Pipe, Tubing, Hose & Fittings

Pipe Fittings & Pipe

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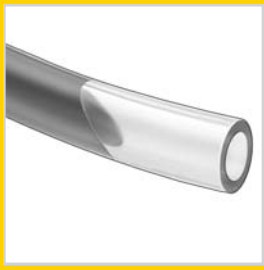

Selecting and Measuring Pipe & Fittings

Pipe Basics

Have you ever tried to order fittings, pipe, nipples, or valves and had difficulty determining the size? If so, you're not alone. Even experienced maintenance people are sometimes confused by the industry's terminology and method of sizing. Before joining a pipe with a fitting or valve, you need to know the *pipe size*, *thread style*, and *thread type*—the pipe sizes must be the same and the thread types must be compatible in order for two components to fit properly.

Pipe Size and Thread Size

When we provide the size of a pipe or fitting in our catalog, we will call it a pipe size or a thread size.

Pipe size, which is the most common, is not an actual measured size, but rather an industry designation. When people refer to pipe size, they sometimes call it IPS or nominal size. You can determine pipe size by using the sizing guides at the bottom of this page. You can also use a sizing gauge or kit sold separately below.

Thread size is the actual measured diameter of the threads. The most common connections that have a thread size are UN/UNF and metric threads; for these, you can use a ruler to measure the threads.

Thread Style

There are two thread styles: tapered and straight.

Tapered threads, which are the most common type, have a slight taper toward the end of the fitting. When threads are mated and tightened together, they hold the fitting in place and seal the connection.

Straight (parallel) threads maintain the same diameter along their entire length. They're used for mechanical joining and serve one purpose—to hold a fitting in place. Straight threads require a seal to make a tight connection.

Pipe Size Measuring Gauges and Kits

Accurately determine the size of your pipe and fittings with one of these kits. For more gauges, see pages 2263-2265.

Pipe Size Measuring Gauges

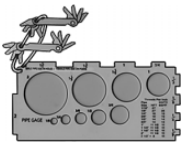

Quickly measure your pipe and fittings. This plastic gauge measures male and female threads in NPT and BSPT pipe sizes 1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2, and 2. It includes two metal gauges for measuring NPT and BSPT thread pitch.

5887T1 ..... $8.13

Thread Pitch Measuring Kits

You'll get four gauges that measure the pitch of BSPT, BSPP, metric, NPT, and UN/UNF threads; a caliper; and an instruction manual. The gauges and caliper are metal. Furnished in a folding plastic case.

7863K1 ..... $42.44

Pipe Size Kits

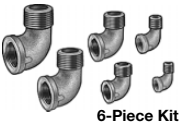

6-Piece Kit

Kits include brass 90° elbows that have male threads on one end and female threads on the other end.

No. of Pieces	For Pipe Sizes	NPT Kits		BSPT Kits	
6	1/8, 1/4, 3/8, 1/2, 3/4, 1	7843K5	$18.32	7843K7	$19.79
9	1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2, 2	7843K6	52.62	7843K8	56.84

How to Measure Threaded Pipe and Fittings

ⓘ To measure larger pipe and fittings up to pipe size 8, go to mcmaster.com and search for **4464KAC**.

How To Measure Pipe and Fittings with Male (External) Threads

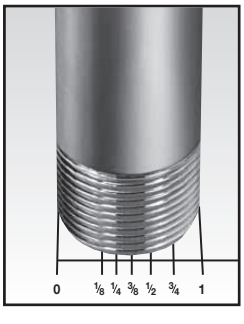

Place the outside edge of the pipe or fitting on the "0" line. The line on the opposite edge gives the pipe size.

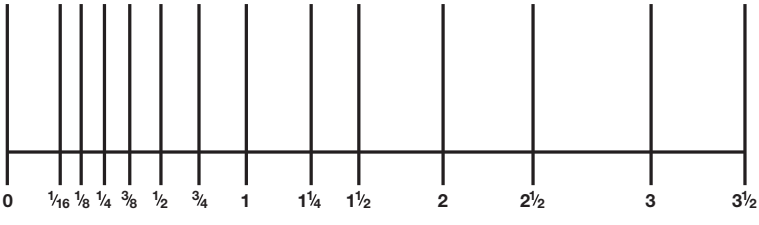

How To Measure Fittings with Female (Internal) Threads

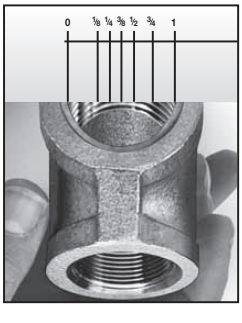

Align the top of the threads on one wall (not the wall itself) with the "0" line. The line that aligns with the top of the threads on the opposite side gives the pipe size.

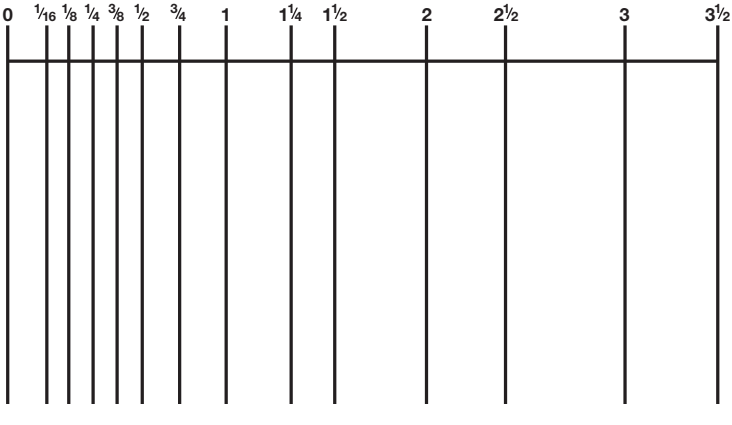

Thread Type Compatibility

In order for two components to fit properly, thread types must be compatible. See the list below for thread types that can be used together.

Thread Type	Compatibility
Tapered Threads	
NPT—National Pipe Taper (Also known as MPT and FPT threads)	Male threads work with female NPT, NPTF, NPSM, NPSH, NPSL, and NPSC. Female threads work with male NPT and NPTF.
NPTF—National Pipe Tapered Fuel (Also known as Dryseal)	Male threads work with female NPTF, NPT, NPSM, and NPSH. Female threads work with male NPTF and NPT.
BSPT—British Standard Pipe Taper (Also known as R threads and 55° Whitworth)	Male threads work with female BSPT and BSPP. Female threads work with male BSPT.
Straight (Parallel) Threads	
BSPP—British Standard Pipe Parallel (Also known as G threads and 55° Whitworth)	Male threads work with female BSPP. Female threads work with male BSPP and BSPT.
NPSM—National Pipe Straight Mechanical	Male threads work with female NPSM and NPSH. Female threads work with male NPSM, NPT, and NPTF.
NPSH—National Pipe Straight Hose	Male threads work with female NPSH. Female threads work with male NPSH, NPT, NPTF, and NPSM.
NPSL—National Pipe Straight Locknut	Threads are female and work with male NPT.
NPSC—National Pipe Straight Coupling	Threads are female and work with male NPT.
NH/NST—National Hose/National Standard Thread	Work with other NH/NST threads.
GHT—Garden Hose Thread	Work with other GHT threads.
UN/UNF—Unified	Work with other UN/UNF threads.
Metric Thread DIN 3852	Work with other DIN 3852 threads.
Metric Thread DIN 3901/3902	Work with other DIN 3901/3902 threads.

NPT (National Pipe Taper) and BSP (British Standard Pipe) Threads

NPT threads are common in the United States, while BSP threads are widely used in many other countries. NPT threads are tapered, while BSP threads come in both tapered (BSPT) and straight/parallel (BSPP) styles.

NPT and BSP threads are not compatible; however, when placed side-by-side, you may not be able to tell them apart. There are two ways to determine if you have NPT threads or BSPT threads.

The first way is by examining the shape and angle of the threads. NPT threads are set at a 60° angle and have flattened peaks and valleys; BSP threads are set at a 55° angle and have rounded peaks and valleys.

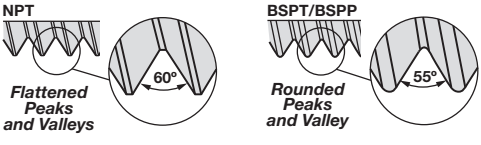

The second way is to find the pitch, which is also known as threads per inch. Either count the number of threads that fall into a 1″ span or use a thread gauge (sold on page 2) for a precise measurement.

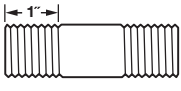

8 Threads per Inch

Pipe Size	Pitch (Threads/Inch) NPT	Pitch (Threads/Inch) BSP
1/16	27	___
1/8	27	28
1/4	18	19
3/8	18	19
1/2	14	14
5/8	___	14

Pipe Size	Pitch (Threads/Inch) NPT	Pitch (Threads/Inch) *BSP*
3/4	14	14
1	11 1/2	11
1 1/4	11 1/2	11
1 1/2	11 1/2	11
2	11 1/2	11
2 1/2	8	11

Pipe Size	Pitch (Threads/Inch) NPT	Pitch (Threads/Inch) BSP
3	8	11
3 1/2	8	11
4	8	11
5	8	11
6	8	11
8	8	___

Unthreaded Pipe Dimensions and Schedule

Metal pipe, plastic pipe, and plastic pipe fittings are generally rated by schedule, which refers to the wall thickness. As the Schedule increases, the walls get thicker towards the center for any given pipe size.

Metal pipe fittings are not usually rated by schedule; they are instead rated by the amount of pressure (psi) they can withstand.

Pipe Size	Actual Unthreaded Pipe OD	Thin Wall (Schedule 10) Our lightest weight pipe.		Standard Wall (Schedule 40) Most popular choice for all around use.		Thick Wall (Schedule 80) Designed for high-pressure applications.		Extra-Thick Wall (Schedule 160) Hefty construction for extreme pressures.		Super-Thick Wall (Schedule XXH) Use for your most demanding applications.	
		Pipe ID	Wall Thick.	Pipe ID	Wall Thick.	Pipe ID	Wall Thick.	Pipe ID	Wall Thick.	Pipe ID	Wall Thick.
1/8	0.405″	0.307″	0.049″	0.269″	0.068″	0.215″	0.095″	____	____	____	____
1/4	0.540″	0.410″	0.065″	0.364″	0.088″	0.302″	0.119″	____	____	____	____
3/8	0.675″	0.545″	0.065″	0.493″	0.091″	0.423″	0.126″	____	____	____	____
1/2	0.840″	0.674″	0.083″	0.622″	0.109″	0.546″	0.147″	0.464″	0.188″	0.252″	0.294″
3/4	1.050″	0.884″	0.083″	0.824″	0.113″	0.742″	0.154″	0.612″	0.219″	0.434″	0.308″
1	1.315″	1.097″	0.109″	1.049″	0.133″	0.957″	0.179″	0.815″	0.250″	0.599	0.358″
1 1/4	1.660″	1.442″	0.109″	1.380″	0.140″	1.278″	0.191″	1.160″	0.250″	____	____
1 1/2	1.900″	1.682″	0.109″	1.610″	0.145″	1.500″	0.200″	1.338″	0.281″	1.100″	0.400″
2	2.375″	2.157″	0.109″	2.067″	0.154″	1.939″	0.218″	1.687″	0.344″	1.503″	0.436″
2 1/2	2.875″	2.635″	0.120″	2.469″	0.203″	2.323″	0.276″	2.125″	0.375″	____	____
3	3.500″	3.260″	0.120″	3.068″	0.216″	2.900″	0.300″	2.624″	0.438″	____	____
4	4.500″	4.260″	0.120″	4.026″	0.237″	3.826″	0.337″	3.438″	0.531″	____	____
5	5.563″	5.295″	0.134″	5.047″	0.258″	4.813″	0.375″	4.313″	0.625″	____	____
6	6.625″	6.357″	0.134″	6.065″	0.280″	5.761″	0.432″	5.187″	0.719″	____	____
8	8.625″	8.329″	0.148″	7.981″	0.322″	7.625″	0.500″	6.813″	0.906″	____	____

ⓘ For a measuring guide for unthreaded pipe and fittings up to pipe size 8, go to mcmaster.com and search for **4347KAC**.

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

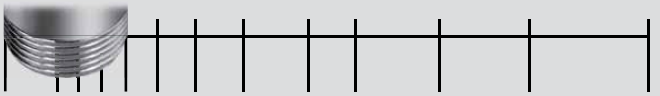

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Stainless Steel Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 366° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall stainless steel (see pages 6-8)
- Flanges: Use threaded low-pressure stainless steel (see page 8)

Don't confuse these with poor-quality fittings that don't make the grade—these are the highest quality Class 150 low-pressure stainless steel fittings available. Their high quality is proven by the standards they meet: ANSI/MSS SP-114 (for heat treating, material thickness, and marking) and ASTM A351, except hex-socket plugs.

Type 304 stainless steel offers very good corrosion resistance for an economical alternative to Type 316. ***Type 316 stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304.

Connections: NPT, except locknuts are NPSL (National Pipe Straight Locknut) and hex-socket plugs are NPTF (Dryseal); both NPSL and NPTF threads are compatible with NPT threads.

Elbows, Tees, Crosses, and Unions

The ***90° female×male elbows*** are also known as street elbows.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		Tees		Crosses		Unions	
Type 304 Stainless Steel												
1/8	4464K11	$4.53	4464K35	$6.42	4464K23	$5.99	4464K47	$6.39	4464K311	$11.09	4464K483	$12.55
1/4	4464K12	4.53	4464K36	6.42	4464K24	5.99	4464K48	6.39	4464K312	11.09	4464K484	13.06
3/8	4464K13	5.55	4464K37	7.71	4464K25	7.06	4464K49	8.16	4464K313	13.19	4464K485	13.76
1/2	4464K14	5.97	4464K38	9.83	4464K26	7.71	4464K51	8.46	4464K314	16.35	4464K486	13.81
3/4	4464K15	8.52	4464K39	13.63	4464K27	11.31	4464K52	13.56	4464K315	27.96	4464K487	17.55
1	4464K16	12.09	4464K41	23.61	4464K28	13.88	4464K53	17.29	4464K316	37.63	4464K488	26.44
1 1/4	4464K17	22.50	4464K42	31.72	4464K29	22.18	4464K54	34.36	4464K317	48.98	4464K489	45.87
1 1/2	4464K18	28.29	4464K43	37.50	4464K31	26.41	4464K55	42.74	4464K318	60.66	4464K491	51.87
2	4464K19	35.80	4464K44	50.86	4464K32	37.11	4464K56	54.84	4464K319	66.02	4464K492	57.97
2 1/2	4464K121	65.55	4464K127	86.24	4464K124	77.51	4464K141	89.40	4464K144	142.26	4464K493	135.01
3	4464K122	83.51	4464K128	114.39	4464K125	106.82	4464K142	128.91	4464K145	153.68	4464K494	169.51
4	4464K123	139.67	4464K129	167.07	4464K126	142.58	4464K143	199.52	4464K146	221.92	4464K495	234.90
Type 316 Stainless Steel												
1/8	4452K411	5.54	4452K471	7.54	4452K421	7.12	4452K431	7.38	4452K481	13.37	4452K222	14.24
1/4	4452K412	5.67	4452K472	7.53	4452K422	7.12	4452K432	7.38	4452K482	13.37	4452K223	14.24
3/8	4452K413	6.83	4452K473	9.42	4452K423	8.64	4452K433	9.77	4452K483	15.67	4452K224	14.47
1/2	4452K414	7.55	4452K474	11.12	4452K424	9.45	4452K434	10.31	4452K484	19.46	4452K225	15.74
3/4	4452K415	10.99	4452K475	14.61	4452K425	12.42	4452K435	15.20	4452K485	33.99	4452K226	19.93
1	4452K416	13.74	4452K476	23.33	4452K426	15.59	4452K436	19.10	4452K486	41.06	4452K227	30.13
1 1/4	4452K417	23.50	4452K477	34.86	4452K427	24.55	4452K437	38.03	4452K487	59.45	4452K228	52.03
1 1/2	4452K418	31.35	4452K478	38.85	4452K428	29.19	4452K438	46.12	4452K488	74.18	4452K229	59.36
2	4452K419	39.63	4452K479	55.40	4452K429	40.80	4452K439	59.45	4452K489	102.13	4452K231	61.62
2 1/2	4452K611	93.93	4452K617	114.29	4452K614	106.88	4452K621	116.10	4452K624	168.74	4452K232	144.85
3	4452K612	119.58	4452K618	148.16	4452K615	128.92	4452K622	154.66	4452K625	183.77	4452K233	201.40
4	4452K613	155.59	4452K619	186.16	4452K616	169.89	4452K623	188.99	4452K626	264.68	4452K234	298.74

Couplings, Caps, Plugs, and Locknuts

Half couplings are partially threaded; one end has an unthreaded portion that can be welded. ***Plugs*** are hollow, except the *square-head plugs* with 1/8-3/8 pipe sizes are solid.

Pipe Size	Couplings		Half Couplings		Caps		Square-Head Plugs		Hex-Head Plugs		Locknuts	
Type 304 Stainless Steel												
1/8	4464K351	$2.65	4464K364	$1.93	4464K496	$1.85	4464K231	$1.70	4464K251	$1.85	4464K581	$4.46
1/4	4464K352	3.14	4464K471	2.11	4464K497	2.70	4464K232	2.00	4464K252	1.85	4464K582	4.46
3/8	4464K353	3.64	4464K472	2.25	4464K498	3.16	4464K233	2.66	4464K253	2.30	4464K583	4.46
1/2	4464K354	5.21	4464K473	3.14	4464K499	3.28	4464K234	3.81	4464K254	3.62	4464K584	4.46
3/4	4464K355	7.20	4464K474	4.22	4464K511	4.07	4464K235	4.62	4464K255	4.54	4464K585	5.41
1	4464K356	10.48	4464K475	5.43	4464K512	6.15	4464K236	5.84	4464K256	7.86	4464K586	6.16
1 1/4	4464K357	15.50	4464K476	8.49	4464K513	11.12	4464K237	11.66	4464K257	12.62	4464K587	12.74
1 1/2	4464K358	18.39	4464K477	10.48	4464K514	14.62	4464K238	13.90	4464K258	13.81	4464K588	12.74
2	4464K359	25.93	4464K478	13.35	4464K515	18.63	4464K239	16.43	4464K259	19.09	4464K589	14.03
2 1/2	4464K361	56.95	4464K479	32.40	4464K516	33.63	4464K241	31.32	4464K244	34.21	4464K591	17.69
3	4464K362	68.71	4464K481	44.52	4464K517	46.49	4464K242	39.37	4464K245	46.91	4464K592	22.50
4	4464K363	106.78	4464K482	67.95	4464K518	73.41	4464K243	85.47	4464K246	98.17	4464K593	32.24
Type 316 Stainless Steel												
1/8	4452K111	3.11	4452K138	2.20	4452K235	2.27	4452K121	1.80	4452K141	2.31	4452K671	4.85
1/4	4452K112	3.50	4452K139	2.30	4452K236	3.04	4452K122	2.30	4452K142	2.31	4452K672	4.85
3/8	4452K113	4.13	4452K211	2.60	4452K237	3.58	4452K123	3.04	4452K143	2.62	4452K673	4.85
1/2	4452K114	6.02	4452K212	3.77	4452K238	4.20	4452K124	4.28	4452K144	4.35	4452K674	4.85
3/4	4452K115	8.32	4452K213	4.80	4452K239	4.78	4452K125	5.23	4452K145	5.50	4452K675	6.12

(Continued on following page)

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

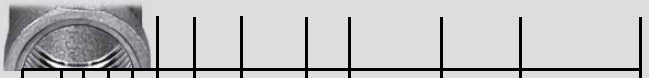

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Stainless Steel Threaded Pipe Fittings *(Continued from previous page)*

Couplings, Caps, Plugs, and Locknuts (Cont.)

Pipe Size	Couplings		Half Couplings		Caps		Square-Head Plugs		Hex-Head Plugs		Locknuts	
Type 316 Stainless Steel (Cont.)												
1	4452K116	$11.08	4452K214	$6.27	4452K241	$7.34	4452K126	$6.55	4452K146	$8.77	4452K676	$6.83
1 1/4	4452K117	17.62	4452K215	9.51	4452K242	14.39	4452K127	15.46	4452K147	15.12	4452K677	13.88
1 1/2	4452K118	20.93	4452K216	12.66	4452K243	18.46	4452K128	17.12	4452K148	17.89	4452K678	13.88
2	4452K119	29.48	4452K217	16.55	4452K244	23.71	4452K129	23.60	4452K149	25.86	4452K679	15.24
2 1/2	4452K135	64.61	4452K218	39.52	4452K245	41.91	4452K131	38.02	4452K151	41.56	4452K681	19.55
3	4452K136	83.47	4452K219	53.84	4452K246	54.91	4452K132	46.22	4452K152	53.34	4452K682	24.01
4	4452K137	110.46	4452K221	82.96	4452K247	89.04	4452K133	94.57	4452K153	111.31	4452K683	38.64

Reducing Couplings and Hex Reducing Bushings

Reducing Couplings

Pipe Size (A)	Pipe Size (B)						
Type 304 Stainless Steel				*Type 316 Stainless Steel*			
1/4	1/8	4464K519	$3.89	1/4	1/8	4452K248	$4.43
3/8	1/8	4464K521	4.31	3/8	1/8	4452K249	4.88
3/8	1/4	4464K522	4.47	3/8	1/4	4452K251	4.98
1/2	1/8	4464K523	4.43	1/2	1/8	4452K252	5.91
1/2	1/4	4464K524	4.61	1/2	1/4	4452K253	5.99
1/2	3/8	4464K525	4.80	1/2	3/8	4452K254	6.11
3/4	1/8	4464K526	6.20	3/4	1/8	4452K255	7.54
3/4	1/4	4464K527	6.43	3/4	1/4	4452K256	7.68
3/4	3/8	4464K528	6.67	3/4	3/8	4452K257	7.82
3/4	1/2	4464K529	6.94	3/4	1/2	4452K258	7.97
1	1/8	4464K531	8.47	1	1/8	4452K259	11.64
1	1/4	4464K532	8.78	1	1/4	4452K261	11.83
1	3/8	4464K533	9.12	1	3/8	4452K262	12.04
1	1/2	4464K534	9.48	1	1/2	4452K263	12.25
1	3/4	4464K535	9.88	1	3/4	4452K264	12.47
1 1/4	3/8	4464K536	12.35	1 1/4	3/8	4452K265	15.19
1 1/4	1/2	4464K537	12.81	1 1/4	1/2	4452K266	15.45
1 1/4	3/4	4464K538	13.30	1 1/4	3/4	4452K267	15.72
1 1/4	1	4464K539	13.84	1 1/4	1	4452K268	15.99
1 1/2	3/8	4464K541	17.86	1 1/2	3/8	4452K269	20.26
1 1/2	1/2	4464K542	18.52	1 1/2	1/2	4452K271	20.60
1 1/2	3/4	4464K543	19.23	1 1/2	3/4	4452K272	20.96
1 1/2	1	4464K544	20.00	1 1/2	1	4452K273	21.32
1 1/2	1 1/4	4464K545	20.83	1 1/2	1 1/4	4452K274	21.70
2	1/2	4464K546	29.79	2	1/2	4452K275	34.19
2	3/4	4464K547	30.89	2	3/4	4452K276	34.77
2	1	4464K548	32.08	2	1	4452K277	35.37
2	1 1/4	4464K549	33.36	2	1 1/4	4452K278	35.99
2	1 1/2	4464K551	29.79	2	1 1/2	4452K279	36.63
2 1/2	1	4464K552	57.63	2 1/2	1	4452K281	69.60
2 1/2	1 1/4	4464K553	58.57	2 1/2	1 1/4	4452K282	70.70
2 1/2	1 1/2	4464K554	59.55	2 1/2	1 1/2	4452K283	71.84
2 1/2	2	4464K555	60.56	2 1/2	2	4452K284	73.02
3	1	4464K556	82.06	3	1	4452K285	94.69
3	1 1/4	4464K557	83.41	3	1 1/4	4452K286	96.19
3	1 1/2	4464K558	84.80	3	1 1/2	4452K287	97.74
3	2	4464K571	84.80	3	2	4452K288	99.34
3	2 1/2	4464K572	84.80	3	2 1/2	4452K289	101.00
4	2	4464K573	117.06	4	2	4452K291	143.52
4	2 1/2	4464K574	119.58	4	2 1/2	4452K292	145.60
4	3	4464K575	120.40	4	3	4452K296	167.44

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)						
Type 304 Stainless Steel				*Type 316 Stainless Steel*			
1/4	1/8	4464K261	$2.54	1/4	1/8	4452K161	$2.85
3/8	1/8	4464K262	2.78	3/8	1/8	4452K162	3.27
3/8	1/4	4464K263	2.78	3/8	1/4	4452K163	3.27
1/2	1/8	4464K264	3.51	1/2	1/8	4452K164	3.85
1/2	1/4	4464K265	3.51	1/2	1/4	4452K165	3.85
1/2	3/8	4464K266	3.51	1/2	3/8	4452K166	3.85
3/4	1/8	4464K267	5.12	3/4	1/8	4452K167	5.70
3/4	1/4	4464K268	5.12	3/4	1/4	4452K168	5.70
3/4	3/8	4464K269	5.12	3/4	3/8	4452K169	5.70
3/4	1/2	4464K271	5.12	3/4	1/2	4452K171	5.70
1	1/8	4464K272	7.12	1	1/8	4452K293	7.61
1	1/4	4464K273	7.12	1	1/4	4452K173	8.12
1	3/8	4464K274	7.12	1	3/8	4452K174	8.12
1	1/2	4464K275	7.12	1	1/2	4452K175	8.12
1	3/4	4464K276	7.12	1	3/4	4452K176	8.12
1 1/4	1/4	4464K278	12.73	1 1/4	1/4	4452K178	15.89
1 1/4	3/8	4464K279	12.73	1 1/4	3/8	4452K294	14.84
1 1/4	1/2	4464K281	12.73	1 1/4	1/2	4452K134	15.89
1 1/4	3/4	4464K282	12.73	1 1/4	3/4	4452K181	15.89
1 1/4	1	4464K151	12.73	1 1/4	1	4452K182	15.89
1 1/2	1/4	4464K153	15.24	1 1/2	1/4	4452K184	18.81
1 1/2	3/8	4464K154	15.24	1 1/2	3/8	4452K295	17.57
1 1/2	1/2	4464K155	15.24	1 1/2	1/2	4452K186	18.81
1 1/2	3/4	4464K156	15.24	1 1/2	3/4	4452K187	18.81
1 1/2	1	4464K157	15.24	1 1/2	1	4452K188	18.81
1 1/2	1 1/4	4464K158	15.24	1 1/2	1 1/4	4452K189	18.81
2	1/4	4464K191	23.24	2	1/4	4452K199	26.70
2	3/8	4464K159	23.24	2	3/8	4452K191	24.93
2	1/2	4464K171	23.24	2	1/2	4452K192	25.35
2	3/4	4464K172	23.24	2	3/4	4452K193	25.79
2	1	4464K173	23.24	2	1	4452K194	26.24
2	1 1/4	4464K174	23.24	2	1 1/4	4452K195	26.71
2	1 1/2	4464K175	23.24	2	1 1/2	4452K196	27.19
2 1/2	1 1/2	4464K192	39.87	2 1/2	1 1/2	4452K158	45.37
2 1/2	2	4464K176	39.87	2 1/2	2	4452K197	45.37
3	1	4464K177	61.11	3	1	4452K198	69.77
3	1 1/2	4464K193	61.11	3	1 1/2	4452K159	67.36
3	2	4464K178	61.11	3	2	4452K154	65.12
3	2 1/2	4464K179	61.11	3	2 1/2	4452K156	66.22
4	2	4464K187	111.17	4	2	4452K157	119.11
4	3	4464K188	111.17	4	3	4452K155	117.12

Hex-Socket Plugs

Pipe Size	Hex Key Size	Type 302 Stainless Steel		Type 316 Stainless Steel	
1/16	5/32″	4464K559	$0.87	—	—
1/8	3/16″	4464K561	.54	4452K541	$0.75
1/4	1/4″	4464K562	.76	4452K542	1.18
3/8	5/16″	4464K563	1.72	4452K543	2.09
1/2	3/8″	4464K564	2.40	4452K544	3.06

Pipe Size	Hex Key Size	Type 304 Stainless Steel		Type 316 Stainless Steel	
3/4	9/16″	4464K365	$7.60	4452K545	$9.94
1	5/8″	4464K366	9.18	4452K558	11.01
1 1/4	3/4″	4464K367	20.85	4452K547	22.28
1 1/2	1″	4464K368	24.60	4452K548	30.24
2	1″	4464K369	45.83	4452K549	49.50

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Type 304/304L Stainless Steel Threaded Pipe Nipples and Pipe

Fully Threaded

Threaded on Both Ends

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 150 low-pressure stainless steel (see pages 4-5)
- Flanges: Use threaded low-pressure stainless steel (see page 8)

You may know these as Schedule 40 threaded nipples and pipe—they're made of Type 304/304L stainless steel, which offers very good corrosion resistance for an economical alternative to Type 316/316L. They have welded construction, so there's a weld bead on the inside, except 1/8-3/8 pipe sizes are seamless. Meet ASTM A733, ASTM A312, and ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	4830K111	$1.32
1/4	7/8″	4830K131	1.50
3/8	1″	4830K151	1.79
1/2	1 1/8″	4830K171	2.18
3/4	1 3/8″	4830K191	2.71
1	1 1/2″	4830K221	3.61
1 1/4	1 5/8″	4830K241	4.86
1 1/2	1 3/4″	4830K261	5.61
2	2″	4830K281	8.64
2 1/2	2 1/2″	4830K293	14.97
3	2 5/8″	4830K294	20.78
4	2 7/8″	4830K295	26.72

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	4830K112	$1.68	4830K113	$1.96	4830K114	$2.25	4830K115	$2.54	4830K143	$2.89
1/4	4830K132	1.79	4830K133	2.14	4830K134	2.50	4830K135	2.86	4830K144	3.32
3/8	4830K152	2.07	4830K153	2.46	4830K154	2.93	4830K155	3.36	4830K145	3.89
1/2	4830K172	2.57	4830K173	3.00	4830K174	3.54	4830K175	4.07	4830K146	4.75
3/4	4830K192	2.86	4830K193	3.32	4830K194	3.93	4830K195	4.54	4830K147	5.29
1	———	———	4830K223	4.43	4830K324	5.14	4830K225	5.96	4830K148	6.96
1 1/4	———	———	———	———	4830K244	6.54	4830K245	7.54	4830K149	8.82
1 1/2	———	———	———	———	4830K264	7.18	4830K265	8.32	4830K163	9.71
2	———	———	———	———	4830K284	9.29	4830K285	10.61	4830K164	11.60
2 1/2	———	———	———	———	———	———	4830K296	16.94	4830K165	20.63
3	———	———	———	———	———	———	4830K297	22.66	4830K166	27.50
4	———	———	———	———	———	———	———	———	4830K207	35.22

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		4 1/2″ Lengths		5″ Lengths		5 1/2″ Lengths		6″ Lengths		6 1/2″ Lengths	
1/8	4830K116	$3.18	4830K331	$3.46	4830K117	$3.79	4830K301	$4.07	4830K118	$4.36	4830K253	$5.11
1/4	4830K136	3.71	4830K332	4.07	4830K137	4.46	4830K302	4.82	4830K138	5.18	4830K254	6.11
3/8	4830K156	4.32	4830K333	4.75	4830K157	5.21	4830K303	5.64	4830K158	6.07	4830K255	7.21
1/2	4830K176	5.29	4830K334	5.86	4830K177	6.39	4830K304	6.93	4830K178	7.46	4830K256	8.79
3/4	4830K196	5.89	4830K335	6.50	4830K197	7.07	4830K305	7.68	4830K198	8.29	4830K257	9.71
1	4830K226	7.75	4830K336	8.54	4830K227	9.36	4830K306	10.14	4830K228	10.96	4830K258	11.34
1 1/4	4830K246	9.86	4830K337	10.17	4830K247	10.41	4830K307	11.31	4830K248	12.19	4830K259	14.28
1 1/2	4830K266	10.86	4830K338	11.20	4830K267	11.47	4830K308	12.47	4830K268	13.47	4830K262	15.84
2	4830K286	12.16	4830K339	13.44	4830K287	14.72	4830K309	16.00	4830K288	17.28	4830K263	20.50
2 1/2	4830K276	21.31	4830K341	22.88	4830K277	24.84	4830K311	26.84	4830K278	28.72	4830K273	33.75
3	4830K356	28.28	4830K342	30.70	4830K357	31.28	4830K312	33.78	4830K358	36.28	4830K274	44.22
4	4830K376	35.22	4830K343	38.22	4830K377	41.62	4830K313	45.03	4830K378	48.44	4830K275	49.71
6	4830K209	155.42	4830K235	167.88	4830K236	186.81	4830K237	199.39	4830K238	212.46	4830K326	221.82

Pipe Size	7″ Lengths		8″ Lengths		9″ Lengths		10″ Lengths		11″ Lengths		12″ Lengths	
1/8	4830K183	$5.11	4830K119	$5.68	4830K213	$6.25	4830K121	$6.93	4830K123	$7.50	4830K122	$8.07
1/4	4830K184	6.11	4830K139	6.86	4830K214	7.57	4830K141	8.39	4830K124	9.11	4830K142	9.86
3/8	4830K185	7.21	4830K159	8.07	4830K215	8.96	4830K161	9.93	4830K125	10.07	4830K162	10.90
1/2	4830K186	8.79	4830K179	9.86	4830K216	10.23	4830K181	11.37	4830K126	11.59	4830K182	13.37
3/4	4830K187	9.71	4830K199	10.20	4830K217	10.62	4830K211	11.78	4830K127	12.84	4830K212	13.91
1	4830K188	11.34	4830K229	12.75	4830K218	14.16	4830K231	15.75	4830K128	17.16	4830K232	18.53
1 1/4	4830K189	14.28	4830K249	16.06	4830K219	17.88	4830K251	19.88	4830K129	21.66	4830K252	23.47
1 1/2	4830K201	15.84	4830K269	17.81	4830K282	19.81	4830K271	22.03	4830K314	24.38	4830K272	26.00
2	4830K202	20.50	4830K289	23.06	4830K283	25.62	4830K291	28.50	4830K315	31.06	4830K292	33.62
2 1/2	4830K203	33.75	4830K279	37.62	4830K167	44.27	4830K233	45.91	4830K316	49.78	4830K234	53.69
3	4830K204	44.22	4830K359	46.29	4830K168	48.17	4830K361	51.90	4830K317	54.58	4830K362	58.79
4	4830K205	52.47	4830K379	55.45	4830K169	61.16	4830K381	67.61	4830K318	73.34	4830K382	79.08
6	4830K239	230.66	4830K319	239.31	4830K321	256.79	4830K322	274.29	4830K323	286.28	4830K325	292.40

To Order: Please specify length.

Pipe Size		14″ Lengths	16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths	120″ Lengths
1/8	4813K134	$7.88	$9.00	$10.19	$11.28	$12.41	$13.53	$20.31	$27.12	$33.84	$40.66	$67.75
1/4	4813K135	9.47	10.81	12.12	13.53	14.85	16.25	24.41	32.50	40.62	48.75	81.28
3/8	4813K136	11.53	13.16	14.81	16.47	18.12	19.75	29.56	39.44	49.31	59.22	98.62
1/2	4813K137	15.00	17.15	19.25	21.44	23.59	25.72	38.59	51.41	64.28	77.12	128.56
3/4	4813K138	18.00	20.59	23.19	25.72	28.31	30.88	46.38	61.81	77.28	92.72	141.26
1	4813K139	23.25	26.56	29.91	33.19	36.50	39.81	59.75	79.72	99.59	119.53	159.40
1 1/4	4813K141	29.25	33.41	37.59	41.78	45.97	49.74	75.22	99.74	125.47	150.47	199.74
1 1/2	4813K142	34.50	39.44	44.34	49.31	54.25	59.19	88.72	118.28	147.84	166.97	236.55
2	4813K143	44.97	51.41	57.78	64.25	70.66	77.09	115.62	154.19	171.28	184.95	274.04
2 1/2	4813K144	73.19	83.66	94.09	104.53	115.00	125.44	150.57	199.74	250.93	267.69	407.63
3	4813K145	97.00	110.84	124.78	130.44	139.37	152.06	199.60	266.10	295.71	319.36	483.91
4	4813K146	125.09	142.97	151.35	158.86	165.55	171.57	257.38	305.04	343.16	411.82	612.84
6	4813K147	358.02	394.42	429.98	467.20	503.58	512.91	687.07	810.82	———	———	———

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

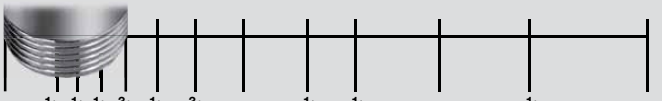

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Type 316/316L Stainless Steel Threaded Pipe Nipples and Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 150 low-pressure stainless steel (see pages 4-5)
- Flanges: Use threaded low-pressure stainless steel (see page 8)

Made from Type 316/316L stainless steel, which contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L, these threaded nipples and pipe are known as Schedule 40. They have welded construction, so there's a weld bead on the inside, except 1/8–3/8 pipe sizes are seamless. Meet ASTM A733, ASTM A312, and ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

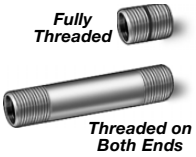

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	4548K111	$1.52
1/4	7/8″	4548K131	1.74
3/8	1″	4548K381	2.07
1/2	1 1/8″	4548K171	2.70
3/4	1 3/8″	4548K191	3.44
1	1 1/2″	4548K221	4.70
1 1/4	1 5/8″	4548K241	6.41
1 1/2	1 3/4″	4548K261	7.59
2	2″	4548K281	10.93
2 1/2	2 1/2″	4548K123	19.56
3	2 5/8″	4548K124	26.97
4	2 7/8″	4548K125	35.44

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	4548K112	$2.00	4548K113	$2.41	4548K114	$2.78	4548K115	$3.19	4548K143	$3.63
1/4	4548K132	2.15	4548K133	2.59	4548K134	3.04	4548K135	3.52	4548K144	4.11
3/8	4548K152	2.52	4548K153	3.04	4548K154	3.59	4548K155	4.15	4548K145	4.85
1/2	4548K172	3.26	4548K173	3.89	4548K174	4.63	4548K175	5.37	4548K146	6.30
3/4	4548K192	3.67	4548K193	4.33	4548K194	5.19	4548K195	6.00	4548K147	7.04
1	—	—	4548K223	5.81	4548K224	6.85	4548K225	7.96	4548K148	9.37
1 1/4	—	—	—	—	4548K244	8.85	4548K245	10.33	4548K149	10.93
1 1/2	—	—	—	—	4548K264	9.96	4548K265	10.83	4548K151	11.53
2	—	—	—	—	4548K284	11.77	4548K285	12.72	4548K163	15.00
2 1/2	—	—	—	—	—	—	4548K126	22.38	4548K164	25.91
3	—	—	—	—	—	—	4548K127	29.69	4548K165	34.22
4	—	—	—	—	—	—	—	—	4548K397	41.53

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		4 1/2″ Lengths		5″ Lengths		5 1/2″ Lengths		6″ Lengths		6 1/2″ Lengths	
1/8	4548K116	$4.04	4548K311	$4.41	4548K117	$4.81	4548K331	$5.19	4548K118	$5.59	4548K341	$6.56
1/4	4548K136	4.59	4548K312	5.07	4548K137	5.52	4548K332	6.00	4548K138	6.48	4548K342	7.63
3/8	4548K156	5.41	4548K313	5.96	4548K157	6.52	4548K333	7.07	4548K158	7.63	4548K343	9.07
1/2	4548K176	7.04	4548K314	7.81	4548K177	8.56	4548K334	9.30	4548K178	10.04	4548K344	10.63
3/4	4548K196	7.89	4548K315	8.70	4548K197	9.56	4548K335	10.37	4548K198	11.22	4548K345	11.87
1	4548K226	9.79	4548K316	10.47	4548K227	11.47	4548K336	11.72	4548K228	12.66	4548K346	14.97
1 1/4	4548K246	11.50	4548K317	12.72	4548K247	13.15	4548K337	15.19	4548K248	16.44	4548K347	19.25
1 1/2	4548K266	12.94	4548K318	13.50	4548K267	14.34	4548K338	17.12	4548K268	18.53	4548K348	21.81
2	4548K286	16.81	4548K319	18.66	4548K287	20.50	4548K339	22.31	4548K288	24.16	4548K349	28.62
2 1/2	4548K166	28.72	4548K321	31.19	4548K167	34.00	4548K324	36.81	4548K168	39.62	4548K327	46.59
3	4548K356	37.84	4548K322	39.44	4548K357	43.06	4548K325	46.69	4548K358	50.31	4548K328	55.57
4	4548K376	47.59	4548K323	52.03	4548K377	53.56	4548K326	56.46	4548K378	59.22	4548K329	67.79
6	4548K384	186.42	4548K385	203.45	4548K386	219.83	4548K387	236.54	4548K388	249.02	4548K396	261.42

Pipe Size	7″ Lengths		8″ Lengths		9″ Lengths		10″ Lengths		11″ Lengths		12″ Lengths	
1/8	4548K363	$6.56	4548K119	$7.33	4548K233	$8.11	4548K121	$8.96	4548K421	$9.39	4548K122	$10.52
1/4	4548K364	7.63	4548K139	8.56	4548K234	9.48	4548K141	10.18	4548K422	10.69	4548K142	11.55
3/8	4548K365	9.07	4548K159	10.19	4548K235	10.89	4548K161	11.30	4548K423	11.53	4548K162	12.50
1/2	4548K366	11.00	4548K179	11.97	4548K236	13.30	4548K181	13.87	4548K424	15.12	4548K182	16.38
3/4	4548K367	11.87	4548K199	12.53	4548K237	13.94	4548K211	15.50	4548K425	16.91	4548K212	18.31
1	4548K368	14.97	4548K229	16.88	4548K238	18.75	4548K231	20.87	4548K426	22.78	4548K232	24.69
1 1/4	4548K369	19.25	4548K249	21.72	4548K239	24.19	4548K251	26.97	4548K427	29.44	4548K252	31.91
1 1/2	4548K213	21.81	4548K269	24.62	4548K253	27.41	4548K271	30.53	4548K428	33.34	4548K272	36.12
2	4548K214	28.62	4548K289	32.28	4548K254	35.94	4548K291	40.06	4548K429	43.72	4548K292	47.41
2 1/2	4548K215	46.59	4548K169	49.18	4548K255	52.91	4548K183	55.54	4548K431	58.82	4548K184	75.50
3	4548K216	55.57	4548K359	57.29	4548K256	63.39	4548K361	70.26	4548K432	76.37	4548K362	82.45
4	4548K217	69.62	4548K379	75.97	4548K257	84.16	4548K481	93.37	4548K433	96.45	4548K482	101.71
6	4548K389	273.94	4548K391	287.83	4548K392	306.18	4548K393	329.76	4548K394	353.36	4548K395	376.93

To Order: Please specify length.

Pipe Size		14″ Lengths	16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths	120″ Lengths
1/8	4816K134	$10.08	$11.54	$13.03	$14.43	$15.89	$17.34	$27.23	$34.66	$43.37	$51.94	$86.63
1/4	4816K135	11.03	12.60	14.23	15.78	17.34	18.94	28.40	37.83	47.31	56.80	94.60
3/8	4816K136	13.72	15.69	17.60	19.60	21.58	23.51	35.23	47.03	58.77	70.57	117.60
1/2	4816K137	17.94	20.52	23.89	25.63	28.21	30.74	47.77	63.69	79.57	95.00	139.28
3/4	4816K138	20.91	23.94	26.91	29.89	32.91	35.91	53.83	71.83	89.77	107.74	157.12
1	4816K139	28.49	32.54	36.57	40.71	44.77	48.83	73.23	97.60	122.03	146.43	213.57
1 1/4	4816K141	36.49	41.71	46.91	52.11	57.31	62.54	93.77	125.06	136.75	164.15	273.55
1 1/2	4816K142	43.03	49.17	55.34	61.49	67.63	73.74	110.69	147.60	161.47	193.68	322.82
2	4816K143	56.74	64.86	72.97	81.09	89.17	97.29	130.63	170.20	212.80	255.35	378.31
2 1/2	4816K144	88.26	99.74	106.86	122.56	134.83	146.51	190.23	227.96	256.46	307.70	468.79
3	4816K145	111.31	127.19	143.14	159.00	165.71	171.75	257.62	274.84	306.09	367.27	612.08
4	4816K146	149.56	170.94	177.54	192.30	211.50	230.75	307.67	369.22	394.61	473.59	769.22
6	4816K147	424.11	471.27	519.36	565.64	612.80	658.36	861.95	1,018.56	—	—	—

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

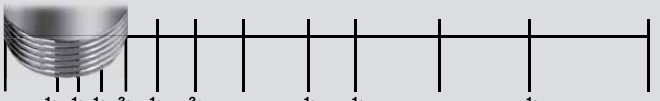

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Stainless Steel Threaded-On-One-End Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 150 low-pressure stainless steel (see pages 4-5)
- Flanges: Use threaded low-pressure stainless steel (see below)

One end of these Schedule 40 nipples is threaded for a quick connection, while the other end is unthreaded for a welded connection. They have welded construction so there is a weld bead on the inside, except 1/8-3/8 pipe sizes are seamless. Meet ASTM A312, ASTM A733, and ANSI/ASME B1.20.1.

Type 304/304L stainless steel offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: NPT on one end, unthreaded on the other end.

Pipe Size	1″ Lengths		1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths	
Type 304/304L Stainless Steel														
1/8	9157K14	$1.50	9157K28	$1.50	9157K39	$1.75	9157K61	$2.00	9157K49	$2.25	9157K59	$2.83	9157K91	$3.88
1/4	9157K11	1.32	9157K21	1.60	9157K31	1.90	9157K62	2.23	9157K41	2.55	9157K51	3.30	9157K92	4.60
3/8	9157K12	1.57	9157K22	1.85	9157K32	2.20	9157K63	2.58	9157K42	2.98	9157K52	3.85	9157K93	5.40
1/2	9157K13	1.92	9157K23	2.27	9157K33	2.65	9157K64	3.12	9157K43	3.60	9157K53	4.70	9157K94	6.62
3/4	9157K15	2.40	9157K24	2.55	9157K34	2.95	9157K65	3.50	9157K44	4.03	9157K54	5.22	9157K95	7.35
1	—	—	9157K25	3.20	9157K35	3.92	9157K66	4.58	9157K45	5.28	9157K55	6.88	9157K96	9.72
1 1/4	—	—	9157K26	4.30	9157K36	4.97	9157K67	5.80	9157K46	6.70	9157K56	8.75	9157K97	12.38
1 1/2	—	—	9157K27	4.97	9157K37	5.35	9157K68	6.35	9157K47	7.38	9157K57	9.62	9157K98	13.65
2	—	—	—	—	9157K38	7.67	9157K69	8.25	9157K48	9.40	9157K58	12.32	9157K99	17.52
2 1/2	—	—	—	—	—	—	9157K601	15.18	9157K401	17.15	9157K501	21.60	9157K901	29.12
3	—	—	—	—	—	—	9157K602	20.80	9157K402	22.98	9157K502	28.70	9157K902	36.50
4	—	—	—	—	—	—	9157K603	25.81	9157K403	27.10	9157K503	35.73	9157K903	49.10
Type 316/316L Stainless Steel														
1/4	9110T11	1.48	9110T21	1.85	9110T31	2.23	9110T41	2.60	9110T51	3.00	9110T61	3.95	9110T71	5.53
3/8	9110T12	1.77	9110T22	2.15	9110T32	2.60	9110T42	3.07	9110T52	3.55	9110T62	4.62	9110T72	6.55
1/2	9110T13	2.33	9110T23	2.77	9110T33	3.33	9110T43	3.95	9110T53	4.58	9110T63	6.02	9110T73	8.57
3/4	9110T14	2.95	9110T24	3.12	9110T34	3.73	9110T44	4.42	9110T54	5.15	9110T64	6.75	9110T74	9.60
1	—	—	9110T25	4.03	9110T35	4.97	9110T45	5.88	9110T55	6.82	9110T65	9.00	9110T75	12.82
1 1/4	—	—	9110T26	5.50	9110T36	6.42	9110T46	7.58	9110T56	8.85	9110T66	11.65	9110T76	16.65
1 1/2	—	—	9110T27	6.50	9110T37	7.10	9110T47	8.53	9110T57	9.93	9110T67	13.12	9110T77	18.77
2	—	—	—	—	9110T38	10.05	9110T48	11.18	9110T58	12.88	9110T68	17.05	9110T78	24.50
3	—	—	—	—	—	—	9110T49	27.35	9110T59	30.10	9110T69	38.38	9110T79	51.02
4	—	—	—	—	—	—	9110T82	32.68	9110T83	35.95	9110T84	48.27	9110T85	67.55

Low-Pressure Stainless Steel Threaded Flanges

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 366° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall stainless steel (see pages 6-7 and above)
- Fittings: Use threaded Class 150 low-pressure stainless steel (see pages 4-5)

Create a flange connection to gain easy access to your pipe. Bolt two same-size flanges together with a gasket (not included) to form a tight seal. For gaskets, see pages 3474-3480; for bolts, see pages 3146-3147.

Forged Flanges— These high-strength flanges are also called ANSI flanges and raised-face flanges. Match with another ANSI/raised-face flange of the same size for connection. They meet ASTM A182 and ANSI/ASME B16.5.

Cast Flanges— Also called MSS flanges and flat-face flanges. Match with another MSS/flat-face flange of the same size for connection. Flanges meet ASTM A351 and conform to MSS SP-42 for diameter and bolt holes and MSS SP-51 for thickness.

Types 304 and ***304/304L stainless steel*** offer very good corrosion resistance for an economical alternative to Types 316 and 316/316L.

Types 316 and ***316/316L stainless steel*** contain more nickel and have molybdenum for better resistance to corrosion than Types 304 and 304/304L.

Connections: NPT.

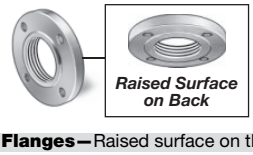

Forged Flanges—Raised surface on the back.

Pipe Size	Flange OD	Bolts Req'd Qty.	Dia.		
Type 304/304L Stainless Steel					
1/2	3 1/2″	4	1/2″	44685K11	$19.34
3/4	3 7/8″	4	1/2″	44685K12	27.12
1	4 1/4″	4	1/2″	44685K13	27.19
1 1/4	4 5/8″	4	1/2″	44685K14	37.10
1 1/2	5″	4	1/2″	44685K15	37.06
2	6″	4	5/8″	44685K16	56.83
2 1/2	7″	4	5/8″	44685K17	92.62
3	7 1/2″	4	5/8″	44685K18	87.43
4	9″	8	5/8″	44685K19	116.11
6	11″	8	3/4″	44685K21	201.66
Type 316/316L Stainless Steel					
1/2	3 1/2″	4	1/2″	44695K11	25.82
3/4	3 7/8″	4	1/2″	44695K12	32.00
1	4 1/4″	4	1/2″	44695K13	43.04
1 1/4	4 5/8″	4	1/2″	44695K14	53.27
1 1/2	5″	4	1/2″	44695K15	49.01
2	6″	4	5/8″	44695K16	59.24
2 1/2	7″	4	5/8″	44695K17	103.20
3	7 1/2″	4	5/8″	44695K18	115.70
4	9″	8	5/8″	44695K19	143.24
6	11″	8	3/4″	44695K21	265.63

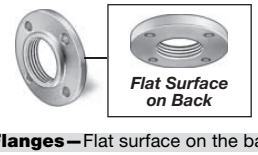

Cast Flanges—Flat surface on the back.

Pipe Size	Flange OD	Bolts Req'd Qty.	Dia.		
Type 304 Stainless Steel					
1/2	3 1/2″	4	1/2″	43505K351	$26.12
3/4	3 7/8″	4	1/2″	43505K352	27.55
1	4 1/4″	4	1/2″	43505K353	36.80
1 1/4	4 5/8″	4	1/2″	43505K354	41.78
1 1/2	5″	4	1/2″	43505K355	51.39
2	6″	4	5/8″	43505K356	63.99
2 1/2	7″	4	5/8″	43505K357	69.66
3	7 1/2″	4	5/8″	43505K358	84.90
4	9″	8	5/8″	43505K359	120.13
Type 316 Stainless Steel					
1/2	3 1/2″	4	1/2″	43615K561	29.77
3/4	3 7/8″	4	1/2″	43615K562	33.97
1	4 1/4″	4	1/2″	43615K563	42.83
1 1/4	4 5/8″	4	1/2″	43615K564	48.68
1 1/2	5″	4	1/2″	43615K565	56.48
2	6″	4	5/8″	43615K566	74.02
2 1/2	7″	4	5/8″	43615K567	88.41
3	7 1/2″	4	5/8″	43615K568	103.20
4	9″	8	5/8″	43615K569	154.81

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

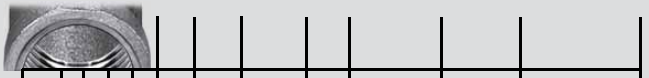

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Stainless Steel Threaded Reducing Flanges

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 366° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall stainless steel (see pgs. 6-8)
- Fittings: Use threaded Class 150 low-pressure stainless steel (see pages 4-5)

The connecting point is reduced, so you can transition your piping system to a smaller pipe size. Also known as Class 150 and raised-face flanges, bolt one of these forged flanges to your flange (be sure the flange pipe size, flange OD, and number of bolt holes are the same). A gasket is required, but not included. For gaskets, see pages 3474-3480; for bolts, see pages 3146-3147. Meet ASTM A182 and ANSI/ASME B16.5.

Type 304/304L stainless steel offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: NPT.

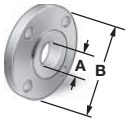

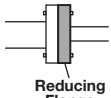

Reducing Flange

Flange Pipe Size	Threaded Pipe Size (A)	Flange OD (B)	Bolts Req'd Qty.	Bolts Req'd Dia.		
Type 304/304L Stainless Steel						
1	1/2	4 1/4″	4	1/2″	**44685K141**	$53.22
1	3/4	4 1/4″	4	1/2″	**44685K142**	54.31
1 1/2	1	5″	4	1/2″	**44685K143**	68.70
2	1	6″	4	5/8″	**44685K144**	89.98
3	2	7 1/2″	4	5/8″	**44685K145**	131.52

Flange Pipe Size	Threaded Pipe Size (A)	Flange OD (B)	Bolts Req'd Qty.	Bolts Req'd Dia.		
Type 316/316L Stainless Steel						
1	1/2	4 1/4″	4	1/2″	**44695K141**	$75.46
1	3/4	4 1/4″	4	1/2″	**44695K142**	75.46
1 1/2	1	5″	4	1/2″	**44695K143**	99.74
2	1	6″	4	5/8″	**44695K144**	124.80
3	2	7 1/2″	4	5/8″	**44695K145**	163.67

Ultra-Corrosion-Resistant Alloy 20 Threaded Pipe Fittings

- Use with air, water, steam
- Maximum Pressure: Fittings: 300 psi @ 72° F; 150 psi @ 366° F for steam Pipe Nipples: Not rated

Able to resist sulfuric acid, pitting, and stress cracking, Alloy 20 is the superhero of stainless steel fittings. Also called Carpenter 20, it contains more nickel than Type 316, so it is suited for especially corrosive environments.

Fittings—Also known as Class 150 fittings. Meet ANSI/MSS SP-114, ASTM B351, ASTM B473, and ANSI/ASME B1.20.1.

Pipe Nipples—Also known as Schedule 40 and standard-wall threaded nipples. All have seamless construction for unrestricted flow. *Fully threaded* nipples are also called close nipples; they are threaded on each end to the center. Meet ASTM B729 and ANSI/ASME B36.10 and SB729.

Connections: NPT.

Fittings

Pipe Size	90° Elbows		Tees		Couplings		Hex-Head Plugs	
1/2	**2698K11**	$62.74	**2698K16**	$81.13	**2698K22**	$48.00	**2698K27**	$25.43
3/4	**2698K12**	84.51	**2698K17**	95.14	**2698K23**	69.17	**2698K28**	34.04
1	**2698K13**	91.87	**2698K18**	116.61	**2698K24**	97.32	**2698K29**	59.43
1 1/2	**2698K14**	123.50	**2698K19**	167.19	**2698K25**	143.02	—	—
2	**2698K15**	167.19	**2698K21**	222.31	**2698K26**	175.02	—	—

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)		
1/2	1/4	**2698K31**	$34.06
3/4	1/2	**2698K32**	42.15
1	3/4	**2698K33**	70.98

Nipples

FULLY THREADED

Pipe Size	Lg.		
1/2	1 1/8″	**2698K55**	$22.92
3/4	1 3/8″	**2698K56**	27.26
1	1 1/2″	**2698K57**	37.74
1 1/2	1 3/4″	**2698K58**	58.96
2	2″	**2698K59**	79.96

THREADED ON BOTH ENDS

Pipe Size	2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths	
1/2	**2698K34**	$29.91	**2698K38**	$38.21	**2698K44**	$46.32	**2698K49**	$68.40
3/4	**2698K35**	33.30	**2698K39**	42.83	**2698K45**	52.45	**2698K51**	71.70
1	**2698K36**	45.19	**2698K41**	60.00	**2698K46**	75.00	**2698K52**	99.11
1 1/2	**2698K37**	63.79	**2698K42**	90.81	**2698K47**	99.55	**2698K53**	138.62
2	—	—	**2698K43**	113.36	**2698K48**	128.48	**2698K54**	174.91

Miniature Stainless Steel Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 500 psi @ 72° F; 100 psi @ 350° F for steam

Our compact fittings are ideal for cramped spaces. All are Type 303 stainless steel, which offers very good corrosion resistance. Meet ASTM A314, A320, and A582.

Connections: NPT (1/16, 1/8, 1/4); metric straight threads (M3×0.5, M5×0.8, M6×1.0, M8×1.0); and UN/UNF straight threads (4-28, 10-32). All male straight threads include a fluoroelastomer gasket.

Reducing Adapters, Female×Male

Pipe/Thread Size (A)	Pipe/Thread Size (B)		
1/8	10-32	**2684K19**	$10.07
1/8	1/16	**2684K21**	9.45
1/8	M5×0.8	**2684K26**	12.66
1/8	M6×1.0	**2684K27**	12.66
1/8	M8×1.0	**2684K28**	12.66
M6×1.0	10-32	**2684K29**	12.66

Hex Reducing Bushings, Male×Female

Pipe/Thread Size (A)	Thread Size (B)		
1/16	10-32	**2684K34**	$9.80
1/8	10-32	**2684K35**	9.80
1/4	10-32	**2684K36**	12.20
4-28	10-32	**2684K33**	10.43
M6×1.0	10-32	**2684K31**	10.43
M8×1.0	10-32	**2684K32**	10.43

90° Elbows, Female×Male

Pipe/Thread Size (A)	Pipe/Thread Size (B)		
1/16	1/8	**2684K17**	$13.63
1/8	1/8	**2684K14**	13.65
1/8	10-32	**2684K18**	14.28
1/8	M5×0.8	**2684K23**	14.28
1/8	M8×1.0	**2684K24**	14.28
4-28	4-28	**2684K13**	14.28
4-28	1/8	**2684K16**	13.63
10-32	1/8	**2684K15**	13.63
10-32	M5×0.8	**2684K22**	10.32
M3×0.5	M3×0.5	**2684K11**	8.57
M5×0.8	M5×0.8	**2684K12**	8.57
M6×1.0	10-32	**2684K25**	14.28

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

British Standard Threaded Low-Pressure Stainless Steel Pipe Fittings

CAD

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 366° F for steam
- Pipe and Pipe Nipples: Use British standard threaded Schedule 40 standard-wall stainless steel (see below)

Connect to BSPT pipe with fittings threaded for the job. Also known as Class 150 fittings, they're made from Type 304 stainless steel, which offers very good corrosion resistance. These high-quality fittings, with the exception of hex adapters, meet MSS SP-114 for heat treating, material thickness, and marking.

90° female×male elbows are also known as street elbows. ***Plugs*** are hollow, except the square-head plugs with 1/8-3/8 pipe sizes are solid.

Connections: BSPT (British Standard Pipe Taper); hex adapters have NPT threads on one end.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		Tees		Crosses		Unions	
1/8	4810T111	$5.11	4810T131	7.26	4810T121	$6.42	4810T141	$6.84	4810T249	$11.36	4810T161	$17.19
1/4	4810T112	5.34	4810T132	7.59	4810T122	6.71	4810T142	7.15	4810T251	11.85	4810T162	17.97
3/8	4810T113	6.61	4810T133	9.16	4810T123	7.89	4810T143	9.11	4810T252	14.26	4810T163	18.32
1/2	4810T114	7.05	4810T134	10.78	4810T124	8.67	4810T144	9.55	4810T253	17.47	4810T164	19.84
3/4	4810T115	10.09	4810T135	14.94	4810T125	12.68	4810T145	15.18	4810T254	29.84	4810T165	25.13
1	4810T116	14.30	4810T136	25.86	4810T126	15.48	4810T146	19.35	4810T255	44.18	4810T166	37.91
1 1/2	4810T118	33.45	4810T138	44.42	4810T128	29.53	4810T148	47.85	4810T256	59.74	4810T168	74.35
2	4810T229	40.57	4810T232	57.53	4810T231	39.68	4810T233	58.75	4810T257	82.26	4810T238	75.30

Pipe Size	Couplings		Half Couplings		Caps		Square-Head Plugs		Hex-Head Plugs		Hex Adapters, BSPT×NPT	
1/8	4810T151	$3.23	4810T241	$2.24	4810T171	$2.69	4810T181	$2.30	4810T191	$2.44	4810T221	$3.72
1/4	4810T152	3.87	4810T242	2.49	4810T172	3.82	4810T182	2.74	4810T192	2.55	4810T222	6.46
3/8	4810T153	4.51	4810T243	2.67	4810T173	4.51	4810T183	3.62	4810T193	3.13	4810T223	8.42
1/2	4810T154	6.37	4810T244	3.75	4810T174	4.70	4810T184	5.19	4810T194	4.95	4810T224	12.34
3/4	4810T155	9.21	4810T245	4.97	4810T175	5.88	4810T185	6.32	4810T195	6.22	4810T225	16.26
1	4810T156	13.96	4810T246	6.37	4810T176	8.82	4810T186	8.03	4810T196	10.78	4810T226	21.30
1 1/2	4810T158	26.35	4810T247	13.35	4810T178	20.96	4810T188	19.05	4810T198	18.91	4810T228	32.29
2	4810T234	35.51	4810T248	18.27	4810T235	25.53	4810T236	21.50	4810T237	24.97	4810T239	45.86

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)			Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4810T201	$3.48	1	1/4	4810T275	$8.58
3/8	1/8	4810T271	3.66	1	3/8	4810T276	8.93
3/8	1/4	4810T202	3.77	1	1/2	4810T277	9.32
1/2	1/8	4810T272	4.59	1	3/4	4810T206	9.75
1/2	1/4	4810T203	4.59	1 1/2	3/4	4810T278	19.13
1/2	3/8	4810T204	4.80	1 1/2	1	4810T279	19.96
3/4	1/4	4810T273	6.46	1 1/2	1 1/4	4810T208	20.86
3/4	3/8	4810T274	6.75	2	1	4810T281	29.18
3/4	1/2	4810T205	7.00	2	1 1/2	4810T282	30.45

Reducing Couplings

Pipe Size (A)	Pipe Size (B)			Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4810T211	$5.34	1	1/4	4810T263	$10.69
3/8	1/8	4810T258	5.93	1	3/8	4810T264	11.13
3/8	1/4	4810T212	5.43	1	1/2	4810T265	11.62
1/2	1/8	4810T259	5.67	1	3/4	4810T216	12.15
1/2	1/4	4810T213	5.62	1 1/2	3/4	4810T266	23.44
1/2	3/8	4810T214	5.88	1 1/2	1	4810T267	24.45
3/4	1/4	4810T261	8.13	1 1/2	1 1/4	4810T218	25.52
3/4	3/8	4810T262	8.48	2	1	4810T268	39.06
3/4	1/2	4810T215	10.82	2	1 1/2	4810T269	40.76

British Standard Threaded Stainless Steel Pipe Nipples and Pipe

CAD

- Use with air, water, oil, natural gas, steam
- Fittings: Use British standard threaded Class 150 low-pressure stainless steel (see above)

You'll get BSPT threads on one or both ends of this Schedule 40 pipe. Made of Type 304/304L stainless steel, which offers very good corrosion resistance. All have welded construction, so there's a weld bead on the inside. Meet ASTM A312.

Fully threaded nipples are also called close nipples; they're threaded on each end to the center.

Connections: BSPT (British Standard Pipe Taper) or NPT.

Fully Threaded

Threaded on Both Ends

FULLY THREADED Pipe Size	Lg.			THREADED ON BOTH ENDS Pipe Size	1 1/2″ Lengths		3″ Lengths		36″ Lengths		48″ Lengths		72″ Lengths	
BSPT Threads on Both Ends														
1/8	3/4″	2427K11	$1.73	1/8	2427K12	$2.30	2427K13	$3.50	2427K14	$26.56	2427K15	$35.16	2427K16	$52.12
1/4	7/8″	2427K21	1.67	1/4	2427K22	1.97	2427K23	2.90	2427K24	20.80	2427K25	25.72	2427K26	37.88
3/8	1″	2427K31	1.97	3/8	2427K32	2.30	2427K33	3.43	2427K34	24.38	2427K35	32.12	2427K36	47.34
1/2	1 1/8″	2427K41	2.53	1/2	2427K42	2.83	2427K43	4.33	2427K44	31.78	2427K45	41.88	2427K46	58.24
3/4	1 3/8″	2427K51	3.37	3/4	2427K52	3.50	2427K53	5.40	2427K54	40.44	2427K55	53.22	2427K56	73.88
1	1 1/2″	2427K61	4.63	1	—	—	2427K63	7.30	2427K64	54.12	2427K65	71.21	2427K66	99.25
1 1/2	1 3/4″	2427K71	8.00	1 1/2	—	—	2427K73	11.73	2427K74	90.09	2427K75	111.69	2427K76	164.56
2	2″	2427K81	10.97	2	—	—	2427K83	15.07	2427K84	109.72	2427K85	143.56	2427K86	189.65
BSPT Threads on One End, NPT Threads on Other End														
1/8	3/4″	2427K111	2.00	1/8	2427K112	2.60	2427K113	3.80	2427K114	28.88	2427K115	38.22	2427K116	53.32
1/4	7/8″	2427K121	1.97	1/4	2427K122	2.27	2427K123	3.20	2427K124	22.60	2427K125	27.97	2427K126	41.19
3/8	1″	2427K131	2.27	3/8	2427K132	2.60	2427K133	3.73	2427K134	26.50	2427K135	34.91	2427K136	51.44
1/2	1 1/8″	2427K141	2.83	1/2	2427K142	3.13	2427K143	4.63	2427K144	34.53	2427K145	45.53	2427K146	63.32
3/4	1 3/8″	2427K151	3.67	3/4	2427K152	3.80	2427K153	5.70	2427K154	43.97	2427K155	54.44	2427K156	80.29
1	1 1/2″	2427K161	4.93	1	—	—	2427K163	7.60	2427K164	58.82	2427K165	77.41	2427K166	107.89
1 1/2	1 3/4″	2427K171	8.90	1 1/2	—	—	2427K173	12.63	2427K174	97.91	2427K175	121.42	2427K176	178.86
2	2″	2427K181	11.97	2	—	—	2427K183	16.07	2427K184	119.28	2427K185	156.03	2427K186	183.22

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

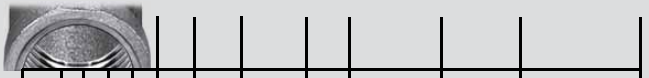

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Medium-Pressure Stainless Steel Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 1,000 psi @ 72° F; 650 psi @ 350° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall stainless steel (see pages 6-8)
- Flanges: Use threaded low-pressure stainless steel (see page 8)

Choose these fittings when you want the same high quality found in our low-pressure fittings, but need more strength to handle higher pressures. Also known as Class 1000, these fittings meet ANSI/MSS SP-114 (for heat treating, material thickness, and marking) and ASTM A182.

Type 304 stainless steel offers very good corrosion resistance. ***Type 316 stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304.

Half couplings are partially threaded; one end has an unthreaded portion that can be welded.

Connections: NPT.

Pipe Size	Couplings		Half Couplings		Unions		Caps	
Type 304 Stainless Steel								
1/8	4464K211	$3.81	4464K221	$2.11	4464K96	$17.47	4464K84	$3.61
1/4	4464K212	4.10	4464K222	2.57	4464K97	17.47	4464K85	3.64
3/8	4464K213	5.34	4464K223	2.89	4464K98	21.29	4464K86	4.92
1/2	4464K214	7.79	4464K224	4.01	4464K99	26.72	4464K87	5.03
3/4	4464K215	10.37	4464K225	5.44	4464K111	36.48	4464K88	7.30
1	4464K216	17.07	4464K226	9.21	4464K112	53.27	4464K89	10.70
1 1/4	4464K66	23.41	4464K78	12.79	4464K113	96.25	4464K91	25.39
1 1/2	4464K67	29.29	4464K79	17.55	4464K114	110.72	4464K92	31.68
2	4464K68	46.17	4464K81	23.57	4464K115	121.46	4464K93	38.39
2 1/2	4464K147	120.77	4464K161	74.38	4464K167	229.75	4464K164	78.28
3	4464K148	143.22	4464K227	110.29	4464K168	330.25	4464K165	123.72
4	4464K149	227.08	4464K228	153.39	—	—	4464K166	179.19
Type 316 Stainless Steel								
1/8	4452K441	4.60	4452K511	3.00	4452K461★	20.16	4452K451	4.92
1/4	4452K342	5.58	4452K512	3.08	4452K462★	20.16	4452K452	4.92
3/8	4452K343	6.45	4452K313	3.42	4452K463★	24.52	4452K453	6.58
1/2	4452K344	8.71	4452K314	4.92	4452K464★	30.84	4452K454	7.10
3/4	4452K345	12.13	4452K315	7.13	4452K465★	43.47	4452K455	10.39
1	4452K346	19.68	4452K316	11.60	4452K466★	62.70	4452K456	15.95
1 1/4	4452K447	29.89	4452K517	17.58	4452K467★	106.68	4452K457	47.15
1 1/2	4452K448	38.15	4452K518	23.50	4452K468★	124.90	4452K458	51.55
2	4452K449	54.57	4452K519	30.60	4452K469★	161.25	4452K459	61.12
2 1/2	4452K627	144.17	4452K631	92.76	4452K637★	275.29	4452K634	107.20
3	4452K628	179.60	4452K632	97.38	4452K638★	651.32	4452K635	138.72
4	4452K629	254.73	4452K633	167.49	4452K659★	679.99	4452K658	215.39

★ The nut is made from Type 304 stainless steel.

Reducing Couplings

Pipe Size (A)	Pipe Size (B)			
Type 304 Stainless Steel				
1/4	1/8	4464K371	$5.30	
3/8	1/8	4464K651	6.25	
3/8	1/4	4464K372	6.25	
1/2	1/8	4464K434	7.74	
1/2	1/4	4464K652	7.74	
1/2	3/8	4464K373	7.74	
3/4	1/8	4464K435	10.03	
3/4	1/4	4464K436	10.03	
3/4	3/8	4464K653	10.03	
3/4	1/2	4464K374	10.03	
1	1/8	4464K437	17.51	
1	1/4	4464K438	17.51	
1	3/8	4464K439	17.51	
1	1/2	4464K654	17.51	
1	3/4	4464K375	17.51	
1 1/4	1/8	4464K441	33.68	
1 1/4	1/4	4464K442	33.68	
1 1/4	3/8	4464K443	33.68	
1 1/4	1/2	4464K444	33.68	
1 1/4	3/4	4464K655	33.68	
Type 304 Stainless Steel (Cont.)				
1 1/4	1	4464K376	$33.68	
1 1/2	1/8	4464K445	39.38	
1 1/2	1/4	4464K446	39.38	
1 1/2	3/8	4464K447	39.38	
1 1/2	1/2	4464K448	39.38	
1 1/2	3/4	4464K131	39.38	
1 1/2	1	4464K656	39.38	
1 1/2	1 1/4	4464K377	39.38	
2	3/8	4464K452	61.42	
2	1/2	4464K453	61.42	
2	3/4	4464K454	61.42	
2	1	4464K132	61.42	
2	1 1/4	4464K657	61.42	
2	1 1/2	4464K378	61.43	
2 1/2	2	4464K394	122.10	
3	1	4464K456	191.51	
3	2	4464K395	191.51	
3	2 1/2	4464K457	191.51	
4	2	4464K458	279.45	
4	3	4464K396	279.45	
Type 316 Stainless Steel				
1/4	1/8	4452K581	$7.60	
3/8	1/8	4452K811	9.05	
3/8	1/4	4452K582	9.05	
1/2	1/8	4452K591	12.31	
1/2	1/4	4452K812	12.31	
1/2	3/8	4452K583	12.31	
3/4	1/8	4452K592	15.71	
3/4	1/4	4452K813	15.71	
3/4	3/8	4452K814	15.71	
3/4	1/2	4452K584	15.71	
1	1/8	4452K594	26.02	
1	1/4	4452K815	26.02	
1	3/8	4452K816	26.02	
1	1/2	4452K817	26.02	
1	3/4	4452K585	26.02	
1 1/4	1/4	4452K596	43.76	
1 1/4	3/8	4452K597	43.76	
1 1/4	1/2	4452K819	43.76	
1 1/4	3/4	4452K598	43.76	
1 1/4	1	4452K586	43.76	
Type 316 Stainless Steel (Cont.)				
1 1/2	1/8	4452K599	$49.65	
1 1/2	1/4	4452K639	49.96	
1 1/2	3/8	4452K641	50.28	
1 1/2	1/2	4452K642	50.60	
1 1/2	3/4	4452K643	50.93	
1 1/2	1	4452K822	51.26	
1 1/2	1 1/4	4452K587	49.34	
2	3/8	4452K646	74.36	
2	1/2	4452K647	75.24	
2	3/4	4452K648	76.13	
2	1	4452K823	77.05	
2	1 1/4	4452K649	77.99	
2	1 1/2	4452K588	79.94	
2 1/2	2	4452K661	185.03	
3	1	4452K654	229.93	
3	2	4452K589	249.30	
3	2 1/2	4452K655	234.82	
4	2	4452K657	388.79	
4	3	4452K593	352.38	

Mil. Spec. Stainless Steel Threaded Hex-Socket Plugs

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,000 psi @ 72° F; 600 psi @ 220° F for steam

Made to the stringent military standards of MS-27769, these high-quality, aircraft-grade plugs are the best you can buy. They are made from Type 347 stainless steel, which offers resistance to corrosion and prolonged heat exposure. Plugs also meet SAE AS4842 and AS71051.

Connections: ANPT (Aeronautical National Pipe Threads), which are more precise than NPT and NPTF threads, yet compatible.

Pipe Size	Hex Key Size		
1/16	5/32″	1725K11	$2.67
1/8	3/16″	1725K12	3.33
1/4	1/4″	1725K13	4.17
3/8	5/16″	1725K14	11.36
1/2	3/8″	1725K15	21.43

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

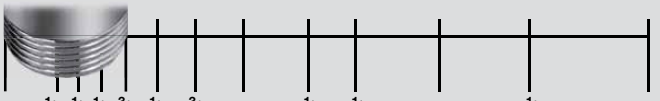

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Stainless Steel Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure:
  Type 304 SS: 2,570 psi @ 72° F;
  1,965 psi @ 350° F for steam, unless noted
  Type 316 SS: 3,000 psi @ 72° F;
  2,810 psi @ 350° F for steam, unless noted
- Pipe Nipples and Pipe: Use threaded Schedule 80 thick-wall stainless steel (see pages 14-15)

It's no wonder these heavy duty fittings are called Class 3000—they have extra-strong forged or bar stock construction that stands up to high-pressure applications. Meet ASTM A182 and ANSI/ASME B16.11, unless noted.

Type 304 stainless steel offers very good corrosion resistance for an economical alternative to Type 316. ***Type 316 stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304.

Connections: NPT.

Elbows, Tees, Crosses, and Unions

90° female×male elbows are also known as street elbows.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		Tees		Crosses		Unions▲	
Type 304 Stainless Steel												
1/8	45525K511	$11.84	45525K531	$27.62	45525K521	$21.40	45525K541	$18.00	45525K551	$22.98	45525K591	$35.84
1/4	45525K512	12.57	45525K532	30.28	45525K522	22.26	45525K542	18.51	45525K552	26.47	45525K592	37.73
3/8	45525K513	16.22	45525K533	34.76	45525K523	23.18	45525K543	25.28	45525K553	39.96	45525K593	38.33
1/2	45525K514	20.06	45525K534	37.57	45525K524	29.34	45525K544	27.47	45525K554	59.81	45525K594	39.32
3/4	45525K515	28.97	45525K535	50.32	45525K525	39.99	45525K545	36.30	45525K555	72.81	45525K595	46.97
1	45525K516	41.68	45525K536	69.12	45525K526	55.13	45525K546	62.92	45525K556	108.43	45525K596	67.36
1 1/4	45525K517	58.26	45525K113	115.67	45525K527	72.19	45525K547	89.64	45525K557	150.83	45525K597	101.01
1 1/2	45525K518	97.92	45525K114	182.71	45525K528	91.35	45525K548	122.39	45525K558	218.73	45525K598	114.66
2	45525K519	124.19	—	—	45525K529	109.85	45525K549	149.37	45525K559	315.58	45525K599	136.63
Type 316 Stainless Steel												
1/8	4443K611	14.24	4443K631	37.08	4443K621	28.50	4443K641	19.45	4443K651	30.12	4443K691	39.60
1/4	4443K612	14.57	4443K632	38.68	4443K622	29.58	4443K642	21.03	4443K652	36.59	4443K692	42.21
3/8	4443K613	19.05	4443K633	42.69	4443K623	36.74	4443K643	30.28	4443K653	50.95	4443K693	46.43
1/2	4443K614	24.31	4443K634	49.70	4443K624	37.57	4443K644	36.27	4443K654	75.02	4443K694	46.53
3/4	4443K615	36.19	4443K635	57.95	4443K625	47.41	4443K645	55.91	4443K655	105.67	4443K695	60.67
1	4443K616	61.56	4443K636	99.74	4443K626	63.18	4443K646	84.24	4443K656	139.08	4443K696	86.74
1 1/4	4443K617	84.74	4443K113	119.01	4443K627	84.74	4443K647	110.42	4443K657	226.01	4443K697	117.00
1 1/2	4443K618	125.87	—	—	4443K628	117.00	4443K648	157.20	4443K658	289.87	4443K698	145.65
2	4443K619	175.24	—	—	4443K629	126.94	4443K649	193.48	4443K659	492.45	4443K699	190.57

▲Maximum pressure is 2,915 psi @ 72° F; 2,020 psi @ 350° F for steam. Do not meet ANSI/ASME B16.11.

Couplings, Caps, and Plugs

Half couplings are partially threaded; one end has an unthreaded portion that can be welded. ***Square-head*** and ***hex-head plugs*** are solid.

Pipe Size	Couplings		Half Couplings		Caps		Square-Head Plugs♠		Hex-Head Plugs♠	
Type 304 Stainless Steel										
1/8	45525K561	$4.71	45525K571	$3.99	45525K581	$5.59	4464K321	$3.64	4464K331	$2.86
1/4	45525K562	5.16	45525K572	4.09	45525K582	5.73	4464K322	3.96	4464K332	2.91
3/8	45525K563	5.67	45525K573	4.87	45525K583	5.94	4464K323	5.22	4464K333	3.64
1/2	45525K564	7.25	45525K574	5.72	45525K584	7.73	4464K324	6.23	4464K334	4.84
3/4	45525K565	9.63	45525K575	7.81	45525K585	9.66	4464K325	8.40	4464K335	6.82
1	45525K566	16.34	45525K576	13.13	45525K586	18.16	4464K326	12.92	4464K336	11.40
1 1/4	45525K567	36.83	45525K577	21.11	45525K587	26.30	4464K327	29.34	4464K337	22.93
1 1/2	45525K568	42.85	45525K578	27.78	45525K588	33.04	4464K328	31.88	4464K338	28.60
2	45525K569	61.10	45525K579	39.22	45525K589	44.83	4464K329	37.09	4464K339	44.40
2 1/2	45525K161	128.37	45525K171	88.44	45525K181	90.64	4464K181	68.76	4464K184	74.16
3	45525K162	181.59	45525K172	125.11	45525K182	134.50	4464K182	101.84	4464K185	85.97
Type 316 Stainless Steel										
1/8	4443K661	5.14	4443K671	4.43	4443K681	7.53	4443K711	3.77	4443K721	3.32
1/4	4443K662	5.83	4443K672	4.65	4443K682	7.62	4443K712	3.82	4443K722	3.40
3/8	4443K663	6.26	4443K673	5.71	4443K683	8.10	4443K713	5.54	4443K723	5.94
1/2	4443K664	8.69	4443K674	6.77	4443K684	11.02	4443K714	6.77	4443K724	6.09
3/4	4443K665	12.76	4443K675	10.19	4443K685	14.31	4443K715	9.39	4443K725	8.13
1	4443K666	21.40	4443K676	16.10	4443K686	21.96	4443K716	14.04	4443K726	13.32
1 1/4	4443K667	44.57	4443K677	30.60	4443K687	32.88	4443K717	33.87	4443K727	30.50
1 1/2	4443K668	56.15	4443K678	40.82	4443K688	42.64	4443K718	36.75	4443K728	37.77
2	4443K669	69.29	4443K679	52.78	4443K689	66.66	4443K719	47.83	4443K729	50.31
2 1/2	4443K161	166.06	4443K171	110.62	4443K181	137.37	4443K211	66.82	4443K221	84.51
3	4443K162	228.75	4443K172	149.72	4443K182	167.16	4443K212	101.39	4443K222	111.26

♠ Do not meet ANSI/ASME B16.11.

(Continued on following page)

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Stainless Steel Threaded Pipe Fittings

(Continued from previous page)

Hex Reducing Bushings, Male × Female♠

Pipe Size (A)	Pipe Size (B)		
Type 304 Stainless Steel			
1/4	1/8	**4464K381**	$4.40
3/8	1/8	**4464K641**	4.73
3/8	1/4	**4464K382**	4.84
1/2	1/8	**4464K397**	6.30
1/2	1/4	**4464K642**	6.45
1/2	3/8	**4464K383**	6.60
3/4	1/8	**4464K398**	8.46
3/4	1/4	**4464K399**	8.56
3/4	3/8	**4464K643**	8.66
3/4	1/2	**4464K384**	8.76
1	1/8	**4464K411**	12.38
1	1/4	**4464K412**	12.52
1	3/8	**4464K413**	12.67
1	1/2	**4464K644**	12.81
1	3/4	**4464K385**	12.97
1 1/4	1/8	**4464K414**	23.69
1 1/4	1/4	**4464K415**	23.96
1 1/4	3/8	**4464K416**	24.14
1 1/4	1/2	**4464K417**	24.52
1 1/4	3/4	**4464K645**	24.81
1 1/4	1	**4464K386**	25.11
1 1/2	1/8	**4464K418**	31.05
1 1/2	1/4	**4464K419**	31.41
1 1/2	3/8	**4464K421**	31.78
1 1/2	1/2	**4464K422**	32.15
1 1/2	3/4	**4464K648**	32.53
1 1/2	1	**4464K646**	32.93
1 1/2	1 1/4	**4464K387**	33.33
2	3/8	**4464K425**	43.38
2	1/2	**4464K426**	43.88
2	3/4	**4464K427**	44.39
2	1	**4464K649**	44.91
2	1 1/4	**4464K647**	45.45
2	1 1/2	**4464K388**	46.00
2 1/2	2	**4464K391**	82.22
3	1	**4464K431**	120.41
3	2	**4464K392**	123.15
3	2 1/2	**4464K432**	126.01
4	2	**4464K433**	213.36
4	3	**4464K393**	216.97

Pipe Size (A)	Pipe Size (B)		
Type 316 Stainless Steel			
1/4	1/8	**4443K731**	$4.79
3/8	1/8	**4443K751**	5.25
3/8	1/4	**4443K732**	5.51
1/2	1/8	**4443K411**	7.08
1/2	1/4	**4443K752**	7.26
1/2	3/8	**4443K733**	7.44
3/4	1/8	**4443K412**	9.36
3/4	1/4	**4443K413**	9.47
3/4	3/8	**4443K754**	9.58
3/4	1/2	**4443K734**	9.69
1	1/8	**4443K414**	13.56
1	1/4	**4443K415**	13.78
1	3/8	**4443K416**	13.93
1	1/2	**4443K757**	14.25
1	3/4	**4443K735**	14.58
1 1/4	1/8	**4443K441**	31.72
1 1/4	1/4	**4443K417**	31.03
1 1/4	3/8	**4443K418**	31.37
1 1/4	1/2	**4443K419**	31.72
1 1/4	3/4	**4443K759**	31.72
1 1/4	1	**4443K736**	32.44
1 1/2	1/8	**4443K442**	37.59
1 1/2	1/4	**4443K443**	35.93
1 1/2	3/8	**4443K421**	36.78
1 1/2	1/2	**4443K422**	37.18
1 1/2	3/4	**4443K423**	37.18
1 1/2	1	**4443K762**	37.59
1 1/2	1 1/4	**4443K737**	38.45
2	3/8	**4443K446**	51.22
2	1/2	**4443K424**	51.79
2	3/4	**4443K425**	52.38
2	1	**4443K426**	52.98
2	1 1/4	**4443K764**	53.60
2	1 1/2	**4443K738**	54.23
2 1/2	2	**4443K427**	87.11
3	1	**4443K449**	126.05
3	2	**4443K739**	131.91
3	2 1/2	**4443K114**	131.91
4	2	**4443K115**	235.40
4	3	**4443K553**	235.40

♠ Do not meet ANSI/ASME B16.11.

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
Type 304 Stainless Steel			
1/4	1/8	**45525K641**	$6.79
3/8	1/8	**45525K642**	8.45
3/8	1/4	**45525K643**	8.67
1/2	1/8	**45525K115**	9.80
1/2	1/4	**45525K644**	11.21
1/2	3/8	**45525K645**	12.07
3/4	1/4	**45525K313**	15.77
3/4	3/8	**45525K646**	16.19
3/4	1/2	**45525K647**	16.98
1	1/4	**45525K116**	18.57
1	1/2	**45525K648**	23.38
1	3/4	**45525K649**	23.98
1 1/4	3/4	**45525K651**	44.11
1 1/4	1	**45525K652**	45.24
1 1/2	1/2	**45525K117**	51.98
1 1/2	1	**45525K653**	57.94
1 1/2	1 1/4	**45525K654**	59.43
2	1 1/4	**45525K655**	71.88
2	1 1/2	**45525K656**	73.47
Type 316 Stainless Steel			
1/4	1/8	**4443K741**	8.85
3/8	1/8	**4443K771**	10.33
3/8	1/4	**4443K742**	10.33
1/2	1/8	**4443K116**	12.65
1/2	1/4	**4443K772**	13.78
1/2	3/8	**4443K743**	13.78
3/4	1/4	**4443K313**	18.83
3/4	3/8	**4443K774**	19.07
3/4	1/2	**4443K744**	19.31
1	1/4	**4443K117**	28.73
1	1/2	**4443K777**	31.30
1	3/4	**4443K745**	31.30
1 1/4	3/4	**4443K779**	61.87
1 1/4	1	**4443K746**	61.87
1 1/2	1/2	**4443K118**	69.24
1 1/2	1	**4443K782**	69.88
1 1/2	1 1/4	**4443K747**	71.47
2	1 1/4	**4443K784**	99.94
2	1 1/2	**4443K748**	102.21

High-Pressure Stainless Steel Threaded Flanges

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 300 psi @ 72° F; 300 psi @ 300° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 80 thick-wall stainless steel (see pages 14-15)

Commonly called Class 300, ANSI, and raised-face flanges, these high-strength forged flanges provide easy access to your pipe. Bolt two same-size flanges together with a gasket (not included) to form a tight seal. For gaskets, see pages 3474-3480; for bolts, see pages 3146-3147. Flanges meet ASTM A182 and ANSI/ASME B16.5.

Type 304/304L stainless steel offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: NPT.

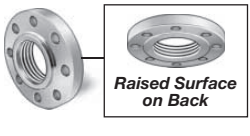

Pipe Size	Flange OD	Bolts Required Qty.	Bolts Required Dia.		
Type 304/304L Stainless Steel					
1/2	3 3/4″	4	1/2″	**7977K11**	$39.41
3/4	4 5/8″	4	5/8″	**7977K12**	40.99
1	4 7/8″	4	5/8″	**7977K13**	41.82
1 1/4	5 1/4″	4	5/8″	**7977K14**	65.47
1 1/2	6 1/8″	4	3/4″	**7977K15**	66.67
2	6 1/2″	8	5/8″	**7977K16**	75.44
2 1/2	7 1/2″	8	3/4″	**7977K17**	130.09
3	8 1/4″	8	3/4″	**7977K18**	134.84
4	10″	8	3/4″	**7977K19**	176.04

Pipe Size	Flange OD	Bolts Required Qty.	Bolts Required Dia.		
Type 316/316L Stainless Steel					
1/2	3 3/4″	4	1/2″	**7469T31**	$39.40
3/4	4 5/8″	4	5/8″	**7469T32**	50.27
1	4 7/8″	4	5/8″	**7469T33**	60.10
1 1/4	5 1/4″	4	5/8″	**7469T34**	82.23
1 1/2	6 1/8″	4	3/4″	**7469T35**	92.07
2	6 1/2″	8	5/8″	**7469T36**	99.18
2 1/2	7 1/2″	8	3/4″	**7469T37**	168.76
3	8 1/4″	8	3/4″	**7469T38**	172.00
4	10″	8	3/4″	**7469T39**	242.59

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Thick-Wall Stainless Steel Threaded Pipe Nipples and Pipe

Fully Threaded

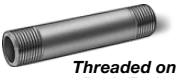

Threaded on Both Ends

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 3000 high-pressure stainless steel (see pages 12-13)
- Flanges: Use threaded high-pressure stainless steel (see page 13)

The thick-wall design, which is often called Schedule 80, gives these threaded nipples and pipe the strength to handle high-pressure applications. All have seamless construction for unrestricted flow. Meet ASTM A733, ASTM A312, and ANSI/ASME B1.20.1.

Type 304/304L stainless steel offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

Type 304/304L Stainless Steel

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	46755K11	$3.63
1/4	7/8″	46755K12	4.10
3/8	1″	46755K13	4.80
1/2	1 1/8″	46755K14	5.93
3/4	1 3/8″	46755K15	7.40
1	1 1/2″	46755K16	9.83
1 1/4	1 5/8″	46755K17	12.34
1 1/2	1 3/4″	46755K18	14.28
2	2″	46755K19	22.06
3	2 5/8″	46755K261	51.08
4	2 7/8″	46755K271	65.66

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	46755K21	$4.57	46755K31	$5.37	46755K121	$6.10	46755K41	$6.93	46755K131	$7.90
1/4	46755K22	4.90	46755K32	5.83	46755K122	6.80	46755K42	7.80	46755K132	9.03
3/8	46755K23	5.67	46755K33	6.73	46755K123	7.93	46755K43	9.13	46755K133	10.60
1/2	46755K24	6.97	46755K34	8.13	46755K124	9.60	46755K44	11.07	46755K134	12.09
3/4	46755K25	7.80	46755K35	9.07	46755K125	10.70	46755K45	11.56	46755K135	13.47
1	—	—	46755K36	11.25	46755K126	13.16	46755K46	15.19	46755K136	17.75
1 1/4	—	—	46755K37	14.34	46755K127	16.66	46755K47	19.28	46755K137	22.56
1 1/2	—	—	46755K38	15.41	46755K128	18.31	46755K48	21.19	46755K138	24.81
2	—	—	—	—	46755K129	23.75	46755K49	27.03	46755K139	31.72
3	—	—	—	—	—	—	46755K262	55.71	46755K263	63.37
4	—	—	—	—	—	—	—	—	46755K272	88.97

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		5″ Lengths		6″ Lengths		8″ Lengths		10″ Lengths		12″ Lengths	
1/8	46755K51	$8.70	46755K61	$10.27	46755K71	$11.12	46755K81	$14.50	46755K91	$17.66	46755K111	$20.59
1/4	46755K52	10.13	46755K62	11.38	46755K72	13.22	46755K82	17.47	46755K92	21.41	46755K112	25.16
3/8	46755K53	11.06	46755K63	13.28	46755K73	15.50	46755K83	20.62	46755K93	25.34	46755K113	29.78
1/2	46755K54	13.53	46755K64	16.28	46755K74	19.03	46755K84	25.19	46755K94	31.06	46755K114	36.56
3/4	46755K55	15.00	46755K65	18.09	46755K75	21.16	46755K85	27.87	46755K95	34.41	46755K115	40.53
1	46755K56	19.78	46755K66	23.88	46755K76	27.97	46755K86	37.22	46755K96	45.91	46755K116	54.09
1 1/4	46755K57	25.16	46755K67	30.38	46755K77	35.59	46755K87	46.88	46755K97	49.74	46755K117	57.63
1 1/2	46755K58	27.72	46755K68	33.50	46755K78	39.28	46755K88	52.00	46755K98	54.13	46755K118	63.87
2	46755K59	35.44	46755K69	42.94	46755K79	50.41	46755K89	56.66	46755K99	70.03	46755K119	82.61
3	46755K264	69.50	46755K265	76.82	46755K266	89.13	46755K267	106.84	46755K268	129.88	46755K269	138.68
4	46755K273	86.55	46755K274	102.24	46755K275	118.95	46755K276	161.74	46755K277	197.26	46755K278	230.74

To Order: Please specify length.

Pipe Size		14″ Lengths	16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths	120″ Lengths
1/8	48395K61	$15.37	$17.57	$19.80	$21.96	$24.13	$26.38	$39.56	$52.79	$65.96	$79.17	$108.50
1/4	48395K62	18.43	21.07	23.72	26.35	28.98	31.65	47.50	63.28	79.12	89.79	139.38
3/8	48395K63	22.37	25.59	28.81	31.96	35.17	38.40	57.65	76.82	90.76	108.95	157.92
1/2	48395K64	29.17	33.35	41.07	41.67	45.83	54.79	82.17	102.22	127.80	135.33	221.21
3/4	48395K65	35.02	40.04	49.43	49.74	55.04	65.79	92.16	122.91	143.96	159.50	238.34
1	48395K66	45.22	51.91	63.62	64.63	71.07	79.27	118.87	137.13	171.40	205.73	307.38
1 1/4	48395K67	56.89	65.02	80.10	81.26	87.47	99.69	149.56	172.60	215.73	240.38	386.79
1 1/2	48395K68	67.11	76.70	88.18	95.87	103.21	117.60	176.36	203.50	254.38	283.45	440.90
2	48395K69	87.46	99.93	106.40	119.73	131.69	141.89	212.82	223.84	279.81	335.77	554.20
3	48395K81	149.16	170.46	191.79	213.09	234.39	255.70	346.44	461.92	577.40	—	—
4	48395K82	199.74	229.30	257.98	286.64	315.30	343.96	515.96	687.95	—	—	—

Type 316/316L Stainless Steel

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	4475K11	$3.78
1/4	7/8″	4475K12	4.28
3/8	1″	4475K13	5.12
1/2	1 1/8″	4475K14	6.66
3/4	1 3/8″	4475K15	8.50
1	1 1/2″	4475K16	10.88
1 1/4	1 5/8″	4475K17	14.88
1 1/2	1 3/4″	4475K18	17.62
2	2″	4475K19	27.21
3	2 5/8″	4475K251	62.95
4	2 7/8″	4475K271	82.75

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	4475K21	$4.97	4475K31	$5.94	4475K121	$6.84	4475K41	$7.81	4475K131	$8.97
1/4	4475K22	5.31	4475K32	6.38	4475K122	7.53	4475K42	8.66	4475K132	10.09
3/8	4475K23	6.19	4475K33	7.47	4475K123	8.84	4475K43	10.22	4475K133	11.21
1/2	4475K24	8.00	4475K34	9.53	4475K124	11.38	4475K44	12.41	4475K134	14.56
3/4	4475K26	9.03	4475K35	10.69	4475K125	12.00	4475K45	13.94	4475K135	16.32
1	—	—	4475K36	13.47	4475K126	15.88	4475K46	18.50	4475K136	21.74
1 1/4	—	—	4475K37	17.41	4475K127	20.56	4475K47	23.94	4475K137	28.18
1 1/2	—	—	4475K38	19.24	4475K128	23.06	4475K48	26.91	4475K138	31.71
2	—	—	—	—	4475K129	30.26	4475K49	34.88	4475K139	41.18
3	—	—	—	—	—	—	4475K252	69.30	4475K253	79.88
4	—	—	—	—	—	—	—	—	4475K272	106.79

(Continued on following page)

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Thick-Wall Stainless Steel Threaded Pipe Nipples and Pipe

(Continued from previous page)

Type 316/316L Stainless Steel (Cont.)

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		5″ Lengths		6″ Lengths		8″ Lengths		10″ Lengths		12″ Lengths	
1/8	4475K51	$9.94	4475K61	$11.15	4475K71	$12.94	4475K81	$16.97	4475K91	$20.76	4475K111	$24.35
1/4	4475K52	11.34	4475K62	12.82	4475K72	15.00	4475K82	19.85	4475K92	24.44	4475K112	28.74
3/8	4475K53	12.53	4475K63	15.12	4475K73	17.71	4475K83	23.59	4475K93	29.09	4475K113	34.29
1/2	4475K54	16.32	4475K64	19.76	4475K74	23.21	4475K84	30.79	4475K94	38.12	4475K114	45.00
3/4	4475K55	18.26	4475K65	22.12	4475K75	26.00	4475K85	34.41	4475K95	42.59	4475K115	50.32
1	4475K56	24.35	4475K66	29.53	4475K76	34.74	4475K86	46.29	4475K96	57.35	4475K116	57.58
1 1/4	4475K57	31.56	4475K67	38.32	4475K77	45.09	4475K87	53.37	4475K97	62.95	4475K117	74.45
1 1/2	4475K58	35.53	4475K68	43.21	4475K78	50.85	4475K88	58.92	4475K98	71.28	4475K118	84.33
2	4475K59	46.21	4475K69	56.26	4475K79	56.38	4475K89	75.33	4475K99	93.50	4475K119	102.88
3	4475K354	88.33	4475K255	99.74	4475K256	109.26	4475K257	147.70	4475K258	181.14	4475K259	212.60
4	4475K273	104.59	4475K274	123.53	4475K275	144.65	4475K276	195.86	4475K277	230.00	4475K278	270.33

To Order: Please specify length.

Pipe Size	14″ Lengths		16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths	120″ Lengths
1/8	68045K61	$19.55	$22.35	$23.55	$26.62	$29.26	$31.38	$47.08	$62.77	$78.47	$94.17	$120.71
1/4	68045K62	21.38	24.43	25.75	29.10	32.00	34.30	51.48	68.62	85.80	102.92	131.96
3/8	68045K63	26.55	30.35	31.98	36.12	39.74	42.62	63.95	85.27	94.73	113.67	163.96
1/2	68045K64	44.95	51.42	57.58	61.19	67.31	77.12	102.80	137.07	148.31	177.98	257.07
3/4	68045K65	50.77	58.02	64.92	69.07	75.98	87.05	116.00	154.67	167.35	199.74	290.07
1	68045K66	69.00	78.88	88.28	93.88	103.29	105.13	136.46	181.96	211.21	236.55	394.22
1 1/4	68045K67	87.97	99.74	113.12	119.71	128.60	134.67	174.83	202.05	252.52	303.02	505.02
1 1/2	68045K68	104.61	118.67	124.16	131.84	145.02	152.21	206.29	238.42	298.02	357.63	550.20
2	68045K69	121.67	127.69	135.35	150.40	165.44	181.29	235.73	314.32	392.88	471.43	725.29
3	68045K81	227.26	259.72	292.20	324.66	357.12	389.58	521.77	660.32	749.22	—	—
4	68045K83	302.40	345.60	388.80	432.00	448.30	480.00	658.98	797.54	—	—	—

Thick-Wall Smooth-Flow Stainless Steel Threaded Reducing Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded medium-pressure stainless steel (see page 11)
- Flanges: Use threaded high-pressure stainless steel (see page 13)

Also known as swage nipples and Schedule 80 nipples, the walls reduce gradually to provide smoother flow than other types of reducing connections. They're made of Type 304/304L stainless steel, which offers very good corrosion resistance, and have seamless construction for unrestricted flow. Meet MSS SP-95 and ASTM 403 WP.

Connections: NPT.

Pipe Size (A)	(B)	Lg.		
1/2	1/4	2 3/4″	2161K11	$24.75
1/2	3/8	2 3/4″	2161K12	26.96
3/4	1/4	3″	2161K13	29.80
3/4	1/2	3″	2161K14	29.80
1	1/2	3 1/2″	2161K15	37.88
1	3/4	3 1/2″	2161K16	37.88
1 1/4	1	6 1/2″	2161K17	68.19
1 1/2	1/2	4 1/2″	2161K18	75.05
1 1/2	3/4	4 1/2″	2161K19	75.05
1 1/2	1	4 1/2″	2161K21	73.20
1 1/2	1 1/4	4 1/2″	2161K22	73.20
2	1/2	6 1/2″	2161K23	181.09
2	3/4	6 1/2″	2161K24	181.09
2	1	6 1/2″	2161K25	171.85
2	1 1/4	6 1/2″	2161K26	174.76
2	1 1/2	6 1/2″	2161K27	177.78

High-Strength Lightweight Titanium Threaded Pipe Fittings

- Use with air, water, oil, natural gas
- Maximum Pressure: 3,000 psi @ 72° F

With excellent strength-to-weight ratio, titanium fittings are approximately 40% lighter than steel. Titanium offers superior corrosion resistance and will stand up to most salt water and chloride applications. Fittings meet ASTM B381. Dimensions conform to ANSI/ASME B16.11.

Half couplings are partially threaded; one end has an unthreaded portion that can be welded.

Connections: NPT.

Pipe Size	Couplings		Half Couplings		Square-Head Plugs		Hex-Head Plugs	
1/4	1961K22	$55.00	1961K27	$51.00	1961K16	$49.17	1961K11	$57.08
3/8	1961K23	55.00	1961K28	47.08	1961K17	49.17	1961K12	65.00
1/2	1961K24	76.67	1961K29	72.50	1961K18	66.67	1961K13	68.75
3/4	1961K25	87.50	1961K31	68.75	1961K19	66.67	1961K14	70.83
1	1961K26	117.86	1961K32	109.29	1961K21	86.25	1961K15	90.00

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

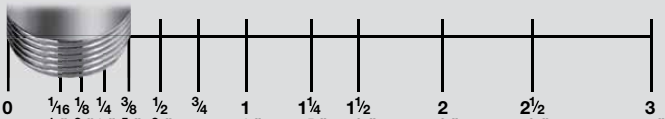

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Stainless Steel Threaded Pipe Outlets

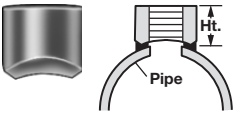

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: See table; 600 psi @ 220° F for steam
- Pipe: Use threaded Schedule 80 thick-wall stainless steel (see pages 14-15)

Also known as branch connectors, use these to create a threaded outlet anywhere on your pipe. To install, drill a hole in your pipe to match the fitting's outlet size and weld in place. Meet MSS SP-97 and ANSI/ASME B16.11.

Type 304/304L stainless steel offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: NPT.

To Order: Please specify pipe size within the range shown below.

Fits Pipe Size Range	Outlet, Pipe Size	Ht.	Max. psi @ 72° F	Type 304/304L Stainless Steel		Type 316/316L Stainless Steel	
1/4 to 36	1/4	3/4″	3,000	4565T31	$28.50	4583T11	$33.24
3/8 to 36	3/8	13/16″	3,000	4565T32	29.13	4583T12	33.98
1/2 to 36	1/2	1″	3,000	4565T33	29.80	4583T13	34.65
3/4 to 36	3/4	1 1/16″	3,000	4565T34	35.54	4583T14	39.07
1 to 36	1	1 5/16″	3,000	4565T35	44.80	4583T15	50.70
1 1/4 to 36	1 1/4	1 5/16″	3,000	4565T36	74.27	4583T16	83.92
1 1/2 to 36	1 1/2	1 3/8″	2,850	4565T37	84.79	4583T17	92.75
2 to 36	2	1 1/2″	2,500	4565T38	96.68	4583T18	33.24

Extreme-Pressure Stainless Steel Threaded Pipe Fittings

- Use with water, oil, steam
- Maximum Pressure: See table; steam is rated @ 300° F

Built tough to handle the pressure of nearly any job. Made of Type 316 stainless steel for excellent resistance to heat and corrosion.

Connections: NPTF (Dryseal), unless noted. NPTF threads are compatible with NPT threads.

Elbows, Tees, and Crosses

Meet ASTM A182. The ***90° female×male elbows*** are also known as street elbows.

Pipe Size	90° Elbows, Female Max. psi @ 72° F			90° Elbows, Male Max. psi @ 72° F			90° Elbows, Female×Male Max. psi @ 72° F			45° Elbows, Female×Male Max. psi @ 72° F		
1/8	5,000	51205K162	$19.62	6,000	51205K113	$33.73	5,000	51205K279	$21.54	5,000	51205K119	$29.19
1/4	5,000	51205K152	23.50	6,000	51205K112	17.29	5,000	51205K272	28.67	5,000	51205K121	35.25
3/8	4,500	51205K154	32.48	6,000	51205K114	37.15	4,500	51205K274	33.13	4,500	51205K122	94.46
1/2	3,000	51205K156	42.71	6,000	51205K115	39.33	3,000	51205K276	49.67	3,000	51205K123	103.19
3/4	3,000	51205K158	82.71	4,000	51205K116	110.51	3,000	51205K278	99.25	3,000	51205K124	156.22
1	1,800	51205K159	134.65	3,000	51205K117	142.02	1,800	51205K282	163.73	1,800	51205K125	208.38

Pipe Size	Tees, Female Max. psi @ 72° F			Tees, Female×Female×Male Max. psi @ 72° F			Tees, Female×Male×Female Max. psi @ 72° F			Crosses Max. psi @ 72° F		
1/8	5,000	51205K242	$26.65	5,000	51205K126	$32.10	5,000	51205K165	$38.31	5,000	51205K172	$49.19
1/4	5,000	51205K241	34.06	5,000	51205K127	33.31	5,000	51205K166	33.15	5,000	51205K173	54.81
3/8	4,500	51205K243	38.98	4,500	51205K128	49.33	4,500	51205K167	66.81	4,500	51205K174	90.52
1/2	3,000	51205K245	67.15	3,000	51205K129	72.46	3,000	51205K168	79.79	3,000	51205K175	97.88
3/4	3,000	51205K247	109.38	3,000	51205K131	176.52	3,000	51205K169	178.13	3,000	51205K576	273.03
1	1,800	51205K244	160.36	1,800	51205K164	188.25	1,800	51205K171	188.25	1,800	51205K577	303.22

Plugs with NPTF Threads

All meet ASTM A479. ***Hex-socket plugs*** are solid. ***Hex-head plugs*** are hollow, except the 1/8 pipe size is solid.

Pipe Size	Hex-Socket Plugs Max. psi @ 72° F	Hex Key Size		Hex-Head Plugs Pipe Size	Max. psi @ 72° F		
1/8	7,200	3/16″	51205K176 $7.15	1/8	7,200	51205K392	$5.46
1/4	7,200	1/4″	51205K177 5.69	1/4	7,200	51205K391	5.96
3/8	7,200	5/16″	51205K178 7.46	3/8	7,200	51205K393	7.60
1/2	7,200	3/8″	51205K179 19.92	1/2	7,200	51205K395	11.71
3/4	6,600	9/16″	51205K181 33.27	3/4	6,600	51205K396	18.85
1	5,350	5/8″	51205K208 40.26	1	5,400	51205K425	30.75

Plugs with Straight Threads

All are solid, have UN/UNF straight threads, and come with a fluoroelastomer seal. Meet ASTM A479.

Hex-Head Plugs Thread Size (Actual OD)	Max. psi @ 72° F		
3/8″-24	9,000	51205K286	$21.21
7/16″-20	9,000	51205K287	6.38
1/2″-20	7,200	51205K288	13.21
9/16″-18	7,200	51205K289	8.87
3/4″-16	7,200	51205K291	11.08
7/8″-14	7,200	51205K292	23.71
1 1/16″-12	7,200	51205K293	32.85
1 5/16″-12	6,600	51205K294	51.73

(Continued on following page)

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

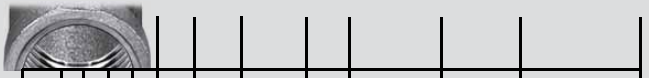

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Extreme-Pressure Stainless Steel Threaded Pipe Fittings

(Continued from previous page)

Couplings, Adapters, Nipples, and Bushings

All meet ASTM A479.

Pipe Size (A)	Pipe Size (B)	Hex Couplings Max. psi @ 72° F			Adapters, Female×Male Max. psi @ 72° F			Hex Nipples Max. psi @ 72° F		
1/8	1/8	6,000	51205K182	$12.23	6,550	51205K209	$10.36	7,200	51205K471	$7.63
1/4	1/8	6,000	51205K183	13.90	6,000	51205K187	18.71	7,200	51205K191	10.12
1/4	1/4	6,000	51205K212	13.04	6,000	51205K311	18.52	7,200	51205K132	7.98
3/8	1/8	6,000	51205K184	31.56	5,350	51205K312	15.63	7,200	51205K192	30.37
3/8	1/4	6,000	51205K214	35.96	6,000	51205K313	19.23	7,200	51205K133	12.94
3/8	3/8	6,000	51205K216	18.37	5,350	51205K314	19.77	7,200	51205K135	9.77
1/2	1/8	6,000	51205K217	50.96	6,000	51205K315	44.08	7,750	51205K136	19.84
1/2	1/4	6,000	51205K218	28.35	6,000	51205K317	25.19	7,200	51205K139	17.35
1/2	3/8	6,000	51205K221	43.87	6,000	51205K319	25.98	7,200	51205K137	16.98
1/2	1/2	6,000	51205K223	22.87	6,000	51205K321	25.67	7,200	51205K142	14.44
3/4	1/4	4,800	51205K224	53.04	4,800	51205K322	48.60	6,600	51205K201	38.90
3/4	3/8	4,800	51205K225	92.91	4,650	51205K323	62.77	7,350	51205K143	43.58
3/4	1/2	4,800	51205K226	55.44	4,800	51205K324	35.23	6,600	51205K202	23.56
3/4	3/4	4,800	51205K228	34.73	4,650	51205K325	60.80	6,600	51205K203	23.27
1	3/8	3,600	51205K229	92.91	4,450	51205K326	116.73	5,350	51205K147	65.17
1	1/2	3,600	51205K232	73.49	3,600	51205K188	97.25	5,350	51205K149	74.37
1	3/4	3,600	51205K233	64.58	3,600	51205K327	71.81	5,400	51205K204	77.98
1	1	3,600	51205K231	67.58	4,450	51205K328	79.07	5,400	51205K205	57.54
1 1/4	1	3,000	51205K234	116.18	3,000	51205K189	147.45	3,600	51205K206	146.22
1 1/4	1 1/4	3,000	51205K185	112.60	—	—	—	3,600	51205K207	108.27
1 1/2	1 1/2	2,400	51205K186	188.75	—	—	—	3,600	51205K197	139.24

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)	Max. psi @ 72° F			Pipe Size (A)	Pipe Size (B)	Max. psi @ 72° F			Pipe Size (A)	Pipe Size (B)	Max. psi @ 72° F		
1/4	1/8	6,000	51205K342	$10.98	1/2	3/8	6,000	51205K353	$14.25	1	3/8	5,400	51205K198	$71.77
3/8	1/8	6,000	51205K344	11.98	3/4	1/4	6,000	51205K355	20.23	1	1/2	5,400	51205K363	32.60
3/8	1/4	6,000	51205K346	13.19	3/4	3/8	6,000	51205K357	21.19	1	3/4	4,800	51205K365	37.58
1/2	1/8	6,000	51205K348	14.81	3/4	1/2	6,000	51205K359	23.02	1 1/4	1	3,600	51205K199	110.36
1/2	1/4	6,000	51205K351	11.54	1	1/4	5,400	51205K251	79.37	1 1/2	1	3,600	51205K252	168.71

Extreme-Pressure Stainless Steel Threaded Adapters

- Use with water, oil, steam
- Maximum Pressure: See table; steam is 3,000 psi @ 300° F

Change the thread configuration in your extreme-pressure pipe system. ***Type 304 stainless steel*** offers very good corrosion resistance. ***Type 316 stainless steel*** offers excellent corrosion resistance.

Connections: BSPP (British Standard Pipe Parallel), NPT, metric, NPTF (Dryseal), or UN/UNF straight threads. Male BSPP threads have a rubber seal bonded to a metal washer; UN/UNF threads have a fluoroelastomer seal.

Female×Male Adapters

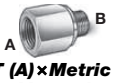

BSPP (A)×NPT (B) Pipe Size	Max. psi @ 72° F			NPT (A)×Metric (B) Pipe Size (A)	Thread Size (B)	Max. psi @ 72° F			NPTF (A)×UN/UNF (B) Pipe Size (A)	Thread Size (B)	Max. psi @ 72° F		
Type 316 Stainless Steel				*Type 304 Stainless Steel*					*Type 316 Stainless Steel*				
1/8	7,500	4822T76	$17.08	1/8	M10×1.0	6,250	4822T41	$42.35	1/4	3/4″-16	6,000	51205K268	$65.85
1/4	6,250	4822T77	18.38	1/4	M12×1.5	6,250	4822T42	30.48	1/4	7/16″-20	6,000	51205K265	76.92
3/8	6,250	4822T78	21.92	1/4	M14×1.5	6,250	4822T43	45.85	1/4	9/16″-18	6,000	51205K266	49.81
1/2	5,000	4822T79	26.50	1/2	M18×1.5	5,000	4822T44	45.08	3/8	3/4″-16	6,000	51205K269	48.00
3/4	4,500	4822T81	45.24	1/2	M20×1.5	5,000	4822T45	59.75	3/8	9/16″-18	6,000	51205K267	66.33
1	4,000	4822T82	79.20	1/2	M22×1.5	3,600	4822T46	60.69	1/2	3/4″-16	6,000	51205K271	99.74

Male Adapters

BSPP×NPT Pipe Size	Max. psi @ 72° F			NPTF (A)×UN/UNF (B) Pipe Size (A)	Thread Size (B)	Max. psi @ 72° F		
Type 316 Stainless Steel				*Type 316 Stainless Steel*				
1/8	7,500	4822T21	$28.73	1/4	9/16″-18	6,000	51205K256	$68.12
1/4	6,250	4822T22	26.04	3/8	3/4″-16	6,000	51205K258	97.87
3/8	6,250	4822T23	29.77	3/8	9/16″-18	6,000	51205K257	42.87
1/2	5,000	4822T24	38.00	1/2	3/4″-16	6,000	51205K259	43.23
3/4	4,500	4822T65	49.74	3/4	1 1/16″-12	6,000	51205K262	105.33
1	4,000	4822T66	75.24	1	1 5/16″-12	5,400	51205K263	90.27

Male Hex Nipples

BSPP×BSPP Pipe Size	Max. psi @ 72° F		
Type 316 Stainless Steel			
1/8	7,500	4822T11	$38.35
1/4	6,250	4822T12	38.19
3/8	6,250	4822T13	39.92
1/2	5,000	4822T14	48.12
3/4	4,500	4822T55	69.24
1	3,600	4822T16	94.73

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

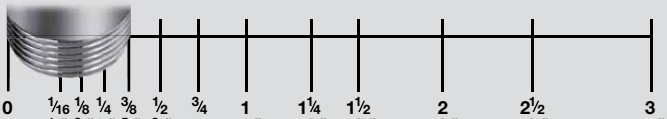

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Precision Extreme-Pressure Stainless Steel Threaded Pipe Fittings

- Use with water, hydraulic oil, natural gas, steam, cryogenic gases (liquid nitrogen), unless noted
- Maximum Pressure: See table; steam is rated @ 300° F, unless noted

While you may know these as instrumentation fittings, we call them precision fittings because they have the most precise threads, tightest tolerances, and highest pressure ratings of all the stainless steel fittings we offer. Plus, the male threads are rolled for extra strength. They're Type 316 stainless steel, which offers excellent resistance to heat and corrosion. Meet ANSI/ASME B1.20.1, B31.1, and B31.3, unless otherwise stated.

Connections: NPT, unless noted.

Elbows, Tees, and Crosses

90° female×male and ***reducing 90° male×female elbows*** are also known as street elbows.

90° Elbows, Female

Pipe Size	Max. psi @ 72° F		
1/16	7,000	48805K121	$33.47
1/8	5,500	48805K92	20.91
1/4	5,600	48805K351	23.84
3/8	5,000	48805K37	33.70
1/2	4,500	48805K391	55.06

90° Elbows, Male

Pipe Size	Max. psi @ 72° F		
—	—	—	—
1/8	9,100	48805K96	$17.43
1/4	7,500	48805K41	18.44
3/8	7,200	48805K431	26.88
1/2	5,800	48805K451	43.99

90° Elbows, Female×Male

Pipe Size	Max. psi @ 72° F		
—	—	—	—
1/8	7,000	48805K122	$38.16
1/4	5,500	48805K18	21.10
3/8	5,600	48805K172	23.27
1/2	5,000	48805K19	33.66
3/8	4,500	48805K211	56.51

45° Elbows, Female×Male

Pipe Size	Max. psi @ 72° F		
—	—	—	—
1/8	5,500	48805K182	$30.63
1/4	5,600	48805K183	37.05
3/8	5,000	48805K184	67.37
1/2	4,500	48805K185	94.35

Reducing 90° Elbows, Male×Female

Pipe Size (A)	(B)	Max. psi @ 72° F		
1/8	1/16	7,000	48805K111	$57.16
1/4	1/16	7,000	48805K112	57.16
1/4	1/8	5,500	48805K113	29.84
3/8	1/16	7,000	48805K114	62.91
3/8	1/8	5,500	48805K115	58.22
3/8	1/4	5,600	48805K116	$65.27
1/2	1/8	5,500	48805K117	72.22
1/2	1/4	5,600	48805K118	73.98
1/2	3/8	5,000	48805K119	76.25

Tees, Female

Pipe Size	Max. psi @ 72° F		
1/16	7,000	48805K171	$44.47
1/8	5,500	48805K97	27.54
1/4	5,600	48805K471	29.95
3/8	5,000	48805K49	56.51
1/2	4,500	48805K511	72.68

Tees, Male

Pipe Size	Max. psi @ 72° F		
1/16	10,100	48805K123	$68.45
1/8	9,700	48805K124	22.45
1/4	8,000	48805K125	30.35
3/8	7,600	48805K127	40.11
1/2	6,200	48805K129	66.67

Tees, Female×Female×Male

Pipe Size	Max. psi @ 72° F		
1/8	7,000	48805K145	$52.08
1/4	5,500	48805K98	30.37
3/8	5,600	48805K571	31.40
1/2	5,000	48805K59	57.92
1/2	4,500	48805K611	76.96

Tees, Female×Male×Female

Pipe Size	Max. psi @ 72° F		
1/8	7,000	48805K191	$52.24
1/4	5,500	48805K192	31.19
3/8	5,600	48805K193	32.85
1/2	5,000	48805K194	58.27
1/2	4,500	48805K195	78.18

Crosses

Pipe Size	Max. psi @ 72° F		
1/16	7,000	48805K147	$69.00
1/8	5,500	48805K62	39.67
1/4	5,600	48805K631	51.95
3/8	5,000	48805K65	74.86
1/2	4,500	48805K671	92.46

Plugs, Caps, Hex Reducing Bushings, and Nipples

Hex-socket plugs are hollow. ***Hex-head plugs*** are solid. ***Pipe nipples*** are also called close nipples; they're threaded on each end to the center.

Hex-Socket Plugs

Pipe Size	Max. psi @ 72° F	Hex Key Size		
1/16	10,000	5/32″	48805K221	$16.92
1/8	9,100	3/16″	48805K222	8.10
1/4	7,500	1/4″	48805K223	9.42
3/8	7,200	5/16″	48805K224	16.46

Hex-Head Plugs

Pipe Size	Max. psi @ 72° F		
1/16	10,500	48805K149	$4.50
1/8	9,700	48805K94	5.33
1/4	8,000	48805K28	6.20
3/8	7,600	48805K32	8.30
1/2	7,000	48805K341	11.65

Caps

Pipe Size	Max. psi @ 72° F		
1/16	7,500	48805K148	$19.40
1/8	6,400	48805K93	6.14
1/4	6,600	48805K22	9.62
3/8	5,300	48805K24	11.28
1/2	5,200	48805K26	17.09

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)	Max. psi @ 72° F		
1/8	1/16	6,400	48805K522	$6.14
1/4	1/16	7,500	48805K241	31.98
1/4	1/8	6,000	48805K523	7.34
3/8	1/8	6,400	48805K524	8.80
3/8	1/4	5,300	48805K525	9.67
1/2	1/8	6,600	48805K526	$14.11
1/2	1/4	6,400	48805K527	14.03
1/2	3/8	4,600	48805K528	14.70
3/4	1/4	6,400	48805K242	17.91
3/4	1/2	4,900	48805K243	19.78

Pipe Nipples

Pipe Size	Max. psi @ 72° F	Lg.		
1/16	10,000	3/4″	48805K161	$29.03
1/8	9,100	3/4″	48805K12	5.48
1/4	7,500	1 1/8″	48805K11	7.20
3/8	7,200	1 1/8″	48805K146	8.59
1/2	6,600	1 1/2″	48805K152	12.79

(Continued on following page)

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

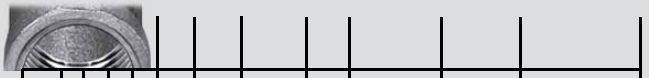

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Precision Extreme-Pressure Stainless Steel Threaded Pipe Fittings

(Continued from previous page)

Hex Couplings, Adapters, and Hex Nipples

Pipe Size (A)	Pipe Size (B)	Hex Couplings Max. psi @ 72° F			Adapters, Female×Male Max. psi @ 72° F			Hex Nipples Max. psi @ 72° F	Lg.		
1/16	1/16	7,500	48805K151	$30.38	—	—	—	10,000	1 1/16″	48805K271	$29.78
1/8	1/16	6,400	48805K261	31.72	6,400	48805K126	$9.79	9,100	1 1/16″	48805K272	6.30
1/8	1/8	6,400	48805K72	9.97	6,400	48805K128	8.13	9,100	1 1/16″	48805K88	6.14
1/4	1/8	6,600	48805K263	12.94	6,600	48805K252	11.78	7,500	1 1/4″	48805K86	8.13
1/4	1/4	6,600	48805K69	12.73	6,600	48805K36	11.11	7,500	1 7/16″	48805K81	7.66
3/8	1/8	5,300	48805K264	36.81	5,300	48805K253	16.83	7,200	1 1/4″	48805K82	10.96
3/8	1/4	5,300	48805K71	17.75	5,300	48805K38	15.77	7,200	1 7/16″	48805K831	10.79
3/8	3/8	5,300	48805K73	17.75	5,300	48805K42	15.12	7,200	1 7/16″	48805K851	10.94
1/2	1/8	5,200	48805K265	25.78	5,200	48805K254	23.88	6,600	1 1/2″	48805K84	18.60
1/2	1/4	5,200	48805K75	27.40	5,200	48805K44	23.04	6,600	1 11/16″	48805K871	16.51
1/2	3/8	5,200	48805K77	26.73	5,200	48805K46	23.06	6,600	1 11/16″	48805K891	16.44
1/2	1/2	5,200	48805K79	25.66	5,200	48805K48	22.89	6,600	1 7/8″	48805K911	15.62

LONG HEX NIPPLES

Pipe Size	Max. psi @ 72° F	2″ Lengths		2 1/2″ Lengths		3″ Lengths		4″ Lengths	
1/16	10,000	48805K163	$31.49	48805K164	$31.50	48805K165	$34.74	48805K166	$40.14
1/8	9,100	48805K135	10.23	48805K137	11.06	48805K141	11.11	48805K157	41.02
1/4	7,500	48805K23	10.42	48805K25	13.50	48805K27	15.37	48805K29	18.14
3/8	7,200	48805K136	13.94	48805K138	41.81	48805K142	16.15	48805K143	26.82
1/2	6,600	48805K311	18.80	48805K139	49.24	48805K331	28.43	48805K144	32.50

Adapters with a British Standard Connection

All have NPT threads on one end and British standard threads on the other end. BSPT (British Standard Pipe Taper) threads meet ISO 7/1 and BS21. BSPP (British Standard Pipe Parallel) threads meet ISO 228/1, 228/2, and BS2779. The fittings with male BSPP threads include a rubber seal bonded to a metal washer. *Note:* The ends of the fittings that have BSPT and BSPP threads do not meet ANSI/ASME B1.20.1.

ADAPTERS, MALE — NPT×BSPT

Pipe Size	Max. psi @ 72° F	Lg.		
1/8	9,100	1 1/16″	4092K81	$6.62
1/4	7,500	1 7/16″	4092K32	8.80
3/8	7,200	1 7/16″	4092K83	11.95
1/2	6,600	1 7/8″	4092K84	17.75
3/4	6,400	1 15/16″	4092K85	25.56
1	4,600	2 3/8″	4092K86	46.12

ADAPTERS, MALE — NPT×BSPP

Pipe Size	Max. psi @ 72° F	Lg.		
1/8	5,300	1 1/16″	4092K91★	$8.94
1/4	5,500	1 7/16″	4092K92★	11.30
3/8	4,400	1 1/2″	4092K93★	15.14
1/2	4,000	1 3/4″	4092K94★	23.52
3/4	3,700	1 15/16″	4092K95★	35.91
1	2,800	2 1/4″	4092K96★	63.78

ADAPTERS, FEMALE×MALE — BSPT (A)×NPT (B)

Pipe Size	Max. psi @ 72° F		
1/8	6,100	4092K26	$29.04
1/4	6,200	4092K21	32.59
3/8	5,000	4092K22	34.97
1/2	4,600	4092K23	49.74
3/4	4,300	4092K24	52.94
1	4,100	4092K25	73.29

ADAPTERS, FEMALE×MALE — BSPP (A)×NPT (B)

Pipe Size	Max. psi @ 72° F		
1/8	6,100	4092K56	$29.04
1/4	6,200	4092K51	32.55
3/8	5,000	4092K52	34.97
1/2	4,600	4092K53	46.58
3/4	4,300	4092K54	44.33
1	4,100	4092K55	73.75

ADAPTERS, FEMALE×MALE — NPT (A)×BSPT (B)

Pipe Size	Max. psi @ 72° F		
6,100	4092K11	$8.95
6,200	4092K12	12.46
5,000	4092K13	16.76
4,600	4092K14	24.57
4,300	4092K15	43.91
4,100	4092K16	85.81

ADAPTERS, FEMALE×MALE — NPT (A)×BSPP (B)

Pipe Size	Max. psi @ 72° F		
5,300	4092K71★	$12.22
5,500	4092K72★	16.04
4,400	4092K73★	20.60
4,000	4092K74★	31.71
3,700	4092K75★	61.60
2,800	4092K76★	90.05

★ Not for use with cryogenic gases (liquid nitrogen). Max. psi for steam is rated at 230° F.

Stainless Steel Threaded Locknuts with PTFE Seal

- Use with air, water, oil, natural gas
- Maximum Pressure: See table

A built-in seal eliminates the need for PTFE tape and sealants. Thread one of these locknuts onto the male end of your fitting before making a connection. They are Type 303 stainless steel, which offers very good corrosion resistance. Temperature range is –300° to +500° F.

Connections: NPT.

Pipe Size	Max. psi @ 72° F	Width	Thick.		
1/8	10,000	5/8″	3/16″	5530K37	$4.40
1/4	10,000	3/4″	5/16″	5530K38	5.70
3/8	10,000	7/8″	5/16″	5530K39	6.44
1/2	10,000	1 1/8″	5/16″	5530K44	10.64
3/4	5,000	1 5/16″	5/16″	5530K45	13.68
1	5,000	1 5/8″	3/8″	5530K46	23.54
1 1/4	5,000	2″	3/8″	5530K47	26.26
1 1/2	3,000	2 1/4″	3/8″	5530K48	35.08
2	3,000	2 3/4″	7/16″	5530K49	50.48

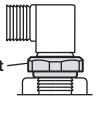

How to Measure Unthreaded Pipe and Butt-Weld Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

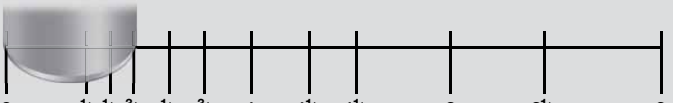

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Thin-Wall Butt-Weld Stainless Steel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas
- Pipe: Use unthreaded Schedule 10 thin-wall stainless steel (see page 21)

Choose thin-wall fittings, which are also known as Schedule 10, when you need a fitting that's lighter in weight than standard wall. They have beveled ends that, when connected to a pipe, create a trough for a strong weld. Meet MSS SP-43, ASTM A403/403M, and ANSI/ASME B16.9.

Fittings come in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Stub ends are for use with the low-pressure easy-access flanges shown on page 24. ***Reducing couplings*** are also known as concentric reducers.

Connections: Butt weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows, Long Radius (C)		90° Elbows, Short Radius (C)		45° Elbows		Tees	
Type 304/304L Stainless Steel									
1/2	0.083″	1 1/2″	45735K211	$5.33	—	—	—	45735K231	$6.83	45735K251	$18.83
3/4	0.083″	1 1/2″	45735K214	5.44	—	—	—	45735K232	6.96	45735K252	19.01
1	0.109″	1 1/2″	45735K213	6.09	1″	45735K321	$40.04	45735K233	7.68	45735K253	19.20
1 1/4	0.109″	1 7/8″	45735K217	9.36	1 1/4″	45735K131	41.66	45735K237	12.84	45735K257	29.59
1 1/2	0.109″	2 1/4″	45735K215	7.62	1 1/2″	45735K323	42.65	45735K235	7.83	45735K255	19.39
2	0.109″	3″	45735K216	9.17	2″	45735K324	37.43	45735K236	9.36	45735K256	20.89
2 1/2	0.120″	3 3/4″	45735K221	16.54	2 1/2″	45735K132	64.24	45735K241	14.80	45735K261	54.40
3	0.120″	4 1/2″	45735K218	19.58	3″	45735K326	58.75	45735K238	16.97	45735K258	38.30
4	0.120″	6″	45735K219	32.64	4″	45735K327	74.85	45735K239	27.20	45735K259	57.45
6	0.134″	9″	45735K222	87.04	6″	45735K328	135.06	45735K242	58.75	45735K262	131.31
8	0.148″	12″	45735K111	144.16	8″	45735K114	197.61	45735K112	104.40	45735K113	268.73
Type 316/316L Stainless Steel									
1/2	0.083″	1 1/2″	43645K311	6.79	—	—	—	43645K331	8.53	43645K351	23.94
3/4	0.083″	1 1/8″	43645K312	6.79	—	—	—	43645K332	8.70	43645K352	23.94
1	0.109″	1 1/2″	43645K313	7.83	1″	43645K124	54.40	43645K333	9.79	43645K353	23.94
1 1/4	0.109″	1 7/8″	43645K111	13.28	1 1/4″	43645K125	54.88	43645K115	16.98	43645K119	41.34
1 1/2	0.109″	2 1/4″	43645K315	9.57	1 1/2″	43645K126	56.56	43645K335	9.57	43645K355	26.11
2	0.109″	3″	43645K316	11.97	2″	43645K127	49.74	43645K336	11.97	43645K356	26.98
2 1/2	0.120″	3 3/4″	43645K112	20.88	2 1/2″	43645K128	84.96	43645K116	18.72	43645K121	67.44
3	0.120″	4 1/2″	43645K318	25.68	3″	43645K129	79.20	43645K338	22.63	43645K358	49.74
4	0.120″	6″	43645K319	41.34	4″	43645K131	92.38	43645K339	34.82	43645K359	73.11
6	0.134″	9″	43645K113	104.70	6″	43645K132	178.04	43645K117	71.80	43645K122	180.02
8	0.148″	12″	43645K114	194.47	8″	43645K133	250.12	43645K118	132.23	43645K123	358.30

Caps

Pipe Size	Wall Thick.		
Type 304/304L Stainless Steel			
1/2	0.083″	45735K271	$10.88
3/4	0.083″	45735K272	14.80
1	0.109″	45735K273	16.10
1 1/4	0.109″	45735K277	40.47
1 1/2	0.109″	45735K275	17.41
2	0.109″	45735K276	15.23
2 1/2	0.120″	45735K281	21.76
3	0.120″	45735K278	18.71
4	0.120″	45735K279	23.94
6	0.134″	45735K282	39.17
8	0.148″	45735K115	73.78
Type 316/316L Stainless Steel			
1/2	0.083″	43645K371	15.67
3/4	0.083″	43645K372	20.89
1	0.109″	43645K373	22.63
1 1/4	0.109″	43645K147	56.58
1 1/2	0.109″	43645K375	24.81
2	0.109″	43645K376	19.58
2 1/2	0.120″	43645K148	24.80
3	0.120″	43645K378	26.11
4	0.120″	43645K379	31.33
6	0.134″	43645K149	52.22
8	0.148″	43645K151	86.74

Stub Ends

Pipe Size	Wall Thick.		
Type 304/304L Stainless Steel			
1/2	0.083″	45735K291	$13.67
3/4	0.083″	45735K292	14.81
1	0.109″	45735K293	15.95
1 1/4	0.109″	45735K297	35.32
1 1/2	0.109″	45735K295	15.38
2	0.109″	45735K296	18.80
2 1/2	0.120″	45735K311	39.87
3	0.120″	45735K298	26.20
4	0.120″	45735K299	35.32
6	0.134″	45735K312	71.20
8	0.148″	45735K116	112.93
Type 316/316L Stainless Steel			
1/2	0.083″	43645K391	17.66
3/4	0.083″	43645K392	20.51
1	0.109″	43645K393	20.51
1 1/4	0.109″	43645K152	44.42
1 1/2	0.109″	43645K395	19.94
2	0.109″	43645K396	22.78
2 1/2	0.120″	43645K153	48.98
3	0.120″	43645K398	32.47
4	0.120″	43645K399	44.43
6	0.134″	43645K154	87.72
8	0.148″	43645K155	158.53

(Continued on following page)

How to Measure Unthreaded Pipe and Butt-Weld Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

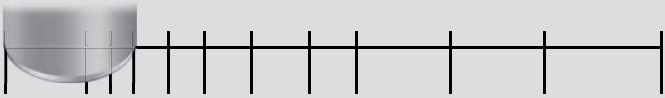

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Thin-Wall Butt-Weld Stainless Steel Unthreaded Pipe Fittings

(Continued from previous page)

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
Type 304/304L Stainless Steel			
3/4	1/2	**45735K411**	$11.75
1	1/2	**45735K117**	16.54
1	3/4	**45735K413**	14.36
1 1/4	1	**45735K414**	24.81
1 1/2	1	**45735K418**	9.14
1 1/2	1 1/4	**45735K118**	12.62
2	1/2	**45735K119**	44.82
2	3/4	**45735K121**	31.76
2	1	**45735K423**	10.88
2	1 1/4	**45735K122**	15.24
2	1 1/2	**45735K425**	10.44
2 1/2	1	**45735K123**	60.92
2 1/2	1 1/2	**45735K424**	47.87
2 1/2	2	**45735K124**	32.64
3	1 1/4	**45735K125**	58.76
Type 304/304L Stainless Steel (Cont.)			
3	2	**45735K432**	$14.80
4	1 1/2	**45735K126**	37.00
4	3	**45735K437**	15.67
6	2	**45735K127**	124.34
6	4	**45735K438**	26.11
8	4	**45735K128**	95.82
8	6	**45735K129**	78.70
Type 316/316L Stainless Steel			
3/4	1/2	**43645K511**	14.36
1	1/2	**43645K134**	21.32
1	3/4	**43645K513**	17.41
1 1/4	3/4	**43645K156**	27.20
1 1/2	1	**43645K518**	12.19
1 1/2	1 1/4	**43645K135**	16.98
2	1/2	**43645K136**	60.06
Type 316/316L Stainless Steel (Cont.)			
2	3/4	**43645K137**	$41.80
2	1	**43645K523**	14.80
2	1 1/4	**43645K138**	19.58
2	1 1/2	**43645K525**	12.19
2 1/2	1	**43645K139**	78.34
2 1/2	1 1/2	**43645K157**	50.77
2 1/2	2	**43645K141**	38.38
3	1 1/4	**43645K142**	82.68
3	2	**43645K532**	18.71
4	1 1/2	**43645K143**	45.70
4	3	**43645K537**	20.89
6	2	**43645K144**	161.64
6	4	**43645K158**	28.77
8	4	**43645K145**	119.43
8	6	**43645K146**	93.42

Thin-Wall Stainless Steel Unthreaded Pipe

- Use with air, water, oil, natural gas
- Fittings: Use butt-weld Schedule 10 thin-wall stainless steel (see page 20 and above)

Thin walls make this pipe, which is also called Schedule 10, lighter in weight than standard-wall pipe. Furnished unthreaded for welded connections, which are less likely to leak than threaded connections. Pipe has welded construction, so there is a weld bead on the inside. Meets ASTM A312 and ANSI/ASME B36.19.

Pipe comes in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

To Order: Please specify 1-, 3-, or 6-ft. length.

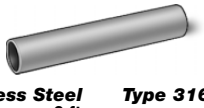

Pipe Size	Type 304/304L Stainless Steel	1 ft.	3 ft.	6 ft.	Type 316/316L Stainless Steel	1 ft.	3 ft.	6 ft.
1/2	**4347K31**	$10.11	$20.54	$31.60	**4378K51**	$12.52	$25.87	$41.73
3/4	**4347K32**	12.06	24.51	37.70	**4378K52**	15.16	31.83	50.53
1	**4347K33**	16.15	36.33	57.67	**4378K53**	19.50	45.75	75.00
1 1/4	**4347K34**	18.63	41.91	66.52	**4378K54**	25.26	59.26	97.15
1 1/2	**4347K35**	19.46	46.41	74.85	**4378K55**	25.98	64.95	108.25
2	**4347K36**	24.00	57.22	92.29	**4378K56**	31.98	79.95	133.25
2 1/2	**4347K37**	29.68	72.43	118.73	**4378K57**	39.63	101.66	172.30
3	**4347K38**	36.38	88.78	145.54	**4378K58**	47.24	121.19	205.40
4	**4347K39**	39.32	103.66	178.73	**4378K59**	52.27	146.35	261.34
6	**4347K41**	62.56	164.93	284.36	**4378K61**	77.78	217.77	388.88

Marine-Rated Butt-Weld Copper-Nickel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas

Other materials may cower to sea water, but not 90/10 copper-nickel—this corrosion-resistant material is tough enough to handle marine applications. Also known as Class 200 fittings and pipe, all proudly carry the military designation of NAVSEA rated. They are unthreaded for a welded connection, which is less likely to leak than a threaded connection.

Pipe has seamless construction for unrestricted flow. Meets MIL-T-16402K. **To Order:** Please specify 1-, 3-, or 6-ft. length. Connections: Butt weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows, Long Radius (C)			90° Elbows, Short Radius (C)			45° Elbows	
1	0.065″	2″	**1946K11**	$35.08	1 1/2″	**1946K17**	$31.47	**1946K24**	$53.95
1 1/2	0.072″	2 15/16″	**1946K12**	58.82	2 3/16″	**1946K18**	65.53	**1946K25**	57.38
2	0.083″	3 11/16″	**1946K13**	70.12	2 11/16″	**1946K19**	72.70	**1946K26**	66.52
2 1/2	0.083″	4 5/8″	**1946K14**	87.87	3 3/8″	**1946K21**	84.55	**1946K27**	70.58
3	0.095″	5 3/8″	**1946K15**	111.92	3 7/8″	**1946K22**	99.87	**1946K28**	88.83
4	0.109″	6 15/16″	**1946K16**	155.55	4 15/16″	**1946K23**	139.50	**1946K29**	115.83

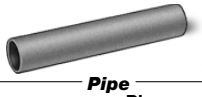

Pipe

Pipe Size	Wall Thick.		1 ft.	3 ft.	6 ft.
1	0.065″	**1946K51**	$20.31	$55.86	$101.56
1 1/2	0.072″	**1946K52**	33.12	91.08	165.60
2	0.083″	**1946K53**	48.09	132.24	240.44
2 1/2	0.083″	**1946K54**	$54.72	$150.48	$273.60
3	0.095″	**1946K55**	65.83	181.03	329.14
4	0.109″	**1946K56**	98.60	271.16	493.01

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Unthreaded Pipe and Butt-Weld Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

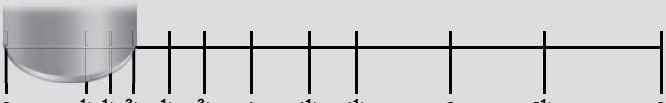

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Butt-Weld Stainless Steel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall stainless steel (see page 23)
- Flanges: Use unthreaded low-pressure stainless steel (see page 24)

A great choice when you need fittings with thicker walls than thin-wall pipe fittings, yet still want the leak resistance of a welded connection. These fittings, also known as Schedule 40, have beveled ends that, when connected to a pipe, create a trough for a strong weld. Meet MSS SP-43, ASTM A403, and ANSI/ASME B16.9. For butt-weld tube fittings, please see page 211.

Fittings come in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Stub ends are for use with the low-pressure easy-access flanges shown on page 24. ***Reducing couplings*** are also known as concentric reducers.

Connections: Butt weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows, Long Radius (C)		90° Elbows, Short Radius (C)		45° Elbows		Tees	
Type 304/304L Stainless Steel									
1/2	0.109″	1 1/2″	45605K511	—	—	45605K551	$8.21	45605K621	$19.71
3/4	0.113″	1 1/2″	45605K512	—	—	45605K552	8.29	45605K622	19.89
1	0.133″	1 1/2″	45605K513	1″	45605K211	45605K553	8.37	45605K623	20.09
1 1/4	0.140″	1 7/8″	45605K514	—	—	45605K554	12.13	45605K624	33.47
1 1/2	0.145″	2 1/4″	45605K515	1 1/2″	45605K213	45605K555	9.42	45605K625	20.09
2	0.154″	3″	45605K516	2″	45605K214	45605K556	11.71	45605K626	21.76
2 1/2	0.203″	3 3/4″	45605K517	—	—	45605K557	23.85	45605K627	54.40
3	0.216″	4 1/2″	45605K521	3″	45605K216	45605K561	21.97	45605K631	43.94
4	0.237″	6″	45605K523	4″	45605K217	45605K563	39.59	45605K633	62.77
6	0.280″	9″	45605K525	—	—	45605K565	98.91	45605K635	141.44
8	0.322″	12″	45605K526	—	—	45605K527	194.78	45605K528	413.04
Type 316/316L Stainless Steel									
1/2	0.109″	1 1/2″	45555K511	—	—	45555K551	9.93	45555K621	22.91
3/4	0.113″	1 1/2″	45555K512	—	—	45555K552	10.01	45555K622	23.11
1	0.133″	1 1/2″	45555K513	1″	45555K211	45555K553	10.07	45555K623	23.24
1 1/4	0.140″	1 7/8″	45555K514	—	—	45555K554	14.13	45555K624	40.68
1 1/2	0.145″	2 1/4″	45555K515	1 1/2″	45555K213	45555K555	11.43	45555K625	23.52
2	0.154″	3″	45555K516	2″	45555K214	45555K556	14.13	45555K626	25.19
2 1/2	0.203″	3 3/4″	45555K517	—	—	45555K557	31.18	45555K627	62.99
3	0.216″	4 1/2″	45555K521	3″	45555K216	45555K561	26.54	45555K631	50.36
4	0.237″	6″	45555K523	4″	45555K217	45555K563	48.42	45555K633	75.56
6	0.280″	9″	45555K525	—	—	45555K565	117.87	45555K635	190.40
8	0.322″	12″	45555K611	—	—	45555K612	223.12	45555K613	495.25

Pipe Size	Wall Thick.	Caps		Stub Ends	
Type 304/304L Stainless Steel					
1/2	0.109″	45605K581	$11.71	45605K651	$13.04
3/4	0.113″	45605K582	13.39	45605K652	14.08
1	0.133″	45605K583	16.74	45605K653	17.73
1 1/4	0.140″	45605K584	31.39	45605K654	39.12
1 1/2	0.145″	45605K585	20.92	45605K655	18.25
2	0.154″	45605K586	14.22	45605K656	19.30
2 1/2	0.203″	45605K587	25.94	45605K657	39.64
3	0.216″	45605K591	19.25	45605K661	27.64
4	0.237″	45605K593	27.20	45605K663	39.12
6	0.280″	45605K595	62.77	45605K665	80.84
8	0.322″	45605K529	101.41	45605K531	120.34
Type 316/316L Stainless Steel					
1/2	0.109″	45555K581	14.34	45555K651	16.04
3/4	0.113″	45555K582	18.21	45555K652	19.30
1	0.133″	45555K583	20.93	45555K653	22.43
1 1/4	0.140″	45555K584	38.75	45555K654	49.55
1 1/2	0.145″	45555K585	26.54	45555K655	23.47
2	0.154″	45555K586	18.40	45555K656	24.51
2 1/2	0.203″	45555K587	32.93	45555K657	50.59
3	0.216″	45555K591	24.41	45555K661	34.42
4	0.237″	45555K593	34.87	45555K663	49.02
6	0.280″	45555K595	75.56	45555K665	93.69
8	0.322″	45555K614	135.18	45555K615	153.73

Reducing Couplings

Pipe Size (A)	Pipe Size (B)			Pipe Size (A)	Pipe Size (B)		
Type 304/304L Stainless Steel				***Type 316/316L Stainless Steel***			
3/4	1/2	45605K711	$13.39	3/4	1/2	45555K711	$16.28
1	1/2	45605K111	19.67	1	1/2	45555K111	22.47
1	3/4	45605K716	15.48	1	3/4	45555K716	19.37
1 1/4	3/4	45605K112	46.04	1 1/4	3/4	45555K112	58.11
1 1/4	1	45605K726	22.18	1 1/4	1	45555K717	30.22
1 1/2	1/2	45605K113	38.92	1 1/2	1/2	45555K113	47.27
1 1/2	1	45605K725	10.05	1 1/2	1	45555K725	13.39
1 1/2	1 1/4	45605K114	15.90	1 1/2	1 1/4	45555K114	19.37
2	3/4	45605K115	37.65	2	3/4	45555K115	46.48
2	1	45605K741	14.64	2	1	45555K741	17.05
2	1 1/2	45605K745	11.71	2	1 1/2	45555K745	13.95
2 1/2	1	45605K116	66.96	2 1/2	1	45555K116	81.36
2 1/2	1 1/2	45605K746	52.31	2 1/2	1 1/2	45555K746	65.86
3	1	45605K117	46.04	3	1	45555K117	56.17
3	1 1/4	45605K118	66.96	3	1 1/4	45555K118	81.36
3	1 1/2	45605K119	20.92	3	1 1/2	45555K119	25.17
3	2	45605K762	18.83	3	2	45555K762	22.47
4	1 1/2	45605K121	48.12	4	1 1/2	45555K121	58.11
4	2	45605K122	27.19	4	2	45555K122	32.94
4	3	45605K783	20.92	4	3	45555K783	25.19
6	4	45605K786	54.40	6	4	45555K786	63.92
8	4	45605K123	176.22	8	4	45555K123	249.98
8	6	45605K532	122.95	8	6	45555K616	147.95

How to Measure Unthreaded Flanges— *Example shows pipe size 1/2.*

Pipe size is an industry designation, not the actual size. Place your flange on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your flange, then select the pipe size on the scale that corresponds to your measurement.

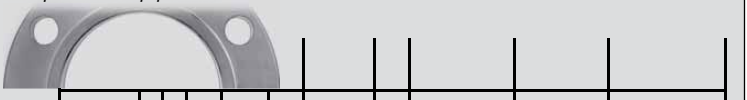

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

i To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Stainless Steel Unthreaded Pipe Nipples

- Use with air, water, oil, natural gas
- Fittings: Use butt-weld Schedule 40 standard-wall stainless steel (see page 22) and socket-weld low-pressure stainless steel (see page 26)
- Flanges: Use unthreaded low-pressure stainless steel (see page 24)

We've cut pipe into short lengths so you won't have to. Also known as Schedule 40 nipples, they have welded construction, so there's a weld bead on the inside. Made of Type 304/304L stainless steel, a low-carbon material that's favorable for welding and offers very good corrosion resistance. Meet ASTM A312.

Pipe Size	1″ Lengths		1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths	
1/8	1947K11	$1.46	1947K12	$1.90	1947K13	$2.20	1947K14	$2.50	1947K15	$2.87	1947K16	$3.57	1947K17	$4.90
1/4	1947K18	1.70	1947K19	2.04	1947K21	2.40	1947K22	2.80	1947K23	3.20	1947K24	4.16	1947K25	5.83
3/8	1947K26	2.00	1947K27	2.34	1947K28	2.80	1947K29	3.27	1947K31	3.76	1947K32	4.87	1947K33	6.83
1/2	1947K34	2.44	1947K35	2.87	1947K36	3.33	1947K37	3.96	1947K38	4.53	1947K39	5.93	1947K41	8.37
3/4	1947K42	3.03	1947K43	3.20	1947K44	3.73	1947K45	4.40	1947K46	5.07	1947K47	6.57	1947K48	9.27
1	—	—	1947K49	4.06	1947K51	4.94	1947K52	5.77	1947K53	6.63	1947K54	8.67	1947K55	12.27
1 1/4	—	—	1947K56	5.40	1947K57	6.27	1947K58	7.30	1947K59	8.47	1947K61	11.07	1947K62	15.60
1 1/2	—	—	1947K63	6.27	1947K64	6.94	1947K65	8.00	1947K66	9.30	1947K67	12.17	1947K68	17.24
2	—	—	—	—	1947K69	9.67	1947K71	10.43	1947K72	11.84	1947K73	15.57	1947K74	22.10
2 1/2	—	—	—	—	—	—	1947K75	19.17	1947K76	21.67	1947K77	25.56	1947K78	34.47
3	—	—	—	—	—	—	1947K79	26.63	1947K81	27.22	1947K82	33.97	1947K83	43.50
4	—	—	—	—	—	—	1947K84	30.18	1947K85	32.06	1947K86	42.25	1947K87	54.68

Standard-Wall Stainless Steel Unthreaded Pipe

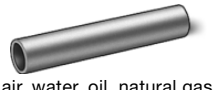

- Use with air, water, oil, natural gas
- Fittings: Use butt-weld Schedule 40 standard-wall stainless steel (see page 22) and socket-weld low-pressure stainless steel (see page 26)
- Flanges: Use unthreaded low-pressure stainless steel (see page 24)

Also called Schedule 40, this pipe is unthreaded for welded connections, which are less likely to leak than threaded connections.

Pipe comes in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Welded pipe is constructed with a weld bead on the inside. Meets ASTM A312 and ANSI/ASME B36.19.

Seamless pipe has a smooth interior for unrestricted flow. Meets ASTM A312.

To Order: Please specify 1-, 3-, or 6-ft. length.

Pipe Size	Type 304/304L Stainless Steel	1 ft.	3 ft.	6 ft.	Type 316/316L Stainless Steel	1 ft.	3 ft.	6 ft.
Welded								
1/8	44635K22	$13.91	$25.84	$39.75	44635K71	$16.19	$30.07	$46.26
1/4	44635K23	14.36	26.66	41.02	44635K72	18.09	33.61	51.70
3/8	44635K24	15.26	28.34	43.60	44635K73	19.70	36.59	56.30
1/2	44635K25	17.58	32.66	50.24	44635K74	23.98	44.53	68.51
3/4	44635K26	19.34	35.92	55.26	44635K75	27.45	50.97	78.42
1	44635K27	26.75	49.68	76.43	44635K76	38.38	71.29	109.67
1 1/4	44635K28	35.17	65.31	100.48	44635K77	49.52	91.97	141.49
1 1/2	44635K29	40.00	74.29	114.29	44635K78	57.43	106.66	164.09
2	44635K31	55.00	102.14	157.14	44635K79	75.12	139.52	214.64
2 1/2	44635K32	84.19	156.34	240.53	44635K81	111.94	207.89	319.83
3	44635K33	100.88	187.36	288.24	44635K82	136.38	253.28	389.66
4	44635K34	128.86	239.32	368.18	44635K83	174.21	323.53	497.74
6	44635K35	204.40	379.59	583.99	44635K84	278.40	517.04	795.44
8	44635K11	231.43	514.28	857.14	44635K12	267.63	594.73	991.22
Seamless								
1/2	44985K71	21.56	56.83	97.98	45725K81	25.96	68.44	118.00
3/4	44985K72	25.69	67.74	116.79	45725K82	32.87	86.66	149.42
1	44985K73	30.06	79.25	136.63	45725K83	34.86	91.90	158.44
1 1/4	44985K74	39.43	103.95	179.23	45725K84	46.25	121.93	210.22
1 1/2	44985K75	40.80	107.56	185.44	45725K85	49.15	129.58	223.42
2	44985K76	47.58	125.45	216.29	45725K86	65.52	172.72	297.80
2 1/2	44985K77	78.44	206.80	356.55	45725K87	96.17	253.53	437.12
3	44985K78	90.87	239.57	413.06	45725K88	108.28	285.46	492.18
4	44985K79	106.86	281.71	485.71	45725K89	134.72	355.18	612.38
6	44985K81	141.45	392.91	785.82	45725K91	171.50	476.38	952.76
8	44985K11	226.19	596.32	1,028.14	45725K11	277.49	731.57	1,261.33

Low-Pressure Stainless Steel Unthreaded Reducing Flanges

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 366° F for steam
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall stainless steel (see above)
- Fittings: Use butt-weld Schedule 40 standard-wall stainless steel (see page 22)

A reduced connecting point allows you to transition to a smaller pipe size. These are also known as slip-on style, Class 150, raised-face flanges. You must weld the flange to your pipe on both sides. To connect, bolt one of these forged flanges to your flange (be sure the flange pipe size, flange OD, and number of bolt holes are the same). A gasket is required, but not included; see pages 3474-3480. For bolts, see pages 3146-3147.

Come in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: Slip on (unthreaded).

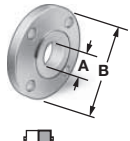

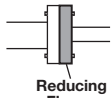

Reducing Flange

Flange Pipe Size	Unthreaded Pipe Size (A)	Flange OD (B)	Bolts Req'd Qty.	Bolts Req'd Dia.		
Type 304/304L Stainless Steel						
2	1	6″	4	5/8″	44685K131	$76.44
3	2	7 1/2″	4	5/8″	44685K132	115.14
4	3	9″	8	5/8″	44685K133	156.74
6	4	11″	8	3/4″	44685K134	229.79
8	6	12 1/2″	8	3/4″	44685K135	410.75

Flange Pipe Size	Unthreaded Pipe Size (A)	Flange OD (B)	Bolts Req'd Qty.	Bolts Req'd Dia.		
Type 316/316L Stainless Steel						
2	1	6″	4	5/8″	44695K131	$103.52
3	2	7 1/2″	4	5/8″	44695K132	164.48
4	3	9″	8	5/8″	44695K133	217.69
6	4	11″	8	3/4″	44695K134	311.36
8	6	12 1/2″	8	3/4″	44695K135	497.15

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Unthreaded Flanges— *Example shows pipe size 1/2.*

Pipe size is an industry designation, not the actual size. Place your flange on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your flange, then select the pipe size on the scale that corresponds to your measurement.

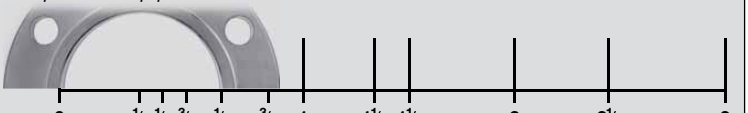

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8"):	0	1/2"	5/8"	3/4"	7/8"	1 1/8"	1 3/8"	1 5/8"	1 7/8"	2 3/8"	2 7/8"	3 1/2"

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Stainless Steel Unthreaded Flanges

- Use with air, water, oil, natural gas
- Maximum Pressure: 150 psi @ 72° F
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall stainless steel (see page 23)
- Fittings: Use butt-weld Schedule 40 standard-wall stainless steel (see page 22)

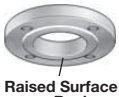

Raised Surface on Back (Forged Flanges, except Easy Access)

Flat Surface on Back (Cast Flanges and Forged Easy Access)

Gain quick access to your pipe by creating a flange connection. Also called Class 150 flanges, they connect by bolting two same-size flanges together with a gasket (not included). For gaskets, see pages 3474-3480; for bolts, see pages 3146-3147.

Forged flanges are also known as ANSI flanges and raised-face flanges. Match with another ANSI flange of the same size for connection. Meet ASTM A182 and ANSI/ASME B16.5, unless noted.

Cast flanges are also called MSS flanges and flat-face flanges. Match with another MSS flange of the same size for connection. Meet ASTM A341; the *caps* also meet MSS SP-42.

Types 304 and ***304/304L stainless steel*** offer very good corrosion resistance for an economical alternative to Types 316 and 316/316L. ***Types 316*** and ***316/316L stainless steel*** contain more nickel and have molybdenum for better resistance to corrosion than Types 304 and 304/304L. *Types 304/304L* and *316/316L stainless steel* are low-carbon materials that are favorable for welding.

Slip On— Slip the flange onto your pipe and weld. There is no internal stop; you must weld the flange to your pipe on both sides.

Socket Weld— An internal stop supports pipe when welding and prevents the pipe from sliding all the way through.

Butt Weld— Also known as weld-neck flanges. Butt-up the flange to your pipe and weld. The flange neck has a beveled end that, when connected to a pipe, creates a trough for a strong weld.

Easy Access— Commonly called lap-joint flanges. Use these flanges with a stub-end fitting (required, but not included; see page 22). The stub-end fitting is welded to the pipe (not the flange), so they're ideal for pipe that is frequently cleaned or inspected.

Cap— Also known as blind flanges, use these solid flanges to close off the end of a pipe.

Forged Flanges— Raised surface on back, unless noted.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.	Slip On		Socket Weld		Butt Weld		Easy Access ★		Cap	
Type 304/304L Stainless Steel													
1/2	3 1/2"	4	1/2"	44685K31	$22.75	44685K51	$21.75	44685K71	$27.18	44685K91	$23.25	44685K111	$21.76
3/4	3 7/8"	4	1/2"	44685K32	25.36	44685K52	29.36	44685K72	32.20	44685K92	24.55	44685K112	25.36
1	4 1/4"	4	1/2"	44685K33	24.56	44685K53	26.37	44685K73	35.60	44685K93	28.66	44685K113	27.64
1 1/4	4 5/8"	4	1/2"	44685K34	37.80	44685K54	38.28	44685K74	57.84	44685K94	48.00	44685K114	37.80
1 1/2	5"	4	1/2"	44685K35	38.05	44685K55	39.38	44685K75	46.00	44685K95	38.09	44685K115	35.60
2	6"	4	5/8"	44685K36	49.51	44685K56	61.36	44685K76	55.36	44685K96	51.00	44685K116	52.51
2 1/2	7"	4	5/8"	44685K37	70.20	44685K57	91.18	44685K77	80.00	44685K97	80.28	44685K117	67.93
3	7 1/2"	4	5/8"	44685K38	65.80	44685K58	80.28	44685K78	91.64	44685K98	67.93	44685K118	71.40
4	9"	8	5/8"	44685K39	99.74	44685K59♠	119.27	44685K79	123.00	44685K99	105.00	44685K119	115.91
6	11"	8	3/4"	44685K42	144.19	44685K62♠	205.81	44685K82	199.74	44685K101	157.36	44685K122	153.66
8	13 1/2"	8	3/4"	44685K151	241.54	44685K152♠	318.89	44685K153	354.38	44685K154	303.57	44685K155	314.65
Type 316/316L Stainless Steel													
1/2	3 1/2"	4	1/2"	44695K31	24.86	44695K51	29.09	44695K71	30.84	44695K91	28.42	44695K111	26.18
3/4	3 7/8"	4	1/2"	44695K32	31.90	44695K52	32.09	44695K72	35.68	44695K92	34.58	44695K112	31.06
1	4 1/4"	4	1/2"	44695K33	36.18	44695K53	43.02	44695K73	47.20	44695K93	38.64	44695K113	40.87
1 1/4	4 5/8"	4	1/2"	44695K34	42.55	44695K54	55.79	44695K74	67.30	44695K94	52.70	44695K114	43.75
1 1/2	5"	4	1/2"	44695K35	47.60	44695K55	57.78	44695K75	57.60	44695K95	52.15	44695K115	49.45
2	6"	4	5/8"	44695K36	65.24	44695K56	70.00	44695K76	70.00	44695K96	67.51	44695K116	80.67
2 1/2	7"	4	5/8"	44695K37	88.51	44695K57	96.15	44695K77	102.69	44695K97	91.00	44695K117	97.05
3	7 1/2"	4	5/8"	44695K38	106.36	44695K58	118.33	44695K78	135.13	44695K98	108.18	44695K118	104.98
4	9"	8	5/8"	44695K39	138.83	44695K59♠	147.18	44695K79	154.91	44695K99	134.97	44695K119	153.39
6	11"	8	3/4"	44695K42	199.75	44695K62♠	287.29	44695K82	224.24	44695K101	192.02	44695K122	198.11
8	13 1/2"	8	3/4"	44695K123	325.82	44695K124♠	406.90	44695K125	394.62	44695K126	338.10	44695K127	441.32

★ Have a flat surface on the back. ♠ Does not meet ANSI/ASME B16.5.

Cast Flanges— Flat surface on back.

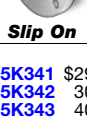

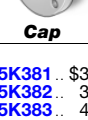

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.	Slip On		Cap	
Type 304 Stainless Steel							
1/2	3 1/2"	4	1/2"	43505K341	$29.02	43505K381	$32.22
3/4	3 7/8"	4	1/2"	43505K342	30.63	43505K382	34.81
1	4 1/4"	4	1/2"	43505K343	40.86	43505K383	43.21
1 1/4	4 5/8"	4	1/2"	43505K344	46.40	43505K384	55.75
1 1/2	5"	4	1/2"	43505K345	57.10	43505K385	58.58
2	6"	4	5/8"	43505K346	68.13	43505K386	79.53
2 1/2	7"	4	5/8"	43505K347	92.70	43505K387	96.83
3	7 1/2"	4	5/8"	43505K348	99.74	43505K388	106.35

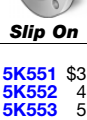

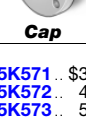

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.	Slip On		Cap	
Type 316 Stainless Steel							
1/2	3 1/2"	4	1/2"	43615K551	$35.56	43615K571	$37.49
3/4	3 7/8"	4	1/2"	43615K552	40.59	43615K572	43.43
1	4 1/4"	4	1/2"	43615K553	51.15	43615K573	51.48
1 1/4	4 5/8"	4	1/2"	43615K554	58.14	43615K574	65.94
1 1/2	5"	4	1/2"	43615K555	67.47	43615K575	72.51
2	6"	4	5/8"	43615K556	87.37	43615K576	96.38
2 1/2	7"	4	5/8"	43615K557	111.46	43615K577	121.45
3	7 1/2"	4	5/8"	43615K558	128.08	43615K578	149.51

How to Measure Unthreaded Pipe and Butt-Weld Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

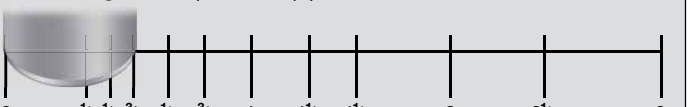

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Thick-Wall Butt-Weld Stainless Steel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Pipe: Use unthreaded Schedule 80 thick-wall stainless steel (see below)
- Flanges: Use unthreaded high-pressure stainless steel (see page 28)

The strongest butt-weld fittings we offer, these are also known as Schedule 80 fittings. They have beveled ends that, when connected to a pipe, create a trough for a strong weld. Meet ASTM A403.

Type 304/304L stainless steel offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: Butt weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows		45° Elbows		Tees		Caps	
Type 304/304L Stainless Steel									
1	0.179″	1739K11	$58.91	1739K15	$63.27	1739K19	$128.73	1739K24	$103.64
1 1/2	0.200″	1739K12	99.27	1739K16	81.82	1739K21	132.00	1739K25	136.62
2	0.218″	1739K13	147.27	1739K17	110.18	1739K22	169.09	1739K26	106.67
3	0.300″	1739K14	198.62	1739K18	157.09	1739K23	268.97	1739K27	163.64
Type 316/316L Stainless Steel									
1	0.179″	1741K11	88.36	1741K15	90.55	1741K19	193.09	1741K24	154.91
1 1/2	0.200″	1741K12	148.36	1741K16	112.36	1741K21	197.45	1741K25	194.12
2	0.218″	1741K13	202.34	1741K17	164.73	1741K22	232.39	1741K26	163.64
3	0.300″	1741K14	288.48	1741K18	216.36	1741K23	360.55	1741K27	225.38

Thick-Wall Stainless Steel Unthreaded Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use butt-weld Schedule 80 thick-wall stainless steel (see above) and socket-weld high-pressure stainless steel (see pgs. 26-27)
- Flanges: Use unthreaded high-pressure stainless steel (see page 28)

Also known as Schedule 80 pipe, this pipe has thick walls for superior strength and is seamless for unrestricted flow. It comes unthreaded so you can make welded connections, which are less likely to leak than threaded connections. Meets ASTM A312.

Pipe comes in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

To Order: Please specify 1-, 3-, or 6-ft. length.

Pipe Size	Type 304/304L Stainless Steel	1 ft.	3 ft.	6 ft.	Type 316/316L Stainless Steel	1 ft.	3 ft.	6 ft.
1/4	4804T11	$41.87	$63.71	$91.02	4815T11	$50.55	$76.93	$109.90
3/8	4804T12	48.20	73.35	104.78	4815T12	63.10	96.03	137.18
1/2	4804T13	44.44	81.26	126.97	4815T13	56.51	103.33	161.45
3/4	4804T14	46.45	84.93	132.71	4815T14	60.34	110.34	172.40
1	4804T15	56.30	102.94	160.85	4815T15	76.92	140.65	219.76
1 1/2	4804T17	69.19	148.25	247.09	4815T17	84.80	181.72	302.86
2	4804T18	85.55	183.32	305.54	4815T18	103.72	222.25	370.42
3	4804T19	99.71	262.87	453.22	4815T19	117.50	309.77	534.09
4	4804T21	122.40	322.69	556.37	4815T21	155.28	409.37	705.81
6	4804T22	217.77	574.11	989.85	4815T22	280.77	740.22	1,276.25

High-Pressure Stainless Steel Butt-Weld Pipe Outlets

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: See table; 600 psi @ 220° F for steam
- Pipe: Use unthreaded Schedule 80 thick-wall stainless steel (see above)

Create a tap-off anywhere along your pipe. These outlets are also known as branch connectors. To install, drill a hole in your pipe to match the fitting's outlet size and weld in place. Meet MSS SP-97 and ANSI/ASME B16.11.

Fittings come in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: Butt weld (unthreaded).

To Order: Please specify pipe size within the range shown below.

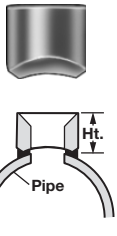

Fits Pipe Size Range	Outlet, Pipe Size	Ht.	Max. psi @ 72° F	Type 304/304L Stainless Steel		Type 316/316L Stainless Steel	
1/4 to 36	1/4	5/8″	3,000	4565T11	$23.87	4583T29	$28.63
3/8 to 36	3/8	3/4″	3,000	4565T12	24.40	4583T31	28.63
1/2 to 36	1/2	3/4″	3,000	4565T13	24.95	4583T32	28.63
3/4 to 36	3/4	7/8″	3,000	4565T14	29.65	4583T33	33.76
1 to 36	1	1 1/16″	3,000	4565T15	38.28	4583T34	44.07
1 1/4 to 36	1 1/4	1 1/4″	3,000	4565T16	60.58	4583T35	69.04
1 1/2 to 36	1 1/2	1 5/16″	2,850	4565T17	69.65	4583T36	83.81
2 to 36	2	1 1/2″	2,500	4565T18	91.69	4583T37	97.62

How to Measure Socket-Weld Unthreaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

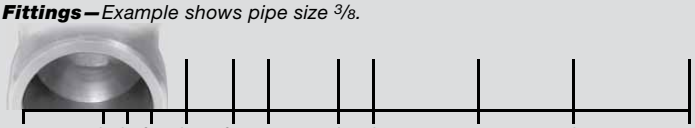

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Socket-Weld Stainless Steel Unthreaded Pipe Fittings

Unthreaded Socket-Weld Connection

- Use with air, water, oil, natural gas
- Maximum Pressure: 150 psi @ 72° F
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall stainless steel (see page 23)
- Flanges: Use unthreaded low-pressure stainless steel (see page 24)

You can be sure these are the highest quality Class 150 fittings available because they all meet ANSI/MSS SP-114 for heat treating, material thickness, and marking. They also meet ASTM A351. They have socket ends that support the pipe during installation; slide your pipe into the fitting and you are ready to weld.

Type 304 stainless steel offers very good corrosion resistance for an economical alternative to Type 316. ***Type 316 stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304.

Connections: Socket weld (unthreaded).

Pipe Size	90° Elbows		45° Elbows		Tees		Unions		Couplings	
Type 304 Stainless Steel										
1/2	4335T32	$7.21	4335T42	$8.87	4335T52	$9.74	4335T72	$20.27	4335T62	$6.51
3/4	4335T33	10.32	4335T43	12.97	4335T53	15.50	4335T73	25.65	4335T63	9.41
1	4335T34	14.63	4335T44	15.83	4335T54	19.77	4335T74	38.71	4335T64	14.26
1 1/4	4335T35	25.65	4335T45	25.32	4335T55	39.29	4335T75	58.19	4335T65	22.67
1 1/2	4335T36	34.15	4335T46	30.13	4335T56	48.86	4335T76	65.80	4335T66	26.94
2	4335T37	43.31	4335T47	42.40	4335T57	58.26	4335T77	78.77	4335T67	37.96
Type 316 Stainless Steel										
1/2	43685K12	9.32	43685K22	11.11	43685K32	12.10	43685K62	23.00	43685K52	7.50
3/4	43685K13	13.55	43685K23	14.63	43685K33	17.86	43685K63	29.18	43685K53	10.86
1	43685K14	16.99	43685K24	18.32	43685K34	22.42	43685K64	44.01	43685K54	16.20
1 1/4	43685K17	29.13	43685K27	28.80	43685K37	44.63	43685K67	65.98	43685K57	25.78
1 1/2	43685K15	38.87	43685K25	34.23	43685K35	54.12	43685K65	74.89	43685K55	30.63
2	43685K16	49.15	43685K26	47.87	43685K36	67.16	43685K66	89.29	43685K56	43.10

High-Pressure Socket-Weld Stainless Steel Unthreaded Pipe Fittings

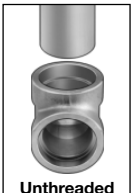

Unthreaded Socket-Weld Connection

- Use with air, water, oil, natural gas, steam
- Maximum Pressure:
  Type 304 SS: 2,570 psi @ 72° F; 1,965 psi @ 350° F for steam
- Type 316 SS: 2,915 psi @ 72° F; 1,965 psi @ 350° F for steam
- Pipe: Use unthreaded Schedule 80 thick-wall stainless steel (see page 25)

Also known as Class 3000 fittings, these heavy duty forged fittings stand up to high-pressure applications. They have socket ends that support the pipe during installation; just slide your pipe into the fitting and you are ready to weld. All meet ASTM A182. Meet ANSI/ASME B16.11, except unions and reducing bushings.

Fittings come in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: Socket weld (unthreaded).

Pipe Size	90° Elbows		45° Elbows		Tees		Crosses		Unions		Caps	
Type 304/304L Stainless Steel												
1/8	44965K411	$11.43	44965K421	$24.37	44965K431	$14.90	44965K441	$38.17	44965K471	$38.36	44965K461	$7.30
1/4	44965K412	11.72	44965K422	22.50	44965K432	15.27	44965K442	39.62	44965K472	38.36	44965K462	7.22
3/8	44965K413	15.17	44965K423	22.77	44965K433	18.22	44965K443	46.60	44965K473	41.03	44965K463	8.85
1/2	44965K414	16.80	44965K424	23.06	44965K434	25.31	44965K444	53.74	44965K474	42.05	44965K464	12.52
3/4	44965K415	21.16	44965K425	28.97	44965K435	30.50	44965K445	82.95	44965K475	53.74	44965K465	14.77
1	44965K416	32.74	44965K426	42.13	44965K436	40.61	44965K446	114.73	44965K476	81.05	44965K466	17.92
1 1/2	44965K418	79.29	44965K428	77.36	44965K438	113.82	44965K448	182.31	44965K478	135.68	44965K468	35.23
2	44965K419	109.16	44965K429	112.80	44965K439	144.66	44965K449	292.01	44965K479	169.62	44965K469	52.40
3	44965K42	355.03	44965K43	378.66	44965K44	418.11	—	—	44965K48	436.29	44965K47	130.23
Type 316/316L Stainless Steel												
1/8	45515K111	13.78	45515K131	29.91	45515K151	17.66	45515K171	42.91	45515K241	41.78	45515K221	8.04
1/4	45515K112	14.12	45515K132	28.19	45515K152	17.23	45515K172	52.03	45515K242	42.83	45515K222	8.24
3/8	45515K113	16.18	45515K133	29.75	45515K153	22.58	45515K173	58.05	45515K243	49.62	45515K223	10.06
1/2	45515K114	21.99	45515K134	28.19	45515K154	30.33	45515K174	77.04	45515K244	49.94	45515K224	12.57
3/4	45515K115	28.36	45515K135	36.27	45515K155	37.00	45515K175	105.93	45515K245	65.56	45515K225	15.62
1	45515K116	42.51	45515K136	55.83	45515K156	56.50	45515K176	135.06	45515K246	99.74	45515K226	21.13
1 1/2	45515K118	92.74	45515K138	92.93	45515K158	124.26	45515K178	253.57	45515K248	181.00	45515K228	42.40
2	45515K119	140.98	45515K139	122.46	45515K159	192.01	45515K179	402.61	45515K249	209.40	45515K229	68.69
3	45515K12	436.50	45515K14	489.10	45515K16	484.72	—	—	45515K25	565.56	45515K23	182.97

(Continued on following page)

How to Measure Unthreaded Pipe and Butt-Weld Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

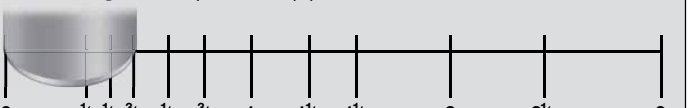

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Socket-Weld Stainless Steel Unthreaded Pipe Fittings

(Continued from previous page)

Couplings

Pipe Size		
Type 304/304L Stainless Steel		
1/8	**44965K451**	$7.36
1/4	**44965K452**	8.16
3/8	**44965K453**	8.00
1/2	**44965K454**	9.18
3/4	**44965K455**	11.59
1	**44965K456**	20.33
1 1/2	**44965K458**	40.63
2	**44965K459**	63.08
3	**44965K46**	152.94
Type 316/316L Stainless Steel		
1/8	**45515K191**	9.47
1/4	**45515K192**	9.98
3/8	**45515K193**	8.51
1/2	**45515K194**	11.85
3/4	**45515K195**	15.84
1	**45515K196**	22.60
1 1/2	**45515K198**	62.73
2	**45515K199**	83.78
3	**45515K201**	216.40

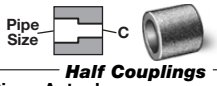

Half Couplings

Pipe Size	Actual ID (C)		
Type 304/304L Stainless Steel			
1/8	1/4″	**44965K311**	$7.36
1/4	3/8″	**44965K312**	7.54
3/8	1/2″	**44965K313**	7.73
1/2	5/8″	**44965K314**	9.90
3/4	13/16″	**44965K315**	12.52
1	1 1/16″	**44965K316**	18.67
1 1/2	1 5/8″	**44965K318**	41.30
2	2 1/16″	**44965K319**	61.95
Type 316/316L Stainless Steel			
1/8	1/4″	**45515K411**	9.60
1/4	3/8″	**45515K412**	10.44
3/8	1/2″	**45515K413**	10.70
1/2	5/8″	**45515K414**	12.73
3/4	13/16″	**45515K415**	16.91
1	1 1/16″	**45515K416**	28.70
1 1/2	1 5/8″	**45515K418**	71.40
2	2 1/16″	**45515K419**	104.46

Reducing Couplings

Pipe Size (A)	(B)		
Type 304/304L Stainless Steel			
1/4	1/8	**44965K482**	$9.58
3/8	1/4	**44965K483**	10.14
1/2	1/4	**44965K481**	13.08
1/2	3/8	**44965K484**	13.08
3/4	1/2	**44965K485**	17.20
1	3/4	**44965K486**	27.66
1 1/2	1 1/4	**44965K488**	50.34
2	1 1/2	**44965K489**	74.15
Type 316/316L Stainless Steel			
1/4	1/8	**45515K282**	12.21
3/8	1/4	**45515K283**	12.52
1/2	1/4	**45515K281**	17.04
1/2	3/8	**45515K284**	17.04
3/4	1/2	**45515K285**	24.82
1	3/4	**45515K286**	33.01
1 1/2	1 1/4	**45515K288**	80.25
2	1 1/2	**45515K289**	111.88

Reducing Bushings, Male (A)×Female (B)

Pipe Size (A)	(B)		
Type 304/304L Stainless Steel			
1/4	1/8	**44965K492**	$8.10
3/8	1/4	**44965K493**	8.51
1/2	1/4	**44965K491**	10.97
1/2	3/8	**44965K494**	10.97
3/4	1/2	**44965K495**	13.59
1	3/4	**44965K496**	18.59
1 1/2	1 1/4	**44965K498**	37.16
2	1 1/2	**44965K499**	72.14
Type 316/316L Stainless Steel			
1/4	1/8	**45515K332**	7.14
3/8	1/4	**45515K333**	11.72
1/2	1/4	**45515K331**	14.98
1/2	3/8	**45515K334**	15.33
3/4	1/2	**45515K335**	19.37
1	3/4	**45515K336**	28.22
1 1/2	1 1/4	**45515K338**	52.97
2	1 1/2	**45515K339**	80.38

High-Strength Socket-Weld Chrome-Moly Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: Fittings: 2,310 psi @ 72° F; 1,595 psi @ 350° F for steam; Pipe: Not rated

Stronger and easier to weld than stainless steel and steel, choose high-strength chrome-moly F22 fittings and P22 pipe when you need a material that resists scaling, even in steam applications.

Fittings—Also known as Class 3000, these heavy duty fittings have socket ends that support the pipe during installation; slide the pipe into the fittings and you are ready to weld. Meet ANSI/ASME B16.11.

Pipe—Also called Schedule 80 and thick-wall pipe, all have seamless construction for unrestricted flow.

Connections: Socket weld (unthreaded).

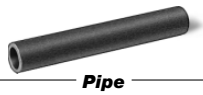

Pipe Size	90° Elbows		Couplings		Caps		Pipe 1-ft. Lengths		Pipe 3-ft. Lengths	
1/2	**1982K11**	$20.30	**1982K16**	$10.70	**1982K22**	$10.70	**1982K27**	$32.28	**1982K33**	$91.36
3/4	**1982K12**	25.73	**1982K17**	16.96	**1982K23**	16.96	**1982K28**	38.60	**1982K34**	99.83
1	**1982K13**	35.34	**1982K18**	30.11	**1982K24**	30.11	**1982K29**	67.92	**1982K35**	126.62
1 1/2	**1982K14**	86.84	**1982K19**	55.77	**1982K25**	55.77	**1982K31**	70.59	**1982K36**	186.21
2	**1982K15**	138.50	**1982K21**	83.41	**1982K26**	83.41	**1982K32**	83.08	**1982K37**	216.36

Extreme-Pressure Socket-Weld Stainless Steel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: See table
- Pipe: Use unthreaded Schedule 160 extra-thick-wall stainless steel (see pg. 28)

Sometimes only the strongest will do—that's where Class 6000 fittings come in. The heavy duty forged construction gives these fittings the highest pressure rating of all the stainless steel fittings we offer. Fittings have socket ends that support the pipe during installation; slide your pipe into the fitting and you are ready to weld. Meet ASTM A182 and ANSI/ASME B16.11.

Type 304/304L stainless steel offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Connections: Socket weld (unthreaded).

Pipe Size	Max. psi @ 72° F	Max. psi @ 220° F for steam	90° Elbows		45° Elbows		Tees		Couplings		Caps	
Type 304/304L Stainless Steel												
1/2	7,700	6,500	**2064K11**	$46.28	**2064K22**	$64.21	**2064K16**	$65.92	**2064K27**	$22.55	**2064K33**	$28.84
3/4	7,100	5,900	**2064K12**	55.76	**2064K23**	72.90	**2064K17**	76.09	**2064K28**	31.76	**2064K34**	36.47
1	6,400	5,300	**2064K13**	84.09	**2064K24**	105.48	**2064K18**	102.32	**2064K29**	43.67	**2064K35**	41.78
1 1/2	4,800	4,000	**2064K14**	167.71	**2064K25**	164.60	**2064K19**	231.72	**2064K31**	90.22	**2064K36**	70.02
2	4,700	3,900	**2064K15**	255.90	**2064K26**	282.76	**2064K21**	297.32	**2064K32**	130.07	**2064K37**	99.74
Type 316/316L Stainless Steel												
1/2	7,700	6,400	**2077K11**	58.78	**2077K22**	84.37	**2077K16**	77.15	**2077K27**	31.24	**2077K33**	34.71
3/4	7,100	5,900	**2077K12**	77.50	**2077K23**	93.55	**2077K17**	95.42	**2077K28**	40.80	**2077K34**	42.16
1	6,400	5,300	**2077K13**	110.08	**2077K24**	133.02	**2077K18**	137.31	**2077K29**	58.07	**2077K35**	53.79
1 1/2	4,800	3,900	**2077K14**	197.40	**2077K25**	201.85	**2077K19**	266.70	**2077K31**	138.57	**2077K36**	104.13
2	4,700	3,800	**2077K15**	284.22	**2077K26**	254.75	**2077K21**	393.28	**2077K32**	189.24	**2077K37**	159.13

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Unthreaded Pipe and Flanges—*Example shows pipe size 3/8 for pipe, pipe size 1/2 for flanges.*

Pipe size is an industry designation, not the actual size. Place your pipe or flange on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe and butt-weld flange, or inside diameter (ID) of your slip-on, socket-weld, and easy-access flange, then select the pipe size on the scale that corresponds to your measurement.

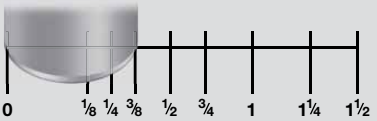

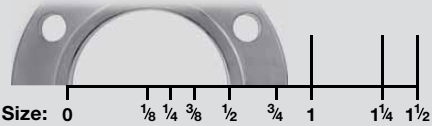

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Extra-Thick-Wall Stainless Steel Unthreaded Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use socket-weld extreme-pressure stainless steel (see page 27)

The extra-thick-wall construction, which is often called Schedule 160, makes this the strongest stainless steel pipe we offer. Pipe is seamless for unrestricted flow. It comes unthreaded so you can make welded connections, which are less likely to leak than threaded connections. Meets ASTM A312.

Type 304 stainless steel offers very good corrosion resistance for an economical alternative to Type 316. ***Type 316 stainless steel*** contains more nickel and has molybdenum for better corrosion resistance than Type 304.

Pipe Size	1-ft. Lengths		3-ft. Lengths		6-ft. Lengths	
Type 304 Stainless Steel						
1/2	2053K11	$19.46	2053K16	$48.65	2053K22	$81.09
3/4	2053K12	33.81	2053K17	84.52	2053K23	140.86
1	2053K13	43.68	2053K18	109.20	2053K24	182.00
1 1/2	2053K14	55.46	2053K19	146.21	2053K25	252.09
2	2053K15	76.06	2053K21	200.51	2053K26	345.71
Type 316 Stainless Steel						
1/2	2057K11	25.57	2057K16	63.92	2057K22	106.54
3/4	2057K12	39.50	2057K17	98.75	2057K23	164.58
1	2057K13	53.35	2057K18	133.37	2057K24	222.28
1 1/2	2057K14	67.06	2057K19	176.80	2057K25	304.83
2	2057K15	103.62	2057K21	273.17	2057K26	470.98

High-Pressure Stainless Steel Unthreaded Flanges

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 300 psi @ 72° F; 300 psi @ 300° F for steam, unless noted
- Pipe: Use unthreaded Schedule 80 thick-wall stainless steel (see page 25)

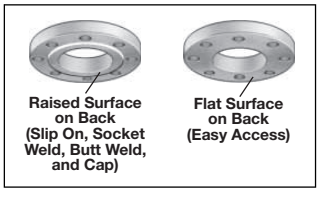

Forged for high strength, these heavy duty flanges are often called Class 300, ANSI, and raised-face flanges (except easy-access, which are called flat-face flanges). Bolt two same-size flanges together with a gasket (not included). For gasket, see pages 3474-3480. For bolts, see pages 3146-3147. Flanges meet MSS SP-6 and SP-25, ASTM A182, and ANSI/ASME B16.5, unless noted.

Flanges come in two low-carbon materials that are favorable for welding. ***Type 304/304L stainless steel*** offers very good corrosion resistance for an economical alternative to Type 316/316L. ***Type 316/316L stainless steel*** contains more nickel and has molybdenum for better resistance to corrosion than Type 304/304L.

Slip On— Slip the flange onto your pipe and weld. There is no internal stop; you must weld the flange to your pipe on both sides.

Socket Weld— An internal stop supports pipe when welding and prevents it from sliding all the way through.

Butt Weld— Also known as weld-neck flanges. Butt-up the flange to your pipe and weld. The flange neck has a beveled end that, when connected to a pipe, creates a trough for a strong weld.

Easy Access— Commonly called lap-joint flanges. Use these flanges with a stub-end fitting (required, but not included; see page 22). The stub-end fitting is welded to the pipe (not the flange), so they're ideal for pipe that is frequently cleaned or inspected.

Cap— Also known as blind flanges, use these solid flanges to close off the end of a pipe.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.	Slip On		Socket Weld		Butt Weld		Easy Access		Cap	
Type 304/304L Stainless Steel													
1/2	3 3/4"	4	1/2"	4448T11	$35.00	4448T31	$35.82	4448T71	$44.42	4448T91	$38.64	4448T51	$31.82
3/4	4 5/8"	4	5/8"	4448T12	35.25	4448T32	35.25	4448T72	37.50	4448T92	38.64	4448T52	33.34
1	4 7/8"	4	5/8"	4448T13	43.73	4448T33	40.90	4448T73	41.30	4448T93	42.00	4448T53	38.06
1 1/4	5 1/4"	4	5/8"	4448T14	60.27	4448T34	62.25	4448T74	65.05	4448T94	64.99	4448T54	65.45
1 1/2	6 1/8"	4	3/4"	4448T15	71.51	4448T35	65.00	4448T75	73.27	4448T95	78.17	4448T55	68.53
2	6 1/2"	8	5/8"	4448T16	68.16	4448T36	84.00	4448T76	83.64	4448T96	91.56	4448T56	80.56
2 1/2	7 1/2"	8	3/4"	4448T17	126.01	4448T37	134.75	4448T77	117.34	4448T97	129.21	4448T57	109.70
3	8 1/4"	8	3/4"	4448T18	136.00	4448T38	143.24	4448T78	122.63	4448T98	140.54	4448T58	117.34
4	10"	8	3/4"	4448T19	154.00	4448T39♠	202.59	4448T79	168.66	4448T24	165.30	4448T59	147.76
6	12 1/2"	12	3/4"	4448T21	299.38	4448T41♠	361.81	4448T81	366.06	4448T25	334.77	4448T61	293.43
Type 316/316L Stainless Steel													
1/2	3 3/4"	4	1/2"	4452T11	44.00	4452T31	45.82	4452T71	46.50	4452T91	42.72	4452T51	36.47
3/4	4 5/8"	4	5/8"	4452T12	43.33	4452T32	42.00	4452T72	48.90	4452T92	48.17	4452T52	43.22
1	4 7/8"	4	5/8"	4452T13	56.40	4452T33	47.26	4452T73	55.58	4452T93	49.01	4452T53	45.01
1 1/4	5 1/4"	4	5/8"	4452T14	74.25	4452T34	76.45	4452T74	86.54	4452T94	69.50	4452T54	86.11
1 1/2	6 1/8"	4	3/4"	4452T15	76.00	4452T35	89.64	4452T75	88.25	4452T95	74.26	4452T55	67.93
2	6 1/2"	8	5/8"	4452T16	85.58	4452T36	97.22	4452T76	97.50	4452T96	96.60	4452T56	82.91
2 1/2	7 1/2"	8	3/4"	4452T17	151.54	4452T37	153.80	4452T77	164.00	4452T97	162.23	4452T57	136.36
3	8 1/4"	8	3/4"	4452T18	135.66	4452T38	181.56	4452T78	152.16	4452T98	161.88	4452T58	167.58
4	10"	8	3/4"	4452T19	201.66	4452T39♠	263.69	4452T79	234.44	4452T24	241.15	4452T59	194.24
6	12 1/2"	12	3/4"	4452T21	427.63	4452T41♠	374.81	4452T81	413.15	4452T25	396.55	4452T61	417.85

♠ Does not meet ANSI/ASME B16.5 and is not rated for steam.

How to Measure Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

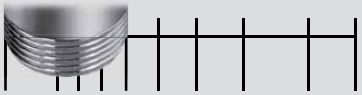

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Brass Threaded Pipe Fittings with Sealant

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 200 psi @ 72° F; 125 psi @ 400° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall brass (see below and page 32)
- Flanges: Use threaded Class 150 low-pressure brass (see page 31)

You don't need to search for your thread sealant—it is already applied to the male threads. Also known as Class 125 fittings, they meet ASTM B584 or B927, as well as ANSI/ASME B16.15 and B1.20.1.

90° female×male elbows are also known as street elbows.

Connections: NPT.

Pipe Size	90° Elbows, Female×Male		45° Elbows, Female×Male		Tees, Female×Female×Male		Adapters, Female×Male		Square-Head Solid Plugs		Square-Socket Solid Plugs	
1/8	2725K11	$10.70	—	—	—	—	—	—	2725K85	$3.00	—	—
1/4	2725K12	10.70	2725K19	$12.42	—	—	—	—	2725K86	3.00	—	—
3/8	2725K13	10.70	2725K21	12.42	2725K27	$16.86	—	—	2725K87	3.00	—	—
1/2	2725K14	10.70	2725K22	10.82	2725K28	21.70	2725K33	$25.30	2725K38	4.64	2725K44	$7.98
3/4	2725K15	12.40	2725K23	15.06	2725K29	28.00	2725K34	34.40	2725K39	5.70	2725K45	8.30
1	2725K16	19.68	2725K24	24.80	2725K31	41.20	2725K35	51.94	2725K41	9.02	2725K46	12.04
1 1/2	2725K17	43.84	2725K25	48.00	—	—	2725K36	98.84	2725K42	19.38	2725K47	26.04
2	2725K18	63.24	2725K26	85.34	2725K32	136.24	2725K37	172.58	2725K43	29.94	2725K48	39.10

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)			Pipe Size (A)	(B)			Pipe Size (A)	(B)			Pipe Size (A)	(B)		
1/4	1/8	2725K49	$1.88	3/4	3/8	2725K58	$4.50	1 1/4	1/2	2725K78	$14.54	2	1/4	2725K71	$26.16
3/8	1/8	2725K51	2.32	3/4	1/2	2725K59	3.78	1 1/4	3/4	2725K79	13.40	2	1/2	2725K72	26.16
3/8	1/4	2725K52	2.12	1	1/8	2725K61	10.72	1 1/4	1	2725K81	13.54	2	3/4	2725K73	22.60
1/2	1/8	2725K53	3.34	1	1/4	2725K62	9.36	1 1/2	1/4	2725K66	18.54	2	1	2725K74	22.74
1/2	1/4	2725K54	3.02	1	3/8	2725K63	9.36	1 1/2	1/2	2725K67	18.54	2	1 1/4	2725K75	22.74
1/2	3/8	2725K55	2.78	1	1/2	2725K64	8.34	1 1/2	3/4	2725K68	18.54	2	1 1/2	2725K76	22.74
3/4	1/8	2725K56	6.34	1	3/4	2725K65	8.34	1 1/2	1	2725K69	21.44	2 1/2	1	2725K83	55.06
3/4	1/4	2725K57	4.88	1 1/4	3/8	2725K77	19.00	1 1/2	1 1/4	2725K82	18.68	2 1/2	2	2725K84	55.06

Standard-Wall Brass Threaded Pipe Nipples with Sealant

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 125 low-pressure brass (see above and pages 30-31)
- Flanges: Use threaded Class 150 low-pressure brass (see page 31)

The thread sealant is already applied, so these nipples are ready to get to work. Also known as Schedule 40 threaded nipples and regular nipples, they have seamless construction for unrestricted flow. They meet ASTM B687.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

Fully Threaded

Threaded on Both Ends

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	2729K11	$2.04
1/4	7/8″	2729K12	2.18
3/8	1″	2729K13	2.22
1/2	1 1/8″	2729K14	2.56
3/4	1 3/8″	2729K15	3.18
1	1 1/2″	2729K16	4.26
1 1/2	1 3/4″	2729K17	7.10
2	2″	2729K18	10.10

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	2729K19	$2.14	2729K25	$2.22	2729K33	$2.36	2729K42	$2.46	2729K111	$2.56
1/4	2729K21	2.34	2729K26	2.50	2729K34	2.60	2729K43	2.84	2729K112	3.00
3/8	2729K22	2.40	2729K27	2.68	2729K35	2.80	2729K44	3.16	2729K113	3.32
1/2	2729K23	2.78	2729K28	3.06	2729K36	3.42	2729K45	3.80	2729K114	4.20
3/4	2729K24	3.30	2729K29	3.70	2729K37	4.10	2729K46	4.54	2729K115	4.96
1	—	—	2729K31	4.94	2729K38	5.56	2729K47	6.20	2729K116	7.00
1 1/2	—	—	2729K32	7.54	2729K39	8.76	2729K48	9.86	2729K117	11.18
2	—	—	—	—	2729K41	10.82	2729K49	12.28	2729K118	13.98

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		5″ Lengths		6″ Lengths		8″ Lengths		10″ Lengths		12″ Lengths	
1/8	2729K51	$2.72	2729K59	$3.06	2729K68	$3.36	2729K77	$4.04	2729K119	$5.04	2729K86	$5.62
1/4	2729K52	3.32	2729K61	3.70	2729K69	4.26	2729K78	5.02	2729K121	5.90	2729K87	6.72
3/8	2729K53	3.72	2729K62	4.14	2729K71	4.66	2729K79	5.92	2729K122	6.86	2729K88	7.88
1/2	2729K54	4.62	2729K63	5.28	2729K72	6.18	2729K81	7.68	2729K123	9.18	2729K89	10.66
3/4	2729K55	5.56	2729K64	6.44	2729K73	7.58	2729K82	9.64	2729K124	11.54	2729K91	13.46
1	2729K56	7.66	2729K65	9.14	2729K74	10.66	2729K83	13.78	2729K125	16.82	2729K92	19.72
1 1/2	2729K57	12.46	2729K66	15.16	2729K75	17.78	2729K84	23.16	2729K126	28.50	2729K93	33.30
2	2729K58	15.64	2729K67	19.04	2729K76	22.48	2729K85	29.54	2729K127	36.12	2729K94	42.70

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8"):	0	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 5/8"	1 3/4"	2 3/8"	2 3/4"	3 3/8"

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Brass Threaded Pipe Fittings

- Use with air, drinking (potable) water, oil, natural gas, steam
- Maximum Pressure: 200 psi @ 72° F; 125 psi @ 400° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall brass (see pages 29 and 32)

All of these low-pressure fittings, also known as Class 125 fittings, are NSF 61 certified for use with drinking (potable) water in all 50 states as of January 1, 2011. They also meet ASTM B584 or B927, as well as ANSI/ASME B16.15 and B1.20.1, except flanges and where noted.

The ***90° female × male elbows*** are also called street elbows. ***Reducing bushings*** are also known as face bushings.

Connections: NPT, except locknuts have NPSL (National Pipe Straight Locknut) threads, which are compatible with NPT threads.

Pipe Size	90° Elbows		90° Elbows with Support		90° Elbows, Female × Male		45° Elbows		45° Elbows, Female × Male		Wyes	
1/8	4429K169	$6.83	—	—	4429K159	$9.07	4429K269	$8.34	—	—	—	—
1/4	4429K161	6.80	4429K483	$27.26	4429K151	9.08	4429K261	8.34	4429K651	$10.77	4429K368	$25.27
3/8	4429K162	6.80	4429K484	27.26	4429K152	9.08	4429K262	8.34	4429K652	10.77	4429K361	25.27
1/2	4429K163	6.80	4429K485	27.26	4429K153	9.08	4429K263	8.34	4429K653	10.77	4429K362	25.27
3/4	4429K164	9.07	—	—	4429K154	12.48	4429K264	11.85	4429K654	15.53	4429K363	34.47
1	4429K165	14.78	—	—	4429K155	20.46	4429K265	20.24	4429K655	26.02	4429K364	57.22
1 1/4	4429K166	23.91	—	—	4429K156	37.50	4429K266	32.17	4429K656	40.59	4429K365	95.37
1 1/2	4429K167	29.60	—	—	4429K157	39.58	4429K267	39.12	4429K657	49.74	4429K366	132.93
2	4429K168	46.16	—	—	4429K158	67.10	4429K268	62.67	4429K658	90.93	4429K367	225.44
2 1/2	4429K431	111.66	—	—	4429K437	126.59	4429K434	119.08	—	—	4429K444	407.35
3	4429K432	170.55	—	—	4429K438	185.82	4429K435	184.15	—	—	4429K445	611.06
4	4429K433	345.29	—	—	—	—	—	—	—	—	—	—

Pipe Size	Tees		Tees, Female × Female × Male		Crosses		Unions		Couplings		Adapters, Female × Male	
1/8	4429K259	$7.97	—	—	4429K359	$16.72	4429K211♥	$16.02	4429K119	$5.70	—	—
1/4	4429K251	7.97	—	—	4429K351	16.72	4429K212	19.37	4429K111	5.70	—	—
3/8	4429K252	7.97	4429K325	$16.67	4429K352	16.72	4429K213	19.37	4429K112	5.70	—	—
1/2	4429K253	7.97	4429K326	21.80	4429K353	16.72	4429K214	19.37	4429K113	5.70	4429K298	$25.64
3/4	4429K254	11.33	4429K327	28.49	4429K354	23.87	4429K215	26.58	4429K114	7.99	4429K299	35.61
1	4429K255	20.50	4429K328	42.70	4429K355	39.42	4429K216	40.23	4429K115	13.62	4429K321	54.11
1 1/4	4429K256	35.20	4429K329	61.53	4429K356	64.32	4429K217	55.30	4429K116	22.75	4429K322	96.83
1 1/2	4429K257	38.50	—	—	4429K357	75.99	4429K218	65.87	4429K117	29.60	4429K323	103.94
2	4429K258	63.81	4429K331	143.68	4429K358	151.96	4429K219	90.04	4429K118	47.27	4429K324	182.28
2 1/2	4429K447	151.92	—	—	4429K451	322.88	4429K221♥	167.51	4429K454	80.55	—	—
3	4429K448	232.28	—	—	4429K452	459.61	4429K222♥	258.76	4429K455	111.66	—	—
4	4429K449	567.74	—	—	4429K453	973.13	—	—	4429K456	221.68	—	—

♥ Does not meet ANSI/ASME B16.15.

Pipe Size	Caps		Square-Head Hollow Plugs		Square-Head Solid Plugs		Square-Socket Solid Plugs		Locknuts♠	
1/8	4429K149	$4.52	—	—	4429K311	$1.14	—	—	4429K121	$1.32
1/4	4429K171	4.52	—	—	4429K312	1.86	—	—	4429K122	1.53
3/8	4429K142	4.52	4429K281	$2.71	4429K313	3.25	—	—	4429K123	2.00
1/2	4429K143	4.52	4429K282	2.93	4429K314	4.18	4429K191	$6.52	4429K124	2.91
3/4	4429K144	5.70	4429K283	3.69	4429K315	5.28	4429K192	6.83	4429K125	4.27
1	4429K145	10.32	4429K316	7.15	4429K287	6.65	4429K193	10.28	4429K126	6.40
1 1/4	4429K146	18.18	4429K317	10.64	4429K288	10.34	4429K396	18.90	4429K127	10.37
1 1/2	4429K147	23.87	4429K318	13.56	4429K289	16.03	4429K194	23.75	4429K128	13.47
2	4429K148	39.56	4429K319	21.37	4429K291	23.62	4429K195	36.51	4429K129	21.37
2 1/2	4429K457	75.94	4429K284	31.40	4429K467	59.28	4429K397	78.01	4429K464	28.24
3	4429K458	117.43	4429K285	49.91	4429K468	92.57	4429K196	110.65	4429K465	73.45
4	4429K459	215.78	4429K286	93.40	4429K469	170.39	4429K197	267.24	4429K466	149.24

♠ Does not meet ANSI/ASME B16.15 or B1.20.1.

90° Reducing Elbows

Pipe Size (A)	(B)			Pipe Size (A)	(B)			Pipe Size (A)	(B)			Pipe Size (A)	(B)		
1/4	1/8	4429K131	$10.14	3/4	1/4	4429K136	$12.98	1 1/4	3/4	4429K172	$34.59	2	1	4429K177	$74.84
3/8	1/8	4429K132	10.14	3/4	3/8	4429K137	12.98	1 1/4	1	4429K173	34.59	2	1 1/4	4429K178	74.84
3/8	1/4	4429K133	10.14	3/4	1/2	4429K138	12.98	1 1/2	3/4	4429K174	41.96	2	1 1/2	4429K179	74.84
1/2	1/4	4429K134	10.92	1	1/2	4429K139	22.75	1 1/2	1	4429K175	41.96	2 1/2	2	4429K181	132.71
1/2	3/8	4429K135	10.92	1	3/4	4429K141	22.75	1 1/2	1 1/4	4429K176	41.96	3	2	4429K182	204.13

(Continued on following page)

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Brass Threaded Pipe Fittings

(Continued from previous page)

Right-Angle Reducing Tees

Pipe Size (A)	Pipe Size (B)		
1/2	1/4	4429K227	$12.78
1/2	3/8	4429K332	11.31
1/2	3/4	4429K231	15.18
3/4	1/2	4429K233	14.27
3/4	1	4429K237	32.92
3/4	1 1/4	4429K382	49.48
1	1/2	4429K239	33.35
1	3/4	4429K241	32.28
1	1 1/2	4429K385	72.20
1 1/4	1/2	4429K383	45.26
1 1/4	3/4	4429K337	46.02
1 1/4	1	4429K336	46.82
1 1/2	1/2	4429K343	63.45
1 1/2	3/4	4429K386	64.54
1 1/2	1	4429K342	62.39
2	3/4	4429K344	101.52
2	1	4429K392	103.24
2	1 1/2	4429K391	102.37

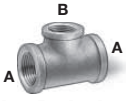

Inline Reducing Tees

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4429K223	$11.87
3/8	1/4	4429K224	11.87
3/8	1/2	4429K225	14.04
1/2	1/4	4429K226	11.87
1/2	3/8	4429K377	11.31
1/2	3/4	4429K228	15.24
3/4	1/4	4429K229	14.27
3/4	3/8	4429K333	13.60
3/4	1/2	4429K232	14.27
3/4	1	4429K234	32.92
1	1/4	4429K235	30.91
1	1/2	4429K236	30.91
1	3/4	4429K238	30.92
1	1 1/2	4429K334	72.27
1 1/4	1/2	4429K242	42.14
1 1/4	3/4	4429K381	41.97
1 1/4	1	4429K379	$41.97
1 1/4	1 1/2	4429K378	72.24
1 1/2	1/2	4429K384	57.85
1 1/2	3/4	4429K341	57.85
1 1/2	1	4429K339	57.85
1 1/2	2	4429K338	111.00
2	1/2	4429K389	94.13
2	3/4	4429K243	94.13
2	1	4429K244	94.13
2	1 1/4	4429K388	94.13
2	1 1/2	4429K387	94.13
2 1/2	3/4	4429K393	197.83
2 1/2	1 1/2	4429K346	197.01
2 1/2	2	4429K345	196.19
3	1	4429K348	295.78
3	2	4429K347	274.25

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4429K731	$6.80
3/8	1/8	4429K349	6.48
3/8	1/4	4429K732	6.80
1/2	1/8	4429K733	8.41
1/2	1/4	4429K734	6.80
1/2	3/8	4429K736	6.80
3/4	1/4	4429K738	9.07
3/4	3/8	4429K735	9.07
3/4	1/2	4429K737	9.07
1	1/4	4429K371	16.14
1	3/8	4429K751	16.95
1	1/2	4429K741	14.76
1	3/4	4429K742	14.76
1 1/4	1/2	4429K372	32.87
1 1/4	3/4	4429K761	32.30
1 1/4	1	4429K743	32.37
1 1/2	1/2	4429K752	$41.06
1 1/2	3/4	4429K746	41.05
1 1/2	1	4429K744	37.50
1 1/2	1 1/4	4429K745	37.50
2	1/2	4429K373	62.58
2	3/4	4429K749	63.50
2	1	4429K762	63.50
2	1 1/4	4429K763	58.21
2	1 1/2	4429K748	58.21
2 1/2	1 1/4	4429K764	106.85
2 1/2	1 1/2	4429K374	97.51
2 1/2	2	4429K747	97.98
3	2	4429K765	125.52
3	2 1/2	4429K766	125.52
4	2	4429K376	289.11
4	3	4429K375	289.11

Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4429K521	$3.20
3/8	1/4	4429K522	3.19
1/2	3/8	4429K524	3.46
3/4	1/2	4429K527	4.46

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4429K411	$1.43
3/8	1/8	4429K471	1.42
3/8	1/4	4429K412	1.91
1/2	1/8	4429K421	2.68
1/2	1/4	4429K422	2.30
1/2	3/8	4429K413	3.06
3/4	1/8	4429K439	5.74
3/4	1/4	4429K423	4.58
3/4	3/8	4429K418	4.33
3/4	1/2	4429K414	4.40
1	1/8	4429K271	9.15
1	1/4	4429K461	9.01
1	3/8	4429K272	9.15
1	1/2	4429K424	7.97
1	3/4	4429K415	7.96
1 1/4	1/8	4429K295	13.10
1 1/4	1/4	4429K292	13.01
1 1/4	3/8	4429K273	17.08
1 1/4	1/2	4429K462	14.90
1 1/4	3/4	4429K472	13.62
1 1/4	1	4429K416	13.60
1 1/2	1/8	4429K293	15.23
1 1/2	1/4	4429K429	19.93
1 1/2	3/8	4429K294	13.10
1 1/2	1/2	4429K436	$17.88
1 1/2	3/4	4429K425	19.34
1 1/2	1	4429K426	19.34
1 1/2	1 1/4	4429K417	19.34
2	1/8	4429K296	19.16
2	1/4	4429K274	23.95
2	3/8	4429K297	16.17
2	1/2	4429K463	23.91
2	3/4	4429K441	24.25
2	1	4429K473	23.87
2	1 1/4	4429K474	23.87
2	1 1/2	4429K427	23.87
2 1/2	3/4	4429K394	40.80
2 1/2	1	4429K442	59.90
2 1/2	1 1/4	4429K475	57.71
2 1/2	1 1/2	4429K395	40.80
2 1/2	2	4429K428	57.70
3	1	4429K275	86.14
3	1 1/4	4429K276	86.14
3	1 1/2	4429K443	94.95
3	2	4429K476	85.79
3	2 1/2	4429K477	85.79
3 1/2	3	4429K277	183.57
4	3 1/2	4429K478	221.61

Flanges

Also known as Class 150 flanges, these have a flat surface on the back. Bolt two same-size flanges together with a gasket (not included) to create easy access to your pipe. They meet ANSI/ASME B16.24. For gaskets, see pages 3474-3480; for bolts, see page 3152.

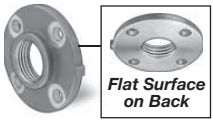

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.		
1/2	3 1/2″	4	1/2″	4429K551	$92.97
3/4	3 7/8″	4	1/2″	4429K552	119.50
1	4 1/4″	4	1/2″	4429K553	130.92
1 1/4	4 5/8″	4	1/2″	4429K554	163.56
1 1/2	5″	4	1/2″	4429K555	189.63
2	6″	4	5/8″	4429K556	$242.09
2 1/2	7″	4	5/8″	4429K557	311.26
3	7 1/2″	4	5/8″	4429K558	370.76
4	9″	8	5/8″	4429K559	531.10

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

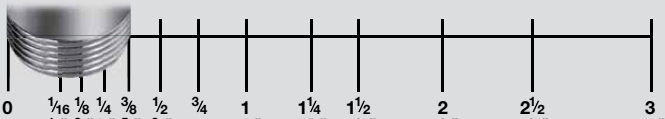

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Brass Threaded Pipe Nipples and Pipe CAD

Fully Threaded

Threaded on Both Ends

- Use with air, drinking (potable) water, oil, natural gas, steam
- Fittings: Use threaded Class 125 low-pressure brass (see pages 29-31)
- Flanges: Use threaded Class 150 low-pressure brass (see page 31)

Our threaded brass nipples and pipe are also known as Schedule 40 and regular nipples and pipe. All are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2011. They have seamless construction for unrestricted flow. All meet ASTM B687.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	4568K111	$1.41
1/4	7/8″	4568K131	1.66
3/8	1″	4568K151	1.72
1/2	1 1/8″	4568K171	2.29
3/4	1 3/8″	4568K191	3.32
1	1 1/2″	4568K221	4.89
1 1/4	1 5/8″	4568K241	7.17
1 1/2	1 3/4″	4568K261	9.56
2	2″	4568K281	14.56
2 1/2	2 1/2″	4568K301	35.41
3	2 5/8″	4568K311	48.16
4	2 7/8″	4568K321	72.43

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	4568K112	$1.60	4568K113	$1.71	4568K114	$1.96	4568K115	$2.11	4568K116	$2.27
1/4	4568K132	1.93	4568K133	2.17	4568K134	2.35	4568K135	2.77	4568K136	3.02
3/8	4568K152	2.02	4568K153	2.47	4568K154	2.68	4568K155	3.29	4568K156	3.53
1/2	4568K172	2.65	4568K173	3.13	4568K174	3.71	4568K175	4.34	4568K176	4.97
3/4	4568K199	3.52	4568K192	4.16	4568K193	4.82	4568K194	5.57	4568K195	6.24
1	—	—	4568K222	6.01	4568K223	7.03	4568K224	8.08	4568K225	9.35
1 1/4	—	—	4568K242	8.41	4568K243	9.49	4568K244	11.24	4568K245	13.15
1 1/2	—	—	4568K262	10.28	4568K263	12.32	4568K264	14.17	4568K265	16.28
2	—	—	—	—	4568K282	15.71	4568K283	18.15	4568K284	20.90
2 1/2	—	—	—	—	—	—	4568K302	37.02	4568K303	41.93
3	—	—	—	—	—	—	4568K312	49.74	4568K313	56.60
4	—	—	—	—	—	—	4568K322	73.57	4568K323	82.59

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		4 1/2″ Lengths		5″ Lengths		5 1/2″ Lengths		6″ Lengths		6 1/2″ Lengths	
1/8	4568K117	$2.56	4568K331	$2.89	4568K119	$3.14	4568K351	$3.38	4568K122	$3.61	4568K391	$4.32
1/4	4568K137	3.53	4568K138	3.83	4568K139	4.20	4568K352	4.52	4568K142	5.09	4568K392	5.83
3/8	4568K157	4.22	4568K158	4.49	4568K159	4.92	4568K353	5.34	4568K162	5.80	4568K393	7.03
1/2	4568K177	5.70	4568K334	6.18	4568K179	6.82	4568K354	7.48	4568K182	8.29	4568K394	9.61
3/4	4568K196	7.27	4568K335	7.90	4568K198	8.72	4568K355	9.53	4568K211	10.61	4568K395	12.42
1	4568K226	10.53	4568K336	11.73	4568K228	12.96	4568K356	14.21	4568K231	15.50	4568K396	18.09
1 1/4	4568K246	14.80	4568K337	16.41	4568K248	18.09	4568K357	19.78	4568K251	21.58	4568K397	25.48
1 1/2	4568K266	18.45	4568K338	20.75	4568K268	22.95	4568K358	25.08	4568K271	27.26	4568K398	29.35
2	4568K285	23.72	4568K339	26.47	4568K287	29.35	4568K359	29.66	4568K289	32.27	4568K399	37.77
2 1/2	4568K304	46.63	4568K341	49.74	4568K305	55.01	4568K361	59.24	4568K306	64.87	4568K411	73.90
3	4568K314	63.73	4568K342	70.07	4568K315	77.09	4568K362	83.76	4568K316	91.06	4568K412	106.25
4	4568K324	94.20	4568K343	101.75	4568K325	109.51	4568K363	113.84	4568K326	125.71	4568K413	144.31

Pipe Size	7″ Lengths		8″ Lengths		9″ Lengths		10″ Lengths		11″ Lengths		12″ Lengths	
1/8	4568K371	$4.32	4568K124	$4.73	4568K511	$5.81	4568K125	$6.40	4568K711	$6.93	4568K126	$7.35
1/4	4568K372	5.83	4568K144	6.36	4568K512	7.08	4568K145	7.78	4568K712	8.47	4568K146	9.20
3/8	4568K373	7.03	4568K164	7.87	4568K513	9.31	4568K165	9.37	4568K713	10.22	4568K166	11.10
1/2	4568K374	9.61	4568K184	10.76	4568K514	11.95	4568K185	13.21	4568K714	14.44	4568K186	15.70
3/4	4568K375	12.42	4568K213	14.56	4568K515	15.50	4568K214	17.09	4568K715	18.63	4568K215	20.32
1	4568K376	18.09	4568K233	20.66	4568K516	23.04	4568K234	25.57	4568K716	27.59	4568K235	30.48
1 1/4	4568K377	25.48	4568K253	28.85	4568K517	31.52	4568K254	32.88	4568K717	37.63	4568K255	39.32
1 1/2	4568K378	29.35	4568K273	33.33	4568K518	37.32	4568K274	41.30	4568K718	45.29	4568K275	49.27
2	4568K379	37.77	4568K292	43.07	4568K519	48.02	4568K293	53.32	4568K719	57.62	4568K294	63.62
2 1/2	4568K381	73.90	4568K307	84.87	4568K611	94.20	4568K308	101.42	4568K811	112.17	4568K309	116.90
3	4568K382	106.25	4568K317	115.00	4568K612	125.92	4568K318	139.70	4568K812	151.91	4568K319	167.32
4	4568K383	144.31	4568K327	163.70	4568K613	183.07	4568K328	202.46	4568K813	221.88	4568K329	238.87

To Order: Please specify length.

Pipe Size		14″ Lengths	16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths
1/8	4512K45	$8.07	$9.22	$10.10	$11.51	$12.69	$13.43	$20.21	$26.99	$33.61	$40.34
1/4	4512K46	10.06	11.49	12.58	14.35	15.81	16.75	25.17	33.56	41.97	50.36
3/8	4512K85	12.15	13.88	15.12	17.38	19.09	20.26	30.34	40.52	50.71	60.86
1/2	4512K48	17.21	19.68	21.50	24.58	27.06	28.73	43.11	57.41	71.87	86.22
3/4	4512K49	22.28	25.44	27.83	31.80	34.97	37.15	55.77	74.35	92.92	111.49
1	4512K75	33.37	38.15	41.84	47.68	52.44	55.77	83.50	111.44	123.85	148.63
1 1/4	4512K76	46.76	53.42	58.60	66.79	73.45	78.07	117.03	138.74	173.42	208.13
1 1/2	4512K77	58.56	66.93	73.32	83.65	92.05	97.75	130.39	173.84	217.27	273.79
2	4512K78	75.61	86.42	94.69	97.21	106.92	112.19	168.33	224.45	252.47	302.93
2 1/2	4512K79	131.66	150.46	162.59	188.08	206.88	216.81	293.08	390.78	569.16	574.68

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Chrome-Plated Brass Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 200 psi @ 72° F; 125 psi @ 400° F for steam
- Pipe Nipples: Use threaded Schedule 40 standard-wall chrome-plated brass (see below)

The polished chrome plating not only looks great but also improves corrosion resistance. Commonly called Class 125, these brass fittings meet ASTM B456. They also meet ASTM B584 or B16 (except reducing bushings), as well as ANSI/ASME B16.15 (except unions and locknuts).

The ***90° female×male elbows*** are also known as street elbows. ***Square-head plugs*** are solid. ***Reducing bushings*** are also known as face bushings.

Connections: NPT.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		45° Elbows, Female×Male		Tees		Crosses	
1/8	9162K111	$15.57	9162K131	$20.85	9162K121	$19.17	9162K211	$23.06	9162K141	$18.30	9162K151	$32.74
1/4	9162K112	15.83	9162K132	21.20	9162K122	19.50	9162K212	23.42	9162K142	18.61	9162K152	33.22
3/8	9162K113	16.10	9162K133	21.57	9162K123	19.83	9162K213	23.80	9162K143	18.93	9162K153	33.71
1/2	9162K114	16.39	9162K134	21.95	9162K124	20.18	9162K214	24.19	9162K144	19.26	9162K154	34.21
3/4	9162K115	20.37	9162K135	28.02	9162K125	25.49	9162K215	33.26	9162K145	25.37	9162K155	48.12
1	9162K116	33.14	9162K136	37.83	9162K126	35.67	9162K216	46.12	9162K146	37.83	9162K156	69.24

Pipe Size	Unions		Couplings		Caps		Square-Head Plugs		Locknuts	
1/8	9162K471	$33.50	9162K311	$13.01	9162K161	$8.42	9162K191	$8.68	9162K181	$7.23
1/4	9162K472	33.95	9162K312	13.23	9162K162	8.54	9162K192	8.77	9162K182	7.31
3/8	9162K473	34.41	9162K313	13.46	9162K163	8.66	9162K193	8.87	9162K183	7.39
1/2	9162K474	34.88	9162K314	13.70	9162K164	8.78	9162K194	13.46	9162K184	10.17
3/4	9162K475	47.06	9162K315	19.05	9162K165	13.54	9162K195	16.20	9162K185	12.20
1	9162K476	62.10	9162K316	30.51	9162K166	15.93	9162K196	22.01	9162K186	18.30

Reducing Bushings, Male×Female

Pipe Size (A)	(B)		
1/4	1/8	9162K241	$3.75
3/8	1/4	9162K243	3.81
1/2	3/8	9162K244	5.40
3/4	3/8	9162K245	7.64
3/4	1/2	9162K246	7.75

Reducing Couplings

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
1/4	1/8	9162K261	$16.10	3/4	1/4	9162K271	$23.13
3/8	1/4	9162K263	16.39	3/4	3/8	9162K265	20.37
1/2	1/8	9162K262	17.27	3/4	1/2	9162K266	20.37
1/2	1/4	9162K267	15.07	1	1/2	9162K272	37.55
1/2	3/8	9162K264	16.20	1	3/4	9162K269	37.92

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
1/4	1/8	9162K221	$3.87	3/4	1/4	9162K232	$13.18
3/8	1/8	9162K222	4.00	3/4	3/8	9162K225	13.86
3/8	1/4	9162K223	4.13	3/4	1/2	9162K226	14.10
1/2	1/8	9162K227	12.97	1	1/4	9162K233	17.71
1/2	1/4	9162K228	10.33	1	1/2	9162K234	18.00
1/2	3/8	9162K224	11.11	1	3/4	9162K229	19.05
3/4	1/8	9162K231	12.97				

Standard-Wall Chrome-Plated Brass Threaded Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 125 low-pressure chrome-plated brass (see above)

Also known as Schedule 40 and regular nipples, these are brass with a polished chrome plating that provides extra corrosion resistance. They are threaded and have seamless construction for unrestricted flow. Meet ASTM B43, B456, and B687.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	9176K111	$5.32
1/4	7/8″	9176K112	5.98
3/8	1″	9176K113	4.21
1/2	1 1/8″	9176K114	5.21
3/4	1 3/8″	9176K115	11.46
1	1 1/2″	9176K116	15.19

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		3″ Lengths		3 1/2″ Lengths		4″ Lengths	
1/8	9176K121	$5.98	9176K131	$6.42	9176K141	$7.86	9176K221	$9.21	9176K151	$9.53
1/4	9176K122	6.92	9176K132	7.78	9176K142	9.88	9176K222	12.11	9176K152	12.67
3/8	9176K123	4.75	9176K133	5.67	9176K143	7.59	9176K223	9.35	9176K153	9.78
1/2	9176K124	5.97	9176K134	7.14	9176K144	9.95	9176K224	12.44	9176K154	12.94
3/4	9176K125	12.11	9176K135	14.53	9176K145	19.34	9176K225	24.02	9176K155	25.21
1	_____	____	9176K136	18.64	9176K146	24.79	9176K226	28.66	9176K156	32.22

THREADED ON BOTH ENDS

Pipe Size	4 1/2″ Lengths		5″ Lengths		6″ Lengths		8″ Lengths		10″ Lengths		12″ Lengths	
1/8	9176K231	$11.65	9176K161	$11.69	9176K171	$13.53	9176K181	$17.71	9176K191	$21.34	9176K211	$25.01
1/4	9176K232	15.49	9176K162	15.64	9176K172	18.25	9176K182	23.80	9176K192	29.03	9176K212	34.27
3/8	9176K233	11.83	9176K163	12.10	9176K173	14.25	9176K183	21.54	9176K193	25.64	9176K213	30.35
1/2	9176K234	15.41	9176K164	15.86	9176K174	18.82	9176K184	27.78	9176K194	34.08	9176K214	40.45
3/4	9176K235	30.33	9176K165	30.99	9176K175	36.73	9176K185	49.71	9176K195	60.61	9176K215	72.02
1	9176K236	35.91	9176K166	39.64	9176K176	47.20	9176K186	63.02	9176K196	77.83	9176K216	92.67

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Thick-Wall Brass Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 400 psi @ 72° F; 250 psi @ 400° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall brass (see pages 29 and 32) or threaded Schedule 80 thick-wall brass (see below)

Also known as Class 250 fittings, these threaded brass fittings have thicker walls to withstand higher pressures than the low-pressure fittings on pages 30-31. All meet ASTM B584, as well as ANSI/ASME B.16.15 and B1.20.1.

Connections: NPT.

Pipe Size	90° Elbows		45° Elbows		Tees		Crosses		Unions		Couplings		Caps	
1/4	9152K11	$14.86	—	—	9152K76	$23.29	—	—	9152K61	$34.02	9152K51	$18.30	—	—
3/8	9152K12	14.86	—	—	9152K31	23.29	—	—	9152K62	38.89	9152K52	18.30	—	—
1/2	9152K13	21.79	—	—	9152K32	26.27	9152K77	$44.84	9152K63	34.02	9152K53	21.87	9152K71	$25.63
3/4	9152K14	29.40	9152K21	$31.00	9152K33	42.73	9152K41	65.32	9152K64	48.25	9152K54	32.34	9152K72	32.34
1	9152K15	43.73	9152K22	54.31	9152K34	58.31	9152K42	102.50	9152K65	74.63	9152K55	49.08	9152K73	49.08
1 1/4	9152K16	78.39	9152K23	82.23	9152K35	107.92	9152K43	131.71	9152K66	103.78	9152K56	71.09	9152K74	70.46
1 1/2	9152K17	105.84	9152K24	112.72	9152K36	141.04	9152K44	203.50	9152K67	108.38	9152K57	90.15	9152K78	88.53
2	9152K18	176.27	9152K25	183.86	9152K37	204.87	9152K45	309.66	9152K68	171.17	9152K58	130.44	9152K75	130.44

Thick-Wall Brass Threaded Pipe Nipples and Pipe

Fully Threaded

Threaded on Both Ends

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 250 low-pressure brass (see above)

You may know these as Schedule 80 and extra-heavy pipe nipples and pipe—they have thicker walls than standard-wall pipe to handle high-pressure applications. All have seamless construction for unrestricted flow. Meet ASTM B43. Lengths up to 12″ also meet ASTM B687 and ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	9149K11	$3.51
1/4	7/8″	9149K12	4.11
3/8	1″	9149K13	4.26
1/2	1 1/8″	9149K14	5.69
3/4	1 3/8″	9149K15	8.12
1	1 1/2″	9149K16	11.96
1 1/4	1 5/8″	9149K17	18.05
1 1/2	1 3/4″	9149K18	23.48
2	2″	9149K19	36.14
2 1/2	2 1/2″	9149K491	90.26

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	9149K21	$3.96	9149K31	$4.23	9149K41	$4.80	9149K51	$5.17	9149K71	$5.59
1/4	9149K22	4.71	9149K32	5.39	9149K42	5.77	9149K52	6.85	9149K72	7.39
3/8	9149K23	4.88	9149K33	6.07	9149K43	6.57	9149K53	8.13	9149K73	8.68
1/2	9149K24	6.51	9149K34	7.66	9149K44	9.10	9149K54	10.70	9149K74	12.21
3/4	9149K25	8.66	9149K35	10.22	9149K45	11.87	9149K55	13.66	9149K75	15.34
1	—	—	9149K36	14.75	9149K46	17.23	9149K56	19.83	9149K76	22.98
1 1/4	—	—	9149K37	20.62	9149K47	23.32	9149K57	27.60	9149K77	30.90
1 1/2	—	—	9149K38	25.27	9149K48	28.96	9149K58	35.16	9149K78	40.37
2	—	—	—	—	9149K49	39.03	9149K59	45.04	9149K79	51.83
2 1/2	—	—	—	—	—	—	9149K591	94.37	9149K791	106.90

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		5″ Lengths		6″ Lengths		8″ Lengths		10″ Lengths		12″ Lengths	
1/8	9149K61	$6.27	9149K81	$7.68	9149K91	$8.89	9149K26	$11.64	9149K121	$15.67	9149K131	$18.08
1/4	9149K62	8.68	9149K82	10.28	9149K92	12.52	9149K27	15.64	9149K122	19.09	9149K132	22.56
3/8	9149K63	10.34	9149K83	12.07	9149K93	14.19	9149K28	19.32	9149K123	23.00	9149K133	27.24
1/2	9149K64	14.00	9149K84	16.72	9149K94	20.35	9149K29	26.42	9149K124	31.02	9149K134	39.03
3/4	9149K65	17.84	9149K85	21.41	9149K95	26.06	9149K39	32.88	9149K125	42.42	9149K135	50.46
1	9149K66	25.83	9149K86	30.47	9149K96	38.43	9149K111	51.27	9149K126	60.04	9149K136	71.59
1 1/4	9149K67	36.77	9149K87	44.87	9149K97	53.62	9149K112	67.79	9149K127	83.81	9149K137	99.74
1 1/2	9149K68	45.82	9149K88	56.95	9149K98	64.01	9149K113	84.99	9149K128	105.30	9149K138	119.19
2	9149K69	58.92	9149K89	68.91	9149K99	82.29	9149K114	109.78	9149K129	128.99	9149K139	153.87
2 1/2	9149K691	118.84	9149K891	133.08	9149K991	156.91	9149K115	205.30	9149K141	239.51	9149K142	283.12

Pipe Size	18″ Lengths		24″ Lengths		36″ Lengths		48″ Lengths		60″ Lengths		72″ Lengths	
1/8	5085T11	$31.10	5085T21	$41.50	5085T31	$62.31	5085T41	$83.00	5085T51	$103.81	5085T61	$113.29
1/4	5085T12	38.63	5085T22	51.50	5085T32	77.26	5085T42	103.03	5085T52	117.08	5085T62	140.48
3/8	5085T13	46.73	5085T23	62.31	5085T33	93.42	5085T43	113.18	5085T53	141.50	5085T63	169.82
1/2	5085T14	66.14	5085T24	88.23	5085T34	120.23	5085T44	160.33	5085T54	199.74	5085T64	215.99
3/4	5085T15	85.52	5085T25	103.73	5085T35	155.61	5085T45	207.45	5085T55	232.88	5085T65	279.43
1	5085T16	116.70	5085T26	155.57	5085T36	209.51	5085T46	279.38	5085T56	349.22	5085T66	425.90
1 1/4	5085T17	163.38	5085T27	217.90	5085T37	293.44	5085T47	391.26	5085T57	489.08	5085T67	586.90
1 1/2	5085T18	202.55	5085T28	242.53	5085T38	363.72	5085T48	484.96	5085T58	606.23	5085T68	685.52
2	5085T19	234.77	5085T29	312.98	5085T39	469.47	5085T49	625.99	5085T59	737.38	5085T69	884.80

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Medium-Pressure Plated Brass Threaded Pipe Fittings

- Use with air, water, oil, natural gas
- Maximum Pressure: 1,000 psi @ 72° F

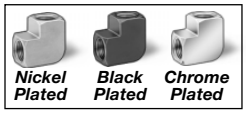

Plating offers more than just good looks—it also provides longer life in corrosive environments than unplated brass.

The ***90° female × male elbows*** are also called street elbows. ***Hex-head plugs*** and ***hex-socket plugs*** are hollow. ***Fully threaded nipples*** are also called close nipples; they are threaded on each end to the center.

Nickel plating has better corrosion resistance than unplated brass. ***Black zinc plating*** has a shiny finish that offers more corrosion resistance than nickel plating and stands up to salt spray applications. ***Chrome plating*** is applied over a nickel base coat, giving these fittings a mirror-like finish that has better corrosion resistance than nickel- and black-plated fittings. **To Order:** Please specify nickel, black, or chrome plating.

Connections: NPTF (Dryseal), which are compatible with NPT.

90° Elbows

Pipe Size		Nickel	Black	Chrome
1/8	2743K11	$3.86	$4.38	$5.02
1/4	2743K12	5.20	5.87	7.71
3/8	2743K13	6.15	7.12	7.71
1/2	2743K14	10.50	12.19	13.33

90° Elbows, Female × Male

	Nickel	Black	Chrome
2743K16	$4.74	$5.13	$5.65
2743K17	5.27	5.87	6.55
2743K18	7.82	8.37	9.74
2743K19	12.60	13.85	15.15

45° Elbows, Female × Male

	Nickel	Black	Chrome
2743K31	$3.98	$4.67	$5.31
2743K32	4.99	5.74	6.69
2743K33	6.02	6.74	7.09
2743K34	9.26	9.83	11.00

Tees

Pipe Size		Nickel	Black	Chrome
1/8	2743K41	$4.57	$5.13	$5.73
1/4	2743K42	5.39	6.38	7.20
3/8	2743K43	7.14	8.16	9.29
1/2	2743K44	11.09	12.98	14.76

Tees, Female × Female × Male

	Nickel	Black	Chrome
2743K51	$4.16	$4.92	$5.57
2743K52	5.86	6.98	7.82
2743K53	9.33	10.35	12.03
2743K54	13.81	15.31	16.88

Caps

	Nickel	Black	Chrome
2743K85	$2.86	$3.26	$3.60
2743K97	3.57	4.06	4.72
2743K98	7.55	8.69	9.65
2743K99	8.81	9.73	10.54

Hex Couplings

Pipe Size		Nickel	Black	Chrome
1/8	2743K61	$2.67	$3.07	$3.57
1/4	2743K62	3.41	3.93	4.57
3/8	2743K63	4.00	4.60	5.34
1/2	2743K64	5.71	6.27	7.31

Hex-Head Plugs

	Nickel	Black	Chrome
2743K71	$2.02	$2.41	$2.70
2743K72	2.24	2.77	3.01
2743K73	2.70	3.08	3.62
2743K74	3.49	4.05	4.40

Hex-Socket Plugs

Hex Key Size		Nickel	Black	Chrome
3/16"	2743K81	$2.17	$2.51	$2.91
1/4"	2743K82	2.60	3.00	3.49
5/16"	2743K83	3.66	4.21	4.92
3/8"	2743K84	3.66	4.21	5.11

Adapters, Female × Male

Pipe Size (A)	(B)		Nickel	Black	Chrome
1/8	1/8	2743K21	$2.29	$2.88	$3.08
1/4	1/8	2743K22	2.91	3.38	3.75
1/4	1/4	2743K23	3.21	3.72	4.23
3/8	1/8	2743K24	6.58	7.29	7.85
3/8	1/4	2743K25	3.75	4.38	5.02
3/8	3/8	2743K26	4.29	4.91	5.59
1/2	1/4	2743K27	5.97	6.79	7.43
1/2	3/8	2743K28	5.67	6.52	7.37
1/2	1/2	2743K29	5.86	6.58	7.68

Hex Reducing Nipples

Pipe Size (A)	(B)		Nickel	Black	Chrome
1/4	1/8	2743K36	$2.57	$3.16	$3.44
3/8	1/8	2743K37	4.36	4.99	5.74
3/8	1/4	2743K38	3.32	3.83	4.44
1/2	1/8	—	—	—	—
1/2	1/4	2743K39	5.33	6.13	7.14
1/2	3/8	—	—	—	—

Hex Reducing Bushings, Male × Female

	Nickel	Black	Chrome
2743K91	$2.17	$2.51	$2.90
2743K92	2.91	3.35	3.89
2743K93	2.49	2.74	3.30
2743K94	3.77	4.43	5.03
2743K95	3.22	3.71	4.33
2743K96	2.89	3.32	3.86

Hex Nipples

Pipe Size		Nickel	Black	Chrome
1/8	2743K86	$2.27	$2.61	$3.03
1/4	2743K87	2.67	3.05	3.58
3/8	2743K88	3.16	3.61	4.22
1/2	2743K89	4.52	5.24	5.69

Fully Threaded Nipples

Pipe Size	Lg.		Nickel	Black	Chrome
1/8	3/4"	2743K76	$1.99	$2.29	$2.57
1/4	7/8"	2743K77	2.29	2.63	3.10
3/8	1"	2743K78	2.54	2.92	3.44
1/2	1 1/8"	2743K79	3.85	4.21	4.71

NIPPLES, THREADED ON BOTH ENDS

Pipe Size	1 1/2" Lengths	Nickel	Black	Chrome	2" Lengths	Nickel	Black	Chrome
1/8	2743K56	$2.39	$2.77	$3.27	2743K46	$2.93	$3.42	$3.98
1/4	2743K57	2.79	3.36	3.81	2743K47	3.10	3.71	4.23
3/8	2743K58	3.40	3.65	4.27	2743K48	4.21	4.84	5.56
1/2	2743K59	4.58	5.29	6.04	2743K49	5.24	6.03	6.98

Pipe Size	3" Lengths	Nickel	Black	Chrome	4" Lengths	Nickel	Black	Chrome
1/8	2743K35	$3.42	$3.93	$4.68	2743K66	$5.30	$6.09	$7.23
1/4	2743K45	4.06	4.68	5.40	2743K67	7.56	8.16	9.16
3/8	2743K55	6.57	7.40	8.24	2743K68	9.77	10.48	11.57
1/2	2743K65	8.28	9.16	10.15	2743K69	11.22	12.90	14.48

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Medium-Pressure Brass Threaded Pipe Fittings

- Use with air, water, oil, natural gas
- Maximum Pressure: 1,000 psi @ 72° F

A great choice when you want brass fittings that can handle moderate pressure, but you don't want to break the bank.

90° female×male elbows are also called street elbows. ***Reducing bushings*** are also called face bushings. ***Through-wall couplings*** are also called bulkhead fittings and panel-mount couplings; they include a nut and a lockwasher. ***Fully threaded nipples***, also called close nipples, are threaded on each end to the center.

Connections: NPT.

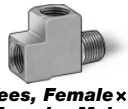

Pipe Size	90° Elbows, Female		90° Elbows, Male		90° Elbows, Female×Male		45° Elbows, Female×Male		Tees		Tees, Female×Female×Male	
1/8	50785K35	$2.67	50785K122	$2.46	50785K41	$1.73	50785K81	$3.30	50785K75	$3.50	50785K219	$2.62
1/4	50785K36	3.77	50785K123	4.31	50785K43	2.36	50785K82	3.73	50785K72	5.62	50785K222	4.60
3/8	50785K37	4.33	50785K124	7.35	50785K44	4.12	50785K83	4.30	50785K73	6.69	50785K223	6.75
1/2	50785K38	7.63	50785K125	9.54	50785K45	7.07	50785K84	6.35	50785K74	12.42	50785K224	12.00
3/4	50785K39	14.97	—	—	50785K46	13.23	50785K333	14.26	50785K76	15.43	50785K339	24.07
1/4 × 1/8	—	—	—	—	50785K42♥	3.83	—	—	—	—	—	—

♥ Female end is 1/4 pipe size, male end is 1/8 pipe size.

Pipe Size	Tees, Female×Male×Female		Crosses		Unions		Hex Couplings		Caps		Locknuts	
1/8	50785K321	$3.10	50785K232	$8.79	50785K242	$19.24	50785K91	$1.14	50785K161	$0.85	50785K141	$1.67
1/4	50785K322	4.57	50785K233	9.57	50785K243	18.36	50785K92	1.42	50785K162	1.31	50785K142	2.30
3/8	50785K323	6.09	50785K234	13.48	50785K244	18.41	50785K93	2.62	50785K163	1.69	50785K143	2.85
1/2	50785K324	8.82	50785K235	22.20	50785K245	26.06	50785K94	3.23	50785K164	2.39	50785K144	3.52
3/4	50785K216	18.64	50785K236	37.96	50785K246	30.54	50785K95	5.08	50785K165	4.23	50785K145	4.13

Pipe Size	SQUARE-HEAD PLUGS Hollow		SQUARE-HEAD PLUGS Solid		HEX-HEAD PLUGS Hollow		HEX-HEAD PLUGS Solid	
1/8	50785K131	$1.04	50785K252	$0.82	50785K21	$0.77	50785K334	$0.96
1/4	50785K132	1.50	50785K253	1.20	50785K22	1.19	50785K335	1.58
3/8	50785K133	2.27	50785K254	1.58	50785K23	1.73	50785K336	2.39
1/2	50785K255	7.21	50785K135	5.04	50785K24	2.62	50785K337	3.46
3/4	50785K256	10.40	50785K136	8.04	50785K521	4.60	50785K338	6.35
1	50785K134	11.77	—	—	50785K332	11.58	—	—

Hex-Socket Solid Plugs

Pipe Size	Hex Key Size		
1/16	5/32″	50785K267	$0.59
1/8	3/16″	50785K112	.73
1/4	1/4″	50785K113	1.14
3/8	5/16″	50785K114	1.31
1/2	3/8″	50785K115	2.42
3/4	9/16″	50785K116	4.42

Slotted-Head Solid Plugs

Pipe Size		
1/8	50785K137	$1.04
1/4	50785K138	1.62
3/8	50785K139	2.19

Reducing Bushings

Pipe Size (A)	Pipe Size (B)		
3/8	1/4	50785K262	$1.80
1/2	3/8	50785K264	1.62
3/4	1/2	50785K265	2.58

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)			Pipe Size (A)	Pipe Size (B)		
1/8	1/16	50785K259	$2.25	3/4	1/4	50785K68	$5.00
1/4	1/8	50785K61	.96	3/4	3/8	50785K69	4.08
3/8	1/8	50785K62	1.73	3/4	1/2	50785K71	3.23
3/8	1/4	50785K63	1.23	1	1/4	50785K85	11.23
1/2	1/8	50785K64	2.69	1	3/8	50785K77	10.81
1/2	1/4	50785K65	2.38	1	1/2	50785K78	9.92
1/2	3/8	50785K66	1.96	1	3/4	50785K79	8.31
3/4	1/8	50785K67	6.50				

Adapters, Female×Male

Pipe Size (A)	Pipe Size (B)		
1/8	1/8	50785K25	$1.13
1/4	1/8	50785K26	1.46
1/4	1/4	50785K27	2.12
3/8	1/8	50785K612	3.83
3/8	1/4	50785K28	2.58
3/8	3/8	50785K617	2.92
1/2	1/4	50785K614	5.04
1/2	3/8	50785K29	3.96
1/2	1/2	50785K31	4.53
3/4	1/2	50785K626	7.35
3/4	3/4	50785K331	10.54

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	50785K181	$1.73
3/8	1/8	50785K182	3.52
3/8	1/4	50785K183	2.54
1/2	1/8	50785K184	4.08
1/2	1/4	50785K185	3.88
1/2	3/8	50785K186	3.65
3/4	1/2	50785K187	6.81

Through-Wall Couplings

Pipe Size (A)	Thread Size (B)	Hole Size in Wall		
1/8	5/8″-18	5/8″	50785K272	$5.58
1/4	3/4″-16	3/4″	50785K273	7.73
3/8	1″-14	1″	50785K274	10.54
1/2	1 1/8″-14	1 1/8″	50785K275	15.55

(Continued on following page)

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Medium-Pressure Brass Threaded Pipe Fittings *(Continued from previous page)*

Hex Nipples

Pipe Size		
1/8	5485K21	$1.30
1/4	5485K22	2.15
3/8	5485K23	3.08
1/2	5485K24	4.95
3/4	5485K25	7.40
1	5485K26	15.72

Hex Reducing Nipples

Pipe Size (A)	(B)		
1/8	1/16	5485K37	$6.35
1/4	1/8	5485K31	2.13
3/8	1/8	5485K35	3.95
3/8	1/4	5485K32	2.55
1/2	1/4	5485K36	4.91
1/2	3/8	5485K33	4.45
3/4	1/2	5485K34	8.60

Fully Threaded Nipples

Pipe Size	Lg.		
1/16	5/8″	50785K268	$3.40
1/8	3/4″	50785K151	.86
1/4	7/8″	50785K152	1.14
3/8	1″	50785K153	1.98
1/2	1 1/8″	50785K154	2.35
3/4	1 5/16″	50785K155	5.07
1	1 5/16″	50785K156	10.26

PIPE NIPPLES, THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths	
1/16	50785K257	$3.48	50785K258	$3.88
1/8	50785K11	1.78	50785K171	2.06
1/4	50785K12	1.67	50785K172	2.45
3/8	50785K13	2.39	50785K173	3.91
1/2	50785K14	3.43	50785K174	4.58
3/4	50785K15	5.33	50785K175	5.69

Fittings with Thread Sealant

There's no need to search for your thread sealant—we've applied it to the male threads for you.

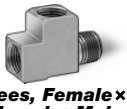

Pipe Size	90° Elbows, Female×Male		45° Elbows, Female×Male		Tees, Female×Female×Male		Tees, Female×Male×Female	
1/8	50785K411	$2.08	50785K811	$3.64	50785K225	$3.19	50785K325	$3.71
1/4	50785K431	2.76	50785K821	4.36	50785K226	5.46	50785K326	5.69
3/8	50785K441	4.76	50785K831	5.35	50785K227	8.25	50785K327	7.79
1/2	50785K451	7.52	50785K841	7.82	50785K228	14.52	50785K328	11.07
3/4	50785K461	15.75	50785K282	16.10	50785K284	23.21	50785K283	19.57
1/4×1/8	50785K916♥	4.17						

♥ Female end is 1/4 pipe size, male end is 1/8 pipe size.

Pipe Size	Square-Head Hollow Plugs		Hex-Head Hollow Plugs	
1/8	50785K287	$1.44	50785K917	$0.97
1/4	50785K288	1.96	50785K221	1.67
3/8	50785K289	2.86	50785K231	2.07
1/2	50785K341	7.55	50785K241	3.20
3/4	50785K342	11.14	50785K166	5.56
1	50785K292	19.06	50785K298	18.76

Hex-Socket Plugs

Pipe Size	Hex Key Size		
1/16	5/32″	50785K167	$0.77
1/8	3/16″	50785K918	1.00
1/4	1/4″	50785K213	1.48
3/8	5/16″	50785K214	2.04
1/2	3/8″	50785K215	3.12
3/4	9/16″	50785K117	5.36

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)		
1/8	1/16	50785K159	$2.94
1/4	1/8	50785K611	1.35
3/8	1/8	50785K621	2.13
3/8	1/4	50785K631	1.52
1/2	1/8	50785K641	3.30
1/2	1/4	50785K919	2.92
1/2	3/8	50785K661	$2.53
3/4	1/8	50785K671	8.29
3/4	1/4	50785K681	6.15
3/4	3/8	50785K691	5.03
3/4	1/2	50785K711	4.11

Adapters, Female×Male

Pipe Size (A)	(B)		
1/8	1/8	50785K251	$1.68
1/4	1/8	50785K261	2.02
1/4	1/4	50785K271	2.63
3/8	1/8	50785K613	4.66
3/8	1/4	50785K281	3.13
3/8	3/8	50785K618	3.57
1/2	1/4	50785K615	5.72
1/2	3/8	50785K291	5.45
1/2	1/2	50785K311	7.24
3/4	1/2	50785K627	8.05
3/4	3/4	50785K299	12.94

Hex Nipples

Pipe Size		
1/8	5485K217	$1.73
1/4	5485K221	2.86
3/8	5485K231	3.38
1/2	5485K241	5.17
3/4	5485K251	8.19
1	5485K252	16.18

Hex Reducing Nipples

Pipe Size (A)	(B)		
1/8	1/16	5485K371	$7.43
1/4	1/8	5485K312	2.41
3/8	1/8	5485K351	4.81
3/8	1/4	5485K321	2.86
1/2	1/4	5485K361	5.29
1/2	3/8	5485K331	4.62
3/4	1/2	5485K341	8.85

Fully Threaded Nipples

Pipe Size	Lg.		
1/16	5/8″	50785K168	$4.42
1/8	3/4″	50785K201	2.98
1/4	7/8″	50785K202	1.68
3/8	1″	50785K203	2.55
1/2	1 1/8″	50785K204	3.09
3/4	1 5/16″	50785K205	5.83

PIPE NIPPLES, THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths	
1/16	50785K157	$4.52	50785K158	$5.16
1/8	50785K911	2.26	50785K207	2.57
1/4	50785K912	2.54	50785K208	2.77
3/8	50785K913	3.18	50785K209	4.49
1/2	50785K915	4.07	50785K211	5.50

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

British Standard Threaded Medium-Pressure Nickel-Plated Brass Pipe Fittings

- Use with air and water
- Maximum Pressure: See table

Use these fittings for an easy connection to other British Standard threads. All are nickel-plated brass (unless noted), which offers more resistance to corrosion than unplated brass. Meet ISO 7.1 and ISO 228 Class A, (unless noted).

90° female × male elbows are also called street elbows. ***Hex-socket plugs*** are solid.

Connections: BSPP (British Standard Pipe Parallel) or BSPT (British Standard Pipe Taper). The male BSPP threads have a rubber seal bonded to a metal washer.

Pipe Size	Max. psi @ 72° F	90° Elbows, BSPP Female		90° Elbows, BSPT Male		90° Elbows, BSPP Female × BSPT Male		Tees, BSPP Female		Tees, BSPT Male		Tees, BSPP Female × BSPT Male × BSPP Female	
1/8	2,900	4860K431	$4.54	4860K411	$8.35	4860K421	$8.54	4860K451	$9.88	4860K441	$9.88	4860K461	$11.26
1/4	2,100	4860K432	11.83	4860K412	10.86	4860K422	11.83	4860K452	14.06	4860K442	14.06	4860K462	14.06
3/8	1,450	4860K433	15.02	4860K413	15.02	4860K428▲	11.23	4860K453	19.61	4860K443	19.59	4860K463	19.59
1/2	1,450	4860K434	24.63	4860K414	24.75	4860K424	23.65	4860K454	34.91	—	—	4860K464	34.30
3/4	1,750	4860K435	31.49	4860K415	35.15	4860K425	31.49	4860K455	40.29	—	—	—	—

▲Does not meet ISO 7.1 or ISO 228 Class A.

Pipe Size (A)	Pipe Size (B)	Max. psi @ 72° F	Hex Couplings, BSPP Female		Hex Nipples, BSPP Male		Hex Nipples, BSPT Male		Hex Bushings, BSPP Male × BSPP Female		Hex Bushings, BSPT Male × BSPP Female	
1/8	1/8	2,900	4860K671	$4.85	4860K601	$5.49	4860K631	$3.46	4860K651	$5.32	—	—
1/4	1/8	2,100	4860K672	6.69	4860K602	7.20	4860K632	4.85	4860K653	5.88	4860K691	$4.40
1/4	1/4	2,100	4860K673	6.34	4860K603	7.26	4860K633	4.85	4860K654	6.91	—	—
3/8	1/8	1,450	4860K674	8.80	4860K604	8.23	4860K634	5.65	4860K656	7.37	4860K692	5.15
3/8	1/4	1,450	4860K675	9.32	4860K605	8.57	4860K635	7.09	4860K657	6.97	4860K593	4.86
3/8	3/8	1,450	4860K676	8.54	4860K606	9.61	4860K636	6.34	4860K658	10.34	—	—
1/2	1/4	1,450	4860K681	10.86	4860K607	12.06	4860K637	9.32	4860K662	10.05	4860K694	7.88
1/2	3/8	1,450	4860K682	13.60	4860K608	12.11	4860K638	9.88	4860K663	9.71	4860K695	7.26
1/2	1/2	1,450	4860K683	14.51	4860K619	14.80	4860K639	9.88	4860K664	16.74	—	—
3/4	1/2	1,750	—	—	4860K622	17.78	—	—	4860K666	19.19	4860K696	12.74

Pipe Size	Max. psi @ 72° F	Hex-Socket Plugs, BSPP Male: Hex Key Size			Hex-Socket Plugs, BSPT Male: Hex Key Size			Caps, BSPP	
1/8	2,900	5 mm	4860K125	$3.74	5 mm	4860K131	$1.80	4860K175	$3.03
1/4	2,100	6 mm	4860K126	5.11	6 mm	4860K132	2.78	4860K176	4.85
3/8	1,450	8 mm	4860K127	5.76	8 mm	4860K133	3.14	4860K177	7.26
1/2	1,450	10 mm	4860K128	9.77	10 mm	4860K134	7.89	4860K178	12.68
3/4	1,750	—	—	—	12 mm	4860K135★	18.17	—	—

★ Made of plain brass.

British Standard Threaded Medium-Pressure Brass Pipe Fittings

- Use with air and water
- Maximum Pressure: See table

Take the challenge out of connecting different thread styles. All are brass and meet ISO 7.1 and ISO 228 Class A.

Hex-head plugs are hollow.

Connections: BSPT (British Standard Pipe Taper), BSPP (British Standard Pipe Parallel), or NPT.

ADAPTERS

Pipe Size	Max. psi @ 72° F	BSPT Male × NPT Male		BSPP Female × NPT Male		NPT Female × BSPT Male	
1/8	2,900	4860K611	$6.75	4860K151	$5.72	4860K141	$4.99
1/4	2,100	4860K612	9.95	4860K152	7.65	4860K142	8.06
3/8	1,450	4860K613	11.49	4860K153	17.42	4860K143	12.11
1/2	1,450	4860K614	17.71	4860K154	25.49	4860K144	19.98
3/4	1,750	4860K615	40.11	4860K155	35.09	4860K145	38.57

HEX-HEAD PLUGS, BSPT MALE

Pipe Size	Max. psi @ 72° F			Pipe Size	Max. psi @ 72° F		
1/8	1,200	4860K115	$5.43	1/2	1,200	4860K118	$12.48
1/4	1,200	4860K116	3.80	3/4	1,200	4860K119	35.06
3/8	1,200	4860K117	10.09				

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Brass Threaded Pipe Fittings

- Use with air, water, oil, natural gas
- Maximum Pressure: See table

Not your average brass pipe fittings—these have the strength to handle high-pressure applications. All meet SAE J476 and ANSI/ASME B1.20.3; they also meet ASTM B16 and B453, or ASTM B124.

90° female×male elbows are also known as street elbows. ***Hex-head plugs*** are hollow, except the 1/8 pipe size is solid.

Connections: NPTF (Dryseal), which are compatible with NPT.

Pipe Size	90° Elbows, Female: Max. psi @ 72° F			90° Elbows, Male: Max. psi @ 72° F			90° Elbows, Female×Male: Max. psi @ 72° F			45° Elbows, Female×Male: Max. psi @ 72° F		
1/8	3,200	4757T21	$7.68	3,900	4757T11	$9.80	3,200	4757T31	$6.10	3,200	4757T131	$6.40
1/4	3,200	4757T22	11.62	3,900	4757T12	13.42	3,200	4757T32	7.82	3,200	4757T132	11.34
3/8	3,000	4757T23	12.70	3,900	4757T13	16.32	3,000	4757T33	10.06	2,900	4757T133	15.02
1/2	1,900	4757T24	15.24	3,900	4757T14	28.80	1,900	4757T34	13.30	1,900	4757T134	19.34
3/4	1,900	4757T25	27.72	2,600	4757T15	41.80	1,900	4757T35	28.16	1,900	4757T135	24.64
1	1,200	4757T141	73.11	—	—	—	1,200	4757T142	59.55	—	—	—

Pipe Size	Tees, Female: Max. psi @ 72° F			Tees, Male: Max. psi @ 72° F			Tees, Female×Female×Male: Max. psi @ 72° F			Tees, Female×Male×Female: Max. psi @ 72° F		
1/8	3,200	4757T41	$8.66	3,900	4757T151	$12.82	3,200	4757T51	$14.06	3,200	4757T155	$14.80
1/4	3,200	4757T42	11.38	3,900	4757T152	13.28	3,200	4757T52	18.04	3,200	4757T156	14.20
3/8	3,000	4757T43	18.62	3,900	4757T153	16.20	3,000	4757T53	25.16	3,000	4757T157	27.92
1/2	1,900	4757T44	19.10	3,900	4757T154	36.90	1,900	4757T54	29.37	1,900	4757T158	35.70
3/4	1,900	4757T45	41.47	—	—	—	—	—	—	—	—	—
1	1,200	4757T149	66.30	—	—	—	—	—	—	—	—	—

Crosses

Pipe Size	Max. psi @ 72° F		
1/8	3,200	4757T159	$23.36
1/4	3,200	4757T161	18.40
3/8	—	—	—
1/2	1,900	4757T162	48.80
3/4	—	—	—
1	—	—	—

Hex-Head Plugs

Max. psi @ 72° F		
3,900	4757T71	$1.36
3,900	4757T72	1.80
3,900	4757T73	2.50
3,900	4757T74	4.76
3,500	4757T75	9.04
3,000	4757T163	19.76

Hex Couplings

Pipe Size (A)	(B)	Max. psi @ 72° F		
1/8	1/8	3,900	4757T61	$3.69
1/4	1/8	3,900	4757T144	8.10
1/4	1/4	3,900	4757T62	6.40
3/8	1/8	3,900	4757T145	24.40
3/8	1/4	3,900	4757T146	13.44
3/8	3/8	3,900	4757T63	15.20
1/2	1/4	3,200	4757T147	18.30
1/2	3/8	3,200	4757T148	30.12
1/2	1/2	3,200	4757T64	12.50
3/4	3/4	2,600	4757T65	20.12

Hex Nipples

Max. psi @ 72° F	Lg.		
3,900	1 1/16″	4757T81	$2.56
3,900	1 1/4″	4757T176	4.72
3,900	1 7/16″	4757T82	2.96
3,900	1 7/16″	4757T177	10.72
3,900	1 7/16″	4757T178	5.86
3,900	1 7/16″	4757T83	4.40
3,900	1 11/16″	4757T181	10.30
3,900	1 11/16″	4757T179	5.58
3,900	1 7/8″	4757T84	5.68
3,500	1 15/16″	4757T85	10.88

Adapters, Female×Male

Pipe Size (A)	(B)	Max. psi @ 72° F		
1/4	1/8	3,900	4757T121	$6.82
1/4	1/4	3,900	4757T165	8.26
3/8	1/4	3,900	4757T122	6.04
3/8	3/8	3,900	4757T166	7.68
1/2	1/8	3,200	4757T164	27.06
1/2	1/4	3,200	4757T123	13.92
1/2	3/8	3,200	4757T124	13.80
1/2	1/2	3,200	4757T167	13.26
3/4	1/4	2,600	4757T125	34.42
3/4	1/2	2,600	4757T126	21.34

LONG HEX NIPPLES

Pipe Size	Max. psi @ 72° F	1 1/2″ Lengths		2″ Lengths		3″ Lengths	
1/8	3,900	4757T57	$8.22	4757T67	$18.63	4757T77	$10.76
1/4	3,900	4757T58	20.48	4757T68	6.10	4757T78	10.00
1/2	3,900	—	—	—	—	4757T79	16.02

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)	Max. psi @ 72° F		
1/4	1/8	3,900	4757T91	$2.52
3/8	1/8	3,900	4757T168	3.30
3/8	1/4	3,900	4757T92	3.98
1/2	1/8	3,200	4757T169	6.60
1/2	1/4	3,200	4757T93	$4.32
1/2	3/8	3,200	4757T94	4.62
3/4	1/4	3,700	4757T95	9.42
3/4	3/8	3,700	4757T171	9.58
3/4	1/2	3,300	4757T96	$8.76
1	3/8	3,000	4757T172	14.14
1	1/2	3,000	4757T173	15.04
1	3/4	2,700	4757T174	12.10

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

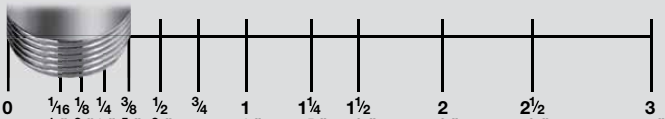

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Precision High-Pressure Brass Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam, oxygen, nitrogen, argon
- Maximum Pressure: See table; 1,560 psi @ 300° F for steam

Also called instrumentation fittings, precision fittings have the most precise threads and tightest tolerances of all the brass fittings we offer. Plus, the male threads are rolled for extra strength. All have extra-strong forged or bar stock construction to handle high-pressure applications. Meet ANSI/ASME B1.20.1, B31.1, and B31.3.

Connections: NPT, BSPT (British Standard Pipe Taper), or BSPP (British Standard Pipe Parallel).

Elbows, Tees, and Crosses

90° female × male elbows are also known as street elbows.

90° Elbows, Female

Pipe Size	Max. psi @ 72° F		
1/8	2,900	9171K11	$13.00
1/4	3,000	9171K12	13.06
3/8	2,700	9171K13	21.34
1/2	2,500	9171K14	24.57
3/4	2,000	9171K15	39.33

90° Elbows, Male

Pipe Size	Max. psi @ 72° F		
1/8	5,000	9171K21	$11.31
1/4	4,100	9171K22	12.69
3/8	4,000	9171K23	16.10
1/2	3,100	9171K24	23.96
3/4	3,400	9171K25	39.05

90° Elbows, Female × Male

Pipe Size	Max. psi @ 72° F		
1/8	2,900	9171K16	$12.88
1/4	3,000	9171K17	14.67
3/8	2,700	9171K18	21.93
1/2	2,500	9171K19	23.21
3/4	2,000	9171K36	40.50

45° Elbows, Female × Male

Pipe Size	Max. psi @ 72° F		
1/8	2,900	9171K81	$7.34
1/4	3,000	9171K82	9.64
3/8	2,700	9171K83	30.13
1/2	2,500	9171K84	34.78
3/4	2,000	9171K85	41.39

Reducing 90° Elbows, Male × Female

Pipe Size (A)	(B)	Max. psi @ 72° F		
1/8	1/16	3,800	9171K144	$75.38
1/4	1/16	3,800	9171K145	75.25
1/4	1/8	2,900	9171K146	24.04
3/8	1/16	3,800	9171K147	78.96
3/8	1/8	2,900	9171K148	80.17
3/8	1/4	3,000	9171K149	$62.98
1/2	1/8	2,900	9171K151	81.53
1/2	1/4	3,000	9171K152	80.39
1/2	3/8	2,700	9171K153	81.62

Tees, Female

Pipe Size	Max. psi @ 72° F		
1/8	2,900	9171K26	$17.69
1/4	3,000	9171K27	17.46
3/8	2,700	9171K28	27.43
1/2	2,500	9171K29	31.19
3/4	2,000	9171K97	50.67

Tees, Male

Pipe Size	Max. psi @ 72° F		
1/8	5,000	9171K155	$16.68
1/4	4,100	9171K156	18.40
3/8	4,000	9171K157	22.92
1/2	3,100	9171K158	30.05
3/4	3,400	9171K154	83.69

Tees, Female × Female × Male

Pipe Size	Max. psi @ 72° F		
1/8	2,900	9171K31	$17.44
1/4	3,000	9171K32	17.83
3/8	2,700	9171K33	27.56
1/2	2,500	9171K34	31.39
3/4	2,000	9171K35	80.35

Tees, Female × Male × Female

Pipe Size	Max. psi @ 72° F		
1/8	2,900	9171K86	$18.36
1/4	3,000	9171K87	18.03
3/8	2,700	9171K88	27.99
1/2	2,500	9171K89	32.87
3/4	2,000	9171K91	80.35

Crosses

Pipe Size	Max. psi @ 72° F		
1/8	2,900	9171K92	$22.92
1/4	3,000	9171K93	30.52
3/8	2,700	9171K94	105.82
1/2	2,700	9171K95	45.60
3/4	2,000	9171K96	151.40

Plugs, Caps, and Bushings

Hex-head plugs are hollow. ***Hex-socket plugs*** are solid.

Hex-Head Plugs

Pipe Size	Max. psi @ 72° F		
1/8	5,600	9171K46	$3.16
1/4	4,100	9171K47	3.97
3/8	4,000	9171K48	4.75
1/2	3,900	9171K49	6.50
3/4	3,800	9171K45	9.09

Hex-Socket Plugs

Pipe Size	Max. psi @ 72° F	Hex Key Size		
1/8	5,600	3/16″	9171K251	$2.83
1/4	4,100	1/4″	9171K252	3.22
3/8	4,000	5/16″	9171K253	26.47

Caps

Pipe Size	Max. psi @ 72° F		
1/8	4,000	9171K241	$3.93
1/4	4,300	9171K242	4.75
3/8	3,500	9171K243	7.01
1/2	3,600	9171K244	9.48
3/4	3,000	9171K245	27.86

Hex Reducing Bushings, Male × Female

Pipe Size (A)	(B)	Max. psi @ 72° F		
1/8	1/16	2,900	9171K51	$23.76
1/4	1/8	3,600	9171K52	4.56
3/8	1/8	4,000	9171K53	6.09
3/8	1/4	3,000	9171K54	$6.17
1/2	1/8	3,900	9171K55	8.05
1/2	1/4	3,900	9171K56	6.95
1/2	3/8	2,800	9171K57	$7.13
3/4	1/2	2,800	9171K58	9.70

(Continued on following page)

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Precision High-Pressure Brass Threaded Pipe Fittings

(Continued from previous page)

Couplings, Adapters, and Nipples

Fully threaded pipe nipples, also called close nipples, are threaded on each end to the center.

Hex Couplings

Pipe Size (A)	Pipe Size (B)	Max. psi @ 72° F		
1/8	1/16	4,000	9171K69	$25.70
1/8	1/8	4,000	9171K71	5.28
1/4	1/8	4,300	9171K72	8.11
1/4	1/4	4,300	9171K73	7.52
3/8	1/8	3,500	9171K79	24.45
3/8	1/4	3,500	9171K74	10.11
3/8	3/8	3,500	9171K75	9.29
1/2	1/4	3,600	9171K76	13.82
1/2	3/8	3,600	9171K77	13.61
1/2	1/2	3,600	9171K78	12.59
3/4	1/2	3,000	9171K98	18.99
3/4	3/4	3,000	9171K99	18.77

Adapters, Female×Male

Max. psi @ 72° F		
4,000	9171K231	$6.40
4,000	9171K61	4.54
4,300	9171K62	6.50
4,300	9171K63	6.32
3,500	9171K232	8.60
3,500	9171K64	8.11
3,500	9171K65	7.85
3,600	9171K66	12.00
3,600	9171K67	11.96
3,600	9171K68	11.76
3,000	9171K233	16.71

Hex Nipples

Max. psi @ 72° F	Lg.		
5,600	11/16″	9171K211	$4.75
5,600	11/16″	9171K212	3.87
4,100	1 1/4″	9171K213	5.09
4,100	17/16″	9171K214	5.34
4,000	1 1/4″	9171K215	7.01
4,000	17/16″	9171K216	6.62
4,000	17/16″	9171K217	6.50
3,900	1 11/16″	9171K219	9.70
3,900	1 11/16″	9171K221	9.29
3,900	17/8″	9171K222	8.35
3,800	1 15/16″	9171K223	12.37
3,800	1 15/16″	9171K224	12.17

Fully Threaded Pipe Nipples

Pipe Size	Max. psi @ 72° F	Lg.		
1/8	5,600	3/4″	9171K111	$4.14
1/4	4,100	1 1/8″	9171K112	4.69
3/8	4,000	1 1/8″	9171K113	6.26
1/2	3,900	1 1/2″	9171K114	7.52
3/4	3,800	1 1/2″	9171K115	34.65

LONG HEX NIPPLES

Pipe Size	Max. psi @ 72° F	2″ Lengths		2 1/2″ Lengths		3″ Lengths		4″ Lengths	
1/8	5,600	9171K121	$5.24	9171K131	$8.05	9171K135	$8.05	9171K139	$75.26
1/4	4,100	9171K122	6.09	9171K132	6.60	9171K136	8.30	9171K141	10.10
3/8	4,000	9171K123	7.89	9171K133	74.29	9171K137	75.37	9171K142	79.86
1/2	3,900	9171K124	14.88	9171K134	77.70	9171K138	15.94	9171K143	25.41

Adapters with British Standard Connections

ADAPTERS, MALE BSPT×NPT

Pipe Size	Max. psi @ 72° F		
1/8	5,600	9171K159	$5.23
1/4	4,100	9171K161	7.70
3/8	4,000	9171K162	8.45
1/2	3,900	9171K163	11.40
3/4	3,800	9171K164	25.82

ADAPTERS, FEMALE×MALE

BSPT (A)×NPT (B)

Pipe Size	Max. psi @ 72° F		
1/8	3,200	9171K165	$29.14
1/4	3,300	9171K166	29.66
3/8	2,600	9171K167	30.07
1/2	2,400	9171K168	32.14
3/4	2,300	9171K169	45.34

BSPP (A)×NPT (B)

Pipe Size	Max. psi @ 72° F		
1/8	3,200	9171K171	$29.05
1/4	3,300	9171K172	29.68
3/8	2,600	9171K173	30.07
1/2	2,400	9171K174	32.14
3/4	2,300	9171K175	45.34

Easy-Install Brass Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 1,000 psi @ 72° F; 1,000 psi @ 250° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall brass (see pages 29 and 32)

Keep your pipe wrench in your tool chest—you can install and remove these brass fittings with your socket wrench or hex key. And because they're compact, they require less clearance than traditional elbows.

Connections: NPTF (Dryseal), which is compatible with NPT.

Socket-Wrench Elbows

Pipe Size	Socket Wrench Size	90° Elbows, Female		
1/16	9/16″	5021T11	$4.56
1/8	3/4″	5021T12	3.97
1/4	7/8″	5021T14	4.46
3/8	1″	5021T16	6.14
1/2	1 1/4″	5021T18	10.25

Hex-Key Elbows

Pipe Size	Hex Key Size	90° Elbows, Female		90° Elbows, Male×Female	
1/16	1/4″	5021T31	$6.11	5021T51	$6.11
1/8	5/16″	5021T32	5.12	5021T52	5.12
1/4	3/8″	5021T34	5.23	5021T54	5.23
3/8	1/2″	5021T36	8.27	5021T56	8.27
1/2	1/2″	5021T38	13.11	5021T58	13.11

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Miniature Brass Threaded Pipe Fittings

- Use with air and water
- Maximum Pressure: See table

At less than an inch long, you won't find a better fitting for your miniature pipe system. ***Nickel-plated brass*** fittings offer better corrosion resistance than unplated brass. For miniature brass barbed fittings, see page 164.

Swivel elbows, ***swivel tees***, and ***swivel adapters*** rotate 360° for tightening in confined spaces.

Connections: UN/UNF (10-32 straight thread size) and NPT (1/16, 1/8, and 1/4 pipe sizes). Male ends with 10-32 thread size have a Buna-N gasket, except the through-wall couplings where all have a locknut and washer. **Also Available:** Replacement Buna-N gaskets in packages of 25; please ask for 5454K21.

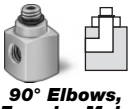
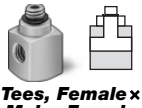
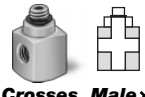

Female Thread Size	Male Thread/ Pipe Size	Max. psi @ 72° F	Pkg. Qty.	90° Elbows, Female×Male	Pkg.	Tees, Female×Male×Female	Pkg.	Crosses, Male×Female on Three Sides	Pkg.	Adapters, Female×Male	Pkg.
Brass											
10-32	10-32	1,000	10	5454K58	$11.07	5454K59	$11.07	5454K82	$11.07	5454K88	$9.91
10-32	1/8	1,000	5	5454K83	5.64	5454K84	5.95	—	—	—	—
Nickel-Plated Brass											
10-32	10-32	1,000	10	5483T62	11.54	5483T64	11.54	5483T65	11.54	5483T81	10.51
10-32	1/8	1,000	5	5483T61	5.93	5483T63	5.93	—	—	—	—

Female Thread/ Pipe Size	Male Thread Size	Max. psi @ 72° F	Pkg. Qty.	90° Swivel Elbows, Female×Male	Pkg.	Swivel Tees, Female×Male×Female	Pkg.	Swivel Adapters, Female×Male	Pkg.
Brass									
10-32	10-32	150	5	5454K78	$10.22	5454K79	$10.16	5454K68	$9.53
1/8	10-32	150	5	—	—	—	—	5454K69	10.58
Nickel-Plated Brass									
10-32	10-32	150	5	5483T11	11.46	5483T12	11.55	5483T21	10.44
1/8	10-32	150	5	—	—	—	—	5483T22	11.60

Thread Size	Max. psi @ 72° F	Pkg. Qty.	Hex Couplings	Pkg.	Hex Nipples	Pkg.	Slotted-Head Plugs	Pkg.
Brass								
10-32	150	10	5454K71	$5.05	5454K72	$7.00	5454K81	$4.22
Nickel-Plated Brass								
10-32	150	10	5483T31	5.38	5483T32	6.60	5483T15	4.70

Through-Wall Couplings

Thread/ Pipe Size (A)	Thread Size (B)	Required Hole Size	Max. psi @ 72° F	Pkg. Qty.	Pkg.
Brass					
10-32	15/32″-32	1/2″	1,000	5	5454K85 $7.65
1/8	3/4″-20	13/16″	1,000	2	5454K86 6.75
1/4	3/4″-20	13/16″	1,000	2	5454K87 7.31
Nickel-Plated Brass					
10-32	15/32″-32	1/2″	1,000	5	5483T91 8.49
1/8	3/4″-20	13/16″	1,000	2	5483T92 8.54
1/4	3/4″-20	13/16″	1,000	2	5483T93 9.55

Hex Bushings, Male×Female

Male Pipe Size (A)	Female Thread/ Pipe Size (B)	Max. psi @ 72° F	Pkg. Qty.	Pkg.
Brass				
1/16	10-32	1,000	10	5454K93 $7.71
1/8	10-32	1,000	10	5454K44 7.60
1/4	10-32	1,000	10	5454K54 10.16
1/4	1/8	1,000	10	5454K57 13.82
Nickel-Plated Brass				
1/8	10-32	1,000	10	5483T72 8.49
1/4	1/8	1,000	5	5483T74 7.87

Super-Corrosion-Resistant Copper-Nickel Threaded Pipe Fittings

- Use with air, water, oil, natural gas
- Maximum Pressure: Fittings: 400 psi @ 72° F; 200 psi @ 425° F for steam; Pipe Nipples: Not rated

Need a pipe fitting that can stand up to salt water better than brass? Our corrosion-resistant 90/10 copper-nickel has what it takes to handle marine applications.

Elbows and ***tees*** meet ANSI/ASME B16.3.

Fully threaded nipples are also called Schedule 40, standard-wall, and close nipples; they are threaded on each end to the center. All have seamless construction for unrestricted flow. Meet ASTM B466 and B1.20.1.

Connections: NPT.

Pipe Size	90° Elbows		Tees		Couplings		Fully Threaded Nipples Lg.		
1/4	2626K11	$64.28	2626K14	$55.85	2626K21	$36.25	1 1/2″	2626K17	$30.42
1/2	2626K12	76.70	2626K15	90.20	2626K22	45.35	1 1/2″	2626K18	33.32
3/4	2626K13	76.12	2626K16	107.95	2626K23	59.55	1 1/2″	2626K19	39.20

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

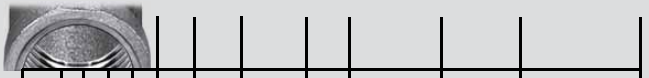

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

British Standard Threaded Low-Pressure Bronze Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 200 psi @ 72° F; 125 psi @ 400° F for steam
- Pipe Nipples: Use British Standard threaded Schedule 40 standard-wall brass (see below)

BSPT threads on these fittings and flanges allow easy connection to other BSPT threads. Also known as Class 125 fittings or Class 150 flanges, they're made of bronze, which is compatible with brass. All meet ASTM B584. They also meet ANSI/ASME B16.15, except unions and flanges. The threads meet BS21.

Connections: BSPT (British Standard Pipe Taper).

Fittings

Pipe Size	90° Elbows	45° Elbows	Tees	Unions	Couplings	Caps
1/8	4978K101 ... $7.06	4978K111 ... $7.81	4978K121 ... $9.87	4978K161 ... $25.12	4978K131 ... $7.06	4978K141 ... $5.26
1/4	4978K102 ... 7.06	4978K112 ... 7.81	4978K122 ... 9.87	4978K162 ... 25.12	4978K132 ... 7.06	4978K142 ... 5.26
3/8	4978K103 ... 7.06	4978K113 ... 7.81	4978K123 ... 9.87	4978K163 ... 25.12	4978K133 ... 7.06	4978K143 ... 5.26
1/2	4978K104 ... 10.74	4978K114 ... 9.87	4978K124 ... 12.40	4978K164 ... 27.35	4978K134 ... 8.90	4978K144 ... 7.06
3/4	4978K105 ... 14.47	4978K115 ... 14.47	4978K125 ... 17.80	4978K165 ... 37.83	4978K135 ... 11.71	4978K145 ... 9.38
1	4978K106 ... 22.35	4978K116 ... 24.50	4978K126 ... 31.69	4978K166 ... 49.74	4978K136 ... 17.80	4978K146 ... 14.60
1 1/4	4978K107 ... 35.53	4978K117 ... 39.14	4978K127 ... 44.40	4978K167 ... 67.73	4978K137 ... 27.83	4978K147 ... 22.30
1 1/2	4978K108 ... 44.40	4978K118 ... 49.05	4978K128 ... 61.10	4978K168 ... 79.99	4978K138 ... 37.83	4978K148 ... 30.11
2	4978K109 ... 66.72	4978K119 ... 73.44	4978K129 ... 92.41	4978K169 ... 114.33	4978K139 ... 57.46	4978K149 ... 51.07

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4978K211	$7.58
3/8	1/4	4978K212	7.58
1/2	1/8	4978K213	10.95
1/2	1/4	4978K214	9.51
1/2	3/8	4978K215	9.51
3/4	1/4	4978K216	15.64
3/4	3/8	4978K217	14.08
3/4	1/2	4978K218	14.08
1	1/2	4978K219	23.46
1	3/4	4978K221	$23.46
1 1/4	3/4	4978K222	37.83
1 1/4	1	4978K223	37.83
1 1/2	3/4	4978K224	53.87
1 1/2	1	4978K225	47.82
1 1/2	1 1/4	4978K226	47.82
2	1	4978K227	73.92
2	1 1/4	4978K228	65.59
2	1 1/2	4978K229	65.59

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)		
1/2	1/8	4978K171	$6.70
1/2	1/4	4978K172	5.61
1/2	3/8	4978K173	5.61
3/4	1/4	4978K174	9.38
3/4	3/8	4978K175	7.81
3/4	1/2	4978K176	7.81
1	1/2	4978K177	11.71
1	3/4	4978K178	11.71
1 1/4	3/4	4978K179	19.98
1 1/4	1	4978K181	$19.98
1 1/2	1/4	4978K182	31.21
1 1/2	1/2	4978K183	31.21
1 1/2	3/4	4978K184	31.21
1 1/2	1	4978K185	25.60
1 1/2	1 1/4	4978K186	25.60
2	1	4978K188	45.61
2	1 1/4	4978K189	37.83
2	1 1/2	4978K191	37.83

Flanges

Bolt two same-size flanges together with a gasket (not included) to create easy access to your pipe. The surface on the back side is flat. For gaskets, see pages 3474-3480; for bolts, see page 3152.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.		
1/2	3 1/2″	4	1/2″	4978K194	$59.88
3/4	3 7/8″	4	1/2″	4978K195	80.07
1	4 1/4″	4	1/2″	4978K196	105.60
1 1/4	4 5/8″	4	1/2″	4978K197	138.94
1 1/2	5″	4	1/2″	4978K198	160.28
2	6″	4	5/8″	4978K199	233.34

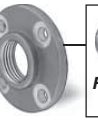

British Standard Threaded Brass Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings and Flanges: Use British Standard threaded low-pressure bronze (see above)

Connect BSPT threads to other BSPT threads or adapt BSPT threads to NPT threads. They're also known as Schedule 40, standard-wall, and regular pipe nipples. They have seamless construction for unrestricted flow. Meet ASTM B687. The BSPT threads also meet BS21; NPT threads also meet ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: BSPT (British Standard Pipe Taper) or NPT.

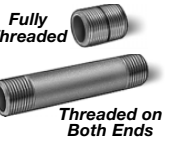

FULLY THREADED Pipe Size	Lg.			THREADED ON BOTH ENDS Pipe Size	1 1/2″ Lengths	2″ Lengths	3″ Lengths	4″ Lengths	6″ Lengths
BSPT Threads on Both Ends									
1/8	3/4″	4824K111	$2.81	1/8	4824K121 ... $3.16	4824K131 ... $3.43	4824K151 ... $4.17	4824K171 ... $5.06	4824K191 ... $6.56
1/4	7/8″	4824K112	3.29	1/4	4824K122 ... 3.78	4824K132 ... 4.31	4824K152 ... 5.45	4824K172 ... 6.99	4824K192 ... 9.23
3/8	1″	4824K113	3.39	3/8	4824K123 ... 4.04	4824K133 ... 4.88	4824K153 ... 6.46	4824K173 ... 8.31	4824K193 ... 10.48
1/2	1 1/8″	4824K114	4.53	1/2	4824K124 ... 5.24	4824K134 ... 6.15	4824K154 ... 8.62	4824K174 ... 11.26	4824K194 ... 15.03
3/4	1 3/8″	4824K115	6.55	3/4	4824K125 ... 6.94	4824K135 ... 8.22	4824K155 ... 10.99	4824K175 ... 14.38	4824K195 ... 20.97
1	1 1/2″	4824K116	9.64	1	—	4824K136 ... 11.88	4824K156 ... 15.95	4824K176 ... 20.81	4824K196 ... 30.63
1 1/4	1 5/8″	4824K117	14.55	1 1/4	—	4824K137 ... 16.62	4824K157 ... 22.26	4824K177 ... 29.28	4824K197 ... 42.74
1 1/2	1 3/4″	4824K118	18.92	1 1/2	—	4824K138 ... 20.36	4824K158 ... 28.01	4824K178 ... 36.50	4824K198 ... 53.91
2	2″	4824K119	28.81	2	—	—	4824K159 ... 35.88	4824K179 ... 46.96	4824K199 ... 68.57
BSPT Threads on One End, NPT Threads on Other End									
1/8	3/4″	5832T111	2.79	1/8	5832T121 ... 3.14	5832T131 ... 3.38	5832T141 ... 4.14	5832T151 ... 5.01	5832T161 ... 7.11
1/4	7/8″	5832T112	3.26	1/4	5832T122 ... 3.77	5832T132 ... 4.27	5832T142 ... 5.43	5832T152 ... 6.95	5832T162 ... 10.02
3/8	1″	5832T113	3.38	3/8	5832T123 ... 3.99	5832T133 ... 4.86	5832T143 ... 6.44	5832T153 ... 8.26	5832T163 ... 11.34
1/2	1 1/8″	5832T114	4.51	1/2	5832T124 ... 5.22	5832T134 ... 6.13	5832T144 ... 8.56	5832T154 ... 11.19	5832T164 ... 16.29
3/4	1 3/8″	5832T115	6.48	3/4	5832T125 ... 6.92	5832T135 ... 8.18	5832T145 ... 10.93	5832T155 ... 14.26	5832T165 ... 20.84
1	1 1/2″	5832T116	9.57	1	—	5832T136 ... 11.81	5832T146 ... 15.86	5832T156 ... 20.66	5832T166 ... 30.42

How to Measure Unthreaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

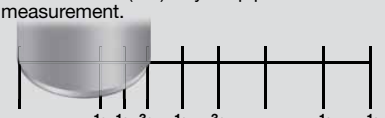

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
ID (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Socket-End Bronze Unthreaded Pipe Fittings

Unthreaded Socket-End Connection

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 200 psi @ 72° F; 200 psi @ 425° F for steam
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall brass (see below)

You may know these as Silbraze fittings—snap a silver ring (required, sold separately) into the fitting and braze them to your brass pipe for a strong, leak-resistant connection. These fittings have socket ends that support the pipe during installation. They are made of bronze, which is compatible with brass. Meet MIL-F-1183.

Connections: Socket end (unthreaded).

Fittings

Pipe Size	90° Elbows, Long Radius (C)			90° Elbows, Short Radius (C)			45° Elbows	
1/2	1 3/4″	2190K6	$30.62	1″	2190K1	$11.78	2190K34	$14.65
3/4	2″	2190K7	32.45	1 3/16″	2190K2	15.62	2190K35	14.40
1	2 5/16″	2190K8	40.33	1 7/16″	2190K3	16.55	2190K36	16.07
1 1/2	3 1/8″	2190K9	56.07	1 13/16″	2190K4	28.78	2190K37	27.96
2	3 1/4″	2190K11	67.80	2 1/8″	2190K5	41.00	2190K38	39.02

Pipe Size	Tees		Unions		Couplings		Caps	
1/2	2190K12	$19.58	2190K28	$31.33	2190K23	$16.20	2190K17	$22.84
3/4	2190K13	24.65	2190K29	39.04	2190K24	17.20	2190K18	22.24
1	2190K14	25.29	2190K31	51.95	2190K25	16.07	2190K19	41.42
1 1/2	2190K15	47.71	2190K32	91.93	2190K26	22.25	2190K21	32.42
2	2190K16	78.18	2190K33	138.58	2190K27	34.16	2190K22	34.53

Flanges

Flat Surface on Back

Flanges have a flat surface on the back. Bolt two same-size flanges together with a gasket (not included) to create easy access to your pipe. For gaskets, see pages 3474-3480; for bolts, see page 3152.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.		
1/2	3 1/2″	4	1/2″	2190K39	$54.82
3/4	3 7/8″	4	1/2″	2190K41	71.82
1	4 1/4″	4	1/2″	2190K42	70.78
1 1/2	5″	4	1/2″	2190K43	88.78
2	6″	4	5/8″	2190K44	104.98

Silver Brazing Rings

One ring is required for every connection.

Pipe Size		
1/2	2190K45	$1.03
3/4	2190K46	1.42
1	2190K47	1.91
1 1/2	2190K48	3.20
2	2190K49	3.93

Standard-Wall Brass Threaded-On-One-End Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 125 low-pressure brass (see pages 29-31) and socket-weld bronze (see above)
- Flanges: Use threaded Class 150 low-pressure brass (see page 31) and socket-weld bronze (see above)

One end of these Schedule 40 nipples is threaded, while the other is unthreaded. They're brass and have seamless construction for unrestricted flow. Meet ASTM B687.

Connections: NPT on one end; unthreaded on the other end.

Pipe Size	1″ Lengths		1 1/2″ Lengths		2″ Lengths		3″ Lengths		4″ Lengths	
1/4	9580K11	$2.02	9580K21	$2.32	9580K31	$2.65	9580K41	$3.35	9580K51	$4.31
3/8	9580K12	2.08	9580K22	2.47	9580K32	3.02	9580K42	3.98	9580K52	5.13
1/2	9580K13	2.77	9580K23	3.23	9580K33	3.80	9580K43	5.28	9580K53	6.91
3/4	—	—	9580K24	4.28	9580K34	5.07	9580K44	6.76	9580K54	8.84
1	—	—	—	—	9580K35	7.30	9580K45	9.80	9580K55	12.79
1 1/4	—	—	—	—	9580K36	10.19	9580K46	13.66	9580K56	18.01
1 1/2	—	—	—	—	9580K37	12.52	9580K47	17.22	9580K57	22.41
2	—	—	—	—	9580K38	17.70	9580K48	22.05	9580K58	28.83

Standard-Wall Brass Unthreaded Pipe

- Use with air, water, oil, natural gas, steam
- Fittings and Flanges: Use socket-weld bronze (see above)

Also called Schedule 40 and regular pipe, this brass pipe has seamless construction for unrestricted flow. It's unthreaded for brazed connections, which are less likely to leak than threaded connections. Meet ASTM B43.

To Order: Please specify 1-, 3-, or 6-ft. length.

Pipe Size		1 ft.	3 ft.	6 ft.
1/8	4501K11	$6.11	$16.88	$29.10
1/4	4501K12	8.88	24.53	42.30
3/8	4501K13	12.03	33.23	57.29
1/2	4501K14	17.36	47.94	82.65
3/4	4501K15	22.98	63.48	109.44
1	4501K16	29.34	81.03	139.71
1 1/4	4501K17	41.60	114.89	198.08
1 1/2	4501K18	48.92	135.11	232.95
2	4501K19	61.60	170.13	293.32

How to Measure Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

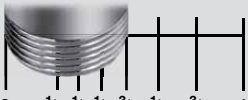

Pipe Size: 0 1/16 1/8 1/4 3/8 1/2 3/4 1
OD (to nearest 1/8″): 0 1/4″ 3/8″ 1/2″ 5/8″ 3/4″ 1″ 1 1/4″

Pipe Size: 0 1/16 1/8 1/4 3/8 1/2 3/4 1
ID (to nearest 1/8″): 0 1/4″ 3/8″ 1/2″ 5/8″ 3/4″ 1″ 1 1/4″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Medium-Pressure Aluminum Threaded Pipe Fittings

- Use with air, water, oil
- Maximum Pressure: 500 psi @ 72° F

A blue anodized finish on these aluminum fittings provides more corrosion resistance and a harder surface than plain aluminum.

90° female×male elbows are also known as street elbows.

Connections: NPT.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows, Female×Male		Tees		Hex Couplings		Hex Nipples	
1/8	3861T11	$17.54	3861T21	$17.54	3861T41	$17.54	3861T51	$17.54	3861T61	$4.12	3861T81	$3.08
1/4	3861T12	20.53	3861T22	20.53	3861T42	20.53	3861T52	20.53	3861T62	4.72	3861T82	4.72
3/8	3861T13	29.51	3861T23	29.51	3861T43	29.51	3861T53	29.51	3861T63	7.89	3861T83	8.22
1/2	3861T14	34.78	3861T24	29.51	3861T44	29.51	3861T54	35.92	3861T64	12.84	3861T84	10.62

High-Pressure Aluminum Threaded Pipe Fittings

- Use with air and water
- Maximum Pressure: 3,000 psi @ 72° F, except unions are 1,500 psi @ 72° F
- Pipe Nipples: Use threaded Schedule 80 thick-wall aluminum (see below)

Don't let the light weight fool you—these aluminum fittings have super-strong forged or bar stock construction for the highest pressure ratings of all the aluminum fittings we offer. They're also known as Class 3000 fittings. All meet Fed. Spec. QQ-A-200/8 and ANSI/ASME B1.20.1. They also meet ANSI/ASME B16.11, except wyes and unions.

Connections: NPT.

Elbows, Wyes, Tees, and Crosses

All meet ASTM B247. The ***90° female×male elbows*** are also known as street elbows.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		Wyes		Tees		Crosses	
1/4	3867T11	$16.39	3867T31	$40.96	3867T21	$19.65	3867T15	$43.84	3867T41	$19.67	3867T25	$40.96
1/2	3867T12	28.11	3867T32	61.20	3867T22	32.73	3867T16	67.45	3867T42	35.60	3867T26	61.20
3/4	3867T13	41.43	3867T33	89.15	3867T23	42.22	3867T17	95.89	3867T43	50.64	3867T27	86.73
1	3867T14	55.29	3867T34	137.07	3867T24	70.33	3867T18	150.78	3867T44	84.51	3867T28	137.07

Unions, Couplings, Caps, Plugs, and Bushings

All meet ASTM B221. ***Square-head plugs*** and ***hex-head plugs*** are solid. ***Half couplings*** are partially threaded; one end has an unthreaded portion that can be welded.

Pipe Size	Unions		Couplings		Half Couplings		Caps		Square-Head Plugs		Hex-Head Plugs	
1/4	3867T511	$89.09	3867T61	$13.49	3867T71	$11.05	3867T81	$15.42	3867T55	$15.22	3867T65	$17.35
1/2	3867T521	132.50	3867T62	17.73	3867T72	13.49	3867T82	20.23	3867T56	15.22	3867T66	17.35
3/4	3867T531	155.34	3867T63	21.20	3867T73	15.91	3867T83	24.96	3867T57	16.38	3867T67	18.80
1	3867T541	198.30	3867T64	34.69	3867T74	23.23	3867T84	38.09	3867T58	19.28	3867T68	21.20

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
1/2	1/4	3867T75	$20.23
3/4	1/2	3867T76	24.96
1	1/2	3867T77	38.09
1	3/4	3867T78	38.09

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)		
1/2	1/4	3867T91	$30.55
3/4	1/2	3867T92	38.31
1	1/2	3867T93	43.85
1	3/4	3867T94	43.85

Thick-Wall Aluminum Threaded Pipe Nipples

- Use with air, water, oil
- Fittings: Use threaded Class 3000 high-pressure aluminum (see above)

Also known as Schedule 80 nipples, these are made of aluminum for a high strength-to-weight ratio. They have seamless construction for unrestricted flow. Meet ASTM B241 and ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/4	7/8″	2155K11	$3.19
1/2	1 1/8″	2155K17	2.41
3/4	1 3/8″	2155K24	3.95
1	1 1/2″	2155K31	2.64

THREADED ON BOTH ENDS

Pipe Size	2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths		12″ Lengths	
1/4	2155K12	$6.48	2155K13	$9.53	2155K14	$12.63	2155K15	$18.75	2155K16	$37.23
1/2	2155K18	3.78	2155K19	5.47	2155K21	7.16	2155K22	10.54	2155K23	20.82
3/4	2155K25	5.26	2155K26	7.65	2155K27	10.05	2155K28	14.85	2155K29	29.40
1	2155K32	3.36	2155K33	4.48	2155K34	5.60	2155K35	7.86	2155K36	14.11

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

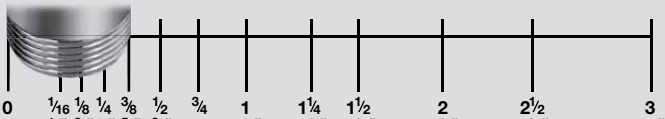

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Aluminum Threaded Pipe Fittings CAD

- Use with air, water, oil
- Maximum Pressure: 150 psi @ 72° F for fittings; 125 psi @ 72° F for flanges
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall aluminum (see page 48)

The lightweight champion of low-pressure pipelines, aluminum offers a high strength-to-weight ratio along with excellent corrosion resistance. For best performance, do not tighten more than a 1/4-turn past hand tight.

Connections: NPT, except locknuts are NPSL (National Pipe Straight Locknut); NPSL threads are compatible with NPT threads.

Fittings

Also known as Class 150 fittings. The ***90° female×male elbows*** are also called street elbows. ***Half couplings*** are partially threaded; one end has an unthreaded portion that can be welded. ***Square-head plugs*** and ***square-socket plugs*** are solid.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		45° Elbows, Female×Male		180° Bends		Tees	
1/8	44705K266	$4.19	44705K155	$6.85	44705K156	$4.29	—	—	—	—	44705K333	$4.35
1/4	44705K278	4.91	44705K113	7.55	44705K157	5.60	—	—	—	—	44705K344	5.86
3/8	44705K289	6.02	44705K114	8.48	44705K158	6.75	—	—	—	—	44705K345	7.31
1/2	44705K295	7.31	44705K115	11.30	44705K17	8.51	44705K196	$12.08	44705K479	$26.88	44705K346	9.49
3/4	44705K296	9.22	44705K128	13.55	44705K174	10.54	44705K197	14.30	44705K481	34.38	44705K347	9.82
1	44705K297	10.80	44705K13	14.98	44705K175	11.89	44705K198	15.71	44705K482	43.82	44705K348	12.35
1 1/4	44705K298	12.80	44705K138	16.93	44705K176	13.78	44705K199	17.98	44705K483	52.02	44705K349	15.94
1 1/2	44705K299	15.79	44705K139	23.20	44705K177	16.86	44705K209	26.26	44705K484	61.07	44705K351	19.20
2	44705K314	23.17	44705K149	29.78	44705K178	26.99	44705K225	37.81	44705K485	89.22	44705K352	35.71
2 1/2	44705K315	44.80	44705K152	55.65	44705K192	38.83	44705K226	66.91	—	—	44705K353	66.41
3	44705K325	60.71	44705K154	88.18	44705K194	73.10	—	—	—	—	44705K355	96.17
4	44705K329	108.43	44705K492	140.57	44705K195	122.24	—	—	—	—	44705K356	197.90
6	44705K422	231.00	—	—	44705K423	243.20	—	—	—	—	—	—

Pipe Size	Crosses		Unions		Couplings		Half Couplings		Caps		Locknuts	
1/8	44705K254	$6.96	44705K239	$13.66	44705K36	$2.13	44705K316	$1.58	44705K372	$2.64	—	—
1/4	44705K256	8.37	44705K242	15.25	44705K368	2.22	44705K317	1.66	44705K373	3.46	44705K412	$4.08
3/8	44705K257	10.88	44705K243	16.93	44705K369	2.30	44705K318	1.76	44705K374	3.81	44705K413	4.77
1/2	44705K258	14.53	44705K244	18.88	44705K52	2.42	44705K319	1.82	44705K375	4.80	44705K414	5.33
3/4	44705K259	15.54	44705K245	19.89	44705K56	2.54	44705K32	1.89	44705K376	5.28	44705K415	7.07
1	44705K261	15.79	44705K246	24.77	44705K58	2.98	44705K321	2.26	44705K377	5.49	44705K416	9.31
1 1/4	44705K262	23.98	44705K247	28.14	44705K89	3.95	44705K322	2.98	44705K378	7.79	44705K417	10.14
1 1/2	44705K263	31.62	44705K248	35.86	44705K99	5.68	44705K323	4.26	44705K379	10.80	44705K418	13.74
2	44705K264	58.26	44705K249	48.69	44705K371	8.03	44705K324	6.03	44705K381	14.59	44705K419	18.42
2 1/2	44705K265	90.01	44705K251	76.75	44705K153	14.62	44705K326	10.98	44705K357	26.64	44705K331	30.58
3	44705K267	123.18	44705K252	118.06	44705K172	16.83	44705K327	12.67	44705K358	30.72	44705K332	50.73
4	44705K268	181.36	44705K253	244.20	44705K227	30.53	44705K328	22.90	44705K359	50.29	—	—
6	—	—	—	—	44705K451	165.36	44705K421	124.05	44705K438	107.39	—	—

Pipe Size	Square-Head Plugs		Square-Socket Plugs	
1/8	44705K382	$2.40	—	—
1/4	44705K383	2.75	—	—
3/8	44705K384	3.06	44705K334	$4.72
1/2	44705K385	3.44	44705K335	5.09
3/4	44705K386	3.84	44705K336	5.68
1	44705K387	4.85	44705K337	6.99
1 1/4	44705K388	6.77	44705K338	9.47
1 1/2	44705K389	7.44	44705K339	10.45
2	44705K411	8.21	44705K341	11.50
2 1/2	44705K237	24.91	44705K342	33.22
3	44705K241	30.34	44705K343	40.45
4	44705K255	49.17	44705K354	63.74
6	44705K478	85.03	—	—

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)			
1/4	1/8	44705K279	$2.64	
3/8	1/8	44705K393	3.36	
3/8	1/4	44705K281	3.36	
1/2	1/8	44705K439	3.89	
1/2	1/4	44705K394	3.89	
1/2	3/8	44705K282	3.89	
3/4	1/4	44705K395	4.70	
3/4	3/8	44705K292	4.70	
3/4	1/2	44705K283	4.70	
1	1/4	44705K441	5.25	
1	1/2	44705K293	5.25	
1	3/4	44705K284	5.25	
1 1/4	3/4	44705K442	8.59	
1 1/4	1	44705K285	8.59	
1 1/2	1/2	44705K443	$10.18	
1 1/2	3/4	44705K396	10.18	
1 1/2	1	44705K294	10.18	
1 1/2	1 1/4	44705K286	10.18	
2	3/4	44705K444	15.04	
2	1	44705K287	15.04	
2	1 1/4	44705K397	15.04	
2	1 1/2	44705K288	15.04	
2 1/2	1	44705K445	21.55	
3	1 1/2	44705K446	31.90	
3	2	44705K291	31.90	
3	2 1/2	44705K447	31.90	
4	2	44705K448	57.17	
4	3	44705K449	57.17	

(Continued on following page)

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Aluminum Threaded Pipe Fittings

(Continued from previous page)

Fittings (Cont.)

Reducing 90° Elbows

Pipe Size (A)	Pipe Size (B)		
1/2	1/4	44705K424	$8.91
1/2	3/8	44705K425	8.91
3/4	1/2	44705K426	12.94
1	1/2	44705K427	17.92
1	3/4	44705K428	17.92
1 1/4	1	44705K429	22.80
1 1/2	1	44705K431	$26.88
1 1/2	1 1/4	44705K432	26.88
2	1 1/2	44705K433	47.01
3	2	44705K434	102.26
3	2 1/2	44705K435	102.26
4	3	44705K436	174.82

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	44705K269	$6.06
3/8	1/8	44705K391	6.66
3/8	1/4	44705K271	6.66
1/2	1/4	44705K392	7.31
1/2	3/8	44705K272	7.31
3/4	1/4	44705K486	7.92
3/4	1/2	44705K273	7.92
1	1/2	44705K487	8.69
1	3/4	44705K274	$8.69
1 1/4	1	44705K275	13.20
1 1/2	1	44705K488	17.76
1 1/2	1 1/4	44705K276	17.76
2	1 1/2	44705K277	23.71
3	2	44705K489	54.29
4	3	44705K491	108.15

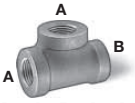

Right-Angle Reducing Tees

Pipe Size (A)	Pipe Size (B)		
1/2	3/4	44705K454	$15.81
1/2	1	44705K458	21.74
3/4	1/2	44705K455	15.81
3/4	1	44705K459	21.74
1	3/4	44705K461	21.74
1	1 1/2	44705K467	35.46
1 1/2	3/4	44705K466	35.46
2	1 1/2	44705K473	59.86

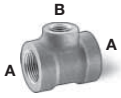

Inline Reducing Tees

Pipe Size (A)	Pipe Size (B)		
1/2	1/4	44705K452	$11.34
1/2	3/4	44705K453	11.34
3/4	3/8	44705K456	15.81
3/4	1/2	44705K457	15.81
1	1/2	44705K462	21.74
1	1 1/2	44705K463	21.74
1 1/4	3/4	44705K464	28.75
1 1/4	1	44705K465	28.75
1 1/2	1/2	44705K468	$35.46
1 1/2	3/4	44705K469	35.46
1 1/2	1	44705K471	35.46
1 1/2	2	44705K472	35.46
2	3/4	44705K474	59.86
2	1	44705K475	59.86
3	2	44705K476	152.97
4	2	44705K477	242.47

Flanges

Pipe Sizes 1/2 to 2 1/2

Pipe Sizes 3 to 6

Also known as Class 125 flanges. Bolt two same-size flanges together with a gasket (not included) to create easy access to your pipe. The surface on the back is flat. Flanges in pipe sizes 1 and larger meet ANSI/ASME B16.1. For gaskets, see pages 3474-3480; for bolts, see page 3151.

Pipe Size	Flange OD	Bolts Required Qty.	Bolts Required Dia.		
1/2	3 1/2″	4	1/2″	44705K228	$13.68
3/4	3 7/8″	4	1/2″	44705K229	15.07
1	4 1/4″	4	1/2″	44705K231	15.82
1 1/4	4 5/8″	4	1/2″	44705K232	18.42
1 1/2	5″	4	1/2″	44705K233	25.33
2	6″	4	5/8″	44705K234	$33.79
2 1/2	7″	4	5/8″	44705K235	42.37
3	7 1/2″	4	5/8″	44705K236	46.61
4	9″	8	5/8″	44705K238	65.57
6	11″	8	3/4″	44705K437	99.03

British Standard Threaded Low-Pressure Aluminum Pipe Fittings

- Use with air, water, oil
- Maximum Pressure: 150 psi @ 72° F

The BSPT threads on these lightweight aluminum fittings allow easy connection to other BSPT threads. For best performance, do not tighten more than a 1/4-turn past hand tight.

90° female×male elbows are also known as street elbows. ***Square-head plugs*** are solid.

Connections: BSPT (British Standard Pipe Taper).

Also Available: Pipe nipples with BSPT threads on one end and NPT threads on the other. For fully threaded nipples, which are also called close nipples, please ask for 2744K1 and specify pipe size from the list below. For nipples that are threaded on both ends, please ask for 2744K2 and specify pipe size from the list below and nipple length: 1 1/2″, 2″, or 3″.

Pipe Size	90° Elbows		90° Elbows, Female×Male		Tees		Couplings		Square-Head Plugs	
1/8	2617K11	$4.79	2617K19	$7.83	2617K28	$4.97	2617K37	$2.43	2617K46	$2.75
1/4	2617K12	5.61	2617K21	8.63	2617K29	6.69	2617K38	2.54	2617K47	3.15
3/8	2617K13	6.88	2617K22	9.69	2617K31	8.36	2617K39	2.63	2617K48	3.49
1/2	2617K14	8.36	2617K23	12.91	2617K32	10.84	2617K41	2.77	2617K49	3.93
3/4	2617K15	10.53	2617K24	15.49	2617K33	11.23	2617K42	2.91	2617K51	4.39
1	2617K16	12.35	2617K25	17.12	2617K34	14.11	2617K43	3.40	2617K52	5.54
1 1/2	2617K17	18.05	2617K26	26.52	2617K35	21.95	2617K44	6.49	2617K53	8.50
2	2617K18	26.48	2617K27	34.03	2617K36	40.81	2617K45	9.18	2617K54	9.38

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	2617K55	$3.02
3/8	1/4	2617K56	3.84
1/2	1/4	2617K58	4.44
1/2	3/8	2617K57	2.45
3/4	1/2	2617K59	5.38
1	3/4	2617K61	5.30
1 1/2	1	2617K62	11.63
2	1 1/2	2617K63	17.19

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

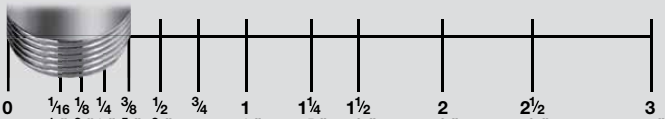

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Aluminum Threaded Pipe Nipples and Pipe CAD

Fully Threaded

Threaded on Both Ends

- Use with air, water, oil
- Fittings: Use threaded Class 150 low-pressure aluminum (see pages 46-47)
- Flanges: Use threaded low-pressure aluminum (see page 47)

They're so light, it's hard to believe these are Schedule 40 nipples and pipe. They're made of aluminum, which offers a high strength-to-weight ratio and very good corrosion resistance. They have seamless construction for unrestricted flow. Meet ASTM B241.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	44665K111	$1.35
1/4	7/8″	44665K131	1.49
3/8	1″	44665K151	1.82
1/2	1 1/8″	44665K171	2.24
3/4	1 3/8″	44665K191	3.04
1	1 1/2″	44665K221	3.20
1 1/4	1 5/8″	44665K241	3.37
1 1/2	1 3/4″	44665K261	4.06
2	2″	44665K281	7.09
2 1/2	2 1/2″	44665K278	15.21
3	2 5/8″	44665K315	18.88
4	2 7/8″	44665K324	26.10

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	44665K161	$1.16	44665K113	$1.35	44665K121	$1.52	44665K115	$1.72	44665K141	$1.91
1/4	44665K167	1.52	44665K133	1.75	44665K122	2.05	44665K135	2.31	44665K142	2.61
3/8	44665K184	1.85	44665K153	2.21	44665K123	2.61	44665K155	2.97	44665K143	3.43
1/2	44665K211	2.44	44665K173	2.81	44665K124	3.30	44665K175	3.83	44665K144	4.46
3/4	44665K217	3.20	44665K193	3.20	44665K125	3.80	44665K195	4.39	44665K145	5.12
1	—	—	44665K223	3.46	44665K126	4.06	44665K225	4.65	44665K146	5.41
1 1/4	—	—	44665K243	3.80	44665K127	4.19	44665K245	4.79	44665K147	5.54
1 1/2	—	—	44665K263	4.39	44665K128	5.12	44665K265	5.74	44665K148	6.63
2	—	—	—	—	44665K129	8.28	44665K285	9.11	44665K149	10.56
2 1/2	—	—	—	—	—	—	44665K295	16.73	44665K152	18.64
3	—	—	—	—	—	—	44665K305	20.39	44665K154	22.87
4	—	—	—	—	—	—	44665K325	28.15	44665K326	29.87

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		4 1/2″ Lengths		5″ Lengths		5 1/2″ Lengths		6″ Lengths		6 1/2″ Lengths	
1/8	44665K117	$2.08	44665K621	$2.24	44665K308	$2.41	44665K162	$2.57	44665K119	$2.74	44665K163	$2.84
1/4	44665K137	2.94	44665K622	3.20	44665K318	3.46	44665K168	3.70	44665K139	3.99	44665K169	4.12
3/8	44665K157	3.80	44665K623	4.19	44665K328	4.55	44665K185	4.95	44665K159	5.31	44665K186	5.48
1/2	44665K177	5.02	44665K624	5.51	44665K338	6.04	44665K212	6.57	44665K179	7.06	44665K213	7.33
3/4	44665K197	5.74	44665K625	6.34	44665K348	6.93	44665K218	7.52	44665K199	8.09	44665K219	8.41
1	44665K227	6.11	44665K626	6.70	44665K358	7.29	44665K234	7.89	44665K229	8.48	44665K235	8.81
1 1/4	44665K247	6.24	44665K627	6.83	44665K368	7.42	44665K251	8.02	44665K249	8.65	44665K252	8.94
1 1/2	44665K267	7.36	44665K628	8.09	44665K369	8.81	44665K256	9.54	44665K269	10.23	44665K257	10.63
2	44665K287	11.75	44665K629	12.90	44665K379	14.09	44665K273	15.28	44665K289	16.43	44665K274	17.06
2 1/2	44665K297	20.16	44665K631	20.82	44665K389	22.37	44665K279	23.89	44665K299	25.41	44665K311	26.40
3	44665K307	24.88	44665K632	26.86	44665K399	27.91	44665K316	28.21	44665K259	30.05	44665K319	31.47
4	44665K317	30.35	44665K327	32.98	44665K409	35.57	44665K329	38.17	44665K239	40.76	44665K331	42.33
6	44665K335	183.77	44665K336	191.94	44665K337	218.25	44665K339	225.96	44665K341	233.75	44665K342	241.48

Pipe Size	7″ Lengths		8″ Lengths		9″ Lengths		10″ Lengths		11″ Lengths		12″ Lengths	
1/8	44665K164	$3.10	44665K411	$3.46	44665K165	$3.96	44665K511	$4.36	44665K166	$4.85	44665K541	$5.18
1/4	44665K181	4.46	44665K412	4.83	44665K182	5.74	44665K512	6.27	44665K183	6.58	44665K542	6.93
3/8	44665K187	5.94	44665K413	6.73	44665K188	7.62	44665K513	8.38	44665K189	9.34	44665K543	10.06
1/2	44665K214	7.89	44665K414	8.91	44665K215	10.16	44665K514	11.15	44665K216	12.38	44665K544	13.40
3/4	44665K231	9.07	44665K415	10.23	44665K232	11.65	44665K515	12.77	44665K233	14.26	44665K545	15.35
1	44665K236	9.47	44665K416	10.72	44665K237	12.18	44665K516	13.40	44665K238	14.88	44665K546	16.07
1 1/4	44665K253	9.64	44665K417	10.89	44665K254	12.41	44665K517	13.63	44665K255	15.18	44665K547	16.34
1 1/2	44665K258	11.45	44665K418	12.97	44665K271	14.72	44665K518	16.20	44665K272	18.02	44665K548	19.44
2	44665K275	18.38	44665K419	18.88	44665K276	23.66	44665K519	25.97	44665K277	26.43	44665K549	28.51
2 1/2	44665K312	28.41	44665K501	29.42	44665K313	33.43	44665K531	36.72	44665K314	40.85	44665K551	44.08
3	44665K321	33.88	44665K502	38.05	44665K322	43.57	44665K532	47.32	44665K323	53.25	44665K552	56.99
4	44665K332	45.59	44665K503	51.59	44665K333	58.62	44665K533	64.48	44665K334	66.00	44665K553	71.22
6	44665K343	249.22	44665K344	264.71	44665K345	280.18	44665K346	295.68	44665K347	311.54	44665K349	326.65

To Order: Please specify length.

Pipe Size		14″ Lengths	16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths	120″ Lengths
1/8	5038K361	$5.64	$6.46	$7.24	$8.05	$8.87	$9.65	$13.46	$19.33	$24.16	$26.94	$48.33
1/4	5038K371	8.15	9.30	10.47	11.68	12.83	13.97	18.80	27.98	34.94	40.19	69.88
3/8	5038K381	10.90	12.43	13.97	15.53	17.07	18.62	30.87	37.26	46.55	62.15	93.14
1/2	5038K391	14.45	16.53	18.59	20.67	22.72	24.76	35.51	49.57	61.94	71.45	123.91
3/4	5038K411	16.60	18.95	21.33	23.71	26.08	28.45	37.83	56.90	71.11	76.15	142.23
1	5038K421	17.35	19.85	22.33	24.80	27.27	29.78	39.28	59.53	74.43	79.05	148.87
1 1/4	5038K431	17.72	20.21	22.76	25.28	27.79	30.32	44.47	60.64	75.82	89.55	151.61
1 1/2	5038K441	21.01	23.99	27.00	29.99	32.98	35.99	51.05	71.99	89.94	102.40	179.94
2	5038K451	33.73	38.53	43.33	48.15	52.98	57.75	74.43	115.50	144.40	149.86	288.77
2 1/2	5038K461	52.11	56.31	60.08	65.10	71.60	89.28	96.67	178.55	223.21	267.86	374.85
3	5038K471	59.40	67.90	75.79	84.88	93.35	115.47	129.68	230.96	288.71	303.12	509.18
4	5038K481	79.94	91.34	102.80	114.21	125.64	156.65	180.43	313.27	342.65	411.18	685.29

How to Measure Unthreaded Pipe and Butt-Weld Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

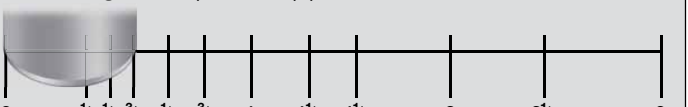

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Thin-Wall Quick-Weld Aluminum Unthreaded Pipe Fittings

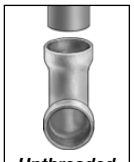

Unthreaded Quick-Weld Connection

- Use with air, water, oil
- Pipe: Use unthreaded Schedule 10 thin-wall aluminum (see below)

Often called bell-end fittings, these are made of 6061 or 6063 aluminum and have bell-shaped ends that support the pipe for quicker and easier welding than butt-weld fittings. Meet ASTM B361.

Couplings are designed to slip over pipe, so they do not have bell-shaped ends. Connections: Quick weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows (C)		45° Elbows		Tees		Couplings	
1/2	0.083″	1 7/8″	4657T11	$19.98	4657T31	$15.87	4657T51	$34.13	4657T21	$7.67
3/4	0.083″	1 9/16″	4657T12	22.54	4657T32	17.31	4657T52	36.54	4657T22	8.50
1	0.109″	1 15/16″	4657T13	27.94	4657T33	19.71	4657T53	43.31	4657T23	9.52
1 1/2	0.109″	2 7/8″	4657T14	35.15	4657T34	27.94	4657T54	52.23	4657T24	11.56
2	0.109″	3 11/16″	4657T15	44.17	4657T35	33.63	4657T55	58.19	4657T25	13.06
2 1/2	0.120″	4 1/2″	4657T16	65.31	4657T36	49.74	4657T56	67.31	4657T26	15.54
3	0.120″	5 3/8″	4657T17	53.90	4657T37	46.00	4657T57	78.77	4657T27	18.08
4	0.120″	6 7/8″	4657T18	72.73	4657T38	55.06	4657T58	98.93	4657T28	30.60

Reducing Couplings

Pipe Size (A)	(B)		
3/4	1/2	4657T71	$23.03
1	3/4	4657T72	26.12
1 1/2	1	4657T73	29.89
2	1 1/2	4657T74	39.28
3	2	4657T75	46.27
4	3	4657T76	83.87

Thin-Wall Butt-Weld Aluminum Unthreaded Pipe Fittings

- Use with air, water, oil

Commonly called Schedule 10, here are the thinnest and lightest aluminum fittings and pipe we offer. All are unthreaded so you can make welded connections, which are less likely to leak than threaded connections.

Elbows and ***reducing couplings*** are 6061 aluminum and have beveled ends that, when connected to a pipe, create a trough for a strong weld. Meet ASTM B361 and ANSI/ASME B16.9. *Reducing couplings* are also called concentric reducers.

Pipe is 6061 or 6063 aluminum and has seamless construction for unrestricted flow. Meets ASTM B241. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Connections: Butt weld (unthreaded).

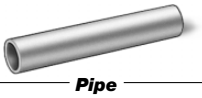

Pipe Size	Wall Thick.	90° Elbows (C)		45° Elbows	
1/2	0.083″	1 1/2″	4672T11	$42.74	4672T21	$70.71
3/4	0.083″	1 1/2″	4672T67	39.39	4672T68	66.34
1	0.109″	1 1/2″	4672T13	30.95	4672T23	52.32
1 1/4	0.109″	1 7/8″	4672T14	39.79	4672T24	71.43
1 1/2	0.109″	2 1/4″	4672T15	33.89	4672T25	48.63
2	0.109″	3″	4672T16	39.79	4672T26	50.91
2 1/2	0.120″	3 3/4″	4672T17	68.60	4672T27	87.68
3	0.120″	4 1/2″	4672T18	69.29	4672T28	69.29
4	0.120″	6″	4672T19	112.26	4672T29	99.74

Reducing Couplings

Pipe Size (A)	(B)		
3/4	1/2	4672T61	$70.71
1	3/4	4672T62	70.71
1 1/2	1	4672T63	66.67
2	1 1/2	4672T64	46.32
3	2	4672T65	66.67
4	3	4672T66	72.73

Pipe

Pipe Size		1 ft.	3 ft.	6 ft.
1/2	4561T1	$15.38	$38.46	$76.92
3/4	4561T2	16.46	41.14	82.28
1	4561T3	15.44	38.60	77.21
1 1/4	4561T4	15.43	38.57	77.14
1 1/2	4561T5	15.92	39.80	79.60
2	4561T6	22.58	45.16	90.33
2 1/2	4561T7	27.86	55.71	111.42
3	4561T8	29.48	58.95	117.90
4	4561T9	38.36	76.72	153.44

Standard-Wall Butt-Weld Aluminum Unthreaded Pipe Fittings

- Use with air, water, oil
- Pipe: Use unthreaded Schedule 40 standard-wall aluminum (see page 50)
- Flanges: Use unthreaded low-pressure aluminum (see page 50)

Choose these fittings when you need thicker walls than the thin-wall fittings, yet still want the leak resistance of a welded connection. They have beveled ends that, when connected to a pipe, create a trough for a strong weld. All are 6061 aluminum and meet ANSI/ASME B16.9.

Reducing couplings are also called concentric reducers.

Connections: Butt weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows (C)		45° Elbows		Tees		Caps	
1/2	0.109″	1 1/2″	43485K119	$31.75	43485K149	$56.11	43485K169	$91.18	43485K189	$114.07
3/4	0.113″	1 1/8″	43485K121	32.08	43485K151	56.57	43485K171	91.92	43485K191	115.14
1	0.133″	1 1/2″	43485K122	23.58	43485K152	42.74	43485K172	92.86	43485K192	116.23
1 1/4	0.140″	1 7/8″	43485K123	30.95	43485K153	57.14	43485K173	117.55	43485K193	198.11
1 1/2	0.145″	2 1/4″	43485K124	26.53	43485K154	38.32	43485K174	96.16	43485K194	99.06
2	0.154″	3″	43485K125	30.95	43485K155	41.26	43485K175	79.19	43485K195	77.78
2 1/2	0.203″	3 3/4″	43485K126	55.15	43485K156	69.29	43485K176	171.70	43485K196	118.87
3	0.216″	4 1/2″	43485K127	55.15	43485K157	55.15	43485K177	126.79	43485K197	97.58
4	0.237″	6″	43485K131	96.16	43485K161	84.85	43485K181	171.70	43485K201	97.74

Reducing Couplings

Pipe Size (A)	(B)		
3/4	1/2	43485K111	$60.61
1	3/4	43485K112	60.61
1 1/2	1	43485K113	56.57
2	1 1/2	43485K114	37.89
3	2	43485K115	50.51
4	3	43485K116	56.57

How to Measure Unthreaded Pipe and Flanges—*Example shows pipe size 3/8 for pipe, pipe size 1/2 for flanges.*

Pipe size is an industry designation, not the actual size. Place your pipe or flange on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe and butt-weld flange, or inside diameter (ID) of your slip-on flange, then select the pipe size on the scale that corresponds to your measurement.

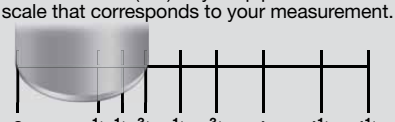

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC.** For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Aluminum Unthreaded Pipe CAD

- Use with air, water, oil
- Fittings: Use butt-weld Schedule 40 standard-wall aluminum (see pg. 49)
- Flanges: Use unthreaded low-pressure aluminum (see below)

Also known as Schedule 40, this is the most popular style of pipe. This 6061 aluminum pipe is unthreaded so you can make welded connections, which are less likely to leak than threaded connections. It has seamless construction for unrestricted flow. Meets ASTM B241.

To Order: Please specify 1-, 3-, or 6-ft. length.

Pipe Size		1 ft.	3 ft.	6 ft.
1/8	5038K151	$6.30	$14.54	$24.23
1/4	5038K161	7.09	16.36	27.27
3/8	5038K171	14.54	33.55	55.91
1/2	5038K181	16.73	38.60	64.33
3/4	5038K221	$17.82	$41.13	$68.55
1	5038K261	19.92	42.68	71.14
1 1/4	5038K271	20.95	48.35	80.59
1 1/2	5038K281	23.96	55.30	92.17
2	5038K321	$30.75	$70.95	$118.25
2 1/2	5038K331	47.43	85.69	153.01
3	5038K341	63.73	115.12	205.58
4	5038K351	84.47	152.60	272.50

Low-Pressure Aluminum Unthreaded Flanges CAD

- Use with air, water, oil
- Maximum Pressure: 150 psi @ 72° F
- Pipe: Use unthreaded Schedule 40 standard-wall aluminum (see above)
- Fittings: Use butt-weld Schedule 40 standard-wall aluminum (see page 49)

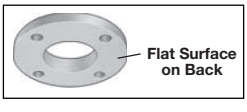

Aluminum flanges, which are also known as Class 125, allow easy access to your pipe. Bolt two same-size flanges together with a gasket (not included). They're made of 356 aluminum and have a flat surface on back. Flanges meet the dimensional requirements of ANSI/ASME B16.1. For gaskets, see pages 3474-3480; for bolts, see page 3151.

Slip On— Slip the flange onto your pipe and weld. There is no internal stop; you must weld the flange to your pipe on both sides.

Butt Weld— Also known as weld-neck flanges. Butt up the flange to your pipe and weld. The flange neck has a beveled end that, when connected to a pipe, creates a trough for a strong weld.

Cap— Also known as blind flanges, use these solid flanges to close off the end of a pipe.

Pipe Size	Flange OD	Bolts Required Qty.	Bolts Required Dia.	Slip On		Butt Weld		Cap	
1/2	3 1/2"	4	1/2"	44705K37	$13.68	44705K543	$30.94	44705K531	$18.62
3/4	3 7/8"	4	1/2"	44705K38	15.07	44705K544	39.45	44705K532	22.98
1	4 1/4"	4	1/2"	44705K361	15.82	44705K545	44.30	44705K533	27.60
1 1/4	4 5/8"	4	1/2"	44705K362	18.42	44705K546	51.92	44705K534	30.64
1 1/2	5"	4	1/2"	44705K363	25.33	44705K547	57.54	44705K535	38.26
2	6"	4	5/8"	44705K364	33.79	44705K548	64.44	44705K536	47.49
2 1/2	7"	4	5/8"	44705K365	42.37	44705K549	76.01	44705K537	53.58
3	7 1/2"	4	5/8"	44705K366	46.61	44705K551	91.14	44705K538	68.05
4	9"	8	5/8"	44705K367	65.57	44705K552	103.88	44705K539	88.50
6	11"	8	3/4"	44705K542	99.03	44705K553	157.94	44705K541	132.38

Thick-Wall Butt-Weld Aluminum Unthreaded Pipe Fittings CAD

- Use with air, water, oil

The thick walls, which are also known as Schedule 80, ensure you're getting the strongest unthreaded aluminum fittings and pipe we offer. All are made of 6061 aluminum.

Elbows, ***tees***, and ***reducing couplings*** have beveled ends that, when connected to a pipe, create a trough for a strong weld. Meet ASTM B361 and ANSI/ASME B16.9. The *reducing couplings* are also called concentric reducers.

Pipe has seamless construction for unrestricted flow. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Connections: Butt weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows (C)		45° Elbows		Tees	
1/2	0.147"	1 1/2"	4684T11	$80.94	4684T21	$153.85	4684T31	$228.00
3/4	0.154"	1 1/8"	4684T12	83.81	4684T22	153.85	4684T32	230.09
1	0.179"	1 1/2"	4684T13	61.54	4684T23	111.54	4684T33	232.22
1 1/4	0.191"	1 7/8"	4684T14	80.77	4684T24	153.85	—	—
1 1/2	0.200"	2 1/4"	4684T15	69.23	4684T25	99.74	4684T35	238.00
2	0.218"	3"	4684T16	80.77	4684T26	107.69	4684T36	203.40
2 1/2	0.276"	3 3/4"	4684T17	143.85	4684T27	188.46	4684T37	412.76
3	0.300"	4 1/2"	4684T18	143.85	4684T28	143.85	4684T38	316.91
4	0.337"	6"	4684T19	226.67	4684T29	226.42	4684T39	452.17

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
3/4	1/2	4684T61	$84.62
1	3/4	4684T62	84.62
1 1/2	1	4684T63	84.62
2	1 1/2	4684T64	59.62
3	2	4684T65	84.62
4	3	4684T66	103.77

Pipe

Pipe Size		1 ft.	3 ft.	6 ft.	Pipe Size		1 ft.	3 ft.	6 ft.
1/2	4559T1	$32.63	$75.30	$125.50	2	4559T6	$39.74	$91.70	$152.84
3/4	4559T2	32.84	75.79	126.31	2 1/2	4559T7	61.92	142.90	238.16
1	4559T3	21.77	50.24	83.74	3	4559T8	70.43	162.54	270.90
1 1/4	4559T4	22.60	52.15	86.92	4	4559T9	90.06	207.83	346.38
1 1/2	4559T5	26.88	62.04	103.40					

How to Measure Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

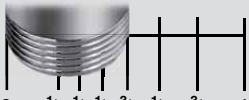

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″

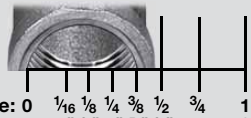

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

FM-Approved Low-Pressure Black Iron Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 125 psi @ 72° F; 125 psi @ 353° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall black steel (see pages 55-56)
- Flanges: Use threaded low-pressure black iron and steel (see pg. 56)

A strike of a hammer is all it takes to break open a water line in an emergency. Also called Class 125, these black cast iron fittings are a great choice for fire protection applications because they're more brittle than malleable iron and steel fittings. All are FM approved, UL and C-UL listed, and meet ASTM A126 and ANSI/ASME B1.20.1. They also meet ANSI/ASME B16.4 or B16.14, except off-center reducing couplings. They can be used interchangeably with black malleable iron and black steel.

Off-center reducing couplings, also called eccentric reducers, connect one pipe to another of a smaller diameter with the centers offset.

Connections: NPT.

Pipe Size	90° Elbows		45° Elbows		Tees	
1/2	68115K21	$3.16	68115K31	$4.83	68115K41	$4.93
3/4	68115K22	3.29	68115K32	4.87	68115K42	5.75
1	68115K23	3.90	68115K33	5.70	68115K43	5.84
1 1/4	68115K24	5.54	68115K34	7.67	68115K44	9.33
1 1/2	68115K25	7.66	68115K35	12.71	68115K45	12.12
2	68115K26	11.96	68115K36	14.66	68115K46	16.88
2 1/2	68115K27	25.48	68115K37	33.90	68115K47	38.99
3	68115K28	41.72	68115K38	53.69	68115K48	59.84
4	68115K49	69.62	68115K51	99.74	68115K52	105.04

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)		
1 1/4	3/8	44605K284	$3.99
1 1/4	1/2	44605K283	3.69
1 1/4	3/4	44605K296	3.24
1 1/2	3/8	44605K289	6.12
1 1/2	1/2	44605K288	4.11
1 1/2	3/4	44605K287	4.11
1 1/2	1	44605K286	3.60
2	1/2	44605K295	6.52
2	3/4	44605K294	5.16
2	1	44605K293	4.93
2	1 1/4	44605K292	4.93
2 1/2	1 1/2	44605K411	7.89
3	2	44605K412	9.15
3	2 1/2	44605K413	10.61
4	3	44605K414	20.65

Reducing Couplings

Pipe Size (A)	(B)		
3/4	1/2	68115K53	$8.84
1	1/2	68115K11	4.52
1	3/4	68115K12	5.99
1 1/4	3/4	68115K54	13.26
1 1/4	1	68115K13	15.51
1 1/2	1	68115K55	19.53
1 1/2	1 1/4	68115K14	19.53
2	1/2	68115K58	28.35
2	3/4	68115K57	25.53
2	1	68115K15	22.74
2	1 1/4	68115K56	26.67
2	1 1/2	68115K16	25.53
2 1/2	2	68115K17	36.28
3	1 1/2	68115K59	61.59
3	2	68115K18	44.47

Off-Center Reducing Couplings

Pipe Size (A)	(B)		
3/4	1/2	68115K62	$16.52
1	1/2	68115K66	17.34
1	3/4	68115K64	17.84
1 1/4	1/2	68115K73	28.51
1 1/4	3/4	68115K71	25.83
1 1/4	1	68115K67	26.57
1 1/2	1/2	68115K81	35.89
1 1/2	3/4	68115K78	37.68
1 1/2	1	68115K77	37.68
1 1/2	1 1/4	68115K75	36.02
2	1	68115K85	44.92
2	1 1/4	68115K84	46.83
2	1 1/2	68115K82	47.78

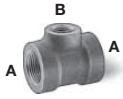

Inline Reducing Tees

Pipe Size (A)	(B)		
3/4	1/2	68115K61	$7.99
1	1/2	68115K65	5.76
1	3/4	68115K63	6.92
1 1/4	1/2	68115K68	9.21
1 1/4	3/4	68115K72	10.00
1 1/4	1	68115K69	9.22
1 1/2	1/2	68115K83	12.02
1 1/2	3/4	68115K79	12.98
1 1/2	1	68115K76	12.02
1 1/2	1 1/4	68115K74	17.10
2	1/2	68115K96	17.04
2	3/4	68115K94	17.04
2	1	68115K92	17.04
2	1 1/4	68115K89	17.01
2	1 1/2	68115K86	17.97

Low-Pressure Black Iron Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 125 psi @ 72° F; 125 psi @ 353° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall black steel (see pages 55-56)
- Flanges: Use threaded low-pressure black iron and steel (see page 56)

Also known as Class 125, these fittings are made of black cast iron and can be used interchangeably with black malleable iron and black steel; however, cast iron is the most brittle of the three. Fittings are UL listed and meet ASTM A126 and ANSI/ASME B1.20.1; they also meet ANSI/ASME B16.4 or B16.14.

Square-head plugs are hollow; ***square-socket plugs*** are solid.

Connections: NPT.

Pipe Size	Caps		Square-Head Plugs		Square-Socket Plugs	
3/4	44605K105	$2.94	—	—	—	—
1	44605K106	3.77	44605K226	$1.88	44605K236	$2.60
1 1/4	44605K107	4.51	44605K227	2.64	44605K237	2.84
1 1/2	44605K108	6.26	44605K228	3.52	44605K238	4.08
2	44605K109	8.51	44605K229	5.00	44605K239	7.72
2 1/2	44605K206	11.27	44605K337	9.60	44605K341	12.29
3	—	—	44605K338	10.61	44605K342	19.32
4	—	—	44605K339	18.50	44605K343	20.07

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)		
1	1/4	44605K255	$3.24
1	3/8	44605K254	3.24
1	1/2	44605K253	3.24
1	3/4	44605K252	3.68

Low-Pressure Steel Threaded Pipe Plugs with Magnet

- Use with air, water, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 250° F for steam

A bar or disc magnet is bonded to one end of these steel plugs to grab metal shavings before they become a problem. Plugs are solid.

Connections: ***Square-head*** and ***hex-socket plugs*** have NPTF (Dryseal) threads, which are compatible with NPT threads. ***Hex-head plugs*** have metric straight threads.

Pipe Size	Square-Head Plugs		Hex Key Size	Hex-Socket Plugs		Thread Size (Actual OD)	Hex-Head Plugs	
1/8	1072A16	$3.20	3/16″	1072A26	$3.64	M12×1.25	1072A31	$8.04
1/4	1072A11	3.32	1/4″	1072A21	3.60	M14×1.25	1072A32	15.40
3/8	1072A12	2.32	5/16″	1072A22	2.20	M14×1.5	1072A33	9.36
1/2	1072A13	2.84	3/8″	1072A23	3.00	M18×1.5	1072A34	7.88
3/4	1072A14	3.76	9/16″	1072A24	4.32			
1	1072A15	8.86	5/8″	1072A25	6.08			

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

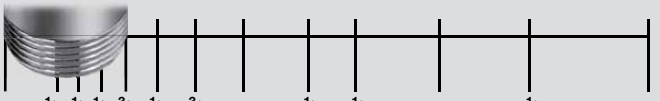

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Black Iron and Steel Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 350° F for steam, except locknuts
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall black steel (see pages 55-56)
- Flanges: Use threaded low-pressure black iron and steel (see pg. 56)

A popular choice for low-pressure plumbing applications, these Class 150 fittings are black malleable iron or black steel. They can be used interchangeably with low-pressure black cast iron.

Connections: NPT or NPT compatible. The fittings with NPT-compatible threads are fully threaded couplings in pipe sizes 1/8-2, which have NPSC (National Pipe Straight Coupling) threads, and locknuts, which have NPSL (National Pipe Straight Locknut) threads.

Elbows, Wyes, Tees, Crosses, Unions, Couplings, and Adapters

UL listed (unless noted) and meet ANSI/ASME B1.20.1. They also meet ANSI/ASME B16.3 or B16.39, except adapters. The ***90° female × male elbows*** are also known as street elbows. ***180° bends*** are also called U-bends. ***Unions*** have a brass seal, which is also called a seat, that conforms to uneven surfaces. ***Couplings*** are threaded on each end with an unthreaded space in the middle.

Pipe Size	90° Elbows		90° Elbows, Female × Male		45° Elbows		45° Elbows, Female × Male		180° Bends		Wyes	
1/8	44605K111	$2.10	44605K131	$3.02	44605K129	$3.08	44605K141	$4.74	—	—	—	—
1/4	44605K112	2.04	44605K132	3.02	44605K121	3.08	44605K149	4.17	—	—	—	—
3/8	44605K113	2.04	44605K133	3.02	44605K122	3.08	44605K142	4.00	—	—	44605K351	$7.85
1/2	44605K114	1.42	44605K134	2.93	44605K123	2.34	44605K143	3.27	44605K563	$24.31	44605K353	7.39
3/4	44605K115	1.71	44605K135	2.93	44605K124	2.89	44605K144	4.93	44605K564	15.40	44605K354	9.80
1	44605K116	2.97	44605K136	4.15	44605K125	3.65	44605K145	5.75	44605K565★	14.31	44605K355	13.18
1 1/4	44605K117	4.90	44605K137	6.44	44605K126	6.44	44605K146	9.95	44605K566	29.83	44605K356	22.78
1 1/2	44605K118	6.44	44605K138	8.62	44605K127	7.97	44605K147	12.82	44605K567	52.41	44605K357	30.94
2	44605K119	11.10	44605K139	14.01	44605K128	12.05	44605K148	21.56	44605K568	52.41	44605K359	48.15
2 1/2	44605K11	24.73	44605K31	35.52	44605K21	34.88	—	—	—	—	44605K361	117.95
3	44605K12	36.20	44605K32	52.05	44605K22	45.30	—	—	—	—	44605K362	163.06
4	44605K13	74.64	44605K33	104.60	44605K23	85.29	—	—	—	—	44605K363	308.08
6	44605K297	252.08	—	—	44605K531	318.04	—	—	—	—	—	—

★ Not UL listed.

Pipe Size	Tees		Tees, Female × Female × Male		Crosses		Unions		Couplings		Adapters, Female × Male	
1/8	44605K151	$3.15	—	—	44605K38	$8.89	44605K191★	$10.85	44605K662	$3.03	—	—
1/4	44605K152	2.97	44605K401	$6.42	44605K168	7.28	44605K192	10.03	44605K182	2.54	—	—
3/8	44605K153	2.97	44605K402	7.16	44605K34	7.54	44605K193	6.91	44605K183	2.54	44605K659	$5.48
1/2	44605K154	1.89	44605K403	5.92	44605K161	7.16	44605K194	6.26	44605K184	1.96	44605K312	4.36
3/4	44605K155	2.72	44605K404	7.32	44605K162	8.67	44605K195	7.19	44605K185	2.29	44605K313	6.44
1	44605K156	4.65	44605K405	9.67	44605K163	10.67	44605K196	9.38	44605K186	3.43	44605K314	9.29
1 1/4	44605K157	7.54	44605K406	15.96	44605K164	17.32	44605K197	13.45	44605K187	4.45	44605K661★	10.69
1 1/2	44605K158	9.37	44605K407	24.22	44605K165	21.48	44605K198	16.77	44605K188	6.01	—	—
2	44605K159	15.98	44605K408	45.84	44605K167	35.31	44605K199	19.50	44605K189	8.90	—	—
2 1/2	44605K51	34.45	—	—	44605K35	77.24	44605K91	55.78	44605K81	24.58	—	—
3	44605K52	50.74	—	—	44605K36	107.16	44605K92	67.14	44605K82★	33.23	—	—
4	44605K53	113.20	—	—	44605K37	213.38	44605K93	168.37	44605K83★	64.24	—	—
6	44605K533	341.40	—	—	—	—	—	—	—	—	—	—

★ Not UL listed.

Caps and Fully Threaded Couplings

Caps in pipe sizes 1-6 meet ANSI/ASME B16.3 and B1.20.1. ***Fully threaded couplings*** are also known as merchant couplings; they meet ASTM A53 and A865.

Caps

Pipe Size			Pipe Size		
1/8	44605K171	$0.63	1 1/2	44605K656	$4.25
1/4	44605K172	.74	2	44605K657	6.20
3/8	44605K173	1.14	2 1/2	44605K658	14.12
1/2	44605K174	1.67	3	44605K391	20.98
3/4	44605K201	2.98	4	44605K392	35.97
1	44605K654	2.35	6	44605K536	155.28
1 1/4	44605K655	3.09			

Fully Threaded Couplings

Pipe Size			Pipe Size		
1/8	46685K261	$1.38	1 1/4	46685K267	$5.56
1/4	46685K262	1.91	1 1/2	46685K268	7.04
3/8	46685K263	2.29	2	46685K269	10.08
1/2	46685K264	2.44	2 1/2	46685K271	28.71
3/4	46685K265	3.12	3	46685K272	34.27
1	46685K266	4.35	4	46685K273	60.73

(Continued on following page)

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

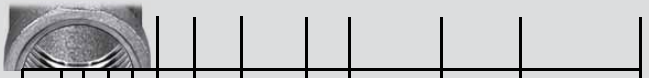

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Black Iron and Steel Threaded Pipe Fittings

(Continued from previous page)

Locknuts, Plugs, and Bushings

Locknuts are not rated for pressure. They meet ANSI/ASME B16.14. ***Square-head***, ***square-socket***, and ***hex-socket plugs*** are solid. ***Reducing bushings*** are also known as face bushings.

Pipe Size	Locknuts		Square-Head Plugs		Square-Socket Plugs		Hex-Socket Plugs: Hex Key Size		
1/8	44605K433	$2.26	44605K221	$0.12	44605K672	$0.12	3/16″	44605K231	$0.17
1/4	44605K434	2.08	44605K222	.18	44605K673	.20	1/4″	44605K232	.18
3/8	44605K211	2.36	44605K223	.28	44605K674	.25	5/16″	44605K233	.22
1/2	44605K212	2.02	44605K224	.50	44605K675	.42	3/8″	44605K234	.38
3/4	44605K213	2.21	44605K225	.84	44605K676	.55	9/16″	44605K235	.67
1	44605K214	4.23	44605K663	2.19	44605K677	1.80	5/8″	44605K667	1.70
1 1/4	44605K215	3.48	44605K664	14.18	44605K678	5.17	3/4″	44605K668	5.00
1 1/2	44605K216	4.89	44605K665	14.96	44605K679	10.34	1″	44605K669	8.72
2	44605K217	8.11	44605K666	23.95	44605K681	15.61	1″	44605K671	10.90

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
1/4	1/8	44605K241	$0.63	1	1/2	44605K368	$2.45
3/8	1/8	44605K243	.74	1	3/4	44605K369	2.42
3/8	1/4	44605K242	.74	1 1/4	1/2	44605K621	2.86
1/2	1/8	44605K246	1.14	1 1/4	3/4	44605K622	2.86
1/2	1/4	44605K245	1.14	1 1/4	1	44605K281	3.15
1/2	3/8	44605K244	1.14	1 1/2	3/4	44605K623	10.92
3/4	1/8	44605K319	2.62	1 1/2	1	44605K624	10.92
3/4	1/4	44605K344	2.49	1 1/2	1 1/4	44605K285	4.00
3/4	3/8	44605K345	2.55	2	1	44605K625	13.22
3/4	1/2	44605K346	2.30	2	1 1/4	44605K626	13.22
1	1/8	44605K347	3.74	2	1 1/2	44605K291	5.04
1	1/4	44605K348	3.23	2 1/2	2	44605K398	7.76
1	3/8	44605K349	3.31	4	3 1/2	44605K409	27.00

Reducing Bushings, Male×Female

Pipe Size (A)	(B)		
1/4	1/8	44605K256	$0.63
3/8	1/8	44605K388	.72
3/8	1/4	44605K257	.74
1/2	1/8	44605K261	1.06
1/2	1/4	44605K259	1.10
1/2	3/8	44605K258	1.14
3/4	1/8	44605K396	1.74
3/4	1/4	44605K264	1.77
3/4	3/8	44605K263	1.80
3/4	1/2	44605K262	1.86
1	1/4	44605K268	2.87
1	3/8	44605K267	2.92
1	1/2	44605K266	2.98
1	3/4	44605K265	3.04

Reducing Tees

All are UL listed and meet ANSI/ASME B16.3 and B1.20.1.

Right-Angle Reducing Tees

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
3/8	1/2	44605K513	$5.04	1	1 1/2	44605K518	$13.46
1/2	1/4	44605K512★	3.38	1	2	44605K644★	19.91
1/2	3/8	44605K373	5.04	1 1/4	1/2	44605K634	11.26
1/2	3/4	44605K449	4.31	1 1/4	3/4	44605K632	10.20
1/2	1	44605K381	6.05	1 1/4	1 1/2	44605K637	18.05
3/4	1/2	44605K448	4.85	1 1/2	3/4	44605K519	13.46
3/4	1	44605K378	5.62	1 1/2	1	44605K521	13.46
3/4	1 1/4	44605K633	11.26	1 1/2	1 1/4	44605K636	20.29
3/4	1 1/2	44605K517★	22.55	1 1/2	2	44605K641	20.62
1	1/4	44605K516	6.16	2	1	44605K522	20.98
1	1/2	44605K379	6.05	2	1 1/4	44605K643	22.54
1	3/4	44605K377	6.16	2	1 1/2	44605K466	22.70
1	1 1/4	44605K629	9.90	2	3	44605K527	60.78

★ Not UL listed.

Inline Reducing Tees

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
3/8	1/2	44605K511	$4.41	1 1/2	1	44605K382	$10.70
1/2	1/4	44605K372	3.23	1 1/2	1 1/4	44605K459	13.23
1/2	3/8	44605K371	4.14	2	1/2	44605K465	17.09
1/2	3/4	44605K451	4.85	2	3/4	44605K464	16.77
1/2	1	44605K628★	7.94	2	1	44605K463	16.77
3/4	1/4	44605K375	4.67	2	1 1/4	44605K639	18.05
3/4	3/8	44605K468	5.16	2	1 1/2	44605K383	18.05
3/4	1/2	44605K374	4.21	2 1/2	3/4	44605K649★	50.32
3/4	1	44605K455	6.40	2 1/2	1	44605K648★	52.25
1	1/4	44605K627★	6.71	2 1/2	1 1/4	44605K647★	52.25
1	3/8	44605K453	7.46	2 1/2	1 1/2	44605K646★	52.25
1	1/2	44605K452	5.30	2 1/2	2	44605K645★	44.81
1	3/4	44605K376	5.30	3	3/4	44605K653★	58.58
1	1 1/4	44605K635	11.75	3	1	44605K524	60.14
1 1/4	1/2	44605K458	9.67	3	1 1/4	44605K652	60.82
1 1/4	3/4	44605K457	8.47	3	1 1/2	44605K651	59.73
1 1/4	1	44605K456	9.19	3	2	44605K525	57.45
1 1/2	1/2	44605K462	11.33	3	2 1/2	44605K526	68.25
1 1/2	3/4	44605K461	10.70	4	3	44605K683★	135.57

★ Not UL listed.

Dual Reducing Tees

Pipe Size (A)	(B)	(C)		
1	1/2	3/4	44605K454	$6.07
1 1/4	3/4	1	44605K631	9.90
1 1/2	3/4	1 1/4	44605K638	13.46
2	1	1 1/2	44605K467	20.62

(Continued on following page)

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Black Iron and Steel Threaded Pipe Fittings

(Continued from previous page)

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 350° F for steam, except locknuts
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall black steel (see pages 55-56)
- Flanges: Use threaded low-pressure black iron and steel (see pg. 56)

A popular choice for low-pressure plumbing applications, these Class 150 fittings are black malleable iron or black steel. They can be used interchangeably with low-pressure black cast iron.

Connections: NPT for all of the fittings listed below.

Reducing Elbows and Couplings

All are UL listed and meet ANSI/ASME B16.3 and B1.20.1. ***90° female × male elbows*** are also known as street elbows.

90° Reducing Elbows

Pipe Size (A)	(B)			
1/4	1/8	44605K415	$4.07	
3/8	1/8	44605K364	5.83	
3/8	1/4	44605K416	2.87	
1/2	1/4	44605K417	2.78	
1/2	3/8	44605K418	2.70	
3/4	1/4	44605K365	4.56	
3/4	3/8	44605K435	3.88	
3/4	1/2	44605K419	2.78	
1	3/8	44605K436	7.57	
1	1/2	44605K422	3.85	
1	3/4	44605K421	$3.57	
1 1/4	1/2	44605K437	7.82	
1 1/4	3/4	44605K425	6.69	
1 1/4	1	44605K423	6.00	
1 1/2	1/2	44605K439	9.27	
1 1/2	3/4	44605K438	9.68	
1 1/2	1	44605K427	8.46	
1 1/2	1 1/4	44605K426	8.46	
2	1/2	44605K444	11.70	
2	3/4	44605K443	$14.76	
2	1	44605K442	13.92	
2	1 1/4	44605K441	13.92	
2	1 1/2	44605K428	12.25	
2 1/2	1 1/2	44605K446	35.60	
2 1/2	2	44605K445	33.62	
3	2	44605K447	52.18	
3	2 1/2	44605K366	64.65	
4	3	44605K367	106.24	

90° Reducing Elbows, Female × Male

Pipe Size (A)	(B)		
1/2	3/8	44605K571	$4.58
3/4	1/2	44605K572	6.84
1	3/4	44605K573	6.42
1 1/4	3/4	44605K575	15.14
1 1/4	1	44605K574	9.24
1 1/2	1	44605K576	13.20
1 1/2	1 1/4	44605K577	15.66
2	1 1/2	44605K578	23.04

Reducing Couplings

Pipe Size (A)	(B)		
1/4	1/8	44605K269	$2.67
3/8	1/8	44605K384	3.62
3/8	1/4	44605K271	2.67
1/2	1/8	44605K385	2.71
1/2	1/4	44605K273	2.43
1/2	3/8	44605K272	2.30
3/4	1/8	44605K386	3.20
3/4	1/4	44605K276	3.07
3/4	3/8	44605K275	3.07
3/4	1/2	44605K274	2.57
1	1/4	44605K387	5.71
1	3/8	44605K279	$5.04
1	1/2	44605K278	4.10
1	3/4	44605K277	4.00
1 1/4	1/2	44605K323	6.05
1 1/4	3/4	44605K322	5.15
1 1/4	1	44605K321	5.15
1 1/2	1/2	44605K326	7.69
1 1/2	3/4	44605K317	8.67
1 1/2	1	44605K325	7.55
1 1/2	1 1/4	44605K324	6.51
2	1/2	44605K333	$12.52
2	3/4	44605K331	10.81
2	1	44605K329	10.21
2	1 1/4	44605K328	10.81
2	1 1/2	44605K327	9.44
2 1/2	1	44605K541	29.47
2 1/2	1 1/4	44605K542	29.47
2 1/2	1 1/2	44605K543	25.74
2 1/2	2	44605K318	21.70
3	1	44605K545	34.53
3	1 1/4	44605K546	$35.17
3	1 1/2	44605K547	33.90
3	2	44605K332	28.08
3	2 1/2	44605K334	32.78
4	1 1/2	44605K582	83.69
4	2	44605K335	62.73
4	2 1/2	44605K584	80.54
4	3	44605K336	65.24
4	3 1/2	44605K586	105.88
6	4	44605K682	183.28

Standard-Wall Steel Threaded Pipe Nipple Assortments

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 125 low-pressure black iron (see page 51) or threaded Class 150 low-pressure black iron and steel (see pg. 52-above)
- Flanges: Use threaded low-pressure black iron and steel (see page 56)

Each assortment includes a range of different pipe nipple lengths in both fully threaded and threaded-on-both-ends styles. All meet ASTM A53 and A733, as well as ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they're threaded on each end to the center and vary in length from 7/8″ to 2″ depending on the pipe size.

Galvanized steel offers better corrosion resistance than black steel.

Connections: NPT.

25-Nipple Assortment

Pipe Size	Total No. of Nipples	No. of Nipples: Fully Threaded	Threaded on Both Ends, Length: 1 1/2″	2″	2 1/2″	3″	3 1/2″	4″	4 1/2″	5″	5 1/2″	6″	Black Steel		Galvanized Steel	
1/4	100	20	10	15	10	10	5	10	5	5	5	5	4561K11	$170.14	4561K21	$212.69
3/8	100	20	10	15	10	10	5	10	5	5	5	5	4561K12	150.33	4561K22	206.28
1/2	66	6	6	6	6	6	6	6	6	6	6	6	4561K33	97.34	4561K43	121.50
1/2	100	20	10	15	10	10	5	10	5	5	5	5	4561K13	113.63	4561K23	139.06
3/4	66	6	6	6	6	6	6	6	6	6	6	6	4561K34	91.12	4561K44	121.75
3/4	100	20	10	15	10	10	5	10	5	5	5	5	4561K14	135.66	4561K24	169.36
1	30	3	—	3	3	3	3	3	3	3	3	3	4561K36	72.34	4561K46	90.23
1	75	15	—	12	5	12	3	12	3	3	5	5	—	—	4561K25	184.00
1	75	15	—	15	10	12	5	5	4	3	3	3	4561K15	149.58	—	—
1 1/4	25	5	—	5	3	2	2	2	1	2	1	2	—	—	4561K76	83.27
1 1/4	25	6	—	4	3	2	2	2	1	2	1	2	4561K56	67.89	—	—
1 1/2	25	5	—	5	3	2	2	2	1	2	1	2	4561K57	83.33	4561K77	99.74
2	25	6	—	—	3	3	2	3	1	3	1	3	4561K58	117.88	4561K78	143.63

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

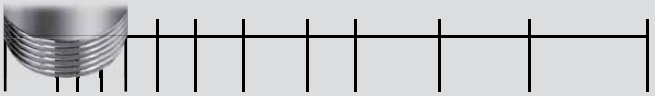

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Black Steel Threaded Pipe Nipples and Pipe

Fully Threaded

Threaded on Both Ends

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 125 low-pressure black iron (see page 51) or threaded Class 150 low-pressure black iron and steel (see pages 52-54)
- Flanges: Use threaded low-pressure black iron and steel (see page 56)

Black steel is the most popular choice for pipe nipples and pipe in low-pressure plumbing applications. Also known as Schedule 40, all have a welded construction, so there's a weld bead on the inside. Meet ASTM A53 and A733, as well as ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	44615K411	$0.82
1/4	7/8″	44615K412	.99
3/8	1″	44615K413	1.01
1/2	1 1/8″	44615K414	.85
3/4	1 3/8″	44615K415	.96
1	1 1/2″	44615K416	1.41
1 1/4	1 5/8″	44615K417	1.81
1 1/2	1 3/4″	44615K418	2.22
2	2″	44615K419	3.04
2 1/2	2 1/2″	44615K111	9.53
3	2 5/8″	44615K121	11.33
4	2 7/8″	44615K131	17.07
6	3 1/8″	44615K138	44.23

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	44615K421	$1.01	44615K431	$1.01	44615K441	$1.17	44615K451	$1.17	44615K551	$1.41
1/4	44615K422	1.05	44615K432	1.05	44615K442	1.35	44615K452	1.35	44615K552	1.56
3/8	44615K423	1.14	44615K433	1.14	44615K443	1.47	44615K453	1.47	44615K553	1.72
1/2	44615K424	.85	44615K434	.85	44615K444	1.01	44615K454	1.01	44615K554	1.22
3/4	44615K425	1.05	44615K435	1.05	44615K445	1.18	44615K455	1.18	44615K555	1.47
1			44615K436	1.55	44615K446	1.65	44615K456	1.65	44615K556	2.04
1 1/4			44615K437	2.02	44615K447	2.17	44615K457	2.17	44615K557	2.55
1 1/2			44615K438	2.41	44615K448	2.69	44615K458	2.69	44615K558	3.03
2					44615K449	3.50	44615K459	3.50	44615K559	4.23
2 1/2							44615K112	9.80	44615K561	11.52
3							44615K122	12.31	44615K562	14.59

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		4 1/2″ Lengths		5″ Lengths		5 1/2″ Lengths		6″ Lengths		6 1/2″ Lengths	
1/8	44615K461	$1.41	44615K141	$2.69	44615K471	$2.69	44615K155	$2.96	44615K481	$2.96	44615K171	$4.06
1/4	44615K462	1.56	44615K142	2.38	44615K472	2.38	44615K156	2.80	44615K482	2.80	44615K172	4.29
3/8	44615K463	1.72	44615K143	2.50	44615K473	2.50	44615K157	2.78	44615K483	2.78	44615K173	4.89
1/2	44615K464	1.22	44615K144	1.41	44615K474	1.41	44615K158	1.59	44615K484	1.59	44615K174	2.85
3/4	44615K465	1.47	44615K145	1.84	44615K475	1.84	44615K159	2.09	44615K485	2.09	44615K175	3.50
1	44615K466	2.04	44615K146	2.42	44615K476	2.42	44615K161	2.86	44615K486	2.86	44615K176	4.66
1 1/4	44615K467	2.55	44615K147	3.07	44615K477	3.07	44615K162	3.64	44615K487	3.64	44615K177	5.88
1 1/2	44615K468	3.03	44615K148	3.69	44615K478	3.69	44615K163	4.24	44615K488	4.24	44615K178	6.74
2	44615K469	4.23	44615K149	4.88	44615K479	4.88	44615K164	5.70	44615K489	5.70	44615K179	9.56
2 1/2	44615K113	11.52	44615K151	12.64	44615K114	12.64	44615K165	13.18	44615K115	13.18	44615K181	16.77
3	44615K123	14.59	44615K152	16.10	44615K124	16.10	44615K166	17.49	44615K125	17.49	44615K182	23.60
4	44615K132	19.75	44615K154	22.54	44615K133	22.54	44615K168	24.12	44615K134	24.12	44615K183	27.83
6	44615K139	46.49	44615K326	52.06	44615K189	52.06	44615K169	57.73	44615K188	57.73	44615K184	69.58

Pipe Size	7″ Lengths		8″ Lengths		9″ Lengths		10″ Lengths		11″ Lengths		12″ Lengths	
1/8	44615K191	$4.06	44615K521	$4.06	44615K311	$4.66	44615K531	$4.66	44615K331	$4.75	44615K541	$4.75
1/4	44615K192	4.29	44615K522	4.29	44615K312	5.06	44615K532	5.06	44615K332	5.58	44615K542	5.58
3/8	44615K193	4.87	44615K523	4.89	44615K313	5.49	44615K533	5.49	44615K333	6.22	44615K543	6.22
1/2	44615K194	2.85	44615K524	2.85	44615K314	3.44	44615K534	3.44	44615K334	4.08	44615K544	4.08
3/4	44615K195	3.50	44615K525	3.50	44615K315	4.06	44615K535	4.06	44615K335	4.51	44615K545	4.51
1	44615K196	4.66	44615K526	4.66	44615K316	5.46	44615K536	5.46	44615K336	6.28	44615K546	6.28
1 1/4	44615K197	5.88	44615K527	5.88	44615K317	7.05	44615K537	7.05	44615K337	7.98	44615K547	7.98
1 1/2	44615K198	6.74	44615K528	6.74	44615K318	7.88	44615K538	7.88	44615K338	9.07	44615K548	9.07
2	44615K199	9.56	44615K529	9.56	44615K319	11.25	44615K539	11.25	44615K339	12.95	44615K549	12.95
2 1/2	44615K211	16.77	44615K116	16.77	44615K321	18.85	44615K117	18.85	44615K341	20.96	44615K118	20.96
3	44615K212	23.60	44615K126	23.60	44615K322	26.50	44615K127	26.50	44615K342	29.40	44615K128	29.40
4	44615K213	27.83	44615K135	27.83	44615K323	28.88	44615K136	28.88	44615K343	31.59	44615K137	31.60
6	44615K214	69.58	44615K185	69.58	44615K324	80.58	44615K186	80.58	44615K344	94.86	44615K187	94.86

To Order: Please specify length.

Pipe Size		14″ Lengths	16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths	126″ Lengths
1/8	4457K441	$4.89	$5.58	$6.02	$7.00	$7.37	$8.13	$9.94	$13.01	$15.15	$15.57	$35.83
1/4	4457K442	5.65	6.46	7.04	7.59	8.03	8.72	12.20	14.37	18.86	21.78	42.10
3/8	4457K443	6.29	6.88	7.67	8.61	9.47	10.64	13.57	15.99	19.03	24.51	42.27
1/2	4457K444	4.50	5.16	5.72	6.46	6.81	7.50	10.35	13.56	15.72	19.33	29.82
3/4	4457K445	5.31	6.07	7.09	7.59	8.03	9.08	12.56	16.72	20.48	23.57	35.37
1	4457K446	7.14	8.17	9.13	10.23	10.77	11.93	16.60	21.66	27.28	27.73	49.08
1 1/4	4457K447	9.42	10.77	11.61	13.46	14.20	15.64	24.18	28.83	30.89	36.84	64.69
1 1/2	4457K448	10.55	12.04	13.26	15.07	15.89	17.87	25.45	30.20	36.95	43.53	71.08
2	4457K449	15.57	17.80	20.50	22.26	22.66	24.44	31.68	41.39	51.19	67.53	92.29
2 1/2	4457K451	24.08	27.51	28.35	31.65	34.79	37.39	56.68	69.50	81.32	88.70	139.50
3	4457K452	29.56	33.78	38.03	43.37	43.31	45.65	76.07	83.00	103.73	124.49	179.49
4	4457K453	34.27	39.16	41.68	46.28	50.82	55.57	83.35	101.05	126.29	151.55	259.55
6	4457K454	115.23	131.65	146.94	156.73	167.10	179.58	269.38	351.62	439.56	519.48	594.27

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

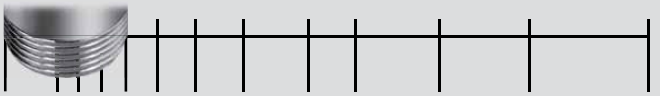

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Black Steel Threaded-On-One-End Pipe Nipples and Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 125 low-pressure black iron (see page 51) or threaded Class 150 low-pressure black iron and steel (see pages 52-54)
- Flanges: Use threaded low-pressure black iron and steel (see below)

Turn to these nipples and pipe when you need a threaded connection on one end and an unthreaded connection on the other. Also known as Schedule 40, they are made of black steel, which is the most common material for low-pressure plumbing applications. All have welded construction, so there's a weld bead on the inside. They meet ASTM A53 and A733, as well as ANSI/ASME B1.20.1.

Connections: NPT on one end, unthreaded on the other end.

Pipe Size	1 1/2″ Lengths		2″ Lengths		3″ Lengths		4″ Lengths	
1/8	7753K111	$1.46	7753K121	$1.46	7753K131	$1.71	7753K141	$2.01
1/4	7753K112	1.55	7753K122	1.55	7753K132	2.01	7753K142	2.30
3/8	7753K113	1.65	7753K123	1.65	7753K133	2.17	7753K143	2.55
1/2	7753K114	1.34	7753K124	1.34	7753K134	1.55	7753K144	1.88
3/4	7753K115	1.55	7753K125	1.55	7753K135	1.84	7753K145	2.17
1	7753K116	2.17	7753K126	2.37	7753K136	2.55	7753K146	3.18
1 1/2	—	—	7753K128	3.68	7753K138	4.14	7753K148	4.64
2	—	—	7753K129	4.75	7753K139	5.39	7753K149	6.48

Pipe Size	6″ Lengths		12″ Lengths		36″ Lengths		60″ Lengths	
1/8	7753K151	$4.39	7753K161	$7.02	7750K24	$11.42	7750K27	$17.43
1/4	7753K152	4.14	7753K162	8.27	7750K25	14.03	7750K28	21.70
3/8	7753K153	4.14	7753K163	8.86	7750K26	15.62	7750K29	21.90
1/2	7753K154	2.47	7753K164	6.27	7750K391	12.71	7750K431	19.55
3/4	7753K155	3.22	7753K165	6.52	7750K392	15.57	7750K432	25.52
1	7753K156	4.43	7753K166	9.61	7750K393	20.70	7750K433	32.47
1 1/2	7753K158	6.52	7753K168	13.96	7750K395	30.67	7750K435	51.12
2	7753K159	8.77	7753K169	18.64	7750K396	39.78	7750K436	66.29
2 1/2	7753K171	13.70	7750K317	23.52	7750K397	67.51	7750K437	112.51
3	7753K172	18.17	7750K318	31.57	7750K398	94.72	7750K438	157.87
4	7753K173	25.07	7750K319	38.43	7750K399	115.29	7750K439	192.16

Low-Pressure Black Iron and Steel Threaded Flanges

- Use with air, water, oil, natural gas, steam
- Maximum Pressure:
  Steel: 150 psi @ 72° F; 150 psi @ 350° F for steam
  Iron: 125 psi @ 72° F; 125 psi @ 350° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall black steel (see page 55 and above)
- Fittings: Use threaded Class 125 low-pressure black iron (see page 51) or threaded Class 150 low-pressure black iron and steel (see pages 52-54)

A flange connection allows easy access to your pipe. Bolt two same-size flanges together with a gasket (not included). For an installation set that includes a gasket and bolts, see page 3474. For gaskets, see pages 3474-3480; for bolts, see pages 3140-3142.

Steel flanges are forged for extra strength. Also called raised-face flanges, they have a raised surface on the back. Meet MSS SP-25, ASTM A105, and ANSI/ASME B16.1.

Iron flanges are brittle, so they can be quickly opened in a fire emergency with the strike of a sledge hammer. Also known as flat-face flanges, these have a flat surface on the back. They're FM approved and meet ASTM A126, as well as ANSI/ASME B16.1 and B1.20.1. They are also UL listed, except the flange in 3/4 pipe size.

Connections: NPT.

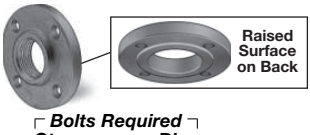

Pipe Size	Flange OD	Bolts Required Qty.	Bolts Required Dia.		
Steel					
1/2	3 1/2″	4	1/2″	68095K226	$15.02
3/4	3 7/8″	4	1/2″	68095K121	17.28
1	4 1/4″	4	1/2″	68095K122	18.57
1 1/4	4 5/8″	4	1/2″	68095K123	23.12
1 1/2	5″	4	1/2″	68095K124	23.45
2	6″	4	5/8″	68095K125	22.88
2 1/2	7″	4	5/8″	68095K126	31.06
3	7 1/2″	4	5/8″	68095K127	31.64
4	9″	8	5/8″	68095K128	46.55
5	10″	8	3/4″	68095K222	67.51
6	11″	8	3/4″	68095K129	61.00
8	13 1/2″	8	3/4″	68095K223	121.61

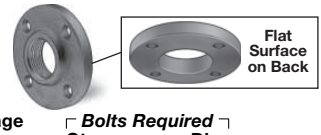

Pipe Size	Flange OD	Bolts Required Qty.	Bolts Required Dia.		
Iron					
3/4	3 7/8″	4	1/2″	68185K111	$36.66
1	4 1/4″	4	1/2″	68185K112	21.55
1 1/4	4 5/8″	4	1/2″	68185K113	25.79
1 1/2	5″	4	1/2″	68185K114	23.84
2	6″	4	5/8″	68185K115	23.79
2 1/2	7″	4	5/8″	68185K116	27.82
3	7 1/2″	4	5/8″	68185K117	35.85
4	9″	8	5/8″	68185K118	48.30
5	10″	8	3/4″	68185K131	68.23
6	11″	8	3/4″	68185K132	77.20
8	13 1/2″	8	3/4″	68185K133	107.52

Pipe Nipples and Couplings with Right-Hand and Left-Hand Threads

- Use with air, water, oil, natural gas, steam

Threads run clockwise (right hand) on one end and counterclockwise (left hand) on the other. When you use your wrench to turn, connections on both ends draw in at the same time.

Pipe nipples are also known as right/left pipe nipples and Schedule 40 pipe nipples. They're made of steel and have welded construction, so there's a weld bead on the inside. Meet ASTM A53 and A733, as well as ANSI/ASME B1.20.1.

Couplings are malleable iron. Meet ASTM A197, as well as ANSI/ASME B16.3 and B1.20.1.

Connections: NPT.

PIPE NIPPLES

Pipe Size	4″ Lengths		6″ Lengths	
1/8	7748K161	$5.99	7748K201	$13.00
1/4	7748K162	6.88	7748K202	12.36
3/8	7748K163	7.59	7748K203	12.28
1/2	7748K164	5.38	7748K204	7.02
3/4	7748K165	6.20	7748K205	9.16
1	7748K166	8.99	7748K206	12.60
1 1/2	7748K168	13.36	7748K208	16.80
2	7748K169	18.52	7748K209	25.08

COUPLINGS

Pipe Size		
1/2	5498T11	$4.94
3/4	5498T12	5.54
1	5498T13	8.21
1 1/2	5498T14	13.30
2	5498T15	17.78

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

British Standard Threaded Low-Pressure Iron Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72°F; 150 psi @ 366°F for steam
- Pipe Nipples: Use British standard threaded Schedule 40 standard-wall steel (see below)

Also known as Class 150, these malleable iron fittings have BSPT threads for connecting to BSPT pipe. They come in your choice of black iron, which is the most popular material for low-pressure plumbing applications, and galvanized iron for increased corrosion resistance. They meet ASTM A197 and EN 10226.

Unions have a brass seal, which is also called a seat, that conforms to uneven surfaces. ***Square-head plugs*** are hollow. ***BSPT×NPT adapters*** allow you to connect BSPT threads to NPT threads. The end with BSPT threads meets ASME BS21 and is marked with paint. The end with NPT threads meets ANSI/ASME B1.20.1.

Connections: BSPT (British Standard Pipe Taper); adapters also have NPT threads on one end.

Pipe Size	90° Elbows		45° Elbows		Tees		Unions		Couplings		Caps	
Black Iron												
1/4	4778K102	$2.72	4778K112	$3.20	4778K122	$3.44	4778K162	$10.60	4778K132	$2.20	4778K142	$2.08
3/8	4778K103	2.72	4778K113	3.20	4778K123	3.44	4778K163	10.60	4778K133	2.20	4778K143	2.08
1/2	4778K104	3.20	4778K114	3.20	4778K124	3.44	4778K164	10.60	4778K134	2.20	4778K144	2.08
3/4	4778K105	3.20	4778K115	3.36	4778K125	4.08	4778K165	13.05	4778K135	2.28	4778K145	2.08
1	4778K106	4.96	4778K116	4.96	4778K126	6.48	4778K166	15.28	4778K136	3.76	4778K146	2.96
1 1/4	4778K107	7.44	4778K117	8.08	4778K127	9.80	4778K167	20.40	4778K137	5.32	4778K147	4.32
1 1/2	4778K108	9.96	4778K118	9.96	4778K128	12.40	4778K168	22.60	4778K138	6.48	4778K148	5.68
2	4778K109	15.06	4778K119	14.88	4778K129	18.60	4778K169	33.67	4778K139	10.08	4778K149	7.96
2 1/2	4778K11	20.46	4778K12	22.86	4778K13	30.88	4778K17	48.29	4778K14	13.29	4778K15	14.63
Galvanized Iron												
1/4	4888K102	3.01	4888K112	3.36	4888K122	3.80	4888K162	11.28	4888K132	2.32	4888K142	2.20
3/8	4888K103	3.00	4888K113	3.36	4888K123	3.80	4888K163	11.28	4888K133	2.32	4888K143	2.20
1/2	4888K104	3.40	4888K114	3.43	4888K124	3.88	4888K164	13.60	4888K134	2.32	4888K144	2.20
3/4	4888K105	3.47	4888K115	3.52	4888K125	4.32	4888K165	13.60	4888K135	2.37	4888K145	2.24
1	4888K106	5.20	4888K116	5.20	4888K126	6.80	4888K166	16.06	4888K136	3.92	4888K146	3.12
1 1/2	4888K108	10.40	4888K118	10.36	4888K128	13.05	4888K168	23.67	4888K138	6.80	4888K148	6.02
2	4888K109	15.60	4888K119	15.60	4888K129	19.52	4888K169	35.50	4888K139	11.40	4888K149	8.32

Pipe Size	Square-Head Plugs		BSPT×NPT Adapters	
Black Iron				
1/4	4778K152	$1.80	—	—
3/8	4778K153	1.80	—	—
1/2	4778K154	1.80	4778K194	$15.62
3/4	4778K155	1.84	4778K195	15.71
1	4778K156	2.48	4778K196	16.88
1 1/4	4778K157	3.76	4778K197	20.38
1 1/2	4778K158	4.40	4778K198	23.53
2	4778K159	6.20	4778K199	25.97
2 1/2	4778K16	8.86	—	—
Galvanized Iron				
1/4	4888K152	1.84	—	—
3/8	4888K153	1.84	—	—
1/2	4888K154	1.92	4888K194	11.76
3/4	4888K155	1.96	4888K195	13.80
1	4888K156	2.60	4888K196	17.94
1 1/2	4888K158	4.60	4888K198	25.59
2	4888K159	6.40	4888K199	28.37

Reducing Couplings

Pipe Size (A)	Pipe Size (B)				Pipe Size (A)	Pipe Size (B)		
Black Iron					***Galvanized Iron***			
1/4	1/8	4778K192	$2.01		1/4	1/8	4888K192	$2.72
3/8	1/4	4778K223	2.01		3/8	1/4	4888K223	2.72
3/4	1/2	4778K221	2.96		3/4	1/2	4888K221	3.01
1	1/2	4778K224	3.76		1	1/2	4888K224	4.02
1	3/4	4778K227	3.76		1	3/4	4888K227	4.08
1 1/4	1/2	4778K232	5.38		1 1/2	1/2	4888K239	7.31
1 1/4	3/4	4778K234	5.60		1 1/2	3/4	4888K241	7.45
1 1/4	1	4778K236	5.83		1 1/2	1	4888K243	7.60
1 1/2	1/2	4778K239	6.77		1 1/2	1 1/4	4888K245	7.76
1 1/2	3/4	4778K241	6.90		2	1/2	4888K248	11.15
1 1/2	1	4778K243	7.04		2	3/4	4888K252	11.37
1 1/2	1 1/4	4778K245	6.76		2	1	4888K254	11.60
2	1/2	4778K248	10.31		2	1 1/4	4888K255	11.84
2	3/4	4778K252	10.51		2	1 1/2	4888K256	12.08
2	1	4778K254	10.72					
2	1 1/4	4778K255	10.94					
2	1 1/2	4778K256	11.17					

British Standard Threaded Steel Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings: Use British standard threaded Class 150 low-pressure iron (see above)

BSPT threads on both ends allow quick connections to BSPT fittings. Also called Schedule 40, these nipples are black steel. They have welded construction, so there's a weld bead on the inside. Meet ASTM A53 and A733, as well as EN 10226.

Fully threaded nipples are also called close nipples.

Connections: BSPT (British Standard Pipe Taper).

Also Available: Galvanized steel nipples, which offer increased corrosion resistance over black steel. Please ask for 4859K1 and specify nipple style (fully threaded or threaded on both ends), pipe size, and length from the choices below.

Fully Threaded

Threaded on Both Ends

FULLY THREADED

Pipe Size	Lg.		
1/2	1 1/8″	4788K414	$3.29
3/4	1 3/8″	4788K415	3.80
1	1 1/2″	4788K416	5.52
1 1/4	1 5/8″	4788K417	7.09
1 1/2	1 3/4″	4788K418	6.87
2	2″	4788K419	11.93

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths	
1/2	4788K424	$3.29	4788K434	$3.29	4788K454	$3.94	4788K464	$4.80	4788K484	$6.23
3/4	4788K425	3.94	4788K435	3.94	4788K455	4.62	4788K465	5.52	4788K485	8.20
1	—	—	4788K436	6.09	4788K456	6.48	4788K466	8.06	4788K486	11.21
1 1/4	—	—	4788K437	7.66	4788K457	8.20	4788K467	8.67	4788K487	14.29
1 1/2	—	—	4788K438	8.44	4788K458	9.51	4788K468	11.93	4788K488	16.58
2	—	—	—	—	4788K459	13.72	4788K469	16.47	4788K489	22.31

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

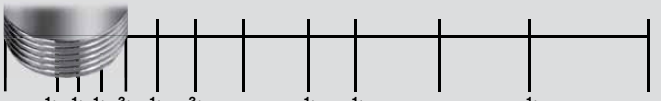

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Galvanized Iron and Steel Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 350° F for steam, except locknuts
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall galvanized steel (see page 61)
- Flanges: Use threaded low-pressure galvanized steel (see page 62)

Galvanizing provides the extra rust and corrosion resistance you need. Also known as Class 150, these fittings are malleable iron or steel and can be used interchangeably with low-pressure zinc-plated iron.

Connections: NPT or NPT compatible. The fittings with NPT-compatible threads are fully threaded couplings in pipe sizes 1/8-2, which have NPSC (National Pipe Straight Coupling) threads, and locknuts, which have NPSL (National Pipe Straight Locknut) threads.

Elbows, Wyes, Tees, Crosses, Unions, Couplings, and Adapters

UL listed (unless noted) and meet ASTM A197 and ANSI/ASME B1.20.1. They also meet ANSI/ASME B16.3 or B16.39, except adapters. The ***90° female×male elbows*** are also known as street elbows. ***180° bends*** are also called U-bends. ***Unions*** have a brass or copper seal, which is also called a seat, that conforms to uneven surfaces. ***Couplings*** are threaded on each end with an unthreaded space in the middle.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		45° Elbows, Female×Male		180° Bends		Wyes	
1/8	4638K139	$3.42	4638K229	$4.48	4638K239	$5.04	4638K142	$6.52				
1/4	4638K131	3.13	4638K221	4.33	4638K231	4.26	4638K143	6.02				
3/8	4638K132	3.13	4638K222	4.33	4638K232	4.76	4638K144	6.42			4638K321	$9.54
1/2	4638K133	2.02	4638K223	4.43	4638K233	3.18	4638K145	4.87			4638K322	8.57
3/4	4638K134	2.48	4638K224	4.43	4638K234	4.58	4638K146	7.73	4638K299	$20.97	4638K323	13.40
1	4638K135	4.58	4638K225	5.92	4638K235	5.17	4638K147	9.90	4638K385	22.89	4638K324	19.16
1 1/4	4638K136	7.25	4638K226	9.94	4638K236	9.66	4638K148	14.86			4638K325	31.55
1 1/2	4638K137	9.45	4638K227	12.48	4638K237	11.35	4638K149	17.99	4638K556	38.80	4638K326	43.15
2	4638K138	15.48	4638K228	21.04	4638K238	16.80	4638K157	29.63	4638K557	68.00	4638K327	69.41
2 1/2	4638K151	40.50	4638K241	60.86	4638K244	58.44					4638K328	178.10
3	4638K152	66.78	4638K242	88.57	4638K245	85.00					4638K329	277.68
4	4638K153	117.28	4638K243	168.43	4638K246	142.49					4638K331	435.72
6	4638K396	380.02			4638K397	519.36						

Pipe Size	Tees		Tees, Female×Female×Male		Crosses		Unions		Couplings		Adapters, Female×Male	
1/8	4638K129	$4.85			4638K429	$14.53	4638K402★	$13.77				
1/4	4638K121	4.08	4638K366	$11.53	4638K421	17.03	4638K731	14.38	4638K112	$3.74		
3/8	4638K122	4.08	4638K367	12.54	4638K422	15.48	4638K732	9.62	4638K113	3.86	4638K711	$6.64
1/2	4638K123	2.61	4638K368	11.87	4638K423	10.74	4638K733	8.78	4638K114	2.96	4638K389	9.30
3/4	4638K124	4.30	4638K369	11.70	4638K424	13.08	4638K734	10.09	4638K115	3.40	4638K386	13.90
1	4638K125	6.95	4638K371	14.80	4638K425	18.05	4638K735	13.21	4638K116	5.57	4638K387	17.42
1 1/4	4638K126	11.04	4638K372	24.68	4638K426	27.14	4638K736	19.10	4638K117	7.86	4638K712★	13.59
1 1/2	4638K127	13.72	4638K373	36.59	4638K427	31.75	4638K737	23.14	4638K118	8.93		
2	4638K128	22.30	4638K374	72.04	4638K428	60.14	4638K738	26.61	4638K119	13.06		
2 1/2	4638K154	62.78			4638K435	156.38	4638K741★	92.43	4638K171	39.97		
3	4638K155	73.63			4638K436	172.81	4638K742★	129.37	4638K172	53.42		
4	4638K156	174.17			4638K437	354.61	4638K219★	228.75	4638K173	113.44		
6	4638K398	464.52										

★ Not UL listed.

Caps and Fully Threaded Couplings

Caps in pipe sizes 1-6 are UL listed and meet ASTM A153, as well as ANSI/ASME B16.3 and B1.20.1. ***Fully threaded couplings*** are also known as merchant couplings; they meet ASTM A53, A865, and B633.

Pipe Sizes 1/8-3/4

Pipe Sizes 1-6

Caps

Pipe Size			Pipe Size		
1/8	4638K251	$0.66	1 1/2	4638K779	$6.46
1/4	4638K252	.77	2	4638K781	9.05
3/8	4638K253	1.19	2 1/2	4638K782	26.28
1/2	4638K254	1.94	3	4638K262	31.85
3/4	4638K296	3.25	4	4638K263	70.36
1	4638K777	3.83	6	4638K497	216.88
1 1/4	4638K778	5.04			

Fully Threaded Couplings

Pipe Size			Pipe Size		
1/8	46685K461	$1.69	1 1/4	46685K467	$6.70
1/4	46685K462	2.20	1 1/2	46685K468	8.31
3/8	46685K463	2.81	2	46685K469	12.45
1/2	46685K464	2.99	2 1/2	46685K471	29.99
3/4	46685K465	3.75	3	46685K472	39.79
1	46685K466	5.24	4	46685K473	70.14

(Continued on following page)

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

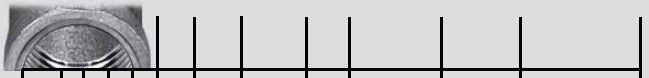

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Galvanized Iron and Steel Threaded Pipe Fittings

(Continued from previous page)

Locknuts, Plugs, and Bushings

Locknuts are not rated for pressure; they meet ANSI/ASME B16.14. ***Square-head***, ***square-socket***, and ***hex-socket plugs*** are solid and meet SAE J531. ***Reducing bushings*** are also known as face bushings; they meet ANSI/ASME B16.14.

Pipe Size	Locknuts		Square-Head Plugs		Square-Socket Plugs		Hex-Socket Plugs: Hex Key Size		
1/8	—	—	4638K821	$0.16	4638K714	$0.18	3/16″	4638K511	$0.14
1/4	4638K612	$2.45	4638K822	.24	4638K715	.21	1/4″	4638K512	.20
3/8	4638K613	3.13	4638K823	.40	4638K716	.27	5/16″	4638K513	.24
1/2	4638K614	2.53	4638K824	.67	4638K717	.43	3/8″	4638K514	.44
3/4	4638K615	2.96	4638K825	1.02	4638K718	.68	9/16″	4638K515	.80
1	4638K616	5.39	4638K834	4.60	4638K719	2.16	5/8″	4638K516	1.85
1 1/4	4638K617	5.17	4638K835	13.20	4638K721	6.78	3/4″	4638K517	3.88
1 1/2	4638K618	6.71	4638K836	15.20	4638K722	13.10	1″	4638K518	8.72
2	4638K619	11.82	4638K837	24.80	4638K723	21.96	1″	4638K519	13.20

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
1/4	1/8	4638K651	$0.68	1	1/2	4638K548	$5.69
3/8	1/8	4638K653	.78	1	3/4	4638K549	5.29
3/8	1/4	4638K652	.81	1 1/4	1/2	4638K724	3.79
1/2	1/8	4638K636	1.24	1 1/4	3/4	4638K725	3.88
1/2	1/4	4638K635	1.27	1 1/4	1	4638K335	5.70
1/2	3/8	4638K654	1.29	1 1/2	3/4	4638K726	12.21
3/4	1/8	4638K541	5.54	1 1/2	1	4638K727	12.45
3/4	1/4	4638K542	5.38	1 1/2	1 1/4	4638K337	6.87
3/4	3/8	4638K543	6.01	2	1	4638K728	15.10
3/4	1/2	4638K544	4.60	2	1 1/4	4638K729	15.25
1	1/8	4638K545	7.39	2	1 1/2	4638K743	15.40
1	1/4	4638K546	6.28	2 1/2	2	4638K552	16.60
1	3/8	4638K547	6.31	4	3 1/2	4638K554	45.30

Reducing Bushings, Male×Female

Pipe Size (A)	(B)		
1/4	1/8	4638K351	$0.63
3/8	1/8	4638K353	.74
3/8	1/4	4638K352	.77
1/2	1/8	4638K356	1.11
1/2	1/4	4638K355	1.15
1/2	3/8	4638K354	1.20
3/4	1/8	4638K361	1.63
3/4	1/4	4638K359	1.66
3/4	3/8	4638K358	1.69
3/4	1/2	4638K357	1.73
1	1/4	4638K365	3.15
1	3/8	4638K364	3.22
1	1/2	4638K363	3.28
1	3/4	4638K362	3.35

Reducing Tees

All are UL listed and meet ASTM A153, as well as ANSI/ASME B16.3 and B1.20.1.

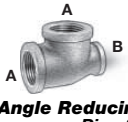

Right-Angle Reducing Tees

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
3/8	1/2	4638K523	$8.90	1	1 1/2	4638K528	$20.70
1/2	1/4	4638K522	7.43	1	2	4638K713	25.03
1/2	3/8	4638K176	7.89	1 1/4	1/2	4638K757	16.50
1/2	3/4	4638K211	10.21	1 1/4	3/4	4638K755	15.49
1/2	1	4638K184	10.49	1 1/4	1 1/2	4638K761	28.70
3/4	1/2	4638K189	6.83	1 1/2	3/4	4638K529	20.70
3/4	1	4638K182	10.12	1 1/2	1	4638K531	20.70
3/4	1 1/4	4638K756	17.96	1 1/2	1 1/4	4638K759	28.70
3/4	1 1/2	4638K527	30.21	1 1/2	2	4638K764	28.70
1	1/4	4638K526	13.59	2	1	4638K532	29.26
1	1/2	4638K183	10.49	2	1 1/4	4638K765	33.80
1	3/4	4638K181	10.49	2	1 1/2	4638K281	29.26
1	1 1/4	4638K753	15.81	2	3	4638K537	107.62

Inline Reducing Tees

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
3/8	1/2	4638K521	$7.72	1 1/2	1	4638K185	$16.09
1/2	1/4	4638K175	5.01	1 1/2	1 1/4	4638K275	20.14
1/2	3/8	4638K174	6.06	2	1/2	4638K276	26.18
1/2	3/4	4638K187	7.15	2	3/4	4638K277	23.50
1/2	1	4638K752	11.69	2	1	4638K278	23.06
3/4	1/4	4638K178	6.39	2	1 1/4	4638K763	27.66
3/4	3/8	4638K188	6.43	2	1 1/2	4638K186	27.66
3/4	1/2	4638K265	5.99	2 1/2	3/4	4638K771	86.09
3/4	1	4638K177	10.29	2 1/2	1	4638K769	82.98
1	1/4	4638K751	11.69	2 1/2	1 1/4	4638K768	86.09
1	3/8	4638K212	10.72	2 1/2	1 1/2	4638K767	86.59
1	1/2	4638K213	8.40	2 1/2	2	4638K766	77.77
1	3/4	4638K179	8.40	3	3/4	4638K774	141.97
1	1 1/4	4638K758	16.97	3	1	4638K534	101.76
1 1/4	1/2	4638K266	13.77	3	1 1/4	4638K773	107.62
1 1/4	3/4	4638K271	13.03	3	1 1/2	4638K772	105.56
1 1/4	1	4638K272	13.03	3	2	4638K535	101.76
1 1/2	1/2	4638K273	17.01	3	2 1/2	4638K536	117.28
1 1/2	3/4	4638K274	16.09	4	3	4638K775	250.36

Dual Reducing Tees

Pipe Size (A)	(B)	(C)			
1	1/2	3/4	4638K264	$10.49
1 1/4	3/4	1	4638K754	16.50
1 1/2	3/4	1 1/4	4638K762	20.70
2	1	1 1/2	4638K279	27.64

(Continued on following page)

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Female Threaded Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Galvanized Iron and Steel Threaded Pipe Fittings

(Continued from previous page)

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 350° F for steam, except locknuts
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall galvanized steel (see page 61)
- Flanges: Use threaded low-pressure galvanized steel (see page 62)

Galvanizing provides the extra rust and corrosion resistance you need. Also known as Class 150, these fittings are malleable iron or steel and can be used interchangeably with low-pressure zinc-plated iron.

Connections: NPT for all of the fittings listed below.

Reducing Elbows and Couplings

All are UL listed and meet ASTM A153, as well as ANSI/ASME B16.3 and B1.20.1. The ***90° female×male elbows*** are also known as street elbows.

90° Reducing Elbows

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4638K191	$5.61
3/8	1/8	4638K391	11.59
3/8	1/4	4638K192	5.01
1/2	1/4	4638K193	4.34
1/2	3/8	4638K194	3.70
3/4	1/4	4638K392	9.55
3/4	3/8	4638K282	5.94
3/4	1/2	4638K195	4.30
1	3/8	4638K283	10.40
1	1/2	4638K197	5.86
1	3/4	4638K196	$5.52
1 1/4	1/2	4638K284	11.78
1 1/4	3/4	4638K199	11.12
1 1/4	1	4638K198	9.25
1 1/2	1/2	4638K285	14.51
1 1/2	3/4	4638K286	14.79
1 1/2	1	4638K312	14.94
1 1/2	1 1/4	4638K311	15.10
2	1/2	4638K287	18.79
2	3/4	4638K288	$20.98
2	1	4638K289	20.55
2	1 1/4	4638K291	19.81
2	1 1/2	4638K295	19.64
2 1/2	1 1/2	4638K292	65.27
2 1/2	2	4638K293	58.59
3	2	4638K294	92.48
3	2 1/2	4638K393	103.56
4	3	4638K394	213.03

90° Reducing Elbows, Female×Male

Pipe Size (A)	Pipe Size (B)		
1/2	3/8	4638K341	$7.18
3/4	1/2	4638K342	9.31
1	3/4	4638K343	11.04
1 1/4	3/4	4638K345	22.44
1 1/4	1	4638K344	16.23
1 1/2	1	4638K346	18.88
1 1/2	1 1/4	4638K347	20.32
2	1 1/2	4638K348	33.56

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	4638K451	$3.83
3/8	1/8	4638K431	6.29
3/8	1/4	4638K452	3.83
1/2	1/8	4638K432	4.54
1/2	1/4	4638K454	3.44
1/2	3/8	4638K453	3.57
3/4	1/8	4638K433	4.98
3/4	1/4	4638K457	4.35
3/4	3/8	4638K456	4.35
3/4	1/2	4638K455	3.83
1	1/4	4638K434	9.06
1	3/8	4638K461	$8.28
1	1/2	4638K459	6.38
1	3/4	4638K458	5.92
1 1/4	1/2	4638K464	10.59
1 1/4	3/4	4638K463	8.25
1 1/4	1	4638K462	8.09
1 1/2	1/2	4638K468	12.48
1 1/2	3/4	4638K467	10.63
1 1/2	1	4638K466	10.63
1 1/2	1 1/4	4638K465	10.04
2	1/2	4638K474	$18.02
2	3/4	4638K485	17.37
2	1	4638K472	14.50
2	1 1/4	4638K471	15.34
2	1 1/2	4638K469	14.50
2 1/2	1	4638K441	58.51
2 1/2	1 1/4	4638K442	68.67
2 1/2	1 1/2	4638K443	53.48
2 1/2	2	4638K214	40.47
3	1	4638K445	71.06
3	1 1/4	4638K446	$71.06
3	1 1/2	4638K447	67.23
3	2	4638K215	50.83
3	2 1/2	4638K216	51.90
4	1 1/2	4638K492	171.76
4	2	4638K217	116.37
4	2 1/2	4638K494	136.22
4	3	4638K218	116.37
4	3 1/2	4638K496	173.68
6	4	4638K776	310.44

Low-Pressure Zinc-Plated Iron Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 125 psi @ 72° F; 125 psi @ 353° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall galvanized steel (see page 61)
- Flanges: Use threaded low-pressure galvanized steel (see page 62)

Zinc plating on these cast iron fittings provides better rust and corrosion resistance than you'll get with black iron and steel. Also called Class 125 fittings, they can be used interchangeably with galvanized iron and steel. They're UL listed and meet ASTM A126 and ANSI/ASME B1.20.1; they also meet ANSI/ASME B16.4 or B16.14.

Square-head plugs are hollow; ***square-socket plugs*** are solid.

Connections: NPT.

Pipe Size	***Caps***		***Square-Head Plugs***		***Square-Socket Plugs***	
3/4	4638K255	$3.22	4638K923	$2.48	4638K332	$2.25
1	4638K256	4.83	4638K926	2.68	4638K333	2.88
1 1/4	4638K257	6.85	4638K927	3.64	4638K334	4.36
1 1/2	4638K258	8.05	4638K928	4.84	4638K338	5.60
2	4638K259	12.88	4638K929	7.24	4638K336	9.88
2 1/2	4638K261	21.85	4638K931	12.44	4638K267	20.72
3	—	—	4638K932	15.32	4638K268	29.44
4	—	—	4638K933	29.44	4638K269	49.00

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)		
1	1/4	4638K665	$3.54
1	3/8	4638K664	3.61
1	1/2	4638K663	3.68
1	3/4	4638K662	4.40
1 1/4	3/8	4638K569	4.42
1 1/4	1/2	4638K568	4.51
1 1/4	3/4	4638K567	4.60
1 1/4	1	4638K566	5.72
1 1/2	3/8	4638K575	5.42
1 1/2	1/2	4638K574	5.49
1 1/2	3/4	4638K573	5.64
1 1/2	1	4638K572	$5.76
1 1/2	1 1/4	4638K571	6.44
2	1/2	4638K581	8.42
2	3/4	4638K582	8.59
2	1	4638K578	8.76
2	1 1/4	4638K577	10.82
2	1 1/2	4638K576	11.04
2 1/2	1 1/2	4638K158	16.80
3	2	4638K247	23.41
3	2 1/2	4638K248	23.88
4	3	4638K249	41.36

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Galvanized Steel Threaded Pipe Nipples and Pipe

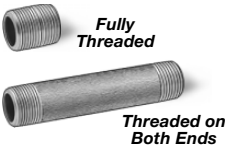

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 150 low-pressure galvanized iron and steel (see pages 58-60)
- Flanges: Use threaded low-pressure galvanized steel (see page 62)

Galvanized steel pipe nipples and pipe provide very good corrosion resistance in low-pressure plumbing applications. Also known as Schedule 40, all have welded construction, so there's a weld bead on the inside. Meet ASTM A53 and A733, as well as ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	4549K511	$1.15
1/4	7/8″	4549K931	1.19
3/8	1″	4549K551	1.31
1/2	1 1/8″	4549K571	1.08
3/4	1 3/8″	4549K591	1.37
1	1 1/2″	4549K611	1.88
1 1/4	1 5/8″	4549K631	2.48
1 1/2	1 3/4″	4549K651	2.97
2	2″	4549K671	4.17
2 1/2	2 1/2″	4549K681	12.38
3	2 5/8″	4549K691	14.81
4	2 7/8″	4549K711	22.17
6	3 1/8″	4549K714	115.92

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	4549K512	$1.37	4549K513	$1.58	4549K514	$1.81	4549K515	$2.06	4549K211	$2.16
1/4	4549K532	1.26	4549K533	1.44	4549K534	1.69	4549K535	1.87	4549K212	1.90
3/8	4549K552	1.45	4549K553	1.54	4549K554	1.80	4549K555	2.02	4549K213	2.09
1/2	4549K572	1.19	4549K573	1.31	4549K574	1.38	4549K575	1.50	4549K214	1.51
3/4	4549K592	1.45	4549K593	1.57	4549K594	1.69	4549K595	1.77	4549K215	1.84
1	—	—	4549K612	2.26	4549K613	2.38	4549K614	2.55	4549K216	2.69
1 1/4	—	—	4549K632	2.67	4549K633	2.95	4549K634	3.16	4549K217	3.25
1 1/2	—	—	4549K652	3.25	4549K653	3.66	4549K654	3.75	4549K218	4.17
2	—	—	—	—	4549K672	4.47	4549K873	4.97	4549K219	5.29
2 1/2	—	—	—	—	—	—	4549K883	13.73	4549K221	13.77
3	—	—	—	—	—	—	4549K893	16.85	4549K222	17.04
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		4 1/2″ Lengths		5″ Lengths		5 1/2″ Lengths		6″ Lengths		6 1/2″ Lengths	
1/8	4549K517	$2.48	4549K111	$3.89	4549K519	$3.99	4549K2	$4.33	4549K522	$4.48	4549K721	$5.75
1/4	4549K537	2.26	4549K3	3.10	4549K539	3.17	4549K4	3.41	4549K542	3.54	4549K722	5.90
3/8	4549K557	2.44	4549K5	3.35	4549K559	3.46	4549K6	3.73	4549K562	3.85	4549K723	5.99
1/2	4549K577	1.81	4549K7	1.99	4549K579	2.21	4549K8	2.29	4549K582	2.52	4549K724	4.00
3/4	4549K597	2.16	4549K9	2.45	4549K599	2.71	4549K11	2.93	4549K602	3.24	4549K725	5.12
1	4549K616	3.08	4549K12	3.38	4549K618	3.75	4549K13	3.84	4549K621	4.28	4549K726	6.49
1 1/4	4549K636	3.76	4549K14	4.19	4549K638	4.63	4549K15	4.87	4549K641	5.41	4549K727	7.94
1 1/2	4549K656	4.76	4549K16	5.20	4549K658	5.80	4549K17	5.84	4549K661	6.50	4549K728	9.12
2	4549K875	6.08	4549K18	6.99	4549K877	7.74	4549K19	8.13	4549K679	9.05	4549K729	13.30
2 1/2	4549K885	15.95	4549K21	15.97	4549K887	16.95	4549K22	17.59	4549K689	19.51	4549K731	22.78
3	4549K895	19.81	4549K23	22.21	4549K897	23.03	4549K24	23.47	4549K699	24.39	4549K732	31.84
4	4549K905	25.73	4549K25	28.63	4549K907	30.37	4549K26	31.69	4549K709	33.99	4549K733	38.08
6	4549K906	122.00	4549K28	136.59	4549K908	143.78	4549K27	151.35	4549K708	159.32	4549K734	173.73

Pipe Size	7″ Lengths		8″ Lengths		9″ Lengths		10″ Lengths		11″ Lengths		12″ Lengths	
1/8	4549K741	$5.75	4549K524	$6.06	4549K761	$6.77	4549K525	$7.13	4549K781	$7.50	4549K526	$7.89
1/4	4549K742	5.90	4549K544	6.21	4549K762	6.87	4549K545	7.23	4549K782	7.65	4549K546	8.05
3/8	4549K743	5.99	4549K564	6.30	4549K763	7.14	4549K565	7.51	4549K783	7.92	4549K566	8.34
1/2	4549K744	4.00	4549K584	4.39	4549K764	4.75	4549K585	5.25	4549K795	5.40	4549K586	5.99
3/4	4549K745	5.12	4549K604	5.65	4549K765	5.68	4549K605	6.25	4549K785	6.35	4549K606	7.02
1	4549K746	6.48	4549K623	7.13	4549K766	7.40	4549K624	8.16	4549K786	8.62	4549K625	9.54
1 1/4	4549K747	7.94	4549K643	8.79	4549K767	9.51	4549K644	10.44	4549K787	11.42	4549K645	12.16
1 1/2	4549K748	9.12	4549K663	10.03	4549K768	10.62	4549K664	11.71	4549K788	12.15	4549K665	13.41
2	4549K749	13.30	4549K682	14.66	4549K769	15.56	4549K683	17.13	4549K789	17.85	4549K784	19.71
2 1/2	4549K751	22.78	4549K692	25.16	4549K771	25.97	4549K693	28.65	4549K791	29.06	4549K794	32.02
3	4549K752	31.84	4549K702	32.81	4549K772	36.33	4549K703	37.40	4549K792	40.84	4549K804	42.08
4	4549K753	38.08	4549K712	42.03	4549K773	44.14	4549K713	48.65	4549K793	49.74	4549K814	51.52
6	4549K754	173.73	4549K716	182.42	4549K774	192.18	4549K715	196.65	4549K796	202.96	4549K815	207.19

To Order: Please specify length.

Pipe Size	14″ Lengths		16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths	126″ Lengths
1/8	4499K211	$8.50	$9.71	$10.37	$11.57	$12.52	$12.60	$16.67	$21.96	$26.40	$30.84	$62.89
1/4	4499K212	8.69	9.93	10.57	11.67	12.05	12.65	16.68	21.93	26.21	30.60	72.15
3/8	4499K213	9.00	10.26	11.25	12.83	13.11	13.64	18.11	23.89	28.69	33.54	74.69
1/2	4499K214	6.15	7.02	8.33	9.29	10.11	10.75	14.63	18.74	23.18	27.30	51.00
3/4	4499K215	7.23	8.25	9.88	11.03	11.99	12.73	17.98	23.45	28.65	33.91	60.51
1	4499K216	9.79	11.19	12.80	14.43	14.65	14.85	19.81	26.20	33.05	39.42	75.09
1 1/4	4499K217	12.96	14.81	16.85	19.08	21.04	22.54	26.86	35.57	44.22	59.76	96.41
1 1/2	4499K218	13.81	15.77	19.10	21.65	23.87	25.54	36.15	48.10	58.55	66.75	109.36
2	4499K219	20.26	23.14	26.03	29.38	32.25	34.44	46.66	58.21	66.50	84.87	151.68
2 1/2	4499K221	32.99	33.33	33.63	47.11	47.31	47.46	68.41	89.44	110.36	131.35	182.02
3	4499K222	43.25	44.50	47.22	61.80	63.39	64.95	99.36	129.99	171.68	186.28	258.29
4	4499K223	53.21	57.02	60.92	76.01	83.62	91.76	126.21	164.05	198.59	212.78	344.65
6	4499K224	215.47	229.55	237.18	268.71	286.50	277.55	313.60	398.05	452.51	488.51	701.11

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Low-Pressure Zinc-Plated Steel Threaded Pipe Fittings with Sealant

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 366° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall galvanized steel (see page 58)
- Flanges: Use threaded low-pressure galvanized steel (see below)

Save yourself the time and trouble it takes to apply sealant—these fittings come with it already applied to the male threads. Also known as Class 150, they have a zinc-plated finish for extra protection from corrosion.

Plugs are solid and meet SAE J531. ***Hex reducing bushings*** meet ANSI/ASME B16.14.

Connections: NPTF (Dryseal), which are compatible with NPT threads.

Pipe Size	Square-Head Plugs		Square-Socket Plugs		Hex-Socket Plugs: Hex Key Size		
1/8	1162T31	$0.28	1162T44	$0.23	3/16″	1162T37	$0.23
1/4	1162T32	.37	1162T45	.31	1/4″	1162T38	.31
3/8	1162T33	.54	1162T46	.35	5/16″	1162T39	.35
1/2	1162T34	.86	1162T47	.53	3/8″	1162T41	.57
3/4	1162T35	1.22	1162T48	.82	9/16″	1162T42	.87
1	1162T36	4.99	1162T49	2.29	5/8″	1162T43	2.49

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	1162T51	$1.16
3/8	1/4	1162T52	1.38
1/2	1/4	1162T53	1.96
1/2	3/8	1162T54	1.96
3/4	1/4	1162T55	2.97
3/4	1/2	1162T56	2.97

Low-Pressure Galvanized Steel Threaded Flanges

Raised Surface on Back

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 350° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 40 standard-wall galvanized steel (see page 58)
- Fittings: Use threaded Class 150 low-pressure galvanized iron and steel (see pages 58-60)

Galvanized for extra protection from corrosion, these steel flanges are also known as Class 150. Use them to create easy access to your pipe by bolting two same-size flanges together with a gasket (not included). For an installation set that includes a gasket and bolts, see page 3474. For gaskets, see pages 3474-3480; for bolts, see pages 3140-3142. Flanges meet ASTM A105 and A123, as well as ANSI/ASME B16.5.

Connections: NPT.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.		
1/2	3 1/2″	4	1/2″	7551K119	$22.54
3/4	3 7/8″	4	1/2″	7551K121	23.92
1	4 1/4″	4	1/2″	7551K122	26.91
1 1/4	4 5/8″	4	1/2″	7551K123	35.75
1 1/2	5″	4	1/2″	7551K124	31.24
2	6″	4	5/8″	7551K125	36.26
2 1/2	7″	4	5/8″	7551K126	$57.40
3	7 1/2″	4	5/8″	7551K127	55.80
4	9″	8	5/8″	7551K128	78.20
5	10″	8	3/4″	7551K129	108.76
6	11″	8	3/4″	7551K131	109.71
8	13 1/2″	8	3/4″	7551K133	216.39

Standard-Wall Threaded Pipe Nipples for Joining Dissimilar Metals

- Use in water applications where copper meets iron or steel
- Maximum Pressure: 150 psi @ 72° F
- Maximum Temperature: 180° F

A nonconductive plastic sleeve prevents destructive electrolytic corrosion (the electrical current generated between dissimilar metals that causes corrosion) when connecting different metals. Made of galvanized steel, these threaded nipples have welded construction, so there's a weld bead on the inside. Not for use in heating systems that use hot liquids or gas. Meet ANSI/ASME B1.20.1.

Connections: NPT.

Note: When connecting iron pipe to copper tube, use a socket-end to pipe adapter (see 5520K21 to K26 on page 217).

Pipe Size	Lg.		
1/2	3″	7819K41	$4.66
3/4	3″	7819K42	3.29
1	4″	7819K43	8.67
1 1/4	4″	7819K44	12.42
1 1/2	4″	7819K45	15.46
2	4″	7819K46	21.55

Medium-Pressure Threaded Pipe Unions for Joining Dissimilar Metals

- Use with air, water, oil, natural gas
- Maximum Pressure: 250 psi @ 72° F
- Maximum Temperature: 180° F

Need to connect different metals in your piping or plumbing system? These unions have a Buna-N gasket with a plastic insulator that inhibits destructive electrolytic corrosion (electrical current generated between dissimilar metals that causes corrosion).

Connections: NPT (threaded) or female solder (tube).

Female Threaded End×Female Solder End

Pipe Size (A)	Tube Size (B)♣	Actual Tube OD		
Iron to Copper				
1/2	1/2″	5/8″	4838K1	$7.42
3/4	1/2″	5/8″	4838K2	8.71
3/4	3/4″	7/8″	4838K3	11.05
1	3/4″	7/8″	4838K4	15.48
1	1″	1 1/8″	4838K5	15.12
1 1/4	1 1/4″	1 3/8″	4838K6	25.94
1 1/2	1 1/2″	1 5/8″	4838K7	38.92
2	2″	2 1/8″	4838K8	54.62

♣ Tube size is an accepted industry designation, not an actual size.

Female Threaded on Both Ends

Pipe Size			Pipe Size		
Iron to Brass			***Iron to Galvanized Iron***		
1/2	4838K74	$17.55	1/2	4838K81	$12.56
3/4	4838K75	19.56	3/4	4838K82	14.50
1	4838K76	28.64	1	4838K83	18.04
1 1/4	4838K77	46.65	1 1/4	4838K84	25.34
1 1/2	4838K78	60.69	1 1/2	4838K85	41.62
2	4838K79	79.73	2	4838K86	58.58

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

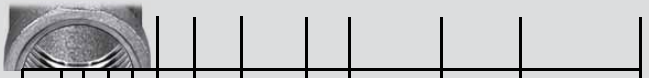

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Medium-Pressure Iron Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 300 psi @ 72° F; 300 psi @ 550° F for steam, except unions are 230 psi @ 550° F
- Pipe Nipples and Pipe: Use threaded Schedule 80 thick-wall steel (see pages 64-65)
- Flanges: Use threaded medium-pressure steel (see page 67)

Also known as Class 300 pipe fittings, these black malleable iron fittings have thicker walls than low-pressure fittings, so they can withstand higher pressures. They are UL listed and meet ANSI/ASME B.1.20.1. They also meet ASTM A126 or A197, as well as ANSI/ASME B16.3, B16.14, or B16.39.

90° female×male elbows are also known as street elbows.

Connections: NPT.

Pipe Size	90° Elbows		90° Elbows, Female×Male		90° Union Elbows		45° Elbows		45° Elbows, Female×Male		Tees	
1/4	4627K211	$7.59	4627K231	$8.97	—	—	4627K221	$11.28	—	—	4627K251	$9.55
3/8	4627K212	6.73	4627K232	10.06	4627K339	$41.07	4627K222	11.28	—	—	4627K252	10.11
1/2	4627K213	8.72	4627K233	11.73	4627K301	40.96	4627K223	12.56	4627K243	$20.06	4627K253	12.88
3/4	4627K214	9.87	4627K234	16.66	4627K302	43.46	4627K224	13.96	4627K244	21.91	4627K254	13.89
1	4627K215	12.60	4627K235	19.54	4627K341	45.92	4627K225	15.45	4627K245	25.69	4627K255	16.71
1 1/4	4627K216	18.39	4627K236	26.86	—	—	4627K226	24.76	4627K246	32.31	4627K256	23.96
1 1/2	4627K217	21.67	4627K237	33.19	—	—	4627K227	32.28	4627K247	46.19	4627K257	27.94
2	4627K218	31.19	4627K238	51.67	—	—	4627K228	48.76	4627K248	78.59	4627K258	41.23

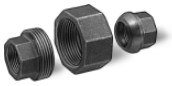

Pipe Size	Crosses		Unions		Couplings		Square-Head Plugs		Hex Caps		Round Caps	
1/4	—	—	4627K289	$15.49	4627K151	$6.84	—	—	4627K271	$0.50	—	—
3/8	—	—	4627K291	15.67	4627K152	6.84	—	—	4627K272	.74	—	—
1/2	4627K263	$32.57	4627K292	12.68	4627K153	7.63	4627K333	$1.12	4627K273	1.16	—	—
3/4	4627K264	42.28	4627K295	14.04	4627K154	8.78	4627K334	3.39	4627K274	1.95	—	—
1	4627K265	46.12	4627K296	18.34	4627K155	10.04	4627K335	3.61	—	—	4627K275	$11.52
1 1/4	4627K266	42.50	4627K297	29.33	4627K156	11.93	4627K336	4.16	—	—	4627K276	12.76
1 1/2	4627K267	73.30	4627K298	30.72	4627K157	17.88	4627K337	5.90	—	—	4627K277	18.64
2	4627K268	79.81	4627K299	38.05	4627K158	25.74	4627K338	7.62	—	—	4627K278	25.89

90° Reducing Elbows

Pipe Size (A)	(B)		
3/8	1/4	4627K311	$14.12
1/2	3/8	4627K312	14.66
3/4	1/2	4627K313	10.80
1	1/2	4627K315	23.79
1	3/4	4627K316	23.79
1 1/4	3/4	4627K317	41.74
1 1/4	1	4627K318	29.07
1 1/2	1	4627K319	45.89
1 1/2	1 1/4	4627K314	45.89
2	1 1/2	4627K321	55.28

Inline Reducing Tees

Pipe Size (A)	(B)		
1/2	1/4	4627K322	$12.49
1/2	3/8	4627K323	19.81
3/4	1/4	4627K324	32.26
3/4	1/2	4627K325	18.65
1	1/4	4627K326	28.57
1	1/2	4627K327	22.79
1	3/4	4627K328	22.79
1 1/4	3/4	4627K329	30.34
1 1/2	1	4627K331	36.92
2	1 1/2	4627K332	53.23

Reducing Couplings

Pipe Size (A)	(B)		
3/8	1/4	4627K135	$9.04
1/2	1/4	4627K137	10.88
1/2	3/8	4627K136	10.88
3/4	3/8	4627K139	15.10
3/4	1/2	4627K138	11.12
1	1/4	4627K145	18.09
1	3/8	4627K144	18.09
1	1/2	4627K143	13.55
1	3/4	4627K142	13.29
1 1/4	3/4	4627K187	18.15
1 1/4	1	4627K186	$17.49
1 1/2	1/2	4627K193	28.05
1 1/2	3/4	4627K192	24.89
1 1/2	1	4627K191	23.97
1 1/2	1 1/4	4627K189	27.26
2	3/4	4627K197	40.46
2	1	4627K196	34.76
2	1 1/4	4627K195	40.94
2	1 1/2	4627K194	34.46

Easy-Alignment Steel Threaded Pipe Couplings

- Use with air, water, oil, natural gas
- Maximum Pressure: 300 psi @ 72° F
- Pipe Nipples and Pipe: Use threaded Schedule 80 thick-wall steel (see pages 64-65) and threaded Schedule 160 extra-thick-wall steel or galvanized steel (see pages 67-68)

Each end has a short unthreaded space before the threads start—this space acts as a pilot when threading onto long lengths of pipe. Also known as API (American Petroleum Institute) line couplings, they meet API 5-L standards, as well as ASTM A53 and A105.

Galvanized steel offers better corrosion resistance than black steel.

Connections: NPT.

Pipe Size	Black Steel		Galvanized Steel	
1/8	43245K121	$4.42	43245K361	$4.76
1/4	43245K122	5.79	43245K362	6.24
3/8	43245K123	6.29	43245K363	6.92
1/2	43245K124	8.53	43245K364	10.20
3/4	43245K125	9.13	43245K365	10.91
1	43245K126	11.61	43245K366	14.04
1 1/4	43245K127	18.62	43245K367	21.54
1 1/2	43245K129	18.62	43245K368	21.54
2	43245K131	28.33	43245K369	34.31
3	43245K132	49.80	43245K371	57.80

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

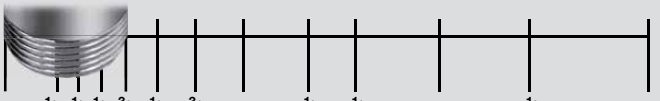

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Thick-Wall Smooth-Flow Steel Threaded Reducing Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 300 medium-pressure iron (see page 63)
- Flanges: Use threaded medium-pressure steel (see page 67)

The walls reduce gradually to provide smoother flow than other types of reducing connections. Also called swage nipples and Schedule 80 nipples, they're zinc-plated steel and have seamless construction for unrestricted flow. They meet MSS SP-95, ASTM A234-WPB, and ANSI/ASME B1.20.1.

Connections: NPT.

Pipe Size (A)	(B)	Lg.		
1/4	1/8	2 1/4″	7818K231	$16.18
3/8	1/4	2 1/2″	7818K232	14.21
1/2	1/8	2 3/4″	7818K233	16.18
1/2	1/4	2 3/4″	7818K211	13.33
1/2	3/8	2 3/4″	7818K212	13.33
3/4	1/4	3″	7818K213	19.74
3/4	1/2	3″	7818K214	15.14
1	1/8	3 1/2″	7818K234	26.74
1	1/4	3 1/2″	7818K235	$23.47
1	3/8	3 1/2″	7818K236	23.47
1	1/2	3 1/2″	7818K215	18.71
1	3/4	3 1/2″	7818K216	18.71
1 1/4	1/2	4″	7818K217	29.09
1 1/4	3/4	4″	7818K218	29.09
1 1/4	1	4″	7818K219	27.72
1 1/2	1/2	4 1/2″	7818K221	37.12
1 1/2	3/4	4 1/2″	7818K222	$37.12
1 1/2	1	4 1/2″	7818K223	32.46
1 1/2	1 1/4	4 1/2″	7818K224	32.46
2	1/2	6 1/2″	7818K225	66.64
2	3/4	6 1/2″	7818K226	66.64
2	1	6 1/2″	7818K227	52.73
2	1 1/4	6 1/2″	7818K228	55.93
2	1 1/2	6 1/2″	7818K229	52.73

Thick-Wall Welded Steel Threaded Pipe Nipples and Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 300 medium-pressure iron (see page 63)
- Flanges: Use threaded medium-pressure steel (see page 67)

Also known as Schedule 80 nipples and pipe, these are made of black steel, which is the most popular material for low-pressure plumbing applications. All have a welded construction, so there's a weld bead on the inside. Meet ASTM A53 and A733, as well as ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	4550K111	$1.59
1/4	7/8″	4550K131	1.68
3/8	1″	4550K151	1.72
1/2	1 1/8″	4550K171	1.59
3/4	1 3/8″	4550K191	1.82
1	1 1/2″	4550K221	2.70
1 1/4	1 5/8″	4550K241	3.30
1 1/2	1 3/4″	4550K261	4.14
2	2″	4550K281	5.68

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	4550K112	$1.80	4550K113	$1.80	4550K114	$2.10	4550K115	$2.10	4550K311	$2.71
1/4	4550K132	1.96	4550K133	1.97	4550K134	2.54	4550K135	2.54	4550K312	2.78
3/8	4550K152	2.18	4550K153	2.18	4550K154	2.58	4550K155	2.58	4550K313	3.05
1/2	4550K172	1.58	4550K173	1.58	4550K174	1.91	4550K175	1.91	4550K314	2.27
3/4	4550K192	1.84	4550K193	1.84	4550K194	2.19	4550K195	2.19	4550K315	2.60
1	—	—	4550K222	3.02	4550K223	3.11	4550K224	3.11	4550K316	3.74
1 1/4	—	—	4550K242	3.55	4550K243	3.89	4550K244	3.89	4550K317	4.86
1 1/2	—	—	4550K262	4.48	4550K263	4.83	4550K264	4.83	4550K318	5.81
2	—	—	—	—	4550K282	6.40	4550K283	6.40	4550K319	7.36

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		4 1/2″ Lengths		5″ Lengths		5 1/2″ Lengths		6″ Lengths		6 1/2″ Lengths	
1/8	4550K117	$2.71	4550K411	$4.96	4550K119	$4.96	4550K511	$5.41	4550K122	$5.41	4550K611	$7.15
1/4	4550K137	2.78	4550K412	4.39	4550K139	4.39	4550K512	4.99	4550K142	4.99	4550K612	8.41
3/8	4550K157	3.05	4550K413	4.40	4550K159	4.39	4550K513	4.99	4550K162	4.99	4550K613	9.35
1/2	4550K177	2.27	4550K414	2.60	4550K179	2.60	4550K514	2.95	4550K182	2.95	4550K614	5.65
3/4	4550K197	2.60	4550K415	3.23	4550K199	3.23	4550K515	3.85	4550K212	3.85	4550K615	6.61
1	4550K226	3.73	4550K416	4.45	4550K228	4.45	4550K516	5.26	4550K231	5.26	4550K616	8.90
1 1/4	4550K246	4.86	4550K417	5.99	4550K248	5.99	4550K517	6.74	4550K251	6.74	4550K617	11.22
1 1/2	4550K266	5.81	4550K418	6.77	4550K268	6.77	4550K518	7.76	4550K271	7.76	4550K618	12.96
2	4550K285	7.36	4550K419	9.09	4550K287	9.09	4550K519	10.47	4550K289	10.47	4550K619	18.02

Pipe Size	7″ Lengths		8″ Lengths		9″ Lengths		10″ Lengths		11″ Lengths		12″ Lengths	
1/8	4550K711	$7.15	4550K124	$7.15	4550K811	$8.28	4550K125	$8.28	4550K911	$8.71	4550K126	$8.71
1/4	4550K712	8.41	4550K144	8.41	4550K812	8.93	4550K145	8.93	4550K912	9.87	4550K146	9.87
3/8	4550K713	9.35	4550K164	9.35	4550K813	10.18	4550K165	10.18	4550K913	10.74	4550K166	10.74
1/2	4550K714	5.65	4550K184	5.65	4550K814	6.41	4550K185	6.41	4550K914	7.35	4550K186	7.36
3/4	4550K715	6.61	4550K214	6.61	4550K815	7.71	4550K215	7.71	4550K915	8.74	4550K216	8.74
1	4550K716	8.90	4550K233	8.90	4550K816	10.67	4550K234	10.67	4550K916	11.63	4550K235	11.63
1 1/4	4550K717	11.22	4550K253	11.22	4550K817	12.96	4550K254	12.96	4550K917	14.94	4550K255	14.94
1 1/2	4550K718	12.96	4550K273	12.96	4550K818	14.90	4550K274	14.90	4550K918	18.02	4550K275	18.02
2	4550K719	18.02	4550K292	18.02	4550K819	20.97	4550K293	20.97	4550K919	24.19	4550K294	24.19

To Order: Please specify length.

Pipe Size		14″ Lengths	16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths	126″ Lengths
1/8	4550K441	$10.30	$11.24	$11.61	$13.46	$14.80	$15.69	$22.70	$34.85	$37.86	$47.02	$66.93
1/4	4550K442	11.53	12.57	13.16	15.07	16.56	17.79	26.61	35.49	49.30	53.28	75.79
3/8	4550K443	12.76	13.93	14.50	16.69	18.35	18.72	29.06	43.02	48.38	61.80	82.65
1/2	4550K444	8.24	8.94	9.48	10.77	12.37	14.19	21.24	25.52	35.46	38.32	56.90
3/4	4550K445	9.87	10.78	11.27	12.92	14.19	15.16	22.72	30.30	42.09	45.47	64.66
1	4550K446	14.54	16.47	17.43	19.92	20.58	20.90	31.34	41.78	52.24	66.68	89.13
1 1/4	4550K447	17.70	19.32	20.15	23.15	25.45	26.87	40.28	57.11	71.43	77.12	114.60
1 1/2	4550K448	22.82	26.07	26.97	29.95	34.33	35.97	48.55	68.83	86.03	92.94	129.83
2	4550K449	28.83	31.48	32.64	34.72	36.76	37.83	62.44	83.25	104.03	117.41	174.43

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

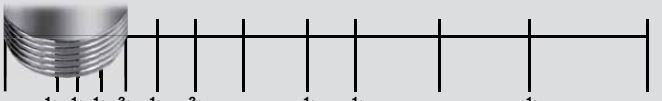

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Thick-Wall Seamless Steel Threaded Pipe Nipples and Pipe

Fully Threaded

Threaded on Both Ends

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 300 medium-pressure iron (see page 63)
- Flanges: Use threaded medium-pressure steel (see page 67)

Seamless construction provides unrestricted flow. Also known as Schedule 80, these nipples and pipe are made of black steel, which is the most popular material for low-pressure plumbing applications. Meet ASTM A53, A106, and A733, as well as ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/8	3/4″	7727K101	$3.08
1/4	7/8″	7727K131	3.62
3/8	1″	7727K161	3.92
1/2	1 1/8″	7727K191	2.00
3/4	1 3/8″	7727K221	2.25
1	1 1/2″	7727K251	3.18
1 1/4	1 5/8″	7727K281	4.00
1 1/2	1 3/4″	7727K311	4.81
2	2″	7727K341	5.71
2 1/2	2 1/2″	7727K371	18.99
3	2 5/8″	7727K401	23.94
4	2 7/8″	7727K431	34.10

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths		3 1/2″ Lengths	
1/8	7727K102	$3.26	7727K103	$3.52	7727K104	$3.82	7727K105	$4.24	7727K106	$4.63
1/4	7727K132	3.71	7727K133	4.09	7727K134	4.46	7727K135	4.96	7727K136	5.51
3/8	7727K162	4.08	7727K163	4.46	7727K164	5.02	7727K165	5.64	7727K166	6.20
1/2	7727K192	2.12	7727K193	2.34	7727K194	2.58	7727K195	2.84	7727K196	3.22
3/4	7727K222	2.40	7727K223	2.52	7727K224	2.85	7727K225	3.17	7727K226	3.61
1	—	—	7727K253	3.38	7727K254	3.62	7727K255	4.23	7727K256	4.69
1 1/4	—	—	7727K283	4.15	7727K284	4.57	7727K285	5.32	7727K286	5.81
1 1/2	—	—	7727K313	5.09	7727K314	5.53	7727K315	6.37	7727K316	6.95
2	—	—	—	—	7727K344	6.41	7727K345	7.46	7727K346	8.02
2 1/2	—	—	—	—	—	—	7727K375	19.88	7727K376	21.41
3	—	—	—	—	—	—	7727K405	25.32	7727K406	27.05
—	—	—	—	—	—	—	—	—	—	—

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		5″ Lengths		6″ Lengths		8″ Lengths		10″ Lengths		12″ Lengths	
1/8	7727K107	$5.13	7727K109	$7.66	7727K111	$8.80	7727K113	$10.06	7727K115	$11.41	7727K117	$12.76
1/4	7727K137	6.11	7727K139	9.42	7727K141	10.62	7727K143	12.08	7727K145	13.44	7727K147	14.75
3/8	7727K167	6.75	7727K169	9.89	7727K171	11.26	7727K173	12.92	7727K175	14.60	7727K177	16.28
1/2	7727K197	3.54	7727K199	4.49	7727K201	5.28	7727K203	8.02	7727K205	9.22	7727K207	10.44
3/4	7727K227	3.97	7727K229	4.95	7727K231	5.71	7727K233	8.72	7727K235	10.12	7727K237	11.52
1	7727K257	5.24	7727K259	6.60	7727K261	7.54	7727K263	11.92	7727K265	13.66	7727K267	15.70
1 1/4	7727K287	6.49	7727K289	8.20	7727K291	9.42	7727K293	14.99	7727K295	17.54	7727K297	20.21
1 1/2	7727K317	7.78	7727K319	9.84	7727K321	11.06	7727K323	17.53	7727K325	20.41	7727K327	23.24
2	7727K347	8.95	7727K349	11.31	7727K351	12.92	7727K353	20.39	7727K355	23.75	7727K357	27.12
2 1/2	7727K377	22.20	7727K379	24.99	7727K381	27.37	7727K383	32.75	7727K385	38.11	7727K387	43.30
3	7727K407	28.64	7727K409	32.33	7727K411	35.53	7727K413	43.78	7727K415	50.82	7727K417	57.18
4	7727K437	38.61	7727K439	44.31	7727K441	48.27	7727K443	58.81	7727K445	68.28	7727K447	77.89

To Order: Please specify length.

Pipe Size		14″ Lengths	16″ Lengths	18″ Lengths	20″ Lengths	22″ Lengths	24″ Lengths	36″ Lengths	48″ Lengths	60″ Lengths	72″ Lengths
1/8	5016T111	$14.88	$17.01	$20.03	$22.26	$24.49	$25.52	$38.27	$48.59	$60.74	$76.55
1/4	5016T112	17.22	19.67	22.13	24.59	27.04	29.51	44.27	59.02	73.77	88.52
3/8	5016T113	18.99	21.71	24.79	27.77	29.84	32.55	48.84	60.76	72.84	110.18
1/2	5016T114	12.18	13.89	15.51	17.37	19.14	20.87	24.86	41.76	52.17	62.59
3/4	5016T115	13.45	16.33	18.86	20.95	21.65	23.04	34.59	46.12	57.58	69.10
1	5016T116	21.96	23.83	25.48	28.31	29.57	31.40	42.90	62.80	78.49	85.81
1 1/4	5016T117	23.59	29.53	31.64	32.81	36.09	40.43	59.06	80.84	91.50	121.27
1 1/2	5016T118	27.12	30.99	32.19	37.18	43.75	46.48	67.47	92.96	122.25	134.94
2	5016T119	33.63	36.71	39.70	42.74	50.88	54.24	73.24	108.47	122.07	146.49
2 1/2	5016T121	56.20	65.50	69.64	71.73	78.91	86.61	132.31	164.96	208.92	233.85
3	5016T122	66.71	76.24	85.77	94.40	104.18	114.36	171.54	205.85	257.32	298.74
4	5016T123	90.87	112.74	118.80	132.00	145.20	155.78	203.65	273.48	310.77	372.93

Thick-Wall Steel Threaded-On-One-End Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 300 medium-pressure iron (see page 63)
- Flanges: Use threaded medium-pressure steel (see page 67)

These handy black steel nipples have one threaded end and one unthreaded end. All have welded construction, so there's a weld bead on the inside. They meet ASTM A53 and A733, as well as ANSI/ASME B1.20.1.

Connections: NPT on one end, unthreaded on the other end.

Pipe Size	1 1/2″ Lengths		2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths		12″ Lengths	
1/8	5081T11	$2.85	5081T12	$2.85	5081T13	$3.29	5081T14	$4.29	5081T15	$8.52	5081T16	$13.76
1/4	5081T17	3.07	5081T18	3.07	5081T19	4.01	5081T21	4.42	5081T22	7.87	5081T23	15.54
3/8	5081T24	3.48	5081T25	3.48	5081T26	4.07	5081T27	4.83	5081T28	7.87	5081T29	16.95
1/2	5081T31	2.48	5081T32	2.48	5081T33	3.01	5081T34	3.54	5081T35	4.64	5081T36	11.60
3/4	5081T37	2.85	5081T38	2.85	5081T39	3.48	5081T41	4.07	5081T42	6.05	5081T43	13.76
1	5081T44	4.29	5081T45	4.29	5081T46	4.89	5081T47	5.89	5081T48	8.34	5081T49	18.27
1 1/2	5081T51	6.37	5081T52	7.05	5081T53	7.52	5081T54	9.18	5081T55	12.25	5081T56	28.39
2	—	—	5081T58	8.93	5081T59	10.09	5081T61	11.60	5081T62	16.51	5081T63	38.17

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

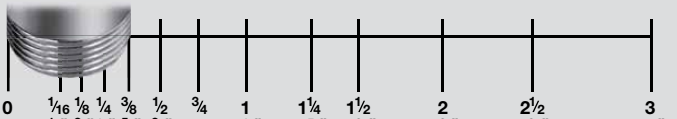

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Black Steel Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,000 psi @ 72° F, except plugs are rated 6,000 psi @ 72° F
- Pipe Nipples and Pipe: Use threaded Schedule 160 extra-thick-wall black steel (see page 67)
- Flanges: Use threaded extreme-pressure steel (see page 70)

The thick walls on these Class 3000 forged steel fittings stand up to high pressures. All meet ASTM A105 and ANSI/ASME B1.20.1; also meet ANSI/ASME B16.11, except the unions, lug unions, and low-profile couplings.

90° female×male elbows are also called street elbows. ***Unions*** meet MSS SP-83. ***Lug unions*** have two, three, or four lugs depending on their size. ***Half couplings*** are partially threaded; one end has an unthreaded portion that can be welded. ***Plugs*** are solid.

Connections: NPT.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		Tees		Crosses	
1/8	4513K211	$6.03	—	—	4513K221	$7.66	4513K241	$7.33	4513K251	$27.16
1/4	4513K11	5.91	4513K31	$8.84	4513K21	7.50	4513K41	7.17	4513K51	25.62
3/8	4513K12	5.91	4513K32	8.52	4513K22	7.50	4513K42	7.17	4513K52	27.16
1/2	4513K13	4.53	4513K33	8.52	4513K23	7.39	4513K43	6.46	4513K53	17.53
3/4	4513K14	5.68	4513K34	10.77	4513K24	8.54	4513K44	8.72	4513K54	23.13
1	4513K15	8.44	4513K35	13.79	4513K25	11.16	4513K45	11.03	4513K55	30.70
1 1/4	4513K16	15.40	4513K36	24.98	4513K26	15.43	4513K46	21.41	4513K56	40.68
1 1/2	4513K17	19.86	4513K37	28.49	4513K27	22.16	4513K47	24.97	4513K57	54.20
2	4513K18	24.12	4513K38	41.09	4513K28	28.84	4513K48	30.47	4513K58	73.06
2 1/2	4513K212	67.37	—	—	4513K222	67.39	4513K242	82.57	4513K252	178.88
3	4513K213	97.06	—	—	4513K223	105.57	4513K243	148.39	4513K253	217.12
4	4513K214	216.53	—	—	4513K224	193.12	4513K244	226.63	4513K254	308.65

Pipe Size	Couplings		Half Couplings		Low-Profile Couplings		Caps	
1/8	4513K261	$2.35	4513K271	$1.25	—	—	4513K281	$2.24
1/4	4513K61	2.30	4513K71	1.20	4513K411	$2.13	4513K81	2.22
3/8	4513K62	2.30	4513K72	1.24	4513K412	2.08	4513K82	2.22
1/2	4513K63	1.89	4513K73	1.15	4513K413	2.08	4513K83	2.16
3/4	4513K64	2.46	4513K74	1.65	4513K414	2.40	4513K84	3.01
1	4513K65	4.28	4513K75	2.15	4513K415	3.04	4513K85	4.62
1 1/4	4513K66	7.14	4513K76	3.90	4513K416	4.81	4513K86	7.43
1 1/2	4513K67	9.23	4513K77	4.98	4513K417	5.92	4513K87	8.88
2	4513K68	11.06	4513K78	7.33	4513K418	8.13	4513K88	12.27
2 1/2	4513K262	27.37	4513K272	16.03	4513K419	16.60	4513K282	31.88
3	4513K263	48.81	4513K273	30.62	4513K421	25.58	4513K283	58.73
4	4513K264	91.56	4513K274	53.51	4513K422	31.21	4513K284	74.11

Pipe Size	Unions		Lug Unions		Square-Head Plugs		Hex-Head Plugs	
1/8	4513K291	$9.48	—	—	4513K423	$1.00	4513K321	$0.84
1/4	4513K91	9.29	—	—	4513K424	1.00	4513K322	.84
3/8	4513K92	9.45	—	—	4513K425	1.05	4513K323	.87
1/2	4513K93	8.03	4513K112	$38.09	4513K426	1.10	4513K324	.87
3/4	4513K94	9.82	4513K113	42.66	4513K427	1.37	4513K325	1.62
1	4513K95	12.32	4513K114	55.92	4513K428	2.10	4513K326	2.17
1 1/4	4513K96	19.55	4513K115	88.89	4513K429	4.33	4513K327	3.77
1 1/2	4513K97	23.31	4513K116	93.57	4513K431	4.94	4513K328	5.02
2	4513K98	29.82	4513K117	106.62	4513K432	7.81	4513K329	8.56
2 1/2	4513K292	73.91	4513K312	199.74	4513K433	19.28	4513K331	20.60
3	4513K293	87.01	4513K313	262.55	4513K434	30.45	4513K332	31.95
4	—	—	4513K314	476.03	4513K435	48.10	4513K333	52.58

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)			
1/4	1/8	4513K341	$1.36
3/8	1/8	4513K342	1.37
3/8	1/4	4513K343	1.37
1/2	1/4	4513K344	1.38
1/2	3/8	4513K345	1.38
3/4	3/8	4513K346	1.71
3/4	1/2	4513K347	1.71
1	1/2	4513K348	2.78
1	3/4	4513K349	$2.78
1 1/4	1	4513K351	4.54
1 1/2	1 1/4	4513K352	5.23
2	1	4513K353	7.86
2	1 1/2	4513K354	7.86
2 1/2	2	4513K355	23.65
3	2 1/2	4513K356	34.51
4	3	4513K357	74.77

Reducing Couplings

Pipe Size (A)	(B)			
1/4	1/8	4513K151	$3.61
3/8	1/8	4513K153	3.76
3/8	1/4	4513K152	3.76
1/2	1/4	4513K155	3.84
1/2	3/8	4513K154	3.84
3/4	3/8	4513K158	4.47
3/4	1/2	4513K157	4.47
1	1/2	4513K163	6.20
1	3/4	4513K162	$6.20
1 1/4	1	4513K166	10.19
1 1/2	1 1/4	4513K171	10.62
2	1	4513K178	15.40
2	1 1/2	4513K179	15.40
2 1/2	2	4513K181	57.82
3	2 1/2	4513K182	76.47
4	3	4513K183	112.83

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

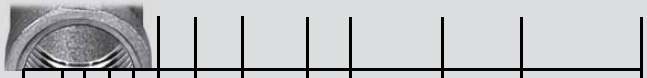

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Thick-Wall Steel Threaded Pipe Plugs

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 300 medium-pressure iron (see page 63)
- Flanges: Use threaded medium-pressure steel (see below)

The hollow center allows fluid to put pressure on the threads for a tight seal. Also called bull plugs, these heavy duty plugs are made from Schedule 80 pipe and are zinc plated for corrosion resistance. Meet MSS SP-95 and ASTM A234-WPB, as well as ANSI/ASME B1.20.1, B31.1, and B31.3.

Connections: NPT.

Pipe Size	Lg.		
1/8	2″	1109T11	$10.92
1/4	2″	1109T12	10.09
3/8	2 1/4″	1109T13	10.92
1/2	2 1/2″	1109T14	11.47
3/4	2 3/4″	1109T15	11.80
1	3″	1109T16	13.87
1 1/4	3 1/4″	1109T17	21.70
1 1/2	3 1/2″	1109T18	20.94
2	4″	1109T19	40.36

Pipe Sizes 1/2 to 1

Pipe Sizes 1/8 to 3/8 and 1 1/4 to 2

Medium-Pressure Steel Threaded Flanges

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 300 psi @ 72° F; 300 psi @ 300° F for steam
- Fittings: Use threaded Class 300 medium-pressure iron (see page 63)
- Pipe Nipples and Pipe: Use threaded Schedule 80 thick-wall steel (see pgs. 64-65)

Forged for strength, these black steel flanges are also called Class 300 and raised-face flanges. Bolt two same-size flanges together with a gasket (not included) to create easy access to your pipe. For an installation set that includes a gasket and bolts, see pg. 3474. For gaskets, see pgs. 3474-3480; for bolts, see pgs. 3140-3142. Meet ASTM A105 and ANSI/ASME B16.5.

Connections: NPT.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.		
1/2	3 3/4″	4	1/2″	6806K226	$19.64
3/4	4 5/8″	4	5/8″	6806K121	22.59
1	4 7/8″	4	5/8″	6806K122	21.75
1 1/4	5 1/4″	4	5/8″	6806K123	29.00
1 1/2	6 1/8″	4	3/4″	6806K124	30.91
2	6 1/2″	8	5/8″	6806K125	29.40
2 1/2	7 1/2″	8	3/4″	6806K126	46.29
3	8 1/4″	8	3/4″	6806K127	47.67
4	10″	8	3/4″	6806K128	66.12
5	11″	8	3/4″	6806K222	118.35
6	12 1/2″	12	3/4″	6806K129	165.00
8	15″	12	7/8″	6806K223	260.19

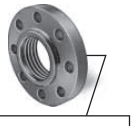

Raised Surface on Back

Extra-Thick-Wall Black Steel Threaded Pipe Nipples and Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 3000 high-pressure black steel (see page 66)
- Flanges: Use threaded extreme-pressure steel (see page 70)

Ready for rugged service, these strong steel nipples and pipe are also known as Schedule 160. They have seamless construction for unrestricted flow. Meet ASTM A53, A106, and A733, as well as ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

Fully Threaded

Threaded on Both Ends

FULLY THREADED

Pipe Size	Lg.		
1/2	1 1/8″	7733K101	$5.52
3/4	1 3/8″	7733K131	7.95
1	1 1/2″	7733K161	11.25
1 1/4	1 5/8″	7733K191	14.05
1 1/2	1 3/4″	7733K221	17.04
2	2″	7733K251	19.28
2 1/2	2 1/2″	7733K281	61.58
3	2 5/8″	7733K311	77.69
4	2 7/8″	7733K341	99.63

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths	
1/2	7733K102	$5.91	7733K103	$6.49	7733K104	$7.12	7733K105	$7.87
3/4	7733K132	8.49	7733K133	8.93	7733K134	10.10	7733K135	11.22
1	—	—	7733K163	11.91	7733K164	12.75	7733K165	14.94
1 1/4	—	—	7733K193	14.71	7733K194	16.14	7733K195	18.80
1 1/2	—	—	7733K223	17.99	7733K224	19.55	7733K225	22.51
2	—	—	—	—	7733K254	21.75	7733K255	25.27
2 1/2	—	—	—	—	—	—	7733K285	64.57
3	—	—	—	—	—	—	7733K315	82.15
4	—	—	—	—	—	—	—	—

THREADED ON BOTH ENDS

Pipe Size	4″ Lengths		5″ Lengths		6″ Lengths		8″ Lengths		10″ Lengths	
1/2	7733K107	$9.82	7733K109	$12.49	7733K111	$14.62	7733K113	$21.26	7733K115	$24.45
3/4	7733K137	14.00	7733K139	17.48	7733K141	20.16	7733K143	29.47	7733K145	34.21
1	7733K167	18.50	7733K169	23.30	7733K171	26.60	7733K173	40.32	7733K175	46.16
1 1/4	7733K197	22.93	7733K199	28.94	7733K201	33.28	7733K203	50.65	7733K205	59.26
1 1/2	7733K227	27.49	7733K229	34.74	7733K231	39.09	7733K233	59.26	7733K235	68.91
2	7733K257	30.39	7733K259	38.35	7733K261	43.85	7733K263	69.16	7733K265	80.61
2 1/2	7733K287	72.04	7733K289	81.11	7733K294	88.87	7733K293	106.33	7733K295	123.70
3	7733K317	92.93	7733K319	104.99	7733K321	115.34	7733K323	127.94	7733K325	148.43
4	7733K347	112.79	7733K349	129.18	7733K351	141.02	7733K353	171.88	7733K355	199.45

Pipe Size	12″ Lengths		18″ Lengths		24″ Lengths		36″ Lengths	
1/2	7733K117	$27.65	5225T34	$45.71	5225T35	$55.30	5225T36	$82.95
3/4	7733K147	38.95	5225T42	60.61	5225T43	77.89	5225T44	105.15
1	7733K177	53.04	5225T49	79.56	5225T51	106.08	5225T52	143.21
1 1/4	7733K207	68.55	5225T57	109.55	5225T58	123.40	5225T59	185.09
1 1/2	7733K237	78.56	5225T65	112.88	5225T66	141.40	5225T67	203.19
2	7733K267	92.02	5225T73	124.23	5225T74	165.64	5225T75	225.87
2 1/2	7733K297	140.59	5225T81	189.80	5225T82	219.11	—	—
3	7733K327	167.00	5225T88	227.73	5225T89	303.63	—	—
4	7733K357	206.85	5225T96	310.28	5225T97	413.70	—	—

For technical drawings and 3-D models, go to mcmaster.com. CAD

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

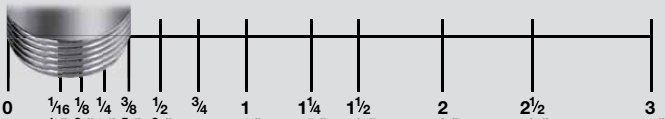

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Galvanized Steel Threaded Pipe Fittings

CAD

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,000 psi @ 72° F
- Pipe Nipples: Use threaded Schedule 160 extra-thick-wall galvanized steel (see below)

Forged for strength, these thick-wall fittings are also known as Class 3000. They are galvanized, so they have better corrosion resistance than black steel. All meet ASTM A105 and ANSI/ASME B1.20.1. They also meet ANSI/ASME B16.11, except the unions.

90° female×male elbows are also called street elbows. ***Unions*** meet MSS SP-83. ***Half couplings*** are partially threaded; one end has an unthreaded portion that can be welded. ***Hex-head plugs*** are hollow, except pipe sizes 1-2 are solid.

Connections: NPT.

Pipe Size	90° Elbows		90° Elbows, Female×Male		45° Elbows		Tees		Crosses	
1/8	7739K101	$8.14	7739K111	$20.82	7739K121	$10.34	7739K131	$9.89	7739K201	$35.25
1/4	7739K102	7.97	7739K112	11.46	7739K122	10.12	7739K132	9.68	7739K202	34.59
3/8	7739K103	7.97	7739K113	11.04	7739K123	10.12	7739K133	9.68	7739K203	34.59
1/2	7739K104	6.11	7739K114	11.04	7739K124	9.98	7739K134	8.72	7739K204	23.66
3/4	7739K105	7.67	7739K115	13.95	7739K125	11.07	7739K135	11.31	7739K205	29.46
1	7739K106	10.94	7739K116	18.62	7739K126	15.07	7739K136	14.89	7739K206	41.44
1 1/4	7739K107	20.78	7739K117	31.82	7739K127	20.83	7739K137	27.27	7739K207	54.91
1 1/2	7739K108	26.82	7739K118	38.46	7739K128	28.22	7739K138	31.81	7739K208	73.17
2	7739K109	30.72	7739K119	55.47	7739K129	38.94	7739K139	41.14	7739K209	98.63

Pipe Size	Unions		Couplings		Half Couplings		Caps		Hex-Head Plugs	
1/8	7739K171	$14.04	7739K141	$3.17	7739K151	$1.65	7739K161	$3.09	7739K181	$1.16
1/4	7739K172	13.76	7739K142	3.11	7739K152	1.62	7739K162	2.99	7739K182	1.13
3/8	7739K173	14.02	7739K143	3.11	7739K153	1.67	7739K163	2.99	7739K183	1.18
1/2	7739K174	11.92	7739K144	2.55	7739K154	1.56	7739K164	2.91	7739K184	1.18
3/4	7739K175	14.58	7739K145	3.32	7739K155	2.23	7739K165	4.06	7739K185	2.19
1	7739K176	19.06	7739K146	5.78	7739K156	3.06	7739K166	6.23	7739K186	3.08
1 1/4	7739K177	28.51	7739K147	9.64	7739K157	5.53	7739K167	10.03	7739K187	5.24
1 1/2	7739K178	33.98	7739K148	11.97	7739K158	7.36	7739K168	11.51	7739K188	6.75
2	7739K179	46.09	7739K149	14.93	7739K159	9.90	7739K169	16.57	7739K189	11.10

Hex Reducing Bushings, Male×Female

Pipe Size (A)	(B)			
1/4	1/8	7739K211	$1.91
3/8	1/8	7739K212	1.83
3/8	1/4	7739K192	1.83
1/2	1/4	7739K213	1.88
1/2	3/8	7739K193	1.88
3/4	3/8	7739K214	2.31
3/4	1/2	7739K194	2.31
1	1/2	7739K195	$3.76
1	3/4	7739K196	3.76
1 1/4	1	7739K197	6.13
1 1/2	1 1/4	7739K198	7.07
2	1	7739K215	10.61
2	1 1/2	7739K199	10.61
2 1/2	2	7739K216	30.12

Reducing Couplings

Pipe Size (A)	(B)		
1/4	1/8	7739K221	$4.87
3/8	1/8	7739K222	4.98
3/8	1/4	7739K223	4.98
1/2	1/4	7739K224	5.08
1/2	3/8	7739K225	5.08
3/4	3/8	7739K226	6.04
3/4	1/2	7739K227	6.03
1	1/2	7739K228	$7.85
1	3/4	7739K229	7.85
1 1/4	1	7739K231	13.20
1 1/2	1 1/4	7739K232	14.34
2	1	7739K233	20.79
2	1 1/2	7739K234	20.79
2 1/2	2	7739K235	78.06

Extra-Thick-Wall Galvanized Steel Threaded Pipe Nipples

CAD

Fully Threaded

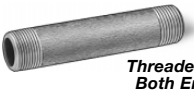

Threaded on Both Ends

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 3000 high-pressure galvanized steel (see above)

Designed for high-pressure applications, these strong nipples are also known as Schedule 160. They are galvanized for better corrosion resistance than black steel and have seamless construction for unrestricted flow. Meet ASTM A106B, A53, and A733, as well as ANSI/ASME B1.20.1.

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/2	1 1/8″	7736K113	$10.98
3/4	1 3/8″	7736K114	15.79
1	1 1/2″	7736K115	22.36
1 1/4	1 5/8″	7736K116	27.94
1 1/2	1 3/4″	7736K117	33.88
2	2″	7736K118	38.32

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths	
1/2	7736K123	$11.75	7736K133	$12.90	7736K153	$15.65	7736K163	$19.52	7736K183	$29.07
3/4	7736K124	16.89	7736K134	17.76	7736K154	22.31	7736K164	27.83	7736K184	40.07
1	—	—	7736K135	23.68	7736K155	29.69	7736K165	36.76	7736K185	52.87
1 1/4	—	—	7736K136	29.24	7736K156	37.38	7736K166	45.59	7736K186	66.14
1 1/2	—	—	7736K137	35.76	7736K157	44.75	7736K167	54.65	7736K187	77.71
2	—	—	—	—	7736K158	50.24	7736K168	60.40	7736K188	87.17

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Zinc-Plated Steel Threaded Hex-Socket Plugs

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: See table

Put an end to costly, messy leaks. An O-ring seal provides a dependable no-leak connection. Use in hydraulic systems and where vibration, temperature variations, and pressure spikes are a concern. Plugs are made of zinc-plated steel and are solid. They're interchangeable with standard SAE J514 straight-thread fittings. Meet SAE J1926 and ASTM B633.

Plugs with a ***Buna-N seal*** have a temperature range of –20° to 200° F. Plugs with a ***fluoroelastomer seal*** have a temperature range of –4° to 400° F.

Connections: UN/UNF straight threads.

Thread Size (Actual OD)	Max. psi @ 72° F	Hex Key Size	*With Buna-N Seal*		*With Fluoroelastomer Seal*	
5/16″-24	5,500	1/8″	4835K21	$1.68	4835K41	$1.93
7/16″-20	5,000	3/16″	4835K23	1.80	4835K43	2.04
9/16″-18	4,000	1/4″	4835K25	1.96	4835K45	2.18
3/4″-16	3,500	5/16″	4835K26	2.32	4835K46	2.43
7/8″-14	2,750	3/8″	4835K27	2.44	4835K47	2.53
1 1/16″-12	2,250	9/16″	4835K28	2.57	4835K48	2.62
1 5/16″-12	2,000	5/8″	4835K31	5.32	4835K51	5.71
1 5/8″-12	1,625	3/4″	4835K32	14.20	4835K52	18.21
1 7/8″-12	1,250	3/4″	4835K33	19.23	4835K53	24.75

Flush-Mount High-Pressure Steel Threaded Hex-Socket Plugs

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 5,000 psi @ 72° F

Precision machined with a 7/8″ taper, these steel plugs not only install flush, but also withstand higher pressure than standard steel plugs. Plugs are solid. Meet ASTM A574 and ANSI/ASME B1.20.3. Temperature range is –100° to 450° F.

Choose ***PTFE-coated*** plugs for corrosion resistance.

Connections: NPTF (Dryseal), which is compatible with NPT.

Pipe Size	Hex Key Size	*Uncoated*		*PTFE Coated*	
1/16	5/32″	4534K39	$0.36	4534K29	$1.13
1/8	3/16″	4534K41	.41	4534K11	1.19
1/4	1/4″	4534K42	.58	4534K12	1.91
3/8	5/16″	4534K43	.90	4534K13	2.12
1/2	3/8″	4534K44	$1.61	4534K14	$5.60
3/4	9/16″	4534K45	3.11	4534K15	7.29
1	5/8″	4534K46	12.90	—	—
1 1/4	3/4″	4534K47	17.65	—	—

Seal-Tight High-Pressure Steel Threaded Pipe Unions

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,000 psi @ 100° F; 1,500 psi @ 700° F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 160 extra-thick-wall black steel (see page 67)

Rather than the standard metal-to-metal seal you get on other pipe unions, these heavy duty forged steel unions have a special gasket that provides a seal-tight joint in high-pressure applications. The gasket is Type 304 stainless steel with a graphite filler. A Type 316 stainless steel retainer protects the seal from overtightening during installation. Meet MSS SP-83, ASTM A105, and ANSI/ASME B1.20.1. Temperature range is –20° to 700° F.

Connections: NPT.

Pipe Size			Pipe Size		
1/2	4690K11	$57.09	1 1/4	4690K14	$134.81
3/4	4690K12	64.82	1 1/2	4690K15	152.00
1	4690K13	84.01	2	4690K16	185.46

High-Pressure Steel Threaded Locknuts with PTFE Seal

- Use with air, water, oil, natural gas
- Maximum Pressure: See table

No need for PTFE tape and sealants—these locknuts have a built-in seal for high-pressure applications. They're made of zinc-plated steel for corrosion resistance. Screw one onto your fitting before making a connection. Rounded corners prevent overtightening during installation. Temperature range is –100° to 500° F.

Connections: NPT.

Pipe Size	Max. psi @ 72° F	Width	Thick.		
1/8	10,000	5/8″	3/16″	5530K14	$2.00
1/4	10,000	3/4″	5/16″	5530K16	2.52
3/8	10,000	7/8″	5/16″	5530K18	2.74
1/2	10,000	1 1/8″	5/16″	5530K19	3.50
3/4	5,000	1 5/16″	5/16″	5530K21	4.30
1	5,000	1 5/8″	3/8″	5530K23	6.40
1 1/4	5,000	2″	3/8″	5530K25	10.02
1 1/2	3,000	2 1/4″	3/8″	5530K27	10.64
2	3,000	2 3/4″	7/16″	5530K29	31.44

High-Pressure Steel Threaded Pipe Outlets

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,000 psi @ 72° F
- Pipe: Use threaded Schedule 160 extra-thick-wall black steel (see page 67)

Create a threaded outlet anywhere on your pipe. Also known as branch connectors, they're made of heavy duty forged steel. To install, drill a hole in your pipe to match the fitting's outlet size and weld in place. Meet MSS SP-97 and ASTM A105; they also meet ANSI/ASME B16.9, B16.11, and B31.

Connections: NPT.

To Order: Please specify pipe size within the range shown.

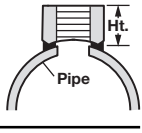

Fits Pipe Size Range	Outlet, Pipe Size	Ht.		
1/4 to 36	1/4	3/4″	4587K51	$5.87
3/8 to 36	3/8	13/16″	4587K52	5.87
1/2 to 36	1/2	1″	4587K53	5.84
3/4 to 36	3/4	1 1/16″	4587K54	6.73
1 to 36	1	1 5/16″	4587K55	7.06
1 1/4 to 36	1 1/4	1 3/8″	4587K56	11.28
1 1/2 to 36	1 1/2	1 3/8″	4587K57	11.28
2 to 36	2	1 1/2″	4587K28	12.85

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Extreme-Pressure Steel Threaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 6,000 psi @ 72° F
- Pipe Nipples and Pipe: Use threaded Schedule XXH super-thick-wall steel (see below)
- Flanges: Use threaded extreme-pressure steel (see below)

With the thickest walls of all our threaded fittings, these super-tough Class 6000 forged black steel fittings handle the highest pressure. They meet ASTM A105 and ANSI/ASME B1.20.1; they also meet ANSI/ASME B16.11, except unions.

Half couplings are partially threaded; one end has an unthreaded portion that can be welded.

Connections: NPT.

Pipe Size	90° Elbows		Tees		Unions		Couplings		Half Couplings		Caps	
1/4	43455K12	$14.92	43455K21	$26.35	43455K31	$19.46	43455K38	$4.54	43455K41	$4.19	43455K51	$6.68
3/8	43455K19	15.17	43455K22	31.62	43455K32	19.29	43455K39	4.70	43455K42	4.56	43455K52	6.94
1/2	43455K13	8.63	43455K43	11.84	43455K93	19.02	43455K63	4.50	43455K73	3.27	43455K83	6.48
3/4	43455K14	10.99	43455K44	16.01	43455K94	21.56	43455K64	5.13	43455K74	3.47	43455K84	7.78
1	43455K15	14.09	43455K45	27.66	43455K95	27.90	43455K65	6.89	43455K75	4.48	43455K85	8.28
1 1/2	43455K17	36.91	43455K47	47.83	43455K97	54.27	43455K67	14.23	43455K77	12.53	43455K87	21.46
2	43455K18	56.54	43455K48	78.62	43455K98	95.71	43455K68	21.13	43455K78	22.83	43455K88	25.51

Super-Thick-Wall Steel Pipe Nipples and Pipe

Fully Threaded

Threaded on Both Ends

Threaded on One End

- Use with air, water, oil, natural gas, steam
- Fittings: Use threaded Class 6000 extreme-pressure steel (see above)
- Flanges: Use threaded extreme-pressure steel (see below)

Super duty nipples and pipe, also known as Schedule XXH, have the thickest walls available. They are black steel and have seamless construction for unrestricted flow. Meet ASTM A106B and A733, as well as ANSI/ASME B1.20.1

Fully threaded nipples are also called close nipples; they are threaded on each end to the center.

Connections: NPT.

FULLY THREADED

Pipe Size	Lg.		
1/2	1 1/8″	6850T11	$5.12
3/4	1 3/8″	6850T17	7.38
1	1 1/2″	6850T24	10.44
1 1/2	1 3/4″	6850T31	15.82
2	2″	6850T37	17.88

THREADED ON BOTH ENDS

Pipe Size	1 1/2″ Lengths		2″ Lengths		3″ Lengths		4″ Lengths	
1/2	6850T12	$5.48	6850T13	$6.02	6850T14	$7.30	6850T15	$9.12
3/4	6850T18	7.88	6850T19	8.28	6850T21	10.42	6850T22	13.00
1	—	—	6850T26	11.06	6850T27	13.86	6850T28	17.16
1 1/2	—	—	6850T33	16.68	6850T34	20.88	6850T35	25.52
2	—	—	—	—	6850T41	23.46	6850T42	28.20

THREADED ON BOTH ENDS

Pipe Size	6″ Lengths		12″ Lengths		18″ Lengths		24″ Lengths		36″ Lengths	
1/2	6850T16	$13.56	6850T67	$23.98	6880T11	$44.04	6880T12	$55.09	6880T13	$76.26
3/4	6850T23	18.70	6850T68	33.78	6880T14	54.72	6880T25	72.94	6880T16	93.68
1	6850T29	24.68	6850T69	46.00	6880T15	80.66	6880T26	99.36	6880T17	149.04
1 1/2	6850T36	36.28	6850T71	68.12	6880T18	110.36	6880T19	147.16	6880T21	199.74
2	6850T43	40.68	6850T72	79.80	6880T22	140.28	6880T23	182.36	6880T24	223.38

THREADED ON ONE END

Pipe Size	1 1/2″ Lengths		2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths	
1/2	6850T44	$5.98	6850T45	$6.56	6850T46	$7.96	6850T47	$9.95	6850T48	$14.80
3/4	6850T49	8.60	6850T51	9.04	6850T52	11.36	6850T53	14.18	6850T54	20.36
1	—	—	6850T55	12.07	6850T56	15.13	6850T57	18.73	6850T58	26.93
1 1/2	—	—	6850T59	18.18	6850T61	22.78	6850T62	27.84	6850T63	39.58
2	—	—	—	—	6850T64	28.36	6850T65	34.11	6850T66	49.20

Extreme-Pressure Steel Threaded Flanges

Raised Surface on Back

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,700 psi @ 72° F; 3,200 psi @ 350° F for steam
- Fittings: Use threaded Class 6000 extreme-pressure steel (see above)
- Pipe Nipples and Pipe: Use threaded Schedule XXH super-thick-wall steel (see above)

Take one look at these hefty flanges and you'll have no doubt they are the strongest available. Also called Class 1500 flanges, they're made of heavy duty forged black steel and have a raised surface on the back. Bolt two same-size flanges together with a gasket (not included) to create easy access to your pipe. For bolts, see pages 3140-3142. Flanges meet MSS SP-6, MSS SP-25, ASTM A105, and ANSI/ASME B16.5.

Connections: NPT.

Pipe Size	Flange OD	Bolts Required Qty.	Bolts Required Dia.		
1/2	4 3/4″	4	3/4″	1153T41	$103.50
3/4	5 1/8″	4	3/4″	1153T42	105.21
1	5 7/8″	4	7/8″	1153T43	108.00
1 1/4	6 1/4″	4	7/8″	1153T44	$147.26
1 1/2	7″	4	1″	1153T45	114.93
2	8 1/2″	8	7/8″	1153T46	117.23

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

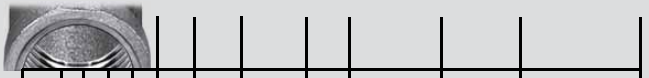

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

British Standard and Metric Threaded High-Pressure Steel Pipe Fittings

- Use with air, water, oil
- Maximum Pressure: See table

Make high-pressure connections between BSPT, BSPP, NPT, and metric threads. Fittings are made of zinc-plated steel for corrosion resistance.

Swivel adapters rotate 360° for tightening in confined spaces. ***Through-wall nipples*** are also called panel-mount couplings and bulkhead fittings. ***Hex-head plugs*** with BSPT threads are solid, except pipe size 1 is hollow; plugs with BSPP threads are hollow.

Connections: BSPT (British Standard Pipe Taper), BSPP (British Standard Pipe Parallel), NPT, or metric straight threads. Male BSPP threads have a rubber seal bonded to a metal washer.

Adapters and Pipe Nipples

Pipe Size (A)	Pipe Size (B)	BSPT Male×NPT Male Max. psi @ 72° F		
1/8	1/8	5,100	4936K611	$10.80
1/4	1/8	6,500	4936K612	9.11
1/4	1/4	6,500	4936K713	10.64
3/8	1/4	5,500	4936K715	11.61
3/8	3/8	5,500	4936K716	12.05
1/2	1/4	—	—	—
1/2	3/8	—	—	—
1/2	1/2	4,500	4936K721	12.33
3/4	1/2	—	—	—
3/4	3/4	3,500	4936K731	19.22
1	3/4	—	—	—
1	1	3,000	4936K738	28.30

BSPT Male×BSPT Male Max. psi @ 72° F		
5,100	4936K511	$7.78
5,100	4936K512	13.55
6,500	4936K513	7.83
5,500	4936K515	8.44
5,500	4936K516	8.28
4,500	4936K518	9.72
4,500	4936K519	9.72
4,500	4936K521	9.16
3,500	4936K528	15.00
3,500	4936K531	14.72
3,000	4936K537	23.15
3,000	4936K538	22.65

BSPP Male×NPT Male Max. psi @ 72° F		
5,100	4936K411	$3.56
5,100	4936K412	5.70
6,500	4936K413	3.86
5,500	4936K415	4.95
5,500	4936K416	4.44
4,500	4936K418	7.69
4,500	4936K419	6.05
4,500	4936K421	5.22
3,500	4936K428	12.11
3,500	4936K431	7.72
3,000	4936K437	18.00
3,000	4936K438	15.11

BSPP Male×BSPP Male Max. psi @ 72° F		
5,100	4936K211	$4.80
5,100	4936K212	5.05
6,500	4936K213	4.56
5,500	4936K215	5.08
5,500	4936K216	5.14
4,500	4936K218	6.39
4,500	4936K219	6.42
4,500	4936K221	6.50
3,500	4936K228	10.09
3,500	4936K231	10.28
3,000	4936K237	17.00
3,000	4936K238	16.92

Pipe Size (A)	Pipe Size (B)	BSPP Female×NPT Male Max. psi @ 72° F		
1/8	1/8	5,100	4936K613	$15.10
1/8	1/4	6,500	4936K614	19.28
1/4	1/4	6,500	4936K137	5.75
1/4	3/8	5,500	4936K138	9.16
1/4	1/2	4,500	4936K141	12.11
3/8	3/8	5,500	4936K139	8.11
3/8	1/2	4,500	4936K142	9.78
1/2	1/2	4,500	4936K143	9.69
1/2	3/4	3,500	4936K144	14.00
3/4	3/4	3,500	4936K145	13.80
3/4	1	3,000	4936K146	22.54
1	1	3,000	4936K147	23.68

BSPP Female×BSPP Male Max. psi @ 72° F		
4,500	4936K386	$5.11
4,500	4936K387	4.83
4,500	4936K388	9.03
4,500	4936K389	9.28
3,500	4936K112	8.00
4,500	4936K391	9.47
3,500	4936K393	11.56
3,500	4936K394	8.00
—	—	—
3,500	4936K401	7.64
3,500	4936K405	23.95
3,500	4936K406	24.25

NPT Female×BSPT Male Max. psi @ 72° F		
3,500	4936K408	$9.61
6,500	4936K615	20.34
3,500	4936K148	10.17
—	—	—
—	—	—
3,500	4936K149	11.78
—	—	—
3,500	4936K151	14.67
—	—	—
3,500	4936K152	17.58
—	—	—
3,500	4936K407	24.82

NPT Female×BSPP Male Max. psi @ 72° F		
5,100	4936K117	$5.52
5,100	4936K118	5.92
6,500	4936K119	5.37
5,500	4936K122	6.95
4,500	4936K125	10.78
5,500	4936K123	6.95
4,500	4936K126	9.67
4,500	4936K127	9.11
3,500	4936K131	18.42
3,500	4936K132	11.73
—	—	—
3,000	4936K136	19.23

NPT Female (A)×Metric Male (B)

Pipe Size	Thread Size (Actual OD)	Max. psi @ 72° F		
1/8	M10×1.0	3,500	4936K153	$12.44
1/4	M12×1.5	3,500	4936K154	13.53
1/4	M14×1.5	3,500	4936K155	13.94
3/8	M16×1.5	3,500	4936K156	14.47
3/8	M18×1.5	3,500	4936K157	$14.86
1/2	M16×1.5	3,500	4936K158	20.17
1/2	M18×1.5	3,500	4936K159	17.72
1/2	M20×1.5	3,500	4936K175	19.58
1/2	M22×1.5	3,500	4936K161	$19.53
3/4	M27×2.0	3,500	4936K162	20.88
1	M33×2.0	3,500	4936K163	32.12

Swivel Adapters

Pipe Size	Max. psi @ 72° F	BSPP Female Swivel× NPT Male		BSPP Female Swivel× BSPP Male	
1/4	3,500	4936K375	$10.78	4936K369	$7.64
3/8	3,500	4936K376	10.94	4936K371	8.72
1/2	3,500	4936K377	15.14	4936K372	11.75
3/4	3,500	4936K378	19.77	4936K373	17.17
1	3,500	4936K379	29.55	—	—

Through-Wall Nipples

Pipe Size	Max. psi @ 72° F	BSPP Male×BSPP Male	
1/4	6,500	4936K198	$13.56
3/8	5,500	4936K201	14.67
1/2	4,500	4936K204	15.98
3/4	3,500	4936K208	24.60
1	3,000	4936K341	34.30

Hex-Head Plugs

Pipe Size	Max. psi @ 72° F	BSPT Male		BSPP Male	
1/8	3,500	4936K184	$3.72	4936K176	$3.44
1/4	3,500	4936K185	3.86	4936K177	3.61
3/8	3,500	4936K186	5.42	4936K178	4.50
1/2	3,500	4936K187	5.50	4936K179	5.97
5/8	3,500	4936K188	7.58	4936K181	7.36
3/4	3,500	4936K189	8.89	4936K182	9.50
1	3,500	4936K191	13.11	4936K183	15.64

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Male Threaded Pipe and Fittings— *Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

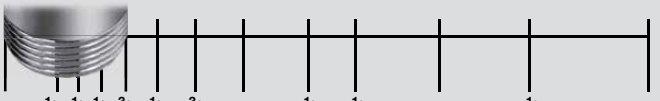

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Compact Extreme-Pressure Steel Threaded Pipe Fittings

- Use with air, water, hydraulic oil
- Maximum Pressure: See table

Heavy duty forged or barstock construction gives these little fittings a lot of might. Made of zinc-plated steel for corrosion resistance. Meet ASTM A108 or A576.

Connections: NPTF (Dryseal), which are compatible with NPT threads, or UN/UNF straight threads.

NPTF Connections

90° female×male elbows are also known as street elbows. ***Square-head plugs*** are hollow. ***Hex-head plugs*** are solid, except pipe sizes 3/4 and 1 are hollow. ***Hex-socket plugs*** are solid.

Pipe Size	90° Elbows, Female Max. psi @ 72° F			90° Elbows, Male Max. psi @ 72° F			90° Elbows, Female×Male Max. psi @ 72° F			45° Elbows, Female Max. psi @ 72° F		
1/8	5,000	50925K118	$4.04	6,000	50925K117	$3.83	5,000	50925K119	$3.98	—	—	—
1/4	5,000	50925K151	5.09	6,000	50925K111	4.17	5,000	50925K271	4.14	5,000	50925K173	$6.68
3/8	4,500	50925K153	6.07	6,000	50925K113	5.44	4,500	50925K273	5.61	4,500	50925K174	9.15
1/2	3,000	50925K155	9.57	6,000	50925K114	7.88	3,000	50925K275	9.09	3,000	50925K175	12.90
3/4	3,000	50925K157	15.40	4,000	50925K115	11.94	3,000	50925K277	14.38	3,000	50925K176	20.66
1	1,800	50925K159	23.86	3,000	50925K116	22.70	1,800	50925K279	24.01	1,800	50925K177	28.08

Pipe Size	45° Elbows, Female×Male Max. psi @ 72° F			Tees, Female Max. psi @ 72° F			Tees, Male Max. psi @ 72° F			Tees, Female×Female×Male Max. psi @ 72° F		
1/8	5,000	50925K178	$4.15	5,000	50925K121	$5.71	6,000	50925K519	$27.23	5,000	50925K196	$5.23
1/4	5,000	50925K179	5.57	5,000	50925K239	6.13	6,000	50925K521	12.66	5,000	50925K197	6.38
3/8	4,500	50925K181	7.06	4,500	50925K242	8.47	6,000	50925K522	27.47	4,500	50925K198	8.49
1/2	3,000	50925K182	10.23	3,000	50925K244	12.82	6,000	50925K523	33.15	3,000	50925K199	14.19
3/4	3,000	50925K183	14.98	3,000	50925K246	20.32	4,000	50925K524	37.55	3,000	50925K201	23.95
1	1,800	50925K184	25.64	1,800	50925K248	28.44	3,000	50925K552	67.60	1,800	50925K202	35.14

Pipe Size	Tees, Female×Male×Female Max. psi @ 72° F			Crosses Max. psi @ 72° F			Square-Head Plugs Max. psi @ 72° F			Hex-Head Plugs Max. psi @ 72° F		
1/8	5,000	50925K189	$7.89	5,000	50925K203	$15.66	6,000	50925K525	$0.45	6,000	50925K209	$0.64
1/4	5,000	50925K191	6.02	5,000	50925K204	11.38	6,000	50925K526	.64	6,000	50925K389	.73
3/8	4,500	50925K192	10.05	4,500	50925K205	14.17	6,000	50925K527	.83	6,000	50925K392	.87
1/2	3,000	50925K193	14.17	3,000	50925K206	21.70	6,000	50925K528	1.28	6,000	50925K394	1.36
3/4	3,000	50925K194	24.15	3,000	50925K207	31.60	6,000	50925K529	1.81	5,500	50925K382	3.13
1	1,800	50925K195	34.27	1,800	50925K208	56.27	5,000	50925K531	7.74	4,500	50925K384	5.00

Pipe Size	Hex-Socket Plugs Max. psi @ 72° F	Hex Key Size		
1/8	6,000	3/16″	50925K231	$1.21
1/4	6,000	1/4″	50925K381	1.58
3/8	6,000	5/16″	50925K383	1.92
1/2	6,000	3/8″	50925K385	2.53
3/4	5,500	9/16″	50925K387	4.61

Pipe Size (A)	Pipe Size (B)	Reducing 90° Elbows, Female×Male Max. psi @ 72° F			Reducing 90° Elbows, Male×Female Max. psi @ 72° F	
1/4	1/8	5,000	50925K511	$8.38	5,000	50925K512 $8.66
3/8	1/4	4,500	50925K513	12.11	5,000	50925K514 7.81
1/2	3/8	3,000	50925K515	19.09	4,500	50925K516 8.87
3/4	1/2	3,000	50925K517	33.95	3,000	50925K518 15.87

Hex Reducing Bushings, Male×Female

Pipe Size (A)	Pipe Size (B)	Max. psi @ 72° F			Pipe Size (A)	Pipe Size (B)	Max. psi @ 72° F			Pipe Size (A)	Pipe Size (B)	Max. psi @ 72° F		
1/4	1/8	6,000	50925K341	$1.60	1/2	3/8	6,000	50925K352	$2.36	1	3/8	4,500	50925K361	$5.44
3/8	1/8	6,000	50925K343	1.79	3/4	1/4	5,500	50925K354	3.23	1	1/2	4,500	50925K362	4.92
3/8	1/4	6,000	50925K345	1.50	3/4	3/8	5,500	50925K356	2.89	1	3/4	4,000	50925K364	4.81
1/2	1/8	6,000	50925K347	3.85	3/4	1/2	5,000	50925K358	3.11	1 1/4	1	3,000	50925K266	9.88
1/2	1/4	6,000	50925K349	2.16	1	1/4	4,500	50925K532	18.62					

(Continued on following page)

How to Measure Female Threaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

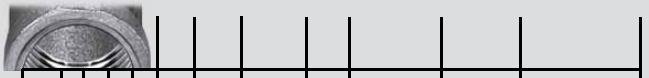

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″	1 5/8″	1 3/4″	2 3/8″	2 3/4″	3 3/8″

To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Compact Extreme-Pressure Steel Threaded Pipe Fittings *(Cont. from previous page)*

NPTF Connections (Cont.)

Pipe Size (A)	Pipe Size (B)	Hex Couplings Max. psi @ 72° F			Adapters, Female×Male Max. psi @ 72° F			Hex Nipples Max. psi @ 72° F		
1/8	1/8	6,000	50925K232	$2.46	6,000	50925K128	$6.53	6,000	50925K257	$1.27
1/4	1/8	6,000	50925K233	3.98	6,000	50925K251	2.73	6,000	50925K258	2.04
1/4	1/4	6,000	50925K211	2.42	6,000	50925K129	5.70	6,000	50925K131	1.29
3/8	1/8	6,000	50925K234	6.02	6,000	50925K163	9.96	6,000	50925K259	3.25
3/8	1/4	6,000	50925K213	3.63	6,000	50925K312	3.64	6,000	50925K133	2.00
3/8	3/8	6,000	50925K215	3.48	6,000	50925K164	8.57	6,000	50925K134	1.85
1/2	1/8	5,000	50925K549	45.89	5,000	50925K314	6.83	—	—	—
1/2	1/4	5,000	50925K217	5.66	5,000	50925K316	5.38	6,000	50925K138	3.74
1/2	3/8	5,000	50925K219	5.11	5,000	50925K318	4.53	6,000	50925K136	3.31
1/2	1/2	5,000	50925K222	4.96	5,000	50925K165	17.23	6,000	50925K141	2.46
3/4	1/4	—	—	—	4,000	50925K321	11.27	5,500	50925K281	25.10
3/4	3/8	—	—	—	2,500	50925K282	23.13	2,500	50925K285	16.48
3/4	1/2	4,000	50925K225	8.30	4,000	50925K323	6.49	5,500	50925K142	4.30
3/4	3/4	4,000	50925K227	7.61	4,000	50925K166	18.21	5,500	50925K149	4.06
1	1/2	3,000	50925K551	44.69	3,000	50925K325	17.06	—	—	—
1	3/4	—	—	—	3,000	50925K326	11.65	4,500	50925K261	8.04
1	1	3,000	50925K229	10.65	2,000	50925K283	21.88	4,500	50925K148	6.36
1 1/4	1	—	—	—	2,500	50925K256	24.83	3,000	50925K267	18.15
1 1/4	1 1/4	2,500	50925K236	24.04	—	—	—	3,000	50925K268	12.81
1 1/2	1 1/2	2,000	50925K237	43.05	—	—	—	3,000	50925K265	19.76

NPTF×UN/UNF Connections

The male UN/UNF threads have a Buna-N O-ring for a tight seal.

NPTF Female×UN/UNF Male Adapters

Pipe Size (A)	Thread Size (B)	Max. psi @ 72° F		
1/8	7/16″-20	6,000	50925K172	$3.64
1/8	9/16″-18	6,000	50925K533	16.25
1/4	7/16″-20	6,000	50925K186	5.00
1/4	9/16″-18	6,000	50925K451	2.29
1/4	3/4″-16	6,000	50925K452	3.73
1/4	7/8″-14	5,000	50925K453	2.94
3/8	9/16″-18	6,000	50925K187	5.21
3/8	3/4″-16	6,000	50925K188	2.64
3/8	7/8″-14	5,000	50925K368	3.19
3/8	1 1/16″-12	5,000	50925K535	6.32
1/2	9/16″-18	5,000	50925K534	17.45
1/2	3/4″-16	5,000	50925K454	4.06
1/2	7/8″-14	5,000	50925K457	4.00
1/2	1 1/16″-12	5,000	50925K459	4.94
1/2	1 3/16″-12	5,000	50925K462	12.77
1/2	1 5/16″-12	5,000	50925K464	7.96
3/4	7/8″-14	4,000	50925K458	7.15
3/4	1 1/16″-12	4,000	50925K461	5.54
3/4	1 3/16″-12	4,000	50925K463	8.98
3/4	1 5/16″-12	4,000	50925K465	7.36
1	1 5/16″-12	3,000	50925K536	10.06
1	1 5/8″-12	3,000	50925K537	15.34
1	1 7/8″-12	3,000	50925K538	21.74

UN/UNF Female×NPTF Male Adapters

Thread Size (A)	Pipe Size (B)	Max. psi @ 72° F		
1/2″-20	1/8	6,000	50925K539	$14.02
9/16″-18	1/4	6,000	50925K541	5.99
9/16″-18	3/8	6,000	50925K542	16.11
9/16″-18	1/2	6,000	50925K544	18.16
3/4″-16	3/8	5,000	50925K543	5.80
3/4″-16	1/2	5,000	50925K545	15.52
7/8″-14	1/2	4,500	50925K546	18.40
1 1/16″-12	3/4	4,500	50925K547	23.23
1 5/16″-12	1	3,500	50925K548	22.04

NPTF Male×UN/UNF Male Adapters

Pipe Size (A)	Thread Size (B)	Max. psi @ 72° F		
1/8	7/16″-20	6,000	50925K327	$4.06
1/4	9/16″-18	6,000	50925K328	3.57
3/8	9/16″-18	6,000	50925K329	4.45
3/8	3/4″-16	6,000	50925K331	4.32
1/2	3/4″-16	6,000	50925K332	7.36
1/2	7/8″-14	6,000	50925K333	5.59
3/4	1 1/16″-12	5,000	50925K342	8.15
1	1 5/16″-12	4,500	50925K344	10.32

UN/UNF Connections

All have a Buna-N O-ring for a tight seal. ***Hex-head plugs*** are hollow. ***Hex-socket plugs*** are solid.

Hex-Head Plugs

Thread Size	Max. psi @ 72° F		
5/16″-24	7,500	50925K336	$1.64
3/8″-24	7,500	50925K337	1.55
7/16″-20	7,500	50925K411	1.06
1/2″-20	6,000	50925K413	1.36
9/16″-18	6,000	50925K415	1.13
3/4″-16	6,000	50925K417	1.52
7/8″-14	6,000	50925K419	2.04
1 1/16″-12	6,000	50925K422	3.13
1 3/16″-12	5,500	50925K424	5.85
1 5/16″-12	5,500	50925K425	4.36

Hex-Socket Plugs

Thread Size	Max. psi @ 72° F	Hex Key Size		
5/16″-24	6,000	1/8″	50925K338	$0.96
3/8″-24	6,000	1/8″	50925K339	1.08
7/16″-20	6,000	3/16″	50925K431	.89
1/2″-20	6,000	3/16″	50925K433	1.22
9/16″-18	6,000	1/4″	50925K435	1.08
3/4″-16	6,000	5/16″	50925K437	1.49
7/8″-14	6,000	3/8″	50925K439	1.90
1 1/16″-12	6,000	9/16″	50925K442	3.04
1 3/16″-12	5,500	9/16″	50925K443	4.19
1 5/16″-12	5,500	5/8″	50925K444	4.44

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Threaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1
OD (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″

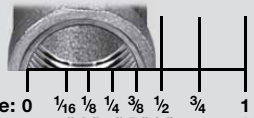

Pipe Size:	0	1/16	1/8	1/4	3/8	1/2	3/4	1
ID (to nearest 1/8″):	0	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4464KAC**. For information about fittings and pipe, see pgs. 2-3.

Precision Compact Extreme-Pressure Steel Threaded Pipe Fittings

- Use with air, water, hydraulic oil, natural gas
- Maximum Pressure: See table

Also called instrumentation fittings, these have precise threads, tight tolerances, and high pressure ratings. Plus, the male threads are rolled for extra strength. They have heavy duty forged or barstock steel construction and are zinc plated for corrosion resistance. Meet ASTM A108 or A576, as well as ANSI/ASME B31.1, B31.3, and B1.20.1. ***90° female × male elbows*** are also called street elbows. ***Hex-head plugs*** are solid. ***Hex-socket plugs*** are hollow. Connections: NPT.

Pipe Size	90° Elbows, Female Max. psi @ 72° F			90° Elbows, Male Max. psi @ 72° F			90° Elbows, Female × Male Max. psi @ 72° F			45° Elbows, Female Max. psi @ 72° F		
1/8	5,900	5232T113	$5.60	9,700	5232T412	$6.24	5,900	5232T127	$4.83	—	—	—
1/4	6,000	5232T115	16.47	8,000	5232T413	7.61	6,000	5232T129	19.03	6,000	5232T418	$9.36
3/8	5,300	5232T117	16.85	7,600	5232T414	8.92	5,300	5232T131	8.74	5,300	5232T419	12.73
1/2	4,800	5232T119	27.30	6,200	5232T415	11.81	4,800	5232T133	27.47	4,800	5232T421	19.28
3/4	3,700	5232T411	34.69	6,800	5232T416	17.04	3,700	5232T417	23.86	3,700	5232T422	29.68

Pipe Size	45° Elbows, Female × Male Max. psi @ 72° F			Tees, Female Max. psi @ 72° F			Tees, Female × Female × Male Max. psi @ 72° F			Tees, Female × Male × Female Max. psi @ 72° F		
1/8	5,900	5232T423	$6.07	5,900	5232T241	$7.99	5,900	5232T429	$9.90	5,900	5232T435	$12.88
1/4	6,000	5232T424	7.53	6,000	5232T243	22.90	6,000	5232T431	25.89	6,000	5232T436	10.44
3/8	5,300	5232T425	10.07	5,300	5232T245	38.20	5,300	5232T432	15.91	5,300	5232T437	15.43
1/2	4,800	5232T426	16.08	4,800	5232T247	42.60	4,800	5232T433	23.34	4,800	5232T438	23.34
3/4	3,700	5232T427	22.46	3,700	5232T428	29.84	3,700	5232T434	32.05	3,700	5232T439	32.82

Pipe Size	Crosses Max. psi @ 72° F			Hex-Head Plugs Max. psi @ 72° F			Hex-Socket Plugs Max. psi @ 72° F		
1/16	—	—	—	6,000	5232T446	$19.18	10,500	5232T448	$1.53
1/8	5,900	5232T441	$22.61	9,100	5232T227	3.66	9,700	5232T449	2.12
1/4	6,000	5232T442	15.66	7,500	5232T229	4.01	8,000	5232T451	2.87
3/8	5,300	5232T443	30.01	7,200	5232T231	5.64	7,600	5232T452	3.68
1/2	4,800	5232T444	34.87	6,600	5232T233	6.22	7,000	5232T453	4.45
3/4	3,700	5232T445	44.67	6,400	5232T447	9.46	—	—	—

Pipe Size (A)	(B)	Hex Couplings Max. psi @ 72° F			Adapters, Female × Male Max. psi @ 72° F			Hex Nipples Max. psi @ 72° F		
1/8	1/8	6,800	5232T311	$4.06	—	—	—	9,700	5232T312	$3.85
1/4	1/8	7,000	5232T313	4.89	7,000	5232T347	$6.78	8,000	5232T314	4.39
1/4	1/4	7,000	5232T315	6.97	7,000	5232T349	6.05	8,000	5232T316	4.58
3/8	1/8	5,600	5232T317	7.32	—	—	—	7,600	5232T318	4.43
3/8	1/4	5,600	5232T319	4.47	5,600	5232T353	6.97	7,600	5232T322	7.07
3/8	3/8	5,600	5232T321	6.32	—	—	—	7,600	5232T324	6.88
1/2	1/4	5,500	5232T325	11.90	5,500	5232T359	10.80	7,000	5232T328	7.88
1/2	3/8	5,500	5232T327	9.32	5,500	5232T361	9.71	7,000	5232T332	7.32
1/2	1/2	5,500	5232T329	9.07	—	—	—	7,000	5232T334	8.05
3/4	1/4	—	—	—	4,600	5232T456	15.62	—	—	—
3/4	1/2	4,600	5232T454	16.58	4,600	5232T367	13.00	6,800	5232T458	12.75
1	1/2	4,800	5232T455	46.02	4,800	5232T369	26.91	—	—	—
1	3/4	—	—	—	4,800	5232T457	18.57	—	—	—

Hex Reducing Bushings, Male × Female

Pipe Size (A)	(B)	Max. psi @ 72° F			Pipe Size (A)	(B)	Max. psi @ 72° F			Pipe Size (A)	(B)	Max. psi @ 72° F		
1/8	1/16	6,000	5232T459	$19.12	1/2	1/4	7,000	5232T385	$6.41	1	1/4	4,900	5232T464	$14.48
1/4	1/8	6,400	5232T377	4.39	1/2	3/8	4,900	5232T387	6.41	1	3/8	4,900	5232T465	9.90
3/8	1/8	6,800	5232T379	6.22	3/4	1/4	6,800	5232T462	9.13	1	1/2	4,900	5232T393	9.71
3/8	1/4	5,600	5232T381	6.41	3/4	3/8	5,600	5232T463	9.13	1	3/4	4,500	5232T466	14.31
1/2	1/8	6,800	5232T461	8.30	3/4	1/2	5,200	5232T391	8.61					

How to Measure Unthreaded Pipe and Butt-Weld Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

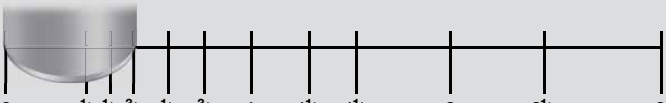

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Butt-Weld Steel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall steel (see below and page 76)
- Flanges: Use unthreaded low-pressure steel (see page 76)

Get the leak resistance of a welded connection combined with the strength of black steel. Also known as Schedule 40, these fittings have beveled ends that, when connected to a pipe, create a trough for a strong weld. Meet ASTM A234 and ANSI/ASME B16.9.

180° bends are also known as U-bends. ***Stub ends*** are for use with the low-pressure easy-access flanges on page 76. ***Centered reducing couplings***, also called concentric reducers, connect one pipe to another pipe of a smaller diameter with the centers lined up. ***Off-center reducing couplings***, also known as eccentric reducers, connect one pipe to another pipe of a smaller diameter with the centers offset.

Connections: Butt weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows, Long Radius (C)			90° Elbows, Short Radius (C)			45° Elbows		180° Bends (C)		
1/2	0.109″	1 1/2″	43425K111	$12.14	—	—	—	43425K112	$12.91	3″	43425K113	$104.65
3/4	0.113″	1 1/2″	43425K121	12.25	—	—	—	43425K122	13.02	2 1/4″	43425K123	105.46
1	0.133″	1 1/2″	43425K131	12.35	1″	43425K137	$19.48	43425K132	13.13	3″	43425K133	106.29
1 1/4	0.140″	1 7/8″	43425K141	12.46	1 1/4″	43425K147	19.65	43425K142	13.24	3 3/4″	43425K143	107.12
1 1/2	0.145″	2 1/4″	43425K151	12.56	1 1/2″	43425K157	19.81	43425K152	13.35	4 1/2″	43425K153	107.97
2	0.154″	3″	43425K161	16.98	2″	43425K167	25.83	43425K162	16.57	6″	43425K163	108.84
2 1/2	0.203″	3 3/4″	43425K171	20.57	2 1/2″	43425K177	41.37	43425K172	19.85	7 1/2″	43425K173	109.72
3	0.216″	4 1/2″	43425K181	25.11	3″	43425K187	48.55	43425K182	20.57	9″	43425K183	125.63
4	0.237″	6″	43425K211	41.37	4″	43425K217	63.62	43425K212	37.07	12″	43425K213	174.13
6	0.280″	9″	43425K231	91.24	6″	43425K237	162.70	43425K232	72.94	18″	43425K233	358.56
8	0.322″	12″	43425K241	166.74	8″	43425K247	256.96	43425K242	117.57	24″	43425K243	770.54

Pipe Size	Wall Thick.	Tees		Caps		Stub Ends	
1/2	0.109″	43425K114	$39.98	43425K116	$14.93	43425K115	$40.67
3/4	0.113″	43425K124	40.32	43425K126	15.06	43425K125	40.67
1	0.133″	43425K134	40.66	43425K136	15.18	43425K135	49.74
1 1/4	0.140″	43425K144	41.01	43425K146	15.31	43425K145	50.46
1 1/2	0.145″	43425K154	41.36	43425K156	15.45	43425K155	50.88
2	0.154″	43425K164	42.31	43425K166	16.51	43425K165	60.65
2 1/2	0.203″	43425K174	56.44	43425K176	17.37	43425K175	76.58
3	0.216″	43425K184	62.90	43425K186	17.51	43425K185	74.17
4	0.237″	43425K214	88.25	43425K216	25.34	43425K215	96.77
6	0.280″	43425K234	146.73	43425K236	43.27	43425K235	141.94
8	0.322″	43425K244	244.16	43425K246	65.48	43425K245	153.23

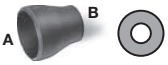

Centered Reducing Couplings

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
3/4	1/2	43425K411	$38.85	2	1 1/2	43425K473	$25.69
1	1/2	43425K417	39.49	2 1/2	2	43425K481	32.28
1	3/4	43425K415	39.49	3	1 1/4	43425K495	52.04
1 1/4	1/2	43425K443	40.15	3	1 1/2	43425K493	32.94
1 1/4	3/4	43425K441	40.15	3	2	43425K491	28.66
1 1/4	1	43425K419	40.15	3	2 1/2	43425K482	26.68
1 1/2	1/2	43425K471	40.49	4	2	43425K499	41.83
1 1/2	3/4	43425K449	40.49	4	2 1/2	43425K483	41.83
1 1/2	1	43425K447	40.83	4	3	43425K497	34.25
1 1/2	1 1/4	43425K445	40.83	6	3	43425K486	86.96
2	3/4	43425K479	55.01	6	4	43425K487	71.81
2	1	43425K477	35.57	8	4	43425K488	117.30
2	1 1/4	43425K475	25.69	8	6	43425K489	94.20

Off-Center Reducing Couplings

Pipe Size (A)	(B)			Pipe Size (A)	(B)		
3/4	1/2	43425K511	$52.62	2	1 1/2	43425K573	$32.94
1	1/2	43425K517	53.49	2 1/2	2	43425K581	38.21
1	3/4	43425K515	53.49	3	1 1/4	43425K595	177.87
1 1/4	1/2	43425K543	54.38	3	1 1/2	43425K593	51.05
1 1/4	3/4	43425K541	54.38	3	2	43425K591	44.79
1 1/4	1	43425K519	54.38	3	2 1/2	43425K582	41.83
1 1/2	1/2	43425K571	54.83	4	2	43425K599	66.54
1 1/2	3/4	43425K549	55.30	4	2 1/2	43425K583	57.64
1 1/2	1	43425K547	55.30	4	3	43425K597	54.68
1 1/2	1 1/4	43425K545	54.83	6	3	43425K586	170.85
2	3/4	43425K579	146.95	6	4	43425K587	109.01
2	1	43425K577	53.36	8	4	43425K588	242.32
2	1 1/4	43425K575	53.36	8	6	43425K589	138.98

Standard-Wall Steel Unthreaded Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use butt-weld Schedule 40 standard-wall steel (see above)
- Flanges: Use unthreaded low-pressure steel (see page 76)

Also called Schedule 40, this unthreaded black steel pipe has welded construction, so there's a weld bead on the inside. Meets ASTM A53 and A733.

To Order: Please specify 1-, 3-, or 5-ft. length.

Pipe Size		1 ft.	3 ft.	5 ft.	Pipe Size		1 ft.	3 ft.	5 ft.	Pipe Size		1 ft.	3 ft.	5 ft.
1/2	7750K131	$4.89	$12.71	$19.55	1 1/2	7750K135	$10.22	$30.67	$51.12	4	7750K139	$38.43	$115.30	$192.16
3/4	7750K132	5.10	15.57	25.52	2	7750K136	13.26	39.77	66.29	6	7750K141	78.04	234.11	390.18
1	7750K133	6.49	19.81	32.47	2 1/2	7750K137	22.50	67.51	112.51	8	7750K142	272.48	340.61	454.14
1 1/4	7750K134	8.55	25.64	42.74	3	7750K138	31.57	94.72	157.87					

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Unthreaded Flanges— *Example shows pipe size 1/2.*

Pipe size is an industry designation, not the actual size. Place your flange on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your flange, then select the pipe size on the scale that corresponds to your measurement.

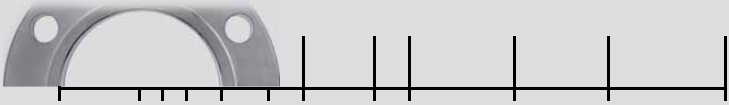

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Standard-Wall Steel Unthreaded Pipe Nipples

- Use with air, water, oil, natural gas, steam
- Fittings: Use butt-weld Schedule 40 standard-wall steel (see page 75)
- Flanges: Use unthreaded low-pressure steel (see below)

Keep these nipples on hand for those times when a short piece of pipe is all you need. Also called Schedule 40 nipples, they're black steel and have welded construction, so there's a weld bead on the inside. Meet ASTM A733.

Pipe Size	1″ Lengths		1 1/2″ Lengths		2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths		8″ Lengths	
1/8	1120T11	$1.71	1120T12	$1.73	1120T13	$1.73	1120T14	$2.00	1120T15	$2.41	1120T16	$5.04	1120T17	$6.93
1/4	1120T18	1.76	1120T19	1.78	1120T21	1.78	1120T22	2.29	1120T23	2.65	1120T24	4.77	1120T25	7.34
3/8	1120T26	1.88	1120T27	1.96	1120T28	1.96	1120T29	2.50	1120T31	2.95	1120T32	4.72	1120T33	8.32
1/2	1120T34	1.44	1120T35	1.46	1120T36	1.46	1120T37	1.73	1120T38	2.07	1120T39	2.70	1120T41	4.86
3/4	1120T42	1.76	1120T43	1.78	1120T44	1.78	1120T45	2.02	1120T46	2.50	1120T47	3.56	1120T48	5.96
1	—	—	1120T49	2.65	1120T51	2.65	1120T52	2.79	1120T53	3.49	1120T54	4.86	1120T55	7.96
1 1/4	—	—	1120T56	3.49	1120T57	3.49	1120T58	3.69	1120T59	4.37	1120T61	6.19	1120T62	9.99
1 1/2	—	—	1120T63	4.12	1120T64	4.12	1120T65	4.59	1120T66	5.17	1120T67	7.20	1120T68	11.47
2	—	—	1120T69	4.14	1120T71	5.78	1120T72	5.78	1120T73	7.00	1120T74	9.45	1120T75	15.86

Low-Pressure Steel Unthreaded Flanges

- Use with air, water, oil, natural gas, steam (unless noted)
- Maximum Pressure: 150 psi @ 72° F; 150 psi @ 350° F for steam
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall steel (see page 75 and above)
- Fittings: Use butt-weld Schedule 40 standard-wall steel (see page 75)

Raised Surface on Back (All except Easy Access)

Flat Surface on Back (Easy Access)

For easy access to your pipe, create a flange connection. Also called Class 150 flanges, they connect by bolting two same-size flanges together with a gasket (not included). For an installation set that includes a gasket and bolts, see page 3474. For gaskets, see pages 3474-3480; for bolts, see pages 3140-3142. Flanges are black steel and meet MSS SP-25, ASTM A105, and ANSI/ASME B16.5, unless noted.

Slip On— Slip the flange onto your pipe and weld. There is no internal stop; you must weld the flange to your pipe on both sides.

Socket Weld— An internal stop supports pipe when welding and prevents the pipe from sliding all the way through.

Butt Weld— Also called weld-neck flanges. Butt-up the flange to your pipe and weld. The flange neck has a beveled end that, when connected to a pipe, creates a trough for a strong weld.

Easy Access— Commonly called lap-joint flanges. Use these flanges with stub-end fittings (required, but not included; see page 75). The stub-end fitting is welded to the pipe (not the flange), so they're ideal for pipe that is frequently cleaned or inspected.

Cap— Also known as blind flanges, use these solid flanges to close off the end of a pipe.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.	Slip On		Socket Weld		Butt Weld		Easy Access		Cap	
1/2	3 1/2″	4	1/2″	68095K236	$14.09	68095K246	$15.81	68095K256	$20.19	68095K276	$14.93	68095K266	$14.93
3/4	3 7/8″	4	1/2″	68095K131	15.48	68095K141	16.89	68095K151	19.91	68095K171	16.58	68095K161	15.48
1	4 1/4″	4	1/2″	68095K132	16.92	68095K142	16.03	68095K152	22.37	68095K172	17.03	68095K162	17.03
1 1/4	4 5/8″	4	1/2″	68095K133	19.91	68095K143	21.68	68095K153	25.96	68095K173	20.12	68095K163	19.52
1 1/2	5″	4	1/2″	68095K134	20.90	68095K144	22.10	68095K154	24.87	68095K174	20.85	68095K164	19.72
2	6″	4	5/8″	68095K135	20.92	68095K145	22.88	68095K155	25.37	68095K175	22.08	68095K165	22.40
2 1/2	7″	4	5/8″	68095K136	26.78	68095K146	30.46	68095K156	32.73	68095K176	31.50	68095K166	33.61
3	7 1/2″	4	5/8″	68095K137	27.00	68095K147	31.06	68095K157	30.88	68095K177	26.95	68095K167	29.70
4	9″	8	5/8″	68095K138	39.55	68095K148■	43.51	68095K158	48.00	68095K178	42.73	68095K168	40.91
5	10″	8	3/4″	68095K232	47.91	68095K242■	59.18	68095K252	67.51	68095K272	61.36	68095K262	51.82
6	11″	8	3/4″	68095K139	57.00	68095K149■	60.20	68095K159	69.00	68095K179	57.78	68095K169	65.45
8	13 1/2″	8	3/4″	68095K233	86.41	68095K243■	123.25	68095K253	113.75	68095K273	98.64	68095K263	101.50

■ Does not meet ANSI/ASME B16.5 and is not rated for use with steam.

Low-Pressure Iron Pipe Fittings with Flanged Ends

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 150 psi @ 72° F; 125 psi @ 353° F for steam
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall steel (see page 75 and above)
- Flanges: Use unthreaded low-pressure steel (see above)

Get rid of the middleman in your pipeline—these black cast iron fittings give you the shape and connection you want with fewer pieces to join. They're UL listed and FM approved, and because cast iron is brittle, they can be quickly opened in a fire emergency with the strike of a sledge hammer. Bolt the flanged end to another same-size flange, pump, or valve; a gasket is required, but not included. For an installation set that includes a gasket and bolts, see page 3474. For gaskets, see pages 3474-3480; for bolts see pages 3140-3142. Fittings meet Fed. Spec. WW-F-406, ASTM A126 and B307, and ANSI/ASME B1.20.1 and B16.1.

Centered reducing couplings are also known as concentric reducers.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.	90° Elbows		45° Elbows		Tees	
2	6″	4	5/8″	1117T11	$154.11	1117T15	$214.37	1117T24	$168.74
2 1/2	7″	4	5/8″	1117T12	166.69	1117T16	228.64	1117T25	226.86
3	7 1/2″	4	5/8″	1117T13	139.13	1117T17	222.34	1117T26	172.24
4	9″	8	5/8″	1117T14	172.07	1117T18	250.25	1117T27	241.85

Centered Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
2 1/2	2	1117T19	$321.88
3	2	1117T22	269.47
3	2 1/2	1117T21	279.64
4	3	1117T23	298.89

How to Measure Unthreaded Pipe and Butt-Weld Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or fitting, then select the pipe size on the scale that corresponds to your measurement.

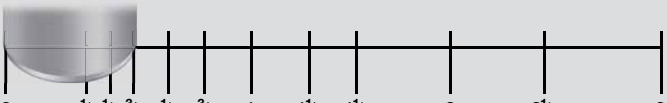

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
OD (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Thick-Wall Butt-Weld Steel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Pipe: Use unthreaded Schedule 80 thick-wall steel (see page 79)
- Flanges: Use unthreaded medium-pressure steel (see below)

Also known as Schedule 80 fittings, these are the strongest butt-weld black steel fittings we offer. They have beveled ends that, when connected to a pipe, create a trough for a strong weld. Meet ASTM A234.

Centered reducing couplings are also known as concentric reducers.

Connections: Butt weld (unthreaded).

Pipe Size	Wall Thick.	90° Elbows, Long Radius (C)		90° Elbows, Short Radius (C)		45° Elbows		180° Bends (C)		Tees	
1/2	0.147″	1 1/2″	4981T11	$44.10	—	—	—	4981T51	$17.53	—	—
3/4	0.154″	1 1/2″	4981T12	44.10	—	—	—	4981T52	48.92	4981T92	$99.96
1	0.179″	1 1/2″	4981T13	21.54	1″	4981T33	$49.74	4981T53	22.05	4981T93	39.94
1 1/4	0.191″	1 7/8″	4981T14	21.54	1 1/4″	4981T34	50.65	4981T54	22.24	4981T94	40.61
1 1/2	0.200″	2 1/4″	4981T15	21.80	1 1/2″	4981T35	51.08	4981T55	22.42	4981T95	41.31
2	0.218″	3″	4981T16	21.80	2″	4981T36	73.26	4981T56	22.81	4981T96	45.57
2 1/2	0.276″	3 3/4″	4981T17	30.67	2 1/2″	4981T37	73.86	4981T57	49.00	4981T97	75.95
3	0.300″	4 1/2″	4981T18	39.28	3″	4981T38	74.48	4981T58	29.40	4981T98	70.81
4	0.337″	6″	4981T19	62.48	4″	4981T39	118.55	4981T59	46.38	4981T99	110.72
6	0.432″	9″	4981T21	152.93	6″	4981T41	263.24	4981T61	118.79	4981T23	202.18

Caps

Pipe Size	Wall Thick.		
1/2	0.147″	4981T43	$36.51
3/4	0.154″	4981T44	36.81
1	0.179″	4981T45	37.12
1 1/4	0.191″	4981T46	37.76
1 1/2	0.200″	4981T47	25.09
2	0.218″	4981T48	17.23
2 1/2	0.276″	4981T49	23.57
3	0.300″	4981T63	26.36
4	0.337″	4981T64	35.74
6	0.432″	4981T65	70.31

Centered Reducing Couplings

Pipe Size (A)	Pipe Size (B)			Pipe Size (A)	Pipe Size (B)		
1 1/2	1	4981T119	$39.54	3	2	4981T129	$34.22
2	3/4	4981T122	79.14	3	2 1/2	4981T131	34.22
2	1	4981T123	37.51	4	2	4981T132	55.37
2	1 1/4	4981T124	35.74	4	2 1/2	4981T133	49.98
2	1 1/2	4981T125	29.91	4	3	4981T134	43.85
2 1/2	2	4981T126	40.81	6	3	4981T135	114.99
3	1 1/4	4981T127	65.17	6	4	4981T136	98.40
3	1 1/2	4981T128	45.62				

Medium-Pressure Steel Unthreaded Flanges

- Use with air, water, oil, natural gas, steam
- Max. Pressure: 300 psi @ 72° F; 300 psi @ 300° F for steam
- Pipe: Use unthreaded Schedule 80 thick-wall steel (see page 79)
- Fittings: Use butt-weld Schedule 80 thick-wall steel (see above) and socket-weld high-pressure steel (see page 78)

Gain access to your pipe without disassembling your line. Also called Class 300 flanges, they have heavy duty forged construction for superior strength. Connect by bolting two same-size flanges together with a gasket (not included). For an installation set that includes a gasket and bolts, see page 3474. For gaskets, see pages 3474-3480; for bolts, see pages 3140-3142. Flanges are black steel and meet ASTM A105 and ANSI/ASME B16.5.

Slip On—Slip the flange onto your pipe and weld. There is no internal stop; you must weld the flange to your pipe on both sides.

Socket Weld—An internal stop supports pipe when welding and prevents the pipe from sliding all the way through.

Butt Weld—Also known as weld-neck flanges. Butt-up the flange to your pipe and weld. The flange neck has a beveled end that, when connected to a pipe, creates a trough for a strong weld.

Easy Access—Commonly called lap-joint flanges. Use these flanges with stub-end fittings (required, but not included; see page 75). The stub-end fitting is welded to the pipe (not the flange), so they're ideal for pipe that is frequently cleaned or inspected.

Cap—Also known as blind flanges, use these solid flanges to close off the end of a pipe.

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.	Slip On		Socket Weld		Butt Weld		Easy Access		Cap	
1/2	3 3/4″	4	1/2″	6806K236	$17.56	6806K246	$17.56	6806K256	$18.91	6806K276	$18.55	6806K266	$16.94
3/4	4 5/8″	4	5/8″	6806K131	17.15	6806K141	20.39	6806K151	21.95	6806K171	17.73	6806K161	19.76
1	4 7/8″	4	5/8″	6806K132	20.49	6806K142	21.18	6806K152	25.36	6806K172	21.82	6806K162	19.76
1 1/4	5 1/4″	4	5/8″	6806K133	21.00	6806K143	29.24	6806K153	35.24	6806K173	23.18	6806K163	24.69
1 1/2	6 1/8″	4	3/4″	6806K134	25.82	6806K144	30.00	6806K154	31.62	6806K174	29.11	6806K164	28.51
2	6 1/2″	8	5/8″	6806K135	27.64	6806K145	28.00	6806K155	31.06	6806K175	33.42	6806K165	28.18
2 1/2	7 1/2″	8	3/4″	6806K136	42.35	6806K146	43.40	6806K156	44.61	6806K176	45.09	6806K166	39.50
3	8 1/4″	8	3/4″	6806K137	43.51	6806K147	44.56	6806K157	53.92	6806K177	49.45	6806K167	46.51
4	10″	8	3/4″	6806K138	49.96	6806K148	74.18	6806K158	65.26	6806K178	72.13	6806K168	64.82
5	11″	8	3/4″	6806K232	109.97	6806K242	132.92	6806K252	112.50	6806K272	111.67	6806K262	113.17
6	12 1/2″	12	3/4″	6806K139	105.00	6806K149	187.50	6806K159	112.38	6806K179	113.10	6806K169	104.40
8	15″	12	7/8″	6806K233	143.75	6806K243	209.44	6806K253	172.39	6806K273	173.08	6806K263	173.08

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Unthreaded Pipe and Flanges—*Example shows pipe size 3/8 for pipe, pipe size 1/2 for flanges.*

Pipe size is an industry designation, not the actual size. Place your pipe or flange on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe and butt-weld flange neck, or inside diameter (ID) of your slip-on, socket-weld, and easy-access flange, then select the pipe size on the scale that corresponds to your measurement.

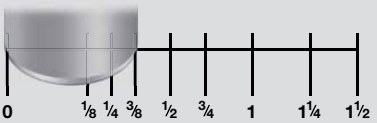

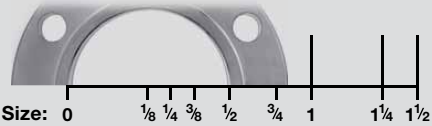

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

DIN Steel Unthreaded Flange Adapters

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 230 psi @ 72° F; 180 psi @ 300° F for steam
- Pipe Nipples and Pipe: Use unthreaded Schedule 40 standard-wall steel (see pgs. 75-76)
- Fittings: Use butt-weld Schedule 40 standard-wall steel (see page 75)

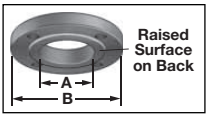

Made to DIN EN standards, these flanges provide a smooth transition between your standard-wall (Schedule 40) pipe or fittings and another DIN EN flange connection. Flanges have heavy duty forged construction for superior strength. Bolt two same-size flanges together with a gasket (not included). Gaskets are sold separately below; see page 3155 for bolts. Meet DIN 2527, 2633, or 86030, as well as EN 1092-1.

Slip On—Slip the flange onto your pipe and weld on both sides of your pipe.

Butt Weld—Also known as weld-neck flanges. Butt-up the flange to your pipe and weld. The flange neck has a beveled end that, when connected to a pipe, creates a trough for a strong weld.

Cap—Also known as blind flanges, use these solid flanges to close off the end of a pipe.

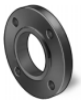

Flange Size	Pipe Size (A)	Flange OD (B)	Bolts Req'd Qty.	Bolts Req'd Dia.	Slip On		Butt Weld		Cap		Gasket	
DIN 25	1	115 mm	4	M12	1132T19	$27.62	1132T11	$28.11	1132T15	$29.89	1132T2	$3.06
DIN 50	2	165 mm	4	M16	1132T21	59.20	1132T12	62.40	1132T16	70.00	1132T4	6.78
DIN 80	3	200 mm	8	M16	1132T22	84.36	1132T13	94.14	1132T17	104.34	1132T6	11.36
DIN 100	4	220 mm	8	M16	1132T23	95.46	1132T14	131.58	1132T18	123.60	1132T8	15.68

High-Pressure Socket-Weld Steel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,000 psi @ 72° F
- Pipe: Use unthreaded Schedule 80 thick-wall steel (see page 79)

Also known as Class 3000, these heavy duty black steel pipe fittings have forged construction that stands up to high pressures. Meet ASTM A105; also meet ANSI/ASME B16.11, except unions meet MSS SP-83 and reducing bushings meet MSS SP-79.

Connections: Socket weld (unthreaded).

Pipe Size	90° Elbows		45° Elbows		Tees		Crosses		Unions		Caps	
1/8	45005K111	$8.99	45005K131	$9.04	45005K151	$9.93	45005K171	$22.00	45005K251	$12.25	45005K231	$5.47
1/4	45005K112	8.99	45005K132	9.04	45005K152	9.93	45005K172	22.91	45005K252	12.25	45005K232	5.47
3/8	45005K113	8.99	45005K133	9.04	45005K153	9.93	45005K173	29.62	45005K253	12.25	45005K233	5.47
1/2	45005K114	5.02	45005K134	6.68	45005K154	6.21	45005K174	22.56	45005K254	10.27	45005K234	3.32
3/4	45005K115	5.22	45005K135	7.77	45005K155	7.60	45005K175	23.30	45005K255	11.98	45005K235	3.87
1	45005K116	6.70	45005K136	10.16	45005K156	10.32	45005K176	25.25	45005K256	15.44	45005K236	5.88
1 1/4	45005K117	12.89	45005K137	13.93	45005K157	15.86	45005K177	34.25	45005K257	24.90	45005K237	6.92
1 1/2	45005K118	14.97	45005K138	17.07	45005K158	21.02	45005K178	49.32	45005K258	26.97	45005K238	9.62
2	45005K119	22.02	45005K139	27.46	45005K159	30.34	45005K179	71.06	45005K259	38.82	45005K239	14.83
2 1/2	45005K121	62.59	45005K141	72.10	45005K161	87.15	45005K181	150.81	45005K261	97.88	45005K241	80.68
3	45005K122	108.10	45005K142	108.93	45005K162	189.43	45005K182	199.74	45005K262	118.00	45005K242	83.37
4	45005K123	237.89	45005K143	214.66	45005K163	274.20	—	—	—	—	45005K243	112.87

Couplings

Pipe Size		
1/8	45005K191	$6.86
1/4	45005K192	5.71
3/8	45005K193	5.71
1/2	45005K194	2.64
3/4	45005K195	3.42
1	45005K196	3.77
1 1/4	45005K197	6.67
1 1/2	45005K198	7.38
2	45005K199	11.79
2 1/2	45005K201	26.37
3	45005K202	59.28
4	45005K203	89.14

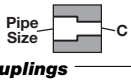

Half Couplings

Pipe Size	Actual ID (C)		
1/8	1/4"	45005K211	$6.45
1/4	3/8"	45005K212	6.45
3/8	1/2"	45005K213	6.45
1/2	5/8"	45005K214	2.99
3/4	13/16"	45005K215	3.05
1	1 1/16"	45005K216	4.07
1 1/4	1 3/8"	45005K217	8.22
1 1/2	1 5/8"	45005K218	8.20
2	2 1/16"	45005K219	11.88
2 1/2	2 7/16"	45005K221	108.67
3	3 1/16"	45005K222	115.78
4	4 1/16"	45005K223	132.34

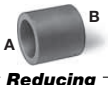

Reducing Couplings

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	45005K301	$14.20
3/8	1/8	45005K302	14.88
3/8	1/4	45005K303	14.88
1/2	1/4	45005K304	9.37
1/2	3/8	45005K305	9.37
3/4	3/8	45005K306	9.38
3/4	1/2	45005K307	9.38
1	1/2	45005K308	12.24
1	3/4	45005K309	12.24
1 1/4	1	45005K311	16.72
1 1/2	1 1/4	45005K312	17.92
2	1	45005K313	19.82
2	1 1/2	45005K314	19.82
2 1/2	2	45005K315	63.60
3	2 1/2	45005K316	114.68
4	3	45005K317	117.18

Reducing Bushings, Male (A) × Female (B)

Pipe Size (A)	Pipe Size (B)		
1/4	1/8	45005K271	$11.30
1/2	1/4	45005K273	5.09
1/2	3/8	45005K272	5.09
3/4	1/4	45005K276	6.21
3/4	3/8	45005K275	6.21
3/4	1/2	45005K274	6.21
1	1/2	45005K278	6.80
1	3/4	45005K277	6.80
1 1/4	1	45005K279	7.98
1 1/2	1 1/4	45005K281	9.97
2	1	45005K283	13.65
2	1 1/2	45005K282	13.65

How to Measure Socket-Weld Unthreaded Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your fitting on the scale to determine the pipe size. You can also measure the inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

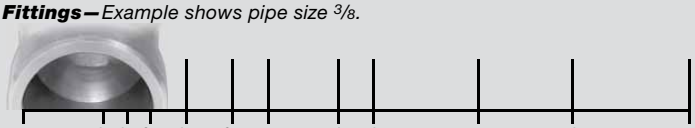

Pipe Size:	0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
ID (to nearest 1/8″):	0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″

To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

Thick-Wall Steel Unthreaded Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use butt-weld Schedule 80 thick-wall steel (see page 77) and socket-weld high-pressure steel (see page 78)
- Flanges: Use unthreaded medium-pressure steel (see page 77)

Thick walls and seamless construction result in superior strength and unrestricted flow. Also known as Schedule 80, this black steel pipe meets ASTM A53, A106, and A733.

To Order: Please specify 1-, 3-, or 6-ft. length.

Pipe Size		1 ft.	3 ft.	6 ft.
1/8	7972K31	$21.61	$63.84	$98.22
1/4	7972K32	25.00	73.85	113.62
3/8	7972K33	27.50	81.26	125.02
1/2	7972K34	16.91	49.96	76.86
3/4	7972K35	$16.96	$50.11	$77.09
1	7972K36	23.14	68.37	105.19
1 1/4	7972K37	31.16	92.07	141.64
1 1/2	7972K38	35.79	105.73	162.66
2	7972K39	$41.77	$123.40	$189.85
2 1/2	7972K41	66.69	197.03	303.12
3	7972K42	80.72	238.50	366.92
4	7972K43	109.95	324.86	499.79

Extreme-Pressure Socket-Weld Steel Unthreaded Pipe Fittings

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 6,000 psi @ 72° F
- Pipe: Use unthreaded Schedule XXH super-thick-wall steel (see below)
- Flanges: Use unthreaded extreme-pressure steel (see below)

Looking for the strongest steel fittings we offer? Also known as Class 6000, these heavy duty forged black steel fittings handle extreme pressure. Meet ASTM A105; they also meet ANSI/ASME B16.11, except unions.

Connections: Socket weld (unthreaded).

Unthreaded Socket-Weld Connection

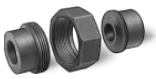
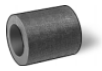

Pipe Size	90° Elbows		Tees		Unions		Couplings		Caps	
1/2	43665K114	$7.14	43665K154	$11.15	43665K254	$19.59	43665K194	$4.40	43665K234	$5.89
3/4	43665K115	8.22	43665K155	12.86	43665K255	22.77	43665K195	4.86	43665K235	8.57
1	43665K116	11.30	43665K156	16.08	43665K256	33.01	43665K196	6.12	43665K236	9.10
1 1/4	43665K117	18.70	43665K157	35.31	43665K257	51.05	43665K197	16.07	43665K237	21.13
1 1/2	43665K118	25.10	43665K158	41.53	43665K258	59.90	43665K198	16.07	43665K238	27.62
2	43665K119	36.81	43665K159	52.64	43665K259	112.81	43665K199	23.03	43665K239	40.96

Super-Thick-Wall Steel Unthreaded Pipe

- Use with air, water, oil, natural gas, steam
- Fittings: Use socket-weld Class 6000 extreme-pressure steel (see above)
- Flanges: Use unthreaded extreme-pressure steel (see below)

The strongest black steel pipe we offer, this pipe is also known as Schedule XXH. It has seamless construction for unrestricted flow. Meets ASTM A106B and A733.

Pipe Size	1-ft. Lengths		2-ft. Lengths		3-ft. Lengths	
1/2	1155T11	$31.55	1155T16	$56.88	1155T22	$83.84
3/4	1155T12	44.45	1155T17	80.12	1155T23	120.18
1	1155T13	60.53	1155T18	109.12	1155T24	163.66
1 1/2	1155T14	89.63	1155T19	161.60	1155T25	220.36
2	1155T15	105.00	1155T21	199.74	1155T26	245.33

Extreme-Pressure Steel Unthreaded Flanges

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,700 psi @ 72° F; 3,200 psi @ 350° F for steam
- Pipe: Use unthreaded Schedule XXH super-thick-wall steel (see above)
- Fittings: Use unthreaded socket-weld extreme-pressure (Class 6000) steel (see above)

Flange connections give you access to your pipe without having to disassemble the line. Also called Class 1500 flanges, they are black steel and have heavy duty forged construction for superior strength. Connect by bolting two same-size flanges together with a gasket (not included). For bolts, see pages 3140-3142. Flanges meet MSS SP-6 and SP-25, as well as ASTM A105 and ANSI/ASME B16.5.

Slip On— Slip the flange onto your pipe and weld. There is no internal stop; you must weld the flange to your pipe on both sides.

Socket Weld— An internal stop supports pipe when welding and prevents the pipe from sliding all the way through.

Butt Weld— Also called weld-neck flanges. Butt-up the flange to your pipe and weld. The flange neck has a beveled end that, when connected to a pipe, creates a trough for a strong weld.

Cap— Also known as blind flanges, use these solid flanges to close off the end of a pipe.

Raised Surface on Back

Pipe Size	Flange OD	Bolts Req'd Qty.	Bolts Req'd Dia.	Slip On		Socket Weld		Butt Weld		Cap	
1/2	4 3/4″	4	3/4″	1139T17	$96.00	1139T32	$99.74	1139T11	$79.20	1139T24	$99.74
3/4	5 1/8″	4	3/4″	1139T18	99.74	1139T33	112.20	1139T12	79.20	1139T25	102.00
1	5 7/8″	4	7/8″	1139T19	103.86	1139T34	117.30	1139T13	86.40	1139T26	105.00
1 1/4	6 1/4″	4	7/8″	1139T21	108.20	1139T35	121.60	1139T14	97.60	1139T27	110.20
1 1/2	7″	4	1″	1139T22	110.40	1139T36	118.40	1139T15	93.60	1139T28	108.00
2	8 1/2″	8	7/8″	1139T23	113.16	1139T37	124.50	1139T16	102.20	1139T31	114.00

For technical drawings and 3-D models, go to mcmaster.com.

How to Measure Unthreaded Pipe and Fittings—*Example shows pipe size 3/8.*

Pipe size is an industry designation, not the actual size. Place your pipe or fitting on the scale to determine the pipe size. You can also measure the outside diameter (OD) of your pipe or inside diameter (ID) of your fitting, then select the pipe size on the scale that corresponds to your measurement.

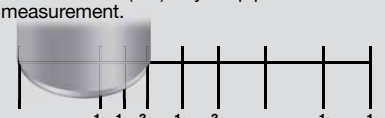

Pipe Size: 0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
OD (to nearest 1/8″): 0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″

Pipe Size: 0	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
ID (to nearest 1/8″): 0	1/2″	5/8″	3/4″	7/8″	1 1/8″	1 3/8″	1 5/8″	1 7/8″

ⓘ To measure larger pipe sizes, go to mcmaster.com and search for **4347KAC**. For information about fittings and pipe, see pgs. 2-3.

High-Pressure Steel Socket-Weld Pipe Outlets

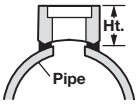

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,000 psi @ 72° F
- Pipe: Use unthreaded Schedule 80 thick-wall black steel (see page 79)

Also called branch connectors, use these outlets to create a tap off anywhere along your pipe. To install, drill a hole in your pipe to match the fitting's outlet size and weld in place. They're heavy duty forged steel and meet MSS SP-97 and ASTM A105, as well as ANSI/ASME B16.9, B16.11, and B31.

Connections: Socket weld (unthreaded).

To Order: Please specify pipe size within the range shown.

Fits Pipe Size Range	Outlet, Pipe Size	Ht.		
1/4 to 36	1/4	3/4″	**4587K61**	$9.29
3/8 to 36	3/8	7/8″	**4587K62**	6.86
1/2 to 36	1/2	1″	**4587K63**	8.15
3/4 to 36	3/4	1 1/8″	**4587K64**	8.15
1 to 36	1	1 3/8″	**4587K65**	9.17
1 1/4 to 36	1 1/4	1 3/8″	**4587K66**	13.62
1 1/2 to 36	1 1/2	1 3/8″	**4587K67**	13.62
2 to 36	2	1 1/2″	**4587K68**	14.05

Seal-Tight High-Pressure Steel Socket-Weld Pipe Unions

- Use with air, water, oil, natural gas, steam
- Maximum Pressure: 3,000 psi @ 100° F; 1,500 psi @ 700° F for steam
- Pipe: Use unthreaded Schedule XXH super-thick-wall steel (see page 79)

A Type 304 stainless steel gasket with a graphite filler gives these forged steel unions a tight seal under high pressures. They also have a Type 316 stainless steel retainer that protects the seal from overtightening during installation. Meet MSS SP-83, ASTM A105, and ANSI/ASME B1.20.1. Temperature range is –20° to 700° F.

Connections: Socket weld (unthreaded).

Pipe Size		
1/2	**4690K17**	$57.09
3/4	**4690K18**	64.82
1	**4690K19**	84.01
1 1/4	**4690K21**	134.81
1 1/2	**4690K22**	152.00
2	**4690K23**	185.46

Grooved-End Iron Unthreaded Pipe Fittings and Pipe

- Use with air and water
- Maximum Pressure:
  Fittings and Couplings: 1,000 psi @ 72° F;
  Pipe: Not rated

Use a coupling to join pipe and fittings.

Grooved ends on these fittings connect with a coupling for an easy way to install and maintain piping systems. Plus, the gaskets on the coupling allow for pipe expansion and contraction as temperatures change. All are UL listed and FM approved.

Elbows, ***tees***, ***caps***, and ***adapters*** are ductile or malleable iron and covered with rust-inhibiting orange paint. Meet ASTM A47 or A536.

Couplings have a two-piece housing, EPDM gaskets, and zinc-plated nuts and bolts. Meet ASTM A47, A183, A536, A563, and D2000. Temperature range is –40° to 230° F.

Standard-wall pipe is also known as Schedule 40. It is black steel and has welded construction, so there's a weld bead on the inside.

Pipe Size	90° Elbows		Tees		Caps	
2	**46575K143**	$22.32	**46575K163**	$34.34	**46575K204**	$18.37
3	**46575K145**	39.64	**46575K165**	48.04	**46575K206**	18.37
4	**46575K146**	43.16	**46575K166**	66.61	**46575K207**	19.97

Adapters, Grooved×NPT Male

Pipe Size (A)	(B)		
3	2	**46575K226**	$33.40
4	2	**46575K231**	40.49
4	3	**46575K232**	49.97

Couplings

For Pipe Size	For Pipe OD		
2	2.375″	**46575K104**	$18.18
3	3.500″	**46575K106**	23.99
4	4.500″	**46575K108**	34.95

STANDARD-WALL PIPE

Pipe Size	Lg.	Grooved on Both Ends		Grooved on One End, Male NPT Threaded on Other End		Grooved on One End, Unthreaded on Other End	
2	2 ft.	**4139K142**	$60.15	**4139K141**	$60.15	**4139K143**	$60.15
2	4 ft.	**4139K242**	79.08	**4139K241**	79.08	**4139K243**	79.08
2	5 ft.	**4139K342**	88.54	**4139K341**	88.54	**4139K343**	88.54
3	2 ft.	**4139K152**	111.97	**4139K151**	111.97	**4139K153**	111.97
3	4 ft.	**4139K252**	150.15	**4139K251**	150.15	**4139K253**	150.15
3	5 ft.	**4139K352**	169.25	**4139K351**	169.25	**4139K353**	169.25
4	2 ft.	**4139K162**	154.61	**4139K161**	154.61	**4139K163**	154.61
4	4 ft.	**4139K262**	188.80	**4139K261**	180.59	**4139K263**	180.59
4	5 ft.	**4139K362**	212.34	**4139K361**	212.34	**4139K363**	212.34

For information about selecting and measuring pipe and fittings, see pages 2-3.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at right. Then, refer to the chart and select the corresponding pipe size. For example, if the actual ID or OD measures 1.315″, the corresponding pipe size is 1″.

Unthreaded ID or OD	0.840″	1.050″	1.315″	1.90″	2.375″
Pipe Size	1/2″	3/4″	1″	1 1/2″	2″

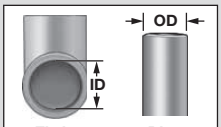

About Plastic Fittings and Pipe

Plastic fittings and pipe offer several benefits over metal. They're lightweight, nontoxic, and corrosion, chemical, and rust resistant. You can also use them to transition from metal pipe fittings and pipe without the concern of destructive electrolytic corrosion (the electrical current generated between dissimilar metals that causes corrosion).

Note: The table below is only a general guide. For specific products and detailed information, see individual presentations.

Material	Features	Applications	Page(s)
UV-Resistant PVC (Polyvinyl Chloride)	All of the great features of PVC with the addition of a UV inhibitor, so it stands up to outdoor use.	Ideal for outdoor use and in cold water applications.	81, 89
PVC (Polyvinyl Chloride)	The most widely used plastic material for plumbing applications, offering good strength, corrosion resistance, and rigidity.	Use for cold water applications. NSF 61 certified for drinking (potable) water.	82-83, 85-93
Gravity-Flow PVC (Polyvinyl Chloride)	Good strength and corrosion resistance.	Designed for nonpressure drain, waste, and vent applications.	84-86
CPVC (Chlorinated Polyvinyl Chloride)	Similar to PVC except with chlorine added to handle higher temperatures.	Use with hot water and corrosive liquids. NSF 61 certified for drinking (potable) water.	94-96
Polyethylene	Strong, bendable material.	Good for water drainage applications.	97
Polypropylene	Excellent chemical resistance, this material resists acids, bases, and many solvents.	Good for laboratory plumbing and corrosive drainage piping.	97-100
Nylon	High strength and impact resistant.	Good for fuel lines (except barbed fittings).	100
PVDF (Polyvinylidene Fluoride)	Strong, tough material with good wear and abrasion resistance. Excellent UV and corrosion resistance.	Use for ultra-high-purity applications, such as in laboratories.	101
PFA (Perfluoroalkoxy)	Strong material with smooth, friction-resistant surface and excellent corrosion resistance.	Suitable for high-purity, chemical-handling applications.	101
PTFE (Polytetra-fluoroethylene)	Offers extreme corrosion resistance in high-temperature, high-purity applications.	Good for high-purity, high-temperature, chemical-handling applications.	102

Schedule and Pressure

Plastic pipe fittings and pipe are classified by Schedule, which is an indicator of the wall thickness. The higher the Schedule, the thicker the walls will be; thicker walls allow a pipe fitting or pipe to handle more pressure. In order to maintain the integrity of a piping system, be sure to use the same Schedule pipe and pipe fittings within one system.

Plastic pipe fittings are not rated for pressure; however, the pressure rating for pipe is often used as a reference. Keep in mind there are several factors that will reduce the pressure rating. For example, threads on a fitting will lower the pressure rating by approximately 50%. A reducing fitting will also lower the overall pressure of a system. And, as temperature rises, the amount of pressure a system can withstand decreases.

How to Connect Unthreaded Plastic Fittings

Unthreaded plastic fittings can have two different types of ends: pipe end (male) and socket end (female). The pipe end is also called a spigot.

Connect the fittings to pipe by cementing the pipe end (male) into the socket end (female) using a primer and cement. See page 86 for PVC primer and cement; see page 94 for CPVC primer and cement.

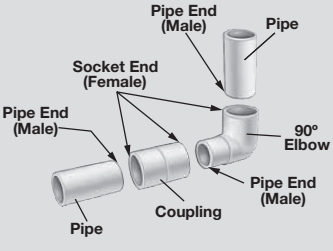

UV-Resistant Standard-Wall (Schedule 40) PVC Unthreaded Pipe Fittings and Pipe

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure:
  Fittings: Not rated
  Pipe: See below

These PVC fittings and pipe have an additive that makes them resistant to ultraviolet light—use outdoors or in any plumbing application where you need to protect sensitive material. Rigid and corrosion resistant, PVC is the most popular plastic choice for low-pressure plumbing applications. ***Pipe*** meets ASTM D2467 and D1784.

Connect fittings to pipe by cementing the pipe end (male) into the socket end (female) using a PVC primer and cement (see page 86). Connections: Socket end (female) on fittings; pipe is unthreaded.

Socket End (Female) to Socket End (Female) Fittings—*Beige*

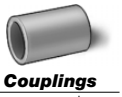

Pipe Size	90° Elbows		45° Elbows		Tees		Couplings	
1/2″	4738T11	$1.94	4738T21	$2.71	4738T31	$2.44	4738T41	$2.02
3/4″	4738T12	2.44	4738T22	3.53	4738T32	2.87	4738T42	2.71
1″	4738T13	4.06	4738T23	4.23	4738T33	5.69	4738T43	4.06
1 1/2″	4738T14	8.79	4738T24	8.27	4738T34	11.26	4738T44	6.24
2″	4738T15	12.19	4738T25 ♣	11.80	4738T35	14.92	4738T45	9.48

♣ Thick-wall (Schedule 80).

Pipe End (Male) to Socket End (Female)—*Beige*

Reducer Bushings

Pipe Size			
3/4″ ×	1/2″	4738T51	$2.15
1″ ×	3/4″	4738T53	3.08
1 1/2″ ×	1″	4738T55	5.30
2″ ×	1″	4738T56	6.51
2″ ×	1 1/2″	4738T57 ♣	6.51

Pipe Size	Male Adapters	
3/4″	4738T82	$2.15
1″	4738T83	2.71
1 1/2″	4738T84	4.61
2″	4738T85	7.45

Pipe—*Black*

Pipe Size	ID	Max. psi @ 72° F	5-ft. Lengths		10-ft. Lengths	
1/2″	0.602″	300	5065K13	$16.16	5065K23	$30.49
3/4″	0.804″	240	5065K14	21.66	5065K24	40.86
1″	1.029″	220	5065K15	32.16	5065K25	60.68
1 1/2″	1.590″	170	5065K16	$51.99	5065K26	$98.09
2″	2.047″	140	5065K17	70.16	5065K27	132.37

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

PVC Pipe Fittings

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

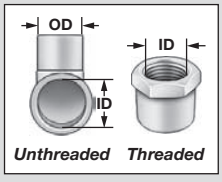

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at left. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size. For ***threaded*** fittings, round up the measurement to the closest ID listed in the chart and select the corresponding pipe size. For example, if the threaded pipe fitting ID measures 1 3/16″, the next highest ID in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Unthreaded OD or ID	—	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″	6.625″	8.625″
Threaded ID	1/2″	—	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	—	—
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″	8″

Standard-Wall (Schedule 40) White PVC Pipe Fittings

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: Not rated
- Pipe: Use standard-wall (Schedule 40) white PVC unthreaded (see page 83)

Offering corrosion resistance, strength, and rigidity, these standard-wall PVC fittings are the most common choice for plastic fittings in low-pressure plumbing applications. They meet ASTM D1784 and D2466.

Connect fittings to pipe by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86). The pipe end is also known as a spigot. Connections: Unthreaded socket end (female), unthreaded pipe end (male), or threaded (NPT).

Unthreaded Socket End (Female) to Unthreaded Socket End (Female)

Pipe Size	90° Elbows		45° Elbows		Tees		Crosses		Caps		Couplings Lg.	
3/8″	4880K108	$1.66	—	—	4880K109	$1.28	—	—	—	—	1 9/32″	4880K114 $0.59
1/2″	4880K21	.33	4880K31	$0.55	4880K41	.41	4880K241	$1.27	4880K51	$0.30	1 21/32″	4880K71 .21
3/4″	4880K22	.38	4880K32	.85	4880K42	.47	4880K242	2.10	4880K52	.35	1 11/16″	4880K72 .30
1″	4880K23	.67	4880K33	1.02	4880K43	.88	4880K243	2.62	4880K53	.55	2 3/32″	4880K73 .52
1 1/4″	4880K24	1.19	4880K34	1.42	4880K44	1.38	4880K244	3.46	4880K54	.78	2 5/8″	4880K74 .72
1 1/2″	4880K25	1.27	4880K35	1.78	4880K45	1.68	4880K245	3.92	4880K55	.85	2 5/8″	4880K75 .78
2″	4880K26	1.98	4880K36	2.32	4880K46	2.45	4880K246	3.73	4880K56	1.02	2 7/8″	4880K76 1.19
2 1/2″	4880K103	3.90	4880K113	3.90	4880K123	5.21	4880K247	7.91	4880K143	3.24	4 7/32″	4880K133 2.62
3″	4880K27	4.66	4880K37	6.06	4880K47	6.84	4880K248	9.70	4880K57	3.55	4 1/4″	4880K77 4.10
4″	4880K28	8.34	4880K38	10.86	4880K48	12.37	4880K249	14.38	4880K58	5.21	4 1/4″	4880K78 3.83
6″	4880K101	26.50	4880K111	26.83	4880K121	40.55	—	—	4880K141	12.48	7 5/16″	4880K131 12.10
8″	4880K102	66.48	4880K112	62.84	4880K122	94.08	—	—	4880K142	31.35	9 5/16″	4880K132 22.59

Reducing Tees

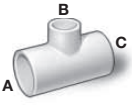

Pipe Size, (A)×(B)×(C)			Pipe Size, (A)×(B)×(C)		
3/4″ × 1/2″ × 3/4″	4880K971	$0.55	2″ × 1 1/2″ × 2″	4880K978	$2.62
1″ × 1/2″ × 1″	4880K973	.94	2 1/2″ × 1 1/4″ × 2 1/2″	4880K979	5.20
1″ × 3/4″ × 3/4″	4880K972	1.57	2 1/2″ × 2″ × 2 1/2″	4880K981	5.20
1″ × 3/4″ × 1″	4880K974	1.02	3″ × 2″ × 3″	4880K982	7.43
1 1/4″ × 1″ × 1″	4880K975	2.14	4″ × 3″ × 4″	4880K983	12.37
1 1/2″ × 3/4″ × 1 1/2″	4880K976	2.66	6″ × 4″ × 6″	4880K984	40.55
1 1/2″ × 1″ × 1 1/2″	4880K977	2.66	8″ × 6″ × 8″	4880K985	94.08

Unions

Pipe Size		
1/2″	4880K301	$3.24
3/4″	4880K302	3.69
1″	4880K303	3.80
1 1/4″	4880K304	7.91
1 1/2″	4880K305	8.24
2″	4880K306	11.11

Unthreaded Pipe End (Male) to Unthreaded Socket End (Female)

Hex Reducing Bushings

Pipe Size, Male×Female			Pipe Size, Male×Female			Pipe Size, Male×Female		
3/4″ × 1/2″	4880K313	$0.47	2″ × 3/4″	4880K337	$2.46	3″ × 1 1/2″	4880K519	$3.87
1″ × 1/2″	4880K314	1.04	2″ × 1″	4880K338	2.46	3″ × 2″	4880K612	3.87
1″ × 3/4″	4880K315	1.04	2″ × 1 1/4″	4880K339	2.46	3″ × 2 1/2″	4880K613	3.87
1 1/4″ × 1/2″	4880K171	1.41	2″ × 1 1/2″	4880K512	2.46	4″ × 2″	4880K614	8.68
1 1/4″ × 3/4″	4880K317	1.41	2 1/2″ × 1″	4880K513	3.95	4″ × 2 1/2″	4880K616	8.68
1 1/4″ × 1″	4880K318	1.41	2 1/2″ × 1 1/4″	4880K514	3.95	4″ × 3″	4880K615	8.68
1 1/2″ × 1/2″	4880K319	1.48	2 1/2″ × 1 1/2″	4880K515	3.95	6″ × 2″	4880K181	21.50
1 1/2″ × 3/4″	4880K333	1.48	2 1/2″ × 2″	4880K516	3.95	6″ × 4″	4880K183	21.50
1 1/2″ × 1″	4880K334	1.48	3″ × 1″	4880K517	3.87	8″ × 4″	4880K185	74.94
1 1/2″ × 1 1/4″	4880K335	1.48	3″ × 1 1/4″	4880K518	3.87	8″ × 6″	4880K186	71.08
2″ × 1/2″	4880K172	2.46						

90° Elbows

Pipe Size		
1/2″	4880K771	$0.94
3/4″	4880K772	1.15
1″	4880K773	1.98
1 1/4″	4880K774	2.37
1 1/2″	4880K775	2.62
2″	4880K776	5.06

Unthreaded Pipe End (Male) to Threaded End

Hex Reducing Bushings, Pipe End (A)×Female NPT (B)

Pipe Size, (A)×(B)			Pipe Size, (A)×(B)			Pipe Size, (A)×(B)			Pipe Size, (A)×(B)		
1/2″ × 1/4″	4880K199	$0.72	1 1/2″ × 3/4″	4880K208	$1.57	2″ × 1 1/2″	4880K216	$2.10	3″ × 1 1/2″	4880K228	$3.50
3/4″ × 1/2″	4880K201	.55	1 1/2″ × 1″	4880K209	1.57	2 1/2″ × 1″	4880K217	3.05	3″ × 2″	4880K229	3.50
1″ × 1/2″	4880K202	.88	1 1/2″ × 1 1/4″	4880K211	1.57	2 1/2″ × 1 1/4″	4880K218	3.05	3″ × 2 1/2″	4880K224	3.50
1″ × 3/4″	4880K203	.88	2″ × 1/2″	4880K212	2.10	2 1/2″ × 1 1/2″	4880K219	3.05	4″ × 2″	4880K231	5.05
1 1/4″ × 1/2″	4880K204	1.36	2″ × 3/4″	4880K213	2.10	2 1/2″ × 2″	4880K221	3.05	4″ × 2 1/2″	4880K225	5.05
1 1/4″ × 3/4″	4880K205	1.36	2″ × 1″	4880K214	2.10	3″ × 1″	4880K222	3.50	4″ × 3″	4880K233	5.05
1 1/4″ × 1″	4880K206	1.36	2″ × 1 1/4″	4880K215	2.10	3″ × 1 1/4″	4880K223	3.50	6″ × 4″	4880K235	18.48
1 1/2″ × 1/2″	4880K207	1.57									

(Continued on following page)

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at right. For ***threaded*** fittings, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the threaded OD or ID measures 1 3/16″, the next highest OD or ID in the chart is 1 3/8″, and the corresponding pipe size is 1″. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	6 5/8″	8 5/8″
Unthreaded ID	0.54″	0.675″	0.84″	1.05″	1.315″	1.66″	1.90″	2.375″	2.875″	3.50″	4.50″	6.625″	8.625″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″	8″

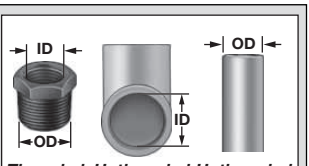

Threaded Fitting *Unthreaded Fitting* *Unthreaded Pipe*

Standard-Wall (Schedule 40) White PVC Pipe Fittings *(Continued from previous page)*

Threaded End to Unthreaded Socket End (Female)

Pipe Size	90° Elbows		Male×Female Adapters		Female Adapters	
1/2″	4880K321	$0.40	4880K61	$0.30	4880K81	$0.38
3/4″	4880K322	.46	4880K62	.33	4880K82	.47
1″	4880K323	.86	4880K63	.59	4880K83	.55
1 1/4″	4880K324	1.43	4880K64	.72	4880K84	.85
1 1/2″	4880K325	1.59	4880K65	.98	4880K85	.98
2″	4880K326	4.11	4880K66	1.27	4880K86	1.31
2 1/2″	4880K327	6.77	4880K163	3.76	4880K153	3.30
3″	4880K328	10.14	4880K67	3.55	4880K87	4.42
4″	4880K329	15.37	4880K68	4.52	4880K88	4.73
6″	—	—	4880K161	11.79	4880K151	17.42
8″	—	—	4880K162	52.18	4880K152	32.85

REDUCING ADAPTERS

Male NPT × Socket End (Female)

Pipe Size		
1/2″ × 3/8″	4880K431	$0.58
3/4″ × 1/2″	4880K433	.53
1″ × 3/4″	4880K435	1.76
1 1/4″ × 1″	4880K437	2.16
1 1/2″ × 1 1/4″	4880K439	2.61
2″ × 1 1/2″	4880K442	2.98

Socket End (Female) × Male NPT

Pipe Size		
3/4″ × 1/2″	4880K432	$0.58
1″ × 3/4″	4880K434	.82
1 1/4″ × 1″	4880K436	1.92
1 1/2″ × 1 1/4″	4880K438	2.16
2″ × 1 1/2″	4880K441	2.61
2 1/2″ × 2″	4880K443	4.64
3″ × 2 1/2″	4880K444	3.74
4″ × 3″	4880K445	5.99

Snap-On Tees with NPT Female Threaded Outlet

Get a tee connection without removing any of your piping system. Simply apply primer and cement, then snap over a pipe. When the cement is cured, drill a hole through the fitting and pipe.

Pipe Size, (A)×(B)×(C)		
3/4″ × 1/2″ × 3/4″	4880K105	$1.27
3/4″ × 3/4″ × 3/4″	4880K104	1.51

Pipe Size, (A)×(B)×(C)		
1″ × 1/2″ × 1″	4880K106	$2.28
1″ × 3/4″ × 1″	4880K107	2.28

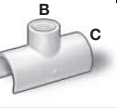

Threaded End to Threaded End

Unions

Pipe Size		
1/2″	4880K371	$3.64
3/4″	4880K372	4.71
1″	4880K373	5.35
1 1/4″	4880K374	9.19
1 1/2″	4880K375	9.39
2″	4880K376	11.54

Hex Reducing Bushings

Pipe Size, Male×Female		
3/8″ × 1/4″	4880K342	$1.57
1/2″ × 1/4″	4880K343	1.57
1/2″ × 3/8″	4880K344	1.57
3/4″ × 1/4″	4880K345	.98
3/4″ × 3/8″	4880K346	.98
3/4″ × 1/2″	4880K347	.98
1″ × 1/2″	4880K348	1.36

Pipe Size, Male×Female		
1″ × 3/4″	4880K349	$1.36
1 1/4″ × 1/2″	4880K351	2.03
1 1/4″ × 3/4″	4880K352	2.03
1 1/4″ × 1″	4880K353	2.03
1 1/2″ × 1/2″	4880K354	2.45
1 1/2″ × 3/4″	4880K355	2.45
1 1/2″ × 1″	4880K356	2.45

Pipe Size, Male×Female		
1 1/2″ × 1 1/4″	4880K357	$2.45
2″ × 1″	4880K358	2.62
2″ × 1 1/4″	4880K359	2.62
2″ × 1 1/2″	4880K361	2.62
2 1/2″ × 2″	4880K363	5.90
3″ × 2″	4880K362	6.98

Selectable-Angle Standard-Wall (Schedule 40) White PVC Unthreaded Pipe Elbows

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: Not rated
- Pipe: Use standard-wall (Schedule 40) white PVC unthreaded (see below)

Always have the right elbow on hand to complete your job—you can cut these two-piece elbows to any angle you need. Furnished as a 90° elbow, they have cutting guides at 22 1/2°, 33 3/4°, 45°, 56 1/4°, 67 1/2°, and 78 3/4° angles; they also have a measuring template so you can cut a custom angle. After cutting, prime and cement the two pieces together (see page 86 for primer and cement). They're IAPMO listed and meet ASTM D2466. Connections: Socket end (female).

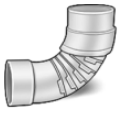

Pipe Size		
1 1/2″	4747T11	$5.35
2″	4747T12	6.71
3″	4747T13	18.88
4″	4747T14	24.69

Standard-Wall (Schedule 40) White PVC Unthreaded Pipe

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: See below
- Fittings: Use standard-wall (Schedule 40) white PVC (see page 82 and above)

PVC is the most popular plastic material for low-pressure plumbing applications, offering good corrosion resistance, strength, and rigidity. This pipe meets ASTM D1784 and D1785 and CSA B137.3-99.

Connect pipe to fittings by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86).

Pipe Size	ID	Max. psi @ 73° F	5-ft. Lengths		10-ft. Lengths	
1/4″	0.354″	780	48925K21★	$3.95	48925K41★	$6.08
3/8″	0.483″	620	48925K22★	5.32	48925K42★	8.18
1/2″	0.608″	600	48925K91	2.58	48925K11	3.44
3/4″	0.810″	480	48925K92	3.35	48925K12	4.47
1″	1.033″	450	48925K93	4.99	48925K13	6.65
1 1/4″	1.364″	370	48925K94	6.70	48925K14	8.94

★ Color is dark gray.

Pipe Size	ID	Max. psi @ 73° F	5-ft. Lengths		10-ft. Lengths	
1 1/2″	1.592″	330	48925K95	$6.75	48925K15	$8.99
2″	2.049″	280	48925K96	8.93	48925K16	11.90
2 1/2″	2.445″	300	48925K99	18.65	48925K19	25.55
3″	3.042″	260	48925K97	18.16	48925K17	24.88
4″	3.998″	220	48925K98	24.51	48925K18	33.57
6″	6.031″	180	48925K25	40.25	48925K45	73.19
8″	7.943″	160	48925K26	65.35	48925K46	118.82

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

PVC Pipe Fittings

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

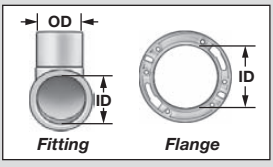

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then refer to the chart and select the corresponding pipe size. For example, if the actual OD or ID measures 1.660″, the corresponding pipe size is 1¼″.

Unthreaded OD or ID	1.660″	1.90″	2.375″	3.50″	4.50″
Pipe Size	1¼″	1½″	2″	3″	4″

Drain, Waste, and Vent Standard-Wall (Schedule 40) White PVC Pipe Fittings

- Use with water
- Max. Temperature: 140° F
- Maximum Pressure: Gravity flow only
- Pipe: Use standard-wall (Schedule 40) white PVC unthreaded (see page 83)

In addition to being the most popular fittings for nonpressure gravity-flow drain, waste, and vent applications, these fittings have thicker walls than the thin-wall sewer and drain PVC fittings (on page 86) to handle more demanding jobs. ***Easy-align flanges*** have a rotating base that allows easy adjustment (see pages 1998 and 2000 for more flanges and wax rings). All meet ASTM D1784, D2665, and D3311.

Note: Not for use with hot water or pressure-rated applications.

Connect unthreaded fittings and pipe by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86). The pipe end is also known as a spigot.

Connections: Unthreaded socket end (female), unthreaded pipe end (male), or threaded (NPT).

Unthreaded Socket End (Female) to Unthreaded Socket End (Female)

Pipe Size	90° Elbows		90° Long Elbows		45° Elbows		Tees		Sanitary Tees	
1¼″	2389K26	$5.40	—	—	2389K37	$3.53	—	—	2389K216	$5.42
1½″	2389K27	1.48	2389K112	$3.56	2389K38	1.45	2389K15	$9.05	2389K22	2.69
2″	2389K28	2.34	2389K113	3.85	2389K39	2.09	2389K16	7.24	2389K23	3.95
3″	2389K29	6.89	2389K114	9.06	2389K41	6.16	2389K17	21.13	2389K24	10.12
4″	2389K31	13.58	2389K115	17.30	2389K42	10.82	—	—	2389K25	17.60

Couplings

Lg.		
1 41/64″	2389K671	$3.26
1½″	2389K68	.74
1 21/32″	2389K69	.96
3 15/64″	2389K71	3.31
3 25/32″	2389K72	5.87

Pipe Size	45° Wyes		Long Turn Wyes		Double Wyes	
1¼″	2389K36	$6.87	—	—	—	—
1½″	2389K32	5.07	2389K47	$6.48	2389K512	$10.97
2″	2389K33	4.81	2389K48	6.93	2389K513	12.31
3″	2389K34	12.99	2389K49	17.27	2389K514	25.76
4″	2389K35	23.56	2389K51	33.06	2389K515	50.49

Reducing Sanitary Tees

Pipe Size, (A)×(B)×(C)		
2″×1½″×1½″	2389K13	$4.15
2″×1½″×2″	2389K45	3.49
3″×1½″×3″	2389K14	7.33
4″×2″ ×4″	2389K46	16.48

Reducing Couplings

Pipe Size		
2″×1½″	2389K73	$2.13
3″×1½″	2389K74	6.52
3″×2″	2389K75	5.01
4″×2″	2389K7	9.94
4″×3″	2389K76	10.57

P-Traps with Union

Pipe Size		
1¼″	2389K82	$30.86
1½″	2389K83	6.58
2″	2389K84	14.29

Drum Trap with Plug

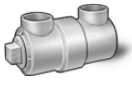

Pipe Size		
1½″×1½″	2389K86	$20.83

FLANGES

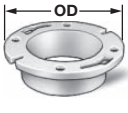

Pipe Size	OD★	Straight		Easy Align	
4″×4″	7″	2389K88	$7.47	2389K89	$18.22

★ This is the actual size, not a "pipe size."

REDUCING FLANGES

Pipe Size	OD★	Straight		45° Easy Align	
4″×3″	7″	2389K91	$7.46	2389K9	$12.00

★ This is the actual size, not a "pipe size."

Unthreaded Socket End (Female) to Unthreaded Pipe End (Male)

Pipe Size	90° Elbows		45° Elbows		22½° Elbows	
1¼″	2389K211	$7.61	2389K311	$4.84	—	—
1½″	2389K212	1.99	2389K312	1.44	2389K412	$5.77
2″	2389K213	3.02	2389K313	2.22	2389K413	6.18
3″	2389K214	7.63	2389K314	6.04	2389K414	9.73
4″	2389K215	14.35	2389K315	10.33	2389K415	14.17

Unthreaded Socket End (Female) to Tube End

P-Trap with Union

Pipe Size		
1½″	2389K85	$7.46

Trap Adapters

Pipe Size, A×B		
1¼″×1¼″	2389K43	$2.34
1½″×1½″	2389K57	2.61
2″ ×1½″	2389K44	4.22

Unthreaded Pipe End (Male) to Unthreaded Socket End (Female)

Reducing Bushings

Pipe Size			Pipe Size		
1½″×1¼″	2389K5	$2.95	3″×2″	2389K53	$3.18
2″ ×1½″	2389K52	1.27	4″×2″	2389K55	10.58
3″ ×1½″	2389K56	6.08	4″×3″	2389K54	5.40

(Continued on following page)

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at right. For ***threaded*** fittings, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the threaded ID or OD measures 1 3/16″, the next highest ID or OD in the chart is 1 3/8″, and the corresponding pipe size is 1″. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″	4 1/2″
Unthreaded OD or ID	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	3.50″	4.50″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″	4″

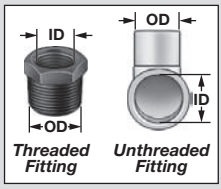

Drain, Waste, and Vent Standard-Wall (Schedule 40) White PVC Pipe Fittings

(Continued from previous page)

Threaded End to Unthreaded Socket End (Female)

Male×Female Adapters

Pipe Size		
1 1/4″	2389K58	$3.48
1 1/2″	2389K59	1.43
2″	2389K61	1.85
3″	2389K62	5.32
4″	2389K63	11.79

Female Adapters

Pipe Size		
1 1/4″	2389K66	$6.99
1 1/2″	2389K64	1.38
2″	2389K65	2.34
3″	2389K67	6.29

Threaded

Square-Head Plugs

Pipe Size		
1 1/4″	2389K761	$1.61
1 1/2″	2389K77	1.30
2″	2389K78	1.45
3″	2389K79	2.59
4″	2389K81	3.83

Unthreaded Pipe End (Male) to Threaded End

Male×Female Adapters

Pipe Size		
1 1/4″	2389K911	$2.34
1 1/2″	2389K92	1.74
2″	2389K93	$2.24
3″	2389K94	$6.32
4″	2389K95	$10.39

Standard-Wall (Schedule 40) Clear PVC Pipe Fittings

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: Not rated
- Pipe: Use standard-wall (Schedule 40) clear PVC unthreaded (see below and page 86)

Just as strong, rigid, and corrosion resistant as white PVC, but these fittings are transparent so you can see what's flowing through your system. Compatible with standard-wall (Schedule 40) white PVC pipe and fittings, all are FDA compliant, UL 94V0 listed for flammability, and meet ASTM D2466 and D2464. ***Female adapters*** are reinforced with a stainless steel ring.

Connect unthreaded fittings and pipe by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86).

Connections: Unthreaded socket end (female) or threaded (NPT).

Unthreaded Socket End (Female) to Unthreaded Socket End (Female)

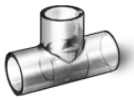

Pipe Size	90° Elbows		45° Elbows		Tees		Couplings		Caps	
1/4″	9161K101♣	$8.73	9161K71♣	$14.01	9161K111♣	$10.73	9161K121♣	$5.86	9161K151♣	$7.87
3/8″	9161K102	8.73	9161K72♣	14.01	9161K112	10.73	9161K122♣	5.86	9161K152♣	7.87
1/2″	9161K21	6.58	9161K73	10.63	9161K31	8.08	9161K41	4.36	9161K153	5.87
3/4″	9161K22	7.21	9161K74	16.42	9161K32	9.22	9161K42	5.87	9161K154	6.79
1″	9161K23	13.08	9161K75	19.74	9161K33	17.27	9161K43	10.20	9161K155	10.75
1 1/4″	9161K24	23.05	9161K76	27.91	9161K34	27.12	9161K44	13.91	9161K161	14.95
1 1/2″	9161K25	24.48	9161K77	34.80	9161K35	32.91	9161K45	14.95	9161K156	16.42
2″	9161K26	38.80	9161K78	45.37	9161K36	47.80	9161K46	23.30	9161K157	19.80
3″	9161K27	111.21	9161K79	144.48	9161K37	163.18	9161K47	63.24	9161K158	49.23
4″	9161K28	189.15	9161K81	246.53	9161K38	277.00	9161K48	86.74	9161K159	105.05

♣ Thick-wall (Schedule 80).

Threaded End to Unthreaded Socket End (Female)

Male×Female Adapters

Pipe Size		
3/8″	9161K142	$7.87
1/2″	9161K61	5.87
3/4″	9161K62	6.58
1″	9161K63	11.57
1 1/4″	9161K64	13.96
1 1/2″	9161K65	$18.96
2″	9161K66	24.74
3″	9161K67	107.19
4″	9161K68	136.71

Female Adapters♣

Pipe Size		
1/4″	9161K131	$12.30
3/8″	9161K132	12.30
1/2″	9161K51	7.29
3/4″	9161K52	9.13
1″	9161K53	10.55
1 1/4″	9161K54	$16.19
1 1/2″	9161K55	18.99
2″	9161K56	25.58
3″	9161K57	68.50
4″	9161K58	107.64

♣ Thick-wall (Schedule 80).

Flexible Standard-Wall (Schedule 40) Clear PVC Unthreaded Pipe

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: See below
- Fittings: Use standard-wall (Schedule 40) clear PVC unthreaded (see above)

Bend this pipe around objects—fewer connections not only saves you installation time, but also means less friction in fluid handling applications. Material is FDA compliant and meets 3-A (dairy) requirements.

Connect unthreaded fittings and pipe by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86).

Pipe Size	ID	Max. psi @ 73° F	5-ft. Lengths		10-ft. Lengths	
1/2″	0.602″	65	4805K11	$9.99	4805K21	$18.16
3/4″	0.804″	55	4805K12	13.40	4805K22	24.37
1″	1.029″	50	4805K13	19.71	4805K23	35.84
1 1/2″	1.590″	45	4805K14	31.81	4805K24	57.83
2″	2.047″	40	4805K15	42.58	4805K25	77.42

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

PVC Pipe Fittings, Pipe, Cement & Primer

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

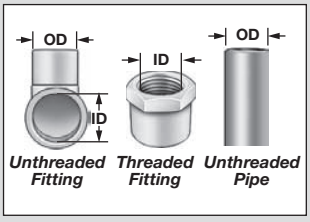

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at left. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size. For ***threaded*** fittings, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the threaded pipe fitting OD measures 6½″, the next highest OD in the chart is 6⅝″, and the corresponding pipe size is 6″.

Unthreaded ID or OD	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	3.50″	4.50″	6.625″
Threaded ID or OD	—	—	—	—	—	—	—	—	3½″	4½″	6⅝″
Pipe Size	¼″	⅜″	½″	¾″	1″	1¼″	1½″	2″	3″	4″	6″

Standard-Wall (Schedule 40) Clear PVC Unthreaded Pipe

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: See below
- Fittings: Use standard-wall (Schedule 40) clear PVC unthreaded (see page 85)

Clear pipe offers optimum visibility, so you can see what is flowing through your system. This pipe is compatible with both clear PVC and white PVC standard-wall (Schedule 40) pipe systems. Pipe is FDA compliant and meets UL 94V0 for flammability and ASTM D1784.

Connect unthreaded fittings and pipe by cementing the pipe end (male) into the socket end (female) using primer and cement (see below).

Pipe Size	ID	Max. psi @ 73° F	4-ft. Lengths		8-ft. Lengths	
¼″	0.354″	390	49035K21	$4.03	49035K81	$6.50
⅜″	0.483″	310	49035K22	5.44	49035K82	8.78
½″	0.608″	300	49035K23	8.13	49035K83	13.12
¾″	0.810″	240	49035K24	10.89	49035K84	17.56
1″	1.033″	220	49035K25	16.10	49035K85	25.97
1¼″	1.364″	180	49035K26	21.84	49035K86	35.22
1½″	1.592″	170	49035K27	$26.15	49035K87	$42.17
2″	2.049″	140	49035K28	35.19	49035K88	56.75
3″	3.042″	130	49035K31	71.74	49035K91	115.71
4″	3.998″	110	49035K33	109.37	49035K93	176.40
6″	6.031″	90	49035K35	199.95	49035K95	322.50

Sewer and Drain Thin-Wall White PVC Pipe Fittings and Light Green Pipe

- Use with water
- Maximum Temperature: 140° F
- Maximum Pressure: Gravity flow only

Thin-wall PVC fittings and pipe are perfect for lightweight gravity-flow sewer and drain applications that don't require the strength found in standard-wall PVC.

Note: Not for use with standard-wall (Schedule 40) or thick-wall (Schedule 80) PVC fittings and pipe.

Fittings are white and are only compatible with the pipe sold below. All meet ASTM D3034 and ASTM D2729.

Unthreaded pipe is light green and is only compatible with the fittings sold below. *4½-ft. lengths* have plain ends; *10-ft. lengths* are belled on one end for easy connection. All pipe meets ASTM D2729.

Connect unthreaded fittings and pipe by cementing the pipe end (male) into the socket end (female) of the fitting using a PVC primer and cement (see below). Connections: Unthreaded socket end (female) or threaded (NPT) for fittings; pipe is unthreaded.

Unthreaded Socket End (Female) to Unthreaded Socket End (Female)

Pipe Size	90° Elbows		90° Long Elbows		45° Elbows		Tees		Sanitary Tees	
3″	9102K121	$2.89	9102K113	$3.11	9102K133	$2.21	9102K153	$2.98	9102K163	$5.31
4″	9102K122	3.74	9102K114	3.39	9102K134	2.40	9102K154	3.87	9102K164	5.74
6″	9102K123	16.74	9102K116	31.55	9102K136	11.29	9102K156	16.16	9102K165	36.99

Threaded End

Pipe Size	Square-Head Plugs	
3″	9102K333	$1.88
4″	9102K334	2.14
6″	9102K335	10.56

Pipe Size	45° Wyes		Couplings Lg.		Caps	
3″	9102K183	$4.64	3 5/32″	9102K233	$1.68	9102K223	$1.42
4″	9102K184	5.55	3 21/32″	9102K234	1.97	9102K224	1.63
6″	9102K186	15.40	6 5/32″	9102K236	7.23	9102K226	6.75

Pipe Size	Reducing Couplings	
4″ × 3″	9102K243	$3.10
6″ × 4″	9102K264	9.69

Threaded End to Unthreaded Pipe End (Male)

Pipe Size	Female × Male Adapters	
3″	9102K353	$2.97
4″	9102K354	3.23

Unthreaded Pipe

Pipe Size	OD	ID	4½-ft. Lengths		10-ft. Lengths	
3″	3.250″	3.110″	2426K24	$7.06	2426K92	$13.57
4″	4.215″	4.075″	2426K25	7.53	2426K93	14.49
6″	6.275″	6.075″	2426K27	14.64	2426K95	28.16

PVC Cement and Primer

Create firm, leakproof joints between PVC pipe and fittings. All are NSF 61 certified for use with drinking (potable) water. These products are also compliant under all state VOC rules in effect on July 1, 2010.

Cement meets ASTM D2564. For more PVC cement, see page 3421.

Primer prepares PVC pipe for solvent welding. To achieve greater overall strength, use primer before applying cement.

	Clear Cement: For ¼″ to 6″ Pipe Sizes		Clear Cement: For 8″ and Up Pipe Sizes		Primer: Purple		Primer: Clear	
8-oz. Dauber-Top Can	18815K61	$4.37	18815K91	$4.55	18815K71	$4.67	18815K31	$4.59
16-oz. Dauber-Top Can	18815K62	8.43	18815K92	7.57	18815K72	9.08	18815K32	8.32

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID) or outside diameter (OD), as shown at right. Then, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the ID or OD measures 1 3/16″, the next highest ID or OD in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Threaded ID or OD	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

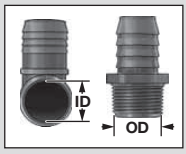

Barbed Dark Gray PVC Pipe Fittings

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: See below
- Pipe: Use with flexible polyethylene (see page 88)

Installation couldn't be easier—just slip the barbed ends into flexible polyethylene pipe and secure with a worm-drive clamp (not included, see page 274). Also called insert fittings, all are made of rigid, corrosion-resistant PVC and meet ASTM D2609 and D1784.

Connections: Barbed or threaded (NPT).

Pipe Size	Fitting OD	Max. psi @ 73° F	90° Elbows		90° Elbows, Barbed × Threaded Male		Tees		Couplings Lg.		Adapters, Barbed × Threaded Male Lg.	
1/2″	0.65″	200	48315K31	$1.78	48315K41	$2.24	48315K61	$1.95	3 1/16″	48315K81	$0.90	2 7/16″	48315K91	$0.89
3/4″	0.85″	200	48315K32	2.19	48315K42	3.10	48315K62	2.12	3 1/8″	48315K82	1.09	2 17/32″	48315K92	1.09
1″	1.08″	200	48315K33	2.42	48315K43	4.08	48315K63	2.75	3 7/32″	48315K83	1.14	2 19/32″	48315K93	1.13
1 1/4″	1.41″	200	48315K34	2.70	48315K44	5.42	48315K64	4.30	3 3/16″	48315K84	1.69	2 25/32″	48315K94	1.78
1 1/2″	1.65″	160	48315K35	3.18	48315K45	7.20	48315K65	4.87	3 5/16″	48315K85	2.00	3 1/16″	48315K95	2.00
2″	2.11″	160	48315K36	4.45	48315K46	11.36	48315K66	9.62	3 21/32″	48315K86	3.79	3 7/32″	48315K96	3.83

Plugs

Pipe Size	Fitting OD	Max. psi @ 73° F			Pipe Size	Fitting OD	Max. psi @ 73° F			Pipe Size	Fitting OD	Max. psi @ 73° F		
1/2″	0.65″	200	48315K11	$1.62	1″	1.08″	200	48315K13	$2.28	1 1/2″	1.65″	160	48315K15	$3.15
3/4″	0.85″	200	48315K12	1.69	1 1/4″	1.41″	200	48315K14	2.89	2″	2.11″	160	48315K16	5.55

90° Reducing Elbows, Barbed × Threaded Female

Pipe Size	Max. psi @ 73° F		
3/4″ × 1/2″	200	48315K51	$2.06
1″ × 1/2″	200	48315K52	2.19
1″ × 3/4″	200	48315K53	2.53
1 1/4″ × 1″	200	48315K54	3.75
1 1/2″ × 1″	160	48315K55	4.27
2″ × 1 1/2″	160	48315K56	7.57

Reducing Tees

Pipe Size, (A) × (B) × (C)	Max. psi @ 73° F		
3/4″ × 1/2″ × 1/2″	200	48315K21	$2.64
3/4″ × 1″ × 3/4″	200	48315K17	6.08
1″ × 3/4″ × 3/4″	200	48315K23	4.56
1″ × 3/4″ × 1″	200	48315K27	2.83
1 1/4″ × 1″ × 1 1/4″	200	48315K18	3.68
1 1/2″ × 1″ × 1 1/2″	160	48315K28	6.42

Reducing Couplings

Pipe Size	Lg.	Max. psi @ 73° F		
3/4″ × 1/2″	3 1/8″	200	48315K71	$1.48
1″ × 1/2″	3 1/8″	200	48315K72	2.03
1″ × 3/4″	3 3/16″	200	48315K73	1.52
1 1/4″ × 1″	3 1/8″	200	48315K74	2.42
1 1/2″ × 1″	3 3/8″	160	48315K75	3.64
2″ × 1 1/2″	3 3/8″	160	48315K76	4.55

Barbed Light Gray Polypropylene and White Nylon Pipe Fittings

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: Polypropylene: 120° F; Nylon: 150° F
- Maximum Pressure: See below
- Pipe: Use with flexible polyethylene (see page 88)

Also known as insert fittings, just slip the barbed end into flexible polyethylene pipe and secure with a worm-drive clamp (not included, see page 274). All meet ASTM D2609.

Polypropylene has good strength and is more flexible than PVC and nylon. *Note:* The use of pipe tape on the threads is not recommended.

Nylon is a great choice when your application requires excellent strength and resistance to impact.

For polypropylene and nylon barbed tube fittings, see pages 156-159 and 162-163; for barbed hose fittings, see pages 286-290.

Connections: Barbed or threaded (NPT).

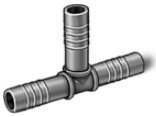

Pipe Size	Fitting OD	Max. psi @ 73° F	90° Elbows		90° Elbows, Barbed × Threaded Male		Tees		Couplings Lg.		Adapters, Barbed × Threaded Male Lg.	
Polypropylene												
1/2″	0.65″	60	4885K31	$0.93	4885K61	$1.06	4885K41	$1.03	3 1/32″	4885K21	$0.48	2 5/8″	4885K11	$0.45
3/4″	0.84″	60	4885K32	1.11	4885K62	1.45	4885K42	1.03	3 57/64″	4885K22	.53	2 3/4″	4885K12	.54
1″	1.09″	60	4885K33	1.22	4885K63	1.96	4885K43	1.28	3 1/64″	4885K23	.62	2 31/32″	4885K13	.60
1 1/4″	1.40″	60	4885K34	1.40	4885K64	2.63	4885K44	1.96	3 3/8″	4885K24	.93	3 5/64″	4885K14	.83
1 1/2″	1.65″	60	4885K35	1.67	4885K65	3.30	4885K45	2.27	3 5/8″	4885K25	1.10	3 7/32″	4885K15	1.03
2″	2.12″	60	4885K56	2.07	———	——	4885K46	4.50	4 1/8″	4885K26	1.72	3 31/64″	4885K16	1.83
Nylon												
1/2″	0.65″	60	43535K11	1.44	43535K21	2.33	43535K51	1.81	3 1/32″	43535K61	.92	2 41/64″	43535K71	.90
3/4″	0.84″	60	43535K12	1.90	43535K22	4.47	43535K52	2.18	2 7/8″	43535K62	.99	2 3/4″	43535K72	1.09
1″	1.09″	60	43535K13	1.97	43535K23	5.21	43535K53	3.24	3 1/64″	43535K63	1.44	3 1/64″	43535K73	1.37
1 1/4″	1.40″	60	43535K14	3.31	43535K24	6.20	43535K54	5.67	3 13/32″	43535K64	2.33	3 7/64″	43535K74	2.22
1 1/2″	1.65″	60	43535K15	4.79	43535K25	6.87	43535K55	7.15	3 21/32″	43535K65	2.99	3 7/32″	43535K75	2.97
2″	2.12″	60	43535K16	7.96	———	——	43535K56	9.69	4 9/64″	43535K66	3.70	3 31/64″	43535K76	3.84

Warning! ***Never use PVC, polypropylene, or nylon fittings and pipe with compressed air or gas.***

Polyethylene Pipe & PVC Pipe Fittings

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

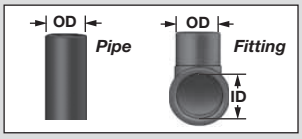

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, refer to the chart and select the corresponding pipe size. For example, if the actual OD or ID measures 1.315″, the corresponding pipe size is 1″.

Unthreaded OD or ID	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″	6.625″	8.625″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″	8″

Flexible Black Polyethylene Unthreaded Pipe for Barbed Fittings

- NSF 61 certified for use with drinking (potable) water
- Max.Temperature: 140° F
- Max. Pressure: See table
- Fittings: Use with barbed fittings (see page 87)

Strong and bendable, yet this high-density polyethylene pipe can easily be cut to length with a knife. Pipe meets ASTM D3350 and D2239, as well as BOCA.

Pipe Size	OD	ID	Max. psi @ 73° F	10-ft. Coils		25-ft. Coils		100-ft. Coils	
3/4″	1.050″	0.824″	160	4884K91	$27.48	4884K71	$33.59	4884K62	$76.33
1″	1.315″	1.049″	160	4884K92	34.81	4884K72	47.70	4884K63	128.93
1 1/4″	1.660″	1.380″	160	4884K93	42.20	4884K73	75.51	4884K64	222.09
1 1/2″	1.90″	1.610″	160	4884K94	56.73	4884K74	101.52	4884K65	298.58
2″	2.375″	2.067″	160	4884K95★	94.55	4884K75	169.19	4884K66	497.62

★ Cannot be coiled; comes as a 10-ft. length.

Thick-Wall (Schedule 80) Dark Gray PVC Unthreaded Pipe Fittings and Flanges

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: Fittings: Not rated; Flanges: 150 psi @ 72° F
- Pipe: Use thick-wall (Schedule 80) dark gray PVC unthreaded (see page 89)

Thicker walls give these PVC fittings more strength than standard-wall PVC fittings to handle higher pressures. PVC is the most widely used plastic material for plumbing applications, offering rigidity and corrosion resistance. All meet ASTM D2467, except the blind flanges.

Flanges are also called Class 150 flanges. Bolt two same-size flanges together with a gasket to form a tight seal (gasket required, but not included; see pages 3474-3480). *Easy-align* flanges, which are also called Van Stone flanges, have a ring that swivels for easy bolt hole alignment. *Blind* flanges close off the end of a pipe.

Connect fittings to pipe by cementing the pipe end (male) into the socket end (female) using a PVC primer and cement (see page 86). The pipe end is also known as a spigot. Connections: Unthreaded socket end (female) or unthreaded pipe end (male).

Socket End (Female) to Socket End (Female)

Pipe Size	90° Elbows		45° Elbows		22 1/2° Elbows		Wyes		Tees		Crosses		Unions	
1/4″	4881K281	$1.10	4881K311	$2.03	—	—	—	—	4881K47	$2.83	4881K321	$16.63	4881K68	$7.65
3/8″	4881K29	1.13	4881K39	2.14	—	—	—	—	4881K49	3.02	—	—	4881K69	7.84
1/2″	4881K21	1.14	4881K31	2.15	4881K161	$2.71	4881K181	$5.05	4881K41	3.23	4881K322	16.97	4881K61	1.84
3/4″	4881K22	1.47	4881K32	3.28	4881K162	4.14	4881K182	5.31	4881K42	3.16	4881K323	17.86	4881K62	5.33
1″	4881K23	2.36	4881K33	4.93	4881K163	6.20	4881K183	8.50	4881K113	4.23	4881K324	20.91	4881K63	6.09
1 1/4″	4881K24	3.15	4881K34	4.66	4881K164	7.89	4881K184	12.78	4881K114	11.21	4881K325	25.09	4881K64	12.07
1 1/2″	4881K25	3.38	4881K35	5.52	4881K165	9.33	4881K185	13.03	4881K115	11.61	4881K326	25.88	4881K65	13.67
2″	4881K26	4.09	4881K36	7.15	4881K166	12.08	4881K186	27.04	4881K116	14.52	4881K327	33.49	4881K66	18.51
2 1/2″	4881K261	9.41	4881K361	19.92	4881K167	33.42	4881K187	154.86	4881K121	15.55	4881K328	45.66	—	—
3″	4881K27	10.73	4881K37	22.97	4881K168	30.97	4881K188	109.26	4881K117	19.74	4881K329	56.95	4881K67	32.19
4″	4881K28	16.34	4881K38	35.46	4881K169	55.65	4881K189	110.80	4881K48	21.34	4881K331	99.10	—	—
6″	4881K282	27.81	4881K312	33.40	4881K171	70.07	4881K191	136.21	4881K118	46.76	4881K332	501.11	—	—
8″	4881K283	76.64	4881K313	72.45	4881K172	133.02	4881K192	607.97	4881K119	108.45	4881K333	671.67	—	—

Pipe Size	Caps		Couplings Lg.		
1/4″	4881K521	$1.88	1 3/8″	4881K711	$2.46
3/8″	4881K59	1.91	1 5/8″	4881K79	2.48
1/2″	4881K51	2.03	1 55/64″	4881K71	2.07
3/4″	4881K52	2.13	2 1/8″	4881K72	2.80
1″	4881K53	3.78	2 23/64″	4881K73	2.89
1 1/4″	4881K54	4.57	2 51/64″	4881K74	4.38
1 1/2″	4881K55	4.57	3 1/32″	4881K75	4.72
2″	4881K56	9.04	3 19/64″	4881K76	5.07
2 1/2″	4881K561	18.16	3 51/64″	4881K762	12.32
3″	4881K57	21.59	4″	4881K77	14.34
4″	4881K58	33.97	4 3/4″	4881K78	17.98
6″	4881K522	41.66	6 7/32″	4881K712	23.17
8″	4881K523	102.36	8 9/32″	4881K713	31.53

Reducing Tees

Pipe Size, (A) × (B) × (C)			Pipe Size, (A) × (B) × (C)		
3/4″ × 1/2″ × 3/4″	4881K141	$1.98	2″ × 1″ × 2″	4881K148	$7.59
1″ × 1/2″ × 1″	4881K142	2.76	2″ × 1 1/2″ × 2″	4881K149	7.90
1″ × 3/4″ × 1″	4881K143	2.88	2 1/2″ × 2″ × 2 1/2″	4881K151	10.31
1 1/4″ × 1″ × 1 1/4″	4881K144	5.54	3″ × 2″ × 3″	4881K152	14.50
1 1/2″ × 3/4″ × 1 1/2″	4881K145	5.76	4″ × 3″ × 4″	4881K153	23.42
1 1/2″ × 1″ × 1 1/2″	4881K146	5.99	6″ × 4″ × 6″	4881K154	62.85
1 1/2″ × 1 1/4″ × 1 1/2″	4881K147	6.24	8″ × 6″ × 8″	4881K155	81.29

Reducing Couplings

Pipe Size	Lg.		Pipe Size	Lg.	
3/4″ × 1/2″	2 1/64″	4881K131 $2.04	3″ × 2″	3 1/2″	4881K136 $17.49
1″ × 3/4″	2 5/16″	4881K132 2.98	4″ × 3″	5″	4881K137 32.97
1 1/4″ × 1″	2 11/16″	4881K133 6.04	6″ × 4″	6 45/64″	4881K138 67.24
1 1/2″ × 1 1/4″	3 53/64″	4881K134 7.81	8″ × 6″	7 31/32″	4881K139 113.57
2″ × 1 1/2″	2 13/16″	4881K135 7.12			

Socket End (Female) × Pipe End (Male)

90° Elbows

Pipe Size			Pipe Size			Pipe Size		
1/2″	4881K341	$1.53	1 1/2″	4881K345	$4.51	4″	4881K348	$23.22
3/4″	4881K342	1.95	2″	4881K346	5.45	6″	4881K349	66.09
1″	4881K343	3.14	3″	4881K347	15.28	8″	4881K351	165.59
1 1/4″	4881K344	4.21						

(Continued on following page)

Warning! ***Never use polyethylene or PVC fittings and pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at right. Then, refer to the chart and select the corresponding pipe size. For example, if the actual ID or OD measures 1.315″, the corresponding pipe size is 1″.

Unthreaded ID or OD	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″	6.625″	8.625″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″	8″

Thick-Wall (Schedule 80) Dark Gray PVC Unthreaded Pipe Fittings and Flanges

(Continued from previous page)

Pipe End (Male) × Socket End (Female) (Cont.)

45° Elbows

Pipe Size		
1/2″	4881K371	$2.30
3/4″	4881K372	3.51
1″	4881K373	5.27
1 1/4″	4881K374	6.70
1 1/2″	4881K375	7.93
2″	4881K376	10.28
3″	4881K377	26.26
4″	4881K378	47.30

Hex Reducing Bushings

Pipe Size, Male × Female		
3/8″ × 1/4″	4881K611	$1.96
1/2″ × 1/4″	4881K616	2.08
1/2″ × 3/8″	4881K612	1.83
3/4″ × 1/2″	4881K613	.66
1″ × 1/2″	4881K614	1.84
1″ × 3/4″	4881K615	1.91
1 1/4″ × 1/2″	4881K618	2.41
1 1/4″ × 3/4″	4881K619	2.88
1 1/4″ × 1″	4881K617	3.00
1 1/2″ × 1/2″	4881K621	3.15
1 1/2″ × 3/4″	4881K622	3.62

Pipe Size, Male × Female		
1 1/2″ × 1″	4881K626	$4.09
1 1/2″ × 1 1/4″	4881K623	3.93
2″ × 1/2″	4881K624	4.94
2″ × 3/4″	4881K625	5.15
2″ × 1″	4881K645	5.35
2″ × 1 1/4″	4881K646	5.61
2″ × 1 1/2″	4881K649	5.83
2 1/2″ × 1″	4881K647	7.22
2 1/2″ × 1 1/4″	4881K648	7.50
2 1/2″ × 1 1/2″	4881K652	7.79
2 1/2″ × 2″	4881K653	8.13

Pipe Size, Male × Female		
3″ × 1″	4881K651	$15.79
3″ × 1 1/4″	4881K661	13.45
3″ × 1 1/2″	4881K662	13.93
3″ × 2″	4881K663	16.02
3″ × 2 1/2″	4881K665	12.90
4″ × 2″	4881K666	17.86
4″ × 3″	4881K675	22.20
6″ × 2″	4881K674	24.86
6″ × 3″	4881K676	26.81
6″ × 4″	4881K677	18.46
8″ × 6″	4881K678	42.60

Flanges

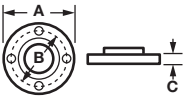

1/2″ to 3″ pipe sizes have four bolt holes; *4″ to 8″ pipe sizes* have eight bolt holes.

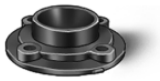

Socket End (Female)

Pipe Size	Bolt Circle (B)	Dia. (A)	Thick. (C)	Recom'd Bolt Size × Lg.		
1/2″	2 3/8″	3 17/32″	7/16″	1/2″ × 1 3/4″	4881K212	$6.25
3/4″	2 3/4″	3 29/32″	17/32″	1/2″ × 2″	4881K213	6.70
1″	3 1/8″	4 9/32″	19/32″	1/2″ × 2″	4881K214	7.46
1 1/4″	3 1/2″	4 21/32″	21/32″	1/2″ × 2 1/4″	4881K215	7.68
1 1/2″	3 7/8″	5 1/32″	11/16″	1/2″ × 2 3/4″	4881K216	7.84
2″	4 3/4″	6″	13/16″	5/8″ × 3″	4881K217	10.45
2 1/2″	5 1/2″	7″	31/32″	5/8″ × 3 1/4″	4881K223	15.88
3″	6″	7 1/2″	1 1/32″	5/8″ × 3 5/8″	4881K218	17.80
4″	7 1/2″	9″	1 1/32″	5/8″ × 3 3/4″	4881K219	22.54
6″	9 1/2″	10 31/32″	1 9/32″	3/4″ × 4 3/8″	4881K221	31.23
8″	11 3/4″	—	—	—	—	—

Easy Align, Socket End (Female)

Dia. (A)	Thick. (C)	Recom'd Bolt Size × Lg.		
3 17/32″	7/16″	1/2″ × 1 3/4″	4881K231	$4.70
3 29/32″	17/32″	1/2″ × 2″	4881K232	5.38
4 9/32″	19/32″	1/2″ × 2″	4881K233	6.00
4 21/32″	21/32″	1/2″ × 2 1/4″	4881K234	6.17
5 1/32″	11/16″	1/2″ × 2 3/4″	4881K235	6.30
6″	13/16″	5/8″ × 3″	4881K236	8.39
—	—	—	—	—
7 1/2″	1 1/32″	5/8″ × 3 5/8″	4881K238	14.33
9″	1 1/32″	5/8″ × 3 3/4″	4881K239	18.12
10 31/32″	1 9/32″	3/4″ × 4 3/8″	4881K241	25.17
13 1/2″	1 1/8″	3/4″ × 4 3/8″	4881K237	46.40

Blind

Dia. (A)	Thick. (C)	Recom'd Bolt Size × Lg.		
3 1/2″	9/16″	1/2″ × 2″	4881K962	$9.37
3 7/8″	5/8″	1/2″ × 2″	4881K963	11.17
4 1/4″	3/4″	1/2″ × 2 1/4″	4881K964	15.25
4 5/8″	23/32″	1/2″ × 2 1/4″	4881K965	18.35
5″	3/4″	1/2″ × 2 1/2″	4881K966	18.72
5 15/16″	13/16″	5/8″ × 3″	4881K967	27.97
7″	1″	5/8″ × 3 1/4″	4881K968	45.57
7 1/2″	1 1/16″	5/8″ × 3 1/4″	4881K969	54.99
9″	1 1/4″	5/8″ × 3 1/2″	4881K971	68.51
11″	1 3/8″	3/4″ × 4″	4881K972	83.25
13 1/2″	1 7/16″	3/4″ × 4 1/2″	4881K973	123.58

Thick-Wall (Schedule 80) Dark Gray PVC Unthreaded Pipe

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: See below
- Fittings and Flanges: Use thick-wall (Schedule 80) dark gray PVC unthreaded (see pg. 88 and above)

The thicker walls make this pipe stronger and able to withstand higher pressures than standard-wall PVC pipe. PVC is the most widely used plastic material for plumbing applications, offering rigidity and corrosion resistance. Meet ASTM D1784 and D1785. Connect pipe to fittings by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86).

Pipe Size	OD	ID	Max. psi @ 73° F	5-ft. Lengths		10-ft. Lengths	
1/4″	0.540″	0.282″	1,130	48855K41	$3.04	48855K51	$4.60
3/8″	0.675″	0.403″	920	48855K29	5.71	48855K19	10.38
1/2″	0.840″	0.526″	850	48855K21	2.93	48855K11	5.32
3/4″	1.050″	0.722″	690	48855K22	3.96	48855K12	7.20
1″	1.315″	0.936″	630	48855K23	5.81	48855K13	8.81
1 1/4″	1.660″	1.255″	520	48855K24	9.04	48855K14	12.06
1 1/2″	1.90″	1.476″	470	48855K25	9.08	48855K15	13.76
2″	2.375″	1.913″	400	48855K26	$12.57	48855K16	$19.04
2 1/2″	2.875″	2.290″	420	48855K31	22.02	48855K54	37.97
3″	3.50″	2.864″	370	48855K27	26.76	48855K17	46.13
4″	4.50″	3.786″	320	48855K28	39.11	48855K18	67.43
6″	6.625″	5.709″	280	48855K42	74.70	48855K52	128.79
8″	8.625″	7.565″	250	48855K43	113.30	48855K53	195.34

UV-Resistant Thick-Wall (Schedule 80) Black PVC Unthreaded Pipe

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: See table at right

Just as strong and rigid as the PVC pipe above, but this pipe is specially formulated with a UV inhibitor to protect sensitive material from light. Great for use outdoors. All meet ASTM D2467.

Connect pipe to fittings by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86).

Pipe Size	OD	ID	Max. psi @ 72° F	4-ft. Lengths		8-ft. Lengths	
1/4″	0.540″	0.282″	570	5066K11	$8.90	5066K21	$17.11
3/8″	0.675″	0.403″	460	5066K12	12.03	5066K22	23.14
1/2″	0.840″	0.526″	420	5066K13	17.39	5066K23	33.45
3/4″	1.050″	0.722″	340	5066K14	23.94	5066K24	46.03
1″	1.315″	0.935″	320	5066K15	35.57	5066K25	68.41
1 1/2″	1.90″	1.476″	240	5066K16	59.51	5066K26	114.44
2″	2.375″	1.913″	200	5066K17	82.79	5066K27	159.21

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

PVC Pipe & Fittings

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

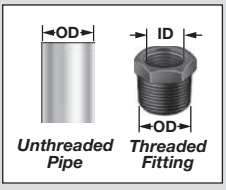

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at left. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size. For ***threaded*** fittings, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the threaded OD or ID measures 1 3/16″, the next highest OD or ID in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Unthreaded OD	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″	6.625″
Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	____
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″

Thick-Wall (Schedule 80) Clear PVC Unthreaded Pipe

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Max. Pressure: See below
- Fittings and Flanges: Use thick-wall (Schedule 80) dark gray PVC unthreaded (see pages 88-89)

Clear pipe provides optimum visibility, allowing you to see what's flowing through your piping system. Ideal for heavy duty applications, this pipe has thicker walls than standard-wall clear PVC pipe, so it is stronger and can withstand higher pressures. This pipe is UL 94V0 listed for flammability and meets ASTM D1784 and D1785; the material meets FDA (food and beverage).

Connect pipe to fittings by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86).

Pipe Size	OD	ID	Max. psi @ 73° F	4-ft. Lengths		8-ft. Lengths	
1/4″	0.540″	0.282″	570	4740K41	$7.91	4740K18	$10.83
3/8″	0.675″	0.403″	460	4740K42	10.90	4740K19	14.93
1/2″	0.840″	0.526″	420	4740K43	15.97	4740K21	21.88
3/4″	1.050″	0.722″	340	4740K44	21.57	4740K22	29.55
1″	1.315″	0.936″	320	4740K45	31.77	4740K23	43.52
1 1/4″	1.660″	1.255″	260	4740K46	43.79	4740K24	59.98
1 1/2″	1.90″	1.476″	240	4740K47	$53.19	4740K25	$72.86
2″	2.375″	1.913″	200	4740K48	72.81	4740K26	99.74
2 1/2″	2.875″	2.290″	210	4740K49	112.14	4740K27	153.61
3″	3.50″	2.864″	190	4740K51	130.20	4740K28	164.81
4″	4.50″	3.786″	160	4740K52	190.34	4740K31	240.94
6″	6.625″	5.709″	140	4740K53	292.44	4740K32	411.89

Thick-Wall (Schedule 80) Dark Gray PVC Threaded Pipe Fittings and Flanges

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: Fittings: Not rated; Flanges: 150 psi @ 73° F
- Pipe Nipples and Pipe: Use thick-wall (Schedule 80) PVC threaded (see pages 92-93) *Note:* Pipe nipples and pipe are rated 110° F

The threads on these fittings and flanges permit quick and easy connections. All are made of rigid, corrosion-resistant PVC, which is the most popular plastic material for plumbing applications. They have thicker walls than standard-wall fittings, making them stronger to handle heavy duty applications. All meet ASTM D2464 and D2467.

Hex-head plugs are hollow. ***Flanges*** are also called Class 150 flanges.

Bolt two same-size flanges together with a gasket to form a tight seal (gasket required, but not included; see pages 3474-3480).

Connect unthreaded fittings to pipe by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86). The pipe end is also known as a spigot. Connections: Threaded (NPT), unthreaded socket end (female), or unthreaded pipe end (male).

Threaded

Pipe Size	90° Elbows		45° Elbows		Tees		Caps		Unions		Hex-Head Plugs		Couplings Lg.	
1/4″	4596K121	$2.49	4596K18	$4.78	4596K321	$3.27	4596K39	$2.22	4596K83	$8.76	4596K71	$1.76	1 1/4″	4596K51 $2.39
3/8″	4596K122	2.74	4596K19	4.97	4596K322	3.42	4596K41	2.33	4596K84	9.11	4596K72	1.83	1 15/32″	4596K69 2.65
1/2″	4596K12	2.56	4596K22	4.10	4596K32	3.60	4596K42	2.44	4596K62	4.75	4596K73	1.88	2 1/32″	4596K52 2.23
3/4″	4596K13	3.18	4596K23	4.40	4596K33	4.00	4596K43	2.74	4596K63	5.98	4596K74	1.95	2 3/16″	4596K53 3.19
1″	4596K14	4.00	4596K24	5.53	4596K34	6.79	4596K44	3.45	4596K64	7.97	4596K75	2.39	2 15/32″	4596K54 3.42
1 1/4″	4596K15	4.31	4596K25	8.44	4596K35	7.21	4596K45	4.11	4596K65	15.20	4596K76	3.53	2 23/32″	4596K55 4.23
1 1/2″	4596K16	6.12	4596K26	10.61	4596K36	8.74	4596K46	4.69	4596K66	18.81	4596K77	4.29	3 31/32″	4596K56 7.24
2″	4596K17	6.89	4596K27	15.72	4596K37	9.40	4596K47	9.21	4596K67	24.73	4596K78	4.40	3 7/32″	4596K57 7.61
2 1/2″	4596K125	26.84	4596K21	31.11	4596K31	34.20	4596K38	18.43	4596K85	60.14	4596K79	12.30	3 9/32″	4596K61 23.60
3″	4596K123	33.29	4596K28	38.49	4596K325	35.72	4596K48	21.69	4596K68	62.72	4596K81	14.36	3 1/2″	4596K58 27.67
4″	4596K124	58.58	4596K29	55.23	4596K326	58.05	4596K49	29.39	4596K86	73.70	4596K82	21.50	3 31/32″	4596K59 36.86

Hex Reducing Bushings

Pipe Size, Male × Female			Pipe Size, Male × Female			Pipe Size, Male × Female			Pipe Size, Male × Female		
3/8″ × 1/4″	4596K401	$3.66	1″ × 3/8″	4596K413	$3.52	1 1/2″ × 3/4″	4596K428	$4.42	2″ × 1 1/2″	4596K446	$7.13
1/2″ × 1/4″	4596K402	3.83	1″ × 1/2″	4596K416	3.69	1 1/2″ × 1″	4596K434	4.63	2 1/2″ × 2″	4596K445	9.66
1/2″ × 3/8″	4596K403	4.02	1″ × 3/4″	4596K418	3.87	1 1/2″ × 1 1/4″	4596K436	4.87	3″ × 1 1/2″	4596K447	12.49
3/4″ × 1/4″	4596K404	2.86	1 1/4″ × 1/2″	4596K422	3.73	2″ × 1/2″	4596K437	6.20	3″ × 2″	4596K448	12.79
3/4″ × 3/8″	4596K405	3.00	1 1/4″ × 3/4″	4596K424	3.91	2″ × 3/4″	4596K439	6.48	3″ × 2 1/2″	4596K443	13.11
3/4″ × 1/2″	4596K414	2.47	1 1/4″ × 1″	4596K426	4.11	2″ × 1″	4596K438	6.79	4″ × 3″	4596K449	26.57
1″ × 1/4″	4596K407	4.84	1 1/2″ × 1/2″	4596K427	4.87	2″ × 1 1/4″	4596K444	7.13			

Unthreaded Pipe End (Male) to Threaded End

Male Adapters

Pipe Size		
1/2″	4596K661	$2.60
3/4″	4596K662	3.83
1″	4596K663	5.66
1 1/2″	4596K665	6.85
2″	4596K666	7.97

Hex Reducing Bushings

Pipe Size, Male × Female			Pipe Size, Male × Female			Pipe Size, Male × Female		
3/4″ × 1/2″	4596K821	$1.16	1 1/2″ × 1″	4596K828	$4.47	2 1/2″ × 2″	4596K836	$12.14
1″ × 1/2″	4596K822	1.75	1 1/2″ × 1 1/4″	4596K829	4.69	3″ × 2″	4596K837	21.41
1″ × 3/4″	4596K823	1.85	2″ × 1/2″	4596K831	5.21	3″ × 2 1/2″	4596K838	22.48
1 1/4″ × 3/4″	4596K824	3.56	2″ × 3/4″	4596K832	5.34	4″ × 2″	4596K839	25.58
1 1/4″ × 1″	4596K825	3.74	2″ × 1″	4596K833	5.46	4″ × 3″	4596K841	26.57
1 1/2″ × 1/2″	4596K826	4.47	2″ × 1 1/4″	4596K834	5.60	6″ × 4″	4596K842	30.61
1 1/2″ × 3/4″	4596K827	4.69	2″ × 1 1/2″	4596K835	5.74			

(Continued on following page)

Warning! ***Never use PVC fittings, pipe, or pipe nipples with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic fittings and pipe, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at right. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size. For ***threaded*** fittings, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the threaded ID or OD measures 1³⁄₁₆″, the next highest ID or OD in the chart is 1⅜″, and the corresponding pipe size is 1″.

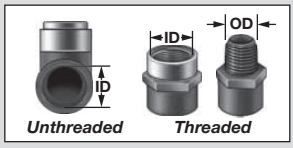

Unthreaded ID	0.540″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″
Threaded ID or OD	½″	¾″	1″	1⅜″	1⅝″	1⅞″	2⅜″	2⅞″	3½″	4½″
Pipe Size	¼″	½″	¾″	1″	1¼″	1½″	2″	2½″	3″	4″

Thick-Wall (Schedule 80) Dark Gray PVC Threaded Pipe Fittings and Flanges

(Continued from previous page)

Unthreaded Socket End (Female) to Threaded End

Pipe Size	90° Elbows		Tees		Unions		Female Adapters Lg.		Male Adapters Lg.	
¼″	4596K621	$4.62	4596K631	$7.96	—	—	1 13⁄32″	4596K843	—	—
½″	4596K622	4.13	4596K632	4.69	4596K641	$4.75	2″	4596K844	1⅞″	4596K854 $2.34
¾″	4596K623	4.86	4596K633	6.07	4596K642	6.64	2 9⁄32″	4596K845	2 3⁄16″	4596K855 2.57
1″	4596K624	5.26	4596K634	7.10	4596K643	8.83	2½″	4596K846	2⅜″	4596K856 4.46
1¼″	4596K625	6.07	4596K635	7.59	4596K644	16.87	2 13⁄16″	4596K847	2 9⁄16″	4596K857 5.21
1½″	4596K626	7.23	4596K636	10.35	4596K645	17.54	3 3⁄32″	4596K848	2 11⁄16″	4596K858 7.49
2″	4596K627	9.37	4596K637	12.77	4596K646	27.01	3 11⁄32″	4596K849	2⅞″	4596K859 10.83
2½″	—	—	—	—	4596K647	66.35	3 25⁄32″	4596K851	3 11⁄16″	4596K861 12.30
3″	4596K628	26.00	—	—	4596K648	88.12	4 1⁄32″	4596K852	3 15⁄16″	4596K862 13.66
4″	4596K629	49.03	—	—	4596K649	101.27	4⅞″	4596K853	4½″	4596K863 24.30

Threaded Flanges

Pipe Size	Dia. (A)	Bolt Circle (B)	Thick. (C)	No. of Bolt Holes	Recommended Bolt Size × Lg.		
½″	3½″	2⅜″	7⁄16″	4	½″ × 1¾″	4596K152	$7.24
¾″	3⅞″	2¾″	9⁄16″	4	½″ × 1 15⁄16″	4596K153	8.48
1″	4¼″	3⅛″	19⁄32″	4	½″ × 2″	4596K154	9.28
1¼″	4⅝″	3½″	21⁄32″	4	½″ × 2¼″	4596K155	12.80
1½″	5″	3⅞″	11⁄16″	4	½″ × 2¾″	4596K156	13.97
2″	6″	4¾″	27⁄32″	4	⅝″ × 3″	4596K157	14.28
2½″	7 1⁄16″	5½″	29⁄32″	4	⅝″ × 3¼″	4596K161	25.26
3″	7½″	6″	1 1⁄16″	4	⅝″ × 3⅝″	4596K158	26.01
4″	9″	7½″	1″	8	⅝″ × 3¾″	4596K159	48.86

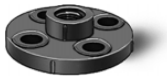
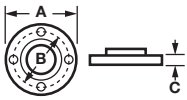

PVC-to-Metal Thick-Wall (Schedule 80) Dark Gray PVC Pipe Fittings

- NSF 61 certified for use with drinking (potable) water
- Max. Temperature: 140° F
- Max. Pressure: Not rated
- Pipe: Use with thick-wall (Schedule 80) dark gray PVC unthreaded (see pg. 89)

Transition your piping system from PVC to brass or copper with these fittings. Made of PVC, all of these fittings have a molded-in-place brass threaded insert and a stainless steel reinforcement collar. ***Unions*** are furnished with an O-ring. Fittings meet ASTM D2467; threads meet ANSI B1.20.1.

Connect unthreaded fittings and pipe by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86).

Connections: Unthreaded socket end (female) or threaded (NPT).

Also Available: CPVC-to-metal thick-wall (Schedule 80) pipe fittings for temperatures up to 200° F. Please ask for 43565K12 and specify pipe size and shape from the listing below.

Unthreaded Socket End (Female) to Threaded End (Female)

Pipe Size	90° Elbows		Adapters Lg.		Unions		Tees Pipe Size, (A) × (B) × (C)	
½″ × ½″	46695K51	$36.61	1 25⁄32″	46695K71 $31.64	—	—	½″ × ½″ × ½″	46695K61 $41.69
¾″ × ½″	46695K53	45.72	1 15⁄16″	46695K72 46.96	—	—	¾″ × ½″ × ¾″	46695K63 52.04
¾″ × ¾″	46695K55	64.84	2″	46695K73 45.43	—	—	¾″ × ¾″ × ¾″	46695K65 83.56
1″ × 1″	—	—	2 9⁄32″	46695K74 78.28	46695K81	$83.15		
1¼″ × 1¼″	—	—	2⅜″	46695K75 128.91	46695K82	143.50		
1½″ × 1½″	—	—	2 17⁄32″	46695K76 169.35	46695K83	189.91		
2″ × 2″	—	—	2 11⁄16″	46695K77 209.73	46695K84	252.40		

Metric-to-Inch Thick-Wall Dark Gray PVC Pipe Unions

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: 235 psi @ 73° F
- Pipe: Use with thick-wall (Schedule 80) dark gray PVC unthreaded (see page 89)

Use these unions to convert your pipe from German DIN (Deutsche Industrie Normen) standards to inch pipe sizes. Made of corrosion-resistant PVC with an O-ring. The DIN mm size is the actual OD of the pipe.

Connect unthreaded fittings and pipe by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86).

Connections: Unthreaded socket end (female).

Unthreaded Socket End (Female) on Both Ends

DIN Size	Pipe Size		
20 mm	½″	5460K11	$10.46
25 mm	¾″	5460K12	13.32
32 mm	1″	5460K13	15.20
40 mm	1¼″	5460K14	30.19
50 mm	1½″	5460K15	34.19
63 mm	2″	5460K16	46.37
110 mm	4″	5460K18	120.21

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

PVC Pipe Fittings & Nipples

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

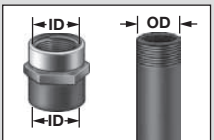

Threaded/ Unthreaded Fitting — *Threaded Pipe*

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at left. For ***threaded*** fittings and pipe, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the threaded ID or OD measures 1 3/16″, the next highest ID or OD in the chart is 1 3/8″, and the corresponding pipe size is 1″. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	6 5/8″
Unthreaded ID	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	—	—	—	—
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″

Reinforced Thick-Wall (Schedule 80) Dark Gray PVC Threaded Pipe Fittings

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: Not rated, except unions which are 235 psi @ 73° F
- Pipe Nipples and Pipe: Use thick-wall (Schedule 80) dark gray PVC threaded (see below and page 93) *Note:* Pipe nipples and pipe are rated 110° F

Take the worry out of over-tightening female plastic pipe threads—these PVC fittings have a stainless steel collar to support the threads and keep them from cracking. Threaded connections permit quick and easy installation. ***Unions*** have an O-ring. All meet ASTM D1784 and D2467.
Connections: Threaded (NPT) or unthreaded socket end (female).

Threaded on Both Ends

Couplings

Pipe Size	Lg.		
1/2″	1 19/32″	9174K21	$4.68
3/4″	1 5/8″	9174K22	6.65
1″	1 31/32″	9174K23	7.11
1 1/4″	2 1/16″	9174K24	8.85
1 1/2″	2 5/32″	9174K25	19.60
2″	2 1/4″	9174K26	20.55

Unthreaded Socket End (Female) to Threaded End

Unions

Pipe Size		
1/4″	9174K41	$19.40
3/8″	9174K42	19.40
1/2″	9174K43	10.54
3/4″	9174K44	14.51
1″	9174K45	18.85
1 1/4″	9174K46	36.03
1 1/2″	9174K47	44.45
2″	9174K48	67.89

Adapters

Lg.		
1 13/32″	9174K31	$7.08
1 15/32″	9174K32	7.08
1 3/4″	9174K33	3.93
1 7/8″	9174K34	5.72
2 5/32″	9174K35	8.51
2 5/16″	9174K36	13.76
2 7/16″	9174K37	16.94
2 11/16″	9174K38	29.53

Reducing Adapters

Pipe Size, (A) × (B)	Lg.		
1/2″ × 3/4″	1 3/4″	9174K51	$5.72
3/4″ × 1/2″	1 7/8″	9174K52	5.72
3/4″ × 1″	2 1/16″	9174K53	8.51
1″ × 1/2″	2″	9174K54	8.51
1″ × 3/4″	2 1/8″	9174K55	8.51

Unthreaded Socket End (Female) to Threaded End to Unthreaded Socket End (Female)

Tees

Pipe Size		
1/2″	9174K11	$10.21
1″	9174K12	16.96

Reducing Tees

Pipe Size, (A) × (B) × (C)		
1/2″ × 1/4″ × 1/2″	9174K61	$10.21
3/4″ × 1/4″ × 3/4″	9174K62	13.26
3/4″ × 1/2″ × 3/4″	9174K63	13.26
1 1/2″ × 1″ × 1 1/2″	9174K64	24.51

Thick-Wall (Schedule 80) Dark Gray PVC Threaded Pipe Nipples

- NSF 61 certified for use with drinking (potable) water
- Max. Temperature: 110° F
- Max. Pressure: See below
- Fittings and Flanges: Use thick-wall (Schedule 80) dark gray PVC threaded (see pages 90-91)

With threads at each end, these nipples connect quickly and easily to threaded fittings and flanges. PVC is the most popular plastic material for plumbing applications, offering rigidity and corrosion resistance. All meet ASTM D1784.
Fully threaded nipples are also called close nipples; they are threaded on each end to the center.
Connections: NPT.

Pipe Size	Max. psi @ 73° F	FULLY THREADED Lg.			THREADED ON BOTH ENDS 1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths	
1/4″	565	7/8″	4882K11	$1.44	4882K21	$1.56	4882K26	$1.76	4882K211	$2.00	4882K41	$2.12
3/8″	460	1″	4882K12	1.56	4882K23	1.72	4882K27	1.96	4882K212	2.20	4882K42	2.52
1/2″	425	1 1/8″	4882K13	.72	4882K24	.80	4882K28	.88	4882K213	1.48	4882K43	1.00
3/4″	345	1 3/8″	4882K14	.80	—	—	4882K29	.88	4882K214	1.80	4882K44	1.24
1″	315	1 1/2″	4882K15	1.16	—	—	4882K3	1.32	4882K215	2.32	4882K45	1.44
1 1/4″	260	1 5/8″	4882K16	1.36	—	—	4882K31	1.80	4882K216	2.16	4882K46	1.92
1 1/2″	235	1 3/4″	4882K17	1.56	—	—	4882K32	1.96	4882K217	1.92	4882K47	2.20
2″	200	2″	4882K18	3.12	—	—	—	—	4882K218	3.28	4882K48	3.60
2 1/2″	210	2 1/2″	4882K193	7.04	—	—	—	—	—	—	4882K25	7.56
3″	185	2 5/8″	4882K19	8.24	—	—	—	—	—	—	4882K49	8.84
4″	160	2 7/8″	4882K191	10.72	—	—	—	—	—	—	—	—
6″	140	3 1/8″	4882K192	73.31	—	—	—	—	—	—	—	—

THREADED ON BOTH ENDS

Pipe Size	Max. psi @ 73° F	3 1/2″ Lengths		4″ Lengths		4 1/2″ Lengths		5″ Lengths		5 1/2″ Lengths	
1/4″	565	4882K251	$2.32	4882K51	$2.52	4882K231	$2.76	4882K71	$2.88	4882K271	$3.12
3/8″	460	4882K252	2.76	4882K52	3.04	4882K232	3.28	4882K72	3.44	4882K272	3.68
1/2″	425	4882K253	1.72	4882K53	1.16	4882K233	1.92	4882K73	1.32	4882K273	2.04
3/4″	345	4882K254	2.00	4882K54	1.36	4882K234	2.52	4882K74	1.60	4882K274	2.76
1″	315	4882K255	2.68	4882K55	1.68	4882K235	3.20	4882K75	1.96	4882K275	3.44
1 1/4″	260	4882K256	3.60	4882K56	2.04	4882K236	4.04	4882K76	2.32	4882K276	4.60
1 1/2″	235	4882K257	4.32	4882K57	2.60	4882K237	5.12	4882K77	3.00	4882K277	5.72
2″	200	4882K258	5.28	4882K58	4.16	4882K238	6.16	4882K78	4.84	4882K278	6.92
2 1/2″	210	4882K259	8.24	4882K593	8.64	4882K239	9.28	4882K793	9.80	4882K279	10.40
3″	185	4882K261	9.60	4882K59	10.28	4882K241	11.12	4882K79	11.76	4882K281	12.56
4″	160	—	—	4882K591	13.16	4882K242	14.20	4882K791	15.24	4882K282	17.44
6″	140	—	—	4882K592	80.60	4882K243	87.94	4882K792	87.94	4882K283	97.74

(Continued on following page)

Warning! ***Never use PVC fittings or pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD), as shown at right. For ***threaded*** pipe, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the threaded OD measures 1 3/16″, the next highest OD in the chart is 1 3/8″, and the corresponding pipe size is 1″. For ***unthreaded*** pipe, take the actual measurement and select the corresponding pipe size.

Threaded OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	6 5/8″
Unthreaded OD	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″	6.625″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″

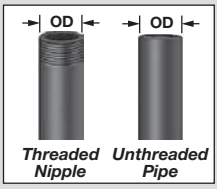

Thick-Wall (Schedule 80) Dark Gray PVC Threaded Pipe Nipples *(Cont. from previous page)*

THREADED ON BOTH ENDS

Pipe Size	Max. psi @ 73° F	6″ Lengths		7″ Lengths		8″ Lengths		10″ Lengths		12″ Lengths	
1/4″	565	4882K62	$3.32	4882K321	$4.32	4882K81	$4.72	4882K91	$4.92	4882K911	$5.56
3/8″	460	4882K63	3.88	4882K322	4.92	4882K82	5.76	4882K92	6.48	4882K912	6.56
1/2″	425	4882K64	1.36	4882K323	3.44	4882K83	3.60	4882K93	3.92	4882K913	4.36
3/4″	345	4882K65	1.68	4882K324	3.68	4882K84	3.92	4882K94	4.72	4882K914	5.44
1″	315	4882K66	2.12	4882K325	4.68	4882K85	4.96	4882K95	5.68	4882K915	6.92
1 1/4″	260	4882K67	2.60	4882K326	5.72	4882K86	6.28	4882K96	7.24	4882K916	8.60
1 1/2″	235	4882K68	3.32	4882K327	7.24	4882K87	7.72	4882K97	8.84	4882K917	10.60
2″	200	4882K69	5.40	4882K328	8.72	4882K88	9.64	4882K98	11.16	4882K918	13.32
2 1/2″	210	4882K613	10.88	4882K329	13.92	4882K893	13.92	4882K993	17.28	4882K923	19.48
3″	185	4882K61	13.28	4882K331	15.44	4882K89	18.28	4882K99	21.20	4882K919	24.20
4″	160	4882K611	17.44	4882K332	21.64	4882K891	21.68	4882K991	28.08	4882K921	32.40
6″	140	4882K612	97.71	4882K333	106.86	4882K892	106.86	4882K992	138.20	4882K922	146.57

Thick-Wall (Schedule 80) Dark Gray PVC Threaded Pipe

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 110° F
- Maximum Pressure: See table
- Fittings and Flanges: Use with thick-wall (Schedule 80) dark gray PVC threaded (see pages 90-91)

Threads on both ends allow quick and easy connections. PVC is the most popular plastic material for plumbing applications, offering rigidity and corrosion resistance. All meet ASTM D1784 and D1785. Connections: NPT.

Pipe Size	Max. psi @ 73° F	24″ Lengths		36″ Lengths		60″ Lengths	
1/4″	565	4687T11	$10.01	4687T31	$15.31	4687T51	$29.45
3/8″	460	4687T12	10.75	4687T32	16.44	4687T52	31.62
1/2″	425	4687T13	4.01	4687T33	6.13	4687T53	11.78
3/4″	345	4687T14	5.58	4687T34	7.67	4687T54	13.95
1″	315	4687T15	7.90	4687T35	10.86	4687T55	19.75
1 1/4″	260	4687T16	10.67	4687T36	14.67	4687T56	26.68
1 1/2″	235	4687T17	13.15	4687T37	18.08	4687T57	32.88
2″	200	4687T18	17.20	4687T38	23.66	4687T58	43.01
2 1/2″	210	4687T19	24.05	4687T39	39.16	4687T59	55.94
3″	185	4687T21	29.81	4687T41	48.52	4687T61	69.32
4″	160	4687T22	41.72	4687T42	52.85	4687T62	92.72

Thick-Wall (Schedule 80) Clear PVC Threaded Pipe Nipples

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 110° F
- Maximum Pressure: See table
- Fittings and Flanges: Use with thick-wall (Schedule 80) dark gray PVC threaded (see pages 90-91)

Made of transparent PVC, these pipe nipples have the rigidity and corrosion resistance of dark gray PVC except with a see-through benefit. They're compatible with other thick-wall (Schedule 80) threaded fittings and pipe. Meet ASTM D1784 and D1785.

Fully threaded nipples are also called close nipples; they're threaded on each end to the center. Connections: NPT.

Fully Threaded

Threaded on Both Ends

Pipe Size	Max. psi @ 73° F	FULLY THREADED Lg.			THREADED ON BOTH ENDS 3″ Lengths		4″ Lengths		6″ Lengths	
1/2″	210	11/8″	4677T11	$1.62	4677T21	$4.31	4677T31	$5.76	4677T41	$8.61
3/4″	170	1 3/8″	4677T12	2.66	4677T22	5.83	4677T32	7.76	4677T42	11.63
1″	160	1 1/2″	4677T13	4.28	4677T23	8.56	4677T33	11.43	4677T43	17.12
1 1/2″	120	1 3/4″	4677T14	8.35	4677T24	12.73	4677T34	16.97	4677T44	25.47
2″	100	2″	4677T15	13.22	4677T25	19.86	4677T35	26.45	4677T45	39.67
3″	95	2 5/8″	4677T16	36.35	4677T26	39.90	4677T36	48.48	4677T46	64.60
4″	80	2 7/8″	4677T17	50.92	———	———	4677T37	62.98	4677T47	94.47

Thick-Wall (Schedule 80) Dark Gray PVC Threaded-On-One-End Pipe Nipples

- NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 110° F
- Maximum Pressure: See below
- Fittings and Flanges: Use with thick-wall (Schedule 80) dark gray PVC threaded (see pages 90-91)

Easily convert socket end (female) connections to threaded connections with these threaded-on-one-end nipples. They're made of PVC, which offers rigidity and corrosion resistance. All meet ASTM D1784.

Connect unthreaded pipe to fittings by cementing the pipe end (male) into the socket end (female) using a primer and cement (see page 86). Connections: NPT on one end; unthreaded on other end.

Pipe Size	OD	ID	Max. psi @ 73° F	2″ Lengths		3″ Lengths		4″ Lengths		6″ Lengths		12″ Lengths	
1/4″	0.540″	0.288″	565	9173K31	$1.76	9173K51	$2.16	9173K71	$2.56	9173K511	$3.32	9173K411	$6.08
3/8″	0.675″	0.407″	460	9173K32	1.76	9173K52	2.56	9173K72	3.04	9173K512	3.88	9173K412	7.20
1/2″	0.840″	0.528″	425	9173K33	1.36	9173K53	1.56	9173K73	1.80	9173K513	2.12	9173K413	4.36
3/4″	1.050″	0.724″	345	9173K34	1.68	9173K54	1.92	9173K74	2.24	9173K514	2.96	9173K414	5.44
1″	1.315″	0.935″	315	9173K35	2.16	9173K55	2.48	9173K75	2.92	9173K515	3.60	9173K415	6.92
1 1/4″	1.660″	1.256″	260	9173K36	2.80	9173K56	3.32	9173K76	3.84	9173K516	4.84	9173K416	8.60
1 1/2″	1.90″	1.476″	235	9173K37	3.16	9173K57	3.92	9173K77	4.72	9173K517	5.88	9173K417	10.60
2″	2.375″	1.913″	200	9173K38	3.24	9173K58	4.76	9173K78	5.72	9173K518	7.84	9173K418	13.32
2 1/2″	2.875″	2.289″	210	———	———	9173K59	7.56	9173K79	8.68	9173K519	10.88	9173K419	19.48
3″	3.50″	2.864″	185	———	———	9173K61	8.88	9173K81	10.28	9173K621	13.28	9173K421	24.20
4″	4.50″	3.786″	160	———	———	———	———	9173K82	13.16	9173K622	17.44	9173K422	32.40
6″	6.625″	5.709″	140	———	———	———	———	9173K83	80.31	9173K623	97.71	9173K423	146.57

Warning! ***Never use PVC fittings and pipe with compressed air or gas.***

CPVC Cement, Primer & Pipe Fittings

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

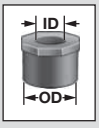

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at left. Then, refer to the chart and select the corresponding pipe size. For example, if the actual ID or OD measures 1.315″, the corresponding pipe size is 1″.

Untreaded ID or OD	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″	6.625″	8.625″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″	8″

CPVC Cement and Primer

Create firm, leakproof joints between CPVC pipe and fittings. All are NSF 61 certified for use with drinking (potable) water. These products are also compliant under all state VOC rules in effect on November 1, 2010.

Cement meets ASTM F493. For more CPVC cement, see page 3421.

Primer prepares CPVC pipe for solvent welding. To achieve greater overall strength, use primer before applying cement.

Size	Orange Cement		Purple Primer	
8 oz.	24285K31	$4.40	18815K71	$4.67
16 oz.	24285K32	8.57	18815K72	9.08
32 oz.	24285K33	17.41	24285K43	15.06

Thick-Wall (Schedule 80) Light Gray CPVC Unthreaded Pipe Fittings and Flanges

- Use with hot water; NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 200° F
- Maximum Pressure: Fittings: Not rated; Flanges: 150 psi @ 72° F
- Pipe: Use thick-wall (Schedule 80) light gray CPVC unthreaded (see page 95)

CPVC is similar to PVC, except it has the addition of chlorine so it stands up to higher temperature applications such as hot water. All meet ASTM D1784 and F439.

Unions have an O-ring. ***Flanges*** are also called Class 150 flanges. Bolt two same-size flanges together with a gasket to form a tight seal (gasket required, but not included; see pages 3474-3480).

Easy-align flanges, also known as Van Stone flanges, have a ring that swivels for easy bolt-hole alignment.

Connect fittings to pipe by cementing the pipe end (male) into the socket end (female) using a CPVC primer and cement (see above). The pipe end is also known as a spigot. Connections: Socket end (female) or pipe end (male).

Socket End (Female) to Socket End (Female)

Pipe Size	90° Elbows		45° Elbows		22 1/2° Elbows		Wyes		Tees		Crosses		Unions	
1/4″	6826K41	$5.15	6826K31	$7.65	—	—	—	—	6826K61	$5.13	6826K271	$21.86	6826K97	$7.85
3/8″	6826K51	5.69	6826K98	8.46	—	—	—	—	6826K99	5.23	—	—	6826K611	15.20
1/2″	6826K12	2.02	6826K22	2.47	6826K221	$3.21	6826K241	$6.06	6826K32	4.73	6826K272	22.29	6826K62	6.80
3/4″	6826K13	2.57	6826K23	3.56	6826K222	4.63	6826K242	6.26	6826K33	4.81	6826K273	23.46	6826K63	7.34
1″	6826K14	4.09	6826K24	5.67	6826K223	7.37	6826K243	10.55	6826K34	5.90	6826K274	26.01	6826K64	8.82
1 1/4″	6826K15	7.07	6826K25	8.91	6826K224	14.48	6826K244	15.97	6826K35	9.95	6826K275	27.83	6826K65	17.84
1 1/2″	6826K16	7.89	6826K26	11.43	6826K225	14.87	6826K245	17.17	6826K36	11.40	6826K276	30.24	6826K66	18.17
2″	6826K17	9.52	6826K27	12.82	6826K226	16.68	6826K246	42.05	6826K37	12.69	6826K277	39.23	6826K67	30.12
2 1/2″	6826K101	27.42	6826K103	26.19	6826K227	95.60	—	—	6826K105	31.06	6826K278	52.30	6826K138	71.02
3″	6826K18	24.84	6826K28	26.92	6826K228	43.79	6826K247	188.50	6826K38	32.30	6826K279	66.60	6826K68	65.01
4″	6826K19	44.73	6826K29	36.96	6826K229	60.12	6826K248	199.29	6826K39	42.98	6826K281	108.16	6826K69	104.39
6″	6826K102	74.90	6826K104	94.88	6826K231	168.36	6826K249	272.76	6826K106	93.22	6826K282	657.98	—	—
8″	6826K182	157.11	6826K183	169.20	6826K232	461.67	6826K251	864.51	6826K167	228.88	6826K283	994.02	—	—

Pipe Size	Caps		Couplings Lg.			Reducing Couplings Pipe Size	Lg.			Pipe Size	Lg.		
1/4″	6826K95	$3.97	1 23/64″	6826K89★	$5.48	3/4″ × 1/2″	2 1/64″	6826K141	$5.58	2″ × 1 1/4″	3 11/32″	6826K154	$26.41
3/8″	6826K96	4.05	1 5/8″	6826K94★	6.06	1″ × 1/2″	2 3/16″	6826K142	8.79	2″ × 1 1/2″	2 63/64″	6826K155	23.88
1/2″	6826K52	3.32	1 55/64″	6826K42	2.13	1″ × 3/4″	2 5/16″	6826K143	7.95	2 1/2″ × 2″	3 21/32″	6826K156	30.08
3/4″	6826K53	4.73	2 1/8″	6826K43	2.98	1 1/4″ × 1/2″	2 1/4″	6826K144	19.74	3″ × 2″	3 1/2″	6826K157	43.95
1″	6826K54	8.37	2 23/64″	6826K44	4.01	1 1/4″ × 3/4″	2 19/32″	6826K145	20.13	4″ × 2″	5 1/2″	6826K158	72.50
1 1/4″	6826K55	6.54	2 51/64″	6826K45	6.01	1 1/4″ × 1″	2 11/16″	6826K146	18.20	4″ × 2 1/2″	4 9/16″	6826K159	72.50
1 1/2″	6826K56	6.79	3 1/32″	6826K46	7.56	1 1/2″ × 1/2″	2 27/32″	6826K147	19.21	4″ × 3″	5″	6826K161	52.50
2″	6826K57	7.43	3 19/64″	6826K47	7.03	1 1/2″ × 3/4″	2 7/8″	6826K148	19.59	6″ × 2″	7 1/16″	6826K262	174.36
2 1/2″	6826K109	26.00	3 51/64″	6826K107	19.56	1 1/2″ × 1″	2 7/8″	6826K149	19.98	6″ × 3″	7 1/8″	6826K163	177.93
3″	6826K58	28.50	4″	6826K48	21.25	1 1/2″ × 1 1/4″	3 63/64″	6826K151	18.06	6″ × 4″	10 1/4″	6826K164	99.26
4″	6826K59	28.97	4 3/4″	6826K49★	22.28	2″ × 3/4″	3 7/32″	6826K152	25.90	8″ × 4″	9″	6826K265	271.67
6″	6826K111	79.88	6 7/32″	6826K108★	52.47	2″ × 1″	3 1/8″	6826K153	26.41	8″ × 6″	9″	6826K166	147.41
8″	6826K169	365.61	8 9/32″	6826K168★	118.18								

★ No hex in the center.

Pipe End (Male) to Socket End (Female)

Hex Reducing Bushings

Pipe Size, Male × Female			Pipe Size, Male × Female			Pipe Size, Male × Female		
3/8″ × 1/4″	6826K187	$4.05	1 1/2″ × 1/2″	6826K218	$10.59	2 1/2″ × 2″	6826K129	$16.65
1/2″ × 1/4″	6826K188	4.24	1 1/2″ × 3/4″	6826K219	7.57	3″ × 1 1/2″	6826K131	24.16
1/2″ × 3/8″	6826K189	4.45	1 1/2″ × 1″	6826K121	7.85	3″ × 2″	6826K128	25.37
3/4″ × 1/2″	6826K212	2.28	1 1/2″ × 1 1/4″	6826K122	8.15	4″ × 2″	6826K134	21.58
1″ × 1/2″	6826K213	3.36	2″ × 1/2″	6826K123	10.13	4″ × 3″	6826K132	22.44
1″ × 3/4″	6826K214	3.53	2″ × 3/4″	6826K124	13.02	6″ × 2″	6826K135	65.27
1 1/4″ × 1/2″	6826K215	8.92	2″ × 1″	6826K125	13.67	6″ × 3″	6826K136	66.57
1 1/4″ × 3/4″	6826K216	9.37	2″ × 1 1/4″	6826K126	10.13	6″ × 4″	6826K137	47.81
1 1/4″ × 1″	6826K217	6.94	2″ × 1 1/2″	6826K127	10.52	8″ × 6″	6826K184	131.17

(Continued on following page)

Warning! ***Never use CPVC fittings or pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at right. For ***unthreaded*** flanges and pipe, take the actual measurement and select the corresponding pipe size. For ***threaded*** pipe, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the threaded OD measures 1 3/16″, the next highest OD in the chart is 1 3/8″, and the corresponding pipe size is 1″.

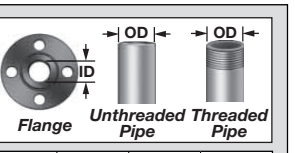

Unthreaded ID or OD	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″	6.625″	8.625″
Threaded OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	—	—
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″	8″

Thick-Wall (Schedule 80) Light Gray CPVC Unthreaded Pipe Fittings and Flanges

(Continued from previous page)

Flanges

Pipe Size	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	No. of Bolt Holes	Recom'd Bolt Size × Lg.	Socket End (Female)		Easy Align, Socket End (Female)	
1/2″	3 1/2″	2 3/8″	7/16″	4	1/2″ × 1 3/4″	6826K112	$8.97	6826K171	$9.04
3/4″	3 29/32″	2 3/4″	1/2″	4	1/2″ × 1 15/16″	6826K113	9.18	6826K172	9.24
1″	4 19/64″	3 1/8″	9/16″	4	1/2″ × 2″	6826K114	10.03	6826K173	10.09
1 1/4″	4 39/64″	3 1/2″	5/8″	4	1/2″ × 2 1/4″	6826K115	12.24	6826K174	12.31
1 1/2″	5″	3 7/8″	11/16″	4	1/2″ × 2 3/4″	6826K116	13.58	6826K175	13.67
2″	6″	4 3/4″	3/4″	4	5/8″ × 3″	6826K117	16.44	6826K176	16.56
2 1/2″	7″	5 1/2″	31/32″	4	5/8″ × 3 1/4″	6826K191	27.25	6826K177	37.94
3″	7 1/2″	6″	15/16″	4	5/8″ × 3 5/8″	6826K118	28.50	6826K178	28.73
4″	9″	7 1/2″	15/16″	8	5/8″ × 3 3/4″	6826K119	38.50	6826K179	38.80
6″	11″	9 1/2″	1″	8	3/4″ × 4 3/8″	6826K133	65.58	6826K181	66.12
8″	13 1/2″	11 3/4″	1 7/16″	8	3/4″ × 4 1/2″	6826K185	188.32	6826K186	142.10

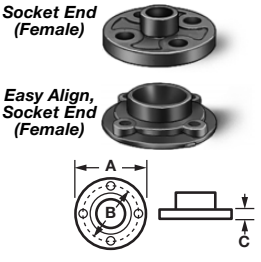

Thick-Wall (Schedule 80) Light Gray CPVC Unthreaded Pipe

- Use with hot water; NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 200° F
- Maximum Pressure: See below
- Fittings and Flanges: Use with thick-wall (Schedule 80) light gray CPVC unthreaded (see page 94 and above)

Choose CPVC over PVC for applications that involve higher temperatures such as hot water. Pipe meets ASTM D1784 and F441. Connect unthreaded pipe to fittings by cementing the pipe end (male) into the socket end (female) using a CPVC primer and cement (see page 94).

Pipe Size	OD	ID	Max. psi @ 73° F	5-ft. Lengths		10-ft. Lengths	
1/4″	0.540″	0.282″	1,130	6803K61	$10.68	6803K21	$19.42
3/8″	0.675″	0.403″	920	6803K51	14.70	6803K11	26.72
1/2″	0.840″	0.526″	850	6803K52	7.98	6803K12	14.50
3/4″	1.050″	0.722″	690	6803K53	10.82	6803K13	19.68
1″	1.315″	0.936″	630	6803K54	15.93	6803K14	28.96
1 1/4″	1.660″	1.255″	520	6803K55	22.73	6803K15	39.87
1 1/2″	1.90″	1.476″	470	6803K56	27.62	6803K16	48.45
2″	2.375″	1.913″	400	6803K57	$38.22	6803K17	$67.06
2 1/2″	2.875″	2.290″	420	6803K62	58.23	6803K22	102.16
3″	3.50″	2.864″	370	6803K58	78.07	6803K18	136.96
4″	4.50″	3.786″	320	6803K59	113.85	6803K19	199.74
6″	6.625″	5.709″	280	6803K63	208.67	6803K23	347.78
8″	8.625″	7.565″	250	6803K64	387.81	6803K24	646.35

Thick-Wall (Schedule 80) Light Gray CPVC Threaded Pipe Nipples

- Use with hot water; NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 200° F
- Maximum Pressure: See below
- Fittings and Flanges: Use with thick-wall (Schedule 80) light gray CPVC threaded (see page 96)

CPVC is similar to PVC, but has the addition of chlorine—this allows it to stand up to higher temperature applications such as hot water. These nipples have threads on each end for quick and easy connections. All meet ASTM F437. ***Fully threaded nipples*** are also called close nipples; they're threaded on each end to the center. Connections: NPT.

Pipe Size	Max. psi @ 73° F	FULLY THREADED Lg.		THREADED ON BOTH ENDS 1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths	
1/4″	565	7/8″	6810K111	$1.30	6810K23	$1.47	6810K35	$1.68	6810K112	$1.80	6810K58	$1.98
3/8″	460	1″	6810K11	1.44	6810K21	1.56	6810K31	1.76	6810K113	2.20	6810K51	2.28
1/2″	425	1 1/8″	6810K12	1.35	6810K22	1.44	6810K32	1.67	6810K114	1.79	6810K52	1.92
3/4″	345	1 3/8″	6810K13	1.89	—	—	6810K33	1.98	6810K115	2.22	6810K53	2.48
1″	315	1 1/2″	6810K14	2.37	—	—	6810K34	2.63	6810K116	3.15	6810K54	3.62
1 1/4″	260	1 5/8″	6810K15	2.93	—	—	—	—	6810K132	4.09	6810K55	4.52
1 1/2″	235	1 3/4″	6810K16	3.39	—	—	—	—	6810K133	4.80	6810K56	5.39
2″	200	2″	6810K17	4.82	—	—	—	—	6810K134	6.02	6810K57	6.90
2 1/2″	210	2 1/2″	6810K24	10.27	—	—	—	—	—	—	6810K26	11.53
3″	185	2 5/8″	6810K18	12.87	—	—	—	—	—	—	6810K59	14.21
4″	160	2 7/8″	6810K19	16.55	—	—	—	—	—	—	—	—

THREADED ON BOTH ENDS

Pipe Size	Max. psi @ 73° F	4″ Lengths		5″ Lengths		6″ Lengths		8″ Lengths		10″ Lengths		12″ Lengths	
1/4″	565	6810K68	$2.35	6810K911	$2.61	6810K78	$3.18	6810K88	$4.87	6810K98	$5.67	6810K48	$6.49
3/8″	460	6810K61	2.61	6810K912	3.28	6810K71	3.76	6810K81	5.49	6810K91	6.49	6810K41	7.52
1/2″	425	6810K62	2.25	6810K913	2.34	6810K72	3.56	6810K82	4.60	6810K92	5.37	6810K42	6.04
3/4″	345	6810K63	3.41	6810K914	3.03	6810K73	4.34	6810K83	5.58	6810K93	6.58	6810K43	8.05
1″	315	6810K64	4.06	6810K915	3.98	6810K74	5.57	6810K84	7.47	6810K94	8.87	6810K44	10.71
1 1/4″	260	6810K65	5.51	6810K916	5.29	6810K75	7.53	6810K85	9.82	6810K95	11.86	6810K45	14.21
1 1/2″	235	6810K66	6.60	6810K917	6.57	6810K76	9.27	6810K86	12.07	6810K96	14.48	6810K46	17.34
2″	200	6810K67	8.55	6810K918	8.50	6810K77	12.13	6810K87	15.92	6810K97	18.00	6810K47	21.54
2 1/2″	210	6810K36	14.13	6810K37	13.72	6810K38	19.26	6810K39	26.05	6810K27	29.39	6810K28	33.53
3″	185	6810K69	16.55	6810K919	17.17	6810K79	22.92	6810K89	31.44	6810K99	36.72	6810K49	42.98
4″	160	6810K691	21.34	6810K921	22.37	6810K791	29.57	6810K891	39.69	6810K991	48.22	6810K491	53.10

Warning! ***Never use CPVC fittings or pipe with compressed air or gas.***

CPVC Pipe Fittings & Flanges

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

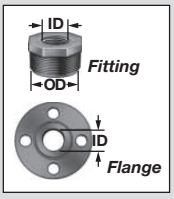

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at left. For ***threaded*** fittings, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the threaded ID or OD measures 1 3/16″, the next highest ID or OD in the chart is 1 3/8″, and the corresponding pipe size is 1″. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Unthreaded ID	0.540″	0.675″	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	2.875″	3.50″	4.50″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Thick-Wall (Schedule 80) Light Gray CPVC Threaded Pipe Fittings and Flanges

- Use with hot water; NSF 61 certified for use with drinking (potable) water
- Maximum Temperature: 200° F
- Maximum Pressure: Fittings: Not rated; Flanges: 150 psi @ 72° F
- Pipe Nipples: Use with thick-wall (Schedule 80) light gray CPVC threaded (see page 95)

CPVC is the best choice for high-temperature applications, such as hot water. Threaded ends permit quick and easy connections. Meet ASTM D1784 and F439.

Unions have an O-ring. ***Plugs*** are hollow. ***Flanges*** are also called Class 150 flanges. Bolt two same-size flanges together with a gasket to form a tight seal (gasket required, but not included; see pgs. 3474-3480).

Connect unthreaded fittings to pipe by cementing the pipe end (male) into the socket end (female) using a CPVC primer and cement (see page 94). The pipe end is also known as a spigot.

Connections: Threaded (NPT) or unthreaded socket end (female).

Threaded End to Threaded End

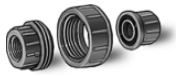

Pipe Size	90° Elbows		45° Elbows		Tees		Couplings Lg.			Caps		Unions	
1/4″	4589K28	$5.98	4589K38	$7.95	4589K11	$11.62	1 11/32″	4589K58	$7.61	4589K12	$4.75	4589K13	$17.09
3/8″	4589K21	5.41	4589K31	7.18	4589K41	10.50	1 1/4″	4589K51	6.88	4589K61	4.29	4589K71	15.45
1/2″	4589K22	3.14	4589K32	6.81	4589K42	8.40	1 15/16″	4589K52	5.67	4589K62	3.69	4589K72	7.26
3/4″	4589K23	4.70	4589K33	5.99	4589K43	12.12	2 11/64″	4589K53	7.32	4589K63	6.10	4589K73	12.82
1″	4589K24	6.59	4589K34	8.23	4589K44	13.04	2 7/16″	4589K54	8.32	4589K64	8.54	4589K74	23.87
1 1/4″	4589K25	10.16	4589K35	13.40	4589K45	13.11	2 13/32″	4589K55	11.02	4589K65	15.23	4589K75	34.98
1 1/2″	4589K26	10.92	4589K36	14.07	4589K46	17.22	2 31/32″	4589K56	11.84	4589K66	15.61	4589K76	36.38
2″	4589K27	18.30	4589K37	18.57	4589K47	19.12	3 7/32″	4589K57	11.17	4589K67	22.48	4589K77	41.12
2 1/2″	4589K29	62.82	4589K39	64.91	4589K108	75.20	3 5/16″	4589K59	27.70	4589K121	57.54	4589K141	91.60
3″	4589K104	67.37	4589K106	70.12	4589K48	87.26	3 1/2″	4589K16	32.25	4589K68	54.60	4589K142	158.00
4″	4589K105	95.84	4589K107	98.04	4589K49	172.26	3 21/32″	4589K17	65.74	4589K69	79.31	4589K143	169.85

Hex-Head Plugs

Pipe Size		
1/4″	4589K151	$3.45
3/8″	4589K152	3.82
1/2″	4589K111	3.00
3/4″	4589K112	3.80
1″	4589K113	6.25
1 1/4″	4589K114	9.43
1 1/2″	4589K115	7.83
2″	4589K116	10.65
2 1/2″	4589K119	20.01
3″	4589K117	19.37
4″	4589K118	22.43

Hex Reducing Bushings

Pipe Size, (A) × (B)			Pipe Size, (A) × (B)		
3/8″ × 1/4″	4589K14	$7.11	1 1/2″ × 3/4″	4589K95	$11.70
1/2″ × 1/4″	4589K109	7.11	1 1/2″ × 1″	4589K96	12.29
1/2″ × 3/8″	4589K153	7.11	1 1/2″ × 1 1/4″	4589K97	9.38
3/4″ × 1/4″	4589K154	7.84	2″ × 1/2″	4589K126	14.74
3/4″ × 3/8″	4589K123	7.84	2″ × 3/4″	4589K127	15.03
3/4″ × 1/2″	4589K78	3.05	2″ × 1″	4589K98	12.94
1″ × 1/4″	4589K124	8.30	2″ × 1 1/4″	4589K99	13.60
1″ × 3/8″	4589K125	8.46	2″ × 1 1/2″	4589K81	12.19
1″ × 1/2″	4589K79	4.89	2 1/2″ × 2″	4589K128	26.13
1″ × 3/4″	4589K91	5.14	3″ × 1 1/2″	4589K129	47.66
1 1/4″ × 1/2″	4589K92	9.71	3″ × 2″	4589K101	35.16
1 1/4″ × 3/4″	4589K93	10.21	3″ × 2 1/2″	4589K131	48.61
1 1/4″ × 1″	4589K94	7.78	4″ × 2″	4589K102	58.08
1 1/2″ × 1/2″	4589K15	13.59	4″ × 3″	4589K103	60.41

Threaded End to Unthreaded Socket End (Female)

Female Adapters

Pipe Size	Lg.			Pipe Size	Lg.		
1/4″	1 1/4″	6826K71	$6.96	1 1/2″	2 31/32″	6826K75	$10.03
3/8″	1 15/32″	6826K81	7.69	2″	3 7/32″	6826K76	17.28
1/2″	1 15/16″	6826K79	3.44	2 1/2″	3 9/32″	6826K82	26.51
3/4″	2 3/16″	6826K72	3.64	3″	3 1/2″	6826K77	54.40
1″	2 15/16″	6826K73	8.41	4″	3 31/32″	6826K78	90.54
1 1/4″	2 23/32″	6826K74	8.60				

Male Adapters

Pipe Size	Lg.			Pipe Size	Lg.		
1/2″	1 51/64″	6826K91	$2.75	2″	2 53/64″	6826K86	$15.28
3/4″	1 61/64″	6826K92	3.36	2 1/2″	2 23/64″	6826K83	33.33
1″	2 19/64″	6826K93	5.66	3″	3 13/16″	6826K87	44.80
1 1/4″	2 1/2″	6826K84	8.33	4″	4 9/32″	6826K88	75.74
1 1/2″	2 21/32″	6826K85	11.27				

Threaded Flanges

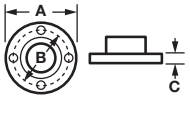

Pipe Size	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	No. of Bolt Holes	Recom'd Bolt Size × Lg.		
1/2″	3 1/2″	2 3/8″	7/16″	4	1/2″ × 1 3/4″	4589K82	$12.54
3/4″	3 29/32″	2 3/4″	1/2″	4	1/2″ × 1 15/16″	4589K83	15.21
1″	4 19/64″	3 1/8″	9/16″	4	1/2″ × 2″	4589K84	16.59
1 1/4″	4 39/64″	3 1/2″	5/8″	4	1/2″ × 2 1/4″	4589K85	23.04
1 1/2″	5″	3 7/8″	11/16″	4	1/2″ × 2 3/4″	4589K86	24.38
2″	6″	4 3/4″	3/4″	4	5/8″ × 3″	4589K87	24.83
2 1/2″	7″	5 1/2″	1″	4	5/8″ × 3 1/4″	4589K132	44.59
3″	7 1/2″	6″	15/16″	4	5/8″ × 3 5/8″	4589K88	32.00
4″	9″	7 1/2″	15/16″	8	5/8″ × 3 3/4″	4589K89	49.74

Warning! ***Never use CPVC fittings or pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at right. Then, refer to the chart and select the corresponding pipe size. For example, if the actual ID or OD measures 1.315″, the corresponding pipe size is 1″.

Unthreaded ID or OD	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″	3.50″	4.50″
Pipe Size	½″	¾″	1″	1¼″	1½″	2″	3″	4″

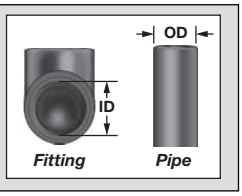

Snap-Lock Gravity-Flow Black Polyethylene Pipe Fittings and Pipe

- Use for water drainage
- Temperature: Not rated
- Maximum Pressure: Not rated

Snap-together design makes it easy to connect fittings to pipe. Made of high-density polyethylene, these fittings and pipe resist freeze/thaw cycles and won't corrode, crack, or crumble unless exposed to direct sunlight. Elbows, tees, wyes, and pipe are corrugated inside and out, making them strong and bendable. All meet ASTM F405.

Offset adapters have a tapered opening that can be cut to 3½″×2½″ or 4″×3″. The ***pipe*** snaps into elbows, tees, wyes, and caps. *Nonperforated pipe* is ideal for flowing drainage to one area. *Perforated pipe* has slits along its entire length that allow drainage to be dispersed. All pipe exceeds specifications contained in the Soil Conservation Service (SCS) Engineering Practice Standard for subsurface drains.

Pipe Size	90° Elbows		Tees		Wyes		Couplings Lg.		Caps	
3″	44845K61	$5.83	44845K63	$6.50	44845K65	$7.50	3½″	44845K69	44845K67	$1.50
4″	44845K21	7.50	44845K23	8.00	44845K25	10.00	4⅛″	44845K29	44845K27	2.33

Straight *Offset*

Adapters Pipe Size	Style	Opening, Wd.×Ht.		Pipe Size	OD	ID	NONPERFORATED PIPE 10-ft. Lengths		NONPERFORATED PIPE 100-ft. Coils		PERFORATED PIPE 10-ft. Lengths		PERFORATED PIPE 100-ft. Coils	
3″	Straight	3¼″×2″	44845K81	$5.00	3″	3⅝″	3″	44845K91	$4.88	44845K93	$39.00	44845K51	$4.88	44845K55	$39.00
4″	Offset	3″ ×2″	44845K41	5.67	4″	4⅝″	4″	44845K95	6.00	44845K97	48.00	44845K71	6.00	44845K75	48.00

Heat-Weld Thick-Wall (Schedule 80) Black Polypropylene Unthreaded Pipe Fittings

- Use with water, concentrated acetic acid and hydroxides, alkalies, salt solutions, solvents
- Temperature Range: –20° to +180° F
- Maximum Pressure: See below
- Pipe: Use thick-wall (Schedule 80) black polypropylene unthreaded (see below)

Heat weld these fittings to pipe—the result is a leak-tight joint that's stronger than cement without the mess or the potential of breakdown over time. Simply melt the mating surfaces with a heating tool (sold separately) and when the surfaces cool a weld forms.

Polypropylene has good strength and excellent chemical resistance. It is also UV resistant for extended use outdoors and is inert to moisture. All meet ASTM D4101. ***Unions*** have a fluoroelastomer O-ring.

Connections: Socket end (female).

Also Available: Tan polypropylene fittings in metric sizes 20 mm, 25 mm, 32 mm, 50 mm, and 63 mm. Metric size is the actual OD. Temperature range is 32° to 212° F. Maximum pressure is 150 psi at 73° F. Meet ASTM D4101. Please ask for 45435K1 and specify size and shape from the listing below.

Pipe Size	Max. psi @ 73° F	90° Elbows		Tees		Couplings Lg.		Unions	
½″	410	9159K11	$11.20	9159K31	$13.47	1 63/64″	9159K51	$13.86	9159K61	$48.92
¾″	330	9159K12	16.58	9159K32	16.22	2 17/64″	9159K52	15.49	9159K62	53.49
1″	310	9159K13	18.23	9159K33	17.80	2 15/32″	9159K53	16.59	9159K63	76.29
1½″	230	9159K14	25.34	9159K34	26.60	2 31/32″	9159K54	17.90	9159K64	117.00
2″	200	9159K15	30.87	9159K35	35.54	3 7/32″	9159K55	25.08	9159K65	177.30

Hand-Held Heat-Weld Kit

Includes everything you'll need to join heat-weld fittings to pipe. You'll get a heating tool, male and female heat face sets with bolts, depth gauge, cold ring pipe clamp with inserts, pipe cutter, beveling tool, timer, thermal blanket, auxiliary handle, hex key wrenches, thermostat adjustment tool, instructions, and a heavy duty tool box.

9159K18 ..... $2,331.82

Thick-Wall (Schedule 80) Black Polypropylene Unthreaded Pipe

- Use with water, concentrated acetic acid and hydroxides, alkalies, salt solutions, solvents
- Temperature Range: –20° to +180° F
- Maximum Pressure: See below
- Fittings: Use heat-weld thick-wall (Schedule 80) black polypropylene unthreaded (see above)

Our polypropylene pipe has good strength and excellent chemical resistance; it's also UV resistant and inert to moisture. Use this pipe with the heat-weld fittings above, or cut and thread it to your own specifications. Meets ASTM D4101.

Also Available: Light gray polypropylene pipe in metric sizes 20 mm, 25 mm, 32 mm, 50 mm, and 63 mm. Metric size is the actual OD. Temperature range is 32° to 212° F. Maximum pressure is 150 psi at 73° F. Please ask for 45435K2 and specify pipe size. Available in 8-ft. lengths only.

Pipe Size	OD	ID	Max. psi @ 73° F ♠	2-ft. Lengths		5-ft. Lengths		10-ft. Lengths	
½″	0.840″	0.526″	410	—	—	9159K81	$18.66	9159K91	$28.71
¾″	1.050″	0.722″	330	—	—	9159K82	22.58	9159K92	34.74
1″	1.315″	0.936″	310	9159K16	$15.71	9159K83	34.05	9159K93	52.38
1¼″	1.660″	1.255″	260	9159K17	19.28	43415K35■	38.56	9159K97	64.26
1½″	1.90″	1.476″	230	9159K26	19.90	9159K84	43.11	9159K94	66.33
2″	2.375″	1.913″	200	9159K27	24.41	9159K85	52.88	9159K95	81.36
3″	3.50″	2.864″	190	9159K36	45.41	43415K39	100.55	9159K96	162.18

♠ When threaded, the maximum pressure is 20 psi @ 73° F. ■ The ID is 1.278″ and the maximum pressure is 205 psi @ 72° F.

Warning! ***Never use polyethylene or polypropylene fittings or pipe with compressed air or gas.***

Polypropylene Pipe Fittings & Pipe

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

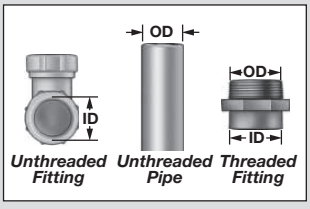

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the inside diameter (ID) or outside diameter (OD), as shown at left. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size. For ***threaded*** fittings, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the threaded pipe fitting ID or OD measures 1 3/16″, the next highest ID or OD in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Unthreaded ID or OD	___	___	___	___	1.90″	2.375″	3.50″
Threaded ID or OD	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″
Pipe Size	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″

Drain, Waste, and Vent Green Polypropylene Pipe Fittings and Pipe

- Use with water, bleach, sulfur dioxide, salt water, organic solvents, acids, alkalies
- Temperature Range: –10° to +212° F
- Maximum Pressure: Gravity flow

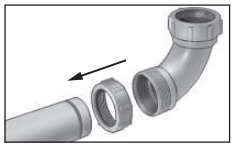

Groove seal connections on these gravity-flow fittings and pipe allow you to create leak-resistant joints without the need for cement or heat welding—plus they can be easily dismantled and reused. Polypropylene has good strength, excellent chemical resistance, and is UV resistant. They all meet CSA B181.3, UL 94V-2, and ASTM D4101 and F1412.

These fittings can only be used with the pipe sold below. To make a connection, create a groove in the pipe using a groove tool (sold separately); place a union nut on the pipe and push on a seal ring until it clicks into the groove. Now you can insert the pipe into the fitting and tighten by hand, followed by a 1/4 turn with the spanner wrench. Connections: Groove seal or threaded (NPT).

Pipe Size	90° Elbows		45° Elbows		Wyes		Drainage Tees		Tees with Plug		Couplings Lg.		
1 1/2″	4807K111	$37.35	4807K121	$35.92	4807K131	$45.65	4807K141	$53.26	4807K251	$60.87	2 13/64″	4807K151	$28.55
2″	4807K112	46.64	4807K122	45.08	4807K132	65.78	4807K142	56.45	4807K252	63.70	2 1/2″	4807K152	36.25
3″	4807K113	93.85	4807K123	98.18	4807K133	143.26	4807K143	133.40	4807K253	150.50	4 1/4″	4807K153	60.55

Pipe Size	Adapters, Threaded Male×Groove Seal Lg.		Adapters, Threaded Female×Groove Seal Lg.		Plugs		Union Nuts		Seal Rings Pipe Size		
1 1/2″	2 1/8″	4807K171	$23.24	2″	4807K181	$23.24	4807K161	$10.55	4807K271	$13.38	1 1/2″	4807K275	$5.16
2″	2 1/2″	4807K172	28.31	2 5/16″	4807K182	32.48	4807K162	16.73	4807K272	20.09	2″	4807K276	6.27
3″	4 1/8″	4807K173	55.92	___	___	___	4807K163	38.62	4807K273	31.79	3″	4807K277	26.28

Reducing Couplings, Groove Seal×Threaded Female

Pipe Size	Lg.		
2″×1 1/2″	2 13/16″	4807K211	$23.15
3″×2″	3 5/16″	4807K212★	40.54

★ Not furnished with a union nut. For nut, order 4807K273 above.

Adapters, Threaded Female×Threaded Male

Pipe Size	Lg.		
1 1/4″×1 1/2″	1 7/8″	4807K221	$29.17
1 1/2″×1 1/2″	1 7/8″	4807K222	29.17

P-Traps

Pipe Size		
1 1/2″	4807K241	$91.64
2″	4807K242	108.37
3″	4807K243	252.00

Unthreaded Pipe

Pipe Size	ID	2-ft. Lengths		5-ft. Lengths		10-ft. Lengths	
1 1/2″	1.610″	4807K625	$28.52	4807K615	$58.06	4807K611	$101.86
2″	2.067″	4807K626	39.17	4807K616	79.75	4807K612	139.91
3″	3.068″	4807K627	70.79	4807K617	144.11	4807K613	252.82

Groove Tools w/Spanner Wrench

Pipe Size		
1 1/2″	4807K621	$74.45
2″	4807K622	102.60
3″	4807K623	231.71

Reinforced Thick-Wall (Schedule 80) Black Polypropylene Threaded Pipe Fittings

- Use with water, caustic solutions, benzoic acid, nitric acid, acetone, solvents
- Temperature Range: 40° to 180° F
- Max. Pressure: 150 psi @ 73° F for water
- Pipe: Use thick-wall (Schedule 80) black polypropylene threaded (see page 100)

A Type 316 stainless steel reinforcing collar supports the threads to prevent cracking when mating with another thread. These fittings are made of lightweight polypropylene, which is inert to moisture and offers excellent strength, corrosion resistance, and UV resistance. ***Unions*** have a fluoroelastomer O-ring. All meet ASTM D1598.

Connections: NPT. *Note:* The use of pipe tape is not recommended; thread sealant (sold separately below) is recommended.

Pipe Size	90° Elbows		45° Elbows		Tees		Caps		Unions		Couplings Lg.		
1/2″	4883K11	$11.46	4883K31	$14.34	4883K51	$14.05	4883K81	$10.31	4883K91	$45.14	1 17/32″	4883K71	$10.88
3/4″	4883K12	13.93	4883K32	16.21	4883K52	15.66	4883K82	13.56	4883K92	48.93	1 9/16″	4883K72	13.56
1″	4883K13	17.17	4883K33	17.08	4883K53	18.52	4883K83	14.93	4883K93	60.35	2″	4883K73	14.91
1 1/2″	4883K14	23.15	4883K34	23.15	4883K54	27.47	4883K84	20.83	4883K94	87.62	2″	4883K74	19.53
2″	4883K15	31.54	4883K35	31.54	4883K55	36.43	4883K85	23.47	4883K95	136.73	2 5/64″	4883K75	23.47

Blue Thread Sealant—8-oz. Can 4883K28 $17.82

Warning! ***Never use polypropylene fittings or pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID) or outside diameter (OD) of a fitting, or the ID of a flange, as shown at right. Then, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the ID or OD measures 1 3/16″, the next highest ID or OD in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″	4 1/2″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″	4″

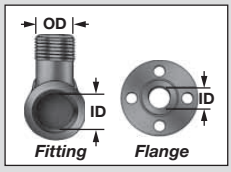

Thick-Wall (Schedule 80) Black Polypropylene Threaded Pipe Fittings and Nipples

- Use with water, oil, fertilizers, lubricants, soap solutions, calcium chloride, sodium chloride
- Temperature Range: –20° to +150° F
- Maximum Pressure: 150 psi @ 70° F, unless noted

You'll get excellent strength and chemical resistance at an economical price with these fiberglass-reinforced polypropylene fittings. They're also UV resistant and inert to moisture. ***Flanges*** are also called Class 150 flanges. Bolt two same-size flanges together with a gasket to form a tight seal (gasket required, but not included; see pages 3474-3480).

Connections: NPT. *Note:* The use of pipe tape is not recommended; thread sealant (sold separately on page 98) is recommended.

Pipe Size	90° Elbows		90° Elbows, Female × Male		45° Elbows, Female × Male		Tees		Crosses		Caps	
3/8″	46885K101	$4.60	46885K121	$4.36	—	—	46885K151	$4.56	—	—	—	—
1/2″	46885K102	4.16	46885K122	4.36	—	—	46885K152	4.84	—	—	46885K202	$6.40
3/4″	46885K103	4.48	46885K123	4.68	46885K133	$7.52	46885K153	5.16	46885K173	$21.16	46885K203	6.40
1″	46885K104	5.32	46885K124	5.48	46885K134	11.00	46885K154	7.48	46885K174	21.16	46885K204	6.40
1 1/4″	46885K105	6.64	46885K125	6.88	46885K135	13.60	46885K155	8.64	46885K175	26.30	46885K205	7.16
1 1/2″	46885K106	10.40	46885K126	10.76	46885K136	14.52	46885K156	12.40	46885K176	26.30	46885K206	9.04
2″	46885K107	12.40	46885K127	12.76	46885K137	17.24	46885K157	15.44	46885K177	32.17	46885K207	10.48
3″	46885K108	52.22	46885K128	54.13	46885K138	59.47	46885K158	61.27	—	—	46885K208	31.30

Pipe Size	Couplings Lg.			Hex-Head Plugs	
3/8″	1 1/4″	46885K181	$4.76	—	—
1/2″	2″	46885K182	4.76	46885K212	$3.28
3/4″	2″	46885K183	4.76	46885K213	3.28
1″	2 1/4″	46885K184	5.44	46885K214	3.28
1 1/4″	2 1/2″	46885K185	7.32	46885K215	3.28
1 1/2″	2 1/2″	46885K186	12.16	46885K216	5.24
2″	2 3/4″	46885K187	13.84	46885K217	5.24
3″	3 39/64″	46885K188	32.67	46885K218	20.76

Reducing Couplings

Pipe Size	Lg.		
1″ × 3/4″	2 1/4″	46885K221	$7.04
1 1/2″ × 1″	2″	46885K222	11.96
1 1/2″ × 1 1/4″	2″	46885K223	11.96
2″ × 1/2″	2 3/16″	46885K228	12.72
2″ × 1″	2 13/64″	46885K224	12.72
2″ × 1 1/4″	2 13/64″	46885K225	12.72
2″ × 1 1/2″	2 13/64″	46885K226	12.72
3″ × 2″	3 7/64″	46885K227	37.67

Hex Reducing Bushings

Pipe Size, (A) × (B)			Pipe Size, (A) × (B)		
3/8″ × 1/4″	46885K251	$3.16	1 1/4″ × 3/4″	46885K263	$3.28
1/2″ × 1/4″	46885K252	3.16	1 1/4″ × 1″	46885K264	3.28
1/2″ × 3/8″	46885K253	3.16	1 1/2″ × 3/4″	46885K265	4.36
3/4″ × 1/8″	46885K254	3.16	1 1/2″ × 1″	46885K266	4.36
3/4″ × 1/4″	46885K255	3.16	1 1/2″ × 1 1/4″	46885K267	4.36
3/4″ × 3/8″	46885K256	3.16	2″ × 3/4″	46885K268	4.76
3/4″ × 1/2″	46885K257	3.16	2″ × 1″	46885K271	4.76
1″ × 1/8″	46885K258	3.28	2″ × 1 1/4″	46885K272	4.76
1″ × 1/4″	46885K259	3.28	2″ × 1 1/2″	46885K273	4.76
1″ × 1/2″	46885K261	3.28	3″ × 1 1/2″	46885K274	19.84
1″ × 3/4″	46885K262	3.28	3″ × 2″	46885K275	19.84
1 1/4″ × 3/8″	46885K269	3.28	4″ × 3″	46885K276	25.63

Reducing Nipples

Pipe Size		
1/2″ × 3/8″	46885K301	$2.36
3/4″ × 1/2″	46885K302	2.56
1″ × 1/2″	46885K303	3.24
1″ × 3/4″	46885K304	2.96
1 1/4″ × 3/4″	46885K305	3.44
1 1/4″ × 1″	46885K306	3.16
1 1/2″ × 1″	46885K307	3.68
1 1/2″ × 1 1/4″	46885K308	3.28
2″ × 1 1/4″	46885K309	4.48
2″ × 1 1/2″	46885K311	3.64
3″ × 2″	46885K312	15.12

Flanges

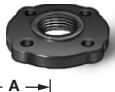
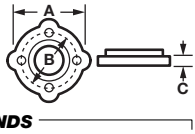

Pipe Size	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	No. of Bolt Holes	Bolt Size		
1″	4 1/4″	3 1/8″	5/8″	4	1/2″	46885K291	$15.68
1 1/2″	5″	3 7/8″	3/4″	4	1/2″	46885K292	25.07
2″	6″	4 3/4″	3/4″	4	5/8″	46885K293	29.27
3″	7 1/2″	6″	15/16″	4	5/8″	46885K294	46.77
4″	9″	7 1/2″	15/16″	8	5/8″	46885K295	98.83

Swivel Adapters, Female × Male ♣

Pipe Size	Lg.		
1″	3 1/2″	46885K391	$18.88
1 1/2″	3 45/64″	46885K392	23.12
2″	3 29/32″	46885K393	21.60

♣ Maximum pressure is 75 psi @ 70° F.

PIPE NIPPLES, THREADED ON BOTH ENDS

Pipe Size	ID	4″ Lengths		6″ Lengths	
3/4″	0.688″	46825K35	$3.16	46825K37	$3.64
1″	0.813″	46825K45	3.28	46825K47	4.12
1 1/4″	1.250″	46825K55	4.12	46825K57	4.68
1 1/2″	1.313″	46825K65 ♠	8.76	46825K67 ★	10.32
2″	1.875″	46825K75 ♠	10.20	46825K77 ★	11.92
3″	2.875″	46825K85	22.80	46825K87	24.47

♠ Length is actually 4 1/4″. ★ Length is actually 6 1/4″.

Hex Nipples

Pipe Size	ID	Lg.		
3/8″	0.406″	1 1/4″	46825K11	$1.40
1/2″	0.50″	1 3/4″	46825K21	1.56
3/4″	0.688″	1 13/16″	46825K31	1.64
1″	0.813″	2″	46825K41	2.32
1 1/4″	1.250″	2″	46825K51	2.32
1 1/2″	1.313″	2 1/2″	46825K61	4.28
2″	1.875″	2 1/2″	46825K71	4.84
3″	2.875″	3″	46825K81 ■	15.16

■ Has grip ridges instead of hex.

Warning! ***Never use polypropylene fittings or pipe with compressed air or gas.***

Polypropylene Pipe & Nylon Pipe Fittings

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

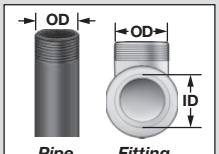

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Threaded OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Thick-Wall (Schedule 80) Black Polypropylene Threaded Pipe

- Use with water, oil, fertilizers, lubricants, soap solutions, calcium chloride, sodium chloride
- Maximum Temperature: 180° F
- Maximum Pressure: See below

Choose this polypropylene pipe when you need excellent strength and chemical resistance. This material is also UV resistant and inert to moisture. Pipe meets ASTM D4101 and ANSI B1.20.1.
Connections: NPT.

Pipe Size	ID	Max. psi @ 73° F	2-ft. Lengths		3-ft. Lengths	
1/4″	0.282″	20	8798T11	$11.34	8798T31	$21.80
1/2″	0.526″	20	8798T12	10.60	8798T32	20.38
3/4″	0.722″	20	8798T13	12.21	8798T33	23.48
1″	0.936″	20	8798T14	13.44	8798T34	25.85
1 1/4″	1.255″	20	8798T15	18.71	8798T35	35.98
1 1/2″	1.476″	20	8798T16	$19.66	8798T36	$37.80
2″	1.913″	20	8798T17	24.66	8798T37	47.42
3″	2.864″	20	8798T18	49.19	8798T38	94.60
4″	3.786″	20	8798T19	66.31	8798T39	127.52

High-Strength White Nylon Threaded Pipe Fittings

- Use with water, oil, soap solutions, acetone, fuel (unless noted)
- Temperature Range: 32° to 167° F; High-Pressure is rated for a max. temp. of 180° F
- Maximum Pressure: 75 psi @ 72° F; High-Pressure is rated 500 psi @ 72° F (unless noted)

Made of nylon 6, these fittings offer high strength and impact resistance. All are FDA compliant, except the high-pressure hex reducing bushings. Connections: NPT. *Note:* PTFE tape or paste sealant is recommended when connecting (sold separately, see page 3415).

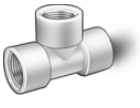

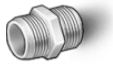

Pipe Size	90° Elbows		90° Elbows, Female × Male		Tees		Couplings Lg.		Hex-Head Plugs		Hex Nipples	
1/8″	—	—	—	—	—	—	—	—	48335K151	$0.70	—	—
1/4″	—	—	48335K111	$4.74	48335K131	$7.63	—	—	48335K152	1.25	48335K171	$0.81
3/8″	—	—	48335K112	3.36	—	—	—	—	48335K153	1.29	48335K172	.94
1/2″	48335K102	$4.01	48335K113	4.01	48335K132	5.07	1 5/8″	48335K142	48335K154	.88	48335K173	.97
3/4″	48335K103	4.51	48335K115	4.94	48335K133	6.99	1 27/32″	48335K143	48335K155	.92	48335K174	1.11
1″	48335K104	6.39	48335K116	7.66	48335K134	8.86	2 1/4″	48335K144	48335K156	1.09	48335K175	1.77
1 1/4″	48335K105	9.47	48335K117	8.74	48335K135	13.40	2 1/4″	48335K145	48335K157	1.66	48335K176	3.13
1 1/2″	48335K106	10.26	48335K118	14.17	48335K136	13.60	2 1/4″	48335K146	—	—	48335K177	4.43
2″	48335K107	16.46	48335K119	16.94	48335K137	18.54	2 1/4″	48335K147	—	—	48335K178	5.43

Hex Reducing Nipples

Pipe Size			
3/8″ ×	1/4″	48335K161	$1.25
1/2″ ×	1/4″	48335K165■	1.25
1/2″ ×	3/8″	48335K162■	1.33
3/4″ ×	3/8″	48335K166	2.17
3/4″ ×	1/2″	48335K167	1.33
1 1/4″ ×	1″	48335K169	2.55

■ Not hex shaped; center is square.

Hex Reducing Bushings

Pipe Size, (A) × (B)			
1/4″ ×	1/8″	48335K201	$1.26
3/8″ ×	1/8″	48335K202	1.41
3/8″ ×	1/4″	48335K203	1.38
1/2″ ×	1/4″	48335K205	1.36
1/2″ ×	3/8″	48335K206	1.43
3/4″ ×	1/8″	48335K207	1.72
3/4″ ×	1/4″	48335K208	1.46
3/4″ ×	3/8″	48335K209	1.56
3/4″ ×	1/2″	48335K211	1.52
1″ ×	1/2″	48335K212	2.10
1″ ×	3/4″	48335K213	$1.71
1 1/4″ ×	3/4″	48335K214	3.03
1 1/4″ ×	1″	48335K215	2.90
1 1/2″ ×	3/4″	48335K216	3.42
1 1/2″ ×	1″	48335K217	3.29
1 1/2″ ×	1 1/4″	48335K218	2.93
2″ ×	1″	48335K222	16.54
2″ ×	1 1/2″	48335K219	4.01
3″ ×	2″	48335K221	10.38

High-Pressure Hex Reducing Bushings✓

Pipe Size, (A) × (B)			
3/8″ ×	1/4″	4837K11	$1.34
1/2″ ×	3/8″	4837K12	1.49
3/4″ ×	1/2″	4837K13	1.54
1″ ×	3/4″	4837K14	1.69
1 1/4″ ×	1″	4837K15	2.43
1 1/2″ ×	1 1/4″	4837K26♠	2.77
2″ ×	1 1/2″	4837K27♠	4.46
2 1/2″ ×	2″	4837K28♠	7.09

✓ For water use only. Color is red.
♠ Maximum pressure is 250 psi @ 72° F.

Miniature High-Strength White Nylon Threaded Pipe Fittings

- Use with water, oil, soap solutions, acetone
- Temperature Range: 0° to 175° F
- Maximum Pressure: 125 psi @ 72° F

Compact in size, these tiny fittings are great for tight spaces. They're made of nylon, which offers high strength and impact resistance. All are FDA compliant.
Connections: NPT or straight thread (UNF).

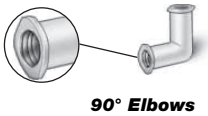

Size ♦	90° Elbows		90° Elbows, Female × Male		Tees		Couplings Lg.		Hex-Head Plugs		Hex Nipples	
10-32	8316T11	$2.61	8316T14	$2.63	8316T26	$2.88	5/8″	8316T29	8316T33	$0.38	8316T44	$0.38
1/16″	—	—	—	—	—	—	—	—	8316T34	.76	—	—
1/4″-28	8316T13	5.08	—	—	8316T28	6.01	15/16″	8316T32	8316T35	.62	—	—

♦ 10-32 and 1/4″-28 are actual thread size. 1/16″ is a pipe size.

Warning! ***Never use polypropylene or nylon fittings or pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at right. For ***threaded*** fittings, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID in the chart is 1 3/8″, and the corresponding pipe size is 1″. For ***unthreaded*** pipe, take the actual measurement and select the corresponding pipe size.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 7/8″	2 3/8″
Unthreaded ID or OD	0.405″	0.540″	0.675″	0.840″	1.050″	1.315″	1.90″	2.375″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/2″	2″

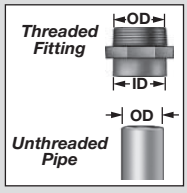

UV-Resistant Thick-Wall (Schedule 80) Red PVDF Threaded Pipe Fittings and Pipe

- Use with water, salts, strong acids, solvents, chlorine, bromine, bases
- Temperature Range: Fittings and Flanges: –40° to +280° F; Pipe and Nipples: 40° to 280° F
- Maximum Pressure: Fittings: 200 psi @ 73° F; Flanges: 150 psi @ 73° F; Pipe and Nipples: See below

PVDF (polyvinylidene fluoride), also known as Kynar, withstands the damaging effects of sun and oxygen, so it is ideal for use outdoors. It's also an excellent choice for corrosive chemicals. All are UL 94V-0 listed for flammability and meet ASTM D3222. ***Flanges*** are also called Class 150 flanges. Bolt two same-size flanges together with a gasket to form a tight seal (gasket required, but not included; see pages 3474-3480).
Connections: Threaded (NPT) or unthreaded.

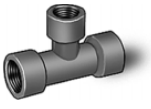

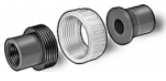

Pipe Size	90° Elbows		Tees		Couplings Lg.		Unions	
1/2″	4415K13	$27.97	4415K33	$36.85	1 5/8″	4415K43	$26.13	4415K63	$63.36
3/4″	4415K14	35.64	4415K34	40.37	1 5/8″	4415K44	27.97	4415K64	82.54
1″	4415K15	51.57	4415K35	63.31	1 5/8″	4415K45	42.26	4415K65	118.56
1 1/2″	4415K16	84.51	4415K36	103.81	2 1/16″	4415K46	55.23	4415K66	183.03
2″	4415K17	109.89	4415K37	157.41	2 1/16″	4415K47	91.26	4415K67	241.01

Reducing Bushings

Pipe Size, (A) × (B)		
3/4″ × 1/2″	4415K93	$27.96
1″ × 1/2″	4415K94	28.20
1″ × 3/4″	4415K95	27.97
1 1/2″ × 1″	4415K96	49.41
2″ × 1 1/2″	4415K97	94.09

Flanges

Pipe Size	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	No. of Bolt Holes	Bolt Size		
1/2″	3 1/2″	2 3/8″	1/2″	4	5/8″	4415K73	$52.52
3/4″	3 7/8″	2 3/4″	1/2″	4	5/8″	4415K74	65.34
1″	4 1/4″	3 1/8″	1/2″	4	5/8″	4415K75	99.74
1 1/2″	5″	3 7/8″	1/2″	4	5/8″	4415K76	130.14
2″	6″	4 3/4″	1/2″	4	5/8″	4415K77	209.79

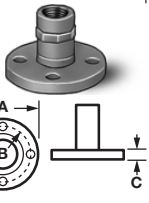

PIPE NIPPLES, THREADED ON BOTH ENDS

Pipe Size	Max. psi @ 72° F	2″ Lengths		4″ Lengths	
1/2″	290	4415K231	$13.88	4415K241	$24.31
3/4″	230	4415K232	16.57	4415K242	29.13
1″	210	4415K233	23.27	4415K243	41.56
1 1/2″	160	4415K234	38.65	4415K244	69.42
2″	140	4415K235	46.23	4415K245	86.42

UNTHREADED PIPE

Pipe Size	OD	ID	Max. psi @ 72° F ♠	2-ft. Lengths		5-ft. Lengths	
1/2″	0.840″	0.526″	580	4415K118	$92.31	4415K113	$119.88
3/4″	1.050″	0.722″	470	4415K119	121.99	4415K114	158.43
1″	1.315″	0.936″	430	4415K121	173.73	4415K115	206.82
1 1/2″	1.90″	1.476″	326	4415K122	255.39	4415K116	304.04
2″	2.375″	1.913″	270	4415K128	346.53	4415K117	412.54

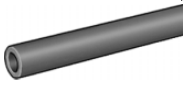

♠ When you thread the pipe, the max. psi drops by 50%.

Corrosion-Resistant Thick-Wall (Schedule 80) White PFA Threaded Pipe Fittings

- Use with water, acids, salt solutions, alcohols, oils
- Maximum Temperature: 200° F for 1/8″ and 1/4″ pipe sizes; 175° F for 3/8″ pipe size; 150° F for 1/2″ and 3/4″ pipe sizes
- Maximum Pressure: See below

Use these fittings when you want extreme corrosion resistance and high purity, but don't require the high temperature resistance of PTFE. PFA (perfluoroalkoxy) has a low coefficient of friction and outstanding antistick properties. Plus, this tough material resists stress cracking and is nonreactive to most chemicals and solvents. Material is FDA compliant and meets 3-A (dairy).
The ***90° female × male elbows*** are also known as street elbows. ***Unions*** are furnished without O-rings, except the 3/4″ pipe size which includes a fluoroelastomer O-ring.
To connect, use PTFE tape or paste sealant (see page 3415). Connections: NPT.

Pipe Size	Max. psi @ 72° F	90° Elbows		90° Elbows, Female × Male		Tees		Couplings Lg.		Unions		Hex-Head Plugs	
1/8″	125	45505K115	$25.42	45505K125	$24.16	45505K175	$34.96	1 5/8″	45505K135	$22.44	45505K185	$48.91	45505K195	$12.75
1/4″	125	45505K116	29.49	45505K126	32.95	45505K176	39.65	1 5/8″	45505K136	25.20	45505K186	63.55	45505K196	13.65
3/8″	125	45505K117	41.36	45505K127	42.11	45505K177	44.35	1 5/8″	45505K137	32.53	45505K187	84.73	45505K197	14.67
1/2″	100	45505K118	48.31	45505K128	48.31	45505K178	53.42	1 5/8″	45505K138	39.13	45505K188	99.74	45505K198	20.31
3/4″	75	45505K119	65.04	45505K129	64.95	45505K179	82.55	1 5/8″	45505K139	53.42	45505K189	135.00	45505K199	23.45

Reducing Adapters

Pipe Size, (A) × (B)		
1/4″ × 1/8″	45505K154	$25.62
3/8″ × 1/4″	45505K156	27.95
1/2″ × 1/4″	45505K157	29.84
1/2″ × 3/8″	45505K158	29.84
3/4″ × 1/2″	45505K159	49.76

Hex Nipples

Pipe Size	Lg.			
1/8″ × 1/8″	1 13/32″	45505K316	$13.76
1/4″ × 1/8″	1 13/32″	45505K318	14.29
1/4″ × 1/4″	1 13/32″	45505K322	14.89
3/8″ × 1/4″	1 13/32″	45505K324	16.64
3/8″ × 3/8″	1 13/32″	45505K326	17.24
1/2″ × 1/4″	1 13/32″	45505K328	$20.69
1/2″ × 3/8″	1 13/32″	45505K334	21.11
1/2″ × 1/2″	1 13/32″	45505K336	21.55
3/4″ × 1/2″	1 5/8″	45505K338	22.55
3/4″ × 3/4″	1 21/32″	45505K342	23.04

Warning! ***Never use PVDF or PFA fittings or pipe with compressed air or gas.***

PTFE Pipe Fittings

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

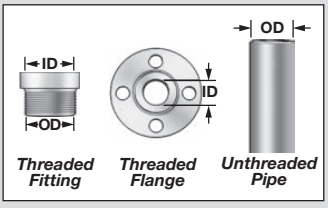

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) or inside diameter (ID), as shown at left. For ***threaded*** fittings, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the threaded pipe fitting OD measures 1 3/16″, the next highest OD in the chart is 1 3/8″, and the corresponding pipe size is 1″. For ***unthreaded*** pipe, take the actual measurement and select the corresponding pipe size.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 7/8″	2 3/8″
Unthreaded OD	0.405″	0.540″	0.675″	0.840″	1.050″	1.315″	____	____
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/2″	2″

High-Temperature Thick-Wall (Schedule 80) White PTFE Threaded Pipe Fittings

- Use with water, deionized water, oils, acids, solvents, concentrated sodium hydroxide, methylene chloride
- Temperature Range: –450° to +550° F
- Maximum Pressure: See below

When high purity and extreme resistance to temperatures are critical, rely on PTFE. PTFE has superior corrosion resistance that's even better than that of lined steel, alloy, and exotic metals such as tantalum and zirconium. It's also nonreactive to most chemicals.

Hose-end adapters have a barbed end that connects to a hose using a worm-drive clamp (not included, see page 274). ***Quick-clamp adapters*** have a quick-clamp (sanitary) end, which is also called a tri-clamp; you'll need a quick clamp (not included, see pg. 208) to make a connection. ***Flanges*** are used in pairs with a gasket to create a tight seal (gasket required but not included; see pgs. 3474-3480). ***Fully threaded pipe nipples***, also called close nipples, are threaded on each end to the center.

Connections: Threaded (NPT), barbed, quick clamp, or unthreaded.

Fittings

Pipe Size	Max. psi @ 72° F	90° Elbows		Tees		Couplings		Plugs		Caps	
1/8″	110	45375K112	$29.83	45375K162	$39.77	45375K182	$24.71	45375K252	$20.57	45375K212	$34.73
1/4″	90	45375K113	35.65	45375K163	44.56	45375K183	28.42	45375K253	23.25	45375K213	39.22
3/8″	65	45375K114	49.90	45375K164	62.36	45375K184	40.21	45375K254	28.66	45375K214	48.65
1/2″	60	45375K115	67.17	45375K165	83.70	45375K185	54.29	45375K255	32.35	45375K215	54.81
3/4″	50	45375K116	97.33	45375K166	122.03	45375K186	71.63	45375K256	43.60	45375K216	75.78
1″	37	45375K117	158.11	45375K167	181.91	45375K187	86.54	45375K257	58.93	45375K217	109.30
1 1/2″	32	45375K118	252.10	45375K168	302.52	____	____	____	____	____	____
2″	30	45375K119	413.68	45375K169	496.08	____	____	____	____	____	____

Reducing Bushings

Pipe Size, (A) × (B)		
1/4″ × 1/8″	45375K314	$28.55
3/8″ × 1/8″	45375K315	39.13
3/8″ × 1/4″	45375K316	37.83
1/2″ × 1/4″	45375K317	51.80
1/2″ × 3/8″	45375K318	48.98
3/4″ × 3/8″	45375K319	66.47
3/4″ × 1/2″	45375K321	62.80
1″ × 1/2″	45375K322	81.02
1″ × 3/4″	45375K323	76.52
1 1/2″ × 3/4″	45375K324	95.70
1 1/2″ × 1″	45375K325	91.87
2″ × 1″	45375K326	132.53

Reducing Couplings

Pipe Size	Lg.		
1/4″ × 1/8″	1 1/8″	45375K341	$39.86
3/8″ × 1/8″	1 1/4″	45375K343	56.71
3/8″ × 1/4″	1 1/4″	45375K344	53.48
1/2″ × 1/4″	1 3/8″	45375K345	76.54
1/2″ × 3/8″	1 3/8″	45375K346	72.24
3/4″ × 3/8″	1 1/2″	45375K347	99.74
3/4″ × 1/2″	1 1/2″	45375K348	95.27
1″ × 1/2″	1 5/8″	45375K349	120.04
1″ × 3/4″	1 5/8″	45375K351	115.10
1 1/2″ × 3/4″	2 1/8″	45375K352	172.21
1 1/2″ × 1″	2 1/8″	45375K353	168.72
2″ × 1″	2 1/2″	45375K354	233.38

Hose-End Adapters

Pipe Size, (A) × (B)			Pipe Size, (A) × (B)		
1/8″ × 1/8″	45375K521	$41.28	1/2″ × 3/8″	45375K527	$81.73
1/8″ × 1/4″	45375K522	39.09	1/2″ × 1/2″	45375K528	75.72
1/4″ × 1/4″	45375K523	56.16	3/4″ × 1/2″	45375K529	96.26
1/4″ × 3/8″	45375K524	44.87	3/4″ × 3/4″	45375K531	109.18
3/8″ × 3/8″	45375K525	68.04	1″ × 3/4″	45375K532	108.26
3/8″ × 1/2″	45375K526	64.09	1″ × 1″	45375K533	121.21

Quick-Clamp Adapters

Pipe Size	Flange OD	Max. psi @ 72° F		
1/2″	0.992″	60	45375K121	$154.86
3/4″	0.992″	50	45375K122	160.15
1″	1.984″	37	45375K123	172.96

Flanges

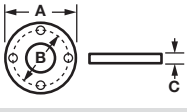

Pipe Size	Max. psi @ 72° F	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	No. of Bolt Holes	Bolt Size		
1/2″	60	3 1/2″	2 3/8″	3/4″	4	1/2″	45375K811	$107.56
3/4″	50	3 7/8″	2 3/4″	3/4″	4	1/2″	45375K812	110.93
1″	37	4 1/4″	3 1/8″	3/4″	4	1/2″	45375K813	117.54

Pipe Nipples

Fully Threaded

Threaded on Both Ends

Pipe Size	Max. psi @ 72° F	FULLY THREADED Lg.			THREADED ON BOTH ENDS 1 1/2″ Lengths		2″ Lengths		2 1/2″ Lengths		3″ Lengths	
1/8″	110	3/4″	45375K611	$28.05	45375K426	$28.05	45375K428	$37.39	45375K612	$37.39	45375K613	$37.39
1/4″	90	7/8″	45375K621	30.37	45375K434	30.37	45375K436	40.49	45375K438	40.49	45375K623	40.49
3/8″	65	1″	45375K631	33.65	45375K442	33.65	45375K444	44.85	45375K446	44.85	45375K633	44.85
1/2″	60	1 1/8″	45375K641	37.29	45375K448	37.29	45375K452	49.71	45375K454	49.71	45375K643	48.29
3/4″	50	1 3/8″	45375K651	39.38	45375K411	52.50	45375K456	39.38	45375K458	52.51	45375K462	52.51
1″	37	1 1/2″	45375K661	48.20	____	____	45375K662	48.20	45375K464	64.25	45375K466	64.25

Unthreaded Pipe

Pipe Size	OD	ID	Max. psi @ 72° F▲	2-ft. Lengths		4-ft. Lengths		8-ft. Lengths	
1/8″	0.405″	0.215″	110	45375K731	$24.65	45375K722	$49.31	45375K713	$82.18
1/4″	0.540″	0.302″	90	45375K732	31.20	45375K723	62.40	45375K714	104.00
3/8″	0.675″	0.423″	65	45375K733	47.57	45375K724	95.15	45375K715	158.58
1/2″	0.840″	0.546″	60	45375K734	66.82	45375K725	135.73	45375K716	208.82
3/4″	1.050″	0.742″	50	45375K735	76.68	45375K726	155.77	45375K717	239.64
1″	1.315″	0.957″	37	45375K736	105.61	45375K727	192.01	45375K718	320.02

▲ Pipe will withstand these pressures, even when threaded.

Warning! ***Never use PTFE fittings or pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.
For information about plastic pipe and fittings, see page 81.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID) or outside diameter (OD), as shown. For ***threaded*** fittings and pipe, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the ID or OD measures 1 3/16″, the next highest is 1 3/8″ and the corresponding pipe size is 1″. For ***unthreaded*** fittings, take the actual measurement and select the corresponding pipe size.

Threaded OD or ID	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Unthreaded ID	0.840″	1.050″	1.315″	1.660″	1.90″	2.375″
Pipe Size	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

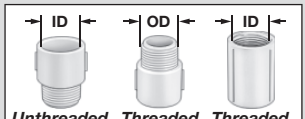

Unthreaded Socket End — *Threaded Male End* — *Threaded Female End*

Quick-Access Black Polypropylene Flanged Pipe Fittings

- Use with water, calcium chloride, and fertilizer
- Temperature Range: –20° to +150° F
- Maximum Pressure @ 70° F: 150 psi
- Pipe and Pipe Nipples: Use polypropylene

Get a tight yet easily accessible connection. The flanged ends secure with a clamp (sold separately).
Clamps are 300 series stainless steel with an EPDM gasket. Use a 5/16″ nut driver to tighten.
Connections: Flanged, threaded NPT, threaded BSPT (British Standard Pipe Taper), or barbed.

Flanged Fittings

Pipe Size	Flange OD	90° Elbows		Tees		Couplings		Plugs	
1″	2 1/32″	4657N13	$6.70	4657N17	$6.17	4657N11	$4.80	4657N29	$2.07
2″	3 9/32″	4657N14	8.39	4657N18	9.72	4657N12	10.65	4657N31	5.40

Clamps

Pipe Size		
1″	4657N41	$9.30
2″	4657N42	10.55

Flange to Threaded NPT

Pipe Size, A×B	Flange OD	Male Adapters		Female Adapters	
1″× 1/2″	2 1/32″	—	—	4657N22	$2.07
1″× 3/4″	2 1/32″	4657N26	$2.07	4657N23	2.07
1″×1″	2 1/32″	4657N27	2.07	4657N24	2.07
2″×2″	3 9/32″	4657N28	4.23	4657N25	16.37

Flange to Threaded BSPT

Male Adapters			
Pipe Size	Flange OD		
1″	2 1/32″	4657N19	$2.07
2″	3 9/32″	4657N21	4.23

Flange to Hose Barb

Hose-End Adapters			
Pipe Size, A×B	Flange OD		
1″× 3/4″	2 1/32″	4657N32	$1.80
1″×1″	2 1/32″	4657N33	1.80
2″×1 1/2″	3 9/32″	4657N34	4.80
2″×2″	3 9/32″	4657N35	4.80

British Standard Schedule 40 White PVC Pipe Fittings

- Use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: Not rated
- Pipe and Pipe Nipples: Use unthreaded standard-wall (Schedule 40) pipe and threaded British standard pipe nipples

Put a threaded fitting onto your unthreaded pipe—the threaded ends permit quick and easy connections. Fittings are NSF 61 certified for use with drinking (potable) water; the unthreaded socket ends of the fittings also meet ASTM D2466. The material meets ASTM D1784. Connect unthreaded fittings to pipe using PVC primer and cement (see page 86).
Connections: Threaded BSPT (British Standard Pipe Taper) and unthreaded socket end (female).

Unthreaded Socket End (Female) to Threaded End

Male Adapters		
Pipe Size		
1/2″	4654N27	$0.73
3/4″	4654N28	.81
1″	4654N29	1.46
1 1/4″	4654N31	1.78
1 1/2″	4654N32	2.37

Female Adapters		
Pipe Size		
1″	4654N23	$1.34
1 1/4″	4654N24	2.10
1 1/2″	4654N25	2.37

90° Elbows		
Pipe Size, A×B		
3/4″× 3/4″	4654N16	$1.16
1″ × 3/4″	4654N18	3.33
1″ ×1″	4654N17	2.17
1 1/2″×1″	4654N19	8.10

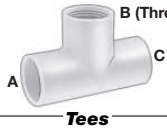

Tees		
Pipe Size, A×B×C		
3/4″× 3/4″× 3/4″	4654N11	$2.08
1″ × 3/4″×1″	4654N13	3.86
1″ ×1″ ×1″	4654N12	3.85
1 1/2″×1″ ×1 1/2″	4654N14	7.92

British Standard Schedule 80 Gray PVC Pipe Nipples

- Use with drinking (potable) water
- Maximum Temperature: 140° F
- Maximum Pressure: See table
- Fittings: Use threaded British standard

In addition to being NSF 61 certified for use with drinking (potable) water, these pipe nipples also meet ASTM D1784.
Connections: Threaded BSPT (British Standard Pipe Taper).

Pipe Size	Max. psi @ 73° F	FULLY THREADED Lg.		THREADED ON BOTH ENDS 2″ Length		3″ Length		4″ Length		5″ Length		6″ Length	
1/2″	425	1 1/8″	4672N111	$1.40	4672N112	$1.49	4672N113	$1.69	4672N114	$1.90	4672N115	$2.19	4672N116	$2.31
3/4″	345	1 3/8″	4672N121	1.49	4672N122	1.49	4672N123	1.69	4672N124	1.95	4672N125	2.31	4672N126	2.88
1″	315	1 1/2″	4672N131	1.95	4672N132	2.19	4672N133	2.51	4672N134	2.88	4672N135	3.46	4672N136	3.96
1 1/4″	260	1 5/8″	4672N141	3.20	4672N142	2.96	4672N143	3.36	4672N144	3.86	4672N145	4.40	4672N146	4.94
1 1/2″	235	1 3/4″	4672N151	3.15	4672N152	3.46	4672N153	3.96	4672N154	4.40	4672N155	5.27	4672N156	5.91

Warning! ***Never use polypropylene or PVC fittings or pipe with compressed air or gas.***

For information about selecting and measuring pipe and fittings, see pages 2-3.

Flexible Couplings and Fittings for Pipe

- Use with air and water in drain, waste, and vent applications
- Temperature Range: –40° to +120° F
- Maximum Pressure @ 72° F: 4.3 psi
- Pipe: Use on unthreaded aluminum, cast iron, rigid PVC, rigid CPVC, ductile iron, steel, and stainless steel

A flexible PVC body with series 300 stainless steel bands permits quick and easy installation. Use these couplings and fittings to connect rigid pipes of the same or different materials. All meet ASTM D5926 and the codes set by ICC-ES (International Code Council Evaluation Service).

Couplings and ***reducing couplings*** are CSA certified and meet ASTM C1173 for underground use. Vacuum rating is 30″ Hg @ 72° F.

90° elbows, ***tees***, and ***caps*** are not for underground use. Not rated for vacuum.

Also Available: Fittings with Type 316 stainless steel bands where marked with a ♦. They offer extra corrosion resistance. Please ask for 4693K1 and the specify corresponding part number from the table.

Couplings

For Pipe OD	For Pipe Size	Lg.		
1.050″	3/4″	2 3/8″	4511K61	$7.21
1.315″	1″	2 3/8″	4511K62	7.21
1.660″	1 1/4″	3 1/2″	4511K71 ♦	4.02
1.900″	1 1/2″	3 7/16″	4511K73 ♦	4.30
2.375″	2″	3 1/2″	4511K75 ♦	4.62
3.500″	3″	4″	4511K78 ♦	6.25
4.500″	4″	4″	4511K82 ♦	7.82
5.563″	5″	4″	4511K58	13.23
6.625″	6″	5 3/4″	4511K83 ♦	16.72
8.625″	8″	6″	4511K84 ♦	25.71
10.750″	10″	5 7/8″	4511K87	38.62
12.750″	12″	6 5/16″	4511K89 ♦	45.06
15.000″	15″	10″	4511K69	65.88
18.000″	18″	9 7/8″	4511K92	145.82

Reducing Couplings

For Pipe Size		Lg.		
1 1/2″ ×	1 1/4″	3 1/2″	4511K72	$4.46
2″ ×	1 1/4″	3 1/2″	4511K23	6.95
2″ ×	1 1/2″	3 7/16″	4511K74	4.88
3″ ×	1 1/2″	3 7/8″	4511K53	8.14
3″ ×	2″	4″	4511K77 ♦	5.77
4″ ×	1 1/2″	4″	4511K54 ♦	11.87
4″ ×	2″	3 7/8″	4511K26 ♦	10.90
4″ ×	3″	4″	4511K81 ♦	8.42
5″ ×	3″	3 7/8″	4511K56	17.38
5″ ×	4″	4″	4511K57	14.71
6″ ×	3″	5 3/4″	4511K59★	23.76
6″ ×	4″	5 3/4″	4511K86 ♦	19.63
6″ ×	5″	5 3/4″	4511K63	20.78
8″ ×	4″	6″	4511K64★	42.51
8″ ×	6″	6″	4511K65	31.05
10″ ×	8″	6″	4511K66 ♦	42.29
12″ ×	10″	6 3/8″	4511K67	49.91

★ Size is reduced with a sleeve.

90° Elbows

For Pipe OD	For Pipe Size		
1.900″	1 1/2″	4511K11	$15.49
2.375″	2″	4511K12	16.44
3.500″	3″	4511K13	24.43
4.500″	4″	4511K14	36.45

Tees

For Pipe OD	For Pipe Size		
1.900″	1 1/2″	4511K31	$19.35
2.375″	2″	4511K32	20.95
3.500″	3″	4511K33	32.01
4.500″	4″	4511K34	45.01

Caps

For Pipe OD	For Pipe Size		
1.900″	1 1/2″	4511K41	$2.75
2.375″	2″	4511K42	3.21
3.500″	3″	4511K43	4.07
4.500″	4″	4511K44	5.21

Flexible Couplings for Plastic Pipe and Fittings

- Use with air and water in drain, waste, and vent applications
- Temperature Range: –40° to +120° F
- Maximum Pressure @ 72° F: 4.3 psi
- Pipe and Fittings: Use on rigid PVC pipe and fittings and corrugated polyethylene pipe

Here are easy solutions to difficult connections. These couplings have a flexible PVC body with 300 series stainless steel bands. They meet ASTM D5926.

Socket End to Socket End and ***Pipe End to Socket End***—If your rigid plastic pipe becomes damaged, these couplings allow you to create a new hassle-free connection without disassembling your entire system. *Socket-end to socket-end couplings* connect two socket-end (female) fittings without using a pipe. *Pipe-end to socket-end couplings* connect a pipe to a socket-end (female) fitting. To install both styles, simply cut out the damaged pipe, slide the coupling over the ends of the fittings or pipe, and tighten the bands. For installation in close quarters, you can cut the length down to either 3″ or 2″. Vacuum rating is 30″ Hg @ 72° F.

Pipe End to Corrugated Pipe—Ideal for storm and drainage systems, use these couplings to connect a rigid plastic pipe to a corrugated polyethylene pipe. To install, slide the coupling over the ends of the two pipes and tighten the bands; a groove in the coupling matches the groove in corrugated pipe. Not rated for vacuum.

Socket End to Socket End

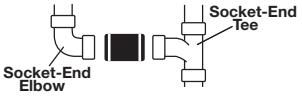

For Pipe OD	For Pipe Size	Coupling ID	Lg.		
1.900″	1 1/2″	2.26″	4″	46775K81	$8.99
2.375″	2″	2.70″	4″	46775K82	9.68
3.500″	3″	3.94″	4″	46775K83	13.09
4.500″	4″	5.01″	4″	46775K84	16.40

Pipe End to Socket End

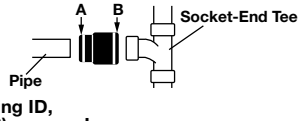

For Pipe OD	For Pipe Size	Coupling ID, (A) × (B)	Lg.		
1.900″	1 1/2″	1.97″ × 2.26″	4″	46775K71	$8.99
2.375″	2″	2.40″ × 2.69″	4″	46775K72	9.68
3.500″	3″	3.49″ × 3.9″	4″	46775K73	13.09
4.500″	4″	4.50″ × 4.92″	4″	46775K74	16.40

Pipe End to Corrugated Pipe

For Pipe OD	For Pipe Size	Coupling ID, (A) × (B)	Lg.		
3.500″	3″	3.44″ × 3.57″	4″	46775K91	$13.73
4.500″	4″	4.29″ × 4.76″	4″	46775K92	17.22
6.625″	6″	6.50″ × 6.83″	6″	46775K93	33.76
8.625″	8″	8.42″ × 9.76″	6″	46775K94	51.89

Low-Pressure Cut-to-Length Couplings for Pipe

Coupling with Clamp

- Use with water in drain, waste, and vent applications; not for use with compressed air or gas
- Temperature Range: –13° to +140° F
- Maximum Pressure: See table
- Pipe: Use on steel and rigid PVC

Connect two pipes that are up to 100 feet apart—simply cut the coupling to the length you need and attach a clamp (sold separately) to each end. Use couplings to connect rigid pipes of the same or different materials. They fit standard-wall (Schedule 40) and thick-wall (Schedule 80) pipe.

Couplings are flexible PVC. They're weatherproof and ozone resistant. **To Order:** Please order in increments of 5 ft. up to the full coil length of 100 ft.

Clamps are corrosion-resistant galvanized steel. You'll need one clamp for each connecting point.

For Pipe OD	For Pipe Size	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	Couplings Per Ft. Partial Coil		Couplings Per Ft. Full Coil	Clamps Each	
2.375″	2″	3 1/2″	15	29.8″ Hg	52265K71	$4.62	$3.73	52265K81	$17.89
3.500″	3″	7″	15	29.8″ Hg	52265K72	8.18	6.61	52265K82	19.05
4.500″	4″	9″	15	28″ Hg	52265K73	11.52	9.31	52265K83	22.33

For information about selecting and measuring pipe and fittings, see pages 2-3.

Low-Pressure Type 304 Stainless Steel Couplings for Pipe

- Use with air and water; also use in drain, waste, and vent applications
- Temperature Range: 0° to +180° F
- Maximum Pressure @ 72° F: 15 psi
- Pipe: Use on aluminum, cast iron, steel, stainless steel, and rigid PVC

Also known as no-hub couplings, these couplings are rigid and corrosion resistant. They're made from Type 304 stainless steel with a one-piece molded neoprene sleeve; the sleeve has a stop in the center. Connect rigid pipes of the same or different materials. Couplings meet ASTM A666 and C564 and the 94-20 codes set by ICC-ES (International Code Council Evaluation Service).

For Pipe to Pipe Connections

For Pipe Size	Lg.		
1½″×1½″	3″	6820K21	$15.61
2″ ×1½″	3″	6820K41	20.18
2″ ×2″	3″	6820K22	16.23
3″ ×2″	3″	6820K42	25.33
3″ ×3″	3″	6820K23	17.62
4″×3″	3″	6820K43	$26.96
4″×4″	3″	6820K24	19.89
5″×5″	4″	6820K25	38.43
6″×6″	4″	6820K26	43.08
8″×8″	4″	6820K28	72.89

For Pipe to Copper Tube Connections

For Pipe Size ×Tube Size▲	Lg.		
2″×2″	3″	6820K35	$19.07
3″×3″	3″	6820K36	21.47
4″×4″	3″	6820K37	26.42

▲ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Low-Pressure Couplings for Pipe and Tubing

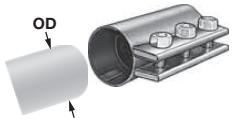

- Use with air, glass, plastic pellets, resins, and wood chips; not for use with liquids
- Temperature Range: With Neoprene Gasket: –50° to +180° F; With Silicone Gasket: –103° to +500° F
- Maximum Pressure @ 72° F: 20 psi
- Pipe and Tubing: Use on aluminum, copper, cast iron, ductile iron, steel, stainless steel, rigid PVC, and rigid CPVC

Join two pieces of rigid pipe or tubing of the same or different materials for use in low-pressure air and vacuum conveying systems, as well as in gravity-flow systems. Couplings are galvanized steel with zinc-plated steel nuts and bolts; the gasket is protected by a Type 304 stainless steel inner sleeve (unless noted) and a stainless steel strip that provides an escape route for electrostatic buildup when used in a fully grounded system. Vacuum rating is 29.9″ Hg @ 72° F.

Note: Measure the OD of your pipe or tubing and select the coupling that's closest in size to the OD dimension below.

For Pipe/ Tube OD	For Pipe Size	Lg.	No. of Bolts	*With Neoprene Gasket*		*With Silicone Gasket*	
0.840″	½″	2″	2	4487K21■	$29.51	4615K21■	$37.08
1.050″	¾″	2″	2	4487K22■	30.04	4615K22■	41.42
1.315″	1″	4″	2	4487K23■	15.74	4615K23■	23.22
1.500″	___	6″	3	4487K43	19.26	4615K43	29.92
1.660″	1¼″	6″	3	4487K24	20.78	4615K24	30.86
1.750″	___	6″	3	4487K44	20.30	4615K44	30.20
1.900″	1½″	6″	3	4487K25	20.47	4615K25	30.92
2.000″	___	6″	3	4487K45	20.78	4615K45	30.04
2.125″	___	6″	3	4487K54	21.67	4615K54	32.90
2.250″	___	6″	3	4487K56	21.95	4615K56	33.28
2.375″	2″	6″	3	4487K26	22.26	4615K26	34.38
2.500″	___	6″	3	4487K46	22.62	4615K46	34.48
2.875″	2½″	6″	3	4487K27	23.77	4615K27	36.42
3.000″	___	6″	3	4487K48	$24.36	4615K48	$40.60
3.500″	3″	6″	3	4487K28	26.52	4615K28	45.86
4.000″	3½″	8″	4	4487K51	35.28	4615K51	60.84
4.500″	4″	6″	3	4487K31	31.70	4615K31	49.88
5.000″	4½″	6″	3	4487K32	33.94	4615K32	59.68
5.563″	5″	8″	4	4487K33	45.08	4615K33	86.90
6.000″	___	8″	4	4487K11	46.28	4615K11	92.34
6.625″	6″	8″	4	4487K12	49.90	4615K12	99.60
8.000″	___	10″	4	4487K18	84.03	4615K18	156.42
8.625″	8″	10″	4	4487K14	85.93	4615K14	148.50
10.000″	___	10″	4	4487K64	90.02	4615K64	164.02
10.750″	10″	10″	4	4487K65	92.29	4615K65	170.94

■ Does not include a stainless steel inner sleeve to protect the gasket.

Low-Pressure Quick-Lock Couplings for Pipe and Tubing

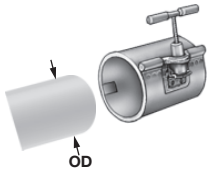

- Use with air, dust, grains, pellets, and powders; not for use with liquids
- Temperature Range: –30° to +180° F
- Maximum Pressure @ 72° F: 15 psi
- Pipe and Tubing: Use on aluminum, copper, cast iron, ductile iron, steel, stainless steel, rigid PVC, and rigid CPVC

A simple turn of the T-handle will tighten and loosen these couplings, so you can quickly disassemble and reassemble your lines without tools. Use couplings to connect pieces of rigid pipe or tubing of the same or different materials. They're ideal for use in gravity-flow systems and low-pressure air and vacuum conveying systems. Couplings are Type 304 stainless steel with a tan gum rubber gasket that's FDA compliant. They also have a metal strip that provides an escape route for electrostatic buildup when used in a fully grounded system. Vacuum rating is 29.9″ Hg @ 72° F.

Note: Measure the OD of your pipe or tubing and select the coupling that's closest in size to the OD dimension below.

For Pipe/ Tube OD	For Pipe Size	Lg.		
1.500″	___	4″	6815K41	$41.33
1.660″	1¼″	4″	6815K42	42.17
1.900″	1½″	4″	6815K44	43.76
2.000″	___	4″	6815K45	44.80
2.250″	___	4″	6815K47	46.59
2.375″	2″	4″	6815K48	48.16
2.500″	___	4″	6815K49	49.42
2.875″	2½″	4″	6815K52	52.89
3.000″	___	4″	6815K53	54.46
3.250″	___	4″	6815K54	$56.45
3.500″	3″	4″	6815K56	59.72
4.000″	3½″	4″	6815K58	64.85
4.500″	4″	4″	6815K64	68.43
5.000″	___	4″	6815K65	71.57
6.000″	___	4″	6815K71	92.83
6.625″	6″	4″	6815K75	86.18
8.000″	___	4″	6815K77	108.95
8.625″	8″	4″	6815K79	119.87

Medium-Pressure Compression Couplings for Copper Tubing

- Use with water; not for use with air or gas
- Temp. Range: 32° to 180° F
- Max. Pressure @ 72° F: 125 psi

For leak-resistant connections on copper tubing without threading or soldering, try these brass couplings. Simply slide your tube into the coupling and turn the end nuts until hand tight plus a quarter turn—this compresses the gasket for a tight seal. You may need to tighten over time. All have an EPDM gasket that permits moderate movement and misalignment of tube ends. Not rated for vacuum. NSF 61 certified for use with drinking (potable) water in all states as of July 1, 2010.

For Tube OD	For Tube Size▲	Lg.		
⅝″	½″	2 9/16″	4562K171	$6.40
⅝″	½″	4¾″	4562K181	9.87
⅞″	¾″	2 13/16″	4562K172	8.93
⅞″	¾″	4 29/32″	4562K182	12.68
1⅛″	1″	3¼″	4562K173	15.37
1⅛″	1″	5 3/16″	4562K183	$19.89
1⅜″	1¼″	2 27/32″	4562K174	15.79
1⅜″	1¼″	4⅞″	4562K184	23.36
1⅝″	1½″	3 3/32″	4562K175	25.66
1⅝″	1½″	4 29/32″	4562K185	34.81

▲ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

For information about selecting and measuring pipe and fittings, see pages 2-3.

Medium-Pressure Compression Couplings for Pipe

Stainless Steel and Carbon Steel
- Use with air, antifreeze, and water; not for natural gas or steam
- Temperature Range: –60° to +260° F
- Maximum Pressure @ 72° F: 200 psi
- Pipe: Use on aluminum, steel, stainless steel, and rigid CPVC

Black and Galvanized Malleable Iron
- Use with water; not for compressed air, gas, or steam
- Temperature Range: –20° to +180° F
- Maximum Pressure @ 72° F: 125 psi
- Pipe: Use on steel and rigid PVC

PVC
- Use with water; not for compressed air, gas, or steam
- Temperature Range: –20° to +125° F
- Maximum Pressure @ 72° F: 150 psi
- Pipe: Use on steel and rigid PVC

Get quick, liquid-tight connections on rigid pipe of the same or different material without threading, welding, or gluing. Simply slide pipe into the coupling and turn the end nuts until hand tight. You may need to tighten over time. Not rated for vacuum.

All have a Buna-N (nitrile) gasket that permits moderate movement and misalignment of pipe ends.

Type 304 stainless steel couplings provide excellent corrosion resistance. They meet ASTM A312-03 and ANSI B36.19.

Carbon steel couplings are strong and durable with poor corrosion resistance. They meet ASTM A53-04 and ANSI B36.10.

Malleable iron couplings have fair corrosion resistance. *Black malleable iron* couplings meet ASTM A197; *galvanized malleable iron* couplings meet ASTM A153 and A197.

PVC couplings are light in weight and more economical than the metal couplings.

For Pipe OD	For Pipe Size	Type 304 Stainless Steel Lg.			Carbon Steel Lg.			Black Malleable Iron Lg.			Galvanized Malleable Iron Lg.		
0.675″	3/8″	—	—	—	—	—	—	—	—	—	2 1/2″	4562K109	$4.72
0.840″	1/2″	3 1/2″	4486K111	$43.86	3 1/2″	9187K111	$19.29	4 1/4″	4562K221	$6.66	3″	4562K111	5.82
1.050″	3/4″	3 1/2″	4486K121	65.88	3 1/2″	9187K121	21.96	4 7/16″	4562K222	8.60	3 5/16″	4562K112	7.76
1.315″	1″	3 5/8″	4486K131	75.29	3 5/8″	9187K131	23.51	4 3/4″	4562K223	11.38	3 1/2″	4562K113	10.01
1.660″	1 1/4″	3 5/8″	4486K141	84.57	3 5/8″	9187K141	28.31	4 3/4″	4562K224	14.15	3 5/8″	4562K114	12.22
1.900″	1 1/2″	4″	4486K151	104.92	4″	9187K151	38.39	5 3/16″	4562K226	15.82	3 5/8″	4562K115	14.73
2.375″	2″	4 5/16″	4486K161	143.92	4 5/16″	9187K161	42.84	5 3/8″	4562K228	24.16	4 1/16″	4562K116	21.12
3.500″	3″	—	—	—	—	—	—	—	—	—	4 3/4″	4562K118	51.40

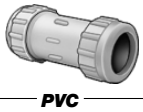

PVC

For Pipe OD	For Pipe Size	Lg.			For Pipe OD	For Pipe Size	Lg.			For Pipe OD	For Pipe Size	Lg.		
0.675″	3/8″	4 1/4″	4562K129	$1.69	1.315″	1″	5 3/4″	4562K133	$2.76	2.375″	2″	7 3/4″	4562K136	$6.73
0.840″	1/2″	4 7/8″	4562K131	1.69	1.660″	1 1/4″	6 1/2″	4562K134	4.03	3.500″	3″	10 3/4″	4562K138	19.09
1.050″	3/4″	5 5/8″	4562K132	2.39	1.900″	1 1/2″	6 5/8″	4562K135	5.03	4.500″	4″	12″	4562K139	26.40

Medium-Pressure Vibration-Resistant Couplings for Pipe

- Use with air, alkalies, diluted acids, salts, and water
- Temperature Range: –4° to +200° F
- Maximum Pressure @ 72° F: 232 psi
- Pipe: Use on aluminum, steel, stainless steel, and rigid PVC

Perfect for high-vibration areas, these couplings have teeth that bite into the pipe's surface to prevent the pipe from pulling out. They can also accommodate up to 5° misalignment between pipes. Use them to connect rigid pipes of the same or different materials. Couplings are Type 316 stainless steel with an EPDM gasket that's FDA compliant. Meet ASTM 1476 (Type 2, Class 2). Vacuum rating is 28″ Hg @ 72° F.

For Pipe OD	For Pipe Size	Lg.	No. of Bolts			For Pipe OD	For Pipe Size	Lg.	No. of Bolts		
1.050″	3/4″	1 13/16″	1	2397K11	$68.88	2.375″	2″	3″	1	2397K15	$106.52
1.315″	1″	1 13/16″	1	2397K12	73.03	2.875″	2 1/2″	3 11/16″	2	2397K16	135.78
1.660″	1 1/4″	2 3/8″	1	2397K13	86.67	3.500″	3″	3 11/16″	2	2397K17	149.60
1.900″	1 1/2″	2 3/8″	1	2397K14	90.95	4.500″	4″	3 11/16″	2	2397K18	165.67

High-Pressure Couplings for Pipe

Coupling with Two Bolts

Coupling with Four Bolts

- Use with drinking (potable) water, bases, mild acids, and salt solutions
- Temperature Range: –20° to +180° F
- Maximum Pressure @ 72° F: 500 psi
- Pipe: Use on cast iron, steel, and rigid PVC

Choose these heavy duty steel couplings for high-pressure applications. Use them to connect rigid pipes of the same or different materials. To install, center the coupling over two pipe ends and tighten the bolts with a wrench. Couplings allow limited expansion and contraction; they do not restrain side-to-side movement. Vacuum rating is 15″ Hg @ 72° F.

All couplings have a Buna-N (nitrile) gasket and meet AWWA (American Water Works Association) C-219 standards. Those ***with two bolts*** also meet ASTM A307 and A536, and those ***with three to six bolts*** also meet ASTM A53, A513, and A715. All couplings are also NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

For Pipe OD	For Pipe Size	Lg.	No. of Bolts			For Pipe OD	For Pipe Size	Lg.	No. of Bolts		
0.840″	1/2″	7″	2	5542K51	$37.75	3.500″	3″	6″	3	5542K57	$102.46
1.050″	3/4″	7″	2	5542K52	43.19	4.500″	4″	6″	4	5542K61	129.44
1.315″	1″	7″	2	5542K53	44.69	5.563″	5″	8″	4	5542K62	171.29
1.660″	1 1/4″	7″	2	5542K54	46.79	6.625″	6″	6″	6	5542K63	175.06
1.900″	1 1/2″	7″	2	5542K55	55.87	8.625″	8″	6″	6	5542K64	206.50
2.380″	2″	8″	2	5542K56	71.58						

For information about selecting and measuring pipe and fittings, see pages 2-3.

Deep-Freeze Plug Kits for Pipe

Create a temporary ice plug in your pipe so you can make repairs without draining the line—great for sprinkler systems and anywhere draining is not practical. These kits freeze the standing water (or other fluid with a similar freezing point) that's in your line, eliminating the need to refill or reheat and preventing air-lock problems that can occur.

Simply wrap a jacket (included) around your pipe at an upstream location near the point of repair and inject CO_2 (not included) into the jacket. After use, the CO_2 evaporates and the ice plug melts, so there's little to clean up. Use on steel, iron, copper, and plastic pipe.

Kits include up to three jackets, one or two unfilled cylinders for CO_2, a 10-ft. high-pressure hose, fittings, insulated work gloves, rubber mallet, timing log, safety glasses, carrying case, and instructions.

Kits

Fits Pipe Sizes	Jacket Sizes Included	*Unfilled CO_2 Cylinders* No. Included	Cap.		
3/8″-1 1/2″	3/8″-3/4″, 3/4″-1 1/2″	1	20 lbs.	4893K71	$569.74
3/8″-3″	3/8″-3/4″, 3/4″-1 1/2″, 1 1/2″-3″	2	20 lbs.	4893K77	884.58
3/4″-1 1/2″	3/4″-1 1/2″	1	20 lbs.	4893K73	485.00

Replacement Jackets

Fits Pipe Sizes	Lg.		
3/8″- 3/4″	8″	4893K31	$99.74
3/4″-1 1/2″	12″	4893K33	110.55
1 1/2″-3″	14″	4893K35	207.07

Low-Pressure Repair Clamps for Pipe and Tubing

- Use with air, water, and waste water
- Temperature Range: –50° to +180° F
- Maximum Pressure @ 72° F: 15 psi
- Pipe and Tubing: Use on aluminum, cast iron, ductile iron, steel, stainless steel, rigid PVC, and rigid CPVC

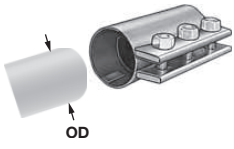

Repair pinholes, punctures, and cracks in low-pressure systems. Couplings are Type 304 stainless steel with a neoprene gasket and zinc-plated steel nuts, bolts, and washers. They also have a zinc-plated steel strip that bridges the opening between the bolts to provide complete coverage. Vacuum rating is 29.9″ Hg @ 72° F.

Note: Measure the OD of your pipe or tubing and select the coupling that is closest in size to the OD dimension below.

For Pipe/ Tube OD	For Pipe Size	4″ Length No. of Bolts			6″ Length No. of Bolts			8″ Length No. of Bolts			12″ Length No. of Bolts		
2.000″	—	2	4481K861	$41.37	3	4481K241	$51.14	4	4481K311	$59.50	6	4481K611	$80.43
2.375″	2″	2	4481K781	39.91	3	4481K111	52.54	4	4481K331	61.33	6	4481K631	82.83
3.000″	—	2	4481K941	43.90	3	4481K281	51.58	4	4481K411	72.36	6	4481K711	93.42
3.500″	3″	2	4481K791	52.75	3	4481K121	64.90	4	4481K431	74.95	6	4481K731	98.07
4.000″	—	2	4481K981	54.16	3	4481K321	73.01	4	4481K451	80.08	6	4481K751	112.88
4.500″	4″	2	4481K811	56.91	3	4481K131	73.01	4	4481K471	83.61	6	4481K771	126.95
6.000″	—	2	4481K221	56.91	3	4481K361	85.28	4	4481K531	99.74	6	4481K831	153.14
6.625″	6″	2	4481K821	77.56	3	4481K141	94.05	4	4481K551	105.16	6	4481K851	157.93

Medium-Pressure Adjustable-Diameter Repair Clamps for Pipe

- Use with: See table
- Temperature Range: –20° to +180° F
- Maximum Pressure: See table
- Pipe:
  For Water: Use on aluminum, stainless steel, and rigid PVC;
  For Natural Gas: Use on ductile iron and steel

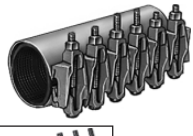

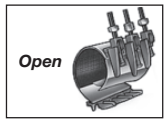

If your pipe's OD has changed over time due to corrosion or build up, these clamps are adjustable to accommodate the variance. They have one-piece Type 304 stainless steel construction and a full-circle Buna-N (nitrile) gasket. Vacuum rating is 15″ Hg @ 72° F for pinholes; vacuum is not rated for other repairs.

With Type 304 Stainless Steel Lugs, Bolts, and Nuts— Repair pinholes, cracks, and full-circle breaks in your water pipe. Use these under water and anywhere corrosion is a concern; also use them with air. Clamps are NSF 61 certified for use with drinking (potable) water.

With Ductile Iron Lugs and Alloy Steel Bolts and Nuts— Use clamps *for water* to repair pinholes, cracks, and full-circle breaks; they are NSF 61 certified for use with drinking (potable) water. Use clamps *for natural gas* to repair holes and cracks (do not use for full-circle breaks).

For Pipe OD Range	For Pipe Size	Max. psi @ 72° F	7 1/2″ Length No. of Bolts			12 1/2″ Length No. of Bolts			15″ Length No. of Bolts		
With Type 304 Stainless Steel Lugs, Bolts, and Nuts											
For Water											
2.70″- 3.00″	2 1/2″	150	2	9252K11	$99.24	3	9252K31	$162.54	4	9252K51	$186.98
3.46″- 3.70″	3″	150	2	9252K12	108.16	3	9252K32	168.74	4	9252K52	190.12
4.45″- 4.73″	4″	125	2	9252K13	119.72	3	9252K33	186.70	4	9252K53	199.58
6.56″- 6.96″	6″	125	2	9252K15	138.30	3	9252K35	226.66	4	9252K55	227.04
With Ductile Iron Lugs and Alloy Steel Bolts and Nuts											
For Water											
2.35″- 2.63″	2″	250	3	4488K313	79.66	5	4488K413	141.38	6	4488K513	162.64
2.70″- 3.00″	2 1/2″	250	3	4488K314	86.50	5	4488K414	148.94	6	4488K514	174.26
3.46″- 3.70″	3″	250	3	4488K315	94.64	5	4488K415	157.02	6	4488K515	186.42
3.73″- 4.00″	3 1/2″	250	3	4488K316	96.96	5	4488K416	161.60	6	4488K516	192.52
4.45″- 4.73″	4″	225	3	4488K317	103.96	5	4488K417	175.50	6	4488K517	205.79
5.22″- 5.62″	5″	225	3	4488K319	110.12	5	4488K419	189.76	6	4488K519	216.88
6.56″- 6.96″	6″	225	3	4488K322	124.26	5	4488K422	199.74	6	4488K522	225.28
8.54″- 8.94″	8″	200	3	4488K324	147.22	5	4488K424	226.96	6	4488K524	270.69
10.64″-11.04″	10″	175	3	4488K325	181.02	5	4488K425	270.52	6	4488K525	327.27
For Natural Gas											
2.35″- 2.63″	2″	100	3	4584K241	81.56	5	4584K441	144.76	6	4584K641	166.50
3.46″- 3.70″	3″	100	3	4584K261	96.90	5	4584K461	160.76	6	4584K661	190.86
4.45″- 4.73″	4″	100	3	4584K281	106.42	5	4584K481	179.68	6	4584K681	209.52
6.56″- 6.96″	6″	100	3	4584K311	127.22	5	4584K511	204.96	6	4584K711	230.64
8.54″- 8.94″	8″	100	3	4584K331	150.74	5	4584K531	241.66	6	4584K731	262.02
10.64″-11.04″	10″	100	3	4584K351	186.90	5	4584K551	261.85	6	4584K751	335.05

For information about selecting and measuring pipe and fittings, see pages 2-3.

Medium-Pressure Single-Hole Repair Clamps for Pipe

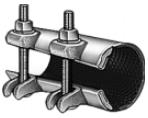

- Use with air, drinking (potable) water, and natural gas
- Temperature Range: –20° to +180° F
- Maximum Pressure: See table
- Pipe: Use on aluminum, cast iron, and steel; also rigid PVC for water applications only

Also called patch clamps, use to repair pinholes, punctures, and small splits in a pipe without having to disassemble your system. All have one-piece construction, unless noted, and are NSF 61 certified for use with drinking (potable) water. They are Type 304 stainless steel with a Buna-N (nitrile) gasket, ductile iron lugs, and steel nuts and bolts. Vacuum rating is 15″ Hg @ 72° F for pinholes; vacuum is not rated for other repairs.

Also Available: Items marked with a ♠ can also be furnished with an EPDM gasket for hot water and steam applications up to 300° F. Please ask for 4570K1 and specify the pipe size.

For Pipe OD	For Pipe Size	Max. psi @ 72° F: For Water	Max. psi @ 72° F: For Natural Gas	3″ Length: No. of Bolts			6″ Length: No. of Bolts			9″ Length: No. of Bolts			12″ Length: No. of Bolts		
0.840″	1/2″	150	100	1	4570K111♠	$12.19	2	4570K131	$22.50	—	—	—	—	—	—
1.050″	3/4″	150	100	1	4570K112♠	12.43	2	4570K132	23.19	—	—	—	—	—	—
1.315″	1″	150	100	1	4570K113♠	13.60	2	4570K133	24.69	—	—	—	—	—	—
1.660″	1 1/4″	150	100	1	4570K114	13.95	2	4570K134♠	26.02	—	—	—	—	—	—
1.900″	1 1/2″	150	100	1	4570K115	15.00	2	4570K135♠	28.26	—	—	—	—	—	—
2.375″	2″	150	100	1	4570K116	16.38	2	4570K136♠	29.69	3	4570K56	$45.50	4	4570K76	$60.38
2.875″	2 1/2″	150	100	1	4570K117	20.55	2	4570K137♠	41.00	3	4570K57	60.95	4	4570K77	82.38
3.500″	3″	150	100	1	4570K118	21.48	2	4570K138♠	43.40	3	4570K58	71.38	4	4570K78	97.12
4.000″	3 1/2″	150	100	1	4570K119	23.19	2	4570K139	45.00	3	4570K59	71.83	4	4570K79	98.14
4.500″	4″	150	100	1	4570K121	24.93	2	4570K141♠	46.26	3	4570K61	86.57	4	4570K81	115.93
5.563″	5″	100	60	1	4570K122	28.26	2	4570K142	56.05	3	4570K62	94.76	4	4570K82	126.67
6.625″	6″	100	60	1	4570K151	29.69	2	4570K161	58.24	3	4570K63♠	98.14	4	4570K83	131.52
8.625″	8″	100	60	1	4570K152	34.88	2	4570K162	67.76	3	4570K64♠	106.95	4	4570K84	166.45
10.750″	10″	50	25	2	4570K153★	64.19	4	4570K163★	132.93	6	4570K65♠★	190.60	8	4570K85★	244.70
12.750″	12″	50	25	2	4570K154★	73.50	4	4570K164★	142.50	6	4570K66★	208.82	8	4570K86♠★	255.61

★ Two-piece design.

Medium-Pressure Multi-Hole Repair Clamps for Pipe and Copper Tube

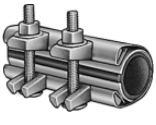

- Use with air and drinking (potable) water
- Temperature Range: –20° to +180° F
- Maximum Pressure @ 72° F: Air: 100 psi; Water: 150 psi
- Pipe: Use on steel and rigid PVC

Repair multiple pinholes, punctures, splits, and full-circle breaks on air and water lines. These clamps are also a great choice when you want to add support to corroded pipe. Clamps slip over pipe, so there's no need to disassemble your system. All have one-piece Type 304 stainless steel construction with ductile iron lugs and galvanized steel nuts and bolts. They also have a full-circle Buna-N (nitrile) gasket that is NSF 61 certified for use with drinking (potable) water as of October 1, 2010. Vacuum rating is 15″ Hg @ 72° F.

For Pipe/ Tube OD	For Pipe Size	3″ Length: No. of Bolts			6″ Length: No. of Bolts		
For Pipe							
0.840″	1/2″	1	50245K14	$42.19	2	50245K15	$89.88
1.050″	3/4″	1	50245K16	42.76	2	50245K17	90.38
1.315″	1″	1	50245K24	45.21	2	50245K25	91.05
1.660″	1 1/4″	1	50245K26	46.36	2	50245K27	92.14
1.900″	1 1/2″	1	50245K28	47.62	2	50245K29	93.93
2.375″	2″	1	50245K34	51.88	2	50245K35	96.38
For Copper Tubing							
1.13″	—	1	50245K18	44.55	2	50245K19	90.60

High-Pressure Hinged Repair Clamps for Pipe

- Use with water, antifreeze, diesel fuel, natural gas, and oil
- Temperature Range: –20° to +250° F
- Maximum Pressure: See table
- Pipe: Use on cast iron and steel

Often called emergency clamps, use these high-pressure clamps to repair pinholes, punctures, and splits in pipe. Not for full-circle breaks. Clamps have a hinged design that opens wide and closes over the pipe, so there's no need to disassemble your system. They are ductile iron with a Buna-N (nitrile) gasket and electroplated steel bolts. Not rated for vacuum.

For Pipe OD	For Pipe Size	Max. psi @ 72° F	Lg.	No. of Bolts		
0.840″	1/2″	600	3 1/4″	2	4577K51	$33.75
1.050″	3/4″	600	3 1/4″	2	4577K52	37.12
1.315″	1″	600	3 1/2″	2	4577K53	38.25
1.660″	1 1/4″	600	3 3/4″	2	4577K54	40.50
1.900″	1 1/2″	600	4″	2	4577K55	45.00
2.375″	2″	600	4 1/4″	2	4577K56	49.50
2.875″	2 1/2″	600	4 1/2″	2	4577K57	$60.75
3.500″	3″	500	4 3/4″	2	4577K58	63.00
4.500″	4″	500	6″	2	4577K61	108.00
6.625″	6″	400	8″	3	4577K64	234.00
8.625″	8″	300	9 7/8″	3	4577K65	291.60
10.750″	10″	200	11 7/8″	4	4577K66	572.73

High-Pressure Two-Piece Repair Clamps for Pipe

4″ Length

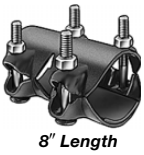

8″ Length

- Use with water, antifreeze, diesel fuel, natural gas, and oil
- Temperature Range: –20° to +250° F
- Maximum Pressure: See table
- Pipe: Use on cast iron and steel

Providing the highest pressure rating of all the repair clamps we offer, these also have a two-piece design that makes installation easy. Just position the two clamp halves over the damaged pipe and secure the bolts—there's no need to disassemble your system. Clamps are 3/16″ thick steel plate with zinc-plated steel nuts and bolts. Not rated for vacuum. Not for full-circle breaks.

4″ Length—Repair small holes caused by pitting. Furnished with a cone-shaped Buna-N (nitrile) gasket.

8″ Length—Use to repair corrosion spots and splits. Furnished with a Buna-N (nitrile) strip gasket that runs the full length of the clamp.

For Pipe OD	For Pipe Size	4″ Length: Max. psi @ 72° F	4″ Length: No. of Bolts			8″ Length: Max. psi @ 72° F	8″ Length: No. of Bolts		
4.500″	4″	1,000	2	6822K311	$75.18	500	4	6822K411	$113.30
6.625″	6″	1,000	2	6822K331	87.52	500	4	6822K431	124.55
8.625″	8″	1,000	2	6822K341	99.74	400	4	6822K441	150.36

For information about selecting and measuring pipe and fittings, see pages 2-3.

Saddle Taps for Metal-to-Plastic Pipe

- Use with drinking (potable) water; not for use with compressed air or gas
- Maximum Temperature: 140° F
- Maximum Pressure @ 72° F: 2″, 3″, and 4″ pipe sizes: 235 psi; 6″ pipe size: 200 psi
- Pipe: Use on aluminum, cast iron, ductile iron, steel, stainless steel, rigid PVC, and rigid CPVC

With Threaded NPT Outlet

Create additional outlets, connections, and transitions from metal pipe to PVC pipe. Saddles are PVC with an EPDM gasket and zinc-plated steel nuts, bolts, and washers. They have a two-piece design for quick, easy installation and come with your choice of a socket end (unthreaded) outlet or a threaded NPT outlet. All are NSF 61 certified for use with drinking (potable) water. Vacuum rating is 26″ Hg @ 72° F.

To install, shut down your line and drill a hole in the pipe where you want to create a connection. Position the saddle over the hole so the gasket and lip are fully engaged with the hole, and secure with the nuts, bolts, and washers.

For Pipe OD	For Pipe Size	Outlet Pipe Size	Lg. (A)	Required Hole Size in Pipe		
Schedule 40 with Socket End (Unthreaded) Outlet— *White*						
3.500″	3″	1 1/2″	4 1/8″	2 1/4″	4763K21	$35.67
3.500″	3″	2″	4 1/8″	2 1/4″	4763K22	35.67
4.500″	4″	1 1/2″	4 1/8″	1 3/4″	4763K27	45.68
4.500″	4″	2″	4 1/8″	2 1/4″	4763K28	45.68
4.500″	4″	3″	5 7/16″	3″	4763K31	62.18
6.625″	6″	2″	4 1/8″	2 1/4″	4763K82	81.94
Schedule 40 with Threaded NPT Outlet— *White*						
2.375″	2″	1/2″	2 7/16″	3/4″	4763K51	30.81
2.375″	2″	3/4″	2 7/16″	7/8″	4763K52	30.81
2.375″	2″	1″	2 7/16″	1 1/8″	4763K53	30.81
4.500″	4″	3/4″	3″	1 1/8″	4763K64	53.70
4.500″	4″	1″	3″	1 1/8″	4763K65	53.70
6.625″	6″	2″	4 1/8″	2 1/4″	4763K85	89.62

For Pipe OD	For Pipe Size	Outlet Pipe Size	Lg. (A)	Required Hole Size in Pipe		
Schedule 80 with Threaded NPT Outlet— *Dark Gray*						
2.375″	2″	1/2″	2 7/16″	3/4″	4849K51	$30.46
2.375″	2″	3/4″	2 7/16″	7/8″	4849K52	30.46
2.375″	2″	1″	2 7/16″	1 1/8″	4849K53	30.46
3.500″	3″	1/2″	3″	7/8″	4849K56	40.15
3.500″	3″	3/4″	3″	7/8″	4849K57	40.15
3.500″	3″	1″	3″	1 1/8″	4849K58	40.15
3.500″	3″	1 1/2″	4 1/8″	2 1/4″	4849K61	40.15
4.500″	4″	1/2″	3″	1 1/8″	4849K63	49.74
4.500″	4″	3/4″	3″	1 1/8″	4849K64	49.74
4.500″	4″	1″	3″	1 1/8″	4849K65	49.74
4.500″	4″	1 1/2″	4 1/8″	1 3/4″	4849K67	49.74
4.500″	4″	2″	4 1/8″	2 1/4″	4849K68	49.74
6.625″	6″	2″	4 1/8″	2 1/4″	4849K82	83.48

Flexible Saddle Taps for Pipe

- Use with drain, waste, and vent applications
- Temperature Range: –4° to +110° F

Easily tap-off a new connection on a wide range of pipe sizes. These flexible saddles are PVC with three 300 series stainless steel clamps. To install, shut down your line and drill a hole in the pipe where you want to create a connection. Position the saddle over the hole and tighten the clamps to a minimum of 60 in./lbs. torque. Not rated for pressure or vacuum.

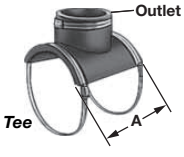

Tee

Wye

For Pipe Size	Outlet Pipe Size	Required Hole Size in Pipe	Tees Lg. (A)			Wyes Lg. (A)		
6″-36″	4″	4 1/8″	10″	48545K15	$74.97	14″	48545K19	$93.29
6″-36″	6″	5 1/2″	12 1/2″	48545K17	99.09	16″	48545K21	118.37

Saddle Taps for Steel Pipe

- Use with air and drinking (potable) water
- Temperature Range: –20° to +180° F
- Maximum Pressure @ 72° F: Air: 100 psi; Water: 150 psi
- Pipe: Use on steel

Quickly tap into existing pipelines for branch lines, air and vacuum valves, and other equipment. Saddles have a taper-seal gasket with wraparound bands that provide nearly 360° contact with pipe. As bands are tightened, pressure is uniformly distributed around the pipe for maximum support. Clamps are ductile iron with a blue epoxy coating; they have a Buna-N (nitrile) gasket and galvanized steel threaded bands, nuts, and washers. They are NSF 61 certified for use with drinking (potable) water. Vacuum rating is 15″ Hg @ 72° F.

To install, shut down your line and position the saddle over the area where you want to create a connection. Secure with the bands, nuts, and washers, then drill a hole in the pipe.

Note: The required hole size (the hole size you will need to drill) is the same size as the threaded outlet pipe size.

For Pipe OD	For Pipe Size	Lg. (A)	THREADED OUTLET PIPE SIZE 1/2″ NPT		3/4″ NPT		1″ NPT		1 1/4″ NPT		1 1/2″ NPT		2″ NPT	
1.900″	1 1/2″	3 1/4″	4572K211■	$38.79	4572K221■	$38.81	4572K231■	$38.79						
2.375″	2″	3 1/4″	4572K212	38.93	4572K222	38.93	4572K232	38.93	4572K241	$40.90	4572K251	$40.90		
3.500″	3″	3 1/4″	4572K213	40.81	4572K223	46.36	4572K233	46.36	4572K242	60.07	4572K252	60.10	4572K261♣	$64.93
4.500″	4″	3 5/8″	4572K214	52.60	4572K224	52.60	4572K234	52.60	4572K243	66.55	4572K253	66.55	4572K262▲	68.64
6.625″	6″	3 5/8″	4572K215	57.31	4572K225	57.31	4572K235	57.31	4572K244	71.31	4572K254	71.31	4572K263▲	73.33
8.625″	8″	3 5/8″	4572K216	61.00	4572K226	69.29	4572K236	69.29	4572K245	88.81	4572K255	88.81	4572K264▲	89.79

■ Also fits 1 1/4″ pipe size with a pipe OD of 1.660″. ♣ Length is 4 1/4″. ▲ Length is 5 5/16″.

Pipe Blinds

Also called paddle blinds, just slip a blind between two Class 150 flanges to temporarily block the flow while you work downstream.

Steel blinds have a 7″ long handle and meet ASTM A36.

PTFE-coated blinds have a Type 304 stainless steel core and are ideal for corrosive applications. Handle length varies from 2 3/4″ long for 4739K21 to 5″ long for 4739K26. Blinds meet ASTM D4894 and are FDA compliant.

PTFE Coated

Steel

For Pipe Size	OD	Thick.		
1″	2 1/2″	1/4″	4730K22	$14.71
1 1/2″	3 1/4″	1/4″	4730K24	15.39
2″	4″	1/4″	4730K25	16.18
2 1/2″	4 3/4″	1/4″	4730K26	17.16
3″	5 1/4″	1/4″	4730K27	18.14
4″	6 3/4″	1/4″	4730K28	$21.57
6″	8 5/8″	1/2″	4730K29	60.78
8″	10 7/8″	5/8″	4730K52	72.06
10″	13 1/4″	5/8″	4730K53	85.78
12″	16″	5/8″	4730K54	103.92

PTFE-Coated Stainless Steel

For Pipe Size	OD	Thick.		
1″	2 5/8″	1/8″	4739K21	$32.06
1 1/2″	3 3/8″	1/8″	4739K22	37.36
2″	4 1/8″	1/8″	4739K23	43.46
3″	5 3/8″	1/8″	4739K24	56.01
4″	6 7/8″	1/8″	4739K25	66.17
6″	8 3/4″	3/16″	4739K26	88.85

Expansion Joints

For information about selecting pipe size, see pages 2-3.

Please Read Before Ordering: When ordering an expansion joint, you must first know the size of your pipe. Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) of your pipe, as shown at left. Then, refer to the chart and select the corresponding pipe size. For example, if the unthreaded pipe OD measures 1.90″, the corresponding pipe size is 1½″.

Unthreaded Pipe OD	1.90″	2.375″	2.875″	3.50″	4.50″	5.563″	6.625″	8.625″	10.750″	12.750″
Pipe Size	1½″	2″	2½″	3″	4″	5″	6″	8″	10″	12″

About Expansion Joints

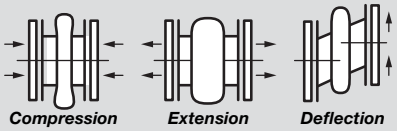

Expansion joints reduce stress, vibration, and noise in piping and duct systems by providing a point of flexibility to absorb any movement.

Expansion joints are rated for three types of movement: ***compression***, when the distance between the connections is shortened; ***extension***, when the distance between the connections is lengthened; and ***deflection***, when the connections are moved off center. While they can handle three types of movement, they can only move one way at a time. For example, if a joint is compressed, it must go back to its original position before it can be deflected.

Expansion Joints with Easy-Align Galvanized Steel Flanged Ends

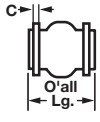

Neoprene
- Temperature Range: –50° to +230° F
- Maximum Pressure: 225 psi @ 72° F
- Vacuum: 26″ Hg @ 72° F

EPDM
- Temperature Range: –60° to +250° F
- Maximum Pressure: 225 psi @ 72° F
- Vacuum: 26″ Hg @ 72° F

The flanged ends on these expansion joints rotate for easy bolt hole alignment during installation. The flanges are made of galvanized steel and have a flat face; they'll mate with other flat-face Class 150 flanges without the need for a gasket. All have a flexible body that's nylon-reinforced for structural strength.

Double-arch joints absorb more vibration, plus can withstand more movement than the single-arch joints.

Neoprene offers excellent abrasion resistance. Ideal for use with antifreeze. Available with your choice of straight UNC threaded bolt holes or unthreaded bolt holes.

EPDM has good abrasion resistance with a higher temperature rating than neoprene. Use with water and alcohols. Bolt holes are unthreaded.

						Movement Distance			Threaded Bolt Holes				Unthreaded Bolt Holes					
									Neoprene				Neoprene			EPDM		
Pipe Size	O'all Lg.	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	No. of Bolt Holes	Compression	Extension	Deflection	Hole Size				Hole Size			Hole Size		
Single Arch																		
1½″	6″	5″	3⅞″	35/64″	4	½″	⅜″	½″	½″-13	9175K32	$52.80		⅝″	9175K13	$40.00	½″	9175K52	$52.80
2″	6″	6″	4¾″	⅝″	4	½″	⅜″	½″	⅝″-11	9175K33	52.80		¾″	9175K14	47.70	⅝″	9175K53	52.80
2½″	6″	7″	5½″	23/32″	4	½″	⅜″	½″	⅝″-11	9175K34	70.40		¾″	9175K15	61.90	⅝″	9175K54	70.40
3″	6″	7½″	6″	23/32″	4	½″	⅜″	½″	⅝″-11	9175K35	79.20		¾″	9175K16	76.20	⅝″	9175K55	79.20
4″	6″	9″	7½″	23/32″	8	¾″	½″	½″	⅝″-11	9175K36	96.80		¾″	9175K17	93.50	⅝″	9175K56	96.80
5″	6″	10″	8½″	25/32″	8	¾″	½″	½″	¾″-10	9175K37	112.20		⅞″	9175K18	121.50	¾″	9175K57	112.20
6″	6″	11″	9½″	⅞″	8	¾″	½″	½″	¾″-10	9175K38	149.60		⅞″	9175K19	151.84	¾″	9175K58	149.60
8″	6″	13½″	11¾″	⅞″	8	¾″	½″	½″	¾″-10	9175K39	213.40		⅞″	9175K23★	226.70	¾″	9175K59	213.40
10″	8″	16″	14¼″	61/64″	12	1″	⅝″	¾″	⅞″-9	9175K21	283.50		1″	9175K24	319.50	⅞″	9175K61	283.50
12″	8″	19″	17″	61/64″	12	1″	⅝″	¾″	⅞″-9	9175K22	367.50		1″	9175K25	458.70	⅞″	9175K62	367.50
Double Arch																		
1½″	7″	5″	3⅞″	35/64″	4	2″	1 3/16″	1¾″	½″-13	6819K61	86.84		⅝″	6819K26	54.46	½″	6819K81	86.84
2″	7″	6″	4¾″	⅝″	4	2″	1 3/16″	1¾″	⅝″-11	6819K62	97.37		¾″	6819K27	72.11	⅝″	6819K82	97.37
2½″	7″	7″	5½″	23/32″	4	2″	1 3/16″	1¾″	⅝″-11	6819K63	121.05		¾″	6819K28	93.16	⅝″	6819K83	121.05
3″	7″	7½″	6″	23/32″	4	2″	1 3/16″	1¾″	⅝″-11	6819K64	139.47		¾″	6819K29	114.34	⅝″	6819K84	139.47
4″	9″	9″	7½″	23/32″	8	2″	1⅜″	1 9/16″	⅝″-11	6819K65	189.47		¾″	6819K31	148.82	⅝″	6819K85	189.47
5″	9″	10″	8½″	25/32″	8	2″	1⅜″	1 9/16″	¾″-10	6819K66	223.68		⅞″	6819K52	206.05	¾″	6819K86	223.68
6″	9″	11″	9½″	⅞″	8	2″	1⅜″	1 9/16″	¾″-10	6819K67	310.53		⅞″	6819K53	252.24	¾″	6819K87	310.53
8″	13″	13½″	11¾″	⅞″	8	2⅜″	1⅜″	1⅜″	¾″-10	6819K68	439.47		⅞″	6819K54★	328.16	¾″	6819K88	439.47
10″	13″	16″	14¼″	61/64″	12	2⅜″	1⅜″	1⅜″	⅞″-9	6819K69	472.34		1″	6819K55	423.77	⅞″	6819K89	472.34
12″	13″	19″	17″	61/64″	12	2⅜″	1⅜″	1⅜″	⅞″-9	6819K71	587.27		1″	6819K56	515.50	⅞″	6819K91	587.27

★ OD (A) is 12½″.

Expansion Joints with Gasketed Flanged Ends

Chlorobutyl
- Temperature Range: –60° to +250° F
- Maximum Pressure: 190 psi @ 72° F
- Vacuum: 26″ Hg @ 72° F

Neoprene
- Temperature Range: –50° to +225° F
- Maximum Pressure: 190 psi @ 72° F
- Vacuum: 26″ Hg @ 72° F

Neoprene w/Buna-N Liner
- Temperature Range: –65° to +225° F
- Maximum Pressure: 210 psi @ 72° F
- Vacuum: 30″ Hg @ 72° F

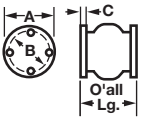

You'll get a better seal than with other expansion joints because these come with molded flanged ends that act as gaskets. Because the flanges are molded into the body, they do not rotate; however, all have galvanized steel back up flanges that do. These joints will mate with the Class 150 flanges in your piping system. The bolt holes are unthreaded. The joint bodies have a single arch and are nylon reinforced, except the joints that are neoprene with Buna-N liner which are reinforced with polyester cord.

Chlorobutyl withstands higher temperatures than neoprene or Buna-N. It has good abrasion resistance.

Neoprene offers excellent abrasion resistance and is ideal for use with antifreeze.

Neoprene with Buna-N (nitrile) liner handles more applications than neoprene alone. It has good abrasion resistance and is for use with water, antifreeze, oils, grease, and hydraulic fluids.

					Unthreaded Bolt Holes		Movement Distance								
Pipe Size	O'all Lg.	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	No.	Size	Compression	Extension	Deflection	Chlorobutyl		Neoprene		Neoprene w/Buna-N Liner	
2″	6″	6″	4¾″	27/32″	4	⅝″	1¼″	⅝″	19/32″	4528K72	$234.00	4528K82	$234.00	4528K52	$130.00
2½″	6″	7″	5½″	27/32″	4	⅝″	1¼″	⅝″	19/32″	4528K73	242.00	4528K83	242.00	4528K53	156.67
3″	6″	7½″	6″	27/32″	4	⅝″	1¼″	⅝″	19/32″	4528K74	244.00	4528K84	244.00	4528K54	181.67
4″	6″	9″	7½″	27/32″	8	⅝″	1¼″	⅝″	19/32″	4528K75	303.64	4528K85	303.64	4528K55	236.67
5″	6″	10″	8½″	17/32″	8	¾″	1¼″	⅝″	19/32″	4528K76	336.67	4528K86	336.67	4528K56	266.67
6″	6″	11″	9½″	17/32″	8	¾″	1¼″	⅝″	19/32″	4528K77	339.50	4528K87	339.50	4528K57	321.67
8″	6″	13½″	11¾″	17/32″	8	¾″	1¼″	⅝″	19/32″	4528K78	437.77	4528K88	437.77	4528K58	411.67

For information about selecting pipe size, see pages 2-3. For information about expansion joints, see page 110.

Please Read Before Ordering: When ordering an expansion joint, you must first know the size of your pipe. Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first measure the outside diameter (OD) of your pipe, as shown at right. Then, refer to the chart and select the corresponding pipe size. For example, if the unthreaded pipe OD measures 1.90″, the corresponding pipe size is 1½″.

Unthreaded Pipe OD	1.90″	2.375″	2.875″	3.50″	4″	4.50″	5″	5.563″	6.625″	8.625″	10.750″	12.750″
Pipe Size	1½″	2″	2½″	3″	3½″	4″	4½″	5″	6″	8″	10″	12″

Corrosion-Resistant PTFE Expansion Joints with Ductile Iron Flanged Ends

- Use with water, air, natural gas, oil, antifreeze, hydrochloric acid
- Temperature Range: 0° to 400° F
- Maximum Pressure: 138 psi @ 72° F
- Vacuum: 29.9″ Hg @ 72° F

Corrosive chemicals are no match for these super-tough PTFE expansion joints—there's even a rust inhibitor on the flanges to prevent corrosion. Joints have a triple arch to absorb vibration and limit rods to prevent overextension. The flanges have a flat face; they'll mate with other flat-face Class 150 flanges without the need for a gasket. Bolt holes have UNC straight threads.

Pipe Size	O'all Lg.	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	Threaded Bolt Holes No.	Threaded Bolt Holes Size	Movement Distance Compression	Movement Distance Extension	Movement Distance Deflection		
1½″	2″	5″	3⅞″	11/32″	4	½″-13	½″	½″	¼″	3501K51	$326.00
2″	2¾″	6″	4¾″	7/16″	4	⅝″-11	¾″	¾″	⅜″	3501K52	422.00
2½″	3 3/16″	7″	5½″	½″	4	⅝″-11	¾″	¾″	⅜″	3501K53	438.00
3″	3⅝″	7½″	6″	½″	4	⅝″-11	1″	1″	½″	3501K54	520.00
4″	3⅝″	9″	7½″	⅝″	8	⅝″-11	1″	1″	½″	3501K55	684.00
6″	4″	11″	9½″	¾″	8	¾″-10	1⅛″	1⅛″	9/16″	3501K57	962.00

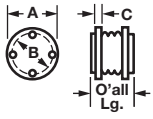

Stainless Steel Bellows Expansion Joints with Easy-Align Steel Flanged Ends

- Use with water, air, steam, natural gas, oil, antifreeze
- Temperature Range: –20° to +800° F
- Maximum Pressure: 150 psi @ 72° F
- Vacuum: 29″ Hg @ 72° F

These expansion joints have a corrosion-resistant Type 321 stainless steel body that stands up to higher temperatures than the other joints. The flanges are carbon steel and rotate for easy bolt hole alignment during installation. Flanges have a flat face that will mate with other flat-face Class 150 flanges (gasket required, but not included; see pages 3474-3480). All are made to EJMA (Expansion Joint Manufacturers Association) standards.

Liners are Type 304 stainless steel. Simply slide one into the expansion joint to provide a smooth interior for better flow.

Pipe Size	O'all Lg.	OD (A)	Bolt Circle Dia. (B)	Flange Thick. (C)	Unthreaded Bolt Holes No.	Unthreaded Bolt Holes Size	Movement Distance Compression	Movement Distance Extension	Movement Distance Deflection	Expansion Joints		Liners	
2″	6″	6″	4¾″	⅝″	4	¾″	11/16″	5/16″	5/16″	9413K61	$216.22	9413K41	$110.00
2½″	6″	7″	5½″	⅝″	4	¾″	¾″	5/16″	5/16″	9413K62	241.63	9413K42	119.85
3″	6″	7½″	6″	⅝″	4	¾″	⅞″	5/16″	¼″	9413K63	256.89	9413K43	131.60
4″	6″	9″	7½″	⅝″	8	¾″	⅞″	5/16″	3/16″	9413K64	302.67	9413K44	148.80
5″	6″	10″	8½″	¾″	8	⅞″	⅞″	5/16″	3/16″	9413K65	360.00	9413K45	176.00
6″	6″	11″	9½″	¾″	8	⅞″	⅞″	5/16″	⅛″	9413K66	398.89	9413K46	198.00
8″	6″	13½″	11¾″	1″	8	⅞″	13/16″	⅜″	1/16″	9413K67	544.44	9413K47	227.00
10″	8″	16″	14¼″	1″	12	1″	1″	⅜″	⅛″	9413K68	670.76	9413K48	282.00
12″	8″	19″	17″	1″	12	1″	1⅛″	⅜″	⅛″	9413K69	704.67	9413K49	326.00

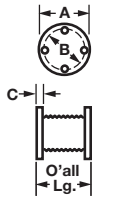

Stainless Steel Bellows Expansion Joints with Steel Butt-Weld Ends

- Use with water, air, steam, natural gas, oil, antifreeze
- Temp. Range: –20° to +800° F
- Maximum Pressure: 150 psi @ 72° F
- Vacuum: 29″ Hg @ 72° F

With a Type 321 stainless steel body like the expansion joints above, these will also stand up to high temperatures and corrosion. However, these joints have beveled butt-weld carbon steel ends for a permanent, welded connection to pipe.

Pipe Size	O'all Lg.	Movement Distance Compression	Movement Distance Extension	Movement Distance Deflection		
3″	5″	¼″	⅛″	1/16″	5254K11	$233.10
4″	6″	⅝″	17/64″	1/16″	5254K12	253.33
5″	7½″	⅝″	7/16″	1/16″	5254K13	311.11
6″	9″	⅞″	⅜″	1/16″	5254K14	372.22
8″	8½″	⅞″	11/32″	1/16″	5254K15	462.22
10″	9½″	⅞″	7/16″	1/16″	5254K16	570.00

Slip-On Expansion Joints with Clamps

- Use with water, oil, petroleum, sewage, sludge, calcium chloride and sodium carbonate 20% in water
- Temperature Range: Neoprene: –20° to +225° F; Silicone: –75° to +500° F
- Maximum Pressure: 150 psi @ 72° F
- Vacuum: 20″ Hg @ 72° F

Just slip these joints over your pipe ends and tighten the band clamps. All have a triple arch for extra flexibility as well as internal and external reinforcing rings that prevent deformation during surges and negative pressure. The band clamps are T-bolt style and made of 300 series stainless steel with steel bolts.

Neoprene joints are impregnated with nylon to offer good abrasion resistance.

Silicone joints are impregnated with fiberglass, so they remain soft and flexible at high temperatures.

Pipe Size	O'all Lg.	Movement Distance Compression	Movement Distance Extension	Movement Distance Deflection	Neoprene		Silicone	
2″	7″	1″	½″	1⅛″	5428K14	$191.56	54345K21	$279.38
2½″	7″	1″	½″	1⅛″	5428K16	195.27	54345K22	274.19
3″	7″	1″	½″	1⅛″	5428K18	205.66	54345K23	277.57
3½″	7″	1″	½″	1⅛″	5428K23	238.79	54345K24	341.04
4″	7″	1″	½″	1⅛″	5428K25	238.13	54345K25	352.63
4½″	7″	1″	½″	1⅛″	5428K27	243.91	54345K26	360.91
5″	7″	1″	½″	1⅛″	5428K29	245.21	54345K27	348.96
6″	7″	1″	½″	1⅛″	5428K33	281.33	54345K28	401.29
8″	7″	1″	½″	1⅛″	5428K37	294.65	54345K29	415.32
10″	7″	1″	½″	1⅛″	5428K41	325.37	54345K31	458.75
12″	7″	1″	½″	1⅛″	5428K45	338.69	54345K32	496.79

Low-Pressure Slip-On Expansion Joints with Clamps

- Use with water and air in drain, waste, and vent systems
- Temp. Range: –30° to +130° F
- Maximum Pressure: 4.3 psi @ 72° F
- Vacuum: Not rated

Designed for vertical use in drain, waste, and vent systems, these PVC joints easily slip over the ends of pipes. They have a single arch design and internal stops that ensure pipe is in the proper position. The band clamps are Type 301 stainless steel.

Pipe Size	O'all Lg.	Movement Distance Compression	Movement Distance Extension	Movement Distance Deflection		
1½″	4″	½″	1½″	¼″	48345K25	$12.05
2″	4″	½″	1½″	¼″	48345K26	13.67
3″	4″	½″	1½″	⅜″	48345K27	14.81
4″	4″	½″	1½″	⅜″	48345K28	18.62

Rotating Joints

For information about selecting pipe size, see pages 2-3.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″
Pipe Size (NPT)	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″

About Rotating Joints

Rotating joints transfer hot and cold materials from your supply line to a continuously revolving drum, roll, or other rotating equipment. They are often used in industrial processes such as the manufacture of paper, plastic, textiles, and rubber.

All rotating joints have at least two threaded connections known as *rotor threads* and *port threads*. Joints with two-way flow also have a third connection called *elbow threads*.

Rotor threads are male threads on a shaft that rotates with the drum.

Port threads are the stationary female threads located on the housing where you connect your supply (or return) line to the rotating joint.

Elbow threads are only found on two-way flow rotating joints. Connect a hose or pipe to the stationary female threads to remove media from the drum.

Normally, the housing and the port and elbow threads remain stationary and the rotor threads rotate with the drum or roll.

One-Way Flow

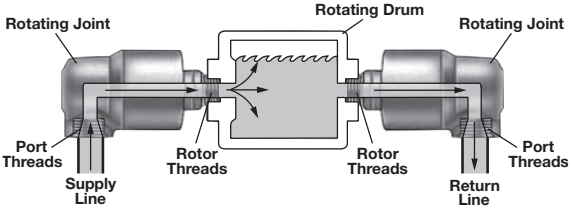

One-way flow joints have one port and one rotor connection to handle flow that's moving through a drum or roll in one direction. They are typically used in pairs, with one joint supplying fluid and the other joint returning fluid.

Two-Way Flow

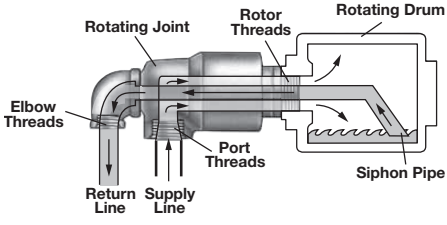

Two-way flow joints have one elbow, one port, and one rotor connection to handle flow that's moving in two directions. For example, use them to supply steam and return condensation from a drum or roll.

Right-Hand Rotor Threads

Use rotating joints with ***right-hand rotor threads*** for drums and rolls that rotate counterclockwise.

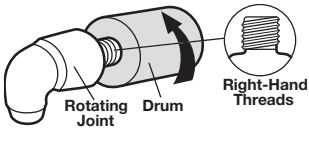

Left-Hand Rotor Threads

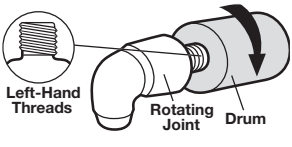

Use rotating joints with ***left-hand rotor threads*** for drums and rolls that rotate clockwise.

High-Speed Brass Rotating Joints

- Use with water, oil, intermittent steam (up to 20% of operating time)
- Max. Temperature: 250° F
- Maximum Pressure:
  Water: 750 psi @ 72° F
  Oil: 100 psi @ 72° F
  Steam: 15 psi @ 250° F
- Vacuum: Not Rated

Built for speed, these rotating joints have a brass body, a carbon graphite/bronze seal, and two precision ball bearings that keep the seal faces aligned. Joints with a 3/8″ to 1″ rotor thread size have a stainless steel rotor shaft; all others have a carbon steel rotor shaft. All have right-hand rotor threads.

Rotor Connections: NPT or straight. Port and Elbow Connections: NPT.

Rebuild kits consist of a right-hand rotor, as well as ball bearings, seals, spacers, and springs.

Also Available: Rotating joints with left-hand rotor threads for drums and rolls that rotate clockwise. Please ask for 5275K1 and specify left-hand rotor threads and the corresponding right-hand part number below.

Rotor Thread Size	Port Thread Size	Max. Speed, rpm	Body Dia.	One-Way Flow Lg.		Two-Way Flow Elbow Thread Size	Lg.		Rebuild Kits	
NPT Male Rotor Thread, NPT Female Port Thread ■										
3/8″	3/8″	1,500	1 3/4″	3 15/16″	5275K412	1/4″	4 13/16″	5275K512	5275K711	$79.33
1/2″	1/2″	1,500	2 1/4″	4 13/16″	5275K422	3/8″	5 7/8″	5275K522	5275K129	89.42
1/2″	3/4″	1,500	2 7/8″	5 9/16″	5275K432	1/2″	6 3/4″	5275K532	5275K133	108.17
3/4″	3/4″	1,500	2 7/8″	5 9/16″	5275K442	1/2″	6 3/4″	5275K542	5275K731	108.17
1″	1″	1,500	3 1/4″	6 13/16″	5275K452	1/2″	8 5/16″	5275K552	5275K741	150.00
1 1/4″	1 1/4″	1,500	3 9/16″	—	—	3/4″	9 3/8″	5275K562	5275K134	193.27
1 1/4″	1 1/2″	1,500	4 1/4″	8 1/2″	5275K462	—	—	—	5275K127	237.05
1 1/2″	1 1/2″	1,500	4 1/4″	8 1/2″	5275K472	3/4″	10 5/16″	5275K572	5275K135	255.29
Straight Male Rotor Thread, NPT Female Port Thread ■										
5/8″-18	3/8″	3,500	1 3/4″	3 15/16″	5275K612	1/4″	4 13/16″	5275K712	5275K145	79.33
3/4″-16	1/2″	3,500	2 1/4″	4 11/16″	5275K622	3/8″	5 3/4″	5275K722	5275K146	89.42
1″-14	3/4″	3,500	2 7/8″	5 7/16″	5275K632	1/2″	6 5/8″	5275K732	5275K147	108.17
1 1/2″-12	1″	3,000	3 1/4″	6 13/16″	5275K642	1/2″	8 5/16″	5275K742	5275K148	150.00
1 3/4″-12	1 1/4″	2,500	3 9/16″	7 9/16″	5275K652	3/4″	9 3/8″	5275K752	5275K149	193.27
2″-12	1 1/2″	2,500	4 1/4″	8 7/8″	5275K662	3/4″	10 11/16″	5275K762	5275K151	255.29

■ NPT threads are pipe size (see chart above for sizing information); straight threads are actual measured size.

Warning! ***Rotating joints should not be operated at maximum speed and maximum pressure simultaneously.***

For information about selecting pipe size, see pages 2-3. For information about rotating joints, see page 112.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at right. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

High-Speed Stainless Steel Rotating Joints

- Use with water, air, oil, steam
- Temperature Range: Water: –40° to +300° F; Oil: –40° to +395° F; Steam: Up to 350° F
- Maximum Pressure: Water: 750 psi @ 72° F; Air: 300 psi @ 72° F; Oil: 100 psi @ 72° F; Steam: 120 psi
- Vacuum: 22″ Hg @ 72° F

Choose these high-speed rotating joints when you need superior corrosion resistance. They have a 300 series stainless steel body, a fluorocarbon/carbon graphite seal, and two precision ball bearings. All have a stainless steel rotor shaft with right-hand threads. Connections: NPT.

Also Available: Rotating joints with left-hand rotor threads for drums and rolls that rotate clockwise. Please ask for 9177K1 and specify left-hand rotor threads and the corresponding right-hand part number below.

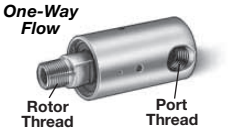

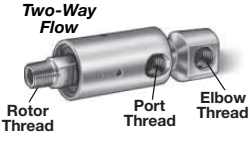

Rotor Thread Size	Port Thread Size	Max. rpm Water, Oil, and Steam	Max. rpm Air	Body Dia.	One-Way Flow Lg.			Two-Way Flow Elbow Thread Size	Lg.		
3/8″	3/8″	1,000	550	1 9/16″	4″	9177K512	$202.08	3/8″	5 1/4″	9177K612	$203.36
1/2″	1/2″	1,000	550	2 1/16″	4 3/4″	9177K522	202.08	3/8″	5 15/16″	9177K622	218.71
3/4″	3/4″	1,000	550	2 5/16″	5 1/4″	9177K532	239.88	1/2″	6 1/2″	9177K632	277.73
1″	1″	1,000	550	3 1/8″	6 3/16″	9177K542	307.59	1/2″	7 1/2″	9177K642	350.61
1 1/4″	1 1/4″	1,000	550	3 1/2″	7 1/2″	9177K552	427.20	3/4″	9 1/16″	9177K652	474.50
1 1/2″	1 1/2″	1,000	550	4″	8 3/8″	9177K562	551.17	3/4″	9 15/16″	9177K662	609.88
2″	2″	1,000	550	4 3/8″	9 1/2″	9177K572	832.81	3/4″	11″	9177K672	943.25

Medium-Speed Rotating Joints

- Use with water, oil, steam
- Temperature Range: –20° to +375° F
- Maximum Pressure: Water: 250 psi @ 72° F; Oil: 100 psi @ 72° F; Steam: 150 psi
- Vacuum: Not rated

Ideal for transferring water, oil, and steam at moderate speeds, these joints have a cast iron body, a stainless steel/carbon graphite gasket, and a precision ball bearing, except joints with 1 1/4″ rotor threads and larger which have two precision ball bearings. All have a grease fitting and a steel rotor shaft with right-hand threads. Connections: NPT.

Also Available: Rotating joints with left-hand rotor threads for drums and rolls that rotate clockwise. Please ask for 5278K1 and specify left-hand rotor threads and the corresponding right-hand part number below.

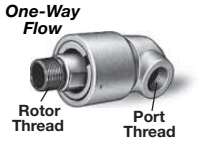

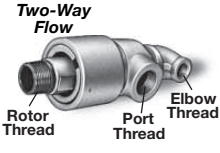

Rotor Thread Size	Port Thread Size	Max. Speed, rpm	Body Dia.	One-Way Flow Lg.			Two-Way Flow Elbow Thread Size	Lg.		
1/4″	1/4″	700	1 3/4″	4 3/8″	5278K51	$155.61	—	—	—	—
3/8″	3/8″	700	1 3/4″	4 3/8″	5278K52	161.52	—	—	—	—
1/2″	1/2″	700	2 3/8″	5″	5278K53	179.24	1/2″	7 1/4″	5278K71	$196.97
3/4″	3/4″	700	2 1/2″	5 1/2″	5278K54	211.71	1/2″	7 3/4″	5278K72	242.27
1″	1″	700	3″	6 1/8″	5278K55	290.33	1/2″	8 1/2″	5278K73	311.21
1 1/4″	1 1/4″	700	3 3/4″	9 1/16″	5278K66	378.18	1/2″	10 5/8″	5278K84	415.61
1 1/2″	1 1/2″	700	4 1/8″	9 11/16″	5278K67	490.45	3/4″	11 3/8″	5278K85	535.76
2″	2″	700	5 7/8″	11 3/4″	5278K68	737.79	1″	13 7/8″	5278K86	827.27

High-Temperature Medium-Speed Rotating Joints

- Use with oil or steam
- Temperature Range: Oil: –60° to +600° F; Steam: Up to 450° F
- Maximum Pressure: See below
- Vacuum: Not rated

Whether you're using oil or steam, these one-way-flow joints can handle your high-temperature rotating applications. They have a cast iron body that's painted with a high-temperature gold enamel, a carbon steel/carbon graphite seal, and a carbon graphite bearing. All have a nickel-plated steel rotor shaft with right-hand threads. Connections: NPT.

Also Available: Rotating joints with left-hand rotor threads for drums and rolls that rotate clockwise. Please ask for 9189K1 and specify left-hand rotor threads and the corresponding right-hand part number below.

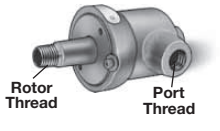

Rotor Thread Size	Port Thread Size	Max. Speed, rpm	Body Dia.	Lg.	For Oil Max. psi @ 72° F			For Steam Max. psi		
1/2″	1/2″	600	3 5/8″	6 1/4″	100	9189K122	$307.27	175	9189K422	$239.43
3/4″	3/4″	600	4 3/16″	6 3/8″	100	9189K132	346.67	175	9189K432	281.67
1″	1″	600	4 1/2″	7 1/8″	100	9189K142	338.79	175	9189K442	260.00

High-Pressure Low-Speed Rotating Joints

- Use with water, oil, hydraulic oil
- Temperature Range: –22° to +248° F
- Maximum Pressure: See below
- Vacuum: Not rated

Designed for high-pressure, low-speed transfer of process fluid, these one-way flow joints have a nickel-plated carbon steel body, a fluoroelastomer/PTFE seal, and a bearing. All have a nickel-plated steel rotor shaft with right-hand threads. Connections: NPT.

Also Available: Rotating joints with left-hand rotor threads for drums and rolls that rotate clockwise. Please ask for 1122K2 and specify left-hand rotor threads and the corresponding right-hand part number below.

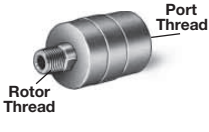

Rotor Thread Size	Port Thread Size	Max. Speed, rpm	Max. psi @ 72° F	Body Dia.	Lg.		
1/4″	1/4″	80	5,075	1 3/8″	2 5/8″	1122K101	$115.94
3/8″	3/8″	80	5,075	1 1/2″	2 3/4″	1122K102	160.69
1/2″	1/2″	80	4,350	2 3/64″	3 1/8″	1122K103	196.81
3/4″	3/4″	80	4,350	2 23/64″	3 1/2″	1122K104	241.08
1″	1″	80	3,625	2 9/16″	3 3/4″	1122K105	269.03
1 1/2″	1 1/2″	80	2,900	3 11/32″	4 9/16″	1122K107	435.14
2″	2″	80	2,900	3 15/16″	5 1/8″	1122K108	550.69

Warning! ***Rotating joints should not be operated at maximum speed and maximum pressure simultaneously.***

Rotating Joints & Swivel Joints

For information about selecting pipe size, see pages 2-3. For information about rotating joints, see page 112.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″
Pipe Size (NPT)	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″

Compact High-Speed Rotating Joints

- Use with air, hydraulic oil
- Temperature Range: –20° to +250° F
- Maximum Pressure: See below
- Vacuum: 28″ Hg @ 72° F

Great for tight spaces, use these compact joints with small air clutches and variable-pitch, hydraulic-actuated pulleys. All have an aluminum body, steel/carbon graphite seal, and a carbon steel rotor shaft with right-hand threads.

Rotor Connections: NPT or straight. Port Connections: NPT.

Also Available: Rotating joints with left-hand rotor threads for drums and rolls that rotate clockwise. Please ask for 6827K1 and specify left-hand rotor threads and the corresponding right-hand part number below.

Rotor Thread Size	Port Thread Size	Max. Speed, rpm	Max. psi @ 72° F for Oil★	Body Dia.	Lg.		
NPT Male Rotor Thread							
1/8″	1/8″	1,500	1,000	1 1/8″	2 13/16″	6827K41	$96.78
1/4″	1/4″	1,500	1,000	1 5/8″	3 3/16″	6827K42	134.13
1/4″	3/8″	1,500	500	1 23/32″	3 15/16″	6827K43	141.35
3/8″	3/8″	1,500	500	1 23/32″	3 15/16″	6827K44	141.35
1/2″	1/2″	1,500	750	2 1/4″	4 9/16″	6827K45	171.63
3/4″	3/4″	1,500	1,000	2 7/8″	5 1/8″	6827K46	174.52
1″	1″	1,500	1,000	3 1/4″	6 3/16″	6827K47	248.08
Straight Male Rotor Thread							
3/8″-24	1/8″	3,500	1,000	1 1/8″	2 13/16″	6827K81	96.78
5/8″-18	1/4″	3,500	1,000	1 5/8″	3 3/16″	6827K82	134.13
5/8″-18	3/8″	3,500	500	1 23/32″	3 15/16″	6827K83	141.35
3/4″-16	1/2″	3,500	750	2 1/4″	4 7/16″	6827K84	171.63
1″-14	3/4″	3,500	1,000	2 7/8″	5″	6827K85	174.52

★ Maximum pressure for air is 150 psi @ 72° F.

Rotating Joint Manifolds

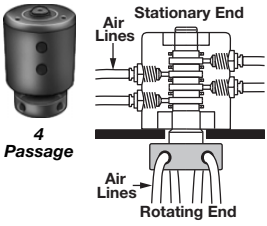

- Use with air
- Temp. Range: –30° to +250° F
- Max. Pressure: 220 psi @ 72° F
- Vacuum: 28″ Hg @ 72° F

These joints supply an independent air flow to multiple stations—the unique design allows part of the joint to rotate while supplying air to rotating objects from a stationary air supply. The connections are sealed to allow different pressures and/or vacuum service to be supplied simultaneously through the ports.

All have a black 6061 anodized aluminum body and a long-life Buna-N (nitrile) O-ring for minimal pressure loss. Use them with air equipment such as indexing tables and packing equipment.

Connections: NPT.

Rotor Thread Size	Port Thread Size	Max. Speed, rpm	Body Dia.	Lg.		
2 Passage—2 Rotor Threads, 2 Port Threads						
1/8″	1/8″	100	2 29/64″	3 3/64″	9233K12	$299.60
4 Passage—4 Rotor Threads, 4 Port Threads						
1/8″	1/8″	75	2 1/2″	3 27/32″	9233K22	458.77
6 Passage—6 Rotor Threads, 6 Port Threads						
1/8″	1/8″	50	2 1/2″	4 5/8″	9233K32	628.75

Compact Swivel Elbows

A

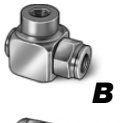
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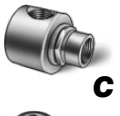
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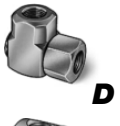
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E

- Temperature Range: Steel: –30° to +250° F: Stainless Steel and Brass: –25° to +250° F
- Maximum Pressure: See below
- Vacuum Rating: Steel: 28″ Hg @ 72° F; Stainless Steel and Brass: 29″ Hg @ 72° F

Compact in size, these 90° elbow joints are great for tight spaces. They rotate 360° for occasional rotation, but are not designed for continuous rotational movement. All have Buna-N (nitrile) seals.

Steel joints are plated with Melonite for corrosion resistance. ***Type 316 stainless steel*** joints offer excellent corrosion resistance. ***Brass*** joints have good corrosion resistance. Connections: NPT.

	Pipe Size	Lg.	Max. psi @ 72° F		
Steel—Use with water, air, and antifreeze.					
A	1/8″	1 15/32″	250	9519K69	$26.69
A	1/4″	2 3/32″	250	9519K71	29.81
A	3/8″	2 3/32″	250	9519K72	31.55
A	1/2″	2 23/32″	250	9519K73	38.71
Type 316 Stainless Steel—Use with water, air, diesel fuel, fuel oil, and antifreeze.					
B	3/8″	2 1/2″	3,000	9393K61	104.94
B	1/2″	2 1/2″	2,500	9393K62	107.41
C	3/4″	3 1/4″	1,250	9393K63	179.01
Brass—Use with water, air, diesel fuel, fuel oil, and antifreeze.					
D	1/4″	1 9/16″	3,000	9392K51	40.74
D	3/8″	2 1/8″	3,000	9392K52	40.74
D	1/2″	2 3/16″	2,500	9392K53	67.90
E	3/4″	3 11/32″	1,250	9392K54	115.43

Swivel Joints

Straight ***90° Elbow***

- Temperature Range: –20° to +225° F
- Maximum Pressure: See below
- Vacuum: 29″ Hg @ 72° F

Add flexibility to your rigid metal piping system without compromising reliability. Joints rotate 360° for occasional rotation, but are not designed for continuous rotational movement.

Joints have two rows of ball bearings, a Buna-N (nitrile) O-ring, and a pressure grease fitting. Connections: NPT.

Pipe Size	Max. psi @ 72° F	Lg.	Straight		90° Elbow	
Steel—Use with water, antifreeze, and natural gas.						
2″	6,000	6 3/8″	54065K41	$546.15	54065K42	$767.25
Type 316 Stainless Steel—Use with water, antifreeze, and natural gas.						
1″	1,000	3 15/16″	53965K84	488.23	53965K34	516.03
1 1/2″	1,000	4 5/8″	53965K89	742.00	53965K39	761.41
Ductile Iron—Use with water and antifreeze.						
1″	600	4 5/16″	53775K12	168.71	53775K52	174.52
1 1/2″	600	4 5/8″	53775K14	184.99	53775K54	193.14
2″	600	5 11/16″	53775K16	250.14	53775K56	258.29
3″	600	6 5/8″	53775K18	350.94	53775K58	380.93
Bronze—Use with water.						
1″	300	4 5/16″	53845K44	214.08	53845K54	219.46
1 1/2″	300	4 5/8″	53845K46	228.04	53845K56	240.83
2″	300	5 11/16″	53845K48	329.94	53845K58	342.10
Aluminum—Use with water and antifreeze.						
1″	125	4 5/16″	53785K33	172.40	53785K43	167.54
1 1/2″	125	4 5/8″	53785K34	170.29	53785K44	203.08
2″	125	5 11/16″	53785K36	266.54	53785K46	266.54
3″	125	6 5/8″	53785K38	324.29	53785K48	338.73

Self-Aligning Swivel Joints

- Use with air, water, antifreeze
- Temperature Range: 0° to 400° F
- Max. Pressure: See below
- Vacuum: Not rated

A unique ball-joint design accommodates up to ±5° misalignment in your piping system. These 90° elbow swivel joints rotate 360° for occasional rotation, but are not designed for continuous rotational movement.

All have a malleable iron body with a bronze nut and ball; the ball is sealed with a PTFE O-ring for protection from dirt, grit, and other contaminants.

Connections: NPT.

Pipe Size	Max. psi @ 72° F		
1/2″	340	8685T11	$230.62
3/4″	340	8685T13	164.25
1″	340	8685T15	326.93
1 1/4″	300	8685T17	502.50
1 1/2″	300	8685T19	608.75

Warning! ***Rotating joints should not be operated at maximum speed and maximum pressure simultaneously.***

For information about selecting pipe size, see pages 2-3.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID), as shown at right. Then, round up the measurement to the closest ID listed in the chart and select the corresponding pipe size. For example, if the ID measures 1 3/16″, the next highest ID in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Threaded ID	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″	4 1/2″
Pipe Size	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″	4″

Quick-Maintenance Swivel Joints

- Use with air, steam, antifreeze, hydraulic fluid, mineral oils, lubrication oils
- Temp. Range: –20° to +225° F
- Maximum Pressure: See below
- Vacuum: 20″ Hg @ 72° F

Just unscrew the nut and these joints are ready for maintenance without removing them from your line. They turn 360° for occasional rotation, but are not designed for continuous rotational movement.

Joints have a carbon steel body. Bearings have a Buna-N (nitrile) seal for protection from dirt, grit, and other contaminants.

Connections: NPT.

Straight *90° Elbow*

Pipe Size	Max. psi @ 72° F	Straight Lg.	Straight		90° Elbow	90° Elbow
1/2″	1,000	3 7/8″	6821K32	$203.50	6821K42	$217.25
3/4″	1,000	4 3/8″	6821K33	211.75	6821K43	229.63
1″	1,000	4 3/8″	6821K34	225.50	6821K44	247.50
1″	6,000	4 3/8″	6821K54	265.65	6821K64	298.74
1 1/4″	1,000	5 1/8″	6821K35	$240.63	6821K45	$262.63
1 1/4″	6,000	5 1/8″	6821K55	304.63	6821K65	336.35
1 1/2″	1,000	5 3/4″	6821K36	321.75	6821K46	357.50
2″	1,000	6 3/8″	6821K37	504.63	6821K47	655.88

About Through-Wall Fittings

Through-wall fittings, which are also known as bulkhead fittings, allow you to make safe, quick inlets and outlets in plastic and metal tanks, walls, and panels for faucets, pipes, and spigots. To install, start by depressurizing and draining your tank. Cut a hole in your tank, slide the body of the fitting through the hole from the inside of the tank (make sure the gasket is against the inside tank wall), and tighten the nut on the outside of the tank.

Threaded female × threaded female connections allow you to make threaded connections both inside and outside of your tank.

Unthreaded female (socket end) × threaded female connections allow you to make an unthreaded pipe connection on one side of your tank and a threaded pipe or fitting connection on the other side.

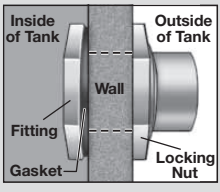

Through-Wall Fittings

Mount these fittings in a hole on your wall, tank, or panel to serve as an inlet or outlet for faucets, pipes, and spigots. Also known as bulkhead fittings, each fitting consists of a body, gasket, and locking nut with wrench flats. They are for use on curved and flat surfaces, except the polyethylene fittings which are for flat tank walls only.

Connections: NPT (threaded) or unthreaded (socket end).

PVC is the most widely used plastic material due to its good strength, corrosion resistance, and rigidity. Use with water and antifreeze. Gasket is made of EPDM. Temperature range is 32° to 140° F. Vacuum is 29″ Hg @ 72° F. Color is dark gray.

Polypropylene has excellent chemical resistance. Use with hydrochloric and phosphoric acids. Gasket is made of EPDM. Temp. range is 32° to 180° F. Vacuum is 29″ Hg @ 72° F. Color is translucent white.

Polyethylene is a strong, bendable material. Use with water, antifreeze, and hydraulic oil. Gasket is made of EPDM. Temp. range is –20° to +140° F. Not rated for vacuum. Color is black.

PTFE is the choice for extreme corrosion resistance in high-purity, high-temperature applications. The gasket is made of FEP encapsulated in silicone. Use with water, air, oil, hydraulic oil, gasoline, diesel fuel, and antifreeze. Temperature range is –75° to +400° F. Vacuum is 30″ Hg @ 72° F. Color is white.

Type 316 stainless steel offers excellent corrosion resistance and high strength in high-temperature applications. Use with water and fertilizers. Gasket is made of EPDM. Temperature range is –20° to +300° F. Not rated for vacuum.

CPVC is similar to PVC, except it has the addition of chlorine which allows it to stand up to higher temperatures. Use with hot water. Gasket is made of EPDM. Temperature range is 32° to 180° F. Vacuum is 29″ Hg @ 72° F. Color is light gray.

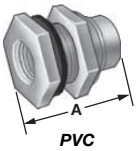

PVC

Pipe Size	Required Hole Size in Wall	Maximum Thickness of Wall	Lg. (A)	Max. psi @ 72° F		
Threaded Female × Threaded Female Connections						
PVC						
1/2″	1 3/8″	2 5/64″	3 3/4″	150	36895K121	$15.36
3/4″	1 5/8″	2 5/64″	3 7/8″	150	36895K122	16.82
1″	1 7/8″	2 5/64″	3 7/8″	150	36895K123	18.38
1 1/4″	2 5/8″	2″	4″	150	36895K124	24.85
1 1/2″	2 5/8″	2″	4″	150	36895K125	26.40
2″	3 1/4″	2″	4 1/4″	150	36895K126	35.11
3″	4 1/2″	2 1/8″	4 21/32″	150	36895K127	61.37
4″	5 3/4″	2 29/64″	5 3/4″	150	36895K128	115.64
Polypropylene						
1/2″	1 3/8″	2 5/64″	3 3/4″	150	36895K141	19.85
3/4″	1 5/8″	2 5/64″	3 7/8″	150	36895K142	24.15
1″	1 7/8″	2 5/64″	3 7/8″	150	36895K143	31.36
1 1/4″	2 5/8″	2″	4″	150	36895K144	39.77
1 1/2″	2 5/8″	2″	4″	150	36895K145	39.77
2″	3 1/4″	2″	4 1/4″	150	36895K146	61.92
3″	4 1/2″	2 1/8″	4 21/32″	150	36895K147	118.91
4″	5 3/4″	2 29/64″	5 3/4″	150	36895K148	228.04
Polyethylene						
3/4″	1 11/16″	7/16″	1 5/8″	150	3736K2	13.11
1″	2 5/8″	9/16″	1 3/4″	150	3736K3 ♠	18.67
1 1/4″	2 5/8″	9/16″	1 3/4″	150	3736K5 ♠	18.67
1 1/2″	2 5/8″	9/16″	1 3/4″	150	3736K4 ♠	18.67
2″	3 1/4″	9/16″	1 7/8″	150	3736K6 ♠	29.99
PTFE						
1/2″	1 1/2″	5/8″	2 1/8″	60	1282K44	220.66
3/4″	1 13/16″	3/4″	2 1/2″	50	1282K45	254.86
1″	2 1/16″	3/4″	2 1/2″	37	1282K46	323.33
2″	3 1/8″	7/8″	2 7/8″	30	1282K48	460.79

♠ Threaded on one end only; threads are for the outside connection.

Pipe Size	Required Hole Size in Wall	Maximum Thickness of Wall	Lg. (A)	Max. psi @ 72° F		
Threaded Female × Threaded Female Connections (Cont.)						
Type 316 Stainless Steel						
3/8″	1″	3/8″	1 11/32″	150	6696K58 ♣	$78.00
1/2″	1 3/8″	3/8″	1 19/32″	150	6696K59 ♣	103.38
3/4″	1 5/8″	3/4″	1 27/32″	150	6696K61	121.11
1″	2 1/4″	1 3/8″	2 7/8″	150	6696K62	147.40
1 1/4″	2 1/4″	1 3/8″	2 3/8″	150	6696K63	147.40
1 1/2″	3″	1 3/8″	2 5/8″	150	6696K64 ♣	185.19
2″	3″	1 3/8″	2 5/8″	150	6696K65 ♣	185.19
2″	3 1/4″	1 3/4″	3 5/32″	150	6696K66 ♣	195.45
3″	4 3/8″	1 11/16″	2 27/32″	150	6696K67 ♣	299.49
Unthreaded Female × Threaded Female Connections						
PVC						
1/2″	1 3/8″	2 5/64″	3 3/4″	150	36895K111	11.75
3/4″	1 5/8″	2 5/64″	3 7/8″	150	36895K112	13.19
1″	1 7/8″	2 5/64″	3 7/8″	150	36895K113	15.25
1 1/4″	2 5/8″	2″	4″	150	36895K114	19.10
1 1/2″	2 5/8″	2″	4″	150	36895K115	19.10
2″	3 1/4″	2″	4 1/4″	150	36895K116	28.53
3″	4 1/2″	2 1/8″	4 21/32″	150	36895K117	52.52
4″	5 3/4″	2 29/64″	5 3/4″	150	36895K118	103.13
CPVC						
1/2″	1 3/8″	2 5/64″	3 3/4″	150	36895K831	15.75
3/4″	1 5/8″	2 5/64″	3 7/8″	150	36895K832	18.75
1″	1 7/8″	2 5/64″	3 7/8″	150	36895K833	21.55
1 1/2″	2 5/8″	2″	4″	150	36895K834	29.41
2″	3 1/4″	2″	4 1/4″	150	36895K835	41.63
3″	4 1/2″	2 1/8″	4 21/32″	150	36895K836	71.83
4″	5 3/4″	2 29/64″	5 3/4″	150	36895K837	120.72

♣ Head is round.

Through-Wall Fittings

For information about selecting pipe size, see pgs. 2-3. For information about through-wall fittings, see pg. 115.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID), as shown at left. Then, round up the measurement to the closest ID listed in the chart and select the corresponding pipe size. For example, if the ID measures 1 3/16″, the next highest ID in the chart is 1 3/8″, and the corresponding pipe size is 1″.

Threaded ID	5/16″	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″	4 1/2″	6 5/8″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″	4″	6″

Through-Wall Fittings for Drinking (Potable) Water

- NSF 61 certified for use with drinking (potable) water
- Temp. Range: PVC: 40° to 140° F; CPVC: 40° to 200° F
- Max. Pressure: 150 psi @ 72° F
- Vacuum: 26″ Hg @ 72° F
- Use on curved and flat tanks

Similar to the through-wall fittings on the previous page, except these fittings are rated for use with drinking (potable) water. Also known as bulkhead fittings, mount them in a hole on your wall, tank, or panel to serve as an inlet or outlet. Each consists of a body, neoprene gasket, and round locking nut. Connections: NPT (threaded) or unthreaded (socket end).

PVC, which is ideal for cold water applications, is the most widely used plastic due to its good strength, corrosion resistance, and rigidity. Color is dark gray. ***CPVC*** is ideal for hot water applications. It is similar to PVC except it has the addition of chlorine, which allows it to stand up to higher temperatures. Color is light gray.

Pipe Size	Required Hole Size in Wall	Maximum Thickness of Wall	Lg. (A)		
Threaded Female × Threaded Female Connections					
PVC					
1/2″	1 1/2″	3/4″	2 15/16″	3773K41	$22.66
3/4″	1 3/4″	3/4″	2 15/16″	3773K42	24.86
1″	2″	55/64″	3 5/16″	3773K43	27.18
1 1/4″	2 3/8″	55/64″	3 13/32″	3773K44	36.24
1 1/2″	2 3/4″	55/64″	3 19/32″	3773K45	39.50
2″	3 3/8″	1 3/16″	4 1/8″	3773K46	52.02
3″	4 5/8″	2″	5 1/2″	3773K47	90.63
CPVC					
1/2″	1 1/2″	3/4″	2 15/16″	3773K81	31.71
3/4″	1 3/4″	3/4″	2 15/16″	3773K82	36.61
1″	2″	55/64″	3 5/16″	3773K83	40.05
1 1/4″	2 3/8″	55/64″	3 13/32″	3773K84	56.54
1 1/2″	2 3/4″	55/64″	3 19/32″	3773K85	61.80
2″	3 3/8″	1 3/16″	4 1/8″	3773K86	77.03

Pipe Size	Required Hole Size in Wall	Maximum Thickness of Wall	Lg. (A)		
Unthreaded Female × Threaded Female Connections					
PVC					
1/2″	1 1/2″	3/4″	2 29/32″	3773K61	$16.87
3/4″	1 3/4″	3/4″	2 15/16″	3773K62	19.24
1″	2″	55/64″	3 5/16″	3773K63	21.37
1 1/4″	2 3/8″	55/64″	3 13/32″	3773K64	25.75
1 1/2″	2 3/4″	55/64″	3 5/8″	3773K65	28.25
2″	3 3/8″	1 3/16″	4 1/8″	3773K66	41.87
3″	4 5/8″	2″	5 1/2″	3773K67	77.03
4″	5 1/2″	1 1/4″	5″	3773K68	151.74
6″	8″	2 1/16″	4 31/32″	3773K69	294.54
CPVC					
1/2″	1 1/2″	3/4″	2 29/32″	3773K91	23.75
3/4″	1 3/4″	3/4″	2 15/16″	3773K92	28.25
1″	2″	55/64″	3 5/16″	3773K93	31.71
1 1/2″	2 3/4″	55/64″	3 5/8″	3773K95	44.04
2″	3 3/8″	1 3/16″	4 1/8″	3773K96	62.17

Miniature Through-Wall Fittings

The small size permits a through-wall connection in even the tightest spots. Mount them in a hole on your wall or panel to serve as an inlet or outlet. The PTFE and brass fittings can also be mounted in a flat tank wall. Each consists of a body and a locking nut with wrench flats. Connections: Thread sizes 10-32 and 1/4″-20 are straight threads; pipe sizes are NPT.

Acetal is for use with water, air, antifreeze, and isopropyl alcohol. Temperature range is -40° to +180° F. Vacuum is 25″ Hg @ 72° F. *White* fittings meet FDA (food and beverage). *Black* fittings are more rugged for heavy duty use.

Nylon is for use with water, air, and ethanol up to 72° F. Temperature range is -40° to +200° F. Vacuum is not rated. Color is natural.

PTFE is ideal for extreme corrosion resistance in high-temperature applications. Use with water, air, oil, hydraulic oil, gasoline, diesel fuel, and antifreeze. Fittings include an FEP encapsulated silicone gasket. Temperature range is -75° to +400° F. Vacuum is 30″ Hg @ 72° F. Color is white.

Brass is for use with water, air, oil, and hydraulic oil. Fittings include a steel gasket. Temperature range is -65° to +250° F. Vacuum is not rated.

Thread Size	Pipe Size	Required Hole Size in Wall	Maximum Thickness of Wall	Lg. (A)	Max. psi @ 72° F		
White Acetal							
10-32	—	1/2″	5/16″	17/32″	120	8674T41	$8.45
1/4″-28	—	1/2″	5/16″	17/32″	120	8674T42	8.45
—	1/16″	1/2″	5/16″	17/32″	120	8674T43	8.45
Black Acetal							
10-32	—	41/64″	5/32″	1 1/32″	125	8674T51	12.26
1/4″-28	—	41/64″	5/32″	1 1/32″	125	8674T52	12.26
—	1/16″	41/64″	5/32″	1 1/32″	125	8674T53	12.26
—	1/8″	41/64″	5/32″	1 1/32″	125	8674T54	11.31
—	1/4″	49/64″	17/64″	1 1/4″	125	8674T55	11.79
—	3/8″	7/8″	23/64″	1 39/64″	125	8674T56	11.79

Pipe Size	Required Hole Size in Wall	Maximum Thickness of Wall	Lg. (A)	Max. psi @ 72° F		
Nylon						
1/16″	7/16″	5/8″	1 31/64″	125	8671T21	$7.45
1/8″	1/2″	47/64″	1 5/8″	125	8671T22	7.98
1/4″	5/8″	23/32″	1 49/64″	125	8671T23	8.51
3/8″	1″	3/4″	2″	125	8671T24	18.61
PTFE						
1/4″	13/16″	1/2″	1 3/4″	90	1282K42	153.26
3/8″	19/32″	1/2″	1 3/4″	65	1282K43	190.36
Brass						
1/8″	5/8″	15/16″	1 1/2″	1,000	8682T21	7.89
1/4″	3/4″	9/16″	15/16″	1,000	8682T22	8.78
3/8″	1″	11/16″	1 5/16″	1,000	8682T23	11.45

Through-Wall Fittings with Compression Pipe Connections

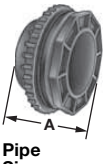

- Use with water, hydraulic oil, lye, antifreeze
- Temperature Range: –35° to +180° F
- Maximum Pressure: Not rated
- Vacuum: Not rated
- Use on curved and flat tanks

Get a quick, liquid-tight connection on unthreaded pipe with these compression fittings. Simply insert the pipe and turn the end nuts until hand tight. Also known as bulkhead fittings, mount them in a hole on your tank, panel, or wall to serve as an inlet or outlet. They absorb vibration and provide flexibility to reduce stress. Fittings are glass-filled polypropylene and include a body, two thermoplastic elastomer gaskets, one round locknut, and one round compression nut. Color is black. Connections: Compression.

Pipe Size	Required Hole Size in Wall	Maximum Thickness of Wall	Lg. (A)	*For Curved Tanks*		*For Flat Tanks*	
1/2″	2 3/16″	3/8″	3 47/64″	3770K41	$43.69	3770K31	$43.69
3/4″	2 3/16″	3/8″	3 47/64″	3770K42	43.69	3770K32	43.69
1″	2 3/16″	3/8″	3 47/64″	3770K43	43.69	3770K33	43.69
2″	3 3/16″	1/2″	3 7/16″	3770K44	52.00	3770K34	52.00
3″	4 7/16″	3/4″	3 39/64″	3770K45	88.22	3770K35	88.22

For information about selecting pipe size, see pgs. 2-3. For information about through-wall fittings, see pg. 115.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID) or outside diameter (OD), as shown at right. Then, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the ID or OD measures 1³⁄₁₆″, the next highest ID or OD in the chart is 1³⁄₈″, and the corresponding pipe size is 1″.

Threaded ID or OD	³⁄₈″	¹⁄₂″	⁵⁄₈″	³⁄₄″	1″	1³⁄₈″	1⁵⁄₈″	1⁷⁄₈″	2³⁄₈″	3¹⁄₂″	4¹⁄₂″
Pipe Size	¹⁄₈″	¹⁄₄″	³⁄₈″	¹⁄₂″	³⁄₄″	1″	1¹⁄₄″	1¹⁄₂″	2″	3″	4″

Swivel PVC Through-Wall Fittings

- Use with water and antifreeze
- Temperature Range: 32° to 140° F
- Maximum Pressure: 75 psi @ 72° F
- Vacuum: 29″ Hg @ 72° F
- Use on curved and flat tanks

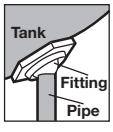

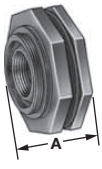

The swiveling ball-shaped connector inside these fittings allows you to adjust the connection angle on curved and flat tanks. Also known as bulkhead fittings, mount them through a hole in your tank, panel, or wall to serve as an inlet or outlet. Each consists of a PVC body, PTFE seal, EPDM gasket, and locking nut with wrench flats. Color is gray. Connections: NPSC (National Pipe Straight Coupling).

Pipe Size	Required Hole Size in Wall	Maximum Thickness of Wall	Lg. (A)		
³⁄₄″	3¹⁄₄″	1¹⁄₂″	3″	**3766K11**	$116.74
1″	3¹⁄₄″	1¹⁄₂″	2⁹⁄₁₆″	**3766K12**	114.18
1¹⁄₂″	4¹⁄₂″	1⁹⁄₆₄″	3¹⁄₈″	**3766K13**	177.48
2″	4¹⁄₂″	1⁹⁄₆₄″	2¹⁄₂″	**3766K14**	174.79
3″	5³⁄₄″	1¹¹⁄₁₆″	3¹⁄₄″	**3766K15**	262.99

Type 316 Stainless Steel Bolt-On Through-Wall Fittings

- Use with water, air, oil, hydraulic oil, antifreeze
- Temperature Range: –20° to +180° F
- Maximum Pressure: Not rated
- Vacuum: Not rated
- Use on flat tanks only

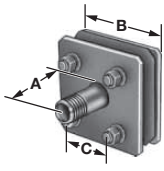

Bolt these fittings right on to your tank for the strongest connection of all our through-wall fittings. Also known as bulkhead fittings, these fittings can be retightened and adjusted from the outside of the tank—no need to drain contents to make adjustments. Made of Type 316 stainless steel, each fitting has four Type 316 stainless steel bolts and an EPDM gasket. Maximum wall thickness is 1¹⁄₄″. Connections: NPT.

Pipe Size	Required Hole Size in Wall	Lg. (A)	Mounting Plate Size, sq. (B)	Holes No.	Holes Size	Ctr.-to-Ctr. (C)		
Male Connection Outside Tank Wall								
¹⁄₂″	⁵⁵⁄₆₄″	2⁷⁄₁₆″	3¹⁄₂″	4	⁷⁄₁₆″	2″	**3765K21**	$102.22
³⁄₄″	1⁵⁄₆₄″	2⁷⁄₁₆″	3¹⁄₂″	4	⁷⁄₁₆″	2″	**3765K22**	106.67
1″	1²¹⁄₆₄″	2⁷⁄₁₆″	3¹⁄₂″	4	⁷⁄₁₆″	2″	**3765K23**	111.11
1¹⁄₂″	1¹⁵⁄₁₆″	2⁷⁄₁₆″	4″	4	⁷⁄₁₆″	2¹⁄₂″	**3765K24**	126.67
2″	2²⁵⁄₆₄″	2⁷⁄₁₆″	4¹⁄₂″	4	⁷⁄₁₆″	3″	**3765K25**	144.44
Female Connection Outside Tank Wall								
¹⁄₂″	1⁵⁄₆₄″	1³⁄₁₆″	3¹⁄₂″	4	⁷⁄₁₆″	2″	**3765K31**	104.44
³⁄₄″	1⁹⁄₃₂″	1⁵⁄₁₆″	3¹⁄₂″	4	⁷⁄₁₆″	2″	**3765K32**	108.89
1″	1¹⁹⁄₃₂″	1¹¹⁄₁₆″	3¹⁄₂″	4	⁷⁄₁₆″	2″	**3765K33**	113.33
1¹⁄₂″	2¹¹⁄₆₄″	1⁵⁄₁₆″	4″	4	⁷⁄₁₆″	2¹⁄₂″	**3765K34**	133.33
2″	2⁵⁄₈″	1⁵⁄₈″	4¹⁄₂″	4	⁷⁄₁₆″	3″	**3765K35**	160.00

Threaded Tank Fittings

- Use with water, air, steam, oil, hydraulic oil, gasoline, diesel fuel
- Temp. Range: Not rated
- Max. Pressure: Not rated
- Vacuum: Not rated

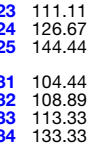

Simply screw one of these fittings into a threaded hole on your tank for an easy through-wall connection. All have male threads on one end for connection to the tank, as well as female threads on both ends to make inlet or outlet connections. Made of cast iron, you can also use these fittings as pipe reducers in piping installations. Connections: NPT.

Pipe Size, Male	Pipe Size, Female		
2″	³⁄₈″ × ³⁄₈″	**6850K11**	$13.25
2″	¹⁄₂″ × ¹⁄₂″	**6850K12**	7.79
2″	³⁄₄″ × ³⁄₄″	**6850K13**	7.79
2″	1″ × 1″	**6850K14**	7.79
2″	1¹⁄₄″ × 1¹⁄₄″	**6850K43**	7.79
2″	1¹⁄₂″ × 1¹⁄₂″	**6850K16**	7.79
2¹⁄₂″	2″ × 2″	**6850K44**	13.11
3″	1″ × 1″	**6850K35**	$38.22
3″	1¹⁄₂″ × 1¹⁄₂″	**6850K18**	18.43
3″	2″ × 2″	**6850K19**	14.60
4″	1″ × 1″	**6850K41**	24.61
4″	2″ × 2″	**6850K25**	16.82
4″	3″ × 3″	**6850K26**	25.10

Weld-On Tank Fittings

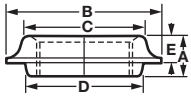

Weld these fittings onto any tank, pressure vessel, or drum for a permanent inlet and outlet connection. They have a pilot taper that centers the fitting in the hole prior to welding. Not rated for pressure or vacuum. Connections: NPT.

Forged Carbon Steel

- Use with water, oil, hydraulic oil, gasoline, diesel fuel
- Temp. Range: 30° to 275° F
- Use on curved and flat tanks

Choose these fittings for their high strength. They conform to ASME Boiler and Pressure Vessel Code, Section II. They also meet ASTM A181/A181M-01, ASTM A105/A105M-03, and ANSI/ASME B1.20.1-1983.

Low-height fittings are ideal when space is a concern.

Pipe Size	Ht. (A)	(B)	(C)	(D)	(E)		
Low Height							
¹⁄₈″	³⁄₈″	1⁵⁄₁₆″	⁷⁄₈″	1⁵⁄₁₆″	¹⁄₄″	**12555K79**	$2.83
¹⁄₄″	³⁄₈″	1⁵⁄₁₆″	⁷⁄₈″	1⁵⁄₁₆″	¹⁄₄″	**12555K81**	2.23
³⁄₈″	³⁄₈″	1⁵⁄₁₆″	⁷⁄₈″	1⁵⁄₁₆″	¹⁄₄″	**12555K82**	2.88
¹⁄₂″	⁷⁄₁₆″	1⁵⁄₈″	1¹⁄₁₆″	1¹⁄₈″	¹⁄₄″	**12555K83**	3.20
³⁄₄″	¹⁄₂″	1¹⁵⁄₁₆″	1⁵⁄₁₆″	1⁵⁄₁₆″	⁵⁄₁₆″	**12555K84**	3.52
1″	⁹⁄₁₆″	2¹⁄₄″	1⁵⁄₈″	1¹¹⁄₁₆″	⁵⁄₁₆″	**12555K85**	4.83
1¹⁄₄″	⁹⁄₁₆″	2⁹⁄₁₆″	1¹⁵⁄₁₆″	2″	⁵⁄₁₆″	**12555K86**	7.72
1¹⁄₂″	⁹⁄₁₆″	2¹³⁄₁₆″	2³⁄₁₆″	2¹⁄₄″	⁵⁄₁₆″	**12555K87**	7.42
2″	⁵⁄₈″	3³⁄₈″	2³⁄₄″	2⁵⁄₈″	³⁄₈″	**12555K88**	7.47
Full Height							
¹⁄₈″	⁹⁄₁₆″	1¹⁄₂″	1″	1⁵⁄₁₆″	⁵⁄₁₆″	**12555K69**	3.59
¹⁄₄″	⁹⁄₁₆″	1¹⁄₂″	1″	1⁵⁄₁₆″	⁵⁄₁₆″	**12555K71**	3.33
³⁄₈″	⁹⁄₁₆″	1¹⁄₂″	1″	1⁵⁄₁₆″	⁵⁄₁₆″	**12555K72**	2.90
¹⁄₂″	⁵⁄₈″	1³⁄₄″	1³⁄₁₆″	1¹⁄₈″	³⁄₈″	**12555K73**	2.90
³⁄₄″	1¹⁄₁₆″	2¹⁄₈″	1⁷⁄₁₆″	1³⁄₈″	⁷⁄₁₆″	**12555K74**	3.60
1″	³⁄₄″	2³⁄₈″	1³⁄₄″	1²¹⁄₃₂″	¹⁄₂″	**12555K75**	4.85
1¹⁄₄″	³⁄₄″	2¹¹⁄₁₆″	2¹⁄₈″	2″	¹⁄₂″	**12555K76**	5.12
1¹⁄₂″	³⁄₄″	3″	2³⁄₈″	2¹⁄₄″	¹⁄₂″	**12555K77**	7.03
2″	²⁷⁄₃₂″	3¹⁄₂″	2⁷⁄₈″	2⁵⁄₈″	¹⁹⁄₃₂″	**12555K78**	7.42
2¹⁄₂″	1″	4¹⁄₁₆″	3⁹⁄₃₂″	3⁵⁄₃₂″	¹³⁄₁₆″	**12555K89**	14.90
3″	1″	4⁵⁄₈″	3¹⁵⁄₁₆″	3²¹⁄₃₂″	¹³⁄₁₆″	**12555K91**	15.75
4″	1⁷⁄₃₂″	5¹³⁄₁₆″	4¹⁵⁄₁₆″	4²³⁄₃₂″	1¹⁄₃₂″	**12555K92**	23.23

Type 316 Stainless Steel

- Use with water, oil, hydraulic oil, diesel fuel
- Temp. Range: 30° to 275° F, unless noted
- Use on curved and flat tanks

A perfect choice when you need a high degree of corrosion resistance.

Pipe Size	Ht. (A)	(B)	(C)	(D)	(E)		
¹⁄₄″	⁹⁄₁₆″	1¹⁄₂″	1″	1⁵⁄₁₆″	⁵⁄₁₆″	**1145K51**	$22.94
³⁄₈″	⁹⁄₁₆″	1¹⁄₂″	1″	1⁵⁄₁₆″	⁵⁄₁₆″	**1145K52**	25.54
¹⁄₂″	⁵⁄₈″	1³⁄₄″	1³⁄₁₆″	1¹⁄₈″	³⁄₈″	**1145K53**	28.46
³⁄₄″	1¹⁄₁₆″	2¹⁄₈″	1⁷⁄₁₆″	1³⁄₈″	⁷⁄₁₆″	**1145K54**	31.52
1″	³⁄₄″	2³⁄₈″	1³⁄₄″	1²¹⁄₃₂″	¹⁄₂″	**1145K55**	33.08
1¹⁄₄″	³⁄₄″	2¹¹⁄₁₆″	2¹⁄₈″	2″	¹⁄₂″	**1145K56**	67.10
1¹⁄₂″	³⁄₄″	3″	2³⁄₈″	2¹⁄₄″	¹⁄₂″	**1145K57**	48.14
2″	²⁷⁄₃₂″	3¹⁄₂″	2⁷⁄₈″	2⁵⁄₈″	¹⁹⁄₃₂″	**1145K58**	51.04
2¹⁄₂″	1″	4¹⁄₁₆″	3⁹⁄₃₂″	3⁵⁄₃₂″	¹³⁄₁₆″	**1145K59**	93.98
3″	1″	4⁵⁄₈″	3¹⁵⁄₁₆″	3²¹⁄₃₂″	¹³⁄₁₆″	**1145K61**	96.20
4″	1³⁄₁₆″	5³⁄₄″	5″	4⁷⁄₈″	3¹⁄₃₂″	**1145K62** ♦	87.20

♦ Not rated for temperature.

Aluminum

- Use with water
- Temp. Range: Not rated
- Use on flat tank walls only

Made of aluminum alloy 6061-T6, these lightweight fittings meet ASTM B221.

Pipe Size	Ht. (A)	(B)	(C)	(D)	(E)		
¹⁄₈″	1³⁄₃₂″	1⁵⁄₁₆″	1³⁄₁₆″	⁷⁄₈″	⁹⁄₃₂″	**8694T41**	$5.69
¹⁄₄″	1³⁄₃₂″	1⁵⁄₁₆″	1³⁄₁₆″	⁷⁄₈″	⁹⁄₃₂″	**8694T42**	8.00
³⁄₈″	1⁵⁄₃₂″	1⁷⁄₁₆″	1¹⁄₁₆″	1³⁄₁₆″	⁹⁄₃₂″	**8694T43**	11.38
¹⁄₂″	1⁵⁄₃₂″	1⁵⁄₈″	1³⁄₁₆″	1¹⁄₈″	⁹⁄₃₂″	**8694T44**	13.07
³⁄₄″	1⁵⁄₃₂″	2″	1³⁄₈″	1⁵⁄₁₆″	⁹⁄₃₂″	**8694T45**	17.38
1″	1⁷⁄₃₂″	2¹⁄₄″	1⁵⁄₈″	1¹¹⁄₁₆″	⁹⁄₃₂″	**8694T46**	20.69
1¹⁄₄″	⁹⁄₁₆″	2⁹⁄₁₆″	1¹⁵⁄₁₆″	1¹⁵⁄₁₆″	⁵⁄₁₆″	**8694T47**	35.42
1¹⁄₂″	3⁷⁄₆₄″	2¹⁵⁄₁₆″	2⁵⁄₁₆″	2¹⁄₄″	²¹⁄₆₄″	**8694T48**	35.70
2″	1⁹⁄₃₂″	3³⁄₈″	2³⁄₄″	2⁵⁄₈″	1¹⁄₃₂″	**8694T49**	40.56

About Plastic, Rubber, and Blended Plastic/Rubber Tubing

Many variables affect tubing, such as temperature, pressure, pump speed, and the fluid being conveyed through the tube. It is your responsibility to test and monitor the tubing to ensure it is appropriate for the intended application. Tubing is not intended nor recommended for medical applications.

Material Selector Packs— You'll get one individually marked piece of tubing in the materials listed. Each piece is 3″ long and is the most popular product within the material family.

		Per Pkg.
PVC, Polyurethane, Polypropylene, Polyethylene, EVA	3077K1	$3.58
Nylon, PTFE, PVDF, PEEK	3077K2	10.65
Rubber, Blended Rubber/Plastic	3077K3	7.30

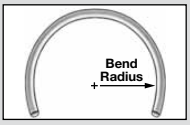

Bend Radius (Flexibility)— Indicates how far you can bend tubing before damaging it. The smaller the measurement, the better the flexibility. Bend radius is measured from the center of the bend to the edge of the tube.

Bend Radius Selector Pack— You'll get seven pieces of tubing, ranging in lengths from 12″ to 30″. Each piece of tubing is marked with the bend radius: ⅝″, 1¾″, 3⅛″, 5″, 6″, 8″, and unbendable.

	Per Pkg.
3077K4	$24.85

Color and Clarity— *Clear* and *transparent-colored* tubing allow you to see what's flowing through your line. With *semi-clear* tubing, you can see that there is something in your line, but the view is limited. With *opaque* tubing, you cannot see what is in your tubing.

Temperature/Pressure— As temperature rises, the amount of pressure tubing can withstand will decrease.

Tensile Strength— The breaking strength of material when stretched.

Fittings— Tubing hardness determines which tube fitting you should use. *Barbed Fittings:* Tubing slides over barbs to form a seal; use a tube or hose clamp to secure hose to fitting. *Compression* and *Instant Fittings:* Both styles form a seal around the tubing. *Note*: "Use with Fittings Style(s)" below represents all the fittings that can be used with a material. Please see the individual tubing presentations for fitting recommendations.

Wall Hardness (Durometer)— Measured on a Shore A, Shore D, or Rockwell R scale, the chart below shows a comparison for these scales.

Wall Hardness (Durometer) Selector Pack— This pack includes nine pieces of tubing. Each piece is 3″ long and is individually marked with its durometer: Shore A 35, 40, 55, 65, 74, 85; Shore D 43-55, 65; and Rockwell R 120.

	Per Pkg.
3077K5	$11.41

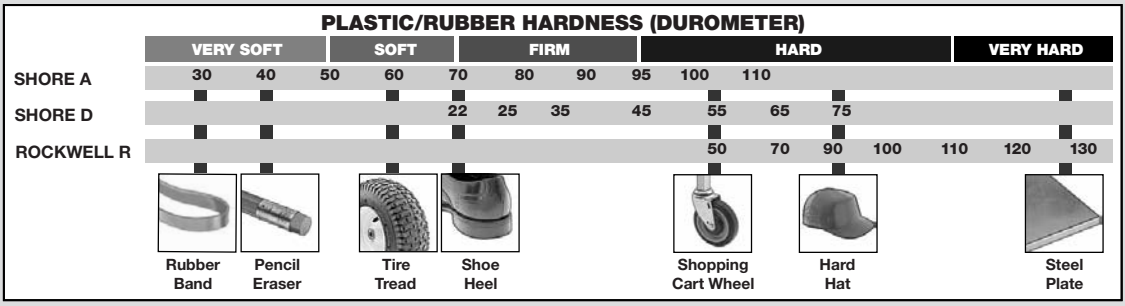

Tubing Material	Tubing Features	Use with Fitting Style(s)	Tubing Page(s)
PVC	This flexible material is a popular choice not only because it's economical, but also because it's versatile.	Barbed	119-127
Polyurethane	Flexible like PVC, except with higher abrasion resistance.	Barbed	127-129
Polyethylene	An alternative to polyurethane. Not as clear or soft as PVC.	Barbed, compression, and instant	129-131
EVA	A blend of polyethylene and vinyl acetate, it stays flexible at low temperatures.	Barbed and compression	131-132
Polypropylene	Not only can this material handle higher temperatures than polyethylene, it is also harder and stronger.	Compression	132
Nylon	Hard materials with high impact resistance.	Compression	132-134
Polycarbonate	Rigid material with an excellent balance between toughness and clarity.	Use adhesives	134
Acetal	Rigid, hard, and durable, acetal absorbs less moisture than nylon.	Compression	134
ETFE, PTFE, FEP, PFA	Very smooth, friction-resistant surface. Unaffected by most chemicals. Made without a plasticizer that can contaminate fluid passing through.	Compression	134-137
PVDF	Also known as Kynar, this tubing resists abrasion and UV. Made without a plasticizer that can contaminate fluid passing through tube.	Compression	137-138
THV	Clearer than FEP, PTFE, and PFA tubing for better flow and visibility.	Compression	138
PEEK	Offers superior impact and chemical resistance with a wide temperature range.	Compression	138
Buna-N (Nitrile) Rubber	Harder than natural rubber yet less resilient.	Barbed	138
Latex Rubber	Soft with very good impact and abrasion resistance. It's highly elastic and will resume its original shape after bending and stretching.	Barbed	139
Gum Rubber	Not as soft as latex, but has excellent impact and abrasion resistance.	Barbed	139
Viton® Fluoroelastomer Rubber	Excellent chemical and UV resistance. Can withstand higher temperatures than any other rubber tubing with the exception of silicone.	Barbed	140
Neoprene Rubber	Good resistance to weathering, oxidation, and acid. Harder than natural rubber yet less resilient.	Clamps	140
EPDM Rubber	Weather resistant with a high tear strength.	Barbed and instant	140
Synthetic Rubber	Great for outdoor use, it resists ozone and abrasion.	Clamps	140
Silicone Rubber	Remains soft and flexible over a wide temperature range.	Barbed	141-142
Blended Rubber/ Plastic	Also called thermoplastic elastomer, this highly durable material combines the best performance characteristics of rubber and plastic. It's soft, flexible, and resistant to fatigue.	Barbed and compression	142-143

For information about tubing, see page 118.

Masterkleer PVC Tubing

- Very flexible
- Wall Hardness: Soft (Shore A: 67)
- Temperature Range: –45° to +165° F
- Tensile Strength: 2450 psi
- Use barbed fittings (see pages 156-165)

Easily monitor what's flowing through your line—this PVC tubing comes in clear as well as a selection of transparent colors so you can easily identify different lines within your system. Also known as vinyl, PVC is the most common plastic material for low-pressure conveying applications. Use with water and air; ***clear*** tubing is FDA CFR21 175.300 compliant and can also be used with food and beverage. All tubing can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed. Also, for *Transparent Choose-a-Color* tubing, please specify color: blue, green, orange, or red.

Clear

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	1/8"	1/32"	1/4"	70	25, 50, 100	5233K51	$0.14
1/8"	1/4"	1/16"	3/8"	62	25, 50, 100	5233K52	.12
3/16"	5/16"	1/16"	5/8"	45	25, 50, 100	5233K53	.19
3/16"	3/8"	3/32"	1/2"	62	25, 50, 100	5233K54	.31
3/16"	7/16"	1/8"	3/8"	78	25, 50, 100	5233K55	.46
1/4"	3/8"	1/16"	1"	36	25, 50, 100	5233K56	.23
1/4"	7/16"	3/32"	3/4"	49	25, 50, 100	5233K57	.39
1/4"	1/2"	1/8"	5/8"	62	25, 50, 100	5233K58	.56
5/16"	7/16"	1/16"	1 3/8"	30	25, 50, 100	5233K59	.28
5/16"	1/2"	3/32"	1"	41	25, 50, 100	5233K62	.56
3/8"	1/2"	1/16"	1 3/4"	26	50, 100	5233K63	.29
3/8"	9/16"	3/32"	1 3/8"	36	25, 50, 100	5233K64	.54
3/8"	5/8"	1/8"	1 1/8"	45	25, 50, 100	5233K65	.73
7/16"	9/16"	1/16"	2 1/4"	22	25, 50, 100	5233K43	.39
7/16"	5/8"	3/32"	1 3/4"	30	25, 50, 100	5233K44	.60
1/2"	5/8"	1/16"	2 7/8"	20	25, 50, 100	5233K66	.40
1/2"	11/16"	3/32"	2 1/8"	28	25, 50, 100	5233K67	.61
1/2"	3/4"	1/8"	1 3/4"	36	10, 25, 50, 100	5233K68	.94
1/2"	13/16"	5/32"	1 1/2"	40	10, 25, 50, 100	5233K84	1.25
9/16"	3/4"	3/32"	2 1/2"	25	25, 50, 100	5233K86	.75
5/8"	13/16"	3/32"	3"	23	25, 50, 100	5233K87	$0.82
5/8"	7/8"	1/8"	2 3/8"	30	10, 25, 50, 100	5233K69	1.10
3/4"	1"	1/8"	3 1/4"	26	10, 25, 50, 100	5233K71	1.19
3/4"	1 1/16"	5/32"	2 3/4"	30	10, 25, 50, 100	5233K88	1.40
3/4"	1 1/8"	3/16"	2 3/8"	34	10, 25, 50, 100	5233K45	1.74
3/4"	1 1/4"	1/4"	2"	43	5, 10, 25, 50, 100	5233K46	2.46
7/8"	1 1/8"	1/8"	4 1/8"	23	10, 25, 50, 100	5233K47	1.25
1"	1 1/4"	1/8"	5 1/8"	20	10, 25, 50	5233K72	1.29
1"	1 3/8"	3/16"	3 3/4"	28	10, 25, 50	5233K73	2.20
1"	1 1/2"	1/4"	3"	36	5, 10, 25, 50	5233K48	3.10
1 1/4"	1 5/8"	3/16"	5 1/2"	24	5, 10, 25, 50	5233K74	3.28
1 1/4"	1 3/4"	1/4"	4 3/8"	30	5, 10, 25, 50	5233K75	3.69
1 1/2"	1 7/8"	3/16"	7 1/4"	20	5, 10, 25, 50	5233K76	3.59
1 1/2"	2"	1/4"	5 7/8"	26	5, 10, 25, 50	5233K77	4.01
1 3/4"	2 1/4"	1/4"	7 1/2"	23	5, 10, 25, 50	5233K78	4.92
2"	2 3/8"	3/16"	11 3/4"	16	2, 5, 10, 20	5233K49	5.36
2"	2 1/2"	1/4"	9 3/8"	20	2, 5, 10, 25, 50	5233K79	6.11
2 1/2"	3"	1/4"	13 3/8"	16	2, 5, 10, 20	5233K82	7.48
3"	3 1/2"	1/4"	18"	15	2, 5, 10, 20	5233K83	9.57

Transparent Choose-a-Color

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/8"	1/4"	1/16"	3/8"	62	25, 50, 100	9117T1	$0.98
1/4"	3/8"	1/16"	1"	36	10, 25, 50, 100	9117T2	1.56
3/8"	1/2"	1/16"	1 3/4"	26	5, 10, 25, 50, 100	9117T3	3.00
1/2"	3/4"	1/8"	1 3/4"	36	5, 10, 25, 50, 100	9117T4	3.38

Choose-a-Color PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 78)
- Temperature Range: –20° to +180° F
- Tensile Strength: 2200 psi
- Use barbed and compression fittings (see pages 156-179)

You can identify lines at a glance when you use this opaque PVC tubing to color-code different lines within your system. Also known as vinyl, PVC is the most common plastic material for low-pressure conveying applications. Use with water and air. This tubing can be sterilized with steam (autoclaving). Not rated for bend radius or vacuum.

To Order: Please specify color: black, blue, green, red, or yellow, and length from the available lengths listed.

ID	OD	Wall	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/16"	1/8"	1/32"	50	50, 100	9446K11	$0.10
1/8"	1/4"	1/16"	70	50, 100	9446K21	.26
3/16"	5/16"	1/16"	40	25, 50, 100	9446K31	.35
1/4"	3/8"	1/16"	36	25, 50, 100	9446K41	.42
3/8"	1/2"	1/16"	25	25, 50, 100	9446K51	.57
7/16"	5/8"	3/32"	30	10, 25, 50, 100	9446K61	$0.87
1/2"	3/4"	1/8"	35	10, 25, 50, 100	9446K71	1.15
5/8"	7/8"	1/8"	27	10, 25, 50, 100	9446K81	1.39
3/4"	1"	1/8"	20	5, 10, 25, 50, 100	9446K91	1.61
1"	1 1/4"	1/8"	15	5, 10, 25, 50, 100	9446K12	2.07

High-Pressure Clear PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 73)
- Temperature Range: 25° to 150° F
- Tensile Strength: 2465 psi
- Use barbed fittings (see pages 156-165)

Polyester-braid reinforcement is embedded into the walls of this tubing, giving it extra strength to stand up to higher working pressures than nonreinforced PVC tubing. Due to the braid reinforcement, this tubing is sometimes referred to as hose. This tubing is clear, so you can easily monitor the flow of your line. Use with water, air, food and beverage, and deionized water. Material is FDA CFR21 170-199 compliant. It can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/8"	21/64"	7/64"	1 1/4"	350	25, 50, 100	5238K718	$0.52
3/16"	3/8"	3/32"	1 3/4"	250	25, 50, 100	52375K11	.59
3/16"	13/32"	7/64"	1 1/2"	350	25, 50, 100	5238K728	.44
1/4"	7/16"	3/32"	2"	250	25, 50, 100	52375K12	.63
1/4"	1/2"	1/8"	1 3/4"	350	25, 50, 100	5238K738	.53
5/16"	17/32"	7/64"	2 1/2"	250	25, 50, 100	52375K22	.72
5/16"	9/16"	1/8"	2 1/4"	275	25, 50, 100	5238K558	.76
3/8"	19/32"	7/64"	3"	225	25, 50, 100	52375K13	.87
3/8"	5/8"	1/8"	2 3/4"	275	10, 25, 50, 100	5238K748	.93
1/2"	3/4"	1/8"	4"	200	10, 25, 50, 100	52375K14	1.05
1/2"	13/16"	5/32"	3 1/2"	250	10, 25, 50, 100	5238K758	1.27
5/8"	57/64"	9/64"	5"	200	10, 25, 50, 100	52375K15	$1.31
5/8"	1"	3/16"	4 1/2"	225	10, 25, 50, 100	5238K588	1.99
3/4"	1 1/32"	9/64"	6"	150	10, 25, 50, 100	52375K16	1.78
3/4"	1 1/8"	3/16"	5 1/2"	200	10, 25, 50, 100	5238K768	1.87
1"	1 19/64"	5/32"	8"	125	5, 10, 25, 50, 100	52375K17	2.45
1"	1 3/8"	3/16"	7 1/2"	150	5, 10, 25, 50, 100	5238K778	2.99
1 1/4"	1 5/8"	3/16"	10"	100	5, 10, 25, 50, 100	52375K18	3.43
1 1/4"	1 3/4"	1/4"	9"	125	5, 10, 25, 50, 100	5238K798	3.84
1 1/2"	1 15/16"	7/32"	12"	100	2, 5, 10, 25, 50, 100	52375K19	4.22
1 1/2"	2"	1/4"	11"	100	2, 5, 10, 25, 50, 100	5238K788	5.10
2"	2 1/2"	1/4"	16"	75	2, 5, 10, 25, 50, 100	52375K21	6.10

♦Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

3-A Sanitary Clear PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 70)
- Temperature Range: –10° to +175° F
- Tensile Strength: 2200 psi
- Use barbed fittings (see pages 156-165)

With a nonabsorbing surface that resists bacterial growth, this PVC tubing facilitates thorough cleansing, won't impart taste, and meets 3-A sanitary requirements. It is clear, so you can easily monitor the flow of your line. Use with dairy as well as water and food and beverage. Material is FDA CFR21 175.300 and USDA compliant; it is also NSF 51 certified. This tubing can be cleaned with alkaline-based cleaners and sanitizers; it can be sterilized with steam (autoclaving), gas, and chemicals. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	1/8"	1/32"	5/8"	66	25, 50, 100	5231K311	$0.16
1/16"	3/16"	1/16"	15/16"	80	25, 50, 100	5231K947	.19
3/32"	5/32"	1/32"	25/32"	56	25, 50, 100	5231K315	.19
1/8"	3/16"	1/32"	15/16"	46	25, 50, 100	5231K948	.16
1/8"	1/4"	1/16"	1 1/4"	68	25, 50, 100	5231K321	.25
5/32"	7/32"	1/32"	1 3/32"	40	25, 50, 100	5231K949	.19
5/32"	9/32"	1/16"	1 13/32"	60	25, 50, 100	5231K951	.22
3/16"	1/4"	1/32"	1 1/4"	34	25, 50, 100	5231K952	.20
3/16"	5/16"	1/16"	1 9/16"	54	25, 50, 100	5231K325	.28
3/16"	7/16"	1/8"	2 3/16"	80	25, 50, 100	5231K953	.64
1/4"	3/8"	1/16"	1 7/8"	46	25, 50, 100	5231K331	.32
1/4"	7/16"	3/32"	2 3/16"	58	25, 50, 100	5231K335	.50
1/4"	1/2"	1/8"	2 1/2"	70	25, 50, 100	5231K341	.71
5/16"	7/16"	1/16"	2 3/16"	40	25, 50, 100	5231K345	.40
5/16"	9/16"	1/8"	2 13/16"	62	25, 50, 100	5231K351	.81
5/16"	5/8"	5/32"	3 1/8"	68	10, 25, 50, 100	5231K954	.81
3/8"	1/2"	1/16"	2 1/2"	34	25, 50, 100	5231K355	.42
3/8"	9/16"	3/32"	2 13/16"	48	25, 50, 100	5231K361	.67
3/8"	5/8"	1/8"	3 1/8"	58	10, 25, 50, 100	5231K365	$0.94
7/16"	11/16"	1/8"	3 7/16"	48	10, 25, 50, 100	5231K955	.85
1/2"	5/8"	1/16"	3 1/8"	28	25, 50, 100	5231K371	.63
1/2"	11/16"	3/32"	3 7/16"	38	10, 25, 50, 100	5231K451	.93
1/2"	3/4"	1/8"	3 3/4"	44	10, 25, 50, 100	5231K375	1.05
5/8"	7/8"	1/8"	4 3/8"	38	10, 25, 50, 100	5231K381	1.20
11/16"	15/16"	1/8"	4 11/16"	38	10, 25, 50	5231K944	1.32
3/4"	1"	1/8"	5"	34	10, 25, 50	5231K385	1.39
7/8"	1 1/8"	1/8"	5 5/8"	30	10, 25, 50	5231K945	1.55
1"	1 1/4"	1/8"	6 1/4"	28	10, 25, 50	5231K391	1.80
1"	1 3/8"	3/16"	6 7/8"	38	5, 10, 25, 50	5231K395	2.73
1"	1 1/2"	1/4"	7 1/2"	44	5, 10, 25, 50	5231K946	3.64
1 1/4"	1 1/2"	1/8"	7 1/2"	24	5, 10, 25, 50	5231K431	2.41
1 1/4"	1 5/8"	3/16"	8 1/8"	34	5, 10, 25, 50	5231K411	3.33
1 1/2"	1 7/8"	3/16"	9 3/8"	28	2, 5, 10, 25, 50	5231K435	4.26
1 1/2"	2"	1/4"	10"	36	2, 5, 10, 25, 50	5231K415	5.40
2"	2 1/2"	1/4"	12 1/2"	28	2, 5, 10, 25, 50	5231K421	9.17

Beverage, Food, and Dairy Clear Tygon PVC Tubing

Beverage

- Tygon Formulation: B-44-3
- Very flexible
- Wall Hardness: Soft (Shore A: 63)
- Temperature Range: –49° to +165° F
- Tensile Strength: 2300 psi
- Use barbed fittings (see pages 156-165)

Food and Dairy

- Tygon Formulation: B-44-4X
- Very flexible
- Wall Hardness: Soft (Shore A: 65)
- Temperature Range: –47° to +165° F
- Tensile Strength: 2100 psi
- Use barbed fittings (see pages 156-165)

Odor-free with a nonabsorbing surface, this PVC tubing won't impart taste, plus it resists bacterial growth. All of this tubing is FDA CFR21 175.300 compliant, NSF 51 certified, and for use with water and air. The ***food and dairy*** tubing is also for use in dairy applications and meets 3-A sanitary requirements. All tubing is clear, so you can easily monitor the flow of your line. It can be cleaned with alkaline-based cleaners and sanitizers, and sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Available Lengths, ft.	Beverage Max. psi @ 73° F		Beverage Per Ft. ♦	Food and Dairy Max. psi @ 73° F		Food and Dairy Per Ft. ♦
1/32"	3/32"	1/32"	1/8"	25, 50	—	—	—	100	5553K23	$0.16
1/16"	1/8"	1/32"	1/4"	25, 50	70	5114K11	$0.24	60	5553K33	.24
1/16"	3/16"	1/16"	1/8"	25, 50	108	5114K12	.59	100	5553K93	.66
3/32"	5/32"	1/32"	3/8"	25, 50	47	5114K13	.27	43	5553K34	.27
1/8"	3/16"	1/32"	1/2"	25, 50	45	5114K43	.36	34	5553K24	.33
1/8"	1/4"	1/16"	3/8"	10, 25, 50	62	5114K14	.80	60	5553K11	.80
5/32"	7/32"	1/32"	3/4"	25, 50	31	5114K15	.46	28	5553K41	.51
5/32"	9/32"	1/16"	1/2"	10, 25, 50	52	5114K16	1.17	50	5553K42	1.17
3/16"	1/4"	1/32"	1"	25, 50	34	5114K17	.51	25	5553K43	.51
3/16"	5/16"	1/16"	5/8"	10, 25, 50	45	5114K18	1.23	43	5553K12	1.23
3/16"	7/16"	1/8"	3/8"	5, 10, 25, 50	78	5114K19	3.02	—	—	—
1/4"	3/8"	1/16"	1"	10, 25, 50	36	5114K21	1.50	34	5553K13	1.50
1/4"	7/16"	3/32"	3/4"	5, 10, 25, 50	49	5114K22	2.69	47	5553K47	2.69
1/4"	1/2"	1/8"	5/8"	5, 10, 25, 50	62	5114K23	3.26	60	5553K14	3.26
5/16"	7/16"	1/16"	1 3/8"	5, 10, 25, 50	30	5114K24	1.93	28	5553K15	1.93
5/16"	9/16"	1/8"	7/8"	5, 10, 25, 50	52	5114K25	3.40	50	5553K71	3.40
3/8"	1/2"	1/16"	1 3/4"	5, 10, 25, 50	26	5114K26	2.02	25	5553K16	2.02
3/8"	9/16"	3/32"	1 3/8"	5, 10, 25, 50	36	5114K27	2.90	34	5553K74	2.90
3/8"	5/8"	1/8"	1 1/8"	5, 10, 25, 50	45	5114K28	4.20	44	5553K17	4.20
7/16"	11/16"	1/8"	1 3/8"	2, 5, 10, 25, 50	39	5114K45	4.62	—	—	—
1/2"	5/8"	1/16"	2 7/8"	5, 10, 25, 50	20	5114K29	2.73	19	5553K18	2.73
1/2"	11/16"	3/32"	2 1/8"	5, 10, 25, 50	28	5114K46	3.79	27	5553K26	3.79
1/2"	3/4"	1/8"	1 3/4"	2, 5, 10, 25, 50	36	5114K31	4.67	34	5553K19	4.66
5/8"	7/8"	1/8"	2 3/8"	2, 5, 10, 25, 50	30	5114K32	5.09	29	5553K21	5.09
11/16"	15/16"	1/8"	2 7/8"	2, 5, 10, 25, 50	28	5114K47	5.42	—	—	—
3/4"	1"	1/8"	3 1/4"	2, 5, 10, 25, 50	26	5114K33	5.18	25	5553K22	5.76
7/8"	1 1/8"	1/8"	4 1/8"	2, 5, 10, 20, 25, 50	23	5114K48	6.40	22	5553K27	6.40
1"	1 1/4"	1/8"	5 1/8"	2, 5, 10, 20, 25, 50	20	5114K34	7.20	20	5553K51	7.20
1"	1 3/8"	3/16"	3 3/4"	2, 5, 10, 20, 25, 50	28	5114K35	11.37	27	5553K54	11.37
1"	1 1/2"	1/4"	3"	2, 5, 10, 20, 25, 50	36	5114K36	13.00	34	5553K56	13.00
1 1/4"	1 1/2"	1/8"	7 3/8"	2, 5, 10, 20, 25, 50	17	5114K49	8.78	—	—	—
1 1/4"	1 5/8"	3/16"	5 1/2"	2, 5, 10, 20, 25, 50	24	5114K37	11.16	23	5553K59	11.16
1 1/2"	1 7/8"	3/16"	7 1/4"	2, 5, 10, 20, 25, 50	20	5114K51	13.16	—	—	—
1 1/2"	2"	1/4"	5 7/8"	2, 5, 10, 20, 25, 50	26	5114K38	18.19	25	5553K63	18.19
2"	2 1/2"	1/4"	9 3/8"	2, 5, 10, 20, 25, 50	20	5114K39	24.32	19	5553K66	24.32

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

High-Pressure 3-A Sanitary Clear PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 73)
- Temperature Range: 25° to 150° F
- Tensile Strength: 2538 psi
- Use barbed fittings (see pages 156-165)

Reinforced with a polyester braid for extra strength in high-pressure applications, this tubing also meets 3-A sanitary requirements. Due to the braid reinforcement, this tubing is sometimes referred to as hose. It's made of clear PVC, so you can easily monitor the flow of your line. Use with dairy as well as drinking (potable) water, air, and food and beverage. Material is FDA CFR21 170-199 and USDA compliant, and NSF 51 and 61 certified. It can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/8"	21/64"	7/64"	1 1/4"	350	25, 50, 100	5238K618	$0.55
3/16"	3/8"	3/32"	1 3/4"	250	25, 50, 100	52375K31	.62
3/16"	13/32"	7/64"	1 1/2"	350	25, 50, 100	5238K628	.67
1/4"	7/16"	3/32"	2"	250	25, 50, 100	52375K32	.67
1/4"	1/2"	1/8"	1 3/4"	350	25, 50, 100	5238K638	.81
5/16"	17/32"	7/64"	2 1/2"	250	25, 50, 100	52375K42	.49
5/16"	9/16"	1/8"	2 1/4"	275	25, 50, 100	5238K868	.88
3/8"	19/32"	7/64"	3"	225	25, 50, 100	52375K33	.92
3/8"	5/8"	1/8"	2 3/4"	275	10, 25, 50, 100	5238K648	.98
1/2"	3/4"	1/8"	4"	200	10, 25, 50, 100	52375K34	1.11
1/2"	13/16"	5/32"	3 1/2"	250	10, 25, 50, 100	5238K658	1.47
5/8"	57/64"	9/64"	5"	200	10, 25, 50, 100	52375K35	$1.38
5/8"	1"	3/16"	4 1/2"	225	10, 25, 50, 100	5238K759	2.19
3/4"	1 1/32"	9/64"	6"	150	10, 25, 50, 100	52375K36	1.88
3/4"	1 1/8"	3/16"	5 1/2"	200	5, 10, 25, 50, 100	5238K668	2.48
1"	1 19/64"	5/32"	8"	125	5, 10, 25, 50, 100	52375K37	2.59
1"	1 3/8"	3/16"	7 1/2"	150	5, 10, 25, 50, 100	5238K678	3.15
1 1/4"	1 5/8"	3/16"	10"	100	5, 10, 25, 50, 100	52375K38	3.22
1 1/4"	1 3/4"	1/4"	9"	125	5, 10, 25, 50, 100	5238K688	4.42
1 1/2"	1 15/16"	7/32"	12"	100	5, 10, 25, 50, 100	52375K39	4.45
1 1/2"	2"	1/4"	11"	100	2, 5, 10, 25, 50, 100	5238K698	5.88
2"	2 1/2"	1/4"	16"	75	2, 5, 10, 25, 50, 100	52375K41	6.42

Metric

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
4 mm	9 mm	2.5 mm	35 mm	250	25, 50, 100	52015K11	$0.71
6 mm	11 mm	2.5 mm	50 mm	250	25, 50, 100	52015K13	.81
8 mm	13.5 mm	2.75 mm	65 mm	250	25, 50, 100	52015K15	.98
10 mm	16 mm	3 mm	80 mm	225	25, 50, 100	52015K17	1.09
12 mm	18 mm	3 mm	95 mm	200	10, 25, 50, 100	52015K19	1.20
19 mm	26 mm	3.5 mm	150 mm	150	10, 25, 50, 100	52015K21	2.21

High-Pressure Clear Tygon PVC Tubing

- Tygon Formulation: B-44-4X I.B.
- Very flexible
- Wall Hardness: Soft (Shore A: 65)
- Temperature Range: –47° to +165° F
- Tensile Strength: 2100 psi
- Use barbed fittings (see pages 156-165)

Thanks to the polyester-braid reinforcement, this tubing has superior strength to handle up to four times more pressure than the nonreinforced Tygon food and dairy tubing on page 120. Due to the braid reinforcement, this tubing is sometimes referred to as hose. This clear material will not impart taste or odors, plus you can easily monitor the flow of your line. Use with water, air, food and beverage, and dairy. Material meets 3-A sanitary requirements; it is also FDA CFR21 175.300 compliant and NSF 51 certified. It can be cleaned with alkaline-based cleaners and sanitizers and sterilized with steam (autoclaving). Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/4"	7/16"	3/32"	1 1/2"	250	5, 10, 25, 50	55425K31	$2.54
3/8"	5/8"	1/8"	1 1/8"	170	2, 5, 10, 25, 50	55425K22	3.95
1/2"	3/4"	1/8"	2 1/8"	200	2, 5, 10, 25, 50	55425K33	4.71
5/8"	7/8"	1/8"	2 3/8"	165	2, 5, 10, 25, 50	55425K34	6.66
3/4"	1"	1/8"	3 1/4"	145	2, 5, 10, 20, 25, 50	55425K35	6.56
1"	1 3/8"	3/16"	3 3/4"	100	2, 5, 10, 20, 25, 50	55425K36	11.20
1 1/4"	1 5/8"	3/16"	5 1/2"	85	2, 5, 10, 20, 25, 50	55425K41	15.77
1 1/2"	2"	1/4"	5 7/8"	75	2, 5, 10, 20, 25, 50	55425K27	22.22
2"	2 3/4"	3/8"	6 7/8"	60	2, 5, 10, 20	55425K28	41.99
3"	3 3/4"	3/8"	13 1/4"	40	2, 5, 10, 20	55425K29	67.14

3-A Sanitary Clear PVC Vacuum Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 73)
- Temperature Range: 25° to 150° F
- Tensile Strength: 2538 psi
- Use barbed fittings (see pages 156-165)

Not only does this clear PVC tubing meet 3-A sanitary requirements, it's reinforced with steel wire so it can handle vacuum applications up to 29.9" Hg @ 70° F. The wire reinforcement also supports this tubing in high-pressure applications and makes it kink resistant. Due to the wire reinforcement, this tubing is sometimes referred to as hose. This tubing is clear, so you can easily monitor what's flowing through your line. Use with dairy as well as drinking (potable) water, air, and food and beverage. Material is FDA CFR21 170-199 and USDA compliant, and NSF 51 and 61 certified. It can be sterilized with steam (autoclaving) and gas.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/4"	7/16"	3/32"	1"	150	10, 25, 50, 100	5393K41	$1.03
1/4"	1/2"	1/8"	1"	250	10, 25, 50, 100	5393K31	1.17
3/8"	5/8"	1/8"	1 1/2"	150	10, 25, 50, 100	5393K32	1.63
3/8"	5/8"	1/8"	1 1/2"	100	10, 25, 50, 100	5393K42	1.62
1/2"	3/4"	1/8"	2"	100	10, 25, 50, 100	5393K43	2.13
1/2"	13/16"	5/32"	2"	150	5, 10, 25, 50, 100	5393K33	2.51
5/8"	7/8"	1/8"	2 1/2"	100	5, 10, 25, 50, 100	5393K44	2.54
5/8"	1"	3/16"	2 1/2"	150	5, 10, 25, 50, 100	5393K34	3.22
3/4"	1"	1/8"	3"	70	5, 10, 25, 50, 100	5393K45	3.45
3/4"	1 1/8"	3/16"	3"	150	5, 10, 25, 50, 100	5393K35	3.68
1"	1 5/16"	5/32"	4"	70	5, 10, 25, 50, 100	5393K46	$3.54
1"	1 3/8"	3/16"	4"	100	2, 5, 10, 25, 50, 100	5393K36	4.60
1 1/4"	1 5/8"	3/16"	5"	70	2, 5, 10, 25, 50	5393K47	5.39
1 1/4"	1 3/4"	1/4"	5"	100	2, 5, 10, 20, 25, 50	5393K37	7.45
1 1/2"	1 7/8"	3/16"	6"	50	2, 5, 10, 25, 50	5393K48	5.97
1 1/2"	2"	1/4"	6"	100	2, 5, 10, 20, 25, 50	5393K38	8.83
2"	2 3/8"	3/16"	8"	50	2, 5, 10, 20, 25, 50	5393K49	8.61
2"	2 1/2"	1/4"	8"	100	2, 5, 10, 20, 25, 50	5393K39	12.32
2 1/2"	3"	1/4"	10"	50	2, 5, 10, 20, 25, 50	5393K51	17.15
3"	3 1/2"	1/4"	12"	50	2, 5, 10, 20, 25, 50	5393K52	19.86

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the laboratory tubing on this page, go to mcmaster.com and search for **5554KAC**.

High-Pressure 3-A Sanitary Clear PVC Tubing with Fittings Attached

- Flexible
- Wall Hardness: Firm (Shore A: 80)
- Temperature Range: –25° to +150° F
- Tensile Strength: 2465 psi

This ready-to-use tubing is furnished with the fittings attached for quick and easy connections. Tubing is made of PVC with a nylon-braid reinforcement that stands up to high-pressure applications. Due to the braid reinforcement, this tubing is sometimes referred to as hose. It has a nonabsorbing surface that resists bacterial growth. And because this tubing is clear, you can monitor the flow of your line. Use with dairy as well as drinking (potable) water, air, and food and beverage. Material meets 3-A sanitary requirements; it is also FDA CFR21 170-199 and USDA compliant. This tubing can be cleaned with alkaline-based cleaners and sanitizers and sterilized with gas and radiation. Not rated for bend radius or vacuum.

Tube ID	Tube OD	Max. psi @ 70° F	Pipe Size	2-ft. Lengths	Each	4-ft. Lengths	Each
Male NPT Fittings on Both Ends							
1/4″	1/2″	350	1/4″	9115T52	$100.64	9115T54	$105.92
1/2″	3/4″	250	1/2″	9115T62	109.33	9115T64	131.65
3/4″	1 1/8″	200	3/4″	9115T72	114.16	9115T74	136.48

Tube ID	Tube OD	Max. psi @ 70° F	Flange OD	2-ft. Lengths	Each	4-ft. Lengths	Each
Quick-Clamp Sanitary Fittings on Both Ends							
1/2″	3/4″	250	1.984″	9115T22	$109.33	9115T24	$131.65
3/4″	1 1/8″	200	1.984″	9115T32	114.16	9115T34	136.48
1″	1 3/8″	150	1.984″	9115T42	124.32	9115T44	156.96

High-Pressure/Vacuum 3-A Sanitary Clear PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 73)
- Temperature Range: 15° to 150° F
- Tensile Strength: 2465 psi
- Use barbed fittings with clamps (see pgs. 156-165 and 274-275)

Two kinds of reinforcement—a high-tensile yarn braid and a steel wire spiral—give this tubing extra strength to handle high pressures as well as vacuum up to 29.9″ Hg @ 70° F. Due to the reinforcement, this tubing is sometimes referred to as hose. This tubing is also kink resistant. It is clear, so you can easily monitor the flow of your line. Use with dairy as well as drinking (potable) water and food and beverage. Material meets 3-A sanitary requirements; it is also FDA CFR21 170-199 and USDA compliant, and NSF 51 and 61 certified. This tubing can be sterilized with steam (autoclaving) and gas.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/2″	0.906″	0.203″	2″	250	5, 10, 25, 50	9118T1	$3.20
3/4″	1.196″	0.223″	2 1/2″	225	2, 5, 10, 25, 50	9118T2	5.30
1″	1.464″	0.232″	3 1/2″	225	2, 5, 10, 25, 50	9118T3	6.32
1 1/4″	1.78″	0.265″	4 1/2″	175	2, 5, 10, 25	9118T4	$10.17
1 1/2″	2.03″	0.265″	5 1/2″	175	2, 5, 10, 25	9118T5	12.04
2″	2.6″	0.3″	7″	150	2, 5, 10, 25	9118T6	16.81

Laboratory Clear Tygon PVC Tubing

- Tygon Formulation: R-3603
- Very flexible
- Wall Hardness: Soft (Shore A: 55)
- Temperature Range: –58° to +165° F
- Tensile Strength: 1650 psi
- Use barbed fittings (see pgs. 156-165)

Commonly found in laboratories, this clear Tygon tubing is relatively soft, which makes it ideal for use with peristaltic (squeeze-action) pumps. This tubing is clear, so you can easily monitor the flow of your line. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 175.300 compliant. It can be sterilized with steam (autoclaving) and gas. ***Standard*** tubing is not rated for vacuum. ***Vacuum-rated*** tubing has a vacuum rating of 29.9″ Hg @ 73° F.

To Order: Please specify length from the available lengths listed.

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Standard							
1/32″	3/32″	1/32″	1/8″	80	25, 50	5554K41	$0.17
1/16″	1/8″	1/32″	1/4″	45	25, 50	5554K42	.26
1/16″	3/16″	1/16″	1/8″	75	25, 50	5554K52	.78
3/32″	5/32″	1/32″	3/8″	30	25, 50	5554K43	.35
1/8″	1/4″	1/16″	3/8″	45	10, 25, 50	5554K11	.90
5/32″	7/32″	1/32″	3/8″	20	25, 50	5554K47	.66
5/32″	9/32″	1/16″	1/2″	35	10, 25, 50	5554K48	1.12
3/16″	1/4″	1/32″	1″	20	25, 50	5554K49	.68
3/16″	5/16″	1/16″	5/8″	30	10, 25, 50	5554K12	1.46
3/16″	7/16″	1/8″	3/8″	55	5, 10, 25, 50	5554K53	3.31
1/4″	3/8″	1/16″	1″	25	10, 25, 50	5554K13	1.52
1/4″	7/16″	3/32″	3/4″	35	5, 10, 25, 50	5554K58	2.65
1/4″	1/2″	1/8″	1/2″	40	5, 10, 25, 50	5554K14	3.20
5/16″	7/16″	1/16″	1 3/8″	20	10, 25, 50	5554K15	1.89
5/16″	9/16″	1/8″	7/8″	35	5, 10, 25, 50	5554K67	3.70
5/16″	5/8″	5/32″	3/4″	45	2, 5, 10, 25, 50	5554K68	5.23
3/8″	1/2″	1/16″	1 1/2″	20	5, 10, 25, 50	5554K16	2.20
3/8″	9/16″	3/32″	1 3/8″	25	5, 10, 25, 50	5554K71	3.16
3/8″	5/8″	1/8″	1 1/8″	30	5, 10, 25, 50	5554K17	4.12
Standard (Cont.)							
1/2″	5/8″	1/16″	2 7/8″	10	5, 10, 25, 50	5554K18	$2.98
1/2″	3/4″	1/8″	1 1/2″	25	2, 5, 10, 25, 50	5554K19	4.96
5/8″	7/8″	1/8″	2 3/8″	20	2, 5, 10, 25, 50	5554K21	6.28
3/4″	1″	1/8″	3 1/4″	18	2, 5, 10, 25, 50	5554K22	6.38
1″	1 1/4″	1/8″	4 3/4″	15	2, 5, 10, 20, 25, 50	5554K51	8.25
1″	1 3/8″	3/16″	4″	20	2, 5, 10, 20, 25, 50	5554K54	13.03
1″	1 1/2″	1/4″	3″	25	2, 5, 10, 20, 25, 50	5554K55	15.71
1 1/4″	1 5/8″	3/16″	5 1/2″	15	2, 5, 10, 20, 25, 50	5554K59	14.99
1 1/2″	2″	1/4″	5 7/8″	18	2, 5, 10, 20, 25, 50	5554K63	24.44
2″	2 1/2″	1/4″	9 3/8″	15	2, 5, 10, 20, 25, 50	5554K66	31.29
Vacuum Rated							
3/16″	9/16″	3/16″	1/4″	60	2, 5, 10, 25, 50	55505K32	5.94
1/4″	5/8″	3/16″	1/2″	50	2, 5, 10, 25, 50	55505K38	6.06
3/8″	7/8″	1/4″	5/8″	50	2, 5, 10, 20, 25, 50	55505K35	10.68
1/2″	1 1/8″	5/16″	7/8″	45	2, 5, 10, 20, 25, 50	55505K37	13.90
5/8″	1 3/8″	3/8″	1″	40	2, 5, 10, 20, 25, 50	55505K39	20.15
3/4″	1 1/2″	3/8″	1 1/2″	35	2, 5, 10, 20, 25, 50	55505K41	21.36
1″	2″	1/2″	1 7/8″	35	2, 5, 10, 20, 25, 50	55505K42	40.30

Metric

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Standard							
2 mm	4 mm	1 mm	7 mm	40	25, 49	5347K21	$0.57
3 mm	5 mm	1 mm	13 mm	30	25, 49	5347K12	.74
4 mm	6 mm	1 mm	16 mm	25	10, 25, 49	5347K19	.88
5 mm	8 mm	1.5 mm	19 mm	30	5, 10, 25, 49	5347K14	1.77
6 mm	9 mm	1.5 mm	22 mm	25	5, 10, 25, 49	5347K15	1.98
8 mm	12 mm	2 mm	29 mm	25	5, 10, 25, 49	5347K22	2.91

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the PVC tubing on this page, go to mcmaster.com and search for **5231KAC**.

Chemical-Resistant Clear PVC Tubing

- Very flexible
- Wall Hardness: Soft (Shore A: 60)
- Temperature Range: –25° to +160° F
- Tensile Strength: 1650 psi
- Use barbed fittings (see pages 156-165)

The most common choice for chemical applications, this tubing is also relatively soft, making it ideal for use with peristaltic (squeeze-action) pumps. It's made of clear PVC, so you can easily monitor the flow of your line. Use with water, air, food and beverage, and bleach. Material is FDA CFR21 175.300 and USDA compliant. It can be sterilized with steam (autoclaving), gas, and chemicals. ***Standard*** tubing is not rated for vacuum. ***Vacuum-rated*** tubing has a vacuum rating of 29.9" Hg @ 73° F.

To Order: Please specify length from the available lengths listed.

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Standard							
1/16"	1/8"	1/32"	1/2"	48	25, 50, 100	5231K124	$0.16
1/16"	3/16"	1/16"	3/4"	60	25, 50, 100	5231K957	.27
3/32"	5/32"	1/32"	5/8"	42	25, 50, 100	5231K134	.19
1/8"	1/4"	1/16"	1"	50	25, 50, 100	5231K144	.26
5/32"	7/32"	1/32"	7/8"	30	25, 50, 100	5231K958	.26
5/32"	9/32"	1/16"	1 1/8"	42	25, 50, 100	5231K959	.32
3/16"	1/4"	1/32"	1"	25	25, 50, 100	5231K961	.29
3/16"	5/16"	1/16"	1 1/4"	36	25, 50, 100	5231K155	.29
3/16"	7/16"	1/8"	1 3/4"	60	25, 50, 100	5231K962	.75
1/4"	3/8"	1/16"	1 1/2"	30	25, 50, 100	5231K161	.32
1/4"	7/16"	3/32"	1 3/4"	40	25, 50, 100	5231K165	.51
1/4"	1/2"	1/8"	2"	46	25, 50, 100	5231K171	.71
5/16"	7/16"	1/16"	1 3/4"	28	25, 50, 100	5231K175	.40
5/16"	9/16"	1/8"	2 1/4"	42	25, 50, 100	5231K181	.81
5/16"	5/8"	5/32"	2 1/2"	52	25, 50, 100	5231K963	.82
3/8"	1/2"	1/16"	2"	22	25, 50, 100	5231K185	.43
3/8"	9/16"	3/32"	2 1/4"	32	25, 50, 100	5231K196	.68
3/8"	5/8"	1/8"	2 1/2"	40	10, 25, 50, 100	5231K217	.95

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Standard (Cont.)							
1/2"	5/8"	1/16"	2 1/2"	20	25, 50, 100	5231K227	$0.65
1/2"	3/4"	1/8"	3"	30	10, 25, 50, 100	5231K237	1.06
5/8"	7/8"	1/8"	3 1/2"	26	10, 25, 50, 100	5231K246	1.22
3/4"	1"	1/8"	4"	22	10, 25, 50	5231K261	1.41
1"	1 1/4"	1/8"	5"	18	5, 10, 25, 50	5231K265	1.82
1"	1 3/8"	3/16"	5 1/2"	26	5, 10, 25, 50	5231K271	2.75
1"	1 1/2"	1/4"	6"	34	5, 10, 25, 50	5231K956	3.67
1 1/4"	1 5/8"	3/16"	6 1/2"	22	5, 10, 25, 50	5231K275	3.37
1 1/2"	2"	1/4"	8"	24	2, 5, 10, 25, 50	5231K282	5.33
2"	2 1/2"	1/4"	10"	18	2, 5, 10, 25, 50	5231K291	9.26
Vacuum Rated							
3/16"	9/16"	3/16"	2 1/4"	62	10, 25, 50	55525K11	1.21
1/4"	5/8"	3/16"	2 1/2"	56	10, 25, 50	55525K12	1.61
3/8"	7/8"	1/4"	3 1/2"	54	5, 10, 25, 50	55525K13	2.79
1/2"	1 1/8"	5/16"	4 1/2"	52	5, 10, 25, 50	55525K14	4.38
5/8"	1 3/8"	3/8"	5 1/2"	56	2, 5, 10, 25, 50	55525K15	7.29
3/4"	1 1/2"	3/8"	6"	46	2, 5, 10, 20, 25	55525K16	7.81
1"	2"	1/2"	8"	46	2, 5, 10, 20, 25	55525K17	17.53

Metric

ID, mm	OD, mm	Wall, mm	Bend Radius, mm	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Standard							
1	2	0.5	8	46	25, 50, 100	51825K41	$0.20
2	4	1	16	46	25, 50, 100	51825K42	.26
3	5	1	20	38	25, 50, 100	51825K55	.31
4	6	1	24	32	25, 50, 100	51825K43	.31
5	8	1.5	32	34	25, 50, 100	51825K45	.46
6	9	1.5	36	30	25, 50, 100	51825K56	.59
6	10	2	40	38	25, 50, 100	51825K46	.61

ID, mm	OD, mm	Wall, mm	Bend Radius, mm	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Standard							
7	10	1.5	40	28	25, 50, 100	51825K47	$0.66
8	12	2	48	32	25, 50, 100	51825K48	.84
9	13	2	52	28	10, 25, 50, 100	51825K49	.91
10	14	2	56	26	10, 25, 50, 100	51825K51	.98
12	16	2	64	24	10, 25, 50, 100	51825K52	1.00
18	23	2.5	92	20	10, 25, 50	51825K53	1.63
20	25	2.5	100	18	10, 25, 50	51825K54	1.78

Chemical-Resistant Clear Tygon Tubing

- Tygon Formulation: 2375
- Very flexible
- Wall Hardness: Firm (Shore A: 75)
- Temperature Range: –103° to +130° F
- Tensile Strength: 1,900 psi
- Use barbed fittings (see pages 156-165)

If you're looking for a good combination of chemical resistance, clarity, and flexibility, this is the tubing for you. It is made without a plasticizer additive that can contaminate fluid passing through the line. Plus this tubing is clear, so you can easily monitor flow. Use with water, air, food and beverage, ethylene glycol, and bleach. Material is FDA CFR21 175.1520 compliant. It can be sterilized with gas and radiation. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi.@ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	3/16"	1/16"	1/8"	65	10, 25, 50	5103K31	$0.95
1/8"	1/4"	1/16"	1/4"	40	10, 25, 50	5103K32	1.46
3/16"	5/16"	1/16"	1/2"	30	5, 10, 25, 50	5103K33	1.79
1/4"	3/8"	1/16"	3/4"	25	5, 10, 25, 50	5103K34	1.80
5/16"	7/16"	1/16"	1 1/4"	20	5, 10, 25, 50	5103K35	2.21

ID	OD	Wall	Bend Radius	Max. psi.@ 73° F	Available Lengths, ft.		Per Ft. ♦
3/8"	1/2"	1/16"	1 1/2"	17	5, 10, 25, 50	5103K36	$2.28
1/2"	3/4"	1/8"	1 1/2"	25	2, 5, 10, 25, 50	5103K37	5.18
5/8"	7/8"	1/8"	2 1/2"	20	2, 5, 10, 25, 50	5103K38	6.13
3/4"	1"	1/8"	2 3/4"	17	2, 5, 10, 20, 25, 50	5103K39	6.61
1"	1 3/8"	3/16"	4 1/2"	17	2, 5, 10, 20, 25	5103K41	11.42

Ultra-Chemical-Resistant Clear Tygon PVC Tubing

- Tygon Formulation: SE-200
- Very flexible
- Wall Hardness: Soft (Shore A: 67)
- Temperature Range: –40° to +170° F
- Tensile Strength: 2000 psi
- Use single barbed fittings (see pgs. 156-165)

Lined with FEP (fluorinated ethylene propylene), this tubing provides higher resistance to chemicals than the chemical-resistant Tygon tubing on this page, while offering equal clarity and flexibility. The FEP liner is inert, so it won't impart taste or odors. Use with water, air, food and beverage, hydraulic oil, and ethylene glycol. Material is FDA CFR21 177.1550 compliant. It can be sterilized with gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	1/8"	1/32"	1/2"	100	10, 25, 50	5046K16	$1.47
1/8"	1/4"	1/16"	1"	85	5, 10, 25, 50	5046K11	1.68
3/16"	5/16"	1/16"	1 1/2"	75	5, 10, 25, 50	5046K12	2.77
1/4"	3/8"	1/16"	2"	55	5, 10, 25, 50	5046K13	3.20

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
3/8"	9/16"	3/32"	3 1/2"	50	2, 5, 10, 25, 50	5046K14	$5.05
1/2"	3/4"	1/8"	4"	45	2, 5, 10, 20, 25, 50	5046K15	6.27
3/4"	1"	1/8"	4 1/2"	30	2, 5, 10, 25, 50	5046K17	8.72

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the PVC tubing on this page, go to mcmaster.com and search for **5187KAC**.

Fuel and Lubricant Yellow PVC Tubing

- Very flexible
- Wall Hardness: Soft (Shore A: 65)
- Temperature Range: –15° to +165° F
- Tensile Strength: 1900 psi
- Use barbed fittings (see pages 156-165)

Keep your fuel and lubricant lines flexible—you can use this tubing with gasoline, kerosene, heating oils, cutting compounds, and coolants without causing it to become hard or brittle. You can also use it with water and air. This tubing is transparent yellow, so you can easily monitor the flow of your line. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
5/64"	9/64"	1/32"	9/16"	42	25, 50, 100	5187K71	$0.27
3/32"	3/16"	3/64"	3/4"	54	25, 50, 100	5187K72	.28
1/8"	1/4"	1/16"	1"	62	25, 50, 100	5187K61	.39
3/16"	5/16"	1/16"	1 1/4"	48	25, 50, 100	5187K62	.52
1/4"	3/8"	1/16"	1 1/2"	40	25, 50, 100	5187K63	.61
5/16"	7/16"	1/16"	1 3/4"	36	10, 25, 50, 100	5187K64	.73
3/8"	1/2"	1/16"	2"	30	10, 25, 50, 100	5187K65	.87
3/8"	5/8"	1/8"	2 1/2"	44	10, 25, 50, 100	5187K73	1.38
7/16"	9/16"	1/16"	2 1/4"	24	10, 25, 50, 100	5187K74	.86
7/16"	5/8"	3/32"	2 1/2"	40	10, 25, 50, 100	5187K66	1.08
1/2"	5/8"	1/16"	2 1/2"	22	10, 25, 50, 100	5187K75	.94
1/2"	3/4"	1/8"	3"	40	10, 25, 50, 100	5187K67	1.79
5/8"	7/8"	1/8"	3 1/2"	34	5, 10, 25, 50, 100	5187K68	2.05
3/4"	1"	1/8"	4"	30	5, 10, 25, 50	5187K69	2.34

Fuel and Lubricant Yellow Tygon PVC Tubing

- Tygon Formulation: F-4040-A
- Very flexible
- Wall Hardness: Soft (Shore A: 57)
- Temperature Range: –35° to +165° F
- Tensile Strength: 1820 psi
- Use barbed fittings (see pages 156-165)

Not only will this tubing remain flexible when used with gasoline, kerosene, biodiesel, heating oils, cutting compounds, and coolants, it also withstands lower temperatures than other fuel and lubricant tubing. This tubing is transparent yellow, so you can easily monitor the flow of your line. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
5/64"	9/64"	1/32"	1/4"	40	10, 25, 50	5552K43	$0.80
3/32"	3/16"	3/64"	1/4"	50	10, 25, 50	5552K22	.72
1/8"	1/4"	1/16"	3/8"	50	10, 25, 50	5552K23	.82
3/16"	5/16"	1/16"	5/8"	35	10, 25, 50	5552K24	1.17
1/4"	3/8"	1/16"	1"	30	10, 25, 50	5552K25	1.49
5/16"	7/16"	1/16"	1 3/8"	25	5, 10, 25, 50	5552K26	1.91
3/8"	1/2"	1/16"	1 7/8"	20	5, 10, 25, 50	5552K27	2.23
3/8"	5/8"	1/8"	1 1/8"	35	2, 5, 10, 25, 50	5552K32	4.64
7/16"	9/16"	1/16"	2 3/8"	15	5, 10, 25, 50	5552K33	2.93
1/2"	5/8"	1/16"	2 7/8"	15	5, 10, 25, 50	5552K28	3.02
1/2"	3/4"	1/8"	1 3/4"	30	2, 5, 10, 25, 50	5552K42	5.47
5/8"	7/8"	1/8"	2 1/2"	25	2, 5, 10, 25, 50	5552K31	6.22
3/4"	1"	1/8"	3 1/4"	20	2, 5, 10, 20, 25	5552K29	7.03

Abrasion-Resistant Clear PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 80)
- Temperature Range: –31° to +122° F
- Tensile Strength: 3000 psi
- Use barbed fittings (see pages 156-165)

This clear PVC tubing has the highest strength and abrasion resistance of any PVC tubing we offer, plus it remains flexible at low temperatures. Use with water, air, food and beverage, and ethylene glycol. Material is FDA compliant. It can be sterilized with gas. Not rated for bend radius or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	1/8"	1/32"	120	25, 50, 100	5006K61	$0.15
3/32"	5/32"	1/32"	55	25, 50, 100	5006K62	.20
1/8"	3/16"	1/32"	77	25, 50, 100	5006K63	.16
1/8"	1/4"	1/16"	108	25, 50, 100	5006K64	.23
5/32"	9/32"	1/16"	120	25, 50, 100	5006K65	.27
3/16"	1/4"	1/32"	50	25, 50, 100	5006K66	.18
1/4"	5/16"	1/32"	38	25, 50, 100	5006K67	.23
1/4"	3/8"	1/16"	63	25, 50, 100	5006K68	.39

Antibacterial Gray PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 70)
- Temperature Range: 25° to 150° F
- Tensile Strength: 2103 psi
- Use barbed fittings (see pages 156-165)

Specially formulated to resist the growth of bacteria, yeast, fungi, and mold, this semi-transparent gray PVC tubing is ideal for use as drain tubing in ice machines and in other water-related applications. It can be sterilized with steam (autoclaving) and gas. Not rated for pressure or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Available Lengths, ft.		Per Ft. ♦
3/8"	5/8"	1/8"	4 1/2"	10, 25, 50, 100	8354K11	$1.22
1/2"	3/4"	1/8"	6"	10, 25, 50, 100	8354K12	1.28
5/8"	7/8"	1/8"	8"	10, 25, 50, 100	8354K13	1.67
3/4"	1"	1/8"	9"	10, 25, 50, 100	8354K14	1.85
1"	1 1/4"	1/8"	12"	5, 10, 25, 50, 100	8354K15	2.57

UV-Resistant Black PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 70)
- Temperature Range: –10° to +175° F
- Tensile Strength: 2400 psi
- Use barbed fittings (see pages 156-165)

Protect light-sensitive fluid with this opaque black tubing. It resists degradation caused by exposure to ozone and UV light, making it ideal for outdoor use. Use with water, air, food and beverage, ethylene glycol, and bleach. Material is FDA CFR21 175.300 compliant. It can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	1/8"	1/32"	5/8"	66	25, 50, 100	5231K31	$0.15
3/32"	5/32"	1/32"	25/32"	56	25, 50, 100	5231K32	.16
3/32"	7/32"	1/16"	1 3/32"	64	25, 50, 100	5231K33	.21
1/8"	1/4"	1/16"	1 1/4"	68	25, 50, 100	5231K81	.26
5/32"	9/32"	1/16"	1 13/32"	54	25, 50, 100	5231K34	.24
3/16"	1/4"	1/32"	1 1/4"	34	25, 50, 100	5231K35	.20
3/16"	5/16"	1/16"	1 9/16"	54	25, 50, 100	5231K82	.28
3/16"	3/8"	3/32"	1 7/8"	70	25, 50, 100	5231K36	.37
1/4"	3/8"	1/16"	1 7/8"	46	25, 50, 100	5231K83	.33
1/4"	7/16"	3/32"	2 3/16"	58	25, 50, 100	5231K37	.44
1/4"	1/2"	1/8"	2 1/2"	70	25, 50, 100	5231K84	.73
5/16"	7/16"	1/16"	2 3/16"	40	25, 50, 100	5231K85	.42
3/8"	1/2"	1/16"	2 1/2"	34	25, 50, 100	5231K6	$0.43
3/8"	5/8"	1/8"	3 1/8"	58	10, 25, 50, 100	5231K7	1.03
1/2"	5/8"	1/16"	3 1/8"	28	25, 50, 100	5231K88	.65
1/2"	3/4"	1/8"	3 3/4"	44	10, 25, 50, 100	5231K89	1.24
5/8"	7/8"	1/8"	4 3/8"	38	10, 25, 50, 100	5231K91	1.52
3/4"	1"	1/8"	5"	34	5, 10, 25, 50	5231K92	1.96
1"	1 1/4"	1/8"	6 1/4"	28	5, 10, 25, 50	5231K93	2.27
1 1/2"	2"	1/4"	10"	36	2, 5, 10, 25, 50	5231K94	6.74
2"	2 1/2"	1/4"	12 1/2"	28	2, 5, 10, 20, 25	5231K95	11.45
2 1/2"	3"	1/4"	15"	22	2, 5, 10, 20, 25	5231K96	16.24
3"	3 1/2"	1/4"	17 1/2"	20	2, 5, 10	5231K97	18.96

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

ⓘ For information about the chemical compatibility of the PVC tubing on this page, go to mcmaster.com and search for **5255KAC**.

UV-Resistant Black Tygon PVC Tubing

- Tygon Formulation: R-3400
- Very flexible
- Wall Hardness: Soft (Shore A: 64)
- Temperature Range: –6° to +165° F
- Tensile Strength: 2250 psi
- Use barbed fittings (see pages 156-165)

Ideal for outdoor use, this opaque black tubing will protect your light-sensitive fluids. It resists degradation caused by exposure to ozone and UV light. Use with water, air, and ethylene glycol. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	1/8″	1/32″	1/4″	60	25, 50	5255K31	$0.34
3/32″	5/32″	1/32″	3/8″	45	25, 50	5255K12	.39
3/32″	7/32″	1/16″	1/4″	80	10, 25, 50	5255K13	1.06
1/8″	1/4″	1/16″	3/8″	60	10, 25, 50	5255K14	.95
5/32″	9/32″	1/16″	1/2″	50	10, 25, 50	5255K15	1.44
3/16″	1/4″	1/32″	1″	25	25, 50	5255K36	.75
3/16″	5/16″	1/16″	5/8″	45	10, 25, 50	5255K17	1.47
3/16″	3/8″	3/32″	1/2″	60	5, 10, 25, 50	5255K18	2.76
1/4″	3/8″	1/16″	1″	35	10, 25, 50	5255K19	$1.86
1/4″	7/16″	3/32″	3/4″	50	5, 10, 25, 50	5255K21	3.35
5/16″	7/16″	1/16″	1 3/8″	30	5, 10, 25, 50	5255K22	2.06
3/8″	1/2″	1/16″	1 3/4″	25	5, 10, 25, 50	5255K23	2.16
3/8″	5/8″	1/8″	1 1/8″	45	2, 5, 10, 25, 50	5255K24	4.49
1/2″	3/4″	1/8″	1 3/4″	35	2, 5, 10, 25, 50	5255K26	5.29
5/8″	7/8″	1/8″	2 3/8″	30	2, 5, 10, 25, 50	5255K27	6.02
3/4″	1″	1/8″	3 1/4″	25	2, 5, 10, 25, 50	5255K28	6.81

High-Flex White PVC Tubing

- Very flexible
- Wall Hardness: Soft (Shore A: 50)
- Temperature Range: –67° to +180° F
- Tensile Strength: 1400 psi
- Use barbed fittings (see pages 156-165)

An economical alternative to silicone tubing, this semi-transparent white PVC tubing offers very good flex life. Ideal for use with peristaltic (squeeze-action) pumps, it's also a good nonallergenic alternative to latex. Use with water and food and beverage. Material is FDA CFR21 177.1520 compliant. This tubing can be sterilized with gas and radiation. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	3/16″	1/16″	3/16″	70	25, 50	5229K52	$0.23
1/8″	1/4″	1/16″	1/2″	43	25, 50	5229K54	.37
3/16″	5/16″	1/16″	3/4″	31	25, 50	5229K56	.50
1/4″	3/8″	1/16″	1 1/8″	25	25, 50	5229K58	.60
1/4″	1/2″	1/8″	3/4″	25	10, 25, 50	5229K59	1.18
5/16″	7/16″	1/16″	1 3/8″	21	25, 50	5229K63	.74
3/8″	1/2″	1/16″	1 3/4″	17	10, 25, 50	5229K64	.74
3/8″	5/8″	1/8″	1 1/4″	31	5, 10, 25, 50	5229K67	1.55
1/2″	5/8″	1/16″	3″	19	10, 25, 50	5229K68	.88
1/2″	3/4″	1/8″	1 3/4″	25	5, 10, 25, 50	5229K72	1.78

Long-Flex-Life Clear Tygon PVC Tubing

- Tygon Formulation: LFL
- Very flexible
- Wall Hardness: Soft (Shore A: 56)
- Temperature Range: –65° to +165° F
- Tensile Strength: 1550 psi
- Use barbed fittings (see pages 156-165)

Offering excellent wear resistance, this clear tubing has the longest flex life of any Tygon PVC tubing we offer. It is soft, which makes it ideal for use with peristaltic (squeeze-action) pumps. And because it's clear, you can easily monitor the flow of your line. Use with water and food and beverage. Material is FDA CFR21 175.300 compliant. This tubing can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	3/16″	1/16″	1/4″	50	2, 5, 10, 25	55485K51	$4.16
1/8″	1/4″	1/16″	1/2″	33	2, 5, 10, 25	55485K52	4.80
3/16″	5/16″	1/16″	3/4″	25	2, 5, 10, 25	55485K56	5.00
1/4″	3/8″	1/16″	1″	20	2, 5, 10, 25	55485K57	4.87
1/4″	1/2″	1/8″	3/4″	35	2, 5, 10, 20, 25	55485K53	7.88
5/16″	7/16″	1/16″	1 1/4″	15	2, 5, 10, 25	55485K59	5.69
3/8″	5/8″	1/8″	1″	25	2, 5, 10, 20, 25	55485K61	12.03
1/2″	3/4″	1/8″	1 1/2″	20	2, 5, 10, 20, 25	55485K62	12.73
3/4″	1 1/4″	1/4″	1 3/4″	24	2, 5, 10	55485K63	25.28
1″	1 3/8″	3/16″	3 1/4″	15	2, 5, 10	55485K64	26.38

Ultra-Soft Clear Tygon PVC Tubing

- Tygon Formulation: R-1000
- Very flexible
- Wall Hardness: Very soft (Shore A: 40)
- Temperature Range: –75° to +125° F
- Tensile Strength: 1200 psi
- Use barbed fittings (see pages 156-165)

Looking for an excellent alternative to silicone tubing? This tubing will outlast silicone tubing at a rate of 2 to 1 in peristaltic (squeeze-action) pump applications. It is clear to allow you to monitor the flow in your line, plus it's super soft and resistant to many corrosive chemicals. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 175.300 compliant. It can be sterilized with gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	3/16″	1/16″	1/8″	55	10, 25, 50	5894K11	$0.84
1/8″	1/4″	1/16″	3/8″	30	10, 25, 50	5894K12	1.11
3/16″	5/16″	1/16″	5/8″	20	10, 25, 50	5894K13	1.77
1/4″	3/8″	1/16″	1″	15	5, 10, 25, 50	5894K14	2.12
1/4″	1/2″	1/8″	5/8″	30	5, 10, 25, 50	5894K15	4.18
5/16″	7/16″	1/16″	1 3/8″	15	5, 10, 25, 50	5894K16	2.46
3/8″	1/2″	1/16″	1 3/4″	10	5, 10, 25, 50	5894K17	2.87
3/8″	5/8″	1/8″	1 1/8″	20	2, 5, 10, 25, 50	5894K18	5.36
1/2″	5/8″	1/16″	2 7/8″	10	5, 10, 25, 50	5894K19	3.50
1/2″	3/4″	1/8″	1 3/4″	15	2, 5, 10, 25, 50	5894K21	6.19

High-Purity White Tygon Tubing

- Tygon Formulation: 2001
- Very flexible
- Wall Hardness: Soft (Shore A: 69)
- Temperature Range: –108° to +135° F
- Tensile Strength: 800 psi
- Use barbed fittings (see pages 156-165)

Made without a plasticizer additive that can contaminate fluid passing through it, this semi-transparent tubing won't impart taste or odors. This tubing is soft, which makes it ideal for use in peristaltic (squeeze-action) pump applications. Use with water, deionized water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.2600(e) compliant. It can be sterilized with steam (autoclaving), gas, and radiation. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	3/16″	1/16″	1/4″	45	10, 25, 50	9449K41	$1.21
1/8″	1/4″	1/16″	1/2″	30	5, 10, 25, 50	9449K42	1.88
3/16″	5/16″	1/16″	1/2″	22	5, 10, 25, 50	9449K43	2.09
1/4″	3/8″	1/16″	1″	17	5, 10, 25, 50	9449K44	2.33
5/16″	7/16″	1/16″	1 1/2″	14	5, 10, 25, 50	9449K45	2.58
3/8″	1/2″	1/16″	2″	12	5, 10, 25, 50	9449K46	2.89
1/2″	3/4″	1/8″	1 1/2″	16	2, 5, 10, 25, 50	9449K47	5.88
5/8″	7/8″	1/8″	2 1/2″	13	2, 5, 10, 20, 25, 50	9449K48	6.96
3/4″	1″	1/8″	3″	11	2, 5, 10, 20, 25, 50	9449K49	7.51
1″	1 3/8″	3/16″	3 3/4″	13	2, 5, 10, 20, 25, 50	9449K51	13.08

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the PVC tubing on this page, go to mcmaster.com and search for **5466KAC**.

Smooth-Bore High-Purity Clear Tygon Tubing

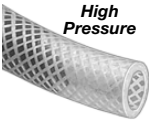

- Tygon Formulation: Standard: 2475, High Pressure: 2475 I.B.
- Wall Hardness: Firm (Shore A: 72)
- Very flexible
- Temperature Range: –94° to +125° F
- Tensile Strength: 2000 psi
- Use barbed fittings (see pages 156-165)

When it comes to food handling, this tubing is the whole package. It has a smooth bore that resists material buildup and the absorption of water-based fluids. This tubing is also high purity, which means it is made without a plasticizer additive that can contaminate fluid passing through it. And because it's clear, you can easily monitor the flow of your line. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1520 compliant. It can be sterilized with gas and radiation. Vacuum rating is 29.9″ Hg @ 73° F, unless noted.

High-pressure tubing has a nylon braid reinforcement, which gives it extra strength to handle higher pressures than standard tubing. Due to the braid reinforcement, this tubing is sometimes referred to as hose.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Standard							
1/16″	3/16″	1/16″	1/8″	85	10, 25, 50	5466K31	$1.25
1/8″	1/4″	1/16″	1/4″	50	5, 10, 25, 50	5466K32	1.57
3/16″	5/16″	1/16″	1/2″	40	5, 10, 25, 50	5466K33	2.10
1/4″	3/8″	1/16″	3/4″	30	5, 10, 25, 50	5466K34	2.04
5/16″	7/16″	1/16″	1 3/8″	18	5, 10, 25, 50	5466K35	2.61
3/8″	1/2″	1/16″	1 3/4″	20	5, 10, 25, 50	5466K36■	2.56
1/2″	3/4″	1/8″	1 1/2″	29	2, 5, 10, 25, 50	5466K37	5.75
5/8″	7/8″	1/8″	2 1/4″	25	2, 5, 10, 20, 25, 50	5466K38	6.65
3/4″	1″	1/8″	3 1/4″	21	2, 5, 10, 20, 25, 50	5466K39	7.13
1″	1 3/8″	3/16″	3″	20	2, 5, 10, 20, 25	5466K41	12.22

■ Vacuum rating is 25″ Hg @ 73° F.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
High Pressure							
1/4″	1/2″	1/8″	3/8″	225	2, 5, 10, 25, 50	5624K51	$3.99
3/8″	5/8″	1/8″	1″	210	2, 5, 10, 25, 50	5624K52	4.87
1/2″	3/4″	1/8″	1 1/4″	230	2, 5, 10, 20, 25, 50	5624K53	5.90
5/8″	7/8″	1/8″	1 3/4″	135	2, 5, 10, 20, 25, 50	5624K54	7.54
3/4″	1 1/16″	5/32″	2 1/4″	135	2, 5, 10, 20, 25, 50	5624K55	8.19
1″	1 3/8″	3/16″	3 1/2″	125	2, 5, 10, 20, 25	5624K56	14.35

Antistatic Clear PVC Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 73)
- Temperature Range: –5° to +175° F
- Tensile Strength: 2000 psi
- Use barbed or compression fittings (see pages 156-179)

Protect sensitive equipment—a metal wire coil is embedded into the walls of this tubing to dissipate static electricity without the need for grounding. This tubing is clear, so you can easily monitor the flow of your line. Use with water, air, ethylene glycol, and bleach. Not rated for sterilization. Vacuum rating is 29.8″ Hg @ 70° F.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/4″	1/2″	1/8″	1″	250	Up to 25	50285K22	$9.18
3/8″	5/8″	1/8″	1 1/2″	150	Up to 25	50285K24	10.95
1/2″	13/16″	5/32″	2″	150	Up to 25	50285K25	14.31
5/8″	1″	3/16″	2 1/2″	150	Up to 25	50285K26	14.57
3/4″	1 1/8″	3/16″	3″	150	Up to 25	50285K27	18.26
1″	1 3/8″	3/16″	4″	100	Up to 25	50285K28	23.49
1 1/4″	1 3/4″	1/4″	5″	100	Up to 25	50285K29	33.74
1 1/2″	2″	1/4″	6″	100	Up to 25	50285K31	47.41
2″	2 1/2″	1/4″	8″	100	Up to 25	50285K32	57.88
2 1/4″	2 3/4″	1/4″	9″	50	Up to 25	50285K33	77.02
2 1/2″	3″	1/4″	10″	50	Up to 25	50285K34	93.39
3″	3 1/2″	1/4″	12″	50	Up to 25	50285K35	99.56

Ultra-Clear Tygon PVC Tubing

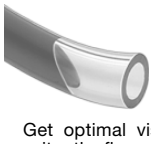

- Tygon Formulation: S-50-HL
- Very flexible
- Wall Hardness: Soft (Shore A: 66)
- Temperature Range: –55° to +165° F
- Tensile Strength: 2000 psi
- Use barbed fittings (see pages 156-165)

Get optimal visibility—this ultra-clear tubing makes it easy to monitor the flow of your line, plus it's kink resistant for restriction-free flow. Use with water, air, and ethylene glycol. It can be sterilized with steam (autoclaving), gas, and radiation. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/32″	3/32″	1/32″	1/8″	100	25, 50	8339K11	$0.13
1/16″	1/8″	1/32″	1/4″	55	25, 50	8339K12	.25
3/32″	5/32″	1/32″	3/8″	40	25, 50	8339K13	.33
1/8″	1/4″	1/16″	3/8″	55	10, 25, 50	8339K14	.88
5/32″	9/32″	1/16″	1/2″	45	10, 25, 50	8339K15	1.02
3/16″	5/16″	1/16″	5/8″	40	10, 25, 50	8339K16	1.37
1/4″	3/8″	1/16″	1″	30	5, 10, 25, 50	8339K17	1.56
5/16″	7/16″	1/16″	1 3/8″	25	5, 10, 25, 50	8339K18	2.00
3/8″	5/8″	1/8″	1 1/8″	40	2, 5, 10, 25, 50	8339K19	4.37
1/2″	3/4″	1/8″	1 3/4″	30	2, 5, 10, 25, 50	8339K21	5.39
5/8″	7/8″	1/8″	2 3/8″	25	2, 5, 10, 25, 50	8339K22	5.51
1″	1 1/4″	1/8″	5 1/8″	18	2, 5, 10, 20, 25, 50	8339K24	7.79

Hard-Wall Rigid Clear PVC Tubing

- Rigid
- Wall Hardness: Hard (Shore D: 81)
- Temperature Range: –50° to +140° F
- Tensile Strength: 7000 psi

Don't be fooled by this tubing—it is hard, rigid, nonbendable, and straight like pipe, but sized to the tubing industry's standards. This tubing is clear, so you can easily monitor what's flowing through your line. Use with water, air, food and beverage, dairy, oils, and hydraulic fluid. Material is FDA CFR21 177.1520 compliant, NSF 51 certified, and meets 3-A sanitary requirements. It can be sterilized with gas and chemicals. Vacuum rating is 29.75″ Hg @ 73° F.

To Order: Please specify 1-, 3-, or 6-ft. length.

ID	OD	Wall	Max. psi @ 73° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
0.17″	1/4″	0.04″	448	53945K11	$0.80	$2.17	$3.80
3/16″	5/16″	1/16″	366	53945K12	1.35	3.65	6.41
1/4″	3/8″	1/16″	330	53945K13	1.76	4.77	8.37
3/8″	1/2″	1/16″	248	53945K14	2.44	6.62	11.61
1/2″	5/8″	1/16″	198	53945K15	3.15	8.56	15.01
5/8″	3/4″	1/16″	165	53945K16	4.28	11.61	20.36

ID	OD	Wall	Max. psi @ 73° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
1″	1 1/8″	1/16″	110	53945K17	$5.27	$14.30	$25.08
1 1/8″	1 1/4″	1/16″	99	53945K18	6.72	18.25	32.02
1 1/4″	1 3/8″	1/16″	90	53945K19	6.90	18.74	32.88
1 3/8″	1 1/2″	1/16″	83	53945K21	5.85	15.87	27.85
1 7/8″	2″	1/16″	62	53945K22	9.45	25.64	44.98
2 3/8″	2 1/2″	1/16″	50	53945K23	12.88	34.97	61.35

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

Abrasion-Resistant Clear PVC/Polyurethane Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 80)
- Temperature Range: –10° to +170° F
- Tensile Strength: 2100 psi
- Use barbed fittings (see pages 156-165)

Get the clarity and flexibility of PVC combined with the abrasion resistance of polyurethane. This blended tubing is clear, so you can easily monitor the flow of your line. Use with water, deionized water, air, and food and beverage. Material is FDA CFR21 175.300 compliant. Not rated for sterilization, pressure, or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Available Lengths, ft.		Per Ft. ♦
1/8"	1/4"	1/16"	1"	25, 50, 100	53955K13	$0.60
3/16"	5/16"	1/16"	1"	25, 50, 100	53955K14	.66
1/4"	3/8"	1/16"	1 1/2"	25, 50, 100	53955K18	.81
5/16"	7/16"	1/16"	1 1/4"	25, 50, 100	53955K21	.98
3/8"	1/2"	1/16"	2"	10, 25, 50, 100	53955K23	1.10
1/2"	5/8"	1/16"	3"	10, 25, 50, 100	53955K29	$1.38
1/2"	3/4"	1/8"	4"	5, 10, 25, 50, 100	53955K31	2.99
5/8"	3/4"	1/16"	5"	10, 25, 50, 100	53955K34	1.50
3/4"	1"	1/8"	5"	5, 10, 25, 50, 100	53955K38	3.66
1"	1 1/4"	1/8"	7"	5, 10, 25, 50, 100	53955K39	5.19

Soft Abrasion-Resistant Blue Polyurethane Tubing

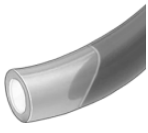

- Very flexible
- Wall Hardness: Soft (Shore A: 68)
- Temperature Range: –40° to +180° F
- Tensile Strength: 2434 psi
- Use barbed or compression fittings (see pages 156-179)

Ideal for use with peristaltic (squeeze-action) pumps, this ester-based polyurethane tubing combines softness with high abrasion resistance and tear strength. It is transparent blue, so you can easily monitor what's flowing through your line. Unlike other polyurethane tubing, this tubing is specially formulated for use with water; also use with ethylene glycol. It can be sterilized with gas and radiation. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	3/16"	1/16"	5/8"	101	10, 25, 50	5792K31	$1.03
1/16"	7/32"	5/64"	5/8"	120	10, 25, 50	5792K21	1.41
1/8"	1/4"	1/16"	1 1/8"	58	10, 25, 50	5792K32	1.32
1/8"	3/8"	1/8"	11/16"	101	2, 5, 10, 25, 50	5792K51	3.56
3/16"	5/16"	1/16"	1 5/8"	42	5, 10, 25, 50	5792K33	1.77
3/16"	3/8"	3/32"	1 5/8"	58	5, 10, 25, 50	5792K34	2.56
1/4"	3/8"	1/16"	2 1/4"	33	5, 10, 25, 50	5792K35	1.88
1/4"	7/16"	3/32"	2 1/8"	46	5, 10, 25, 50	5792K36	2.97
1/4"	1/2"	1/8"	2 1/8"	58	2, 5, 10, 25, 50	5792K37	3.91
5/16"	7/16"	1/16"	2 3/4"	28	5, 10, 25, 50	5792K22	2.09
5/16"	1/2"	3/32"	2 11/16"	39	2, 5, 10, 25, 50	5792K38	3.08
3/8"	1/2"	1/16"	3 1/4"	24	5, 10, 25, 50	5792K39	2.22
3/8"	9/16"	3/32"	3 1/4"	27	2, 5, 10, 25, 50	5792K41	$3.56
3/8"	5/8"	1/8"	3 1/8"	34	2, 5, 10, 25, 50	5792K42	5.06
1/2"	3/4"	1/8"	4 1/8"	33	2, 5, 10, 25, 50	5792K44	6.17
1/2"	7/8"	3/16"	3 3/4"	46	2, 5, 10, 25, 50	5792K25	10.76
5/8"	7/8"	1/8"	5"	28	2, 5, 10, 20, 25, 50	5792K45	7.39
5/8"	15/16"	5/32"	4 7/8"	33	2, 5, 10, 20, 25, 50	5792K46	9.64
3/4"	1"	1/8"	5 15/16"	24	2, 5, 10, 20, 25, 50	5792K47	8.63
3/4"	1 1/16"	5/32"	5 5/8"	29	2, 5, 10, 20, 25, 50	5792K48	11.17
3/4"	1 1/4"	1/4"	4 5/8"	42	2, 5, 10, 20, 25, 50	5792K49	17.75
1"	1 1/4"	1/8"	7 5/8"	19	2, 5, 10, 25, 50	5792K26	11.73
1"	1 3/8"	3/16"	6 3/4"	27	2, 5, 10, 25, 50	5792K27	18.59
1"	1 1/2"	1/4"	5 5/8"	33	2, 5, 10, 25, 50	5792K28	26.12

Abrasion-Resistant Clear Polyurethane Tubing

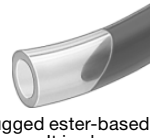

- Flexible
- Wall Hardness: Firm (Shore A: 85)
- Temperature Range: –70° to +175° F
- Tensile Strength: 5000 psi
- Use barbed fittings (see pages 156-165)

Abrasion resistant with high tear strength, this rugged ester-based polyurethane tubing performs well at low temperatures. It is clear, so you can easily monitor the flow of your line. Use with air, bleach, and food. Material is FDA CFR21 177.2600 compliant. It can be sterilized with gas. Not rated for vacuum.

Note: Do not use with water. Water will degrade this tubing and adversely affect the physical properties.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	1/8"	1/32"	3/4"	106	25, 50, 100	5108K41	$0.24
1/8"	3/16"	1/32"	11/8"	70	25, 50, 100	5108K42	.32
1/8"	1/4"	1/16"	1 1/2"	110	25, 50, 100	5108K43	.58
3/16"	1/4"	1/32"	1 1/2"	56	25, 50, 100	5108K45	.40
3/16"	5/16"	1/16"	1 7/8"	86	25, 50, 100	5108K46	.77
1/4"	5/16"	1/32"	1 7/8"	50	25, 50, 100	5108K48	.50
1/4"	3/8"	1/16"	2 1/4"	76	10, 25, 50, 100	5108K49	.91
1/4"	7/16"	3/32"	2 5/8"	96	10, 25, 50, 100	5108K51	1.25
1/4"	1/2"	1/8"	3"	110	5, 10, 25, 50, 100	5108K52	1.77
5/16"	7/16"	1/16"	2 5/8"	66	10, 25, 50, 100	5108K53	1.07
5/16"	9/16"	1/8"	3 3/8"	100	5, 10, 25, 50, 100	5108K55	2.34
3/8"	1/2"	1/16"	3"	56	10, 25, 50, 100	5108K56	1.12
3/8"	9/16"	3/32"	3 3/8"	76	5, 10, 25, 50, 100	5108K57	1.71
3/8"	5/8"	1/8"	3 3/4"	90	5, 10, 25, 50, 100	5108K58	2.34
7/16"	5/8"	3/32"	3 3/4"	66	5, 10, 25, 50, 100	5108K61	1.91
1/2"	5/8"	1/16"	3 3/4"	40	10, 25, 50, 100	5108K62	1.40
1/2"	3/4"	1/8"	4 1/2"	76	5, 10, 25, 50, 100	5108K63	2.93
5/8"	13/16"	3/32"	4 7/8"	52	5, 10, 25, 50, 100	5108K64	2.56
5/8"	7/8"	1/8"	5 1/4"	60	2, 5, 10, 25, 50	5108K65	3.41
3/4"	1"	1/8"	6"	56	2, 5, 10, 25, 50	5108K66	2.95
7/8"	1 1/8"	1/8"	6 3/4"	46	2, 5, 10, 25, 50	5108K67	4.50
1"	1 1/4"	1/8"	7 1/2"	40	2, 5, 10, 25, 50	5108K68	3.68

Abrasion-Resistant Clear Tygothane Polyurethane Tubing

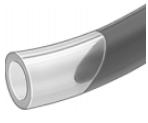

- Tygon Formulation: C-210-A
- Flexible
- Wall Hardness: Firm (Shore A: 82)
- Temperature Range: –100° to +175° F
- Tensile Strength: 6050 psi
- Use barbed fittings (see pages 156-165)

Made of ester-based polyurethane, this tubing has a high tear strength, won't impart taste or odors, and performs well at low temperatures. It is clear, so you can easily monitor what's flowing through your line. Use with air, food, and biodiesel. Material is FDA CFR21 177.2600(e) compliant. It is not rated for sterilization or vacuum.

Note: Do not use with water. Water will degrade this tubing and adversely affect the physical properties.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16"	1/8"	1/32"	3/16"	70	25, 50, 100	5549K43	$0.28
1/8"	3/16"	1/32"	1/2"	45	25, 50, 100	5549K44	.35
1/8"	1/4"	1/16"	5/16"	74	25, 50, 100	5549K31	.68
3/16"	1/4"	1/32"	1"	34	25, 50, 100	5549K45	.50
3/16"	5/16"	1/16"	5/8"	56	10, 25, 50, 100	5549K32	.84
1/4"	5/16"	1/32"	1 9/16"	28	10, 25, 50, 100	5549K46	.89
1/4"	3/8"	1/16"	15/16"	42	10, 25, 50, 100	5549K33	.95
1/4"	7/16"	3/32"	11/16"	58	5, 10, 25, 50, 100	5549K47	1.86
1/4"	1/2"	1/8"	9/16"	70	5, 10, 25, 50, 100	5549K34	2.51
5/16"	7/16"	1/16"	1 15/16"	36	10, 25, 50, 100	5549K35	1.36
3/8"	1/2"	1/16"	1 3/4"	34	10, 25, 50, 100	5549K36	1.15
3/8"	9/16"	3/32"	1 5/16"	45	5, 10, 25, 50, 100	5549K48	1.76
3/8"	5/8"	1/8"	1 1/16"	54	5, 10, 25, 50, 100	5549K37	2.57
7/16"	5/8"	3/32"	1 11/16"	40	5, 10, 25, 50, 100	5549K49	2.26
1/2"	5/8"	1/16"	2 7/8"	26	5, 10, 25, 50, 100	5549K38	1.68
1/2"	3/4"	1/8"	1 3/4"	46	5, 10, 25, 50, 100	5549K39	3.13
5/8"	13/16"	3/32"	3"	32	5, 10, 25, 50, 100	5549K51	3.15
5/8"	7/8"	1/8"	2 3/8"	38	2, 5, 10, 25, 50	5549K41	3.79
3/4"	1"	1/8"	3 1/4"	33	2, 5, 10, 25, 50	5549K42	3.90
1"	1 1/4"	1/8"	5 1/8"	28	2, 5, 10, 25, 50	5549K53	5.00

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

Polyurethane Joined Tubing for Drinking Water

- Very flexible
- Wall Hardness: Firm (Shore A: 85, unless noted)
- Temperature Range: –40° to +165° F
- Tensile Strength: 5000 psi
- Use barbed fittings (see pages 156-165)

No need for cable ties or tape—this multiple-line tubing holds together on its own. Made of ether-based polyurethane, it offers better abrasion resistance and higher tear strength than PVC tubing. This tubing is NSF 61 certified for use with drinking (potable) water. Not rated for sterilization. Vacuum rating is 28″ Hg @ 72° F.

Single-Color Tubing—Manufactured as one piece, this tubing is permanently joined. It comes in a choice of two colors; all tubes will be the color you select. **To Order:** Please specify color and length from the available lengths listed.

Multicolor Tubing—Manufactured as separate tubes then bonded together, this tubing holds together until you separate it. Multiple colors make it easy to identify lines. **To Order:** Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
Single Color							
Two Same-Color Tubes—*Choose clear or opaque black*							
1/16″	1/8″	1/32″	3/16″	190	25, 50, 100	50555K34 ♣	$0.34
1/8″	1/4″	1/16″	1/2″	150	10, 25, 50, 100	50555K35	.99
1/4″	3/8″	1/16″	3/4″	120	5, 10, 25, 50	50555K37 ♣	2.29
Two Same-Color Tubes—*Choose opaque black or gray*							
0.159″	1/4″	3/64″	1/2″	130	10, 25, 50, 100	50555K61 ♣	.86
Three Same-Color Tubes—*Choose clear or opaque black*							
1/16″	1/8″	1/32″	3/16″	125	25, 50, 100	50555K39	.60
1/8″	1/4″	1/16″	1/2″	150	5, 10, 25, 50	50555K38	1.88
Four Same-Color Tubes—*Choose clear or opaque black*							
1/16″	1/8″	1/32″	3/16″	125	10, 25, 50, 100	50555K41	.91
1/8″	1/4″	1/16″	1/2″	150	5, 10, 25, 50	50555K42	2.31

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
Multicolor							
Two Tubes—*One clear, one opaque black*							
1/16″	1/8″	1/32″	3/16″	135	25, 50, 100	50335K22	$0.71
1/8″	1/4″	1/16″	1/2″	145	10, 25, 50, 100	50335K52	1.38
Four Tubes—*One each: transparent green, yellow, orange, and red*							
1/16″	1/8″	1/32″	3/16″	135	10, 25, 50, 100	50335K34	1.18
1/8″	1/4″	1/16″	1/2″	145	5, 10, 25, 50, 100	50335K64	2.66
Four Tubes—*One each: clear, opaque blue, opaque white, and transparent red*							
1/16″	1/8″	1/32″	3/16″	135	5, 10, 25, 50, 100	50335K44	2.56
1/8″	1/4″	1/16″	1/2″	145	5, 10, 25, 50, 100	50335K74	3.09

♣ Hardness is Shore A: 90.

High-Pressure Polyurethane Tubing for Drinking Water

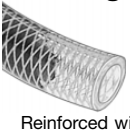

- Very flexible
- Wall Hardness: Firm (Shore A: 85)
- Temperature Range: –40° to +165° F
- Tensile Strength: 5000 psi
- Use barbed fittings (see pages 156-165)

Reinforced with a polyester braid for strength, this tubing can withstand high pressure. Due to the braid reinforcement, this tubing is sometimes called hose. It's made of ether-based polyurethane, which is more abrasion resistant and has a higher tear strength than PVC tubing. This tubing is clear, so you can easily monitor the flow of your line. It's NSF 61 certified for use with drinking (potable) water. Not rated for sterilization.

Reinforced tubing is clear and has a vacuum rating of 28″ Hg @ 72° F.

Extra-flex reinforced tubing has thinner walls to give it more flexibility. It is transparent blue and is not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
Reinforced							
1/4″	0.470″	1/8″	3/4″	230	5, 10, 25, 50, 100	51165K11	$2.07
3/8″	5/8″	1/8″	1 1/2″	155	5, 10, 25, 50, 100	51165K12	2.96
1/2″	3/4″	1/8″	2″	125	5, 10, 25, 50, 100	51165K13	3.49
5/8″	29/32″	9/64″	2 3/4″	105	2, 5, 10, 25, 50, 100	51165K14	4.77
3/4″	1″	9/64″	3″	90	2, 5, 10, 25, 50, 100	51165K15	5.69
1″	1 5/16″	5/32″	5″	75	2, 5, 10, 20, 25, 50	51165K16	9.61
Extra-Flex Reinforced							
1/4″	3/8″	1/16″	7/8″	210	10, 25, 50, 100	5545K14	.83
5/16″	0.473″	0.081″	1″	200	10, 25, 50, 100	5545K16	1.34
3/8″	9/16″	3/32″	1 1/2″	200	5, 10, 25, 50, 100	5545K18	1.40

High-Pressure Clear Tygothane Polyurethane Tubing

- Tygon Formulation: C-544-A I.B.
- Very flexible
- Wall Hardness: Firm (Shore A: 85)
- Temperature Range: –100° to +180° F
- Tensile Strength: 5000 psi
- Use barbed fittings (see pages 156-165)

Similar to the polyurethane tubing for drinking water, but this tubing can also be used with food and beverage. It is made of ether-based polyurethane and reinforced with polyester braid for strength. Due to the braid reinforcement, this tubing is sometimes referred to as hose. This tubing won't impart taste or odors and is abrasion resistant with high tear strength. And because it's clear, you can easily monitor the flow of your line. Material is FDA CFR21 177.2600 compliant and NSF 61 certified. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/8″	3/8″	1/8″	1/4″	420	5, 10, 25, 50, 100	5439K19	$2.38
1/4″	1/2″	1/8″	3/4″	275	5, 10, 25, 50, 100	5439K21	2.53
3/8″	5/8″	1/8″	1 1/2″	205	5, 10, 25, 50, 100	5439K22	3.41
1/2″	3/4″	1/8″	2″	195	2, 5, 10, 25, 50, 100	5439K23	4.18
5/8″	7/8″	1/8″	3″	175	2, 5, 10, 25, 50, 100	5439K24	5.01
3/4″	1 1/16″	5/32″	3 1/2″	150	2, 5, 10, 25, 50, 100	5439K25	5.56
1″	1 3/8″	3/16″	4 3/4″	120	2, 5, 10, 20, 25, 50	5439K26	7.52
1 1/4″	1 3/4″	1/4″	6″	95	2, 5, 10, 20, 25, 50	5439K27	14.75
1 1/2″	2″	1/4″	7 1/2″	80	2, 5, 10, 20, 25, 50	5439K28	15.90
2″	2 1/2″	1/4″	13″	70	2, 5, 10, 20, 25, 50	5439K29	40.87

Choose-a-Color Polyurethane Tubing for Drinking Water

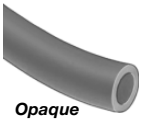

- Very flexible
- Wall Hardness: Hard (Shore A: 95)
- Temperature Range: –40° to +165° F
- Tensile Strength: 6000 psi
- Use push-to-connect fittings (see pgs. 185-201); inch sizes also accept barbed and compression fittings (see pgs. 156-179)

Color-code your water lines for easy identification. This ether-based polyurethane tubing offers better abrasion resistance and higher tear strength than PVC tubing. It's NSF 61 certified for use with drinking (potable) water. Not rated for sterilization. Vacuum rating is 28″ Hg @ 72° F.

Opaque tubing comes in black, blue, green, red, white, and yellow, unless noted. ***Clear*** tubing allows you to monitor what's flowing through your line; it comes in blue, clear, green, red, and yellow.

To Order: Please specify color as well as length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.	***Opaque Colors***	Per Ft. ♦	***Clear Colors***	Per Ft. ♦
Inch									
0.066″	1/8″	0.03″	1/4″	255	25, 50, 100	5648K22	$0.18	5648K67	$0.18
3/32″	5/32″	0.031″	3/8″	210	25, 50, 100	5648K23	.19	5648K68	.19
1/8″	1/4″	0.062″	1/2″	265	25, 50, 100	5648K31	.54	5648K74	.54
0.16″	1/4″	0.045″	1/2″	175	25, 50, 100	5648K25	.42	5648K69	.42
0.245″	3/8″	0.065″	7/8″	170	10, 25, 50, 100	5648K26	.86	5648K71	.86
5/16″	15/32″	0.079″	1 1/8″	155	10, 25, 50	5648K32	1.09	5648K77	1.09
0.32″	1/2″	0.09″	1 1/8″	175	5, 10, 25, 50	5648K33	1.62	5648K78	1.62
3/8″	9/16″	0.094″	1 3/8″	155	10, 25, 50	5648K29★	1.61	5648K72	1.61
Metric									
1.8 mm	3 mm	0.6 mm	1/4″	230	25, 50, 100	50315K21■	.17	50315K67	.17
2.4 mm	4 mm	0.8 mm	3/8″	210	25, 50, 100	50315K22	.20	50315K68	.20
4 mm	6 mm	1 mm	1/2″	160	25, 50, 100	50315K24	.33	50315K69	.33
5 mm	8 mm	1.5 mm	3/4″	190	25, 50, 100	50315K25	.59	50315K71	.59
6.5 mm	10 mm	1.75 mm	7/8″	170	10, 25, 50	50315K26	.82	50315K72	.82
8 mm	12 mm	2 mm	1 1/8″	155	10, 25, 50	50315K28	1.19	50315K73	1.19

★ Not available in white. ■ Available in black only.

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the polyurethane and polyethylene tubing on this page, go to mcmaster.com and search for **9148TAC**.

Self-Retracting Choose-a-Color Polyurethane Tubing

- Very flexible
- Wall Hardness: Hard (Shore A: 95)
- Temperature Range: –40° to +125° F
- Tensile Strength: 6000 psi
- Use barbed fittings (see pages 156-165)

Keep your work site safe and clutter free—this coiled tubing extends when you need it and retracts out of the way when you don't. Made of ether-based polyurethane, it offers better abrasion resistance and higher tear strength than PVC tubing. It meets NSF 61 and is for use with drinking (potable) water and air. Not rated for sterilization or bend radius. Vacuum rating is 28″ Hg @ 75° F.

Comes in transparent blue, as well as the following opaque colors: dark blue, neon green, red, and yellow. **To Order:** Please specify color.

ID	OD	Wall	Max. psi @ 75° F	Coil OD	Coil Lg. Retracted	Coil Lg. Extended		Each
0.16″	1/4″	0.045″	150	1 1/2″	7″	10 ft.	9148T12	$6.23
0.16″	1/4″	0.045″	150	1 1/2″	15 1/2″	25 ft.	9148T13	9.17
1/4″	3/8″	0.065″	145	2 1/2″	6″	10 ft.	9148T11	12.14
1/4″	3/8″	0.065″	145	2 1/2″	16″	25 ft.	9148T14	19.35
3/8″	9/16″	0.094″	135	4 1/8″	5 1/2″	10 ft.	9148T16	21.02
3/8″	9/16″	0.094″	135	4 1/8″	14″	25 ft.	9148T19	37.93

Antistatic White Polyurethane Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 85)
- Temperature Range: –40° to +165° F
- Tensile Strength: 4700 psi
- Use barbed fittings (see pages 156-165)

Prevent electrostatic discharge with this opaque white tubing. Made of specially formulated ether-based polyurethane, this tubing offers better abrasion resistance and higher tear strength than PVC tubing. Use with water, air, hydraulic oil, and mineral oil. Not rated for sterilization. Vacuum rating is 28″ Hg @ 75° F.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
Inch							
1/16″	1/8″	1/32″	3/16″	115	25, 50, 100	5790K15	$0.30
5/64″	5/32″	3/64″	3/8″	125	25, 50, 100	5790K16	.42
1/8″	1/4″	1/16″	1/2″	120	25, 50, 100	5790K18	.82
1/4″	3/8″	1/16″	3/4″	90	10, 25, 50, 100	5790K24	1.52
Metric							
4 mm	6 mm	1 mm	9.5 mm	70	25, 50, 100	5790K62	.61
6 mm	9 mm	1.5 mm	19 mm	80	10, 25, 50, 100	5790K64	1.55

Large-Diameter Thin-Wall Clear Polyurethane Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 82)
- Temperature Range: –40° to +180° F
- Tensile Strength: 4700 psi
- Use worm drive clamps (see pages 274-275)

A large diameter makes this tubing useful with vibrating sifters, screeners, hoppers, and packaging equipment. Made of abrasion-resistant ether-based polyurethane, this tubing won't build up or conduct static in moist environments. It has thin walls, so it is more flexible than our other polyurethane tubing. This tubing is clear, so you can easily monitor the flow of your line. Use with water, food and beverage, and dairy. It is FDA CFR21 177.2600 compliant and meets 3-A sanitary requirements. Not rated for bend radius, sterilization, pressure, or vacuum.

To Order: Please specify length in 1-ft. increments up to 50 feet.

ID	OD	Wall	Available Lengths, ft.		Per Ft. ♦
2 1/4″	2 5/16″	1/32″	Up to 50	5971K11	$24.64
3 1/4″	3 5/16″	1/32″	Up to 50	5971K12	24.96
4 1/4″	4 5/16″	1/32″	Up to 50	5971K13	28.21
5 1/4″	5 5/16″	1/32″	Up to 50	5971K14	33.27
6 1/4″	6 5/16″	1/32″	Up to 50	5971K15	33.45
7 1/8″	7 3/16″	1/32″	Up to 50	5971K16	35.54
8 1/8″	8 3/16″	1/32″	Up to 50	5971K17	37.70
9 1/8″	9 3/16″	1/32″	Up to 50	5971K18	38.30
10 1/8″	10 3/16″	1/32″	Up to 50	5971K19	49.74
12 1/8″	12 3/16″	1/32″	Up to 50	5971K21	52.18

Water-Resistant Clear Polyurethane Tubing

- Flexible
- Wall Hardness: Firm (Shore A: 84)
- Temperature Range: –70° to +175° F
- Tensile Strength: 5500 psi
- Use barbed fittings (see pages 156-165)

Other polyurethane tubing may let water get the best of them, but not this one—this ether-based tubing shrugs off water and maintains its integrity. This tubing is clear, so you can easily monitor the flow of your line. It is more abrasion resistant than PVC tubing with a higher tear strength, plus it's made without a plasticizer additive that can contaminate fluid passing through it. Use with water, air, and food and beverage. Material is FDA compliant. It can be sterilized with gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	1/8″	1/32″	3/4″	90	25, 50, 100	5195T61	$0.24
1/8″	3/16″	1/32″	1 1/8″	58	25, 50, 100	5195T62	.31
1/8″	1/4″	1/16″	1 1/2″	92	25, 50, 100	5195T63	.57
3/16″	1/4″	1/32″	1 1/2″	48	25, 50, 100	5195T64	.38
3/16″	5/16″	1/16″	1 7/8″	72	10, 25, 50, 100	5195T65	.75
1/4″	3/8″	1/16″	2 1/4″	64	10, 25, 50, 100	5195T67	.89
1/4″	1/2″	1/8″	3″	92	5, 10, 25, 50, 100	5195T69	1.95
5/16″	7/16″	1/16″	2 5/8″	56	10, 25, 50, 100	5195T71	.91
5/16″	9/16″	1/8″	3 3/8″	84	5, 10, 25, 50, 100	5195T72	2.01
3/8″	1/2″	1/16″	3″	48	10, 25, 50, 100	5195T73	1.25
3/8″	5/8″	1/8″	3 3/4″	76	5, 10, 25, 50, 100	5195T75	2.27
7/16″	5/8″	3/32″	3 3/4″	56	5, 10, 25, 50, 100	5195T76	1.84
1/2″	5/8″	1/16″	3 3/4″	34	5, 10, 25, 50, 100	5195T77	1.36
1/2″	3/4″	1/8″	4 1/2″	64	2, 5, 10, 25, 50, 100	5195T78	2.85
5/8″	13/16″	3/32″	4 7/8″	44	5, 10, 25, 50, 100	5195T79	2.50
3/4″	1″	1/8″	6″	48	2, 5, 10, 25, 50	5195T82	2.86
7/8″	1 1/8″	1/8″	6 3/4″	38	2, 5, 10, 25, 50	5195T83	3.35
1″	1 1/4″	1/8″	7 1/2″	34	2, 5, 10, 20, 25, 50	5195T84	3.76

Weld-Spatter-Resistant Choose-a-Color Polyurethane Tubing

- Flexible
- Wall Hardness: Hard (Shore A: 95)
- Temperature Range: –40° to +180° F
- Tensile Strength: Not rated
- Use compression and push-to-connect fittings (see pgs. 165-179 and 185-201)

Made to UL 94V2 standards, this super-tough tubing is resistant to weld spatter, flames, and abrasion. It's made of a specially formulated ether-based polyurethane that's self-extinguishing. Use with water and air. Not rated for sterilization. Vacuum rating is 28″ Hg @ 73° F.

This tubing comes in four opaque colors: black, blue, green, and white. **To Order:** Please specify color as well as length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
0.16″	1/4″	0.045″	1/2″	175	10, 25, 50, 100, 250	9149T11	$0.89
0.251″	3/8″	0.062″	3/4″	150	10, 25, 50, 100, 250	9149T13	1.68
0.32″	1/2″	0.09″	1″	160	10, 25, 50, 100, 250	9149T15	2.50

Flexible White Polyethylene Tubing

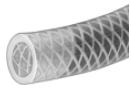

- Flexible
- Wall Hardness: Firm (Shore A: 82)
- Temperature Range: –60° to +120° F
- Tensile Strength: 1625 psi
- Use barbed fittings with a clamp (see pages 156-165 and 274-275)

Softer and more flexible than our other polyethylene tubing, this semi-clear white tubing has polyester braid reinforcement for added strength in pressure applications. Use with water, air, food and beverage, and ethylene glycol. Material is FDA compliant. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/4″	0.46″	0.105″	2 1/2″	150	10, 25, 50, 100	9336T1	$0.69
3/8″	0.593″	0.109″	3 1/2″	150	10, 25, 50, 100	9336T2	.95
1/2″	0.74″	0.12″	5″	150	10, 25, 50, 100	9336T3	1.18

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the polyethylene tubing on this page, go to mcmaster.com and search for **5181KAC**.

Crack-Resistant Polyethylene Tubing

- Flexible
- Wall Hardness: Firm (Shore A: 95)
- Temperature Range: –100° to +175° F
- Tensile Strength: 2800 psi
- Use compression fittings (see pgs. 165-179)

This linear low-density polyethylene (LLDPE) tubing has superior stress-crack resistance and remains flexible at low temperatures. Made without a plasticizer that can contaminate fluid passing through, it won't impart tastes or odors. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1520 compliant. Not rated for sterilization or vacuum.

Choose-a-color tubing allows you to color-code your lines for easy identification.

To Order: Please specify length from the available lengths listed. For Choose-a-Color tubing, also please specify color: opaque blue, green, orange, red, or yellow.

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
Semi-Clear White							
1/16″	1/8″	0.031″	1 1/4″	184	25, 50, 100	5181K15	$0.05
1/8″	1/4″	1/16″	2″	358	25, 50, 100	5181K24	.12
1/8″	3/8″	1/8″	3″	540	25, 50, 100	5181K31	.26
0.17″	1/4″	0.04″	2″	205	25, 50, 100	5181K39	.10
3/16″	5/16″	1/16″	2 1/2″	268	25, 50, 100	5181K42	.16
1/4″	3/8″	1/16″	3″	214	25, 50, 100	5181K25	.20
1/4″	1/2″	1/8″	4″	360	25, 50, 100	5181K33	.40
5/16″	7/16″	1/16″	3 1/2″	178	25, 50, 100	5181K34	.25
5/16″	1/2″	3/32″	4″	249	25, 50, 100	5181K35	.32
3/8″	1/2″	1/16″	4″	153	25, 50, 100	5181K26	.28
3/8″	5/8″	1/8″	5″	270	25, 50, 100	5181K37	.54
1/2″	5/8″	1/16″	5″	119	25, 50, 100	5181K27	.30
1/2″	3/4″	1/8″	6″	216	10, 25, 50, 100	5181K38	.67
0.6″	3/4″	0.075″	6″	120	25, 50, 100	5181K61	.51
5/8″	3/4″	1/16″	6″	97	25, 50, 100	5181K28	.37
5/8″	7/8″	1/8″	7″	180	10, 25, 50, 100	5181K72	.80
3/4″	7/8″	1/16″	7″	82	25, 50, 100	5181K93	.45
3/4″	1″	1/8″	8″	154	10, 25, 50, 100	5181K29	.85
0.814″	1″	0.093″	8″	110	10, 25, 50, 100	5181K11	.74
7/8″	1″	1/16″	8″	71	25, 50, 100	5181K94	.54
1″	1 1/8″	1/16″	9″	63	10, 25, 50, 100	5181K12	.55
1″	1 1/4″	1/8″	10″	120	10, 25, 50, 100	5181K36	1.07
1 1/8″	1 3/8″	1/8″	11″	108	5, 10, 25, 50, 100	5181K95	1.19
1 1/4″	1 1/2″	1/8″	12″	98	5, 10, 25, 50, 100	5181K96	1.31
1 3/8″	1 5/8″	1/8″	13″	90	5, 10, 25, 50, 100	5181K13	1.27
1 1/2″	1 3/4″	1/8″	14″	83	5, 10, 25, 50, 100	5181K98	1.55
1 3/4″	2″	1/8″	16″	72	5, 10, 25, 50, 100	5181K14	1.77
2″	2 1/4″	1/8″	18″	63	5, 10, 25, 50, 100	5181K22	2.00
Opaque Black							
1/8″	1/4″	1/16″	2″	358	25, 50, 100	5180K75	.11
0.17″	1/4″	0.04″	2″	205	25, 50, 100	5180K71	.10
3/16″	5/16″	1/16″	2 1/2″	268	25, 50, 100	5180K72	.19
1/4″	3/8″	1/16″	3″	214	25, 50, 100	5180K73	.20
5/16″	1/2″	3/32″	4″	249	25, 50, 100	5180K17	.31
3/8″	1/2″	1/16″	4″	153	25, 50, 100	5180K74	.28
1/2″	5/8″	1/16″	5″	119	25, 50, 100	5180K76	.30
5/8″	3/4″	1/16″	6″	97	25, 50, 100	5180K77	.37
3/4″	1″	1/8″	8″	154	10, 25, 50, 100	5180K79	.85
1″	1 1/8″	1/16″	9″	63	10, 25, 50, 100	5180K18	.59
1″	1 1/4″	1/8″	10″	120	10, 25, 50, 100	5180K81	1.08
1 1/2″	1 3/4″	1/8″	14″	83	5, 10, 25, 50, 100	5180K19	1.54
2″	2 1/4″	1/8″	18″	63	5, 10, 25, 50, 100	5180K82	2.00
Choose-a-Color							
0.17″	1/4″	0.04″	2″	205	50, 100	5181K23	.10
3/16″	5/16″	1/16″	2 1/2″	268	50, 100	5181K53	.16
1/4″	3/8″	1/16″	3″	214	50, 100	5181K48	.20
3/8″	1/2″	1/16″	4″	153	50, 100	5181K76	.28

Metric

ID, mm	OD, mm	Wall, mm	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Semi-Clear White							
2	4	1	1 1/4″	192	25, 50, 100	5958K11	$0.11
3	5	1	1 9/16″	155	25, 50, 100	5958K12	.12
4	6	1	1 7/8″	124	25, 50, 100	5958K13	.14
6	8	1	2 1/2″	100	25, 50, 100	5958K14	.17
8	10	1	3 1/8″	79	25, 50, 100	5958K15	.19
9	12	1.5	3 3/4″	89	25, 50, 100	5958K16	.28

High-Pressure Polyethylene Vacuum Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 65)
- Temperature Range: –100° to +180° F
- Tensile Strength: 3900 psi
- Use compression fittings (see pgs. 165-179)

Even though no extra reinforcement has been added, this high-density polyethylene (HDPE) tubing can withstand high pressures as well as vacuum up to 29.9″ Hg @ 73° F. This tubing is made without a plasticizer that can contaminate fluid passing through, so it won't impart tastes or odors. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1520 compliant. It can be sterilized with gas and chemicals.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
Semi-Clear White							
1/8″	1/4″	1/16″	2 1/2″	456	25, 50, 100	50375K41	$0.14
0.17″	1/4″	0.04″	2 1/2″	260	25, 50, 100	50375K43	.11
3/16″	5/16″	1/16″	3 1/8″	340	25, 50, 100	50375K45	.18
1/4″	3/8″	1/16″	3 3/4″	272	25, 50, 100	50375K47	.21
5/16″	7/16″	1/16″	4 3/8″	228	25, 50, 100	50375K48	.28
3/8″	1/2″	1/16″	5″	194	25, 50, 100	50375K49	.25
1/2″	5/8″	1/16″	6 1/4″	151	25, 50, 100	50375K51	.32
0.6″	3/4″	0.075″	7 1/2″	152	25, 50, 100	50375K52	.47
5/8″	3/4″	1/16″	7 1/2″	123	25, 50, 100	50375K53	.40
3/4″	7/8″	1/16″	8 3/4″	105	25, 50, 100	50375K54	.51
3/4″	1″	1/8″	10″	195	10, 25, 50, 100	50375K57	.90
0.814″	1″	0.093″	10″	140	10, 25, 50, 100	50375K55	.78
7/8″	1″	1/16″	10″	90	10, 25, 50, 100	50375K58	.58
1″	1 1/4″	1/8″	12 1/2″	152	10, 25, 50, 100	50375K59	1.83
1 1/4″	1 1/2″	1/8″	15″	124	5, 10, 25, 50, 100	50375K61	1.40
1 1/2″	1 3/4″	1/8″	17 1/2″	105	5, 10, 25, 50, 100	50375K63	1.64
1 3/4″	2″	1/8″	20″	91	5, 10, 25, 50, 100	50375K64	1.89
2″	2 1/4″	1/8″	22 1/2″	80	5, 10, 25, 50, 100	50375K65	2.14
Opaque Black							
0.17″	1/4″	0.04″	2 1/2″	260	25, 50, 100	50375K81	.11
1/4″	3/8″	1/16″	3 3/4″	272	25, 50, 100	50375K82	.18
3/8″	1/2″	1/16″	5″	194	25, 50, 100	50375K83	.32
1/2″	5/8″	1/16″	6 1/4″	151	25, 50, 100	50375K84	.32

Moisture-Resistant Polyethylene Vacuum Tubing

- Flexible
- Wall Hardness: Firm (Shore D: 44)
- Temperature Range: –40° to +150° F
- Tensile Strength: 4298 psi
- Use compression and push-to-connect fittings (see pgs. 165-179 and 185-201)

Impermeable to moisture, this low-density polyethylene (LDPE) tubing is also resistant to a broad range of chemicals and gases. This tubing will withstand vacuum up to 28″ Hg @ 75° F. It is made without a plasticizer that can contaminate fluid passing through, so it won't impart tastes or odors. While this tubing is flexible, it will crack if subjected to continual flexing. Use with water, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1520 compliant for all, except for the red color (inch-size) tubing. Not rated for sterilization.

Inch tubing comes in semi-clear white, as well as opaque black, blue, green, red, and yellow. ***Metric*** tubing comes in opaque black and semi-clear white. **To Order:** Please specify color as well as length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
Inch							
1/16″	1/8″	1/32″	1″	305	25, 50, 100	5384K51	$0.16
0.106″	5/32″	0.025″	1″	175	25, 50, 100	5384K52	.22
0.17″	1/4″	0.04″	1 1/4″	200	25, 50, 100	5384K53	.21
3/16″	5/16″	1/16″	1 1/2″	230	25, 50, 100	5384K54	.34
1/4″	3/8″	1/16″	2″	190	25, 50, 100	5384K55	.33
3/8″	1/2″	1/16″	2 1/2″	135	25, 50, 100	5384K56	.49
Metric							
2.7 mm	4 mm	0.65 mm	1″	175	25, 50, 100	51555K126	.22
4 mm	6 mm	1 mm	1 1/4″	175	25, 50, 100	51555K127	.24
6 mm	8 mm	1 mm	1 1/2″	140	25, 50, 100	51555K128	.30
8 mm	10 mm	1 mm	2″	115	25, 50, 100	51555K129	.38
9 mm	12 mm	1.5 mm	2 1/2″	135	25, 50, 100	51555K137	.50

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the polyethylene and EVA tubing on this page, go to mcmaster.com and search for **9334TAC**.

Antimicrobial Blue Polyethylene Tubing

- Flexible
- Wall Hardness: Firm (Shore A: 92)
- Temperature Range: –40° to +170° F
- Tensile Strength: Not rated
- Use antimicrobial barbed fittings (see page 160)

A silver lining inside this opaque blue polyethylene tubing inhibits the growth of bacteria, mold, fungi, and other microbes. Use with water and food. It can be sterilized with gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 72° F	Available Lengths, ft.		Per Ft. ♦
1/16″	1/8″	1/32″	5/32″	110	10, 25, 50, 100	9334T12	$1.23
1/8″	1/4″	1/16″	1/4″	150	5, 10, 25, 50, 100	9334T23	1.68
3/16″	5/16″	1/16″	1/2″	96	5, 10, 25, 50, 100	9334T34	2.30
1/4″	3/8″	1/16″	1″	73	2, 5, 10, 25, 50, 100	9334T42	2.55
5/16″	7/16″	1/16″	1 1/2″	66	2, 5, 10, 25, 50, 100	9334T53	2.61
3/8″	1/2″	1/16″	1 3/4″	53	2, 5, 10, 25, 50, 100	9334T64	2.61
1/2″	5/8″	1/16″	2 1/2″	48	2, 5, 10, 25, 50, 100	9334T75	2.84

High-Temperature White Polyethylene Tubing

- Flexible
- Wall Hardness: Hard (Shore A: Not rated)
- Temperature Range: 73° to 180° F
- Tensile Strength: 2900 psi
- Use barbed fittings (see pages 156-165)

Made of cross-linked polyethylene, which is also known as PEX, this opaque white tubing is ideal for high-temperature water applications in plumbing and hydronic radiant heating systems. Material meets NSF 61 standards and is IAPMO (International Association of Plumbing and Mechanical Officials) approved to ASTM F876 and F877 standards. Maximum pressure is 160 psi @ 73° F. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

Tube Size ♠	Actual Tube OD	ID	Wall	Bend Radius	Available Lengths, ft.		Per Ft. ♦
1/4″	3/8″	1/4″	0.065″	3″	10, 25, 50, 100	51275K82	$0.79
3/8″	1/2″	0.35″	0.075″	4″	10, 25, 50, 100	51275K83	.89
1/2″	5/8″	0.475″	0.075″	5″	10, 25, 50, 100	51275K81	.99
3/4″	7/8″	0.671″	0.102″	7″	10, 25, 50, 100	51275K85	1.80
1″	1 1/8″	0.863″	0.131″	9″	5, 10, 25, 50	51275K86	3.10

♠ Tube size is the accepted designation of the copper tubing industry. Not an actual size.

Flame-Retardant Polyethylene Tubing

- Flexible
- Wall Hardness: Hard (Shore A: 99)
- Temperature Range: –70° to +175° F
- Tensile Strength: 1900 psi
- Use barbed, compression, and push-to-connect fittings (see pgs. 156-179 and 185-201)

Designed for use in air control systems, this tubing rapidly self-extinguishes to control smoke generation and flame spread. It stays flexible and resists stress cracks, even at low temperatures. Use with air; not recommended for use with liquids. Material meets UL 94V2 and UL 1820. Not rated for sterilization or vacuum.

Tubing with stripes has four evenly spaced stripes for easy line identification.

To Order: Please specify length from the available lengths listed. For tubing with stripes, please also specify stripe color: blue, green, orange, red, violet, white, or yellow.

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
Opaque Black without Stripes							
0.096″	5/32″	0.03″	1/2″	115	25, 50, 100, 250	5156K86	$0.24
0.17″	1/4″	0.04″	3/4″	100	25, 50, 100, 250	5156K87	.33
1/4″	3/8″	1/16″	1 1/2″	100	25, 50, 100, 250	5156K88	.75
3/8″	1/2″	1/16″	1 7/8″	70	25, 50, 100, 250	5156K89	1.12
Opaque Black with Stripes							
0.096″	5/32″	0.03″	1/2″	115	25, 50, 100, 250	53385K12	.28
0.17″	1/4″	0.04″	3/4″	100	25, 50, 100, 250	53385K14	.39
1/4″	3/8″	1/16″	1 1/2″	100	25, 50, 100, 250	53385K16	.85
3/8″	1/2″	1/16″	1 7/8″	70	10, 25, 50, 100, 250	53385K18	1.37

Flexible Low-Temperature White EVA Tubing

- Flexible
- Wall Hardness: Firm (Shore A: 90)
- Temperature Range: –105° to +160° F
- Tensile Strength: 2100 psi
- Use compression fittings with tube supports (see page 169)

EVA (ethyl vinyl acetate) tubing, which is a blend of polyethylene and vinyl acetate, remains flexible at low temperatures and is resistant to impact, flex fatigue, and stress cracks. You can count on it to stand up to grease and UV rays. Use this semi-clear white tubing with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1350 compliant. It can be sterilized with gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/8″	1/4″	1/16″	1″	65	25, 50, 100	5113K31	$0.19
0.17″	1/4″	0.04″	1″	40	25, 50, 100	5113K32	.13
3/16″	5/16″	1/16″	1 1/4″	55	25, 50, 100	5113K33	.24
1/4″	3/8″	1/16″	1 1/2″	25	25, 50, 100	5113K34	.30
3/8″	1/2″	1/16″	2″	45	25, 50, 100	5113K35	.42
3/8″	5/8″	1/8″	2 1/2″	55	10, 25, 50, 100	5113K36	.93
1/2″	5/8″	1/16″	2 1/2″	30	25, 50, 100	5113K37	.53
1/2″	3/4″	1/8″	3″	45	10, 25, 50, 100	5113K38	.85
5/8″	3/4″	1/16″	3″	30	10, 25, 50, 100	5113K39	.64
3/4″	1″	1/8″	4″	35	10, 25, 50, 100	5113K41	1.23
1″	1 1/4″	1/8″	5″	25	10, 25, 50, 100	5113K42	1.57

High-Purity White Polyethylene-Lined EVA Tubing

- Flexible
- Wall Hardness: Firm (Shore A: 90)
- Temperature Range: Standard: –50° to +175° F; High Temperature: –60° to +200° F
- Tensile Strength: Standard: 1500 psi; High Temperature: 2500 psi
- Use barbed fittings (see pages 156-165)

With a polyethylene liner, this EVA (ethyl vinyl acetate) tubing will resist freezing and remain flexible and impact resistant when temperatures fluctuate. This semi-clear white tubing is high purity, which means it is made without a plasticizer that can impart odors and contaminate fluid passing through. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1520 and USDA compliant. It can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

			Standard					***High Temperature***				
ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	3/16″	1/16″	—	—	—	—	—	9/16″	91	10, 25, 50	5155K12	$1.42
1/8″	3/16″	1/32″	11/16″	48	25, 50	5154K15	$0.37	11/16″	48	10, 25, 50	5155K15	1.04
1/8″	1/4″	1/16″	13/16″	79	25, 50	5154K16	.82	13/16″	79	5, 10, 25, 50	5155K16	1.82
3/16″	1/4″	1/32″	—	—	—	—	—	61/64″	43	10, 25, 50	5155K19	1.25
3/16″	5/16″	1/16″	—	—	—	—	—	1″	67	5, 10, 25, 50	5155K21	2.40
1/4″	3/8″	1/16″	1 5/16″	67	10, 25, 50	5154K25	1.27	1 5/16″	67	5, 10, 25, 50	5155K25	2.98
5/16″	7/16″	1/16″	—	—	—	—	—	1 13/16″	61	2, 5, 10, 25, 50	5155K28	3.10
3/8″	1/2″	1/16″	1 13/16″	55	10, 25, 50	5154K32	1.74	1 13/16″	55	2, 5, 10, 25, 50	5155K32	3.66
1/2″	5/8″	1/16″	3 1/2″	36	5, 10, 25, 50	5154K38	2.25	—	—	—	—	—
3/4″	1″	1/8″	5 1/2″	43	5, 10, 25, 50	5154K53	6.28	5 1/2″	43	2, 5, 10, 20, 25, 50	5155K53	15.06

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the EVA, polypropylene, and nylon tubing on this page, go to mcmaster.com and search for **5632KAC**.

High-Pressure White EVA Tubing

- Flexible
- Wall Hardness: Firm (Shore A: 80)
- Temperature Range: –30° to +125° F
- Tensile Strength: 1800 psi
- Use barbed fittings (see pages 156-165)

Reinforced with a polyester-rayon braid for strength in pressure applications, this semi-clear white tubing will remain flexible, even at low temperatures. Due to the braid reinforcement, this tubing is sometimes referred to as hose. It has excellent resistance to flex fatigue as well as stress cracking. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1350 compliant. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/4″	15/32″	7/64″	3″	250	25, 50, 100	5632K31	$0.79
5/16″	17/32″	7/64″	3″	250	10, 25, 50, 100	5632K32	.93
3/8″	19/32″	7/64″	4″	250	10, 25, 50, 100	5632K33	1.01
1/2″	23/32″	7/64″	4″	250	10, 25, 50, 100	5632K34	1.42
5/8″	7/8″	1/8″	5″	200	10, 25, 50, 100	5632K35	1.81
3/4″	31/32″	7/64″	7″	150	10, 25, 50, 100	5632K36	1.83
1″	1 5/16″	5/32″	9″	150	5, 10, 25, 50, 100	5632K38	3.26
1 1/4″	1 11/16″	7/32″	12″	150	5, 10, 25, 50, 100	5632K41	3.81
1 1/2″	2″	1/4″	30″	150	5, 10, 25, 50, 100	5632K42	5.17
2″	2 7/16″	7/32″	36″	150	2, 5, 10, 25, 50	5632K43	5.80

Rigid White Polypropylene Tubing

- Rigid
- Wall Hardness: Hard (Rockwell R: 90)
- Temperature Range: 40° to 200° F
- Tensile Strength: 4930 psi
- Use compression and push-to-connect fittings (see pgs. 165-179 and 185-201)

This semi-clear white polypropylene tubing is generally harder and stronger than polyethylene tubing. It is made without a plasticizer that can impart tastes and contaminate fluid passing through. Use with water, deionized water, air, and ethylene glycol. Material is FDA CFR21 177.1520 compliant. It can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi.@ 73° F	Available Lengths, ft.		Per Ft. ♦
1/8″	1/4″	1/16″	1″	250	25, 50, 100	5392K11	$0.39
0.17″	1/4″	0.04″	1 1/2″	175	25, 50, 100	5392K12	.29
3/16″	5/16″	1/16″	1″	200	25, 50, 100	5392K13	.43
1/4″	3/8″	1/16″	1 1/4″	175	25, 50, 100	5392K14	.55
3/8″	1/2″	1/16″	2″	125	25, 50, 100	5392K15	.84
1/2″	5/8″	1/16″	3″	90	10, 25, 50, 100	5392K16	1.16
5/8″	3/4″	1/16″	3″	80	10, 25, 50, 100	5392K17	1.33
3/4″	1″	1/8″	6″	140	5, 10, 25, 50	5392K18	2.12
1″	1 1/4″	1/8″	8″	100	5, 10, 25, 50	5392K19	2.85

NSF/FDA-Compliant Black Polypropylene Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 66)
- Temperature Range: –40° to +180° F
- Tensile Strength: 4100 psi
- Use compression fittings (see pages 165-179)

While similar to the white polypropylene tubing above, this opaque black polypropylene tubing does have one obvious advantage—it meets NSF 51 for use with food and beverage. Also use with water and air. The material is FDA CFR21 177.1520 compliant. It is harder, stronger, and more resistant to stress cracking than polyethylene tubing. It can be sterilized with radiation. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/8″	1/4″	1/16″	2 1/2″	272	25, 50, 100	9349T1	$0.43
0.17″	1/4″	0.04″	2 1/2″	149	25, 50, 100	9349T2	.29
1/4″	3/8″	1/16″	3 3/4″	157	25, 50, 100	9349T3	.52
3/8″	1/2″	1/16″	5″	112	10, 25, 50, 100	9349T4	.50

Flexible Nylon Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 70)
- Temp. Range: –60° to +200° F, unless noted
- Use compression fittings (see pages 165-179)

This tubing provides flexibility along with chemical and impact resistance. Not rated for sterilization. Vacuum rating is 28″ Hg @ 72° F, unless noted.

General purpose tubing comes in opaque black and white, unless noted.

Choose-a-color tubing makes it easy to identify different lines within your system. Comes in opaque blue, green, red, and yellow.

To Order: Please specify length from the available lengths listed, as well as color where applicable.

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
General Purpose							
0.093″	1/8″	0.016″	1/2″	270	25, 50, 100	5548K61	$0.17
0.106″	5/32″	0.025″	1/2″	350	25, 50, 100	5548K62	.25
0.138″	3/16″	0.025″	5/8″	260	25, 50, 100	5548K63	.37
0.15″	1/4″	0.05″	—	—	25, 50, 100	5548K918★	.92
0.17″	1/4″	0.04″	1″	330	25, 50, 100	5548K64	.53
0.18″	1/4″	0.035″	1 1/4″	290	25, 50, 100	5548K65	.39
0.182″	5/16″	0.065″	—	—	10, 25, 50, 100	5548K923★	1.22
0.232″	5/16″	0.04″	1 1/2″	240	25, 50, 100	5548K66	.64
0.242″	5/16″	0.035″	—	—	25, 50, 100	5548K928★	.91
0.275″	3/8″	0.05″	2″	250	10, 25, 50, 100	5548K67	.79
0.305″	3/8″	0.035″	—	—	10, 25, 50, 100	5548K934★	1.04
3/8″	1/2″	0.062″	3 1/2″	240	10, 25, 50, 100	5548K68	1.30
0.43″	1/2″	0.035″	—	—	10, 25, 50, 100	5548K939★	1.30
Choose-a-Color							
0.093″	1/8″	0.016″	1/2″	270	50, 100	5635K21	.23
0.106″	5/32″	0.025″	1/2″	350	50, 100	5635K22	.25
0.18″	1/4″	0.035″	1 1/4″	290	25, 50, 100	5635K23	.38
0.275″	3/8″	0.05″	2″	250	10, 25, 50, 100	5635K24	.78
3/8″	1/2″	0.062″	3 1/2″	240	10, 25, 50, 100	5635K25	1.30

★ Temp. range is –94° to +176° F. Not rated for vacuum. Only available in white.

Metric

ID, mm	OD, mm	Wall, mm	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
General Purpose							
1.8	3	0.6	3/8″	410	25, 50, 100	50405K22	$0.29
2.7	4	0.65	1/2″	350	25, 50, 100	50405K23♠	.25
3	5	1	3/4″	420	25, 50, 100	50405K24♠	.52
4	6	1	1 1/4″	340	25, 50, 100	50405K25♠	.45
6	8	1	1 1/2″	250	25, 50, 100	50405K26	.61
8	10	1	2″	190	10, 25, 50, 100	50405K27	.79
10	12	1	2 1/2″	150	10, 25, 50, 100	50405K28	1.29

♠ Also available in gray and red.

High-Pressure White Nylon Tubing

- Flexible
- Wall Hardness: Hard (Rockwell R: 108)
- Temperature Range: –60° to +200° F
- Tensile Strength: 7685 psi
- Use compression and push-to-connect fittings (see pgs. 165-179 and 185-201)

Harder walls on this tubing allow it to withstand twice as much pressure as the other nylon tubing on this page. Use with water, air, and ethylene glycol. Not rated for sterilization. Vacuum rating is 28″ Hg @ 75° F.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
0.073″	1/8″	0.026″	5/16″	800	25, 50, 100	9685T1	$0.37
0.109″	3/16″	0.039″	7/16″	800	25, 50, 100	9685T2	.61
0.15″	1/4″	0.05″	9/16″	800	25, 50, 100	9685T3	.79
0.225″	3/8″	0.075″	3/4″	800	10, 25, 50, 100	9685T4	1.69
0.35″	1/2″	0.075″	1 3/4″	530	5, 10, 25, 50	9685T5	2.66

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the nylon tubing on this page, go to mcmaster.com and search for **5112KAC**.

Extra-Flex Nylon Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 57)
- Temperature Range: –40° to +180° F
- Tensile Strength: 5655 psi
- Use compression and push-to-connect fittings (see pgs. 165-179 and 185-201)

Softer walls make this nylon tubing more flexible. It is made without a plasticizer that can impart odors and contaminate fluid passing through. Use with water, air, and ethylene glycol; ***inch*** sizes can also be used with kerosene and mineral oil. Not rated for sterilization. Vacuum rating is 28″ Hg @ 73° F.

To Order: Please specify length from the available lengths listed, as well as color: opaque black or semi-clear white.

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
0.093″	1/8″	0.016″	1/4″	200	25, 50, 100	5112K41	$0.27
0.106″	5/32″	0.025″	3/8″	220	25, 50, 100	5112K42	.27
0.18″	1/4″	0.035″	3/4″	180	25, 50, 100	5112K43	.39
0.232″	5/16″	0.04″	15/16″	170	25, 50, 100	5112K44	.63
0.275″	3/8″	0.05″	1 1/8″	160	10, 25, 50, 100	5112K45	.77
0.375″	1/2″	0.062″	1 1/2″	140	10, 25, 50, 100	5112K46	1.30

Metric

ID, mm	OD, mm	Wall, mm	Bend Radius, mm	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
3	5	1	12.7	310	25, 50, 100	9355T1	$0.50
4	6	1	19	240	25, 50, 100	9355T2	.58
6	8	1	23.8	160	10, 25, 50, 100	9355T3	.74
8	10	1	28.6	120	10, 25, 50, 100	9355T4	.94
10	12	1	38	90	5, 10, 25, 50, 100	9355T5	1.19

Nylon Vacuum Tubing

- Flexible
- Wall Hardness: Hard (Rockwell R: 112)
- Temperature Range: –40° to +225° F
- Tensile Strength: 11,000 psi
- Use compression fittings (see pages 165-179)

An exceptionally hard wall gives this tubing enough strength to handle vacuum pressure up to 29.9″ Hg @ 70° F. This abrasion resistant tubing is made without a plasticizer that can impart odors and contaminate fluid passing through. Use with water, air, food, and fuel. Material is FDA CFR21 177.1500 compliant. Tubing can be sterilized with gas.

To Order: Please specify length from the available lengths listed, as well as color: opaque black or semi-clear white.

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
.078″	1/8″	0.024″	1 1/4″	854	25, 50, 100	5173K86	$0.19
.096″	1/8″	0.014″	1 1/4″	456	25, 50, 100	5173K87	.13
.106″	5/32″	0.025″	1 1/2″	703	25, 50, 100	5173K88	.26
.110″	3/16″	0.039″	1 1/2″	960	25, 50, 100	5173K89	.32
.138″	3/16″	0.025″	1 3/4″	567	25, 50, 100	5173K91	.31
.150″	1/4″	0.05″	2 1/4″	922	25, 50, 100	5173K92	.32
.188″	5/16″	0.062″	2 3/4″	913	25, 50, 100	5173K93	.52
.190″	1/4″	0.03″	2 1/2″	553	25, 50, 100	5173K94	.29
.225″	3/8″	0.075″	3 1/2″	922	10, 25, 50, 100	5173K95	.75
.242″	5/16″	0.035″	3″	465	25, 50, 100	5173K96	.33
.290″	1/2″	0.105″	4 3/4″	981	10, 25, 50, 100	5173K97	1.34
.295″	3/8″	0.04″	3 3/4″	440	25, 50, 100	5173K98	.47
.380″	1/2″	0.06″	5″	503	10, 25, 50, 100	5173K99	.85

Metric

ID, mm	OD, mm	Wall, mm	Bend Radius, mm	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
2.7	4	0.65	31	410	25, 50, 100	5140K91	$0.24
3	5	1	44	380	25, 50, 100	5140K92	.42
4	6	1	44	350	25, 50, 100	5140K93	.24
6	8	1	63	260	25, 50, 100	5140K94	.34
8	10	1	76	180	25, 50, 100	5140K95	.47
10	12	1	95	160	10, 25, 50, 100	5140K96	.79

Self-Retracting Nylon Tubing

- Flexible
- Wall Hardness: Hard (Rockwell R: 78)
- Temperature Range: –40° to +180° F
- Tensile Strength: 6960 psi
- Use compression and push-to-connect fittings (see pgs. 165-179 and 185-201)

Keep your work area tidy with this coiled tubing that extends when you need it and retracts out of the way when you don't. It's made of tough, abrasion-resistant nylon. Use with water, air, ethylene glycol, kerosene, and mineral oil. Not rated for sterilization or bend radius. Vacuum rating is 28″ Hg @ 75° F.

Comes in semi-clear white and the following opaque colors: black, blue, green, orange, and red. **To Order:** Please specify color.

ID	OD	Wall	Max. psi @ 75° F	Coil Lg. Retracted	Coil Lg. Extended		Each
1 5/16″ Coil Diameter							
0.106″	0.156″	0.025″	350	3″	3′6″	5040K51	$6.23
0.106″	0.156″	0.025″	350	6″	7′	5040K52	6.89
0.106″	0.156″	0.025″	350	9″	10′6″	5040K53	7.81
0.106″	0.156″	0.025″	350	12″	14′	5040K54	8.33
0.106″	0.156″	0.025″	350	24″	28′	5040K55	14.54
1 3/4″ Coil Diameter							
0.17″	1/4″	0.04″	330	6″	4′	5040K56	11.45
0.17″	1/4″	0.04″	330	9″	5′6″	5040K57	12.86
0.17″	1/4″	0.04″	330	12″	7′6″	5040K58	14.71
0.17″	1/4″	0.04″	330	25″	15′6″	5040K59	25.91
0.17″	1/4″	0.04″	330	36″	22′6″	5040K61	35.57
3″ Coil Diameter							
0.275″	3/8″	0.05″	250	6″	8′	5040K62	21.51
0.275″	3/8″	0.05″	250	12″	16′	5040K63	29.77
0.275″	3/8″	0.05″	250	17″	23′	5040K64	37.07
5″ Coil Diameter							
3/8″	1/2″	0.062″	240	4 1/2″	8′	5040K65	26.92
3/8″	1/2″	0.062″	240	9″	16′	5040K66	38.30
3/8″	1/2″	0.062″	240	13″	23′	5040K67	49.36

High-Strength Clear Nylon Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 80)
- Temperature Range: –40° to +212° F
- Tensile Strength: 10,875 psi
- Use compression fittings (see pages 165-179)

Made of tough, abrasion-resistant nylon, this high-strength tubing is clear, so you can easily monitor the flow of your line. This tubing is made without a plasticizer that can impart taste and contaminate fluid passing through. Use with water, air, food, and fuel. Material is FDA CFR21 177.1500 compliant. Tubing can be sterilized with gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
0.096″	1/8″	0.014″	1 1/4″	430	25, 50, 100	8359K11	$0.16
0.106″	5/32″	0.025″	1 1/2″	430	25, 50, 100	8359K12	.30
0.138″	3/16″	0.025″	1 3/4″	420	25, 50, 100	8359K13	.38
0.19″	1/4″	0.03″	2 3/4″	410	25, 50, 100	8359K14	.36
0.242″	5/16″	0.035″	3″	410	25, 50, 100	8359K15	.54
0.295″	3/8″	0.04″	3 3/4″	400	25, 50, 100	8359K16	.74
0.38″	1/2″	0.06″	5″	370	10, 25, 50, 100	8359K17	1.06

Metric

ID, mm	OD, mm	Wall, mm	Bend Radius, mm	Max. psi @ 75° F	Available Lengths, ft.		Per Ft. ♦
2.7	4	0.65	41	410	25, 50, 100	8365K21	$0.36
3	5	1	51	380	25, 50, 100	8365K22	.66
4	6	1	61	350	10, 25, 50, 100	8365K23	.82
6	8	1	81	260	25, 50, 100	8365K24	.70
8	10	1	102	180	10, 25, 50, 100	8365K25	.91
10	12	1	122	160	10, 25, 50, 100	8365K26	.82

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the tubing on this page, go to mcmaster.com and search for **5097TAC**.

D.O.T. Choose-a-Color Nylon Tubing for Air

- Flexible
- Wall Hardness: Hard (Shore D: 63)
- Temperature Range: –40° to +200° F
- Tensile Strength: Not rated
- Use compression and push-to-connect fittings (see pgs. 165-179 and 185-201)

This tubing meets the Department of Transportation (D.O.T. FMVSS 106) criteria for air brake tubing. The ***nonreinforced*** tubing also meets SAE J844 A standards; ***reinforced*** tubing also meets SAE J844 B standards. Both styles are for use with compressed air only and have a pressure rating of 150 psi @ 75° F. Not rated for sterilization or vacuum.

Comes in opaque black, blue, green, red, silver, and yellow, unless noted. **To Order:** Please specify color and length from the available lengths listed.

ID	OD	Wall	Bend Radius	Available Lengths, ft.		Per Ft. ♦
Nonreinforced						
0.079″	1/8″	0.023″	3/8″	25, 50, 100	5097T312★	$0.42
0.092″	5/32″	0.032″	1/2″	25, 50, 100, 250	5097T321▲	.57
0.17″	1/4″	0.04″	1″	25, 50, 100, 250	5097T41	.56
Reinforced						
0.251″	3/8″	0.062″	1 1/2″	10, 25, 50, 100	5097T61	1.08
0.376″	1/2″	0.062″	2″	10, 25, 50, 100	5097T71	1.47
0.441″	5/8″	0.092″	2 1/2″	10, 25, 50, 100	5097T81■	2.45
0.566″	3/4″	0.092″	3″	5, 10, 25, 50, 100	5097T91■	3.33

★ Comes in blue only. ▲ Comes in black only.
■ Comes in black and green only.

Durable Clear Polycarbonate Tubing

- Rigid
- Wall Hardness: Very hard (Rockwell R: 118)
- Temperature Range: 32° to 250° F
- Tensile Strength: 9000 psi
- Use adhesives to connect (see pages 3402-3403)

Made of rigid polycarbonate, this super-tough tubing stands up to high-pressure applications. It is UV resistant and it's clear, so you can easily monitor the flow of your line. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water, air, and food and beverage. Material is FDA compliant. Not rated for bend radius, sterilization, or vacuum.

To Order: Please specify 2-, 4-, or 8-ft. length.

ID	OD	Wall	Max. psi. @ 73° F		Each 2 ft.	Each 4 ft.	Each 8 ft.
1/4″	3/8″	1/16″	1250	9176T1	$2.48	$4.96	$8.26
3/8″	1/2″	1/16″	413	9176T2	3.29	6.59	10.98
5/8″	3/4″	1/16″	248	9176T3	4.13	8.26	13.76
3/4″	1″	1/8″	417	9176T4	8.88	17.76	29.60

Abrasion-Resistant White ETFE Tubing

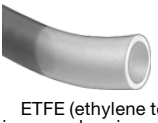

- Flexible
- Wall Hardness: Hard (Shore D: 63-72)
- Temperature Range: –60° to +300° F
- Tensile Strength: 5800-6700 psi
- Use compression fittings (see pgs. 165-179)

ETFE (ethylene tetrafluoroethylene), which is also known as Tefzel, is more abrasion resistant than PTFE, PFA, and FEP. This semi-clear white tubing has a smooth ID for restriction-free flow, has low permeability, and is a good electrical insulator. It's also impact resistant and inert to most chemicals. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water, deionized water, air, and ethylene glycol. Material meets ASTM D3159. It can be sterilized with steam (autoclaving), gas, and chemicals. Vacuum rating is 29.9″ Hg @ 72° F.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
0.016″	1/16″	0.023″	1/2″	769	5, 10, 25, 50	5583K51	$4.38
0.02″	1/16″	0.021″	1/2″	714	5, 10, 25, 50	5583K52	4.12
0.062″	1/8″	0.031″	1/2″	598	5, 10, 25, 50	5583K43	5.67
0.093″	1/8″	0.016″	3/4″	249	10, 25, 50	5583K44	1.48
0.14″	3/16″	0.024″	3/4″	248	5, 10, 25, 50	5583K45	3.17
0.187″	1/4″	0.031″	3/4″	248	5, 10, 25, 50	5583K46	3.75
0.232″	5/16″	0.04″	1 3/4″	250	2, 5, 10, 25, 50	5583K47	6.53
0.278″	3/8″	0.048″	1 1/2″	255	2, 5, 10, 25, 50	5583K48	6.80
0.375″	1/2″	0.062″	2″	240	2, 5, 10, 25, 50	5583K49	11.47

Flame-Retardant Nylon Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 50)
- Temperature Range: 32° to 140° F
- Tensile Strength: 1560 psi
- Use push-to-connect fittings (see pgs. 185-201)

Ideal for spot welding applications, this tubing meets UL 94V0 for flammability. It will stay flexible longer than other types of nylon tubing. Use with water and air. Maximum pressure is 174 psi @ 68° F. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed and color: opaque black, blue, green, white, or red (unless noted).

Inch

ID	OD	Wall	Bend Radius	Available Lengths, ft.		Per Ft. ♦
0.166″	1/4″	0.042″	0.91″	10, 25, 50, 100	51185K41	$1.12
1/4″	3/8″	0.063″	1.06″	5, 10, 25, 50, 100	51185K42	2.28
11/32″	1/2″	0.078″	1.38″	2, 5, 10, 25, 50, 100	51185K43	3.77

Metric

ID, mm	OD, mm	Wall, mm	Bend Radius, mm	Available Lengths, ft.		Per Ft. ♦
3	6	1.5	17	10, 25, 50, 100	5437K11■	$1.28
5	8	1.5	19	5, 10, 25, 50, 100	5437K12	1.74
6.5	10	1.75	27	5, 10, 25, 50, 100	5437K13	2.54
8	12	2	32	2, 5, 10, 25, 50, 100	5437K14	3.57

■ Not offered in green or red.

Moisture-Resistant White Acetal Tubing

- Rigid
- Wall Hardness: Very hard (Rockwell R: 120)
- Temperature Range: –20° to +180° F
- Tensile Strength: 10,000 psi
- Use compression fittings (see pgs. 165-179)

Choose acetal tubing over nylon if you want comparable strength and flexibility with less moisture absorption. This opaque white tubing is hard and durable, plus it's made without a plasticizer that can contaminate fluid passing through. Use with water and deionized water. This tubing can be sterilized with steam (autoclaving). Not rated for bend radius or vacuum.

ID	OD	Wall	Max. psi @ 73° F		***5-ft. Lengths*** Each
0.17″	1/4″	0.04″	265	9362T1	$4.02
1/4″	3/8″	0.063″	280	9362T2	9.41
3/8″	1/2″	0.063″	205	9362T3	13.43

Flexible White Tubing Made with Teflon® PTFE

- Very flexible
- Wall Hardness: Hard (Shore D: 50-65)
- Temperature Range: –454° to +500° F
- Tensile Strength: 2500-4000 psi
- Use worm drive clamps (see pgs. 274-275)

Also known as convoluted tubing, the spiral design makes this tubing more flexible than smooth-surface tubing. This tubing is made of semi-clear white Teflon® PTFE (polytetrafluoroethylene), so it is inert to most chemicals and is a good electrical insulator. It is made without a plasticizer that can contaminate fluid passing through. This tubing has a cuff on each end to allow for easy connections. Use with water, deionized water, air, food and beverage, and ethylene glycol. Material is FDA compliant, and meets UL 94V0 for flammability and Mil. Spec. AMS-T-81914/2. It can be sterilized with steam (autoclaving) and gas. Vacuum is not rated.

To Order: Please specify length in 1-ft. increments up to the maximum continuous length of 10 feet. Length includes both cuffs.

Cuff Dimensions ID	OD	Wall	Lg.	Spiral OD	Bend Radius	Max. psi @ 70° F		Per Ft.
0.177″	0.209″	0.016″	3/4″	0.32″	5/16″	100	51155K21	$12.00
0.265″	0.297″	0.016″	3/4″	0.414″	7/16″	90	51155K42	13.70
0.365″	0.405″	0.02″	1″	0.53″	1/2″	70	51155K43	15.37
0.472″	0.516″	0.022″	1″	0.66″	3/4″	50	51155K44	19.55
0.595″	0.639″	0.022″	1 1/4″	0.78″	3/4″	50	51155K45	27.05
0.725″	0.777″	0.026″	1 1/2″	0.975″	15/16″	40	51155K26	36.86
0.967″	1.019″	0.026″	1 1/2″	1.26″	1 1/8″	30	51155K27	46.07
1.217″	1.273″	0.028″	1 1/2″	1.539″	1 1/8″	20	51155K28	53.64
1.44″	1.496″	0.028″	2″	1.81″	2″	20	51155K29	60.41

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the Teflon® PTFE, PTFE, and FEP-lined polyethylene tubing on this page, go to mcmaster.com and search for **52315KAC**.

Extreme-Temperature Tubing Made with PTFE and Teflon® PTFE

- Flexible
- Wall Hardness: Hard (Shore D: 50-65)
- Temperature Range: –450° to +500° F
- Tensile Strength: 2500-4000 psi
- Use compression fittings (see pages 165-179)

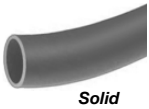

Solid

With Stripe

Whether you choose Teflon® PTFE or PTFE (polytetrafluoroethylene), you'll find this tubing can withstand a broad temperature variation. It has a smooth surface for restriction-free flow, plus it won't react to most chemicals, has a low penetration of gases and liquids, and good insulating properties. Use with water, deionized water, air, food and beverage, and ethylene glycol. Can be sterilized with gas.

Teflon® PTFE— Material is FDA compliant and meets UL 94V0 for flammability. Not rated for vacuum. **To Order:** Please specify length from the available lengths listed.

PTFE Choose-a-Color— Material is FDA CFR21 177.1550 compliant. Vacuum rating is 29″ Hg @ 72° F. *Solid* tubing comes in opaque black, blue, green, red, and yellow. *Striped* tubing is semi-clear white and comes with your choice of stripe color: black, blue, green, red, and yellow. **To Order:** Please specify length from the available lengths listed and tube color or stripe color.

Metric PTFE— Material is FDA CFR21 177.1550 compliant. Vacuum rating is 29″ Hg @ 72° F. **To Order:** Please specify length from the available lengths listed.

Inch Made with Teflon® PTFE—Semi-Clear White

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/32″	1/16″	1/64″	1/8″	398	10, 25, 50, 100	5239K23	$1.00
1/16″	1/8″	1/32″	1/2″	295	10, 25, 50	5239K24	1.00
3/32″	5/32″	1/32″	1/2″	245	10, 25, 50	5239K25	1.37
1/8″	3/16″	1/32″	15/8″	233	10, 25, 50	5239K11	1.30
1/8″	1/4″	1/16″	19/16″	300	5, 10, 25, 50	5033K31	3.73
3/16″	1/4″	1/32″	21/2″	168	10, 25, 50	5239K12	1.69
3/16″	5/16″	1/16″	3″	250	2, 5, 10, 25, 50	5033K32	4.55
1/4″	5/16″	1/32″	31/4″	132	5, 10, 25, 50	5239K13	2.27
1/4″	3/8″	1/16″	31/2″	200	2, 5, 10, 25, 50	5033K33	6.29
5/16″	3/8″	1/32″	4″	108	5, 10, 25, 50	5239K14	3.25
5/16″	7/16″	1/16″	51/2″	170	2, 5, 10, 20, 25, 50	5033K34	8.79
3/8″	7/16″	1/32″	41/2″	92	5, 10, 25, 50	5239K15	3.66
3/8″	1/2″	1/16″	61/2″	150	2, 5, 10, 20, 25, 50	5033K35	9.04
7/16″	1/2″	1/32″	43/4″	79	5, 10, 25, 50	5239K16	$4.39
7/16″	9/16″	1/16″	7″	120	2, 5, 10, 20, 25, 50	5033K36	11.89
1/2″	9/16″	1/32″	41/2″	67	2, 5, 10, 25, 50	5239K17	4.51
1/2″	5/8″	1/16″	8″	110	2, 5, 10, 20, 25	5033K37	11.83
9/16″	11/16″	1/16″	9″	100	2, 5, 10, 20, 25	5033K38	14.76
5/8″	11/16″	1/32″	8″	57	2, 5, 10, 25, 50	5239K18	5.95
5/8″	3/4″	1/16″	6″	100	2, 5, 10, 20, 25	5033K39	15.95
3/4″	53/64″	3/64″	14″	61	2, 5, 10, 20, 25, 50	5239K19	9.03
3/4″	7/8″	1/16″	12″	90	2, 5, 10, 20, 25	5033K41	20.18
7/8″	31/32″	3/64″	13″	59	2, 5, 10	5239K21	10.81
7/8″	1″	1/16″	16″	80	2, 5, 10, 20, 25	5033K43	20.90
1″	17/64″	3/64″	25″	47	2, 5, 8	5239K92	16.71

Inch PTFE—Choose-a-Color

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Solid: Available Lengths, ft.		Solid: Per Ft. ♦	Striped: Available Lengths, ft.		Striped: Per Ft. ♦
1/8″	3/16″	1/32″	1/2″	199	10, 25	52315K12	$1.73	10, 25	53935K22	$1.96
1/8″	1/4″	1/16″	1/2″	300	5, 10, 25	55515K41	4.92	5, 10, 25	52365K61	5.03
3/16″	1/4″	1/32″	1″	150	5, 10, 25	52315K18	2.37	5, 10, 25	53935K24	2.50
3/16″	5/16″	1/16″	1/2″	242	5, 10, 25	55515K43	5.98	2, 5, 10, 25	52365K63	6.57
1/4″	5/16″	1/32″	13/4″	120	5, 10, 25	52315K24	3.22	5, 10, 25	53935K26	3.42
1/4″	3/8″	1/16″	3/4″	200	2, 5, 10, 25	55515K45	8.23	2, 5, 10, 25	52365K65	9.07
5/16″	3/8″	1/32″	21/2″	100	5, 10, 25	52315K17	4.57	5, 10, 25	53935K27	4.72
5/16″	7/16″	1/16″	1″	175	2, 5, 10, 25	55515K47	11.37	2, 5, 10, 25	52365K67	12.22
3/8″	7/16″	1/32″	2″	86	5, 10, 25	52315K19	5.12	5, 10, 25	53935K29	5.22
3/8″	1/2″	1/16″	11/2″	150	2, 5, 10, 20, 25	55515K49	11.87	2, 5, 10, 20, 25	52365K69	12.68
7/16″	1/2″	1/32″	4″	75	5, 10, 25	52315K21	5.59	5, 10, 25	53935K31	6.12
7/16″	9/16″	1/16″	21/2″	137	2, 5, 10, 20, 25	55515K51	16.00	2, 5, 10, 20, 25	52365K71	17.75
1/2″	9/16″	1/32″	43/4″	67	2, 5, 10, 25	52315K23	6.44	2, 5, 10, 25	53935K33	6.47
1/2″	5/8″	1/16″	3″	125	2, 5, 10, 20, 25	55515K53	16.00	2, 5, 10, 20, 25	52365K73	18.20
5/8″	11/16″	1/32″	63/4″	55	2, 5, 10, 25	52315K25	7.58	2, 5, 10, 25	53935K35	8.00
5/8″	3/4″	1/16″	6″	100	2, 5, 10, 20, 25	55515K57	22.80	2, 5, 10, 20, 25	52365K75	24.78
3/4″	53/64″	3/64″	171/2″	61	2, 5, 10, 20, 25	52315K27	12.71	2, 5, 10, 20, 25	53935K37	13.48
7/8″	31/32″	3/64″	20″	59	2, 5, 10, 20, 25	52315K29	15.03	2, 5, 10, 20, 25	53935K39	15.78
7/8″	1″	1/16″	16″	80	2, 5, 10, 20, 25	55515K59	25.68	2, 5, 10, 20, 25	52365K79	28.40

Metric PTFE—Semi-Clear White

ID, mm	OD, mm	Wall, mm	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1	3	1	11/2″	400	10, 25	52335K91	$1.56
2	4	1	11/2″	305	10, 25	52335K32	2.37
3	5	1	13/4″	246	5, 10, 25	52335K53	2.73
4	6	1	13/4″	207	5, 10, 25	52335K34	2.48
5	7	1	2″	178	5, 10, 25	52335K94	3.65
6	8	1	21/2″	156	5, 10, 25	52335K36	$3.33
7	9	1	21/2″	138	5, 10, 25	52335K55	4.43
8	10	1	21/2″	124	2, 5, 10, 25	52335K38	4.31
10	12	1	4″	105	2, 5, 10, 25	52335K41	4.78

Flexible White FEP-Lined Polyethylene Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 45)
- Temperature Range: –25° to +175° F
- Tensile Strength: 1450 psi
- Use barbed and compression fittings (see pages 156-179)

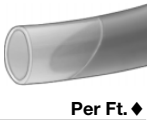

Get the toughness of FEP (fluorinated ethylene propylene) combined with the flexibility of LDPE (low-density) polyethylene. The FEP liner is inert to most chemicals, has a smooth surface, and is a good electrical insulator. Use this semi-clear white color tubing with water, air, food and beverage, and ethylene glycol. Liner material is FDA CFR21 177.1550 compliant. It can be sterilized with gas and chemicals. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/8″	1/4″	0.063″	1″	225	5, 10, 25, 50	9388T11	$2.27
3/16″	1/4″	0.031″	11/4″	87	5, 10, 25, 50	9388T12	2.32
1/4″	3/8″	0.063″	11/2″	150	5, 10, 25, 50	9388T14	3.63
3/8″	1/2″	0.063″	4″	87	2, 5, 10, 25, 50	9388T15	4.47
1/2″	5/8″	0.063″	6″	62	2, 5, 10, 25, 50	9388T16	6.42

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the FEP tubing on this page, go to mcmaster.com and search for **52355KAC**.

Durable White Tubing Made with Teflon® FEP

- Flexible (unless noted)
- Wall Hardness: Hard (Shore D: 55)
- Temperature Range: Inch: –320° to +400° F
  Metric: –300° to +400° F
- Tensile Strength: Inch: 2600 psi
  Metric: 4300 psi
- Use compression fittings (see pgs. 165-179)

Made of semi-clear white Teflon® FEP (fluorinated ethylene propylene), this tubing is tougher than PTFE, PFA, and ETFE tubing. It has low porosity and permeability, plus it's UV resistant, abrasion resistant, and inert to most chemicals. It's also a good electrical insulator. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1550 compliant. Tubing can be sterilized with steam (autoclaving) and gas.

Inch sizes have a vacuum rating of 29″ Hg @ 73° F, except 52355K93, K21, and K22, which are not rated for vacuum. ***Metric*** sizes are not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Inch							
1/16″	1/8″	1/32″	1/2″	412	10, 25, 50	52355K41	$1.12
1/16″	3/16″	1/16″	1/2″	623	5, 10, 25, 50	52355K51	3.06
3/32″	5/32″	1/32″	3/4″	310	10, 25, 50	52355K54	1.58
1/8″	3/16″	1/32″	3/4″	252	10, 25, 50	52355K12	2.16
1/8″	1/4″	1/16″	1/2″	417	5, 10, 25, 50	52355K32	3.92
3/16″	1/4″	1/32″	1″	177	5, 10, 25, 50	52355K57	2.43
1/4″	5/16″	1/32″	1 3/4″	140	5, 10, 25, 50	52355K14	3.08
1/4″	3/8″	1/16″	1″	250	2, 5, 10, 25, 50	52355K33	5.00
5/16″	3/8″	1/32″	2 1/2″	113	2, 5, 10, 25, 50	52355K58	3.61
3/8″	7/16″	1/32″	2″	97	2, 5, 10, 25, 50	52355K15	4.21
3/8″	1/2″	1/16″	2″	97	2, 5, 10, 25, 50	52355K95	7.07
7/16″	1/2″	1/32″	4″	83	2, 5, 10, 25, 50	52355K59	5.08
1/2″	9/16″	1/32″	5″	74	2, 5, 10, 25, 50	52355K17	5.47
1/2″	5/8″	1/16″	3″	139	2, 5, 10, 20, 25, 50	52355K35	8.24
5/8″	11/16″	1/32″	—	60	2, 5	52355K91★	7.50
5/8″	3/4″	1/16″	6″	114	2, 5, 10, 20, 25, 50	52355K36	10.74
11/16″	3/4″	1/32″	—	54	2, 5	52355K92★	6.76
3/4″	13/16″	1/32″	—	30	2, 5	52355K93★	10.37
3/4″	7/8″	1/16″	8″	100	2, 5, 10, 20, 25, 50	52355K37	15.43
7/8″	15/16″	1/32″	—	25	2, 5	52355K21★	6.29
1″	1 1/16″	1/32″	—	20	2, 5	52355K22★	10.54
1″	1 1/8″	1/16″	—	75	2, 5	52355K94★	20.17
Metric—ID, OD, and Wall dimensions are in mm							
1	3	1	1 1/2″	1075	10, 25, 50	5557K37	.89
2	4	1	1 1/2″	530	10, 25, 50	5557K32	1.33
3	5	1	1 3/4″	355	5, 10, 25, 50	5557K38	1.53
4	6	1	1 3/4″	267	5, 10, 25, 50	5557K33	1.98
5	7	1	2″	212	5, 10, 25, 50	5557K39	2.32
6	8	1	2 1/2″	177	5, 10, 25, 50	5557K34	2.73
7	9	1	2 1/2″	152	5, 10, 25, 50	5557K41	3.01
8	10	1	2 1/2″	133	5, 10, 25, 50	5557K35	3.48
10	12	1	4″	106	2, 5, 10, 25, 50	5557K36	3.74

★ This tubing is rigid and is furnished in a straight length.

Self-Retracting White FEP Tubing

- Very flexible
- Wall Hardness: Hard (Shore D: 55)
- Temperature Range: –400° to +400° F
- Tensile Strength: 3500 psi
- Use compression and push-to-connect fittings (see pgs. 165-179 and 185-201)

This tubing extends when you need it and retracts out of the way when you don't to keep your work area neat. Made of semi-clear white FEP (fluorinated ethylene propylene), this tubing is more abrasion resistant than PTFE tubing. It has low porosity and permeability, plus it's UV resistant and inert to most chemicals. It is also a good electrical insulator. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water, air, and food and beverage. Material meets UL 94V0 for flammability and is FDA CFR21 177.1550 compliant. Tubing can be sterilized with steam (autoclaving), gas, and chemicals. Vacuum rating is 27″ Hg @ 72° F.

ID	OD	Wall	Bend Radius	Max. psi @ 72° F	Coil Lg. Retracted	Coil Lg. Extended		Each
1 1/2″ Coil Diameter								
1/8″	1/4″	0.062″	1/2″	300	3″	12″	9384T11	$93.00
1/8″	1/4″	0.062″	1/2″	300	6″	24″	9384T12	87.70
1/8″	1/4″	0.062″	1/2″	300	12″	48″	9384T14	115.45
1/8″	1/4″	0.062″	1/2″	300	18″	72″	9384T16	157.64
2 3/8″ Coil Diameter								
1/4″	3/8″	0.062″	3/4″	210	3″	12″	9384T21	106.27
1/4″	3/8″	0.062″	3/4″	210	6″	24″	9384T22	120.90
1/4″	3/8″	0.062″	3/4″	210	12″	48″	9384T24	189.45
1/4″	3/8″	0.062″	3/4″	210	18″	72″	9384T26	198.50

Choose-a-Color FEP Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 55)
- Temperature Range: Air: –4° to +392° F
  Water: 32° to 212° F
- Tensile Strength: 4350 psi
- Use barbed, compression, and push-to-connect fittings (see pgs. 156-179 and 185-201)

Color code your lines for easy identification with this FEP (fluorinated ethylene propylene) tubing. This tubing is tougher than PTFE, PFA, and ETFE tubing. It has low porosity and permeability, plus it's UV resistant, abrasion resistant, and inert to most chemicals. It is also a good electrical insulator. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water, air, and ethylene glycol. Material meets UL 94V0 for flammability. Tubing can be sterilized with steam (autoclaving) and chemicals. Maximum pressure is 145 psi @ 69° F. Not rated for vacuum.

This tubing comes in your choice of opaque black, semi-clear blue, and semi-clear red. **To Order:** Please specify length from the available lengths listed and color.

ID	OD	Wall	Bend Radius	Available Lengths, ft.		Per Ft. ♦
0.093″	1/8″	0.016″	1″	5, 10, 25, 50	9369T46	$2.27
0.137″	3/16″	0.025″	1 1/4″	5, 10, 25, 50	9369T15	2.67
0.18″	1/4″	0.035″	2″	5, 10, 25, 50	9369T16	2.90
0.275″	3/8″	0.05″	3 1/4″	2, 5, 10, 25, 50	9369T17	5.60
3/8″	1/2″	0.063″	3 1/2″	2, 5, 10, 25, 50	9369T18	8.71

Flexible White Tubing Made with Teflon® FEP

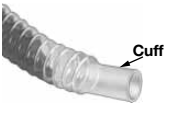

- Very flexible
- Wall Hardness: Hard (Shore D: 56)
- Temperature Range: –112° to +200° F
- Tensile Strength: 2600 psi
- Use barbed and compression fittings (see pages 156-179)

The corrugated design acts like an accordion to give this FEP (fluorinated ethylene propylene) tubing a 2:1 extension/compression ratio as well as a tight bend radius. This semi-clear white tubing is tougher than PTFE, PFA, and ETFE tubing. It has low porosity and permeability, plus it's UV resistant, abrasion resistant, and inert to most chemicals. It's made without a plasticizer that can contaminate fluid passing through. Use with water, air, and food and beverage. Material is FDA CFR21 177.1550 compliant. Tubing can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length in 1-ft. increments up to the maximum continuous length of 12 feet. Length is the "relaxed length" and includes both cuffs.

ID	Cuff Dimensions OD	Cuff Dimensions Wall	Cuff Dimensions Lg.	Bend Radius	Corrugated OD	Max. psi @ 72° F		Per Ft.
1/4″	0.28″	0.017″	3/4″	1/8″	3/8″	50	5336K26	$38.94
3/8″	0.415″	0.02″	1″	3/16″	9/16″	37	5336K27	39.87
1/2″	0.55″	0.025″	1″	1/4″	3/4″	35	5336K28	45.75
5/8″	0.675″	0.025″	1″	5/16″	15/16″	28	5336K31	51.60
3/4″	0.81″	0.03″	1 1/2″	3/8″	1 1/16″	30	5336K32	54.01
1″	1.07″	0.035″	2″	1/2″	1 3/8″	20	5336K63	69.19
1 1/4″	1.32″	0.035″	2″	5/8″	1 5/8″	17	5336K64	77.67
1 1/2″	1.57″	0.035″	2″	3/4″	1 13/16″	15	5336K65	96.87
2″	2.08″	0.04″	2″	1″	2 5/8″	12	5336K71	143.78

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the PFA and PVDF tubing on this page, go to mcmaster.com and search for **51805KAC**.

Crack-Resistant Tubing Made with Teflon® PFA

- Flexible (unless noted)
- Wall Hardness: Hard (Shore D: 60 for inch sizes; Shore D: 55 for metric sizes)
- Temperature Range: –320° to +500° F
- Tensile Strength: 2200 psi
- Use compression fittings (see pages 165-179)

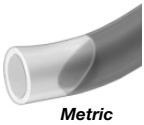

Metric

More resistant to stress cracking than PTFE tubing, this PFA (perfluoroalkoxy) tubing is also less porous. It is a good electrical insulator, inert to most chemicals, and is abrasion resistant. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water, air, food and beverage, and ethylene glycol. Material is FDA CFR21 177.1550 compliant. Tubing can be sterilized with steam (autoclaving) and gas.

Inch sizes are semi-clear white and have a vacuum rating of 29.9″ Hg @ 72° F.

Metric sizes are clear and are not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Inch							
1/16″	1/8″	1/32″	1/2″	412	10, 25	51805K41	$1.43
1/8″	3/16″	1/32″	3/4″	252	5, 10, 25	51805K32	2.56
1/8″	1/4″	1/16″	1/2″	417	2, 5, 10, 25	51805K72	4.98
5/32″	1/4″	3/64″	3/4″	289	2, 5, 10, 25	51805K86	4.33
3/16″	5/16″	1/16″	1 1/2″	312	2, 5, 10, 20, 25	51805K87	9.88
1/4″	5/16″	1/32″	1 3/4″	140	5, 10, 25	51805K54	3.58
1/4″	3/8″	1/16″	1″	250	2, 5, 10, 20, 25	51805K73	7.88
3/8″	7/16″	1/32″	2″	97	2, 5, 10, 25	51805K55	5.27
3/8″	1/2″	1/16″	2″	97	2, 5, 10, 20, 25	51805K11	10.65
1/2″	9/16″	1/32″	5″	74	2, 5, 10, 20, 25	51805K57	10.30
1/2″	5/8″	1/16″	3″	139	2, 5, 10, 20, 25	51805K75	13.48
5/8″	11/16″	1/32″	8″	60	2, 5, 10, 20, 25	51805K58	12.78
5/8″	3/4″	1/16″	6″	114	2, 5, 10, 20, 25	51805K76	16.38
3/4″	13/16″	1/32″	10″	30	2, 5, 10, 20, 25	51805K59	14.19
3/4″	7/8″	1/16″	8″	100	2, 5, 10, 20, 25	51805K77	26.19
7/8″	15/16″	1/32″	—	25	2, 5	51805K61★	17.68
7/8″	1″	1/16″	12″	90	2, 5, 10, 20, 25	51805K78	20.71
1″	1 1/16″	1/32″	—	20	2, 5	51805K62★	18.33
1″	1 1/8″	1/16″	—	75	2, 5	51805K79★	21.05
Metric—ID, OD, and Wall dimensions are in mm							
1	3	1	1 1/2″	1000	10, 25, 50	5733K51	1.37
2	4	1	1/2″	493	10, 25, 50	5733K52	2.05
3	5	1	1 3/4″	330	5, 10, 25, 50	5733K73	2.54
4	6	1	1″	248	5, 10, 25, 50	5733K54	3.15
5	7	1	2″	197	5, 10, 25, 50	5733K75	3.73
6	8	1	2 1/2″	165	2, 5, 10, 25, 50	5733K76	4.38
7	9	1	2 1/2″	141	2, 5, 10, 25, 50	5733K77	4.90
8	10	1	2 1/2″	123	2, 5, 10, 25, 50	5733K78	5.54
10	12	1	4″	98	2, 5, 10, 25, 50	5733K81	6.37

★ This tubing is rigid and furnished in a straight length.

Extreme-Purity Clear PFA Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 60)
- Temperature Range: –320° to +500° F
- Tensile Strength: 4000 psi
- Use compression fittings (see pages 165-179)

This PFA (perfluoroalkoxy) tubing is so pure, it is ideal for use in the semiconductor and pharmaceutical industries. This tubing is made without a plasticizer that can contaminate fluid passing through. It is inert to most chemicals and offers excellent resistance to UV exposure and temperature extremes. Use with water, air, and food and beverage. Material meets UL 94V0 for flammability and is FDA compliant. Tubing can be sterilized with steam (autoclaving) and gas. Not rated for bend radius or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	1/8″	1/32″	410	10, 25, 50	5773K11	$1.30
1/8″	3/16″	1/32″	175	5, 10, 25, 50	5773K12	2.19
1/8″	1/4″	1/16″	410	2, 5, 10, 20, 25, 50	5773K13	5.02
3/16″	1/4″	1/32″	175	5, 10, 25, 50	5773K14	2.89
1/4″	3/8″	1/16″	250	2, 5, 10, 20, 25, 50	5773K15	7.33
3/8″	1/2″	1/16″	180	2, 5, 10, 20, 25, 50	5773K16	11.23
1/2″	5/8″	1/16″	140	2, 5, 10, 20, 25, 50	5773K17	12.37
5/8″	3/4″	1/16″	115	2, 5, 10, 20, 25, 50	5773K18	14.83
3/4″	7/8″	1/16″	95	2, 5, 10, 20, 25, 50	5773K19	18.27
7/8″	1″	1/16″	85	2, 5, 10, 20, 25, 50	5773K21	19.09
1″	1 1/8″	1/16″	75	2, 5, 10, 20, 25, 50	5773K22	23.53

Ultra-Clear PFA Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 59)
- Temperature Range: –320° to +450° F
- Tensile Strength: 2300 psi
- Use compression fittings (see pages 165-179)

Made of a specially formulated PFA material, this tubing is clearer and smoother than other PFA and FEP tubing. Its superior smoothness creates better flow and allows easier cleaning. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water and air. Tubing can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
1/16″	1/8″	1/32″	1/2″	379	10, 25, 50	52705K31	$1.52
1/8″	1/4″	1/16″	1/2″	383	2, 5, 10, 25, 50	52705K32	5.50
5/32″	1/4″	3/64″	3/4″	266	2, 5, 10, 25, 50	52705K33	4.64
3/16″	1/4″	1/32″	1″	163	5, 10, 25, 50	52705K34	3.25
1/4″	5/16″	1/32″	1 3/4″	129	2, 5, 10, 25, 50	52705K35	4.11
1/4″	3/8″	1/16″	1″	230	2, 5, 10, 20, 25, 50	52705K36	8.48
3/8″	1/2″	1/16″	2″	164	2, 5, 10, 20, 25, 50	52705K37	10.64

3-A Sanitary White PVDF Tubing

- Flexible
- Wall Hardness: Hard (Shore D: 57-62)
- Temperature Range: –44° to +212° F
- Tensile Strength: 3500 psi
- Use compression fittings (see pages 165-179)

Use this tubing with dairy products, food, beverage, water, and air—it is resistant to fungi, abrasion, UV exposure, and most chemicals. It's made of off-white PVDF (polyvinylidene fluoride), which is also known as Kynar. It is NSF 51 certified and FDA CFR21 177.2600 and USDA compliant. This tubing is made without a plasticizer that can contaminate fluid passing through, plus it is more flexible than the other PVDF tubing we offer. Tubing can be sterilized with gas. Vacuum rating is 28″ Hg @ 72° F.

To Order: Please specify length from the available lengths listed.

Metric

ID, mm	OD, mm	Wall, mm	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
2	4	1	3/4″	464	10, 25, 50	5342K11	$1.11
4	6	1	1″	310	10, 25, 50	5342K12	1.87
6	8	1	1 1/2″	236	10, 25, 50	5342K13	2.55
8	10	1	2 1/2″	260	5, 10, 25, 50	5342K14	3.28

Inch

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/8″	1/4″	1/16″	1/2″	260	5, 10, 25, 50	5390K31	$2.59
0.17″	1/4″	0.04″	1″	155	5, 10, 25, 50	5390K32	2.99
3/16″	5/16″	1/16″	1″	210	5, 10, 25, 50	5390K33	3.31
1/4″	3/8″	1/16″	1″	174	2, 5, 10, 25, 50	5390K34	4.25
5/16″	7/16″	1/16″	1 3/4″	155	2, 5, 10, 25, 50	5390K35	5.12
3/8″	1/2″	1/16″	2″	130	2, 5, 10, 25, 50	5390K36	5.94
1/2″	5/8″	1/16″	3″	104	2, 5, 10, 20, 25, 50	5390K37	7.66
5/8″	3/4″	1/16″	5″	90	2, 5, 10, 20, 25, 50	5390K38	9.31
3/4″	7/8″	1/16″	15″	74	2, 5, 10, 20, 25, 50	5390K39	11.00
7/8″	1″	1/16″	16″	65	2, 5, 10, 20, 25, 50	5390K41	12.68

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the tubing on this page, go to mcmaster.com and search for **52395KAC**.

High-Strength White PVDF Tubing

- Flexible
- Wall Hardness: Hard
  Inch: (Shore D: 75-80)
  Metric: (Shore D: 65-70)
- Temperature Range:
  –40° to +250° F
- Tensile Strength:
  Inch: 5000-7500 psi
  Metric: 3900-4900 psi
- Use compression fittings
  (see pages 165-179)

With greater mechanical strength than other PVDF (polyvinylidene fluoride) tubing, this semi-clear white tubing is more rigid. PVDF is also known as Kynar. This tubing is resistant to fungi, abrasion, UV exposure, and most chemicals. It is made without a plasticizer that can contaminate fluid passing through. Use with water, air, and food and beverage. ***Inch*** sizes meet UL 94V0 for flammability and are FDA CFR21 177.2510 compliant. ***Metric*** sizes are FDA compliant. All tubing can be sterilized with steam (autoclaving) and chemicals. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
Inch							
1/8"	1/4"	1/16"	1 1/8"	350	10, 25, 50	51105K21	$1.54
0.17"	1/4"	0.04"	1 3/8"	180	10, 25, 50	51105K22	1.15
3/16"	5/16"	1/16"	1 3/8"	290	10, 25, 50	51105K23	1.62
1/4"	3/8"	1/16"	1 1/2"	240	5, 10, 25, 50	51105K24	2.38
5/16"	7/16"	1/16"	1 5/8"	200	5, 10, 25, 50	51105K25	2.79
3/8"	1/2"	1/16"	1 3/4"	180	5, 10, 25, 50	51105K26	3.08
1/2"	5/8"	1/16"	2 1/2"	145	2, 5, 10, 25, 50	51105K27	3.92
5/8"	3/4"	1/16"	3 1/2"	120	2, 5, 10, 25, 50	51105K28	4.76
3/4"	7/8"	1/16"	5"	100	2, 5, 10, 25, 50	51105K29	5.36
7/8"	1"	1/16"	7 1/2"	90	2, 5, 10, 25, 50	51105K31	6.07
1"	1 1/4"	1/8"	9"	140	2, 5, 10, 20, 25, 50	51105K32	13.46
Metric—ID, OD, and Wall dimensions are in mm							
2	4	1	3/4"	432	10, 25, 50	52395K21	1.26
4	6	1	1"	218	5, 10, 25, 50	52395K33	3.08
6	8	1	2"	145	2, 5, 10, 25, 50	52395K53	3.94
8	10	1	3"	108	2, 5, 10, 25, 50	52395K64	4.33
10	12	1	4 1/4"	87	2, 5, 10, 25, 50	52395K72	6.73

Light-Transmitting THV Fluoropolymer Tubing

- Flexible
- Wall Hardness: Firm (Shore D: 44)
- Temperature Range: –40° to +200° F
- Tensile Strength: 2900 psi
- Use compression fittings (see pgs. 165-179)

Ideal for UV purification systems, this semi-clear THV tubing can transmit UV light better than FEP, PTFE, or PFA tubing. It is also clearer and more flexible than FEP and PFA tubing. Use with water and air. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 72° F	Available Lengths, ft.		Per Ft. ♦
5/32"	1/4"	0.047"	1/4"	275	2, 5, 10, 25, 50, 100	5737K41	$6.46
1/4"	3/8"	1/16"	1/4"	250	2, 5, 10, 25, 50, 100	5737K42	9.33
3/8"	1/2"	1/16"	1/2"	190	2, 5, 10, 25, 50, 100	5737K43	10.10
5/8"	3/4"	1/16"	3"	115	2, 5, 10, 25, 50, 100	5737K44	15.94
7/8"	1"	1/16"	6"	90	2, 5, 10, 25, 50, 100	5737K45	21.76

Super Hard PEEK Tubing

- Rigid
- Wall Hardness: Very hard (Rockwell R: 126)
- Temperature Range: –328° to +482° F
- Tensile Strength: 13,300 psi
- Use compression fittings (see pgs. 165-179)

This PEEK (polyetheretherketone) tubing is so hard, it is an excellent substitute for stainless steel tubing. It has superior impact resistance and is inert to most chemicals. Use with water, air, and food and beverage. Material is FDA compliant. Tubing can be sterilized with steam (autoclaving) and gas. Not rated for bend radius or vacuum. *Note*: Do not bend this tubing.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Max. psi @ 73° F	Color	Available Lengths, ft.		Per Ft. ♦
0.005"	1/16"	0.029"	5000	Red	5, 10, 25	51085K41	$3.52
0.007"	1/16"	0.028"	5000	Yellow	5, 10, 25	51085K42	3.67
0.01"	1/16"	0.026"	5000	Blue	5, 10, 25	51085K44	3.71
0.02"	1/16"	0.021"	5000	Orange	10, 25	51085K45	3.40
0.03"	1/16"	0.016"	5000	Green	25	51085K48	3.00
0.062"	1/8"	0.032"	5000	Tan	20, 25	51085K49	11.15

High-Pressure Black Buna-N Rubber Tubing

- Very flexible
- Wall Hardness: Firm (Shore A: 75)
- Temperature Range: –40° to +220° F
- Tensile Strength: 1400 psi
- Use barbed fittings
  (see pages 156-165)

A durable nylon braided cover protects this opaque black Buna-N (nitrile) tubing and gives it strength to handle the highest pressure of any rubber tubing we offer. Due to the braided cover, this tubing is sometimes referred to as hose. Use with water, air, and hydraulic fluid. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
9/64"	15/64"	3/64"	1 1/4"	200	10, 25, 50, 100	5394K13	$1.55
5/32"	9/32"	1/16"	1"	200	10, 25, 50, 100	5394K14	1.65
3/16"	5/16"	1/16"	1 1/2"	200	5, 10, 25, 50, 100	5394K15	1.88
1/4"	3/8"	1/16"	2"	200	5, 10, 25, 50, 100	5394K16	1.92
3/8"	5/8"	1/8"	3"	200	5, 10, 25, 50, 100	5394K22	2.77

Oil-Resistant Black Buna-N Rubber Tubing

- Very flexible
- Wall Hardness: Soft (Shore A: 60)
- Temperature Range: –20° to +212° F
- Tensile Strength: 1500 psi
- Use barbed and compression fittings (see pages 156-179)

Choose this opaque black Buna-N (nitrile) tubing when your application requires good resistance to oil and solvents. Also use with water, deionized water, air, and ethylene glycol. Material meets ASTM D2000 BG 615. It can be sterilized with steam (autoclaving). Not rated for bend radius or vacuum. Also not rated for pressure; use in gravity flow applications.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Available Lengths, ft.		Per Ft. ♦
1/8"	3/16"	1/32"	25, 50	5235K41	$0.52
1/8"	1/4"	1/16"	25, 50	5235K42	.52
5/32"	9/32"	1/16"	25, 50	5235K43	.52
3/16"	5/16"	1/16"	25, 50	5235K44	.56
1/4"	3/8"	1/16"	25, 50	5235K45	.60
1/4"	7/16"	3/32"	10, 25, 50	5235K58	.72
5/16"	7/16"	1/16"	25, 50	5235K48	.60
3/8"	1/2"	1/16"	25, 50	5235K51	.68
3/8"	9/16"	3/32"	10, 25, 50	5235K52	1.04
3/8"	5/8"	1/8"	10, 25, 50	5235K53	$1.20
7/16"	11/16"	1/8"	10, 25, 50	5235K59	1.40
1/2"	5/8"	1/16"	10, 25, 50	5235K54	.80
1/2"	3/4"	1/8"	10, 25, 50	5235K55	1.53
5/8"	7/8"	1/8"	10, 25, 50	5235K56	1.83
3/4"	1"	1/8"	10, 25, 50	5235K57	2.13
1"	1 3/16"	3/32"	10	5235K61	2.10
1"	2"	1/2"	2, 5, 10	5235K62	11.48

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the rubber tubing on this page, go to mcmaster.com and search for **5543KAC**.

Super Soft Latex Rubber Tubing

- Very flexible
- Stretches up to 3 times its length
- Wall Hardness: Very soft (Shore A: 35)
- Temperature Range: 0° to 158° F
- Tensile Strength: 4000 psi
- Use barbed fittings (see pages 156-165)

Go ahead and stretch it, bend it, compress it—this tubing will spring back to its original shape. Made of super-soft natural rubber, this tubing is commonly called surgical tubing (not for use in medical applications). It has a smooth finish and is resistant to abrasion as well as weak acids and alkalies. Use with water, air, and ethylene glycol. Material meets Fed. Spec. A-A-52047C and MIL-T-36966/A-A-53848. Tubing can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

Tubing comes in your choice of colors: opaque black or semi-clear amber. **To Order:** Please specify length from the available lengths listed and color.

ID	OD	Wall	Bend Radius	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
1/16″	1/8″	1/32″	1″	25	10, 25	5234K93	$1.04
1/8″	3/16″	1/32″	23/32″	20	10, 25	5234K24	1.03
1/8″	1/4″	1/16″	13/32″	15	10, 25	5234K41	1.11
1/8″	5/16″	3/32″	1″	45	10, 25	5234K29	1.13
1/8″	3/8″	1/8″	1″	48	10, 25	5234K66	1.57
1/8″	1/2″	3/16″	1″	57	5, 10, 25	5234K65	2.45
1/8″	9/16″	7/32″	1″	78	5, 10, 25	5234K68	2.80
1/8″	5/8″	1/4″	1″	82	5, 10, 25	5234K69	3.48
1/8″	11/16″	9/32″	1″	84	5, 10, 25	5234K94	3.86
1/8″	3/4″	5/16″	1″	85	2, 5, 10, 25	5234K95	4.25
5/32″	1/4″	3/64″	2″	23	10, 25	5234K96	.86
3/16″	1/4″	1/32″	4″	10	10, 25	5234K97	.83
3/16″	5/16″	1/16″	11 9/32″	15	10, 25	5234K42	1.17
3/16″	3/8″	3/32″	13/32″	35	10, 25	5234K25	1.20
3/16″	7/16″	1/8″	13/16″	30	10, 25	5234K43	1.60
1/4″	5/16″	1/32″	5″	10	10, 25	5234K98	.89
1/4″	3/8″	1/16″	23/32″	15	10, 25	5234K44	1.28
1/4″	7/16″	3/32″	11 3/32″	20	10, 25	5234K45	1.42
1/4″	1/2″	1/8″	1″	30	10, 25	5234K46	1.91
5/16″	7/16″	1/16″	21 9/32″	15	10, 25	5234K47	1.44
5/16″	1/2″	3/32″	11 1/16″	20	10, 25	5234K48	1.68
5/16″	9/16″	1/8″	15/16″	30	5, 10, 25	5234K49	2.30
3/8″	1/2″	1/16″	33/32″	15	10, 25	5234K51	1.46
3/8″	9/16″	3/32″	3″	28	5, 10, 25	5234K99	2.04
3/8″	5/8″	1/8″	1 1/2″	30	5, 10, 25	5234K52	2.68
3/8″	3/4″	3/16″	1″	35	5, 10, 25	5234K53	4.47
1/2″	5/8″	1/16″	43/32″	10	10, 25	5234K26	1.78
1/2″	11/16″	3/32″	21 1/16″	20	5, 10, 25	5234K54	2.68
1/2″	3/4″	1/8″	2″	25	5, 10, 25	5234K55	3.60
1/2″	7/8″	3/16″	11 3/32″	30	5, 10, 15	5234K56	4.83
5/8″	7/8″	1/8″	2 1/2″	25	5, 10, 25	5234K57	4.09
3/4″	7/8″	1/16″	63/32″	10	5, 10, 15	5234K63	2.50
3/4″	1″	1/8″	3″	20	5, 10, 15	5234K58	4.89
3/4″	1 1/8″	3/16″	2″	25	2, 5, 10, 15	5234K59	5.93
7/8″	1 1/8″	1/8″	3 1/2″	20	2, 5, 10, 15	5234K64	5.10
1″	1 1/4″	1/8″	4″	20	2, 5, 10, 15	5234K61	5.85
1″	1 1/2″	1/4″	2″	30	2, 5, 10, 15	5234K62	10.21

Abrasion-Resistant Tan Gum Rubber Tubing

- Very flexible
- Stretches up to 2 times its length
- Wall Hardness: Very soft (Shore A: 45)
- Temperature Range: –70° to +180° F
- Tensile Strength: 3000 psi
- Use barbed fittings (see pages 156-165)

While not as resilient or soft as latex rubber, this gum rubber tubing has thick walls and a rough-textured finish (unless noted) to provide excellent abrasion resistance. Use with water, air, and ethylene glycol. Material meets Fed Spec A-A-52047 Type 1, Class 1 and 2. This tubing can be sterilized with chemicals. Not rated for bend radius or pressure. Use in gravity-flow applications.

Vacuum-rated tubing withstands vacuum up to 30″ Hg @ 72° F.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Available Lengths, ft.		Per Ft. ♦
Standard					
1/8″	1/4″	1/16″	5, 10, 25, 50, 100	5546K42■	$1.26
1/8″	3/8″	1/8″	5, 10, 25, 50, 100	5546K43■	2.47
3/16″	5/16″	1/16″	5, 10, 25, 50, 100	5546K44■	2.06
1/4″	3/8″	1/16″	5, 10, 25, 50	5546K45■	1.86
1/4″	1/2″	1/8″	5, 10, 25, 50	5546K31■	2.57
5/16″	9/16″	1/8″	5, 10, 25, 50	5546K46■	2.57
3/8″	3/4″	3/16″	5, 10, 25	5546K47	5.92
1/2″	1″	1/4″	2, 5, 10, 25, 50	5546K32	7.43
5/8″	1 1/8″	1/4″	2, 5, 10, 25	5546K48	6.64
3/4″	1″	1/8″	2, 5, 10, 25, 50	5546K49	4.36
1″	1 1/4″	1/8″	2, 5, 10, 25, 50	5546K52	6.79
1 1/4″	1 1/2″	1/8″	2, 5, 10, 25, 50	5546K53	6.50
1 1/4″	1 3/4″	1/4″	2, 5, 10, 20, 25, 50	5546K33	9.89
1 1/2″	2 1/2″	1/2″	2, 5, 10, 20	5546K34	15.00
1 3/4″	2 1/4″	1/4″	2, 5, 10	5546K56■	10.06
2″	2 1/4″	1/8″	2, 5, 12	5546K35	9.89
2″	2 1/2″	1/4″	2, 5, 12	5546K36	13.25
2″	3″	1/2″	2, 5, 12	5546K37	22.00
2 1/4″	2 3/4″	1/4″	2, 5, 12	5546K38	17.05
2 1/2″	3″	1/4″	2, 5, 12	5546K39	17.12
3″	3 1/2″	1/4″	2, 5, 10	5546K41	21.50
Vacuum Rated					
1/8″	3/8″	1/8″	10, 25, 50, 100	5543K41■	2.46
3/16″	7/16″	1/8″	5, 10, 25, 50	5543K21■	2.22
3/16″	9/16″	3/16″	5, 10, 25, 50	5543K42■	3.71
1/4″	5/8″	3/16″	5, 10, 25	5543K22	5.71
1/4″	3/4″	1/4″	2, 5, 10, 25	5543K43	5.00
1/4″	1″	3/8″	2, 5, 10, 25	5543K44	5.43
5/16″	13/16″	1/4″	2, 5, 10, 25	5543K45	4.00
3/8″	7/8″	1/4″	2, 5, 10, 25	5543K46	6.21
3/8″	1 1/8″	3/8″	2, 5, 10, 25, 50	5543K47	9.59
1/2″	1 1/8″	5/16″	2, 5, 10, 20, 25, 50	5543K48	8.21
1/2″	1 1/4″	3/8″	2, 5, 10, 20, 25	5543K49	8.06
1/2″	1 1/2″	1/2″	2, 5, 10, 25, 50	5543K25	11.88
5/8″	1 3/8″	3/8″	2, 5, 10, 20, 25, 50	5543K51	9.19
5/8″	1 5/8″	1/2″	2, 5, 10, 20, 25, 50	5543K52	8.86
3/4″	1 1/2″	3/8″	2, 5, 10, 20, 25, 50	5543K54	8.91
3/4″	1 3/4″	1/2″	2, 5, 10, 20, 25, 50	5543K55	12.74
3/4″	2″	5/8″	2, 5, 10, 20, 25	5543K53	12.57
1″	2″	1/2″	2, 5, 10, 20, 25, 50	5543K56	14.89

■ Smooth finish.

Large-Diameter FDA White Gum Rubber Tubing

- Very flexible
- Stretches up to 2 times its length
- Wall Hardness: Very soft (Shore A: 45)
- Temp. Range: –67° to +180° F
- Tensile Strength: 3396 psi
- Use clamps (see pages 274-283)

Ideal for use in clean environments such as food processing plants, this opaque white gum rubber tubing comes in a range of large diameters for easy connections. It has a rough-textured finish that provides excellent abrasion and tear resistance, however it is not as soft or resilient as latex rubber. Use this tubing with water, air, and food and beverage. Material is FDA CFR21 177.2600 compliant. It can be sterilized with steam (autoclaving). Not rated for bend radius or vacuum. Also not rated for pressure; use in gravity-flow applications.

To Order: Please specify length in 1-ft. increments up to 25 ft.

ID	OD	Wall	Available Lengths, ft.		Per Ft.
2″	2 1/4″	1/8″	Up to 25	9480T1	$13.80
2″	2 1/2″	1/4″	Up to 25	9480T2	20.40
4″	4 1/4″	1/8″	Up to 25	9480T3	21.66
4″	4 1/2″	1/4″	Up to 25	9480T4	31.20
6″	6 1/4″	1/8″	Up to 25	9480T5	29.34
6″	6 1/2″	1/4″	Up to 25	9480T6	32.68
8″	8 1/4″	1/8″	Up to 25	9480T7	$28.92
8″	8 1/2″	1/4″	Up to 25	9480T8	39.92
10″	10 1/4″	1/8″	Up to 25	9480T9	34.75
10″	10 1/2″	1/4″	Up to 25	9480T11	49.25
12″	12 1/4″	1/8″	Up to 25	9480T12	36.00
12″	12 1/2″	1/4″	Up to 25	9480T13	58.58

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the rubber tubing on this page, go to mcmaster.com and search for **5102KAC**.

High-Temperature Viton® Fluoroelastomer Rubber Tubing

- Flexible
- Soft: Stretches up to 2 times its length
- Wall Hardness: Soft: (Shore A: 60); Firm: (Shore A: 75)
- Temperature Range: –15° to +400° F
- Tensile Strength: 1600 psi
- Use barbed fittings (see pages 156-165)

Harder than pure gum (natural) rubber, this synthetic rubber tubing is resistant to high temperatures, ozone, and UV exposure. Use with water and ethylene glycol. It can be sterilized with steam (autoclaving). Not rated for bend radius or vacuum. Also not rated for pressure; use in gravity-flow applications.

Soft tubing comes in opaque black. ***Firm*** tubing comes in your choice of opaque black, brown, and green. **To Order:** Please specify length from the available lengths listed; for firm tubing, also specify color.

Inch

ID	OD	Wall	Available Lengths, ft.	*Soft*	Per Ft. ♦	*Firm*	Per Ft. ♦
1/16″	1/8″	1/32″	5, 10, 25, 50	5119K39	$2.23	5119K78	$2.00
1/8″	1/4″	1/16″	2, 5, 10, 25, 50	5119K41	4.47	5119K79	3.97
1/8″	5/16″	3/32″	2, 5, 10, 20, 25, 50	5119K31	7.40	5119K81	6.63
1/8″	3/8″	1/8″	2, 5, 10, 20, 25, 50	5119K48	11.06	5119K82	9.94
3/16″	5/16″	1/16″	2, 5, 10, 25, 50	5119K42	5.70	5119K83	5.07
3/16″	7/16″	1/8″	2, 5, 10, 20, 25, 50	5119K32	14.16	5119K84	12.72
1/4″	5/16″	1/32″	2, 5, 10, 25, 50	5119K33	4.50	5119K85	4.00
1/4″	3/8″	1/16″	2, 5, 10, 20, 25, 50	5119K43	6.90	5119K86	6.23
1/4″	1/2″	1/8″	2, 5, 10, 20, 25, 50	5119K49	16.28	5119K87	14.59
5/16″	7/16″	1/16″	2, 5, 10, 20, 25, 50	5119K44	8.43	5119K88	7.53
5/16″	9/16″	1/8″	2, 5, 10, 20, 25, 50	5119K51	19.72	5119K89	17.66
3/8″	1/2″	1/16″	2, 5, 10, 20, 25, 50	5119K45	10.27	5119K91	9.20
3/8″	9/16″	3/32″	2, 5, 10, 20, 25, 50	5119K34	16.72	5119K92	14.38
3/8″	5/8″	1/8″	2, 5, 10, 20, 25, 50	5119K52	19.57	5119K93	19.19
1/2″	5/8″	1/16″	2, 5, 10, 20, 25, 50	5119K46	12.31	5119K94	11.00
1/2″	3/4″	1/8″	2, 5, 10, 20, 25, 50	5119K53	25.97	5119K95	24.20
3/4″	7/8″	1/16″	2, 5, 10, 20, 25, 50	5119K47	20.94	5119K96	20.47
3/4″	1″	1/8″	2, 5, 10, 20, 25, 50	5119K35	34.92	5119K97	31.20

Metric

ID, mm	OD, mm	Wall, mm	Available Lengths, ft.	*Soft*	Per Ft. ♦	*Firm*	Per Ft. ♦
2	4	1	5, 10, 25, 50	5102K11	$3.59	5102K41	$3.19
4	6	1	5, 10, 25, 50	5102K12	4.12	5102K42	3.65
6	8	1	2, 5, 10, 25, 50	5102K13	4.99	5102K43	4.43
8	10	1	2, 5, 10, 20, 25, 50	5102K14	8.02	5102K44	7.16
10	12	1	2, 5, 10, 20, 25, 50	5102K15	10.59	5102K45	9.96

Durable Black Neoprene Rubber Tubing

- Flexible
- Wall Hardness: Firm (Shore A: 82)
- Temperature Range: –20° to +212° F
- Tensile Strength: 1286 psi
- Use barbed and compression fittings (see pages 156-179)

This synthetic rubber tubing is harder and more abrasion resistant than natural rubber, yet slightly less resilient. Made of opaque black neoprene, you can use this tubing with water, air, ethylene glycol, and diluted acids. Material meets ASTM D2000 2BC, 810, A14, C12, and E034, as well as ASTM E162. It can be sterilized with steam (autoclaving). Not rated for bend radius or vacuum. Also not rated for pressure; use in gravity-flow applications.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Available Lengths, ft.		Per Ft. ♦
1/8″	1/4″	1/16″	25, 50, 100	5034K21	$0.52
3/16″	3/8″	3/32″	10, 25, 50, 100	5034K11	.64
1/4″	7/16″	3/32″	10, 25, 50, 100	5034K12	.72
1/4″	1/2″	1/8″	10, 25, 50, 100	5034K23	1.12
5/16″	1/2″	3/32″	10, 25, 50, 100	5034K13	.84
3/8″	9/16″	3/32″	10, 25, 50, 100	5034K24	1.04
3/8″	5/8″	1/8″	10, 25, 50, 100	5034K14	1.20
1/2″	5/8″	1/16″	10, 25, 50, 100	5034K25	$0.80
1/2″	3/4″	1/8″	10, 25, 50, 100	5034K15	1.53
5/8″	7/8″	1/8″	10, 25, 50	5034K16	1.80
3/4″	1″	1/8″	5, 10, 25, 50	5034K17	2.13
7/8″	1 1/8″	1/8″	5, 10, 25, 50	5034K18	2.40
1″	1 1/4″	1/8″	5, 10, 25, 50	5034K19	2.73
2″	2 1/2″	1/4″	2, 5, 10	5034K27	8.15

Weather-Resistant Black EPDM Rubber Tubing

- Flexible
- Stretches up to 2 times its length
- Wall Hardness: Soft (Shore A: 60)
- Temperature Range: –40° to +300° F
- Tensile Strength: 1700 psi
- Use barbed and push-to-connect fittings (see pgs. 156-165 and 185-201)

Made of pure EPDM with no SBR additives, this opaque black tubing has excellent resistance to UV sunlight, ozone, and whatever else Mother Nature throws at it. It has higher resistance to diluted and somewhat concentrated acids than silicone. Use with water and ethylene glycol. Material meets ASTM D2000 M4 CA611. Not rated for sterilization or vacuum. It is also not rated for pressure; use in gravity-flow applications.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Available Lengths, ft.		Per Ft. ♦
1/16″	1/8″	1/32″	1/8″	25, 50, 100	9776T1	$0.37
3/32″	7/32″	1/16″	7/32″	25, 50, 100	9776T2	.48
1/8″	1/4″	1/16″	1/4″	25, 50, 100	9776T3	.52
3/16″	5/16″	1/16″	5/16″	25, 50, 100	9776T4	.59
3/16″	3/8″	3/32″	3/8″	10, 25, 50, 100	9776T5	.80
3/16″	7/16″	1/8″	7/16″	10, 25, 50, 100	9776T6	$1.08
1/4″	3/8″	1/16″	3/8″	10, 25, 50, 100	9776T7	.69
1/4″	1/2″	1/8″	1/2″	10, 25, 50, 100	9776T8	1.18
3/8″	1/2″	1/16″	1/2″	10, 25, 50, 100	9776T9	.82
3/8″	5/8″	1/8″	5/8″	10, 25, 50, 100	9776T11	1.50

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the rubber tubing on this page, go to mcmaster.com and search for **51845KAC**.

High-Temperature Silicone Rubber Tubing

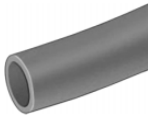

- Very flexible
- Stretches up to 2 times its length
- Wall Hardness: Firm: (Shore A: 70)
  Soft and NSF 51 Soft: (Shore A: 50)
- Temperature Range: –94° to +392° F
- Tensile Strength: Firm: 1350 psi
  Soft and NSF 51 Soft: 1100 psi
- Use barbed fittings (see pages 156-165)

Able to handle higher temperatures than natural rubber, this synthetic rubber tubing will maintain its flexibility and resiliency over time, making it a good choice for peristaltic (squeeze-action) pump applications. It is peroxide cured and won't impart odors or taste to the fluid passing through. Use with water, air, and food and beverage. Material is FDA CFR21 177.2600 compliant. It can be sterilized with steam (autoclaving). Not rated for vacuum.

Firm tubing meets ASTM D2000 M7GE 707 and comes in your choice of opaque black, opaque red, semi-clear blue, or semi-clear white.

Soft tubing is the softest silicone tubing we offer. It meets ASTM D2000 M3GE 507 and comes in your choice of opaque black, opaque red, semi-clear blue, or semi-clear white.

NSF 51 soft tubing is furnished in individually bagged lengths to meet the NSF 51 food handling standard. It also meets ASTM D2000 M3GE 507. Color is semi-clear white.

To Order: Please specify length from the available lengths listed. For *firm* and *soft* tubing, please also specify color.

ID	OD	Wall	Bend Radius	Max. psi @ 72°F	Firm Available Lengths, ft.		Firm Per Ft.♦	Soft Available Lengths, ft.		Soft Per Ft.♦	NSF 51 Soft Available Lengths, ft.		NSF 51 Soft Per Ft.
Inch													
1/16"	1/8"	1/32"	1/8"	10	25, 50, 100	51135K12	$0.50	25, 50, 100	5236K81	$0.43	10, 25	3038K11	$0.51
3/32"	7/32"	1/16"	7/32"	15	10, 25, 50, 100	51135K13	.82	10, 25, 50, 100	5236K82	.68	10, 25	3038K12	.82
1/8"	1/4"	1/16"	1/4"	20	10, 25, 50, 100	51135K15	.81	10, 25, 50, 100	5236K83	.67	10, 25	3038K13	.82
3/16"	5/16"	1/16"	5/16"	20	10, 25, 50, 100	51135K17	.92	10, 25, 50, 100	5236K84	.84	10, 25	3038K14	1.06
3/16"	3/8"	3/32"	3/8"	20	10, 25, 50, 100	51135K18	1.47	10, 25, 50, 100	5236K85	1.24	—	—	—
3/16"	7/16"	1/8"	7/16"	15	5, 10, 25, 50, 100	51135K19	2.03	10, 25, 50, 100	5236K86	1.52	10, 25	3038K16	2.33
1/4"	3/8"	1/16"	3/8"	5	10, 25, 50, 100	51135K21	1.05	10, 25, 50, 100	5236K87	.95	10, 25	3038K17	1.10
1/4"	1/2"	1/8"	1/2"	15	5, 10, 25, 50, 100	51135K26	2.30	5, 10, 25, 50, 100	5236K88	2.11	—	—	—
5/16"	7/16"	1/16"	7/16"	10	10, 25, 50, 100	51135K27	1.41	10, 25, 50, 100	5236K89	1.20	10, 25	3038K19	1.69
5/16"	9/16"	1/8"	9/16"	10	5, 10, 25, 50, 100	51135K29	2.42	5, 10, 25, 50, 100	5236K91	2.30	—	—	—
3/8"	1/2"	1/16"	1/2"	10	5, 10, 25, 50, 100	51135K34	1.93	10, 25, 50, 100	5236K93	1.43	10, 25	3038K22	1.54
3/8"	5/8"	1/8"	5/8"	10	5, 10, 25, 50, 100	51135K36	2.81	5, 10, 25, 50, 100	5236K44	2.57	—	—	—
1/2"	5/8"	1/16"	5/8"	5	5, 10, 25, 50, 100	51135K38	1.91	10, 25, 50, 100	5236K45	1.41	—	—	—
1/2"	11/16"	3/32"	11/16"	5	5, 10, 25, 50, 100	51135K39	2.86	5, 10, 25, 50, 100	5236K46	2.29	5, 10, 25	3038K25	3.11
1/2"	3/4"	1/8"	3/4"	10	2, 5, 10, 25, 50, 100	51135K46	3.57	2, 5, 10, 25, 50, 100	5236K47	3.47	5, 10, 25	3038K26	5.36
5/8"	3/4"	1/16"	3/4"	3	5, 10, 25, 50, 100	51135K48	2.21	5, 10, 25, 50, 100	5236K48	2.02	—	—	—
5/8"	7/8"	1/8"	7/8"	5	2, 5, 10, 25, 50, 100	51135K52	3.80	2, 5, 10, 25, 50, 100	5236K49	3.37	—	—	—
3/4"	1"	1/8"	1"	5	2, 5, 10, 25, 50, 100	51135K53	4.29	2, 5, 10, 25, 50, 100	5236K95	4.13	—	—	—
Metric—ID, OD, Wall, and Bend Radius dimensions in mm													
2	6	2	6	20	10, 25, 50, 100	5041K51	.95	25, 50, 100	5054K51	.77	10, 25	3142K11	1.03
3	8	2.5	8	20	10, 25, 50, 100	5041K52	1.39	10, 25, 50, 100	5054K52	1.08	10, 25	3142K12	1.38
4	8	2	8	15	10, 25, 50, 100	5041K53	1.18	10, 25, 50, 100	5054K53	.96	10, 25	3142K13	1.22
6	9	1.5	9	5	10, 25, 50, 100	5041K54	1.16	10, 25, 50, 100	5054K54	.97	10, 25	3142K14	1.23
7	10	1.5	10	5	10, 25, 50, 100	5041K61	1.24	10, 25, 50, 100	5054K61	.76	10, 25	3142K15	1.24
9	13	2	13	10	5, 10, 25, 50, 100	5041K55	2.35	5, 10, 25, 50, 100	5054K55	2.16	10, 25	3142K16	2.15
9	15	3	15	10	5, 10, 25, 50, 100	5041K56	3.58	5, 10, 25, 50, 100	5054K56	3.24	5, 10, 25	3142K17	3.52
10	15	2.5	15	10	5, 10, 25, 50, 100	5041K57	3.09	5, 10, 25, 50, 100	5054K57	2.32	5, 10, 25	3142K18	4.07
10	17	3.5	17	10	5, 10, 25, 50, 100	5041K58	5.02	5, 10, 25, 50, 100	5054K58	4.23	2, 5, 10, 25	3142K19	5.68
15	20	2.5	20	10	5, 10, 25, 50, 100	5041K59	4.17	5, 10, 25, 50, 100	5054K59	3.09	5, 10, 25	3142K21	5.20

Crush-Resistant Silicone Rubber Tubing

- Very flexible
- Stretches up to 2 times its length
- Wall Hardness: Soft (Shore A: 65)
- Temperature Range: –65° to +450° F
- Tensile Strength: 1150 psi
- Use barbed fittings (see pages 156-165)

Thick walls combined with synthetic silicone rubber make this semi-clear white tubing crush resistant. It will stay flexible over a wide range of temperatures, plus it's resistant to weather and ozone, so it is ideal for outdoor use. This tubing is peroxide cured and won't impart odors or taste to the fluid passing through. Use with drinking (potable) water, air, food and beverage, and dairy. Material meets 3-A sanitary requirements, NSF 51 and 61, and ASTM D2000. It is also FDA CFR21 177.2600 and USDA compliant. It can be sterilized with steam (autoclaving). Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 78°F	Available Lengths, ft.		Per Ft.♦
1/8"	1/4"	1/16"	1/4"	35	25, 50, 100	3184K5	$0.84
3/16"	3/8"	3/32"	3/8"	35	25, 50, 100	3184K6	1.56
1/4"	7/16"	3/32"	1 1/4"	35	5, 10, 25, 50, 100	3184K1	2.08
1/2"	7/8"	3/16"	7/8"	35	2, 5, 10, 25, 50, 100	3184K7	5.36
5/8"	1 1/16"	7/32"	2 1/2"	35	2, 5, 10, 20, 25, 50, 100	3184K4	6.21
3/4"	1 1/4"	1/4"	2 5/8"	35	2, 5, 10, 20, 25, 50, 100	3184K3	9.72

High-Pressure Silicone Rubber Tubing

- Flexible
- Wall Hardness: Soft (Shore A: 60)
- Temperature Range: –65° to +350° F
- Tensile Strength: 1275 psi
- Use barbed fittings (see pages 156-165)

Reinforced with a polyester braid, this semi-clear white tubing can handle high pressure. Due to the braid reinforcement, this tubing is sometimes referred to as hose. It remains flexible at a wide range of temperatures and is resistant to UV exposure. This tubing is peroxide cured and won't impart odors or taste to the fluid passing through. Use with water and food and beverage. Material meets NSF 51 and is FDA CFR21 177.2600 compliant. It can be sterilized with steam (autoclaving). Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 68°F	Available Lengths, ft.		Per Ft.♦
1/16"	0.292"	0.115"	1"	175	2, 5, 10, 25, 50, 100	5157K39	$7.17
1/8"	0.365"	0.12"	1"	175	2, 5, 10, 25, 50, 100	5157K41	5.05
3/16"	0.447"	0.13"	1 1/4"	165	2, 5, 10, 25, 50, 100	5157K42	5.82
1/4"	0.52"	0.135"	1 1/2"	160	2, 5, 10, 25, 50, 100	5157K43	6.50
5/16"	0.592"	0.14"	1 3/4"	140	2, 5, 10, 20, 25, 50	5157K53	7.92
3/8"	0.655"	0.14"	2"	125	2, 5, 10, 20, 25, 50	5157K44	7.50
1/2"	0.8"	0.15"	2 1/2"	130	2, 5, 10, 20, 25, 50	5157K45	9.03
5/8"	0.965"	0.17"	3"	100	2, 5, 10, 20, 25, 50	5157K46	11.51
3/4"	1.1"	0.175"	3 1/2"	85	2, 5, 10, 20, 25, 50	5157K47	13.36
7/8"	1.235"	0.18"	4"	70	2, 5, 10, 20, 25, 50	5157K55	29.24
1"	1.36"	0.18"	5"	65	2, 5, 10, 20, 25, 50	5157K48	16.98
1 1/4"	1.61"	0.18"	6"	55	2, 5, 10, 20, 25	5157K51	24.06

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the rubber tubing on this page, go to mcmaster.com and search for **9628TAC**.

High-Purity White Silicone Rubber Tubing for Peristaltic Pumps

- Flexible
- Stretches up to 5 times its length
- Wall Hardness: Soft (Shore A: 50)
- Temperature Range: –70° to +450° F
- Tensile Strength: 1250 psi
- Use barbed fittings (see pages 156-165)

Specially sized for peristaltic (squeeze-action) pumps, this semi-clear white tubing is cured with platinum, a higher purity process than the peroxide curing used on other silicone tubing. It is also made without any plasticizers that can contaminate fluid passing through. Use with dairy, food, and beverage. Material meets 3-A sanitary requirements and is FDA CFR21 177.2600 and USDA compliant. It can be sterilized with steam (autoclaving) or gas. Not rated for bend radius, vacuum, or pressure.

To Order: Please specify length from the available lengths listed.

For Pump Tube No.	ID	OD	Wall	Available Lengths, ft.		Per Ft. ♦
13	0.031″	0.157″	0.063″	25, 50, 100	9628T54	$1.35
15	0.187″	3/8″	0.094″	25, 50, 100	9628T41	4.07
16	1/8″	1/4″	0.063″	25, 50, 100	9628T42	2.06
18	0.312″	0.437″	0.063″	25, 50, 100	9628T43	3.88
24	1/4″	0.437″	0.094″	25, 50, 100	9628T44	4.74
25	0.187″	0.312″	0.063″	25, 50, 100	9628T45	2.60
26	1/4″	0.502″	0.126″	25, 50, 100	9628T46	6.40
73	3/8″	0.627″	0.126″	25, 50, 100	9628T47	8.01
82	0.484″	0.736″	0.126″	25, 50, 100	9628T48	10.00
88	1/2″	0.878″	0.189″	25, 50, 100	9628T49	16.96
92	1″	1.378″	0.189″	25, 50	9628T51	31.23
120	1/8″	0.313″	0.094″	25, 50, 100	9628T52	3.35
191	3/4″	1.128″	0.189″	25, 50, 100	9628T53	22.03

High-Purity White Silicone Rubber Tubing

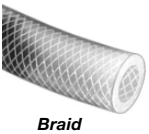

Braid Reinforced

Nonreinforced
- Very flexible
- Stretches up to 3 times its length
- Wall Hardness: Soft (Shore A: 50)
- Temp. Range: –80° to +425° F
- Tensile Strength: 1350 psi
- Use barbed fittings (see pgs. 156-165)

Braid Reinforced
- Flexible
- Wall Hardness: Soft (Shore A: 60)
- Temp. Range: –80° to +350° F
- Tensile Strength: Not rated
- Use barbed fittings (see pgs. 156-165)

This semi-clear white tubing is cured with platinum, a higher-purity process than the peroxide curing used on other silicone tubing. It is also made without any plasticizers that can contaminate fluid passing through. Use with water, air, and food and beverage. It can be sterilized with steam (autoclaving).

Nonreinforced tubing is FDA CFR21 177.2600 compliant. Not rated for bend radius or vacuum.

Braid-reinforced tubing is FDA and USDA compliant. The braid is made of polyester for added strength. Due to the braid reinforcement, this tubing is sometimes called hose. Not rated for vacuum.

To Order: Please specify length from the available lengths listed.

Nonreinforced

ID	OD	Wall	Max. psi @ 70° F	Available Lengths, ft.		Per Ft. ♦
0.03″	0.065″	0.018″	11	10, 25, 50	51845K51	$0.91
0.04″	0.085″	0.023″	11	10, 25, 50	51845K52	1.18
1/16″	1/8″	1/32″	11	10, 25, 50	51845K53	1.18
0.078″	1/8″	0.024″	10	10, 25, 50	51845K54	1.24
1/8″	1/4″	1/16″	10	5, 10, 25, 50	51845K55	1.37
3/16″	3/8″	3/32″	10	5, 10, 25, 50	51845K56	2.45
1/4″	1/2″	1/8″	10	2, 5, 10, 25, 50	51845K57	4.96
5/16″	1/2″	3/32″	6	2, 5, 10, 25, 50	51845K58	4.27
3/8″	5/8″	1/8″	7	2, 5, 10, 25, 50	51845K59	4.86
1/2″	5/8″	1/16″	—	2, 5, 10, 25, 50	51845K61	5.11
1/2″	3/4″	1/8″	5	2, 5, 10, 20, 25, 50	51845K62	6.71
5/8″	7/8″	1/8″	4	2, 5, 10, 20, 25, 50	51845K63	7.90
3/4″	1″	1/8″	3	2, 5, 10, 20, 25, 50	51845K64	10.49

Braid Reinforced

ID	OD	Wall	Bend Radius	Max. psi @ 68° F	Available Lengths, ft.		Per Ft. ♦
1/16″	0.292″	0.115″	1″	175	2, 5, 10, 20, 25	51735K21	$6.98
1/8″	0.365″	0.12″	1″	175	2, 5, 10, 20, 25	51735K22	8.65
3/16″	0.447″	0.13″	1 1/4″	165	2, 5, 10, 20, 25	51735K23	10.27
1/4″	0.52″	0.135″	1 1/2″	160	2, 5, 10, 20, 25	51735K24	12.19
5/16″	0.592″	0.14″	1 3/4″	140	2, 5, 10, 20, 25	51735K25	12.58
3/8″	0.655″	0.14″	2″	125	2, 5, 10, 20, 25	51735K26	13.83
1/2″	0.8″	0.15″	2 1/2″	130	2, 5, 10, 20, 25	51735K27	16.08
5/8″	0.965″	0.17″	3″	100	2, 5, 10, 20, 25	51735K28	21.00
3/4″	1.1″	0.175″	3 1/2″	85	2, 5, 10, 20, 25	51735K29	13.85
7/8″	1.235″	0.18″	4″	70	2, 5, 10, 20, 25	51735K31	28.63
1″	1.36″	0.18″	5″	65	2, 5, 10, 20, 25	51735K32	31.57
1 1/8″	1.485″	0.18″	6″	45	2, 5, 10, 20, 25	51735K33	38.31
1 1/4″	1.61″	0.18″	6″	55	2, 5, 10, 20, 25	51735K34	41.43

Durable Santoprene Blended Rubber/Plastic Tubing

General Purpose

- Very flexible
- Stretches up to 2 times its length
- Wall Hardness:
  General Purpose: Soft (Shore A: 64)
  Food and Beverage: Firm (Shore A: 73)
- Temperature Range: –76° to +275° F
- Tensile Strength: 1000 psi
- Use compression fittings (see pgs. 165-179)

Made of Santoprene, which is also known as thermoplastic elastomer, this tubing combines the best characteristics of EPDM rubber and polypropylene plastic to provide a highly durable material that's fatigue resistant. This tubing is ideal for use in peristaltic (squeeze-action) pumps. It can be sterilized with steam (autoclaving) and gas. Not rated for vacuum.

General purpose tubing is resistant to ozone and UV exposure. Use with water, air, and ethylene glycol. Color is opaque black.

Food and beverage tubing is resistant to ozone. Use with water, air, and food and beverage. Material meets UL 94HB for flammability and is FDA CFR21 177.1210 compliant. Color is opaque light brown.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
General Purpose							
1/16″	3/16″	1/16″	3/4″	34	25, 50	51225K21	$0.26
1/8″	1/4″	1/16″	1″	19	25, 50	51225K22	.31
3/16″	5/16″	1/16″	1″	13	25, 50	51225K24	.40
3/16″	3/8″	3/32″	1 1/2″	19	10, 25, 50	51225K25	.65
1/4″	3/8″	1/16″	1 1/2″	10	25, 50	51225K27	.49
1/4″	7/16″	3/32″	1 3/4″	16	10, 25, 50	51225K28	.81
1/4″	1/2″	1/8″	2″	19	10, 25, 50	51225K29	1.16
5/16″	7/16″	1/16″	1 3/4″	8	10, 25, 50	51225K32	.61
5/16″	1/2″	3/32″	2″	12	10, 25, 50	51225K33	.96
3/8″	1/2″	1/16″	2″	7	10, 25, 50	51225K35	.67
3/8″	9/16″	3/32″	2 1/4″	10	10, 25, 50	51225K36	1.10
3/8″	5/8″	1/8″	2 1/2″	13	5, 10, 25, 50	51225K37	1.56
7/16″	9/16″	1/16″	2 1/4″	6	10, 25, 50	51225K39	.81
1/2″	5/8″	1/16″	2 1/2″	6	10, 25, 50	51225K41	.90
1/2″	11/16″	3/32″	2 3/4″	8	10, 25, 50	51225K42	1.38
1/2″	3/4″	1/8″	3″	10	5, 10, 25, 50	51225K43	1.94
5/8″	13/16″	3/32″	2 1/2″	7	5, 10, 25, 50	51225K44	1.68
5/8″	7/8″	1/8″	3 1/2″	8	5, 10, 25, 50	51225K45	2.29
3/4″	1″	1/8″	4″	7	5, 10, 25, 50	51225K47	2.67
1″	1 1/4″	1/8″	5″	6	5, 10, 25, 50	51225K48	3.09
Food and Beverage							
1/16″	3/16″	1/16″	1/2″	37	25, 50	51245K21	.28
1/8″	1/4″	1/16″	3/4″	21	25, 50	51245K22	.35
3/16″	5/16″	1/16″	1″	14	25, 50	51245K24	.44
1/4″	3/8″	1/16″	1″	11	25, 50	51245K27	.54
1/4″	1/2″	1/8″	1 1/2″	21	10, 25, 50	51245K29	1.27
5/16″	7/16″	1/16″	1 1/4″	9	10, 25, 50	51245K32	.66
3/8″	1/2″	1/16″	1 1/2″	13	10, 25, 50	51245K35	.74
3/8″	5/8″	1/8″	1 3/4″	14	5, 10, 25, 50	51245K37	1.71
1/2″	3/4″	1/8″	2 1/4″	11	5, 10, 25, 50	51245K43	2.12
5/8″	7/8″	1/8″	2 1/2″	9	5, 10, 25, 50	51245K45	2.52
3/4″	1″	1/8″	3″	8	5, 10, 25, 50	51245K47	2.93
1″	1 1/4″	1/8″	3 3/4″	6	2, 5, 10, 25, 50	51245K48	3.39

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

For information about tubing, see page 118.

For information about the chemical compatibility of the blended rubber/plastic tubing on this page, go to mcmaster.com and search for **51075KAC**.

Durable Norprene Blended Rubber/Plastic Tubing

- Formulation:
  General Purpose: A-60-G
  Food and Beverage: A-60-F
- Flexible
- Stretches up to 2 times its length
- Wall Hardness: Soft (Shore A: 61)
- Temperature Range: –75° to +275° F
- Tensile Strength: 1000 psi
- Use barbed fittings (see pgs. 156-165)

General Purpose

This Norprene tubing is a blend of EPDM rubber and polypropylene plastic to provide a highly durable material that's resistant to fatigue, ozone, and UV exposure. Also known as thermoplastic elastomer, this tubing can withstand vacuum up to 29.9″ Hg @ 73° F, unless noted. This tubing is ideal for use in peristaltic (squeeze-action) pumps. It can be sterilized with steam (autoclaving) and chemicals.

General purpose tubing is opaque black. Use with water, air, and ethylene glycol.

Food and beverage tubing is opaque beige. Use with water, dairy, and food and beverage. Material meets 3-A sanitary requirements and NSF 51, plus it is FDA CFR21 177.2600 compliant.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
General Purpose							
1/16″	3/16″	1/16″	1/4″	34	10, 25, 50	51075K21	$0.72
1/8″	1/4″	1/16″	1/2″	19	10, 25, 50	51075K22	.74
1/8″	3/8″	1/8″	1/2″	34	10, 25, 50	51075K23	1.42
3/16″	5/16″	1/16″	3/4″	13	10, 25, 50	51075K24	.81
3/16″	3/8″	3/32″	1/2″	19	10, 25, 50	51075K51	1.21
3/16″	9/16″	3/16″	1/4″	34	2, 5, 10, 25, 50	51075K52	3.23
1/4″	3/8″	1/16″	7/8″	10	10, 25, 50	51075K27	.90
1/4″	7/16″	3/32″	3/4″	15	10, 25, 50	51075K28	1.48
1/4″	1/2″	1/8″	3/4″	19	5, 10, 25, 50	51075K29	2.17
1/4″	5/8″	3/16″	1/2″	26	2, 5, 10, 25, 50	51075K53	3.53
5/16″	7/16″	1/16″	1 1/4″	8	10, 25, 50	51075K32★	1.14
5/16″	1/2″	3/32″	1″	12	5, 10, 25, 50	51075K33	1.74
5/16″	13/16″	1/4″	1/2″	28	2, 5, 10, 20, 25, 50	51075K54	5.99
3/8″	1/2″	1/16″	1 3/8″	7	5, 10, 25, 50	51075K35★	1.28
3/8″	9/16″	3/32″	1 1/2″	10	5, 10, 25, 50	51075K36	2.08
3/8″	5/8″	1/8″	1 1/8″	13	5, 10, 25, 50	51075K37	2.87
7/16″	9/16″	1/16″	2 1/4″	6	5, 10, 25, 50	51075K39★	2.37
1/2″	5/8″	1/16″	3″	6	5, 10, 25, 50	51075K41★	1.88
General Purpose (Cont.)							
1/2″	11/16″	3/32″	2 1/4″	8	5, 10, 25, 50	51075K42★	$2.78
1/2″	3/4″	1/8″	1 1/8″	10	2, 5, 10, 25, 50	51075K56★	3.60
5/8″	13/16″	3/32″	3 1/4″	7	2, 5, 10, 25, 50	51075K44★	3.74
5/8″	7/8″	1/8″	2 3/4″	8	2, 5, 10, 25, 50	51075K45★	4.03
3/4″	1″	1/8″	3 1/2″	7	2, 5, 10, 25, 50	51075K47★	4.65
1″	1 1/4″	1/8″	5″	6	2, 5, 10, 20, 25, 50	51075K48★	6.02
Food and Beverage							
1/16″	3/16″	1/16″	1/4″	34	10, 25, 50	52035K12	.80
1/8″	1/4″	1/16″	1/2″	19	10, 25, 50	52035K14	.92
3/16″	5/16″	1/16″	3/4″	13	10, 25, 50	52035K16	1.29
1/4″	3/8″	1/16″	1 1/4″	10	10, 25, 50	52035K19♣	1.58
1/4″	1/2″	1/8″	3/4″	19	5, 10, 25, 50	52035K23	2.73
5/16″	7/16″	1/16″	1 1/2″	8	5, 10, 25, 50	52035K26■	1.81
3/8″	1/2″	1/16″	2 1/4″	7	5, 10, 25, 50	52035K28▲	2.68
3/8″	5/8″	1/8″	1 1/4″	13	2, 5, 10, 25, 50	52035K29	4.26
1/2″	3/4″	1/8″	2″	10	2, 5, 10, 25, 50	52035K37♣	4.62
5/8″	7/8″	1/8″	3 1/4″	8	2, 5, 10, 25, 50	52035K38■	5.06
3/4″	1″	1/8″	4″	7	2, 5, 10, 25, 50	52035K39▲	5.74

★ Not rated for vacuum. ♣ Vacuum rating is 26″ Hg @ 73° F. ■ Vacuum rating is 17″ Hg @ 73° F. ▲ Vacuum rating is 11″ Hg @ 73° F.

High-Performance Blended Rubber/Plastic Tubing

- Flexible
- Stretches up to 2 times its length
- Wall Hardness: Soft (Shore A: 64)
- Temp. Range: –60° to +275° F
- Tensile Strength: 1000 psi
- Use barbed fittings (see pgs. 156-165)

Made from a special blend of rubber and plastic, this highly durable tubing will last longer than silicone and other blended materials. Also known as PharMed BPT, this opaque tan material is soft and flexible, so it is ideal for use in peristaltic (squeeze-action) pumps. Use with water, air, food and beverage, and ethylene glycol. Material meets NSF 51 and is FDA CFR21 177.2600 compliant. It can be sterilized with steam (autoclaving), gas, and radiation.

Vacuum-rated tubing will withstand vacuum pressure up to 29.9″ Hg @ 73° F.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.		Per Ft. ♦
Standard							
1/8″	3/16″	1/32″	1/2″	13	2, 5, 10, 25	50345K78	$4.02
1/4″	3/8″	1/16″	7/8″	13	2, 5, 10, 25	50345K79	5.14
5/16″	7/16″	1/16″	1 1/4″	11	2, 5, 10, 25	50345K68	5.39
3/8″	1/2″	1/16″	1 3/8″	9	2, 5, 10, 25	50345K81	5.77
1/2″	3/4″	1/8″	1 1/8″	10	2, 5, 10, 20, 25	50345K71	9.13
5/8″	7/8″	1/8″	2 3/4″	11	2, 5, 10, 20, 25	50345K72	10.79
3/4″	1″	1/8″	3 1/2″	9	2, 5, 10, 20, 25	50345K74	15.06
Vacuum Rated							
0.02″	0.145″	1/16″	1/8″	115	5, 10, 25	50345K61	$2.78
1/32″	5/32″	1/16″	1/8″	78	5, 10, 25	50345K62	3.30
1/16″	1/8″	1/32″	1/4″	24	5, 10, 25	50345K75	3.67
1/16″	3/16″	1/16″	1/8″	43	2, 5, 10, 25	50345K63	4.09
3/32″	7/32″	1/16″	1/4″	30	2, 5, 10, 25	50345K76	5.30
1/8″	1/4″	1/16″	1/2″	24	2, 5, 10, 25	50345K64	4.25
3/16″	5/16″	1/16″	5/8″	17	2, 5, 10, 25	50345K65	4.36
1/4″	1/2″	1/8″	3/4″	24	2, 5, 10, 20, 25	50345K67	7.92
3/8″	5/8″	1/8″	1 1/8″	17	2, 5, 10, 20, 25	50345K69	7.46

Tubing Reels

Simply pull out as much tubing as you need—a gentle tug activates the spring rewind mechanism to neatly store the tubing for safety. Reels are made of 12-ga. steel with a blue powder-coated finish. Both the inlet and the outlet are a brass female swivel with 1/4″ NPT connection and a Buna-N (nitrile) seal. Includes four 13/32″ mounting holes (mounting bolts not included).

Reels with Braid-Reinforced PVC Tubing—Tubing is clear with a polyester braid reinforcement for extra strength. Due to the braid reinforcement, this tubing is sometimes referred to as hose. Temperature range is –40° to +165° F. Use with water and air. Not rated for vacuum.

Reels with Braid-Reinforced Polyurethane Tubing—This abrasion-resistant tubing is made of clear ether-based polyurethane with a polyester braid reinforcement for extra strength. Due to the braid reinforcement, this tubing is sometimes referred to as hose. Temperature range is –40° to +165° F. Use with water and air. Not rated for vacuum.

Tubing ID	Tubing OD	Tubing Wall	Tubing Max. psi @ 70° F	Tubing Length	Reel, Ht. × Wd. × Dp.		Each
Reel with Braid-Reinforced PVC Tubing							
1/4″	7/16″	3/32″	250	25 ft.	10 3/4″ × 5 1/4″ × 10 5/8″	9869T1	$168.28
Reel with Braid-Reinforced Polyurethane Tubing							
1/4″	1/2″	1/8″	230	25 ft.	10 3/4″ × 5 1/4″ × 10 5/8″	9869T3	232.40
Reel without Tubing							
—	—	—	—	—	10 3/4″ × 5 1/4″ × 10 5/8″	9869T4	140.69

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).

About Metal Tubing

Temperature/Pressure— As the temperature rises, the amount of pressure the tubing can withstand decreases.

Hardness— Compared to plastic and rubber tubing, the range of hardness for metal tubing is relatively small. For example, copper tubing is considered a soft metal while stainless steel is considered a hard metal; this is because copper bends more easily than stainless steel. Some of our tubing will have a hardness indicator, which is measured on the *Rockwell B* scale—for products that do not have this indicator, temper is a good indicator of relative hardness.

Temper— Also known as stress relieving. It is the heat treating or cold working of a metal to achieve the tensile strength and increase toughness.

Tensile Strength— The breaking strength of a material when stretched.

Fittings— The "Use with Fittings Style(s)" below represents all the fittings that can be used with a material. Please see the individual tubing presentation for fitting recommendations. Some tubing can be flared for use with flared fittings; for flaring tools see page 2336. *Note*: Use fittings that are made of the same material as the tubing to avoid electrolytic corrosion, which is generated between dissimilar metals.

Construction

Welded— Also known as "as welded." In this process, tubing is formed by rolling and welding sheet metal; there is a visible seam on the OD and a weld bead on the ID. Use this style when flow restriction is not an issue.

Welded and Drawn— Just like welded tubing, sheet metal is rolled and welded; however there is an additional process that smooths the ID and OD. This added step produces the smoothness and appearance of seamless tubing at a lower cost.

Seamless— A cylinder of material is pierced, creating a uniform tube without a weld or seam. Because it has no weld bead, this process ensures restriction-free flow.

Note: It is your responsibility to determine the suitability of the tubing for your application.

Material	Features	Use with Fitting Style(s)	Page(s)
Type 304 and Type 316 Stainless Steel	*Type 304* has good corrosion resistance. *Type 316* contains molybdenum for excellent resistance to corrosion and pitting. Within these materials, an "L" indicates low carbon content (less than 0.035%), which makes it easier to work with when welding.	Butt weld, quick clamp, compression, and flared; also connect by welding	144-150
Type 321 Stainless Steel	Similar to Type 304 stainless steel, but has the addition of titanium for enhanced corrosion resistance.	Butt weld, compression, and flared	150
Titanium	Strong yet lightweight with excellent corrosion resistance.	Connect by welding	150
Nickel-Copper	Also known as Alloy 400 Monel, it resists corrosion at high temperatures.	Connect by welding	150
Nickel-Chromium	Also called Alloy 600 Inconel. It has the highest temperature rating of any non-stainless steel tubing we offer.	Connect by welding	151
Carbon Steel	Also known as 1010 carbon steel, this is the most popular tubing produced.	Compression, flared, and vacuum	151-152
Aluminum	Lightweight with good corrosion resistance.	Flared; also connect by welding	152-153
Copper—Alloy 122	A soft metal with excellent corrosion resistance.	Wrot-copper solder-end, compression, and flared	153-155
Brass—Alloy 260	Similar to copper but contains 30% zinc, so it has a harder temper and handles higher pressures than copper.	Connect by soft soldering	155

Stainless Steel Tubing

High-Polish Sanitary Stainless Steel Tubing

- Temperature Range: –425° to +1500° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use quick-clamp and butt-weld fittings (see pages 208-211)

Manufactured to 3-A sanitary requirements, this tubing is polished inside and out to a high-luster finish. The ID is polished to a 30 Ra finish; the OD is polished to a 20 Ra finish, except the 1/2″ and 3/4″ sizes which have a 30 Ra finish. This tubing has welded construction, so there's no weld bead on the ID. It has a Rockwell hardness of B90. Use with dairy, food and beverage, and anywhere surface contamination is a concern. Tubing can be sterilized with steam (autoclaving) and gas.

Type 304L stainless steel has good corrosion resistance. ***Type 316L stainless steel*** has excellent corrosion resistance. All tubing is furnished in a sealed cardboard tube.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Tolerance	Max. psi @ 72° F	Type 304L	Each 1 ft.	Each 3 ft.	Each 6 ft.	Type 316L	Each 1 ft.	Each 3 ft.	Each 6 ft.
1/2″	0.37″	0.065″	+.004″/–0.004″	3100	4466K72	$19.14	$49.60	$87.02	4466K82	$23.44	$61.40	$111.64
3/4″	0.62″	0.065″	+.004″/–0.004″	2065	4466K73	20.23	52.42	91.96	4466K83	23.25	60.89	110.70
1″	0.87″	0.065″	+.002″/–0.008″	1500	4466K52	15.61	40.45	70.96	4466K58	15.86	41.54	75.52
1 1/2″	1.37″	0.065″	+.002″/–0.008″	1000	4466K53	19.99	51.80	90.88	4466K59	20.68	54.16	98.48
2″	1.87″	0.065″	+.002″/–0.011″	750	4466K54	24.24	62.80	110.18	4466K6	28.22	73.91	134.38
2 1/2″	2.37″	0.065″	+.002″/–0.011″	600	4466K55	32.37	83.86	147.12	4466K61	34.97	91.59	166.52
3″	2.87″	0.065″	+.003″/–0.012″	500	4466K56	38.09	98.68	173.12	4466K62	43.49	113.90	207.09
4″	3.83″	0.083″	+.003″/–0.015″	500	4466K57	74.36	192.66	338.00	4466K63	75.97	198.96	361.74
6″	5.78″	0.109″	+.030″/–0.030″	435	4466K84	241.41	710.83	1,341.18	4466K85	269.25	822.72	1,495.86

Ultra-High-Polish Type 316/316L Stainless Steel Tubing

- Temperature Range: –425° to +1500° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Moderate tensile (stretching) strength
- Use quick-clamp fittings (see pages 208-210)

Not only does this Type 316/316L stainless steel tubing meet 3-A sanitary requirements, it also meets ASME BPE2005 (bioprocessing equipment standards) for pharmaceutical, biotechnology, and other high-purity applications. Use with water, deionized water, air, dairy, and hydraulic oil.

The *1/2″ OD* tubing has seamless construction and the *3/4″ OD* tubing is welded. The OD is polished to a 30 Ra finish. The *1″-2″ OD* tubing has welded construction; the ID is polished to a 20 Ra finish and the OD is polished to a 30 Ra finish. All tubing has a Rockwell hardness of B90 and a wall thickness of 0.065″. Meets ASTM A269 and A270. Tubing can be sterilized with steam (autoclaving), gas, and chemicals. Each tube is capped, put in a plastic sleeve, then sealed in a cardboard tube.

To Order: Please specify 1-, 3-, or 6-ft. length.

Ga.	OD	ID	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
16	1/2″	0.37″	±.005″	3000	3334K74	$24.55	$62.60	$122.75
16	3/4″	0.62″	±.005″	2000	3334K94	24.51	62.50	122.55
16	1″	0.87″	±.005″	1000	3334K16	24.21	61.75	121.07
16	1 1/2″	1.37″	±.008″	1000	3334K11	26.77	68.25	133.83
16	2″	1.87″	±.008″	750	3334K12	33.39	85.15	166.97

For information about metal tubing, see page 144.

Stainless Steel Welded Tubing

- Temperature Range:
  Type 304: –423° to +1500° F
  Type 316: –325° to +1500° F
- Bendable: Yes, with bending tool
- Flareable: No
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use stainless steel compression fittings and butt-weld fittings (see pages 172-175 and 211)

Also known as "as welded" tubing, this tubing has a weld bead on the ID—choose it as an economical alternative in applications that don't require the smooth interior of seamless or welded and drawn tubing. This tubing has a Rockwell hardness of B90. Use with water, deionized water, air, natural gas, oil, and hydraulic oil. Meets ASTM A269. Tubing can be sterilized with chemicals.

Type 304 stainless steel has good corrosion resistance.

Type 316 stainless steel has excellent corrosion resistance.

To Order: For straight lengths, please specify 1-, 3-, or 6-ft. length where prices are shown.

Straight Lengths

OD	ID	Wall	OD Tolerance	Max. psi @ 72° F	Type 304	Each 1 ft.	Each 3 ft.	Each 6 ft.	Type 316	Each 1 ft.	Each 3 ft.	Each 6 ft.
1/8″	0.093″	0.016″	±.005″	3,923	8989K111	—	$5.41	$8.20	89995K178	—	$9.99	$15.13
1/8″	0.085″	0.02″	±.005″	4,904	8989K121	—	5.46	8.28	89995K188	$9.52	23.28	35.27
1/8″	0.069″	0.028″	±.005″	7,140	8989K131	—	6.89	10.44	89995K208	10.79	26.39	39.98
1/8″	0.055″	0.035″	±.005″	8,582	8989K711	—	9.03	13.68	89995K221	10.26	25.08	38.00
1/8″	0.027″	0.049″	±.005″	12,014	—	—	—	—	89995K231	20.53	50.19	76.04
3/16″	0.148″	0.02″	±.006″	3,303	8989K151	—	7.02	10.65	89995K238	11.38	27.83	42.16
3/16″	0.132″	0.028″	±.006″	4,747	8989K161	—	9.01	13.65	89995K248	7.20	17.60	26.67
3/16″	0.118″	0.035″	±.006″	5,780	8989K211	—	8.17	12.38	89995K258	6.35	15.52	23.51
3/16″	0.09″	0.049″	±.006″	8,093	8989K171	—	13.56	20.55	89995K268	20.26	49.53	75.04
1/4″	0.23″	0.01″	±.005″	1,250	8989K181	—	6.72	10.18	89995K278	23.97	58.59	88.78
1/4″	0.218″	0.016″	±.005″	2,000	8989K321	—	6.52	9.88	89995K398	14.15	34.60	52.42
1/4″	0.21″	0.02″	±.005″	2,500	8989K191	—	5.79	8.78	89995K288	5.51	13.46	20.40
1/4″	0.194″	0.028″	±.005″	3,570	8989K441	—	6.17	9.35	89995K412	—	7.73	11.71
1/4″	0.18″	0.035″	±.005″	4,375	8989K721	—	6.52	9.88	89995K312	—	6.70	10.14
1/4″	0.152″	0.049″	±.005″	6,125	8989K731	—	7.46	11.30	89995K322	—	8.59	13.02
1/4″	0.12″	0.065″	±.005″	8,125	8989K221	—	12.51	18.95	89995K418	—	13.05	19.77
5/16″	0.273″	0.02″	±.006″	2,005	8989K451	—	7.15	11.00	89995K468	10.75	15.53	23.89
5/16″	0.257″	0.028″	±.006″	2,851	8989K461	—	5.65	8.70	89995K488	—	9.17	14.11
5/16″	0.243″	0.035″	±.006″	3,508	8989K741	—	6.19	9.53	89995K508	—	9.89	15.22
5/16″	0.215″	0.049″	±.006″	4,912	8989K231	—	8.85	13.62	89995K518	11.24	16.24	24.98
5/16″	0.183″	0.065″	±.006″	6,515	8989K749	$11.84	17.10	26.30	89995K528	11.58	16.72	25.73
3/8″	0.335″	0.02″	±.005″	1,678	8989K471	—	6.63	10.20	89995K538	15.15	21.89	33.67
3/8″	0.319″	0.028″	±.005″	2,380	8989K481	—	5.75	8.85	89995K548	—	7.77	11.96
3/8″	0.305″	0.035″	±.005″	2,936	8989K761	—	6.50	10.00	89995K33	—	—	11.71
3/8″	0.277″	0.049″	±.005″	4,110	8989K771	—	8.09	12.45	89995K342	—	10.93	16.82
3/8″	0.245″	0.065″	±.005″	5,452	8989K238	—	14.25	21.93	89995K558	11.70	16.90	26.00
1/2″	0.46″	0.02″	±.01″	1,337	8989K871	—	8.29	12.75	89995K698	9.87	14.25	21.93
1/2″	0.444″	0.028″	±.01″	1,785	8989K951	—	7.38	11.35	89995K718	9.59	13.85	21.31
1/2″	0.43″	0.035″	±.01″	2,339	8989K781	—	8.20	12.62	89995K35	—	—	13.96
1/2″	0.402″	0.049″	±.01″	3,275	8989K251	—	10.41	16.02	89995K108	—	13.10	20.16
1/2″	0.37″	0.065″	±.005″	4,344	8989K258	11.52	16.64	25.60	89995K358	11.17	16.13	24.82
5/8″	0.585″	0.02″	±.01″	1,071	8989K488	11.13	16.07	24.73	89995K368	—	15.30	23.54
5/8″	0.569″	0.028″	±.01″	1,428	8989K508	—	12.12	18.65	89995K357	—	13.85	21.31
5/8″	0.555″	0.035″	±.01″	1,875	8989K791	—	10.50	16.15	89995K381	9.64	13.92	21.42
5/8″	0.527″	0.049″	±.01″	2,625	8989K268	—	12.95	19.93	89995K118	11.48	16.58	25.51
5/8″	0.495″	0.065″	±.005″	3,482	8989K808	12.17	17.58	27.05	89995K378	10.93	15.79	24.29
3/4″	0.68″	0.035″	±.01″	1,565	8989K818	—	12.99	19.10	89995K428	9.19	14.25	22.98
3/4″	0.652″	0.049″	±.01″	2,190	8989K278	—	16.08	23.65	89995K128	12.76	19.78	31.91
3/4″	0.62″	0.065″	±.005″	2,906	8989K828	14.80	18.99	27.92	89995K438	14.39	22.31	35.98
7/8″	0.805″	0.035″	±.01″	1,342	8989K518	13.48	17.29	25.43	89995K588	12.10	18.75	30.24
7/8″	0.777″	0.049″	±.01″	1,879	8989K528	17.13	21.98	32.33	89995K608	12.50	19.38	31.26
1″	0.93″	0.035″	±.01″	1,175	8989K288	11.63	14.93	21.95	89995K138	10.54	16.34	26.36
1″	0.902″	0.049″	±.01″	1,646	8989K838	15.74	20.20	29.70	89995K448	12.74	19.74	31.84
1″	0.87″	0.065″	±.005″	2,183	8989K848	17.00	21.81	32.08	89995K458	13.62	21.10	34.04
1 1/4″	1.18″	0.035″	±.01″	941	8989K308	16.27	20.88	30.70	89995K618	11.33	17.56	28.33
1 1/4″	1.152″	0.049″	±.01″	1,318	8989K428	18.56	23.81	35.02	89995K628	14.31	22.18	35.78
1 1/4″	1.12″	0.065″	±.005″	1,748	8989K328	22.94	29.43	43.28	89995K638	18.74	29.04	46.84
1 1/2″	1.43″	0.035″	±.02″	782	8989K338	17.78	22.81	33.55	89995K648	15.82	24.53	39.56
1 1/2″	1.402″	0.049″	±.02″	1,095	8989K348	22.63	29.04	42.70	89995K658	18.76	29.07	46.89
1 1/2″	1.37″	0.065″	±.02″	1,453	8989K858	29.20	37.47	55.10	89995K478	21.00	32.54	52.49
1 3/4″	1.68″	0.035″	±.02″	671	8989K358	17.80	26.92	43.42	89995K668	17.00	42.51	60.73
1 3/4″	1.652″	0.049″	±.02″	940	8989K368	20.23	30.60	49.35	89995K678	19.20	48.01	68.58
1 3/4″	1.62″	0.065″	±.02″	1,246	8989K378	26.47	40.02	64.55	89995K148	23.48	58.71	83.87
2″	1.93″	0.035″	±.02″	588	8989K388	17.82	26.95	43.47	89995K688	21.37	53.42	76.31
2″	1.902″	0.049″	±.02″	823	8989K408	21.18	32.04	51.67	89995K158	15.39	38.49	54.98
2″	1.87″	0.065″	±.02″	1,091	8989K418	27.18	41.11	66.30	89995K168	18.51	46.28	66.11

Coils

OD	ID	Wall	OD Tolerance	Max. psi @ 72° F	TYPE 304 50-ft. Coils	Each	TYPE 304 100-ft. Coils	Each	TYPE 316 50-ft. Coils	Each	TYPE 316 100-ft. Coils	Each
1/8″	0.085″	0.02″	±.005″	4,904	8989K96	$106.19	8989K61	$174.09	89995K96	$117.47	89995K121	$192.58
1/4″	0.21″	0.02″	±.005″	2,500	8989K91	52.33	8989K62	85.78	89995K91	62.27	89995K122	102.09
1/4″	0.194″	0.028″	±.005″	3,570	8989K97	60.66	8989K63	99.44	89995K97	73.32	89995K123	120.20
5/16″	0.273″	0.02″	±.0055″	2,005	8989K92	50.09	8989K64	92.76	89995K92	55.01	89995K124	112.27
3/8″	0.335″	0.02″	±.005″	1,678	8989K93	55.79	8989K65	103.31	89995K93	61.48	89995K125	125.47
3/8″	0.319″	0.028″	±.005″	2,380	8989K94	70.57	8989K66	130.69	89995K94	74.56	89995K126	152.16
1/2″	0.46″	0.02″	±.005″	1,337	8989K98	70.33	8989K67	130.24	89995K98	78.46	89995K131	160.12

For information about metal tubing, see page 144.

Smooth-Bore Stainless Steel Seamless Tubing

- Temp. Range: Type 304: –425° to +1500° F
  Type 316: –325° to +1500° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use compression, flared, and butt-weld fittings (see pgs. 165-184 and 211)

The seamless inner surface prevents particulate buildup for restriction-free flow. This tubing has a Rockwell hardness of B90. Use with water, air, natural gas, oil, and in boiler applications. Meets ASME SA213 as well as ASTM A213 and A269. Tubing can be sterilized with chemicals.

Type 304 stainless steel has good corrosion resistance. ***Type 316 stainless steel*** has excellent corrosion resistance.

To Order: For straight lengths, please specify 1-, 3-, or 6-ft. length.

Straight Lengths

OD	ID	Wall	OD Tolerance	Max. psi @ 72° F	Type 304	Each 1 ft.	Each 3 ft.	Each 6 ft.	Type 316	Each 1 ft.	Each 3 ft.	Each 6 ft.
1/8"	0.085"	0.02"	±.005"	4,904	89895K711	$9.21	$15.27	$22.46	89785K811	$15.48	$26.16	$53.38
1/8"	0.069"	0.028"	±.005"	7,140	89895K712	9.68	16.06	23.62	89785K812	13.92	23.52	48.00
1/8"	0.055"	0.035"	±.005"	8,582	89895K713	9.11	15.11	22.22	89785K813	15.08	25.48	52.00
1/8"	0.027"	0.049"	±.005"	12,014	89895K714	11.68	19.38	28.50	89785K814	21.46	36.26	74.00
3/16"	0.148"	0.02"	±.005"	3,303	89895K715	10.26	17.01	25.02	89785K815	12.92	21.83	44.55
3/16"	0.132"	0.028"	±.005"	4,747	89895K716	9.38	15.56	22.88	89785K816	13.51	22.83	46.59
3/16"	0.118"	0.035"	±.005"	5,780	89895K717	9.11	15.11	22.22	89785K817	17.05	28.80	58.78
3/16"	0.09"	0.049"	±.005"	8,093	89895K718	10.35	17.16	25.24	89785K818	17.07	28.84	58.85
1/4"	0.23"	0.01"	±.005"	1,250	89895K719	9.02	15.97	23.14	89785K819	17.22	30.47	44.16
1/4"	0.218"	0.016"	±.005"	1,280	—	—	—	—	89785K896	15.95	28.23	40.91
1/4"	0.21"	0.02"	±.005"	2,500	89895K722	9.48	16.78	24.32	89785K822	16.11	28.51	41.32
1/4"	0.194"	0.028"	±.005"	3,750	89895K723	8.75	15.48	22.44	89785K823	14.76	26.11	37.84
1/4"	0.18"	0.035"	±.005"	4,375	89895K724	5.75	10.17	14.74	89785K824	8.69	15.37	22.28
1/4"	0.152"	0.049"	±.005"	6,125	89895K725	6.75	11.94	17.30	89785K825	13.04	23.07	33.43
1/4"	0.12"	0.065"	±.005"	8,125	89895K726	7.57	13.39	19.40	89785K826	11.82	20.92	30.32
1/4"	0.084"	0.083"	±.005"	10,375	89895K727	13.13	23.23	33.66	89785K827	18.14	32.09	46.50
5/16"	0.257"	0.028"	±.005"	2,851	89895K728	8.92	15.73	23.48	89785K828	13.53	29.24	43.64
5/16"	0.243"	0.035"	±.005"	3,508	89895K729	8.83	15.57	23.24	89785K829	17.52	37.86	56.50
5/16"	0.215"	0.049"	±.005"	4,912	89895K731	11.05	19.48	29.08	89785K831	20.39	44.07	65.77
5/16"	0.183"	0.065"	±.005"	6,515	89895K732	11.59	20.44	30.50	89785K832	18.79	40.61	60.61
5/16"	0.147"	0.083"	±.005"	8,320	89895K733	13.54	23.88	35.64	89785K833	23.36	50.48	75.35
3/8"	0.355"	0.01"	±.005"	839	89895K734	17.99	31.72	47.34	89785K834	15.09	32.62	48.68
3/8"	0.335"	0.02"	±.005"	1,678	89895K735	9.36	16.51	24.64	89785K835	15.98	34.53	51.54
3/8"	0.319"	0.028"	±.005"	2,380	89895K736	9.90	17.46	26.06	89785K836	14.94	32.28	48.18
3/8"	0.305"	0.035"	±.005"	2,936	89895K737	7.06	12.45	18.58	89785K837	8.82	19.07	28.46
3/8"	0.277"	0.049"	±.005"	4,110	89895K738	9.10	16.04	23.94	89785K838	11.09	23.97	35.77
3/8"	0.245"	0.065"	±.005"	5,452	89895K739	10.16	17.92	26.74	89785K839	18.79	40.61	60.61
3/8"	0.209"	0.083"	±.005"	6,962	89895K741	15.91	28.05	41.86	89785K841	22.32	48.24	72.00
1/2"	0.46"	0.02"	±.01"	1,337	89895K742	11.76	20.74	30.96	89785K842♣	21.91	47.35	70.67
1/2"	0.444"	0.028"	±.01"	1,785	89895K743	11.59	20.44	30.50	89785K843♣	17.38	37.56	56.06
1/2"	0.43"	0.035"	±.01"	2,339	89895K744	9.10	16.04	23.94	89785K844♣	12.03	26.01	38.82
1/2"	0.402"	0.049"	±.01"	3,275	89895K745	10.08	17.77	26.52	89785K845♣	12.93	27.94	41.70
1/2"	0.37"	0.065"	±.005"	4,344	89895K746	12.30	21.68	32.36	89785K846	18.12	39.15	58.44
1/2"	0.334"	0.083"	±.005"	5,547	89895K747	21.36	37.65	56.20	89785K847	28.58	61.77	92.20
1/2"	0.26"	0.12"	±.005"	8,020	89895K748	24.91	43.91	65.54	89785K848	36.05	77.91	116.28
5/8"	0.585"	0.02"	±.01"	1,071	89895K749	12.12	21.37	31.90	89785K849♣	22.08	47.71	71.21
5/8"	0.569"	0.028"	±.01"	1,428	89895K751	14.52	25.59	38.20	89785K851♣	28.65	61.92	92.42
5/8"	0.555"	0.035"	±.01"	1,875	89895K752	11.15	19.66	29.34	89785K852♣	18.95	40.96	61.13
5/8"	0.527"	0.049"	±.01"	2,625	89895K753	13.63	24.04	35.88	89785K853♣	18.47	39.92	59.58
5/8"	0.495"	0.065"	±.005"	3,482	89895K754	14.96	26.38	39.38	89785K854	26.42	57.10	85.22
5/8"	0.459"	0.083"	±.005"	4,446	89895K755	19.40	34.21	51.06	89785K855	33.98	73.43	109.60
5/8"	0.385"	0.12"	±.005"	6,429	89895K756	25.71	45.33	67.66	89785K856	38.07	82.29	122.82
3/4"	0.68"	0.035"	±.01"	1,565	89895K757	11.31	23.32	35.34	89785K857♣	13.97	31.16	53.72
3/4"	0.652"	0.049"	±.01"	2,190	89895K758	12.22	25.21	38.20	89785K858♣	12.05	26.88	46.35
3/4"	0.62"	0.065"	±.005"	2,906	89895K759	13.35	27.54	41.72	89785K859	20.12	44.87	77.37
3/4"	0.584"	0.083"	±.005"	3,710	89895K761	18.36	37.87	57.38	89785K861	32.60	72.71	125.37
3/4"	0.51"	0.12"	±.005"	5,364	89895K762	21.95	45.28	68.60	89785K862	34.67	77.33	133.33
7/8"	0.805"	0.035"	±.01"	1,342	89895K763	13.43	27.69	41.96	89785K863	22.27	49.68	85.66
7/8"	0.777"	0.049"	±.01"	1,879	89895K764	14.32	29.54	44.76	89785K864	18.63	41.55	71.64
7/8"	0.745"	0.065"	±.01"	2,493	89895K765	17.24	35.56	53.88	89785K865	21.84	48.72	84.00
7/8"	0.635"	0.12"	±.01"	4,602	89895K766	29.80	61.46	93.12	89785K866	29.09	64.89	111.88
1"	0.93"	0.035"	±.01"	1,175	89895K767	13.13	27.07	41.02	89785K867	14.60	32.56	56.14
1"	0.902"	0.049"	±.01"	1,646	89895K768	15.22	31.39	47.56	89785K868	18.76	41.84	72.14
1"	0.87"	0.065"	±.005"	2,183	89895K769	16.86	34.78	52.70	89785K869	20.75	46.30	79.82
1"	0.834"	0.083"	±.005"	2,787	89895K771	25.54	52.67	79.80	89785K871	21.52	48.01	82.78
1"	0.76"	0.12"	±.005"	4,030	89895K772	29.95	61.78	93.60	89785K872	29.69	66.24	114.20
1 1/4"	1.18"	0.035"	±.01"	941	89895K774	16.12	33.24	50.36	89785K874	21.39	47.71	82.26
1 1/4"	1.152"	0.049"	±.01"	1,318	89895K775	18.59	38.33	58.08	89785K875	22.00	49.07	84.60
1 1/4"	1.12"	0.065"	±.005"	1,748	89895K776	23.82	49.13	74.44	89785K876	25.17	56.16	96.82
1 1/4"	1.084"	0.083"	±.005"	2,232	89895K777	30.18	62.24	94.30	89785K877	29.30	65.37	112.70
1 1/4"	1.01"	0.12"	±.005"	3,227	89895K778	33.91	69.95	105.98	89785K878	35.50	79.19	136.54
1 3/8"	1.305"	0.035"	±.01"	857	89895K779	31.80	65.59	99.38	89785K879	22.61	50.44	86.96
1 3/8"	1.277"	0.049"	±.01"	1,199	89895K781	30.62	63.15	95.68	89785K881	28.38	63.31	109.16
1 3/8"	1.245"	0.065"	±.005"	1,591	89895K782	34.51	71.17	107.84	89785K882	29.96	66.83	115.22
1 1/2"	1.402"	0.049"	±.02"	1,095	89895K783	27.07	55.84	84.60	89785K883	33.47	74.66	128.72
1 1/2"	1.37"	0.065"	±.02"	1,453	89895K784	32.42	66.86	101.30	89785K884	36.07	80.46	138.72
1 1/2"	1.31"	0.095"	±.01"	2,123	89895K785	34.66	71.49	108.32	89785K885	54.23	120.96	208.56
1 1/2"	1.26"	0.12"	±.01"	2,682	89895K786	47.52	98.01	148.50	89785K886	56.41	125.84	216.96
1 3/4"	1.62"	0.065"	±.02"	1,246	89895K789	35.86	101.05	162.98	89785K889	44.45	108.23	193.26
2"	1.87"	0.065"	±.02"	1,091	89895K794	38.28	107.88	174.00	89785K894	55.48	135.08	241.22
2"	1.76"	0.12"	±.01"	2,015	89895K795	49.33	139.02	224.22	89785K895	71.98	175.26	312.96

♣ OD tolerance is ±.005".

(Continued on following page)

Smooth-Bore Stainless Steel Seamless Tubing *(Continued from previous page)*

50-ft. Coils

OD	ID	Wall	OD Tolerance	Max. psi @ 72° F	Type 304	Type 304 Each	Type 316	Type 316 Each
1/4"	0.21"	0.02"	±.005"	2,500	89895K522	$271.20	89785K462	$291.55
3/8"	0.335"	0.02"	±.005"	1,678	89895K525	306.38	89785K465	324.76
1/2"	0.46"	0.02"	±.005"	1,337	89895K527	321.09	89785K467	335.53

Extra-Hard Type 304 Stainless Steel Seamless Tubing

- Temperature Range: –325° to +800° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- 1/8 Hard Temper: Moderate tensile (stretching) strength
- Use flared fittings (see pages 180-181)

Unlike other stainless steel tubing, this tubing (which is also known as 1/8 hard) has an extra-hard surface. It's just as corrosion resistant as annealed Type 304 stainless steel, but has higher tensile strength and is stronger and more durable. This tubing has seamless construction. It's commonly used on hydraulic fluid systems, but is also for use with water, deionized water, air, natural gas, and oil. Meets AMS-T-6845. It can be sterilized with steam (autoclaving) and gas. *Note*: Not suitable for welding or brazing.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/4"	0.21"	0.02"	±.003"	3528	9773T11	$13.00	$26.86	$43.32
1/4"	0.18"	0.035"	±.003"	6173	9773T13	13.59	28.09	45.30
3/8"	0.305"	0.035"	±.003"	4132	9773T15	18.58	38.40	61.94
3/8"	0.277"	0.049"	±.003"	5785	9773T16	$22.91	$47.36	$76.38
1/2"	0.444"	0.028"	±.003"	2484	9773T17	19.93	41.20	66.45
1/2"	0.43"	0.035"	±.003"	3105	9773T18	18.55	38.33	61.83

Cleaned and Capped Type 316 Stainless Steel Seamless Tubing

- Temperature Range: –325° to +1500° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use compression, flared, and butt-weld fittings (see pgs. 172-175, 180-181, and 211)

This tubing comes to you cleaned and capped to prevent moisture and dirt from contaminating the inside. It has seamless construction and is made of Type 316 stainless steel for excellent corrosion resistance. Use with water, air, natural gas, oil, and in boiler applications. Meets ASTM A213 and A269. Tubing can be sterilized with steam (autoclaving) and chemicals.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/4"	0.18"	0.035"	±.005"	4375	9797T12	$12.54	$20.79	$33.00
3/8"	0.305"	0.035"	±.005"	2936	9797T14	14.73	24.42	38.76
1/2"	0.43"	0.035"	±.005"	2339	9797T16	18.06	29.94	47.52
3/4"	0.68"	0.035"	±.005"	1565	9797T19	22.71	37.65	59.76

Type 316/316L Stainless Steel Tubing with PVC Coating

- Temperature Range: –35° to +221° F
- Bendable: Yes, by hand
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use compression and flared fittings (see pages 172-175 and 180-181)

The outside of this Type 316/316L stainless steel tubing is covered with PVC to provide extra protection from corrosion. Type 316/316L stainless steel has excellent corrosion resistance. This tubing has welded construction, so there's a weld bead on the ID. It has a Rockwell hardness of B80. Use with water, air, natural gas, and mineral oil. Meets UL 94V2 for flammability. Not rated for sterilization.

To Order: Please specify 10- or 50-ft. coil.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 10 ft.	Each 50 ft.
1/4"	0.18"	0.035"	±.008"	5025	3331K11	$44.53	$222.64
3/8"	0.305"	0.035"	±.008"	3200	3331K12	52.45	262.26
1/2"	0.43"	0.035"	±.008"	2350	3331K13	110.31	551.55

Extreme-Pressure Type 316L Stainless Steel Seamless Tubing

- Temperature Range: –425° to +1200° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- 1/8 Hard Temper: Moderate tensile (stretching) strength
- Use with 5892K fittings (see page 172)

Got a lot of pressure in your job? Then this tubing may be what you need—it handles more pressure than any other tubing we offer. This tubing has seamless construction and is made of Type 316L stainless steel for excellent corrosion resistance. Use with water, air, natural gas, oil, and hydraulic fluid. It can be sterilized with steam (autoclaving), gas, and chemicals.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/4"	1/8"	0.062"	±.003"	15,000	9926T12	$39.66	$91.51	$152.52
3/8"	0.219"	0.078"	±.003"	15,000	9926T13	47.59	109.81	183.02
9/16"	0.344"	0.109"	±.003"	15,000	9926T14	65.59	151.37	252.28

Metric Type 316 Stainless Steel Welded and Drawn Tubing

- Temperature Range: –425° to +600° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Hard Temper: High tensile (stretching) strength
- Connect by welding

This metric tubing has welded and drawn construction, so there is no weld bead on the ID. It's made of Type 316 stainless steel, which has excellent corrosion resistance. Use with water, air, natural gas, and oil. Meets ASTM A908 and Fed. Spec. GG-N-196. It can be sterilized with steam (autoclaving) and chemicals.

To Order: Please specify 0.5-, 1-, or 2-m length.

OD, mm	ID, mm	Wall, mm	OD Toler., mm	Max. psi @ 72° F		Each 0.5 m	Each 1 m	Each 2 m
1	0.5	0.25	±.1	3000	50415K38	$8.90	$15.23	$23.43
2	1.5	0.25	±.1	3000	50415K39	9.10	15.57	23.95
2	1.2	0.4	±.1	4000	50415K41	9.05	15.48	23.82
2	1	0.5	±.1	4000	50415K42	9.00	15.39	23.68
3	2.5	0.25	±.1	3000	50415K15	11.35	19.42	29.87
3	2.2	0.4	±.1	4000	50415K16	11.40	19.50	30.00
3	2	0.5	±.1	4000	50415K17	11.45	19.58	30.13
4	3.5	0.25	±.1	3000	50415K18	11.50	19.67	30.26
4	3.2	0.4	±.1	4000	50415K19	11.60	19.84	30.53
4	3	0.5	±.1	4000	50415K21	11.65	19.93	30.66
5	4.5	0.25	±.1	3000	50415K22	13.80	23.61	36.32
5	4.2	0.4	±.1	4000	50415K23	13.85	23.69	36.45
5	4	0.5	±.1	4000	50415K24	$13.90	$23.78	$36.58
6	5.5	0.25	±.1	3000	50415K25	13.90	23.78	36.58
6	5.2	0.4	±.1	4000	50415K26	13.95	23.86	36.71
6	5	0.5	±.1	4000	50415K27	14.00	23.95	36.85
7	6.5	0.25	±.1	3000	50415K28	21.15	36.18	55.66
7	6	0.5	±.1	4000	50415K31	21.25	36.35	55.92
8	7.5	0.25	±.1	3000	50415K32	27.85	47.64	73.29
8	7.2	0.4	±.1	4000	50415K33	27.90	47.72	73.42
8	7	0.5	±.1	4000	50415K34	27.95	47.81	73.55
10	9	0.5	±.1	1800	50415K35	56.00	95.79	147.37
12	11	0.5	±.1	1500	50415K36	75.90	129.83	199.74
16	15	0.5	±.1	1000	50415K37	87.00	148.82	228.95

For information about metal tubing, see page 144.

Metric Type 316 Stainless Steel Seamless Tubing for Instrumentation Fittings

- Temperature Range: –325° to +1500° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use Yor-Lok compression fittings (see page 176)

Designed for use with Yor-Lok, Swagelok®, and Parker A-Lok metric fittings, this tubing meets ASTM A269. It's made of Type 316 stainless steel, which has excellent corrosion resistance. This tubing has seamless construction. Use with water, deionized water, air, natural gas, oil, and hydraulic fluid. It can be sterilized with steam (autoclaving), gas, and chemicals.

To Order: Please specify 0.5-, 1-, or 2-m length.

OD, mm	ID, mm	Wall, mm	OD Toler. mm	Max. psi @ 72° F		Each 0.5 m	1 m	2 m
6	4	1	±.13	5100	9811T12	$28.57	$47.35	$81.64
8	5	1.5	±.13	5800	9811T13	47.81	79.23	136.60
10	6	2	±.13	6300	9811T14	65.19	108.02	186.25
12	8	2	±.13	5200	9811T15	72.10	119.48	206.00

Precision Type 304 Stainless Steel Welded and Drawn Tubing

- Temperature Range: –425° to +600° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Straight: Hard Temper: High tensile (stretching) strength
  Coils: Soft Temper: Low tensile (stretching) strength
- Connect by welding

Unlike our welded stainless steel tubing that has a raised weld bead, this welded and drawn tubing is manufactured to tighter tolerances with no weld bead on the ID or OD. Use with water, air, natural gas, oil, and hydraulic fluid. Meets ASTM A908 and Fed. Spec. GG-N-196.

Straight lengths can be sterilized with steam (autoclaving) and radiation. OD tolerance is +.004″/–.002″. **To Order:** Please specify 12″ or 28″ length where prices are shown.

Coils can be sterilized with steam (autoclaving), gas, and chemicals. OD tolerance is ±.002″.

Straight Lengths

OD	ID	Wall	Max. psi @ 72° F		Each 12″	28″
3/32″	0.084″	0.005″	3500	6100K111	—	$13.40
3/32″	0.074″	0.01″	3500	6100K117	—	12.75
3/32″	0.064″	0.015″	3500	6100K118	—	13.07
3/32″	0.054″	0.02″	3500	6100K141	—	13.56
3/32″	0.038″	0.028″	3500	6100K119	—	15.17
3/32″	0.024″	0.035″	3500	6100K121	—	15.65
1/8″	0.115″	0.005″	3500	6100K112	—	14.35
1/8″	0.105″	0.01″	3500	6100K122	—	13.87
1/8″	0.095″	0.015″	3500	6100K123	—	14.19
1/8″	0.085″	0.02″	3500	6100K142	—	14.19
1/8″	0.069″	0.028″	3500	6100K124	—	14.83
1/8″	0.055″	0.035″	3500	6100K162	—	15.96
5/32″	0.146″	0.005″	3500	6100K171	$9.26	15.97
5/32″	0.136″	0.01″	3500	6100K181	8.93	15.39
5/32″	0.126″	0.015″	3500	6100K191	9.11	15.71
5/32″	0.116″	0.02″	3500	6100K251	9.36	16.13
5/32″	0.1″	0.028″	3500	6100K261	9.40	16.21
5/32″	0.086″	0.035″	3500	6100K271	10.01	17.26
3/16″	0.178″	0.005″	3500	6100K281	10.19	17.57
3/16″	0.168″	0.01″	3500	6100K291	9.73	16.77
3/16″	0.158″	0.015″	3500	6100K311	9.91	17.09
3/16″	0.148″	0.02″	3500	6100K321	10.19	17.57
3/16″	0.132″	0.028″	3500	6100K331	10.29	17.74
3/16″	0.118″	0.035″	3500	6100K371	10.67	18.39
7/32″	0.208″	0.005″	3500	6100K337	11.23	19.36
7/32″	0.198″	0.01″	3500	6100K338	10.75	18.54
7/32″	0.188″	0.015″	3500	6100K339	$10.94	$18.86
7/32″	0.178″	0.02″	3500	6100K341	11.14	19.20
7/32″	0.162″	0.028″	3500	6100K342	11.51	19.85
7/32″	0.148″	0.035″	3500	6100K343	11.60	20.00
1/4″	0.24″	0.005″	3500	6100K344	12.91	22.26
1/4″	0.23″	0.01″	3500	6100K345	11.50	19.83
1/4″	0.22″	0.015″	3500	6100K346	11.69	20.15
1/4″	0.21″	0.02″	3500	6100K347	12.07	20.81
1/4″	0.194″	0.028″	3500	6100K348	12.26	21.14
1/4″	0.18″	0.035″	3500	6100K349	12.73	21.94
9/32″	0.271″	0.005″	2000	6100K356	13.93	24.02
9/32″	0.261″	0.01″	2000	6100K357	12.35	21.29
9/32″	0.251″	0.015″	2000	6100K358	12.53	21.61
9/32″	0.241″	0.02″	2500	6100K359	12.81	22.09
9/32″	0.225″	0.028″	2500	6100K361	13.57	23.39
9/32″	0.211″	0.035″	3000	6100K362	14.03	24.19
5/16″	0.292″	0.01″	2500	6100K351	14.12	24.35
5/16″	0.282″	0.015″	3000	6100K352	12.81	22.09
5/16″	0.272″	0.02″	3500	6100K353	13.00	22.41
5/16″	0.256″	0.028″	3500	6100K354	13.18	22.73
5/16″	0.242″	0.035″	3500	6100K355	13.84	23.87
3/8″	0.355″	0.01″	2000	6100K363	14.87	25.64
3/8″	0.345″	0.015″	2000	6100K364	14.03	24.19
3/8″	0.335″	0.02″	2000	6100K365	14.22	24.51
3/8″	0.319″	0.028″	2500	6100K366	14.97	25.81
3/8″	0.305″	0.035″	3000	6100K367	15.43	26.61

50-ft. Coils

OD	ID	Wall	Max. psi @ 72° F		Each
3/32″	0.073″	0.01″	3500	6100K43	$119.19
1/8″	0.105″	0.01″	3500	6100K44	130.48
5/32″	0.136″	0.01″	3500	6100K45	149.84
3/16″	0.167″	0.01″	3000	6100K46	$167.90
7/32″	0.198″	0.01″	3000	6100K47	184.19
1/4″	0.23″	0.01″	2500	6100K48	197.42

High-Pressure Stainless Steel Tubing

Type 304

- Temperature Range: –425° to +600° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Hard Temper: High tensile (stretching) strength
- Connect by welding

Type 316

- Temperature Range: –148° to +750° F
- Bendable: Yes, with bending tool
- Flareable: No
- Soft (annealed) Temper: Low tensile (stretching) strength
- Use compression fittings (see pages 174-175)

Also known as capillary tubing, this thin tubing comes in a wide range of wall thicknesses for high-pressure applications. This tubing can be sterilized with steam (autoclaving).

Type 304 stainless steel has good corrosion resistance and good machinability. It has welded and drawn construction, so there's no weld bead on the ID. Use with water, air, natural gas, and oil. Meets Fed. Spec. GG-N-196, as well as ASTM A269 and A908. OD tolerance is +.004″/–.002″.

Type 316 stainless steel has excellent corrosion resistance. This tubing has seamless construction and a Rockwell hardness of B95. It's a good choice for liquid chromatography applications. Also use with air, natural gas, oil, and hydraulic fluid. Meets ASTM A213 and A269. OD tolerance is +.002″/–.000″.

OD	ID	Wall	Max. psi @ 72° F		Each
Type 304—1-ft. Straight Lengths					
1/16″	0.052″	0.005″	5,000	51755K11	$4.24
1/16″	0.042″	0.01″	7,000	51755K13	4.54
1/16″	0.032″	0.015″	7,000	51755K15	5.91
1/16″	0.022″	0.02″	7,000	51755K17	6.21
1/16″	0.012″	0.025″	7,000	51755K19	10.91
Type 316—5-ft. Coils					
1/16″	0.046″	0.008″	3,900	51755K37	111.64
1/16″	0.04″	0.011″	7,300	51755K36	100.78
1/16″	0.03″	0.016″	10,000	51755K35	41.10
1/16″	0.02″	0.021″	12,000	51755K34	35.72
1/16″	0.01″	0.026″	13,000	51755K33	41.10
1/16″	0.007″	0.028″	13,600	51755K32	41.10
1/16″	0.005″	0.029″	13,700	51755K31	46.60

For information about metal tubing, see page 144.

Precision Miniature Stainless Steel Welded and Drawn Tubing

- Temperature Range: –425° to +600° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Hard Temper: High tensile (stretching) strength
- Connect by welding

Also known as hypodermic tubing, this small-diameter tubing is made to tight tolerances, so it's great for miniature applications such as needles or instruments. It has welded and drawn construction, so there is no weld bead on the ID. It also offers excellent machinability. Use with water, air, natural gas, and oil. Meets ASTM A908 and A269, as well as Fed. Spec. GG-N-196. Tubing can be sterilized with steam (autoclaving).

Type 304 stainless steel has good corrosion resistance. ***Type 316 stainless steel*** has excellent corrosion resistance.

To Order: Please specify 1- or 3-ft. length.

Gauge	OD	ID	Wall	OD Tolerance	Max. psi @ 72° F	Type 304	Each 1 ft.	Each 3 ft.	Type 316	Each 1 ft.	Each 3 ft.
33	0.008″	0.004″	0.002″	±.0005″	7000	8988K84	$5.91	$15.55	89875K87	$11.24	$29.58
32	0.009″	0.004″	0.0025″	±.0005″	7000	8988K83	5.81	15.30	89875K83	11.00	28.94
31	0.01″	0.005″	0.0025″	±.0005″	7000	8988K81	5.43	14.28	89875K93	10.71	28.18
30	0.012″	0.006″	0.003″	±.0005″	7000	8988K79	5.14	13.52	89875K99	10.37	27.28
29	0.013″	0.007″	0.003″	±.0005″	7000	8988K78	5.09	13.39	89875K98	10.32	27.16
28	0.014″	0.007″	0.0035″	±.0005″	7000	8988K77	5.04	13.26	89875K97	10.27	27.03
27	0.016″	0.01″	0.003″	±.0005″	6000	8987K75	6.15	16.19	89935K95	11.54	30.36
27	0.016″	0.008″	0.004″	±.0005″	7000	8988K76	4.99	13.13	89875K96	9.93	26.14
26	0.018″	0.012″	0.003″	±.0005″	6000	8987K73	6.11	16.07	89935K93	11.54	30.36
26	0.018″	0.01″	0.004″	±.0005″	7000	8988K74	4.99	13.13	89875K94	9.93	26.14
25	0.02″	0.016″	0.002″	±.0005″	4000	5560K69	7.27	19.12	89935K89	13.45	35.39
25	0.02″	0.012″	0.004″	±.0005″	6000	8987K71	6.11	16.07	89935K91	11.49	30.24
25	0.02″	0.01″	0.005″	±.0005″	7000	8988K72	4.94	13.01	89875K92	9.88	26.01
24	0.022″	0.016″	0.003″	±.0005″	4000	5560K66	7.52	19.79	89935K86	13.45	35.39
24	0.022″	0.014″	0.004″	±.0005″	6000	8987K67	6.11	16.07	89935K87	11.49	30.24
24	0.022″	0.012″	0.005″	±.0005″	7000	8988K68	4.94	13.01	89875K88	9.88	26.01
23	0.025″	0.02″	0.0025″	±.0005″	4000	5560K63	7.52	19.79	89935K83	13.45	35.39
23	0.025″	0.017″	0.004″	±.0005″	6000	8987K64	6.06	15.94	89935K84	11.44	30.11
23	0.025″	0.013″	0.006″	±.0005″	7000	8988K65	4.89	12.88	89875K85	9.83	25.88
22	0.028″	0.021″	0.0035″	±.0005″	4000	5560K59	7.47	19.67	89935K79	13.21	34.76
22	0.028″	0.02″	0.004″	±.0005″	6000	8987K61	6.06	15.94	89935K82	11.44	30.11
22	0.028″	0.016″	0.006″	±.0005″	7000	8988K62	4.89	12.88	89875K82	9.83	25.88
21	0.032″	0.025″	0.0035″	±.0005″	2000	5560K56	7.47	19.67	89935K76	13.21	34.76
21	0.032″	0.023″	0.0045″	±.0005″	3000	8987K57	6.01	15.81	89935K77	11.39	29.98
21	0.032″	0.02″	0.006″	±.0005″	4000	8988K58	4.89	12.88	89875K78	9.79	25.75
20	0.0355″	0.0275″	0.004″	±.0005″	2000	5560K53	7.43	19.54	89935K73	13.21	34.76
20	0.0355″	0.0255″	0.005″	±.0005″	3000	8987K54	6.01	15.81	89935K74	11.39	29.98
20	0.0355″	0.0235″	0.006″	±.0005″	4000	8988K55	4.94	13.01	89875K75	9.79	25.75
19	0.042″	0.035″	0.0035″	±.0005″	2000	5560K49	7.43	19.54	89935K69	13.21	34.75
19	0.042″	0.032″	0.005″	±.0005″	3000	8987K51	6.01	15.81	89935K71	11.39	29.98
19	0.042″	0.027″	0.0075″	±.0005″	4000	8988K52	5.04	13.26	89875K72	9.83	25.88
18	0.05″	0.042″	0.004″	±.0005″	2000	5560K46	7.47	19.67	89935K66	13.21	34.75
18	0.05″	0.038″	0.006″	±.0005″	3000	8987K47	6.06	15.94	89935K67	11.44	30.11
18	0.05″	0.033″	0.0085″	±.0005″	4000	8988K48	4.99	13.13	89875K68	9.88	26.01
17	0.058″	0.05″	0.004″	±.0005″	2000	5560K43	7.47	19.67	89935K63	13.21	34.75
17	0.058″	0.048″	0.005″	±.0005″	3000	8987K44	6.15	16.19	89935K64	11.44	30.11
17	0.058″	0.042″	0.008″	±.0005″	4000	8988K45	5.04	13.26	89875K65	9.88	26.01
16	0.065″	0.055″	0.005″	±.0005″	2000	5560K39	7.52	19.79	89935K59	13.30	35.01
16	0.065″	0.053″	0.006″	±.0005″	3000	8987K39	6.06	15.94	89935K62	11.49	30.24
16	0.065″	0.047″	0.009″	±.0005″	4000	8988K42	5.09	13.39	89875K62	9.93	26.14
15	0.072″	0.063″	0.0045″	±.0005″	2000	5560K36	7.52	19.79	89935K56	13.30	35.01
15	0.072″	0.06″	0.006″	±.0005″	3000	8987K37	6.11	16.07	89935K57	11.49	30.24
15	0.072″	0.054″	0.009″	±.0005″	4000	8988K38	5.14	13.52	89875K58	9.98	26.27
14	0.083″	0.072″	0.0055″	±.001″	2000	5560K33	7.57	19.92	89935K53	13.35	35.14
14	0.083″	0.067″	0.008″	±.001″	3000	8987K34	6.20	16.32	89935K54	11.54	30.36
14	0.083″	0.063″	0.01″	±.001″	4000	8988K35	5.23	13.77	89875K55	10.03	26.39
13	0.095″	0.085″	0.005″	±.001″	2000	5560K29	7.67	20.19	89935K49	13.45	35.40
13	0.095″	0.077″	0.009″	±.001″	3000	8987K31	6.66	17.53	89935K51	11.67	30.71
13	0.095″	0.071″	0.012″	±.001″	4000	8988K32	5.72	15.05	89875K52	10.41	27.40
12	0.109″	0.095″	0.007″	±.001″	2000	5560K26	7.72	20.32	89935K46	13.50	35.52
12	0.109″	0.091″	0.009″	±.001″	3000	8987K27	6.76	17.79	89935K47	11.77	30.97
12	0.109″	0.085″	0.012″	±.001″	4000	8988K28	5.82	15.31	89875K48	10.51	27.65
11	0.12″	0.106″	0.007″	±.001″	2000	5560K23	7.72	20.32	89935K43	13.70	36.04
11	0.12″	0.1″	0.01″	±.001″	3000	8987K24	6.86	18.05	89935K44	11.87	31.24
11	0.12″	0.094″	0.013″	±.001″	4000	8988K25	5.92	15.57	89875K45	10.61	27.91
10	0.134″	0.118″	0.008″	±.001″	2000	5560K19	7.72	20.32	89935K39	13.85	36.44
10	0.134″	0.114″	0.01″	±.001″	3000	8987K21	6.96	18.31	89935K41	11.97	31.49
10	0.134″	0.106″	0.014″	±.001″	4000	8988K22	6.01	15.82	89875K42	10.70	28.17
9	0.148″	0.135″	0.0065″	±.001″	2000	5560K16	7.77	20.44	89935K36	13.89	36.56
9	0.148″	0.128″	0.01″	±.001″	3000	8987K17	7.06	18.58	89935K37	12.06	31.75
9	0.148″	0.118″	0.015″	±.001″	4000	8988K18	6.11	16.08	89875K38	10.80	28.42
8	0.165″	0.15″	0.0075″	±.001″	2000	5560K13	7.77	20.44	89935K33	13.89	36.56
8	0.165″	0.145″	0.01″	±.001″	3000	8987K14	6.78	17.85	89935K34	12.16	32.01
8	0.165″	0.135″	0.015″	±.001″	4000	8988K15	6.21	16.34	89875K35	10.90	28.68
7	0.18″	0.166″	0.007″	±.001″	2000	5560K9	7.77	20.44	89935K29	14.28	37.57
7	0.18″	0.16″	0.01″	±.001″	3000	8987K9	7.25	19.08	89935K31	12.26	32.26
7	0.18″	0.15″	0.015″	±.001″	4000	8988K14	6.30	16.59	89875K32	10.99	28.93
6	0.203″	0.189″	0.007″	±.001″	2000	5560K6	7.82	20.57	89935K26	14.33	37.70
6	0.203″	0.183″	0.01″	±.001″	3000	8987K7	7.35	19.34	89935K27	12.36	32.52
6	0.203″	0.173″	0.015″	±.001″	4000	8988K8	6.40	16.85	89875K28	11.10	29.20
5	0.219″	0.205″	0.007″	±.002″	2000	5560K3	7.82	20.57	89935K23	14.42	37.95
5	0.219″	0.199″	0.01″	±.002″	3000	8987K4	7.44	19.59	89935K24	12.46	32.78
5	0.219″	0.189″	0.015″	±.002″	4000	8988K5	6.11	16.07	89875K25	11.19	29.45
4	0.238″	0.218″	0.01″	±.002″	2000	5560K2	7.56	19.89	89935K22	14.47	38.08
3	0.259″	0.239″	0.01″	±.002″	2000	5560K1	7.61	20.02	89935K21	14.52	38.20

For information about metal tubing, see page 144.

Metric Type 316 Stainless Steel Seamless Tubing

- Temperature Range: –325° to +1500° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Connect by welding

Sized for metric applications, this Type 316 stainless steel tubing has seamless construction. Use with water, air, natural gas, and oil in pressure vessels. It can be sterilized with chemicals.

To Order: Please specify 0.5-, 1-, or 2-m length.

OD, mm	ID, mm	Wall, mm	OD Toler., mm	Max. psi @ 72° F		Each 0.5 m	Each 1 m	Each 2 m
6	4	1.0	±.1	4,713	50365K31	$18.88	$34.71	$60.89
8	6	1.0	±.1	3,545	50365K32	22.97	42.24	74.11
10	7	1.5	±.1	4,621	50365K33	31.77	58.42	102.49
12	8	2.0	±.1	5,415	50365K34	41.07	75.51	132.47
16	12	2.0	±.1	4,065	50365K35	52.02	95.65	167.80
20	16	2.0	±.1	3,258	50365K36	49.57	91.15	159.91

Super-Smooth Coated Stainless Steel Tubing

- Temperature Range: –425° to +842° F
- Bendable: Yes, with bending tool
- Flareable: No
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use compression fittings (see pages 172-175)

A thin layer of silicon permanently bonded to the ID of this tubing provides an extremely smooth surface that prevents deposits from forming, resulting in excellent corrosion resistance. Use with water, air, oil, sulfides, alcohols, and chlorinated compounds. Meets ASTM A269. Not rated for sterilization.

Type 304 stainless steel has good corrosion resistance. It has welded and drawn construction, so there's no weld bead on the ID.

Type 316 stainless steel has excellent corrosion resistance. This tubing has seamless construction.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
Type 304								
1/16″	0.04″	0.011″	±.002″	4,000	5954K411	$33.80	$49.26	$96.58
1/16″	0.03″	0.016″	±.002″	6,300	5954K311	33.80	49.26	96.58
1/16″	0.02″	0.021″	±.002″	7,000	5954K211	33.80	49.26	96.58
1/16″	0.01″	0.026″	±.002″	7,000	5954K111	33.80	49.25	96.57
1/8″	0.085″	0.02″	±.002″	3,000	5954K512	33.80	49.26	96.58
1/4″	0.21″	0.02″	±.002″	2,000	5954K611	49.40	71.99	141.15
Type 316								
1/8″	0.055″	0.035″	±.002″	8,500	5954K811	39.00	56.83	111.43
1/4″	0.18″	0.035″	±.002″	4,300	5954K911	61.11	89.05	174.60

High-Strength Type 321 Stainless Steel Tubing

- Temperature Range: –425° to +1500° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use flared, compression, and butt-weld fittings (see pages 172-175, 180-181, and 211)

Some people think it's the titanium additive while others credit the seamless construction—all we know is that these two factors combined give this Type 321 stainless steel tubing very good strength and superior corrosion resistance. Use with water, air, natural gas, and oil. Meets MIL-T-8808B. Tubing can be sterilized with chemicals.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/4″	0.21″	0.02″	±.004″	2,500	6622K51	$15.56	$35.47	$62.23
1/4″	0.18″	0.035″	±.004″	4,375	6622K41	16.58	37.80	66.31
1/4″	0.152″	0.049″	±.004″	6,125	6622K61	22.92	52.26	91.69
3/8″	0.335″	0.02″	±.004″	1,678	6622K71	18.84	42.96	75.37
3/8″	0.305″	0.035″	±.004″	2,936	6622K42	19.02	43.37	76.09
3/8″	0.277″	0.049″	±.004″	4,110	6622K81	23.68	54.00	94.74
1/2″	0.46″	0.02″	±.01″	1,337	6622K91	23.61	53.83	94.43
1/2″	0.43″	0.035″	±.01″	2,339	6622K43	26.38	60.14	105.51
1/2″	0.402″	0.049″	±.01″	3,275	6622K11	28.39	64.72	113.54
3/4″	0.71″	0.02″	±.01″	894	6622K12	29.48	67.23	117.94
3/4″	0.68″	0.035″	±.01″	1,565	6622K44	33.30	75.92	133.20
3/4″	0.652″	0.049″	±.01″	2,190	6622K14	$35.69	$81.38	$142.77
1″	0.96″	0.02″	±.02″	672	6622K15	53.52	122.01	214.06
1″	0.93″	0.035″	±.02″	1,175	6622K45	40.47	92.26	161.86
1″	0.902″	0.049″	±.02″	1,646	6622K18	48.22	109.93	192.86
1 1/2″	1.46″	0.02″	±.02″	447	6622K19	94.01	214.34	376.03
1 1/2″	1.43″	0.035″	±.02″	782	6622K22	82.22	187.47	328.89
1 1/2″	1.402″	0.049″	±.02″	1,095	6622K23	69.83	159.21	279.31
2″	1.96″	0.02″	±.02″	336	6622K24	124.22	283.23	496.89
2″	1.93″	0.035″	±.02″	588	6622K46	98.99	225.69	395.95
2″	1.902″	0.049″	±.02″	823	6622K26	118.35	269.84	473.40

High-Strength and Lightweight Titanium Tubing

- Temperature Range: –20° to +600° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Connect by welding

Made of Grade 2 titanium, this tubing has a high strength-to-weight ratio and excellent corrosion resistance. It has a Rockwell hardness of B85. Use with water, salt water, air, oil, and chlorides. Meets ASTM B338 and ASME SB338. Not rated for sterilization.

Seamless tubing is made without a seam or a weld for a smooth, restriction free surface.

Welded tubing has a visible seam on the OD and a weld bead on the ID.

To Order: Please specify 1-, 3-, or 5-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 100° F		Each 1 ft.	Each 3 ft.	Each 5 ft.
Seamless								
1/8″	0.093″	0.016″	±.004″	3,625	89835K96	$38.46	$115.39	$192.31
1/4″	0.18″	0.035″	±.004″	4,000	89835K611	13.56	40.68	67.80
3/8″	0.305″	0.035″	±.004″	2,575	89835K621	16.95	50.85	84.75
1/2″	0.43″	0.035″	±.004″	1,895	89835K91	21.67	65.00	108.33
5/8″	0.555″	0.035″	±.004″	1,500	89835K92	21.82	65.45	109.09
3/4″	0.68″	0.035″	±.004″	1,240	89835K93	22.95	68.85	114.75
Welded								
1/2″	0.43″	0.035″	±.004″	1,270	89835K631	$8.20	$24.59	$40.98
5/8″	0.555″	0.035″	±.004″	1,270	89835K671	10.83	32.50	54.17
3/4″	0.68″	0.035″	±.004″	1,050	89835K641	10.91	32.73	54.55
3/4″	0.652″	0.049″	±.004″	1,490	89835K95	12.50	37.50	62.50
1″	0.93″	0.035″	±.005″	780	89835K651	13.11	39.34	65.57
1 1/2″	1.43″	0.035″	±.006″	515	89835K681	22.88	68.65	114.41

Acid-Resistant Nickel-Copper Tubing

- Temperature Range: –325° to +900° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Connect by welding

Also known as Alloy 400 Monel, this tubing is composed of 63% nickel and 28-34% copper, which makes it corrosion resistant, even at high temperatures. This tubing has seamless construction. Use with salt water, hydrofluoric acid, sulfuric acid, and alkalies. Meets ASTM B163. Not rated for sterilization.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/4″	0.18″	0.035″	±.005″	4,324	89795K14	$12.90	$32.83	$58.63
3/8″	0.305″	0.035″	±.008″	2,879	89795K18	15.74	40.07	71.55
3/8″	0.277″	0.049″	±.008″	4,030	89795K23	25.48	64.86	115.83
1/2″	0.43″	0.035″	±.01″	2,123	89795K26	23.71	60.35	107.77
1/2″	0.402″	0.049″	±.01″	2,972	89795K28	29.10	74.08	132.28
1/2″	0.37″	0.065″	±.01″	3,942	89795K32	33.96	86.45	154.37
3/4″	0.62″	0.065″	±.015″	2,712	89795K33	39.53	100.62	179.68

For information about metal tubing, see page 144.

High-Temperature/Chemical-Resistant Nickel-Chromium Tubing

- Temperature Range: –325° to +1200° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Connect by welding

Also known as Alloy 600 Inconel, this tubing is composed of 72% nickel, 14-17% chromium, and 6-10% iron, so not only is it strong, it's also resistant to corrosion and stress cracking. Plus, it has the highest temperature rating of any non-stainless steel tubing we offer. This tubing has a Rockwell hardness of B92. It has seamless construction. Use with water, air, natural gas, oil, sodium sulfide, and abietic acid. Meets ASTM B163. This tubing can be sterilized with chemicals.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/8"	0.055"	0.035"	±.004"	9,087	89865K321	$8.94	$25.03	$44.69
1/4"	0.18"	0.035"	±.005"	4,941	89865K331	15.02	42.06	75.11
5/16"	0.257"	0.028"	±.006"	2,972	89865K92	16.71	46.80	83.57
3/8"	0.305"	0.035"	±.008"	3,084	89865K471	19.76	55.32	98.78
3/8"	0.277"	0.049"	±.008"	4,318	89865K521	25.04	70.12	125.22
1/2"	0.43"	0.035"	±.01"	2,274	89865K551	35.34	98.95	176.69
1/2"	0.37"	0.065"	±.01"	4,223	89865K591	$39.44	$110.43	$197.19
5/8"	0.569"	0.028"	±.008"	1,493	89865K93	27.72	77.62	138.61
5/8"	0.555"	0.035"	±.008"	1,866	89865K94	41.06	114.97	205.31
3/4"	0.62"	0.065"	±.015"	2,894	89865K621	51.15	143.23	255.76
1"	0.87"	0.065"	±.02"	2,176	89865K631	55.71	156.00	278.57
1"	0.834"	0.083"	±.02"	2,779	89865K95	124.34	348.16	621.71

Carbon Steel Seamless Tubing

- Temperature Range: –65° to +800° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use compression and flared fittings (see pgs. 173, 178-179, and 182)

You may know this tubing as 1010 carbon steel, but did you also know that it's the most popular steel tubing produced? This tubing has seamless construction. Use with natural gas and hydraulic fluid. Meets ASTM A179 and SAE J524. Not rated for sterilization.

To Order: Please specify 3- or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 3 ft.	Each 6 ft.
1/4"	0.18"	0.035"	±.004"	2,752	9220K311	$5.65	$8.69
1/4"	0.152"	0.049"	±.004"	3,853	9220K321	6.43	9.89
1/4"	0.12"	0.065"	±.004"	5,112	9220K441	9.91	15.25
3/8"	0.305"	0.035"	±.004"	1,845	9220K331	6.55	10.08
3/8"	0.277"	0.049"	±.004"	2,583	9220K341	7.51	11.56
3/8"	0.245"	0.065"	±.004"	3,426	9220K451	7.49	11.53
1/2"	0.43"	0.035"	±.004"	1,384	9220K151	7.75	11.92
1/2"	0.402"	0.049"	±.004"	1,938	9220K361	7.88	12.12
1/2"	0.37"	0.065"	±.004"	2,571	9220K461	8.38	12.90
1/2"	0.334"	0.083"	±.004"	3,283	9220K471	$11.70	$18.00
5/8"	0.555"	0.035"	±.004"	1,175	9220K371	7.64	11.75
5/8"	0.527"	0.049"	±.004"	1,645	9220K381	9.39	14.44
3/4"	0.652"	0.049"	±.004"	1,373	9220K391	10.26	15.78
3/4"	0.62"	0.065"	±.004"	1,821	9220K411	12.83	19.74
3/4"	0.584"	0.083"	±.004"	2,325	9220K511	14.85	22.84
1"	0.902"	0.049"	±.004"	1,031	9220K421	15.26	23.48
1"	0.87"	0.065"	±.004"	1,368	9220K431	15.63	24.05
1"	0.834"	0.083"	±.004"	1,747	9220K521	17.17	26.42

Corrosion-Resistant Carbon Steel Seamless Tubing

- Temperature Range: –65° to +800° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use compression and flared fittings (see pgs. 173, 178-179, and 182)

Coated with a thin layer of yellow zinc dichromate for corrosion resistance, this carbon steel tubing is an economical alternative to stainless steel. It has seamless construction. Use with water, salt water, oil, hydraulic fluid, and for any application where steel is needed and extra corrosion resistance is required. Meets ASTM A179, A450, and A633 as well as SAE J524. Not rated for sterilization.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
3/16"	0.118"	0.035"	±.004"	3,340	9922K11	$11.66	$14.73	$20.46
1/4"	0.18"	0.035"	±.004"	2,520	9922K12	12.85	16.24	22.55
5/16"	0.243"	0.035"	±.004"	2,000	9922K13	12.23	15.45	21.46
3/8"	0.305"	0.035"	±.004"	1,900	9922K14	12.35	15.60	21.67
3/8"	0.277"	0.049"	±.004"	2,600	9922K15	13.22	16.70	23.19
3/8"	0.245"	0.065"	±.004"	3,500	9922K16	13.68	17.28	24.00
1/2"	0.43"	0.035"	±.004"	1,400	9922K17	13.16	16.62	23.09
1/2"	0.402"	0.049"	±.004"	2,000	9922K18	13.06	16.50	22.91
1/2"	0.37"	0.065"	±.004"	2,600	9922K19	14.77	18.66	25.91
5/8"	0.495"	0.065"	±.004"	2,100	9922K21	16.79	21.20	29.45
3/4"	0.584"	0.083"	±.004"	2,200	9922K23	18.66	23.57	32.73
1"	0.81"	0.095"	±.006"	1,900	9922K24	24.66	31.15	43.27

Metric Carbon Steel Seamless Tubing

- Temperature Range: –5° to +572° F (unless noted)
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use compression fittings (see page 172)

Sized for metric applications, this carbon steel tubing is seamless and cold drawn, so there's no weld bead on the ID. It has a Rockwell hardness of B75, unless noted. Use with air, oil, and hydraulic fluids. Meets DIN 2391. Not rated for sterilization.

To Order: Please specify 1- or 2-m length.

OD, mm	ID, mm	Wall, mm	OD Toler., mm	Max. psi @ 68° F		Each 1 m	Each 2 m
4	2	1	±.10	8,033	50295K56■	$11.93	$15.89
6	4	1	±.08	5,584	50295K211	10.05	13.40
8	6	1	±.08	4,263	50295K241	10.05	13.40
8	3	2.5	±.08	10,672	50295K251	18.23	24.30
10	7	1.5	±.08	5,423	50295K271	11.66	15.55
12	9	1.5	±.08	4,509	50295K291	12.49	16.65
14	10	2	±.08	5,162	50295K321	17.92	23.90
15	12	1.5	±.08	3,610	50295K332	14.85	19.80
16	12	2	±.08	4,509	50295K351	19.42	25.90
16	10	3	±.08	6,771	50295K341	27.83	37.10
18	14	2	±.08	4,016	50295K381	21.08	28.10
20	16	2	±.08	3,610	50295K411	21.38	28.50
25	21	2	±.08	2,885	50295K431	24.45	32.60

■ Temperature range is –40° to +482° F; Rockwell hardness is B72.

High-Pressure Carbon Steel Welded and Drawn Tubing

- Temperature Range: –65° to +800° F
- Bendable: Yes, with bending tool
- Flareable: No
- Soft (Annealed) Temper: Moderate tensile (stretching) strength
- Connect by welding

Also known as DOM (drawn over mandrel) tubing, this tubing has welded and drawn construction, so there's no weld bead on the ID. It has a higher pressure rating than seamless tubing, and also has very good machinability and tolerances. Use with natural gas and hydraulic fluid. Meets ASTM A513 Type 5. Not rated for sterilization.

To Order: Please specify 3- or 6-ft. length where prices are shown.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 3 ft.	Each 6 ft.
1/4"	0.18"	0.035"	+.004"	3,720	89975K231	$16.22	$21.07
1/4"	0.152"	0.049"	+.004"	5,209	89975K241	19.16	24.88
3/8"	0.305"	0.035"	+.004"	2,493	89975K25	———	13.88
3/8"	0.277"	0.049"	+.004"	3,491	89975K26	———	14.06
1/2"	0.43"	0.035"	+.005"	1,871	89975K27	———	14.97
1/2"	0.402"	0.049"	+.005"	2,620	89975K281	12.47	16.20
5/8"	0.555"	0.035"	+.005"	1,500	89975K291	13.05	16.95
5/8"	0.527"	0.049"	+.005"	2,100	89975K321	$14.32	$18.60
3/4"	0.68"	0.035"	+.005"	1,252	89975K311	15.03	19.52
1"	0.93"	0.035"	+.005"	940	89975K331	19.16	24.88
1 1/4"	1.12"	0.065"	+.005"	1,398	89975K341	17.40	22.60
1 1/2"	1.37"	0.065"	+.005"	1,166	89975K351	21.37	27.75
2"	1.87"	0.065"	+.005"	875	89975K361	25.10	32.60

For information about metal tubing, see page 144.

High-Strength/Corrosion-Resistant Carbon Steel Tubing

- Temp. Range: –40° to +250° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use compression and flared fittings (see pgs. 173 and 182)

Also known as Bundyweld tubing, this tubing is neither welded nor seamless. A single sheet of copper-plated carbon steel is rolled into a tube, then the copper is melted to form a strong cohesive bond. For exceptional corrosion resistance, 5176K22 and K23 are coated with an aluminum-based paint, while 5176K24 and K25 are zinc plated. Use with hydraulic fluid, fuel, and in refrigerator lines. Meets SAE J527. Not rated for sterilization. Coil length is 25 ft.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each
3/16″	0.132″	0.028″	±.003″	3680	5176K22	$18.35
1/4″	0.194″	0.028″	±.003″	2650	5176K23	20.61
5/16″	0.257″	0.028″	±.003″	2100	5176K24	25.33
3/8″	0.319″	0.028″	±.003″	1690	5176K25	31.42

Steel Welded Vacuum Tubing

- Temperature Range: Up to 150° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Hard Temper: High tensile (stretching) strength
- Use vacuum fittings (see page 215)

Rated for both pressure and vacuum, this "as welded" tubing has a weld bead on the ID. Ideal for use in conveying systems for the transfer of granular products such as pellets and powder. Meets ASTM A513. Not rated for sterilization.

Carbon steel tubing has a Rockwell hardness of B55-70.

Galvanized steel offers better resistance to corrosion.

OD	ID	Wall	OD Toler.	Vacuum @ 72° F	Max. psi @ 72° F	CARBON STEEL 5-ft. Length	Each	CARBON STEEL 10-ft. Length	Each	GALVANIZED STEEL 5-ft. Length	Each	GALVANIZED STEEL 10-ft. Length	Each
2 1/8″	2″	0.063″	±.006″	29″ Hg	150	3094K21	$19.74	3094K28	$32.90	4935K108	$22.43	4935K124	$35.88
2 1/2″	2.38″	0.06″	±.006″	29″ Hg	150	3094K22	23.62	3094K29	39.37	4935K109	25.68	4935K125	41.83
3″	2.88″	0.06″	±.009″	29″ Hg	150	3094K23	26.25	3094K38	43.75	4935K118	29.40	4935K126	48.65
3 1/2″	3.38″	0.06″	±.009″	29″ Hg	150	3094K24	51.77	3094K39	86.28	4935K119	33.79	4935K127	56.70
4″	3.88″	0.06″	±.01″	29″ Hg	150	3094K25	36.33	3094K41	60.55	4935K121	39.33	4935K128	66.85
5″	4.84″	0.08″	±.02″	29″ Hg	150	3094K26	51.03	3094K42	85.05	4935K122	57.65	4935K129	99.74
6″	5.84″	0.08″	±.02″	29″ Hg	150	3094K27	64.47	3094K43	107.45	4935K123	68.25	4935K131	119.88

Aluminum Tubing

- Temperature Range: –452° to +400° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Hard T6 Temper: High tensile (stretching) strength
- Use flared fittings (see page 183)

This lightweight tubing is the most versatile aluminum tubing we offer—it is corrosion resistant, handles high pressure, and offers good weldability. Also known as Alloy 6061, it has magnesium and silicon added for strength. This tubing has seamless construction. Use with water, air, hydraulic fluid, and fuel. Meets ASTM B210 and SAE AMS-WW-T-700/6. Tubing can be sterilized with steam (autoclaving).

Military spec tubing meets MIL-T-7081.

To Order: Please specify 3- or 6-ft. length.

Standard

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 3 ft.	Each 6 ft.
3/16″	0.12″	0.035″	±.006″	3410	89965K21	$10.48	$16.90
3/16″	0.09″	0.049″	±.006″	4774	89965K11	11.62	18.75
1/4″	0.21″	0.02″	±.006″	1477	89965K341	13.81	22.27
1/4″	0.18″	0.035″	±.006″	2584	89965K42	—	10.18
1/4″	0.15″	0.049″	±.006″	3618	89965K38	—	11.65
1/4″	0.134″	0.058″	±.006″	4282	89965K344	13.11	21.15
1/4″	0.12″	0.065″	±.006″	4799	89965K23	9.72	15.68
5/16″	0.24″	0.035″	±.006″	2074	89965K43	—	11.50
5/16″	0.21″	0.049″	±.006″	2903	89965K39	—	12.30
5/16″	0.18″	0.065″	±.006″	3851	89965K461	14.68	23.68
3/8″	0.305″	0.035″	±.006″	1736	89965K45	—	11.93
3/8″	0.277″	0.049″	±.006″	2431	89965K22	8.93	14.41
3/8″	0.259″	0.058″	±.006″	2877	89965K347	9.77	15.75
3/8″	0.245″	0.065″	±.006″	3224	89965K24	9.80	15.80
3/8″	0.185″	0.095″	±.006″	4713	89965K351	17.31	27.92
1/2″	0.43″	0.035″	±.006″	1307	89965K52	—	12.53
1/2″	0.402″	0.049″	±.006″	1830	89965K25	9.50	15.32
1/2″	0.384″	0.058″	±.006″	2166	89965K354	13.02	21.00
1/2″	0.37″	0.065″	±.006″	2428	89965K26	11.11	17.92
1/2″	0.334″	0.083″	±.006″	3100	89965K357	18.85	30.40
1/2″	0.31″	0.095″	±.006″	3548	89965K361	19.13	30.85
1/2″	0.26″	0.12″	±.006″	4482	89965K364	21.90	35.33
5/8″	0.555″	0.035″	±.008″	1045	89965K27	10.67	17.21
5/8″	0.527″	0.049″	±.008″	1463	89965K14	12.96	20.90
5/8″	0.495″	0.065″	±.008″	1941	89965K571	14.57	23.50
3/4″	0.694″	0.028″	±.008″	698	89965K367	9.90	15.97
3/4″	0.68″	0.035″	±.008″	873	89965K29	10.33	16.66
3/4″	0.652″	0.049″	±.008″	1222	89965K511	12.96	20.90
3/4″	0.634″	0.058″	±.008″	1446	89965K371	17.71	28.57
3/4″	0.62″	0.065″	±.008″	1621	89965K641	14.72	23.75
3/4″	0.584″	0.083″	±.008″	2070	89965K374	18.15	29.27
3/4″	0.5″	0.125″	±.008″	3117	89965K377	28.05	45.25
7/8″	0.805″	0.035″	±.008″	749	89965K631	10.09	16.28
7/8″	0.777″	0.049″	±.008″	1049	89965K651	$11.40	$18.38
7/8″	0.745″	0.065″	±.008″	1391	89965K661	14.53	23.43
1″	0.93″	0.035″	±.008″	656	89965K15	12.82	20.68
1″	0.902″	0.049″	±.008″	919	89965K531	15.50	25.00
1″	0.884″	0.058″	±.008″	1088	89965K381	18.97	30.60
1″	0.87″	0.065″	±.008″	1219	89965K681	17.78	28.68
1″	0.834″	0.083″	±.008″	1556	89965K384	22.88	36.90
1″	0.81″	0.095″	±.008″	1781	89965K387	30.29	48.85
1″	0.75″	0.125″	±.008″	2344	89965K31	35.46	57.20
1″	0.624″	0.188″	±.008″	3525	89965K391	50.38	81.25
1 1/8″	1.027″	0.049″	±.01″	816	89965K394	18.57	29.95
1 1/8″	0.995″	0.065″	±.01″	1082	89965K397	25.97	41.88
1 1/4″	1.18″	0.035″	±.01″	525	89965K721	15.85	25.57
1 1/4″	1.152″	0.049″	±.01″	735	89965K551	20.79	33.53
1 1/4″	1.12″	0.065″	±.01″	975	89965K741	21.71	35.02
1 3/8″	1.277″	0.049″	±.01″	669	89965K411	30.41	49.05
1 3/8″	1.259″	0.058″	±.01″	791	89965K414	29.59	47.73
1 1/2″	1.43″	0.035″	±.01″	438	89965K731	21.01	33.88
1 1/2″	1.402″	0.049″	±.01″	613	89965K561	25.10	40.49
1 1/2″	1.37″	0.065″	±.01″	814	89965K751	29.42	47.45
1 1/2″	1.25″	0.125″	±.01″	1565	89965K32	39.31	63.40
1 3/4″	1.68″	0.035″	±.01″	376	89965K771	25.73	41.50
1 3/4″	1.652″	0.049″	±.01″	526	89965K591	32.86	53.00
1 3/4″	1.62″	0.065″	±.01″	698	89965K781	34.42	55.52
2″	1.93″	0.035″	±.01″	329	89965K821	26.63	42.95
2″	1.902″	0.049″	±.01″	461	89965K611	31.65	51.05
2″	1.87″	0.065″	±.01″	611	89965K841	36.02	58.10
2″	1.834″	0.083″	±.01″	780	89965K417	50.79	81.92
2 1/2″	2.43″	0.035″	±.012″	263	89965K851	44.44	71.67
2 1/2″	2.402″	0.049″	±.012″	369	89965K861	37.51	60.50
2 1/2″	2.37″	0.065″	±.012″	489	89965K871	38.91	62.75
3″	2.902″	0.049″	±.024″	307	89965K421	61.94	99.90
3 1/2″	3.402″	0.049″	±.048″	263	89965K424	71.99	116.12

Military Spec

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 3 ft.	Each 6 ft.
1/4″	0.194″	0.028″	±.006″	2067	9924K11	$12.21	$23.48
1/4″	0.18″	0.035″	±.006″	2584	9924K12	9.83	18.90
3/8″	0.319″	0.028″	±.006″	1389	9924K13	10.32	19.85
3/8″	0.305″	0.035″	±.006″	1736	9924K14	11.18	21.50
3/8″	0.277″	0.049″	±.006″	2431	9924K15	12.95	24.90
1/2″	0.444″	0.028″	±.006″	1046	9924K16	$13.11	$25.22
1/2″	0.43″	0.035″	±.006″	1307	9924K17	15.95	30.68
1/2″	0.402″	0.049″	±.006″	1830	9924K18	25.48	49.00
3/4″	0.68″	0.035″	±.006″	873	9924K19	18.02	34.66
3/4″	0.652″	0.049″	±.006″	1222	9924K21	19.25	37.01

For information about metal tubing, see page 144.

Rigid Aluminum Tubing

- Temperature Range: –112° to +300° F
- Bendable: No
- Flareable: No
- ½ Hard H14 Temper: Moderate tensile (stretching) strength
- Connect by welding

Also known as Alloy 3003-H14, this lightweight tubing contains manganese for strength. It is corrosion resistant and can be welded. This tubing has seamless construction. Use with water, air, oil, and hydraulic fluid. Meets ASTM B210 and Fed. Spec. WW-T-700/2. Tubing can be sterilized with steam (autoclaving).

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 75° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
3/16"	0.144"	0.022"	±.003"	490	8978K11	—	$2.51	$4.48
1/4"	0.18"	0.035"	±.003"	580	8978K12	—	2.36	4.22
3/8"	0.305"	0.035"	±.003"	390	8978K13	—	3.61	6.45
1/2"	0.43"	0.035"	±.004"	290	8978K14	—	5.35	9.56
1/2"	0.37"	0.065"	±.004"	540	8978K15	—	8.80	15.72
5/8"	0.555"	0.035"	±.004"	230	8978K16	—	6.14	10.96
5/8"	0.495"	0.065"	±.004"	440	8978K17	—	10.85	19.38
3/4"	0.68"	0.035"	±.004"	190	8978K18	—	8.01	14.31
3/4"	0.62"	0.065"	±.004"	360	8978K19	—	$11.94	$21.33
1"	0.93"	0.035"	±.004"	140	8978K21	—	8.80	15.71
1"	0.87"	0.065"	±.004"	270	8978K22	$6.52	13.04	23.29
1 1/4"	1.18"	0.035"	±.005"	140	8978K23	—	10.07	17.98
1 1/2"	1.43"	0.035"	±.005"	120	8978K24	6.76	13.52	24.14
1 1/2"	1.37"	0.065"	±.005"	210	8978K25	9.36	18.72	33.43
2"	1.93"	0.035"	±.005"	110	8978K26	7.54	15.09	26.94

Easy-Bend Aluminum Tubing

- Temperature Range: –40° to +180° F
- Bendable: Yes, by hand
- Flareable: Yes
- Soft (Annealed) Type O Temper: Low tensile (stretching) strength
- Use flared fittings (see page 183)

Also known as Alloy 3003-O, this tubing is softer and more bendable than our other aluminum tubing. It has seamless construction. All have an OD tolerance of ±.003", except the 5/8" OD tubing which is ±.004". Use with water, air, alcohol, and oil. Meets ASTM B483-03, B483-75, and B483-95. Not rated for sterilization.

OD	ID	Wall	Max. psi @ 100° F	*25-ft. Coils*	Each	*50-ft. Coils*	Each
1/8"	0.075"	0.025"	2,380	5177K41	$12.74	5177K11	$21.23
3/16"	0.132"	0.028"	1,696	5177K42	15.60	5177K12	26.00
1/4"	0.186"	0.032"	1,426	5177K43	18.33	5177K13	30.55
1/4"	0.152"	0.049"	2,324	5177K44	20.24	5177K25	33.73
5/16"	0.243"	0.035"	1,230	5177K45	20.82	5177K14	34.70
3/8"	0.305"	0.035"	1,008	5177K46	25.10	5177K15	41.84
3/8"	0.277"	0.049"	1,459	5177K47	31.20	5177K16	52.00
7/16"	0.368"	0.035"	854	5177K48	29.03	5177K17	48.39
1/2"	0.43"	0.035"	741	5177K49	36.19	5177K18	60.32
1/2"	0.402"	0.049"	1,063	5177K51	50.28	5177K26	83.80
1/2"	0.37"	0.065"	1,450	5177K52	61.28	5177K19	102.14
5/8"	0.555"	0.035"	586	5177K53	39.33	5177K21	65.55
5/8"	0.527"	0.049"	836	5177K54	50.06	5177K22	83.43

Ultra-Corrosion-Resistant Aluminum Tubing

- Temperature Range: –452° to +400° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use flared fittings (see page 183)

This tubing is also known as Alloy 5052-O temper. It has a higher magnesium content than 6061 aluminum for higher strength and is excellent for marine applications because it stands up to salt water and corrosion. Also for use with hydraulic fluid. This tubing has seamless construction. Not rated for sterilization.

To Order: Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 72° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
3/16"	0.132"	0.028"	±.018"	1,624	9929T11	—	$5.48	$9.79
3/16"	0.118"	0.035"	±.018"	2,030	9929T12	—	7.13	12.73
1/4"	0.194"	0.028"	±.018"	1,230	9929T13	—	7.48	13.36
1/4"	0.18"	0.035"	±.018"	1,538	9929T14	—	8.20	14.64
3/8"	0.319"	0.028"	±.018"	827	9929T15	—	6.55	11.70
3/8"	0.305"	0.035"	±.018"	1,033	9929T16	—	6.69	11.95
1/2"	0.43"	0.035"	±.018"	778	9929T17	—	10.00	15.15
1/2"	0.402"	0.049"	±.018"	1,089	9929T18	—	8.84	15.78
3/4"	0.694"	0.028"	±.024"	416	9929T19	$5.77	13.47	19.24
3/4"	0.68"	0.035"	±.024"	519	9929T21	5.96	13.91	19.87

Copper Tubing

- Temperature Range: –425° to +400° F
- Bendable: Straight: Yes, with bending tool
  Coils: Yes, by hand
- Flareable: Yes
- Straight: Hard Temper: Moderate tensile (stretching) strength
- Coils: Soft Temper: Low tensile (stretching) strength
- Use brass compression and copper solder-joint fittings (see pages 168-171 and 216-217)

Also known as Alloy 122, this alloy has the best ability to conduct heat of any standard heat exchange material. Tubing has seamless construction. For ***straight lengths***, the OD tolerance is ±.002" for OD sizes 1/8" to 1/2"; ±.003" for 5/8" to 1 3/4" OD sizes; ±.004" for 2" and 2 1/2" OD sizes; ***coils*** are soft and cannot hold these tolerances. Use with water, air, oil, and hydraulic fluid. Meets ASTM B75. Tubing can be sterilized with steam (autoclaving).

To Order: For straight lengths, please specify 1-, 3-, or 6-ft. length. For coils, please specify 10- or 50-ft. length.

Straight Lengths

Tube Size★	OD	ID	Wall	Max. psi @ 70° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
—	1/8"	0.061"	0.032"	3,410	8967K86	—	$3.68	$5.33
—	3/16"	0.124"	0.032"	2,120	8967K87	—	5.84	8.47
1/8"	1/4"	0.186"	0.032"	1,530	8967K88	—	5.84	8.47
1/4"	3/8"	0.311"	0.032"	980	8967K89	—	12.53	18.16
1/4"	3/8"	0.245"	0.065"	2,240	8967K93	—	16.04	23.24
3/8"	1/2"	0.436"	0.032"	720	8967K94	—	14.87	21.55
3/8"	1/2"	0.37"	0.065"	1,620	8967K36	$11.33	26.05	37.76
1/2"	5/8"	0.561"	0.032"	570	8967K69	10.54	24.23	35.12
1/2"	5/8"	0.495"	0.065"	1,270	8967K23	14.89	34.25	49.64
5/8"	3/4"	0.686"	0.032"	470	8967K74	9.51	21.88	31.71
5/8"	3/4"	0.62"	0.065"	1,040	8967K38	16.63	38.25	55.43
3/4"	7/8"	0.811"	0.032"	400	8967K85	10.82	24.89	36.07
3/4"	7/8"	0.745"	0.065"	880	8967K21	19.03	43.77	63.44
—	1"	0.936"	0.032"	350	8967K91	12.93	29.74	43.10
—	1"	0.87"	0.065"	760	8967K311	23.75	54.62	79.16
1"	1 1/8"	1.061"	0.032"	310	8967K111	15.32	35.24	51.07
1"	1 1/8"	0.995"	0.065"	680	8967K331	28.25	64.98	94.17
—	1 1/4"	1.186"	0.032"	280	8967K121	15.91	36.58	53.02
—	1 1/4"	1.12"	0.065"	600	8967K351	29.71	68.32	99.02
1 1/4"	1 3/8"	1.311"	0.032"	250	8967K131	18.67	42.94	62.23
1 1/4"	1 3/8"	1.245"	0.065"	550	8967K371	34.72	79.85	115.72
—	1 1/2"	1.436"	0.032"	230	8967K141	19.75	45.44	65.85

Straight Lengths (Cont.)

Tube Size★	OD	ID	Wall	Max. psi @ 70° F		Each 1 ft.	Each 3 ft.	Each 6 ft.
—	1 1/2"	1.37"	0.065"	500	8967K391	$34.06	$78.34	$113.54
—	1 3/4"	1.686"	0.032"	200	8967K151	23.24	53.45	77.47
—	1 3/4"	1.62"	0.065"	430	8967K421	38.71	89.03	129.03
—	2"	1.936"	0.032"	170	8967K161	26.07	59.97	86.91
—	2"	1.87"	0.065"	370	8967K441	45.10	103.74	150.35
—	2 1/2"	2.436"	0.032"	130	8967K171	32.76	75.35	109.20
—	2 1/2"	2.37"	0.065"	280	8967K461	56.36	129.64	187.88

Coils

Tube Size★	OD	ID	Wall	Max. psi @ 70° F		Each 10 ft.	Each 50 ft.
1/8"	1/4"	0.152"	0.049"	2,440	8955K112	$31.78	$79.46
1/8"	1/4"	0.12"	0.065"	3,220	8955K231	41.56	103.91
—	5/16"	0.215"	0.049"	1,940	8955K241	45.86	114.64
—	5/16"	0.183"	0.065"	2,580	8955K251	55.73	139.33
1/4"	3/8"	0.277"	0.049"	1,620	8955K121	41.82	104.54
1/4"	3/8"	0.245"	0.065"	2,140	8955K261	68.50	171.24
3/8"	1/2"	0.402"	0.049"	1,220	8955K141	71.61	179.03
3/8"	1/2"	0.37"	0.065"	1,620	8955K151	90.68	226.70
1/2"	5/8"	0.495"	0.065"	1,280	8955K171	72.17	288.69
5/8"	3/4"	0.62"	0.065"	1,080	8955K271	79.44	317.76
—	1"	0.87"	0.065"	800	8955K291	112.78	451.13

★ Tube size is the accepted designation of the copper tubing industry; it's not an actual size.

For information about metal tubing, see page 144.

Cleaned and Capped Copper Tubing

- Temp. Range: 32° to 400° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use brass compression and copper solder-joint fittings (see pgs. 168-171 and 216-218)

This tubing is known by many names, such as copper pipe, Alloy 122, and refrigeration and air conditioning tubing. It has seamless construction and is furnished cleaned and capped to prevent moisture and dirt from contaminating the inside. The OD tolerance is ±.002″ for OD sizes up to 5/8″; ±.003″ for 3/4″ and 7/8″ OD sizes; ±.004″ for 1 1/8″ and 1 3/8″ OD sizes, and ±.005″ for 1 5/8″ OD size. Use with water, natural gas, and oil, as well as in refrigeration and air conditioning applications. Meets ASTM B280. Not rated for sterilization.

Tube Size★	OD	ID	Wall	Max. psi @ 100° F	50-ft. Coils	Each	100-ft. Coils	Each
—	1/8″	0.065″	0.03″	3074	5174K1	$34.82	—	—
—	3/16″	0.127″	0.03″	1935	5174K2	40.78	—	—
1/8″	1/4″	0.19″	0.03″	1406	5174K3	46.80	5174K33	$111.60
—	5/16″	0.248″	0.032″	1197	5174K4	63.11	5174K34	134.27
1/4″	3/8″	0.311″	0.032″	984	5174K5	69.49	5174K35	148.68
3/8″	1/2″	0.436″	0.032″	727	5174K6	94.40	5174K36	199.74
1/2″	5/8″	0.555″	0.035″	618	5174K7	$128.01	5174K37	$272.35
5/8″	3/4″	0.68″	0.035″	631	5174K8	154.49	5174K38	328.70
3/4″	7/8″	0.785″	0.045″	582	5174K12	222.53	5174K39	473.54
1″	1 1/8″	1.025″	0.05″	494	5174K13	301.78	—	—
1 1/4″	1 3/8″	1.265″	0.055″	439	5174K14	472.67	—	—
1 1/2″	1 5/8″	1.505″	0.06″	408	5174K15	597.74	—	—

★ Tube size is the accepted designation of the wrot copper tubing industry; it's not an actual size.

Copper Tubing for Drinking (Potable) Water

- Temp. Range: 32° to 180° F
- Bendable: Straight: No Coils: Yes, with bending tool
- Flareable: Straight: No Coils: Yes
- Straight: Hard Temper: High tensile (stretching) strength Coils: Soft (Annealed) Temper: Low tensile (stretching) strength
- Use copper solder-joint fittings (see pages 216-218)

Also known as copper pipe and Alloy 122, this copper tubing meets NSF 61 for use with drinking (potable) water. It also meets ASTM B88. It has seamless construction. Not rated for sterilization.

High-pressure (Type K) tubing has thick walls. ***Medium-pressure (Type L)*** tubing has thinner walls than the high-pressure tubing. ***Low-pressure (Type M)*** tubing has extra-thin walls.

Straight Lengths

Tube Size★	OD	ID	Wall	OD Toler.	Max. psi @ 72° F	2-ft. Length	Each	5-ft. Length	Each	10-ft. Length	Each
High Pressure (Type K)											
1/4″	3/8″	0.305″	0.035″	±.001″	1,612	—	—	50475K21	$8.70	50475K41	$15.54
3/8″	1/2″	0.402″	0.049″	±.001″	1,695	—	—	50475K22	14.83	50475K42	26.49
1/2″	5/8″	0.527″	0.049″	±.001″	1,337	50475K13	$7.92	50475K23	17.75	50475K43	31.70
5/8″	3/4″	0.652″	0.049″	±.001″	1,104	50475K14	9.87	50475K24	22.11	50475K44	39.48
3/4″	7/8″	0.745″	0.065″	±.001″	1,278	50475K15	14.72	50475K25	32.97	50475K45	58.87
1″	1 1/8″	0.995″	0.065″	±.002″	982	50475K16	19.60	50475K26	43.90	50475K46	78.39
1 1/4″	1 3/8″	1.245″	0.065″	±.002″	797	50475K17	24.39	50475K27	54.62	50475K47	97.54
1 1/2″	1 5/8″	1.481″	0.072″	±.002″	742	50475K18	31.75	50475K28	71.11	50475K48	126.98
2″	2 1/8″	1.959″	0.083″	±.002″	652	50475K19	48.60	50475K29	108.87	50475K49	194.41
2 1/2″	2 5/8″	2.435″	0.095″	±.002″	597	50475K81	71.32	50475K31	159.76	50475K51	285.28
3″	3 1/8″	2.907″	0.109″	±.002″	578	50475K82	98.94	50475K32	221.63	50475K52	395.76
Medium Pressure (Type L)											
1/4″	3/8″	0.315″	0.03″	±.001″	1,367	—	—	5175K18	9.62	5175K51	17.17
3/8″	1/2″	0.43″	0.035″	±.001″	1,168	—	—	5175K19	14.61	5175K52	26.09
1/2″	5/8″	0.545″	0.04″	±.001″	1,082	5175K109	7.59	5175K27	17.00	5175K53	30.36
5/8″	3/4″	0.666″	0.042″	±.001″	947	5175K111	11.47	5175K28	25.70	5175K44	45.90
3/4″	7/8″	0.785″	0.045″	±.001″	873	5175K112	12.30	5175K29	27.55	5175K54	49.20
1″	1 1/8″	1.025″	0.05″	±.002″	741	5175K113	18.25	5175K33	40.87	5175K55	72.98
1 1/4″	1 3/8″	1.265″	0.055″	±.002″	658	5175K114	25.74	5175K34	57.65	5175K56	102.95
1 1/2″	1 5/8″	1.505″	0.06″	±.002″	613	5175K115	33.52	5175K35	75.08	5175K57	134.08
2″	2 1/8″	1.985″	0.07″	±.002″	545	5175K116	52.95	5175K36	118.62	5175K58	211.82
2 1/2″	2 5/8″	2.465″	0.08″	±.002″	504	5175K117	63.64	5175K37	142.55	5175K59	254.55
3″	3 1/8″	2.945″	0.09″	±.002″	476	5175K118	85.37	5175K38	191.23	5175K61	341.48
Low Pressure (Type M)											
3/8″	1/2″	0.45″	0.025″	±.001″	855	—	—	5175K43	11.27	5175K62	20.12
1/2″	5/8″	0.569″	0.028″	±.001″	741	—	—	5175K45	12.24	5175K63	21.86
3/4″	7/8″	0.811″	0.032″	±.001″	611	5175K39	8.78	5175K46	19.66	5175K64	35.10
1″	1 1/8″	1.055″	0.035″	±.002″	506	5175K211	14.22	5175K47	31.85	5175K65	56.87
1 1/4″	1 3/8″	1.291″	0.042″	±.002″	507	5175K212	20.84	5175K48	46.67	5175K66	83.34
1 1/2″	1 5/8″	1.527″	0.049″	±.002″	497	5175K213	28.81	5175K49	64.54	5175K67	115.25
2″	2 1/8″	2.009″	0.058″	±.002″	448	5175K214	45.43	5175K91	101.76	5175K68	181.72
2 1/2″	2 5/8″	2.495″	0.065″	±.002″	411	5175K215	54.40	5175K92	121.86	5175K94	217.61
3″	3 1/8″	2.981″	0.072″	±.002″	380	5175K216	71.97	5175K93	161.22	5175K95	287.90

Coils

Tube Size★	OD	ID	Wall	OD Toler.	Max. psi @ 72° F	60-ft. Coils	Each	100-ft. Coils	Each
High Pressure (Type K)									
1/4″	3/8″	0.305″	0.035″	±.002″	1,074	50475K61	$94.61	50475K71	$157.68
3/8″	1/2″	0.402″	0.049″	±.003″	1,130	50475K62	169.47	50475K72	282.45
1/2″	5/8″	0.527″	0.049″	±.003″	891	50475K63	198.06	50475K73	330.10
5/8″	3/4″	0.652″	0.049″	±.003″	736	50475K64	256.25	—	—
3/4″	7/8″	0.745″	0.065″	±.003″	852	50475K65	364.00	50475K75	606.66
1″	1 1/8″	0.995″	0.065″	±.004″	655	50475K66	477.45	50475K76	795.75
Medium Pressure (Type L)									
1/4″	3/8″	0.315″	0.03″	±.002″	912	5175K69	94.74	5175K81	157.90
3/8″	1/2″	0.43″	0.035″	±.003″	779	5175K71	133.65	5175K82	222.75
1/2″	5/8″	0.545″	0.04″	±.003″	722	5175K72	182.65	5175K83	304.42
5/8″	3/4″	0.666″	0.042″	±.003″	631	5175K73	245.02	—	—
3/4″	7/8″	0.785″	0.045″	±.003″	582	5175K74	267.82	5175K85	446.37
1″	1 1/8″	1.025″	0.05″	±.004″	494	5175K75	375.02	5175K86	625.03

★ Tube size is the accepted designation of the wrot-copper tubing industry; it's not an actual size.

For information about metal tubing, see page 144.

Metric Copper Tubing

1-meter Straight Lengths
- Temp. Range: –40° to +400° F
- Bendable: No
- Flareable: No
- Half Hard Temper: Moderate tensile (stretching) strength
- Use metric solder-joint copper fittings (see 9395T on pg. 218)

10-meter Coils
- Temp. Range: –40° to +400° F
- Bendable: Yes, by hand
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use metric solder-joint copper fittings (see 9395T on pg. 218)

Also known as Alloy 122, this copper tubing is ideal for use in air conditioning and refrigeration lines. Also use with water, air, natural gas, oil, and hydraulic fluid. Tubing has seamless construction. Meets ASTM B75. Not rated for sterilization.

OD, mm	ID, mm	Wall, mm	OD Toler., mm	Max. psi @ 100° F		Each
1-meter Straight Lengths						
6	4	1	—	3,190	9935K11	$15.27
8	6	1	+.045, –0.035	2,100	9935K13	15.61
10	8	1	+.045, –0.035	1,600	9935K15	18.78
12	10	1	+.045, –0.035	1,230	9935K16	24.29
14	12	1	+.045, –0.035	1,060	9935K18	23.67

OD, mm	ID, mm	Wall, mm	OD Toler., mm	Max. psi @ 100° F		Each
10-meter Coils						
4	2	1	—	4,147	9935K21	$67.27
6	4	1	—	2,073	9935K23	80.36
8	6	1	+.045, –0.035	1,365	9935K24	82.16
10	8	1	+.045, –0.035	1,040	9935K25	98.85
12	10	1	+.045, –0.035	799	9935K26	127.82

Tin-Lined Copper Tubing

- Temp. Range: –100° to +400° F
- Bendable: Yes, by hand
- Flareable: No
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use brass compression fittings (see pgs. 168-171)

Lined with 99% pure tin for added corrosion resistance, this tubing has seamless construction. Use with water, air, natural gas, hydraulic fluids, and liquids with high sulfur content. Meets ASTM B75. Not rated for sterilization.

OD	ID	Wall	OD Tolerance	Max. psi @ 100° F	*25-ft. Coils*	Each	*50-ft. Coils*	Each
1/4″	0.19″	0.03″	±.002″	1,406	9939K21	$112.76	9939K11	$152.38
5/16″	0.249″	0.032″	±.002″	1,197	9939K22	219.28	9939K12	296.32
3/8″	0.311″	0.032″	±.002″	984	9939K23	156.45	9939K13	211.42
1/2″	0.436″	0.032″	±.002″	727	9939K24	233.91	9939K14	316.10
5/8″	0.555″	0.035″	±.002″	618	9939K25	274.87	9939K15	371.45

Copper Tubing with PVC Coating

- Temperature Range: –35° to +221° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use brass compression fittings (see pgs. 168-171)

A 1/32″ thick, black PVC coating protects the outside of this tubing from external corrosion, eliminating the need for on-site sleeving. Tubing has seamless construction. Use with water, air, natural gas, and oil. Meets UL 94V2 for flame resistance, and ASTM B68 and B75. Not rated for sterilization.

Note: The OD and OD tolerance specifications represent the tubing without the coating. You must pull back the coating to attach the fittings.

To Order: Please specify 10- or 50-ft. coil length.

OD	ID	Wall	OD Toler.	Max. psi @ 100° F		Each 10 ft.	Each 50 ft.
1/4″	0.19″	0.03″	±.002″	1,450	3041K11	$27.60	$125.45
3/8″	0.311″	0.032″	±.002″	1,010	3041K12	41.20	187.27
1/2″	0.43″	0.035″	±.002″	810	3041K13	55.60	252.73

Copper Tubing with Yellow Polyethylene Coating

- Temperature Range: –94° to +219° F
- Bendable: Yes, with bending tool
- Flareable: Yes
- Soft (Annealed) Temper: Low tensile (stretching) strength
- Use 45° flared brass fittings (see page 184)

For use with natural gas and liquefied petroleum (LP) gas, the yellow coating on this copper tubing has markings to identify it as a gas line. The coating is made of inert polyethylene and ranges from 0.022″ to 0.025″ thick; it protects the tubing from external corrosion and eliminates the need for on-site sleeving. Tubing has seamless construction. Meets ASTM B75 and B837, as well as NFPA 54 and 58. Not rated for sterilization.

Note: The OD and OD tolerance specifications represent the tubing without the coating. You must pull back the coating to attach the fittings.

To Order: Please specify 60- or 100-ft. coil length.

OD	ID	Wall	OD Toler.	Max. psi @ 100° F		Each 60 ft.	Each 100 ft.
3/8″	0.315″	0.03″	±.002″	912	3089K11	$87.50	$145.83
1/2″	0.43″	0.035″	±.002″	779	3089K15	137.20	228.67
5/8″	0.545″	0.04″	±.002″	722	3089K19	194.27	323.79
3/4″	0.666″	0.042″	±.002″	631	3089K24	253.40	422.33
7/8″	0.785″	0.045″	±.003″	582	3089K28	300.56	500.94

Brass Tubing

- Temperature Range: –40° to +200° F
- Bendable: No
- Flareable: No
- Half Hard H58 Temper: Moderate tensile (stretching) strength
- Connect by soft soldering

Also known as Alloy 260, this multipurpose tubing is the perfect choice for a wide range of plumbing applications. Use with air, natural gas, and gasoline. Tubing has seamless construction. Meets ASTM B135. Tubing can be sterilized with steam (autoclaving).

To Order: Please specify 3- or 6-ft. length.

OD	ID	Wall	OD Toler.	Max. psi @ 100° F		Each 3 ft.	Each 6 ft.
1/8″	0.085″	0.02″	±.002″	3,005	8950K512	$7.64	$11.57
3/16″	0.124″	0.032″	±.002″	3,000	8950K522	7.46	11.30
1/4″	0.186″	0.032″	±.002″	2,250	8950K532	7.64	11.57
1/4″	0.12″	0.065″	±.002″	4,570	8950K542	12.32	18.67
5/16″	0.249″	0.032″	±.002″	1,810	8950K552	7.64	11.57
5/16″	0.183″	0.065″	±.002″	3,660	8950K562	14.24	21.57
3/8″	0.311″	0.032″	±.002″	1,500	8950K582	13.02	19.72
3/8″	0.245″	0.065″	±.002″	3,050	8950K591	18.92	28.67
7/16″	0.374″	0.032″	±.002″	1,280	8950K612	13.71	20.77
7/16″	0.308″	0.065″	±.002″	2,600	8950K641	22.73	34.44
1/2″	0.436″	0.032″	±.002″	1,120	8950K692	13.89	21.05
1/2″	0.37″	0.065″	±.002″	2,280	8950K651	22.73	34.44
5/8″	0.561″	0.032″	±.003″	890	8950K75	18.39	27.87
5/8″	0.495″	0.065″	±.003″	1,820	8950K671	31.24	47.34
3/4″	0.686″	0.032″	±.003″	750	8950K712	15.44	23.39
3/4″	0.62″	0.065″	±.003″	1,505	8950K731	32.63	49.44
7/8″	0.811″	0.032″	±.003″	640	8950K721	19.96	30.24
7/8″	0.745″	0.065″	±.003″	1,310	8950K741	38.35	58.11

OD	ID	Wall	OD Toler.	Max. psi @ 100° F		Each 3 ft.	Each 6 ft.
1″	0.936″	0.032″	±.003″	560	8950K791	$20.82	$31.54
1″	0.87″	0.065″	±.003″	1,200	8950K811	44.07	66.78
1 1/8″	1.061″	0.032″	±.003″	490	8950K781	30.37	46.01
1 1/8″	0.995″	0.065″	±.003″	1,010	8950K771	50.15	75.98
1 1/4″	1.186″	0.032″	±.003″	450	8950K831	46.15	69.93
1 1/4″	1.12″	0.065″	±.003″	910	8950K821	54.83	83.08
1 3/8″	1.311″	0.032″	±.003″	400	8950K861	35.24	53.39
1 3/8″	1.245″	0.065″	±.003″	830	8950K881	67.33	102.02
1 1/2″	1.436″	0.032″	±.003″	370	8950K911	38.35	58.11
1 1/2″	1.37″	0.065″	±.003″	760	8950K921	93.02	140.94
1 5/8″	1.561″	0.032″	±.003″	340	8950K931	38.35	58.11
1 5/8″	1.495″	0.065″	±.003″	700	8950K961	91.45	138.56
1 3/4″	1.686″	0.032″	±.003″	320	8950K941	38.52	58.36
1 3/4″	1.62″	0.065″	±.003″	650	8950K971	99.26	150.39
1 7/8″	1.811″	0.032″	±.003″	300	8950K951	46.34	70.21
1 7/8″	1.745″	0.065″	±.003″	610	8950K981	106.54	161.43
2″	1.936″	0.032″	±.004″	280	8950K841	55.53	84.13
2″	1.87″	0.065″	±.004″	570	8950K851	127.04	192.48

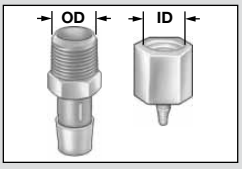

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″	3/4″	1″

About Barbed Tube Fittings

Single-Barbed 90° Elbow

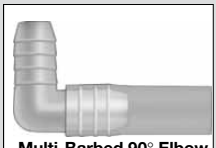
Multi-Barbed 90° Elbow

Use barbed fittings with soft tubing in low-pressure applications. They provide a quick and easy connection without the need for installation tools. Selecting a fitting is easy—barbed fittings are sized to match the inside diameter (ID) of your tubing. To connect, simply slide the tubing over the barbed end of the fitting. In most cases, a clamp is required for securing the tubing to the fitting (clamps sold separately, see pages 274-280).

Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings.

Multi-barbed fittings provide additional contact between the fitting and the tube for extra gripping power.

FDA-Compliant White Nylon Single-Barbed Tube Fittings

CAD

- Maximum Pressure: 125 psi @ 72° F
- Temperature Range: –60° to +200° F
- Tubing: Use with PVC, polyurethane, and silicone with a hardness of Shore A 45-90
- Clamps: Required (see pages 274-280)

These high-purity, FDA-compliant nylon fittings are ideal for use with food and beverage applications, as well as with water and air. They are made without a plasticizer that can contaminate fluid passing through. The durable nylon construction means these semi-clear white fittings are impact and abrasion resistant. The single-barbed design minimizes leaks by having a smoother sealing surface than multi-barbed fittings. Fittings can be sterilized with radiation. Not rated for vacuum. Pipe connections are NPT, except for the 10-32 and 1/4″-28 sizes which are UNF straight screw threads. Package quantity is 10.

Tube-to-Threaded Pipe Connectors

Adapters, Male Pipe

For Tube ID	Pipe/ Thread Size		Per Pkg.
1/16″	10-32	5116K201	$2.89
1/16″	1/8″	5116K78	2.89
1/16″	1/4″	5116K84	3.02
3/32″	10-32	5116K202	2.89
3/32″	1/8″	5116K79	2.89
1/8″	10-32	5116K203	2.89
1/8″	1/8″	5116K81	2.89
1/8″	1/4″-28	5116K198	3.56
1/8″	1/4″	5116K85	2.98
5/32″	10-32	5116K206	2.89
5/32″	1/8″	5116K207	3.71
3/16″	1/8″	5116K82	3.00
3/16″	1/4″	5116K86	3.12
1/4″	1/8″	5116K83	3.02
1/4″	1/4″-28	5116K204	3.65
1/4″	1/4″	5116K87	3.12
1/4″	1/2″	5116K208	4.78
3/8″	1/8″	5116K205	3.85
3/8″	1/2″	5116K88	3.64
1/2″	1/2″	5116K89	3.64

90° Elbows, Male Pipe

For Tube ID	Pipe/ Thread Size		Per Pkg.
1/16″	10-32	5116K91	$3.82
1/8″	10-32	5116K92	3.82
1/8″	1/8″	5116K93	4.01
3/16″	1/8″	5116K94	4.20
3/16″	3/8″	5116K96	4.48
1/4″	1/8″	5116K95	4.20
1/4″	1/2″	5116K106	4.19

Branch Tees, Male Pipe

For Tube ID	Pipe/ Thread Size		Per Pkg.
1/16″	1/8″	5116K502	$4.73
1/8″	10-32	5116K501	4.40
1/8″	1/8″	5116K504	4.84
1/4″	1/8″	5116K503	4.94

Adapters, Female Pipe

For Tube ID	Pipe Size		Per Pkg.
1/8″	1/8″	5116K301	$6.14
1/8″	1/4″	5116K302	6.14

Tube-to-Tube Connectors

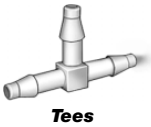

For Tube ID	Couplings	Per Pkg.	90° Elbows	Per Pkg.	Tees	Per Pkg.	Plugs	Per Pkg.
1/16″	5116K16	$2.66	5116K23	$3.53	5116K11	$2.52	5116K107	$2.20
3/32″	5116K17	2.66	5116K24	3.53	5116K12	3.53	5116K108	2.20
1/8″	5116K18	2.66	5116K25	3.63	5116K13	3.63	5116K109	2.20
5/32″	5116K41	2.89	5116K29	3.97	5116K14	3.91	5116K111	2.42
3/16″	5116K42	2.91	5116K56	4.30	5116K15	3.58	5116K112	2.43
1/4″	5116K43	3.13	5116K57	4.53	5116K36	4.53	5116K113	2.63
3/8″	5116K45	2.80	5116K58	5.02	5116K37	5.02	5116K114	2.55
1/2″	5116K46	2.88	5116K59	5.38	5116K38	5.30	____	____

For Tube ID	Reducing Couplings	Per Pkg.	Reducing 90° Elbows	Per Pkg.
3/32″ × 1/16″	5116K19	$2.66	5116K61	$3.53
1/8″ × 1/16″	5116K21	2.66	____	____
1/8″ × 3/32″	5116K22	2.66	5116K65	3.63
3/16″ × 1/8″	5116K51	2.87	5116K64	4.30
3/16″ × 5/32″	____	____	5116K63	4.30
1/4″ × 5/32″	5116K52	2.93	____	____
1/4″ × 3/16″	5116K53	2.93	____	____
3/8″ × 1/4″	5116K54	2.86	____	____

Reducing Tees

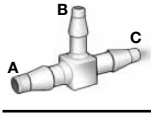

For Tube ID, (A) × (B) × (C)		Per Pkg.	For Tube ID, (A) × (B) × (C)		Per Pkg.	For Tube ID, (A) × (B) × (C)		Per Pkg.
1/16″ × 3/32″ × 1/16″	5116K71	$3.53	5/32″ × 1/16″ × 5/32″	5116K73	$3.83	3/8″ × 1/8″ × 3/8″	5116K401	$5.46
3/32″ × 1/16″ × 3/32″	5116K72	3.53	5/32″ × 1/8″ × 5/32″	5116K74	3.91	3/8″ × 1/4″ × 3/8″	5116K75	5.00
1/8″ × 3/16″ × 1/8″	5116K76	3.63						

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3.

Durable Nylon Single-Barbed Tube Fittings

- Maximum Pressure: 150 psi @ 72° F
- Temperature Range: –60° to +175° F
- Tubing: Use with PVC and polyurethane with a hardness of Shore A 75-80
- Clamps: Required (see pages 274-280)

Whether you choose black or white nylon, these durable single-barbed fittings are impact and abrasion resistant. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. They can be sterilized with steam (autoclaving). Not rated for vacuum. Pipe connections are NPT with two exceptions: the 10-32 threads are UNF straight screw threads; and the *through-wall couplings* have an NPSM (National Pipe Straight Mechanical) connection, which is compatible with NPT threads

Through-wall adapters are also known as bulkhead couplings.

All fittings are for use with water, air, and hydraulic fluid. Package quantity is 10, unless noted.

To Order: Please specify color: opaque black or semi-clear white.

Opaque Black — Semi-Clear White

Tube-to-Threaded Pipe Connectors

For Tube ID	Pipe/ Thread Size	Adapters, Male Pipe	Per Pkg.	90° Elbows, Male Pipe	Per Pkg.	Branch Tees, Male Pipe	Per Pkg.
1/16"	10-32	5463K2	$2.90	5463K12	$6.02	5463K21	$7.13
1/16"	1/16"	5463K3	7.39	5463K13	12.38	5463K22	11.03
1/16"	1/8"	5463K4	7.94	5463K14	13.16	5463K23	11.82
3/32"	10-32	5463K33	3.09	5463K34	7.11	5463K56	7.13
3/32"	1/8"	5463K5	9.73	5463K15	12.89	5463K24	11.58
1/8"	10-32	5463K53	3.09	5463K54	6.84	5463K57	8.99
1/8"	1/16"	5463K6	7.65	5463K16	12.37	5463K25	11.83
1/8"	1/8"	5463K438	5.26	5463K485	6.05	5463K55	12.35
1/8"	1/4"	5463K439	5.26	5463K133	6.05	5463K58	7.90
5/32"	1/16"	5463K7	9.66	5463K17	13.16	5463K26	11.05
5/32"	1/8"	5463K8	8.71	5463K18	7.79	5463K27	7.79
3/16"	1/16"	5463K9	9.04	5463K19	13.70	5463K28★	6.71
3/16"	1/8"	5463K11	5.84	5463K35★	4.86	5463K29★	4.86
1/4"	1/8"	5463K442	5.26	5463K487	6.05	5463K532	6.05
1/4"	1/4"	5463K445	5.26	5463K489	6.05	5463K534	6.05
1/4"	3/8"	5463K447	5.53	5463K492	6.05	5463K536	6.54
1/4"	1/2"	5463K449	5.79	5463K494	6.54	5463K538	7.12
1/4"	3/4"	5463K452	6.54	5463K496	8.16	5463K541	8.68
3/8"	1/8"	5463K454	5.26	5463K498	6.05	5463K543	6.05
3/8"	1/4"	5463K456	5.53	5463K501	6.05	5463K545	6.05
3/8"	3/8"	5463K458	5.53	5463K503	6.54	5463K547	6.54
3/8"	1/2"	5463K461	5.79	5463K505	6.54	5463K549	7.12
3/8"	3/4"	5463K463	6.54	5463K507	8.68	5463K552	8.68
1/2"	1/4"	5463K465	5.53	5463K509	6.05	5463K554	6.54
1/2"	3/8"	5463K467	5.53	5463K512	6.54	5463K556	6.83
1/2"	1/2"	5463K469	5.79	5463K514	6.54	5463K558	7.12
1/2"	3/4"	5463K472	6.54	5463K516	8.68	5463K561	8.68
5/8"	1/2"	5463K474	5.79	5463K518	7.37	5463K31	10.71
5/8"	3/4"	5463K476	6.83	5463K521	8.86	5463K32	11.00
3/4"	1/2"	5463K478	5.79	5463K523	8.16	5463K563	8.68
3/4"	3/4"	5463K265	6.83	5463K525	8.86	5463K565	8.68
1"	3/4"	5463K267	9.72	5463K527	9.14	5463K567	9.72
1"	1"	5463K481	11.05	5463K529	9.72	5463K569	9.72

★ Package quantity is 5.

Through-Wall Adapters

For Tube ID	Thread Size, NPSM	Required Hole Size		Per Pkg.
5/32"	1/4"	1/2"	5463K81	$5.27
3/16"	1/4"	1/2"	5463K82	5.27
1/4"	1/4"	1/2"	5463K83	5.27
5/16"	1/4"	1/2"	5463K84	5.38
3/8"	1/4"	1/2"	5463K85	5.52
1/2"	1/4"	1/2"	5463K86	5.52

Tube-to-Tube Connectors

Reducing 90° Elbows

For Tube ID		Per Pkg.
3/32" × 1/16"	5463K66	$7.10
1/8" × 1/16"	5463K67	8.15
1/8" × 3/32"	5463K68	8.15
3/8" × 1/4"	5463K69	6.96
1/2" × 3/8"	5463K71	6.97

Tube-to-Tube Connectors

For Tube ID	Couplings	Per Pkg.	90° Elbows	Per Pkg.	Tees	Per Pkg.
1/16"	5463K36	$3.68	5463K39	$6.83	5463K43	$6.83
3/32"	5463K37	3.69	5463K41	6.02	5463K44	6.02
1/8"	5463K38	3.68	5463K42	6.84	5463K45	6.55
5/32"	5463K338	8.19	5463K177	10.29	5463K181	8.12
3/16"	5463K576	8.19	5463K173	11.75	5463K183	8.16
1/4"	5463K578	5.26	5463K594	6.05	5463K606	6.96
5/16"	5463K581	5.26	5463K175	6.05	5463K188	6.95
3/8"	5463K583	5.26	5463K596	6.84	5463K608	6.96
1/2"	5463K585	5.26	5463K598	6.84	5463K611	6.54
5/8"	5463K587	5.53	5463K602	7.12	5463K613	7.12
3/4"	5463K589	9.14	5463K604	7.37	5463K615	7.37
1"	5463K592	9.72	5463K277	8.86	5463K287	8.86

For Tube ID	Wyes	Per Pkg.	Plugs	Per Pkg.
1/16"	5463K51	$7.10	5463K73	$2.55
3/32"	5463K52	7.10	5463K74	3.09
1/8"	5463K118	7.37	5463K75	3.35
5/32"	—	—	5463K76	4.21
3/16"	5463K721	13.16	5463K77	6.31
1/4"	5463K723	14.63	5463K78	7.10
3/8"	5463K725	13.16	—	—
1/2"	5463K727	14.21	—	—

Reducing Couplings

For Tube ID		Per Pkg.
3/32" × 1/16"	5463K46	$3.68
1/8" × 1/16"	5463K47	3.68
1/8" × 3/32"	5463K48	3.68
5/32" × 1/8"	5463K624	7.37
3/16" × 1/16"	5463K49	7.10
3/16" × 1/8"	5463K626	7.37
1/4" × 1/8"	5463K628	7.37
1/4" × 5/32"	5463K631	7.37
1/4" × 3/16"	5463K152	8.71
5/16" × 1/4"	5463K155	7.37
3/8" × 1/4"	5463K633	7.37
3/8" × 5/16"	5463K157	7.37
1/2" × 1/4"	5463K635	7.37
1/2" × 5/16"	5463K637	7.37
1/2" × 3/8"	5463K639	7.37
5/8" × 1/4"	5463K162	6.38
5/8" × 5/16"	5463K642	6.38
5/8" × 3/8"	5463K644	6.38
5/8" × 1/2"	5463K646	6.38
3/4" × 3/8"	5463K648	6.38
3/4" × 1/2"	5463K651	6.38
3/4" × 5/8"	5463K167	7.89
1" × 1/2"	5463K653	8.94
1" × 5/8"	5463K655	9.43
1" × 3/4"	5463K657	9.43

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3.

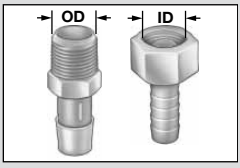

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

Durable Nylon Multi-Barbed Tube Fittings

- Maximum Pressure: 75 psi @ 72° F
- Temperature Range: 32° to 167° F
- Tubing: Use with PVC and polyurethane with a hardness of Shore A 45-85
- Clamps: Required (see pages 274-280)

These fittings are made of durable nylon for impact and abrasion resistance, plus they have multiple barbs that provide additional contact between the fitting and the tube for extra gripping power. Use with water, air, and food and beverage. Material is FDA compliant. Not rated for sterilization or vacuum. Pipe connections are NPT with two exceptions: 10-32 threads are UNF straight screw threads; and the *swivel female pipe adapters* have NPSM (National Pipe Straight Mechanical) threads (unless noted), which is compatible with NPT threads.

Tube-to-Threaded Pipe Connectors—Semi-Clear White

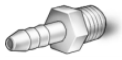

Adapters, Male Pipe

For Tube ID	Pipe Size	Pkg. Qty.		Per Pkg.
3/16″	1/4″	10	5372K121	$5.46
1/4″	1/8″	10	5372K111	6.76
1/4″	1/4″	10	5372K112	4.47
1/4″	3/8″	10	5372K113	4.65
1/4″	1/2″	10	5372K114	4.97
1/4″	3/4″	10	5372K122	7.88
3/8″	1/8″	10	5372K116	4.51
3/8″	1/4″	10	5372K117	4.54
3/8″	3/8″	10	5372K118	4.71
3/8″	1/2″	10	5372K119	5.02
3/8″	3/4″	10	5372K154	5.90
3/8″	1″	10	5372K156	8.29
1/2″	1/8″	10	5372K115	4.72
1/2″	1/4″	10	5372K123	4.73
1/2″	3/8″	10	5372K124	4.76
1/2″	1/2″	10	5372K125	5.45
1/2″	3/4″	10	5372K126	5.75
1/2″	1″	10	5372K157	8.05
5/8″	1/4″	10	5372K146	8.46
5/8″	3/8″	10	5372K148	4.84
5/8″	1/2″	10	5372K128	5.45
5/8″	3/4″	10	5372K155	9.52
3/4″	1/4″	10	5372K129	8.25
3/4″	3/8″	10	5372K149	5.65
3/4″	1/2″	10	5372K132	6.24
3/4″	3/4″	10	5372K133	6.24
3/4″	1″	10	5372K136	7.73
1″	1/2″	10	5372K143	8.48
1″	3/4″	10	5372K134	7.53
1″	1″	10	5372K135	8.32
1 1/4″	3/4″	5	5372K147	7.94
1 1/4″	1″	5	5372K141	8.70
1 1/4″	1 1/4″	5	5372K142	9.10
1 1/2″	1 1/4″	5	5372K151	9.32
1 1/2″	1 1/2″	5	5372K152	8.73
2″	2″	5	5372K161	12.41

90° Elbows, Male Pipe

For Tube ID	Pipe Size	Pkg. Qty.		Per Pkg.
1/4″	1/8″	10	5372K311	$5.65
1/4″	1/4″	10	5372K312	5.45
1/4″	3/8″	10	5372K313	6.44
1/4″	1/2″	10	5372K167	10.03
1/4″	3/4″	5	5372K137	8.00
5/16″	1/4″	10	5372K165	7.85
5/16″	3/8″	10	5372K166	8.55
3/8″	1/8″	10	5372K316	7.06
3/8″	1/4″	10	5372K317	5.55
3/8″	3/8″	10	5372K318	6.74
3/8″	1/2″	10	5372K323	7.03
3/8″	3/4″	10	5372K138	8.63
3/8″	1″	10	5372K139	9.99
1/2″	1/4″	10	5372K314	5.97
1/2″	3/8″	10	5372K324	6.74
1/2″	1/2″	10	5372K325	7.13
1/2″	3/4″	10	5372K326	8.32
1/2″	1″	10	5372K476	9.86
5/8″	1/4″	10	5372K127	8.05
5/8″	3/8″	10	5372K131	7.50
5/8″	1/2″	10	5372K328	8.62
5/8″	3/4″	10	5372K332	8.81
5/8″	1″	10	5372K144	10.67
3/4″	1/2″	10	5372K329	9.11
3/4″	3/4″	10	5372K333	9.41
3/4″	1″	10	5372K485	10.98
3/4″	1 1/4″	5	5372K168	15.30
1″	3/4″	10	5372K334	9.46
1″	1″	10	5372K335	11.19
1″	1 1/4″	5	5372K336	9.60
1 1/4″	1″	5	5372K169	8.79
1 1/4″	1 1/4″	5	5372K145	11.36
1 1/2″	1 1/2″	5	5372K338	12.92
2″	2″	2	5372K339	6.69

Branch Tees, Male Pipe

For Tube ID	Pipe Size	Pkg. Qty.		Per Pkg.
3/16″	1/8″	10	5372K631	$7.06
3/16″	1/4″	10	5372K632	7.09
1/4″	1/8″	10	5372K633	7.09
1/4″	1/4″	10	5372K634	7.09
1/4″	3/8″	10	5372K635	7.46
3/8″	1/4″	10	5372K636	7.46
3/8″	3/8″	10	5372K637	7.77
1/2″	3/8″	10	5372K638	7.77
1/2″	1/2″	10	5372K639	11.26
3/4″	3/4″	10	5372K641	10.24

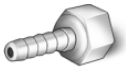

Swivel Adapters, Female Pipe

For Tube ID	Thread Size, NPSM	Pkg. Qty.		Per Pkg.
1/4″	1/4″	10	5372K212	$9.25
3/8″	3/8″	10	5372K215	10.57
1/2″	1/2″	10	5372K213♥	8.83
5/8″	3/4″	5	5372K218	8.12
3/4″	3/4″	10	5372K219	16.13

♥ This adapter does not swivel and has NPT threads.

90° Elbows, Female Pipe

For Tube ID	Pipe Size	Pkg. Qty.		Per Pkg.
1/2″	1/2″	10	5372K341	$10.59
1/2″	3/4″	10	5372K342	10.19
3/4″	3/4″	10	5372K343	12.20

Tube-to-Threaded Pipe Connectors—Opaque Black

Swivel Adapters, Male Pipe

For Tube ID	Pipe/ Thread Size	Pkg. Qty.		Per Pkg.
1/16″	10-32	5	5153K31	$14.57
1/16″	1/8″	5	5153K34	14.57
1/16″	1/4″	5	5153K37	14.57
3/32″	10-32	5	5153K32	14.57
3/32″	1/8″	5	5153K35	14.57
3/32″	1/4″	5	5153K38	14.57
1/8″	10-32	5	5153K33	14.57
1/8″	1/8″	5	5153K36	14.57
1/8″	1/4″	5	5153K39	14.57

Swivel 90° Elbows, Male Pipe

For Tube ID	Pipe/ Thread Size	Pkg. Qty.		Per Pkg.
1/16″	10-32	5	5153K51	$14.57
1/16″	1/8″	5	5153K52	14.57
1/16″	1/4″	5	5153K17	14.57
3/32″	10-32	5	5153K53	14.57
3/32″	1/8″	5	5153K54	14.57
3/32″	1/4″	5	5153K18	14.57
1/8″	10-32	5	5153K55	14.57
1/8″	1/8″	5	5153K56	14.57
1/8″	1/4″	5	5153K19	14.57

(Continued on following page)

Tube-to-Tube Connectors—Semi-Clear White

90° Elbows

For Tube ID	Pkg. Qty.		Per Pkg.
3/8″	10	5372K372	$7.40
1/2″	10	5372K373	6.44
5/8″	10	5372K162	10.81
3/4″	10	5372K376	8.02
1″	5	5372K377	9.35
1 1/4″	5	5372K378	12.82
1 1/2″	5	5372K379	12.68
2″	2	5372K163	13.61

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3.

Durable Nylon Multi-Barbed Tube Fittings *(Continued from previous page)*

Tube-to-Tube Connectors—Semi-Clear White

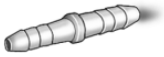

Couplings

For Tube ID	Pkg. Qty.		Per Pkg.
1/8″	10	5372K511	$3.95
3/16″	10	5372K512	3.92
1/4″	10	5372K513	4.35
5/16″	10	5372K515	4.47
3/8″	10	5372K516	4.76
1/2″	10	5372K518	6.15
5/8″	10	5372K522	6.44
3/4″	10	5372K525	7.03
1″	10	5372K526	8.22
1 1/4″	10	5372K527	12.57
1 1/2″	10	5372K528	15.08
2″	2	5372K159	9.63

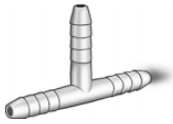

Tees

For Tube ID	Pkg. Qty.		Per Pkg.
1/4″	10	5372K613	$7.84
5/16″	10	5372K614	6.94
3/8″	10	5372K615	8.14
1/2″	10	5372K618	8.91
5/8″	10	5372K625	8.91
3/4″	10	5372K626	10.99
1″	10	5372K627	15.41
1 1/4″	5	5372K628	8.99
1 1/2″	5	5372K629	11.55
2″	1	5372K158	8.09

Reducing Couplings

For Tube ID	Pkg. Qty.		Per Pkg.
1/4″ × 3/16″	10	5372K514	$3.51
3/8″ × 1/4″	10	5372K517	4.91
1/2″ × 1/4″	10	5372K519	3.86
1/2″ × 3/8″	10	5372K521	4.86
5/8″ × 3/8″	10	5372K523	3.86
5/8″ × 1/2″	10	5372K524	6.44

Reducing 90° Elbows

For Tube ID	Pkg. Qty.		Per Pkg.
1/2″ × 3/8″	10	5372K375	$7.06

Metric Nylon and Acetal Multi-Barbed Tube Fittings

- Maximum Pressure: 100 psi @ 72° F
- Temperature Range: 32° to 95° F
- Tubing: Use with PVC and polyurethane with a hardness of Shore A 40-80
- Clamps: Required (see pages 274-280)

Sized for metric applications, these multi-barbed fittings provide additional contact between the fitting and the tube for extra gripping power. Use with water, air, gasoline, and solvents. Not rated for sterilization or vacuum. Pipe connections are NPT.

Nylon fittings are impact and abrasion resistant. ***Acetal*** fittings have impact and abrasion resistance that's comparable to nylon, but with less moisture absorption.

Tube-to-Threaded Pipe Connectors—Opaque Black Nylon

For Tube ID	Pipe Size	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each	Branch Tees, Male Pipe	Each
4 mm	1/4″	2429K12	$2.00	2429K31	$2.01	2429K18	$4.28
5 mm	1/4″	2429K13	4.28	—	—	—	—
6 mm	1/8″	2429K14	1.96	2429K32	2.00	2429K21	2.08
6 mm	1/4″	2429K15	2.00	2429K33	2.12	2429K22	2.33
8 mm	1/4″	2429K16	2.25	2429K34	2.70	2429K23	2.91
10 mm	1/4″	2429K19	2.33	—	—	—	—
12 mm	3/8″	2429K44	2.79	2429K99	4.12	—	—

Tube-to-Tube Connectors—Semi-Clear White Acetal

For Tube ID	Couplings	Each	90° Elbows	Each	Tees	Each
3 mm	—	—	2429K59	$1.37	2429K52	$1.04
4 mm	2429K37	$0.54	2429K45	1.50	2429K53	1.33
5 mm	2429K38	.83	2429K46	1.58	2429K54	1.66
6 mm	2429K39	1.12	2429K47	1.83	2429K55	1.96
8 mm	2429K41	1.62	2429K48	2.37	2429K56	2.45
10 mm	2429K42	1.96	2429K49	2.99	2429K57	3.12
12 mm	2429K43	2.58	2429K51	3.54	2429K58	3.74

Moisture-Resistant White Acetal Single-Barbed Tube Fittings

- Maximum Pressure: 150 psi @ 72° F
- Temperature Range: –20° to +280° F
- Tubing: Use with PVC and polyurethane with a hardness of Shore A 40-90
- Clamps: Required (see pages 274-280)

Choose these acetal single-barbed fittings over nylon if you want comparable impact and abrasion resistance with less moisture absorption. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. Fittings are semi-clear white and are for use with water, air, oil, fuel, and hydraulic fluid. Fittings can be sterilized with steam (autoclaving), radiation, and chemicals. Not rated for vacuum. Pipe connections are NPT, except the 10-32 size which is a UNF straight screw thread.

Tube-to-Threaded Pipe Connectors

For Tube ID	Pipe/ Thread Size	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each	Branch Tees, Male Pipe	Each
1/16″	10-32	5047K11	$0.53	5047K31	$1.00	5047K51	$1.30
1/16″	1/8″	5047K12	1.10	5047K32	1.97	5047K52	2.60
1/8″	10-32	5047K13	.53	5047K33	1.07	5047K53	1.39
1/8″	1/8″	5047K14	1.02	5047K34	1.75	5047K54	2.67
1/4″	1/8″	5047K15	1.35	5047K35	1.75	5047K55	1.93
1/4″	1/4″	5047K16	1.60	5047K36	1.87	5047K56	2.07
3/8″	1/4″	5047K17	1.80	5047K37	1.93	5047K57	2.11
3/8″	3/8″	5047K18	1.97	5047K38	2.11	5047K58	2.40
1/2″	3/8″	5047K19	2.03	5047K39	2.23	5047K59	2.44
1/2″	1/2″	5047K21	2.26	5047K41	2.40	5047K61	2.70
3/4″	3/4″	5047K22	3.00	5047K42	3.43	5047K62	3.64
1″	1″	5047K23	3.67	5047K43	4.20	5047K63	4.67

Tube-to-Tube Connectors

For Tube ID	Couplings	Each	90° Elbows	Each	Tees	Each
1/16″	5047K71	$0.60	5047K81	$0.97	5047K91	$0.97
1/8″	5047K72	.60	5047K82	1.07	5047K92	1.06
1/4″	5047K73	1.39	5047K83	1.70	5047K93	1.75
3/8″	5047K74	1.64	5047K84	1.87	5047K94	1.97
1/2″	5047K75	1.87	5047K85	1.97	5047K95	2.20
3/4″	5047K76	2.90	5047K86	3.13	5047K96	3.36
1″	5047K77	3.60	5047K87	3.93	5047K97	4.26

Reducing Couplings

For Tube ID		Each
1/8″ × 1/16″	5047K24	$0.60
1/4″ × 1/8″	5047K25	1.26
3/8″ × 1/4″	5047K26	1.54
1/2″ × 3/8″	5047K27	1.78
3/4″ × 1/2″	5047K28	2.36
1″ × 3/4″	5047K29	3.43

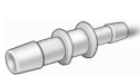

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3.

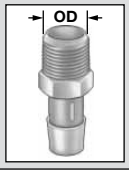

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD), as shown at left. Then, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the OD measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Sanitary White PVDF Single-Barbed Tube Fittings

- Maximum Pressure: 150 psi @ 72° F
- Temperature Range: –80° to +225° F
- Tubing: Use with PVC, polyurethane, and polyethylene with a hardness of Shore A 40-90
- Clamps: Required (see pages 274-280)

These fittings have earned the bragging rights for being the most highly rated fittings we offer. The material is FDA CFR 21 177.2600 and USDA compliant, plus it also meets 3-A sanitary requirements. Use them with water, air, beverage, and chlorine. These single-barbed fittings are made of semi-clear white PVDF (polyvinylidene fluoride), which is also known as Kynar. PVDF is a high purity material that has superior chemical resistance along with excellent strength; it also has excellent impact and abrasion resistance. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. They can be sterilized with steam (autoclaving), radiation, and gas. Not rated for vacuum. Pipe connections are NPT.

Tube-to-Threaded Pipe Connectors

For Tube ID	Pipe Size	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each	Branch Tees, Male Pipe	Each
1/8″	1/8″	53055K207	$1.26	53055K201	$2.69	53055K331	$2.91
3/16″	1/8″	53055K208	1.84	53055K202	2.70	53055K332	2.93
1/4″	1/8″	53055K211	2.05	53055K181	2.29	53055K231	2.55
1/4″	1/4″	53055K213	2.29	53055K183	2.47	53055K233	2.80
1/4″	3/8″	53055K216	2.64	53055K186	2.77	53055K236	3.17
1/4″	1/2″	53055K219	2.94	53055K189	3.14	53055K239	3.54
1/4″	3/4″	53055K224	3.62	53055K194	3.74	53055K244	4.08
3/8″	1/8″	53055K212	2.21	53055K182	2.32	53055K232	2.64
3/8″	1/4″	53055K214	2.47	53055K184	2.55	53055K234	2.91
3/8″	3/8″	53055K217	2.77	53055K187	2.87	53055K237	3.32
3/8″	1/2″	53055K221	3.09	53055K191	3.20	53055K241	3.62
3/8″	3/4″	53055K225	3.77	53055K195	3.92	53055K245	4.26
1/2″	1/4″	53055K215	2.55	53055K185	2.64	53055K235	3.09
1/2″	3/8″	53055K218	2.90	53055K188	3.03	53055K238	3.42
1/2″	1/2″	53055K222	3.20	53055K192	3.32	53055K242	3.74
1/2″	3/4″	53055K226	3.82	53055K196	4.00	53055K246	4.46
3/4″	1/2″	53055K223	3.51	53055K193	3.68	53055K243	4.03
3/4″	3/4″	53055K227	4.53	53055K197	4.76	53055K247	5.13
1″	3/4″	53055K228	4.59	53055K198	5.40	53055K248	6.23
1″	1″	53055K229	5.05	53055K199	5.83	53055K249	6.66

Tube-to-Tube Connectors

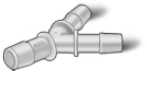

Wyes

For Tube ID		Each
3/32″	53055K152	$1.63
1/8″	53055K153	1.70
3/16″	53055K154	2.67
1/4″	53055K155	3.15
3/8″	53055K156	7.80
1/2″	53055K157	8.82

Tube-to-Tube Connectors

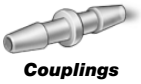

For Tube ID	Couplings	Each	90° Elbows	Each	Tees	Each
1/16″	53055K111	$0.57	53055K161	$1.03	53055K333	$1.23
3/32″	53055K112	.63	53055K162	1.09	53055K334	1.34
1/8″	53055K113	.66	53055K163	1.20	53055K171	1.43
5/32″	53055K114	1.41	53055K366	2.17	53055K335	2.17
3/16″	53055K115	1.53	53055K261	2.51	53055K178	2.61
1/4″	53055K116	1.91	53055K164	2.29	53055K172	2.32
5/16″	53055K117	2.06	53055K262	2.47	53055K179	2.64
3/8″	53055K118	2.26	53055K165	2.47	53055K173	2.64
1/2″	53055K119	2.63	53055K166	2.64	53055K174	2.94
5/8″	53055K121	3.03	53055K169	3.46	53055K177	3.82
3/4″	53055K122	3.82	53055K167	4.35	53055K175	4.82
1″	53055K123	4.96	53055K168	5.42	53055K176	6.20

Reducing Couplings

For Tube ID		Each	For Tube ID		Each
1/8″ × 1/16″	53055K125	$0.66	5/8″ × 1/4″	53055K139	$2.67
3/16″ × 1/8″	53055K126	1.41	5/8″ × 5/16″	53055K141	2.77
1/4″ × 1/8″	53055K127	1.52	5/8″ × 3/8″	53055K142	2.84
1/4″ × 3/16″	53055K131	1.52	5/8″ × 1/2″	53055K143	2.90
5/16″ × 1/4″	53055K132	1.60	3/4″ × 3/8″	53055K144	3.32
3/8″ × 1/4″	53055K134	2.06	3/4″ × 1/2″	53055K145	3.45
3/8″ × 5/16″	53055K135	2.10	3/4″ × 5/8″	53055K146	3.62
1/2″ × 1/4″	53055K136	2.49	1″ × 1/2″	53055K147	4.34
1/2″ × 5/16″	53055K137	2.52	1″ × 5/8″	53055K148	4.52
1/2″ × 3/8″	53055K138	2.58	1″ × 3/4″	53055K149	4.76

Antimicrobial Blue Polyethylene Single-Barbed Tube Fittings

- Maximum Pressure: 120 psi @ 72° F
- Temperature Range: –40° to +153° F
- Tubing: Use with antimicrobial polyethylene
- Clamps: Required (see pages 274-280)

A special lining with silver elements is inside these blue single-barbed fittings to inhibit the growth of bacteria, mold, fungi, and other microbes. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. Polyethylene has better chemical resistance than nylon, but is not as strong. The material is FDA compliant and is for use with water. Can be sterilized with radiation and gas. Not rated for vacuum. Pipe connections are NPT. Package quantity is 5, unless noted.

Tube-to-Threaded Pipe Connectors

For Tube ID	Pipe Size	Adapters, Male Pipe	Per Pkg.	Branch Tees, Male Pipe	Per Pkg.
1/8″	1/8″	9675T53	$6.28	—	—
1/4″	1/8″	—	—	9675T63	$8.43
1/4″	1/4″	9675T55	7.42	9675T65	9.71
3/8″	3/8″	9675T57	8.51	9675T67	11.50
1/2″	1/2″	9675T58	11.65	9675T68 ♠	7.36

♠ Package quantity is 2.

Tube-to-Tube Connectors

For Tube ID	Couplings	Per Pkg.	90° Elbows	Per Pkg.	Tees	Per Pkg.	Wyes	Per Pkg.
1/16″	9675T12	$3.86	—	—	—	—	—	—
1/8″	9675T13	4.29	9675T23	$5.57	9675T33	$5.71	9675T43	$8.43
3/16″	9675T14	5.28	9675T24	6.00	9675T34	6.58	9675T44	12.60
1/4″	9675T15	6.28	9675T25	6.58	9675T35	7.11	9675T45 ♠	6.97
5/16″	9675T16	6.58	9675T26	7.28	9675T36	8.15	—	—
3/8″	9675T17	6.95	9675T27	8.15	9675T37	8.68	9675T47 ♠	7.51
1/2″	9675T18	9.29	9675T28	9.93	9675T38	12.15	9675T48 ♠	7.40

♠ Package quantity is 2.

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3.

White Polyethylene Single-Barbed Tube Fittings

- Maximum Pressure: 150 psi @ 72° F
- Temperature Range: –50° to +150° F
- Tubing: Use with PVC, polyurethane, and rubber with a hardness of Shore A 40-90
- Clamps: Required (see pages 274-280)

Made of opaque white polyethylene, these general-purpose fittings have better chemical resistance than nylon, but are not as strong. They have a single-barbed design that minimizes leaks by having a smoother sealing surface than multi-barbed fittings. Use with water, air, and food and beverage. Material is FDA CFR21 177.1520 compliant. Fittings can be sterilized with gas. Not rated for vacuum. Pipe connections are NPT. Package quantity is 10, unless noted.

Tube-to-Threaded Pipe Connectors

For Tube ID	Pipe Size	Adapters, Male Pipe	Per Pkg.	90° Elbows, Male Pipe	Per Pkg.	Branch Tees, Male Pipe	Per Pkg.
1/8"	1/8"	2808K22	$5.53	2808K49	$7.89	2808K11 ♦	$13.33
5/32"	1/8"	2808K23	5.53	2808K48	7.90	2808K69	7.89
3/16"	1/8"	2808K26	5.53	2808K47	7.90	2808K71	7.89
3/16"	1/4"	2808K37	5.53	2808K52	7.90	2808K92	7.89
1/4"	1/8"	2808K24	5.53	2808K51	7.89	2808K76	7.89
1/4"	1/4"	2808K27	5.53	2808K12	7.89	2808K77	7.89
1/4"	3/8"	2808K31	5.79	2808K13	7.89	2808K78	8.42
1/4"	1/2"	2808K34	6.54	2808K14	8.42	2808K79	8.86
1/4"	3/4"	2808K39	7.12	2808K15	8.95	2808K81	10.79
3/8"	1/8"	2808K25	5.53	2808K59	7.89	2808K82	7.89
3/8"	1/4"	2808K28	5.79	2808K61	7.89	2808K83	7.89
3/8"	3/8"	2808K32	5.79	2808K62	8.42	2808K84	8.42
3/8"	1/2"	2808K35	6.54	2808K63	8.42	2808K85	8.86
3/8"	3/4"	2808K41	7.12	2808K64	10.79	2808K86	10.79
1/2"	1/4"	2808K29	5.79	2808K65	7.89	2808K87	8.42
1/2"	3/8"	2808K33	5.79	2808K66	8.42	2808K88	8.68
1/2"	1/2"	2808K36	6.54	2808K67	8.42	2808K89	8.86
1/2"	3/4"	2808K42	7.12	2808K68	10.79	2808K91	10.79
3/4"	1/2"	2808K38	7.12	2808K72	9.43	2808K94	10.79
3/4"	3/4"	2808K44	7.37	2808K73	11.05	2808K95	10.79
1"	3/4"	2808K45	11.05	2808K74	11.32	2808K96	12.61
1"	1"	2808K46	11.32	2808K75	12.61	2808K97	12.61

♦ Package quantity is 5.

Tube-to-Tube Connectors

For Tube ID	Couplings	Per Pkg.	90° Elbows	Per Pkg.	Tees	Per Pkg.
1/16"	2808K101	$3.68	2808K177	$6.84	2808K178	$6.32
3/32"	2808K102	3.68	2808K114	6.84	2808K165	6.32
1/8"	2808K103	3.68	2808K115	6.84	2808K166	6.32
5/32"	2808K104	5.26	2808K116	7.37	2808K167	7.37
3/16"	2808K105	5.26	2808K117	7.37	2808K168	7.37
1/4"	2808K106	5.26	2808K118	7.37	2808K169	7.89
5/16"	2808K107	5.79	2808K119	7.89	2808K171	7.89
3/8"	2808K108	5.79	2808K121	7.89	2808K172	7.89
1/2"	2808K109	5.79	2808K122	7.89	2808K173	8.42
5/8"	2808K111	5.79	2808K123	8.86	2808K174	8.86
3/4"	2808K112	8.68	2808K124	9.43	2808K175	9.14
1"	2808K113	11.05	2808K125	12.32	2808K176	11.05

Wyes

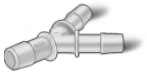

For Tube ID		Per Pkg.
1/8"	2808K127 ♦	$5.79
3/16"	2808K128 ♦	8.55
1/4"	2808K129 ♦	8.82
3/8"	2808K131 ♦	9.29
1/2"	2808K132 ♦	9.87

Clear Polycarbonate Single-Barbed Tube Fittings

- Maximum Pressure: 125 psi @ 72° F
- Temperature Range: –211° to +275° F
- Tubing: Use with PVC and polyurethane with a hardness of Shore A 45-90
- Clamps: Required (see pages 274-280)

These polycarbonate single-barbed fittings are transparent, so you can see what's flowing through your line. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. Polycarbonate has high impact strength. Use with water, air, and food and beverage. Material meets FDA CFR21 177.1580. Fittings can be sterilized with steam (autoclaving). Not rated for vacuum. Pipe connections are NPT, except the 10-32 size which is a UNF straight screw thread. Package quantity is 10.

Tube-to-Tube Connectors

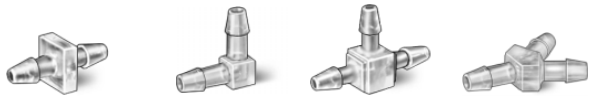

For Tube ID	Couplings	Per Pkg.	90° Elbows	Per Pkg.	Tees	Per Pkg.	Wyes	Per Pkg.
1/16"	5117K41	$4.74	5117K71	$7.00	5117K11	$7.00	5117K65	$7.00
3/32"	5117K42	4.74	5117K72	7.00	5117K12	7.00	5117K66	7.00
1/8"	5117K43	4.74	5117K73	7.64	5117K13	7.42	5117K67	7.64
5/32"	5117K44	5.73	5117K74	9.55	5117K14	9.55	5117K68	9.55
3/16"	5117K45	5.73	5117K75	10.51	5117K15	11.46	5117K69	10.82
1/4"	5117K46	6.37	5117K76	12.05	5117K16	12.42	5117K97	12.42

Tube-to-Threaded Pipe Connectors

Adapters, Male Pipe

For Tube ID	Pipe/ Thread Size		Per Pkg.
1/16"	10-32	5117K81	$3.82
1/16"	1/16"	5117K85	5.73
1/16"	1/8"	5117K91	7.32
3/32"	10-32	5117K82	3.82
3/32"	1/16"	5117K86	5.73
3/32"	1/8"	5117K92	7.32
1/8"	10-32	5117K83	3.82
1/8"	1/16"	5117K87	6.05
1/8"	1/8"	5117K93	7.96
5/32"	10-32	5117K84	3.18
5/32"	1/16"	5117K88	6.37
5/32"	1/8"	5117K94	7.96
3/16"	1/16"	5117K89	7.96
3/16"	1/8"	5117K95	8.59
1/4"	1/8"	5117K96	9.55

Reducing Couplings

For Tube ID		Per Pkg.
3/32" × 1/16"	5117K51	$4.74
1/8" × 1/16"	5117K52	4.74
1/8" × 3/32"	5117K55	4.14
5/32" × 1/16"	5117K53	6.68
5/32" × 3/32"	5117K56	7.00
5/32" × 1/8"	5117K58	6.68
3/16" × 1/16"	5117K54	6.68
3/16" × 3/32"	5117K57	6.49
3/16" × 1/8"	5117K59	7.00
3/16" × 5/32"	5117K62	7.00
1/4" × 1/8"	5117K61	7.00
1/4" × 5/32"	5117K63	7.00
1/4" × 3/16"	5117K64	7.00

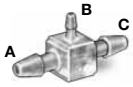

Reducing Tees

For Tube ID, (A) × (B) × (C)		Per Pkg.
1/16" × 1/8" × 1/16"	5117K21	$7.96
1/8" × 1/16" × 1/8"	5117K22	7.64
1/8" × 3/32" × 1/8"	5117K23	7.96
1/8" × 5/32" × 1/8"	5117K24	8.91
1/8" × 3/16" × 1/8"	5117K25	9.55
1/8" × 1/4" × 1/8"	5117K26	9.87
5/32" × 1/8" × 5/32"	5117K27	9.87
5/32" × 3/16" × 5/32"	5117K28	10.82
5/32" × 1/4" × 5/32"	5117K29	11.12
3/16" × 1/8" × 3/16"	5117K31	11.78
1/4" × 3/32" × 1/4"	5117K32	12.42
1/4" × 1/8" × 1/4"	5117K33	11.78

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3.

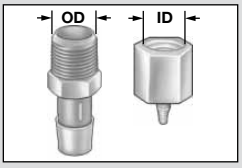

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″	3/4″	1″

White Polypropylene Single-Barbed Tube Fittings

- Max. Pressure: Standard: 150 psi @ 72° F
  High Temperature: 125 psi @ 72° F
- Temp. Range: Standard: 32° to 150° F
  High Temperature: 32° to 250° F
- Tubing: Use with PVC and polyurethane with a hardness of Shore A 75-80
- Clamps: Required (see pages 274-280)

Choose these semi-clear white polypropylene fittings when you need good chemical resistance, but don't require the high strength or impact- and abrasion-resistance of nylon or PVDF. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. Use with water, air, ethylene glycol, alcohol, and mild bases. Fittings are not rated for sterilization or vacuum. Pipe connections are NPT except the 10-32 and 1/4″-28 sizes, which are UNF straight screw thread. Package quantity is 10, unless noted.

Tube-to-Threaded Pipe Connectors—Standard

For Tube ID	Pipe Size	Adapters, Male Pipe	Per Pkg.	90° Elbows, Male Pipe	Per Pkg.	Branch Tees, Male Pipe	Per Pkg.
1/16″	1/16″	53415K261	$8.25	53415K115♦	$8.03	53415K197♦	$6.83
3/32″	1/16″	53415K262	8.25	53415K117♦	8.03	53415K198♦	6.83
1/8″	1/16″	53415K263	8.49	53415K119♦	7.44	53415K199♦	7.07
1/8″	1/8″	53415K195	5.53	53415K238	7.89	53415K243♦	7.32
5/32″	1/8″	53415K266	9.74	53415K137	7.90	53415K244	7.90
3/16″	1/8″	53415K245	5.53	53415K269	8.74	53415K272	8.74
1/4″	1/8″	53415K201	5.53	53415K171	7.89	53415K221	7.89
1/4″	1/4″	53415K202	5.53	53415K172	7.89	53415K222	7.89
1/4″	3/8″	53415K203	5.79	53415K173	7.89	53415K223	8.42
1/4″	1/2″	53415K204	6.54	53415K174	8.42	53415K224	8.86
1/4″	3/4″	53415K205	7.12	53415K175	8.86	53415K225	10.79
3/8″	1/8″	53415K206	5.53	53415K176	7.89	53415K226	7.89
3/8″	1/4″	53415K207	5.79	53415K177	7.89	53415K227	7.89
3/8″	3/8″	53415K208	5.79	53415K178	8.42	53415K228	8.42
3/8″	1/2″	53415K209	6.54	53415K179	8.42	53415K229	8.86
3/8″	3/4″	53415K211	7.12	53415K181	10.79	53415K231	10.79
1/2″	1/4″	53415K212	5.79	53415K182	7.89	53415K232	8.42
1/2″	3/8″	53415K213	5.79	53415K183	8.42	53415K233	8.68
1/2″	1/2″	53415K214	6.54	53415K184	8.42	53415K234	8.86
1/2″	3/4″	53415K215	7.12	53415K185	10.79	53415K235	10.79
3/4″	1/2″	53415K216	6.58	53415K186	9.43	53415K316	10.79
3/4″	3/4″	53415K217	7.37	53415K187	8.95	53415K317	10.79
1″	3/4″	53415K218	11.05	53415K188	11.32	53415K236	12.61
1″	1″	53415K219	11.32	53415K189	12.61	53415K237	12.61

♦ Package quantity is 5.

Tube-to-Tube Connectors—Standard

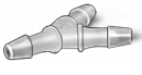

Wyes

For Tube ID		Per Pkg.
1/16″	53415K281	$8.25
3/32″	53415K282	8.25
1/8″	53415K143	8.86
3/16″	53415K138	14.35
1/4″	53415K139♦	9.14
3/8″	53415K241♦	9.29
1/2″	53415K242♦	9.87

♦ Package quantity is 5.

Tube-to-Tube Connectors—Standard

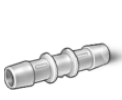

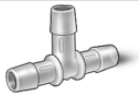

For Tube ID	Couplings	Per Pkg.	90° Elbows	Per Pkg.	Tees	Per Pkg.
1/16″	53415K101	$4.47	53415K275	$8.25	53415K285	$8.25
3/32″	53415K102	4.47	53415K146	7.11	53415K166	7.63
1/8″	53415K103	4.47	53415K147	7.63	53415K157	8.16
5/32″	53415K104	8.42	53415K292	11.75	53415K167	11.75
3/16″	53415K105	8.42	53415K293	11.75	53415K168	13.42
1/4″	53415K106	5.53	53415K148	7.37	53415K158	7.89
5/16″	53415K113	5.53	53415K144	7.89	53415K169	7.89
3/8″	53415K107	5.53	53415K149	7.89	53415K159	7.89
1/2″	53415K108	5.53	53415K151	7.89	53415K161	8.42
5/8″	53415K109	5.79	53415K152	8.86	53415K162	8.86
3/4″	53415K111	9.43	53415K153	9.43	53415K163	9.14
1″	53415K112	11.05	53415K154	12.32	53415K164	11.05

Reducing Couplings

For Tube ID		Per Pkg.
3/32″ × 1/16″	53415K289	$4.47
1/8″ × 1/16″	53415K114	4.47
1/8″ × 3/32″	53415K294	4.47
5/32″ × 1/8″	53415K295	8.16
3/16″ × 1/8″	53415K116	8.42
1/4″ × 1/8″	53415K118	8.42
1/4″ × 5/32″	53415K296	8.42
1/4″ × 3/16″	53415K121	8.86
5/16″ × 1/4″	53415K122	7.37
3/8″ × 1/4″	53415K124	5.53
3/8″ × 5/16″	53415K123	5.53
1/2″ × 1/4″	53415K125	5.53
1/2″ × 5/16″	53415K155	5.53
1/2″ × 3/8″	53415K126	5.53
5/8″ × 1/4″	53415K127	5.79
5/8″ × 5/16″	53415K156	5.79
5/8″ × 3/8″	53415K128	5.79
5/8″ × 1/2″	53415K129	5.79
3/4″ × 3/8″	53415K131	5.79
3/4″ × 1/2″	53415K132	5.79
3/4″ × 5/8″	53415K133	9.43
1″ × 1/2″	53415K134	10.79
1″ × 5/8″	53415K135	10.79
1″ × 3/4″	53415K136	10.79

Tube-to-Threaded Pipe Connectors—High Temperature

Adapters, Male Pipe

For Tube ID	Pipe/ Thread Size		Per Pkg.
1/16″	10-32	5121K311	$2.89
1/16″	1/8″	5121K351	3.71
1/16″	1/4″	5121K421	3.88
3/32″	10-32	5121K321	2.89
3/32″	1/8″	5121K361	3.71
1/8″	10-32	5121K331	2.89
1/8″	1/8″	5121K371	3.71
1/8″	1/4″	5121K431	3.88
3/16″	1/8″	5121K381	3.85
3/16″	1/4″	5121K441	4.02
1/4″	1/8″	5121K391	3.88
1/4″	1/4″-28	5121K341	3.65
1/4″	1/4″	5121K451	4.02
3/8″	1/8″	5121K411	3.85
3/8″	1/2″	5121K461	4.78
1/2″	1/2″	5121K471	4.78

For Tube ID	Pipe/ Thread Size	Adapters, Female Pipe	Per Pkg.	90° Elbows, Male Pipe	Per Pkg.	Branch Tees, Male Pipe	Per Pkg.
1/16″	10-32	—	—	5121K611	$5.03	—	—
1/16″	1/8″	—	—	—	—	5121K921	$4.73
1/8″	10-32	—	—	5121K621	5.03	5121K911	4.40
1/8″	1/8″	5121K511	$6.14	5121K631	5.30	5121K941	4.84
1/8″	1/4″	5121K521	6.14	—	—	—	—
3/16″	1/8″	—	—	5121K641	5.57	—	—
3/16″	3/8″	—	—	5121K661	5.97	—	—
1/4″	1/8″	—	—	5121K651	5.59	5121K931	4.94

(Continued on following page)

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3.

White Polypropylene Single-Barbed Tube Fittings *(Continued from previous page)*

Tube-to-Tube Connectors—High Temperature

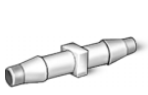

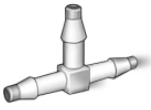
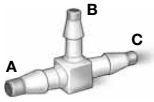

For Tube ID	Couplings Per Pkg.		90° Elbows Per Pkg.		Tees Per Pkg.	
1/16"	5121K191	$3.37	5121K901	$3.91	5121K711	$3.91
3/32"	5121K121	3.37	5121K902	3.91	5121K721	3.91
1/8"	5121K131	3.37	5121K903	4.03	5121K731	4.03
5/32"	5121K141	3.71	5121K904	4.41	5121K741	4.34
3/16"	5121K151	3.73	5121K905	4.79	5121K751	4.79
1/4"	5121K161	4.05	5121K906	5.06	5121K761	5.06
3/8"	5121K171	3.57	5121K907	5.62	5121K771	5.62
1/2"	5121K181	3.69	5121K908	6.03	5121K781	5.94

Reducing Tees

For Tube ID, (A)×(B)×(C)		Per Pkg.
1/16"×3/32"×1/16"	5121K811	$3.91
3/32"×1/16"×3/32"	5121K821	3.91
1/8"×3/16"×1/8"	5121K871	4.03
5/32"×1/16"×5/32"	5121K831	4.25
5/32"×1/8"×5/32"	5121K841	4.34
3/8"×1/8"×3/8"	5121K851	5.46
3/8"×1/4"×3/8"	5121K861	5.60

Reducing Couplings

For Tube ID		Per Pkg.
3/32"×1/16"	5121K211	$3.37
1/8"×1/16"	5121K221	3.38
1/8"×3/32"	5121K231	3.37
3/16"×1/8"	5121K241	3.68
1/4"×5/32"	5121K251	3.76
1/4"×3/16"	5121K261	3.76
3/8"×1/4"	5121K271	3.66

Reducing 90° Elbows

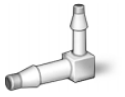

For Tube ID		Per Pkg.
3/32"×1/16"	5121K912	$3.91
1/8"×3/32"	5121K915	4.03
3/16"×1/8"	5121K913	4.79
3/16"×5/32"	5121K914	4.79

Type 316L Stainless Steel Single-Barbed Tube Fittings

- Maximum Pressure: 150 psi @ 72°F
- Temperature Range: –50° to +850°F
- Tubing: Use with PVC and polyurethane with a hardness of Shore A 40-90
- Clamps: Required (see pages 274-280)

Because these single-barbed fittings are made of Type 316L stainless steel, they contain molybdenum, which provides better corrosion resistance than other types of stainless steel. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. Use with water, air, gasoline, and acetic acids. Material meets ASTM A240 and ASME SA-240. Fittings can be sterilized with steam (autoclaving) and radiation. Not rated for vacuum.

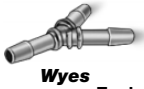

For Tube ID	Couplings Each		90° Elbows Each		Tees Each		Wyes Each	
1/8"	2653K11	$4.84	2653K31	$9.82	2653K51	$15.64	—	—
3/16"	2653K12	6.02	2653K32	13.84	2653K52	23.49	2653K64	$19.40
1/4"	2653K13	7.18	2653K33	21.36	2653K53	25.27	—	—
5/16"	2653K14	8.20	2653K34	24.82	2653K54	33.98	2653K19	39.40
3/8"	2653K15	14.29	2653K35	32.31	2653K55	43.42	2653K66	42.53
1/2"	2653K16	22.13	2653K36	38.60	2653K56	52.71	2653K21	45.62
5/8"	2653K17	27.47	2653K37	47.73	2653K57	63.29	—	—
3/4"	2653K18	39.56	2653K38	59.53	2653K58	79.78	—	—

Reducing Couplings

For Tube ID		Each
1/4"×1/8"	2653K81	$8.02
1/4"×3/16"	2653K82	10.04
1/2"×1/4"	2653K83	15.40
3/4"×1/2"	2653K84	16.89

Reducing Tees

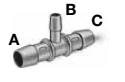

For Tube ID, (A)×(B)×(C)		Each
1/8"×5/16"×1/8"	2653K95	$22.69
3/8"×5/16"×3/8"	2653K96	42.13
1/2"×5/16"×1/2"	2653K97	47.18
5/8"×3/8"×5/8"	2653K98	58.22

Type 303 Stainless Steel Multi-Barbed Tube Fittings

- Maximum Pressure: 275 psi @ 72°F
- Temperature Range: –20° to +750°F
- Tubing: Use with PVC and polyurethane with a hardness of Shore A 65-90
- Clamps: Required (see pgs. 274-280)

These Type 303 stainless steel fittings have a surface treatment for enhanced corrosion resistance. They have a multi-barbed design that provides additional contact between the fitting and the tube for extra gripping power. Use with water, air, oil, hydraulic fluid, and food and beverage. Material is FDA compliant and meets ASTM A581 and A582. Not rated for sterilization or vacuum. Pipe connections are NPT.

Fittings with a ***45° flare*** connect to tubing that has been flared to 45°. The *female 45° flare* fittings have a nickel-plated brass nut.

Tube-to-Threaded Pipe Connectors

Adapters, Male Pipe

For Tube ID	Pipe Size		Each
1/4"	1/8"	5670K86	$3.43
1/4"	1/4"	5670K84	3.23
1/4"	3/8"	5670K82	4.37
3/8"	1/8"	5670K87	4.40
3/8"	1/4"	5670K85	3.55
3/8"	3/8"	5670K83	4.37
3/8"	1/2"	5670K81	6.89
1/2"	3/4"	5670K88	10.03

90° Elbows, Male Pipe

For Tube ID	Pipe Size		Each
1/4"	1/8"	5670K94	$6.86
1/4"	1/4"	5670K93	6.57
1/4"	3/8"	5670K99	7.20
3/8"	1/8"	5670K95	12.88
3/8"	1/4"	5670K91	6.86
3/8"	3/8"	5670K92	7.66
1/2"	1/2"	5670K96	15.80
1/2"	3/4"	5670K97	12.92

Tube-to-45° Flare Threaded Connectors

For Tube ID	Flared End Thread Size	Adapters, Male 45° Flare	Each	Adapters, Female 45° Flare	Each
1/8"	7/16"-20	—	—	5670K47	$1.77
1/8"	1/2"-16	—	—	5670K28	3.23
1/4"	7/16"-20	5670K51	$2.52	5670K21	1.28
1/4"	1/2"-16	5670K54	2.83	5670K22	1.77
1/4"	5/8"-18	5670K55	3.80	5670K23	2.49
3/8"	7/16"-20	5670K53	2.77	5670K24	3.20
3/8"	1/2"-16	5670K57	2.83	5670K26	2.20
3/8"	5/8"-18	5670K56	3.89	5670K25	2.49
1/2"	3/4"-16	—	—	5670K29	3.31

Tube-to-Tube Connectors

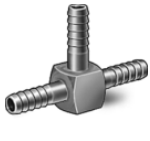

For Tube ID	Couplings Each		90° Elbows Each		Curved 90° Elbows Each		Tees Each	
1/8"	5670K14	$2.95	—	—	—	—	5670K67	$8.09
1/4"	5670K11	1.83	5670K27	$4.94	5670K17	$2.17	5670K31	6.00
3/8"	5670K12	2.22	—	—	5670K18	3.46	5670K32	6.77
1/2"	5670K15	3.09	—	—	5670K19	6.54	5670K68	12.31

Reducing Couplings

For Tube ID		Each
1/4"×1/8"	5670K16	$3.18
3/8"×1/8"	5670K41	3.18
3/8"×1/4"	5670K13	2.22
1/2"×1/4"	5670K42	3.26
1/2"×3/8"	5670K43	3.09

Reducing Tees

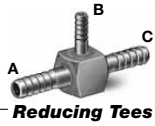

For Tube ID, (A)×(B)×(C)		Each
1/4"×1/8"×1/4"	5670K35	$8.92
1/4"×3/8"×1/4"	5670K33	6.97
3/8"×1/4"×3/8"	5670K34	6.97
1/2"×1/4"×1/2"	5670K37	12.26
1/2"×3/8"×1/2"	5670K36	13.48

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3.

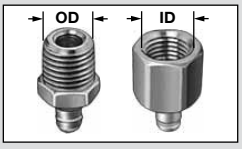

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″

Miniature Brass Barbed Tube Fittings

- Maximum Pressure: 150 psi @ 72° F
- Temperature Range: –40° to +250° F
- Tubing: Use with polyethylene and polyurethane with a hardness up to Shore A 90
- Clamps: Required (see pages 274-280)

You'll appreciate the compact body on these fittings, especially when working in restricted spaces. They're machined from brass bar stock and have a bright finish. Use with water, air, and oil. Not rated for sterilization. Vacuum rating is 28″ Hg @ 72° F.

Adapters come with a clamp, unless noted. Fittings with a 10-32 thread come with a Buna-N (nitrile) gasket. The fittings with 3-56 and 10-32 thread sizes are UNF straight screw thread. The fittings with 1/16″ and 1/8″ pipe sizes have NPT threads.

For Tube ID	Pipe/ Thread Size	Adapters, Male Pipe: O'all Lg.	Pkg. Qty.		Per Pkg.	Swivel Adapters, Male Pipe: O'all Lg.	Pkg. Qty.		Per Pkg.
1/16″	3-56	1/4″	10	5454K74■	$4.64	—	—	—	—
1/16″	10-32	9/16″	10	5454K61	7.47	—	—	—	—
1/8″	10-32	21/32″	10	5454K62	9.00	1 1/32″	5	5454K66■	$10.95
1/8″	10-32	13/16″	10	5454K63	9.00	—	—	—	—
1/8″	1/16″	23/32″	10	5454K64	9.49	—	—	—	—
1/8″	1/8″	1″	10	5454K65	9.49	1 5/32″	5	5454K67■	10.09

Repl. Buna-N Gaskets—5/32″ ID × 15/64″ OD (25/Pkg.) ..... 5454K21 Per Pkg. $1.62

■ Clamp not included.

High-Pressure Brass and Brass/Stainless Steel Single-Barbed Tube Fittings

- Maximum Pressure: 750 psi @ 125° F
- Temperature Range: –40° to +250° F
- Tubing: Use with polyurethane with a hardness of Shore A 65-90
- Clamps: Required (see pages 274-280)

Ideal for use in pressure-measurement equipment, these compact single-barbed fittings stand up to high pressure. They have a corrosion-resistant brass body with a Type 321 stainless steel barbed end except those for 1/16″ tube ID, which have a brass barbed end. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. Use with water, air, oil, and freon. Not rated for sterilization or vacuum. Pipe connections are NPT.

For Tube ID	ADAPTERS, MALE PIPE: 1/8″ Pipe Size	Each	1/4″ Pipe Size	Each	ADAPTERS, FEMALE PIPE: 1/8″ Pipe Size	Each	1/4″ Pipe Size	Each
0.031″	50745K11★	$9.10	50745K31★	$9.10	50745K21★	$9.10	50745K41★	$9.10
0.04″	50745K12	9.10	50745K32	9.10	50745K22	9.10	50745K42	9.10
0.05″	50745K13	9.10	50745K33	9.10	50745K23	9.10	50745K43	9.10
1/16″	50745K14	9.10	50745K34	9.10	50745K24	9.10	50745K44	9.10
3/32″	50745K15	9.10	50745K35	9.10	50745K25	9.10	50745K45	9.10
1/8″	50745K16	9.10	50745K36	9.10	50745K26	9.10	50745K46	9.10

★ Does not have a barb.

Brass Double-Barbed Vacuum Tube Fittings

- Max. Pressure: 100 psi @ 73° F
- Temp. Range: –65° to +75° F
- Tubing: Use with polyethylene with a hardness of Shore A 92
- Clamps: Not required

These fittings have a vacuum rating of 29.9″ Hg @ 72° F, plus they're great in heating and air conditioning applications. Made of extruded Type CA360/CA345 yellow brass, they have two barbs for strong gripping power. Just cut your tubing squarely and push it over both barbs for a strong connection. Use with water and air. Not rated for sterilization. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads. ***Through-wall couplings*** are also known as bulkhead couplings.

Tube-to-Threaded Pipe Connectors

For Tube ID	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	90° Elbows, Female Pipe	Each	Branch Tees, Male Pipe	Each	Run Tees, Male Pipe	Each
0.096″	1/8″	44555K126	$2.34	44555K122	$4.71	44555K145	$4.49	—	—	—	—	—	—
0.17″	1/16″	44555K127	1.29	—	—	44555K146	3.14	—	—	44555K158	$5.66	—	—
0.17″	1/8″	44555K128	1.11	44555K123	2.80	44555K147	2.37	44555K153	$3.06	44555K159	3.77	44555K155	$5.14
0.17″	1/4″	44555K129	2.51	—	—	44555K148	2.54	—	—	—	—	—	—
1/4″	1/8″	44555K131	2.00	44555K124	4.09	44555K149	3.20	—	—	44555K161	5.29	44555K156	6.80
1/4″	1/4″	44555K132	2.63	44555K125	4.86	44555K151	5.26	44555K154	6.29	44555K162	5.37	44555K157	8.40
3/8″	1/4″	44555K133	2.03	—	—	44555K182	6.07	—	—	—	—	—	—
3/8″	3/8″	44555K134	5.31	—	—	44555K183	7.63	—	—	—	—	—	—
3/8″	1/2″	44555K135	6.29	—	—	—	—	—	—	—	—	—	—

Tube-to-Tube Connectors

For Tube ID	Couplings	Each	90° Elbows	Each	Tees	Each	Through-Wall Couplings: Required Hole Size		Each	Reducing Couplings: For Tube ID		Each
0.096″	44555K111	$1.34	44555K141	$3.54	44555K136	$3.14	—	—	—	0.17″ × 0.096″	44555K115	$3.11
0.17″	44555K112	1.31	44555K142	2.23	44555K137	2.20	5/16″	44555K119	$6.03	1/4″ × 0.17″	44555K116	2.97
1/4″	44555K113	2.00	44555K143	3.29	44555K138	3.37	3/8″	44555K121	7.11	3/8″ × 0.17″	44555K187	2.95
3/8″	44555K184	2.64	44555K185	3.42	44555K186	3.77	—	—	—	3/8″ × 1/4″	44555K188	2.34

Reducing Tees

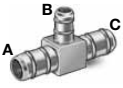

For Tube ID, (A) × (B) × (C)	Each	For Tube ID, (A) × (B) × (C)	Each
0.17″ × 0.096″ × 0.17″	44555K171 $3.77	3/8″ × 0.17″ × 3/8″	44555K189 $4.44
1/4″ × 0.096″ × 1/4″	44555K172 3.46	3/8″ × 1/4″ × 3/8″	44555K191 4.82
1/4″ × 0.17″ × 1/4″	44555K173 2.26		

For information about barbed tube fittings, see pg. 156. For information about selecting pipe size, see pgs. 2-3

Nickel-Plated Brass Barbed Vacuum Tube Fittings

- Max. Pressure: 150 psi @ 75° F except swivel elbows and tees, which are 120 psi @ 75° F
- Temperature Range: –30° to +160° F
- Tubing: Use with polyurethane with a hardness of Shore A 85
- Clamps: Required (see pages 274-280)

The nickel plating gives these brass fittings longer life in corrosive environments, plus the plating won't peel or chip so you can count on it when appearance is important. Use these fittings with water, air, and oil. Not rated for sterilization. Vacuum rating is 28″ Hg @ 75° F.

All of the ***tube-to-threaded pipe connectors*** include a Buna-N (nitrile) O-ring for a tight seal. Thread size connections are UNF straight thread.

The ***swivel 90° elbows*** and ***swivel branch tees*** permit easy adjustments in tight spaces.

Tube-to-Threaded Pipe Connectors

For Tube ID	Thread Size	Adapters, Male Pipe: No. of Barbs		Each	Swivel 90° Elbows, Male Pipe: No. of Barbs		Each	Swivel Branch Tees, Male Pipe: No. of Barbs		Each
1/16″	10-32	1	2844K11	$0.90	1	2844K71	$4.61	1	2844K74	$6.13
5/64″	10-32	2	2844K12	1.04	1	2844K72	4.61	1	2844K75	6.13
1/8″	10-32	2	2844K13	1.04	1	2844K73	4.61	1	2844K76	6.13

Tube-to-Tube Connectors

For Tube ID	No. of Barbs	Couplings	Each	Tees	Each
1/16″	1	2844K21	$1.26	2844K41	$3.04
5/64″	2	—	—	2844K42	3.50
1/8″	2	2844K22	1.35	2844K43	3.50

Choose-a-Color Aluminum Single-Barbed Tube Fittings

- Maximum Pressure: 125 psi @ 72° F
- Temperature Range: –40° to +300° F
- Tubing: Use with polyethylene, polypropylene, polyurethane, PTFE, and nylon
- Clamps: Not required

These lightweight, single-barbed fittings are made from 6061-T6 aluminum with an anodized finish to improve corrosion resistance and surface hardness. Single-barbed fittings minimize leaks by having a smoother sealing surface than multi-barbed fittings. Use with water, air, hydraulic fluid, and oil. Vacuum rating is 27″ Hg @ 72° F. Not rated for sterilization.

The fittings with 10-32 and 1/4″-28 thread sizes are UNF straight threads and include a fiber gasket. The fittings with 1/4″ pipe size are NPT threads.

Fittings come in a choice of colors for easy line identification. **To Order:** Please specify color: black, blue, red, or silver.

Tube-to-Threaded Pipe Connectors

For Tube ID	Pipe/Thread Size	Adapters, Male Pipe:	Each	For Tube ID	Pipe/Thread Size		Each
1/16″	10-32	5058K21	$1.93	0.17″	1/4″-28	5058K33	$2.40
1/16″	1/4″-28	5058K31	2.40	0.17″	1/4″	5058K43	3.75
1/16″	1/4″	5058K41	3.75	1/4″	10-32	5058K24	2.04
1/8″	10-32	5058K22	1.93	1/4″	1/4″-28	5058K34	2.58
1/8″	1/4″-28	5058K32	2.40	1/4″	1/4″	5058K44	4.11
1/8″	1/4″	5058K42	3.75	3/8″	1/4″	5058K45	5.20
0.17″	10-32	5058K23	1.93	1/2″	1/4″	5058K46	5.20

Tube-to-Tube Connectors

For Tube ID	Couplings	Each	90° Elbows	Each	Tees	Each
1/16″	5058K11	$1.78	5058K47	$2.51	5058K54	$4.33
1/8″	5058K12	1.96	5058K48	2.88	5058K55	4.88
0.17″	5058K13	1.96	5058K49	2.88	5058K56	4.88
1/4″	5058K14	2.73	5058K51	6.00	5058K57	6.00
3/8″	5058K15	3.28	5058K52	6.91	5058K58	7.45
1/2″	5058K16	3.28	5058K53	6.91	5058K59	7.46

About Compression Tube Fittings

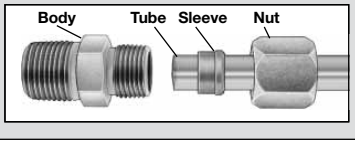

Compression fittings are for use with hard-plastic and metal tubing. They provide a tight seal around the outside of your tubing without the need for flaring, soldering, or other forms of tubing preparation. Most compression fittings consist of a body, nut, and sleeve (ferrule), however some have the sleeve built right into the nut. Simply insert the tubing into the fitting and tighten the nut; it's the nut and sleeve that form the seal. Unless otherwise stated, you must remove the nut before inserting the tubing.

Durable White Nylon Compression Tube Fittings

- Maximum Pressure (with Copper Tubing):
  1/4″ and 5/16″ OD: 300 psi @ 73° F
  3/8″ OD: 250 psi @ 73° F
  1/2″ OD: 200 psi @ 73° F
- Temperature Range: –40° to +200° F
- Tubing: Use with polyurethane (with a hardness of Shore A 85-95), copper, polyethylene, polypropylene, and nylon

Made of durable nylon, these semi-clear white compression fittings are impact and abrasion resistant. They also have fair chemical resistance. Compression fittings form a seal around the outside of the tubing. Fittings include a body, nut, Type 302 stainless steel grasping ring for securing the tubing, and Buna-N (nitrile) O-ring. Use with water, air, and food and beverage. Material meets FDA CFR21 177 and is NSF 51 certified. Not rated for sterilization. Vacuum rating is 25″ Hg @ 72° F. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads.

Note: The nuts for these fittings have a unique thread style that allows them to work only with the fittings in this presentation.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	90° Elbows, Female Pipe	Each	Branch Tees, Male Pipe	Each	Run Tees, Male Pipe	Each
1/4″	1/8″	50775K327	$1.20	50775K309	$2.32	50775K341	$1.70	50775K379	$2.26	50775K355	$3.30	50775K389	$3.28
1/4″	1/4″	50775K329	1.20	50775K311	2.48	50775K343	1.70	50775K381	3.00	50775K357	3.40	—	—
5/16″	1/4″	50775K331	1.30	—	—	50775K345	2.24	—	—	—	—	—	—
3/8″	1/4″	50775K333	1.48	50775K313	2.22	50775K347	1.58	50775K383	2.92	50775K359	4.90	50775K391	8.92
3/8″	3/8″	50775K335	1.48	50775K315	2.50	50775K349	1.72	50775K385	2.66	50775K361	4.40	—	—
1/2″	3/8″	50775K337	1.56	50775K317	3.54	50775K351	2.28	50775K387	3.34	50775K363	5.34	50775K393	6.42
1/2″	1/2″	50775K339	1.60	50775K356	4.30	50775K353	2.08	50775K358	3.00	—	—	—	—

(Continued on following page)

For information about compression fittings, see pg. 165. For information about selecting pipe size, see pgs. 2-3.

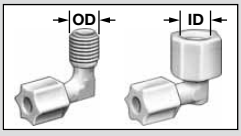

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 15/16″, the next highest OD or ID is 1″ and the corresponding pipe size is 3/4″ .

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″	1″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″

Durable White Nylon Compression Tube Fittings *(Continued from previous page)*

- Maximum Pressure (with Copper Tubing):
  1/4″ and 5/16″ OD: 300 psi @ 73° F
  3/8″ OD: 250 psi @ 73° F
  1/2″ OD: 200 psi @ 73° F
- Temperature Range: –40° to +200° F
- Tubing: Use with polyurethane (with a hardness of Shore A 85-95), copper, polyethylene, polypropylene, and nylon

Made of durable nylon, these semi-clear white compression fittings are impact and abrasion resistant. They also have fair chemical resistance. Compression fittings form a seal around the outside of the tubing. Fittings include a body, nut, Type 302 stainless steel grasping ring for securing the tubing, and Buna-N (nitrile) O-ring. Use with water, air, and food and beverage. Material meets FDA CFR21 177 and is NSF 51 certified. Not rated for sterilization. Vacuum rating is 25″ Hg @ 72° F. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads.

Through-wall couplings are also known as bulkhead couplings. They require a 21/32″ hole through the wall for installation, except the coupling for 3/8″ tube OD which requires a 25/32″ hole and the coupling for 1/2″ tube OD which requires a 31/32″ hole.

Nuts include a sleeve, Type 302 stainless steel grasping ring, and a Buna-N (nitrile) O-ring. *Note*: The nuts have a unique thread style that allows them to work only with the fittings in this presentation.

Tube supports (sold separately) are recommended for polyurethane and polyethylene tubing. Pkg. qty. is 10.

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	90° Elbows	Each	Tees	Each	Through-Wall Couplings	Each
1/4″	50775K301	$2.22	50775K319	$2.72	50775K395	$3.76	50775K373	$4.68
5/16″	50775K303	2.68	50775K321	3.02	50775K397	4.18	50775K374	8.35
3/8″	50775K305	2.68	50775K323	2.90	50775K399	4.14	50775K375	5.62
1/2″	50775K307	2.86	50775K325	3.76	50775K401	5.34	50775K377	6.68

Accessories

For Tube OD	Nuts	Each	For Tube ID	Tube Supports	Per Pkg.
1/4″	50775K365	$1.42	3/16″	50775K403	$5.60
5/16″	50775K367	2.02	3/16″	50775K405	10.00
3/8″	50775K369	1.88	1/4″	50775K407	4.20
1/2″	50775K371	1.68	3/8″	50775K409	6.40

White Polypropylene Compression Tube Fittings for Drinking Water

- Maximum Pressure: 220 psi @ 70° F
- Temperature Range: –30° to +215° F
- Tubing: Use with polypropylene, polyethylene, and nylon 11

Use these opaque-white polypropylene fittings with drinking (potable) water—they're NSF 61 certified, so you know they're safe. Polypropylene has good chemical resistance, plus it won't absorb water like nylon, but it's not as impact or abrasion resistant. Compression fittings form a seal around the outside of the tubing. Fittings include a body and nut with a built-in sleeve (ferrule), so there's no need to disassemble the fittings for installation. They can be sterilized with steam (autoclaving) and gas. Not rated for vacuum. Pipe connections are NPT. Nut/tube ends have UNF straight screw threads.

Tube supports (sold separately) are recommended for plastic tubing with a hardness of Shore A 70 or less.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/ Tube End Thread	Pkg. Qty.	Adapters, Male Pipe	Per Pkg.	Adapters, Female Pipe	Per Pkg.	90° Elbows, Male Pipe	Per Pkg.	90° Elbows, Female Pipe	Per Pkg.	Branch Tees, Male Pipe	Per Pkg.
1/4″	1/8″	7/16″-20	5	5016K411	$4.11	5016K911	$5.26	5016K611	$6.00	5016K125	$7.54	5016K811	$8.57
1/4″	1/4″	7/16″-20	5	5016K422	4.46	5016K922	5.54	5016K622	6.06	5016K135	7.66	5016K822	10.23
1/4″	3/8″	7/16″-20	5	5016K423	4.57	—	—	5016K681	7.09	—	—	—	—
5/16″	1/4″	1/2″-20	5	5016K477	4.63	5016K977	5.77	5016K677	6.51	5016K145	8.46	5016K877	10.97
3/8″	1/4″	5/8″-20	5	5016K488	5.31	5016K988	6.51	5016K688	7.54	5016K156	9.20	5016K889	11.89
3/8″	3/8″	5/8″-20	5	5016K444	5.89	5016K944	6.74	5016K644	7.83	5016K165	10.29	5016K844	12.23
3/8″	1/2″	5/8″-20	5	5016K446	6.91	5016K949	7.66	—	—	—	—	—	—
1/2″	1/4″	3/4″-20	5	5016K491	8.80	—	—	5016K112	8.40	—	—	—	—
1/2″	3/8″	3/4″-20	5	5016K499	7.14	5016K991	7.83	5016K699	9.09	5016K175	12.00	5016K899	15.43
1/2″	1/2″	3/4″-20	5	5016K466	7.54	5016K966	8.29	5016K666	9.14	5016K185	13.71	5016K866	15.71
5/8″	3/8″	7/8″-20	5	5016K455	8.23	—	—	5016K655	10.69	—	—	—	—
5/8″	1/2″	7/8″-20	2	5016K456	3.34	5016K933	5.14	5016K656	4.39	5016K195	7.04	5016K855	7.18
3/4″	1/2″	1 1/16″-20	1	5016K457	2.74	—	—	—	—	—	—	5016K856	5.21
3/4″	3/4″	1 1/16″-20	1	5016K458	2.86	—	—	—	—	—	—	5016K857	5.30

Tube-to-Tube Connectors

For Tube OD	Nut/ Tube End Thread	Pkg. Qty.	Couplings	Per Pkg.	90° Elbows	Per Pkg.	Tees	Per Pkg.
1/4″	7/16″-20	5	5016K522	$6.63	5016K111	$8.46	5016K722	$11.09
5/16″	1/2″-20	5	5016K577	6.91	5016K122	8.91	5016K777	11.60
3/8″	5/8″-20	5	5016K544	8.91	5016K133	11.20	5016K744	14.69
1/2″	3/4″-20	2	5016K566	4.57	5016K144	5.49	5016K766	7.06
5/8″	7/8″-20	1	5016K555	2.65	5016K155	4.59	5016K755	3.84
3/4″	1 1/16″-20	1	5016K588	4.26	5016K205	6.75	5016K788	6.57

Accessories

For Tube OD	Pkg. Qty.	Nuts	Per Pkg.	Tube Supports	Per Pkg.
1/4″	10	5016K222	$5.03	5016K322	$1.26
5/16″	10	5016K277	5.26	5016K377	1.49
3/8″	10	5016K244	6.29	5016K344	1.71
1/2″	10	5016K266	7.77	5016K366	2.29
5/8″	10	5016K233	8.57	—	—
3/4″	5	5016K234	8.11	—	—

For information about compression fittings, see pg. 165. For information about selecting pipe size, see pgs. 2-3.

NSF/FDA-Compliant White PVDF Compression Tube Fittings

- Maximum Pressure: 50 psi @ 70° F
- Temperature Range: –40° to +275° F
- Tubing: Use with polyethylene, polypropylene, and nylon 11

In addition to being NSF 61 certified for use with drinking (potable) water, these fittings are FDA CFR21 177.2510 compliant for use with food and beverage, as well as USDA compliant. You can also use them with air, oil, and iodine. They're made of semi-clear white PVDF (polyvinylidene fluoride), which is also known as Kynar. PVDF has excellent chemical resistance and strength. Compression fittings form a seal around the outside of the tubing. They include a body and nut with a built-in sleeve (ferrule), so there's no need to disassemble the fittings for installation. They can be sterilized with steam (autoclaving) and gas. Not rated for vacuum. Nut/tube ends have UNF straight screw threads.

Tube supports (sold separately) are recommended for plastic tubing with a hardness of Shore A 70 or less.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/Tube End Thread	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	90° Elbows, Female Pipe	Each	Branch Tees, Male Pipe	Each
1/8″	1/8″	5/16″-24	5533K433	$3.02	—	—	5533K633	$3.44	—	—	—	—
1/8″	1/4″	5/16″-24	—	—	—	—	—	—	5533K115	$3.61	—	—
1/4″	1/8″	7/16″-20	5533K411	3.45	5533K911	$3.45	5533K611	3.66	5533K125	3.83	5533K811	$4.96
1/4″	1/4″	7/16″-20	5533K422	3.62	5533K922	3.77	5533K622	3.77	5533K135	4.04	5533K822	5.17
1/4″	3/8″	7/16″-20	5533K423	4.29	—	—	5533K681	5.69	—	—	—	—
5/16″	1/4″	1/2″-20	5533K477	3.91	5533K977	4.06	5533K677	4.26	5533K145	4.41	5533K877	5.68
3/8″	1/4″	5/8″-20	5533K488	5.46	5533K988	5.46	5533K688	5.58	5533K155	5.81	5533K888	8.64
3/8″	3/8″	5/8″-20	5533K444	5.71	5533K944	5.53	5533K644	5.71	5533K165	5.95	5533K844	8.79
3/8″	1/2″	5/8″-20	5533K446	6.47	5533K949	6.30	—	—	—	—	—	—
1/2″	1/4″	3/4″-20	5533K491	7.24	—	—	—	—	—	—	—	—
1/2″	3/8″	3/4″-20	5533K499	6.54	5533K991	6.41	5533K699	6.67	5533K175	7.40	5533K899	10.86
1/2″	1/2″	3/4″-20	5533K466	6.97	5533K966	6.82	5533K666	7.40	5533K185	7.84	5533K866	11.59

Tube-to-Tube Connectors

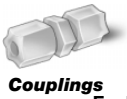

For Tube OD	Nut/Tube End Thread	Couplings	Each	90° Elbows	Each	Tees	Each
1/8″	5/16″-24	—	—	—	—	5533K711	$5.09
1/4″	7/16″-20	5533K522	$4.65	5533K111	$4.65	5533K722	6.15
5/16″	1/2″-20	5533K577	5.58	5533K122	5.09	5533K777	6.89
3/8″	5/8″-20	5533K544	7.87	5533K133	7.87	5533K744	11.05
1/2″	3/4″-20	5533K566	9.89	5533K144	10.15	5533K766	13.78

Accessories

For Tube OD	Nuts	Each	Tube Supports Pkg. Qty.		Per Pkg.
1/8″	5533K211	$0.99	—	—	—
1/4″	5533K222	1.20	10	5533K322	$2.17
5/16″	5533K277	1.35	10	5533K377	2.28
3/8″	5533K244	2.41	10	5533K344	2.51
1/2″	5533K266	2.91	10	5533K366	3.32

Chemical-Resistant Clear PFA Compression Tube Fittings

- Maximum Pressure: 125 psi @ 70° F
- Temp. Range: –60° to +400° F
- Tubing: Use with PFA (with a hardness of Shore D 60) and PTFE (Shore D 50-65)

Made of clear PFA (perfluoroalkoxy), these fittings offer the best chemical resistance of any compression fittings we offer. Use them with hydrochloric and sulfuric acids, as well as with water, air, and oil. The material is FDA CFR21 177.1550 compliant. Compression fittings form a seal around the outside of the tubing. Fittings include a body, an ETFE gripping ring, a nut, and a sleeve (ferrule). Not rated for sterilization or vacuum. Pipe connections are NPT. Nut/tube ends have UNEF straight screw threads except the 5/16″-20 thread size, which is UN straight screw thread and 1/2″-20 thread size, which is UNF straight screw thread.

Through-wall adapters, which are also called bulkhead couplings, require a hole through the wall that's 1/4″ larger than the tube OD.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/Tube End Thread	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	Branch Tees, Male Pipe	Each
1/8″	1/8″	5/16″-20	52195K51	$21.63	52195K71	$22.83	52195K46	$15.82	52195K13	$29.87
1/4″	1/8″	1/2″-20	52195K52	22.77	52195K72	28.58	52195K47	24.32	52195K11	29.22
1/4″	1/4″	1/2″-20	52195K53	22.60	52195K73	28.58	52195K48	24.13	52195K14	28.98
1/4″	3/8″	1/2″-20	52195K54	23.65	52195K74	30.63	52195K481	24.93	—	—
1/4″	1/2″	1/2″-20	52195K55	26.02	52195K75	30.63	52195K482	25.52	—	—
3/8″	1/4″	5/8″-20	52195K56	26.40	52195K77	32.03	52195K49	25.32	52195K112	33.07
3/8″	3/8″	5/8″-20	52195K57	26.58	52195K78	32.03	52195K85	25.70	52195K15	33.07
3/8″	1/2″	5/8″-20	52195K58	26.38	52195K79	32.03	52195K86	25.52	52195K113	33.07
1/2″	1/4″	3/4″-20	52195K64	28.28	52195K36	39.35	52195K27	26.17	52195K116	44.52
1/2″	3/8″	3/4″-20	52195K65	28.50	52195K37	39.35	52195K28	26.17	—	—
1/2″	1/2″	3/4″-20	52195K66	28.07	52195K38	39.05	52195K29	26.17	52195K118	45.03
3/4″	3/4″	1″-20	52195K63	40.02	52195K84	56.43	52195K891	40.33	52195K17	55.72

Through-Wall Adapters, Male Pipe

For Tube OD	Pipe Size	Nut/Tube End Thread		Each
1/4″	1/4″	1/2″-20	52195K124	$29.50
3/8″	3/8″	5/8″-20	52195K125	32.17
1/2″	1/2″	3/4″-20	52195K126	34.75
3/4″	3/4″	1″-20	52195K127	51.53

Tube-to-Tube Connectors

For Tube OD	Nut/Tube End Thread	Couplings	Each	90° Elbows	Each	Tees	Each
1/8″	5/16″-20	52195K21	$22.07	52195K31	$22.83	52195K41	$28.98
1/4″	1/2″-20	52195K22	26.45	52195K32	26.65	52195K42	36.33
3/8″	5/8″-20	52195K23	30.27	52195K33	30.27	52195K43	40.22
1/2″	3/4″-20	52195K18	37.47	52195K19	37.77	52195K39	52.75
3/4″	1″-20	52195K25	52.73	52195K35	53.13	52195K45	71.97

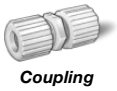
Coupling

90° Elbow

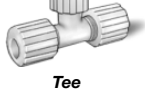
Tee

For information about compression fittings, see pg. 165. For information about selecting pipe size, see pgs. 2-3.

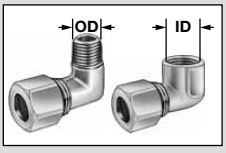

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 15/16″, the next highest OD or ID is 1″ and the corresponding pipe size is 3/4″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″	1″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″

Brass Compression Tube Fittings

- Max. Pressure: See chart at right
- Temp. Range: −65° to +250° F
- Tubing: Use with polyethylene, polypropylene, nylon, brass, copper, and aluminum

Not only are these brass fittings for use with water, air, and oil, they're also UL listed for use with flammable liquids. They're constructed of forged or extruded brass. Compression fittings form a seal around the outside of the tubing. They can be sterilized with steam (autoclaving). Not rated for vacuum. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads. Nut/tube ends have UN straight screw threads.

Standard fittings have to be disassembled for installation and include a brass body, nut, and sleeve (ferrule). *Plastic sleeves* (sold separately) are required for plastic tubing.

Self-aligning fittings include a brass body and nut with a built-in sleeve (ferrule), so there's no need to disassemble them for installation. They can be used on plastic tubing without changing the sleeve material.

Long nuts give standard fittings extra gripping power in high-vibration applications.

Also Available: Tube supports for use with plastic tubing that has a 5/8″ OD or smaller. They're made of brass except the 1/8″ size, which is copper. All supports come in a package of 10 except the 5/8″ size, which comes in a package of 5. Please ask for 50915K1 and specify tube OD.

Max. Pressure (psi) @ 72° F			
For Tube OD	Tube Wall Thick.	Standard	Self-Aligning
1/8″	.030″	400	2800
3/16″	.030″	400	1900
1/4″	.030″	300	1400
5/16″	.032″	300	1200
3/8″	.032″	200	1000
1/2″	.032″	200	750
5/8″	.035″	150	650
3/4″	.035″	100	550
1″	.035″	—	350

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/ Tube End Thread	ADAPTERS, MALE PIPE Standard	Each	ADAPTERS, MALE PIPE Self-Aligning	Each	ADAPTERS, FEMALE PIPE Standard	Each	ADAPTERS, FEMALE PIPE Self-Aligning	Each	90° ELBOWS, MALE PIPE Standard	Each	90° ELBOWS, MALE PIPE Self-Aligning	Each
1/8″	1/8″	5/16″-24	50915K311	$1.36	5220K61	$1.70	50915K211	$2.13	5220K31	$2.46	50915K711	$2.43	5220K91	$2.64
3/16″	1/8″	3/8″-24	50915K312	1.43	5220K62	1.80	50915K212	2.33	5220K32	2.67	50915K712	3.20	5220K92	3.67
3/16″	1/4″	3/8″-24	50915K313	2.77	5220K63	3.33	50915K213	4.71	5220K33	5.43	50915K713	5.49	5220K93	5.91
1/4″	1/8″	7/16″-24	50915K314	1.37	5220K64	1.54	50915K214	1.47	5220K34	1.80	50915K714	2.20	5220K94	2.36
1/4″	1/4″	7/16″-24	50915K315	1.80	5220K65	2.07	50915K215	2.84	5220K35	3.34	50915K715	2.54	5220K95	2.73
1/4″	3/8″	7/16″-24	50915K316	2.83	5220K66	3.40	50915K216	7.40	—	—	50915K716	7.13	5220K96	7.24
5/16″	1/8″	1/2″-24	50915K317	1.81	5220K67	2.27	50915K217	3.03	5220K36	3.57	50915K717	4.50	5220K97	5.50
5/16″	1/4″	1/2″-24	50915K318	2.07	5220K68	2.46	50915K218	5.13	5220K37	5.31	50915K718	4.77	5220K98	5.10
5/16″	3/8″	1/2″-24	50915K319	3.91	5220K69	11.40	50915K219	8.05	5220K332	8.60	50915K719	10.06	5220K99	13.90
5/16″	1/2″	1/2″-24	50915K321	7.99	5220K71	10.43	50915K221	8.94	—	—	50915K721	16.97	—	—
3/8″	1/8″	9/16″-24	50915K422	1.94	5220K72	2.19	50915K222	2.23	5220K38	2.66	50915K722	3.57	5220K102	4.20
3/8″	1/4″	9/16″-24	50915K323	1.83	5220K73	2.10	50915K223	3.40	5220K39	4.23	50915K723	3.34	5220K103	3.53
3/8″	3/8″	9/16″-24	50915K324	2.53	5220K74	2.93	50915K224	3.76	5220K41	4.20	50915K724	4.14	5220K104	4.40
3/8″	1/2″	9/16″-24	50915K325	3.54	5220K75	3.79	50915K225	5.49	5220K334	5.80	50915K725	6.70	5220K105	7.13
1/2″	1/4″	11/16″-20	50915K326	3.81	5220K76	4.30	50915K226	5.43	5220K42	5.80	50915K727	5.92	5220K107	7.14
1/2″	3/8″	11/16″-20	50915K327	3.60	5220K77	4.03	50915K227	5.29	5220K43	5.51	50915K726	5.93	5220K106	6.04
1/2″	1/2″	11/16″-20	50915K328	4.57	5220K78	4.60	50915K228	6.34	5220K44	6.90	50915K728	7.24	5220K108	7.63
1/2″	3/4″	11/16″-20	50915K329	8.38	5220K79	13.60	50915K229	17.04	—	—	50915K729	15.62	5220K109	17.40
5/8″	3/8″	13/16″-18	50915K331	5.77	5220K81	7.10	50915K231	19.57	5220K45	20.93	50915K732	9.51	5220K112	10.92
5/8″	1/2″	13/16″-18	50915K332	5.56	5220K82	6.20	50915K232	7.24	5220K46	7.69	50915K731	9.07	5220K111	9.83
5/8″	3/4″	13/16″-18	50915K335	7.66	5220K441	8.24	—	—	—	—	50915K733	28.13	5220K113	27.87
3/4″	1/2″	1″-18	50915K333	9.13	5220K83	7.98	50915K233	28.16	5220K47	24.66	50915K736	13.43	5220K221	12.97
3/4″	3/4″	1″-18	50915K334	10.86	5220K84	10.40	50915K234	32.77	—	—	50915K735	15.90	5220K114	16.43
1″	3/4″	1 1/4″-18	—	—	5220K85	19.73	—	—	—	—	—	—	5220K251	54.97

For Tube OD	Pipe Size	Nut/ Tube End Thread	90° ELBOWS, FEMALE PIPE Standard	Each	90° ELBOWS, FEMALE PIPE Self-Aligning	Each	BRANCH TEES, MALE PIPE Standard	Each	BRANCH TEES, MALE PIPE Self-Aligning	Each	RUN TEES, MALE PIPE Standard	Each	RUN TEES, MALE PIPE Self-Aligning	Each
1/8″	1/8″	5/16″-24	50915K161	$4.36	5220K121	$4.43	50915K511	$5.94	5220K156	$6.67	50915K411	$6.67	5220K144	$7.67
3/16″	1/8″	3/8″-24	50915K162	4.70	5220K122	6.07	50915K512	4.97	5220K157	7.81	50915K412	6.47	5220K145	7.46
1/4″	1/8″	7/16″-24	50915K163	3.34	5220K123	5.23	50915K513	4.90	5220K158	5.94	50915K413	5.07	5220K146	5.66
1/4″	1/4″	7/16″-24	50915K164	5.93	5220K124	6.04	50915K514	5.64	5220K159	6.50	50915K414	5.60	5220K147	6.64
1/4″	3/8″	7/16″-24	50915K165	11.61	5220K222	13.87	—	—	—	—	—	—	—	—
5/16″	1/8″	1/2″-24	50915K166	10.67	—	—	50915K515	8.48	—	—	50915K415	12.07	—	—
5/16″	1/4″	1/2″-24	50915K167	12.20	—	—	—	—	—	—	—	—	5220K149	11.19
3/8″	1/8″	9/16″-24	50915K168	8.10	5220K127	11.30	50915K517	8.05	5220K163	11.87	50915K417	12.92	—	—
3/8″	1/4″	9/16″-24	50915K169	6.20	5220K128	6.70	50915K518	6.44	5220K164	7.83	50915K418	6.44	5220K152	7.36
3/8″	3/8″	9/16″-24	50915K171	7.37	5220K129	7.73	50915K519	9.07	5220K165	10.06	50915K419	15.96	5220K153	15.27
3/8″	1/2″	9/16″-24	50915K172	10.17	5220K223	11.83	—	—	—	—	—	—	—	—
1/2″	1/4″	11/16″-20	50915K173	14.58	—	—	—	—	—	—	—	—	—	—
1/2″	3/8″	11/16″-20	50915K174	8.83	5220K132	9.06	50915K521	11.47	5220K166	12.67	50915K421	16.81	5220K154	18.13
1/2″	1/2″	11/16″-20	50915K175	13.35	5220K133	14.56	50915K522	22.30	5220K167	23.23	50915K423	28.80	5220K155	28.70
5/8″	1/2″	13/16″-18	50915K176	12.09	5220K134	15.43	—	—	—	—	—	—	—	—

(Continued on following page)

For information about compression fittings, see pg. 165. For information about selecting pipe size, see pgs. 2-3.

Brass Compression Tube Fittings *(Continued from previous page)*

Tube-to-Tube Connectors

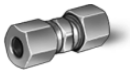

For Tube OD	Nut/ Tube End Thread	COUPLINGS Standard	Each	COUPLINGS Self-Aligning	Each	90° ELBOWS Standard	Each	90° ELBOWS Self-Aligning	Each	TEES Standard	Each	TEES Self-Aligning	Each
1/8"	5/16"-24	50915K131	$2.23	5220K21	$3.04	50915K141	$5.23	5220K51	$5.77	50915K151	$5.97	5220K135	$7.00
3/16"	3/8"-24	50915K132	2.40	5220K22	3.23	50915K142	4.17	5220K52	5.07	50915K152	8.16	5220K136	8.80
1/4"	7/16"-24	50915K133	1.87	5220K23	2.40	50915K143	3.90	5220K53	4.77	50915K153	5.90	5220K137	6.57
5/16"	1/2"-24	50915K134	2.62	5220K24	3.43	50915K144	6.90	5220K54	7.27	50915K154	7.04	5220K138	9.07
3/8"	9/16"-24	50915K135	2.69	5220K25	3.17	50915K145	4.27	5220K55	5.44	50915K155	5.83	5220K139	6.94
1/2"	11/16"-20	50915K136	5.73	5220K26	6.07	50915K146	10.03	5220K56	10.08	50915K156	11.63	5220K141	13.46
5/8"	13/16"-18	50915K137	7.67	5220K27	9.73	50915K147	11.93	5220K57	12.97	50915K157	18.13	5220K142	22.09
3/4"	1"-18	50915K138	14.44	5220K28	14.87	50915K148	26.34	5220K58	34.35	—	—	—	—
1"	1 1/4"-18	—	—	—	—	—	—	5220K59	79.30	—	—	—	—

Accessories

For Tube OD	NUTS Standard Lg.	Each	NUTS Self-Aligning Lg.	Each	LONG NUTS Standard Lg.	Each	SLEEVES Standard Brass Pkg. Qty.	Per Pkg.	SLEEVES Standard Plastic Pkg. Qty.	Per Pkg.
1/8"	3/8"	50915K121	$0.47	23/64"	5220K201	$0.96	1/2"	50915K101	$0.98	10	50915K611	$2.51	—	—
3/16"	13/32"	50915K122	.47	3/8"	5220K202	.93	5/8"	50915K102	1.17	10	50915K612	2.51	—	—
1/4"	7/16"	50915K123	.47	13/32"	5220K203	.80	3/4"	50915K103	.87	10	50915K613	2.51	10	50915K193	$2.78
5/16"	7/16"	50915K124	.59	27/64"	5220K204	1.03	27/32"	50915K104	1.93	10	50915K614	3.30	10	50915K194	5.07
3/8"	15/32"	50915K125	.57	29/64"	5220K205	.86	31/32"	50915K105	1.49	10	50915K615	2.54	10	50915K195	4.89
1/2"	5/8"	50915K126	1.23	1/2"	5220K206	1.60	1 1/16"	50915K106	3.03	10	50915K616	5.23	10	50915K196	5.87
5/8"	5/8"	50915K127	1.53	17/32"	5220K207	2.67	1 3/16"	50915K107	4.17	10	50915K617	5.55	10	50915K197	7.53
3/4"	11/16"	50915K128	3.70	9/16"	5220K208	4.23	1 3/8"	50915K108	5.89	10	50915K618	6.56	—	—
1"	—	—	—	5/8"	5220K209	12.80	—	—	—	—	—	—	—	—

Brass Compression Tube Fittings with Tube Supports

- Maximum Pressure: 90 psi @ 73° F
- Temperature Range: –65° to +250° F
- Tubing: Use with polyethylene (with a hardness of Shore A 95)

These fittings come with a forged or bar stock yellow brass body, brass nut, acetal sleeve (ferrule), and a built-in stainless steel tube support that slips inside the tubing to prevent collapsing. Compression fittings form a seal around the outside of the tubing. Use with water, air, and oil. They can be sterilized with steam (autoclaving). Not rated for vacuum. Pipe connections are NPT. Nut/tube ends have UNF straight screw threads.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/ Tube End Thread	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	Adapters, Female 45° Flared	Each	90° Elbows, Male Pipe	Each	90° Elbows, Female Pipe	Each	Branch Tees, Male Pipe	Each
1/4"	1/8"	7/16"-24	51875K61	$2.46	51875K51	$2.28	—	—	51875K81	$3.61	51875K91	$4.31	51875K72	$6.06
1/4"	1/4"	7/16"-24	51875K62	3.26	51875K52	2.95	51875K15	$5.01	51875K82	4.21	51875K92	5.73	51875K73	8.31
1/4"	3/8"	7/16"-24	51875K63	3.59	—	—	—	—	51875K83	6.24	—	—	—	—
1/4"	1/2"	7/16"-24	51875K64	4.76	—	—	—	—	—	—	—	—	—	—
3/8"	1/8"	9/16"-24	51875K65	3.65	51875K53	3.00	—	—	51875K84	3.67	—	—	—	—
3/8"	1/4"	9/16"-24	51875K66	3.59	51875K54	3.57	51875K16	4.97	51875K85	4.98	51875K93	5.97	51875K74	9.58
3/8"	3/8"	9/16"-24	51875K67	3.44	51875K55	4.33	51875K17	7.25	51875K86	4.53	51875K94	6.24	51875K75	8.95
3/8"	1/2"	9/16"-24	51875K68	4.18	51875K56	5.41	—	—	51875K87	6.59	—	—	—	—
1/2"	3/8"	11/16"-20	51875K69	5.70	51875K57	7.13	—	—	51875K88	7.71	51875K95	9.15	51875K76	10.08
1/2"	1/2"	11/16"-20	51875K71	6.49	51875K58	6.38	—	—	51875K89	8.59	—	—	—	—

Tube-to-Tube Connectors

For Tube OD	Nut/ Tube End Thread	Couplings	Each	90° Elbows	Each	Tees	Each
1/4"	7/16"-24	51875K21	$4.03	51875K35	$5.77	51875K31	$5.18
3/8" × 1/4"	★	51875K22	4.31	—	—	—	—
3/8" × 3/8" × 1/4"	★	—	—	—	—	51875K33	8.65
3/8"	9/16"-24	51875K23	4.51	51875K36	6.63	51875K32	9.44
1/2" × 3/8"	★	51875K24	7.15	—	—	—	—
1/2"	11/16"-20	51875K25	6.31	51875K37	7.74	51875K34	13.43

★ Nut/tube end thread is 7/16"-24 for 1/4" OD; 9/16"-24 for 3/8" OD; 11/16"-20 for 1/2" OD.

Accessories

For Tube OD	Nuts Pkg. Qty.	Nuts	Per Pkg.	Sleeves Pkg. Qty.	Sleeves	Per Pkg.
1/4"	25	51875K47	$13.46	25	51875K44	$6.42
3/8"	25	51875K48	13.84	25	51875K45	7.88
1/2"	10	51875K49	13.85	25	51875K46	9.23

For information about compression fittings, see pg. 165. For information about selecting pipe size, see pgs. 2-3.

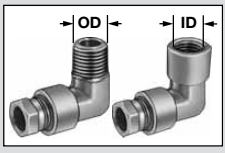

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 13/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″

Quick-Assembly Brass Compression Tube Fittings

- Maximum Pressure @ 72° F:
  With Plastic Tubing: 150 psi
  With Copper Tubing: 300 psi
- Temperature Range:
  With Plastic Tubing:
  0° to 150° F
  With Copper Tubing:
  0° to 175° F
- Tubing: Use with polyethylene and polypropylene; fittings with brass sleeves are also for use with PVC, nylon 11, and copper

The body, nut, and sleeve (ferrule) come assembled, so there's no need to remove the nut during installation. Use with water, air, and oil. Compression fittings form a seal around the outside of the tubing. These fittings are made of forged or bar stock yellow brass. They come with a black acetal sleeve and a built-in tube support except the fittings for 1/8″ and 3/16″ tube ODs, which have a brass sleeve and no tube support (tube supports are sold separately). Not rated for sterilization or vacuum. The 10-32 pipe size is a UNF straight screw thread; all other pipe sizes are NPTF (Dryseal), which are compatible with NPT threads. Nut/tube ends have UNF straight screw threads.

Also Available: Department of Transportation (D.O.T.) fittings that are for use with air only. Fittings have brass sleeves. Max. pressure is 150 psi @ 72° F. They are offered in the shapes and sizes marked with a ★ below. Please ask for 51835K1 for fittings that are for use with nylon tubing or 51745K2 for fittings that are for use with copper tubing; also please specify the corresponding part number from the list below that matches the fitting you need.

Also Available: Metric fittings for 4 mm, 6 mm, 8 mm, 10 mm, and 12 mm tube OD. They come in two tube-to-threaded male pipe shapes (adapters and 90° elbows), which include a brass sleeve and no tube support. They also come in two accessory shapes (nuts with brass sleeve and brass sleeves). The pipe connections on the fittings are 1/8″ NPT for the 4 mm fittings, 1/4″ NPT for the 6 mm and 8 mm fittings, 3/8″ NPT for 10 mm fittings, and 1/2″ for the 12 mm fittings. Please ask for 2815K1 and specify the size and shape.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/Tube End Thread	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	Branch Tees, Male Pipe	Each
1/8″	10-32	5/16″-24	5454K73	$2.04	—	—	—	—	—	—
1/8″	1/16″	5/16″-24	5053K44	2.77	—	—	5053K57	$4.60	—	—
1/8″	1/8″	5/16″-24	5053K45	2.69	5053K35	$3.49	5053K58	3.54	5053K71	$9.57
3/16″	1/8″	3/8″-24	5053K46	2.97	5053K36	3.71	5053K59	4.95	5053K72	8.97
1/4″	1/8″	3/8″-24	5053K47★	1.97	5053K37	1.80	5053K61★	3.52	5053K73	5.93
1/4″	1/4″	3/8″-24	5053K48★	2.07	5053K38	4.01	5053K62★	4.32	5053K74	8.86
5/16″	1/8″	7/16″-24	5053K49	2.70	5053K39	3.17	5053K63	5.85	5053K75	8.53
5/16″	1/4″	7/16″-24	5053K51	4.14	—	—	—	—	—	—
3/8″	1/8″	1/2″-24	5053K52	2.20	—	—	5053K64★	4.46	5053K76	15.07
3/8″	1/4″	1/2″-24	5053K53★	2.47	5053K41★	4.53	5053K65★	4.69	5053K77	8.59
3/8″	3/8″	1/2″-24	5053K54★	4.39	—	—	5053K66★	6.32	—	—
1/2″	3/8″	11/16″-20	5053K55★	4.46	5053K42★	4.46	5053K67★	7.90	5053K79	12.23

Tube-to-Tube Connectors

For Tube OD	Nut/Tube End Thread	Couplings	Each	Tees	Each
1/8″	5/16″-24	5053K21	$3.53	5053K28	$9.57
3/16″	3/8″-24	5053K22	5.02	5053K29	11.27
1/4″	3/8″-24	5053K23★	2.70	5053K31★	5.59
5/16″	7/16″-24	5053K24	5.84	5053K32	10.07
3/8″	1/2″-24	5053K25★	3.40	5053K33★	8.45
1/2″	11/16″-20	5053K26★	6.46	5053K34★	13.53

Accessories

For Tube OD	Nuts with Acetal Sleeve	Each	Nuts with Brass Sleeve	Each	Acetal Sleeves Pkg. Qty.	Acetal Sleeves	Per Pkg.	Brass Sleeves Pkg. Qty.	Brass Sleeves	Per Pkg.	Copper Tube Supports Pkg. Qty.	Copper Tube Supports	Per Pkg.
1/8″	—	—	5053K86	$1.09	—	—	—	10	5053K88	$9.99	10	5053K91	$7.27
3/16″	—	—	5053K87	1.69	—	—	—	5	5053K89	10.68	10	5053K92	5.86
1/4″	5053K11	$0.63	5053K15★	1.31	10	5053K19	$5.42	5	5053K93★	9.32	—	—	—
5/16″	5053K12	1.12	5053K16	2.27	10	5053K27	5.91	5	5053K94	10.68	—	—	—
3/8″	5053K13	.80	5053K17★	1.65	10	5053K78	5.90	5	5053K95★	9.32	—	—	—
1/2″	5053K14	1.33	5053K18★	2.74	10	5053K56	6.36	5	5053K96★	11.14	—	—	—

High-Pressure Quick-Assembly Brass Compression Tube Fittings

- Max. Pressure: 800 psi @ 72° F
- Temp. Range: −65° to +250° F
- Tubing: Use with polyethylene, polypropylene, nylon, copper, and aluminum

Get all the benefits of a quick-assembly fitting with the added capability of handling high pressure. The nut and sleeve (ferrule) are one piece; the sleeve breaks away from the nut when the tubing is installed, so there's no need to remove the nut during installation. Compression fittings form a seal around the outside of the tubing. Fittings are made of forged or bar stock yellow brass with a brass sleeve. Use with water, air, and oil. They can be sterilized with steam (autoclaving). Vacuum rating is 29″ Hg @ 72° F. Pipe connections are NPT (unless noted). Nut/tube ends have UNF straight screw threads.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/Tube End Thread	Adapters, Male Pipe ♦	Each	Adapters, Female Pipe ♦	Each	90° Elbows, Male Pipe	Each	90° Elbows, Female Pipe	Each
1/8″	1/8″	5/16″-24	50815K158	$2.49	50815K144	$13.15	50815K184	$5.59	50815K174	$17.06
3/16″	1/8″	3/8″-24	50815K162	2.82	—	—	50815K186	6.88	—	—
1/4″	1/8″	7/16″-24	50815K164	2.74	50815K148	7.86	50815K188	4.68	50815K176	6.82
1/4″	1/4″	7/16″-24	50815K166	3.05	50815K152	8.70	50815K192	5.26	50815K178	11.88
3/8″	1/4″	9/16″-20	50815K168	3.47	50815K154	13.88	50815K194	5.71	50815K182	19.56
1/2″	3/8″	11/16″-16	50815K172	10.74	—	—	50815K196	24.79	—	—

♦ Pipe connection is NPTF (Dryseal), which is compatible with NPT.

(Continued on following page)

For information about compression fittings, see pg. 165. For information about selecting pipe size, see pgs. 2-3.

High-Pressure Quick-Assembly Brass Compression Tube Fittings *(Cont. from previous page)*

Tube-to-Tube Connectors

For Tube OD	Nut/Tube End Thread	Couplings	Each	90° Elbows	Each	Tees	Each
1/8"	5/16"-24	50815K112	$36.00	—	—	—	—
3/16"	3/8"-24	50815K113	18.62	—	—	—	—
1/4"	7/16"-24	50815K114	10.80	50815K126	$12.89	50815K136	$19.11
3/8"	9/16"-20	50815K116	14.32	50815K128	18.79	50815K138	33.88
1/2"	11/16"-16	50815K118	13.89	50815K132	23.85	50815K142	30.59

Accessories

For Tube OD	Nuts with Brass Sleeve	Each
1/8"	50815K102	$1.14
3/16"	50815K103	1.32
1/4"	50815K104	1.17
3/8"	50815K106	1.53
1/2"	50815K108	3.00

Vibration-Resistant Brass Compression Tube Fittings

- Maximum Pressure: See chart at right
- Temperature Range: –30° to +275° F
- Tubing: Use with seamless and welded copper, aluminum, steel, and stainless steel

A Buna-N (nitrile) rubber sleeve absorbs severe vibration and shock, so these fittings are perfect for high-vibration applications. The sleeve also aligns the tubing and protects it from surface damage. Compression fittings form a seal around the outside of the tubing. Made of forged or bar stock yellow brass. Fittings include a body, nut, and a Buna-N sleeve (ferrule). Use with water, air, oil, lubricants, gasoline, and diesel fuel. They can be sterilized with steam (autoclaving). Vacuum rating is 29.9" Hg @ 73° F. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT. Nut/tube ends have UNF straight screw threads.

Sleeves—Buna-N sleeves are black with a green stripe. Fluoroelastomer sleeves (optional) are black with a red stripe; use in high-temperature applications from –15° to +450° F.

For Tube OD	Maximum Pressure @ 73° F
3/16"	300 psi
1/4"	300 psi
5/16"	225 psi
3/8"	175 psi
1/2"	100 psi

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/Tube End Thread	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each	45° Elbows, Male Pipe	Each
3/16"	1/8"	7/16"-24	50385K41	$4.50	50385K11	$7.37	—	—
1/4"	1/8"	1/2"-24	50385K42	4.50	50385K12	6.23	50385K31	$9.07
1/4"	1/4"	1/2"-24	50385K43	5.40	50385K13	9.37	—	—
5/16"	1/4"	9/16"-24	50385K44	7.83	50385K14	12.63	—	—
3/8"	1/8"	5/8"-24	50385K33	5.63	50385K15	17.44	—	—
3/8"	1/4"	5/8"-24	50385K45	7.70	50385K16	12.33	50385K32	17.47
3/8"	3/8"	5/8"-24	50385K46	12.10	50385K17	17.80	—	—
1/2"	3/8"	13/16"-18	50385K47	12.33	50385K18	19.13	—	—
1/2"	1/2"	13/16"-18	—	—	50385K19	32.53	—	—

Tube-to-Tube Connectors

For Tube OD	Nut/Tube End Thread	Couplings	Each
1/4"	1/2"-24	50385K51	$8.87
3/8"	5/8"-24	50385K52	14.93
1/2"	13/16"-18	50385K53	22.83

Accessories

For Tube OD	Nuts	Each	Buna-N Sleeves	Each	Fluoroelastomer Sleeves	Each
3/16"	50385K61	$1.73	50385K71	$1.97	50385K81	$8.43
1/4"	50385K62	1.67	50385K72	1.73	50385K82	4.03
5/16"	50385K63	2.03	50385K73	1.90	50385K83	4.13
3/8"	50385K64	2.73	50385K74	1.90	50385K84	4.13
1/2"	50385K65	4.30	50385K75	2.27	50385K85	6.87

Metric Vibration-Resistant Steel Compression Tube Fittings

- Max. Pressure @ 75° F: 4560 psi, unless noted
- Temperature Range: –30° to +250° F
- Tubing: Use with seamless carbon steel (DIN 2391)

Applications causing unwanted vibration and tube movement have met their match—these fittings have a Buna-N (nitrile) rubber sleeve that absorbs vibration and shock. Designed for metric tubing, they can't be assembled incorrectly because the seals and the gripping rings are integrated into the nut. Compression fittings form a seal around the outside of the tubing. Made of forged or bar stock steel with a zinc-plated finish. Fittings include a body, nut, grasping ring, and sleeve (ferrule). The threaded ends also include a Buna-N O-ring and a retaining ring; those with British Standard Pipe Parallel (BSPP) threads also include a washer. Use with air, diesel fuel, heating oils, and mineral oil. Fittings meet DIN 3861. Not rated for sterilization or vacuum.

Through-wall couplings are also known as bulkhead couplings.

Tube-to-Threaded Pipe Connectors

For Tube OD, mm	Nut/Tube End Thread	UNF Straight Screw Thread: Thread Size	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each	BSPP Thread: Thread Size	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each	Metric Parallel Pipe Thread: Thread Size	Adapters, Male Pipe	Each
6	M12×1.5	7/16"-20	—	—	5949K95	$25.40	1/8"	5949K51	$6.23	5949K91	$23.06	M10×1	5949K61	$6.74
8	M14×1.5	7/16"-20	5949K72	$26.29	5949K96	26.43	1/4"	5949K52	7.63	5949K92	24.91	M12×1.5	5949K62	7.74
10	M16×1.5	7/16"-20	5949K73	28.91	—	—	1/4"	5949K53	8.43	5949K93	26.57	M14×1.5	5949K63	9.09
12	M18×1.5	9/16"-18	5949K74	28.51	5949K98	41.66	3/8"	5949K54	9.91	5949K94▲	29.26	M16×1.5	5949K64	10.71

▲ Maximum pressure is 3625 psi @ 75° F.

Tube-to-Tube Connectors

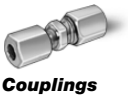

For Tube OD, mm	Nut/Tube End Thread	Couplings	Each	Through-Wall Couplings: Required Hole Size	Each	90° Elbows	Each	Tees	Each
6	M12×1.5	5949K11	$9.69	14 mm	5949K41	$14.66	5949K21	$16.43	5949K31	$21.49
8	M14×1.5	5949K12	10.94	16 mm	5949K42	14.40	5949K22	17.69	5949K32	23.20
10	M16×1.5	5949K13	12.57	18 mm	5949K43	17.31	5949K23	19.14	5949K33	26.26
12	M18×1.5	5949K14	14.09	20 mm	5949K44	19.34	5949K24	21.77	5949K34	29.86

Accessories

For Tube OD, mm	Nuts	Each
6	5949K85	$4.00
8	5949K86	4.51
10	5949K87	5.26
12	5949K88	5.83

For information about compression fittings, see pg. 165. For information about selecting pipe size, see pgs. 2-3.

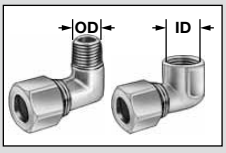

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 15/16″, the next highest OD or ID is 1″ and the corresponding pipe size is 3/4″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″	1″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″

Metric Steel Compression Tube Fittings

- Max. Pressure @ 68° F: 3625 psi
- Temperature Range: –40° to +392° F
- Tubing: Use with seamless carbon steel (DIN 2391)

Connect metric tubing to pipe with NPT, BSPT (British Standard Pipe Tapered), and metric tapered threads with these metric fittings. These fittings do more than just compress the tubing, they also bite into it to minimize leaks. Made of forged carbon steel with a zinc-plated finish, they include a body, nut, and sleeve (ferrule). Use with hydraulic oil. Fittings meet ISO 8434 and the pressure ratings are in accordance with DIN 2401. Not rated for sterilization or vacuum.

Through-wall couplings are also known as bulkhead couplings.

Tube OD	Nut/Tube End Thread Size
6 mm	M12×1.5
8 mm	M14×1.5
10 mm	M16×1.5
12 mm	M18×1.5
15 mm	M22×1.5

Tube-to-Threaded Pipe Connectors

For Tube OD, mm	Pipe Size	NPT THREAD Adapters, Male Pipe	Each	NPT THREAD 90° Elbows, Male Pipe	Each	BSPT THREAD Adapters, Male Pipe	Each	BSPT THREAD 90° Elbows, Male Pipe	Each	METRIC TAPERED PIPE THREAD Thread Size	METRIC TAPERED PIPE THREAD Adapters, Male Pipe	Each	METRIC TAPERED PIPE THREAD 90° Elbows, Male Pipe	Each
6	1/8″	5269K311	$4.11	5269K361	$12.04	5269K321	$6.98	5269K371	$11.82	M10×1	5269K331	$7.33	5269K381	$12.04
8	1/4″	5269K312	6.13	5269K362	14.16	5269K322	6.04	5269K372	14.98	M12×1.5	5269K332	8.40	5269K382	12.87
10	1/4″	5269K313	7.24	5269K363	16.00	5269K323	7.11	5269K373	14.44	M14×1.5	5269K333	9.13	5269K383	14.44
12	3/8″	5269K314	7.91	5269K364	18.20	5269K324	8.11	5269K374	21.29	M16×1.5	5269K334	9.40	5269K384	17.40
15	1/2″	5269K315	10.78	5269K365	24.89	5269K325	10.82	5269K375	21.00	M18×1.5	5269K335	11.49	5269K385	21.47

Tube-to-Tube Connectors

For Tube OD, mm	Couplings	Each	Through-Wall Couplings Required Hole Size, mm	Through-Wall Couplings	Each	90° Elbows	Each	Tees	Each
6	5269K291	$5.29	12.5	5269K411	$10.42	5269K421	$13.62	5269K441	$19.72
8	5269K292	6.20	14.5	5269K412	11.02	5269K422	14.91	5269K442	21.79
10	5269K293	7.60	16.5	5269K413	11.16	5269K423	16.51	5269K443	29.58
12	5269K294	9.13	18.5	5269K414	16.31	5269K424	19.27	5269K444	26.62
15	5269K295	12.91	22.5	5269K415	24.71	5269K425	25.62	5269K445	36.82

Accessories

For Tube OD, mm	Nuts	Each	Sleeves	Each
6	5269K271	$1.03	5269K281	$0.50
8	5269K272	1.47	5269K282	.70
10	5269K273	1.33	5269K283	.70
12	5269K274	1.73	5269K284	.73
15	5269K275	2.43	5269K285	.93

Extreme-Pressure Type 316 Stainless Steel Compression Tube Fittings

- Max. Pressure @ 72° F: 15,000 psi
- Temperature Range: –425° to +1000° F
- Tubing: Use with 9926T Type 316 stainless steel (see page 147)

Completely assembled and ready to use, the unique design makes these the highest pressure rated compression fittings we offer. After inserting your tubing, finger tighten the nut then wrench-tighten 1 1/2 turns. Compression fittings form a seal around the outside of the tubing. They're made of extruded Type 316 stainless steel and include a body, nut, and sleeve (ferrule); the nut has a molybdenum disulfide coating for improved corrosion resistance. Use with water, air, natural gas, oil, and hydraulic fluid. They meet ANSI B31.3. Not rated for sterilization or vacuum. Pipe connections are NPT. Nut/tube ends have UNF straight screw threads.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/Tube End Thread	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each
1/4″	1/4″	1/2″-20	5892K11	$58.50	5892K14	$70.72
3/8″	1/4″	5/8″-20			5892K15	75.13
3/8″	3/8″	5/8″-20	5892K12	67.62		
9/16″	1/4″	7/8″-20			5892K16	99.96
9/16″	1/2″	7/8″-20	5892K13	99.74		

Tube-to-Tube Connectors

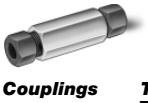

For Tube OD	Nut/Tube End Thread	Couplings	Each	Through-Wall Couplings Required Hole Size	Through-Wall Couplings	Each	90° Elbows	Each
1/4″	1/2″-20	5892K21	$67.62	49/64″	5892K17	$99.96	5892K24	$73.78
3/8″	5/8″-20	5892K22	96.60	57/64″	5892K18	110.02	5892K25	80.50
9/16″	7/8″-20	5892K23	144.24	1 9/64″	5892K19	139.79	5892K26	132.16

Accessories

For Tube OD	Caps	Each	Nuts	Each	Front Sleeves	Each	Back Sleeves	Each
1/4″	5892K27	$34.62	5892K37	$12.34	5892K31	$6.44	5892K34	$5.63
3/8″	5892K28	46.95	5892K38	17.05	5892K32	7.65	5892K35	21.44
9/16″	5892K29	69.09	5892K39	28.17	5892K33	11.14	5892K36	10.21

For information about compression fittings, see pg. 165. For information about selecting pipe size, see pgs. 2-3.

Steel and Type 316 Stainless Steel Compression Tube Fittings

- Maximum Pressure: See chart at right
- Temperature Range: Steel: –65° to +400° F Type 316 Stainless Steel: –425° to +1200° F
- Tubing: Use steel fittings with welded steel; use stainless steel fittings with welded or seamless stainless steel

These fittings not only compress, they also bite into the tubing for a strong connection—even in high-vibration applications. Compression fittings form a seal around the outside of the tubing. Fittings include a body, nut, and sleeve (ferrule). Use with water, air, and hydraulic fluid. They meet SAE J514. Not rated for sterilization or vacuum. Nut/tube ends have UNF straight screw threads.

Through-wall couplings are also known as bulkhead couplings.

Steel—Made of forged 12L14 carbon steel with a zinc-plated finish. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads.

Stainless Steel—The bodies and nuts are made of corrosion-resistant Type 316 stainless steel; the sleeves are 17-4 PH stainless steel. Pipe connections are NPT.

Tube OD	Nut/Tube End Thread Size	*Steel* Max. psi @ 72° F	*Stainless Steel* Max. psi @ 72° F ♦
1/8″	5/16″-24	4000	5000
3/16″	3/8″-24	4000	5000
1/4″	7/16″-20	4000	5000
5/16″	1/2″-20	4000	4000
3/8″	9/16″-18	3000	3000
1/2″	3/4″-16	2000	2000
5/8″	7/8″-14	1000	3000
3/4″	1 1/16″-12	2000	2000
1″	1 5/16″-12	2000	____

♦ Based on Type 304 or 316 annealed stainless steel welded or seamless tubing made to ASTM A269.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	*Adapters, Male Pipe*	Each	*Adapters, Female Pipe*	Each	*90° Elbows, Male Pipe*	Each	*45° Elbows, Male Pipe*	Each	*Branch Tees, Male Pipe*	Each	*Run Tees, Male Pipe*	Each
Steel													
1/8″	1/8″	52215K621	$4.88	52215K611	$13.29	52215K631	$9.62	____	____	____	____	____	____
3/16″	1/8″	52215K622	4.35	52215K612	13.68	52215K632	10.86	____	____	____	____	____	____
1/4″	1/8″	52215K439	3.65	52215K423	8.18	52215K455	9.00	52215K411	$8.47	52215K485	$12.32	52215K471	$12.32
1/4″	1/4″	52215K441	4.79	52215K425	5.65	52215K457	10.62	____	____	52215K487	19.74	52215K473	20.26
5/16″	1/8″	52215K443	5.82	52215K427	7.53	52215K459	9.44	52215K415	13.35	52215K489	27.41	____	____
3/8″	1/4″	52215K445	4.44	52215K429	5.88	52215K461	10.09	52215K417	10.26	52215K491	15.50	52215K475	15.53
3/8″	3/8″	52215K624	5.59	52215K614	7.74	52215K634	13.76	____	____	____	____	____	____
3/8″	1/2″	52215K625	8.50	____	____	52215K635	17.03	____	____	____	____	____	____
1/2″	1/4″	52215K626	7.35	52215K617	9.91	52215K636	14.03	____	____	____	____	____	____
1/2″	3/8″	52215K447	6.71	52215K431	7.71	52215K463	13.09	52215K419	15.35	52215K493	25.94	52215K477	25.68
1/2″	1/2″	52215K449	7.65	52215K433	11.15	52215K465	20.00	____	____	52215K495	29.94	52215K479	28.91
5/8″	1/2″	52215K451	8.24	52215K435	11.53	52215K467	16.65	52215K421	18.47	52215K497	29.65	52215K481	30.15
3/4″	1/2″	52215K628	12.56	____	____	52215K638	25.29	____	____	____	____	____	____
3/4″	3/4″	52215K453	11.94	52215K437	16.91	52215K469	24.82	52215K422	30.76	52215K499	38.05	52215K483	35.98
1″	1″	52215K454	19.38	52215K438	28.91	52215K468	34.06	52215K424	40.45	52215K498	61.67	52215K484	62.20
Type 316 Stainless Steel													
1/8″	1/8″	52245K821	14.13	52245K811	43.87	52245K831	29.51	____	____	____	____	____	____
1/4″	1/8″	52245K531	8.87	52245K519	12.56	52245K545	15.87	52245K511	24.26	52245K567	28.28	52245K559	29.64
1/4″	1/4″	52245K533	10.50	52245K521	14.65	52245K547	19.81	52245K513	67.56	52245K569	35.31	52245K561	35.75
3/8″	1/4″	52245K535	11.61	52245K523	17.11	52245K549	20.94	52245K515	28.26	52245K571	37.53	52245K563	37.43
3/8″	3/8″	52245K824	15.27	52245K814	23.46	52245K834	32.61	____	____	____	____	____	____
3/8″	1/2″	52245K825	22.49	____	____	52245K835	44.72	____	____	____	____	____	____
1/2″	1/4″	52245K826	20.50	52245K817	24.74	52245K836	39.05	____	____	____	____	____	____
1/2″	3/8″	52245K537	17.81	52245K525	26.35	52245K551	34.06	52245K517	62.28	52245K573	103.44	____	____
1/2″	1/2″	52245K539	20.89	52245K527	36.79	52245K553	44.20	____	____	52245K575	105.21	52245K565	107.43
5/8″	1/2″	52245K541	30.19	____	____	52245K555	49.59	____	____	____	____	____	____
3/4″	3/4″	52245K543	50.61	52245K529	58.02	52245K557	72.54	____	____	____	____	____	____

Tube-to-Tube Connectors

For Tube OD	*Couplings*	Each	*Through-Wall Couplings* Required Hole Size	Each	*90° Elbows*	Each
Steel						
1/8″	52215K533	$9.65	____	____	____	____
3/16″	52215K535	7.71	____	____	____	____
1/4″	52215K537	6.00	29/64″	52215K571	$22.38	52215K559	$11.03
5/16″	52215K539	7.65	____	____	52215K561	18.38
3/8″	52215K541	7.09	37/64″	52215K573	12.32	52215K563	12.59
1/2″	52215K543	10.09	49/64″	52215K575	29.26	52215K565	18.53
5/8″	52215K545	13.15	____	____	52215K567	21.65
3/4″	52215K547	17.53	1 5/64″	52215K577	34.53	52215K569	30.44
1″	52215K548	28.23	1 21/64″	52215K578	60.85	52215K568	44.95
Type 316 Stainless Steel						
1/8″	52245K609	30.68	____	____	____	____
3/16″	52245K611	41.68	____	____	____	____
1/4″	52245K613	13.70	7/16″	52245K743	27.42	52245K633	21.19
5/16″	52245K615	24.20	____	____	____	____
3/8″	52245K617	17.60	9/16″	52245K745	33.36	52245K635	26.47
1/2″	52245K619	29.68	3/4″	52245K747	56.73	52245K637	40.51
5/8″	52245K621	45.67	____	____	____	52245K639	59.95
3/4″	52245K623	70.45	____	____	____	52245K641	97.50

Accessories

For Tube OD	*Caps*	Each	*Nuts*	Each	*Sleeves*	Each
Steel						
1/8″	____	____	52215K517	$1.24	52215K501	$1.00
3/16″	____	____	52215K519	1.26	52215K503	.88
1/4″	52215K549	$4.88	52215K521	1.26	52215K505	.82
5/16″	____	____	52215K523	1.41	52215K507	1.24
3/8″	52215K551	6.15	52215K525	1.26	52215K509	1.26
1/2″	52215K553	7.88	52215K527	2.03	52215K511	1.32
5/8″	52215K555	10.76	52215K529	2.59	52215K513	2.00
3/4″	52215K557	10.15	52215K531	3.18	52215K515	2.62
1″	52215K558	14.94	52215K532	5.21	52215K516	4.41
Type 316 Stainless Steel						
1/8″	52245K625	12.05	52245K593	3.78	52245K577	2.46
3/16″	____	____	52245K595	3.95	52245K579	2.78
1/4″	52245K627	8.82	52245K597	2.29	52245K581	1.51
5/16″	____	____	52245K599	4.90	52245K583	2.36
3/8″	52245K629	11.56	52245K601	3.08	52245K585	1.99
1/2″	52245K631	15.96	52245K603	4.24	52245K587	2.92
5/8″	52245K649	37.68	52245K605	11.33	52245K589	3.78
3/4″	52245K651	36.53	52245K607	17.70	52245K591	7.35

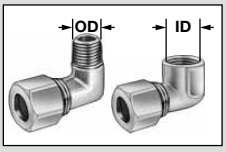

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″	3/4″	1″

About Yor-Lok Tube Fittings

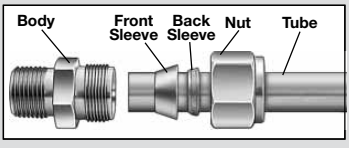

Also known as instrumentation fittings, Yor-Lok fittings are designed to handle higher pressures than other types of compression fittings. Use them on metal tubing. Yor-Lok fittings consist of a body, nut, and front and back sleeves (double ferrules); two sleeves provide extra gripping strength and ensure a leak-free seal. To install, insert your tubing into a fitting until the tubing bottoms out, then finger-tighten the nut. Continue tightening the nut using a wrench. For 1/16″, 1/8″, and 3/16″ fittings, a 3/4-wrench-turn is all you need; all other sizes need a 1 1/4-wrench-turn.

Type 316 Stainless Steel Yor-Lok Tube Fittings

CAD

- Maximum Pressure: See chart at right
- Temperature Range: –425° to +1200° F
- Tubing: Use seamless or welded Types 304, 304L, 316, or 316L stainless steel that meets ASTM A213, A249, or A269

These stainless steel fittings, which are also known as instrumentation fittings, are great for high-pressure applications in corrosive environments. Use them with water, air, steam, natural gas, gasoline, oil, and hydraulic fluid. Yor-Lok fittings have a body and nut like other compression fittings, but also have front and back sleeves (double ferrules) that form a leak-free seal around the outside of your tubing. Made of forged or bar stock Type 316 stainless steel, they have precision, high-tolerance threads. They are compatible with Swagelok®, Parker A-Lok, and Let-Lok fittings. Fittings can be sterilized with steam (autoclaving). Not rated for vacuum. Pipe connections are NPT. Nut/tube ends have UNF straight screw threads.

Cleaned and Bagged Fittings— Cleaned and individually bagged to prevent moisture and dirt from contaminating the inside.

Through-wall couplings are also known as bulkhead couplings.

Tube stem reducing couplings let you adapt the tube end of an existing fitting to a different tube size without the need for a complete fitting. The stem end on these fittings is a short length of tubing.

♠ Max. pressures (listed at right) are based on Type 304 or 316 annealed stainless steel welded tubing made to ASTM A213, A249, or A269. *Note:* Ratings for seamless tubing are approximately 15-20% higher depending on tube size.

Tube OD	Tube Wall Thick.	Max. psi @ 72° F ♠
1/16″	0.020″	9100
1/8″	0.035″	6100
3/16″	0.035″	5680
1/4″	0.035″	4160
5/16″	0.035″	3280
3/8″	0.035″	2680
1/2″	0.035″	2120
5/8″	0.049″	2360
3/4″	0.049″	2100
1″	0.065″	1920

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/ Tube End Thread	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	90° Elbows, Female Pipe	Each	Branch Tees, Male Pipe	Each	Branch Tees, Female Pipe	Each
Standard														
1/16″	1/16″	10-32	5182K834	$13.46	—	—	5182K839	$29.72	—	—	—	—	—	—
1/16″	1/8″	10-32	5182K435	13.76	—	—	5182K441	26.40	—	—	—	—	—	—
1/8″	1/16″	5/16″-20	5182K411	9.01	—	—	5182K931	30.97	—	—	—	—	—	—
1/8″	1/8″	5/16″-20	5182K804	8.82	5182K491	$11.38	5182K817	14.22	—	—	5182K771	$29.38	5182K452	$39.72
1/8″	1/4″	5/16″-20	5182K405	9.72	5182K492	13.29	5182K418	15.25	—	—	5182K472	52.37	5182K481	40.46
3/16″	1/8″	3/8″-20	5182K806	8.95	5182K793	10.96	5182K819	14.45	—	—	5182K773	32.53	—	—
3/16″	1/4″	3/8″-20	5182K912	10.14	5182K942	21.91	5182K932	18.10	—	—	—	—	—	—
1/4″	1/8″	7/16″-20	5182K807	7.64	5182K794	10.96	5182K821	14.11	5182K205	$19.92	5182K774	27.38	5182K353	36.41
1/4″	1/4″	7/16″-20	5182K111	7.92	5182K251	13.36	5182K142	15.27	5182K206	22.72	5182K222	33.14	5182K319	38.72
1/4″	3/8″	7/16″-20	5182K112	10.79	5182K253	17.07	5182K143	22.72	5182K207	33.66	5182K234	46.04	5182K363	63.29
1/4″	1/2″	7/16″-20	5182K113	14.20	5182K256	18.67	5182K144	25.83	5182K208	38.11	5182K122	75.20	—	—
5/16″	1/8″	1/2″-20	5182K808	9.30	5182K795	13.69	5182K822	16.44	5182K198	24.41	5182K775	38.30	—	—
5/16″	1/4″	1/2″-20	5182K809	10.96	5182K796	14.78	5182K823	16.93	5182K199	27.05	5182K123	46.91	—	—
3/8″	1/8″	9/16″-20	5182K811	10.27	5182K797	14.59	5182K824	20.20	5182K209	22.44	—	—	—	—
3/8″	1/4″	9/16″-20	5182K119	10.86	5182K266	13.71	5182K156	18.94	5182K211	23.35	5182K224	34.29	5182K323	39.86
3/8″	3/8″	9/16″-20	5182K125	12.33	5182K267	18.52	5182K157	22.76	5182K212	26.31	5182K226	38.87	5182K785	49.86
3/8″	1/2″	9/16″-20	5182K126	14.80	5182K268	24.51	5182K158	29.23	5182K213	39.35	5182K236	67.60	5182K373	74.89
3/8″	3/4″	9/16″-20	5182K913	20.08	5182K943	34.78	5182K933	46.94	—	—	—	—	—	—
1/2″	1/4″	3/4″-20	5182K129	15.85	5182K269	19.45	5182K159	27.74	5182K214	30.03	5182K238	58.10	5182K383	67.94
1/2″	3/8″	3/4″-20	5182K133	17.07	5182K275	19.91	5182K164	27.74	5182K215	32.18	5182K228	54.20	5182K324	57.39
1/2″	1/2″	3/4″-20	5182K135	18.37	5182K276	25.85	5182K166	33.47	5182K216	42.77	5182K232	55.63	5182K333	64.70
1/2″	3/4″	3/4″-20	5182K812	24.42	5182K798	32.68	5182K825	50.48	—	—	—	—	—	—
5/8″	3/8″	7/8″-20	5182K813	20.39	5182K799	32.19	5182K826	37.76	5182K223	44.11	—	—	—	—
5/8″	1/2″	7/8″-20	5182K814	21.57	5182K801	29.53	5182K827	39.67	5182K225	47.10	5182K776	66.55	5182K786	84.97
5/8″	3/4″	7/8″-20	5182K914	27.19	5182K944	41.04	5182K934	46.47	—	—	—	—	—	—
3/4″	1/2″	1″-20	5182K815	28.25	5182K802	36.35	5182K828	43.11	5182K217	55.10	—	—	—	—
3/4″	3/4″	1″-20	5182K816	29.00	5182K803	36.71	5182K829	42.06	5182K218	86.92	5182K777	85.34	5182K787	110.94
3/4″	1″	1″-20	5182K836	46.47	—	—	—	—	—	—	—	—	—	—
1″	3/4″	1 5/16″-20	5182K837	54.73	5182K831	65.90	5182K842	85.34	5182K219	116.17	—	—	5182K844	201.61
1″	1″	1 5/16″-20	5182K838	50.86	5182K832	78.58	5182K843	84.00	5182K221	139.40	—	—	5182K845	210.94
Cleaned and Bagged														
1/4″	1/4″	7/16″-20	5943K111	10.86	5943K251	16.17	5943K142	17.81	5943K206	25.51	5943K222	35.85	5943K185	41.10
3/8″	3/8″	9/16″-20	5943K125	14.54	5943K267	19.67	5943K157	31.94	5943K212	26.81	5943K226	39.40	—	—
1/2″	1/2″	3/4″-20	5943K135	20.75	5943K276	26.55	5943K166	35.25	5943K216	42.07	5943K232	54.77	5943K193	63.26

(Continued on following page)

For information about Yor-Lok fittings, see page 174. For information about selecting pipe size, see pages 2-3.

Type 316 Stainless Steel Yor-Lok Tube Fittings *(Continued from previous page)*

Tube-to-Threaded Pipe Connectors

Run Tees, Male Pipe

For Tube OD	Pipe Size	Nut/ Tube End Thread		Each
1/8"	1/8"	5/16"-20	5182K744	$29.38
1/8"	1/4"	5/16"-20	5182K745	51.27
3/16"	1/8"	3/8"-20	5182K746	31.86
1/4"	1/8"	7/16"-20	5182K747	27.82
1/4"	1/4"	7/16"-20	5182K185	32.34
1/4"	3/8"	7/16"-20	5182K753	42.83
1/4"	1/2"	7/16"-20	5182K756	66.84
5/16"	1/8"	1/2"-20	5182K748	44.85
3/8"	1/4"	9/16"-20	5182K187	34.17
3/8"	3/8"	9/16"-20	5182K191	39.50
1/2"	1/4"	3/4"-20	5182K124	67.78
1/2"	3/8"	3/4"-20	5182K192	54.20
1/2"	1/2"	3/4"-20	5182K193	57.01
5/8"	1/2"	7/8"-20	5182K749	66.55
3/4"	3/4"	1"-20	5182K751	85.34

Tube Stems, Male Pipe

Stem OD	Pipe Size		Each
1/16"	1/8"	5182K139	$51.91
1/8"	1/8"	5182K141	7.48
1/8"	1/4"	5182K145	8.47
1/4"	1/8"	5182K146	6.62
1/4"	1/4"	5182K147	7.02
1/4"	3/8"	5182K148	9.30
1/4"	1/2"	5182K149	12.47
3/8"	3/8"	5182K153	11.13
3/8"	1/2"	5182K154	13.29
1/2"	1/4"	5182K155	14.28
1/2"	3/8"	5182K161	14.93
1/2"	1/2"	5182K162	15.69
3/4"	1/2"	5182K163	23.41
3/4"	3/4"	5182K165	24.42
1"	1"	5182K171	42.99

Tube-to-Butt Weld Connectors

For Tube OD	Pipe Size	Nut/ Tube End Thread	Adapters, Butt Weld	Each	90° Elbows, Butt Weld	Each
1/8"	1/8"	5/16"-20	5182K91	$10.79	5182K72	$32.78
3/16"	1/8"	3/8"-20	5182K92	12.01	5182K73	33.27
1/4"	1/8"	7/16"-20	5182K93	9.47	5182K81	32.07
1/4"	1/4"	7/16"-20	5182K94	9.13	5182K82	18.44
5/16"	1/4"	1/2"-20	5182K95	16.29	—	—
3/8"	1/4"	9/16"-20	5182K921	13.46	5182K83	22.24
3/8"	3/8"	9/16"-20	5182K96	14.59	—	—
3/8"	1/2"	9/16"-20	5182K97	20.08	—	—
1/2"	3/8"	3/4"-20	5182K711	20.25	5182K74	46.28
1/2"	1/2"	3/4"-20	5182K98	19.76	5182K84	58.69
1/2"	3/4"	3/4"-20	5182K99	29.38	—	—
5/8"	1/2"	7/8"-20	5182K86	23.41	5182K75	74.34
3/4"	3/4"	1"-20	5182K87	33.20	5182K85	48.53
1"	1"	15/16"-20	5182K88	64.24	5182K76	78.88

Tube-to-Tube Connectors

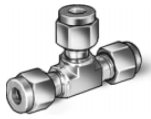

For Tube OD	Nut/ Tube End Thread	Couplings	Each	Through-Wall Couplings: Required Hole Size		Each	90° Elbows	Each	Tees	Each	Crosses	Each
1/16"	10-32	5182K716	$18.80	13/64"	5182K846	$46.31	—	—	5182K853	$47.65	5182K137	$84.30
1/8"	5/16"-20	5182K717	13.23	21/64"	5182K723	26.77	5182K731	$18.10	5182K736	28.92	5182K764	52.77
3/16"	3/8"-20	5182K718	12.47	25/64"	5182K724	27.55	5182K732	18.10	5182K737	29.72	—	—
1/4"	7/16"-20	5182K343	12.33	29/64"	5182K375	18.98	5182K414	18.52	5182K434	25.39	5182K766	48.68
5/16"	1/2"-20	5182K719	14.93	33/64"	5182K725	22.58	5182K733	20.26	5182K738	31.37	—	—
3/8"	9/16"-20	5182K345	17.62	37/64"	5182K377	27.41	5182K416	22.03	5182K436	33.16	5182K768	60.42
1/2"	3/4"-20	5182K35	26.36	49/64"	5182K378	39.63	5182K417	36.25	5182K437	50.36	5182K769	70.16
5/8"	7/8"-20	5182K721	36.27	57/64"	5182K726	58.74	5182K734	42.97	5182K739	60.86	5182K784	110.56
3/4"	1"-20	5182K722	44.18	11/64"	5182K727	67.81	5182K735	66.17	5182K741	77.97	5182K779	123.77
1"	15/16"-20	5182K715	76.69	121/64"	5182K847	130.68	5182K833	122.43	5182K854	167.08	5182K783	220.90

Reducing Couplings

For Tube OD		Each	For Tube OD		Each
1/8" × 1/16"	5182K714	$17.98	1/2" × 1/8"	5182K246	$34.29
3/16" × 1/16"	5182K241	20.58	1/2" × 1/4"	5182K367	28.22
3/16" × 1/8"	5182K701	12.79	1/2" × 3/8"	5182K368	28.22
1/4" × 1/16"	5182K242	15.44	5/8" × 3/8"	5182K708	38.41
1/4" × 1/8"	5182K702	13.86	5/8" × 1/2"	5182K231	37.76
1/4" × 3/16"	5182K243	14.11	3/4" × 1/4"	5182K247	51.62
5/16" × 1/4"	5182K705	15.44	3/4" × 3/8"	5182K248	51.62
3/8" × 1/16"	5182K244	23.41	3/4" × 1/2"	5182K713	44.02
3/8" × 1/8"	5182K245	20.87	1" × 1/2"	5182K249	90.41
3/8" × 1/4"	5182K365	18.21	1" × 3/4"	5182K709	82.01
3/8" × 5/16"	5182K239	19.09			

Reducing Couplings, Tube Stem

Stem OD	For Tube OD	Nut/ Tube End Thread		Each
1/8"	1/16"	10-32	5182K728	$16.11
1/8"	3/16"	3/8"-20	5182K233	16.62
1/8"	1/4"	7/16"-20	5182K742	14.59
3/16"	1/8"	5/16"-20	5182K121	11.13
5/16"	1/4"	7/16"-20	5182K235	11.61
3/8"	1/4"	7/16"-20	5182K754	10.96
3/8"	5/16"	1/2"-20	5182K23	11.61
3/8"	1/2"	3/4"-20	5182K132	18.60
1/2"	1/4"	7/16"-20	5182K755	12.94
1/2"	3/8"	9/16"-20	5182K131	14.93
3/4"	1/2"	3/4"-20	5182K761	19.28

Accessories

For Tube OD	Caps for Tubing	Each	Caps for Fittings	Each	Nuts	Each	Front Sleeves	Each	Back Sleeves	Each
1/16"	5182K848	$10.96	5182K851	$13.61	5182K672	$4.01	5182K65	$2.52	5182K66	$2.39
1/8"	5182K691	7.90	5182K681	8.36	5182K673	2.54	5182K651	1.60	5182K661	1.47
3/16"	5182K692	7.81	5182K682	8.63	5182K675	2.29	5182K652	1.58	5182K662	1.45
1/4"	5182K634	6.70	5182K624	6.38	5182K554	2.29	5182K574	1.30	5182K584	1.18
5/16"	5182K693	7.14	5182K683	6.97	5182K676	2.44	5182K653	1.58	5182K663	1.51
3/8"	5182K636	8.92	5182K626	7.18	5182K556	3.09	5182K576	1.60	5182K586	1.49
1/2"	5182K638	13.06	5182K628	10.69	5182K557	5.10	5182K577	2.29	5182K587	2.08
5/8"	5182K694	16.44	5182K684	15.18	5182K677	7.33	5182K654	2.69	5182K664	2.58
3/4"	5182K695	22.07	5182K685	17.75	5182K678	8.74	5182K655	3.61	5182K665	3.19
1"	5182K849	41.10	5182K852	36.02	5182K679	16.67	5182K656	6.45	5182K666	4.96

For information about Yor-Lok fittings, see page 174. For information about selecting pipe size, see pages 2-3.

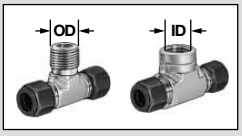

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 15/16″, the next highest OD or ID is 1″ and the corresponding pipe size is 3/4″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″	1″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″	3/4″

British Standard Type 316 Stainless Steel Yor-Lok Tube Fittings

- Maximum Pressure: See below
- Temperature Range: –425° to +1200° F
- Tubing: Use with annealed Types 304 or 316 seamless stainless steel that meets ASTM A269

Use these fittings to connect your tubing to BSPT (British Standard Pipe Taper) and BSPP (British Standard Pipe Parallel) threads. Also known as instrumentation fittings, they are great for high-pressure applications in corrosive environments. Yor-Lok fittings have a body and nut like other compression fittings, but also have front and back sleeves (double ferrules) that form a leak-free seal around the outside of your tubing. The male BSPP threads also have a fluoroelastomer O-ring. These fittings are made of forged or bar stock Type 316 stainless steel, and are compatible with Swagelok®, Parker A-Lok, and Let-Lok fittings. Use with water, air, steam, natural gas, oil, gasoline, solvents, and acids. Adapters meet ASTM A479; elbows meet ASTM A182. Fittings are not rated for sterilization or vacuum. Nut/tube ends have UNF straight screw threads. For replacement nuts and sleeves, see 5182K on page 175.

For Tube OD	Pipe Size	Nut/ Tube End Thread	Max. psi @ 72° F	BSPT Adapters, Male Pipe	Each	BSPT Adapters, Female Pipe	Each	BSPT 90° Elbows, Male Pipe	Each	BSPP Adapters, Male Pipe	Each	BSPP Adapters, Female Pipe	Each	BSPP 90° Elbows, Male Pipe	Each
1/8″	1/8″	5/16″-20	10,050	5672K21	$9.38	—	—	5672K41	$15.18	5672K11	$22.30	—	—	—	—
1/4″	1/4″	7/16″-20	5,100	5672K23	8.93	5672K61	$14.59	5672K43	17.56	5672K13	24.66	5672K51	$20.84	5672K32	$29.02
3/8″	3/8″	9/16″-20	3,300	5672K26	13.84	5672K64	19.79	5672K46	25.60	5672K16	32.74	5672K54	27.09	5672K34	36.91
1/2″	1/2″	3/4″-20	2,450	5672K28	20.54	5672K66	29.02	5672K48	37.51	5672K18	43.86	5672K56	40.33	5672K35	51.64

Metric Type 316 Stainless Steel Yor-Lok Tube Fittings

- Maximum Pressure: See chart at right
- Temperature Range: –425° to +1200° F
- Tubing: Use with Types 304 or 316 stainless steel that meets ASTM A213, A249, or A269

Sized for metric tubing, these stainless steel fittings, which are also called instrumentation fittings, are great for high-pressure applications in corrosive environments. Yor-Lok fittings have a body and nut like other compression fittings, but also have front and back sleeves (double ferrules) that form a leak-free seal around the outside of your tubing. Made of forged or bar stock Type 316 stainless steel, they are compatible with Swagelok®, Parker A-Lok, and Let-Lok fittings. Use with water, air, steam, natural gas, oil, gasoline, solvents, and acids. Fittings are not rated for sterilization or vacuum. Pipe connections are NPT. Nut/tube ends have UNF straight screw threads.

♠Maximum pressures (listed at right) are based on Types 304 and 316 annealed stainless steel welded tubing made to ASTM A213, A249, or A269. *Note*: Ratings for seamless tubing are approximately 15-20% higher depending on tube size.

Tube OD, mm	Nut/ Tube End Thread	Tube Wall Thick.	Max. psi @ 72° F♠
3	5/16″-20	0.028″	4400
4	3/8″-20	0.028″	3640
6	7/16″-20	0.035″	4160
8	1/2″-20	0.035″	3280
10	5/8″-20	0.035″	2680
12	3/4″-20	0.035″	2120
14	7/8″-20	0.049″	2420

Tube-to-Threaded Pipe Connectors

For Tube OD, mm	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each
3	1/8″	5305K248	$12.56	5305K209	$15.98	—	—
4	1/4″	5305K346	12.01	—	—	5305K462	$21.94
6	1/4″	5305K251	11.29	5305K231	17.45	5305K263	21.50
6	3/8″	5305K252	13.65	5305K232	18.09	5305K264	31.91
6	1/2″	5305K253	18.39	5305K233	24.80	5305K265	34.11
8	1/4″	5305K247	14.31	5305K242	18.37	5305K273	21.94
10	1/4″	5305K254	14.59	5305K234	16.75	5305K266	26.29
10	3/8″	5305K255	16.49	5305K235	20.95	5305K267	29.49
10	1/2″	5305K256	19.78	5305K236	30.45	5305K268	40.94
12	1/4″	5305K257	21.07	5305K237	25.97	5305K269	33.17
12	3/8″	5305K258	22.15	5305K238	23.04	5305K271	35.64
12	1/2″	5305K259	24.42	5305K239	35.90	5305K272	43.03
14	1/2″	5305K249	30.15	5305K211	38.59	—	—

Tube-to-Tube Connectors

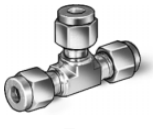

For Tube OD, mm	Couplings	Each	90° Elbows	Each	Tees	Each
3	5305K316	$19.04	5305K366	$24.39	5305K376	$39.66
4	5305K414	16.05	5305K461	21.32	5305K474	38.46
6	5305K311	16.38	5305K362	25.09	5305K371	35.65
8	5305K315	19.32	5305K365	26.24	5305K375	40.73
10	5305K312	23.44	5305K363	30.45	5305K372	46.51
12	5305K313	34.91	5305K364	47.76	5305K373	67.00
14	5305K317	45.63	5305K367	57.41	5305K377	83.88

Reducing Couplings

For Tube OD		Each
4 mm × 1/4″	5305K401	$16.42
6 mm × 1/4″	5305K302	16.75
10 mm × 1/4″	5305K305	23.27
12 mm × 1/4″	5305K306	31.06

Accessories

For Tube OD, mm	Caps for Tubing	Each	Caps for Fittings	Each	Nuts	Each	Front Sleeves	Each	Back Sleeves	Each
3	—	—	—	—	5305K147	$3.54	5305K127	$2.21	5305K137	$1.98
4	5305K261	$8.63	5305K451	$10.60	5305K452	3.52	5305K422	1.96	5305K432	1.96
6	5305K163	10.14	5305K153	8.14	5305K143	3.35	5305K123	1.68	5305K133	1.34
8	5305K162	8.09	5305K152	8.73	5305K146	3.17	5305K126	1.68	5305K136	1.71
10	5305K164	10.74	5305K154	9.31	5305K144	3.94	5305K124	1.80	5305K134	1.71
12	5305K165	15.94	5305K155	15.18	5305K145	6.55	5305K125	2.58	5305K135	2.44
14	—	—	—	—	5305K148	9.90	5305K128	3.54	5305K138	3.35

Quick-Assembly Type 316 Stainless Steel Compression Tube Fittings

- Maximum Pressure: See chart at right
- Temperature Range: –425° to +1200° F
- Tubing: Use with welded or seamless Types 304 or 316 stainless steel that meets ASTM A213, A249, or A269

Also known as instrumentation fittings, these fittings have one sleeve (ferrule) instead of two for faster assembly. They're made of forged or bar stock Type 316 stainless steel for excellent corrosion resistance, plus the nut has a molybdenum disulfide coating that acts as a lubricant for easy installation. These fittings are compatible with Parker CPI fittings. Compression fittings form a seal around the outside of the tubing. They consist of a body, nut, and sleeve. Use with water, air, steam, natural gas, gasoline, oil, hydraulic fluid, and alcohol. Not rated for sterilization or vacuum. Pipe connections are NPT. Nut/tube ends have UNF straight screw threads.

Tube stems let you adapt the end of an existing fitting without the need for a complete fitting. The stem end on these fittings is a short length of tubing.

Through-wall couplings are also known as bulkhead couplings.

♠ Maximum pressures (shown at right) are based on Types 304 and 316 welded stainless steel tubing made to ASTM A213, A249, or A269. *Note*: Ratings for seamless tubing are approximately 15-20% higher depending on tube size.

Tube OD	Tube Wall Thick.	Max. psi @ 72° F♠
1/16″	0.020″	7500
1/8″	0.035″	5500
3/16″	0.035″	5600
1/4″	0.035″	4000
5/16″	0.035″	3200
3/8″	0.035″	2600
1/2″	0.035″	2100
5/8″	0.049″	2500
3/4″	0.049″	2100

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/ Tube End Thread	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	Branch Tees, Male Pipe	Each	Branch Tees, Female Pipe	Each	Run Tees, Male Pipe	Each
1/16″	1/16″	10-32	8239K12	$13.46	8239K364	$19.90	8239K34	$29.72	—	—	—	—	—	—
1/8″	1/8″	5/16″-20	8239K11	8.82	8239K341	11.07	8239K71	14.22	8239K101	$29.38	8239K331	$36.67	8239K161	$29.38
1/8″	1/4″	5/16″-20	8239K314	9.79	8239K365	13.39	8239K335	15.37	8239K102	46.81	8239K132	53.84	8239K162	47.08
3/16″	1/8″	3/8″-20	8239K13	8.95	8239K43	10.96	8239K73	14.45	8239K103	32.53	8239K133	65.83	8239K163	57.24
1/4″	1/8″	7/16″-20	8239K16	7.64	8239K66	10.96	8239K36	14.11	8239K59	27.38	8239K76	33.14	8239K54	27.82
1/4″	1/4″	7/16″-20	8239K15	7.92	8239K45	13.36	8239K75	15.27	8239K105	33.14	8239K135	38.72	8239K165	32.34
1/4″	3/8″	7/16″-20	8239K24	10.79	8239K67	17.07	8239K37	22.72	8239K104	61.41	8239K134	70.62	8239K164	61.41
1/4″	1/2″	7/16″-20	8239K17	14.20	8239K47	18.67	8239K77	25.83	8239K106	80.66	8239K136	92.76	8239K166	80.66
5/16″	1/8″	1/2″-20	8239K18	9.30	8239K48	13.69	8239K78	16.44	8239K107	51.01	8239K137	58.65	8239K167	51.01
5/16″	1/4″	1/2″-20	8239K19	10.96	8239K49	14.78	8239K79	16.93	8239K108	51.01	8239K138	58.65	8239K168	51.01
3/8″	1/8″	9/16″-20	8239K21	10.27	8239K51	14.59	8239K81	20.20	—	—	—	—	—	—
3/8″	1/4″	9/16″-20	8239K22	10.86	8239K52	13.71	8239K82	18.94	8239K112	34.29	8239K142	39.86	8239K172	34.17
3/8″	3/8″	9/16″-20	8239K23	12.33	8239K53	18.52	8239K83	22.76	8239K113	38.87	8239K143	99.34	8239K173	39.50
3/8″	1/2″	9/16″-20	8239K25	14.80	8239K68	24.51	8239K38	29.23	8239K109	86.38	8239K144	120.94	8239K169	86.38
1/2″	1/2″	3/4″-20	8239K26	18.37	8239K69	25.85	8239K39	33.47	8239K61	55.63	8239K84	59.31	8239K55	52.26
5/8″	1/2″	7/8″-20	8239K27	21.57	8239K72	29.53	8239K42	39.67	8239K62	61.01	8239K85	77.89	8239K56	61.01
3/4″	3/4″	1″-20	8239K28	29.00	8239K74	36.71	8239K44	42.06	8239K63	78.22	8239K86	101.69	8239K57	78.22

Tube Stems, Male Pipe

Stem OD	Pipe Size		Each	Stem OD	Pipe Size		Each	Stem OD	Pipe Size		Each
1/8″	1/8″	8239K422	$7.48	1/4″	3/8″	8239K426	$9.30	1/2″	3/8″	8239K431	$14.93
1/8″	1/4″	8239K423	8.48	3/8″	1/4″	8239K427	9.32	1/2″	1/2″	8239K432	15.70
1/4″	1/8″	8239K424	6.62	3/8″	3/8″	8239K428	11.13	3/4″	3/4″	8239K433	24.41
1/4″	1/4″	8239K425	7.03	3/8″	1/2″	8239K429	13.29				

Tube-to-Tube Connectors

For Tube OD	Nut/ Tube End Thread	Couplings	Each	Through-Wall Couplings Required Hole Size		Each	90° Elbows	Each	Tees	Each	Reducing Couplings For Tube OD		Each
1/16″	10-32	8239K29	$18.80	13/64″	8239K87	$46.31	8239K92	$32.53	8239K96	$47.65	3/16″ × 1/8″	8239K231	$12.79
1/8″	5/16″-20	8239K191	13.23	21/64″	8239K201	26.77	8239K211	18.10	8239K221	28.92	1/4″ × 1/8″	8239K232	13.86
3/16″	3/8″-20	8239K192	12.47	25/64″	8239K202	27.55	8239K212	18.10	8239K222	29.72	5/16″ × 1/4″	8239K233	15.44
1/4″	7/16″-20	8239K193	12.33	29/64″	8239K203	18.98	8239K213	18.52	8239K223	25.39	3/8″ × 1/8″	8239K256	20.87
5/16″	1/2″-20	8239K194	14.93	33/64″	8239K204	22.58	8239K214	20.26	8239K224	31.37	3/8″ × 1/4″	8239K234	18.21
3/8″	9/16″-20	8239K195	17.62	37/64″	8239K205	27.41	8239K215	22.03	8239K225	33.16	1/2″ × 1/4″	8239K257	28.22
1/2″	3/4″-20	8239K31	26.36	49/64″	8239K88	39.63	8239K93	36.25	8239K97	50.36	1/2″ × 3/8″	8239K258	28.22
5/8″	7/8″-20	8239K32	36.27	57/64″	8239K89	53.85	8239K94	42.97	8239K98	55.79	3/4″ × 1/2″	8239K259	44.03
3/4″	1″-20	8239K33	44.18	1 1/64″	8239K91	62.16	8239K95	60.66	8239K99	71.47			

Accessories

For Tube OD	Caps for Tubing	Each	Caps for Fittings	Each	Nuts	Each	Sleeves	Each
1/16″	8239K239	$10.96	8239K235	$13.61	8239K216	$4.01	8239K226	$4.56
1/8″	8239K241	7.90	8239K251	8.36	8239K261	2.54	8239K271	2.86
3/16″	8239K242	7.81	8239K252	8.63	8239K262	2.29	8239K272	2.81
1/4″	8239K243	6.70	8239K253	6.38	8239K263	2.29	8239K273	2.33
5/16″	8239K244	7.14	8239K254	6.97	8239K264	2.44	8239K274	2.77
3/8″	8239K245	8.92	8239K255	7.18	8239K265	3.09	8239K275	2.92
1/2″	8239K246	13.06	8239K236	10.69	8239K217	5.10	8239K227	4.28
5/8″	8239K247	16.44	8239K237	15.18	8239K218	7.33	8239K228	4.93
3/4″	8239K248	22.07	8239K238	17.75	8239K219	8.74	8239K229	6.82

For information about Yor-Lok fittings, see page 174. For information about selecting pipe size, see pages 2-3.

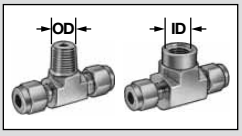

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Brass and Steel Yor-Lok Tube Fittings

- Maximum Pressure: See chart at right
- Temperature Range: Brass: –40° to +400° F Steel: –20° to +800° F
- Tubing: Brass: Seamless copper that meets ASTM B68, B75, or B88 Steel: Use seamless carbon steel that meets ASTM A179 or SAE J524b or J525b

Also called instrumentation fittings, Yor-Lok fittings have a body and nut like other compression fittings, but also have front and back sleeves (double ferrules) that form a leak-free seal around the outside of your tubing, unless noted. They're compatible with Swagelok®, Parker A-Lok, and Let-Lok fittings. Use with air, oil, hydraulic fluid, gasoline, and diesel fuel; brass fittings can also be used with water. Not rated for vacuum. Pipe connections are NPT. Nut/tube ends have UNF straight screw threads.

Tube stems let you adapt the end of an existing fitting without the need for a complete fitting. The stem end is a short length of tubing. They do not include double ferrules.

Through-wall couplings are also known as bulkhead couplings.

Brass fittings are made of forged or bar stock yellow brass and have the highest pressure rating of any brass compression fittings we offer. Brass offers good resistance to corrosion. Not rated for sterilization. For brass instrumentation pipe fittings, see pages 40-41.

Steel fittings are made from forged or bar stock carbon steel with a zinc-plated finish. They offer strength and durability and are ideal for applications that require a high pressure rating in noncorrosive environments. They can be sterilized with steam (autoclaving).

Tube OD	Tube Wall Thickness	*Brass* Max. psi @ 72° F	*Steel* Max. psi @ 72° F
1/16″	0.035″	6000	—
1/8″	0.035″	2900	6800
3/16″	0.035″	2300	6700
1/4″	0.035″	1600	4900
5/16″	0.035″	1300	3800
3/8″	0.035″	1000	3100
1/2″	0.035″	800	2300
5/8″	0.035″	—	1800
5/8″	0.049″	900	—
3/4″	0.049″	700	2200
1″	0.065″	800	2100

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/ Tube End Thread	*Adapters, Male Pipe*	Each	*Adapters, Female Pipe*	Each	*90° Elbows, Male Pipe*	Each	*Branch Tees, Male Pipe*	Each	*Branch Tees, Female Pipe*	Each	*Run Tees, Male Pipe*	Each
Brass														
1/8″	1/8″	5/16″-20	5272K292	$4.20	5272K283	$5.59	5272K303	$8.37	5272K178	$13.96	5272K365	$16.99	5272K156	$13.96
1/8″	1/4″	5/16″-20	5272K291	4.61	5272K282	5.65	5272K302	7.91	5272K177	15.60	—	—	5272K288	16.46
3/16″	1/8″	3/8″-20	5272K284	4.38	5272K313	5.23	5272K402	8.16	5272K501	16.22	5272K531	66.85	5272K157	15.08
1/4″	1/8″	7/16″-20	5272K299	3.86	5272K281	4.71	5272K301	7.31	5272K176	13.75	5272K168	16.12	5272K139	13.75
1/4″	1/4″	7/16″-20	5272K191	3.86	5272K181	5.03	5272K201	7.91	5272K171	13.75	5272K161	17.03	5272K151	13.75
1/4″	3/8″	7/16″-20	5272K192	5.15	5272K182	6.77	5272K202	10.74	5272K264	14.93	5272K272	26.80	—	—
1/4″	1/2″	7/16″-20	5272K193	7.35	5272K183	9.45	5272K203	15.27	5272K265	23.25	5272K273	26.53	5272K274	27.25
5/16″	1/8″	1/2″-20	5272K311	4.59	5272K314	6.02	5272K308	8.08	5272K179	16.22	—	—	5272K158	15.27
5/16″	1/4″	1/2″-20	5272K297	4.59	5272K315	5.90	5272K307	8.52	5272K266	12.96	—	—	5272K275	15.51
3/8″	1/8″	9/16″-20	5272K295	4.96	5272K316	6.54	5272K306	9.24	—	—	—	—	5272K276	10.62
3/8″	1/4″	9/16″-20	5272K194	4.69	5272K184	6.69	5272K204	8.93	5272K172	15.47	5272K162	18.71	5272K152	15.70
3/8″	3/8″	9/16″-20	5272K195	5.07	5272K185	6.87	5272K205	10.14	5272K173	18.55	5272K286	25.96	5272K153	18.55
3/8″	1/2″	9/16″-20	5272K196	7.29	5272K186	10.11	5272K206	12.79	5272K267	24.41	—	—	5272K277	22.93
1/2″	1/4″	3/4″-20	5272K197	8.62	5272K187	9.82	5272K207	10.97	5272K268	19.50	5272K169	25.75	5272K278	21.15
1/2″	3/8″	3/4″-20	5272K198	8.12	5272K188	9.45	5272K208	10.70	5272K174	22.93	5272K163	26.19	5272K154	22.93
1/2″	1/2″	3/4″-20	5272K199	8.93	5272K189	11.32	5272K209	12.57	5272K175	23.72	5272K164	27.71	5272K155	25.13
1/2″	3/4″	3/4″-20	5272K296	11.73	5272K317	14.19	5272K403	22.26	—	—	—	—	—	—
5/8″	3/8″	7/8″-20	5272K312	9.55	5272K318	12.88	5272K401	16.99	—	—	—	—	—	—
5/8″	1/2″	7/8″-20	5272K298	9.87	5272K261	12.79	5272K309	16.01	5272K269	32.92	5272K167	31.80	5272K159	29.49
3/4″	1/2″	1″-20	5272K293	11.78	5272K262	16.37	5272K304	22.26	—	—	—	—	—	—
3/4″	3/4″	1″-20	5272K294	12.79	5272K263	16.57	5272K305	21.39	5272K271	76.85	5272K166	43.64	5272K279	76.35
1″	1″	15/16″-20	5272K515	24.66	5272K516	34.70	5272K517	43.64	—	—	—	—	—	—
Steel														
1/8″	1/8″	5/16″-20	5929K11	4.95	5929K35	40.28	5929K71	10.13	—	—	—	—	—	—
1/8″	1/4″	5/16″-20	5929K34	5.52	5929K36	39.94	5929K37	12.79	—	—	—	—	—	—
3/16″	1/8″	3/8″-20	5929K13	4.99	—	—	5929K73	10.13	—	—	—	—	—	—
1/4″	1/8″	7/16″-20	5929K14	4.14	5929K44	6.04	5929K74	9.04	5929K104	14.33	5929K134	59.66	5929K164	14.71
1/4″	1/4″	7/16″-20	5929K15	4.44	5929K45	6.75	5929K75	10.02	5929K105	15.72	5929K135	19.73	5929K165	16.12
1/4″	3/8″	7/16″-20	5929K16	5.52	5929K46	35.90	5929K76	12.43	—	—	—	—	—	—
1/4″	1/2″	7/16″-20	5929K17	7.96	5929K47	9.25	5929K77	15.65	—	—	—	—	—	—
5/16″	1/8″	1/2″-20	5929K18	5.54	5929K48	32.96	5929K78	11.92	—	—	5929K138	73.89	—	—
5/16″	1/4″	1/2″-20	5929K19	5.32	5929K49	32.56	5929K79	12.79	—	—	—	—	—	—
3/8″	1/8″	9/16″-20	5929K21	5.60	5929K51	7.09	5929K81	11.72	—	—	—	—	—	—
3/8″	1/4″	9/16″-20	5929K22	5.26	5929K52	7.27	5929K82	11.34	5929K112	17.18	5929K142	21.68	5929K172	17.58
3/8″	3/8″	9/16″-20	5929K23	6.47	5929K53	9.58	5929K83	12.64	5929K113	26.62	—	—	5929K173	65.40
3/8″	1/2″	9/16″-20	5929K24	8.13	5929K54	11.12	5929K84	14.60	—	—	—	—	—	—
1/2″	1/4″	3/4″-20	5929K25	8.23	5929K55	10.38	5929K85	13.04	—	—	5929K145	76.74	—	—
1/2″	3/8″	3/4″-20	5929K26	8.05	5929K56	10.28	5929K86	13.44	5929K116	26.70	5929K146	27.58	5929K176	26.70
1/2″	1/2″	3/4″-20	5929K27	8.22	5929K57	12.43	5929K87	15.46	5929K117	25.59	5929K147	36.42	5929K177	25.17
1/2″	3/4″	3/4″-20	5929K28	10.82	5929K58	20.80	5929K88	19.54	—	—	—	—	—	—
5/8″	3/8″	7/8″-20	5929K29	39.54	5929K59	28.24	5929K89	19.36	—	—	—	—	—	—
5/8″	1/2″	7/8″-20	5929K31	9.90	5929K61	13.52	5929K91	16.94	5929K118	42.60	5929K151	76.66	—	—
3/4″	1/2″	1″-20	5929K32	11.66	5929K62	15.74	5929K92	20.58	—	—	—	—	—	—
3/4″	3/4″	1″-20	5929K33	12.78	5929K63	16.96	5929K93	20.28	5929K123	74.19	5929K153	43.16	—	—
1″	1″	15/16″-20	5929K38	19.36	5929K64	32.45	5929K94	44.87	5929K119	182.82	5929K154	190.08	5929K178	169.82

(Continued on following page)

For information about Yor-Lok fittings, see page 174. For information about selecting pipe size, see pages 2-3.

Brass and Steel Yor-Lok Tube Fittings *(Continued from previous page)*

Tube-to-Threaded Pipe Connectors (Cont.)

Tube Stems, Male Pipe

Stem OD	Pipe Size		Each	Stem OD	Pipe Size		Each
Brass				***Steel***			
1/4"	1/8"	5272K721	$3.28	1/4"	1/8"	5929K621	$3.54
1/4"	1/4"	5272K722	3.28	1/4"	1/4"	5929K622	3.72
3/8"	1/4"	5272K723	3.93	3/8"	1/4"	5929K623	4.98
3/8"	3/8"	5272K724	4.59	3/8"	3/8"	5929K624	5.30
1/2"	3/8"	5272K725	7.21	1/2"	3/8"	5929K625	6.56
1/2"	1/2"	5272K726	7.41	1/2"	1/2"	5929K626	7.06

Tube-to-Tube Connectors

For Tube OD	Nut/ Tube End Thread	Couplings	Each	90° Elbows	Each	Tees	Each
Brass							
1/16"	10-32	5272K503	$7.85	—	—	5272K505	$18.78
1/8"	5/16"-20	5272K224	6.23	5272K244	$10.70	5272K254	12.57
3/16"	3/8"-20	5272K225	5.90	5272K245	10.26	5272K255	13.42
1/4"	7/16"-20	5272K221	4.47	5272K241	8.18	5272K251	12.57
5/16"	1/2"-20	5272K227	5.03	5272K247	11.13	5272K257	15.27
3/8"	9/16"-20	5272K222	6.48	5272K242	10.55	5272K252	14.60
1/2"	3/4"-20	5272K223	10.34	5272K243	15.41	5272K253	21.31
5/8"	7/8"-20	5272K228	15.51	5272K248	20.85	5272K258	28.79
3/4"	1"-20	5272K226	18.44	5272K246	30.49	5272K256	36.49
1"	15/16"-20	5272K518	34.70	5272K238	57.82	5272K521	64.67
Steel							
1/8"	5/16"-20	5929K191	7.81	—	—	5929K221	14.34
3/16"	3/8"-20	5929K192	8.70	—	—	5929K222	96.22
1/4"	7/16"-20	5929K193	6.58	5929K213	10.81	5929K223	13.64
5/16"	1/2"-20	5929K194	7.09	5929K214	74.08	5929K224	26.62
3/8"	9/16"-20	5929K195	8.72	5929K215	12.78	5929K225	16.62
1/2"	3/4"-20	5929K196	11.04	5929K216	16.79	5929K226	24.57
5/8"	7/8"-20	5929K197	14.86	5929K217	21.89	5929K227	28.37
3/4"	1"-20	5929K198	19.03	5929K218	27.65	5929K228	35.70
1"	15/16"-20	5929K199	29.08	5929K219	56.28	5929K229	61.34

Reducing Couplings

For Tube OD	Nut/ Tube End Thread		Each
Brass			
1/8" × 1/16"	5/16"-20	5272K506	$6.87
3/16" × 1/8"	3/8"-20	5272K215	7.00
1/4" × 1/16"	7/16"-20	5272K507	7.00
1/4" × 1/8"	7/16"-20	5272K214	5.44
5/16" × 1/4"	1/2"-20	5272K217	5.69
3/8" × 1/4"	9/16"-20	5272K211	6.71
1/2" × 1/4"	3/4"-20	5272K212	11.17
1/2" × 3/8"	3/4"-20	5272K213	10.88
3/4" × 1/2"	1"-20	5272K216	19.42
Steel			
1/4" × 1/8"	7/16"-20	5929K232	7.23
3/8" × 1/4"	9/16"-20	5929K234	9.43
1/2" × 1/4"	3/4"-20	5929K235	12.79
1/2" × 3/8"	3/4"-20	5929K236	12.79
3/4" × 1/2"	1"-20	5929K238	19.36

Through-Wall Couplings

For Tube OD	Nut/Tube End Thread	Required Hole Size		Each	For Tube OD	Nut/Tube End Thread	Required Hole Size		Each
Brass					***Steel***				
1/16"	10-32	13/64"	5272K229	$23.14	1/8"	5/16"-20	21/64"	5929K201	$14.43
1/8"	5/16"-20	21/64"	5272K234	9.01	1/4"	7/16"-20	29/64"	5929K203	8.66
3/16"	3/8"-20	25/64"	5272K504	9.62	5/16"	1/2"-20	33/64"	5929K204	91.62
1/4"	7/16"-20	29/64"	5272K231	7.71	3/8"	9/16"-20	37/64"	5929K205	13.85
5/16"	1/2"-20	33/64"	5272K236	8.72	1/2"	3/4"-20	49/64"	5929K206	16.90
3/8"	9/16"-20	37/64"	5272K232	10.30	3/4"	1"-20	1 1/64"	5929K208	24.94
1/2"	3/4"-20	49/64"	5272K233	16.53					
5/8"	7/8"-20	57/64"	5272K237	24.01					
3/4"	1"-20	1 1/64"	5272K235	28.81					
1"	15/16"-20	1 21/64"	5272K519	61.15					

Accessories

For Tube OD	Caps for Tubing	Each	Caps for Fittings	Each	Nuts	Each	Front Sleeves	Each	Back Sleeves	Each
Brass										
1/16"	5272K509	$4.80	5272K508	$5.23	5272K511	$1.37	5272K512	$1.39	5272K513	$1.30
1/8"	5272K144	2.85	5272K134	2.58	5272K124	.87	5272K104	.99	5272K114	.83
3/16"	5272K145	2.85	5272K135	2.62	5272K125	.79	5272K105	.93	5272K115	.83
1/4"	5272K141	2.41	5272K131	2.33	5272K121	.66	5272K101	.93	5272K111	.83
5/16"	5272K147	3.07	5272K137	2.86	5272K127	.93	5272K107	1.08	5272K117	.99
3/8"	5272K142	3.72	5272K132	3.45	5272K122	1.00	5272K102	1.14	5272K112	1.02
1/2"	5272K143	5.46	5272K133	5.15	5272K123	1.35	5272K103	1.82	5272K113	1.70
5/8"	5272K148	6.33	5272K138	5.69	5272K128	1.83	5272K108	2.10	5272K118	1.85
3/4"	5272K146	9.39	5272K136	6.33	5272K126	2.62	5272K106	2.47	5272K116	2.28
1"	5272K523	16.81	5272K522	13.74	5272K524	6.37	5272K514	3.14	5272K119	2.54
Steel										
1/8"	5929K241	4.34	5929K251	3.89	5929K261	.90	5929K271	2.02	5929K281	.92
3/16"	—	—	—	—	5929K262	.90	5929K272	1.99	5929K282	.92
1/4"	5929K243	3.55	5929K253	3.51	5929K263	.82	5929K273	1.63	5182K584■	1.18
5/16"	5929K244	48.78	5929K254	32.72	5929K264	.94	5929K274	1.99	5182K663■	1.51
3/8"	5929K245	5.32	5929K255	3.89	5929K265	1.04	5929K275	2.02	5182K586■	1.49
1/2"	5929K246	6.60	5929K256	6.04	5929K266	1.44	5929K276	2.94	5182K587■	2.08
5/8"	—	—	—	—	5929K267	1.92	5929K277	3.45	5182K664■	2.58
3/4"	5929K248	10.28	5929K258	7.67	5929K268	2.54	5929K278	4.58	5182K665■	3.19
1"	—	—	5929K259	13.28	5929K269	5.06	5929K279	5.51	5182K666■	4.96

■ Made of Type 316 stainless steel.

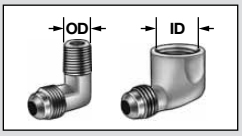

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

About Flared Tube Fittings

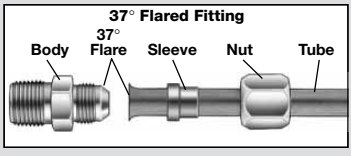

Flared tube fittings are for use with metal tubing that can be flared. The flared angle on these fittings mates with the flared angle on the tubing for a tight, reliable connection. Flared fittings have a simple design consisting of a body and nut (the 37° flared fittings also require a sleeve). To install, begin by cutting your tubing squarely and removing all burrs. Slide the nut (and sleeve if applicable) onto the tubing, with the threaded end of the nut facing outward. Flare the end of the tubing with a flaring tool (sold separately, see page 2336). Tighten the body onto the nut and the sleeve, making sure the flared end of the tubing is set between them.

Precision Type 304 Stainless Steel 37° Flared Tube Fittings

- Maximum Pressure @ 72° F: 3000 psi
- Temperature Range: –325° to +1200° F
- Tubing: Use with stainless steel

Also known as AN fittings, these fittings are made to exact AS (formerly AN) specifications. Not only are these fittings manufactured to tighter tolerances than other 37° flared fittings, the nut/tube ends have 3A and 3B threads, which adhere to higher tolerances than all other nut/tube end threads. They meet ASTM A380 and SAE AS4841. Fittings are made of forged or bar stock Type 304 stainless steel and are furnished as a body only; nuts and sleeves are sold separately. Use with water, air, oil, and hydraulic fluid. Not rated for sterilization or vacuum. Pipe connections are ANPT, which are compatible with NPT. Nut/tube ends have UNJF straight screw threads.

For Tube OD	Nut/ Tube End Thread Size
1/8″	5/16″-24
1/4″	7/16″-20
3/8″	9/16″-18
1/2″	3/4″-16
3/4″	1 1/16″-12

Tube-to-Threaded Pipe Connectors

Adapters, Male Pipe

For Tube OD	Pipe Size		Each
1/8″	1/8″	5482K11	$18.18
1/4″	1/4″	5482K12	8.93
3/8″	3/8″	5482K15	10.35
1/2″	1/2″	5482K18	15.84
3/4″	3/4″	5482K21	21.15

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	90° Elbows	Each	Tees	Each
1/8″	5482K31	$15.65	5482K24	$41.64	5482K51	$63.05
1/4″	5482K32	10.02	5482K25	17.87	5482K52	22.38
3/8″	5482K33	10.55	5482K26	18.73	5482K53	25.73
1/2″	5482K34	14.85	5482K27	34.91	5482K54	38.85
3/4″	5482K35	34.60	5482K28	68.05	5482K55	86.80

Reducing Couplings

For Tube OD		Each
1/4″ × 1/8″	5482K41	$23.33
3/8″ × 1/4″	5482K43	11.89
1/2″ × 1/4″	5482K42	16.67
1/2″ × 3/8″	5482K44	17.13

Accessories

For Tube OD	Caps	Each	Plugs	Each	Nuts	Each	Sleeves	Each
1/8″	5482K67	$7.09	5482K61	$14.85	5482K74	$2.55	5482K81	$2.04
1/4″	5482K68	4.00	5482K62	5.76	5482K75	3.07	5482K82	1.20
3/8″	5482K69	4.64	5482K63	6.75	5482K76	3.53	5482K83	1.88
1/2″	5482K71	8.64	5482K64	7.33	5482K77	5.62	5482K84	2.07
3/4″	5482K72	19.84	5482K65	13.65	5482K78	13.45	5482K85	13.65

British Standard Type 316 Stainless Steel 37° Flared Tube Fittings

- Maximum Pressure: See below
- Temperature Range: –425° to +1200° F
- Tubing: Use flareable seamless or welded Type 304 or Type 316 stainless steel

Also known as JIC (Joint Industrial Council) fittings, these fittings connect BSPT (British Standard Pipe Taper) and BSPP (British Standard Pipe Parallel). They require the use of tubing that has been flared to 37° for a tight seal. All fittings are made of forged or bar stock Type 316 stainless steel and meet SAE J514 and MIL-F-18866. They come with a body; the nuts and sleeves are sold separately on page 181. Fittings with BSPP threads also include an O-ring and bonded washer. The 90° elbow with BSPP threads has an adjustable nut that orients the fitting before connecting. Use with water, air, steam, natural gas, oil, and solvents. Not rated for sterilization or vacuum. Pipe connections are BSPT or BSPP. Nut/tube ends have UNF straight screw threads.

For Tube OD	Pipe Size	Nut/ Tube End Thread	Max. psi @ 72° F	BSPT Adapters, Male Pipe	Each	BSPT 90° Elbows, Male Pipe	Each	Max. psi @ 72° F	BSPP Adapters, Male Pipe	Each	BSPP 90° Elbows, Male Pipe	Each
1/4″	1/8″	7/16″-20	8050	5097K31	$10.21	—	—	6000	5097K21	$11.27	5097K61	$49.74
1/4″	1/4″	7/16″-20	8050	5097K32	12.48	5097K71	$30.35	6000	5097K11	10.66	5097K51	48.33
3/8″	1/4″	9/16″-18	7850	5097K34	12.82	5097K73	28.64	6000	5097K13	34.54	5097K53	57.66
3/8″	3/8″	9/16″-18	7850	5097K35	16.64	5097K74	44.88	6000	5097K14	13.71	5097K54	70.19

For information about flared fittings, see page 180. For information about selecting pipe size, see pages 2-3.

Type 316 Stainless Steel 37° Flared Tube Fittings

- Maximum Pressure: See below
- Temperature Range: –425° to +1200° F
- Tubing: Use seamless or welded Type 304 or Type 316 stainless steel that meets ASTM A213, A249, or A269

These fittings are also known as JIC (Joint Industrial Council) fittings. Choose them over 45° flared fittings when your application requires higher pressure ratings. These fittings require the use of tubing that has been flared to 37° for a tight seal. They are made of forged or bar stock Type 316 stainless steel and come with a body; the nuts and sleeves are sold separately. Use them with water, air, natural gas, and solvents. They meet SAE J514 and ISO 8434-3. Not rated for sterilization or vacuum. Pipe connections are NPT. Nut/tube ends have UNF straight screw threads.

Through-wall couplings are also known as bulkhead couplings.

Tube OD	Nut/Tube End Thread Size
1/8″	5/16″-24
1/4″	7/16″-20
5/16″	1/2″-20
3/8″	9/16″-18
1/2″	3/4″-16
5/8″	7/8″-14
3/4″	1 1/16″-12
1″	1 5/16″-12

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe Max. psi @ 72°F		Each	Adapters, Female Pipe Max. psi @ 72°F		Each	90° Elbows, Male Pipe Max. psi @ 72°F		Each	90° Elbows, Female Pipe Max. psi @ 72°F		Each
1/8″	1/8″	6000	50715K411	$11.73	6000	50715K412	$29.95	5000	50715K413	$32.95	—	—	—
1/4″	1/8″	6000	50715K161	6.01	6000	50715K171	8.26	5000	50715K181	14.53	5000	50715K191	$21.82
1/4″	1/4″	6000	50715K162	7.35	6000	50715K172	11.70	5000	50715K182	16.53	5000	50715K192	27.68
5/16″	1/8″	6000	50715K169	8.95	6000	50715K179	21.96	5000	50715K189	29.83	—	—	—
5/16″	1/4″	6000	50715K212	9.96	6000	50715K213	17.92	5000	50715K214	19.92	5000	50715K215	43.89
3/8″	1/4″	6000	50715K163	7.54	6000	50715K173	12.39	5000	50715K183	16.85	5000	50715K193	30.44
3/8″	3/8″	6000	50715K164	9.78	6000	50715K174	17.55	5000	50715K184	24.86	4500	50715K194	42.43
1/2″	3/8″	6000	50715K165	12.13	6000	50715K175	18.14	5000	50715K185	27.19	3000	50715K195	39.44
1/2″	1/2″	6000	50715K166	15.05	6000	50715K176	29.25	5000	50715K186	35.10	3000	50715K196	57.97
5/8″	1/2″	6000	50715K269	21.59	6000	50715K279	28.08	5000	50715K289	44.75	3000	50715K299	65.82
3/4″	3/4″	4800	50715K167	31.07	4800	50715K177	43.73	4000	50715K187	60.12	3000	50715K197	90.63
1″	1″	3600	50715K168	47.18	3600	50715K178	70.74	3000	50715K188	88.12	1750	50715K198	209.61

Tube-to-Tube Connectors

For Tube OD	Couplings Max. psi @ 72° F		Each	90° Elbows Max. psi @ 72° F		Each	90° Elbows, Swivel Nut Max. psi @ 72° F		Each	Tees Max. psi @ 72° F		Each
1/8″	6000	50715K414	$39.93	—	—	—	—	—	—	5000	50715K415	$54.90
1/4″	6000	50715K261	8.68	5000	50715K562	$15.97	5000	50715K532	$19.96	5000	50715K281	30.17
5/16″	6000	50715K266	17.90	5000	50715K563	47.91	5000	50715K533	49.91	5000	50715K286	51.51
3/8″	6000	50715K262	11.02	5000	50715K564	19.96	4500	50715K534	29.95	5000	50715K282	34.14
1/2″	6000	50715K263	16.42	5000	50715K565	27.95	4000	50715K535	44.92	5000	50715K283	42.92
5/8″	6000	50715K267	31.59	5000	50715K566	45.92	4000	50715K536	59.89	3500	50715K287	57.05
3/4″	6000	50715K264	42.56	4500	50715K567	43.73	3500	50715K537	84.85	4500	50715K284	73.75
1″	4800	50715K265	51.41	3500	50715K568	89.84	2500	50715K538	124.78	3500	50715K285	118.26

Through-Wall Couplings

For Tube OD	Required Hole Size	Max. psi @ 72° F		Each
1/4″	15/32″	6000	50715K581	$23.96
3/8″	19/32″	6000	50715K582	29.45
1/2″	3/4″	6000	50715K583	46.67
5/8″	29/32″	6000	50715K584	78.36
3/4″	1 3/32″	6000	50715K585	90.64
1″	1 11/32″	4800	50715K586	119.78

Reducing Couplings

For Tube OD	Max. psi @ 72° F		Each
3/8″ × 1/4″	6000	50715K572	$24.95
1/2″ × 3/8″	6000	50715K573	44.92
3/4″ × 1/2″	6000	50715K574	55.90

Accessories

For Tube OD	Caps	Each	Plugs	Each	Nuts	Each	Sleeves	Each
1/8″	50715K511	$13.97	50715K521	$19.96	50715K416	$3.50	50715K417	$2.25
1/4″	50715K512	6.49	50715K522	5.99	50715K324	2.05	50715K316	1.26
5/16″	50715K513	15.47	50715K523	9.49	50715K635	3.74	50715K627	1.81
3/8″	50715K514	7.49	50715K524	7.98	50715K326	2.57	50715K318	1.93
1/2″	50715K515	8.99	50715K525	11.98	50715K328	3.39	50715K322	3.51
5/8″	50715K516	24.95	50715K526	22.96	50715K636	10.91	50715K628	5.26
3/4″	50715K517	29.95	50715K527	31.94	50715K632	15.53	50715K624	6.38
1″	50715K518	44.92	50715K528	43.92	50715K634	25.77	50715K626	12.66

For information about flared fittings, see page 180. For information about selecting pipe size, see pages 2-3.

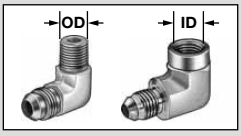

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Brass and Steel 37° Flared Tube Fittings

- Maximum Pressure: See below
- Temperature Range: Brass: –40° to +400° F Steel: –63° to +400° F
- Tubing: Brass: Use flareable seamless copper made to ASTM B75 Steel: Use flareable welded or seamless steel

Just like the stainless steel 37° fittings on page 181, these fittings are also known as JIC (Joint Industrial Council) fittings; however, these are constructed of brass or steel. Choose them over 45° flared fittings when your application requires higher pressure ratings. These fittings require the use of tubing that has been flared to 37° for a tight seal. They come with a body; the nuts and sleeves are sold separately. Not rated for sterilization. Nut/tube ends have UNF straight screw threads.

Brass fittings are made of forged or bar stock CA377, CA360, or CA345 yellow brass. Brass offers good resistance to corrosion. Use these fittings with water, air, natural gas, oil, and solvents. They meet SAE J514 and ISO 8434-1. Not rated for vacuum. Pipe connections are NPT.

Steel fittings are made from forged or bar stock 12L14 carbon steel with a zinc-plated finish. They offer strength and durability. Use with air and hydraulic oil. They meet SAE J514. Vacuum rating is 28″ Hg @ 72° F. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads.

Tube OD	Nut/Tube End Thread Size
1/4″	7/16″-20
5/16″	1/2″-20
3/8″	9/16″-18
1/2″	3/4″-16
5/8″	7/8″-14
3/4″	1 1/16″-12
1″	1 5/16″-12

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe Max. psi @ 72° F		Each	Adapters, Female Pipe Max. psi @ 72° F		Each	90° Elbows, Male Pipe Max. psi @ 72° F		Each	90° Elbows, Female Pipe Max. psi @ 72° F		Each
Brass													
1/4″	1/8″	3250	50675K161	$1.89	3250	50675K171	$3.14	4250	50675K181	$4.43	2700	50675K191	$12.80
1/4″	1/4″	3250	50675K162	2.21	3250	50675K172	4.56	4250	50675K182	5.76	2700	50675K192	16.23
3/8″	1/4″	3250	50675K163	2.08	3250	50675K173	2.92	4250	50675K183	5.87	2700	50675K193	17.87
3/8″	3/8″	3250	50675K164	2.94	3250	50675K174	5.51	4250	50675K184	8.95	2450	50675K194	24.91
1/2″	3/8″	3250	50675K165	4.14	3250	50675K175	6.90	4250	50675K185	9.02	1600	50675K195	23.15
1/2″	1/2″	3250	50675K166	5.03	3250	50675K176	10.91	4250	50675K186	13.36	1600	50675K196	37.78
3/4″	3/4″	2600	50675K167	11.11	2600	50675K177	16.94	2600	50675K187	15.53	1600	50675K197	63.25
1″	1″	1950	50675K168	17.67	1950	50675K178	29.11	1950	50675K188	29.43	950	50675K198	135.83
Steel													
1/4″	1/8″	5000	50695K161	1.11	5000	50695K171	1.77	5000	50695K181	4.46	5000	50695K191	6.17
1/4″	1/4″	5000	50695K162	1.37	5000	50695K172	3.69	5000	50695K182	5.09	—	—	—
5/16″	1/8″	5000	50695K169	1.69	5000	50695K179	2.74	5000	50695K189	5.49	5000	50695K199	13.00
3/8″	1/4″	5000	50695K163	1.40	4000	50695K173	2.63	5000	50695K183	5.49	4000	50695K193	7.46
3/8″	3/8″	5000	50695K164	2.03	4000	50695K174	3.69	5000	50695K184	6.66	4000	50695K194	11.06
1/2″	3/8″	4000	50695K165	2.03	3000	50695K175	3.14	4000	50695K185	6.91	3000	50695K195	11.00
1/2″	1/2″	4000	50695K166	3.03	3000	50695K176	8.03	4000	50695K186	9.71	3000	50695K196	15.74
5/8″	1/2″	3000	50695K269	3.37	3000	50695K279	5.11	3000	50695K289	9.26	3000	50695K299	16.00
3/4″	3/4″	4000	50695K167	4.23	2500	50695K177	6.86	4000	50695K187	12.94	2500	50695K197	23.66
1″	1″	4000	50695K168	6.26	2000	50695K178	10.31	4000	50695K188	23.89	2000	50695K198	39.77

Tube-to-Tube Connectors

For Tube OD	Couplings Max. psi @ 72° F		Each	Tees Max. psi @ 72° F		Each
Brass						
1/4″	3250	50675K261	$2.04	3250	50675K281	$10.07
3/8″	3250	50675K262	3.05	3250	50675K282	10.76
1/2″	3250	50675K263	4.18	3250	50675K283	15.05
3/4″	3250	50675K264	12.72	2925	50675K284	24.48
1″	2600	50675K265	19.37	2275	50675K285	37.95
Steel						
1/4″	5000	50695K261	1.80	5000	50695K281	7.09
5/16″	5000	50695K266	2.37	5000	50695K286	7.40
3/8″	5000	50695K262	1.74	5000	50695K282	8.60
1/2″	4000	50695K263	2.83	4000	50695K283	11.63
5/8″	4000	50695K267	3.86	4000	50695K287	15.91
3/4″	4000	50695K264	5.86	4000	50695K284	22.57
1″	4000	50695K265	8.80	4000	50695K285	35.03

Accessories

For Tube OD	Nuts	Each	Sleeves	Each
Brass				
1/4″	50675K124	$0.85	50675K116	$0.85
3/8″	50675K126	1.11	50675K118	1.14
1/2″	50675K128	1.78	50675K122	1.40
3/4″	50675K432	4.26	50675K424	2.99
1″	50675K434	9.79	50675K426	4.48
Steel				
1/4″	50695K224	.88	50695K216	.71
5/16″	50695K635	.91	50695K627	.94
3/8″	50695K226	1.12	50695K218	.79
1/2″	50695K228	1.26	50695K222	.82
5/8″	50695K636	1.77	50695K628	.91
3/4″	50695K532	2.53	50695K524	1.24
1″	50695K534	3.56	50695K526	1.91

For information about flared fittings, see page 180. For information about selecting pipe size, see pages 2-3.

British Standard/Metric Steel 37° Flared Tube Fittings

- Maximum Pressure: See below
- Temperature Range: –40° to +212° F
- Tubing: Use with flareable SAE seamless carbon steel tubing

Also known as JIC (Joint Industrial Council) fittings, these fittings connect BSPT (British Standard Pipe Taper), BSPP (British Standard Pipe Parallel), and metric straight (DIN 3852) threads. They require the use of tubing that has been flared to 37° for a tight seal. They are made of forged or bar stock carbon steel with a zinc-plated finish and meet SAE J514. Use with oil and hydraulic fluid. They come with a body; the nuts and sleeves are sold separately on page 182. Fittings with BSPP and metric threads also include an O-ring and a washer. The 90° elbows with BSPP threads have an adjustable nut that orients the fitting before connecting. Not rated for sterilization or vacuum. Pipe connections are BSPT or BSPP. Nut/tube ends have UNF straight screw threads.

For Tube OD	Max. psi @ 72° F	Nut/ Tube End Thread	BSPT Pipe Size	Adapters, Male Pipe	Each	BSPP Pipe Size	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each	METRIC THREAD Thread Size	Adapters, Male Pipe	Each
1/4″	5000	7/16″-20	1/8″	4545K162	$4.47	1/8″	4545K151	$5.40	4545K281	$28.94	M10x1	4545K216	$7.78
1/4″	5000	7/16″-20	1/4″	4545K163	4.02	1/4″	4545K152	6.84	4545K146	15.24	M12x1.5	4545K217	9.98
3/8″	5000	9/16″-18	1/4″	4545K164	4.02	1/4″	4545K154	6.20	4545K239	15.71	M14x1.5	4545K219	10.07
3/8″	5000	9/16″-18	3/8″	4545K165	6.33	3/8″	4545K155	7.98	4545K241	18.13			
1/2″	4500	3/4″-16	1/2″	4545K167	7.38	1/2″	4545K158	10.56	4545K242	24.60	M18x1.5	4545K223	12.04

Compact Aluminum 37° Flared Tube Fittings

- Maximum Pressure @ 72° F: 3000 psi
- Temperature Range: –51° to +302° F
- Tubing: Use with aluminum, steel, and stainless steel

Also known as banjo fittings, these unique fittings have a compact design that permits easy connections in cramped locations. For a basic fitting, you'll need an adapter, bolt, and washer; nuts and sleeves are also required to create a complete fitting that's intended to be connected to tubing. Each component is sold separately. They are made of lightweight aluminum and have a blue anodized finish, except bolts are red and washers are not anodized. They mate with tubing that has been flared to 37° for a tight seal. Use with water, air, oil, and hydraulic fluid. Not rated for sterilization or vacuum. Nut/tube ends have JIC/UNF straight screw threads.

For ***washers***, ***nuts***, and ***sleeves***, the package quantity is 5.

For Tube OD	Nut/ Tube End Thread	Adapters	Each
3/16″	3/8″-24	5487K91	$27.46
3/8″	9/16″-18	5487K92	23.08

For Tube OD	Bolt Thread Size	Bolts	Each
3/16″	3/8″-24	5487K31	$14.73
1/4″	7/16″-20	5487K32	15.47
3/8″	9/16″-18	5487K33	19.45
1/2″	3/4″-16	5487K34	28.18

For Tube OD	Washers	Per Pkg.	Nuts	Per Pkg.	Sleeves	Per Pkg.
3/16″	5487K61	$1.84	5487K71	$6.18	5487K81	$5.49
1/4″	5487K62	1.84	5487K72	7.09	5487K82	6.07
3/8″	5487K63	2.24	5487K73	7.51	5487K83	7.91
1/2″	5487K64	3.24	5487K74	12.45	5487K84	9.22

Aluminum 37° Flared Tube Fittings

- Maximum Pressure @ 72° F: 3000 psi, except for the fittings for 1″ tube OD, which are 1500 psi
- Temperature Range: –60° to +400° F
- Tubing: Use with aluminum

Also known as JIC (Joint Industrial Council) fittings, these fittings are constructed of Alloy 2024 or Alloy 2014 aluminum, so they are lighter than similar fittings made of other materials. These fittings require the use of tubing that has been flared to 37° for a tight seal. They have a blue anodized finish except the plugs, which are red. All connectors are furnished as a body; the nuts and sleeves are sold separately. Use with water, air, hydraulic fluid, coolants, engine oil, and fuel. Not rated for sterilization or vacuum. Pipe connections are NPT. Nut/tube ends have UNJ straight screw threads.

Note: The pressure ratings for the nuts and sleeves are equal to the body on which they are used.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Nut/ Tube End Thread	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each	Branch Tees, Male Pipe	Each
1/4″	1/4″	7/16″-20	2227K11	$4.14	2227K31	$12.09		
3/8″	3/8″	9/16″-18	2227K12	5.04	2227K32	16.25		
1/2″	1/2″	3/4″-16	2227K13	7.66	2227K33	23.34		
5/8″	1/2″	7/8″-14	2227K18	7.78	2227K38	23.14	2227K46	$26.63
3/4″	3/4″	1 1/16″-12	2227K14	14.52	2227K34	34.57	2227K44	46.45

Tube-to-Tube Connectors

For Tube OD	Nut/ Tube End Thread	Couplings	Each	Tees	Each
1/4″	7/16″-20	2227K81	$4.31	2227K21	$13.06
3/8″	9/16″-18	2227K82	4.31	2227K22	13.06
1/2″	3/4″-16	2227K83	7.66	2227K23	22.02
5/8″	7/8″-14	2227K86	8.91	2227K26	28.40
3/4″	1 1/16″-12	2227K84	17.29	2227K24	42.59

Accessories

For Tube OD	Plugs	Each	Nuts	Each	Sleeves	Each
1/4″	2227K51	$2.24	2227K61	$1.46	2227K71	$1.49
3/8″	2227K52	2.24	2227K62	1.91	2227K72	1.91
1/2″	2227K53	4.14	2227K63	2.77	2227K73	2.16
5/8″	2227K56	5.35	2227K66	3.97	2227K76	3.31
3/4″	2227K54	7.96	2227K64	5.34	2227K74	5.39
1″	2227K55	10.64	2227K65	8.92	2227K75	6.38

For information about flared fittings, see page 180. For information about selecting pipe size, see pages 2-3.

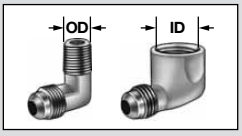

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″	1″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″

Brass 45° Flared Tube Fittings

- Maximum Pressure: See chart at right
- Temp. Range: −65° to +250° F
- Tubing: Use with flareable aluminum, brass, copper, and welded steel

Also known as SAE (Society of Automotive Engineers) fittings, these fittings are UL listed for flammable liquid, except the solder-joint couplings. They're constructed of forged or bar stock brass and come with a body; nuts are sold separately. These fittings require the use of tubing that has been flared to 45° for a tight seal. Use with water, air, natural gas, oil, diesel fuel, and refrigerants. Not rated for sterilization or vacuum. Pipe connections are NPTF, which are compatible with NPT threads. Nut/tube ends have UNF straight screw threads.

Caps are furnished with a copper gasket.

♠ Pressures are based on use with copper tubing that meets ASTM B75.

Tube OD	Tube Wall Thick.	Max. psi @ 73° F♠	Nut/Tube End Thread
3/16″	0.030″	1900	3/8″-24
1/4″	0.030″	1400	7/16″-20
5/16″	0.032″	1200	1/2″-20
3/8″	0.032″	1000	5/8″-18
1/2″	0.032″	750	3/4″-16
5/8″	0.035″	650	7/8″-14
3/4″	0.035″	550	1 1/16″-14

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each
3/16″	1/8″	50635K371	$1.09	50635K401	$2.91
3/16″	1/4″	50635K372	3.44	—	—
1/4″	1/8″	50635K373	.84	50635K403	2.34
1/4″	1/4″	50635K374	1.22	50635K404	3.03
1/4″	3/8″	50635K375	2.12	50635K405	5.66
1/4″	1/2″	50635K376	3.88	50635K406	12.05
5/16″	1/8″	50635K377	1.56	50635K407	4.06
5/16″	1/4″	50635K378	1.69	50635K408	5.16
3/8″	1/8″	50635K379	2.09	50635K409	4.16
3/8″	1/4″	50635K381	1.84	50635K411	3.31
3/8″	3/8″	50635K382	2.09	50635K412	3.72
3/8″	1/2″	50635K383	3.25	50635K413	5.50
3/8″	3/4″	50635K384	5.25	50635K414	9.12
1/2″	1/4″	50635K385	2.75	50635K415	4.94
1/2″	3/8″	50635K386	2.56	50635K416	4.75
1/2″	1/2″	50635K387	3.12	50635K417	5.09
1/2″	3/4″	50635K388	5.34	50635K418	9.19
5/8″	1/4″	50635K389	4.62	50635K419	28.62
5/8″	3/8″	50635K391	3.62	50635K421	6.28
5/8″	1/2″	50635K392	3.78	50635K422	5.31
5/8″	3/4″	50635K393	5.72	50635K423	7.75
3/4″	1/2″	50635K394	7.53	50635K424	9.25
3/4″	3/4″	50635K395	6.47	50635K425	11.41

For Tube OD	Pipe Size	Adapters, Female Pipe	Each	90° Elbows, Female Pipe	Each	Branch Tees, Male Pipe	Each	Run Tees, Male Pipe	Each
3/16″	1/8″	50635K431	$2.00	—	—	50635K471	$13.37	—	—
1/4″	1/8″	50635K432	1.41	50635K452	$2.44	50635K472	6.11	50635K481	$4.44
1/4″	1/4″	50635K433	2.16	50635K453	5.22	50635K473	8.25	50635K482	4.59
1/4″	3/8″	50635K434	3.22	—	—	—	—	—	—
1/4″	1/2″	50635K435	11.02	—	—	—	—	—	—
5/16″	1/8″	50635K436	2.53	50635K454	16.93	50635K474	11.71	—	—
5/16″	1/4″	50635K437	2.72	50635K455	5.87	—	—	—	—
3/8″	1/4″	50635K438	2.50	50635K456	5.06	50635K475	7.50	50635K483	11.96
3/8″	3/8″	50635K439	3.31	50635K457	6.84	50635K476	7.27	50635K484	9.28
3/8″	1/2″	50635K441	5.25	50635K458	9.16	—	—	50635K485	18.05
3/8″	3/4″	50635K442	12.27	—	—	—	—	—	—
1/2″	1/4″	50635K443	3.31	—	—	—	—	—	—
1/2″	3/8″	50635K444	3.50	50635K459	6.75	50635K478	8.41	50635K486	12.81
1/2″	1/2″	50635K445	5.47	50635K461	7.25	50635K477	10.91	50635K487	12.53
1/2″	3/4″	50635K446	8.91	—	—	—	—	—	—
5/8″	1/2″	—	—	—	—	—	—	50635K488	17.66

45° Elbows, Male Pipe

For Tube OD	Pipe Size		Each
1/4″	1/8″	50635K591	$3.56
1/4″	1/4″	50635K592	6.12
3/8″	1/4″	50635K593	4.53

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	Solder-Joint Couplings♣ Copper Tube Size▲		Each	90° Elbows	Each	Tees	Each
3/16″	50635K511	$1.62	—	—	—	50635K521	$3.44	50635K531	$6.66
1/4″	50635K512	1.09	1/4″	50635K581	$2.12	50635K522	4.75	50635K532	3.84
5/16″	50635K513	1.91	—	—	—	50635K523	4.94	50635K533	7.72
3/8″	50635K514	2.19	3/8″	50635K582	2.78	50635K524	6.06	50635K534	8.14
1/2″	50635K515	3.19	1/2″	50635K583	2.59	50635K525	6.07	50635K535	10.11
5/8″	50635K516	4.41	5/8″	50635K584	5.94	50635K526	9.64	50635K536	13.94
3/4″	50635K517	9.44	3/4″	50635K585	9.31	50635K527	14.37	50635K537	46.46

Reducing Couplings

For Tube OD		Each
3/8″ × 1/4″	50635K571	$4.54
3/8″ × 5/16″	50635K572	5.79
1/2″ × 1/4″	50635K573	8.00
1/2″ × 3/8″	50635K574	6.14
5/8″ × 3/8″	50635K575	8.09
5/8″ × 1/2″	50635K576	9.57

♣ Not UL listed for flammable liquids. ▲The soldered end is the accepted designation of the copper tubing industry, not the actual size.

Accessories

For Tube OD	Caps	Each	Long Nuts Length		Each	Short Nuts Length		Each
3/16″	50635K541	$2.66	13/16″	50635K551	$1.75	5/8″	50635K561	$1.09
1/4″	50635K542	1.69	15/16″	50635K552	1.22	3/4″	50635K562	.88
5/16″	50635K543	2.34	1 1/8″	50635K553	1.56	7/8″	50635K563	1.47
3/8″	50635K544	2.37	1 5/16″	50635K554	3.00	1″	50635K564	1.59
1/2″	50635K545	3.06	1 5/8″	50635K555	3.62	1 1/8″	50635K565	2.25
5/8″	50635K546	4.17	1 7/8″	50635K556	5.72	1 5/16″	50635K566	3.62
3/4″	50635K547	9.17	2 3/16″	50635K557	9.62	1 1/2″	50635K567	6.09

For information about selecting pipe size, see pages 2-3.

About Push-to-Connect Tube Fittings

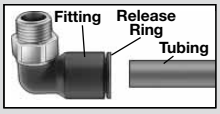

Also known as instant fittings, these fittings provide a quick and easy way to connect and disconnect plastic and soft metal tubing. They form a tight seal around the outside of your tubing—simply insert the tubing into the fitting until it is seated. Depending on the fitting, either an internal grasping ring or a collet and O-ring keep the tubing secured. To disconnect, simply push on the release ring and pull the tubing out of the fitting.

Metric Black Nylon and Nickel-Plated Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 70° F: 290 psi
- Temperature Range: –4° to +175° F
- Tubing: Use nylon (with a hardness of Shore D 50 and D 70), polyethylene (Shore D 44), and polyurethane (Shore A 95)

Sized for metric tubing, glass-filled nylon is strong and durable, plus it offers excellent impact and abrasion resistance. These fittings are for use with air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All are opaque black except the plugs are opaque red and adapters are nickel-plated brass. They include a stainless steel grasping ring, Buna-N (nitrile) O-ring, and a black polypropylene release ring. Threaded fittings have nickel-plated brass threads; male threads have a PTFE sealant except BSPP and metric straight threads, which have a Buna-N O-ring. They are not rated for sterilization. Vacuum rating is 28″ Hg @ 70° F. All meet ISO 14743.

Pipe connections are either NPT, BSPT (British Standard Pipe Taper, which are also known as R threads), BSPP (British Standard Pipe Parallel, which are also known as G threads), or metric straight threads.

Tube-to-Threaded Pipe Connectors

For Tube OD, mm	Pipe/ Thread Size	Adapters, Male Pipe Each	Adapters, Female Pipe Each	Swivel 45° Elbows, Male Pipe Each	Swivel 90° Elbows, Male Pipe Each	Swivel Branch Tees, Male Pipe Each	Swivel Run Tees, Male Pipe Each
Metric Tube with BSPT (British Standard Pipe Tapered) Threads							
4	1/8″	5225K301 $2.98	— —	5225K101 $4.10	5225K321 $3.67	5225K341 $5.25	5225K361 $5.73
4	1/4″	5225K302 4.68	— —	5225K487 10.24	5225K322 5.68	5225K342 8.11	5225K362 8.00
6	1/8″	5225K303 3.27	— —	5225K102 3.93	5225K323 3.93	5225K343 5.58	5225K363 5.58
6	1/4″	5225K304 3.73	— —	5225K103 4.65	5225K324 4.03	5225K344 5.68	5225K364 5.68
8	1/8″	5225K305 4.78	— —	5225K104 4.18	5225K325 5.81	5225K345 7.05	5225K365 7.05
8	1/4″	5225K306 4.78	— —	5225K105 4.85	5225K326 5.81	5225K346 7.33	5225K366 7.33
8	3/8″	5225K307 5.45	— —	5225K106 5.42	5225K327 7.17	5225K347 7.61	5225K367 7.61
10	1/4″	5225K308 5.86	— —	5225K107 5.58	5225K328 10.25	5225K348 14.08	5225K368 14.08
12	1/4″	5225K312 7.15	— —	5225K111 9.33	5225K332 11.93	5225K352 16.90	5225K372 16.57
12	3/8″	5225K313 7.38	— —	5225K112 9.75	5225K333 12.05	5225K353 16.90	5225K373 16.68
12	1/2″	5225K314 8.28	— —	5225K113 10.56	5225K334 12.43	5225K354 17.23	5225K374 17.00
14	3/8″	5225K315 9.28	— —	— —	5225K335 13.30	5225K355 17.60	5225K375 18.32
14	1/2″	5225K316 9.58	— —	— —	5225K336 13.55	5225K356 18.32	5225K376 18.70
Metric Tube with BSPP (British Standard Parallel Pipe) Threads							
4	1/8″	5225K501 3.23	5225K601 $5.05	5225K202 3.75	5225K561 4.18	5225K521 5.73	5225K541 6.45
4	1/4″	5225K502 4.73	5225K602 6.72	5225K489 9.11	5225K562 7.23	5225K522 8.62	5225K542 8.88
6	1/8″	5225K504 3.55	5225K604 5.00	5225K204 3.93	5225K564 4.46	5225K524 6.26	5225K544 6.26
6	1/4″	5225K505 4.26	5225K605 5.58	5225K205 4.65	5225K565 6.03	5225K525 7.43	5225K545 7.43
8	1/8″	5225K507 5.05	5225K606 6.35	5225K206 4.18	5225K567 6.55	5225K527 7.71	5225K547 7.71
8	1/4″	5225K508 5.05	5225K607 6.03	5225K207 4.85	5225K568 6.55	5225K528 7.83	5225K548 8.05
8	3/8″	5225K509 6.90	5225K613 7.33	5225K208 5.42	5225K569 8.88	5225K529 8.05	5225K549 8.15
10	1/4″	5225K511 8.28	5225K615 8.80	5225K209 5.58	5225K571 10.38	5225K531 14.28	5225K551 14.28
10	3/8″	5225K512 9.22	5225K608 9.75	5225K211 6.26	5225K572 11.21	5225K532 15.10	5225K552 15.10
12	1/4″	5225K514 11.38	5225K486 19.51	5225K213 9.46	5225K574 13.03	5225K534 17.98	5225K554 17.73
12	1/2″	5225K516 12.47	5225K611 15.40	5225K215 10.78	5225K576 12.88	5225K536 17.05	5225K556 16.90
14	1/2″	5225K518 10.72	— —	— —	5225K578 13.45	5225K538 18.70	5225K558 17.78
Metric Tube with Metric Straight Threads							
4	M5×0.8	5225K503 3.77	5225K603 8.57	5225K201 4.10	5225K563 3.88	5225K523 7.43	5225K543 7.66
6	M5×0.8	5225K506 5.35	— —	5225K203 4.03	5225K566 4.18	5225K526 7.48	5225K546 7.61

Adapters, Male Pipe

For Tube OD, mm	Pipe Size	Each
Metric Tube with NPT Threads		
4	1/8″	5225K711 $2.17
6	1/8″	5225K712 3.58
6	1/4″	5225K713 4.10
8	1/8″	5225K714 4.90
8	1/4″	5225K715 4.90
8	3/8″	5225K716 5.58
10	1/4″	5225K717 5.85
12	3/8″	5225K718 7.50

Swivel 90° Elbows, Male Pipe

For Tube OD, mm	Pipe Size	Each
Metric Tube with NPT Threads		
4	1/8″	5225K721 $2.70
6	1/8″	5225K722 3.92
6	1/4″	5225K723 4.03
8	1/8″	5225K724 6.08
8	1/4″	5225K725 6.08
8	3/8″	5225K726 6.35
10	1/4″	5225K727 10.25
12	3/8″	5225K728 12.05

Tube-to-Tube Connectors

For Tube OD, mm	Couplings Each	90° Elbows Each	Tees Each	Wyes Each
4	5225K61 $2.71	5225K68 $3.02	5225K77 $3.93	5225K85 $3.93
6	5225K62 3.40	5225K69 3.67	5225K78 4.92	5225K87 4.85
8	5225K63 3.83	5225K71 4.13	5225K79 5.58	5225K89 5.48
10	5225K64 8.76	5225K72 8.30	5225K81 12.23	5225K92 7.92
12	5225K65 9.75	5225K73 10.51	5225K82 14.03	5225K99 8.76
14	5225K66 13.60	5225K74 13.30	5225K83 17.98	— —

Accessories

Plugs

Stem OD, mm	Each
4	5225K93 $0.41
6	5225K94 1.23
8	5225K95 1.32
10	5225K96 2.63
12	5225K97 4.03
14	5225K98 4.61

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″

Black Nylon and Nickel-Plated Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 70° F: 290 psi
- Temperature Range: –4° to +175° F
- Tubing: Use nylon (with a hardness of Shore D50 and D70), polyethylene (Shore D44), and polyurethane (Shore A95)

Get the excellent abrasion resistance of nylon along with the added benefit of glass filling for excellent strength, durability, and impact resistance. Use with air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All have an opaque black body except *plugs* have an opaque red body and *adapters* are nickel-plated brass, unless noted. Fittings include a stainless steel grasping ring, Buna-N (nitrile) O-ring, and black polypropylene release ring. The threads are nickel-plated brass (unless noted); the male threads have a PTFE sealant except the fittings with 10-32 threads, which have a Buna-N O-ring. They're not rated for sterilization. Vacuum rating is 28″ Hg @ 70° F. Fittings meet ISO 14743. Pipe connections are either NPT or BSPT (British Standard Pipe Tapered, which are also known as R threads), except the 10-32 size is a UNF straight screw thread.

90° easy-access elbows are also known as banjo-style elbows. ***Tube stems*** adapt the end of a fitting; the stem end is a short piece of tubing. ***Crosses*** and ***manifolds*** have 11/64″ dia. mounting holes. ***Through-wall couplings*** are also known as bulkhead couplings.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	Swivel 45° Elbows, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel 90° Elbows, Female Pipe	Each	Easy Access 90° Elbow, Male Pipe	Each
With NPT Threads													
1/8″	10-32	5779K241	$2.28	5779K441	$10.78	5779K331	$5.10	5779K281	$4.85	5779K447	$12.33	5779K657	$5.10
1/8″	1/16″	5779K242	3.02	—	—	5779K401	11.13	5779K282	6.58	—	—	—	—
1/8″	1/8″	5779K102	2.51	5779K123	4.06	5779K332	3.78	5779K143	3.15	5779K631	5.80	—	—
1/8″	1/4″	5779K243	4.06	5779K251	4.83	5779K402	8.25	5779K283	4.70	5779K462	10.18	—	—
5/32″	10-32	5779K244	2.46	5779K442	10.78	5779K403	10.11	5779K284	4.33	5779K448	11.31	5779K658	4.60
5/32″	1/8″	5779K104	2.18	5779K125	5.05	5779K404	6.85	5779K146	2.71	5779K632	5.05	5779K651	12.80
5/32″	1/4″	5779K105	3.90	5779K126	6.25	5779K468	8.97	5779K147	5.53	5779K633	7.17	—	—
3/16″	1/8″	5779K245■	2.93	5779K252■	4.95	5779K405	8.53	5779K285	6.50	5779K463	7.77	5779K464	16.27
1/4″	10-32	5779K246	3.23	5779K443	11.18	5779K406	9.95	5779K286	5.12	5779K449	10.98	5779K659	8.80
1/4″	1/8″	5779K108	2.83	5779K129	3.93	5779K333	3.62	5779K151	2.95	5779K634	3.77	5779K652	12.80
1/4″	1/4″	5779K109	2.83	5779K131	5.20	5779K334	3.93	5779K152	3.30	5779K635	5.80	5779K653	12.20
1/4″	3/8″	5779K111	3.60	5779K488	11.13	5779K446	15.13	5779K153	4.28	5779K451	13.36	5779K654	16.18
5/16″	1/8″	5779K112	4.90	5779K132	6.95	5779K407	7.05	5779K154	6.08	5779K636	7.88	5779K457	18.48
5/16″	1/4″	5779K113	4.90	5779K133	6.95	5779K408	8.10	5779K155	6.08	5779K637	7.88	5779K458	41.51
5/16″	3/8″	5779K114	5.58	—	—	5779K409	11.47	5779K156	6.35	—	—	—	—
3/8″	1/8″	5779K115	5.30	5779K134	6.53	5779K411	10.93	5779K157	5.10	5779K452	13.11	—	—
3/8″	1/4″	5779K116	3.93	5779K135	7.92	5779K335	5.31	5779K158	4.50	5779K638	7.17	5779K655	16.60
3/8″	3/8″	5779K117	4.83	5779K136	8.32	5779K336	5.48	5779K159	5.05	5779K453	14.49	5779K656	16.27
3/8″	1/2″	5779K118	6.80	5779K444	11.65	5779K461	11.49	5779K161	7.13	5779K454	17.25	—	—
1/2″	1/4″	5779K119	6.70	5779K445	15.36	—	—	5779K162	5.43	5779K455	15.76	—	—
1/2″	3/8″	5779K121	6.80	5779K137	8.32	—	—	5779K163	7.33	5779K639	10.32	—	—
1/2″	1/2″	5779K122	6.95	5779K139	8.90	—	—	5779K164	8.20	5779K456	19.36	—	—

■ The body and threads are plain brass.

Swivel Branch Tees, Male Pipe

For Tube OD	Pipe Size	Each
With NPT Threads		
1/8″	10-32	5779K291 $6.78
1/8″	1/16″	5779K292 7.56
1/8″	1/8″	5779K168 4.92
1/8″	1/4″	5779K293 5.38
5/32″	10-32	5779K294 7.33
5/32″	1/8″	5779K171 4.80
5/32″	1/4″	5779K172 7.06
3/16″	1/8″	5779K295 7.43
1/4″	1/8″	5779K174 4.33
1/4″	1/4″	5779K175 4.70
1/4″	3/8″	5779K176 5.58
With NPT Threads (Cont.)		
5/16″	1/8″	5779K177 $6.60
5/16″	1/4″	5779K178 6.90
5/16″	3/8″	5779K179 7.13
3/8″	1/8″	5779K181 8.98
3/8″	1/4″	5779K182 6.60
3/8″	3/8″	5779K183 7.65
3/8″	1/2″	5779K184 9.95
1/2″	1/4″	5779K185 8.63
1/2″	3/8″	5779K186 10.83
1/2″	1/2″	5779K187 12.23

Swivel Run Tees, Male Pipe

For Tube OD	Pipe Size	Each
With NPT Threads		
1/8″	10-32	5779K321 $6.90
1/8″	1/16″	5779K322 7.76
1/8″	1/8″	5779K198 5.31
5/32″	10-32	5779K323 7.48
5/32″	1/8″	5779K201 5.31
5/32″	1/4″	5779K202 7.23
3/16″	1/8″	5779K324 8.98
1/4″	1/8″	5779K204 4.46
1/4″	1/4″	5779K205 4.70
1/4″	3/8″	5779K206 5.58
With NPT Threads (Cont.)		
5/16″	1/8″	5779K207 $6.60
5/16″	1/4″	5779K208 6.90
5/16″	3/8″	5779K209 7.13
3/8″	1/8″	5779K211 8.71
3/8″	1/4″	5779K212 7.38
3/8″	3/8″	5779K213 8.30
3/8″	1/2″	5779K214 10.21
1/2″	1/4″	5779K215 8.63
1/2″	3/8″	5779K216 10.83
1/2″	1/2″	5779K217 12.23

Swivel Wyes, Male Pipe

For Tube OD	Pipe Size	Each
With NPT Threads		
5/32″	1/8″	5779K624 $6.12
5/32″	1/4″	5779K625 6.08
With NPT Threads (Cont.)		
1/4″	1/8″	5779K626 $6.35
1/4″	1/4″	5779K627 6.60
With NPT Threads (Cont.)		
3/8″	1/4″	5779K628 $8.97
3/8″	3/8″	5779K629 10.78

(Continued on following page)

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Black Nylon and Nickel-Plated Brass Push-to-Connect Tube Fittings

(Continued from previous page)

Tube-to-Threaded Pipe Connectors (Cont.)

Tube Stems, Male Pipe

Stem OD	Pipe Size		Each
With NPT Threads			
5/32"	10-32	5779K623	$10.05
5/32"	1/8"	5779K611	2.85
5/32"	1/4"	5779K612	3.35
1/4"	1/8"	5779K613	3.88
1/4"	1/4"	5779K614	2.90
5/16"	1/8"	5779K615	3.20
5/16"	1/4"	5779K616	3.20
3/8"	1/8"	5779K617	4.03
3/8"	1/4"	5779K618	3.02
3/8"	3/8"	5779K619	3.45
1/2"	3/8"	5779K621	5.25
1/2"	1/2"	5779K622	6.78

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each
With BSPT (British Standard Pipe Tapered) Threads							
1/8"	1/8"	5779K381	$6.31	5779K421	$4.92	5779K471	$9.90
5/32"	1/8"	5779K382	2.98	5779K422	3.67	5779K472	5.25
3/16"	1/8"	5779K384	6.10	5779K424	7.48	5779K474	7.33
1/4"	1/8"	5779K385	5.22	5779K425	4.60	5779K475	6.30
1/4"	1/4"	5779K386	5.35	5779K426	4.65	5779K476	6.35
5/16"	1/4"	5779K388	4.78	5779K428	5.81	5779K478	7.33
3/8"	1/4"	5779K391	7.97	5779K431	4.80	5779K481	6.72
3/8"	3/8"	5779K392	8.16	5779K432	5.05	5779K482	7.01
1/2"	3/8"	5779K395	11.68	5779K435	13.68	5779K485	18.43
1/2"	1/2"	5779K396	11.80	5779K436	14.08	5779K469	27.74

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	Required Hole Size	Through-Wall Couplings	Each	90° Elbows	Each	Tees	Each	Wyes	Each	Crosses	Each
1/8"	5779K11	$3.45	13/32"	5779K675	$4.28	5779K21	$3.68	5779K31	$5.26	5779K41	$4.03	—	—
5/32"	5779K12	2.71	13/32"	5779K676	4.75	5779K22	3.02	5779K32	3.93	5779K42	3.93	5779K785	$10.60
3/16"	5779K13	4.03	17/32"	5779K465	4.65	5779K23	4.28	5779K33	6.50	5779K466	9.85	5779K467	13.45
1/4"	5779K14	2.95	17/32"	5779K677	5.05	5779K24	3.30	5779K34	4.50	5779K44	4.50	5779K786	7.55
5/16"	5779K15	3.83	39/64"	5779K678	6.30	5779K25	4.13	5779K35	5.58	5779K45	5.48	5779K787	6.72
3/8"	5779K16	4.33	47/64"	5779K679	7.47	5779K26	5.31	5779K36	6.25	5779K46	8.10	—	—
1/2"	5779K17	7.13	1"	5779K681	10.78	5779K27	7.13	5779K37	10.28	—	—	—	—

Reducing Couplings

For Tube OD		Each
5/32" × 1/8"	5779K351	$3.93
1/4" × 1/8"	5779K352	4.61
1/4" × 5/32"	5779K353	3.63
5/16" × 1/4"	5779K354	4.45
3/8" × 1/4"	5779K355	6.78
1/2" × 3/8"	5779K356	7.13

Reducing Tees

For Tube OD, (A) × (B) × (C)		Each
1/8" × 1/4" × 1/8"	5779K665	$6.30
5/32" × 1/4" × 5/32"	5779K666	4.65
1/4" × 1/8" × 1/4"	5779K667	5.88
1/4" × 5/32" × 1/4"	5779K668	4.55
1/4" × 3/8" × 1/4"	5779K669	8.20
3/8" × 1/4" × 3/8"	5779K671	8.20
3/8" × 1/2" × 3/8"	5779K672	11.45
1/2" × 1/4" × 1/2"	5779K673	10.28
1/2" × 3/8" × 1/2"	5779K674	10.55

Tube Stem Reducing Couplings

Stem OD	For Tube OD		Each	Stem OD	For Tube OD		Each
5/32"	1/8"	5779K697	$4.28	5/16"	1/4"	5779K717	$1.98
3/16"	1/8"	5779K698	4.75	3/8"	5/32"	5779K714	5.42
3/16"	5/32"	5779K711	1.40	3/8"	1/4"	5779K718	1.70
1/4"	1/8"	5779K699	4.28	3/8"	5/16"	5779K721	2.33
1/4"	5/32"	5779K712	1.40	1/2"	1/4"	5779K719	5.38
1/4"	3/16"	5779K716	2.52	1/2"	5/16"	5779K722	6.03
5/16"	5/32"	5779K713	2.80	1/2"	3/8"	5779K723	3.02
5/16"	3/16"	5779K715	2.52				

90° Reducing Elbows

For Tube OD		Each
1/4" × 1/8"	5779K661	$4.10
1/4" × 5/32"	5779K662	3.30
3/8" × 1/4"	5779K663	7.28
1/2" × 3/8"	5779K664	7.12

Manifolds, 6 Outlets

For Tube OD

Inlet	Outlet		Each
1/4"	5/32"	5779K781	$18.98
1/4"	1/4"	5779K782	19.68
5/16"	5/32"	5779K783	25.70
3/8"	1/4"	5779K784	20.45

Stem OD	For Tube OD	Tube Stem 90° Elbows	Each	Tube Stem Tees	Each	Tube Stem Wyes	Each
1/8"	1/8"	5779K682	$1.88	5779K691	$3.02	5779K728	$3.88
5/32"	5/32"	5779K683	1.65	5779K692	3.25	5779K788	5.90
1/4"	5/32"	5779K684	4.60	—	—	—	—
1/4"	1/4"	5779K685	1.70	5779K693	3.15	5779K731	6.03
5/16"	5/16"	5779K687	1.98	5779K694	3.45	5779K732	3.58
3/8"	1/4"	5779K686	4.17	—	—	—	—
3/8"	3/8"	5779K688	4.12	5779K695	4.65	5779K733	6.25
1/2"	1/2"	5779K689	5.10	5779K696	6.25	—	—

Accessories

Choose-a-color covers snap over the release ring for color-coding. **To Order:** Please specify color: blue, green, red, yellow, or white.

Plugs

Stem OD		Each	Stem OD		Each
1/8"	5779K51	$1.27	5/16"	5779K736	$1.32
5/32"	5779K734	.40	3/8"	5779K56	1.32
3/16"	5779K735	1.27	1/2"	5779K57	1.40
1/4"	5779K54	1.08			

Choose-a-Color Covers

For Tube OD		Each	For Tube OD		Each
1/8"	5779K791	$0.35	5/16"	5779K795	$0.40
5/32"	5779K792	.31	3/8"	5779K796	.48
3/16"	5779K793	.25	1/2"	5779K797	.48
1/4"	5779K794	.30			

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″

Low-Temperature D.O.T. Black Nylon and Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 70° F: 275 psi
- Temp. Range: –20° to +225° F
- Tubing: Use D.O.T. nylon (see 5097T on page 134)

These fittings meet the Department of Transportation (D.O.T. FMVSS 106) criteria for use in low temperature applications. Unless noted, all fittings have a glass-filled opaque-black nylon body, which offers excellent abrasion resistance, strength, and durability. Use with air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All fittings include a built-in tube support, brass grasping ring, Buna-N (nitrile) O-ring, and black polypropylene release ring. They are not rated for sterilization. Vacuum rating is 29″ Hg @ 70° F. Pipe connections are NPTF (Dryseal) except where noted; NPTF threads are compatible with NPT threads.

Through-wall couplings are also known as bulkhead couplings.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe■	Each	Adapters, Female Pipe■	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each	Swivel Run Tees, Male Pipe	Each	Swivel Wyes, Male Pipe	Each
5/32″	1/8″	5148K11★	$4.02	5148K31★	$6.99	5148K41★	$5.46	5148K61★	$9.77	5148K81★	$8.09	5148K94★	$10.11
3/16″	1/8″	5148K13★	4.73	5148K33★	7.85	5148K42★	7.89	5148K63★	9.99	5148K83★	10.99	—	—
1/4″	1/8″	5148K15	3.32	5148K34	4.73	5148K43	3.62	5148K64	5.36	5148K84	5.36	5148K96	9.19
1/4″	1/4″	5148K16	3.32	5148K35	6.18	5148K44	4.02	5148K65	5.77	5148K85	5.77	5148K97	9.63
3/8″	1/4″	5148K19	4.66	5148K36	9.70	5148K46	10.04	5148K67	11.42	5148K86	11.48	—	—
3/8″	3/8″	5148K21	5.83	5148K37	9.84	5148K47	9.76	5148K68	11.69	5148K87	11.69	—	—
1/2″	3/8″	5148K24	11.90	—	—	5148K51	10.81	5148K72	14.77	5148K91	15.24	—	—
1/2″	1/2″	5148K25	9.76	—	—	5148K52	10.93	5148K73	14.87	5148K92	14.87	—	—

■ Made from brass. ★ Pipe connection is NPT.

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	Through-Wall Couplings: Required Hole Size	Through-Wall Couplings	Each	90° Elbows	Each	Tees	Each	Wyes	Each
5/32″	5148K111	$4.43	31/64″	5148K611■	$6.93	5148K211	$5.00	5148K311	$6.64	5148K411	$6.64
3/16″	5148K112	7.04	—	—	—	5148K212	7.09	5148K312	10.34	—	—
1/4″	5148K113	3.62	19/32″	5148K612	7.79	5148K213	4.55	5148K313	5.57	5148K412	7.61
3/8″	5148K114	5.65	55/64″	5148K613	9.23	5148K214	7.72	5148K314	8.76	5148K413	11.71
1/2″	5148K115	9.64	1″	5148K614■	13.51	5148K215	9.54	5148K315	12.66	—	—

■ Made from brass.

Polybutylene and Nickel-Plated Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 72° F: 145 psi
- Temp. Range: 32° to 104° F
- Tubing: Use nylon and polyurethane

In corrosive environments, you can't beat these fittings. Not only will the nickel plating hold up better than uncoated brass, the polybutylene bodies offer excellent abrasion and impact resistance along with excellent strength and durability. Use with water and air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. The adapters are made of nickel-plated brass; all other fittings have a light gray polybutylene body with nickel-plated brass threads. All include a Type 304 stainless steel grasping ring, a Buna-N (nitrile) O-ring, and an orange acetal release ring. They are not rated for sterilization. Vacuum rating is 29.6″ Hg @ 72° F. Pipe connections are NPT and have a PTFE sealant except the 10-32 threads, which are UNF straight screw threads and have a Buna-N O-ring instead of the sealant.

Adapters with hex socket have an internal socket so you can connect threads with a hex key wrench. Great for tight spaces.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Male Pipe with Hex Socket: Hex Size	Adapters, Male Pipe with Hex Socket	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each	Swivel Wyes, Male Pipe	Each
1/8″	10-32	52065K111	$2.47	5/64″	52065K211	$3.23	52065K121	$2.12	52065K131	$5.55	52065K141	$7.45
1/8″	1/16″	52065K112	2.07	—	—	—	52065K122	3.12	52065K132	4.72	52065K142	7.87
1/8″	1/8″	52065K113	2.49	—	—	—	52065K123	2.97	52065K133	4.10	52065K143	7.87
5/32″	10-32	52065K114	1.96	3/32″	52065K214	2.42	52065K124	2.78	52065K134	5.55	52065K144	7.08
5/32″	1/16″	52065K115	2.06	7/64″	52065K215	3.52	52065K125	3.12	52065K135	4.57	52065K145	5.23
5/32″	1/8″	52065K116	2.03	7/64″	52065K216	2.97	52065K126	2.77	52065K136	4.03	52065K146	5.23
1/4″	10-32	52065K117	3.77	3/32″	52065K217	4.18	52065K127	3.85	52065K137	5.23	52065K147	6.93
1/4″	1/16″	52065K118	2.63	9/64″	52065K218	4.31	52065K128	4.12	52065K138	4.53	52065K148	8.66
1/4″	1/8″	52065K119	2.66	3/16″	52065K219	3.20	52065K129	3.06	52065K139	4.53	52065K149	8.66

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Heat- and Spatter-Resistant Push-to-Connect Tube Fittings

- Max. Pressure @ 72° F: 145 psi
- Temp. Range: 32° to 105° F
- Tubing: Use flame-retardant nylon 12 (see 51185K on page 134) and polyurethane (see 9149T on page 129)

Great for use in welding applications, these fittings meet UL 94V0 for flame resistance. They're made of strong and durable opaque black polybutylene (except plugs, which are green), which has excellent abrasion and impact resistance. Use with water and air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. They have a polyacetal grasping ring, Buna-N (nitrile) O-ring, and green polybutylene release ring. The threads are brass and have a PTFE sealant. Not rated for sterilization. Vacuum rating is 29.52″ Hg @ 72° F. Pipe connections are NPT.

90° elbows and ***tees*** have a 5/32″ mounting hole.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each
1/4″	1/8″	5486K111	$6.71	5486K121	$4.93
1/4″	1/4″	5486K112	6.71	5486K122	5.42
1/4″	3/8″	5486K113	7.12	5486K123	6.07
3/8″	3/8″	5486K114	8.01	5486K124	7.04
1/2″	1/2″	5486K115	9.54	5486K125	11.73

Tube-to-Tube Connectors

For Tube OD	90° Elbows	Each	Tees	Each
1/4″	5486K131	$7.44	5486K141	$10.35
3/8″	5486K134	9.22	5486K144	9.22
1/2″	5486K135	10.92	5486K145	15.37

Accessories

Plugs		
Stem OD		Each
1/4″	5486K151	$3.24
3/8″	5486K154	2.99
1/2″	5486K155	3.24

Universal Thread Polybutylene and Brass Push-to-Connect Tube Fittings

- Max. Pressure @ 72° F: 145 psi
- Temp. Range: 32° to 104° F
- Tubing: Use polyurethane (with a hardness of Shore A 88-97) and nylon

Why keep four fittings on hand, when all you need is one? These fittings have a unique male thread and an O-ring that allow them to mate with multiple types of threads, such as NPT, NPTF (Dryseal), BSPT (British Standard Pipe Taper, which are also known as R threads), and BSPP (British Standard Pipe Parallel, which are also known as G threads). All are made of polybutylene, except the adapters are brass. Polybutylene offers excellent abrasion and impact resistance along with excellent strength and durability. Use with water and air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All fittings include an acetal grasping ring and a Buna-N-coated stainless steel O-ring. The inch sizes have a red acetal release ring; the metric sizes have a blue acetal release ring. Threads are brass. They are not rated for sterilization. Vacuum rating is 29.53″ Hg @72° F.

Swivel wyes have a 5/32″ mounting hole for securing the fitting.

Also Available: Antistatic polybutylene metric fittings. For use with air only. All have nickel-plated brass male threads. Choose from adapters, swivel 90° elbows, swivel branch tees, and swivel run tees. Please ask for 5787K1 and specify the corresponding metric part number from below.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each	Swivel Run Tees, Male Pipe	Each	Swivel Wyes, Male Pipe	Each
Inch Tube with Universal Threads											
1/8″	1/8″	51235K101	$2.51	51235K121	$2.99	51235K141	$4.31	51235K161	$5.23	51235K181	$8.57
1/8″	1/4″	51235K102	3.29	51235K122	3.85	51235K142	5.70	51235K162	5.59	51235K182	8.63
5/32″	1/8″	51235K103	1.96	51235K123	2.77	51235K143	4.15	51235K163	4.36	51235K183	5.59
5/32″	1/4″	51235K104	2.57	51235K124	3.75	51235K144	5.23	51235K164	5.49	51235K184	5.59
3/16″	1/8″	51235K105	3.12	51235K125	3.45	51235K145	5.14	51235K165	5.23	51235K185	9.70
3/16″	1/4″	51235K106	3.39	51235K126	3.39	51235K146	5.70	51235K166	5.85	51235K186	10.10
1/4″	1/8″	51235K107	2.66	51235K127	3.12	51235K147	4.72	51235K167	4.52	51235K187	9.44
1/4″	1/4″	51235K108	2.66	51235K128	3.45	51235K148	4.72	51235K168	4.77	51235K188	9.60
1/4″	3/8″	51235K109	3.69	51235K129	4.72	51235K149	5.95	51235K169	5.91	51235K189	10.22
5/16″	1/8″	51235K111	2.42	51235K131	4.41	51235K151	5.85	51235K171	5.95	51235K191	10.72
5/16″	1/4″	51235K112	3.29	51235K132	4.61	51235K152	6.47	51235K172	6.77	51235K192	8.83
5/16″	3/8″	51235K113	3.69	51235K133	5.14	51235K153	6.68	51235K173	6.93	51235K193	9.13
3/8″	1/4″	51235K114	4.31	51235K134	4.88	51235K154	7.23	51235K174	7.23	51235K194	10.72
3/8″	3/8″	51235K115	4.46	51235K135	5.70	51235K155	8.83	51235K175	8.31	51235K195	10.79
3/8″	1/2″	51235K116	4.77	51235K136	6.21	51235K156	9.60	—	—	51235K196	12.36
1/2″	1/4″	51235K117	4.31	51235K137	6.57	51235K157	10.10	51235K176	10.42	51235K197	12.26
1/2″	3/8″	51235K118	4.72	51235K138	6.77	51235K158	9.60	51235K177	10.42	51235K198	13.60
1/2″	1/2″	51235K119	4.72	51235K139	7.08	51235K159	10.10	—	—	51235K199	13.60
Metric Tube with Universal Threads											
4 mm	1/8″	51305K301	2.00	51305K331	2.77	51305K361	4.36	51305K391	5.23	51305K409	5.59
4 mm	1/4″	51305K302	2.57	51305K332	3.75	51305K362	5.23	51305K392	5.59	51305K411	5.59
6 mm	1/8″	51305K303	2.66	51305K333	3.12	51305K363	4.72	51305K393	4.61	51305K412	9.44
6 mm	1/4″	51305K304	2.66	51305K334	3.45	51305K364	4.72	51305K394	4.88	51305K416	9.60
6 mm	3/8″	51305K305	3.69	51305K335	4.72	51305K366	5.95	51305K396	5.91	51305K417	10.22
8 mm	1/8″	51305K306	2.66	51305K336	4.41	51305K367	5.85	51305K397	5.95	51305K418	10.72
8 mm	1/4″	51305K307	3.29	51305K337	4.61	51305K368	6.47	51305K398	6.77	51305K419	8.83
8 mm	3/8″	51305K308	3.69	51305K338	5.14	51305K369	6.68	51305K399	6.93	51305K421	9.13
10 mm	1/8″	51305K309	4.77	51305K339	5.65	51305K371	7.75	51305K401	8.11	—	—
10 mm	1/4″	51305K311	4.31	51305K341	4.88	51305K374	7.23	51305K404	7.23	51305K424	10.72
10 mm	3/8″	51305K314	4.46	51305K344	5.70	51305K375	8.83	51305K405	8.31	51305K425	10.79
10 mm	1/2″	51305K315	4.77	51305K345	6.21	51305K376	9.60	—	—	51305K426	12.36
12 mm	1/4″	51305K316	4.31	51305K346	6.57	51305K377	10.10	51305K406	10.42	51305K427	12.26
12 mm	3/8″	51305K317	4.72	51305K347	6.77	51305K378	9.60	51305K407	10.42	51305K428	13.60
12 mm	1/2″	51305K318	4.72	51305K348	7.08	51305K379	10.10	—	—	51305K429	13.60

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

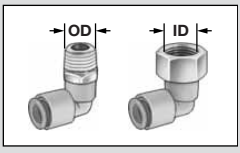

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″

Polybutylene and Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 72° F: 145 psi
- Temperature Range: 32° to 104° F
- Tubing: Use polyurethane (with a hardness of Shore A 88-97) and nylon

Strength and durability are just two of polybutylene's good points—it also offers excellent abrasion and impact resistance. Use with water and air. These fittings are made of polybutylene, except the adapters and through-wall couplings are brass. All include an acetal grasping ring, Buna-N (nitrile) O-ring, and acetal release ring (unless indicated otherwise). Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. They are not rated for sterilization. Vacuum rating is 29.53″ Hg @ 72° F.

Tube-to-Threaded Pipe Connectors— Have brass threads; the male threads have a PTFE sealant except on the metric straight threads which have no sealant. The *swivel wyes* have 5/32″ mounting holes. Pipe connections are NPT, BSPT (British Standard Pipe Taper, which are also known as R threads), or metric straight threads.

Tube-to-Tube Connectors— The 90° elbows, tees, and wyes have 5/32″ mounting holes.

Through-wall couplings are also known as bulkhead couplings.

Fixed manifolds have two 11/64″ mounting holes. Manifolds with female pipe threads include one plug. Metric sizes have a polybutylene release ring and meet UL 94V0.

Swivel manifolds rotate 360° for easy alignment.

Tube-to-Threaded Pipe Connectors

Fittings marked with a ♥ come in your choice of light gray or opaque black. The ***adapters*** are brass and the ***90° female pipe elbows*** are light gray. **To Order:** Where indicated with a ♥, please specify light gray or opaque black.

For Tube OD	Pipe/ Thread Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	Swivel 90° Elbows, Male Pipe ♥	Each	90° Elbows, Female Pipe	Each	Swivel Branch Tees, Male Pipe ♥	Each	Swivel Run Tees, Male Pipe ♥	Each
Inch Tube with NPT Threads													
1/8″	1/16″	5111K108	$1.70	—	—	5111K181	$2.77	—	—	5111K251	$4.37	5111K321	$3.97
1/8″	1/8″	5111K102	2.13	5111K662	$4.22	5111K183	2.61	5111K381	$5.23	5111K253	3.75	5111K323	4.58
1/8″	1/4″	5111K109	2.87	5111K663	5.57	5111K185	3.37	5111K382	5.67	5111K255	5.00	5111K325	4.91
5/32″	1/16″	5111K91	1.70	—	—	5111K187	2.77	—	—	5111K257	4.23	5111K327	4.43
5/32″	1/8″	5111K104	1.67	5111K664	3.98	5111K191	2.44	5111K383	4.98	5111K261	3.67	5111K331	3.82
5/32″	1/4″	5111K92	2.24	5111K665	4.89	5111K193	3.25	5111K384	5.85	5111K263	4.60	5111K333	4.78
3/16″	1/8″	5111K105	2.81	—	—	5111K195	2.99	—	—	5111K265	4.48	5111K335	4.58
3/16″	1/4″	5111K106	2.97	—	—	5111K197	2.99	—	—	5111K267	5.00	5111K337	5.31
1/4″	1/8″	5111K81	2.31	5111K666	3.86	5111K221	2.73	5111K385	5.14	5111K271	4.19	5111K351	4.04
1/4″	1/4″	5111K82	2.31	5111K667	4.43	5111K223	3.00	5111K386	6.00	5111K273	4.19	5111K353	4.31
1/4″	3/8″	5111K94	3.21	5111K668	5.85	5111K225	4.16	5111K387	7.03	5111K275	5.25	5111K355	5.22
5/16″	1/8″	5111K83	2.09	5111K669	4.29	5111K227	3.84	—	—	5111K277	5.16	5111K357	5.24
5/16″	1/4″	5111K84	2.87	5111K671	5.29	5111K231	4.04	—	—	5111K281	5.68	5111K361	5.93
5/16″	3/8″	—	—	5111K672	6.45	—	—	—	—	5111K283	5.88	5111K363	6.07
3/8″	1/4″	5111K85	3.75	5111K673	5.99	5111K233	4.31	5111K388	7.44	5111K285	6.33	5111K365	6.33
3/8″	3/8″	5111K86	3.88	5111K674	7.24	5111K235	5.00	5111K389	8.31	5111K287	7.75	5111K367	7.33
3/8″	1/2″	5111K95	4.17	5111K675	9.09	5111K237	5.46	5111K391	9.64	5111K291	8.44	5111K371	9.15
1/2″	1/4″	5111K87	3.73	—	—	5111K241	5.77	—	—	5111K293	8.91	5111K373	9.15
1/2″	3/8″	5111K88	4.13	5111K676	8.91	5111K243	5.93	5111K392	9.20	5111K295	8.48	5111K375	9.15
1/2″	1/2″	5111K96	4.13	5111K677	8.23	5111K245	6.25	5111K393	10.46	5111K297	8.91	5111K377	9.38
Metric Tube with BSPT (British Standard Pipe Taper) Threads													
4 mm	1/8″	51115K111	1.71	51115K711	3.96	51115K223	2.43	51115K383	5.74	51115K285	3.79	51115K443	4.58
4 mm	1/4″	51115K112	2.24	51115K712	4.54	51115K225	3.24	51115K384	3.50	51115K287	4.60	51115K445	4.91
6 mm	1/8″	51115K113	2.31	51115K713	3.96	51115K241	2.73	51115K387	3.31	51115K293	4.19	51115K451	4.04
6 mm	1/4″	51115K114	2.31	51115K714	4.54	51115K243	3.00	51115K388	3.65	51115K295	4.19	51115K453	4.31
6 mm	3/8″	51115K115	3.21	51115K715	4.86	51115K245	4.16	51115K389	4.18	51115K297	5.25	51115K455	5.22
8 mm	1/8″	51115K116	2.31	51115K716	4.09	51115K247	3.84	51115K391	3.61	51115K411	5.16	51115K457	5.24
8 mm	1/4″	51115K117	2.87	51115K717	4.64	51115K251	4.04	51115K392	4.18	51115K413	5.68	51115K461	5.93
8 mm	3/8″	51115K118	3.21	51115K718	5.04	51115K253	4.48	51115K393	4.26	51115K415	5.88	51115K463	6.07
10 mm	1/8″	51115K119	4.03	—	—	51115K255	4.95	—	—	51115K417	6.80	51115K465	7.12
10 mm	1/4″	51115K121	3.75	51115K719	4.85	51115K257	4.31	51115K394	5.36	51115K421	6.30	51115K467	6.33
10 mm	3/8″	51115K122	3.88	51115K721	5.19	51115K261	5.02	—	—	51115K423	7.77	51115K471	7.33
10 mm	1/2″	51115K123	4.17	—	—	51115K263	5.46	—	—	51115K425	8.47	51115K473	9.15
12 mm	1/4″	51115K124	3.73	51115K722	5.53	51115K265	5.77	—	—	51115K427	8.94	51115K475	9.15
12 mm	3/8″	51115K125	4.13	51115K723	5.72	51115K267	5.93	—	—	51115K431	8.48	51115K477	9.15
12 mm	1/2″	51115K126	4.13	51115K724	6.01	51115K281	6.25	—	—	51115K433	8.91	51115K481	9.05
16 mm	3/8″	—	—	51115K725	5.74	—	—	—	—	—	—	—	—
16 mm	1/2″	—	—	51115K726	6.22	—	—	—	—	—	—	—	—
Metric Tube with Metric Straight Threads													
4 mm	M5×0.8	51115K1	1.70	—	—	51115K221	2.87	51115K381	3.89	51115K283	4.37	51115K441	3.97
4 mm	M6×1.0	—	—	—	—	—	—	51115K382	4.04	—	—	—	—
6 mm	M5×0.8	51115K2	3.41	—	—	51115K227	3.49	51115K385	3.89	51115K291	4.19	51115K447	4.43
6 mm	M6×1.0	—	—	—	—	—	—	51115K386	4.14	—	—	—	—

(Continued on following page)

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Polybutylene and Brass Push-to-Connect Tube Fittings *(Cont. from previous page)*

Tube-to-Threaded Pipe Connectors (Cont.)

Fittings marked with a ♥ come in your choice of light gray or opaque black. The ***through-wall couplings*** are brass, the ***fixed manifolds*** are black, and the ***swivel manifolds*** are light gray. **To Order:** Where indicated with a ♥, please specify light gray or opaque black.

Swivel Wyes, Male Pipe♥

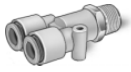

For Tube OD	Pipe Size		Each
Inch Tube with NPT Thread			
1/8″	1/4″	5111K421	$7.57
5/32″	1/8″	5111K423	4.88
5/32″	1/4″	5111K425	4.87
3/16″	1/8″	5111K427	8.51
3/16″	1/4″	5111K431	8.91
1/4″	1/8″	5111K433	8.32
1/4″	1/4″	5111K435	8.47
1/4″	3/8″	5111K437	8.98
Inch Tube with NPT Thread *(Cont.)*			
5/16″	1/8″	5111K441	$9.47
5/16″	1/4″	5111K443	7.77
5/16″	3/8″	5111K445	8.02
3/8″	1/4″	5111K447	9.47
3/8″	3/8″	5111K451	9.53
1/2″	1/4″	5111K453	10.79
1/2″	3/8″	5111K455	11.96
1/2″	1/2″	5111K457	11.96

Through-Wall Couplings, Female Pipe

For Tube OD	Pipe Size	Required Hole Size		Each
Inch Tube with NPT Threads				
1/8″	1/4″	17/32″	5111K201	$7.68
5/32″	1/4″	17/32″	5111K202	8.35
3/16″	1/8″	19/32″	5111K203	3.48
1/4″	1/4″	19/32″	5111K204	6.78
5/16″	3/8″	25/32″	5111K205	10.48
3/8″	3/8″	29/32″	5111K206	9.90
1/2″	3/8″	1 1/32″	5111K207	11.20
1/2″	1/2″	1 1/32″	5111K208	12.61
Metric Tube with BSPT Threads				
4 mm	1/8″	33/64″	51115K361	5.37
4 mm	1/4″	33/64″	51115K362	8.35
6 mm	1/8″	19/32″	51115K363	7.60
6 mm	1/4″	19/32″	51115K364	6.78
6 mm	3/8″	19/32″	51115K365	6.84
8 mm	1/4″	43/64″	51115K366	9.71
8 mm	3/8″	43/64″	51115K367	10.48
10 mm	1/4″	53/64″	51115K368	7.81
10 mm	3/8″	53/64″	51115K369	9.90
12 mm	3/8″	29/32″	51115K371	11.20
12 mm	1/2″	29/32″	51115K372	12.61

FIXED MANIFOLDS, FEMALE PIPE

10 Outlet

For Tube OD (Outlet)	Pipe Size (Inlet)	*6 Outlets*	Each	*10 Outlets*	Each
Inch Tube with NPT Thread					
5/32″	1/4″	52045K211	$23.04	52045K215	$24.85
1/4″	1/4″	52045K212	24.96	52045K216	26.72
5/16″	3/8″	52045K213	27.74	52045K217	29.53

SWIVEL MANIFOLDS, MALE PIPE

For Tube OD (Outlet)	Pipe Size (Inlet)	*2 Outlets*	Each	*3 Outlets*	Each	*4 Outlets*	Each	*6 Outlets*	Each
Inch Tube with NPT Threads									
1/8″	1/8″	5203K12	$8.38	5203K32	$12.66	5203K51	$12.53	5203K71	$17.58
5/32″	1/8″	5203K14	10.26	5203K34	14.60	5203K52	13.42	5203K72	19.59
1/4″	1/8″	5203K17	9.71	5203K37	13.96	5203K54	12.10	5203K74	18.95
1/4″	1/4″	5203K18	10.26	5203K38	13.91	5203K55	12.62	5203K75	18.98
1/4″	3/8″	5203K19	10.96	5203K39	15.11	5203K56	13.26	5203K76	20.18
3/8″	1/4″	5203K24	13.61	5203K44	20.45	5203K61	17.75	5203K81	27.96
3/8″	3/8″	5203K25	13.61	5203K45	20.59	5203K62	17.75	5203K82	27.31
3/8″	1/2″	5203K26	15.15	5203K46	20.82	5203K63	18.18	5203K83	28.33
1/2″	3/8″	5203K27	17.49	5203K47	27.12	5203K64	23.26	5203K84	35.37
1/2″	1/2″	5203K28	18.56	5203K48	26.67	5203K65	23.70	5203K85	35.88

Tube-to-Tube Connectors

Fittings marked with a ♥ come in your choice of light gray or opaque black. The ***through-wall couplings*** are brass; the ***fixed manifolds*** are black. **To Order:** Where indicated with a ♥, please specify light gray or opaque black.

For Tube OD	*Couplings♥*	Each	Required Hole Size	*Through-Wall Couplings*	Each	*90° Elbows♥*	Each	*Tees♥*	Each	*Wyes♥*	Each
Inch											
1/8″	5111K461	$2.88	17/32″	5111K141	$5.72	5111K481	$2.95	5111K521	$3.75	5111K541	$5.20
5/32″	5111K463	2.32	17/32″	5111K142	4.88	5111K483	2.76	5111K523	3.40	5111K543	5.10
3/16″	5111K465	3.35	19/32″	5111K143	5.59	5111K485	2.88	5111K525	4.25	5111K545	4.58
1/4″	5111K467	2.76	19/32″	5111K11	4.88	5111K487	3.15	5111K527	4.16	5111K547	4.91
5/16″	5111K471	3.32	25/32″	5111K12	7.04	5111K491	3.76	5111K531	4.91	5111K551	5.97
3/8″	5111K473	4.31	29/32″	5111K13	9.42	5111K493	5.66	5111K533	6.15	—	—
1/2″	5111K475	5.46	1 1/32″	5111K15	10.32	5111K495	6.74	5111K535	8.02	—	—
Metric											
4 mm	51115K541	2.73	33/64″	51115K315	6.62	51115K553	2.88	51115K565	3.40	51115K581	5.10
6 mm	51115K543	2.76	19/32″	51115K316	6.98	51115K555	3.15	51115K567	4.16	51115K583	4.91
8 mm	51115K545	3.32	43/64″	51115K317	8.27	51115K557	3.76	51115K571	4.91	51115K585	5.97
10 mm	51115K547	4.31	53/64″	51115K318	10.17	51115K561	5.66	51115K573	6.18	51115K587	6.18
12 mm	51115K551	5.46	29/32″	51115K319	11.33	51115K563	6.74	51115K575	8.02	51115K591	10.59

FIXED MANIFOLDS

6 Outlet

For Tube OD (Outlet)	For Tube OD (Inlet)	*6 Outlets*	Each	*10 Outlets*	Each
Inch					
5/32″	5/16″	52045K201	$15.22	52045K205	$17.02
1/4″	3/8″	52045K202	21.31	52045K206	23.10
5/16″	1/2″	52045K203	23.51	52045K207	25.31
Flame-Resistant Metric					
6 mm	10 mm	5582K311	$21.90	5582K313	$26.97
8 mm	12 mm	5582K312	22.74	5582K314	29.91

Accessories

Plugs

Stem OD		Each
Inch—Orange		
1/8″	5111K501	$0.83
5/32″	5111K502	.83
3/16″	5111K503	.97
1/4″	5111K504	.97
Inch—Orange (Cont.)		
5/16″	5111K505	$1.27
3/8″	5111K506	1.70
1/2″	5111K507	2.43
Metric—Blue		
4 mm	51115K602	$0.83
6 mm	51115K604	.97
8 mm	51115K605	1.26
Metric—Blue (Cont.)		
10 mm	51115K606	$1.70
12 mm	51115K607	2.43
16 mm	51115K608	3.43

Push-to-Connect Tube Fittings

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

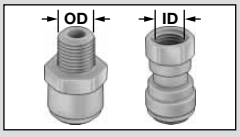

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/8″	1/4″	3/8″	1/2″

Rotating Polybutylene Push-to-Connect Tube Fittings

- Maximum Pressure @ 72° F: 145 psi
- Temperature Range: 23° to 140° F
- Tubing: Use polyurethane (with a hardness of Shore A 88-97) and nylon

Steel ball bearings allow fittings to rotate 360°. Use with air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. These fittings are made of polybutylene with nickel-plated brass threads. Polybutylene has excellent strength, durability, abrasion resistance, and impact resistance. Fittings include a Type 304 stainless steel grasping ring, a Buna-N (nitrile) O-ring, and a blue acetal release ring. They are not rated for sterilization. Vacuum rating is 29.6″ Hg @ 72° F.

Inch fittings have NPT threads with a PTFE thread sealant except the 10-32 size, which is a UNF straight thread with no thread sealant. ***Metric*** fittings have metric tapered pipe threads with no thread sealant.

For Tube OD	Pipe Size	Max. rpm	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each
Inch Tube with NPT Pipe Threads						
5/32″	10-32	500	52115K205	$14.42	52115K211	$14.89
5/32″	1/8″	500	52115K201	15.25	52115K212	16.29
1/4″	1/8″	500	52115K202	15.98	52115K213	16.29
1/4″	1/4″	500	52115K203	15.98	52115K214	16.29
3/8″	3/8″	300	52115K204	25.74	52115K215	26.05

For Tube OD	Thread Size	Max. rpm	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each
Metric Tube with Metric Tapered Pipe Threads						
4 mm	M5×0.8	500	52115K221	$14.89	52115K241	$15.25
4 mm	M6×1.0	500	52115K222	14.89	52115K242	15.25
6 mm	M5×0.8	500	52115K206	15.98	52115K207	16.34
6 mm	M6×1.0	500	52115K224	15.98	52115K244	16.34

Moisture-Resistant Acetal Push-to-Connect Tube Fittings

- Maximum Pressure @ 73° F: 5/32″ to 5/16″: 230 psi; 3/8″ to 1/2″: 150 psi
- Temperature Range: 33° to 158° F
- Tubing: Use nylon (with a hardness of Shore D 50-70), polyethylene (Shore D 50-70), brass, and copper

Because they offer low moisture absorption, these acetal fittings are ideal for use in high-humidity environments. Acetal also provides excellent durability along with good strength, abrasion resistance, and impact resistance. All meet NSF 51 and 61 for use with drinking (potable) water, as well as FDA CFR21 177.2600 and 177.2470 for use with food and beverage. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. Fittings are not rated for sterilization or vacuum. Pipe connections are either NPTF (Dryseal), BSPT (British Standard Pipe Taper, which are also known as R threads), or UNF straight threads.

Through-wall couplings are also known as bulkhead couplings. ***Tube stems*** adapt the end of an existing fitting; the stem end is a short piece of tubing. ***Locking clips*** secure the release ring to prevent it from disconnecting; color is red.

All fittings are gray, except those marked with a ♣, which come in your choice of gray or white. The gray fittings have a Buna-N (nitrile) O-ring and a gray acetal release ring with stainless steel teeth; gray fittings can also be used with air. The white fittings have an EPDM O-ring and a white acetal release ring with stainless steel teeth. **To Order:** Where indicated with a ♣, please specify color: gray or white.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each	Tube Stem, Male Pipe: Stem OD	Tube Stem, Male Pipe	Each
NPTF Threads										
5/32″	1/8″	51055K7	$1.38	51055K44	$3.30	51055K23	$4.09	5/32″	51055K111	$0.81
5/32″	1/4″	51055K8	1.61	51055K45	3.30	51055K24	4.09	5/32″	51055K112	.81
3/16″	1/8″	51055K9	1.46	51055K46	3.30	51055K25	4.19	3/16″	51055K113	.81
1/4″	1/8″	51055K971♣	1.47	51055K47	3.76	51055K26	4.48	1/4″	51055K977♣	.81
1/4″	1/4″	51055K972♣	1.69	51055K48	3.76	51055K27	4.48	1/4″	51055K978♣	.81
1/4″	3/8″	51055K522♣	2.34	—	—	—	—	1/4″	51055K151	1.17
5/16″	1/8″	51055K13	1.72	51055K49	4.17	51055K28	4.57	5/16″	51055K116	.81
5/16″	1/4″	51055K14	1.80	51055K51	4.17	51055K29	4.57	5/16″	51055K117	.81
5/16″	3/8″	51055K15	2.59	51055K52	4.21	51055K31	4.61	5/16″	51055K118	1.35
3/8″	1/8″	51055K16	3.38	51055K163	5.48	—	—	—	—	—
3/8″	1/4″	51055K973♣	2.54	51055K53	5.26	51055K32	5.44	3/8″	51055K979♣	.99
3/8″	3/8″	51055K18	2.92	51055K54	5.50	51055K33	5.70	3/8″	51055K981♣	1.25
3/8″	1/2″	51055K19	4.53	—	—	—	—	—	—	—
1/2″	1/4″	—	—	51055K164	6.47	—	—	—	—	—
1/2″	3/8″	51055K21	3.95	51055K55	7.08	51055K34	7.39	1/2″	51055K122	2.04
1/2″	1/2″	51055K22	4.25	51055K56	7.08	51055K35	7.39	1/2″	51055K123	2.04
BSPT (British Standard Pipe Taper) Threads										
3/16″	1/8″	5104K13	1.84	5104K33	4.78	5104K51	6.15	3/16″	5104K62	2.04
1/4″	1/8″	5104K15	1.84	5104K35	5.31	5104K52	6.52	1/4″	5104K63	2.04
1/4″	1/4″	5104K16	2.09	5104K36	5.62	5104K53	6.87	1/4″	5104K64	2.38
5/16″	1/8″	5104K17	2.09	5104K37	6.13	5104K54	7.01	5/16″	5104K65	2.41
5/16″	1/4″	5104K18	2.34	5104K38	6.13	5104K55	7.01	5/16″	5104K66	2.41
5/16″	3/8″	5104K19	3.13	5104K39	6.56	5104K56	7.44	5/16″	5104K67	2.85
3/8″	1/4″	5104K21	3.62	5104K41	7.18	5104K57	7.84	3/8″	5104K68	2.41
3/8″	3/8″	5104K22	3.89	5104K42	7.83	5104K58	8.52	3/8″	5104K69	3.09
1/2″	3/8″	5104K23	6.12	5104K43	8.75	5104K59	9.68	1/2″	5104K71	3.18
1/2″	1/2″	5104K24	5.83	5104K44	8.79	5104K61	9.73	1/2″	5104K72	3.23

For Tube OD	Pipe/ Thread Size	Adapters, Female Pipe	Each
NPTF Threads			
1/4″	1/4″	51055K677	$3.60
3/8″	1/4″	51055K678	4.16
45° Flare x UNF Straight Threads			
3/8″	7/16″-20	51055K612	3.24
3/8″	5/8″-18	51055K613	3.77

For Tube OD	Pipe Size	90° Elbows, Male Pipe	Each
NPTF Threads			
1/4″	1/8″	51055K974♣	$2.31
1/4″	1/4″	51055K975♣	2.61
1/4″	3/8″	51055K541♣	3.12
3/8″	1/4″	51055K976♣	3.95
3/8″	3/8″	51055K518	4.31

(Continued on following page)

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Moisture-Resistant Acetal Push-to-Connect Tube Fittings *(Continued from previous page)*

Tube-to-Tube Connectors

To Order: Where indicated with a ♣, please specify color: gray or white.

Couplings

For Tube OD		Each
5/32"	51055K127	$1.86
3/16"	51055K128	2.04
1/4"	51055K982♣	2.29
5/16"	51055K131	2.46
3/8"	51055K983♣	3.10
1/2"	51055K133	3.59

Through-Wall Couplings

Required Hole Size		Each
43/64"	51055K1	$3.30
43/64"	51055K2	3.77
43/64"	51055K526♣	4.01
53/64"	51055K4	5.06
53/64"	51055K5	5.25
1 1/16"	51055K6	8.81

90° Elbows

	Each
51055K134	$2.14
51055K135	2.14
51055K984♣	2.60
51055K137	3.03
51055K985♣	3.95
51055K139	4.69

Tees

	Each
51055K141	$2.96
51055K142	3.05
51055K986♣	3.34
51055K144	3.43
51055K987♣	4.12
51055K146	5.00

Wyes

	Each
—	—
—	—
51055K417	$3.94
51055K147	3.77
51055K148	4.20
51055K418	7.54

Crosses

For Tube OD		Each
3/8"	51055K432	$7.67

Reducing Couplings

For Tube OD		Each
1/4" × 3/16"	51055K92	$2.54
5/16" × 5/32"	51055K93	2.51
5/16" × 3/16"	51055K94	2.54
5/16" × 1/4"	51055K95	2.54
3/8" × 3/16"	51055K96	3.11
3/8" × 1/4"	51055K97	3.13
3/8" × 5/16"	51055K98	3.18
1/2" × 5/16"	51055K256	4.10
1/2" × 3/8"	51055K99	4.25

Reducing 90° Elbows

For Tube OD		Each
5/16" × 5/32"	51055K84	$3.18
5/16" × 3/16"	51055K85	3.18
5/16" × 1/4"	51055K86	3.35
3/8" × 3/16"	51055K87	4.25
3/8" × 1/4"	51055K88	4.35
3/8" × 5/16"	51055K89	4.35
1/2" × 5/16"	51055K416	5.42
1/2" × 3/8"	51055K91	5.15

180° Bends

For Tube OD		Each
3/8"	51055K438	$9.25
1/2"	51055K439	10.75

Reducing Tees

For Tube OD, (A) × (B) × (C)		Each
3/8" × 1/4" × 3/8"	51055K421	$5.61
1/2" × 3/8" × 1/2"	51055K422	5.86

Reducing Through-Wall Couplings

For Tube OD	Required Hole Size		Each
3/8" × 1/4"	53/64"	51055K441	$6.05
1/2" × 1/4"	53/64"	51055K412	8.80

Tube Stem, 90° Elbows

Stem OD	For Tube OD		Each
5/32"	5/32"	51055K36	$2.37
3/16"	3/16"	51055K37	2.37
1/4"	1/4"	51055K528♣	2.37
5/16"	5/16"	51055K39	2.99
3/8"	3/16"	51055K221	3.16
3/8"	1/4"	51055K531♣	3.16
3/8"	5/16"	51055K41	3.16
3/8"	3/8"	51055K532♣	4.01
1/2"	1/2"	51055K43	4.81

Reducers, Stem x Tube

Stem OD	For Tube OD		Each
3/16"	5/32"	51055K311	$1.86
5/16"	3/16"	51055K312	2.04
5/16"	1/4"	51055K313	2.23
3/8"	3/16"	51055K314	2.54
3/8"	1/4"	51055K524♣	2.54
3/8"	5/16"	51055K316	2.61
1/2"	5/16"	51055K317	3.11
1/2"	3/8"	51055K318	4.82

Couplings, Stem x Barb

Stem OD	For Tube ID		Each
1/4"	3/16"	51055K57	$1.47
1/4"	1/4"	51055K58	1.47
1/4"	5/16"	51055K59	1.33
5/16"	3/16"	51055K61	1.47
5/16"	1/4"	51055K62	1.64
5/16"	5/16"	51055K63	1.64
5/16"	3/8"	51055K64	2.07
3/8"	1/4"	51055K65	2.04
3/8"	5/16"	51055K66	2.12
3/8"	3/8"	51055K67	2.31
3/8"	1/2"	51055K231	3.11
1/2"	3/8"	51055K68	2.48
1/2"	1/2"	51055K69	3.08

90° Elbows, Stem x Barb

Stem OD	For Tube ID		Each
1/4"	1/4"	51055K124	$1.87
1/4"	5/16"	51055K244	2.33
5/16"	1/4"	51055K125	1.93
5/16"	5/16"	51055K246	2.33
3/8"	1/4"	51055K534♣	2.48
3/8"	5/16"	51055K248	2.91

Accessories

Caps

For Tube OD		Each
1/4"	51055K429	$1.55
3/8"	51055K431	1.92

Plugs

Stem OD	Pkg. Qty.		Per Pkg.
5/32"	10	51055K77	$5.10
3/16"	10	51055K78	5.31
1/4"	10	51055K79	6.45
5/16"	10	51055K81	8.15
3/8"	10	51055K82	10.51
1/2"	5	51055K83	7.97

Tube Supports

For Tube OD	Pkg. Qty.		Per Pkg.
5/16"	10	51055K433	$1.94
3/8"	10	51055K434	2.60
1/2"	10	51055K435	2.60

Locking Clips

Stem OD	Pkg. Qty.		Per Pkg.
1/4"	10	51055K413	$2.05
3/8"	10	51055K414	2.05
1/2"	10	51055K419	2.49

Push-to-Connect Tube Fittings

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

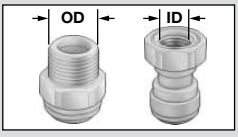

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/8″	1/4″	3/8″	1/2″

Drill-and-Install Acetal and Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 72° F: 1/4″ Tube OD: 230 psi; 3/8″ and 1/2″ Tube ODs: 150 psi
- Temperature Range: 33° to 158° F
- Tubing: Use polyethylene and nylon (with a hardness of Shore D 50-70), brass, and copper

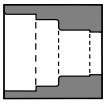

Drill a stepped hole. (Instructions are included.)

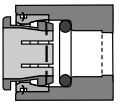

Insert the body, O-ring, and release ring.

Use these fittings to create a push-to-connect connection in equipment and on other plastic or metal surfaces. Fittings are FDA compliant for use with food and beverage; also use with water, air, and oil. To install, drill a stepped hole into your surface, then insert the fitting's body, O-ring, and release ring (complete installation instructions are included). Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. They can be sterilized with chemicals. Vacuum rating is 29.9″ Hg @ 72° F.

All fittings have a Buna-N (nitrile) O-ring and a gray acetal release ring. Fittings with ***acetal*** bodies have stainless steel teeth molded into the outer diameter for gripping power. Acetal offers low moisture absorption, so it's ideal for use in high-humidity environments. Acetal also has excellent durability, strength, and impact resistance, along with good abrasion resistance. The fittings with a ***brass*** body have good corrosion resistance.

For Tube OD	Acetal Body for Plastic	Each	Brass Body for Metal	Each
1/4″	5472K11	$3.82	5472K21	$4.24
3/8″	5472K12	3.99	5472K22	4.43
1/2″	5472K13	5.09	5472K23	5.61

Metric Black Acetal Push-to-Connect Tube Fittings

- Maximum Pressure @ 73° F: 4 mm to 8 mm: 230 psi; 10 mm and 12 mm: 150 psi
- Temperature Range: 33° to 158° F
- Tubing: Use polyethylene and nylon (with a hardness of Shore D 50-70), brass, and copper

Sized for metric tubing, these acetal fittings offer low moisture absorption, so they're ideal for use in high-humidity environments. Acetal has excellent durability, strength, and impact resistance, along with good abrasion resistance. Fittings are FDA CFR21 177.2600 and 177.2470 compliant for use with food and beverage; they're also NSF 51 and 61 certified for use with drinking (potable) water. You can also use them with air and oil. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All fittings have an acetal grasping ring with stainless steel teeth, Buna-N (nitrile) O-ring, and black acetal release ring. Color is opaque black, except the plugs are red. They can be sterilized with nonacidic chemicals. Vacuum rating is 29″ Hg at 70° F. Pipe connections are BSPP (British Standard Pipe Parallel, which are also known as G threads) or BSPT (British Standard Pipe Taper, which are also known as R threads). The BSPP threaded fittings come with a Buna-N O-ring for a tight connection.

Tube stems adapt the end of a fitting; the stem end is a short piece of tubing.

Through-wall couplings are also known as bulkhead couplings.

Tube-to-Threaded Pipe Connectors

For Tube OD, mm	Pipe Size	Adapters, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each
BSPT (British Standard Pipe Taper) Threads							
4	1/8″	5449K171	$2.10	5449K231	$5.23	5449K311	$6.47
4	1/4″	5449K172	3.00	5449K232	5.29	5449K312	6.53
5	1/8″	5449K173	2.37	5449K233	5.34	5449K313	6.79
5	1/4″	5449K174	3.00	5449K234	5.41	5449K314	6.85
6	1/8″	5449K175	2.69	5449K235	5.41	5449K315	7.76
6	1/4″	5449K176	3.00	5449K236	5.47	5449K316	6.85
8	1/8″	5449K177	2.94	5449K237	6.22	5449K317	7.35
8	1/4″	5449K178	3.00	5449K238	6.28	5449K318	7.42
8	3/8″	5449K179	3.72	5449K239	6.89	5449K319	8.02
10	1/4″	5449K181	4.60	5449K241	8.42	5449K321	8.73
10	3/8″	5449K182	5.01	5449K242	8.83	5449K322	9.17
10	1/2″	5449K183	6.47	5449K243	10.29	5449K323	10.61
12	3/8″	5449K184	6.29	5449K244	10.45	5449K324	12.52
12	1/2″	5449K185	6.88	5449K245	11.51	5449K325	12.01

For Tube OD, mm	Pipe Size	Adapters, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each
BSPP (British Standard Pipe Parallel) Threads							
4	1/8″	5449K111	$2.70	5449K271	$5.29	5449K251	$6.53
4	1/4″	5449K112	3.18	5449K272	6.23	5449K252	7.60
5	1/8″	5449K113	2.81	5449K273	5.41	5449K253	7.83
5	1/4″	5449K114	3.25	5449K274	5.53	5449K254	8.00
6	1/8″	5449K115	2.75	5449K275	5.47	5449K255	6.85
6	1/4″	5449K116	3.28	5449K276	5.60	5449K256	7.00
8	1/8″	5449K117	3.00	5449K277	6.28	5449K257	7.42
8	1/4″	5449K118	3.35	5449K278	6.44	5449K258	7.57
8	3/8″	5449K119	4.04	5449K279	7.08	5449K259	8.21
10	1/4″	5449K121	4.87	5449K281	8.67	5449K261	9.00
10	3/8″	5449K122	5.35	5449K282	9.06	5449K262	10.73
10	1/2″	5449K123	6.79	5449K283	10.54	5449K263	10.86
12	3/8″	5449K124	6.73	5449K284	10.79	5449K264	11.29
12	1/2″	5449K125	7.35	5449K285	11.74	5449K265	12.26

Tube Stems, Male Pipe

Stem OD, mm	Pipe Size	Each
BSPP (British Standard Pipe Parallel) Threads		
4	1/8″	5449K141 $1.51
4	1/4″	5449K142 1.66
6	1/8″	5449K145 1.32
6	1/4″	5449K146 $1.46
8	1/4″	5449K148 1.46
10	1/4″	5449K151 1.80

(Continued on following page)

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Metric Black Acetal Push-to-Connect Tube Fittings *(Continued from previous page)*

Tube-to-Tube Connectors

For Tube OD, mm	Couplings	Each	Through-Wall Couplings Required Hole Size	Through-Wall Couplings	Each	90° Elbows	Each	Tees	Each
4	5449K191	$3.32	16.5 mm	5449K291	$5.50	5449K161	$3.56	5449K131	$4.79
5	5449K192	3.40	16.5 mm	5449K292	6.29	5449K162	3.65	5449K132	5.12
6	5449K193	3.40	16.5 mm	5449K293	6.55	5449K163	3.89	5449K133	5.12
8	5449K194	3.72	21 mm	5449K294	6.75	5449K164	4.54	5449K134	5.67
10	5449K195	5.01	21 mm	5449K295	9.83	5449K165	6.47	5449K135	6.79
12	5449K196	5.89	26.5 mm	5449K296	11.36	5449K166	7.67	5449K136	8.19

Tube Stem 90° Elbows

Stem OD, mm	For Tube OD, mm		Each
4	4	5449K341	$3.56
5	5	5449K342	3.65
6	6	5449K343	3.65
8	8	5449K344	4.54
10	10	5449K345	6.47
12	12	5449K346	7.67

Tube-to-Tube Connectors

Tube Stem Reducing Couplings

Stem OD, mm	For Tube OD, mm		Each
5	4	5449K351	$2.30
6	4	5449K352	2.57
6	5	5449K353	2.73
8	6	5449K354	3.14
10	8	5449K355	3.67
12	10	5449K356	6.93

Accessories

Plugs

Stem OD, mm		Each
4	5449K331	$0.99
5	5449K332	1.04
6	5449K333	1.16
8	5449K334	1.32
10	5449K335	2.53
12	5449K336	2.97

White Polypropylene Push-to-Connect Tube Fittings

- Max. Pressure @ 70° F: 150 psi
- Temp. Range: 33° to 140° F
- Tubing: Use polyethylene and nylon (with a hardness of Shore D 50-70), brass, and copper

Use these opaque white polypropylene fittings with food and beverage—all are FDA CFR21 177.2600 and 177.2470 compliant. They're also NSF 51 and 61 certified for use with drinking (potable) water. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All fittings have a polypropylene grasping ring with stainless steel teeth, an EPDM O-ring, and a white polypropylene release ring. They can be sterilized with nonacidic chemicals. Not rated for vacuum. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT.

Tube stems adapt the end of a fitting; the stem end is a short piece of tubing.

Also Available: UV-resistant black polypropylene fittings that protect against the damaging effects of the sun. They meet NSF 58 for use in drinking (potable) water systems. Please ask for 5562K1 and specify the part number of the corresponding fitting from the listing below.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each
1/4"	1/8"	9087K11	$1.55	9087K26	$5.62	9087K21	$2.40	9087K31	$3.90	9087K41	$4.61
1/4"	1/4"	9087K12	1.76	9087K27	5.80	9087K22	2.75	9087K32	3.90	9087K42	4.61
3/8"	1/4"	9087K13	2.67	9087K28	5.99	9087K23	3.63	9087K33	5.53	9087K43	5.57
3/8"	3/8"	9087K14	3.06	—	—	9087K24	3.73	9087K34	5.80	9087K44	5.84
1/2"	1/2"	9087K15	4.73	—	—	—	—	—	—	—	—

Tube Stems, Male Pipe

Stem OD	Pipe Size		Each
1/4"	1/8"	9087K51	$0.84
1/4"	1/4"	9087K52	.84
3/8"	1/4"	9087K53	1.04
3/8"	3/8"	9087K54	1.31
1/2"	1/2"	9087K55	2.27

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	90° Elbows	Each	Tees	Each
1/4"	9087K61	$2.36	9087K71	$2.71	9087K81	$3.42
3/8"	9087K62	3.21	9087K72	4.15	9087K82	4.19
1/2"	9087K63	4.02	9087K73	5.23	9087K83	5.57

Reducing Couplings

For Tube OD		Each
3/8" × 1/4"	9087K65	$3.49
1/2" × 3/8"	9087K66	4.73

Tube-to-Tube Connectors

Tube Stem Reducing Couplings

Stem OD	For Tube OD		Each
3/8"	1/4"	9087K112	$2.67

Tube Stem 90° Elbows

Stem OD	For Tube OD		Each
1/4"	1/4"	9087K91	$2.44
3/8"	1/4"	9087K92	3.34

Accessories

Plugs

Stem OD		Each
1/4"	9087K96	$0.71
3/8"	9087K97	1.18
1/2"	9087K98	1.83

Push-to-Connect Tube Fittings

For information about push-to-connect fittings, see page 165; about selecting pipe size, see pages 2-3.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/8″	1/4″	3/8″	1/2″

Metric Clean Room Polypropylene Push-to-Connect Tube Fittings

- Max. Pressure @ 72° F: 142 psi
- Temp. Range: 32° to 104° F
- Tubing: Use polypropylene

Double bagged and ready for use in Class 1000 clean room environments. Use these semi-clear white metric fittings with water, air, and nitrogen gas. Polypropylene has excellent strength and durability. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All have a polypropylene grasping ring, an EPDM O-ring, and a green polypropylene release ring. Not rated for sterilization. Vacuum rating is 29.52″ Hg @ 72° F.

Tube-to-Threaded Pipe Connectors— Pipe connections are BSPT (British Standard Pipe Taper, which are also known as R threads).

Tube-to-Tube Connectors— 90° elbows and tees have 5/32″ mounting holes.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	*Adapters, Male Pipe*	Each	*90° Elbows, Male Pipe*	Each	*Branch Tees, Male Pipe*	Each
4 mm	1/8″	5526K11	$3.78	5526K21	$5.28	5526K31	$8.76
6 mm	1/8″	5526K12	3.78	5526K22	5.28	5526K32	8.76
6 mm	1/4″	5526K13	3.78	5526K23	5.28	5526K33	8.76
8 mm	1/4″	5526K14	3.90	5526K24	5.52	5526K34	9.30

Tube-to-Tube Connectors

For Tube OD	*Couplings*	Each	*90° Elbows*	Each	*Tees*	Each
4 mm	5526K41	$7.44	5526K51	$6.96	5526K61	$10.26
6 mm	5526K42	7.44	5526K52	6.96	5526K62	10.26
8 mm	5526K43	8.16	5526K53	7.86	5526K63	10.80

Moisture-Resistant Black Push-to-Connect Tube Fittings

- Max. Pressure @ 72° F: 150 psi
- Temperature Range: 32° to 125° F
- Tubing: Use polyurethane and PVC (with a hardness of Shore A 80-90) and polyethylene (Shore D 65)

All of these fittings have a polyester grasping ring that will not soften—it maintains its gripping power, even in high-humidity environments. They have a nylon body except the female elbows, 4-outlet manifolds, and plugs, which have a brass body. Threads are nylon, unless noted. Nylon has excellent abrasion resistance along with good strength and durability; brass offers good corrosion resistance. Use with air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. The swivel elbows, tees, and manifolds have a Buna-N (nitrile) O-ring. All fittings have a black nylon release ring. They can be sterilized with radiation. Not rated for vacuum. Pipe connections are NPT, except the 10-32 size is a UNF straight thread.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	*Adapters, Male Pipe*	Each	*Swivel 90° Elbows, Male Pipe*	Each	*Swivel 90° Elbows, Female Pipe*	Each
5/32″	10-32	51215K101	$1.40	51215K201★	$2.70	—	—
5/32″	1/8″	51215K102	2.00	51215K202	2.23	51215K501★	$3.13
5/32″	1/4″	—	—	—	—	51215K504★	3.70
1/4″	10-32	51215K103	1.50	51215K203★	2.70	—	—
1/4″	1/8″	51215K104	1.50	51215K204	2.37	51215K502★	3.30
1/4″	1/4″	51215K105	1.50	51215K205	2.47	51215K505★	3.87
1/4″	3/8″	—	—	51215K206	2.67	—	—
3/8″	1/8″	—	—	51215K207	2.83	51215K503★	3.50
3/8″	1/4″	51215K106	1.63	51215K208	3.00	51215K506★	4.90
3/8″	3/8″	51215K107	2.37	51215K209	3.13	—	—

★ Threads are brass.

Tube-to-Tube Connectors

For Tube OD		Each
Couplings		
1/4″	51215K702	$3.40
3/8″	51215K704	4.97
Reducing Couplings		
1/4″ × 5/32″	51215K701	3.23
3/8″ × 1/4″	51215K703	4.87

For Tube OD		Each
Tees		
1/4″	51215K602	$4.67
3/8″	51215K604	7.03
Reducing Tees, (A)×(B)×(C)		
1/4″ × 5/32″ × 1/4″	51215K601	4.57
3/8″ × 1/4″ × 3/8″	51215K603	6.63

Swivel Manifolds, Male Pipe

For Tube OD	Pipe Size	*2 Outlets*	Each	*3 Outlets*	Each	*4 Outlets*	Each
5/32″	1/8″	51215K302	$4.00	—	—	—	—
5/32″	1/4″	—	—	5306K32	$9.55	5306K42★	$14.75
5/32″	3/8″	—	—	5306K33	10.20	5306K43★	15.63
1/4″	1/8″	51215K303	4.10	—	—	—	—
1/4″	1/4″	51215K304	4.23	5306K34	9.90	5306K44★	14.98
1/4″	3/8″	51215K305	5.40	5306K35	10.45	5306K45★	15.88
3/8″	1/8″	51215K306	4.77	—	—	—	—
3/8″	1/4″	51215K307	4.87	5306K36	10.10	5306K46★	15.23
3/8″	3/8″	51215K308	5.70	5306K37	10.70	5306K47★	16.13

★ Threads are brass.

Accessories

Plugs for Tubing

Stem OD	For Tube ID		Each
3/16″	5/32″	51215K651	$2.73
9/32″	1/4″	51215K652	3.03

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Chemical-Resistant PVDF Push-to-Connect Tube Fittings

- Maximum Pressure @ 73° F: 300 psi
- Temperature Range: 0° to 275° F
- Tubing: Use PVDF, polyethylene, polypropylene, and nylon

PVDF (polyvinylidene fluoride), which is also known as Kynar, is resistant to most chemicals and solvents. These fittings are NSF 51 certified and FDA CFR21 177.2510 compliant for use with food and beverage. Also use with water, air, chlorine, and sulfuric acid. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All are semi-clear white. Fittings have a plastic grasping ring, fluoroelastomer O-ring, and a gray plastic release ring. Not rated for sterilization. Vacuum rating is 28″ Hg @ 73° F. Pipe connections are NPTF (dryseal); NPTF threads are compatible with NPT.

Tube stems adapt the end of a fitting; the stem end is a short piece of tubing.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each
1/4″	1/8″	1901K21	$2.70	1901K28	$5.25	1901K39	$4.35	1901K33	$6.28	1901K62	$12.03
1/4″	1/4″	1901K22	2.30	1901K29	6.08	1901K41	4.58	1901K34	6.35	1901K63	12.55
1/4″	3/8″	1901K23	3.72	—	—	1901K42	9.15	1901K35	10.03	—	—
3/8″	1/8″	1901K24	5.67	—	—	—	—	1901K36	8.97	1901K64	13.12
3/8″	1/4″	1901K25	4.42	1901K31	7.22	1901K43	7.05	1901K37	9.78	1901K65	14.12
3/8″	3/8″	1901K26	5.05	1901K32	8.40	1901K44	7.78	1901K38	10.15	1901K66	15.78
3/8″	1/2″	1901K27	7.10	—	—	—	—	—	—	—	—

Tube Stems, Male Pipe

Stem OD	Pipe Size		Each
1/4″	1/8″	1901K45	$1.38
1/4″	1/4″	1901K46	1.45
3/8″	1/4″	1901K47	2.05
3/8″	3/8″	1901K48	2.40

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	90° Elbows	Each	Tees	Each
1/4″	1901K17	$4.28	1901K11	$4.50	1901K14	$6.60
3/8″	1901K19	7.05	1901K13	7.72	1901K16	8.20

Tube Stem 90° Elbows

Stem OD	For Tube OD		Each
1/4″	1/4″	1901K49	$4.62
1/4″	3/8″	1901K52	9.22
3/8″	1/4″	1901K51	5.60
3/8″	3/8″	1901K53	7.33

Accessories

Plugs

Stem OD		Each
1/4″	1901K59	$1.30
3/8″	1901K61	2.02

Type 316 Stainless Steel Push-to-Connect Tube Fittings

- Maximum Pressure @ 70° F: 290 psi
- Temperature Range: 5° to 230° F
- Tubing: Use polyurethane (with a hardness of Shore A 95), polyethylene (Shore D 44), and nylon (Shore D 50 and D 70)

Choose these Type 316 stainless steel fittings for highly corrosive environments. Use with water, deionized water, air, oil, acetone, and ethyl alcohol. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. Fittings have a Type 303L stainless steel grasping ring, fluoroelastomer O-ring, and Type 303L stainless steel release ring. Not rated for sterilization or vacuum. Pipe connections are NPT, except the 10-32 size is a UNF straight thread.

Adapters with hex sockets have an internal socket so you can connect threads with a hex key wrench; great for tight spaces. ***Tube stems*** adapt the end of a fitting; the stem end is a short piece of tubing. ***Through-wall couplings*** are also known as bulkhead couplings.

Also Available: Metric fittings for 4 mm, 6 mm, and 8 mm tube ODs. They come in two tube-to-threaded pipe shapes (90° elbows and tube stems) with 1/8″ and 1/4″ male pipe size. Please ask for 5566K1 and specify the tube OD, pipe size, and shape.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe with Hex Socket: Hex Size		Each	Swivel 90° Elbows, Male Pipe	Each
5/32″	10-32	3/32″	51065K71	$18.62	51065K54	$45.67
5/32″	1/8″	1/8″	51065K14	21.82	51065K53	36.60
3/16″	1/8″	1/8″	51065K15	22.93	51065K55	41.62
3/16″	1/4″	1/8″	51065K16	35.59	51065K56	46.21
1/4″	1/8″	5/32″	51065K17	30.13	51065K57	43.60
1/4″	1/4″	5/32″	51065K18	31.81	51065K58	48.85
3/8″	1/4″	1/4″	51065K22	37.72	51065K62	79.50
3/8″	3/8″	9/32″	51065K23	39.37	51065K63	84.06
1/2″	1/4″	9/32″	51065K24	45.50	51065K64	92.12
1/2″	3/8″	5/16″	51065K25	51.21	51065K65	99.52
1/2″	1/2″	13/32″	51065K26	54.49	51065K66	104.29

Tube Stems, Male Pipe

Stem OD	Pipe Size		Each
5/32″	1/8″	51065K41	$10.38
3/16″	1/8″	51065K42	14.73
1/4″	1/8″	51065K43	18.17
1/4″	1/4″	51065K44	24.67
3/8″	1/4″	51065K47	21.97
3/8″	3/8″	51065K48	21.02
1/2″	1/4″	51065K49	29.60
1/2″	3/8″	51065K51	34.36
1/2″	1/2″	51065K52	32.28

Tube-to-Tube Pipe Connectors

For Tube OD	Couplings	Each	Through-Wall Couplings: Required Hole Size		Each
5/32″	51065K27	$24.67	1/2″	51065K34	$33.74
3/16″	51065K28	38.17	1/2″	51065K35	53.08
1/4″	51065K29	33.74	9/16″	51065K36	68.88
3/8″	51065K32	46.77	13/16″	51065K38	74.69
1/2″	51065K33	59.71	13/16″	51065K39	85.25

For Tube OD	90° Elbows	Each	Tees	Each
5/32″	51065K1	$25.38	51065K7	$42.45
3/16″	51065K2	35.01	51065K8	54.29
1/4″	51065K3	41.44	51065K9	57.92
3/8″	51065K5	69.98	51065K12	88.77
1/2″	51065K6	84.10	51065K13	105.29

Push-to-Connect Tube Fittings

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

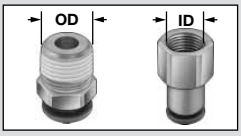

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD or ID is 3/4″ and the corresponding pipe size is 1/2″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″

Nickel-Plated Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 72° F: 260 psi, except the tube stem couplings and plugs are rated 150 psi
- Temperature Range: 0° to 175° F, except the tube stem couplings and plugs are 32° to 140° F
- Tubing: Use polyethylene (with a hardness of Shore D 44), polyurethane (Shore A 95), and nylon (Rockwell R 78)

The nickel plating not only provides better corrosion resistance than nonplated brass, it also gives these fittings a bright, clean appearance. Use these fittings with water, air, and noncombustible and nonreactive gases. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All are made of nickel-plated brass except the tube stem couplings and plugs, which are black PBT (polybutylene terephthalate). Fittings have a nickel-plated brass grasping ring, Buna-N (nitrile) O-ring, and nickel-plated brass release ring. They can be sterilized with chemicals. Vacuum rating is 29.5″ Hg @ 72° F.

Tube-to-Threaded Pipe Connectors— Have a white sealant on the threads. Pipe connections are NPT, except the 10-32 size is a UNF straight thread.

Tube stems adapt the end of a fitting; the stem end is a short piece of tubing. ***Easy-access 90° elbows*** and ***tees*** are also known as banjo style. ***Through-wall couplings*** are also called bulkhead couplings.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each
1/8″	10-32	51495K178	$2.00	—	—	—	—	51495K246	$7.10	51495K257	$17.16
1/8″	1/16″	51495K179	2.99	—	—	—	—	—	—	—	—
1/8″	1/8″	51495K181	2.48	51495K261	$4.91	51495K231	$3.73	51495K211	3.36	51495K138	5.02
1/8″	1/4″	51495K187	3.48	51495K259	9.13	—	—	51495K215	4.21	51495K139	6.66
5/32″	10-32	51495K108	1.82	—	—	—	—	51495K129	3.93	51495K158	5.75
5/32″	1/8″	51495K182	1.91	51495K268	4.87	51495K232	3.65	51495K212	3.01	51495K141	4.84
5/32″	1/4″	51495K188	2.87	51495K269	5.59	51495K237	4.21	51495K216	3.87	51495K145	5.84
3/16″	1/8″	51495K183	3.01	—	—	51495K233	3.65	51495K213	5.22	51495K142	7.89
3/16″	1/4″	51495K189	3.50	—	—	51495K238	9.34	51495K217	5.25	51495K146	6.70
1/4″	1/8″	51495K184	2.42	51495K262	4.47	51495K234	2.87	51495K214	3.27	51495K143	5.10
1/4″	1/4″	51495K191	2.50	51495K264	5.08	51495K239	3.17	51495K218	3.62	51495K147	5.10
1/4″	3/8″	51495K117	3.31	—	—	51495K127	6.62	51495K144	6.53	51495K159	7.33
5/16″	1/8″	51495K192	2.36	51495K265	7.06	51495K229	4.84	51495K219	4.50	51495K148	7.41
5/16″	1/4″	51495K185	3.20	51495K267	9.04	51495K235	5.25	51495K223	4.50	51495K154	7.68
3/8″	1/8″	51495K186	3.50	—	—	51495K236	5.18	51495K224	5.72	51495K155	11.60
3/8″	1/4″	51495K193	3.82	51495K266	8.15	51495K242	4.65	51495K221	5.27	51495K149	7.92
3/8″	3/8″	51495K194	3.93	51495K271	8.22	51495K241	5.84	51495K225	5.98	51495K156	9.37
3/8″	1/2″	51495K118	5.80	—	—	51495K128	10.94	51495K157	7.92	51495K164	11.03
1/2″	1/4″	51495K195	4.55	—	—	51495K243	7.44	51495K222	6.92	51495K151	11.33
1/2″	3/8″	51495K196	4.87	—	—	51495K244	6.15	51495K226	7.58	51495K152	11.33
1/2″	1/2″	51495K197	4.39	—	—	51495K245	9.54	51495K227	8.18	51495K153	12.89

For Tube OD	Pipe Size	Easy-Access 90° Elbows, Male Pipe	Each	Easy-Access Branch Tees, Male Pipe	Each
5/32″	10-32	51495K622	$19.80	51495K721	$24.62
5/32″	1/8″	51495K623	22.67	—	—
1/4″	1/8″	51495K624	16.99	51495K722	24.62
1/4″	1/4″	51495K625	18.61	—	—
1/4″	3/8″	51495K626	26.04	—	—
3/8″	1/4″	51495K627	26.54	51495K724	25.26
3/8″	3/8″	—	—	51495K725	27.21

Tube Stems, Male Pipe

Stem OD	Pipe Size		Each
5/32″	10-32	51495K511	$5.68
1/4″	1/8″	51495K514	6.18
1/4″	1/4″	51495K515	6.49
5/16″	1/4″	51495K517	6.74
3/8″	1/4″	51495K518	7.49

Tube-to-Tube Connectors

Inch-to-Metric Adapters

For Tube OD		Each
5/32″ × 4 mm	51495K411	$2.95
3/16″ × 5 mm	51495K412	5.21
1/4″ × 6 mm	51495K413	4.01
5/16″ × 8 mm	51495K414	4.09
3/8″ × 10 mm	51495K415	6.35
1/2″ × 12 mm	51495K416	7.88

Tube Stems, Barbed

Stem OD	For Tube ID		Each
1/8″	1/8″	51495K421	$10.08
5/32″	1/8″	51495K422	8.97
1/4″	3/16″	51495K423	6.35
3/8″	5/16″	51495K424	9.83
1/2″	3/8″	51495K425	10.95

Tube Stem Expanders

Stem OD	For Tube OD		Each
1/8″	1/4″	51495K311	$8.90
5/32″	1/4″	51495K312	5.51

(Continued on following page)

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Nickel-Plated Brass Push-to-Connect Tube Fittings *(Continued from previous page)*

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	Through-Wall Couplings: Required Hole Size		Each	90° Elbows	Each	Tees	Each
Inch									
1/8"	51495K109	$3.22	7/16"	51495K249	$5.25	51495K119	$4.55	51495K131	$4.79
5/32"	51495K111	2.87	7/16"	51495K251	5.80	51495K121	3.50	51495K132	4.50
3/16"	51495K112	4.50	1/2"	51495K252	7.58	51495K122	5.02	51495K133	5.18
1/4"	51495K113	3.22	9/16"	51495K253	5.43	51495K123	3.65	51495K134	4.79
5/16"	51495K114	4.01	11/16"	51495K254	7.42	51495K124	4.44	51495K135	5.89
3/8"	51495K115	5.02	13/16"	51495K255	8.46	51495K125	6.44	51495K136	7.16
1/2"	51495K116	6.78	31/32"	51495K256	11.63	51495K126	7.68	51495K137	9.97
Metric									
4 mm	51615K101	3.06	7/16"	51615K133	7.64	51615K161	9.29	51615K171	5.62
5 mm	51615K102	7.66	1/2"	51615K134	15.27	51615K162	9.31	51615K172	7.69
6 mm	51615K103	3.18	9/16"	51615K135	6.85	51615K163	4.18	51615K173	5.56
8 mm	51615K104	3.84	11/16"	51615K136	7.13	51615K164	4.97	51615K174	6.14
10 mm	51615K105	4.92	13/16"	51615K137	8.78	51615K165	6.53	51615K175	8.68
12 mm	51615K106	6.05	31/32"	51615K138	13.04	51615K166	7.78	51615K176	10.54

Tube Stem Reducing Couplings

Stem OD	For Tube OD		Each
Inch			
5/32"	1/8"	51495K298	$4.87
1/4"	1/8"	51495K299	4.21
1/4"	5/32"	51495K301	2.90
1/4"	3/16"	51495K302	6.29
3/8"	1/4"	51495K306	4.12
1/2"	1/4"	51495K307	4.47
1/2"	5/16"	51495K309	8.12
Metric			
6 mm	4 mm	51615K112	5.15
8 mm	4 mm	51615K113	5.15
8 mm	6 mm	51615K121	5.15
10 mm	6 mm	51615K122	6.14
10 mm	8 mm	51615K125	6.59
12 mm	8 mm	51615K126	5.93

Accessories

Stem OD	Tube Stem Couplings	Each	Plugs	Each
Inch				
5/32"	51495K161	$0.91	51495K171	$0.86
3/16"	51495K162	1.21	51495K172	.97
1/4"	51495K163	1.22	51495K173	.78
5/16"	51495K315	1.33	51495K174	.83
3/8"	51495K165	1.55	51495K175	1.34
1/2"	51495K166	1.77	51495K176	.84
Metric				
4 mm	51615K181	.95	51615K191	.85
6 mm	51615K183	2.43	51615K193	.94
8 mm	51615K184	1.39	51615K194	.85
10 mm	51615K185	1.73	51615K195	1.20
12 mm	—	—	51615K196	1.37

Nickel-Plated Brass Plugs

Stem OD		Each
Inch		
1/8"	51495K321	$5.35
5/32"	51495K322	5.35
1/4"	51495K324	5.51
5/16"	51495K325	6.46
3/8"	51495K326	5.77

FDA-Compliant Nickel-Plated Brass Push-to-Connect Tube Fittings

- Max. Pressure @ 72° F: 290 psi
- Temp. Range: –4° to +250° F
- Tubing: Use polyethylene (with a hardness of Shore D 44), polyurethane (Shore A 95), and nylon (Shore D 50 and D 70)

A special FDA-compliant nickel-plated coating allows these forged CA360 brass fittings to be used with food and beverage in addition to water and air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. Fittings have a nickel-plated brass grasping ring, fluoroelastomer O-ring, and nickel-plated brass release ring. Not rated for sterilization or vacuum. Pipe connections are NPT or BSPT (British Standard Pipe Taper, which are also known as R threads).

Tube stems adapt the end of a fitting; the stem end is a short piece of tubing.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each
Inch with NPT Threads							
5/32"	1/8"	5523K12	$4.33	5523K32	$5.36	5523K52	$9.76
5/32"	1/4"	5523K13	5.40	5523K33	5.97	5523K53	11.81
1/4"	1/8"	5523K15	4.22	5523K35	6.48	5523K55	9.26
1/4"	1/4"	5523K16	4.72	5523K36	7.05	5523K56	9.26
3/8"	1/4"	5523K19	6.75	5523K39	11.15	5523K59	13.01
3/8"	3/8"	5523K21	9.12	5523K41	13.35	5523K61	15.66
1/2"	3/8"	5523K23	11.26	5523K43	12.93	5523K63	17.62
1/2"	1/2"	5523K24	11.26	5523K44	13.21	5523K64	21.27
Metric with BSPT (British Standard Pipe Taper) Threads							
4 mm	1/8"	5508K121	4.22	5508K111	9.20	5508K131	12.22
4 mm	1/4"	5508K122	5.97	5508K112	10.88	—	—
6 mm	1/8"	5508K123	4.65	5508K113	9.97	5508K132	12.85
6 mm	1/4"	5508K124	5.05	5508K114	11.15	5508K133	13.20
8 mm	1/4"	5508K125	7.10	5508K115	11.03	5508K134	14.90
10 mm	1/4"	5508K126	10.35	5508K116	17.55	5508K135	22.25

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	90° Elbows	Each	Tees	Each
Inch						
5/32"	5523K71	$8.85	5523K81	$7.18	5523K91	$9.90
1/4"	5523K72	6.13	5523K82	7.05	5523K92	8.47
5/16"	5523K73	12.23	5523K83	9.28	5523K93	12.93
3/8"	5523K74	9.62	5523K84	10.06	5523K94	12.31
1/2"	5523K75	12.93	5523K85	12.97	5523K95	17.82
Metric						
4 mm	5508K141	8.85	5508K151	7.17	5508K161	9.90
6 mm	5508K142	10.40	5508K152	8.65	5508K162	11.32
8 mm	5508K143	12.22	5508K153	9.28	5508K163	12.93
10 mm	5508K144	15.18	5508K154	14.45	5508K164	19.65

Tube Stem Metric-to-Inch Adapters

Stem OD	For Tube OD		Each
Metric			
6 mm	1/4"	5508K171	$8.30
10 mm	3/8"	5508K172	8.78
12 mm	1/2"	5508K173	12.93

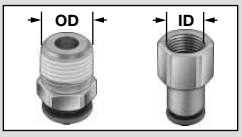

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	5/16″	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/16″	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 73° F:
  Brass: 300 psi;
  Nylon: 150 psi
- Temperature Range:
  Brass: 0° to 200° F;
  Nylon: 0° to 150° F
- Tubing: Use polyethylene, polypropylene, and nylon

Use these fittings outdoors or wherever corrosion is a concern. All are made of forged brass except the wye, tube stem wye, tube stem reducing couplings, tube stem couplings, and plugs are nylon. Use with air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. Fittings have a stainless steel grasping ring, Buna-N (nitrile) O-ring, and acetal release ring (unless noted). Not rated for sterilization or vacuum. Pipe connections are NPTF (Dryseal), except the 10-32 size is a UNF straight thread. NPTF threads are compatible with NPT threads. Male threads have an acrylic thread sealant, except the 10-32 size has no sealant.

Through-wall couplings are also called bulkhead couplings. ***Tube stems*** adapt the end of a fitting; the stem end is a short piece of tubing.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	90° Elbows, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each	Swivel Run Tees, Male Pipe	Each
1/8″	10-32	51025K166	$3.75	—	—	—	—	—	—	—	—	—	—
1/8″	1/16″	51025K322	3.58	—	—	—	—	—	—	—	—	—	—
1/8″	1/8″	51025K171	2.54	51025K241	$7.12	51025K371	$4.37	51025K131	$5.00	51025K111	$12.83	51025K151	$11.65
1/8″	1/4″	51025K172	4.74	—	—	—	—	51025K132	7.67	—	—	—	—
5/32″	10-32	51025K167	3.37	—	—	—	—	—	—	—	—	—	—
5/32″	1/8″	51025K173	2.82	51025K347	5.07	51025K372	3.96	51025K133	4.62	51025K112	7.95	51025K152	7.95
5/32″	1/4″	51025K174	10.83	51025K348	5.70	51025K373	4.96	51025K134	8.15	—	—	—	—
3/16″	1/8″	51025K175	4.07	51025K242	8.19	—	—	51025K135	6.05	51025K113	10.58	—	—
3/16″	1/4″	51025K176	4.93	—	—	—	—	—	—	—	—	—	—
1/4″	10-32	51025K324	5.00	—	—	—	—	—	—	—	—	—	—
1/4″	1/16″	51025K323	8.53	—	—	—	—	—	—	—	—	—	—
1/4″	1/8″	51025K177	1.54	51025K243	2.39	51025K374	4.01	51025K136	3.46	51025K114	4.72	51025K154	5.49
1/4″	1/4″	51025K178	1.77	51025K244	3.05	51025K375	3.79	51025K137	3.79	51025K115	5.28	51025K155	6.35
1/4″	3/8″	51025K179	2.42	—	—	—	—	51025K138	7.89	—	—	—	—
5/16″	1/8″	51025K181	9.86	51025K245	7.90	51025K376	7.47	51025K139	6.72	51025K116	11.37	51025K156	9.38
5/16″	1/4″	51025K182	10.18	51025K349	8.86	51025K377	7.49	51025K141	7.16	51025K117	12.17	51025K336	11.63
5/16″	3/8″	51025K183	7.39	—	—	—	—	—	—	—	—	—	—
3/8″	1/8″	51025K325	6.00	—	—	—	—	51025K341	6.95	—	—	—	—
3/8″	1/4″	51025K184	3.25	51025K246	10.18	51025K378	5.77	51025K142	5.37	51025K118	14.34	51025K157	15.05
3/8″	3/8″	51025K185	3.30	51025K247	8.46	51025K379	7.06	51025K143	5.49	51025K119	17.07	51025K158	14.51
3/8″	1/2″	51025K186	13.77	—	—	51025K381	10.17	51025K144	15.55	—	—	—	—
1/2″	1/4″	51025K187	5.70	—	—	—	—	51025K145	10.79	—	—	—	—
1/2″	3/8″	51025K188	7.19	—	—	51025K382	9.53	51025K146	7.58	51025K123	26.40	51025K337	13.92
1/2″	1/2″	51025K189	9.86	—	—	51025K383	12.19	51025K147	18.26	51025K124	17.30	51025K338	12.93

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	Required Hole Size	Through-Wall Couplings	Each	90° Elbows	Each	Tees	Each
1/8″	51025K191	$4.96	7/16″	51025K211	$12.05	51025K231	$7.07	51025K221	$9.53
5/32″	51025K192	9.83	7/16″	51025K212	9.83	51025K232	9.86	51025K222	7.88
3/16″	51025K193	6.44	—	—	—	—	—	51025K223	12.93
1/4″	51025K194	3.20	9/16″	51025K214	4.69	51025K234	5.37	51025K224	4.37
5/16″	51025K195	7.07	5/8″	51025K215	14.40	51025K235	6.56	51025K225	13.33
3/8″	51025K196	5.33	3/4″	51025K216	15.37	51025K236	10.61	51025K226	8.44
1/2″	51025K197	8.35	7/8″	51025K217	29.90	51025K237	11.63	51025K227	21.00

Accessories

Tube Stem Couplings

Stem OD	Each
5/32″	51025K562 $1.53
1/4″	51025K563 1.56
5/16″	51025K764 2.48
3/8″	51025K765 2.33
1/2″	51025K766 6.37

Wye

For Tube OD	Each
5/32″	51025K695 $8.52

Tube Stem Wye

Stem OD	For Tube OD	Each
5/32″	5/32″	51025K682 $9.71

Tube Stem Reducing Couplings■

Stem OD	For Tube OD	Each
5/32″	1/8″	5779K697 $4.28
1/4″	1/8″	5779K699 4.28
1/4″	5/32″	5779K712 1.40
5/16″	1/4″	5779K717 1.98
3/8″	5/32″	5779K714 5.42
3/8″	1/4″	5779K718 1.70
1/2″	1/4″	5779K719 5.38
1/2″	3/8″	5779K723 3.02

■ The release ring is made of polypropylene.

Plugs

Stem OD	Each
1/8″	51025K651 $0.84
5/32″	51025K652 1.21
1/4″	51025K654 .75
5/16″	51025K655 .91
3/8″	51025K656 .82
1/2″	51025K657 1.84

For information about push-to-connect fittings, see page 185; about selecting pipe size, see pages 2-3.

Low-Temperature D.O.T. Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 72° F: 150 psi
- Temperature Range: –40° to +212° F
- Tubing: Use D.O.T. nylon (see 5097T on page 134)

In addition to having the lowest temperature rating of all our brass push-to-connect fittings, these also meet Department of Transportation criteria FMVSS 571.106 and SAE J1131 for air brake performance. Use with air. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. All are made of forged or bar stock brass, except the plugs are nylon. Fittings have a brass grasping ring, Buna-N (nitrile) O-ring, and brass release ring. Not rated for sterilization. Vacuum rating is 26″ Hg @ 72° F. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads. Male threads have a latex-based sealant.

Tube-to-Threaded Pipe Connectors

For Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each	Swivel 45° Elbows, Male Pipe	Each	Swivel 90° Elbows, Male Pipe	Each	Swivel Branch Tees, Male Pipe	Each	Swivel Run Tees, Male Pipe	Each
5/32″	1/8″	51915K118	$4.99	—	—	—	—	51915K125	$6.72	—	—	—	—
1/4″	1/8″	51915K11	3.20	51915K21	$6.16	51915K61	$7.29	51915K31	5.67	51915K71	$9.29	51915K81	$9.27
1/4″	1/4″	51915K12	3.93	51915K22	7.28	51915K62	6.98	51915K32	6.46	51915K72	9.89	51915K82	10.09
3/8″	1/4″	51915K13	4.86	51915K23	8.45	51915K63	8.01	51915K33	7.55	51915K73	11.54	51915K83	11.49
3/8″	3/8″	51915K14	5.22	51915K24	11.09	51915K64	8.54	51915K34	8.52	51915K74	12.07	51915K84	12.05
1/2″	3/8″	—	—	—	—	51915K65	12.92	—	—	51915K75	18.67	51915K85	18.57
1/2″	1/2″	51915K15	9.02	—	—	—	—	51915K35	14.13	—	—	—	—
3/4″	3/4″	51915K124	15.95	—	—	—	—	51915K126	14.96	—	—	—	—

Tube-to-Tube Connectors

For Tube OD	Couplings	Each	90° Elbows	Each	Tees	Each
5/32″	51915K109	$5.55	—	—	—	—
1/4″	51915K41	5.71	51915K51	$6.56	51915K91	$9.39
3/8″	51915K42	6.76	51915K52	8.09	51915K92	11.78
1/2″	51915K43	8.20	51915K53	13.63	51915K93	20.75
3/4″	51915K113	11.98	—	—	51915K116	24.80

Accessories

Plugs

Stem OD		Each
5/32″	51915K36	$0.53
1/4″	51915K37	.70
3/8″	51915K38	1.49
1/2″	51915K39	.79

Aluminum Manifolds with Brass Push-to-Connect Tube Fittings

- Maximum Pressure @ 72° F: 150 psi
- Temperature Range: –10° to +200° F
- Tubing: Use D.O.T. nylon (see 5097T on page 134), polyethylene, and polyurethane

Connect several air lines to one common supply. Push-to-connect fittings form a seal around the outside of the tubing; no tools are needed to release the tubing from the fitting. Manifolds are made of Alloy 6061-T6 anodized aluminum and have 3/16″ mounting holes. Fittings are made from bar stock CA360 brass; they have a Buna-N (nitrile) O-ring and a brass release ring. Use a plug to block off any unused outlet (see page 221 for plugs). Not rated for sterilization or vacuum. Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads.

6 Outlets

For Tube OD	Pipe Size	4 Outlets: Overall Size, Lg. × Wd. × Ht.		Each	6 Outlets: Overall Size, Lg. × Wd. × Ht.		Each	8 Outlets: Overall Size, Lg. × Wd. × Ht.		Each
1/4″	3/8″	3 1/2″ × 1 1/8″ × 1 1/8″	4785K21	$59.62	5″ × 1 1/8″ × 1 1/8″	4785K22	$69.44	6 1/2″ × 1 1/8″ × 1 1/8″	4785K23	$82.47
3/8″	3/8″	3 1/2″ × 1 1/8″ × 1 1/8″	4785K31	62.97	—	—	—	—	—	—

Brass Push-to-Connect Tube Fittings for Copper Tubing

- Maximum Pressure @ 72° F: 200 psi
- Temperature Range: 32° to 200° F
- Tubing: Use copper (Types K, L, and M), CPVC, and PEX

Now you can get a pressure-rated connection on copper tubing without the need for flux, solder, and heat. These forged brass push-to-connect fittings are NSF 61 certified for use with drinking (potable) water in all states as of April 1, 2010. Also use with air. Push-to-connect fittings form a seal around the outside of the tubing; a release tool (included) is needed to remove the tubing from the fitting. Fittings have a Type 316 stainless steel grasping ring, EPDM O-ring, and plastic release ring. Not rated for sterilization or vacuum. All meet ASSE 1061 standards. Pipe connections are NPT.

Tube-to-Threaded Pipe Connectors

Copper Tube Size▲	Actual Tube OD	Pipe Size	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each
1/2″	5/8″	1/2″	5483K41	$6.53	5483K31	$6.45
3/4″	7/8″	3/4″	5483K42	7.39	5483K32	7.55
1″	1 1/8″	1″	5483K43	15.17	5483K33	13.53

Tube-to-Tube Connectors

Copper Tube Size▲	Actual Tube OD	Couplings	Each	90° Elbows	Each	Tees	Each
1/2″	5/8″	5483K11	$8.11	5483K51	$8.41	5483K61	$11.61
3/4″	7/8″	5483K12	9.29	5483K52	10.50	5483K62	14.31
1″	1 1/8″	5483K13	19.57	5483K53	20.82	5483K63	21.72

Reducing Couplings

Copper Tube Size▲		Each
3/4″ × 1/2″	5483K22	$9.07
1″ × 3/4″	5483K23	22.58

Accessories

Copper Tube Size▲	Actual Tube OD	Caps	Each	Release Tools	Each
1/2″	5/8″	5483K71	$6.80	5483K81	$1.92
3/4″	7/8″	5483K72	8.52	5483K82	.80
1″	1 1/8″	5483K73	18.57	5483K83	1.15

▲ Copper tube size is the accepted designation of the copper tubing industry, not the actual size.

Quick-Disconnect Tube Couplings

For information about selecting pipe size, see pages 2-3.

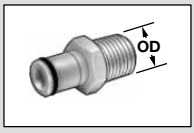

Please Read Before Ordering: Pipe size (NPT) is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD), as shown at left. Then, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the OD measures 5/16″, the next highest OD is 3/8″ and the corresponding pipe size is 1/8″.

Threaded Fitting OD	3/8″	1/2″	5/8″	3/4″
Pipe Size (NPT)	1/8″	1/4″	3/8″	1/2″

About Quick-Disconnect Tube Couplings

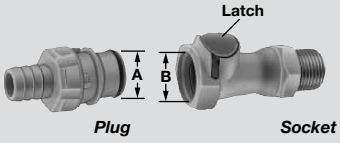

Quick-disconnect couplings are ideal when you want to frequently connect and disconnect tubing. Also known as quick-connect couplings, a complete coupling consists of a plug and a socket of the same coupling size. To connect, insert the plug into the socket. This connection also permits 360° swiveling, so tubing won't twist and kink. To disconnect, simply press the latch and remove the plug. You can determine the actual dimension of the plug and socket by measuring the OD of the plug (A) and the ID of the socket (B).

NSF-Certified White Acetal Quick-Disconnect Tube Couplings

- Max. Pressure @ 70° F: 120 psi
- Temperature Range: 0° to 180° F
- Tubing: Use with polyurethane with a hardness of Shore A 68-A 80 for barbed couplings; polyethylene and nylon with a hardness of Shore A 82-D 60 for compression couplings
- Clamps: Recommended with barbed fittings (see pgs. 274-280)

A winning combination—these fittings are NSF C-2 certified for use with food and beverage plus they're made of moisture-resistant acetal, so they'll stand up in high-humidity environments. Acetal also has good strength, abrasion resistance, and impact resistance. Quick-disconnect couplings are also known as quick-connect couplings; they're ideal if you need to frequently connect and disconnect your line. These fittings are white and include an EPDM O-ring; the sockets have an acetal latch. They can be sterilized with chemicals. Vacuum rating is 200 Hg @ 70° F.

Plugs and sockets ***with shut-off valve*** stop flow when coupling is separated. Plugs and sockets ***without shut-off valve*** do not have a valve to shut off flow.

Barbed Couplings— Insert the barbed end into tubing and secure with a clamp.

Also Available: Couplings marked with a ▲ also come with a compression end. For plugs, please ask for 5923K1; for sockets, please ask for 5923K2. Also, please specify your tube OD (1/4″ or 3/8″).

Plugs

Threaded, Male Pipe: Pipe Size, NPT	Each	Barbed: For Tube ID	Each	90° Elbows, Barbed	Each
With Shut-Off Valve		***With Shut-Off Valve***			
1/4 Coupling Size (A=3/8″)		***1/4 Coupling Size (A=3/8″)***			
1/4″ 5923K53	$6.88	1/4″ 5923K73 ▲	$6.72	5923K83	$8.53
3/8″ 5923K54	6.90	3/8″ 5923K74 ▲	6.69	5923K84	8.59
Without Shut-Off Valve		***Without Shut-Off Valve***			
1/4 Coupling Size (A=3/8″)		***1/4 Coupling Size (A=3/8″)***			
1/4″ 5923K51	1.47	1/4″ 5923K71	1.47	5923K81	1.84
3/8″ 5923K52	2.80	3/8″ 5923K72	1.47	5923K82	1.84

Sockets

Threaded, Male Pipe: Pipe Size, NPT	Each	Barbed: For Tube ID	Each
With Shut-Off Valve		***With Shut-Off Valve***	
1/4 Coupling Size (B=3/8″)		***1/4 Coupling Size (B=3/8″)***	
1/4″ 5923K23	$5.59	1/4″ 5923K43 ▲	$6.52
3/8″ 5923K24	5.66	3/8″ 5923K44 ▲	6.56
Without Shut-Off Valve		***Without Shut-Off Valve***	
1/4 Coupling Size (B=3/8″)		***1/4 Coupling Size (B=3/8″)***	
1/4″ 5923K21	3.70	1/4″ 5923K41	2.33
3/8″ 5923K22	3.70	3/8″ 5923K42	2.28

Moisture-Resistant Acetal Quick-Disconnect Tube Couplings

- Maximum Pressure @ 70° F: 100 psi
- Temperature Range: –40° to +180° F
- Tubing: Use with polyurethane with a hardness of Shore A 68-A 80 for barbed couplings; polyethylene and nylon with a hardness of Shore A 82-D 60 for compression couplings
- Clamps: Recommended with barbed fittings (see pages 274-280)

Because acetal offers low moisture absorption, these fittings are ideal for high-humidity environments. Use with water, air, ethanol, and methanol. Acetal has good strength, abrasion resistance, and impact resistance.

All are quick-disconnect couplings except those with a 3/32 coupling size, which are twist-lock style. Quick-disconnect fittings are also known as quick-connect couplings; they're ideal if you need to frequently connect and disconnect your line. All couplings are white and include a Buna-N (nitrile) O-ring. The sockets have a Type 301 stainless steel latch except the couplings with 3/32 coupling size, which do not have a latch. They can be sterilized with steam (autoclaving) and chemicals. Vacuum rating is 20″ Hg @ 70° F.

Plugs and sockets ***with shut-off valve*** stop flow when coupling is separated. Plugs and sockets ***without shut-off valve*** do not have a valve to shut off flow.

Through-wall couplings are also known as bulkhead couplings. Couplings with 3/32 coupling size require a 7/16″ hole for mounting; 1/8 coupling size requires a 1/2″ hole size and 1/4 coupling size requires an 11/16″ hole size.

Compression Tube Couplings— Insert the tubing into the plug or socket and tighten the nut to form a tight seal around the tubing's OD.

Barbed Tube Couplings— Insert the barbed end into tubing and secure with a clamp. The couplings for 1/16″ tube ID have a collar that limits the size of the tubing to 1/8″ maximum OD.

Plugs

Threaded, Male Pipe: Pipe Size, NPT	Each	Compression: For Tube OD	Each	Through-Wall, Compression	Each	Barbed: For Tube ID	Each	Through-Wall, Barbed	Each
With Shut-Off Valve		***With Shut-Off Valve***				***With Shut-Off Valve***			
1/8 Coupling Size (A=5/16″)		***1/8 Coupling Size (A=5/16″)***				***1/8 Coupling Size (A=5/16″)***			
1/8″ 5012K46	$6.82	5/32″ 5012K222	$11.89	—	—	1/16″ 5012K43	$7.22	5012K52	$11.04
1/4″ 5012K47	6.90	1/4″ 5012K41	6.67	5012K482	$11.69	1/8″ 5012K44	6.44	5012K54	9.47
1/4 Coupling Size (A=7/16″)		3/8″ 5012K42	8.39	—	—	3/16″ 5012K252	6.70	5012K56	9.95
1/4″ 5012K87	6.71	***1/4 Coupling Size (A=7/16″)***				1/4″ 5012K45	6.44	5012K58	9.70
3/8″ 5012K88	6.71	1/4″ 5012K692	8.10	5012K492	9.85	***1/4 Coupling Size (A=7/16″)***			
		3/8″ 5012K84	8.10	5012K496	11.25	1/4″ 5012K85	6.01	5012K94	9.58
						5/16″ 5012K712	6.01	5012K96	10.21
						3/8″ 5012K86	6.01	5012K98	10.07

(Continued on following page)

For information about quick-disconnect couplings, see page 202; about selecting pipe size, see pages 2-3.

Moisture-Resistant Acetal Quick-Disconnect Tube Couplings

(Continued from previous page)

Plugs (Cont.)

Threaded, Male Pipe: Pipe Size, NPT	Each	Compression: For Tube OD	Each	Through-Wall, Compression	Each	Barbed: For Tube ID	Each	Through-Wall, Barbed	Each
Without Shut-Off Valve									
1/8 Coupling Size (A=5/16″)									
1/8″	5012K27	5/32″	5012K221	———	———	3/32″	51605K11	51605K15	
1/4″	5012K28	1/4″	5012K22	5012K481	$7.23	1/16″	51605K12	51605K16	
1/4 Coupling Size (A=7/16″)		3/8″	5012K23	———	———	***1/8 Coupling Size (A=5/16″)***			
1/4″	5012K73	***1/4 Coupling Size (A=7/16″)***				1/16″	5012K24	5012K51	
3/8″	5012K74	1/4″	5012K691	5012K491		1/8″	5012K25	5012K53	
		3/8″	5012K69	5012K495		3/16″	5012K251	5012K55	
						1/4″	5012K26	5012K57	
						1/4 Coupling Size (A=7/16″)			
						1/4″	5012K71	5012K93	
						5/16″	5012K711	5012K95	
						3/8″	5012K72	5012K97	

Threaded, Male Pipe: Pipe Size, NPT	Each	Compression: For Tube OD	Each	Through-Wall, Compression	Each	Barbed: For Tube ID	Each	Through-Wall, Barbed	Each
1/4″	2.04	1/4″	3.58			1/8″	1.58		
3/8″	1.34	3/8″	4.57			1/16″	1.82		6.45
			3.88		7.74	1/8″	1.14		5.32
			4.22		7.15	3/16″	1.33		4.92
						1/4″	1.41		5.41
						1/4″	1.17		4.35
						5/16″	1.31		5.75
						3/8″	1.17		5.49

Sockets

Threaded, Male Pipe: Pipe Size, NPT	Each	Compression: For Tube OD	Each	Through-Wall, Compression	Each	Barbed: For Tube ID	Each	Through-Wall, Barbed	Each
With Shut-Off Valve		***With Shut-Off Valve***				***With Shut-Off Valve***			
3/32 Coupling Size (B=1/4″)		***1/8 Coupling Size (B=5/16″)***				***1/8 Coupling Size (B=5/16″)***			
1/8″	51605K29	5/32″	5012K172	5012K132	$10.82	1/16″	5012K37	5012K33	$11.06
1/8 Coupling Size (B=5/16″)		1/4″	5012K36	5012K32	10.30	1/8″	5012K38	5012K34	9.78
1/8″	5012K29	***1/4 Coupling Size (B=7/16″)***				3/16″	5012K192	5012K152	10.13
1/4″	5012K31	1/4″	5012K662	5012K632	15.50	1/4″	5012K39	5012K35	9.93
1/4 Coupling Size (B=7/16″)		3/8″	5012K81	5012K77	14.44	***1/4 Coupling Size (B=7/16″)***			
1/4″	5012K75	***Without Shut-Off Valve***				1/4″	5012K82	5012K78	13.99
3/8″	5012K76	***1/8 Coupling Size (B=5/16″)***				5/16″	5012K672	5012K642	14.55
Without Shut-Off Valve		5/32″	5012K171	5012K131	9.71	3/8″	5012K83	5012K79	13.99
3/32 Coupling Size (B=1/4″)		1/4″	5012K17	5012K13	8.94	***Without Shut-Off Valve***			
1/8″	51605K19	***1/4 Coupling Size (B=7/16″)***				***1/8 Coupling Size (B=5/16″)***			
1/8 Coupling Size (B=5/16″)		1/4″	5012K661	5012K631	13.93	1/16″	5012K18	5012K14	9.85
1/8″	5012K11	3/8″	5012K66	5012K63	13.07	1/8″	5012K19	5012K15	8.52
1/4″	5012K12					3/16″	5012K191	5012K151	9.02
1/4 Coupling Size (B=7/16″)						1/4″	5012K21	5012K16	8.68
1/4″	5012K61					***1/4 Coupling Size (B=7/16″)***			
3/8″	5012K62					1/4″	5012K67	5012K64	12.33
						5/16″	5012K671	5012K641	12.90
						3/8″	5012K68	5012K65	12.33

Threaded, Male Pipe: Pipe Size, NPT	Each	Barbed: For Tube ID	Each	Threaded, Male Pipe: Pipe Size, NPT	Each	Barbed: For Tube ID	Each	Through-Wall, Barbed	Each
With Shut-Off Valve		***With Shut-Off Valve***		***With Shut-Off Valve***		***With Shut-Off Valve***			
3/8 Coupling Size (A=3/4″)		***3/8 Coupling Size (A=3/4″)***		***3/8 Coupling Size (B=3/4″)***		***3/8 Coupling Size (B=3/4″)***			
3/8″	5385K51	3/8″	5385K54	3/8″	5385K21	3/8″	5385K24	5385K27	
1/2″	5385K52	1/2″	5385K55	1/2″	5385K22	1/2″	5385K25	5385K28	
Without Shut-Off Valve		***Without Shut-Off Valve***		***Without Shut-Off Valve***		***Without Shut-Off Valve***			
3/8 Coupling Size (A=3/4″)		***3/8 Coupling Size (A=3/4″)***		***3/8 Coupling Size (B=3/4″)***		***3/8 Coupling Size (B=3/4″)***			
3/8″	5385K41	3/8″	5385K44	3/8″	5385K11	3/8″	5385K14	5385K17	
1/2″	5385K42	1/2″	5385K45	1/2″	5385K12	1/2″	5385K15	5385K18	

NSF-Certified Gray Polypropylene Quick-Disconnect Tube Couplings

- Maximum Pressure @ 70° F: 60 psi
- Temperature Range: 32° to 160° F
- Tubing: Use with polyurethane with a hardness of Shore A 68-A 80 for barbed couplings
- Clamps: Recommended with barbed fittings (see pages 274-280)

Not only are these polypropylene fittings NSF C-2 certified for use with food and beverage, you can also use them with water, air, ammonia, ethanol, and methanol. Polypropylene offers better chemical resistance than acetal. Quick-disconnect couplings are also known as quick-connect couplings; they're ideal if you need to frequently connect and disconnect your line. These fittings are light gray and include an EPDM O-ring; the sockets have a polypropylene latch. They can be sterilized with chemicals. Vacuum rating is 20″ Hg @ 70° F.

Plugs and sockets ***with shut-off valve*** stop flow when coupling is separated. Plugs and sockets ***without shut-off valve*** do not have a valve to shut off flow.

Through-wall couplings are also known as bulkhead couplings. They require a 1 7/32″ dia. hole for mounting.

Barbed Couplings— Insert the barbed end into tubing and secure with a clamp.

Note: For a complete coupling, order a plug and a socket with the same coupling size.

Plugs

Sockets

Threaded, Male Pipe: Pipe Size, NPT	Each	Barbed: For Tube ID	Each	Threaded, Male Pipe: Pipe Size, NPT	Each	Barbed: For Tube ID	Each	Through-Wall, Barbed	Each
With Shut-Off Valve		***With Shut-Off Valve***		***With Shut-Off Valve***		***With Shut-Off Valve***			
3/8 Coupling Size (A=3/4″)		***3/8 Coupling Size (A=3/4″)***		***3/8 Coupling Size (B=3/4″)***		***3/8 Coupling Size (B=3/4″)***			
3/8″	5385K51	3/8″	5385K54	3/8″	5385K21	3/8″	5385K24	5385K27	
1/2″	5385K52	1/2″	5385K55	1/2″	5385K22	1/2″	5385K25	5385K28	
Without Shut-Off Valve		***Without Shut-Off Valve***		***Without Shut-Off Valve***		***Without Shut-Off Valve***			
3/8 Coupling Size (A=3/4″)		***3/8 Coupling Size (A=3/4″)***		***3/8 Coupling Size (B=3/4″)***		***3/8 Coupling Size (B=3/4″)***			
3/8″	5385K41	3/8″	5385K44	3/8″	5385K11	3/8″	5385K14	5385K17	
1/2″	5385K42	1/2″	5385K45	1/2″	5385K12	1/2″	5385K15	5385K18	

Quick-Disconnect Tube Couplings

For information about quick-disconnect couplings, see page 202; about selecting pipe size, see pages 2-3.

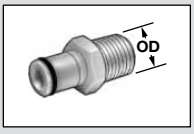

Please Read Before Ordering: Pipe size (NPT and NPTF) is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD), as shown at left. Then, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 5/16″, the next highest OD or ID is 3/8″ and the corresponding pipe size is 1/8″.

Threaded Fitting OD	3/8″	1/2″	5/8″	3/4″
Pipe Size (NPT and NPTF)	1/8″	1/4″	3/8″	1/2″

Polypropylene Quick-Disconnect Tube Couplings

- Maximum Pressure @ 70° F: 1/8-1/4 Coupling Sizes: 120 psi 3/8 Coupling Size: 60 psi
- Temperature Range: 32° to 160° F
- Tubing: Use with polyurethane with a hardness of Shore A 68-80
- Clamps: Recommended with barbed fittings (see pages 274-280)

Choose polypropylene couplings over acetal for better chemical resistance. Use with water, air, ammonia, ethanol, and methanol. Quick-disconnect couplings are also known as quick-connect couplings; they're ideal if you need to frequently connect and disconnect your line. These couplings come with an EPDM O-ring. They can be sterilized with chemicals. Vacuum rating is 20″ Hg @ 70° F.

Plugs and sockets ***with shut-off valve*** stop flow when coupling is separated. Plugs and sockets ***without shut-off valve*** do not have a valve to shut off flow.

1/8 and 1/4 Coupling Sizes— Color is almond with a stainless steel latch.

3/8 Coupling Size— Color is gray with a polypropylene latch.

Through-wall couplings are also known as bulkhead couplings. Plugs and sockets with 1/8 coupling size require a 1/2″ hole for mounting; those with 1/4 coupling size require an 11/16″ hole size; those with 3/8 coupling size require a 17/32″ hole size.

Barbed Couplings— Insert the barbed end into tubing and secure with a clamp.

Note: For a complete coupling, order a plug and a socket with the same coupling size.

Plugs

Threaded, Male Pipe

Barbed

90° Elbows, Barbed

Pipe Size, NPT		Each	For Tube ID		Each		Each
With Shut-Off Valve							
1/8 Coupling Size (A=5/16″)							
1/8″	51545K75	$9.00	1/8″	51545K77	$8.31	51545K92	$12.06
			1/4″	51545K78	9.17	51545K93	12.06
1/4 Coupling Size (A=7/16″)							
1/4″	51545K76	10.63	1/4″	51545K79	9.00	51545K94	11.27
			3/8″	51545K91	9.93	51545K95	11.83
3/8 Coupling Size (A=3/4″)							
3/8″	51545K51	10.79	3/8″	51545K53	10.59	51545K55	12.24
1/2″	51545K52	10.76	1/2″	51545K54	10.70	51545K56	12.25
Without Shut-Off Valve							
1/8 Coupling Size (A=5/16″)							
1/8″	51545K65	3.76	1/8″	51545K67	2.41	51545K82	6.17
			1/4″	51545K68	2.41	51545K83	6.17
1/4 Coupling Size (A=7/16″)							
1/4″	51545K66	5.98	1/4″	51545K69	2.37	51545K84	7.37
			3/8″	51545K81	2.37	51545K85	7.68
3/8 Coupling Size (A=3/4″)							
3/8″	51545K41	5.03	3/8″	51545K43	4.77	51545K45	7.75
1/2″	51545K42	5.03	1/2″	51545K44	4.74	51545K46	7.74

Sockets

Threaded, Male Pipe

Barbed

Through-Wall, Barbed

Pipe Size, NPT		Each	For Tube ID		Each		Each
With Shut-Off Valve							
1/8 Coupling Size (B=5/16″)							
1/8″	51545K21	$8.63	1/8″	51545K71	$11.49	51545K25	$12.20
1/4″	51545K22	9.09	1/4″	51545K72	11.92	51545K26	12.98
1/4 Coupling Size (B=7/16″)							
1/4″	51545K23	9.36	1/4″	51545K73	12.06	51545K27	17.21
3/8″	51545K24	9.68	3/8″	51545K74	12.51	51545K28	17.24
3/8 Coupling Size (B=3/4″)							
3/8″	51545K31	13.22	3/8″	51545K33	13.94	51545K35	18.41
1/2″	51545K32	13.28	1/2″	51545K34	13.95	51545K36	18.36
Without Shut-Off Valve							
1/8 Coupling Size (B=5/16″)							
1/8″	51545K11	7.07	1/8″	51545K61	8.26	51545K15	11.99
			1/4″	51545K62	8.37	51545K16	12.03
1/4 Coupling Size (B=7/16″)							
1/4″	51545K13	8.06	1/4″	51545K63	9.94	51545K17	15.15
			3/8″	51545K64	10.17	51545K18	15.17
3/8 Coupling Size (B=3/4″)							
3/8″	51545K86	10.44	3/8″	51545K96	11.30	51545K88	16.02
1/2″	51545K87	10.41	1/2″	51545K97	11.58	51545K89	15.75

For information about quick-disconnect couplings, see page 202; about selecting pipe size, see pages 2-3.

Type 316 Stainless Steel Quick-Disconnect Tube Couplings

- Maximum Pressure @ 72° F: 150 psi
- Temperature Range: 0° to 150° F
- Tubing: Use with polyethylene and polypropylene

Made of Type 316 stainless steel for excellent strength and corrosion resistance, you can use these couplings with water, air, oil, gasoline, enamel, and caustic soda. Quick-disconnect couplings are also known as quick-connect couplings; they're ideal if you need to frequently connect and disconnect your line. All have a fluoroelastomer O-ring. They are not rated for sterilization or vacuum.

Plugs and sockets ***with shut-off valve*** stop flow when coupling is separated. Plugs and sockets ***without shut-off valve*** do not have a valve to shut off flow.

Through-wall couplings are also known as bulkhead couplings. Sockets with 1/4 coupling size require a 1/2″ dia. hole for mounting; those with 3/8 coupling size require an 11/16″ dia. hole.

Threaded Couplings— Pipe connections are NPTF (Dryseal); NPTF threads are compatible with NPT threads.

Compression Couplings— Insert the tubing into the plug or socket and tighten the nut to form a tight seal around the tubing's OD.

Note: For a complete coupling, order a plug and a socket with the same coupling size.

Also Available: Chrome-plated brass couplings with a Buna-N O-ring for use with air and enamel. Please ask for 5327K1 and specify the corresponding stainless steel part number from the listing below.

Plugs

Compression

For Tube OD		Each
With Shut-Off Valve		
1/4 Coupling Size (A=1/4″)		
1/4″	5327K35	$128.60
3/8 Coupling Size (A=3/8″)		
3/8″	5327K38	182.40
Without Shut-Off Valve		
1/4 Coupling Size (A=1/4″)		
1/4″	5327K33	92.00
3/8 Coupling Size (A=3/8″)		
3/8″	5327K34	103.32

Sockets

Threaded, Male Pipe

Pipe Size, NPTF		Each
With Shut-Off Valve		
1/4 Coupling Size (B=1/4″)		
1/8″	5327K24	$49.45
1/4″	5327K25	66.60
3/8 Coupling Size (B=3/8″)		
1/4″	5327K29	85.60

Through-Wall, Compression

For Tube OD		Each
With Shut-Off Valve		
1/4 Coupling Size (B=1/4″)		
1/4″	5327K31	$125.03
3/8 Coupling Size (B=3/8″)		
3/8″	5327K32	190.63

Miniature Nickel-Plated Brass Quick-Disconnect Tube Couplings

- Maximum Pressure @ 72° F: 700 psi
- Temperature Range: –30° to +250° F
- Tubing: Use with flexible plastic and rubber
- Clamps: Required with barbed fittings (see pages 274-280)

Cramped spaces are not a problem for these compact fittings—these quick-disconnect couplings don't have a latch, so connecting and disconnecting is as easy as pushing and pulling. Use with air. Quick-disconnect couplings are also known as quick-connect couplings; they're ideal if you need to frequently connect and disconnect your line. All are made of nickel-plated brass and come with a Buna-N (nitrile) O-ring. They are not rated for sterilization or vacuum.

Sockets ***with shut-off valve*** stop flow when coupling is separated. Plugs and sockets ***without shut-off valve*** do not have a valve to shut off flow.

Through-wall couplings are also known as bulkhead couplings.

Threaded Couplings— Pipe connections are NPT for the 1/8″ size, UNF straight thread for the 10-32 size.

Barbed Couplings— Insert the barbed end into tubing and secure with a clamp.

Note: For a complete coupling, order a plug and a socket with the same coupling size.

Plugs

Size (A)	Thread/ Pipe Size	***Threaded, Male Pipe***	Each	***Threaded, Female Pipe***	Each
Without Shut-Off Valve					
0.196″	10-32	9414K61	$3.52	9414K71	$3.50
0.196″	1/8″	9414K62	4.08	———	——

Size (A)	For Tube ID	***Barbed***	Each	Required Hole Size	***Through-Wall, Barbed***	Each
Without Shut-Off Valve						
0.196″	3/32″	———	——	1/4″	9414K91	$4.80
0.196″	1/8″	9414K81	$3.21	5/16″	9414K93	4.47
0.196″	5/32″	9414K82	3.23	5/16″	9414K94	4.50
0.196″	3/16″	———	——	1/4″	9414K92	4.83
0.196″	7/32″	9414K83	3.23	5/16″	9414K95	4.50

Sockets

Size (B)	Thread/ Pipe Size	***Threaded, Male Pipe***	Each	***Threaded, Female Pipe***	Each
With Shut-Off Valve					
0.196″	10-32	9414K18	$10.48	9414K28	$10.43
0.196″	1/8″	9414K19	10.95	———	——
Without Shut-Off Valve					
0.196″	10-32	9414K11	10.28	9414K21	10.23
0.196″	1/8″	9414K12	10.75	———	——

Size (B)	For Tube ID	***Barbed***	Each	Required Hole Size	***Through-Wall, Barbed***	Each
With Shut-Off Valve						
0.196″	3/32″	———	——	1/4″	9414K51	$12.80
0.196″	1/8″	9414K36	$10.46	5/16″	9414K53	12.27
0.196″	5/32″	9414K37	10.48	5/16″	9414K54	12.32
0.196″	3/16″	———	——	1/4″	9414K52	12.82
0.196″	7/32″	9414K38	10.48	5/16″	9414K55	12.32
Without Shut-Off Valve						
0.196″	3/32″	———	——	1/4″	9414K41	12.57
0.196″	1/8″	9414K31	10.26	5/16″	9414K43	12.07
0.196″	5/32″	9414K32	10.28	5/16″	9414K44	12.12
0.196″	3/16″	———	——	1/4″	9414K42	12.60
0.196″	7/32″	9414K33	10.28	5/16″	9414K45	12.12

Quick-Disconnect Tube Couplings

For information about quick-disconnect couplings, see page 202; about selecting pipe size, see pages 2-3.

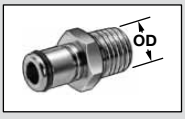

Please Read Before Ordering: Pipe size (NPT) is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD), as shown at left. Then, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the OD measures 5/16″, the next highest OD is 3/8″ and the corresponding pipe size is 1/8″.

Threaded Fitting OD	3/8″	1/2″	5/8″
Pipe Size, NPT	1/8″	1/4″	3/8″

Chrome-Plated Brass Quick-Disconnect Tube Couplings

- Maximum Pressure @ 70° F: 250 psi
- Temperature Range: –40° to +180° F
- Tubing: Use with polyurethane with a hardness of Shore A 68-A 80 for barbed couplings; nylon and polyethylene with a hardness of Shore A 82-D 60 for compression couplings
- Clamps: Recommended with barbed fittings (see pages 274-280)

Offering more than just good looks, these chrome-plated brass couplings also withstand more pressure than our other quick-disconnect tube couplings of similar size. Use with air, oxygen, methanol, and ethylene glycol. Quick-disconnect couplings are also known as quick-connect couplings; they're ideal if you need to frequently connect and disconnect your line. These couplings come with a Buna-N (nitrile) O-ring. They can be sterilized with steam (autoclaving) and chemicals. Vacuum rating is 20″ Hg @ 70° F.

Plugs and sockets ***with shut-off valve*** stop flow when coupling is separated; the valve is made of acetal. Plugs and sockets ***without shut-off valve*** do not have a valve to shut off flow.

Through-wall couplings are also known as bulkhead couplings. Plugs and sockets with 1/8 coupling size require a 1/2″ hole for mounting; those with 1/4 coupling size require an 11/16″ hole size.

Compression Couplings— Insert the tubing into the plug or socket and tighten the nut to form a tight seal around the tubing's OD.

Barbed Couplings— Insert the barbed end into tubing and secure with a clamp.

Note: For a complete coupling, order a plug and a socket with the same coupling size.

Plugs

Pipe Size, NPT	Threaded, Male Pipe Each	For Tube OD	Compression Each	Through-Wall, Compression Each	For Tube ID	Barbed Each	Through-Wall, Barbed Each
With Shut-Off Valve							
1/8 Coupling Size (A=5/16″)							
1/8″	5478K411 $11.66	1/4″	5478K417 $13.35	5478K414 $13.96	1/8″	5478K418 $11.22	5478K415 $14.62
1/4″	5478K412 11.67	*1/4 Coupling Size (A=7/16″)*			3/16″	5478K618 12.11	5478K619 15.43
1/4 Coupling Size (A=7/16″)		1/4″	5478K147 15.71	5478K143 19.80	1/4″	5478K419 11.51	5478K416 15.02
1/4″	5478K141 13.48	3/8″	5478K148 16.75	5478K144 19.83	*1/4 Coupling Size (A=7/16″)*		
3/8″	5478K142 13.83	**Without Shut-Off Valve**			1/4″	5478K149 13.08	5478K145 18.17
Without Shut-Off Valve		*1/8 Coupling Size (A=5/16″)*			3/8″	5478K122 13.07	5478K146 18.38
1/8 Coupling Size (A=5/16″)		1/4″	5478K317 6.88	5478K314 13.35	**Without Shut-Off Valve**		
1/8″	5478K311 5.41	*1/4 Coupling Size (A=7/16″)*			*1/8 Coupling Size (A=5/16″)*		
1/4″	5478K312 5.73	1/4″	5478K917 7.51	5478K913 15.81	1/8″	5478K318 4.95	5478K315 11.72
1/4 Coupling Size (A=7/16″)		3/8″	5478K918 8.92	5478K914 16.29	3/16″	5478K616 5.28	5478K617 11.85
1/4″	5478K911 5.80				1/4″	5478K319 5.28	5478K316 12.24
3/8″	5478K912 6.46				*1/4 Coupling Size (A=7/16″)*		
					1/4″	5478K919 5.73	5478K915 13.15
					3/8″	5478K131 5.82	5478K916 14.01

Sockets

Pipe Size, NPT	Threaded, Male Pipe Each	For Tube OD	Compression Each	Through-Wall, Compression Each	For Tube ID	Barbed Each	Through-Wall, Barbed Each
With Shut-Off Valve							
1/8 Coupling Size (B=5/16″)							
1/8″	5478K221 $11.37	*1/8 Coupling Size (B=5/16″)*			1/8″	5478K228 $16.74	5478K225 $16.80
1/4″	5478K222 11.42	5/32″	—	— 5478K223 $20.35	3/16″	5478K613 18.13	5478K615 18.14
1/4 Coupling Size (B=7/16″)		1/4″	5478K227 $21.38	5478K224 19.47	1/4″	5478K229 17.14	5478K226 17.89
1/4″	5478K711 13.69	*1/4 Coupling Size (B=7/16″)*			*1/4 Coupling Size (B=7/16″)*		
3/8″	5478K712 13.69	1/4″	5478K717 25.17	5478K713 23.63	1/4″	5478K719 21.40	5478K715 21.90
Without Shut-Off Valve		3/8″	5478K718 25.42	5478K714 23.71	3/8″	5478K811 21.39	5478K716 22.00
1/8 Coupling Size (B=5/16″)		**Without Shut-Off Valve**			**Without Shut-Off Valve**		
1/8″	5478K211 10.11	*1/8 Coupling Size (B=5/16″)*			*1/8 Coupling Size (B=5/16″)*		
1/4″	5478K212 10.14	5/32″	—	— 5478K213 19.42	1/8″	5478K218 16.21	5478K215 15.25
1/4 Coupling Size (B=7/16″)		1/4″	5478K217 21.37	5478K214 17.92	3/16″	5478K612 17.21	5478K614 15.65
1/4″	5478K511 12.51	*1/4 Coupling Size (B=7/16″)*			1/4″	5478K219 17.11	5478K216 15.52
3/8″	5478K512 12.49	1/4″	5478K517 24.04	5478K513 21.10	*1/4 Coupling Size (B=7/16″)*		
		3/8″	5478K518 24.39	5478K514 21.32	1/4″	5478K519 20.41	5478K515 19.67
					3/8″	5478K611 20.41	5478K516 19.68

For information about selecting pipe size, see pages 2-3.

Plastic Quick-Turn (Luer Lock) Tube Couplings

- Maximum Pressure @ 72° F: 125 psi
- Temperature Range: Nylon and polycarbonate: –60° to +200° F; Polypropylene: +32° to +200° F
- Tubing: PVC and silicone (both with a hardness of Shore A 40-65)
- Clamps: Not required

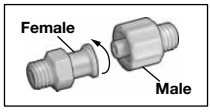

Also known as Luer Lock couplings, it only takes a quarter turn to connect and disconnect these economical couplings. They have a universal connection, so any female plastic quick-turn coupler can connect to any male plastic quick-turn coupler, regardless of size or style. All meet ISO 594-1. Not rated for sterilization or vacuum.

Nylon couplings are for use with water and air. They have good strength, abrasion resistance, and impact resistance. Color is opaque white. ***Polypropylene*** couplings are for use with water and air. They have fair strength, abrasion resistance, and impact resistance. Color is semi-clear white. ***Polycarbonate*** couplings are for use with air. They have good strength, abrasion resistance, and impact resistance. Color is clear.

Threaded Couplings— Have male UNF straight screw threads.

Barbed Couplings— Insert the barbed end into tubing.

Note: For a complete coupling, order a female and male coupler. Pkg. qty. is 10.

Female

THREADED

Thread Size	Nylon	Per Pkg.	Polypropylene	Per Pkg.	Polycarbonate	Per Pkg.
10-32	51525K222	$5.49	51525K235	$6.97	51525K242	$8.01
1/4″-28	51525K223	5.49	51525K236	6.97	51525K243	8.01

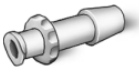

BARBED

For Tube ID	Nylon	Per Pkg.	Polypropylene	Per Pkg.	Polycarbonate	Per Pkg.
1/16″	51525K211	$3.41	51525K291	$3.83	51525K281	$4.28
3/32″	51525K212	3.41	51525K292	3.83	51525K282	4.28
1/8″	51525K213	3.41	51525K293	3.83	51525K283	4.28
5/32″	51525K214	3.83	51525K294	4.25	51525K284	4.67
3/16″	51525K215	3.83	51525K295	4.28	51525K285	4.67
1/4″	51525K216	3.74	51525K296	4.28	51525K286	4.67

CAPS

Nylon	Per Pkg.	Polypropylene	Per Pkg.	Polycarbonate	Per Pkg.
51525K315	$3.41	51525K372	$3.83	51525K245	$4.28

Male

THREADED

Thread Size	Nylon	Per Pkg.	Polypropylene	Per Pkg.	Polycarbonate	Per Pkg.
1/4″-28	51525K221	$5.09	51525K234	$5.91	51525K241	$7.39

BARBED

For Tube ID	Nylon	Per Pkg.	Polypropylene	Per Pkg.	Polycarbonate	Per Pkg.
1/16″	51525K121	$3.83	51525K141	$4.28	51525K271	$4.67
3/32″	51525K122	3.83	51525K142	4.28	51525K272	4.67
1/8″	51525K123	3.83	51525K143	4.25	51525K273	4.67
5/32″	51525K124	4.28	51525K144	4.67	51525K274	5.09
3/16″	51525K125	4.28	51525K145	4.67	51525K275	5.09
1/4″	51525K126	4.28	51525K146	4.67	51525K276	5.09

CAPS

Nylon	Per Pkg.	Polypropylene	Per Pkg.	Polycarbonate	Per Pkg.
51525K311	$2.35	51525K371	$2.57	51525K244	$2.99

Nickel-Plated Brass Quick-Turn (Luer Lock) Tube Couplings

- Maximum Pressure @ 72° F: 30 psi
- Temperature Range: –100° to +350° F
- Tubing: Use polyurethane, PVC, and silicone
- Clamps: Required for barbed couplings (see pages 274-280)

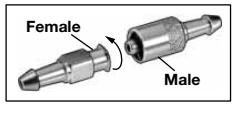

Commonly called Luer Lock couplings, these nickel-plated brass quick-turn couplings connect and disconnect with a quarter turn. Use with air and hydraulic fluid. They have a universal connection, so any size female metal quick-turn coupler can connect to any size male metal quick-turn coupler, regardless of size or shape. All meet ANSI MD70.1-1955.They can be sterilized with steam (autoclaving) and chemicals. Not rated for vacuum.

Threaded Couplings— Pipe connections are male NPT for the 1/8″ and 1/4″ sizes, male UNF straight screw threads for the 10-32 size.

Barbed Couplings— Insert the barbed end into tubing and secure with a clamp.

Note: For a complete coupling, order a female and a male coupler.

Also Available: Couplings marked with a ♥ also come in Type 316 stainless steel. Please ask for 5194K1 and specify the corresponding nickel-plated brass part number from the listing below. *Note:* The threaded stainless steel couplings have a 1/4″-28 thread size, not 10-32.

Female

THREADED

Thread Size		Each
10-32	51465K161♥	$6.15

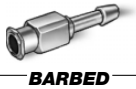

BARBED

For Tube ID		Each
1/16″ to 3/32″	51465K133	$5.95
1/8″ to 3/16″	51465K135	6.15
1/4″ to 5/16″	51465K137♥	6.36

CONNECTORS

	Each
51465K145♥	$6.76

CAPS

	Each
51465K169♥	$8.40

Male

THREADED

Pipe/ Thread Size		Each
10-32	51465K151♥	$6.15
1/8″	51465K155	8.20
1/4″	51465K153	8.81

BARBED

For Tube ID		Each
1/16″ to 3/32″	51465K113	$6.56
1/8″ to 3/16″	51465K115	6.76
1/4″ to 5/16″	51465K117♥	6.97

CONNECTORS

	Each
51465K141♥	$10.04

CAPS

	Each
51465K165♥	$8.61

High-Polish Sanitary Stainless Steel Quick-Clamp Tube Fittings

- Maximum Pressure: See clamps below
- Temperature Range:
  With Buna-N Gasket: –30° to +200° F;
  With PTFE Gasket: –100° to +500° F
  With Fluoroelastomer Gasket: –20° to +400° F;
- Tubing: Use with 4466K on page 144

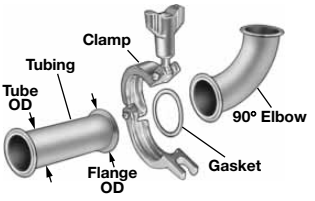

For information about how to measure Quick-Clamp Tube Fittings, go to mcmaster.com and search for **4322KAC**.

Also known as tri-clamps, these fittings open easily by hand or wrench to allow quick access to your lines. All meet 3-A sanitary requirements, except the clamps shown below and all of the adapters on page 210. Use with dairy, water, and air, except the adapters on page 190 are not for use with dairy. They can be sterilized with steam (autoclaving). Not rated for vacuum.

Note: For a complete connection, you'll need a clamp, gasket, and two fittings or adapters.

Clamps— Made of Type 304 stainless steel, the type and size of the clamp dictates the amount of pressure a connection can withstand. The *high-pressure clamps* are secured by two bolts and require a wrench to assemble.

Gaskets— The gasket material dictates the temperature range for the connection. For more gaskets, see page 3481.

Fittings and Adapters— Polished to a 32Ra finish on the OD and a 23Ra-32Ra finish on the ID. *Type 304 stainless steel* has good corrosion resistance. *Type 316L stainless steel* has excellent corrosion resistance.

Quick-clamp to butt-weld tube adapters are also known as ferrules; you weld the butt-weld end to your tubing end. Those with *thick walls* are also known as tank ferrules; they have an extra-thick wall for welding to large structures and tanks.

Quick-clamp to hose adapters connect flexible hose or tubing to your system. Use a hose clamp (sold separately, see pages 274-280) to secure hose or tubing to these adapters.

Quick-clamp to grooved-ID adapters are also known as nonrecess ferrules and have a series of serrations on the interior. Connect by placing metal tubing inside the fitting and using an expansion tool to press the tubing into the fitting wall.

Clamps

For Tube OD	For Flange OD	HAND TIGHTENED Max. psi @ 72° F	Wing Nut	Each	Spring Loaded	Each	HIGH PRESSURE Max. psi @ 72° F	Bolted	Each
1/2", 3/4"	0.984"	1500	45195K44	$7.71	9155K12	$20.42	—	—	—
1", 1 1/2"	1.984"	500	4322K152	8.80	9155K11	24.79	1500	4322K711	$16.83
2"	2.516"	450	4322K153	11.33	9155K13	29.00	1000	4322K712	19.89
2 1/2"	3.047"	400	4322K154	12.30	9155K14	36.54	1000	4322K713	21.78
3"	3.579"	350	4322K155	14.63	9155K15	39.16	1000	4322K714	24.34
4"	4.682"	200	4322K156	16.71	9155K16	45.16	1000	4322K715	29.86
6"	6.570"	150	4322K157	39.79	—	—	300	4322K716	62.07

Gaskets

For Tube OD	Buna-N	Each	PTFE	Each	Fluoroelastomer	Each
1/2"	4509K11	$1.03	43315K21	$2.02	5044K11	$3.33
3/4"	4509K12	1.17	43315K22	1.99	5044K12	3.52
1"	4509K13	.36	43315K23	2.14	5044K13	3.88
1 1/2"	4509K14	.46	43315K24	1.95	5044K14	3.15
2"	4509K15	.55	43315K25	2.04	5044K15	3.22
2 1/2"	4509K16	.60	43315K26	2.63	5044K16	5.56
3"	4509K17	.73	43315K27	2.72	5044K17	7.04
4"	4509K18	1.09	43315K28	4.10	5044K18	10.56
6"	4509K19	10.02	43315K29	16.66	5044K19	48.70

Straight Lengths

For Tube OD	Flange OD		Each 6"	12"	18"
Type 304 Stainless Steel					
1"	1.984"	4322K65	$87.23	$95.44	$102.62
1 1/2"	1.984"	4322K66	97.31	106.47	114.48
2"	2.516"	4322K67	105.96	115.93	124.66
Type 316L Stainless Steel					
1"	1.984"	50485K73	98.41	107.68	115.78
1 1/2"	1.984"	50485K75	111.45	121.94	131.12
2"	2.516"	50485K76	125.51	137.32	147.66

Fittings

For Tube OD	Flange OD	Elbows Radius	90° (A)		Each	45° (B)		Each	Tees (C)		Each	Wyes (D)		Each
Type 304 Stainless Steel														
1/2"	0.984"	3/4"	3 1/2"	4322K118	$39.54	2 3/4"	4322K138	$44.28	5 1/4"	4322K148	$56.89	—	—	—
3/4"	0.984"	1 1/8"	3 1/2"	4322K119	39.54	2 3/4"	4322K139	44.28	5 1/4"	4322K149	56.89	—	—	—
1"	1.984"	1 1/2"	2"	4322K111	26.58	1 1/8"	4322K131	28.73	4 3/4"	4322K141	47.08	3 1/2"	4322K811	$263.63
1 1/2"	1.984"	2 1/4"	2 3/4"	4322K112	24.68	1 7/16"	4322K132	24.68	5 1/2"	4322K142	44.46	3 1/2"	4322K812	263.63
2"	2.516"	3"	3 1/2"	4322K113	30.39	1 3/4"	4322K133	33.45	7"	4322K143	60.41	4 1/2"	4322K813	276.37
2 1/2"	3.047"	3 3/4"	4 1/4"	4322K114	50.69	2 1/16"	4322K134	47.71	7"	4322K144	75.12	5 1/2"	4322K814	323.64
3"	3.579"	4 1/2"	5"	4322K115	59.06	2 3/8"	4322K135	52.47	7 1/2"	4322K145	109.90	6 1/2"	4322K815	352.73
4"	4.682"	6"	6 5/8"	4322K116	121.67	3 1/8"	4322K136	107.33	9"	4322K146	134.03	8 5/8"	4322K816	533.33
6"	6.570"	9"	9 7/8"	4322K117	511.11	4 5/8"	4322K137	409.09	13"	4322K147	714.28	8 7/8"	4322K817	1,082.85
Type 316L Stainless Steel														
1/2"	0.984"	3/4"	3 1/2"	45195K12	44.91	2 3/4"	45195K16	59.83	5 1/4"	45195K24	85.75	—	—	—
3/4"	0.984"	1 1/8"	3 1/2"	45195K14	44.91	2 3/4"	45195K18	70.61	5 1/4"	45195K28	85.75	—	—	—
1"	1.984"	1 1/2"	2"	50485K111	38.40	1 1/8"	50485K131	42.00	4 3/4"	50485K141	65.32	3 1/2"	50485K811	338.92
1 1/2"	1.984"	2 1/4"	2 3/4"	50485K112	39.25	1 7/16"	50485K132	38.68	5 1/2"	50485K142	63.90	3 1/2"	50485K812	329.84
2"	2.516"	3"	3 1/2"	50485K113	46.88	1 3/4"	50485K133	48.44	7"	50485K143	72.38	4 1/2"	50485K813	340.58
2 1/2"	3.047"	3 3/4"	4 1/4"	50485K114	73.98	2 1/16"	50485K134	78.41	7"	50485K144	101.92	5 1/2"	50485K814	423.83
3"	3.579"	4 1/2"	5"	50485K115	76.31	2 3/8"	50485K135	83.70	7 1/2"	50485K145	139.17	6 1/2"	50485K815	480.94
4"	4.682"	6"	6 5/8"	50485K116	158.63	3 1/8"	50485K136	161.13	9"	50485K146	227.82	8 5/8"	50485K816	661.31
6"	6.570"	9"	9 7/8"	50485K117	583.34	4 5/8"	50485K137	497.74	17 3/4"	50485K147	857.14	8 7/8"	50485K817	1,307.85

(Continued on following page)

High-Polish Sanitary Stainless Steel Quick-Clamp Tube Fittings

(Continued from previous page)

Reducer Fittings

For Tube OD	Flange OD	COUPLINGS Type 304 Stainless Steel	Each	Type 316L Stainless Steel	Each	90° ELBOWS (A)	Type 304 Stainless Steel	Each	Type 316L Stainless Steel	Each
1½″×1″	1.984″×1.984″	4322K231	$48.79	50485K231	$85.91	—	—	—	—	—
2″ ×1″	2.516″×1.984″	4322K232	59.61	50485K232	97.50	2″	4322K121	$103.58	50485K121	$161.11
2″ ×1½″	2.516″×1.984″	4322K233	43.71	50485K233	80.41	2¾″	4322K122	104.62	50485K122	134.32
2½″×1½″	3.047″×1.984″	4322K234	66.91	50485K234	79.15	2¾″	4322K123	111.02	50485K123	174.98
2½″×2″	3.047″×2.516″	4322K235	56.97	50485K235	95.40	3½″	4322K124	121.21	50485K124	231.15
3″ ×1½″	3.579″×1.984″	4322K236	90.32	50485K236	157.75	2¾″	4322K125	148.15	50485K125	237.03
3″ ×2″	3.579″×2.516″	4322K237	74.54	50485K237	91.41	3½″	4322K126	141.49	50485K126	185.18
3″ ×2½″	3.579″×3.047″	4322K238	74.29	50485K238	112.49	4¼″	4322K127	142.22	50485K127	259.26
4″ ×2½″	4.682″×3.047″	4322K243	132.25	50485K243	202.67	4¼″	4322K244	307.41	50485K244	336.00
4″ ×3″	4.682″×3.579″	4322K239	139.04	50485K239	146.87	5″	4322K129	321.30	50485K128	533.63
6″ ×3″	6.570″×3.579″	4322K241	388.00	50485K241	473.94	—	—	—	—	—
6″ ×4″	6.570″×4.682″	4322K242	398.74	50485K242	437.51	—	—	—	—	—

Quick-Clamp to Butt-Weld Tube Adapters

For Tube OD	Flange OD	Wall Thick.	Short Butt-Weld Lg.		Each	Med. Butt-Weld Lg.		Each	Long Butt-Weld Lg.		Each
Type 304 Stainless Steel											
1″	1.984″	0.065″	½″	4322K211	$3.94	1⅛″	4322K161	$6.14	3″	4322K191	$28.88
1½″	1.984″	0.065″	½″	4322K212	3.94	1⅛″	4322K162	6.14	3″	4322K192	25.44
2″	2.516″	0.065″	½″	4322K213	4.81	1⅛″	4322K163	7.77	3″	4322K193	30.59
2½″	3.047″	0.065″	½″	4322K214	7.22	1⅛″	4322K164	11.31	3″	4322K194	48.53
3″	3.579″	0.065″	½″	4322K215	9.57	1⅛″	4322K165	14.36	4″	4322K195	60.44
4″	4.682″	0.083″	⅝″	4322K216	16.54	1⅛″	4322K166	22.41	4″	4322K196	97.06
6″	6.570″	0.109″	⅞″	4322K217	70.18	1½″	4322K167	78.30	6″	4322K197	199.74
Type 316L Stainless Steel											
½″	0.984″	0.065″	½″	45195K62	11.84	1⅛″	45195K72	18.42	1¾″	45195K66	26.05
¾″	0.984″	0.065″	½″	45195K64	11.25	1⅛″	45195K74	18.42	1¾″	45195K68	26.05
1″	1.984″	0.065″	½″	50485K211	6.61	1⅛″	50485K161	9.91	3″	50485K191	53.88
1½″	1.984″	0.065″	½″	50485K212	6.61	1⅛″	50485K162	10.13	3″	50485K192	46.76
2″	2.516″	0.065″	½″	50485K213	8.32	1⅛″	50485K163	13.00	3″	50485K193	50.43
2½″	3.047″	0.065″	½″	50485K214	14.28	1⅛″	50485K164	22.07	3″	50485K194	73.75
3″	3.579″	0.065″	½″	50485K215	16.68	1⅛″	50485K165	26.37	4″	50485K195	90.69
4″	4.682″	0.083″	⅝″	50485K216	26.86	1⅛″	50485K166	42.53	4″	50485K196	138.61
6″	6.570″	0.109″	⅞″	50485K217	88.18	1½″	50485K167	129.84	6″	50485K197	250.00

Reducers, Butt-Weld For Tube OD, (F)×(G)	Each
Type 304 Stainless Steel	
1″ × ½″	4322K621 $40.00
1″ × ¾″	4322K622 40.00
1½″×1″	4322K623 34.67
2″ ×1″	4322K624 37.22
2″ ×1½″	4322K625 37.22
2½″×1½″	4322K626 62.22
2½″×2″	4322K627 62.22
3″ ×2″	4322K628 77.44
Type 316L Stainless Steel	
1″ × ½″	50485K621 59.38
1″ × ¾″	50485K622 59.38
1½″×1″	50485K623 43.75
2″ ×1″	50485K624 52.50
2″ ×1½″	50485K625 52.50
2½″×1½″	50485K626 73.75
2½″×2″	50485K627 73.75
3″ ×2″	50485K628 93.75

Thick-Wall Butt-Weld

For Tube OD	Flange OD	(E)	Wall Thick.	Lg.	Each
Type 304 Stainless Steel					
½″	0.984″	⅝″	⅛″	1½″	4322K188 $21.96
¾″	0.984″	⅞″	⅛″	1½″	4322K189 21.40
1″	1.984″	1 5/32″	5/32″	1⅝″	4322K181 13.96
1½″	1.984″	1 11/16″	5/32″	1⅝″	4322K182 13.49
2″	2.516″	2 3/16″	5/32″	1¾″	4322K183 17.01
2½″	3.047″	2 11/16″	5/32″	1¾″	4322K184 28.83
3″	3.579″	3 7/32″	3/16″	1 13/16″	4322K185 33.73
4″	4.682″	4¼″	7/32″	2⅛″	4322K186 67.02
6″	6.570″	6 3/16″	7/32″	2½″	4322K187 320.00

For Tube OD	Flange OD	(E)	Wall Thick.	Lg.	Each
Type 316L Stainless Steel					
½″	0.984″	⅝″	⅛″	1½″	45195K65 $27.58
¾″	0.984″	⅞″	⅛″	1½″	45195K67 27.58
1″	1.984″	1 5/32″	5/32″	1⅝″	50485K181 24.30
1½″	1.984″	1 11/16″	5/32″	1⅝″	50485K182 24.30
2″	2.516″	2 3/16″	5/32″	1¾″	50485K183 35.13
2½″	3.047″	2 11/16″	5/32″	1¾″	50485K184 48.85
3″	3.579″	3 7/32″	3/16″	1 13/16″	50485K185 59.15
4″	4.682″	4¼″	7/32″	2⅛″	50485K186 121.26
6″	6.570″	6 3/16″	7/32″	2½″	50485K187 360.00

Quick-Clamp to Hose Adapters

For Tube OD	Flange OD	For Hose ID	Type 304 Stainless Steel	Each	Type 316L Stainless Steel	Each
½″	0.984″	½″	4322K771	$49.13	50485K771	$73.16
¾″	0.984″	¾″	4322K772	49.13	50485K772	77.13
1″	1.984″	1″	4322K773	23.52	50485K773	81.78
1½″	1.984″	1½″	4322K774	25.82	50485K774	82.45
2″	2.516″	2″	4322K775	38.01	50485K775	98.72
2½″	3.047″	2½″	4322K776	45.08	50485K776	157.66
3″	3.579″	3″	4322K777	68.29	50485K777	159.56
4″	4.682″	4″	4322K778	99.46	50485K778	216.06

Quick-Clamp to Grooved-ID Adapters

For Tube OD	Flange OD	Type 304 Stainless Steel	Each	Type 316L Stainless Steel	Each
1″	1.984″	4322K171	$5.30	50485K171	$10.80
1½″	1.984″	4322K172	5.20	50485K172	9.00
2″	2.516″	4322K173	7.44	50485K173	11.74
2½″	3.047″	4322K174	11.50	50485K174	23.68
3″	3.579″	4322K175	14.31	50485K175	37.84
4″	4.682″	4322K176	19.98	50485K176	80.44

Caps

For Tube OD	Type 304 Stainless Steel	Each	Type 316L Stainless Steel	Each
½″,¾″	—	—	45195K52	$8.83
1″,1½″	4322K221	$4.72	50485K221	7.24
2″	4322K222	6.20	50485K222	9.38
2½″	4322K223	9.23	50485K223	13.94
3″	4322K224	$13.02	50485K224	$25.31
4″	4322K225	23.81	50485K225	47.91
6″	4322K226	90.12	50485K226	110.92

(Continued on following page)

For information about selecting pipe size, see pages 2-3.

High-Polish Sanitary Stainless Steel Quick-Clamp Tube Fittings

(Continued from previous page)

- Maximum Pressure: Determined by clamp (see page 208)
- Temperature Range: Determined by gasket (see page 208)
- Tubing: Use with 4466K on page 144

Also known as tri-clamps, these fittings open easily by hand or wrench to allow quick access to your lines. These fittings are polished to a 32Ra finish on the OD and a 23Ra-32Ra finish on the ID. Use with water and air. The adapters below do not meet 3-A sanitary requirements and are not for use with dairy. They can be sterilized with steam (autoclaving). Not rated for vacuum.

Note: For a complete connection, you'll need a clamp, a gasket, and two fittings or adapters. Clamps, gaskets, and more fittings are shown on pages 208-209.

Quick-Clamp to Pipe (Threaded) Adapters

For Tube OD	Flange OD	Pipe Size, NPT	MALE THREADS Type 304 Stainless Steel	Each	MALE THREADS Type 316L Stainless Steel	Each	FEMALE THREADS Type 304 Stainless Steel	Each	FEMALE THREADS Type 316L Stainless Steel	Each
1/2"	0.984"	1/2"	4322K417	$35.16	45195K791	$50.79	4322K517	$41.58	45195K793	$60.42
3/4"	0.984"	3/4"	4322K418	36.47	45195K792	50.79	4322K518	41.58	45195K794	60.42
1"	1.984"	1"	4322K411	55.57	50485K511	73.97	4322K511	53.53	50485K521	73.97
1 1/2"	1.984"	1 1/2"	4322K412	53.70	50485K512	79.16	4322K512	60.40	50485K522	87.92
2"	2.516"	2"	4322K413	64.22	50485K513	119.92	4322K513	64.80	50485K523	121.65
2 1/2"	3.047"	2 1/2"	4322K414	101.44	50485K514	156.38	4322K514	99.74	50485K524	151.43
3"	3.579"	3"	4322K415	127.47	50485K515	204.61	4322K515	127.93	50485K525	192.91
4"	4.682"	4"	4322K416	173.85	50485K516	232.30	4322K516	173.42	50485K526	232.30

Quick-Clamp to Pipe (Threaded) Reducer Adapters

For Tube OD	Flange OD	Pipe Size, NPT	MALE THREADS Type 304 Stainless Steel	Each	MALE THREADS Type 316L Stainless Steel	Each	FEMALE THREADS Type 304 Stainless Steel	Each	FEMALE THREADS Type 316L Stainless Steel	Each
1/2"	0.984"	1/4"	4322K631	$59.11	50485K631	$70.00	4322K641	$104.89	50485K641	$124.25
3/4"	0.984"	1/2"	4322K632	70.73	50485K632	83.75	4322K642	104.89	50485K642	124.25
1"	1.984"	3/4"	4322K633	111.17	50485K251	113.65	4322K643	104.89	50485K151	124.53
1 1/2"	1.984"	3/4"	4322K634	111.17	50485K252	113.65	4322K644	147.30	50485K152	124.53
2"	2.516"	1"	4322K635	105.56	50485K253	113.25	4322K645	173.33	50485K153	178.52
2"	2.516"	1 1/2"	4322K636	104.50	50485K254	108.43	4322K646	150.00	50485K154	157.50
3"	3.579"	2"	4322K637	180.00	50485K255	187.50	4322K647	273.85	50485K155	287.58

Sanitary Type 304 Stainless Steel Union Tube Fittings

- Max. Pressure @ 72° F: 400 psi
- Temp. Range: -30° to +200° F
- Tubing: Use with 4466K on page 144

How to Measure Tube OD

Measure the fitting behind the threads.

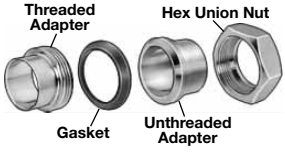

Also known as bevel seat fittings, these fittings permit easy access to your line. They have beveled ends that seal with a gasket and hex union nut—they'll maintain a leak-tight seal, even if the fittings are slightly misaligned. The fittings meet 3-A sanitary requirements; the gaskets do not. Use with dairy, water, and air. All are machined from Type 304 stainless steel bar stock. They're polished with to a 23Ra-32Ra finish on the OD and ID. They can be sterilized with chemicals. Not rated for vacuum.

The ***threaded adapters*** and ***hex union nuts*** have an Acme standard thread.

Note: For a complete connection, you'll need an unthreaded adapter, threaded adapter, hex union nut, and gasket.

Bevel-End to Butt-Weld Tube Adapters

For Tube OD	Wall Thick.	UNTHREADED Short Lg.	Short	Each	UNTHREADED Long Lg.	Long	Each	THREADED Short Lg.	Short	Each	THREADED Long Lg.	Long	Each
1"	0.065"	1 3/8"	44575K211	$9.71	2"	44575K411	$51.78	11/16"	44575K131	$8.33	1 3/8"	44575K421	$13.00
1 1/2"	0.065"	1 1/2"	44575K212	11.11	2 1/4"	44575K412	53.33	11/16"	44575K132	8.33	1 1/2"	44575K422	18.33
2"	0.065"	1 1/2"	44575K213	12.10	2 1/2"	44575K413	60.00	23/32"	44575K133	11.50	1 1/2"	44575K423	20.90
2 1/2"	0.065"	1 3/4"	44575K214	19.50	2 3/4"	44575K414	66.67	27/32"	44575K134	17.71	1 3/4"	44575K424	31.33
3"	0.065"	1 3/4"	44575K215	24.70	3"	44575K415	73.70	15/16"	44575K135	22.60	1 3/4"	44575K425	41.22
4"	0.083"	1 3/4"	44575K216	42.80	4"	44575K416	111.00	1"	44575K136	36.00	1 3/4"	44575K426	61.07

Caps

For Tube OD		Each
1"	44575K311	$5.04
1 1/2"	44575K312	8.22
2"	44575K313	11.50
2 1/2"	44575K314	16.31
3"	44575K315	22.90
4"	44575K316	42.80

Hex Union Nuts

For Tube OD		Each
1"	44575K111	$8.68
1 1/2"	44575K112	12.82
2"	44575K113	15.68
2 1/2"	44575K114	22.13
3"	44575K115	28.58
4"	44575K116	44.68

Buna-N Gaskets

For Tube OD		Each
1"	4524K47	$1.08
1 1/2"	4524K48	.81
2"	4524K49	1.00
2 1/2"	4524K51	1.92
3"	4524K52	2.30
4"	4524K53	2.75

Type 304L Stainless Steel Butt-Weld Tube Fittings

- Maximum Pressure: See below
- Temperature Range: −65° to +250° F
- Tubing: Use with seamless or welded Type 304 stainless steel (see pages 144-148)

Polished fittings are A 3

When you weld these fittings to tubing, you'll get flush joints that improve flow and reduce turbulence and contamination. All are made of Type 304L stainless steel tubing. They can be sterilized with steam (autoclaving) and chemicals. Vacuum rating is 10^{-6} torr (10^{-6} mm Hg) @ 72° F.

Polished Fittings— All meet 3-A sanitary requirements, except caps. Use with dairy, water, and air. They're polished with a 150 grit abrasive on the OD to a 32Ra finish and with a 180 grit abrasive on the ID to a 25Ra-32Ra finish.

Unpolished Fittings— Use with water and air.

Centered reducing couplings, which are also known as concentric reducers, allow you to connect one tube to another tube of a smaller diameter so that the centers align.

Off-center reducing couplings, which are also known as eccentric reducers, allow you to connect one tube to another tube of a smaller diameter so that the centers are offset. Use for horizontal flow.

Also Available: Type 316 stainless steel fittings. Please ask for 5237K1 and specify the corresponding polished or unpolished part number from the listing below.

For Tube OD	Wall Thick.	Radius	Max. psi @ 72° F	90° Short Elbows (A)		Each	90° Long Elbows (A)		Each	45° Short Elbows (B)		Each	45° Long Elbows (B)		Each
Polished															
1″	0.065″	1½″	600	1½″	44655K17	$20.35	2 1/16″	44655K11	$23.60	5/8″	44655K37	$16.86	1 3/16″	44655K21	$26.40
1½″	0.065″	2¼″	600	2¼″	44655K18	21.51	2 15/16″	44655K12	26.17	15/16″	44655K38	18.38	1 5/8″	44655K22	25.72
2″	0.065″	3″	550	3″	44655K19	25.81	4 1/16″	44655K13	32.33	1¼″	44655K39	20.60	2 5/16″	44655K23	26.88
2½″	0.065″	3¾″	450	3¾″	44655K27	41.53	5 3/16″	44655K14	49.42	1 9/16″	44655K57	30.60	3″	44655K24	35.60
3″	0.065″	4½″	350	4½″	44655K28	50.47	6 5/16″	44655K15	62.55	1 7/8″	44655K58	35.23	3 11/16″	44655K25	47.23
4″	0.083″	6″	250	6″	44655K29	95.93	8 5/16″	44655K16	124.42	2½″	44655K59	61.12	4 13/16″	44655K26	82.50
6″	0.109″	9″	125	9″	44655K52	375.00	12″	44655K56	418.18	3¾″	44655K53	320.00	6¾″	44655K61	360.00
Unpolished															
1″	0.065″	1½″	600	1½″	44675K17	11.50	2 1/16″	44675K11	14.75	5/8″	44675K37	12.21	1 3/16″	44675K21	16.57
1½″	0.065″	2¼″	600	2¼″	44675K18	12.75	2 15/16″	44675K12	15.95	15/16″	44675K38	15.62	1 5/8″	44675K22	17.60
2″	0.065″	3″	550	3″	44675K19	17.95	4 1/16″	44675K13	22.25	1¼″	44675K39	16.53	2 5/16″	44675K23	21.55
2½″	0.065″	3¾″	450	3¾″	44675K27	28.70	5 3/16″	44675K14	39.00	1 9/16″	44675K57	25.25	3″	44675K24	37.00
3″	0.065″	4½″	350	4½″	44675K28	35.08	6 5/16″	44675K15	53.12	1 7/8″	44675K58	26.07	3 11/16″	44675K25	47.95
4″	0.083″	6″	250	6″	44675K29	70.62	8 5/16″	44675K16	105.00	2½″	44675K59	49.38	4 13/16″	44675K26	81.00
6″	0.109″	9″	125	9″	44675K49	206.00	12″	44675K51	310.80	3¾″	44675K69	144.00	6¾″	44675K71	260.00

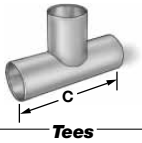

For Tube OD	Wall Thick.	Max. psi @ 72° F	Tees (C)		Each	Caps	Each
Polished							
1″	0.065″	600	3¾″	44655K31	$30.80	44655K81	$37.01
1½″	0.065″	600	4½″	44655K32	31.24	44655K82	37.58
2″	0.065″	550	6″	44655K33	38.50	44655K83	40.93
2½″	0.065″	450	6″	44655K34	54.34	44655K84	49.72
3″	0.065″	350	6½″	44655K35	66.28	44655K85	53.98
4″	0.083″	250	7¾″	44655K36	124.71	44655K86	61.97
6″	0.109″	125	10″	44655K55	499.09	44655K51♠	210.00
Unpolished							
1″	0.065″	600	3¾″	44675K31	22.82	44675K91	19.25
1½″	0.065″	600	4½″	44675K32	24.50	44675K92	19.12
2″	0.065″	550	6″	44675K33	27.75	44675K93	20.93
2½″	0.065″	450	6″	44675K34	42.05	44675K94	26.00
3″	0.065″	350	6½″	44675K35	52.17	44675K95	27.75
4″	0.083″	250	7¾″	44675K36	85.93	44675K96	33.10
6″	0.109″	125	10″	44675K53	280.00	44675K97♠	93.76

♠ Wall thickness is 0.120″.

REDUCING COUPLINGS

For Tube OD	Wall Thick.	Max. psi @ 72° F	Centered	Each	Off-Center	Each
Polished						
1½″ × 1″	0.065″	600	44655K42	$26.70	44655K62	$49.77
2″ × 1½″	0.065″	550	44655K43	28.25	44655K63	49.77
2½″ × 1½″	0.065″	450	44655K44	41.53	44655K64	99.65
2½″ × 2″	0.065″	450	44655K45	34.07	44655K65	56.63
3″ × 1½″	0.065″	350	44655K46	79.14	44655K66	117.67
3″ × 2″	0.065″	350	44655K47	43.62	44655K67	75.81
3″ × 2½″	0.065″	350	44655K48	43.62	44655K68	72.09
4″ × 3″	0.083″	250	44655K54♣	68.49	44655K74♣	86.59
6″ × 4″	0.109″	125	44655K69■	275.00	44655K87■	390.91
Unpolished						
1½″ × 1″	0.065″	600	44675K41	14.38	44675K61	32.38
2″ × 1″	0.065″	550	44675K42	45.27	44675K62	82.50
2″ × 1½″	0.065″	550	44675K43	15.30	44675K63	31.10
2½″ × 1½″	0.065″	450	44675K44	45.65	44675K64	76.15
2½″ × 2″	0.065″	450	44675K45	17.75	44675K65	32.50
3″ × 1½″	0.065″	350	44675K46	53.50	44675K66	94.15
3″ × 2″	0.065″	350	44675K47	24.75	44675K67	42.50
3″ × 2½″	0.065″	350	44675K48	23.75	44675K68	59.75
4″ × 3″	0.083″	250	44675K52♣	34.38	44675K72♣	60.25
6″ × 4″	0.109″	125	44675K73■	170.00	44675K74■	260.00

♣ 3″ end has 0.065″ wall thick. ■ 4″ end has 0.083″ wall thick.

REDUCING TEES

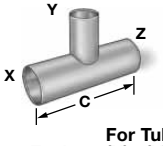

For Tube OD, (X) × (Y) × (Z)	Wall Thick.	Max. psi @ 72° F	(C)		Each
Polished					
1½″ × 1″ × 1½″	0.065″	600	4½″	44655K71	$41.25
2″ × 1″ × 2″	0.065″	550	6″	44655K72	65.00
2″ × 1½″ × 2″	0.065″	550	6″	44655K73	65.00
3″ × 2″ × 3″	0.065″	350	6½″	44655K75	86.88
4″ × 2″ × 4″	0.083″	250	7¾″	44655K76★	197.50
4″ × 3″ × 4″	0.083″	250	7¾″	44655K77♣	197.50

★ 2″ end has 0.065″ wall thickness. ♣ 3″ end has 0.065″ wall thickness.

For Tube OD, (X) × (Y) × (Z)	Wall Thick.	Max. psi @ 72° F	(C)		Each
Unpolished					
1½″ × 1″ × 1½″	0.065″	600	4½″	44675K55	$31.25
2″ × 1″ × 2″	0.065″	550	6″	44675K56	46.75
2″ × 1½″ × 2″	0.065″	550	6″	44675K75	46.75
3″ × 2″ × 3″	0.065″	350	6½″	44675K76	62.50
4″ × 2″ × 4″	0.083″	250	7¾″	44675K77★	89.38
4″ × 3″ × 4″	0.083″	250	7¾″	44675K78♣	89.38

Easy-Align Sanitary Type 304 Stainless Steel Tube Fittings

- Maximum Pressure: Determined by clamp (see below)
- Temp. Range: –30° to +200° F
- Tubing: Use with 4466K on page 144

How to Measure Tube OD

Measure the fitting behind the flange.

Tube OD

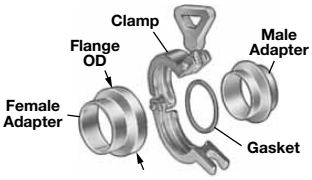

Also known as I-line fittings, the male and female ends interlock to provide a higher pressure rating than other quick-clamp fittings. After you butt-weld these fittings to your tubing, simply clamp the flanged ends together for a rigid "no-slip" connection. The fittings meet 3-A sanitary requirements; the clamps do not. Use with dairy and water. They can be sterilized with steam (autoclaving) and chemicals. Not rated for vacuum.

Clamps are cast from Type 304 stainless steel and have a Type 304 wing nut; they can be hand-tightened.

Adapters and ***caps*** are fabricated from Type 304 stainless steel tubing and are polished to a 32Ra finish on the OD and ID.

Note: For a complete connection, you'll need a clamp, a male adapter, a female adapter, and a gasket.

Clamps

For Tube OD	For Flange OD	Max. psi @ 72° F		Each
1", 1½"	2"	1220	5081K61	$26.67
2"	2⅝"	900	5081K63	33.07
3"	3⅞"	600	5081K64	47.15

Quick-Clamp to Butt-Weld Adapters

For Tube OD	Flange OD	Wall Thick.	Male	Each	Female	Each
1"	2"	0.065"	5081K81	$10.40	5081K21	$7.67
1½"	2"	0.065"	5081K82	10.40	5081K22	7.67
2"	2⅝"	0.065"	5081K83	13.65	5081K23	11.97
3"	3⅞"	0.065"	5081K84	28.67	5081K24	33.19

Caps

For Tube OD	Male	Each	Female	Each
1"	5081K41	$12.71	5081K51	$20.59
1½"	5081K42	12.71	5081K52	20.59
2"	5081K43	15.54	5081K53	30.23
3"	5081K44	32.55	5081K54	45.47

Buna-N Gaskets

For Tube OD	Gasket OD		Each
1"	1¼"	5081K71	$1.16
1½"	1¾"	5081K72	1.16
2"	2¼"	5081K73	$1.26
3"	3⁵⁄₁₆"	5081K74	2.42

Thin-Wall Type 316L Stainless Steel Socket-Weld Tube Fittings

- Maximum Pressure @ 65° F: 1500 psi
- Temp. Range: Not rated
- Tubing: Use with Types 304 and 316 welded stainless steel

Fabricated from thin-wall Type 316L stainless steel tubing, these fittings provide leak-free connections on thin-wall tubing. Insert your tubing into the socket ends of the fittings and weld for a permanent connection. Use with water, air, hydraulic fluid, and oil. Not rated for sterilization or vacuum.

For Tube OD	Wall Thick.	Couplings	Each	90° Elbows	Each	180° Bends	Each	Tees	Each
¼"	0.025"	4048K11	$8.14	4048K51	$14.00	4048K61	$24.52	4048K21	$24.70
⅜"	0.028"	4048K12	8.78	4048K52	15.01	4048K62	25.49	4048K22	27.83
½"	0.032"	4048K13	9.50	4048K53	17.35	4048K63	29.59	4048K23	30.74
¾"	0.042"	4048K14	16.20	4048K54	26.86	4048K64	48.89	4048K24	40.36
1"	0.049"	4048K15	25.06	4048K55	37.76	4048K65	73.84	4048K25	63.07

Type 316 Stainless Steel Socket-Weld Tube Fittings

- Maximum Pressure @ 72° F: 4300 psi
- Temp. Range: –425° to +1200° F
- Tubing: Use with seamless or welded Types 304 and 316 stainless steel that meets ASTM A269

Create leak-free connections that withstand extreme pressures and temperatures. Insert your tubing into the socket ends of these fittings and weld for a permanent connection. All are machined from Type 316 stainless steel bar stock, except the elbows and tees, which are forged Type 316 stainless steel. Use with water, air, natural gas, and hydraulic oil. They meet ANSI B31.1.0 and B31.7. Not rated for sterilization or vacuum.

Socket-to-Threaded Pipe Adapters

For Tube OD	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each	90° Elbows, Female Pipe	Each
¼"	⅛"	51255K231	$9.05	51255K301	$10.08	51255K311	$19.08
¼"	¼"	51255K232	7.42	51255K302	13.67	51255K312	22.23
⅜"	¼"	51255K233	9.69	51255K303	13.31	51255K313	26.23
⅜"	⅜"	51255K234	9.69	51255K304	18.34	51255K314	29.67
⅜"	½"	51255K235	14.84	—	—	—	—
½"	⅜"	51255K236	12.92	51255K305	17.11	51255K315	30.50
½"	½"	51255K237	14.24	51255K306	23.57	51255K316	34.46
¾"	¾"	51255K239	23.16	51255K308	33.83	51255K318	77.65
1"	1"	51255K241	38.14	—	—	—	—

Socket-to-Socket Connectors

For Tube OD	Couplings	Each	90° Elbows	Each	Tees	Each
¼"	51255K201	$6.85	51255K211	$14.63	51255K221	$21.09
⅜"	51255K202	7.02	51255K212	18.99	51255K222	25.46
½"	51255K203	10.09	51255K213	24.88	51255K223	37.06
¾"	51255K205	20.82	51255K215	52.20	51255K225	71.25
1"	51255K206	31.92	51255K216	91.59	51255K226	128.27

Pharmaceutical-Grade Type 316L Stainless Steel Tube Fittings

- Max. Pressure @ 72° F: 870 psi
- Temp. Range: Determined by gasket material (see page 208 for gaskets)
- Tubing: Use with 3334K on page 144

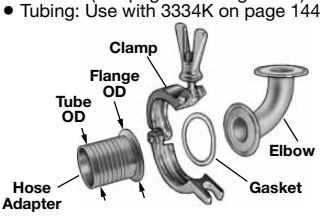

Also known as BPE fittings, these Type 316L stainless steel fittings are ultra-high polished to a mirror finish that meets ASME BPE (Bioprocessing Equipment Standard) requirements, unless indicated otherwise. They have a 20Ra finish on the ID and a 30Ra finish on the OD; this ultra-smooth surface makes them ideal for pharmaceutical applications. Also use with water, deionized water, air, and hydraulic oil. They can be sterilized with steam (autoclaving) and chemicals. Not rated for vacuum.

Clamps are not ultra-high polished or ASME BPE rated; tighten the wing nut by hand. ***Quick-clamp to pipe (threaded) adapters*** do not meet ASME BPE standards. ***Reducing couplings***, which are also known as concentric reducers, allow you to connect one tube to another tube of a smaller diameter so the centers align.

Note: A complete connection consists of a clamp, two fittings or adapters, and a gasket. Buna-N, fluoroelastomer, and PTFE gaskets are sold separately on page 208.

Also Available: Pharmaceutical-grade Type 316L stainless steel butt-weld fittings in the following ODs: 1/2", 3/4", 1", 1 1/2" and 2". Please ask for 4746K1 and specify the OD and shape: 90° elbow, tee, or butt-weld adapter.

For information about how to measure Quick-Clamp Tube Fittings, go to mcmaster.com and search for **4322KAC**.

Clamps

For Tube OD	For Flange OD		Each
1/2", 3/4"	0.984"	4759K61	$15.55
1", 1 1/2"	1.984"	4759K62	19.05
2"	2.516"	4759K63	23.75

Fittings

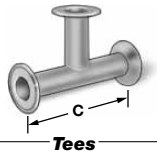

90° Elbows

For Tube OD	Flange OD	(A)		Each
1/2"	0.984"	1 5/8"	4759K11	$80.00
3/4"	0.984"	1 5/8"	4759K12	80.00
1"	1.984"	2"	4759K13	67.98
1 1/2"	1.984"	2 3/4"	4759K14	67.98
2"	2.516"	3 1/2"	4759K15	86.14

Tees

(C)		Each
4 1/2"	4759K31	$133.27
4 3/4"	4759K32	133.27
5 1/4"	4759K33	114.75
5 3/4"	4759K34	114.75
6 3/4"	4759K35	123.27

Reducing Couplings

For Tube OD			Each
1"	×	1/2"	4759K102 $125.00
1"	×	3/4"	4759K103 108.00
1 1/2"	×	3/4"	4759K105 136.25
1 1/2"	×	1"	4759K106 125.00
2"	×	1 1/2"	4759K111 133.00

Quick-Clamp to Hose Adapters

For Tube OD	Flange OD	For Hose ID		Each
1/2"	0.984"	1/2"	4759K51	$59.17
3/4"	0.984"	3/4"	4759K52	60.72
1"	1.984"	1"	4759K53	61.40
1 1/2"	1.984"	1 1/2"	4759K54	62.00
2"	2.516"	2"	4759K55	117.26

Quick-Clamp to Pipe (Threaded) Adapters

For Tube OD	Flange OD	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each
1/2"	0.984"	1/2"	4759K64	$86.15	4759K84	$136.96
1/2"	0.984"	3/4"	4759K65	89.13	4759K85	135.13
3/4"	0.984"	1/2"	4759K69	101.34	4759K89	136.96
3/4"	0.984"	3/4"	4759K71	89.13	4759K91	137.85
1"	1.984"	1"	4759K72	135.13	4759K92	142.56
1 1/2"	1.984"	1 1/2"	4759K73	135.13	4759K93	142.56
2"	2.516"	2"	4759K74	153.00	4759K94	161.57

Caps

For Tube OD	Flange OD		Each
1/2", 3/4"	0.984"	4759K41	$11.34
1", 1 1/2"	1.984"	4759K43	11.82
2"	2.516"	4759K45	15.50

Sanitary and FDA Compliant PVDF Tube Fittings

- Maximum Pressure @ 72° F: 150 psi, unless noted
- Temperature Range: Not rated

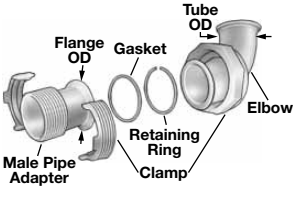

For information about how to assemble PVDF Tube Fittings, go to mcmaster.com and search for **5070KAC**.

Forgive us for bragging, but our high-purity PVDF (Kynar) fittings have earned the accolades—they're FDA CFR21 178.1520 and USDA compliant for use with food and beverage, NSF 61 certified for use with drinking (potable) water, plus they meet 3-A sanitary requirements for use with dairy. PVDF is opaque white; it is ideal in applications where metal cannot be used. Fittings can be sterilized with steam (autoclaving) and radiation. Not rated for vacuum.

Tighten ***clamps*** by hand, then use a spanner wrench to turn the nut a half-turn.

Note: For a complete connection, you'll need a clamp, two fittings or adapters, and a gasket. Buna-N, fluoroelastomer, and PTFE gaskets are sold separately on page 208.

Warning: PVDF fittings and pipe should never be used with compressed air or gas.

Also Available: Spanner wrench set. Please ask for 5070K1 and specify tube OD.

Clamps

For Tube OD	For Flange OD		Each
1", 1 1/2"	1.984"	5070K51	$21.91
2"	2.516"	5070K53	24.53

Fittings

90° Elbows

For Tube OD	Flange OD	(A)		Each
1"	1.984"	2 1/2"	5070K91	$79.96
1 1/2"	1.984"	2 3/4"	5070K92	43.91
2"	2.516"	3 1/2"	5070K93	46.35

Quick-Clamp to Pipe (Threaded) Adapters

For Tube OD	Flange OD	Pipe Size, NPT	Adapters, Male Pipe ♦	Each	Adapters, Female Pipe ♦	Each
1"	1.984"	1"	5070K71	$122.92	5070K81	$122.92
1 1/2"	1.984"	1 1/2"	5070K72	83.53	5070K82	102.15
2"	2.516"	2"	5070K73	160.77	5070K83	208.07

♦ Not rated for maximum pressure.

Caps

For Tube OD	Flange OD		Each
1", 1 1/2"	1.984"	5070K31	$16.76
2"	2.516"	5070K33	22.29

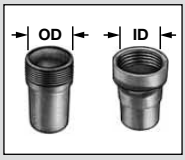

Please Read Before Ordering: Pipe size (NPT) is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 2³⁄₁₆″, the next highest OD is 2⅜″ and the corresponding pipe size is 2″.

Threaded OD or ID	½″	2⅜″	3½″	4½″	5⅝″	6⅝″
Pipe Size (NPT)	¼″	2″	3″	4″	5″	6″

Ultra-High-Vacuum Tube Flanges

- Vacuum Rating @ 72° F: Flanges: 10^{-13} torr; Gaskets: Not rated
- Temperature Range: Flanges: –328° to +842° F; Gaskets: Not rated
- Tubing: Use seamless Types 304, 304L, 316, and 316L stainless steel

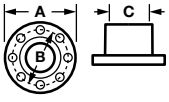

Also known as CF, Conflat, and UHV fittings. These flanges form a super-tight seal that will pull a vacuum to 10^{-13} torr. Flanges are made from unpolished Type 304 stainless steel. Weld these flanges onto your tubing. To make a connection, bolt two flanges of the same size together with a metal gasket (sold separately). Flanges meet ASTM A240, E45, and E112. Not rated for sterilization.

Fixed— These flanges have one-piece construction.

Easy Align— The outer ring rotates, so it is easier to match up the bolt holes with another flange.

Blind— Close off the end of tubing with these solid flanges.

Gaskets— Made of OFE (oxygen-free, electronic-grade) copper, they meet ASTM F68-77 and B152-179.

OD (A)	For Tube OD	Bolt Circle Dia. (B)	No. of Bolt Holes	Fixed ID (C)	Fixed Each	Easy Align ID (C)	Easy Align Each	Blind Each	Gaskets For Flange OD	Gaskets Each
1.33″	¾″	1 1⁄16″	6	0.63″	9088K12 $20.91	0.63″	9088K13 $22.91	9088K11 $20.91	1.33″	9088K51 $1.74

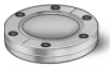

OD (A)	For Tube OD	Bolt Circle Dia. (B)	No. of Bolt Holes	Fixed ID (C)	Fixed Each	Easy Align ID (C)	Easy Align Each	Blind Each	Gaskets For Flange OD	Gaskets Each
2.73″	1½″	2 5⁄16″	6	1.44″	9088K15 $24.55	1.44″	9088K16 $35.45	9088K14 $24.55	2.73″	9088K52 $2.98
4.47″	2½″	3⅝″	8	2.44″	9088K18 89.09	2.44″	9088K19 107.27	9088K17 89.09	4.47″	9088K53 4.80
5.97″	4″	5⅛″	16	3.91″	9088K22 134.55	3.91″	9088K23 158.18	9088K21 134.55	5.97″	9088K54 7.10
7.97″	6″	7⅛″	20	5.87″	9088K25 199.74	5.87″	9088K26 261.82	9088K24 201.82	7.97″	9088K55 9.54

High-Vacuum Tube Fittings

- Vacuum Rating @ 72° F: 10^{-7} torr
- Temperature Range: –4° to +300° F
- Tubing: Types 304, 304L, 316, and 316L stainless steel

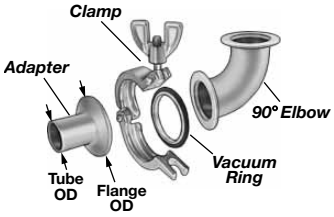

Also known as KF, QF, and NW fittings, these fittings have a unique center ring and flange connector that create a strong seal for high-vacuum applications. Use for air applications such as drying and leak testing, as well as applications where particles are suspended in a gas. All are Type 304 stainless steel, except the hose adapters and clamps are cast aluminum. Those with flanged ends meet ISO 2861. They can be sterilized with steam (autoclaving).

Reducing couplings are also known as concentric reducers.

Flange-end to hose adapters require the use of a hose clamp (see pages 274-280) to secure the hose.

Flange-end to pipe (threaded) adapters require PTFE tape (see page 3415) for sealing threaded ends.

Clamps can be hand-tightened.

Rings have fluoroelastomer O-rings. *Vacuum rings* have a stainless steel centering ring. *Pressure and vacuum rings* have a stainless steel centering ring and an aluminum outer ring. *Note:* See the table for pressure ratings.

Note: For a complete connection, you'll need two fittings or adapters, a ring, and a clamp.

Fittings

For Tube OD	Flange OD	Trade No.	Elbows Radius	90° (A)	90° Each	45° (B)	45° Each	Tees (C)	Tees Each	Crosses (D)	Crosses Each
¾″	1.18″	16	1⅛″	1 9⁄16″	4518K111 $46.92	29⁄32″	4518K151 $53.99	3 5⁄32″	4518K191 $77.07	3 5⁄32″	4518K241 $111.70
1″	1.57″	25	1½″	2″	4518K12 52.87	1⅛″	4518K16 62.55	3 15⁄16″	4518K21 88.24	3 15⁄16″	4518K25 129.57
1½″	2.16″	40	2¼″	2 9⁄16″	4518K13 73.72	1 11⁄16″	4518K17 97.18	5⅛″	4518K22 99.41	5⅛″	4518K26 158.62
2″	2.95″	50	3″	2¾″	4518K14 93.83	2″	4518K18 103.88	5½″	4518K23 135.16	5½″	4518K27 211.12

Reducing Couplings

For Tube OD	Flange OD	Trade No.	Each
1″ × ¾″	1.57″ × 1.18″	25	4518K281 $42.23
1½″ × ¾″	2.16″ × 1.18″	40	4518K291 45.80
1½″ × 1″	2.16″ × 1.57″	40	4518K32 47.50
2″ × ¾″	2.95″ × 1.18″	50	4518K311 48.62
2″ × 1″	2.95″ × 1.57″	50	4518K33 51.06
2″ × 1½″	2.95″ × 2.16″	50	4518K34 55.21

Couplings

For Tube OD	Flange OD	Trade No.	Lg.	Each
¾″	1.18″	16	3⁄32″	4518K91 $74.47
1″	1.57″	25	4⁄32″	4518K92 90.43
1½″	2.16″	40	4⁄32″	4518K93 104.26
2″	2.95″	50	4⁄32″	4518K94 117.02

(Continued on following page)

High-Vacuum Tube Fittings *(Continued from previous page)*

Flange-End to Butt-Weld Tube Adapters

For Tube OD	Flange OD	Trade No.	Short Butt-Weld Lg.	Short Butt-Weld Each	Long Butt-Weld Lg.	Long Butt-Weld Each
3/4"	1.18"	16	1/2"	4518K81	19/16"	4518K82 $15.32
1"	1.57"	25	1/2"	4518K36	19/16"	4518K41
1 1/2"	2.16"	40	3/4"	4518K37	19/16"	4518K42
2"	2.95"	50	3/4"	4518K38	19/16"	4518K43

$9.83 11.54 17.66 15.00 20.00 21.70 31.06

Flange-End to Pipe (Threaded) Adapters

For Tube OD	Flange OD	Trade No.	Pipe Size, NPT	Male Pipe Each	Female Pipe Each
3/4"	1.18"	16	1/4"	4518K441 $53.19	4518K481 $19.68
1"	1.57"	25	1/4"	4518K45 56.97	4518K49 23.35
1 1/2"	2.16"	40	1/4"	4518K46 56.97	4518K51 32.98
2"	2.95"	50	1/4"	4518K47 63.67	4518K52 43.14

Aluminum Flange-End to Hose Adapters

For Tube OD	Flange OD	Trade No.	For Hose ID	Each
3/4"	1.18"	16	3/4"	4518K831 $13.40
1"	1.57"	25	7/8"	4518K84 15.64
1 1/2"	2.16"	40	1 5/8"	4518K85 21.22
2"	2.95"	50	1 5/8"	4518K86 23.46

Aluminum Clamps

For Tube OD	For Flange OD	Spring-Loaded Each	Wing-Nut Each
3/4"	1.18"	4518K75 $16.55	4518K711 $7.00
1"	1.57"	4518K76 19.30	4518K72 9.38
1 1/2"	2.16"	4518K77 20.75	4518K73 11.06
2"	2.95"	4518K78 23.50	4518K74 18.69

Caps

For Tube OD	For Flange OD	Each
3/4"	1.18"	4518K571 $8.09
1"	1.57"	4518K58 8.83
1 1/2"	2.16"	4518K59 14.41
2"	2.95"	4518K61 17.66

Rings

For Tube OD	For Flange OD	Vacuum Each	Pressure and Vacuum Max. psi @ 72° F	Pressure and Vacuum Each
3/4"	1.18"	4518K621 $6.28	—	—
1"	1.57"	4518K63 7.39	100	4518K67 $20.11
1 1/2"	2.16"	4518K64 11.17	75	4518K68 20.69
2"	2.95"	4518K65 14.52	50	4518K69 25.43

Vacuum Tube Fittings

- Maximum Pressure @ 72° F: 15 psi
- Vacuum Rating @ 72° F: 15" Hg
- Temperature Range: −10° to +180° F
- Tubing: Use 3094K carbon steel or 4935K galvanized steel (see page 152)

Build an air vacuum system without welding or brazing—simply butt two fittings or adapters together and secure with a compression coupling. Wall thickness is 0.065" (16 ga) for all, except the fittings and adapters for 5" and 6" ODs have a wall thickness of 0.083" (14 ga). Not rated for sterilization.

Compression couplings are galvanized steel.

Capped connectors are cast zinc with a zinc-plated steel lid.

Elbows, ***wyes***, ***reducing couplings***, and ***adapters*** come in your choice of carbon steel or corrosion-resistant galvanized steel. **To Order:** Please specify carbon steel or galvanized steel. The prices listed below are for galvanized steel; prices for the carbon steel are approximately 20% lower.

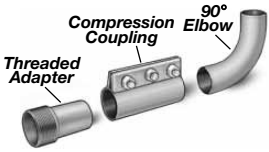

Tube-to-Tube Connectors

90° Elbows

For Tube OD	Radius (A)		Each
2 1/8"	5"	7"	4935K212 $10.99
2 1/2"	6"	8"	4935K228 15.38
3"	7 1/2"	9 1/2"	4935K229 20.68
3 1/2"	8 3/4"	10 3/4"	4935K234 24.59
4"	10"	12"	4935K236 31.59
5"	12 1/2"	15 1/8"	4935K237 57.21
6"	15"	18 1/4"	4935K239 82.84

45° Elbows

(B)	Each
4 1/16"	4935K241 $9.55
4 1/2"	4935K242 14.07
5 1/8"	4935K244 16.96
5 5/8"	4935K245 21.35
6 1/8"	4935K246 27.69
7 13/16"	4935K247 45.37
9 7/16"	4935K249 63.11

90° Wyes

For Tube OD	Each
2 1/8"	4935K258 $21.47
2 1/2"	4935K259 27.95
3"	4935K268 36.87
3 1/2"	4935K269 47.09
4"	4935K271 67.53
5"	4935K272 109.67
6"	4935K273 157.55

45° Wyes

Each
4935K274 $19.47
4935K275 25.81
4935K276 32.51
4935K277 43.21
4935K278 56.50
4935K279 73.75
4935K288 132.84

Compression Couplings

For Tube OD	Each
2 1/8"	4487K54 $21.67
2 1/2"	4487K46 22.62
3"	4487K48 24.36
3 1/2"	4487K28 26.52
4"	4487K51 35.28
5"	4487K32 33.94
6"	4487K11 46.28

Tube-to-Tube Connectors

Reducing Couplings

For Tube OD	Each
2 1/2" × 2 1/8"	4935K289 $6.24
3" × 2 1/8"	4935K298 20.01
3 1/2" × 2 1/8"	4935K299 28.07
3 1/2" × 2 1/2"	4935K332 23.62
4" × 2 1/8"	4935K333 38.82
5" × 2 1/8"	4935K334 66.27
6" × 2 1/8"	4935K335 74.13

Tube-to-Pipe (Threaded) Adapters

For Tube OD	Pipe Size, NPT	Male Pipe Each	Female Pipe Each
2 1/8"	2"	4935K336 $12.23	4935K344 $13.93
2 1/2"	2 1/2"	4935K337 18.68	4935K345 21.69
3"	3"	4935K338 20.82	4935K346 29.41
3 1/2"	3 1/2"	4935K339 24.86	4935K347 40.38
4"	4"	4935K341 28.82	4935K348 53.37
5"	5"	4935K342 40.47	4935K349 61.00
6"	6"	4935K343 53.33	4935K351 85.00

Capped Connectors

For Tube OD	Pipe Size, NPT	Each
1 1/2"	2"	4935K152 $20.20
2"	2"	4935K154 23.40

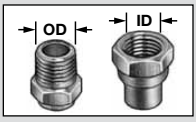

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″

Solder-Joint Copper Tube Fittings for Drinking (Potable) Water

- Maximum Pressure @ 100° F (when used with 95/5 Solder): 1/4″-1″ Tube Size: 500 psi; 1 1/4″-2″ Tube Size: 400 psi; 2 1/2″- 3″ Tube Size: 300 psi
- Temperature Range: 32° to 200° F
- Tubing: Use copper tubing for drinking water (see 5175K and 50475K on page 154)

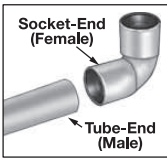

Copper tube fittings consist of two different connection types: tube-end (male) and socket-end (female). The tube-end of a fitting or the end of a copper tube is inserted into the socket-end of a fitting then soldered together.

Also known as sweat fittings, solder these fittings together for a permanent, leak-tight connection. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010. They also meet ANSI B16.22 and MSS-SP104. They're made from seamless wrot-copper tubing; the wrot describes the 99.9% pure copper of these fittings. They can be sterilized with trisodium phosphate (TSP) in water. Not rated for vacuum. Materials and threads are compatible with the bronze fittings on page 218. To join these fittings to malleable iron or steel, see unions on page 62.

Unions are wrot copper with a brass nut.

Couplings with center stop have a small bump that prevents the tubing from sliding all the way through the coupling.

Caps have a socket (female) end to seal the end of tubing.

Dissolvable plugs temporarily block the flow in your tubing system to keep moisture away from an area that's being soldered.

Socket-End (Female) to Socket-End (Female)

Tube Size▲	Actual Tube OD	90° Short Elbows	Each	90° Long Elbows	Each	45° Elbows	Each	Tees	Each	Unions	Each
1/8″	1/4″	5520K818	$1.61	5520K177	$2.70	—	—	5520K833	$3.89	—	—
1/4″	3/8″	5520K77	1.42	5520K601	2.70	5520K67	$3.18	5520K79	3.59	5520K815	$9.28
3/8″	1/2″	5520K78	1.46	5520K602	3.29	5520K68	2.55	5520K86	2.73	5520K97	8.76
1/2″	5/8″	5520K61	.49	5520K603	2.85	5520K51	.90	5520K71	.86	5520K91	4.64
5/8″	3/4″	5520K166	3.22	5520K167	3.18	5520K168	5.17	5520K169	5.88	—	—
3/4″	7/8″	5520K62	1.12	5520K604	3.93	5520K52	1.57	5520K72	2.13	5520K92	5.54
1″	1 1/8″	5520K63	2.81	5520K605	5.88	5520K53	4.19	5520K73	6.51	5520K93	11.19
1 1/4″	1 3/8″	5520K64	4.45	5520K606	9.43	5520K54	5.73	5520K74	9.99	5520K94	16.85
1 1/2″	1 5/8″	5520K65	6.81	5520K607	12.05	5520K55	7.08	5520K75	14.56	5520K95	23.40
2″	2 1/8″	5520K66	12.84	5520K608	24.63	5520K56	12.54	5520K76	23.88	5520K96	34.62
2 1/2″	2 5/8″	5520K819	24.48	5520K822	44.13	5520K828	25.38	5520K834	42.77	—	—
3″	3 1/8″	5520K821	31.79	5520K823	55.94	5520K829	34.03	5520K835	58.77	—	—

COUPLINGS

Tube Size▲	Actual Tube OD	With Center Stop	Each	Without Center Stop	Each
1/8″	1/4″	5520K523	$0.34	—	—
1/4″	3/8″	5520K89	.37	5520K201	$0.34
3/8″	1/2″	5520K43	.52	5520K202	1.05
1/2″	5/8″	5520K31	.37	5520K203	.49
5/8″	3/4″	5520K165	1.27	—	—
3/4″	7/8″	5520K32	.73	5520K204	1.09
1″	1 1/8″	5520K33	1.61	5520K205	2.25
1 1/4″	1 3/8″	5520K34	2.92	5520K206	3.48
1 1/2″	1 5/8″	5520K35	3.89	5520K207	5.09
2″	2 1/8″	5520K36	6.29	5520K208	7.52
2 1/2″	2 5/8″	5520K836	12.73	5520K838	10.48
3″	3 1/8″	5520K837	20.44	5520K839	20.55

90° Reducing Elbows

Tube Size▲		Each	Tube Size▲		Each
3/8″ × 1/4″	5520K151	$2.62	1 1/4″ × 1″	5520K158	$12.62
1/2″ × 1/4″	5520K153	4.57	1 1/2″ × 1 1/4″	5520K159	18.64
1/2″ × 3/8″	5520K152	4.49	2″ × 1 1/2″	5520K161	25.27
5/8″ × 1/2″	5520K154	3.78	2 1/2″ × 2″	5520K162	73.83
3/4″ × 1/2″	5520K155	2.70	3″ × 2 1/2″	5520K163	105.65
1″ × 1/2″	5520K157	4.87	4″ × 3″	5520K164	158.94
1″ × 3/4″	5520K156	5.47			

Reducing Couplings with Center Stop

Tube Size▲		Each
1/4″ × 1/8″	5520K142	$2.47
3/8″ × 1/8″	5520K143	.90
3/8″ × 1/4″	5520K59	.82
1/2″ × 1/8″	5520K301	.90
1/2″ × 1/4″	5520K29	.75
1/2″ × 3/8″	5520K69	.79
5/8″ × 1/4″	5520K145	2.10
5/8″ × 3/8″	5520K146	2.17
5/8″ × 1/2″	5520K147	2.43
3/4″ × 1/4″	5520K144	1.46
3/4″ × 3/8″	5520K307	1.42
3/4″ × 1/2″	5520K37	1.35
3/4″ × 5/8″	5520K302	1.46
1″ × 3/8″	5520K281	2.69
1″ × 1/2″	5520K303	2.51
1″ × 5/8″	5520K148	2.70
1″ × 3/4″	5520K38	2.51
1 1/4″ × 1″	5520K39	3.82
1 1/2″ × 3/4″	5520K284	6.14
1 1/2″ × 1″	5520K304	6.36
1 1/2″ × 1 1/4″	5520K41	6.36
2″ × 1″	5520K306	9.77
2″ × 1 1/4″	5520K305	9.77
2″ × 1 1/2″	5520K42	9.92
2 1/2″ × 2″	5520K842	21.56
3″ × 2″	5520K149	25.92

Reducing Tees

Tube Size,▲ (X)×(Y)×(Z)		Each
1/4″ × 1/8″ × 1/4″	5520K841	$5.54
3/8″ × 1/4″ × 3/8″	5520K87	5.43
1/2″ × 1/4″ × 1/2″	5520K98	4.64
1/2″ × 3/8″ × 1/2″	5520K88	4.34
1/2″ × 3/4″ × 1/2″	5520K133	3.97
3/4″ × 1/2″ × 1/2″	5520K131	2.47
3/4″ × 1/2″ × 3/4″	5520K81	1.98
3/4″ × 3/4″ × 1/2″	5520K132	2.47
3/4″ × 1″ × 3/4″	5520K141	7.11
1″ × 3/8″ × 1″	5520K282	6.85
1″ × 1/2″ × 1″	5520K701	6.55
1″ × 3/4″ × 3/4″	5520K134	7.86
1″ × 3/4″ × 1″	5520K82	6.63
1″ × 1″ × 1/2″	5520K139	8.31
1″ × 1″ × 3/4″	5520K135	6.55
1 1/4″ × 1/2″ × 1 1/4″	5520K137	10.18
1 1/4″ × 3/4″ × 1 1/4″	5520K702	10.59
1 1/4″ × 1″ × 1 1/4″	5520K83	10.11
1 1/2″ × 1/2″ × 1 1/2″	5520K138	10.86
1 1/2″ × 3/4″ × 1 1/2″	5520K704	11.23
1 1/2″ × 1″ × 1 1/2″	5520K703	11.34
1 1/2″ × 1 1/4″ × 1 1/2″	5520K99	10.86
2″ × 3/4″ × 2″	5520K136	16.85
2″ × 1″ × 2″	5520K706	18.12
2″ × 1 1/4″ × 2″	5520K705	18.12
2″ × 1 1/2″ × 2″	5520K85	18.12

(Continued on following page)

▲Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Solder-Joint Copper Tube Fittings for Drinking (Potable) Water

(Continued from previous page)

Tube-End (Male) to Socket-End (Female)

Tube Size▲	Actual Tube OD	90° Short Elbows	Each	90° Long Elbows	Each	45° Elbows	Each
1/8"	1/4"	5520K824	$3.18	5520K181	$2.81	—	—
1/4"	3/8"	5520K825	3.18	5520K182	2.99	5520K721	$4.27
3/8"	1/2"	5520K712	1.65	5520K183	5.58	5520K722	3.03
1/2"	5/8"	5520K713	.75	5520K184	4.27	5520K723	1.09
5/8"	3/4"	5520K194	3.37	5520K185	4.68	5520K195	7.49
3/4"	7/8"	5520K714	1.76	5520K186	5.24	5520K724	1.68
1"	1 1/8"	5520K715	4.30	5520K187	7.64	5520K725	5.43
1 1/4"	1 3/8"	5520K716	6.81	5520K188	10.82	5520K726	7.11
1 1/2"	1 5/8"	5520K717	8.50	5520K189	14.79	5520K727	9.21
2"	2 1/8"	5520K718	20.63	5520K191	24.18	5520K728	14.19
2 1/2"	2 5/8"	5520K826	30.57	5520K192	43.43	5520K831	30.75
3"	3 1/8"	5520K827	45.78	5520K193	60.40	5520K832	39.65

Tube Size, ▲ Male × Female	Reducing Couplings	Each	Bushings	Each
1/4" × 1/8"	5520K221	$1.01	5520K234	$0.92
3/8" × 1/4"	5520K222	1.24	5520K235	.94
1/2" × 1/4"	5520K223	1.05	5520K236	1.20
1/2" × 3/8"	5520K224	.97	5520K237	1.20
5/8" × 1/2"	5520K225	2.21	5520K238	1.27
3/4" × 1/2"	5520K226	1.46	5520K239	1.95
3/4" × 5/8"	5520K227	1.57	5520K241	2.13
1" × 1/2"	5520K228	2.36	5520K242	3.18
1" × 3/4"	5520K229	2.28	5520K243	3.03
1 1/4" × 1"	5520K231	4.12	5520K244	3.82
1 1/2" × 1 1/4"	5520K232	5.54	5520K245	11.87
2" × 1 1/2"	5520K233	10.74	5520K246	14.60

Socket-End (Female) to Pipe (Threaded) Adapters

Tube Size▲	Actual Tube OD	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each
1/8"	1/4"	1/8"	5520K172	$2.76	5520K173	$2.72
1/4"	3/8"	1/4"	5520K18	5.73	5520K27	3.67
3/8"	1/2"	3/8"	5520K19	2.62	5520K28	3.86
1/2"	5/8"	1/2"	5520K11	1.07	5520K21	1.61
3/4"	7/8"	3/4"	5520K12	1.80	5520K22	2.32
1"	1 1/8"	1"	5520K13	4.87	5520K23	4.98
1 1/4"	1 3/8"	1 1/4"	5520K14	7.08	5520K24	8.35
1 1/2"	1 5/8"	1 1/2"	5520K17	7.86	5520K25	13.29
2"	2 1/8"	2"	5520K16	14.15	5520K26	18.16
3"	3 1/8"	3"	5520K171	54.61	—	—

Reducers, Female Pipe

Tube Size▲	Pipe Size, NPT		Each	Tube Size▲	Pipe Size, NPT		Each
1/8"	1/4"	5520K174	$4.04	5/8"	3/4"	5520K176	$4.04
1/4"	1/8"	5520K843	4.04	3/4"	1/2"	5520K409	3.67
1/4"	3/8"	5520K402	3.14	3/4"	1"	5520K408	7.56
1/4"	1/2"	5520K401	2.77	1"	1/2"	5520K412	7.67
3/8"	1/4"	5520K404	3.14	1"	3/4"	5520K411	7.75
3/8"	1/2"	5520K403	2.62	1 1/4"	1"	5520K414	14.22
1/2"	1/4"	5520K407	2.62	1 1/4"	1 1/2"	5520K413	17.29
1/2"	3/8"	5520K406	2.62	1 1/2"	1 1/4"	5520K416	17.26
1/2"	3/4"	5520K405	3.71	1 1/2"	2"	5520K415	25.15
5/8"	1/2"	5520K175	4.87	2"	1 1/2"	5520K129	26.21

Reducers, Male Pipe

Tube Size▲	Actual Tube OD	Pipe Size, NPT		Each	Tube Size▲	Actual Tube OD	Pipe Size, NPT		Each	Tube Size▲	Actual Tube OD	Pipe Size, NPT		Each
1/8"	1/4"	1/4"	5520K121	$4.83	1/2"	5/8"	1"	5520K504	$6.89	1 1/4"	1 3/8"	3/4"	5520K516	$11.23
1/4"	3/8"	1/8"	5520K491	4.53	5/8"	3/4"	1/2"	5520K382	6.14	1 1/4"	1 3/8"	1"	5520K515	10.82
1/4"	3/8"	1/2"	5520K493	2.06	5/8"	3/4"	3/4"	5520K127	4.12	1 1/4"	1 3/8"	1 1/2"	5520K514	15.91
3/8"	1/2"	1/4"	5520K503	6.18	3/4"	7/8"	1/2"	5520K509	3.18	1 1/2"	1 5/8"	1"	5520K519	16.43
3/8"	1/2"	1/2"	5520K502	2.70	3/4"	7/8"	1"	5520K508	6.92	1 1/2"	1 5/8"	1 1/4"	5520K518	15.91
3/8"	1/2"	3/4"	5520K501	3.52	1"	1 1/8"	1/2"	5520K283	7.04	1 1/2"	1 5/8"	2"	5520K517	25.08
1/2"	5/8"	1/4"	5520K507	2.96	1"	1 1/8"	3/4"	5520K513	6.81	2"	2 1/8"	1 1/4"	5520K522	30.57
1/2"	5/8"	3/8"	5520K506	2.77	1"	1 1/8"	1 1/4"	5520K512	10.97	2"	2 1/8"	1 1/2"	5520K521	24.22
1/2"	5/8"	3/4"	5520K505	3.11	1"	1 1/8"	1 1/2"	5520K511	15.91					

Tube End (Male) to Pipe (Threaded) Adapters

Tube Size▲	Actual Tube OD	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each
1/4"	3/8"	1/4"	5520K285	$5.80	5520K251	$3.97
3/8"	1/2"	3/8"	5520K286	4.87	5520K252	4.38
1/2"	5/8"	1/2"	5520K287	4.30	5520K253	3.41
3/4"	7/8"	3/4"	5520K288	6.44	5520K254	4.30

Tube End (Male) to Tube End (Male)

90° Elbows

Tube Size▲	Actual Tube OD		Each	Tube Size▲	Actual Tube OD		Each
1/4"	3/8"	5520K262	$6.18	3/4"	7/8"	5520K266	$6.21
3/8"	1/2"	5520K263	5.24	1"	1 1/8"	5520K267	7.04
1/2"	5/8"	5520K264	2.62	1 1/4"	1 3/8"	5520K268	9.21
5/8"	3/4"	5520K265	6.74				

Dissolvable Plugs with Insertion Tool

For Tube Size▲	Plugs/ Box		Per Box
1/2"	7	6813K12	$11.00
3/4"	5	6813K14	11.00

Socket-End (Female) Caps

Tube Size▲	Actual Tube OD		Each	Tube Size▲	Actual Tube OD		Each
1/8"	1/4"	5520K811	$0.64	1"	1 1/8"	5520K46	$1.50
1/4"	3/8"	5520K57	.49	1 1/4"	1 3/8"	5520K47	2.19
3/8"	1/2"	5520K58	.75	1 1/2"	1 5/8"	5520K48	3.14
1/2"	5/8"	5520K44	.36	2"	2 1/8"	5520K49	5.91
5/8"	3/4"	5520K196	.82	2 1/2"	2 5/8"	5520K812	19.09
3/4"	7/8"	5520K45	.64	3"	3 1/8"	5520K813	25.22

▲ *Tube size is the accepted designation of the copper tubing industry, not the actual OD.*

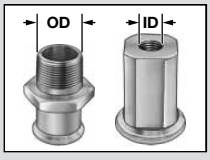

Please Read Before Ordering: Pipe size (NPT) is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD), as shown at left. Then, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the OD measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded Fitting OD or ID	1/2″	3/4″	1″	1 3/8″
Pipe Size (NPT)	1/4″	1/2″	3/4″	1″

Cleaned and Bagged Solder-Joint Copper Tube Fittings

- Maximum Pressure @ 100° F (when used with 95/5 Solder): 500 psi
- Temperature Range: 32° to 200° F
- Tubing: Use with copper tubing for drinking water (see 5175K and 50475K on page 154)

Don't let dirt and moisture contaminate the inside of your tubing line—these fittings come cleaned and bagged, so they stay spotless. Also known as sweat fittings, these fittings solder together for a permanent, leak-tight connection. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010. They also meet ANSI B16.22 and MSS-SP104. They're made from seamless wrot-copper tubing. They can be sterilized with trisodium phosphate (TSP) in water. Not rated for vacuum.

Couplings with center stop have a small bump that prevents the tubing from sliding all the way through the coupling.

Socket-End (Female) to Socket-End (Female)

Tube Size▲	Actual Tube OD	90° Elbows	Each	Tees	Each	Couplings with Center Stop	Each
1/4″	3/8″	5135K77	$2.39	5135K79	$6.04	5135K89	$0.63
1/2″	5/8″	5135K61	.82	5135K71	1.45	5135K31	.63
3/4″	7/8″	5135K62	1.89	5135K72	3.58	5135K32	1.23
1″	1 1/8″	5135K63	4.72	5135K73	10.94	5135K33	2.70

Socket-End (Female) to Pipe (Threaded) Adapters

Tube Size▲	Actual Tube OD	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each
1/4″	3/8″	1/4″	5135K18	$9.62	5135K27	$6.16
1/2″	5/8″	1/2″	5135K11	1.79	5135K21	2.70
3/4″	7/8″	3/4″	5135K12	3.02	5135K22	3.90
1″	1 1/8″	1″	5135K13	8.18	5135K23	8.36

Solder-Joint Cast Bronze Tube Fittings

- Maximum Pressure @ 100° F (when used with 95/5 Solder): Elbows: 500 psi; Flanges: 400 psi; Unions and Reducer: 300 psi
- Temperature Range: 32° to 200° F
- Tubing: Use with copper tubing (see 5175K, 50475K, and 5174K on page 154)

Made of cast bronze, but also known as cast copper, these fittings provide much higher pressure ratings than wrot-copper. Use with water. Fittings can be sterilized with trisodium phosphate (TSP). Not rated for vacuum.

90° elbows meet ASTM B584 and ASME B16.18.

Flanges meet ASME B16.24. Bolt two same-size flanges together with a gasket to create easy access to your tubing system.

Unions meet ASME B16.18.

Socket-End (Female) to Pipe (Threaded)

Tube Size▲	Actual Tube OD	Pipe Size, NPT	90° Elbows	Each	90° Elbows with Mounting Foot	Each
1/2″	5/8″	1/2″	5075K13	$3.18	5075K23	$3.99
3/4″	7/8″	1/2″	5075K17	7.56	5075K24	11.90
3/4″	7/8″	3/4″	5075K18	5.57	5075K25	7.01

Reducer, Male Pipe

Tube Size▲	Actual Tube OD	Pipe Size, NPT		Each
2 1/2″	2 5/8″	2″	5520K247	$63.52

Socket-End (Female) to Socket-End (Female)

Flanges

Tube Size▲	Actual Tube OD		Each
1″	1 1/8″	5520K123	$27.58
1 1/4″	1 3/8″	5520K124	29.94
1 1/2″	1 5/8″	5520K125	49.93
2″	2 1/8″	5520K126	72.01

Unions

Tube Size▲	Actual Tube OD		Each
2 1/2″	2 5/8″	5520K816	$77.04
3″	3 1/8″	5520K817	199.30

Metric Solder-Joint Copper Tube Fittings

- Maximum Pressure @ 86° F (when used with 95/5 Solder): 362 psi
- Temperature Range: 32° to 200° F
- Tubing: Use with 9935K metric copper tubing (see page 155)

Sized for metric applications, solder these fittings together for a permanent, leak-tight connection. Also known as sweat fittings, these fittings are made of seamless wrot-copper tubing. Use with water, air, oil, and hydraulic fluid. They can be sterilized with steam (autoclaving). Not rated for vacuum.

Couplings with center stop have a small bump that prevents the tubing from sliding all the way through the coupling.

Caps have a socket (female) end. Use them to seal the ends of your tubing.

Socket-End (Female) to Socket-End (Female)

Actual Tube OD, mm	90° Elbows	Each	45° Elbows	Each	Tees	Each	Couplings with Center Stop	Each
6	—	—	9395T62	$10.83	—	—	9395T81	$1.73
8	9395T58	$6.62	9395T63	7.63	9395T68	$6.62	—	—
10	9395T59	3.37	9395T64	6.74	9395T69	5.16	9395T83	.84
12	9395T61	1.13	9395T65	4.16	9395T71	1.97	9395T84	1.01
14	—	—	9395T66	2.01	9395T72	1.73	9395T85	1.01

Reducing Couplings

Actual Tube OD, mm		Each
8 × 6	9395T86	$6.85
10 × 8	9395T87	5.84
12 × 10	9395T88	3.92

Socket-End (Female)

Caps

Actual Tube OD, mm		Each
8	9395T54	$4.88
10	9395T55	3.98
12	9395T56	3.59
14	9395T57	3.99

▲Tube size is the accepted designation of the copper tubing industry, not the actual OD.

For information about selecting pipe size, see pages 2-3.

CPVC Tube Fittings and Tubing for Drinking (Potable) Water

- Maximum Pressure: Fittings: 100 psi @ 180° F; Tubing: 400 psi @ 72° F
- Temperature Range: 40° to 180° F
- Tubing: See table

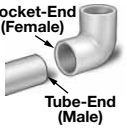

These CPVC fittings and tubing are sized the same as wrot copper, but they're less expensive, lighter weight, and easier to install. No solder needed; they connect with CPVC cement (sold separately on page 94). They meet NSF 61 for use with drinking (potable) water, as well as ASTM D2846, National Standard Plumbing Code, and Uniform Plumbing Code. Not rated for sterilization or vacuum.

Warning: Never use CPVC fittings and tubing with compressed air or gas.

Socket-End (Female) to Socket-End (Female)

For Tube Size▲	Actual Tube OD	90° Elbows	Each	Couplings Lg.		Each	Caps	Each
1/2″	5/8″	5035K31	$0.38	1 1/8″	5035K61	$0.33	5035K71	$0.37
3/4″	7/8″	5035K32	.66	1 9/16″	5035K62	.44	5035K72	.46
1″	1 1/8″	5035K33	1.92	1 15/16″	5035K63	1.61	5035K73	1.28

Socket-End (Female) to Pipe (Threaded)

For Tube Size▲	Actual Tube OD	Adapters, Male Pipe Pipe Size, NPT		Each
1/2″	5/8″	1/2″	5035K21	$0.42
3/4″	7/8″	3/4″	5035K22	.71
1″	1 1/8″	1″	5035K23	2.74

Tubing—5-ft. Lengths

Tube Size▲	Actual Tube OD		Each
1/2″	5/8″	5037K31	$2.00
3/4″	7/8″	5037K32	3.00
1″	1 1/8″	5037K33	6.40

Flexible PVC Tube Fittings

- Maximum Pressure: See table
- Temperature Range: 0° to 165° F
- Tubing: Use with metal or rigid plastic
- Hose clamps are required (see page 274)

In addition to being soft and shock absorbent, these PVC fittings also withstand vibration. Use them in place of rigid fittings when your application requires flexibility. They meet NSF 61 for use with drinking (potable) water, 3-A sanitary requirements for use with dairy, and they're FDA compliant for use with food and beverage. Fittings can be sterilized with steam (autoclaving). Not rated for vacuum.

90° elbows are clear; ***wyes*** are opaque blue.

For Tube OD	90° Elbows Max. psi @ 68° F		Each	Wyes Max. psi @ 68° F		Each
3/8″	66	5074K11	$7.50	80	5074K41	$15.96
1/2″	50	5074K12	8.00	62	5074K42	17.38
3/4″	66	5074K13	9.65	48	5074K43	23.01
1″	50	5074K14	14.10	37	5074K44	30.60
1 1/4″	40	5074K15	16.50	45	5074K45	44.16
2″	50	5074K17	49.15	20	5074K47	87.43

Clear and Smooth Glass Tube Fittings

- Max. Pressure @ 72° F: 3/4″ and 1″: 100 psi; 2″: 75 psi
- Temperature Range: –40° to 450° F
- Tubing: See table

For fittings that will stand up to chemicals, the choice is crystal clear. These durable borosilicate-glass fittings are for use in chemical applications such as acetic, hydrochloric, and sulfuric acids. Plus, these fittings have thick walls with a super-smooth surface that allows you to see what's flowing through your line. They can be sterilized with steam (autoclaving), chemicals, gas, and irradiation. Not rated for vacuum.

Adapters and ***clamps*** are made of Type 304 stainless steel; the clamps have a fluoroelastomer liner and a TFE seal ring gasket.

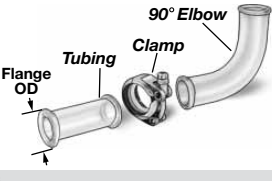

Fittings

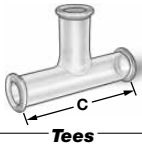

For Tube ID	Flange OD	90° Elbows (A)		Each	Tees (C)		Each
3/4″	1 5/32″	2 1/2″	4871K41	$58.13	5″	4871K51	$84.40
1″	1 17/32″	2 3/4″	4871K42	76.95	5 1/2″	4871K52	93.93
2″	2 9/16″	6″	4871K43	108.76	8″	4871K53	163.85

Reducer Couplings

For Tube ID	Flange OD		Each
1″ × 3/4″	1 17/32″ × 1 5/32″	4871K61	$55.76
2″ × 3/4″	2 9/16″ × 1 5/32″	4871K62	80.65
2″ × 1″	2 9/16″ × 1 17/32″	4871K63	83.05

Tubing with Flanged Ends

Tube ID	Flange OD	6″ Length	Each	12″ Length	Each	18″ Length	Each
3/4″	1 5/32″	4871K11	$42.58	4871K12	$43.91	4871K13	$48.18
1″	1 17/32″	4871K21	56.47	4871K22	59.82	4871K23	64.15
2″	2 9/16″	4871K31	98.73	4871K32	111.05	4871K33	119.85

Caps

For Tube ID	Flange OD		Each
3/4″	1 5/32″	4871K71	$30.35
1″	1 17/32″	4871K72	52.35
2″	2 9/16″	4871K73	76.96

Flange-End to Pipe (Threaded) Adapters

For Tube ID	Flange OD	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each
3/4″	1 5/32″	3/4″	4871K91	$226.89	4871K101	$226.89
1″	1 17/32″	1″	4871K92	294.40	4871K102	294.40
2″	2 9/16″	2″	4871K93	373.17	4871K103	373.17

Clamps

For Tube ID	For Flange OD		Each
3/4″	1 5/32″	4871K81	$108.17
1″	1 17/32″	4871K82	134.60
2″	2 9/16″	4871K83	174.97

▲ ***Tube size is the accepted designation of the tubing industry, not the actual OD.***

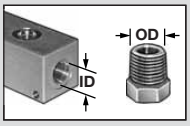

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID) or outside diameter (OD), as shown at left. Then, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the ID or OD measures 5/16″, the next highest ID or OD is 3/8″ and the corresponding pipe size is 1/8″.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″
Pipe Size	1/8″	1/4″	3/8″	1/2″

Manifolds

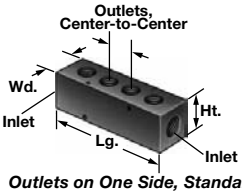

Outlets on One Side, Standard

Outlets on Two Sides, Extra-Wide Space

Keep your air and liquid lines organized by creating a "distribution center" with these manifolds. Also known as headers, just thread in your tube fittings using the configuration that best suits your needs, and you'll have multiple outlets from one incoming supply source. All have two inlets (one at each end) and four mounting holes that allow you to mount them from either the top or side. Not rated for sterilization or vacuum. Connections are NPT.

Manifolds with ***outlets on two sides*** have two rows of outlets set at a 90° angle.

Extra-wide-space manifolds have more room between holes to give you the space you need for multiple valves or gauges.

Plugs (sold separately on the next page) close off any inlet or outlet holes that are not in use.

Also Available: Aluminum manifolds with BSPT (British Standard Pipe Taper) and BSPP (British Standard Pipe Parallel) threads. All have a plain finish. Please ask for 4750K1 and specify thread type (BSPP or BSPT), number of outlets (2, 4, 6, 8, or 10), and the inlet pipe size (1/4″, 3/8″, or 1/2″).

	Maximum Pressure @ 72° F	Temperature Range	Corrosion Resistance	Chemical Resistance	Durability	For Use With
Brass (Alloy 360)	2000 psi	−65° to +250° F	Good	Good	Excellent	Water, Air, Hydraulic Oils
Nickel-Plated Aluminum—Alloy 6061	1000 psi for water and air; 3000 psi for nonshock hydraulics	−10° to +200° F	Good	Fair	Good	Water, Air, Hydraulic Oils
Aluminum—Alloy 6061 (Black anodized finish)	1000 psi for water and air; 3000 psi for nonshock hydraulics	−10° to +200° F	Good	Good	Good	Water, Air, Hydraulic Oils
Zinc-Plated Steel—Alloy 12L14	5000 psi for water and nonshock hydraulics; 1000 psi for air	−65° to +300° F	Fair	Poor	Excellent	Water, Air, Hydraulic Oils
Type 303 Stainless Steel	3500 psi	−100° to +500° F	Excellent	Good	Excellent	Water, Air, Hydraulic Oils
Nylon (Opaque white)	200 psi	−60° to +200° F	Good	Fair	Fair	Water, Air
Polypropylene (Opaque white)	150 psi	+32° to +230° F	Fair	Poor	Fair	Water, Air

No. of Outlets	Pipe Size Inlet	Pipe Size Outlet	Overall Size, Lg. × Wd. × Ht.	Outlets, Ctr.-to-Ctr.	Mount. Hole Size	OUTLETS ON ONE SIDE Brass	Each	Nickel-Plated Aluminum	Each	Aluminum	Each	OUTLETS ON TWO SIDES♠ Aluminum	Each
Standard													
2	1/4″	1/8″	1 3/4″ × 1″ × 1″	3/4″	0.17″	5627K501	$46.84	5085K22	$17.15	5469K101	$14.92	5469K11	$23.53
2	3/8″	1/4″	2 1/8″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K502	62.63	5085K25	19.45	5469K103	16.94	5469K12	26.56
2	1/2″	3/8″	2 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K503	76.58	5085K24	37.43	5469K105	22.65	5469K13	35.48
3	1/4″	1/8″	2 1/2″ × 1″ × 1″	3/4″	0.17″	5627K504	51.84	5085K21	22.87	5469K111	16.69	5469K21	26.38
3	3/8″	1/4″	3″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K505	68.03	5085K26	21.07	5469K113	22.68	5469K22	28.91
3	1/2″	3/8″	3 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K506	83.55	5085K23	30.41	5469K115	24.01	5469K23	38.61
4	1/4″	1/8″	3 1/4″ × 1″ × 1″	3/4″	0.17″	5627K511	55.92	5085K33	25.82	5469K121	18.52	5469K31	29.03
4	3/8″	1/4″	3 7/8″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K512	71.84	5085K34	22.68	5469K123	19.72	5469K32	31.16
4	1/2″	3/8″	4 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K513	89.74	5085K35	31.92	5469K125	26.63	5469K33	41.41
5	1/4″	1/8″	4″ × 1″ × 1″	3/4″	0.17″	5627K514	59.61	5085K41	27.86	5469K131	19.74	5469K41	31.06
5	3/8″	1/4″	4 3/4″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K515	76.58	5085K42	24.30	5469K133	21.13	5469K42	33.39
5	1/2″	3/8″	5 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K516	98.03	5085K43	33.25	5469K135	28.69	5469K43	44.53
6	1/4″	1/8″	4 3/4″ × 1″ × 1″	3/4″	0.17″	5627K521	62.89	5085K51	30.11	5469K151	20.93	5469K51	32.81
6	3/8″	1/4″	5 5/8″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K522	80.92	5085K52	25.87	5469K153	22.49	5469K52	35.47
6	1/2″	3/8″	6 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K523	106.58	5085K53	34.27	5469K155	30.58	5469K53	47.66
7	1/4″	1/8″	5 1/2″ × 1″ × 1″	3/4″	0.17″	5627K524	66.05	5085K61	30.09	5469K161	21.96	5469K61	34.53
7	3/8″	1/4″	6 1/2″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K525	84.87	5085K62	26.76	5469K163	23.80	5469K62	37.59
7	1/2″	3/8″	7 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K526	114.21	5085K63	38.50	5469K165	32.45	5469K63	50.77
8	1/4″	1/8″	6 1/4″ × 1″ × 1″	3/4″	0.17″	5627K531	68.68	5085K71	32.04	5469K171	23.09	5469K71	36.50
8	3/8″	1/4″	7 3/8″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K532	88.29	5085K72	27.09	5469K173	29.56	5469K72	39.53
8	1/2″	3/8″	8 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K533	122.89	5085K73	46.20	5469K175	37.41	5469K73	51.44
9	1/4″	1/8″	7″ × 1″ × 1″	3/4″	0.17″	5627K534	73.68	5085K81	32.41	5469K181	23.93	5469K81	37.66
9	3/8″	1/4″	8 1/4″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K535	95.26	5085K82	27.50	5469K183	26.08	5469K82	41.25
9	1/2″	3/8″	9 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K536	133.16	5085K83	48.39	5469K185	38.25	5469K83	52.60
10	1/4″	1/8″	7 3/4″ × 1″ × 1″	3/4″	0.17″	5627K551	78.03	5085K91	28.45	5469K191	24.74	5469K91	38.91
10	3/8″	1/4″	9 1/8″ × 1 1/4″ × 1 1/4″	7/8″	0.20″	5627K552	103.55	5085K92	28.02	5469K193	27.01	5469K92	42.50
10	1/2″	3/8″	10 3/4″ × 1 1/2″ × 1 1/2″	1″	0.20″	5627K553	143.42	5085K93	48.31	5469K195	39.12	5469K93	53.79
Extra-Wide Space													
4	1/4″	1/8″	6 1/4″ × 1″ × 1″	1 1/2″	0.17″	—	—	—	—	5975K11	21.37	5975K21	26.20
4	3/8″	1/4″	6 1/4″ × 1 1/4″ × 1 1/4″	1 1/2″	0.20″	—	—	—	—	5975K12	21.43	5975K22	28.13
4	1/2″	3/8″	6 1/4″ × 1 1/2″ × 1 1/2″	1 1/2″	0.20″	—	—	—	—	5975K13	29.58	5975K23	36.96
5	1/4″	1/8″	7 1/2″ × 1″ × 1″	1 1/2″	0.17″	—	—	—	—	5975K14	22.58	5975K24	27.66
5	3/8″	1/4″	7 3/4″ × 1 1/4″ × 1 1/4″	1 1/2″	0.20″	—	—	—	—	5975K15	22.95	5975K25	29.36
5	1/2″	3/8″	7 3/4″ × 1 1/2″ × 1 1/2″	1 1/2″	0.20″	—	—	—	—	5975K16	31.49	5975K26	39.37
6	1/4″	1/8″	9 1/4″ × 1″ × 1″	1 1/2″	0.17″	—	—	—	—	5975K17	24.59	5975K27	30.09
6	3/8″	1/4″	9 1/4″ × 1 1/4″ × 1 1/4″	1 1/2″	0.20″	—	—	—	—	5975K18	24.80	5975K28	32.74
6	1/2″	3/8″	9 1/4″ × 1 1/2″ × 1 1/2″	1 1/2″	0.20″	—	—	—	—	5975K19	33.42	5975K29	41.80

♠ Outlets on two sides have twice the number of outlets listed.

(Continued on following page)

Manifolds *(Continued from previous page)*

Manifolds (Cont.)

No. of Outlets	Pipe Size Inlet	Pipe Size Outlet	Overall Size, Lg.×Wd.×Ht.	Outlets, Ctr.-to-Ctr.	Mounting Hole Size	OUTLETS ON ONE SIDE: Zinc-Plated Steel	Each	Type 303 Stainless Steel	Each	Nylon	Each	Polypropylene	Each
Standard													
2	1/4″	1/8″	1 3/4″×1″ ×1″	3/4″	0.17″	5096K61	$20.84	4839K711	$58.78	5253K301	$26.62	5364K211	$23.75
2	3/8″	1/4″	2 3/8″×1 1/4″×1 1/4″	7/8″	0.20″	5096K62	25.86	4839K712	72.44	5253K302	29.75	5364K212	26.62
2	1/2″	3/8″	2 3/4″×1 1/2″×1 1/2″	1″	0.20″	5096K63	36.44	4839K713	90.33	5253K303	44.75	5364K213	40.12
4	1/4″	1/8″	3 1/4″×1″ ×1″	3/4″	0.17″	5096K71	25.82	4839K721	69.67	5253K311	32.88	5364K221	29.38
4	3/8″	1/4″	4 1/8″×1 1/4″×1 1/4″	7/8″	0.20″	5096K72	29.78	4839K722	85.11	5253K312	35.00	5364K222	31.25
4	1/2″	3/8″	4 3/4″×1 1/2″×1 1/2″	1″	0.20″	5096K23	40.56	4839K723	113.44	5253K313	49.74	5364K223	45.00
6	1/4″	1/8″	4 3/4″×1″ ×1″	3/4″	0.17″	5096K31	29.14	4839K731	76.00	5253K321	35.75	5364K231	32.00
6	3/8″	1/4″	5 7/8″×1 1/4″×1 1/4″	7/8″	0.20″	5096K32	33.68	4839K732	103.11	5253K322	41.25	5364K232	34.75
6	1/2″	3/8″	6 3/4″×1 1/2″×1 1/2″	1″	0.20″	5096K33	44.70	4839K733	133.22	5253K323	53.88	5364K233	48.38
8	1/4″	1/8″	6 1/4″×1″ ×1″	3/4″	0.17″	5096K41	32.30	4839K761	86.11	5253K331	41.00	5364K241	36.75
8	3/8″	1/4″	7 5/8″×1 1/4″×1 1/4″	7/8″	0.20″	5096K42	36.94	4839K762	120.22	5253K332	43.88	5364K242	39.38
8	1/2″	3/8″	8 3/4″×1 1/2″×1 1/2″	1″	0.20″	5096K43	54.84	4839K763	157.44	5253K333	73.25	5364K243	66.62
10	1/4″	1/8″	7 3/4″×1″ ×1″	3/4″	0.17″	5096K51	34.62	4839K791	99.44	5253K341	44.00	5364K257	39.38
10	3/8″	1/4″	9 3/8″×1 1/4″×1 1/4″	7/8″	0.20″	5096K52	40.02	4839K792	140.00	5253K342	47.12	5364K258	42.12
10	1/2″	3/8″	10 3/4″×1 1/2″×1 1/2″	1″	0.20″	5096K53	62.86	4839K793	183.33	5253K343	76.25	5364K259	69.38

Plugs

- Maximum Pressure @ 72° F: Aluminum, Steel, Polypropylene: 150 psi; Brass: 1200 psi; Type 304 Stainless Steel: 3000 psi; Nylon: 75 psi

Pipe Size	Square-Head Aluminum	Each	Square-Head Steel	Each	Hex-Head Brass	Each	Hex-Head Type 304 SS	Each	Hex-Head Nylon	Each	Hex-Head Polypropylene	Each
1/8″	44705K382	$2.40	44605K221	$0.12	50785K21	$0.77	4464K331	$2.86	48335K151	$0.70	4515K208	$0.95
1/4″	44705K383	2.75	44605K222	.18	50785K22	1.19	4464K332	2.91	48335K152	1.25	4515K209	.92
3/8″	44705K384	3.06	44605K223	.28	50785K23	1.73	4464K333	3.64	48335K153	1.29	4515K211	1.03
1/2″	44705K385	3.44	44605K224	.50	50785K24	2.62	4464K334	4.84	48335K154	.88	4515K212	1.01

Straight-Thread Aluminum Manifolds

- Maximum Pressure @ 72° F: Air and Water: 1000 psi; Nonshock Hydraulics: 3000 psi
- Temperature Range: −50° to +200° F

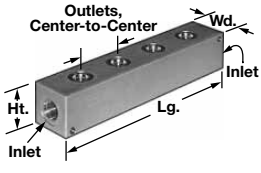

Designed for hydraulic oil systems, these manifolds accept SAE-UNF Class 2B straight-thread fittings. Also known as headers, just thread in your tube fittings and you'll have multiple outlets from one incoming supply source.

Manifolds are machined from Alloy 6061 aluminum bar stock, which has good corrosion and chemical resistance and good durability. All have a row of outlets on one side. They have two inlets (one at each end) and 17/64″ mounting holes that allow you to mount them from either the top or side. Not rated for sterilization or vacuum.

The inlets and the outlets have female SAE-UNF Class 2B straight threads. *Note:* SAE-UNF sizes are actual sizes and not compatible with NPT threads.

Also Available: Aluminum manifolds with 1/8″ NPT threaded inlets and 10-32 threaded outlets. Please ask for 5092K1 and specify number of outlets (3, 4, 5, 6, 8, or 10).

No. of Outlets	Thread Size Inlet	Thread Size Outlet	Overall Size, Lg.×Wd.×Ht.	Outlets, Ctr-to-Ctr	Each
2	9/16″-18	7/16″-20	3 7/8″×1 3/4″×1 3/4″	1 3/4″	5092K52 $23.51
2	3/4″-16	9/16″-18	5″ ×1 3/4″×1 3/4″	2″	5092K54 24.53
3	9/16″-18	7/16″-20	5 5/8″×1 3/4″×1 3/4″	1 3/4″	5092K13 26.58
3	3/4″-16	9/16″-18	7″ ×1 3/4″×1 3/4″	2″	5092K33 29.64
4	9/16″-18	7/16″-20	7 3/8″×1 3/4″×1 3/4″	1 3/4″	5092K55 30.67
4	3/4″-16	9/16″-18	9″ ×1 3/4″×1 3/4″	2″	5092K34 33.73
5	3/4″-16	9/16″-18	11″ ×1 3/4″×1 3/4″	2″	5092K35 39.87
6	3/4″-16	9/16″-18	13″ ×1 3/4″×1 3/4″	2″	5092K36 44.98
8	3/4″-16	9/16″-18	17″ ×1 3/4″×1 3/4″	2″	5092K38 59.29
10	3/4″-16	9/16″-18	21″ ×1 3/4″×1 3/4″	2″	5092K41 70.53

Three-Way Aluminum Manifolds for Air

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: −40° to +360° F

Distribute air to three locations from a single source. These manifolds have one inlet and a round head with three outlets—an ideal shape when space is tight. They are machined from aluminum bar stock, which has fair corrosion and chemical resistance and good durability. Sterilize with steam (autoclaving). Not rated for vacuum. The inlet and outlet connections are female NPT.

No. of Outlets	Pipe Size Inlet	Pipe Size Outlet	Overall Size, Dia.×Lg.	Outlets, Ctr.-to-Ctr.	Each
3	1/4″	1/4″	1 5/8″×1 1/2″	1″	5465K71 $8.91
3	3/8″	1/4″	1 5/8″×1 1/2″	1″	5465K72 8.79
3	1/2″	1/4″	1 5/8″×1 1/2″	1″	5465K73 9.14

Miniature Hex Shape Brass Manifold

- Maximum Pressure @ 72° F: 250 psi
- Temperature Range: −60° to +300° F

Distribute air, water, and hydraulic oil from a single source to as many as 12 locations with this manifold. Also known as a header, this manifold has four outlets on three of its sides. It is machined from Alloy 360 brass, which has good corrosion and chemical resistance and good durability. This manifold has two inlets (one at each end) and a 13/64″ mounting hole. Use plugs (sold separately, see 5454K81 on pg. 42) to close off any inlet or outlet holes that are not in use. Not rated for sterilization or vacuum. The inlets have NPT threads; the outlets have female UNF straight threads.

No. of Outlets	Inlet, Pipe Size	Outlet, Thread Size	Overall Size, Lg.×Wd.×Ht.	Outlets, Ctr.-to-Ctr.	Each
12	1/8″-27	10-32	2 7/8″×9/16″×5/8″	1/2″	5454K97 $8.56

Multiline Aluminum Blocks

- Max. Pressure @ 72° F: Air and Water: 1000 psi; Nonshock Hydraulics: 3000 psi
- Temp. Range: −10° to +200° F

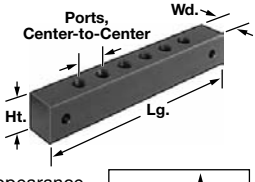

Organize multiple lines within an air or fluid system. Also known as junction blocks, these do not have inlets like a manifold—instead they simply have threaded ports that hold your lines in place for a neat, orderly appearance. Blocks are machined from Alloy 6061 aluminum bar stock with a black anodized finish, which has good corrosion and chemical resistance and good durability. They have 13/64″ mounting holes that allow you to secure them from either the top or side. Not rated for sterilization. Vacuum rating is 29.9″ Hg @ 72° F. Connections are female NPT, except 10-32 are female UNF straight threads.

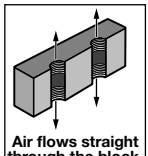

Air flows straight through the block.

No. of Ports	Pipe Size	Overall Size, Lg.×Wd.×Ht.	Ports Ctr.-to-Ctr.	Each
4	10-32	3″ × 5/8″× 5/8″	1/2″	5091K51 $16.45
4	1/8″	4 3/4″×1″ × 3/4″	3/4″	5091K52 22.96
4	1/4″	5 3/8″×1″ ×1″	7/8″	5091K53 23.46
6	10-32	4″ × 5/8″× 5/8″	1/2″	5091K61 17.31
6	1/8″	6 1/4″×1″ × 3/4″	3/4″	5091K62 24.97
6	1/4″	7 1/8″×1″ ×1″	7/8″	5091K63 25.94
8	10-32	5″ × 5/8″× 5/8″	1/2″	5091K71 18.50
8	1/8″	7 3/4″×1″ × 3/4″	3/4″	5091K72 28.21
8	1/4″	8 7/8″×1″ ×1″	7/8″	5091K73 29.53
10	10-32	6″ × 5/8″× 5/8″	1/2″	5091K41 19.69
10	1/8″	9 1/4″×1″ × 3/4″	3/4″	5091K42 30.26
10	1/4″	10 5/8″×1″ ×1″	7/8″	5091K43 31.84

About Duct Hose

While duct hose is commonly used to blow or exhaust air and fumes, variations in construction also allow some duct hose to transport media such as dust, chips, shavings, and liquids. Our duct hose is organized by application, as described below:

Duct for Air— For use with air.

Duct for Fumes— Ideal for use with smoke and fumes, as well as air.

Duct for Dust— While all duct hose in this classification is for use with dust, some will stand up to more specific dust, such as grinding dust, wood sawdust, and lint (see individual presentations for specific applications). Also use with air and smoke.

Duct for Chips and Shavings— All duct hose in this classification is for use with wood chips and corrugated fibers; however, some will stand up to metal shavings, plastic pellets, and powders (see individual presentations for specific applications). Also use with air and dust.

Duct for Liquids— While all duct hose in this classification is for use with water, some will stand up to other liquids (see individual presentations for specific applications). Also use with air, smoke, and dust.

Connection— A hose clamp or U-bolt is required to secure the duct hose; see pages 274-278 and 282 for hose clamps and pages 1534-1537 for U-bolts. To connect two lengths of hose, see page 239 for a hose connector.

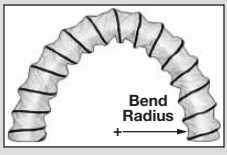

Bend Radius— Measured from the center point to the inside edge of the hose, this is the minimum radius you can bend hose without damaging it or shortening its life. The smaller the measurement, the greater the flexibility.

Flexibility— While bend radius is an approximate guide for hose flexibility, we have also rated flexibility in general terms. *Very Flexible*—Similar to rope, this hose can easily loop without restricting flow. *Flexible*—Bends without a lot of effort. *Rigid*—Very stiff and difficult to bend.

Compressibility— Expressed as a percentage of the extended length, the higher the percentage, the more compressible the hose. For example, if a 10-ft. hose compresses 75% of its extended length, the duct can compress to 2½ feet. *Note*: Hose lengths given in each presentation are the extended length, unless noted otherwise.

Vacuum Rating— Vacuum, or negative pressure, is measured in inches of mercury (Hg). The larger the number, the higher the vacuum. As a general guide: *Low* = 1″ to 24″ Hg; *Medium* = 25″ to 27″ Hg; *High or Full* = 28″ to 29.9″ Hg.

Blo-N-Vent Duct for Air

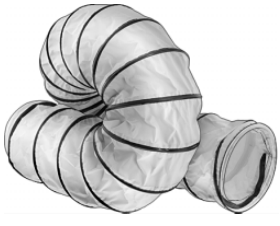

Hose with Finished Ends and Wear Strip

- Use with air
- Very flexible
- Temperature Range: –65° to +250° F
- Color: Yellow; wear strip is black
- Clamps: Use worm-drive clamps (see pages 274-278)

The perfect choice for general-purpose blowing and venting applications, this single-ply hose is lightweight and very flexible. It's made from 0.016″ thick, neoprene-coated polyester with a fabric-enclosed steel wire support. Hose with a 4″ ID compresses to 80% of its length; all other sizes compress to 92%. Meets UL 94V0 for flammability. Not rated for vacuum. Can be used indoors and out.

Hose with Wear Strip— The wear strip protects hose from damage caused by dragging.

Hose with Finished Ends and Wear Strip— In addition to having a wear strip, both ends of this hose have finished ends with galvanized wire rope sewn in. The finished ends allow you to connect hose for longer lengths; just squeeze the end on one hose and slip it into the end of the other hose. The finished ends also aid in connecting hose to equipment.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Without Wear Strip Per Ft.	Partial Coil	Full Coil	HOSE With Wear Strip Per Ft.	Partial Coil	Full Coil	HOSE WITH FINISHED ENDS AND WEAR STRIP 10-ft. Length Each	25-ft. Length Each
4″	4⅜″	3″	5.4	5265K14	$5.89	$4.80	5265K41	$6.76	$5.53	5265K245 $81.14	5265K244 $165.74
6″	6⅜″	3½″	3	5265K16	7.62	6.24	5265K43	8.75	7.15	5265K249 105.03	5265K246 214.64
8″	8⅜″	5″	3	5265K18	8.42	6.88	5265K45	9.66	7.91	5265K262 116.18	5265K248 237.60
10″	10⅜″	6½″	2.5	5265K21	9.62	7.89	5265K47	11.47	9.38	5265K264 137.57	5265K254 270.49
12″	12⅜″	7½″	2	5265K23	11.78	9.66	5265K49	12.91	10.71	5265K266 154.90	5265K255 308.38
14″	14⅜″	8½″	1.7	5265K25	14.52	11.88	5265K51	15.95	13.05	5265K269 191.55	5265K256 373.64
16″	16⅜″	9½″	1.5	5265K27	15.82	12.94	5265K53	18.72	15.31	5265K273 224.64	5265K257 429.83
18″	18⅜″	10½″	1.3	5265K29	19.07	15.61	5265K55	22.18	18.15	5265K275 266.00	5265K258 519.69
20″	20⅜″	12″	1.1	5265K31	20.89	17.09	5265K56	24.29	19.88	5265K277 280.98	5265K259 472.00
24″	24½″	13″	1	5265K32	25.81	21.11	5265K57	30.38	24.86	5265K279 349.90	5265K261 698.27

Choose-a-Color Duct for Air

Hose with Finished Ends

- Use with air
- Very flexible
- Temperature Range: –20° to +180° F
- Color: Black, blue, red, or white; wear strip is black
- Clamps: Use worm-drive clamps (see pages 274-278)

With a choice of four colors, you can use this hose to identify different air systems within your plant. This single-ply, lightweight hose is made from 0.014″ thick, PVC-coated polyester with a fabric-enclosed steel wire support. It has a wear strip. Hose compresses 90% of its length. Meets UL 94V0 for flammability. Can be used indoors and out.

Hose— **To Order:** Please order in 5-ft. increments up to the full coil length of 25 ft. and specify color: black, blue, red, or white.

Hose with Finished Ends— Installation is easier because the finished ends have no wire support or wear strip to get in your way. **To Order:** Please specify color: black, blue, red, or white.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72°F	Vacuum @ 72° F	HOSE Per Ft.	Partial Coil	Full Coil	HOSE WITH FINISHED ENDS 5-ft. Length Each	15-ft. Length Each	25-ft. Length Each
4″	4⅜″	2″	13	9″ Hg	5636K61	$5.50	$3.88	5636K71 $28.75	5636K21 $63.69	5636K41 $112.27
5″	5⅜″	3⅛″	12	7″ Hg	5636K62	6.59	4.65	5636K72 34.52	5636K22 76.34	5636K42 137.82
6″	6 7/16″	3″	11	3″ Hg	5636K63	7.29	5.15	5636K73 39.11	5636K23 84.09	5636K43 148.52
7″	7 7/16″	3 11/16″	9.5	3″ Hg	5636K64	8.42	5.94	5636K74 44.17	5636K24 97.15	5636K44 171.46
8″	8½″	4½″	8	2″ Hg	5636K65	10.04	7.09	5636K75 52.50	5636K25 116.16	5636K45 204.12
10″	10 9/16″	5½″	7	2″ Hg	5636K66	12.41	8.76	5636K76 65.05	5636K26 148.42	5636K46 252.94
12″	12 9/16″	6¾″	5	1″ Hg	5636K67	14.92	10.53	5636K77 77.70	5636K27 172.11	5636K47 291.77
14″	14 9/16″	8″	5	0.75″ Hg	5636K68	17.38	12.26	5636K78 90.66	5636K28 199.74	5636K48 339.55
16″	16 9/16″	9″	5	0.5″ Hg	5636K69	18.04	12.73	5636K79 95.00	5636K29 208.24	5636K49 352.61

For information about duct hose, see page 222.

Quick-Attach Duct for Air

- Use with air
- Very flexible
- Temperature Range: –20° to +180° F
- Color: Black, blue, white, or yellow; wear strip is black

Eliminate the need for hose fittings and clamps—this lightweight, single-ply hose has belt-and-buckle end connectors for quick and easy attachment. Hose is made from 0.014″ thick, PVC-coated polyester with a fabric-enclosed steel wire support. It has a wear strip. Hose compresses 90% of its length. Hose meets UL 94V0 and is manufactured with materials that meet NFPA (National Fire Protection Association) 701 standards for flammability. Can be used indoors and out.

To Order: Please specify color: black, blue, white, or yellow.

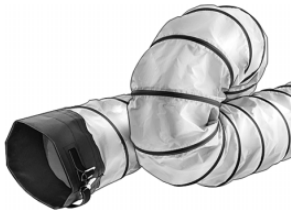

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	5-ft. Length	Each	10-ft. Length	Each	15-ft. Length	Each	25-ft. Length	Each
4″	4 3/8″	2″	13	9″ Hg	5473K61	$41.43	5473K71	$55.87	5473K81	$70.40	5473K91	$128.62
6″	6 7/16″	3″	11	3″ Hg	5473K62	52.83	5473K72	65.10	5473K82	82.83	5473K92	115.10
8″	8 1/2″	4 1/2″	8	3″ Hg	5473K63	59.43	5473K73	82.10	5473K83	104.90	5473K93	157.02
10″	10 1/2″	5 1/2″	7	2″ Hg	5473K64	70.20	5473K74	96.23	5473K84	130.20	5473K94	160.94
12″	12 9/16″	6 3/4″	5	1″ Hg	5473K65	81.33	5473K75	111.33	5473K85	145.70	5473K95	168.54

Super-Compressible Duct for Air

- Use with air
- Very flexible
- Temperature Range: –20° to +140° F
- Color: Silver
- Clamps: Use worm-drive clamps (see pages 274-278)

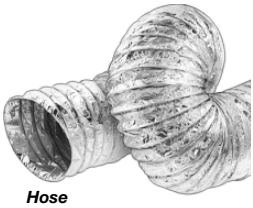

Hose

Coupling

Capable of compressing 96% of its length, this hose collapses from its full 25-ft. length down to 1 ft. for easy storage. Hose is made from 0.005″ thick, double-ply metalized polyester with a fabric-enclosed steel wire support. Hose meets UL 181 Class 1 and NFPA (National Fire Protection Association) 90A and 90B standards. Not rated for pressure or vacuum. For indoor use.

Couplings slide inside the hose to connect lengths of hose. They are made from 26-ga. riveted galvanized steel. The coupling OD is equal to the hose ID. They are 5 3/8″ long, except 55275K31 is 3″ long and 55275K37 and K41 are 6″ long. The material meets ASTM A653-07-CS Type B.

Hose (25-ft. Length) ID	OD	Bend Radius		Each	Couplings	Each
3″	3 1/8″	3″	55275K11	$21.31	55275K31	$1.72
4″	4 1/8″	4″	55275K13	22.54	55275K32	3.10
5″	5 1/8″	5″	55275K15	26.64	55275K33	3.58
6″	6 1/8″	6″	55275K17	34.43	55275K34	3.84
7″	7 1/8″	7″	55275K19	38.93	55275K35	4.28
8″	8 1/8″	8″	55275K21	39.75	55275K36	5.02
9″	9 1/8″	9″	55275K23	45.49	55275K37	6.32
10″	10 1/8″	10″	55275K25	49.18	55275K38	6.22
12″	12 1/8″	12″	55275K27	61.07	55275K39	7.58
14″	14 1/8″	14″	55275K29	64.75	55275K41	10.02

Bend-and-Stay Duct for Air

- Use with air
- Very flexible
- Temperature Range: –100° to +435° F
- Clamps: Use worm-drive clamps (see pages 274-278)

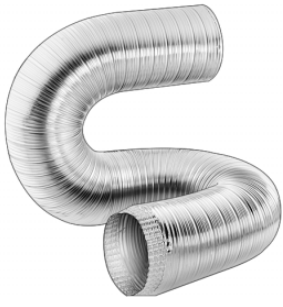

Bend this hose over and over again—it maintains its shape and will support itself once positioned. Hose is made from 0.004″ thick aluminum with lock-seam construction. One end of the hose is crimped; insert the crimped end into another piece to make longer lengths. (*Note*: Hose may need support to maintain its shape once the length extends past 6 ft.) Not rated for pressure or vacuum. For indoor use.

Hose ID	Hose OD	Bend Radius	Length Compressed	Length Extended		Each
3″	3 1/4″	1 1/2″	26″	7 ft.	55335K41	$5.40
4″	4 1/4″	2″	26″	7 ft.	55335K42	7.75
5″	5 1/4″	2 1/2″	26″	6 1/2 ft.	55335K43	9.77
6″	6 1/4″	3″	26″	6 1/2 ft.	55335K44	12.83
7″	7 1/4″	3 1/2″	26″	6 1/2 ft.	55335K45	15.52
8″	8 1/4″	4″	24″	6 ft.	55335K46	18.00
9″	9 1/4″	4 1/2″	24″	6 ft.	55335K47	21.17
10″	10 1/4″	5″	24″	6 ft.	55335K48	22.75
12″	12 1/4″	6″	24″	6 ft.	55335K49	34.83
14″	14 1/4″	7″	24″	6 ft.	55335K51	44.75

Crush-Resistant Duct for Air

- Use with air
- Flexible
- Temperature Range: –40° to +225° F
- Color: Blue
- Clamps: Use worm-drive clamps (see pages 274-278)

Go ahead and step on this hose—it will bounce right back. This highly crush-resistant hose is made from single-ply polypropylene with an exposed polypropylene internal support. Material for the 3″ to 5″ ID hose is 0.011″ thick; 6″ to 8″ ID hose is 0.014″ thick. Hose compresses 50% of its length. Not rated for vacuum. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
3″	3 11/32″	4 1/2″	8	5152K11	$4.11	$3.20
4″	4 11/32″	4 3/4″	4	5152K12	5.54	4.31
5″	5 11/32″	5″	4	5152K13	6.54	5.09
6″	6 7/16″	5 1/2″	7	5152K14	10.40	8.09
7″	7 1/2″	5 3/4″	8	5152K15	11.74	9.13
8″	8 1/2″	6 3/4″	4	5152K16	13.34	10.38

Disposable Clear Duct for Air

- Use with air
- Very flexible
- Temperature Range: 32° to 120° F
- Color: Clear
- Clamps: Use worm-drive clamps (see pages 274-278)

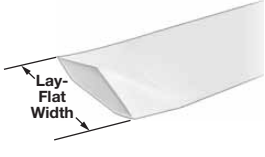

Designed for blowing applications only, this economical hose can be thrown away when your job is complete. Hose is made from ultra-thin, 0.004″ thick polyethylene. Because it is so light, it's not rated for bend radius—you can bend it any way you want, even tie it in a knot. Not rated for pressure or vacuum. For indoor use.

To Order: Please specify length from the choices below.

Hose ID	Lay-Flat Width	Available Lengths		Per Ft.
4 7/16″	7″	25 ft., 100 ft.	1289T11	$0.18
6 7/16″	10″	25 ft., 100 ft.	1289T12	.21
8 5/16″	13″	25 ft., 100 ft.	1289T13	.33
10 1/2″	16 1/2″	25 ft., 50 ft., 100 ft.	1289T14	.43
12 3/4″	20″	25 ft., 50 ft., 100 ft.	1289T15	.52
15 5/16″	24″	25 ft., 50 ft., 100 ft.	1289T16	.56
16 1/4″	25 1/2″	25 ft., 50 ft., 100 ft.	1289T17	.50
18 1/2″	29″	25 ft., 50 ft., 100 ft.	1289T18	.56
20 7/16″	32″	25 ft., 50 ft., 100 ft.	1289T19	.80

For information about duct hose, see page 222.

Insulated Duct for Air

With Silver Cover

- Use with air
- Very flexible
- Temperature Range:
  Black Cover: –20° to +200° F
  Silver Cover: –20° to +250° F
- Color: Black or silver
- Clamps: Use worm-drive clamps (see pages 274-278)

Great for heating and cooling (HVAC) applications, this lightweight hose is thermally insulated with a 1⅛″ thick fiberglass blanket. It also has a steel wire support. You can easily cut this hose to the length you need with a utility knife or pair of scissors. Hose meets UL 181 Class 1 and NFPA (National Fire Protection Association) 90A and 90B standards. Hose is not rated for compression, pressure, or vacuum. For indoor use.

The ***black cover*** is made from 0.003″ thick polyethylene. Hose has a velocity rating of 5000 fpm.

The ***silver cover*** is 0.005″ thick metalized material. Hose has a velocity rating of 6000 fpm.

Hose ID	Hose OD	Bend Radius	WITH BLACK COVER 25-ft. Length	Each	WITH SILVER COVER 25-ft. Length	Each
4″	6″	4″	5514K34	$60.07	55315K71	$70.69
5″	7″	5″	5514K35	64.17	55315K65	76.74
6″	8″	6″	5514K36	68.26	55315K72	82.24
8″	10″	8″	5514K38	85.33	55315K73	101.50
10″	12″	10″	5514K41	99.74	55315K74	122.95
12″	14″	12″	5514K42	124.24	55315K75	149.91
14″	16″	14″	5514K44	149.65	55315K76	184.02
16″	18″	16″	5514K46	173.94	55315K77	207.09

High-Temperature Duct for Air

- Use with air
- Very flexible
- Temperature Range:
  –20° to +325° F
- Color: Yellow;
  wear strip is black
- Clamps: Use worm-drive clamps (see pages 274-278)

An acrylic coating gives this 0.016″ thick, single-ply polyester hose a higher temperature rating than other hose for air. Hose has a fabric-enclosed steel wire support and a wear strip. Hose compresses 90% of its length. Meets UL 94V0 for flammability. Not rated for vacuum. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
4″	4 5/16″	3″	6	6664T11	$11.06	$9.49
6″	6 5/16″	4″	3	6664T12	14.87	12.75
8″	8 5/16″	5″	3	6664T13	19.91	17.05
10″	10 9/16″	6″	2	6664T14	29.37	25.17
12″	12 9/16″	7 1/2″	1.5	6664T15	29.37	25.17
14″	14 9/16″	8 1/2″	1.2	6664T16	34.20	29.31

Heat-Reflective/High-Temperature Duct for Air

- Use with air
- Flexible
- Temperature Range:
  –65° to +625° F
- Color: Silver
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

A heat-reflective metalized film deflects heat from the exterior of this lightweight double-ply hose. Hose is made from 0.065″ thick, silicone-coated fiberglass with a fabric-enclosed steel wire support. Hose with a 1″ to 2″ ID compresses 67% of its length; 3″ to 6″ ID compresses 75% of its length. Can be used indoors and out.

To Order: Please order hose in 1-ft. increments up to the full coil length of 12 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1 1/8″	1 3/32″	30	29″ Hg	6665T11	$22.57	$17.55
1 1/2″	1 5/8″	1 1/8″	30	29″ Hg	6665T12	22.57	17.56
2″	2 1/8″	1 37/64″	30	29″ Hg	6665T13	26.57	20.66
3″	3 1/8″	2 3/8″	30	29″ Hg	6665T14	32.14	25.01
4″	4 1/8″	4″	30	21″ Hg	6665T15	34.23	26.62
5″	5 1/8″	4″	28	12″ Hg	6665T16	34.80	27.06
6″	6 1/8″	4″	19	5″ Hg	6665T17	38.69	30.09

Blo-R-Vac Duct for Fumes

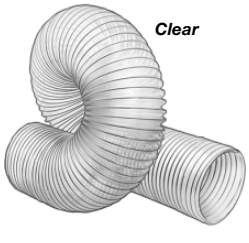

Clear

- Ideal for smoke and propane fumes, as well as air; blue hose is also for weld fumes
- Very flexible
- Temperature Range:
  20° to 160° F
- Color: Blue or clear
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

Very flexible yet rugged, this hose is the perfect choice for venting smoke and propane fumes. Hose is made from 0.020″ thick PVC with a steel wire support. Hose with a 1¼″ to 2″ ID compresses 50% of its length; 2½″ to 3″ ID compresses 67% of its length; 4″ to 16″ ID compresses 80% of its length. Can be used indoors and out.

Blue hose meets UL 94V0 for flammability. ***Clear*** hose allows you to see the flow.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft. for the 1¼″ to 8″ ID hose; up to 25 ft. for the 10″ to 16″ ID hose.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	Blue	Blue Per Ft. Partial Coil	Blue Per Ft. Full Coil	Clear	Clear Per Ft. Partial Coil	Clear Per Ft. Full Coil
1 1/4″	1 1/2″	1″	27	29″ Hg	5666K11	$3.15	$2.58	56675K72	$3.45	$2.77
1 1/2″	1 3/4″	1 13/32″	25	29″ Hg	5666K12	2.78	2.27	56675K41	3.18	2.54
2″	2 1/4″	2 1/16″	19	29″ Hg	5666K14	2.96	2.42	56675K69	3.45	2.76
2 1/2″	2 3/4″	2 1/4″	14	19″ Hg	5666K16	3.73	3.05	56675K71	4.33	3.46
3″	3 1/4″	2 1/2″	12	11″ Hg	5666K17	4.44	3.64	56675K48	5.03	4.02
4″	4 1/4″	3 9/32″	8	9″ Hg	5666K19	5.22	4.27	56675K52	5.90	4.72
5″	5 1/4″	3 27/32″	6.5	4.7″ Hg	5666K21	5.62	4.60	56675K54	7.02	5.62
6″	6 1/4″	4 13/32″	5.4	2.7″ Hg	5666K22	6.00	4.91	56675K56	6.80	5.44
7″	7 5/16″	5 13/32″	3.9	2.8″ Hg	5666K23	7.33	6.00	56675K58	8.30	6.64
8″	8 3/8″	6 13/32″	3.4	1.9″ Hg	5666K24	8.42	6.89	56675K62	9.53	7.62
10″	10 3/8″	7 7/32″	2.7	1″ Hg	5666K25	10.67	8.73	56675K64	12.07	9.66
12″	12 3/8″	8″	2.3	0.6″ Hg	5666K26	10.67	8.73	56675K65	14.65	11.72
14″	14 3/8″	9″	2	0.4″ Hg	5666K27	15.93	13.04	56675K66	18.07	14.46
16″	16 3/8″	10″	1.7	0.3″ Hg	5666K28	19.31	15.80	56675K67	21.89	17.52

For information about duct hose, see page 222.

Super-Flexible Duct for Fumes

- Ideal for smoke, paint fumes, and weld fumes; also for air
- Very flexible
- Temperature Range: –20° to +150° F
- Color: Blue
- Clamps: Use worm-drive clamps (see pages 274-278)

Extremely lightweight, this is the most flexible hose for fumes we offer. Hose is made from 0.018″ thick PVC with an enclosed steel wire support. Hose compresses 30% of its length. Meets UL 94HB for flammability. Hose is not rated for pressure or vacuum. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft.

Hose ID	Hose OD	Bend Radius		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1 1/8″	1/8″	5488K53	$2.26	$1.85
1 1/4″	1 7/16″	1/4″	5488K55	2.39	1.96
1 1/2″	1 11/16″	1/4″	5488K56	2.54	2.07
1 3/4″	1 15/16″	1/4″	5488K57	2.67	2.19
2″	2 3/16″	1/4″	5488K58	2.98	2.44
3″	3 7/32″	3/8″	5488K61	4.62	3.78
4″	4 7/32″	1/2″	5488K63	6.96	5.70
5″	5 7/32″	5/8″	5488K64	8.42	6.89
6″	6 1/4″	3/4″	5488K66	9.22	7.54

Clear Duct for Fumes with Wear Strip

- Ideal for smoke and paint fumes; also for air
- Flexible
- Temperature Range: –13° to +140° F
- Color: Clear; wear strip is black
- Clamps: Use twin-ring hose clamps (see page 282)

The clear construction allows you to see what's going through the inside while a wear strip protects the outside from damage due to dragging. Hose is made from PVC; material thickness is 0.035″ for the 2 1/2″ ID hose; 0.039″ for the 3″ and 4″ ID hose; and 0.047″ for the 5″ to 8″ ID hose. Hose compression is not recommended. Not rated for vacuum. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 100 ft. for 2 1/2″ to 7″ ID hose; 50 ft. for 8″ ID hose.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2 1/2″	2 13/16″	2 1/2″	6	5348K31	$3.17	$2.54
3″	3 3/8″	3″	6	5348K32	3.78	3.02
4″	4 7/16″	4″	5	5348K33	5.17	4.14
5″	5 9/16″	5″	3	5348K34	7.70	6.16
6″	6 1/2″	6″	3	5348K35	9.57	7.66
7″	7 1/2″	7″	2	5348K36	11.39	9.11
8″	8 1/2″	8″	2	5348K37	12.81	10.24

Adjustable-Diameter Duct for Fumes

- Ideal for smoke and paint fumes; also for air
- Rigid
- Temperature Range: –10° to +150° F
- Color: Gray
- Clamps: Use worm-drive clamps (see pages 274-278)

Increase or decrease the inside diameter by 25% with a two-handed twist. Hose is made from 0.187″ thick PVC and it will retain its shape after bending. To connect lengths of hose, just interlock two ends together—no clamps or couplers required. Not rated for compression. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft. for the 2″ to 6″ ID hose; 10 ft. for the 8″ ID hose.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2″	2 1/4″	5 1/2″	2.5	6″ Hg	5257K15	$10.69	$8.31
2 1/2″	2 3/4″	6 5/16″	2.5	6″ Hg	5257K16	11.80	9.18
3″	3 1/4″	7 1/2″	2.5	6″ Hg	5257K17	13.40	10.42
3 1/2″	3 3/4″	8 5/16″	2.5	6″ Hg	5257K18	15.51	12.07
4″	4 1/4″	9″	2.5	6″ Hg	5257K19	16.80	13.44
4 1/2″	4 3/4″	9 13/16″	2.5	6″ Hg	5257K21	17.27	14.13
5″	5 1/4″	11″	2.5	5″ Hg	5257K22	19.16	15.67
6″	6 1/4″	12 1/2″	2.5	4″ Hg	5257K23	21.58	17.98
8″	8 1/4″	17″	2	3″ Hg	5257K24	34.29	28.58

Economical Duct for Fumes

- Ideal for smoke, paint fumes, and weld fumes; also for air
- Very flexible
- Temperature Range: –20° to +200° F
- Color: Gray
- Clamps: Use worm-drive clamps (see pages 274-278)

This lightweight hose is an economical choice for your venting applications. Made from single-ply, 0.005″ thick, PVC-coated fiberglass with an exposed steel wire support. Hose compresses 78% for 2″ ID hose; 83% for 3″ to 6″ ID hose; 92% for 7″ to 14″ ID hose. Meets UL 94V0 for flammability. For indoor use.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2″	2 1/16″	1/2″	7.5	0.88″ Hg	5501K61	$1.87	$1.50
3″	3 3/16″	3/4″	5.5	0.66″ Hg	5501K62	2.59	2.07
4″	4 1/4″	1″	4.5	0.51″ Hg	5501K63	3.38	2.71
5″	5 1/4″	1 1/4″	3.5	0.29″ Hg	5501K64	3.57	2.86
6″	6 3/16″	1 1/2″	2.8	0.16″ Hg	5501K65	4.59	3.67
7″	7 1/8″	1 3/4″	2.2	0.07″ Hg	5501K66	5.23	4.18
8″	8 1/8″	2″	1.8	0.05″ Hg	5501K67	6.08	4.86
9″	9 1/2″	2 1/4″	1.5	0.03″ Hg	5501K68	6.60	5.28
10″	10 1/4″	2 1/2″	1.2	0.02″ Hg	5501K69	7.51	6.00
12″	12 1/2″	3″	1	0.01″ Hg	5501K71	8.74	7.00
14″	14 1/2″	3 1/2″	0.6	0.01″ Hg	5501K72	9.81	7.85

Bend-and-Stay Metal Duct for Fumes

- Ideal for smoke and paint fumes; also for air
- Flexible
- Temperature Range: Aluminum: –100° to +400° F Type 304 SS: –400° to +800° F
- Clamps: Use duct hose connectors (see page 239)

Bend this crimped-seam metal hose into position and it holds its shape. Not for continuous flexing. Hose is not rated for compression, pressure, or vacuum. Can be used indoors and out.

***Aluminum*—**Lighter in weight than stainless steel with good corrosion resistance. Material thickness is 0.008″.

***Type 304 Stainless Steel*—**More durable than aluminum with excellent corrosion resistance. Material thickness is 0.005″.

Aluminum

Hose ID	Hose OD	Bend Radius	2-ft. Length	Each	5-ft. Length	Each	10-ft. Length	Each
2″	2 5/16″	4″	5400K51	$16.12	5400K31	$34.90	5400K11	$64.40
3″	3 5/16″	5 11/16″	5400K52	16.68	5400K32	36.20	5400K12	67.20
4″	4 5/16″	7 1/2″	5400K53	20.04	5400K33	44.60	5400K13	72.40
5″	5 5/16″	9 5/16″	5400K54	21.48	5400K34	48.20	5400K14	91.20
6″	6 5/16″	11 3/16″	5400K55	21.76	5400K35	48.90	5400K15	92.40
8″	8 5/16″	14 15/16″	5400K57	26.75	5400K37	61.40	5400K17	117.80

Type 304 Stainless Steel

Hose ID	Hose OD	Bend Radius	2-ft. Length	Each	5-ft. Length	Each	10-ft. Length	Each
2″	2 5/16″	2 1/8″	5515K81	$23.96	5515K61	$54.17	5515K41	$101.47
3″	3 5/16″	3 5/16″	5515K82	26.58	5515K62	60.73	5515K42	114.87
4″	4 5/16″	4 5/16″	5515K83	29.58	5515K63	68.23	5515K43	129.88
5″	5 5/16″	5 3/8″	5515K84	35.75	5515K64	83.75	5515K44	160.47
6″	6 5/16″	6 1/2″	5515K85	37.54	5515K65	88.12	5515K45	169.21
8″	8 5/16″	8 11/16″	5515K87	46.96	5515K67	111.67	5515K47	215.98

Duct Hose

For information about duct hose, see page 222.

Duct for Fumes with PVC Support

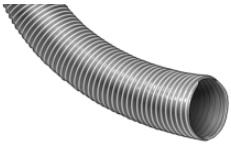

- Ideal for smoke and paint fumes; also for air
- Flexible
- Temperature Range: 0° to 150° F
- Color: Green
- Clamps: Use worm-drive clamps (see pages 274-278)

Unlike hose that's supported with steel wire, this hose has an enclosed PVC support that will not rust. Hose is made from PVC. Material thickness is 0.036″ for the 1″ ID hose; 0.04″ for the 1¼″ and 1½″ ID hose; 0.048″ for the 2″ to 6″ ID hose; and 0.064″ for the 8″ ID hose. Hose compresses 80% of its length. Not rated for pressure. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 100 ft. for the 1″ to 4″ ID hose; 30 ft. for the 6″ ID hose; 20 ft. for the 8″ ID hose.

Hose ID	Hose OD	Bend Radius	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1 7/32″	2″	5″ Hg	5643K11	$1.79	$1.44
1¼″	1½″	2″	5″ Hg	5643K18	2.05	1.63
1½″	1¾″	2″	5″ Hg	5643K12	2.70	2.17
2″	2 5/16″	3″	5″ Hg	5643K13	3.72	2.98
2½″	2 13/16″	4″	5″ Hg	5643K19	4.55	3.63
3″	3 13/32″	7″	5″ Hg	5643K14	6.60	5.28
4″	4 7/16″	8″	5″ Hg	5643K15	10.13	8.11
6″	6 15/32″	10″	5″ Hg	5643K16	16.57	13.24
8″	8½″	12″	5″ Hg	5643K17	29.85	23.88

Retracting Duct for Fumes

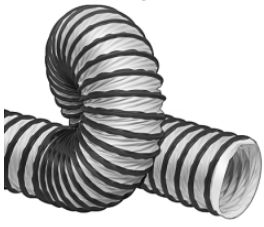

- Ideal for smoke and paint fumes; also for air
- Very flexible
- Temp. Range: –40° to +250° F
- Color: Yellow; wear strip is black
- Clamps: Use worm-drive clamps (see pages 274-278)

This lightweight single-ply hose extends for installation, then springs right back when released. It is made from 0.016″ thick neoprene-coated polyester with a bronze-coated steel wire support. It has a wear strip. Hose compresses 80% of its length. Meets UL 94V0 for flammability. Hose is not rated for vacuum. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
3″	3 3/8″	2½″	14	5421K16	$5.92	$4.85
4″	4 3/8″	3″	13	5421K17	6.83	5.58
5″	5 3/8″	3½″	8	5421K18	7.88	6.44
6″	6 3/8″	4″	8	5421K19	8.91	7.29
8″	8 1/32″	6″	6	5421K21	10.33	8.46
10″	10 1/32″	6½″	4	5421K22	12.02	9.83
12″	12 1/32″	7″	3	5421K23	13.98	11.44
14″	14 1/32″	8½″	2.5	5421K24	16.07	13.15

High-Temperature/Flexible Duct for Fumes

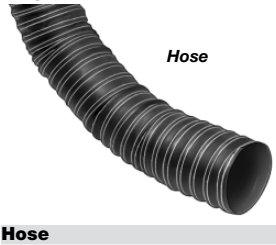

- Ideal for smoke and paint fumes, as well as air; neoprene-coated hose is also for weld fumes
- Flexible
- Temperature Range: Neoprene Coated: –65° to +300° F; Silicone Coated: –75° to +500° F
- Color: Neoprene Coated: Black; Silicone Coated: Red
- Clamps: Use worm-drive clamps (see pages 274-278)

A flexible alternative to metal hose, this double-ply fiberglass hose stands up to high-temperature applications. Hose is made from 0.023″ thick fiberglass with an enclosed bronze-coated steel wire support. Can be used indoors and out.

Neoprene-coated hose meets UL 94V0 for flammability.

Silicone-coated hose handles a wider temperature range than neoprene-coated hose.

Hose—Full coil length is 25 ft. **To Order:** Please order hose in 5-ft. increments up to the full coil length.

Hose with Finished Ends—For easier installation, the ends are neatly cuffed with no wire support.

Hose

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	Neoprene Coated	Per Ft. Partial Coil	Per Ft. Full Coil	Silicone Coated	Per Ft. Partial Coil	Per Ft. Full Coil
3/4″	7/8″	11/16″	28	28″ Hg	55125K71	$4.95	$3.88	55125K94	$7.87	$6.29
7/8″	1 1/16″	1 1/16″	28	28″ Hg	55125K12	4.75	3.71	55125K95	8.47	6.78
1″	1 1/8″	15/16″	28	28″ Hg	55125K13	4.78	3.75	55125K72	7.76	6.21
1¼″	1 3/8″	1¼″	26	26″ Hg	55125K14	5.44	4.26	55125K73	8.44	6.74
1½″	1 5/8″	1 7/16″	25	24″ Hg	55125K15	6.29	4.93	55125K74	9.56	7.65
1¾″	1 7/8″	1 11/16″	23	22″ Hg	55125K16	6.65	5.20	55125K75	10.31	8.24
2″	2 1/8″	1 7/8″	24	20″ Hg	55125K17	6.55	5.13	55125K76	11.08	8.85
2¼″	2 13/32″	2 3/16″	21	19″ Hg	55125K93	6.94	5.55	55125K77	12.03	9.62
2½″	2 21/32″	2 3/8″	20	18″ Hg	55125K18	7.83	6.13	55125K78	13.08	10.24
3″	3 5/32″	2 7/8″	19	16″ Hg	55125K19	8.62	6.74	55125K79	14.49	11.59
3½″	3 11/16″	3 3/8″	18	14″ Hg	55125K21	9.79	7.66	55125K81	16.35	13.07
4″	4 3/16″	3 7/8″	16	13″ Hg	55125K22	10.31	8.07	55125K82	18.40	14.40
4½″	4 21/32″	4 3/8″	15	11″ Hg	55125K23	11.79	9.23	55125K83	19.82	15.85
5″	5 5/32″	4 7/8″	14	10″ Hg	55125K24	12.32	9.64	55125K84	20.22	16.17
5½″	5 21/32″	5 3/8″	13	8″ Hg	55125K25	13.63	10.67	55125K96	22.77	18.22
6″	6 5/32″	5 7/8″	11	7″ Hg	55125K26	14.07	11.00	55125K85	25.05	19.61
6½″	6 11/16″	6 3/8″	11	6″ Hg	55125K27	14.86	11.63	55125K97	30.55	24.78
7″	7 3/16″	6 7/8″	9	5″ Hg	55125K28	16.34	12.78	55125K86	28.88	23.11
8″	8 3/16″	7 13/16″	7	3″ Hg	55125K29	18.34	14.36	55125K87	30.55	24.79
9″	9 3/16″	8 7/8″	6	2″ Hg	55125K31	19.77	15.47	55125K88	33.78	27.41
10″	10 7/32″	9 13/16″	5	1″ Hg	55125K32	22.00	17.22	55125K89	37.68	30.56
11″	11 7/32″	10 13/16″	4	1″ Hg	55125K33	22.57	18.05	55125K91	38.86	31.53
12″	12 7/32″	11 13/16″	4	1″ Hg	55125K34	23.74	18.99	55125K92	46.50	37.75

Hose with Finished Ends

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	5-ft. Length	Each	15-ft. Length	Each	25-ft. Length	Each
Neoprene Coated										
2″	2 1/8″	1 7/8″	24	20″ Hg	55125K64	$42.22	55125K44	$98.62	55125K54	$152.34
3″	3 5/32″	2 7/8″	19	16″ Hg	55125K35	51.00	55125K45	121.56	55125K55	189.32
4″	4 3/16″	3 7/8″	16	13″ Hg	55125K36	61.15	55125K46	141.95	55125K56	220.67
6″	6 5/32″	5 7/8″	11	7″ Hg	55125K37	84.92	55125K47	198.95	55125K57	277.13
Silicone Coated										
2″	2 1/8″	1 7/8″	24	20″ Hg	55125K38	57.71	55125K48	143.09	55125K58	226.46
3″	3 5/32″	2 7/8″	19	16″ Hg	55125K39	73.85	55125K49	187.09	55125K59	298.55
4″	4 3/16″	3 7/8″	16	13″ Hg	55125K41	90.57	55125K51	229.23	55125K61	332.61
6″	6 5/32″	5 7/8″	11	7″ Hg	55125K42	130.41	55125K52	317.32	55125K62	502.12

For information about duct hose, see page 222.

High-Temperature Metal Duct for Fumes

- Ideal for smoke, paint fumes, and weld fumes; also for air
- Rigid
- Maximum Temperature: Galvanized Steel: 550° F; Aluminum: 450° F; Types 304 and 316 Stainless Steels: 1000° F
- Clamp Type: Use U-bolt clamps (see page 1534)

All-metal interlocked strips create a durable hose that is not air tight but can take the heat. Hose is not rated for compression, pressure, or vacuum. Can be used indoors and out, except the galvanized steel hose is for indoor use only.

Galvanized Steel— An economical choice with fair corrosion resistance. *Extra-heavy weight* hose has Type 304 stainless steel packing for added strength and better sealing.

Aluminum— Lighter in weight than galvanized steel and stainless steel with good corrosion resistance.

Type 304 Stainless Steel— Very good corrosion resistance.

Type 316 Stainless Steel— Excellent corrosion resistance.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Also Available: Pressure-rated Type 304 stainless steel duct hose that's 0.018″ thick. Pressure rating is 25 psi @ 72° F. Comes in the following IDs: 2½″, 3″, 4″, 5″, or 6″. Please ask for 5592K1 and specify hose ID and hose length in 5 ft. increments up to the full coil length of 25 ft.

Galvanized Steel

Hose ID	Hose OD	Bend Radius		Per Ft. Partial Coil	Per Ft. Full Coil
Light Weight—0.012″ Thick					
1/2″	5/8″	1 3/4″	5262K14	$0.62	$0.51
5/8″	3/4″	2″	5262K15	.74	.60
3/4″	7/8″	2 1/4″	5262K16	.95	.78
7/8″	1″	2 3/4″	5262K17	1.08	.89
1″	1 1/8″	3 1/4″	5262K18	1.11	.91
1 1/8″	1 1/4″	3 1/2″	5262K19	1.22	1.00
1 1/4″	1 3/8″	3 3/4″	5262K21	1.27	1.04
1 3/8″	1 1/2″	4″	5262K22	1.40	1.14
1 1/2″	1 5/8″	4 1/4″	5262K23	1.49	1.22
1 5/8″	1 25/32″	5″	5262K24	1.56	1.27
1 3/4″	1 7/8″	5″	5262K25	1.59	1.31
1 7/8″	2 1/32″	7″	5262K26	1.71	1.40
2″	2 1/8″	5 3/4″	5262K27	1.80	1.48
2 1/8″	2 7/16″	7″	5262K28	2.07	1.69
2 1/4″	2 3/8″	6 1/2″	5262K29	2.18	1.78
2 3/8″	2 11/16″	8″	5262K31	2.24	1.84
2 1/2″	2 5/8″	7 1/2″	5262K32	2.39	1.96
2 5/8″	2 15/16″	9″	5262K33	2.49	2.03
2 3/4″	2 7/8″	8 1/2″	5262K34	2.54	2.07
2 7/8″	3 3/16″	9 3/4″	5262K35	2.56	2.09
3″	3 1/8″	9 1/2″	5262K36	3.24	2.65
Light Weight—0.012″ Thick (Cont.)					
3 1/8″	3 1/4″	9 3/4″	5262K37	$3.40	$2.79
3 1/4″	3 3/8″	10 1/2″	5262K38	3.53	2.89
3 1/2″	3 5/8″	11″	5262K41	3.82	3.12
3 3/4″	3 7/8″	11 1/4″	5262K42	4.00	3.28
4″	4 1/8″	12″	5262K43	4.22	3.45
4 1/4″	4 3/8″	12 1/2″	5262K44	4.87	3.98
4 1/2″	4 5/8″	13 1/2″	5262K45	5.20	4.25
5″	5 1/8″	14 1/2″	5262K48	5.82	4.76
6″	6 1/8″	19″	5262K52	6.59	5.40
7″	7 1/8″	21 1/2″	5262K56	8.93	7.31
8″	8 1/8″	24″	5262K62	9.25	7.56
10″	10 1/8″	28″	5262K63	11.40	9.33
Heavy Weight—0.019″ Thick					
1″	1 1/4″	3 3/4″	5495K14	1.78	1.45
1 1/4″	1 1/2″	4 1/2″	5495K15	2.24	1.84
1 1/2″	1 3/4″	5 1/2″	5495K16	2.66	2.18
1 3/4″	2″	5 3/4″	5495K17	3.00	2.45
2″	2 1/4″	6 1/2″	5495K18	3.42	2.79
2 1/4″	2 1/2″	7 1/2″	5495K19	3.93	3.22
2 1/2″	2 3/4″	8 1/2″	5495K21	4.09	3.35
3″	3 1/4″	10 1/2″	5495K23	4.23	3.46
Heavy Weight—0.019″ Thick (Cont.)					
3 1/2″	3 3/4″	12 1/2″	5495K25	$4.91	$4.02
4″	4 1/4″	13 1/2″	5495K27	5.61	4.59
4 1/2″	4 3/4″	15″	5495K29	6.60	5.40
5″	5 1/4″	16 1/2″	5495K31	6.97	5.71
6″	6 1/4″	21 1/2″	5495K35	8.38	6.85
7″	7 1/4″	24″	5495K39	9.57	7.83
8″	8 1/4″	27 1/2″	5495K43	11.83	9.77
9″	9 1/4″	29 1/2″	5495K47	13.76	11.25
10″	10 1/4″	31 1/2″	5495K51	14.84	12.14
Extra-Heavy Weight—0.029″ Thick					
2″	2 5/16″	8 1/2″	5263K14	6.98	5.71
2 1/4″	2 9/16″	9″	5263K15	7.98	6.53
2 1/2″	2 13/16″	10″	5263K16	9.13	7.47
3″	3 5/16″	13″	5263K18	10.47	8.56
3 1/2″	3 13/16″	13 1/2″	5263K21	12.09	9.89
4″	4 5/16″	15″	5263K23	13.71	11.22
5″	5 5/16″	18″	5263K27	13.71	11.21
6″	6 5/16″	23 1/2″	5263K31	16.65	13.70
8″	8 5/16″	29 1/2″	5263K39	23.45	19.19

Aluminum

Hose ID	Hose OD	Bend Radius		Per Ft. Partial Coil	Per Ft. Full Coil
Light Weight—0.012″ Thick					
1″	1 1/8″	3 1/4″	54995K15	$1.88	$1.50
1 1/4″	1 3/8″	3 3/4″	54995K17	2.10	1.68
1 1/2″	1 5/8″	4 1/4″	54995K19	2.41	1.92
1 5/8″	1 25/32″	4 5/8″	54995K21	2.60	2.08
1 3/4″	1 7/8″	5″	54995K22	2.73	2.18
2″	2 1/8″	5 3/4″	54995K24	3.23	2.58
Heavy Weight—0.019″ Thick					
1″	1 1/4″	3 3/4″	55015K15	$2.83	$2.26
1 1/4″	1 1/2″	4 1/2″	55015K17	3.53	2.82
1 1/2″	1 3/4″	5 1/2″	55015K19	4.21	3.36
1 3/4″	2″	5 3/4″	55015K22	4.91	3.92
2″	2 1/4″	6 1/2″	55015K24	5.62	4.50
2 1/4″	2 1/2″	7 1/2″	55015K26	6.30	5.04
2 1/2″	2 3/4″	8 1/2″	55015K28	6.40	5.12
Heavy Weight—0.019″ Thick (Cont.)					
3″	3 1/4″	10 1/2″	55015K33	$6.55	$5.24
3 1/2″	3 3/4″	12 1/2″	55015K36	6.76	5.40
4″	4 1/4″	13 1/2″	55015K38	8.31	6.64
5″	5 1/4″	16 1/2″	55015K42	10.70	8.56
6″	6 1/4″	21 1/2″	55015K43	12.60	10.08
7″	7 1/4″	24″	55015K44	14.76	11.80
8″	8 1/4″	27 1/2″	55015K45	15.21	12.45
12″	12 1/4″	38″	55015K48	26.00	20.80

Type 304 Stainless Steel

Hose ID	Hose OD	Bend Radius		Per Ft. Partial Coil	Per Ft. Full Coil
Light Weight—0.012″ Thick					
1/2″	5/8″	1 3/4″	5241K51	$2.47	$1.99
3/4″	7/8″	2 1/4″	5241K52	3.87	3.15
1″	1 1/8″	3 1/4″	5241K53	5.03	4.08
1 1/8″	1 1/4″	3 1/2″	5241K54	5.59	4.55
1 1/4″	1 3/8″	3 3/4″	5241K55	5.89	4.79
1 3/8″	1 1/2″	4″	5241K56	6.38	5.18
1 1/2″	1 5/8″	4 1/4″	5241K57	6.67	5.42
1 5/8″	1 25/32″	4 7/16″	5241K58	7.29	5.91
1 3/4″	1 7/8″	5″	5241K59	7.67	6.23
1 7/8″	2 1/32″	5 5/16″	5241K61	8.00	6.50
2″	2 1/8″	5 3/4″	5241K62	8.59	6.97
Light Weight—0.012″ Thick (Cont.)					
2 1/4″	2 3/8″	6 1/2″	5241K63	$9.59	$7.80
2 1/2″	2 5/8″	7 1/2″	5241K64	10.75	8.73
3″	3 1/8″	9 1/2″	5241K66	13.16	10.69
3 1/2″	3 5/8″	11″	5241K67	13.90	11.07
4″	4 1/8″	12″	5241K68	16.30	13.26
4 1/2″	4 5/8″	13 1/2″	5241K69	16.14	13.21
5″	5 1/8″	14 1/2″	5241K71	18.02	15.02
Medium Weight—0.016″ Thick					
6″	6 3/16″	20 1/4″	5241K82	24.06	20.06
7″	7 3/16″	23″	5241K86	32.22	27.78
8″	8 3/16″	25 1/2″	5241K84	34.04	29.34
Heavy Weight—0.019″ Thick					
2″	2 1/4″	6 1/2″	5242K51	$12.26	$10.04
2 1/4″	2 1/2″	7 1/2″	5242K52	13.40	10.96
2 1/2″	2 3/4″	8 1/2″	5242K53	15.16	12.40
3″	3 1/4″	10 1/2″	5242K55	19.61	16.04
3 1/2″	3 3/4″	12 1/2″	5242K56	22.77	18.65
4″	4 1/4″	13 1/2″	5242K58	26.08	21.34
4 1/2″	4 3/4″	15″	5242K59	29.36	24.02
5″	5 1/4″	16 1/2″	5242K61	30.55	25.00
6″	6 1/4″	21 1/2″	5242K62	32.05	26.22
7″	7 1/4″	24″	5242K63	42.79	35.19
8″	8 1/4″	27 1/2″	5242K64	42.69	34.92

Type 316 Stainless Steel

Hose ID	Hose OD	Bend Radius		Per Ft. Partial Coil	Per Ft. Full Coil
Light Weight—0.012″ Thick					
1/2″	5/8″	1 3/4″	54945K11	$3.26	$2.67
3/4″	7/8″	2 1/4″	54945K12	4.62	3.78
1″	1 1/8″	3 1/4″	54945K13	6.27	5.13
1 1/8″	1 1/4″	3 1/2″	54945K14	6.94	5.68
1 1/4″	1 3/8″	3 3/4″	54945K15	7.16	5.85
1 3/8″	1 1/2″	4″	54945K16	8.42	6.90
Light Weight—0.012″ Thick (Cont.)					
1 1/2″	1 5/8″	4 1/4″	54945K17	$9.38	$7.68
1 3/4″	1 7/8″	5″	54945K19	10.86	8.90
2″	2 1/8″	5 3/4″	54945K22	11.93	9.76
2 1/2″	2 5/8″	7 1/2″	54945K24	15.44	12.64
3″	3 1/8″	9 1/2″	54945K26	16.22	13.28
3 1/2″	3 5/8″	11″	54945K27	18.42	15.24
Light Weight—0.012″ Thick (Cont.)					
4″	4 1/8″	12″	54945K28	$21.67	$17.73
5″	5 1/8″	14 1/2″	54945K31	26.40	21.84
Heavy Weight—0.019″ Thick					
2″	2 1/4″	6 1/2″	55055K22	15.53	12.71
3″	3 1/4″	10 1/2″	55055K26	21.49	17.58
4″	4 1/4″	13 1/2″	55055K28	28.17	23.06
6″	6 1/4″	21 1/2″	55055K32	33.29	27.23

For information about duct hose, see page 222.

Extreme-Temperature Duct for Fumes

- Ideal for smoke and paint fumes; also for air
- Flexible
- Temperature Range: –200° to +1000° F
- Color: Silver/Gray
- Clamps: See below

Get the best of both worlds—this single-ply hose stands up to extreme temperatures like all-metal hose, yet is more flexible like fabric hose. Hose is made from 0.02″ thick, alumina-coated glass fabric with fine stainless steel wire woven in. It has an external galvanized steel wire support that acts as a wear strip. Hose compresses 75% of its length for 3″ and 4″ ID hose, 67% for 6″ to 14″ ID hose. Can be used indoors and out.

Hose—To Order: Please order in 1-ft. increments up to the full coil length of 25 ft.
Clamps— Made from Type 304 stainless steel.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	Hose	Hose Per Ft. Partial Coil	Hose Per Ft. Full Coil	Clamps	Clamps Each
3″	3 5/16″	4 1/2″	6.8	4″ Hg	45825K71	$36.21	$29.63	45825K11	$4.39
4″	4 5/16″	6″	3.7	2″ Hg	45825K72	53.61	43.86	45825K12	5.41
6″	6 5/16″	9″	2.3	1″ Hg	45825K74	78.88	64.53	45825K13	6.93
8″	8 5/16″	12″	1.4	0.7″ Hg	45825K76	87.25	71.39	45825K14	8.10
10″	10 5/16″	15″	1	0.45″ Hg	45825K78	111.35	91.11	45825K15	9.71
12″	12 5/16″	18″	0.7	0.3″ Hg	45825K79	123.92	101.39	45825K16	12.13
14″	14 5/16″	21″	0.7	0.3″ Hg	45825K81	142.14	118.45	45825K17	12.41

Crushproof Duct for Exhaust Fumes

Hose

EPDM Y Adapter

Universal Adapter

Oval Adapter

Door Port (5398K39 & K44)

Door Port (5398K41)

Diesel Adapter

Connector

- Ideal for carbon monoxide vapors
- Flexible
- Temperature Range: –40° to +400° F
- Color: Black
- Clamps: See connectors and adapters below

Hose

Ideal for garage environments, you can drive over this hose and it will bounce back to shape. Made from 0.156″ thick EPDM rubber, use this hose to carry carbon monoxide exhaust fumes to underground, overhead, and through-the-door outlets. Hose is not rated for compression, pressure, or vacuum. Can be used indoors and out.

Note: Hose and accessories are for use only with motor idling.

2″ to 4″ ID hose has one straight end and one flared end. To make longer lengths, "screw" the straight end of one hose into the flared end of another hose with the same ID—no need for tools or connectors.

5″ and 6″ ID hose has two straight ends. To make longer lengths, use connectors (sold separately at right).

Straight End ID	Straight End OD	Flared End ID	Flared End OD	Bend Radius	11-ft. Length	Each
2″	2 7/16″	2 1/16″	2 11/16″	3″	5398K11	$90.89
2 1/2″	3″	2 11/16″	3 3/8″	3″	5398K12	93.62
3″	3 1/2″	3 1/16″	3 13/16″	4″	5398K13	113.07
4″	4 13/16″	4 3/16″	5 1/16″	4″	5398K15	178.30
5″	6″	—	—	5″	5398K22	231.99
6″	7″	—	—	4″	5398K18	294.99

Accessories

Y adapters let you vent two exhausts through one outlet. ***Universal adapters*** connect to tailpipes with a 4″ or smaller OD. ***Oval adapters*** are for vehicles with oval and/or twin-tip exhaust pipes (5398K51 for 2 1/2″ × 5 1/2″ oval tailpipes and twin tailpipes up to 2 1/2″ dia. each; 5398K52 for 3″ × 8″ oval tailpipes and twin tailpipes up to 3″ dia. each). ***Door ports*** allow you to vent hose through a door. ***Diesel adapters*** connect a hose to diesel exhaust pipes (up to 5 1/2″) for overhead and underground exhaust systems. ***Connectors*** splice sections of 5″ or 6″ ID hose.

	For Hose ID	Material		Each
Y Adapter	2 1/2″	EPDM	5398K21	$30.00
Y Adapter	3″	EPDM	5398K19	31.51
Y Adapter	4″	Aluminum	5398K24	80.84
Universal Adapter	2″, 3″	EPDM	5398K17	34.11
Universal Adapter	2 1/2″	EPDM	5398K16	34.11
Oval Adapter (3″ × 6″)	3″, 4″	EPDM	5398K51	37.64
Oval Adapter (3 1/2″ × 8 1/2″)	3″, 4″	EPDM	5398K52	48.42
Door Port	2 1/2″	EPDM	5398K39	27.62
Door Port	3″	Aluminum	5398K41	37.07
Door Port	4″	Aluminum	5398K44	49.78
Diesel Adapter	4″	EPDM	5398K31	75.58
Diesel Adapter	6″	EPDM	5398K32	88.89
Connector	5″	Aluminum	5398K33	47.67
Connector	6″	Aluminum	5398K35	87.71

Highly Compressible Duct for Fumes

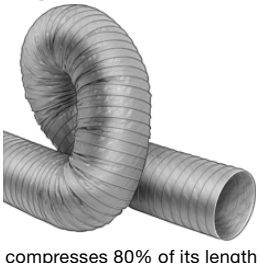

- Ideal for smoke and paint fumes; also for air
- Very flexible
- Temp. Range: –65° to +550° F
- Color: Orange
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

Lightweight and flexible, this single-ply hose is highly compressible. Made from 0.016″ thick, silicone-coated fiberglass, it has a fabric-enclosed steel wire support. Hose compresses 80% of its length for 2″ to 3″ ID hose; 85% for 4″ to 12″ ID hose. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2″	2 1/4″	1.4″	30	29″ Hg	5409K25	$13.49	$10.49
2 1/2″	2 3/4″	1.8″	30	24″ Hg	5409K17	16.63	12.93
3″	3 1/4″	2.1″	30	14″ Hg	5409K69	17.40	13.53
4″	4 1/4″	2.7″	18	12″ Hg	5409K24	21.32	16.40
5″	5 5/16″	3.3″	14	6″ Hg	5409K26	25.94	20.18
6″	6 5/16″	3.7″	7	5″ Hg	5409K28	29.83	23.20
8″	8 3/8″	4.9″	5	2″ Hg	5409K31	32.30	26.92
10″	10 3/8″	6.1″	4	1″ Hg	5409K68	43.14	35.95
12″	12 3/8″	7.3″	0.3	0.7″ Hg	5409K64	49.98	41.64

Compressible Duct for Corrosive Fumes

- Ideal for smoke, paint fumes, butyl acetate fumes, and nitric acid fumes; also for air
- Flexible
- Temperature Range: –65° to +500° F
- Color: Gray
- Clamps: Use worm-drive clamps (see pages 274-278)

Corrosive fumes are no problem for this single-ply hose—it's made from 0.016″ thick PTFE-coated fiberglass. Hose has an external Type 304 stainless steel wire support that acts as a wear strip. Hose compresses 75% of its length. Can be used indoors and out.

To Order: Please order hose in 1-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
4″	4 5/16″	6″	3.7	2″ Hg	45865K41	$32.36	$27.22
5″	5 5/16″	7 1/2″	3	1″ Hg	45865K42	40.73	34.27
6″	6 5/16″	9″	2.3	1″ Hg	45865K43	48.56	40.85
7″	7 5/16″	10 1/2″	2	0.85″ Hg	45865K44	56.81	47.79
8″	8 5/16″	12″	1.4	0.75″ Hg	45865K45	64.73	54.46
10″	10 5/16″	15″	1	0.4″ Hg	45865K47	80.92	68.08
12″	12 5/16″	18″	0.7	0.25″ Hg	45865K48	90.39	76.90

For information about duct hose, see page 222.

Duct for Corrosive Fumes

- Ideal for smoke, paint fumes, hydrochloric acid fumes, and toluene fumes; also for air
- Flexible
- Temperature Range: –75° to +400° F
- Color: Orange
- Clamps: Use worm-drive clamps (see pages 274-278)

A nonstick PTFE (polytetrafluoroethylene) liner gives this double-ply hose the ability to handle corrosive fumes. Hose is made from 0.028″ thick silicone-coated fiberglass with an enclosed steel wire support. Not rated for compression. Can be used indoors and out.

Note: This hose is recommended for straight runs or gradual bends only. The liner may separate with overbending.

Hose— Full coil length is 12 ft. **To Order:** Please order in 1-ft. increments up to the full coil length.

Hose with Finished Ends— For easier installation, the ends are neatly cuffed with no wire support.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	HOSE WITH FINISHED ENDS 6-ft. Length	HOSE WITH FINISHED ENDS 6-ft. Length Each	HOSE WITH FINISHED ENDS 12-ft. Length	HOSE WITH FINISHED ENDS 12-ft. Length Each
1″	1 1/8″	1″	28	28″ Hg	5497K38	$11.61	$9.68	5497K39	$76.66	5497K52	$127.73
1 1/4″	1 3/8″	1 1/4″	26	24″ Hg	5497K31	14.35	11.74	5497K51	94.66	5497K53	154.95
1 1/2″	1 5/8″	1 1/2″	25	22″ Hg	5497K33	18.48	14.79	5497K57	121.97	5497K54	186.45
1 3/4″	1 7/8″	1 3/4″	24	21″ Hg	5497K34	21.75	17.40	5497K58	143.55	5497K55	211.33
2″	2 5/32″	2″	24	20″ Hg	5497K35	23.26	18.61	5497K59	136.48	5497K56	260.66
3″	3 5/32″	3″	19	16″ Hg	5497K36	31.60	25.28	5497K63	204.68	5497K62	354.29
4″	4 3/16″	4″	16	13″ Hg	5497K37	41.39	33.11	5497K67	268.12	5497K66	415.39
6″	6 3/16″	6″	11	7″ Hg	5497K92	54.06	44.23	5497K77	350.17	5497K76	613.38
8″	8 3/16″	8″	7	3″ Hg	5497K94	67.72	56.45	5497K98	438.62	5497K91	679.63
10″	10 1/4″	10″	5	1″ Hg	5497K95	98.95	82.46	5497K99	640.83	5497K93	850.28
12″	12 1/4″	12″	4	1″ Hg	5497K97	99.31	82.48	5497K89	630.05	5497K96	988.36

Highly Compressible Clear Duct for Corrosive Fumes

- Ideal for smoke, paint fumes, sodium hydroxide fumes, and sulfuric acid fumes; also for air
- Flexible
- Temperature Range: –65° to +500° F
- Color: Clear
- Clamps: Use worm-drive clamps (see pages 274-278)

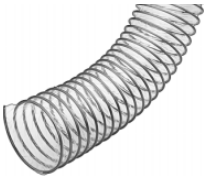

See what's flowing through your hose. This highly compressible hose is made from clear, 0.005″ thick PFA (perfluoroalkoxy). It has an external Type 304 stainless steel wire support that acts as a wear strip. Hose compresses 83% of its length. Can be used indoors and out.

To Order: Please order hose in 1-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72°F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
3″	3 5/16″	4 1/2″	7	3″ Hg	56365K23	$34.78	$29.43
4″	4 5/16″	6″	4	2″ Hg	56365K24	39.51	33.44
5″	5 5/16″	7 1/2″	3.6	2″ Hg	56365K25	48.65	41.17
6″	6 5/16″	9″	3.5	2″ Hg	56365K26	59.74	50.55
7″	7 5/16″	10 1/2″	3.5	2″ Hg	56365K27	69.10	58.48
8″	8 5/16″	12″	3	1″ Hg	56365K28	78.94	66.79
10″	10 5/16″	15″	2.2	1″ Hg	56365K41	80.04	67.73

Blo-R-Vac Duct for Dust with Wear Strip

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temp. Range: –40° to +180° F
- Internal Abrasion Resistance: Very Good
- Color: Black with orange wear strip
- Clamps: Use worm-drive clamps (see pages 274-278)

A highly visible orange wear strip on this double-ply hose provides high external wear resistance. It is made from 0.03″ thick PVC-coated polyester with an enclosed bronze-coated steel wire support. Hose compresses 60% of its length for 3″ to 5″ ID hose; 75% for 6″ to 12″ ID hose. Meets UL 94V0 and UL 94HB for flammability. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
3″	3 11/32″	1 1/2″	28	24″ Hg	56435K33	$6.63	$5.31
4″	4 11/32″	2″	24	18″ Hg	56435K34	8.35	6.68
5″	5 11/32″	2 1/2″	20	16″ Hg	56435K35	9.47	7.58
6″	6 13/32″	3″	18	17″ Hg	56435K36	10.01	8.00
8″	8 13/32″	4″	12	8″ Hg	56435K38	13.24	10.59
10″	10 7/16″	5″	8	5″ Hg	56435K39	15.70	12.56
12″	12 7/16″	6″	6	3″ Hg	56435K42	19.07	15.26

Flexible Blo-R-Vac Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Very flexible
- Temperature Range: –40° to +250° F
- Internal Abrasion Resistance: Good
- Color: Black
- Clamps: Use worm-drive clamps (see pages 274-278)

Whether it needs to go over, under, or around, this very flexible double-ply hose conforms to your installation needs. Hose is made from 0.03″ thick neoprene-coated polyester with a fabric-enclosed steel wire support. Hose compresses 67% for 1″ to 4″ ID hose; 63% for 5″ to 10″ ID hose; and 75% for 12″ to 24″ ID hose. Meets UL 94V0 for flammability. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1 1/4″	7/8″	30	29″ Hg	5266K82	$5.01	$4.00
1 1/4″	1 1/2″	15/16″	30	29″ Hg	5266K83	5.47	4.38
1 1/2″	1 3/4″	1 11/16″	30	29″ Hg	5266K84	6.30	5.04
2″	2 1/4″	1 11/16″	30	29″ Hg	5266K25	7.05	5.64
2 1/2″	2 3/4″	1 13/16″	30	29″ Hg	5266K26	7.51	6.02
3″	3 5/16″	2 3/8″	30	29″ Hg	5266K27	7.97	6.38
4″	4 3/8″	3 3/32″	30	29″ Hg	5266K28	9.01	7.20
5″	5 3/8″	3 1/2″	17	17″ Hg	5266K29	10.25	8.20
6″	6 3/8″	4 1/2″	11	22″ Hg	5266K31	10.97	8.78
7″	7 3/8″	4 3/4″	8.5	14″ Hg	5266K85	$12.46	$9.96
8″	8 7/16″	5 1/2″	6.5	7″ Hg	5266K33	14.01	11.20
10″	10 7/16″	6 7/8″	5	5″ Hg	5266K35	17.55	14.04
12″	12 7/16″	7 11/16″	4.3	3″ Hg	5266K37	21.18	16.94
14″	14 1/2″	10″	3.6	3″ Hg	5266K39	22.33	18.27
16″	16 1/2″	12″	3.2	2″ Hg	5266K41	26.08	21.34
18″	18 1/2″	13″	3	1″ Hg	5266K42	32.53	26.62
20″	20 1/2″	14″	2.6	1″ Hg	5266K43	40.73	33.33
24″	24 1/2″	17″	2.2	0.75″ Hg	5266K44	50.47	41.29

For information about duct hose, see page 222.

Blo-R-Vac Duct for Dust

Black

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temperature Range: –60° to +275° F
- Internal Abrasion Resistance: Very good
- Clamps: Use worm-drive and quick-release clamps (see pgs. 274-278)

You'll get the strength of plastic and the durability of rubber with this hose—it's made from blended polypropylene/rubber, which is also known as TPR (thermoplastic rubber). Hose is 0.03″ thick, except 1¼″ to 1¾″ ID hose is 0.026″ thick. It has an enclosed bronze-coated steel wire support. ***Black*** hose meets UL 94HB for flammability. The TPR material for the ***white*** hose is FDA CFR21 177.2600 compliant. All hose compresses 50% of its length, except 1¾″ ID hose compresses 25% and 8″ ID hose compresses 42%. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	Black	Black Per Ft. Partial Coil	Black Per Ft. Full Coil	White	White Per Ft. Partial Coil	White Per Ft. Full Coil
Inch										
1¼″	1½″	1½″	28	29″ Hg	53145K31	$3.13	$2.50	—	—	—
1½″	1¾″	1¾″	24	29″ Hg	53145K32	3.18	2.54	—	—	—
1¾″	2″	2″	22	29″ Hg	53145K33	3.31	2.65	—	—	—
2″	2¼″	3½″	17	29″ Hg	53145K61	3.02	2.41	53145K81	$3.97	$3.18
2½″	2¾″	4″	13	28″ Hg	53145K63	3.97	3.18	53145K83	5.03	4.02
3″	3¼″	4¼″	10	28″ Hg	53145K65	4.45	3.56	53145K85	5.93	4.74
4″	4 9/32″	6½″	10	25″ Hg	53145K67	5.70	4.55	53145K87	7.41	5.93
5″	5 9/32″	8″	9	15″ Hg	53145K69	6.09	4.87	53145K89	7.97	6.37
6″	6 9/32″	8¾″	8	11″ Hg	53145K71	6.67	5.34	53145K91	8.66	6.92
8″	8 11/32″	12″	6	5″ Hg	53145K73	8.55	6.84	53145K93	11.15	8.92
10″	10⅜″	12½″	4	5″ Hg	53145K75	10.94	8.75	53145K95	14.24	11.39
12″	12⅜″	13¾″	4	4″ Hg	53145K77	13.11	10.48	53145K97	16.73	13.38
14″	14½″	18″	2	2″ Hg	53145K21	14.20	11.88	53145K41	18.51	15.48
16″	16½″	21″	2	2″ Hg	53145K22	18.37	15.36	53145K42	23.71	19.83
18″	18½″	21½″	2	2″ Hg	53145K23	21.87	18.29	53145K43	28.55	23.88
20″	20½″	25½″	1	2″ Hg	53145K24	29.12	24.35	53145K44	37.87	31.67
Metric										
50 mm	55.9 mm	3½″	17	29″ Hg	53335K11	3.10	2.49	53335K27	4.00	3.22
60 mm	65.9 mm	3⅞″	13	28″ Hg	53335K12	4.00	3.22	53335K28	5.04	4.04
70 mm	75.9 mm	4″	10	28″ Hg	53335K13	4.34	3.48	53335K29	5.94	4.78
80 mm	85.9 mm	4⅜″	10	28″ Hg	53335K14	5.11	4.11	53335K31	7.23	5.81
90 mm	95.9 mm	5¼″	10	20″ Hg	53335K15	5.32	4.28	53335K32	7.43	5.98
100 mm	106.5 mm	6½″	10	25″ Hg	53335K16	5.76	4.63	53335K33	7.52	6.05
115 mm	121.5 mm	7½″	9	15″ Hg	53335K18	5.83	4.69	53335K35	7.64	6.14
140 mm	147 mm	8¼″	8	11″ Hg	53335K19	6.48	5.21	53335K36	8.45	6.79
160 mm	167 mm	9″	8	11″ Hg	53335K21	7.34	5.90	53335K37	9.53	7.67

High-Temperature Blo-R-Vac Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temp. Range: –60° to +300° F
- Internal Abrasion Resistance: Good
- Color: Black
- Clamps: Use worm-drive clamps (see pages 274-278)

A double coating of neoprene makes this 0.02″ thick fiberglass hose resistant to high temperatures. It has double-ply construction with an enclosed bronze-coated steel wire support. The 1″ to 3¾″ ID hose is not rated for compression; 4″ to 9″ ID hose compresses 66% of its length, 74% for 10″ to 12″ ID hose. Can be used indoors and out.

To Order: Please order hose in 1-ft. increments up to the full coil length of 12 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1⅛″	15/16″	28	28″ Hg	5499K237	$5.26	$4.12
1¼″	1⅜″	1¼″	26	26″ Hg	5499K238	5.76	4.51
1½″	1 9/16″	1 7/16″	25	23″ Hg	5499K239	6.06	4.75
1¾″	1 13/16″	1 11/16″	23	22″ Hg	5499K241	6.54	5.11
2″	2 1/16″	1⅞″	24	20″ Hg	5499K242	6.60	5.16
2¼″	2 5/16″	2 3/16″	21	19″ Hg	5499K243	7.33	5.75
2½″	2⅝″	2⅜″	20	18″ Hg	5499K244	7.56	5.92
2¾″	2⅞″	1⅜″	34	17″ Hg	5499K245	8.11	6.34
3″	3⅛″	2⅞″	19	16″ Hg	5499K246	8.54	6.68
3¼″	3⅜″	1⅝″	30	15″ Hg	5499K247	8.64	6.76
3½″	3⅝″	3⅜″	18	14″ Hg	5499K248	9.11	7.12
3¾″	3⅞″	1⅞″	26	14″ Hg	5499K249	9.38	7.34
4″	4⅛″	3⅞″	16	13″ Hg	5499K251	$10.03	$7.85
4½″	4⅝″	4⅜″	15	11″ Hg	5499K252	11.05	8.65
5″	5⅛″	4⅞″	14	10″ Hg	5499K253	11.15	8.72
5½″	5⅝″	5⅜″	14	8″ Hg	5499K254	12.48	9.77
6″	6⅛″	5⅞″	12	7″ Hg	5499K255	13.09	10.24
6½″	6⅝″	6⅜″	10	6″ Hg	5499K256	13.99	10.95
7″	7⅛″	6⅞″	9	5″ Hg	5499K257	14.96	11.70
8″	8⅛″	7 13/16″	8	3″ Hg	5499K258	17.02	13.33
9″	9⅛″	8⅞″	6	3″ Hg	5499K259	19.41	15.19
10″	10⅛″	9 13/16″	5	2″ Hg	5499K261	21.57	16.89
11″	11⅛″	10 13/16″	4	1″ Hg	5499K262	22.61	17.69
12″	12⅛″	11 13/16″	4	1″ Hg	5499K263	25.73	20.14

Abrasion-Resistant Duct for Dust with Wear Strip

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temperature Range: –60° to +275° F
- Internal Abrasion Resistance: Very good
- Color: Black with orange wear strip
- Clamps: Use worm-drive clamps (see pages 274-278)

This abrasion-resistant hose offers the strength of plastic with the durability of rubber. It's made from 0.03″ thick TPR (thermoplastic rubber) with an enclosed bronze-coated steel wire support and a wear strip. Hose compresses 33% of its length. Meets UL 94HB for flammability. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2″	2 5/16″	3″	17	29″ Hg	5845K11	$4.50	$3.60
3″	3 5/16″	4¼″	10	28″ Hg	5845K12	6.76	5.40
4″	4 5/16″	6″	10	25″ Hg	5845K13	8.61	6.88
5″	5 5/16″	6¾″	9	15″ Hg	5845K14	9.14	7.31
6″	6 5/16″	8¼″	8	11″ Hg	5845K15	10.00	7.99
8″	8⅜″	10¼″	6	5″ Hg	5845K16	12.91	10.32
10″	10 7/16″	12¾″	4	5″ Hg	5845K17	16.55	13.24
12″	12 7/16″	15¼″	4	4″ Hg	5845K18	19.85	15.88

For information about duct hose, see page 222.

Abrasion-Resistant Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temp. Range: –60° to +275° F
- Internal Abrasion Resistance: Very good
- Color: Black
- Clamps: Use worm-drive clamps (see pages 274-278)

Also known as TPR (thermoplastic rubber) hose, this single-ply hose is made from polyester and coated with a blend of EPDM rubber and polypropylene for abrasion resistance. Hose is 0.028″ thick, except the 2″ and 3″ ID hose is 0.026″ thick. All hose has an enclosed steel wire support. Hose compresses 50% of its length. Meets UL 94HB for flammability. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2″	2 1/4″	3 1/2″	50	29″ Hg	5222K22	$3.83	$3.14
3″	3 1/4″	4 1/4″	29	28″ Hg	5222K23	5.60	4.58
4″	4 9/32″	4 3/4″	27	28″ Hg	5222K24	7.26	5.94
5″	5 9/32″	6″	25	19″ Hg	5222K25	8.36	6.85
6″	6 9/32″	7 1/2″	18	16″ Hg	5222K26	8.49	6.95
8″	8 11/32″	9″	13	15″ Hg	5222K28	10.82	8.85
10″	10 3/8″	11″	8	10″ Hg	5222K31	15.11	12.37
12″	12 3/8″	13″	8	8″ Hg	5222K32	18.10	14.81

Flexible Abrasion-Resistant Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temp. Range: –65° to +300° F
- Internal Abrasion Resistance: Good
- Color: Black
- Clamps: Use worm-drive clamps (see pages 274-278)

Double-ply construction with a neoprene liner makes this hose flexible yet tough enough to resist abrasion. Hose is made from 0.024″ thick neoprene-coated fiberglass with an enclosed bronze-coated steel wire support. Hose compresses 35% of its length for 1″ to 3 1/2″ ID hose; 50% for 4″ to 10″ ID hose. Can be used indoors and out.

To Order: Please order hose in 1-ft. increments up to the full coil length of 12 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1 5/32″	9/16″	26	10″ Hg	5502K51	$7.76	$6.21
1 1/2″	1 21/32″	13/16″	24	8″ Hg	5502K52	9.01	7.21
2″	2 5/32″	1 3/32″	23	7″ Hg	5502K53	10.09	8.07
2 1/2″	2 11/16″	1 1/4″	21	5″ Hg	5502K54	11.48	9.18
3″	3 3/16″	1 9/16″	20	4″ Hg	5502K55	11.99	9.60
3 1/2″	3 23/32″	1 13/16″	19	4″ Hg	5502K56	15.20	12.16
4″	4 7/32″	2 1/16″	18	3″ Hg	5502K57	17.52	14.01
5″	5 7/32″	2 1/2″	16	2″ Hg	5502K58	20.97	16.77
6″	6 7/32″	3 1/16″	12	2″ Hg	5502K61	24.78	19.82
7″	7 1/4″	3 9/16″	9	1″ Hg	5502K62	28.26	22.61
8″	8 1/4″	4 3/32″	6	1″ Hg	5502K63	31.45	25.16
10″	10 9/32″	5 1/16″	3	1″ Hg	5502K66	39.82	31.85

Super-Abrasion-Resistant Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Very flexible
- Temp. Range: –65° to +225° F
- Internal Abrasion Resistance: Excellent
- Color: Black
- Clamps: Use worm-drive and quick-release clamps (see pgs. 274-278)

You'll get superior abrasion resistance with this hose—it's made from a polyurethane/rubber blend, which is also known as TPU (thermoplastic polyurethane). Material is 0.02″ thick, except the 2″ ID hose is 0.015″ thick. Hose has an enclosed bronze-coated steel wire support. It compresses 67% of its length for 2″ ID hose; 75% for 3″ to 6″ ID hose; and 80% for 7″ to 10″ ID hose. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2″	2 1/4″	2″	30	29″ Hg	5628K11	$4.35	$3.48
3″	3 1/4″	3 1/4″	30	29″ Hg	5628K111	6.58	5.26
4″	4 5/16″	3 3/4″	22	24″ Hg	5628K112	8.36	6.53
5″	5 3/8″	4 1/2″	18	13″ Hg	5628K113	10.18	8.14
6″	6 5/16″	5 1/4″	15	8″ Hg	5628K114	11.78	9.42
7″	7 3/8″	5 7/8″	10	8″ Hg	5628K115	13.03	10.42
8″	8 7/16″	6 1/2″	7	2″ Hg	5628K116	14.35	11.48

Super-Abrasion-Resistant Clear Duct for Dust

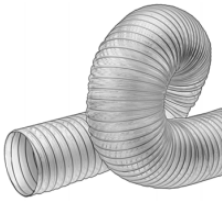

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Very flexible
- Temp. Range: –40° to +200° F
- Internal Abrasion Resistance: Excellent
- Color: Clear
- Clamps: Use worm-drive clamps (see pages 274-278)

Offering superior abrasion resistance, this hose is clear, so you can monitor flow. Hose is made from a 0.02″ thick polyurethane/rubber blend, which is also known as TPU (thermoplastic polyurethane); it has an enclosed steel wire support. Hose compresses 58% of its length for 1 1/2″ to 6″ ID hose; compression is not rated for 3/4″ to 1 1/4″ ID hose. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
3/4″	15/16″	11/16″	16	28″ Hg	5136K17	$2.17	$1.69
1″	1 3/16″	7/8″	15	28″ Hg	5136K18	2.55	1.98
1 1/4″	1 7/16″	1 3/16″	13	28″ Hg	5136K11	2.96	2.31
1 1/2″	1 11/16″	1 7/16″	10	26″ Hg	5136K12	3.65	2.83
2″	2 1/8″	1 15/16″	8	22″ Hg	5136K13	4.49	3.50
2 1/2″	2 5/8″	2 7/16″	7	20″ Hg	5136K14	5.55	4.31
3″	3 3/16″	2 7/8″	6	16″ Hg	5136K15	6.88	5.35
4″	4 3/16″	3 7/8″	5	12″ Hg	5136K16	8.82	6.86
5″	5 3/16″	4 7/8″	5	10″ Hg	5136K27	10.58	8.23
6″	6 3/16″	5 7/8″	4	7″ Hg	5136K28	12.34	9.60

Static-Dissipative Duct for Dust with Wire Support

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Very flexible
- Temperature Range: –40° to +250° F
- Internal Abrasion Resistance: Good
- Color: Black
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

The neoprene coating on this double-ply hose contains conductive carbon that creates an escape route for electrostatic buildup when you crimp a grounding wire to the wire support. Made from 0.03″ thick polyester with a fabric-enclosed steel wire support. Hose compresses 63% of its length. For indoor use.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1 5/16″	1″	30	29″ Hg	5619K31	$8.62	$7.05
2″	2 5/16″	2″	30	29″ Hg	5619K12	11.60	9.49
3″	3 5/16″	2 1/8″	29	29″ Hg	5619K13	13.07	10.69
4″	4 5/16″	2 13/16″	16	29″ Hg	5619K14	15.02	12.29
5″	5 5/16″	3 1/2″	15	22″ Hg	5619K15	15.78	12.91
6″	6 5/16″	4″	13	22″ Hg	5619K16	18.07	14.78
7″	7 5/16″	4 11/16″	14	14″ Hg	5619K17	19.78	16.18
8″	8 5/16″	5 1/2″	10	7″ Hg	5619K18	23.07	18.87
10″	10 5/16″	7″	8	3″ Hg	5619K19	26.22	21.45
12″	12 5/16″	8 3/16″	7	2″ Hg	5619K21	35.62	29.15
14″	14 5/16″	9 3/8″	5	3″ Hg	5619K22	38.00	31.10
16″	16 5/16″	10 13/16″	4	2″ Hg	5619K23	41.42	34.74
18″	18 5/16″	12″	4	1″ Hg	5619K24	45.00	36.81

For information about duct hose, see page 222.

Static-Dissipative Duct for Dust with Plastic Support

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temp. Range: –40° to +140° F
- Internal Abrasion Resistance: Excellent
- Color: Black
- Clamps: Use twin-ring hose clamps (see page 282)

Made from SBR (styrene butadiene rubber) blended with carbon black, this hose dissipates static even without a ground wire. Hose has an enclosed PVC support. Not rated for compression. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 100 ft.

Hose ID	Hose OD	Material Thick.	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1¼″	1 9/16″	0.079″	2″	45	29″ Hg	4505K21	$3.94	$3.15
1½″	1 13/16″	0.087″	2″	45	29″ Hg	4505K22	4.10	3.28
2″	2 11/32″	0.087″	2½″	40	29″ Hg	4505K23	6.90	5.52
2½″	2 15/16″	0.098″	2½″	35	29″ Hg	4505K24	8.50	6.81
3″	3½″	0.098″	3″	35	29″ Hg	4505K25	11.18	8.94
3½″	4 7/64″	0.138″	4″	30	29″ Hg	4505K26	16.96	13.56
4″	4⅝″	0.142″	4½″	30	29″ Hg	4505K27	18.43	14.75
5″	5¾″	0.177″	5″	30	28″ Hg	4505K28	30.40	24.45
6″	6¾″	0.217″	9¼″	30	28″ Hg	4505K29	37.56	30.21

Tear-Resistant Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temperature Range: –40° to +250° F
- Internal Abrasion Resistance: Good
- Color: Black
- Clamps: Use worm-drive clamps (see pages 274-278)

Exceptionally tough for a thin-wall (0.022″ thick) hose, this TPE (thermoplastic elastomer) hose is made from a blend of polypropylene and rubber with an enclosed steel wire support. Hose compresses 50% of its length for ¾″ to 5″ ID hose; 40% for 6″ ID hose. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
¾″	15/16″	¾″	10	28″ Hg	5475K81	$1.67	$1.27
1″	1 3/16″	1″	10	28″ Hg	5475K82	1.93	1.49
1¼″	1 7/16″	1¼″	10	28″ Hg	5475K83	2.12	1.62
1½″	1⅝″	1½″	10	28″ Hg	5475K84	2.42	1.86
1¾″	1 15/16″	1¾″	10	28″ Hg	5475K85	2.71	2.08
2″	2⅛″	2″	10	28″ Hg	5475K86	3.19	2.45
2½″	2⅝″	2½″	9	28″ Hg	5475K87	3.78	2.91
3″	3 3/16″	3″	7	26″ Hg	5475K88	5.14	3.95
4″	4¼″	4″	6	20″ Hg	5475K89	6.75	5.19
5″	5¼″	5″	5	18″ Hg	5475K91	8.87	6.82
6″	6¼″	6″	4	10″ Hg	5475K92	9.70	7.92

Economical Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temp. Range: –50° to +150° F
- Internal Abrasion Resistance: Excellent
- Color: Gray
- Clamps: Use worm-drive clamps (see pages 274-278)

All-polyethylene construction with no wire support means this hose offers excellent abrasion resistance at an economical price. Not rated for compression. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft.

Hose ID	Hose OD	Material Thick.	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
½″	11/16″	0.035″	1¼″	15	29″ Hg	5399K16	$1.77	$1.41
⅝″	15/16″	0.038″	1½″	15	29″ Hg	5399K17	1.88	1.50
¾″	1″	0.040″	2¼″	15	29″ Hg	5399K18	1.91	1.52
1″	1 5/16″	0.040″	3½″	15	29″ Hg	5399K21	2.00	1.60
1¼″	1⅝″	0.045″	3¾″	13	29″ Hg	5399K22	2.25	1.80
1½″	1⅞″	0.050″	4″	9	29″ Hg	5399K11	2.65	2.12
2″	2½″	0.055″	5″	5	20″ Hg	5399K12	3.92	3.14
2½″	3 1/16″	0.055″	6″	4	12″ Hg	5399K13	5.12	4.09
3″	3½″	0.060″	7″	3	6″ Hg	5399K14	5.43	4.34
4″	4½″	0.060″	13″	1	2″ Hg	5399K24	7.50	6.00

Economical Clear Duct for Dust

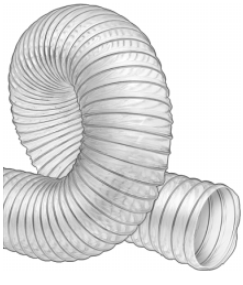

- Ideal for dust and lint; also for air and smoke
- Very flexible
- Temperature Range: –20° to +180° F
- Internal Abrasion Resistance: Fair
- Color: Clear
- Clamps: Use worm-drive clamps (see pages 274-278)

Made from 0.015″ thick clear PVC with an enclosed steel wire support, this economical hose allows you to see the flow. Hose compresses 66% of its length. Can be used indoors and out.

To Order: Please order in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
4″	4 3/16″	3″	13	10″ Hg	56355K33	$3.73	$2.90
6″	6 7/32″	4″	7	6″ Hg	56355K34	4.71	3.67
7″	7 9/32″	5″	7	4″ Hg	56355K36	6.11	4.76
8″	8 9/32″	6″	7	2″ Hg	56355K38	6.08	4.73
10″	10 5/16″	8″	5	1″ Hg	56355K41	8.98	6.98
12″	12 5/16″	9½″	3	1″ Hg	56355K42	10.54	8.20
14″	14⅜″	10½″	2	1″ Hg	56355K44	11.72	9.11
16″	16⅜″	11½″	1	1″ Hg	56355K46	13.50	10.50
18″	18⅜″	12½″	1	1″ Hg	56355K48	15.00	11.67

Bend-and-Stay Duct and Fittings for Dust

Screw-On Fitting

- Ideal for dust; also for air and smoke
- Very flexible
- Temp. Range: –4° to +175° F
- Internal Abrasion Resistance: Poor
- Color: Brown or white

Bend this hose any way you like—it maintains its shape after positioning. Hose is made from 0.015″ thick polypropylene with an enclosed steel wire support. Create longer lengths by twisting one end of hose into another. Hose compresses 65% of its length. Can be used indoors and out.

***Hose*—**Comes in your choice of brown or white. **To Order:** Please order hose in 5-ft. increments up to the full coil length of 20 ft. and specify color.

***Screw-On Fittings*—**Screw onto the hose end to make connections to equipment easier. Made from EPT (ethylene-propylene terpolymer) rubber, in your choice of brown or white. **To Order:** Please specify color.

Hose ID	Hose OD	Bend Radius	Max. psi @ 68° F	Vacuum @ 68° F		Per Ft. Partial Coil	Per Ft. Full Coil
1½″	1⅝″	1 3/16″	20	22″ Hg	56385K12	$5.16	$4.23
2″	2¼″	1 9/16″	13	21″ Hg	56385K14	5.73	4.69
2½″	2 13/16″	2″	10	19″ Hg	56385K16	6.61	5.40
3″	3 3/16″	2 5/16″	10	18″ Hg	56385K18	7.19	5.89
4″	4 3/16″	3″	8	13″ Hg	56385K24	8.94	7.32
5″	5 3/16″	4 5/16″	7	10″ Hg	56385K26	10.09	8.25
6″	6¼″	5 1/16″	6	7″ Hg	56385K28	12.82	10.49
8″	8 3/16″	7″	4	5″ Hg	56385K34	18.42	15.07

Screw-On Fittings ID (A)	ID (B)		Each
1⅝″	1½″	56385K72	$5.61
2¼″	2″	56385K74	6.14
2 13/16″	2½″	56385K76	10.70
3 3/16″	3″	56385K78	12.24
4 3/16″	4″	56385K84	21.81
5 3/16″	5″	56385K86	26.95
6¼″	6″	56385K88	33.16
8 3/16″	8″	56385K93	43.79

For information about duct hose, see page 222.

FDA-Compliant Duct for Dust

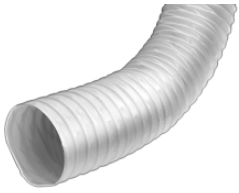

- Ideal for dust, grinding dust, wood sawdust, lint, and dry food products; also for air and smoke
- Flexible
- Temp. Range: –20° to +325° F
- Internal Abrasion Resistance: Good
- Color: White
- Clamps: Use worm-drive clamps (see pages 274-278)

This hose is made from 0.03″ thick acrylic-coated polyester that is FDA CFR21 177.1010 compliant, so in addition to dust, it can be used with dry foods and pharmaceutical materials. Hose has a fabric-enclosed steel wire support. It compresses 64% of its length for 1½″ to 4″ ID hose; 80% for 5″ to 16″ ID hose. For indoor use.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1½″	1 13/16″	5/16″	30	29″ Hg	5586K29	$9.90	$7.92
2″	2 5/16″	1 11/16″	30	29″ Hg	5586K31	9.79	8.00
2½″	2 7/8″	2″	30	29″ Hg	5586K32	11.17	9.14
3″	3 5/16″	2½″	29	29″ Hg	5586K33	11.73	9.58
4″	4 5/16″	3 3/16″	30	29″ Hg	5586K35	13.10	10.72
5″	5 5/16″	4″	29	16″ Hg	5586K36	14.98	12.26
6″	6 5/16″	4½″	18	22″ Hg	5586K38	16.20	12.96
7″	7 5/16″	5″	14	15″ Hg	5586K39	16.87	13.80
8″	8 15/32″	5 19/32″	11	7″ Hg	5586K41	18.53	15.16
10″	10 15/32″	7″	8	3″ Hg	5586K42	23.22	19.00
12″	12 15/32″	8 5/16″	7	2″ Hg	5586K43	28.62	23.42
14″	14 15/32″	10″	5.3	3″ Hg	5586K44	32.60	27.17
16″	16 15/32″	11″	4.5	2″ Hg	5586K45	37.24	31.03

High-Flow Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temp. Range: –60° to +275° F
- Internal Abrasion Resistance: Very good
- Color: Black with gray support or white with white support
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

Instead of an internal support, this TPR (thermoplastic rubber) hose has an external polypropylene support that provides a smooth interior for up to 40% better air flow. The support acts as a wear strip. Material thickness is 0.026″ for 1″ to 4″ ID hose; 0.045″ for 6″ to 10″ ID hose. Hose compresses 33% of its length. Can be used indoors and out.

Hose comes in your choice of colors: black, which has a gray support; and all white, which is made from a TPR material that's FDA CFR21 177.2600 compliant.

To Order: Please order hose in 5-ft. increments up to the full coil length and specify black or white. Full coil length is 50 ft., except 1″ to 1¾″ ID hose in white, which has a full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1 3/8″	2 1/4″	34	29″ Hg	5915T32	$3.38	$2.63
1 1/4″	1 11/16″	2 1/2″	28	29″ Hg	5915T33	3.44	2.68
1 1/2″	1 15/16″	2 3/4″	23	29″ Hg	5915T34	3.86	3.00
1 3/4″	2 3/16″	3″	18	29″ Hg	5915T35	4.43	3.44
2″	2 1/2″	3 1/4″	17	29″ Hg	5915T36	5.23	4.06
2 1/2″	3 1/32″	3 3/4″	16	24″ Hg	5915T37	6.88	5.35
3″	3 9/16″	5″	14	19″ Hg	5915T38	7.70	6.00
4″	4 5/8″	7″	11	16″ Hg	5915T39	11.34	9.07
6″	6 11/16″	7 1/4″	14	10″ Hg	5915T41	15.05	12.04
8″	8 7/8″	9″	14	6″ Hg	5915T42	16.72	13.38
10″	10 7/8″	12″	10	3″ Hg	5915T43	20.90	16.72

Metric Duct for Dust

- Ideal for dust, grinding dust, wood sawdust, and lint; also for air and smoke
- Flexible
- Temperature Range: –40° to +250° F
- Internal Abrasion Resistance: Very good
- Color: Blue
- Clamps: Use worm-drive clamps (see pgs. 274-278)

No calculating or conversion necessary—this double-ply hose is sized for metric applications. It is made from 0.025″ thick neoprene-coated cotton with an enclosed steel wire support. Hose compresses 64% of its length. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID, mm	Hose OD, mm	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
30	34.3	1 3/8″	42	29″ Hg	53025K22	$5.89	$4.70
50	53.3	2 5/16″	35	28″ Hg	53025K33	7.25	5.81
80	84.1	2 11/16″	24	27″ Hg	53025K44	9.38	7.50
100	104.9	3 11/16″	19	25″ Hg	53025K55	9.47	7.58
115	119.9	3 13/16″	17	20″ Hg	53025K66	10.57	8.46
140	145	4″	16	16″ Hg	53025K77	11.28	9.02

Blo-R-Vac Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, and corrugated fibers; also for air, smoke, and dust
- Flexible
- Temperature Range: 20° to 160° F
- Internal Abrasion Resistance: Very good
- Color: Blue or clear
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

Take your blowing and venting performance to the next level—this hose is made from rugged PVC with an enclosed steel support, so it has the brawn to handle heavier materials. Hose compresses 50% of its length for 1¼″ to 8″ ID hose; 60% for 10″ to 16″ ID hose. Can be used indoors and out.

Blue hose meets UL 94V0 for flammability. ***Clear*** allows you to see the flow; the PVC material is FDA CFR21 177.1010 compliant.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft. for the 1¼″ to 8″ ID hose; 25 ft. for the 10″ to 16″ ID hose.

Hose ID	Hose OD	Material Thick.	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	Blue	Blue Per Ft. Partial Coil	Blue Per Ft. Full Coil	Clear	Clear Per Ft. Partial Coil	Clear Per Ft. Full Coil
1 1/4″	1 9/16″	0.035″	1 13/32″	30	29″ Hg	5666K51	$3.25	$2.65	5718K69	$3.73	$2.98
1 1/2″	1 27/32″	0.035″	1 1/2″	30	29″ Hg	5666K52	3.40	2.78	5718K71	3.83	3.06
2″	2 5/16″	0.035″	2 13/32″	30	29″ Hg	5666K54	3.53	2.89	5718K72	4.20	3.36
2 1/2″	2 29/32″	0.035″	2 27/32″	30	29″ Hg	5666K36	4.31	3.53	5718K73	5.11	4.08
3″	3 13/32″	0.035″	3 1/4″	20	28″ Hg	5666K37	5.72	4.68	5718K74	6.81	5.44
4″	4 15/32″	0.045″	4 13/32″	20	29″ Hg	5666K39	7.71	6.31	5718K75	9.22	7.38
5″	5 15/32″	0.045″	5 17/32″	17	16″ Hg	5666K41	9.62	7.87	5718K76	11.47	9.18
6″	6 1/2″	0.045″	6 5/8″	15	8″ Hg	5666K42	10.74	8.78	5718K77	12.80	10.24
7″	7 1/2″	0.045″	7 5/32″	13	5″ Hg	5666K43	12.56	10.27	5718K78	15.01	12.00
8″	8 9/16″	0.045″	7 11/16″	11	3″ Hg	5666K44	14.67	12.00	5718K79	17.48	13.98
10″	10 9/16″	0.045″	9 29/32″	8	3″ Hg	5666K45	18.49	15.13	5718K81	22.06	17.64
12″	12 21/32″	0.045″	12″	7	2″ Hg	5666K46	22.38	18.31	5718K82	26.68	21.34
14″	14 17/32″	0.045″	14″	6	1″ Hg	5666K47	26.16	21.40	5718K83	31.17	24.94
16″	16 5/8″	0.045″	16″	5	0.7″ Hg	5666K48	29.53	24.16	5718K84	35.25	28.20

For information about duct hose, see page 222.

Puncture- and Abrasion-Resistant Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Flexible
- Temp. Range: –65° to +225° F
- Internal Abrasion Resistance: Excellent
- Color: Black
- Clamps: Use worm-drive and quick-release clamps (see pgs. 274-278)

Take the worry out of venting jagged and abrasive materials—this blended polyurethane/rubber hose is highly puncture resistant. It is made from TPU (thermoplastic polyurethane) and has an enclosed steel wire support. Hose compresses 50% of its length. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
Thin Wall—*0.030″ Material Thickness*							
2″	2 5/16″	2″	30	29″ Hg	5628K331	$10.95	$8.76
3″	3 5/16″	3″	29	29″ Hg	5628K332	10.91	8.72
4″	4 3/8″	4″	25	29″ Hg	5628K333	13.46	10.76
5″	5 3/8″	5″	22	17″ Hg	5628K334	15.90	12.72
6″	6 3/8″	6″	19	15″ Hg	5628K335	16.08	12.86
7″	7 3/8″	7″	16	12″ Hg	5628K336	19.88	15.90
8″	8 7/16″	8″	14	9″ Hg	5628K337	21.01	16.80
10″	10 7/16″	8″	11	4″ Hg	5628K382	27.88	22.30
12″	12 11/16″	10″	10	2″ Hg	5628K383	31.89	25.51
Medium Wall—*0.035″ Material Thickness*							
2″	2 3/8″	2″	32	29″ Hg	5628K441	11.63	9.30
3″	3 3/8″	3″	32	29″ Hg	5628K442	13.65	10.92
Thick Wall—*0.045″ Material Thickness*							
4″	4 7/16″	3 1/2″	30	29″ Hg	5628K443	17.23	13.78
5″	5 7/16″	4″	30	17″ Hg	5628K444	19.95	15.96
6″	6 1/2″	5″	24	15″ Hg	5628K445	20.60	16.48
7″	7 1/2″	7″	22	12″ Hg	5628K446	26.26	21.00
8″	8 9/16″	8″	20	9″ Hg	5628K447	26.40	21.12
10″	10 9/16″	9″	17	4″ Hg	5628K449	38.48	30.78
12″	12 1/2″	11″	14	2″ Hg	5628K451	41.54	33.22

Puncture- and Abrasion-Resistant Clear Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, dust, and smoke
- Flexible
- Temp. Range: –65° to +200° F
- Internal Abrasion Resistance: Excellent
- Color: Clear
- Clamps: Use worm-drive clamps (see pages 274-278)

The see-through design allows you to view what's flowing through this puncture-resistant hose. It's made from TPU (thermoplastic polyurethane), a blended polyurethane/rubber material, and has an enclosed steel wire support. ***Medium-wall*** hose compresses 50% of its length; ***thick-wall*** hose compresses 32% of its length. The TPU material is FDA CFR21 177.2600 compliant. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
Medium Wall—*0.035″ Material Thickness*							
2″	2 9/32″	2 1/2″	33	29″ Hg	5136K21	$9.40	$7.31
3″	3 5/16″	3 1/2″	27	29″ Hg	5136K22	10.92	8.49
4″	4 11/32″	4 1/2″	18	28″ Hg	5136K23	12.64	9.83
5″	5 11/32″	5 1/2″	16	26″ Hg	5136K24	14.46	11.24
6″	6 3/8″	6 1/4″	14	23″ Hg	5136K25	15.60	12.14
7″	7 13/32″	7 1/4″	12	18″ Hg	5136K26	19.02	14.79
8″	8 13/32″	8 3/4″	11	13″ Hg	5136K29	19.39	15.08
10″	10 13/32″	11 1/4″	9	6″ Hg	5136K31	28.25	21.97
12″	12 13/32″	13 1/4″	7	5″ Hg	5136K32	31.14	24.22
Thick Wall—*0.060″ Material Thickness*							
2″	2 5/16″	3″	35	29″ Hg	5136K41	17.39	13.52
3″	3 11/32″	5″	30	29″ Hg	5136K42	19.32	15.03
4″	4 11/32″	6 1/2″	21	29″ Hg	5136K43	20.99	16.32
5″	5 11/32″	7 1/2″	18	26″ Hg	5136K44	23.66	18.40
6″	6 13/32″	8 1/2″	16	23″ Hg	5136K45	25.03	19.47
7″	7 7/16″	10 1/2″	14	18″ Hg	5136K46	28.43	22.11
8″	8 7/16″	12″	12	13″ Hg	5136K47	30.28	23.55
10″	10 7/16″	14″	10	6″ Hg	5136K48	47.42	36.88
12″	12 15/32″	12″	19	5″ Hg	5136K49	51.35	39.94

Extra-Strength/High-Pressure Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air and dust
- Rigid
- Temperature Range: –40° to +140° F
- Internal Abrasion Resistance: Very good
- Color: Black
- Clamps: Use bolt clamps (see pages 279-280)

This is the highest strength duct hose we offer. It's made from SBR (styrene butadiene rubber) with a double reinforcement of steel wire and yarn and an enclosed steel wire support. It has an SBR liner, except the 6″ to 10″ ID hose has a gum rubber liner. Not rated for compression. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft. for 3/4″ to 4 1/2″ ID hose; 25 ft. for 5″ and 6″ ID hose; 10 ft. for 8″ and 10″ ID hose.

Hose ID	Hose OD	Material Thick.	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
3/4″	1 7/64″	0.176″	3″	75	28″ Hg	5314K31	$9.32	$7.38
1″	1 23/64″	0.176″	3″	75	28″ Hg	5314K32	10.27	8.14
1 1/4″	1 39/64″	0.176″	4″	75	28″ Hg	5314K33	9.55	7.56
1 1/2″	1 55/64″	0.176″	5″	75	28″ Hg	5314K34	11.44	9.06
1 3/4″	2 7/64″	0.176″	6″	75	28″ Hg	5314K35	11.77	9.32
2″	2 23/64″	0.176″	8″	75	28″ Hg	5314K36	12.54	9.92
2 1/4″	2 39/64″	0.176″	8″	75	28″ Hg	5314K37	12.89	10.20
2 1/2″	2 55/64″	0.176″	8″	75	28″ Hg	5314K38	13.65	10.81
2 3/4″	3 7/64″	0.176″	9″	75	28″ Hg	5314K39	13.88	10.99
3″	3 23/64″	0.176″	9″	75	28″ Hg	5314K41	15.80	12.51
3 1/2″	3 59/64″	0.210″	10″	50	28″ Hg	5314K42	19.05	15.24
4″	4 7/16″	0.216″	12″	50	28″ Hg	5314K43	23.08	18.26
4 1/2″	4 15/16″	0.216″	14″	25	28″ Hg	5314K44	29.54	24.63
5″	5 7/16″	0.216″	16″	25	28″ Hg	5314K45	29.80	24.83
6″	6 39/64″	0.292″	18″	25	28″ Hg	5314K46	45.64	35.67
8″	8 39/64″	0.292″	24″	25	25″ Hg	5314K47	59.02	49.19
10″	10 39/64″	0.292″	30″	25	20″ Hg	5314K48	84.33	70.27

Aluminum Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Flexible
- Temperature Range: –100° to +500° F
- Internal Abrasion Resistance: Good
- Clamps: Use worm-drive clamps (see pgs. 274-278)

Stretch and bend this flexible hose into shape without the need for elbows. Hose is made from 0.005″ thick aluminum and compresses 83% of its length. Material meets UL 181 Class 0. Not rated for vacuum. Can be used indoors and out.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	15-ft. Length	Each	30-ft. Length	Each
3″	3 3/8″	1 13/16″	50	5525K33	$13.33	5525K43	$26.67
4″	4 3/8″	2 3/8″	50	5525K34	17.67	5525K44	33.67
5″	5 3/8″	3″	50	5525K35	22.07	5525K45	42.07
6″	6 3/8″	3 5/8″	50	5525K36	26.73	5525K46	50.93
7″	7 3/8″	4 3/16″	50	5525K31	30.97	5525K41	59.13
8″	8 3/8″	4 13/16″	50	5525K37	35.43	5525K47	67.47
10″	10 3/8″	6″	50	5525K38	44.57	5525K48	84.93
12″	12 3/8″	7 3/16″	50	5525K39	53.30	5525K49	101.47

For information about duct hose, see page 222.

Continuous-Flex Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Flexible
- Temperature Range: –40° to +250° F
- Internal Abrasion Resistance: Very good
- Color: Black
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

This double-ply hose stands up to the rigors of continuous motion. It is made from 0.03″ thick neoprene-coated nylon with a fabric-enclosed steel wire support. Hose compresses 67% of its length for 1″ to 3″ ID hose; 69% for 4″ and 5″ ID hose; 72% for 6″ to 8″ ID hose; and 75% for 10″ to 24″ ID hose. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1″	1¼″	⅞″	30	29″ Hg	5266K91	$5.88	$4.70
1¼″	1½″	15/16″	30	29″ Hg	5266K92	6.65	5.32
1½″	1¾″	1 11/16″	30	29″ Hg	5266K93	7.50	6.00
2″	2¼″	1 11/16″	30	29″ Hg	5266K53	8.95	7.16
2½″	2¾″	1 13/16″	30	29″ Hg	5266K54	9.53	7.62
3″	3 5/16″	2⅜″	30	29″ Hg	5266K55	10.08	8.06
4″	4⅜″	4″	30	29″ Hg	5266K56	15.21	12.16
5″	5⅜″	4⅛″	30	25″ Hg	5266K57	17.83	14.26
6″	6⅜″	4 11/16″	30	24″ Hg	5266K58	19.60	15.68
7″	7⅜″	5⅛″	26	16″ Hg	5266K64	$22.38	$17.90
8″	8 7/16″	5 11/16″	23	14″ Hg	5266K59	22.67	18.55
10″	10 7/16″	7 3/16″	19	7″ Hg	5266K61	27.94	22.86
12″	12 7/16″	8⅝″	15	4″ Hg	5266K63	34.28	28.05
14″	14½″	9 13/16″	11	3″ Hg	5266K65	39.96	32.70
16″	16½″	11 3/16″	9	2″ Hg	5266K66	46.56	38.09
18″	18½″	11⅝″	7	1″ Hg	5266K67	53.18	43.51
20″	20½″	13″	5	1″ Hg	5266K68	65.71	53.76
24″	24½″	15⅜″	3	0.6″ Hg	5266K69	82.00	67.09

Economical Duct for Chips and Shavings

- Ideal for wood chips and corrugated fibers; also for air, smoke, and dust
- Flexible
- Temperature Range: –40° to +220° F
- Internal Abrasion Resistance: Good
- Color: Black
- Clamps: Use twin-ring hose clamps (see page 282)

Value meets strength with this super-tough hose—it is made from EPDM rubber with an embedded steel wire support. Material is 0.047″ thick, except 2½″ and 3″ ID hose is 0.039″ thick. Hose compresses 60% of its length. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft. for the 2½″ to 10″ ID hose; 25 ft. for the 12″ ID hose.

Hose without Wear Strip

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2½″	3″	3″	12	9″ Hg	56345K22	$5.24	$4.28
3″	3⅜″	3″	12	8″ Hg	56345K23	5.50	4.50
4″	4⅜″	4″	9	6″ Hg	56345K24	5.69	4.65
5″	5 7/16″	5″	7	5″ Hg	56345K25	7.22	5.91
6″	6 5/16″	6″	6	4″ Hg	56345K26	9.12	7.47
7″	7 5/16″	7″	5	4″ Hg	56345K27	10.75	8.81
8″	8 5/16″	8″	4	4″ Hg	56345K28	11.90	9.74
10″	10½″	10″	3	4″ Hg	56345K29	16.61	13.58
12″	12⅜″	12″	3	4″ Hg	56345K32	19.39	15.86

Hose with Wear Strip

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2½″	3 5/32″	3″	12	9″ Hg	56345K52	$5.77	$4.72
3″	3½″	3″	12	8″ Hg	56345K53	6.07	4.97
4″	4 9/16″	4″	9	6″ Hg	56345K54	6.24	5.12
5″	5⅝″	5″	7	5″ Hg	56345K55	7.95	6.51
6″	6½″	6″	6	4″ Hg	56345K56	10.03	8.20
7″	7½″	7″	5	4″ Hg	56345K57	11.87	9.72
8″	8 9/16″	8″	4	4″ Hg	56345K58	13.05	10.69
10″	10 11/16″	10″	3	4″ Hg	56345K59	18.29	14.96
12″	12⅝″	12″	3	4″ Hg	56345K62	21.34	17.45

Impact-Resistant Duct and Fittings for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Flexible
- Temperature Range: –65° to +140° F
- Internal Abrasion Resistance: Very good
- Color: Gray

Commonly used as vacuum hose, this hose is made from EVA (ethylene vinyl acetate) with an EVA support for excellent impact resistance. It can be used indoors and out.

Hose—The full coil length is 50 ft. for 1¼″ and 1½″ ID hose; 25 ft. for 2″ to 3″ ID hose. **To Order:** Please order hose in 5-ft. increments up to the full coil length.

Screw-On Fittings—Made from gray PVC. They provide easy connection to equipment.

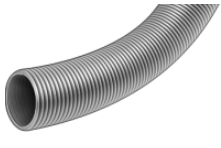

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	Hose	Per Ft. Partial Coil	Per Ft. Full Coil	Screw-On Fittings ID (A)	ID (B)		Each
1¼″	1 9/16″	2 11/16″	22	20″ Hg	5397K11	$2.18	$1.69	1⅝″	1¼″	5397K17	$2.31
1½″	1⅞″	3 1/16″	20	18″ Hg	5397K12	2.54	1.98	2″	1½″	5397K18	2.54
2″	2⅜″	3⅛″	14	18″ Hg	5397K13	3.40	2.65	2½″	2″	5397K19	6.11
2½″	2⅞″	3⅛″	12	16″ Hg	5397K14	4.78	3.72				
3″	3⅜″	3 7/16″	8	11″ Hg	5397K15	5.38	4.19				

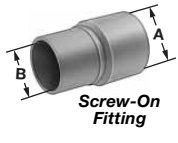

Screw-On Fitting

Easy-Clamp Duct Couplers for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Temperature Range: Natural Rubber: –20° to +180° F; Neoprene Rubber: 0° to +212° F
- Internal Abrasion Resistance: Excellent
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

Make a connection to vibratory equipment, such as sifters and screeners, with these one-piece, bellows-style couplers. They have a clamping collar on each end. Material is 3/16″ thick. Not rated for pressure, vacuum, or compression. For indoor use.

Natural Rubber—Material is FDA CFR21 177.2600 compliant. **To Order:** Please specify color: amber or white.

Neoprene Rubber—Harder than natural rubber, but slightly less resilient. **To Order:** Please specify color: black or white.

Coupler ID	Coupler OD	NATURAL RUBBER 12″ Length	Each	NEOPRENE RUBBER 12″ Length	Each
4″	5″	9394K31	$42.00		
6″	7″	9394K33	46.00	9394K44	$49.91
8″	9″	9394K35	63.00	9394K46	68.09
10″	11″	9394K37	71.00	9394K48	75.55

For information about duct hose, see page 222.

High-Pressure Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Flexible
- Temperature Range: 0° to 158° F
- Internal Abrasion Resistance: Excellent
- Color: Blue
- Clamps: Use worm-drive and twin-ring hose clamps (see pages 274-278 and 282)

A polyurethane liner gives this hose extra strength to handle high pressure and vacuum, as well as excellent abrasion resistance. Hose is made from PVC with an enclosed PVC support. Not rated for compression. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 100 ft. for 1 1/2″ to 4″ ID hose; 50 ft. for 5″ and 6″ ID hose.

Hose ID	Hose OD	Material Thick.	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1 1/2″	1 7/8″	0.08″	4″	50	29″ Hg	5563K11	$5.51	$4.41
2″	2 1/2″	0.115″	6″	50	29″ Hg	5563K12	8.89	7.11
3″	3 5/8″	0.16″	8″	40	29″ Hg	5563K14	15.13	12.11
4″	4 3/4″	0.18″	14″	35	29″ Hg	5563K15	25.00	20.00
5″	5 13/16″	0.18″	20″	30	29″ Hg	5563K16	39.18	31.35
6″	6 13/16″	0.18″	25″	23	25″ Hg	5563K17	48.31	38.64

Static-Dissipative Clear Duct for Chips and Shavings

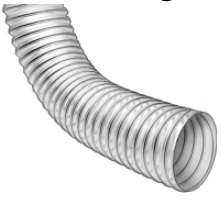

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Flexible
- Temp. Range: –20° to +200° F
- Internal Abrasion Resistance: Excellent
- Color: Clear
- Clamps: Use worm-drive clamps (see pages 274-278)

Just crimp a grounding wire to the wire support on this hose and you'll create an escape route for electrostatic buildup. Made from 0.035″ thick TPU (thermoplastic polyurethane) with an enclosed bronze-coated steel wire support, this clear hose allows you to view the flow. The TPU material is FDA CFR21 177.2600 compliant. Hose compresses 50% of its length. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
2″	29/32″	2 1/2″	13	29″ Hg	5916T1	$11.67	$9.46
2 1/2″	2 3/4″	3″	13	29″ Hg	5916T2	12.39	10.05
3″	3 9/32″	3 1/2″	12	29″ Hg	5916T3	13.12	10.65
4″	4 5/16″	4 1/2″	10	20″ Hg	5916T4	14.59	11.84
5″	5 5/16″	5 1/2″	10	15″ Hg	5916T5	18.30	14.85
6″	6 5/16″	6 1/4″	9	13″ Hg	5916T6	20.12	16.32
8″	8 11/32″	8 3/4″	7	10″ Hg	5916T7	22.50	18.26
10″	10 3/8″	11 1/4″	5	7″ Hg	5916T8	31.78	25.78
12″	12 3/8″	13 1/4″	5	6″ Hg	5916T9	41.58	33.73

Abrasion-Resistant Duct with Metal Wear Strip for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Flexible
- Temp. Range: –20° to +250° F
- Internal Abrasion Resistance: Very good
- Color: Black
- Clamps: Use worm-drive clamps (see pages 274-278)

Both internally and externally, this rugged hose stands up to abrasion. It's made from 0.03″ thick polyurethane with an external galvanized steel support that acts as a wear strip to protect the hose from damage caused by dragging. The polyurethane material is FDA CFR21 177.2600 compliant. Hose compresses 75% of its length. Can be used indoors and out.

To Order: Please order hose in 1-ft. increments up to the full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72°F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
4″	4 5/8″	6″	18	26″ Hg	52945K41	$23.52	$19.39
5″	5 5/8″	7 1/2″	18	21″ Hg	52945K42	26.31	21.70
6″	6 5/8″	9″	16	16″ Hg	52945K43	33.22	27.40
7″	7 5/8″	10 1/2″	16	10″ Hg	52945K44	36.44	30.37
8″	8 5/8″	12″	16	6″ Hg	52945K45	41.66	34.73
9″	9 5/8″	13 1/2″	15	5″ Hg	52945K46	49.41	41.17

Static-Dissipative Duct with Fittings Attached for Chips and Shavings

- Ideal for wood chips, corrugated fibers, plastic pellets, and powders; also for air and dust
- Flexible
- Temperature Range: –60° to +180° F
- Internal Abrasion Resistance: Very good
- Color: Clear with black fittings

This hose has an imbedded grounding wire along with carbon-impregnated vinyl fittings to eliminate static buildup when connected to metal equipment on one end and a metal tool on the other. Commonly used as vacuum hose, it is made from clear polyurethane with a steel wire support. Not rated for compression. Can be used indoors and out.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	10-ft. Length	Each	15-ft. Length	Each	25-ft. Length	Each
1 1/2″	1 7/8″	1 1/2″	8	15″ Hg	9020T62	$74.78	9020T63	$111.56	9020T64	$146.44
2″	2 1/4″	2″	8	15″ Hg	9020T65	107.67	9020T66	146.56	9020T67	215.22

FDA-Compliant Duct for Chips and Shavings

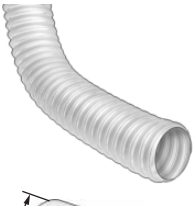

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, powders, and dry food products; also for air, smoke, and dust
- Flexible
- Temp. Range: –20° to +180° F
- Internal Abrasion Resistance: Excellent
- Color: Clear with white support

Tough enough to handle chips and shavings, the TPU material of this hose is FDA CFR21 177.2600 compliant, so it can also be used with dry foods and pharmaceutical materials. Commonly used as vacuum hose, it will dissipate static buildup when used in a fully grounded system. It's made from TPU (thermoplastic polyurethane) with an external ABS plastic support and a wear strip. Not rated for compression. Can be used indoors and out.

Screw-on fittings provide an easy connection to equipment. Made from white PVC. *Note*: Fittings are not FDA compliant.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft. for 1 1/4″ to 1 3/4″ ID hose; 25 ft. for 2″ to 4″ ID hose.

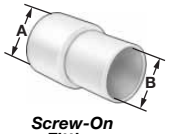

Screw-On Fitting

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	Screw-On Fittings ID (A)	Screw-On Fittings ID (B)		Each
1 1/4″	1 5/8″	2 7/16″	29	29″ Hg	5798T11	$4.96	$4.20	1 5/8″	1 1/4″	5798T31	$3.85
1 1/2″	1 7/8″	3 1/16″	27	29″ Hg	5798T12	5.19	4.39	1 7/8″	1 1/2″	5798T32	3.90
1 3/4″	2 1/8″	3 3/16″	27	28″ Hg	5798T13	5.93	5.02	2 1/8″	1 3/4″	5798T33	3.98
2″	2 1/2″	3 1/4″	25	27″ Hg	5798T14	7.24	6.13	2 1/2″	2″	5798T34	4.18
3″	3 9/16″	4 3/16″	19	20″ Hg	5798T15	13.04	11.03	3 9/16″	3″	5798T35	8.06
4″	4 9/16″	4 1/2″	9	15″ Hg	5798T16	18.77	15.88	4 9/16″	4″	5798T36	11.65

For information about duct hose, see page 222.

Metric Crush-Resistant Clear Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, powders, and dry food products; also for air, smoke, and dust
- Very flexible
- Temperature Range: –40° to +195° F
- Internal Abrasion Resistance: Excellent
- Color: Clear with blue support
- Clamps: Use worm-drive clamps (see pages 274-278)

You can step on this hose and it will pop right back to its original shape. Sized for metric applications, it's made from 0.02″ thick polyurethane with an exposed polyurethane support that acts as a wear strip. Material is FDA CFR21 177.2600 compliant. Not rated for compression. Can be used indoors and out.

To Order: Please order in 5-ft. increments up to the full coil length of 25 ft.

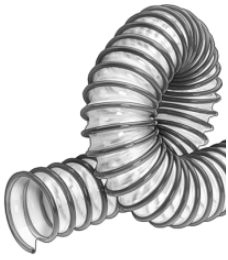

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
60 mm	71 mm	2 39/64″	11	5″ Hg	9592K11	$15.68	$13.11
81 mm	92 mm	3 13/64″	7	4″ Hg	9592K13	20.56	17.19
101 mm	114 mm	4″	6	3″ Hg	9592K14	22.59	18.89
122 mm	133 mm	4 51/64″	5	3″ Hg	9592K15	29.56	24.73
152 mm	166 mm	6″	4	2″ Hg	9592K17	34.22	28.61

Any-Which-Way Duct and Nozzles for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Duct is flexible
- Temperature Range: –40° to +170° F
- Internal Abrasion Resistance: Good
- Color: See below

The ball-and-socket design of this crush-resistant hose allows you to reposition it again and again in any direction without it springing back. Commonly used as vacuum hose, it can be easily integrated into an existing central or portable vacuum system. Not rated for compression or pressure. For indoor use.

Hose comes in 1-ft. lengths. You can make up to a 20-ft. length by snapping lengths together (hose is self supporting up to 3 feet). Made from acetal polymer. *Antistatic hose* must be attached to a grounded system to create an escape route for electrostatic buildup.

Nozzles snap onto the end of the hose. They're made from acetal polymer. *Round* have a 4½″ dia. opening. *Tapered* are 5¾″ long.

Adapters allow easy connection to 3″ dia. metal duct in an existing vacuum system. Made from PVC.

ID	OD	Hose Bend Radius	Hose Vacuum @ 72° F	Hose Color		Hose Each	Round Nozzles Color		Round Nozzles Each	Tapered Nozzles Color		Tapered Nozzles Each	Adapters Color		Adapters Each
Standard															
2½″	3″	5¾″	28″ Hg	Blue	6503T21	$14.62	Orange	6503T22	$5.72	Orange	6503T24	$5.72	Blue	6503T28	$4.45
Antistatic															
2½″	3″	5¾″	26″ Hg	Black	6502T21	16.81	Black	6502T22	6.58	Black	6502T24	6.58	Black	6502T28	5.12

Super-Abrasion-Resistant Metal Duct for Chips and Shavings

- Ideal for wood chips, metal shavings, corrugated fibers, plastic pellets, and powders; also for air, smoke, and dust
- Rigid
- Maximum Temperature: Galvanized Steel: 550° F; Type 304 SS: 1000° F
- Internal Abrasion Resistance: Excellent
- Clamps: Use U-bolts (see pages 1534-1536)

Also known as smooth-bore metal hose, this hose has an internal metal strip that bridges the gaps formed by the interlocked design to provide smooth flow. Hose is designed for flow in one direction; flow direction is marked on the hose. Material thickness is 0.015″. This hose is not airtight and is not rated for compression, pressure, or vacuum.

Galvanized Steel— Has fair corrosion resistance. For indoor use.

Type 304 Stainless Steel— Offers very good corrosion resistance. Can be used indoors and out.

To Order: Please order hose in 5-ft. increments up to the full coil length of 25 ft.

Galvanized Steel with Galvanized Steel Internal Strip

Hose ID	Hose OD	Bend Radius		Per Ft. Partial Coil	Per Ft. Full Coil
2″	2¼″	9″	5261K12	$5.13	$4.20
2½″	2¾″	10″	5261K11	5.29	4.33
3″	3¼″	11″	5261K42	7.20	6.00
4″	4¼″	15½″	5261K14	10.09	8.25
5″	5¼″	19″	5261K15	12.64	10.34
6″	6¼″	23″	5261K16	15.11	12.36
8″	8¼″	28½″	5261K18	20.89	17.09
10″	10¼″	39″	5261K19	26.18	21.41
12″	12¼″	46½″	5261K21	30.85	26.43

Type 304 Stainless Steel with Type 304 SS Internal Strip

Hose ID	Hose OD	Bend Radius		Per Ft. Partial Coil	Per Ft. Full Coil
2″	2¼″	8½″	4462K41	$15.30	$12.75
2½″	2¾″	9½″	4462K42	18.36	15.29
3″	3¼″	10½″	4462K43	25.50	21.24
4″	4¼″	14½″	4462K44	34.68	28.90
5″	5¼″	18″	4462K45	40.93	36.31
6″	6¼″	21½″	4462K46	52.02	43.35
8″	8¼″	28½″	4462K47	66.18	55.14
10″	10¼″	39″	4462K48	74.70	62.25
12″	12¼″	45½″	4462K49	89.69	76.50

Crush-Resistant Duct and Fittings for Liquids

- Ideal for water and chemicals such as citric acid and boric acid; also for air, smoke, dust, chips, and shavings
- Flexible
- Temp. Range: –40° to +140° F
- Internal Abrasion Resistance: Very good
- Color: Black or gray

Don't worry if you step on this hose—it will bounce right back to its original shape. Commonly used as vacuum hose, it's made from polyethylene with an external polyethylene support. Hose is not rated for compression. Can be used indoors and out.

Screw-on fittings are made from gray PVC. They provide an easy connection to equipment.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft. and specify color: black or gray.

Screw-On Fitting

ID	OD	Hose Bend Radius	Hose Max. psi @ 72° F	Hose Vacuum @ 72° F		Hose Per Ft. Partial Coil	Hose Per Ft. Full Coil	Screw-On Fittings ID (A)	Screw-On Fittings ID (B)		Screw-On Fittings Each
1¼″	1 11/16″	2⅜″	20	29″ Hg	5200K31	$1.95	$1.56	1 9/16″	1¼″	5200K23	$1.46
1½″	2″	2¾″	16	29″ Hg	5200K32	2.35	1.88	1 15/16″	1½″	5200K24	2.14
2″	2⅜″	4¼″	15	29″ Hg	5200K33	4.02	3.22	2 5/16″	2″	5200K25	4.90
2½″	3 1/16″	5″	14	29″ Hg	5200K34	6.73	5.38	3 3/16″	2½″	5200K26	14.80
3″	3 9/16″	7½″	9	29″ Hg	5200K35	8.78	7.02	3 11/16″	3″	5200K27	20.66
4″	4 11/16″	9½″	8	29″ Hg	5200K36	10.76	8.60	4⅞″	4″	5200K28	33.78

For information about duct hose, see page 222.

Crush-Resistant Flexible Duct and Fittings for Liquids

Hose

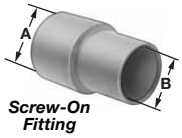

Screw-On Fitting

Hose with Fitting Attached

- Ideal for water, oil, and chemicals, such as citric and acetic acids; also for air, smoke, dust, plastic pellets, and wood chips
- Flexible
- Temperature Range: 5290K Series: –20° to +150° F; 9020T Series: Up to +140° F
- Internal Abrasion Resistance: 5290K Series: Excellent; 9020T Series: Good

Here's our most flexible crush-resistant hose. Commonly used as vacuum hose, it's made from low-density polyethylene, so it will bounce back to its original shape if stepped on. Hose is not rated for compression. Can be used indoors and out.

Hose is dual-color; see below for color. **To Order:** Please order hose in 5-ft. increments up to full coil length of 50 ft. for ½″ to 3½″ ID hose; 10 ft. for the 4″ ID hose.

Screw-on fittings are made from gray PVC. They provide an easy connection to equipment.

Hose with fittings attached come in your choice of hose color with white polyethylene fittings. **To Order:** Please specify hose color: blue, gray, green, red, or yellow.

HOSE								SCREW-ON FITTINGS		
ID	OD	Bend Radius	Color	Max. psi @ 72° F	Vacuum @ 72° F	Per Ft. Partial Coil	Per Ft. Full Coil	ID (A)	ID (B)	Each
½″	23/32″	1¼″	Silver/Black	15	29″ Hg	5290K54	$2.63	$2.10	—	—	—
5/8″	15/16″	1½″	Silver/Black	15	29″ Hg	5290K51	2.84	2.27	—	—	—
3/4″	1 1/16″	2¼″	Silver/Black	15	29″ Hg	5290K11	3.10	2.48	1 1/16″	3/4″	5290K31	$3.12
7/8″	1 3/16″	3″	Silver/Black	15	29″ Hg	5290K52	3.14	2.51	1¼″	7/8″	5290K62	3.38
1″	1 3/8″	3½″	Silver/Black	15	29″ Hg	5290K12	3.69	2.96	1 5/16″	1″	5290K32	3.38
1¼″	1 11/16″	3¾″	Gray/Black	13	29″ Hg	5290K21	4.18	3.34	1 11/16″	1¼″	5290K41	3.66
1½″	1 15/16″	4″	Gray/Black	9	29″ Hg	5290K22	5.82	4.66	2″	1½″	5290K42	4.10
2″	2½″	5″	Gray/Black	5	20″ Hg	5290K23	7.42	5.93	2 9/16″	2″	5290K43	5.83
2½″	3″	6″	Gray/Black	4	12″ Hg	5290K24	9.63	7.71	3″	2½″	5290K44	9.20
3″	3½″	7″	Gray/Black	3	6″ Hg	5290K25	11.28	9.02	3 9/16″	3″	5290K45	12.55
3½″	4″	10″	Gray/Black	2	4″ Hg	5290K53	13.02	10.41	—	—	—
4″	4½″	13″	Gray/Black	1	2″ Hg	5290K26	13.29	10.63	4 9/16″	4″	5290K46	21.06

HOSE WITH FITTINGS ATTACHED

ID	OD	Bend Radius	Color	Max. psi @ 72° F	Vacuum @ 72° F	10-ft. Length	Each	15-ft. Length	Each	25-ft. Length	Each
1½″	2″	2″	Blue, Gray, Green, Red, or Yellow	15	22″ Hg	9020T73	$18.19	9020T71	$25.34	9020T75	$39.62
2″	2½″	3″	Blue, Gray, Green, Red, or Yellow	10	18″ Hg	9020T74	27.48	9020T72	37.83	9020T76	58.55

Abrasion-Resistant Duct and Fitting for Liquids

Push-On Fitting

- Ideal for water and noncorrosive acids; also for air, smoke, dust, chips, and shavings
- Flexible
- Temperature Range: Hose: –20° to +325° F; Fitting: –20° to +150° F
- Internal Abrasion Resistance: Excellent
- Color: Gray or black

Commonly used as vacuum hose, this flexible hose is made from ⅛″ thick EPDM rubber, so it will easily bounce back to its original shape if stepped on. Hose is not rated for compression or pressure. Can be used indoors and out.

Push-on fitting connects hose to a portable vacuum. Simply insert the small-diameter end into the hose cuff. The small-diameter end has a 1 13/16″ ID and 2″ OD; the large-diameter end has a 2 1/16″ ID and 2¼″ OD. Color is black.

ID	OD	Cuff ID (Hose End)	Bend Radius	Vacuum @ 72° F	GRAY HOSE 10-ft. Length	Each	BLACK HOSE 10-ft. Length	Each
1½″	2¼″	2″	3″	20″ Hg	5954T3	$75.03	5954T1	$61.38
2″	2½″	2″	3″	20″ Hg	5954T4	85.95	5954T2	72.32

Push-On Fitting ..... 5954T5 Each $2.40

High-Temperature/Smooth-Bore Duct and Fittings for Liquids

Hose

Antistatic Fitting

Hose with Antistatic Fitting Attached

- Ideal for water, hydraulic oil, oil, and chemicals, such as citric and acetic acids; also for air, smoke, dust, chips, and shavings
- Flexible
- Temperature Range: –20° to +300° F
- Internal Abrasion Resistance: Excellent
- Color: Blue or green

Made from PVC-coated foam, this hose withstands high temperatures. Commonly used as vacuum hose, it has a wire support and a smooth interior for unrestricted flow and easier cleaning. Hose also resists crushing and kinking. Can be used indoors and out.

Hose comes in your choice of blue or green. **To Order:** Please order hose in 5-ft. increments up to the full coil length of 50 ft. and specify color.

Antistatic fittings are gray vinyl with a steel support. Use them to connect hose to your equipment. They slide onto the hose and secure with set screws (included). They eliminate static buildup and ground the hose for antistatic flow.

Hose with antistatic fittings attached comes in your choice of hose color with gray fittings attached. **To Order:** Please specify hose color: blue or green.

HOSE							ANTISTATIC FITTINGS		
ID	OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft.	ID (A)	ID (B)	Each
1¼″	1½″	2″	80	29″ Hg	5223K25	$4.97	1 5/8″	1 3/8″	5223K26	$5.00
1½″	1 3/4″	2 3/4″	77	29″ Hg	5223K35	6.02	1 7/8″	1 5/8″	5223K36	5.27
1 3/4″	2″	4″	74	29″ Hg	5223K95	6.83	2 1/8″	1 5/8″	5223K96	5.55
2″	2¼″	4 5/8″	70	29″ Hg	5223K45	7.77	2 3/8″	1 7/8″	5223K46	5.91
2¼″	2½″	5 3/8″	68	29″ Hg	5223K11	8.81	2 5/8″	2 3/8″	5223K13	6.64
2½″	2 3/4″	6″	66	29″ Hg	5223K12	10.21	2 7/8″	2½″	5223K14	9.09
3″	3¼″	7″	65	29″ Hg	5223K85	12.02	3¼″	3″	5223K86	9.27

HOSE WITH ANTISTATIC FITTINGS ATTACHED

ID	OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	5-ft. Length	Each	15-ft. Length	Each	25-ft. Length	Each	50-ft. Length	Each
1¼″	1½″	2″	80	29″ Hg	5223K55	$31.87	5223K56	$81.57	5223K57	$131.30	5223K58	$255.58
1½″	1 3/4″	2 3/4″	77	29″ Hg	5223K65	37.34	5223K66	97.46	5223K67	157.56	5223K68	307.85
2″	2¼″	4 5/8″	70	29″ Hg	5223K75	47.24	5223K76	125.77	5223K77	204.27	5223K78	398.74

For information about duct hose, see page 222.

Smooth-Bore Duct and Fittings for Liquids

- Ideal for water; also for air, smoke, and dust
- Flexible
- Temperature Range: 15° to 125° F
- Internal Abrasion Resistance: Good
- Color: White

Commonly used as vacuum hose, this hose has a smooth internal surface that provides unrestricted flow and is easier to clean. It's made from PVC with a PVC support. Not rated for compression. Can be used indoors and out.

Screw-on fittings are made from gray PVC. They provide easy connection to equipment.

To Order: Please order hose in 5-ft. increments up to the full coil length of 100 ft. for 1″ to 4″ ID hose; 30 ft. for 6″ ID hose.

Hose							Screw-On Fittings			
ID	OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	ID (A)	ID (B)		Each
1″	1 3/16″	3″	37	29″ Hg	5641K21	$1.58	$1.27	1 1/4″	15/16″	5641K61	$4.80
1 1/4″	1 1/2″	4″	37	29″ Hg	5641K27	1.84	1.47	1 1/2″	1 1/4″	5641K65	3.89
1 1/2″	1 3/4″	4″	34	29″ Hg	5641K22	2.77	2.22	1 3/4″	1 1/2″	5641K62	5.17
2″	2 5/16″	6″	30	29″ Hg	5641K23	4.33	3.46	2 1/4″	1 15/16″	5641K63	7.89
2 1/2″	2 7/8″	7″	30	29″ Hg	5641K28	6.00	4.80	___	___	___	___
3″	3 5/16″	8″	30	29″ Hg	5641K24	8.11	6.48	3 7/16″	3″	5641K64	13.98
4″	4 1/2″	14″	27	15″ Hg	5641K25	10.86	8.69	___	___	___	___
6″	6 9/16″	25″	20	10″ Hg	5641K26	15.24	13.22	___	___	___	___

Screw-On Fitting

Super-Flexible Duct and Fittings for Liquids

- Ideal for water and oil; also for air, smoke, dust, chips, and shavings
- Very flexible
- Temperature Range: −20° to +150° F
- Internal Abrasion Resistance: Good
- Color: Gray

Twist this super-flexible hose any way you like. Commonly used as vacuum hose, it can be used indoors and out. Hose is made from PVC with an enclosed steel wire support. Not rated for compression.

Screw-on fittings are made from gray PVC. They provide easy connection to equipment.

Thread × thread fitting is made from gray PVC. Use it to connect two lengths of hose.

To Order: Please order hose in 5-ft. increments up to the full coil length of 50 ft. for 1 1/4″ to 2 1/2″ ID hose; 25 ft. for 3″ and 4″ ID hose.

Hose								Screw-On Fittings			
ID	OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	ID (A)	ID (B)		Each
1 1/4″	1 1/2″	1/8″	45	27″ Hg	5500K31	$2.30	$1.84	1 1/2″	1 1/4″	5500K17	$2.13
1 1/2″	1 3/4″	1/4″	36	26″ Hg	5500K32	2.60	2.08	1 13/16″	1 1/2″	5500K18	2.27
2″	2 3/8″	1/2″	26	25″ Hg	5500K33	3.21	2.57	2 7/16″	2″	5500K19	7.48
2 1/2″	2 7/8″	3/4″	20	24″ Hg	5500K35	4.48	3.59	2 11/16″	2 1/2″	5500K24	7.71
3″	3 3/8″	3/4″	20	24″ Hg	5500K37	5.02	4.01	3 3/8″	3″	5500K25	8.52
4″	4 3/8″	1 1/16″	14	18″ Hg	5500K39	6.53	5.23	___	___	___	___

Thread × Thread Fitting for 2″ ID Hose ..... 5500K16 Each $9.18

Screw-On Fitting

Duct Connectors

- Use with fabric, plastic, rubber, blended rubber, and light-gauge metal duct hose
- Temperature Range:
  Aluminum: −100° to +400° F
  Neoprene-Coated Aluminum: −40° to +250° F
  Type 304 SS: −400° to +800° F
  Galvanized Steel: −40° to +450° F
- Clamps: Use worm-drive clamps (see pages 274-278)

Join sections of duct hose to create longer lengths. Not rated for pressure or vacuum. Can be used indoors and out.

Aluminum is lightweight.

Neoprene-coated aluminum prevents connectors from scratching surfaces.

Type 304 stainless steel offers very good corrosion resistance.

Galvanized steel has fair corrosion resistance.

For Duct Hose ID	Lg.	COUPLERS Aluminum	Each	Neoprene-Coated Aluminum	Each	Type 304 Stainless Steel	Each	WYES Galvanized Steel	Each
1″	4″	5518K27	$8.32	5272T31	$9.38	5518K52	$10.72	___	___
1 1/4″	4″	5518K29	9.06	5272T32	10.24	5518K53	11.32	___	___
1 1/2″	3″	5518K16	11.80	5272T11	13.00	___	___	___	___
2″	4″	5518K11	12.25	5272T12	13.48	5518K41	14.10	___	___
2 1/2″	4″	5518K31	11.44	5272T33	12.94	___	___	___	___
3″	4″	5518K12	15.67	5272T13	17.25	5518K42	18.02	5518K71	$29.25
4″	4″	5518K13	16.38	5272T14	18.00	5518K43	18.79	5518K72	29.25
5″	4″	5518K14	17.23	5272T15	18.95	5518K44	19.79	5518K73	29.25
6″	4″	5518K15	18.48	5272T16	20.36	5518K45	21.28	5518K74	29.92
7″	4″	5518K22	19.55	5272T17	21.51	5518K28	22.48	5518K75	27.69
8″	4″	5518K17	20.82	5272T18	22.90	5518K47	23.92	5518K76	30.25
9″	4″	5518K18	22.55	5272T19	24.81	5518K48	25.93	___	___
10″	4″	5518K19	23.18	5272T21	25.49	5518K49	26.66	5518K77	68.40
12″	4″	5518K21	25.10	5272T22	27.60	5518K51	28.86	5518K78	68.40
14″	4″	5518K23	27.00	5272T23	34.47	5518K32	31.04	___	___
16″	4″	5518K24	30.82	5272T24	33.92	___	___	___	___
18″	4″	5518K25	31.48	5272T25	41.47	___	___	___	___
20″	4″	5518K26	35.27	5272T26	38.83	___	___	___	___

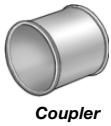

Coupler

Wye

Quick-Lock Duct Connectors

- Use with fabric, plastic, rubber, blended rubber, and light-gauge metal duct hose
- Temperature Range: −400° to +800° F
- Clamps: Use worm-drive and quick-release clamps (see pages 274-278)

Connect sections of duct hose quickly and easily—just twist to join two connectors. Also known as J-lock connectors, you'll need a Part A and Part B connector to make a connection. Made of Type 304 stainless steel. Not rated for pressure or vacuum. Can be used indoors and out.

For Duct Hose ID	Lg.	Part A ID		Each	Part B ID		Each
4″	1 5/8″	3 13/16″	5260T11	$18.72	3 21/32″	5260T31	$18.72
5″	1 5/8″	4 13/16″	5260T12	19.44	4 21/32″	5260T32	19.44
6″	1 5/8″	5 13/16″	5260T13	20.30	5 21/32″	5260T33	20.30
8″	1 5/8″	7 13/16″	5260T14	21.88	7 21/32″	5260T34	21.88
10″	1 5/8″	9 13/16″	5260T15	23.28	9 21/32″	5260T35	23.28
12″	1 5/8″	11 13/16″	5260T16	24.86	11 21/32″	5260T36	24.86
16″	1 5/8″	15 13/16″	5260T17	27.66	15 21/32″	5260T37	27.66
20″	1 5/8″	19 13/16″	5260T18	27.66	19 21/32″	5260T38	27.66

Part A

Part B

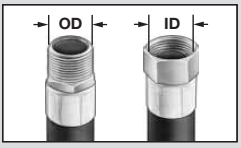

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID) as shown at left. Then round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″

About Hose

While our hose is offered with the most popular fitting styles attached, we also offer hose without fittings so you can customize it to suit your needs. If you choose to add your own fittings to the hose, you'll need to secure them with a hose clamp (see pages 274-285 for hose clamps). For barbed hose fittings, see pages 286-290.

Note: For garden hose and garden hose fittings, please see pages 2079-2081.

Bend Radius— Measured from the center point to the inside edge of the hose, this is the minimum radius you can bend a hose without damaging it or shortening its life. The smaller the bend radius, the greater the flexibility.

Vacuum Rating— Vacuum, or negative pressure, is measured in inches of mercury (Hg). The larger the number, the higher the vacuum. *Low* = 1″ to 24″ Hg; *Medium* = 25″ to 27″ Hg; *High* or *Full* = 28″ to 29.9″ Hg.

Air and Water Hose

Hose

Male Fitting

Easy-Install Female Fitting

- Use with air and water; not for use with steam or oil
- Temp. Range: –40° to +200° F, unless noted
- Color: Black or red
- Hose: EPDM rubber, except 3/16″ ID hose is Buna-N (nitrile)
- Cover: EPDM rubber, except 3/16″ ID hose is neoprene
- Reinforcement: Polyester yarn

EPDM is the most widely used rubber for air and water applications. This hose has a smooth interior for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Male fittings are brass. The *1/4″* to *3/4″ pipe sizes* have NPTF (Dryseal) threads (unless noted), which are compatible with female NPTF and NPT threads. The *1″* to *1 1/2″ pipe sizes* have NPSM (National Pipe Straight Mechanical) threads, which are compatible with female NPSM and NPSH threads.

Easy-install female fittings turn 360° until they are tightened down during installation. They're brass and have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads. The *1/4″* to *3/4″ pipe sizes* have a metal-to-metal (ball seat) seal (unless noted); *1″* to *1 1/2″ pipe sizes* have a washer seal.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 1-, 2-, 3-, 4-, 5-, 10-, 15-, 25-, or 50-ft., or any length you choose up to 100 ft. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings Per Set	One Male and One Easy-Install Female Fitting Per Set	Two Easy-Install Female Fittings Per Set
Black Hose									
3/16″	7/16″	2″	250	5304K42▲	$1.27	$1.02	1/4″	5304K81▲ $10.15	5304K51▲ $10.95	—	—
1/4″	1/2″	1 1/2″	200	5304K14	.64	.54	1/4″	5304K82 10.09	5304K32 10.94	5722T36	$13.00
1/4″	5/8″	1 1/2″	300	5304K16	.96	.79	1/4″	5304K87 10.09	5304K33 10.94	5722T38	13.00
5/16″	5/8″	2″	300	5304K19	.95	.79	1/4″	5304K83 11.63	5304K35 12.86	5722T61	15.48
3/8″	11/16″	2 1/4″	200	5304K22	.99	.90	3/8″	5304K84 10.94	5304K36 12.02	5722T63	14.40
3/8″	23/32″	2 1/4″	300	5304K24	1.15	.95	1/4″	5304K8 10.09	5304K7 10.90	5722T65	12.92
3/8″	23/32″	2 1/4″	300	5304K24	1.15	.95	3/8″	5304K99 10.95	5304K9 12.02	5722T67	14.40
1/2″	13/16″	3″	200	5304K26	1.20	.98	1/2″	5304K85 16.68	5304K38 14.88	5722T69	14.36
1/2″	27/32″	3″	300	5304K28	1.20	.98	1/2″	5304K89 16.68	5304K39 14.88	5722T72	14.36
1/2″	27/32″	3″	300	5304K28	1.20	.98	3/4″	5304K891■ 24.63	5304K391 ■★ 24.92	—	—
5/8″	15/16″	3 3/4″	200	5304K96	1.59	1.32	3/4″	5304K567 16.68	5304K569★ 19.32	—	—
5/8″	1″	3 3/4″	300	5304K31	1.67	1.38	3/4″	5304K157 16.68	5304K41★ 19.32	—	—
3/4″	1 5/32″	4 1/2″	200	5304K65	1.67	1.38	3/4″	5304K151 16.24	5304K97 19.62	5722T81	25.28
3/4″	1 5/32″	4 1/2″	300	5304K44	1.80	1.46	3/4″	5304K153 16.24	5304K53 19.62	5722T83	25.28
1″	1 3/8″	7″	150	5304K45	2.39	2.19	1″	5304K154 35.52	5304K54 40.59	5722T85	39.78
1″	1 3/8″	7″	200	5304K66	2.55	2.11	1″	5304K152 35.52	5304K98 40.59	5722T87	39.78
1 1/4″	1 3/4″	8 3/4″	200	5304K46	4.64	3.75	1 1/4″	5304K155 64.79	5304K55 78.28	—	—
1 1/2″	2″	10 1/2″	200	5304K47	5.40	4.32	1 1/2″	5304K156 63.23	5304K56 86.50	—	—
Red Hose									
3/16″	7/16″	2″	250	5405K18▲	1.75	1.36	1/4″	5405K705▲ 11.90	5405K937▲ 12.70	—	—
1/4″	1/2″	2 1/2″	200	5405K2	.58	.50	1/4″	5405K182 10.09	5405K222 10.94	5356K11	8.92
1/4″	17/32″	3 5/16″	300	5405K3	.86	.71	1/4″	5405K183 10.09	5405K223 10.94	5356K13	8.92
5/16″	5/8″	3 1/2″	300	5405K4	.88	.73	1/4″	5405K184 11.63	5405K224 12.86	5356K15	9.54
3/8″	21/32″	3 1/2″	200	5405K5	.89	.75	3/8″	5405K185 10.94	5405K225 12.02	5356K17	10.92
3/8″	11/16″	4″	300	5405K6	1.06	.87	1/4″	5405K187 10.09	5405K227 10.90	5356K19	9.54
3/8″	11/16″	4″	300	5405K6	1.06	.87	3/8″	5405K188 10.95	5405K228 12.02	5356K22	10.90
1/2″	13/16″	4 1/2″	200	5405K7	1.08	.89	1/2″	5405K189 16.68	5405K229 14.88	5356K24	12.66
1/2″	7/8″	5″	300	5405K8	1.09	.90	1/2″	5405K191 16.68	5405K231 14.88	5356K26	12.66
1/2″	7/8″	5″	300	5405K8	1.09	.90	3/4″	5405K192■ 24.63	5405K232 ■★ 24.92	—	—
5/8″	31/32″	5 1/2″	200	5405K9	1.36	1.13	3/4″	5405K193 16.68	5405K233★ 19.32	—	—
5/8″	1 1/16″	5 1/2″	300	5405K11	1.51	1.26	3/4″	5405K194 16.68	5405K234★ 19.32	—	—
3/4″	1 3/32″	6″	200	5405K12	1.53	1.27	3/4″	5405K195 16.24	5405K235 19.62	5356K28	16.22
3/4″	1 5/32″	6″	300	5405K13	1.64	1.34	3/4″	5405K196 16.24	5405K236 19.62	5356K31	16.22
1″	1 13/32″	7″	200	5405K14	2.31	1.92	1″	5405K197 35.52	5405K237 40.59	5356K33	27.02
1″	1 7/16″	8″	300	5405K15	2.26	1.80	1″	5405K198 35.52	5405K238 40.59	5356K36	27.02
1 1/4″	1 25/32″	9″	200	5405K16	3.96	3.23	1 1/4″	5405K211 64.79	5405K239 78.28	—	—
1 1/2″	2 1/32″	10″	200	5405K17	4.97	4.05	1 1/2″	5405K212 63.23	5405K241 86.50	—	—

▲ Temperature range is –20° to +200° F. ■ Male fittings have NPSM threads. ★ Female fittings have a washer seal.

For information about hose, see page 240.

Air and Water Hose with Quick-Connect Fittings

- Use with air and water, except quick-disconnect fittings are for use with air only; not for use with steam or oil
- Temperature Range: –40° to +200° F
- Color: Black or red
- Hose: EPDM rubber
- Cover: EPDM rubber
- Reinforcement: Polyester yarn

We've combined EPDM hose with quick-connect fittings so you can easily connect and disconnect your hose line. Hose has a smooth interior for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Hose

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length and specify color: black or red.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 25-, or 50-ft., or any length you choose up to 100 ft. **To Order:** Specify the part number for the set of fittings along with your desired hose length and color: black or red. To determine your total price, add the price of the hose to the price of the set of fittings.

Quick-Disconnect and Easy-Install Male Fittings

Quick-disconnect sockets and ***plugs*** are industrial shape. They meet the dimensional requirements of Fed. Spec. A-A-59439. *Sockets* are sleeve-lock style; *1/4″* and *3/4″ coupling sizes* are brass, *3/8″* and *1/2″ coupling sizes* are steel. *Plugs* are steel. For information about quick-disconnect couplings, see page 298.

Easy-install male fittings turn 360° until they are tightened down during installation. They're brass and have NPTF (Dryseal) threads, which are compatible with female NPTF and NPT threads.

Quick-Disconnect Socket

Quick-Disconnect Plug

Easy-Install Male Fitting

Hose ID	Hose OD	Bend Radius	HOSE: Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE): Coupling Size	Max. psi @ 72° F	One Quick-Disconnect Socket and One Plug	Per Set	One Quick-Disconnect Socket and One Easy-Install Male Fitting: Pipe Size		Per Set
1/4″	1/2″	1 1/2″	200	5138K38	$0.64	$0.54	1/4″	200	5138K14	$27.96	1/4″	5138K44	$35.82
1/4″	5/8″	1 1/2″	300	5138K39	.96	.79	1/4″	300	5138K18	27.96	1/4″	5138K48	35.82
3/8″	11/16″	2 1/4″	200	5138K64	.99	.90	3/8″	200	5138K19	46.53	1/4″	5138K49	54.17
3/8″	23/32″	2 1/4″	300	5138K68	1.15	.95	3/8″	300	5138K24	46.53	1/4″	5138K54	54.17
1/2″	13/16″	3″	200	5138K69	1.20	.98	1/2″	200	5138K28	62.56	1/2″	5138K58	79.18
1/2″	27/32″	3″	300	5138K74	1.20	.98	1/2″	300	5138K29	62.56	1/2″	5138K59	79.18
3/4″	1 5/32″	4 1/2″	200	5138K78	1.67	1.38	3/4″	200	5138K91	121.73	3/4″	5138K95	134.68
3/4″	1 5/32″	4 1/2″	300	5138K79	1.80	1.46	3/4″	300	5138K92	121.73	3/4″	5138K96	134.68

Twist-Claw and Male Fittings

Twist-claw fittings are also known as universal hose couplings. All are malleable iron. The fittings on *1/2″* to *1″ ID hose* have two claws and are interchangeable with one another regardless of the hose size; fittings on the *1 1/4″* and *1 1/2″ ID hose* have four claws and are interchangeable with each other regardless of the hose size.

Male fittings are brass. Pipe sizes *1/2″* to *1″* have NPTF (Dryseal) threads, which are compatible with female NPTF and NPT threads. Pipe sizes *1 1/4″* and *1 1/2″* have NPSM threads, which are compatible with female NPSM and NPSH threads.

Twist-Claw Fitting with Two Claws

Male Fitting

Hose ID	Hose OD	Bend Radius	HOSE: Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE): Max. psi @ 72° F	Two Twist-Claw Fittings	Per Set	One Twist-Claw and One Male Fitting: Pipe Size		Per Set
1/2″	13/16″	3″	200	5304K831	$1.20	$0.98	150	5304K946	$39.64	1/2″	5304K841	$33.94
5/8″	15/16″	3 3/4″	200	5304K907	1.59	1.32	150	5304K593	47.95	3/4″	5304K619	32.33
3/4″	1 5/32″	4 1/2″	300	5304K833	1.80	1.46	150	5304K921	38.68	3/4″	5304K843	33.57
1″	1 3/8″	7″	150	5304K834	2.39	2.19	150	5304K93	63.29	1″	5304K844	48.24
1 1/4″	1 3/4″	8 3/4″	200	5304K835	4.64	3.75	150	5722T441	159.38	1 1/4″	5722T461	113.73
1 1/2″	2″	10 1/2″	200	5304K836	5.40	4.32	150	5722T481	172.18	1 1/2″	5722T511	119.31

Choose-a-Color Air and Water Hose

- Use with air and water, except quick-disconnect fittings are for use with air only
- Temperature Range: 25° to 150° F
- Color: Blue, gray, red, or yellow
- Hose: PVC
- Cover: PVC
- Reinforcement: Polyester yarn

Color-code your air and water lines for easy identification. Hose is made from PVC, which is lighter in weight than EPDM rubber. For indoor use. Not rated for vacuum.

Male fittings are brass and have NPT threads.

Easy-install female fittings turn 360° until they are tightened down during installation. They're brass and have NPSM (National Pipe Straight Mechanical) threads, which are compatible with male NPSM, NPT, and NPTF threads. All have a metal-to-metal (ball seat) seal.

Quick-disconnect sockets and ***plugs*** are industrial shape. They meet the dimensional requirements of Fed. Spec. A-A-59439. *Sockets* are sleeve-lock style, except the *3/4″* and *1″ coupling sizes* are push-to-connect style; all sockets are brass with a steel sleeve. *Plugs* are zinc-plated steel. For information about quick-disconnect couplings, see page 298.

Hose

Quick-Disconnect Socket

Male Fitting

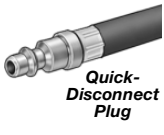
Quick-Disconnect Plug

Easy-Install Female Fitting

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length and specify color: blue, gray, red, or yellow, unless noted.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 25-, or 50-ft., or any length you choose up to 100 ft. **To Order:** Specify the part number for the set of fittings along with your desired hose length and color choice: blue, gray, red, or yellow, unless noted. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	HOSE: Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE): Two Male Fittings: Pipe Size		Per Set	One Male and One Easy-Install Female: Pipe Size		Per Set	One Quick-Disconnect Socket and Plug: Coupling Size		Per Set
1/4″	1/2″	2″	300	54075K42	$0.51	$0.38	1/4″	54075K18	$3.43	1/4″	54075K49	$4.06	1/4″	54075K59 ♦	$24.25
5/16″	5/8″	3″	300	54075K43 ♦	.71	.53	1/4″	54075K19 ♦	3.84	1/4″	54075K51 ♦	4.36	1/4″	54075K61 ♦	24.54
3/8″	5/8″	3″	300	54075K44	.60	.45	1/4″	54075K28	3.60	1/4″	54075K52	4.19	1/4″	54075K62 ♦	24.38
1/2″	13/16″	4″	300	54075K45	1.04	.78	1/2″	54075K29	6.28	1/2″	54075K55	7.67	1/2″	54075K65 ♦	47.45
5/8″	29/32″	5″	250	54075K46 ♦	1.24	.93	3/4″	54075K38 ♦	10.07	—	—	—	3/4″	54075K66 ♦	89.87
3/4″	1 1/8″	6″	250	54075K47	1.88	1.41	3/4″	54075K39	11.65	3/4″	54075K57	13.89	3/4″	54075K67 ♦	92.49
1″	1 13/32″	8″	250	54075K48 ♠	2.48	1.86	1″	54075K41 ♠	20.31	—	—	—	1″	54075K68 ♦	132.88

♦ Available in red only. ♠ Not available in gray.

For information about hose, see page 240.

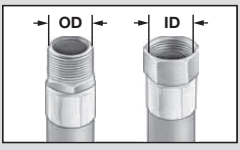

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID) as shown at left. Then round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

Lubricated Air and Water Hose

Hose

Male Fitting

Easy-Install Female Fitting

- Use with lubricated air and water; not for use with fuel
- Temp. Range: −20° to +160° F
- Color: Red
- Hose: Blended rubber (SBR/NBR), except 3/16″ and 5/16″ ID hose are Buna-N (nitrile) rubber
- Cover: Blended NBR/SBR/PVC, except 3/16″ and 5/16″ ID hose are neoprene
- Reinforcement: Polyester yarn

Use this hose with lubricated air—the hose material meets RMA (Rubber Manufacturers Association) Class A for oil resistance. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Male fittings are brass. The *1/4″* to *3/4″ pipe sizes* have NPTF (Dryseal) threads, which are compatible with female NPT threads. The *1″* to *1 1/2″ pipe sizes* have NPSM threads, which are compatible with female NPSM and NPSH threads.

Easy-install female fittings turn 360° until they are tightened down during installation. They are brass and have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads. The *1/4″* to *3/4″ pipe sizes* have a metal-to-metal (ball seat) seal; *1″* to *1 1/2″ pipe sizes* have a washer seal.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 1-, 2-, 3-, 4-, 5-, 10-, 15-, 25-, or 50-ft., or any length you choose up to 100 ft. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft.	Partial Coil	Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings	Per Set	One Male and One Easy-Install Female Fitting	Per Set
3/16″	7/16″	2″	250	5268K11	$1.34	$1.07	1/4″	5268K621	$12.39	5268K51	$13.51
1/4″	1/2″	1 1/2″	250	5268K13	1.21	.96	1/4″	5268K622	12.60	5268K52	13.38
1/4″	5/8″	1 1/2″	300	5268K21	1.27	1.01	1/4″	5268K623	12.60	5268K56	13.38
5/16″	5/8″	3″	250	5268K35	1.15	1.00	1/4″	5268K624	16.84	5268K53	15.71
3/8″	11/16″	2 1/4″	250	5268K17	1.64	1.35	3/8″	5268K625	13.38	5268K54	14.69
3/8″	23/32″	2 1/4″	300	5268K25	1.63	1.34	1/4″	5268K626	12.32	5268K57	13.34
3/8″	23/32″	2 1/4″	300	5268K25	1.63	1.34	3/8″	5268K627	13.38	5268K12	14.69
1/2″	27/32″	3″	250	5268K19	1.87	1.52	1/2″	5268K628	26.23	5268K55	23.37
1/2″	27/32″	3″	300	5268K27	2.03	1.65	1/2″	5268K629	26.23	5268K58	23.37
3/4″	15/32″	4 1/2″	300	5268K28	2.93	2.38	3/4″	5268K631	32.42	5268K59	38.37
1″	17/16″	7″	300	5268K29	4.03	3.29	1″	5268K632	35.91	5268K61	42.88
1 1/4″	1 7/8″	8 3/4″	250	5268K97	7.04	5.84	1 1/4″	5268K633	87.12	5268K67	107.58
1 1/2″	2 1/32″	10 1/2″	250	5268K99	7.81	6.52	1 1/2″	5268K634	81.55	5268K68	122.11

Air, Water, and Oil Hose

Hose

Male Fitting

Easy-Install Female Fitting

- Use with lubricated air, water, and oil; not for use with gasoline
- Temp. Range: −20° to +160° F
- Color: Brown
- Hose: NBR rubber
- Cover: Blended NBR/PVC
- Reinforcement: Polyester yarn

Made from a strong rubber material that meets RMA (Rubber Manufacturers Association) Class A for oil resistance, you can use this hose with oil. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Male fittings are brass and have NPT threads.

Easy-install female fittings turn 360° until they are tightened down during installation. They're brass and have NPSM (National Pipe Straight Mechanical) threads, which are compatible with male NPSM, NPT, and NPTF threads and a metal-to-metal (ball seat) seal.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 25-, or 50-ft., or any length you choose up to 100 ft. **To Order:** Specify the part number for the set of fittings you'd like and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft.	Partial Coil	Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings	Per Set	One Male and One Easy-Install Female Fitting	Per Set
1/4″	5/8″	1 1/2″	300	54765K21	$1.80	$1.55	1/4″	54765K51	$10.06	54765K66	$10.95
3/8″	23/32″	2 1/4″	300	54765K22	2.21	1.89	3/8″	54765K52	10.95	54765K67	12.02
1/2″	27/32″	3″	300	54765K23	3.07	2.63	1/2″	54765K53	16.70	54765K68	14.88
3/4″	15/32″	4 1/2″	300	54765K24	4.78	4.10	3/4″	54765K54	16.25	54765K69	19.62
1″	17/16″	7″	300	54765K25	6.37	5.45	1″	54765K55	27.18	54765K56	30.99

High-Pressure/Vacuum Air, Water, and Oil Hose

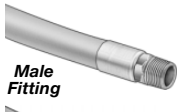
Male Fitting

90° Elbow

- Use with air, water, and oil
- Temp. Range: −20° to +170° F
- Color: Yellow
- Hose: Buna-N (nitrile) rubber
- Cover: High-strength Buna-N (nitrile) rubber
- Reinforcement: Aramid fiber yarn

Tough enough to handle high pressure, this hose also has what it takes to handle full-vacuum applications. It is commonly used in vacuum-bagging applications where pressure is applied on fiberglass or laminate to remove air, compact laminate fibers, and reduce humidity. Hose is furnished with the fittings attached; the fittings are brass and have NPT threads. The Buna-N material meets RMA (Rubber Manufacturers Association) Class A for oil resistance, as well as MSHA (Mine Safety and Health Administration) 2G-14C/14 standards for flame resistance. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Hose ID	Hose OD	Pipe Size	Bend Radius	Max. psi @ 72° F	TWO MALE FITTINGS 5-ft. Length	Each	10-ft. Length	Each	20-ft. Length	Each	ONE MALE FITTING AND ONE MALE 90° ELBOW 5-ft. Length	Each	10-ft. Length	Each	20-ft. Length	Each
1/4″	19/32″	1/4″	2 3/4″	500	5603K14	$29.17	5603K24	$50.34	5603K44	$92.69	5603K11	$32.14	5603K21	$53.31	5603K41	$95.66
3/8″	23/32″	3/8″	2″	500	5603K15	35.03	5603K25	61.03	5603K45	113.03	5603K12	38.76	5603K22	64.76	5603K42	116.76

For information about hose, see page 240.

High-Pressure Air, Water, and Oil Hose

- Use with air, water, and oil; not for use with gasoline or as a fuel hose
- Temperature Range: –20° to +190° F
- Color: Yellow
- Hose: Buna-N (nitrile) rubber
- Cover: High-strength Buna-N (nitrile) rubber
- Reinforcement: Aramid fiber yarn

Hose

Male Fitting

Easy-Install Female Fitting

This high-pressure hose stands up to oil. The Buna-N material meets RMA (Rubber Manufacturers Association) Class A for oil resistance, as well as MSHA (Mine Safety and Health Administration) 2G-14C/14 standards for flame resistance. Hose has a smooth interior for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Male fittings have NPT threads. The ¼″ to ¾″ pipe sizes are brass; 1″ to 2″ pipe sizes are steel.

Easy-install female fittings turn 360° until they are tightened down during installation. The ¼″ to ¾″ pipe sizes are brass; 1″ to 2″ pipe sizes are steel. They have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads. All have a metal-to-metal (ball seat) seal.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 25-, or 50-ft., or any length you choose up to 100 ft. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings Per Set		One Male and One Easy-Install Female Fitting Per Set	
1/4″	19/32″	3″	500	52785K11	$2.30	$1.89	1/4″	52785K511	$13.38	52785K611	$11.35
3/8″	23/32″	4 1/2″	500	52785K13	2.83	2.33	3/8″	52785K521	17.05	52785K621	14.51
1/2″	7/8″	6″	500	52785K15	3.93	3.24	1/2″	52785K531	22.84	52785K631	25.53
3/4″	1 3/16″	9″	500	52785K17	5.28	4.35	3/4″	52785K541	31.67	52785K641	26.95
1″	1 1/2″	12″	500	52785K19	7.85	6.48	1″	52785K551	37.77	52785K651	61.79
1 1/4″	1 3/4″	15″	500	52785K21	12.54	10.34	1 1/4″	52785K561	117.61	52785K661	108.92
1 1/2″	2 1/32″	18″	500	52785K22	14.23	11.73	1 1/2″	52785K571	155.73	52785K671	130.81
2″	2 5/8″	24″	500	52785K23	14.32	11.81	2″	52785K581	182.83	52785K681	180.29

Retracting Air and Water Hose

- Use with air and water
- Temperature Range:
  Low Temperature: –40° to +125° F;
  Medium Temperature: –40° to +165° F;
  High Temperature: –40° to +180° F
- Color: See below
- Hose: Polyurethane
- Cover: Polyurethane
- Reinforcement: None

Hose with One Male and One Easy-Install Male Fitting

More flexible than nylon, this polyurethane hose retracts out of the way when not in use. Hose is furnished with fittings attached; all fittings are brass and have NPT threads. The easy-install fittings turn 360° until tightened down during installation. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 27″ Hg @ 72° F.

Low-Temperature Hose with Two Easy-Install Male Fittings— The polyurethane material is NSF 61 certified for use with drinking (potable) water; it also meets UL 94HB for flammability. The fittings have a permanent threadlock sealant. **To Order:** Please specify color: neon green, red, transparent blue, or yellow.

Medium-Temperature Hose with Two Easy-Install Male Fittings— The fittings have a PTFE sealant. **To Order:** Please specify color: black or neon orange, unless noted.

High-Temperature Hose with One Male and One Easy-Install Male Fitting— Color is transparent blue.

Hose ID	Hose OD	Pipe Size	Max. psi @ 72° F	Coil OD	Lg.	Each
Low-Temperature Hose with Two Easy-Install Male Fittings						
1/4″	3/8″	1/4″	145	2 1/2″	8 ft.	54635K1	$19.00
1/4″	3/8″	1/4″	145	2 1/2″	12 ft.	54635K2	21.89
1/4″	3/8″	1/4″	145	2 1/2″	17 ft.	54635K3	25.08
1/4″	3/8″	1/4″	145	2 1/2″	20 ft.	54635K21	27.94
5/16″	15/32″	1/4″	130	2 15/16″	8 ft.	54635K4	26.51
5/16″	15/32″	1/4″	130	2 15/16″	12 ft.	54635K5	30.47
5/16″	15/32″	1/4″	130	2 15/16″	17 ft.	54635K6	35.58
5/16″	15/32″	1/4″	130	2 15/16″	20 ft.	54635K22	45.23
3/8″	9/16″	3/8″	135	4 1/8″	8 ft.	54635K7	31.90
3/8″	9/16″	3/8″	135	4 1/8″	12 ft.	54635K8	38.85
3/8″	9/16″	3/8″	135	4 1/8″	17 ft.	54635K9	46.24
3/8″	9/16″	3/8″	135	4 1/8″	20 ft.	54635K23	52.49
15/32″	3/4″	1/2″	155	5″	8 ft.	54635K11	53.19
15/32″	3/4″	1/2″	155	5″	12 ft.	54635K12	64.03
15/32″	3/4″	1/2″	155	5″	17 ft.	54635K13	77.09
15/32″	3/4″	1/2″	155	5″	20 ft.	54635K24	92.56

Hose ID	Hose OD	Pipe Size	Max. psi @ 72° F	Coil OD	Lg.	Each
Medium-Temperature Hose with Two Easy-Install Male Fittings						
1/4″	3/8″	1/4″	147	2 1/2″	8 ft.	54525K41	$25.43
1/4″	3/8″	1/4″	147	2 1/2″	17 ft.	54525K43	34.09
1/4″	3/8″	1/4″	147	2 1/2″	21 ft.	54525K45	38.43
1/4″	3/8″	1/4″	147	2 1/2″	25 ft.	54525K47	46.69
3/8″	9/16″	3/8″	133	3 5/8″	8 ft.	54525K21 ♦	51.34
3/8″	9/16″	3/8″	133	3 5/8″	17 ft.	54525K23 ♦	70.43
3/8″	9/16″	3/8″	133	3 5/8″	21 ft.	54525K25 ♦	75.51
3/8″	9/16″	3/8″	133	3 5/8″	25 ft.	54525K27 ♦	90.60
High-Temp. Hose with One Male and One Easy-Install Male Fitting						
1/8″	1/4″	1/4″	125	1 1/2″	10 ft.	51045K21	37.16
1/4″	3/8″	1/4″	125	2″	10 ft.	51045K22	37.66
1/4″	3/8″	1/4″	125	2″	15 ft.	51045K23	45.29
1/4″	3/8″	1/4″	125	2″	20 ft.	51045K24	51.18
1/4″	3/8″	1/4″	125	2″	25 ft.	51045K25	57.03
3/8″	1/2″	3/8″	85	3 1/2″	10 ft.	51045K26	58.45
3/8″	1/2″	3/8″	85	3 1/2″	20 ft.	51045K27	67.37

♦ Available in black only.

Dual-Line Retracting Air Hose

- Use with air
- Temperature Range: –40° to +200° F
- Color: Red
- Hose: Nylon
- Cover: Nylon
- Reinforcement: None

Two nylon hoses bonded side-by-side neatly provide two air connections. Hose retracts out of the way when not in use. Hose is furnished with brass easy-install male fittings attached to each end; fittings have NPT threads and turn 360° until tightened down during installation. The hose also has a spring guard on each end to reduce strain. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Hose ID	Hose OD	Pipe Size	Max. psi @ 72° F	Coil OD	Lg.	Each
1/8″	3/16″	1/8″	385	2 3/8″	6 ft.	5612K42	$47.46
1/8″	3/16″	1/8″	385	2 3/8″	12 ft.	5612K43	77.00
1/8″	3/16″	1/8″	385	2 3/8″	25 ft.	5612K44	122.71
3/16″	1/4″	1/4″	285	3 1/2″	6 ft.	5612K52	50.83
3/16″	1/4″	1/4″	285	3 1/2″	12 ft.	5612K53	74.60
1/4″	5/16″	1/4″	240	4 1/2″	6 ft.	5612K12	52.83
1/4″	5/16″	1/4″	240	4 1/2″	12 ft.	5612K13	74.54

Hose ID	Hose OD	Pipe Size	Max. psi @ 72° F	Coil OD	Lg.	Each
1/4″	5/16″	1/4″	240	4 1/2″	25 ft.	5612K14	$123.11
3/8″	15/32″	3/8″	225	9″	6 ft.	5612K22	76.34
3/8″	15/32″	3/8″	225	9″	12 ft.	5612K23	113.49
3/8″	15/32″	3/8″	225	9″	25 ft.	5612K24	198.43
1/2″	5/8″	1/2″	220	12 1/4″	6 ft.	5612K32	127.06
1/2″	5/8″	1/2″	220	12 1/4″	12 ft.	5612K33	192.71
1/2″	5/8″	1/2″	220	12 1/4″	25 ft.	5612K34	325.97

Air Hose

For information about hose, see page 240.

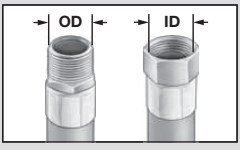

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID) as shown at left. Then round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

Retracting Air Hose

Yellow Hose

Male Fitting

Easy-Install Male Fitting

Quick-Disconnect Socket

Quick-Disconnect Plug

- Use with air
- Temperature Range: –40° to +200° F
- Color: Yellow or blue
- Hose: Nylon
- Cover: Nylon
- Reinforcement: None

Made from nylon, this economical hose retracts out of the way when not in use. Can be used indoors and out.

Yellow Hose— Hose has a smooth interior for unrestricted flow and spring guards attached to each end to reduce strain. Vacuum rating is 28″ Hg @ 72° F. *Male fittings* are brass with NPT threads; the *easy-install* style turn 360° until tightened down during installation. *Quick-disconnect sockets* are sleeve-lock style and steel (unless noted); *quick-disconnect plugs* are zinc-plated steel (see page 298 for information about quick-disconnect couplings).

Blue High-Pressure Hose— A smooth interior provides unrestricted flow. Not rated for vacuum. Hose has brass easy-install male fittings with NPT threads and an acrylic sealant; they turn 360° until tightened down during installation.

Also Available: Retracting hose that meets Department of Transportation (D.O.T. FMVSS 106) criteria. Hose has a 3/8″ ID and comes with two male NPT brass fittings. Please ask for 5367K1 and specify color: blue or red.

Hose ID	Hose OD	Pipe Size	Coupling Size	Max. psi @ 72° F	Coil OD	9-ft. Length	Each	18-ft. Length	Each	38-ft. Length	Each
Yellow Hose with One Male and One Easy-Install Male Fitting											
1/4″	5/16″	1/4″	—	170	4 5/16″	5245K11	$17.04	5245K12	$19.89	5245K13	$28.09
3/8″	15/32″	3/8″	—	170	6 3/8″	5245K14	23.68	5245K15	33.45	5245K16	52.64
1/2″	5/8″	1/2″	—	170	9″	5245K17	36.09	5245K18	52.91	5245K19	90.30
Yellow Hose with One Quick-Disconnect Industrial-Shape Socket and One Easy-Install Male Fitting											
1/4″	5/16″	1/4″	1/4″	185	3 1/2″	9150K11★	20.21	9150K12★	25.89	9150K13★	37.46
3/8″	15/32″	1/4″	1/4″	165	5 5/8″	9150K21	34.84	9150K22	43.76	9150K23	63.76
3/8″	15/32″	3/8″	3/8″	165	5 5/8″	9150K14	38.16	9150K15	47.32	9150K16	66.97
1/2″	5/8″	1/2″	1/2″	170	9″	9150K17	56.95	9150K18	76.63	—	—
Yellow Hose with One Quick-Disconnect ARO-Shape Socket and One Easy-Install Male Fitting											
3/8″	15/32″	1/4″	1/4″	165	5 5/8″	9150K24★	35.13	9150K25★	44.08	9150K26★	64.05
Yellow Hose with One Quick-Disconnect Industrial-Shape Socket and One Plug											
1/4″	5/16″	—	1/4″	185	3 1/2″	9150K31★	22.50	9150K32★	29.68	9150K33★	41.24
3/8″	15/32″	—	1/4″	165	5 5/8″	9150K39	39.16	9150K41	47.58	9150K42	65.97
3/8″	15/32″	—	3/8″	165	5 5/8″	9150K34	42.75	9150K35	51.50	9150K36	70.21
1/2″	5/8″	—	1/2″	170	9″	9150K37	67.29	9150K38	86.55	—	—
Yellow Hose with One Quick-Disconnect ARO-Shape Socket and One Plug											
3/8″	15/32″	—	1/4″	165	5 5/8″	9150K43★	39.50	9150K44★	47.89	9150K45★	66.26
Blue High-Pressure Hose with Two Easy-Install Male Fittings											
1/4″	3/8″	1/4″	—	350	4 1/2″	5507K11	27.94	5507K12	41.89	5507K14	75.26
3/8″	1/2″	3/8″	—	310	5 1/2″	5507K21	45.14	5507K22	66.94	5507K26	119.57

★ Socket is brass.

Assemble-Your-Own Retracting Air Hose

- Use with air
- Temp. Range: –40° to +200° F
- Color: Red or yellow
- Hose: Nylon
- Cover: Nylon
- Reinforcement: None

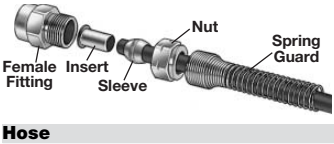

The hose and fittings are sold separately, so you can build a hose line to meet your needs.

Hose— Retracts out of the way when not in use. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Fittings Kits— All include a brass fitting with NPT threads, an insert, a sleeve, a nut, and a spring guard, except the kit for 3/4″ hose ID does not include the spring guard. The fitting in the *easy-install male kit* turns 360° until tightened down during installation.

Hose

Hose ID	Hose OD	Max. psi @ 72° F	Coil OD	25-ft. Length	Each	50-ft. Length	Each	100-ft. Length	Each
Red									
1/8″	3/16″	300	1 3/4″	5644K91	$13.91	5644K11	$22.59	—	—
3/16″	1/4″	285	2 1/2″	5644K99	13.74	5644K92	25.00	5644K12	$42.50
1/4″	5/16″	240	3″	5644K78	13.30	5644K94	25.00	5644K13	41.35
5/16″	3/8″	210	4 1/2″	5644K88	23.26	5644K95	42.37	5644K14	70.50
3/8″	15/32″	225	5 1/2″	5644K79	24.22	5644K96	44.30	5644K15	74.02
1/2″	5/8″	220	8″	5644K87	35.91	5644K97	69.04	5644K16	122.11
3/4″	7/8″	160	13″	5644K89	54.20	5644K58	111.02	5644K59	208.00
Yellow									
1/4″	5/16″	240	3 1/2″	5644K49	14.24	5644K37	26.15	5644K67	44.24
3/8″	15/32″	225	5 1/2″	5644K76	24.22	5644K38	44.30	5644K68	74.02
1/2″	5/8″	220	8″	5644K77	35.91	5644K39	69.04	5644K69	122.11

Fittings Kits

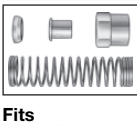

All include an insert, sleeve, nut, and spring guard, except 5644K57 does not have a spring guard.

Fits Hose ID	Pipe Size	Max. psi @ 72° F	With Easy-Install Male Fittings	Each	With Male Fittings	Each	With Female Fittings	Each	With Male 90° Elbows	Each
1/8″	1/8″	300	5644K51	$4.31	5644K61	$2.75	—	—	5644K81	$3.61
3/16″	1/4″	285	5644K52	4.92	5644K62	2.75	5644K71	$2.81	5644K82	4.09
1/4″	1/4″	240	5644K53	4.58	5644K63	2.75	5644K72	2.70	5644K83	4.29
5/16″	1/4″	210	5644K54	5.20	5644K64	2.99	5644K73	3.34	5644K84	5.47
3/8″	3/8″	225	5644K55	7.18	5644K65	4.87	5644K74	4.53	5644K85	6.03
1/2″	1/2″	220	5644K56	12.46	5644K66	8.65	5644K75	7.54	5644K86	8.04
3/4″	3/4″	160	5644K57	32.38	—	—	—	—	—	—

For information about hose, see page 240.

Choose-a-Color Air Hose

- Use with air
- Temp. Range: –40° to +185° F
- Color: Blue, red, or translucent turquoise
- Hose: Polyurethane
- Cover: Polyurethane
- Reinforcement: Polyester yarn

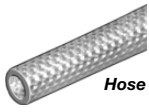
Hose

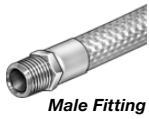
Male Fitting

Easy-Install Female Fitting

Offered in your choice of three colors so you can easily identify your air lines. Hose has a smooth interior for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Male fittings are brass and have NPTF (Dryseal) threads, which are compatible with female NPT threads.

Easy-install female fittings turn 360° until tightened down during installation. They're brass and have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads. All have a metal-to-metal (ball seat) seal.

Hose— Comes in your choice of blue, red, or translucent turquoise, unless noted. **To Order:** Please order in 5-ft. increments up to the full coil length of 100 ft. and specify color.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 25-, or 50-ft., or any length you choose up to 100 ft. **To Order:** Specify the part number for the set of fittings and your desired hose length and color choice: blue, red, or translucent turquoise, unless noted. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings Per Set	FITTINGS (ATTACHED TO THE HOSE) One Male and One Easy-Install Female Fitting Per Set
1/4"	3/8"	1 1/4"	250	54085K11 $1.82	$1.44	1/4"	54085K61 $5.07	54085K71 $5.82
5/16"	15/32"	1 1/2"	250	54085K12♣ 2.27	1.81	1/4"	54085K62♣ 5.68	54085K72♣ 6.77
3/8"	9/16"	2"	250	54085K13 2.81	2.24	1/4"	54085K63 5.40	54085K73 6.11
1/2"	11/16"	2 1/2"	250	54085K14 3.71	2.98	1/2"	54085K64 8.76	54085K74 10.94

♣ Not available in translucent turquoise.

High-Pressure Air Hose

- Use with air
- Temperature Range: –22° to +176° F
- Color: Yellow
- Hose: Blended rubber (SBR/NBR)
- Cover: SBR rubber
- Reinforcement: Steel wire

Hose

Male Fitting

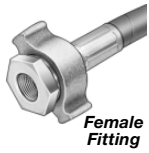
Female Fitting

Reinforced with steel wire, this hose can withstand higher pressure than other types of air hose. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Fittings are also known as ground-joint couplings. All have NPT threads. The *1/2" to 1" pipe sizes* are zinc-plated steel; the *1 1/4" to 2" pipe sizes* are zinc-plated ductile iron.

Hose— Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, or 25-ft., or any length you choose up to 50 ft. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings Per Set	FITTINGS (ATTACHED TO THE HOSE) One Male and One Female Fitting Per Set
1/2"	29/32"	2 1/2"	600	53065K21 $4.52	$3.62	1/2"	53065K37 $27.82	53065K1 $49.92
3/4"	1 1/8"	4"	600	53065K22 4.71	3.77	3/4"	53065K32 34.00	53065K2 61.48
1"	1 13/32"	5"	600	53065K23 5.99	4.79	1"	53065K33 49.74	53065K3 76.18
1 1/4"	1 23/32"	6"	600	53065K24 7.88	6.31	1 1/4"	53065K34 71.91	53065K4 119.64
1 1/2"	2 1/16"	7 1/2"	600	53065K25 9.94	7.95	1 1/2"	53065K35 80.91	53065K5 121.18
2"	2 9/16"	10"	600	53065K26 14.00	11.20	2"	53065K36 102.91	53065K6 148.64

Easy-Install Air Hose System

If your vision for the perfect shop includes compressed-air outlets located exactly where you need them, this is the system for you. With this system and the accessories below, you'll have everything you need to distribute air from your compressor to as many outlets as you desire. You can surface-mount this system to the walls and ceiling or install it before the walls go up. For indoor use. Temperature range is –40° to +180° F. Maximum pressure is 150 psi @ 72° F. Not rated for vacuum.

Master Kit

Includes 100 ft. of 5594K13 air hose, an aluminum manifold with one inlet and three outlets, two aluminum outlet blocks, six 5594K21 adapters, four 5594K23 90° elbows, two valves, two 1/4" NPT brass nipples, two 1/4" NPT 45° brass elbows, three 3/8" NPT brass plugs, and a plastic hose cutter.

5594K11 ..... **Each** $120.37

Additional Air Hose

This all-nylon hose is blue with a smooth interior for unrestricted flow. Hose ID is 3/8"; hose OD is 1/2". Furnished with a plastic hose cutter. Sold in 100-ft. lengths.

5594K13 ..... **Each** $46.88

Additional Outlets

Each outlet comes with an aluminum outlet block, a 5594K21 adapter, 5594K23 90° elbow, valve, 1/4" NPT brass nipple, 1/4" NPT 45° brass elbow, and 3/8" NPT brass plug.

5594K12 ..... **Each** $25.49

Accessories

The ***coupling***, ***90° elbows***, ***tee***, and ***adapter*** have a black polyamide body (except the adapter is nickel-plated brass), an acetal release button, a stainless steel grab ring, and a Buna-N (nitrile) rubber O-ring; accessories *with male pipe threads* have nickel-plated brass 3/8" NPT threads with a PTFE thread sealant. The ***quick-disconnect female socket*** is made from brass; it is industrial shape, sleeve-lock style with a 1/4" coupling size (for more information about quick-disconnect couplings, see page 298).

Coupling — Each
5594K25 ..... $5.10

90° Elbow, Male Pipe — Each
5594K24 ..... $7.62

90° Elbow — Each
5594K23 ..... $5.04

Tee — Each
5594K22 ..... $6.56

Adapter, Male Pipe — Each
5594K21 ..... $5.68

Quick-Disconnect Female Socket — Each
6536K28 ..... $5.11

Air Hose, Whip Checks & Water Hose

For information about hose, see page 240.

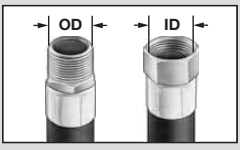

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID) as shown at left. Then round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

Bend-and-Stay Hose for Compressed Air

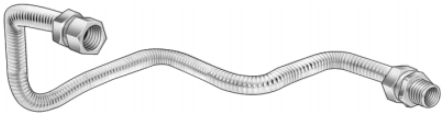

- Use with compressed air
- Maximum Temperature: 800° F

Bend this flexible hose and it will stay in place. The hose is made from Type 304 stainless steel; the interior is ribbed. The fittings are brass and have NPT threads. For indoor use. Not rated for vacuum. *Note*: Not for continuous flexing or vibration applications.

Union connectors are brass. They allow you to join two lengths of hose.

Hose ID	Hose OD	Pipe Size	Bend Radius	Max. psi @ 72° F	HOSE WITH ONE MALE AND ONE FEMALE FITTING ATTACHED: 5-ft. Length	Each	10-ft. Length	Each	15-ft. Length	Each	25-ft. Length	Each	UNION CONNECTORS	Each
3/8″	5/8″	3/8″	3″	200	4806K33	$58.45	4806K43	$73.50	4806K63	$88.83	4806K73	$123.90	4806K84	$10.65
1/2″	23/32″	1/2″	3″	200	4806K35	62.88	4806K45	79.03	4806K65	95.35	4806K75	133.82	4806K86	11.78
3/4″	1″	3/4″	3″	200	4806K37	83.30	4806K47	104.75	4806K67	126.30	4806K77	177.40	4806K88	17.60
1″	1 1/4″	1″	5″	200	4806K39	109.40	4806K49	138.07	4806K69	166.75	4806K79	223.81	4806K81	18.95

Air Hose Impact Absorbers

Male Fitting

Easy-Install Female Fitting

Easy-Install Male Fitting

Install one of these short lengths of hose between your source hose and tool to absorb impact and vibration that can shorten the life of your air hose. For use with air only. Fittings are brass with NPT threads; *easy-install fittings* turn 360° until tightened down during installation. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

PVC hose is lighter in weight and more economical than neoprene and polyurethane. Both the hose and cover are PVC; the reinforcement is rayon cord. Temperature range is –20° to +150° F. Color is blue.

Neoprene hose can withstand higher temperatures than PVC and polyurethane. The hose is Buna-N (nitrile) rubber, the cover is neoprene, and the reinforcement is rayon cord. Temperature range is –40° to +212° F. Color is blue.

Polyurethane hose is the most flexible choice. Both the hose and cover are polyurethane; hose is not reinforced. Temperature range is –40° to +165° F. Color is translucent blue.

Hose Material	Hose ID	Hose OD	Pipe Size	Bend Radius	Max. psi @ 72° F	18″ Length	Each	24″ Length	Each	36″ Length	Each
One Male and One Easy-Install Female Fitting											
PVC	1/4″	17/32″	1/4″	3″	300	5719K53	$8.43	5719K55	$8.97	5719K57	$9.91
PVC	3/8″	21/32″	3/8″	4″	300	5719K62	10.63	5719K64	12.11	5719K66	12.82
Neoprene	1/4″	1/2″	1/4″	2″	200	5427K11	10.01	5427K14	11.03	5427K17	12.92
Neoprene	3/8″	21/32″	3/8″	3 3/4″	200	5427K12	12.14	5427K15	13.66	5427K18	16.46
Neoprene	1/2″	13/16″	1/2″	5″	200	5427K13	20.04	5427K16	22.16	5427K19	26.11
Two Easy-Install Male Fittings											
Polyurethane	1/4″	3/8″	1/4″	7/8″	170	5742K63	12.49	5742K64	13.15	5742K65	14.83
Polyurethane	3/8″	9/16″	3/8″	1 3/8″	155	5742K67	18.26	5742K68	18.83	5742K69	20.29
Polyurethane	1/2″	11/16″	1/2″	1 1/2″	200	5742K71	50.77	5742K72	52.51	5742K73	54.54

Air Hose Whip Checks

Hose-to-Tool

Prevent hose from whipping when couplings are accidentally disconnected. These whip checks are made from steel cable and meet OSHA and MSHA (Mine Safety and Health Administration) safety standards. Maximum working pressure is 200 psi.

Hose-to-hose whip checks have two spring-loaded loop ends that easily pass over the hose ends for a firm grip. ***Hose-to-tool*** whip checks have a spring-loaded loop on one end and a choker on the other end.

For Hose ID	Cable Dia.	Lg.	Hose-to-Hose	Each	Hose-to-Tool	Each
1/2″ to 1 1/4″	1/8″	20 1/4″	5484K23	$13.37	5484K27	$13.37
1 1/2″ to 3″	1/4″	38″	5484K25	19.54	5484K29	19.54
4″	3/8″	44″	5484K31	43.90	5484K33	43.90

Drinking Water Hose

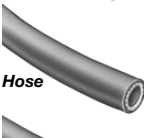

Hose

Male Fitting

Easy-Install Female Fitting

- Use with air and water
- Temp. Range: –18° to +180° F
- Color: Opaque gray
- Hose: Blended EPDM/polypropylene
- Reinforcement: Polyester yarn
- Cover: Blended EPDM/polypropylene

The hose and fittings are made from materials that comply with NSF 61, making them certified for use with drinking (potable) water. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Male fittings are white nylon with NPT threads.

Easy-install female fittings turn 360° until tightened down during installation. They're white nylon with NPSM (National Pipe Straight Mechanical) threads, which are compatible with male NPSM, NPT, and NPTF threads. They have a ball-seat seal.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, or 20-ft., or any length you choose up to 100 ft. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE:	Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE): Pipe Size	Two Male Fittings	Per Set	One Male and One Easy-Install Female Fitting	Per Set
3/8″	5/8″	6″	200	5043T1	$2.47	$2.02	3/8″	5043T4	$17.94	5043T7	$18.66
1/2″	3/4″	7 1/2″	200	5043T2	3.04	2.49	1/2″	5043T6	18.58	5043T9	18.89
5/8″	7/8″	9″	200	5043T3	3.49	2.85	—	—	—	—	—

For information about hose, see page 240.

Washdown Water Hose

Medium Pressure
- Use with water
- Temp. Range: +10° to +180° F
- Color: Yellow
- Hose: Blended PVC/rubber
- Cover: Blended PVC/rubber
- Reinforcement: Two polyester spirals

High Pressure
- Use with water
- Temp. Range: –40° to +180° F
- Color: Yellow
- Hose: Buna-N (nitrile) rubber
- Cover: Blended PVC/Buna-N (nitrile) rubber
- Reinforcement: Braided wire

It's the reinforcement that gives this hose the strength to handle medium- and high-pressure washdown applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Hose

Hose—Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.
Fittings (Attached to the Hose)—Assembled in lengths of 5-, 10-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Medium Pressure

Fittings are brass. *Male* fittings have NPT threads. *Easy-install female* fittings rotate 360° until tightened down during installation; they have NPSH (National Pipe Straight Hose) threads, which are compatible with male NPSH, NPSM, NPT, and NPTF threads.

Male

Easy-Install Female

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings Per Set		One Male and One Easy-Install Female Fitting Per Set	
3/8"	11/16"	4 1/2"	400	53075K14	$1.98	$1.69	3/8"	53075K41	$2.91	53075K65	$3.36
1/2"	25/32"	6"	400	53075K16	2.43	2.07	1/2"	53075K42	4.72	53075K66	5.08
5/8"	1"	7 1/2"	400	53075K17	3.73	3.18	3/4"	53075K43	8.37	53075K63	12.10
3/4"	1 1/8"	9"	400	53075K18	4.06	3.46	3/4"	53075K44	10.55	53075K64	15.09

High Pressure

Fittings are zinc-plated steel. *Male* fittings have NPT threads. *Female* fittings have NPSM (National Pipe Straight Mechanical) threads, which are compatible with male NPSM, NPT, and NPTF threads.

Male

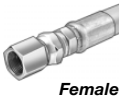
Female

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) One Male and One Female Fitting Per Set	
3/8"	11/16"	5"	1000	53075K24	$3.34	$2.74	3/8"	53075K71	$11.68
1/2"	27/32"	7"	1000	53075K26	3.31	2.71	1/2"	53075K72	15.27
3/4"	1 5/32"	9 1/2"	1000	53075K28	4.81	3.94	3/4"	53075K73	27.48

Fire-Resistant High-Pressure Washdown Water Hose

- Use with water
- Temperature Range: –22° to +200° F
- Color: Yellow
- Hose: Blended rubber (SBR/NBR)
- Cover: Blended rubber (SBR/NBR)
- Reinforcement: Steel wire

Hose

Also known as mine-spray hose, a specially formulated cover makes this hose ideal for severe operating conditions, such as those found when controlling dust in mines. The cover material meets MSHA (Mine Safety and Health Administration) IC-152/6 standards for fire resistance. The steel reinforcement gives this hose strength to handle high-pressure applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.
Fittings are also known as ground-joint couplings. All have NPT threads. The fittings with *3/4"* and *1"* *pipe sizes* are zinc-plated steel; *1 1/2"* and *2"* *pipe sizes* are zinc-plated malleable iron.

Male

Hose—Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.
Fittings (Attached to the Hose)—Assembled in lengths of 5-, 10-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

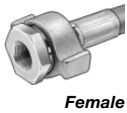
Female

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings Per Set		One Male and One Female Fitting Per Set	
3/4"	1 1/8"	3 3/4"	1000	5630K12	$4.37	$3.58	3/4"	5630K15	$40.38	5630K32	$72.99
1"	1 3/8"	5"	1000	5630K13	5.41	4.42	1"	5630K18	59.60	5630K33	90.48
1 1/2"	2"	7 1/2"	1000	5630K17	8.25	6.75	1 1/2"	5630K19	96.09	5630K37	121.18
2"	2 9/16"	10"	1000	5630K16	12.26	10.03	2"	5630K21	122.22	5630K36	148.64

Washdown Water Hose for Clean Environments

- Use with water
- Temperature Range: –25° to +200° F
- Color: White
- Hose: SBR rubber
- Cover: SBR rubber
- Reinforcement: Spiral-plied synthetic yarn

Hose

This hose, also known as creamery and paper-mill hose, has a white cover that easily shows dirt—great for washdown applications in clean environments. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.
Fittings are brass and have NPSM (National Pipe Straight Mechanical) threads. Male NPSM threads are compatible with female NPSM and NPSH threads. Female NPSM threads are compatible with male NPSM, NPT, and NPTF threads. *Easy-install female* fittings rotate 360° until tightened down during installation; they have a washer seal.

Male

Hose—Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.
Fittings (Attached to the Hose)—Assembled lengths of 5-, 10-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Easy-Install Female

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings Per Set		One Male and One Easy-Install Female Fitting Per Set	
1/2"	15/16"	2 1/2"	150	5286K78	$6.32	$5.41	3/4"	5286K11	$36.38	5286K69	$29.86
3/4"	1 11/64"	3"	150	5286K79	6.51	5.57	3/4"	5286K25	44.50	5286K75	29.83
1"	1 27/64"	3"	150	5286K81	8.16	6.68	1"	5286K23	48.12	5286K76	36.53
1 1/4"	1 11/16"	3 1/2"	150	5286K82	9.01	7.37	1 1/4"	5286K31	53.04	5286K77	58.45

For information about hose, see page 240.

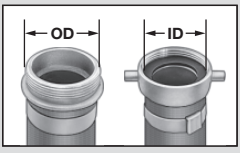

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	6 5/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″

High-Pressure Washdown Hot-Water Hose

Hose

Male

Female

- Use with water
- Temperature Range: –40° to +200° F
- Color: Black
- Hose: Neoprene rubber
- Cover: Neoprene rubber
- Reinforcement: Synthetic yarn

Choose this hose for high-pressure, hot-water washdown applications. The neoprene material meets SAE 100R3. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Fittings are zinc-plated steel and have NPT threads. *Easy-install female fittings* rotate 360° until tightened down during installation.

Hose— Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled lengths of 5-, 10-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	Max. psi @ 72° F	FITTINGS (ATTACHED TO THE HOSE) One Male and One Easy-Install Female Fitting	Per Set
1/4″	9/16″	3″	1250	5291K29	$2.41	$1.95	1/4″	1250	5291K73	$33.33
3/8″	3/4″	4″	1125	5291K11	3.30	2.67	3/8″	1125	5291K76	40.00
1/2″	15/16″	5″	1000	5291K23	4.51	3.65	1/2″	1000	5291K14	44.50
3/4″	1 1/4″	6″	750	5291K25	7.81	6.31	3/4″	750	5291K16	63.60
1″	1 1/2″	8″	565	5291K27	9.42	7.61	1″	565	5291K17	84.40

Pressure-Washer and Steam-Cleaner Hose

Hose

Male

Easy-Install Male

Designed to withstand the temperature and pressure requirements of most pressure washers and steam cleaners. The cover material meets RMA (Rubber Manufacturers Association) Class B for oil resistance. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum. Color is black.

Fittings are made of zinc-plated steel and have NPT threads. *Easy-install male fittings* turn 360° until tightened down during installation.

Pressure-washer hose is for use with water. It's made from Buna-N (nitrile) rubber with a synthetic rubber cover. The reinforcement is synthetic yarn on hose rated 1500 psi; braided steel wire on hose rated 3000 psi. Temperature range is –20° to +200° F.

Combination pressure-washer/steam-cleaner hose is for use with hot water and steam (not for cold-water service). It's made from synthetic rubber with a Hypalon rubber cover and braided steel wire reinforcement. Temperature range is 0° to +250° F for pressure washing; 0° to +325° F for steam cleaning.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 10-, 25-, 30-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) One Male and One Easy-Install Male Fitting	Per Set
Pressure-Washer Hose								
1/4″	0.53″	2″	3000	53115K71	$2.55	$2.07	1/4″	53115K25	$14.10
1/4″	0.59″	2″	1500	53115K21	2.07	1.68	1/4″	53115K26	13.10
3/8″	0.69″	2 1/2″	3000	53115K72	2.94	2.38	3/8″	53115K27	15.50
3/8″	0.75″	2 1/2″	1500	53115K22	3.02	2.45	3/8″	53115K28	13.80
1/2″	0.82″	3 1/2″	3000	53115K73	3.89	3.16	1/2″	53115K29	18.50
Combination Pressure-Washer/Steam-Cleaner Hose								
3/8″	0.69″	2 1/2″	3000♣	53115K51	3.41	2.77	3/8″	53115K45■	19.00
1/2″	0.82″	3 1/2″	2500♣	53115K56	4.45	3.61	1/2″	53115K46■	24.20

♣ This rating decreases to 350 psi @ 325° F for steam-cleaner applications. ■ Has two male fittings (not easy-install style).

Low-Pressure Steam Hose

Hose

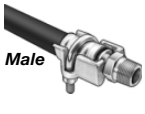
Male

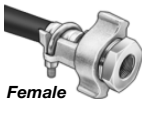
Female

- Use with steam
- Temperature Range: –40° to +450° F
- Color: Black or red
- Hose: EPDM rubber
- Cover: EPDM rubber
- Reinforcement: Braided steel wire

Ideal for low-pressure steam applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum. The cover material for the ***red hose*** meets RMA (Rubber Manufacturers Association) Class C for oil resistance.

Fittings are also known as ground-joint couplings. All have NPT threads. The *1/2″* to *1″ pipe sizes* are zinc-plated steel; *1 1/4″* to *2″ pipe sizes* are zinc-plated ductile iron.

Hose— Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 450° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) One Male and One Female Fitting	Per Set
Black Hose								
1/2″	1 1/16″	7″	250	5301K11	$3.28	$2.77	1/2″	5301K21	$75.60
3/4″	1 9/32″	9″	250	5301K12	3.81	3.22	3/4″	5301K22	83.98
1″	1 1/2″	11″	250	5301K13	5.25	4.44	1″	5301K23	102.51
1 1/4″	1 13/16″	16″	250	5301K14	11.50	9.59	1 1/4″	5301K24	157.16
1 1/2″	2 1/8″	20″	250	5301K15	12.25	10.21	1 1/2″	5301K25	153.84
2″	2 11/16″	25″	250	5301K16	14.64	12.21	2″	5301K26	166.79
Red Hose								
1/2″	1 1/32″	7″	250	53045K61	4.12	3.43	1/2″	53045K51	75.60
3/4″	1 9/32″	9″	250	53045K63	5.51	4.59	3/4″	53045K52	83.98
1″	1 1/2″	11″	250	53045K65	7.76	6.45	1″	53045K53	102.51
1 1/2″	2 3/16″	20″	250	53045K67	15.53	12.94	1 1/2″	53045K55	153.84
2″	2 11/16″	25″	250	53045K69	17.48	14.56	2″	53045K56	166.79

For information about hose, see page 240.

Suction and Discharge Water Hose

- Use with water
- Temperature Range: –10° to +130° F
- Color: Green or clear
- Hose: PVC
- Cover: PVC
- Reinforcement: Rigid PVC

Hose

Cam-and-Groove Socket

Male

Cam-and-Groove Plug

Easy-Install Female

All-PVC construction makes this hose an economical choice for both vacuum and pressure applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

Male fittings have NPSM (National Pipe Straight Mechanical) threads, which are compatible with female NPSM and NPSH threads. All are aluminum, except the 1″ and 1¼″ pipe sizes are brass.

Easy-install female fittings rotate 360° until tightened down during installation. All have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads. They're aluminum with a brass nut, except the 1″ and 1¼″ pipe sizes are all brass.

Cam-and-groove sockets and ***plugs*** come in your choice of aluminum or polypropylene. To connect, insert the plug into the socket and push the levers down.

Hose— Full coil length is 100 ft., except 6″ ID hose is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, 30-, or 50-ft., or any length you choose up to 100 feet, except 6″ ID hose has a maximum length of 50 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE): One Male and One Easy-Install Female Pipe Size	Per Set	One Cam-and-Groove Socket and One Plug, Aluminum Coupling Size	Per Set	Polypropylene Coupling Size	Per Set
Green Hose											
1″	1 9/32″	3″	90	5293K38	$1.68	$1.40	1″ 5293K11	$19.06	1″ 5293K31	$31.47	1″ 5293K55	$21.06
1¼″	1½″	4″	75	5293K39	1.86	1.55	1¼″ 5293K22	34.20	1¼″ 5293K32	42.18	—	—
1½″	1 13/16″	5″	75	5293K41	2.18	1.80	1½″ 5293K13	15.94	1½″ 5293K33	41.16	1½″ 5293K57	23.78
2″	2⅜″	6″	70	5293K42	3.03	2.52	2″ 5293K14	22.11	2″ 5293K34	48.39	2″ 5293K58	29.24
2½″	2⅞″	8″	50	5293K43	4.74	3.96	2½″ 5293K15	36.33	2½″ 5293K35	72.04	—	—
3″	3 7/16″	9″	50	5293K44	5.17	4.27	3″ 5293K16	46.96	3″ 5293K36	77.96	3″ 5293K65	63.70
4″	4½″	13″	50	5293K45	9.65	8.05	4″ 5293K17	86.06	4″ 5293K37	119.75	4″ 5293K66	96.76
6″	6 13/16″	24″	25	5293K47	17.00	14.16	6″ 5293K19	181.58	6″ 5293K51	284.29	—	—
Clear Hose											
1″	1 9/32″	3″	90	5796K11	1.83	1.49	1″ 5796K22	19.06	1″ 5796K41	31.47	1″ 5796K71	21.06
1¼″	1½″	4″	75	5796K12	2.32	1.91	1¼″ 5796K33	34.20	1¼″ 5796K42	42.18	—	—
1½″	1 13/16″	5″	75	5796K13	2.67	2.20	1½″ 5796K24	15.94	1½″ 5796K43	41.16	1½″ 5796K72	23.78
2″	2⅜″	6″	70	5796K14	3.86	3.17	2″ 5796K25	22.11	2″ 5796K44	48.39	2″ 5796K73	29.24
2½″	2⅞″	8″	50	5796K15	6.03	4.92	2½″ 5796K26	36.33	2½″ 5796K45	72.04	—	—
3″	3 7/16″	9″	50	5796K16	7.14	5.84	3″ 5796K27	46.96	3″ 5796K46	77.96	3″ 5796K74	63.70
4″	4½″	13″	50	5796K17	12.07	9.86	4″ 5796K28	86.06	4″ 5796K47	119.75	4″ 5796K75	96.76
6″	6 13/16″	24″	25	5796K19	22.74	18.59	6″ 5796K31	181.58	6″ 5796K49	284.29	—	—

Suction and Discharge Water Hose with Wear Strip

- Use with water
- Temperature Range: –13° to +140° F
- Color: See below
- Hose: Black: EPDM rubber; Clear: PVC
- Cover: Black: EPDM rubber; Clear: PVC
- Reinforcement: Black: Polyethylene; Clear: PVC

Hose

Male

Easy-Install Female

Cam-and-Groove Socket

Cam-and-Groove Plug

The reinforcement is on the outside, so it doubles as a wear strip to protect this hose from damage caused by dragging. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F, unless noted.

Male fittings have NPSM (National Pipe Straight Mechanical) threads, which are compatible with female NPSM and NPSH threads. All are aluminum, except the 1″ pipe size is brass.

Easy-install female fittings rotate 360° until tightened down during installation. All have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads. They're aluminum with a brass nut, except the 1″ pipe size is all brass.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose— **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, 30-, or 50-ft., or any length you choose up to the full coil length. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Full Coil Lg.	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE): One Male and One Easy-Install Female Fitting Pipe Size	Per Set	One Cam-and-Groove Socket and One Plug Coupling Size	Per Set
Black Hose with Gray Wear Strip										
1″	1 11/32″	4″	80	100	5642K11	$2.63	$2.02	1″ 5642K61	$27.44	1″ 5642K71	$45.11
1¼″	1 5/8″	5″	70	100	5642K12	2.85	2.20	1¼″ 5642K62	32.00	1¼″ 5642K72	57.11
1½″	1 31/32″	6″	60	100	5642K13	3.29	2.55	1½″ 5642K63	19.38	1½″ 5642K73	60.22
2″	2½″	9″	60	100	5642K14	4.80	3.73	2″ 5642K64	25.67	2″ 5642K74	65.00
2½″	3″	11″	50	100	5642K15	8.29	6.45	2½″ 5642K65	45.11	2½″ 5642K75	96.89
3″	3⅝″	12″	50	50	5642K16	9.37	7.29	3″ 5642K66	47.56	3″ 5642K76	107.00
4″	4 11/16″	17″	45	50	5642K17	15.85	12.33	4″ 5642K67	79.56	4″ 5642K77	145.64
6″	6⅞″	27″	35	50	5642K19★	30.99	24.36	6″ 5642K81★	182.91	6″ 5642K91★	314.64
Clear Hose with White Wear Strip										
1½″	2 1/32″	2½″	110	100	45815K21	5.38	4.40	—	—	1½″ 45815K61	45.80
2″	2 19/32″	4″	100	100	45815K22	6.78	5.55	—	—	2″ 45815K62	59.92
3″	3 11/16″	6 5/16″	100	100	45815K23	8.99	7.36	—	—	3″ 45815K63	102.82
4″	4 25/32″	7″	75	100	45815K24	14.58	11.92	—	—	4″ 45815K64	138.69
Clear Hose with Safety-Orange Wear Strip										
1½″	2 1/32″	2½″	110	100	45815K51	4.32	3.54	—	—	1½″ 45815K25	45.80
2″	2 19/32″	4″	100	100	45815K52	5.22	4.27	—	—	2″ 45815K26	59.92
3″	3 11/16″	6 5/16″	100	100	45815K53	6.20	5.06	—	—	3″ 45815K27	102.82
4″	4 25/32″	7″	75	100	45815K54	9.29	7.59	—	—	4″ 45815K28	138.69
6″	7 5/32″	10 3/16″	70	60	45815K55	18.81	15.39	—	—	6″ 45815K29	295.63

★ Vacuum rating is 20″ Hg @ 72° F.

For information about hose, see page 240.

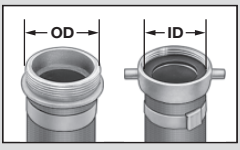

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	5 5/8″	6 5/8″
Pipe Size	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	5″	6″

High-Pressure Suction and Discharge Water Hose

Hose

Male

Cam-and-Groove Socket

Easy-Install Female

Cam-and-Groove Plug

- Use with water
- Temperature Range: –20° to +180° F
- Color: Blue
- Hose: Blended vinyl/Buna-N (nitrile) rubber
- Cover: Blended vinyl/Buna-N (nitrile) rubber
- Reinforcement: Polyester and steel wire

Use this strong hose for high-pressure and high-vacuum applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

Male fittings are brass and have NPSM (National Pipe Straight Mechanical) threads, which are compatible with female NPSM and NPSH threads.

Easy-install female fittings rotate 360° until tightened down during installation. All are brass and have NPSH (National Pipe Straight Hose) threads, which are compatible with male NPSH, NPSM, NPT, and NPTF threads.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose—Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)—Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 30-ft., or any length you choose up to 50 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

HOSE							FITTINGS (ATTACHED TO THE HOSE): One Male and One Easy-Install Female Fitting				FITTINGS (ATTACHED TO THE HOSE): One Cam-and-Groove Socket and One Plug			
Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	Pipe Size	Max. psi @ 72° F		Per Set	Coupling Size	Max. psi @ 72° F		Per Set
1 1/2″	2″	6″	300	5651K11	$13.91	$11.28	1 1/2″	250	5651K91	$78.33	1 1/2″	250	5651K16	$73.20
2″	2 1/2″	8″	300	5651K12	18.70	15.17	2″	225	5651K92	107.00	2″	250	5651K17	90.40
2 1/2″	3″	10″	300	5651K13	20.93	16.98	2 1/2″	210	5651K93	143.71	2 1/2″	150	5651K18	161.20
3″	3 1/2″	12″	250	5651K14	26.65	21.62	3″	200	5651K94	196.87	3″	150	5651K19	147.40
4″	4 1/2″	16″	200	5651K15	35.47	28.77	4″	175	5651K95	267.78	4″	150	5651K27	212.60

Low-Temperature Suction and Discharge Water Hose

Hose

Male

Easy-Install Female

Cam-and-Groove Socket

Cam-and-Groove Plug

- Use with water
- Temp. Range: –40° to +180° F
- Color: Black with yellow stripe
- Hose: EPDM rubber
- Cover: EPDM rubber
- Reinforcement: Spiral-plied synthetic fabric with wire

A good all-around choice for low-temperature, high-vacuum applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Male fittings are brass (unless noted) and have NPSM (National Pipe Straight Mechanical) threads, which are compatible with female NPSM and NPSH threads.

Easy-install female fittings rotate 360° until tightened down during installation. All are brass (unless noted) and have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose—Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)—Assembled in lengths of 5-, 10-, 15-, 20-, 25-, 30-, and 50-ft., or any length you choose up to 100 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

HOSE							FITTINGS (ATTACHED TO THE HOSE): One Male and One Easy-Install Female Fitting			FITTINGS (ATTACHED TO THE HOSE): One Cam-and-Groove Socket and One Plug		
Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	Pipe Size		Per Set	Coupling Size		Per Set
1″	1 27/64″	3″	125	5294K781	$4.91	$4.05	1″	5294K571	$62.52	1″	5294K31	$53.58
1 1/4″	1 11/16″	4″	125	5294K782	5.60	4.62	1 1/4″	5294K572	75.45	1 1/4″	5294K32	61.65
1 1/2″	1 15/16″	4″	125	5294K793	5.93	4.89	1 1/2″	5294K573	79.84	1 1/2″	5294K33	55.84
2″	2 29/64″	7″	125	5294K795	6.59	5.43	2″	5294K574	97.54	2″	5294K34	75.48
2 1/2″	3 1/64″	10″	100	5294K709	8.79	8.00	2 1/2″	5294K575	144.89	2 1/2″	5294K35	98.62
3″	3 1/2″	14″	100	5294K724	9.87	8.14	3″	5294K576	193.88	3″	5294K36	104.78
4″	4 35/64″	18″	75	5294K727	14.37	11.85	4″	5294K577	258.61	4″	5294K37	154.48
6″	6 39/64″	24″	75	5294K728	28.72	23.68	6″	5294K578■	183.79	6″	5294K38	313.13

■ Male fitting is aluminum; easy-install female fitting is aluminum with a brass nut.

Discharge Water Hose for Reels

Pin-Lug Fitting

- Use with water
- Temp. Range: –40° to +257° F
- Color: Black
- Hose: EPDM rubber
- Cover: EPDM rubber
- Reinforcement: Synthetic fabric

Ideal for reels—this hose won't collapse when water stops flowing. Use for general purpose washdown applications and fire emergencies. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for bend radius or vacuum.

The ***1″ ID hose*** has brass fittings with NPSH (National Pipe Straight Hose) threads. Male NPSH threads are compatible only with female NPSH threads; female NPSH threads are compatible with male NPSH, NPSM, NPT, and NPTF threads.

The ***1 1/2″*** and ***2″ ID hose*** comes with aluminum pin-lug fittings that have a brass nut and NPSM (National Pipe Straight Mechanical) threads. Male NPSM threads are compatible with female NPSM and NPSH threads; female NPSM threads are compatible with male NPSM, NPT, and NPTF threads. The *female* fittings are easy-install style; they rotate 360° until tightened down during installation.

Hose ID	Hose OD	Pipe Size	Max. psi @ 72° F	Hose Lg.	One Male and One Female Fitting	Each
1″	1 1/2″	1″	175	50 ft.	6461T71	$455.43
1 1/2″	2″	1 1/2″	112	50 ft.	6461T78	556.29
2″	2 1/2″	2″	88	50 ft.	6461T79	857.16

For information about hose, see page 240.

Heavy Duty Discharge Water Hose

- Use with water
- Temperature Range: –25° to +180° F
- Color: Black
- Hose: SBR rubber
- Cover: SBR rubber
- Reinforcement: Spiral-plied synthetic fabric

Hose

Choose this super-tough hose when you need excellent abrasion resistance. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for bend radius or vacuum.

Fittings are aluminum. *Easy-install female* fittings rotate 360° until tightened down during installation. All fittings have NPSM (National Pipe Straight Mechanical) threads. Male NPSM threads are compatible with female NPSM and NPSH threads; female NPSM threads are compatible with male NPSM, NPT, and NPTF threads.

Male

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, and 25-ft., or any length you choose up to 100 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Easy-Install Female

Hose ID	Hose OD	HOSE Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Pipe Size	Max. psi @ 72° F	One Male and One Easy-Install Female Fitting	Per Set
1″	1 9/32″	150	5289K21	$6.20	$5.02	1″	150	5289K861	$45.30
1 1/4″	1 19/32″	150	5289K22	6.49	5.23	1 1/4″	150	5289K862	49.12
1 1/2″	1 53/64″	150	5289K23	6.68	5.41	1 1/2″	150	5289K863	45.07
1 3/4″	2 9/64″	150	5289K24	7.37	5.95	—	—	—	—
2″	2 3/8″	150	5289K25	7.95	6.43	2″	150	5289K865	46.85
2 1/2″	2 7/8″	150	5289K26	10.32	8.33	2 1/2″	150	5289K866	116.07
3″	3 15/32″	150	5289K27	13.90	11.22	3″	150	5289K867	121.84
3 1/2″	4 1/64″	150	5289K28	16.78	13.55	—	—	—	—
4″	4 1/2″	150	5289K29	19.69	15.90	4″	150	5289K868	164.33
4 1/2″	5″	150	5289K31	23.37	18.87	—	—	—	—
6″	6 1/2″	150	5289K32	32.15	25.98	6″	150	5289K869	302.66

Lay-Flat Discharge Water Hose

Low- (Blue) and Medium- (Red) Pressure Hose
- Use with water
- Temperature Range: –5° to +170° F
- Hose: PVC
- Cover: PVC
- Reinforcement: Polyester yarn

Medium-Pressure (White) Hose
- Use with water
- Temperature Range: –40° to +180° F
- Hose: SBR rubber
- Cover: Polyester
- Reinforcement: None

High-Pressure (Yellow) Hose
- Use with water
- Temperature Range: –5° to +200° F
- Hose: Blended PVC/Buna-N (nitrile) rubber
- Cover: Blended PVC/Buna-N (nitrile) rubber
- Reinforcement: Synthetic yarn

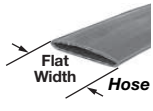

Hose

This hose lays flat when not in use, so it's easy to store. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for bend radius or vacuum.

The ***medium-pressure white hose*** is also known as mill hose. It resists mildew and rot.

Male fittings are aluminum (unless noted) and have NPSM (National Pipe Straight Mechanical) threads, which are compatible with female NPSM and NPSH threads.

Easy-install female fittings rotate 360° until tightened down during installation. They are aluminum with a brass nut (unless noted) and have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose— Full coil length is 100 ft., unless noted. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, 30-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Male

Easy-Install Female

Cam-and-Groove Socket

Cam-and-Groove Plug

Hose ID	Wall Thick.	Flat Width	HOSE Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) One Male and One Easy-Install Female Fitting Pipe Size	Max. psi @ 72° F		Per Set	One Cam-and-Groove Socket and One Plug Coupling Size	Max. psi @ 72° F		Per Set
Low Pressure— *Blue*														
1.61″	0.059″	2 1/2″	80	5295K1	$0.84	$0.68	1 1/2″	75	5295K17	$13.51	1 1/2″	80	5295K31	$36.39
2.09″	0.059″	3 5/16″	80	5295K35	.91	.72	2″	75	5295K18	18.68	2″	80	5295K32	42.72
2.56″	0.059″	4 1/2″	65	5295K2	1.59	1.27	2 1/2″	50	5295K21	29.73	2 1/2″	65	5295K34	63.95
3.07″	0.063″	5″	80	5295K39	1.78	1.43	3″	50	5295K22	39.75	3″	80	5295K36	69.15
4.13″	0.067″	6 1/2″	70	5295K41	2.34	1.88	4″	50	5295K23	74.77	4″	70	5295K38	112.93
6.16″	0.075″	9 1/2″	60	5295K3	4.19	3.35	6″	25	5295K24	147.09	6″	60	5295K42	249.89
8.15″	0.087″	13 1/2″	35	5295K45	9.75	7.80	—	—	—	—	8″	35	5295K44	1,037.91
Medium Pressure— *Red*														
1.61″	0.079″	2 1/2″	150	5310K33	1.91	1.52	1 1/2″	75	5310K11	13.51	1 1/2″	150	5310K21	36.39
2.09″	0.087″	3 5/16″	150	5310K35	2.28	1.82	2″	75	5310K12	18.68	2″	150	5310K22	42.72
2.56″	0.091″	4 1/2″	150	5310K37	3.44	2.75	2 1/2″	50	5310K13	29.73	2 1/2″	150	5310K23	63.95
3.07″	0.095″	5″	150	5310K43	5.38	4.30	3″	50	5310K14	39.75	3″	150	5310K24	69.15
4.13″	0.102″	6 1/2″	150	5310K45	6.56	5.25	4″	50	5310K15	74.77	4″	150	5310K25	112.93
6.18″	0.119″	9 1/2″	150	5310K47	13.12	10.50	6″	25	5310K16	147.09	6″	75	5310K51	249.89
8.19″	0.134″	13 1/2″	115	5310K49	21.97	17.57	—	—	—	—	8″	50	5310K52	1,037.91
Medium Pressure— *White*														
1″	0.07″	1 3/4″	100	5504K13	2.31	1.74	1″	100	5504K22♠	9.75	1″	100	5504K41	21.06
1 1/2″	0.07″	2 1/2″	100	5504K15	2.39	1.79	1 1/2″	100	5504K23	6.75	1 1/2″	100	5504K42	28.69
2″	0.08″	3 1/4″	100	5504K16	3.19	2.40	2″	100	5504K24	8.12	2″	100	5504K43	32.19
2 1/2″	0.08″	4″	100	5504K17	4.24	3.18	2 1/2″	100	5504K25	16.88	2 1/2″	100	5504K44	54.88
3″	0.09″	5″	100	5504K19	5.05	3.79	3″	100	5504K26	18.12	3″	100	5504K45	55.94
4″	0.13″	6 1/4″	100	5504K21▲	8.06	6.05	4″	100	5504K27▲	33.44	4″	100	5504K46▲	88.94
High Pressure— *Yellow*														
1″	0.08″	1 3/4″	300	45845K1	3.45	2.82	1″	300	45845K41♣	40.45	1″	250	45845K81	24.45
1 1/2″	0.11″	2 3/4″	300	45845K2	4.83	3.95	1 1/2″	300	45845K42♣	41.27	1 1/2″	250	45845K82	30.18
2″	0.12″	3 1/2″	300	45845K3	6.51	5.33	2″	300	45845K43♣	62.91	2″	250	45845K83	35.73
2 1/2″	0.13″	4 1/4″	300	45845K4	7.85	6.43	2 1/2″	300	45845K44♣	66.73	2 1/2″	200	45845K84	54.18
3″	0.14″	5″	300	45845K5	9.53	7.80	3″	300	45845K45♣	123.55	3″	200	45845K85	59.00
4″	0.14″	6 1/2″	200	45845K8	10.44	8.55	4″	200	45845K46♣	274.73	4″	150	45845K86	103.82
5″	0.14″	8 3/16″	200	45845K7	12.90	10.54	5″	200	45845K47♣	353.27	5″	75	45845K87	183.27

♠ Fittings are brass. ▲ Full coil length is 50 ft. ♣ Nut is aluminum.

For information about hose, see page 240.

About Fire Hose Fittings and Threads

There are two types of fire hose fittings: pin lug and rocker lug. Both lug styles provide a quick connection to hydrants, washdown equipment, and another hose. You'll need a hook-style spanner wrench to tighten these fittings (sold separately on pages 2765-2766).

There are two main types of fire hose thread. ***NH (National Hose)***, also known as ***NST (National Standard Thread)***, is the most common; it is only compatible with other NH/NST threads. ***NPSH (National Pipe Straight Hose)*** is also a popular choice; female NPSH threads are compatible with male NPSH, NPSM, NPT, and NPTF threads.

Pin-Lug Fitting

Rocker-Lug Fitting

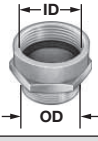

To determine the size and type of fire hose threads you need, measure the ID or OD of your fitting and count the threads per inch, then refer to the chart.

Fire Hose Thread Selection

Fitting ID (Female)	Fitting OD (Male)	Threads Per Inch	Thread Size and Type★
0.950″	1.035″	14	3/4″ NPSH
1.192″	1.295″	11 1/2	1″ NPSH
1.224″	1.375″	8	1″ NH/NST
1.775″	1.879″	11 1/2	1 1/2″ NPSH
1.857″	1.990″	9	1 1/2″ NH/NST
2.693″	2.843″	8	2 1/2″ NPSH
2.910″	3.068″	7 1/2	2 1/2″ NH/NST
3.531″	3.623″	6	3″ NH/NST

★ *Note*: NH/NST threads are only compatible with other NH/NST threads (not compatible with NPT or NPSH threads).

Some of our fire hose adapters on page 253 have NPT threads; NPT is a pipe size, not an actual measured size. To determine pipe size, measure the inside or outside diameter of your fitting and round the measurement up to the closest ID or OD listed in the chart, then select the corresponding pipe size.

Threaded ID or OD	1 3/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″
Pipe Size (NPT)	1″	1 1/2″	2″	2 1/2″	3″

Lay-Flat Fire Hose

Hose with Rocker-Lug Fittings

- Use with water
- Temperature Range: –40° to +150° F, except High-Pressure Hose is –5° to +200° F

You don't need a lot of space to store this fire hose—it lays flat when not in use. Hose meets NFPA 1961 (National Fire Protection Association) standards. Hose interior is smooth for unrestricted flow. Not rated for bend radius or vacuum. For additional lay-flat hose, see page 251.

This hose is furnished with one male fitting and one easy-install female fitting that rotates 360° until tightened down during installation. *Brass fittings* are more durable than aluminum. *Aluminum fittings* are lighter in weight than brass.

Hose with a double cover provides better resistance to abrasion and is more durable than single-cover hose.

Lightweight Polyester-Cover Hose— Also known as pin-rack hose, this hose folds nicely and is sized to fit in a vertical rack. Hose is polyurethane with a polyester cover. FM approved. For indoor use only. Color is white.

High-Pressure Blended PVC/Buna-N (Nitrile) Rubber-Cover Hose— Lightweight yet tough, this hose is made from blended PVC/Buna-N (nitrile) rubber with a blended PVC/Buna-N rubber cover and polyester/nylon reinforcement. UL listed. Can be used indoors and out. Color is red, except 45845K57 and K58 are yellow.

Abrasion-Resistant Polyester-Cover Hose— This EPDM rubber hose has a polyester cover that provides superior abrasion resistance. Can be used indoors and out. *1 1/2″* and *2 1/2″ ID single-cover hose* and the *270 psi double-cover hose* are UL listed and FM approved. Color is white, except those marked with a ★ come in your choice of color: red, white, or yellow. **To Order:** For items marked with a ★, please specify color.

Heat-Resistant Polyester/Cotton-Cover Hose— Made from EPDM rubber with a heavy duty polyester/cotton cover, this hose provides excellent heat and mildew resistance. Can be used indoors and out. Color is tan.

Hose ID	Hose OD	Hose Lg.	Max. psi @ 72° F	Thread Size	WITH BRASS PIN-LUG FITTINGS NH/NST	WITH BRASS PIN-LUG FITTINGS NPSH	Each	WITH BRASS ROCKER-LUG FITTINGS NH/NST	WITH BRASS ROCKER-LUG FITTINGS NPSH	Each	WITH ALUMINUM ROCKER-LUG FITTINGS NH/NST	WITH ALUMINUM ROCKER-LUG FITTINGS NPSH	Each
Lightweight Polyester Single Cover													
1 1/2″	1 11/16″	50 ft.	225	1 1/2″	6549T151	6549T152	$107.08	6549T153	6549T154	$99.74	6549T721	6549T722	$99.50
1 1/2″	1 11/16″	75 ft.	225	1 1/2″	6549T161	6549T162	138.64	6549T163	6549T164	122.01	6549T731	6549T732	130.16
1 1/2″	1 11/16″	100 ft.	225	1 1/2″	6549T172	6549T171	170.20	6549T173	6549T174	154.76	6549T741	6549T742	160.88
2 1/2″	2 13/16″	50 ft.	225	2 1/2″	6549T541	6549T542	258.36	6549T543	6549T544	298.38	—	—	—
2 1/2″	2 13/16″	75 ft.	225	2 1/2″	6549T662	6549T661	326.07	6549T664	6549T663	292.52	—	—	—
2 1/2″	2 13/16″	100 ft.	225	2 1/2″	6549T581	6549T582	394.85	6549T583	6549T584	434.89	—	—	—
High-Pressure Blended PVC/Buna-N (Nitrile) Rubber Single Cover													
1 1/2″	1 13/16″	50 ft.	270	1 1/2″	6529T111	6529T112	190.49	6529T113	6529T114	207.68	45845K57	—	222.45
1 1/2″	1 13/16″	100 ft.	270	1 1/2″	6529T131	6529T132	350.94	6529T133	6529T134	367.77	45845K58	—	410.13
Abrasion-Resistant Polyester Single Cover													
1″	15/32″	50 ft.	270	1″	—	—	—	—	—	—	6446T681	6446T682	126.65
1″	15/32″	100 ft.	270	1″	—	—	—	—	—	—	6446T691	6446T692	211.81
1 1/2″	1 3/4″	50 ft.	225	1 1/2″	6446T113★	6446T114★	103.18	6446T115★	6446T116★	120.09	6446T143★	6446T144★	96.19
1 1/2″	1 3/4″	75 ft.	225	1 1/2″	6446T123★	6446T124★	150.18	6446T125★	6446T126★	167.09	6446T145★	6446T146★	140.92
1 1/2″	1 3/4″	100 ft.	225	1 1/2″	6446T133★	6446T134★	172.91	6446T135★	6446T136★	177.34	6446T147★	6446T148★	181.37
2 1/2″	2 13/16″	50 ft.	225	2 1/2″	6446T21	6446T24	243.70	6446T46	6446T49	284.36	—	—	—
2 1/2″	2 13/16″	75 ft.	225	2 1/2″	6446T22	6446T25	334.59	6446T47	6446T51	375.26	—	—	—
2 1/2″	2 13/16″	100 ft.	225	2 1/2″	6446T23	6446T26	366.30	6446T48	6446T52	406.96	—	—	—
Abrasion-Resistant Polyester Double Cover													
1 1/2″	1 15/16″	50 ft.	270	1 1/2″	6555T21	6555T24	161.01	6555T27	6555T31	148.96	—	—	—
1 1/2″	1 15/16″	50 ft.	360	1 1/2″	—	—	—	—	—	—	6555T112	6555T111	140.16
1 1/2″	1 15/16″	100 ft.	270	1 1/2″	6555T23	6555T26	266.01	6555T29	6555T33	253.97	—	—	—
1 1/2″	1 15/16″	100 ft.	360	1 1/2″	—	—	—	—	—	—	6555T132	6555T131	219.33
2 1/2″	3″	50 ft.	270	2 1/2″	6555T45	6555T48	398.04	6555T52	6555T55	398.04	—	—	—
2 1/2″	3″	50 ft.	360	2 1/2″	—	—	—	—	—	—	6555T122	6555T121	248.23
2 1/2″	3″	100 ft.	270	2 1/2″	6555T47	6555T51	557.21	6555T54	6555T57	557.21	—	—	—
2 1/2″	3″	100 ft.	360	2 1/2″	—	—	—	—	—	—	6555T142	6555T141	385.35
Heat-Resistant Polyester/Cotton Double Cover													
1 1/2″	1 15/16″	50 ft.	270	1 1/2″	6448T259	6448T263	220.75	6448T266	6448T269	203.55	—	—	—
1 1/2″	1 15/16″	100 ft.	270	1 1/2″	6448T262	6448T265	376.96	6448T268	6448T272	364.72	—	—	—

For information about hose, see page 240.

Racks and Reels for Lay-Flat Fire Hose

Neatly store your lay-flat fire hose. All of these rugged steel racks and reels have a pivoting mounting bracket, which allows them to swing as the hose is released to prevent kinking, then store out of the way when not in use. Color is red.

Note: For full flow, the entire length of hose must be released from the rack or reel. Hose is not included.

Vertical Storage Rack— Use only with lightweight polyester hose (also called pin-rack hose). Hose hooks onto the rack. The mounting bracket has one 3/8″ hole and four 3/4″ × 1/2″ slots; fasteners not included.

Horizontal Storage Racks— A support (hump) in the center of the base keeps the hose evenly stacked to reduce fold stress and make hose removal easier. They have a dual mounting bracket with eight 3/8″ holes; fasteners not included.

Reels— Ideal for hose that is used frequently, reels allow quick winding and unwinding. The mounting bracket has two 3/8″ holes and two 3/8″ × 1 3/4″ slots; fasteners not included.

Covers— Protect racks and reels when not in use. Covers are made of red PVC with "Fire Hose Keep Clear" imprinted on both sides, except 6465T21 has printing on one side only.

Vertical Storage Rack

Horizontal Storage Rack

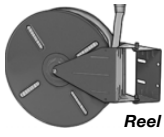

Reel

Hose ID	Hose Capacity: Lightweight Polyester	Hose Capacity: Single Cover	Hose Capacity: Double Cover	Rack/Reel O'all Size: Lg.♠	Rack/Reel O'all Size: Wd.	Rack/Reel O'all Size: Ht.	Racks/Reels	Each	Covers	Each
Vertical Storage Rack										
1 1/2″	150 ft.	—	—	20″	6″	1 1/2″	6465T13	$145.07	6465T21	$39.10
Horizontal Storage Racks										
1 1/2″ to 1 3/4″	100 ft.	50 ft.	—	29″	4″	18″	6466T11	230.95	6466T31	45.90
1 1/2″ to 1 3/4″	150 ft.	100 ft.	50 ft.	29″	4″	24″	6466T12	259.52	6466T32	47.62
1 1/2″ to 1 3/4″	200 ft.	150 ft.	75 ft.	39″	4″	34″	6466T13	390.48	6466T33	69.76
2″ to 2 1/2″	100 ft.	50 ft.	—	29″	5 1/4″	24″	6466T14	288.10	6466T34	56.19
Reels										
1 1/2″ to 1 3/4″	150 ft.	75 ft.	50 ft.	23 1/2″	6 1/4″	18″	6464T11	164.29	6464T21	29.40
1 1/2″ to 1 3/4″	200 ft.	100 ft.	75 ft.	29″	6 1/4″	24″	6464T12	197.62	6464T22	35.02
2″ to 2 1/2″	200 ft.	100 ft.	75 ft.	29″	8 1/2″	24″	6464T13	285.71	6464T23	37.50

♠ The distance the rack or reel extends from the mounting point.

Fire Hose Adapters, Hydrant Caps, and Hydrant Plugs

The NH/NST (National Hose/National Standard Thread) threads are only compatible with other NH/NST threads. Female NPSH (National Pipe Straight Hose) threads are compatible with male NPSH, NPSM, NPT, and NPTF threads. Not rated for pressure or vacuum.

Hex Fire Hose Adapters

Hex shape allows you to tighten these brass adapters with a wrench.

Also Available: Aluminum hex fire hose adapters. Please ask for 5578K1 and specify part number.

Male × Male

Thread or Pipe Size		Each
NH/NST × NH/NST		
1 1/2″ × 1 1/2″	6523T24	$39.20
2 1/2″ × 1 1/2″	6523T53	85.09
2 1/2″ × 2 1/2″	6523T54	53.35
NH/NST × NPSH		
1 1/2″ × 1 1/2″	6523T51	44.27
NH/NST × NPT		
1″ × 1″	6523T17	30.37
1 1/2″ × 1″	6523T33	35.44
1 1/2″ × 1 1/2″	6523T11	21.41
1 1/2″ × 2″	6523T28	30.67
1 1/2″ × 2 1/2″	6523T13	79.56
2 1/2″ × 1 1/2″	6523T35	84.25
2 1/2″ × 2″	6523T46	47.04
2 1/2″ × 2 1/2″	6523T14	55.98
2 1/2″ × 3″	6523T56	77.70
3″ × 3″	6523T57	95.80
NPSH × NPT		
1 1/2″ × 1 1/2″	6523T23	21.07

Male × Female

Thread or Pipe Size		Each
NPT × NH/NST		
1 1/2″ × 1 1/2″	6523T52	$27.73
1 1/2″ × 2 1/2″	6523T36	61.40
2 1/2″ × 2 1/2″	6523T55	54.53
3″ × 3″	6523T58	99.74
NPT × NPSH		
1 1/2″ × 1 1/2″	6523T38	30.50
NH/NST × NH/NST		
1 1/2″ × 2 1/2″	6523T26	61.40
NH/NST × NPSH		
1 1/2″ × 1 1/2″	6523T12	30.50
NH/NST × NPT		
1 1/2″ × 1″	6523T43	28.22
1 1/2″ × 1 1/2″	6523T16	19.45
2 1/2″ × 1 1/2″	6523T45	49.18
2 1/2″ × 2″	6523T49	72.65
2 1/2″ × 2 1/2″	6523T19	54.55
NPSH × NH/NST		
1 1/2″ × 1 1/2″	6523T25	27.73

Hydrant Plugs with Chain

These brass plugs have male threads, two rocker lugs, and a 9″ long chain.

Chicago Fire Dept. plug fits female 3.10″ max. OD holes.

Thread Size		Each
NH/NST		
1 1/2″	6527T16	$49.01
2 1/2″	6527T11	48.96
Chicago Fire Dept.		
2 1/2″	6527T14	48.96

Hydrant Caps with Chain

Made from brass, these caps have female threads, two rocker lugs, and a 9″ long chain.

Thread Size		Each
NH/NST		
1″	6525T171	$35.37
1 1/2″	6525T141	33.66
2 1/2″	6525T161	50.55

Rocker-Lug Fire Hose Adapters

Made from brass with two rocker lugs.

Also Available: Aluminum rocker-lug fire hose adapters. Please ask for 5578K1 and specify the part number.

Male × Female

Thread or Pipe Size		Each
NPT × NH/NST		
1″ × 1 1/2″	6524T13	$40.75
1″ × 2 1/2″	6524T18	54.90
1 1/2″ × 1 1/2″	6524T19	43.82
2″ × 2 1/2″	6524T26	52.87
2 1/2″ × 2 1/2″	6524T27	57.87
NH/NST × NH/NST		
1″ × 1 1/2″	6524T15	40.75
1″ × 2 1/2″	6524T16	51.11
1 1/2″ × 2 1/2″	6524T22	48.09
2 1/2″ × 1 1/2″	6524T25	69.82
NH/NST × NPSH		
1 1/2″ × 1 1/2″	6524T17	47.58
1 1/2″ × 2 1/2″	6524T14	40.08
NPSH × NH/NST		
1″ × 2 1/2″	6524T11	62.47
1 1/2″ × 2 1/2″	6524T24	53.44
NPSH × NPSH		
1 1/2″ × 2 1/2″	6524T12	53.44

Pin-Lug Easy-Install Fire Hose Adapters

These brass adapters rotate 360° until tightened down during installation.

Male × Easy-Install Female

Thread or Pipe Size		Each
NPT × NH/NST		
1 1/2″ × 1 1/2″	6494T61	$60.00
2″ × 2 1/2″	6494T72	73.40
2 1/2″ × 2 1/2″	6494T63	94.78

Easy-Install Female × Female

Thread or Pipe Size		Each
NH/NST × NPT		
1 1/2″ × 1 1/2″	6494T64	$40.38
2 1/2″ × 2″	6494T66	78.37
2 1/2″ × 2 1/2″	6494T73	95.22

Easy-Install Female × Easy-Install Female

Thread Size		Each
NH/NST × NH/NST		
2 1/2″ × 2 1/2″	6494T34	$115.60

Swivel Hydrant Cap

This easy-off cap saves time in an emergency. It has an adjustable bracket that snaps into any 2 1/2″ female hose thread. To remove cap, tap the spanner lug on one end. Cap is aluminum; adjustable bracket is chrome-plated steel. Not intended to hold or seal pressure. Not rated for pressure or vacuum. UL listed.

6528T1 ..... Each $13.50

Fire Hose Nozzles & Braided Hose

For information about hose, see page 240.

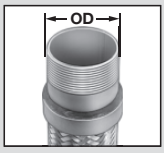

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD), as shown. Then, round the measurement up to the closest OD listed in the chart and select the corresponding pipe size. For example, if the threaded OD measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Fire Hose Nozzles

Use these nozzles to direct water flow when fighting a fire or in any water hose application. All nozzles have female threads. For information about fire hose threads, see page 252. For fire hose adapters that allow you to convert the thread size and style on these nozzles to one that's compatible with your equipment, please see page 253.

***A** FM-Approved Polycarbonate Spray/Stream Nozzles—*These lightweight nozzles have an easy-grip textured barrel and a rubber bumper. Turn the nozzle to adjust the water flow.

***B** Brass Compact Spray/Stream Nozzles—*The small size combined with a textured barrel makes these nozzles easy to hold. All have a rubber bumper. Turn the nozzle to adjust the water flow.

***C** UL-Listed Brass Heavy Duty Spray/Stream Nozzles—*These nozzles have an easy-grip textured barrel and a rubber bumper. Turn the nozzle to adjust the water flow.

***D&E** Quick-Flow Stream Nozzles—*There is no shut-off valve in these nozzles, so they provide instant water flow. *Style D* is brass. *Style E* is plastic.

***F** Brass Lever-Activated Stream Nozzles—*Have a rubber bumper. Turn on and off with the lever.

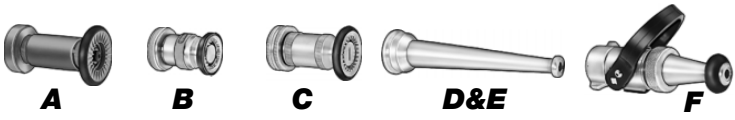

	Thread Size	Thread Style	Threads per Inch	gpm @ 100 psi	O'all Size, Dia. × Lg.	Orifice Size		Each
A	3/4″	NPSH	14	8	2 3/4″ × 4 3/4″	—	6469T432	$17.82
A	1″	NH/NST	8	22	2 3/4″ × 4 3/4″	—	6469T341	17.82
A	1″	NPSH	11 1/2	22	2 3/4″ × 4 3/4″	—	6469T342	17.82
A	1 1/2″	NH/NST	9	75	2 3/4″ × 4 5/8″	—	6469T131	18.29
A	1 1/2″	NPSH	11 1/2	75	2 3/4″ × 4 5/8″	—	6469T141	18.08
A	2″	NPSH	11 1/2	150	3 1/4″ × 5 3/8″	—	6469T38	55.77
B	1 1/2″	NH/NST	9	95	2 1/2″ × 3 1/2″	—	6480T1	75.07
B	1 1/2″	NPSH	11 1/2	95	2 1/2″ × 3 1/2″	—	6480T12	75.07
C	1 1/2″	NH/NST	9	95	2 7/8″ × 5″	—	6470T32	112.00
C	1 1/2″	NPSH	11 1/2	95	2 7/8″ × 5″	—	6470T34	121.00
D	1″	NH/NST	8	28	1 3/8″ × 8″	5/16″	6484T15	13.84
D	1″	NPSH	11 1/2	28	1 19/64″ × 8″	5/16″	6484T22	12.00
D	1 1/2″	NH/NST	9	73	2″ × 10″	1/2″	6484T29	23.33
D	1 1/2″	NPSH	11 1/2	73	1 7/8″ × 10″	1/2″	6484T31	23.33
D	2 1/2″	NH/NST	7 1/2	168	3 1/16″ × 12″	3/4″	6484T44	52.56
D	2 1/2″	NPSH	8	168	2 27/32″ × 12″	3/4″	6484T46	52.56
E	1 1/2″	NH/NST	9	71	2 1/2″ × 10″	1/2″	6424T61	10.13
E	1 1/2″	NPSH	11 1/2	71	2 1/2″ × 10″	1/2″	6424T62	10.13
F	1 1/2″	NH/NST	9	75	3 1/4″ × 9 1/2″	1/2″	6479T5	458.18
F	1 1/2″	NPSH	11 1/2	75	3 1/4″ × 9 1/2″	1/2″	6479T6	458.18

Braided Metal Hose

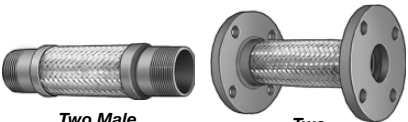

Two Male Fittings — *Two Flanges*

- Ideal for use with water; also use with air and coolants
- Temp. Range: –50° to +800° F
- Hose: Type 304 stainless steel
- Braid: Type 304 stainless steel

Also known as pump-connector hose, this economical hose is furnished with the fittings attached. It is resistant to mild vibration and can handle up to 1/8″ connection misalignment. Hose interior is ribbed. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Carbon Steel—Has fair corrosion resistance and is more economical than stainless steel.

Type 304 Stainless Steel—Provides very good corrosion resistance.

Male fittings have NPT threads.

Flange connections are unthreaded ANSI Class 150. They connect by bolting to another flange of the same size. The flanges on the 2″ to 3″ ID hose have four bolt holes; 4″ to 6″ ID hose have eight bolt holes. All flanges are fixed.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	O'all Lg.	With Carbon Steel Fittings	Each	With Type 304 SS Fittings	Each
Two Male Fittings									
1/2″	1/2″	0.69″	7″	990	6 1/2″	5468K21	$24.06	5468K91	$40.15
3/4″	3/4″	1.01″	9 1/2″	750	7″	5468K22	26.35	5468K92	44.41
1″	1″	1.31″	11″	605	8″	5468K13	33.74	5468K53	56.12
1 1/4″	1 1/4″	1.62″	12″	570	8 1/2″	5468K14	40.50	5468K54	71.06
1 1/2″	1 1/2″	1.9″	13″	410	9″	5468K25	45.76	5468K95	78.50
2″	2″	2.44″	16″	455	10 1/2″	5468K16	54.50	5468K56	87.50
2 1/2″	2 1/2″	3.42″	18″	345	12″	5468K27	86.50	5468K97	136.25
3″	3″	3.93″	22″	290	14″	5468K18	97.12	5468K58	170.72
4″	4″	4.99″	26″	250	16″	5468K19	133.20	5468K59	244.65
Two Flanges									
2″	2″	2.44″	16″	455	9″	5468K31	89.82	5468K71	243.72
2 1/2″	2 1/2″	3.42″	18″	345	9″	5468K78	121.47	5468K72	263.84
3″	3″	3.93″	22″	290	9″	5468K33	109.17	5468K73	288.96
4″	4″	4.99″	26″	250	9″	5468K34	141.20	5468K74	388.04
6″	6″	7.09″	41″	210	11″	5468K36	224.43	5468K89	575.20

Bronze Hose with Solder-Joint Tube Fittings

- Ideal for use with water; also use with air and refrigerants
- Temp. Range: –423° to +450° F
- Hose: Bronze
- Braid: Bronze

This bronze hose has copper socket-end (female) tube fittings attached to both ends, so it's ready for connection to copper tubing. Bronze is corrosion resistant and compatible with copper components. The bronze material is UL and C-UL recognized. This flexible hose is good for vibration applications. Hose interior is ribbed. Can be used indoors and out. Vacuum rating is 30″ Hg @ 72° F.

For information about copper solder-joint tube fittings, see page 216.

Tube Size ▲	Actual Tube OD	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	O'all Lg.		Each
1/8″	1/4″	1/4″	9/16″	1″	450	7 1/2″	5611K23	$18.80
1/4″	3/8″	3/8″	3/4″	1 1/4″	450	8 1/4″	5611K24	20.51
3/8″	1/2″	3/8″	3/4″	1 1/4″	450	9″	5611K25	20.86
1/2″	5/8″	1/2″	7/8″	1 1/2″	450	9 3/4″	5611K26	23.18
5/8″	3/4″	1/2″	7/8″	1 1/2″	450	10″	5611K27	24.71
5/8″	3/4″	3/4″	15/16″	2 1/4″	440	11 1/4″	5611K28	32.56
3/4″	7/8″	3/4″	15/16″	2 1/4″	440	11 1/2″	5611K29	32.59
1″	1 1/8″	1″	1 5/8″	3″	400	13″	5611K31	42.19
1 1/4″	1 3/8″	1 1/4″	1 15/16″	3 1/2″	480	14 3/4″	5611K32	64.72
1 1/2″	1 5/8″	1 1/2″	2 5/16″	4″	420	17″	5611K33	80.87
2″	2 1/8″	2″	2 5/8″	5″	190	20″	5611K34	130.19

▲ Tube size is the accepted designation for copper tube fittings; it is not the actual size.

About Bend Radius and Vacuum Ratings for Hose

Bend Radius— Measured from the center point to the inside edge of the hose, this is the minimum radius you can bend a hose without damaging it or shortening its life. The smaller the bend radius, the greater the flexibility.

Vacuum Rating— Vacuum, or negative pressure, is measured in inches of mercury (Hg). The larger the number, the higher the vacuum. *Low* = 1″ to 24″ Hg; *Medium* = 25″ to 27″ Hg; *High* or *Full* = 28″ to 29.9″ Hg.

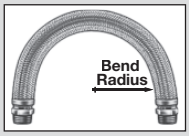

About Pressure-Rating Reductions for High-Temperature Braided Hose

The maximum pressure rating, which is listed in every presentation, is for constant pressures and even flows. For pulsating conditions, divide the max. psi rating by 2. For shock conditions with stainless steel hose, divide the max. psi rating by 6; with bronze hose, divide by 2.

When the temperature increases, the amount of pressure a hose can withstand decreases. To determine the maximum amount of pressure your hose can withstand at elevated temperatures, multiply the max. psi rating for your hose by the factors listed.

	Multiply Max. psi by	
Temperature	**Stainless Steel**	**Bronze**
100° F	1.00	0.92
200° F	1.00	0.89
400° F	0.93	0.78
800° F	0.74	N/A
1200° F	0.30	N/A

High-Temperature Braided Air and Water Hose

- Ideal for air, water, and steam; also use with ethylene glycol, fuel oil, and mineral oil
- Temperature Range: –325° to +1250° F
- Hose: Type 321 or Type 316 stainless steel
- Braid: Type 304 stainless steel

All-stainless steel construction makes this hose tough enough to handle high temperatures as well as applications involving vibration. Also good when connections are misaligned. Hose interior is ribbed. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Type 321 stainless steel hose with Type 304 stainless steel fittings has good corrosion resistance. ***Type 316 stainless steel hose with Type 316 stainless steel fittings*** has excellent corrosion resistance.

Super-flexible hose has a better bend radius than ***flexible*** hose.

Length is measured end-to-end, including the fittings. Fittings have NPT threads. Available in 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 66″, 72″, 96″, and 120″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

ⓘ For information about the chemical compatibility for the braided hose listed below, go to mcmaster.com and search for **5793KAC**.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	TYPE 321 SS HOSE WITH TYPE 304 SS FITTINGS 12″ Length	Each	Add'l Hose Per Inch	TYPE 316 SS HOSE WITH TYPE 316 SS FITTINGS 12″ Length	Each	Add'l Hose Per Inch
(A) Flexible Hose with Two Male Fittings										
1/4″	1/4″	0.47″	4 1/2″	1800	**5680K61**	$29.63	$0.42	**5793K61**	$33.46	$0.43
3/8″	3/8″	0.71″	5″	1558	**5680K12**	31.81	.56	**5793K12**	38.06	.61
1/2″	1/2″	0.83″	5 1/2″	1186	**5680K13**	34.48	.61	**5793K13**	45.71	.77
3/4″	3/4″	1.22″	8″	898	**5680K64**	41.94	.79	**5793K64**	54.15	1.03
1″	1″	1.53″	9″	718	**5680K15**	49.07	1.03	**5793K15**	73.77	.77
1 1/4″	1 1/4″	1.83″	10″	645	**5680K16**	71.02	1.30	**5793K16**	80.17	1.52
1 1/2″	1 1/2″	2.16″	11″	531	**5680K17**	81.00	1.50	**5793K17**	91.17	1.78
2″	2″	2.69″	13″	449	**5680K68**	101.45	2.00	**5793K68**	139.08	2.18
2 1/2″	2 1/2″	3.50″	16″	417	**5680K19**♠	157.27	2.92	**5793K19**♠	174.27	3.35
3″	3″	3.98″	18″	346	**5680K2**♠	187.64	3.06	**5793K2**♠	207.89	3.50
4″	4″	5.06″	22″	299	**5680K3**♠	263.27	5.33	**5793K3**♠	292.22	5.85
(A) Super-Flexible Hose with Two Male Fittings										
1/4″	1/4″	0.48″	3 11/16″	1800	**54875K31**	39.45	1.39	**5301T41**	43.51	1.21
3/8″	3/8″	0.71″	4″	1558	**54875K13**	44.71	1.42	**5301T42**	49.31	1.29
1/2″	1/2″	0.83″	4 3/8″	1186	**54875K15**	49.74	1.33	**5301T43**	55.87	1.31
3/4″	3/4″	1.22″	6 3/8″	898	**54875K17**	58.45	1.73	**5301T44**	65.35	1.51
1″	1″	1.53″	7 1/16″	718	**54875K19**	70.97	2.03	**5301T45**	79.52	1.86
1 1/4″	1 1/4″	1.83″	7 7/8″	645	**54875K21**	71.99	2.52	**5301T46**	81.45	2.61
1 1/2″	1 1/2″	2.16″	8 11/16″	531	**54875K23**	80.59	3.06	**5301T47**	92.02	2.90
2″	2″	2.69″	10 5/16″	449	**54875K25**	99.16	3.54	**5301T48**	110.65	3.39
(B) Flexible Hose with One Male Fitting and One Female Union										
1/4″	1/4″	0.47″	4 1/2″	300	**5676T72**	36.06	.41	**5793T72**▲	40.78	.43
3/8″	3/8″	0.71″	5″	300	**5676T32**	42.33	.56	**5793T32**▲	48.79	.61
1/2″	1/2″	0.83″	5 1/2″	300	**5676T33**	46.52	.61	**5793T33**▲	55.19	.78
3/4″	3/4″	1.22″	8″	300	**5676T74**	58.18	.79	**5793T74**▲	68.35	1.03
1″	1″	1.53″	9″	300	**5676T35**	68.40	1.03	**5793T35**▲	75.61	1.27
1 1/4″	1 1/4″	1.83″	10″	300	**5676T36**	95.24	1.30	**5793T36**▲	105.91	1.52
1 1/2″	1 1/2″	2.16″	11″	300	**5676T37**	106.15	1.50	**5793T37**▲	118.81	1.78
2″	2″	2.69″	13″	300	**5676T78**	129.64	2.00	**5793T78**▲	143.75	2.18
(B) Super-Flexible Hose with One Male Fitting and One Female Union										
1/4″	1/4″	0.48″	3 11/16″	300	**54905K27**	46.19	1.39	**5301T61**	50.45	1.21
3/8″	3/8″	0.71″	4″	300	**54905K29**	51.31	1.42	**5301T62**	56.10	1.29
1/2″	1/2″	0.83″	4 3/8″	300	**54905K32**	56.55	1.33	**5301T63**	62.82	1.31
3/4″	3/4″	1.22″	6 3/8″	300	**54905K34**	66.15	1.73	**5301T64**	73.64	1.51
1″	1″	1.53″	7 1/16″	300	**54905K36**	84.57	2.03	**5301T65**	93.90	1.86
1 1/4″	1 1/4″	1.83″	7 7/8″	300	**54905K38**	101.00	2.52	**5301T66**	113.02	2.61
1 1/2″	1 1/2″	2.16″	8 11/16″	300	**54905K52**	113.60	3.06	**5301T67**	125.89	2.90
2″	2″	2.69″	10 5/16″	300	**54905K54**	139.60	3.54	**5301T68**	154.63	3.39
(C) Flexible Hose with Two Female Unions										
1/4″	1/4″	0.47″	4 1/2″	300	**5676T22**	42.30	.46	**5793T12**	48.50	.51
3/8″	3/8″	0.71″	5″	300	**5676T24**	44.90	.49	**5793T14**	50.70	.54
1/2″	1/2″	0.83″	5 1/2″	300	**5676T26**	45.70	.49	**5793T16**	53.60	.56
3/4″	3/4″	1.22″	8″	300	**5676T28**	58.90	.65	**5793T18**	66.40	.73
1″	1″	1.53″	9″	300	**5676T38**	74.30	.85	**5793T22**	83.50	.91
1 1/4″	1 1/4″	1.83″	10″	300	**5676T46**	95.91	1.14	**5793T24**	109.64	1.22
1 1/2″	1 1/2″	2.16″	11″	300	**5676T48**	103.05	1.26	**5793T26**	117.82	1.39
2″	2″	2.69″	13″	300	**5676T56**	125.18	1.71	**5793T28**	146.73	1.84

A

B

C

♠ The hex nuts are carbon steel. ▲ Female unions are Type 304 stainless steel.

For information about hose, see page 255.

For information about the chemical compatibility for the braided hose on this page, go to mcmaster.com and search for **5676TAC.**

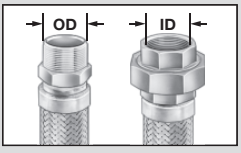

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

High-Temperature Braided Air and Water Hose with Flanged Ends

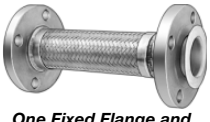

One Fixed Flange and One Easy-Install Flange

- Ideal for air, water, and steam; also use with ethylene glycol, fuel oil, and mineral oil
- Temp. Range: –20° to +950° F
- Hose: Type 321 or 316 stainless steel
- Braid: Type 304 stainless steel

Furnished with unthreaded ANSI Class 150 flanges attached, this stainless steel hose connects to another hose with the same flange size. Hose is good for applications involving vibration and when connections are misaligned. Hose interior is ribbed. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Flanges are carbon steel. *Easy-install* flanges rotate until tightened down during installation.

Type 321 stainless steel has good corrosion resistance. ***Type 316 stainless steel*** has excellent corrosion resistance.

Length is measured end-to-end, including the flanges. Available in 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 66″, and 72″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Also Available: Type 321 stainless steel hose with one fixed and one easy-install Type 304 stainless steel flange. Temperature range is –325° to +1250° F. Please ask for 5626K1 and specify pipe size and hose length up to 48″.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Flange OD (A)	Flange Bolt Circle Dia. (B)	Flange No. of Bolt Holes	TYPE 321 SS HOSE w/ONE FIXED AND ONE EASY-INSTALL FLANGE 12″ Length Each	Add'l Hose Per Inch	TYPE 316 SS HOSE w/TWO EASY-INSTALL FLANGES 12″ Length Each	Add'l Hose Per Inch
1″	1″	1.53″	9″	285	4 1/4″	3 1/8″	4	5676T62 $106.00	$0.85	5793T46 $121.87	$0.91
1 1/2″	1 1/2″	2.16″	11″	285	5″	3 7/8″	4	5676T64 113.76	1.26	5793T48 128.78	1.39
2″	2″	2.69″	13″	285	6″	4 3/4″	4	5676T1 134.81	2.00	5793T1 146.86	2.18
2 1/2″	2 1/2″	3.50″	16″	285	7″	5 1/2″	4	5676T2 188.46	2.31	5793T2 211.84	3.35
3″	3″	3.98″	18″	285	7 1/2″	6″	4	5676T3 204.47	3.06	5793T3 224.53	3.50
4″	4″	5.06″	22″	285	9″	7 1/2″	8	5676T4 265.00	5.33	5793T4 289.43	5.85

High-Temperature Braided Air and Water Hose with 37° Flared Fittings

- Ideal for air, water, and steam; also use with ethylene glycol, fuel oil, and mineral oil
- Temp. Range: –325° to +1250° F
- Hose: Type 321 or 316 stainless steel
- Braid: Type 304 stainless steel

This all-stainless steel hose comes with a male NPT threaded pipe fitting on one end and a 37° flared female tube fitting on the other. The 37° flared fittings, which are also known as JIC (Joint Industrial Council) fittings, rotate 360° until tightened down during installation; they have UNF straight threads, which are only compatible with male UNF threads. Hose is good for applications involving vibration and when connections are misaligned. Hose interior is ribbed. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Type 321 stainless steel hose with Type 304 stainless steel fittings has good corrosion resistance. ***Type 316 stainless steel hose with Type 316 stainless steel fittings*** has excellent corrosion resistance.

Length is measured end-to-end, including the fittings. Available in 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 66″, 72″, 96″, and 120″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe Size (Male)	Thread Size (Female)	Hose ID	Hose OD	Bend Radius	Max. psi @ 72°F	TYPE 321 SS HOSE WITH ONE 304 SS MALE AND ONE 316 SS 37° Flared FEMALE FITTING 12″ Length Each	Add'l Hose Per Inch	TYPE 316 SS HOSE WITH ONE 316 SS MALE AND ONE 316 SS 37° Flared FEMALE FITTING 12″ Length Each	Add'l Hose Per Inch
1/4″	7/16″-20	1/4″	0.53″	4 1/2″	2700	5676T82 $48.50	$0.71	5793T62 $53.34	$0.70
3/8″	9/16″-18	3/8″	0.77″	5″	2336	5676T84 54.00	.75	5793T64 58.60	.72
1/2″	3/4″-16	1/2″	0.89″	5 1/2″	1779	5676T12 59.77	.76	5793T91 65.71	.82
3/4″	1 1/16″-12	3/4″	1.28″	8″	1347	5676T13 82.88	1.02	5793T92 91.31	1.12
1″	1 5/16″-12	1″	1.59″	9″	1077	5676T14 109.78	1.27	5793T93 121.94	1.40
1 1/2″	1 7/8″-12	1 1/2″	2.24″	11″	797	5676T15 208.00	1.87	5793T94 230.27	2.11
2″	2 1/2″-12	2″	2.77″	13″	674	5676T16 287.27	2.57	5793T95 315.83	2.84

High-Pressure/High-Temperature Braided Air and Water Hose

- Ideal for air, water, and steam; also use with ethylene glycol, fuel oil, and mineral oil
- Temperature Range: –325° to +1250° F
- Hose: Type 321 stainless steel
- Braid: Type 321 stainless steel

With double-braid stainless steel construction, this hose has what it takes to stand up to high pressure and temperatures. Good for misaligned connections. Hose interior is ribbed. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

Fittings are Type 304 stainless steel and have male NPT threads.

Length is measured end-to-end, including the fittings. Available in 12″, 18″, 24″, 30″, 36″, 42″, and 48″, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	TWO MALE FITTINGS 12″ Length Each	Add'l Hose Per Inch
3/4″	3/4″	1.40″	10″	3600	5615K11 $81.02	$4.50
1″	1″	1.70″	11″	3000	5615K21 98.15	5.80
1 1/4″	1 1/4″	2.00″	12 1/2″	2600	5615K31 126.67	6.67
1 1/2″	1 1/2″	2.36″	13″	2200	5615K41 138.15	7.33

For information about bend radius and vacuum ratings for hose, see page 255.

Semiflexible High-Temperature Braided Air and Water Hose

- Use with air and water
- Temperature Range: –20° to +450° F
- Hose: Bronze
- Braid: Bronze

Two Male Fittings

One Male Fitting and One Female Union

Perfect for high-temperature applications, this bronze hose provides good corrosion resistance and is compatible with copper components. It is good for misaligned connections and anywhere vibration is a concern. The bronze material meets ASTM B508. Hose interior is ribbed. For indoor use only. Vacuum rating is 29″ Hg @ 72° F.

Male fittings are copper and have NPT threads. ***Female unions*** are brass and have NPT threads.

Length is measured end-to-end, including the fittings. Hose with fittings attached is available in lengths of 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 66″, and 72″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total price, start with the price for the 12″ length, then add the price for each additional inch.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72°F	Two Male Fittings 12″ Length	Each	One Male Fitting and One Female Union 12″ Length	Each	Add'l Hose Per Inch
1/4″	1/4″	0.54″	5 3/4″	1,380	54895K42	$33.98	55095K17	$50.76	$0.64
3/8″	3/8″	0.71″	6 3/4″	1,000	54895K43	38.96	55095K18	49.12	.68
1/2″	1/2″	0.87″	7 1/2″	605	54895K53	37.38	55095K64	52.29	1.20
3/4″	3/4″	1.21″	9 3/8″	485	54895K54	53.87	55095K65	67.33	1.34
1″	1″	1.53″	11″	375	54895K65	63.49	55095K76	83.90	1.54
1 1/4″	1 1/4″	1.84″	13″	345	54895K66	76.36	55095K77	121.98	1.92
1 1/2″	1 1/2″	2.16″	14″	270	54895K67	88.89	55095K78	131.12	2.24
2″	2″	2.80″	17 5/8″	280	54895K68	107.71	55095K79	186.00	2.76

Coolant Hose

- Use with ethylene glycol and water
- Temp. Range: 0° to +212° F
- Color: Black w/green stripe
- Hose: Blended rubber (Buna-N/SBR)
- Cover: Blended rubber (Buna-N/neoprene)
- Reinforcement: Polyester cord

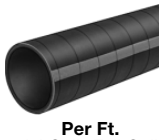

Here's a hose that is ideal for low-pressure coolant applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for bend radius or vacuum.

To Order: Please order in 5-ft. increments up to the full coil length of 25 feet.

Hose ID	Hose OD	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
5/8″	1″	56	5285K131	$8.30	$6.79
3/4″	1 1/8″	56	5285K132	8.05	6.59
7/8″	1 1/4″	56	5285K133	9.04	7.40
1″	1 3/8″	53	5285K134	9.32	7.62
1 1/8″	1 1/2″	53	5285K135	9.84	8.05
1 1/4″	1 5/8″	51	5285K136	9.97	8.16
1 3/8″	1 3/4″	51	5285K137	10.41	8.52
1 1/2″	1 7/8″	49	5285K138	11.18	9.14
1 5/8″	2″	49	5285K139	11.49	9.40
1 3/4″	2 1/8″	48	5285K151	11.69	9.57
1 7/8″	2 1/4″	45	5285K152	12.58	10.30
2″	2 3/8″	45	5285K153	13.70	11.21
2 1/8″	2 1/2″	44	5285K154	14.79	12.10
2 1/4″	2 5/8″	43	5285K155	14.09	11.66
2 3/8″	2 3/4″	39	5285K156	15.33	12.68
2 1/2″	2 7/8″	39	5285K157	$17.25	$14.28
2 5/8″	3″	38	5285K158	17.56	14.53
2 3/4″	3 1/8″	38	5285K159	17.56	14.53
2 7/8″	3 1/4″	35	5285K171	19.18	15.87
3″	3 3/8″	33	5285K172	19.54	16.17
3 1/8″	3 1/2″	33	5285K173	20.02	16.57
3 1/4″	3 5/8″	33	5285K111	21.96	18.17
3 1/2″	3 7/8″	28	5285K112	24.41	20.20
3 3/4″	4 1/8″	25	5285K113	26.48	21.91
4″	4 3/8″	19	5285K114	29.00	24.00
4 1/4″	4 5/8″	18	5285K115	28.30	23.42
4 1/2″	4 7/8″	16	5285K116	33.29	28.12
4 3/4″	5 1/8″	16	5285K117	37.97	31.43
5″	5 3/8″	15	5285K118	38.71	32.04
6″	6 3/8″	12	5285K119	52.84	43.73

High-Temperature Coolant Hose

- Use with ethylene glycol and water
- Temperature Range: –65° to +350° F
- Color: Blue
- Hose: Silicone rubber
- Cover: Silicone rubber
- Reinforcement: Silicone-coated polyester

Use this high-temperature hose in medium-pressure applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Standard hose meets SAE J20R1 Class A.

Kink-resistant hose is wire reinforced to prevent kinking; it will also withstand more pressure. Meets SAE J20R2 Class A. Not rated for bend radius.

To Order: Please order hose in 1-ft. increments up to the full coil length of 12 ft., except hose with a 6″ ID, which is sold in 3-ft. lengths.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
Standard Hose						
1/2″	7/8″	5 1/2″	115	5296K311	$10.50	$8.31
5/8″	1″	5 3/4″	90	5296K321	10.76	8.52
3/4″	1 1/8″	6″	80	5296K331	12.05	9.54
7/8″	1 1/4″	7″	80	5296K341	12.34	9.77
1″	1 3/8″	8″	75	5296K351	13.11	10.38
1 1/8″	1 1/2″	10″	75	5296K361	13.07	10.51
1 1/4″	1 5/8″	11″	65	5296K371	13.59	10.92
1 3/8″	1 3/4″	15″	65	5296K381	14.78	11.88
1 1/2″	1 7/8″	17″	60	5296K391	15.17	12.20
1 3/4″	2 1/8″	23″	55	5296K411	18.39	14.78
2″	2 3/8″	26″	50	5296K421	19.41	15.61
2 1/8″	2 1/2″	30″	50	5296K431	20.15	16.20
2 1/4″	2 5/8″	34″	40	5296K441	21.61	17.37
2 3/8″	2 3/4″	38″	40	5296K451	22.20	17.84
2 1/2″	2 7/8″	40″	35	5296K461	22.90	18.41
2 3/4″	3 1/8″	50″	30	5296K471	24.49	19.69
3″	3 3/8″	60″	25	5296K481	26.61	21.39
3 1/4″	3 21/32″	70″	25	5296K491	29.88	24.02
3 1/2″	3 7/8″	83″	15	5296K611	32.41	26.06
3 3/4″	4 1/8″	100″	10	5296K621	34.90	28.06
4″	4 3/8″	120″	10	5296K631	35.61	28.63
Standard Hose (Cont.)						
4 1/2″	4 7/8″	150″	10	5296K641	$44.56	$35.82
5″	5 3/8″	186″	10	5296K651	51.43	42.25
6″	6 21/64″	210″	8	5296K661	56.02	—
Kink-Resistant Hose						
1/2″	13/16″	—	200	5591K11	11.58	9.65
5/8″	15/16″	—	200	5591K12	12.52	10.43
3/4″	1 1/16″	—	200	5591K13	13.44	11.20
1″	1 5/16″	—	175	5591K15	15.32	12.77
1 1/4″	1 9/16″	—	160	5591K17	17.12	14.27
1 3/8″	1 11/16″	—	160	5591K18	17.74	14.78
1 1/2″	1 13/16″	—	160	5591K19	18.48	15.40
1 3/4″	2 1/16″	—	150	5591K23	19.82	16.51
2″	2 5/16″	—	140	5591K25	21.74	18.11
2 1/4″	2 9/16″	—	125	5591K29	26.36	21.97
2 1/2″	2 13/16″	—	100	5591K56	28.90	24.09
2 3/4″	3 1/16″	—	100	5591K59	30.06	25.05
3″	3 5/16″	—	100	5591K82	33.92	28.27
3 1/2″	3 13/16″	—	85	5591K84	37.92	31.61
4″	4 5/16″	—	75	5591K86	43.04	35.86
4 1/2″	4 13/16″	—	55	5591K87	49.50	41.26
5″	5 5/16″	—	40	5591K88	54.80	45.67

Coolant Hose

For information about bend radius and vacuum ratings for hose, see page 255.

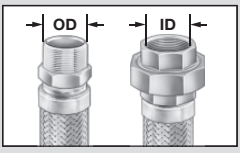

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″

High-Temperature Vacuum-Rated Coolant Hose

- Use with ethylene glycol and water
- Temperature Range: –65° to +350° F
- Color: Blue
- Hose: Silicone rubber
- Cover: Silicone rubber
- Reinforcement: Polyester

Here's a great choice for high-temperature coolant applications that require vacuum. The material meets SAE J20R3 Class A. Hose interior is smooth for unrestricted flow. Can be used indoors and out. **To Order:** Please order in 5-ft. increments up to the full coil length of 50 feet.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1/4″	9/16″	1 3/8″	60	9.98″ Hg	5133K21	$3.39	$2.69
3/8″	11/16″	2″	60	9.98″ Hg	5133K22	4.08	3.23
1/2″	13/16″	2 1/4″	60	9.98″ Hg	5133K23	5.29	4.19
5/8″	15/16″	2 3/8″	60	7.97″ Hg	5133K24	5.52	4.37
3/4″	1 1/16″	4 1/4″	50	6.97″ Hg	5133K25	6.20	4.90
1″	1 23/64″	5″	40	5.99″ Hg	5133K26	8.63	6.83
1 1/4″	1 37/64″	6″	40	4.99″ Hg	5133K27	12.05	9.54

Marine Coolant and Fuel Hose

- Use with diesel fuel, ethylene glycol, fuel oil, and gasoline
- Temperature Range: –20° to +212° F
- Color: Black w/yellow stripe
- Hose: Buna-N (nitrile) rubber
- Cover: Neoprene rubber
- Reinforcement: Nylon screen w/steel wire spiral

Ideal for use with coolants and fuel in marine applications, this hose is made with a specially formulated Buna-N (nitrile) rubber material that meets SAE J1527 Type A2 and USCG (United States Coast Guard) 1942F standards. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 30″ Hg @ 72° F.

To Order: Please order in 5-ft. increments up to the full coil length of 60 ft., except 1/2″ and 5/8″ ID hose, which have a full coil length of 25 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
1/2″	7/8″	2″	60	5727K41	$9.10	$7.44
5/8″	1″	2″	60	5727K42	9.31	7.61
3/4″	1 1/8″	3″	58	5727K43	9.38	7.68
7/8″	1 1/4″	3″	55	5727K44	9.76	7.98
1″	1 3/8″	3″	53	5727K45	10.01	8.19
1 1/8″	1 1/2″	3″	50	5727K46	10.38	8.49
1 1/4″	1 5/8″	3″	44	5727K47	10.90	8.92
1 3/8″	1 3/4″	4″	44	5727K48	11.80	9.65
1 1/2″	1 7/8″	4″	44	5727K49	12.11	9.77
1 5/8″	2″	5″	41	5727K51	11.90	9.85
1 3/4″	2 1/8″	5″	41	5727K52	$12.04	$9.96
1 7/8″	2 1/4″	5″	38	5727K91	13.40	11.09
2″	2 3/8″	6″	35	5727K53	13.98	11.57
2 1/8″	2 1/2″	6″	34	5727K54	14.95	12.38
2 1/4″	2 5/8″	6″	34	5727K55	15.15	12.53
2 3/8″	2 3/4″	7″	33	5727K56	15.46	12.79
2 1/2″	2 7/8″	8″	30	5727K57	20.68	17.11
3″	3 3/8″	13″	26	5727K58	23.67	19.59
3 1/2″	3 7/8″	14″	20	5727K92	26.76	22.15
4″	4 3/8″	15″	18	5727K59	29.16	24.14

Medium-Pressure Braided Coolant Hose

- Use with ethylene glycol and water
- Temperature Range: 5° to 230° F
- Hose: EPDM rubber
- Braid: Type 304 stainless steel

A Type 304 stainless steel braid gives this rubber hose the strength to handle more pressure than coolant hose without a braid. Length is measured end-to-end, including the fittings. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Male fittings are brass and have NPT threads.

Easy-install female fittings rotate 360° until tightened down during installation. They're brass and have NPSM (National Pipe Straight Mechanical) threads, which are compatible with male NPSM, NPT, and NPTF threads.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	ONE MALE AND ONE EASY-INSTALL FEMALE FITTING 12″ Length	Each	18″ Length	Each	24″ Length	Each	30″ Length	Each	36″ Length	Each
1/2″	1/2″	0.73″	2 5/8″	350	5308K15	$11.71	5308K61	$13.95	5308K71	$17.43	5308K81	$17.89	5308K91	$20.26
3/4″	3/4″	1.05″	4 1/2″	300	5308K25	18.82	5308K62	22.24	5308K72	28.14	5308K82	30.00	5308K92	33.16
1″	1″	1.25″	5 1/2″	230	5308K37	34.47	5308K67	39.61	5308K77	44.08	5308K87	48.82	5308K97	57.50

High-Pressure Braided Coolant Hose

Two Male Fittings

One Male and One Female Union

- Use with air and ethylene glycol; not for use with water
- Temperature Range: –20° to +250° F
- Hose: Carbon steel
- Braid: Galvanized steel

Able to withstand more pressure than any other coolant hose we offer, this hose is ideal for when connections are misaligned. Hose interior is ribbed. For indoor use only. Vacuum rating is 29″ Hg @ 72° F.

Length is measured end-to-end, including the fittings. Fittings are carbon steel and have NPT threads. Available in 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 66″, 72″, and 96″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	TWO MALE FITTINGS 12″ Length	Each	ONE MALE AND ONE FEMALE UNION 12″ Length	Each	Add'l Hose Per Inch
1/4″	1/4″	0.54″	5″	1478	56145K61	$27.77	56155K81	$35.37	$0.60
3/8″	3/8″	0.71″	5 1/2″	931	56145K62	30.38	56155K82	35.56	.62
1/2″	1/2″	0.87″	7″	768	56145K63	31.42	56155K83	37.27	.62
3/4″	3/4″	1.21″	8″	576	56145K64	41.04	56155K84	46.49	.65
1″	1″	1.53″	9″	369	56145K65	49.93	56155K85	53.73	.73
1 1/4″	1 1/4″	1.84″	11″	340	56145K66	56.47	56155K86	65.78	.84
1 1/2″	1 1/2″	2.16″	12″	300	56145K67	60.91	56155K67	71.84	.97
2″	2″	2.80″	15″	297	56145K68	70.51	56155K68	83.93	1.31
2 1/2″	2 1/2″	3.26″	18″	235	56145K69	93.60	56155K35	149.73	1.40

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the chemical hose on this page, go to mcmaster.com and search for **5395KAC**.

High-Temperature Coolant-Hose Elbows

- Use with ethylene glycol and water
- Temperature Range: –65° to +500° F
- Color: Blue
- Hose: Silicone rubber
- Cover: Silicone rubber
- Reinforcement: Polyester

Connect two lengths of coolant hose with these 90° elbows—they'll stand up to your high-temperature applications. Attach to the hose using a Worm-Drive Clamp for Soft Hose (sold separately; see page 276). The silicone material meets SAE J20R1 Class A. Interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

For Hose ID	For Hose OD	Lg. (A)	Lg. (B)	Max. psi @ 72° F		Each
1″	1 5/16″	8″	8″	150	5359K12	$29.44
1 1/2″	1 13/16″	9″	9″	125	5359K14	35.67
2″	2 3/16″	10″	10″	83	5359K16	41.42
3 1/2″	3 13/16″	11 5/16″	11 5/16″	50	5359K19	68.18

Chemical Hose

- Use with acetone, ethylene glycol, and mineral oil
- Temperature Range: –25° to +150° F
- Color: Green w/green stripe
- Hose: Cross-linked polyethylene
- Cover: EPDM rubber
- Reinforcement: Synthetic fabric with wire spiral

Hose

The specially formulated polyethylene material allows this hose to handle a wide range of chemicals. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Cam-and-groove sockets and ***plugs*** come in your choice of two materials: *aluminum,* which has good corrosion resistance; and *Type 316 stainless steel,* which has excellent corrosion resistance. To connect, insert the plug into the socket and push the levers down.

Cam-and-Groove Socket

Hose— Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Cam-and-Groove Plug

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Coupling Size	FITTINGS (ATTACHED TO THE HOSE) One Cam-and-Groove Socket and One Plug: Aluminum	Aluminum Per Set	Type 316 SS	Type 316 SS Per Set
1/2″	3 1/32″	6″	150	5534K13	$12.00	$9.60	1/2″	5534K39♣	$19.18	5534K51♣	$52.45
3/4″	1 15/64″	7″	150	5534K14	14.04	11.23	3/4″	5534K41	19.09	5534K58	43.36
1″	1 15/32″	8″	150	5534K21	14.36	11.49	1″	5534K42	21.64	5534K52	58.45
1 1/4″	1 47/64″	9″	150	5534K22	15.95	12.76	1 1/4″	5534K43	27.82	5534K53	84.91
1 1/2″	2 1/32″	10″	150	5534K23	16.65	13.32	1 1/2″	5534K44	25.73	5534K54	97.18
2″	2 39/64″	12″	150	5534K24	17.83	14.26	2″	5534K45	32.55	5534K55	144.73
3″	3 39/64″	18″	150	5534K25	27.79	22.23	3″	5534K28	57.82	5534K26	262.27
4″	4 11/16″	24″	150	5534K16	37.95	30.36	4″	5534K29	85.27	5534K27	441.45

♣ Socket has one lever.

High-Temperature/Medium-Pressure Chemical Hose

- Use with ethylene glycol, isopropyl alcohol, and mineral oil
- Temperature Range: –40° to +350° F
- Color: Green w/yellow stripe
- Hose: FEP (fluorinated ethylene propylene)
- Cover: EPDM rubber
- Reinforcement: Synthetic fabric with wire spiral

Hose

Not only will this hose stand up to chemicals at high temperatures, the FEP material is also FDA (food) compliant. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29.9″ Hg @ 72° F.

Fittings come in your choice of two materials: *carbon steel,* which is economical but has poor corrosion resistance; and *Type 316 stainless steel,* which has excellent corrosion resistance. All have male NPT threads.

Hose— Full coil length is 50 ft. **To Order:** Please order in 1-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 1-, 2-, 3-, 4-, 5-, 10-, 15-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Male Fitting

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings: Carbon Steel	Carbon Steel Per Set	Type 316 SS	Type 316 SS Per Set
1/2″	15/16″	2 5/8″	500	54675K241	$24.63	$20.17	1/2″	54675K14	$42.71	54675K41	$55.30
3/4″	1 1/4″	4 1/8″	500	54675K242	30.15	24.66	3/4″	54675K15	60.99	54675K42	110.82
1″	1 9/16″	5 3/4″	450	54675K243	33.39	27.98	1″	54675K16	66.44	54675K43	124.59
1 1/2″	2 1/8″	10 1/2″	350	54675K244	50.67	41.47	1 1/2″	54675K17	163.43	54675K44	248.83
2″	2 11/16″	13″	300	54675K245	65.67	53.72	2″	54675K18	240.91	54675K45	403.92

High-Temperature Chemical Hose

- Use with acetone, ethylene glycol, and isopropyl alcohol
- Temp. Range: –40° to +250° F
- Color: Black w/red stripe
- Hose: Cross-linked polyethylene
- Cover: EPDM rubber
- Reinforcement: Synthetic fabric with wire spiral

Hose

In addition to handling a wide range of chemicals, this hose also withstands high temperatures. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Cam-and-groove sockets and ***plugs*** are Type 316 stainless steel. To connect, insert the plug into the socket and push the levers down.

Cam-and-Groove Socket

Hose— Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Cam-and-Groove Plug

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	Coupling Size	FITTINGS (ATTACHED TO THE HOSE) One Cam-and-Groove Socket and One Plug	Per Set
2″	2 13/32″	5″	200	5395K36	$23.73	$18.99	2″	5395K22	$99.74
2 1/2″	2 29/32″	6″	200	5395K38	25.07	20.06	2 1/2″	5395K23	126.60
3″	3 13/32″	8″	200	5395K31	36.75	29.40	3″	5395K24	174.97

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the chemical hose on this page, go to mcmaster.com and search for **5601KAC**.

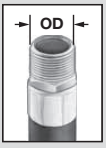

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD), as shown. Then, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the OD measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD	3/8″	1/2″	5/8″	3/4″	1″	1 5/8″	1 3/8″	1 7/8″	2 3/8″	3 1/2″	4 1/2″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1 1/4″	1″	1 1/2″	2″	3″	4″

High-Performance Chemical Hose

Hose

Cam-and-Groove Socket

Cam-and-Groove Plug

- Use with ethylene glycol, isopropyl alcohol, and paint
- Temperature Range: –40° to +250° F
- Color: Green w/white stripe
- Hose: UHMW (ultra-high molecular weight) polyethylene
- Cover: EPDM rubber
- Reinforcement: Fabric with wire spiral

Standing up to high pressure and high temperatures is just part of the story—this high-performance hose is also lightweight, flexible, and abrasion resistant. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

Cam-and-groove sockets and ***plugs*** are Type 316 stainless steel. To connect, insert the plug into the socket and push the levers down.

Hose—Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)—Assembled in lengths of 5-, 10-, 15-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft.	Partial Coil	Full Coil	FITTINGS (ATTACHED TO THE HOSE) Coupling Size	One Cam-and-Groove Socket and One Plug	Per Set
3/4″	1 3/16″	4″	200	5095T21	$18.39	$14.70	3/4″	5095T41	$199.14
1″	1 17/32″	5 1/2″	200	5095T22	18.55	14.85	1″	5095T42	216.83
1 1/4″	1 7/8″	6″	200	5095T23	19.14	15.32	1 1/4″	5095T43	282.92
1 1/2″	2 1/8″	7 1/2″	200	5095T24	19.47	15.57	1 1/2″	5095T44	281.32
2″	2 5/8″	8″	200	5095T25	19.78	15.82	2″	5095T45	355.37
2 1/2″	3 1/8″	8″	200	5095T26	24.87	19.89	2 1/2″	5095T46	515.85
3″	3 5/8″	9″	200	5095T27	27.97	22.38	3″	5095T47	609.57
4″	4 21/32″	14″	150	5095T38	35.93	29.94	4″	5095T58	732.39

Crush-Resistant Chemical Hose

Hose

Cam-and-Groove Socket

Cam-and-Groove Plug

- Use with acetone, ethylene glycol, and mineral spirits
- Temp. Range: –40° to +180° F
- Color: Green w/red stripe
- Hose: Polyethylene
- Cover: EPDM rubber
- Reinforcement: Fabric with plastic spiral

Multilayer construction allows this super-tough hose to bounce right back after being stepped on or even run over by a forklift. This hose is also good for tight spaces where bending is required. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Cam-and-groove sockets and ***plugs*** are Type 316 stainless steel. To connect, insert the plug into the socket and push the levers down.

Hose—Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)—Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to 100 ft. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft.	Partial Coil	Full Coil	FITTINGS (ATTACHED TO THE HOSE) Coupling Size	One Cam-and-Groove Socket and One Plug	Per Set
1″	1 1/2″	4″	200	5601K11	$8.36	$7.06	1″	5601K21	$82.51
1 1/2″	2″	5″	200	5601K12	9.79	8.26	1 1/2″	5601K22	145.50
2″	2 21/32″	7″	200	5601K13	13.79	11.63	2″	5601K23	196.69

Extra-Flexible Chemical Hose

Hose

Male

Cam-and-Groove Socket

Cam-and-Groove Plug

- Use with acetone, ethylene glycol, and isopropyl alcohol
- Temp. Range: –40° to +220° F
- Color: Purple w/yellow stripe
- Hose: EPDM rubber
- Cover: EPDM rubber
- Reinforcement: Synthetic fabric with wire spiral

Here's the most flexible chemical hose we offer. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Male fittings are Type 316 stainless steel and have NPT threads.

Cam-and-groove sockets and ***plugs*** are Type 316 stainless steel. To connect, insert the plug into the socket and push the levers down.

Hose—Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)—Assembled in lengths of 5-, 10-, 15-, 20-, or 25-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft.	Partial Coil	Full Coil	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings: Pipe Size	Per Set	One Cam-and-Groove Socket and One Plug: Coupling Size	Per Set
1 1/2″	2 1/64″	4″	150	5797K1	$14.91	$11.94	1 1/2″	5797K14 $82.88	1 1/2″	5797K24 $105.44
2″	2 17/32″	5″	150	5797K2	18.97	15.18	2″	5797K15 107.26	2″	5797K25 140.46
3″	3 37/64″	7″	150	5797K3	27.45	21.96	3″	5797K16 266.05	3″	5797K26 285.35

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the chemical hose on this page, go to mcmaster.com and search for **5264KAC.**

Flexible Chemical Hose

- Use with acetone, ethylene glycol, and vegetable oil
- Color: Green
- Temperature Range: –40° to +140° F
- Hose: Layered polypropylene and polyester
- Cover: PVC-coated nylon
- Reinforcement: Internal polypropylene-coated steel spiral and external galvanized steel spiral

Also known as composite hose, multiple layers of polypropylene and polyester are sandwiched between two wire spirals—this unique construction provides high chemical resistance and extra flexibility. The hose interior is ribbed due to the internal wire; the external wire also acts as a wear strip. Hose is furnished with two male fittings attached; the fittings are Type 304 stainless steel and have NPT threads. Can be used indoors and out; the hose material meets USCG (United States Coast Guard) 154-500 standards for marine applications. Vacuum rating is 29.9″ Hg @ 72° F.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	TWO MALE FITTINGS 5-ft. Length	Each	10-ft. Length	Each	15-ft. Length	Each	20-ft. Length	Each	25-ft. Length	Each
1″	1½″	4″	250	55065K711	$158.90	55065K211	$210.78	55065K712	$259.42	55065K213	$314.55	55065K713	$324.28
1½″	1½″	5″	250	55065K721	185.35	55065K231	245.87	55065K722	302.61	55065K233	366.91	55065K723	378.26
2″	2″	6″	250	55065K731	221.36	55065K241	293.64	55065K732	361.40	55065K243	438.20	55065K733	451.75
3″	3″	7⅞″	250	55065K741	346.49	55065K261	459.63	55065K742	565.70	55065K263	685.92	55065K743	707.13
4″	4″	11⅞″	250	55065K751	488.25	55065K271	647.68	55065K752	797.14	55065K273	966.54	55065K753	996.43

Economical Chemical Hose

- Use with lacquer and paint
- Temperature Range: –30° to +160° F
- Color: Red
- Hose: Nylon
- Cover: Blended vinyl/Buna-N (nitrile) rubber
- Reinforcement: Synthetic braid

Hose

Male

Cam-and-Groove Socket

Cam-and-Groove Plug

Here is the most economical chemical hose we offer. Hose material meets RMA (Rubber Manufacturers Association) Class B for oil resistance. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Male fittings are Type 316 stainless steel and have NPT threads.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose—Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)—Assembled in lengths of 5-, 10-, 15-, 20-, or 25-ft., or any length you choose up to 50 ft. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	HOSE Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Max. psi @ 72° F	Two Male Fittings Pipe Size		Per Set	One Cam-and-Groove Socket and One Plug Coupling Size		Per Set
¼″	½″	2½″	500	5264K61	$2.30	$1.84	250	¼″	5264K87	$23.26	—	—	—
⅜″	11/16″	3½″	500	5264K65	3.20	2.56	250	⅜″	5264K88	24.81	—	—	—
½″	25/32″	4″	500	5264K66	4.25	3.40	250	½″	5264K89	31.01	½″	5264K94■	$26.13
¾″	1 3/16″	6″	750	5264K67	5.27	4.22	250	¾″	5264K91	35.50	¾″	5264K95	31.08
1″	1½″	7½″	500	5264K68	9.50	7.60	250	1″	5264K92	49.17	1″	5264K96	28.08

■ Socket has one lever.

Build-Your-Own High-Pressure Braided Chemical Hose

- Use with ethylene glycol, mineral oil, and toluene; not for use with fuel oil or gasoline
- Temperature Range: –65° to +400° F
- Hose: PTFE
- Braid: Type 304 stainless steel

Hose and fittings are sold separately. Just cut the hose to length and attach the fittings—no special equipment required.

Note: After attaching the fittings, hose should be tested for required pressure before use.

Hose

Hose material is FDA (food) compliant. Ideal for applications involving continuous flexing and vibration. Hose interior is smooth and nonsticking. Can be used indoors and out.

To Order: Please order in 1-ft. increments up to the maximum continuous length of 100 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F		Per Ft. 1-24	Per Ft. 25-Up
3/16″	0.312″	2″	3000	28″ Hg	52515K21	$4.56	$3.54
¼″	0.375″	3″	3000	28″ Hg	52515K22	5.69	4.42
5/16″	0.445″	4″	2500	28″ Hg	52515K23	6.67	5.18
13/32″	0.549″	5¼″	2000	28″ Hg	52515K24	8.40	6.53
½″	0.648″	6½″	1500	28″ Hg	52515K25	9.33	7.25
⅝″	0.778″	7¾″	1200	20″ Hg	52515K26	14.43	11.22
⅞″	1.03″	9″	1000	14″ Hg	52515K27	19.69	15.31

Fittings

Brass with zinc-plated steel nut offers fair corrosion resistance. ***Type 303 stainless steel*** offers very good corrosion resistance.

Male fittings have NPT threads.

37° flared female fittings are also known as JIC (Joint Industrial Council) fittings. They have UNF straight threads, which are compatible only with male UNF threads, and rotate 360° until tightened down during installation.

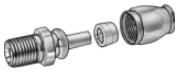

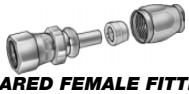

For Hose ID	Max. psi @ 72° F	MALE FITTINGS Pipe Size	Brass with Zinc-Plated Steel Nut	Each	Type 303 Stainless Steel	Each	37° FLARED FEMALE FITTINGS Thread Size	Brass with Zinc-Plated Steel Nut	Each	Type 303 Stainless Steel	Each
3/16″	1500	⅛″	52515K31	$7.76	52515K51	$24.61	7/16″-20	52515K41	$8.23	52515K61	$21.57
¼″	1500	¼″	52515K32	10.06	52515K52	25.79	½″-20	52515K42	10.66	52515K62	26.99
5/16″	1500	⅜″	52515K33	10.82	52515K53	26.50	9/16″-18	52515K43	14.72	52515K63	29.63
13/32″	1500	½″	52515K34	13.09	52515K54	45.48	¾″-16	52515K44	14.00	52515K64	41.50
½″	1500	½″	52515K35	16.93	52515K55	50.52	⅞″-14	52515K45	20.50	52515K65	51.09
⅝″	1500	¾″	52515K36	21.44	52515K56	63.34	1 1/16″-12	52515K46	29.23	52515K66	62.65
⅞″	1500	1″	52515K37	34.78	52515K57	90.64	1 5/16″-12	52515K47	38.13	52515K67	91.50

Chemical Hose

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the chemical hose on this page, go to mcmaster.com and search for **5830KAC**.

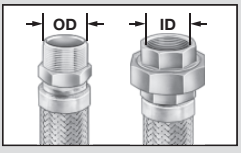

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

High-Pressure Braided Chemical Hose with Abrasion-Resistant Cover

One Male and One Easy-Install Male Fitting

Two 37° Flared Female Fittings

- Use with acetone, isopropyl alcohol, and mineral oil; not for use with fuel oil or gasoline
- Temperature Range: –65° to +275° F
- Color: Blue
- Hose: PTFE
- Cover: Blended rubber/plastic
- Braid: Type 304 SS

Go ahead and drag this high-pressure hose—the blended rubber/plastic cover provides excellent resistance to abrasion. Use this hose to transfer chemicals at high pressures as well as for applications involving continuous flexing and vibration. The PTFE hose material is FDA (food) compliant. Hose interior is smooth and nonsticking for unrestricted flow. Can be used indoors and out.

Male fittings come in brass or Type 303 stainless steel. All have NPT threads.

Easy-install male fittings come in brass or Type 316 stainless steel. All have NPT threads and rotate 360° until tightened down during installation.

37° flared female fittings are also known as JIC (Joint Industrial Council) fittings. They come in brass or Type 303 stainless steel. All have UNF straight threads, which are compatible only with male UNF threads, and rotate 360° until tightened down during installation.

Brass offers good corrosion resistance. ***Type 303 stainless steel*** has very good corrosion resistance. ***Type 316 stainless steel*** has excellent corrosion resistance.

Length is measured end-to-end, including the fittings. Available in 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 66″, and 72″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe/ Thread Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	BRASS FITTINGS 12″ Length	Each	STAINLESS STEEL FITTINGS 12″ Length	Each	Add'l Hose Per Inch
Two Male Fittings										
1/8″	3/16″	0.312″	2″	3000	28″ Hg	5723K501	$13.17	5830K101	$34.36	$0.33
1/4″	1/4″	0.375″	3″	3000	28″ Hg	5723K521	20.79	5830K121	43.42	.41
3/8″	5/16″	0.445″	4″	2500	28″ Hg	5723K541	23.73	5830K141	53.17	.46
1/2″	1/2″	0.648″	6 1/2″	1500	28″ Hg	5723K561	38.36	5830K161	84.33	.62
3/4″	5/8″	0.778″	7 3/4″	1200	20″ Hg	5723K581	47.76	5830K181	107.00	.74
One Male and One Easy-Install Male Fitting										
1/8″	3/16″	0.312″	2″	3000	28″ Hg	5723K601	17.84	5830K201	44.61	.33
1/4″	1/4″	0.375″	3″	3000	28″ Hg	5723K621	30.66	5830K221	65.40	.41
3/8″	5/16″	0.445″	4″	2500	28″ Hg	5723K641	29.99	5830K241	69.85	.46
1/2″	1/2″	0.648″	6 1/2″	1500	28″ Hg	5723K661	57.63	5830K261	133.91	.62
3/4″	5/8″	0.778″	7 3/4″	1200	20″ Hg	5723K681	68.34	5830K281	170.90	.74
Two Easy-Install Male Fittings										
1/8″	3/16″	0.312″	2″	3000	28″ Hg	5723K701	22.54	5830K301	54.71	.33
1/4″	1/4″	0.375″	3″	3000	28″ Hg	5723K721	45.08	5830K321	87.16	.41
Two 37° Flared Female Fittings										
7/16″-20	3/16″	0.312″	2″	3000	28″ Hg	5723K801	16.12	5830K401	24.61	.33
1/2″-20	1/4″	0.375″	3″	3000	28″ Hg	5723K821	19.80	5830K421	47.81	.41

High-Pressure Static-Dissipative Braided Chemical Hose

- Use with acetone, diesel fuel, fuel oil, isopropyl alcohol, mineral oil, and steam
- Temperature Range: –65° to +450° F
- Hose: Conductive PTFE
- Braid: Type 304 stainless steel

This PTFE hose is blended with carbon black, so it dissipates static when used in a grounded system. Use this hose to transfer chemicals and fuel at high pressures as well as for applications involving continuous flexing and vibration. Hose interior is smooth and nonsticking for unrestricted flow. Can be used indoors and out.

Male fittings have NPT threads.

Easy-install male fittings have NPT threads and rotate 360° until tightened down during installation.

Brass offers good corrosion resistance. ***Type 303 stainless steel*** has very good corrosion resistance.

Length is measured end-to-end, including the fittings. Available in 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 66″, 72″, 96″, 120″, and 144″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	ONE MALE AND ONE EASY-INSTALL MALE FITTING: Brass Fittings 12″ Length	Each	Type 303 SS Fittings 12″ Length	Each	Add'l Hose Per Inch
1/8″	3/16″	0.312″	2″	3000	28″ Hg	5589K41	$16.74	5589K12	$33.95	$0.21
1/4″	1/4″	0.375″	3″	3000	28″ Hg	5589K43	28.64	5589K14	57.26	.28
3/8″	5/16″	0.445″	4″	2500	28″ Hg	5589K45	26.29	5589K16	51.79	.34
1/2″	1/2″	0.648″	6 1/2″	1500	28″ Hg	5589K47	42.12	5589K18	112.25	.41
3/4″	5/8″	0.778″	7 3/4″	1200	20″ Hg	5589K49	59.69	5589K21	125.07	.60
1″	7/8″	1.03″	9″	1000	14″ Hg	5589K52	94.23	5589K23	194.23	.94

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the chemical hose on this page, go to mcmaster.com and search for **4468KAC**.

High-Pressure Braided Chemical Hose

- Use with acetone, isopropyl alcohol, and mineral oil; not for use with fuel oil or gasoline
- Temperature Range: –65° to +450° F
- Hose: PTFE
- Braid: Type 304 stainless steel

One Male and One Easy-Install Male Fitting

Two 37° Flared Female Fittings

Choose this hose when you need to transfer chemicals at high pressures. It's also a good choice for applications involving continuous flexing and vibration. Hose meets SAE 100R14 standards; the PTFE hose material is FDA (food) compliant. Hose interior is smooth and nonsticking for unrestricted flow. Can be used indoors and out.

Male fittings have NPT threads.

Easy-install male fittings have NPT threads and rotate 360° until tightened down during installation.

37° flared female fittings are also known as JIC (Joint Industrial Council) fittings. They have UNF straight threads, which are compatible only with male UNF threads. They rotate 360° until tightened down during installation.

Brass offers good corrosion resistance. ***Type 303 stainless steel*** has very good corrosion resistance.

Length is measured end-to-end, including the fittings. Available in 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 72″, and 96″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe/ Thread Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	BRASS FITTINGS 12″ Length	Each	TYPE 303 SS FITTINGS 12″ Length	Each	Add'l Hose Per Inch
Two Male Fittings										
1/8″	3/16″	0.312″	2″	3000	28″ Hg	4468K131	$12.10	4552K101	$23.61	$0.24
1/4″	1/4″	0.375″	3″	3000	28″ Hg	4468K132	15.52	4552K102	37.11	.31
3/8″	5/16″	0.445″	4″	2500	28″ Hg	4468K133	19.60	4552K103	37.76	.37
1/2″	1/2″	0.648″	6 1/2″	1500	28″ Hg	4468K134	32.23	4552K104	65.17	.45
3/4″	5/8″	0.778″	7 3/4″	1200	20″ Hg	4468K135	45.71	4552K106	88.02	.65
1″	7/8″	1.030″	9″	1000	14″ Hg	4468K136	86.73	4552K107	136.69	.96
One Male and One Easy-Install Male Fitting										
1/8″	3/16″	0.312″	2″	3000	28″ Hg	4468K441	15.88	4552K121	32.30	.24
1/4″	1/4″	0.375″	3″	3000	28″ Hg	4468K442	28.67	4552K122	60.24	.31
3/8″	5/16″	0.445″	4″	2500	28″ Hg	4468K443	26.29	4552K123	50.34	.37
1/2″	1/2″	0.648″	6 1/2″	1500	28″ Hg	4468K444	43.33	4552K124	112.30	.45
3/4″	5/8″	0.778″	7 3/4″	1200	20″ Hg	4468K445	60.96	4552K125	142.51	.65
1″	7/8″	1.030″	9″	1000	14″ Hg	4468K446	94.23	4552K126	193.89	.96
Two Easy-Install Male Fittings										
1/8″	3/16″	0.312″	2″	3000	28″ Hg	4468K571	20.58	4552K201	42.80	.24
1/4″	1/4″	0.375″	3″	3000	28″ Hg	4468K572	43.09	4552K202	74.10	.31
3/8″	5/16″	0.445″	4″	2500	28″ Hg	4468K573	33.57	4552K203	65.73	.37
1/2″	1/2″	0.648″	6 1/2″	1500	28″ Hg	4468K574	57.93	4552K204	172.81	.45
3/4″	5/8″	0.778″	7 3/4″	1200	20″ Hg	4468K575	79.72	4552K205	172.46	.65
1″	7/8″	1.030″	9″	1000	14″ Hg	4468K576	112.56	4552K206	258.17	.96
Two 37° Flared Female Fittings										
7/16″-20	3/16″	0.312″	2″	3000	28″ Hg	4468K811	15.49	4552K301	25.70	.24
1/2″-20	1/4″	0.375″	3″	3000	28″ Hg	4468K812	17.69	4552K302	45.68	.31
9/16″-18	5/16″	0.445″	4″	2500	28″ Hg	4468K813	24.47	4552K303	36.19	.37
7/8″-14	1/2″	0.648″	6 1/2″	1500	28″ Hg	4468K814	39.40	4552K304	133.74	.45
1 1/16″-12	5/8″	0.778″	7 3/4″	1200	20″ Hg	4468K815	47.58	4552K305	122.65	.65
1 5/16″-12	7/8″	1.030″	9″	1000	14″ Hg	4468K816	63.93	4552K306	162.98	.96

Extra-Flexible High-Pressure Braided Chemical Hose

- Use with acetone, ethylene glycol, and mineral oil; not for use with fuel oil or gasoline
- Temperature Range: –65° to +400° F
- Hose: PTFE
- Braid: Type 304 stainless steel

Two Male Fittings

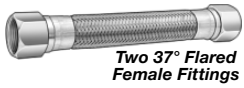

Two 37° Flared Female Fittings

Spiral hose construction provides a better bend radius and more flexibility than other braided hose. Good for applications involving continuous flexing and vibration. The PTFE hose material is FDA (food) compliant. Hose interior is smooth and nonsticking for unrestricted flow. Can be used indoors and out.

Male fittings have NPT threads.

37° flared female fittings, which are also called JIC (Joint Industrial Council) fittings, have UNF straight threads that are compatible only with male UNF threads. Fittings rotate 360° until tightened down during installation.

Zinc-plated steel has fair corrosion resistance. ***Type 316 stainless steel*** has excellent corrosion resistance.

Length is measured end-to-end, including the fittings. Available in 12″, 18″, 24″, 30″, 36″, 42″, 48″, 54″, 60″, 66″, 72″, and 96″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe/ Thread Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	ZINC-PLATED STEEL FITTINGS 12″ Length	Each	TYPE 316 SS FITTINGS 12″ Length	Each	Add'l Hose Per Inch
Two Male Fittings										
1/2″	1/2″	0.76″	1 1/2″	1250	28″ Hg	54685K11	$86.56	54685K31	$113.24	$1.18
3/4″	3/4″	1.07″	2 1/2″	1100	28″ Hg	54685K12	91.93	54685K32	182.00	1.69
1″	1″	1.34″	3″	1000	25″ Hg	54685K13	95.36	54685K33	232.68	2.09
1 1/4″	1 1/4″	1.57″	3 1/2″	1000	20″ Hg	54685K14	161.25	54685K34	356.19	2.57
1 1/2″	1 1/2″	1.81″	4 1/2″	750	12″ Hg	54685K15	235.73	54685K35	414.25	2.75
2″	2″	2.32″	5 1/4″	500	5″ Hg	54685K16	298.69	54685K36	657.37	3.74
Two 37° Flared Female Fittings										
3/4″-16	1/2″	0.76″	1 1/2″	1250	28″ Hg	54685K24	89.16	54685K41	109.82	1.18
1 1/16″-12	3/4″	1.07″	2 1/2″	1100	28″ Hg	54685K25	102.51	54685K42	205.44	1.69
1 5/16″-12	1″	1.34″	3″	1000	25″ Hg	_____	_____	54685K43	230.25	2.09
1 5/8″-12	1 1/4″	1.57″	3 1/2″	1000	20″ Hg	_____	_____	54685K44	427.60	2.09
1 7/8″-12	1 1/2″	1.81″	4 1/2″	750	12″ Hg	54685K28	279.71	54685K45	475.85	2.75
2 1/2″-12	2″	2.32″	5 1/4″	500	5″ Hg	_____	_____	54685K46	979.25	3.74

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the chemical hose on this page, go to mcmaster.com and search for **5616KAC**.

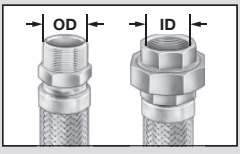

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round the measurement up to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Lightweight High-Strength Braided Chemical Hose

Two Male Fittings

One Male and One Easy-Install Male Fitting

- Use with acetone, ethylene glycol, and mineral oil; not for use with fuel oil or gasoline
- Temperature Range: –65° to +275° F
- Hose: PTFE
- Braid: Fiberglass

Strong enough to withstand continuous flexing, this lightweight hose is nonconductive for use in static-control and electrical-isolation applications. The PTFE hose material is FDA (food) compliant. Hose interior is smooth and nonsticking for unrestricted flow. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

Fittings are Type 303 stainless steel and have NPT threads. *Easy-install* fittings rotate 360° until tightened down during installation.

Length is measured end-to-end, including the fittings. Available in 12″, 18″, 24″, 30″, 36″, 42″, and 48″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	TWO MALE FITTINGS 12″ Length	Each	ONE MALE AND ONE EASY-INSTALL MALE FITTING 12″ Length	Each	Add'l Hose Per Inch
1/8″	3/16″	5/16″	2 1/2″	800	5616K51	$24.60	5616K61	$34.65	$0.24
1/4″	1/4″	13/32″	3″	800	5616K52	32.71	5616K62	49.13	.28
3/8″	5/16″	15/32″	3″	800	5616K53	34.65	5616K63	48.73	.34

High-Pressure Braided Chemical Hose with Precision 37° Flared Fittings

One Male and One 37° Flared Male Fitting

One Male and One 37° Flared Female Fitting

- Use with acetone, ethylene glycol, and mineral oil; not for use with fuel oil or gasoline
- Temperature Range: –65° to +450° F
- Hose: PTFE
- Braid: Type 304 SS

This high-pressure hose comes with a threaded male pipe fitting on one end and a precision 37° flared tube fitting on the other. Ideal for applications involving continuous flexing and vibration. The hose meets SAE 100R14 standards. The PTFE hose material is FDA (food) compliant. Hose interior is smooth and nonsticking for unrestricted flow. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

Male fittings are Type 303 stainless steel and have NPT threads.

37° flared male and ***female fittings*** are Type 304 stainless steel and have 3A or 3B threads that adhere to higher tolerances than other types of threads. They rotate 360° until tightened down during installation. *Male fittings* are made to exact AS (formerly AN) specifications; *female fittings* meet the pressure and sealing capabilities of the AS specification and are compatible with male fittings that meet the AS specification.

Length is measured end-to-end, including the fittings. Available in 12″, 18″, 24″, 30″, 36″, 42″, and 48″ lengths, or any length you choose. **To Order:** Please specify the part number for the 12″ length along with the total length you need. To determine your total cost, begin with the base price for the 12″ length, then add the price for each additional inch.

Pipe Size	Thread Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	ONE MALE AND ONE 37° Flared MALE FITTING 12″ Length	Each	ONE MALE AND ONE 37° Flared FEMALE FITTING 12″ Length	Each	Add'l Hose Per Inch
1/4″	7/16″-20	1/4″	0.312″	2″	3000	5355K11	$48.69	5355K31	$33.54	$0.22
3/8″	9/16″-18	3/8″	0.445″	4″	2500	5355K12	53.62	5355K32	37.90	.26
1/2″	3/4″-16	1/2″	0.549″	5 1/4″	2000	5355K13	70.73	5355K33	44.96	.30

Heated Braided Chemical Hose

Hose with Two Male Fittings

Temperature Controller

- Use with adhesives and paraffin wax
- Temperature Range: 50° to 450° F
- Color: Black
- Hose: PTFE
- Cover: Braided polyester
- Braid: Type 304 stainless steel

Ideal for materials that need heat in order to flow, simply plug this hose into the temperature controller and the nickel-alloy heating element will keep the interior warm. Hose includes a 6-ft. shielded power cord with an electrical connector that plugs into the temperature controller; the controller (sold separately) is required. Hose has a smooth, nonsticking interior for unrestricted flow; the exterior is laminated with silicone rubber and encased in a braided polyester cover. For indoor use only. Not rated for vacuum.

Male fittings are Type 303 stainless steel and have NPT threads.

37° flared female fittings are also called JIC (Joint Industrial Council) fittings; they rotate 360° until tightened down during installation. They are Type 303 stainless steel and have UNF straight threads, which are compatible only with male UNF threads.

Hose is furnished with the fittings attached and is available in 2-, 4-, 6-, 8-, 10-, and 12-ft. lengths, or any length you choose in 1-ft. increments up to 25 feet. **To Order:** Please specify the part number for the 2-ft. length along with the total length you need. To determine your total cost, begin with the base price for the 2-ft. length, then add the price for each additional foot.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Watts per ft.	TWO MALE FITTINGS Pipe Size	2-ft. Length	Each	TWO 37° FLARED FEMALE FITTINGS Thread Size	2-ft. Length	Each	Add'l Hose Per Ft.
0.187″	1.40″	4″	2250	23	1/4″	5565K61	$370.00	7/16″-20	5565K81	$403.64	$49.33
0.312″	1.50″	8″	1875	25	3/8″	5565K62	421.67	9/16″-18	5565K82	460.00	53.00
0.406″	1.59″	10″	1500	30	1/2″	5565K63	469.58	3/4″-16	5565K83	512.27	56.67
0.625″	1.79″	15″	1125	40	3/4″	5565K64	603.33	1 1/16″-12	5565K84	658.18	60.83
0.875″	2.10″	18″	750	50	1″	5565K65	737.33	1 5/16″-12	5565K85	804.36	64.17

Temperature Controller— Has a temperature-adjustment dial, an electrical connector for attaching to hose, and an 8-ft. power cord with three-prong plug. Operates on 120 VAC. Temperature range is 50° to 450° F (accuracy is ±3° F of set temperature).

5565K71 ..... Each $452.86

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the petroleum hose on this page, go to mcmaster.com and search for **54605KAC**.

Hose for Paint Spray Systems

Air Hose
- Temp. Range: –40° to +200° F
- Color: Red
- Hose: EPDM
- Cover: EPDM
- Reinforcement: Synthetic braid

Paint Hose for Air-Operated Systems
- Temperature Range: 0° to +190° F
- Color: Black
- Hose: Nylon
- Cover: Synthetic rubber
- Reinforcement: Braided synthetic yarn

Paint Hose for Airless Systems
- Temperature Range: 0° to +200° F
- Color: Blue
- Hose: Nylon
- Cover: Polyurethane
- Reinforcement: High-tensile polyester

Paint Hose

Specially designed for use with paint-spraying systems, this hose has a smooth interior for unrestricted flow. Hose is furnished with two easy-install female fittings attached that rotate 360° until tightened down during installation. *Air hose* has fittings with NPSM (National Pipe Standard Mechanical) threads, except 7859T122 and T125 have NPSH (National Pipe Standard Hose) threads. All *paint hose* has fittings with NPSH threads. Female NPSM threads are compatible with male NPSM, NPT, and NPTF threads. Female NPSH threads are compatible with male NPSH, NPSM, NPT, and NPTF threads. Hose is not rated for vacuum.

Hose for Air-Operated Paint-Spray Systems— For systems that have separate hoses for air and paint. *Air hose* has brass fittings and is for indoor use only. *Paint hose* has zinc-plated steel fittings and spring guards; hose can be used indoors and out.

Hose for High-Pressure Airless Paint-Spray Systems— For systems that use a single hose. Hose has zinc-plated steel fittings and spring guards; hose can be used indoors and out.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max psi @ 72° F	TWO EASY-INSTALL FEMALE FITTINGS 15-ft. Length	Each	25-ft. Length	Each	50-ft. Length	Each
Hose for Air-Operated Paint-Spray Systems										
Air Hose										
1/4″	1/4″	1/2″	2 3/4″	250	7859T121	$38.40	7859T122	$59.98	7859T125	$98.38
3/8″	3/8″	11/16″	3 1/2″	250	7859T151	48.80	7859T152	65.00	7859T155	116.73
Paint Hose										
1/4″	1/4″	1/2″	2 1/2″	750	7859T611	49.66	7859T612	75.21	7859T615	141.90
3/8″	3/8″	11/16″	3″	750	7859T621	57.68	7859T622	87.34	7859T625	164.80
Hose for High-Pressure Airless Paint-Spray Systems										
Paint Hose										
1/4″	1/4″	1/2″	2 1/2″	3300	5517K612	50.59	5517K611	70.42	5517K613	99.19

Petroleum Hose

- Use with diesel fuel, fuel oil, gasoline with up to 15% ethanol, and hydraulic oil
- Color: Black
- Temperature Range: –40° to +212° F
- Hose: Buna-N (nitrile) rubber
- Cover: Blended Buna-N rubber/PVC
- Reinforcement: Spiral steel wire

Hose

Male

Easy-Install Female

Cam-and-Groove Socket

Cam-and-Groove Plug

With rugged Buna-N and wire construction, this hose is durable enough to handle gasoline and other petroleum-based products. Hose interior is smooth for unrestricted flow. Can be used indoors and out.

Male fittings are brass and have NPSM threads, unless noted.

Easy-install female fittings rotate 360° until tightened down during installation. They are brass and have NPSM threads, unless noted.

Male NPSM (National Pipe Straight Mechanical) threads are compatible with female NPSM and NPSH (National Pipe Straight Hose) threads. Male NPSH threads are compatible only with female NPSH threads. Female NPSM threads are compatible with male NPSM, NPT, and NPTF threads. Female NPSH threads are compatible with male NPSH, NPSM, NPT, and NPTF threads.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose— Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Also Available: Hose that comes with two male fittings attached. Please ask for 5282K1 and specify hose ID (3/4″, 1″, 1 1/4″, 1 1/2″, or 2″) and hose length (5-, 10-, 15-, 20-, or 25-ft.)

Hose ID	Hose OD	Bend Radius	Max psi @ 72° F	Vacuum @ 72° F	HOSE Per Ft. Partial Coil	Full Coil	FITTINGS (ATTACHED TO THE HOSE) One Male and One Easy-Install Female Fitting: Pipe Size		Per Set	One Cam-and-Groove Socket and One Plug: Coupling Size		Per Set
3/4″	1 9/64″	3″	150	29″ Hg	5282K69	$6.67	$5.33	3/4″	5282K39■	$25.82	3/4″	5282K99	$48.40
1″	1 3/8″	4″	150	29″ Hg	5282K65	7.83	6.27	1″	5282K32♦	36.33	1″	5282K92	49.74
1 1/4″	1 21/32″	5″	150	29″ Hg	5282K63	8.77	7.01	1 1/4″	5282K33	39.80	1 1/4″	5282K93	62.40
1 1/2″	1 57/64″	6″	150	29″ Hg	5282K64	9.82	7.85	1 1/2″	5282K34	48.80	1 1/2″	5282K94	63.80
2″	2 7/16″	8″	150	29″ Hg	5282K15	10.78	8.68	2″	5282K35	63.78	2″	5282K95	68.40
2 1/2″	2 61/64″	10″	150	27″ Hg	5282K17	14.55	11.64	2 1/2″	5282K36	118.67	2 1/2″	5282K96	103.10
3″	3 15/32″	12″	150	27″ Hg	5282K19	16.72	13.38	3″	5282K37	145.22	3″	5282K97	113.70
4″	4 37/64″	16″	150	27″ Hg	5282K22	22.83	18.26	4″	5282K38	251.76	4″	5282K98	181.30

■ Male threads are NPT. ♦ Male and female threads are NPSH.

Low-Pressure SAE Fuel Hose

- Use with diesel fuel and gasoline with up to 15% ethanol
- Temperature Range: –29° to +257° F
- Color: Black
- Hose: Buna-N (nitrile) rubber
- Cover: Blended Buna-N rubber/PVC
- Reinforcement: Polyester yarn spiral

Designed for inline connecting of fuel lines, this hose meets SAE 30R7 standards. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 24″ Hg @ 72° F.

To Order: Please order in 5-ft. increments up to the full coil length of 100 feet.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Full Coil
3/16″	13/32″	1 1/4″	50	54605K31	$0.88	$0.69
1/4″	1/2″	1 1/2″	50	54605K32	1.06	.81
5/16″	9/16″	2″	50	54605K33	1.12	.88
3/8″	5/8″	2 1/4″	50	54605K34	1.36	1.04

Petroleum Hose

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the petroleum hose on this page, go to mcmaster.com and search for **56315KAC**.

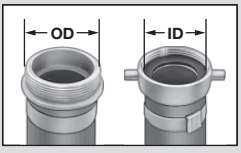

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Flexible Petroleum Hose

Male Fitting

Cam-and-Groove Plug

Cam-and-Groove Socket

- Use with diesel fuel, fuel oil, and gasoline with up to 15% ethanol
- Temperature Range: -40° to +212° F
- Color: Brown with white stripe
- Hose: Blended polypropylene/polyester
- Cover: PVC-coated fabric
- Reinforcement: Internal and external galvanized steel wire spirals

Also known as composite hose, multiple layers of polypropylene and polyester are sandwiched between exposed internal and external wires—this unique construction makes for a petroleum hose that's flexible and lightweight. Hose interior is ribbed. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Male fittings are steel and have NPT threads. Maximum pressure is 200 psi @ 72° F.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down. Maximum pressure is 150 psi @ 72° F.

Pipe Size	Hose ID	Hose OD	Bend Radius	TWO MALE FITTINGS 5-ft. Length	Each	10-ft. Length	Each	15-ft. Length	Each	20-ft. Length	Each	25-ft. Length	Each
1″	1″	1 1/2″	4 1/16″	55145K511	$135.39	55145K411	$179.60	55145K412	$221.04	55145K413	$268.01	55145K512	$276.30
1 1/2″	1 1/2″	2″	5 1/16″	55145K521	140.21	55145K421	185.99	55145K422	228.91	55145K423	277.56	55145K522	286.14
2″	2″	2 1/2″	6 1/16″	55145K531	170.22	55145K431	225.80	55145K432	277.90	55145K433	336.96	55145K532	347.38
3″	3″	3 1/2″	8 3/16″	55145K551	257.77	55145K451	341.94	55145K452	420.85	55145K453	510.28	55145K552	526.06
4″	4″	4 1/2″	14″	55145K561	312.59	55145K461	414.65	55145K462	510.34	55145K463	618.79	55145K562	637.93

Coupling Size	Hose ID	Hose OD	Bend Radius	ONE CAM-AND-GROOVE SOCKET AND ONE PLUG 5-ft. Length	Each	10-ft. Length	Each	15-ft. Length	Each	20-ft. Length	Each	25-ft. Length	Each
1″	1″	1 1/2″	4 1/16″	55145K711	$146.38	55145K714	$194.18	55145K715	$238.99	55145K716	$289.78	55145K712	$298.74
1 1/2″	1 1/2″	2″	5 1/16″	55145K721	156.08	55145K724	207.05	55145K725	254.83	55145K726	308.98	55145K722	318.54
2″	2″	2 1/2″	6 1/16″	55145K731	192.06	55145K734	254.77	55145K735	313.57	55145K736	380.20	55145K732	391.96
3″	3″	3 1/2″	8 3/16″	55145K741	283.07	55145K744	375.51	55145K745	462.16	55145K746	560.37	55145K742	577.70
4″	4″	4 1/2″	14″	55145K751	291.93	55145K754	474.38	55145K755	583.86	55145K756	707.93	55145K752	729.82

Extra-Flexible Petroleum Hose

Petroleum Hose

Petroleum Hose with Male Fitting

Petroleum Hose with Easy-Install Female Fitting

Petroleum Hose
- Use with diesel fuel and gasoline with up to 15% ethanol
- Temperature Range: –35° to +200° F
- Color: Black with red stripe
- Hose: Buna-N (nitrile) rubber
- Cover: Blended Buna-N/PVC
- Reinforcement: Synthetic fabric with a wire spiral

Fuel Oil Hose
- Use with fuel oil and kerosene
- Temperature Range: –40° to +140° F
- Color: Red
- Hose: Buna-N (nitrile) rubber
- Cover: Blended Buna-N/PVC
- Reinforcement: Synthetic braid

Biodiesel Hose
- Use with biodiesel, diesel fuel, ethanol, and gasoline with up to 15% ethanol
- Temperature Range: –30° to +180° F
- Color: Black
- Hose: Synthetic rubber
- Cover: Synthetic rubber
- Reinforcement: Spiral-plied synthetic fabric with wire

Here's the most flexible petroleum hose we offer. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F, except fuel oil hose is not rated for vacuum.

Male fittings have NPT threads. They are zinc-plated steel, except the fittings on the fuel oil hose are brass.

Easy-install female fittings rotate 360° until tightened down during installation. They are zinc-plated steel with NPSM (National Pipe Straight Mechanical) threads, except the fittings on the fuel oil hose are brass with NPSH (National Pipe Straight Hose) threads. Female NPSM threads are compatible with male NPSM, NPT, and NPTF threads; female NPSH threads are compatible with male NPSH, NPSM, NPT, and NPTF threads.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	Full Coil	Pipe Size	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings	Per Set	One Male and One Easy-Install Female Fitting	Per Set
Petroleum Hose										
1 1/2″	2 1/32″	4″	150	56315K51	$11.19	$8.95	1 1/2″	56315K71	$46.97	56315K81	$67.22
2″	2 35/64″	5″	150	56315K53	13.07	10.46	2″	56315K72	60.69	56315K82	81.68
2 1/2″	3 5/64″	6″	150	56315K55	15.91	12.73	2 1/2″	56315K73	109.20	56315K83	102.92
3″	3 37/64″	7″	150	56315K57	18.62	14.90	3″	56315K74	117.67	56315K84	136.63
4″	4 39/64″	10″	150	56315K59	25.35	20.28	4″	56315K75	161.31	56315K85	191.60
Fuel Oil Hose										
1″	1 1/2″	10″	250	56315K33	8.87	7.10	1″	56315K14	60.17	56315K43	64.51
1 1/4″	1 51/64″	12 1/2″	250	56315K35	10.76	8.61	1 1/4″	56315K16	82.00	56315K45	81.41
1 1/2″	2 3/32″	15″	250	56315K39	13.75	11.00	1 1/2″	56315K18	99.60	56315K49	112.16
Biodiesel Hose										
1 1/2″	2 1/32″	4″	150	5230K12	12.27	10.03	1 1/2″	5230K22	46.03	5230K32	67.22
2″	2 35/64″	5″	150	5230K13	14.90	11.92	2″	5230K23	55.63	5230K33	81.68
3″	3 5/64″	7″	150	5230K15	18.12	15.10	3″	5230K25	107.87	5230K35	136.63
4″	4 39/64″	10″	150	5230K16	27.43	21.95	4″	5230K26	147.87	5230K36	191.60

For information about bend radius and vacuum ratings for hose, see page 255.

For information about the chemical compatibility for the petroleum, gasoline, and fuel hose on this page, go to mcmaster.com and search for **5161KAC**

Lay-Flat Petroleum Hose

- Use with diesel fuel and petroleum-based oil
- Temperature Range: –20° to +176° F
- Color: Green
- Hose: Blended polyurethane elastomer
- Cover: Blended polyurethane elastomer
- Reinforcement: Woven polyester

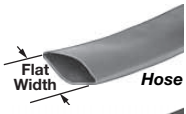

A lay-flat design makes this hose easier to store, handle, and transport. The specially blended polyurethane elastomer material meets MIL-PRF-370J. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose— Full coil length is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, or 25-ft., or any length you choose up to 50 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Cam-and-Groove Socket

Cam-and-Groove Plug

Hose ID	Wall Thick.	Flat Width	Max psi @ 72° F	HOSE	Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Coupling Size	One Cam-and-Groove Socket and One Plug Per Set
1½″	0.071″	2 19/32″	250	5161K12	$10.13	$8.02	1½″	5161K66 $73.13
2″	0.071″	3 5/16″	250	5161K13	12.63	10.00	2″	5161K68 76.88
2½″	0.083″	4 3/32″	150	5161K14	14.28	11.32	2½″	5161K76 110.62
3″	0.083″	4 29/32″	125	5161K15	18.34	14.52	3″	5161K48 131.46
4″	0.100″	6½″	100	5161K17	24.57	19.45	4″	5161K56 233.75
6″	0.130″	9 19/32″	75	5161K19	46.32	36.67	6″	5161K88 476.54

UL Listed Gasoline and Fuel Hose

- Use with diesel fuel, fuel oil, and gasoline with up to 15% ethanol
- Temperature Range: –40° to +140° F
- Color: Black
- Hose: Buna-N (nitrile) rubber
- Cover: Blended Buna-N/PVC
- Reinforcement: Braided synthetic yarn with static-control wire

Use this UL listed hose for transferring gasoline and fuel oil. A static-control wire provides an escape route for electrostatic buildup. Hose interior is smooth for unrestricted flow. Hose is furnished with the fittings attached; fittings are die cast zinc and have male NPT threads. Can be used indoors and out. Not rated for vacuum.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	TWO MALE FITTINGS 10-ft. Length	Each	12-ft. Length	Each	14-ft. Length	Each	20-ft. Length	Each
¾″	⅝″	1″	6¼″	50	—	—	5396K23	$54.40	5396K26	$60.89	5396K29	$81.19
¾″	¾″	1 3/16″	7½″	50	5396K22	$58.70	5396K24	59.57	5396K27	65.71	5396K32	87.61
1″	1″	1½″	10″	50	—	—	5396K25	102.15	5396K28	112.66	5396K33	150.22

SAE Hydraulic Hose

- Use with hydraulic fluid
- Temperature Range: –40° to +212° F
- Color: Black
- Hose: Buna-N (nitrile) rubber
- Cover: Synthetic rubber
- Reinforcement: Braided wire

Hose

This hose is SAE rated for use in hydraulic applications. Hose interior is smooth for unrestricted flow. Can be used indoors and out.

Medium-pressure hose meets SAE 100R1-AT. Use this hose only with Parker Series 42 fittings (see 52305K on page 295 for Series 42 fittings that are sold individually). Vacuum rating is 24″ Hg @ 72° F.

High-pressure hose meets SAE 100R2-AT. Use this hose only with Parker Series 30 fittings (see 52305K on page 295 for Series 30 fittings that are sold individually). Vacuum rating is 28″ Hg @ 72° F, except hose with ¾″ and 1″ ID is rated 24″ Hg @ 72° F.

Note: The integrity of the SAE rating is dependent upon the use of hose, fittings, and components that meet SAE requirements and also upon using proper assembly methods. It is the responsibility of the consumer to test and monitor the hose and fittings to ensure they are appropriate for the intended applications.

Male Fitting

Male fittings are zinc-plated steel and have NPT threads.

37° flared female fittings are also known as JIC (Joint Industrial Council) fittings. They are zinc-plated steel and have UNF threads, which are compatible only with male UNF threads. They rotate 360° until tightened down during installation. See page 182 for steel UNF-to-NPTF thread adapters.

37° Flared Female Fitting

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 1-, 1½-, 2-, 2½-, 3-, 4-, 5-, or 6-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE	Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings: Pipe Size	Per Set	Two 37° Flared Female Fittings: Thread Size	Per Set
Medium Pressure (SAE 100R1-AT)										
¼″	0.53″	4″	3250	9459K321	$2.80	$2.30	¼″	9459K121 $12.44	7/16″-20	9459K221 $12.74
⅜″	0.68″	5″	2600	9459K341	2.98	2.45	⅜″	9459K141 13.04	9/16″-18	9459K241 13.69
½″	0.81″	7″	2325	9459K361	3.30	2.71	½″	9459K161 14.02	¾″-16	9459K261 16.71
¾″	1.09″	9½″	1525	9459K381	5.91	4.86	¾″	9459K181 19.73	1 1/16″-12	9459K281 23.11
1″	1.40″	12″	1275	9459K401	7.54	6.20	1″	9459K201 35.31	1 5/16″-12	9459K301 39.49
High Pressure (SAE 100R2-AT)										
¼″	0.59″	4″	5800	8646T11	3.99	3.28	¼″	8646T21 11.56	7/16″-20	8646T41 11.82
⅜″	0.75″	5″	4750	8646T12	4.70	3.86	⅜″	8646T23 12.10	9/16″-18	8646T43 13.38
½″	0.88″	7″	4000	8646T13	5.35	4.39	½″	8646T25 13.01	¾″-16	8646T45 15.51
¾″	1.16″	9½″	3100	8646T14	8.71	7.16	¾″	8646T27 18.32	1 1/16″-12	8646T47 21.45
1″	1.50″	12″	2400	8646T15	11.92	9.79	1″	8646T29 32.78	1 5/16″-12	8646T49 36.67

For information about bend radius and vacuum ratings for hose, see page 255.

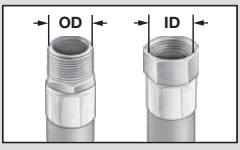

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Lightweight SAE Hydraulic Hose

Hose

Male

37° Flared Female

- Use with hydraulic fluid
- Temperature Range: –40° to +212° F
- Color: Black
- Hose: Nylon
- Cover: Polyurethane
- Reinforcement: Fiber braid

Lightweight and chemical resistant, this hose meets SAE 100R7. Use with Parker Series 55 fittings, except the hose with 1/8″ ID is for use with Parker Series 57 fittings. See 5243K on page 295 for Series 55 fittings sold individually. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

Note: The integrity of the SAE rating is dependent upon the use of hose, fittings, and components that meet SAE requirements and also upon using proper assembly methods. It is the responsibility of the consumer to test and monitor the hose and fittings to ensure they are appropriate for the intended applications.

Male fittings are zinc-plated steel and have NPT threads.

37° flared female fittings are also known as JIC (Joint Industrial Council) fittings. They are zinc-plated steel and have UNF threads, which are compatible only with male UNF threads. These fittings rotate 360° until tightened down during installation.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 1-, 1 1/2-, 2-, 2 1/2-, 3-, 4-, 5-, or 6-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Also Available: Hose with one male and one 37° flared female fitting attached. Please ask for 5201K1 and specify hose ID (1/8″, 1/4″, 3/8″, or 1/2″) and hose length (2-, 3-, 4-, or 6-ft.).

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE	Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Two Male Fittings Pipe Size	Two Male Fittings Per Set	Two 37° Flared Female Fittings Thread Size	Two 37° Flared Female Fittings Per Set
1/8″	0.34″	1/2″	3000	5201K61	$2.05	$1.64	1/8″	5201K71 $23.68	5/16″-24	5201K81 $35.56
3/16″	0.43″	3/4″	3000	5201K62	2.87	2.29	1/8″	5201K72 19.29	7/16″-20	5201K82 20.77
1/4″	0.51″	1 1/2″	2750	5201K63	3.03	2.42	1/4″	5201K73 19.50	7/16″-20	5201K83 19.93
5/16″	0.57″	1 3/4″	2500	5201K64	3.96	3.17	1/4″	5201K74 21.64	1/2″-20	5201K84 24.74
3/8″	0.65″	2″	2250	5201K65	3.88	3.10	3/8″	5201K75 19.35	9/16″-18	5201K85 22.26
1/2″	0.81″	3″	2000	5201K66	4.96	3.96	1/2″	5201K76 21.39	3/4″-16	5201K86 25.03
3/4″	1.06″	6″	1250	5201K67	9.78	7.82	3/4″	5201K77 32.12	1 1/16″-12	5201K87 37.43

Flame-Resistant SAE Hydraulic Hose

Male

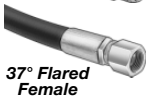

37° Flared Female

- Use with hydraulic fluid
- Temperature Range: –40° to +212° F
- Color: Black
- Hose: Buna-N (nitrile) rubber
- Cover: Synthetic rubber
- Reinforcement: Two steel wire braids

Meeting MSHA (Mine Safety and Health Administration) 2G standards for flame resistance, this hose also meets SAE 100R2-AT standards and EN 853 2SN (formerly DIN 200222SN). Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Hose is furnished with the fittings attached. Fittings are carbon steel. ***Male fittings*** have NPT threads. ***37° flared female fittings*** are also known as JIC (Joint Industrial Council) fittings; they have UNF threads, which are compatible only with male UNF threads, and rotate 360° until tightened down during installation.

Pipe Size (Male)	Thread Size (Female)	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	ONE MALE AND ONE 37° FLARED FEMALE FITTING 2-ft. Length	Each	3-ft. Length	Each	4-ft. Length	Each	5-ft. Length	Each	6-ft. Length	Each
1/4″	7/16″-20	1/4″	37/64″	4″	5800	5683K11	$13.93	5683K31	$16.57	5683K51	$18.97	5683K71	$19.45	5683K91	$24.01
3/8″	9/16″-18	3/8″	47/64″	5″	4800	5683K13	13.75	5683K33	18.25	5683K53	20.90	5683K73	21.42	5683K93	26.45
1/2″	3/4″-16	1/2″	55/64″	7″	4000	5683K15	17.67	5683K35	20.10	5683K55	24.06	5683K75	24.67	5683K95	30.46
3/4″	1 1/16″-12	3/4″	1 9/64″	9 1/2″	3100	5683K17	26.41	5683K37	31.42	5683K57	35.97	5683K77	36.88	5683K97	45.53
1″	1 5/16″-12	1″	1 31/64″	12″	2400	5683K19	42.28	5683K39	50.29	5683K59	57.58	5683K79	59.04	5683K99	72.89

Low-Pressure SAE Hydraulic Hose

- Use with hydraulic fluid
- Temperature Range:
  SAE 30R2 and 30R3: –40° to +200° F;
  SAE 100R4: –40° to +212° F
- Color: Black
- Hose:
  SAE 30R2 and 100R4: Buna-N rubber
  SAE 30R3: Synthetic rubber
- Cover:
  SAE 30R2 and 30R3: Synthetic rubber;
  SAE 100R4: Blended Buna-N rubber/PVC
- Reinforcement:
  SAE 30R2 and 30R3: Polyester braid;
  SAE 100R4: Spiral textile cords with four steel wire spirals

SAE rated for low-pressure applications, this hose is ideal for connecting inline hydraulic-fluid lines. Hose interior is smooth for unrestricted flow. Can be used indoors and out.

SAE 30R2 hose is not rated for vacuum. Vacuum rating for ***SAE 30R3*** is 20″ Hg @ 72° F; for ***SAE 100R4*** is 29″ Hg @ 72° F.

To Order: Please order in 5-ft. increments up to the full coil length of 100 ft.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
SAE 30R2						
1/2″	3/4″	5″	400	5645K18	$2.98	$2.38
5/8″	7/8″	6″	350	5645K19	3.27	2.62
SAE 30R3						
3/16″	3/8″	3″	500	5645K21	2.08	1.66
1/4″	7/16″	3″	400	5645K22	2.10	1.68
5/16″	1/2″	4″	300	5645K23	2.48	1.98
3/8″	19/32″	4″	225	5645K25	2.95	2.36

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F		Per Ft. Partial Coil	Per Ft. Full Coil
SAE 100R4						
3/4″	1 9/64″	2 1/4″	300	54595K31	$6.53	$5.49
1″	1 3/8″	3″	250	54595K33	7.82	6.57
1 1/4″	1 21/32″	3 3/4″	200	54595K35	8.69	7.09
1 1/2″	1 15/16″	4 1/2″	150	54595K37	9.76	8.20
2″	2 7/16″	6″	100	54595K42	11.25	9.45

For information about bend radius and vacuum ratings for hose, see page 255.

Clear Dry-Food Hose

- Use with dry food products
- Temperature Range: –4° to +150° F
- Color: Clear
- Hose: PVC
- Cover: PVC
- Reinforcement: PVC spiral

Hose with Static Wire

Clear hose allows you to visually monitor flow. The hose material is FDA CFR21 170-199 and USDA compliant. Hose interior is smooth for unrestricted flow. Can be used indoors and out.

Hose with Static-Control Wire— Just crimp a grounding wire to the static-control wire that's built into this hose and you'll create an escape route for electrostatic buildup.

Cam-and-groove sockets and ***plugs*** come in your choice of *aluminum,* which are lightweight with good corrosion resistance, and *Type 316 stainless steel,* which have excellent corrosion resistance. To connect, insert the plug into the socket and push the levers down. *Note:* Fittings do not meet the standards shown for the hose material.

Hose— **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to the full coil length. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Cam-and-Groove Socket

Cam-and-Groove Plug

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	Full Coil Lg.	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Coupling Size	One Cam-and-Groove Socket and One Plug Aluminum	Aluminum Per Set	Type 316 SS	Type 316 SS Per Set
Hose without Static-Control Wire												
1″	1 5/16″	2″	55	28″ Hg	100 ft.	5199K71	$2.69	$2.11	1″	5199K51	$23.18	5199K23	$48.72
1 1/4″	1 19/32″	2″	50	28″ Hg	100 ft.	5199K72	3.23	2.55	1 1/4″	5199K52	30.09	5199K24	73.09
1 1/2″	1 15/16″	3″	50	28″ Hg	100 ft.	5199K73	3.78	2.98	1 1/2″	5199K53	28.82	5199K25	77.18
2″	2 13/32″	4″	40	28″ Hg	100 ft.	5199K74	5.18	4.08	2″	5199K54	34.00	5199K26	97.09
2 1/2″	3″	5″	40	28″ Hg	100 ft.	5199K75	8.00	6.30	2 1/2″	5199K55	51.55	5199K27	133.64
3″	3 21/32″	6″	40	28″ Hg	100 ft.	5199K76	10.27	8.07	3″	5199K56	56.09	5199K28	198.73
4″	4 23/32″	10″	35	24″ Hg	100 ft.	5199K78	17.88	14.07	4″	5199K58	98.91	____	____
5″	5 3/4″	16″	30	24″ Hg	20 ft.	5199K89	30.05	23.66	5″	5199K59	174.55	____	____
6″	6 29/32″	18″	30	24″ Hg	20 ft.	5199K81	34.19	26.92	6″	5199K61	215.27	____	____
8″	8 31/32″	36″	20	20″ Hg	20 ft.	5199K84	52.37	41.22	8″	5199K62	591.64	____	____
Hose with Static-Control Wire												
1 1/4″	1 21/32″	2″	50	28″ Hg	50 ft.	5179K23	7.57	5.94	1 1/4″	5179K11	30.09	____	____
1 1/2″	1 15/16″	3″	50	28″ Hg	50 ft.	5179K24	7.87	6.20	1 1/2″	5179K12	28.82	____	____
2″	2 15/32″	4″	40	28″ Hg	50 ft.	5179K25	10.89	8.57	2″	5179K13	34.00	____	____
2 1/2″	3 1/16″	5″	40	28″ Hg	50 ft.	5179K26	13.14	10.34	2 1/2″	5179K14	51.55	____	____
3″	3 21/32″	6″	40	28″ Hg	50 ft.	5179K27	17.54	13.81	3″	5179K15	56.09	____	____
4″	4 23/32″	10″	35	24″ Hg	50 ft.	5179K28	28.69	22.60	4″	5179K16	98.91	____	____
5″	5 3/4″	16″	30	24″ Hg	50 ft.	5179K45	45.11	35.52	5″	5179K17	174.55	____	____
6″	6 13/16″	18″	30	24″ Hg	50 ft.	5179K46	49.74	39.39	6″	5179K18	215.27	____	____

Abrasion-Resistant Dry-Food Hose

- Use with dry food products
- Temperature Range: –40° to +180° F
- Color: Tan
- Hose: Gum rubber
- Cover: SBR rubber
- Reinforcement: Synthetic fabric with a wire spiral

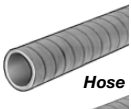

Hose

Resistant to cuts, tears, and abrasion, this rubber hose is the most durable dry-food hose we offer. The hose material is FDA CFR21 177.2600 compliant. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down. *Note:* Fittings do not meet the standards shown for the hose material.

Hose— Full coil length is 100 ft. **To Order:** Please order in 1-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Cam-and-Groove Socket

Cam-and-Groove Plug

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Coupling Size	One Cam-and-Groove Socket and One Plug Per Set
2″	2 39/64″	4″	75	52895K12	$23.61	$19.54	2″	52895K71	$72.20
3″	3 41/64″	6″	75	52895K14	31.87	27.64	3″	52895K72	117.90
4″	4 11/16″	9″	75	52895K15	39.74	32.88	4″	52895K73	167.82

Extra-Flexible Wet-Food Hose

- Use with liquid food products
- Temperature Range: –30° to +200° F
- Color: Gray
- Hose: Buna-N (nitrile) rubber
- Cover: Blended Buna-N/PVC
- Reinforcement: Two-ply polyester cord and two steel wire spirals

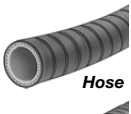

Hose

A corrugated cover makes this hose super flexible. The hose material is FDA and USDA compliant. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 30″ Hg @ 72° F.

Cam-and-groove sockets and ***plugs*** are Type 316 stainless steel. To connect, insert the plug into the socket and push the levers down. *Note:* Fittings do not meet the standards shown for the hose material.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Cam-and-Groove Socket

Cam-and-Groove Plug

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Coupling Size	Max. psi @ 72° F	One Cam-and-Groove Socket and One Plug Per Set
1 1/2″	2 3/16″	3″	150	5256K21	$20.26	$16.36	1 1/2″	150	5256K61	$143.90
2″	2 11/16″	4″	150	5256K22	24.88	20.10	2″	150	5256K62	172.41
3″	3 23/32″	6″	150	5256K23	32.45	26.20	3″	125	5256K65	267.82

Food Hose

For information about bend radius and vacuum ratings for hose, see page 255.

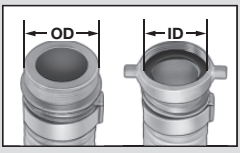

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 2 3/16″, the next highest OD is 2 3/8″ and the corresponding pipe size is 2″.

Threaded OD or ID	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1 1/2″	2″	2 1/2″	3″	4″

Clear Wet- and Dry-Food Hose

Hose

Cam-and-Groove Socket

Cam-and-Groove Plug

Sanitary Fitting

- Use with liquid and dry food products
- Temperature Range: –15° to +158° F
- Color: Clear with clear or white spiral
- Hose: PVC
- Cover: PVC
- Reinforcement: PVC spiral

Clear PVC construction allows you to see the flow. The PVC hose material meets 3-A sanitary standard requirements and is FDA and USDA compliant. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F. *Note:* Fittings do not meet the standards shown for the hose material, unless stated otherwise.

Cam-and-groove sockets and ***plugs*** are Type 316 stainless steel. To connect, insert the plug into the socket and push the levers down.

Sanitary fittings are Type 304 stainless steel. They're also known as tri-clamps; they connect with a sanitary clamp (sold separately on page 208). These fittings meet 3-A sanitary standard requirements.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) One Cam-and-Groove Socket and One Plug: Coupling Size	Per Set	Two Sanitary Fittings: Flange OD	Per Set
3/4″	1″	3″	120	5544K21	$1.98	$1.68	3/4″	5544K51	$53.58	0.984″	5544K71	$333.47
1″	1 1/4″	5″	106	5544K12	2.45	2.07	1″	5544K52	69.95	1.984″	5544K72	345.42
1 1/4″	1 9/16″	5″	99	5544K13	3.12	2.63	1 1/4″	5544K53	97.04	1.984″	5544K73	350.58
1 1/2″	1 25/32″	6″	89	5544K14	3.43	2.90	1 1/2″	5544K54	108.63	1.984″	5544K74	351.50
2″	2 3/8″	8″	79	5544K15	5.18	4.37	2″	5544K55	141.16	2.516″	5544K75	475.00
2 1/2″	2 7/8″	10″	65	5544K16	7.50	6.35	2 1/2″	5544K56	177.67	3.047″	5544K76	558.33
3″	3 1/2″	12″	65	5544K17	9.61	8.12	3″	5544K57	268.15	3.579″	5544K77	707.63
4″	4 1/2″	16″	55	5544K19	16.68	14.12	4″	5544K58	353.62	4.682″	5544K78	997.75
6″	6 5/8″	36″	47	5544K26	30.98	26.22	6″	5544K59	726.27	—	—	—

High-Pressure Wet-Food Hose

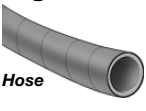
Hose

Cam-and-Groove Socket

Cam-and-Groove Plug

- Use with liquid food products
- Temp. Range: –30° to +212° F
- Color: Orange
- Cover: Buna-N (nitrile) rubber
- Hose: Buna-N (nitrile) rubber
- Reinforcement: Polyester cord with Buna-N (nitrile) rubber coating

Also known as brewer's and vintner's hose, the hose material is FDA (food) compliant. Hose interior is smooth for unrestricted flow. Can be used indoors and out.

Cam-and-groove sockets and ***plugs*** are Type 316 stainless steel. To connect, insert the plug into the socket and push the levers down. *Note:* Fittings do not meet the standards shown for the hose material.

Hose— 4″ ID hose is not rated for vacuum. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to the full coil length. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Vacuum @ 72° F	Full Coil Lg.	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Coupling Size	Max. psi @ 72° F	One Cam-and-Groove Socket and One Plug	Per Set
1/2″	29/32″	2″	20″ Hg	100 ft.	225	53715K41	$7.00	$5.72	1/2″	150	53715K601	$93.85
3/4″	1 5/32″	2″	20″ Hg	100 ft.	225	53715K42	8.22	6.73	3/4″	150	53715K602	106.15
1″	1 13/32″	3″	20″ Hg	100 ft.	225	53715K43	9.78	8.00	1″	150	53715K603	99.69
1 1/2″	2 1/8″	4 1/2″	20″ Hg	100 ft.	225	53715K45	13.89	11.37	1 1/2″	150	53715K604	112.31
2″	2 5/8″	6″	20″ Hg	100 ft.	225	53715K46	16.56	13.55	2″	150	53715K605	127.69
2 1/2″	3 3/16″	15″	10″ Hg	50 ft.	225	53715K48	23.33	19.10	2 1/2″	150	53715K607	161.54
3″	3 3/4″	18″	10″ Hg	100 ft.	225	53715K47	27.11	22.18	3″	125	53715K606	223.08
4″	4 13/16″	24″	—	50 ft.	225	53715K49	35.20	29.23	4″	100	53715K608	207.69

Wet-Food Hose with Abrasion-Resistant Cover

Hose

Sanitary Fitting

- Use with liquid food products
- Temp. Range: –40° to +225° F
- Color: Gray with blue stripe
- Hose: Butyl rubber
- Cover: EPDM rubber
- Reinforcement: Steel wire spiral and two nylon braids

An EPDM rubber cover protects this hose from external abrasion. The hose and the fittings meet 3-A sanitary standard requirements. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Sanitary fittings are Type 316L stainless steel. They're also known as tri-clamps; they connect with a sanitary clamp (sold separately on page 208).

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 2-, 3-, 4-, 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Flange OD	Max. psi @ 72° F	Two Sanitary Fittings	Per Set
1″	1 17/32″	4″	148	54975K69	$19.42	$16.23	1.984″	148	54975K29	$216.50
1 1/2″	2 5/32″	6″	148	54975K71	20.88	16.42	1.984″	148	54975K31	315.57
2″	2 21/32″	7″	148	54975K72	23.08	18.16	2.516″	148	54975K32	415.29
2 1/2″	3 3/16″	8″	148	54975K73	27.48	21.63	3.047″	148	54975K33	494.49
3″	3 3/4″	9″	148	54975K74	35.16	27.60	3.579″	148	54975K34	690.95
4″	4 3/4″	12″	148	54975K75	45.66	35.81	4.682″	100	54975K35	1,127.43

For information about bend radius and vacuum ratings for hose, see page 255.

Extreme-Temperature Wet-Food Hose

- Use with liquid food products
- Temperature Range: –65° to +350° F
- Color: Translucent white
- Hose: Peroxide-cured silicone
- Cover: Peroxide-cured silicone
- Reinforcement: Polyester braid

Hose

Sanitary Fitting

This hose has the widest temperature range of all our wet-food hose. The hose material meets NSF 51 standards and is FDA CFR21 177.2600 and USDA compliant. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for vacuum. *Note:* Fittings do not meet the standards shown for the hose material.

Sanitary fittings are Type 316 stainless steel. They're also known as tri-clamps; they connect with a sanitary clamp (sold separately on page 208). These fittings meet 3-A sanitary standard requirements.

Hose— Full coil length is 100 ft., except hose with 1″ ID is 50 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, or 20-ft., or any length you choose up to the full coil length. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Flange OD	Two Sanitary Fittings Per Set
1/4″	33/64″	1 1/4″	160	5153T11 $6.17	$4.94	0.984″	5153T51 $41.01
3/8″	21/32″	2″	125	5153T12 7.01	5.61	0.984″	5153T52 134.36
1/2″	51/64″	2 1/2″	130	5153T13 9.03	7.22	0.984″	5153T53 143.38
3/4″	1 7/64″	3 1/2″	85	5153T14 13.35	10.68	0.984″	5153T54 118.28
1″	1 23/64″	5″	65	5153T15 16.72	13.37	1.984″	5153T55 207.94

Ultrasmooth-Interior Wet-Food Hose

- Use with liquid food products
- Temperature Range: Standard: –25° to +212° F; High-Temperature: –25° to +250° F
- Hose: Blended Buna-N rubber/PVC
- Cover: Blended Buna-N rubber/PVC
- Reinforcement: Synthetic fabric with a wire spiral

Hose

Cam-and-Groove Socket

Sanitary Fitting

Cam-and-Groove Plug

A special manufacturing process leaves the interior of this hose ultrasmooth to prevent buildup. The hose material meets 3-A sanitary standard requirements and is FDA CFR21 177.2600 and USDA compliant. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F. *Note:* Fittings do not meet the standards shown for the hose material, unless stated otherwise.

Cam-and-groove sockets and ***plugs*** are Type 316 stainless steel. To connect, insert the plug into the socket and push the levers down.

Sanitary fittings are Type 304 stainless steel. Also known as tri-clamps, they connect with a sanitary clamp (sold separately on page 208). Meet 3-A sanitary standard requirements.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) One Cam-and-Groove Socket and One Plug: Coupling Size	Per Set	Two Sanitary Fittings: Flange OD	Per Set
Standard Hose— *Gray*									
3/4″	1 13/64″	2″	150	5555K16 $12.21	$9.76	3/4″	5555K71 $62.46	0.984″	5555K51 $290.36
1″	1 7/16″	3″	150	5555K17 13.32	10.66	1″	5555K72 74.45	1.984″	5555K52 296.07
1 1/2″	1 31/32″	4″	150	5555K11 17.01	13.62	1 1/2″	5555K73 98.32	1.984″	5555K53 298.74
2″	2 19/32″	5″	150	5555K12 26.04	20.84	2″	5555K74 123.60	2.516″	5555K54 407.14
3″	3 19/32″	7″	150	5555K13 40.75	32.59	3″	5555K75 224.02	3.579″	5555K55 606.54
4″	4 11/16″	10″	150	5555K14 56.03	44.81	4″	5555K78 297.70	4.682″	5555K58 855.21
High-Temperature Hose— *White*									
3/4″	1 13/64″	2″	150	5567K15 14.06	11.08	3/4″	5567K31 77.77	0.984″	5567K16 290.36
1″	1 7/16″	3″	150	5567K26 17.50	13.78	1″	5567K38 84.58	1.984″	5567K14 296.07
1 1/4″	1 45/64″	4″	150	5567K19 18.44	14.52	1 1/4″	5567K32 97.03	1.984″	5567K17 350.58
1 1/2″	1 31/32″	4″	150	5567K21 20.91	16.46	1 1/2″	5567K34 112.39	1.984″	5567K18 298.74
2″	2 17/32″	5″	150	5567K22 30.35	23.89	2″	5567K35 143.68	2.516″	5567K23 407.14
3″	3 39/64″	7″	150	5567K33 39.01	35.11	3″	5567K36 266.52	3.579″	5567K24 606.54
4″	4 41/64″	10″	150	5567K44 53.69	48.32	4″	5567K37 304.11	4.682″	5567K25 855.21

Clear Dry-Material Hose

- Use with plastic pellets and powders
- Temperature Range: –4° to +150° F
- Color: Clear
- Hose: Polyurethane
- Cover: PVC
- Reinforcement: None

Hose

Cam-and-Groove Socket

Male

Cam-and-Groove Plug

Easy-Install Female

The polyurethane hose material provides better internal abrasion resistance than PVC, plus it's FDA CFR21 1177.2600 and USDA compliant. Hose has a clear construction that allows you to monitor flow. Interior is smooth for unrestricted flow. Can be used indoors and out. Vacuum rating is 29″ Hg @ 72° F.

Male fittings are aluminum and have NPSM (National Pipe Straight Mechanical) threads, which are compatible with female NPSM and NPSH threads.

Easy-install female fittings rotate 360° until tightened down during installation. They are aluminum and have NPSM threads, which are compatible with male NPSM, NPT, and NPTF threads.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose— Full coil length is 60 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, 30-, or 50-ft., or any length you choose up to 60 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	HOSE Per Ft. Partial Coil	HOSE Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) One Male and One Easy-Install Female Fitting: Pipe Size	Per Set	One Cam-and-Groove Socket and One Plug: Coupling Size	Per Set
1 1/2″	1 7/8″	6″	50	52765K71 $10.75	$8.96	1 1/2″	52765K41 $29.12	1 1/2″	52765K61 $39.63
2″	2 7/16″	7″	40	52765K73 14.79	12.33	2″	52765K42 33.50	2″	52765K62 46.76
2 1/2″	3 1/8″	8″	40	52765K75 17.93	14.94	2 1/2″	52765K43 54.12	2 1/2″	52765K63 70.88
3″	3 11/16″	9″	40	52765K81 23.84	19.86	3″	52765K44 60.88	3″	52765K64 77.12
4″	4 13/16″	15″	35	52765K82 38.25	31.88	4″	52765K45 102.75	4″	52765K65 132.42

Dry-Material & Natural and LP Gas Hose

For information about bend radius and vacuum ratings for hose, see page 255.

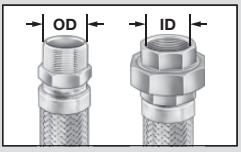

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″

Antistatic Clear Dry-Material Hose

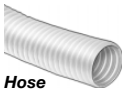

Hose

Cam-and-Groove Socket

Cam-and-Groove Plug

- Use with plastic pellets and powders
- Temperature Range: –4° to +150° F
- Color: Clear
- Hose: PVC
- Cover: PVC
- Reinforcement: PVC spiral

Made from a specially formulated PVC material, this hose will dissipate static buildup when used in a fully grounded system. The clear construction allows you to monitor flow. The reinforcement is on the outside, so it doubles as a wear strip. Hose material is FDA CFR21 170-199 and USDA compliant. Interior is smooth for unrestricted flow. Can be used indoors and out.

Cam-and-groove sockets and ***plugs*** are aluminum. To connect, insert the plug into the socket and push the levers down.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 20-, 25-, 30-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Please specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	Vacuum @ 72° F	HOSE	Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Coupling Size	One Cam-and-Groove Socket and One Plug	Per Set
1 1/2″	1 15/16″	3″	50	28″ Hg	5705K12	$5.65	$4.47	1 1/2″	5705K71	$28.82
2″	2 13/32″	4″	40	28″ Hg	5705K14	7.65	6.06	2″	5705K72	34.00
2 1/2″	3″	5″	40	28″ Hg	5705K16	10.96	8.68	2 1/2″	5705K73	51.55
3″	3 21/32″	6″	40	28″ Hg	5705K18	14.07	11.14	3″	5705K74	56.09
4″	4 3/4″	10″	35	24″ Hg	5705K22	24.03	19.02	4″	5705K75	98.91

Abrasion-Resistant Dry-Material Hose

Hose

Sandblast Quick Coupling

- Use with abrasive materials, sand, crushed glass, and steel shot
- Temp. Range: –22° to +176° F
- Color: Black
- Hose: Gum rubber
- Cover: Blended SBR/natural rubber
- Reinforcement: Polyester cord

Also called sandblast hose, this tough rubber hose can handle highly abrasive materials. Hose interior is smooth for unrestricted flow. Can be used indoors and out. Not rated for bend radius or vacuum.

Sandblast quick couplings are aluminum. *Note:* These fittings are unique to this hose and application.

Hose— Full coil length is 100 ft. **To Order:** Please order in 5-ft. increments up to the full coil length.

Fittings (Attached to the Hose)— Assembled in lengths of 5-, 10-, 15-, 25-, or 50-ft., or any length you choose up to 100 feet. **To Order:** Specify the part number for the set of fittings and your desired hose length. To determine your total price, add the price of the hose to the price of the set of fittings.

Hose ID	Hose OD	Max. psi @ 72° F	HOSE	Per Ft. Partial Coil	Per Ft. Full Coil	FITTINGS (ATTACHED TO THE HOSE) Two Sandblast Quick Couplings	Per Set
1/2″	1 1/16″	150	5277K32	$4.75	$3.80	5277K41	$35.38
3/4″	1 1/2″	150	5277K33	6.10	4.87	5277K42	33.13
1″	1 57/64″	150	5277K34	7.95	6.36	5277K43	34.50
1 1/4″	2 11/64″	150	5277K15	8.28	6.62	5277K44	59.79
1 1/2″	2 23/64″	150	5277K16	9.51	7.61	5277K45	77.25
2″	2 7/8″	150	5277K18	13.12	10.50		

Natural and Liquefied-Petroleum Gas Hose

One Male and One Female Fitting

- Temperature Range: -40° to +800° F
- Hose: Type 304 stainless steel
- Braid: None

Designed for use with natural and liquefied petroleum (LP) gas, this hose comes with the fittings attached. Hose interior is ribbed. Can be used indoors and out. Not rated for vacuum.

For Natural and Liquefied-Petroleum Gas

This hose meets CSA/ANSI LC1 and LC1b 2005, as well as CSA 6.26 and 6.26b 2005 standards. Furnished with brass male NPT fittings that include a silicone O-ring and a graphite gasket. Maximum pressure is 5 psi @ 72° F. Installation instructions are included.

Pipe Size	Hose ID	Hose OD	Bend Radius	10-ft. Length	Each	15-ft. Length	Each	25-ft. Length	Each	50-ft. Length	Each	75-ft. Length	Each	100-ft. Length	Each
Two Male Fittings															
1/2″	1/2″	11/16″	3″	5814K11	$72.43	5814K12	$91.32	5814K13	$116.51	5814K14	$188.94	5814K15	$270.81	5814K16	$314.90
3/4″	3/4″	1″	3″	5814K21	93.78	5814K22	119.35	5814K23	157.71	5814K24	251.49	5814K25	328.21	5814K26	426.25
1″	1″	1 1/4″	5″	5814K31	124.79	5814K32	157.35	5814K33	193.70	5814K34	303.84	5814K35	396.08	5814K36	542.57

For Natural and Liquefied-Petroleum Gas Appliances

Hook up dryers and ranges to your gas supply—this flexible hose is furnished with special appliance fittings that meet ANSI Z2.24a 2002 and CSA 6a.10 2002 standards. The *3/8″ ID hose* is for use with dryers; the *1/2″ ID hose* is for use with ranges. Furnished with zinc-plated steel fittings that have NPT threads. Maximum pressure is 0.5 psi @ 72° F. Not rated for bend radius.

Pipe Size	Hose ID	Hose OD	12″ Length	Each	24″ Length	Each	36″ Length	Each	48″ Length	Each	60″ Length	Each	72″ Length	Each
Two Male Fittings														
1/2″	3/8″	1/2″	5891K11	$11.25	5891K13	$15.88	5891K15	$19.19	5891K16	$23.49	5891K17	$29.12	5891K18	$33.09
1/2″	1/2″	7/8″	5891K51	11.80	5891K53	16.66	5891K55	19.78	5891K56	24.64	5891K57	29.85	5891K58	34.71
3/4″ × 1/2″	1/2″	7/8″	5891K41	11.80	5891K43	16.66	5891K45	19.78	5891K46	24.64	5891K47	29.85	5891K48	34.71
One Male and One Female Fitting														
1/2″	3/8″	1/2″	5891K31	11.25	5891K33	15.88	5891K35	19.19	5891K36	23.49	5891K37	28.46	5891K38	33.09
1/2″	1/2″	7/8″	5891K61	11.80	5891K63	16.66	5891K65	19.78	5891K66	24.64	5891K67	29.85	5891K68	34.71
Two Female Fittings														
3/8″	3/8″	1/2″	5891K21	11.25	5891K23	15.88	5891K25	19.19	5891K26	23.49	5891K27	29.12	5891K28	33.09

For information about bend radius and vacuum ratings for hose, see page 255.

Liquefied-Petroleum Gas Hose

- Use with LP gas
- Temp. Range: –40° to +140° F
- Color: Black
- Hose: Buna-N (nitrile) rubber
- Cover: Neoprene rubber
- Reinforcement: PVA (Polyvinyl Alcohol) spirals

Don't be fooled by the rubber construction—the hose material is UL 21 recognized and CSA certified. Furnished with NPT threaded fittings attached. The fittings for *1/4″ and 3/8″ ID hose* are brass; for *1/2″ to 1″ ID hose* are steel. Hose interior is smooth for unrestricted flow. For outdoor use only. Not rated for vacuum.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	TWO MALE FITTINGS 5-ft. Length	Each	10-ft. Length	Each	15-ft. Length	Each	25-ft. Length	Each
1/4″	1/4″	39/64″	2 1/2″	350	45835K612	$19.30	45835K613	$32.66	45835K614	$46.76	45835K615	$74.22
3/8″	3/8″	49/64″	3 1/2″	350	45835K622	24.41	45835K623	41.31	45835K624	59.15	45835K625	93.89
1/2″	1/2″	15/16″	4 1/2″	350	45835K632	35.83	45835K633	57.33	45835K634	77.64	45835K635	119.44
3/4″	3/4″	1 1/4″	6 1/2″	350	45835K642	67.33	45835K643	109.41	45835K644	149.38	45835K645	210.40
1″	1″	1 1/2″	7 1/2″	350	45835K652	108.15	45835K653	151.92	45835K654	177.67	45835K655	257.50

Smooth-Bore Nitrogen Gas Hose

- Use with nitrogen gas, argon, and oxygen
- Temperature Range: –65° to +450° F
- Hose: PTFE
- Cover: Type 304 stainless steel
- Braid: Type 304 stainless steel

Also known as pigtails, this PTFE hose is nonsticking with a smooth interior for unrestricted flow. It comes cleaned, capped, and bagged to meet CGA (Compressed Gas Association) specification G4.1. Furnished with the fittings attached; fittings are brass and have NPT threads. Can be used indoors and out. Vacuum rating is 28″ Hg @ 72° F.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	TWO FEMALE FITTINGS 2-ft. Length	Each	3-ft. Length	Each	4-ft. Length	Each
1/4″	1/4″	5/8″	3 1/2″	3600	5665K12	$59.20	5665K13	$71.49	5665K14	$83.79

Extreme-Temperature Nitrogen Hose

Also called cryogenic hose, the stainless steel braid gives this hose strength to stand up to applications involving vibration. Hose interior is ribbed. Can be used indoors and out.

Hose for Liquid Nitrogen

- Temperature Range: –320° to +1500° F
- Hose: Type 321 stainless steel
- Braid: Type 304L stainless steel

With Cover

This hose comes cleaned, capped, and bagged to meet CGA (Compressed Gas Association) specification G4.1. Furnished with Type 316 stainless steel 37° flared female fittings with 3/4″-16 UNF straight threads, which are compatible only with male 3/4″-16 UNF threads. The fittings rotate 360° until tightened down during installation. Bend radius is 4 7/8″. Maximum pressure is 1160 psi @ 72° F. Vacuum rating is 29.9″ Hg @ 72° F.

Hose with cover protects the braid; the cover is Type 304 stainless steel.

Hose ID	O'all Lg.	TWO 37° FLARED FEMALE FITTINGS Without Cover: Hose OD		Each	With Cover: Hose OD		Each
1/2″	3 ft.	0.79″	54935K19	$139.91	0.94″	54935K29	$178.65
1/2″	6 ft.	0.79″	54935K11	232.75	0.94″	54935K21	275.06
1/2″	8 ft.	0.79″	54935K13	280.08	0.94″	54935K23	335.81
1/2″	10 ft.	0.79″	54935K15	322.80	0.94″	54935K25	398.56
1/2″	12 ft.	0.79″	54935K17	374.92	0.94″	54935K27	460.15

Hose for Nitrogen Gas, Argon, and Oxygen

- Temperature Range: –320° to +1500° F
- Hose: Type 316 stainless steel
- Braid: Type 304 stainless steel
- Cover: Type 304 stainless steel

Designed for gas service, this hose comes cleaned, capped, and bagged to meet CGA (Compressed Gas Association) specification G4.1. Furnished with Type 316L stainless steel female NPT fittings attached and a stainless steel cover that protects the braid. Vacuum rating is 29.9″ Hg @ 72° F.

Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72° F	O'all Lg.	Two Female Fittings	Each
1/4″	1/4″	0.72″	4.7″	4250	2 ft.	5665K32	$116.64
1/4″	1/4″	0.72″	4.7″	4250	3 ft.	5665K33	139.97
1/4″	1/4″	0.72″	4.7″	4250	4 ft.	5665K34	187.96

Hose with Tube Connections for Liquid Nitrogen

- Temperature Range: –321° to +1250° F
- Hose: Type 316 stainless steel
- Braid: Type 304 stainless steel

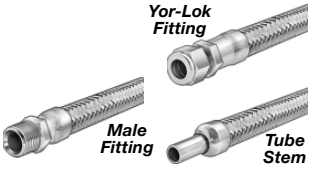

Furnished with tube connections. ***Standard hose*** is air cleaned. ***Cleaned and bagged hose*** is cleaned, capped, and bagged to meet CGA specification G4.1. Vacuum rating is 29″ Hg @ 72° F.

Fittings are Type 316 stainless steel. *Yor-Lok fittings* are also known as instrumentation fittings; see page 174 for more information on Yor-Lok fittings. *Male fittings* have NPT threads. *Tube stems* are a short length of tubing; the actual OD of these fittings is the same as the For Tube OD specification listed below.

For Tube OD	Pipe Size	Hose ID	Hose OD	Bend Radius	Max. psi @ 72°F	STANDARD HOSE 12″ Length	Each	24″ Length	Each	CLEANED AND BAGGED HOSE 12″ Length	Each	24″ Length	Each
Two Yor-Lok Fittings													
1/4″	—	1/4″	0.52″	5″	4600	5425T57	$116.70	5425T67	$135.70	5425T77	$150.11	5425T87	$170.58
3/8″	—	3/8″	0.70″	5 1/2″	3800	5425T58	140.65	5425T68	165.47	5425T78	175.77	5425T88	199.74
1/2″	—	1/2″	0.82″	5 3/4″	2600	5425T59	164.84	5425T69	198.60	5425T79	200.80	5425T89	233.49
One Yor-Lok and One Male Fitting													
1/4″	1/4″	1/4″	0.52″	5″	4600	5425T17	92.17	5425T27	111.05	5425T37	128.42	5425T47	145.93
3/8″	3/8″	3/8″	0.70″	5 1/2″	3800	5425T18	110.31	5425T28	134.53	5425T38	145.70	5425T48	169.42
1/2″	1/2″	1/2″	0.82″	5 3/4″	2600	5425T19	128.28	5425T29	158.37	5425T39	166.20	5425T49	193.26
One Tube Stem and One Yor-Lok Fitting													
1/4″	—	1/4″	0.52″	5″	4600	5425T141	115.70	5425T151	134.53	5425T412	149.09	5425T512	169.42
3/8″	—	3/8″	0.70″	5 1/2″	3800	5425T142	134.12	5425T152	157.79	5425T413	169.55	5425T513	192.67
1/2″	—	1/2″	0.82″	5 3/4″	2600	5425T143	159.41	5425T153	189.77	5425T414	195.45	5425T514	224.65
Two Tube Stems													
1/4″	—	1/4″	0.52″	5″	4600	5425T71	115.90	5425T74	134.77	5425T81	149.29	5425T84	169.65
3/8″	—	3/8″	0.70″	5 1/2″	3800	5425T72	126.29	5425T75	150.35	5425T82	161.15	5425T85	185.23
1/2″	—	1/2″	0.82″	5 3/4″	2600	5425T73	156.36	5425T76	183.95	5425T83	190.39	5425T86	218.84

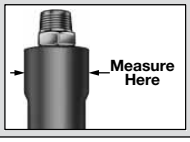

About Measuring Hose and Tube Clamps

What's the best way to determine the clamp size you'll need? Simply measure the outside diameter of your hose with the fitting installed. Some clamps accommodate a range of sizes, so be sure the size you need falls in the middle of that range.

Note: It is your responsibility to test and monitor clamps to ensure they are appropriate for your application.

Worm-Drive Hose and Tube Clamps

So easy to use, it's no wonder these are the most popular style of hose clamps. Clamps are reusable. The banding is 0.023″ thick. Temperature range is –50° to +250° F. Clamps meet SAE J1508. Not recommended for use with silicone hose and tube.

The ***5/16″ band width*** clamps tighten with a wrench, slotted screwdriver, or 1/4″ hex nutdriver. Torque is 15 in.-lbs.

The ***1/2″*** and ***9/16″ band width*** clamps tighten with a wrench, slotted screwdriver, or 5/16″ hex nutdriver. Torque is 35 in.-lbs.

Type 301 Stainless Steel Clamps— Have a Type 301 stainless steel housing and band for very good corrosion resistance. The *zinc-plated screws* have fair corrosion resistance. The *Type 410 stainless steel screws* have good corrosion resistance. The *Type 305 stainless steel screws* have very good corrosion resistance.

Type 316 Stainless Steel Clamps with Type 316 Stainless Steel Screw— Have excellent corrosion resistance.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	mm	SAE No.	Type 301 SS with Zinc-Plated Steel Screw Pkg. Qty.		Per Pkg.	Type 301 SS with Type 410 SS Screw Pkg. Qty.		Per Pkg.	Type 301 SS with Type 305 SS Screw Pkg. Qty.		Per Pkg.	Type 316 SS with Type 316 SS Screw Pkg. Qty.		Per Pkg.
5/16″ Band Width														
7/32″-5/8″★	5.6-16	4	10	5388K14	$5.70	10	5321K14	$6.99	10	54195K14	$7.87	10	5011T141	$10.22
7/16″-25/32″★	11-20	6	10	5388K16	5.70	10	5321K16	6.99	10	54195K16	7.87	10	5011T161	10.22
1/2″-29/32″	13-23	8	10	5388K17	6.26	10	5321K17	7.32	10	54195K17	8.77	10	5011T171	11.38
9/16″-1 1/16″	14-27	10	10	5388K18	6.26	10	5321K18	7.32	10	54195K18	8.77	10	5011T181	11.38
11/16″-1 1/4″	17-32	12	10	5388K22	7.15	10	5321K22	8.21	10	54195K22	10.45	10	5011T221	13.57
15/16″-1 1/2″	24-38	16	10	5388K24	7.15	10	5321K24	8.21	10	54195K24	10.45	10	5011T241	13.57
1 3/16″-1 3/4″	30-44	20	10	5388K26	8.06	10	5321K26	9.14	10	54195K26	10.61	10	5011T261	13.77
1 7/16″-2″	37-51	24	10	5388K28	8.09	10	5321K28	9.14	10	54195K28	10.61	10	5011T281	13.77
1 11/16″-2 1/4″	43-57	28	10	5388K32	9.00	10	5321K32	10.10	10	54195K32	10.85	10	5011T321	14.08
1 15/16″-2 1/2″	49-64	32	10	5388K34	9.00	10	5321K34	10.10	10	54195K34	10.85	10	5011T341	14.08
1/2″ Band Width														
7/16″-25/32″★	11-20	6	10	5415K11	6.41	10	5416K11	9.27	10	54155K11	10.81	10	5011T11	14.03
1/2″-29/32″★	13-23	8	10	5415K32	6.41	10	5416K32	9.27	10	54155K32	10.81	10	5011T32	14.03
9/16″-1 1/16″★	14-27	10	10	5415K33	6.41	10	5416K33	9.27	10	54155K33	10.81	10	5011T33	14.03
11/16″-1 1/4″★	17-32	12	10	5415K14	6.54	10	5416K14	9.43	10	54155K14	10.81	10	5011T14	14.03
13/16″-1 1/2″★	21-38	16	10	5415K15	6.54	10	5416K15	9.43	10	54155K15	10.81	10	5011T15	14.03
13/16″-1 3/4″	21-44	20	10	5415K16	6.65	10	5416K16	9.59	10	54155K16	11.13	10	5011T16	14.46
1 1/16″-2″★	27-51	24	10	5415K17	6.65	10	5416K17	9.59	10	54155K17	11.13	10	5011T17	14.46
1 5/16″-2 1/4″	33-57	28	10	5415K18	6.79	10	5416K18	9.74	10	54155K18	11.28	10	5011T18	14.65
1 9/16″-2 1/2″	40-64	32	10	5415K19	6.79	10	5416K19	9.74	10	54155K19	11.28	10	5011T19	14.65
1 13/16″-2 3/4″★	46-70	36	10	5415K21	7.06	10	5416K21	10.16	10	54155K21	11.76	10	5011T21	15.28
1 7/8″-5″	48-127	72	10	5415K34	11.29	5	5416K34	8.07	5	54155K34	8.80	5	5011T34	10.19
2 1/16″-3″★	52-76	40	10	5415K22	8.74	10	5416K22	11.67	10	54155K22	13.15	5	5011T22	8.54
2 5/16″-3 1/4″	59-83	44	10	5415K23	9.62	10	5416K23	13.55	5	54155K23	7.96	5	5011T23	9.83
2 1/2″-5 1/2″	64-140	80	10	5415K35	12.97	5	5416K35	8.32	5	54155K35	9.07	5	5011T35	11.89
2 9/16″-3 1/2″	65-89	48	10	5415K24	9.62	10	5416K24	13.55	5	54155K24	7.96	5	5011T24	9.83
2 13/16″-3 3/4″	71-95	52	10	5415K25	10.37	5	5416K25	7.46	5	54155K25	8.30	5	5011T25	10.27
3 1/16″-4″	78-102	56	10	5415K41	10.37	5	5416K41	7.46	5	54155K41	8.30	5	5011T41	10.27
3 1/8″-6″	79-152	88	10	5415K36	13.29	5	5416K36	8.81	5	54155K36	8.91	5	5011T36	13.32
3 5/16″-4 1/4″	84-108	60	10	5415K42	10.73	5	5416K42	7.69	5	54155K42	8.17	5	5011T42	10.99
3 9/16″-4 1/2″	91-114	64	10	5415K26	10.73	5	5416K26	7.69	5	54155K26	8.17	5	5011T26	10.26
3 5/8″-6 1/2″	92-165	96	10	5415K37	13.54	5	5416K37	9.03	5	54155K37	8.85	5	5011T37	13.65
4 1/8″-7″	105-178	104	10	5415K38	13.70	5	5416K38	9.12	5	54155K38	8.93	5	5011T38	13.76
9/16″ Band Width														
7/16″-25/32″	11-20	6	10	5415K51	8.30	10	5416K45	10.33	10	54155K51	11.98	5	5011T51	8.42
1/2″-29/32″	13-23	8	10	5415K75	8.30	10	5416K53	10.33	10	54155K75	7.55	—	—	—
9/16″-1 1/16″	14-27	10	10	5415K76	8.30	10	5416K54	10.33	10	54155K76	7.55	—	—	—
11/16″-1 1/4″	17-32	12	10	5415K54	8.47	10	5416K46	10.62	10	54155K54	11.98	5	5011T54	8.42
13/16″-1 1/2″	21-38	16	10	5415K77	8.47	10	5416K55	10.62	10	54155K77	7.78	—	—	—
13/16″-1 3/4″	21-44	20	10	5415K78	8.47	10	5416K56	10.75	10	54155K78	7.78	—	—	—
1 1/16″-2″	27-51	24	10	5415K57	8.60	10	5416K47	10.75	10	54155K57	12.34	5	5011T57	8.68
1 5/16″-2 1/4″	33-57	28	10	5415K79	8.90	10	5416K57	10.89	10	54155K79	7.96	—	—	—
1 9/16″-2 1/2″	40-64	32	10	5415K81	8.90	10	5416K58	10.89	10	54155K81	7.96	—	—	—
1 13/16″-2 3/4″	46-70	36	10	5415K61	9.14	10	5416K48	11.33	10	54155K61	13.06	5	5011T61	9.17
2 1/16″-3″	52-76	40	10	5415K82	11.36	10	5416K59	13.83	10	54155K82	9.91	—	—	—
2 9/16″-3 1/2″	65-89	48	10	5415K64	12.45	5	5416K49	7.87	5	54155K64	8.82	5	5011T64	11.79
3 5/16″-4 1/4″	84-108	60	10	5415K67	13.88	5	5416K51	8.39	5	54155K67	8.98	5	5011T67	12.73
3 9/16″-4 1/2″	91-114	64	10	5415K86	13.67	5	5416K64	8.39	10	54155K86	11.48	—	—	—
3 5/8″-6 1/2″	92-165	96	5	5415K87	8.31	5	5416K65	10.50	5	54155K87	7.70	—	—	—
4 1/8″-7″	105-178	104	5	5415K74	8.78	5	5416K52	10.67	5	54155K74	9.43	2	5011T74	6.61
5 5/8″-8 1/2″	143-216	128	5	5415K39	9.60	5	5416K39	9.65	5	54155K39	10.45	1	5011T39	4.06
7 1/8″-10″	181-254	152	5	5415K43	9.00	5	5416K43	8.96	5	54155K43	9.57	2	5011T43	8.77
9 3/8″-12 1/4″	238-311	188	5	5415K44	8.93	5	5416K44	8.98	5	54155K44	9.56	2	5011T44	8.90

Assortments

Each assortment includes a total of 100 clamps—10 of each size shown above with a ★. You'll also get two hex nutdrivers (1/4″ and 5/16″ sizes). Assortments come packed in a metal box with individual compartments for each clamp size.

		Each
Clamps with Zinc-Plated Steel Screw Assortment	5419K17	$96.48
Clamps with Type 410 Stainless Steel Screw Assortment	5419K19	118.57
Clamps with Type 305 Stainless Steel Screw Assortment	5419K21	143.61
Clamps with Type 316 Stainless Steel Screw Assortment	5419K22	166.47

For information about how to measure hose and tube clamps, see page 274.

Mil. Spec. Worm-Drive Hose and Tube Clamps

Just like the worm-drive clamps on the previous page, except these clamps meet MS-35842 and have that military spec stamped into the band. They also meet Fed. Spec. A-A52506 and SAE J1508. Clamps are reusable. The band and housing are Type 301 stainless steel, which offers very good corrosion resistance; the screws are Type 410 stainless steel, which offers good corrosion resistance. The band is 9/16″ wide and 0.023″ thick. Tighten with a wrench, slotted screwdriver, or 5/16″ hex nutdriver. Torque is 40 in.-lbs. Temperature range is –50° to +250° F. Not recommended for use with silicone hose and tube.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	SAE No.	Pkg. Qty.		Per Pkg.
7/16″-25/32″	11-20	6	10	54225K54	$11.95
11/16″-1 1/4″	17-32	12	10	54225K56	12.16
1 1/16″-2″	27-51	24	10	54225K58	12.34
1 13/16″-2 3/4″	46-70	36	10	54225K64	13.10
2 9/16″-3 1/2″	65-89	48	5	54225K66	$8.48
3 5/16″-4 1/4″	84-108	60	5	54225K68	9.18
4 1/8″-7″	105-178	104	5	54225K82	12.11

Worm-Drive Hose and Tube Clamps with Thumb Screw

A small variation in design—a thumb screw instead of a screw—allows you to install these worm-drive clamps without any tools. Clamps are reusable. The band and housing are Type 301 stainless steel, which offers very good corrosion resistance; the thumb screws are Type 410 stainless steel, which offers good corrosion resistance. The band is 9/16″ wide and 0.023″ thick. Temperature range is –50° to +250° F. Clamps meet SAE J1508. Not recommended for use with silicone hose and tube.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	SAE No.	Pkg. Qty.		Per Pkg.
7/16″-25/32″	11-20	6	5	5362K11	$7.89
1/2″-29/32″	13-23	8	5	5362K12	7.89
9/16″-1 1/16″	14-27	10	5	5362K13	7.89
11/16″-1 1/4″	17-32	12	5	5362K14	8.00
13/16″-1 1/2″	21-38	16	5	5362K15	8.00
13/16″-1 3/4″	21-44	20	5	5362K16	8.19
1 1/16″-2″	27-51	24	5	5362K17	$8.19
1 5/16″-2 1/4″	33-57	28	5	5362K18	8.30
1 9/16″-2 1/2″	40-64	32	5	5362K19	8.30
1 13/16″-2 3/4″	46-70	36	5	5362K21	8.59
2 9/16″-3 1/2″	65-89	48	5	5362K24	10.72
4 1/8″-7″	105-178	104	5	5362K34	14.41

Worm-Drive Hose and Tube Clamps with Nonslip Screw

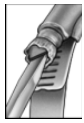

A raised safety collar around the head of the screw prevents your screwdriver from slipping and damaging the hose or tube—especially useful in hard-to-reach areas where it's difficult to keep your screwdriver engaged in the screw. Clamps are reusable. The band and housing are Type 201 stainless steel, which offers good corrosion resistance; the screws are zinc-plated steel, which offers fair corrosion resistance. The band is 9/16″ wide and 0.022″ thick. Tighten with a wrench, slotted screwdriver, or 3/8″ hex nutdriver. Torque is 30 in.-lbs. Temperature range is –40° to +375° F. Clamps meet SAE J1508 and Fed. Spec. WW-C-440B. Not recommended for use with silicone hose and tube.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	SAE No.	Pkg. Qty.		Per Pkg.
3/8″-7/8″	10-22	6	10	5407K57	$11.53
7/16″-1″	11-25	8	10	5407K58	11.53
1/2″-1 1/16″	13-27	10	10	5407K59	11.53
1/2″-1 1/4″	13-32	12	10	5407K61	11.77
11/16″-1 1/2″	17-38	16	10	5407K62	11.77
3/4″-1 3/4″	19-44	20	10	5407K63	11.40
1″-2″	25-51	24	10	5407K64	11.90
1 1/4″-2 1/4″	32-57	28	10	5407K65	12.17
1 1/2″-2 1/2″	38-63	32	10	5407K66	$12.17
1 3/4″-2 3/4″	44-70	36	10	5407K21	12.67
2″-3″	51-76	40	5	5407K22	7.87
2 1/4″-3 1/4″	57-82	44	5	5407K23	8.65
2 1/2″-3 1/2″	64-89	48	5	5407K24	8.65
2 3/4″-3 3/4″	70-95	52	5	5407K25	10.43
3″-4″	76-101	56	5	5407K26	10.43

Quick-Opening Worm-Drive Hose and Tube Clamps

The screw flips up to release the band for quick opening. Clamps are reusable. All have a Type 201 stainless steel band and housing, which offers good corrosion resistance. The band is 9/16″ wide and 0.022″ thick. Not recommended for use with silicone hose and tube.

***Clamps with Zinc-Plated Steel Screw*—**Screws have a clear coating and offer fair corrosion resistance. Temperature range is –40° to +375° F. The *slotted hex-head screws* can be tightened with a wrench, slotted screwdriver, or 5/16″ hex nutdriver; torque is 35 in.-lbs. The *thumb screw* tightens by hand.

***Clamps with Type 410 Stainless Steel Screw*—**Screws have good corrosion resistance. Tighten screw with a wrench, slotted screwdriver, or 3/8″ hex nutdriver. Torque is 35 in.-lbs. Temperature range is –40° to +800° F.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	SAE No.	With Zinc-Plated Steel Screw: Pkg. Qty.		Per Pkg.	With Type 410 SS Screw: Pkg. Qty.		Per Pkg.
Slotted Hex-Head Screw								
1/2″-1 1/4″	13-32	12	10	5322K14	$8.31	10	5322K53	$13.00
3/4″-1 3/4″	19-44	20	10	5322K15	8.21	10	5322K54	13.80
1″-2 1/4″	25-57	28	10	5322K16	8.73	10	5322K56	14.39
1″-2 3/4″	25-70	36	10	5322K17	9.04	10	5322K57	15.23
1″-4″	25-101	56	10	5322K19	12.06	5	5322K59	9.97
1 1/2″-3 1/2″	38-89	48	10	5322K18	11.15	5	5322K58	9.56
1 3/4″-7″	44-178	104	5	5322K23	9.52	5	5322K63	14.35
1 3/4″-7 3/4″	44-197	116	5	5322K34	9.94	1	5322K64	3.01
1 13/16″-15″	46-381	232	1	5322K37	2.55	—	—	—
1 13/16″-18 1/2″	45-470	288	1	5322K41	3.05	—	—	—
1 15/16″-16 1/4″	49-413	258	1	5322K38	2.93	—	—	—
2″-5″	51-127	72	10	5322K21	14.06	5	5322K61	11.89
2″-6″	51-152	88	10	5322K22	14.60	5	5322K62	13.12
2″-10″	51-254	152	5	5322K36	12.53	1	5322K66	3.37
2″-12 1/4″	51-311	188	5	5322K24	9.55	1	5322K67	3.73
2 1/16″-17″	52-432	272	1	5322K39	2.92	—	—	—
2 1/16″-21 1/4″	52-540	332	1	5322K42	4.99	1	5322K68	5.06
2 1/4″-8 1/2″	57-216	128	5	5322K35	10.05	1	5322K65	3.12
Thumb Screw								
1/2″-3 1/2″	13-89	48	10	6634K25	11.42	—	—	—

Slotted Screw

Thumb Screw

For information about how to measure hose and tube clamps, see page 274.

Any-Diameter Worm-Drive Hose and Tube Clamps

Here's everything you need to make your own 3″ diameter and larger custom-length worm-drive clamps. Simply cut a length of band from the continuous roll and attach a housing and screw. Use a band splicer to attach two lengths of band for an even larger clamp. Clamps are reusable. The bands and housings are Type 301 stainless steel, which offers very good corrosion resistance; the screws are Type 410 stainless steel, which offers good corrosion resistance. The band is 1/2″ wide and 0.023″ thick. Tighten with a wrench, slotted screwdriver, or 5/16″ hex nutdriver. Torque is 40 in.-lbs. Temperature range is –50° to +250° F. Not recommended for use with silicone hose and tube.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Band Lg.	No. of Screws and Housings	No. of Band Splicers		Each
8 1/2 ft.	3	1	5426K1	$13.75
50 ft.	10	5	5426K2	44.18
100 ft.	25	10	5426K4	94.28

Replacement Parts		Per Box
Box of 10 Screws and Housings	5426K3	$19.82
Box of 10 Band Splicers	5426K6	.96
Box of 10 Band Splicers and 100 ft. Band	5426K7	47.56

Vibration-Resistant Worm-Drive Hose and Tube Clamps

Also called high-torque clamps, a torque rating of 80 in.-lbs. provides extra holding power in high-vibration applications. Clamps are reusable. The band and housing are Type 304 stainless steel for very good corrosion resistance; the screw is Type 410 stainless steel for good corrosion resistance. The band is 5/8″ wide and 0.028″ thick. Tighten with a slotted screwdriver, 5/16″ socket, or 5/16″ hex nutdriver. Temp. range is –40° to +800° F. Clamps meet SAE J1508. Not recommended for use with silicone hose and tube.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Also Available: All-Type 316 stainless steel clamps, which have a temperature range of –50° to +250° F. Please ask for 5682K1 and specify the corresponding Type 304 stainless steel clamp part number from the listing below.

Clamp ID Range Inch	mm	SAE No.	Pkg. Qty.		Per Pkg.
Standard Range					
1″-1 3/4″	25-45	175	2	5661K55	$5.82
1 1/4″-2 1/8″	32-54	212	2	5661K11	5.82
1 3/4″-2 5/8″	45-66	262	2	5661K12	5.89
2 1/4″-3 1/8″	57-79	312	2	5661K13	8.37
2 3/4″-3 5/8″	70-92	362	2	5661K14	6.38
3 1/4″-4 1/8″	83-105	412	2	5661K15	6.54
3 3/4″-4 5/8″	95-117	462	2	5661K16	6.63
4 1/4″-5 1/8″	108-130	512	2	5661K17	6.87
4 3/4″-5 5/8″	121-143	562	2	5661K18	9.15
5 1/4″-6 1/8″	133-155	612	2	5661K19	9.15
5 3/4″-6 5/8″	146-168	662	2	5661K21	8.76
Standard Range (Cont.)					
6 1/4″-7 1/8″	159-181	712	2	5661K22	$9.15
6 3/4″-7 5/8″	172-193	762	2	5661K23	9.84
7 1/4″-8 1/8″	184-206	812	2	5661K24	9.99
7 3/4″-8 5/8″	197-219	862	2	5661K25	9.99
8 1/4″-9 1/8″	210-232	912	2	5661K26	10.21
Extended Range					
1 1/4″-2 5/8″	32-66	262	5	5663K11	14.09
2″-4 1/8″	51-104	412	5	5663K12	15.03
4″-6 1/8″	102-155	612	2	5663K13	9.73
6″-9 1/8″	153-231	912	2	5663K14	11.56

Worm-Drive Clamps for Soft Hose and Tube

An extended tail acts as a liner to protect soft hoses and tubes from being cut by the slots in the band. Clamps are reusable. Tighten with a slotted screwdriver, 5/16″ socket, or 5/16″ hex nutdriver. Torque is 35 in.-lbs. Clamps meet SAE J1508 and Fed. Spec. WW-C-440B.

Type 201 Stainless Steel Clamps with Zinc-Plated Steel Screw—The band and housing are Type 201 stainless steel for good corrosion resistance; the screw is zinc-plated steel for fair corrosion resistance. The band is 1/2″ wide and 0.022″ thick. Temperature range is –40° to +375° F.

Type 301 Stainless Steel Clamps with Type 305 Stainless Steel Screw—The band and housing are Type 301 stainless steel for very good corrosion resistance; the screw is Type 305 stainless steel, which also has very good corrosion resistance. The band is 9/16″ wide and 0.022″ thick. Temperature range is –40° to +800° F.

Type 316 Stainless Steel Clamps with Type 316 Stainless Steel Screw—Have excellent corrosion resistance. The band is 1/2″ wide and 0.024″ thick. Temperature range is –40° to +1600° F.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	mm	SAE No.	Type 201 Stainless Steel with Zinc-Plated Steel Screw: Pkg. Qty.		Per Pkg.	Type 301 Stainless Steel with Type 305 SS Screw: Pkg. Qty.		Per Pkg.	Type 316 Stainless Steel with Type 316 SS Screw: Pkg. Qty.		Per Pkg.
5/8″-7/8″	15-22	6	10	5413K49	$10.86	—	—	—	—	—	—
5/8″-1″	16-25	8	10	5413K51	11.67	10	54235K51	$13.77	5	6151K51	$10.79
3/4″-1 1/16″	19-27	10	10	5413K52	11.67	10	54235K52	13.69	5	6151K52	10.96
7/8″-1 1/4″	22-32	12	10	5413K53	11.84	10	54235K53	14.09	5	6151K53	11.09
1″-1 1/2″	26-38	16	10	5413K54	11.84	10	54235K54	14.09	5	6151K54	11.09
1 1/8″-1 3/4″	29-44	20	10	5413K55	12.13	10	54235K55	14.26	5	6151K55	11.24
1 1/4″-2″	32-51	24	10	5413K56	12.13	10	54235K56	14.26	5	6151K56	11.24
1 5/16″-2 1/4″	33-57	28	10	5413K57	12.13	10	54235K57	14.40	5	6151K57	11.39
1 9/16″-2 1/2″	40-63	32	10	5413K58	11.98	10	54235K58	14.40	5	6151K58	11.39
1 13/16″-2 3/4″	46-70	36	10	5413K59	12.56	10	54235K59	14.80	5	6151K59	11.69
2 1/16″-3″	52-76	40	10	5413K61	14.68	5	54235K61	10.13	5	6151K61	12.29
2 5/16″-3 1/4″	59-82	44	5	5413K62	8.63	5	54235K62	10.13	5	6151K62	12.70
2 9/16″-3 1/2″	65-89	48	5	5413K63	8.73	5	54235K63	10.13	5	6151K63	12.97
2 13/16″-3 3/4″	72-95	52	5	5413K64	9.07	5	54235K64	10.89	5	6151K64	13.40
3 1/16″-4″	78-101	56	5	5413K65	9.07	5	54235K65	10.89	5	6151K65	13.67
3 9/16″-4 1/2″	91-114	64	5	5413K66	10.19	5	54235K68	11.96	5	6151K66	14.54
4 1/16″-5″	103-127	72	5	5413K67	10.16	5	54235K69	12.42	5	6151K67	15.24

Corrosion-Resistant Nylon Worm Drive Hose and Tube Clamps

Noncorrosive, nonconductive, and lightweight, these all-nylon clamps last longer in highly corrosive environments than metal clamps. Clamps are reusable. They're a great choice for marine applications. The band is 3/8″ wide and 0.063″ thick. Tighten with a slotted screwdriver, 3/16″ hex nutdriver, or the included nylon hex tool. Torque is not rated. Temperature range is –40° to +302° F. Each package includes five clamps and one nylon hex tool.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	mm	Pkg. Qty.		Per Pkg.
5/8″-3 1/2″	16-89	5	5471K1	$5.34
1 1/2″-5 1/2″	38-140	5	5471K2	8.25

For information about how to measure hose and tube clamps, see page 274.

Stainless Steel Smooth-Band Worm-Drive Hose and Tube Clamps

Choose these clamps when you want an economical alternative to Type 316 stainless steel. Clamps are reusable and have a smooth band with rolled edges to prevent them from cutting into hoses and tubes. They're ideal for use with silicone hoses and tubes. The band is 3/8″ wide and 0.024″ thick. Temperature range is –40° to +350° F. Clamps meet DIN 3017.

Type 430 stainless steel clamps have a Type 430 stainless steel band and housing and a zinc-plated steel screw. Tighten with a slotted or Phillips screwdriver, or a 9/32″ (7 mm) hex nutdriver. Torque is 20 in.-lbs.

Type 304 stainless steel clamps have a Type 304 stainless steel band, housing, and screw. Tighten with a slotted screwdriver. Torque is 26.5 in.-lbs., unless noted.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	SAE No.	Pkg. Qty.		Per Pkg.
Type 430 Stainless Steel					
5/16″-5/8″	8-16	2	10	5076K31	$8.12
1/2″-3/4″	12-20	4	10	5076K13	8.17
5/8″-11/16″	16-27	10	10	5076K14	8.21
3/4″-1 1/4″	20-32	12	10	5076K15	8.21
1″-1 5/8″	25-40	18	10	5076K16	8.98
1 1/4″-2″	32-50	24	10	5076K17	9.42
1 5/8″-2 3/8″	40-60	30	10	5076K18	9.80
2″-2 3/4″	50-70	36	10	5076K19	10.30
2 3/8″-3 1/8″	60-80	42	10	5076K21	11.77
2 3/4″-3 1/2″	70-90	48	10	5076K22	12.29
3 1/8″-4″	80-100	56	10	5076K23	12.69
3 1/2″-4 3/8″	90-110	62	10	5076K24	13.34
4″-4 3/4″	100-120	68	10	5076K25	13.77
4 3/8″-5 1/8″	110-130	74	5	5076K26	10.10
4 3/4″-5 1/2″	120-140	80	5	5076K27	10.31
5 1/8″-5 7/8″	130-150	86	5	5076K28	10.61
5 1/2″-6 1/4″	140-160	92	5	5076K29	10.70

Clamp ID Range Inch	Clamp ID Range mm	SAE No.	Pkg. Qty.		Per Pkg.
Type 304 Stainless Steel					
5/16″-5/8″	8-16	2	10	5574K12★	$9.35
1/2″-7/8″	12-22	4	10	5574K13	9.38
5/8″-11/16″	16-27	10	10	5574K14	9.45
3/4″-1 1/4″	20-32	12	10	5574K15	9.67
1″-1 5/8″	25-40	18	10	5574K16	10.33
1 3/8″-2″	35-50	24	10	5574K17	10.82
1 5/8″-2 3/8″	40-60	30	10	5574K18	11.27
2″-2 3/4″	50-70	36	10	5574K19	11.83
2 3/8″-3 1/8″	60-80	42	10	5574K21	13.53
2 3/4″-3 1/2″	70-90	48	10	5574K22	14.12
3 1/8″-4″	80-100	56	10	5574K23	14.58
3 1/2″-4 3/8″	90-110	62	5	5574K24	8.06
4″-4 3/4″	100-120	68	5	5574K25	8.32
4 3/8″-5 1/8″	110-130	74	5	5574K26	12.16
4 3/4″-5 1/2″	120-140	80	5	5574K27	11.86
5 1/8″-5 7/8″	130-150	86	5	5574K28	12.19
5 1/2″-6 1/4″	140-160	92	5	5574K29	12.29

★ Torque is 17.7 in.-lbs.

Type 316 Stainless Steel Smooth-Band Worm-Drive Hose and Tube Clamps

Excellent corrosion resistance is only one reason to use these all-Type 316 stainless steel clamps—they also have a smooth band with rolled edges to prevent them from cutting into hoses and tubes. They're ideal for use with silicone hoses and tubes. Clamps are reusable. The band is 1/2″ wide and 0.031″ thick. Tighten with a 9/32″ (7 mm) hex nutdriver. Temperature range is –40° to +1200° F. Clamps meet SAE J1508.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	SAE No.	Torque, in.-lbs.		Each
7/16″-11/16″	11-17	4	35	45945K61	$3.32
1/2″-13/16″	13-20	6	35	45945K62	3.51
5/8″-15/16″	15-24	8	35	45945K63	3.51
3/4″-1 1/8″	19-28	10	45	45945K64	3.68
7/8″-1 1/4″	22-32	12	45	45945K65	3.68
1 1/16″-1 1/2″	26-38	16	45	45945K66	3.74
1 1/4″-1 3/4″	32-44	20	45	45945K67	3.83
1 1/4″-2 1/4″	32-57	28	60	45945K29	4.10
1 1/2″-2″	38-50	24	60	45945K68	4.00
1 1/2″-2 1/2″	38-64	32	60	45945K31	4.58
1 3/4″-2 3/4″	44-70	36	60	45945K15	4.82
2″-3″	51-76	40	60	45945K32	4.87
2 1/4″-3 1/4″	57-83	44	60	45945K33	5.22
2 1/2″-3 1/2″	64-89	48	60	45945K16	5.34
2 3/4″-3 3/4″	70-95	52	60	45945K34	5.46

70-Clamp Assortment— Includes 10 each of SAE Nos. 4-10 and 5 each of SAE Nos. 12-32 from the list above; sizes range from 7/16″ to 2 1/2″ (11 mm to 64 mm). You'll also get a 9/32″ (7 mm) hex nutdriver and a metal storage case.

54265K17 ..... **Each** $238.89

Clamp ID Range Inch	Clamp ID Range mm	SAE No.	Torque, in.-lbs.		Each
3″-4″	76-102	56	60	45945K17	$5.89
3 1/4″-4 1/4″	83-108	60	60	45945K18	6.08
3 1/2″-4 1/2″	89-114	64	60	45945K35	5.90
3 1/2″-5″	89-127	72	60	45945K19	6.06
4″-5 1/2″	102-140	80	60	45945K36	6.31
4 1/2″-6″	114-152	88	60	45945K21	6.55
5″-6 1/2″	127-165	96	60	45945K37	7.39
5 1/2″-7″	140-178	104	60	45945K38	7.96
6″-7 1/2″	152-191	112	60	45945K22	8.26
6 1/2″-8″	165-203	120	60	45945K39	8.54
7″-8 1/2″	178-216	128	60	45945K23	8.76
7 5/8″-9 1/8″	194-232	138	60	45945K41	9.18
8 5/8″-10 1/8″	219-257	154	60	45945K42	9.69
9 5/8″-11 1/8″	244-283	170	60	45945K43	10.13
10 5/8″-12 1/8″	270-308	186	60	45945K44	10.71

140-Clamp Assortment— Includes 20 each of SAE Nos. 4-10 and 10 each of SAE Nos. 12-32 from the list above; sizes range from 7/16″ to 2 1/2″ (11 mm to 64 mm). You'll also get a 9/32″ (7 mm) hex nutdriver and a metal storage case.

54265K14 ..... **Each** $423.35

Any-Diameter Smooth-Band Worm-Drive Hose and Tube Clamps

Build your own 2″ diameter and larger smooth-band worm-drive clamps. Simply cut a length of band from the continuous roll and attach a housing and a screw. Clamps are reusable. Torque is not rated. Temperature range is –100° to +500° F.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Type 430 SS w/Type 410 Stainless Steel Screw

Offering good corrosion resistance, the band is Type 430 stainless steel, the housing is Type 301 stainless steel, and the screw is Type 410 stainless steel. The band is 3/8″ wide and 0.025″ thick. Tighten with a slotted screwdriver.

Band Lg.	No. of Screws and Housings			Each
10 ft.	5	95885K41		$44.49
50 ft.	10	95885K61		93.08
100 ft.	25	95885K81		165.88
Repl. Screws and Housings (5/Pkg.)		95885K92	**Per Pkg.**	$12.58

200/300 Series SS w/Type 410 Stainless Steel Screw

The banding and the housing are 200/300 series stainless steel for very good corrosion resistance. The screw is Type 410 stainless steel, which offers good corrosion resistance. The band is 3/8″ wide and 0.015″ thick. Tighten with a slotted screwdriver or 5/16″ hex nutdriver.

Band Lg.	No. of Screws and Housings			Each
10 ft.	3	5540K22		$25.33
100 ft.	25	5540K11		158.12
Repl. Screws and Housings (10/Pkg.)		5540K14	**Per Pkg.**	$49.74

For information about how to measure hose and tube clamps, see page 274.

Constant-Tension Worm-Drive Clamps for Soft Hose and Tube

Don't worry about your hose and tube expanding and contracting when temperatures fluctuate—these clamps have Belleville springs that automatically increase and decrease the clamps' diameter to eliminate the need for retightening. These clamps have an extended tail on the band, which acts as a liner to protect soft hose and tube from being cut. The band is 0.028″ thick. Clamps are reusable. Temperature range is –50° to +250° F. Clamps meet SAE J1508.

9/16″ Band Width—Band and spring are Type 301 stainless steel and the housing is Type 302 stainless steel, which both offer very good corrosion resistance. The screw is Type 410 stainless steel, which offers good corrosion resistance. Tighten with a wrench or 5/16″ hex nutdriver. Torque is 45 in.-lbs.

5/8″ Band Width—The band and housing are Type 304 stainless steel and the spring is Type 301 stainless steel, which both offer very good corrosion resistance. The *zinc-plated screw* has fair corrosion resistance; the *Type 410 stainless steel screw* has good corrosion resistance. Tighten with a wrench or 3/8″ hex nutdriver. Torque is 90 in.-lbs.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	mm	SAE No.	With Zinc-Plated Steel Screw	Each	With Type 410 SS Screw	Each
9/16″ Band Width						
9/16″-1 1/16″	14-27	10	____	____	54205K11	$5.10
11/16″-1 1/4″	17-32	12	____	____	54205K13	5.42
13/16″-1 1/2″	21-38	16	____	____	54205K15	5.59
13/16″-1 3/4″	21-44	20	____	____	54205K17	5.76
1 1/16″-2″	27-51	24	____	____	54205K19	5.93
5/8″ Band Width						
1″-1 3/4″	25-44	____	5281K16	$6.97	5325K27	8.85
1 1/4″-2 1/8″	32-54	212	5281K17	6.97	5325K28	8.85
1 3/4″-2 5/8″	44-67	262	5281K18	7.01	5325K29	8.90
2 1/4″-3 1/8″	57-79	312	5281K19	7.13	5325K31	9.05
2 3/4″-3 5/8″	70-92	362	5281K21	7.20	5325K32	9.12
3 1/4″-4 1/8″	83-105	412	5281K22	7.30	5325K33	9.24
3 3/4″-4 5/8″	95-117	462	5281K23	7.38	5325K34	9.34
4 1/4″-5 1/8″	108-130	512	5281K24	7.49	5325K35	9.49
4 3/4″-5 5/8″	121-143	562	5281K25	7.74	5325K36	9.79
5 1/4″-6 1/8″	133-156	612	5281K26	7.83	5325K37	9.92
5 3/4″-6 5/8″	146-168	662	5281K27	7.87	5325K38	9.97
6 1/4″-7 1/8″	159-181	712	5281K28	8.02	5325K39	10.14
6 3/4″-7 5/8″	171-194	762	5281K29	8.34	5325K41	10.53
7 1/4″-8 1/8″	184-206	812	5281K31	8.45	5325K42	10.66
7 3/4″-8 5/8″	197-219	862	5281K32	8.52	5325K43	10.75
8 1/4″-9 1/8″	210-232	912	5281K33	8.64	5325K44	10.91

Quick-Release Worm-Drive Duct and Hose Clamps

A quick-release latch allows you to access your line as often as you need while maintaining your original clamp size. Perfect for temporary connections and applications requiring repeated use. Use with flexible duct hose; not recommended for use with rigid hose. Clamps are reusable. The band, housing, and latch are Type 304 stainless steel, which offers very good corrosion resistance. The screw is Type 410 stainless steel, which offers good corrosion resistance. The band is 5/8″ wide and 0.031″ thick. Tighten with a slotted screwdriver, 8 mm socket, or 8 mm hex nutdriver. Torque is 130 in.-lbs. Temperature range is –4° to +428° F.

220-lb. clamps have a latch that is 0.87″ (22 mm) wide. ***496-lb. clamps*** have a latch that is 0.96″ (26.5 mm) wide. *Note*: Work load limit is the maximum force the latch can withstand without affecting its operation or appearance.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

Also Available: All-zinc-plated steel clamps offered in the sizes marked with a ♦ below. Work load limit is 150 lbs. Temperature range is +33 to +400° F. Please ask for 5588K1 and specify clamp ID range.

220-lb. Work Load Limit

Clamp ID Range Inch	mm		Each
2 3/4″-4 1/2″	70-115	5215K11 ♦	$41.27
3 1/2″-5 3/8″	90-135	5215K12 ♦	39.03
5 1/8″-6 7/8″	130-175	5215K13 ♦	41.21
6 3/4″-8 1/2″	170-215	5215K14 ♦	43.30
8 1/4″-10″	210-255	5215K15 ♦	45.61
9 7/8″-11 5/8″	250-295	5215K16 ♦	47.88
11 3/8″-13 1/4″	290-335	5215K17 ♦	49.74
13″-14 3/4″	330-375	5215K18 ♦	52.12

496-lb. Work Load Limit

Clamp ID Range Inch	mm		Each
9 7/8″-11 5/8″	250-295	5215K26	$62.58
11 3/8″-13 1/4″	290-335	5215K27	65.30
13″-14 3/4″	330-375	5215K28	68.67
14 5/8″-16 3/8″	370-415	5215K29	72.45
16 1/8″-17 7/8″	410-455	5215K31	77.06
17 3/4″-19 1/2″	450-495	5215K32	81.64
19 1/4″-21 1/8″	490-535	5215K33	87.36
20 7/8″-22 5/8″	530-575	5215K34	93.00
22 1/2″-24 1/4″	570-615	5215K35	99.39

Quick-Release Duct Hose Clamps

Install and remove clamps in seconds—just flip the toggle latch. Clamps are reusable and open completely for easy installation around blower hose and ventilation duct. They have fair corrosion resistance; the housing and toggle are cold-rolled steel, the band is electrogalvanized steel, and the lugs and latch are zinc-plated steel. The band is 7/8″ wide and 0.035″ thick. Temperature range is –250° to +500° F.

Clamp ID Range Inch	mm		Each
4″-4 1/4″	101-108	53185K51	$13.35
6″-6 1/4″	152-159	53185K52	14.45
8 3/16″-8 3/8″	208-213	53185K53	14.73
10 3/16″-10 3/8″	259-264	53185K54	14.98
12 1/4″-12 7/16″	311-316	53185K55	15.47

Clamp ID Range Inch	mm		Each
14 1/4″-14 7/16″	362-366	53185K56	$24.76
16 3/16″-16 3/8″	411-415	53185K57	25.32
18 3/16″-18 3/8″	462-466	53185K58	26.09
20 3/16″-20 3/8″	513-517	53185K59	26.85
24 3/16″-24 7/16″	614-620	53185K61	27.76

Worm-Drive Clamps for Wire Duct

Right-Hand Spiral

Right-Hand Spiral

Left-Hand Spiral

Also known as bridge clamps, these worm-drive clamps are designed to provide a tight seal on wire duct hose. Clamps are reusable. The band and the housing are Type 301 stainless steel and the screw is Type 305, so they offer very good corrosion resistance. The band is 1/2″ wide and 0.025″ thick. Tighten with a slotted screwdriver, 5/16″ socket, or 5/16″ hex nutdriver. Torque is 50 in.-lbs. Temperature range is –250° to +500° F.

To Order: Specify right-hand or left-hand spiral. When looking at the end of your hose, ***right-hand spiral*** twists away from you clockwise; ***left-hand spiral*** twists away from you counterclockwise.

Clamp ID Range Inch	mm		Each
3 1/4″-4 3/4″	83-121	45955K31	$5.44
4 1/4″-5 3/4″	108-146	45955K32	6.05
5 1/4″-6 3/4″	133-171	45955K33	6.40
7 1/4″-8 3/4″	184-222	45955K34	7.64
8 1/4″-9 3/4″	210-248	45955K35	9.51

Clamp ID Range Inch	mm		Each
9 1/4″-10 3/4″	235-273	45955K36	$10.64
11 1/4″-12 3/4″	286-324	45955K37	13.12
13 1/4″-14 3/4″	337-375	45955K38	15.60
15 1/4″-16 3/4″	387-425	45955K39	16.71
17 1/4″-18 3/4″	438-476	45955K41	17.94

For information about how to measure hose and tube clamps, see page 274.

Miniature Bolt Hose and Tube Clamps

Stainless Steel

Sized perfectly for small-diameter hose and tube. Clamps provide a 360° seal and are reusable. They are smooth on the inside and have rolled edges to protect soft hose and tube.

Galvanized steel clamps offer fair corrosion resistance. The band is 3/8″ wide and 0.02″ thick. Tighten with a slotted screwdriver or 9/32″ (7 mm) hex nutdriver. Torque is 13.3 in.-lbs. Clamps meet SAE J1508. Temperature range is –40° to +450° F.

Type 304 stainless steel clamps offer very good corrosion resistance. The band is 3/8″ wide and 0.02″ thick. Tighten with a Phillips screwdriver or 9/32″ (7 mm) hex nutdriver. Clamps meet SAE J1508. Torque is 13.3 in.-lbs. Temperature range is –40° to +450° F.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

Clamp ID Range Inch	mm	Pkg. Qty.		Per Pkg.
Galvanized Steel Clamp with Galvanized Steel Screw				
9/32″-21/64″	7-8.5	10	53175K81	$9.72
5/16″-3/8″	8-9.5	10	53175K82	9.72
23/64″-13/32″	9-10.5	10	53175K83	10.35
3/8″-29/64″	9.5-11.5	10	53175K84	10.35
13/32″-31/64″	10.5-12.5	10	53175K85	10.80
29/64″-17/32″	11.5-13.5	10	53175K86	10.80
31/64″-37/64″	12.5-14.5	10	53175K87	11.34
17/32″-39/64″	13.5-15.5	10	53175K88	11.34
35/64″-21/32″	14-16.5	10	53175K89	11.95
19/32″-11/16″	15-17.5	10	53175K91	11.95
Type 304 Stainless Steel Clamp with Type 304 Stainless Steel Screw				
19/64″-21/64″	7.5-8.5	5	53175K21	9.23
21/64″-3/8″	8.5-9.5	5	53175K22	9.23
3/8″-7/16″	9.5-11	5	53175K23	9.33
13/32″-15/32″	10.5-12	5	53175K24	9.33
29/64″-33/64″	11.5-13	5	53175K25	9.41
31/64″-35/64″	12.5-14	5	53175K26	9.41
17/32″-19/32″	13.5-15	5	53175K27	9.54
37/64″-5/8″	14.5-16	5	53175K28	9.54
19/32″-43/64″	15-17	5	53175K29	9.65
5/8″-45/64″	16-18	5	53175K31	9.65

Constant-Tension T-Bolt Hose Clamps

A spring automatically adjusts the clamp diameter to compensate for the expansion and contraction of hose when temperatures fluctuate. The T-bolt design provides high strength and a 360° seal. Clamps are reusable. The band is 3/4″ wide, 0.025″ thick, and has rolled edges to protect soft hose. The locknut has a nylon insert. Tighten with a 7/16″ wrench or hex nutdriver. Torque is 75 in.-lbs. Maximum temperature is 250° F.

Type 301 Stainless Steel Clamps with Zinc-Plated Steel Bolt— T-bolt, spring, and locknut are zinc-plated steel, which has fair corrosion resistance.

Type 316 Stainless Steel Clamps with Type 316 Stainless Steel Bolt— Excellent corrosion resistance.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

Clamp ID Range Inch	mm	Type 301 SS with Zinc-Plated Steel Bolt	Each	Type 316 SS w/Type 316 SS Bolt	Each
21/16″-25/16″	52-59	8946K51	$8.91	5276K51	$14.58
27/16″-23/4″	62-70	8946K31	8.98	5276K31	14.84
23/4″-31/16″	70-78	8946K52	9.23	5276K52	14.90
215/16″-31/4″	75-83	8946K32	9.16	5276K32	15.12
31/4″-39/16″	83-90	8946K53	9.46	5276K53	15.14
37/16″-33/4″	87-95	8946K33	9.37	5276K33	15.38
33/4″-41/16″	95-103	8946K54	9.71	5276K54	15.38
315/16″-41/4″	100-108	8946K34	9.63	5276K34	15.70
41/4″-49/16″	108-116	8946K55	9.94	5276K55	15.60
47/16″-43/4″	114-121	8946K35	9.86	5276K35	15.98
415/16″-51/4″	126-133	8946K36	10.12	5276K36	16.28
57/16″-53/4″	138-146	8946K37	10.39	5276K37	16.56
515/16″-61/4″	151-159	8946K38	10.60	5276K38	16.88
67/16″-63/4″	164-171	8946K39	10.92	5276K39	17.18
615/16″-71/4″	176-184	8946K41	11.08	5276K41	17.50
77/16″-73/4″	189-197	8946K42	11.36	5276K42	17.80
715/16″-81/4″	202-210	8946K43	11.60	5276K43	18.08
87/16″-83/4″	214-222	8946K44	11.92	5276K44	18.38
815/16″-91/4″	227-235	8946K45	12.12	5276K45	18.66

Easy-to-Install Bolt Hose Clamps

Remove the bolt and flip open the hinged bridge—installation is that simple. Bolt clamps are stronger than worm-drive clamps. Clamps are reusable. They have rolled edges to protect your hose, so they are ideal for use with silicone and other soft hose and tube. Temperature range is –40° to +122° F.

Type 430 Stainless Steel Clamps with Zinc-Plated Steel Bolt— The nut and bolt are zinc-plated steel for fair corrosion resistance. Clamps meet DIN 1.4016.

Type 304 Stainless Steel Clamps with Type 304 Stainless Steel Bolt— Have very good corrosion resistance. Clamps meet DIN 1.4301.

45/64″ band width clamps can be tightened with an 8 mm hex nutdriver; torque is 46 in.-lbs. ***25/32″ band width clamps*** can be tightened with an 11 mm hex nutdriver; torque is 106 in.-lbs. ***63/64″ band width clamps*** can be tightened with a 13 mm hex nutdriver; torque is 166 in.-lbs.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

Clamp ID Range Inch	mm	Type 430 SS w/Zinc-Plated Steel Bolt	Each	Type 304 SS w/Type 304 SS Bolt	Each
45/64″ Band Width— *1/64″ Band Thickness*					
11/16″-3/4″	17-19	5443K11	$2.69	5462K41	$5.51
3/4″-13/16″	19-21	5443K12	2.73	5462K42	5.60
13/16″-29/32″	21-23	5443K13	2.74	5462K43	5.66
29/32″-1″	23-25	5443K14	2.77	5462K44	5.75
1″-11/16″	25-27	5443K15	2.81	5462K45	5.83
11/16″-15/32″	27-29	5443K16	2.86	5462K46	5.96
25/32″ Band Width— *1/32″ Band Thickness*					
15/32″-17/32″	29-31	5443K17	3.36	5462K47	6.12
17/32″-15/16″	31-34	5443K18	3.45	5462K48	6.19
15/16″-17/16″	34-37	5443K19	3.66	5462K49	6.36
17/16″-19/16″	37-40	5443K21	3.69	5462K51	6.43
19/16″-111/16″	40-43	5443K22	3.74	5462K52	6.53
111/16″-17/8″	43-47	5443K23	4.28	5462K53	7.00
17/8″-2″	47-51	5443K24	4.45	5462K54	7.06
2″-25/32″	51-55	5443K25	4.53	5462K55	7.21
25/32″-25/16″	55-59	5443K26	4.75	5462K56	7.34
25/16″-21/2″	59-63	5443K27	4.92	5462K57	7.40
21/2″-211/16″	63-68	5443K28	5.17	5462K58	7.65
63/64″ Band Width— *3/64″ Band Thickness*					
211/16″-27/8″	68-73	5443K29	6.61	5462K59	10.39
27/8″-31/8″	73-79	5443K31	6.77	5462K61	10.75
31/8″-311/32″	79-85	5443K32	6.93	5462K62	10.95
311/32″-39/16″	85-91	5443K33	7.12	5462K63	11.17
39/16″-313/16″	91-97	5443K34	7.27	5462K64	11.44
313/16″-43/32″	97-104	5443K35	7.51	5462K65	11.68
43/32″-43/8″	104-112	5443K36	7.94	5462K66	11.96
43/8″-43/4″	112-121	5443K37	8.15	5462K67	12.19
43/4″-51/8″	121-130	5443K38	8.36	5462K68	12.39

T-Bolt Hose and Tube Clamps

The T-bolt design provides high strength and a 360° seal. The band is 3/4″ wide and 0.025″ thick. Clamps are reusable. The locknut has a nylon insert. Temperature range is –100° to +250° F.

300 Series Stainless Steel Clamps with Zinc-Plated Steel Bolt— The T-bolt and locknut are zinc-plated steel, which has fair corrosion resistance. The band has rolled edges to protect soft hoses and tubes. Tighten with a 7/16″ wrench. Torque is 90 in.-lbs.

Type 316 Stainless Steel Clamps with Type 316 Stainless Steel Bolt— Have excellent corrosion resistance. Tighten with a 7/16″ wrench. Torque is 75 in.-lbs.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	mm	300 Series SS w/Zinc-Plated Steel Bolt	Each	Type 316 SS w/Type 316 SS Bolt	Each
13/8″-11/2″	34.5-38	5312K45	$5.22	5204K45	$8.28
17/8″-21/8″	47-54	5312K11	4.63	5204K11	8.31
25/16″-25/8″	58-66	5312K12	4.70	5204K12	8.33
225/32″-33/32″	70-78	5312K13	4.78	5204K13	8.35
39/32″-319/32″	83-90	5312K14	4.85	5204K14	8.37
325/32″-43/32″	96-103	5312K15	4.97	5204K15	8.39
41/32″-411/32″	102-109	5312K23	4.79	5204K23	8.33
49/32″-419/32″	108-116	5312K16	5.05	5204K16	8.40
425/32″-53/32″	121-129	5312K17	5.37	5204K17	8.44
59/32″-519/32″	134-141	5312K18	5.18	5204K18	10.76
525/32″-63/32″	146-154	5312K19	6.01	5204K19	10.78
69/32″-619/32″	160-167	5312K21	5.44	5204K21	10.80
625/32″-73/32″	172-180	5312K22	6.39	5204K22	10.82

For information about how to measure hose and tube clamps, see page 274.

High-Torque Malleable Iron Bolt Hose Clamps

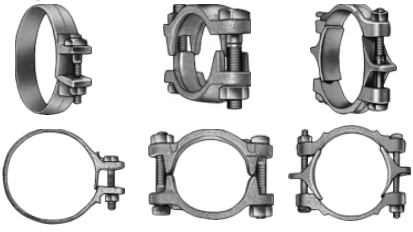

Single Bolt | Double Bolt | Double Bolt with Saddles

Get extra holding power in high-torque applications. These rugged clamps provide a 360° seal and have a narrow clamp ID range for a precise fit. Clamps offer fair corrosion resistance; they're made of zinc-plated malleable iron and have zinc-plated carbon steel bolts and nuts. Tighten with a wrench or torque wrench (see below for the wrench size required). Because the bolts bend when tightened, these clamps are not reusable. Not rated for temperature. Not recommended for use with helix wire hose and hydraulic hose.

Single Bolt— One bolt makes these clamps quicker to install than double-bolt clamps.

Double Bolt— The tightening force is equally distributed between both sides of the clamp. These clamps open completely for easier installation and have reinforced bolt lugs to prevent the clamp from bending out of alignment.

Double Bolt with Saddles— Same as the double-bolt clamps, except these have two interior saddles to maintain even pressure around larger diameter hoses.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	Wrench Size	Band Wd.	Torque, in.-lbs.		Each
Single Bolt with Round Head						
1 7/16"-1 9/16"	36.5-39.7	7/16"	11/16"	72	5411K55	$22.16
1 3/4"-1 7/8"	44.5-47.6	7/16"	11/16"	72	5411K59	21.69
1 7/8"-2 1/32"	47.6-51.6	7/16"	23/32"	72	5411K56	20.88
2"-2 1/8"	50.8-54	7/8"	23/32"	144	5411K23	22.25
2 1/4"-2 13/32"	57.2-61.1	7/8"	3/4"	144	5411K25	26.40
Single Bolt with Square Head						
2 3/8"-2 1/2"	60.3-63.5	7/8"	11/16"	144	5411K26	22.25
2 1/2"-2 5/8"	63.5-66.7	7/8"	11/16"	144	5411K27	22.25
2 5/8"-2 7/8"	66.7-73	7/8"	23/32"	144	5411K28	25.69
2 7/8"-3 1/16"	73-77.8	7/8"	3/4"	144	5411K29	24.94
3 1/16"-3 1/4"	77.8-82.6	7/8"	25/32"	144	5411K31	24.42
3 7/16"-3 5/8"	87.3-92.1	9/16"	27/32"	252	5411K32	27.25
3 5/8"-3 13/16"	92.1-96.8	9/16"	29/32"	252	5411K33	35.69
3 13/16"-4 1/8"	96.8-104.8	9/16"	29/32"	252	5411K34	33.71
4 7/16"-4 5/8"	112.7-117.5	9/16"	1 1/16"	252	5411K37	40.92
4 7/8"-5 1/4"	123.8-133.4	9/16"	1 3/32"	252	5411K39	39.98
Double Bolt with Square Head						
1 3/16"-1 3/8"	30.2-34.9	9/16"	15/16"	252	5411K12	7.76
1 5/8"-1 13/16"	41.3-46	11/16"	1 1/4"	480	5411K14	11.51
Double Bolt with Square Head (Cont.)						
1 3/4"-2 3/64"	44.5-52	9/16"	1"	324	5411K71	$11.97
2 7/64"-2 19/64"	53.6-58.3	9/16"	1"	324	5411K72	11.97
2 5/16"-2 5/8"	58.7-66.7	11/16"	1"	480	5411K73	12.92
2 1/2"-2 3/4"	63.5-69.9	11/16"	1 3/16"	480	5411K15	15.07
3 1/4"-3 1/2"	82.6-88.9	3/4"	1 5/32"	720	5411K77	18.53
Double Bolt with Saddles and Square Head						
3 1/2"-3 13/16"	88.9-96.8	11/16"	1"	480	5411K41	18.53
3 25/32"-4 1/16"	96-103.2	11/16"	1"	480	5411K18	20.96
4 1/32"-4 9/32"	102.4-108.7	3/4"	1"	480	5411K84	19.89
4 1/4"-4 15/16"	108-125.4	3/4"	1 1/8"	720	5411K85	24.56
4 1/2"-5 1/4"	114.3-133.4	3/4"	1 1/8"	720	5411K79	25.60
5 1/8"-5 11/16"	130.2-144.5	3/4"	1 1/8"	720	5411K86	27.91
5 15/16"-6 1/2"	150.8-165.1	3/4"	1 5/32"	720	5411K87	29.75
6 1/2"-7 9/16"	165.1-192.1	3/4"	1 1/8"	720	5411K88	33.28
7 11/16"-8 3/16"	195.3-208	15/16"	1 3/8"	1500	5411K19	45.49
8 1/4"-8 7/8"	209.6-225.4	15/16"	1 3/8"	1500	5411K91	47.85
8 15/16"-9 7/8"	227-250.8	15/16"	1 3/8"	1500	5411K92	58.60
9 15/16"-11 3/8"	252.4-288.9	15/16"	1 5/8"	1500	5411K93	91.46
12 3/16"-14"	309.6-355.6	1 1/8"	1 7/8"	2400	5411K22	155.37

Snap-Grip Nylon Hose and Tube Clamps

Single Snap-Grip

Double Snap-Grip

Installing these clamps is a snap. Just push together the interlocking teeth with your fingers, then squeeze tight with pliers. To remove, use pliers to push sideways and separate the teeth. Clamps are lightweight and chemical resistant.

Single Snap-Grip Clamps— Have a single row of interlocking teeth. They're made of glass-filled nylon 6/6, which has very good corrosion resistance. Temperature range is –25° to +275° F.

Double Snap-Grip Clamps— Have two rows of interlocking teeth for extra gripping strength. They're made of nylon 6/6, which has excellent corrosion resistance and is UV stable. Material meets ASTM D149, D150, and D257. Temperature range is –40° to +302° F.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	Band Wd.	Pkg. Qty.		Per Pkg.
Single Snap-Grip— *White*					
1/4"-5/16"	6.4-7.9	0.13"	20	5246K61	$5.29
23/64"-25/64"	9.1-9.9	0.22"	20	5246K62	5.67
25/64"-15/32"	9.9-11.9	0.22"	20	5246K63	5.83
15/32"-17/32"	11.9-13.5	0.22"	20	5246K64	5.97
17/32"-19/32"	13.5-15.1	0.22"	20	5246K65	6.10
19/32"-21/32"	15.1-16.7	0.22"	20	5246K66	6.13
11/16"-13/16"	17.5-20.6	0.22"	20	5246K67	6.53
3/4"-7/8"	19.1-22.2	0.22"	20	5246K68	7.16
7/8"-1"	22.2-25.4	0.22"	20	5246K69	7.34
61/64"-1 3/32"	24.2-27.8	0.31"	20	5246K71	8.21
1 1/32"-1 3/16"	26.2-30.2	0.31"	20	5246K72	9.11
1 1/4"-1 7/16"	31.8-36.5	0.31"	20	5246K73	9.95
1 13/32"-1 5/8"	35.7-41.3	0.36"	20	5246K74	11.71
2 1/8"-2 3/8"	54-60.3	0.4"	20	5246K78	13.09
Double Snap-Grip— *Black*					
7/32"-1/4"	5.6-6.5	0.17"	20	9579K61	7.33
1/4"-5/16"	6.5-7.9	0.18"	20	9579K62	7.78
5/16"-3/8"	7.9-9.2	0.17"	20	9579K63	7.83
3/8"-13/32"	9.2-10.3	0.18"	20	9579K64	7.97
13/32"-15/32"	10.2-11.8	0.23"	20	9579K65	8.43
15/32"-17/32"	12-13.8	0.24"	20	9579K66	9.08
1/2"-19/32"	13.1-15.1	0.28"	20	9579K67	10.16
19/32"-11/16"	15-17.1	0.28"	20	9579K68	10.35
21/32"-3/4"	16.9-19.1	0.27"	20	9579K69	10.58
23/32"-13/16"	18.1-20.6	0.28"	20	9579K71	10.81
25/32"-29/32"	20.3-23	0.25"	20	9579K72	9.82
7/8"-31/32"	22.2-24.9	0.28"	20	9579K73	9.82
31/32"-1 3/32"	24.5-27.6	0.28"	20	9579K74	9.92
1 1/32"-1 5/32"	26.5-29.5	0.29"	20	9579K75	9.82
1 1/8"-1 9/32"	28.8-32.2	0.35"	10	9579K76	6.99
Double Snap-Grip (Cont.)— *Black*					
1 1/4"-1 3/8"	32-34.8	0.36"	10	9579K77	$7.07
1 11/32"-1 1/2"	34.3-37.9	0.35"	10	9579K78	7.07
1 15/32"-1 19/32"	38-41	0.36"	10	9579K79	7.07
1 9/16"-1 3/4"	40.1-44.2	0.35"	10	9579K81	7.07
1 11/16"-1 13/16"	43.2-46.2	0.35"	10	9579K82	7.63
1 13/16"-1 31/32"	46-50.5	0.35"	10	9579K83	7.22
1 29/32"-2 1/8"	48.5-53.8	0.35"	10	9579K84	7.97
2 3/32"-2 7/32"	53-56.5	0.35"	10	9579K85	8.01
2 5/32"-2 3/8"	55-60.5	0.37"	10	9579K86	8.36
2 5/16"-2 9/16"	59-64.7	0.37"	10	9579K87	11.95
2 19/32"-2 13/16"	65.8-71.7	0.36"	5	9579K88	6.80
2 3/4"-2 31/32"	70-75.4	0.36"	5	9579K89	7.01
2 15/16"-3 3/16"	74.7-80.5	0.36"	5	9579K91	7.21
3 1/8"-3 3/8"	79.8-85	0.35"	5	9579K92	7.62
3 11/32"-3 9/16"	85.1-90.6	0.35"	5	9579K93	7.83
3 27/32"-4"	97.7-102.1	0.34"	5	9579K94	8.07
4 5/32"-4 3/8"	105.3-111.8	0.35"	5	9579K95	8.24

Single Snap-Grip Clamp Assortment

This assortment contains a total of 226 clamps from the single snap-grip clamps listed above. You'll get: 25 each of 5246K61-K64; 15 each of K65-K69; 12 each of K71-K73; 10 each of K74; and 5 each of K78. Comes in a plastic storage box.

5755K61 ..... **Each** $155.74

For information about how to measure hose and tube clamps, see page 274.

Pinch Hose and Tube Clamps

Also known as ear clamps, these clamps install by crimping the pinch point(s) with pinch-clamp pincers (sold separately; see 6541K67 and K69 on page 282). They are for one-time use. Clamps withstand vibration and temperature changes without loosening. Use them to secure hose, tube, coaxial cable, and rope. Clamps meet SAE J1508.

Zinc-plated steel clamps have fair corrosion resistance; ***Type 304 stainless steel*** clamps have very good corrosion resistance.

Single Pinch—Perfect for tight spots, these clamps install quickly because only one side needs to be crimped.

Double Pinch—Accommodate a greater variation in hose diameters than single-pinch clamps, and can be used on thicker walled hose and tube.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Single Pinch

Double Pinch

Clamp ID Range Inch	Clamp ID Range mm	Band Wd.	Zinc-Plated Steel Band Thick.	Zinc-Plated Steel Pkg. Qty.		Zinc-Plated Steel Per Pkg.	Type 304 Stainless Steel Band Thick.	Type 304 Stainless Steel Pkg. Qty.		Type 304 Stainless Steel Per Pkg.
Single Pinch										
21/64″-25/64″	8.3-10.1	9/32″	0.03″	100	**54285K21**	$13.44	0.024″	25	**5435K27**	$4.59
11/32″-13/32″	8.9-10.5	9/32″	0.03″	100	**54285K22**	13.44	0.024″	25	**5435K11**	4.64
3/8″-7/16″	9.7-11.3	9/32″	0.03″	100	**54285K23**	14.14	0.024″	25	**5435K12**	4.73
13/32″-31/64″	10.4-12.3	9/32″	0.03″	100	**54285K24**	14.14	0.024″	25	**5435K28**	4.73
29/64″-17/32″	11.4-13.3	9/32″	0.03″	100	**54285K25**	14.14	0.024″	25	**5435K13**	4.79
1/2″-37/64″	12.6-14.5	9/32″	0.03″	100	**54285K28**	14.26	0.024″	25	**5435K14**	4.87
17/32″-5/8″	13.5-15.7	9/32″	0.03″	100	**54285K29**	14.26	0.024″	25	**5435K15**	4.93
19/32″-43/64″	15.1-17	9/32″	0.03″	100	**54285K32**	14.26	0.024″	25	**5435K16**	5.07
5/8″-47/64″	15.7-18.5	9/32″	0.03″	100	**54285K26**	14.26	0.024″	25	**5435K29**	5.13
43/64″-25/32″	17-19.8	9/32″	0.03″	100	**54285K34**	14.49	0.024″	25	**5435K17**	5.24
23/32″-53/64″	18.2-21	9/32″	0.03″	100	**54285K27**	14.84	0.024″	25	**5435K31**	5.44
25/32″-57/64″	19.8-22.6	9/32″	0.03″	100	**54285K36**	15.06	0.024″	25	**5435K18**	5.52
57/64″-1 1/64″	22.8-25.6	9/32″	0.03″	100	**54285K38**	15.54	0.024″	25	**5435K19**	5.76
15/16″-1 1/16″	24-27.1	9/32″	0.03″	50	**54285K39**	8.34	0.024″	25	**5435K21**	5.86
1″-1 1/8″	25.5-28.6	9/32″	0.03″	25	**54285K41**	4.66	0.024″	25	**5435K22**	5.24
1 1/16″-1 3/16″	27-30.1	9/32″	0.03″	25	**54285K42**	4.81	0.024″	25	**5435K23**	6.09
1 1/8″-1 1/4″	28.5-31.6	9/32″	0.03″	25	**54285K43**	4.90	0.024″	25	**5435K24**	6.21
1 15/64″-1 23/64″	31.5-34.6	9/32″	0.03″	25	**54285K45**	5.10	0.024″	25	**5435K25**	6.48
1 3/8″-1 1/2″	35-38.1	9/32″	0.03″	25	**54285K49**	5.51	0.024″	25	**5435K26**	6.89
Double Pinch										
1/8″-5/32″	3.1-4.1	9/64″	0.02″	25	**6541K31**	7.79	0.02″	25	**54105K31**	8.87
9/64″-13/64″	3.4-5	13/64″	0.028″	25	**6541K33**	7.79	0.02″	25	**54105K33**	8.87
13/64″-9/32″	5-7	15/64″	0.028″	25	**6541K34**	8.17	0.02″	25	**54105K34**	9.23
9/32″-23/64″	7-9	9/32″	0.039″	25	**6541K35**	8.17	0.031″	25	**54105K35**	9.61
5/16″-7/16″	8.1-11	9/32″	0.039″	25	**6541K51**	8.20	0.031″	25	**54105K51**	10.88
27/64″-33/64″	10.8-13	9/32″	0.039″	25	**6541K37**	8.37	0.031″	25	**54105K37**	10.28
31/64″-19/32″	12.5-15	19/64″	0.039″	25	**6541K38**	8.86	0.031″	25	**54105K38**	10.66
19/32″-45/64″	15-18	5/16″	0.047″	25	**6541K39**	8.95	0.031″	25	**54105K39**	12.45
41/64″-25/32″	16.2-20	21/64″	0.047″	25	**6541K41**	9.72	0.039″	25	**54105K41**	13.87
45/64″-55/64″	18-22	23/64″	0.059″	25	**6541K53**	16.24	0.039″	25	**54105K53**	14.19
3/4″-29/32″	19-23	23/64″	0.059″	25	**6541K42**	10.96	0.039″	25	**54105K42**	15.32
53/64″-63/64″	21-25	25/64″	0.059″	25	**6541K54**	19.20	0.039″	10	**54105K54**	9.22
7/8″-1 1/16″	22.5-27	25/64″	0.059″	25	**6541K43**	12.87	0.039″	10	**54105K43**	6.94
15/16″-1 7/64″	24-28	25/64″	0.059″	25	**6541K55**	13.62	0.039″	10	**54105K55**	7.30
1 1/32″-1 7/32″	26.3-31	25/64″	0.059″	25	**6541K56**	14.06	0.039″	10	**54105K56**	7.77
1 5/32″-1 11/32″	29.3-34	25/64″	0.059″	25	**6541K57**	21.36	0.039″	10	**54105K57**	8.59
1 17/64″-1 29/64″	32-37	25/64″	0.059″	25	**6541K58**	15.58	0.039″	10	**54105K58**	8.95
1 3/8″-1 37/64″	35-40	25/64″	0.059″	10	**6541K45**	6.57	0.039″	10	**54105K45**	9.41

Gap-Free Pinch Hose and Tube Clamps

The unique design prevents gaps that can cause leaks. A reinforcing dimple in the ear creates spring-like action that allows these clamps to withstand vibration and temperature changes without loosening. They install by crimping the pinch point with pinch-clamp pincers (sold separately; see 6541K67 and K69 on page 282). Clamps are for one-time use. They're made of Type 304 stainless steel for very good corrosion resistance. Use them to secure hose, tube, coaxial cable, and rope. Clamps meet SAE J1508.

Clamps with Insert—Ideal for soft tube, these clamps have a Type 302 stainless steel insert that bridges the gap created by the ear to ensure complete circumferential sealing.

Clamps with Tongue and Groove—The tongue and groove design creates a smooth, 360° seal to protect hose and tube.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

Tongue and Groove

Clamp ID Range Inch	Clamp ID Range mm	Band Thick.	Pkg. Qty.		Per Pkg.
7/32″ Band Width with Insert					
3/32″-7/64″	2.5-2.9	0.02″	25	**52545K11**	$25.40
7/64″-9/64″	2.9-3.7	0.02″	25	**52545K12**	21.16
9/64″-3/16″	3.7-4.7	0.02″	25	**52545K13**	18.59
3/16″-7/32″	4.7-5.7	0.02″	25	**52545K14**	13.65
13/64″ Band Width with Tongue and Groove					
15/64″-9/32″	5.8-7	0.02″	25	**52545K38**	8.78
9/32″-11/32″	7-8.7	0.02″	25	**52545K26**	8.78
5/16″-3/8″	7.8-9.5	0.02″	25	**52545K42**	8.78
11/32″-13/32″	8.8-10.5	0.02″	25	**52545K27**	8.78
3/8″-7/16″	9.6-11.3	0.02″	25	**52545K45**	8.78
9/32″ Band Width with Tongue and Groove					
27/64″-17/32″	10.8-13.3	0.024″	25	**52545K51**	8.87
29/64″-35/64″	11.5-14	0.024″	25	**52545K52**	8.93
15/32″-37/64″	12.3-14.8	0.024″	25	**52545K53**	9.01
33/64″-5/8″	13.2-15.7	0.024″	25	**52545K54**	9.07
37/64″-43/64″	14.5-17	0.024″	25	**52545K55**	9.13
39/64″-47/64″	15.3-18.5	0.024″	25	**52545K25**	10.32
21/32″-25/32″	16.6-19.8	0.024″	25	**52545K71**	10.31
45/64″-53/64″	17.8-21	0.024″	25	**52545K73**	10.61

Clamp ID Range Inch	Clamp ID Range mm	Band Thick.	Pkg. Qty.		Per Pkg.
9/32″ Band Width with Tongue and Groove (Cont.)					
49/64″-57/64″	19.4-22.6	0.024″	25	**52545K72**	$10.81
53/64″-61/64″	20.9-24.1	0.024″	25	**52545K28**	10.92
7/8″-1 1/64″	22.4-25.6	0.024″	25	**52545K74**	11.07
15/16″-1 1/16″	23.9-27.1	0.024″	25	**52545K75**	11.21
1″-1 1/8″	25.4-28.6	0.024″	25	**52545K76**	11.36
1 1/16″-1 3/16″	26.9-30.1	0.024″	25	**52545K56**	11.54
1 1/8″-1 1/4″	28.4-31.6	0.024″	25	**52545K57**	11.64
1 15/64″-1 23/64″	31.4-34.6	0.024″	25	**52545K58**	11.97
1 3/8″-1 1/2″	34.9-38.1	0.024″	25	**52545K81**	12.37
1 31/64″-1 39/64″	37.8-41	0.024″	25	**52545K83**	12.69
1 35/64″-1 43/64″	39.3-42.5	0.024″	25	**52545K61**	12.84
1 43/64″-1 51/64″	42.3-45.5	0.024″	25	**52545K86**	13.16
1 25/32″-1 29/32″	45.3-48.5	0.024″	25	**52545K29**	13.41
1 29/32″-2 1/32″	48.3-51.5	0.024″	25	**52545K89**	13.77
2 1/64″-2 9/64″	51.3-54.5	0.024″	25	**52545K62**	14.02
2 9/64″-2 17/64″	54.3-57.5	0.024″	25	**52545K31**	14.32
2 3/8″-2 1/2″	60.3-63.5	0.024″	25	**52545K32**	14.87
2 29/32″-3 1/32″	73.8-77	0.024″	25	**52545K34**	15.48

For information about how to measure hose and tube clamps, see page 274.

Pinch Clamp Pincers

Use these steel pincers to simplify the installation of pinch (ear) clamps (shown on page 281).

Straight-jaw pincer must be used perpendicular to the hose. ***Side-jaw pincer*** is good for tight spaces because you can use it parallel or perpendicular to the hose.

	O'all Lg.		Each
Straight-Jaw Pincer	8⅝″	6541K67	$23.26
Side-Jaw Pincer	8⅝″	6541K69	28.42

Constant-Tension Spring-Band Hose and Tube Clamps

The spring-action band provides constant tension—clamps automatically expand and contract with your hose and tube as temperatures fluctuate. These clamps provide more coverage than the spring clamps below to reduce the chance of leaks. They're made of carbon steel with black zinc-plating for fair corrosion resistance. Clamps are for one-time use. They require the use of pliers (sold separately at right) for installation and removal. Clamps meet SAE J1508. Temperature range is –100° to +400° F.

Note: When choosing a clamp, measure the outside diameter of your hose or tube with the fitting installed.

For Hose and Tube OD	Band Wd.	Band Thick.	Pkg. Qty.		Per Pkg.
⅝″	37/64″	0.039″	10	7329K11	$4.13
21/32″	37/64″	0.033″	10	7329K12	3.53
¾″	37/64″	0.051″	10	7329K13	5.87
25/32″	37/64″	0.051″	10	7329K14	5.92
15/16″	37/64″	0.051″	10	7329K15	6.46
1 1/16″	37/64″	0.063″	10	7329K16	7.94
1 21/32″	37/64″	0.075″	10	7329K17	11.89
1 31/32″	37/64″	0.079″	10	7329K18	14.43

Constant Tension Spring Band Hose and Tube Clamp Pliers..... 7329K21 **Each** $36.07

Constant-Tension Spring Hose and Tube Clamps

Our spring clamps automatically expand and contract with your hose and tube in response to fluctuations in temperature. Not as bulky as the constant-tension clamps above, these round-wire clamps are ideal for low-pressure applications. Clamps are for one-time use. They require the use of pliers (sold separately below) for installation and removal. Temperature range is –100° to +400° F.

Zinc-Plated Carbon Steel— Offers fair corrosion resistance. Clamps meet SAE J1508.

17-7 PH Stainless Steel— Offers good corrosion resistance. Clamps are heat treated, so they are stronger than carbon steel to better retain their hold. They meet AISI 631, ASTM 313, and AMS-5678.

Note: When choosing clamps, measure the outside diameter of your hose or tube *without* the fitting installed.

Zinc-Plated Carbon Steel

For Hose OD	Wire Dia.	Color	Pkg. Qty.		Per Pkg.
¼″	0.062″	Green	100	5324K51	$6.51
5/16″	0.062″	Red	100	5324K52	6.75
11/32″	0.062″	Green	100	5324K56	7.86
⅜″	0.082″	Yellow	100	5324K53	8.13
7/16″	0.087″	Green	100	5324K54	9.00
15/32″	0.087″	Yellow	100	5324K57	9.37
½″	0.092″	Red	100	5324K12	9.42
17/32″	0.092″	Green	100	5324K58	11.53
9/16″	0.107″	Yellow	100	5324K13	11.53
19/32″	0.107″	Red	100	5324K59	$11.95
⅝″	0.107″	Green	100	5324K14	10.13
21/32″	0.107″	Yellow	100	5324K15	11.33
11/16″	0.112″	Red	100	5324K17	11.24
¾″	0.112″	Yellow	100	5324K16	12.06
13/16″	0.117″	Green	100	5324K19	12.22
⅞″	0.122″	Red	100	5324K18	13.10
15/16″	0.122″	Yellow	25	5324K22	3.55
1″	0.132″	Green	25	5324K21	3.78
1⅛″	0.152″	Yellow	25	5324K23	$5.88
1¼″	0.152″	Red	25	5324K25	5.59
1⅜″	0.162″	Yellow	25	5324K41	6.73
1½″	0.162″	Yellow	25	5324K43	7.77
1⅝″	0.172″	Yellow	25	5324K45	9.50
1¾″	0.172″	Yellow	25	5324K47	9.70
1⅞″	0.177″	Yellow	25	5324K48	10.93
2″	0.177″	Yellow	25	5324K49	11.23
2⅛″	0.182″	Yellow	10	5324K55	4.96

17-7 PH Stainless Steel

For Hose OD	Wire Dia.	Finish	Pkg. Qty.		Per Pkg.
¼″	0.04″	Bright	100	5324K81	$13.79
5/16″	0.051″	Bright	100	5324K82	14.58
⅜″	0.065″	Bright	50	5324K83	9.52
7/16″	0.075″	Bright	50	5324K84	10.03
½″	0.08″	Bright	50	5324K42	10.30
9/16″	0.092″	Bright	50	5324K85	$14.29
⅝″	0.105″	Bright	25	5324K44	9.65
11/16″	0.105″	Bright	25	5324K61	11.48
¾″	0.105″	Bright	25	5324K46	10.47
13/16″	0.112″	Bright	25	5324K62	13.80
⅞″	0.12″	Bright	25	5324K88	$13.17
15/16″	0.12″	Bright	25	5324K63	6.26
1″	0.12″	Bright	25	5324K91	6.68
1 1/16″	0.13″	Bright	10	5324K64	8.14
1⅛″	0.142″	Bright	10	5324K93	8.93

Spring-Hose-Clamp Pliers

Jaws have grooves that grip the ends of the spring clamps (shown above) to prevent slipping and twisting. Pliers are made of forged steel and are 8 1/16″ long.

5324K97..... **Each** $21.52

Twin-Ring Hose Clamps

A double ring of thick wire provides a 360° seal around large-diameter hose. Clamps are ideal for use on metal hose and are reusable. They're made of zinc-plated steel, which offers fair corrosion resistance. The clamps with ***¼″ wire diameter*** install with a 9/16″ socket wrench; use an 11/16″ socket wrench on clamps with ***5/16″ wire diameter***. Torque is 720 in.-lbs. Clamps are not rated for temperature.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

Clamp ID Range Inch	Clamp ID Range mm	O'all Wd.		Each
¼″ Wire Diameter				
2 3/32″-2 9/32″	52.8-57.9	1¼″	4483K11	$6.50
2 11/32″-2 17/32″	59.2-64.3	1¼″	4483K12	6.62
2 19/32″-2 25/32″	65.5-70.6	1¼″	4483K13	7.00
2 27/32″-3 1/32″	71.9-77	1¼″	4483K14	7.19
3 3/32″-3 9/32″	78.2-83.3	1¼″	4483K15	7.27
3 19/32″-3 25/32″	90.9-96	1¼″	4483K16	7.54
5/16″ Wire Diameter				
4 3/32″-4 9/32″	103.6-108.7	1½″	4483K17	$7.83
4 19/32″-4 25/32″	116.3-121.4	1½″	4483K18	7.99
5 3/32″-5 9/32″	129-134.1	1½″	4483K19	8.21
5 19/32″-5 25/32″	141.7-146.8	1½″	4483K21	8.54
6 3/32″-6 9/32″	154.4-159.5	1½″	4483K22	8.82
7 3/32″-7 9/32″	179.8-184.9	1½″	4483K23	11.78
8 3/32″-8 9/32″	205.2-210.3	1½″	4483K24	12.39

For information about how to measure hose and tube clamps, see page 274.

Low-Profile Hose Clamps

Also known as center-punch clamps, these clamps require a tool for installation (sold separately below) and a hammer blow to the buckle. Unlike worm-drive clamps and bolt clamps, these clamps have a low profile with no protruding parts, plus they are stronger because the band is double wrapped. They're easier to install than the Extra-Strength Low-Profile Clamps on this page. Clamps are for one-time use. Use them to secure hose, tube, coaxial cable, and rope.

Galvanized Carbon Steel Band with Type 201 Stainless Steel Buckle— Band has fair corrosion resistance; buckle has good corrosion resistance. Temperature range is –100° to +300° F.

Type 201 Stainless Steel Band and Buckle— Have good corrosion resistance. Temperature range is –100° to +500° F.

Ratchet-Action Installation Tools— Each tool allows you to tighten 3/8″ and 5/8″ wide clamps then break off the excess band. All are made of steel. The *light duty tool* has a punch lever on each end and a ratchet handle. The *medium duty tool* is longer than the light duty tool for increased leverage to tighten the clamp. The *heavy duty tool* has the most leverage and has a ball handle that makes it easier to ratchet.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

ⓘ For instructions on how to use the installation tools, go to mcmaster.com and search for **5657KAC**.

Clamp ID Range Inch	Clamp ID Range mm	Band Width	Band Thick.	Galv. Carbon Steel Band w/Type 201 SS Buckle Pkg. Qty.		Per Pkg.	Type 201 Stainless Steel w/Type 201 SS Buckle Pkg. Qty.		Per Pkg.
5/8″-13/16″	15.9-20	3/8″	0.025″	24	**5655K11**	$14.13	12	**5655K31**	$14.27
5/8″-1 3/8″	15.9-35	3/8″	0.025″	12	**5655K12**	9.52	8	**5655K32**	11.49
3/4″-1″	19.1-25	5/8″	0.025″	12	**5655K13**	9.33	8	**5655K33**	14.76
3/4″-1 1/4″	19.1-32	5/8″	0.025″	12	**5655K14**	10.22	8	**5655K34**	15.02
3/4″-1 1/2″	19.1-38	5/8″	0.025″	12	**5655K15**	8.90	8	**5655K35**	15.35
3/4″-1 3/4″	19.1-44	5/8″	0.025″	12	**5655K16**	11.22	8	**5655K36**	14.09
3/4″-2″	19.1-51	5/8″	0.025″	12	**5655K17**	11.33	8	**5655K37**	14.29
3/4″-2 1/4″	19.1-57	5/8″	0.025″	12	**5655K18**	11.85	8	**5655K38**	15.15
3/4″-2 1/2″	19.1-63	5/8″	0.025″	12	**5655K19**	12.08	4	**5655K39**	8.75
3/4″-2 3/4″	19.1-70	5/8″	0.025″	12	**5655K21**	12.58	4	**5655K41**	11.73
3/4″-3″	19.1-76	5/8″	0.025″	12	**5655K22**	12.90	4	**5655K42**	12.65
3/4″-3 1/2″	19.1-89	5/8″	0.025″	12	**5655K23**	13.47	4	**5655K43**	10.44
3/4″-4″	19.1-101	5/8″	0.025″	12	**5655K24**	14.40	4	**5655K44**	12.78
3/4″-4 1/2″	19.1-114	5/8″	0.025″	12	**5655K25**	14.88	4	**5655K45**	14.09
3/4″-5″	19.1-127	5/8″	0.025″	12	**5655K26**	14.72	4	**5655K46**	14.73
3/4″-6″	19.1-152	5/8″	0.025″	8	**5655K27**	14.58	4	**5655K47**	15.35
3/4″-6 1/2″	19.1-165	5/8″	0.025″	8	**5655K52**	14.87	2	**5655K51**	9.49
3/4″-7″	19.1-178	5/8″	0.025″	8	**5655K28**	15.68	2	**5655K48**	9.51
3/4″-8″	19.1-203	5/8″	0.025″	4	**5655K29**	9.87	2	**5655K49**	11.15

Ratchet-Action Installation Tools

Lg. × Wd. × Ht.		Each
Light Duty		
10″ × 2″ × 1″	**5657K21**	$63.75
Medium Duty		
11″ × 1 1/2″ × 1 1/2″	**5604K53**	118.53
Heavy Duty		
11″ × 4″ × 4″	**5657K42**	201.72

Extra-Strength Low-Profile Hose Clamps

Ratchet-Handle Installation Tool

Wing-Handle Installation Tool

The end of the band curls back into the buckle—this small feature gives these clamps up to 25% more strength than the other low-profile clamps on this page. Also known as JS-style clamps, these clamps require the use of an installation tool (sold separately below) to install. Unlike worm-drive clamps and bolt clamps, these have a low profile with no protruding parts, plus they have a smooth inside to prevent damage to the hose. Clamps are for one-time use. They meet SAE J1508.

Galvanized Steel Band with Type 201 Stainless Steel Buckle— Band has fair corrosion resistance; buckle has good corrosion resistance. Temperature range is –100° to +300° F.

Type 201 Stainless Steel Band and Buckle— Have good corrosion resistance. Temperature range is –100° to +500° F.

Type 316 Stainless Steel Band and Buckle— Have excellent corrosion resistance. Temperature range is –100° to +600° F.

Installation Tools— Made of zinc-plated carbon steel.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

ⓘ For instructions on how to install these clamps using the installation tool, go to mcmaster.com and search for **5423KAC**.

Clamp ID Range Inch	Clamp ID Range mm	Band Wd.	Band Thick.	Galv. Steel Band w/Type 201 SS Buckle Pkg. Qty.		Per Pkg.	Type 201 SS Band and Buckle Pkg. Qty.		Per Pkg.	Type 316 SS Band and Buckle	Each
1/2″-13/16″	12.7-20	1/4″	0.020″	—	—	—	8	**5423K91**	$9.80	—	—
1/2″-1 3/8″	12.7-35	1/4″	0.020″	—	—	—	8	**5423K93**	10.67	—	—
5/8″-13/16″	15.9-20	3/8″	0.025″	12	**5423K21**	$11.48	8	**5423K11**	13.24	**5423K51**	$3.07
5/8″-1″	15.9-25	3/8″	0.025″	12	**5423K22**	12.80	8	**5423K12**	12.44	—	—
5/8″-1 3/8″	15.9-35	3/8″	0.025″	12	**5423K84**	12.32	8	**5423K74**	13.16	**5423K54**	3.36
5/8″-2″	15.9-50	3/8″	0.025″	12	**5423K23**	13.30	8	**5423K13**	14.09	**5423K69**	3.90
3/4″-1″	19.1-25	1/2″	0.030″	12	**5423K82**	11.75	8	**5423K72**	14.29	**5423K52**	4.47
3/4″-1 1/4″	19.1-32	1/2″	0.030″	12	**5423K83**	11.75	4	**5423K73**	8.65	**5423K53**	4.74
1 1/4″-1 1/2″	32-38	5/8″	0.030″	12	**5423K25**	14.00	4	**5423K15**	9.80	**5423K55**	5.72
1 1/4″-1 3/4″	32-44	5/8″	0.030″	12	**5423K26**	14.32	4	**5423K16**	10.53	**5423K56**	6.41
1 1/4″-2″	32-51	5/8″	0.030″	12	**5423K27**	14.67	4	**5423K17**	11.64	**5423K57**	7.02
1 1/4″-2 1/4″	32-57	5/8″	0.030″	12	**5423K28**	14.97	4	**5423K18**	12.78	**5423K58**	7.46
1 1/4″-2 1/2″	32-63	5/8″	0.030″	12	**5423K29**	15.52	4	**5423K19**	13.42	**5423K59**	7.97
1 3/4″-2 3/4″	44-70	3/4″	0.030″	8	**5423K41**	14.97	4	**5423K31**	14.49	**5423K61**	9.69
1 3/4″-3″	44-76	3/4″	0.030″	8	**5423K42**	15.67	4	**5423K32**	15.71	**5423K62**	10.21
1 3/4″-3 1/2″	44-89	3/4″	0.030″	4	**5423K43**	13.82	4	**5423K33**	16.75	**5423K63**	10.86
1 3/4″-4″	44-101	3/4″	0.030″	4	**5423K44**	13.97	2	**5423K34**	11.33	**5423K64**	13.08
1 3/4″-4 1/2″	44-114	3/4″	0.030″	4	**5423K45**	9.83	2	**5423K35**	12.16	**5423K65**	13.90
1 3/4″-5″	44-127	3/4″	0.030″	4	**5423K46**	11.38	2	**5423K36**	13.16	**5423K66**	14.45
1 3/4″-6″	44-152	3/4″	0.030″	4	**5423K47**	15.47	2	**5423K37**	15.13	**5423K67**	17.43
1 3/4″-7″	44-178	3/4″	0.030″	4	**5423K48**	15.34	2	**5423K38**	18.20	—	—

Ratchet-Handle Installation Tool (for 1/4″-3/8″ band width)	**5424K3**	**Each**	$150.02
Wing-Handle Installation Tool	**5423K87**	**Each**	$235.04

For information about how to measure hose and tube clamps, see page 274.

Low-Profile Hose Banding and Buckles

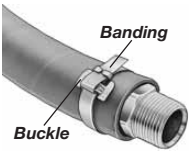

Create your own low-profile hose and tube clamps—all you need is a roll of banding, a package of buckles, and an installation tool (all sold separately). Ideal for both permanent connections and emergency repairs, use this banding with buckles to secure cable, signs, and all kinds of irregular shapes.

The breaking strength listed is the maximum tension that can be applied to the banding. For an extra-strong clamp, wrap the banding around twice, threading it through the buckle each time.

Banding—Furnished in a dispenser carton, this banding has smooth, rounded edges to protect your hose from cuts.

Ear-style buckles have teeth and ears for strong, reliable clamping. For one-time use.

Clip-style buckles (marked with a ★) are for one-time use.

Set-screw-style buckles are made of Type 301 stainless steel for very good corrosion resistance, except the buckles for 5/8″ and 3/4″ band widths are Type 201 stainless steel for good corrosion resistance. Secure buckles by tightening the set screw with the included Allen wrench. They are reusable.

Galvanized Carbon Steel Banding and Buckles—Have fair corrosion resistance. Temp. range is –100° to +500° F.

Type 201 Stainless Steel Banding and Buckles—Have good corrosion resistance. Temperature range is –100° to +500° F.

Type 304 Stainless Steel Banding and Type 316 Stainless Steel Buckles—Banding has very good corrosion resistance; buckles have excellent corrosion resistance. Temperature range is –200° to +1300° F.

Type 316 Stainless Steel Banding and Buckles—Have excellent corrosion resistance. Temperature range is –100° to +500° F.

Also Available: Black polyester-coated Type 201 stainless steel banding, which has excellent abrasion and UV resistance. Please ask for 5422K1 and specify 1/2″ or 3/4″ band width and 25-ft. or 100-ft. length.

			BANDING				BUCKLES							
			25-ft. Rolls		100-ft. Rolls		Ear Style				Set-Screw Style			
Band Width	Band Thick.	Breaking Strength, lbs.		Per Roll		Per Roll	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
Galvanized Carbon Steel Banding and Buckles															
3/8″	0.025″	700	5422K48	$23.03	5422K15	$37.84	25	5422K63	$12.84	100	5422K24	$29.60	5	5453K34	$11.06
1/2″	0.03″	1125	5422K49	23.54	5422K16	49.06	10	5422K64	7.33	100	5422K25	38.30	5	5453K31	12.04
5/8″	0.03″	1405	5422K51	26.68	5422K17	60.52	10	5422K65	10.46	100	5422K26	45.68	5	5453K35	13.60
3/4″	0.03″	1690	5422K52	30.02	5422K18	71.70	5	5422K66	9.25	100	5422K27	53.94	5	5453K32	15.66
Type 201 Stainless Steel Banding and Buckles															
1/4″	0.02″	500	5422K53	25.98	5422K42	47.16	10	5422K67★	6.30	100	5422K43★	32.50	5	5453K33	11.05
3/8″	0.025″	900	5422K54	26.52	5422K11	59.16	10	5422K68	6.76	100	5422K19	38.11	5	5453K34	11.06
1/2″	0.03″	1500	5422K55	33.34	5422K12	83.06	10	5422K69	9.00	100	5422K21	51.58	5	5453K31	12.04
5/8″	0.03″	1875	5422K56	34.00	5422K13	99.74	10	5422K71	12.60	100	5422K22	62.53	5	5453K35	13.60
3/4″	0.03″	2250	5422K57	36.67	5422K14	124.00	10	5422K72	14.52	100	5422K23	77.87	5	5453K32	15.66
3/4″	0.044″	3300	5658K41	91.64	5658K11	188.43	5	5658K44	12.46	25	5658K31	45.18	5	5453K32	15.66
1″	0.044″	4400	5658K42	109.97	5658K12	219.51	5	5658K45	15.85	25	5658K32	58.48	—	—	—
1 1/4″	0.044″	5500	5658K43	115.81	5658K13	270.04	2	5658K46	5.83	25	5658K33	75.48	—	—	—
Type 304 Stainless Steel Banding and Type 316 Stainless Steel Buckles															
3/8″	0.02″	600	5358K11	28.29	5358K21	78.93	5	5422K73	10.12	100	5422K33	100.84	5	5453K34	11.06
1/2″	0.02″	850	5358K12	44.02	5358K22	105.07	5	5422K74	12.93	100	5422K34	132.07	5	5453K31	12.04
5/8″	0.02″	1000	5358K13	49.36	5358K23	130.53	5	5422K75	15.69	100	5422K35	168.44	5	5453K35	13.60
3/4″	0.02″	1275	5358K14	55.76	5358K24	153.93	2	5422K76	8.33	100	5422K36	207.58	5	5453K32	15.66
Type 316 Stainless Steel Banding and Buckles															
1/4″	0.02″	400	5422K77	38.87	5422K83	122.72	5	5422K78★	8.31	100	5422K84★	87.71	5	5453K33	11.05
3/8″	0.025″	750	5422K58	57.99	5422K28	144.64	5	5422K73	10.12	100	5422K33	100.84	5	5453K34	11.06
1/2″	0.03″	1200	5422K59	67.37	5422K29	186.29	5	5422K74	12.93	100	5422K34	132.07	5	5453K31	12.04
5/8″	0.03″	1500	5422K61	78.49	5422K31	236.13	5	5422K75	15.69	100	5422K35	168.44	5	5453K35	13.60
3/4″	0.03″	1800	5422K62	90.62	5422K32	278.69	2	5422K76	8.33	100	5422K36	207.58	5	5453K32	15.66

★ Clip-style buckle.

Hose Banding Installation Tools

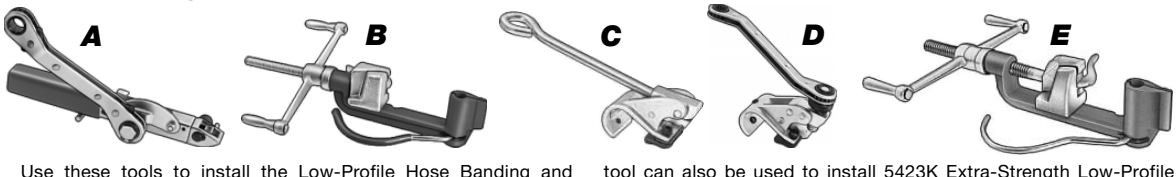

Use these tools to install the Low-Profile Hose Banding and Buckles on this page.

A Ratchet-Handle Tool—Made of zinc-plated carbon steel with a vinyl-coated handle, this tool uses ratchet action to tighten the band. You can also use this tool with the 3/8″ wide 5423K Extra-Strength Low-Profile Hose Clamps on page 283.

B Wing-Handle Tool—Made of forged steel with a blue epoxy finish. It comes with a built-in cutter and tension handle, as well as a tension nut that can be used instead of the handle in confined spaces. This tool can also be used to install 5423K Extra-Strength Low-Profile Hose Clamps (on page 283) with the addition of an adapter (sold separately below; see Styles C and D).

C&D Adapters—Made of zinc-plated carbon steel, these adapters fit over the Wing-Handle Tool so you can install 5423K Extra-Strength Low-Profile Hose Clamps (sold on page 283). The *handle-cut adapter* cuts the banding when you press down the handle. The *screw-cut adapter* cuts the banding when you turn a screw with the included ratchet handle.

E Vise-Mount Tool—Made of zinc-plated carbon steel.

ⓘ For information about how to use these tools, go to mcmaster.com and search for **5424KAC**.

	Banding Tools	For Band Width	For Band Thickness	Lg.	Pull Strength		Each
A	Ratchet Handle Tool	1/4″-3/8″	0.020″-0.025″	8″	—	5424K3	$150.02
B	Wing Handle Tool	1/4″-3/4″	0.015″-0.030″	10 5/8″	2250 psi	5424K1	134.47
C	Handle Cut Adapter	—	—	9″	—	5424K4	155.09
D	Screw Cut Adapter	—	—	9 1/2″	—	5424K5	203.71
E	Vise Mount Tool	3/4″-1 1/4″	0.044″	16 1/2″	6000 psi	5658K51	643.57

For information about how to measure hose and tube clamps, see page 274.

Wide-Range Band Clamps

One clamp fits a wide range of diameters, so you can always have the right size clamp on hand. Clamps are for one-time use. The screw tightens with a slotted screwdriver, 5/16″ socket wrench, or 5/16″ hex nutdriver. Torque is 20 in.-lbs. Temperature range is –40° to +375° F. Not recommended for use with silicone rubber hose and heavy wire-reinforced hose.

Galvanized Steel Solid Band— Offering fair corrosion resistance, the band is galvanized carbon steel; the buckle and screw are zinc-plated steel. Clamps lock with a screw on the banding.

Stainless Steel Slotted Band— Offering very good corrosion resistance, the band and buckle are Type 301 stainless steel; the screw is zinc-plated Type 305 stainless steel. Clamps lock with a screw on the banding and a notch in the slot. Clamps meet SAE J1508 and Fed. Spec. WW-C-440B, plus they are Uniform Plumbing Code listed.

Galvanized Steel

Stainless Steel

Clamp ID Range Inch	Clamp ID Range mm	Band Wd.	Band Thick.		Each
Galvanized Steel Solid Band					
1″-3½″	25-89	½″	0.017″	**5420K1**	$1.21
1″-4½″	25-114	½″	0.017″	**5420K3**	1.35
1″-5″	25-127	½″	0.017″	**5420K4**	1.59
1″-7″	25-178	½″	0.017″	**5420K2**	1.77
1″-9″	25-229	½″	0.017″	**5420K5**	2.03
1″-14½″	25-368	½″	0.017″	**5420K8**	2.78
Type 301 Stainless Steel Slotted Band					
11/16″-2⅝″	17-67	½″	0.015″	**5323K14**	2.56
1¾″-5″	44-127	½″	0.015″	**5323K16**	4.06
4″-7¼″	102-184	½″	0.015″	**5323K18**	4.25

Reusable Polypropylene Banding

A great choice for both temporary and long-term clamping, this banding is easy to install and can be used over and over again. Use it for packaging applications, attaching flexible duct, and securing insulation to pipe. To install, cut the banding to your desired length with a utility knife and thread it through the buckle (sold separately). Polypropylene has excellent corrosion resistance; it is also lightweight, UV resistant, and chemical resistant. Temperature range is –30° to +200° F.

Banding is ½″ wide and 0.05″ thick. It has interlocking ridges on the top for secure holding and a smooth back to reduce the chance of damage to hose. The breaking strength is 190 lbs; the breaking strength is the maximum tension that can be applied to the banding.

Tightening/cutting tool is made of Type 304 stainless steel with rubber handles.

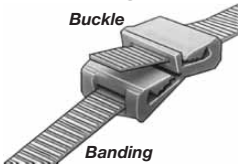

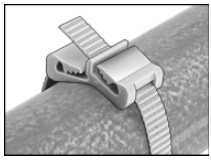

Color	Banding Roll Lg.		Per Roll	Buckles Pkg. Qty.		Per Pkg.
White	100 ft.	**5188K44**	$12.58	25	**5188K55**	$9.08
Black	100 ft.	**5188K45**	12.59	25	**5188K56**	9.08
Tightening/Cutting Tool		**5188K33**	Each			$55.38

Shrink-to-Fit Plastic Coolant Hose Clamps

Slide these clamps over your coolant hose and heat-shrink them with a heavy duty heat gun (not included; see page 2733). Clamps conform to any shape hose and have a wide sealing area. They never need tightening because when the hose contracts with cold temperatures, the clamps adjust themselves to maintain tension. Use them with coolant hose; however, they are not recommended for use with wire-reinforced coolant hose. Clamps are for one-time use. Meet SAE J1610. Temperature range is –40° to +302° F.

Hose clamp removal tool is made of steel and is spring loaded to quickly cut through the clamp without damaging the hose.

Note: When choosing a clamp, measure the outside diameter of your hose with the fitting installed.

Hose Clamp Removal Tool

ⓘ For detailed installation and removal instructions, go to mcmaster.com and search for **5470KAC**.

Clamp ID Range Inch	Clamp ID Range mm	Band Wd.	Band Thick.		Each
½″-11/16″	12.7-17.5	¾″	0.075″	**5470K11**	$4.42
11/16″-13/16″	17.5-20.6	¾″	0.075″	**5470K12**	4.60
13/16″-15/16″	20.6-23.8	¾″	0.065″	**5470K13**	4.64
15/16″-1 1/16″	23.8-27	1″	0.065″	**5470K14**	4.67
1 1/16″-1 3/16″	27-30.2	1″	0.065″	**5470K15**	4.71
1 3/16″-1½″	30.2-38.1	1″	0.065″	**5470K16**	4.75
1½″-1¾″	38.1-44.5	1¼″	0.065″	**5470K17**	4.79
1¾″-2″	44.5-50.8	1¼″	0.065″	**5470K18**	5.03
2″-2¼″	50.8-57.2	1¼″	0.065″	**5470K19**	5.76
2¼″-2½″	57.2-63.5	1¼″	0.065″	**5470K21**	6.70
2½″-2¾″	63.5-69.9	1½″	0.085″	**5470K22**	9.16
2¾″-3″	69.9-76.2	1½″	0.085″	**5470K23**	9.34
3″-3¼″	76.2-82.6	1½″	0.085″	**5470K24**	9.38
Hose Clamp Removal Tool				**5470K4**	Each $48.17

Smooth Metal Hose Banding

Ridges on one side of this banding serve as a track for the housing to ride upon—this leaves the reverse side smooth with no sharp edge to worry about. Use this banding to make your own 4″ diameter and larger worm-drive clamps. Also use it to clamp pipe, attach signs, and connect tubing. To install, cut the banding to your desired length with wire snips, feed it through the housing (sold separately), and tighten screw with a slotted screwdriver or 9/32″ (7 mm) hex nutdriver. Clamps are reusable.

Banding is 15/32″ wide and 0.031″ thick. The breaking strength listed is the maximum tension that can be applied to the banding.

Zinc-Plated Steel— Has fair corrosion resistance. Temperature range is –22° to +392° F.

Type 430 Stainless Steel— Has good corrosion resistance. Temperature range is –22° to +572° F.

Breaking Strength, lbs.	Banding Roll Lg.		Per Roll	Housings with Screw Pkg. Qty.		Per Pkg.
Zinc-Plated Steel						
382	98½ ft.	**6542K63**	$48.93	20	**6542K73**	$9.51
Type 430 Stainless Steel						
584	98½ ft.	**6542K64**	56.22	10	**6542K74**	7.85

Pipe-Covering Metal Banding

Use this lightweight metal banding for securing pipe coverings as well as for packaging applications. To install, cut the banding to your desired length with wire cutters, feed it through the buckle, and secure with a tensioner (see page 1571 for tensioners). Clamps are for one-time use. Maximum temperature is 300° F.

The breaking strength listed is the maximum tension that can be applied to the banding.

Aluminum— An economical choice for noncorrosive applications. Meets ASTM B209.

Type 304 Stainless Steel— Offers very good corrosion resistance.

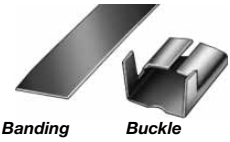

Banding Buckle

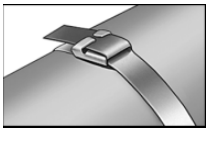

Band Width	Breaking Strength, lbs.	Band Thick.	Banding Roll Lg.		Per Roll	Buckles Pkg. Qty.		Per Pkg.
Aluminum								
½″	200	0.02″	200 ft.	**4582K12**	$20.69	100	**4582K15**	$4.76
¾″	200	0.02″	200 ft.	**4582K13**	25.60	100	**4582K16**	10.50
Type 304 Stainless Steel								
½″	800	0.02″	200 ft.	**4582K22**	74.98	100	**4582K25**	14.72
¾″	800	0.02″	200 ft.	**4582K23**	106.94	50	**4582K26**	9.26

Barbed Hose Fittings

For information about selecting pipe size, see pages 2-3.

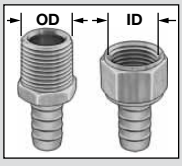

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	6 5/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″

Brass Barbed Hose Fittings

- Maximum Pressure @ 72° F: 250 psi for all, except threaded 90° and 45° elbows are 150 psi
- Temperature Range: –40° to +160° F
- Hose: Use reinforced rubber
- Clamps: Use worm-drive clamps (see pages 274-277) or hose ferrules (see page 290)

Also known as hose nipples, these fittings are made from brass for good corrosion resistance. Use with air and water. Fittings meet SAE J476 and the functional requirements of SAE J512. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Hose-to-Threaded Pipe Connectors— Are barbed on one end and threaded on the other.

Hose-to-Threaded Pipe Easy-Install Connectors— Also barbed on one end and threaded on the other, but these rotate until they are tightened. They're furnished with a Buna-N (nitrile) seal.

Hose-to–45° Flare Threaded Connectors— Let you connect hose to 45° flared tubing. The flared ends have UNF straight threads.

Hose-to-Hose Connectors— Also called hose menders and splicers. Use to repair damaged hose and to connect two pieces of hose.

Also Available: Fittings with BSPT (British Standard Pipe Taper) threads where indicated with a ♦. Please ask for 1075T1 and specify the hose ID and pipe size.

Hose-to-Threaded Pipe Connectors

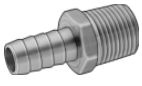
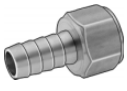

For Hose ID	Pipe Size, NPTF	Adapters, Male Pipe: Pkg. Qty.		Per Pkg.	Adapters, Female Pipe: Pkg. Qty.		Per Pkg.	90° Elbows, Male Pipe: Pkg. Qty.		Per Pkg.
1/8″	1/8″	10	5346K61	$9.62	10	5346K81	$11.82	—	—	—
1/8″	1/4″	10	5346K62	10.55	5	5346K82	8.36	—	—	—
3/16″	1/8″	10	5346K11	9.60	10	5346K39	13.36	—	—	—
3/16″	1/4″	10	5346K12	12.46	5	5346K51	9.22	—	—	—
1/4″	1/8″	10	5346K13 ♦	8.99	10	5346K41	12.27	5	53525K11	$12.34
1/4″	1/4″	10	5346K14 ♦	10.50	10	5346K42	13.05	5	53525K12	14.47
1/4″	3/8″	5	5346K24	8.83	2	5346K52	11.98	2	53525K56	11.76
1/4″	1/2″	5	5346K44	15.79	2	5346K46	7.52	—	—	—
5/16″	1/8″	10	5346K15	11.10	5	5346K33	8.64	5	53525K13	14.24
5/16″	1/4″	10	5346K16	12.86	5	5346K53	9.04	5	53525K14	14.61
5/16″	3/8″	10	5346K26	15.88	1	5346K54	11.38	2	53525K65	11.19
3/8″	1/8″	10	5346K17	12.95	5	5346K34	8.24	5	53525K16	14.51
3/8″	1/4″	10	5346K18 ♦	10.94	5	5346K35	7.44	5	53525K17	9.16
3/8″	3/8″	10	5346K19 ♦	15.16	5	5346K55	8.93	5	53525K18	11.19
3/8″	1/2″	5	5346K21 ♦	14.01	5	5346K56	13.18	2	53525K57	8.36
3/8″	3/4″	2	5346K87	7.52	2	5346K47	13.31	—	—	—
1/2″	1/4″	5	5346K22	8.21	5	5346K37	10.10	2	53525K19	8.28
1/2″	3/8″	5	5346K23 ♦	9.43	5	5346K38	12.45	2	53525K21	9.18
1/2″	1/2″	5	5346K25 ♦	12.56	5	5346K57	14.46	2	53525K58	13.95
1/2″	3/4″	2	5346K88	7.32	2	5346K48	13.31	—	—	—
5/8″	3/8″	5	5346K65	10.72	2	5346K49	12.68	2	53525K22	6.99
5/8″	1/2″	5	5346K66	14.83	2	5346K59	7.52	2	53525K23	8.02
5/8″	3/4″	2	5346K91	7.38	2	5346K63	13.31	—	—	—
3/4″	1/2″	5	5346K68	16.37	2	5346K64	8.27	—	—	—
3/4″	3/4″	2	5346K28 ♦	8.16	2	5346K58	14.44	—	—	—
1″	3/4″	2	5346K69	10.67	2	5346K89	14.10	—	—	—
1″	1″	2	5346K71 ♦	16.87	1	5346K72	9.20	—	—	—
1 1/4″	3/4″	1	5346K94	10.43	—	—	—	—	—	—
1 1/4″	1″	1	5346K45	9.23	1	5346K67	11.11	—	—	—

90° Elbows, Female Pipe

For Hose ID	Pipe Size, NPTF	Pkg. Qty.		Per Pkg.
1/4″	1/8″	2	5346K121	$7.47
1/4″	1/4″	2	5346K122	9.53
3/8″	1/4″	2	5346K123	9.53
3/8″	3/8″	2	5346K124	13.86
1/2″	1/4″	2	5346K125	9.68
1/2″	3/8″	2	5346K126	14.16
1/2″	1/2″	1	5346K127	14.91
3/4″	3/4″	1	5346K128	25.67

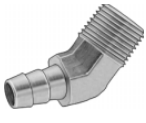

45° Elbows, Male Pipe

For Hose ID	Pipe Size, NPTF	Pkg. Qty.		Per Pkg.
1/4″	1/8″	5	53525K41	$15.98
5/16″	1/8″	5	53525K43	14.82
5/16″	1/4″	1	53525K44	3.30
3/8″	1/8″	5	53525K46	17.16
3/8″	1/4″	5	53525K47	16.80
3/8″	3/8″	2	53525K48	7.85
1/2″	1/4″	2	53525K49	10.91
1/2″	3/8″	2	53525K51	8.49
5/8″	3/8″	2	53525K52	8.90

Hose-to-Threaded Pipe Easy-Install Connectors

For Hose ID	Pipe Size, NPTF	Adapters, Male Pipe: Pkg. Qty.		Per Pkg.	Adapters, Female Pipe: Pkg. Qty.		Per Pkg.
1/4″	1/4″	2	5346K27	$6.82	2	5346K83	$10.10
3/8″	1/4″	2	5346K29	6.88	2	5346K84	10.21
3/8″	3/8″	2	5346K31	7.40	2	5346K85	10.47
1/2″	3/8″	2	5346K32	9.51	2	5346K86	10.79
1/2″	1/2″	2	5346K36	11.14	2	5346K92	12.91
3/4″	3/4″	2	5346K43	15.40	—	—	—

Hose-to–45° Flare Threaded Connectors

Adapters, Male 45° Flare

For Hose ID	Thread Size	Pkg. Qty.		Per Pkg.
3/16″	7/16″-20	5	5346K73	$7.84
1/4″	7/16″-20	5	5346K74	6.96
1/4″	5/8″-18	5	5346K75	8.48
5/16″	1/2″-20	5	5346K76	10.08
3/8″	5/8″-18	5	5346K77	12.10
3/8″	3/4″-16	5	5346K78	12.21
1/2″	3/4″-16	5	5346K79	13.63

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Brass Barbed Hose Fittings *(Continued from previous page)*

Hose-to-Hose Connectors

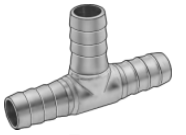

For Hose ID	Couplings Pkg. Qty.		Per Pkg.	90° Elbows Pkg. Qty.		Per Pkg.	Tees Pkg. Qty.		Per Pkg.
1/8"	5	91355K88	$6.51	2	91355K41	$6.82	2	91355K57	$7.89
3/16"	5	91355K81	5.17	5	91355K42	13.57	2	91355K51	6.55
1/4"	5	91355K82	5.21	5	91355K44	11.04	2	91355K47	5.85
5/16"	5	91355K83	6.46	2	91355K43	6.92	2	91355K52	7.42
3/8"	5	91355K84	5.94	2	91355K45	6.78	2	91355K48	7.18
1/2"	5	91355K85	9.40	2	91355K46	8.16	2	91355K49	9.98
5/8"	5	91355K86	11.36	1	91355K55	8.60	1	91355K53	8.00
3/4"	2	91355K87	6.83	1	91355K56	12.02	1	91355K54	10.40

For Hose ID	Reducing Couplings Pkg. Qty.		Per Pkg.	Reducing Elbows Pkg. Qty.		Per Pkg.
1/4"×1/8"	5	91355K31	$8.52	2	91355K21	$6.82
3/8"×1/4"	5	91355K32	9.85	2	91355K22	8.21
1/2"×3/8"	5	91355K33	13.47	2	91355K23	9.82
3/4"×1/2"	2	91355K34	7.89	1	91355K24	10.21

Straight-Thread Brass Barbed Hose Fittings

- Maximum Pressure @ 72° F: 150 psi
- Temperature Range: –20° to +110° F
- Hose: Use reinforced rubber and reinforced plastic
- Clamps: Use worm-drive clamps (see pages 274-277) and hose ferrules (see page 290)

The straight threads combined with an SBR rubber gasket in the female adapters provide a better seal than other fittings with a threaded connection—they're a great choice if you repeatedly connect and disconnect your hose line. The *easy-install adapters* have a nut that rotates until they are tightened. Also known as hose nipples, these fittings are made from brass for good corrosion resistance. Use with air, water, and coolants. Not rated for vacuum. Female NPSM (National Pipe Straight Mechanical) and NPSH (National Pipe Straight Hose) threads are compatible with male NPT threads.

For Hose ID	Pipe Size	Adapters, Male Pipe	Each	Easy-Install Adapters, Female Pipe	Each
NPSM Threads					
1/2"	1/2"	5365K21	$8.58	5365K31	$9.12
5/8"	3/4"	5365K22	6.99	5365K32	11.11
3/4"	3/4"	5365K23	8.03	5365K33	9.12
1"	1"	5365K24	13.97	5365K34	13.96
NPSH Threads					
1"	1"	5365K71	6.01	5365K81	6.67

Bronze Barbed Hose Fittings

- Maximum Pressure @ 72° F: 100 psi
- Temperature Range: 32° to 212° F
- Hose: Use reinforced rubber
- Clamps: Use worm-drive clamps (see pages 274-277) and band clamps (see pages 283-285)

Also known as hose nipples, these fittings are made from bronze to offer better corrosion resistance than brass. Use with air, water, and salt water. They meet UL 1121 for marine applications and ASTM B584. Not rated for vacuum.

For Hose ID	Pipe Size, NPT	Adapters, Male Pipe	Each	90° Elbows, Male Pipe	Each
1/2"	1/2"	9431K11	$9.29	9431K31	$14.33
5/8"	1/2"	9431K12	9.68	9431K32	14.33
3/4"	3/4"	9431K13	11.22	9431K33	17.82
1"	1"	9431K14	15.86	9431K34	27.48
1 1/8"	1 1/4"	9431K15	28.24	9431K35	39.48
1 1/4"	1 1/4"	9431K16	29.01	9431K36	40.65
1 1/2"	1 1/2"	9431K17	37.54	9431K37	56.90
2"	2"	9431K18	43.21	9431K38	66.47
2 1/2"	2 1/2"	9431K19	70.00	9431K39	102.90
3"	3"	9431K21	112.90	9431K41	117.43
4"	4"	9431K22	125.78	9431K43	296.41

Tight-Seal Straight-Thread Brass Barbed Hose Fittings

- Maximum Pressure @ 72° F: 250 psi
- Temperature Range: –40° to +160° F
- Hose: Use reinforced rubber
- Clamps: Use worm-drive clamps (see pages 274-277) and hose ferrules (see page 290)

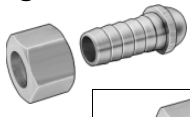
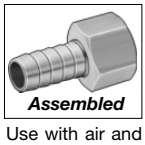
Assembled

Often called ball-seat hose nipples, these two-piece fittings consist of a barbed stem that seats inside a nut for a better seal than fittings with a thread-to-thread connection. The nut rotates to make installation easier. Fittings are made from brass for good corrosion resistance. Use with air and water. They meet ANSI B1.20.1, SAE J476, and the functional requirements of SAE J512. Not rated for vacuum. Female NPSM (National Pipe Straight Mechanical) threads are compatible with male NPT threads.

For Hose ID	Pipe Size, NPSM	Pkg. Qty.		Per Pkg.
1/8"	1/8"	5	5440K101	$8.66
3/16"	1/8"	5	5440K102	7.10
3/16"	1/4"	5	5440K103	9.51
1/4"	1/8"	5	5440K104	7.50
1/4"	1/4"	5	5440K105	8.42
1/4"	3/8"	5	5440K106	12.12
5/16"	1/4"	5	5440K107	9.53
5/16"	3/8"	5	5440K108	12.01
3/8"	1/4"	5	5440K109	8.56
3/8"	3/8"	5	5440K111	11.59
3/8"	1/2"	2	5440K112	6.71
1/2"	3/8"	5	5440K113	14.32
1/2"	1/2"	2	5440K114	7.10
3/4"	3/4"	2	5440K115	10.70

Straight-Thread Aluminum Barbed Hose Fittings

- Max. Pressure @ 72° F: 1 1/2" to 4": 50 psi; 6": 20 psi
- Temperature Range: –20° to +180° F
- Hose: Use reinforced rubber and reinforced plastic
- Clamps: Use bolt clamps (see pgs. 279-280) and band clamps (see pgs. 283-285)

Made from aluminum for good corrosion resistance, these lightweight fittings have straight threads and a neoprene gasket in the female adapters for a better seal than other fittings with a threaded connection. All have lugs for better gripping, unless noted. The *easy-install adapters* have a nut that rotates until they are tightened. Use these with air, water, and oil. Not rated for vacuum. Female NPSM (National Pipe Straight Mechanical) threads are compatible with male NPT threads.

For Hose ID	Pipe Size, NPSM	Adapters, Male Pipe	Each	Easy-Install Adapters, Female Pipe	Each
1 1/2"	1 1/2"	5185K71★	$2.80	5185K41	$4.15
2"	2"	5185K72★	3.91	5185K42	5.74
2 1/2"	2 1/2"	5185K73	6.98	5185K43	11.01
3"	3"	5185K74	8.89	5185K44	13.48
4"	4"	5185K75	14.89	5185K45	23.40
6"	6"	5185K76	31.55	5185K46	50.68

★ Does not include lug.

Barbed Hose Fittings

For information about selecting pipe size, see pages 2-3.

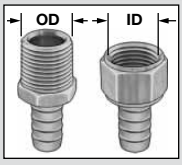

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	5 5/8″	6 5/8″	8 5/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	5″	6″	8″

Type 316 Stainless Steel Barbed Hose Fittings

- Max. Pressure @ 72° F: 300 psi
- Temp. Range: –40° to +200° F
- Hose: Use reinforced plastic
- Clamps: Use band clamps (see pages 283-285)

Made from Type 316 stainless steel for excellent corrosion resistance. Use with air, water, oil, gasoline, and coolants. Not rated for vacuum.

Hose-to-Threaded Pipe Connectors— Also known as hose nipples, they're barbed on one end and threaded on the other.

Hose-to-Hose Connectors— Also called hose menders and splicers, use these to connect two pieces of hose.

Hose-to-Threaded Pipe Connectors **Hose-to-Hose Connectors**

Adapters, Male Pipe

For Hose ID	Pipe Size, NPT		Each	For Hose ID	Pipe Size, NPT		Each
1/8″	1/8″	53505K61	$18.89	1/2″	3/8″	53505K72	$13.49
1/8″	1/4″	53505K62	18.39	1/2″	1/2″	53505K73	21.82
1/4″	1/8″	53505K63	10.24	1/2″	3/4″	53505K74	28.50
1/4″	1/4″	53505K64	13.39	5/8″	1/2″	53505K75	27.09
1/4″	3/8″	53505K65	16.06	3/4″	1/2″	53505K76	23.76
1/4″	1/2″	53505K66	21.43	3/4″	3/4″	53505K77	31.83
3/8″	1/4″	53505K67	14.44	3/4″	1″	53505K78	56.79
3/8″	3/8″	53505K68	13.98	1″	3/4″	53505K79	34.62
3/8″	1/2″	53505K69	21.43	1″	1″	53505K81	54.46
1/2″	1/4″	53505K71	13.62				

90° Elbows, Male Pipe

For Hose ID	Pipe Size, NPT		Each
1/4″	1/8″	53505K41	$35.35
1/4″	1/4″	53505K42	39.73
3/8″	1/4″	53505K43	41.02
3/8″	3/8″	53505K44	47.07
3/8″	1/2″	53505K45	69.06
1/2″	3/8″	53505K46	47.32
1/2″	1/2″	53505K47	70.85
1/2″	3/4″	53505K88	82.00
3/4″	3/4″	53505K89	80.94
1″	1″	53505K91	123.54

Couplings

For Hose ID		Each
1/4″ × 1/8″	53505K32	$41.42
1/4″ × 1/4″	53505K33	40.23
3/8″ × 1/4″	53505K34	45.56
3/8″ × 3/8″	53505K35	43.78
3/8″ × 1/2″	53505K36	54.43
1/2″ × 1/2″	53505K37	52.20
1/2″ × 3/4″	53505K92	62.30
3/4″ × 3/4″	53505K93	60.70
1″ × 3/4″	53505K94	73.48

Barbed Hose Fittings

- Max. Pressure @ 72° F: 150 psi
- Temp. Range: –40° to +350° F
- Hose: Use reinforced rubber and reinforced plastic
- Clamps: Use worm-drive clamps (see pages 274-277) and band clamps (see pages 283-285)

Use these barbed hose fittings with air, water, and oil.

Hose-to-Threaded Pipe Connectors— Also called hose nipples. They're barbed on one end and threaded on the other. Vacuum rating is 29″ Hg @ 72° F.

Hose-to-Hose Connectors— Also called hose menders and splicers, use these to repair damaged hose and to connect two pieces of hose. Not rated for vacuum.

Thick-wall adapters have thicker walls and more barbs than the standard-wall adapters.

Zinc-plated steel has fair corrosion resistance. ***Aluminum*** is lightweight with good corrosion resistance. ***Type 304 stainless steel*** offers very good corrosion resistance.

Hose-to-Threaded Pipe Connectors

For Hose ID	Pipe Size, NPT	***STANDARD-WALL ADAPTERS, MALE PIPE*** Zinc-Plated Steel	Each	Aluminum	Each	Type 304 SS	Each	***THICK-WALL ADAPTERS, MALE PIPE*** Zinc-Plated Steel	Each	Aluminum	Each	Type 304 SS	Each
1/4″	1/8″	5350K31	$1.83	5357K31	$2.90	5361K31	$8.30	5350K11	$2.12	5357K11	$4.14	5361K11	$9.54
1/4″	1/4″	5350K32	2.01	5357K32	3.28	5361K32	9.02	5350K12	2.23	5357K12	4.38	5361K12	10.04
1/4″	3/8″	5350K33	2.14	5357K33	3.68	5361K33	9.92	5350K22	2.40	5357K13	4.90	5361K13	11.10
5/16″	1/4″	5350K34	2.00	5357K34	3.28	5361K34	7.08	5350K25	2.27	5357K14	4.44	5361K14	10.40
3/8″	1/8″	5350K35	1.80	5357K35	2.96	5361K35	6.84	5350K26	2.48	5357K15	5.17	5361K15	11.50
3/8″	1/4″	5350K36	1.98	5357K36	3.28	5361K36	7.08	5350K13	2.61	5357K16	5.43	5361K16	12.08
3/8″	3/8″	5350K37	2.14	5357K37	3.68	5361K37	7.92	5350K14	2.61	5357K17	5.43	5361K17	12.08
3/8″	1/2″	5350K59	2.77	5357K38	4.94	5361K38	11.13	5350K56	3.38	5357K18	7.41	5361K18	15.66
1/2″	1/4″	5350K79	1.93	5357K39	3.28	5361K39	7.08	5350K65	3.34	5357K19	7.27	5361K19	12.82
1/2″	3/8″	5350K81	2.12	5357K41	3.68	5361K41	7.92	5350K66	3.34	5357K21	7.27	5361K21	12.82
1/2″	1/2″	5350K82	2.78	5357K42	4.99	5361K42	10.58	5350K67	3.54	5357K22	7.84	5361K22	13.64
1/2″	3/4″	5350K43	3.53	5357K43	6.55	5361K43	16.44	5350K24	4.58	5357K23	9.68	5361K23	21.30
3/4″	1/2″	5350K44	3.11	5357K44	5.70	5361K44	12.18	5350K18	5.14	5357K24	10.86	5361K24	20.62
3/4″	3/4″	5350K45	4.06	5357K45	7.50	5361K45	16.24	5350K19	5.14	5357K25	10.86	5361K25	20.62
3/4″	1″	5350K48	6.06	5357K46	10.53	5361K46	26.40	5350K28	7.11	5357K26	15.16	5361K26	33.04
1″	3/4″	5350K46	4.05	5357K47	7.59	5361K47	16.24	5350K27	6.82	5357K27	14.21	5361K27	27.42
1″	1″	5350K47	5.66	5357K48	10.53	5361K48	23.84	5350K21	7.22	5357K28	15.16	5361K28	28.98

THICK-WALL ADAPTERS, FEMALE PIPE

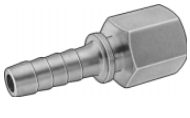

For Hose ID	Pipe Size, NPT	Zinc-Plated Steel	Each	Aluminum	Each	Type 304 SS	Each
1/4″	1/8″	5350K71	$2.76	5357K51	$5.04	5361K51	$12.38
1/4″	1/4″	5350K72	3.02	5357K52	5.60	5361K52	13.44
3/8″	1/4″	5350K73	3.25	5357K53	6.20	5361K53	14.48
3/8″	3/8″	5350K74	3.70	5357K54	7.61	5361K54	17.00
3/8″	1/2″	5350K75	4.93	5357K55	9.87	5361K55	22.52
1/2″	3/8″	5350K76	3.85	5357K56	7.93	5361K56	14.60
1/2″	1/2″	5350K77	5.13	5357K57	10.33	5361K57	23.54
3/4″	1/2″	5350K78	5.69	5357K58	11.50	5361K58	22.24
3/4″	3/4″	5350K83	7.58	5357K59	15.34	5361K59	34.98

(Continued on following page)

Barbed Hose Fittings *(Continued from previous page)*

Hose-to-Hose Connectors

COUPLINGS

For Hose ID	Zinc-Plated Steel	Each	Aluminum	Each	Type 304 Stainless Steel	Each
1/4"	5351K11	$7.51	5357K71	$8.98	5361K71	$20.84
3/8"	5351K12	3.26	5357K72	4.24	5361K72	7.34
1/2"	5351K13	3.57	5357K73	4.74	5361K73	8.32
5/8"	5351K16	5.31	5357K74	7.08	5361K74	13.10
3/4"	5351K14	5.97	5357K75	8.30	5361K75	15.12
1"	5351K15	7.51	5357K76	10.46	5361K76	20.02
1 1/4"	5351K17	10.14	5357K77	14.19	5361K77	27.46

Easy-Fit Barbed Hose Fittings

- Maximum Pressure @ 72° F: 1/2" to 4": 125 psi; 5" to 8": 100 psi
- Temperature Range: –20° to +200° F
- Hose: Use reinforced rubber
- Clamps: Use worm drive clamps (see pgs. 274-277), T-bolt clamps (see pg. 279), and band clamps see pgs. 283-285)

With low-profile barbs and a longer first barb, you'll get a smoother connection and a better grip than with other fittings. All meet ANSI/ASME B1.20.1. Vacuum rating is 26" Hg @ 72° F. Use with air and water.

Hose-to-Threaded Pipe Connectors— Also known as hose nipples. They're barbed on one end and threaded on the other.

Hose-to-Hose Connectors— Also called hose menders and splicers, use these to repair damaged hose and to connect two pieces of hose.

Steel has poor corrosion resistance. Meets ASTM A53. ***Zinc-plated steel*** has fair corrosion resistance. Meets ASTM A53. ***Aluminum*** is lightweight with good corrosion resistance. Meets ASTM B241. ***Brass*** has good corrosion resistance. Meets ASTM B43. ***Type 316 stainless steel*** offers excellent corrosion resistance. Meets ASTM A312.

Hose-to-Threaded Pipe Connectors

Hex Body

ADAPTERS, MALE PIPE

For Hose ID	Pipe Size, NPT	Body Shape	Steel	Each	Zinc-Plated Steel	Each	Aluminum	Each	Brass	Each	Type 316 Stainless Steel	Each
1/2"	1/2"	Hex	5363K51	$2.35	5363K41	$2.54	—	—	—	—	—	—
1/2"	1/2"	Round	—	—	—	—	5363K21	$10.27	5363K11	$8.59	5363K71	$13.28
3/4"	3/4"	Hex	5363K52	2.41	5363K42	2.62	5363K22	9.75	5363K12	12.31	5363K72	11.62
1"	1"	Hex	5363K53	2.94	5363K43	3.33	5363K23	9.75	5363K13	12.41	5363K73	13.33
1 1/4"	1 1/4"	Hex	5363K54	3.80	5363K44	3.95	5363K24	10.83	5363K14	15.72	5363K74	16.23
1 1/2"	1 1/2"	Hex	5363K55	4.25	5363K45	4.66	5363K25	11.05	5363K15	17.63	5363K75	18.33
2"	2"	Round	5363K56	5.54	5363K46	6.51	5363K26	13.31	5363K16	25.22	5363K76	26.31
2 1/2"	2 1/2"	Round	5363K57	12.62	5363K47	13.27	5363K27	33.40	5363K17	44.25	5363K77	54.56
3"	3"	Round	5363K58	14.54	5363K48	16.24	5363K28	32.47	5363K18	60.51	5363K78	74.41
4"	4"	Round	5363K59	22.91	5363K49	25.05	5363K29	51.96	5363K19	124.02	5363K79	93.76
5"	5"	Round	5363K61	49.79	5363K91	53.38	5363K31	88.40	—	—	5363K81	202.65
6"	6"	Round	5363K62	56.72	5363K92	60.83	5363K32	99.34	—	—	5363K82	211.05
8"	8"	Round	5363K63	97.06	5363K93	112.92	—	—	—	—	5363K83	337.71

EXPANDERS

For Hose ID	Pipe Size, NPT	Body Shape	Steel	Each	Zinc-Plated Steel	Each
3/4"	1"	Round	53555K21	$7.31	53555K31	$7.13
1"	1 1/4"	Round	53555K22	9.62	53555K32	9.36
1 1/4"	1 1/2"	Round	53555K23	8.69	53555K33	8.52
1 1/2"	2"	Round	53555K24	10.64	53555K34	10.71
2"	2 1/2"	Round	53555K25	20.21	53555K35	20.76
2 1/2"	3"	Round	53555K26	24.36	53555K36	24.63
3"	4"	Round	53555K27	49.48	53555K37	49.45

REDUCING COUPLINGS

For Hose ID	Pipe Size, NPT	Body Shape	Steel	Each	Zinc-Plated Steel	Each
1"	3/4"	Round	53555K41	$4.54	53555K51	$4.57
1 1/4"	1"	Round	53555K42	5.73	53555K52	5.78
1 1/2"	1 1/4"	Round	53555K43	6.13	53555K53	6.07
2"	1 1/2"	Round	53555K44	11.43	53555K54	11.79
2 1/2"	2"	Round	53555K45	18.26	53555K55	18.04
3"	2 1/2"	Round	53555K46	22.43	53555K56	22.45
4"	3"	Round	53555K47	46.05	53555K57	49.11

Hose-to-Hose Connectors

COUPLINGS

For Hose ID	Body Shape	Steel	Each	Zinc-Plated Steel	Each	Brass	Each	Type 316 Stainless Steel	Each
1/2"	Round	53605K51	$3.04	53605K61	$3.14	—	—	—	—
3/4"	Round	53605K52	3.22	53605K62	3.31	53605K41	$8.40	53605K31	$30.75
1"	Round	53605K53	3.46	53605K63	3.54	53605K42	8.64	53605K32	34.25
1 1/4"	Round	53605K11	5.42	53605K64	5.44	53605K43	14.66	53605K33	38.25
1 1/2"	Round	53605K12	5.30	53605K65	5.35	53605K44	23.79	53605K34	44.92
2"	Round	53605K13	7.01	53605K66	7.02	53605K45	26.19	53605K35	45.55
3"	Round	53605K15	15.13	53605K67	14.87	—	—	53605K36	87.27
4"	Round	53605K16	25.59	53605K68	25.85	—	—	53605K37	102.46

Barbed Hose Fittings & Hose Ferrules

For information about selecting pipe size, see pages 2-3.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″

Lightweight Plastic Hose Fittings

- Maximum Pressure: See below
- Temperature Range: See material descriptions
- Hose: Use reinforced rubber and reinforced plastic
- Clamps: Use worm-drive clamps (see pages 274-277) and T-bolt clamps (see page 279)

Light in weight, these plastic fittings are not rated for vacuum.

Hose-to-Threaded Pipe Connectors— Also known as hose nipples, they're barbed on one end and threaded on the other.

Hose-to-Hose Connectors— Also called hose menders and splicers, use these to repair damaged hose and to connect two pieces of hose.

Glass-reinforced yellow nylon has good chemical resistance. Use with water and ethylene glycol. Temperature range is –30° to +200° F.

Glass-reinforced black polypropylene has very good chemical resistance. Use with water, mineral oil, and citric acid. Temperature range is 10° to 150° F.

FDA-compliant white polypropylene is for use with food and beverage. Temperature range is 10° to 180° F.

White PVDF has the best resistance to chemicals. Use with water, salt water, mineral oil, and acids such as citric, phosphoric, and nitric. Temperature range is –20° to +300° F.

Hose-to-Threaded Pipe Connectors

ADAPTERS, MALE PIPE

For Hose ID	Pipe Size, NPT	Glass-Reinforced Yellow Nylon Max. psi @ 70° F		Each	Glass-Reinforced Black Polypropylene Max. psi @ 70° F		Each	FDA-Compliant White Polypropylene Max. psi @ 70° F		Each	White PVDF Max. psi @ 70° F		Each
1/2″	1/2″	175	5218K85	$1.84	125	5218K35	$1.20	125	5218K45	$2.30	125	5218K13	$20.32
3/4″	3/4″	175	5218K86	2.03	125	5218K36	1.33	125	5218K46	2.61	125	5218K14	20.32
1″	1″	175	5218K87	2.27	125	5218K37	1.59	125	5218K47	2.83	125	5218K15	21.78
1 1/4″	1 1/4″	150	5218K18	2.71	100	5218K38	1.78	—	—	—	100	5218K16	21.23
1 1/2″	1 1/2″	150	5218K29	2.96	100	5218K39	2.18	100	5218K49	3.17	100	5218K17	21.23
2″	2″	150	5218K31	4.50	100	5218K41	2.67	100	5218K51	5.64	100	5218K19	30.03
3″	3″	100	5218K12	6.99	75	5218K42	6.28	50	5218K11	6.14	50	5218K21	50.25

Hose-to-Threaded Pipe Connectors

90° ELBOWS, MALE PIPE

For Hose ID	Pipe Size, NPT	Glass-Reinforced Yellow Nylon Max. psi @ 70° F		Each	Glass-Reinforced Black Polypropylene Max. psi @ 70° F		Each
3/4″	3/4″	175	5218K81	$4.18	125	5218K76	$4.18
1 1/2″	1 1/2″	150	5218K82	4.88	125	5218K77	4.88
2″	2″	150	5218K83	7.16	125	5218K78	7.16

Hose-to-Hose Connectors

COUPLINGS

For Hose ID	Max. psi @ 70° F	Glass-Reinforced Black Polypropylene	Each
1 1/2″	150	5218K65	$2.22
2″	150	5218K66	2.80

Hose Ferrules

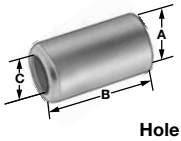

Use ferrules to create or repair a permanent connection between your hose and a barbed hose fitting. You will need a hose crimper (sold separately on page 291) for installation. Ferrules are for use with air and water hose.

Brass and ***aluminum*** have good corrosion resistance. Choose a ferrule with an ID no more than 0.025″ larger than your hose OD with the fitting installed; also make sure the ferrule is at least as long as the barb end of your fitting.

Type 304 stainless steel offers very good corrosion resistance. Choose a ferrule with an ID no more than 0.031″ larger than the hose OD with the fitting installed.

ID (A)	Lg. (B)	Hole Size (C)	Pkg. Qty.		Per Pkg.
Brass					
0.275″	0.500″	0.217″	50	5349K39	$5.97
0.380″	0.718″	0.266″	50	5349K41	7.16
0.450″	0.500″	0.266″	50	5349K42	7.60
0.500″	0.500″	0.328″	50	5349K43	8.33
0.500″	1.000″	0.344″	25	5349K44	7.49
0.525″	1.000″	0.375″	25	5349K45	7.70
0.550″	0.550″	0.406″	50	5349K46	8.47
0.593″	1.000″	0.438″	50	5349K47	16.30
0.625″	0.550″	0.453″	50	5349K48	10.50
0.625″	1.000″	0.453″	25	5349K49	8.56
0.656″	1.000″	0.438″	25	5349K51	9.10
0.675″	0.516″	0.500″	25	5349K52	6.03
0.687″	1.000″	0.500″	25	5349K53	9.67
Brass (Cont.)					
0.718″	1.000″	0.625″	25	5349K54	$9.93
0.750″	0.531″	0.500″	50	5349K55	10.77
0.750″	1.000″	0.625″	25	5349K56	10.00
0.781″	1.000″	0.625″	25	5349K57	10.90
0.812″	1.000″	0.625″	25	5349K58	11.44
0.875″	0.844″	0.688″	25	5349K59	10.39
0.975″	0.844″	0.688″	25	5349K61	12.66
1.150″	0.844″	0.875″	25	5349K62	13.20
1.375″	0.875″	1.125″	10	5349K63	7.10
Aluminum					
0.375″	0.718″	0.266″	50	6703K11	6.81
0.450″	0.500″	0.265″	50	6703K12	7.02
0.500″	0.500″	0.328″	50	6703K13	7.03
Aluminum (Cont.)					
0.550″	0.550″	0.406″	50	6703K16	$8.92
0.625″	0.550″	0.453″	50	6703K18	7.69
0.625″	0.968″	0.453″	50	6703K19	10.17
0.675″	0.500″	0.500″	50	6703K22	8.19
0.750″	0.550″	0.500″	50	6703K25	8.04
Type 304 Stainless Steel					
0.560″	1.000″	0.437″	5	9256T31	3.96
0.625″	1.000″	0.437″	5	9256T32	4.12
0.656″	1.000″	0.437″	5	9256T33	5.02
0.690″	1.000″	0.500″	5	9256T34	5.06
0.750″	1.000″	0.625″	5	9256T35	5.22
1.175″	0.844″	0.875″	5	9256T36	6.06

For information about selecting pipe size, see pages 2-3.

Clamp-Free Hose Fittings

- Maximum Pressure @ 72° F: 250 psi
- Temperature Range: –40° to +160° F
- Hose: Use reinforced rubber
- Clamps: Not required

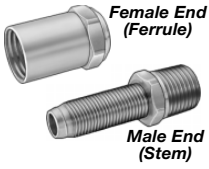

Also called reusable hose fittings, you can use these fittings over and over again without the need for clamps or crimping tools. Use with air and water. Not rated for vacuum.

You'll need a female end (ferrule) and a male end (stem) with the same hose ID to make a connection. Simply twist the female end onto your hose, then lubricate the male end and thread it into the female end.

Brass fittings have good corrosion resistance. They meet SAE J476 and J512. Connections are NPTF (Dryseal), which are compatible with NPT threads.

Type 303 stainless steel fittings have very good corrosion resistance. Connections are NPT.

For Hose ID	For Hose OD	Pipe Size	Brass Pkg. Qty.	Brass	Brass Per Pkg.	Type 303 SS	Type 303 SS Each
Female End (Ferrule)							
1/4″	1/2″	—	5	6691K11	$8.73	4526K32	$12.97
1/4″	9/16″	—	5	6691K12	9.52	4526K33	12.11
1/4″	5/8″	—	5	6691K41	10.16	4526K21	13.23
5/16″	9/16″	—	2	6691K51	6.35	—	—
5/16″	5/8″	—	5	6691K13	10.56	4526K34	12.54
5/16″	11/16″	—	2	6691K42	6.39	—	—
3/8″	5/8″	—	5	6691K14	11.38	4526K35	12.54
3/8″	11/16″	—	5	6691K15	12.75	4526K37	12.54
3/8″	3/4″	—	5	6691K16	11.82	4526K38	12.54
1/2″	7/8″	—	2	6691K17	10.21	4526K41	18.60
1/2″	15/16″	—	2	6691K18	10.85	4526K43	18.60
1/2″	1″	—	2	6691K19	12.36	—	—
Male End (Stem)							
1/4″	—	1/8″	5	6691K43	12.92	4526K22	11.36
1/4″	—	1/4″	5	6691K21	10.41	4526K45	12.05
1/4″	—	3/8″	2	6691K44	6.93	—	—
5/16″	—	1/4″	5	6691K22	10.56	4526K46	11.16
5/16″	—	3/8″	2	6691K45	8.32	4526K23	14.86
3/8″	—	1/4″	5	6691K23	10.33	4526K47	12.54
3/8″	—	3/8″	5	6691K46	12.53	4526K24	13.23
3/8″	—	1/2″	2	6691K47	10.15	—	—
1/2″	—	1/4″	2	6691K48	10.85	—	—
1/2″	—	3/8″	2	6691K49	9.07	4526K25	15.81
1/2″	—	1/2″	2	6691K24	8.69	4526K48	18.73

Hose Crimpers

Use with ferrules on pg. 290 to secure barbed fittings onto your hose.

Hammer-Operated Crimper

Use a hammer strike or a vise to crimp 7/16″, 9/16″, and 11/16″ OD air hose. Made of steel, crimper is 9″ Lg. × 1 1/4″ Wd.

5551K13 ..... **Each** $28.61

Hose Crimping Pliers

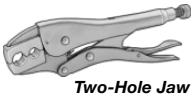
Two-Hole Jaw

As you squeeze the handles, the vise-like jaws lock tightly onto the ferrule for a secure crimp on air hose. All are 1/2″ wide and made of steel with a black finish, except 54215K11 has a nickel-plated finish.

	For Hose OD	Lg.		Each
Two-Hole Jaw	7/16″, 9/16″	9″	54215K11	$27.40
Two-Hole Jaw	5/8″, 11/16″	8 3/4″	54215K22	52.55
Three-Hole Jaw	5/16″, 11/32″, 27/64″	9″	54215K24	56.03

Lever-Operated Crimper with Dies

Furnished with five removable steel dies that crimp 0.484″ to 0.703″ OD air hose (without the fittings installed). Base is cast iron; handle is steel. Crimper is 12″ long and has two 1/8″ dia. mounting holes (fasteners not included).

5531K41 ..... **Each** $246.01

Lever-Operated Crimper and Dies

Individual dies (sold separately) allow you to crimp air and water hose from 0.75″ to 1.375″ OD (without the fittings installed). Base is cast iron; handle is zinc-plated steel. Crimper is 12″ long and has two 1/8″ dia. mounting holes (fasteners not included).

To Order: For dies, please specify size: 0.75″, 0.781″, 0.8125″, 0.875″, 0.906″, 0.938″, 0.969″, 1″, 1.125″, or 1.375″.

		Each
Crimper	7986K1	$206.00
Dies	7986K2	32.08

Swivel Air Hose Fittings

- Maximum Pressure @ 72° F: 150 psi
- Temperature Range: –20° to +200° F
- Hose: Use reinforced rubber
- Clamps: For fittings with a barbed end, use worm-drive clamps (see pages 274-277)

Connect your air hose to portable air tools with these fittings. These fittings are not rated for vacuum.

Threaded Pipe-to-Threaded Pipe Swivel Connectors

90° elbows swivel on one axis to allow your hose to extend horizontally away from the tool. They have an aluminum body; the female threads are aluminum, the male threads are steel.

Double swivels swivel on two axes to allow your hose to extend vertically to the floor regardless of how the tool is held. They have an aluminum body; the female threads are aluminum, the male threads are steel.

Nonmarring double swivels also swivel on two axes, but these will protect delicate surfaces from scratching. For fittings with 1/4″ *female threads*, the female threads are nylon, the male threads are steel; the body on *91095K81* is a composite of glass-filled nylon and polycarbonate, while the body on *91095K91* is polycarbonate. Fittings with 3/8″ *female threads* have a steel body; both the female threads and male threads are zinc-plated steel. The fitting with 1/2″ *female threads* is all aluminum.

Flex connectors flex 45° from center. They're made from steel with a black finish.

Straight connectors are made from brass. Material meets ASTM B16/16M-00.

90° Elbows, Female Pipe × Male Pipe

Pipe Size, NPT Female	Pipe Size, NPT Male		Each
Without Flow Control			
1/4″	1/4″	91095K85	$13.09
3/8″	3/8″	91095K86	25.15
1/2″	1/2″	91095K87	37.30

Double Swivels, Female Pipe × Male Pipe

Pipe Size, NPT Female	Pipe Size, NPT Male		Each
Without Flow Control			
1/4″	1/8″	91095K79	$24.91
1/4″	1/4″	91095K92	27.64
3/8″	3/8″	91095K82	37.40
1/2″	1/2″	91095K83	57.44
3/4″	3/4″	91095K84	95.77
With Flow Control			
1/4″	1/4″	91095K88	38.93

Nonmarring Double Swivels, Female Pipe × Male Pipe

Pipe Size, NPT Female	Pipe Size, NPT Male		Each
Without Flow Control			
1/4″	1/4″	91095K81	$16.31
3/8″	1/4″	91095K93	35.67
3/8″	3/8″	91095K94	35.76
1/2″	1/2″	91095K95	46.88
With Flow Control			
1/4″	1/4″	91095K91	38.63

Flex, Female Pipe × Male Pipe

Pipe Size, NPT Female	Pipe Size, NPT Male		Each
Without Flow Control			
1/4″	1/4″	5302K65	$7.65

Straight, Female Pipe × Male Pipe

Pipe Size, NPT Female	Pipe Size, NPT Male		Each
Without Flow Control			
1/4″	1/4″	4480K11	$4.30
3/8″	3/8″	4480K12	8.90

Hose-to-Threaded Pipe Swivel Connectors

Flex connectors flex 45° from center. They're made from steel with a black finish.

Flex, Barbed × Male Pipe

For Hose ID	Pipe Size, NPT Male		Each
Without Flow Control			
1/4″	1/4″	5302K63	$7.58
3/8″	1/4″	5302K64	7.65

Push-On Hose & Fittings

For information about selecting pipe size, see pages 2-3.

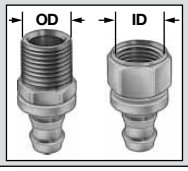

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Hose for Push-On Fittings

- Maximum Pressure @ 72° F: Standard: 200 psi; Choose-a-Color: 250 psi; High-Pressure: 300 psi
- Temperature Range: –20° to +150° F
- Fittings: Use push-on style (see below and pg. 293)

Because of the unique braid-reinforced design, push-on hose doesn't require clamps or ferrules to stay put. In fact, the more you pull on the fitting, the tighter the hose will grip. Not rated for vacuum.

Standard Buna-N/PVC Blend

Use with air and water. Both the tube and cover are Buna-N blended with PVC and reinforced with a textile braid. Hose meets ASTM D2240, D412, and D792. Color is black. **To Order:** Please specify hose length of 5-, 10-, 20-, 25-, 30-, or 50-ft., or any length you choose up to 100 feet.

Hose ID	Hose OD	Bend Radius		Per Ft.
1/4″	1/2″	2 1/2″	5633K21	$1.88
5/16″	9/16″	3 1/8″	5633K22	2.13
3/8″	5/8″	3 3/4″	5633K23	2.43
1/2″	3/4″	5″	5633K24	2.93
5/8″	7/8″	6 1/4″	5633K25	3.66
3/4″	1 1/32″	7 1/2″	5633K26	4.28

Choose-a-Color Buna-N

Use with air, water, and oil. Tube is Buna-N; cover is Buna-N blended with PVC. Hose is reinforced with an Aramid braid. Meets RMA Class A for oil resistance. **To Order:** Please specify hose length of 5-, 10-, 20-, 25-, 30-, or 50-ft., or any length you choose up to 100 feet; also specify color: black, blue, gray, green, red, or yellow.

Hose ID	Hose OD	Bend Radius		Per Ft.
1/4″	1/2″	1 1/2″	5288K11	$1.17
3/8″	5/8″	2 1/4″	5288K12	1.45
1/2″	3/4″	3″	5288K13	1.68
5/8″	29/32″	3 3/4″	5288K34★	2.06
3/4″	1 1/32″	4 1/2″	5288K35★	2.86

★ Color is black.

High-Pressure Buna-N

Use with air, water, oil, and glycol. The tube and cover are Buna-N and reinforced with an Aramid braid. Hose is MSHA (Mine Safety and Health Administration) compliant for flame resistance. Color is black. **To Order:** Please specify hose length of 5-, 10-, 20-, 25-, 30-, or 50-ft., or any length you choose up to 100 feet.

Hose ID	Hose OD	Bend Radius		Per Ft.
1/4″	1/2″	1 1/2″	5283K31	$1.14
3/8″	5/8″	2 1/4″	5283K12	1.39
1/2″	3/4″	3″	5283K13	1.71
5/8″	29/32″	3 3/4″	5283K14	2.46
3/4″	1 1/32″	4 1/2″	5283K15	3.05
1″	1 11/32″	8″	5283K16	5.90

Brass Push-On Hose Fittings

- Maximum Pressure @ 72° F: 350 psi
- Temperature Range: –20° to +150° F
- Hose: Use hose for push-on fittings (see above)
- Clamps: None required

No need for clamps or ferrules—just push these fittings into hose for push-on fittings (sold above) until the yellow plastic ring covers the hose end. Use with air and water. Fittings are made from brass, which has good corrosion resistance. Not rated for vacuum.

Note: These fittings are only for use with the hose for push-on fittings shown above. To ensure proper operation, the hose must be pushed in all the way, with the hose end completely concealed by the ring.

Hose-to-Threaded Pipe Connectors— Also known as hose nipples. They're barbed on one end and threaded on the other. *Easy-install adapters* rotate until they are tightened. NPTF (Dryseal) threads are compatible with NPT threads; female NPSM (National Pipe Straight Mechanical) threads are compatible with male NPT threads.

Hose-to-Threaded Flared Connectors— Connect your hose to flared tubing. *Female adapters* have a dual-angle seat that accepts both 37° JIC and 45° SAE male flared fittings. All have UNF straight threads.

Hose-to-Hose Connectors— Also called hose menders and splicers, use these to repair damaged hose and to connect two pieces of hose.

Hose-to-Threaded Pipe Connectors

Adapters, Male Pipe / **Adapters, Female Pipe**

For Hose ID	Pipe Size, NPTF	Adapters, Male Pipe: Pkg. Qty.		Per Pkg.	Adapters, Female Pipe: Pkg. Qty.		Per Pkg.
1/4″	1/8″	10	91465K11	$11.73	5	91465K311	$9.00
1/4″	1/4″	10	91465K91	14.60	5	91465K951	9.96
1/4″	3/8″	5	91465K12	8.84	1	91465K321	3.34
5/16″	1/8″	10	91465K13	14.93	5	91465K31	10.32
5/16″	1/4″	10	91465K14	15.28	5	91465K32	12.42
3/8″	1/8″	5	91465K15	8.84	5	91465K331	11.43
3/8″	1/4″	5	91465K92	7.68	5	91465K341	11.23
3/8″	3/8″	5	91465K93	9.01	5	91465K961	12.97
3/8″	1/2″	5	91465K161	14.00	2	91465K351	13.68
3/8″	3/4″	2	91465K171	10.25	1	91465K33	7.78
1/2″	1/4″	5	91465K181	11.20	2	91465K361	7.52
1/2″	3/8″	5	91465K191	9.61	2	91465K371	5.85
1/2″	1/2″	5	91465K94	12.74	2	91465K841	7.31
1/2″	3/4″	2	91465K21	9.64	1	91465K381	8.54
5/8″	3/8″	5	91465K22	14.41	2	91465K35	7.95
5/8″	1/2″	5	91465K23	14.68	2	91465K391	13.53
5/8″	3/4″	2	91465K24	8.76	1	91465K411	9.96
3/4″	1/2″	2	91465K25	8.03	2	91465K36	9.40
3/4″	3/4″	2	91465K26	7.94	2	91465K421	13.87
1″	3/4″	1	91465K27	10.42	1	91465K37	9.51
1″	1″	1	91465K28	11.37	1	91465K38	13.80

Easy-Install Adapters, Male Pipe

For Hose ID	Pipe Size	Pkg. Qty.		Per Pkg.
1/4″	1/4″	2	91465K53	$8.03
3/8″	1/4″	2	91465K54	7.95
3/8″	3/8″	2	91465K55	8.85
1/2″	3/8″	2	91465K56	9.87
1/2″	1/2″	2	91465K57	12.59
3/4″	3/4″	1	91465K58	9.21

Easy-Install Adapters, Female Pipe

For Hose ID	Pipe Size, NPSM	Pkg. Qty.		Per Pkg.
1/4″	1/8″	2	53485K11	$7.14
1/4″	1/4″	5	53485K12	14.51
1/4″	3/8″	2	53485K13	8.45
3/8″	1/4″	5	53485K14	15.25
3/8″	3/8″	2	53485K15	8.11
3/8″	1/2″	2	53485K16	8.99
1/2″	1/2″	2	53485K17	9.82
1/2″	3/4″	1	53485K18	9.40
5/8″	3/4″	1	53485K29	9.77
3/4″	3/4″	1	53485K21	8.57

90° Elbows, Male Pipe

For Hose ID	Pipe Size, NPTF	Pkg. Qty.		Per Pkg.	For Hose ID	Pipe Size, NPTF	Pkg. Qty.		Per Pkg.	For Hose ID	Pipe Size, NPTF	Pkg. Qty.		Per Pkg.
1/4″	1/8″	5	91465K61	$13.16	3/8″	3/8″	2	91465K64	$8.03	1/2″	1/2″	2	91465K66	$12.72
1/4″	1/4″	5	91465K62	15.08	1/2″	3/8″	2	91465K65	10.22	3/4″	3/4″	1	91465K67	12.32
3/8″	1/4″	2	91465K63	7.22										

(Continued on following page)

For information about selecting pipe size, see pages 2-3.

Brass Push-On Hose Fittings *(Continued from previous page)*

Hose-to-Threaded Flared Connectors

Adapters, Male 37° Flare

For Hose ID	Flared-End Thread Size	Pkg. Qty.		Per Pkg.
1/4"	7/16"-20	5	53485K71	$11.82
1/4"	9/16"-18	5	53485K72	14.75
3/8"	9/16"-18	2	53485K73	7.62
1/2"	3/4"-16	2	53485K74	7.90
3/4"	11/16"-12	2	53485K75	15.91

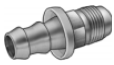

Adapters, Male 45° Flare

For Hose ID	Flared-End Thread Size	Pkg. Qty.		Per Pkg.
1/4"	1/2"-20	5	53485K82	$10.73
1/4"	7/16"-20	5	53485K81	12.75
3/8"	5/8"-18	5	53485K83	15.18
1/2"	3/4"-16	2	53485K84	10.35
3/4"	11/16"-14	1	53485K85	8.39

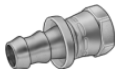

Adapters, Female 37°/45° Flared

For Hose ID	Flared-End Thread Size	Pkg. Qty.		Per Pkg.
1/4"	1/2"-20	5	53485K23	$13.29
1/4"	7/16"-20	5	53485K22	11.80
3/8"	3/4"-16	2	53485K24	7.86
1/2"	3/4"-16	2	53485K25	7.33
1/2"	7/8"-14	2	53485K26	10.15
5/8"	7/8"-14	2	53485K27	11.31

Hose-to-Hose Connectors

Couplings

For Hose ID	Pkg. Qty.		Per Pkg.
1/4"	5	91465K97	$8.75
5/16"	5	91465K43	9.04
3/8"	5	91465K98	$10.40
1/2"	5	91465K51	14.96
5/8"	2	91465K44	$9.43
3/4"	2	91465K52	10.94

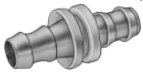

Type 316 Stainless Steel Push-On Hose Fittings

- Maximum Pressure @ 72° F: 350 psi
- Temperature Range: −20° to +150° F
- Hose: Use hose for push-on fittings (see page 292)
- Clamps: None required

You'll get excellent corrosion resistance with these Type 316 stainless steel fittings. They install easily on hose for push-on fittings (sold on pg. 292) without the need for clamps or ferrules—just push them into the hose until the blue plastic ring covers the hose end. Use them with air, water, and coolants. Not rated for vacuum.

Note: These fittings are only for use with the hose for push-on fittings shown on page 292. To ensure proper operation, the hose must be pushed in all the way, with the hose end completely concealed by the ring.

Hose-to-Threaded Pipe Connectors— Also called hose nipples, they're barbed on one end and threaded on the other.

Hose-to-Threaded Flared Connectors— Also known as easy-install fittings, the threaded end rotates until tightened for easy connection to 37° JIC male flared fittings. All have UNF straight threads.

Hose-to-Hose Connectors— Also called hose menders and splicers, use these to repair damaged hose and to connect two pieces of hose.

Hose-to-Threaded Pipe Connectors

Adapters, Male Pipe

For Hose ID	Pipe Size, NPT		Each
1/4"	1/8"	53515K21	$15.06
1/4"	1/4"	53515K22	13.89
3/8"	1/4"	53515K31	20.97
3/8"	3/8"	53515K24	17.02
3/8"	1/2"	53515K32	28.25
1/2"	1/2"	53515K27	25.12
3/4"	3/4"	53515K33	43.96

Hose-to-Threaded Flared Connectors

Adapters, Female 37° Flare

For Hose ID	Flared-End Thread Size		Each
1/4"	7/16"-20	53515K11	$23.16
3/8"	9/16"-18	53515K12	27.03
1/2"	3/4"-16	53515K14	32.49
5/8"	7/8"-14	53515K34	60.10
3/4"	11/16"-12	53515K35	65.78

Hose-to-Hose Connectors

Couplings

For Hose ID		Each
1/4"	53515K41	$16.38
3/8"	53515K42	23.75
1/2"	53515K43	31.53

Nylon Push-On Hose Fittings

- Maximum Pressure @ 72° F: 150 psi
- Temperature Range: 0° to 150° F
- Hose: Use hose for push-on fittings (see page 292)
- Clamps: None required

Hose-to-Threaded Pipe Connectors

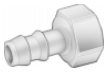

For Hose ID	Pipe Size, NPT	Pkg. Qty.	Adapters, Male Pipe	Per Pkg.	Adapters, Female Pipe	Per Pkg.
1/4"	1/8"	10	5228K21	$5.32		
1/4"	1/4"	10	5228K22	5.48	5228K12	$7.59
1/4"	3/8"	10	5228K23	5.90		
3/8"	1/4"	10	5228K24	5.62	5228K14	9.28
3/8"	3/8"	10	5228K25	5.95	5228K15	9.28
3/8"	1/2"	10	5228K26	6.96		
1/2"	3/8"	10	5228K27	8.50	5228K17	8.36
1/2"	1/2"	10	5228K28	8.50	5228K18	9.70
1/2"	3/4"	10	5228K29	8.19		

Made from white nylon, these lightweight fittings install easily on hose for push-on fittings (sold on page 292) without the need for clamps or ferrules—just push them into the hose until the white nylon ring covers the hose end. They meet FDA CFR21 177.1500 for use with food and beverage. Not for use with compressed air or gas. Not rated for vacuum.

Note: These fittings are only for use with the hose for push-on fittings shown on pg. 292. To ensure proper operation, the hose must be pushed in all the way, with the hose end completely concealed by the ring.

Hose-to-Threaded Pipe Connectors— Also called hose nipples. They're barbed on one end and threaded on the other.

Hose-to-Hose Connectors— Also known as hose menders and splicers, use these to repair damaged hose and to connect two pieces of hose.

Hose-to-Hose Connectors

Couplings

For Hose ID	Pkg. Qty.		Per Pkg.
1/4"	10	5228K31	$4.99
3/8"	10	5228K32	5.41
1/2"	10	5228K33	6.54

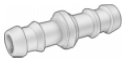

Installation Tool for Push-On Hose Fittings

Installing push-on fittings is a breeze with this tool. Simply use the built-in cutter to squarely cut 1/4"-3/4" push-on style hose without fraying. Then, clamp the hose into the tool's vise and apply light pressure on the handle to drive in the fitting. Tool has four 7/16" mounting holes (fasteners not included). Overall size is 13 1/2" Lg. × 6 7/8" Ht. × 2 3/8" Dp.

53685K11 ..... Each $239.62

Hose Washers & Hydraulic Hose Fittings

For information about selecting pipe size, see pages 2-3.

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Brass Straight-to-Taper Thread Hose Fittings

- Maximum Pressure @ 72° F: 250 psi
- Temperature Range: –40° to +160° F
- Hose: Use rubber, EPDM, and PVC
- Clamps: Not required

Convert your hose with NPSM (National Pipe Straight Mechanical) threads to NPTF (Dryseal) threads. NPTF threads are compatible with NPT threads. Fittings are made from yellow brass for good corrosion resistance. Use with air, water, natural gas, gasoline, oil, and petroleum products. Not rated for vacuum.

Pipe Size, NPSM×NPTF	Adapters, Male Pipe	Each	Adapters, Female Pipe	Each
1/4″	4685T11	$1.30	4685T33	$2.18
3/8″	4685T12	2.08	4685T34	2.35
1/2″	4685T13	2.96	4685T35	2.98

Stainless Steel Swivel Water Hose Fittings

- Maximum Pressure @ 72° F: 3500 psi
- Temperature Range: 38° to 180° F
- Hose: Use hydraulic
- Clamps: Not required

Also called live swivels, these fittings rotate 360° before and after installation—this not only makes installation easier, but also eliminates the twisting that can cause premature hose failure. They're made from Type 416 stainless steel for good corrosion resistance and include a Buna-N (nitrile) seal. Use with water. Not rated for vacuum.

Pipe Size, NPT	Female Pipe × Male Pipe	Each
1/2″	5273K21	$36.48
3/8″	5273K23	36.48

Hose Washers

Red rubber is the most common gasket; use with garden hose couplings. ***Black neoprene*** has good oil resistance. ***Black SBR rubber*** is for use with water; it is not recommended for use with oil.

For Hose ID	Washer OD	Washer ID	Washer Thick.	Pkg. Qty.		Per Pkg.
Red Rubber						
3/4″	1″	5/8″	1/8″	100	5456K8	$3.71
Black Neoprene						
3/4″	1 11/16″	5/8″	1/8″	100	5456K7	8.89
1″	1 5/16″	7/8″	1/8″	100	5456K2	14.44
Black SBR Rubber						
1 1/4″	1 5/8″	1 1/8″	1/8″	25	5456K3	$9.30
1 1/2″	1 15/16″	1 5/16″	1/8″	25	5456K4	11.13
2″	2 7/16″	1 11/16″	1/8″	25	5456K5	13.88
2 1/2″	2 7/8″	2 1/8″	5/32″	10	5456K6	7.10

Hydraulic Hose Fittings

- Maximum Pressure: See below
- Temperature Range: Zinc-Plated Steel: Not Rated Type 316 SS: –425° to +1200° F
- Hose: Use hydraulic
- Clamps: Not required

Fittings rotate 360° until they are tightened—this prevents the hose from kinking to make installation easier, especially in tight spaces. They meet SAE J514. Use with hydraulic oil. Not rated for vacuum. Female NPSM (National Pipe Straight Mechanical) threads are compatible with male NPT threads.

Zinc-plated steel offers fair corrosion resistance. The nonswiveling end has NPTF threads; NPTF threads are compatible with NPT threads.

Type 316 stainless steel offers excellent corrosion resistance. The nonswiveling end has NPT threads.

Pipe Size	Swivel Pipe Size, NPSM	Max. psi @ 72° F	Adapters, Male × Female Swivel	Each	Couplings, Female × Female Swivel	Each	90° Elbows, Male × Female Swivel	Each	90° Elbows, Female × Female Swivel	Each	45° Elbows, Male × Female Swivel	Each
Zinc-Plated Steel												
1/8″	1/8″	5000	5340K11	$1.48	5340K21	$1.67	5340K31	$2.38	—	—	5340K51	$2.68
1/8″	1/4″	5000	5340K61	2.00	5340K71	18.18	5340K5	8.72	—	—	—	—
1/4″	1/4″	4000	5340K16	1.84	5340K26	2.66	5340K68	2.63	—	—	5340K7	7.12
1/4″	3/8″	3000	5340K62	3.54	5340K72	3.12	5340K241	3.60	5340K92	$31.30	—	—
3/8″	1/4″	3000	5340K28	3.48	5340K29	13.35	5340K78	4.98	—	—	5340K77	28.30
3/8″	3/8″	3000	5340K36	2.39	5340K46	2.52	5340K87	2.52	—	—	5340K81	4.18
3/8″	1/2″	3000	5340K64	4.80	5340K1	14.02	5340K243	5.48	—	—	5340K204	3.97
1/2″	3/8″	3000	5340K114	3.14	5340K115	22.98	5340K91	4.92	—	—	5340K89	6.63
1/2″	1/2″	3000	5340K48	2.58	5340K49	3.45	5340K99	4.88	—	—	5340K98	5.30
3/4″	1/2″	2200	5340K56	5.68	5340K2	23.29	5340K112	7.93	—	—	5340K111	5.64
3/4″	3/4″	2250	5340K17	4.65	5340K27	5.43	5340K37	8.27	5340K47	8.08	5340K57	8.23
3/4″	1″	2000	5340K18	9.71	—	—	5340K38	19.97	—	—	—	—
1″	3/4″	2000	5340K59	8.31	5340K4	33.99	5340K6	12.83	—	—	—	—
1″	1″	2000	5340K66	6.62	5340K76	7.50	5340K86	13.93	5340K96	16.16	5340K116	10.78
Type 316 Stainless Steel												
1/8″	1/8″	5000	8704K14	46.85	8704K63	46.84	8704K29	42.50	—	—	—	—
1/4″	1/4″	5000	8704K16	28.64	8704K65	72.45	8704K31	46.74	8704K79	93.61	8704K45	45.37
1/4″	3/8″	4000	8704K17	42.30	—	—	8704K33	59.68	—	—	—	—
3/8″	3/8″	4000	8704K19	29.11	8704K67	57.06	8704K35	59.08	8704K81	69.87	8704K47	60.65
1/2″	3/8″	3500	8704K21	49.74	—	—	8704K37	50.50	—	—	—	—
1/2″	1/2″	3500	8704K23	34.28	8704K69	65.89	8704K39	68.47	8704K83	81.77	8704K48	75.07
3/4″	3/4″	2250	8704K25	41.61	8704K71	80.55	8704K41	95.65	8704K85	61.73	8704K49	101.13
1″	1″	2000	8704K27	91.02	—	—	8704K43	68.93	—	—	8704K51	138.22

Swivel Hydraulic Hose Fittings

- Maximum Pressure: See below
- Temperature Range: –40° to +250° F
- Hose: Use hydraulic
- Clamps: Not required

Also known as live swivels, these fittings rotate 360° before and after installation to not only make installation easier, but also eliminate the twisting that can cause premature hose failure. They're made from zinc-plated steel, which offers fair corrosion resistance, and include a Buna-N (nitrile) seal. Use with hydraulic oil. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Pipe Size, NPTF	Adapters, Male Pipe × Female Pipe: Max. psi @ 72° F		Each	Couplings, Female Pipe: Max. psi @ 72° F		Each	90° Elbows, Male Pipe: Max. psi @ 72° F		Each	90° Elbows, Male Pipe × Female Pipe: Max. psi @ 72° F		Each
1/4″	5000	5381K52	$67.04	5000	5381K62	$67.11	3000	5381K39	$85.00	3000	5381K15	$60.87
3/8″	5000	5381K53	70.58	5000	5381K63	72.09	3000	5381K41	74.69	3000	5381K16	58.11
1/2″	5000	5381K54	79.57	5000	5381K64	72.31	3000	5381K42	76.80	3000	5381K17	49.16
3/4″	5000	5381K55	89.51	5000	5381K57	83.20	3000	5381K43	101.31	3000	5381K18	70.59
1″	5000	5381K58	104.40	5000	5381K61	109.57	—	—	—	—	—	—

Screw-On Hydraulic Hose Fittings and Hose

- Maximum Pressure: See hose below
- Temperature Range: –40° to +212° F
- Hose: Use hose shown below
- Clamps: Not required

Use these two-piece fittings with the hose sold below—fittings thread directly onto the hose without the need for a separate adapter. They're made from zinc-plated steel for fair corrosion resistance. Use with hydraulic oil. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Fittings are only for use with the hose sold below. For installation, you'll need a vise and a wrench. Start by separating the two pieces of the fitting. Secure the socket portion of the fitting in the vise. Lubricate the end of the hose and screw it into the socket counterclockwise until it bottoms out, then back out a ½ turn. Now lubricate the nipple portion of the fitting and screw it into the other end of the socket using a wrench until the hex shoulder is against the socket.

Hose comes in a maximum continuous length of 100 ft. Please order hose in 5-ft. increments.

Also Available: Fittings marked with a ▲ also come in Type 316 stainless steel, which offers excellent corrosion resistance. Please ask for 5333K1 and specify the corresponding part number from the listing below.

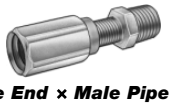

For Hose ID	Hose End × Male Pipe: Pipe Size, NPTF		Each	Hose End × JIC 37° Female Swivel: Thread Size		Each	Hose: Max. psi @ 72° F		Per Ft.
Parker 42 Series Fittings									
1/4″	1/4″	52305K21	$12.35	7/16″-20	52305K51	$13.48	3250	9459K321	$2.80
3/8″	3/8″	52305K23	13.78	9/16″-18	52305K53	15.38	2600	9459K341	2.98
1/2″	1/2″	52305K25	17.32	3/4″-16	52305K55	23.30	2325	9459K361	3.30
3/4″	3/4″	52305K27	31.75	1 1/16″-12	52305K57	40.90	1525	9459K381	5.91
1″	1″	52305K29	57.88	1 5/16″-12	52305K59	68.47	1275	9459K401	7.54
Parker 30 Series Fittings									
1/4″	1/4″	52305K41▲	13.18	7/16″-20	52305K71▲	14.30	5800	8646T11	3.99
3/8″	3/8″	52305K43▲	15.72	9/16″-18	52305K73▲	17.32	4750	8646T12	4.70
1/2″	1/2″	52305K45▲	19.95	3/4″-16	52305K75▲	25.93	4000	8646T13	5.35
3/4″	3/4″	52305K47▲	30.55	1 1/16″-12	52305K77▲	39.70	3100	8646T14	8.71
1″	1″	52305K49▲	55.58	1 5/16″-12	52305K79▲	66.20	2400	8646T15	11.92

Crimp-On Hydraulic Hose Fittings and Hose

- Maximum Pressure: See hose below
- Temperature Range: –40° to +212° F
- Hose: Use hose shown below
- Clamps: Not required

Permanently attach fittings to hose using the swage installation tool (all sold separately). The fittings, pushers, and dies are all made from zinc-plated steel for fair corrosion resistance. Use with hydraulic oil. Vacuum is 28″ Hg @ 72° F.

Fittings are only for use with the hose sold below. NPTF (Dryseal) threads are compatible with NPT threads.

Hose comes in a maximum continuous length of 100 ft. Please order hose in 5-ft. increments.

Swage Installation Tool— Made from aluminum, this tool is 15¾″ Ht. × 5″ Wd. and has two 7/16″ dia. mounting holes (fasteners not included). For operation, you'll need a 1½″ open-end box wrench, plus a pusher and a die that both correspond to the fitting size you want to install.

ⓘ For instructions on how to install these fittings with the swage tool, go to mcmaster.com and search for **5243KAC**.

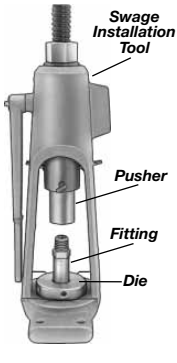

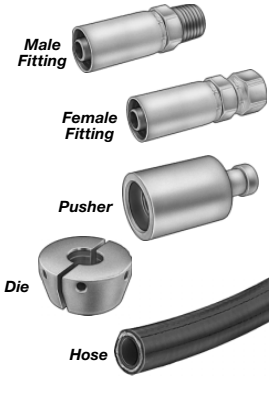

For Hose ID	Pipe Size, NPTF	MALE NPTF FITTINGS: Hose End × Male Pipe	Each	Pushers	Each	FEMALE JIC 37° SWIVEL FITTINGS: Hose End × Female Thread: Thread Size		Each	Pushers	Each	Dies	Each	Hose: Max. psi @ 72° F		Per Ft.
1/4″	1/4″	5243K82	$4.25	5243K61	$41.76	7/16″-20	5243K92	$4.48	5243K72	$48.11	5243K52	$140.76	2750	5201K63	$3.03
5/16″	1/4″	5243K88	5.44	5243K61	41.76	1/2″-20	5243K98	6.80	5243K78	48.48	5243K58	150.50	2500	5201K64	3.96
3/8″	3/8″	5243K83	4.29	5243K62	41.76	9/16″-18	5243K93	5.58	5243K73	48.11	5243K53	140.76	2250	5201K65	3.88
1/2″	1/2″	5243K84	5.32	5243K63	41.76	3/4″-16	5243K94	6.92	5243K74	48.09	5243K54	135.17	2000	5201K66	4.96
3/4″	3/4″	5243K85	11.12	5243K65	43.77	1 1/16″-12	5243K95	13.78	5243K75	50.40	5243K55	135.17	1250	5201K67	9.78

Swage Installation Tool ..... 5243K44 Each $488.07

Hose Couplings

For information about selecting pipe size, see pages 2-3.

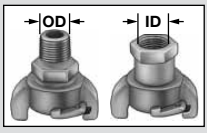

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

High-Pressure Threaded Couplings

- Maximum Pressure @ 72° F: 600 psi
- Temperature Range: –20° to +450° F
- Hose: For steam, use steam hose; for all other media, use rubber hose
- Clamps: Use interlocking clamps (included)

Also known as boss couplings and ground-joint couplings. Made for high-pressure applications, these couplings combine a zinc-plated steel barbed hose fitting with an interlocking clamp. Use with air, water, steam, and oil. Vacuum rating is 30″ Hg @ 72° F. Male NPSM (National Pipe Straight Mechanical) threads are compatible with female NPSM and NPSH (National Pipe Straight Hose) threads; they are not compatible with NPT threads.

Couplings

Couplings include an interlocking clamp, which firmly grips your hose as it locks onto the ring of the barbed fitting. The interlocking clamps are not reusable. Couplings with a *female pipe* connection also have a zinc-plated malleable iron wing nut and a zinc-plated steel hex bushing.

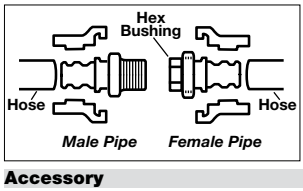

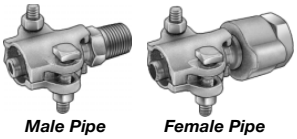

For Hose ID	Clamp Fits Hose OD	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each
1/2″	15/16″-1 1/16″	1/2″	5360K23	$12.02	5360K43	$28.28
1/2″	1 1/16″-1 3/16″	1/2″	5360K26	12.95	5360K41	29.20
3/4″	1 5/32″-1 5/16″	3/4″	5360K27	15.25	5360K42	34.57
3/4″	1 5/16″-1 1/2″	3/4″	5360K24	15.66	5360K44	34.98
1″	1 11/16″-1 15/16″	1″	5360K25	25.53	5360K45	41.75

Accessory

Also called double spuds. Use these to connect two female couplings—just replace the hex bushing from the female coupling with one of these. Made from zinc-plated steel with a polymer seal on both ends.

Hex Nipples, Male Pipe (NPSM) × Male Pipe (NPSM)

For Hose ID		Each
1/2″	5360K51	$24.17
3/4″, 1″	5360K52	24.34

Replacement Parts

Hex bushings are also called female spuds. Made from zinc-plated steel with a polymer seal that grips onto the rounded head of the barbed fitting.

Interlocking clamps consist of two zinc-plated malleable iron halves held together by two zinc-plated steel nuts and bolts. The clamps and bolts are not reusable.

Hex Bushings, Female Pipe (NPT) × Male Pipe (NPSM)

Pipe Size		Each
1/2″	5360K61	$12.55
3/4″	5360K62	10.93
1″	5360K63	11.34

Interlocking Clamps

Clamp Fits Hose OD		Each
15/16″-1 1/16″	5417K61	$6.71
1 1/16″-1 3/16″	5417K62	7.83
1 5/32″-1 5/16″	5417K63	8.42
1 5/16″-1 1/2″	5417K64	8.95
1 11/16″-1 15/16″	5417K65	16.00

Grip-Lock Hose Couplings

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range:
  Zinc-Plated Steel and
  Type 303 SS: –40° to +250° F;
  Brass: –20° to +175° F
- Hose: Use nylon and rubber air hose
- Clamps: Use interlocking clamps (see above)

Also called Bowes couplings, push a plug and a socket together with a quarter turn for a leak-free connection; a spring-loaded locking sleeve prevents accidental disconnection. The grip-lock ends are all 3/4″ diameter and are compatible with Dixon Dix-Lock series and Perfecting N-series couplings.

Couplings include a Buna-N (nitrile) seal. All of the plugs mate with all of the sockets regardless of the pipe size or barb size. Couplings meet the dimensional requirements of MIL-A-A-50431A and MIL-C-3486B. Use with air. NPTF (Dryseal) threads are compatible with NPT threads.

Zinc-plated steel has fair corrosion resistance. Vacuum rating is 22″ Hg @ 72° F.

Brass has good corrosion resistance. Not rated for vacuum.

Type 303 stainless steel has very good corrosion resistance. Vacuum rating is 22″ Hg @ 72° F.

Grip-Lock Plugs

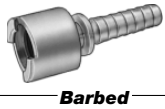

Male Pipe: Pipe Size, NPTF		Each	Female Pipe: Pipe Size, NPTF		Each	Barbed: For Hose ID		Each
Zinc-Plated Steel								
3/8″	5577T21	$10.93	3/8″	5577T41	$10.93	3/8″	5577T61	$10.93
1/2″	5577T22	10.93	1/2″	5577T42	10.93	1/2″	5577T62	10.93
3/4″	5577T23	10.93	3/4″	5577T43	10.93	3/4″	5577T63	10.93
Brass								
3/8″	5280K35	15.30	3/8″	5280K51	15.80	3/8″	5280K19	17.40
1/2″	5280K36	15.30	1/2″	5280K52	15.80	1/2″	5280K21	17.40
3/4″	5280K37	15.30	3/4″	5280K53	15.80	3/4″	5280K22	17.40
Type 303 Stainless Steel								
3/4″	5585T21	27.34	3/4″	5585T41	32.50	3/4″	5585T61	29.04

Grip-Lock Sockets

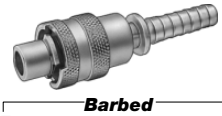

Male Pipe: Pipe Size, NPTF		Each	Female Pipe: Pipe Size, NPTF		Each	Barbed: For Hose ID		Each
Zinc-Plated Steel								
3/8″	5577T11	$13.38	3/8″	5577T31	$13.38	3/8″	5577T51	$14.71
1/2″	5577T12	13.85	1/2″	5577T32	13.28	1/2″	5577T52	14.71
3/4″	5577T13	13.65	3/4″	5577T33	13.68	3/4″	5577T53	14.71
Brass								
3/8″	5280K27	21.40	3/8″	5280K43	20.70	3/8″	5280K12	23.40
1/2″	5280K69	21.40	1/2″	5280K44	20.70	1/2″	5280K13	23.40
3/4″	5280K29	21.40	3/4″	5280K45	20.70	3/4″	5280K14	23.40
Type 303 Stainless Steel								
3/4″	5585T11	48.93	3/4″	5585T31	37.89	3/4″	5585T51	39.68

Replacement Gaskets

Made of Buna-N (nitrile), these gaskets fit all of the grip-lock hose couplings in this presentation. Package quantity is 10.

5280K59 ..... **Per Pkg.** $9.50

Warning! There is no valve in these couplings. Flow should be stopped before disconnecting your hose line. We recommend using a whip check (see page 246) to prevent accidental hose whipping.

For information about selecting pipe size, see pages 2-3.

Double Grip-Lock Hose Couplings

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: –40° to +250° F
- Hose: Use rubber
- Clamps: For couplings with a barbed end, use band clamps (see pgs. 283-285) or hose ferrules (see pg. 290)

Also known as Thor couplings, these couplings have two locking points to give you twice the gripping power of the single grip-lock couplings. Simply push a plug and a socket together with a quarter turn for a leak-free connection. All are compatible with Dixon Dual-Lock series, National A-series, and Perfecting P-series couplings. They are made from zinc-plated steel for fair corrosion resistance; they include a black Buna-N (nitrile) seal. Use with air and water. Vacuum rating is 22″ Hg @ 72° F. NPTF (Dryseal) threads are compatible with NPT threads.

All of the plugs mate with all of the sockets regardless of pipe size or barb size. ***Sockets*** have a spring-loaded locking sleeve that prevents accidental disconnection; both the spring and the sleeve are made of bronze.

Double Grip-Lock Plugs

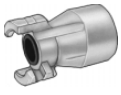

Pipe Size, NPTF	*Male Pipe*	Each	*Female Pipe*	Each
3/8″	6539K66	$9.51	6539K76	$11.21
1/2″	6539K67	9.51	6539K77	11.86
3/4″	6539K68	9.99	6539K78	12.44
1″	6539K69	10.68	6539K79	15.79

Double Grip-Lock Sockets

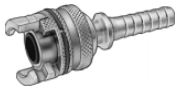

Pipe Size, NPTF	*Male Pipe*	Each	*Female Pipe*	Each	For Hose ID	*Barbed*	Each
3/8″	6539K36	$15.82	—	—	3/8″	6539K56	$17.29
1/2″	6539K37	15.82	6539K47	$19.14	1/2″	6539K57	15.84
3/4″	6539K38	16.71	6539K48	17.85	3/4″	6539K58	16.82
					1″	6539K59	21.65

Accessories

Optional locking rings attach onto the sockets to prevent accidental disconnection. Pkg. qty. is 5.

6539K82 ..... **Per Pkg.** $2.25

Replacement gaskets are made of black Buna-N (nitrile). They fit all of the double grip-lock hose couplings shown above. Package quantity is 10.

6539K83 ..... **Per Pkg.** $7.75

Twist-Claw Hose Couplings

- Maximum Pressure @ 70° F: 150 psi
- Temperature Range: –20° to +160° F
- Hose: Use rubber
- Clamps: For couplings with a barbed end, use band clamps (see pgs. 283-285) or interlocking clamps (see pg. 296)

Also known as universal hose couplings and Chicago couplings, all of these couplings have an identical claw-style head that allows you to connect any two sizes or styles together. Simply push two couplings together with a quarter twist for a leak-free connection. They are compatible with Dixon "Air King" series. Use with air and water. Vacuum rating is 30″ Hg @ 72° F.

Malleable iron has poor corrosion resistance. ***Brass*** has good corrosion resistance. ***Type 316 stainless steel*** has excellent corrosion resistance. All couplings are furnished with a lanyard and safety clip.

Also Available: Spring-loaded locking twist-claw hose couplings that prevent accidental disconnection. Made from ductile iron, they come in male pipe and barbed styles in 1/2″, 3/4″, and 1″ sizes, as well as female pipe style in 1/2″ and 3/4″ sizes. Please ask for 7149K1 and specify the style and size.

Couplings

Pipe Size, NPT	*Male Pipe*	Each	Pipe Size, NPT	*Female Pipe*	Each	For Hose ID	*Barbed*	Each
Malleable Iron								
1/4″	5344K22	$6.42	1/4″	5344K27	$5.78	—	—	—
3/8″	5344K23	5.60	3/8″	5344K28	5.60	3/8″	5344K39	$6.39
1/2″	5344K24	4.92	1/2″	5344K29	5.16	1/2″	5344K41	4.24
3/4″	5344K25	5.04	3/4″	5344K31	4.98	3/4″	5344K42	4.27
1″	5344K26	5.54	1″	5344K32	6.22	1″	5344K43	5.86
Brass								
1/4″	5344K11	15.53	1/4″	5344K16	16.94	—	—	—
3/8″	5344K12	18.83	3/8″	5344K17	16.59	3/8″	5344K34	21.80
1/2″	5344K13	15.65	1/2″	5344K18	13.32	1/2″	5344K35	14.47
3/4″	5344K14	15.47	3/4″	5344K19	15.79	3/4″	5344K36	14.97
1″	5344K15	16.06	1″	5344K21	16.06	1″	5344K37	19.12
Type 316 Stainless Steel								
3/8″	5344K61	48.85	3/8″	5344K65	46.35	3/8″	5344K69	44.64
1/2″	5344K62	33.06	1/2″	5344K66	34.09	1/2″	5344K71	34.09
3/4″	5344K63	29.61	3/4″	5344K67	29.61	3/4″	5344K72	28.70
1″	5344K64	31.70	1″	5344K68	33.21	1″	5344K73	31.70

Accessories

Triple Connector— Allows you to connect one inlet to two outlets. Made of malleable iron with a synthetic rubber gasket.

5344K53 ..... **Each** $13.94

Blank End— Use these like a plug to temporarily close off an outlet. Made of malleable iron with a synthetic rubber gasket. A lanyard and safety clip are included.

5344K51 ..... **Each** $7.84

Replacement Parts

Gaskets— Made of SBR rubber, these gaskets fit all of the 5344K series couplings. Package quantity is 10.

5344K44 ..... **Per Pkg.** $3.42

Safety Clip— Furnished with a lanyard.

5344K81 ..... **Each** $0.49

Large-Diameter Twist-Claw Hose Couplings

- Maximum Pressure @ 72° F: 110 psi
- Temperature Range: –20° to +160° F
- Hose: Use rubber
- Clamps: Not required

Push two couplings together with a quarter twist for a leak-free connection on large-diameter hose. The 1 1/4″ and 1 1/2″ sizes mate interchangeably; the 2″ size only mates with other 2″ couplings. All are made from malleable iron with a black painted finish, which has good corrosion resistance. Each includes a natural rubber gasket and a safety clip. Use with air and water; not recommended for steam service. Not rated for vacuum.

Pipe Size, NPT	*Male Pipe*	Each	*Female Pipe*	Each	*Replacement Gaskets*	Each
1 1/4″	5368K21	$47.84	5368K11	$44.40	5368K18	$16.43
1 1/2″	5368K22	47.84	5368K12	44.40	5368K18	16.43
2″	5368K23	61.21	5368K13	56.90	5368K29	16.43

Warning! There is no valve in these couplings. Flow should be stopped before disconnecting your hose line. We recommend using a whip check (see page 246) to prevent accidental hose whipping.

How to Order Quick-Disconnect Hose Couplings

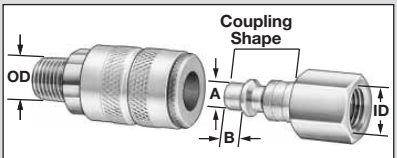

Measure A and B to Determine Coupling Size

1. **Determine the coupling shape.** To make a connection, you'll need a plug and a socket with the same shape; however, the coupling's shape is determined by the plug's end. Compare your plug's end to the illustrations below.
2. **Determine the coupling size.** Coupling size is an industry designation, not the actual measured size. To determine coupling size, measure the "A" and "B" dimensions as shown at left, and match the measurements to those found in the individual presentations for your specific coupling shape.
3. **For threaded connections, determine the pipe size.** Pipe size is an accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD is 1 3/8″ and the corresponding pipe size is 1″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″

Quick-Disconnect Hose Coupling Shape Selection Chart

While many of the quick-disconnect couplings are named after their original manufacturer, they're now made by most coupling manufacturers.

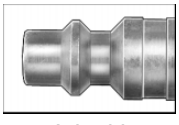
Industrial (Most Popular) Pages 298-301

ARO Page 302

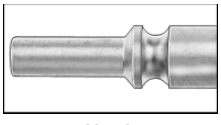
Lincoln Page 302

Tru-Flate Page 303

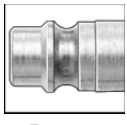
European Page 303

Japanese Page 304

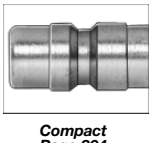
Compact Page 304

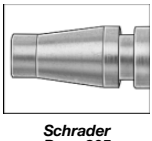
Schrader Page 305

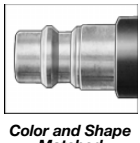
Color and Shape Matched Page 305

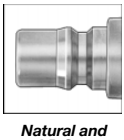
Natural and LP Gas Page 305

High Flow Page 306

High Flow for Coolant Page 306

Plastic Page 307

ISO 16028 Minimal Spill Page 307

High Pressure Minimal Spill Page 307

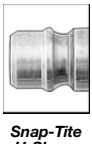
Snap-Tite H-Shape Page 308

ISO Series A Page 309

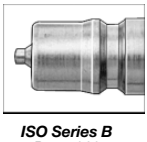
ISO Series B Page 309

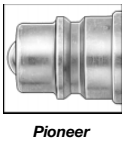
Pioneer Page 310

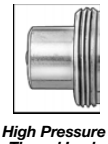
High Pressure Thread Lock Page 310

For a comparison chart that shows actual-size illustrations for all of the quick-disconnect hose couplings we offer, go to mcmaster.com and search for **6534KAC**.

Industrial-Shape Size-Identification Kit

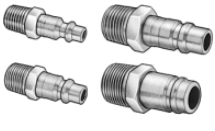

Identifying the couplings around your shop doesn't have to be a hassle. This kit contains the most popular shape of plug (industrial) in four coupling sizes (1/4, 3/8, 1/2, and 3/4), so you can determine the size of your couplings without the need for measuring. The plugs in this kit are made from zinc-plated steel and the size is clearly labeled on each of them.

5597K12 ..... **Each** $11.37

Industrial-Shape Hose Coupling Sets

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: –40° to +250° F
- Hose: Use flexible PVC and rubber

Set includes one plug and one socket. Plug shown has male pipe connection; socket has female pipe connection.

We've paired the most popular plugs and sockets for these convenient sets—simply select the threaded-end configuration that best suits your needs. Also known as industrial exchange couplings, these couplings have a brass socket and a zinc-plated steel sleeve and plug. Use with air. Couplings are single shut-off style, so there is a valve in the socket but not the plug. They meet the dimensional requirements of Fed. Spec. A-A-59439 (formerly MIL-C-4109); the plugs also meet ISO 6150/B and ANSI T3.20.14. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Sockets are sleeve-lock style. To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All have a Buna-N (nitrile) seal.

Pipe Size, NPTF	Male Pipe on Both Ends Per Set	Female Pipe on Both Ends Per Set	Male Pipe Plug × Female Pipe Socket Per Set	Female Pipe Plug × Male Pipe Socket Per Set
Coupling Size: 1/4				
1/4″	**5602K11** $5.99	**5602K14** $6.32	**5602K12** $6.05	**5602K13** $6.26

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

Industrial-Shape Hose Couplings

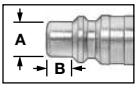

Coupling Size	(A)	(B)
1/4	5/16″	3/16″
3/8	7/16″	5/16″
1/2	9/16″	3/8″
3/4	13/16″	5/16″

- Maximum Pressure @ 72° F: 300 psi for all, except 145 psi for angled swivel plugs
- Temp. Range: –40° to +250° F for all, except +20° to +140° F for angled swivel plugs
- Hose: Use flexible PVC and rubber with all, except *push on* must be used with hose for push-on fittings (see page 292)
- Clamps: For barbed couplings, use worm-drive clamps (see pages 274-277) or hose ferrules (see page 290)

The most popular style of quick-disconnect hose couplings, you may also know these as industrial interchange couplings. Use with air. All industrial-shape plugs are compatible with any of the industrial-shape sockets of the same coupling size, regardless of the pipe or barb size. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. ***Threaded*** couplings with NPTF (Dryseal) threads are compatible with NPT threads. ***Push-on*** couplings must be used with hose for push-on fittings (see page 292). All *1/4* and *1/2 coupling sizes* meet the dimensional requirements of Fed. Spec. A-A-59439 (formerly MIL-C-4109). Not rated for vacuum.

Zinc-plated steel has fair corrosion resistance and high wear resistance. ***Brass*** has good corrosion resistance and low wear resistance.

Plugs

Also known as nipples. All plugs meet ANSI T3.20.14; the 1/4, 3/8, and 1/2 coupling sizes also meet ISO 6150/B.

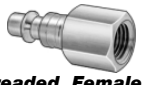
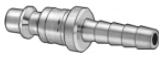

Coupling Size	Threaded, Male Pipe: Pipe Size, NPTF		Each	Threaded, Female Pipe: Pipe Size, NPTF		Each	Barbed: For Hose ID		Each	Push On: For Hose ID		Each
Zinc-Plated Steel												
1/4	1/8″	6534K19	$1.62	1/8″	6534K18	$1.91	—	—	—	—	—	—
1/4	1/4″	6534K46	1.03	1/4″	6534K56	1.21	1/4″	6534K66	$1.94	1/4″	6534K29	$1.97
1/4	3/8″	6534K47	1.44	3/8″	6534K57	2.12	3/8″	6534K67	1.94	3/8″	6534K35	2.29
3/8	1/4″	6534K71	2.41	1/4″	6534K74	3.79	1/4″	6534K77	5.65	1/4″	6534K121	4.25
3/8	3/8″	6534K72	4.00	3/8″	6534K75	4.12	3/8″	6534K78	4.74	3/8″	6534K45	4.76
3/8	1/2″	6534K73	4.15	1/2″	6534K76	4.91	1/2″	6534K79	4.74	1/2″	6534K122	4.70
1/2	3/8″	6534K42	2.85	3/8″	6534K52	3.65	3/8″	6534K62	4.00	3/8″	6534K15	4.00
1/2	1/2″	6534K43	3.47	1/2″	6534K53	3.56	1/2″	6534K63	4.09	1/2″	6534K48	6.32
1/2	3/4″	6534K44	4.15	3/4″	6534K54	5.62	3/4″	6534K64	4.21	3/4″	6534K25	6.31
3/4	3/4″	6534K49	5.16	3/4″	6534K91	6.29	3/4″	6534K97	6.23	3/4″	6534K123	10.00
3/4	1″	6534K61	10.49	1″	6534K92	13.73	1″	6534K98	11.06	1″	6534K124	10.20
Brass												
1/4	1/4″	1077T17	1.26	1/4″	1077T11	1.38	1/4″	1077T25	2.16	1/4″	1077T13	6.37
1/4	3/8″	1077T18	2.19	3/8″	1077T12	2.24	3/8″	1077T26	2.45	3/8″	1077T14	6.67
3/8	3/8″	1077T21	4.31	3/8″	1077T22	4.53	3/8″	1077T27	4.99	3/8″	1077T16	7.00
1/2	1/2″	1077T23	4.01	1/2″	1077T15	3.94	1/2″	1077T29	4.33	1/2″	1077T19	7.14

Sleeve-Lock Sockets

To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All have a zinc-plated steel sleeve and a Buna-N (nitrile) seal.

Coupling Size	Threaded, Male Pipe: Pipe Size, NPTF		Each	Threaded, Female Pipe: Pipe Size, NPTF		Each	Barbed: For Hose ID		Each	Push On: For Hose ID		Each
Brass												
1/4	1/8″	6536K25	$6.30	1/8″	6536K24	$6.30	—	—	—	—	—	—
1/4	1/4″	6536K18	5.05	1/4″	6536K28	5.11	1/4″	6536K38	$6.37	1/4″	6536K11	$7.42
1/4	3/8″	6536K19	5.92	3/8″	6536K29	5.98	3/8″	6536K39	6.37	3/8″	6536K12	7.42
Zinc-Plated Steel												
3/8	1/4″	6536K21	9.80	1/4″	6536K31	9.85	1/4″	6536K61	10.24	1/4″	6536K26	12.37
3/8	3/8″	6536K22	9.55	3/8″	6536K32	9.03	3/8″	6536K62	10.24	3/8″	6536K13	12.78
3/8	1/2″	6536K23	11.04	1/2″	6536K33	11.51	1/2″	6536K63	12.26	1/2″	6536K27	12.88
1/2	3/8″	6536K37	11.20	3/8″	6536K49	11.95	3/8″	6536K71	13.81	3/8″	6536K16	13.71
1/2	1/2″	6536K41	11.12	1/2″	6536K51	11.12	1/2″	6536K72	13.81	1/2″	6536K15	9.80
1/2	3/4″	6536K42	12.65	3/4″	6536K52	12.89	3/4″	6536K73	15.68	—	—	—

Push-to-Connect Sockets

To connect, push plug into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. All have a Buna-N (nitrile) seal.

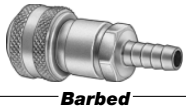

Coupling Size	Threaded, Male Pipe: Pipe Size, NPTF		Each	Threaded, Female Pipe: Pipe Size, NPTF		Each	Barbed: For Hose ID		Each	Push On: For Hose ID		Each
Brass												
1/4	1/8″	6534K28	$9.52	1/8″	6534K21	$11.30	—	—	—	—	—	—
1/4	1/4″	6534K16	6.60	1/4″	6534K26	6.61	1/4″	6534K36	$6.92	1/4″	6534K51	$6.68
1/4	3/8″	6534K17	6.74	3/8″	6534K27	8.27	3/8″	6534K37	6.92	3/8″	6534K55	7.03
3/8	1/4″	6534K81	12.65	1/4″	6534K84	12.96	1/4″	6534K87	14.38	—	—	—
3/8	3/8″	6534K82	12.65	3/8″	6534K85	12.71	3/8″	6534K88	13.85	3/8″	6534K11	14.76
3/8	1/2″	6534K83	13.29	1/2″	6534K86	14.44	1/2″	6534K89	14.38	—	—	—
1/2	3/8″	6534K12	15.02	3/8″	6534K22	17.35	3/8″	6534K32	15.58	—	—	—
1/2	1/2″	6534K13	14.16	1/2″	6534K23	17.03	1/2″	6534K33	15.12	1/2″	6534K99	17.36
1/2	3/4″	6534K14	15.12	3/4″	6534K24	16.92	3/4″	6534K34	14.76	—	—	—
3/4	3/4″	6534K39	24.98	3/4″	6534K95	25.55	3/4″	6534K58	25.67	—	—	—
3/4	1″	6534K41	26.44	1″	6534K65	26.44	1″	6534K59	31.59	—	—	—

(Continued on following page)

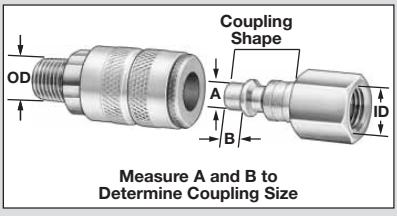

Please Read Before Ordering: To determine the ***shape*** of your coupling, compare the end of your plug to the illustrations shown on page 298. You'll also find an illustration of the plug's shape in each presentation. ***Coupling size*** is an industry designation, not the actual measured size. To determine the actual size of your coupling, measure the "A" and "B" dimensions of the plug, as shown at left.

Pipe size also is an accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16", the next highest OD is 3/4" and the corresponding pipe size is 1/2".

Threaded OD or ID	3/8"	1/2"	5/8"	3/4"
Pipe Size	1/8"	1/4"	3/8"	1/2"

Industrial-Shape Hose Couplings *(Continued from previous page)*

- Maximum Pressure @ 72°F: 300 psi for all, except 145 psi for angled swivel plugs
- Temp. Range: –40° to +250°F for all, except +20° to +140°F for angled swivel plugs
- Hose: Use flexible PVC and rubber

Coupling Size	(A)	(B)
1/4	5/16"	3/16"
3/8	7/16"	5/16"
1/2	9/16"	3/8"
3/4	13/16"	5/16"

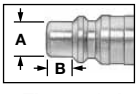

These couplings are single-shut-off style, so there is a valve in the socket but not the plug. Use with air. All *1/4* and *1/2 coupling sizes* meet the dimensional requirements of Fed. Spec. A-A-59439 (formerly MIL-C-4109). Not rated for vacuum.

Zinc- and ***chrome-plated steel*** have fair corrosion resistance and high wear resistance. ***Brass*** has good corrosion resistance and low wear resistance.

Also Available: Aluminum manifolds with quick-disconnect sockets. Please ask for 5595K22 for a round manifold with three sockets; please ask for 5595K21 for an inline manifold with four sockets.

Swivel Plugs

Eliminate hose kinking and unnecessary wrist strain. All plugs meet ISO 6150/B. ***Inline swivel plugs*** have a brass hex nut and a Buna-N (nitrile) seal. They meet ANSI T3.20.14. ***Angled swivel plugs*** allow for a 45° angle that pivots back and forth. They have a PTFE sealant on the threads and a chrome-plated steel dust cover on the rotating joint.

INLINE SWIVEL

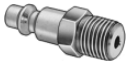

Coupling Size	Pipe Size, NPT	Threaded, Male Pipe	Each
Zinc-Plated Steel Body with Brass Threads			
1/4	1/8"	4342K26	$4.42
1/4	1/4"	4342K27	4.03
1/4	3/8"	4342K24	4.42
3/8	1/4"	4342K25	7.30
3/8	3/8"	4342K28	5.78
1/2	1/2"	4342K29	7.88

ANGLED SWIVEL

Coupling Size	Pipe Size, NPT	Threaded, Male Pipe	Each
Chrome-Plated Steel			
1/4	1/8"	52435K31	$31.08
1/4	1/4"	52435K25	26.92
1/4	3/8"	52435K21	32.23
3/8	1/4"	52435K19	32.17
3/8	3/8"	52435K28	33.29

Plug with British Standard Threads

Plugs are also known as nipples. This plug meets ISO 6150/B. It has BSPP (British Standard Pipe Parallel) threads, which are also known as G threads.

Coupling Size	Pipe Size, BSPP	Threaded, Female Pipe	Each
Zinc-Plated Steel			
1/4	1/4"	1283T24	$1.32

Sleeve-Lock Sockets with British Standard Threads

To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All have a zinc-plated steel sleeve and a Buna-N (nitrile) seal. Connections are BSPT (British Standard Pipe Taper) threads, which are also known as R threads, or BSPP (British Standard Pipe Parallel) threads, which are also known as G threads.

Coupling Size	Pipe Size, BSPT	Threaded, Male Pipe	Each
Brass			
1/4	1/4"	1283T17	$5.62
1/4	3/8"	1283T18	6.58

Coupling Size	Pipe Size, BSPP	Threaded, Female Pipe	Each
Brass			
1/4	1/4"	1283T12	$5.62
1/4	3/8"	1283T13	6.58

Nickel-Plated Industrial-Shape Hose Couplings

- Maximum Pressure @ 72°F: 300 psi
- Temp. Range: –40° to +250°F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pages 274-277) or hose ferrules (see page 290)

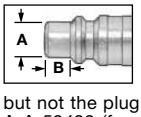

Nickel plating provides better corrosion resistance than plain steel or brass. Also known as industrial interchange couplings. Use with air. All industrial-shape plugs are compatible with any of the industrial-shape sockets of the same coupling size, regardless of the pipe or barb size. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. The *1/4 coupling size* meets the dimensional requirements of Fed. Spec. A-A-59439 (formerly MIL-C-4109); the *3/8 coupling size* meets ISO 6150/B. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Plugs

Plugs are also known as nipples.

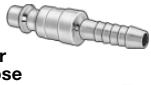

Pipe Size, NPTF	Male Pipe (THREADED)	Each	Female Pipe (THREADED)	Each	For Hose ID (BARBED)	Each
Nickel-Plated Steel						
Coupling Size: 1/4 (A=5/16"; B=3/16")						
1/4"	6050T14	$2.37	6050T15	$2.60	1/4" 6050T16	$3.24
3/8"	6050T34	3.93	6050T35	6.38	3/8" 6050T36	4.56
Coupling Size: 3/8 (A=7/16"; B=5/16")						
1/4"	6050T17	4.60	6050T18	4.95	—	—

Sleeve-Lock Sockets

To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. Sockets have a nickel-plated steel sleeve and a Buna-N (nitrile) seal.

Pipe Size, NPTF	Male Pipe (THREADED)	Each	Female Pipe (THREADED)	Each	For Hose ID (BARBED)	Each
Nickel-Plated Brass						
Coupling Size: 1/4 (A=5/16"; B=3/16")						
1/4"	6050T12	$9.13	6050T11	$9.13	1/4" 6050T13	$9.78
3/8"	6050T32	10.11	6050T31	10.11	3/8" 6050T33	10.73
Coupling Size: 3/8 (A=7/16"; B=5/16")						
1/4"	6050T21	18.49	6050T22	18.31	—	—

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

Stainless Steel Industrial-Shape Hose Couplings

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: –40° to +250° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

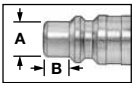

Made from Type 303 stainless steel, these couplings offer excellent corrosion resistance and high wear resistance. They're also known as industrial interchange couplings. Use with air and water. All industrial-shape plugs are compatible with any of the industrial-shape sockets of the same coupling size, regardless of the pipe or barb size. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. The *1/4* and *1/2 coupling sizes* meet the dimensional requirements of Fed. Spec. A-A-59439 (formerly MIL-C-4109). Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Plugs

Also known as nipples, plugs meet ISO 6150/B and ANSI 3.20.14.

Pipe Size, NPTF	Male Pipe Each	Female Pipe Each	For Hose ID	Each
	THREADED		BARBED	
Coupling Size: 1/4 (A=5/16"; B=3/16")				
1/4"	6718K26 $4.21	6718K52 $5.21	1/4"	6718K72 $5.50
3/8"	6718K56 5.04	6718K54 5.33	3/8"	6718K53 5.42
Coupling Size: 3/8 (A=7/16"; B=5/16")				
3/8"	6718K28 8.62	6718K55 9.77	3/8"	6718K73 7.10
Coupling Size: 1/2 (A=9/16"; B=3/8")				
1/2"	6718K31 12.19	6718K57 11.81	1/2"	6718K74 8.06

Sleeve-Lock Sockets

To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. Sockets have a Buna-N (nitrile) seal.

Pipe Size, NPTF	Male Pipe Each	Female Pipe Each	For Hose ID	Each
	THREADED		BARBED	
Coupling Size: 1/4 (A=5/16"; B=3/16")				
1/4"	6718K81 $24.73	6718K84 $22.65	1/4"	6718K87 $26.08
3/8"	6718K68 25.23	6718K66 23.40	3/8"	6718K71 26.60
Coupling Size: 3/8 (A=7/16"; B=5/16")				
3/8"	6718K82 35.98	6718K85 42.77	3/8"	6718K88 40.58
Coupling Size: 1/2 (A=9/16"; B=3/8")				
1/2"	6718K83 46.60	6718K86 48.31	1/2"	6718K89 39.96

Push-to-Connect Sockets

To connect, push plug into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. Sockets have a Buna-N (nitrile) seal.

Pipe Size, NPTF	Male Pipe Each	Female Pipe Each	For Hose ID	Each
	THREADED		BARBED	
Coupling Size: 1/4 (A=5/16"; B=3/16")				
1/4"	6718K91 $29.75	6718K94 $31.27	1/4"	6718K97 $31.27
3/8"	6718K59 30.25	6718K58 32.69	3/8"	6718K64 32.69
Coupling Size: 3/8 (A=7/16"; B=5/16")				
3/8"	6718K92 45.75	6718K95 42.75	3/8"	6718K98 40.81
Coupling Size: 1/2 (A=9/16"; B=3/8")				
1/2"	6718K93 52.73	6718K96 55.04	1/2"	6718K99 54.42

Push-Button Industrial-Shape Hose Sockets

- Max. Pressure @ 72° F: 175 psi
- Temp. Range: 5° to 160° F
- Hose: Use PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

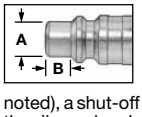

A push of the button is all it takes to disconnect your hose line. They're also known as industrial interchange couplings. Use with air. All of these industrial-shape sockets are compatible with any industrial-shape plug of the same coupling size, regardless of the pipe or barb size. They're made from nonmarring nylon, which has good corrosion resistance and high wear resistance. They have zinc-plated steel threads or barbs (unless noted), a shut-off valve, and a Buna-N (nitrile) seal. Sockets meet ISO 6150/B; the *1/4 coupling size* also meets the dimensional requirements of Fed. Spec. A-A-59439 (formerly MIL-C-4109). Not rated for vacuum.

Standard Push-Button Sockets

To connect, firmly push the plug into the socket until you hear a "click." To disconnect, push the button and the plug will eject.

Pipe Size, NPT	Male Pipe Each	Female Pipe Each	For Hose ID	Each
	THREADED		BARBED	
Coupling Size: 1/4 (A=5/16"; B=3/16")				
1/4"	5136T13 $23.78	5136T11 $21.47	1/4"	5136T15 $23.78
3/8"	5136T14 23.78	5136T12 23.78	3/8"	5136T16 23.78
Coupling Size: 3/8 (A=7/16"; B=5/16")				
3/8"	5136T19 43.07	5136T17 42.49	3/8"	5136T22 43.07
1/2"	5136T21 43.07	5136T18 42.49	—	—

Safety Push-Button Sockets

To connect, firmly push the plug into the socket until you hear a "click." To disconnect, push the button to purge the compressed air, which will release the plug. Barbs are made of aluminum.

Pipe Size, NPT	Male Pipe Each	Female Pipe Each	For Hose ID	Each
	THREADED		BARBED	
Coupling Size: 1/4 (A=5/16"; B=3/16")				
1/4"	9585K11 $30.01	9585K17 $29.37	1/4"	9585K24 $31.15
3/8"	9585K12 30.01	9585K18 30.01	3/8"	9585K25 31.15
Coupling Size: 3/8 (A=7/16"; B=5/16")				
1/4"	9585K14 48.76	9585K21 47.07	—	—
3/8"	9585K15 48.76	9585K22 47.07	3/8"	9585K26 53.16
1/2"	9585K16 48.76	9585K23 47.07	1/2"	9585K27 53.16

Safety Vent Industrial-Shape Hose Sockets

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: –40° to +225° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

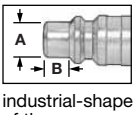

Make safety your first priority with these twist-to-disconnect sockets—pressure is released before you disconnect your hose line, so they minimize the chance of hose whip. They're also known as industrial interchange couplings. Use with air. All of these industrial-shape sockets are compatible with any industrial-shape plug of the same coupling size, regardless of the pipe or barb size. They're made from zinc-plated steel, which has fair corrosion resistance and high wear resistance. All have a shut-off valve and a Buna-N (nitrile) seal. The *1/4* and *1/2 coupling sizes* meet the dimensional requirements of Fed. Spec. A-A-59439 (formerly MIL-C-4109). Vacuum is 26" Hg @ 72° F.

To connect, insert the plug into the socket and slide the sleeve forward until it locks. To disconnect, slide the sleeve back while twisting it left and right (the twisting action vents the downstream air), then remove the plug.

Pipe Size, NPT	Male Pipe Each	Female Pipe Each	For Hose ID	Each
	THREADED		BARBED	
Coupling Size: 1/4 (A=5/16"; B=3/16")				
1/4"	9582K14 $17.07	9582K33 $17.00	1/4"	9582K54 $18.26
Coupling Size: 3/8 (A=7/16"; B=5/16")				
3/8"	9582K17 20.53	9582K39 20.13	3/8"	9582K56 21.63
Coupling Size: 1/2 (A=9/16"; B=3/8")				
1/2"	9582K22 23.49	9582K41 23.74	1/2"	9582K58 23.78

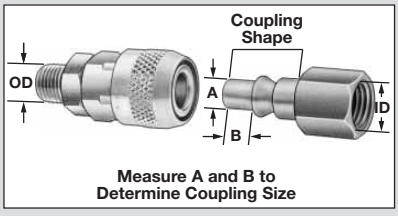

Please Read Before Ordering: To determine the ***shape*** of your coupling, compare the end of your plug to the illustrations shown on page 298. You'll also find an illustration of the plug's shape in each presentation. ***Coupling size*** is an industry designation, not the actual measured size. To determine the actual size of your coupling, measure the "A" and "B" dimensions of the plug, as shown at left.

Pipe size also is an accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16", the next highest OD is 3/4" and the corresponding pipe size is 1/2".

Threaded OD or ID	3/8"	1/2"	5/8"	3/4"
Pipe Size	1/8"	1/4"	3/8"	1/2"

ARO-Shape Hose Couplings

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: –40° to +225° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pages 274-277) and hose ferrules (see page 290)

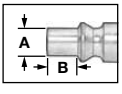

All of the ARO-shape plugs are compatible with any of the ARO-shape sockets of the same coupling size, regardless of the pipe or barb size. Use with air. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. Vacuum rating is 26" Hg at 72° F.

Zinc-plated steel has fair corrosion resistance and high wear resistance. ***Brass*** has good corrosion resistance and low wear resistance. ***Type 303 stainless steel*** has very good corrosion resistance and high wear resistance.

Also Available: Nickel-plated steel plugs and nickel-plated brass sockets. Please ask for 5621K1 and specify plug or socket; also specify the corresponding part number from the zinc-plated steel plugs or brass sockets.

Plugs

Plugs are also known as nipples.

Pipe Size, NPT	Male Pipe Each	Female Pipe Each	For Hose ID	Each
Zinc-Plated Steel				
Coupling Size: 1/4 (A=5/16"; B=5/16")				
1/8"	5343K12 $1.75	—	1/4"	5343K18 $1.93
1/4"	5343K13 1.50	5343K14 $1.74	5/16"	5343K19 3.88
Coupling Size: 3/8 (A=7/16"; B=9/16")				
3/8"	5343K82 3.35	5343K83 4.11	3/8"	5343K84 3.50
Type 303 Stainless Steel				
Coupling Size: 1/4 (A=5/16"; B=5/16")				
1/4"	6026T13 7.03	6026T14 6.73	—	—

Sleeve-Lock Sockets

To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All sockets have a zinc-plated steel sleeve and a Buna-N (nitrile) seal.

Pipe Size, NPT	Male Pipe Each	Female Pipe Each	For Hose ID	Each
Brass				
Coupling Size: 1/4 (A=5/16"; B=5/16")				
1/8"	5343K26 $7.40	5343K27 $7.40	—	—
1/4"	5343K28 7.40	5343K29 7.45	1/4"	5343K32 $7.67
Coupling Size: 3/8 (A=7/16"; B=9/16")				
3/8"	5343K74 12.90	5343K75 13.69	3/8"	5343K76 13.17
Type 303 Stainless Steel				
Coupling Size: 1/4 (A=5/16"; B=5/16")				
1/4"	6026T21 30.90	6026T22 22.47	1/4"	6026T23 24.67

Push-to-Connect Sockets

To connect, push plug firmly into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. All sockets have a zinc-plated steel sleeve and a Buna-N (nitrile) seal.

Pipe Size, NPT	Male Pipe Each	Female Pipe Each	For Hose ID	Each
Brass				
Coupling Size: 1/4 (A=5/16"; B=5/16")				
1/8"	5343K22 $8.79	5343K15 $9.72	—	—
1/4"	5343K23 8.10	5343K11 8.03	1/4"	5343K25 $8.41
Coupling Size: 3/8 (A=7/16"; B=9/16")				
3/8"	5343K71 15.27	5343K73 14.73	3/8"	5343K72 15.10
Type 303 Stainless Steel				
Coupling Size: 1/4 (A=5/16"; B=5/16")				
1/4"	6026T11 25.35	6026T12 26.12	1/4"	6026T15 38.17

Lincoln-Shape Hose Couplings

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: –40° to +240° F
- Hose: Use flexible PVC, nylon, and rubber

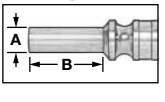

All of these Lincoln-shape plugs are compatible with any of the Lincoln-shape sockets shown below. Use with air. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. All are made of zinc-plated steel, which has fair corrosion resistance and high wear resistance. Not rated for vacuum.

Plugs

Plugs are also known as nipples.

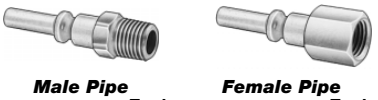

Pipe Size, NPT	Male Pipe Each	Female Pipe Each
Coupling Size: 1/4 (A=9/32"; B=3/4")		
1/8"	91455K51 $3.00	91455K54 $2.85
1/4"	91455K31 2.19	91455K36 2.68

Sleeve-Lock Sockets

To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All sockets have a Buna-N (nitrile) seal.

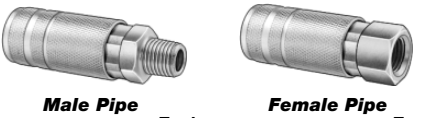

Pipe Size, NPT	Male Pipe Each	Female Pipe Each
Coupling Size: 1/4 (A=9/32"; B=3/4")		
1/8"	91455K52 $9.06	91455K53 $9.06
1/4"	91455K42 9.53	91455K47 8.56

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

Tru-Flate-Shape Hose Couplings

- Maximum Pressure @ 72° F: 300 psi for all, except 175 psi for push-button sockets
- Temperature Range: –40° to +250° F for all, except +5° to +160° F for push-button sockets
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

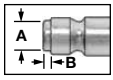

Also called automotive couplings, all of the Tru-Flate-shape plugs are compatible with any of the Tru-Flate-shape sockets of the same coupling size, regardless of the pipe or barb size. Use with air. Couplings are single-shut-off style, so there's a valve in the socket but not the plug. Vacuum rating is 26″ Hg @ 72° F, unless noted. NPTF (Dryseal) threads are compatible with NPT threads.

Zinc-plated steel has fair corrosion resistance and high wear resistance. ***Brass*** has good corrosion resistance and low wear resistance. ***Nylon*** is nonmarring; it has excellent corrosion resistance and high wear resistance.

Plugs

Plugs are also known as nipples.

Pipe Size, NPTF	Male Pipe	Each	Female Pipe	Each	For Hose ID	Each
Zinc-Plated Steel						
Coupling Size: 1/4 (A=3/8″; B=1/16″)						
1/8″	95815K41	$2.00	95815K51	$2.78	—	—
1/4″	95815K69	1.69	95815K71	1.88	1/4″	95815K76 $2.62
3/8″	95815K43	2.16	95815K53	7.72	3/8″	95815K83 2.53
Coupling Size: 3/8 (A=7/16″; B=1/8″)						
1/4″	95815K44	2.06	95815K54	2.12	—	—
3/8″	95815K72	2.94	95815K73	3.56	3/8″	95815K77 3.53
Coupling Size: 1/2 (A=9/16″; B=1/8″)						
3/8″	95815K47	3.38	95815K57	5.03	3/8″	95815K87▲ 4.25
1/2″	95815K74	4.91	95815K75	5.84	1/2″	95815K79 6.97

▲ Vacuum is not rated.

Sleeve-Lock Sockets

To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All sockets have a zinc-plated steel sleeve and a Buna-N (nitrile) seal.

Pipe Size, NPTF	Male Pipe	Each	Female Pipe	Each	For Hose ID	Each
Brass						
Coupling Size: 1/4 (A=3/8″; B=1/16″)						
1/8″	95815K11	$9.03	95815K21	$8.56	—	—
1/4″	95815K61	7.59	95815K62	7.41	1/4″	95815K67 $8.91
3/8″	95815K13	8.47	95815K23	9.44	3/8″	95815K33 8.88
Zinc-Plated Steel						
Coupling Size: 3/8 (A=7/16″; B=1/8″)						
1/4″	95815K14	15.62	95815K24	16.34	—	—
3/8″	95815K63	14.06	95815K64	14.75	3/8″	95815K68 15.12
1/2″	95815K16	17.78	95815K26	18.47	1/2″	95815K36 16.94
Coupling Size: 1/2 (A=9/16″; B=1/8″)						
3/8″	95815K17	22.72	95815K27	23.25	3/8″	95815K37 23.09
1/2″	95815K65	17.78	95815K66	18.66	1/2″	95815K78 19.62

Push-to-Connect Sockets

To connect, push plug firmly into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. All have a Buna-N (nitrile) seal.

Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each	For Hose ID	Each
Zinc-Plated Steel						
Coupling Size: 1/4 (A=3/8″; B=1/16″)						
1/8″	95815K12	$8.43	95815K31	$9.05	—	—
1/4″	95815K15	8.53	95815K32	8.05	1/4″	95815K45 $8.53
3/8″	95815K18	8.80	95815K34	9.00	3/8″	95815K46 9.31
Coupling Size: 3/8 (A=7/16″; B=1/8″)						
1/4″	95815K22	14.07	95815K35	14.07	1/4″	95815K91 14.82
3/8″	95815K25	14.08	95815K38	13.95	3/8″	95815K48 16.08
1/2″	95815K28	15.30	95815K42	15.30	1/2″	95815K52 17.07

Push-Button Sockets

To connect, firmly push the plug into the socket until you hear a "click." To disconnect, push the button and pull out the plug. All have zinc-plated steel threads or barbs and a Buna-N (nitrile) seal.

Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each	For Hose ID	Each
Nylon						
Coupling Size: 1/4 (A=3/8″; B=1/16″)						
1/4″	5732T12▲	$25.16	5732T18▲	$22.71	—	—
Coupling Size: 3/8 (A=7/16″; B=1/8″)						
3/8″	5732T15▲	43.07	5732T22▲	43.07	3/8″	5732T27▲ $44.51
1/2″	—	—	5732T23▲	43.07	—	—

▲ Vacuum is not rated.

European-Shape Hose Couplings

- Maximum Pressure @ 72° F: 232 psi
- Temperature Range: –4° to +212° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

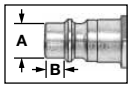

With a virtually unobstructed internal air path, these couplings provide a higher flow rate than other coupling shapes of the same size. Use with air. All of the European-shape plugs are compatible with any of the European-shape sockets of the same coupling size, regardless of the pipe or barb size. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. Not rated for vacuum.

Plugs

Also known as nipples, plugs are made from zinc-plated steel, which has fair corrosion resistance and high wear resistance.

Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each	For Hose ID	Each
Coupling Size: 1/4 (A=3/8″; B=3/16″)						
1/4″	53445K16	$2.67	53445K21	$4.42	1/4″	53445K94 $3.09
3/8″	53445K18	2.89	53445K92	5.67	3/8″	53445K96 3.20
1/2″	53445K24	8.13	53445K98	7.64	1/2″	53445K85 3.69

Push-to-Connect Sockets

To connect, push plug into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. Made from zinc-plated brass, which has good corrosion resistance and low wear resistance. All have a Buna-N (nitrile) seal.

Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each	For Hose ID	Each
Coupling Size: 1/4 (A=3/8″; B=3/16″)						
1/4″	53445K15	$16.27	53445K19	$16.27	1/4″	53445K93 $15.56
3/8″	53445K17	16.27	53445K91	19.44	3/8″	53445K95 15.56
1/2″	53445K86	21.80	53445K97	22.29	1/2″	53445K99 15.78

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

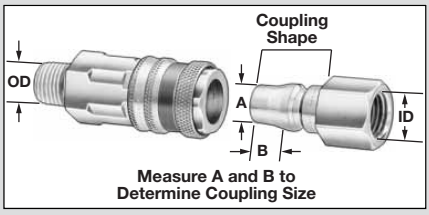

Measure A and B to Determine Coupling Size

Please Read Before Ordering: To determine the ***shape*** of your coupling, compare the end of your plug to the illustrations shown on pg. 298. An illustration of the plug's shape is also in each presentation. ***Coupling size*** is an industry designation, not the actual measured size. To determine the actual size of your coupling, measure the "A" and "B" dimensions of the plug, as shown at left.

Pipe size also is an accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16", the next highest OD is 3/4" and the corresponding pipe size is 1/2".

Threaded OD or ID	3/8"	1/2"	5/8"	3/4"
Pipe Size	1/8"	1/4"	3/8"	1/2"

Universal Hose Sockets

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: –40° to +250° F
- Hose: For *threaded* sockets, use flexible PVC and rubber hose; *push-on* sockets must be used with hose for push-on fittings (see page 292)

Talk about versatile—one socket accommodates five popular plug shapes. These push-to-connect sockets accept any industrial-, ARO-, Lincoln-, Tru-Flate-, or European-shape plug with a 1/4 coupling size. To connect, push plug into socket until you hear a "click"; to disconnect, slide sleeve forward until the plug ejects. Use with air. They're made from brass, which has good corrosion resistance and low wear resistance. All have a shut-off valve and a Buna-N (nitrile) seal. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

For industrial-shape plugs, see pages 299-301; for ARO- and Lincoln-shape plugs, see page 302; for Tru-Flate- and European-shape plugs, see page 303.

Push-on sockets must be used with hose for push-on fittings (see page 292). To install, push the socket firmly into the push-on hose until the yellow plastic ring completely covers the hose end.

Pipe Size, NPTF	Male Pipe Each	Female Pipe Each	For Hose ID	Each
Coupling Size: 1/4				
1/4"	53475K31 $8.84	53475K21 $8.84	1/4"	53475K39 $10.45
3/8"	53475K33 9.71	53475K23 9.71	3/8"	53475K41 9.33

Japanese-Shape Hose Couplings

- Maximum Pressure @ 72° F: 232 psi
- Temperature Range: –4° to +212° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

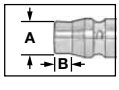

Japanese-shape plugs are compatible with any of the Japanese-shape sockets of the same coupling size, regardless of the pipe or barb size. Use with air. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. All are made from zinc-plated steel, which has fair corrosion resistance and high wear resistance. Not rated for vacuum.

Plugs

Plugs are also known as nipples.

Pipe Size, NPT	Male Pipe Each	Female Pipe Each	For Hose ID	Each
Coupling Size: 1/4 (A=7/16"; B=7/32")				
1/4"	53425K63 $3.26	53425K73 $3.88	1/4"	53425K78 $2.40
3/8"	53425K65 3.55	53425K75 9.48	3/8"	53425K79 2.40

Push-to-Connect Sockets

To connect, push plug into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. All have a Buna-N (nitrile) seal.

Pipe Size, NPT	Male Pipe Each	Female Pipe Each	For Hose ID	Each
Coupling Size: 1/4 (A=7/16"; B=7/32")				
1/4"	53425K23 $19.06	53425K33 $18.23	1/4"	53425K76 $16.08
3/8"	53425K25 19.06	53425K35 18.23	3/8"	53425K77 16.08

Compact Hose Couplings

- Maximum Pressure @ 72° F: 500 psi
- Temperature Range: –40° to +250° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

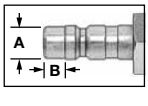

A slim body makes these plugs and sockets great for use in tight spaces. Use with air and water. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Zinc-plated steel has fair corrosion resistance and high wear resistance. ***Brass*** has good corrosion resistance and low wear resistance.

Plugs

Also known as nipples, these plugs are only for use with the sockets in this presentation.

Pipe Size, NPTF	Male Pipe Each	Female Pipe Each	For Hose ID	Each
Brass				
Coupling Size: 1/8 (A=7/32"; B=3/32")				
1/8"	53465K22 $4.34	53465K42 $4.66	1/8"	53465K62 $4.97
Zinc-Plated Steel				
Coupling Size: 1/4 (A=5/16"; B=7/32")				
1/4"	53465K24 1.71	53465K44 2.10	1/4"	53465K64 3.38

Push-to-Connect Sockets

To connect, push plug into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. All have a Buna-N (nitrile) seal. These sockets are only for use with the plugs in this presentation.

Pipe Size, NPTF	Male Pipe Each	Female Pipe Each	For Hose ID	Each
Brass				
Coupling Size: 1/8 (A=7/32"; B=3/32")				
1/8"	53465K12 $12.79	53465K32 $12.79	1/8"	53465K52 $14.18
Coupling Size: 1/4 (A=5/16"; B=7/32")				
1/4"	53465K14 14.18	53465K34 14.18	1/4"	53465K54 15.07

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

Schrader-Shape Hose Couplings

- Maximum Pressure @ 72° F: 300 psi
- Temperature Range: –40° to +225° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

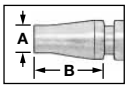

All of the Schrader-shape plugs are compatible with any of the Schrader-shape sockets of the same coupling size, regardless of the pipe size or barb size. Use with air; Type 303 stainless steel is also for use with water. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. Vacuum rating is 26″ Hg @ 72° F.

Zinc-plated steel has fair corrosion resistance and high wear resistance. ***Type 303 stainless steel*** has very good corrosion resistance and high wear resistance. ***Aluminum*** has good corrosion resistance and low wear resistance.

Plugs

Plugs are also known as nipples.

Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each	For Hose ID	Each
Zinc-Plated Steel						
Coupling Size: 1/4 (A=5/16″; B=3/4″)						
1/4″	3124K46	$1.87	3124K52	$2.09	1/4″ 3124K74	$3.19
Coupling Size: 1/2 (A=1/2″; B=7/8″)						
3/8″	—	—	3124K61	4.22	3/8″ 3124K78	4.46
1/2″	3124K64	3.64	—	—	1/2″ 3124K76	5.00
Type 303 Stainless Steel						
Coupling Size: 1/4 (A=5/16″; B=3/4″)						
1/4″	5606T13	5.13	5606T14	5.94	— —	—

Push-to-Connect Sockets

To connect, push plug into socket until you hear a "click." To disconnect, twist sleeve and pull out the plug; this twist-to-disconnect feature reduces the chance of accidental disconnection if the hose gets snagged. All have a Buna-N (nitrile) seal. Aluminum sockets have a zinc-plated steel sleeve; Type 303 stainless steel have a Type 303 stainless steel sleeve.

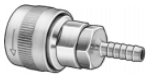

Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each	For Hose ID	Each
Aluminum						
Coupling Size: 1/4 (A=5/16″; B=3/4″)						
1/4″	3124K59	$12.98	3124K55	$11.90	1/4″ 3124K75	$13.49
Coupling Size: 1/2 (A=1/2″; B=7/8″)						
3/8″	3124K67	19.57	3124K66	18.90	3/8″ 3124K79	20.29
1/2″	3124K73	18.86	3124K68	19.76	1/2″ 3124K77	20.58
Type 303 Stainless Steel						
Coupling Size: 1/4 (A=5/16″; B=3/4″)						
1/4″	5606T11	40.82	5606T12	38.31	1/4″ 5606T15	46.58

Color and Shape Matched Hose Couplings

- Maximum Pressure @ 68° F: 500 psi
- Temperature Range: –4° to +210° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pgs. 274-277) or hose ferrules (see pg. 290)

Color	Shape
Blue	Hexagon
Brown	Triangle
Green	Circle
Red	Octagon

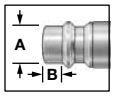

Eliminate the possibility of mixing hose lines. These couplings come in your choice of four colors; each color has its own unique shape, so only plugs and sockets of the same color will fit together. Use with air and water. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. They're made of brass, which has good corrosion resistance and low wear resistance. Vacuum rating is 28″ Hg @ 68° F. NPSF (National Pipe Straight Fuel) threads are compatible with NPT threads.

To Order: Please specify color: blue, brown, green, or red.

Plugs

Also known as nipples, plugs have a color-coded anodized aluminum ring.

Pipe Size, NPT	Male Pipe	Each	Thread Size, NPSF	Female Pipe	Each	For Hose ID	Each
Coupling Size: 1/4 (A=3/8″; B=3/16″)							
1/4″	8636T16	$20.80	1/4″-18	8636T18	$22.06	1/4″ 8636T21	$19.85
3/8″	8636T17	22.60	3/8″-18	8636T19	24.28	3/8″ 8636T22	21.90

Push-to-Connect Sockets

To connect, push plug into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. All have a color-coded anodized aluminum sleeve and a Buna-N (nitrile) seal.

Pipe Size, NPT	Male Pipe	Each	Thread Size, NPSF	Female Pipe	Each	For Hose ID	Each
Coupling Size: 1/4 (A=3/8″; B=3/16″)							
1/4″	8636T11	$35.94	1/4″-18	8636T13	$35.94	1/4″ 8636T15	$35.94
3/8″	8636T12	35.94	3/8″-18	8636T14	35.94	— —	—

Hose Couplings for Natural and LP Gas

- Maximum Pressure @ 72° F: 0.5 psi
- Temperature Range: –40° to +212° F
- Hose: Use hose rated for use with natural and LP gas

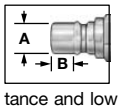

Connect and disconnect your gas line with ease. To make a connection, you'll need a plug and a socket from the listing at right with the same coupling size. These couplings are made of brass, which offers good corrosion resistance and low wear resistance. They are single-shut-off style, so there is a valve in the socket but not the plug. They meet CSA 6.9-M98 and ANSI Z21.41. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads. *Note*: These couplings are not compatible with any other style of coupling.

Plugs— Also known as nipples, these plugs have a heat-sensitive fuse that will stop gas flow in the event of a fire.

Sleeve-Lock Sockets— To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All have a fluoroelastomer seal.

Plugs

Pipe Size, NPTF	Female Pipe	Each
Coupling Size: 3/8 (A=9/16″; B=25/64″)		
3/8″	6053T12	$10.53
Coupling Size: 1/2 (A=3/4″; B=1/2″)		
1/2″	6053T14	13.40
Coupling Size: 3/4 (A=15/16″; B=1/2″)		
3/4″	6053T16	18.48
Coupling Size: 1 (A=1 1/4″; B=3/4″)		
1″	6053T18	27.57

Sleeve-Lock Sockets

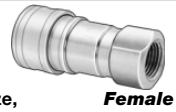

Pipe Size, NPTF	Female Pipe	Each
Coupling Size: 3/8 (A=9/16″; B=25/64″)		
3/8″	6053T11	$22.30
Coupling Size: 1/2 (A=3/4″; B=1/2″)		
1/2″	6053T13	34.15
Coupling Size: 3/4 (A=15/16″; B=1/2″)		
3/4″	6053T15	49.90
Coupling Size: 1 (A=1 1/4″; B=3/4″)		
1″	6053T17	81.75

Quick-Disconnect Couplings

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

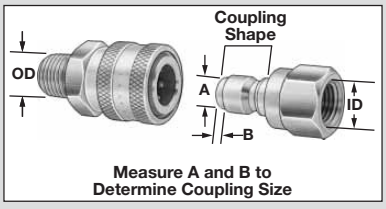

Please Read Before Ordering: To determine the ***shape*** of your coupling, compare the end of your plug to the illustrations shown on page 298. You'll also find an illustration of the plug's shape in each presentation. ***Coupling size*** is an industry designation, not the actual measured size. To determine the actual size of your coupling, measure the "A" and "B" dimensions of the plug, as shown at left.

Pipe size also is an accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16″, the next highest OD is 3/4″ and the corresponding pipe size is 1/2″.

Threaded OD or ID	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″

High-Flow Hose Couplings

- Maximum Pressure: See below
- Temperature Range: –40° to +250° F
- Hose: Use nylon and rubber

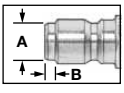

There is no valve in either the plug or the socket, so these straight-through-style couplings allow maximum flow. Use with air and water. To be used together, plugs and sockets must have the same coupling size. They are compatible with Parker ST series, Hansen ST series, and Perfecting E series. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Zinc-plated steel has fair corrosion resistance and high wear resistance. ***Brass*** has good corrosion resistance and low wear resistance. ***Type 303 stainless steel*** has very good corrosion resistance and high wear resistance.

Plugs— Also known as nipples.

Sleeve-Lock Sockets— To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All sockets have a Buna-N (nitrile) seal.

Note: Pressure ratings given are for static (constant) pressure conditions.

Also Available: Replacement Buna-N seals. Please ask for 6537K87 and specify coupling size.

Coupling Size	(A)	(B)	Pipe Size, NPTF	Max. psi @ 72° F	PLUGS Male Pipe	Each	PLUGS Female Pipe	Each	SLEEVE-LOCK SOCKETS Male Pipe	Each	SLEEVE-LOCK SOCKETS Female Pipe	Each
Zinc-Plated Steel												
1/4	3/8″	1/8″	1/4″	5500	6537K43	$2.42	6537K53	$3.83	—	—	—	—
3/8	1/2″	1/8″	3/8″	3500	6537K44	2.99	6537K54	3.28	—	—	—	—
1/2	5/8″	1/8″	1/2″	2700	6537K45	4.85	6537K55	4.79	—	—	—	—
3/4	7/8″	3/16″	3/4″	2700	6537K46	9.69	6537K56	10.41	—	—	—	—
1	1 3/16″	3/16″	1″	2000	6537K47	16.11	6537K57	18.31	—	—	—	—
Brass												
1/4	3/8″	1/8″	1/4″	5200	6537K91	3.06	6537K11	3.74	6537K63	$6.80	6537K73	$6.62
3/8	1/2″	1/8″	3/8″	2700	6537K92	3.61	6537K12	4.00	6537K64	9.61	6537K74	8.99
1/2	5/8″	1/8″	1/2″	2200	6537K93	5.56	6537K13	6.15	6537K65	13.33	6537K75	12.71
3/4	7/8″	3/16″	3/4″	1700	6537K94	8.95	6537K14	9.85	6537K66	21.04	6537K76	21.04
1	1 3/16″	3/16″	1″	1200	6537K95	15.50	6537K15	16.81	6537K67	32.10	6537K77	30.47
Type 303 Stainless Steel												
1/4	3/8″	1/8″	1/4″	6700	6543K43	11.16	6543K53	11.59	6543K23	38.41	6543K33	35.01
3/8	1/2″	1/8″	3/8″	5500	6543K44	14.57	6543K54	14.55	6543K24	39.05	6543K34	38.71
1/2	5/8″	1/8″	1/2″	3000	6543K45	20.02	6543K55	20.51	6543K25	55.47	6543K35	43.24
3/4	7/8″	3/16″	3/4″	3000	6543K46	28.41	6543K56	37.25	6543K26	84.60	6543K36	77.02
1	1 3/16″	3/16″	1″	1700	6543K47	53.76	6543K57	50.92	6543K27	131.10	6543K37	98.34

High-Flow Hose Couplings for Coolant

- Maximum Pressure @ 72° F: 200 psi
- Temperature Range: –90° to +400° F
- Hose: Use flexible PVC and rubber
- Clamps: For couplings with a barbed end, use worm-drive clamps (see pages 274-277) and low-profile clamps (see page 283)

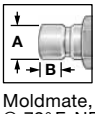

Also known as coolant-line mold couplings, these couplings are straight-through style with no valve in either the plug or the socket to allow maximum flow. Use with coolants and water. To be used together, plugs and sockets must have the same coupling size. Unless indicated otherwise, they're made from brass, which offers good corrosion resistance and low wear resistance. All are compatible with Parker Moldmate, Foster FP and FS series, and Hansen FT series couplings. Vacuum rating is 27″ Hg @ 72° F. NPTF (Dryseal) threads are compatible with NPT threads. Female NPSM (National Pipe Straight Mechanical) threads are compatible with male NPT and NPTF threads.

Plugs

Plugs are also known as nipples. The *female pipe* plugs are made from zinc-plated steel, which has fair corrosion resistance and high wear resistance.

Coupling Size	(A)	(B)	Pipe Size, NPTF	THREADED Male Pipe	Each	THREADED Female Pipe	Each
1/4	3/8″	7/32″	1/4″	6739K52	$0.93	6739K55	$1.09
1/4	3/8″	7/32″	3/8″	6739K53	1.14	6739K56	1.53
3/8	17/32″	3/8″	3/8″	6739K57	1.14	6739K58	1.85
3/8	17/32″	3/8″	1/2″	6739K59	1.98	—	—

Sleeve-Lock Sockets

To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All have a silicone seal.

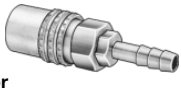

Coupling Size	(A)	(B)	Pipe Size, NPSM	THREADED Female Pipe	Each	For Hose ID	BARBED Straight	Each	BARBED 90°	Each
1/4	3/8″	7/32″	1/8″	6739K34	$4.12	1/4″	6739K35	$4.66	6739K91	$6.80
1/4	3/8″	7/32″	—	—	—	3/8″	6739K37	4.66	6739K92	5.91
3/8	17/32″	3/8″	1/4″	6739K61	5.99	3/8″	6739K62	6.18	6739K66	8.92
3/8	17/32″	3/8″	—	—	—	1/2″	6739K64	6.47	6739K68	8.01

Warning! There is no valve in these couplings. Flow should be stopped before you disconnect your line.

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

Plastic Hose Couplings

- Max. Pressure @ 68° F: Acetal: 145 psi; PVDF: 116 psi
- Temperature Range: Acetal: –4° to +176° F; PVDF: –4° to +250° F
- Hose: Use flexible PVC and rubber

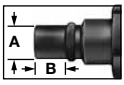

Get the convenience of quick-disconnect couplings combined with the lighter weight of plastic. All of the plastic plugs are compatible with any of the plastic sockets listed here, regardless of the pipe size. These couplings are single-shut-off style, so there is a valve in the socket but not the plug. Vacuum rating is 28″ Hg @ 68° F.

Note: These couplings are not compatible with any other style of coupling.

Acetal has low wear resistance and resists humidity. Use with air and water. Color is black.

PVDF (polyvinylidene fluoride) has high wear resistance and resists ultraviolet light. Material is FDA compliant for use with food and beverage; you can also use these couplings with air and water. Color is white.

Plugs

Plugs are also known as nipples.

Coupling Size	(A)	(B)	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each
Acetal							
1/4	13/32″	13/32″	1/4″	4821K35	$3.96	4821K52	$5.21
1/4	13/32″	13/32″	3/8″	4821K36	3.96	4821K53	5.30
PVDF							
1/4	13/32″	13/32″	1/4″	4821K45	6.47	4821K58	6.86
1/4	13/32″	13/32″	3/8″	4821K46	6.86	4821K59	6.86

Push-to-Connect Sockets

To connect, push plug into socket until you hear a "click". To disconnect, slide sleeve forward until the plug ejects. ***Acetal*** sockets have a Buna-N (nitrile) seal; ***PVDF*** sockets have a fluoroelastomer seal.

Coupling Size	(A)	(B)	Pipe Size, NPT	Male Pipe	Each	Female Pipe	Each
Acetal							
1/4	13/32″	13/32″	1/4″	4821K31	$12.30	4821K47	$12.53
1/4	13/32″	13/32″	3/8″	4821K32	12.30	4821K48	12.53
PVDF							
1/4	13/32″	13/32″	1/4″	4821K33	29.45	4821K49	31.13
1/4	13/32″	13/32″	3/8″	4821K34	29.45	4821K51	31.13

International Standard (ISO 16028) Minimal-Spill Hose Couplings

- Maximum Pressure: See below
- Temperature Range: –40° to +250° F
- Hose: Use high-pressure reinforced hose, including SAE 100R1, 100R2, and 100R7

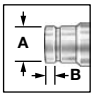

Also known as flush-face couplings, these couplings have a flat face that ensures minimal fluid loss when connecting and disconnecting your hose line. They're double-shut-off style, so there is a valve in both the plug and the socket. Use with hydraulic oil. To make a connection, you'll need a plug and a socket with the same coupling size. They are compatible with all couplings that meet ISO 16028 standards, such as Parker FEM series, Snap-Tite 74 series, and Perfecting HT series. These couplings are made of zinc-plated steel, which offers fair corrosion resistance and high wear resistance. Not rated for vacuum. Female NPSF (National Pipe Straight Fuel) threads are compatible with male NPT and NPTF (Dryseal) threads.

Plugs— Also known as nipples, these plugs have a Buna-N/PTFE bonded seal.

Push-to-Connect Sockets— To connect, push plug firmly into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. All sockets have a Buna-N (nitrile) seal.

Dust Caps and Dust Plugs— Made from black rubber, use these to keep contaminants out.

Note: Pressure ratings given are for static (constant) pressure conditions.

Warning: Never attempt to connect or disconnect couplings when operating at maximum pressure.

Coupling Size	(A)	(B)	Thread Size, NPSF	Max. psi @ 72° F	PLUGS Female Pipe	Each	PUSH-TO-CONNECT SOCKETS Female Pipe	Each	For Coupling Size	Dust Caps For Plugs	Each	Dust Plugs For Sockets	Each
1/4	5/8″	1/4″	1/4″-18	4568	5220T17	$33.90	5220T11	$64.66	1/4	5220T41	$2.98	5220T41	$2.98
3/8	3/4″	3/16″	3/8″-18	3625	5220T18	29.44	5220T12	44.78	3/8	5220T42	2.06	5220T43	2.40
1/2	15/16″	3/8″	1/2″-14	3625	5220T24	31.83	5220T23	51.64	1/2	5220T44	3.36	5220T45	2.74
3/4	1 3/16″	7/16″	3/4″-14	3625	5220T26	74.56	5220T25	139.32	3/4	5220T47	59.02	5220T46	9.56
1	1 7/16″	7/16″	1″-11 1/2	2900	5220T22	117.40	5220T15	237.09	1	—	—	5220T48	30.74

High-Pressure Minimal-Spill Hose Couplings

- Maximum Pressure: See below
- Temp. Range: –40° to +200° F
- Hose: Use rubber

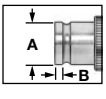

Here are the highest pressure minimal-spill hose couplings we offer. They have a flat face, which ensures minimal fluid loss when connecting and disconnecting your hose line. They're double-shut-off style, so there is a valve in both the plug and the socket. Use with hydraulic oil. To make a connection, you'll need a plug and a socket with the same coupling size. These couplings are compatible with Snap-Tite 71 series. Not rated for vacuum. Female NPTF (Dryseal) threads are compatible with male NPT threads. Female NPSF (National Pipe Straight Fuel) threads are compatible with male NPT and NPTF threads.

Zinc-plated steel has fair corrosion resistance and high wear resistance.

Type 316 stainless steel has excellent corrosion resistance and high wear resistance.

Plugs— Also known as nipples, these plugs have a Buna-N (nitrile) seal.

Push-to-Connect Sockets— To connect, push plug firmly into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects. Sockets have a Buna-N (nitrile) seal.

Note: Pressure ratings given are for static (constant) pressure conditions.

Warning: Never attempt to connect or disconnect couplings when under pressure.

Coupling Size	(A)	(B)	Pipe Size, NPTF	Max. psi @ 72° F	PLUGS Female Pipe	Each	PUSH-TO-CONNECT SOCKETS Female Pipe	Each
Zinc-Plated Steel								
1/4	3/4″	3/16″	1/4″	10,000	53645K52	$24.95	53645K51	$41.63
3/8	15/16″	7/32″	3/8″	10,000	53645K31	21.65	53645K11	39.43
1/2	1 3/16″	7/32″	1/2″	10,000	53645K33	31.61	53645K13	48.22
3/4	1 1/2″	9/32″	3/4″	7,500	53645K35	36.20	53645K15	68.24
1	1 3/4″	11/32″	1″	7,500	53645K37	53.99	53645K17	120.85
1	1 3/4″	11/32″	1 1/4″ ★	7,500	53645K54	73.53	53645K53	140.64
Type 316 Stainless Steel								
3/8	15/16″	7/32″	3/8″ ■	5,000	53645K91	62.09	53645K71	152.84
1/2	1 3/16″	7/32″	1/2″ ■	5,000	53645K93	68.91	53645K73	199.74
3/4	1 1/2″	9/32″	3/4″ ■	5,000	53645K95	132.26	53645K75	298.54
1	1 3/4″	11/32″	1″ ■	4,000	53645K97	153.16	53645K77	468.18

★ Connection is NPT. ■ Connection is NPSF (National Pipe Straight Fuel).

Warning! Flow should be stopped before you disconnect your line.

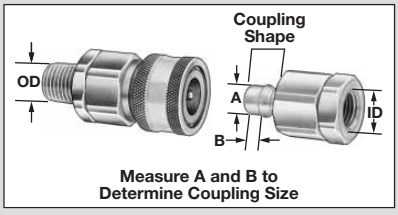

Please Read Before Ordering: To determine the ***shape*** of your coupling, compare the end of your plug to the illustrations shown on page 298. You'll also find an illustration of the plug's shape in each presentation. ***Coupling size*** is an industry designation, not the actual measured size. To determine the actual size of your coupling, measure the "A" and "B" dimensions of the plug, as shown at left.

Pipe size also is an accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16", the next highest OD is 3/4" and the corresponding pipe size is 1/2".

Threaded OD or ID	3/8"	1/2"	5/8"	3/4"	1"	1 5/8"
Pipe Size	1/8"	1/4"	3/8"	1/2"	3/4"	1"

Snap-Tite H-Shape Hose Couplings

- Maximum Pressure: See below
- Temperature Range: –40° to +200° F
- Hose: Use rubber
- Clamps: For hose barb couplings, use worm-drive clamps (see pgs. 274-277)

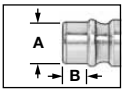

With your choice of materials and hose connections, these double-shut-off couplings are ideal for a variety of applications. They have a valve in both the plug and the socket to stop all flow when your hose line is disconnected. Use with air, water, coolants, hydraulic oil, and petroleum. To make a connection, you'll need a plug and a socket with the same coupling size. All come with a Buna-N (nitrile) seal and meet MIL-C-51234. Not rated for vacuum. NPTF (Dryseal) threads are compatible with male NPT threads.

Note: Pressure ratings given are for static (constant) pressure conditions.

Zinc-plated steel has fair corrosion resistance and high wear resistance. ***Brass*** and ***aluminum*** have good corrosion resistance and low wear resistance. ***Type 316 stainless steel*** has excellent corrosion resistance and high wear resistance.

Plugs—Also known as nipples.

Sleeve-Lock Sockets—To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug.

Optional Combination Dust Caps/Plugs—With a dust cap on one side and a dust plug on the other, these combination dust caps/plugs provide the easiest way to keep contaminants out of the plugs and sockets listed below. Made from black plastic.

Threaded Couplings

Coupling Size	Coupling (A)	Coupling (B)	Pipe Size, NPTF	Max. psi @ 72° F	PLUGS Male Pipe♣	Each	PLUGS Female Pipe	Each	SLEEVE-LOCK SOCKETS Male Pipe♣	Each	SLEEVE-LOCK SOCKETS Female Pipe	Each
Zinc-Plated Steel												
1/4	7/16"	1/4"	1/8"	6500	5315K46	$9.27	5315K37	$8.35	5315K69	$12.75	5315K61	$11.80
1/4	7/16"	1/4"	1/4"	6500	5315K47	8.35	5315K38	7.71	5315K21	11.87	5315K12	11.27
3/8	1/2"	9/32"	3/8"	4500	5315K48	10.40	5315K39	9.60	5315K22	17.24	5315K13	15.33
1/2	5/8"	5/16"	1/2"	4000	5315K49	12.44	5315K41	11.49	5315K23	19.60	5315K14	18.64
3/4	15/16"	7/16"	3/4"	3500	5315K51	18.35	5315K42	17.24	5315K24	29.96	5315K15	28.89
1	1 3/16"	3/8"	1"	2000	5315K52	33.13	5315K43	27.55	5315K25	50.44	5315K16	44.85
Brass												
1/4	7/16"	1/4"	1/8"	2250	5316K46	24.69	5316K37	27.10	5316K69	29.14	5316K61	31.68
1/4	7/16"	1/4"	1/4"	2250	5316K47	11.44	5316K38	10.31	5316K21	16.74	5316K12	15.49
3/8	1/2"	9/32"	3/8"	2250	5316K48	15.88	5316K39	14.44	5316K22	21.67	5316K13	20.17
1/2	5/8"	5/16"	1/2"	2000	5316K49	21.18	5316K41	19.23	5316K23	31.65	5316K14	29.57
3/4	15/16"	7/16"	3/4"	2000	5316K51	29.31	5316K42	26.14	5316K24	49.22	5316K15	45.81
1	1 3/16"	3/8"	1"	1750	5316K52	57.07	5316K43	50.51	5316K25	82.33	5316K16	75.29
Aluminum												
1/4	7/16"	1/4"	1/4"	2250	5314T47	18.40	5314T38	17.00	5314T21	21.72	5314T12	20.69
3/8	1/2"	9/32"	3/8"	2250	5314T48	37.97	5314T39	31.12	5314T22	40.81	5314T13	44.81
1/2	5/8"	5/16"	1/2"	1750	5314T49	41.66	5314T41	33.45	5314T23	54.21	5314T14	46.24
3/4	15/16"	7/16"	3/4"	1750	5314T51	96.43	5314T42	89.65	5314T24	110.93	5314T15	104.38
1	1 3/16"	3/8"	1"	1500	—	—	5314T43	111.05	—	—	5314T16	146.66
Type 316 Stainless Steel												
1/4	7/16"	1/4"	1/4"	5000	5317K47	36.05	5317K38★	30.20	5317K21	49.14	5317K12★	43.28
3/8	1/2"	9/32"	3/8"	4000	5317K88	49.24	5317K89★	44.37	5317K22	67.02	5317K13★	62.20
1/2	5/8"	5/16"	1/2"	3750	5317K49	75.19	5317K41★	61.03	5317K23	99.85	5317K14★	85.68
3/4	15/16"	7/16"	3/4"	2000	5317K51	115.39	5317K42★	84.03	5317K24	154.00	5317K15★	122.66
1	1 3/16"	3/8"	1"	2000	5317K52	151.92	5317K43★	137.12	5317K25	203.83	5317K16★	189.03

♣ Male pipe threads are NPT. ★ Threads are NPSF.

Hose Barb Couplings

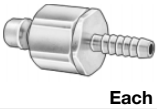
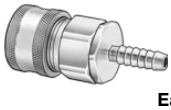

Coupling Size	Coupling (A)	Coupling (B)	For Hose ID	Max. psi @ 72° F	PLUGS	Each	SLEEVE-LOCK SOCKETS	Each
Zinc-Plated Steel								
1/4	7/16"	1/4"	1/4"	300	5315K56	$17.56	5315K29	$21.09
3/8	1/2"	9/32"	3/8"	300	5315K57	19.69	5315K31	25.42
1/2	5/8"	5/16"	1/2"	300	5315K58	23.67	5315K32	30.84
Brass								
1/4	7/16"	1/4"	1/4"	300	5316K56	22.77	5316K29	28.89
3/8	1/2"	9/32"	3/8"	300	5316K57	27.03	5316K31	33.63
1/2	5/8"	5/16"	1/2"	300	5316K58	36.14	5316K32	44.48
Type 316 Stainless Steel								
1/4	7/16"	1/4"	1/4"	300	5317K56	57.00	5317K29	70.08

Optional Combination Dust Caps/Plugs

For Coupling Size	Pkg. Qty.		Per Pkg.
1/4	5	5248K36	$9.62
3/8	5	5248K37	9.62
3/4	5	5248K38	10.32
1	2	5248K39	7.78

Warning! Flow should be stopped before you disconnect your line.

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

International Standard (ISO A and B) Hose Couplings

- Max. Pressure: See below
- Temp. Range: –40° to + 250° F, except acetal is –4° to +195° F
- Hose: See material descriptions

Considered the international standard for double-shut-off couplings, these couplings have a valve in both the plug and the socket to stop all flow when your hose line is disconnected. Vacuum rating is 27.4″ Hg @ 72° F for all except acetal, which is rated 28″ Hg @ 68° F. NPTF (Dryseal) threads are compatible with NPT threads.

Note: Pressure ratings reflect static (constant) pressure conditions.

Zinc-plated steel has fair corrosion resistance and high wear resistance. For use with hydraulic oil. Use with rubber hydraulic hose.

Brass has good corrosion resistance and low wear resistance. For use with hydraulic oil, air, and water. Use rubber hydraulic hose for hydraulic oil; use general purpose rubber hose for air and water.

Type 303 stainless steel has very good corrosion resistance and high wear resistance. For use with hydraulic oil, air, and water. Use rubber hydraulic hose for hydraulic oil; use general purpose rubber hose for air and water.

Acetal has excellent corrosion resistance and low wear resistance. Material is FDA compliant for use with food and beverage; also for use with hydraulic oil, air, water, and gasoline. Use rubber hydraulic hose for hydraulic oil; use general purpose rubber hose for air and water; use neoprene hose for gasoline. Color is white.

Plugs— Also known as nipples, all have a Buna-N (nitrile) seal.

Sleeve-Lock Sockets— To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug. All have a Buna-N (nitrile) seal. Sockets made of zinc-plated steel and Type 303 stainless steel also have a PTFE backup ring.

ISO Series A

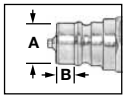

Compatible with all couplings that meet ISO 7241-1 series A, such as Parker 6600 series and Aeroquip 5600 series.

ZINC-PLATED STEEL

Coupling Size (A)	Coupling (B)	Pipe Size, NPTF	Max. psi @ 72° F	Plugs, Female Pipe	Each	Sleeve-Lock Sockets, Female Pipe	Each
1/4	7/16″	1/4″	1/8″	5000	51335K59	$8.24	51335K49	$20.89
1/4	7/16″	1/4″	1/4″	5000	51335K61	7.17	51335K51	19.32
3/8	11/16″	3/8″	3/8″	4000	51335K62	11.28	51335K52	24.60
1/2	13/16″	3/8″	1/2″	4000	51335K63	10.87	51335K53	24.51
3/4	1 1/8″	5/8″	3/4″	4000	51335K64	20.46	51335K54	44.43
1	1 3/8″	13/16″	1″	4000	51335K65	26.15	51335K55	55.36

ISO Series B

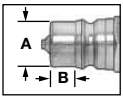

Compatible with all couplings that meet ISO 7241-1 series B, such as Parker 60 series.

Also Available: ISO Series B Type 316 stainless steel couplings with fluoroelastomer seals. The maximum pressure is the same as the Type 303 stainless steel couplings; temperature range is –15° to +400° F. Please ask for 5247K68 and specify coupling size and plug or socket.

ZINC-PLATED STEEL

Coupling Size (A)	Coupling (B)	Pipe Size, NPTF	Max. psi @ 72° F	Plugs, Female Pipe	Each	Sleeve-Lock Sockets, Female Pipe	Each
1/8	7/16″	5/16″	1/8″	5000	95825K75	$8.12	95825K79	$17.67
1/4	9/16″	3/8″	1/4″	5000	95825K86	6.95	95825K81	17.00
3/8	3/4″	1/2″	3/8″	4000	95825K87	10.82	95825K82	23.88
1/2	15/16″	1/2″	1/2″	4000	95825K88	12.68	95825K83	29.48
3/4	1 1/4″	3/4″	3/4″	2500	95825K89	17.82	95825K84	44.67
1	1 1/2″	13/16″	1″	2000	95825K91	25.18	95825K85	60.50

BRASS

Coupling Size (A)	Coupling (B)	Pipe Size, NPTF	Max. psi @ 72° F	Plugs, Female Pipe	Each	Sleeve-Lock Sockets, Female Pipe	Each
1/8	7/16″	5/16″	1/8″	1000	52495K58	$8.71	52495K38	$18.38
1/4	9/16″	3/8″	1/4″	1000	52495K61	7.65	52495K41	16.27
3/8	3/4″	1/2″	3/8″	1000	52495K63	10.80	52495K43	22.62
1/2	15/16″	1/2″	1/2″	1000	52495K65	17.50	52495K45	30.32
3/4	1 1/4″	3/4″	3/4″	1000	52495K67	22.52	52495K47	45.44
1	1 1/2″	13/16″	1″	1000	52495K69	32.83	52495K49	74.84

TYPE 303 STAINLESS STEEL

Coupling Size (A)	Coupling (B)	Pipe Size, NPTF	Max. psi @ 72° F	Plugs, Female Pipe	Each	Sleeve-Lock Sockets, Female Pipe	Each
1/8	7/16″	5/16″	1/8″	2000	5247K28	$21.33	5247K18	$51.70
1/4	9/16″	3/8″	1/4″	2000	5247K31	16.54	5247K21	41.55
3/8	3/4″	1/2″	3/8″	1500	5247K32	26.43	5247K22	57.70
1/2	15/16″	1/2″	1/2″	1500	5247K33	38.89	5247K23	84.77
3/4	1 1/4″	3/4″	3/4″	1500	5247K34	62.73	5247K24	140.45
1	1 1/2″	13/16″	1″	1000	5247K35	108.20	5247K25	234.91

ACETAL

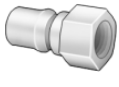

Coupling Size (A)	Coupling (B)	Pipe Size, NPT	Max. psi @ 72° F	Plugs, Female Pipe	Each	Sleeve-Lock Sockets, Female Pipe	Each
1/8	1/2″	5/16″	1/8″	220	5526T11	$51.91	5526T31	$64.53
1/4	5/8″	3/8″	1/4″	220	5526T12	25.41	5526T32	48.03
1/2	1″	1/2″	1/2″	220	5526T14	153.12	5526T34	113.37
3/4	1 1/4″	3/4″	3/4″	145	5526T15	58.65	5526T35	101.91
1	1 9/16″	13/16″	1″	145	5526T16	158.87	5526T36	226.67

Optional Dust Caps and Dust Plugs

Made from black rubber, use these dust caps and dust plugs to keep contaminants out of the zinc-plated steel, brass, and Type 303 stainless steel plugs and sockets shown above.

For Coupling Size	Dust Caps For Series A Plugs	Each	Dust Plugs For Series A Sockets	Each	Dust Caps For Series B Plugs	Each	Dust Plugs For Series B Sockets	Each
1/8	—	—	—	—	51335K71	$1.52	51335K81	$1.62
1/4	51335K71	$1.52	51335K81	$1.62	95825K52	1.50	95825K62	1.48
3/8	51335K72★	2.45	51335K72★	2.45	95825K53	1.83	95825K63	1.63
1/2	51335K73	2.24	5341K831	3.00	95825K54	1.79	95825K64	1.79
3/4	51335K74	4.04	51335K84	4.12	95825K55	4.30	95825K65	4.21
1	51335K79	5.43	51335K85	5.39	95825K56	4.76	95825K66	4.82

★ Combination dust cap/plug.

Warning! Flow should be stopped before you disconnect your line.

Quick-Disconnect Couplings

For information about pipe size, see pgs. 2-3. For information about quick-disconnect couplings, see pg. 298.

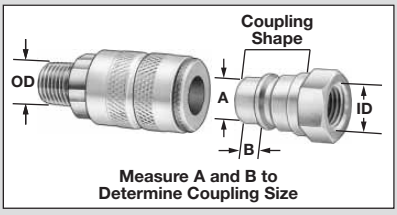

Measure A and B to Determine Coupling Size

Please Read Before Ordering: To determine the ***shape*** of your coupling, compare the end of your plug to the illustrations shown on page 298. You'll also find an illustration of the plug's shape in each presentation. ***Coupling size*** is an industry designation, not the actual measured size. To determine the actual size of your coupling, measure the "A" and "B" dimensions of the plug, as shown at left.

Pipe size also is an accepted industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 11/16", the next highest OD is 3/4" and the corresponding pipe size is 1/2".

Threaded OD or ID	1/2"	5/8"	3/4"	1"	1 5/8"
Pipe Size	1/4"	3/8"	1/2"	3/4"	1"

Pioneer-Shape Hose Couplings for Hydraulic Fluid

- Maximum Pressure @ 72° F: 3000 psi
- Temperature Range: –40° to +250° F
- Hose: Use high-pressure reinforced-rubber hose and hydraulic steel tubing

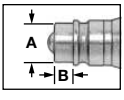

Pioneer-shape couplings are double-shut-off style, so there's a valve in both the plug and the socket to stop all flow when your hose line is disconnected. Couplings are made from zinc-plated steel, which has fair corrosion resistance and high wear resistance. Plugs and sockets with an *O-ring seal* provide a better seal than couplings with a *metal-to-metal seal*; the O-ring is made from Buna-N (nitrile). Vacuum rating is 27" Hg @ 72° F. NPTF (Dryseal) threads are compatible with NPT threads.

Plugs

Also known as nipples, these plugs are compatible with Parker 4000 and 4200 series, as well as SafeWay S20 and S40 series.

Coupling Size	Coupling (A)	Coupling (B)	Pipe Size, NPTF	Metal-to-Metal Seal, Female Pipe	Each	O-Ring Seal, Female Pipe	Each
1/4	9/16"	5/16"	1/4"	5341K57	$5.97	5341K91	$6.97
3/8	3/4"	11/32"	3/8"	5341K53	8.69	5341K92	9.35
1/2	13/16"	3/8"	1/2"	5341K54	7.62	5341K93	8.77
1/2	13/16"	3/8"	3/4"	5341K55	12.52	5341K94	13.14
1	1 7/32"	5/8"	1"	—	—	5341K56	27.86

Push-to-Connect Sockets

Compatible with Parker 4200 series and SafeWay S40 series. To connect, push plug firmly into socket until you hear a "click." To disconnect, slide sleeve forward until the plug ejects.

Coupling Size	Coupling (A)	Coupling (B)	Pipe Size, NPTF	Metal-to-Metal Seal, Female Pipe	Each
1/4	9/16"	5/16"	1/4"	5341K61	$16.46
3/8	3/4"	11/32"	3/8"	5341K47	18.46
1/2	13/16"	3/8"	1/2"	5341K62	19.66
1/2	13/16"	3/8"	3/4"	5341K49	24.49

Sleeve-Lock Sockets

Compatible with Parker 4000 series and SafeWay S20 series. To connect, pull back sleeve, insert plug into socket, then release the sleeve. To disconnect, slide back sleeve and pull out the plug.

Coupling Size	Coupling (A)	Coupling (B)	Pipe Size, NPTF	Metal-to-Metal Seal, Female Pipe	Each	O-Ring Seal, Female Pipe	Each
1/4	9/16"	5/16"	1/4"	5341K45	$11.83	5341K24	$13.57
3/8	3/4"	11/32"	3/8"	5341K63	15.98	5341K25	16.71
1/2	13/16"	3/8"	1/2"	5341K48	17.11	5341K26	18.86
1	1 7/32"	5/8"	1"	—	—	5341K51	54.06

Optional Dust Caps for Plugs

Made from rubber. Color is black, unless noted otherwise.

For Coupling Size		Each
1/4	5341K71	$2.68
3/8	5341K72	3.43
1/2	5341K73■	3.00
1	5341K75	7.26

■ Available in your choice of colors. Please specify color: black, blue, green, red, or yellow.

Optional Dust Plugs for Sockets

Made from rubber. Color is black, unless noted otherwise.

For Coupling Size		Each
1/4	5341K81	$3.17
3/8	5341K96	3.63
1/2	5341K97■	3.00
1	5341K85	6.86

■ Available in your choice of colors. Please specify color: black, blue, green, red, or yellow.

High-Pressure Thread-Lock Hose Couplings for Hydraulic Fluid

- Maximum Pressure @ 72° F: 10,000 psi
- Temperature Range: –40° to +250° F
- Hose: Use reinforced rubber

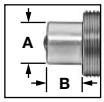

Plugs and sockets thread together, allowing you to connect and disconnect them while operating at maximum working pressure. They're double-shut-off style, so there's a valve in both the plug and the socket to stop all flow when your hose line is disconnected. Couplings are made from zinc-plated steel, which has fair corrosion resistance and high wear resistance. They're compatible with Enerpac series and Parker 3000 series couplings. To make a connection, the plug and socket must have the same coupling size. Not rated for vacuum. NPTF (Dryseal) threads are compatible with NPT threads.

Plugs have a Type 302 stainless steel ball shut-off.

Sockets have a Buna-N (nitrile) seal. To connect, insert plug into socket, slide the sleeve forward, and thread onto plug. To disconnect, unthread the plug from the socket, slide the sleeve back, and pull out the plug.

Note: Pressure ratings given are for static (constant) pressure conditions.

Also Available: Type 316 stainless steel couplings with a 3/8 coupling size × 3/8" pipe connection. Please ask for 5622K1 and specify plug or socket.

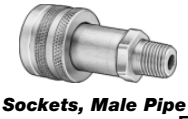

Coupling Size	Coupling (A)	Coupling (B)	Pipe Size, NPTF	Plugs, Female Pipe	Each	Sockets, Male Pipe	Each
1/4	5/8"	7/16"	1/4"	53455K36	$10.22	53455K24	$14.81
3/8	3/4"	5/8"	3/8"	53455K55	11.00	53455K28	16.42

Warning! Flow should be stopped before you disconnect your line.

For information about pipe size, see pages 2-3.

How to Order Cam-and-Groove Hose Couplings

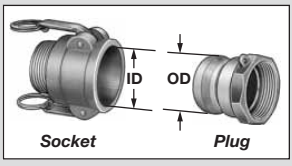

1. **Determine the coupling size.** Coupling size is an industry designation, not the actual measured size. To determine coupling size, measure the inside diameter (ID) of the socket or outside diameter (OD) of the plug, as shown at left. Match the actual size to the coupling size listed in the chart below. For example, if the actual size measures 3⅝″, the coupling size is 3.

Actual ID or OD	15/16″	1¼″	1 7/16″	1 13/16″	2⅛″	2½″	3″	3⅝″	4¾″	5¾″	6 15/16″
Coupling Size	½	¾	1	1¼	1½	2	2½	3	4	5	6

2. **Determine the pipe size.** Pipe size is also an industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD), as shown at left. Then, round up the measurement to the closest OD listed in the chart and select the corresponding pipe size. For example, if the OD measures 1 3/16″, the next highest OD is 1⅜″ and the corresponding pipe size is 1″.

Threaded OD	¾″	1″	1⅜″	1⅝″	1⅞″	2⅜″	2⅞″	3½″	4½″	5⅝″	6⅝″
Pipe Size	½″	¾″	1″	1¼″	1½″	2″	2½″	3″	4″	5″	6″

Metal Cam-and-Groove Hose Couplings

- Maximum Pressure: See below
- Temperature Range: −65° to +250° F
- Hose: Use polyethylene, polyurethane, PVC, and rubber

Metal cam-and-groove couplings are stronger and more durable than the plastic versions. They provide quick access to medium- and large-diameter hose lines. All couplings meet Fed. Spec. A-A-59326 (formerly MIL-C-27487). They're compatible with PT Coupling, Dixon "Andrews", and Ever-Tite cam-and-groove couplings.

Cam-and-groove couplings consist of two pieces: a socket (also called a coupler) and a plug (also called an adapter); see pages 315-317 for plugs. To be used together, the socket and plug must have the same coupling size. To connect, insert the plug into the socket and press down the levers. The levers fit snugly into the groove on the plug's body and force the plug down against the gasket to form a tight seal. To disconnect, lift both levers and pull out the plug. For replacement gaskets, see page 318.

Material	Features	Applications
Aluminum	Good abrasion resistance. Fair corrosion and chemical resistance. Lightweight and economical.	Use with water, ethylene glycol, hydraulic oil, petroleum oil, gasoline, and diesel fuel.
Hard-Anodized Aluminum	Good abrasion, corrosion, and chemical resistance. Lightweight and economical.	Use with sand and salt water, as well as with water, ethylene glycol, hydraulic oil, petroleum oil, gasoline, and diesel fuel.
Brass	More economical than stainless steel. Fair abrasion and chemical resistance. Good corrosion resistance.	Use with salt water and waste water. Also use with water, ethylene glycol, hydraulic oil, petroleum oil, gasoline, and diesel fuel.
Type 316 Stainless Steel	Excellent abrasion, corrosion, and chemical resistance.	Ideal for use with citric acid, salt water, and waste water; also use with water, ethylene glycol, hydraulic oil, petroleum oil, gasoline, and diesel fuel.

Sockets with Threaded Male Pipe Connection

Also known as B couplers, these sockets have a Buna-N (nitrile) gasket and zinc-plated steel pull rings, except the Type 316 stainless steel sockets have Type 304 stainless steel pull rings. Sockets ***with locking levers*** prevent accidental disconnection.

With Nonlocking Levers

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Aluminum with Brass Levers	Each	Aluminum with Type 316 SS Levers	Each	Hard-Anodized Aluminum with Type 316 SS Levers	Each	Brass with Brass Levers	Each	Type 316 SS with Type 316 SS Levers	Each
With Nonlocking Levers												
½	½″	250	51415K108	$10.60	2005T91	$11.04	—	—	52155K108	$19.08	53015K108	$35.16
¾	¾″	250	51415K11	11.21	2005T11	15.05	2084T11	$14.89	52155K11	23.90	53015K11	37.60
1	1″	250	51415K12	12.48	2005T12	13.46	2084T12	14.90	52155K12	27.47	53015K12	41.85
1¼	1¼″	250	51415K13	15.95	2005T13	17.23	2084T13	21.15	52155K13	37.27	53015K13	48.37
1½	1″	250	95805K22	37.35	2005T131	37.36	2084T131	46.68	52155K131	82.88	—	—
1½	1½″	250	51415K14	15.45	2005T14	16.69	2084T14	23.43	52155K14	43.51	53015K14	53.89
2	1½″	250	95805K23	40.33	2005T132	40.73	2084T132	48.37	52155K161	99.40	6795K132	135.88
2	2″	250	51415K15	17.41	2005T15	18.79	2084T15	27.24	52155K15	46.90	53015K15	60.77
2½	2½″	200	51415K16	24.23	2005T16	26.16	2084T16	36.56	52155K16	58.08	53015K16	98.94
3	2″	200	95805K63	39.15	2005T133	51.54	2084T133	62.57	52155K171	114.63	6795K63	228.18
3	3″	200	51415K17	29.82	2005T17	32.21	2084T17	43.22	52155K17	91.65	53015K17	114.74
4	3″	150	95805K62	64.81	2005T134	75.52	2084T134	94.39	52155K181	183.75	—	—
4	4″	150	51415K18	45.97	2005T18	49.64	2084T18	67.34	52155K18	124.86	53015K18	163.44
5	5″	75	51415K109	75.59	2005T1	81.64	—	—	52155K109	220.35	53015K109	226.43
6	6″	75	51415K19	106.75	2005T19	115.29	2084T19	149.80	52155K19	267.90	53015K19	279.48
With Locking Levers												
1	1″	250	51415K432	23.25	2005T92	25.11	2084T92	45.17	52155K432	48.89	53015K132	59.60
1¼	1¼″	250	51415K433	34.87	2005T93	37.64	2084T93	33.13	52155K433	69.98	53015K133	70.87
1½	1½″	250	51415K434	32.83	2005T94	35.46	2084T94	35.11	52155K434	70.64	53015K134	75.90
2	2″	250	51415K435	34.26	2005T95	36.99	2084T95	55.12	52155K435	78.95	53015K135	87.51
2½	2½″	200	51415K436	43.15	2005T96	46.61	2084T96	47.05	52155K436	91.97	53015K136	117.63
3	3″	200	51415K437	52.02	2005T97	56.18	2084T97	69.15	52155K437	126.29	53015K137	153.97
4	4″	150	51415K438	67.51	2005T98	72.91	2084T98	93.27	52155K438	170.01	53015K138	199.84
5	5″	75	51415K439	98.00	2005T99	105.84	—	—	52155K439	252.98	53015K139	268.13

(Continued on following page)

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use metal cam-and-groove couplings with compressed air or gas.

Metal Cam-and-Groove Hose Couplings

For information about pipe size, see pgs. 2-3. For information about cam-and-groove couplings, see pg. 311.

How to Order Cam-and-Groove Hose Couplings

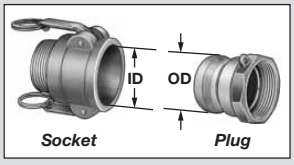

1. **Determine the coupling size.** Coupling size is an industry designation, not the actual measured size. To determine coupling size, measure the inside diameter (ID) of the socket or outside diameter (OD) of the plug, as shown at left. Match the actual size to the coupling size listed in the chart below. For example, if the actual size measures 3⅝″, the coupling size is 3.

Actual ID or OD	15/16″	1¼″	1 7/16″	1 13/16″	2⅛″	2½″	3″	3⅝″	4¾″	5¾″	6 15/16″
Coupling Size	½	¾	1	1¼	1½	2	2½	3	4	5	6

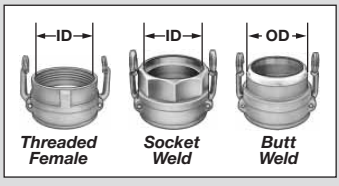

2. **For all couplings (except those with a barbed end), determine the pipe size.** Pipe size is also an industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID) or outside diameter (OD), as shown at left. For ***threaded*** couplings, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the ID or OD measures 1 3/16″, the next highest ID or OD is 1⅜″ and the corresponding pipe size is 1″. For ***unthreaded*** couplings, take the actual measurement and select the corresponding pipe size.

Threaded ID or OD	¾″	1″	1⅜″	1⅝″	1⅞″	2⅜″	2⅞″	3½″	4½″	5⅝″	6⅝″
Unthreaded ID or OD	—	—	—	—	1.90″	2.375″	—	3.50″	4.50″	—	6.625″
Pipe Size	½″	¾″	1″	1¼″	1½″	2″	2½″	3″	4″	5″	6″

Metal Cam-and-Groove Hose Couplings *(Continued from previous page)*

- Maximum Pressure: See below
- Temperature Range: –65° to +250° F
- Hose: Use polyethylene, polyurethane, PVC, and rubber

All sockets have a Buna-N (nitrile) gasket and zinc-plated steel pull rings, except the Type 316 stainless steel sockets have Type 304 stainless steel pull rings. For plugs, see pages 315-317; for replacement gaskets, see page 318.

Sockets with Threaded Female Pipe Connection

With Locking Levers

Also known as D couplers. Sockets ***with locking levers*** prevent accidental disconnection.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Aluminum with Brass Levers Each	Aluminum with Type 316 SS Levers Each	Hard-Anodized Aluminum with Type 316 SS Levers Each	Brass with Brass Levers Each	Type 316 SS with Type 316 SS Levers Each
With Nonlocking Levers							
½	½″	250	51415K208 $11.53	2005T43 $14.92	2084T208 $17.64	52155K208 $24.44	53015K208 $36.05
¾	¾″	250	51415K21 12.11	2005T21 13.09	2084T21 15.54	52155K21 27.42	53015K21 38.98
1	1″	250	51415K22 11.82	2005T22 12.75	2084T22 16.16	52155K22 30.46	53015K22 40.83
1¼	1¼″	250	51415K23 14.71	2005T23 15.88	2084T23 20.11	52155K23 35.80	53015K23 51.35
1½	1″	250	95805K28 38.54	2005T141 38.59	2084T141 48.20	52155K141 85.05	6795K141 127.76
1½	1½″	250	51415K24 16.29	2005T24 17.59	2084T24 21.81	52155K24 41.53	53015K24 55.47
2	1½″	250	95805K29 37.71	2005T142 37.72	2084T142 47.13	52155K142 83.20	6795K142 118.32
2	2″	250	51415K25 17.41	2005T25 18.79	2084T25 27.24	52155K25 50.56	53015K25 59.73
2½	2½″	200	51415K26 24.36	2005T26 26.31	2084T26 35.54	52155K26 61.78	53015K26 99.71
3	2″	200	95805K64 45.03	2005T143 52.57	2084T143 69.95	52155K143 147.06	6795K64 185.15
3	3″	200	51415K27 28.15	2005T27 30.40	2084T27 42.65	52155K27 89.66	53015K27 116.60
4	3″	150	95805K65 66.25	2005T144 75.81	2084T144 92.76	52155K144 210.56	6795K65 304.75
4	4″	150	51415K28 43.23	2005T28 46.69	2084T28 66.76	52155K28 144.81	53015K28 157.08
5	5″	75	51415K209 76.56	2005T44 82.68	2084T209 109.62	52155K209 227.34	53015K209 238.67
6	6″	75	51415K29 101.08	2005T29 109.17	2084T29 139.99	52155K29 292.96	53015K29 302.75
With Locking Levers							
1	1″	250	51415K442 23.05	2005T51 24.90	2084T172 46.63	52155K442 48.53	53015K172 58.44
1¼	1¼″	250	51415K443 33.61	2005T52 36.30	2084T173 33.25	52155K443 68.43	53015K173 71.08
1½	1½″	250	51415K444 33.63	2005T53 36.31	2084T174 42.51	52155K444 69.66	53015K174 77.72
2	2″	250	51415K445 34.73	2005T54 37.50	2084T175 55.11	52155K445 77.83	53015K175 86.45
2½	2½″	200	51415K446 43.27	2005T55 46.74	2084T176 56.27	52155K446 95.78	53015K176 121.01
3	3″	200	51415K447 51.30	2005T56 55.40	2084T177 68.55	52155K447 122.04	53015K177 156.11
4	4″	150	51415K448 66.20	2005T57 71.50	2084T178 92.69	52155K448 173.24	53015K178 191.67
5	5″	75	51415K449 99.00	2005T58 106.92	2084T179 117.23	52155K449 234.90	53015K179 274.26

90° Elbow Sockets with Threaded Female Pipe Connection

Also known as LD couplers.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Aluminum with Brass Levers Each	Aluminum with Type 316 SS Levers Each	Hard-Anodized Aluminum with Type 316 SS Levers Each	Brass with Brass Levers Each	Type 316 SS with Type 316 SS Levers Each
With Nonlocking Levers							
1	1″	250	95805K15 $25.72	2005T312 $29.21	2084T712 $32.22	52155K97 $52.01	6795K15 $205.46
1½	1½″	250	95805K16 30.92	2005T313 32.32	2084T713 50.24	52155K98 67.36	6795K16 201.29
2	2″	250	95805K17 34.66	2005T314 43.03	2084T714 55.80	52155K99 118.25	6795K17 271.71
3	3″	200	95805K81 53.30	2005T315 57.56	2084T715 71.94	52155K911 190.68	6795K81 328.75
4	4″	150	95805K82 82.31	2005T316 88.90	2084T716 113.35	52155K912 246.44	6795K82 358.21

(Continued on following page)

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use metal cam-and-groove couplings with compressed air or gas.

For information about pipe size, see pgs. 2-3. For information about cam-and-groove couplings, see pg. 311.

Metal Cam-and-Groove Hose Couplings *(Continued from previous page)*

Sockets with Hose Barb Connection

Also known as C couplers. Sockets ***with locking levers*** prevent accidental disconnection. Secure hose to the barbed end with low-profile clamps (see page 283) or banding with a buckle (see page 284).

With Nonlocking Levers

Coupling Size	For Hose ID	Max. psi @ 72° F	Aluminum with Brass Levers Each	Aluminum with Type 316 SS Levers Each	Hard-Anodized Aluminum with Type 316 SS Levers Each	Brass with Brass Levers Each	Type 316 SS with Type 316 SS Levers Each
With Nonlocking Levers							
1/2	1/2″	250	51415K308 $10.45	2005T41 $11.28	2084T308 $16.44	52155K308 $24.80	53015K308 $36.75
3/4	3/4″	250	51415K31 11.23	2005T31 12.13	2084T31 17.85	52155K31 28.80	53015K31 36.75
1	3/4″	250	95805K24 33.38	—	—	—	—
1	1″	250	51415K32 11.39	2005T32 14.84	2084T32 17.12	52155K32 32.00	53015K32 40.47
1 1/4	1 1/4″	250	51415K33 15.27	2005T33 16.50	2084T33 21.47	52155K33 38.10	53015K33 50.97
1 1/2	1″	250	95805K25 37.40	2005T135 58.54	2084T135 76.86	52155K235 62.66	—
1 1/2	1 1/2″	250	51415K34 15.67	2005T34 16.93	2084T34 20.45	52155K34 43.23	53015K34 46.88
2	1 1/2″	250	95805K26 38.53	2005T136 38.56	2084T136 48.15	52155K236 101.64	6795K136 133.59
2	2″	250	51415K35 16.81	2005T35 18.15	2084T35 24.27	52155K35 52.95	53015K35 55.46
2 1/2	2 1/2″	200	51415K36 23.99	2005T36 25.90	2084T36 35.67	52155K36 70.29	53015K36 89.94
3	2″	200	95805K67 37.94	2005T137 43.36	2084T137 69.95	52155K237 145.53	6795K67 211.86
3	3″	200	51415K37 28.12	2005T37 30.37	2084T37 41.78	52155K37 87.08	53015K37 104.94
4	3″	150	95805K66 55.39	2005T138 61.51	2084T138 76.81	52155K238 224.76	6795K66 235.63
4	4″	150	51415K38 40.87	2005T38 44.14	2084T38 62.22	52155K38 140.10	53015K38 157.85
5	5″	75	51415K309 71.52	2005T42 77.24	2084T309 105.76	52155K309 221.78	53015K309 230.95
6	6″	75	51415K39 105.45	2005T39 113.88	2084T39 140.48	52155K39 276.79	53015K39 248.87
With Locking Levers							
1	1″	250	51415K452 22.69	2005T2 24.50	2084T2 29.70	52155K452 50.35	53015K162 56.58
1 1/4	1 1/4″	250	51415K453 34.16	2005T3 36.89	2084T3 47.25	52155K453 70.80	53015K163 69.52
1 1/2	1 1/2″	250	51415K454 32.90	2005T4 35.53	2084T4 47.28	52155K454 71.26	53015K164 68.56
2	2″	250	51415K455 34.77	2005T5 37.56	2084T5 43.78	52155K455 80.20	53015K165 81.41
2 1/2	2 1/2″	200	51415K456 42.90	2005T6 46.34	2084T6 54.06	52155K456 104.81	53015K166 109.95
3	3″	200	51415K457 50.46	2005T7 54.50	2084T7 77.75	52155K457 119.90	53015K167 142.71
4	4″	150	51415K458 63.85	2005T8 68.96	2084T8 75.71	52155K458 175.04	53015K168 192.55
5	5″	75	51415K459 93.98	2005T9 101.49	2084T9 145.10	52155K459 240.89	53015K169 256.76

90° Elbow Sockets with Hose Barb Connection

Also known as CL couplers. Secure hose to the barbed end with low-profile clamps (see page 283) or banding with a buckle (see page 284).

Coupling Size	For Hose ID	Max. psi @ 72° F	Aluminum with Brass Levers Each	Aluminum with Type 316 SS Levers Each	Hard-Anodized Aluminum with Type 316 SS Levers Each	Brass with Brass Levers Each	Type 316 SS with Type 316 SS Levers Each
With Nonlocking Levers							
1	1″	250	95805K12 $27.47	2005T112 $27.49	2084T912 $34.41	52155K92 $56.23	6795K12 $168.12
1 1/2	1 1/2″	250	95805K13 27.77	2005T113 30.00	2084T913 37.48	52155K93 67.62	6795K13 224.16
2	2″	250	95805K83 34.64	2005T114 37.42	2084T914 47.41	52155K94 84.69	6795K83 205.18
3	3″	200	95805K84 54.12	2005T115 58.45	2084T915 73.05	52155K95 167.18	6795K84 341.76
4	4″	150	95805K85 90.49	2005T116 101.98	2084T916 120.57	52155K96 221.10	6795K85 419.06

Sockets with Socket-Weld Connection

Also known as DWS couplers, all have an unthreaded socket-weld end that slips over the metal fitting on your hose for a strong welded connection.

Coupling Size	Pipe Size	Max. psi @ 72° F	Aluminum with Brass Levers Each	Type 316 SS with Type 316 SS Levers Each
With Nonlocking Levers				
1 1/2	1 1/2″	250	—	53015K357 $89.49
2	2″	250	51415K354 $33.56	53015K354 77.65
3	3″	200	51415K355 45.69	53015K355 139.10
4	4″	150	51415K356 54.41	53015K356 181.38
6	6″	75	51415K357 139.28	—

Sockets with Schedule 40 Butt-Weld Connection

Also known as DWB couplers, all have an unthreaded beveled end that forms a trough for a strong welded bond when connected to a hose that also has a butt-weld connection.

Coupling Size	Pipe Size	Max. psi @ 72° F	Aluminum with Brass Levers Each	Type 316 SS with Type 316 SS Levers Each
With Nonlocking Levers				
1 1/2	1 1/2″	250	—	53015K344 $78.50
2	2″	250	51415K345 $34.56	53015K345 77.65
3	3″	200	51415K346 45.69	53015K346 139.10
4	4″	150	51415K347 54.41	53015K347 181.38

(Continued on following page)

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use metal cam-and-groove couplings with compressed air or gas.

Metal Cam-and-Groove Hose Couplings

For information about pipe size, see pgs. 2-3. For information about cam-and-groove couplings, see pg. 311.

How to Order Cam-and-Groove Hose Couplings

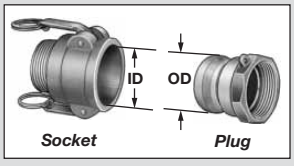

1. Determine the coupling size. Coupling size is an industry designation, not the actual measured size. To determine coupling size, measure the inside diameter (ID) of the socket or outside diameter (OD) of the plug, as shown at left. Match the actual size to the coupling size listed in the chart below. For example, if the actual size measures 3⅝″, the coupling size is 3.

Actual ID or OD	15/16″	1 1/4″	1 7/16″	1 13/16″	2 1/8″	2 1/2″	3″	3 5/8″	4 3/4″	5 3/4″	6 15/16″
Coupling Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6

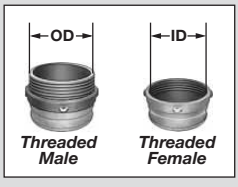

2. Determine the pipe size. Pipe size is also an industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. For ***threaded*** couplings, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1 3/8″ and the corresponding pipe size is 1″. For ***unthreaded*** couplings, take the actual measurement and select the corresponding pipe size.

Threaded OD or ID	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	5 5/8″	6 5/8″
Unthreaded ID	—	—	—	—	—	2.375″	—	3.50″	4.50″	—	6.625″
Pipe Size	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	5″	6″

Metal Cam-and-Groove Hose Couplings *(Continued from previous page)*

- Maximum Pressure: See below
- Temperature Range: –65° to +250° F
- Hose: Use polyethylene, polyurethane, PVC, and rubber

All ***sockets*** and ***caps*** have a Buna-N (nitrile) gasket and zinc-plated steel pull rings, except the Type 316 stainless steel sockets have Type 304 stainless steel pull rings. For more sockets, see pages 311-313. For plugs, see pages 315-317. For replacement gaskets, see page 318.

Sockets with Flanged Connection

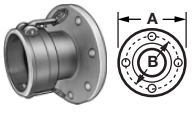

Also known as PFC couplers, all have an unthreaded flanged end (Class 150) that bolts to a hose with a flanged connection of the same size for easy access to your line. ***Aluminum*** flanges have a flat face. ***Type 316 stainless steel*** flanges have a raised face, except *coupling size 6* has a flat face.

Coupling Size	Pipe Size	Flange OD (A)	Bolt Circle Dia. (B)	No. of Bolt Holes	Recom'd Bolt Size	Max. psi @ 72° F	Aluminum with Brass Levers	Each	Type 316 SS with Type 316 SS Levers	Each
With Nonlocking Levers										
2	2″	6″	4 3/4″	4	5/8″	250	51415K335	$76.98	53015K335	$242.61
3	3″	7 1/2″	6″	4	5/8″	200	51415K336	108.03	53015K336	307.81
4	4″	9″	7 1/2″	8	5/8″	150	51415K337	148.72	53015K337	462.90
6	6″	11″	9 1/2″	8	3/4″	75	51415K338	240.14	53015K338	716.45

Caps

With Nonlocking Levers

Caps ***with locking levers*** prevent accidental disconnection.

Coupling Size	Max. psi @ 72° F	Aluminum with Brass Levers	Each	Aluminum with Type 316 SS Levers	Each	Hard-Anodized Aluminum with Type 316 SS Levers	Each	Brass with Brass Levers	Each	Type 316 SS with Type 316 SS Levers	Each
With Nonlocking Levers											
1/2	250	51415K808	$8.92	2005T45	$9.64	2084T808	$13.51	52155K808	$18.90	53015K808	$34.29
3/4	250	51415K81	10.74	2005T81	14.58	2084T81	13.92	52155K81	25.39	53015K81	32.34
1	250	51415K82	12.48	2005T82	13.46	2084T82	16.45	52155K82	31.81	53015K82	36.54
1 1/4	250	51415K83	14.35	2005T83	15.51	2084T83	18.50	52155K83	32.00	53015K83	37.74
1 1/2	250	51415K84	14.90	2005T84	16.10	2084T84	19.22	52155K84	37.99	53015K84	45.19
2	250	51415K85	14.05	2005T85	15.17	2084T85	19.57	52155K85	42.16	53015K85	53.30
2 1/2	200	51415K86	19.22	2005T86	20.75	2084T86	29.48	52155K86	41.00	53015K86	73.44
3	200	51415K87	20.96	2005T87	22.64	2084T87	30.49	52155K87	60.99	53015K87	67.93
4	150	51415K88	29.45	2005T88	31.81	2084T88	47.67	52155K88	86.88	53015K88	101.12
5	75	51415K809	49.45	2005T46	53.40	2084T809	70.47	52155K809	183.02	53015K809	164.91
6	75	51415K89	73.39	2005T89	79.26	2084T89	108.21	52155K89	220.89	53015K89	250.29
With Locking Levers											
1	250	51415K462	23.64	2005T61	25.53	2084T182	43.47	52155K462	49.74	53015K182	51.76
1 1/4	250	51415K463	33.24	2005T62	35.90	2084T183	45.91	52155K463	64.44	53015K183	65.21
1 1/2	250	51415K464	32.38	2005T63	34.97	2084T184	39.99	52155K464	66.06	53015K184	66.62
2	250	51415K465	31.72	2005T64	34.26	2084T185	40.27	52155K465	70.45	53015K185	79.06
2 1/2	200	51415K466	38.09	2005T65	41.13	2084T186	48.60	52155K466	73.92	53015K186	90.01
3	200	51415K467	43.51	2005T66	47.00	2084T187	56.42	52155K467	96.43	53015K187	99.74
4	150	51415K468	52.63	2005T67	56.85	2084T188	73.58	52155K468	126.10	53015K188	127.40
5	75	51415K469	72.31	2005T68	78.09	2084T189	126.94	52155K469	195.74	53015K189	176.49

(Continued on following page)

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use metal cam-and-groove couplings with compressed air or gas.

For information about pipe size, see pgs. 2-3. For information about cam-and-groove couplings, see pg. 311.

Metal Cam-and-Groove Hose Couplings *(Continued from previous page)*

Socket-to-Socket Connection

Also known as C×C couplers.

Coupling Size	Max. psi @ 72° F	Aluminum with Brass Levers	Each	Aluminum with Type 316 SS Levers	Each	Hard-Anodized Aluminum with Type 316 SS Levers	Each	Brass with Brass Levers	Each	Type 316 SS with Type 316 SS Levers	Each
With Nonlocking Levers											
1 ×1	250	51415K912	$31.00	2005T412	$33.48	2084T812	$51.53	52155K914	$77.28	6795K22	$69.69
1½×1½	250	51415K91	38.14	2005T413	41.19	2084T813	54.39	52155K915	83.76	6795K23	126.51
2 ×2	250	51415K92	40.74	2005T414	44.00	2084T814	58.06	52155K916	109.72	6795K24	158.02
3 ×2	200	51415K221	69.75	2005T321	69.51	2084T161	86.31	52155K191	193.66	6795K191	208.53
3 ×3	200	51415K93	45.50	2005T415	49.14	2084T815	64.88	52155K917	149.52	6795K25	218.88
4 ×3	150	51415K222	72.39	2005T322	70.89	2084T162	93.06	52155K192	210.67	6795K192	310.82
4 ×4	150	51415K94	71.23	2005T416	76.93	2084T816	93.31	52155K918	227.68	6795K26	305.32

Plugs with Threaded Male Pipe Connection

Also known as F adapters.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Aluminum	Each	Hard-Anodized Aluminum	Each	Brass	Each	Type 316 SS	Each
½	½″	250	51415K408	$4.48	2084T408	$10.37	52155K408	$11.14	53015K408	$27.84
¾	¾″	250	51415K41	5.66	2084T41	9.36	52155K41	12.99	53015K41	28.29
¾	1″	250	95805K111	26.45	—	—	—	—	—	—
1	1″	250	51415K42	6.47	2084T42	10.91	52155K42	12.99	53015K42	31.73
1	1½″	250	95805K121	32.00	2084T151	43.18	52155K151	46.12	—	—
1¼	1¼″	250	51415K43	8.94	2084T43	12.18	52155K43	17.08	53015K43	42.55
1½	1½″	250	51415K44	8.94	2084T44	15.09	52155K44	25.55	53015K44	40.78
1½	2″	250	95805K56	24.39	2084T152	34.93	52155K152	58.95	6795K56	75.73
2	1½″	250	95805K57	26.16	2084T153	40.92	52155K153	67.28	6795K57	77.85
2	2″	250	51415K45	11.14	2084T45	18.00	52155K45	26.10	53015K45	44.50
2	3″	250	95805K58	35.05	2084T154	51.13	52155K154	120.12	6795K58	132.47
2½	2½″	200	51415K46	19.68	2084T46	27.95	52155K46	56.03	53015K46	86.20
3	2″	200	95805K59	35.62	2084T155	50.61	52155K155	99.72	6795K59	114.92
3	3″	200	51415K47	21.69	2084T47	31.97	52155K47	63.57	53015K47	88.21
3	4″	200	95805K61	45.33	2084T156	68.51	52155K156	135.84	6795K61	137.80
4	3″	150	95805K42	49.99	2084T157	93.21	52155K157	171.09	6795K157	205.14
4	4″	150	51415K48	39.60	2084T48	62.02	52155K48	116.92	53015K48	141.10
5	5″	75	51415K409	71.87	2084T409	134.66	52155K409	200.80	53015K409	199.74
6	6″	75	51415K49	88.03	2084T49	121.09	52155K49	263.40	53015K49	246.13

Plugs with Threaded Female Pipe Connection

Also known as A adapters.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Aluminum	Each	Hard-Anodized Aluminum	Each	Brass	Each	Type 316 SS	Each
½	½″	250	51415K508	$4.18	2084T508	$6.83	52155K508	$9.34	53015K508	$27.84
¾	¾″	250	51415K51	4.41	2084T51	7.99	52155K51	10.66	53015K51	23.81
1	1″	250	51415K52	5.24	2084T52	8.31	52155K52	11.68	53015K52	24.90
1¼	1¼″	250	51415K53	7.58	2084T53	11.96	52155K53	13.72	53015K53	31.34
1½	1½″	250	51415K54	7.17	2084T54	11.56	52155K54	15.86	53015K54	29.98
1½	2″	250	95805K51	24.39	2084T121	34.93	52155K121	57.51	6795K51	119.67
2	1½″	250	95805K52	24.39	2084T122	34.92	52155K122	59.45	6795K52	119.67
2	2″	250	51415K55	8.64	2084T55	13.51	52155K55	22.06	53015K55	30.64
2	3″	250	95805K53	33.25	2084T123	55.61	52155K158	106.71	6795K53	124.32
2½	2½″	200	51415K56	13.77	2084T56	22.03	52155K56	36.59	53015K56	63.70
3	2″	200	95805K54	26.98	2084T124	45.71	52155K159	97.71	6795K54	118.79
3	3″	200	51415K57	15.97	2084T57	24.15	52155K57	46.89	53015K57	59.83
3	4″	200	95805K41	30.77	—	—	—	—	6795K89	151.93
4	3″	150	95805K55	41.07	2084T126	60.45	52155K126	144.60	6795K55	272.80
4	4″	150	51415K58	36.20	2084T58	52.72	52155K58	109.54	53015K58	111.66
5	5″	75	51415K509	60.96	2084T509	92.10	52155K509	170.38	53015K509	176.96
6	6″	75	51415K59	72.29	2084T59	108.18	52155K59	217.36	53015K59	194.14

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Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use metal cam-and-groove couplings with compressed air or gas.

How to Order Cam-and-Groove Hose Couplings

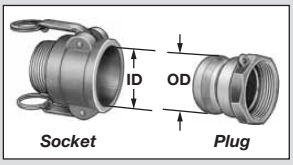

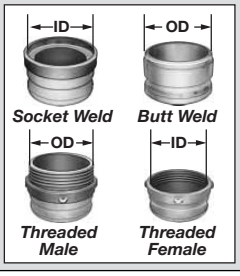

1. **Determine the coupling size.** Coupling size is an industry designation, not the actual measured size. To determine coupling size, measure the inside diameter (ID) of the socket or outside diameter (OD) of the plug, as shown at left. Match the actual size to the coupling size listed in the chart below. For example, if the actual size measures 3⅝″, the coupling size is 3.

Actual ID or OD	15/16″	1¼″	1 7/16″	1 13/16″	2⅛″	2½″	3″	3⅝″	4¾″	5¾″	6 15/16″
Coupling Size	½	¾	1	1¼	1½	2	2½	3	4	5	6

2. **For all couplings (except those with a barbed end), determine the pipe size.** Pipe size is also an industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the inside diameter (ID) or outside diameter (OD), as shown at left. For ***threaded*** couplings, round up the measurement to the closest ID or OD listed in the chart and select the corresponding pipe size. For example, if the ID or OD measures 1 3/16″, the next highest ID or OD is 1⅜″ and the corresponding pipe size is 1″. For ***unthreaded*** couplings, take the actual measurement and select the corresponding pipe size.

Threaded ID or OD	1″	1⅜″	1⅞″	2⅜″	3½″	4½″	6⅝″
Unthreaded ID or OD	—	—	1.90″	2.375″	3.50″	4.50″	6.625″
Pipe Size	¾″	1″	1½″	2″	3″	4″	6″

Metal Cam-and-Groove Hose Couplings *(Continued from previous page)*

- Maximum Pressure: See below
- Temperature Range: –65° to +250° F
- Hose: Use polyethylene, polyurethane, PVC, and rubber

All ***sockets*** have a Buna-N (nitrile) gasket and zinc-plated steel pull rings, except the Type 316 stainless steel sockets have Type 304 stainless steel pull rings. For sockets, see pgs. 311-315; for replacement gaskets, see pg. 318.

Plugs with Hose Barb Connection

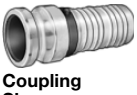

Also known as E adapters. Secure hose to the barbed end with low-profile clamps (see page 283) or banding with a buckle (see page 284).

Coupling Size	For Hose ID	Max. psi @ 72° F	Aluminum	Each	Hard-Anodized Aluminum	Each	Brass	Each	Type 316 SS	Each
½	½″	250	51415K608	$6.53	2084T608	$10.54	52155K608	$14.98	53015K608	$26.42
¾	¾″	250	51415K61	6.53	2084T61	10.61	52155K61	15.95	53015K61	25.12
1	¾″	250	95805K33	29.28	—	—	—	—	—	—
1	1″	250	51415K62	6.80	2084T62	10.81	52155K62	16.74	53015K62	27.16
1¼	1¼″	250	51415K63	8.18	2084T63	13.20	52155K63	20.68	53015K63	34.85
1½	1″	250	95805K34	37.19	—	—	—	—	—	—
1½	1½″	250	51415K64	8.37	2084T64	14.19	52155K64	27.47	53015K64	33.89
2	1½″	250	95805K36	29.50	2084T145	36.89	52155K145	72.06	—	—
2	2″	250	51415K65	10.45	2084T65	16.59	52155K65	29.51	53015K65	32.67
2½	2½″	200	51415K66	16.11	2084T66	29.04	52155K66	38.70	53015K66	68.76
3	2″	200	95805K68	34.72	2084T146	55.73	52155K146	154.62	—	—
3	3″	200	51415K67	19.32	2084T67	31.36	52155K67	63.63	53015K67	62.50
4	3″	150	95805K69	49.65	2084T147	72.31	52155K147	167.44	6795K147	315.19
4	4″	150	51415K68	39.17	2084T68	60.41	52155K68	127.29	53015K68	143.83
5	5″	75	51415K609	62.87	2084T609	89.79	52155K609	191.41	53015K609	207.79
6	6″	75	51415K69	78.43	2084T69	108.34	52155K69	243.55	53015K69	250.06

Plugs with Socket Connection

Also known as A×C couplers.

Coupling Size Plug	Coupling Size Socket	Max. psi @ 72° F	Aluminum with Brass Levers	Each	Aluminum with Type 316 SS Levers	Each	Hard-Anodized Aluminum with Type 316 SS Levers	Each	Brass with Brass Levers	Each	Type 316 SS with Type 316 SS Levers	Each
With Nonlocking Levers												
1½	1	250	95805K141	$41.15	2005T331	$37.24	2084T211	$40.15	52155K311	$110.55	53015K311	$195.38
2	1½	250	95805K151	51.64	2005T332	46.72	2084T212	49.76	52155K312	98.62	53015K312	195.50
2	3	200	95805K72	44.07	2005T333	52.08	2084T214	55.13	52155K313	139.95	6795K71	162.90
3	2	200	95805K71	41.52	2005T334	42.67	2084T213	61.42	52155K314	98.97	6795K72	154.24
3	4	150	95805K74	63.74	2005T335	62.55	2084T216	82.62	52155K315	183.13	6795K73	332.73
4	3	150	95805K73	56.22	2005T336	66.50	2084T215	86.56	52155K316	191.73	6795K74	294.03

Plugs with Socket-Weld Connection

Also known as AWS adapters. All have an unthreaded socket-weld end that slips over the metal fitting on your hose for a strong welded connection.

Coupling Size	Pipe Size	Max. psi @ 72° F	Aluminum	Each	Type 316 SS	Each
1½	1½″	250	—	—	53015K349	$61.12
2	2″	250	51415K349	$22.28	53015K351	57.47
3	3″	200	51415K361	34.93	53015K352	97.52
4	4″	150	51415K352	45.30	53015K353	146.39
6	6″	75	51415K353	79.43	—	—

Plugs with Schedule 40 Butt-Weld Connection

Also known as AWB adapters. The unthreaded beveled end forms a trough for a strong welded bond when connected to a hose that also has a butt-weld connection.

Coupling Size	Pipe Size	Max. psi @ 72° F	Aluminum	Each	Type 316 SS	Each
1½	1½″	250	—	—	53015K339	$61.12
2	2″	250	51415K341	$26.92	53015K341	57.47
3	3″	200	51415K342	34.93	53015K342	97.52
4	4″	150	51415K343	45.30	53015K343	146.39

(Continued on following page)

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use metal cam-and-groove couplings with compressed air or gas.

For information about pipe size, see pgs. 2-3. For information about cam-and-groove couplings, see pg. 311.

Metal Cam-and-Groove Hose Couplings *(Continued from previous page)*

Plugs with Flange Connection

Also known as PFA adapters. All have an unthreaded flanged end (Class 150) that bolts to a hose with a flanged connection of the same size for easy access to your line. ***Aluminum*** flanges have a flat face. ***Type 316 stainless steel*** flanges have a raised face, except *coupling size 6* has a flat face.

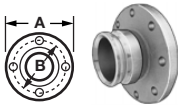

Coupling Size	Pipe Size	OD Flange (A)	Bolt Circle Dia. (B)	No. of Bolt Holes	Recom'd Bolt Size	Max. psi @ 72° F	Aluminum	Each	Type 316 SS	Each
2	2″	6″	4¾″	4	⅝″	250	51415K331	$65.04	53015K331	$150.93
3	3″	7½″	6″	4	⅝″	200	51415K332	69.49	53015K332	197.73
4	4″	9″	7½″	8	⅝″	150	51415K333	110.17	53015K333	295.82
6	6″	11″	9½″	8	¾″	75	51415K334	174.37	53015K334	522.82

Plug-to-Plug Connection

Also known as SA spool adapters.

Coupling Size	Max. psi @ 72° F	Aluminum	Each	Hard-Anodized Aluminum	Each	Brass	Each	Type 316 SS	Each
1 ×1	250	51415K321	$15.45	2084T111	$21.01	52155K321	$56.37	53015K321	$59.42
1½ ×1	250	95805K171	36.59	2084T112	46.76	52155K322	117.38	—	—
1½ ×1½	250	51415K323	21.41	2084T113	32.56	52155K323	78.45	53015K323	84.75
2 ×2	250	95805K75	22.44	2084T114	38.23	52155K324	69.84	6795K75	88.02
2½ ×2	200	95805K181	39.99	2084T115	47.48	52155K325	190.02	—	—
3 ×2	200	95805K76	35.31	2084T116	52.53	52155K326	130.98	6795K76	149.10
3 ×3	200	95805K77	38.58	2084T117	52.80	52155K327	138.19	6795K77	142.27
4 ×3	150	95805K78	52.01	2084T118	74.84	52155K328	192.41	6795K78	292.15
4 ×4	150	95805K79	55.16	2084T119	72.33	52155K329	245.06	6795K79	256.43

Plugs

Coupling Size	Max. psi @ 72° F	Aluminum	Each	Hard-Anodized Aluminum	Each	Brass	Each	Type 316 SS	Each
½	250	51415K708	$4.95	2084T708	$7.81	52155K708	$12.31	53015K708	$21.84
¾	250	51415K71	6.18	2084T71	8.18	52155K71	14.59	53015K71	21.23
1	250	51415K72	6.72	2084T72	10.08	52155K72	14.59	53015K72	22.20
1¼	250	51415K73	8.28	2084T73	11.39	52155K73	19.66	53015K73	25.45
1½	250	51415K74	6.72	2084T74	11.72	52155K74	20.59	53015K74	30.35
2	250	51415K75	9.09	2084T75	14.44	52155K75	24.39	53015K75	32.61
2½	200	51415K76	12.37	2084T76	17.31	52155K76	32.24	53015K76	50.94
3	200	51415K77	13.38	2084T77	22.03	52155K77	37.54	53015K77	52.42
4	150	51415K78	20.43	2084T78	31.07	52155K78	61.03	53015K78	86.13
5	75	51415K709	38.34	2084T709	59.75	52155K709	99.79	53015K709	106.83
6	75	51415K79	42.72	2084T79	74.18	52155K79	159.22	53015K79	162.30

Sockets with British Threaded Male Pipe Connection

Also known as B couplers. Connections are BSPT (British Standard Pipe Taper) threads, which are also known as R threads.

Aluminum with Type 316 SS Levers

Coupling Size	Pipe Size, BSPT	Max. psi @ 72° F		Each
With Nonlocking Levers				
¾	¾″	250	2091T11	$12.58
1	1″	250	2091T12	12.95
1½	1½″	250	2091T14	16.04
2	2″	250	2091T15	18.07
3	3″	200	2091T17	30.96

Sockets with British Threaded Female Pipe Connection

Also known as D couplers. Connections are BSPP (British Standard Pipe Parallel) threads, which are also known as G threads.

Aluminum with Type 316 SS Levers

Coupling Size	Pipe Size, BSPP	Max. psi @ 72° F		Each
With Nonlocking Levers				
¾	¾″	250	2091T21	$12.58
1	1″	250	2091T22	11.21
1½	1½″	250	2091T24	16.91
2	2″	250	2091T25	18.07
3	3″	200	2091T27	29.23

Plugs with British Threaded Male Pipe Connection

Also known as F adapters. Connections are BSPT (British Standard Pipe Taper) threads, which are also known as R threads.

Aluminum

Coupling Size	Pipe Size, BSPT	Max. psi @ 72° F		Each
¾	¾″	250	2091T61	$6.13
1	1″	250	2091T62	7.78
1½	1½″	250	2091T64	9.29
2	2″	250	2091T65	11.58
3	3″	200	2091T67	22.52

Plugs with British Threaded Female Pipe Connection

Also known as A adapters. Connections are BSPP (British Standard Pipe Parallel) threads, which are also known as G threads.

Aluminum

Coupling Size	Pipe Size, BSPP	Max. psi @ 72° F		Each
¾	¾″	250	2091T51	$4.58
1	1″	250	2091T52	5.96
1½	1½″	250	2091T54	7.45
2	2″	250	2091T55	8.97
3	3″	200	2091T57	16.59

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use metal cam-and-groove couplings with compressed air or gas.

Metal Cam-and-Groove Hose Couplings

For information about pipe size, see pages 2-3.

How to Order Cam-and-Groove Hose Couplings

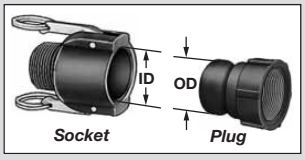

1. **Determine the coupling size.** Coupling size is an industry designation, not the actual measured size. To determine coupling size, measure the inside diameter (ID) of the socket or outside diameter (OD) of the plug, as shown at left. Match the actual size to the coupling size listed in the chart below. For example, if the actual size measures 3⅝″, the coupling size is 3.

Actual ID or OD	1¼″	1⁷⁄₁₆″	2⅛″	2½″	3″	3⁵⁄₈″	4¾″
Coupling Size	¾	1	1½	2	2½	3	4

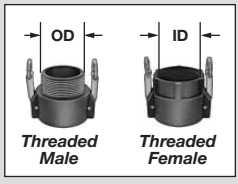

2. **Determine the pipe size.** Pipe size is also an industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1³⁄₁₆″, the next highest OD or ID is 1⅜″ and the corresponding pipe size is 1″.

Threaded OD or ID	¾″	1″	1⅜″	1⅝″	1⅞″	2⅜″	3½″	4½″
Pipe Size	½″	¾″	1″	1¼″	1½″	2″	3″	4″

Gaskets for Metal Cam-and-Groove Hose Couplings

***Buna-N (Nitrile) Rubber*—**Use with water, salt water, waste water, sand, ethylene glycol, hydraulic oil, petroleum oil, gasoline, diesel fuel, and citric acid. Temperature range is –65° to +275° F. Color is black.

***Viton® Fluoroelastomer*—**Use with water, salt, detergents, varnish, ethanol, and biodiesel. Temperature range is –40° to +400° F. Color is green.

***FEP-Encased Silicone*—**Both the FEP casing and the silicone core are FDA compliant. Use with vegetable oil and mineral oil. Temperature range is –75° to +400° F. Color is red.

***FEP-Encased Viton® Fluoroelastomer*—**The FEP casing is FDA compliant; however, the Viton® fluoroelastomer core is not. Use with acids and solvents, as well as in applications requiring greater resistance to chemicals. Temperature range is –15° to +400° F. Color is black.

For Coupling Size	ID	OD	Buna-N (Nitrile) Rubber Pkg. Qty.		Per Pkg.	Viton® Fluoroelastomer	Each	FEP-Encased Silicone	Each	FEP-Encased Viton® Fluoroelastomer	Each
½	0.69″	1.06″	10	5345K72	$5.36	5659K29	$4.17	93185K69	$8.79	—	—
¾	0.88″	1.38″	10	5345K11	5.47	5659K31	4.56	93185K71	8.79	9315K14	$14.79
1	1.06″	1.56″	10	5345K12	5.67	5659K32	7.59	93185K72	7.96	9315K15	13.44
1¼	1.36″	1.94″	10	5345K13	5.86	5659K33	9.18	93185K73	9.17	9315K16	15.78
1½	1.63″	2.19″	10	5345K14	6.08	5659K34	10.13	93185K74	9.31	9315K17	15.78
2	2″	2.63″	10	5345K15	6.40	5659K35	12.54	93185K75	10.64	9315K18	17.24
2½	2.38″	3.13″	10	5345K16	6.62	5659K36	15.67	93185K76	11.98	9315K19	18.63
3	3″	3.72″	10	5345K17	7.06	5659K37	16.20	93185K77	14.67	9315K21	22.12
4	4″	4.88″	10	5345K18	10.57	5659K38	23.60	93185K78	20.02	9315K22	29.31
5	4.88″	5.91″	5	5345K73	8.80	—	—	93185K79	25.39	9315K23	38.65
6	6″	7.06″	5	5345K69	14.63	5659K39	41.09	93185K81	28.76	9315K24	39.97

Metal Cam-and-Groove Hose Couplings with Shut-Off Valve

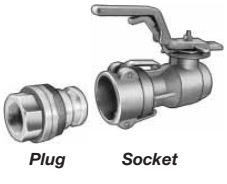

- Maximum Pressure: See below
- Temperature Range: Aluminum: –65° to +250° F; Type 316 SS: –40° to +400° F
- Hose: Use polyethylene, polyurethane, PVC, and rubber

Also known as dry disconnects, both the socket and the plug have a shutoff valve for minimal fluid loss when disconnecting your hose line. *Note*: The sockets and plugs in this presentation must be used together; they are not compatible with any other style of coupling. Use with water, ethylene glycol, and hydraulic oil.

Cam-and-groove couplings consist of two pieces: a socket (also called a coupler) and a plug (also called and adapter). To connect, insert the plug into the socket, press down the levers, and turn the handle to the "open" position. To disconnect, turn handle to the "closed" position, lift the levers, and pull out the plug. Couplings cannot be disconnected when the valve is open. Connections are female NPT.

Aluminum has good abrasion, corrosion, and chemical resistance. ***Type 316 stainless steel*** has excellent abrasion, corrosion, and chemical resistance.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Aluminum with Buna-N (Nitrile) Gasket: Sockets with Type 304 SS Levers O'all Lg.	Each	Plugs O'all Lg.	Each	Type 316 SS with Fluoroelastomer Gasket: Sockets with Type 304 SS Levers O'all Lg.	Each	Plugs O'all Lg.	Each
2	1½″	200	6⅞″	5605K74 $259.90	4⁵⁄₁₆″	5605K71 $102.14	6⅞″	5605K83 $448.49	4⁵⁄₁₆″	5605K81 $262.56
2½	2″	150	7½″	5605K75 267.32	5³⁄₁₆″	5605K72 114.29	7½″	5605K84 458.21	5³⁄₁₆″	5605K82 337.84
4	3″	125	9½″	5605K76 788.89	6¹³⁄₁₆″	5605K73 221.79	—	—	—	—

Polypropylene Cam-and-Groove Hose Couplings with Shut-Off Valve

- Maximum Pressure: See below
- Temperature Range: –20° to +150° F
- Hose: Use polyethylene, PVC, and EPDM

Lighter in weight and more economical than the metal couplings above, these two-piece polypropylene couplings are also known as dry disconnects. Each end has a valve for minimal fluid loss when disconnecting your hose line; they cannot be disconnected when the valves are open. They also have PTFE seats and a fluoroelastomer face seal between the two halves. Polypropylene offers poor abrasion resistance and very good corrosion and chemical resistance. Use with water, ethylene glycol, acetic acid, and magnesium chloride. Connections are female NPT.

Pipe Size, NPT	Max. psi @ 72° F	O'all Lg.		Each
1½″	100	8¾″	5064K11	$276.33
2″	100	8¾″	5064K12	276.33

Warning! Do not use cam-and-groove couplings with compressed air or gas.

For information about pipe size, see pages 2-3.

Plastic Cam-and-Groove Hose Couplings

- Maximum Pressure: See below
- Temperature Range: See below
- Hose: Use polyethylene, PVC, polyurethane, and rubber

Plastic cam-and-groove couplings are lighter in weight than those made from metal. They provide quick access to medium- and large-diameter hose lines. All couplings meet Fed. Spec. A-A-59326 (formerly MIL-C-27487).

Cam-and-groove couplings consist of two pieces: a socket (also known as a coupler) and a plug (also known as an adapter). To be used together, the socket and plug must have the same coupling size. To connect, insert the plug into the socket and press down the levers. The levers fit snugly into the groove on the plug's body and force the plug against the gasket to form a tight seal. To disconnect, lift both levers and pull out the plug. For plugs and replacement gaskets, see page 321.

Material	Features/Applications	Color	Gasket Material	Temperature Range
Polypropylene	An economical choice. Good abrasion, corrosion, and chemical resistance. Use with water and ethylene glycol.	Black	EPDM	–20° to +150° F
FDA/NSF Polypropylene	FDA (food and beverage) CFR21 177.2510, NSF-51 (food), and NSF-61 (drinking water) compliant. Good abrasion, corrosion, and chemical resistance.	White	FDA-Compliant Buna-N (Nitrile)	+10° to +180° F
Nylon	Reinforced with glass fiber for strength. Very good abrasion, corrosion, and chemical resistance. Use with water, ethylene glycol, gasoline, and varnish.	Yellow	EPDM	–30° to +200° F
PVDF	Excellent abrasion, corrosion, and chemical resistance. Use with gasoline, sodium, linseed oil, and lactic acid.	White	EPDM	–20° to +250° F

Sockets with Threaded Male Pipe Connection

Also known as B couplers. All have two Type 304 stainless steel levers (unless noted) with stainless steel pull rings, except the *polypropylene sockets with locking levers* have zinc-plated steel pull rings, and the *PDVF sockets* have stainless steel pins instead of rings.

Sockets ***with locking levers*** prevent accidental disconnection.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Polypropylene with Nonlocking Levers	Each	Polypropylene with Locking Levers	Each	FDA/NSF Polypropylene with Nonlocking Levers	Each	Nylon with Locking Levers	Each	PVDF with Locking Levers	Each
3/4	1/2″	125	5535K55	$5.42	5237T11	$6.52	91105K551	$6.30	5596K111■	$6.85	5403K212▲	$28.50
3/4	3/4″	125	5535K56	5.41	5237T12	7.75	91105K561	6.62	5596K121■	6.62	5403K222▲	28.50
1	1″	125	5535K25	6.24	5237T13	7.98	91105K571	7.92	5596K131■	7.92	5403K232▲	32.61
1	1 1/4″	125	5535K28	6.24	5237T14	9.25	—	—	—	—	—	—
1 1/2	1 1/4″	100	5535K82	8.04	—	—	91105K591	10.03	5596K181	10.54	5403K271	36.10
1 1/2	1 1/2″	100	5535K21	7.31	5237T15	9.95	91105K58	10.54	5596K141	10.54	5403K241	37.90
2	2″	100	5535K22	8.89	5237T16	10.76	91105K59	11.88	5596K151	11.88	5403K251	41.93
3	3″	50	5535K57	14.95	—	—	91105K61	20.23	5596K161	20.23	5403K261	71.72
4	4″	50	5535K67★	29.59	—	—	—	—	5596K171	28.14	—	—

■ Levers do not lock; they have steel pins instead of stainless steel pull rings. ▲ Levers do not lock. ★ Has three levers.

Sockets with Threaded Female Pipe Connection

Also known as D couplers. All have two Type 304 stainless steel levers (unless noted) with stainless steel pull rings, except the *polypropylene sockets with locking levers* have zinc-plated steel pull rings, and the *PDVF sockets* have stainless steel pins instead of rings.

Sockets ***with locking levers*** prevent accidental disconnection.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Polypropylene with Nonlocking Levers	Each	Polypropylene with Locking Levers	Each	FDA/NSF Polypropylene with Nonlocking Levers	Each	Nylon with Locking Levers	Each	PVDF with Locking Levers	Each
3/4	1/2″	125	5535K27	$5.42	5237T31	$7.64	91105K611	$6.30	5596K211■	$6.62	5403K412▲	$29.35
3/4	3/4″	125	5535K64	5.42	5237T32	7.62	91105K671	6.62	5596K221■	6.62	5403K422▲	29.35
1	1″	125	5535K35	6.24	5237T33	9.11	91105K681	7.46	5596K231■	7.46	5403K432▲	33.00
1	1 1/4″	125	5535K29	6.24	5237T34	9.13	—	—	—	—	—	—
1 1/2	1 1/4″	100	5535K84	8.04	—	—	91105K691	10.03	5596K281	11.00	5403K471	36.48
1 1/2	1 1/2″	100	5535K31	7.31	5237T35	9.96	91105K69	10.54	5596K241	10.72	5403K441	38.30
2	2″	100	5535K32	8.89	5237T36	11.17	91105K71	11.84	5596K251	11.96	5403K451	42.79
3	3″	50	5535K36	14.95	—	—	91105K72	20.23	5596K261	20.65	5403K461	70.50
4	4″	50	5535K75★	29.59	—	—	—	—	5596K271	29.88	—	—

■ Levers do not lock; they have steel pins instead of stainless steel pull rings. ▲ Levers do not lock. ★ Has three levers.

(Continued on following page)

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use plastic cam-and-groove couplings with compressed air or gas.

Plastic Cam-and-Groove Hose Couplings

For information about pipe size, see pgs. 2-3. For information about cam-and-groove couplings, see pg. 319.

How to Order Cam-and-Groove Hose Couplings

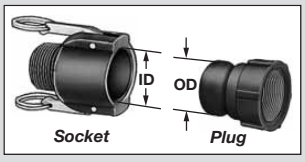

1. **Determine the coupling size.** Coupling size is an industry designation, not the actual measured size. To determine coupling size, measure the inside diameter (ID) of the socket or outside diameter (OD) of the plug, as shown at left. Match the actual size to the coupling size listed in the chart below. For example, if the actual size measures 3⅝″, the coupling size is 3.

Actual ID or OD	1¼″	1 7/16″	2⅛″	2½″	3⅝″	4¾″
Coupling Size	¾	1	1½	2	3	4

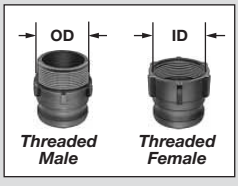

2. **For all couplings (except those with a barbed end), determine the pipe size.** Pipe size is also an industry designation, not the actual measured size. To determine pipe size, first use a ruler to measure the outside diameter (OD) or inside diameter (ID), as shown at left. Then, round up the measurement to the closest OD or ID listed in the chart and select the corresponding pipe size. For example, if the OD or ID measures 1 3/16″, the next highest OD or ID is 1⅜″ and the corresponding pipe size is 1″.

Threaded OD or ID	¾″	1″	1⅜″	1⅝″	1⅞″	2⅜″	3½″	4½″
Pipe Size	½″	¾″	1″	1¼″	1½″	2″	3″	4″

Plastic Cam-and-Groove Hose Couplings *(Continued from previous page)*

- Maximum Pressure: See below
- Temperature Range: See pg. 319
- Hose: Use polyethylene, PVC, polyurethane, and rubber

All ***sockets*** and ***caps*** have two Type 304 stainless steel levers (unless noted) with stainless steel pull rings, except the *polypropylene with locking levers* have zinc-plated steel rings, and the *PVDF* have stainless steel pins instead of rings.

Sockets and caps ***with locking levers*** prevent accidental disconnection.

Sockets with Hose Barb Connection

Also known as C couplers. Secure hose to the barbed end with worm-drive clamps (see page 274) or low-profile clamps (see page 283).

Coupling Size	For Hose ID	Max. psi @ 72° F	Polypropylene with Nonlocking Levers	Each	Polypropylene with Locking Levers	Each	FDA/NSF Polypropylene with Nonlocking Levers	Each	Nylon with Locking Levers	Each	PVDF with Locking Levers	Each
¾	½″	125	5535K51	$5.42	5237T21	$6.60	91105K651	$6.70	5596K311■	$6.62	5403K312▲	$28.50
¾	¾″	125	5535K52	5.42	5237T22	6.63	91105K621	7.03	5596K321■	6.62	5403K322▲	28.50
1	1″	125	5535K15	6.24	5237T23	8.11	91105K631	8.35	5596K331■	7.57	5403K332▲	32.61
1	1¼″	125	5535K39	6.24	5237T24	8.16	—	—	—	—	—	—
1½	1¼″	100	5535K83	8.04	—	—	91105K641	9.63	5596K381	10.92	5403K371	36.48
1½	1½″	100	5535K11	7.31	5237T25	10.07	91105K64	10.11	5596K341	10.54	5403K341	38.30
2	2″	100	5535K12	8.89	5237T26	10.92	91105K65	11.88	5596K351	11.96	5403K351	43.19
3	3″	50	5535K16	14.95	—	—	91105K66	20.23	5596K361	18.76	5403K361	66.80
4	4″	50	5535K74★	29.59	—	—	—	—	5596K371	27.30	—	—

■Levers do not lock; they have steel pins instead of stainless steel pull rings. ▲Levers do not lock. ★Has three levers.

Caps

Coupling Size	Max. psi @ 72° F	Polypropylene with Nonlocking Levers	Each	Polypropylene with Locking Levers	Each	FDA/NSF Polypropylene with Nonlocking Levers	Each	Nylon with Locking Levers	Each	PVDF with Locking Levers	Each
¾	125	5535K72	$5.42	5237T42	$6.66	91105K841	$6.35	5596K911■	$6.15	5403K712▲	$26.56
1	125	5535K46	5.98	5237T43	8.05	91105K851	7.46	5596K921■	7.03	5403K722▲	30.98
1½	100	5535K43	7.31	5237T44	9.96	91105K86	10.54	5596K931	10.39	5403K731	36.71
2	100	5535K44	8.89	5237T45	10.92	91105K87	11.88	5596K941	11.69	5403K741	34.56
3	50	5535K63	14.95	—	—	91105K88	19.32	5596K951	18.03	5403K751	54.59
4	50	5535K89	21.59	—	—	—	—	5596K962	24.18	—	—

■Levers do not lock; they have steel pins instead of stainless steel pull rings. ▲Levers do not lock.

90° Elbows

Sockets have nonlocking levers. For sockets with a barbed connection, secure hose with worm-drive clamps (see page 274) or low-profile clamps (see page 283).

Coupling Size	Max. psi @ 72° F	Polypropylene Sockets with Threaded Female Pipe Connection: Pipe Size, NPT	Each	Polypropylene Sockets with Hose Barb Connection: For Hose ID	Each	Polypropylene Plugs with Threaded Male Pipe Connection: Pipe Size, NPT	Each	Polypropylene Plugs with Threaded Female Pipe Connection: Pipe Size, NPT	Each
1½	100	1½″	5535K93	$8.74	1½″	5535K91	$8.74	1½″	5535K97	$5.10	1½″	5535K95	$4.26
2	100	2″	5535K94	10.84	2″	5535K92	10.84	2″	5535K98	5.45	2″	5535K96	4.86

(Continued on following page)

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use plastic cam-and-groove couplings with compressed air or gas.

For information about pipe size, see pgs. 2-3. For information about cam-and-groove couplings, see pg. 319.

Plastic Cam-and-Groove Hose Couplings *(Continued from previous page)*

Plugs with Threaded Male Pipe Connection

Also known as F adapters.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Polypropylene	Each	FDA/NSF Polypropylene	Each	Nylon	Each	PVDF	Each
3/4	1/2″	125	5535K19	$2.56	91105K771	$3.59	5596K41	$3.50	5403K611	$23.62
3/4	3/4″	125	5535K59	2.56	91105K781	3.77	5596K42	3.50	5403K621	23.62
1	1″	125	5535K26	2.84	91105K791	4.38	5596K43	3.77	5403K631	24.46
1	1 1/4″	125	5535K47	2.84	—	—	—	—	—	—
1 1/2	1 1/4″	100	5535K86	3.14	91105K811	4.68	5596K48	5.19	5403K68	26.01
1 1/2	1 1/2″	100	5535K23	2.86	91105K81	4.92	5596K44	4.92	5403K64	27.31
2	2″	100	5535K24	3.75	91105K82	5.27	5596K45	5.27	5403K65	29.35
3	3″	50	5535K61	9.82	91105K83	11.42	5596K46	13.19	5403K66	64.36
4	4″	50	5535K77	11.69	—	—	5596K47	21.11	—	—

Plugs with Threaded Female Pipe Connection

Also known as A adapters.

Coupling Size	Pipe Size, NPT	Max. psi @ 72° F	Polypropylene	Each	FDA/NSF Polypropylene	Each	Nylon	Each	PVDF	Each
3/4	1/2″	125	5535K65	$2.37	91105K491	$2.93	5596K61	$2.65	5403K111	$20.80
3/4	3/4″	125	5535K66	2.37	91105K511	3.08	5596K62	2.65	5403K121	20.80
1	1″	125	5535K37	2.37	91105K521	3.34	5596K63	2.92	5403K131	22.01
1	1 1/4″	125	5535K48	2.37	—	—	—	—	—	—
1 1/2	1 1/4″	100	5535K81	2.96	91105K531	4.18	5596K68	4.68	5403K18	27.56
1 1/2	1 1/2″	100	5535K33	2.69	91105K53	4.38	5596K64	4.54	5403K14	28.94
2	2″	100	5535K34	3.18	91105K54	4.84	5596K65	4.96	5403K15	30.56
3	3″	50	5535K38	7.68	91105K55	9.69	5596K66	11.00	5403K16	54.98
4	4″	50	5535K58	11.69	—	—	5596K67	19.84	—	—

Plugs with Hose Barb Connection

Also known as E adapters. Secure hose to the barbed end with worm-drive clamps (see page 274) or low-profile clamps (see page 283).

Coupling Size	For Hose ID	Max. psi @ 72° F	Polypropylene	Each	FDA/NSF Polypropylene	Each	Nylon	Each	PVDF	Each
3/4	1/2″	125	5535K53	$2.56	91105K721	$3.33	5596K71	$3.50	5403K511	$23.62
3/4	3/4″	125	5535K54	2.56	91105K731	3.50	5596K72	3.50	5403K521	23.62
1	1″	125	5535K17	2.84	91105K741	3.95	5596K73	4.04	5403K531	25.28
1	1 1/4″	125	5535K49	2.84	—	—	—	—	—	—
1 1/2	1 1/4″	100	5535K85	3.14	91105K751	4.61	5596K78	4.92	5403K58	25.98
1 1/2	1 1/2″	100	5535K13	2.86	91105K75	4.84	5596K74	4.73	5403K54	27.29
2	2″	100	5535K14	3.75	91105K76	5.27	5596K75	5.46	5403K55	29.35
3	3″	50	5535K18	9.82	91105K77	10.54	5596K76	10.46	5403K56	48.92
4	4″	50	5535K76	11.69	—	—	5596K77	19.34	—	—

Plugs

Coupling Size	Max. psi @ 72° F	Polypropylene	Each	FDA/NSF Polypropylene	Each	Nylon	Each	PVDF	Each
3/4	125	5535K68	$2.56	91105K891	$2.73	5596K81	$2.81	5403K811	$21.17
1	125	5535K45	2.47	91105K911	3.77	5596K82	3.06	5403K821	22.01
1 1/2	100	5535K41	2.75	91105K92	4.38	5596K83	3.77	5403K83	24.06
2	100	5535K42	3.70	91105K93	4.84	5596K84	4.58	5403K84	26.06
3	50	5535K69	7.79	91105K94	9.85	5596K85	11.42	5403K85	61.10
4	50	5535K78	9.21	—	—	5596K86	14.50	—	—

Replacement Gaskets

EPDM gaskets are for the polypropylene, nylon, and PVDF sockets and caps. Color is black. Temperature range is –30° to +250° F. ***FDA-compliant Buna-N (nitrile)*** gaskets are for the FDA/NSF polypropylene sockets and caps. Color is white. Temperature range is +10° to +180° F.

For Coupling Size	ID	OD	Pkg. Qty.	EPDM	Per Pkg.	FDA-Compliant Buna-N	Per Pkg.
3/4	0.88″	1.38″	10	5647K61	$4.71	5656K41	$5.20
1	1.06″	1.56″	10	5647K62	4.73	5656K42	6.04
1 1/2	1.56″	2.19″	10	5647K63	6.03	5656K43	7.17
2	2″	2.63″	10	5647K64	6.60	5656K44	8.52
3	3″	3.72″	10	5647K65	8.95	5656K45	11.92
4	4″	4.87″	10	5647K66	13.95	—	—

Warning! It is important to relieve all pressure before disconnecting the couplings. Do not use plastic cam-and-groove couplings with compressed air or gas.

Steel Automatic-Winding Hose Reels

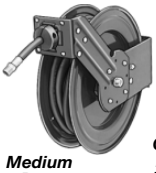

Medium Duty

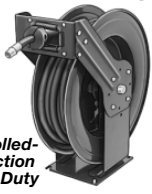

Controlled-Retraction Heavy Duty

Super Duty

Hose locks in place when pulled out of these reels—a quick tug retracts hose. All reels are steel with a blue powder-coated finish.

Versa-Mount Reels—Mount on the floor, wall, or ceiling. All have a 1/4″ thick support bracket, two 1/2″ dia. mounting holes, and two 1/2″ wide mounting slots (fasteners not included). Reels have a brass (unless noted) female swivel inlet with a Buna-N (nitrile) seal, except reels *with Type 316 stainless steel swivel* have a stainless steel swivel instead of brass. The hose end has a brass rigid male fitting, except reels *with industrial-shape quick-disconnect coupling* and reels *with Type 316 stainless steel fitting*.

The *medium duty* reels are for use in applications where the hose is pulled straight out of the reel. The *heavy duty* reels have more support for when hose needs to be pulled out of the reel at an angle. The *controlled-retraction* reels are also called safety reels; the retraction speed is reduced to five feet per second to increase operator safety.

Floor-Mount Super Duty Reels—Strong and well supported to handle large diameter hose. Ideal for use in vibration applications. All have six 1/2″ dia. mounting holes (fasteners not included). The reel *with 3/4″ ID hose* has a brass female swivel inlet with a Buna-N (nitrile) seal; the hose end has a brass male rigid fitting. Reels *with 1″ ID hose* have a nickel-plated steel female swivel inlet with a fluoroelastomer (Aflas) seal; the hose end has a zinc-plated steel male rigid fitting.

PVC hose is lightweight and abrasion resistant. Use with air and water. The tube and cover are PVC with yarn reinforcement. Temperature range is −15° to +150° F. **To Order:** Please specify part number and color of hose: blue, red, or yellow.

EPDM hose is weather resistant. Use with air and water. The tube and cover are EPDM with textile reinforcement. Temperature range is −40° to +200° F, unless noted. **To Order:** Please specify part number and color of hose: black or red.

Buna-N/neoprene hose is for use with oil, glucose, citric acid, lactic acid, and mineral spirits, as well as with air and water. The tube is Buna-N (nitrile) and the cover is neoprene with textile reinforcement. Temperature range is −20° to +200° F. Hose color is black.

Reels without hose allow you to connect your own hose with a male NPT fitting to the reel. They have a female outlet that is the same size as the swivel inlet. Temperature range is −40° to +250° F.

Also Available: Replacement reel parts. Please specify the reel part number and the part you need: spring for latching mechanism (also called a spring dog), spring can assembly, roller bracket, swivel, or shoulder bolt.

Hose ID	Hose Lg.	Max. psi @ 72° F	Swivel Inlet, NPT Female	Hose End, NPT Male	Reel, Ht.×Wd.×Dp.	Reels with PVC Hose	Each	Reels with EPDM Hose	Each	Reels with Buna-N Hose	Each	Reels without Hose	Each
Versa-Mount Medium Duty Reels—*6″ Lg.×6″ Wd. Mounting Base*													
1/4″	25 ft.	300	1/4″	1/4″	14 1/2″ × 6″ × 13 3/4″	5618T51	$180.70	5476K21	$199.74	5227K32	$237.35	5320K556	$155.17
1/4″	35 ft.	300	1/4″	1/4″	14 1/2″ × 6″ × 13 3/4″	5618T12	193.54	5476K23	215.41	5227K33	266.00	5320K557	155.17
1/4″	50 ft.	300	1/4″	1/4″	18 1/4″ × 6 1/8″ × 17 1/4″	5618T13	247.66	5320K13	275.22	5227K34	347.85	5320K555	213.77
3/8″	15 ft.	300	3/8″	3/8″	14 1/2″ × 6 1/4″ × 13 3/4″	5618T52	171.52	5476K25	190.14	5227K35	222.01	5320K558	155.17
3/8″	25 ft.	300	3/8″	3/8″	14 1/2″ × 6 1/4″ × 13 3/4″	5618T15	197.21	5476K27	219.02	5227K11	271.12	5320K559	169.27
3/8″	35 ft.	300	3/8″	3/8″	18 1/4″ × 6 1/8″ × 17 1/4″	5618T16	237.57	5320K15	267.66	5227K36	336.60	5320K633	213.77
3/8″	50 ft.	300	3/8″	1/4″	18 1/4″ × 6 1/8″ × 17 1/4″	5618T18	276.09	5320K23	308.18	5227K37	410.25	5320K91	238.45
3/8″	50 ft.	300	3/8″	3/8″	21″ × 8 3/4″ × 19 5/8″	5618T17	318.28	5320K17	354.76	5227K13	457.32	5320K634	293.08
1/2″	25 ft.	300	1/2″	1/2″	18 1/4″ × 7″ × 17 1/4″	5618T21	232.98	5320K25	263.86	5227K16	316.13	5320K635	211.03
1/2″	35 ft.	300	1/2″	1/2″	21″ × 9 1/4″ × 19 5/8″	5618T53	337.54	5320K27	381.19	5227K38	455.27	5320K92	287.85
1/2″	50 ft.	300	1/2″	1/2″	21″ × 9 1/4″ × 19 5/8″	5618T23	357.72	5320K31	406.91	5227K18	511.54	5320K554	293.08
3/4″	25 ft.	250	3/4″	3/4″	21″ × 9 3/4″ × 19 5/8″	5618T72	401.59	5320K39	462.75	5227K39	522.28	5320K636	341.45
Versa-Mount Medium Duty Reels with Industrial-Shape Quick-Disconnect Coupling—*6″ Lg.×6″ Wd. Mounting Base*													
3/8″	25 ft.	300	3/8″	1/4″	14 1/2″ × 6 1/4″ × 13 3/4″	5618T41	225.37	5476K64	249.95	5227K72	289.23	5320K559	169.27
3/8″	50 ft.	300	3/8″	1/4″	18 1/4″ × 6 1/8″ × 17 1/4″	5618T42	308.56	5476K65	343.94	5227K73	427.00	5320K91	238.45
1/2″	50 ft.	300	1/2″	3/8″	21″ × 9 1/4″ × 19 5/8″	5618T43	404.32	5320K21	459.03	—	—	5320K554	293.08
Versa-Mount Medium Duty Reels with Type 316 Stainless Steel Swivel and Fitting—*6″ Lg.×6″ Wd. Mounting Base*													
3/8″	25 ft.	300	3/8″	3/8″	14 1/2″ × 6 1/4″ × 13 3/4″	—	—	—	—	5227K12	355.01	5227K41	193.29
3/8″	50 ft.	300	3/8″	3/8″	18 1/4″ × 6 1/8″ × 17 1/4″	—	—	—	—	5227K14	494.15	5227K42	260.68
1/2″	50 ft.	300	1/2″	1/2″	21″ × 9 1/4″ × 19 5/8″	—	—	—	—	5227K31	595.43	5227K43	310.33
Versa-Mount Heavy Duty Reels—*9″ Lg.×8″ Wd. Mounting Base*													
3/8″	50 ft.	300	3/8″	3/8″	21 3/16″ × 8 3/4″ × 19 5/8″	5618T31	398.52	5320K46	442.67	5227K44	523.82	5320K637	351.12
3/8″	75 ft.	300	3/8″	3/8″	25 1/2″ × 9 1/4″ × 23″	5618T55	516.52	5320K48	574.22	5227K45	699.78	5320K638	448.81
3/8″	100 ft.	300	3/8″	3/8″	25 1/2″ × 9 1/4″ × 23″	5618T56	569.72	5320K51	635.25	5227K46	807.21	5320K552	474.05
1/2″	50 ft.	300	1/2″	1/2″	21 3/16″ × 9 1/4″ × 19 5/8″	5618T34	442.04	5320K53	497.74	5227K47	580.08	5320K642	351.12
1/2″	75 ft.	300	1/2″	1/2″	25 1/2″ × 9 1/4″ × 23″	5618T57	522.52	5320K65	618.14	5227K21	743.78	5320K639	452.68
1/2″	100 ft.	300	1/2″	1/2″	25 1/2″ × 9 1/4″ × 23″	5618T58	588.10	5320K57	644.53	5227K48	847.11	5320K551	474.05
3/4″	35 ft.	250	3/4″	3/4″	25 1/2″ × 9 3/4″ × 23″	5618T59	510.72	5320K59	566.68	5227K23	622.54	5320K641	430.03
3/4″	50 ft.	250	3/4″	3/4″	25 1/2″ × 9 3/4″ × 23″	5618T85	530.41	5320K62	613.69	5227K49	697.74	5320K553	469.13
1″	35 ft.	300	1″	1″	25 1/2″ × 10″ × 23″	—	—	5320K18●	756.20	—	—	5320K93●	535.80
Controlled-Retraction Versa-Mount Medium Duty Reels—*6″ Lg.×6″ Wd. Mounting Base*													
3/8″	25 ft.	300	3/8″	3/8″	14 1/2″ × 6 1/4″ × 13 3/4″	9244K51	266.97	5657T11	295.75	5227K24	333.52	9244K16	228.28
3/8″	50 ft.	300	3/8″	1/4″	18 1/4″ × 6 1/8″ × 17 1/4″	9244K53	350.15	5657T13	389.88	—	—	9244K17	301.79
3/8″	50 ft.	300	3/8″	3/8″	18 1/4″ × 6 1/8″ × 17 1/4″	9244K52	350.15	5657T12	389.88	5227K25	472.66	9244K17	301.79
1/2″	50 ft.	300	1/2″	1/2″	21″ × 9 1/4″ × 19 5/8″	9244K55	441.08	5657T15	499.84	5227K26	579.06	9244K21	356.92
3/4″	25 ft.	250	3/4″	3/4″	21″ × 9 3/4″ × 19 5/8″	9244K56	476.05	5657T16	529.61	—	—	9244K22	405.29
Controlled-Retraction Versa-Mount Heavy Duty Reels—*9″ Lg.×8″ Wd. Mounting Base*													
3/8″	75 ft.	300	3/8″	3/8″	25 1/2″ × 9 1/4″ × 23″	9244K42	550.34	—	—	—	—	9244K23	486.14
3/8″	100 ft.	300	3/8″	3/8″	25 1/2″ × 9 1/4″ × 23″	9244K43	597.74	—	—	—	—	9244K24	518.24
1/2″	75 ft.	300	1/2″	1/2″	25 1/2″ × 9 1/4″ × 23″	9244K45	576.03	—	—	5227K71	811.30	9244K25	489.81
1/2″	100 ft.	300	1/2″	1/2″	25 1/2″ × 9 1/4″ × 23″	9244K46	618.22	—	—	5227K27	912.88	9244K26	518.24
3/4″	50 ft.	250	3/4″	3/4″	25 1/2″ × 9 3/4″ × 23″	9244K47	580.61	—	—	—	—	9244K27	505.40
Floor-Mount Super Duty Reels													
3/4″	100 ft.	300	3/4″	3/4″	24 1/2″ × 20″ × 27″	—	—	44835K26	974.71	—	—	44835K54	729.47
1″	50 ft.	300	1″	1″	24 1/2″ × 21″ × 27″	—	—	44835K27♦	930.70	—	—	44835K32	649.98
1″	75 ft.	300	1″	1″	28 1/2″ × 21″ × 31″	—	—	44835K28♦	1,024.37	—	—	44835K55	764.45

● Female swivel inlet is nickel-plated steel. ♦ Temperature range is −7° F to +200° F.

Optional Mounting Brackets for All Versa-Mount Reels

Made from steel, all have two 1/2″ dia. holes and two 1/2″ wide slots for mounting (fasteners not included).

Swivel-base brackets swivel 345°. Mount to the floor or ceiling.

Wall-swing brackets pivot the reel 180°. Mount to the wall.

Beam brackets easily mount overhead on 3″-8 1/2″ wide I-beams and H-beams.

For Mounting Base Size	Swivel-Base Brackets	Each	Wall-Swing Brackets	Each	Beam Brackets	Each
6″ Lg.×6″ Wd.	5320K98	$40.74	5320K63	$58.98	5320K95	$75.05
9″ Lg.×8″ Wd.	5320K98	40.74	5320K97	88.98	5320K96	74.61

Automatic-Winding Hose Reels for High-Pressure Hose

Take the work out of winding high-pressure hose. The hose locks in place when pulled out of these reels; retract hose with a quick tug. Reels are steel with a blue powder-coated finish and have a 1/4″ thick support bracket. They also have a brass swivel inlet (unless noted) with a Buna-N (nitrile) seal. Reels mount to the floor, wall, or ceiling; they have two 1/2″ dia. mounting holes and two 1/2″ wide mounting slots (fasteners not included). See pg. 322 for optional mounting brackets.

Versa-Mount Medium Duty Reels—Use in applications where the hose is pulled straight out of the reel.

Versa-Mount Heavy Duty Reels—Have more support for when the hose needs to be pulled out of the reel at an angle.

Reels with hose are for use with hydraulic oil, as well as with water in pressure-washer applications. Hose has a polyester tube and a black synthetic rubber cover with steel wire reinforcement. The hose end has a zinc-plated steel rigid fitting. Hose rated *2500 psi* is SAE 100R1; *3000 psi* is SAE 100R17; and *4000* and *5000 psi* is SAE 100R16. Temp. range is –40° to +200° F.

Reels without hose have a female outlet that is the same size as the swivel inlet. Temp. range is –40° to +250° F.

Medium Duty

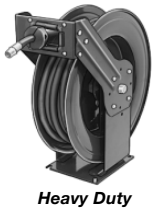

Heavy Duty

Hose ID	Hose Lg.	Max. psi @ 72° F	Swivel Inlet, NPT Female	Hose End, NPT Male	Reel, Ht. × Wd. × Dp.	Mounting Base, Lg. × Wd.	Reels with Hose	Each	Reels without Hose	Each
Versa-Mount Medium Duty Reels										
1/4″	50 ft.	5000	1/4″	1/4″	21″ × 9 1/4″ × 19 5/8″	6″ × 6″	5564K22♣	$459.29	5564K41♣	$322.75
3/8″	35 ft.	3000	3/8″	3/8″	18 1/4″ × 7″ × 17 1/4″	6″ × 6″	5564K11	344.91	5564K42	233.19
3/8″	50 ft.	3000	3/8″	3/8″	21″ × 8 3/4″ × 19 5/8″	6″ × 6″	5564K12	439.79	5564K43	286.39
3/8″	50 ft.	4000	3/8″	3/8″	21″ × 9 1/4″ × 19 5/8″	6″ × 6″	5564K24♣	487.67	5564K44♣	338.71
1/2″	35 ft.	2500	1/2″	1/2″	21″ × 9 1/4″ × 19 5/8″	6″ × 6″	5564K13	388.36	5564K45	297.03
1/2″	50 ft.	2500	1/2″	1/2″	21″ × 9 1/4″ × 19 5/8″	6″ × 6″	5564K14	449.54	5564K46	297.03
Versa-Mount Heavy Duty Reels										
3/8″	75 ft.	3000	3/8″	3/8″	25 1/2″ × 9 1/4″ × 23″	9″ × 8″	5217K31	580.77	5217K41	419.39
1/2″	50 ft.	2500	1/2″	1/2″	21 3/16″ × 9 1/4″ × 19 5/8″	9″ × 8″	5217K37	522.76	5217K42	399.00
1/2″	75 ft.	2500	1/2″	1/2″	25 1/2″ × 9 1/4″ × 23″	9″ × 8″	5217K38	671.42	5217K43	479.72

♣ The swivel inlet is zinc-plated steel.

Lightweight Automatic-Winding Hose Reels

These lightweight reels are resistant to corrosion. The hose locks in place when pulled out of these reels; retract hose with a quick tug. Mount to the floor, wall, or ceiling; mounting fasteners are not included.

Glass-Filled Polypropylene Reels—Black with a red powder-coated steel base, these reels have an adjustable hose guide, a steel rigid inlet, two 5/16″ dia. mounting holes, and two 5/16″ wide mounting slots.

Aluminum Reels—Have a blue powder-coated finish. They have a brass swivel inlet with a Buna-N (nitrile) seal, two 1/2″ dia. mounting holes, and two 1/2″ wide mounting slots.

Reels with PVC hose are for use with air and water. Hose has a PVC tube and red PVC cover with yarn reinforcement. The hose end has a brass rigid fitting; the fitting has NPTF (Dryseal) threads on the *glass-filled polypropylene reels* and NPT threads on the *aluminum reels*. NPTF threads are compatible with NPT threads. Temperature range is 32° to 150° F.

Reels without hose have a female outlet that is the same size as the inlet. Temperature range is 32° to 150° F for the *glass-filled polypropylene reels*; –65° to +250° F for the *aluminum reels*.

Glass-Filled Polypropylene

Aluminum

Hose ID	Hose Lg.	Max. psi @ 72° F	Inlet, NPT Female	Hose End, Male	Reel, Ht. × Wd. × Dp.	Mounting Base, Lg. × Wd.	Reels with PVC Hose	Each	Reels without Hose	Each
Glass-Filled Polypropylene Reels										
1/4″	25 ft.	300	3/8″	1/4″	17 7/8″ × 5 3/4″ × 16 1/2″	8″ × 4 1/2″	5595T11	$133.83	5595T21	$120.84
1/4″	35 ft.	300	3/8″	1/4″	17 7/8″ × 5 3/4″ × 16 1/2″	8″ × 4 1/2″	5595T12	139.52	5595T22	120.84
1/4″	50 ft.	300	3/8″	1/4″	17 7/8″ × 5 3/4″ × 16 1/2″	8″ × 4 1/2″	5595T13	168.00	5595T23	131.65
3/8″	25 ft.	300	3/8″	1/4″	17 7/8″ × 5 3/4″ × 16 1/2″	8″ × 4 1/2″	5595T14	144.27	5595T24	120.84
3/8″	35 ft.	300	3/8″	1/4″	17 7/8″ × 5 3/4″ × 16 1/2″	8″ × 4 1/2″	5595T15	157.56	5595T25	131.65
3/8″	50 ft.	300	1/2″	1/4″	17 7/8″ × 6 1/4″ × 16 1/2″	8″ × 4 1/2″	5595T16	203.12	5595T26	156.21
1/2″	25 ft.	300	1/2″	1/2″	17 7/8″ × 6 1/4″ × 16 1/2″	8″ × 4 1/2″	5595T17	203.12	5595T27	163.09
1/2″	35 ft.	300	1/2″	1/2″	17 7/8″ × 6 1/4″ × 16 1/2″	8″ × 4 1/2″	5595T18	213.56	5595T28	168.00
1/2″	50 ft.	300	1/2″	1/2″	17 7/8″ × 7 3/4″ × 16 1/2″	8″ × 4 1/2″	5595T19	272.41	5595T29	227.93
Aluminum Reels										
3/8″	25 ft.	300	3/8″	3/8″	14 1/2″ × 6 1/4″ × 13 3/4″	6″ × 5″	5344T11	356.25	5344T21	323.95
3/8″	50 ft.	300	3/8″	3/8″	18 1/4″ × 6 1/8″ × 17 1/4″	6″ × 6″	5344T12	418.00	5344T22	371.45
1/2″	25 ft.	300	1/2″	1/2″	18 1/4″ × 7″ × 17 1/4″	6″ × 6″	5344T13	396.15	5344T23	359.10

Type 304 Stainless Steel Automatic-Winding Hose Reels

Corrosive environments are no problem for these Type 304 stainless steel reels. Hose locks in place when pulled out; retract hose with a quick tug. All reels have a female inlet with NPT or NPTF (Dryseal) threads. The reels that have a female swivel inlet include a Buna-N (nitrile) seal, except the 1″ inlets include a fluoroelastomer (Aflas) seal.

Versa-Mount Medium Duty Reels—Mount to the floor, wall, or ceiling. Reels have four 7/16″ wide mounting slots, except 5132K21, K22, K46, K71, and K72 have two 1/2″ dia. mounting holes and two 1/2″ wide mounting slots (fasteners not included).

Floor/Wall-Mount Extra-Strength Reels—The frame-style construction provides extra strength to handle large diameter hose. Mount to the floor or wall. They have four 1/2″ dia. mounting holes (fasteners not included).

Reels with chemical hose are for use with air, water, paint, and solvents. Hose has a nylon tube, textile reinforcement, and a red vinyl/nitrile cover, except 5132K21 has a black neoprene cover. The hose end has a rigid fitting with NPT or NPTF (Dryseal) threads. Temperature range is –30° to +160° F.

Reels with washdown hose are for use with water in food areas. Hose has an EPDM tube, polyester reinforcement, and a white EPDM cover. The hose end has a rigid fitting with NPT or NPTF (Dryseal) threads. Temperature range is –40° to +180° F.

Reels without hose have a female outlet that is the same size as the inlet. Temperature range is –20° to +200° F.

Medium Duty

Extra Strength

Hose ID	Hose Lg.	Inlet	Hose End, Male	Reel, Ht. × Wd. × Dp.	Mounting Base, Lg. × Wd.	Reels with Chemical Hose: Max. psi @ 72° F	Each	Reels with Washdown Hose: Max. psi @ 72° F	Each	Reels without Hose	Each
Versa-Mount Medium Duty Reels											
With Nickel-Plated Steel Female Rigid Reel Inlet and Nickel-Plated Brass Male Rigid Hose Fitting											
3/8″	50 ft.	1/2″	3/8″	18 3/4″ × 6 1/2″ × 18″	6″ × 5″	500	5132K14	$652.16	—	—	5132K51	$593.39
3/8″	70 ft.	1/2″	3/8″	18 3/4″ × 6 1/2″ × 18″	6″ × 5″	500	5132K15	681.90	—	—	5132K51	593.39
1/2″	50 ft.	1/2″	1/2″	18 3/4″ × 6 1/2″ × 18″	6″ × 5″	500	5132K17	676.95	250	5132K31	$676.95	5132K52	593.39
With Type 316 Stainless Steel Female Swivel Reel Inlet and Type 316 Stainless Steel Male Rigid Hose Fitting											
3/8″	50 ft.	3/8″	3/8″	18 1/4″ × 6 1/8″ × 17 1/4″	6″ × 6″	500	5132K21	1,095.02	—	—	5132K71	701.64
1/2″	50 ft.	1/2″	1/2″	21″ × 9 1/4″ × 19 5/8″	6″ × 6″	500	5132K22	1,349.00	250	5132K46	1,163.37	5132K72	878.30
Floor/Wall-Mount Extra-Strength Reels											
With Nickel-Plated Steel Female Swivel Reel Inlet and Type 304 Stainless Steel Male Rigid Hose Fitting											
3/4″	70 ft.	1″	3/4″	18 3/4″ × 19 1/2″ × 19 3/8″	19 3/8″ × 15 5/8″	750	5132K19	1,388.59	200	5132K33	1,388.59	5132K53	1,142.15
1″	45 ft.	1″	1″	18 3/4″ × 19 1/2″ × 19 3/8″	19 3/8″ × 15 5/8″	500	5132K23	1,398.52	—	—	—	5132K54	1,170.27

Compact Automatic-Winding Hose Reels

Great for confined spaces. Hose locks in place when pulled out of these reels; retract hose with a quick tug. Reels are steel with a red powder-coated finish. They have four 3/8″ dia. mounting holes (except 53205K39 has six holes) and can be mounted to the floor or wall (fasteners not included). Reels also have an 18″ inlet hose with a brass swivel fitting. Hose has a PVC tube and red PVC cover with textile reinforcement, except 53205K39 has a Buna-N (nitrile) tube and black Buna-N (nitrile) cover. The hose end has a brass rigid fitting. Use with air and water. Temperature range is –15° to +150° F. Hose meets RMA (Rubber Manufacturer's Association) Class B for oil resistance. For replacement hose, see pgs. 240-241.

Hose ID	Hose Lg.	Max. psi @ 72° F	Inlet Hose, NPT Female	Hose End, NPT Male	Reel, Ht. × Wd. × Dp.	Mounting Base, Lg. × Wd.		Each
3/16″	20 ft.	200	1/4″	1/4″	10 1/2″ × 5″ × 10 1/2″	9 3/4″ × 4″	53205K39	$133.78
1/4″	10 ft.	250	1/4″	1/4″	10 1/2″ × 5″ × 10 1/2″	9 3/4″ × 4″	53205K51	122.47
1/4″	15 ft.	250	1/4″	1/4″	10 1/2″ × 5″ × 10 1/2″	9 3/4″ × 4″	53205K52	130.01
1/4″	20 ft.	250	1/4″	1/4″	10 1/2″ × 5″ × 10 1/2″	9 3/4″ × 4″	53205K53	136.60
3/8″	10 ft.	250	3/8″	1/4″	10 1/2″ × 6″ × 10 1/2″	9 3/4″ × 4″	53205K54	143.20

Enclosed Automatic-Winding Hose Reels

Steel

An enclosure protects the hose when not in use and keeps it out of sight. The hose locks in place when pulled out of these reels; retract hose with a quick tug. Reels have two 1/2″ dia. mounting holes and two 1/2″ wide mounting slots. They can be mounted to the floor, wall, or ceiling (fasteners not included).

Steel reels have a blue powder-coated finish. Reels have a brass swivel inlet with a Buna-N (nitrile) seal. Hose has an EPDM tube and red EPDM cover with textile spiral reinforcement. The hose end has a brass rigid fitting. Use with air and water. Temperature range is –40° to +212° F. For replacement hose see pages 240-241.

Type 304 stainless steel reel has a polished finish. Reel has a stainless steel swivel inlet with a Buna-N (nitrile) seal. Hose has a red SBR tube and cover. The hose end has a stainless steel rigid fitting. Use with air and water. Temperature range is –4° to +212° F.

Hose ID	Hose Lg.	Max. psi @ 72° F	Swivel Inlet, NPT Female	Hose End, NPT Male	Reel, Ht. × Wd. × Dp.	Mounting Base, Lg. × Wd.		Each
Steel Reels								
1/4″	25 ft.	300	1/4″	1/4″	18 3/4″ × 7″ × 18 3/4″	6″ × 6″	5216K43	$307.17
1/4″	50 ft.	300	1/4″	1/4″	18 3/4″ × 7″ × 18 3/4″	6″ × 6″	5216K44	358.37
3/8″	25 ft.	300	3/8″	3/8″	18 3/4″ × 7″ × 18 3/4″	6″ × 6″	5216K45	337.82
3/8″	50 ft.	300	3/8″	3/8″	21 3/4″ × 9 1/4″ × 21 3/4″	6″ × 6″	5216K46	414.96
1/2″	25 ft.	300	1/2″	1/2″	18 3/4″ × 7″ × 18 3/4″	6″ × 6″	5216K47	366.89
1/2″	50 ft.	300	1/2″	1/2″	21 3/4″ × 9 1/4″ × 21 3/4″	6″ × 6″	5216K48	512.11
Type 304 Stainless Steel Reel								
3/8″	50 ft.	300	3/8″	3/8″	21 1/2″ × 20 1/2″ × 8 1/2″	6″ × 7″	9458T18	897.74

Enclosed Polypropylene Automatic-Winding Hose Reels

Made from black polypropylene with a carrying handle, these reels are lighter in weight and easier to transport than the enclosed reels above. The hose locks in place when pulled out of these reels; retract hose with a quick tug. Reels have a steel support bracket and a 3-ft. long inlet hose, except 5529K36 has a 5-ft. long inlet hose; the fittings on the inlet hose are rigid brass, unless noted. Reels are free standing, but can be mounted to the wall or ceiling with the included steel bracket. They have four 9/32″ dia. mounting holes (fasteners not included). The hose has a PVC tube and cover with polyester reinforcement. The hose end has a brass rigid fitting. Temperature range is 40° to 140° F.

Reels with Red PVC Hose— Use with air; 5529K18 comes with a 1/2″ NPT × 3/4″ GHT (Garden Hose Thread) adapter and is also for use with water.

Reels with White PVC Hose— Use 5529K36 with water in food service washdown applications; use 5529K47 for hot water washdown applications.

Optional floor/bench mount bracket is 3″ Wd. × 5 3/4″ Dp. Includes a 15″ long mounting tube that attaches to the bracket with four 1/4″ mounting holes (fasteners not included).

Hose ID	Hose Lg.	Max. psi @ 72° F	Inlet Hose, NPT Male	Hose End, NPT Male	Reel, Ht. × Wd. × Dp.	Mounting Base, Lg. × Wd.		Each
Reels with Red PVC Hose								
3/8″	50 ft.	350	1/4″	1/4″	19 1/8″ × 10 1/2″ × 17 1/4″	6 1/4″ × 2 5/8″	5529K22	$179.25
3/8″	75 ft.	350	1/4″	1/4″	19 1/8″ × 10 1/2″ × 17 1/4″	6 1/4″ × 2 5/8″	5529K49	196.63
1/2″	50 ft.	300	1/2″	1/2″	19 1/8″ × 10 1/2″ × 17 1/4″	6 1/4″ × 2 5/8″	5529K18	194.80
Reels with White PVC Hose for Food Service Washdown								
5/8″	50 ft.	140	3/4″ ♦	3/4″ ★	19 1/8″ × 10 1/2″ × 17 1/4″	6 1/4″ × 2 5/8″	5529K36	235.22
Reels with White PVC Hose for Hot Water Washdown								
5/8″	50 ft.	130	3/4″ ♦	3/4″ ★	19 1/8″ × 10 1/2″ × 17 1/4″	6 1/4″ × 2 5/8″	5529K47	264.95
Optional Floor/Bench Mounting Bracket							5529K44 Each	$43.40

♦ Inlet hose has a swivel fitting with GHT (Garden Hose Thread) female threads. ★ Hose end has GHT male threads.

Automatic-Winding Dual Hose Reels

Open

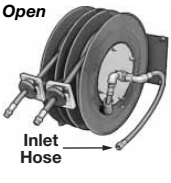

Enclosed

Two reels are attached to a single mounting base so you have access to two independently operating hoses. The hose locks in place when pulled out of these reels; retract hose with a quick tug. Reels have four 1/2″ Lg. × 3/4″ Wd. mounting slots and can be mounted to the floor, wall, or ceiling (fasteners not included). Reels come with an 18″ long inlet hose with a brass swivel inlet. Hose has a PVC tube and a red PVC cover with textile cord reinforcement. The hose end has a brass rigid fitting. Hose meets RMA (Rubber Manufacturer's Association) Class B for oil resistance. Use with air and water. Temperature range is –15° to +150° F. For replacement hose, see page 241.

Open reels are steel with a red powder-coated finish.

Enclosed reels are steel with a white powder-coated finish. An enclosure protects the hose when not in use and provides a neat appearance. For indoor or outdoor use.

Also Available: Replacement reel parts. Please specify reel part number and the part you need: spring for latching mechanism (also called a spring dog), spring-can assembly, swivel, spring assembly, or hose assembly.

Hose ID	Hose Lg.	Max. psi @ 72° F	Inlet Hose, NPT Female	Hose End, NPT Male	Reel, Ht. × Wd. × Dp.	Mounting Base, Lg. × Wd.		Each
Open Reels								
1/4″	25 ft.	300	1/4″	1/4″	17″ × 12 1/2″ × 14″	8″ × 11 1/2″	5617K61	$340.11
1/4″	50 ft.	300	1/4″	1/4″	22 1/2″ × 12 1/2″ × 18″	8″ × 11 1/2″	5617K62	446.45
3/8″	25 ft.	300	3/8″	1/4″	19″ × 13″ × 16″	8″ × 11 1/2″	5617K63	370.77
3/8″	50 ft.	300	3/8″	1/4″	22 1/2″ × 13″ × 18″	8″ × 11 1/2″	5617K64	484.77
1/2″	25 ft.	300	1/2″	1/2″	22 1/2″ × 14 1/2″ × 18″	8″ × 11 1/2″	5617K65	458.91
Enclosed Reels								
3/8″	35 ft.	300	3/8″	1/4″	17″ × 13″ × 15 1/2″	8″ × 11 1/2″	5617K71	472.32
1/2″	25 ft.	300	1/2″	1/2″	20″ × 13″ × 18″	8″ × 11 1/2″	5617K72	541.30

Combination Air Hose and Electric Cord Automatic-Winding Reels

One reel does the job of two—each reel comes with an air hose and an electric cord. Both the hose and the cord lock in place when pulled out of these reels; retract hose with a quick tug. The two sides can be operated independently. Reels are steel with a red powder-coated finish; they have an 18″ long inlet with a brass swivel fitting and a 5-ft. inlet electric cord for 115 VAC, 60 Hz, single phase operation. Reels have four ½″ Lg. × ¾″ Wd. mounting slots. They can be mounted to the floor, wall, or ceiling (fasteners not included). Temperature range is –15° to +150° F.

The hose is for use with air only. It has a red PVC tube and cover with textile cord reinforcement. The hose end has a brass rigid fitting. Hose meets RMA (Rubber Manufacturer's Association) Class B for oil resistance. For replacement hose, see page 241.

Enclosed reels protect the air hose and electric cord when not in use and provide a neat appearance.

Air Hose: Hose ID	Hose Lg.	Max. psi @ 72° F	Inlet Hose, NPT Female	Hose End, NPT Male	Electric Cord: Cord Type	Cord Lg.	Amps	Plug Type	Reel, Ht. × Wd. × Dp.	Mounting Base, Lg. × Wd.		Each
Open Reels												
⅜″	35 ft.	300	⅜″	¼″	14/3 SJEOOW	50 ft.	15	NEMA 5-15	18″ × 14″ × 14″	11½″ × 8″	**5618K32**	$554.92
⅜″	35 ft.	300	⅜″	¼″	12/3 SJEOOW	50 ft.	20	NEMA 5-20	18″ × 14″ × 14″	11½″ × 8″	**5618K33**	598.43
Enclosed Reels												
⅜″	35 ft.	300	⅜″	¼″	14/3 SJEOOW	50 ft.	15	NEMA 5-15	18″ × 14″ × 14″	11½″ × 8″	**5618K34**	629.30
⅜″	35 ft.	300	⅜″	¼″	12/3 SJEOOW	50 ft.	20	NEMA 5-20	18″ × 14″ × 14″	11½″ × 8″	**5618K35**	672.63

Economy Manual-Winding Hose Reels

Looking for an inexpensive way to store air hose? These reels keep air hose neatly stored for safety and reduced wear. To rewind hose simply turn the hand crank. Reels are steel with a black finish. The mounting base is 7″ Lg. × 3″ Wd. and has four ⅜″ dia. mounting holes. Reels can be mounted to the floor, wall, or ceiling (fasteners not included).

Reels with hose include a 3-ft. long inlet hose with a brass rigid fitting. Hose has a PVC tube and cover with polyester reinforcement. The hose end has a brass rigid fitting. Hose color is red for 6868K2; orange for 6868K3. Use hose with air. Temperature range is 0° to 140° F.

Reels without hose let you connect your own hose with an NPT male fitting to the reel. Use with any length hose up to 100 ft.

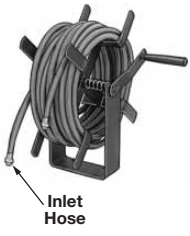

Hose ID	Hose Lg.	Max. psi @ 72° F	Inlet Hose, NPT Male	Hose End, NPT Male	Reel, Ht. × Wd. × Dp.	Reels with PVC Hose	Each	Reels without Hose	Each
⅜″	50 ft.	300	¼″	¼″	18⅛″ × 12¼″ × 17¼″	**6868K2**	$68.27	**6868K6**	$52.76
⅜″	100 ft.	350	¼″	¼″	18⅛″ × 12¼″ × 17¼″	**6868K3**	82.55	**6868K6**	52.76

Manual-Winding Hose Reels

Neatly store your own air, water, pressure-washer, or lay-flat hose with these sturdy reels. (*Note*: Lay-flat hose must be rolled out before use.) *Style C* reels can also be used with fuel hose. To rewind your hose, simply turn the hand crank. Reels are made from heavy gauge steel and have a locking pin assembly that prevents accidental unwinding. All can be mounted to the floor or wall (fasteners not included).

Style A— Compact size makes these reels ideal for confined spaces. They have a black high-gloss painted finish. Reels have a female inlet with a Buna-N (nitrile) seal and male outlet. Temperature range is 40° to 200° F. Mounting base has four ½″ dia. mounting holes.

Style B— These reels have more capacity to handle longer lengths of hose than Style A. They have a black high-gloss painted finish. Reels have a female inlet with a Buna-N (nitrile) seal and male outlet. Temperature range is 40° to 200° F. Mounting base has eight ½″ dia. holes.

Styles A and *B* include a zinc-plated steel ½″ NPT female swivel that converts the male outlet to female threads, as well as a bushing that converts the ½″ connection to ⅜″.

Style C— The largest capacity manual-winding reels we offer. Reels have a blue painted finish. Temperature range is –20° to +225° F. 5332K65 has a brass female inlet and outlet with Buna-N (nitrile) seals and six ½″ wide mounting slots. 5332K66 and *K67* have a nickel-plated steel female inlet and outlet with fluoroelastomer (Aflas) seals and eight ½″ wide mounting slots. 5332K68 has an aluminum female inlet and outlet with Buna-N (nitrile) seals and two ½″ dia. mounting holes and eight ½″ wide mounting slots.

Wheel attachment kits for 5332K65 and ***K67*** contain a steel handle, slip-resistant rubber-capped front legs, and two 8″ dia. solid rubber tires that attach to the reels for easy portability.

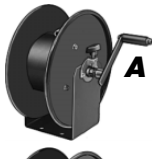

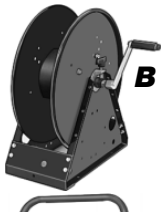

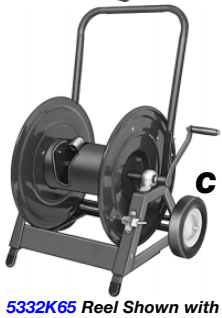

5332K65 ***Reel Shown with Wheel Attachment Kit***

For Hose ID (Reel Capacity)			Inlet, NPT	Outlet, NPT	Max. psi @ 72° F	Reel, Ht. × Wd. ♦ × Dp.	Mounting Base, Lg. × Wd.		Each
A	⅜″ (75 ft.);	½″ (50 ft.)	½″	½″	4000	14½″ × 16⅝″ × 14″	6″	× 7″ **53235K27**	$173.94
A	⅜″ (150 ft.);	½″ (100 ft.)	½″	½″	4000	14½″ × 21⅝″ × 14″	6″	× 12″ **53235K28**	192.53
B	⅜″ (100 ft.);	½″ (75 ft.)	½″	½″	4000	20¼″ × 16⅜″ × 17″	17″	× 8¾″ **5505K14**	165.02
B	⅜″ (250 ft.);	½″ (175 ft.)	½″	½″	4000	20¼″ × 21⅜″ × 17″	17″	× 13¾″ **5505K25**	186.86
C	⅜″ (300 ft.);	½″ (200 ft.)	½″	½″	3000	18⅛″ × 27¾″ × 17½″	15⅛″	× 17⅜″ **5332K65**	231.93
C	¾″ (100 ft.);	1″ (50 ft.)	1″	1″	3000	26¼″ × 24¾″ × 24″	20⅛″	× 12⅞″ **5332K66**	428.73
C	¾″ (150 ft.);	1″ (100 ft.)	1″	1″	3000	26¼″ × 28¾″ × 24″	20⅛″	× 16⅞″ **5332K67**	428.73
C	1¼″ (125 ft.);	1½″ (100 ft.)	1½″	1½″	600	25″ × 32 9/16″ × 24″	22 3/16″	× 25½″ **5332K68**	547.66

♦ Width includes hand crank.

Wheel Attachment Kit for 5332K65 ..... **5332K71** Each $118.99
Wheel Attachment Kit for 5332K67 ..... **5332K72** Each $118.99

Rubber Hose Stops

Also known as bumper stops or ball stops, these two-piece rubber hose stops prevent your hose from completely rewinding onto the reel. To use, simply position the stop anywhere along your hose and secure with two stainless steel screws (included). Hose not included.

To Order: Please specify color: black, red, or yellow.

For Hose ID	For Hose OD	Stop Size (A)	Stop Size (B)		Each
¼″	½″	29/64″	2½″	**5585K21**	$7.98
⅜″	21/32″	39/64″	2½″	**5585K22**	7.49
½″	¾″	¾″	2½″	**5585K23**	8.59
¾″	1″	1⅛″	3½″	**5585K24**	22.02
1″	19/16″	1 7/16″	5″	**5585K25**	32.31
1¼″	1 13/16″	1 11/16″	5″	**5585K26**	34.87
1½″	2 1/16″	2″	5″	**5585K27**	37.84

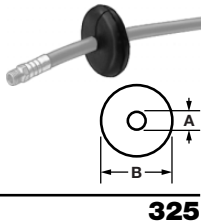

For information about pipe size, see pages 2-3.

Dispensing Hose Nozzles

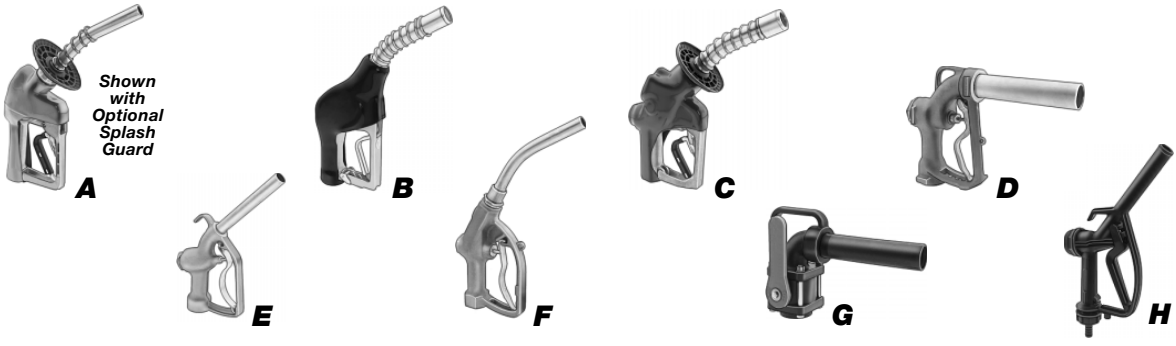

In addition to having an on/off mechanism, these nozzles allow you to control the flow while dispensing liquids. All have a threaded female NPT connection, except Style H has a hose barb connection.

Nozzles with ***automatic shutoff*** have a three-position hold-open clip, so you can dispense without holding the trigger. All will shut off automatically when the tank is full; they will also shut off if the nozzle falls from the tank, except Style B.

Nozzles with ***manual shutoff*** will stop the flow when you release the trigger or close the lever. *Note:* Do not leave nozzles unattended when in use.

Style A— Also known as service-station-style nozzles, these nozzles have a red scuff guard. UL listed. An optional splash guard is sold separately below; splash guard is red.

Styles B and ***C—*** Commonly called truck-stop nozzles, these nozzles offer high-volume flow. UL listed. *Style B* has a black scuff guard. *Style C* has a green scuff guard and splash guard.

Style E— These nozzles are UL listed.

Styles G and ***H—*** Made from black polypropylene. *Style G* are the highest-volume flow nozzles we offer; turn flow on and off by moving the lever.

Use With	Max. gpm	Temperature Range	Max. psi @ 72°F	Connection	Spout OD	Spout Lg.	Seal Material	Type of Shutoff		Each
Aluminum Nozzles										
A Unleaded Gasoline	10	–20° to +125°F	50	¾″ NPT Female	1³⁄₁₆″	6½″	Fluoroelastomer	Automatic	5433K29	$62.99
A Leaded Gasoline	10	–20° to +125°F	50	¾″ NPT Female	1⁵⁄₁₆″	6½″	Fluoroelastomer	Automatic	5433K19	62.99
B Biodiesel, Diesel Fuel	60	–20° to +120°F	60	1″ NPT Female	1³⁄₁₆″	6¼″	Buna-N	Automatic	5496K71	129.12
C Diesel Fuel	75	–20° to +125°F	50	1″ NPT Female	1⅜″	7″	Fluoroelastomer	Automatic	5496K84	164.20
D Fuel Oil, Hydraulic Oil	60	–40° to +300°F	50	1½″ NPT Female	1⅞″	8⅜″	PTFE	Manual	54805K11	232.33
E Ethylene Glycol, Hydraulic Oil	40	–40° to +140°F	55	¾″ NPT Female	1³⁄₁₆″	6″	Buna-N	Manual	5434K37	26.22
E Ethylene Glycol, Hydraulic Oil	40	–40° to +140°F	55	1″ NPT Female	1³⁄₁₆″	6″	Buna-N	Manual	5434K38	26.22
Brass Nozzle										
F Coolants, Water	29	–40° to +350°F	35	1″ NPT Female	1³⁄₁₆″	7½″	Fluoroelastomer	Manual	5434K13	165.20
Polypropylene Nozzles										
G Fertilizers, Waste Water	180	–20° to +150°F	150	1½″ NPT Female	1⅞″	8″	Fluoroelastomer	Manual	56515K41	40.06
G Fertilizers, Waste Water	200	–20° to +150°F	150	2″ NPT Female	2⅜″	8″	Fluoroelastomer	Manual	56515K43	40.06
G Fertilizers, Waste Water	240	–20° to +150°F	150	2″ NPT Female	2⅜″	8″	Fluoroelastomer	Manual	56515K67	59.94
H Citric Acid, Ethyl Alcohol	40	+32° to +105°F	150	For ½″ ID Hose	3¹⁄₃₂″	4½″	Fluoroelastomer	Manual	54335K71	71.16
H Citric Acid, Ethyl Alcohol	40	+32° to +105°F	150	For ¾″ ID Hose	3¹⁄₃₂″	4½″	Fluoroelastomer	Manual	54335K72	71.16
H Citric Acid, Ethyl Alcohol	40	+32° to +105°F	150	For 1″ ID Hose	3¹⁄₃₂″	4½″	Fluoroelastomer	Manual	54335K73	71.16

Optional Splash Guard for Style A ..... 5433K31 **Each** $5.20

Angled Fuel Hose Swivels

- Maximum Pressure @ 72°F: 50 psi
- Temperature Range: –20° to +120°F
- Use with fuel and petroleum hose

Relieve tension on hose and nozzles with these swivels. They allow smooth 360° rotation at the male connection and at the 45° elbow to prevent twisting, kinking, and premature hose wear. Body is aluminum with a Buna-N (nitrile) seal and zinc inlet and outlet adapters. Use with leaded and unleaded gasoline, as well as with diesel fuel. UL listed.

Pipe Size, NPT Male	Pipe Size, NPT Female	O'all Lg.		Each
¾″	¾″	4⅛″	5538K52	$37.95
1″	1″	4¾″	5538K54	71.22

Large-Diameter Liquid-Handling Hose Swivels

- Maximum Pressure @ 72°F: 150 psi
- Temperature Range: –65° to +250°F
- Hose: Use Buna-N (nitrile), EPDM, and polyethylene
- Clamps: For swivel barbs, use low-profile clamps (see page 283)

Also known as live swivels and inline swivels, these hose swivels rotate 360° to prevent larger-sized hose from twisting, kinking, and wearing prematurely. Use with water, coolants, mineral oil, glycol, hydraulic oil, gasoline, and petroleum products.

Both ***anodized aluminum*** and ***chrome-plated brass*** have good corrosion resistance and chemical resistance.

Male Pipe × Swivel Female Pipe

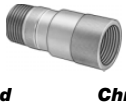

Pipe Size, NPT	O'all Lg.	Anodized Aluminum	Each	Chrome-Plated Brass	Each
1¼″	4½″	5509K51	$85.34	5509K71	$88.35
1½″	5″	5509K52	96.59	5509K72	132.01
2″	6⅜″	5509K53	125.07	5509K73	182.84

Male Pipe × Swivel Barb

Pipe Size, NPT	For Hose ID	O'all Lg.	Anodized Aluminum	Each
1″	1″	2¹³⁄₁₆″	5509K31	$34.08
1¼″	1¼″	3⅞″	5509K32	55.54
1½″	1½″	4⅛″	5509K33	82.05
2″	2″	4¹¹⁄₁₆″	5509K34	103.94

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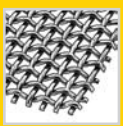

About Pump Performance

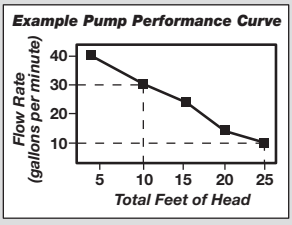

Max. Flow @ Feet of Head—Flow rate in gallons per minute at a particular pressure. Generally, flow decreases as the feet of head increases.

In the example at left, when pumping at 10 feet of head, the pump will output 30 gallons per minute. But at 25 feet of head, it can only pump 10 gallons per minute.

Max. Feet of Head—Also known as shutoff, this is the pressure at which flow is zero.

Note: To convert feet of head to psi, multiply by 0.43.

Calculating Your Feet of Head

To determine how many feet of head you'll be pumping and how strong a pump you'll need, there are a couple factors to consider.

1.) Pressure loss due to friction between the fluid and pipe. The chart at right shows the feet of head lost due to friction per 100 feet of PVC pipe (for metal pipe, approximately double the head loss shown for PVC pipe).

2.) The height to which you'll be pumping.

Note: Fittings and valves can add up to 3% additional feet of head, depending on the number of fittings and valves in your system.

Friction Loss per 100 Feet of PVC Pipe in Feet of Head

Flow Rate, gpm	Pipe Size ½″	¾″	1″	1¼″	1½″	2″	3″
5	23.44	5.73	1.72	0.44	0.22	0.07	0.02
10	82.02	20.04	6.02	1.55	0.72	0.21	0.03
15	____	42.46	12.77	3.28	1.53	0.45	0.07
20	____	72.34	21.75	5.59	2.61	0.76	0.11
25	____	____	32.88	8.45	3.95	1.15	0.17
50	____	____	____	30.51	14.25	4.16	0.6

For example, let's say you need a flow rate of 20 gpm and your system consists of ¾″ PVC pipe that runs 10 feet vertically and 40 feet horizontally for a total of 50 feet of pipe.

From the chart above, 100 ft. of ¾″ PVC pipe at 20 gpm results in a loss of about 72 feet of head. You only have 50 ft. of pipe so cut that value in half—you'll lose about 36 feet of head to friction. Add that to the 10 vertical feet of pipe, which equates exactly to 10 feet of head, for a total of 46 feet of head. In other words, you must choose a pump that will move at least 20 gpm at 46 feet of head.

Pumping Flammable Liquids

Caution: When using any pump with flammable liquids, you should always bond and ground your application for static control. For more information about bonding and grounding, as well as bonding and grounding equipment, see pages 932-933 and Sections 1910.106 and 1910.107 of the Federal OSHA Code.

About Sump, Water-Removal, Condensate, and Submersible Pumps

Sump pumps drain accumulated water from a sump pit.

Be sure to choose the right capacity pump for your application. A pump that doesn't have enough flow won't be able to keep up with water flowing into your sump pit. But a pump that is too powerful and has too high a flow rate will start and stop too fast. Both situations can cause premature pump failure.

Water-removal pumps remove water from a flooded, open area. Generally, they are not used with a sump pit.

Condensate pumps typically have a tank in which condensate accumulates from HVAC or refrigeration systems.

Submersible pumps are compact and have low horsepower motors; ideal for circulating liquids in small tanks and baths.

Sump Pumps for Water

Sump Pumps for Water

Tethered Float Switch

Integrated Float Switch

Pressure-Diaphragm Switch

Transfer water from underground sumps, loading docks, and cooling towers. Use only with debris-free water. Not rated for use with solids. All pumps have a screened intake, a single-phase motor with thermal overload protection, a 1½″ NPT female discharge connection (unless noted), and a power cord with a three-prong plug, unless noted.

Bottom-inlet pumps draw water in from the bottom of the pit. They have a continuous-duty motor and require a minimum 18″ Dia.×22″ Dp. sump. Temp. range is 32° to 120° F. UL listed and CSA certified, unless noted.

Plug-In Controlled—Pumps do not have a switch; simply plug in to turn on. They must be submerged in water at all times. Do not run dry.

Tethered Float-Switch Controlled—"Piggyback" switch is not wired to the pump; it has its own power cord. Switch is easy to replace so it's ideal for troubleshooting.

Integrated Float-Switch Controlled—Float switch is part of the pump for a smaller footprint than tethered float-switch pumps.

Pressure-Diaphragm Switch Controlled—Compact with no external float that can catch on sump walls.

Side-inlet pumps have a screened inlet that is 2″ from the bottom of the pit to avoid picking up dirt and debris. Motor is continuous duty and requires a minimum 11″ Dia.×12″ Dp. sump. Temperature range is 40° to 120° F. CSA certified.

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	O'all Size, Ht.×Wd.×Dp.	10-ft. Power Cord	Each	25-ft. Power Cord	Each
Bottom Inlet														
Plug-In Controlled—*Cast Iron Housing*														
46	29	12.5	—	18	—	—	1/3	115	9	7¼″ × 9½″ × 7¼″	9989K54	$122.80	9989K31	$147.07
54	42	26	7.5	22.9	—	—	4/10	115	10	6″ × 9½″ × 8½″	9989K56	211.53	9989K32	224.55
Tethered Float-Switch Controlled—*Cast Iron Housing*														
46	29	12.5	—	18	10″	4″	1/3	115	9	7¼″ × 9½″ × 7¼″	9989K45	167.62	____	____
Integrated Float-Switch Controlled—*Cast Iron Housing*														
67	61	50	40	30	10″	5″	1/2	115	8	10 3/16″ × 10 5/8″ × 8 3/8″	9989K61♣	427.08	9989K62♣▲	441.25
Integrated Float-Switch Controlled—*Zinc Housing*														
35	30	20	10	25	10″	5″	1/4	115	8.5	10¾″ × 8⅞″ × 6″	9989K41■	158.40	9989K37■	164.26
Pressure-Diaphragm Switch Controlled—*Cast Iron Housing*														
46	29	12.5	—	18	10″	4″	1/3	115	9	6″ × 9½″ × 8½″	9989K53	128.58	____	____
46	29	12.5	—	18	10″	4″	1/3	230	4.5	6″ × 9½″ × 8½″	9989K63●	175.74	____	____
54	42	26	7.5	22.9	10″	4″	4/10	115	10	6″ × 9½″ × 8½″	9989K33	226.50	9989K34	255.91
Pressure-Diaphragm Switch Controlled—*Bronze Housing*														
54	42	25.8	7.5	22.9	10″	4″	4/10	115	10	6″ × 9½″ × 8½″	9989K55	341.67	____	____
83	66	50	33.3	26	12″	5″	1/2	115	11	10½″ × 9½″ × 9½″	9989K48	842.37	9989K36	859.67

Switch Repair Kit for Pressure-Diaphragm Switch Pumps with 1/3 and 4/10 hp Motors ..... 9989K71 Each $16.38
Switch Repair Kit for Pressure-Diaphragm Switch Pumps with 1/2 hp Motor ..... 9989K73 Each $27.30

Side Inlet															
Integrated Float-Switch Controlled—*Type 430 Stainless Steel Housing*															
58	45	28	2	21	9″	4″	1/3	115	9.5	11½″ × 9¾″ × 7½″	2348K21★	177.98	____	____
65	53	35	10	21	9″	4″	1/2	115	10	11½″ × 9¾″ × 7½″	2348K22★	206.83	____	____
81	66	49	26	25	9″	4″	1	115	9.8	11½″ × 9¾″ × 7½″	2348K23★	256.54	____	____

♣ CSA certified to U.S. and Canadian standards. ▲ Power cord is 20-ft. long. ■ Discharge connection is 1¼″ NPT female.
● Power cord does not have a plug. Not UL listed or CSA certified. ★ Power cord is 8-ft. long.

For information about pumps and pump performance, see page 328.

High-Flow Sump Pumps for Water

A large, high-horsepower motor gives you more flow at the same feet of head than our other pumps. These also have a top discharge so liquid flows through the pump, providing extra cooling for the motor and extending pump life. They're powered by a tethered float switch. This "piggyback" switch is not wired to the pump; it has its own power cord so it's easy to replace and ideal for troubleshooting. Motors are intermittent duty and single phase. They have thermal overload protection and a power cord with three-prong plug. Pumps have an ABS-thermoplastic housing with an intake screen and built-in check valve. Discharge connection is an unthreaded universal adapter for 1¼″ and 1½″ pipe. Not rated for use with solids. Overall size is 14⅞″ Ht.×5¹³⁄₁₆″ Wd.×5⅜″ Dp. They require a minimum 14″ Dia.×14″ Dp. sump. Temperature range is 32° to 77° F. UL listed and CSA certified.

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	10-ft. Power Cord	Each	20-ft. Power Cord	Each
100	84	64	39	25	11″	3½″	¾	115	7.5	4244K85	$268.04	4244K86	$305.69

Energy-Efficient Sump Pumps for Water

A heavy duty motor with sealed bearings gives you higher efficiency than the Sump Pumps for Water on the previous page—they use fewer amps to achieve a similar flow rate. A Type 304 stainless steel housing dissipates heat from the motor to extend its life. Motor is continuous duty and single phase. It has thermal overload protection and a power cord with three-prong plug. Discharge connection is 1½″ NPT female. Maximum solid diameter is ⅜″. Temperature range is 33° to 104° F. UL listed and CSA certified.

Plug-In Controlled— Pump does not have a switch; simply plug in to turn on. It must be submerged in water at all times. Do not run dry.

Tethered Float-Switch Controlled— "Piggyback" switch is not wired to the pump; it has its own power cord. Switch is easy to replace so it's ideal for troubleshooting.

Integrated Float-Switch Controlled— Float switch is part of the pump for a smaller footprint than tethered float-switch pumps.

Plug In *Integrated Float Switch*

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Cord Lg.	Overall Size, Ht.×Wd.×Dp.	Min. Sump Size, Dia.×Dp.	Each
Plug-In Controlled													
41	34	26	17	30	—	—	⅓	115	3	10 ft.	9¼″×7¼″×5⅜″	8″×10″	42945K29 $164.30
Tethered Float-Switch Controlled													
41	34	26	17	30	9″	3″	⅓	115	3	10 ft.	9¼″×7¼″×5⅜″	8″×10″	42945K21 174.13
Integrated Float-Switch Controlled													
41	34	26	17	30	6″	2¼″	⅓	115	3	10 ft.	9¼″×7¼″×5⅜″	8″×10″	42945K25 170.78

Easy-Maintenance High-Temperature Sump Pumps for Water

Unlike the sump pumps above, you can replace these motors, making pump maintenance a snap. And because the motor is mounted on a pedestal and never comes in contact with water, these pumps can handle high-temperature water. They have thermal overload protection and are controlled by an integrated float switch that is part of the pump for a smaller footprint than tethered float switches.

With Totally Enclosed Fan-Cooled Motor (TEFC)— Ideal for dusty environments. Motor is continuous duty, single phase, and has a 10-ft. power cord with three-prong plug. Discharge connection is 1½″ NPT female, unless noted. Maximum solid diameter is ¾″. Overall size is 39″ Ht.×10¹³⁄₁₆″ Wd.×11″ Dp., unless noted. Pumps require a minimum 18″ Dia.×24″ Dp. sump. Temperature range is 40° to 200° F. UL listed. *Repair kits* include float, float rod, and switch.

With Hazardous-Location Motor— NEMA C-face motor is UL listed and CSA certified for Class I, Group D and Class II, Groups F and G hazardous locations. Motor is continuous duty, single phase, and has a ½″ NPT female conduit connection and screw terminals. Discharge connection is 1¼″ NPT female. Max. solid diameter is ¼″. Overall size is 48″ Ht.×15″ Wd.×15″ Dp. Pumps require a minimum 17″ Dia.×25″ Dp. sump. Temp. range is 33° to 170° F for 4323K41 and 33° to 390° F for 4323K43.

Hazardous Location with Stainless Steel Housing

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Pumps	Each	Repair Kits	Each
With Totally Enclosed Fan-Cooled Motor (TEFC)												
Cast Iron Housing												
55	44	30	20	24″	6½″	⅓	115	7	4317K84	$455.33	4317K91	$121.75
103	72	39	20.5	25½″	6½″	½	115	9	4317K85♦	459.75	4317K91	121.75
Bronze Housing												
55	44	30	20	24″	6½″	⅓	115	7	4317K42	529.07	4317K91	121.75
Type 316 Stainless Steel Housing												
55	44	30	20	24″	6½″	⅓	115	7	4317K86	536.45	4317K91	121.75
65	58	49	25	24″	7″	½	115	9	4317K87	541.73	4317K91	121.75
With Hazardous-Location Motor												
Cast Iron Housing												
67	63	56	31	28½″	6″	½	115/230	7.5	4323K41	1,843.17	—	—
Type 316 Stainless Steel Housing												
67	63	56	31	28½″	6″	½	115/230	7.5	4323K43	2,181.31	—	—

♦ Discharge connection is 2″ NPT female; overall size is 41″ Ht.×12⅛″ Wd.×12¼″ Dp.

Extended-Life Sump Pumps for Water

A titanium housing with a rugged motor and bearings keep these pumps working in the most abusive environments. They have titanium, Buna-N, polypropylene, and ABS-thermoplastic wetted parts for pumping salt water, barium hydroxide, lithium chloride, magnesium chloride, potassium nitrite, and any other fluid compatible with those wetted parts. Motor is continuous duty and single phase. It has thermal overload protection and a power cord with three-prong plug. Discharge connection is 2″ NPT male. Maximum solid diameter is ²⁵⁄₆₄″. Pumps require a minimum 15″ Dia.×26″ Dp. sump. Temperature range is 34° to 140° F.

Plug-In Controlled— Does not have a switch; plug in to turn on. Must be submerged in water at all times. Do not run dry.

Direct-Wire Tethered Float-Switch Controlled— Pump has two floats—one turns the pump on and the other turns it off. Float switch is directly wired to the pump.

Direct-Wire Tethered Float Switch

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Cord Lg.	Overall Size, Ht.×Wd.×Dp.	Each
Plug-In Controlled												
81	73	63	51	43	—	—	½	115	6.4	32 ft.	15¼″×9⅝″×6¹¹⁄₁₆″	4190T51 $1,143.21
Direct-Wire Tethered Float-Switch Controlled												
81	73	63	51	43	23⅜″	5⅛″	½	115	6.4	32 ft.	15¼″×9⅝″×7⅛″	4190T54 1,333.93

Sump Pumps for Water with Solids

High Head

Also known as effluent pumps, these have a large impeller, intake, and internal flow path that can handle solids up to 3/4″ dia., unless noted. They also have an epoxy-coated, heavy duty cast iron housing for impact resistance. Motor is continuous duty and single phase. It has thermal overload protection and a power cord with three-prong plug, unless noted.

Plug-In Controlled—Pumps do not have a switch; simply plug them in to turn them on. They must be submerged in water at all times. Do not run dry. *Tethered Float-Switch Controlled*—Pumps are ideal for troubleshooting. "Piggyback" switch is not wired to the pump; it has its own power cord so it's easy to replace. *Integrated Float-Switch Controlled*—Pumps have a smaller footprint than tethered float-switch pumps; float switch is part of the pump. *Direct-Wire Tethered Float-Switch Controlled*—Pumps have a float switch that is directly wired to the pump.

Standard pumps have a 1 1/2″ NPT female discharge connection and a temp. range of 32° to 120° F. UL listed and CSA certified, unless noted. ***High temperature*** pumps have a temp. range of 32° to 200° F. Discharge connection is 1 1/2″ NPT female. CSA certified. ***High-head*** pumps move water to greater heights than standard and high-temperature pumps. They have a 2″ NPT female discharge connection (unless noted) and a temperature range of 32° to 120° F. UL listed and CSA certified, unless noted.

Standard and High Temperature

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Cord Lg.	Overall Size, Ht.×Wd.×Dp.	Min. Sump Size, Dia.×Dp.		Each
Standard—*Plug-In Controlled*														
50	42	30	10	22	—	—	1/3	115	6	20 ft.	9 7/8″ × 8 3/4″ × 8 1/2″	12″×20″	43155K12■♣	$168.43
80	67	52	33	26	—	—	1/2	115	10.5	15 ft.	10 1/4″ × 9 5/8″ × 8 1/4″	18″×22″	43155K13	364.33
Standard—*Tethered Float-Switch Controlled*														
80	67	52	33	26	15″	9″	1/2	115	10.5	15 ft.	10 1/4″ × 9 5/8″ × 8 1/4″	18″×22″	43155K21	409.77
80	70	60	45	32	14″	6″	4/10	115	9	20 ft.	9 1/8″ × 9 5/8″ × 6 13/16″	18″×22″	43155K19♣	270.98
Standard—*Integrated Float-Switch Controlled*														
50	42	30	10	22	10″	5″	1/3	115	6	10 ft.	10 3/16″ × 10 5/8″ × 8 3/8″	12″×20″	43155K14■♣	167.70
80	68	53	27	24	11″	5″	1/2	115	8.2	10 ft.	12 3/4″ × 10 1/2″ × 9 9/16″	18″×22″	43155K16	404.64
High Temperature—*Plug-In Controlled*														
80	70	59	37	24	—	—	1/2	115	10.5	15 ft.	10 5/16″ × 9 5/8″ × 9 3/16″	18″×24″	43215K52	541.42
High Temperature—*Direct-Wire Tethered Float-Switch Controlled*														
50	42	27	—	20	12″	4″	1/3	115	10.1	15 ft.	10 7/8″ × 8 3/4″ × 8 3/8″	18″×24″	43215K42■	451.31
80	70	59	37	24	12″	4″	1/2	115	10.5	15 ft.	10 5/16″ × 9 5/8″ × 9 3/16″	18″×24″	43215K62	662.11

■ Maximum solid diameter is 1/2″. ♣ CSA certified to U.S. and Canadian standards.

High Head

Max. Flow, gpm @ 20 ft. of Head	@ 30 ft. of Head	@ 40 ft. of Head	@ 50 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	Cord Lg.	Overall Size, Ht.×Wd.×Dp.	Min. Sump Size, Dia.×Dp.		Each
Plug-In Controlled												
45	6	—	—	32	4/10	115	9	20 ft.	9 1/8″ × 9 5/8″ × 6 13/16″	18″×22″	43155K26▲♣	$195.70
60	40	20	—	50	1/2	115	12.5	20 ft.	16 1/8″ × 14 1/16″ × 9 7/8″	24″×36″	43155K25	624.97
90	90	70	35	81	1	230	10.2	20 ft.	16 1/8″ × 14 1/16″ × 9 7/8″	24″×36″	43155K27★	730.68
135	125	110	95	110	2	230	16.4	20 ft.	17 1/16″ × 12 15/16″ × 8 7/16″	24″×36″	43155K28★	921.25

▲ Discharge connection is 1 1/2″ NPT female. ♣ CSA certified to U.S. and Canadian standards. ★ Cord does not have a plug.

High-Flow Sump Pumps for Water with Solids

Pump with Horizontal Discharge Connection

At the same feet of head as the pumps above, these will give you higher flow rates while still accepting solids up to 1 3/8″ diameter. They have a Type 304 stainless steel housing for high durability. All include a tethered float switch with a turn-on level of 20″ and a turn-off level of 12″. This switch is not wired to the pump. It has its own power cord without a plug, so it's easy to replace and ideal for troubleshooting. Motor is intermittent duty (up to 20 starts per hour or once every 3 minutes) and single phase. It has thermal overload protection and a power cord without a plug. All are CSA certified.

Pumps with a ***vertical discharge connection*** have a 1 1/2″ NPT female connection and require a minimum 21 1/2″ Dia.× 23″ Dp. sump. Temperature range is 32° to 131° F. UL listed. Pumps with a ***horizontal discharge connection*** have a 2″ NPT male connection and require a minimum 22″ Dia.×24″ Dp. sump. Temperature range is 32° to 104° F.

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 20 ft. of Head	@ 30 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	O'all Size, Ht.×Wd.×Dp.	10-ft. Power Cord	Each	25-ft. Power Cord	Each
With Vertical Discharge Connection												
88	70	45	18	39	8/10	230	3.9	8 1/2″ Dia.×14 13/16″ Ht.	1342K51	$679.63	1342K71	$706.37
97	80	55	28	42	1	230	5.3	8 1/2″ Dia.×16 1/8″ Ht.	1342K52	903.27	1342K72	928.73
With Horizontal Discharge Connection												
79	60	35	12	32	8/10	230	5.9	17 7/16″ × 9 1/4″ × 8 1/4″	1342K64	580.47	1342K84	582.28
92	70	48	20	38	1	230	5.9	18 7/16″ × 9 1/4″ × 8 1/4″	1342K66	672.00	1342K86	696.82

Sump Pump Switches and Accessories

Tethered Float Switch

Suction Strainer

NPT×Socket Adapter

Tethered Float Switches—Use these "piggyback" switches as a replacement, or turn your plug-in controlled pump into a float-switch controlled pump. Housing is polypropylene. Use with 1/2-hp and smaller motors. Rated for 13 amps. Clamp is 300 series stainless steel and adjusts from 1″ to 3″ dia. Float diameter is 3″. Includes a 15-ft. cord with three-prong plug. Contacts are open until electrically energized (normally open). Maximum temperature is 140° F.

115 VAC ..... **5142K68** **Each** $36.00
230 VAC ..... **5142K72** **Each** $68.00

Basin—Keep dirt away from your sump pump by placing it inside this basin. It measures 18″ Dia.×30″ Dp. Max. temp. is 130° F.

5142K11 ..... **Each** $228.67

Tethered Float Switch with Backup—Make sure your pump turns on when you need it. This switch has two floats for built-in redundancy; if one fails, the second kicks in. Floats are enclosed in a mounting cage to prevent them from catching on sump walls. Housing is ABS thermoplastic. Rated for 12 amps at 115 VAC. Maximum temperature is 140° F.

2506K15 ..... **Each** $68.33

Suction Strainer—An unthreaded SBR (styrene-butadiene rubber) fitting on this polypropylene strainer connects it to 3/4″ pipe or garden hose. Maximum temperature is 120° F.

5142K81 ..... **Each** $14.47

NPT×Socket Adapter—1 1/4″ NPT male×1 1/2″ socket connects a 1 1/4″ NPT female discharge to 1 1/2″ pipe. Made of schedule 40 PVC. Maximum temperature is 140° F.

5142K95 ..... **Each** $2.59

1 1/4″ and 1 1/2″ NPT Drain Hose Kits—Include 24 ft. of flexible polyethylene tubing, a polypropylene male adapter, Type 201 series stainless steel clamp, and ABS check valve with NPT male thread. Temp. not rated.

1 1/4″ NPT Kit ..... **5142K92** **Each** $9.67
1 1/2″ NPT Kit ..... **5142K93** **Each** $12.89

For information about pumps and pump performance, see page 328.

Sump Pumps with Basin

These all-in-one pumps include their own thermoplastic basin and will work in a dug-out pit or at ground level. All have a continuous duty, single-phase motor with thermal overload protection and a power cord with three-prong plug.

For Water—Basin is polypropylene. Maximum solid diameter is 1/4″. Pump housing is epoxy-coated cast iron. Powered by a pressure-diaphragm switch with an 8-ft. power cord. Intake and discharge connections are 1 1/2″ NPT female; basin also has a 2″ NPT female vent. Temperature range is 32° to 125° F.

For Sewage Water—Basin is polyethylene. Maximum solid diameter is 2″. Pump housing is cast iron and has a heavy, structural foam cover. Powered by a tethered float switch. This "piggyback" switch is not wired to the pump; it has its own 10-ft. power cord so it's easy to replace and ideal for troubleshooting. Intake is a 4″ OD unthreaded hole; discharge connection is 2″ NPT female. Temperature range is 33° to 104° F.

For Water

For Water, Cutaway

Basin Capacity	Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Overall Size, Ht. × Wd. × Dp.		Each
For Water													
3.5 gal.	45	29	12	—	18	7″	3″	1/3	115	9	10 1/2″ × 14 1/2″ × 14 1/2″	99685K53	$316.58
5 gal.	45	29	12	—	18	10″	4″	1/3	115	9	15 9/16″ × 14 1/2″ × 14 1/2″	99685K55	330.35
For Sewage Water													
41 gal.	125	95	51	—	19	11 1/2″	4 1/2″	4/10	115	12	24″ × 28 1/4″ × 24 3/8″	2921K51	505.55
41 gal.	138	112	71	41	25	11 1/2″	4 1/2″	1/2	115	12	24″ × 28 1/4″ × 24 3/8″	2921K52	564.21
41 gal.	145	120	90	61	28	11 1/2″	4 1/2″	3/4	115	12	24″ × 28 1/4″ × 24 3/8″	2921K53	817.08

Sump Pumps for Sewage Water

With a rugged impeller, large intake, and 2″ NPT female discharge connection (unless noted), these pumps are capable of handling large sewage waste up to 2″ diameter, except 5143K45, which can handle solids up to 2 1/2″ diameter.

Standard pumps have an epoxy-coated cast iron housing. They have a continuous duty, single-phase motor with thermal overload protection and power cord with three-prong plug. They require a minimum 18″ Dia. × 24″ Dp. sump. Temperature range is 32° to 120° F. 42935K14, K24, and K25 are CSA certified to U.S. and Canadian standards.

High-flow pumps have a cast iron housing and an intermittent duty, single-phase motor—limited to 20 starts per hour with a minimum 15 seconds between starts. Motor has thermal overload protection and a power cord without a plug, unless noted. All require a minimum 24″ Dia. × 30″ Dp. sump, unless noted. Temperature range is 33° to 104° F, unless noted. CSA certified.

Plug-In Controlled—Pumps do not have a switch; simply plug in to turn on. They must be submerged in water at all times. Do not run dry.

Tethered Float-Switch Controlled—"Piggyback" switch is not wired to the pump; it has its own power cord. Switch is easy to replace so it's ideal for troubleshooting.

Integrated Float-Switch Controlled—Float switch is part of the pump for a smaller footprint than tethered float-switch pumps.

Direct-Wire Tethered Float-Switch Controlled—Float switch is directly wired to the pump.

Standard, Integrated Float Switch

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Cord Lg.	Overall Size, Ht. × Wd. × Dp.		Each
Standard												
Plug-In Controlled												
110	75	30	20	14″	6″	4/10	115	8.5	20 ft.	11 5/8″ × 11 3/8″ × 6 13/16″	42935K14	$266.10
110	85	45	20	—	—	1/2	208/230	5.8/6.6	15 ft.	12 11/16″ × 10 5/16″ × 8 1/4″	42935K16	404.13
120	95	70	25	14″	6″	1/2	115	9.5	20 ft.	11 5/8″ × 11 3/8″ × 6 13/16″	42935K15	348.27
Tethered Float-Switch Controlled												
110	75	30	20	14″	6″	4/10	115	8.5	20 ft.	11 5/8″ × 11 3/8″ × 6 13/16″	42935K24	310.10
120	95	70	25	14″	6″	1/2	115	9.5	20 ft.	11 5/8″ × 11 3/8″ × 6 13/16″	42935K25	369.50
Integrated Float-Switch Controlled												
110	85	45	20	14″	8″	1/2	115	9.2	10 ft.	15″ × 10 5/16″ × 9 11/16″	42935K31	426.70
110	85	45	20	14″	8″	1/2	115	9.2	25 ft.	15″ × 10 5/16″ × 9 11/16″	42935K32	440.66
110	85	45	20	14″	8″	1/2	230	4.6	25 ft.	15″ × 10 5/16″ × 9 11/16″	42935K33	476.42
High Flow												
Plug-In Controlled												
165	140	98	25	—	—	1/2	120	11.6	20 ft.	18 5/8″ × 9 3/4″ × 12 5/8″	5143K57■	533.33
165	140	98	25	—	—	1/2	240	5.9	20 ft.	18 5/8″ × 9 3/4″ × 12 5/8″	5143K58■	575.00
220	195	165	36	—	—	1	200/240	8.8/8.3	30 ft.	18 5/8″ × 9 3/4″ × 13 3/16″	5143K35♣	668.33
405	375	335	46	—	—	2	230	19	30 ft.	21 1/4″ × 12 5/8″ × 16 3/4″	5143K45♣	1,523.81
Tethered Float-Switch Controlled												
115	95	68	26	13″	6″	4/10	115	12	15 ft.	16 3/4″ × 7 3/4″ × 10 3/4″	5143K37♥	401.67
165	140	98	25	13″	6″	1/2	120	11.6	20 ft.	18 5/8″ × 9 3/4″ × 12 5/8″	5143K28★	516.67
Direct-Wire Tethered Float-Switch Controlled												
165	140	98	25	20″	13″	1/2	120	11.6	20 ft.	18 5/8″ × 9 3/4″ × 12 5/8″	5143K72	520.00
165	140	98	25	20″	13″	1/2	240	5.9	20 ft.	18 5/8″ × 9 3/4″ × 12 5/8″	5143K73	535.00

■ Power cord has a three-prong plug. ♣ Discharge connection is 3″ NPT female.
♥ Pump requires an 18″ Dia. × 30″ Dp. sump. Temperature range is 33° to 77° F. ★ Temperature range is 33° to 77° F.

High Flow, Plug In

Grinder-Style Sump Pumps for Sewage Water

Type 440C stainless steel blades process sewage and stringy materials into an easy-to-transfer slurry to reduce clogging. Do not use with metal particles or any debris that could damage cutting blades. Housing is epoxy-coated cast iron. Motor has thermal overload protection and a power cord with no plug, unless noted. Discharge connection is 1 1/4″ NPT female. It requires a minimum 24″ Dia. × 36″ Dp. sump.

2758K24 is powered by a tethered float switch. Switch is not wired to the pump; it has its own power cord so it's easy to replace and ideal for troubleshooting. Pump has an intermittent duty (2 hours max. on; 1 hour min. off) motor and a temperature range of 32° to 140° F. UL listed and CSA certified. 2758K28 and ***K29*** have a tethered switch that is part of the pump. Also have an intermittent duty (duty cycle not rated) motor and a maximum temperature of 130° F. Minimum temperature is not rated. UL listed.

Max. Flow, gpm @ 20 ft. of Head	@ 60 ft. of Head	@ 100 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz (phase)	Amps	Cord Lg.	Overall Size, Ht. × Wd. × Dp.		Each
32	30	20	130	24″	10″	2	230 (1)	13.9	20 ft.	21 9/16″ × 11 7/16″ × 9 5/8″	2758K24	$1,527.86
46	43	7	98	24″	6″	2	230 (1)	13.7	20 ft.	18 5/8″ × 11 5/8″ × 8″	2758K28♦	1,675.15
46	43	7	98	24″	6″	2	200/208 (1)	15.5	20 ft.	18 5/8″ × 11 5/8″ × 8″	2758K29	1,675.15

♦ Includes a plug.

For information about pumps and pump performance, see page 328.

Ultra-Energy-Efficient Sump Pumps for Sewage Water

Direct-Wire Tethered Float Switch

Compared with similar sump pumps, these require fewer amps for the same amount of flow due to their double seals and sealed, long-life bearings. All have a Type 304L stainless steel housing, a continuous duty motor with 20-ft. power cord, and accept solids up to 2″ diameter. Discharge connection is 2″ NPT female. They require a minimum 24″ Dia.×24″ Dp. sump. Temperature range is 33° to 104° F.

Power-Cord Controlled (No Switch or Plug)— Pumps must be submerged in water at all times. Do not run dry. Motor is three phase and has a power cord with no switch and no plug.

Direct-Wire Tethered Float-Switch Controlled— Operates like "piggyback" float switches, but the switch is directly wired to the pump; it cannot be disconnected or replaced. Motor is single phase. *115 VAC* models have a power cord with three-prong plug. *230 VAC* model has a power cord with no plug.

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Overall Size, Ht.×Wd.×Dp.		Each
Power-Cord Controlled (No Switch or Plug)												
130	107	83	51	26	—	—	1	230	3.1	19⅛″	×9″×7½″	42495K96 $986.67
—	175	158	142	46	—	—	2	230	6.1	20¼″	×9″×7½″	42495K97 1,146.67
Direct-Wire Tethered Float-Switch Controlled												
100	78	53	15	22	32″	12″	½	115	5.3	21⅝″	×9″×7½″	42495K31 931.03
130	107	83	51	26	32″	12″	1	115	8.8	22 13/16″	×9″×7½″	42495K32 1,046.67
140	125	107	85	33	29″	15″	1½	230	6.4	20¼″	×9″×7½″	42495K34 1,116.67

Pumps for Water Removal

Painted Cast Aluminum

For removing water from flooded open areas, these pumps don't require a sump; they'll take water right off the floor. They have a screened bottom intake and a top discharge connection. All are plug-in controlled—they do not have a switch. Simply plug them in to turn them on. They must be submerged at all times. Do not run dry.

Pumps have an intermittent duty, single-phase motor with thermal overload protection and power cord with three-prong plug. Not rated for use with solids. A ¾″ garden hose thread (GHT) adapter is included. Temp. range is 32° to 120° F, unless noted. CSA certified.

Polypropylene Housing— Housing is glass-filled composite for durability. Discharge connection is 1¼″ NPT female. 3023K41 pumps down to ⅛″ and 99805K12 pumps down to ⅝″.

Polyester Housing— Housing is glass-reinforced composite for durability. Pumps water down to 1″. Discharge connection is 1¼″ NPT male.

Painted Cast Aluminum Housing— More impact resistant than polyester pumps, these pump water down to ⅛″. Discharge connection is 1¼″ NPT female.

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	Cord Lg.	Overall Size, Ht.×Wd.×Dp.		Each
Polypropylene Housing											
20	17	14	8	25	¼	115	6	8 ft.	9½″× 7″	× 7″	3023K41 $108.60
29	27	21	12	28	⅓	115	10	8 ft.	10¼″× 7″	× 7″	99805K12 131.77
Polyester Housing											
42	32	22	13	25	½	115	3	8 ft.	5¾″×10¼″×10¼″		99805K17■ 163.88
Painted Cast Aluminum Housing											
20	17	14	8	25	¼	115	5.6	8 ft.	8½″× 6¾″×	6¾″	4250K51 137.19
20	17	14	8	25	¼	115	5.6	25 ft.	8½″× 6¾″×	6¾″	4250K52 147.92

■ Temp. range is 32° to 77° F.

Easy-Carry Pumps for Water Removal

Plug In

If you're not sure where your next flood will be, these lightweight pumps have an epoxy-coated cast aluminum housing with a handle, so you can take them wherever they're needed. Motor is single phase with thermal overload protection and a power cord with three-prong plug. It is continuous duty when completely submerged and intermittent duty (3 hours max. on, 30 minutes min. off) if partially submerged. Pumps have a screened bottom intake and are not rated for solids. Discharge connection is 1″ NPT female and includes a ¾″ male garden hose thread (GHT) adapter. Overall size is 7 13/16″ Ht.×6⅛″ Wd.×4 5/16″ Dp., unless noted. Temperature range is 32° to 120° F. UL listed and CSA certified, unless noted.

Plug-In Controlled— Pumps do not have a switch; simply plug in to turn on. They must remain submerged in water at all times. Do not run dry.

Pressure Diaphragm-Switch Controlled— "Piggyback" switch is not wired to the pump; it has its own power cord. Switch is easy to replace, so it's ideal for troubleshooting.

Direct-Wire Tethered Float-Switch Controlled— Float switch is directly wired to the pump; it cannot be replaced.

Pressure Diaphragm Switch

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Cord Lg.		Each
Plug-In Controlled												
18	17	14	9	26.3	—	—	⅙	115	5	10 ft.	99835K61	$107.67
18	17	14	9	26.3	—	—	⅙	115	5	18 ft.	99835K62	112.72
18	17	14	9	26.3	—	—	⅙	115	5	25 ft.	99835K63●	117.80
Pressure-Diaphragm Switch Controlled												
18	17	14	9	26.3	9″	4″	⅙	115	5	10 ft.	99835K81	150.57
18	17	14	9	26.3	3″	1½″	⅙	115	5	18 ft.	99835K82	158.23
Direct-Wire Tethered Float-Switch Controlled												
18	17	14	9	26.3	12″	4″	⅙	115	5	10 ft.	99835K83▲	150.57

● UL listed only. ▲ Overall size is 8½″ Ht.×6⅛″ Wd.×4 5/16″ Dp.

Mini Pump with Hose for Water Removal

Remove water down to ⅛″ from small, flooded open spaces. This low-flow pump is furnished ready-to-use with its included suction strainer and 6 feet of garden hose. Housing is glass-reinforced PBT (polybutylene) and has six ¼″ mounting holes on the base (fasteners not included). Pump is plug-in controlled—it does not have a switch. Simply plug it in to turn it on. Do not run dry.

Motor is intermittent duty, single phase with thermal overload protection, and has a 6-ft. power cord with three-prong plug. Intake and discharge connection are ¾″ male garden hose thread (GHT). Not rated for use with solids. Overall size is 4 13/16″ Ht.×4⅜″ Wd.×6 7/16″ Dp. Temperature range is 32° to 77° F. UL listed and CSA certified.

Service Kit— Includes seal, O-ring, impeller, retainer, and wear plate.

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	Pump	Each	Service Kit	Each
5.3	5	4.5	4	43	1/12	115	2	4193K11	$147.27	4193K21	$13.87

For information about pumps and pump performance, see page 328.

Compact Pumps with Internal Sensor for Water Removal

Also known as bilge pumps, these fit into tight spots and have an internal sensor that checks for water every 2½ minutes. If water is found, the pumps turn on and run until water is removed. They will then continue to check for water every 2½ minutes. Motor is not rated for horsepower; all are single phase. Discharge connection is barbed for 1⅛″ ID tubing, except 3022K11, which is barbed for ¾″ ID tubing. Maximum solid diameter is 1/16″.

12 VDC pumps turn on when 1″ of water is sensed. They have an ABS housing and power cord with no plug. Maximum temperature is 186° F; minimum temperature not rated.

110 VAC pump turns on when ½″ of water is sensed. It has an acetal housing and a power cord with three-prong plug. Includes a garden hose thread (GHT) fitting. UL listed. Temperature range is 33° to 150° F.

110 VAC

Voltage	Amps	Cord Lg.	Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 15 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	Overall Size, Dia.×Ht.		Each
12 VDC	2.5	29″	5	1	—	—	12	2⅜″×4″	3022K11	$62.51
12 VDC	5	29″	12	3	—	—	12	2⅜″×4½″	3022K21	94.97
110 VAC @ 60 Hz	1	24 ft.	21	12	4	1	21	11″ ×7¾″	3022K24	175.34

High-Flow Pumps for Water Removal

Get higher flow rates at the same pressures as the water removal pumps above. In addition, these have an NPT female top discharge connection so water flows through the pump, providing additional cooling for the motor and extending its life. Maximum solid diameter is ⅜″. All have a Type 304 stainless steel housing, a single-phase motor, and a power cord with three-prong plug, unless noted.

Plug-In Controlled— Do not run dry. *Standard head* pumps are UL listed and CSA certified. They do not have a switch; simply plug in to turn on. Motor is intermittent duty—max. 8 hrs. on when completely submerged and max. 20 starts per hour (once every 3 minutes) when partially submerged, unless noted. For ⅓-hp pumps, temperature range is 32° to 122° F. They'll pump water down to 1″. For ½-hp pumps, temperature range is 32° to 131° F.

High head pumps will remove water down to 1⅜″. They have a continuous-duty motor with a power cord and thermal overload protection. Temperature range is 33° to 120° F.

Tethered Float-Switch Controlled— "Piggyback" switch is not wired to the pump; it has its own power cord. Switch is easy to replace so it's ideal for troubleshooting. These pumps are UL listed and CSA certified. For ⅓-hp pumps, temperature range is 32° to 122° F. For ½-hp pumps, temperature range is 32° to 131° F.

Plug-In Controlled, High Head

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 20 ft. of Head	@ 30 ft. of Head	@ 40 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps	Cord Lg.	Discharge Conn.	Overall Size, Ht.×Wd.×Dp.		Each
Plug-In Controlled— *Standard Head*															
49	41	23	—	—	26	—	—	1/3	115	4.9	10 ft.	1¼″	8⅞″ ×5⅞″×5⅞″	42805K21●	$460.35
49	41	23	—	—	26	—	—	1/3	115	4.9	25 ft.	1¼″	8⅞″ ×5⅞″×5⅞″	42805K41●	486.35
73	64	43	16	—	34	—	—	½	115	8	10 ft.	1½″	12 11/16″×8½″×8½″	42805K22	541.18
73	64	43	16	—	34	—	—	½	115	8	25 ft.	1½″	12 11/16″×8½″×8½″	42805K23	567.84
Plug-In Controlled— *High Head*															
—	72	48	23	—	36	—	—	½	115	10.3	30 ft.	1½″	14⅛″ ×7″ ×7″	3192K22	691.50
—	85	65	43	15	44	—	—	¾	230	5.7	20 ft.	1½″	15⅛″ ×7″ ×7″	3192K16♠	808.84
—	—	80	60	38	52	—	—	1	230	6.3	20 ft.	1½″	15⅞″ ×7″ ×7″	3192K18♠	883.37
Tethered Float-Switch Controlled															
49	41	23	—	—	26	11¼″	4¼″	⅓	115	4.9	10 ft.	1¼″	8⅞″ ×5⅞″×5⅞″	42805K31●	480.24
49	41	23	—	—	26	11¼″	4¼″	⅓	115	4.9	25 ft.	1¼″	8⅞″ ×5⅞″×5⅞″	42805K51●	506.24
73	64	43	16	—	34	13⅜″	6⅜″	½	115	8	10 ft.	1½″	12 11/16″×8½″×8½″	42805K32	561.57
73	64	43	16	—	34	13⅜″	6⅜″	½	115	8	25 ft.	1½″	12 11/16″×8½″×8½″	42805K33	596.08

● When partially submerged, max. 10 starts per hour (once every 6 minutes). ♠ Power cord has NEMA 6-15 plug (see pg. 784 for illustration).

Pumps for Sewage-Water Removal

If your water contains solids up to 2″ diameter, then these pumps can move it. Built to resist corrosion, they have a Type 304 stainless steel housing. All are powered by a tethered float switch with a turn-on level of 20″ and a turn-off level of 12″. This switch is not wired to the pump; it has its own power cord without a plug. Switch is easy to replace so it's ideal for trouble-shooting. They also have an intermittent duty (up to 20 starts per hour or every 3 minutes), single-phase motor, a power cord without a plug, and thermal overload protection. All are CSA certified.

Pumps with a ***vertical discharge connection*** have a 2″ NPT female connection and require a 21½″ Dia.×23″ Dp. sump. Temperature range is 32° to 131° F. UL listed.

Pumps with a ***horizontal discharge connection*** have a 2″ NPT male connection and require a 22″ Dia.×24″ Dp. sump. Temperature range is 32° to 104° F.

Pump with Horizontal Discharge Connection

Max. Flow, gpm @ 5 ft. of Head	@ 10 ft. of Head	@ 20 ft. of Head	@ 30 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	O'all Size, Ht.×Wd.×Dp.	10-ft. Power Cord	Each	25-ft. Power Cord	Each
With Vertical Discharge Connection												
105	80	40	10	32	1	230	6.3	9½″ Dia.×17 3/16″ Ht.	4184K31	$764.57	4184K81	$772.50
141	115	75	45	40	1½	230	8.4	9½″ Dia.×17 3/16″ Ht.	4184K32	937.50	4184K82	960.00
With Horizontal Discharge Connection												
106	80	45	15	33	1	230	6.4	18 7/16″×9¼″×8¼″	4184K44	565.50	4184K94	585.00
123	110	80	48	42	1½	230	8.4	18 7/16″×9¼″×8¼″	4184K46	864.23	4184K96	883.62

Mobile Engine-Driven Pumps for Sewage-Water Removal

Water containing silt, slurries, sludge, sewage, and solids up to 2″ diameter is no match for these high-horsepower engine-driven, gas-powered pumps. They have a cast aluminum housing and are mounted on a transport dolly with two 16″ dia. pneumatic rubber wheels for portability. Self-priming up to 20 ft., pumps have a built-in check valve and suction strainer. Engine is Briggs & Stratton Vanguard OHV (overhead valve design) with pull start. 43925K39 is also equipped with a 12 VDC electric start (battery not included; sold separately below). Pumps are not submersible. Intake and discharge connections for both pumps are 4″ NPT female. Temperature range is 40° to 180° F.

Max. Flow, gpm @ 10 ft. of Head	@ 30 ft. of Head	@ 60 ft. of Head	@ 90 ft. of Head	@ 100 ft. of Head	Max. ft. of Head	hp	Fuel Tank Capacity	Overall Size, Ht.×Wd.×Dp.		Each
530	475	350	180	115	118	13	1.6 gal.	44⅛″×37½″×36 5/16″	43925K29	$2,445.20
630	560	425	240	170	120	16	2.3 gal.	44⅛″×37½″×36 5/16″	43925K39	3,652.73
Optional 12-Volt Battery for 43925K39									7238K57	79.07

For information about pumps and pump performance, see page 328.

Engine-Driven Pumps for Water Removal

Lightweight without Frame

High Flow with Frame

Just fill up the gas tank and these engine-driven pumps are ready to pump both clean and dirty water. They're self-priming up to 20 ft. All engines have a pull start. Pumps are not submersible. Intake and discharge connections are 2″ NPT female, unless noted.

Lightweight Pumps without Frame— Polypropylene construction is lightweight and corrosion resistant. They have a Briggs & Stratton four-cycle engine. Temperature range is 40° to 130° F.

High-Flow Pumps with Steel Frame— Higher flow rates than the lightweight pumps above, with a steel frame for protection. Housing is cast iron. They have a Briggs & Stratton four-cycle engine. Temperature range is 40° to 180° F. For even more mobility, use the *wheel kit* (sold separately below).

Sandmaster High-Flow Pump with Steel Frame— Even sand can't stop this pump; it works with freshwater and salt water containing up to 25% sand by volume. Protected by a steel frame. Housing is cast iron and internal parts are high-chromium stainless steel for good wear resistance. It has a Honda GX160 four-cycle engine. Temperature range is 40° to 160° F.

Max. Flow, gpm @ 20 ft. of Head	@ 50 ft. of Head	@ 70 ft. of Head	@ 90 ft. of Head	Max. ft. of Head	Max. Solid Dia.	hp	Overall Size, Ht. × Wd. × Dp.	Fuel Tank Capacity		Each
Lightweight Pumps without Frame										
128	85	53	14	94	7/16″	3½	17 13/16″ × 16½″ × 13 3/16″	3 qt.	3068K3	$380.68
132	106	84	56	125	7/16″	5½	17 13/16″ × 16½″ × 13 3/16″	3 qt.	3068K5	443.57
High-Flow Pumps with Steel Frame										
140	100	52	—	87	3/8″	3½	16″ × 15½″ × 19″	3 qt.	43465K25	562.28
162	123	80	20	98	3/8″	6½	20″ × 19½″ × 24 5/16″	3 qt.	43465K23	703.24
285	215	160	65	102	3/4″	8	27 5/16″ × 21 5/16″ × 23″	4 qt.	43465K29★	1,080.16
Wheel Kit (Includes two 10″ dia. solid wheels that clamp to frame)									43465K41	147.34
Sandmaster High-Flow Pump with Steel Frame										
153	125	93	58	98	½″	5½	24 5/16″ × 19½″ × 20″	3.8 qt.	3066K44	1,172.66

★ Intake and discharge connections are 3″ NPT female.

Water Suction and Discharge Hose Kits

Use these kits with engine-driven water-removal pumps to remove water from open areas (see above and on page 333 for pumps). Kits include a 20-ft. green PVC suction hose with suction strainer and a 50-ft. blue PVC lay-flat discharge hose. All hose has couplings with male × female NPSM (straight) threads. Coupling pipe size and hose ID are the same. Also included are two galvanized steel nipples to convert NPT female pump connections to NPT male connections that fit the NPSM couplings.

Connections, Pipe Size	Each	Connections, Pipe Size	Each
1½″	3072K21 $125.78	3″	3072K23 $303.39
2″	3072K22 169.20	4″	3072K24 474.18

Condensate Pumps

A

D

B

E&F

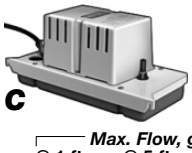

C

Where gravity drainage isn't possible, these pumps collect and remove condensate from evaporative coils on air conditioners and refrigerators. Pumps turn on and off automatically.

Styles A, B, C, D, and ***E*** have a single-phase motor with thermal overload protection. 115 VAC pumps have a three-prong plug; 230 VAC pumps do not have a plug. Temperature range is 32° to 120° F.

Styles B, C, D, and ***E*** include an ABS tank, a 6-ft. power cord, and a 48-volt safety switch that can turn off compatible equipment in case of malfunction. UL listed and CSA certified, unless noted.

A Compact— Mount inside almost any condensate collection tank. Pumps have a cast aluminum housing and a screened intake that can pump down to 1½″. Discharge connection is ¼″ NPT male. ***115 VAC*** pump has a 9-ft. power cord; ***230 VAC*** pump has an 11-ft. power cord.

B Standard— For medium-tonnage air conditioning and refrigeration units. Pumps include a built-in acetal check valve and 20 ft. of 3/8″ ID vinyl tubing. Discharge connection is barbed for 3/8″ ID tubing.

C Low Profile— For use in spaces with low clearance. Pumps include a built-in acetal check valve. Discharge connection is barbed for 3/8″ ID tubing.

D High Capacity— Handle heavy condensate flow. Discharge connection is barbed for 3/8″ ID tubing.

E High Head— Heavy duty pumps move fluid to greater heights. Discharge connection is a 3/8″ OD copper compression fitting.

F High Temperature— Handle high-temperature condensate between 40° and 190° F. They have a safety switch and a single-phase motor with screw terminals. UL and C-UL listed. *1/20-hp* units have a 3/8″ OD check valve and discharge connection. *1/4-* and *1/5-hp* units have a ½″ tube OD check valve and discharge connection.

Max. Flow, gpm @ 1 ft. of Head	@ 5 ft. of Head	@ 10 ft. of Head	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	Amps	O'all Size, Ht. × Wd. × Dp.	Tank Capacity		Each
115 VAC @ 60 Hz											
A 3.4	2.4	—	10	1¾″	1¼″	1/150	1.1	4 5/16″ × 6 3/32″ × 6 5/16″	—	8232K14	$85.72
B 1.3	1.2	0.8	20	2¼″	1¼″	1/30	1.5	7″ × 5″ × 11″	0.5 gal.	99575K21	66.96
C 1.3	1.2	0.8	20	1″	½″	1/30	1.5	5⅛″ × 5″ × 12″	0.3 gal.	99575K13	77.87
D 4.5	4.2	3.5	24	3½″	2″	1/18	2.5	10 7/16″ × 6″ × 12⅛″	1 gal.	99575K15	113.02
E 7.5	7.3	6.8	45	3½″	2″	⅕	3.5	10⅞″ × 6″ × 12⅛″	1 gal.	99575K22	259.30
F 1.8	1.7	1.4	20	3 3/16″	⅞″	1/20	1.3	10⅛″ × 6″ × 12″	1 gal.	3198K17	225.55
F 6.8	6.3	5.9	50	3 3/16″	⅞″	¼	4	10⅛″ × 6″ × 12″	1 gal.	3198K18	305.15
230 VAC @ 60 Hz											
A 3.4	2.4	—	10	1¾″	1¼″	1/150	0.5	4 5/16″ × 6 3/32″ × 6 5/16″	—	8232K24	106.09
B 1.3	1.2	0.8	17	2¼″	1¼″	1/30	0.5	7″ × 5″ × 11″	0.5 gal.	99575K41	72.00
C 1.3	1.2	0.8	17	1″	½″	1/30	0.5	5⅛″ × 5″ × 12″	0.3 gal.	99575K33■	88.74
D 4.5	4.2	3.5	24	3½″	2″	1/18	1.2	10 7/16″ × 6″ × 12⅛″	1 gal.	99575K35	121.39
E 7.5	7.3	6.8	45	3½″	2″	⅕	1	10⅞″ × 6″ × 12⅛″	1 gal.	99575K42	288.85
F 1.8	1.7	1.4	20	3 3/16″	⅞″	1/20	0.9	10⅛″ × 6″ × 12″	1 gal.	3198K33	235.69
F 8.1	7.6	6.9	50	3 3/16″	⅞″	⅕	1.9	10⅛″ × 6″ × 12″	1 gal.	3198K34	315.60

■ Not CSA certified.

For information about pumps and pump performance, see page 328.

Steam Condensate Pumps with Tank

Collect and return hot condensate to the boiler or boiler feed unit in low-pressure steam heating systems. Pumps are mounted on top of the tank for areas with limited horizontal space. A float switch turns pumps on and off automatically. Tanks are cast iron and have a 2″ NPT female intake connection and 1″ NPT female discharge connection. They also have a ½″ NPT female drain connection. All have an open dripproof (ODP), continuous duty, single-phase motor, and are wired for 115 VAC. They have a junction box with screw terminals. Temperature range is 160° to 200° F. ***Single pumps*** measure 26″ Ht. × 17″ Wd. × 17″ Dp. ***Dual pumps*** handle excessive condensate and provide redundancy; should one pump fail, you won't have to shut down your system to replace it. They measure 26″ Ht. × 20″ Wd. × 18″ Dp. All specifications listed are for each pump, unless noted. ***Repair kit*** includes shaft, oil seal, bushing, thrust washer, spring washer, and snap rings.

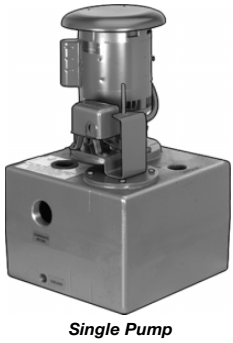

Single Pump

Tank Capacity	Max. gpm	Max. psi	Max. ft. of Head	Turn-On Level	Turn-Off Level	hp	VAC @ 60 Hz	Amps		Each
Single Pumps										
8 gal.	4	30	69	7¼″	5¼″	¼	115/230	5/2.5	4181K35	$1,393.10
8 gal.	12	20	46	7¼″	5¼″	⅓	115/230	6.4/3.2	4181K55	1,418.97
Dual Pumps										
15 gal.	4	30	69	6½″✓	4¼″✓	¼	115/230	5/2.5	4181K39	2,831.67
15 gal.	12	20	46	6½″✓	4¼″✓	⅓	115/230	6.4/3.2	4181K59	2,846.67

Repair Kit (Two are required for Dual Pumps) ..... 4181K91 Each $207.30

✓ Listed value is for first pump; second pump turns on at 7½″ and off at 5¼″.

High-Flow Steam Condensate Pumps with Tank

These large side-mounted pumps give you higher flow than the 4181K pumps above and fit in areas with low vertical clearance. Use in low-pressure steam heating systems to collect and return condensate to the boiler or boiler feed unit. A float switch automatically turns the pumps on when the liquid level is approximately ⅔ of the tank volume; pumps turn off when water level reaches 6″. Tanks are cast iron (except for 20-gal. capacity, which are steel) and have a 2″ NPT female intake connection. Pump discharge connection is 1″ NPT female. All have an open dripproof (ODP), continuous duty, single-phase motor wired for 115 VAC, and a junction box. Temperature range is 35° to 210° F.

Dual pumps handle excessive condensate and provide redundancy; should one pump fail, you won't have to shut down your system to replace the pump. All specifications listed are for each pump.

Seal kit includes one each of a carbon seal with spring, fiber gasket, ceramic seat with vibration ring, and rubber sleeve.

Dual Pump

Tank Capacity	Max. Flow, gpm @ 35 ft. of Head	@ 40 ft. of Head	@ 50 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	O'all Size, Ht. × Wd. × Dp.		Each
Single Pumps										
6 gal.	35	33	26	62	⅓	115/230	8.8/4.4	12 13/16″ × 14 3/16″ × 26″	4050K11	$1,006.46
15 gal.	35	33	26	62	⅓	115/230	8.8/4.4	19 13/16″ × 21 5/16″ × 26½″	4050K15	1,322.80
20 gal.	35	33	26	62	⅓	115/230	8.8/4.4	18½″ × 24 5/16″ × 25″	4050K19	1,348.35
Dual Pumps										
15 gal.	35	33	26	62	⅓	115/230	8.8/4.4	22⅛″ × 21 5/16″ × 26½″	4050K25	1,930.50
20 gal.	35	33	26	62	⅓	115/230	8.8/4.4	20 13/16″ × 24 5/16″ × 25″	4050K29	1,960.36

Replacement Seal Kit (Two are required for Dual Pumps) ..... 4050K51 Each $86.10

Replacement Pump and Motor Assembly ..... 4050K44 Each $737.04

Extended-Life Sealless Submersible Pumps for Water

A magnetic drive means these pumps have no seal to wear out. All are plug-in controlled—they do not have a switch. Simply plug them in to turn them on. Do not run dry. Pumps remove water down to 3″. All have a continuous duty, single-phase motor with a 6-ft. power cord and three-prong plug. Housing is polypropylene. UL recognized for use with water. ***Submersible*** pump has a screened intake that must be underwater at all times. Temperature range is 35° to 160° F. ***Submersible and open-air*** pumps can be submerged but also have an intake connection for open-air applications. Temperature range is 35° to 160° F when pump is fully submerged; in open-air applications, temperature range is 35° to 190° F.

Submersible

Submersible and Open Air

Max. Flow, gpm @ 0 ft. of Head	@ 1 ft. of Head	@ 3 ft. of Head	@ 4 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	Connections Intake	Discharge	O'all Size, Ht. × Wd. × Dp.		Each
Submersible												
3.0	2.5	1.7	0.6	4.6	1/200	115	0.45	Screened	¼″ NPT Male	3 13/16″ × 3 3/16″ × 3¾″	9971K41	$166.51
Submersible and Open Air												
1.7	1.6	0.9	0.5	4.6	1/200	115	0.45	For ⅜″ ID Tube	For ⅜″ ID Tube	3 3/16″ × 3¾″ × 4 7/16″	9971K21	166.51
3.0	2.5	1.7	0.6	4.6	1/200	115	0.45	¼″ NPT Male	¼″ NPT Male	3 3/16″ × 3¾″ × 4 7/16″	9971K31	166.51
3.0	2.5	1.7	0.6	4.6	1/200	115	0.45	For ½″ ID Tube	For ½″ ID Tube	3 3/16″ × 3¾″ × 4 7/16″	9971K11	166.51

Submersible Pumps for Parts Washers and Machine Oil

Choose a pump for parts washers or one for machine oil. All are plug-in controlled—they do not have a switch. Simply plug them in to turn them on. Do not run dry. All have a continuous duty, single-phase motor with thermal overload protection, unless noted. Housing is aluminum, unless noted. Temp. range is 32° to 120° F.

Pumps for Submerged Use in Parts Washers—For pumping unheated metal-parts cleaning solvents (nonwater-based) that are UL classified PJQU as described in the Gas and Oil Equipment Directory (flash point no lower than 100° F). All have a 6-ft. power cord with no plug. They must be fully submerged at all times.

Pump for Machine Oil—Use with machine and cutting oils up to 9 centipoise when pump is submerged. Use with weak acids and cleaning solvents when pump is not submerged. Pump has a 6-ft. power cord with three-prong plug.

A

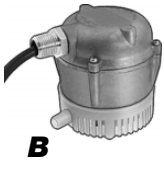

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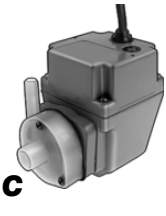

C

Max. Flow, gpm @ 1 ft. of Head	@ 3 ft. of Head	@ 5 ft. of Head	@ 7 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	Connections Intake	Discharge	O'all Size, Ht. × Wd. × Dp.		Each
For Submerged Use in Parts Washers												
A 2.8	2.3	1.7	—	7	1/125	115	0.6	Screened	¼″ NPT Male	3 5/8″ × 2¾″ × 3¼″	9987K57●	$72.76
A 5.0	4.3	3.4	2.5	11.8	1/40	115	1.7	Screened	¼″ NPT Male	4¼″ × 3½″ × 5½″	9987K77	94.83
B 3.4	2.8	2.0	0.3	7.4	1/150	115	1.1	Screened	¼″ NPT Male	4¼″ × 4 5/8″ × 4⅛″	9987K67	87.06
B 3.4	2.8	2.0	0.3	7.4	1/150	230	0.6	Screened	¼″ NPT Male	4¼″ × 4 5/8″ × 4⅛″	9987K87	96.55
For Machine Oil												
C 5.0	4.3	3.4	2.5	11.8	1/40	115	1.7	⅜″ NPT Female	¼″ NPT Male	4 5/8″ × 3½″ × 5 11/16″	4191K21▲	123.35

● Motor does not have thermal overload protection. Housing is epoxy-coated aluminum. ▲ Housing is epoxy-coated aluminum.

Submersible Pumps for Water

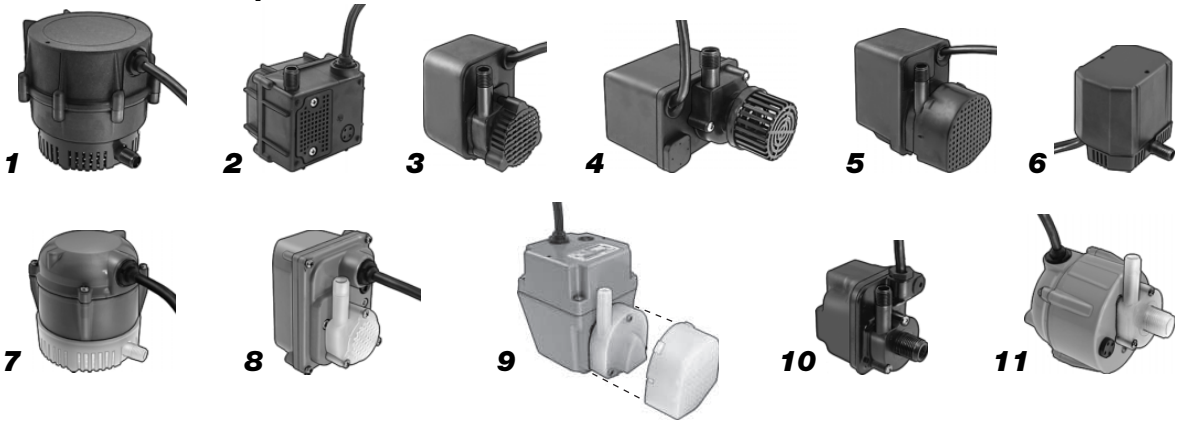

Ideal for low-flow circulation of water for use with small tanks, cooling tubs, tile saws, air conditioners, water displays, and fountains. Not for use with salt water and flammable liquids. Do not run dry. All have a continuous duty, single-phase motor. All except Style 6 have thermal overload protection and a temperature range of 32° to 120° F. Temperature range for Style 6 is 40° to 120° F. *Style 9* has a removable screen for applications in which pump is submerged.

115 VAC pumps are plug-in controlled. They do not have a switch, but do have a power cord with three-prong plug. Simply plug them in to turn them on. *230 VAC* pumps have a power cord with no plug.

Submersible pumps have a screened intake (unless noted) that must be underwater at all times.

Submersible and open-air pumps can be submerged but also have an intake connection for open-air applications in a pipeline.

	Max. Flow, gpm @ 1 ft. of Head	@ 5 ft. of Head	@ 10 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	Cord Lg.	Connections Intake	Discharge, NPT Male	O'all Size, Ht. × Wd. × Dp.		Each
Submersible													
Nylon Housing													
1	3.5	2.5	0.08	10.2	1/150	115	1.1	6 ft.	Screened	1/4″	4 9/16″ × 5″	× 5″	**9988K76** $72.05
1	5.4	4.5	2.2	12.3	1/40	115	1.7	6 ft.	Screened	1/4″	4 9/16″ × 5″	× 5″	**9988K86** 86.63
1	5.4	4.5	2.2	12.3	1/40	115	1.7	18 ft.	Screened	1/4″	4 9/16″ × 5″	× 5″	**9988K89** 97.78
1	5.4	4.5	2.2	12.3	1/40	230	0.7	12 ft.	Screened	1/4″	4 9/16″ × 5″	× 5″	**9988K96** 99.50
Glass-Filled Nylon Housing													
2	2	—	—	4.6	1/160	115	0.5	6 ft.	Screened	1/4″	3 11/16″ × 3 13/16″	× 3″	**4182K21** 59.03
2	2	—	—	4.6	1/160	230	0.3	12 ft.	Screened	1/4″	3 11/16″ × 3 13/16″	× 3″	**4182K71** 71.48
Polyester Housing													
3	2.8	1.7	—	7	1/125	115	0.6	6 ft.	Screened	1/4″	3 5/8″	× 2 13/16″ × 3 1/2″	**4182K22** 60.33
Glass-Filled Polyester Housing													
4	7.9	6.6	3.4	13.4	1/28	115	1.4	6 ft.	Screened	3/8″	4″	× 4″	× 5 5/8″ **4182K37** 99.74
5	5	4	2.2	12.2	1/40	115	0.8	6 ft.	Screened	1/4″	4 3/16″	× 2 13/16″ × 4 13/16″	**4182K36** 73.01
Epoxy-Coated PET Plastic Housing													
6	1.5	—	—	4.3	1/40	115	0.3	6 ft.	Screened	1/8″	3″	× 2 7/8″	× 2 7/8″ **3163K22** 44.50
6	3.5	1.9	—	7.1	1/30	115	0.5	16 ft.	3/4″ GHT■	1/4″	2 3/4″	× 3 1/2″	× 4 5/8″ **3163K24** 61.40
6	5.7	4.3	2.1	12.2	1/15	115	0.8	16 ft.	3/4″ GHT■	1/4″	4 7/8″	× 2 3/4″	× 4″ **3163K26** 83.54
6	9.2	7	3.8	12.4	1/10	115	1.2	16 ft.	3/4″ GHT■	1/2″	3″	× 4″	× 5″ **3163K28** 119.80
Epoxy-Coated Aluminum Housing													
7	2.8	1.7	—	7	1/200	115	1.1	6 ft.	Screened	1/4″	4 5/16″	× 4 1/8″	× 3 11/16″ **4182K24** 63.60
7	3.4	2	—	7.4	1/150	230	0.4	12 ft.	Screened	1/4″	4 5/16″	× 4 1/8″	× 3 11/16″ **4182K72** 82.26
8	2.8	1.7	—	7	1/200	115	1.1	6 ft.	Screened	1/4″	4 5/16″	× 3 5/16″	× 3 5/8″ **4182K23** 67.71
9	5	3.4	1.2	11.8	1/40	115	1.7	6 ft.	Screened	1/4″	4 5/8″	× 3 1/2″	× 5 5/8″ **4182K2** 82.08
9	13.5	12.4	10.2	24.5	1/12	115	3.5	6 ft.	Screened	1/2″	5 7/16″	× 4 7/16″	× 7″ **4182K5** 191.72
9	13.5	12.4	10.2	24.5	1/12	230	1.6	12 ft.	Screened	1/2″	5 7/16″	× 4 7/16″	× 7″ **4182K74** 228.50
Submersible and Open Air													
Polyester Housing													
10	2.8	1.7	—	7	1/125	115	0.6	10 ft.	1/2″ NPT Male	1/4″	3 7/16″	× 2 13/16″ × 3 13/16″	**4182K25★** 71.88
Epoxy-Coated Aluminum Housing													
9	5	3.4	1.2	11.8	1/40	115	1.7	6 ft.	3/8″ NPT Female	1/4″	4 5/8″	× 3 1/2″	× 5 5/8″ **4182K3** 86.90
9	5	3.4	1.2	11.8	1/40	230	0.7	12 ft.	Screened	1/4″	4 5/8″	× 3 1/2″	× 5 5/8″ **4182K73** 99.74
9	8.3	5.6	3.5	17.3	1/15	115	3.2	6 ft.	1/2″ NPT Female	1/2″	5 7/16″	× 4 7/16″	× 7″ **4182K4** 131.68
9	10	8.6	6.9	21	1/15	230	1.4	12 ft.	1/2″ NPT Female	1/2″	5 7/16″	× 4 7/16″	× 7″ **4182K17** 191.13
11	3.4	2	—	7.4	1/150	115	1.1	6 ft.	1/2″ NPT Male	1/4″	3 5/8″	× 4 1/8″	× 4 5/8″ **4182K26★** 70.08

■ Garden hose thread. ★ Also includes a 1/4″ NPT female inlet.

Submersible Pumps for Salt Water

Use with freshwater and salt water in both submerged and open-air applications in a pipeline. All are plug-in controlled—they do not have a switch. Simply plug them in to turn them on. Do not run dry. Pumps have an ABS (acrylonitrile butadiene styrene) housing and a continuous duty, single-phase motor with power cord and three-prong plug. Furnished with NPT-to-hose adapters. Temperature range is 35° to 104° F for 1/150- and 1/75-hp pumps; 35° to 122° F for 1/25- and 1/12-hp pumps. All are UL listed, except 99845K28, which is CSA certified.

Max. Flow, gpm @ 0 ft. of Head	@ 5 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz	Amps	Cord Lg.	Connections, NPT Female Intake	Discharge	O'all Size, Ht. × Wd. × Dp.		Each
1.3	—	4	1/150	115	0.16	6 ft.	3/8″	1/8″	4″ × 5 3/4″	× 2 15/16″	**99845K22** $71.32
2.5	—	5	1/75	115	0.25	6 ft.	3/8″	1/4″	4 1/2″ × 5 13/16″	× 2 15/16″	**99845K24** 80.19
5	2.1	7	1/25	115	0.4	6 ft.	1/2″	3/8″	4 3/4″ × 7″	× 3 13/16″	**99845K26** 112.92
10.5	5.9	12	1/12	115	1	7 ft.	3/4″	3/4″	6 3/8″ × 8 9/16″	× 4 9/16″	**99845K28** 190.19

For information about pump performance, see page 328.

Heavy Duty Metal Drum Pumps

Metal construction and few moving parts give these pumps long service life. Bung connector is included, unless noted. Minimum temperature not rated, unless otherwise indicated.

A ***Handheld with Brass Housing—*** Discharge tube is 36″ long, ½″ ID×¾″ OD. Temperature range is 45° to 140° F. Max. viscosity is not rated. Bung connector is not included.

B&C ***Zinc-Plated Steel Housing—*** Pumps have a removable 360° rotating spout that you can replace with a hose with a ¾″ garden hose thread (GHT) connection.

Style B has a temperature range of 32° to 140° F. Maximum viscosity is 200 centipoise (similar to SAE 30 oil). *Style C* has a temperature range of 0° to 130° F. Maximum viscosity is 250 centipoise (similar to SAE 40 oil).

D ***Steel Housing—*** Maximum temperature is 140° F, and maximum viscosity is 300 centipoise (similar to SAE 40 oil).

E ***Type 316 Stainless Steel Housing—*** Pumps offer exceptional corrosion resistance. Maximum temperature is 140° F, and maximum viscosity is 300 centipoise (similar to SAE 40 oil).

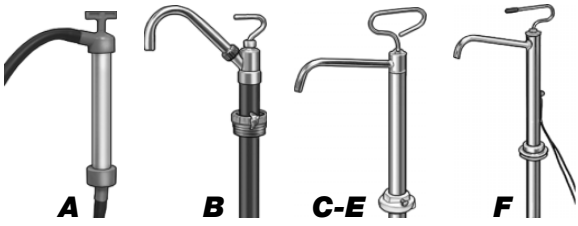

F ***FM-Approved Steel Housing—*** An internal flame arrester and grounding wires make these pumps FM approved for use with flammable and combustible liquids. Maximum temperature is 140° F, and maximum viscosity is 150 centipoise (similar to cough syrup). 4259K23 has a 33 mm unthreaded adapter (fits Rieke Flex Spout) and four threaded screw cap adapters: 1¾″, 2⅛″, 2¼″, and 2⅞″.

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **9974KAC**.

	Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	Intake Tube Lg.	Intake Tube OD	Each
A	Deionized Water, Diesel Fuel, Glycol, Salt Water, Water	5	_____	—	36″	¾″	**9911K11** .. $71.22
B	Hydraulic Oil, Motor Oil	22	15 to 55 gal.	2″	35¼″	1½″	**2520K22** .. $29.51
C	Glycol	16	15 to 55 gal.	2″	36″	1½″	**9912K28** .. $27.11
D	Glycol	8	15 to 55 gal.	2″	22½″	½″	**9912K16** .. $28.10
E	Ammonium Hydroxide, Deionized Water, Glycol, Hydraulic Oil, Motor Oil, Nitric Acid, Water	8	15 to 55 gal.	2″	22½″	½″	**9912K31** .. $136.72
		16	15 to 55 gal.	2″	37″	1⅛″	**9912K32** .. $145.50
F	Acetone, Diesel Fuel, Ethanol, Gasoline, Hydraulic Oil, Isopropyl Alcohol, Lacquer Thinner, Methanol, Methyl Ethyl Ketone, Mineral Spirits	3	5 gal.	—	12″	1¼″	**4259K23** .. $177.19
		8	15 to 55 gal.	2″	22″ to 34″	11/16″	**4259K43** .. $184.00

Optional 5-Gallon Pail Adapter with 1¾″ Adapter Size for Styles D and E..... **9912K21** **Each** $17.23

Easy-Stroke Metal Drum Pumps

Use the power of leverage to pump with less effort. All pumps have a telescoping intake tube and include a bung connector.

G ***Zinc-Plated Steel Housing—*** Pumps have a removable discharge spout that can be replaced with a hose with a ¾″ garden hose thread (GHT) connection. Temperature range is 60° to 100° F. Maximum viscosity is 319 centipoise (similar to SAE 40 oil). *Note:* For indoor use only. Not for use with water and water-based solutions.

H ***High-Flow with Zinc-Alloy Housing—*** Includes two removable spouts: one curved and one high-angle curved. Spouts can be replaced with a 1″ OD discharge tube (not included). Maximum temperature is 140° F, and maximum viscosity is 4,000 centipoise (similar to honey). Minimum temperature is not rated. *Note:* Not for use with water and water-based solutions.

J ***Dual-Stroke with Aluminum Housing—*** For high-flow output, these pump on both the forward and backward strokes. Lock the lever in place using a padlock (not included) with a ¼″ maximum shackle diameter. Flow is reversible. Temperature range is –15° to +150° F. Maximum viscosity is 400 centipoise (similar to varnish). UL listed.

Pump with *tube, nozzle, and meter* lets you track your flow rate. Meter automatically records up to 99.9 gal./delivery (resettable) and totals up to 99,999.9 gal. (nonresettable).

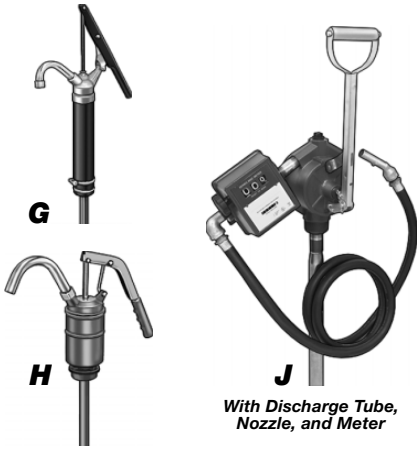

With Discharge Tube, Nozzle, and Meter

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **9906KAC**.

	Common Compatible Chemicals	Discharge Style	Flow Rate, oz./Stroke	For Container	Fits Bung Size	Intake Tube Lg.	Intake Tube OD	Discharge Tube Lg.	Discharge Tube ID×OD	Each
G	Hydraulic Oil, Motor Oil	Curved Spout	10	30 to 55 gal.	2″	18″ to 36″	1⅜″	___	_____	**4266K11** .. $39.69
		Curved Nondrip Spout	10	30 to 55 gal.	2″	18″ to 36″	1⅜″	___	_____	**4266K12** .. $45.19
H	Methanol, Motor Oil	Curved Spout	32	15 to 55 gal.	2″	18″ to 35″	1″	___	_____	**8246K15** .. $77.15
J	Diesel Fuel, Gasoline, Hydraulic Oil, Kerosene, Mineral Spirits, Motor Oil (up to 40 weight at 70° F)	Curved Spout	25	15 to 55 gal.	2″	22″ to 35″	1½″	___	_____	**9906K11** .. $179.45
		Tube & Nozzle	25	15 to 55 gal.	2″	22″ to 35″	1½″	8 ft.	21/32″×1 1/32″	**9906K12** .. $187.93
J	Diesel Fuel, Gasoline, Kerosene, Mineral Spirits	Tube, Nozzle & Meter	25	15 to 55 gal.	2″	22″ to 35″	1½″	8 ft.	21/32″×1 1/32″	**9906K33** .. $427.08

Metal Rotary Drum Pumps

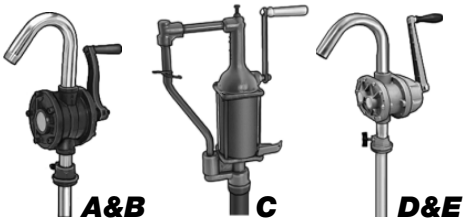

With an easy-to-rotate handle, all pumps except Style C give you smooth flow for continuous dispensing. All have a cast iron body (unless noted) and include a bung connector.

A ***Pumps with Discharge Tube and Curved Spout—*** Temperature range is 41° to 104° F, and maximum viscosity is 80 centipoise (similar to olive oil).

B ***Pump with Curved Spout—*** Rigid, removable spout can be replaced with 1″ ID discharge tube (not included) for transfer applications. Temperature range is 40° to 160° F, and maximum viscosity is 880 centipoise (similar to glycerin).

C ***Pump with Straight Spout—*** Rigid, removable spout can be replaced with 1″ ID discharge tube (not included) for transfer applications. Dispenses one quart of liquid per each rotation of the handle. Temperature range is –15° to +150° F, and maximum viscosity is 405 centipoise (similar to varnish).

D&E ***Heavy Duty Pumps with Curved Spout—*** Minimum temperature is not rated.

Style D has an aluminum body and includes a discharge tube. Maximum temperature is 180° F, and maximum viscosity is 500 centipoise (similar to caramel).

Style E has a maximum temperature of 300° F and a maximum viscosity of 352 centipoise (similar to SAE 40 oil).

F ***Heavy Duty Pump with Discharge Tube and Nozzle—*** It includes a nozzle and nozzle holder. Maximum temperature is 300° F, and maximum viscosity is 352 centipoise (similar to SAE 40 oil). Minimum temperature is not rated.

G&H ***FM-Approved Pumps—*** Approved for use with Class I and II flammable liquids. Maximum temperature is 300° F, and maximum viscosity is 352 centipoise (similar to SAE 40 oil). Minimum temperature is not rated.

Style G has an antistatic discharge tube, a nozzle hanger, a vacuum breaker to prevent siphoning, a strainer, and a flame-arresting baffle.

Style H has a curved discharge spout, a strainer, a flame-arresting screen and baffle, and a drip pan.

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **43655KAC**.

	Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	*Intake Tube* Lg.	*Intake Tube* OD	*Discharge Tube* Lg.	*Discharge Tube* ID×OD	Each
A	Diesel Fuel, Kerosene	6	55 gal.	2 5/16″	39 1/4″	1″	43 5/16″	5/8″×3/4″	**43655K33** $52.90
		9	55 gal.	2 5/16″	41″	1 1/4″	50 3/8″	7/8″×1″	**43655K34** $61.26
B	Diesel Fuel, Ethylene Glycol, Gasoline, Kerosene, Methanol, Motor Oil, Sodium Hydroxide (20%, up to 120° F)	14	15 to 55 gal.	2″	40″	1 1/4″	—	—	**9182K21** $72.97
C	Diesel Fuel, Hydraulic Oil, Kerosene, Mineral Spirits, Motor Oil	31 to 35	15 to 55 gal.	2″	23″ to 41″	1″	—	—	**4225K31** $141.58
D	Hydraulic Oil, Hydrochloric Acid (20%), Motor Oil	32	15 to 55 gal.	2″	39 1/2″	1 1/8″	54″	3/4″×1″	**1586T16** $183.59
E	Glycol, Hydraulic Oil (nonsynthetic only), Motor Oil	11	55 gal.	2″	40″	27/32″	—	—	**4236K7** $150.07
F		11	55 gal.	2″	40″	27/32″	8 ft.	5/8″×3/4″	**4236K8** $190.06
G	Diesel Fuel, Gasoline, Glycol, Hydraulic Oil (nonsynthetic only), Kerosene, Mineral Spirits, Motor Oil	11	55 gal.	2″	20 1/4″ to 40″	1 1/4″	8 ft.	3/4″×1″	**4252K62** $241.90
H		11	55 gal.	2″	20 1/4″ to 40″	1 1/4″	—	—	**4252K61** $235.07

Compact Plastic Drum Pumps

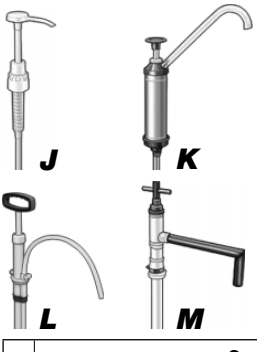

With a small intake tube and handle, these pumps are good for tight spots in low-flow applications. They have few moving parts to wear out so they last longer. Bung connector is included.

J ***Miniature with Polypropylene Housing—*** For small jars, containers, jugs, and carboys with a minimum height of 8″. Discharge spout rotates 360°. Temperature range is 50° to 200° F. Maximum viscosity is 5,000 centipoise (similar to hand lotion).

K ***Metered-Flow with Polypropylene Housing—*** Flow rate is selectable so you dispense only the amount of liquid you need. Discharge spout rotates 360°. Maximum temperature is 125° F. Minimum temperature and maximum viscosity are not rated.

L ***Polyethylene Housing—*** Have a flexible discharge spout. Maximum temperature is 150° F. Minimum temperature and maximum viscosity are not rated.

M ***High-Flow with Polyethylene Housing—*** Has a 90° angled spout. Temperature range is 40° to 158° F. Maximum viscosity is 1,000 centipoise (similar to castor oil).

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **4249KAC**.

	Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	*Intake Tube* Lg.	*Intake Tube* OD	Each
J	Deionized Water, Glycol, Hydraulic Oil, Mineral Spirits, Motor Oil, Water	1	—	38 mm	11″	5/16″	**4249K32** $3.55
		1	—	38 mm	14 1/2″	5/16″	**4249K38** $4.00
K	Ammonium Hydroxide, Glycol, Isopropyl Alcohol, Methanol, Phosphoric Acid (40%), Salt Water, Sulfuric Acid (75%), Water	2, 4, 6, or 8	15 to 55 gal.	3/4″ and 2″	33″	5/8″	**4368K13** $17.90
		4, 8, 12, or 16	15 to 55 gal.	3/4″ and 2″	33″	5/8″	**4368K14** $23.86
L	Ammonium Hydroxide (30%), Deionized Water, Hydrochloric Acid, Nitric Acid (20%), Paint (water based only), Phosphoric Acid, Salt Water, Sodium Hydroxide (50%), Sodium Hypochlorate, Sulfuric Acid (75%), Water	3	5 gal.	83 mm	18 1/4″	1 3/16″	**4277K31** $205.12
		3	55 gal.	2″	32″	1 3/16″	**4277K33** $205.12
M	Deionized Water, Water	25	15 to 55 gal.	2″	35″	1 5/8″	**4277K14** $39.60

For information about pump performance, see page 328.

Plastic Pail-and-Drum Pumps for Small Containers

These lightweight, chemical-resistant pumps have few moving parts to wear out for a long life. All have a PVC housing.

***A* Handheld Pail and Drum Pumps**—Temperature range is 32° to 120° F. Maximum viscosity is 2,500 centipoise (similar to shampoo).

4324K27 is dual function; when the handle is fully extended, it works like a siphon pump. It has an intake tube attached at a 90° angle. 4324K34 has two intake tubes.

***B* Handheld Pail Pump**—Use as a handheld pump or with an optional bung connector to attach the pump to a container (connectors sold separately below). Temp. range is 32° to 120° F. Max. viscosity is 2,500 centipoise (similar to shampoo).

***C-E* Pail- and Drum-Mount Pumps**—Bung connector is included.

Styles C and D have a temperature range of 32° to 120° F. Maximum viscosity is 2,500 centipoise (similar to shampoo).

Style D pumps are dual function; when the handle is fully extended, they act as a siphon pump.

Style E pumps have a maximum temperature of 120° F and a maximum viscosity of 704 centipoise (similar to liquid detergent). Minimum temperature is not rated. 2578K25 has a 0.77″ OD nondrip spout. 2578K15 has a discharge tube.

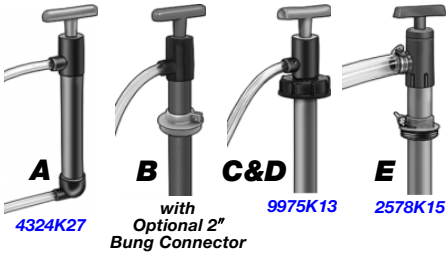

For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **4324KAC**.

	Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	Intake Tube Lg.	Intake Tube OD	Discharge Tube Lg.	Discharge Tube ID × OD	Each
A	Deionized Water, Diesel Fuel, Gasoline, Glycol, Hydraulic Oil, Kerosene, Motor Oil, Salt Water, Water	4	2½ to 55 gal.	———	72″	9/16″	36″	7/16″ × 9/16″	4324K27.. $28.86
		5	2½ to 55 gal.	———	36″	¼″, ½″	24″	1¼″ × 1⅝″	4324K34.. $45.45
B	Ammonium Hydroxide, Deionized Water, Glycol, Isopropyl Alcohol, Phosphoric Acid (<40%), Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (<10%), Water	5	5 gal.	Sold separately (see below)	18″	9/16″	9″	7/16″ × ½″	4938K11.. $25.23
C	Chlorine, Deionized Water, Diesel Fuel, Ethanol, Gasoline, Glycol, Hydraulic Oil, Hydrochloric Acid (37%), Isopropyl Alcohol, Kerosene, Methanol, Motor Oil, Nitric Acid, Phosphoric Acid, Salt Water, Sodium Hypochlorate, Sulfuric Acid (<10%), Water	5	5 to 55 gal.	2″	12″	9/16″	9″	7/16″ × 9/16″	9975K12.. $35.04
D	Ammonium Hydroxide, Deionized Water, Glycol, Hydrochloric Acid (37%), Isopropyl Alcohol, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (<10%), Water	8	5 to 15 gal.	61 mm	15″	¾″	36″	7/16″ × 9/16″	9975K13.. $31.11
		8	5 to 15 gal.	63 mm	15″	¾″	36″	7/16″ × 9/16″	9975K14.. $31.46
		8	5 to 15 gal.	70 mm	15″	¾″	36″	7/16″ × 9/16″	9975K16.. $31.82
		8	55 gal.	2″	36″	⅝″	48″	7/16″ × 9/16″	9975K17.. $36.59
E	Ammonium Hydroxide, Chlorine, Deionized Water, Glycol, Hydraulic Oil, Hydrochloric Acid (20%), Nitric Acid (20%), Sodium Hydroxide (80%), Water	8	5 to 55 gal.	2″	22″	1½″	—	———	2578K25.. $21.90
		8	5 to 55 gal.	2″	22″	1½″	22″	7/16″ × ⅝″	2578K15.. $21.90

Optional Bung Connectors for Handheld Pail Pump (Style B)

Polypropylene Connectors

For 2″ Diameter Bung Opening ..... **4938K21** **Each** $6.75

For 32 mm Bung Opening (Rieke Jr.) ..... **4938K22** **Each** $6.50

Polyethylene Connectors

For ¾″ Bung Size (Rieke Sr.) ..... **4938K23** **Each** $5.00

For 70 mm Diameter Bung Opening ..... **4938K24** **Each** $5.00

Plastic Drum Pumps

A long PVC intake tube reaches to the bottom of your drum and provides high-flow output with every push of the plunger. All pumps have a PVC housing and a 2″ bung connector.

***F* Standard**—Maximum temperature is 120° F, and maximum viscosity is 704 centipoise (similar to liquid detergent). Minimum temperature is not rated. 2578K45 has a ¾″ OD discharge spout, while 2578K35 has a discharge tube.

***G-J* High Viscosity**—Maximum viscosity is 2,500 centipoise (similar to shampoo). *Styles G & J* have a temperature range of 32° to 120° F. *Style H* has a temperature range of 32° to 100° F.

For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **2578KAC**.

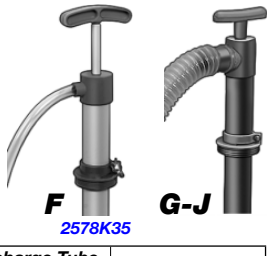

	Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	Intake Tube Lg.	Intake Tube OD	Discharge Tube Lg.	Discharge Tube ID × OD	Each
F	Ammonium Hydroxide, Chlorine, Deionized Water, Glycol, Hydraulic Oil, Hydrochloric Acid (20%), Nitric Acid (20%), Sodium Hydroxide (80%), Water	22	15 to 55 gal.	2″	39″	1½″	—	———	2578K45.. $40.20
		22	15 to 55 gal.	2″	39″	1½″	36″	7/16″ × ⅝″	2578K35.. $40.20
G	Deionized Water, Diesel Fuel, Gasoline, Glycol, Hydraulic Oil, Kerosene, Motor Oil, Salt Water, Water	28	15 to 55 gal.	2″	38″	1½″	36″	1¼″ × 1⅝″	9918K31.. $62.42
		28	15 to 55 gal.	2″	38″	1½″	72″	1¼″ × 1⅝″	9918K35.. $68.18
H	Ammonium Hydroxide, Deionized Water, Glycol, Hydrochloric Acid (37%), Isopropyl Alcohol, Phosphoric Acid (<40%), Salt Water, Sodium Hydroxide (80%), Water	28	15 to 55 gal.	2″	38″	1½″	36″	1¼″ × 1⅝″	9918K21.. $65.86
		28	15 to 55 gal.	2″	38″	1½″	72″	1¼″ × 1⅝″	9918K25.. $71.72
J	Chlorine, Deionized Water, Ethanol, Gasoline, Glycol, Hydraulic Oil, Hydrochloric Acid (37%), Motor Oil, Nitric Acid, Phosphoric Acid, Salt Water, Sodium Hypochlorate, Sulfuric Acid (75%), Water	28	15 to 55 gal.	2″	38″	1½″	36″	1¼″ × 1⅝″	9918K75.. $69.70
		28	15 to 55 gal.	2″	38″	1½″	72″	1¼″ × 1⅝″	9918K76.. $75.76

Replacement 2″ Diameter Bung Connector for Styles G, H, and J ..... **9918K43** **Each** $6.00

Optional Male 2⅝″ Buttress Thread Bung Connector for Styles G, H, and J ..... **9918K45** **Each** $7.00

For information about pump performance, see page 328.

FDA-Compliant Plastic Drum Pumps

3047K11

For food and beverage applications, these pumps are made entirely of FDA-compliant materials and conform to regulations under CFR 21 for indirect food contact. Bung connector is included. Temperature range is 32° to 120° F. Maximum viscosity is 175 centipoise (similar to cough syrup).

3047K11 has a curved discharge spout. 3047K21 has a discharge tube.

For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **3047KAC**.

Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	*Intake Tube* Lg.	*Intake Tube* OD	*Discharge Tube* Lg.	*Discharge Tube* ID×OD	Each
Chlorine, Deionized Water, Diesel Fuel, Ethanol, Gasoline, Glycol, Hydraulic Oil, Hydrochloric Acid (37%), Isopropyl Alcohol, Kerosene, Methanol, Motor Oil, Nitric Acid, Phosphoric Acid, Salt Water, Sodium Hypochlorate, Sulfuric Acid (75%), Water	5	5 to 15 gal.	2″	12″	5/8″	—	—	**3047K11** ... $34.00
	5	5 to 15 gal.	2″	12″	5/8″	9″	13/32″×9/16″	**3047K21** ... $32.32

High-Flow Plastic Drum Pumps

For high-flow applications, these pumps deliver fluid on both the forward and backward strokes. Mount the pump handle above or below the pump body for easy operation at any angle. You can lock the handle using a padlock (not included) with a maximum shackle diameter of 1/4″. Pumps have a built-in tube hanger and include a bung connector. Maximum temperature is 68° F. Minimum temperature is not rated. Maximum viscosity is 352 centipoise (similar to SAE 40 oil).

A ***Pump with Discharge Spout—*** Has a rigid spout that you can remove and replace with a 1″ ID discharge hose (not included) for transfer applications.

B ***Pumps with Discharge Hose and Nozzle—*** These include an 8-ft. Lg., 1″ ID discharge hose, a nozzle, and a vacuum breaker that drains the tube to prevent siphoning.

For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **4312KAC**.

	Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	*Intake Tube* Lg.	*Intake Tube* OD	*Discharge Hose* Lg.	*Discharge Hose* ID×OD	Each
A	Deionized Water, Diesel Fuel, Ethanol, Gasoline, Glycol, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Mineral Spirits, Motor Oil, Phosphoric Acid (<40%), Salt Water, Water	32	55 gal.	2″	34″	1 5/16″	—	—	**4312K24** .. $123.68
B	Deionized Water, Diesel Fuel, Ethanol, Gasoline, Hydraulic Oil, Isopropyl Alcohol, Motor Oil, Phosphoric Acid (<40%), Salt Water, Water	32	55 gal.	2″	34″	1 5/16″	8 ft.	3/4″×1″	**4312K28** .. $138.02
B	Deionized Water, Diesel Fuel, Ethanol, Gasoline, Glycol, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Methyl Chloride, Mineral Spirits, Motor Oil, Nitric Acid (20%), Phosphoric Acid, Salt Water, Water, Xylene	32	55 gal.	2″	34″	1 5/16″	8 ft.	3/4″×1″	**4312K33** .. $350.43

Rotary Plastic Drum Pumps

67515K75

67515K59

An easy-to-rotate handle—rather than a lever—actuates these pumps, giving you smooth, nonpulsating flow for continuous dispensing. Bung connector is included. Maximum temperature is 180° F. Minimum temperature is not rated.

C&D ***Polypropylene Housing—*** *Style C* pumps have a maximum viscosity of 400 centipoise (similar to varnish). *Style D* has a maximum viscosity of 704 centipoise (similar to liquid detergent).

E ***Ryton Housing—*** Maximum viscosity is 1,000 centipoise (similar to castor oil).

For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **67515KAC**.

	Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	*Intake Tube* Lg.	*Intake Tube* OD	Each
C	Deionized Water (up to 72° F), Glycol, Motor Oil (up to 72° F), Nitric Acid (20%, up to 120° F), Phosphoric Acid (up to 120° F), Salt Water, Water	8	15 to 55 gal.	2″	44″	1 1/4″	**67515K75** $93.33
C	Ammonium Hydroxide, Deionized Water (up to 120° F), Glycol, Motor Oil (up to 72° F), Nitric Acid (20%, up to 120° F), Phosphoric Acid (up to 120° F), Salt Water, Water	8	15 to 55 gal.	2″	44″	1 1/4″	**67515K77** $110.80
D	Ammonium Hydroxide, Deionized Water, Glycol, Water	8	15 to 55 gal.	2″	40 1/4″	1 1/4″	**67515K51** $96.85
E	Deionized Water, Salt Water, Water	8	15 to 55 gal.	2″	40 1/4″	1 1/4″	**67515K59** $144.57

For information about pump performance, see page 328.

Easy-Stroke Plastic Drum Pumps

Use the power of leverage to pump with less effort. Pumps include a telescoping intake tube and bung connector, unless noted.

A ***Polyethylene Housing—*** Has a removable spout that you can replace with a 1 3/8″ ID discharge tube (not included) for transfer applications. Intake tube is not telescoping. Bung connector is not included. Temperature range is 0° to 120° F. Maximum viscosity is 1,000 centipoise (similar to castor oil).

B&C ***Polypropylene Housing—*** Spout rotates 360°. *Style B* has a maximum temperature of 125° F and a maximum viscosity of 2,200 centipoise (similar to SAE 140 transmission-grade oil). Minimum temperature is not rated. Bung connector is not included. *Style C* has a temperature range of –15° to +150° F. Maximum viscosity is 15 centipoise (similar to vinegar). Bung connector is built-in.

D ***Metered Flow with Ryton Housing—*** Flow rate is selectable so you dispense only the amount of liquid you need. This pump also has a removable spout that you can replace with a 1″ ID discharge tube (not included) for transfer applications. Maximum temperature is 180° F and maximum viscosity is 500 centipoise (similar to caramel). Minimum temperature is not rated.

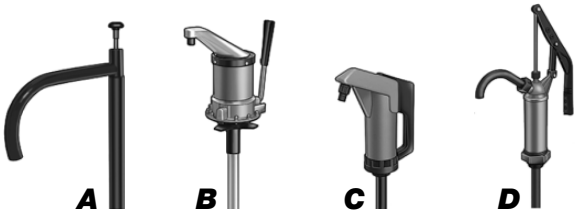

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **43035KAC**.

	Common Compatible Chemicals	Flow Rate, oz./Stroke	For Container	Fits Bung Size	*Intake Tube* Lg.	*Intake Tube* OD	Each
A	Chlorine, Deionized Water, Ethanol, Glycol, Hydraulic Oil, Hydrochloric Acid, Isopropyl Alcohol, Motor Oil, Nitric Acid (50%), Phosphoric Acid, Salt Water, Sodium Hypochlorate, Sulfuric Acid (75%), Water	20	15 to 55 gal.	2″	35″	1 13/16″	**43035K67** $77.73
B	Glycol, Methanol, Water	10	15 to 55 gal.	2″	19″ to 38 1/4″	1″	**4222K32**... $80.80
C	Diesel Fuel, Glycol, Hydraulic Oil, Kerosene, Motor Oil (up to 40 weight at 70° F maximum), Nitric Acid (20%, up to 120° F), Phosphoric Acid (<40%, up to 72° F), Salt Water, Water	11	15 to 55 gal.	2″	20″ to 36″	7/8″	**4222K71**... $84.81
D	Deionized Water, Motor Oil, Phosphoric Acid (<40%, up to 72° F), Water	8, 10, or 12	15 to 55 gal.	1 1/2″ and 2″	24 1/2″ to 34 1/2″	1 1/8″	**2515K45**... $94.35

Siphon Plastic Drum Pumps

Siphon pumps provide a suction force to draw liquid out of its container. Once you get them started pumping, they'll continue to pump without any more help from you.

E&F ***Squeeze-Bulb Style—*** Housing is polyethylene. *Style E* has a temperature range of 0° to 150° F. Maximum viscosity is 150 centipoise (similar to cough syrup). *Style F* includes a 33 mm unthreaded adapter (fits Rieke Flex Spout). Maximum temperature is 140° F, and maximum viscosity is 50 centipoise (similar to SAE 10 motor oil). Minimum temperature is not rated.

G ***Bellows-Action Style—*** Housing is polyethylene. Bung connector is included. Maximum temperature is 140° F, and maximum viscosity is 88 centipoise (similar to olive oil). Minimum temperature is not rated.

H ***Battery Operated for Kerosene—*** Operates on two D batteries (not included). It fits in a 1 13/64″ unthreaded hole. Housing is polypropylene. Maximum temperature is 140° F, and maximum viscosity is 3 centipoise (similar to water). Minimum temperature is not rated

J ***Battery Operated for Water—*** Operates on two D batteries (not included). Pump has a 3/4″ OD discharge spout. Intake tube fits in a 55 mm unthreaded hole. Housing is polypropylene. Maximum temperature is 120° F, and maximum viscosity is 3 centipoise (similar to water). Minimum temperature is not rated.

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **9894KAC**.

	Common Compatible Chemicals	Flow Rate, gpm	For Container	Fits Bung Size	*Intake Tube* Lg.	*Intake Tube* OD	*Discharge Tube* Lg.	*Discharge Tube* ID × OD	Each
E	Ammonium Hydroxide (up to 72° F), Chlorine (up to 72° F), Deionized Water (up to 120° F), Glycol (up to 120° F), Phosphoric Acid (<40%, up to 120° F), Salt Water (up to 120° F), Sulfuric Acid (up to 75%, up to 72° F), Water (up to 120° F)	2	1 to 5 gal.	—	15″	5/8″	21″	1/2″ × 3/4″	**9894K51**... $4.37
F	Ammonium Hydroxide, Glycol, Hydraulic Oil, Hydrochloric Acid (20%), Isopropyl Alcohol, Lacquer Thinner, Methanol, Salt Water, Water	2	5 gal.	—	16″	5/8″	18″	9/16″ × 11/16″	**9894K44**... $4.67
G	Ammonium Hydroxide, Glycol, Hydraulic Oil, Hydrochloric Acid (20%), Salt Water, Water	5	15 to 55 gal.	2″	34″	7/8″	48″	13/16″ × 1″	**4270K21**... $11.99
		7	15 to 55 gal.	2″	34″	1″	48″	13/16″ × 1″	**4270K22**... $16.83
G	Ammonium Hydroxide, Glycol, Hydraulic Oil, Hydrochloric Acid (20%), Water	7	15 to 55 gal.	2″	34″	1″	48″	13/16″ × 1″	**4270K23**... $18.57
H	Kerosene	1.8	5 gal.	—	12 1/2″	23/32″	24″	1/2″ × 9/16″	**9967K11**... $22.68
J	Deionized Water, Water	1.5	5 gal.	—	16″	11/16″	—	—	**2382K66**... $46.43

For information about pump performance, see page 328.

Electric Drum Pumps

A

B

C

D

E

F

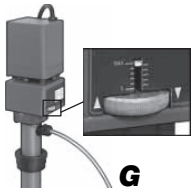
G

For fast draining and transferring with less hassle than hand-operated pumps, these have a compact, single-phase, electric motor. All fit 55-gallon drums, except 42895K81 and 6800K12, which fit 30-gallon drums.

A Adjustable Flow, Variable Speed Motor— Motor is continuous duty and has thermal overload protection. Pumps have a polypropylene housing (unless noted), a 9-ft. power cord with two-prong plug, and a wall bracket for storage. Bung connector is not included. Maximum viscosity is 300 centipoise (similar to SAE 40 oil). *Repair kits* include bearings, couplings, impeller, diffuser, O-rings, and bushings.

B High Flow with Polyester Housing— A powerful continuous duty motor gives you high flow rates and handles viscosities up to 704 centipoise (similar to liquid detergent). Pumps have a 15-ft. power cord with two-prong plug. Bung connector is not included. 4316K27, *K28*, *K49*, and *K65* have a barbed discharge connection for 1″ ID tube; 4316K68 has a discharge connection for ¾″ NPT female and 1¼″ ID tube. *Repair kits* include coupling, bearing assembly, vapor seal, O-ring, and impeller.

C High Flow with Nylon Housing— A double impeller increases suction for high-flow applications. Motor is continuous duty. Pumps have a 12-ft. power cord with three-prong plug and a 2″ bung connector. Maximum viscosity for all is 500 centipoise (similar to caramel). *Repair kit* includes bearing assembly and vapor seal.

D Hazardous Location with Aluminum Housing— UL listed for use in Class I, Groups C and D; and Class II, Groups F and G environments. Motor is intermittent duty and has thermal overload protection and a 16-ft. cord with no plug. Discharge is barbed for 1″ ID tube. Bung connector is not included. Max. viscosity is 300 centipoise (similar to SAE 40 oil). *Repair kit* includes bearings, couplings, impeller, hand wheel, bushing, and seal.

E High Viscosity with Aluminum Housing— For viscous fluids up to 1,000 centipoise (similar to castor oil). Motor is intermittent duty (30 minutes max. on; 5 minutes min. off). Pumps have a 2″ bung connector. 2539K34 has an 8-ft. power cord with three-prong plug. 2539K78 has a 6-ft. power cord with three-prong plug. *Repair kit* includes impeller, O-rings, and seal.

F Adjustable Flow, High Viscosity— An adjustable motor with thermal overload protection lets you control the flow rate of fluids up to 1,500 centipoise (similar to SAE 70 oil). Motor is intermittent duty (2 hours max. on; 15 min. off). Pumps have a polypropylene housing (unless noted), a 16-ft. power cord with three-prong plug, and a barbed discharge connection for 1″ ID tube. Bung connector is not included. *Repair kits* include housing, couplings, impeller, and motor brush set.

G Precision-Metered Low Flow with Cast Zinc Housing— Get precise control over your pump's flow. These pumps let you make flow adjustments in 2% increments. Motor is continuous duty. They include an 8-ft. power cord with three-prong plug, and an unthreaded bung connector that fits into a 2″ bung hole. Maximum viscosity is 1,500 centipoise (similar to SAE 70 oil). *Repair kits* include seals, valves, and piston.

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **42895KAC**.

	Flow Rate, gpm	Discharge Pressure, psi	Temp. Range (°F)	hp	VAC @ 50/60 Hz	Amps	Intake Tube Lg.	Intake Tube OD	Discharge Tube Lg.	Discharge Tube ID×OD	Pumps	Each	Repair Kits	Each
Adjustable Flow, Variable Speed Motor														
A	0 to 18.5	9.2	+14° to +122°	¼	110-120♥	1.7	27″	1¼″	5 ft.	¾″×1″	**42895K81**	$563.61	**42895K94**	$180.36
A	0 to 17	9.2	+14° to +122°	¼	110-120♥	1.7	39″	1¼″	5 ft.	¾″×1″	**42895K82**	617.28	**42895K95**	180.36
A	0 to 17	9	+14° to +122°	¼	110-120♥	1.7	39″	1⅛″	5 ft.	¾″×1″	**42895K83**★	1,325.00	**42895K96**	185.71
High Flow with Polyester Housing														
B	35	17.3	+32° to +130°	¾	115	10	30″	1⅝″	10 ft.	1″ ×1¼″	**4316K27**	827.63	**4316K82**	307.23
B	35	17.3	+32° to +130°	¾	115	10	40″	1⅝″	10 ft.	1″ ×1¼″	**4316K28**	854.99	**4316K82**	307.23
B	35	17.3	+32° to +130°	¾	115	10	50″	1⅝″	10 ft.	1″ ×1¼″	**4316K49**	896.03	**4316K82**	307.23
B	35	17.3	0° to +250°	¾	115	10	40″	1⅝″	—	—	**4316K65**▲	1,209.53	**4316K83**	350.88
B	35	17.3	0° to +250°	¾	115	10	40″	1⅝″	—	—	**4316K68**♦	1,322.11	**4316K84**	283.60
High Flow with Nylon Housing														
C	40	35	+40° to +160°	½	115	5.6	27″	2″	5 ft.	1″ ×1 5/16″	**6800K12**	741.54	**6800K76**	101.59
C	40	35	+40° to +160°	½	115	5.6	40″	2″	5 ft.	1″ ×1 5/16″	**6800K14**	757.62	**6800K76**	101.59
C	40	35	+40° to +160°	½	115	5.6	48″	2″	5 ft.	1″ ×1 5/16″	**6800K18**	791.57	**6800K76**	101.59
C	40	35	+40° to +220°	½	115	5.6	40″	2″	5 ft.	1″ ×1 5/16″	**6800K34**	1,179.32	**6800K76**	101.59
C	40	35	+40° to +220°	½	115	5.6	48″	2″	5 ft.	1″ ×1 5/16″	**6800K38**	1,245.43	**6800K76**	101.59
Hazardous Location with Aluminum Housing														
D	48.5	14	−40° to +212°	½	120♥	5.9	39″	1⅝″	—	—	**42675K47**	1,657.20	**42675K67**	367.24
High Viscosity with Aluminum Housing														
E	17	7	Max. 180°	½	115♥	6.3	39″	1 11/16″	5 ft.	1″ ×1¼″	**2539K34**	508.49	**2539K91**	124.54
E	17	7	Max. 180°	½	115♥	6.3	39½″	1½″	5 ft.	1″ ×1¼″	**2539K78**♦	657.55	**2539K91**	124.54
Adjustable Flow, High Viscosity														
F	0 to 35	16	Max. 130°	1	115	8.5	39″	1⅝″	—	—	**2850K35**	705.34	**2850K71**	132.69
F	0 to 35	16	Max. 130°	1	115	8.5	47″	1⅝″	—	—	**2850K36**	717.11	**2850K71**	132.69
F	0 to 35	16	Max. 175°	1	115	8.5	39″	1⅝″	—	—	**2850K41**■	908.02	**2850K72**	232.69
F	0 to 35	16	Max. 175°	1	115	8.5	39″	1⅝″	—	—	**2850K42**★	870.22	**2850K73**	169.23
F	0 to 35	16	Max. 175°	1	115	8.5	47″	1⅝″	—	—	**2850K43**★	912.68	**2850K73**	169.23
Precision-Metered Low Flow with Cast Zinc Housing														
G	0.001 to 0.006	200	−35° to +120°	1/16	115♥	0.5	36″	2″	10 ft.	11/64″× ¼″	**4341K22**	398.28	**4341K11**	52.58
G	0.025 to 0.100	40	−35° to +120°	1/16	115♥	0.5	36″	2″	10 ft.	11/64″× ¼″	**4341K36**	398.28	**4341K13**	60.09

♥ Voltage at 60 Hz. ★ Housing is Type 316 stainless steel. ▲ Intake tube is PVDF. ♦ Intake tube is Type 316 stainless steel. ■ Housing is PVDF.

Compact Electric Pump for Small Containers

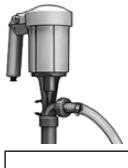

A compact dual-speed motor and short intake tube make this pump ideal for draining and filling 1 gal. to 5 gal. containers. It is handheld and does not connect to a bung. Motor is 1/5 hp, continuous duty, single phase, and operates on 115 VAC, 60 Hz, 2 amps. It has thermal overload protection and a 12-ft. power cord with two-prong plug. Housing is nylon; intake tube is 15″ Lg., 1¼″ OD; and discharge tube is 5 ft. Lg., ¾″ ID×1″ OD. Temperature range is 0° to 150° F. Maximum viscosity is 300 centipoise (similar to SAE 40 oil).

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **3420KAC**.

Common Compatible Chemicals	Flow Rate, gpm	Discharge Pressure, psi	Each
Ammonium Hydroxide, Deionized Water, Glycol, Nitric Acid (30%), Phosphoric Acid (30%), Salt Water, Sodium Hydroxide (18%), Sulfuric Acid (27%, up to 110° F), Water	7/17	2.1/8.6	**3420K21** $308.69

For information about pump performance, see page 328.

Sanitary Electric Drum Pumps

For sanitary food applications, these pumps have a polished Type 316 stainless steel intake tube and a quick-clamp (tri-clamp) discharge connection that meets 3-A sanitary standard requirements. Ideal for wines, flavorings, and sauces. Use with a 55-gallon drum. Motor is intermittent duty (2 hours max. on; 10 minutes min. off), single phase, and operates on 120 VAC, 60 Hz. It has thermal overload protection and a 16-ft. power cord with two-prong plug. Pump housing is polypropylene. Bung connector is not included. Discharge connection is 1½″ quick clamp (see pages 208-210 for quick-clamp fittings). Temperature range is 32° to 248° F.

For 3328K11 and ***K12***, motor is 7/10 hp, 5.2 amps; maximum viscosity is 600 centipoise (similar to caramel).

For 3328K13 and ***K14***, motor is 1 7/10 hp, 7.5 amps; maximum viscosity is 800 centipoise (similar to glycerin).

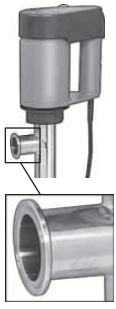

For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **3328KAC**.

Common Compatible Chemicals	Flow Rate, gpm	Discharge Pressure	Intake Tube Lg.	Intake Tube OD	Each
All at 68° to 140° F, unless noted: Ammonium Hydroxide, Deionized Water, Glycol (up to 105° F), Hydraulic Oil, Motor Oil, Nitric Acid (10%), Phosphoric Acid (up to 85% at 105° F), Sodium Hydroxide (50%), Water	32	13 psi	39″	1 11/16″	3328K11 ... $2,198.55
	32	13 psi	47″	1 11/16″	3328K12 ... $2,310.14
	42	17 psi	39″	1 11/16″	3328K13 ... $2,359.42
	42	17 psi	47″	1 11/16″	3328K14 ... $2,473.19

Electric Pumps with Nozzle for Fuel

For high-flow transfer of gasoline, kerosene, diesel fuel, and other low-viscosity petroleum products, these pumps are rated for Class I, Group D hazardous locations. All have an intermittent duty (30 minutes max. on; 30 minutes min. off), single-phase motor with thermal overload protection. Pumps include a 2″ bung connector and a 12-ft. discharge hose with grounding wire. Max. viscosity is 10 centipoise (similar to diesel fuel).

Standard pumps have a 1/8 hp motor that includes a circuit breaker to prevent overload, screw terminals, and a ½″ NPT female conduit connection. Intake hose telescopes from 22″ to 40″. Housing is aluminum. Motor operates on 115 VAC, 50/60 Hz, 1.5 amps. UL listed and CSA certified.

Pump with *automatic shutoff nozzle* turns off when tank is full.

Pumps with meter register up to 99,999.9 gallons. They include a built-in strainer, a check valve, and a bypass valve to prevent pressure build-up when the nozzle is closed. Nozzle is lockable using a padlock with a ⅜″ maximum shackle diameter (padlock not included). Motor is ⅓ hp and has screw terminals and a ½″ NPT female conduit connection. It operates on 115 VAC, 60 Hz, 5.5 amps. Housing is cast iron. Intake connection is 1¼″ NPT female. UL and C-UL listed. Pumps with a ***meter and motor housing*** have a steel enclosure around the motor. Intake connection is 2″ NPT female.

Pedestal-mount pumps allow you to mount the pump off the tank.

Standard

Pump with Meter and Motor Housing

Mounting Style	Nozzle Shutoff Style	Flow Rate, gpm	Max. Lift	Discharge Pressure, psi	Intake Hose, OD	Discharge Hose, ID × OD	Temp. Range	Each
Standard								
Drum	Manual	12	5.5 ft.	15	1 7/16″	¾″ × 1⅛″	–25° to +125° F	8108K43 ... $415.71
Drum	Automatic	8	4.8 ft.	15	1 7/16″	¾″ × 1⅛″	–25° to +125° F	8108K46 ... 465.00
Pumps with Meter								
Drum	Manual	18	10 ft.	22	—	¾″ × 1 11/16″	–40° to +150° F	6753K41 ... 731.97
Pedestal	Manual	18	10 ft.	22	—	¾″ × 1 11/16″	–40° to +150° F	6753K31 ... 838.96
Pumps with Meter and Motor Housing								
Drum	Manual	18	10 ft.	22	—	¾″ × 1 11/16″	–40° to +150° F	6753K51 ... 955.77
Pedestal	Manual	18	10 ft.	22	—	¾″ × 1 11/16″	–40° to +150° F	6753K21 ... 1,014.52

Anti-Siphon Kit for Pumps with Meter and Pumps with Meter and Motor Housing ..... 6753K61 **Each** $41.14

Battery-Operated Pumps with Nozzle for Fuel

Use these battery-operated pumps for heavy duty dispensing and transferring of gasoline, diesel fuel, and kerosene. All have an intermittent duty (30 minutes max. on; 30 minutes min. off), single-phase motor with thermal overload protection. Pumps have a cast iron housing, a 2″ bung connector, and 12-ft. discharge hose with antistatic wire.

Standard pumps have an intake hose that telescopes from 23″ to 40½″. Nozzle is lockable using a padlock with a ¼″ maximum shackle diameter (padlock not included). Motor is ¼ hp; UL and C-UL listed; operates on 12 VDC, 20 amps; and has an 18-ft. three-wire battery cable. Max. viscosity is 30 centipoise (similar to vegetable oil).

Standard pump with meter registers up to 99,999.9 gallons.

High-flow pumps are lockable using a padlock with a 5/16″ maximum shackle diameter (padlock not included). Motor is 4/10 hp and UL listed and C-UL listed for Class I, Group D hazardous locations. It has a 15-ft. three-wire battery cable, screw terminals, a ¾″ NPT female conduit connection, 1″ NPT female intake connection (hose not included), and operates on 12 VDC, 35 amps. Maximum viscosity is 10 centipoise (similar to diesel fuel). Pump with *automatic shutoff nozzle* turns off when tank is full.

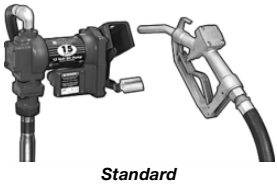

Standard

Standard with Meter

Nozzle Shutoff Style	Flow Rate, gpm	Max. Lift	Discharge Pressure, psi	Intake Hose, OD	Discharge Hose, ID × OD	Temp. Range	Each
Standard							
Manual	15	6 ft.	12	1½″	¾″ × 1 3/16″	–15° to +150° F	9972K16 ... $383.81
Standard with Meter							
Manual	15	6 ft.	12	1½″	¾″ × 1 3/16″	–15° to +150° F	9972K17 ... 571.38
High Flow							
Manual	25	15 ft.	20	—	1″ × 1⅜″	–20° to +125° F	2651K24 ... 570.79
Automatic	25	15 ft.	20	—	1″ × 1⅜″	–20° to +125° F	2651K44 ... 657.49

Portable Battery-Operated Pump for Diesel Fuel

Battery operated for portability, this cast iron pump is designed for handling diesel fuel. Pump has an intermittent duty motor (30 minutes max. on; 30 minutes min. off) that operates on a 12 VDC battery and draws 18 amps (battery not included). Pump has a handle, bypass relief valve, and two ¾″ barbed hose adapters. Pump includes a 6-ft. insulated battery cable, battery clamps, and an on/off switch. Maximum temperature is 158° F, and maximum viscosity is 24 centipoise (similar to vegetable oil). Minimum temperature is not rated.

Flow Rate, gpm	Max. Lift	Discharge Pressure, psi	Each
10.5	6.5 ft.	15	99155K33 ... $212.59

For information about pump performance, see page 328.

Air-Powered Drum Pumps

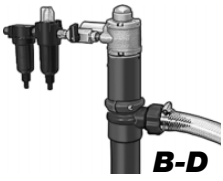

When electricity isn't an option, such as a nonsparking application, try these pumps that have an air motor instead of an electric motor. They provide smooth, nonpulsating flow in a smaller package than the air-powered diaphragm pumps on page 345. All include a 2″ bung connector for 30-gallon and larger drums. Discharge connection is barbed for 1″ ID tube, except for Style A, which has a barbed connection for ¾″ ID tube.

A ***Low Flow with Cast Iron & Aluminum Housing—*** Pumps include a 5-ft. Lg., ¾″ ID×1″ OD discharge tube and a 15-ft. air hose assembly. Temperature range is 0° to 150° F. Maximum viscosity is 300 centipoise (similar to SAE 40 oil).

B ***Cast Iron & Aluminum Housing with Filter/Lubricator—*** Pumps include a 5-ft. Lg., 1″ ID×1¼″ OD discharge tube and a 15-ft. air hose assembly, muffler, and ball valve. Temperature range is 40° to 160° F. Maximum viscosity is 330 centipoise (similar to SAE 40 oil).

C ***Cast Iron & Aluminum Housing with Filter/Lubricator—*** Pumps include a 5-ft. Lg., 1″ ID×1¼″ OD discharge tube and a 15-ft. air hose assembly, muffler, and ball valve. Temperature range is 40° to 150° F. Maximum viscosity is 2,000 centipoise (similar to hand cleaner).

D ***Hazardous Location with Cast Iron & Aluminum Housing and Filter/Lubricator—*** Rated for Class I, Division I hazardous locations. Pumps include a 4-ft. Lg., 1″ ID×1½″ OD grounded discharge tube, a grounded strap clamp, a 15-ft. air hose assembly, muffler, and ball valve. Temperature range is 40° to 220° F. Maximum viscosity is 330 centipoise (similar to SAE 40 oil).

E ***Hazardous Location High Flow with Aluminum Housing—*** Approved for Zone 0 hazardous locations. Pumps include two 6-ft. lengths of ground wire and a 10-ft. bonding wire for static protection. They also include a hanger for tube storage; discharge tube is not included. Temperature range is –40° to +212° F. For 2824K39 and 2824K49, maximum viscosity is 1,100 centipoise (similar to castor oil). For 8252K12 and 8252K14, maximum viscosity is 850 centipoise (similar to glycerin).

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **8165KAC**.

Common Compatible Chemicals: All pumps are compatible with Ammonium Hydroxide, Deionized Water, Glycol, Phosphoric Acid (<40%), Sodium Hydroxide (50%), and Water, except 8165K7 and 8165K8, which are compatible with Phosphoric Acid (<30%) and Sodium Hydroxide (18%). See table below for additional compatible chemicals.

	Additional Common Compatible Chemicals	Flow Rate, gpm	Air Pressure, psi	Air Consumption, cfm	Air Connection, NPT Female	Intake Tube Lg.	Intake Tube OD	Each
A	Nitric Acid (30%), Sulfuric Acid (27%, up to 110° F)	15	40	27	¼″	27″	1¼″	8165K7..... $501.70
		15	40	27	¼″	40″	1¼″	8165K8..... $536.33
B	Hydraulic Oil, Hydrochloric Acid, Motor Oil, Nitric Acid (50%), Paint (water-based only), Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (94%)	22	80 to 100	25	¼″	40″	2″	4296K41.... $1,012.66
		22	80 to 100	25	¼″	48″	2″	4296K48.... $1,049.77
C	Chlorine, Hydraulic Oil, Hydrochloric Acid, Motor Oil, Nitric Acid (50%, up to 100° F), Paint (water-based only), Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (95%, up to 80° F)	16	80 to 100	25	¼″	40″	1⅝″	8243K31.... $1,173.86
C	Hydraulic Oil, Methyl Chloride, Motor Oil, Nitric Acid (80%, up to 120° F), Paint (water-based only), Phosphoric Acid (60%, up to 120° F), Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (<10%, up to 110° F)	16	80 to 100	25	¼″	40″	1½″	8243K21.... $1,176.80
D	Acetone, Diesel Fuel, Ethanol, Gasoline, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Lacquer Thinner, Methanol, Methyl Chloride, Methyl Ethyl Ketone, Mineral Spirits, Motor Oil, Paint, Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Xylene	7	80 to 100	25	¼″	40″	2″	43785K32.. $1,661.02
E	Acetone, Diesel Fuel, Ethanol, Gasoline, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Lacquer Thinner, Methanol, Methyl Ethyl Ketone, Mineral Spirits, Motor Oil, Nitric Acid (20%), Paint, Phosphoric Acid, Xylene	26	44 to 87	32	⅜″	39″	1⅝″	2824K39.... $1,363.79
		26	44 to 87	32	⅜″	47″	1⅝″	2824K49.... $1,397.74
		53	44 to 87	32	⅜″	39″	1⅝″	8252K12.... $1,537.00
		53	44 to 87	32	⅜″	47″	1⅝″	8252K14.... $1,578.82

Air-Powered Drum-Pressurizing Pumps

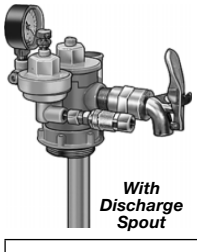

With Discharge Spout

With fewer moving parts for less wear and tear, these pumps pressurize your drum, which forces fluid up the intake tube and out the ¾″ NPT female discharge connection. They have an adjustable air regulator that is furnished set at 6 psi, but with the included pressure gauge, you can monitor and adjust drum pressure anywhere between 1 and 6 psi—the greater the pressure, the greater the flow rate. Pumps fit 55-gal. drums and have threads for 2″ dia. bung openings. Housing is epoxy-coated aluminum. Intake tube is 1¼″ OD and telescopes from 21″ to 36″. Pumps include an air hose quick-connect coupling. Air connection is ¼″ NPT female. Maximum viscosity is 1,200 centipoise (similar to 90 weight oil).

Pump with discharge spout has a maximum temperature of 125° F. Minimum temperature is not rated.

Pump with discharge tube and nozzle has an 8-ft. long, ½″ ID×1″ OD discharge tube assembly with ¾″ NPT male connections and an aluminum shutoff nozzle. Maximum temperature is 140° F. Minimum temperature is not rated.

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **4224KAC**.

Common Compatible Chemicals	Discharge Style	Flow Rate, gpm	Air Pressure, psi	Air Consumption, cfm	Each
Diesel Fuel, Gasoline, Hydraulic Oil, Kerosene, Lacquer Thinner, Mineral Spirits, Motor Oil, Salt Water, Water, Xylene	Spout	18	1 to 100	6	4224K5... $405.17
Diesel Fuel, Gasoline, Hydraulic Oil (above 70° F), Kerosene, Mineral Spirits, Motor Oil (above 70° F), Salt Water, Water	Tube & Nozzle	18	1 to 100	6	4224K9... $491.38

For information about pump performance, see page 328.

High-Efficiency Air-Powered Drum Pumps

Use these pumps to deliver a smooth flow of liquid. They fit 55-gallon drums and include a 2″ dia. bung connector. Air connection is ¼″ NPT female, unless noted.

A&B ***Low Flow with Aluminum Housing—*** Both have a ¼″ NPTF (Dryseal) female air connection. *Style A* has a temperature range of 40° to 180° F. Maximum viscosity is 2,000 centipoise (similar to hand cleaner). *Style B* has a temperature range of 40° to 150° F and a maximum viscosity of 1,000 centipoise (similar to castor oil).

C ***Aluminum Housing—*** Maximum temperature is 140° F, and maximum viscosity is 1,500 centipoise (similar to SAE 70 oil). Minimum temperature is not rated.

D&E ***Aluminum Housing with Telescoping Intake Tube—*** Intake tube telescopes from 32″ to 60″. Maximum temperature is 180° F, and maximum viscosity is 2,200 centipoise (similar to hand cleaner). Minimum temperature is not rated. 2558K51 has a ⅜″ NPT female air connection.

F ***Steel Housing with PVC Extension Tube—*** Includes a 24″ PVC intake tube extension. Temperature range is –10° to +180° F. Maximum viscosity is 1,760 centipoise (similar to SAE 70 oil).

G ***High Temperature with Aluminum Housing—*** Temperature range is –30° to +300° F. Maximum viscosity is 1,500 centipoise (similar to SAE 70 oil). Air connection is ⅛″ NPT female.

H ***FDA Compliant with Aluminum Housing—*** Wetted parts are FDA CFR21 110.40 compliant for direct contact with food, water, and beverage. Temperature range is –30° to +212° F. Maximum viscosity is 1,200 centipoise (similar to 90 weight oil).

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **4304KAC**.

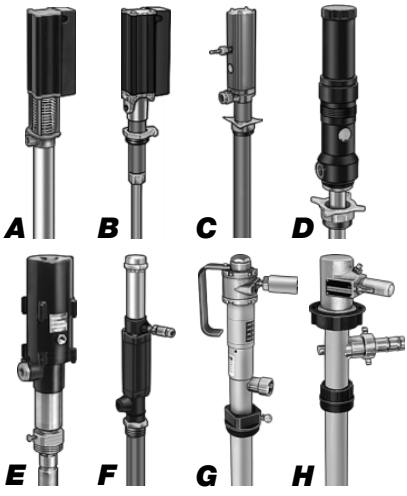

	Common Compatible Chemicals	Flow Rate, gpm	Air Pressure, psi	Air Consumption, cfm	Intake Tube Lg.	Intake Tube OD	Discharge Pipe Size, NPT Female	Each
A	All good up to 150° F, unless noted: Acetone, Deionized Water, Diesel Fuel, Ethanol, Gasoline, Glycol, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Lacquer Thinner, Methanol, Methyl Chloride, Methyl Ethyl Ketone, Mineral Spirits, Nitric Acid, Sodium Hydroxide (20%, cold), Water, Xylene	4.3	30 to 150	6	33 11/16″	2 1/8″	¾″	4304K51 .... $1,305.67
B	Hydraulic Oil, Motor Oil	6	0 to 150	10	22 1/16″	1 1/2″	½″	4262K52 .... $396.99
C	Hydraulic Oil, Motor Oil	10.5	28.5 to 142	12.36	35″	2″	¾″	4346K35 .... $497.74
D	All good up to 68° F: Hydraulic Oil (not waste oil), Motor Oil (not waste oil)	8.5	40 to 90	5	32″ to 60″	1 3/8″	¾″	41835K39 .. $470.28
		10	40 to 140	7	32″ to 60″	1 5/8″	1″	2558K51 .... $714.49
		16.4	40 to 90	7	32″ to 60″	2″	¾″	2557K21 .... $465.78
E	All good up to 68° F: Diesel Fuel, Glycol, Hydraulic Oil (not waste oil), Kerosene, Motor Oil (not waste oil)	5.3	30 to 90	4.8	32″ to 60″	1 3/8″	½″	2588K71 .... $540.76
F	Ethanol, Glycol, Mineral Spirits, Motor Oil	14	40 to 150	18	18 3/4″	2 1/8″	¾″	4257K61 .... $780.92
G	Hydraulic Oil, Motor Oil	14	40 to 80	27	39 3/8″	1 1/2″	¾″	42905K72 .. $536.36
H	Deionized Water, Hydraulic Oil, Motor Oil, Salt Water, Water	32	43 to 85	17	39″	1 5/8″	1″♣	42905K73 .. $1,162.99

♣ Has a barbed male connection.

Extended-Life Air-Powered Diaphragm Drum Pumps

Designed with a twin diaphragm to eliminate the need for rotors, gears, and pistons that can wear down and shorten pump life. Pumps fit 55-gallon drums and include a 2″ dia. bung connector. They can run dry without damage. Intake and discharge connections are NPT female, except for the FDA-compliant pump, which has quick-clamp sanitary (tri-clamp) connections. (See pages 208-210 for quick-clamp fittings.) Air connections are ¼″ NPT female for all. *Repair kits* include diaphragms, valves, and O-rings.

ⓘ For the compatibility of 36 common chemicals and a complete list of wetted parts, go to mcmaster.com and search for **2534KAC**.

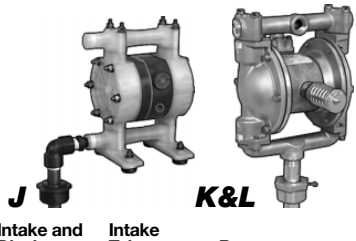

Quick-Clamp Connection for Style L Pump

	Flow Rate, gpm	Diaphragm Material	Max. Viscosity, centipoise▲	Temperature Range	Air Pressure, psi	Air Consumption, cfm	Intake and Discharge Connections	Intake Tube Lg.	Pumps	Each	Repair Kits	Each
Polypropylene Housing												
J	15	Buna-N	3,000	+30° to +180° F	20 to 100	9	½″	36″	2534K16	$406.56	8281K45	$79.29
J	15	Santoprene	3,000	+30° to +180° F	20 to 100	9	½″	36″	2534K18	406.56	8281K46	70.71
J	15	PTFE	3,000	+40° to +180° F	20 to 100	9	½″	36″	8281K52	452.46	8281K111	105.00
J	21	PTFE	8,000	+40° to +180° F	20 to 100	15	¾″	36″	8281K57	785.25	8281K48	298.74
J	28	Santoprene	8,000	+30° to +180° F	20 to 100	15	¾″	36″	8281K55	721.31	8281K47	90.75
PVDF Housing												
J	15	PTFE	3,000	+40° to +212° F	20 to 100	9	½″	36″	2534K54	1,127.87	8281K111	105.00
Aluminum Housing												
K	21	PTFE	8,000	+40° to +212° F	20 to 100	15	¾″	39″	8281K14	721.31	8281K141	284.07
K	28	Buna-N	8,000	+10° to +180° F	20 to 100	15	¾″	39″	8281K13	622.95	8281K131	91.07
Type 316 Stainless Steel Housing												
K	21	PTFE	8,000	+40° to +212° F	20 to 100	15	¾″	39″	8281K16	1,497.74	8281K141	284.07
K	28	Fluoroelastomer	8,000	–20° to +248° F	20 to 100	15	¾″	39″	8281K25	1,570.49	8281K151	327.94
FDA-Compliant Type 316 Stainless Steel Housing												
L	28	PTFE	8,000	+40° to +212° F	20 to 100	40	1″	39 1/2″	3516K11	2,452.46	3516K93	289.22

▲ 3,000 centipoise is similar to liquid soap; 8,000 centipoise is similar to molasses.

About Positive Displacement and Centrifugal Pumps

Collectively, diaphragm pumps, gear pumps, piston pumps, rotary vane pumps, flexible impeller pumps, and peristaltic pumps are known as ***positive displacement pumps***—they draw fluid on one stroke and discharge it on the next. In high- or varying-pressure applications or for pumping high-viscosity fluids, positive displacement pumps hold a constant flow rate much better than centrifugal pumps. Also, positive displacement pumps generally are ***self-priming***—they create enough of a vacuum to draw fluid without assistance.

Centrifugal pumps are best for transfer applications with high flow rates and low pressure and viscosity. They typically are not self-priming and require a gravity-feed setup (see below).

The chart below will help you choose the pump that's best for your application.

Pump Style	Flow	Feet of Head (Pressure)	Self-Priming?	Viscosity	Run Dry?	Use with Solids?	Pulsating Flow?	Features	Pages
Hand- & Air-Powered Diaphragm	High	Medium	Yes	High	Yes	Yes	Yes	Use when electricity isn't convenient. Submersible; self-priming; run dry without damage. Few moving parts to wear.	346-349
Gear/ Rotary Screw	Low	Medium	Yes	High @ Low Flow	No	No	No	For abrasive-free, highly viscous liquids. Ideal for low-flow metering and dispensing applications at high pressures.	350-351
Piston	Low	Very High	No	Low	No	No	Yes	Common in pressure washing and spraying; low flow at high pressures.	351-352
Rotary Vane	Low	Medium	No	Low	No	No	No	Continuous, nonpulsating low flow at medium pressures.	352
Flexible Impeller	Medium	Low	Yes	Low	No	Yes	No	Continuous, nonpulsating flow in low-pressure applications.	352-353
Peristaltic Metering	Low	Low	Yes	High	Yes	No	Yes	Also known as tubing pumps, good for dispensing and injecting. No seals to leak or contaminate fluid; minimal wetted parts.	353-354
Diaphragm Metering	Low	High	Yes	Medium	Yes	No	Yes	For dispensing and injecting, built-in controls move a precise amount of fluid.	355
Centrifugal	High	Low	No	Low	No	No	No	Most common transfer pump produces smooth, nonpulsating flow. High-volume flow at low pressures.	356-362

Do You Need A Self-Priming Pump?

Whether you are installing a pump in a new or existing system, be sure to choose a pump that will work with your setup.

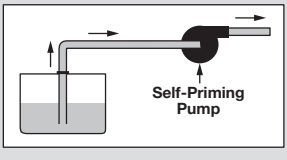

Suction Lift—The source of the liquid is lower than the pump's inlet, and the pump must draw the liquid up. You'll need a self-priming pump for this type of application.

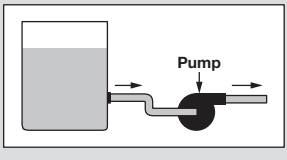

Gravity Feed—Also known as flooded suction, the source of the liquid is higher than the inlet of the pump, so liquid flows into the pump by gravity. Most pumps—self-priming or not—will work in this type of application.

Hand- & Air-Powered Diaphragm Pumps

For information about pump performance, see page 328.

Hand-Operated Diaphragm Pumps

A little elbow grease is all these pumps need to do their job. All pumps have an acetal housing. Intake and discharge connections are unthreaded male slip-on style. All pumps have check valves, are self-priming, and can be run dry. Not for use with solids. Maximum discharge pressure is 12 feet of head (5 psi). Maximum viscosity is 100,000 centipoise (similar to toothpaste). Temperature range is 33° to 140° F.

Common Compatible Chemicals
Deionized Water, Glycol, Salt Water, Water
ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4332KAC**.

Diaphragm Material	Flow Rate, oz./stroke	For Hose ID	Overall Size, Ht.×Wd.×Dp.		Each
Buna-N	14.08	1″	4½″×5½″×12¾″	4332K31	$54.09
Buna-N	21.44	1½″	4½″×5½″×13⅜″	4332K33	64.10
Silicone	14.08	1″	4½″×5½″×12¾″	4332K35	$82.16

Versa-Mount Plastic Air-Powered Diaphragm Pumps

Spring-loaded check valves and a compact design allow these pumps to mount almost anywhere—even upside down and sideways. They are self-priming and can run dry for short periods of time. Not for use with solids. Max. air pressure is 100 psi. Max. discharge pressure is 231 feet of head (100 psi). Max. viscosity is not rated. Overall size is 5⅝″ Ht.×5½″ Wd.×8 1/16″ Dp.

Common Compatible Chemicals	
Deionized Water, Hydrochloric Acid (37%), Sodium Hydroxide (50%), Sulfuric Acid (75%), Water	2604K46
Deionized Water, Glycol, Hydrochloric Acid (37%), Phosphoric Acid, Sodium Hydroxide (80%), Sulfuric Acid (75%), Water	2604K48
Ethanol, Methanol, Water	2604K42
Diesel Fuel, Ethanol, Gasoline, Isopropyl Alcohol, Kerosene, Lacquer Thinner, Methanol, Methyl Chloride, Mineral Spirits, Water, Xylene	2604K44
ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **2604KAC**.	

Diaphragm Material	Max. Flow, gpm	Flow Rate, gpm @ 80 ft. of Head	@ 120 ft. of Head	@ 160 ft. of Head	Air Consumption, cfm	Pipe Size, NPT Female Fluid Intake	Fluid Discharge	Air	Polypropylene Housing Temp. Range (°F)		Each	Acetal Housing Temp. Range (°F)		Each
Santoprene	4.6	3.3	2.7	1.6	7	⅜″	¼″	¼″	35° to 150°	2604K46	$245.92	10° to 180°	2604K42	$287.74
PTFE	4.6	3.3	2.7	1.6	7	⅜″	¼″	¼″	40° to 150°	2604K48	316.51	40° to 180°	2604K44	378.63

For information about pump performance, see pages 328 and 346.

Plastic Air-Powered Diaphragm Pumps

Connect your existing air compressor to run these pumps without electricity in harsh environments. They have durable twin diaphragms that handle high-viscosity liquids with solids. They're submersible, easy to hook up, self-priming, and can run dry. Maximum air pressure is 100 psi. Maximum discharge pressure is 231 feet of head (100 psi). Fluid connection is NPT female; air connection is 1/4″ NPT female. Maximum viscosity is not rated, unless noted.

4157K833

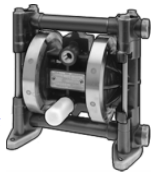

13465K25

Common Compatible Chemicals	
Polypropylene Housing	
Deionized Water, Hydraulic Oil, Phosphoric Acid (<40%), Salt Water, Water	**4157K42**
Salt Water, Water	**4157K41**
Ammonium Hydroxide, Glycol, Hydrochloric Acid (20%), Paint, Salt Water, Sodium Hydroxide (20%), Sulfuric Acid (75%), Water	**4157K72**, **4157K81**, **4157K833**
Ammonium Hydroxide, Deionized Water, Glycol, Phosphoric Acid, Salt Water, Sodium Hydroxide (20%), Sulfuric Acid (75%), Water	**4157K111**, **4157K113**, **4157K115**
Ammonium Hydroxide, Deionized Water, Ethylene Glycol, Motor Oil, Nitric Acid (20%), Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (75%), Water	**4157K21**
Acetal Housing	
Deionized Water, Water	**13465K33**
Glycol, Kerosene, Methanol, Mineral Spirits, Water	**13465K23**
Salt Water, Water	**13465K22**
Ethanol, Salt Water, Water	**13465K29**
Gasoline, Glycol, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Methanol, Mineral Spirits, Salt Water, Water, Xylene	**13465K18**, **13465K38**
Acetone, Chlorine (anhydrous liquid), Diesel Fuel, Ethanol, Gasoline (unleaded only), Isopropyl Alcohol, Kerosene, Methanol, Mineral Spirits, Salt Water, Sodium Hydroxide (50%), Water, Xylene	**13465K25**
Nylon Housing	
Deionized Water, Glycol (2819K45 only), Hydraulic Oil, Motor Oil, Salt Water (2819K44 only), Water	**2819K44**, **2819K45**
Glycol, Hydrochloric Acid (20%)	**2819K46**
Deionized Water, Glycol, Hydraulic Oil, Hydrochloric Acid (20%), Motor Oil, Paint, Salt Water, Water	**2819K47**
Glycol, Hydraulic Oil, Hydrochloric Acid (20%), Motor Oil	**2819K48**
PVDF Housing	
Ammonium Hydroxide, Chlorine, Deionized Water, Glycol, Hydrochloric Acid (20%), Phosphoric Acid (<40%), Salt Water, Sodium Hydroxide (50%), Sodium Hypochlorate (100% for 8070K22; 20% for K13), Sulfuric Acid, Water	**8070K22**, **8070K13**
Ammonium Hydroxide, Chlorine, Deionized Water, Glycol, Hydrochloric Acid, Nitric Acid, Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sodium Hypochlorate, Sulfuric Acid, Water	**8070K15**, **8070K14**, **8070K17**

ⓘ For the compatibility of 36 common chemicals, information about wetted parts, and repair kits, go to mcmaster.com and search for **13465KAC**.

Diaphragm Material	Max. Flow, gpm	Flow Rate, gpm @ 40 ft. of Head	Flow Rate, gpm @ 120 ft. of Head	Flow Rate, gpm @ 160 ft. of Head	Max. Solid Dia.	Temp. Range (°F)	Air Consumption, cfm	Fluid Pipe Size	Overall Size, Ht.×Wd.×Dp.		Each
Polypropylene Housing											
Polyurethane	14	12	7	5	1/8″	40° to 150°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**4157K42**	$403.08
Hytrel	7	6.2	4.2	3	1/16″	40° to 150°	5	3/8″	8 1/8″ × 8 1/8″ × 5 5/16″	**4157K41**▲	320.86
Santoprene	4	3.5	1.5	1	1/32″	40° to 150°	6	1/4″	7 13/16″ × 7″ × 5 1/2″	**4157K72**▲	194.94
Santoprene	14	12	7	5	1/8″	40° to 150°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**4157K81**	350.90
Santoprene	23	18	10	8	5/32″	40° to 150°	20	3/4″	13 3/8″ × 11 13/16″ × 7 1/16″	**4157K833**	447.34
PTFE	4	3.5	1.5	1	1/32″	40° to 150°	6	1/4″	7 13/16″ × 7″ × 5 1/2″	**4157K111**▲	251.58
PTFE	6.5	5.8	3.8	2.6	1/16″	40° to 150°	5	3/8″	8 1/8″ × 8 1/8″ × 5 5/16″	**4157K21**▲	387.07
PTFE	14	12	7	5	1/8″	40° to 150°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**4157K113**	493.86
PTFE	23	18	10	8	5/32″	40° to 150°	20	3/4″	13 3/8″ × 11 13/16″ × 7 1/16″	**4157K115**	616.60
Acetal Housing											
Polyurethane	14	12	7	5	1/8″	50° to 180°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**13465K33**◤	513.83
Buna-N	14	12	7	5	1/8″	0° to 140°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**13465K23**◤	540.07
Hytrel	7	6.2	4.2	3	1/16″	40° to 150°	5	3/8″	8 1/8″ × 8 1/8″ × 5 5/16″	**13465K22**▲	329.89
Santoprene	4	3.5	1.5	1	1/32″	50° to 180°	6	1/4″	7 13/16″ × 7″ × 5 1/2″	**13465K29**▲	260.40
PTFE	4	3.5	1.5	1	1/32″	50° to 180°	6	1/4″	7 13/16″ × 7″ × 5 1/2″	**13465K18**▲	344.91
PTFE	6.5	5.8	3.8	2.6	1/16″	40° to 150°	5	3/8″	8 1/8″ × 8 1/8″ × 5 5/16″	**13465K25**▲	392.13
PTFE	14	12	7	5	1/8″	50° to 180°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**13465K38**◤	653.71
Nylon Housing											
Polyurethane	14	12	7	5	1/8″	32° to 120°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**2819K44**◤	490.90
Buna-N	14	12	7	5	1/8″	32° to 120°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**2819K45**◤	502.57
Santoprene	23	18	10	8	5/32″	32° to 120°	20	3/4″	13 3/8″ × 11 13/16″ × 7 1/16″	**2819K46**	646.83
PTFE	14	12	7	5	1/8″	32° to 120°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**2819K47**◤	608.42
PTFE	23	18	10	8	5/32″	32° to 120°	20	3/4″	13 3/8″ × 11 13/16″ × 7 1/16″	**2819K48**	803.88
PVDF Housing											
Santoprene	4	3.5	1.5	1	1/32″	10° to 200°	6	1/4″	7 13/16″ × 7″ × 5 1/2″	**8070K22**▲	347.42
Santoprene	14	12	7	5	1/8″	10° to 200°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**8070K13**	814.34
PTFE	4	3.5	1.5	1	1/32″	10° to 200°	6	1/4″	7 13/16″ × 7″ × 5 1/2″	**8070K15**▲	417.80
PTFE	14	12	7	5	1/8″	10° to 200°	16	1/2″	11 5/16″ × 10 1/8″ × 7 1/16″	**8070K14**	931.84
PTFE	23	18	10	8	5/32″	10° to 200°	20	3/4″	13 3/8″ × 11 13/16″ × 7 1/16″	**8070K17**	1,192.67

▲ Maximum viscosity is 1,000 centipoise (similar to castor oil). ◤ Maximum viscosity is 10,000 centipoise (similar to chocolate syrup).

Flanged High-Flow Plastic Air-Powered Diaphragm Pumps

For large diameter pipe and high flow, these pumps have easy-to-connect Class 125 flanged fluid connections and an NPT female air intake connection. (See pages 8 and 9 for flanges.) They also have durable twin diaphragms that reduce pulsating flow and can handle high-viscosity liquids and liquids with solids. They're self-priming, submersible, easy to hook up, and can be run dry. Maximum air pressure is 100 psi. Maximum discharge pressure is 231 feet of head (100 psi). Maximum viscosity is not rated. Temperature ranges are 40° to 150° F for polypropylene housing; 32° to 120° F for nylon housing; 10° to 200° F for PVDF housing.

ANSI Flange Dimensions

Pipe Size	OD	Thick.	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Pipe Size	OD	Thick.	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size
1″	4 1/16″	9/16″	3 1/8″	4	3/8″	2″	6″	3/4″	4 3/4″	4	5/8″
1 1/2″	5″	3/4″	3 7/8″	4	1/2″						

Common Compatible Chemicals	
Ammonium Hydroxide, Paint, Salt Water, Sodium Hydroxide (20%), Sulfuric Acid (75%), Water	4157K54
Ammonium Hydroxide, Glycol, Hydrochloric Acid (20%), Paint, Salt Water, Sodium Hydroxide (20%), Sulfuric Acid (75%), Water	4157K911
Ammonium Hydroxide, Deionized Water, Glycol, Hydrochloric Acid (20%), Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (75%), Water	4157K121
Ammonium Hydroxide, Deionized Water, Glycol, Phosphoric Acid, Salt Water, Sodium Hydroxide (20%), Sulfuric Acid, Water	4157K117, 4157K119
Ammonium Hydroxide, Deionized Water, Glycol, Hydrochloric Acid (20%), Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (75%), Water	4157K43
Glycol, Hydrochloric Acid (20%)	2819K53
Glycol, Hydraulic Oil, Hydrochloric Acid (20%), Motor Oil	2819K54
Ammonium Hydroxide, Chlorine, Deionized Water, Glycol, Hydrochloric Acid, Nitric Acid, Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sodium Hypochlorate, Sulfuric Acid, Water	8070K34, 8070K27

ⓘ For the compatibility of 36 common chemicals, information about wetted parts, and repair kits, go to mcmaster.com and search for **4157KAC**.

Housing Material	Diaphragm Material	Max. Flow, gpm	Flow Rate, gpm @ 40 ft. of Head	@ 120 ft. of Head	@ 160 ft. of Head	Max. Solid Dia.	Air Consumption, cfm	Pipe Size Fluid	Air	Overall Size, Ht. × Wd. × Dp.			Each
Polypropylene	Santoprene	52	47	28	20	1/4″	40	1″	1/2″	20 3/4″	× 17″	× 10 1/4″	4157K54 $831.19
Polypropylene	Santoprene	100	91	60	44	15/32″	50	1 1/2″	3/4″	28 3/4″	× 23″	× 13″	4157K911 1,923.01
Polypropylene	Santoprene	160	128	75	44	21/32″	80	2″	3/4″	32 1/4″	× 23 13/16″	× 13″	4157K121 2,818.76
Polypropylene	PTFE	52	47	28	20	1/4″	40	1″	1/2″	20 3/4″	× 17″	× 10 1/4″	4157K117 966.74
Polypropylene	PTFE	100	91	60	44	15/32″	50	1 1/2″	3/4″	28 3/4″	× 23″	× 13″	4157K119 2,132.41
Polypropylene	PTFE	160	128	75	44	21/32″	80	2″	3/4″	32 1/4″	× 23 13/16″	× 13″	4157K43 3,024.69
Nylon	Santoprene	23	19	12	8	5/32″	20	1″	1/4″	13 13/16″	× 11 13/16″	× 7 9/16″	2819K53 724.76
Nylon	PTFE	23	19	12	8	5/32″	20	1″	1/4″	13 13/16″	× 11 13/16″	× 7 9/16″	2819K54 880.65
PVDF	PTFE	53	47	28	20	1/4″	45	1″	1/2″	20 3/4″	× 17″	× 10 1/4″	8070K34 1,696.23
PVDF	PTFE	100	91	60	44	15/32″	50	1 1/2″	3/4″	28 3/4″	× 23″	× 13″	8070K27 3,197.74

Smooth-Flow Polypropylene Air-Powered Mini Diaphragm Pumps

A fast-acting, air-control switching mechanism maintains consistent flow and pressure to minimize pulsating flow. Use for soap dispensing and agricultural sprayers. Pumps operate on compressed air, carbon dioxide, or nitrogen. They are self-priming and have barbed connections. Do not run dry. Housing is polypropylene. Supplied with a nylon side-mounting bracket with two 7/32″ slots. Max. air pressure is 60 psi. Max. discharge pressure is 125 feet of head (54 psi). Max. viscosity is 2,500 centipoise (similar to shampoo).

Common Compatible Chemicals	
Glycol, Motor Oil, Salt Water, Sodium Hydroxide (50%), Sulfuric Acid (<10%), Water	4022K47
Ammonium Hydroxide, Glycol, Nitric Acid (20%), Salt Water, Sulfuric Acid (<10%), Water	4022K57
Chlorine, Glycol, Hydrochloric Acid (37%), Motor Oil, Nitric Acid (20%), Phosphoric Acid, Salt Water, Sulfuric Acid (<10%), Water	4022K36

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4022KAC**.

Diaphragm Material	Max. Flow, gpm	Flow Rate, gpm @ 60 ft. of Head	@ 80 ft. of Head	@ 120 ft. of Head	Max. Solid Dia.	Temp. Range (°F)	Air Consumption, cfm	Tube Size Fluid	Air	Overall Size, Ht. × Wd. × Dp.			Each
Buna-N	0.6	0.58	0.47	0.35	1/64″	34° to 120°	0.48	3/8″	1/4″	7″	× 5 13/16″	× 3 13/16″	4022K47 $98.72
Santoprene	0.6	0.58	0.47	0.35	1/64″	34° to 120°	0.48	3/8″	1/4″	7″	× 5 13/16″	× 3 13/16″	4022K57 98.72
Fluoroelastomer	0.6	0.58	0.47	0.35	1/64″	34° to 120°	0.48	3/8″	1/4″	7″	× 5 13/16″	× 3 13/16″	4022K36 125.20

Aluminum Air-Powered Diaphragm Pumps for Fuel

For use with fuels, these pumps have a pressure-relief valve set at 50 psi per UL 79 safety standard. Housing is aluminum and diaphragms are fluoroelastomer. Pumps are self-priming, submersible, and can run dry. Maximum air pressure is 50 psi. Maximum discharge pressure is 115 feet of head (50 psi). Maximum viscosity is not rated. Temperature range is 10° to 180° F. UL listed for pumping petroleum products.

Common Compatible Chemicals
Diesel Fuel, Gasoline, Kerosene, Mineral Spirits, Water

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **13455KAC**.

Max. Flow, gpm	Flow Rate, gpm @ 20 ft. of Head	@ 40 ft. of Head	@ 60 ft. of Head	@ 100 ft. of Head	Max. Solid Dia.	Air Consumption, cfm	Pipe Size, NPT Female Fluid	Air	Overall Size, Ht. × Wd. × Dp.			Each
29	28	21	17	8	1/8″	13.5	1″	1/4″	12 1/2″	× 8 1/2″	× 8″	13455K36 $896.78
75	66	55	44	13	1/4″	87	1 1/2″	1/2″	19 5/8″	× 13 1/8″	× 11 1/2″	13455K37 1,249.59
75	95	80	65	20	1/4″	87	2″	1/2″	19 7/8″	× 13 1/8″	× 11 1/2″	13455K38 1,531.87

For information about pump performance, see pages 328 and 346.

High-Flow Metal Air-Powered Diaphragm Pumps

More impact resistant than the plastic diaphragm pumps on page 347, these pumps also have durable twin diaphragms that reduce pulsating flow and can handle high-viscosity liquids and liquids with solids. Pumps include a metal muffler and grounding strap. All are self-priming and run on compressed air so they are intrinsically safe for use in hazardous locations. They can be run dry. Maximum air pressure is 100 psi. Maximum discharge pressure is 289 feet of head (125 psi). Maximum viscosity is 10,000 centipoise (similar to chocolate syrup) for pumps with a max. flow of 15 gpm; for all other pumps, maximum viscosity is not rated.

Temperature range for pumps with a neoprene diaphragm is –35° to +200° F. Temperature range for pumps with a Santoprene diaphragm is –35° to +275° F. Temperature range for pumps with a PTFE diaphragm is –35° to +220° F.

Common Compatible Chemicals	
Deionized Water, Hydraulic Oil, Isopropyl Alcohol (90%), Motor Oil	9948K18, 9948K22, 9948K26
Ammonium Hydroxide (30%), Deionized Water, Salt Water, Water	9948K11
Ammonium Hydroxide (30%), Deionized Water, Water	9948K12, 9948K13, 9948K14
Ammonium Hydroxide (30%), Deionized Water, Diesel Fuel, Gasoline, Hydraulic Oil, Isopropyl Alcohol (90%), Kerosene, Lacquer Thinner, Methyl Ethyl Ketone, Mineral Spirits, Motor Oil, Nitric Acid (concentrated only), Salt Water, Water, Xylene	9948K16, 9948K19, 9948K21, 9948K23, 9948K24
Ammonium Hydroxide (50%), Deionized Water, Methanol, Phosphoric Acid, Salt Water, Sodium Hydroxide (50%), Sulfuric Acid (<10%), Water	41655K13, 41655K23, 41655K24, 41655K25
Ammonium Hydroxide (50%), Deionized Water, Salt Water, Sodium Hydroxide (50%), Sulfuric Acid (<10%), Water	41655K26
Acetone, Ammonium Hydroxide (50%), Chlorine, Deionized Water, Diesel Fuel, Ethanol, Gasoline, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Lacquer Thinner, Methanol, Methyl Chloride, Methyl Ethyl Ketone, Mineral Spirits, Motor Oil, Nitric Acid, Paint, Phosphoric Acid, Salt Water, Sodium Hydroxide (50%), Sulfuric Acid (<10%), Water	41655K27, 41655K28, 41655K29, 41655K31, 41655K32

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **9948KAC**.

Diaphragm Material	Max. Flow, gpm	Flow Rate, gpm @ 80 ft. of Head	@ 120 ft. of Head	@ 160 ft. of Head	Max. Solid Dia.	Air Consumption, cfm	Pipe Size, NPT Female Fluid	Air	Overall Size, Ht. × Wd. × Dp.	Aluminum Housing	Each	Type 316 Stainless Steel Housing	Each
Neoprene	45	36	30	19	¼″	25	1″	½″	12¾″ × 10¼″ × 12½″	9948K18	$555.50	—	—
Neoprene	106	76	64	45	¼″	40	1½″	¾″	21⅝″ × 16 11/16″ × 13¾″	9948K22	761.08	—	—
Neoprene	235	158	125	90	¼″	100	3″	¾″	32 1/16″ × 19 11/16″ × 16⅛″	9948K26	1,464.60	—	—
Santoprene	15	12	10	7	⅛″	18	½″	¼″	11½″ × 10¼″ × 8⅛″	9948K11	501.26	41655K13●	$995.72
Santoprene	45	36	30	19	¼″	25	1″	½″	12¾″ × 10¼″ × 12½″	9948K12	618.28	41655K23	1,194.46
Santoprene	106	76	64	45	¼″	40	1½″	¾″	21⅝″ × 16 11/16″ × 13¾″	—	—	41655K24■	2,025.98
Santoprene	150	100	78	55	¼″	50	2″	¾″	26 3/16″ × 16⅞″ × 14 11/16″	9948K13	967.10	41655K25	2,569.88
Santoprene	235	158	125	90	¼″	100	3″	¾″	32 1/16″ × 19 11/16″ × 16⅛″	9948K14	1,487.01	41655K26★	3,648.47
PTFE	15	12	10	7	⅛″	18	½″	¼″	11½″ × 10¼″ × 8⅛″	9948K16	567.47	41655K27●	1,062.51
PTFE	45	36	30	19	¼″	25	1″	½″	12¾″ × 10¼″ × 12½″	9948K19	802.00	41655K28	1,379.96
PTFE	106	76	64	45	¼″	40	1½″	¾″	21⅝″ × 16 11/16″ × 13¾″	9948K21	1,153.10	41655K29■	2,466.16
PTFE	150	100	78	55	¼″	50	2″	¾″	26 3/16″ × 16⅞″ × 14 11/16″	9948K23	1,437.26	41655K31	3,044.60
PTFE	235	158	125	90	¼″	100	3″	¾″	32 1/16″ × 19 11/16″ × 16⅛″	9948K24	2,297.74	41655K32★	4,897.74

● Height is 10⅜″. ■ Height is 21 11/16″. ★ Height is 32¼″.

High-Flow Metal Air-Powered Diaphragm Pumps for Solids

Check valves with flaps allow these pumps to handle fluids containing large particles without damaging the diaphragm. All are self-priming, submersible, and can run dry. Pumps have a top intake and a bottom discharge connection. Maximum air pressure is 100 psi on pumps with a 2″ fluid connection and 125 psi on pumps with a 1″ fluid connection. Maximum discharge pressure is 289 feet of head (125 psi). Maximum viscosity is not rated. ***8090K33*** has a 3″ flanged fluid connection; the flange measures 7½″ OD, ⅞″ thick, and has four ¾″ diameter holes on a 6″ bolt circle.

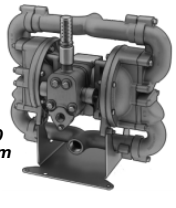

70 gpm

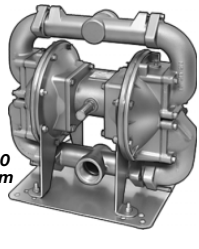

140 gpm

Common Compatible Chemicals	
Deionized Water, Hydraulic Oil, Isopropyl Alcohol, Motor Oil	8090K11, 8090K22, 8090K33, 8090K14, 8090K16
Ammonium Hydroxide (30%), Deionized Water	8090K24
Deionized Water, Diesel Fuel, Gasoline, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Motor Oil, Water, Xylene	8090K13, 8090K25
Chlorine, Deionized Water, Diesel Fuel, Gasoline, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Motor Oil, Nitric Acid, Phosphoric Acid, Salt Water, Sulfuric Acid (<10%), Water	2785K63

ⓘ For the compatibility of 36 common chemicals, information about wetted parts, and repair kits, go to mcmaster.com and search for **8090KAC**.

Diaphragm Material	Max. Flow, gpm	Flow Rate, gpm @ 80 ft. of Head	@ 120 ft. of Head	@ 160 ft. of Head	Max. Solid Dia.	Temperature Range (°F)	Air Consumption, cfm	Pipe Size, NPT Female Fluid	Air	Overall Size, Ht. × Wd. × Dp.		Each
Aluminum Housing												
Neoprene	70	45	35	21	1″	–35° to +200°	58	1″	½″	16 13/32″ × 16 3/16″ × 10 13/16″	8090K11	$1,185.42
Neoprene	140	125	105	80	2″	–35° to +200°	150	2″	¾″	20 5/16″ × 21¾″ × 13″	8090K22	1,679.49
Neoprene	260	180	145	110	3″	–35° to +200°	120	3″ Flanged	¾″	28⅞″ × 36 9/16″ × 16¼″	8090K33	3,172.90
Buna-N	70	45	35	21	1″	–35° to +190°	58	1″	½″	16 13/32″ × 16 3/16″ × 10 13/16″	8090K14	1,185.42
Buna-N	140	125	105	80	2″	–35° to +190°	150	2″	¾″	20 5/16″ × 21¾″ × 13″	8090K16	1,698.87
Santoprene	140	125	105	80	2″	–35° to +275°	150	2″	¾″	20 5/16″ × 21¾″ × 13″	8090K24	1,835.79
Fluoroelastomer	70	45	35	21	1″	–35° to +350°	58	1″	½″	16 13/32″ × 16 3/16″ × 10 13/16″	8090K13	1,497.74
Fluoroelastomer	140	125	105	80	2″	–35° to +350°	150	2″	¾″	20 5/16″ × 21¾″ × 13″	8090K25	2,295.72
Type 316 Stainless Steel Housing												
Fluoroelastomer	70	45	35	21	1″	–35° to +350°	58	1″	½″	16 13/32″ × 16 3/16″ × 10 13/16″	2785K63	2,557.49

For information about pump performance, see pages 328 and 346.

Gear Pumps

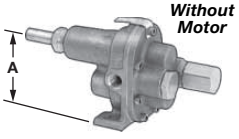

Gear pumps are self-priming and produce nonpulsating, smooth flow. Do not run dry or use with solids. Connections are NPT female.

Pumps with motor and relief valve arrive ready to go with the included motor with relief valve to prevent pressure buildup. At reduced speeds, viscosity can reach up to 17,600 centipoise (similar to SAE 70 oil); at full speed (1,725 rpm), maximum viscosity is 88 centipoise (similar to olive oil). Motor has a connection box with screw terminals.

Bronze Housing—Gears are bronze, unless noted. Max. discharge pressure is 100 psi, unless noted. Temperature range is –20° to +210° F. Motor is continuous duty. 1/2- and 1-hp motors are open dripproof (ODP) and have thermal overload protection. 1 1/2- and 3-hp motors are totally enclosed fan-cooled (TEFC).

Cast Iron Housing—Gears are steel. Pumps include an open dripproof (ODP), continuous duty motor; single-phase motors have thermal overload protection. Maximum discharge pressure is 125 psi. Temperature range is 32° to 280° F.

Pumps without motor leave it up to you—connect a spark-free air motor for hazardous locations. Use an electric motor with a speed reducer or belt pulley to customize the pump rpm. Max. rpm is 1,725. Use a NEMA 56C frame motor with a coupling and belt/pulley drive. (See page 1028 for air motors and page 1020 for electric motors.) "Potential Flow Rates" show you how powerful a motor you'll need to reach a particular flow rate at a particular pressure. *Note:* Pumps do not mount directly to a motor.

Bronze Housing—Gears are bronze. Depending on pump speed and port size, max. viscosity can reach 17,600 centipoise (similar to SAE 70 oil). Max. pressure is 100 psi. Temp. range is –20° to +210° F.

Cast Iron Housing—Gears are steel. Max. viscosity is 88 centipoise (similar to olive oil). Max. pressure is 125 psi. Temp. range is 32° to 280° F.

Common Compatible Chemicals	
Mineral Spirits, Motor Oil, Water	A
Hydraulic Oil and Motor Oil	B
Acetone, Methyl Ethyl Ketone, Motor Oil, Water	C

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4271KAC**.

Gear Pumps with Motor and Relief Valve

	Max. Flow, gpm	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size	Overall Size, Ht. × Wd. × Dp.		Each
Bronze Housing								
A	2.2	1/2	115/230 (1)	8.2/4.1	1/4"	5 3/4" × 5 5/8" × 14 9/16"	**4272K31**	$437.65
A	4.4	1/2	115/230 (1)	8.2/4.1	3/8"	5 3/4" × 5 5/8" × 15 9/16"	**4272K4**	512.13
A	7.0	1	115/230 (1)	13.2/6.6	3/8"	6 5/16" × 6 5/8" × 21 7/16"	**4272K21**■	1,069.03
A	10.8	1 1/2	230/460 (3)	5.0/2.5	1/2"	6 5/16" × 6 5/8" × 22 13/16"	**4272K22**■	1,032.54
A	24.8	3	230/460 (3)	8.2/4.1	1"	8 3/4" × 8 1/2" × 27"	**4272K23**■	1,367.10
Cast Iron Housing								
B	4.8	3/4	115/230 (1)	11.2/5.6	1/4"	6 5/16" × 6 1/2" × 21 1/2"	**41915K86**	888.35
B	7.0	1	115/230 (1)	13.2/6.6	3/8"	6 5/16" × 6 1/2" × 21 7/16"	**41915K73**	899.83
B	10.8	1 1/2	115/230 (1)	18.4/9.2	1/2"	6 5/16" × 6 1/2" × 22 13/16"	**41915K87**	1,063.65
B	20.6	2	230/460 (3)	6.0/3.0	3/4"	6 13/16" × 7" × 24 3/8"	**41915K88**	1,108.00
B	24.8	3	230/460 (3)	8.2/4.1	1"	8 3/4" × 9" × 27"	**41915K89**	1,223.91

■ Gears are Ryton. Maximum discharge pressure is 125 psi.

Gear Pumps without Motor

	Potential Flow Rates @ 25 psi gpm	Req'd hp	gpm	Req'd hp	@ 100 psi gpm	Req'd hp	gpm	Req'd hp	Shaft Dia.	Shaft Lg.	Shaft Center to Base (A)	Pipe Size	Overall Size, Ht. × Wd. × Dp.		Each
Bronze Housing															
C	1.5	1/4	2.1	1/4	1.2	1/3	1.9	1/2	1/2"	7/8"	1 7/8"	1/4"	2 3/4" × 2 3/8" × 6"	**4271K1**	$264.56
C	3.3	1/4	4.8	1/3	2.9	1/3	4.4	3/4	1/2"	7/8"	2 3/8"	1/4"	3 9/16" × 2 3/8" × 6 1/8"	**4271K12**	269.34
C	4.8	1/3	6.9	1/2	4.4	3/4	6.5	1	5/8"	1"	2 5/8"	3/8"	4" × 2 3/4" × 6 5/8"	**4271K13**	337.70
C	7.4	1/2	10.7	3/4	6.9	1	10.2	1 1/2	5/8"	1"	2 5/8"	1/2"	4" × 2 3/4" × 7"	**4271K14**	361.12
C	14.2	3/4	20.5	1	13.5	1 1/2	19.8	2	5/8"	1"	3 9/16"	3/4"	5 3/16" × 3 3/8" × 7"	**4271K15**	456.79
C	16.6	1	24.7	1	15.8	2	23.9	3	5/8"	1"	3 9/16"	1"	5 3/16" × 3 1/2" × 7 1/4"	**4271K16**	481.69
Cast Iron Housing															
B	3.3	1/4	4.8	1/3	2.9	1/3	4.4	3/4	1/2"	1 1/2"	2 3/8"	3/8"	3 7/16" × 2 15/16" × 9 3/8"	**41915K81**	354.78
B	4.8	1/3	6.9	1/2	4.4	3/4	6.5	1	5/8"	1 7/8"	2 5/8"	1/2"	3 3/4" × 3 5/8" × 10 1/16"	**41915K82**	392.17
B	7.4	1/2	10.7	3/4	6.9	1	10.2	1 1/2	5/8"	1 7/8"	2 5/8"	3/4"	3 3/4" × 3 5/8" × 10 7/16"	**41915K83**	448.78
B	14.2	3/4	20.5	1	13.5	1 1/2	19.8	2	3/4"	2 1/4"	3 9/16"	1"	5 1/8" × 4" × 11 5/8"	**41915K84**	546.43
B	16.6	1	24.7	1	15.8	2	23.9	3	3/4"	2 1/4"	3 9/16"	1 1/4"	5 1/8" × 4" × 11 7/8"	**41915K85**	550.61

Corrosion-Resistant Gear Pumps without Motor

With Packing Seal

All pumps have a Type 316 stainless steel housing, cover, and shaft for corrosion resistance in harsh environments. And without a motor, you can customize these pumps to fit your application—connect a spark-free air motor for hazardous locations. Use an electric motor with a speed reducer or belt pulley to customize the pump rpm. Max. rpm is 1,725. (See page 1028 for air motors and page 1020 for electric motors.) Use a motor with a NEMA 56C frame. Pumps are self-priming and cannot run dry. Do not use with solids. Connections are NPT female. "Potential Flow Rates" show you how powerful a motor you will need to reach a particular flow rate at a particular pressure.

With Packing Seal—Fluid will drip slightly through the packing in the nose of the pump. Packing is PTFE, drive gear is Type 316 stainless steel, and idler gear is glass-reinforced PTFE. At reduced speeds, maximum viscosity can reach up to 17,300 centipoise (similar to SAE 70 oil); at full speed (1,725 rpm), maximum viscosity is 9 centipoise (similar to water). Maximum pressure is 100 psi. Temperature range is 50° to 400° F.

With Leak-Resistant PTFE Seal—Gears are Ryton with an oilless carbon graphite bushing. At reduced speeds, maximum viscosity can reach up to 17,600 centipoise (similar to SAE 70 oil); at full speed (1,725 rpm), max. viscosity is 88 centipoise (similar to olive oil). Max. pressure is 125 psi. Temperature range is 32° to 280° F.

Common Compatible Chemicals	
Acetone, Ammonium Hydroxide, Diesel Fuel, Ethanol, Gasoline, Glycol, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Lacquer Thinner, Methyl Ethyl Ketone, Mineral Spirits, Motor Oil, Nitric Acid (20%), Water, Xylene	**43095K26**, **43095K29**
Acetone, Ammonium Hydroxide (up to 70° F), Methyl Ethyl Ketone, Mineral Spirits, Motor Oil, Paint, Water	**43095K56**, **43095K61**, **43095K69**

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **43095KAC**.

	Potential Flow Rates @ 25 psi gpm	Req'd hp	gpm	Req'd hp	@ 100 psi gpm	Req'd hp	gpm	Req'd hp	Shaft Dia.	Shaft Lg.	Shaft Center to Base (A)	Pipe Size	Overall Size, Ht. × Wd. × Dp.		Each
With Packing Seal															
	4.5	1/3	—	—	2.1	1/2	3.8	3/4	1/2"	4"	2 1/2"	1/4"	3 7/8" × 4" × 7 3/4"	**43095K26**	$1,291.07
	17.5	3/4	—	—	9.8	1 1/2	15.0	2	1/2"	3 1/2"	2 1/2"	1"	3 7/8" × 4" × 8 1/2"	**43095K29**	1,596.43
With Leak-Resistant PTFE Seal															
	3.1	1/4	4.5	1/2	2.3	1/2	3.7	3/4	1/2"	1 3/4"	2 13/16"	3/8"	4 1/4" × 3 1/4" × 8 3/16"	**43095K56**	1,037.74
	7.0	1/3	10.2	1/2	5.5	3/4	8.7	1	5/8"	1 7/8"	3 3/16"	1/2"	4 11/16" × 3 1/2" × 9 5/16"	**43095K61**	1,295.18
	16.1	3/4	23.4	1	13.2	2	20.5	3	3/4"	2 1/4"	3 15/16"	1"	5 13/16" × 4 3/16" × 11 3/8"	**43095K69**	1,779.63

For information about pump performance, see pages 328 and 346.

Extended-Life Gear Pumps

Designed especially for low-flow, high-viscosity liquids, these heavy duty pumps have a high-voltage motor, cast iron parts, and handle viscosities up to 880 centipoise (similar to glycerin). Motors are open dripproof (ODP) and have a connection box with wire leads. Housing is cast iron, and gears are a cast iron alloy. Pumps are not self-priming and cannot be run dry. Do not use with solids. Maximum pressure is 200 psi. Temp. range is –20° to +240° F. Connections are NPT female.

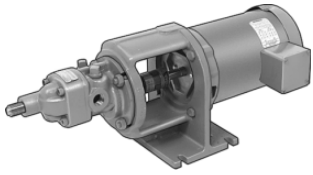

Common Compatible Chemicals
Hydraulic Oil and Motor Oil
For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **41505KAC**.

Max. Flow, gpm	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size	Overall Size, Ht. × Wd. × Dp.		Each
5	1/2	230/460 (3)	2.0/1.0	1/2″	8 7/16″ × 6 7/8″ × 21 5/8″	41505K41	$1,119.43
10	2	208-230/460 (3)	6.2/3.1	3/4″	8 7/16″ × 6 7/8″ × 23 15/16″	41505K43	1,294.39
20	2	208-230/460 (3)	6.2/3.1	1″	8 7/16″ × 6 7/8″ × 24 1/2″	41505K45	1,655.52
30	3	208-230/460 (3)	8.2/4.1	1″	8 7/16″ × 6 7/8″ × 24 15/16″	41505K47	1,931.44
40	5	208-230/460 (3)	13.8/6.9	1 1/2″	8 7/16″ × 11 13/16″ × 28 1/8″	41505K49	2,457.24

Low-Flow Miniature Gear Pumps

Commonly used in small equipment such as bar code printers and lens washers, these pumps have miniature gears and a subfractional horsepower motor for transferring small amounts of liquid. Housing and gears are acetal. Pumps are not self-priming and are rated for continuous duty. Do not run dry or use with solids. Connections are barbed. Maximum viscosity is 2 centipoise (similar to water). Temperature range is 35° to 170° F.

With Fan-Cooled Exposed Motor— Max. pressure is 20 psi. Motor has thermal overload protection and 12″ wire leads.

With Finned-Aluminum Enclosed Motor— Finned-aluminum housing gives you better cooling. Max. pressure is 22 psi. Motor is semi-dripproof and has 10″ wire leads.

With Fan-Cooled Exposed Motor

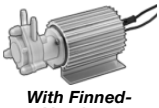

With Finned-Aluminum Enclosed Motor

Common Compatible Chemicals
Glycol, Hydraulic Oil, Motor Oil, Salt Water, Water
For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **8220KAC**.

Max. Flow	Voltage (phase)	Amps	For Tube ID	Overall Size, Ht. × Wd. × Dp.		Each
With Fan-Cooled Exposed Motor						
0.43 gpm (55 oz./min.)	115 VAC @ 50/60 Hz (1)	1.1	3/16″	3 3/4″ × 3″ × 4 3/8″	8220K41	$80.80
0.43 gpm (55 oz./min.)	230 VAC @ 50/60 Hz (1)	0.5	3/16″	3 3/4″ × 3″ × 4 3/8″	8220K42	83.85
With Finned-Aluminum Enclosed Motor						
0.61 gpm (78 oz./min.)	12 VDC	3.0	3/16″	2 9/16″ × 1 3/4″ × 3 15/16″	8220K43	57.00
0.61 gpm (78 oz./min.)	24 VDC	1.5	3/16″	2 9/16″ × 1 3/4″ × 3 15/16″	8220K44	58.42

Smooth-Flow Rotary Screw Pumps

Also known as progressive cavity pumps, these produce smooth, nonpulsating flow of liquids up to 880 centipoise (similar to glycerin). Rotary screws are Type 316 stainless steel with a hard chrome plate. Motors are open dripproof (ODP), continuous duty, and have thermal overload protection and a conduit box with screw terminals. They are not self-priming; do not use with solids or run dry. Connections are NPT female. Max. pressure is 70 psi. Temp. range is –40° to +180° F.

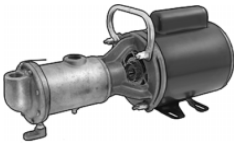

Common Compatible Chemicals
Up to 70° F: Glycol, Hydraulic Oil, Latex Paint, Motor Oil, Salt Water (8074K23 and 8074K24 only), Water
For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **8074KAC**.

Max. Flow, gpm	Flow Rate, gpm @ 70 psi	@ 100 psi	Max. psi	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size	Overall Size, Ht. × Wd. × Dp.	Aluminum Housing	Each	Bronze Housing	Each
8.5	5	—	70	1/2	115/230 (1)	8.8/4.4	3/4″	8 9/16″ × 6 1/2″ × 18 1/2″	8074K21	$869.62	8074K23	$963.26
8.5	5	3.25	100	3/4	115/230 (1)	12.0/6.0	3/4″	8 9/16″ × 6 1/2″ × 18 1/2″	8074K22	945.67	8074K24	1,043.46

Super-High-Pressure Air-Powered Piston Pumps

Just attach these to your compressed air supply and you're ready to pump. They're ideal for use with water and light oil in extremely high-pressure applications, hydrostatic testing, valves, tanks, and pressure switches. They operate on air pressure from as low as 15 psi up to 145 psi (actual output pressure is calculated by multiplying the inlet air pressure by the ratio shown in the table below). Pumps have a Type 303 stainless steel housing; bottom intake; side discharge; and an intermittent duty (30 minutes max. on, 30 minutes min. off), self-priming air motor. Do not use with solids or run dry. Max. viscosity is 100 centipoise (similar to cough syrup). Temp. range is 32° to 140° F. Air and fluid connections are NPT female.

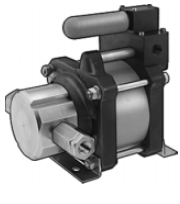

Common Compatible Chemicals	
Up to 70° F: Diesel Fuel, Gasoline, Glycol, Hydraulic and Motor Oil (petroleum based only), Isopropyl Alcohol, Kerosene, Water	6770K28
Up to 70° F: Hydraulic and Motor Oil (petroleum based only), Water	6770K43, 6770K41
For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **6770KAC**.	

Piston Material	Flow Rate, gpm @ 0 psi	@ 3,000 psi	Max. Discharge Pressure, psi	Outlet Liquid Pressure to Inlet Air Pressure Ratio	Pipe Sizes: Air	Fluid Intake	Fluid Discharge	Overall Size, Ht. × Wd. × Dp.		Each
17-4 PH Stainless Steel	4.98	—	1,595	11:1	1/2″	1″	1/2″	12 3/16″ × 7″ × 10 3/4″	6770K28	$1,460.61
440B Stainless Steel	0.19	0.17	12,470	86:1	1/4″	3/8″	1/4″	7 1/16″ × 4″ × 4 5/8″	6770K43	619.00
440B Stainless Steel	0.60	0.13	4,060	28:1	1/4″	3/8″	1/4″	7 1/16″ × 4″ × 4 5/8″	6770K41	619.00

For information about pump performance, see pages 328 and 346.

Piston Pumps without Motor for Pressure Washing with Water

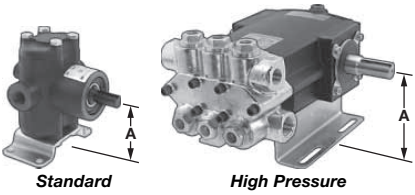

Standard *High Pressure*

Ideal for washing and spraying applications with water and glycol, these pumps give you high-pressure output in a relatively small package. Pumps are not self-priming and cannot be run dry or used with solids. Connections are NPT female. Pumps do not include a motor, so you can choose one to fit your application. Connect an electric motor with a speed reducer or belt pulley to customize pump rpm (see page 1028 for air motors and page 1020 for electric motors).

Standard pumps have a cast iron housing. Temperature range is 32° to 140° F.

High pressure pumps have an aluminum housing. Temperature range is 32° to 160° F.

Max. Flow, gpm	Max. psi (ft. of head)	Req'd hp	Max. rpm	Shaft Dia.	Shaft Lg.	Shaft Center to Base (A)	Pipe Size, Intake	Pipe Size, Discharge	Overall Size, Ht. × Wd. × Dp.		Each
Standard											
1.5	500 (1,163)	3/5	1,800	5/8"	1 1/4"	3 1/2"	1/2"	1/2"	6 3/8" × 5 1/8" × 5 5/8"	**4169K31**	$358.96
2.2	500 (1,163)	4/5	1,800	5/8"	1 1/4"	3 1/2"	1/2"	1/2"	6 3/8" × 5 1/8" × 5 5/8"	**4169K32**	333.68
2.9	800 (1,860)	1.7	1,800	5/8"	1 1/4"	3 1/2"	1/2"	1/2"	6 5/8" × 5 1/8" × 5 9/16"	**4169K34**	356.98
3.0	500 (1,163)	1.2	1,800	5/8"	1 1/4"	3 1/2"	1/2"	1/2"	6 3/8" × 5 1/8" × 5 5/8"	**4169K33**	333.68
10.0	400 (930)	3.0	600	1"	2"	4 1/16"	3/4"	3/4"	7 11/16" × 6 3/4" × 8 1/8"	**4169K35**	591.98
High Pressure											
2.1	2,000 (4,651)	2.9	1,725	3/4"	1 1/16"	3 1/2"	1/2"	3/8"	5 11/16" × 6 3/16" × 9 3/16"	**82415K71**	436.18
4.0	3,000 (6,977)	7.4	1,725	3/4"	1 11/16"	4 1/2"	1/2"	3/8"	6 11/16" × 7 1/2" × 9 3/16"	**82415K82**	594.27
4.3	3,600 (8,372)	9.5	1,725	1"	1 15/16"	4 1/2"	3/4"	1/2"	7 1/4" × 10" × 12 1/8"	**82415K85**	1,053.30
4.8	2,500 (5,814)	7.6	1,725	3/4"	1 11/16"	4 1/2"	1/2"	3/8"	6 11/16" × 7 1/2" × 9 3/16"	**82415K83**	575.64
5.8	3,600 (8,372)	12.8	1,725	1"	1 15/16"	4 1/2"	3/4"	1/2"	7 1/4" × 10" × 12 1/8"	**82415K86**	1,053.30

Rotary Vane Pumps for Water

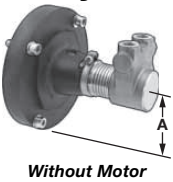

Without Motor

These pumps are for use with water and deionized water at low flows and pressures up to 240 psi (554 ft. of head). They have a built-in bypass relief valve to prevent pressure build up. Vanes are carbon graphite. Connections are NPT female. Pumps are not self-priming; do not run dry or use with solids. Maximum rpm is 1,725. Temperature range is 28° to 195° F. 82395K81, *K82*, and *K83* have a built-in 71 mesh filter.

Pumps with brass housing are NSF 61 certified for use with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012. ***Pumps with stainless steel housing*** are NSF 61 certified for use with drinking (potable) water in all states as of March 1, 2010.

Pumps with motor include a single-phase, continuous-duty motor with thermal overload protection (unless noted) and a connection box with wire leads. Motors are totally enclosed fan-cooled (TEFC), unless noted. ***Pumps without motor*** leave it up to you—choose a spark-free air motor for hazardous locations. Or connect an electric motor with a speed reducer or belt pulley to customize the pump rpm. Use a motor with a NEMA 56C frame (see page 1028 for air motors and page 1020 for electric motors).

Pumps with Motor

Max. Flow, gpm	hp	Pipe Size	Brass Housing: VAC @ 60 Hz	Amps	Overall Size, Ht. × Wd. × Dp.	Each	Type 303 Stainless Steel Housing: VAC @ 60 Hz	Amps	Overall Size, Ht. × Wd. × Dp.	Each
0.8	1/4	3/8"	115	5	6" × 6" × 12"	**82395K81**■ $418.18	—	—	—	—
1.8	1/3	3/8"	100-120/200-240	5.6/2.8	6" × 6" × 12"	**82395K82**■ 412.80	—	—	—	—
2.3	1/2	3/8"	100-120/200-240	7.2/3.6	6" × 6" × 12"	**82395K83**■ 550.27	115/230	8.6/4.3	10" × 12" × 18"	**82395K86**● $908.49
4.3	3/4	1/2"	115/230	11/5.5	10" × 12" × 18"	**82395K84** 1,093.26	115/230	11/5.5	10" × 12" × 18"	**82395K87**● 1,205.14
5.4	1	1/2"	115/230	13.2/6.6	10" × 12" × 18"	**82395K85**● 1,160.16	115/230	13.2/6.6	10" × 12" × 18"	**82395K88**● 1,260.82

■ Motor is open dripproof (ODP). ● Does not have thermal overload protection.

Pumps without Motor

Max. Flow, gpm	Req'd hp	Shaft Dia.	Shaft Lg.	Shaft Center to Base (A)	Pipe Size	Overall Size, Ht. × Wd. × Dp.	Brass Housing	Each	Type 303 Stainless Steel Housing	Each
0.8	1/4	5/8"	1 7/8"	3 1/2"	3/8"	6" × 7" × 7"	**82395K71**	$233.12	—	—
1.8	1/3	5/8"	1 7/8"	3 1/2"	3/8"	6" × 7" × 7"	**82395K72**	245.75	—	—
2.3	1/2	5/8"	1 7/8"	3 1/2"	3/8"	6" × 7" × 7"	**82395K73**	248.16	**82395K76**	$318.45
4.3	3/4	5/8"	1 7/8"	3 1/2"	1/2"	6" × 7" × 7"	**82395K74**	369.79	**82395K77**	492.34
5.4	1	5/8"	1 7/8"	3 1/2"	1/2"	6" × 7" × 7"	**82395K75**	373.41	**82395K78**	496.98

Flexible Impeller Pumps

These versatile pumps are self-priming and have a wear-resistant flexible rubber impeller that can handle suspended solids. All have a continuous duty, single-phase motor with thermal overload protection. Motor is open dripproof (ODP), unless noted. Do not run dry. Connections are NPT female. Temp. range is 60° to 180° F. ***Pumps with bronze housing*** have an 8-ft. cord with three-prong plug. Max. viscosity is 125 centipoise (similar to cough syrup), unless noted. ***Pump with Type 316 stainless steel housing*** has 6" wire leads. Max. viscosity is 2,000 centipoise (similar to hand cleaner).

Common Compatible Chemicals	
Salt Water, Water	**4381K17, 4381K57, 4175K21**
Hydraulic Oil, Motor Oil, Salt Water, Water	**4381K89, 4381K67, 4381K87, 4381K97, 4381K37, 4381K77**

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4381KAC**.

Impeller Material	Max. Flow, gpm	Max. ft. of Head	Self-Priming, Max. Ht.	Max. Solid Dia.	hp	VAC @ 60 Hz	Amps	Pipe Size	Overall Size, Ht. × Wd. × Dp.		Each
Bronze Housing											
Neoprene	6	39	6 ft.	1/6"	1/6	115	3.6	1/2"	9" × 7" × 7 1/4"	**4381K17**	$561.32
Neoprene	6	39	6 ft.	1/6"	1/4	115	3.6	1/2"	9" × 7" × 7 1/4"	**4381K57**★	593.24
Buna-N	6	30	6 ft.	1/6"	1/6	115	3.6	1/2"	9" × 7" × 7 1/4"	**4381K89**	505.32
Buna-N	6	39	6 ft.	1/6"	1/4	115	3.6	1/2"	9" × 7" × 7 1/4"	**4381K67**★	518.40
Buna-N	10	39	10 ft.	1/4"	1/3	115	4.2	1/2"◤	7 3/4" × 7 1/4" × 10 1/2"	**4381K87**♥	442.46
Buna-N	23	60	10 ft.	1/4"	3/4	115/230	12.0	1"	8 5/8" × 7 3/4" × 13 1/16"	**4381K97**♠	559.30
Fluoroelastomer	6	30	6 ft.	1/6"	1/6	115	3.6	1/2"	9" × 7" × 7 1/4"	**4381K37**	510.32
Fluoroelastomer	6	39	6 ft.	1/6"	1/4	115	3.6	1/2"	9" × 7" × 7 1/4"	**4381K77**★	523.56
Type 316 Stainless Steel Housing											
Neoprene	9.5	70	10 ft.	1/16"	3/4	115	10.8	3/4"	9 1/8" × 8 7/8" × 16"	**4175K21**♣	1,497.74

★ Motor is totally enclosed nonventilated (TENV). ◤ Dual-threaded with 3/4" garden hose (GHT) male connection. ♥ Maximum viscosity is 250 centipoise (similar to SAE 40 oil). ♠ Maximum viscosity is 500 centipoise (similar to caramel). ♣ Motor is totally enclosed fan-cooled (TEFC).

For information about pump performance, see pages 328 and 346.

Flexible Impeller Pumps without Motor

Drill-Driven Pumps— Connect your drill to these pumps to generate flow in small pumping jobs. Pumps are self-priming. Do not run dry or use with solids. Housing is glass-filled polyester. Connections are ¾″ male garden hose thread (GHT). Maximum viscosity is 1 centipoise (similar to water). *Pump with intake/discharge tubes* has a 30″ Lg. slip-on intake tube and a 35″ Lg. discharge tube with a female garden hose thread (GHT) connection.

Motor-Driven Pumps— Choose a spark-free air motor for hazardous locations, or use an electric motor with a speed reducer or belt pulley to customize the pump rpm. (See page 1028 for air motors and page 1020 for electric motors.) Pumps have a bronze housing, operate at speeds from 500 to 2,000 rpm (unless noted), and are self-priming to 10 ft. Do not run dry. Connections are NPT female. Max. viscosity is 500 centipoise (similar to caramel).

Drill-Driven Pump (Drill Not Included)

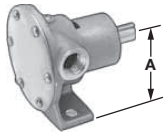

Motor-Driven Pump

Common Compatible Chemicals	
Water	99705K21, 99705K25
Diesel Fuel, Salt Water, Water	4281K61, 4281K62
Diesel Fuel, Hydraulic Oil, Kerosene, Motor Oil, Salt Water, Water	4281K52, 4281K65

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4281KAC**.

Impeller Material	Max. Flow, gpm	Req'd rpm/hp	Max. ft. of Head	Max. Solid Dia.	Temp. Range (°F)	Shaft Dia.	Shaft Lg.	Shaft Center to Base (A)	Pipe Size	Overall Size, Ht.×Wd.×Dp.		Each
Drill-Driven Pump												
Buna-N	3.75	1,200 rpm	90	—	40° to 110°	¼″	¾″	—	—	2⅞″ × 4 5/16″ × 2⅝″	99705K21	$11.71
Drill-Driven Pump with Intake/Discharge Tubes												
Buna-N	3.75	1,200 rpm	90	—	40° to 110°	¼″	¾″	—	—	2⅞″ × 4 5/16″ × 2⅝″	99705K25	13.95
Motor-Driven Pumps												
Neoprene	11	¼ hp	80	⅛″	40° to 176°	⅝″	1⅛″	1 15/16″	½″	3 13/16″ × 4⅛″ × 4½″	4281K61●	291.96
Neoprene	23	¾ hp	120	¼″	40° to 176°	⅝″	1 13/16″	1⅞″	1″	3 9/16″ × 4¾″ × 6 5/16″	4281K62	427.31
Buna-N	11	¼ hp	55	⅛″	50° to 194°	⅝″	1⅛″	1 15/16″	½″	3 13/16″ × 4⅛″ × 4½″	4281K52●	306.00
Buna-N	23	¾ hp	90	¼″	50° to 194°	⅝″	1 13/16″	1⅞″	1″	3 9/16″ × 4¾″ × 6 5/16″	4281K65	432.12

● Motor operates at speeds from 500 to 2,200 rpm.

Versa-Mount Compact Diaphragm Pumps

Mount these compact pumps in any position for fluid transfer, spraying, and dispensing. All have a polypropylene housing, Santoprene diaphragm, and a single-phase motor that operates on 115 VAC, 50/60 Hz, unless noted. It has thermal overload protection and a 6-ft. cord with three-prong plug, unless noted. Pumps are self-priming and can be run dry. All except 8080K18 are UL listed and have a pressure switch that automatically shuts off the pump at the maximum pressure.

Energy-Efficient Intermittent Duty— These pumps have a subfractional horsepower motor and low amp draw for low-flow applications at medium to high pressures. Rated for intermittent use (max. 90 minutes on; return to 72° F before restarting). Do not use with solids. Maximum viscosity is not rated.

Continuous Duty— For low-flow applications at low pressures. Motor is 3/16 hp. Pump includes two ½″ hose barb adapters and two ½″ Quest male adapters. Max. solid diameter is 1/64″. Max. viscosity is 250 centipoise (similar to SAE 40 oil). CSA certified.

Energy-Efficient Intermittent Duty

Common Compatible Chemicals	
Glycol, Salt Water, Water	8080K42, 8080K14
Glycol, Hydrochloric Acid (20%), Nitric Acid (20%), Phosphoric Acid (<40%), Salt Water, Sulfuric Acid (<10%), Water	8080K31
Ammonium Hydroxide, Glycol, Salt Water, Sodium Hydroxide (20%), Water	8080K13
Glycol, Hydrochloric Acid (20%), Nitric Acid (20%), Salt Water, Sulfuric Acid (<10%), Water	8080K38, 8080K18
Deionized Water, Glycol, Hydrochloric Acid (20%), Phosphoric Acid (<40%), Salt Water, Sodium Hydroxide (50%), Sulfuric Acid (<10%), Water	2487K21

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **8080KAC.**

Max. Flow, gpm	Flow Rate, gpm @ 20 psi (46 ft. of head)	Flow Rate, gpm @ 60 psi (139 ft. of head)	Max. psi (ft. of head)	Temperature Range (°F)	Amps	Connection Size	Overall Size, Ht.×Wd.×Dp.		Each
Energy-Efficient Intermittent Duty									
1.4	1.24	1.04	150 (346)	Max. 170°	1.00	⅜″ NPT Female	4⅛″ × 3 5/16″ × 9 5/16″	8080K42★■	$153.17
1.5	1.15	0.84	60 (138)	Max. 130°	0.70	⅜″ NPT Female	4⅛″ × 3 5/16″ × 8 9/16″	8080K31	146.26
1.5	1.32	1.07	100 (231)	Max. 170°	0.95	⅜″ NPT Female	4⅛″ × 3 5/16″ × 8 9/16″	8080K14■	156.67
1.7	1.52	0.03	60 (138)	Max. 170°	0.61	⅜″ NPT Female	4⅛″ × 3 5/16″ × 8 9/16″	8080K13■	126.92
3.0	2.20	—	45 (104)	Max. 120°	0.75	½″ NPSM Male	4⅜″ × 5″ × 8 11/16″	8080K38	141.75
3.3	2.30	—	50 (115)	Max. 120°	0.90	½″ NPSM Male	4⅜″ × 5″ × 7⅝″	8080K18	147.00
Continuous Duty									
3.0	2.50	—	40 (92)	45° to 130°	1.80	½″ Barbed	5⅝″ × 5⅜″ × 10⅝″	2487K21▲	365.90

★ Has 14″ wire leads (does not include cord and plug). ■ Nylon housing. ▲ Motor is 60 Hz and has a 4-ft. power cord.

Fixed-Flow Peristaltic Metering Pumps

Dispense a precise amount of fluid at a specific flow rate. These pumps include 9″ lengths of 1/16″, ⅛″, 3/16″, and ¼″ ID Norprene tubing so you can increase or decrease flow by switching tubing. Tubing durometer is Shore A55-60. Self-priming up to 29 feet. Pumps can be run dry. Do not use with solids. Motor is less than 1/200 hp, continuous duty, single phase, and operates on 115 VAC, 60 Hz. Pumps have an on/off switch and 6-ft. cord with three-prong plug. Maximum pressure is 20 psi (46 ft. of head). Maximum viscosity is 10,000 centipoise (similar to chocolate syrup). Temperature range is −75° to +275° F. Overall size is 5 13/16″ Ht.×6¼″ Wd.×5 11/16″ Dp. UL listed and CSA certified.

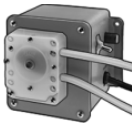

Common Compatible Chemicals
Ammonium Hydroxide, Deionized Water, Glycol, Nitric Acid (50%), Phosphoric Acid, Salt Water, Sodium Hydroxide (50%), Sulfuric Acid (<10%), Water

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **43045KAC**.

Flow Rate, gallons per day: With 1/16″ Tube	With ⅛″ Tube	With 3/16″ Tube	With ¼″ Tube	Amps		Each
1.13	4.61	11.03	19.24	0.37	43045K51	$154.29
4.84	19.24	45.68	79.88	1.2	43045K52	159.11
9.00	35.78	85.05	148.84	1.9	43045K53	178.39
14.40	56.93	135.45	237.04	2.2	43045K54	178.39
23.63	93.26	222.08	388.58	2.2	43045K55	197.68

For information about pump performance, see pages 328 and 346.

Peristaltic Metering Pumps

A

B

C

43205K51

Also known as tubing pumps, these allow you to meter, dispense, or inject a precise amount of liquid. Ideal for injecting applications in boilers and water treatment applications. Pumps have an adjustable flow rate and are self-priming, easy to clean, and can run dry. Do not use with solids. Motor is single phase and continuous duty with a 6-ft. power cord and three-prong plug.

(A) Standard— Supplied with 9″ of Norprene tubing. Maximum viscosity is 1,000 centipoise (similar to castor oil).

(B) High Pressure— Internal tube is Santoprene. Supplied with 20 feet of LDPE (low-density polyethylene) suction and discharge tubing. Tubing durometer is not rated. Maximum viscosity is 10,000 centipoise (similar to chocolate syrup). UL listed, CSA certified, and CE approved.

(C) High Viscosity— Pump fluids with viscosities up to 10,000 centipoise (similar to chocolate syrup). Switches reverse to allow flow in either direction. Pumps include Santoprene tubing—9″ for 43205K51 and 14″ for 43205K52.

Common Compatible Chemicals	
Ammonium Hydroxide, Chlorine, Deionized Water, Glycol, Hydrochloric Acid (37%), Nitric Acid (50%), Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (<10%), Water	A
Ammonium Hydroxide, Chlorine, Deionized Water, Glycol, Hydrochloric Acid (37%, up to 72° F), Phosphoric Acid (<40%), Salt Water, Sodium Hydroxide (50%), Sodium Hypochlorate, Sulfuric Acid (<10%, up to 72° F), Water	B
Ammonium Hydroxide, Deionized Water, Glycol, Nitric Acid (50%), Phosphoric Acid, Salt Water, Sodium Hydroxide (50%), Sodium Hypochlorate, Sulfuric Acid (<10%), Water	C

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **43205KAC**.

Flow Rate, gallons/day	Max. psi	Temperature Range (°F)	hp	VAC @ Hz	Amps	For Tube ID	Overall Size, Ht. × Wd. × Dp.		Each
(A) Standard									
1.6 to 11.93	25	+40° to +104°	1/64	120 @ 50/60	0.1	3/16″	5 11/16″ × 6 7/8″ × 7 5/8″	**43205K11**	$315.00
2.59 to 19.91	25	+40° to +104°	1/64	120 @ 50/60	0.1	1/4″	5 11/16″ × 6 7/8″ × 7 5/8″	**43205K13**	315.00
(B) High Pressure									
0.3 to 5	100	+33° to +104°	1/30	120 @ 60	1.7	1/16″	6″ × 5 5/16″ × 10 5/8″	**9154K41**	410.22
0.8 to 17	100	+33° to +104°	1/30	120 @ 60	1.7	1/8″	6″ × 5 5/16″ × 10 5/8″	**9154K42**	411.64
2 to 40	100	+33° to +104°	1/30	120 @ 60	1.7	3/16″	6″ × 5 5/16″ × 10 5/8″	**9154K43**	413.24
(C) High Viscosity									
0.65 to 304.33	20	−75° to +275°	1/89	115 @ 60	1	1/16″, 1/8″, 3/16″ & 1/4″	5 5/8″ × 8 7/8″ × 7 1/2″	**43205K51**	536.91
83.25 to 765	10	−75° to +275°	1/50	115 @ 60	1	3/8″	7 3/16″ × 6 1/2″ × 10 7/8″	**43205K52**	436.84

Ultra-High-Flow Peristaltic Metering Pump

A more powerful motor and larger tubing let this pump achieve higher flows than other metering pumps for high-volume sampling and draining applications. Pump is self-priming to 15 feet and can be run dry. Do not use with solids. Motor is continuous duty; single phase; 1/4 hp; housed in an open dripproof enclosure (ODP); operates on 115 VAC, 60 Hz, 5.4 amps; and includes an 8-ft. power cord with three-prong plug. Comes with 10″ of 1/2″ ID Norprene tubing (durometer Shore A61) and has PVC intake and discharge male hose barb connections for 1/2″ ID tubing. Maximum pressure is 20 psi. Maximum viscosity is 1,000 centipoise (similar to castor oil). Temperature range is 35° to 170° F.

Common Compatible Chemicals
Ammonium Hydroxide, Deionized Water, Glycol, Hydraulic Oil, Hydrochloric Acid (37%), Motor Oil, Nitric Acid (20%), Paint, Phosphoric Acid, Salt Water, Sodium Hydroxide (50%), Sulfuric Acid (75%), Water

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4306KAC**.

Flow Rate, gallons/day (gallons/min.)	Overall Size, Ht. × Wd. × Dp.		Each
2,448 to 3,168 (1.7 to 2.2)	9 1/2″ × 5 1/2″ × 10″	**4306K64**	$453.69

Ultra-High-Flow Peristaltic Metering Pumps without Tubing

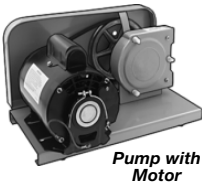

Pump with Motor

Choose your own tubing and customize these high-flow pumps to fit your application; tubing is the only material that contacts your liquid. Belt pulley runs on slow speeds to extend the pump's life. Pumps are self-priming to 15 feet and can run dry. Do not use with solids. Flow is adjustable. Maximum viscosity is 170 centipoise (similar to consistency of SAE 20 motor oil). Temperature range is based on the material of the tubing used.

Pumps require tubing with a hardness of approximately Shore A60. For tubing see pages 118-143. To achieve flow of 0.6 gpm, use 3/16″ ID × 7/16″ OD tubing. For 1 gpm, use 1/4″ ID × 1/2″ OD tubing. For 2.8 gpm, use 3/8″ ID × 5/8″ OD tubing. For 4.8 gpm, use 1/2″ ID × 3/4″ OD tubing.

Note: Do not use with tubing with a wall thickness greater than 1/8″.

Pump with motor includes motor, pulley, V-belt, belt guard, and steel pump base. Motor is continuous duty; single phase; 1/3 hp; thermal overload protected; and operates on 115/230 VAC, 60 Hz, 5.6/2.8 amps. Includes screw terminals. ***Pumps without motor*** include 6″ dia. pulley that accepts 4L size V-belts (not included; see page 1053). Pumps require 1/3 hp, 1,725 rpm motor with a NEMA 48 frame (see page 1022). Shaft is 1/2″ dia.

Flow Rate, gal./day (gal./min.)	Max. psi	Overall Size, Ht. × Wd. × Dp.		Each
Pump with Motor				
4,032 to 6,912 (2.8 to 4.8)	20	9 3/8″ × 15″ × 9 5/8″	**4278K5**	$905.52
Pumps without Motor				
864 to 1,440 (0.6 to 1)	20	6 1/2″ × 6″ × 4 7/8″	**4278K1**	344.42
4,032 to 6,912 (2.8 to 4.8)	20	6 1/2″ × 6 1/8″ × 5 1/2″	**4278K4**	450.58

Micro-Flow Peristaltic Metering Pumps

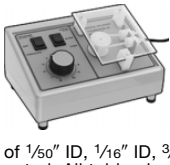

Use for low-flow, low-pressure liquid and gas applications such as pH buffering. Adjust flow with the speed control and by changing the tubing size. Pumps have a purge/prime switch for quick emptying and filling and a reverse switch to drain the tubing. Pumps are self-priming and can run dry. Do not use with solids. Pumps include one 3 1/4″ length each of 1/50″ ID, 1/16″ ID, 3/32″ ID, 3/16″ ID, and 1/4″ ID silicone tubing, unless noted. All tubing has a durometer of Shore A50. Motor is continuous duty, operates on 12 VDC, and includes a 115 VAC, 60 Hz, 0.35 amps (unless noted) single-phase adapter with 6-ft. cord and two-prong plug. Also includes connector for 9-volt battery (reduces flow rates). Battery not included. Maximum viscosity is 5,000 centipoise (similar to hand lotion). Temperature range is −80° to +500° F.

Common Compatible Chemicals
All up to 77° F: Ammonium Hydroxide, Glycol, Salt Water, Sodium Hydroxide (80%), Water

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4049KAC**.

Flow Rate, gallons/day	Max. psi	Overall Size, Ht. × Wd. × Dp.		Each
0 to 0.34	9 to 30	6 5/8″ × 4 3/4″ × 4 1/2″	**4049K55**	$239.41
0 to 3.12	9 to 30	6 5/8″ × 4 3/4″ × 4 1/2″	**4049K66**	241.09
0.15 to 32.33	9 to 15	6 5/8″ × 4 3/4″ × 4 1/2″	**4049K77**	242.98
1.52 to 228.24	9 to 15	6 5/8″ × 4 3/4″ × 4 1/2″	**4049K88**▲	425.05

▲ Does not include 1/50″ ID tubing. Operates on 1.2 amps.

For information about pump performance, see pages 328 and 346.

Fine-Adjustment Diaphragm Metering Pumps

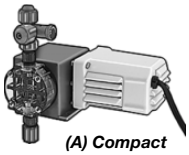

(A) Compact

Adjust the diaphragm stroke for fine control over a wide flow range. All pumps are self-priming and can be run dry. Do not use with solids. Pumps include a single-phase, continuous duty motor with thermal overload protection and a 6-ft. power cord with three-prong plug. Motor operates on 115 VAC, 60 Hz. Pump intake connection is for 5/16″ ID tubing; discharge connection is for 3/8″ ID tubing. Pumps include a 4-ft. 5/16″ ID×7/16″ OD intake tube and an 8-ft. 3/8″ ID×1/2″ OD discharge tube. Maximum viscosity is 300 centipoise (similar to SAE 30 oil). UL listed and CSA certified.

(A) Compact pumps have a Hypalon diaphragm. Temperature range is 40° to 125°F. Overall size is 6 3/4″ Ht.×7 1/4″ Wd.×8 7/8″ Dp.

(B) Medium-pressure pumps have a fluoroelastomer diaphragm. Temperature range is 40° to 122°F. Overall size is 7 3/4″ Ht.×7 1/4″ Wd.×15 1/4″ Dp.

Common Compatible Chemicals	
Ammonium Hydroxide, Chlorine, Deionized Water, Glycol, Hydrochloric Acid, Nitric Acid (50%), Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (75%), Water	*A*
Ammonium Hydroxide, Deionized Water, Glycol, Hydrochloric Acid, Nitric Acid (20%), Phosphoric Acid, Salt Water, Sulfuric Acid (<10%), Water	*B*

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4233KAC**.

Flow Rate, gallons/day	Max. psi	hp	Amps		Each
(A) Compact					
0.3 to 3	100	1/60	0.3	**4233K41**	$330.56
0.7 to 7	100	1/60	0.42	**4233K43**	330.56
1.5 to 15	100	1/60	0.59	**4233K45**	330.56
2.4 to 24	100	1/60	0.75	**4233K47**	330.56
3.0 to 30	100	1/60	0.79	**4233K49**	330.56
10.0 to 100	60	1/60	1	**4233K54**	436.33
(B) Medium Pressure					
1.0 to 10	150	1/20	1.8	**9921K91**	678.63
2.0 to 20	150	1/20	1.8	**9921K93**	678.63
3.0 to 30	125	1/20	1.8	**9921K94**	780.32
6.0 to 60	125	1/20	1.8	**9921K96**	825.26
8.0 to 80	100	1/20	1.8	**9921K97**	851.79
10.0 to 100	100	1/20	1.8	**9921K98**	886.42
12.0 to 120	80	1/20	1.8	**9921K99**	921.05

Extreme-Accuracy Diaphragm Metering Pumps for Water

With their bellows-style diaphragm, these are our most accurate metering pumps, repeatable to within ±1% of desired flow. The flow is adjustable. Pumps are self-priming, can be run dry, and have elbow connectors for attaching tubing. Do not use with solids. Housing is ABS thermoplastic. Diaphragm is polypropylene. Check valves protect against backflow. Motor is continuous duty, single phase, and operates on 115 VAC, 60 Hz, 1.1 amps. It has thermal overload protection and a 6-ft. cord with three-prong plug. Temperature range is 32° to 104°F.

Flow Rate, gallons/day	Max. psi	Tube ID	Overall Size, Ht.×Wd.×Dp.		Each
9.6 to 96	5	3/8″	6 7/8″×4 3/4″×8 5/8″	**42605K43**	$298.51
14.4 to 144	10	3/8″	6 7/8″×4 3/4″×8 5/8″	**42605K44**	311.40
37 to 376	5	1/2″	6 7/8″×4 3/4″×8 5/8″	**42605K46**	314.38
79 to 799	5	1/2″	6 7/8″×4 3/4″×8 5/8″	**42605K47**	317.36

High-Accuracy Diaphragm Metering Pumps

(E) Fine Adjustment

For dosing applications that require very high accuracy, these pumps have a solenoid-controlled diaphragm repeatable within ±2% of the maximum capacity. Pumps are self-priming and can run dry. Do not use with solids. Diaphragm has a PTFE face, Hypalon backing, and brass core. All pumps have a continuous-duty, single-phase motor that operates on 115 VAC, 50/60 Hz, 1 amp with a 6-ft. power cord and three-prong plug. Maximum viscosity is 1,000 centipoise (similar to castor oil). UL listed and CSA certified.

(C&D) Standard Pumps— Flow is adjustable while pumps are running.

Style C pumps have a 4-ft. intake tube, 8-ft. discharge tube, foot valve/strainer, ball check valve, and bleed valve, unless noted. Temperature range is 40° to 125°F. Connections are for 1/4″ ID×3/8″ OD tubing, unless noted.

Style D pumps are for high corrosion applications. All have a strainer and ball check valve (intake tubing, discharge tubing, and bleed valve not included). Temperature range is 40° to 150°F. Connections are 1/4″ NPT female.

(E) Pumps with Fine Adjustment— Microprocessor controlled for more adjustment versatility. Control automatically by using 4-20 mA or external pulse signals. Pumps have an illuminated LCD. Pump head is glass-filled polypropylene. Pumps include a 4-ft. intake tube and an 8-ft. discharge tube. Temperature range is 40° to 125°F. Connections are for 1/4″ ID×3/8″ OD tubing, unless noted.

Common Compatible Chemicals	
Ammonium Hydroxide, Deionized Water, Glycol, Hydrochloric Acid, Nitric Acid (20%), Phosphoric Acid, Salt Water, Sodium Hydroxide (80%), Sulfuric Acid (75%), Water	*C&E*
Ammonium Hydroxide, Deionized Water, Glycol, Nitric Acid (20%), Phosphoric Acid, Sodium Hydroxide (80%), Water	*D*

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **82695KAC**.

Flow Rate, gallons/day	Max. psi	Overall Size, Ht.×Wd.×Dp.		Each
Standard				
(C) Glass-Filled Polypropylene Head				
0.05 to 5	250	11 11/16″×6 3/16″×11 5/16″	**82695K51**	$530.57
0.12 to 12	250	11 11/16″×6 3/16″×11 5/16″	**82695K52**	609.43
0.22 to 22	150	11 11/16″×6 3/16″×11 5/16″	**82695K53**	648.86
0.24 to 24	100	11 11/16″×6 3/16″×11 5/16″	**82695K54**	565.71
0.42 to 42	150	11 11/16″×6 3/16″×11 5/16″	**82695K55**	927.43
0.44 to 44	100	11 11/16″×6 3/16″×11 5/16″	**82695K56**	673.71
0.94 to 94	100	11 11/16″×6 3/16″×11 5/16″	**82695K57**♥	902.57
1.2 to 120	100	11 11/16″×6 3/16″×11 5/16″	**82695K58**♥	902.57
1.92 to 192	50	11 11/16″×6 3/16″×11 5/16″	**82695K59**♥	996.86
2.4 to 240	35	11 11/16″×6 3/16″×11 5/16″	**82695K61**♥	1,022.57
6 to 600	30	11 11/16″×6 3/16″×11 5/16″	**82695K62**■	1,497.74
(D) Type 316 Stainless Steel Head				
0.05 to 5	250	10 5/16″ ×5 3/8″ ×10 13/16″	**4030K91**	804.42
0.12 to 12	250	10 5/8″ ×5 3/8″ ×11 3/16″	**4030K92**	892.39
0.24 to 24	100	10 5/8″ ×5 3/8″ ×10 11/16″	**4030K93**	757.62
0.94 to 94	100	11 5/16″ ×6 3/16″ ×11 3/16″	**4030K95**	1,095.86
Fine Adjustment				
(E) Glass-Filled Polypropylene Head				
0.005 to 5	250	10 5/16″ ×5 3/8″ ×10 13/16″	**42855K71**	802.29
0.012 to 12	100	10 5/8″ ×5 3/8″ ×10 11/16″	**42855K73**	781.71
0.044 to 44	100	10 5/8″ ×5 3/8″ ×11 3/16″	**42855K77**	931.71
0.094 to 94	100	11 5/16″ ×6 3/16″ ×11 3/16″	**42855K79**♥	1,270.29
0.24 to 240	35	11 11/16″×6 1/8″ ×11 3/16″	**42855K85**♥	1,382.57

♥ Connections are for 3/8″ ID×1/2″ OD tubing.
■ Bleed valve not included. Connections are for 1/2″ ID×3/4″ OD tubing.

High-Pressure Diaphragm Metering Pumps

With a more powerful motor than our other diaphragm metering pumps, these adjustable pumps deliver high pressure output, while an internal relief valve protects against overpressure. Diaphragm is PTFE. Pumps are not self-priming and cannot be run dry. Do not use with solids. Motor is continuous duty; single phase; 1/3 hp; totally enclosed fan-cooled (TEFC); and operates on 115 VAC, 60 Hz, 5.8 amps. It has thermal overload protection and an 8-ft. cord with three-prong plug. Connections are NPT male. Maximum viscosity is 1,000 centipoise (similar to castor oil). Temperature range is 40° to 180°F.

Common Compatible Chemicals
Ammonium Hydroxide, Deionized Water, Glycol, Hydraulic Oil, Motor Oil, Paint, Salt Water, Sodium Hydroxide (80%), Water

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4046KAC**.

Flow Rate, gallons/day	Max. psi	Pipe Size	Overall Size, Ht.×Wd.×Dp.		Each
4.8 to 48	700	3/8″	14 13/16″×7 5/8″×15″	**4046K53**	$1,686.40
16.8 to 168	900	3/8″	14 13/16″×7 5/8″×15″	**4046K59**	1,697.92
43.2 to 432	350	3/8″	14 13/16″×7 5/8″×15″	**4046K63**	1,733.05

For information about pump performance, see pages 328 and 346.

Bronze Centrifugal Pumps

With Open-Dripproof Motor

Ideal for general use with water, these popular pumps have a bronze housing and a Type 316 stainless steel or bronze impeller. Motor is rated for continuous duty and has screw terminals, unless noted. Single-phase pumps have thermal overload protection. Pumps are not self-priming—they must be placed at or below the level of the liquid being pumped. Do not run dry or use with solids. Connections are NPT female.

Pumps with a *bronze impeller* have a maximum viscosity of 16 centipoise (similar to antifreeze). Maximum temperature is 200° F. Minimum temperature is not rated. Pumps with a *stainless steel impeller* have a temperature range of 40° to 180° F and 6″ wire leads. Maximum viscosity is 5 centipoise (similar to water).

Common Compatible Chemicals	
Hydraulic Oil (petroleum based only), Motor Oil, Water	8249K81, 8249K82, 8249K85, 8249K83, 8249K84, 8249K86, 8249K47, 8249K48
Deionized Water, Glycol, Sodium Hydroxide (50%, up to 72° F), Water	8249K52, 8249K62, 8249K72

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **8249KAC**.

Impeller Material	Max. Flow, gpm @ 10 ft. of Head	@ 20 ft. of Head	@ 40 ft. of Head	@ 60 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size Intake	Discharge	Overall Size, Ht.×Wd.×Dp.		Each
Open-Dripproof Motor (ODP)													
Bronze	55	45	10	—	42	½	115/230 (1)	11.1/5.55	1¼″	1″	6⅞″×5⅝″ ×12⅜″	8249K81	$448.96
Bronze	72	63	41	—	55	¾	115/230 (1)	13/6.5	1¼″	1″	6⅞″×5⅝″ ×12⅞″	8249K82	477.12
Bronze	72	63	41	—	55	¾	230/460 (3)	2.39/1.2	1¼″	1″	6⅞″×5⅝″ ×12⅞″	8249K85▲	487.32
Bronze	108	98	71	—	58	1	115/230 (1)	12.4/6.2	1½″	1¼″	6⅞″×5⅝″ ×13¾″	8249K83	515.95
Bronze	115	104	81	40	67	1½	115/230 (1)	17/8.5	1½″	1¼″	6⅞″×5⅝″ ×15″	8249K84	620.62
Bronze	115	104	81	40	67	1½	230/460 (3)	4.26/2.13	1½″	1¼″	6⅞″×5⅝″ ×15″	8249K86▲	630.43
Stainless Steel	20	17	11	—	56	⅓	115/230 (1)	7/4	⅜″	⅜″	7¾″×5⁹⁄₁₆″×11¹³⁄₁₆″	8249K52	404.51
Stainless Steel	29	25	7	—	45	⅓	115/230 (1)	7/4	¾″	½″	7¾″×5⁹⁄₁₆″×13⅜″	8249K62	404.51
Stainless Steel	50	36	—	—	34	⅓	115/230 (1)	7/4	1¼″	1″	7¾″×5⁹⁄₁₆″×11¹³⁄₁₆″	8249K72	430.67
Totally Enclosed Fan-Cooled Motor (TEFC)													
Bronze	124	110	80	60	80	2	230/460 (3)	5.36/2.68	1½″	1¼″	7″ ×5⅝″ ×18¾″	8249K47▲	937.82
Bronze	168	155	137	110	83	3	230/460 (3)	7.6/3.8	2″	1½″	7″ ×6⅞″ ×20½″	8249K48▲	1,192.73

▲ VAC @ 50/60 Hz.

Extreme-Head Compact Bronze Turbine-Style Centrifugal Pumps

With a turbine-style impeller, these pumps generate 10 times the pressure of a standard centrifugal pump at the same diameter and speed. These have a much smaller footprint compared to multistage pressure-boosting centrifugal pumps. Great for debris-free applications with chillers, heat exchangers, and boiler feed systems. Both housing and impeller are bronze. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or against a closed valve. Do not use with solids. Motors are open dripproof (ODP), continuous duty, and have thermal overload protection (unless noted). Single-phase motors have screw terminals; three-phase motors have 4″ wire leads. Connections are NPT female. Maximum viscosity is 55 centipoise (similar to SAE 10 oil). Temperature range is –20° to +225° F.

Common Compatible Chemicals
Ethylene Glycol, Hydraulic Oil (petroleum based only), Motor Oil (up to 70° F), Water (up to 180° F)

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **43195KAC**.

Max. Flow, gpm @ 60 ft. of Head	@ 115 ft. of Head	@ 230 ft. of Head	@ 350 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size	Overall Size, Ht.×Wd.×Dp.		Each
3.4	3.1	2.5	2	380	⅓	115/208-230 (1)	9.6/4.8	1″	6⅞″×6½″×13⅝″	43195K51	$691.38
4.7	4.3	3.5	2.8	380	½	115/208-230 (1)	9.6/4.8	1″	6⅞″×6½″×13⅝″	43195K52	706.87
6.4	5.8	4.7	3.6	400	¾	115/208-230 (1)	10.8/5.4	1″	6⅞″×6½″×14⅛″	43195K53	761.63
9.7	8.8	7.2	5.6	400	1½	208-230/460 (3)	4.8-4.6/2.4	1″	8⅝″×6½″×15⅛″	43195K56♠	1,004.55
12.8	11.6	9.4	7.1	400	2	208-230/460 (3)	5.6-5.2/2.6	1″	8⅝″×6½″×15½″	43195K57♠	1,099.63

♠ Motor does not have thermal overload protection.

Self-Priming Cast Iron Centrifugal Pumps

With Cast Iron Impeller and Open-Dripproof Motor

Don't waste time priming these pumps—they're self-priming to 20 feet. Use for liquid transfer applications such as draining and processing waste water. Pumps have a self-cleaning impeller that resists clogging even when used with solids up to ⅜″ diameter. Motor is rated for continuous duty and has thermal overload protection and 6″ wire leads. Do not run dry. Connections are NPT female. Maximum viscosity is 5 centipoise (similar to water). Temperature range is 40° to 180° F.

Common Compatible Chemicals
Deionized Water, Ethylene Glycol, Sodium Hydroxide (20%, up to 120° F), Water

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **99435KAC**.

Max. Flow, gpm @ 30 ft. of Head	@ 60 ft. of Head	@ 90 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size	Overall Size, Ht.×Wd.×Dp.		Each
Cast Iron Impeller; Open-Dripproof Motor (ODP)										
44	18	—	74	½	115/230 (1)	10/5	1½″	9⅝″ ×7¼″×16¹⁵⁄₁₆″	99435K21	$420.24
64	35	—	78	¾	115/230 (1)	13/7	1½″	9⅝″ ×7¼″×17⅝″	99435K23	436.97
84	54	15	93	1½	115/230 (1)	22/11	1½″	9⅝″ ×7¼″×16¹³⁄₁₆″	99435K25	502.05
84	54	15	93	1½	230/460 (3)	7/4	1½″	9⅝″ ×7¼″×16⅝″	99435K33	511.36
102	70	24	95	2	115/230 (1)	28/14	1½″	9⅝″ ×7¼″×17⅝″	99435K27	550.40
103	60	—	93	2	230/460 (3)	7/4	2″	11³⁄₁₆″×7⅜″×19⅛″	99435K35	595.03
Type 316 Stainless Steel Impeller; Totally Enclosed Fan-Cooled Motor (TEFC)										
200	80	—	65	3	230/460 (3)	9.4-8.6/4.3	3″	11¼″ ×8¼″×26″	99435K37	939.04
260	180	—	90	5	230/460 (3)	14.4-12.8/6.4	3″	11¼″ ×8¼″×25″	99435K39	1,074.78
335	260	150	110	7½	230/460 (3)	21.2-18.7/9.3	3″	11¼″ ×8¼″×28″	99435K41	1,151.01

For information about pump performance, see pages 328 and 346.

Bronze Centrifugal Pumps without Motor

With no motor, you can customize these pumps to fit your application. Connect a spark-free air motor for hazardous locations. Or use an electric motor with a speed reducer or belt pulley to customize the pump rpm (max. rpm is 3,450). Use a motor with a NEMA 56 frame (see page 1020 for electric motors). Shaft diameter is 5/8"; shaft length is 15/16". "Potential Flow Rates" show you how powerful a motor you'll need to reach a particular flow rate at a particular rpm and pressure. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids. Pumps have a bronze housing and bronze impeller. Connections are NPT female. Maximum viscosity is 16 centipoise (similar to antifreeze). Maximum temperature is 200° F. Minimum temperature is not rated.

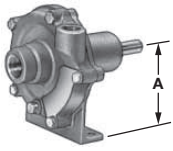

Common Compatible Chemicals
Hydraulic Oil (petroleum based only), Motor Oil (up to 100 SSU), Water

For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4284KAC**.

POTENTIAL FLOW RATES, GPM: With 3,450 rpm Motor Req'd hp	@ 20 ft. of Head	@ 50 ft. of Head	Max. ft. of Head	With 1,725 rpm Motor Req'd hp	@ 10 ft. of Head	Max. ft. of Head	Shaft Center-to-Base Lg. (A)	Pipe Size Intake	Pipe Size Discharge	Overall Size, Ht. x Wd. x Dp.		Each
1/3	34	—	44	1/4	21	11	3 1/2"	1"	3/4"	6 3/8" × 5 11/16" × 6 11/16"	4284K4	$265.23
3/4	63	22	55	1/3	36	14	3 1/2"	1 1/4"	1"	6 13/16" × 6 5/8" × 6 5/8"	4284K8	298.74
1 1/2	104	64	67	1/2	58	17	3 1/2"	1 1/2"	1 1/4"	6 5/8" × 6 7/8" × 6 13/16"	4284K9	327.69

Cast Iron Centrifugal Pumps for Water Sprinklers

Power liquids up and out with these general service pumps commonly used in water systems and sprinklers. Discharge can be rotated in 90° increments. Motors are open dripproof (ODP) with built-in thermal overload protection and automatic reset. They are rated for continuous duty and have screw terminals. Pumps are not self-priming—they must be placed at or below the level of the water being pumped. Do not run dry or use with solids. Pumps have a cast iron housing and NPT female connections. Temperature range is 35° to 140° F for pumps with Noryl impeller and 35° to 225° F for pumps with brass impeller. UL listed and CSA certified.

Max. Flow, gpm @ 20 ft. of Head	@ 60 ft. of Head	@ 80 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size Intake	Pipe Size Discharge	Overall Size, Ht. x Wd. x Dp.	Noryl Impeller	Each	Brass Impeller	Each
31	15.5	5	83	1/3	115/230 (1)	9.9/5	1 1/4"	1"	8 5/8" × 7 13/16" × 11 11/16"	4291K31	$265.81	4291K61	$366.05
40	21	5	83	1/2	115/230 (1)	9.9/5	1 1/4"	1"	8 5/8" × 7 13/16" × 11 11/16"	4291K32	291.66	4291K62	393.69
46	31	22	100	3/4	115/230 (1)	12.4/6.2	1 1/4"	1"	8 5/8" × 7 13/16" × 11 13/16"	4291K33	323.92	4291K63	423.48
61	45	37	113	1	115/230 (1)	14.8/7.4	1 1/4"	1"	8 5/8" × 7 13/16" × 12 13/16"	4291K34	362.92	4291K64	444.64
71	58	49	118	1 1/2	115/230 (1)	19.9/10	1 1/4"	1"	8 5/8" × 7 13/16" × 13 5/8"	4291K55	440.36	4291K65	547.55
82	67.5	51	131	2	230 (1)	12	1 1/2"	1 1/4"	9" × 8 5/8" × 16 3/4"	4291K56	497.68	4291K66	612.28
93	77	67.4	142	2 1/2	115/230 (1)	24/12	2"	1 1/2"	9" × 8 5/8" × 17 3/4"	4291K57	591.85	4291K67	693.97

High-Efficiency Centrifugal Pumps with Adjustable Discharge

Save energy by getting high flow and high feet of head with low amps. Housings rotate for either vertical or horizontal discharge. Motors are totally enclosed fan cooled (TEFC), unless noted, and have wire leads. Rated for continuous duty. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids. Connections are NPT female, unless noted. Maximum viscosity is 17 centipoise (similar to antifreeze). Temperature range is 0° to 250° F.

Standard—All pumps have a cast iron housing and impeller.

High Head—Housing is ductile iron. *1- to 5-hp pumps* have a bronze impeller. *10- to 20-hp pumps* have a ductile iron impeller.

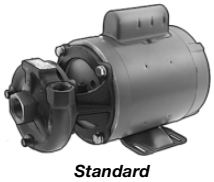

Standard

Common Compatible Chemicals
Glycol, Hydraulic Oil, Motor Oil, Water

For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **9923KAC**.

Standard

Max. Flow, gpm @ 20 ft. of Head	@ 30 ft. of Head	@ 40 ft. of Head	@ 60 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size Intake	Pipe Size Discharge	Overall Size, Ht. x Wd. x Dp.		Each
24	—	—	—	26	1/3	115/230 (1)	4.2/2.1	1"	3/4"	6 1/2" × 6 1/2" × 14 5/16"	9923K41♠	$618.33
36	19	—	—	35	1/2	115/230 (1)	7.0/3.5	1"	3/4"	6 1/2" × 7 5/8" × 16"	9923K42	612.20
—	34	—	—	40	3/4	230/460 (3)	2.6/1.3	1"	3/4"	6 1/2" × 8 5/16" × 16"	9923K43	634.39
60	18	—	—	32	3/4	230/460 (3)	2.6/1.3	1 1/2"	1 1/4"	7 1/2" × 7 1/2" × 19 3/16"	9923K44	801.34
90	75	50	—	52	1	230/460 (3)	3.6/1.8	1 1/2"	1 1/4"	7 1/2" × 8 5/16" × 17"	9923K45	776.27
130	125	100	—	52	2	230/460 (3)	5.2/2.6	2"	1 1/2"	7 13/16" × 9 3/16" × 19 3/16"	9923K46	1,016.67
—	150	125	—	58	3	230/460 (3)	7.2/3.6	2"	1 1/2"	7 13/16" × 9 5/16" × 18 3/16"	9923K47	1,008.35
—	—	—	150	62	5	230/460 (3)	12/6	2 1/2"	2"	10" × 12 1/2" × 24"	9923K48	1,575.71
—	—	—	260	80	7 1/2	230/460 (3)	17.4/8.7	2 1/2"	2"	10" × 11 3/16" × 24"	9923K49	1,716.67

♠ Motor is totally enclosed nonventilated (TENV).

High Head

Max. Flow, gpm @ 40 ft. of Head	@ 60 ft. of Head	@ 80 ft. of Head	@ 100 ft. of Head	@ 120 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size Intake	Pipe Size Discharge	Overall Size, Ht. x Wd. x Dp.		Each
44	30	—	—	—	75	1	230/460 (3)	3.6/1.8	1 1/4"	1"	8" × 8 5/16" × 16 13/16"	8256K41	$761.67
58	44	26	—	—	92	1 1/2	230/460 (3)	4.6/2.3	1 1/4"	1"	8" × 12 1/2" × 16 13/16"	8256K42	836.67
—	59	46	30	—	110	2	230/460 (3)	5.4/2.7	1 1/4"	1"	8" × 8 5/16" × 17 7/16"	8256K43	821.07
—	—	—	70	45	136	3	230/460 (3)	7.6/3.8	1 1/2"	1 1/4"	8 7/8" × 12 1/2" × 17"	8256K44	1,013.33
—	—	190	145	90	130	5	230/460 (3)	12/6	2"	1 1/2"	9 3/4" × 10 3/16" × 21"	8256K45	1,528.08
400	345	300	220	—	115	10	230/460 (3)	24/12	3"★	2 1/2"★	11 1/2" × 13 3/16" × 29 11/16"	8256K46	2,669.35
480	440	410	375	300	148	15	230/460 (3)	37/18.5	3"★	2 1/2"★	12 7/8" × 14 5/8" × 33 1/2"	8256K47	2,897.74
540	520	460	420	375	162	20	230/460 (3)	46/23	3"★	2 1/2"★	12 1/2" × 14 1/2" × 31 13/16"	8256K48	3,337.10

★ 125-lb. flange connections.

For information about pump performance, see pages 328 and 346.

Extended-Life Type 316 Stainless Steel Centrifugal Pumps

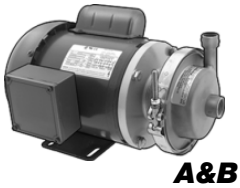

A&B

C

A Type 316 stainless steel housing gives these pumps corrosion resistance, durability, and long life. They have a Type 316 stainless steel impeller and a totally enclosed fan-cooled (TEFC) motor (unless noted) that's rated for continuous duty. Connections are NPT female. Do not run dry.

(A) Standard— Motor has 5″ wire leads. Pumps are not self-priming—they must be placed at or below the level of the liquid being pumped. Maximum viscosity is 50 centipoise (similar to SAE 10 oil). Temperature range is –20° to +300° F.

(B) Adjustable Discharge— Adjust the discharge to four different positions. Motor has thermal overload protection and 6″ wire leads. Pumps are not self-priming—they must be placed at or below the level of the liquid being pumped. Maximum viscosity is 1 centipoise (similar to water). Temperature range is 40° to 200° F.

(C) Self-Priming— After an initial fill of the pump casing, these pumps are self-priming to 6 ft. You won't have to prime them again, making these pumps less prone to running dry—the most common cause of pump failure. Pumps have a centerline discharge to prevent stalling, thermal overload protection, and 6″ wire leads. Maximum viscosity is 1 centipoise (similar to water). Temperature range is 40° to 200° F.

Common Compatible Chemicals	
Ammonium Hydroxide, Deionized Water, Glycol, Hydraulic Oil (with flashpoint over 140° F), Motor Oil, Paint (water based only; flashpoint must be over 140° F), Phosphoric Acid, Salt Water, Sulfuric Acid (<10%), Water	*A*
Deionized Water (up to 72° F), Glycol, Hydraulic Oil, Nitric Acid (20%), Water	*B & C*
ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **4320KAC**.	

Max. Flow, gpm @ 20 ft. of Head	@ 40 ft. of Head	@ 60 ft. of Head	@ 100 ft. of Head	Max. ft. of Head	Max. Solid Dia.	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size Intake	Discharge	Overall Size, Ht. × Wd. × Dp.		Each
(A) Standard													
29	10	—	—	44	1/8″	1/3	115/230 (1)	5.7/2.9	3/4″	1/2″	7 1/2″ × 9″	× 13 1/2″	**4320K41** $507.69
36	22	—	—	54	1/8″	1/2	115/230 (1)	7.6/3.8	3/4″	1/2″	7 1/2″ × 9″	× 13 1/2″	**4320K42** 529.62
38	27	—	—	59	1/8″	3/4	115/230 (1)	10.4/5.2	3/4″	1/2″	7 1/2″ × 9″	× 13 1/2″	**4320K43** 539.02
50	—	—	—	34	3/16″	1	230/460 (3)★	3/1.4	1 1/2″	1 1/4″	8 3/4″ × 9″	× 14 3/8″	**4320K46** 768.82
65	38	2	—	61	3/32″	3/4	115/230 (1)	10.4/5.2	1 1/4″	3/4″	7 3/4″ × 9″	× 14 1/4″	**4320K44** 724.10
80	20	—	—	49	3/16″	1 1/2	230/460 (3)	4.3/2	1 1/2″	1 1/4″	8 3/4″ × 9″	× 14 3/8″	**4320K48** 746.38
83	35	—	—	59	3/32″	1	115/230 (1)	12.8/6.4	1 1/2″	1 1/4″	8 3/4″ × 9″	× 15 9/16″	**4320K45** 763.99
98	60	13	—	69	3/32″	1 1/2	230/460 (3)★	4.3/2	1 1/2″	1 1/4″	8 3/4″ × 9″	× 14 3/8″	**4320K47** 774.73
115	54	—	—	52	3/16″	2	230/460 (3)	5.5/2.6	2″	1 1/2″	8 3/4″ × 9″	× 15 7/16″	**4320K71** 837.63
—	115	60	—	82	3/32″	2	230/460 (3)★	5.6/2.8	2″	1 1/2″	8 3/4″ × 9″	× 15 7/16″	**4320K72** 829.96
—	135	85	—	88	3/32″	3	230/460 (3)★	8/3.8	2″	1 1/2″	8 3/4″ × 9″	× 16 5/8″	**4320K73** 854.50
—	125	55	—	79	3/16″	3	230/460 (3)	8/3.8	2″	1 1/2″	8 3/4″ × 9″	× 16 5/8″	**4320K74** 865.24
(B) Adjustable Discharge													
24	7	—	—	45	1/8″	1/3	115/230 (1)	7/4	3/4″	1/2″	7 3/4″ × 5 5/16″	× 13 7/16″	**8124K61** 462.67
35	9	—	—	45	1/8″	1/2	115/230 (1)	9/5	1″	3/4″	7 3/4″ × 6 5/16″	× 13 5/16″	**8124K62** 515.16
40	16	—	—	48	1/8″	3/4	115/230 (1)	9/5	1″	3/4″	7 3/4″ × 6 5/16″	× 13 13/16″	**8124K63** 532.65
60	28	—	—	48	1/8″	1	115/230 (1)	12/6	1 1/4″	1″	7 3/4″ × 6 7/16″	× 14 1/4″	**8124K64** 575.42
62	35	—	—	52	1/8″	1 1/2	230/460 (3)	5/3	1 1/4″	1″	7 3/4″ × 6 7/16″	× 14 1/4″	**8124K66** 629.85
90	79	64	16	110	1/8″	2	115/230 (1)	22/11	1 1/2″	1 1/4″	8 15/16″ × 8 5/8″	× 18″	**8124K67** 865.07
90	79	64	16	110	1/8″	2	230/460 (3)	6/3	1 1/2″	1 1/4″	8 15/16″ × 8 5/8″	× 17 1/2″	**8124K68** 872.85
103	93	80	45	130	1/8″	3	230/460 (3)	8/4	1 1/2″	1 1/4″	8 15/16″ × 8 5/8″	× 16″	**8124K71** 952.56
(C) Self-Priming													
24	5	—	—	44	1/8″	1/3	115/230 (1)	8/4	1″	1″	8 3/4″ × 6 5/8″	× 14 1/8″	**99505K21**♠ 649.18
35	16	—	—	48	1/8″	1/2	115/230 (1)	10/5	1″	1″	8 3/4″ × 6 5/8″	× 14 1/8″	**99505K22**♠ 668.73
35	16	—	—	48	1/8″	3/4	230/460 (3)	3/2	1″	1″	8 3/4″ × 6 5/8″	× 15 7/16″	**99505K24** 762.05
42	25	—	—	54	1/8″	3/4	115/230 (1)	13/7	1″	1″	8 3/4″ × 6 5/8″	× 14 5/8″	**99505K23**♠ 685.54
50	34	—	—	60	1/8″	1	115/230 (1)	17/9	1″	1″	8 3/4″ × 6 5/8″	× 15 1/8″	**99505K25**♠ 703.73

★ VAC at 50/60 Hz. ♠ Motor is open dripproof (ODP).

Hazardous-Location Type 316 Stainless Steel Centrifugal Pumps for Fuel

Transfer gasoline, diesel fuel, isopropyl alcohol, and other flammable liquids with these Type 316 stainless steel pumps. Motor is UL listed for use in Class I, Groups C & D and Class II, Groups F & G hazardous locations (unless noted). It is also CSA certified. Motor is totally enclosed fan-cooled (TEFC), rated for continuous duty, and has 6″ wire leads. Housing and impeller are Type 316 stainless steel. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry. Connections are NPT female. Maximum viscosity is 264 centipoise (similar to SAE 40 oil). Maximum temperature is 250° F (or, if lower, the boiling point of liquid being pumped). Minimum temperature is not rated.

Common Compatible Chemicals
Deionized Water, Diesel Fuel, Gasoline, Glycol, Hydraulic Oil, Isopropyl Alcohol, Kerosene, Methyl Chloride, Mineral Spirits, Motor Oil, Phosphoric Acid (<40%), Sodium Hydroxide (20%), Sulfuric Acid (<10%), Water, Xylene
ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **8205KAC**.

Max. Flow, gpm @ 20 ft. of Head	@ 40 ft. of Head	@ 60 ft. of Head	Max. ft. of Head	Max. Solid Dia.	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size Intake	Discharge	Overall Size, Ht. × Wd. × Dp.		Each
17	4	—	47	1/4″	1/3	115/208-230 (1)	4.8/2.4	3/4″	1/2″	7 1/2″ × 11″	× 16 1/2″	**8205K51** $1,022.20
22	13	1	62	1/4″	1/2	115/230 (1)	7.4/3.7	3/4″	1/2″	7 1/2″ × 11″	× 16 1/2″	**8205K11** 1,058.31
25	13	1	62	1/4″	1/2	208-230/460 (3)	2.4-2.2/1.1	3/4″	1/2″	7 1/2″ × 11″	× 16 1/2″	**8205K27** 1,138.11
78	48	10	64	1/4″	1	115/230 (1)	12/6	1 1/2″	1″	8 1/2″ × 11″	× 17″	**8205K17** 1,197.74
78	49	10	64	1/4″	1	208-230/460 (3)	3.7-3.6/1.8	1 1/2″	1″	8 1/2″ × 11″	× 17″	**8205K29** 1,219.80
108	90	60	81	1/4″	1 1/2	208-230/460 (3)	5-4.6/2.3	1 1/2″	1″	8 1/2″ × 12″	× 17″	**8205K31** 1,409.80
110	100	50	76	1/4″	2	208-230/460 (3)	5.7-5.4/2.7	2″	1 1/2″	8 1/2″ × 12″	× 17″	**8205K37** 1,442.11
140	120	50	76	1/4″	3	208-230/460 (3)	8.1-7.6/3.8	2″	1 1/2″	8 1/2″ × 12″	× 17″	**8205K39**● 1,641.60

● Not for Group G locations.

For information about pump performance, see pages 328 and 346.

Sanitary Type 316 Stainless Steel Centrifugal Pumps

For use in food, beverage, and other sanitary applications, these pumps meet 3-A sanitary standard requirements for product-contact surfaces. They have a Type 316L stainless steel housing and impeller along with quick-clamp (tri-clamp) intake and discharge connections. Pump head rotates 360° for easy discharge-line connection. Motors are totally enclosed fan-cooled (TEFC), rated for continuous duty, and have 2″ wire leads. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids. Temperature range is –40° to +275° F.

Common Compatible Chemicals
Deionized Water, Glycol, Hydraulic Oil, Motor Oil, Paint, Salt Water, Water
ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **49635KAC**.

Max. Flow, gpm @ 10 ft. of Head	@ 20 ft. of Head	@ 30 ft. of Head	@ 40 ft. of Head	Max. ft. of Head	Max. Viscosity, centipoise	hp	VAC @ 60 Hz (phase)	Amps	For Tube OD	Overall Size, Ht.×Wd.×Dp.		Each
54	37	18	—	33	50▲	½	115/208-230 (1)	7.4/4.3-3.7	1½″	8 3/16″×6½″×16 7/16″	49635K41	$1,285.83
54	37	18	—	33	50▲	½	208-230/460 (3)	2.5-2.0/1	1½″	8 3/16″×6½″×15 13/16″	49635K51	1,254.93
110	95	56	—	40	100♥	1	115/230 (1)	11.8/5.9	1½″	7½″×6½″×17¾″	49635K42	1,189.41
110	95	56	—	40	100♥	1	208-230/460 (3)	4.1-3.6/1.8	1½″	7½″×6½″×15⅞″	49635K52	1,203.10
110	100	70	22	44	150■	1½	230/460 (3)	4.2/2.1	1½″	7½″×6½″×16½″	49635K53	1,223.36
120	105	94	87	62	300♣	2	230/460 (3)	5.2/2.6	1½″	7½″×6½″×17 13/16″	49635K54	1,307.99

▲ Similar to SAE 10 oil. ♥ Similar to olive oil. ■ Similar to cough syrup. ♣ Similar to SAE 40 oil.

High-Head Type 316 Stainless Steel Centrifugal Pumps

A centrifugal impeller with multiple stages boosts pressure for transferring liquid to a great vertical height or at high pressures. Housing and impeller are made of Type 316 stainless steel. Motor is totally enclosed fan-cooled (TEFC), rated for continuous duty, and has 5″ to 6″ wire leads. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids. Connections are NPT female. Maximum viscosity is 50 centipoise (similar to SAE 10 oil). Temperature range is –4° to +194° F. UL and C-UL listed for use with water.

Common Compatible Chemicals
Deionized Water, Water
ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **8134KAC**.

Max. Flow, gpm @ 50 ft. of Head	@ 100 ft. of Head	@ 150 ft. of Head	Max. ft. of Head	No. of Impeller Stages	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size Intake	Discharge	Overall Size, Ht.×Wd.×Dp.		Each
22	12	—	128	3	½	115/230 (1)	8.5/4.26	1″	1″	8 3/16″×5 19/32″×12″	8134K24	$825.15
22	18	8	173	4	1	115/230 (1)	11/5.6	1″	1″	8 3/16″×5 19/32″×14 9/32″	8134K25	970.54
22	22	20	266	6	2	115/230 (1)	18.8/9.8	1″	1″	9″×7″×18⅜″	8134K26	1,154.50
22	22	20	268	6	1½	208-230/440-480 (3)	5.4/2.5●	1″	1″	7½″×5 19/32″×16 13/32″	8134K28	904.91
33	33	31	233	5	3¼	208-230/440-480 (3)	9.8/4.5●	1¼″	1″	7⅞″×7″×16 31/32″	8134K29	931.03

● Amp rating at 208/480 VAC.

Extreme-Head Multistage Centrifugal Booster Pumps for Water

With multiple impeller stages, these pumps provide a boost of pressure ideal for extremely high-head water applications in pressure washing, spraying systems, and reverse osmosis filtering. Bearings are permanently lubricated. Impeller is acetal. Motor is open dripproof (ODP) and rated for continuous duty. It has thermal overload protection, automatic reset, and screw terminals. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids. Connections are ¾″ NPT female, unless noted. Maximum temperature is 140° F. Minimum temperature is not rated.

Max. Flow, gpm @ 100 ft. of Head	@ 160 ft. of Head	@ 240 ft. of Head	Max. ft. of Head	No. of Impeller Stages	hp	VAC @ 60 Hz (phase)	Amps	Overall Size, Ht.×Wd.×Dp.	Cast Iron Housing	Each	Type 304 Stainless Steel Housing	Each
10.3	9	6.4	330	9	½	115/230 (1)	12.4/6.2	9¾″×6½″×24¼″	4337K12	$516.90	8449K22	$755.65
11.4	10.4	9	445	12	¾	115/230 (1)	14.8/7.4	9¾″×6½″×28⅜″	4337K26	545.23	8449K24	791.02
11.8	11.1	10.2	590	16	1	115/230 (1)	19.9/9.9	9¾″×6½″×31 15/16″	4337K47	640.83	8449K26	908.43
27	25	19	330	9	1½	115/230 (1)	24/12	9¾″×6½″×29 13/16″	4337K49◤	632.96	8449K28◤	881.25
27	25	19	330	9	1½	208-230/460 (3)	6.8/3.4	9¾″×6½″×30 5/16″	4337K38◤	686.02	8449K37◤	950.33

◤ Connections are 1″ NPT female.

Self-Priming Polypropylene Centrifugal Pumps for Water

An initial fill of the pump casing creates a vacuum that allows these pumps to self-prime up to 25 feet. Also known as sprinkler pumps, they have high flow rates and high feet of head maximums for use with water in lawn and landscape sprinkling. Housing is fiberglass-reinforced polypropylene and impeller is Noryl. Motor is open dripproof (ODP), rated for continuous duty, and has screw terminals. Do not run dry or use with solids. Connections are NPT female. Maximum viscosity is not rated. Temperature range is 35° to 140° F. UL listed and CSA certified.

Max. Flow, gpm @ 40 ft. of Head	@ 80 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size Intake	Discharge	Overall Size, Ht.×Wd.×Dp.		Each
50	31	103	1	115/230 (1)	14.8/7.4	2″	1½″	11 13/16″×10″×18⅝″	4011K11	$384.22
63	44	115	1½	115/230 (1)	19.9/10	2″	1½″	11 13/16″×10″×19¾″	4011K22	417.65
67	47	118	2	115/230 (1)	24/12	2″	2″	12⅜″×10″×21″	4011K44	508.55

For information about pump performance, see pages 328 and 346.

Plastic Centrifugal Pumps with Adjustable Discharge

Direct flow in any direction—these pumps have a discharge that is adjustable in 90 degree increments. Motor is totally enclosed fan-cooled (TEFC), rated for continuous duty, and has screw terminals (115/230 VAC pumps have thermal overload protection). Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids. Connections are 1½″ NPT female. Maximum viscosity is 18 centipoise (similar to antifreeze).

Polypropylene Housing—Impeller is polypropylene. Temperature range is 32° to 140° F.

Noryl Housing—Impeller is Noryl. Temperature range is 32° to 180° F.

Common Compatible Chemicals	
Ethylene Glycol, Salt Water, Sulfuric Acid (<10%, up to 120° F), Water	**Polypropylene Housing**
Ethylene Glycol, Hydrochloric Acid, Salt Water, Sulfuric Acid (<10%), Water	**Noryl Housing**

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **8190KAC**.

Max. Flow, gpm @ 10 ft. of Head	@ 30 ft. of Head	@ 60 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size	Overall Size, Ht. × Wd. × Dp.	Polypropylene Housing	Each	Noryl Housing	Each
33	22	—	58	½	115/230 (1)	8.6/4.3	1½″	7½″ × 8¾″ × 14 7/16″	**8190K31**	$674.55	**9980K86**	$669.74
33	22	—	58	½	230/460 (3)	1.8/0.9	1½″	7½″ × 8¾″ × 14 7/16″	**8190K34**	727.55	**9980K91**	722.84
37	29	10	72	¾	115/230 (1)	9.8/4.9	1½″	7½″ × 8¾″ × 15 9/16″	**8190K32**	765.82	**9980K87**	752.43
37	29	10	72	¾	230/460 (3)	3.2/1.6	1½″	7½″ × 8¾″ × 14 15/16″	**8190K35**	817.36	**9980K92**	810.26
55	48	28	79	1	115/230 (1)	14/7	1½″	7½″ × 8¾″ × 15 9/16″	**8190K33**	850.45	**9980K88**	834.75
55	48	28	79	1	230/460 (3)	3.7/1.9	1½″	7½″ × 8¾″ × 15 7/16″	**8190K36**	807.91	**9980K93**	788.20
85	73	50	89	1½	230/460 (3)	4.6/2.3	1½″	7½″ × 8¾″ × 14 15/16″	**8190K37**	985.64	**9980K94**	962.22
96	83	58	91	2	230/460 (3)	6/3	1½″	7½″ × 8¾″ × 15 7/16″	**8190K38**	1,182.73	**9980K95**	1,151.11
123	106	76	95	3	230/460 (3)	7.6/3.8	1½″	7½″ × 8¾″ × 16 7/16″	**8190K39**	1,337.82	**9980K96**	1,298.72

Extended-Life Sealless Plastic Centrifugal Pumps

Also known as magnetic-drive pumps, these compact pumps have an impeller and motor joined by a magnetic coupling so there's no rubber seal to wear out, leading to longer pump life. Motor is rated for continuous duty and has thermal overload protection. Includes a 6-ft. cord with three-prong plug, unless noted. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids. Maximum viscosity is 9 centipoise (similar to blood) for 9929K and 9925K pumps; maximum viscosity is 18 centipoise (similar to antifreeze) for 9930K and 99095K pumps. Temperature range is 32° to 150° F, and all pumps are UL recognized. *9929K* pumps are CSA certified and CE approved. *9925K* pumps are CSA certified.

Common Compatible Chemicals	
Glycol (up to 72° F), Sodium Hydroxide (20%), Water	**A**
Deionized Water, Glycol (up to 72° F), Salt Water, Water	**B**
All up to 68° F: Deionized Water, Glycol, Hydrochloric Acid (37%), Phosphoric Acid, Salt Water, Sodium Hydroxide (50%), Sulfuric Acid, Water	**C**
All up to 68° F: Deionized Water, Glycol, Salt Water, Sodium Hydroxide (50%), Water	**D**
All up to 68° F: Ammonium Hydroxide, Glycol, Salt Water, Water	**E**

ⓘ For the compatibility of 36 common chemicals and information about wetted parts, go to mcmaster.com and search for **9930KAC**.

Max. Flow, gpm @ 3 ft. of Head	@ 10 ft. of Head	@ 40 ft. of Head	Max. ft. of Head	hp	VAC @ 50/60 Hz (phase)	Amps	Connections Intake	Discharge	Overall Size, Ht. × Wd. × Dp.	Each
Glass-Filled Polypropylene Housing and Impeller										
With Open Fan-Cooled Motor (OFC)										
A 5	—	—	7	1/50	115 (1)■	0.94	5/8″ Barbed	5/8″ Barbed	5¼″ × 3½″ × 7⅝″	**9930K37** $139.29
A 7.2	5.6	—	19	1/25	115 (1)■	1.65	5/8″ Barbed	5/8″ Barbed	5¼″ × 3½″ × 8¼″	**9930K41** 147.13
A 7.8	4.8	—	14.8	1/30	115 (1)■	1.5	½″ NPT Fem.	½″ NPT Male	4 5/16″ × 4″ × 8½″	**9930K51** 143.51
A 11	8.8	—	23.7	1/12	115 (1)■	2.4	½″ NPT Fem.	½″ NPT Male	4 5/16″ × 4″ × 8 15/16″	**9930K53** 207.98
A 14.6	11.9	—	35	⅛	115 (1)■	2.1	½″ NPT Fem.	½″ NPT Male	5⅝″ × 5 7/16″ × 8 5/16″	**9930K54** 333.50
B 7.8	4.8	—	14.6	1/25	115 (1)■	1.4	½″ NPT Fem.	½″ NPT Male	5″ × 4″ × 8 15/16″	**9930K62** 162.69
B 11.8	9.5	—	22	1/12	115 (1)	2.4	¾″ NPT Fem.	½″ NPT Male	5″ × 4″ × 9 13/16″	**9930K63** 187.09
B 16.5	13.3	—	27.5	⅛	115 (1)	2	1″ NPT Fem.	½″ NPT Male	5½″ × 5½″ × 8 11/16″	**9930K65** 321.51
With Totally Enclosed Fan-Cooled Motor (TEFC)										
A 9.1	5.8	—	16.3	1/20	230 (1)	0.8	½″ NPT Fem.	½″ NPT Male	4 5/16″ × 4″ × 8½″	**9930K52**◤ 198.92
B 13.5	11.5	—	24	1/10	230 (1)	0.7	1″ NPT Fem.	½″ NPT Male	4 15/16″ × 5½″ × 10 9/16″	**9930K64**◤ 279.58
B 19.2	16.5	—	29.5	⅛	115/230 (1)	3/1.4	1″ NPT Fem.	½″ NPT Male	7 5/16″ × 5 3/16″ × 11 3/16″	**9930K66** 467.73
C 16.4	15	—	29	⅕	115/230 (1)	2.2/1.1	1″ NPT Fem.	½″ NPT Male	6 3/16″ × 6½″ × 12¾″	**9929K55**★♥ 439.77
D 50	50	37	60	¾	115/230 (1)	10/5	1½″ NPT Fem.	1″ NPT Male	9 1/16″ × 9¼″ × 18″	**9929K56**● 675.00
With Fan-Cooled Motor (FC)										
E 5	—	—	7	1/55	115 (1)■	0.85	½″ NPT Fem.	⅜″ NPT Fem.	5″ × 3¾″ × 7″	**9925K31**♠ 131.73
E 8	6.5	—	19	1/25	115 (1)	1.35	½″ NPT Fem.	⅜″ NPT Fem.	5″ × 3¾″ × 8″	**9925K32**♠ 140.65
Glass-Filled Ryton Housing and Impeller										
With Totally Enclosed Fan-Cooled Motor (TEFC)										
B 9.1	6	—	16.3	1/25	115 (1)■	1.3	½″ NPT Fem.	½″ NPT Male	4 15/16″ × 4″ × 9″	**99095K51** 264.16
B 13.5	11.5	—	24.3	1/10	115 (1)■	1.7	1″ NPT Fem.	½″ NPT Male	4 15/16″ × 5½″ × 10⅞″	**99095K52** 345.04
B 19.2	16.5	—	29.3	⅛	115/230 (1)	3/1.4	1″ NPT Fem.	½″ NPT Male	7 3/16″ × 5 3/16″ × 11 3/16″	**99095K53** 524.94
B —	30	6	40.5	⅓	115/230 (1)	5/2.5	1″ NPT Fem.	¾″ NPT Male	7″ × 8 11/16″ × 14⅜″	**99095K54**● 596.39
B —	36.7	21.7	51	½	115/230 (1)	9.4/4.7	1″ NPT Fem.	¾″ NPT Male	7″ × 8 11/16″ × 14⅜″	**99095K55**● 617.98
B —	36.7	21.7	51	½	230/460 (3)	1.8/0.9	1″ NPT Fem.	¾″ NPT Male	7″ × 8 11/16″ × 14⅜″	**99095K56**● 659.18
B 46.7	46.7	30.8	58.9	¾	115/230 (1)	11.8/5.9	1½″ NPT Fem.	1″ NPT Male	8½″ × 8 9/16″ × 17 3/16″	**99095K57**● 894.71
B 52	46.7	30.8	58.9	¾	230/460 (3)	2.9/1.45	1½″ NPT Fem.	1″ NPT Male	8½″ × 8 9/16″ × 17 3/16″	**99095K58**● 955.86
D 9.5	7.4	—	17	1/15	115/230 (1)	0.86/0.43	½″ NPT Male	½″ NPT Male	5¼″ × 4⅜″ × 9½″	**9929K54**▲♥ 408.78

■ VAC @ 60 Hz. ◤ Has 6-ft. cord with no plug. ★ Housing and impeller are polypropylene. ♥ Has 8″ wire leads.
● Has 6″ wire leads. ♠ Has 3-ft. cord with no plug. ▲ Housing and impeller are Ryton.

For information about pump performance, see pages 328 and 346.

Cast Iron Centrifugal Pumps for Coolant Tanks

A universal mounting plate makes these pumps the perfect replacement for coolant pumps from foreign manufacturers such as Fuji, Mitsubishi, Toshiba, Hitachi, and Yasukawa. Housing is cast iron. Impeller is polyacetal for pumps with 1/8 and 1/4 hp motors; impeller is aluminum for pumps with 1/2, 3/4, and 1 hp motors. Motor is totally enclosed with sealed bearings. Pumps must be hardwired. They are not self-priming. Connections are NPT female. Max. solid diameter is 1/8″. Max. viscosity is 88 centipoise (similar to olive oil). Temperature range is 50° to 180° F.

115/230 VAC pumps have 3″ wire leads; *230/460 VAC* pumps have screw terminals.

In-Tank Immersion Pumps—Intake is located below the mounting plate at the bottom of the shaft and is immersed in liquid. Pumps remove liquid down to 1″ above the intake. Discharge connection is above mounting plate. Pumps can be run dry.

Remote-Mount Pumps—These pumps let you connect a pipe from your tank to the pump intake for remote mounting in space-constrained areas. Mount above or below the liquid level for general service pumping of water-based coolants and light oils. Suction intake and discharge connections are located above the mounting plate on opposite sides of the housing. Do not run dry.

	Mounting Plate Size, Sq.	No. of Holes	Hole Size	Center-to-Center		Mounting Plate Size, Sq.	No. of Holes	Hole Size	Center-to-Center
99875K21	4 15/16″	4	5/16″	3 17/32″	99875K51	5 1/2″	4	5/16″	3 7/8″
99875K31	6 1/4″	4	5/16″	4 3/8″	99875K61	7 3/8″	4	5/16″	5 1/8″
99875K41	6 1/2″	4	5/16″	4 3/4″	99875K71	7 3/8″	4	5/16″	5 31/32″
99875K25	4 15/16″	4	5/16″	3 17/32″	99875K55	5 1/2″	4	5/16″	3 7/8″
99875K35	6 1/4″	4	5/16″	4 3/8″	99875K65	6 3/4″	4	5/16″	5 1/8″
99875K44	6 1/2″	4	5/16″	4 3/4″	99875K74	7 3/8″	4	5/16″	5 31/32″
99875K46	7 1/2″	4	5/16″	5 1/8″	99875K76	8″	4	5/16″	6 3/32″
99875K48	7 1/2″	4	5/16″	5 1/8″	99875K78	8″	4	5/16″	6 3/32″

Max. Flow, gpm @ 10 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	hp	Amps	In-Tank Immersion Pumps: Shaft Ht.	Pipe Size	Overall Size, Ht. × Wd. × Dp.		Each	Remote-Mount Pumps: Pipe Size	Overall Size, Ht. × Wd. × Dp.		Each
115/230 VAC @ 50/60 Hz, single phase													
5	—	13	1/8	0.7/0.4	6″	3/8″	11 3/4″ × 6″	× 11 3/4″	99875K21 $109.47	3/8″	6 7/8″ × 6″	× 7″	99875K51 $130.53
20	14	33	1/4	3/1.5	7″	1/2″	14 5/8″ × 7 3/8″	× 13 7/8″	99875K31 218.95	3/4″	9″ × 7 3/4″	× 8 3/4″	99875K61 225.26
33	27	42	1/2	5/2.5	9 1/4″	3/4″	17 7/8″ × 7 1/2″	× 18″	99875K41 366.65	3/4″	10 1/4″ × 8 1/8″	× 10 1/2″	99875K71 387.16
230/460 VAC @ 50/60 Hz, three phase													
5	—	13	1/8	0.3/0.2	6″	3/8″	11 3/4″ × 6″	× 11 3/4″	99875K25 120.71	3/8″	6 7/8″ × 6″	× 7″	99875K55 149.85
20	15	33	1/4	0.8/0.4	7″	1/2″	14 5/8″ × 7 3/8″	× 13 7/8″	99875K35 222.02	3/4″	9″ × 8 3/4″	× 7 3/4″	99875K65 244.30
33	27	42	1/2	1.8/1.3	9 1/4″	3/4″	17 7/8″ × 7 1/2″	× 18″	99875K44 377.91	3/4″	10 1/4″ × 8 1/8″	× 10 1/2″	99875K74 403.61
52	45	55	3/4	2.6/1.6	10 7/8″	1″	20 1/2″ × 8″	× 20 1/8″	99875K46 462.54	1″	11 3/4″ × 8 1/8″	× 11 5/8″	99875K76 482.23
56	50	62	1	3.2/1.9	10 7/8″	1″	20 1/2″ × 8″	× 20 7/8″	99875K48 543.36	1″	11 3/4″ × 8 1/8″	× 12 1/8″	99875K78 565.64

Extended-Life Cast Iron Centrifugal Pumps for Coolant Tanks

Heavy duty bearings, impeller, and motor give these pumps a long service life, and a universal mounting plate easily connects to coolant reservoirs. Housing is cast iron; impeller is Type 316 stainless steel. Motor is totally enclosed fan-cooled (TEFC), continuous duty, and has 7″ wire leads. Pumps are not self-priming. They can run dry and will remove liquid down to about 2 1/4″. Maximum solid diameter is 1/4″. Intake is open; discharge connection is NPT female. Mounting plate is 9 1/2″ × 10 3/4″ and has four 5/16″ × 13/16″ holes on 8 5/8″ × 9 3/8″ centers. Maximum viscosity is 88 centipoise (similar to olive oil). Temperature range is 40° to 200° F.

Max. Flow, gpm @ 10 ft. of Head	@ 20 ft. of Head	@ 30 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Shaft Ht.	Pipe Size	Overall Size, Ht. × Wd. × Dp.		Each
35	—	—	17	1/4	230/460 (3)	0.9/0.5	11 11/16″	1 1/4″	20 5/8″ × 9 1/2″	× 10 13/16″	9970K33 $444.90
41	9	—	21	1/3	230/460 (3)	2/1	9 11/16″	1 1/4″	18 13/16″ × 9 1/2″	× 10 13/16″	9970K35 491.95
73	42	7	32	3/4	230/460 (3)	3/2	9 13/16″	1 1/2″	19 11/16″ × 9 1/2″	× 10 13/16″	9970K37 615.86
73	42	7	32	3/4	230/460 (3)	3/2	15 13/16″	1 1/2″	25 11/16″ × 9 1/2″	× 10 13/16″	9970K39 645.80

High-Head Cast Iron Centrifugal Pumps for Coolant Tanks

Pumps have multiple stages to boost pressure—great for coolant delivery in machine tooling applications. Housing is cast iron. Impeller is polycarbonate. Motor is totally enclosed fan-cooled (TEFC), rated for continuous duty, and has 5″ wire leads and thermal overload protection. Pumps are not self-priming. Do not run dry or use with solids. Pumps will remove liquid down to 5″ above the inlet. Connections are 1″ NPT female. Maximum viscosity is 53 centipoise (similar to SAE 10 motor oil). Temperature range is 50° to 160° F.

Mount horizontally. Use the ***optional mounting plate*** for vertical mounting. Mounting plate has four 9/16″ holes on 5 61/64″ centers.

Max. Flow, gpm @ 0 ft. of Head	@ 100 ft. of Head	@ 200 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Shaft Ht.	Overall Size, Ht. × Dia.		Each
38	25	—	150	1	208-230/460 (3)	3.2-3.2/1.6	6 1/4″	21 1/4″ × 6 7/8″	99825K51	$933.33
38	32	10	210	1 1/2	208-230/460 (3)	4.8-4.5/2.4	8″	24″ × 6 7/8″	99825K52	1,130.30
38	34	22	280	2	208-230/460 (3)	5.6-5.4/2.7	9 5/8″	26″ × 6 7/8″	99825K53	1,284.02
38	36	30	420	3	230/460 (3)	8/4	13 1/2″	30 1/2″ × 6 7/8″	99825K54	1,525.17
Optional Cast Iron Mounting Plate for Vertical Mounting									99825K44	86.96

Extended-Life Sealless Centrifugal Pumps for Coolant Tanks

A sealless design means pumps have fewer wear components and longer life. Pump housing is glass-filled acetal. Motors are single phase, totally enclosed fan-cooled (TEFC), and rated for continuous duty. They have a 4-ft. power cord. Pumps are not self-priming but can be run dry. Pumps will remove liquid down to 1″ above the inlet. Max. solid diameter is 1/8″. Intake is open; discharge connection is slip-on for 5/8″ OD tubing. Mounting bracket has four 9/32″ holes on 4 1/2″ centers. Max. viscosity is 70 centipoise (similar to olive oil). Temperature range is 50° to 150° F.

115 VAC pumps have a three-prong plug. ***230 VAC*** pumps do not have a plug.

Max. Flow, gpm @ 2 ft. of Head	@ 4 ft. of Head	@ 6 ft. of Head	Max. ft. of Head	hp	Shaft Ht.	Overall Size, Ht. × Dia.	115 VAC @ 50/60 Hz: Amps		Each	230 VAC @ 50/60 Hz: Amps		Each
11.5	10.5	9.5	13	1/15	5″	9 7/8″ × 4 1/4″	2.4	4336K31	$260.37	1.2	4336K32	$289.17
11.5	10.5	9.5	13	1/15	8″	12 7/8″ × 4 1/4″	2.4	4336K41	298.04	1.2	4336K42	320.19
11.5	10.5	9.5	13	1/15	10″	14 7/8″ × 4 1/4″	2.4	4336K51	351.22	1.2	4336K52	387.78

For information about pump performance, see pages 328 and 346.

Cast Iron Centrifugal Pumps for Circulating Water

A With Flange Mounting Adapters

B Without Flange Mounting Adapters

C

All pumps have a cast iron housing and a motor that is cooled by the pumped water, extending the life of the pump. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids. All have 4″ wire leads.

(A) Compact—Ideal for heating applications, install these pumps in tight spaces in either a horizontal or vertical pipeline, but the motor must never point downward. Pumps have mounting flanges with two 1/2″ dia. holes. Flange mounting adapter is required. Impeller is glass-filled polypropylene. Temperature range is 40° to 230° F. UL and C-UL listed.

(B) Easy Maintenance—For heating and cooling applications, their split body design allows you to leave these pumps inline during repairs. Install in a horizontal or vertical pipeline. All pumps have mounting flanges with two 1/2″ dia. holes, unless noted. Flange mounting adapter is required for 6769K11 and 6769K12. Impeller is propylene, unless noted. Temperature range is 32° to 225° F.

(C) High Flow—A high horsepower motor powers these pumps to greater flow at higher pressures than other circulating pumps. Use in heating and cooling applications. Install in a horizontal or vertical pipeline, but the motor must never point downward. Pumps include mounting flanges with two 5/8″ dia. holes, unless noted. Impeller is Type 304 stainless steel. Temp. range is 5° to 284° F.

Flange mounting adapters (sold separately) are required for all 67705K pumps, plus 6769K11 and 6769K12. **To Order:** Please specify flange size: 3/4″, 1″, 1 1/4″, or 1 1/2″ NPT female.

Max. Flow, gpm @ 5 ft. of Head	@ 20 ft. of Head	@ 40 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Flange Size, NPT Female	Overall Size, Ht. × Wd. × Dp.	Pumps	Each	Flange Mounting Adapters	Per Pair
(A) Compact												
12.5	—	—	16	1/25	230 (1)	0.49	—	4 3/4″ × 6 3/8″ × 6″	67705K21	$94.38	67705K4	$9.10
26	13	—	32	1/8	115 (1)	1.76	—	6″ × 6 1/2″ × 7 5/8″	67705K29	267.41	67705K4	9.10
29	17	—	33	1/6	115 (1)	2.00	—	6″ × 6 1/2″ × 7 3/4″	67705K36	280.34	67705K4	9.10
29	17	—	33	1/6	230 (1)	1.07	—	6″ × 6 1/2″ × 7 3/4″	67705K31	280.34	67705K4	9.10
(B) Easy Maintenance												
22	—	—	8	1/12	115 (1)	1.75	—	6 3/8″ × 5″ × 14 7/8″	6769K11	274.06	6769K1	16.39
33	—	—	13	1/6	115 (1)	1.90	—	3 1/2″ × 5 1/4″ × 15 3/8″	6769K12	496.03	6769K7♣	16.37
33	—	—	10	1/6	115 (1)	1.90	2″	8 1/2″ × 6 1/4″ × 16 5/8″	6769K13★	584.92	—	—
47	20	—	24	1/4	115 (1)	5	1″	11 1/2″ × 8″ × 17 1/4″	6769K31◤	726.31	—	—
(C) High Flow												
—	80■	47	46	3/4	115/208-230 (1)	9.6/5-4.8	1 1/2″	19 3/16″ × 11 1/2″ × 8 7/16″	8115K42	1,306.15	—	—
—	80■	47	46	3/4	208-230/460 (3)	2.7-2.6/1.3	1 1/2″	17 11/16″ × 11 1/2″ × 8 7/16″	8115K52	1,338.22	—	—
—	135■	90	47	1 1/2	115/208-230 (1)	17/9.5-8.6	2″	20 5/16″ × 14″ × 9 1/8″	8115K43★	1,664.19	—	—
—	135■	90	47	1 1/2	208-230/460 (3)	5-4.6/2.3	2″	19 13/16″ × 14″ × 9 1/8″	8115K53★	1,633.96	—	—
—	200■	135	49	3	208-230/460 (3)	8.6-7.8/3.9	3″	21 3/8″ × 19″ × 9 1/16″	8115K34▲	1,562.91	—	—

♣ Not available in 3/4″ NPT. ★ Mounting flange has four 9/16″ dia. holes. ◤ Impeller is Noryl. ■ Max. flow at 25 feet of head.
▲ Mounting flange has four 3/4″ dia. holes.

Sealless Bronze Centrifugal Pumps for Circulating Water

NPT Male

Flanged, with Flange Mounting Adapters

Without a mechanical seal, these pumps have one less wear component for longer pump life. They are ideal for hot water circulation in heating applications. Housing is bronze. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Do not run dry or use with solids.

NPT male pumps have a separate Ryton/carbon/PTFE impeller and motor that are joined by a magnetic coupling. Mount in a vertical pipeline; electrical conduit box must be on the bottom. Pumps have a continuous-duty, air-cooled motor with thermal overload protection and 6″ wire leads. Temperature range is 36° to 250° F. UL recognized.

Flanged and ***solder-end*** pumps have an integrated motor and polypropylene impeller so that the motor is cooled by the liquid being pumped. Motor is continuous duty and has thermal overload protection and a 6-ft. cord with a three-prong plug. Mount in a vertical or horizontal pipeline. Temp. range is 40° to 203° F. CE and ETL listed. *Flanged* pumps have NPT female connections.

Flange mounting adapters (sold separately) are required for flanged pumps. They have a 3/4″ NPT female connection and two 1/2″ mounting holes on a 3 1/8″ center.

Max. Flow, gpm @ 1 ft. of Head	@ 3 ft. of Head	@ 10 ft. of Head	@ 20 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Conn. Size	Overall Size, Ht. × Wd. × Dp.	Pumps	Each	Flange Mounting Adapters	Per Pair
NPT Male													
3.7	2.4	—	—	4.3	1/100	115 (1)	0.4	1/2″ Pipe	6 1/2″ × 3 3/8″ × 4 7/8″	4161K11	$184.52	—	—
5.8	5.2	1.8	—	12.1	1/25	115 (1)	1.4	1/2″ Pipe	7 11/16″ × 3 3/8″ × 4 7/8″	4161K21	201.03	—	—
Flanged													
12	11	8	2	24	2/25	115 (1)	1	—	6″ × 3 3/4″ × 5 11/16″	8174K31	165.64	8174K311	$41.20
Solder End (Unthreaded Female)													
8	7	6	2	22	2/25	115 (1)	1	3/4″ Tube●	6 1/2″ × 3 3/4″ × 5 7/8″	8174K33	165.64	—	—

● Tube size is the accepted designation of the copper tubing industry, not the actual OD. Actual OD is 7/8″.

Ultra-Quiet Sealless Centrifugal Pumps for Circulating Water

Nylon

Type 316 Stainless Steel

Quiet and compact, these pumps have a sealless but leakproof motor. The motor and pump end are integrated so that the motor bearings are lubricated by the liquid being pumped. Impeller is polypropylene. Motor is continuous duty with thermal overload protection and a quick-disconnect terminal. Pumps are not self-priming—they must be placed at or below the level of liquid being pumped. Mount in horizontal or vertical pipeline, but motor must always be below the impeller. Do not run dry or use with solids. CE and ETL listed.

Nylon Housing—Connections are NPT male. Temperature range is 40° to 140° F.

Type 316 Stainless Steel Housing—Connections are NPT female. Temperature range is 40° to 203° F.

Max. Flow, gpm @ 8 ft. of Head	@ 16 ft. of Head	@ 24 ft. of Head	Max. ft. of Head	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size	Overall Size, Ht. × Wd. × Dp.	Nylon Housing	Each	Type 316 Stainless Steel Housing	Each
4.8	4	2.3	26	2/25	115 (1)	1	3/4″	5 5/8″ × 3 9/16″ × 6 1/2″	—	—	9907T303	$305.20
8	4	0	23	2/25	115 (1)	1	3/4″	4 7/8″ × 4 5/16″ × 6″	9907T302	$147.54	—	—
8	5.5	0	20	2/25	115 (1)	1	3/4″	4 7/8″ × 4 5/16″ × 6″	9907T301	132.41	—	—

About Jet and Vacuum Pumps

Jet and vacuum pumps produce a negative, or below atmospheric, pressure condition (vacuum) in a vessel or tank.

Jet pumps use high-pressure liquid or steam to create strong suction within the pump body. They're often used to mix fluids, but they can even be used to move grains and other solid granular material. ***Venturi pumps*** operate under the same principles as jet pumps, but use compressed air instead of liquid or steam. They're ideal for medium- to high-vacuum applications

Electric vacuum pumps operate on electricity and can create a near-perfect vacuum.

Free air is the initial pull needed to create a vacuum. The vessel size and how quickly the vacuum level needs to be reached will determine the flow the pump needs to generate. Estimate how long it will take to form a vacuum by dividing the tank capacity by the cfm of the pump. Forming a vacuum in a large tank will take longer than in a small tank when using a comparable pump.

Note: Tubing and fitting ID sizes also affect flow through the pump.

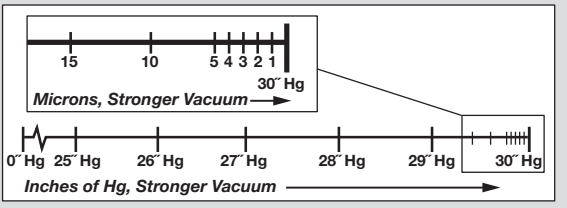

Standard vacuum is measured in inches of mercury (Hg) up to 29″ Hg. It is suitable for light lifting, grabbing, and moving parts. High or deep vacuum is up to 29.9″ Hg. Extreme vacuum is beyond 29.9″ Hg and is measured in microns of Hg. It is often needed in refrigeration service. (1 micron = 1/1,000 of a millimeter.)

Jet Pumps

Maintenance-Free Jet Pumps

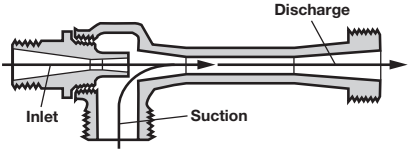

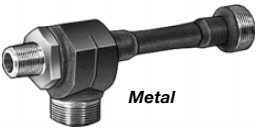

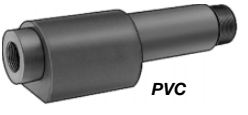

Also known as eductors, ejectors, and injectors, jet pumps have no moving parts and require no lubrication, seals, or electricity, so they are easy to clean and maintain. They use high-pressure liquid or steam (attached at the inlet) to create suction within the pump body. This suction draws a second liquid or gas into the pump and then forces it out, under pressure, through the discharge. Discharge occurs at a pressure greater than the suction stream, but lower than the operating inlet media. Decibel rating is 85. All have a temp. range of –150° to +150° F, except the PVC pumps, which have a max. temperature of +70° F.

Cast Iron— For general purpose applications.
Bronze— More corrosion resistant than cast iron.
Type 316 Stainless Steel— Highly corrosion resistant.
PVC— Highly corrosion resistant and lightweight.

Liquid-Operated Pumps— Use to blend liquids and slurries, circulate and pump solutions, handle condensate, extract solvents, produce emulsions, and elevate water. *Cast iron* pumps operate on pressures up to 75 psi; *bronze* and *Type 316 stainless steel* pumps operate on 15 to 200 psi inlet pressure; *PVC* pumps operate on pressure up to 100 psi. All have suction lift up to 27 feet at a rate of 1 foot per 2 psi of inlet pressure.

Steam-Operated Pumps— Use plant steam to pump liquids and gases, prime pumps, and develop a vacuum.

For pumping liquids: Inlet pressure range is 35 to 150 psi. Pumps have a suction lift up to 20 feet at a rate of 1 foot per 1½ psi of inlet pressure.

For pumping air, vapor, and gases: Use for priming and air removal with steam or air at inlet pressures from 20 to 80 psi.

Suction Flow (Based on a 1½″ Suction/Discharge Pipe Size)

These charts show suction flow based on a 1½″ suction/discharge pipe size. To determine the suction flow for other pipe sizes, use the sizing factor given below as a multiplier. For example, a pump with a 40-ft. discharge head, 5-ft. lift, and 100 psi water pressure, has a suction flow of 22 gpm (from information below; based on 1½″ suction/discharge). For the suction flow of a pump with 1¼″ suction/discharge, multiply 22 gpm by the 0.61 sizing factor to get 13.4 gpm.

For Liquid-Operated Pumps

Liquid Suction (gpm)						
	5-ft. Lift		10-ft. Lift		20-ft. Lift	
Discharge Head, ft.	40 psi Water	100 psi Water	40 psi Water	100 psi Water	40 psi Water	100 psi Water
0	38 gpm	40 gpm	32 gpm	36 gpm	18 gpm	27 gpm
10	18 gpm	40 gpm	12 gpm	36 gpm	———	27 gpm
20	———	40 gpm	———	36 gpm	———	27 gpm
30	———	34 gpm	———	30 gpm	———	20 gpm
40	———	22 gpm	———	18 gpm	———	9 gpm

For Steam-Operated Pumps

Liquid Suction (gpm)						
	5-ft. Lift		10-ft. Lift		20-ft. Lift	
Discharge Head, ft.	80 psi Steam	120 psi Steam	80 psi Steam	120 psi Steam	80 psi Steam	120 psi Steam
0-40	51 gpm	44 gpm	44 gpm	35 gpm	25 gpm	17 gpm

Gas Suction (cfm)			
Suction Pressure	20 psi Steam, Max. Outlet 0 psi	50 psi Steam, Max. Outlet 10 psi	80 psi Steam, Max. Outlet 20 psi
Atmos.	39 cfm	32 cfm	29 cfm
15″ Hg	1 cfm	12 cfm	9 cfm

Pipe Size, NPT Male● Inlet	Suction/ Discharge	Sizing Factor	Overall Size, Lg.×Wd.	Cast Iron	Each	Bronze	Each	Type 316 Stainless Steel	Each	PVC Overall Size, Lg.×Wd.	PVC Each
Liquid-Operated Pumps											
3/8″	3/4″	0.20	5 7/8″×1 7/16″	4979K31	$150.71	4979K11	$198.62	4979K51	$423.01	—	—
1/2″	3/4″	0.20	5 7/8″×1 7/16″	4979K39	150.71	4979K19	198.62	4979K59	423.01	5 3/4″ ×1 7/16″	4979K21 $237.55
1/2″	1″	0.34	7 1/8″×1 11/16″	4979K32	192.65	4979K12	245.54	4979K52	485.08	6 7/8″ ×1 11/16″	4979K22 277.00
3/4″	1 1/4″	0.61	9″ ×2 3/8″	4979K33	235.56	4979K13	269.49	4979K53	603.85	9 1/16″ ×2 3/8″	4979K23 329.39
1″	1 1/2″	1.00	11″ ×2 3/4″	4979K34	304.44	4979K14	359.31	4979K54	703.68	10 15/16″ ×2 3/4″	4979K24 413.21
1 1/4″	2″	1.82	14 3/8″×3 9/16″	4979K35	454.14	4979K15	596.86	4979K55	1,135.34	14 3/16″ ×3 9/16″	4979K25 554.94
1 1/2″	2 1/2″	3.17	18 1/8″×4 5/8″	4979K36	562.39	4979K16	810.46	4979K56	1,448.90	18 1/2″ ×4 5/8″	4979K26 818.44
2″	3″	5.92	23 7/8″×6 3/16″	4979K37	817.68	4979K17	1,119.86	4979K57	1,960.07	24 3/16″ ×6 3/16″	4979K27 1,308.42
Steam-Operated Pumps											
3/8″	1/2″	0.12	4 1/2″×1 1/8″	4977K31	148.73	4977K11	176.67	4977K51	334.36		
1/2″	3/4″	0.20	5 7/8″×1 7/16″	4977K32	150.71	4977K12	198.62	4977K52	422.56		
3/4″	1″	0.34	7 1/8″×1 11/16″	4977K33	192.65	4977K13	245.54	4977K53	485.08		
1″	1 1/4″	0.61	9″ ×2 3/8″	4977K34	235.56	4977K14	269.49	4977K54	603.85		
1″	1 1/2″	1.00	11″ ×2 3/4″	4977K35	304.43	4977K15	359.31	4977K55	703.67		
1 1/4″	2″	1.82	14 3/8″×3 9/16″	4977K36	454.14	4977K16	596.86	4977K56	1,135.34		
1 1/2″	2 1/2″	3.17	18 1/8″×4 5/8″	4977K37	584.88	4977K19	810.46	4977K57	1,448.90		
2″	3″	5.92	23 7/8″×6 3/16″	4977K38	850.39	4977K18	1,119.86	4977K58	1,960.07		

● PVC pumps have NPT female inlet and suction connections and NPT male discharge connections.

Note: Steam-operated pumps are not available in PVC because of temperature and pressure limitations.

For information about vacuum pumps, see page 363.

Maintenance-Free Vacuum Pumps

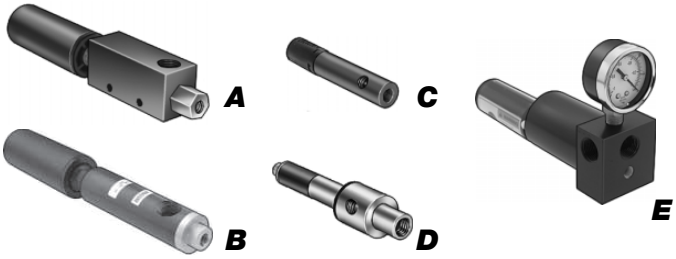

Also known as vacuum generators, these compressed-air powered pumps are easy to install and maintain because they have no moving parts or seals and don't require electricity or lubrication. Plus, they're compact, lightweight and have a silencer to reduce noise level.

Single Stage—Use for low airflow or as an intermittent vacuum source. All have an aluminum housing. *Adjustable-flow* pumps have a rotating diffuser section that adjusts flow.

Multistage—Generate higher vacuum flow with less air consumption. They have an acetal housing and include a 2″ vacuum gauge.

	Max. Vacuum, Hg	Free Air, cfm	Operating Pressure, psi	Air Consumption @ Operating Pressure, cfm	dB Rating	Temp. Range (°F)	Pipe Size, NPT Female Intake	Vacuum	Exhaust	Overall Size, Lg.×Wd.		Each
Single Stage												
Fixed Flow												
A	17″	6.8	70	7.09	65	32° to 300°	1/8″	3/8″	1/4″	8 1/4″ × 1 1/4″	**41605K57**	$82.17
A	26″	0.95	30-75	1.6	65	32° to 300°	1/8″	1/8″	1/8″	5 5/16″ × 1 1/4″	**41605K13**	60.84
A	27″	2.2	30-75	3.5	65	32° to 300°	1/8″	1/4″	1/4″	7 3/8″ × 1 1/4″	**41605K14**	63.64
A	27″	4.0	30-75	6.4	65	32° to 300°	1/8″	3/8″	1/4″	8 3/16″ × 1 1/2″	**41605K15**	81.20
B	16 1/2″	34.0	80	26.4	65	32° to 300°	1/8″	3/8″	1/4″	9 1/4″ × 1 1/4″	**41605K59**	119.49
C	28″	0.5	80	0.8	68	Max. 400°	1/8″	1/8″	1/4″	4 1/8″ × 3/4″	**9997K15**	67.43
C	28″	1.2	80	1.8	68	Max. 400°	1/8″	1/8″	1/4″	4 1/8″ × 3/4″	**9997K16**	67.43
C	28″	2.0	80	2.8	68	Max. 400°	1/8″	1/8″	1/4″	4 1/8″ × 3/4″	**9997K17**	86.86
C	28″	3.2	80	4.8	68	Max. 400°	1/8″	1/8″	1/4″	4 1/8″ × 3/4″	**9997K18**	86.86
C	28″	5.4	80	7.8	72	Max. 400°	1/4″	3/8″	3/8″	5 7/8″ × 1 1/4″	**9997K25**	131.71
C	28″	9.0	80	12.5	68	Max. 400°	1/4″	3/8″	3/8″	8″ × 1 1/4″	**9997K26**	166.29
C	28″	20.0	80	22.0	68	Max. 400°	3/8″	3/8″	3/8″	10 1/4″ × 1 1/4″	**9997K27**	214.29
C	28″	28.0	80	28.0	76	Max. 400°	1/2″	1/2″	1/2″	11 1/4″ × 1 1/2″	**9997K29**	326.00
Adjustable Flow												
D	0 to 25″	2.0	80	0 to 2.6	68	Max. 400°	1/8″	1/4″	1/4″	5 5/8″ × 1 1/4″	**13445K87**	116.00
D	0 to 25″	3.2	80	0 to 4.5	68	Max. 400°	1/8″	1/4″	1/4″	5 5/8″ × 1 1/4″	**13445K81**	116.00
D	0 to 25″	6.0	80	0 to 6.8	68	Max. 400°	1/8″	1/4″	1/4″	5 5/8″ × 1 1/4″	**13445K82**	142.57
D	0 to 25″	10.0	80	0 to 12.0	68	Max. 400°	1/8″	1/4″	1/4″	6 5/16″ × 1 1/4″	**13445K83**	162.57
D	0 to 25″	30.0	80	0 to 29.0	76	Max. 400°	3/8″	1/2″	1/2″	10 7/8″ × 1 3/4″	**13445K84**	180.00
D	0 to 25″	60.0	80	0 to 45.0	76	Max. 400°	3/8″	1/2″	3/4″	13″ × 2″	**13445K85**	237.43
D	0 to 25″	120.0	80	0 to 90.0	76	Max. 400°	1/2″	3/4″	1″	13 7/8″ × 2 1/4″	**13445K86**	296.57
Multistage												
Fixed Flow												
E	26″	17.0	68	7.0	65	32° to 125°	1/8″	1/2″	1/4″	10 1/4″ × 2 1/4″	**41605K45**	272.55
E	27″	6.8	68	2.7	65	32° to 125°	1/8″	1/2″	1/4″	8 1/4″ × 2 1/4″	**41605K33**	204.78
E	27″	12.0	68	4.9	65	32° to 125°	1/8″	1/2″	1/4″	8 5/8″ × 2 1/4″	**41605K34**	237.98

Oil-Free Electric Vacuum Pumps with Tank

These ready-to-use systems come with a rotary vane pump already mounted on a 10-gal. ASME coded tank. Pumps also have oil-free exhaust and include a vacuum gauge and manual shut-off valve. A three-position vacuum switch allows for on/off continuous duty or automatic on/off at a set vacuum. Supplied with external/internal air filters. Housing is cast iron. Vanes are carbon. Inlet and discharge connections are barbed for 3/8″ tube ID. Motors have thermal overload protection. Decibel rating is 70. Pumps are factory wired to 115 VAC. They include a 6-ft. cord with three-prong plug. Max. temperature is 95° F. Min. temperature is not rated.

Max. Vacuum, Hg	Free Air, cfm	hp	VAC @ 60 Hz (phase)	Amps	Overall Size, Lg.×Wd.×Ht.		Each
26″	4.6	1/3	115/230 (1)	5.3/2.7	30″×11″×20 1/2″	**6419K11**	$2,281.34
26″	10	3/4	115/230 (1)	5.1/2.5	30″×11″×21 1/2″	**6419K21**	2,715.69

Hand-Held Vacuum/Pressure Pump

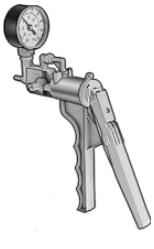

Just squeeze the trigger to create a vacuum—this pump has a pistol-grip pump head for single-handed manual operation. Use for liquid transfer and pickup and integrity checks of hydraulic vacuum and liquid lines. Housing is zinc and aluminum. Temperature range is 40° to 190° F. Overall size is 7″ Lg.× 2″ Wd.×9 1/4″ Ht.

Pump includes two 2-ft. long pieces, one 1 1/2″ piece, and one 3 5/8″ piece of 1/4″ ID PVC tubing; one 3″ piece of 5/32″ ID PVC tubing; a vacuum/pressure gauge; tubing adapters; a 4.5-oz. reservoir jar; tapered adapters and plugs; and a Santoprene cup adapter.

Max. Vacuum, Hg	Stroke Volume	Max. psi		Each
25″	1 cu. in.	15	**9963K21**	$78.47

Oil-Free Electric Vacuum/Pressure Pumps

Wear Resistant

Portable

These easy-to-use pumps run on electricity and require no lubrication—discharge is oil-free. All have a continuous-duty motor with thermal overload protection and a 6-ft. cord with three-prong plug.

Wear Resistant—Has a coiled diaphragm to reduce stress and wear and improve flexibility. Ideal for air and gas sampling and pressure/vacuum filtration. Housing is glass-filled polyester and diaphragm is fluorocarbon elastomer. Includes two polyethylene 3/8″ NPT male×3/8″ barbed hose adapters for 3/8″ ID tubing. Temperature range is 41° to 95° F.

Portable—Weighing only 16 pounds, this easy-to-carry pump is compact and quiet. Housing is aluminum and diaphragm is Nordel/Nomex. Pump includes an on/off switch and rubber feet. Connections are barbed for use with 3/8″ ID tubing. Temperature range is 32° to 104° F.

	Max. Vacuum, Hg	Free Air, cfm	Max. psi	dB Rating	hp	VAC @ 60 Hz (phase)	Amps	Overall Size, Lg.×Wd.×Ht.		Each
Wear Resistant	23″	0.54	21	72	1/45	115 (1)	1.2	8″ × 4″ × 5 1/2″	**41675K41**	$243.97
Portable	25.5″	1.1	60	68	1/8	115 (1)	4.2	7 11/16″ × 5 1/4″ × 10 15/16″	**4176K11**	415.03

For information about vacuum pumps, see page 363.

Oil-Free Electric High-Vacuum Pumps

Requiring no lubrication, these pumps have an oil-free discharge but still provide lots of power for high-vacuum applications. All have a continuous-duty motor with thermal overload protection and a 10-ft. cord with three-prong plug, unless noted. Intake and discharge connections are NPT female. Temperature range is 32° to 104° F.

Style A— Rotary vanes adjust as they wear so pump maintains efficiency and constant vacuum. Includes a relief valve, filter, felt elements, and an internal muffler. Housing is cast iron. Maximum air pressure is 10 psi. CSA certified.

Style B— Pistons achieve high vacuum and withstand harsh operating conditions. Housing is aluminum. Maximum air pressure is 125 psi. CSA certified.

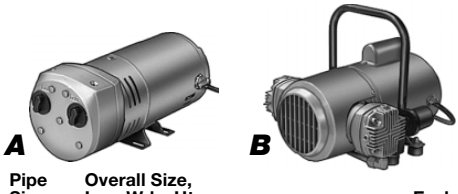

	Max. Vacuum, Hg	Free Air, cfm	dB Rating	hp	VAC @ 60 Hz (phase)	Amps	Pipe Size	Overall Size, Lg.×Wd.×Ht.		Each
A	26″	4.5	70	¼	110-115/220-230 (1)	4.6/2.5	¼″	13¾″ × 5⅝″ × 5 15/16″	**9901K64**	$410.36
B	27.5″	1.8	67	⅙	115 (1)	3.5	¼″	11⅝″ × 5⅝″ × 8⅝″	**4299K1**	501.28
B	27.5″	3.2	70	⅙	115 (1)	3.5	¼″	11 9/16″ × 11¼″ × 5 13/16″	**4299K2**	699.71
B	27.5″	5.0	77	½	115/230 (1)	12/6	¼″	13 5/16″ × 12⅜″ × 8 15/16″	**4299K4**	726.81
B	27.5″	10.5	78	1½	115/208-230 (1)	21.6/12.0-10.8	⅜″	21″ × 12¼″ × 8⅜″	**4299K7▲**	1,651.71

▲ Has 8″ wire leads.

Extended-Life Oil-Free Electric High-Vacuum Pumps

Also known as liquid-ring vacuum pumps, these have a design that eliminates metal-to-metal contact, extending the life of the pump and producing vacuum up to 29″ Hg. As their impeller rotates, sealing fluid (usually water) is forced outward to form a ring that produces a medium vacuum. Pumps do not require oil, but do require a constant supply of water to operate. Housing is cast iron and impeller is bronze. Motor is continuous duty; three phase; operates on 220-275/380-480 VAC, 60 Hz; and has thermal overload protection and screw terminals. Temperature range is 32° to 120° F. CSA certified.

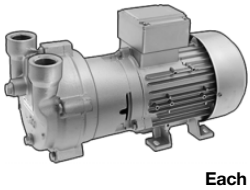

Max. Vacuum, Hg	Free Air, cfm	dB Rating	hp	Amps	Intake/ Discharge Connection	Sealing Fluid Intake	Overall Size, Lg.×Wd.×Ht.		Each
29″	20	65	1.7	5.1/2.9	1″ NPT Female	⅜″ BSPP Female	15 15/16″ × 7 5/16″ × 7 15/16″	**8188K42**	$1,851.67
29″	35	69	2.7	7.8/4.5	1″ NPT Female	⅜″ BSPP Female	18 13/16″ × 7⅛″ × 8⅝″	**8188K43**	2,132.14
29″	56	70	4.6	12.8/7.4	1½″ NPT Female	⅜″ BSPP Female	21½″ × 8 13/16″ × 9 5/16″	**8188K44**	2,666.67
29″	85	76	8.4	20.8/12	1½″ NPT Female	⅜″ BSPP Female	22″ × 10½″ × 11 13/16″	**8188K45**	3,255.00
29″	115	67	8.3	20/11.5	2″ Flange●	¾″ BSPP Female	25 5/16″ × 13 7/16″ × 14 5/16″	**8188K46**	4,733.33
29″	153	74	11	27.5/16	2″ Flange●	¾″ BSPP Female	25 13/16″ × 13 7/16″ × 14⅝″	**8188K47**	5,639.64

● Flange has four ¾″ holes on 3″ bolt circle.

Compact Electric Extreme-Vacuum Pumps

Turn to these direct-drive pumps when you need to produce a high vacuum. Pumps have a two-stage design for a higher vacuum than single-stage designs. They have no belts to wear out and are equipped with an oil level sight window and on/off switch. All have a carrying handle. Motors are continuous duty and have thermal overload protection. For replacement vacuum pump oil, see page 2176.

(C) 15 Microns Maximum Vacuum— Housed in aluminum, these pumps are great for air conditioning, refrigeration, and freezer-system servicing. Pumps come with one quart of vacuum oil. *115 VAC* units have a 6-ft. cord with a standard three-prong plug. *115/230 VAC* units are wired for 230 VAC and have a 6-ft. cord with three-prong NEMA 6-15 plug. Maximum temperature is 150° F. Minimum temperature is not rated.

Intake ports have male flared fitting connections. *3-cfm* models have a ⅜″ male flare × ¼″ male flare tee tube fitting. *5-* , *7-* , and *10-cfm* models have a ½″ male flare × ⅜″ male flare × ¼″ male flare cross tube fitting.

(D) 0.4 and 0.1 Microns Maximum Vacuum— For even greater vacuum, choose these cast iron pumps. Supplied with vacuum oil and a hose adapter. Pumps come wired for 115 VAC and have an 8-ft. cord with three-prong plug. Temperature range is 50° to 104° F. CSA certified.

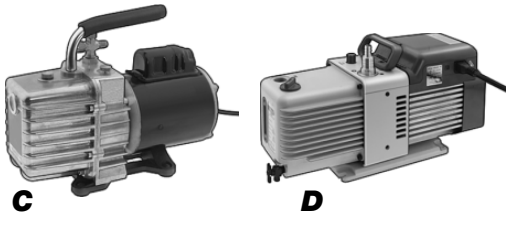

115 VAC Single Phase

115/230 VAC Single Phase NEMA 6-15

	Max. Vacuum, Microns	Free Air, cfm	dB Rating	hp	VAC @ 60 Hz (phase)	Amps	Intake Tubing, ID	Oil Capacity	Overall Size, Lg.×Wd.×Ht.		Each
C	15	3	72	½	115 (1)	7	¼″, ⅜″	27 oz.	14¼″ × 5⅝″ × 12″	**4396K21**	$398.74
C	15	3	72	½	115/230 (1)★	7/3.5	¼″, ⅜″	27 oz.	14¼″ × 5⅝″ × 12″	**4396K61**	429.86
C	15	5	72	½	115 (1)	7	¼″, ⅜″	23 oz.	14¼″ × 5⅝″ × 12″	**4396K41**	441.76
C	15	5	72	½	115/230 (1)★	7/3.5	¼″, ⅜″	23 oz.	14¼″ × 5⅝″ × 12″	**4396K71**	458.34
C	15	7	72	½	115 (1)	7	¼″, ⅜″	23 oz.	14¼″ × 5⅝″ × 12″	**4396K43**	465.49
C	15	7	72	½	115/230 (1)★	7/3.5	¼″, ⅜″	23 oz.	14¼″ × 5⅝″ × 12″	**4396K73**	542.21
C	15	10	72	½	115 (1)	7	¼″, ⅜″	24 oz.	15¼″ × 5⅝″ × 12″	**4396K45**	782.45
C	15	10	72	½	115/230 (1)★	7/3.5	¼″, ⅜″	24 oz.	15¼″ × 5⅝″ × 12″	**4396K75**	802.12
D	0.4	11.3	54	¾	115/230 (1)	9.2/4.6	9/16″, 13/16″	38.4 oz.	21¼″ × 7⅛″ × 10¾″	**8460K74**	3,797.74
D	0.1	2.6	54	½	115/230 (1)	5.0/2.5	7/16″, 13/16″	32 oz.	18½″ × 6½″ × 9⅝″	**8460K64**	2,620.97

★ VAC @ 50/60 Hz.

Extended-Life Electric Extreme-Vacuum Pumps

Cooler running and more rugged than direct-drive models, these pumps have a flexible belt that connects the pump head to the motor. They have a cast iron housing, large-capacity oil reservoir, and pull down to a maximum vacuum of 0.1 microns. Ideal for refrigeration service, vacuum ovens, and furnaces, as well as for removing gases from oils, plastics, and epoxies. Equipped with a fully enclosed belt guard, adjustable gas ballast, dust cap, switch, one quart of vacuum oil for 9950K51, and three quarts of vacuum oil for 9950K52 and K53 (for replacement vacuum pump oil, see page 2176). Decibel rating is 65. Motors are continuous duty and have a 7½-ft. cord with three-prong plug. Temperature range is 50° to 104° F. CSA certified.

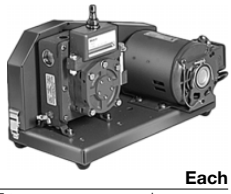

Max. Vacuum, Microns	Free Air, cfm	hp	VAC @ 60 Hz (phase)	Amps	Intake Tubing, ID	Oil Capacity	Overall Size, Lg.×Wd.×Ht.		Each
0.1	0.9	⅓	115 (1)	5.6	7/16″	⅝ qt.	17 13/16″ × 9″ × 12⅝″	**9950K51**	$1,851.78
0.1	3.2	½	115/230 (1)	8.6/4.3	7/16″	2¼ qt.	20″ × 12″ × 15″	**9950K52**	2,552.21
0.1	5.6	½	115/230 (1)	8.6/4.3	13/16″	2¼ qt.	20″ × 12″ × 15″	**9950K53**	2,724.26

For information about pipe size, see pages 2-3.

About Noise, Filtration, and Flow Ratings

Consider noise, filtration, and flow ratings when selecting mufflers, breather vents, and filters.

Noise—Measured in decibels (dB), the rating indicates how much a product reduces exhaust noise from your tool or equipment. OSHA recommends hearing protection for exposure to 80 dB and greater. Some common noise levels include an air-powered riveter @ 125 dB, air-powered drill @ 120 dB, and an impact wrench @ 103 dB.

Filtration—Products trap particles to clean the air exhausting to the environment or going into your process and equipment. The size of particles is measured in microns; the lower the number of microns, the smaller the particles that are removed from the air. For examples of common particle sizes, see page 390.

Flow—Measured in standard cubic feet per minute (scfm), this rating is the maximum air flow a product can withstand.

Mufflers

A **B** **C** **D**

Our most popular mufflers, use these with air-powered tools, valves, and cylinders to reduce noise and filter exhaust air. All have a porous bronze body.

Styles A&D have hex wrench flats. Mufflers reduce noise by 15-20 dB. They trap particles down to 40 microns, except mufflers with 1¼-2 pipe size, which trap particles down to 90 microns. Use with air and inert gas. Fitting is plated steel. Max. temp. is 300° F.

Style B are high temperature; max. temp. is 500° F. They have a slotted head for installation with a screwdriver. Mufflers reduce noise by 10-20 dB and trap particles down to 100 microns. Use with air and inert gas. Fitting is porous bronze.

Style C are knurled for an easy grip. Mufflers reduce noise by 13-21 dB and trap particles down to 100 microns. Use with air. Fitting is plated bronze. Max. temp. is 302° F.

	Pipe Size	Max. scfm @ 100 psi	Max. psi	Ht.	Hex Size/Dia.		
With UNF Male Connection							
A	10-32	6	300	11/16"	5/16"	**4450K31**	$1.72
With NPT Male Connection							
A	1/16	26	175	13/16"	3/8"	**4450K15**	1.82
A	1/8	11	300	1 1/8"	7/16"	**4450K1**	1.78
A	1/4	21	300	1 3/8"	9/16"	**4450K2**	2.10
A	3/8	23	300	1 1/2"	11/16"	**4450K3**	2.79
A	1/2	57	300	1 7/8"	7/8"	**4450K4**	3.77
A	3/4	112	300	2 1/4"	1 1/16"	**4450K5**	5.72
A	1	154	300	2 7/8"	1 5/16"	**4450K6**	8.88
A	1 1/4	154	300	3 1/4"	1 11/16"	**4450K8**	16.43
A	1 1/2	162	300	3 11/16"	2"	**4450K9**	21.86
A	2	2,190	175	4 3/4"	2 3/8"	**4450K16**	23.78
B	1/8	26	170	1"	7/16"	**8158T31**	2.42
B	1/4	35	170	1 5/16"	9/16"	**8158T32**	3.00
B	3/8	82	170	1 9/16"	11/16"	**8158T33**	4.01
B	1/2	130	170	2 1/16"	15/16"	**8158T34**	8.13
B	3/4	215	170	2 7/8"	1 1/8"	**8158T35**	11.60
B	1	305	170	3 3/8"	1 3/8"	**8158T36**	23.06
C	1/8	18	145	13/16"	7/16"	**4450K17**	3.47
C	1/8	28	145	1 5/16"	1/2"	**4450K18**	5.21

	Pipe Size	Max. scfm @ 100 psi	Max. psi	Ht.	Hex Size/Dia.		
With NPS Female Connection							
D	1/8	53	175	1 1/4"	9/16"	**4450K91**	$1.94
D	1/4	70	175	1 7/16"	11/16"	**4450K92**	2.62
D	3/8	175	175	1 7/8"	7/8"	**4450K93**	3.57
D	1/2	263	175	2 1/8"	1 1/16"	**4450K94**	6.76
With BSPT Male Connection							
A	1/8	53	175	7/8"	7/16"	**9836K21**	1.51
A	1/4	70	175	1 5/16"	9/16"	**9836K22**	1.87
A	3/8	175	175	1 1/2"	11/16"	**9836K23**	2.52
A	1/2	263	175	2"	7/8"	**9836K24**	3.44
A	3/4	438	175	2 5/16"	1 1/16"	**9836K25**	6.50
A	1	613	175	3"	1 5/16"	**9836K26**	8.93
A	1 1/4	700	175	3 3/8"	1 5/8"	**9836K27**	15.81
A	1 1/2	1,314	175	4"	2"	**9836K28**	17.66
A	2	2,190	175	4 11/16"	2 3/8"	**9836K29**	24.44
C	1/8	18	145	13/16"	7/16"	**9836K31**	3.47
C	1/8	28	145	1 5/16"	1/2"	**9836K32**	5.21
With Metric Male Connection							
C	M3	3	145	3/8"	1/4"	**4450K21**	1.67
C	M5	10	145	5/8"	5/16"	**4450K22**	3.04

Corrosion-Resistant Mufflers

E&G

All-stainless construction stands up to harsh environments—body is porous Type 316 stainless steel. Use with air and inert gas.

High-temperature mufflers withstand temperatures up to 400° F. They reduce noise by 15-20 dB and trap particles down to 50 microns. Fitting is Type 304 stainless steel. Max. pressure is 175 psi.

Extreme-temperature mufflers withstand temperatures up to 1000° F. They trap particles down to 100 microns. Fitting is Type 316 stainless steel. Max. pressure is 150 psi. *Style F* reduce noise by 10-20 dB; *Style G* reduce noise by 13-29 dB.

F

Pipe Size	Max. scfm @ 100 psi	Ht.	Hex Size/Dia.		
High-Temperature Mufflers					
(E) With NPT Male Connection					
1/8	53	7/8"	7/16"	**4402K51**	$8.32
1/4	70	1 1/4"	9/16"	**4402K52**	8.66
3/8	175	1 5/8"	11/16"	**4402K53**	10.45
1/2	263	2"	7/8"	**4402K54**	14.30
3/4	438	2 1/4"	1 1/16"	**4402K55**	49.57
1	613	3 9/16"	1 5/16"	**4402K56**	69.93
Extreme-Temperature Mufflers					
(F) With NPT Male Connection					
1/8	40	1 3/16"	3/8"	**8360T11**	26.00
1/4	53	1 3/8"	5/8"	**8360T12**	35.80
1/2	200	1 3/4"	7/8"	**8360T14**	44.00
3/4	340	1 15/16"	1 1/16"	**8360T15**	45.64
1	470	1 15/16"	1 7/16"	**8360T16**	66.51
(G) With BSPT Male Connection					
1/8	19	1 1/2"	7/16"	**4402K63**	60.15
1/4	36	2 1/16"	11/16"	**4402K64**	66.83
3/8	65	2 1/16"	11/16"	**4402K65**	66.83
1/2	90	2 5/16"	7/8"	**4402K66**	83.25
(G) With Metric Male Connection					
M3	3	3/8"	7/16"	**4402K61**	34.65
M5	6	11/16"	7/16"	**4402K62**	37.80

Sure-Seal Miniature Mufflers

H

A rubber O-ring above the threads ensures a tight seal. Mufflers reduce noise by 17-22 dB and trap particles down to 40 microns. Use with air and inert gas. Connection is UNF male.

Styles H&J have a porous bronze body with a brass fitting. O-ring is Buna-N. Max. pressure is 125 psi. Max. temp. is 200° F.

Style K has a porous Type 316 stainless steel body with a Type 303 stainless steel fitting. O-ring is fluoroelastomer. Max. pressure is 300 psi. Max. temp. is 300° F.

J&K

Thread Size	Max. scfm @ 100 psi	Ht.	Hex Size		
Bronze Mufflers					
H 10-32	5	5/8"	1/4"	**8226T11**	$7.17
J 10-32	5	1 1/16"	5/16"	**8226T13**	5.11
Type 316 Stainless Steel Muffler					
K 10-32	5	1 1/16"	5/16"	**8226T16**	14.67

Flow-Control Mufflers

Adjust the speed of air-powered tools and cylinders—turn the screw to change air flow and tighten the nut to secure. Mufflers reduce noise by 17-20 dB and trap particles down to 40 microns. Use with air and inert gas. Body is porous bronze and fitting is brass. Max. pressure is 300 psi. Max. temp. is 300° F. Connections are NPT male.

Pipe Size	Max. scfm @ 100 psi	Ht.	Hex Size		
1/8	20	1 5/16"	1/2"	**9834K31**	$4.12
1/8	30	1 9/16"	9/16"	**9834K41**	4.60
1/4	30	1 9/16"	9/16"	**9834K32**	4.57
1/4	40	1 5/8"	11/16"	**9834K42**	5.60
3/8	40	1 5/8"	11/16"	**9834K33**	5.64
3/8	60	2"	7/8"	**9834K43**	7.57
1/2	60	2"	7/8"	**9834K34**	7.26
1/2	70	2 3/8"	1 1/16"	**9834K44**	11.86
3/4	70	2 3/8"	1 1/16"	**9834K35**	13.12
1	100	2 1/2"	1 5/16"	**9834K36**	17.95

For information about mufflers, see page 366. For information about pipe size, see pages 2-3.

Push-to-Connect Mufflers

Decrease noise from manifolds with tubing connections—these have an unthreaded stem to slide into tube fittings and collets. Use with air. Filtration is not rated.

Plastic mufflers are more corrosion resistant than bronze. They reduce noise by 17-20 dB. Max. pressure is 145 psi. Max. temp. is 140°F.

Bronze mufflers withstand higher temperatures than plastic; max. temp. is 300°F. They reduce noise by 20 dB. Body is porous bronze and fitting is nickel-plated brass. Max. pressure is 175 psi.

Plastic

Bronze

Stem OD	Max. scfm @ 100 psi	Ht.	Dia.		
Plastic Mufflers					
1/4"	52	2 3/4"	3/4"	**8457T31**	$7.73
3/8"	117	3 1/8"	3/4"	**8457T32**	10.78
6 mm	27	2 1/16"	5/8"	**8457T51**	8.43
8 mm	42	2 7/8"	7/8"	**8457T52**	10.79
10 mm	95	3 11/16"	1"	**8457T53**	13.43
Bronze Mufflers					
4 mm	Not Rated	1 5/8"	1/2"	**8413T11**	9.21
6 mm	Not Rated	1 7/8"	9/16"	**8413T12**	12.68
8 mm	Not Rated	1 15/16"	9/16"	**8413T13**	13.45
10 mm	Not Rated	2 11/16"	3/4"	**8413T14**	13.57
12 mm	Not Rated	2 11/16"	3/4"	**8413T15**	18.17

Mufflers for Tubing

Make the right connection in applications that use tubing. Use with air. Mufflers have a porous bronze body.

Muffler with barbed fitting is for use with soft tubing. It reduces noise by 10-20 dB and traps particles down to 80 microns. Fitting is copper. Max. pressure is 170 psi. Max. temp. is 500°F.

Muffler with push-to-connect fitting is for use with semi-rigid tubing such as nylon, polyurethane, and FEP. It reduces noise by up to 16 dB. Filtration is not rated. Fitting is bronze. Max. pressure is 145 psi. Max. temp. is 140°F.

With Barbed Fitting

With Push-to-Connect Fitting

For Tube Size	Max. scfm @ 100 psi	Ht.	Hex Size/ Dia.		
With Barbed Fitting					
1/8" ID	4	1 1/16"	5/16"	**8535T11**	$4.83
With Push-to-Connect Fitting					
1/4" OD	63	1 1/2"	9/16"	**8535T23**	8.78

Clog-Resistant Mufflers

Replace your muffler less often—these have a filter design that stays clean longer than porous mufflers. They're often used in air-powered circuits.

Style A— A screw on top adjusts air flow. Mufflers reduce noise by 12-15 dB and trap particles down to 900 microns. Max. pressure is 150 psi. Max. temp. is 400°F.

Styles B&C— Mufflers reduce noise by 17-20 dB and trap particles down to 250 microns. Filter is wire mesh. ***Aluminum mufflers*** have a max. pressure of 300 psi. Max. temp. is 160°F. ***Nylon mufflers*** have a max. pressure of 150 psi. Max. temp. is 120°F.

A

B

With Female Connection

C

Pipe Size	Max. scfm @ 100 psi	Ht.	Hex Size		
With NPT Male Connection					
(A) Zinc-Plated Steel Mufflers					
1/8	35	1 1/16"	7/16"	**9869K91**	$5.22
1/4	52	1 5/8"	9/16"	**9869K92**	5.84
(B) Aluminum Mufflers					
1/8	20	1 7/8"	5/8"	**9993K31**	6.45
1/4	33	1 7/8"	5/8"	**9993K32**	6.45
3/8	81	3 1/4"	1"	**9993K33**	9.77
1/2	115	3 1/4"	1"	**9993K34**	9.77
3/4	175	4 5/8"	1 5/8"	**9993K35**	20.42
1	215	4 5/8"	1 5/8"	**9993K36**	20.42
(C) Nylon Mufflers					
1/8	20	2 1/8"	13/16"	**9992K21**	4.05
1/4	20	2 1/4"	13/16"	**9992K22**	4.05
3/8	65	3 7/16"	1 1/4"	**9992K23**	5.98
1/2	70	3 9/16"	1 1/4"	**9992K24**	5.98
With NPT Female Connection					
(B) Aluminum Mufflers					
1/4	33	1 7/8"	5/8"	**9993K42**	6.78
3/8	81	3 1/4"	1"	**9993K43**	10.30
1/2	115	3 1/4"	1"	**9993K44**	10.30
3/4	175	4 5/8"	1 5/8"	**9993K45**	21.38
1	215	4 5/8"	1 5/8"	**9993K46**	21.38
1 1/2	540	5 1/2"	2 1/2"	**9993K48**	60.70

Clog-Indicating Mufflers

Don't let an unexpected clog interrupt your work. These mufflers have a filter that slides up slowly as it clogs to indicate when the muffler should be replaced. Mufflers reduce noise by 30-35 dB and trap particles down to 70 microns. Use with air. Filter and fitting are plastic. Max. pressure is 100 psi. Max. temp. is 158°F. Max. scfm is not rated. Connection is NPT male.

Pipe Size	Ht.	Dia.		
1/8	1 3/8"	5/8"	**1182T11**	$16.64
1/4	1 11/16"	3/4"	**1182T12**	19.20
3/8	2 1/4"	1 1/16"	**1182T13**	24.32
1/2	2 7/8"	1 1/4"	**1182T14**	30.72

High Noise-Reducing Mufflers

Reduce noise by 30-35 dB. Mufflers trap particles down to 100 microns. Use with air. Filter is plastic. Max. pressure is 145 psi. Max. temp. is 140°F. Connection is NPT male.

Pipe Size	Max. scfm @ 100 psi	Ht.	Hex Size		
Plastic Mufflers					
1/4	106	2 1/2"	3/4"	**1213T11**	$5.27
3/8	176	3 5/16"	7/8"	**1213T12**	5.64
1/2	283	3 5/8"	1 1/16"	**1213T13**	6.14
Steel Mufflers					
3/4	640	4 1/4"	1 7/16"	**1213T14**	19.03
1	704	5 3/16"	1 5/8"	**1213T15**	23.19
1 1/4	1,059	7 7/8"	2 3/16"	**1213T16**	44.83
1 1/2	1,589	9 3/16"	2 3/8"	**1213T17**	46.18
2	2,825	10 3/8"	2 3/4"	**1213T18**	60.39

Flame-Resistant High Noise-Reducing Mufflers

Suitable for use with welding equipment, these mufflers are made of flame-resistant materials and reduce noise by 35-42 dB. They trap particles down to 100 microns. Use with air. Filter is PVF (polyvinyl fluoride) and fitting is PBT (polybutylene terephthalate). Max. pressure is 145 psi. Max. temp. is 140°F. Connection is NPT male.

Pipe Size	Max. scfm @ 100 psi	Ht.	Hex Size		
1/4	106	2 1/2"	3/4"	**1629T11**	$7.87
3/8	176	3 5/16"	15/16"	**1629T12**	8.00
1/2	283	3 3/4"	15/16"	**1629T13**	9.67

Compact High-Flow Mufflers

Get high-flow capacity in a small muffler. They reduce noise by 15-22 dB and trap particles down to 100 microns. Use with air and inert gas. Filter is wire mesh. Max. pressure is 250 psi. Max. temp. is 400°F.

With Male Connection

With Female Connection

Pipe Size	Max. scfm @ 100 psi	Ht.	Hex Size		
With NPT Male Connection					
Zinc-Plated Steel Mufflers					
1/8	48	1 3/8"	7/16"	**9835K41**	$4.81
1/4	105	1 3/4"	9/16"	**9835K42**	5.02
3/8	219	2 3/16"	11/16"	**9835K43**	6.88
1/2	332	2 3/4"	7/8"	**9835K44**	7.70
3/4	613	3 3/16"	1 1/16"	**9835K45**	11.41
1	876	3 7/8"	1 5/16"	**9835K46**	13.95
1 1/4	1,226	4 1/2"	1 11/16"	**9835K49**	21.31
1 1/2	1,576	5"	2"	**9835K47**	25.09
2	2,452	5 1/2"	2 3/8"	**9835K48**	30.73
Type 304 Stainless Steel Mufflers					
1/8	48	1 3/8"	7/16"	**9865K41**	19.53
1/4	105	1 3/4"	9/16"	**9865K42**	22.39
3/8	219	2 3/16"	11/16"	**9865K43**	25.52
1/2	332	2 3/4"	7/8"	**9865K44**	34.21
3/4	613	3 3/16"	1 1/16"	**9865K45**	58.52
1	876	3 7/8"	1 5/16"	**9865K46**	99.66
With NPS Female Connection					
Zinc-Plated Steel Mufflers					
1/8	48	1 3/4"	9/16"	**9835K51**	5.02
1/4	105	2 1/4"	11/16"	**9835K52**	6.88
3/8	219	2 3/4"	7/8"	**9835K53**	7.70
1/2	332	3 1/8"	1 1/16"	**9835K54**	11.41
With BSPT Male Connection					
Zinc-Plated Steel Mufflers					
1/8	48	1 3/8"	7/16"	**5806K51**	4.81
1/4	105	1 3/4"	9/16"	**5806K52**	5.02
3/8	219	2 3/16"	11/16"	**5806K53**	6.88
1/2	332	2 3/4"	7/8"	**5806K54**	7.70

For information about mufflers, see page 366. For information about pipe size, see pages 2-3.

High-Flow Mufflers

With Male Connection

Install a muffler that reduces noise without restricting air flow. Commonly used with high-flow air-powered equipment, such as diaphragm pumps and valves. Mufflers reduce noise by 17-22 dB and trap particles down to 5 microns. Use with air and inert gas. Housing is aluminum and stainless steel; filter is cellulose fiber. Max. pressure is 125 psi. Max. temp. is 290° F.

Pipe Size	Max. scfm @ 100 psi	Ht.	Dia.	Mufflers		Replacement Filter	
With NPT Male Connection							
1/8	48	3 1/8"	1 7/8"	4440K121	$8.90	4440K67	$5.49
1/4	92	4 3/8"	1 7/8"	4440K122	9.89	4440K68	7.20
3/8	210	5 1/8"	2 5/8"	4440K123	11.72	4440K69	7.89
1/2	280	6"	3 3/16"	4440K124	12.87	4440K72	8.57
3/4	595	7 3/16"	3 7/16"	4440K125	15.71	4440K73	9.37
1	876	8 3/4"	3 15/16"	4440K126	18.33	4440K74	11.43
1 1/4	1,489	8 3/4"	3 15/16"	4440K127	19.45	4440K75	11.43
1 1/2	2,277	13 9/16"	5 1/4"	4440K128	29.68	4440K76	23.43
2	3,504	18 7/8"	5 1/4"	4440K129	37.52	4440K77	28.46
3	7,884	22 15/16"	7"	4440K131	169.98	4440K78	18.86
4	15,330	23 9/16"	8"	4440K132	185.85	4440K79	27.54
6	39,420	30 15/16"	11"	4440K133	271.03	4440K82	39.09
With NPS Female Connection							
1/4	92	4"	1 7/8"	4440K142	9.89	4440K68	7.20
3/8	210	4 9/16"	2 5/8"	4440K143	11.72	4440K69	7.89
1/2	280	5 1/2"	3 3/16"	4440K144	12.87	4440K72	8.57
3/4	595	6 11/16"	3 7/16"	4440K145	15.71	4440K73	9.37
1	876	7 15/16"	3 15/16"	4440K146	18.33	4440K74	11.43
1 1/4	1,489	8"	3 15/16"	4440K147	19.45	4440K75	11.43
1 1/2	2,277	12 1/2"	5 1/4"	4440K148	29.68	4440K76	23.43
2	3,504	17 3/4"	5 1/4"	4440K149	37.52	4440K77	28.46

Oil-Mist-Recycling Mufflers

With Female Connection

Capture oil mist for reuse. Also known as reclassifiers, mufflers have a clear reservoir with a drain plug to hold and remove oil. They reduce noise by 35 dB and trap particles down to 0.3 micron. Use with air. Housing is aluminum and steel; filter is PET (polyethylene terephthalate). Reservoir is plastic. Max. pressure is 15 psi. Max. temp. is 140° F. Mufflers must be mounted vertically.

Pipe Size	Max. scfm @ 100 psi	Ht.	Dia.	Mufflers		Replacement Filter	
With NPT Female Connection							
1/4	12	3 1/2"	2 3/16"	7412K31	$45.47	7412K21	$26.76
3/8	28	4 3/4"	2 15/16"	7412K32	41.45	7412K22	32.35
1/2	84	6 13/16"	4 1/16"	7412K33	75.36	7412K23	64.12
3/4	84	6 13/16"	4 1/16"	7412K34	75.36	7412K23	64.12
With NPT Male Connection							
1	187	8 13/16"	4 5/8"	7412K35	93.74	7412K25	55.71
1 1/2	375	10 5/8"	5 5/16"	7412K36	182.75	7412K26	110.41
2	469	12 7/8"	6 1/16"	7412K37	251.02	7412K27	112.35

Parts-Ejecting End-Exhaust Mufflers

Use air to eject items from your conveyor—mufflers exhaust through narrow holes to provide a concentrated blast. They're also good for directing exhaust away from delicate applications. Mufflers reduce noise by up to 21 dB. Filtration is not rated. Use with air and inert gas. Body is steel and filter is acetal. Max. pressure is 175 psi. Max. temp. is 300° F. Connection is NPT male.

Pipe Size	Max. scfm @ 100 psi	Lg.	Hex Size		
1/8	24	1 3/8"	7/16"	9837K41	$5.57
1/4	37	1 3/4"	9/16"	9837K42	6.26
3/8	49	2 3/16"	11/16"	9837K43	6.46
1/2	74	2 3/4"	7/8"	9837K44	7.63
3/4	82	3 3/16"	1 1/16"	9837K45	10.93
1	110	3 7/8"	1 5/16"	9837K46	13.61

Oil-Mist-Eliminating Mufflers

With Male Connection

Keep oil mist under control. In addition to a cellulose fiber filter, these mufflers have a wool felt disc to trap oil. Often used with vacuum pumps and suction devices, they reduce noise by 17-23 dB without restricting flow. Mufflers trap particles down to 5 microns. Use with air and inert gas. Housing is aluminum and stainless steel. Max. pressure is 150 psi. Max. temp. is 290° F.

Pipe Size	Max. scfm @ 100 psi	Ht.	Dia.		
With NPT Male Connection					
1/8	48	3 1/8"	1 7/8"	9850K51	$9.25
1/4	92	4 3/8"	1 7/8"	9850K52	10.35
3/8	210	5 1/8"	2 5/8"	9850K53	13.75
1/2	280	6"	3 3/16"	9850K54	14.34
3/4	595	7 3/16"	3 3/8"	9850K55	17.94
1	876	8 3/4"	3 7/8"	9850K56	20.04
1 1/4	1,489	8 3/4"	3 7/8"	9850K57	22.20
1 1/2	2,277	13 9/16"	5 1/4"	9850K58	34.35
2	3,504	18 7/8"	5 1/4"	9850K59	41.84
3	7,884	22 15/16"	7"	9850K61	206.97
4	15,330	23 9/16"	8"	9850K62	230.99
With NPS Female Connection					
1	876	7 15/16"	3 7/8"	9850K76	20.04
1 1/2	2,277	12 1/2"	5 1/4"	9850K78	34.35
2	3,504	17 3/4"	5 1/4"	9850K79	41.84

Easy-to-Clean Mufflers

A

B

C

Get more from your muffler—these can be cleaned for an extended service life. Mufflers reduce noise by 20-30 dB. Use with air and inert gas. Max. pressure is 150 psi. Connection is NPT male.

Style A trap particles down to 80 microns. Body and filter are polyethylene. Max. temp. is 150° F.

Styles B&C trap particles down to 75 microns. Body is glass-filled polypropylene. Max. temp. is 175° F.

To Order: For *Styles B&C*, please specify filter material: polyethylene, brass, or stainless steel.

Pipe Size	Max. scfm @ 100 psi	Ht.	Dia.		
Polyethylene Mufflers					
A 10-32	0.7	15/16"	5/16"	4427K69	$2.36
A 1/8	13	1 3/16"	1/2"	4427K71	2.76
A 1/8	33	1 3/16"	1/2"	4427K81	2.91
A 1/4	24	1 1/2"	11/16"	4427K72	3.21
A 1/4	60	1 1/2"	11/16"	4427K82	3.42
A 3/8	51	2 5/8"	15/16"	4427K73	4.65
A 3/8	128	2 5/8"	15/16"	4427K83	4.92
A 1/2	60	2 5/8"	15/16"	4427K74	4.84
A 1/2	150	2 5/8"	15/16"	4427K84	5.11
A 3/4	78	5 13/16"	1 1/2"	4427K75	9.07
A 3/4	195	5 13/16"	1 1/2"	4427K85	9.53
A 1	88	6 5/8"	1 7/8"	4427K76	11.05
A 1	220	6 5/8"	1 7/8"	4427K86	11.40
Glass-Filled Polypropylene Mufflers					
B 1/8	75	2 3/8"	15/16"	4869K81	6.60
B 1/4	78	2 1/2"	15/16"	4869K82	6.60
B 3/8	98	3 1/2"	1 3/8"	4869K83	9.20
B 1/2	101	3 11/16"	1 3/8"	4869K84	9.20
B 3/4	115	5 5/8"	1 15/16"	4869K85	18.50
B 1	115	5 7/8"	1 15/16"	4869K86	18.50
C 1/8	83	1 3/4"	1 5/8"	4869K71	6.60
C 1/4	87	1 13/16"	1 5/8"	4869K72	6.60
C 3/8	95	2 13/16"	2"	4869K73	9.20
C 1/2	90	2 15/16"	2"	4869K74	9.20
C 3/4	120	4 1/8"	2 15/16"	4869K75	18.50
C 1	120	4 3/8"	2 15/16"	4869K76	18.50

Tank Flame Arresters

Minimize fire hazard from flammable vapors. Mount an arrester to your vent pipe to stop flames from traveling back into your tank. If the ambient temperature reaches 165° F, fusible links melt, and the cover closes to block flames from the arrester. To reuse the arrester, replace the fusible links (sold separately). Flame arrester is cast iron and aluminum. It's UL listed. Connection is 2 NPT female.

Tank Flame Arrester	1206K81	$626.67
Replacement Fusible Link	1206K85	8.00

For information about mufflers and vents, see page 366. For information about pipe size, see pages 2-3.

High-Flow Inline Mufflers

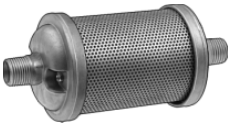

Maintain air flow while reducing exhaust noise from diaphragm pumps, valves, and other air-powered equipment. Mufflers reduce noise by 17-22 dB and trap particles down to 5 microns. Use with air and inert gas. Housing is aluminum and stainless steel; filter is cellulose fiber. Max. pressure is 125 psi. Max. temp. is 290° F. Connections are NPT male.

Pipe Size	Max. scfm @ 100 psi	Lg.	Dia.		
1/8	48	3 7/8"	1 7/8"	4395K51	$11.25
1/4	92	5 5/16"	1 7/8"	4395K52	12.18
3/8	210	6"	2 5/8"	4395K53	15.00
1/2	280	7"	3 3/16"	4395K54	16.76
3/4	595	8 1/4"	3 7/16"	4395K55	21.28
1	876	10 5/16"	3 15/16"	4395K56	25.40
1 1/4	1,489	10 3/8"	3 15/16"	4395K57	30.97
1 1/2	2,277	15 3/8"	5 1/4"	4395K58	42.82
2	3,504	20 3/4"	5 1/4"	4395K59	51.60

Heavy Duty Inline Mufflers

With Male Connections

Heavy duty steel construction provides durability for rugged environments. Mufflers have layered polyester packing to reduce noise by up to 30 dB with minimal pressure drop. They're ideal for large blowers, compressors, and vacuum pumps. Use with air and inert gas. Filtration is not rated. Max. temp. is 212° F. Max. pressure is not rated.

Pipe Size	Max. scfm @ 14.5 psi	Lg.	Dia.		
With NPT Male Connections					
1/2	25	14 1/2"	2 1/2"	5889K61	$85.82
3/4	35	14 1/2"	2 1/2"	5889K62	85.82
1	42	14 1/2"	2 1/2"	5889K63	85.99
1 1/4	55	14 1/2"	2 1/2"	5889K64	87.05
1 1/2	155	14"	2 5/8"	5889K65	114.15
2	270	18 1/2"	3 5/8"	5889K66	124.63
2 1/2	385	23 11/16"	4 5/8"	5889K67	191.70
3	575	28"	5 1/8"	5889K68	272.70
4	575	29 5/16"	10"	5889K69	351.90
With NPT Female Connections					
1	42	12"	2 1/2"	5889K71	82.08
1 1/4	55	12"	2 1/2"	5889K72	82.08
1 1/2	155	12"	2 5/8"	5889K73	108.64
2	270	15 3/4"	3 5/8"	5889K74	139.39
2 1/2	385	21"	4 5/8"	5889K75	191.70
3	575	26"	5 1/8"	5889K76	272.70
4	575	23 7/8"	10"	5889K77	351.90

Inline Mufflers for High-Frequency Noise

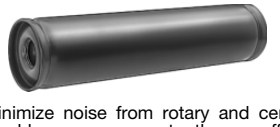

Designed to minimize noise from rotary and centrifugal blowers, vacuum pumps, and low-pressure vents, these mufflers reduce noise by up to 45 dB with minimal pressure drop. Use with air and inert gas. Filtration is not rated. Mufflers have a steel body and thick polywool packing. Max. pressure is 15 psi. Max. temp. is 325° F. Connections are NPT female.

Pipe Size	Max. scfm @ 14.7 psi	Lg.	Dia.		
1/2	12	8"	3 1/4"	8548T31	$63.00
3/4	25	11"	3 1/4"	8548T32	67.00
1	45	14"	3 1/4"	8548T33	69.00
1 1/4	70	16"	3 1/4"	8548T34	80.00
1 1/2	100	19 3/4"	4 1/4"	8548T35	89.00
2	180	26"	5 1/8"	8548T36	144.00
2 1/2	275	33 1/2"	6 1/8"	8548T37	205.00
3	400	36 1/2"	6 5/8"	8548T38	248.00
4	700	48 7/8"	8"	8548T39	399.00

Breather Vents

Protect against excess vacuum and pressure in cylinders, gear boxes, and tanks. You can also use these vents to block dirt from entering equipment; they trap particles down to 90 microns. Use with air and inert gas. Body is porous bronze with a plated steel fitting. Max. pressure is 150 psi. Max. temp. is 300° F.

With Male Connection

With Female Connection

Pipe Size	Max. scfm @ 100 psi	Ht.	Hex Size		
With UNF Male Connection					
10-32	6	3/8"	3/8"	9833K18	$1.23
With NPT Male Connection					
1/16	13	1/2"	3/8"	9833K19	1.23
1/8	2	7/16"	7/16"	9833K21	1.13
1/4	3	5/8"	9/16"	9833K22	1.43
3/8	7	3/4"	11/16"	9833K23	2.11
1/2	17	7/8"	7/8"	9833K11	2.67
3/4	20	1"	1 1/16"	9833K12	4.62
1	28	1 5/16"	1 5/16"	9833K13	9.27
1 1/4	50	1 7/16"	1 11/16"	9833K14	16.34
1 1/2	73	1 1/2"	2"	9833K15	16.13
2	1,095	1 5/8"	2 3/8"	9833K16	19.44
With NPT Female Connection					
1/8	26	5/8"	9/16"	9833K24	1.57
1/4	35	3/4"	11/16"	9833K25	1.97
3/8	87	15/16"	7/8"	9833K26	2.42
1/2	131	1"	1 1/16"	9833K27	3.80
With BSPT Male Connection					
1/8	26	7/16"	7/16"	9847K11	1.23
1/4	35	11/16"	9/16"	9847K12	1.57
3/8	87	13/16"	11/16"	9847K13	1.97
1/2	131	1"	7/8"	9847K14	2.42
3/4	219	1 1/16"	1 1/16"	9847K15	3.80

Corrosion-Resistant Breather Vents

Avoid corrosion in damp environments. These vents are often used to prevent excess pressure in cylinders, gear boxes, and tanks. They trap particles down to 100 microns. Use with air and inert gas. Connection is NPT male.

Type 316 stainless steel vents have a porous Type 316 stainless steel body with a Type 304 stainless steel fitting. Max. pressure is 150 psi. Max. temp. is 400° F.

Polypropylene vents can be cleaned with mineral spirits. Body and fitting are polypropylene. Max. pressure is 100 psi. Max. temp. is 150° F.

Type 316 Stainless Steel

Polypropylene

Pipe Size	Max. scfm @ 100 psi	Ht.	Hex Size/Dia.		
Type 316 Stainless Steel Vents					
1/8	26	1/2"	7/16"	4456K11	$5.16
1/4	35	11/16"	9/16"	4456K12	8.19
3/8	87	13/16"	11/16"	4456K13	10.45
1/2	131	15/16"	7/8"	4456K14	14.98
3/4	219	15/16"	1 1/16"	4456K15	38.01
1	306	1 1/4"	1 5/16"	4456K16	57.81
Polypropylene Vents					
1/8	1	7/16"	1/2"	4471K11	2.01
1/4	3	1/2"	11/16"	4471K12	2.29
3/8	9	11/16"	15/16"	4471K13	2.59
1/2	10	11/16"	15/16"	4471K14	2.76
3/4	20	1 1/8"	1 1/2"	4471K15	4.02
1	22	1 3/8"	1 7/8"	4471K16	5.17

Miniature Breather Vents

Prevent excess pressure in enclosures and manifolds. Use with air and inert gas. Connection is male.

Brass vent has a Buna-N rubber O-ring above the threads for a tight seal. Vent traps particles down to 40 microns. Body is porous bronze with a brass fitting. Max. pressure is 125 psi. Max. temp. is 200° F.

Type 316 stainless steel vents have a slotted head for installation with a screwdriver. Vents trap particles down to 10 microns. Body is porous Type 316 stainless steel. Max. pressure is 100 psi. Max. temp. is 750° F.

Brass

Type 316 Stainless Steel

Thread Size	Max. scfm @ 100 psi	Ht.	Hex Size/ Dia.		
Brass Vent					
10-32 UNF	1	7/16"	5/16"	8556T24	$4.80
Type 316 Stainless Steel Vents					
10-32 UNF	10	7/16"	3/16"	8584T31	15.00
5/16"-18 UNC	25	17/16"	5/16"	8584T32	18.33
3/8"-16 UNC	50	1"	3/8"	8584T33	18.33

For information about vents, see page 366. For information about pipe size, see pages 2-3.

Moisture-Eliminating Breather Vents

Keep rust and corrosion from forming inside your tank—vents contain silica gel that absorbs moisture. They also trap particles down to 3 microns. Use with air and inert gas. Body is nylon and clear polycarbonate; filter is polyester. Replace vents when the silica gel reaches maximum absorption, changing from blue to pink. Max. flow is 16 scfm @ 1 psi. Max. pressure is not rated. Max. temp. is 200° F. Connection is NPT male.

Pipe Size	For Tank Size, gals.	Ht.	Dia.		
1	5 to 200	6 1/8"	4"	3297T31	$65.51
1	5 to 350	8 1/8"	4"	3297T33	76.82
1	5 to 500	10 1/8"	4"	3297T35	85.86

Weather-Resistant Breather Vents

Shield outdoor pipe and tank openings from the environment. Also known as vent caps, these have screens to allow air flow while blocking debris. Use with air. Flow, pressure, and temperature are not rated.

Style A trap particles down to 140 microns. Screen is Type 304 stainless steel 100 mesh.

Style B trap particles down to 880 microns. Screen is Type 304 stainless steel 30 mesh.

Style C have two outlets for greater flow. They trap particles down to 1,190 microns. Screen is brass 16 mesh.

Style D have a set screw to secure in place. Screen is zinc-plated steel with 1/8" perforations. Filtration is not rated.

Pipe Size	Ht.	Dia.		
With NPT Male Connection				
(A) Zinc-Plated Steel Vents				
3/8	1 1/4"	1 1/4"	36635K38	$10.42
1/2	1 7/16"	1 1/4"	36635K39	10.93
With NPT Female Connection				
(B) Zinc-Plated Cast Iron Vents				
3/4	1 3/16"	1 13/16"	36635K41	6.20
1	1 5/16"	2 1/4"	36635K42	8.00
1 1/4	1 3/8"	2 3/4"	36635K43	9.20
1 1/2	1 1/2"	3 1/8"	36635K44	11.14
2	1 11/16"	3 7/8"	36635K45	16.36
3	2 1/2"	5 1/2"	36635K46	51.34
4	2 1/2"	6 1/2"	36635K47	60.16
(C) Cast Iron Vents				
3/4	1 1/2"	4 11/16" Lg.	4815K11	15.20
1	1 1/2"	4 11/16" Lg.	4815K12	15.20
1 1/4	1 7/8"	7 11/16" Lg.	4815K13	26.47
1 1/2	1 7/8"	7 11/16" Lg.	4815K14	27.47
2	2 3/16"	8 1/4" Lg.	4815K15	31.50
With Slip-On Connection				
(D) Zinc-Plated Steel Vents				
1	1 1/2"	2 1/2"	36635K51	3.00
1 1/4	1 1/2"	2 1/2"	36635K52	2.64
1 1/2	1 3/4"	2 3/4"	36635K53	3.96
2	2 3/4"	4"	36635K54	9.52

Breather Vents with Splash Guard

Steel

Polyamide

Vent oil containers for easier dispensing—a guard blocks splashing oil from the vent to prevent clogs. Ideal for containers that are often filled and drained. Max. flow is not rated. Connection is NPT male.

Steel vents have a max. pressure of 125 psi. Max. temp. is 400° F. Filtration is not rated.

Polyamide vents trap particles down to 40 microns. Max. pressure is not rated. Max. temp. is 210° F.

Pipe Size	Ht.	Dia.		
Steel Vents				
1/8	3/4"	7/16"	8631T11	$3.64
3/8	1"	11/16"	8631T12	4.49
1/2	1 1/8"	7/8"	8631T13	12.02
Polyamide Vents				
1/4	1 9/16"	1 11/16"	8631T21	4.84
3/8	1 3/4"	1 11/16"	8631T22	5.95
1/2	1 13/16"	1 11/16"	8631T23	5.81
3/4	1 13/16"	1 11/16"	8631T24	4.84

Submersible Breather Vents

Polycarbonate

Aluminum

Stainless Steel

Rated NEMA 6 to withstand periodic submersion in water, install these vents in enclosures to stop the build up of pressure and vacuum. They trap particles down to 3 microns. Use with air. Filter is acrylic. Max. flow is not rated. Max. pressure is 4 psi. Max. temp. is 158° F. Vents are also for use with enclosures that are rated NEMA 4, 12, and 13 for washdown environments and splashing oil and coolant. Connection is male.

Thread Size	Ht.	Dia.		
With Polycarbonate Fitting with Mounting Nut				
M16	15/16"	1 1/16"	1226T12	$9.00
With Aluminum Fitting				
10-32 UNF	1/4"	3/8"	1226T15	17.90
M8	9/16"	9/16"	1226T14	26.50
With Stainless Steel Fitting				
M3	5/16"	1/4"	1226T13	19.00

Self-Draining Breather Vents

Minimize moisture buildup in enclosures. Also known as drain plugs, these have a small outlet that allows condensation to drain. Vents also have a silicone O-ring above the threads for a tight seal. Use with air. Filter is porous bronze. Max. flow and pressure are not rated. Max. temp. is 320° F. Install at the lowest point of the enclosure. Vents meet IP66 for protection from dust and washdown environments. Connection is NPT male.

Pipe Size	Ht.	Dia.		
With Brass Fitting				
1/4	15/16"	11/16"	8602T11	$31.43
1/2	15/16"	1"	8602T12	30.00
With Type 316 Stainless Steel Fitting				
1/4	15/16"	11/16"	8602T31	55.94
1/2	15/16"	1"	8602T32	88.20

Breather Vents with Lockable Cap

Secure access to vented openings in pipe and tanks—the cap can be locked to prevent tampering; it accepts a padlock (not included) with a 3/8" shackle diameter. Use with water and air. Body and cover are aluminum; screen is brass. Max. flow and pressure are not rated. Max. temp. is 200° F. Connection is NPT male.

Pipe Size	Ht.	Dia.		
2	4 1/2"	5 5/8"	4906K11	$34.30

Flange-Mount Breather Vents with Cap

Nylon

Stainless Steel

Lockable Stainless Steel

Add a convenient filling port to your hydraulic tank while also protecting against excess pressure and vacuum. Vents also stop dirt from entering your tank; they trap particles down to 40 microns. Use with oil and air. Max. pressure is not rated. Mount on top of standard tank openings with included hardware. Flange has six 3/16" bolt holes; bolt hole circle is 2 7/8".

Lockable stainless steel vent prevents tampering; it accepts a padlock (not included) with a 3/8" shackle diameter.

Req'd Tank Opening	O'all Ht.	Max. Temp.	Max. gpm	Cap Material		
Nylon Vents						
2 1/8"	5 5/8"	220° F	20	SS	4473K14	$15.80
2 5/16"	6 1/4"	200° F	190	Steel	4473K52	29.36
2 5/16"	6 5/16"	200° F	Not Rated	Nylon	4473K42	14.82
Stainless Steel Vents						
2 1/8"	4 3/4"	220° F	20	SS	4473K21	12.93
2 1/8"	5 5/16"	250° F	192	Steel	4473K22	12.17
Lockable Stainless Steel Vent						
2 5/16"	5 1/16"	200° F	Not Rated	Steel	4473K41	30.63

For information about filters, see page 366. For information about pipe size, see pages 2-3.

Air-Intake Filters

Stop dust and other contaminants from entering your process and equipment. These air-intake filters come with a polyester element that removes 99% of particles down to 5 microns. They're commonly used on blowers, compressors, engines, and in hydraulic systems. Use with air and inert gas. Filters have a steel housing. Max. temp. is 220° F. 4399K33 has a larger element than 4399K48 for greater dirt-holding capacity.

Filters with silencer reduce intake noise by up to 15 dB while maximizing air flow.

Replacement elements are sold separately. *Polyester elements* remove 99% of particles down to 5 microns. *Paper elements* remove 99% of particles down to 2 microns. *HEPA elements* have greater efficiency for high-purity applications. They remove 99.9% of particles down to 0.3 micron but reduce the max. scfm of your filter.

With NPT Male Connection

With Flange Connection

Pipe Size	Max. scfm	Filters Ht.	Filters Dia.	Filters Without Silencer		Filters With Silencer		Replacement Element Ht.	ID	OD	Polyester		Paper		HEPA	
With NPT Male Connection																
1/2	10	4"	6"	4399K41	$27.00	9828K61	$27.11	2 5/16"	3"	4 3/8"	4399K51	$10.58	4399K11	$5.35	9179K11	$31.83
3/4	25	4"	6"	4399K42	28.12	9828K62	28.55	2 5/16"	3"	4 3/8"	4399K51	10.58	4399K11	5.35	9179K11	31.83
1	35	4"	6"	4399K22	28.12	9828K63	29.68	2 5/16"	3"	4 3/8"	4399K51	10.58	4399K11	5.35	9179K11	31.83
1	55	7"	6"	4399K43	42.38	—	—	4 3/4"	3"	4 3/8"	4399K52	16.50	4399K12	9.78	9179K12	46.10
1 1/4	70	7"	6"	4399K44	42.11	9828K44	48.64	4 3/4"	3"	4 3/8"	4399K52	16.50	4399K12	9.78	9179K12	46.10
1 1/2	85	7"	6"	4399K45	44.52	9828K45	49.61	4 3/4"	3"	4 3/8"	4399K52	16.50	4399K12	9.78	9179K12	46.10
2	135	8"	8"	4399K46	63.37	9828K46★	99.74	4 3/4"	3 5/8"	5 3/4"	4399K53	23.52	4399K13	16.77	9179K13	76.83
2	135	13"	10"	4399K31	144.64	9828K55	178.93	9 1/2"	3 5/8"	5 3/4"	4399K54	47.84	4399K14	29.80	9179K21	131.71
2 1/2	195	8"	8"	4399K47	72.86	9828K47★	108.21	4 3/4"	3 5/8"	5 3/4"	4399K53	23.52	4399K13	16.77	9179K13	76.83
2 1/2	195	13"	10"	4399K32	151.07	9828K56	178.93	9 1/2"	3 5/8"	5 3/4"	4399K54	47.84	4399K14	29.80	9179K21	131.71
3	300	13"	10"	4399K48	156.43	9828K48	184.29	9 1/2"	3 5/8"	5 3/4"	4399K54	47.84	4399K14	29.80	9179K21	131.71
3	300	13"	10"	4399K33	172.07	9828K49■	325.00	9 5/8"	4 3/4"	7 7/8"	4399K55	69.25	4399K15	45.00	9179K22	274.39
4	520	14"	10"	4399K49	196.07	9828K51■	335.00	9 5/8"	4 3/4"	7 7/8"	4399K55	69.25	4399K15	45.00	9179K22	274.39
4	520	14"	16"	4399K34	309.64	9828K57	364.00	9 5/8"	6"	9 3/4"	4399K56	126.78	4399K16	54.00	9179K23	323.18
5	800	14"	16"	4399K61	311.93	9828K29	421.00	9 5/8"	6"	9 3/4"	4399K56	126.78	4399K16	54.00	9179K23	323.18
6	1,100	15"	16"	4399K62	357.95	9828K31	413.05	9 5/8"	8"	11 3/4"	4399K39	146.25	4399K17	79.42	9179K24	391.97
With Class 125/150 Flange Connection																
4	520	14"	10"	4399K84	246.48	9828K85■	360.00	9 5/8"	4 3/4"	7 7/8"	4399K55	69.25	4399K15	45.00	9179K22	274.39
6	1,100	15"	16"	4399K86	439.77	9828K87	467.10	9 5/8"	8"	11 3/4"	4399K39	146.25	4399K17	79.42	9179K24	391.97
8	1,800	23"	23"	—	—	9828K88	1,024.58	14 1/2"	9"	14 5/8"	4399K97	308.77	4399K18	196.87	9179K25	846.00
10	3,300	23"	29"	—	—	9828K89	1,177.69	14 1/2"	14"	19 5/8"	4399K98	398.13	4399K19	230.62	9179K26	1,125.00

★ Diameter is 10". ■ Diameter is 16".

Compact Air-Intake Filters

Clean the air going into small blowers and air-powered equipment in tight spaces. Use with air and inert gas. Max. temp. is 220° F. Connection is NPT male.

Filters without silencer remove 99% of particles down to 5 microns. Element is polyester. Filters do not have a housing.

Filters with silencer reduce intake noise by up to 15 dB. They remove 99% of particles down to 2 microns. Housing is steel; element is paper.

Without Silencer

With Silencer

Pipe Size	Max. scfm	Filters Ht.	Filters Dia.			Replacement Element Ht.	ID	OD		
Without Silencer										
1/4	7	3"	1 3/4"	4401K11	$15.64	—	—	—	—	—
3/8	7	3"	1 3/4"	4401K12	16.31	—	—	—	—	—
1/2	10	4"	4 1/2"	4401K13	27.51	2 5/16"	3"	4 3/8"	4399K51	$10.58
1	35	4"	4 1/2"	4401K15	29.93	2 5/16"	3"	4 3/8"	4399K51	10.58
1 1/4	70	6 5/8"	4 1/2"	4401K6	39.94	4 3/4"	3"	4 3/8"	4399K52	16.50
1 1/2	85	6 5/8"	4 1/2"	4401K17	41.12	4 3/4"	3"	4 3/8"	4399K52	16.50
2	135	7 1/4"	6"	4401K18	53.49	4 3/4"	3 5/8"	5 3/4"	4399K53	23.52
3	300	13"	6"	4401K21	120.38	9 1/2"	3 5/8"	5 3/4"	4399K54	47.84
With Silencer										
1/4	4	2 1/8"	2 1/2"	98305K73	14.76	1"	—	2 1/4"	98305K85	4.94
3/8	8	2 1/8"	2 1/2"	98305K74	14.76	1"	—	2 1/4"	98305K85	4.94
3/8	8	2 15/16"	3 1/4"	98305K76	17.12	1 3/8"	—	3"	98305K86	5.05
1/2	8	2 1/8"	2 1/2"	98305K75	15.37	1"	—	2 1/4"	98305K85	4.94
1/2	12	2 15/16"	3 1/4"	98305K77	17.12	1 3/8"	—	3"	98305K86	5.05
1/2	12	3 1/4"	4 1/8"	98305K78	25.96	1 3/8"	—	4"	98305K87	6.92
3/4	12	2 15/16"	3 1/4"	98305K82	20.09	1 3/8"	—	3"	98305K86	5.05
3/4	25	3 1/4"	4 1/8"	98305K79	27.16	1 3/8"	—	4"	98305K87	6.92
1	35	3 1/4"	4 1/8"	98305K81	28.32	1 3/8"	—	4"	98305K87	6.92

Replacement Elements for Air Compressor and Blower Intake Filters

If you don't see the replacement element you need, just tell us what you're looking for and we'll get it for you.

Replacement Elements for Ingersoll Rand Air Compressor Intake Filters

Ht.	ID	OD	For Compressor Model Number	Paper Element	
2 5/16"	3"	4 3/8"	2340L5, 2475N7.5	1208T41	$29.90
4 3/4"	3"	4 3/8"	2545E10V, 2545K10V, 7100E15	1208T42	46.80

Replacement Elements for Air Compressor and Blower Intake Filters

Ht.	ID	OD	Paper Element		Polyester Element	
2"	4"	5 13/16"	8661T61	$12.89	8661T71	$20.30
2 1/2"	4 5/16"	6 1/16"	8661T62	13.56	8661T72	22.62
4"	7 1/4"	9 3/4"	1208T11	24.00	1208T21	44.20
6"	7 1/4"	9 3/4"	8661T63	32.29	8661T73	62.00
7"	9 13/16"	11 9/16"	1208T12	34.66	1208T22	62.60
8 1/2"	11 5/8"	13 5/8"	1208T13	38.74	1208T23	76.40
9 1/4"	13"	17"	1208T14	133.60	1208T24	238.80
13 1/8"	19"	23"	1208T15	202.46	1208T25	397.32

For information about filters, see page 366. For information about pipe size, see pages 2-3.

Corrosion-Resistant Air-Intake Filters

The polypropylene housing withstands damp environments and is impact resistant. Filters come with a polyester element that removes 99% of particles down to 10 microns. Use with air and inert gas. Max. temp. is 200° F. Connection is NPT male.

Filters with silencer reduce noise by up to 10 dB.

Replacement elements are sold separately. They remove 99% of particles down to 10 microns. *Polyester elements* have 50% more dust-holding capacity than paper.

	FILTERS					REPLACEMENT ELEMENT				
Pipe Size	Max. scfm @ 100 psi	Ht.	Dia.	Without Silencer	With Silencer	Ht.	ID	OD	Polyester	Paper
1/4	10	3 3/4"	3 1/4"	4369K31 $15.20	—	2 1/4"	1 1/8"	2 1/4"	4369K37 $2.78	4369K38 $2.45
3/8	10	3 3/4"	3 1/4"	4369K33 14.28	—	2 1/4"	1 1/8"	2 1/4"	4369K37 2.78	4369K38 2.45
1/2	10	3 3/4"	3 1/4"	4369K35 15.44	—	2 1/4"	1 1/8"	2 1/4"	4369K37 2.78	4369K38 2.45
1/2	30	5"	6 3/4"	9228K11 17.00	4424K71 $18.18	2 5/16"	3"	4 3/8"	9228K21 6.66	9228K31 4.20
3/4	30	5"	6 3/4"	9228K12 17.88	4424K72 18.27	2 5/16"	3"	4 3/8"	9228K21 6.66	9228K31 4.20
1	30	5"	6 3/4"	9228K13 18.90	4424K73 19.69	2 5/16"	3"	4 3/8"	9228K21 6.66	9228K31 4.20
1	60	7"	6 3/4"	9228K14 23.17	—	4 3/4"	3"	4 3/8"	9228K22 8.84	9228K32 6.56
1 1/4	60	7"	6 3/4"	9228K15 24.00	4424K74 29.55	4 3/4"	3"	4 3/8"	9228K22 8.84	9228K32 6.56
1 1/2	60	7"	6 3/4"	9228K16 24.72	4424K75 30.79	4 3/4"	3"	4 3/8"	9228K22 8.84	9228K32 6.56
2	100	7 1/2"	10"	—	4424K76 56.09	4 3/4"	3 5/8"	5 3/4"	9228K23 18.02	9228K33 11.16
2 1/2	100	7 1/2"	10"	—	4424K77 60.98	4 3/4"	3 5/8"	5 3/4"	9228K23 18.02	9228K33 11.16
3	100	7 1/2"	10"	—	4424K78 62.09	4 3/4"	3 5/8"	5 3/4"	9228K23 18.02	9228K33 11.16

Vacuum Filters

Female Connections

Ensure clean air going in and coming out of vacuum pumps. Housing is steel. Max. temp. is 220° F. Connections are NPT.

For Air Intake— Install these on the inlet to stop dust from entering your system. They come with a polyester element that removes 99% of particles down to 5 microns. Use with air and inert gas. Max. vacuum is 29.9" Hg. Inlet is on the side and outlet is on the bottom.

Replacement elements for air intake are sold separately. *Polyester elements* remove 99% of particles down to 5 microns. *Paper elements* remove 99% of particles down to 2 microns. *HEPA elements* have greater efficiency for high-purity applications. They remove 99.9% of particles down to 0.3 micron but reduce the max. scfm of your filter.

For Air Exhaust— Install these on the outlet to prevent oil mist from escaping into your environment. They come with a fiberglass element that removes particles down to 0.3 micron. Use with air. Inlet is on the bottom and outlet is on the side. *Filters with 1 and 1 1/2 pipe size* have a max. pressure of 3 psi; *2 pipe size* has a max. pressure of 14.7 psi.

Replacement elements for air exhaust are sold separately. They are fiberglass and remove particles down to 0.3 micron.

	FILTERS				REPLACEMENT ELEMENT					
Pipe Size	Max. scfm	Ht.	Dia.		Ht.	ID	OD	Polyester	Paper	HEPA
For Air Intake— *Female Connections*										
3/8	18	3 5/8"	3 3/4"	5169K71 $75.44	2 11/16"	1 1/2"	2 1/2"	5169K31 $11.25	4399K71 $8.61	9179K14 $40.61
1/2	18	3 5/8"	3 3/4"	5169K72 77.99	2 11/16"	1 1/2"	2 1/2"	5169K31 11.25	4399K71 8.61	9179K14 40.61
1/2	20	4 3/8"	5 7/8"	5169K82 88.04	2 3/4"	2 3/8"	3 7/8"	5169K91 11.80	4399K72 7.65	9179K15 45.55
3/4	24	3 3/4"	3 3/4"	5169K73 81.13	2 11/16"	1 1/2"	2 1/2"	5169K31 11.25	4399K71 8.61	9179K14 40.61
3/4	25	4 3/8"	5 7/8"	5169K83 88.04	2 3/4"	2 3/8"	3 7/8"	5169K91 11.80	4399K72 7.65	9179K15 45.55
1	40	6 3/4"	7 5/16"	5169K84 120.59	4 3/4"	2 9/16"	5"	5169K92 23.62	4399K73 16.54	9179K16 82.32
1 1/4	60	6 3/4"	7 5/16"	5169K85 120.59	4 3/4"	2 9/16"	5"	5169K92 23.62	4399K73 16.54	9179K16 82.32
1 1/2	80	6 3/4"	7 5/16"	5169K86 122.55	4 3/4"	2 9/16"	5"	5169K92 23.62	4399K73 16.54	9179K16 82.32
2	175	10 1/4"	8 3/4"	5169K87 309.80	8 3/4"	3 1/2"	5 7/8"	5169K93 42.85	4399K74 29.25	9179K17 153.66
2 1/2	210	10 1/2"	8 3/4"	5169K88 320.59	8 3/4"	3 1/2"	5 7/8"	5169K93 42.85	4399K74 29.25	9179K17 153.66
3	300	15 3/4"	13 1/4"	5169K74 674.51	10"	4 7/8"	9 1/4"	5169K32 150.37	4399K75 82.91	9179K73 341.27
For Air Intake— *Male Connections*										
3	300	27 1/8"	14"	5169K89 725.00	9 5/8"	4 3/4"	7 7/8"	4399K55 69.25	4399K15 45.00	9179K22 274.39
4	520	27 1/8"	14"	5169K99 752.60	9 5/8"	4 3/4"	7 7/8"	4399K55 69.25	4399K15 45.00	9179K22 274.39
For Air Exhaust— *Female Connections*										
1	40	6 3/4"	7 5/16"	51685K81 225.49	4 3/4"	2 9/16"	5"	51685K71■ 63.18	—	—
1 1/2	50	6 3/4"	7 5/16"	51685K83 230.39	4 3/4"	2 9/16"	5"	51685K71■ 63.18	—	—
2	125	11 1/4"	8 3/4"	51685K84 463.73	8 7/16"	3 1/2"	5 7/8"	51685K72■ 104.21	—	—

■ Element is fiberglass.

High-Flow Vacuum Filters

Accommodate the flow capacity of large pipe for air and inert gas. Filters remove particles down to 5 microns. Housing is aluminum and steel; element is polyester. Max. vacuum is 29.9" Hg. Max. temp. is 220° F. Connections are NPT female. 9825K11 is 13" Ht. × 9" Dia.; 9825K14 is 18 7/8" Ht. × 13 1/2" Dia.

Pipe Size	Max. scfm @ 14.7 psi	Filters	Replacement Element
2	175	9825K11 $415.60	5169K93 $42.85
4	520	9825K14 692.67	4399K55 69.25

Extended-Life Vacuum Filters

Spend less time on maintenance. These filters combine the long service life of a durable steel housing with high dirt-holding capacity. They remove particles down to 10 microns. Use with air and inert gas. Element is polyester. Max. vacuum is 29.9" Hg. Max. temp. is 200° F. Filters are 12 3/4" Ht. × 3 5/8" Dia. Connections are NPT female.

Pipe Size	Max. scfm @ 14.7 psi	Filters	Replacement Element
1/2	15	4392K51 $304.20	4392K41 $59.62
3/4	26	4392K52 309.40	4392K41 59.62
1	40	4392K53 314.78	4392K41 59.62

Easy-View Vacuum Filters

Monitor the amount of debris in your filter—housing is clear polypropylene. Filters remove particles down to 50 microns. Use with air, inert gas, and water. Element is Type 304 stainless steel. Max. vacuum is 29.9" Hg. Max. temp. is 125° F. Connections are NPT female. 6201K7 is 9 1/4" Ht. × 5 1/2" Dia.; 6201K8 is 14 1/8" Ht. × 5 1/2" Dia.

Pipe Size	Max. scfm @ 14.7 psi	Filters	Replacement Element
3/4	4	6201K7 $130.98	6201K5 $45.98
3/4	15	6201K8 153.60	6201K6 53.86

Miniature Vacuum Filters

Use one of these filters in a tight spot or combine up to ten for a manifold application. They remove particles down to 30 microns. Use with air and nitrogen. Housing is aluminum; element is polyester. Max. vacuum is 29.8" Hg. Max. temp. is 140° F. Connections are NPT female. 6689K36 is 2 3/4" Lg. × 11/16" Wd.; 6689K37 is 2 3/4" Lg. × 1 1/8" Wd.

Pipe Size	Max. scfm @ 14.7 psi	Filters	Replacement Element
1/8	1.8	6689K36 $31.75	6689K39 $10.07
1/4	7.1	6689K37 38.12	6689K41 10.90

For information about pipe size, see pages 2-3.

About Strainers and Selecting Screen Size

Install strainers before valves, pumps, and instrumentation to prevent damage from debris in your pipeline. They have a screen that is sized to trap the particles you wish to remove. Unthread the plug to clear debris without detaching pipe connections.

Selecting Screen Size

For Small or Medium Particles—Strainers have screens made of wire cloth. Screen size is determined by mesh size, which is the number of openings in a linear inch of the screen. For more information about wire cloth and mesh size, see page 409. ***20 mesh*** traps medium particles. It is the most commonly used screen size and is considered the industry standard.

For Large Particles—Strainers have screens made of perforated metal. Screen size is determined by perforation size, which is the actual diameter of the holes in the screen. Perforated screens are more rigid and durable than mesh screens for a longer service life in harsh environments. They are also good for maintaining flow when straining thick liquids.

Common Particle Sizes and Corresponding Screen Sizes

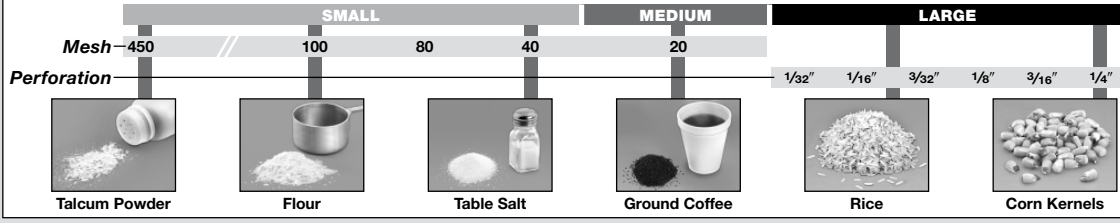

Bronze Y-Strainers

- Max. Pressure: Water, Oil, Inert Gas, and Diesel Fuel: 200 psi @ 70° F
  Steam: 125 psi @ 400° F
- Temp. Range: –20° to 400° F

Safeguard against damage to valves, pumps, nozzles, and steam traps from debris in your pipeline. Body is bronze and screen is Type 304 stainless steel. Connections are NPT female.

To Order: For *small and large particles*, please specify screen size: mesh or perforations.

Pipe Size	Lg.	Ht.	Plug Pipe Size	Strainer		Replacement Screen	
For Medium Particles—*Screen is 20 mesh.*							
1/4	3 3/16″	2 15/16″	3/8	43935K61	$21.67	43935K881	$8.59
3/8	3 3/16″	2 15/16″	3/8	43935K22	21.07	43935K822	8.70
1/2	3 3/16″	2 15/16″	3/8	43935K23	21.52	43935K832	8.81
3/4	3 15/16″	3 3/8″	3/8	43935K24	26.52	43935K842	9.04
1	4 1/2″	3 15/16″	1/2	43935K25	38.26	43935K852	11.66
1 1/4	5 5/16″	4 7/16″	1/2	43935K26	54.78	43935K862	14.52
1 1/2	6 3/16″	5 1/16″	1/2	43935K27	75.43	43935K872	19.77
2	7 7/16″	6 1/8″	1/2	43935K28	127.83	43935K882	30.95
2 1/2	9″	7 1/2″	1/2	43935K39	233.20	43935K884	40.00
For Small Particles—*Specify 40, 60, 80, 100, 150, or 200 mesh.*							
1/4	3 3/16″	2 15/16″	3/8	43935K91	35.85	43935K92	16.20
3/8	3 3/16″	2 15/16″	3/8	43935K52	33.97	43935K72	16.20
1/2	3 3/16″	2 15/16″	3/8	43935K53	34.45	43935K73	26.00
3/4	3 15/16″	3 3/8″	3/8	43935K54	40.65	43935K74	27.40
1	4 1/2″	3 15/16″	1/2	43935K55	49.91	43935K75	29.60
1 1/4	5 5/16″	4 7/16″	1/2	43935K56	69.94	43935K76	38.00
1 1/2	6 3/16″	5 1/16″	1/2	43935K57	101.85	43935K77	49.40
2	7 7/16″	6 1/8″	1/2	43935K58	147.73	43935K78	76.00
2 1/2	9″	7 1/2″	1/2	43935K59	284.24	43935K79	156.00
For Large Particles—*Specify 1/16″ or 1/8″ perforations.*							
1/2	3 3/16″	2 15/16″	3/8	43935K133	51.30	43935K163	15.12
3/4	3 15/16″	3 3/8″	3/8	43935K134	63.90	43935K164	16.10
1	4 1/2″	3 15/16″	1/2	43935K135	77.40	43935K165	21.14
1 1/4	5 5/16″	4 7/16″	1/2	43935K136	108.00	43935K166	25.48
1 1/2	6 3/16″	5 1/16″	1/2	43935K137	144.00	43935K167	32.90
2	7 7/16″	6 1/8″	1/2	43935K138	235.80	43935K168	47.60
2 1/2	9″	7 1/2″	1/2	43935K139	401.40	43935K169	79.80

Bronze Y-Strainers with Magnetic Plug

- Max. Pressure:
  Water, Oil, Inert Gas, Acetone, and Diesel Fuel: 400 psi @ 70° F
  Steam: 235 psi @ 400° F
- Temp. Range: –20° to 400° F

Catch small ferrous particles—strainers have a magnet in the plug and a 40 mesh screen. Body is bronze and screen is Type 304 stainless steel. Connections are NPT female.

Pipe Size	Lg.	Ht.	Plug Pipe Size	Strainer		Replacement Screen	
1	4 1/8″	4 1/16″	1/4	4495K43	$214.17	4385K25	$35.71
2	6 5/8″	7 1/16″	3/4	4495K46	418.33	4385K83	97.86

Cast Iron Y-Strainers

- Max. Pressure: Water, Oil, Inert Gas, Acetone, and Diesel Fuel: 400 psi @ 70° F
  Steam: 250 psi @ 406° F
- Temp. Range: –20° to 406° F

A rugged cast iron body provides strength and durability while protecting valves, pumps, and steam traps from debris. Screen is Type 304 stainless steel. Connections are NPT female.

To Order: For *small and large particles*, please specify screen size: mesh or perforations.

Pipe Size	Lg.	Ht.	Plug Pipe Size	Strainer		Replacement Screen	
For Medium Particles—*Screen is 20 mesh.*							
1/4	3″	3 1/2″	3/8	4417K17	$13.17	4417K31	$10.00
3/8	3″	3 1/2″	3/8	4417K19	13.17	4417K32	10.00
1/2	3″	3 1/2″	3/8	4417K21	13.17	4417K33	10.00
3/4	4″	4 1/2″	1/2	4417K22	17.07	4417K34	10.98
1	4 7/8″	5 3/16″	3/4	4417K23	22.93	4417K35	11.95
1 1/4	5 1/8″	5 15/16″	3/4	4417K24	28.06	4417K36	14.63
1 1/2	5 3/4″	6 3/16″	1	4417K25	35.78	4417K37	20.49
2	7 1/4″	7 13/16″	1 1/4	4417K26	60.89	4417K58	28.29
2 1/2	8 7/8″	9 7/8″	1 1/4	4417K11	136.00	4417K42	92.00
3	10″	10 15/16″	1 1/2	4417K12	188.00	4417K43	112.00
For Small Particles—*Specify 40, 60, 80, 100, 150, or 200 mesh.*							
1/4	3″	3 1/2″	3/8	4417K61	22.68	4417K72	14.63
3/8	3″	3 1/2″	3/8	4417K62	22.68	4417K73	14.63
1/2	3″	3 1/2″	3/8	4417K63	22.87	4417K74	17.80
3/4	4″	4 1/2″	1/2	4417K64	26.29	4417K75	20.49
1	4 7/8″	5 3/16″	3/4	4417K65	34.19	4417K76	26.34
1 1/4	5 1/8″	5 15/16″	3/4	4417K66	44.97	4417K77	30.00
1 1/2	5 3/4″	6 3/16″	1	4417K67	52.29	4417K78	38.78
2	7 1/4″	7 13/16″	1 1/4	4417K68	87.48	4417K79	56.34
2 1/2	8 7/8″	9 7/8″	1 1/4	4417K69	92.73	4417K81	90.24
3	10″	10 15/16″	1 1/2	4417K71	124.00	4417K82	92.00
For Large Particles—*Specify 1/32″, 1/16″, or 1/8″ perforations.*							
1/2	3″	3 1/2″	3/8	4417K83	22.93	4417K74	17.80
3/4	4″	4 1/2″	1/2	4417K84	26.34	4417K75	20.49
1	4 7/8″	5 3/16″	3/4	4417K85	34.39	4417K76	26.34
1 1/4	5 1/8″	5 15/16″	3/4	4417K86	45.12	4417K77	30.00
1 1/2	5 3/4″	6 3/16″	1	4417K87	52.44	4417K78	38.78
2	7 1/4″	7 13/16″	1 1/4	4417K88	87.56	4417K79	56.34
2 1/2	8 7/8″	9 7/8″	1 1/4	4417K89	114.63	4417K81	90.24

Bronze Y-Strainers for Drinking Water

- Max. Pressure: 400 psi @ 70° F
- Temp. Range: 33° to 100° F

Trap and remove debris from pipelines. Strainers are for use with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012. Screen size is 40 mesh. Body is bronze and screen is Type 304 stainless steel. Connections are NPT female.

Pipe Size	Lg.	Ht.	Plug Pipe Size		
1/2	3 7/8″	4″	1/2	4547K332	$117.17
3/4	3 7/8″	4″	1/2	4547K342	127.46
1	5″	5″	3/4	4547K352	213.75

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

High-Pressure Y-Strainers

Protect equipment in high-pressure applications from damage caused by debris. Screen is Type 304 stainless steel. Connections are NPT female.

To Order: Please specify screen size: mesh or perforations.

Pipe Size	Max. psi: Water, Oil, and Inert Gas	Max. psi: Steam	Temp. Range	Lg.	Ht.	Plug Pipe Size	Strainer		Replacement Screen	
For Small or Medium Particles										
Bronze Strainers—Specify 20, 40, 60, 80, or 100 mesh.										
1/4	400 @ 150° F	235 @ 400° F	–20° to 400° F	2 9/16"	2 13/16"	1/8	4385K26	$51.90	4385K41	$19.07
3/8	400 @ 150° F	235 @ 400° F	–20° to 400° F	2 9/16"	2 13/16"	1/8	4385K27	57.25	4385K42	19.52
1/2	400 @ 150° F	235 @ 400° F	–20° to 400° F	2 15/16"	2 13/16"	1/8	4385K28	63.75	4385K43	30.95
3/4	400 @ 150° F	235 @ 400° F	–20° to 400° F	3 3/8"	3 3/16"	1/4	4385K29	73.00	4385K44	30.95
1	400 @ 150° F	235 @ 400° F	–20° to 400° F	4 1/8"	4 1/16"	1/4	4385K36	106.75	4385K45	35.71
1 1/4	400 @ 150° F	235 @ 400° F	–20° to 400° F	4 13/16"	4 11/16"	3/8	4385K37	118.80	4385K46	49.76
1 1/2	400 @ 150° F	235 @ 400° F	–20° to 400° F	5 3/8"	5 5/8"	1/2	4385K38	162.40	4385K47	65.95
2	400 @ 150° F	235 @ 400° F	–20° to 400° F	6 5/8"	7 1/8"	3/4	4385K39	272.00	4385K48	97.86
2 1/2	400 @ 150° F	235 @ 400° F	–20° to 400° F	8 1/4"	8 13/16"	1 1/4	4385K52	490.20	4385K49	139.38
3	400 @ 150° F	235 @ 400° F	–20° to 400° F	9 5/8"	10"	1 1/2	4385K53	628.30	4385K51	196.08
Extreme-Pressure Steel Strainers—Specify 20, 40, or 100 mesh.										
1/2	3,000 @ 100° F	Not Rated	–20° to 450° F	5 1/8"	4 7/8"	1/4	43605K21	249.13	43605K81	54.29
3/4	3,000 @ 100° F	Not Rated	–20° to 450° F	5 1/8"	5 1/8"	1/4	43605K25	222.68	43605K81	54.29
1	3,000 @ 100° F	Not Rated	–20° to 450° F	5 1/8"	5 1/4"	1/4	43605K31	233.62	43605K81	54.29
For Large Particles										
Steel Strainers—Specify 1/32", 3/64", or 3/32" perforations.										
1/2	740 @ 100° F	300 @ 400° F	–20° to 400° F	2 9/16"	2 3/4"	3/8	4391K31	33.83	4391K61	10.90
3/4	740 @ 100° F	300 @ 400° F	–20° to 400° F	3 3/16"	3 1/2"	3/8	4391K33	40.03	4391K63	13.32
1	740 @ 100° F	300 @ 400° F	–20° to 400° F	3 9/16"	4 3/4"	1/2	4391K34	54.89	4391K64	21.40
1 1/4	740 @ 100° F	300 @ 400° F	–20° to 400° F	4 1/8"	5"	1/2	4391K35	75.07	4391K65	32.18
1 1/2	740 @ 100° F	300 @ 400° F	–20° to 400° F	4 3/4"	5 1/4"	1/2	4391K36	87.20	4391K66	36.10
2	740 @ 100° F	300 @ 400° F	–20° to 400° F	5 1/2"	6 1/2"	1/2	4391K37	146.92	4391K67	48.23
3	740 @ 100° F	300 @ 400° F	–20° to 400° F	8 1/16"	9 1/2"	1/2	4391K39	393.20	4391K69	84.34
High-Temperature Steel Strainers—Specify 1/32", 3/64", or 3/32" perforations.										
1/2	1,480 @ 100° F	600 @ 838° F	–20° to 838° F	2 15/16"	3 3/16"	1/4	4412K22	80.53	4412K11	14.94
3/4	1,480 @ 100° F	600 @ 838° F	–20° to 838° F	3 11/16"	3 3/4"	3/8	4412K23	88.06	4412K12	19.77
1	1,480 @ 100° F	600 @ 838° F	–20° to 838° F	4 9/16"	5 1/4"	3/8	4412K24	118.17	4412K13	25.23
1 1/2	1,480 @ 100° F	600 @ 838° F	–20° to 838° F	5 9/16"	5 15/16"	3/4	4412K26	179.38	4412K15	39.32
2	1,480 @ 100° F	600 @ 838° F	–20° to 838° F	6 15/16"	7 15/16"	1	4412K27	251.55	4412K16	57.47
Extended-Life Ductile Iron Strainers—Specify 1/32", 3/64", or 3/32" perforations.										
1/2	640 @ 100° F	450 @ 650° F	–20° to 650° F	3"	3 1/2"	3/8	2768K1	55.72	2768K31	17.24
3/4	640 @ 100° F	450 @ 650° F	–20° to 650° F	4"	4 1/2"	1/2	2768K2	76.08	2768K32	19.08
1	640 @ 100° F	450 @ 650° F	–20° to 650° F	4 7/8"	5 3/16"	3/4	2768K3	78.98	2768K33	24.60
1 1/2	640 @ 100° F	450 @ 650° F	–20° to 650° F	5 3/4"	6 3/16"	1	2768K5	109.07	2768K35	33.18
2	640 @ 100° F	450 @ 650° F	–20° to 650° F	7 1/4"	7 13/16"	1 1/4	2768K6	164.33	2768K36	54.94

High-Pressure Stainless Steel Y-Strainers

- Max. Pressure:
  High Pressure: Water, Oil, Inert Gas, Natural Gas, and Diesel Fuel: 1,400 psi @ 70° F
  Steam: 600 psi @ 1125° F
  Extreme Pressure:
  Water, Oil, and Diesel Fuel: 3,000 psi @ 70° F
  Steam: Not Rated
- Temp. Range:
  High Pressure: 33° to 1125° F
  Extreme Pressure: –20° to 450° F

Get exceptional corrosion resistance in a strainer built to withstand high pressure. Body is Type 316 stainless steel and screen is Type 304 stainless steel. Connections are NPT female.

To Order: Please specify screen size: mesh or perforations.

Pipe Size	Lg.	Ht.	Plug Pipe Size	Strainer		Replacement Screen	
For Small or Medium Particles—Specify 20, 40, or 100 mesh.							
High-Pressure Strainers							
1/4	2 1/2"	2 9/16"	3/8	4745K51	$128.75	4745K71	$18.38
3/8	3 7/8"	3 5/8"	1/2	4745K52	156.28	4745K72	16.77
1/2	3 7/8"	3 5/8"	1/2	4745K53	160.11	4745K73	20.42
3/4	4"	4"	1/2	4745K54	194.92	4745K74	20.42
1	5"	5 1/4"	3/4	4745K55	258.34	4745K75	29.63
1 1/2	5 5/8"	6 1/2"	1	4745K57	411.47	4745K77	40.93
2	8"	7 7/8"	1	4745K58	586.03	4745K78	60.15
Extreme-Pressure Strainers							
1/2	5 1/8"	4 7/8"	1/4	43605K51	305.61	43605K81	54.29
3/4	5 1/8"	5 1/8"	1/4	43605K55	333.29	43605K81	54.29
1	5 1/8"	5 1/4"	1/4	43605K61	355.43	43605K81	54.29
For Large Particles—Specify 1/32", 1/16", or 1/8" perforations.							
High-Pressure Strainers							
1/4	2 1/2"	2 9/16"	3/8	4745K901	127.34	4745K201	12.13
3/8	3 7/8"	3 5/8"	1/2	4745K911	153.76	4745K211	11.95
1/2	3 7/8"	3 5/8"	1/2	4745K921	157.52	4745K221	15.00
3/4	4"	4"	1/2	4745K931	192.33	4745K231	15.00
1	5"	5 1/4"	3/4	4745K941	254.50	4745K241	18.33
1 1/2	5 5/8"	6 1/2"	1	4745K961	390.75	4745K261	24.71
2	8"	7 7/8"	1	4745K971	561.10	4745K271	30.59

Bronze Y-Strainers with Solder-End Connections

- Max. Pressure:
  Water, Oil, Inert Gas, Acetone, and Diesel Fuel: 400 psi @ 70° F
  Steam: 235 psi @ 400° F
- Temp. Range: –20° to 400° F

Block debris in applications that use copper tubing—connections are solder end (unthreaded) female. Body is bronze and screen is Type 304 stainless steel.

To Order: Please specify screen size: 20 or 40 mesh.

Tube Size★	Actual Tube OD	Lg.	Ht.	Plug Pipe Size	Strainer		Replacement Screen	
3/4"	7/8"	3"	2 7/8"	1/8	44125K44	$76.25	44125K74	$28.22
1"	1 1/8"	3 3/8"	3 1/4"	1/4	44125K45	107.26	44125K75	32.67
1 1/2"	1 5/8"	4 7/8"	4 3/4"	3/8	44125K47	182.47	44125K77	67.75

★ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Compact Bronze T-Strainers

- Max. Pressure: Water: 250 psi @ 70° F
- Temp. Range: 32° to 180° F

With a smaller overall size than Y-strainers of the same pipe size, these are well suited to applications in close quarters. Body is bronze and screen is Type 304 stainless steel. Unthread the retainer cap to remove debris. Connections are NPT female.

To Order: Please specify screen size: 40 or 100 mesh.

Pipe Size	Lg.	Ht.	Strainer		Replacement Screen	
1/4	2 1/16"	1 11/16"	9998K32	$32.24	9998K22	$11.87
3/8	2 1/2"	2 3/16"	9998K33	39.05	9998K23	14.89
1/2	2 3/4"	2 5/8"	9998K34	46.62	9998K24	22.52

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

Flanged Y-Strainers

- Max. Pressure for Water, Oil, Inert Gas, Acetone, and Diesel Fuel:
  Cast Iron: 200 psi @ 70° F
  Type 316 Stainless Steel: 275 psi @ 70° F
  Max. Pressure for Steam:
  Cast Iron: 125 psi @ 450° F
  Type 316 Stainless Steel: 150 psi @ 565° F
- Temp. Range:
  Cast Iron: –20° to 450° F
  Type 316 Stainless Steel: –20° to 565° F

Trap debris in high-flow lines with flanged pipe connections. Bolt strainers between two flanges of the same pipe size. Screen is Type 304 stainless steel.

Type 316 stainless steel strainers are more corrosion resistant than cast iron.

To Order: Please specify screen perforation size from those listed in the table.

Pipe Size	Lg.	Ht.	Plug Pipe Size	Flange Dimensions: OD	Bolt Circle Dia.	Thick.	Bolt Hole Qty.	Bolt Size	Available Screen Perforation Sizes	Strainer		Replacement Screen	
Cast Iron—ANSI Class 125 Flange Connections													
2	8 3/8"	11 3/8"	1 1/4	6"	4 3/4"	5/8"	4	5/8"	1/32", 1/16", 1/8"	9814K13	$122.73	9814K34	$43.92
2 1/2	9 7/8"	11 7/8"	1 1/4	7"	5 1/2"	11/16"	4	5/8"	1/32", 1/16", 1/8"	9814K22	140.91	9814K44	73.14
3	10 1/4"	11 1/8"	1	7 1/2"	6"	3/4"	4	5/8"	1/32", 1/16", 1/8"	9814K14	147.73	9814K36	92.75
4	12 1/8"	13 1/4"	1 1/2	9"	7 1/2"	15/16"	8	5/8"	1/32", 1/16", 1/8"	9814K15	229.55	9814K37	174.12
Type 316 Stainless Steel—ANSI Class 150 Flange Connections													
2	7 7/8"	9"	1/2	6"	4 3/4"	5/8"	4	5/8"	1/32", 1/16", 1/8"	4663K41	707.83	4663K35	90.87
3	10 1/16"	11 3/16"	1	7 1/2"	6"	3/4"	4	5/8"	1/32", 1/16", 1/8"	4663K42	1,218.00	4663K36	190.57

Bronze Inline Strainers

- Max. Pressure for Water, Oil, and Inert Gas: 250 psi @ 70° F
- Temp. Range: 32° to 180° F

Use these strainers in place of regular fittings to catch debris in your pipelines. A union fitting on one end allows you to remove debris without detaching the pipe connection. Screen size is 40 mesh. Body is bronze, screen is Type 304 stainless steel, and seal is Buna-N. Connections are NPT female.

Pipe Size	Lg.	Strainer		Replacement Screen	
3/4	4 3/8"	5166K66	$89.74	5166K53	$10.31
1	4 3/8"	5166K67	99.06	5166K53	10.31

High-Pressure Brass Inline Strainers

- Max. Pressure for Water, Oil, and Diesel Fuel: 500 psi @ 70° F
- Temp. Range: 32° to 180° F

Catch small particles in pipelines with pressures up to 500 psi. Body is brass and screen is Monel. Connections are NPT female.

To Order: Please specify screen size: 100 or 200 mesh.

Pipe Size	Lg.	Strainer		Replacement Screen	
1/8	2 5/8"	9802K5	$14.08	9802K9	$7.02
1/4	2 5/8"	9802K6	14.90	9802K9	7.02

Temporary Pipeline Strainers

- Max. Pressure for Water, Oil, Inert Gas, Acetone, and Diesel Fuel: 285 psi @ 100° F
- Temp. Range: –45° to 800° F

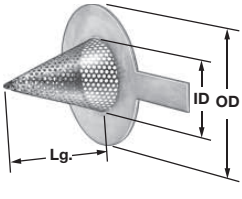

Remove debris from new pipelines before installing equipment. Sandwich strainers between two flanges with the cone pointing in the direction of flow. Screen has 1/8" perforations. Body and screen are Type 304 stainless steel.

Pipe Size	Lg.	ID	OD		
3/4	1 1/8"	5/8"	2 1/8"	4388K12	$47.69
1	1 5/8"	3/4"	2 1/2"	4388K13	48.01
1	3 5/16"	3/4"	2 1/2"	4388K53	49.10
1 1/2	2 3/16"	1 1/4"	3 1/4"	4388K14	53.58
1 1/2	3 3/8"	1 1/4"	3 1/4"	4388K34	55.14
1 1/2	4 1/2"	1 1/4"	3 1/4"	4388K54	55.68
2	3"	1 3/4"	4"	4388K15	65.10
2	4 1/2"	1 3/4"	4"	4388K35	70.62
2	6"	1 3/4"	4"	4388K55	73.34
3	4"	2 3/4"	5 1/4"	4388K17	98.79
3	6 1/4"	2 3/4"	5 1/4"	4388K37	102.60
3	8 1/2"	2 3/4"	5 1/4"	4388K57	107.22
4	5 1/8"	3 3/4"	6 3/4"	4388K18	115.62
4	7 7/8"	3 3/4"	6 3/4"	4388K38	121.74
4	10 5/8"	3 3/4"	6 3/4"	4388K58	127.11
6	8 1/8"	5 3/8"	8 5/8"	4388K21	168.48
6	13"	5 3/8"	8 5/8"	4388K41	184.56
6	17"	5 3/8"	8 5/8"	4388K61	219.54

Polypropylene Y-Strainers

- Max. Pressure for Water: 150 psi @ 70° F
- Temp. Range: –20° to 150° F

Match the material of the pipe and fittings in your polypropylene system. Body is black fiberglass-reinforced polypropylene, screen is Type 316 stainless steel, and seal is EPDM. Connections are NPT female.

To Order: Please specify screen size: For 1/2, 3/4, 1, and 1 1/4 pipe sizes, specify 20, 40, or 80 mesh. For 1 1/2 and 2 pipe sizes, specify 6, 12, 20, 30, 50, 80, or 120 mesh.

Pipe Size	Lg.	Ht.	Plug Pipe Size	Strainer		Replacement Screen	
1/2	4 7/16"	4 1/2"	1/4	9793K111	$21.21	9793K17	$13.70
3/4	4 7/16"	4 1/4"	1/4	9793K112	21.43	9793K17	13.70
1	5 5/8"	6"	1/2	9793K113	21.66	9793K18	13.86
1 1/4	5 5/8"	6 1/4"	1/2	9793K114	21.89	9793K18	13.86
1 1/2	7 3/16"	8 1/8"	1	9793K115	47.16	9793K19	28.05
2	7 3/16"	8 1/8"	1	9793K116	48.17	9793K19	28.05

Easy-Maintenance Plastic Y-Strainers

- Max. Pressure for Water: 150 psi @ 70° F
- Temp. Range: 36° to 140° F

A unique two-piece threaded body comes apart for cleaning without disconnecting your pipeline. Connections are NPT male.

Polypropylene strainer is more chemical resistant than acetal. Screen is polyester and seal is fluoroelastomer. Color is blue.

Acetal strainers have a threaded drain with a ball valve to control flow while cleaning. Seal is Buna-N. Screen is Type 316 stainless steel, except strainers with 20 and 450 mesh screens, which have a polyester screen. Color is black.

To Order: Please specify screen size: 20, 50, 75, 120, 200, or 450 mesh.

Pipe Size	Lg.	Ht.	Strainer		Replacement Screen	
Polypropylene						
3/4	4 3/4"	5 7/16"	44085K11	$55.13	44085K8	$35.64
Acetal						
3/4	4 3/4"	7"	44085K12	37.20	44085K5	25.92
1	7 3/8"	7 3/8"	44085K13	85.17	44085K6	68.04
1 1/2	7 15/16"	11 1/16"	44085K14	178.88	44085K7	110.16

Compact Acetal Y-Strainers

- Max. Pressure for Water, Oil, Inert Gas, and Acetone: 125 psi @ 70° F
- Temp. Range: 32° to 180° F

Strain particles from pipelines in tight spaces. Screen size is 100 mesh. Body is acetal, screen is Type 304 stainless steel, and seal is EPDM. Color is black. Connections are NPT female.

Pipe Size	Lg.	Ht.	Strainer		Replacement Screen	
1/4	1 13/16"	2 1/4"	44305K25	$11.44	44305K19	$3.85
3/8	1 13/16"	2 1/4"	44305K27	11.44	44305K19	3.85

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

Corrosion-Resistant PVC and CPVC Y-Strainers

PVC with NPT Female Connections

- Max. Pressure for Water and Diesel Fuel: 150 psi @ 70° F
- Temp. Range:
  PVC: 35° to 140° F
  CPVC: 35° to 190° F

All-plastic construction makes these strainers corrosion resistant and lightweight. Use with Schedule 80 pipe and fittings. Seal is fluoroelastomer. All have a threaded hex cap to access the screen for cleaning.

PVC strainers have a PVC screen. Color is dark gray. ***CPVC strainers*** withstand higher temperatures than PVC. Screen is CPVC. Color is light gray.

To Order: Please specify screen size: 1/32″ or 1/16″ perforations.

With NPT Female Connections

Pipe Size	Lg.	Ht.	Strainer		Replacement Screen	
PVC						
1/2	3 3/8″	2 15/16″	4425K31	$62.84	4425K51	$21.68
3/4	4 3/16″	3 3/4″	4425K32	70.13	4425K52	24.57
1	5 3/16″	4 5/8″	4425K33	76.72	4425K53	28.35
1 1/4	6 5/8″	5 13/16″	4425K34	140.32	4425K54	33.03
1 1/2	6 5/8″	5 13/16″	4425K35	140.32	4425K54	33.03
2	7 5/8″	7 1/16″	4425K36	165.88	4425K55	54.70
3	10 5/16″	9 5/8″	4425K38	354.14	4425K56	77.30
4	12 13/16″	11 3/4″	4425K39	598.93	4425K57	96.16
CPVC						
1/2	3 3/8″	2 15/16″	44315K41	150.17	44315K61	29.46
3/4	4 3/16″	3 3/4″	44315K42	165.83	44315K62	35.94
1	5 3/16″	4 5/8″	44315K43	212.55	44315K63	44.21
1 1/2	6 5/8″	5 13/16″	44315K44	329.32	44315K64	56.13
2	7 5/8″	7 1/16″	44315K45	416.84	44315K65	73.68
3	10 5/16″	9 5/8″	44315K46	505.44	44315K66	106.28
4	12 13/16″	11 3/4″	44315K47	836.12	44315K67	132.20

With Socket Weld (Unthreaded) Connections

Pipe Size	Lg.	Ht.	Strainer		Replacement Screen	
PVC						
1/2	3 3/8″	2 15/16″	4425K41	$62.84	4425K51	$21.68
3/4	4 3/16″	3 3/4″	4425K42	70.13	4425K52	24.57
1	5 3/16″	4 5/8″	4425K43	76.69	4425K53	28.35
1 1/4	6 5/8″	5 13/16″	4425K44	140.32	4425K54	33.03
1 1/2	6 5/8″	5 13/16″	4425K45	140.32	4425K54	33.03
2	7 5/8″	7 1/16″	4425K46	165.88	4425K55	54.70
2 1/2	10 5/16″	9 5/8″	4425K47	379.05	4425K56	77.30
3	10 5/16″	9 5/8″	4425K48	354.14	4425K56	77.30
4	12 13/16″	11 3/4″	4425K49	598.93	4425K57	96.16
CPVC						
1/2	3 3/8″	2 15/16″	44315K11	150.17	44315K61	29.46
3/4	4 3/16″	3 3/4″	44315K12	165.83	44315K62	35.94
1	5 3/16″	4 5/8″	44315K13	212.55	44315K63	44.21
1 1/2	6 5/8″	5 13/16″	44315K14	331.68	44315K64	56.13
2	7 5/8″	7 1/16″	44315K15	416.84	44315K65	73.68
3	10 5/16″	9 5/8″	44315K16	505.44	44315K66	106.28
4	12 13/16″	11 3/4″	44315K17	836.12	44315K67	132.20

Easy-View PVC Y-Strainers

With PVC Screen

With Type 316 Stainless Steel Screen

- Max. Pressure for Water: 150 psi @ 70° F
- Temp. Range: 35° to 120° F

A clear PVC body lets you monitor debris without disconnecting the pipeline.

Strainers with PVC screen are more corrosion resistant than strainers with Type 316 stainless steel screen. Seal is EPDM. They come with a set of NPT female and socket weld (unthreaded) union fittings for each pipe connection.

Strainers with Type 316 stainless steel screen are more durable than strainers with PVC screen. Seal is fluoroelastomer. Connections are NPT female.

To Order: Please specify screen size: 20 or 40 mesh.

Pipe Size	Lg.	Ht.	Strainer		Replacement Screen	
With PVC Screen						
1/2	6 1/2″	4″	44915K62	$60.50	44915K11	$19.83
3/4	7 15/16″	5 1/16″	44915K64	64.17	44915K12	19.83
1	8 13/16″	5 3/4″	44915K66	77.00	44915K13	22.19
1 1/4	11 5/16″	7 3/4″	44915K68	128.33	44915K14	26.24
1 1/2	11 5/16″	7 3/4″	44915K72	128.33	44915K14	26.24
2	12 3/4″	8 11/16″	44915K74	158.58	44915K15	32.76
With Type 316 Stainless Steel Screen						
1/2	3 3/8″	2 15/16″	4718K41	130.98	4718K31	98.59
3/4	4 3/16″	3 3/4″	4718K42	152.20	4718K32	116.29
1	5 3/16″	4 5/8″	4718K43	173.85	4718K33	143.46
1 1/4	6 5/8″	5 13/16″	4718K44	263.54	4718K35	181.11
1 1/2	6 5/8″	5 13/16″	4718K45	263.79	4718K35	181.11
2	7 5/8″	7 1/16″	4718K46	298.74	4718K36	211.01

High-Capacity Polypropylene T-Strainers with Drain Plug

1 1/4 and 1 1/2 Pipe Sizes

- Max. Pressure for Water, Ethylene Glycol, Acetone, and Sodium Nitrate: 150 psi @ 70° F
- Temp. Range: –20° to 150° F

Well suited for high-flow applications, an extra-long bowl and screen provide greater dirt-holding capacity than our other T-strainers. These strainers also have a threaded drain with plug for cleaning. Head and bowl are glass-reinforced black polypropylene, screen is Type 316 stainless steel, and seal is EPDM. Connections are NPT female.

Strainers with 3/4 and 1 pipe size have two tubes on top for mounting to provide extra stability.

To Order: Please specify screen size: 16, 30, 50, 80, or 100 mesh.

Pipe Size	Lg.	Ht.	Plug Pipe Size	Strainer		Replacement Screen	
3/4	3 7/8″	8 11/16″	1/2	98805K43	$22.65	98805K5	$11.55
1	3 7/8″	8 11/16″	1/2	98805K44	23.14	98805K5	11.55
1 1/4	5 1/4″	11 7/16″	1	98805K45	45.14	98805K6	18.95
1 1/2	5 1/4″	11 7/16″	1	98805K46	46.11	98805K6	18.95

Polypropylene T-Strainers

With Clear Bowl

- Max. Pressure for Water: 150 psi @ 70° F
- Temp. Range: –40° to 125° F

Clean out your strainer less often—a T-shape body provides greater dirt-holding capacity than Y-strainers. Strainers have a black glass-filled polypropylene head. Screen is Type 304 stainless steel and seal is EPDM. Connections are NPT female.

Strainers with clear bowl allow you to monitor debris without disconnecting your pipeline. Bowl is nylon.

Strainers with black bowl have a polypropylene bowl.

Optional fluoroelastomer seals are for use in oil applications.

To Order: For strainers and replacement screens, please specify screen size: 20, 40, 50, or 80 mesh.

With Black Bowl

Pipe Size	Lg.	Ht.	Strainer with Clear Bowl	Each	Strainer with Black Bowl	Each	Replacement Screen	Each	Replacement EPDM Seals	Pkg. of 10	Optional Fluoroelastomer Seals	Pkg. of 10
1/4	3″	2 11/16″	98775K41	$8.33	98775K51	$5.19	98775K81	$1.60	98775K91	$5.00	98775K94	$5.91
3/8	3″	2 11/16″	98775K42	8.55	98775K52	5.30	98775K81	1.60	98775K91	5.00	98775K94	5.91
3/8	3 5/8″	5 3/8″	98775K44	13.26	98775K54	8.34	98775K1	1.94	98775K92	5.69	98775K95	17.62
1/2	3″	2 11/16″	98775K43	8.78	98775K53	5.41	98775K81	1.60	98775K91	5.00	98775K94	5.91
1/2	3 5/8″	5 3/8″	98775K45	13.61	98775K55	8.51	98775K1	1.94	98775K92	5.69	98775K95	17.62
3/4	3 5/8″	5 3/8″	98775K46	13.97	98775K56	8.68	98775K1	1.94	98775K92	5.69	98775K95	17.62
1	5″	6 7/16″	98775K47	22.77	98775K57	17.00	98775K2	2.97	98775K93	8.03	98775K96	25.77
1 1/4	5″	7 1/8″	98775K48	23.37	98775K58	17.43	98775K3	2.89	98775K93	8.03	98775K96	25.77
1 1/2	5 1/8″	8 1/8″	98775K49	24.00	98775K59	17.87	98775K4	2.89	98775K93	8.03	98775K96	25.77

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

Chemical-Resistant Polypropylene T-Strainers

- Max. Pressure for Water: 150 psi @ 70° F
- Temp. Range: –40° to 125° F

With Polypropylene Screen

Made entirely of plastic to withstand exposure to mineral acids and salt solutions that corrode stainless steel. The T-shape body also provides greater dirt-holding capacity than Y-strainers. They have a clear nylon bowl so you can monitor debris without disconnecting your pipeline. Head is black glass-filled polypropylene and seal is EPDM. Connections are NPT female.

Strainers with polyethylene screen trap fine particles. They're also good for use in vacuum applications.

To Order: For strainers with polypropylene screen and replacement polypropylene screens, please specify screen mesh size.

Pipe Size	Lg.	Ht.	Strainer		Replacement Screen	
With Polyethylene Screen—Screen is 200 mesh.						
1/4	3"	2 11/16"	8680T21	$6.87	8680T51	$2.37
1/2	3 9/16"	5 3/8"	8680T25	14.11	8680T52	4.57
3/4	3 9/16"	5 3/8"	8680T26	14.49	8680T52	4.57
With Polypropylene Screen—Specify 20, 40, or 80 mesh.						
1/2	3 9/16"	5 3/8"	8680T15	14.39	8680T44	5.97
3/4	3 9/16"	5 3/8"	8680T16	14.78	8680T44	5.97

Polypropylene T-Strainers with Push-to-Connect Tube Fittings

- Max. Pressure for Water: 150 psi @ 70° F
- Temp. Range: –40° to 125° F

Filter debris from tubing lines. Push-to-connect fittings make a tight seal around flexible tubing. Strainers have a clear nylon bowl so you can view debris without disconnecting your pipeline. Head is black polypropylene, screen is Type 304 stainless steel, and seal is EPDM.

To Order: Please specify screen size: 20, 40, 50, or 80 mesh.

For Tube OD	Lg.	Ht.	Strainer		Replacement Screen	
1/4"	3"	2 11/16"	8698T11	$10.11	98775K81	$1.60
3/8"	3"	2 11/16"	8698T12	10.63	98775K81	1.60

NSF-Certified Easy-View PVC Inline Strainers

- Max. Pressure for Water and Diesel Fuel: 230 psi @ 70° F
- Temp. Range: 14° to 120° F

Meet requirements for drinking (potable) water with one of these NSF 61 certified strainers. They combine a clear PVC body with union fittings so you can view and clear out debris without disconnecting your pipe connections. Screen size is 35 mesh. Screen is Type 316 stainless steel and seal is EPDM. Connections are NPT female.

Pipe Size	Lg.	Strainer		Replacement Screen	
3/8	4"	8855T111	$49.95	8855T321	$18.04
1/2	4"	8855T121	59.06	8855T321	18.04
3/4	4 1/2"	8855T131	60.12	8855T331	18.50
1	5"	8855T141	68.45	8855T331	18.50
1 1/4	5 5/8"	8855T151	86.03	8855T341	27.07
1 1/2	6 9/16"	8855T161	99.74	8855T351	27.75
2	7 13/16"	8855T171	139.68	8855T361	35.15

Strainer Washers

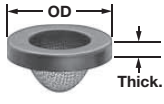

Install these in pipe or fittings to protect equipment in locations where other strainers don't fit. They're often used with valves, sprayers, parts washers, and washing machines. Screen is Type 304 stainless steel.

To Order: Please specify screen mesh size from those listed in the table.

For Pipe Size	Seal OD	Seal Thick.	Available Screen Mesh Sizes		Pkg. of 25
With FDA-Approved PVC Seal					
1/2	0.60"	0.11"	100	8753T31	$7.29
1/2	0.72"	0.09"	60	8753T32	4.87
1/2	0.84"	0.09"	30, 60	8753T33	6.71
3/4	1.00"	0.16"	24, 30, 60	8753T34	5.09
1	1.14"	0.11"	30, 60	8753T35	21.10
1	1.25"	0.16"	30, 60	8753T36	18.00
With NSF-Certified Santoprene Seal					
1/2	0.62"	0.11"	60	8753T41	10.10
1/2	0.73"	0.11"	60	8753T42	10.34
3/4	1.00"	0.16"	60	8753T43	10.60

Impact-Resistant Nylon T-Strainers

- Max. Pressure for Water: 150 psi @ 70° F
- Temp. Range: 0° to 125° F

Combine the durability of an all-nylon body with the dirt-holding capacity of a T-strainer. Screen is Type 304 stainless steel and seal is Buna-N. Strainers have a white head.

Strainers with clear bowl allow you to monitor debris without disconnecting your pipeline.

Optional fluoroelastomer seals are for use in oil applications.

To Order: For strainers and replacement screens, please specify screen size: 20, 40, or 80 mesh.

With Clear Bowl

With White Bowl

Pipe Size	Lg.	Ht.	Strainer with Clear Bowl	Each	Strainer with White Bowl	Each	Replacement Screen	Each	Replacement Buna-N Seals	Pkg. of 10	Optional Fluoroelastomer Seals	Pkg. of 10
1/2	3 5/8"	5 3/8"	9875K216	$16.84	9875K211	$10.80	98775K1	$1.94	9875K27	$6.22	98775K95	$17.62
3/4	3 5/8"	5 3/8"	9875K217	17.30	9875K212	11.04	98775K1	1.94	9875K27	6.22	98775K95	17.62
1	5"	6 7/16"	9875K218	28.51	9875K213	19.08	98775K2	2.97	9875K29	8.78	98775K96	25.77
1 1/4	5"	7 1/8"	9875K219	29.63	9875K214	22.96	98775K3	2.89	9875K29	8.78	98775K96	25.77
1 1/2	5 1/8"	8 1/8"	9875K221	30.43	9875K215	26.38	98775K4	2.89	9875K29	8.78	98775K96	25.77

Easy-View Bronze Basket Strainers

- Max. Pressure for Water, Salt Water, and Diesel Fuel: 25 psi @ 70° F
- Temp. Range: 33° to 140° F

A clear plastic bowl allows you to monitor the collection of debris without stopping flow in your system. Basket has 3/32" perforations. Strainers have a bronze head, Type 304 stainless steel basket, and Buna-N seals. Use the drain at the bottom of the bowl for cleaning. Strainers come with brass brackets for wall mounting. UL listed. Connections are NPT female.

Pipe Size	Lg.	Ht.	Strainer		Replacement Basket	
1/2	4 1/2"	6 3/8"	9813K11	$135.83	9813K31	$25.12
3/4	4 1/2"	8 3/8"	9813K12	140.83	9813K32	26.98
1	5 3/4"	9"	9813K13	195.83	9813K33	30.70
1 1/4	5 3/4"	10 5/8"	9813K14	216.67	9813K34	33.49
1 1/2	7 1/4"	11 3/8"	9813K15	330.83	9813K35	39.07
2	7 1/4"	14"	9813K16	349.19	9813K36	41.86

Basket Strainers

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

ANSI Flange Dimensions

Pipe Size	OD	Bolt Circle Dia.	Thick. (Class 125)	Thick. (Class 150)	Bolt Hole Qty.	Bolt Size
2	6″	4¾″	⅝″	¾″	4	⅝″
2½	7″	5½″	11/16″	⅞″	4	⅝″
3	7½″	6″	¾″	15/16″	4	⅝″
4	9″	7½″	15/16″	15/16″	8	⅝″
6	11″	9½″	1″	1″	8	¾″

Basket Strainers

With NPT Female Connections

With ANSI Flange Connections

Replacement Basket

- Max. Pressure for Water, Oil, Acetone, and Diesel Fuel: 200 psi @ 100° F
- Temp. Range: 20° to 200° F

A fundamental component of high-flow industrial processes, basket strainers hold considerably more debris than Y- and T-strainers. They have a removable cover and a threaded drain with plug for cleaning. Basket is Type 316 stainless steel.

Cast iron strainers have a Buna-N seal.

Bronze strainers are stronger and more corrosion resistant than cast iron. Seal is Buna-N.

Type 316 stainless steel strainers are more corrosion resistant than bronze or cast iron. Seal is chemical-resistant fluoroelastomer.

Strainers with ANSI Flange Connections— Have brackets on the bottom so you can bolt them to the floor for stability. *Cast iron strainers* have Class 125 flanges. *Bronze* and *Type 316 stainless steel strainers* have Class 150 flanges.

To Order: For strainers and replacement baskets, please specify screen size: 20, 40, or 100 mesh or 1/16″, ⅛″, or 3/16″ perforations. For replacement seals, please specify Buna-N or fluoroelastomer.

Pipe Size	Lg.	Ht.	Cast Iron Strainer		Bronze Strainer		Type 316 Stainless Steel Strainer		Replacement Basket		Replacement Seal	
With NPT Female Connections												
⅜	4″	6⅝″	4454K41	$144.23	4454K56	$274.10	—	—	4454K91	$112.72	4454K101	$20.80
½	4″	6⅝″	4454K42	157.45	4454K57	276.63	—	—	4454K91	112.72	4454K101	20.80
¾	5⅜″	8⅜″	4454K43	198.08	4454K58	381.73	—	—	4454K92	115.16	4454K102	20.80
1	5⅜″	8⅜″	4454K44	201.96	4454K59	381.73	4454K78	$496.36	4454K92	115.16	4454K102	20.80
1¼	6¾″	9⅞″	4454K45	271.76	4454K61	575.45	4454K79	706.36	4454K93	159.15	4454K103	23.64
1½	7¼″	11″	4454K46	289.22	4454K62	575.45	4454K81	706.36	4454K94	162.61	4454K103	23.64
2	8¾″	13⅜″	4454K47	349.02	4454K63	874.58	4454K82	1,001.79	4454K95	178.48	4454K104	25.53
2½	10⅜″	14⅞″	4454K48	453.64	4454K64	1,343.22	4454K83	1,552.50	4454K96	205.33	4454K105	34.98
3	11½″	17¾″	4454K49	512.73	4454K65	1,761.67	4454K84	2,015.38	4454K97	241.02	4454K105	34.98
With ANSI Flange Connections												
2	10½″	13¾″	4454K51	455.87	4454K66	1,187.50	4454K85	1,343.33	4454K95	178.48	4454K104	25.53
2½	11⅝″	15⅝″	4454K52	576.36	4454K67	1,626.69	4454K86	2,248.46	4454K96	205.33	4454K105	34.98
3	13⅛″	18″	4454K53	614.55	4454K68	1,969.15	4454K87■	2,265.38	4454K97	241.02	4454K105	34.98
4	16¾″	19⅞″	4454K54	913.05	4454K69	3,249.35	4454K88★	3,583.85	4454K98	461.51	4454K106	39.71
6	19⅝″	28½″	4454K55	1,715.00	4454K71	5,391.75	4454K89	5,826.43	4454K99	628.05	4454K106	39.71

■ Height is 18¾″. ★ Length is 17¼″.

Easy-Swap Dual-Basket Strainers

With NPT Female Connections

With ANSI Flange Connections

Replacement Basket

- Max. Pressure for Water, Oil, Acetone, and Diesel Fuel: 150 psi @ 70° F
- Temp. Range: 20° to 150° F

Don't shut down your operation to service your strainer. These have a dual-basket body so you can divert flow to one basket while you work on the other. Strainers have a removable cover and threaded drains with plugs for cleaning. Baskets are Type 316 stainless steel. Strainers have brackets on the bottom, so you can bolt them to the floor for stability.

Cast iron strainers have a Buna-N seal.

Bronze strainers are stronger and more corrosion resistant than cast iron. Seal is Buna-N.

Type 316 stainless steel strainers are more corrosion resistant than bronze or cast iron. Seal is chemical-resistant fluoroelastomer.

Strainers with ANSI Flange Connections— *Cast iron strainers* have Class 125 flanges. *Bronze* and *Type 316 stainless steel strainers* have Class 150 flanges.

To Order: For strainers and replacement baskets, please specify screen size: 1/32″ or 1/16″ perforations. For replacement seals, please specify Buna-N or fluoroelastomer.

Pipe Size	Lg.	Ht.	O'all Wd.	Cast Iron Strainer		Bronze Strainer		Type 316 Stainless Steel Strainer		Replacement Basket		Replacement Seal	
With NPT Female Connections													
¾	5½″	10½″	10½″	4416K11	$738.40	4416K31	$1,613.15	4416K51	$2,010.80	4416K81	$90.10	4416K101	$18.91
1	5½″	10½″	10½″	4416K12	738.40	4416K32	1,613.15	4416K52	2,010.80	4416K81	90.10	4416K101	18.91
1¼	7½″	12¾″	13¼″	4416K13	1,273.60	4416K33	3,184.19	4416K53	3,037.47	4416K82	124.67	4416K102	22.69
1½	7½″	12¾″	13¼″	4416K14	1,273.60	4416K34	3,173.94	4416K54	3,037.47	4416K82	124.67	4416K102	22.69
2	10″	15½″	17⅜″	4416K15	1,963.87	4416K35	4,022.70	4416K55	3,908.55	4416K83	145.62	4416K103	24.58
2½	10″	15½″	17⅜″	4416K16	1,963.87	4416K36	4,022.70	—	—	4416K83	145.62	4416K103	24.58
With ANSI Flange Connections													
2	10⅝″	15½″	17⅜″	4416K17	2,097.33	4416K37	4,336.71	4416K56	4,337.92	4416K83	145.62	4416K103	24.58
2½	10¾″	15½″	17⅜″	4416K18	2,232.27	4416K38	5,482.40	4416K57	6,036.80	4416K83	145.62	4416K103	24.58
3	13½″	18″	22¾″	4416K19	2,600.06	4416K39	6,936.16	4416K58	6,814.13	4416K84	171.81	4416K104	32.15
4	16″	21⅝″	24¾″	4416K21	3,806.34	4416K22	9,092.15	4416K59	9,027.04	4416K85	283.90	4416K104	32.15

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

Low-Pressure Flanged Cast Iron Basket Strainers

- Max. Pressure for Water, Oil, and Acetone: 60 psi @ 70° F
- Temp. Range: –20° to 150° F

Capture and remove particles from low-pressure flanged pipelines. Strainers have a removable cover and a threaded drain with plug for cleaning. Basket has 1/8″ perforations. Body is cast iron; meets ASTM A126, Class B. Basket is Type 304 stainless steel and seals are Buna-N. Connections are ANSI Class 125 flanges. For ANSI flange dimensions, see page 378.

Pipe Size	Lg.	Ht.	Strainer		Replacement Basket	
2	8″	12 1/2″	44225K13	$342.59	44225K53	$141.18
3	9 3/4″	16″	44225K17	435.19	44225K57	170.59
4	11 1/2″	18″	44225K19	597.74	44225K59	196.08

ASME-Code Stainless Steel Basket Strainers

- Max. Pressure for Water, Oil, Inert Gas, Diesel Fuel, and Natural Gas: 200 psi @ 100° F
- Temp. Range: –20° to 150° F

Constructed for use with boilers and pressure vessels, these strainers meet ASME Code Section VIII and ANSI B16.5. Body is Type 316 stainless steel for excellent corrosion resistance. Strainers have a removable cover and a threaded drain with plug for cleaning. Basket is Type 304 stainless steel and seals are fluoroelastomer. Connections are NPT female.

To Order: Please specify screen size: 1/16″ or 1/8″ perforations.

Pipe Size	Lg.	Ht.	Strainer		Replacement Basket	
1/2	4 9/16″	6 1/2″	9874K11	$276.52	9874K21	$118.30
3/4	4 9/16″	6 1/2″	9874K12	284.61	9874K21	118.30
1	5 5/16″	7 7/16″	9874K13	373.05	9874K22	118.30
1 1/2	6 5/16″	9 1/2″	9874K14	576.67	9874K23	159.95
2	8 1/4″	11 1/2″	9874K15	817.17	9874K24	159.95

Self-Cleaning Stainless Steel Basket Strainers

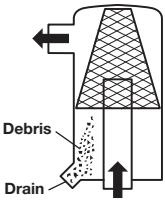

With NPT Male Connections

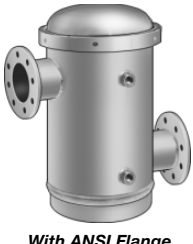

With ANSI Flange Connections

- Max. Pressure for Water:
  NPT Male Connections: 125 psi @ 70° F
  ANSI Class 150 Flange Connections: 150 psi @ 70° F
- Temp. Range: –32° to 135° F

Spend less time on maintenance—these strainers have an inverted basket design that allows debris to fall into the drain as it collects. They also create a minimal pressure drop, which saves energy. Body is Type 304 stainless steel, basket is Type 316 stainless steel, and seals are EPDM. Strainers have two 1/4 NPT female gauge ports so you can measure differential pressure, which indicates when the basket needs to be cleaned or replaced. Drain is 1 1/2 NPT male. For ANSI flange dimensions, see page 378.

To Order: Please specify screen size: 16, 30, 40, 60, 100, or 200 mesh.

Pipe Size	Lg.	Ht.	Strainer		Replacement Basket	
With NPT Male Connections						
2	9 3/8″	16 3/8″	51585K11	$867.27	51585K33	$258.00
3	12 11/16″	24 7/8″	51585K12	1,618.97	51585K34	413.21
With ANSI Class 150 Flange Connections						
4	19 1/4″	25 7/8″	51585K15	2,298.83	51585K35	627.27
6	24 1/2″	38″	51585K16	3,479.03	51585K36	878.95

Easy-to-Install Plastic Basket Strainers

Single Basket Easy-View Polyester

Dual Basket

- Max. Pressure for Water, Oil, and Diesel Fuel:
  PVC and CPVC: 150 psi @ 70° F
  Polyester: 100 psi @ 70° F
- Temp. Range: PVC: 40° to 140° F
  CPVC: 40° to 180° F
  Polyester: 34° to 120° F

Union fittings make these strainers easy to install and allow for maintenance without detaching your pipe connections. They have two outlets for installation in inline or parallel pipe connections. Cover and drain are threaded for easy access for cleaning. Seals are fluoroelastomer. Strainers come with a set of NPT female and socket weld (unthreaded) union fittings for each pipe connection.

Single-basket strainers come with a plug for the unused outlet.

Dual-basket strainers allow for maintenance without interrupting flow. Baskets are connected with a diverting valve. Turn the valve handle to direct flow to one basket while you clean the other.

PVC strainers have a PVC body and basket. ***CPVC strainers*** handle higher temperatures than PVC and polyester. Body and basket are CPVC. ***Easy-view polyester strainers*** have a clear polyester body. Basket is PVC.

To Order: Please specify screen size: 1/32″, 1/16″, 1/8″, or 3/16″ perforations.

Pipe Size	Lg.	Ht.	Strainer		Replacement Basket	
Single Basket						
PVC—Dark Gray Body						
3/4	8 5/8″	11 11/16″	9885K16	$260.25	9885K27	$122.55
1	8 5/8″	11 11/16″	9885K17	262.62	9885K27	122.55
1 1/2	12 11/16″	15 1/2″	9885K18	466.92	9885K28	154.38
2	12 3/4″	15 1/2″	9885K19	475.41	9885K28	154.38
CPVC—Light Gray Body						
1	8 5/8″	11 11/16″	44445K25	398.57	44445K35	185.97
2	12 3/4″	15 1/2″	44445K27	763.59	44445K36	231.98
Easy-View Polyester—Clear Body						
1	8 5/8″	11 11/16″	8766T13	267.66	9885K27	122.55
1 1/2	12 11/16″	15 1/2″	8766T15	462.33	9885K28	154.38
2	12 3/4″	15 1/2″	8766T16	462.33	9885K28	154.38
Dual Basket						
PVC—Dark Gray Body						
1	8 5/8″	11 11/16″	9886K43	1,337.26	9885K35	122.55
2	12 3/4″	15 1/2″	9886K45	2,084.20	9885K36	154.38

Slimline Cast Iron Suction Strainers

- Use with oil and diesel fuel
- Max. Temp.: 225° F

Designed for installation through a tank wall, these strainers have a narrow diameter and both male and female threads. You can also install at the top of a tank for connection to a standpipe. They're often used in hydraulic systems. Body is cast iron and steel; screen is Type 304 stainless steel. Connections are NPT; tank connection is male and pipe connection is female.

To Order: Please specify screen mesh size from those listed in the table.

Pipe Size Male	Pipe Size Female	Ht.	Hex Size	Available Screen Mesh Size		
1	1/2	5 5/16″	1 7/16″	30, 60, 100	98065K51	$15.74
1	1/2	5 5/16″	1 7/16″	200	98065K411	25.53
1 1/4	3/4	8″	1 3/4″	30, 60, 100	98065K52	19.08
1 1/4	3/4	8″	1 3/4″	200	98065K421	27.76
1 1/2	1	8 1/2″	2″	30, 60, 100	98065K53	22.92
1 1/2	1	8 1/2″	2″	200	98065K431	34.32
2	1 1/4	9 9/16″	2 1/2″	30, 60, 100	98065K54	26.27
2	1 1/4	9 9/16″	2 1/2″	200	98065K441	43.37
3	2	9 3/4″	3 1/4″	30, 60, 100	98065K55	55.64
3	2	9 3/4″	3 1/4″	200	98065K451	81.78
4	3	11 3/8″	4 5/8″	30, 60, 100	98065K56	74.22
4	3	11 3/8″	4 5/8″	200	98065K461	109.66

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

Suction Strainers

A

B&C

D

E

- Use with:
  Styles A and B: Oil and diesel fuel
  Styles C and D: Oil
  Style E: Water and oil
- Max. Temp.: 270° F

Filter hydraulic fluids from a reservoir, tank, or other small container. Screen is Type 304 stainless steel. Connection is NPT female.

Styles A-C—Connection is aluminum, which is lighter in weight than steel or stainless steel.

Style D—Connection is steel, which is stronger than aluminum.

Style E—Connection is Type 304 stainless steel for greater corrosion resistance than aluminum or steel.

To Order: Please specify screen mesh size from those listed in the table.

Pipe Size	Ht.	Hex Size/ Dia.	Available Screen Mesh Sizes		
With Aluminum Connection					
A ⅜	3⅛″	1⅝″	60, 100	98115K42	$30.25
A ½	3⅛″	1⅝″	60, 100	98115K43	28.81
A ½	5⅝″	1⅝″	60, 100	98115K44	31.28
A ¾	3⅛″	1⅝″	60, 100	98115K45	29.38
A ¾	5⅝″	1⅝″	60, 100	98115K46	31.69
A 1	6″	1⅝″	60, 100	98115K47	35.14
B 1	5 1/16″	3 3/16″	60, 100	4449K11	37.03
B 1¼	6 1/16″	3 3/16″	60, 100	4449K12	36.49
B 1½	6 1/16″	4 5/16″	60, 100	4449K13	45.95
B 2	7 1/16″	4 5/16″	60, 100	4449K14	53.35
B 2½	7 1/16″	5″	60, 100	4449K15	55.14
B 3	8 5/16″	5″	60, 100	4449K16	64.86
C ¾	3½″	3 5/16″	60, 100	4455K21	17.22
C 1	5¾″	3 5/16″	60, 100	4455K22	20.93
C 1¼	7⅜″	3 5/16″	60, 100	4455K23	24.54
C 1½	9¾″	4 5/16″	60, 100	4455K24	40.89
C 2	9¾″	4 5/16″	60, 100	4455K25	55.26
With Steel Connection					
D ¼	2″	1 13/16″	100	98115K11	25.14
With Type 304 Stainless Steel Connection					
E ¾	3 1/16″	3 1/16″	60, 100	4455K42	55.89
E 1	5 9/16″	3 1/16″	60, 100	4455K43	71.37
E 1¼	7⅛″	3 1/16″	60, 100	4455K44	90.96
E 1½	8¾″	4 1/16″	60, 100	4455K45	124.78
E 2	9⅝″	4 1/16″	60, 100	4455K46	146.46
E 3	12⅝″	5 1/16″	60, 100	4455K48	303.36

High-Capacity Nylon Suction Strainers

Female Connection

Male Connection

- Use with oil
- Max. Temp.: 225° F

The tallest of our suction strainers, these have a large surface area to retain more dirt for use in high-flow applications. Also known as sump strainers, they're often used in hydraulic applications. Connection is black glass-reinforced nylon, screen is Type 304 stainless steel, and end cap is aluminum.

To Order: Please specify screen mesh size from those listed in the table.

Pipe Size	Ht.	Dia.	Available Screen Mesh Sizes		
With NPT Female Connection					
¾	3½″	3 3/16″	30, 60, 100	9807K811	$13.24
¾	3½″	3 3/16″	200	9807K711	19.46
1	5¾″	3 3/16″	30, 60, 100	9807K822	16.35
1	5¾″	3 3/16″	200	9807K722	26.95
1	7⅜″	3 3/16″	30, 60, 100	9807K799	18.01
1	7⅜″	3 3/16″	200	9807K499	31.58
1¼	7⅜″	3 3/16″	30, 60, 100	9807K833	18.19
1¼	7⅜″	3 3/16″	200	9807K733	31.90
1½	9¾″	4 3/16″	30, 60, 100	9807K844	27.98
1½	9¾″	4 3/16″	30, 60, 100	9807K881■	31.12
1½	9¾″	4 3/16″	200	9807K744	52.51
1½	9¾″	4 3/16″	200	9807K588■	58.48
2	9¾″	4 3/16″	30, 60, 100	9807K855	31.44
2	9¾″	4 3/16″	200	9807K755	59.07
2½	12½″	5 3/16″	30, 60, 100	9807K866	36.39
2½	12½″	5 3/16″	200	9807K766	68.52
3	12½″	5 3/16″	30, 60, 100	9807K877	44.45
3	12½″	5 3/16″	200	9807K771	79.57
With NPT Male Connection					
½	3¾″	2¼″	30, 60, 100	9807K922	10.15
½	3¾″	2¼″	200	9807K322	18.92
⅜	3¾″	2¼″	30, 60, 100	9807K911	10.05
⅜	3¾″	2¼″	200	9807K311	18.74
¾	3¾″	2¼″	30, 60, 100	9807K933	10.25
¾	3¾″	2¼″	200	9807K333	19.12
1	6 1/16″	3″	30, 60, 100	9807K599	16.35
1	6 1/16″	3″	200	9807K377	26.95
1	7 11/16″	3″	30, 60, 100	9807K688	18.19
1	7 11/16″	3″	200	9807K388	31.90
2	11 3/16″	4 3/16″	30, 60, 100	9807K944	31.44
2½	13¾″	5 3/16″	30, 60, 100	9807K955	36.39
3	13¾″	5 3/16″	30, 60, 100	9807K966	44.45

■ Has a pleated screen for higher flow.

Large-Particle Suction Strainers

F

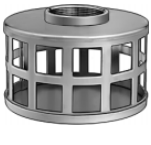

G

H

J

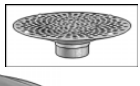

K

- Use with water
- Max. Temp.: Not rated

Keep debris from entering your line. Strainers have heavy duty construction that withstands a high suction force. Connection is female. Strainers with NPS, NPSM, and NPSC thread types are compatible with NPT male threads.

Pipe Size	Thread Type	Ht.	Dia.	Screen Perforation Size		
(F) Zinc-Plated Steel						
¾	NPS	6¼″	1⅝″	3/16″	4413K77	$8.33
¾	GHT	6¼″	1⅝″	3/16″	4413K78	8.33
1	NPS	6¼″	1⅝″	3/16″	4413K79	8.33
1½	NPT	6½″	2¼″	⅜″	4413K41	9.32
1½	NPSM	4″	5″	⅜″	4413K1	9.07
2	NPT	6½″	2¾″	⅜″	4413K42	10.90
2	NPSM	4″	6″	⅜″	4413K2	11.64
2½	NPS	4″	6″	⅜″	4413K9	10.89
2½	NPSM	9½″	3⅜″	⅜″	4413K49	11.00
3	NPSM	5″	7″	⅜″	4413K3	18.28
3	NPSM	9½″	4″	⅜″	4413K43	17.40
4	NPT	5″	7″	⅜″	4413K4	20.77
4	NPSM	9½″	5″	⅜″	4413K44	21.22
5	NPSC	9″	9″	⅜″	4413K6	42.89
6	NPSM	9½″	9″	1″	4413K5	47.08
8	NPT	13″	11″	1″	4413K7	107.67
(F) Corrosion-Resistant Type 304 Stainless Steel						
1½	NPS	4″	5″	⅜″	44215K1	85.91
2	NPS	4″	6″	⅜″	44215K2	112.87
3	NPS	5″	7″	⅜″	44215K3	161.98
4	NPS	5″	7″	⅜″	44215K4	338.64

Pipe Size	Thread Type	Ht.	Dia.	Screen Perforation Size		
(G) Zinc-Plated Steel for Extra-Large Particles						
1½	NPT	3½″	5″	1″	44145K1	$9.23
2	NPT	4″	6″	1⅛″	44145K2	10.57
3	NPT	5″	7″	1½″	44145K3	16.46
4	NPSM	5″	7″	1½″	44145K4	19.47
6	NPSM	9½″	9″	1½″	44145K6	47.08
(H) Zinc-Plated Steel for Shallow Liquid Levels						
1½	NPS	2½″	9½″	⅜″	44365K12	24.68
2	NPS	2½″	9½″	⅜″	44365K14	27.58
3	NPS	3½″	12″	⅜″	44365K16	73.49
(J) Zinc-Plated Steel for Shallow Liquid Levels						
¾	NPS	1″	4″	3/16″	44365K32	10.23
¾	GHT	1″	4″	3/16″	44365K34	10.99
1	NPS	1″	4″	3/16″	44365K36	11.11
1½	NPS	2½″	9½″	⅜″	44365K22	24.68
2	NPS	2½″	9½″	⅜″	44365K24	27.58
3	NPS	3½″	12″	⅜″	44365K26	73.49
(K) Lightweight Black Polyethylene						
1½	NPS	3½″	5″	¼″ × 1″	44265K24	7.10
2	NPS	3½″	5″	¼″ × 1″	44265K25	7.33
3	NPS	5″	7″	½″ × 1½″	44265K27	18.03

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

Miniature Nylon Suction Strainers

- Use with water, oil, and diesel fuel
- Max. Temp.: 275° F

A glass-filled black nylon connection is combined with a Type 304 stainless steel screen for good corrosion resistance.

To Order: Please specify screen mesh size from those listed in the table.

Female Connection *Male Connection*

Pipe Size	Ht.	Dia.	Available Screen Mesh Sizes		
With NPT Female Connection					
1/8	1 1/2"	2 1/4"	4, 6, 8	9877K701	$13.30
1/8	1 1/2"	2 1/4"	10, 20, 30, 40	9877K511	10.17
1/8	1 1/2"	2 1/4"	60, 100	9877K424	14.53
1/4	1 1/2"	2 1/4"	4, 6, 8	9877K702	13.43
1/4	1 1/2"	2 1/4"	10, 20, 30, 40	9877K522	10.27
1/4	1 1/2"	2 1/4"	60, 100	9877K889	14.67
3/8	1 1/2"	2 1/4"	4, 6, 8	9877K703	13.57
3/8	1 1/2"	2 1/4"	10, 20, 30, 40	9877K513	10.37
3/8	1 1/2"	2 1/4"	60, 100	9877K657	14.82
1/2	1 1/2"	2 1/4"	4, 6, 8	9877K704	13.70
1/2	1 1/2"	2 1/4"	10, 20, 30, 40	9877K514	10.48
1/2	1 1/2"	2 1/4"	60, 100	9877K814	14.97
3/4	2 1/8"	3 3/16"	4, 6, 8	9877K705	16.03
3/4	2 1/8"	3 3/16"	10, 20, 30, 40	9877K515	13.43
3/4	2 1/8"	3 3/16"	60, 100	9877K815	19.41
1	2 1/8"	3 3/16"	4, 6, 8	9877K706	16.19
1	2 1/8"	3 3/16"	10, 20, 30, 40	9877K516	13.57
1	2 1/8"	3 3/16"	60, 100	9877K816	19.61
1 1/4	2 1/8"	3 3/16"	4, 6, 8	9877K707	16.35
1 1/4	2 1/8"	3 3/16"	10, 20, 30, 40	9877K517	13.70
1 1/4	2 1/8"	3 3/16"	60, 100	9877K817	19.81
1 1/2	2 5/8"	4 3/16"	4, 6, 8	9877K708	21.77
1 1/2	2 5/8"	4 3/16"	10, 20, 30, 40	9877K518	16.53
1 1/2	2 5/8"	4 3/16"	60, 100	9877K818	23.14
2	2 5/8"	4 3/16"	4, 6, 8	9877K709	21.99
2	2 5/8"	4 3/16"	10, 20, 30, 40	9877K519	16.70
2	2 5/8"	4 3/16"	60, 100	9877K819	23.38
2 1/2	3 1/2"	5 3/16"	4, 6, 8	9877K271	36.62
2 1/2	3 1/2"	5 3/16"	10, 20, 30, 40	9877K687	28.33
2 1/2	3 1/2"	5 3/16"	60, 100	9877K746	29.94
3	3 1/2"	5 3/16"	4, 6, 8	9877K712	39.84
3	3 1/2"	5 3/16"	10, 20, 30, 40	9877K612	32.24
3	3 1/2"	5 3/16"	60, 100	9877K864	33.28
With NPT Male Connection					
3/8	2 1/2"	2 1/4"	4, 6, 8	9806K311	13.43
3/8	2 1/2"	2 1/4"	10, 20, 30, 40	9806K611	10.27
3/8	2 1/2"	2 1/4"	60, 100	9806K911	14.67
1/2	2 1/2"	2 1/4"	4, 6, 8	9806K321	13.57
1/2	2 1/2"	2 1/4"	10, 20, 30, 40	9806K621	10.37
1/2	2 1/2"	2 1/4"	60, 100	9806K929	14.82
3/4	2 1/2"	2 1/4"	4, 6, 8	9806K331	13.70
3/4	2 1/2"	2 1/4"	10, 20, 30, 40	9806K631	10.48
3/4	2 1/2"	2 1/4"	60, 100	9806K931	14.97
1	2 1/2"	3"	4, 6, 8	9806K301	16.35
1	2 1/2"	3"	10, 20, 30, 40	9806K302	13.70
1	2 1/2"	3"	60, 100	9806K303	19.81
2	4 1/4"	4 3/16"	4, 6, 8	9806K341	26.95
2	4 1/4"	4 3/16"	10, 20, 30, 40	9806K641	22.45
2	4 1/4"	4 3/16"	60, 100	9806K941	23.72
3	4 5/8"	5 3/16"	4, 6, 8	9806K361	40.15
3	4 5/8"	5 3/16"	10, 20, 30, 40	9806K661	32.48
3	4 5/8"	5 3/16"	60, 100	9806K961	39.84

Miniature PVC Suction Strainers

- Use with water
- Max. Temp.: 120° F

Use these strainers with water softeners, pressure washers, and in hydraulic systems. A black PVC connection is paired with a Type 304 stainless steel screen for good corrosion resistance. Connection is female; it fits NPT male threads.

To Order: Please specify screen mesh size from those listed in the table.

For Pipe Size	Ht.	Dia.	Available Screen Mesh Sizes		
1/4	1 1/8"	1 1/2"	20, 30, 40, 50, 80	98755K11	$2.10
3/8	1 1/4"	1 1/2"	20, 30, 40, 50, 80	98755K12	2.10
1/2	1 9/16"	1 3/4"	20, 30, 40, 50, 80	98755K13	3.19
3/4	1 11/16"	2 3/16"	20, 30, 40, 50, 80	98755K14	3.95
1	2 3/8"	3 3/16"	20, 30, 40, 50, 80	98755K15	8.16
1 1/2	2 3/8"	3 3/16"	20, 30, 40, 50, 80	98755K16	8.50

All-Nylon Suction Strainers

- Use with water, salt water, oil, and paint
- Max. Temp.: 225° F

For applications that corrode metal, use one of these all-nylon strainers. Screen size is 30 mesh. Color is black.

Female Connection

Pipe Size	Ht.	Dia.		
With NPT Female Connection				
1/8	4 5/16"	2 1/4"	9812K31	$8.85
1/4	4 5/16"	2 1/4"	9812K32	8.94
3/8	4 5/16"	2 1/4"	9812K33	9.03
1/2	4 5/16"	2 1/4"	9812K34	9.12
3/4	4 5/16"	2 1/4"	9812K35	9.21
With NPT Male Connection				
3/8	5 5/16"	2 1/4"	9812K41	9.03
1/2	5 5/16"	2 1/4"	9812K42	9.12
3/4	5 5/16"	2 1/4"	9812K43	9.21

Drinking-Water Bronze Suction Strainers with Check Valve

- Use with drinking (potable) water
- Temp. Range: 32° to 190° F

ANSI certified for use with drinking (potable) water in all states as of November 1, 2011, these strainers are often used in water-delivery applications. Also known as foot valves, they block particles from entering your line and stop backward flow. Screen has 7/64" perforations. Body is bronze and screen is Type 430 stainless steel. Check valve has a Buna-N seal. Max. pressure is 400 psi. Connection is NPT.

Female Threads

Female and Male Threads

Pipe Size Female	Pipe Size Male	Ht.	Dia.		
With Female Threads					
3/4	—	3 3/4"	1 3/8"	4856K111	$24.67
1	—	4 3/4"	1 3/4"	4856K121	26.27
1 1/4	—	5"	2 1/8"	4856K131	28.70
1 1/2	—	6 5/16"	2 1/2"	4856K141	47.23
2	—	7 3/16"	3 1/8"	4856K151	77.91
3	—	9 1/2"	4 5/8"	4856K171	418.87
With Female and Male Threads					
3/4	1	3 3/4"	1 5/16"	4856K211	32.23
1	1 1/4	5"	1 5/8"	4856K221	33.68
1 1/4	1 1/2	5"	1 15/16"	4856K231	40.08

Cast Iron Suction Strainers with Check Valve

- Use with water and oil
- Temp. Range: 32° to 150° F

Also known as foot valves, use these rugged strainers to stop debris from entering your pipeline and prevent backward flow. Screen has 5/16" Dia. holes. Body is cast iron. Check valve has a leather flapper. Max. pressure is 10 psi. Connection is NPT female.

Pipe Size	Ht.	Dia.	Strainer		Replacement Flapper	
1 1/2	4 1/8"	4 5/8"	5436K331	$83.83	5436K61	$15.45
2	5 1/4"	5 3/4"	5436K341	86.86	5436K62	15.45
3	7 3/16"	7 5/8"	5436K361	143.84	5436K63	23.32
4	8 7/8"	9 1/16"	5436K371	199.26	5436K64	41.05
6	12"	11 7/16"	5436K391	321.24	5436K66	75.87

PVC Suction Strainers with Check Valve

- Use with water, oil, and diesel fuel
- Temp. Range: 40° to 140° F

Stop large particles from entering your line while preventing backward flow. Also known as foot valves. Screen has 3/16" perforations. Body and screen are PVC. Check valve has a fluoroelastomer seal. Max. pressure is 150 psi.

Strainers with 1/2 to 2 pipe size come with an NPT female and a socket weld (unthreaded) union fitting for each pipe connection; *3 and 4 pipe size* come with an NPT female union fitting.

Pipe Size	Ht.	Dia.	Strainer		Replacement Screen	
1/2	4 7/8"	2 1/4"	4441K511	$68.23	4441K31	$35.10
3/4	5"	2 5/8"	4441K521	78.02	4441K32	39.40
1	5 7/8"	3"	4441K531	96.39	4441K33	46.41
1 1/4	6 15/16"	4"	4441K571	133.75	4441K34	73.39
1 1/2	7 1/16"	4"	4441K541	153.64	4441K34	73.39
2	8 9/16"	4 3/4"	4441K551	196.36	4441K35	87.91
3	11 1/4"	6 9/16"	4441K561	358.77	4441K36	122.52
4	14 5/8"	8 9/16"	4441K591	534.31	4441K37	141.11

For information about strainers, see page 373. For information about pipe size, see pages 2-3.

Cut-to-Size Acetal Suction Strainer with Check Valve

- Use with water
- Temp. Range: 32° to 180° F

A convenient replacement part to keep on-hand, this strainer has NPT male threads for ¾, 1, 1¼, and 1½ pipe sizes. Use a hacksaw to remove the pipe sizes that are smaller than you need. Also known as a foot valve, the strainer has a check valve to stop backward flow. Screen has 3/32″ perforations. Body is white acetal. Check valve has a neoprene seal. Overall size is 1 15/16″ Dia. × 7″ Ht.

4492K121 ..... $25.00

Steam Traps

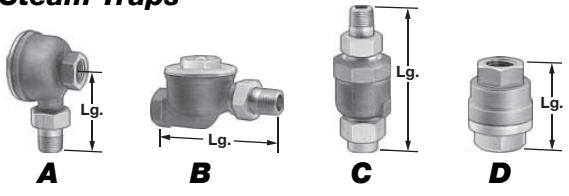

Increase the efficiency of your radiator by venting cool air—these compact steam traps open and close based on temperature. Also known as thermostatic steam traps, they are often used with convection heaters, drip lines, and risers. Connections are NPT.

Style A are for elbow pipe connections. Inlet is male and outlet is female; install with outlet on the side.

Style B are for horizontal pipe. Inlet is male and outlet is female.

Styles C & D are for vertical pipe; install with the outlet pointing down. *Style C* have a male inlet and female outlet. *Style D* have a female inlet and outlet.

	Pipe Size	Max. psi	Max. Temp.	Condensate Capacity, lbs./hr.	Lg.		
Brass Steam Traps							
A	½	25	265° F	210	2⅞″	**9840K21**	$82.77
A	½	65	310° F	350	2⅞″	**9840K61**	108.76
A	¾	25	265° F	430	3⅛″	**9840K23**	134.04
A	1	65	310° F	820	3⅝″	**9840K65**	247.76
B	½	25	265° F	210	4½″	**9840K25**	101.94
B	½	65	310° F	350	4½″	**9840K67**	140.07
B	¾	25	265° F	430	5″	**9840K27**	151.35
C	½	125	350° F	1,500	5⅛″	**9840K33**	148.55
Bronze Steam Traps							
A	½	25	250° F	50	3¼″	**1709K21**	51.61
A	½	25	250° F	125	3¼″	**1709K25**	78.84
A	½	50	250° F	875	3¼″	**1709K11**	96.86
A	½	125	250° F	4,800	3¼″	**1709K36**	114.69
A	¾	25	250° F	100	3¼″	**1709K23**	67.00
A	¾	25	250° F	125	3⅜″	**1709K27**	84.73
A	¾	50	250° F	1,200	3¼″	**1709K13**	105.47
A	¾	125	250° F	6,300	3¼″	**1709K38**	125.79
Type 316 Stainless Steel Steam Traps							
D	¼	304	500° F	1,000	2″	**8810T21**	298.74
D	½	304	500° F	1,000	2 7/16″	**8810T22**	329.02
D	½	650	650° F	650	3¾″	**8027K42**	298.74

Versa-Mount High-Flow Steam Traps

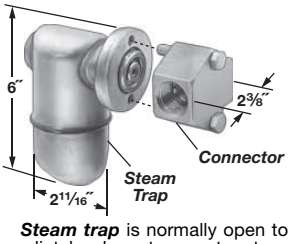

Get near-continuous condensate discharge in vertical or horizontal pipe. Install the connector in either direction—steam trap swivels on the connector so it can be positioned vertically.

Connector and steam trap are sold separately. Choose the connector that fits your line, and attach the steam trap with the included bolts. Position steam trap vertically after mounting.

Steam trap is normally open to release condensate; it closes immediately when steam enters to prevent energy loss. Also known as an inverted-bucket steam trap. Body is Type 304 stainless steel. Max. pressure is 200 psi. Max. temp. is 800° F. Condensate capacity is 500 lbs./hr.

Connectors are Type 304 stainless steel.

Steam Trap	**4382K31**	$285.00
½ NPT Female Connector	**4382K32**	150.77
¾ NPT Female Connector	**4382K33**	150.77

High-Flow Steam Traps

Cast Iron ***Type 304 Stainless Steel***

Also known as inverted-bucket steam traps, these provide near-continuous discharge to accommodate high condensate levels. Traps are normally open to release condensate. They close immediately when steam enters to prevent energy loss. Install in a horizontal pipeline. Connections are NPT female.

Type 304 stainless steel steam traps are more corrosion resistant than cast iron.

Pipe Size	Max. psi	Max. Temp.	Condensate Capacity, lbs./hr.	Lg.	Ht.		
Cast Iron Steam Traps							
½	15	450° F	1,040	5″	6⅜″	**4897K51**	$140.85
½	30	450° F	1,000	5″	6⅜″	**4897K21**	140.85
½	75	450° F	965	5″	6⅜″	**4897K52**	140.85
½	125	450° F	920	5″	6⅜″	**4897K27**	140.85
½	250	450° F	720	5″	6⅜″	**4897K34**	181.57
¾	15	450° F	1,040	5″	6⅜″	**4897K53**	140.85
¾	15	450° F	3,220	6⅝″	7⅝″	**4897K55**	290.51
¾	30	450° F	1,000	5″	6⅜″	**4897K22**	140.85
¾	30	450° F	3,220	6⅝″	7⅝″	**4897K23**	290.51
¾	75	450° F	965	5″	6⅜″	**4897K54**	140.85
¾	75	450° F	2,550	6⅝″	7⅝″	**4897K56**	290.51
¾	125	450° F	920	5″	6⅜″	**4897K28**	140.85
¾	125	450° F	2,240	6⅝″	7⅝″	**4897K29**	290.51
¾	250	450° F	720	5″	6⅜″	**4897K35**	181.57
¾	250	450° F	2,300	6⅝″	7⅝″	**4897K36**	292.71
1	15	450° F	3,900	8″	9¼″	**4897K57**	450.06
1	30	450° F	4,120	8″	9¼″	**4897K24**	450.06
1	75	450° F	3,960	8″	9¼″	**4897K58**	450.06
1	125	450° F	4,100	8″	9¼″	**4897K41**	450.06
1	250	450° F	3,630	8″	9¼″	**4897K37**	480.87
1¼	125	450° F	8,540	9⅜″	13″	**4897K42**	699.85
1¼	250	450° F	6,040	9⅜″	13″	**4897K38**	728.46
2	15	450° F	20,000	11¼″	17″	**4897K62**	1,157.62
2	30	450° F	18,500	11¼″	17″	**4897K26**	1,157.62
2	75	450° F	19,200	11¼″	17″	**4897K63**	1,157.62
2	125	450° F	20,000	11¼″	17″	**4897K33**	1,157.62
2	250	450° F	19,400	11¼″	17″	**4897K39**	1,192.83
Type 304 Stainless Steel Steam Traps							
⅜	200	800° F	500	4⅜″	5⅜″	**17115K81**	285.00
½	200	800° F	500	4⅜″	5⅜″	**17115K82**	285.00
½	400	800° F	580	4⅜″	6⅜″	**17115K83**	285.00
¾	400	800° F	580	4⅜″	6⅝″	**17115K84**	285.00
¾	650	600° F	1,500	5″	8½″	**17115K91**	719.77
1	650	600° F	1,500	5″	8½″	**17115K92**	718.00

Super-Energy-Saving Steam Traps

E&G

F

Maximize the energy from your steam line. Also known as thermodynamic steam traps, these discharge condensate when it's close to steam temperature for minimal energy loss. They also minimize noisy water hammer. Often used with tanks and vats, steam mains, steam tracers, presses, and heating equipment. Body is stainless steel. Max. temp. is 800° F. Install in a horizontal pipeline. Connections are NPT female.

(F) Steam traps with strainer stop debris from moving down the pipeline. Screen has 1/32″ perforations.

(G) Zero-steam-loss steam traps are insulated to increase energy efficiency.

Pipe Size	Max. psi	Condensate Capacity, lbs./hr.	Lg.	Ht.		
(E) Steam Traps						
⅜	600	1,250	2″	1¾″	**4920K51**	$126.32
½	600	2,000	2 11/16″	2″	**4920K52**	150.64
¾	600	3,050	2 13/16″	2 7/16″	**4920K53**	172.73
1	600	4,700	3 5/16″	2⅞″	**4920K54**	264.58
(F) Steam Traps with Strainer						
⅜	600	1,250	3 1/16″	4¼″	**4920K61**	180.74
½	600	2,000	3 1/16″	4¼″	**4920K62**	202.08
¾	600	3,050	3 1/16″	4¼″	**4920K63**	227.84
1	600	4,700	3¼″	4¾″	**4920K64**	340.26
(G) Zero-Steam-Loss Steam Traps						
⅜	600	1,250	2″	2¼″	**8833T21**	202.63
½	600	2,000	2¾″	2½″	**8833T22**	302.80
¾	600	3,050	2 13/16″	2 15/16″	**8833T23**	388.18
1	600	4,700	3 5/16″	3 7/16″	**8833T24**	532.75

For information about pipe size, see pages 2-3.

Energy-Saving High-Flow Steam Traps

Vent cool air and condensate to increase energy efficiency in your steam lines. The vent on these steam traps is normally open, allowing condensate and air to flow out. It closes immediately when steam enters to prevent energy loss. Also known as thermostatic steam traps, they're ideal for use with heat exchangers, air-heating coils, and drip stations in steam lines. Traps are cast iron. Connections are NPT female.

Steam traps for inline or parallel pipe connection have an inlet and an outlet on each side to connect inline or parallel steam and condensate lines. Include two plugs for the unused ports.

Steam traps for parallel pipe connection have an inlet and outlet on the same side to connect parallel steam and condensate lines.

Steam traps for inline pipe connection have an inlet and outlet on opposite sides to connect inline steam and condensate lines.

For Inline or Parallel Pipe Connection

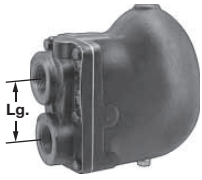

For Parallel Pipe Connection

For Inline Pipe Connection

Pipe Size	Max. psi	Max. Temp.	Condensate Capacity, lbs./hr.	Lg.	Ht.		
For Inline or Parallel Pipe Connection							
3/4	15	250° F	1,075	3 5/16"	5 3/4"	4913K51	$145.63
3/4	30	270° F	1,370	3 5/16"	5 3/4"	4913K71	148.90
3/4	75	320° F	1,450	3 5/16"	5 3/4"	4913K61	179.98
3/4	125	350° F	1,190	3 5/16"	5 3/4"	4913K81	190.74
1	15	250° F	1,075	3 5/16"	5 3/4"	4913K52	146.62
1	30	270° F	1,370	3 5/16"	5 3/4"	4913K72	149.92
1	75	320° F	1,450	3 5/16"	5 3/4"	4913K62	201.87
1	125	350° F	1,190	3 5/16"	5 3/4"	4913K82	225.42
1 1/4	15	250° F	2,340	3 5/16"	5 3/4"	4913K57	169.02
1 1/4	30	270° F	2,000	3 5/16"	5 3/4"	4913K73	187.83
For Parallel Pipe Connection							
1 1/4	75	320° F	5,400	3"	8 3/8"	4913K66	282.45
1 1/4	125	350° F	4,500	3"	8 3/8"	4913K83	319.80
1 1/2	15	250° F	7,600	3"	8 3/8"	4913K56	278.67
1 1/2	30	270° F	7,000	3"	8 3/8"	4913K74	275.04
1 1/2	75	320° F	5,400	3"	8 3/8"	4913K67	231.19
1 1/2	125	350° F	4,500	3"	8 3/8"	4913K84	326.20
2	15	250° F	10,900	4 15/16"	9 1/8"	4913K58	423.82
2	30	270° F	10,000	4 15/16"	9 1/8"	4913K75	454.59
For Parallel Pipe Connection (Cont.)							
2	75	320° F	7,700	4 15/16"	9 1/8"	4913K68	$459.95
2	125	350° F	6,600	4 15/16"	9 1/8"	4913K85	892.44
For Inline Pipe Connection							
1/2	15	295° F	1,075	4 13/16"	5 13/16"	4913K111	253.53
1/2	30	310° F	1,370	4 13/16"	5 13/16"	4913K112	295.79
1/2	75	365° F	1,450	4 13/16"	5 13/16"	4913K113	398.74
1/2	125	395° F	1,190	4 13/16"	5 13/16"	4913K114	411.99
1/2	200	430° F	985	4 13/16"	5 13/16"	4913K115	415.95
3/4	15	295° F	1,075	4 13/16"	5 13/16"	4913K211	257.49
3/4	30	310° F	1,370	4 13/16"	5 13/16"	4913K212	295.79
3/4	75	365° F	1,450	4 13/16"	5 13/16"	4913K213	398.74
3/4	125	395° F	1,190	4 13/16"	5 13/16"	4913K214	411.99
3/4	200	430° F	985	4 13/16"	5 13/16"	4913K215	415.95
1	15	295° F	1,075	4 13/16"	5 13/16"	4913K311	305.03
1	30	310° F	1,370	4 13/16"	5 13/16"	4913K312	322.20
1	75	365° F	1,450	4 13/16"	5 13/16"	4913K313	455.57
1	125	395° F	1,190	4 13/16"	5 13/16"	4913K314	455.57
1	200	430° F	985	4 13/16"	5 13/16"	4913K315	458.21

Sanitary Steam Filters with Reusable Cartridge

Follow health and safety practices for food and dairy applications. These steam filters meet 3-A sanitary standard requirements. They have a carbon cartridge that removes 95% of particles down to 2 microns. Cartridge can be cleaned for reuse. Max. pressure is 100 psi. Max. temp. is 360° F. Connections are NPT female.

Pipe Size	Steam Capacity @100 psi, lbs./hr.	Lg.	Ht.	*Filter*		*Replacement Cartridge*	
1/2	160	9 3/16"	8 11/16"	44105K71	$535.38	44105K11	$163.02
3/4	285	8 3/16"	8 11/16"	44105K72	535.38	44105K11	163.02
1	460	8 3/16"	10 11/16"	44105K73	609.23	44105K12	150.00
1 1/2	1,090	11 3/16"	15 3/16"	44105K74	1,016.92	44105K13	401.54
2	1,800	11 3/16"	18 3/16"	44105K75	1,081.54	44105K14	440.00

Maintenance-Free Moisture/Particle Separators for Air and Steam Lines

Get nothing but clean dry air, inert gas, or steam—separators remove 99% of moisture and particles down to 10 microns. Plus they have no baskets or cartridges to clean or replace. Particles fall to the bottom of the separator and are discharged through the drain trap with minimal pressure loss.

Body is cast iron. Max. temp. is 450° F. Separators meet ASME Code Section VIII for pressure vessels. Connections are NPT female.

For Low Pressure— Smaller and more efficient than separators for medium pressure, a baffle separates contaminants from your media.

For Medium Pressure— Separators use centrifugal flow to remove contaminants from your media. They have a 1/4 NPT female vent on top.

For Low Pressure

Pipe Size	*Capacity @ 150 psi* Air, scfm	Steam, lbs./hr.	Lg.	Ht.		
For Low Pressure—*Max. pressure is 150 psi.*						
1/2	100	235	5 1/2"	12"	51725K41	$271.58
3/4	145	390	5 1/2"	12"	51725K42	288.68
1	180	595	6"	12"	51725K43	360.13
1 1/4	330	900	6"	12"	51725K44	372.55
1 1/2	440	1,650	7 1/2"	14 1/2"	51725K45	391.42
2	700	2,250	8 1/8"	16 1/4"	51725K46	412.49
2 1/2	1,350	3,800	9 3/8"	18 1/4"	51725K47	525.87
3	1,800	5,750	11 1/16"	19 1/2"	51725K48	547.62
For Medium Pressure—*Max. pressure is 250 psi.*						
3/4	125	350	5 1/2"	12 9/16"	9838K15	419.29
1	190	700	6"	11 1/4"	9838K11	465.88
1 1/4	300	1,100	6"	13 3/8"	9838K12	705.88
1 1/2	425	1,450	7 1/4"	15 9/16"	9838K13	799.69
2	770	2,800	8 1/8"	16 7/16"	9838K14	890.31
2 1/2	1,170	4,300	12"	22 3/16"	9838K16	1,165.66
3	1,750	6,600	11"	22 7/16"	9838K17	1,135.86

Vinyl-Coated Woven Plastic Mesh

A vinyl coating on both sides makes this mesh weather resistant. It's woven with multifilament polyester fibers for good strength. Max. temp. is 160° F.

To Order: Please specify length from those listed in the table.

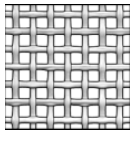

Color	Opening Size (Sq.)	Thread Dia.	Open Area	Available Lengths, ft.	*72" Wide*	Per Ft.
Black	1/16"	0.016"	50%	1, 5, 10, 50	87655K13	$3.15
Blue	1/16"	0.016"	50%	1, 5, 10, 50	87655K12	3.15
Orange	1/16"	0.016"	50%	1, 5, 10, 50	87655K15	3.15
Green	1/16"	0.016"	50%	1, 5, 10, 50	87655K14	3.15
White	1/16"	0.016"	50%	1, 5, 10, 50	87655K11	3.15

Water Filters

w/ Opaque Blue Housing

w/ Clear Housing and Bypass Valve (4496K41)

Repl. Cartridge

Filters have an easy-to-replace, industry-standard cartridge that removes rust and sediment; taste, odor, and chlorine; or oil, gasoline, diesel fuel, and hydrocarbons. Housings and cartridges are made of FDA-grade materials. All have a pressure-release button for safe cartridge replacement, unless noted. Max. pressure is 125 psi and max. temp. is 125° F, unless noted.

Note: Filters work with any double open-end (DOE) filter cartridge with the same OD and length. See pages 390-394 for other cartridges. If using both, install rust-and-sediment filters before taste-and-odor filters in your line. For exceptionally dirty water, install two rust-and-sediment filters.

Connections: NPT female.

Filters with opaque blue housing keep light out to reduce the growth of algae.

Filters with clear housing make it easy to see the flow of water and when the cartridge needs to be replaced. ***Filters with bypass valve*** allow you to stop flow completely to change your cartridge. Furnished with a spanner wrench and adapters for 3/4" compression tube fittings, unless noted. 4496K41 can also route water flow around a clogged cartridge.

Pipe Size	Max. Flow, gpm	Housing Material	Housing O'all Dia.	Housing O'all Ht.	Filter Cartridge Material	Micron Rating	OD	Ht.	Filters		Replacement Cartridge	
Filters with Opaque Blue Housing												
For Removing Sediment and Rust												
1/4"	10	Polypropylene	4 3/4"	11 13/16"	Polypropylene	20	2 1/2"	9 7/8"	4448K35	$23.47	4422K61	$5.54
3/8"	2	Polypropylene	4 3/8"	7"	Polypropylene	5	2 3/8"	4 7/8"	4448K26	23.17	5165K39	3.51
1/2"	10	Polypropylene	4 3/4"	11 13/16"	Polypropylene	20	2 1/2"	9 7/8"	4448K36	22.52	4422K61	5.54
3/4"	10	Polypropylene	5 1/8"	12 1/4"	Cellulose	20	2 5/8"	9 3/4"	4448K22	42.00	7191K11	4.59
3/4"	15	Polypropylene	5 1/8"	22 3/8"	Cellulose	20	2 5/8"	20"	4448K24	63.55	7191K13	10.46
For Removing Taste, Odor, and Chlorine												
1/4"	1.5	Polypropylene	4 3/4"	11 13/16"	Activated Carbon	5	2 7/8"	9 3/4"	4448K38	29.68	4422K62	10.16
3/8"	0.5	Polypropylene	4 3/8"	7"	Activated Carbon	5	2 1/2"	4 7/8"	4448K6	38.64	45175K15	6.12
1/2"	1.5	Polypropylene	4 3/4"	11 13/16"	Activated Carbon	5	2 7/8"	9 3/4"	4448K39	30.60	4422K62	10.16
3/4"	1	Polypropylene	5 1/8"	12 1/4"	Activated Carbon	5	2 1/2"	9 3/4"	4448K67	36.19	45175K4	7.60
3/4"	2	Polypropylene	5 1/8"	22 3/8"	Activated Carbon	5	2 1/2"	20"	4448K68	43.45	4448K17	20.16
Filters with Clear Housing												
For Removing Sediment and Rust												
1/4"	10	Polypropylene	4 3/4"	11 13/16"	Polypropylene	20	2 1/2"	9 7/8"	4422K31	25.83	4422K61	5.54
3/8"	2	Styrene	4 5/8"	7 3/8"	Polypropylene	5	2 3/8"	4 7/8"	4422K4	38.98	5165K39	3.51
1/2"	10	Polypropylene	4 3/4"	11 13/16"	Polypropylene	20	2 1/2"	9 7/8"	4422K32	25.84	4422K61	5.54
3/4"	10	Styrene	5 1/4"	12 5/8"	Cellulose	20	2 5/8"	9 3/4"	4422K3	35.28	7191K11	4.59
3/4"	20	Styrene	5 1/2"	24 7/16"	Cellulose	20	2 3/4"	20"	4448K44	76.17	4448K45	17.12
For Removing Taste, Odor, and Chlorine												
1/4"	1.5	Polypropylene	4 3/4"	11 13/16"	Activated Carbon	5	2 7/8"	9 3/4"	4422K33	32.06	4422K62	10.16
3/8"	0.5	Styrene	4 5/8"	7 3/8"	Activated Carbon	5	2 1/2"	4 7/8"	4422K51	39.49	45175K15	6.12
1/2"	1.5	Polypropylene	4 3/4"	11 13/16"	Activated Carbon	5	2 7/8"	9 3/4"	4422K34	32.70	4422K62	10.16
3/4"	1	Styrene	5 1/4"	12 5/8"	Activated Carbon	5	2 1/2"	9 3/4"	4422K11	45.48	45175K4	7.60
3/4"	8	Styrene	5 1/2"	24 7/16"	Carbon/Cellulose	3	2 5/8"	20"	4448K46 ♦	90.11	4448K47 ★	35.75
For Removing Oil, Gasoline, Diesel Fuel, and Hydrocarbons												
3/4"	5	Polypropylene	4 3/4"	11 13/16"	Polypropylene	5	2 1/2"	9 3/4"	4422K75	104.61	4422K81	61.00
Filters with Clear Housing and Bypass Valve												
For Removing Sediment and Rust												
3/4"	7	Styrene	5"	14"	Polypropylene	5	2 3/4"	9 3/4"	4496K41 ■	61.20	4496K42	9.34
For Removing Taste, Odor, and Chlorine												
3/4"	5	Styrene	5"	15"	Carbon/Paper	5	2 1/2"	9 3/4"	4496K51 ★	74.43	4361K52 ★	10.62

♦ Max. pressure is 150 psi. ★ Max. temp. is 100° F. ■ Does not include a pressure-release button or adapters for tube fittings.

High-Capacity Water Filters

w/ Opaque Blue Housing

w/ Clear Housing

Repl. Cartridge

With a larger housing and a cartridge that has 3 1/2 times the surface area of the water filters above, these filters provide higher dirt-holding capacity. Housings and cartridges are made of FDA-grade materials. They include a pressure-release button for safe cartridge replacement. All include a filter cartridge.

Note: Filters work with any double open-end (DOE) filter cartridge with the same OD and length. See pages 390-394 for other cartridges. If using both, install rust-and-sediment filters before taste-and-odor filters in your line. For exceptionally dirty water, install two rust-and-sediment filters.

Connections: NPT female.

Filters with opaque blue housing keep light out to reduce the growth of algae. Housing is polypropylene. *Filter for removing iron* improves taste, reduces damage to water heaters, and prevents staining of sinks and tubs when there is iron in your groundwater. ***Filters with clear styrene housing*** make it easy to see the flow of water and when the cartridge needs to be replaced.

Pipe Size	Max. Flow, gpm	Max. psi	Max. Temp.	Housing O'all Dia.	Housing O'all Ht.	Filter Cartridge Material	Micron Rating	OD	Ht.	Filters		Replacement Cartridge	
Filters with Opaque Blue Housing													
For Removing Sediment and Rust													
3/4"	10	90	125° F	7 5/16"	24"	Polypropylene	20	4 1/2"	20"	44075K14	$85.85	44075K19	$26.16
1"	10	100	100° F	7 1/4"	13 1/8"	Polyester	50	4 1/2"	9 3/4"	44075K21	64.03	44075K67	16.90
1"	10	90	125° F	7 5/16"	24"	Polypropylene	20	4 1/2"	20"	44075K15	89.08	44075K19	26.16
1 1/2"	10	100	100° F	7 1/4"	13 1/8"	Polyester	50	4 1/2"	9 3/4"	44075K22	64.87	44075K67	16.90
1 1/2"	10	90	125° F	7 5/16"	24"	Polypropylene	20	4 1/2"	20"	44075K16	93.01	44075K19	26.16
For Removing Taste and Odor													
3/4"	2	100	100° F	7 1/4"	13 1/8"	Activated Carbon	25	4 1/2"	9 3/4"	44075K31 ♠	75.00	44075K81	41.24
3/4"	4	90	125° F	7 5/16"	24"	Activated Carbon	5	4 5/8"	20"	44075K26	115.48	44075K29	76.42
1"	2	100	100° F	7 1/4"	13 1/8"	Activated Carbon	25	4 1/2"	9 3/4"	44075K32 ♠	75.00	44075K81	41.24
1"	4	90	125° F	7 5/16"	24"	Activated Carbon	5	4 5/8"	20"	44075K27	123.21	44075K29	76.42
1 1/2"	4	90	125° F	7 5/16"	24"	Activated Carbon	5	4 5/8"	20"	44075K28	128.07	44075K29	76.42
For Removing Iron													
1"	6	90	100° F	7 1/4"	23 3/8"	Zeolite	30	4 1/2"	20"	44075K41	168.10	44075K49	94.02
Filters with Clear Styrene Housing													
For Removing Sediment and Rust													
1" and 1 1/2"	25	100	125° F	7 9/16"	13 5/16"	Polyester	50	4 1/2"	9 3/4"	9860K11	123.00	9860K21	21.50
1" and 1 1/2"	25	100	125° F	7 9/16"	23 11/16"	Polyester	50	4 1/2"	20"	9860K12	165.22	9860K22	39.12

♠ Housing and cartridge are NSF certified.

Ultra-Fine Water Filters with Change-Out Indicator

A built-in differential pressure gauge lets you know when it's time to change your filter cartridge. Use these filters for removing taste, odor, and bacteria. The carbon block cartridge is rated at 0.15 microns to remove extra-fine particles. They include a bracket with 3/8″ mounting holes for panel mounting (mounting hardware not included) and a pressure-release button and spanner wrench for safe and easy cartridge replacement. Housing is blue polypropylene. Overall size is 5 3/8″ Dia. × 14 1/2″ Ht. Max. pressure is 125 psi. Max. temperature is 125° F.

Connections: NPT female.

Pipe Size	Max. Flow, gpm	Filter Cartridge OD	Filter Cartridge Ht.		
1/2″	1	2 7/8″	10 1/4″	8931T21	$155.89
3/4″	1	2 7/8″	10 1/4″	8931T22	170.38
Replacement Cartridge				8931T26	83.50

Heavy Duty Space-Saving Two-Stage Water Filter

To save space, this filter doesn't have individual housings for each cartridge; it contains two stages of filtration within a single body. The first stage is a nylon cartridge that removes rust, sediment, sand, and algae (cartridge measures 3 1/8″ OD × 5 5/8″ Ht.). The second stage is an activated-carbon cartridge that removes unpleasant tastes and odors, including chlorine (cartridge measures 4 1/4″ OD × 5 1/4″ Ht.). Both are rated at 5 microns.

It has a rugged cast aluminum housing for more durability than a polypropylene or styrene housing. Overall size is 7 1/2″ Dia. × 14″ Ht. Max. flow rate is 8 gpm. Max. pressure is 100 psi. Max. temperature is 110° F.

Connections: 1″ NPT female.

Water Filter	4435K14	$242.55
Replacement Cartridges		
Cartridge for Removing Sediment and Rust	4435K15	19.29
Cartridge for Removing Taste and Odor	4435K16	31.79

Quick-Change Water Filters with Instant Tube Connections

Instant (push-to-connect) tube connections allow you to quickly and easily install these filters into your tubing line. They have a slim diameter for squeezing into tight spaces. Cartridge unthreads from filter head for quick replacement without a spanner wrench. To prevent leaks, an internal valve automatically stops flow during cartridge replacement.

All have a polypropylene housing and cartridge. Overall size is 3″ Dia. × 11 5/8″ Ht. Cartridges are 2 1/4″ OD × 10 3/4″ Ht. Max. pressure is 125 psi. Max. temperature is 100° F. All meet ANSI/NSF 42.

Filter for removing taste, odor, chlorine, and lead also meets ANSI/NSF 53.

Connections: Instant (push-to-connect) tube fittings.

For Tube OD	Max. Flow, gpm	Micron Rating	Filters		Replacement Cartridge	
For Removing Taste, Odor, and Chlorine						
1/4″	0.5	5	8484T61	$40.05	8484T66	$31.57
1/4″	0.75	Not Rated	8484T51	32.19	8484T56	21.84
For Removing Taste, Odor, Chlorine, and Lead						
1/4″	0.5	0.5	8484T31	41.69	8484T36	33.32

Two-Stage Water Filter with Compression Tube Connections

Armed with two filter cartridges (one rated at 5 microns for removing sediment and particles and another that's rated at 0.5 microns for removing lead, tastes, and odors), this filter includes a faucet for dispensing clean water and a pressure-release button for safe cartridge replacement. Filter is ANSI/NSF 42 and 53 certified. It has 1/4″ compression tube fittings for connecting to metal tubing. It also includes a mounting bracket, tubing, wrench, and all necessary installation hardware. Housing is polypropylene. Overall size is 10 3/4″ Wd. × 5 1/2″ Dp. × 13 1/4″ Ht. Cartridge size is 2 1/2″ OD × 9 3/4″ Ht. Max. flow rate is 0.5 gpm. Max. pressure is 125 psi. Max. temperature is 100° F. ANSI certified for use with drinking (potable) water in all states as of October 1, 2010.

Connections: 1/4″ compression tube fittings.

Water Filter	44285K76	$199.74
Replacement Cartridge for Removing Sediment and Rust (Polypropylene)	44015K87	5.40
Replacement Cartridge for Removing Taste, Odor, Lead (Activated Carbon)	44015K88	60.90

High-Temperature Water Filters

Made of glass-reinforced nylon to remove sediment from hot water. All are rated at 5 microns. Max. pressure is 125 psi and max. temperature is 160° F.

Connections: NPT female.

1/2″ filter has a black housing and a polypropylene cartridge. ***3/4″ filters*** have an orange/red housing and a cellulose/polyester cartridge. They comply with FDA CFR Title 21.

Pipe Size	Max. Flow, gpm	O'all Dia.	O'all Ht.	Filter Cartridge OD	Filter Cartridge Ht.	Filters		Replacement Cartridge	
1/2″	2	4 3/8″	11 3/4″	2 1/2″	9 7/8″	5190K62	$76.17	8147K52	$6.52
3/4″	5	4 7/8″	7″	2 5/8″	4 7/8″	5190K73	79.53	5190K83	8.01
3/4″	10	4 7/8″	12″	2 5/8″	9 3/4″	5190K74	97.91	5190K84	10.38

Easy-to-Clean Water Filters

3/4″ and 1″ Filters — *2″ Filter*

Use these filters' bottom drain port to flush the cartridge clean of sediment—there's no need to shut off or disassemble the filter for cleaning. They're easy to flush with just a quarter turn of the top thumbscrew. Filters have a polycarbonate housing bowl, a polypropylene upper body housing, and a Type 304 stainless steel filter cartridge. Max. pressure is 100 psi. Max. temperature is 120° F.

Cartridges for ***3/4″*** and ***1″ filters*** measure 1 5/8″ OD × 6 9/16″ Ht. **Connections:** NPT male.

Cartridges for ***2″ filter*** measure 2 5/8″ OD × 13″ Ht. **Connections:** Flange with a 6 1/4″ OD and four 5/8″ dia. mounting holes on a 4.75″ to 4.92″ bolt circle.

To Order: For filters and replacement cartridges, please specify micron size: 105, 150, or 250.

Pipe Size	Max. Flow, gpm	Port-to-Port Lg.	O'all Ht.	Filters		Replacement Cartridge	
3/4″	20	6″	11 3/4″	5159K61	$75.51	5159K91	$32.44
1″	30	6″	11 3/4″	5159K64	81.63	5159K91	32.44
2″	120	10 7/32″	24 29/32″	5159K68	464.72	5159K94	93.34

Inline Disposable Water Filters

With cartridge and housing in a single piece, these 5-micron filters (unless noted) are easy to install and take up no more space than a piece of pipe or tube. Use until the filter becomes clogged and then simply dispose of them. Perfect for tight spaces and low-flow applications. Housing is polypropylene. Max. pressure is 125 psi. Max. temperature is 100° F, unless noted. ***Filters for removing sediment and rust*** meet ANSI/NSF 42.

Connections: NPT female or instant (push-to-connect) tube fittings, unless noted.

NPT Female

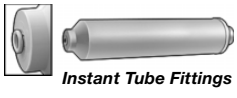

Instant Tube Fittings

For Removing Sediment and Rust—Polypropylene Cartridge

Connection Size	Max. Flow, gpm	Port-to-Port Lg.	O'all Dia.	Filter w/ NPT Female Connections		Filter w/ Instant Tube Fitting Connections	
1/4″	0.5	6″	2″	44205K21	$8.02	44205K41	$10.30
1/4″	1	10″	2″	44205K22	8.24	44205K42	10.54
1/4″	2.5	14″	2 1/2″	_____	____	44205K43	16.24
3/8″	0.5	6″	2″	44205K24	8.02	_____	____
3/8″	1	10″	2″	44205K25	8.24	_____	____
3/8″	2	11″	2 1/2″	44205K26	13.30	_____	____

For Removing Taste, Odor & Chlorine—Activated Carbon Cartridge

Connection Size	Max. Flow, gpm	Port-to-Port Lg.	O'all Dia.	Filter w/ NPT Female Connections		Filter w/ Instant Tube Fitting Connections	
1/4″	0.5	6″	2″	44205K11	$13.72	44205K31	$16.06
1/4″	0.5	10″	2″	44205K12	15.13	44205K32	17.50
1/4″	1	10 1/2″	2 1/2″	44205K95▲	15.95	44205K92♣	17.26
1/4″	1	14″	2 1/2″	44205K13	25.72	44205K33	28.57
3/8″	0.5	6″	2″	44205K14	13.72	_____	____
3/8″	0.5	10″	2″	44205K15	15.13	44205K35	17.96
3/8″	1	14″	2 1/2″	44205K16	25.72	_____	____

▲ Max. temperature is 125° F. Not rated for microns.
♣ Max. flow is 0.5 gpm. Port-to-port lg. is 10″. O'all dia. is 2″.
Connections are 1/4″ compression tube fittings. Not rated for microns.

NSF-Certified Ultra-Fine Drinking Water Filter

Certified to ANSI/NSF standards 42 and 53 for drinking and cooking water, this filter removes unpleasant tastes and odors, lead, mold, algae, oxidized iron, sulfides, and cysts. It also inhibits scale and mineral buildup. This product is also NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Housing is polypropylene. Filter comes with a 0.5-micron filter cartridge that has a blend of purifying material, including activated carbon. A built-in shutoff valve stops the water supply during filter changes. Also included is a mounting bracket with two 1/4″ slots. Overall size is 4″ Dia. × 15 1/2″ Ht. Cartridge size is 4″ OD × 10 1/2″ Ht. Max. flow is 0.75 gpm. Max. pressure is 125 psi. Max. temperature is 100° F.

Connections: 3/8″ NPT female.

Water Filter	9839K16	$294.27
Replacement Cartridge	9839K17	119.70

Water Softeners

Water softeners reduce the concentration of mineral deposits (calcium and magnesium) in your water, reducing scale buildup and improving the cleaning effects of detergent. These softeners have a built-in control valve that refills the tank only when necessary (demand operation), conserving water and salt. Their salt tank is made of high-density polyethylene (HDPE). Resin tank is made of polypropylene wrapped in fiberglass. They operate on 120 VAC, 60 Hz and include an 8-ft. power cord with two-prong plug.

Connections: 1″ NPT male.

Mineral Removal Capacity, Grains of $CaCO_3$/ 10 Pounds of Salt	Salt Storage Cap., lbs.	Max. Flow, gpm	Required Installation Space Ht.	Wd.	Dp.		
24,800	325	11	58″	32″	18″	3515K93	$923.50
49,600	425	15	60″	44″	18″	3515K97	1,040.93
74,400	425	15	73″	46″	18″	3515K98	1,578.16

Cartridge-Style Water Softeners

For protecting medical and food-service equipment from hard water, these combine a standard, polypropylene filter housing with a mineral-removing, water-softening cartridge. Cartridge contains an FDA-grade, sodium-based nonsolvent softening resin. Softeners also include a mounting bracket kit and a spanner wrench. Max. temperature is 100° F. **Connections:** NPT female.

3/4″ Filter—Cartridge removes 1,500 grains of $CaCO_3$.

1″ Filter—Cartridge removes 4,500 grains of $CaCO_3$.

Pipe Size	Max. Flow, gpm	Max. psi	O'all Dia.	O'all Ht.		
3/4″	0.75	125	5 1/8″	22 3/8″	8986T11	$93.96
1″	2	90	7 1/4″	23 3/8″	8986T12	184.53

Repl. Cartridge for 3/4″ Softener (2 5/8″ OD × 20″ Ht.)	8986T51	32.56
Repl. Cartridge for 1″ Softener (4 1/2″ OD × 20″ Ht.)	8986T52	57.71

Multi-Stage Water Filters with Faucet

Four-Stage Filter

Also known as reverse osmosis filters, these remove cryptosporidium, lead, chlorine, copper, and unpleasant tastes and odors from your water. All have a 5-micron first-stage cartridge, a reverse osmosis membrane cartridge, and a carbon post cartridge. They also include a steel storage tank, a faucet, a wrench, tubing, and all necessary installation hardware. Cartridge housings are polypropylene. Carbon and polypropylene cartridges measure 2 1/2″ OD × 9 3/4″ Ht. Max. pressure is 90 psi. Max. temp. is 100° F.

Three-stage filter is rated for 7.6 gallons per day and is ANSI/NSF 58 certified. Overall size is 13 3/4″ Wd. × 4 3/4″ Dp. × 12 3/4″ Ht. Storage tank holds 3 gallons and measures 11 1/4″ Dia. × 16 3/4″ Ht. Reverse osmosis cartridge is 1 3/4″ OD × 10″ Ht. ANSI certified for use with drinking (potable) water in all states as of October 1, 2010.

Four-stage filter has an additional 0.5-micron carbon cartridge to keep small particles from the reverse osmosis membrane. Rated for 7.2 gallons per day, made from FDA-grade materials, and ANSI/NSF 58 certified. Overall size is 14″ Wd. × 6″ Dp. × 17″ Ht. Storage tank holds 2 gallons and measures 12″ Dia. × 16″ Ht. Reverse osmosis cartridge is 1 13/16″ OD × 11 3/4″ Ht. This product can be used with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012.

Three-Stage Filter

		Each
Water Filter	4361K31	$312.74
Replacement Cartridges		
Reverse Osmosis Membrane Cartridge	4361K55	105.37
		Set
5-Micron Carbon First-Stage Cartridge and Carbon Post Cartridge	4361K54	$40.29

Four-Stage Filter

		Each
Water Filter	4361K11	$403.67
Replacement Cartridges		
0.5-Micron Carbon Cartridge	4361K23	30.00
Reverse Osmosis Membrane Cartridge	4361K25	126.51
Carbon Post Cartridge	4361K24	19.95
		Pair
5-Micron Polypropylene First-Stage Cartridge	4361K26	$12.45

Inline Bacteria-Eliminating Ultraviolet Water Purifiers

With Ballast

Disinfect your water without wasting valuable space. These purifiers have 1/4″ instant (push-to-connect) tube fittings to snap easily into your tubing line. Their ultraviolet lamp kills bacteria and purifies water. Housing is polypropylene for chemical resistance. Max. pressure is 125 psi. Max. temperature is 100° F.

Ballast (sold separately) is required to power the purifier. It operates on 120 VAC, 60 Hz and has a two-pin electrical connection that attaches to the lamp. It also has a 6-ft. power cord with two-prong plug.

Connections: 1/4″ instant (push-to-connect) tube fittings.

Max. Flow, gpm	OD	Lg.		
0.5	2″	10″	8967T11	$79.70
1	2 1/2″	13″	8967T12	93.40
2	2 1/2″	14″	8967T13	116.70
Ballast			8967T81	22.56

Bacteria-Eliminating Ultraviolet Water Purifiers

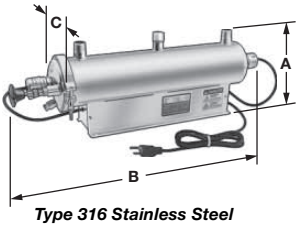

Type 316 Stainless Steel

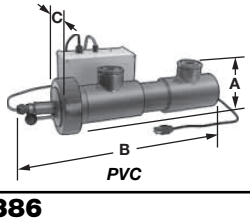

PVC

The ultraviolet light in these purifiers kills bacteria to levels that meet U.S. Public Health Standards for bacterial purity. The bulb lasts for 10,000 hours. A fused quartz sleeve with wiper ensures maximum lamp output and lets you clean the lamp while the purifier is operating. They operate on 120 VAC, 60 Hz. Choose a purifier with a Type 304 stainless steel, Type 316 stainless steel, or PVC housing.

Type 304 and ***Type 316 stainless steel*** purifiers have a max. pressure of 100 psi, a max. temperature of 105° F, and a 5 1/2-ft. power cord with three-prong plug. **Connections:** NPT male.

PVC purifiers have a higher flow rate than stainless steel. They include a 6-ft. power cord with three-prong plug. Max. pressure is 40 psi and max. temperature is 150° F. **Connections:** NPT female.

Pipe Size	Max. Flow, gpm	Overall Size Ht. (A)	Wd. (B)	Dp. (C)	Purifiers		Replacement Lamp		Replacement Quartz Sleeve	
Type 304 Stainless Steel Housing										
3/4″	3	8 3/16″	19 3/8″	4 5/16″	3532K32	$971.67	3532K52	$57.78	3532K62	$40.44
Type 316 Stainless Steel Housing										
3/4″	6	8 3/16″	25 3/8″	4 5/16″	3532K33	1,080.59	3532K53	57.78	3532K63	52.00
1″	12	9 1/2″	39 3/8″	5 11/16″	3532K34	1,216.47	3532K54	64.89	3532K64	56.33
1 1/2″	20	9 1/2″	52 3/8″	5 11/16″	3532K35	1,511.96	3532K55	77.33	3532K65	86.67
2″	40	11 1/8″	52″	6 5/8″	3532K37	2,948.63	3532K56	283.33	3532K66	173.33
PVC Housing										
3/4″	10.7	4 3/4″	17 1/2″	3 1/2″	8938T11	351.85	8938T21	69.44	8938T31	74.07
3/4″	11.7	4 3/4″	17 1/2″	3 1/2″	8938T12	388.89	8938T22	83.33	8938T31	74.07
3/4″	20	4 3/4″	22″	3 1/2″	8938T13	472.22	8938T23	83.33	8938T32	62.50
2″	48.3	4 3/4″	38 1/4″	3 1/2″	8938T14	750.00	8938T24	90.28	8938T33	83.33

Wall-Mount Water Deionizer with Indicating Light

Convert tap water into deionized water—these have a resin-filled PVC cartridge that removes calcium, magnesium, iron, nickel, chromium, nitrites, and other impurities from your water. Unit is ideal for watering lead-acid batteries and has a total dissolved solids (TDS) indicating light that turns red when it's time to replace the cartridge. Also included is a 10-ft. inlet hose, a 20-ft. outlet hose, a cartridge, and a wall mounting bracket with two 3/8″ dia. mounting holes (mounting hardware not included). Indicating light operates on two D batteries (included).

Overall size is 6″ Wd. × 44″ Ht. Cartridge measures 5″ OD × 28″ Ht. Cartridge is rated for approximately 600 gallons (rating will rise or lower based on the quality of your tap water). Max. flow rate is 2 gpm. Max. pressure is 80 psi. Max. temperature is 90° F.

Connections: Inlet is 3/4″ female garden hose thread (GHT); outlet is 3/4″ male GHT.

Water Deionizer	70715K83	$395.96
Replacement Cartridge	70715K82	167.44

Water Deionizers with Color-Indicating Cartridge

These deionizers have a resin-filled cartridge that changes color when it needs to be replaced and a see-through polypropylene cartridge housing that lets you see clearly when that is. It includes a pressure-release button and spanner wrench for safe and easy cartridge replacement. Max. pressure is 90 psi. Max. temperature is 100° F.

3/4″ Filter—Cartridge removes 700 grains of $CaCO_3$ and measures 2 1/2″ OD × 20″ Ht.

1″ Filter—Cartridge removes 900 grains of $CaCO_3$ and measures 4 1/2″ OD × 9 3/4″ Ht.

Connections: NPT female.

Pipe Size	Max. Flow, gpm	O'all Dia.	O'all Ht.	Deionizers		Replacement Cartridge	
3/4″	1	5 3/8″	22 13/16″	8980T31	$103.89	8980T71	$50.47
1″	2	7 5/16″	14″	8980T32	155.68	8980T72	71.03

Easy-Swap Water Deionizers

Replace the cartridge in these deionizers with just a quarter turn. Max. flow rate is 1.1 gpm. Max. pressure is 100 psi. Max. temperature is 120° F. Cartridge holders and cartridges are sold separately. Choose a single or double holder with a high-capacity or ultra-pure cartridge.

Double holder has a point-of-use faucet and digital purity meter that operates on 120 VAC, 60 Hz and includes a 6-ft. long power cord with three-prong plug.

Cartridges have a polypropylene housing. ***High-capacity cartridge*** removes ions (1,725 grains as NaCl to 50,000 ohm water quality). ***Ultra-pure cartridge*** removes ions to a higher purity level (760 grains as NaCl to 1,000,000 ohm water quality).

Connections: 1/2″ NPT female.

	O'all Size		
Cartridge Holders			
Single	7″ Wd. × 7″ Dp. × 24″ Ht.	3523K68	$489.74
Double	15″ Wd. × 7″ Dp. × 27″ Ht.	3523K77	2,444.00
Cartridges			
High-Capacity Cartridge	3 3/8″ OD × 17 3/16″ Ht.	3523K81	153.08
Ultra-Pure Cartridge	3 3/8″ OD × 17 3/16″ Ht.	3523K82	157.68

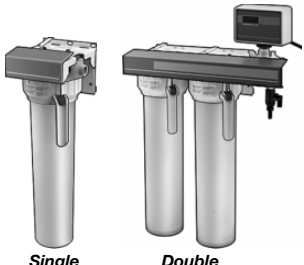

Single Cartridge Holder ***Double Cartridge Holder*** ***High-Capacity Cartridge***

High-Capacity Water Deionizers with Indicating Light

When your application requires higher mineral removal capacity, these deionizers will get the job done. A water conductivity indicating light turns on to let you know when the cartridge needs to be replaced. All have a corrosion-resistant PVC housing, 6-ft. inlet tubing, 6-ft. outlet tubing, and one resin-filled deionizing cartridge (except where noted). Indicating light operates on 120 VAC, 60 Hz and has an 18″ power cord with two-prong plug. Max. pressure is 100 psi (unless noted). Max. temperature is 100° F.

Standard cartridges remove all dissolved minerals except silica and CO_2. They produce water quality greater than 20,000 ohms.

Ultra-pure cartridges remove all dissolved ion solids including silica and CO_2, but have a slightly lower mineral removal capacity. They produce water quality greater than 200,000 ohms.

Connections: Inlet is 3/8″ ID compression tube fitting; outlet is 3/8″ OD barbed tube fitting.

Max. Flow, gpm	Mounting Style	Mineral Removal Capacity, Grains $CaCO_3$/NaCl	Overall Size Ht.	Wd.	Dp.	Deionizers		Replacement Cartridge	
Standard Cartridges									
0.5	Wall	2,275/ 2,700	23″	6 1/2″	6″	3537K31	$522.58	3537K51	$101.93
1	Wall	2,795/ 3,300	29″	6 1/2″	6″	3537K32	560.58	3537K52	142.69
4	Floor	18,000/21,200	41″	19″	13″	3537K4■	1,612.28	3537K54	530.00
Ultra-Pure Cartridges									
0.5	Wall	1,900/ 2,235	23″	6 1/2″	6″	3537K33	530.17	3537K61	110.07
1	Wall	2,330/ 2,750	29″	6 1/2″	6″	3537K34	564.37	3537K62	146.78

■ Furnished with two cartridges. Max. pressure is 50 psi.

Wall Mount ***Floor Mount***

Inline Water Deionizers with Color-Indicating Cartridge

Barbed connections on both ends make it easy to install these deionizers inline. Cartridges contain a resin that changes color when exhausted, alerting you to replace the cartridge. They're ideal for low-flow, inline use in applications without back pressure. Cartridges have a polypropylene housing and measure 3 3/8″ OD × 18 11/16″ Ht. Max. flow rate is .17 gpm. Max. pressure is not rated. Max. temperature is 120° F.

High-capacity cartridge removes ions (1,725 grains as NaCl to 50,000 ohm water quality).

Ultra-pure cartridge removes ions to a higher purity level (760 grains as NaCl to 1,000,000 ohm water quality).

Optional mounting bracket lets you wall-mount the cartridge.

Connections: 3/8″ OD barbed tube fittings.

W/Optional Mounting Bracket

With High-Capacity Cartridge	3535K65	$128.63
With Ultra-Pure Cartridge	3535K66	128.63
Optional Mounting Bracket	3535K89	48.75

Self-Contained Bench-Top Water Distiller

Generate up to 8 gallons of distilled water in 24 hours. Unit includes a 5-gallon holding tank, 1/4″ ID instant tube connection, and a saddle-style valve to connect to a water line for a constant water feed. When the distiller's float system detects that the water level in the tank has dropped below half full, it will automatically draw water from the line.

Made of highly-polished stainless steel, distiller includes a stainless steel cartridge that accepts replaceable, bulk charcoal. It operates on 120 VAC, 60 Hz, and includes a 5-ft. long power cord with three-prong plug. Overall size is 22 3/4″ Ht. × 17 1/2″ Wd. × 11″ Dp. Max. pressure is not rated. Max. temperature is 212° F.

Self-Contained Water Distiller	35105K55	$2,228.85
Replacement Bulk Charcoal (32 oz.)	35105K59	45.63
Cleaner and Descaler (3 lbs.)	35105K6	45.63

Water-Purifying Granular Filter Media

Use with Fill-Your-Own Filter Cartridges on this page.

Activated Carbon Granules—Remove bad taste and odor from water. Sold in bags. Max. temperature is not rated. Meet ANSI/NSF 61.

Greensand—Protects pumps and cooling-water processes from potential blockage, extends seal life, and reduces odor. Sold in bags. Max. temperature is not rated. NSF 61 certified.

Type	Weight		
Activated Carbon Granules			
Odor Removal	27.5 lbs.	**9005T11**	$77.78
High-Purity Odor Removal	27.5 lbs.	**9005T12**	88.89
Greensand			
Iron, Manganese, and Hydrogen Sulfide Removal	44 lbs.	**9016T23**	43.89

Chemical-Resistant Mini Inline Filters

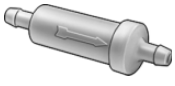

Use these inline filters with water, oil, air, inks, and cleaning solutions. They have a chemical-resistant polyoxymethylene acetal (POM) housing and barbed connections for use with tubing. Element is polyester for all except 150- and 250-micron filters, which have a nylon element. Not rated for max. flow, pressure, or temperature.

Connections: Barbed tube fittings.

To Order: Please specify micron rating from those listed.

For Tube ID	Available Micron Ratings	O'all Dia.	O'all Lg.		
1/4"	65, 130	5/8"	2"	**8991T31**	$3.57
1/4"	20, 65, 105, 150, 250	1 1/8"	4"	**8991T32**	6.25
5/16"	20, 65, 105, 150, 250	1 1/8"	4"	**8991T33**	6.41
3/8"	20, 65, 105, 150, 250	1 1/8"	4"	**8991T34**	6.58

Pancake-Style Inline Filters

A circular disc element makes these filters very compact. They have a rugged, chemical-resistant, polypropylene body for use in laboratory sampling applications. Max. pressure is 60 psi. Max. temperature is 122° F. Package quantity is 10.

With Polyethersulfone Element—Radiation sterilized. A glass microfiber first-stage filter extends the life of the element.

With PTFE Element—Ideal for chemically aggressive solutions, reagents, organic solvents, and venting in laboratory applications.

With Polypropylene Element—For more coarse filtering than the other two elements. Good for water-based and solvent sampling.

Connections: Barbed tube fittings for 6-10 mm tube ID.

Element Material	Max. Flow, ml/min.	Micron Rating	O'all Dia.	O'all Lg.		Pkg.
Polyethersulfone	150	0.2	2 3/16"	1 13/16"	**8995T11**	$134.45
Polyethersulfone	225	0.45	2 3/16"	1 13/16"	**8995T12**	134.45
Polyethersulfone	625	1	2 3/16"	1 13/16"	**8995T13**	134.45
PTFE	200	0.1	2 3/16"	1 13/16"	**8995T21**	150.71
PTFE	900	1	2 3/16"	1 13/16"	**8995T22**	149.62
Polypropylene	1,500	5	2 3/16"	1 13/16"	**8995T31**	143.13
Polypropylene	2,200	10	2 3/16"	1 13/16"	**8995T32**	143.13

Fill-Your-Own Filter Cartridges

Fill this cartridge with your own filter media to customize it to your filtration needs. Simply unscrew the bottom cap to fill. Made of FDA-grade clear polypropylene. It has an open-end bottom that fits into standard housings (see page 389). Max. pressure is not rated. Max. temperature is 125° F.

Volume, cu. in.	O'all Dia.	O'all Ht.		
49	2 1/2"	9 3/4"	**9007T51**	$5.55
109	2 1/2"	20"	**9007T52**	13.36
130	4 1/2"	9 3/4"	**9007T53**	15.30
279	4 1/2"	20"	**9007T54**	17.63

Pipe-Fitting-Style Inline Filters

End View

These filters feature minimal pressure drop and a compact design similar to a pipe nipple; use to protect instrumentation and pneumatic lines. Designed for point-of-use service with water, oil, and air. Filters have a brass body with porous bronze element. Max. pressure is 300 psi. Max. temperature is 300° F. Choose a filter with a 40- or 90-micron rating.

Connections: NPT male.

Pipe Size	Max. Flow, cfm at 100 psi	Hex Size	O'all Lg.	*40-Micron Filters*		*90-Micron Filters*	
1/8"	10	7/16"	1 1/4"	**98355K831**	$3.35	**98355K832**	$3.35
1/4"	23	9/16"	1 1/2"	**98355K841**	4.25	**98355K842**	4.25
3/8"	34	11/16"	1 3/4"	**98355K851**	4.60	**98355K852**	4.60
1/2"	59	7/8"	2"	**98355K861**	7.34	**98355K862**	7.34

Extreme-Pressure Inline Filters

With Standard Element

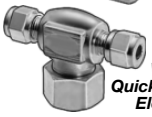

With Quick-Change Element

Trap particles as small as 10 microns in extremely high-pressure liquid and air applications. Filter element is porous Type 316 stainless steel. Max. flow is not rated.

With Standard Element—Max. pressure is 1,000 psi for brass filters and 3,000 psi for Type 316 stainless steel filters. Max. temp. is 300° F for brass filters and 450° F for Type 316 stainless steel filters.

With Quick-Change Element—Replace the filter element without disconnecting the filter from the line. Max. pressure is 3,000 psi for brass filters and 5,000 psi for Type 316 stainless steel filters. Max. temp. is 450° F.

Replacement filter element is compatible with all filters listed.

Connections: NPT female or compression tube fittings.

Pipe Size	O'all Lg.	O'all Ht.	*Brass*		*Type 316 Stainless Steel*	
NPT Female						
With Standard Element						
1/8"	2 9/16"	13/16"♣	**9811K81**	$34.05	**9811K84**	$106.23
1/4"	2 7/8"	13/16"♣	**9811K82**	35.97	**9811K85**	78.96
With Quick-Change Element						
1/4"	2 1/4"	1 13/16"	**9816K72**	76.19	**9816K75**	127.07
Compression Tube Fittings						
With Standard Element						
1/4"	2 15/16"	13/16"♣	**9811K83**	38.74	**9811K86**	78.96
With Quick-Change Element						
1/8"	2 11/16"	1 13/16"	**9816K71**	75.08	**9816K74**	120.66
1/4"	2 15/16"	1 13/16"	**9816K73**	79.84	**9816K76**	127.16

Replacement Filter Element **9811K44** $15.74

♣ Hex size.

Miniature High-Efficiency Inline Filters

Nylon with Smooth End Connection

PVDF with Smooth End Connection

Nylon with Barbed End Connection

For low-flow inert gas or liquid sampling applications, these filters remove from 93% to 99.99% of particles at their specific micron rating. All are disposable and have borosilicate glass fiber filter media. Max. pressure is 125 psi.

Filters with nylon housing are clear and allow visual inspection. Max. temperature is 230° F.

Filters with PVDF housing offer greater chemical resistance as well as higher temperature resistance up to 275° F.

Filter with a smooth end connection and indicating element is used to remove oil from air. It has an element that turns red when it's saturated with oil so you know when it's time to replace the filter.

Filters with a barbed end connection accommodate both 1/4" and 3/8" ID tubing.

For Tube ID	*Efficiency Rating* Air/Gas, % at 0.01 microns	*Efficiency Rating* Liquid, 98% at	*Max. Flow* Air/Gas, cfm at 125 psi	*Max. Flow* Liquid, gph at 5 psi	O'all Dia.	O'all Lg.	*Nylon Housing*		*PVDF Housing*	
Filters with a Smooth End Connection										
1/4"	93%	25 microns	10.1	30	1"	3 1/4"	**4795K1**	$24.92	**4795K2**	$34.34
1/4"	93%	25 microns	14.6	45	1 7/16"	4 5/8"	**4795K41**	40.24	**4795K43**	51.78
1/4"	99.99%	2 microns	6.6	15	1"	3 1/4"	**4795K3**	24.92	**4795K4**	36.34
1/4"	99.99%	2 microns	7.3	26	1 7/16"	4 5/8"	**4795K42**	40.24	**4795K44**	51.78
Filter with a Smooth End Connection and Indicating Element										
1/4"	99.99%	—	6.6	—	1"	3 1/4"	**4795K31**	17.91	—	—
Filters with a Barbed End Connection										
1/4" and 3/8"	93%	25 microns	10.1	30	1"	3 7/16"	**4795K21**	29.40	—	—
1/4" and 3/8"	99.99%	2 microns	6.6	15	1"	3 7/16"	**4795K22**	29.40	—	—

For filter cartridges, see pages 390-394.

High-Temperature Inline Filter Capsules

- Max. Flow: See table
- Max. Temperature: 176° F
- Max. Pressure:
  Liquid: 100 psi @ 68° F, 25 psi @ 176° F;
  Gas: 60 psi @ 68° F (Chemical Resistant only)

These ready-to-use sealed capsules are disposable, made of polypropylene, and flushed with ultra-pure water to ensure product cleanliness. Absolute rated (retain 99% of particles). Overall size is 3 45/64" Dia. × 4 19/64" Ht.

General purpose capsules have polysulfone media. ***Electronic grade capsules*** have polysulfone media and are for point-of-use filtration of ultra-high purity water. ***Chemical resistant capsules*** have PTFE media and are for point-of-use filtration of process chemicals.

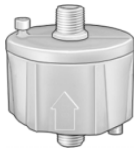

Micron Size	Max. Flow, gpm	1/4" NPT Male		1/2" NPT Male		1/4" Hose Barb	
General Purpose							
0.1	2.5	6645T41	$130.96	6645T51	$131.15	6645T61	$131.15
0.2	2.5	6645T42	126.46	6645T52	126.46	6645T62	130.43
0.65	2.5	6645T46	109.58	6645T56	109.58	6645T66	109.58
1.2	2.5	6645T49	105.97	6645T59	106.16	6645T69	105.97
Electronic Grade							
0.02	1.3	6645T14	181.45	6645T24	181.45	6645T34	181.45
0.1	2.0	6645T16	168.73	6645T26	168.73	6645T36	168.73
0.2	2.5	6645T18	154.25	6645T28	154.58	6645T38	154.58
Chemical Resistant							
0.05	1.5	6645T72	208.19	6645T82	235.58	6645T92	208.20
0.1	1.7	6645T74	181.10	6645T84	181.10	6645T94	181.45
0.2	2.5	6645T75	171.60	6645T85	171.88	6645T95	171.88
1.0	2.5	6645T77	163.66	6645T87	163.66	6645T97	163.88

Inline Filter Capsules

- Max. Flow: See table
- Max. Temperature: 140° F
- Max. Pressure: 70 psi @ 70° F

Ready to use without cleaning or disassembly, these disposable filters combine a housing and filter media in one. Capsules are polypropylene and they pass USP (United States Pharmacopeia) Class VI testing. Housing measures 3 1/2" Dia. × 4" Ht.

Micron Size	Max. Flow, gpm	1/4" NPT Male		1/2" NPT Male	
Capsules with Polyethersulfone Microporous Media					
0.2	0.6	43825K21	$80.09	43825K41	$71.77
0.45	1.0	43825K22	88.55	43825K42	71.77
Capsules with Polypropylene Microfiber Media					
1.2	1.0	43825K23	86.89	43825K43	81.55
5	2.0	43825K24	84.05	—	—
10	3.0	43825K25	86.89	43825K45	81.55

Bottom-Load Single Filter-Cartridge Housings

- Max. Flow: See table
- Max. Temperature: 250° F, unless noted
- Max. Pressure: 250 psi, unless noted

A one-piece shell construction provides quick, spill-free cartridge changes. Housings are in-line mount and are furnished with a mounting bracket, a 1/8" NPT female drain (unless noted), and a Buna-N head gasket. Housings use 1" ID and up to 2 7/8" OD double open-end (DOE) cartridges in the heights listed in the table.

Connections: NPT female.

T-Bolt Style—Has a T-shaped handle for quick, easy filter replacement without tools.

Ring Style—Includes a rod for easy disassembly. Max. temperature is 200° F; max. pressure is 300 psi. Drain is 1/4" NPT female.

Pipe Size	Max. Flow, gpm	O'all Dia. × Ht.	Uses Cartridge Heights		
Hex-Bolt Style					
Carbon Steel Body with Cast Iron Head					
3/4"	10	4" × 13 3/4"	9 3/4" to 10"★	43715K46	$98.72
3/4"	20	4" × 23 3/4"	20"	43715K47	132.68
1"	10	4" × 13 3/4"	9 3/4" to 10"★	43715K11	104.44
1"	20	4" × 23 3/4"	20"	43715K12	141.18
Type 304L Stainless Steel Body w/Nickel-Plated Brass Head					
1/2"	3	4" × 7 3/4"	3 5/8"	43715K41	137.99
3/4"	10	4" × 13 3/4"	9 3/4" to 10"★	43715K42	172.87
3/4"	20	4" × 23 3/4"	20"	43715K43	217.05
Type 316L Stainless Steel Body w/Type 316L Stainless Steel Head					
3/4"	10	4" × 13 3/4"	9 3/4" to 10"★	43715K44	306.81
3/4"	20	4" × 23 3/4"	20"	43715K45	366.48
1"	10	4" × 13 3/4"	9 3/4" to 10"★	43715K13	335.22
1"	20	4" × 23 3/4"	20"	43715K14	388.18
T-Bolt Style					
Type 304L Stainless Steel Body w/Nickel-Plated Brass Head					
3/4"	10	4" × 14 1/4"	9 3/4" to 10"★	43905K66	186.84
3/4"	20	4" × 24 1/4"	20"	43905K77	230.28
Ring Style					
Type 304L Stainless Steel Body w/Brass Head					
1"	10	4" × 13 1/2"	9 3/4" to 10"★	4117K11	180.51
1"	20	4" × 23 1/2"	20"	4117K12	231.45

★ Uses 9 3/4" pleated, carbon, oil absorbent, or stainless steel filter cartridges as well as 10" string-wound filter cartridges.

Bottom-Load High Purity Single Filter-Cartridge Housings

- Max. Flow: See table
- Max. Temperature: 250° F
- Max. Pressure: Liquid: 300 psi; Gas: 150 psi

An ultra-clean electropolished finish prevents bacteria and particles from adhering to the surface of this housing. The Type 316L stainless steel construction is ideal for liquid or gas filtration applications requiring pure, nonreactive surfaces.

Housings accept double open-end (DOE) and 222 O-ring (closed end and fin end) cartridges. An external ring assembly secures the body to the head with a single Buna-N O-ring for a positive seal. Housings have a 1/4" NPT female drain and use 1" ID × 2 1/2" to 2 7/8" OD cartridges in heights listed in the table.

Connections: NPT female.

Pipe Size	Max. Flow, gpm	O'all Dia. × Ht.	Uses Cartridge Heights		
1"	10	4 1/4" × 18"	9 3/4" to 10"★	6882K1	$494.15
1"	20	4 1/4" × 28"	20"	6882K2	564.73

★ Uses 9 3/4" pleated, carbon, oil absorbent, or stainless steel filter cartridges as well as 10" string-wound filter cartridges.

Bottom-Load Thermoplastic Single Filter-Cartridge Housings

These units are made of lightweight, corrosion-resistant thermoplastic. All accept double open-end (DOE) cartridges, unless noted.

Connections: NPT female.

Standard and ***jumbo polypropylene*** housings have a Buna-N O-ring and four 3/16" dia. mounting holes in the head for easy installation. They also have a pressure release valve to relieve internal pressure when changing cartridges.

100%-pure polypropylene housings are for semiconductor, pharmaceutical, and deionized water applications. O-ring is silicone.

Glass-reinforced nylon housings have a fluoroelastomer O-ring to withstand higher temperatures.

Jumbo Polypropylene Housing

Pipe Size	Max. Temp.	O'all Dia.	Uses 9 3/4" or 10" Ht. Cartridges: For Cartridge Ht.	Max. Flow, gpm	Max. psi	Ht.		Uses 20" Ht. Cartridges: Max. Flow, gpm	Max. psi	Ht.		
Standard Polypropylene Housing—*Use 1" ID × 2 1/2" to 2 7/8" OD cartridges*												
3/4"	125° F	5 1/8"	10"	10	125	12 1/4"	9979T21	$25.03	10	125	23 3/8"	9979T23 $42.43
Jumbo Polypropylene Housing—*Use 1" ID × 4 1/2" OD cartridges*												
3/4"	100° F	7 1/4"	10"	15	100	13 1/8"	9979T31	52.95	15	90	23 3/8"	9979T33 76.76
1"	100° F	7 1/4"	10"	15	100	13 1/8"	9979T41	52.95	15	90	23 3/8"	9979T43 76.06
1 1/2"	100° F	7 1/4"	10"	20	100	13 5/8"	9979T51	53.32	20	90	23 7/8"	9979T53 78.36
100%-Pure Polypropylene Housing—*Use 1" ID × 2 1/2" to 2 3/4" OD cartridges*												
3/4"	125° F	5 9/16"	9 3/4"	10	150	13 11/16"	44195K11	41.09	20	150	24 3/16"	44195K21 55.82
3/4"	125° F	5 9/16"	10"	10	150	13 11/16"	44195K12■	48.45	20	150	24 3/16"	44195K22■ 64.00
Glass-Reinforced Nylon Housing—*Use 1" ID × 2 1/2" to 2 7/8" OD cartridges*												
3/4"	165° F	5 1/8"	10"	8	125	12 1/8"	9979T61	115.85	8	125	22 1/4"	9979T63 178.34

■ Accepts 222 O-ring (closed end) cartridges.

Filtering Felt

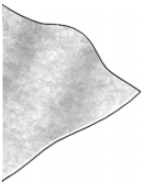

A needle-punch process creates a material suitable for fine filtering. Color is white.

Polyester felt offers greater temperature resistance than polypropylene. Maximum temperature is 300° F. Maximum length is 25 yards.

Polypropylene felt offers better resistance to acids and alkalies than polyester. Maximum temperature is 200° F. Maximum length is 100 yards.

Thick.	Micron Rating	72″ WIDE SHEETING Polyester	Per Yd.	Polypropylene	Per Yd.
0.070″	5	51625K11	$12.53	9242T11	$15.57
0.070″-0.075″	10	51625K12	12.76	9242T13	15.42
0.070″	15	51625K13	12.53	—	—
0.085″	50	51625K15	12.53	9242T17	15.57
0.085″	75	51625K16	12.73	—	—
0.090″	25	51625K14	12.80	9242T15	15.57
0.110″	100	51625K17	12.76	9242T19	15.42

Type 316L Stainless Steel Top-Load High-Volume Single Filter-Cartridge Housing

- Max. Flow: 150 gpm
- Max. Temperature: See table
- Max. Pressure: 150 psi

Handle high volumes of water with this filter housing, made of Type 316L stainless steel for corrosion resistance. It has Buna-N O-rings, mounting legs, side inlet/side outlet fittings with pressure gauges, and two ½″ NPT female drains.

Connections: NPT male.

Filter cartridges have a reusable pleated polyester filter. Maximum temperature is 140° F.

Note: Housing and cartridges are only for use with each other.

Housing

Pipe Size	Max. Temp.	Overall Size, Dia. × Ht.		
2″	300° F	12½″ × 46″	3455K21	$1,300.20

Filter Cartridges

	Overall Size, OD × Ht.		
5-Micron Cartridge	7¾″ × 30¾″	3455K32	$184.46
20-Micron Cartridge	7¾″ × 30¾″	3455K33	181.95
50-Micron Cartridge	7¾″ × 30¾″	3455K34	181.95

Type 304 Stainless Steel Top-Load Multi-Filter-Cartridge Housings

- Max. Flow: See table
- Max. Temperature: 300° F
- Max. Pressure: 150 psi

Housings have a phenolic hold-down knob with brass insert and a band-clamp to make cartridge replacement easy. Housings are Type 304 stainless steel with Type 316 stainless steel internal parts for extra corrosion resistance. All have a Buna-N O-ring, ½″ NPT female drain, and side inlet/side outlet.

Connections: NPT male.

Pipe Size	No. of Cartridges Required	Max. Flow, gpm	Overall Size, Dia. × Ht.	Uses Cartridge ID × OD	Heights		
2″	4	25	10½″ × 19½″	1″ × Up to 2⅞″	9¾″ to 10″	44395K81	$619.40
2″	4★	50	10½″ × 29½″	1″ × Up to 2⅞″	19½″ to 20″	44395K82	670.65
2″	4♦	75	10½″ × 39½″	1″ × Up to 2⅞″	29¼″ to 30″	44395K83	733.04
2″	4♠	100	10½″ × 49½″	1″ × Up to 2⅞″	39″ to 40″	44395K86	931.34

★ Or eight 9¾″ to 10″ high cartridges. ♦ Or twelve 9¾″ to 10″ high cartridges. ♠ Or sixteen 9¾″ to 10″ high cartridges.

Type 304 Stainless Steel Top-Load High-Flow Multi-Filter-Cartridge Housings

- Max. Flow: See table
- Max. Temperature: 140° F
- Max. Pressure: 150 psi

Multiple cartridges provide high-volume filtering. Cartridges mount in a single cluster, so the entire set of cartridges comes out at once for easy service. To clean and change filter cartridges, simply remove the wing nuts holding the top cover.

Housings are Type 304 stainless steel for corrosion resistance. They include an EPDM rim gasket, bottom inlet/bottom outlet, and 1″ NPT male drain.

Connections: NPT male.

Pipe Size	No. of Cartridges Required	Max. Flow, gpm	Overall Size, Dia. × Ht.	Uses Cartridge ID × OD	Height		
1½″	7	30	13″ × 19½″	1 1/16″ × Up to 2¾″	9¾″	9822K61	$780.72
1½″	7♣	60	13″ × 28″	1 1/16″ × Up to 2¾″	19½″	9822K62	1,054.56
2″	8▲	100	13″ × 37″	1 1/16″ × Up to 2¾″	29¼″	9822K63	1,510.60

♣ Or fourteen 9¾″ high cartridges. ▲ Or twenty-four 9¾″ high cartridges.

About Micron Sizes and Particle Filtration

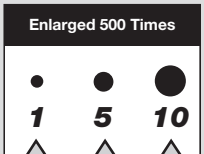

Filtration is the process of forcing a liquid or gas through a porous medium to remove solid particles. The particles are measured or classified in *microns*. One micron equals 0.0000394″.

Absolute-rated filter cartridges will retain at least 99% of particles of a particular micron size.

Micron Size	Inch	Mesh Openings per Inch	Micron Comparison
1	0.0000394″	12,000	Bacteria
10	0.000394″	1,250	Talcum Powder
20	0.00079″	625	Coal Dust (20 to 90 microns)
44	0.0017″	325	Lower Limit of Visibility
74	0.0029″	200	Human Hair
105	0.0041″	140	Table Salt
210	0.0083″	70	Beach Sand

Blanket-Wound Filter Cartridges

A blanket of filter media between layers of yarn becomes increasingly dense as it approaches the core of the cartridge, evenly distributing liquid and preventing clogs. This gives you better efficiency, higher dirt-holding capacity, and longer life than string-wound cartridges. Applications include water, electronics, electroplating, and food and beverage processes. Meets FDA 21 CFR.

Cartridges are double open-end (DOE). Overall size is 1 1/16″ ID × 2 19/32″ OD × 9⅞″ Ht.

Cotton cartridges have a Type 304 stainless steel core. Maximum temperature is 250° F.

Polypropylene cartridges have a polypropylene core. Maximum temperature is 150° F.

Micron Size	Max. Flow, gpm	Cotton w/Type 304 Stainless Steel Core		Polypropylene w/Polypropylene Core	
0.5	2	4535K41	$27.10	4535K71	$22.32
1	2	4535K51	28.50	4535K81	23.47
3	3	4535K53	26.10	4535K83	22.23
5	4	4535K43	22.23	4535K73	18.79
10	4	4535K55	23.58	4535K85	19.45
25	5	4535K45	19.79	4535K75	16.37
50	5	4535K57	21.15	4535K87	17.60
75	5	4535K59	20.19	4535K89	17.29
100	5	4535K47	17.83	4535K77	15.27
350	5	4535K48	17.83	4535K78	15.27

For information about micron size, see page 390. For filter-cartridge housings, see pages 389 and 390.

String-Wound Filter Cartridges

String-wound cartridges provide good dirt-holding capacity. All cartridges are double open-end (DOE).

Note: Use table as a guide only, chemical compatibility should be checked for each specific fluid. Pressure, temperature, flow rate, and micron size should be taken into consideration.

String/Core Material	Water	Organic Solvents	Petroleum Oils	Alkalies	Organic Acids	Oxidizing Agents	Mineral Acids	Max. Temp.
Polyester/Type 304 Stainless Steel	Excellent	Good	Good	Fair	Good	Good	Good	275°F
Rayon/Type 316 Stainless Steel	Excellent	Good	Good	Good	Fair	Fair	Poor	250°F
Rayon/Tinned Steel	Excellent	Good	Good	Good	Fair	Fair	Poor	250°F
Cotton/Type 304 Stainless Steel	Excellent	Good	Excellent	Good	Good	Fair	Poor	250°F
Cotton/Polypropylene	Excellent	Good	Good	Good	Good	Fair	Poor	120°F
Polypropylene/Polypropylene	Excellent	Excellent	Excellent	Excellent	Excellent	Fair	Good	140°F
Polypropylene/Type 304 Stainless Steel	Excellent	Good	Excellent	Good	Good	Fair	Poor	140°F
Polyester/Polypropylene	Excellent	Good	Excellent	Good	Good	Fair	Good	140°F
Nylon/Polypropylene	Excellent	Good	Excellent	Good	Good	Poor	Poor	140°F
Glass Fiber/Type 304 Stainless Steel	Poor	Excellent	Excellent	Poor	Excellent	Excellent	Excellent	750°F

Micron Size	10″ Cartridge Ht. Max. Flow, gpm		Each♥	20″ Cartridge Ht. Max. Flow, gpm		Each♥	30″ Cartridge Ht. Max. Flow, gpm		Each♥
Polyester with Type 304 Stainless Steel Core—1″ ID×2 7/16″ OD									
1	7	4411K911	$8.33	14	4411K921	$15.02	21	4411K931	$20.18
5	7	4411K912	7.82	14	4411K922	14.13	21	4411K932	19.00
10	7	4411K913	7.53	14	4411K923	13.57	21	4411K933	18.26
20	7	4411K914	7.49	14	4411K924	13.51	21	4411K934	18.18
50	7	4411K915	7.02	14	4411K925	12.48	21	4411K935	17.06
100	7	4411K916	6.10	14	4411K926	12.83	21	4411K936	16.97
Rayon with Type 316 Stainless Steel Core—1″ ID×2 7/16″ OD									
0.5	3	4411K793	15.09	6	4411K794	27.68	9	4411K795	26.57
Rayon with Tinned Steel Core—1″ ID×2 7/16″ OD									
1	5	4411K86	6.27	10	4411K806	11.80	15	4411K816	15.14
5	5	4411K84	5.94	10	4411K805	11.23	15	4411K815	14.43
10	5	4411K85	5.70	10	4411K804	10.74	15	4411K814	13.83
20	1	4411K14★	3.20	—	—	—	—	—	—
20	5	4411K83	5.59	10	4411K803	10.40	15	4411K813	13.37
50	5	4411K82	5.18	10	4411K802	9.71	15	4411K812	12.48
100	5	4411K81	5.20	10	4411K801	9.69	15	4411K811	12.03
150	5	4411K87	5.20	10	4411K88	10.29	—	—	—
Cotton with Type 304 Stainless Steel Core—1 3/32″ ID×2 1/2″ OD									
1	3	4411K37	6.87	6	4411K46	13.77	9	4411K56	20.64
5	4	4411K34	6.87	8	4411K45	13.77	12	4411K55	20.64
10	5	4411K35	6.87	10	4411K44	13.77	15	4411K54	20.64
20	6	4411K33	6.87	12	4411K43	13.77	17	4411K53	20.64
50	6.5	4411K32	6.87	13	4411K42	13.77	18	4411K52	20.64
100	7	4411K31	6.87	14	4411K41	13.77	19	4411K51	20.64
150	10	4411K201	6.87	20	4411K202	13.77	30	4411K203	20.64
Cotton with Polypropylene Core—1″ ID×2 7/16″ OD									
0.5	3	4411K981	7.42	6	4411K982	14.70	9	4411K983	21.84
Polypropylene with Polypropylene Core—1 3/32″ ID×2 1/2″ OD									
1	3	4411K77	4.19	6	4411K66	7.31	9	4411K97	12.55
5	4	4411K74	4.19	8	4411K65	8.36	12	4411K96	12.55
10	5	4411K75	4.19	10	4411K78	8.36	15	4411K95	12.55
20	6	4411K73	4.19	12	4411K69	8.36	18	4411K94	12.55
50	6.5	4411K72	4.19	13	4411K68	8.36	19	4411K93	12.55
100	7	4411K71	4.19	14	4411K67	8.36	20	4411K92	12.55
150	10	4411K227	4.19	20	4411K228	8.36	30	4411K229	10.65

♥ Prices are approximately 25% lower when you buy in multiples of 30 cartridges.
★ Cartridge height is 4″.

Micron Size	10″ Cartridge Ht. Max. Flow, gpm		Each♥	20″ Cartridge Ht. Max. Flow, gpm		Each♥
Polypropylene with Type 304 Stainless Steel Core—1 3/32″ ID×2 1/2″ OD						
1	3	4411K237	$6.48	6	4411K245	$12.55
5	4	4411K236	6.48	8	4411K244	12.55
20	6	4411K234	6.48	12	4411K242	12.55
50	6.5	4411K233	6.48	13	4411K241	12.55
100	7	4411K232	6.48	14	4411K239	12.55
150	10	4411K223	6.48	20	4411K238	12.55
Polyester with Polypropylene Core—1 3/32″ ID×2 1/2″ OD						
1	3	4411K277	5.50	6	4411K287	10.25
5	4	4411K276	5.50	8	4411K286	10.25
10	5	4411K275	5.50	10	4411K285	10.25
20	6	4411K274	5.45	12	4411K284	10.25
50	6.5	4411K273	5.50	13	4411K283	10.25
100	7	4411K272	5.50	14	4411K282	10.25
150	10	4411K271	5.50	20	4411K281	10.25
Nylon with Polypropylene Core—1 3/32″ ID×2 1/2″ OD						
1	3	4411K307	7.35	6	4411K318	14.72
5	4	4411K306	7.35	8	4411K317	14.72
10	5	4411K305	7.35	10	4411K316	14.72
20	6	4411K304	7.35	12	4411K315	14.72
50	6.5	4411K303	7.35	13	4411K314	14.72
100	7	4411K302	7.35	14	4411K313	14.72
150	10	4411K301	7.35	20	4411K312	14.72
Glass Fiber with Type 304 Stainless Steel Core—1″ ID×2 1/2″ OD						
0.5	5	4521K11	11.36	10	4521K21	22.65
1	5	4521K12	10.77	10	4521K22	21.56
5	5	4521K13	10.62	10	4521K23	21.60
10	5	4521K14	10.18	10	4521K24	20.33
20	5	4521K15	10.18	10	4521K25	20.33
50	5	4521K16	10.18	10	4521K26	20.33
100	5	4521K17	9.03	10	4521K27	17.80
150	5	4521K18	10.18	10	4521K28	20.11

Large Diameter String-Wound Filter Cartridges

Same as the other string-wound filter cartridges on this page, but with a larger OD for higher flow and greater filtering capacity. All are double open-end (DOE) style. Made of FDA-compliant materials.

Polypropylene with polypropylene core cartridges have a maximum temperature of 140°F.
Cotton with Type 304 stainless steel core cartridges have a maximum temperature of 250°F.

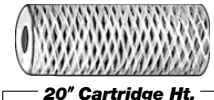

Micron Size	10″ Cartridge Ht. Max. Flow, gpm		Each✓	20″ Cartridge Ht. Max. Flow, gpm		Each✓
Polypropylene with Polypropylene Core—1 3/32″ ID×4 1/2″ OD						
1	7	44435K19	$17.27	13	44435K29	$30.49
5	9	44435K17	16.11	17	44435K27	31.50
10	12	44435K16	17.10	24	44435K26	31.02
20	13	44435K15	16.52	25	44435K25	27.62
50	14	44435K13	15.84	27	44435K23	26.26
100	15	44435K11	14.68	29	44435K21	24.51

Micron Size	10″ Cartridge Ht. Max. Flow, gpm		Each✓	20″ Cartridge Ht. Max. Flow, gpm		Each✓
Cotton with Type 304 Stainless Steel Core—1 3/32″ ID×4 1/2″ OD						
1	10.5	44435K36	$23.89	21	44435K46	$42.78
5	14	44435K35	22.48	28	44435K45	40.28
10	17.5	44435K34	22.48	35	44435K44	42.24
20	21	44435K33	21.74	42	44435K43	40.62
50	23	44435K32	20.84	45.5	44435K42	39.29
100	24.5	44435K31	19.67	49	44435K41	36.94

✓ Prices are approximately 25% lower when you buy in multiples of 18 cartridges.

String-Wound Polypropylene/Carbon Filter Cartridge

Get the best of two filtering processes. Cartridge contains 10 oz. of granular activated carbon between a string-wound polypropylene first-stage filter on the top and a string-wound polypropylene postfilter on the bottom. String-wound filters have good dirt-holding capacity while carbon is ideal for water filtration. Filter is double open-end (DOE) and micron size is 5. Maximum flow is 3 gpm. Maximum temperature is 125°F. Overall size is 7/8″ ID×2 3/4″ OD×9 3/4″ Ht.

6629T44 ..... $9.14

For information about micron size, see page 390. For filter-cartridge housings, see pages 389 and 390.

Polypropylene/Carbon Filter Cartridges

Two filters in one. These combination filter cartridges do the work of a first-stage filter and a carbon filter, removing sediment plus handling taste and odor. Cartridges include a carbon block core with a spun polypropylene sheet wrapped around it that acts as a first-stage filter, plus a polypropylene protective outer netting, polypropylene end caps, and Buna-N O-rings. Maximum temperature is 165° F, and maximum flow is 1 gpm. Filter components meet FDA and NSF material requirements. Double open-end (DOE).

Micron Size	Overall Size, ID × OD × Ht.		
0.5	1″ × 2⅞″ × 9¾″	4542K27	$12.54
5.0	1″ × 2⅞″ × 9¾″	4542K26	10.96

Carbon Filter Cartridges

Carbon-Impregnated Cellulose

Granular Carbon

Extra Large Carbon Block

Reduce unwanted taste, odor, sediment, and chlorine from drinking water. These cartridges are designed for point-of-use water faucet only. All are double open-end (DOE) style, unless noted. Made from FDA-compliant materials. NSF certified to ANSI/NSF Standard 42, except as noted.

Carbon-Impregnated Cellulose— The cellulose fibers contain carbon to provide effective filtration. Internal and external netting provide additional strength and dirt-holding capacity.

Granular Carbon— Filled with carbon granules, these cartridges provide more carbon surface area for more effective filtration than carbon-impregnated cellulose. They have an internal 20 micron post-filter to reduce carbon fragments.

Carbon Block— Has the most carbon media for highly effective filtration and improved dirt-holding capacity. They have carbon briquette media, polypropylene end caps, polyethylene netting, and Buna-N O-rings. The 0.5 micron cartridges are effective at reducing Giardia and Cryptosporidum bacteria, as well as chlorine.

Micron Size	Cartridge ID	Cartridge OD	Cartridge Height	Max. Flow, gpm	Max. Temp.		
Mini Carbon-Impregnated Cellulose							
5	1 1/16″	2½″	4⅞″	0.5	125° F	45175K15●	$6.12
Carbon-Impregnated Cellulose							
1	1 1/16″	2⅝″	9¾″	1	145° F	45175K5●	14.30
5	1 1/16″	2½″	9¾″	1	125° F	45175K4	7.60
Granular Carbon							
5	1″	2⅝″	3⅝″	2	140° F	4387K21●	13.60
20	1 1/16″	2⅞″	9¾″	1	125° F	45175K22★	12.82
Granular Carbon with Coconut Shell Base							
20	1 1/16″	2⅞″	9¾″	1	125° F	45175K67★	12.40
Carbon Block							
0.5	1 1/16″	2⅞″	9¾″	0.6	180° F	45175K66★	18.78
0.5	1 1/16″	2⅞″	20″	2	180° F	4168K33	31.58
5	1 1/16″	2⅞″	9¾″	1	180° F	4168K36	11.86
5	1 1/16″	2⅞″	20″	2	180° F	4168K38	23.62
Extra Large Carbon Block							
5	1 1/16″	4⅝″	9¾″	2	180° F	4168K37	29.34

● Not NSF rated. ★ Single open-end style.

Acrylic Filter Cartridges

These one-piece (coreless) filters are made of acrylic fiber bonded with phenolic resin to maintain rigidity. Fibers are densely packed to give approximately 1½ times the solids removal capacity of string-wound cartridges. Filters are grooved for added surface area. Use with water, oils, paints, and weak acids and bases. Maximum temperature is 250° F; maximum flow is 5 gpm per 9¾″ to 10″ cartridge height. Double open-end (DOE). Size is 1⅛″ ID × 2 9/16″ OD.

Micron Size	9¾″ Cartridge Ht.		10″ Cartridge Ht.		20″ Cartridge Ht.	
2	43835K41	$8.54	43835K51	$8.54	43835K61	$16.97
5	43835K42	6.90	43835K52	6.90	43835K62	13.79
10	43835K43	6.90	43835K53	6.90	43835K63	13.79
25	43835K44	6.90	43835K54	6.90	43835K64	13.79
50	43835K45	6.90	43835K55	6.90	43835K65	13.79
75	43835K46	6.90	43835K56	6.90	43835K66	13.79
125	43835K47	7.40	43835K57	6.90	43835K67	14.77

Absolute-Rated Filter Cartridges

Acrylic/ Cellulose

Achieve consistent 99.9% particle retention with these resin-bonded cartridges. They are double open-end (DOE) and absolute rated.

Acrylic/cellulose fiber with phenolic resin is good for petroleum products, nondrinking water, paint, varnish, and detergents. Cartridges are coreless with a grooved body. Size is 1 1/16″ ID × 2 19/32″ OD. Maximum temperature is 200° F.

Polypropylene is FDA CFR-21 compliant for use with food and beverages, as well as pharmaceutical applications. Cartridges have a polypropylene core with a smooth body. Size is 1 3/32″ ID × 2½″ OD. Maximum temperature is 180° F.

FDA Compliant

Micron Size	9¾″ Cartridge Ht. Max. Flow, gpm			20″ Cartridge Ht. Max. Flow, gpm		
Acrylic/Cellulose Fiber with Phenolic Resin						
5	3	4539K11	$13.27	6	4539K21	$26.55
10	4	4539K13	13.05	8	4539K23	26.14
30	5	4539K15	11.63	10	4539K25	23.25
50	7	4539K16	10.82	14	4539K26	21.64
70	7	4539K17	10.82	14	4539K27	21.64
FDA-Compliant Polypropylene						
10	4	4539K61	25.75	8	4539K71	48.57
30	5	4539K63	24.77	10	4539K73	46.67
40	5	4539K64	24.77	10	4539K74	46.67
50	6	4539K65	23.81	12	4539K75	43.83

Polypropylene Filter Cartridges

Made of FDA-compliant spun polypropylene material for excellent chemical resistance. The filter media becomes increasingly dense toward the core to evenly distribute liquid and prevent clogs. Double open-end (DOE). Size is 1 1/16″ ID × 2⅜″ OD. Maximum temperature is 145° F.

Micron Size	9¾″ Cartridge Ht. Max. Flow, gpm			20″ Cartridge Ht. Max. Flow, gpm		
1	5	5165K21	$4.22	10	5165K23	$8.22
5	5	5165K42	3.87	10	5165K43	7.26
25	5	5165K22	3.74	10	5165K24	7.26

NSF/FDA Polypropylene Filter Cartridges

These filters are NSF certified to ANSI/NSF Standard 42 and FDA compliant for food and beverage. They are made of melt-blown polypropylene for enhanced dirt-holding capabilities, and have an extruded fibrous core for additional strength. Double open-end (DOE). All components meet USP (United States Pharmacopeia), Class VI toxicity criteria (O-ring not included). Size is 1″ ID × 2½″ OD. Maximum temperature is 140° F.

Micron Size	Max. Flow, gpm	9¾″ Cartridge Ht.		10″ Cartridge Ht.	
5	2.5	6637T25	$4.56	6637T55	$4.56
10	3	6637T31	4.19	6637T61	4.19
20	6.5	6637T32	4.19	6637T62	4.19
30	10	6637T33	4.00	6637T63	4.00
50	10	6637T35	3.81	6637T65	4.54
75	10	6637T37	3.81	6637T67	3.81

Polyester Filter Cartridges

Ideal for applications requiring good chemical compatibility, these cartridges are bonded with phenolic resins to reduce fiber migration, which results in a cleaner final product. Cartridges consist of acrylic fibers with an outer prefilter wrap of acrylic and polyester fibers. These fibers have a coreless construction for efficiency and long life. Use for adhesives, coatings, inks, and many other water- and solvent-based liquids. Maximum temperature is 250° F; maximum flow is 5 gpm per 9¾″ to 10″ cartridge height. Size is 1⅛″ ID × 2 9/16″ OD. Double open-end (DOE).

Micron Size	9¾″ Cartridge Ht.		10″ Cartridge Ht.		20″ Cartridge Ht.	
5	9982T12	$5.03	9982T22	$5.14	9982T32	$10.41
10	9982T13	4.69	9982T23	4.78	9982T33	9.54
25	9982T15	4.58	9982T25	4.58	9982T35	9.13
50	9982T16	4.48	9982T26	4.48	9982T36	9.03
75	9982T17	4.27	9982T27	4.37	9982T37	8.82
125	9982T18	4.14	9982T28	4.14	9982T38	8.40

For information about micron size, see page 390. For filter-cartridge housings, see pages 389 and 390.

Pleated Filter Cartridges

Pleats provide more filter media surface area than other cartridge styles for longer life and greater dirt-holding capacity. Cartridges are double open-end style (DOE). Maximum temperature is 140° F.

Cellulose—Designed to remove sediment in general water filtration, cartridges provide 4 sq. ft. of medium per 9¾″ height. Core is polypropylene; end caps are vinyl plastic. Size is 1″ ID × 2⅝″ OD.

Jumbo Cellulose/Micro-Fiberglass and ***Jumbo Polyester***—With a much larger OD than other filters, these cartridges have a higher dirt-holding capacity. Filters have 12 sq. ft. of medium per 10″ height. Size is 1″ ID × 4½″ OD.

Polyester—These cartridges have a rigid polypropylene core and PVC end caps. Filters have 4 sq. ft. of medium per 9¾″ height. Micron sizes 20 and 50 are cleanable and reusable. Size is 1 1/16″ ID × 2¾″ OD. NSF certified to ANSI/NSF Standard 61.

High-Capacity Polyester—Similar to the polyester cartridges above, but with 6 sq. ft. of medium per 9¾″ height for even greater dirt-holding capacity. Filters with micron sizes of 10 to 100 are cleanable and reusable. Size is 1 1/16″ ID × 2¾″ OD. Made of FDA-compliant materials. NSF certified to ANSI/NSF Standard 61.

Micron Size	9¾″ Cartridge Ht. Max. Flow, gpm			19½″ Cartridge Ht. Max. Flow, gpm		
Cellulose						
20	10	7191K11	$4.59	15	7191K13●	$10.46
Jumbo Cellulose/Micro-Fiberglass						
2	5	6657T12	22.08	10	6657T42●	38.02
10	8	6657T21	18.34	16	6657T51●	30.74
20	8	6657T22	17.71	16	6657T52●	30.42
Jumbo Polyester						
30	8	6657T23	20.94	16	6657T53●	34.90
Polyester						
1	6	44295K31	6.74	10	44295K32	16.66
5	6	44295K17	6.06	10	44295K27	14.16
20	6	44295K15	6.06	10	44295K25	14.16
50	6	44295K13	6.06	10	44295K23	14.16
High-Capacity Polyester						
0.35	6	45235K94	12.66	10	45235K24	23.44
1	6	45235K43	8.88	10	45235K13	18.48
5	6	45235K95	7.56	10	45235K25	15.46
10	6	45235K31	7.56	10	45235K32	15.46
20	6	45235K96	7.56	10	45235K26	15.46
50	6	45235K97	7.56	10	45235K27	15.46
100	6	45235K98	7.56	—	—	—

● Cartridge height is 20″.

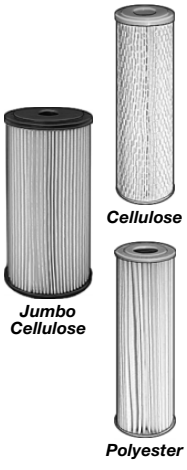

Pleated Polypropylene Filter Cartridges with 222 O-Ring End Caps

High-purity, high-efficiency applications demand 222 O-ring end caps for a better seal than double open-ended cartridges. These cartridges work only with housings that accept 222 O-ring end caps. Cartridges are ideal for drinking water, beverages, and reverse osmosis first-stage filtration, plus are corrosion and chemical resistant. The pleats are made of layers of FDA-compliant melt-blown and spun-bonded polypropylene with EPR rubber gaskets and 222 O-ring seals. All have a molded polypropylene cage to support media. Size is 1″ ID × 2¾″ OD. Max. temperature is 140° F.

Fin end style uses fins to center the cartridge in the housing for a more secure fit.

Micron Size	10″ Cartridge Ht. Max. Flow, gpm	O'all Ht.			20″ Cartridge Ht. Max. Flow, gpm	O'all Ht.		
Closed End								
0.2	5	10 9/16″	44095K31	$37.40	10	20¾″	44095K41	$57.20
0.45	5	10 9/16″	44095K32	34.33	10	20¾″	44095K42	50.60
1	5	10 9/16″	44095K33	31.27	10	20¾″	44095K43	47.31
3	10	10 9/16″	44095K34	30.36	20	20¾″	44095K44	46.67
10	10	10 9/16″	44095K35	28.78	20	20¾″	44095K45	44.33
30	10	10 9/16″	44095K36	27.11	20	20¾″	44095K46	39.66
Fin End								
0.2	5	12 5/16″	44095K81	37.40	10	22½″	44095K91	57.20
0.45	5	12 5/16″	44095K82	34.33	10	22½″	44095K92	50.60
1	5	12 5/16″	44095K83	31.27	10	22½″	44095K93	47.31
3	10	12 5/16″	44095K84	30.36	20	22½″	44095K94	46.67
10	10	12 5/16″	44095K85	28.78	20	22½″	44095K95	44.33
30	10	12 5/16″	44095K86	27.11	20	22½″	44095K96	39.66

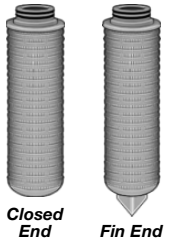

Thermal-Bonded Polypropylene Filter Cartridges

Standard

Absolute Rated

These microfine, thermally bonded fiber filters deliver high filtration efficiency and consistent flow rates. Double open-end (DOE).

Standard cartridges have micro-grooves for added surface area and a polypropylene core. Size is 1 1/16″ ID × 2½″ OD. Max. temp. is 175° F.

Absolute-rated cartridges have polypropylene end caps, surface netting, and core. Filters have an efficiency rating of 99.98%. All materials are FDA compliant for use with drinking water and edible liquids according to CFR 21. Size is 1″ ID × 2 9/16″ OD. Max. temperature is 200° F.

Micron Size	10″ Cartridge Ht. Max. Flow, gpm			20″ Cartridge Ht. Max. Flow, gpm		
Standard						
1	5	8147K51▲	$6.52	10	8147K61	$11.49
5	8	8147K52▲	6.52	16	8147K62	11.49
10	8	8147K53▲	6.49	16	8147K63	11.49
25	10	8147K54▲	6.49	20	8147K64	11.49
Absolute Rated						
1	5	44175K11	40.44	10	44175K21	84.53
5	5	44175K13	30.76	10	44175K23	61.57
10	5	44175K14	18.80	10	44175K24	37.62
20	5	44175K16	18.80	10	44175K26	37.62
40	5	44175K18	18.80	10	44175K28	37.63
70	5	44175K19	18.80	10	44175K29	37.63
90	5	44175K31	18.80	10	44175K41	37.63
120	5	44175K32	18.80	10	44175K42	37.63

▲ Cartridge height is 9⅞″.

Pleated Polypropylene Filter Cartridges

Pleats provide more surface area for longer life and more dirt-holding capacity. Materials are FDA compliant and have excellent chemical resistance. Double open-end (DOE).

Standard cartridges have layers of polypropylene that deliver fine filtration. Size is 1″ ID × 2¾″ OD. Max. temperature is 140° F.

Jumbo cartridges are 1″ ID × 4½″ OD. Max. temperature is 140° F.

Absolute-rated cartridges are made of backwashable media that's great for chemical, pharmaceutical, and food and beverage applications. Core and end caps are polypropylene. 1 1/16″ ID × 2½″ OD. Max. temperature is 200° F. Absolute rated.

Micron Size	10″ Cartridge Ht. Max. Flow, gpm			20″ Cartridge Ht. Max. Flow, gpm		
Standard						
0.2	5	5445T54	$37.40	10	5445T59	$57.20
0.45	5	5445T53	34.33	10	5445T58	50.60
1	5	5445T61	31.27	10	5445T57	47.31
10	10	5445T51	28.78	20	5445T55	44.33
20	10	5445T62	28.12	20	5445T64	40.56
30	10	5445T63	27.11	20	5445T65	39.66
Jumbo						
0.45	2	6661T11★	38.43	4	6661T21	64.17
3	6	6661T13★	27.70	12	6661T23	47.71
10	8	6661T15★	25.73	16	6661T25	41.26
30	8	6661T17★	24.99	16	6661T27	40.11
Absolute Rated						
0.2	1	44465K29	112.16	—	—	—
0.45	3	44465K28	86.31	—	—	—
1	5	44465K27	77.67	—	—	—
5	10	44465K25	59.57	—	—	—
10	10	44465K24	59.57	—	—	—
20	10	44465K23	60.46	—	—	—
40	10	44465K22	55.27	—	—	—

★ Cartridge height is 9¾″.

For information about micron size, see page 390. For filter-cartridge housings, see pages 389 and 390.

Absolute-Rated Membrane Filter Cartridges

Double Open-End

Filter particles one micron and smaller with these absolute-rated filter cartridges. Filters have a 99.98% particle retention rate for consistent, reliable performance in some of our smallest micron sizes. Filter media is thermally bonded to polypropylene support structures. ***222 O-ring*** style provides a better seal than the double open-end cartridges for high purity applications.

PTFE— Ideal for use with solvents and other aggressive liquids. Flushed with deionized water to ensure product cleanliness. Meet USP (United States Pharmacopeia) Class VI toxicity criteria. Maximum temperature is 200° F. *Double open-end (DOE)* cartridges have expanded PTFE O-rings; *222 O-ring* cartridges have FEP encapsulated fluoroelastomer O-rings.

Polyethersulfone— Perfect for water systems, feed water, and water service applications. O-rings are ethylene propylene. Maximum temperature is 180° F. Made of FDA-compliant materials. Components meet USP Class VI–121° C Plastics Tests.

	10″ CARTRIDGE HT.					20″ CARTRIDGE HT.			
Micron Size	Max. Flow, gpm	Double Open-End		222 O-Ring Closed End		Max. Flow, gpm	Double Open-End		222 O-Ring Closed End	
PTFE—1″ ID×2⅝″ OD										
0.05	0.9	6648T11	$845.82	6648T16	$862.92	1.8	6648T21	$1,692.56	6648T26	$1,692.56
0.1	1	6648T12	515.42	6648T17	518.79	2	6648T22	949.15	6648T27	969.61
0.2	2	6648T13	496.48	6648T18	501.56	4	6648T23	942.43	6648T28	945.78
1	3	6648T14	472.75	6648T19	518.79	6	6648T24	894.77	6648T29	899.81
Polyethersulfone—1″ ID×2¾″ OD										
0.1	1.5	43765K16●	84.85	43765K26●	84.84	3	43765K36	169.66	43765K46	169.67
0.2	3	43765K14●	84.84	43765K24●	84.85	6	43765K34	169.68	43765K44	169.68
0.45	6	43765K12●	84.84	43765K22●	84.85	12	43765K32	169.68	43765K42	169.68

● Height is 9¾″.

Polymeric Absorbent Filter Cartridges

The polymeric filter media absorbs hydrocarbon molecules, then chemically binds them to its interior, removing trace hydrocarbons from fluids to meet or exceed EPA discharge regulations. Filters have a polyolefin wall with a polypropylene core, and are double open-end (DOE) with a polyolefin foam gasket. Not rated for microns because they absorb rather than filter. Use for emulsified and dissolved oils, synthetic lubricants, grease, and organic solvents. Maximum temperature is 180° F.

Cartridge ID×OD	Cartridge Ht.	Max. Flow, gpm		
1″×2½″	9 13/16″	1	6632T21	$28.51
1″×2½″	19 15/16″	2	6632T22	42.77
1″×2½″	30 1/16″	3	6632T23	57.05
1″×2½″	40″	4	6632T24	68.63

Type 304 Stainless Steel Reusable Filter Cartridges

Cylindrical

Pleated

These cleanable, reusable filters are made of Type 304 stainless steel mesh and woven wire cloth so they withstand most caustic fluids including process water, oils, paints, and glues. Filters are double open-end (DOE). Maximum temperature is 250° F for cartridges with Buna-N seals; 500° F for cartridges with PTFE seals.

Pleated cartridges provide more filter surface area than the cylindrical cartridges for higher dirt-holding capacity.

			9¾″ CARTRIDGE HT.				10″ CARTRIDGE HT.			
Micron Size	Max. Flow, gpm	Cartridge ID×OD	With Buna-N Seals		With PTFE Seals		With Buna-N Seals		With PTFE Seals	
Cylindrical										
10	5	1⅛″×2½″	44275K13	$143.16	44275K28	$188.70	44275K71	$143.16	44275K93	$188.70
20	10	1⅛″×2½″	44275K34	111.16	44275K44	156.70	44275K87	111.16	44275K67	156.70
40	10	1⅛″×2½″	44275K14	71.76	44275K29	123.37	44275K72	71.76	44275K94	123.37
75	10	1⅛″×2½″	44275K15	55.00	44275K51	103.45	44275K73	54.93	44275K95	103.45
100	20	1⅛″×2½″	44275K33	55.00	44275K43	103.45	44275K81	55.00	44275K61	103.45
230	25	1⅛″×2½″	44275K32	44.65	44275K42	98.37	44275K86	44.65	44275K66	98.37
370	25	1⅛″×2½″	44275K17	44.65	44275K53	98.37	44275K75	44.65	44275K97	98.37
540	25	1⅛″×2½″	44275K31	44.65	44275K41	98.37	44275K85	44.65	44275K65	98.37
Pleated										
5	10	1⅛″×2⅝″	44275K39	204.94	44275K49	250.48	44275K84	204.94	44275K64	250.48
10	10	1⅛″×2⅝″	44275K18	143.16	44275K54	188.70	44275K76	143.16	44275K98	188.70
20	20	1⅛″×2⅝″	44275K38	111.16	44275K48	156.70	44275K83	125.98	44275K63	156.70
40	20	1⅛″×2⅝″	44275K19	71.76	44275K55	123.37	44275K77	71.76	44275K99	123.37
75	20	1⅛″×2⅝″	44275K22	55.00	44275K56	103.45	44275K78	55.00	44275K111	103.45
100	30	1⅛″×2⅝″	44275K37	55.00	44275K47	103.45	44275K82	55.00	44275K62	103.45
230	35	1⅛″×2⅝″	44275K36	44.65	44275K46	98.37	44275K89	44.65	44275K69	98.37
370	35	1⅛″×2⅝″	44275K26	44.65	44275K58	98.37	44275K91	44.65	44275K113	98.37
540	35	1⅛″×2⅝″	44275K35	44.65	44275K45	98.37	44275K88	44.65	44275K68	98.37

Type 316 Stainless Steel Reusable Filter Cartridges

Cylindrical

Pleated

Even more corrosion resistant than the Type 304 stainless steel cartridges on this page. Filter media consists of Type 316 stainless steel, which is ideal for applications with high temperatures, corrosive liquids and gases, and process steam. Cartridges are cleanable and reusable. Double open-end (DOE). Maximum temperature is 250° F for cartridges with Buna-N seals; 500° F for cartridges with PTFE seals.

Cylindrical cartridges have sintered media and are absolute rated with a 99.9% particle retention rate.

Pleated cartridges have woven media. They also provide more surface area for higher dirt-holding capacity.

		10″ CARTRIDGE HT.					20″ CARTRIDGE HT.				
Micron Size	Cartridge ID×OD	Max. Flow, gpm	With Buna-N Seals		With PTFE Seals		Max. Flow, gpm	With Buna-N Seals		With PTFE Seals	
Cylindrical											
3	1 13/64″×2½″	6	6633T11	$466.99	6633T21	$570.00	12	6633T51	$689.31	6633T61	$792.33
5	1 13/64″×2½″	15	6633T12	466.99	6633T22	570.00	25	6633T52	691.87	6633T62	794.88
10	1 13/64″×2½″	15	6633T13	466.99	6633T23	570.00	25	6633T53	691.87	6633T63	794.88
35	1 13/64″×2½″	15	6633T15	417.58	6633T25	520.60	25	6633T55	616.33	6633T65	719.34
40	1 13/64″×2½″	15	6633T16	416.07	6633T26	519.09	25	6633T56	616.33	6633T66	719.34
60	1 13/64″×2½″	15	6633T17	416.07	6633T27	519.09	25	6633T57	616.33	6633T67	719.34
Pleated											
12	1 13/64″×2½″	15	6633T31	338.45	6633T41	438.93	25	6633T71	556.54	6633T81	657.01
40	1 13/64″×2½″	15	6633T32	372.55	6633T42	473.03	25	6633T72	556.54	6633T82	657.01
70	1 13/64″×2½″	15	6633T33	312.91	6633T43	413.39	25	6633T73	464.55	6633T83	565.03
100	1 13/64″×2½″	15	6633T34	377.94	6633T44	478.42	25	6633T74	444.43	6633T84	544.91
140	1 13/64″×2½″	15	6633T35	270.31	6633T45	370.79	25	6633T75	403.40	6633T85	503.88
250	1 13/64″×2½″	15	6633T36	247.19	6633T46	347.67	25	6633T76	369.13	6633T86	469.61

For information about micron size, see page 390.

Polypropylene Filter-Bag Housings and Filter Bags

These lightweight, corrosion-resistant housings mount inline and are bottom loading with a Buna-N O-ring seal. Furnished with a polypropylene basket (1/8″×3/32″ perforations), pressure gauge, wrench, and 3/8″ NPT female bottom drain port with plug. Filter bags sold separately.

Connections: NPT female.

Housings

Pipe Size	Max. Flow, gpm	O'all Size, Dia.×Ht.	Max. Pressure @ 100° F	Max. Temp.		
1″	20	7 1/4″×13 1/8″	100 psi	100° F	98015K11	$191.60
1 1/2″	20	7 1/4″×13 5/8″	100 psi	100° F	98015K15	205.82
1 1/2″	40	7 1/4″×23 7/8″	90 psi	100° F	98015K19	231.13

Filter Bags

All have a polypropylene flange and integral handles. Maximum temperature is 200° F.

Micron Size	For 20 gpm Housings	1-9	10-Up	For 40 gpm Housings	1-9	10-Up
1	98015K21	$6.31	$5.17	98015K31	$8.49	$6.95
5	98015K22	6.20	5.08	98015K32	8.37	6.85
10	98015K23	6.09	4.99	98015K33	8.22	6.73
25	98015K24	5.91	4.84	98015K34	8.11	6.63
50	98015K25	5.84	4.78	98015K35	7.81	6.38
100	98015K26	5.80	4.75	98015K36	7.64	6.26
200	98015K27	5.56	4.54	98015K37	7.57	6.20

Thermoplastic Filter-Bag Housings and Filter Bags

All filter-bag housings mount inline and are bottom loading. Housings include a pressure gauge, wrench, and polypropylene filter-bag support basket. Filter bags sold separately.

Connections: NPT female.

Nylon housings are made of opaque black glass-reinforced nylon and are ideal for hot water applications. They have a Buna-N O-ring seal, a support basket with 3/16″ square perforations, and 1/4″ NPT male brass drain valve. Max. pressure is 125 psi @ 180° F. Max. temperature is 180° F.

Polypropylene housings are constructed of opaque white, high purity, virgin polypropylene. Housing includes a nonlubricated silicone O-ring, drain plug, valve, and a support basket with 7/16″ square perforations. Maximum pressure is 100 psi @ 125° F. Maximum temperature is 125° F.

Styrene housings are clear so you can see your filter bag. Housings are furnished with a Buna-N O-ring seal, polypropylene plugs, a wrench, and a support basket with 3/16″ square perforations. Maximum pressure is 100 psi @ 125° F. Maximum temperature is 125° F.

Filter bags have a PVC O-ring seal. *Polypropylene* has a maximum temperature of 140° F; *polyester* has a maximum temperature of 200° F.

Nylon Housing

Polypropylene Housing

Styrene Housing

Housings

Pipe Size	Max. Flow, gpm	Housing Dia.	Nylon Ht.			Polypropylene Ht.			Styrene Ht.		
1″ and 1 1/2″	40	7 35/64″	13 9/64″	6869K21	$314.17	13 9/64″	9315T46	$182.10	13 21/64″	9304T32	$128.75
1″ and 1 1/2″	45	7 35/64″	23 25/64″	6869K22	344.08	23 25/64″	9315T48	210.00	23 45/64″	9304T34	163.92

Filter Bags

	FOR 40 gpm HOUSINGS Polypropylene	1-9	10-Up	Polyester	1-9	10-Up	FOR 45 gpm HOUSINGS Polypropylene	1-9	10-Up	Polyester	1-9	10-Up
1-Micron Filter Bag	9304T11	$13.45	$10.90	6869K3	$13.45	$10.90	9304T21	$15.93	$12.90	6869K11	$15.93	$12.90
5-Micron Filter Bag	9304T12	13.33	10.80	6869K4	13.33	10.80	9304T22	14.45	11.70	6869K12	14.45	11.70
10-Micron Filter Bag	9304T13	12.96	10.50	6869K5	12.96	10.50	9304T23	14.32	11.60	6869K13	14.32	11.60
25-Micron Filter Bag	9304T14	12.59	10.20	6869K6	12.59	10.20	9304T24	14.19	11.50	6869K14	14.19	11.50
50-Micron Filter Bag	9304T15	12.46	10.10	6869K7	12.46	10.10	9304T25	13.95	11.30	6869K15	13.95	11.30
100-Micron Filter Bag	9304T17	12.22	9.90	6869K8	12.23	9.90	9304T27	13.95	11.30	6869K16	13.95	11.30
200-Micron Filter Bag	9304T19	11.98	9.70	6869K9	11.98	9.70	9304T29	13.70	11.10	6869K17	13.71	11.10

High-Flow Polypropylene Filter-Bag Housings and Filter Bags

Polypropylene construction keeps these filter housings free from rust and corrosion. The threaded cover can be removed without tools, giving you easy access to your filter bag. All styles have upper side inlets. Filter bags sold separately.

Connections: 2″ NPT female.

Light duty housing is opaque blue polypropylene with a bottom outlet, Buna-N O-ring seal, and polypropylene basket with 9/64″ diameter perforations.

Heavy duty housings are opaque gray glass-reinforced polypropylene. All have lower side outlet, 10″ diameter base with four 7/8″ diameter mounting holes, fluoroelastomer O-ring seals, and a polypropylene basket with 1/4″ Ht.×2 1/8″ Wd. slots.

Filter bags are polypropylene felt with a polypropylene ring. Handle is welded in on 51655K8 and sewn in on the others. Maximum temperature is 200° F. **To Order:** Please specify micron size: 5, 10, 25, 50, or 100.

Light Duty

Heavy Duty

Max. Flow, gpm	O'all Size, Dia.×Ht.	Max. Pressure	Max. Temp.	Housings		Filter Bag	
Light Duty							
75	7 1/4″ ×29″	100 psi @ 110° F	110° F	51655K6	$299.00	51655K8	$4.80
Heavy Duty							
50	18 5/16″×34 3/32″	150 psi @ 70° F	120° F	51655K53	1,427.14	51655K7	6.18
100	18 5/16″×50 3/32″	150 psi @ 70° F	120° F	51655K57	1,614.59	51655K9	8.40

Miniature High-Pressure Metal Filter-Bag Housing and Filter Bags

An excellent choice for applications where space is a concern and a high pressure rating is required. Housing and filter bags are made of Type 304 stainless steel. Housing also includes a PTFE-encapsulated fluoroelastomer O-ring seal and a knurled collar for easy bag replacement. Filter bags sold separately.

Connections: 3/8″ NPT female.

Housing

Max. Flow, gpm	O'all Size, Dia.×Ht.	Max. Pressure	Max. Temp.		
6	2 1/4″×8″	3,000 psi	400° F	6891K1	$198.18

Filter Bags

Made of Type 304 stainless steel, these filter bags are cleanable and reusable. Absolute rated. Maximum temperature is 400° F.

		1-9	10-Up
25-Micron Filter Bag	6891K2	$24.62	$20.15
50-Micron Filter Bag	6891K3	24.62	20.15
75-Micron Filter Bag	6891K4	20.51	16.78
100-Micron Filter Bag	6891K5	16.42	13.44
125-Micron Filter Bag	6891K6	16.42	13.44
150-Micron Filter Bag	6891K7	16.42	13.44

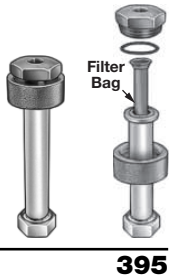

Metal Filter-Bag Housings

With C-Clamp Lid and without Legs

With Eye-Bolt Lid and Three Legs

Our most popular filter-bag housings have large flow capacities. All have an upper side inlet, middle side outlet, and bottom outlet. Furnished with a Type 304 stainless steel bag support strainer basket that has 9/64″ diameter perforations (strainer baskets with different size perforations are sold separately on this page). Housings also have a fluoroelastomer cover gasket and two 1/4″ gauge ports on the side of housing; for gauges see pages 562-577. Housings with legs have 9/16″ diameter mounting holes. Maximum temperature is 400° F.

Connections: NPT female.

Housings with ***C-clamp lids*** have a swing lid for easy opening and closing.

Housings with ***eye-bolt lids*** are more rugged and have higher pressure ratings. They also have an internal stainless steel float that reduces the liquid level so you can quickly and easily remove the filter bag.

Carbon steel housings are painted black. ***Type 304 stainless steel housings*** are electropolished and mill finished.

			WITH C-CLAMP LID						WITH EYE-BOLT LID					
Pipe Size	Max. Flow, gpm	Drain Size, NPT Female	Max. Pressure	Housing Ht.	Carbon Steel		Type 304 Stainless Steel		Max. Pressure	Housing Ht.	Carbon Steel		Type 304 Stainless Steel	
4 1/2″ Dia. Housings without Legs														
For Trade Size 3 Filter Bags														
3/4″	25	1/2″	200 psi	12 13/32″	5168K177	$428.30	5168K206	$506.55	500 psi	15 19/32″	5168K601	$404.61	5168K501	$551.52
1″	25	1/2″	200 psi	12 19/32″	5168K178	437.74	5168K207	503.51	500 psi	15 51/64″	5168K602	421.87	5168K502	555.56
1 1/4″	25	1/2″	200 psi	12 19/32″	5168K179	297.96	5168K208	473.68	500 psi	15 51/64″	5168K603	457.55	5168K503	548.79
1 1/2″	25	1/2″	200 psi	12 1/2″	5168K18	335.85	5168K209	496.49	500 psi	15 45/64″	5168K604	489.70	5168K504	676.77
2″	25	1/2″	200 psi	12 13/32″	5168K181	365.89	5168K21	543.86	500 psi	15 45/64″	5168K605	501.04	5168K505	602.02
For Trade Size 4 Filter Bags														
3/4″	50	1/2″	200 psi	18 13/32″	5168K182	441.51	5168K211	505.45	500 psi	21 19/32″	5168K606	474.75	5168K506	626.26
1″	50	1/2″	200 psi	18 19/32″	5168K183	447.26	5168K212	545.45	500 psi	21 51/64″	5168K607	535.35	5168K507	852.53
1 1/4″	50	1/2″	200 psi	18 19/32″	5168K184	333.96	5168K213	545.45	500 psi	21 51/64″	5168K608	525.25	5168K508	852.53
1 1/2″	50	1/2″	200 psi	18 1/2″	5168K185	501.89	5168K214	607.27	500 psi	21 51/64″	5168K609	557.58	5168K509	666.67
2″	50	1/2″	200 psi	18 13/32″	5168K186	490.57	5168K215	636.36	500 psi	21 45/64″	5168K61	575.76	5168K51	676.77
6″ Dia. Housings with Three 18″ High Legs														
For Trade Size 8 Filter Bags														
1″	100	3/4″	125 psi	28″	5168K187	630.30	5168K216	959.60	150 psi	29 3/32″	5168K333	757.58	5168K243	1,483.59
1 1/4″	100	3/4″	125 psi	28″	5168K188	685.48	5168K217	949.49	150 psi	29 3/32″	5168K334	767.68	5168K244	1,551.72
1 1/2″	100	3/4″	125 psi	28″	5168K189	650.51	5168K218	953.91	150 psi	29 3/32″	5168K335	785.86	5168K245	1,565.52
2″	100	3/4″	125 psi	28″	5168K19	674.75	5168K219	1,010.10	150 psi	29″	5168K336	777.78	5168K246	1,555.17
3″	100	3/4″	125 psi	28 19/64″	5168K191	698.99	5168K221	1,226.26	150 psi	29 13/32″	5168K337	871.29	5168K247	1,744.83
For Trade Size 9 Filter Bags														
1″	150	3/4″	125 psi	38″	5168K192	752.03	5168K369	1,122.03	150 psi	39 3/32″	5168K343	946.75	5168K253	1,810.34
1 1/4″	150	3/4″	125 psi	38″	5168K193	759.60	5168K371	1,159.36	150 psi	39 3/32″	5168K344	968.32	5168K254	1,862.07
1 1/2″	150	3/4″	125 psi	38″	5168K194	769.70	5168K372	1,163.29	150 psi	39 3/32″	5168K345	968.00	5168K255	1,884.48
2″	150	3/4″	125 psi	38″	5168K195	787.88	5168K373	1,175.08	150 psi	39″	5168K346	974.00	5168K256	1,910.34
3″	150	3/4″	125 psi	38 19/64″	5168K196	927.27	5168K374	1,322.46	150 psi	39 13/32″	5168K347	1,126.73	5168K257	1,956.90
8 5/8″ Dia. Housings with Three 22″ High Legs														
For Trade Size 1 Filter Bags														
2″	110	1″	125 psi	25″	5168K171	632.65	5168K2	1,053.25	150 psi	27 51/64″	5168K356	1,060.61	5168K266	2,096.15
3″	110	1″	—	—	—	—	—	—	150 psi	30″	5168K357	969.70	5168K267	1,944.44
For Trade Size 2 Filter Bags														
2″	220	1″	125 psi	40″	5168K174	897.96	5168K203	1,342.11	150 psi	42 51/64″	5168K366	1,289.05	5168K276	2,269.23
3″	220	1″	—	—	—	—	—	—	150 psi	45″	5168K367	1,139.71	5168K277	2,286.92
4″	220	1″	—	—	—	—	—	—	150 psi	45″	5168K368	1,324.43	5168K278	2,698.08
For Trade Size 12 Filter Bags														
1 1/2″	275	1″	125 psi	40 19/64″	5168K197	809.59	5168K227	1,336.22	150 psi	41 51/64″	5168K469	1,179.01	5168K473	2,403.22
2″	275	1″	125 psi	40 13/64″	5168K198	834.34	5168K228	1,357.29	150 psi	41 51/64″	5168K471	1,216.35	5168K474	2,534.88
3″	275	1″	—	—	—	—	—	—	150 psi	44″	5168K472	1,353.90	5168K475	2,839.46

Type 304 Stainless Steel Strainer Baskets for Filter-Bag Housings

For 4 1/2″ and 6″ Dia. Housings, Trade Sizes 3-9

BASKET TYPES

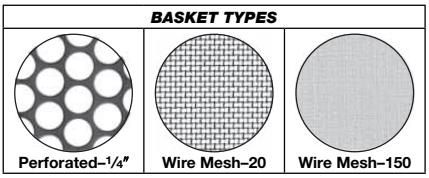

Perforated–1/4″ | Wire Mesh–20 | Wire Mesh–150

Strain large particles with these Type 304 stainless steel baskets. You can use them with or without a filter bag. Choose from perforated and wire mesh baskets. Baskets for housing Trade Sizes 3 through 9 include a hold-down spring.

To Order: For perforated baskets, please specify 1/16″, 9/64″, 3/16″, or 1/4″ perforation size. For 100 and lower wire mesh baskets, please specify 20, 40, 60, or 100 mesh size; for 150 mesh size see part number in table. For more information on mesh size see page 409.

For 8 5/8″ Dia. Housings, Trade Sizes 1, 2 & 12

		PERFORATED			WIRE MESH			
For Housing Size, Dia.	Trade Size	Basket Ht.	1/16″, 9/64″, 3/16″, or 1/4″		Basket Ht.	20, 40, 60, or 100		150
For C-Clamp Lid and Eye-Bolt Lid Housings								
4 1/2″	3	5 5/16″	5803K13	$107.96	6 1/4″	5803K23	$156.61	5803K33 $232.08
4 1/2″	4	11 5/16″	5803K14	136.76	12 1/4″	5803K24	222.76	5803K34 316.19
6″	8	16 1/4″	5803K15	388.06	16 1/4″	5803K25	317.71	5803K35 565.81
6″	9	26 1/4″	5803K16	470.86	26 1/4″	5803K26	408.76	5803K36 582.45
8 5/8″	12	28 1/4″	5803K17	431.49	28 1/4″	5803K27	564.42	5803K37 768.34
For C-Clamp Lid Housings Only								
8 5/8″	1	11 7/8″	5803K11	303.71	11 7/8″	5803K21	443.09	5803K31 512.67
8 5/8″	2	26 7/8″	5803K12●	541.90	26 7/8″	5803K22	668.79	5803K32 804.01
For Eye-Bolt Lid Housings Only								
8 5/8″	1	12 3/8″	5803K41	326.59	12 1/4″	5803K51	320.51	5803K61 410.70
8 5/8″	2	27 3/8″	5803K42	380.84	27 1/4″	5803K52	498.16	5803K62 678.10

● 9/64″ perforated basket height is 26 3/8″.

For information about micron size, see page 390. For filter bags, see pages 398-401.

Easy Access Filter-Bag Housings

Access your filter bag quickly with these top-loading flat-lid housings. All have an upper side inlet and a lower side outlet, fluoroelastomer O-ring seal, polished exterior, and three legs with 5/8″ diameter mounting holes, unless noted. Furnished with a strainer basket with 9/64″ diameter perforations. Cover has two 1/4″ ports (unless noted) for pressure gauge and vent valve.

Connections: NPT female.

Aluminum housings have a Type 304 stainless steel basket and four swing bolts on the cover for easy access.

Stainless steel housings have a Type 316 stainless steel basket and three swing bolts on the cover for easy access.

Aluminum

Stainless Steel

Pipe Size	Max. Flow, gpm	Drain Size, NPT Female	Max. Pressure	Alloy 6061 Aluminum: Housing Ht.	Alloy 6061 Aluminum: Max. Temp.		Type 316 Stainless Steel: Housing Ht.	Type 316 Stainless Steel: Max. Temp.	
5″ Dia. Housings with Three 14″ High Legs—unless noted									
For Trade Size 3 Filter Bags									
3/4″	25	1/2″	300 psi	12 1/2″	250° F	6870K57▲ $462.26	14 3/8″	250° F	9298T31▲● $838.78
1″	25	1/2″	300 psi	12 51/64″	250° F	6870K58▲ 462.26	14 3/8″	250° F	9298T32▲● 838.78
For Trade Size 4 Filter Bags									
3/4″	50	1/2″	300 psi	18 1/2″	250° F	6870K59▲ 490.57	20 3/8″	250° F	9298T41▲● 878.57
1″	50	1/2″	300 psi	18 51/64″	250° F	6870K61▲ 490.57	20 3/8″	250° F	9298T42▲● 887.76
6 5/8″ Dia. Housings with Three 22″ High Legs—unless noted									
For Trade Size 8 Filter Bags									
1 1/2″	100	3/4″	200 psi	24 45/64″	250° F	6870K32 773.58	22 45/64″	300° F	9298T81★ 1,381.51
2″	100	3/4″	200 psi	25″	250° F	6870K33 738.96	21 13/16″	300° F	9298T82★ 1,571.43
For Trade Size 9 Filter Bags									
1 1/2″	150	3/4″	200 psi	34 45/64″	250° F	6870K34 761.23	32 45/64″	300° F	9298T91★ 1,658.73
2″	150	3/4″	200 psi	35″	250° F	6870K35 761.23	31 13/16″	300° F	9298T92★ 1,692.31
8″ Dia. Housings with Three 22″ High Legs—unless noted									
For Trade Size 1 Filter Bags									
2″	100	3/4″	150 psi	21 45/64″	250° F	6870K21 748.87	23 15/32″	250° F	9298T11▲♣ 1,489.80
3″	100	3/4″	150 psi	23″	250° F	6870K23 812.26	23 15/32″	250° F	9298T12▲♣ 1,663.27
For Trade Size 2 Filter Bags									
2″	220	3/4″	150 psi	34 45/64″	250° F	6870K24 812.26	37 33/64″	250° F	9298T21▲♣ 1,591.84
3″	220	3/4″	150 psi	37″	250° F	6870K26 891.51	37 33/64″	250° F	9298T22▲♣ 1,660.71

▲ Cover has one 1/4″ NPT female connection. ● Mounting hole diameter is 5/16″. Housing diameter is 4 1/2″.
★ Housing diameter is 6″. Leg height is 18″. ♣ Housing diameter is 8 5/8″.

Filter-Bag/Cartridge Housings

You can use either a standard Trade Size 2 filter bag (see pages 398-401) or the absolute-rated ultra-high capacity filter cartridge designed especially for these housings (sold separately below). Housings seal and open easily and quickly with three swing bolts and a fluoroelastomer O-ring seal. They have a 2″ upper side inlet and bottom outlet, and two 1/4″ gauge ports. Housings include a Type 304 stainless steel basket with 9/64″ dia. perforations and three 22″ high legs with 5/16″ dia. mounting holes. Max. temperature is 400° F. **Connections:** NPT female.

Housings

Pipe Size	Max. Flow	Drain Size, NPT Female	Max. Pressure	Housing Size, Dia. × Ht.	Type 304 Stainless Steel	Type 316 Stainless Steel
2″	150 gpm	3/4″	150 psi	8 5/8″ × 45″	9307T4 $1,634.83	9307T7 $1,970.18

Cartridges

All have a pleat design with first-stage and final filtration layers for high efficiency and are absolute rated. Made of polypropylene, they have an EPR O-ring and stainless steel handle. Overall size is 6 1/4″ OD × 1 3/4″ ID × 35″ Ht. Max. temperature is 225° F.

Micron Size			Micron Size			Micron Size			Micron Size		
0.5	9307T11	$428.84	5	9307T13	$329.10	20	9307T15	$329.10	70	9307T17	$329.10
2	9307T12	383.26	10	9307T14	329.10	40	9307T16	329.10			

ASME Code Filter-Bag Housings

Manufactured in accordance with the ASME (American Society of Mechanical Engineers) boiler and pressure vessel code Section VIII, Division 1, UM stamp. Use for filtering liquids, gases, and drinking and process water. The hinged cover has swing bolts with eye nuts for easy opening and a single O-ring design that ensures a positive seal. Housings have a side inlet and bottom outlet. Furnished with a Type 316 stainless steel basket with 11/64″ diameter perforations for Trade Sizes 3 and 4, and 1/8″ diameter perforations for Trade Size 2. Max. pressure is 150 psi; max. temperature is 250° F. **Connections:** NPT female.

Housings with Buna-N O-ring have three legs with 9/16″ × 7/8″ mounting slots.

Without Legs

Pipe Size	Max. Flow, gpm	Drain Size, NPT Female	Housing Dia.	Basket Ht.	Carbon Steel	Type 304 Stainless Steel	Type 316 Stainless Steel
With Fluoroelastomer O-Ring and Without Legs							
For Trade Size 3 Filter Bags							
1″	20	—	6 3/4″ × 18 3/5″	7″	—	51665K51 $573.73	51665K61 $635.42
For Trade Size 4 Filter Bags							
1″	35	—	6 3/4″ × 23 13/16″	12 1/2″	—	51665K53 591.81	51665K63 665.87
2″	35	—	6 1/4″ × 23 1/2″	12 1/2″	—	51665K54 602.32	51665K64 708.93
With Buna-N O-Ring and Three 21 3/4″ High Legs							
For Trade Size 2 Filter Bags							
2″	160	3/4″	12 1/4″ × 54″	30″	51665K15 $1,402.61	51665K25 2,613.81	51665K35 3,122.01

ASME Code Tight-Seal Filter-Bag Housings

An integral pipe from the top side inlet directly feeds the liquid being filtered over the top of your filter bag. This flow-through-top design provides superior bag sealing, preventing any liquid from getting through the housing without going through the filter bag. All meet ASME (American Society of Mechanical Engineers) boiler and pressure vessel code Section VIII, Division 1. All have a bottom outlet. Cover is domed and seals firmly with swing-bolts. Each housing has two 1/4″ NPT female vent ports and three 24 1/2″ high legs with 3/8″ dia. mounting holes. Furnished with Buna-N O-rings and a Type 316 stainless steel basket with 5/32″ diameter perforations. Max. temperature is 250° F.

Connections: 150-lb. ANSI flange with 2″ pipe size.

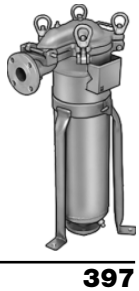

Pipe Size	Max. Flow, gpm	Drain Size, NPT Female	Max. Pressure	Housing Ht.	Carbon Steel	Type 316 Stainless Steel
For Trade Size 1 Filter Bags						
2″	90	1/2″	150 psi	21 1/4″	9306T11 $2,599.48	9306T16 $3,622.17
For Trade Size 2 Filter Bags						
2″	180	1/2″	150 psi	36 3/4″	9306T22 2,651.86	9306T28 3,984.78

For filter-bag housings, see pages 395-397. For information about micron size, see page 390.

About Filter Bags

Filter bags serve as filtering media in filter-bag housings. They may also be used in adapter head or slip-on applications that do not use housings. Filter bags are efficient and easy to change, while offering high flow rates with low pressure drops. They provide good dirt-holding capacities, trapping dirt within the bag.

Types of Bags— We offer bags that fit into standard housings, slip-on bags that do not require a housing but rather a clamp or wire, and grab-on bags that do not require a housing but rather a threaded adapter head.

Trade Size	For Housing Dia.	For Housing Lg.
1	8″ to 8½″	16″ to 17″
2	8″ to 8½″	32″
3	4½″ to 5″	8″ to 8¼″
4	4½″ to 5″	14″
8	6″ to 6½″	20″ to 22″
9	6″ to 6½″	31″ to 33″
12	8½″ to 9″	34″

Construction— *Sewn-seam* bags are the most common and easy to handle. *Heat-welded seam* bags have no needle holes or loose threads that could contribute to fluid contamination.

Micron Ratings— *Absolute-rated* filter bags will retain at least 90% of particles of the specified micron size. All other bags will retain particles, but not to any percent efficiency. Often referred to as nominal rated. To achieve the desired filtration, select a bag with a micron size smaller than the particles you want to filter.

Bags with a glazed finish have minimal fiber migration (contamination from fiber filter media, such as felt). Filter bags are not reusable, unless noted. To order a filter bag for your housing, use the following tables as a guide.

	Water	Organic Solvents	Petroleum Oils	Alkalies	Organic Acids	Mineral Acids
Polyester	Excellent	Excellent	Excellent	Good	Good	Good
Polypropylene	Excellent	Good	Fair	Excellent	Excellent	Good
Nylon	Good	Excellent	Excellent	Good	Fair	Poor
Nomex	Good	Excellent	Excellent	Good	Fair	Poor

Felt Filter Bags

With Woven Handle

With Carbon Steel Retaining Ring

These felt filter bags have sewn construction and a glazed finish (except 51635K, which have no finish).

Polyester are general-purpose media bags manufactured with a single layer of felt media. ***Heavy duty polyester*** filter heavy metallic particles and extremely viscous liquids such as tar without tearing. Interwoven polyester mesh provides extra strength to hold heavy particles. ***Polypropylene*** are FDA compliant. ***Nomex*** are for use in high temperature applications in the harshest environments.

Bag Size, Dia.×Ht.	Trade Size	Max. Flow, gpm	1 Micron	5 Micron	10 Micron	25 Micron	50 Micron	100 Micron	200 Micron	1-9	10-Up
Polyester Felt Bags with Galvanized Steel Retaining Ring and Woven Polyester Handle— *Max. Temp. is 300° F*											
4³⁄₃₂″× 8″	3	25	5162K71	5162K12	5162K81	5162K14	5162K15	5162K16	5162K91	$3.74	$3.18
4³⁄₃₂″×14″	4	50	5162K72	5162K18	5162K82	5162K21	5162K22	5162K23	5162K92	4.12	3.50
5½″ ×21″	8	100	5162K73	5162K51	5162K83	5162K53	5162K54	5162K56	5162K93	5.38	4.58
5½″ ×32″	9	150	5162K74	5162K61	5162K84	5162K63	5162K64	5162K66	5162K94	7.06	6.01
7″ ×16½″	1	100	5162K75	5162K34	5162K85	5162K36	5162K37	5162K39	5162K95	5.30	4.51
7″ ×32″	2	220	5162K76	5162K44	5162K86	5162K46	5162K47	5162K49	5162K96	8.41	7.15
8¼″ ×32″	12	275	5162K57	5162K58	5162K59	5162K87	5162K88	5162K89	5162K97	10.05	8.55
Polyester Felt Bags with Polypropylene Retaining Ring and Integral Polypropylene Handle— *Max. Temp. is 200° F*											
8¼″ ×34″	12	275	9316T71	9316T72	9316T73	9316T74	9316T75	9316T76	9316T77	11.66	8.02
Heavy Duty Polyester Felt Bags with Carbon Steel Retaining Ring— *Max. Temp. is 325° F*											
4″ × 8¼″	3	20	6835K26	6835K27	6835K28	6835K29	6835K31	6835K32	6835K33	3.85	3.00
4″ ×14″	4	35	6835K34	6835K35	6835K36	6835K37	6835K38	6835K39	6835K41	4.58	3.55
5½″ ×22″	8	60	6835K42	6835K43	6835K44	6835K45	6835K46	6835K47	6835K48	5.43	4.22
5½″ ×33″	9	100	6835K49	6835K51	6835K52	6835K53	6835K54	6835K55	6835K56	9.06	7.04
7″ ×16″	1	65	6835K11	6835K12	6835K13	6835K14	6835K15	6835K16	6835K17	5.15	4.00
7″ ×32″	2	125	6835K18	6835K19	6835K21	6835K22	6835K23	6835K24	6835K25	8.80	6.84
Polypropylene Felt Bags with Polypropylene Retaining Ring and Integral Polypropylene Handle— *Max. Temp. is 200° F*											
4³⁄₃₂″× 8″	3	25	51595K11	51595K12	51595K13	51595K14	51595K15	51595K17	51595K18	3.78	2.84
4³⁄₃₂″×14″	4	50	51595K21	51595K22	51595K23	51595K24	51595K25	51595K27	51595K28	4.73	3.55
7″ ×16½″	1	90	51595K51	51595K52	51595K53	51595K54	51595K55	51595K57	51595K58	6.24	4.68
7″ ×32″	2	180	51595K61	51595K62	51595K63	51595K64	51595K65	51595K67	51595K68	8.95	6.73
Polypropylene Felt Bags with Galvanized Steel Retaining Ring and Woven Polypropylene Handle— *Max. Temp. is 200° F*											
5½″ ×20″	8	75	51595K31	51595K32	51595K33	51595K34	51595K35	51595K37	51595K38	5.24	3.94
5½″ ×31″	9	90	51595K41	51595K42	51595K43	51595K44	51595K45	51595K47	51595K48	7.11	5.35
8¼″ ×32″	12	275	51595K71	51595K72	51595K73	51595K74	51595K75	51595K77	51595K78	12.40	8.54
Nomex Felt Bags with Type 304 Stainless Steel Retaining Ring and Woven Nomex Handle— *Max. Temp. is 400° F*											
4″ × 8″	3	25	51635K11	51635K12	51635K13	51635K14	51635K15	51635K17	51635K18	9.36	6.60
4″ ×14″	4	50	51635K21	51635K22	51635K23	51635K24	51635K25	51635K27	51635K28	14.37	10.26
5½″ ×20″	8	75	51635K31	51635K32	51635K33	51635K34	51635K35	51635K37	51635K38	17.09	12.92
5½″ ×31″	9	90	51635K41	51635K42	51635K43	51635K44	51635K45	51635K47	51635K48	23.84	18.02
7″ ×16½″	1	90	51635K61	51635K62	51635K63	51635K64	51635K65	51635K67	51635K68	20.32	14.98
7″ ×32″	2	180	51635K71	51635K72	51635K73	51635K74	51635K75	51635K77	51635K78	33.86	24.96
8″ ×32″	12	275	51635K19	51635K29	51635K39	51635K49	51635K59	51635K69	51635K79	33.83	26.71

Two-in-One High-Capacity Felt Filter Bags

Two bags in one, these high-capacity filter bags have an inner bag, which acts as a first-stage filter for coarser particles, and an outer bag, which filters finer particles. For example, the 5/1 micron size bags have an inner bag that acts as a first-stage filter to remove particles 5 microns or larger; an outer bag removes particles 1 micron and larger. As a result, they have 2 to 3 times the life and dirt-holding capacity of conventional felt filter bags. Bags have sewn construction and a glazed finish.

Bag Size, Dia.×Ht.	Trade Size	Max. Flow, gpm	5/1 Micron	10/5 Micron	25/10 Micron	50/25 Micron	100/50 Micron	200/100 Micron	1-9	10-Up
Polyester Felt Bags with Type 304 Stainless Steel Retaining Ring and Woven Polyester Handle— *Max. Temp. is 300° F*										
4³⁄₃₂″× 8″	3	25	5726K31	5726K32	5726K33	5726K34	5726K35	5726K36	$8.11	$6.90
4³⁄₃₂″×14″	4	50	5726K41	5726K42	5726K43	5726K44	5726K45	5726K46	8.95	7.62
5½″ ×21″	8	100	5726K51	5726K52	5726K53	5726K54	5726K55	5726K56	11.27	9.58
5½″ ×32″	9	150	5726K61	5726K62	5726K63	5726K64	5726K65	5726K66	14.17	12.05
7″ ×16½″	1	100	5726K11	5726K12	5726K13	5726K14	5726K15	5726K16	10.89	9.26
7″ ×32″	2	220	5726K21	5726K22	5726K23	5726K24	5726K25	5726K26	16.44	13.98
8⅜″ ×32″	12	275	5726K71	5726K72	5726K73	5726K74	5726K75	5726K76	18.83	16.02
Polypropylene Felt Bags w/Type 304 Stainless Steel Retaining Ring and Woven Polypropylene Handle— *Max. Temp. is 200° F*										
4³⁄₃₂″× 8″	3	25	5783K31	5783K33	5783K34	5783K35	5783K36	5783K37	8.37	7.12
4³⁄₃₂″×14″	4	50	5783K41	5783K43	5783K44	5783K45	5783K46	5783K47	9.21	7.83
5½″ ×21″	8	100	5783K51	5783K53	5783K54	5783K55	5783K56	5783K57	11.98	10.19
5½″ ×32″	9	150	5783K61	5783K63	5783K64	5783K65	5783K66	5783K67	15.98	13.59
7″ ×16½″	1	100	5783K11	5783K13	5783K14	5783K15	5783K16	5783K17	11.94	10.16
7″ ×32″	2	220	5783K21	5783K23	5783K24	5783K25	5783K26	5783K27	18.29	15.56
8⅜″ ×32″	12	275	5783K71	5783K73	5783K74	5783K75	5783K76	5783K77	22.11	18.81

For information about filter bags, see page 398. For information about micron size, see page 390.

Heat-Welded Polyester Felt Filter Bags

The glazed finish and heat-welded construction of these bags eliminates pinholes and loose threads for a cleaner final product. The retaining ring and integral handle are made of polypropylene. Maximum temperature is 200° F.

Bag Size, Dia. × Ht.	Trade Size	Max. Flow, gpm	1 Micron	5 Micron	10 Micron	25 Micron	50 Micron	100 Micron	200 Micron	1-9	10-Up
4 3/32″ × 8″	3	25	9316T11	9316T12	9316T13	9316T14	9316T15	9316T16	9316T17	$5.11	$3.51
4 3/32″ × 14″	4	50	9316T21	9316T22	9316T23	9316T24	9316T25	9316T26	9316T27	5.46	3.75
5 1/2″ × 21″	8	100	9316T31	9316T32	9316T33	9316T34	9316T35	9316T36	9316T37	6.93	4.76
5 1/2″ × 32″	9	150	9316T41	9316T42	9316T43	9316T44	9316T45	9316T46	9316T47	8.81	6.05
7″ × 16 1/2″	1	100	9316T51	9316T52	9316T53	9316T54	9316T55	9316T56	9316T57	6.84	4.69
7″ × 32″	2	220	9316T61	9316T62	9316T63	9316T64	9316T65	9316T66	9316T67	10.16	6.99

Heat-Welded Felt Filter Bags with Pressure Seal Retaining Ring

Filter bags have heat-welded construction for reliable joints with no pin holes or loose sewing threads. The integral polypropylene retaining ring on these bags doubles as an extra seal that increases in strength as the pressure in your housing rises. The ring has integral handles for easy bag changing.

Standard filter bags have a singed exterior. ***Long-life*** filter bags are made of an extra thick fiber blend media with finer fibers for greater dirt-holding capacity than standard felt bags. Bags have a glazed exterior for minimal fiber migration.

Bag Size, Dia. × Ht.	Trade Size	Max. Flow, gpm	1 Micron	5 Micron	10 Micron	25 Micron	50 Micron	100 Micron	200 Micron	1-9	10-Up
Standard Felt Bags											
Polyester—*Maximum Temperature is 302° F*											
7″ × 17″	1	90	9299T31	9299T32	9299T33	9299T34	9299T35	9299T37	9299T38	$5.21	$4.17
7″ × 32″	2	180	9299T41	9299T42	9299T43	9299T44	9299T45	9299T47	9299T48	7.23	5.78
Polypropylene—*Maximum Temperature is 194° F*											
7″ × 17″	1	90	9299T11	9299T12	9299T13	9299T14	9299T15	9299T16	9299T17	5.21	4.17
7″ × 32″	2	180	9299T21	9299T22	9299T23	9299T24	9299T25	9299T26	9299T27	7.23	5.78
Long-Life Felt Bags											
Polyester—*Maximum Temperature is 302° F*											
7″ × 17″	1	65	9301T81	9301T82	9301T83	9301T84	9301T85	9301T86	_____	10.03	8.06
7″ × 32″	2	135	9301T91	9301T92	9301T93	9301T94	9301T95	9301T96	_____	14.13	11.40
Polypropylene—*Maximum Temperature is 194° F*											
7″ × 17″	1	65	9301T61	9301T62	9301T63	9301T64	9301T65	9301T66	_____	9.29	7.43
7″ × 32″	2	135	9301T71	9301T72	9301T73	9301T74	9301T75	9301T76	_____	13.04	10.43

Oil-Absorbent Polypropylene Microfiber Filter Bags

The 100% oil absorbent polypropylene materials remove oil from water and water-based coolants. Sewn construction. Maximum temperature is 200° F.

Bags with a *polypropylene retaining ring* have an integral handle. Bags with a *galvanized steel retaining ring* have a sewn-in handle.

With Polypropylene Ring

With Galvanized Steel Ring

Bag Size, Dia. × Ht.	Trade Size	Max. Flow, gpm	WITH POLYPROPYLENE RING 10 Micron	25 Micron	90 Micron	1-9	10-Up	WITH GALVANIZED STEEL RING 10 Micron	25 Micron	90 Micron	1-9	10-Up
4 3/32″ × 8″	3	10	9309T11	9309T21	9309T31	$10.09	$7.12	98185K33	98185K12	98185K43	$8.43	$6.16
4 3/32″ × 14″	4	20	9309T12	9309T22	9309T32	12.14	8.57	98185K34	98185K14	98185K44	10.03	7.32
5 1/2″ × 21″	8	40	9309T13	9309T23	9309T33	19.70	13.90	98185K35	98185K16	98185K45	16.60	12.12
5 1/2″ × 32″	9	60	9309T14	9309T24	9309T34	26.31	18.58	98185K36	98185K18	98185K46	22.66	16.54
7″ × 16 1/2″	1	40	9309T15	9309T25	9309T35	19.70	13.90	98185K31	98185K22	98185K41	16.60	12.12
7″ × 32″	2	85	9309T16	9309T26	9309T36	32.49	22.93	98185K32	98185K24	98185K42	27.96	20.39
8 1/4″ × 34″	12	100	9309T17	9309T27	9309T37	36.91	26.05	98185K37	98185K19	98185K47	31.62	23.07

Absolute-Rated Microfiber Filter Bags

These microfiber filter bags are absolute rated for consistent, reliable performance.

Polyester microfiber bags remove 99% of particles. Made of multiple layers for extended life and higher dirt-holding capacity. Sewn construction. Bags with micron sizes of 1 to 10 include a polyester felt first-stage filter and polyester microfiber media with polyester inner and outer covers. Micron sizes 25 to 100 include a glazed polyester felt outer layer with a polyester felt first-stage filter. ***Polypropylene microfiber bags*** are made of multilayer microfiber media that lasts up to three times longer than conventional felt bags, great for high-performance filtering jobs. Bags have a thermally bonded melt-blown media, heat-welded seams (unless noted), and remove at least 90% of particles. Media is FDA compliant, except where noted.

With Sewn-In Polyester Handle

With Integral Polypropylene Handle

With Welded Nylon Handle

Bag Size, Dia. × Ht.	Trade Size	Max. Flow, gpm	1, 2.5, or 5 MICRONS 1 Micron	2.5 Micron	5 Micron	1-9	10-Up	10, 25, 50, or 100 MICRONS 10 Micron	25 Micron	50 Micron	100 Micron	1-9	10-Up
Polyester Microfiber Bags with Type 304 Stainless Steel Retaining Ring and Sewn-In Polyester Handle—*Max. Temperature is 300° F*													
4 3/32″ × 8″	3	25	9844K31	9844K32	9844K33	$16.28	$11.96	9844K34	9844K35	9844K36	9844K38	$8.90	$6.12
4 3/32″ × 14″	4	50	9844K41	9844K42	9844K43	19.07	13.12	9844K44	9844K45	9844K46	9844K48	10.98	7.55
5 1/2″ × 21″	8	100	9844K51	9844K52	9844K53	25.52	17.55	9844K54	9844K55	9844K56	9844K58	14.34	9.85
5 1/2″ × 32″	9	150	9844K61	9844K62	9844K63	40.26	29.56	9844K64	9844K65	9844K66	9844K68	13.40	9.21
7″ × 16 1/2″	1	100	9844K11	9844K12	9844K13	25.70	17.68	9844K14	9844K15	9844K16	9844K18	11.32	8.24
7″ × 32″	2	220	9844K21	9844K22	9844K23	37.09	30.14	9844K24	9844K25	9844K26	9844K28	15.69	12.02
8 1/4″ × 34″	12	275	9844K71	9844K72	9844K73	51.50	37.01	9844K74	9844K75	9844K76	9844K78	20.75	14.27
Polypropylene Microfiber Bags with Polypropylene Retaining Ring and Integral Polypropylene Handle—*Max. Temperature is 200° F*													
4 3/32″ × 8″	3	15	51695K11	51695K81●	51695K16	14.35	11.48	51695K13	51695K14	51695K18	51695K17	14.29	11.44
4 3/32″ × 14″	4	35	51695K21	51695K82●	51695K26	15.70	12.55	51695K23	51695K24	51695K28	51695K27	15.23	12.18
7″ × 16 1/2″	1	60	51695K51	51695K83●	51695K56	16.13	12.90	51695K53	51695K54	51695K58	51695K57	14.45	11.56
7″ × 32″	2	100	51695K61	51695K84●	51695K66	19.78	15.82	51695K63	51695K64	51695K68	51695K67	17.24	14.10
Polypropylene Microfiber Bags with Galvanized Steel Retaining Ring and Welded Nylon Handle—*Max. Temperature is 200° F*													
5 1/2″ × 20″	8	50	51695K31	51695K39★	51695K36	16.80	13.44	51695K33	51695K34	51695K38	51695K37	17.50	14.00
5 1/2″ × 31″	9	60	51695K41	51695K49★	51695K46	16.80	13.44	51695K43	51695K44	51695K48	51695K47	17.66	14.12
8 1/4″ × 34″	12	275	51695K71★	51695K79★	51695K76★	44.57	30.64	51695K73★	51695K74★	51695K78★	51695K77★	19.83	13.63

● Bag has sewn construction. Media is not FDA compliant.

★ Bag has sewn construction, a Type 304 stainless steel retaining ring, and sewn-in polypropylene handle. Media is not FDA compliant.

For information about filter bags, see page 398. For information about micron size, see page 390.

Absolute-Rated Microfiber Filter Bags with Pressure Seal Retaining Ring

These bags have a retaining ring that doubles as a pressure-activated seal—as pressure increases, the seal tightens. Filter bags are made of polypropylene. Maximum temperature is 194° F. Absolute rated.

Multilayered filter bags are sewn with the retaining ring heat welded to the bag. Media is multiple layers of melt-blown microfiber, providing a retention rate greater than 99%. ***Pleated filter bags*** are heat welded. Bags have multiple pleats inside for first-stage filtration and an outer layer for final filtering.

Multilayered Filter Bags

Micron Size	7″ Dia. × 17″ Ht. (Trade Size 1) Max. Flow, gpm		1-9	10-Up	7″ Dia. × 32″ Ht. (Trade Size 2) Max. Flow, gpm		1-9	10-Up
4	35	9300T72	$30.01	$25.38	66	9300T82	$43.64	$36.93
5	35	9300T74	30.01	25.38	66	9300T84	43.64	36.93
10	35	9300T76	30.01	25.38	66	9300T86	43.64	36.93
15	35	9300T78	30.01	25.38	66	9300T88	43.64	36.93

Pleated Filter Bags

Micron Size	7″ Dia. × 32″ Ht. (Trade Size 2) Max. Flow, gpm		1-9	10-Up
2.6	53	9300T92	$125.45	$106.15
6	53	9300T94	125.45	106.15
13	53	9300T96	125.45	106.15
32	53	9300T98	125.45	106.15

Filter Bags with Drawstring

Mesh bags have a sewn-in drawstring to secure to an existing pipe without clamps or wires. When full, simply remove the bag and tighten the string to secure trapped particles. Ideal for chemicals, paints, coatings, and water. Heat treated to inhibit fiber migration. Sewn construction. Maximum temperature is 275° F.

Bag Size, Ht. × Wd. × Dp.	Max. Flow, gpm	75 Micron	100 Micron	150 Micron	200 Micron	300 Micron	400 Micron	600 Micron	800 Micron	1-9	10-Up
Polyester											
18″ × 12″ × 8″	20	—	2514K11	2514K12	2514K13	2514K14	2514K15	2514K16	2514K17	$4.44	$3.30
24″ × 18″ × 11 7/16″	50	—	2514K21	—	2514K22	2514K23	2514K24	2514K25	2514K26	7.00	5.20
Nylon											
18″ × 12″ × 8″	20	2514K31	2514K32	2514K33	2514K34	2514K35	2514K36	2514K37	2514K38	7.70	5.87
24″ × 18″ × 11 7/16″	50	2514K41	2514K42	2514K43	2514K44	2514K45	2514K46	2514K47	2514K48	13.91	10.60

Filter Bags for 5-Gallon Pails

Sized specifically for 5-gallon pails, these bags are made of polyester mesh and heat treated to inhibit fiber migration. Ideal for chemicals, paints, coatings, and water. Sewn construction. Overall size is 20 1/4″ Dia. × 21 1/2″ Ht. Top diameter is 13 1/2″. Maximum flow is not rated. Maximum temperature is 275° F. Pail is not included.

Drawstring bags secure trapped particles upon removal.

Style	100 Micron	150 Micron	200 Micron	300 Micron	400 Micron	600 Micron	800 Micron	1-9	10-Up
Standard	2640K51	2640K52	2640K53	2640K54	2640K55	2640K56	2640K57	$8.08	$6.17
Drawstring	2640K61	2640K62	2640K63	2640K64	2640K65	2640K66	2640K67	9.15	6.97

Mesh Filter Bags

With Integral Polypropylene Handle

With Sewn-In Polyester Handle

Mesh filter bags are designed to filter larger particles. All bags are sewn.

Polyester mesh are made of inexpensive woven multifilament mesh. ***Polypropylene mesh*** are made of a monofilament mesh that is FDA compliant. ***Nylon mesh*** are strong, durable, cleanable, and reusable. The woven mesh construction is perfect for coarse filtering.

Bag Size, Dia. × Ht.	Trade Size	Max. Flow, gpm	100 Micron	150 Micron	200 Micron	250 Micron	300 Micron	400 Micron	600 Micron	800 Micron	1-9	10-Up
Polyester Mesh Bags with Polypropylene Retaining Ring and Integral Polypropylene Handle—*Max. Temperature is 275° F*												
4 3/32″ × 8″	3	25	98315K18	98315K11	98315K12	98315K13	98315K14	98315K15	98315K16	98315K17	$3.40	$2.72
4 3/32″ × 14″	4	50	98315K28	98315K21	98315K22	98315K23	98315K24	98315K25	98315K26	98315K27	3.53	2.83
7″ × 16 1/2″	1	90	98315K58	98315K51	98315K52	98315K53	98315K54	98315K55	98315K56	98315K57	4.93	3.95
7″ × 32″	2	180	98315K68	98315K61	98315K62	98315K63	98315K64	98315K65	98315K66	98315K67	7.47	5.97
Polyester Mesh Bags with Galvanized Steel Retaining Ring and Sewn-In Nylon Handle—*Max. Temperature is 275° F*												
5 1/2″ × 20″	8	75	98315K38	98315K31	98315K32	98315K33	98315K34	98315K35	98315K36	98315K37	6.60	5.28
5 1/2″ × 31″	9	90	98315K48	98315K41	98315K42	98315K43	98315K44	98315K45	98315K46	98315K47	7.63	6.11
Polyester Mesh Bags with Galvanized Steel Retaining Ring and Sewn-In Polyester Handle—*Max. Temperature is 275° F*												
8 1/4″ × 32″	12	275	98315K89	98315K19	98315K29	98315K39	98315K49	98315K59	98315K69	98315K79	9.36	6.44
Polypropylene Mesh Bags with Polypropylene Retaining Ring and Integral Polypropylene Handle—*Max. Temperature is 220° F*												
4 3/32″ × 8″	3	20	6805K31	6805K32	6805K33	—	6805K34	—	6805K35	6805K36	4.75	3.70
4 3/32″ × 14″	4	35	6805K41	6805K42	6805K43	—	6805K44	—	6805K45	6805K46	5.16	4.01
7″ × 16 1/2″	1	88	6805K11	6805K12	6805K13	—	6805K14	—	6805K15	6805K16	6.72	5.23
7″ × 32″	2	125	6805K21	6805K22	6805K23	—	6805K24	—	6805K25	6805K26	9.50	7.39

Bag Size, Dia. × Ht.	Trade Size	Max. Flow, gpm	50 Micron	75 Micron	100 Micron	150 Micron	200 Micron	250 Micron	300 Micron	400 Micron	1-9	10-Up
Nylon Mesh Bags with Galvanized Steel Retaining Ring and Sewn-In Nylon Handle—*Max. Temperature is 325° F*												
4 3/32″ × 8″	3	25	51705K1	51705K19	51705K81	51705K11	51705K12	51705K13	51705K14	51705K15	$4.49	$3.09
4 3/32″ × 14″	4	50	51705K2	51705K29	51705K82	51705K21	51705K22	51705K23	51705K24	51705K25	5.61	3.86
7″ × 16 1/2″	1	100	51705K5	51705K59	51705K85	51705K51	51705K52	51705K53	51705K54	51705K55	8.72	6.00
7″ × 32″	2	220	51705K6	51705K69	51705K86	51705K61	51705K62	51705K63	51705K64	51705K65	11.34	7.79

			600 Micron	800 Micron	1,000 Micron		
4 3/32″ × 8″	3	25	51705K16	51705K17	51705K18	4.49	3.09
4 3/32″ × 14″	4	50	51705K26	51705K27	51705K28	5.61	3.86
7″ × 16 1/2″	1	100	51705K56	51705K57	51705K58	8.72	6.00
7″ × 32″	2	220	51705K66	51705K67	51705K68	11.34	7.79

For information about filter bags, see page 398. For information about micron size, see page 390.

Slip-On Filter Bags

Adapt these filter bags to any existing pipe—no filter housing required. To secure, use a pipe clamp or just tie filter bag on the pipe with sturdy wire. When the bag is full, simply remove it and discard. Ideal for tank car filling, drum loading, and mixing chemicals. Sewn construction. Maximum temperature is 100° F.

Filter Bag

Filter Bag Secured to Pipe

Bag Size, Dia.×Ht.×Wd.	Max. Flow, gpm	5 Micron	10 Micron	15 Micron	25 Micron	50 Micron	75 Micron	100 Micron	200 Micron	1-9	10-Up
Glazed Exterior											
Polyester Felt											
7″×18″×11″	20	9830K11	9830K12	9830K13	9830K37	9830K15	9830K16	9830K17	9830K19	$4.00	$2.92
7″×33″×11″	50	9830K21	9830K22	9830K23	9830K38	9830K25	9830K26	9830K27	9830K29	6.07	4.42
14″×36″×22″	125	9830K62	9830K63	9830K64	9830K65	9830K66	9830K67	9830K68	9830K69	28.00	20.43
Polypropylene Felt											
7″×18″×11″	20	5859K53	5859K54	—	5859K55	5859K56	—	5859K57	—	4.38	3.20
7″×33″×11″	50	5859K63	5859K64	—	5859K65	5859K66	—	5859K67	—	6.71	4.90

Bag Size, Dia.×Ht.×Wd.	Max. Flow, gpm	75 Micron	150 Micron	200 Micron	250 Micron	300 Micron	400 Micron	600 Micron	800 Micron	1-9	10-Up
Natural Exterior											
Polyester Mesh											
7″×18″×11″	20	—	5859K73	5859K74	5859K75	5859K76	5859K77	5859K78	5859K79	$4.04	$2.95
7″×33″×11″	50	—	5859K83	5859K84	5859K85	5859K86	5859K87	5859K88	5859K89	6.03	4.40
Nylon Mesh											
7″×18″×11″	20	9830K32	9830K51	9830K52	9830K53	9830K54	9830K55	9830K56	9830K57	6.12	4.47
7″×33″×11″	50	9830K36	9830K41	9830K42	9830K43	9830K44	9830K45	9830K46	9830K47	9.68	7.06
14″×36″×22″	125	9830K72	9830K74	9830K75	9830K76	9830K77	9830K78	9830K79	9830K81	33.93	24.77

Filter-Bag Adapter Heads and Grab-On Filter Bags

Create a filtration system anywhere with these threaded adapter heads and grab-on filter bags.

Adapter heads are made of polypropylene and thread directly to pipe. The filter bag retaining ring fits over the raised lip on the adapter head to hold the filter bag in place. **Connections:** NPT female.

Filter bags (sold separately) are specially constructed for use without a housing and must be used with our adapter heads. Bags have a galvanized steel ring sewn into the opening that slips over the adapter head to hold the filter bag in place. Sewn construction. Maximum temperature is 100° F. *Polyester felt* and *polypropylene felt* have a glazed exterior. *Nylon monofilament mesh* are more durable and are reusable.

Bag Shown with Adapter Head

Adapter Heads

FOR USE WITH 4³/₃₂″ DIA. BAGS

Fits Pipe Size, NPT Male		
¾″	98295K11	$15.66
1″	98295K12	15.66
1¼″	98295K13	15.66

FOR USE WITH 7″ DIA. BAGS

Fits Pipe Size, NPT Male		
1½″	98295K23	$19.88
2″	98295K25	19.88

Filter Bags

Bag Size, Dia.×Ht.	Max. Flow, gpm	1 Micron	5 Micron	10 Micron	15 Micron	25 Micron	50 Micron	100 Micron	200 Micron	1-9	10-Up
Polyester Felt Bags with Galvanized Steel Retaining Ring											
4³/₃₂″× 8″	10	98295K1	98295K2	98295K3	98295K4	98295K5	98295K6	98295K8	98295K9	$3.39	$2.48
4³/₃₂″×14″	15	98295K21	98295K22	98295K26	98295K27	98295K28	98295K29	98295K32	98295K33	3.74	2.73
7″ ×16½″	25	98295K48	98295K51	98295K52	98295K53	98295K54	98295K55	98295K57	98295K58	4.80	3.51
7″ ×32″	55	98295K59	98295K61	98295K62	98295K63	98295K64	98295K65	98295K67	98295K69	7.63	5.57
Polypropylene Felt Bags with Galvanized Steel Retaining Ring											
4³/₃₂″× 8″	10	9308T11	9308T12	9308T13	9308T14	9308T15	9308T16	9308T18	9308T19	4.25	2.94
4³/₃₂″×14″	15	9308T31	9308T32	9308T36	9308T37	9308T38	9308T39	9308T42	9308T43	4.82	3.32
7″ ×16½″	25	9308T58	9308T61	9308T62	9308T63	9308T64	9308T65	9308T67	9308T68	6.50	4.48
7″ ×32″	55	9308T79	9308T81	9308T82	9308T83	9308T84	9308T85	9308T86	9308T87	10.72	7.38

Bag Size, Dia.×Ht.	Max. Flow, gpm	50 Micron	100 Micron	200 Micron	300 Micron	400 Micron	600 Micron	800 Micron	1,000 Micron	1-9	10-Up
Nylon Monofilament Bags with Galvanized Steel Retaining Ring											
4³/₃₂″× 8″	10	98295K34	98295K36	98295K38	98295K41	98295K42	98295K44	98295K46	98295K49	$3.60	$2.63
4³/₃₂″×14″	15	98295K68	98295K89	98295K92	98295K94	98295K95	98295K96	98295K97	98295K98	4.53	3.32
7″ ×16½″	25	98295K14	98295K16	98295K72	98295K74	98295K75	98295K76	98295K77	98295K78	6.12	4.46
7″ ×32″	55	98295K17	98295K19	98295K82	98295K84	98295K85	98295K86	98295K87	98295K88	9.95	7.25

Filter-Bag Seating Tool

Position your filter bags perfectly every time with this filter-bag seating tool. The rounded head pushes your bag to the bottom of the filter-bag housing, seating it completely. Made of lightweight, corrosion-resistant 6061-T6 aluminum with a T-handle. Tool measures 5″ Head Dia.×36¹³/₁₆″ Ht.

9291T44 ..... $216.67

Filter-Bag Housing Magnets

Extend the life of your filter bag by two to three times when you place one of these magnets inside your filter bag. Magnets attract ferrous metal particles away from the filter bag before they cause damage. When it's time for cleaning, slide the magnet out of the sleeve to remove the metal filings. The shell is constructed of corrosion-resistant Type 304 stainless steel, the magnet is a ceramic magnet with 25 lbs. of pull on contact. Max. temperature is 300° F.

For Bag Trade Size	Magnet Shaft, Dia.×Ht.		
1	1⅛″×15″	9324T21	$318.86
2	1⅛″×30″	9324T42	368.95
3	1⅛″× 8″	9324T11	295.49
4	1⅛″×14″	9324T12	315.53
8	1⅛″×20″	9324T31	335.56
9	1⅛″×29″	9324T34	365.61
12	1⅛″×34″	9324T54	382.30

Spin-On Hydraulic Oil Filters

3/4″ to 1 1/4″ Pipe Sizes

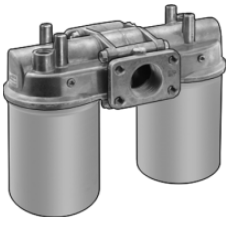

1 1/2″ Pipe Size with Side-by-Side Filter Cartridges

Changing filter cartridges is a snap—simply spin them on and off in seconds since there are no bolts to remove. Install these filters in return lines as well as in off-line filtration and lubrication systems. They have a Buna-N seal, a steel cartridge housing, and include one filter cartridge (two filter cartridges where noted).

All have a built-in bypass valve. When the pressure differential between the inlet and outlet reaches the set limit, indicating a clogged cartridge, the valve routes the oil away from the cartridge to prevent pressure build-up in your line.

Connections: NPT female.

Note: Filters with 1 1/2″ pipe size also have 2″ SAE 4-bolt flange ports. Horizontal bolt hole center-to-center is 3 1/16″; vertical center-to-center is 1 11/16″. Bolt holes are 1/2″-13 UNC.

Standard filters are nominal-rated and use cellulose paper media for filtering.

High-efficiency filters use fiberglass media for more precise filtering. They are absolute-rated to 99% efficiency (they'll stop 99% of particles larger than their micron rating).

Optional Filter Gauge— With a range of 0-60 psi, these gauges tell you when it's time for a new filter cartridge. Available only for 44185K series.

To Order: For filters and replacement cartridges, please specify your required micron rating from those listed.

Pipe Size	Max. psi	Bypass Valve Set Limit, psi	Max. Temp.	Max. Flow, gpm	Port-to-Port Lg.	O'all Ht.	Available Micron Ratings	Filters		Replacement Cartridge	
Standard											
3/4″	120	25	250° F	15	3 11/16″	6 15/16″	3, 10, 25	4453K11	$46.38	4453K19	$16.69
3/4″	150	15	225° F	15	3 3/4″	7 3/4″	3, 10, 25	44185K65	33.85	44185K41	18.28
1″	120	25	250° F	15	3 11/16″	7 3/16″	3, 10, 25	4453K12	47.38	4453K19	16.69
1 1/4″	120	25	250° F	30	5 3/8″	9 5/16″	3, 10, 25	4453K13	80.58	4453K29	26.88
1 1/4″	150	15	225° F	50	4 1/2″	9 1/2″	3, 10, 25	44185K66	68.57	44185K42	35.46
1 1/2″	120	25	250° F	60	6 1/2″■	10 3/16″	3, 10, 25	4453K14	236.17	4453K29	26.88
High Efficiency											
3/4″	120	43	250° F	15	3 11/16″	6 15/16″	5, 10, 20	4358K41	99.74	4358K39	62.64
3/4″	150	15	225° F	15	3 3/4″	7 3/4″	10, 20	44185K67	73.02	44185K43	61.82
1″	120	43	250° F	15	3 11/16″	7 3/16″	5, 10, 20	4358K42	99.35	4358K39	62.64
1 1/4″	120	43	250° F	30	5 3/8″	9 5/16″	5, 10, 20	4358K43	165.18	4358K49	107.24
1 1/4″	150	15	225° F	50	4 1/2″	9 1/2″	10, 20	44185K68	132.57	44185K44	93.30
1 1/2″	120	43	250° F	60	6 1/2″■	10 3/16″	5, 10, 20	4358K44	395.85	4358K49	107.24

Optional Filter Gauge for 44185K 44185K11 $21.80

■ Has two side-by-side filter cartridges. Overall width is 12 15/16″.

High-Capacity Hydraulic Oil Filters

Two concentric cartridges inside a single housing give you greater surface area, more dirt holding capability, and 50% longer life than the Spin-On Hydraulic Oil Filters on this page. These filters boast a Type 304 stainless steel cartridge and a magnetic plug for trapping ferrous particles. They are nominal rated. Use with hydraulic fluids, lube oils, and coolants. They have a Buna-N seal.

All have a bypass valve set at 25 psi. When the differential pressure between the inlet and outlet reaches 25 psi, indicating a clogged cartridge, the valve routes the flow of oil away from the cartridge to prevent pressure build-up in your line.

Connections: NPT female.

Pipe Size	Max. psi	Max. Temp.	Max. Flow, gpm	Port-to-Port Lg.	O'all Ht.	Filters		Replacement Cartridge	
40-Micron Filters									
3/4″	300	225° F	30	4 1/4″	8 3/4″	44485K61	$164.77	44485K39	$108.57
1″	300	225° F	30	4 1/4″	8 3/4″	44485K63	167.56	44485K39	108.57
1 1/4″	300	225° F	30	4 1/4″	8 3/4″	44485K65	168.00	44485K39	108.57
150-Micron Filters									
3/4″	300	225° F	30	4 1/4″	8 3/4″	44485K41	145.21	44485K19	63.33
1″	300	225° F	30	4 1/4″	8 3/4″	44485K43	154.17	44485K19	63.33
1 1/4″	300	225° F	30	4 1/4″	8 3/4″	44485K45	162.35	44485K19	63.33

Extreme-Pressure Hydraulic Oil Filters

Rated to 3,000 psi for use in extremely high-pressure applications such as the discharge side of a pump before a hydraulic press or machine tool. A built-in side-mounting plate makes it a cinch to panel mount these filters. Mounting plate is 2 1/2″ wide with two 13/32″ dia. holes on 1 1/2″ centers. Filter cartridge is included inside a cast iron housing. Seals are Buna-N.

All have a built-in bypass valve that's set at 35 psi. When the differential pressure between the inlet and outlet reaches 35 psi, indicating a clogged cartridge, the valve routes the flow of oil away from the cartridge to prevent pressure build-up in your line.

Connections: NPT female.

Standard filter is nominal rated and uses cellulose paper media for filtering. ***High-efficiency*** filters use fiberglass media for more precise filtering. They are absolute rated to 99% efficiency (they'll stop 99% of particles larger than their micron rating).

Pipe Size	Max. psi	Max. Temp.	Max. Flow, gpm	Port-to-Port Lg.	O'all Ht.	Micron Rating	Filters		Replacement Cartridge	
Standard										
3/4″	3,000	250° F	20	3 3/4″	9 5/8″	40	44255K12	$194.47	44255K22★	$47.67
High Efficiency										
3/4″	3,000	250° F	15	3 3/4″	9 5/8″	3	44255K16	231.91	44255K26	51.86
3/4″	3,000	250° F	20	3 3/4″	9 5/8″	12	44255K14	209.57	44255K24★	68.60

★ Includes two replacement cartridges.

High-Flow Extreme-Pressure Hydraulic Oil Filters

High flow and super-high pressures are no match for these filters' heavy duty steel housing. Ideal for the discharge side of a pump and the return lines of hydraulic reservoir applications. They have a Buna-N seal and include a 10-micron, fiberglass-media filter cartridge, which is absolute rated to 99.9% efficiency (they'll stop 99.9% of all particles larger than 10 microns).

All have a bypass valve set at 87 psi. When the differential pressure between the inlet and outlet reaches 87 psi, indicating a clogged cartridge, the valve routes the flow of oil away from the cartridge to prevent pressure build-up in your line.

Connections: SAE straight thread O-ring fittings.

Thread Size	Max. psi	Max. Temp.	Max. Flow, gpm	Port-to-Port Lg.	O'all Ht.	Filters		Replacement Cartridge	
1 11/16″-12 SAE	4,000	250° F	25	4 1/8″	12″	44375K41	$322.41	44375K35	$76.50
1 7/8″-12 SAE	6,000	250° F	55	6 3/8″	11 9/16″	44375K51	894.70	44375K55	121.17

Miniature Hydraulic Oil Filters

Small size coupled with the high pressure ratings make these filters perfect for fine filtration of compact hydraulic oil lines. All have an aluminum housing, fluoroelastomer seal, and a porous bronze filter cartridge. The 1½″ hex end easily opens for cleaning and replacing cartridges. Max. temperature is 400° F. **Connections:** NPT female or SAE straight threads.

Inline filters have a max. pressure of 3,000 psi.

Elbow-style filters have a max. pressure of 5,000 psi. Overall length is 3³⁄₁₆″.

To Order: For filters and replacement cartridges, specify micron rating: 10, 25, 40, or 90 microns.

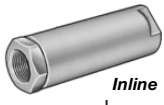

Inline

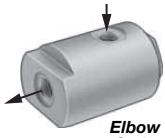

Elbow Style

Size	Max. Flow, gpm	Port-to-Port Lg.	O'all Dia.	Filters		Replacement Cartridge	
Inline							
¼″ NPT	12	3¼″	1½″	9800K51	$20.95	9800K11	$9.29
⅜″ NPT	22	3¼″	1½″	9800K52	21.46	9800K11	9.29
½″ NPT	25	4¹⁵⁄₁₆″	1¹¹⁄₁₆″	9800K53	35.93	9800K12	11.06
¾″ NPT	25	4¹⁵⁄₁₆″	1¹¹⁄₁₆″	9800K54	36.80	9800K12	11.06
⁹⁄₁₆″-18 SAE	12	3¼″	1½″	9800K55	25.17	9800K11	9.29
¾″-16 SAE	22	3¼″	1½″	9800K56	25.78	9800K11	9.29
Elbow Style							
¼″ NPT	12	2″♣	2⅛″	9800K61	44.45	9800K11	9.29
⅜″ NPT	22	2″♣	2⅛″	9800K62	45.54	9800K11	9.29
⁹⁄₁₆″-18 SAE	12	2″♣	2⅛″	9800K63	55.22	9800K11	9.29

♣ Measured from the center of the inlet to the outlet.

Universal-Fit Hydraulic Oil Filter Cartridges

Replace the cartridges in your Schroeder and Parker filters—these cartridges are interchangeable with both. All work well with petroleum-based hydraulic fluids and have end caps that will not corrode or separate from the cartridge.

Standard cartridges have a cellulose paper filter media. They are nominal rated.

High-efficiency cartridge has a fiberglass media and is absolute rated to 99.5% efficiency (it will stop 99.5% of particles larger than its micron rating).

For Schroeder Filters	For Parker Filters	Micron Rating	ID	OD	O'all Ht.		
Standard—Buna-N Seal							
A3	926566	3	1¹⁄₁₆″	3″	4¹¹⁄₁₆″	43995K81	$24.43
A10	926567	10	1¹⁄₁₆″	3″	4¹¹⁄₁₆″	43995K82	21.68
K3	925772	3	1⁹⁄₁₆″	3⅞″	9¹⁄₁₆″	43995K86	44.35
Standard—Fluoroelastomer Seal							
K10	925520	10	1⅝″	4″	9″	43995K87	39.27
K25	925773	20	1⅝″	3⅞″	9¹⁄₁₆″	43995K88	39.27
High Efficiency—Fluoroelastomer Seal							
KZ10	932670Q	10	1⅝″	3⅞″	9″	43995K91	78.27

Super-Capacity Hydraulic Oil Filters

An extra-long cartridge gives you more surface area for greater dirt-holding capacity and higher flow rates. These filters include a stand with three legs and ⁹⁄₁₆″ holes for easy floor mounting. Use with hydraulic and quench oils, compressor lube oils, and coolants.

Three swing bolts on the top of the filter housing secure the cover in place and provide easy access for cartridge changes. Housing is steel and seal is Buna-N. Max. pressure is 175 psi; max. temperature is 250° F. Overall diameter is 7⅝″. Designed to be used with one filter cartridge (sold separately below).

Filter cartridges have phenolic-impregnated cellulose filter media with steel construction.

Connections: 1½″ NPT male side inlet and bottom outlet; 1″ NPT male bottom drain.

Filter Cartridge

Filter Housings

	Max. Flow, gpm	O'all Ht.▲		
For 18″ Cartridge Ht.	30	29⁷⁄₁₆″	3451T11	$1,238.10
For 36″ Cartridge Ht.	60	47⁷⁄₁₆″	3451T21	1,305.95

▲ Measured without the stand.

Filter Cartridges

	18″ Height		36″ Height	
1-Micron Cartridge	3451T32	$28.75	3451T42	$65.89
5-Micron Cartridge	3451T33	24.89	3451T43	58.76
10-Micron Cartridge	3451T34	24.89	3451T44	58.76
20-Micron Cartridge	3451T35	24.89	3451T45	58.76
60-Micron Cartridge	3451T37	24.89	3451T47	58.76

Portable Electric Hydraulic Oil Filter

Move this oil filter to wherever you need filtered oil. Use it for conditioning as well as transferring petroleum-based oils, water emulsions, and diesel fuels with a viscosity of up to 16,000 SSU (a consistency close to molasses).

Filter has an aluminum housing; nitrile seal; 10-micron filter; a 5-ft. long, wire-reinforced PVC hose with 3-ft. PVC wand attachment; and a ¼-hp continuous duty motor. Motor operates on 115 VAC and has a 1-ft. power cord with three-prong plug. Max. flow is 4 gpm. Max. pressure is 50 psi; max. temperature is 120° F.

Optional water removal cartridge (sold separately) is for removing water from oil. ***Carrying case*** (sold separately) measures 24″ Lg. × 19″ Wd. × 10″ Dp. and is made of plastic. It has wheels for easy transport.

Note: Not for use with flammable liquids such as gasoline, alcohol, and solvents.

Filter	98325K61	$922.89
Cartridges and Accessories		
Replacement 2-Micron Fiberglass Cartridge	98325K67	61.02
Optional 5-Micron Fiberglass Cartridge	98325K68	54.86
Optional 10-Micron Cellulose Cartridge	98325K71	33.84
Optional 20-Micron Water Removal Cartridge	98325K75	49.83
Optional Carrying Case	98325K65	370.40

Mobile Electric Hydraulic Oil Filters

Mounted to a cart, these filters will roll wherever you need them. All are excellent for transferring and filtering fluids from machine to machine, tanks to reservoirs, and drums to tanks.

High-Flow Bag Filter

Use for filtering coolants and metalworking fluids with a viscosity up to 300 SSU (a consistency close to 10W motor oil). It has a cast iron, self-priming centrifugal pump with stainless steel impeller and Buna-N seal; steel filter housing with fluoroelastomer seal; and a filter bag basket that holds any size 12 filter bag (sold separately below and on page 398). Max. flow is 30 gpm. Max. pressure is 22.5 psi. Max. temperature is 180° F. Filter operates on 115 VAC and has a ½-hp continuous duty motor with a 6-ft. long power cord with three-prong plug. Overall size is 54″ Ht. × 22″ Wd. × 16″ Dp. Weight is 150 lbs.

Connections: 1″ quick-disconnect inlet and outlet.

High-Flow Bag Filter	5244K31	$2,285.95	
		1-9	10-Up
Size 12 Polyester-Felt Filter Bags			
1-Micron Filter Bag	5162K57	$10.05	$8.55
5-Micron Filter Bag	5162K58	10.05	8.55
10-Micron Filter Bag	5162K59	10.05	8.55
25-Micron Filter Bag	5162K87	10.05	8.55

Two-Cartridge Filters

Simply drop the wand into any reservoir you need filtered. The 40-micron inlet filter catches large particles while the 10-micron outlet filter grabs finer particles (cartridges are included). Well-suited for hydraulic, gear, and lube oils. Systems have a steel filter bowl, aluminum filter head, Buna-N seal, two 11-ft. PVC hose and wand assemblies (hose is 8 ft.; wand is 3 ft.), and an on/off switch. Max. pressure is 50 psi. Max. temperature is 150° F.

They operate on 115 VAC and have a continuous duty motor with a 6-ft. long power cord with three-prong plug. Overall size is 40½″ Ht. × 25½″ Wd. × 19″ Dp. Weight is 110 lbs.

Optional water removal cartridge (sold separately below) is for removing water from oil.

Max. Flow, gpm	Max. Fluid Viscosity	Motor		
Two-Cartridge Filters				
5	3,000 SSU♠	½ hp	9815K51	$1,741.23
10	500 SSU●	¾ hp	9815K31	1,741.23
Replacement Filter Cartridges				
40-Micron Synthetic Media (Inlet) Cartridge			9815K11	41.48
10-Micron Cellulose Media (Outlet) Cartridge			9815K12	77.71
Optional Water Removal Cartridge				
20-Micron (Outlet) Cartridge			9815K24	58.02

♠ Consistency close to SAE 50 oil. ● Consistency close to SAE 10 oil.

Compact Fuel Oil Filters

Keep oil burners operating efficiently by installing one of these filters. They're ETL (Edison Technical Labs) listed for No. 2 oil and thinner.

Filters have a Buna-N seal, a galvanized, epoxy-coated steel body, and a 10-micron, bonded cellulose fiber filter cartridge. Max. pressure is 40 psi; max. temperature is 100° F.

Connections: NPT female.

Pipe Size	Max. Flow, gpm	Port-to-Port Lg.	O'all Ht.	*Filters*		*Replacement Cartridge*	
3/8"	0.20	3 5/8"	5 5/32"	9849K16	$26.63	9849K26	$2.84
3/8"	0.42	4 3/8"	6 5/16"	9849K18	33.88	9849K28	3.51

Spin-On Gasoline and Diesel Filters

Once you've installed the top cap inline, changing filter cartridges is simple—just spin off the old cartridge and spin on the new one. Filters are good for removing dirt, rust, sand, and scale from leaded and unleaded gasoline and diesel fuel, including fuels with ethanol. Filters have a die cast zinc top cap and nitrile seals. They include a 10-micron, pleated-paper filter cartridge. Max. pressure is 50 psi. Max. temp. is 150° F. **Connections:** NPT female.

Optional water-removal cartridge removes water and particles as small as 10 microns.

Pipe Size	Max. Flow, gpm	Port-to-Port Lg.	O'all Ht.	*Filters*		*Replacement Cartridge*	
3/4"	12	3 3/4"	7 1/4"	4833K21	$41.26	4833K15	$12.76
1"	12	3 3/4"	7 1/4"	4833K26	41.26	4833K15	12.76

Optional Water-Removal Cartridge 4833K17 $22.48

High-Capacity Fuel Oil Filters

A large surface area gives these filters high dirt-removing capacity. They also have a chemical-resistant, epoxy-lined interior for use with Nos. 2, 4, 5, and 6 fuel oils. They are UL listed and have a cast iron and steel housing, cellulose fiber seal, and a 1/8" NPT gauge port at the filter inlet and outlet. Max. pressure is 50 psi; max. temperature is 200° F.

Choose a filter with a Monel or wool-felt cartridge. ***Monel cartridges*** are rated at 140 microns. They are corrosion resistant and easy to clean. ***Wool-felt cartridges*** are rated at 25 microns.

Connections: NPT female.

Pipe Size	Port-to-Port Lg.	O'all Ht.	*w/ Monel Cartridge* Max. Flow, gpm			*w/ Wool-Felt Cartridge* Max. Flow, gpm		
3/8"	4 3/8"	6 1/4"	5	9805K13	$67.73	1	9805K33	$57.50
1/2"	4 3/8"	6 3/4"	10	9805K15	71.07	1	9805K35	64.66
3/4"	4 3/8"	6 3/4"	15	9805K17	75.29	1	9805K37	47.34
1"	4 3/8"	7"	20	9805K19	82.84	1	9805K39	67.55

Replacement Monel Cartridge 9805K21 $22.56
Replacement Wool-Felt Cartridge 9805K41 6.42

Easy-View Gasoline and Diesel Filters

Don't guess as to when these filters are getting full—their transparent polymer bowl lets you see for yourself. Filters are excellent for removing dirt, rust, sand, and scale from diesel, leaded, and unleaded gas, including fuels with ethanol. They have a die cast zinc top cap; nitrile seals; a drain valve; and a 10-micron, pleated-paper filter cartridge. Max. pressure is 150 psi. Max. temp. is 150° F.

Connections: NPT female.

Optional stainless steel cartridges are recommended for straining larger particles. They're made of Type 304 stainless steel.

Optional water-removal cartridge removes water and particles as small as 15 microns. It won't remove water from fuels containing alcohol.

Pipe Size	Max. Flow, gpm	Port-to-Port Lg.	O'all Ht.	*Filters*		*Replacement Cartridge*	
3/4"	20	4"	9 1/2"	4340K32	$52.80	4340K12	$9.70
1"	20	4"	9 1/2"	4340K33	52.80	4340K12	9.70

Optional 40-Mesh Stainless Steel Cartridge 4340K15 $20.48
Optional 80-Mesh Stainless Steel Cartridge 4340K16 21.24
Optional Water-Removal Cartridge 4340K14 18.33

Wheel Oil Skimmers

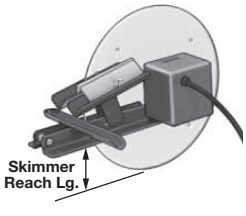

Remove oil and grease from machine coolant sumps, parts washers, and other process tanks. A low-speed wheel breaks the surface tension of your fluid and attracts and removes oil, extending the life of your fluid and tools, and minimizing hazardous waste disposal. Oil is scraped off the wheel by two spring-loaded wiper blades and diverted to a runoff spout. For additional drainage, connect 1" ID PVC tubing (not included; see pages 119-126) to spout end.

All skimmers have a steel frame construction, 1/4" dia. mounting holes (skimmers with 8" dia. wheels have four mounting holes; all others have two), and require a 1" Wd. tank opening. Mounting hardware is not included. The length of the tank opening must equal the wheel diameter of the skimmer. They operate on 110 VAC, single phase, and have an 8-ft. power cord with three-prong plug. Oil removal capacity is 1.5 gallons per hour.

Intermittent duty skimmers are for applications requiring less than two hours of operating time per day.

Skimmers with an *acrylic wheel* have a max. temperature of 120° F; those with an *aluminum wheel* have a max. temperature of 250° F.

Oil Skimmers

Skimmer Reach Lg.	Wheel Dia.	*Intermittent Duty*		*Continuous Duty*	
w/ Acrylic Wheel					
2"	8"	4442K19	$218.89	4442K11	$307.78
4"	12"	4442K21	218.89	4442K12	307.78
7"	18"	4442K22	252.22	4442K13	341.11
10"	24"	4442K23	307.78	4442K14	402.22
w/ Aluminum Wheel					
4"	12"	4442K31	241.11	4442K16	330.00

Replacement Parts

For Wheel Diameter	*Wheels*	Each	*Wiper Blades*	Pair
For Acrylic Wheels				
8"	4442K59	$27.45	4442K88	$23.33
12"	4442K61	27.45	4442K89	20.59
18"	4442K62	49.00	4442K89	20.59
24"	4442K63	68.63	4442K89	20.59
For Aluminum Wheel				
12"	4442K71	54.90	4442K91	21.00

Corrosion-Resistant Wheel Oil Skimmer

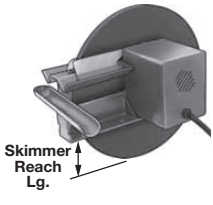

More compact than the Wheel Oil Skimmers on this page, these also have a corrosion-resistant polyester housing. They include a 12" dia. nylon wheel and two 5/16" dia. mounting holes (mounting hardware not included). Motor is continuous duty and operates on 110 VAC, single phase. It has an 8-ft. power cord with three-prong plug. Min. tank opening is 14" Lg. × 3/4" Wd. Skimmer reach length is 4 3/16". Oil removal capacity is 1.5 gallons per hour. Max. temperature is 160° F.

Oil Skimmer	2144T51	Each	$179.20
Replacement Wheel	2144T52	Each	$109.30
Replacement Wiper Blades	2144T53	Pair	$20.59

Corrosion-Resistant Compact Belt Oil Skimmers

These skimmers have a nylon housing and a polyester belt for corrosion resistance. They require little space and a small tank opening, and oil sticks to the entire belt surface for greater efficiency than wheel skimmers. Use to remove oil from water and coolant.

Skimmers include a 1" wide belt, two wiper blades (one for each side of the belt), 3 ft. of 1/2" ID PVC return hose with a hose clamp, and two 5/16" dia. mounting holes (mounting hardware not included). Motor is continuous duty. It operates on 110 VAC, single phase, and includes an 8-ft. power cord with three-prong plug. They require a tank opening of 3" Lg. × 3" Wd. Oil removal capacity is 1 gallon per hour. Max. temperature is 140° F.

Replacement belts also include one pair of replacement wiper blades. To determine the correct size, measure your skimmer reach length or your belt circumference.

Skimmer Reach Lg.	Belt Circumference	*Skimmers*	Each	*Repl. Belts*	Each
8"	26"	2165T11	$351.17	2165T21	$80.18
12"	32"	2165T12	351.17	2165T22	80.18
18"	44"	2165T13	351.17	2165T23	80.18
24"	56"	2165T14	351.17	2165T24	80.18

Replacement Wiper Blades ..... 2165T31 Pair $4.12

Compact Belt Oil Skimmers with Timer

Operating these skimmers in a tight spot is no problem, and for energy savings, they have a 24-hour, 3-setting on/off timer. Oil sticks to the entire belt surface for more efficiency than wheel oil skimmers. All include a 1″ wide belt; a Type 304 stainless steel mounting bracket and trough; a 2-ft. Lg., 5/8″ ID, PVC return hose (unless noted); and mounting hardware. Motor is continuous duty and operates on 115 VAC, single phase. It includes a 6-ft. power cord with three-prong plug and ground fault interrupter.

To choose the correct size replacement belt, measure your skimmer reach length or belt circumference.

Standard skimmers have a ball-and-chain assembly that makes it easy to retrieve the pulley if dislodged. They require a 2″ Lg. × 3″ Wd. tank opening. Skimmers ***for 55-gallon drums*** fit into 2″ OD bung holes.

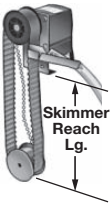

Standard with Polyurethane Belt

To Order: Specify oil removal capacity: 1/4 or 1 gallon per hour.

Skimmer Reach Lg.	Belt Circumference	SKIMMERS 1/4 gph		SKIMMERS 1 gph		Replacement Belt	
Steel-Reinforced Polyurethane Belt— *Max. Temperature is 120° F*							
Standard							
8″	27″	44065K11	$436.01	$462.71		44065K611	$89.47
12″	36″	44065K12	444.92	475.17		44065K612	105.26
18″	48″	44065K13	478.34	487.63		44065K613	122.81
24″	60″	44065K14	491.66	497.74		44065K614	140.35
For 55-Gallon Drums							
24″	60″	44535K61■	554.84	574.83		44065K614	140.35
Type 304 Stainless Steel Belt— *Max. Temperature is 210° F*							
Standard							
8″	27″	4436K31	505.43	520.56		4436K71	96.61
12″	36″	4436K32	517.01	530.33		4436K72	111.86
18″	48″	4436K33	530.33	544.57		4436K73	130.51
24″	60″	4436K34	544.57	562.37		4436K74	142.37

■ Includes a 3-ft. long, 5/8″ ID PVC return hose.

Adjustable-Angle Belt Oil Skimmer

Skim oil from shallow and odd-shaped tanks. A belt arm pivots in 15° increments left or right of center and reaches 16″ into tanks. Includes three mounting brackets—flanged wall, straight wall, and barrel—with 1/4″ mounting holes (bolts included). It requires a 2 1/2″ OD tank opening for vertical installation.

It includes a 1″ wide polyurethane belt; a 3-ft. Lg., 1/2″ ID, vinyl return hose; and two wiper blades. Belt circumference is 54″. Motor is continuous duty and operates on 120 VAC, single phase. It has a 3-ft. power cord with three-prong plug. Oil removal capacity is 1 gallon per hour. Max. temperature is 120° F (212° F for optional Type 304 stainless steel belt).

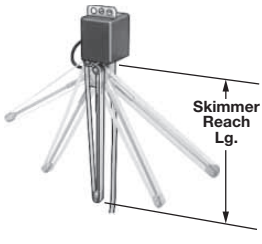

			Each
Oil Skimmer	43635K33		$406.09
Replacement Polyurethane Belt	43635K37		28.35
Optional Type 304 Stainless Steel Belt	43635K35		28.35
Replacement Wiper Blades	43635K39	Pair	$12.75

Tube Oil Skimmers for Hard-to-Reach Areas

A long loop of flexible 3/16″ OD PVC tubing snakes into places other skimmers can't reach. Mount these skimmers horizontally as well as vertically under chip conveyors, on the backs of lathes, and even on totally enclosed machines. Use to skim oil from water and coolants.

Housing is aluminum. Clamp on a tank lip or mount to the side of an enclosed machine. Skimmers require a 1/2″ Lg. × 3″ Wd. tank opening. They include a 10″ long, 1 1/4″ ID, vinyl tube for oil discharge; and three 7/32″ dia. mounting holes. Motor is continuous duty and operates on 110 VAC, single phase. It has an 8-ft. power cord with three-prong plug. Oil removal capacity is 1/4 gallons per hour. Max. temp. is 90° F.

Skimmer Reach Lg.	Tube Circumference	Skimmers		Repl. Tube	
8″	30″	51795K32	$353.45	51795K64	$82.50
14″	42″	51795K33	354.74	51795K65	82.83
20″	54″	51795K34	356.04	51795K66	83.17
26″	66″	51795K35	357.35	51795K67	83.50
32″	78″	51795K36	358.67	51795K68	83.84
38″	90″	51795K37	360.00	51795K69	84.18
44″	102″	51795K38	361.34	51795K71	84.53

High-Capacity Deep-Reach Belt Oil Skimmers

With a wide belt and powerful motor, these skimmers remove large amounts of oil from coolants and parts washers. A stabilizer bar between the pulleys keeps tension in the belt for maximum efficiency. They include an on/off switch; two wiper blades; a 4-ft. Lg., 1 1/4″ ID, PVC return hose; and two 3/4″ Lg. × 7/16″ Wd. mounting slots. Motor is continuous duty and operates on 115 VAC, single phase. It has an 8-ft. power cord with three-prong plug. Housing is steel. Max. temperature is 180° F.

To choose the correct size replacement belt, measure your skimmer reach length or belt circumference.

6 Gallons per Hour Capacity— Include a 2″ wide steel belt and require a 6″ Lg. × 6″ Wd. tank opening.

12 Gallons per Hour Capacity— Include a 4″ wide steel belt and require an 8″ Lg. × 8″ Wd. tank opening.

Skimmer Reach Lg.	Belt Circumference	Skimmers	Each	Repl. Belt	Each
6 Gallons per Hour Capacity					
13″	48″	4371K411	$1,450.62	4371K721	$150.50
19″	60″	4371K412	1,461.86	4371K722	151.76
25″	72″	4371K416	1,473.28	4371K714	153.05
31″	84″	4371K413	1,484.88	4371K723	154.36
37″	96″	4371K417	1,496.67	4371K718	155.69
43″	108″	4371K414	1,508.64	4371K724	157.04
49″	120″	4371K418	1,514.70	4371K725	157.73
55″	132″	4371K415	1,520.81	4371K726	158.42
61″	144″	4371K419	1,643.28	4371K727	152.03
67″	156″	4371K421	1,669.37	4371K728	154.66
73″	168″	4371K422	1,696.29	4371K729	167.63
79″	180″	4371K423	1,724.10	4371K731	170.62
12 Gallons per Hour Capacity					
13″	48″	4371K621	1,653.08	4371K811	196.00
19″	60″	4371K622	1,665.89	4371K812	197.65
25″	72″	4371K624	1,678.91	4371K813	199.32
31″	84″	4371K625	1,692.13	4371K816	201.03
37″	96″	4371K626	1,705.56	4371K817	202.76
43″	108″	4371K623	1,719.20	4371K818	204.52
49″	120″	4371K627	1,726.10	4371K819	205.41
55″	132″	4371K628	1,733.06	4371K82	206.32
61″	144″	4371K629	1,823.05	4371K821	197.20
67″	156″	4371K631	1,851.98	4371K822	199.74
73″	168″	4371K632	1,881.85	4371K823	216.67
79″	180″	4371K633	1,912.70	4371K824	220.54

Repl. 2″ Wide Wiper Blades	4371K21	Pair	$61.09
Repl. 4″ Wide Wiper Blades	4371K22	Pair	$80.18

High-Efficiency Tube Oil Skimmers

These skimmers have a 1/4″ OD urethane-based tube and rugged motor and housing to give you high-efficiency oil removal without removing your process liquid. They remove 4-20 gallons per hour of oil, fat, grease, and sludge from your process. Great in food processing applications to remove animal fat from process washdowns. Skimmers require a 12″ Lg. × 1″ Wd. tank opening and 1″ ID return tube (not included). They are furnished mounted to a 1 1/2″ × 4 1/2″ aluminum extrusion with a 5/16″ T-slot width. For T-nuts, see 47065T97 on page 1922. Motor is continuous duty and operates on 115 VAC, single phase. Includes a conduit box with leads for hardwiring. Housing is aluminum. Max. temperature is 150° F.

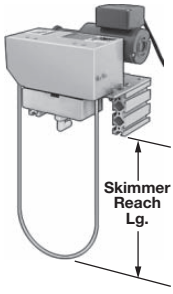

Skimmer Reach Lg.	Tube Circumference	Skimmers		Repl. Tube	
2 ft.	8 ft.	9025T111	$2,138.21	9025T411	$36.50
3 ft.	11 ft.	9025T112	2,141.69	9025T412	36.63
5 ft.	14 ft.	9025T113	2,145.19	9025T413	36.76
6 ft.	17 ft.	9025T114	2,148.69	9025T414	36.90
7 1/2 ft.	20 ft.	9025T115	2,152.21	9025T415	37.04
9 ft.	23 ft.	9025T116	2,155.74	9025T416	37.17

Pillow-Style Oil-Absorbing Skimmers

Float these skimmers on the surface of your liquid to soak up unwanted oil—there's no motor, electricity, or messy oil-return line.

Size, Lg. × Wd. × Thick.	Oil Capacity		
12″ × 8″ × 2″	3 lbs.	44155K68	$11.21
16″ × 10″ × 2″	8 lbs.	44155K78	17.15
10″ Dia. × 20″ Lg.	40 lbs.	44155K88	34.31

Magnetic Separators

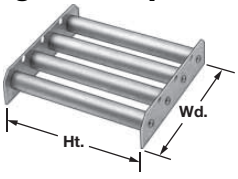

Rectangular Separator; For Sticky Materials

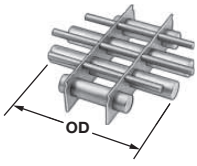

Round Separator; For Dry Materials

Pull ferrous metal scrap and particles out of your process media. Mount separators inside gravity hoppers, chutes, drawers, housings, and surge-and-catch bins. Magnets are sealed in 1″ dia. rods; gap between rods is 1″.

Separators for large particles catch nails, bolts, washers, staples, and other ferrous metal objects. Magnets are ceramic; rods and frame are Type 304 stainless steel. Max. magnetic pull on contact is 1 lb.

Separators for small particles catch metal filings, shavings, residue from metal wear, and other fine particles. Magnets are rare-earth (neodymium-iron-boron); rods and frame are Type 316 stainless steel. Max. magnetic pull on contact is 11.2 lbs.

For Sticky Materials— Separators are designed without guide rods to prevent material from sticking and blocking flow.

For Dry Materials— Separators have guide rods to direct flow to the magnetic rods. They're ideal for use with fine powders and in low-flow applications.

Lg.	Wd.	OD	No. of Rods	*For Sticky Materials*		*For Dry Materials*	
For Large Particles							
Rectangular Separators							
6″	6″	—	3	5710K21	$82.30	5710K51	$87.97
8″	8″	—	4	5710K23	126.35	5710K53	135.81
8″	12″	—	6	5710K25	258.24	5710K55	314.86
10″	10″	—	5	5710K26	224.19	5710K56	220.00
12″	12″	—	6	5710K27	267.75	5710K58	256.74
12″	16″	—	8	5710K29	366.67	5710K59	413.33
14″	14″	—	7	5710K91	368.67	5710K92	371.00
Round Separators							
—	—	6″	3	5710K41	81.58	5710K61	87.11
—	—	8″	4	5710K43	130.81	5710K62	140.24
—	—	10″	5	5710K47	203.26	5710K63	231.25
—	—	12″	6	5710K49	257.29	5710K64	271.90
—	—	14″	7	5710K42	311.75	5710K65	329.14
—	—	20″	10	5710K48	501.71	5710K68	653.33
For Small Particles							
Rectangular Separators							
6″	6″	—	3	5868K21	604.70	5868K51	665.18
8″	8″	—	4	5868K23	951.70	5868K53	856.09
10″	8″	—	4	5868K24	878.58	5868K54	1,035.66
10″	10″	—	5	5868K26	1,101.57	5868K56	1,271.40
12″	12″	—	6	5868K28	1,578.97	5868K58	1,633.04
14″	14″	—	7	5868K91	2,246.63	5868K92	2,678.80
16″	12″	—	6	5868K29	2,060.68	5868K59	2,166.00
Round Separators							
—	—	6″	3	5868K41	586.88	5868K61	599.00
—	—	8″	4	5868K42	846.72	5868K62	861.74
—	—	10″	5	5868K43	1,061.21	5868K63	1,123.24
—	—	12″	6	5868K44	1,487.20	5868K64	1,595.40
—	—	14″	7	5868K45	1,605.94	5868K65	1,874.28
—	—	20″	10	5868K48	3,230.92	5868K68	3,523.92

Replacement Rods for Magnetic Separators

Replace individual rods in an existing separator or create a custom separator. Magnets are sealed in a 1″ dia. rod with a 1/4″-20 mounting hole on each end.

Rods for large particles catch nails, bolts, washers, staples, and other ferrous metal objects. Magnets are ceramic and rod is Type 304 stainless steel. Max. magnetic pull on contact is 1 lb.

Rods for small particles catch metal filings, shavings, residue from metal wear, and other fine particles. Magnets are rare-earth (neodymium-iron-boron) and rod is Type 316 stainless steel. Max. magnetic pull on contact is 11.2 lbs.

Lg.		
For Large Particles		
6″	5758K22	$41.42
8″	5758K23	46.49
10″	5758K24	51.97
12″	5758K25	56.08
For Small Particles		
4″	5784K21	223.32
6″	5784K22	277.49
8″	5784K23	367.78
For Small Particles (Cont.)		
10″	5784K24	$440.43
12″	5784K25	491.78
14″	5784K26	515.22
16″	5784K27	564.46
18″	5784K28	543.43
20″	5784K29	653.98
24″	5784K32	788.69

Quick-Clean Magnetic Separators

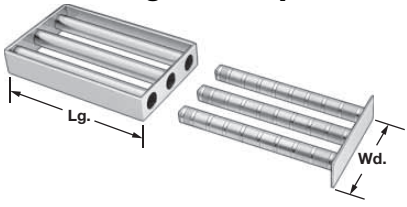

Don't struggle to remove ferrous particles that are stuck to your separator—pull these magnetic rods from their sleeve to release debris. They catch fine particles such as metal filings, shavings, and residue from metal wear. Mount separators inside gravity hoppers, chutes, drawers, housings, and surge-and-catch bins. Magnets are sealed in 1″ dia. rods; gap between rods is 1″. Magnets are rare-earth (neodymium-iron-boron); rods, frame, and sleeve are Type 316 stainless steel. Max. magnetic pull on contact is 7.7 lbs.

Lg.	Wd.	No. of Rods		
6″	6″	3	57185K21	$1,143.31
8″	8″	4	57185K23	1,518.60
10″	6″	3	57185K22	1,470.57
10″	8″	4	57185K24	1,834.83
10″	10″	5	57185K26	1,856.97
12″	8″	4	57185K25	1,980.48
12″	10″	5	57185K27	2,019.33
12″	12″	6	57185K28	2,316.30
16″	12″	6	57185K29	2,685.10

Heavy Duty Plate Magnetic Separators

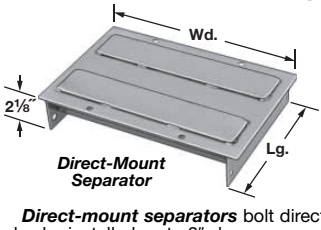

Direct-Mount Separator

Extract ferrous metal debris from process media as it moves through chutes and hoppers. Mount flush with the surface of your container; position below the flow of material. Magnets are ceramic and housing is welded steel. Max. magnetic pull on contact is 2.5 lbs. Mounting holes are 5/16″; hardware is not included.

Direct-mount separators bolt directly to chutes and hoppers. Can also be installed up to 3″ above conveyor belts.

Hinged-mount separators provide access to clean the magnetic surface. You can also mount as a door on chutes and hoppers.

Lg.	Wd.	*Req'd Opening* Lg.	*Req'd Opening* Wd.		
Direct-Mount Separators					
8″	10″	6″	8¾″	5858K43	$286.56
8″	12″	6″	10¾″	5858K44	307.33
8″	16″	6″	14¾″	5858K46	328.22
8″	24″	6″	22¾″	5858K51	620.78
Hinged-Mount Separators					
8″	10″	6″	8¾″	5858K83	311.56
8″	12″	6″	10¾″	5858K84	328.22
8″	16″	6″	14¾″	5858K86	423.00
8″	24″	6″	22¾″	5858K89	646.00

Magnetic Separators for Coolant

Keep coolant systems free of small ferrous particles, such as chip filings and metal dust. Separators have rare-earth (neodymium-iron-boron) magnets that are sealed in a Type 304 stainless steel rod. Housing is aluminum and seal is Buna-N. Max. magnetic pull is not rated. Max. temp. is 150° F. Connections are NPT female.

Pipe Size	Max. psi	Ht.	Dia.		
1/2	200	6 3/16″	4 5/8″	57625K14	$311.38

Oil-Mist-Eliminating Filters

Stop oil and smoke from exhausting into your environment. Often used with small oil-sealed vacuum pumps, these remove 99% of particles down to 0.3 micron. Filters have a nickel-plated steel housing and a fiberglass element that's reinforced with epoxy-coated steel wire. Max. pressure is not rated. Max. temp. is 220° F. Connection is NPT male.

Pipe Size	Max. scfm @ 2 psi	Ht.	Dia.	*Filter*		*Replacement Element*	
1/2	4 1/2	4 1/2″	2 1/2″	9218K81	$109.76	9218K21	$22.12
3/4	4 1/2	4 5/8″	2 1/2″	9218K82	130.49	9218K21	22.12

For information about wire cloth, see page 409.

High-Precision Sieves

Made from precision-tolerance wire cloth so you get accurate, repeatable results in testing and laboratory applications. Sieves with a brass frame conform to ASTM E11, ANSI, ISO, and NBS (National Bureau of Standards). Sieves with a Type 316 stainless steel frame meet ASTM E11 and ISO. Extended bottoms (skirts) are matched to fit all frames, pans, and separator bottoms with the same diameter; stack sieves with the same diameter for multiple stages of sifting.

Optional cover keeps foreign material from entering the sieve, and also retains samples while sieving.

Optional bottom pan lets you catch and transport material that falls through the sieve.

Mesh Size★	Wire Dia.	Opening Width
1″	0.139″	1.00″
3/4″	0.124″	0.750″
1/2″	0.098″	0.500″
3/8″	0.088″	0.375″
1/4″	0.070″	0.250″
4	0.063″	0.187″
5	0.055″	0.157″
6	0.049″	0.132″
7	0.044″	0.111″

Mesh Size	Wire Dia.	Opening Width
8	0.039″	0.0937″
10	0.035″	0.0787″
12	0.031″	0.0661″
14	0.027″	0.0555″
16	0.024″	0.0469″
18	0.022″	0.0394″
20	0.019″	0.0331″
25	0.017″	0.0278″

Mesh Size	Wire Dia.	Opening Width
30	0.015″	0.0234″
35	0.012″	0.0197″
40	0.011″	0.0165″
45	0.008″	0.0139″
50	0.007″	0.0117″
60	0.006″	0.0098″
70	0.005″	0.0083″
80	0.004″	0.0070″

Mesh Size	Wire Dia.	Opening Width
100	0.003″	0.0059″
120	0.003″	0.0049″
140	0.0027″	0.0041″
170	0.0024″	0.0035″
200	0.0019″	0.0029″
230	0.0017″	0.0025″
270	0.0014″	0.0021″
325	0.0012″	0.0017″

★ 1″ through 1/4″ sizes are measured by the opening width.

Cover, Sieve, and Bottom Pan

Brass Frame and Mesh

Mesh Size		Each
3″ Dia. × 1″ Deep		
7	34735K214	$35.00
8	34735K215	35.00
10	34735K216	35.00
12	34735K217	35.00
14	34735K218	35.00
16	34735K219	35.00
18	34735K221	35.00
20	34735K222	35.00
25	34735K223	35.00
30	34735K224	35.00
35	34735K225	35.00
40	34735K226	35.00
45	34735K227	35.00
50	34735K228	35.00
60	34735K229	35.00
70	34735K231	35.00

Mesh Size		Each
3″ Dia. × 1″ Deep (Cont.)		
80	34735K232	$35.00
100	34735K233	35.00
120	34735K234	35.00
140	34735K235	35.00
170	34735K35	46.70
200	34735K36	48.68
230	34735K37	50.38
270	34735K38	55.66
325	34735K39	56.98
8″ Dia. × 1″ Deep		
8	3298K123	50.40
10	3298K124	50.40
14	3298K126	50.40
18	3298K128	50.40
20	3298K129	50.40
30	3298K132	50.40

Mesh Size		Each
8″ Dia. × 1″ Deep (Cont.)		
40	3298K134	$50.40
50	3298K136	50.40
60	3298K137	50.40
80	3298K139	50.40
100	3298K141	50.40
120	3298K142	50.40
140	3298K143	50.40
170	3298K144	63.33
200	3298K145	72.50
230	3298K146	81.67
270	3298K147	105.00
325	3298K148	120.67
8″ Dia. × 2″ Deep		
8	3286K46	50.40
10	3286K47	50.40
14	3286K48	50.40

Mesh Size		Each
8″ Dia. × 2″ Deep (Cont.)		
16	3286K13	$50.40
18	3286K49	50.40
20	3286K14	50.40
25	3286K54	50.40
30	3286K15	50.40
35	3286K55	50.40
40	3286K16	50.40
45	3286K56	50.40
50	3286K17	50.40
60	3286K52	50.40
70	3286K53	50.40
80	3286K18	50.40
100	3286K19	50.40
120	3286K62	50.40
140	3286K21	50.40
170	3286K26	66.67

Mesh Size		Each
8″ Dia. × 2″ Deep (Cont.)		
200	3286K22	$77.68
230	3286K23	87.50
270	3286K24	112.50
325	3286K25	129.29
12″ Dia. × 2″ Deep		
8	3472K413	90.78
35	3472K423	90.78
40	3472K424	90.78
50	3472K426	90.78
80	3472K429	90.78
100	3472K431	90.78
200	3472K43	112.30

Brass Frame and Type 304 Stainless Steel Mesh

Mesh Size		Each
3″ Dia. × 1″ Deep		
4	34735K511	$43.96
10	34735K516	43.96
12	34735K517	43.96
14	34735K518	43.96
16	34735K519	43.96
18	34735K521	43.96
20	34735K522	43.96
25	34735K523	43.96
30	34735K524	43.96
35	34735K525	43.96
40	34735K526	43.96
50	34735K528	43.96
60	34735K529	43.96
70	34735K531	43.96
80	34735K532	43.96
100	34735K533	43.96
120	34735K534	43.96
140	34735K535	43.96
170	34735K65	51.32
200	34735K66	52.45
230	34735K67	54.15
270	34735K68	61.70
325	34735K69	62.26
8″ Dia. × 1″ Deep		
3/4″	3298K246	55.23
1/4″	3298K249	55.23

Mesh Size		Each
8″ Dia. × 1″ Deep (Cont.)		
4	3298K211	$55.23
5	3298K212	55.23
6	3298K213	55.23
7	3298K214	55.23
8	3298K215	55.23
10	3298K216	55.23
12	3298K217	55.23
14	3298K218	55.23
16	3298K219	55.23
18	3298K221	55.23
20	3298K222	55.23
25	3298K223	55.23
30	3298K224	55.23
35	3298K225	55.23
40	3298K226	55.23
45	3298K227	55.23
50	3298K228	55.23
60	3298K229	55.23
70	3298K231	55.23
80	3298K232	55.23
100	3298K233	55.23
140	3298K235	55.23
170	3298K236	68.75
200	3298K237	76.00
230	3298K238	87.50
270	3298K239	108.33

Mesh Size		Each
8″ Dia. × 1″ Deep (Cont.)		
325	3298K241	$131.30
8″ Dia. × 2″ Deep		
1″	3469K154	59.05
3/4″	3469K155	59.05
1/2″	3469K156	59.05
3/8″	3469K157	59.05
1/4″	3469K158	59.05
4	3469K12	59.05
5	3469K13	59.05
6	3469K14	59.05
7	3469K15	59.05
8	3469K16	59.05
10	3469K18	59.05
12	3469K21	59.05
14	3469K23	59.05
16	3469K25	59.05
18	3469K26	59.05
20	3469K28	59.05
25	3469K31	59.05
30	3469K33	59.05
35	3469K35	59.05
40	3469K37	59.05
45	3469K38	59.05
50	3469K41	59.05
60	3469K43	59.05
70	3469K45	59.05

Mesh Size		Each
8″ Dia. × 2″ Deep (Cont.)		
80	3469K47	$59.05
100	3469K49	59.05
120	3469K51	59.05
140	3469K53	59.05
170	3469K56	73.66
200	3469K57	81.43
230	3469K58	93.75
270	3469K61	116.07
325	3469K63	140.62
12″ Dia. × 3″ Deep		
3/8″	3291K242	97.52
1/4″	3291K243	97.52
4	3291K211	97.52
5	3291K212	97.52
6	3291K213	97.52
7	3291K214	97.52
8	3291K215	97.52
10	3291K216	97.52
14	3291K218	97.52
16	3291K219	97.52
20	3291K222	97.52
25	3291K223	97.52
30	3291K224	97.52
40	3291K226	97.52
50	3291K228	97.52
60	3291K229	97.52

Mesh Size		Each
12″ Dia. × 3″ Deep (Cont.)		
80	3291K232	$97.52
100	3291K233	97.52
120	3291K234	97.52
140	3291K235	97.52
170	3291K22	121.88
200	3291K23	130.80
325	3291K26	205.36
12″ Dia. × 4″ Deep		
10	32915K456	153.85
12	32915K457	153.85
16	32915K459	153.85
30	32915K464	153.85
35	32915K465	153.85
40	32915K466	153.85
60	32915K469	153.85
100	32915K473	153.85
12″ Dia. × 8″ Deep		
4	32915K251	198.89
14	32915K258	198.89
20	32915K262	198.89
25	32915K263	198.89
40	32915K266	198.89
60	32915K269	198.89
80	32915K272	198.89
100	32915K273	198.89
200	32915K277	262.57

Type 316 Stainless Steel Frame and Type 316L Stainless Steel Mesh

Mesh Size		Each
8″ Dia. × 2″ Deep		
8	7969T31	$103.86
10	7969T11	103.86
14	7969T32	103.86
16	7969T33	103.86

Mesh Size		Each
8″ Dia. × 2″ Deep (Cont.)		
18	7969T12	$103.86
20	7969T34	105.82
30	7969T35	106.20
35	7969T13	106.94

Mesh Size		Each
8″ Dia. × 2″ Deep (Cont.)		
40	7969T36	$107.04
50	7969T37	107.14
60	7969T38	107.24
70	7969T39	107.34

Mesh Size		Each
8″ Dia. × 2″ Deep (Cont.)		
80	7969T41	$107.45
100	7969T42	107.55
140	7969T43	107.75
170	7969T44	107.85

Mesh Size		Each
8″ Dia. × 2″ Deep (Cont.)		
200	7969T45	$107.95
230	7969T46	108.06
270	7969T47	138.90
325	7969T48	162.96

Accessories

	For 3″ Dia.	Each	For 8″ Dia.	Each	For 12″ Dia.	Each
Cover for Brass Frame Sieves	34735K83	$15.20	3286K31	$18.90	32915K81	$46.36
Bottom Pan for Brass Frame Sieves	34735K85	20.00	3286K32	25.00	32915K82	52.55
Cover for Type 316 Stainless Steel Frame Sieves			7969T19	70.59		
Bottom Pan for Type 316 Stainless Steel Frame Sieves			7969T21	70.59		

For information about wire cloth, see page 409.

Shakers for High-Precision Sieves

Compact

Multidiameter

These versatile sieve shakers give more consistent results than hand sieving. Shakers operate on 115 VAC, 60 Hz. Sieves (not included) are sold separately on page 407. See the chart for the max. number of sieves at each depth that can be used with each shaker.

Compact shaker has a 1/20 hp motor, a vibrating baseplate, a red painted steel and aluminum body, and a 5-ft. power cord with a two-prong plug.

Multidiameter shakers vibrate both vertically and horizontally for greater efficiency. Mount on a solid and stable surface. Shakers have a 1/4 hp motor, a green painted steel body, 5-ft. power cord with a three-prong plug, and a 30-minute timer. They meet ASTM C136.

Shaker Capacity, Max. Number of Sieves					
	1″ Dp.	2″ Dp.	3″ Dp.	4″ Dp.	8″ Dp.
3323K11	6	—	–	–	–
3323K12 (3″ Dia.)	16	—	–	–	–
3323K12 (8″ Dia.)	18	10	–	–	–
3323K13 (8″ Dia.)	19	11	–	–	–
3323K13 (12″ Dia.)	—	11	7	5	2

For Sieve Dia.	O'all Size, Ht.×Wd.×Dp.		Each
Compact			
3″	16″× 8″× 8″	3323K11	$388.33
Multidiameter			
3″ and 8″	45″×15″×15″	3323K12	1,141.01
8″ and 12″	47″×21″×18″	3323K13	1,448.13

Coarse-Mesh Hand Sieves

Manually separate coarse contaminants with these long-lasting, one-piece polypropylene sieves. They measure 14 1/2″ Dia.× 2 1/2″ Dp.

Opening Width		Each	Opening Width		Each
1″	3109K19	$28.89	0.375″	3109K14	$28.89
0.75″	3109K17	28.89	0.25″	3109K12	28.89
0.5″	3109K15	28.89			

Rugged-Duty Hand Sieves

Made with thick Type 304 stainless steel wire cloth, these 18″ Dia.×4″ Dp. sieves are ideal for separating large, abrasive sediment such as rocks and gravel. Frames are galvanized steel.

Mesh Size	Opening Width		Each	Mesh Size	Opening Width		Each
1	0.920″	3415K31	$85.45	12	0.065″	3415K41	$85.45
2	0.437″	3415K32	85.45	14	0.054″	3415K42	85.45
3	0.286″	3415K33	85.45	16	0.047″	3415K43	85.45
4	0.203″	3415K34	85.45	18	0.041″	3415K44	85.45
5	0.168″	3415K35	85.45	20	0.036″	3415K45	85.45
6	0.132″	3415K36	85.45	24	0.028″	3415K46	85.45
8	0.097″	3415K37	85.45	30	0.021″	3415K47	85.45
10	0.080″	3415K38	85.45				

Stainless Steel Separating Screens

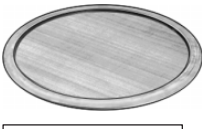

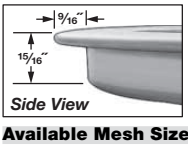

Side View

Fit these screens in standard Sweco, Rotex, and Kason vibratory shakers. Frame and screen are made of Type 304 stainless steel bolting-grade wire cloth for sifting nonabrasive materials such as flour, grain, and pulverized metal. Screen is tensioned for flatness and bonded to the lipped frame for consistent sifting and long life.

To Order: Please specify mesh size from those listed in the chart.

Available Mesh Sizes

Mesh Size	Wire Dia.	Opening Width	Mesh Size	Wire Dia.	Opening Width
20	0.009″	0.041″	80	0.0037″	0.0088″
30	0.0065″	0.0268″	84	0.0035″	0.0084″
40	0.0065″	0.0185″	88	0.0035″	0.0079″
44	0.0055″	0.0172″	90	0.0035″	0.0076″
48	0.0055″	0.0153″	105	0.003″	0.0065″
50	0.0055″	0.0155″	120	0.0026″	0.0058″
54	0.004″	0.0145″	135	0.0023″	0.0051″
60	0.004″	0.0127″	145	0.0022″	0.0047″
66	0.004″	0.0112″	165	0.0019″	0.0042″
74	0.0037″	0.0098″			

Screens

O'all Dia.		Each	O'all Dia.		Each
18″	3719K11	$178.18	48″	3719K14	$296.36
24″	3719K12	216.36	60″	3719K15	360.00
30″	3719K13	234.55			

Hook-On Stainless Steel Separating Screens

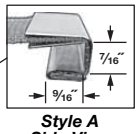

Style A Side View

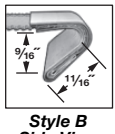

Style B Side View

Installing and mounting these screens is easy; they have galvanized steel hooks on two sides and fit in most shaker and separator machinery, including Mogensen Sizers and Midwestern Separators. Their corrosion-resistant Type 304 stainless steel screen is securely attached to the hooks to withstand vibrations and provide long life. Screens do not have sharp edges. Use in heavy duty sifting applications with more abrasive material.

To Order: Please specify mesh size from those listed in the chart.

Available Mesh Sizes

Mesh Size	Wire Dia.	Opening Width	Mesh Size	Wire Dia.	Opening Width
8	0.028″	0.097″	30	0.012″	0.021″
10	0.025″	0.075″	35	0.011″	0.017″
11	0.018″	0.073″	40	0.01″	0.015″
12	0.023″	0.060″	50	0.009″	0.011″
14	0.02″	0.051″	60	0.0075″	0.009″
16	0.018″	0.045″	80	0.0055″	0.007″
18	0.017″	0.039″	100	0.0045″	0.0055″
20	0.016″	0.034″	120	0.0037″	0.0046″
24	0.014″	0.028″	150	0.0026″	0.0041″

Screens

Overall Size, Lg.×Wd.		Each	Overall Size, Lg.×Wd.		Each
Style A			***Style B***		
48 1/2″×39 1/2″	9341T21	$125.18	36 1/2″×59 3/4″	9341T23	$157.56
54 3/8″×39 1/2″	9341T22	144.78	48 1/2″×59 3/4″	9341T24	173.88

Ultra-Fine Filtering Type 316L Stainless Steel Porous Discs

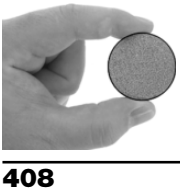

Also known as frits or sintered filters, these corrosion-resistant Type 316L stainless steel discs have micron-rated pores for fine filtering. Use in laboratories and gas-bubbling applications (sparging).

To Order: Please specify micron rating: 2, 5, 10, 20, or 40 microns.

Overall Size, Dia.×Thick.	Pkg. Qty.		Per Pkg.	Overall Size, Dia.×Thick.	Pkg. Qty.		Per Pkg.
1/4″×1/16″	6	9446T31	$10.29	1″ ×1/16″	4	9446T34	$13.95
1/2″×1/16″	6	9446T32	10.90	1 1/2″×1/16″	2	9446T35	14.95
3/4″×1/16″	4	9446T33	11.90				

About Wire Cloth

When ordering wire cloth, you must consider *mesh*, *wire diameter*, and *opening width*. Mesh is expressed by one of two different terms: *distance between wires* or *mesh size*.

Distance between wires is the distance between the centers of two parallel wires.

Mesh size is the number of openings within a linear inch of the wire cloth. This dimension is expressed as two numbers; for example, 3×3 mesh size means there are three openings horizontally and three openings vertically in one square inch.

Wire diameter indicates the thickness of the wire. ***Opening width*** refers to the actual open space between parallel wires. Within wire cloth of the same mesh size, as the wire gets thinner, its flexibility increases and the opening width and open area dimensions get larger. For example, 3×3 mesh with a 0.120″ wire diameter has an opening width of 0.213″ and open area of 40.8%. Compare that to 3×3 mesh with a thinner, more flexible 0.047″ wire diameter. It has an opening width of 0.286″ and an open area of 73.6%.

Note: If using wire cloth for filtration, it is important to choose wire cloth with an opening width smaller than the particles or sediment that you wish to remove.

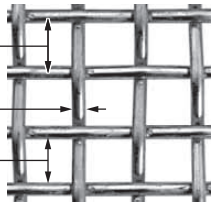

3×3 Mesh (Actual Size)

Types of Wire Cloth

Woven— Most commonly used and available in the widest variety of sizes. Ideal for particle retention and the construction of filter support screens, basket liners, and wire partitions.

Dutch Weave— Dense and strong with small, irregular, and twisting passageways for very fine filtering.

Welded— Wires are welded at the joints to keep cloth straight, uniform, and fray resistant. Very strong and rigid.

Space Cloth— Heavy duty cloth with thick wire diameters and large square openings for maximum uniformity. Measured by space size (same as opening width).

Crimped— Wires are crimped to secure them in place and ensure accurate and rigid screen openings.

Examples of Wire Cloth Mesh Sizes (Actual Size)

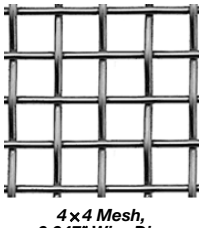
4×4 Mesh, 0.047″ Wire Dia.

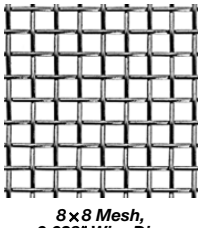
8×8 Mesh, 0.028″ Wire Dia.

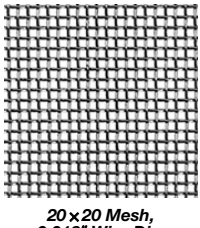
20×20 Mesh, 0.016″ Wire Dia.

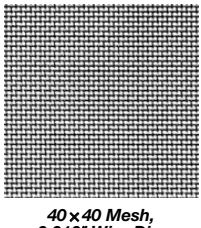
40×40 Mesh, 0.010″ Wire Dia.

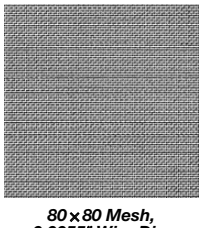
80×80 Mesh, 0.0055″ Wire Dia.

For information about wire cloth, including examples of particle sizes, go to mcmaster.com and search for **9231TAC**.

Wire Cloth Sample Packs and Assortments

All sample packs and assortments include one each of the mesh sizes listed and are made of Type 304 stainless steel for good corrosion resistance, except for 9231T15, which is made of steel.

Sample packs contain small pieces of wire cloth for comparing different mesh types and sizes. Each piece is labeled with its dimensions.

Assortments include a variety of mesh sizes in usable sheet sizes, making them ideal for maintenance work and research projects.

Woven Coarse Mesh Sizes

Mesh Size	Wire Dia.	Mesh Size	Wire Dia.
2×2	0.063″	8× 8	0.028″
3×3	0.047″	10×10	0.025″
4×4	0.047″	12×12	0.023″
5×5	0.041″	14×14	0.021″
6×6	0.035″	16×16	0.018″

Sheet Size		Each
Sample Pack		
2¾″× 1⅝″	**9231T11**	$14.29
Assortments		
6″ × 6″	**92405T13**	32.57
12″ ×12″	**92405T23**	94.27

Woven Medium Mesh Sizes

Mesh Size	Wire Dia.	Mesh Size	Wire Dia.
18×18	0.017″	35×35	0.0100″
20×20	0.016″	40×40	0.0100″
24×24	0.014″	50×50	0.0090″
30×30	0.010″	60×60	0.0075″
30×30	0.012″		

Sheet Size		Each
Sample Pack		
2¾″× 1⅝″	**9231T16**	$13.26
Assortments		
6″ × 6″	**92405T15**	22.17
12″ ×12″	**92405T25**	68.91

Woven Fine Mesh Sizes

Mesh Size	Wire Dia.	Mesh Size	Wire Dia.
70× 70	0.0065″	250×250	0.0016″
80× 80	0.0055″	325×325	0.0014″
100×100	0.0045″	400×400	0.0011″
150×150	0.0026″	500×500	0.0010″
200×200	0.0021″		

Sheet Size		Each
Sample Pack		
2¾″× 1⅝″	**9231T12**	$13.26
Assortments		
6″ × 6″	**92405T17**	66.50
12″ ×12″	**92405T27**	263.63

Woven and Welded Mesh Sample Pack

Identify mesh sizes from coarse to fine. Contains 41 woven and 4 welded mesh sizes. Sheets are 2″×3″ and are furnished in a three-ring binder.

Woven

Mesh Size	Wire Dia.	Mesh Size	Wire Dia.	Mesh Size	Wire Dia.	Mesh Size	Wire Dia.	Mesh Size	Wire Dia.	Mesh Size	Wire Dia.
2×2	0.063″	6× 6	0.063″	10×10	0.035″	18×18	0.0230″	80× 80	0.0055″	200×200	0.0021″
3×3	0.063″	7× 7	0.028″	12×12	0.023″	20×20	0.0160″	100×100	0.0045″	230×230	0.0014″
4×4	0.047″	8× 8	0.028″	12×12	0.028″	24×24	0.0140″	120×120	0.0036″	250×250	0.0016″
4×4	0.063″	8× 8	0.035″	14×14	0.020″	30×30	0.0120″	135×135	0.0023″	270×270	0.0014″
5×5	0.041″	8× 8	0.063″	16×16	0.018″	40×40	0.0100″	150×150	0.0026″	325×325	0.0014″
6×6	0.035″	9× 9	0.023″	16×16	0.023″	50×50	0.0090″	165×165	0.0019″	400×400	0.0010″
6×6	0.047″	10×10	0.025″	18×18	0.017″	60×60	0.0075″	180×180	0.0023″		

Welded

Mesh Size	Wire Dia.
2×2	0.063″
2×2	0.047″
3×3	0.047″
4×4	0.032″

Woven and Welded Sample Pack ..... **9231T44** **Each** $82.57

Woven Wire Diameters Sample Pack

Compare the opening widths and flexibility of wire cloth with the same mesh size but different wire diameters. Includes one 4½″×4½″ sheet each of 20×20 mesh with wire diameters of 0.009″, 0.014″, and 0.023″.

Woven Wire Diameters Sample Pack ..... **9231T13** **Each** $7.65

Space Cloth/Crimped Types Sample Pack

Compare the construction and rigidity of three types of space cloth. Includes one 4½″×4½″ steel sheet each of standard space cloth, extra-rigid crimped space cloth, and super-rigid crimped space cloth.

Space Cloth/Crimped Types Sample Pack ..... **9231T15** **Each** $15.31

For information about wire cloth, see page 409.

Corrosion-Resistant Type 304 Stainless Steel Woven Wire Cloth

Made of Type 304 stainless steel for good corrosion resistance; cloth is offered in a wide range of mesh sizes and wire diameters. Ideal for particle retention and the construction of filter support screens, basket liners, and wire partitions.

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide (unless noted), length needed, and number of pieces. Max. continuous length is 100 linear feet, unless noted.

Distance Between Wires	Wire Dia.	Opening Width	Open Area	SHEETS	12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up ♦
1″	0.120″	0.880″	77.4%	85385T11	$38.24	$72.66	$137.66	$292.54	$367.10	$458.88	9226T11	$38.24	$30.59
1″	0.080″	0.920″	84.6%	85385T12	11.42	21.70	41.11	87.36	109.63	137.04	9226T101	11.42	9.14
¾″	0.120″	0.630″	70.5%	85385T13	27.99	53.18	100.76	214.12	268.70	335.88	9226T12	27.99	22.39
¾″	0.080″	0.670″	79.8%	85385T14	24.72	46.97	88.99	189.11	237.31	296.64	9226T102	24.72	19.78

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS	12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up ♦
2× 2	0.120″	0.380″	57.8%	85385T15	$40.21	$76.40	$144.76	$307.61	$386.02	$482.52	9226T103	$40.21	$32.17
2× 2	0.105″	0.395″	62.4%	85385T16	30.29	57.55	109.04	231.72	290.78	363.48	9226T13	30.29	24.23
2× 2	0.080″	0.420″	70.6%	85385T17	20.80	39.52	74.88	159.12	199.68	249.60	9226T14	20.80	16.64
2× 2	0.063″	0.437″	76.4%	85385T18	13.56	25.76	48.82	103.73	130.18	162.72	9226T15	13.56	10.85
2× 2	0.047″	0.453″	82.1%	85385T19	11.66	22.15	41.98	89.20	111.94	139.92	9226T104	11.66	9.33
3× 3	0.080″	0.253″	57.6%	85385T21	25.79	49.00	92.84	197.29	247.58	309.48	9226T16	25.79	20.63
3× 3	0.063″	0.270″	65.6%	85385T22	15.41	29.28	55.48	117.89	147.94	184.92	9226T17	15.41	12.33
3× 3	0.054″	0.279″	70.1%	85385T23	15.47	29.39	55.69	118.35	148.51	185.64	9226T123■	15.47	12.38
3× 3	0.047″	0.286″	73.6%	85385T24	12.83	24.38	46.19	98.15	123.17	153.96	9226T18	12.83	10.26
4× 4	0.080″	0.170″	46.2%	85385T25	32.37	61.50	116.53	247.63	310.75	388.44	9226T105	32.37	25.90
4× 4	0.063″	0.187″	56.0%	85385T26	19.93	37.87	71.75	152.46	191.33	239.16	9226T19	19.93	15.94
4× 4	0.054″	0.196″	61.5%	85385T27	15.62	29.68	56.23	119.49	149.95	187.44	9226T124■	15.62	12.50
4× 4	0.047″	0.203″	65.9%	85385T28	15.59	29.62	56.12	119.26	149.66	187.08	9226T2	15.59	12.47
5× 5	0.047″	0.153″	58.5%	85385T29	20.25	38.48	72.90	154.91	194.40	243.00	9226T21	20.25	16.20
5× 5	0.041″	0.159″	63.2%	85385T31	12.35	23.46	44.46	94.48	118.56	148.20	9226T22	12.35	9.88
6× 6	0.063″	0.104″	38.9%	85385T32	44.56	84.66	160.42	340.88	427.78	534.72	9226T23	44.56	35.65
6× 6	0.047″	0.120″	51.8%	85385T33	25.38	48.22	91.37	194.16	243.65	304.56	9226T24	25.38	20.30
6× 6	0.041″	0.126″	57.2%	85385T34	15.89	30.19	57.20	121.56	152.54	190.68	9226T125■	15.89	12.71
6× 6	0.035″	0.132″	62.7%	85385T35	13.96	26.52	50.26	106.79	134.02	167.52	9226T25	13.96	11.17
7× 7	0.041″	0.102″	51.0%	85385T36	16.89	32.09	60.80	129.21	162.14	202.68	9226T011	16.89	13.51
8× 8	0.063″	0.062″	24.6%	85385T37	49.76	94.54	179.14	380.66	477.70	597.12	9226T27	49.76	39.81
8× 8	0.047″	0.078″	38.9%	85385T38	27.93	53.07	100.55	213.66	268.13	335.16	9226T28	27.93	22.34
8× 8	0.035″	0.090″	51.8%	85385T39	14.91	28.33	53.68	114.06	143.14	178.92	9226T29	14.91	11.93
8× 8	0.032″	0.093″	55.4%	85385T41	14.21	27.00	51.16	108.71	136.42	170.52	9226T3	14.21	11.37
8× 8	0.028″	0.097″	60.2%	85385T42	10.45	19.85	37.62	79.94	100.32	125.40	9226T31	10.45	8.36
9× 9	0.032″	0.079″	50.6%	85385T43	11.15	21.18	40.14	85.30	107.04	133.80	9226T013	11.15	8.92
9× 9	0.023″	0.088″	62.7%	85385T44	7.52	14.29	27.07	57.53	72.19	90.24	9226T012	7.52	6.02
10×10	0.047″	0.053″	28.1%	85385T45	30.22	57.42	108.79	231.18	290.11	362.64	9226T32★	30.22	24.18
10×10	0.035″	0.065″	42.3%	85385T46	21.75	41.32	78.30	166.39	208.80	261.00	9226T33	21.75	17.40
10×10	0.032″	0.068″	46.2%	85385T47	24.60	46.74	88.56	188.19	236.16	295.20	9226T34	24.60	19.68
10×10	0.025″	0.075″	56.3%	85385T48	9.19	17.46	33.08	70.30	88.22	110.28	9226T35	9.19	7.35
10×10	0.023″	0.077″	59.3%	85385T49	12.20	23.18	43.92	93.33	117.12	146.40	9226T126■	12.20	9.76
11×11	0.018″	0.073″	64.5%	85385T51	6.27	11.91	22.57	47.97	60.19	75.24	9226T014	6.27	5.02
12×12	0.041″	0.042″	25.4%	85385T52	38.91	73.93	140.08	297.66	373.54	466.92	9226T36	38.91	31.13
12×12	0.035″	0.048″	33.2%	85385T53	22.96	43.62	82.66	175.64	220.42	275.52	9226T106	22.96	18.37
12×12	0.032″	0.051″	37.5%	85385T54	22.86	43.43	82.30	174.88	219.46	274.32	9226T37	22.86	18.29
12×12	0.028″	0.055″	43.6%	85385T55	18.52	35.19	66.67	141.68	177.79	222.24	9226T38	18.52	14.82
12×12	0.023″	0.060″	51.8%	85385T56	10.69	20.31	38.48	81.78	102.62	128.28	9226T39	10.69	8.55
14×14	0.032″	0.039″	29.8%	85385T57	27.62	52.48	99.43	211.29	265.15	331.44	9226T107	27.62	22.10
14×14	0.025″	0.046″	41.5%	85385T58	19.31	36.69	69.52	147.72	185.38	231.72	9226T4	19.31	15.45
14×14	0.020″	0.051″	51.0%	85385T61	12.38	23.52	44.57	94.71	118.85	148.56	9226T41	12.38	9.90
15×15	0.010″	0.057″	73.1%	85385T62	5.82	11.06	20.95	44.52	55.87	69.84	9226T015	5.82	4.66
16×16	0.028″	0.035″	30.5%	85385T63	20.03	38.06	72.11	153.23	192.29	240.36	9226T42	20.03	16.02
16×16	0.023″	0.040″	39.9%	85385T64	17.25	32.77	62.10	131.96	165.60	207.00	9226T43	17.25	13.80
16×16	0.018″	0.045″	50.7%	85385T65	10.92	20.75	39.31	83.54	104.83	131.04	9226T45	10.92	8.74
18×18	0.020″	0.036″	41.1%	85385T66	15.64	29.72	56.30	119.65	150.14	187.68	9226T46	15.64	12.51
18×18	0.017″	0.039″	48.3%	85385T67	7.64	14.52	27.50	58.45	73.34	91.68	9226T47	7.64	6.11
20×20	0.023″	0.027″	29.2%	85385T68	17.23	32.74	62.03	131.81	165.41	206.76	9226T48	17.23	13.78
20×20	0.020″	0.030″	36.0%	85385T69	13.85	26.31	49.86	105.95	132.96	166.20	9226T115	13.85	11.08
20×20	0.018″	0.032″	41.0%	85385T71	9.79	18.60	35.24	74.89	93.98	117.48	9226T49	9.79	7.83
20×20	0.016″	0.034″	46.2%	85385T73	8.91	16.93	32.08	68.16	85.54	106.92	9226T51	8.91	7.13
22×22	0.0135″	0.032″	49.6%	85385T74	11.43	21.72	41.15	87.44	109.73	137.16	9226T127■	11.43	9.14
24×24	0.014″	0.028″	44.2%	85385T75	8.02	15.24	28.87	61.35	76.99	96.24	9226T53	8.02	6.42
26×26	0.0075″	0.031″	65.0%	85385T76	5.51	10.47	19.84	42.15	52.90	66.12	9226T016	5.51	4.41
28×28	0.010″	0.026″	51.8%	85385T77	6.58	12.50	23.69	50.34	63.17	78.96	9226T159	6.58	5.26
30×30	0.013″	0.020″	37.1%	85385T78	6.39	12.14	23.00	48.88	61.34	76.68	9226T54	6.39	5.11
30×30	0.012″	0.021″	40.8%	85385T79	7.91	15.03	28.48	60.51	75.94	94.92	9226T55	7.91	6.33
32×32	0.009″	0.022″	50.9%	85385T81	10.48	19.91	37.73	80.17	100.61	125.76	9226T128■	10.48	8.38
32×32	0.0065″	0.025″	62.7%	85385T82	4.81	9.14	17.32	36.80	46.18	57.72	9226T017	4.81	3.85
35×35	0.012″	0.017″	33.8%	85385T83	10.18	19.34	36.65	77.88	97.73	122.16	9226T56	10.18	8.14
35×35	0.010″	0.019″	42.4%	85385T84	8.33	15.83	29.99	63.72	79.97	99.96	9226T162	8.33	6.66

■ Not offered in 36″ width. ★ Max. continuous length is 50 linear feet.

(Continued on following page)

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Corrosion-Resistant Type 304 Stainless Steel Woven Wire Cloth *(Cont. from prev. page)*

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide (unless noted), length needed, and number of pieces. Max. continuous length is 100 linear feet, unless noted.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up♦
38× 38	0.0065″	0.020″	56.7%	85385T85	$5.64	$10.72	$20.30	$43.15	$54.14	$67.68	9226T018	$5.64	$4.51
40× 40	0.0135″	0.012″	21.2%	85385T86	21.57	40.98	77.65	165.01	207.07	258.84	9226T57	21.57	17.26
40× 40	0.011″	0.014″	31.4%	85385T87	11.20	21.28	40.32	85.68	107.52	134.40	9226T58	11.20	8.96
40× 40	0.010″	0.015″	36.0%	85385T88	7.61	14.46	27.40	58.22	73.06	91.32	9226T59	7.61	6.09
40× 40	0.0095″	0.016″	38.4%	85385T89	8.15	15.48	29.34	62.35	78.24	97.80	9226T6	8.15	6.52
40× 40	0.0085″	0.0165″	38.0%	85385T91	10.46	19.87	37.66	80.02	100.42	125.52	9226T129■	10.46	8.37
42× 42	0.0055″	0.018″	59.1%	85385T92	4.95	9.40	17.82	37.87	47.52	59.40	9226T019	4.95	3.96
50× 50	0.009″	0.011″	30.3%	85385T93	10.48	20.84	40.02	89.80	116.15	147.02	9226T61	10.48	8.38
60× 60	0.0075″	0.009″	30.5%	85385T95	7.23	13.74	26.03	55.31	69.41	86.76	9226T64	7.23	5.78
70× 70	0.0065″	0.008″	29.8%	85385T96	6.99	13.28	25.16	53.47	67.10	83.88	9226T65	6.99	5.59
80× 80	0.007″	0.006″	19.4%	85385T97	8.31	15.79	29.92	63.57	79.78	99.72	9226T66	8.31	6.65
80× 80	0.0055″	0.007″	31.4%	85385T98	8.69	16.96	32.44	71.45	91.99	115.30	9226T67	8.69	6.95
90× 90	0.0055″	0.006″	25.4%	85385T99	6.37	12.10	22.93	48.73	61.15	76.44	9226T68	6.37	5.10
100×100	0.0045″	0.0055″	30.3%	85385T101	4.67	8.87	16.86	36.02	45.64	57.82	9226T69	4.67	3.74
120×120	0.004″	0.0043″	26.6%	85385T102	7.27	13.81	26.17	55.62	69.79	87.24	9226T964	7.27	5.82
120×120	0.0037″	0.0046″	30.5%	85385T103	6.60	12.54	23.76	50.49	63.36	79.20	9226T965	6.60	5.28
150×150	0.0026″	0.0041″	37.8%	85385T104	4.87	9.25	17.53	37.26	46.75	58.44	9226T966	4.87	3.90
160×160	0.0024″	0.0038″	37.0%	85385T105	5.75	10.92	20.70	43.99	55.20	69.00	9226T021	5.75	4.60
165×165	0.0019″	0.0042″	47.1%	85385T106	9.17	17.42	33.01	70.15	88.03	110.04	9226T967	9.17	7.34
180×180	0.0018″	0.004″	45.7%	85385T107	7.23	13.74	26.03	55.31	69.41	86.76	9226T022	7.23	5.78
200×200	0.0021″	0.0029″	33.6%	85385T108	7.05	13.39	25.38	53.93	67.68	84.60	9226T968	7.05	5.64
200×200	0.0016″	0.0034″	46.2%	85385T109	5.66	10.75	20.38	43.30	54.34	67.92	9226T969	5.66	4.53
230×230	0.0014″	0.0029″	46.0%	85385T111	16.59	31.52	59.72	126.91	159.26	199.08	9226T971	16.59	13.27
250×250	0.0016″	0.0024″	36.0%	85385T112	16.80	31.92	60.48	128.52	161.28	201.60	9226T972	16.80	13.44
270×270	0.0014″	0.0023″	38.0%	85385T113	15.07	28.63	54.25	115.29	144.67	180.84	9226T973	15.07	12.06
300×300	0.0012″	0.0021″	41.0%	85385T114	27.27	51.81	98.17	208.62	261.79	327.24	9226T023	27.27	21.82
325×325	0.0014″	0.0017″	30.5%	85385T115	13.39	25.44	48.20	102.43	128.54	160.68	9226T974	13.39	10.71
325×325	0.0011″	0.002″	41.0%	85385T116	14.42	27.40	51.91	110.31	138.43	173.04	9226T975	14.42	11.54
400×400	0.001″	0.0015″	36.0%	85385T117	21.00	39.90	75.60	160.65	201.60	252.00	9226T976	21.00	16.80
500×500	0.0008″	0.0012″	36.0%	85385T118	115.34	219.15	415.22	882.35	1,107.26	1,384.08	9226T978	115.34	92.27
635×635	0.0009″	0.0007″	18.4%	85385T119	740.99	1,407.88	2,667.56	5,668.57	—	—	9226T979▲	740.99	592.79

■ Not offered in 36″ width. ▲ Not offered in 48″ width.

Particle-Sifting Type 304 Stainless Steel Woven Wire Cloth

Also known as milling grade, this wire cloth has a thinner wire diameter and larger open area than the corrosion resistant Type 304 stainless steel wire cloth on pages 410 and 411. It also can process abrasive material and capture small particles. Ideal for sifting gritty, dry material. Made of Type 304 stainless steel for good corrosion resistance.

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide (unless noted), length needed, and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up♦
4× 4	0.035″	0.215″	74.0%	9238T51	$7.38	$14.02	$26.57	$56.46	$70.85	$88.56	9238T71■	$7.38	$5.90
6× 6	0.028″	0.139″	69.6%	9238T14	6.32	12.01	22.75	48.35	60.67	75.84	9238T72	6.32	5.06
8× 8	0.025″	0.100″	64.0%	9238T22	8.07	15.33	29.05	61.74	77.47	96.84	9238T73	8.07	6.46
10×10	0.020″	0.080″	64.0%	9238T52	8.62	16.38	31.03	65.94	82.75	103.44	9238T74■	8.62	6.90
12×12	0.018″	0.065″	60.8%	9238T24	5.89	11.19	21.20	45.06	56.54	70.68	9238T75	5.89	4.71
14×14	0.017″	0.054″	57.2%	9238T53	7.38	14.02	26.57	56.46	70.85	88.56	9238T76■	7.38	5.90
16×16	0.016″	0.047″	55.4%	9238T25	5.89	11.19	21.20	45.06	56.54	70.68	9238T77	5.89	4.71
18×18	0.015″	0.041″	53.4%	9238T54	8.48	16.11	30.53	64.87	81.41	101.76	9238T78■	8.48	6.78
20×20	0.014″	0.036″	51.8%	9238T29	6.43	12.22	23.15	49.19	61.73	77.16	9238T79	6.43	5.14
24×24	0.013″	0.029″	47.4%	9238T42	6.80	12.92	24.48	52.02	65.28	81.60	9238T81	6.80	5.44
30×30	0.0095″	0.024″	51.0%	9238T44	5.89	11.19	21.20	45.06	56.54	70.68	9238T83	5.89	4.71
50×50	0.0075″	0.013″	39.1%	9238T45	5.03	9.56	18.11	38.48	48.29	60.36	9238T87	5.03	4.02
60×60	0.0065″	0.010″	37.5%	9238T49	5.58	10.60	20.09	42.69	53.57	66.96	9238T88	5.58	4.46

■ Not offered in 36″ width.

High-Volume Particle-Sifting Type 304 Stainless Steel Woven Wire Cloth

Also known as bolting grade, this cloth has ultra-thin wire and a large percentage of open area for letting through coarse, dense material. Ideal for high-volume sifting of nonabrasive materials, such as flour, grain, and pulverized metal. Made of Type 304 stainless steel for corrosion resistance.

To Order: For ***sheets***, please specify 12″×12″ or 12″×24″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide, length needed, and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up♦
16×16	0.009″	0.054″	73.3%	9230T24	$2.92	$5.55	9230T71	$2.92	$2.34
18×18	0.009″	0.047″	70.4%	9230T25	3.14	5.97	9230T72	3.14	2.51
20×20	0.009″	0.041″	67.2%	9230T26	3.85	7.31	9230T73	3.85	3.08
24×24	0.0075″	0.034″	67.2%	9230T27	4.07	7.73	9230T74	4.07	3.26
30×30	0.0065″	0.0268″	64.8%	9230T28	3.49	6.63	9230T75	3.49	2.79
54×54	0.0055″	0.013″	49.4%	9230T41	5.41	10.28	9230T81	5.41	4.33
60×60	0.0045″	0.0122″	53.3%	9230T44	3.95	7.50	9230T79	3.95	3.16
74×74	0.0037″	0.0098″	52.7%	9230T46	5.21	9.90	9230T82	5.21	4.17
80×80	0.0037″	0.0088″	49.6%	9230T45	8.97	17.04	9230T83	8.97	7.18

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Precision-Mesh Type 304 Stainless Steel Woven Wire Cloth

Made to extremely tight tolerances for critical applications, use these screens for consistent particle retention in vibratory shakers and sieves. Made of Type 304 stainless steel for good corrosion resistance. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES 48″ Wide Per Sq. Ft. 1-16	17-Up ♦
4× 4	0.047″	0.203″	64.0%	9656T11 $19.00	$36.10	$68.40	$145.35	$182.40	$228.00	9656T41 $19.00	$15.20
10× 10	0.025″	0.075″	57.6%	9656T13 17.90	34.01	64.44	136.94	171.84	214.80	9656T43 17.90	14.32
20× 20	0.016″	0.034″	46.2%	9656T15 17.90	34.01	64.44	136.94	171.84	214.80	9656T45 17.90	14.32
40× 40	0.010″	0.015″	38.0%	9656T16 18.00	34.20	64.80	137.70	172.80	216.00	9656T46 18.00	14.40
50× 50	0.009″	0.011″	31.0%	9656T17 19.10	36.29	68.76	146.12	183.36	229.20	9656T47 19.10	15.28
100×100	0.0045″	0.0055″	31.0%	9656T18 17.70	33.63	63.72	135.41	169.92	212.40	9656T48 17.70	14.16
200×200	0.0021″	0.0029″	38.0%	9656T19 19.00	36.10	68.40	145.35	182.40	228.00	9656T49 19.00	15.20

Strainer-Grade Type 304 Stainless Steel Woven Wire Cloth

With narrow, lightweight wires and rectangular openings, this cloth is ideal for shaping into strainers. Made of Type 304 stainless steel for corrosion resistance. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 12″×60″, 24″×24″, or 36″×36″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Size	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	12″×60″ Each	24″×24″ Each	36″×36″ Each	CUT-TO-LENGTH PIECES 36″ Wide Per Sq. Ft. 1-16	17-Up ♦
30× 30	0.0130″	0.0203″×0.0203″	37.2%	9241T41 $9.13	$15.52	$28.03	$26.39	$50.49	9241T51 $9.13	$7.30
40× 40	0.0065″	0.0185″×0.0185″	54.8%	9241T42 5.54	9.42	17.01	16.01	30.64	9241T52 5.54	4.43
60× 40	0.0060″	0.0107″×0.0190″	49.4%	9241T43 5.80	9.86	17.81	16.76	32.07	9241T53 5.80	4.64
100× 90	0.0040″	0.0060″×0.0071″	38.5%	9241T44 5.45	9.27	16.73	15.75	30.14	9241T54 5.45	4.36
120×108	0.0035″	0.0048″×0.0058″	36.2%	9241T45 4.53	7.70	13.91	13.09	25.05	9241T55 4.53	3.62

Corrosion-Resistant Type 304 Stainless Steel Woven Wire Cloth Discs

Made of Type 304 stainless steel for good corrosion resistance, use these convenient discs to replace screens in extruder machines and for inline filtering in pipes.

Discs with diameters from 1/2″ to 3 9/16″ are sold in packs of 25 (unless noted), diameters 4″ to 4 9/16″ are sold in packs of 10, and diameters 5″ to 12″ are sold in packs of 2.

Small Diameter

Mesh Size	Wire Dia.	Opening Width	Open Area	1/2″ Disc Dia. Per Pkg.	3/4″ Disc Dia. Per Pkg.	1″ Disc Dia. Per Pkg.	1 1/4″ Disc Dia. Per Pkg.	1 1/2″ Disc Dia. Per Pkg.	2″ Disc Dia. Per Pkg.
20× 20	0.016″	0.034″	46.0%	9317T121 $7.01	9317T131 $7.01	9317T551 $5.30	9317T105 $5.61	9317T661 $5.89	9317T771 $6.17
30× 30	0.012″	0.021″	41.0%	9317T122 7.01	9317T132 7.01	9317T141 7.01	9317T143 7.71	9317T145 8.41	9317T147 9.12
40× 40	0.010″	0.015″	36.0%	9317T123 7.01	9317T133 7.01	9317T552 5.39	9317T106 5.61	9317T662 6.03	9317T772 6.31
60× 60	0.0075″	0.009″	31.0%	9317T124 7.01	9317T134 7.01	9317T553 5.47	9317T107 5.61	9317T663 6.17	9317T773 6.45
80× 80	0.0055″	0.007″	31.0%	9317T125 7.01	9317T135 7.01	9317T554 5.47	9317T108 5.61	9317T664 6.45	9317T774 6.59
100×100	0.0045″	0.0055″	30.0%	9317T126 7.01	9317T136 7.01	9317T555 5.61	9317T109 7.01	9317T665 7.01	9317T775 7.29
200×200	0.0021″	0.0029″	29.0%	9317T127 7.71	9317T137 7.71	9317T142 8.41	9317T144 8.41	9317T146 9.12	9317T148 11.22

Mesh Size	Wire Dia.	Opening Width	Open Area	2 1/4″ Disc Dia. Per Pkg.	2 9/16″ Disc Dia. Per Pkg.	3″ Disc Dia. Per Pkg.	3 9/16″ Disc Dia. Per Pkg.	4″ Disc Dia. Per Pkg.	4 9/16″ Disc Dia. Per Pkg.
20× 20	0.016″	0.034″	46.0%	9317T881 $6.45	9317T111 $7.57	9317T991 $9.12	9317T221 $13.53	9317T331 $6.02	9317T441 $7.56
30× 30	0.012″	0.021″	41.0%	9317T149 9.82	9317T152 10.52	9317T154 11.22	9317T156 11.92	9317T157 6.41	9317T158 7.69
40× 40	0.010″	0.015″	36.0%	9317T882 6.59	9317T112 7.57	9317T992 9.12	9317T222 13.53	9317T332 6.02	9317T442 7.56
60× 60	0.0075″	0.009″	31.0%	9317T883 6.73	9317T113 7.57	9317T993 9.68	9317T223 13.53	9317T333 6.02	9317T443 7.56
80× 80	0.0055″	0.007″	31.0%	9317T884 6.87	9317T114 7.57	9317T994 9.96	9317T224 13.53	9317T334 6.02	9317T444 7.56
100×100	0.0045″	0.0055″	30.0%	9317T885 7.57	9317T115 8.41	9317T995 10.66	9317T225 14.23	9317T335 6.35	9317T445 7.89
200×200	0.0021″	0.0029″	29.0%	9317T151 13.32	9317T153★ 6.45	9317T155★ 8.61	—	—	—

★ Sold in packs of 10.

Large Diameter

Mesh Size	Wire Dia.	Opening Width	Open Area	5″ Disc Dia. Per Pkg.	5 1/2″ Disc Dia. Per Pkg.	6″ Disc Dia. Per Pkg.	6 1/2″ Disc Dia. Per Pkg.	7″ Disc Dia. Per Pkg.
20× 20	0.016″	0.034″	46.2%	9317T231 $13.81	9317T241 $13.98	9317T251 $14.16	9317T261 $14.27	9317T271 $14.39
40× 40	0.010″	0.015″	36.0%	9317T232 13.81	9317T242 13.98	9317T252 14.16	9317T262 14.27	9317T272 14.39
60× 60	0.0075″	0.0092″	30.5%	9317T233 13.81	9317T243 13.98	9317T253 14.16	9317T263 14.27	9317T273 14.39
80× 80	0.0055″	0.007″	31.4%	9317T234 13.81	9317T244 13.98	9317T254 14.16	9317T264 14.27	9317T274 14.39
100×100	0.0045″	0.0055″	30.3%	9317T235 13.81	9317T245 13.98	9317T255 14.16	9317T265 14.27	9317T275 14.39

Mesh Size	Wire Dia.	Opening Width	Open Area	7 1/2″ Disc Dia. Per Pkg.	8″ Disc Dia. Per Pkg.	9″ Disc Dia. Per Pkg.	10″ Disc Dia. Per Pkg.	12″ Disc Dia. Per Pkg.
20× 20	0.016″	0.034″	46.2%	9317T281 $14.54	9317T291 $14.72	9317T301 $14.87	9317T311 $14.90	9317T321 $14.98
40× 40	0.010″	0.015″	36.0%	9317T282 14.54	9317T292 14.72	9317T302 14.87	9317T312 14.90	9317T322 14.98
60× 60	0.0075″	0.0092″	30.5%	9317T283 14.54	9317T293 14.72	9317T303 14.87	9317T313 14.90	9317T323 14.98
80× 80	0.0055″	0.007″	31.4%	9317T284 14.54	9317T294 14.72	9317T304 14.87	9317T314 14.90	9317T324 14.98
100×100	0.0045″	0.0055″	30.3%	9317T285 14.54	9317T295 14.72	9317T305 14.87	9317T315 14.90	9317T325 14.98

Type 304 Stainless Steel Woven Wire Cloth Extruder Discs

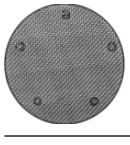

Replace the wire cloth screens in the vanes of your Gneuss and Kreyenborg extruding machines. These discs consist of multiple layers of corrosion-resistant Type 304 stainless steel wire mesh for micron-rated fine filtering (for more information about micron ratings, see page 390).

Micron Rating	Overall Dia.		Each
315	2 3/8″	9544T15	$5.88
250	1 15/16″	9544T12	3.53
250	2 3/8″	9544T14	3.97
100	2 3/8″	9544T13	4.86
75	1 15/16″	9544T11	4.41

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Ultrafine-Filtering Type 304 Stainless Steel Dutch-Weave Wire Cloth

Dutch weave produces a strong and firm mesh which can be used in high-pressure and high-flow applications requiring fine, accurate filtering or particle separation. This wire cloth is micron rated (for information about micron ratings, see page 390) and made of Type 304 stainless steel for good corrosion resistance. Cloth is available in two weave styles: ***Plain Dutch weave*** is similar to a basket weave. The weave wires wrap alternately over and under each base wire. ***Twill Dutch weave*** is a tighter weave than the Plain Dutch. The weave wires wrap alternately over two and under two base wires. This weave provides the finest particle retention available in a wire cloth.

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet.

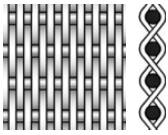

Plain Dutch Weave

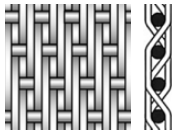

Twill Dutch Weave

Mesh Size	Wire Dia.	Micron Rating	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES 48″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up♦
Plain Dutch Weave											
12× 64	0.0230″×0.0165″	180	92715T71	$17.62	$33.48	$63.43	$134.79	$169.15	$211.44	92715T61	$17.62	$14.10
24× 110	0.0140″×0.0100″	115	92715T72	13.04	24.78	46.94	99.76	125.18	156.48	92715T62	13.04	10.43
30× 150	0.0090″×0.0070″	95	92715T73	9.87	18.75	35.53	75.51	94.75	118.44	92715T63	9.87	7.90
40× 200	0.0070″×0.0055″	75	92715T74	9.24	17.56	33.26	70.69	88.70	110.88	92715T64★	9.24	7.39
50× 250	0.0055″×0.0045″	60	92715T75	8.55	16.25	30.78	65.41	82.08	102.60	92715T65	8.55	6.84
Twill Dutch Weave											
80× 700	0.0040″×0.0030″	25	92715T81	36.50	69.35	131.40	279.23	350.40	438.00	92715T33	36.50	29.20
200× 600	0.0024″×0.0018″	26	92715T82	30.58	58.10	110.09	233.94	293.57	366.96	92715T66	30.58	24.46
165× 800	0.0028″×0.0020″	25	92715T83	31.63	60.10	113.87	241.97	303.65	379.56	92715T67	31.63	25.30
165×1,400	0.0028″×0.0016″	10	92715T84	48.30	91.77	173.88	369.50	463.68	579.60	92715T34	48.30	38.64
200×1,400	0.0028″×0.0016″	10	92715T85	25.67	48.77	92.41	196.38	246.43	308.04	92715T68	25.67	20.54
325×2,300	0.0014″×0.0010″	5	92715T87	163.42	310.50	588.31	1,250.16	1,568.83	1,961.04	92715T69	163.42	130.74

★ Width is 36″.

Easy-to-Form Type 304 Stainless Steel Welded Wire Cloth

This strong and rigid cloth is welded at the joints to keep the wires straight and the opening sizes uniform. Use to fabricate baskets, trays, guards, and laboratory equipment. Made of Type 304 stainless steel for good corrosion resistance.

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide, length needed, and number of pieces. Max. continuous length is 100 linear feet.

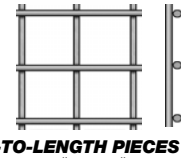

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up♦
1×1	0.080″	0.920″	84.6%	9322T61	$12.66	$24.05	$45.58	$96.85	$121.54	$151.92	9322T3	$12.66	$10.13
2×2	0.063″	0.437″	76.4%	9322T62	16.90	32.11	60.84	129.28	162.24	202.80	9322T1	16.90	13.52
2×2	0.047″	0.453″	82.1%	9322T63	10.16	19.30	36.58	77.72	97.54	121.92	9322T4	10.16	8.13
3×3	0.047″	0.286″	73.6%	9322T64	16.66	31.65	59.98	127.45	159.94	199.92	9322T2	16.66	13.33
4×4	0.032″	0.218″	76.0%	9322T65	9.18	17.44	33.05	70.23	88.13	110.16	9322T5	9.18	7.34
4×4	0.028″	0.222″	78.9%	9322T66	9.52	18.09	34.27	72.83	91.39	114.24	9322T6	9.52	7.62

Large-Opening Type 304 Stainless Steel Space Cloth

Space cloth has large square openings made from relatively large diameter wire for high rigidity. Ideal for screening large, abrasive material such as rocks and gravel. Made of Type 304 stainless steel for good corrosion resistance.

Space size refers to the actual open space between parallel wires.

To Order: For ***sheets***, please specify 12″×48″, 24″×48″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet.

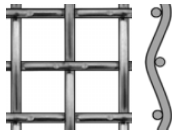

Space Size	Wire Dia.	Open Area	SHEETS 12″×48″ Each	24″×48″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES 48″ Wide	Per Sq. Ft. 1-39	Per Sq. Ft. 40-Up
2″	0.192″	83.2%	9253T11	$93.14	$176.97	$251.48	$316.68	9253T111	$23.29	$18.63
1½″	0.177″	80.0%	9253T12	95.60	181.64	258.12	325.04	9253T112	23.90	19.12
1″	0.148″	75.9%	9253T13	102.82	195.36	277.61	349.59	9253T113	25.70	20.56
1″	0.120″	79.7%	9253T14	71.19	135.26	180.11	216.42	9253T114	17.80	14.24
¾″	0.135″	71.8%	9253T15	102.48	194.71	276.70	348.43	9253T115	25.62	20.50
¾″	0.120″	74.3%	9253T16	86.08	163.55	232.42	292.67	9253T116	21.52	17.22
⅝″	0.120″	70.4%	9253T17	93.44	177.54	252.29	317.70	9253T117	23.36	18.69
½″	0.120″	65.0%	9253T18	113.57	215.78	306.64	386.14	9253T139	28.39	22.71
½″	0.105″	68.3%	9253T19	95.59	181.62	258.09	325.01	9253T119	23.90	19.12
½″	0.080″	74.3%	9253T21	84.39	160.34	227.85	286.93	9253T121	21.10	16.88
½″	0.063″	78.9%	9253T22	72.16	137.10	194.83	245.34	9253T134	18.04	14.43
⅜″	0.120″	57.4%	9253T24	132.78	252.28	358.51	451.45	9253T123	33.20	26.56
⅜″	0.080″	67.9%	9253T25	75.35	143.16	203.44	256.19	9253T135	18.84	15.07
⅜″	0.063″	73.3%	9253T26	56.02	106.44	151.25	190.47	9253T124	14.01	11.20
5/16″	0.080″	63.4%	9253T27	110.25	209.47	297.68	374.85	9253T126	27.56	22.05
¼″	0.105″	49.6%	9253T28	147.03	279.36	396.98	499.90	9253T136	36.76	29.41
¼″	0.080″	57.4%	9253T29	98.29	186.75	265.38	334.19	9253T128	24.57	19.66
¼″	0.063″	63.8%	9253T31	55.07	104.63	148.69	187.24	9253T137	13.77	11.01
3/16″	0.080″	49.1%	9253T32	125.99	239.38	340.17	428.37	9253T129	31.50	25.20
5/32″	0.063″	50.8%	9253T33	73.19	139.06	197.61	248.85	9253T131	18.30	14.64
⅛″	0.063″	44.2%	9253T35	106.45	202.25	287.42	361.93	9253T133	26.61	21.29

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Extra-Rigid Type 304 Stainless Steel Crimped Space Cloth

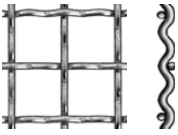

Crimps between intersecting wires keep them in place, making the cloth more rigid and the spacing more accurate than standard wire cloth. Good for machine guards, barriers, shields, and dividers. Made of Type 304 stainless steel for good corrosion resistance. Space size refers to the actual open space between parallel wires. **To Order:** Please specify sheet size: 36″×48″, 36″×60″, 48″×48″, or 48″×60″.

Space Size	Wire Dia.	Open Area		SHEETS 36″×48″ Each	36″×60″ Each	48″×48″ Each	48″×60″ Each
3″	0.250″	85.2%	9327T31	$198.67	$236.42	$238.40	$282.11
2″	0.250″	79.0%	9327T32	280.04	333.25	336.05	397.66
2″	0.120″	89.0%	9327T33	99.74	118.69	119.69	141.63
1½″	0.135″	84.2%	9327T34	174.54	207.70	209.45	247.85
1″	0.120″	79.7%	9327T35	180.11	220.20	216.42	262.07
¾″	0.105″	76.9%	9327T36	189.82	225.89	227.78	269.54

Slotted-Opening Type 304 Stainless Steel Woven Wire Cloth

Long, slotted openings make this wire cloth ideal for processing elongated particles. It offers good strength and durability for wet and dry screening of abrasive materials, such as sand, gravel, and limestone. Made of Type 304 stainless steel for good corrosion resistance. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet.

Slot Opening, Lg.×Wd.	Wire Dia.	Open Area		SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each		CUT-TO-LENGTH PIECES 48″ Wide Per Sq. Ft. 1-16	17-Up♦
1.875″×0.0331″	0.035″	48.4%	9366T12	$28.26	$53.69	$101.74	$216.19	$271.30	$339.12	9366T22	$28.26	$22.61
1.625″×0.0787″	0.054″	57.3%	9366T11	26.26	49.89	94.54	200.89	252.10	315.12	9366T21	26.26	21.01
1″ ×0.086″	0.054″	58.5%	9366T13	30.46	57.87	109.66	233.02	292.42	365.52	9366T23	30.46	24.37

Super-Corrosion-Resistant Type 316 Stainless Steel Woven Wire Cloth

Due to its molybdenum content, Type 316 stainless steel woven wire cloth has greater resistance to chemical corrosion compared to wire cloth made of Type 304 stainless steel. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide (unless noted), length needed, and number of pieces. Max. continuous length is 100 linear feet, unless noted.

Mesh Size	Wire Dia.	Opening Width	Open Area		SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each		CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide Per Sq. Ft. 1-16	17-Up♦
2× 2	0.080″	0.420″	70.6%	9319T111	$20.83	$39.58	$74.99	$159.35	$199.97	$249.96	9319T7	$20.83	$16.66
2× 2	0.063″	0.437″	76.4%	9319T112	17.48	33.21	62.93	133.72	167.81	209.76	9319T829■	17.48	13.98
2× 2	0.047″	0.453″	82.1%	9319T113	13.98	26.56	50.33	106.95	134.21	167.76	9319T831	13.98	11.18
3× 3	0.063″	0.270″	65.6%	9319T114	20.56	39.06	74.02	157.28	197.38	246.72	9319T72	20.56	16.45
3× 3	0.047″	0.286″	73.6%	9319T115	16.38	31.12	58.97	125.31	157.25	196.56	9319T832	16.38	13.10
4× 4	0.080″	0.170″	46.2%	9319T116	28.70	54.53	103.32	219.56	275.52	344.40	9319T163	28.70	22.96
4× 4	0.063″	0.187″	56.0%	9319T117	23.62	44.88	85.03	180.69	226.75	283.44	9319T73	23.62	18.90
4× 4	0.047″	0.203″	65.9%	9319T118	17.68	33.59	63.65	135.25	169.73	212.16	9319T74	17.68	14.14
5× 5	0.041″	0.159″	63.2%	9319T119	17.85	33.91	64.26	136.55	171.36	214.20	9319T164	17.85	14.28
6× 6	0.063″	0.104″	38.9%	9319T121	30.55	58.05	109.98	233.71	293.28	366.60	9319T833■	30.55	24.44
6× 6	0.047″	0.120″	51.8%	9319T122	25.48	48.41	91.73	194.92	244.61	305.76	9319T75	25.48	20.38
6× 6	0.035″	0.132″	62.7%	9319T123	18.30	34.77	65.88	140.00	175.68	219.60	9319T76	18.30	14.64
8× 8	0.063″	0.062″	24.6%	9319T124	70.15	133.28	252.54	536.65	673.44	841.80	9319T165★	70.15	56.12
8× 8	0.047″	0.078″	38.9%	9319T125	31.73	60.29	114.23	242.73	304.61	380.76	9319T166	31.73	25.38
8× 8	0.035″	0.090″	51.8%	9319T126	27.36	43.78	98.50	209.30	262.66	328.32	9319T77	27.36	21.89
8× 8	0.032″	0.093″	55.4%	9319T127	15.97	30.34	57.49	122.17	153.31	191.64	9319T78	15.97	12.78
8× 8	0.028″	0.097″	60.2%	9319T128	15.40	29.26	55.44	117.81	147.84	184.80	9319T79	15.40	12.32
9× 9	0.023″	0.088″	62.7%	9319T129	14.35	27.26	51.66	109.78	137.76	172.20	9319T834■	14.35	11.48
10×10	0.035″	0.065″	42.3%	9319T141	21.35	40.56	76.86	163.33	204.96	256.20	9319T8	21.35	17.08
10×10	0.025″	0.075″	56.3%	9319T142	10.74	20.41	38.66	82.16	103.10	128.88	9319T81	10.74	8.59
12×12	0.041″	0.042″	25.4%	9319T143	37.14	70.57	133.70	284.12	356.54	445.68	9319T168	37.14	29.71
12×12	0.032″	0.051″	37.5%	9319T144	23.53	44.71	84.71	180.00	225.89	282.36	9319T82	23.53	18.82
12×12	0.028″	0.055″	43.6%	9319T145	17.85	33.91	64.26	136.55	171.36	214.20	9319T835■	17.85	14.28
12×12	0.023″	0.060″	51.8%	9319T146	18.53	35.21	66.71	141.75	177.89	222.36	9319T169	18.53	14.82
14×14	0.020″	0.051″	51.0%	9319T147	12.72	24.17	45.79	97.31	122.11	152.64	9319T83	12.72	10.18
15×15	0.010″	0.057″	72.3%	9319T148	10.58	20.10	38.09	80.94	101.57	126.96	9319T836	10.58	8.46
16×16	0.028″	0.0345″	30.5%	9319T149	21.10	40.09	75.96	161.42	202.56	253.20	9319T837■	21.10	16.88
16×16	0.023″	0.0395″	39.9%	9319T151	19.23	36.54	69.23	147.11	184.61	230.76	9319T838	19.23	15.38
16×16	0.018″	0.045″	50.7%	9319T152	13.61	25.86	49.00	104.12	130.66	163.32	9319T84	13.61	10.89
18×18	0.017″	0.039″	48.3%	9319T153	15.29	29.05	55.04	116.97	146.78	183.48	9319T85	15.29	12.23
20×20	0.023″	0.027″	29.2%	9319T154	20.05	38.09	72.18	153.38	192.48	240.60	9319T839	20.05	16.04
20×20	0.018″	0.032″	41.0%	9319T155	14.49	27.53	52.16	110.85	139.10	173.88	9319T86	14.49	11.59
20×20	0.016″	0.034″	46.2%	9319T156	10.63	20.20	38.27	81.32	102.05	127.56	9319T87	10.63	8.50
24×24	0.014″	0.028″	44.2%	9319T157	8.07	15.33	29.05	61.74	77.47	96.84	9319T179	8.07	6.46
28×28	0.010″	0.0257″	51.8%	9319T158	13.81	26.24	49.72	105.65	132.58	165.72	9319T841	13.81	11.05
30×30	0.013″	0.020″	37.1%	9319T159	8.15	15.48	29.34	62.35	78.24	97.80	9319T88	8.15	6.52
30×30	0.012″	0.0213″	40.8%	9319T171	14.08	26.75	50.69	107.71	135.17	168.96	9319T842■	14.08	11.26
35×35	0.012″	0.017″	33.8%	9319T172	13.58	25.80	48.89	103.89	130.37	162.96	9319T89	13.58	10.86
40×40	0.010″	0.015″	36.0%	9319T173	9.62	18.28	34.63	73.59	92.35	115.44	9319T91	9.62	7.70
50×50	0.009″	0.011″	30.3%	9319T174	14.89	28.29	53.60	113.91	142.94	178.68	9319T92	14.89	11.91
60×60	0.011″	0.006″	11.7%	9319T175	18.05	34.30	64.98	138.08	173.28	216.60	9319T93	18.05	14.44
60×60	0.0075″	0.009″	30.5%	9319T176	8.38	15.92	30.17	64.11	80.45	100.56	9319T95	8.38	6.70
80×80	0.007″	0.006″	19.4%	9319T181	11.81	22.44	42.52	90.35	113.38	141.72	9319T97	11.81	9.45
80×80	0.0055″	0.007″	31.4%	9319T182	8.16	15.50	29.38	62.42	78.34	97.92	9319T96	8.16	6.53

■ Not offered in 36″ width. ★ Max. continuous length is 50 linear feet.

(Continued on following page)

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

Super-Corrosion-Resistant Type 316 Stainless Steel Woven Wire Cloth

(Continued from previous page)

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide (unless noted), length needed, and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	17-Up♦
100×100	0.0045″	0.006″	30.3%	9319T183 $8.76	$16.64	$31.54	$67.01	$84.10	$105.12	9319T98	$8.76	$7.01
120×120	0.0036″	0.0047″	30.7%	9319T184 7.86	14.93	28.30	60.13	75.46	94.32	9319T1	7.86	6.29
150×150	0.0026″	0.0041″	37.8%	9319T185 5.42	10.30	19.51	41.46	52.03	65.04	9319T2	5.42	4.34
200×200	0.0021″	0.0029″	33.6%	9319T191 11.00	20.90	39.60	84.15	105.60	132.00	9319T3	11.00	8.80
200×200	0.0016″	0.0034″	46.2%	9319T186 12.78	24.28	46.01	97.77	122.69	153.36	9319T843■	12.78	10.22
250×250	0.0016″	0.0024″	36.0%	9319T187 20.26	38.49	72.94	154.99	194.50	243.12	9319T4	20.26	16.21
325×325	0.0014″	0.0017″	30.5%	9319T188 10.46	19.87	37.66	80.02	100.42	125.52	9319T5	10.46	8.37
400×400	0.001″	0.0015″	36.0%	9319T189 43.62	82.88	157.03	333.69	418.75	523.44	9319T6	43.62	34.90

■ Not offered in 36″ width.

Particle-Sifting Type 316 Stainless Steel Woven Wire Cloth

Also known as milling grade, this wire cloth has a thinner wire diameter and larger open area than the super-corrosion-resistant Type 316 stainless steel wire cloth on pages 414 and 415. It also can process abrasive material and capture small particles. Ideal for sifting gritty, dry material. Made of Type 316 stainless steel for excellent corrosion resistance. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide (unless noted), length needed, and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	17-Up♦
4× 4	0.035″	0.215″	74.0%	9238T56 $17.89	$33.99	$64.40	$136.86	$171.74	$214.68	9238T62	$17.89	$14.31
6× 6	0.028″	0.139″	69.2%	9238T57 12.60	23.94	45.36	96.39	120.96	151.20	9238T82	12.60	10.08
8× 8	0.025″	0.100″	64.0%	9238T58 12.76	24.24	45.94	97.61	122.50	153.12	9238T84	12.76	10.21
10×10	0.025″	0.075″	56.3%	9238T65 12.24	23.26	44.06	93.64	117.50	146.88	9238T96	12.24	9.79
12×12	0.018″	0.065″	60.8%	9238T55 15.35	29.16	55.26	117.43	147.36	184.20	9238T69■	15.35	12.28
16×16	0.016″	0.047″	55.4%	9238T59 13.76	26.14	49.54	105.26	132.10	165.12	9238T85	13.76	11.01
20×20	0.014″	0.036″	51.8%	9238T61 13.80	26.22	49.68	105.57	132.48	165.60	9238T86	13.80	11.04
30×30	0.0095″	0.024″	51.1%	9238T63 12.80	24.32	46.08	97.92	122.88	153.60	9238T89	12.80	10.24
60×60	0.0075″	0.0092″	30.3%	9238T64 13.56	25.76	48.82	103.73	130.18	162.72	9238T91	13.56	10.85

■ Not offered in 36″ width.

High-Volume Particle-Sifting Type 316 Stainless Steel Woven Wire Cloth

Also known as bolting grade wire cloth, this features ultra-thin wire with a large open area for letting through coarse, dense material. Ideal for high-volume sifting of nonabrasive materials such as flour, grain, and pulverized metal. Made of Type 316 stainless steel for excellent corrosion resistance.

To Order: For ***sheets***, please specify 12″×12″ or 12″×24″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide, length needed, and number of pieces. Maximum continuous length is 100 linear feet, unless noted.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	17-Up♦
7× 7	0.035″	0.1079″	57.0%	9230T21 $19.46	$36.97	9230T492★	$19.46	$15.57
11× 11	0.018″	0.0729″	64.3%	9230T47 8.35	15.86	9230T493	8.35	6.68
18× 18	0.009″	0.0466″	70.2%	9230T48 11.55	21.95	9230T91	11.55	9.24
20× 20	0.009″	0.041″	67.2%	9230T49 6.19	11.76	9230T92	6.19	4.95
22× 22	0.0075″	0.038″	69.7%	9230T51 4.48	8.51	9230T494	4.48	3.58
24× 24	0.0075″	0.034″	67.2%	9230T52 5.32	10.11	9230T93	5.32	4.26
26× 26	0.0075″	0.031″	65.0%	9230T53 5.71	10.85	9230T495	5.71	4.57
30× 30	0.0065″	0.0268″	64.8%	9230T54 5.20	9.88	9230T94	5.20	4.16
32× 32	0.0065″	0.0248″	62.7%	9230T55 5.28	10.03	9230T496	5.28	4.22
38× 38	0.0065″	0.0198″	56.7%	9230T56 5.65	10.73	9230T498	5.65	4.52
40× 40	0.0065″	0.0185″	54.8%	9230T57 9.64	18.32	9230T95	9.64	7.71
42× 42	0.0055″	0.0183″	59.1%	9230T58 3.84	7.30	9230T499	3.84	3.07
50× 50	0.0055″	0.0145″	52.6%	9230T59 5.21	9.90	9230T96	5.21	4.17
60× 60	0.0045″	0.0122″	53.3%	9230T62 4.55	8.64	9230T97	4.55	3.64
62× 62	0.0045″	0.0116″	51.7%	9230T63 4.57	8.68	9230T514	4.57	3.66
70× 70	0.0037″	0.0106″	54.9%	9230T65 4.10	7.79	9230T517	4.10	3.28
72× 72	0.0037″	0.0102″	53.8%	9230T66 4.25	8.07	9230T518	4.25	3.40
80× 80	0.0037″	0.0088″	49.6%	9230T67 4.79	9.10	9230T99	4.79	3.83
84× 84	0.0035″	0.0084″	49.8%	9230T68 4.25	8.07	9230T535	4.25	3.40
90× 90	0.0035″	0.0076″	46.8%	9230T69 5.58	10.60	9230T537	5.58	4.46
160×160	0.0024″	0.0039″	37.9%	9230T84 5.66	10.75	9230T538	5.66	4.53
180×180	0.0023″	0.0033″	34.3%	9230T85 11.40	21.66	9230T539	11.40	9.12

★ Max. continuous length is 50 linear feet.

Ultrafine-Filtering Type 316 Stainless Steel Dutch-Weave Wire Cloth

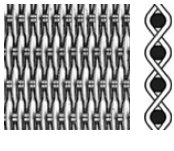

This micron-rated plain dutch weave wire cloth is ideal for fine, accurate filtering (for information about micron ratings, see page 390). The weave wires wrap alternately over and under each base wire, producing a strong and firm mesh for use in high-pressure and high-flow applications. Made of Type 316 stainless steel for excellent corrosion resistance.

To Order: Please specify sheet size: 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″.

Mesh Size	Wire Dia.	Micron Rating	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each
24×110	0.014″ ×0.010″	80	9419T11 $25.50	$48.45	$91.80	$195.08	$244.80	$306.00
50×250	0.0049″×0.0045″	40	9419T13 23.50	44.65	84.60	179.78	225.60	282.00

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Easy-to-Form Type 316 Stainless Steel Welded Wire Cloth

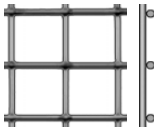

Welded at the joints to keep wires straight, uniform, and fray resistant. This creates a strong and rigid cloth to fabricate baskets, trays, guards, and laboratory equipment. Made of Type 316 stainless steel for excellent corrosion resistance.
To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide, length needed, and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area		SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each		CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide Per Sq. Ft. 1-16	17-Up♦
1×1	0.080″	0.920″	84.6%	9455T31	$26.94	$51.19	$96.98	$206.09	$242.46	$323.28	9455T51	$26.94	$21.55
2×2	0.063″	0.437″	76.4%	9455T32	31.63	60.10	113.87	241.97	303.65	379.56	9455T52	31.63	25.30

Corrosion-Resistant Type 430 Stainless Steel Woven Wire Cloth

Type 430 stainless steel offers good corrosion resistance. It is chromium-based (ferritic) and magnetic.
To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area		SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each		CUT-TO-LENGTH PIECES 48″ Wide Per Sq. Ft. 1-16	17-Up♦
2× 2	0.063″	0.437″	76.4%	9481T11	$15.50	$27.90	$50.22	$101.68	$121.98	$146.47	9481T31	$15.50	$12.40
4× 4	0.047″	0.203″	65.9%	9481T12	15.74	28.33	51.00	103.25	123.87	148.74	9481T32	15.74	12.59
6× 6	0.035″	0.132″	62.7%	9481T13	15.22	27.40	49.31	99.84	119.78	143.83	9481T33	15.22	12.18
10×10	0.025″	0.075″	56.3%	9481T14	15.00	27.00	48.60	98.40	118.05	141.75	9481T34	15.00	12.00
16×16	0.018″	0.0445″	50.7%	9481T15	14.71	26.48	47.66	96.50	115.77	139.01	9481T35	14.71	11.77
20×20	0.016″	0.034″	46.2%	9481T16	14.63	26.33	47.40	95.97	115.14	138.25	9481T36	14.63	11.70
30×30	0.012″	0.0213″	40.8%	9481T17	14.77	26.59	47.85	96.89	116.24	139.58	9481T37	14.77	11.82
40×40	0.010″	0.015″	36.0%	9481T18	14.56	26.21	47.17	95.51	114.59	137.59	9481T38	14.56	11.65

Acid- and Salt-Water-Resistant Monel Woven Wire Cloth

Our most corrosion resistant, this wire cloth is made of Grade 400 Monel for better resistance to acids, alkalies, and salt water than Type 316 stainless steel. **To Order:** Please specify sheet size: 6″×6″, 12″×12″, 12″×24″, 24″×24″, or 36″×36″.

Mesh Size	Wire Dia.	Opening Width	Open Area		SHEETS 6″×6″ Each	12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each
2× 2	0.063″	0.437″	76.4%	9225T351	$36.71	$110.13	$209.25	$397.57	$849.84
3× 3	0.063″	0.270″	65.6%	9225T352	35.18	105.54	200.53	381.00	814.42
8× 8	0.028″	0.097″	60.2%	9225T353	23.06	92.24	161.42	322.84	737.92
10× 10	0.025″	0.075″	56.3%	9225T354	26.50	79.50	151.05	287.00	613.47
20× 20	0.016″	0.034″	46.2%	9225T356	17.15	51.45	97.75	185.73	397.02
30× 30	0.011″	0.022″	44.8%	9225T357	15.46	46.38	88.12	167.43	357.90
50× 50	0.009″	0.011″	30.3%	9225T358	18.17	54.51	103.57	196.78	420.64
100×100	0.0045″	0.0055″	30.3%	9225T359	9.03	27.09	51.47	97.79	209.04
200×200	0.0021″	0.0029″	33.6%	9225T361	9.24	27.72	52.67	100.07	213.91

High-Temperature Nickel-Chromium Woven Wire Cloth

Also known as Nichrome, a blend of 60% nickel, 15% chromium, 24% iron, and 1% silicone makes this wire cloth suitable for high-temperature applications. It also offers resistance to oxidation and scale. **To Order:** Please specify sheet size: 6″×6″, 12″×12″, 12″×24″, 24″×24″, or 36″×36″.

Mesh Size	Wire Dia.	Opening Width	Open Area		SHEETS 6″×6″ Each	12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each
16×16	0.020″	0.043″	46.2%	9229T32	$37.30	$78.70	$134.28	$267.07	$504.67
20×20	0.016″	0.034″	46.2%	9229T33	33.39	71.79	124.54	217.03	474.14
40×40	0.010″	0.015″	36.0%	9229T34	38.17	69.85	123.29	231.69	451.55

Steel Woven Wire Cloth

This uncoated plain steel wire cloth is stronger than stainless steel, making it a good choice for applications in which corrosion is not a concern. Ideal for filtering hydraulic oil. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide (unless noted), length needed, and number of pieces. Max. continuous length is 100 linear feet (unless noted).

Distance Between Wires	Wire Dia.	Opening Width	Open Area		SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each		CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide Per Sq. Ft. 1-16	17-Up♦
1″	0.135″	0.865″	74.8%	9219T121	$8.03	$15.26	$28.91	$61.43	$77.09	$96.36	9219T11	$8.03	$6.42
1″	0.120″	0.880″	77.4%	9219T122	10.61	20.16	38.20	81.17	101.86	127.32	9219T12	10.61	8.49
1″	0.105″	0.895″	80.1%	9219T123	9.90	18.81	35.64	75.73	95.04	118.80	9219T13	9.90	7.92
3/4″	0.120″	0.630″	70.5%	9219T124	7.77	14.76	27.97	59.44	74.59	93.24	9219T15	7.77	6.22
5/8″	0.120″	0.505″	65.3%	9219T125	8.71	16.55	31.36	66.63	83.62	104.52	9219T17	8.71	6.97

Mesh Size	Wire Dia.	Opening Width	Open Area		SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each		CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide Per Sq. Ft. 1-16	17-Up♦
2×2	0.135″	0.365″	53.3%	9219T126	$11.09	$21.07	$39.92	$84.84	$106.46	$133.08	9219T19	$11.09	$8.87
2×2	0.120″	0.380″	57.8%	9219T127	9.01	17.12	32.44	68.93	86.50	108.12	9219T21★	9.01	7.21
2×2	0.105″	0.395″	62.4%	9219T128	7.89	14.99	28.40	60.36	75.74	94.68	9219T22★	7.89	6.31
2×2	0.080″	0.420″	70.6%	9219T129	10.90	20.71	39.24	83.39	104.64	130.80	9219T23	10.90	8.72
2×2	0.063″	0.437″	76.4%	9219T141	6.93	13.17	24.95	53.01	66.53	83.16	9219T24	6.93	5.54

★ Max. continuous length is 50 linear feet.

(Continued on following page)

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Steel Woven Wire Cloth *(Continued from previous page)*

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide (unless noted), length needed, and number of pieces. Max. continuous length is 100 linear feet, unless noted.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up♦
3× 3	0.120″	0.213″	40.8%	9219T142	$14.83	$28.18	$53.39	$113.45	$142.37	$177.96	9219T27	$14.83	$11.86
3× 3	0.105″	0.228″	46.8%	9219T143	10.50	19.95	37.80	80.33	100.80	126.00	9219T28	10.50	8.40
3× 3	0.080″	0.253″	57.6%	9219T144	9.55	18.14	34.38	73.06	91.68	114.60	9219T29	9.55	7.64
3× 3	0.063″	0.270″	65.6%	9219T145	4.76	9.04	17.14	36.41	45.70	57.12	9219T31	4.76	3.81
3× 3	0.047″	0.286″	73.6%	9219T146	3.56	6.76	12.82	27.23	34.18	42.72	9219T32	3.56	2.85
4× 4	0.120″	0.130″	27.0%	9219T147	17.29	32.85	62.24	132.27	165.98	207.48	9219T93★	17.29	13.83
4× 4	0.080″	0.170″	46.2%	9219T148	9.36	17.78	33.70	71.60	89.86	112.32	9219T35★	9.36	7.49
4× 4	0.063″	0.187″	56.0%	9219T149	6.60	12.54	23.76	50.49	63.36	79.20	9219T36	6.60	5.28
4× 4	0.047″	0.203″	65.9%	9219T151	4.38	8.32	15.77	33.51	42.05	52.56	9219T37	4.38	3.50
4× 4	0.035″	0.215″	74.0%	9219T152	2.53	4.81	9.11	19.35	24.29	30.36	9219T38	2.53	2.02
5× 5	0.063″	0.137″	46.9%	9219T153	6.69	12.71	24.08	51.18	64.22	80.28	9219T41	6.69	5.35
6× 6	0.063″	0.104″	38.9%	9219T154	10.12	19.23	36.43	77.42	97.15	121.44	9219T43★	10.12	8.10
6× 6	0.047″	0.120″	51.8%	9219T155	6.21	11.80	22.36	47.51	59.62	74.52	9219T44	6.21	4.97
6× 6	0.035″	0.132″	62.7%	9219T156	3.76	7.14	13.54	28.76	36.10	45.12	9219T45	3.76	3.01
8× 8	0.063″	0.062″	24.6%	9219T157	12.10	22.99	43.56	92.56	116.16	145.20	9219T46★	12.10	9.68
8× 8	0.047″	0.078″	38.9%	9219T158	6.71	12.75	24.16	51.33	64.42	80.52	9219T48★	6.71	5.37
8× 8	0.035″	0.090″	51.8%	9219T159	5.72	10.87	20.59	43.76	54.91	68.64	9219T89★	5.72	4.58
8× 8	0.032″	0.093″	55.4%	9219T171	3.49	6.63	12.56	26.70	33.50	41.88	9219T51	3.49	2.79
8× 8	0.028″	0.097″	60.2%	9219T172	3.75	7.12	13.50	28.69	36.00	45.00	9219T52	3.75	3.00
8× 8	0.025″	0.100″	64.0%	9219T173	2.88	5.47	10.37	22.03	27.65	34.56	9219T33■	2.88	2.30
10×10	0.035″	0.065″	42.3%	9219T174	5.32	10.11	19.15	40.70	51.07	63.84	9219T54	5.32	4.26
10×10	0.032″	0.068″	46.2%	9219T175	4.24	8.06	15.26	32.44	40.70	50.88	9219T55	4.24	3.39
10×10	0.025″	0.075″	56.3%	9219T176	3.28	6.23	11.81	25.09	31.49	39.36	9219T57	3.28	2.62
12×12	0.035″	0.048″	33.2%	9219T177	6.79	12.90	24.44	51.94	65.18	81.48	9219T59	6.79	5.43
12×12	0.028″	0.055″	43.6%	9219T178	4.75	9.03	17.10	36.34	45.60	57.00	9219T75	4.75	3.80
12×12	0.023″	0.060″	51.8%	9219T179	3.56	6.76	12.82	27.23	34.18	42.72	9219T62	3.56	2.85
14×14	0.035″	0.036″	25.4%	9219T191	8.37	15.90	30.13	64.03	80.35	100.44	9219T64	8.37	6.70
14×14	0.028″	0.043″	36.2%	9219T192	5.24	9.96	18.86	40.09	50.30	62.88	9219T73■	5.24	4.19
14×14	0.020″	0.051″	51.0%	9219T193	3.18	6.04	11.45	24.33	30.53	38.16	9219T65	3.18	2.54
16×16	0.028″	0.035″	30.5%	9219T195	5.92	11.25	21.31	45.29	56.83	71.04	9219T66■	5.92	4.74
16×16	0.023″	0.040″	39.9%	9219T196	4.84	9.20	17.42	37.03	46.46	58.08	9219T67	4.84	3.87
16×16	0.018″	0.045″	50.7%	9219T197	3.18	6.04	11.45	24.33	30.53	38.16	9219T68	3.18	2.54
18×18	0.018″	0.038″	45.8%	9219T198	2.81	5.34	10.12	21.50	26.98	33.72	9219T69■	2.81	2.25
20×20	0.016″	0.034″	46.2%	9219T199	3.17	6.02	11.41	24.25	30.43	38.04	9219T71	3.17	2.54
24×24	0.014″	0.028″	44.2%	9219T201	3.26	6.19	11.74	24.94	31.30	39.12	9219T74	3.26	2.61
28×28	0.011″	0.025″	47.9%	9219T202	6.50	12.35	23.40	49.73	62.40	78.00	9219T968	6.50	5.20
30×30	0.016″	0.017″	26.9%	9219T203	4.75	9.03	17.10	36.34	45.60	57.00	9219T77■	4.75	3.80
30×30	0.012″	0.021″	40.8%	9219T204	3.18	6.04	11.45	24.33	30.53	38.16	9219T95	3.18	2.54
35×35	0.013″	0.016″	29.8%	9219T206	5.03	9.56	18.11	38.48	48.29	60.36	9219T969	5.03	4.02
40×40	0.010″	0.015″	36.0%	9219T207	3.18	6.04	11.45	24.33	30.53	38.16	9219T81	3.18	2.54
50×50	0.009″	0.011″	30.3%	9219T208	3.43	6.52	12.35	26.24	32.93	41.16	9219T83	3.43	2.74
60×60	0.0075″	0.009″	30.5%	9219T209	2.88	5.47	10.37	22.03	27.65	34.56	9219T84	2.88	2.30

★ Max. continuous length is 50 linear feet. ■ Not offered in 48″ width.

Steel Crimped Space Cloth

Crimps between intersecting wires keep them in place, making the cloth more rigid and the spacing more accurate than standard wire cloth. Use this plain steel wire cloth for applications in which corrosion is not a concern. Space size refers to the actual open space between parallel wires.

Extra Rigid— Crimped at and between wire intersections for added strength. Good for fabricating machine guards, barriers, shields, and dividers.

Super Rigid— Deep crimps around the intersecting wires hold wires securely in place for maximum accuracy, uniformity, and rigidity. Ideal for heavy duty screening.

To Order: Please specify sheet size: 36″×48″, 36″×60″, 48″×48″, or 48″×60″.

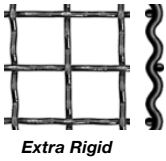

Extra Rigid

Super Rigid

Space Size	Wire Dia.	Open Area	SHEETS 36″×48″ Each	36″×60″ Each	48″×48″ Each	48″×60″ Each
Extra Rigid						
4″	0.250″	88.0%	9327T11	$68.46	$81.47	$82.15	$97.21
3″	0.250″	85.2%	9327T12	92.62	110.22	111.14	131.52
2″	0.250″	79.0%	9327T13	121.41	144.48	145.69	172.40
2″	0.192″	83.2%	9327T14	95.18	113.26	114.22	135.16
2″	0.135″	87.8%	9327T15	66.20	78.78	79.44	94.00
2″	0.120″	89.0%	9327T16	61.34	72.99	73.61	87.10
1½″	0.135″	84.2%	9327T17	84.92	101.05	101.90	120.59
1½″	0.120″	85.7%	9327T18	79.16	94.20	94.99	112.41
1″	0.135″	77.6%	9327T19	103.22	122.76	123.23	159.19
1″	0.120″	79.7%	9327T21	91.89	109.35	110.27	130.48
¾″	0.120″	74.3%	9327T22	107.22	127.59	128.66	152.25
Super Rigid						
4″	0.250″	88.0%	9530T11	85.42	101.65	102.50	121.30
3″	0.250″	85.2%	9530T12	96.84	115.24	116.21	137.51
3″	0.192″	88.3%	9530T13	80.72	96.06	96.86	114.62
2″	0.250″	79.0%	9530T14	119.36	142.04	143.23	169.49
2″	0.120″	89.0%	9530T15	74.32	88.44	89.18	105.53
1½″	0.135″	84.2%	9530T16	87.10	103.65	104.52	123.68
1″	0.120″	79.7%	9530T17	92.80	110.43	111.36	131.78
¾″	0.120″	74.3%	9530T18	106.58	126.83	127.90	151.34
½″	0.105″	68.3%	9530T19	120.02	142.82	144.02	170.43

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Large-Opening Steel Space Cloth

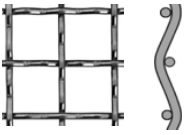

Space cloth has large square openings made from relatively thick diameter wire for a large percentage of open area and good rigidity. Ideal for screening large, abrasive material such as rocks and gravel.

Space size refers to the actual open space between parallel wires.

Plain steel is a low-carbon material, making it ideal for applications in which corrosion is not a concern.

Alloy steel is a high-carbon material, giving it higher tensile strength and longer life than the plain steel.

To Order: For ***sheets***, please specify 12″×48″, 24″×48″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet, unless noted.

Space Size	Wire Dia.	Open Area	SHEETS 12″×48″ Each	24″×48″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES 48″ Wide Per Sq. Ft. 1-39	40-Up
Plain Steel								
1½″	0.177″	80.0%	9243T11	$46.11	$87.61	$124.50	$156.77	9243T117♣	$11.53	$9.22
1½″	0.120″	85.7%	9243T12	43.81	83.24	118.29	148.95	9243T116	10.95	8.76
1″	0.135″	77.6%	9243T13	46.50	88.35	125.55	158.10	9243T124	11.62	9.30
1″	0.120″	79.7%	9243T14	41.91	79.63	113.16	155.07	9243T125	10.48	8.38
¾″	0.135″	71.8%	9243T15	58.94	111.99	159.14	200.40	9243T133	14.73	11.79
¾″	0.120″	74.3%	9243T16	53.83	102.28	145.34	183.02	9243T134	13.46	10.77
¾″	0.105″	76.9%	9243T17	41.18	78.24	111.19	140.01	9243T135	10.29	8.24
½″	0.135″	62.0%	9243T18	65.96	125.32	178.09	224.26	9243T153	16.49	13.19
½″	0.120″	65.0%	9243T19	60.21	114.40	162.57	204.71	9243T156	15.05	12.04
½″	0.080″	74.3%	9243T21	50.85	96.61	137.30	172.89	9243T158	12.71	10.17
½″	0.063″	78.9%	9243T22	46.93	89.17	126.71	159.56	9243T159	11.73	9.39
⅜″	0.120″	57.4%	9243T23	68.70	130.53	185.49	233.58	9243T163	17.18	13.74
¼″	0.092″	53.4%	9243T24	78.37	148.90	211.60	266.46	9243T173	19.59	15.67
Alloy Steel								
2″	0.375″	70.9%	9247T51	92.41	175.58	249.51	314.19	9247T101♣	23.10	18.48
1¼″	0.250″	69.4%	9247T52	72.85	138.41	196.69	247.69	9247T102♣	18.21	14.57
1″	0.250″	64.0%	9247T54	75.34	143.15	203.42	256.16	9247T104♣	18.84	15.07
1″	0.192″	70.4%	9247T55	70.54	134.03	190.46	239.84	9247T105♣	17.64	14.11
¾″	0.135″	71.8%	9247T56	75.77	143.96	204.58	257.62	9247T107	18.94	15.15
⅝″	0.192″	58.5%	9247T57	83.82	159.26	226.31	284.99	9247T108♣	20.95	16.76
⅝″	0.120″	70.3%	9247T58	71.31	135.49	192.54	242.45	9247T109	17.83	14.26
½″	0.120″	65.0%	9247T61	66.53	126.41	179.63	226.20	9247T124	16.63	13.31
⅜″	0.192″	43.8%	9247T62	106.80	202.92	288.36	363.12	9247T141♣	26.70	21.36
⅜″	0.120″	57.4%	9247T63	76.29	144.95	205.98	259.39	9247T146	19.07	15.26
¼″	0.135″	42.2%	9247T64	103.72	197.07	280.04	352.65	9247T163	25.93	20.74
¼″	0.120″	45.6%	9247T65	100.91	191.73	272.46	343.09	9247T164	25.23	20.18
¼″	0.092″	53.4%	9247T66	78.36	148.88	211.57	266.42	9247T166	19.59	15.67
¼″	0.063″	63.8%	9247T67	64.25	122.07	173.48	218.45	9247T168	16.06	12.85
3/16″	0.135″	33.8%	9247T68	103.35	196.36	279.05	351.39	9247T172	25.84	20.67
3/16″	0.063″	56.0%	9247T69	73.43	139.52	198.26	249.66	9247T176	18.36	14.69
⅛″	0.092″	33.2%	9247T71	114.79	218.10	309.93	390.29	9247T193	28.70	22.96

♣ Max. continuous length is 12 linear feet.

Weather-Resistant Galvanized Steel Woven Wire Cloth

Galvanizing gives steel good corrosion resistance to exposure to weather. Cloth is galvanized after it is woven, except mesh sizes ¾″ and 12×12 through 24×24, which are galvanized before the cloth is woven.

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 36″×36″, 36″×48″, or 48″×48″. For ***cut-to-length pieces***, please specify 36″ or 48″ wide, length needed, and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	36″×36″ Each	36″×48″ Each	48″×48″ Each	CUT-TO-LENGTH PIECES Choose 36″ or 48″ Wide Per Sq. Ft. 1-16	17-Up♦
¾″▲	0.080″	0.670″	79.8%	9220T71	$9.52	$18.09	$34.27	$72.83	$91.39	$114.24	9220T15	$9.52	$7.62
2× 2	0.080″	0.420″	70.6%	9220T72	7.19	13.66	25.88	55.00	69.02	86.28	9220T22	7.19	5.75
2× 2	0.063″	0.437″	76.4%	9220T73	7.87	14.95	28.33	60.21	75.55	94.44	9220T23	7.87	6.30
3× 3	0.063″	0.270″	65.6%	9220T74	6.61	12.56	23.80	50.57	63.46	79.32	9220T28	6.61	5.29
4× 4	0.047″	0.203″	65.9%	9220T75	5.15	9.79	18.54	39.40	49.44	61.80	9220T36	5.15	4.12
4× 4	0.041″	0.209″	69.9%	9220T76	4.74	9.01	17.06	36.26	45.50	56.88	9220T37	4.74	3.79
4× 4	0.035″	0.215″	74.0%	9220T77	3.42	6.50	12.31	26.16	32.83	41.04	9220T38	3.42	2.74
5× 5	0.035″	0.165″	68.1%	9220T78	4.76	9.04	17.14	36.41	45.70	57.12	9220T63	4.76	3.81
6× 6	0.041″	0.126″	57.2%	9220T79	6.68	12.69	24.05	51.10	64.13	80.16	9220T42	6.68	5.34
6× 6	0.035″	0.132″	62.7%	9220T81	4.50	8.55	16.20	34.43	43.20	54.00	9220T43	4.50	3.60
6× 6	0.020″	0.147″	77.8%	9220T82	2.24	4.26	8.06	17.14	21.50	26.88	9220T67	2.24	1.79
8× 8	0.032″	0.093″	55.4%	9220T84	5.55	10.54	19.98	42.46	53.28	66.60	9220T46	5.55	4.44
8× 8	0.028″	0.097″	60.2%	9220T85	3.77	7.16	13.57	28.84	36.19	45.24	9220T47	3.77	3.02
8× 8	0.023″	0.102″	66.6%	9220T86	3.94	7.49	14.18	30.14	37.82	47.28	9220T48	3.94	3.15
10×10	0.020″	0.080″	64.0%	9220T87	2.70	5.13	9.72	20.66	25.92	32.40	9220T51	2.70	2.16
12×12	0.020″	0.063″	57.2%	9220T88	4.94	9.39	17.78	37.79	47.42	59.28	9220T83	4.94	3.95
14×14	0.018″	0.053″	55.1%	9220T89	3.04	5.78	10.94	23.26	29.18	36.48	9220T55	3.04	2.43
16×16	0.018″	0.045″	50.7%	9220T91	2.41	4.58	8.68	18.44	23.14	28.92	9220T57	2.41	1.93
24×24	0.014″	0.028″	44.2%	9220T92	3.44	6.54	12.38	26.32	33.02	41.28	9220T59	3.44	2.75

▲ Distance between wires.

Galvanized Steel Extra-Rigid Crimped Space Cloth

Galvanized with a coating of corrosion-resistant zinc and crimped at and between wire intersections for added strength. Good for fabricating machine guards, barriers, and dividers. Space size refers to the actual open space between parallel wires.

Space Size	Wire Dia.	Open Area	SHEETS 36″×48″ Each	36″×60″ Each	48″×48″ Each	48″×60″ Each
2″	0.120″	89.0%	9327T23	$87.90	$104.60	$105.48	$124.82
1½″	0.120″	85.7%	9327T24	97.25	115.73	116.70	138.09

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Easy-to-Form Galvanized Steel Welded Wire Cloth

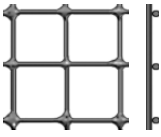

Also known as hardware cloth, this is welded at the joints to keep the wires straight and the opening sizes uniform even after forming to shape. Use to fabricate bird screens, guards, barriers, and other protective screens. All cloth is galvanized after welding with a weather-resistant coating of zinc, except for 8×8 mesh, which is woven then galvanized.

To Order: Please specify width from those available in the table, length needed, and number of pieces. Maximum continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	Available Widths		Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up ♦
1″▲	0.080″	0.920″	84.6%	36″, 48″	9245T73	$2.41	$1.93
1″▲	0.063″	0.937″	87.8%	36″, 60″	9245T74	1.01	.81
2×2	0.063″	0.437″	76.4%	36″, 48″, 60″	9245T75	2.05	1.64
2×2	0.041″	0.459″	84.3%	24″, 30″, 36″, 48″	9217T15	.60	.48
3×3	0.032″	0.304″	81.5%	36″, 48″	9217T16	1.23	.98
4×4	0.025″	0.225″	81.0%	24″, 36″, 48″	9217T17	.84	.67
8×8	0.017″	0.108″	74.6%	36″	9217T18	.78	.62

▲ Distance between wires.

Epoxy-Coated Steel Woven Wire Cloth

This wire cloth is epoxy coated and has small wire diameters. The black epoxy coating protects the steel from corrosion, adds rigidity, and extends its life. Use in filter cartridges. **To Order:** For ***sheets***, please specify 12″×12″ or 12″×24″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Maximum continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″	SHEETS 12″×24″	CUT-TO-LENGTH PIECES 36″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up ♦
8× 8	0.025″	0.100″	64.0%	9641T11 $6.31	$11.99	9641T21	$6.31	$5.05
12×12	0.009″	0.073″	73.2%	9641T12 5.90	11.21	9641T22	5.90	4.72
16×16	0.010″	0.0525″	70.6%	9641T13 6.00	11.40	9641T23	6.00	4.80
24×24	0.009″	0.0327″	61.6%	9641T14 6.06	11.51	9641T241	6.06	4.85

Lightweight Corrosion-Resistant Aluminum Woven Wire Cloth

Lightweight and corrosion resistant, aluminum offers a high strength-to-weight ratio.

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 24″×36″, or 36″×36″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Maximum continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″	SHEETS 12″×24″	SHEETS 24″×24″	SHEETS 24″×36″	SHEETS 36″×36″	CUT-TO-LENGTH PIECES 36″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up ♦
2× 2	0.063″	0.437″	76.4%	9227T52 $7.77	$14.76	$27.97	$39.63	$55.94	9227T14	$7.77	$6.22
4× 4	0.063″	0.187″	56.0%	9227T53 13.68	25.99	49.25	69.77	98.50	9227T15	13.68	10.94
4× 4	0.047″	0.203″	65.9%	9227T54 10.01	19.02	36.04	51.05	72.07	9227T12	10.01	8.01
6× 6	0.035″	0.132″	62.7%	9227T55 8.92	16.95	32.11	45.49	64.22	9227T17	8.92	7.14
8× 8	0.028″	0.097″	60.2%	9227T56 8.58	16.30	30.89	43.76	61.78	9227T18	8.58	6.86
10× 10	0.025″	0.075″	56.3%	9227T57 9.20	17.48	33.12	46.92	66.24	9227T19	9.20	7.36
12× 12	0.023″	0.060″	51.8%	9227T58 8.80	16.72	31.68	44.88	63.36	9227T22	8.80	7.04
14× 14	0.020″	0.051″	51.0%	9227T59 8.94	16.99	32.18	45.59	64.37	9227T24	8.94	7.15
16× 16	0.018″	0.045″	50.7%	9227T61 7.51	14.27	27.04	38.30	54.07	9227T26	7.51	6.01
20× 20	0.016″	0.034″	46.2%	9227T62 8.09	15.37	29.12	41.26	58.25	9227T25	8.09	6.47
30× 30	0.011″	0.022″	44.8%	9227T63 9.48	18.01	34.13	48.35	68.26	9227T27	9.48	7.58
40× 40	0.010″	0.015″	36.0%	9227T64 10.30	19.57	37.08	52.53	74.16	9227T28	10.30	8.24
50× 50	0.009″	0.011″	30.3%	9227T65 18.68	35.49	67.25	95.27	134.50	9227T33	18.68	14.94
120×120	0.004″	0.0043″	26.6%	9227T66 30.75	58.42	110.70	156.82	221.40	9227T35★	30.75	24.60
200×200	0.0021″	0.0029″	33.6%	9227T67 27.10	51.49	97.56	138.21	195.12	9227T37	27.10	21.68

★ Width is 40″.

Extra-Rigid Aluminum Crimped Space Cloth

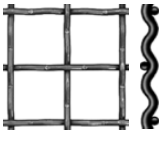

Crimps between the intersecting wires make this wire cloth rigid with accurate open space between wires. Good for machine guards, barriers, shields, and dividers. Made of lightweight and corrosion-resistant aluminum.

Space size refers to the actual open space between parallel wires.

To Order: Please specify sheet size: 36″×48″, 36″×60″, 48″×48″, or 48″×60″.

Space Size	Wire Dia.	Open Area		SHEETS 36″×48″	SHEETS 36″×60″	SHEETS 48″×48″	SHEETS 48″×60″
2″	0.250″	79.0%	9327T41	$137.53	$163.66	$165.04	$195.29
1½″	0.120″	85.7%	9327T42	94.98	113.03	113.98	134.87
1″	0.120″	79.7%	9327T43	107.03	127.37	128.44	151.98

Strainer-Grade Brass Woven Wire Cloth

With narrow, lightweight wires, this cloth has rectangular openings and is ideal for shaping into strainers. Made of brass for resistance to water-based solutions. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 12″×60″, 24″×24″, or 36″×36″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Maximum continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Size, Lg.×Wd.	Open Area	SHEETS 12″×12″	SHEETS 12″×24″	SHEETS 12″×60″	SHEETS 24″×24″	SHEETS 36″×36″	CUT-TO-LENGTH PIECES 36″ Wide	Per Sq. Ft. 1-16	Per Sq. Ft. 17-Up ♦
30×28	0.0080″	0.0253″×0.0277″	59.0%	9241T61 $11.46	$19.48	$35.18	$33.12	$63.37	9241T71	$11.46	$9.17
40×32	0.0075″	0.0175″×0.0238″	53.2%	9241T62 11.46	19.48	35.18	33.12	63.37	9241T72	11.46	9.17
50×36	0.0070″	0.0130″×0.0208″	48.6%	9241T63 11.46	19.48	35.18	33.12	63.37	9241T73	11.46	9.17
60×40	0.0060″	0.0107″×0.0190″	48.6%	9241T64 11.47	19.50	35.21	33.15	63.43	9241T74	11.47	9.18
80×55	0.0055″	0.0070″×0.0127″	39.1%	9241T65 11.47	19.50	35.21	33.15	63.43	9241T75	11.47	9.18
100×69	0.0040″	0.0060″×0.0105″	43.4%	9241T66 11.47	19.50	35.21	33.15	63.43	9241T76	11.47	9.18

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

For information about wire cloth, see page 409.

Corrosion-Resistant Brass Woven Wire Cloth

A high percentage of zinc makes brass stronger than copper. It also resists water and many saltwater solutions. *Note:* For window and insect screening, see page 2876. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 24″×36″, or 36″×36″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	24″×36″ Each	36″×36″ Each	CUT-TO-LENGTH PIECES 36″ Wide	Per Sq. Ft. 1-16	17-Up ♦
2× 2	0.063″	0.437″	76.4%	9223T69	$30.35	$57.66	$109.26	$154.78	$218.52	9223T57	$30.35	$24.28
3× 3	0.063″	0.270″	65.6%	9223T72	22.32	42.41	80.35	113.83	160.70	9223T12	22.32	17.86
4× 4	0.063″	0.187″	56.0%	9223T73	25.03	47.56	90.11	127.65	180.22	9223T14	25.03	20.02
4× 4	0.047″	0.203″	65.9%	9223T74	19.14	36.37	68.90	97.61	137.81	9223T13	19.14	15.31
5× 5	0.054″	0.146″	53.3%	9223T75	36.71	69.75	132.16	187.22	264.31	9223T36	36.71	29.37
6× 6	0.035″	0.132″	62.7%	9223T76	16.52	31.39	59.47	84.25	118.94	9223T15	16.52	13.22
8× 8	0.028″	0.097″	60.2%	9223T77	12.87	24.45	46.33	65.64	92.66	9223T16	12.87	10.30
10× 10	0.025″	0.075″	56.3%	9223T78	17.02	32.34	61.27	86.80	122.54	9223T17	17.02	13.62
12× 12	0.023″	0.060″	51.8%	9223T79	17.40	33.06	62.64	88.74	125.28	9223T18	17.40	13.92
14× 14	0.020″	0.051″	51.0%	9223T81	16.81	31.94	60.52	85.73	121.03	9223T19	16.81	13.45
16× 16	0.018″	0.045″	50.7%	9223T82	16.83	31.98	60.59	85.83	121.18	9223T21	16.83	13.46
18× 18	0.017″	0.039″	48.3%	9223T83	12.55	23.84	45.18	64.00	90.36	9223T22	12.55	10.04
20× 20	0.016″	0.034″	46.2%	9223T84	14.90	28.31	53.64	75.99	107.28	9223T23	14.90	11.92
24× 24	0.014″	0.028″	44.2%	9223T85	15.73	29.89	56.63	80.22	113.26	9223T24	15.73	12.58
30× 30	0.012″	0.021″	40.8%	9223T86	12.44	23.64	44.78	63.44	89.57	9223T25	12.44	9.95
40× 40	0.010″	0.015″	36.0%	9223T87	12.05	22.89	43.38	61.45	86.76	9223T26	12.05	9.64
50× 50	0.009″	0.011″	30.3%	9223T88	20.33	38.63	73.19	103.68	146.38	9223T27	20.33	16.26
60× 60	0.0075″	0.009″	30.5%	9223T89	9.81	18.64	35.32	50.03	70.63	9223T28	9.81	7.85
80× 80	0.0055″	0.007″	31.4%	9223T91	7.78	14.78	28.01	39.68	56.02	9223T29	7.78	6.22
100×100	0.0045″	0.006″	30.3%	9223T92	7.48	14.21	26.93	38.15	53.86	9223T31	7.48	5.98

Corrosion-Resistant Bronze Woven Wire Cloth

Bronze is well suited for exposure to most environments. Its high copper content makes it more corrosion resistant than brass. It is also harder and stronger than copper. *Note:* For window and insect screening, see page 2876.

To Order: For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 24″×36″, or 36″×36″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet, unless noted.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	24″×36″ Each	36″×36″ Each	CUT-TO-LENGTH PIECES 36″ Wide	Per Sq. Ft. 1-16	17-Up ♦
2× 2	0.063″	0.437″	76.4%	9228T41	$32.44	$61.64	$116.78	$165.44	$233.57	9228T51	$32.44	$25.95
4× 4	0.047″	0.203″	65.9%	9228T42	37.31	70.89	134.32	190.28	268.63	9228T52	37.31	29.85
8× 8	0.028″	0.097″	60.2%	9228T43	19.10	36.29	68.76	97.41	137.52	9228T53	19.10	15.28
10× 10	0.025″	0.075″	56.3%	9228T44	17.04	32.38	61.34	86.90	122.69	9228T64	17.04	13.63
12× 12	0.023″	0.060″	51.8%	9228T45	21.44	40.74	77.18	109.34	154.37	9228T17	21.44	17.15
14× 14	0.020″	0.051″	51.0%	9228T46	22.46	42.67	80.86	114.55	161.71	9228T19	22.46	17.97
16× 16	0.018″	0.045″	50.7%	9228T47	14.74	28.01	53.06	75.17	106.13	9228T22	14.74	11.79
20× 20	0.016″	0.034″	46.2%	9228T48	17.08	32.45	61.49	87.11	122.98	9228T55★	17.08	13.66
30× 30	0.012″	0.021″	40.8%	9228T49	17.91	34.03	64.48	91.34	128.95	9228T56★	17.91	14.33
40× 40	0.010″	0.015″	36.0%	9228T61	16.36	31.08	58.90	83.44	117.79	9228T57	16.36	13.09
50× 50	0.009″	0.011″	30.3%	9228T62	16.25	30.88	58.50	82.88	117.00	9228T58	16.25	13.00
100×100	0.0045″	0.006″	30.3%	9228T63●	19.70	37.43	70.92	100.47	141.84	9228T37●	19.70	15.76
120×120	0.0036″	0.0046″	30.5%	9228T65●	9.24	17.56	33.26	47.12	66.53	9228T36●	9.24	7.39
150×150	0.0026″	0.0041″	37.8%	9228T66●	17.87	33.95	64.33	91.14	128.66	9228T38●	17.87	14.30
200×200	0.0021″	0.0029″	33.6%	9228T67●	27.59	52.42	99.32	140.71	198.65	9228T39●	27.59	22.07

★ Max. continuous length is 50 linear feet. ● Material is phosphor bronze.

Electrically Conductive Copper Woven Wire Cloth

Copper is an excellent conductor of heat and electricity. It's nonmagnetic, nonsparking, and rust resistant. *Note:* For window and insect screening, see page 2876. **To Order:** For ***sheets***, please specify 12″×12″, 12″×24″, 24″×24″, 24″×36″, or 36″×36″. For ***cut-to-length pieces***, please specify length needed and number of pieces. Max. continuous length is 100 linear feet.

Mesh Size	Wire Dia.	Opening Width	Open Area	SHEETS 12″×12″ Each	12″×24″ Each	24″×24″ Each	24″×36″ Each	36″×36″ Each	CUT-TO-LENGTH PIECES 36″ Wide	Per Sq. Ft. 1-16	17-Up ♦
2× 2	0.063″	0.437″	76.4%	9224T45	$19.24	$36.56	$69.26	$98.12	$138.53	9224T15	$19.24	$15.39
4× 4	0.063″	0.187″	56.0%	9224T46	44.71	84.95	160.96	228.02	321.91	9224T71	44.71	35.77
4× 4	0.047″	0.203″	65.9%	9224T47	16.68	31.69	60.05	85.07	120.10	9224T17	16.68	13.34
6× 6	0.035″	0.132″	62.7%	9224T48	21.61	41.06	77.80	110.21	155.59	9224T922	21.61	17.29
8× 8	0.028″	0.097″	60.2%	9224T49	15.19	28.86	54.68	77.47	109.37	9224T19	15.19	12.15
10× 10	0.025″	0.075″	56.3%	9224T51	19.47	36.99	70.09	99.30	140.18	9224T73	19.47	15.58
12× 12	0.023″	0.060″	51.8%	9224T52	15.42	29.30	55.51	78.64	111.02	9224T21	15.42	12.34
14× 14	0.020″	0.051″	51.0%	9224T53	18.07	34.33	65.05	92.16	130.10	9224T75	18.07	14.46
16× 16	0.018″	0.045″	50.7%	9224T54	15.22	28.92	54.79	77.62	109.58	9224T23	15.22	12.18
16× 16	0.011″	0.052″	67.9%	9224T55	6.96	13.22	25.06	35.50	50.11	9224T22	6.96	5.57
18× 18	0.017″	0.039″	48.3%	9224T56	21.98	41.76	79.13	112.10	158.26	9224T25	21.98	17.58
20× 20	0.016″	0.034″	46.2%	9224T57	15.81	30.04	56.92	80.63	113.83	9224T77	15.81	12.65
22× 22	0.012″	0.034″	54.3%	9224T59	8.70	16.53	31.32	44.37	62.64	9224T924	8.70	6.96
24× 24	0.014″	0.028″	44.2%	9224T79	13.77	26.16	49.57	70.23	99.14	9224T27	13.77	11.02
30× 30	0.012″	0.021″	40.8%	9224T82	14.96	28.42	53.86	76.30	107.71	9224T29	14.96	11.97
40× 40	0.010″	0.015″	36.0%	9224T83	11.92	22.65	42.91	60.79	85.82	9224T33	11.92	9.54
50× 50	0.009″	0.011″	30.3%	9224T84	23.90	45.41	86.04	121.89	172.08	9224T35	23.90	19.12
60× 60	0.0075″	0.009″	30.5%	9224T85	12.00	22.80	43.20	61.20	86.40	9224T36	12.00	9.60
80× 80	0.0055″	0.007″	31.4%	9224T86	9.91	18.83	35.68	50.54	71.35	9224T38	9.91	7.93
100×100	0.0045″	0.006″	30.3%	9224T87	9.05	17.20	32.58	46.16	65.16	9224T39	9.05	7.24

♦ Prices are 10%-20% lower when you buy 60 square feet or more.

Precision Woven Mesh

Material is woven with monofilament fibers (single threads) with accurate diameters, resulting in a mesh with precise openings that resists clogging and is easy to clean.

Nylon mesh is more abrasion resistant than polyester. Maximum temperature is 239°F. Color is opaque to translucent white. Maximum length is 150 ft.

Polyester mesh has better strength in wet conditions than nylon. Maximum temperature is 260°F. Color is opaque to translucent white. Maximum length is 150 ft.

Polypropylene mesh has good chemical resistance and is excellent for working with materials that bind up most metal screens. Maximum temperature is 194°F. Color is opaque to translucent white. Maximum length is 180 ft. 9275T63 is FDA compliant.

PEEK mesh is FDA compliant and has the best chemical and temperature resistance of all the woven mesh we offer. Maximum temperature is 475°F. Color is opaque amber. Maximum length is 150 ft.

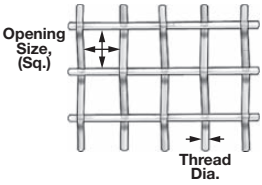

Openings per Sq. In.	Thread Dia.	Opening Size (Sq.)	Open Area	Micron Rating		Per Ft.
Nylon						
40″ Wide						
7.9×7.9	0.0335″	0.0945″	55%	2,400	9318T41	$20.88
9.1×9.1	0.0295″	0.0787″	53%	2,000	9318T26	20.88
10.7×10.7	0.0274″	0.0669″	50%	1,700	9318T12	20.88
12.7×12.7	0.0240″	0.0551″	49%	1,400	9318T27	17.42
58×58	0.0071″	0.0098″	34%	250	9318T16	13.06
61×61	0.0048″	0.0098″	51%	300	9318T45	13.08
104×104	0.0037″	0.0059″	38%	150	9318T18	10.58
127×127	0.0030″	0.0049″	39%	125	9318T23	15.67
168×168	0.0020″	0.0035″	44%	90	9318T46	15.76
193×193	0.0020″	0.0031″	37%	80	9318T22	14.21
307×307	0.0013″	0.0020″	37%	50	9318T48	15.30
335×335	0.0015″	0.0015″	24%	37	9318T24	31.45
371×371	0.0013″	0.0014″	28%	36	9318T25	30.58
376×376	0.0016″	0.0011″	17%	28	9318T51	45.27
42″ Wide						
20.3×20.3	0.0159″	0.0335″	46%	850	9318T13	13.85
43″ Wide						
17.0×17.0	0.0203″	0.0394″	44%	1,000	9318T28	15.58
45″ Wide						
24.6×24.6	0.0114″	0.0295″	52%	750	9318T42	13.03
30.2×30.2	0.0096″	0.0236″	51%	600	9318T43	10.24
31.2×31.2	0.0124″	0.0197″	38%	500	9318T44	13.06
50×50	0.0085″	0.0118″	34%	300	9318T15	19.88
145×145	0.0030″	0.0039″	32%	100	9318T21	17.42
198×198	0.0015″	0.0031″	49%	80	9318T47	19.48
59″ Wide						
36.3×36.3	0.0107″	0.0169″	38%	430	9318T74	15.24
60″ Wide						
80×80	0.0049″	0.0075″	37%	190	9318T31	15.62
Polyester						
40″ Wide						
7.9×7.9	0.0354″	0.0937″	53%	2,380	9218T78	22.97
109×109	0.0034″	0.0059″	41%	150	9218T88	10.97
145×145	0.0030″	0.0039″	32%	100	9218T38	14.58
231×231	0.0022″	0.0021″	24%	54	9218T82	26.48
320×320	0.0016″	0.0016″	25%	40	9218T83	27.52
351×351	0.0016″	0.0013″	21%	33	9218T74	49.82
371×371	0.0017″	0.0011″	16%	27	9218T91	44.33
43″ Wide						
10.9×10.9	0.0197″	0.0709″	61%	1,800	9218T61	16.52
14.7×14.7	0.0157″	0.0520″	59%	1,320	9218T62	15.70
45″ Wide						
45.7×45.7	0.0074″	0.0148″	46%	375	9218T65	11.52
50.8×50.8	0.0081″	0.0118″	36%	300	9218T77	10.97
66×66	0.0048″	0.0104″	47%	265	9218T67	11.70
53″ Wide						
33.8×33.8	0.0087″	0.0209″	50%	530	9218T68	16.18

Openings per Sq. In.	Thread Dia.	Opening Size (Sq.)	Open Area	Micron Rating		Per Ft.
Polyester (Cont.)						
56″ Wide						
20.3×20.3	0.0157″	0.0331″	46%	840	9218T13	$20.58
57″ Wide						
17×17	0.0197″	0.0394″	45%	1,000	9218T93	18.81
59″ Wide						
198×198	0.0021″	0.0029″	34%	74	9218T73	26.00
60″ Wide						
71.1×71.1	0.0058″	0.0083″	35%	210	9218T26	15.48
122×122	0.0035″	0.0047″	34%	120	9218T27	14.33
62″ Wide						
9.1×9.1	0.0315″	0.0787″	51%	2,000	9218T11	21.88
12.7×12.7	0.0236″	0.0555″	49%	1,410	9218T12	27.79
27.2×27.2	0.0104″	0.0264″	52%	670	9218T23	20.76
42.4×42.4	0.0098″	0.0138″	34%	350	9218T94	17.40
Polypropylene						
40″ Wide						
69×69	0.0065″	0.0083″	32%	210	9275T41	15.81
44″ Wide						
42.7×42.7	0.0091″	0.0159″	41%	405	9275T39	14.35
45″ Wide						
7.4×7.4	0.0394″	0.0945″	50%	2,400	9275T36	22.64
121×121	0.0042″	0.0041″	25%	105	9275T21	18.54
54″ Wide						
9.1×9.1	0.0315″	0.0787″	51%	2,000	9275T28	30.09
10.2×10.2	0.0315″	0.0661″	46%	1,680	9275T9	30.05
35×35	0.0134″	0.0165″	30%	420	9275T7	19.26
56×56	0.0085″	0.0098″	29%	250	9275T34	21.49
76×76	0.0065″	0.0070″	29%	177	9275T35	20.82
110×110	0.0042″	0.0049″	30%	125	9275T37	23.89
55″ Wide						
5.8×5.8	0.0394″	0.1323″	60%	3,360	9275T38	36.47
22.9×22.9	0.0173″	0.0280″	41%	710	9275T4	20.75
98×98	0.0043″	0.0059″	34%	150	9275T27	21.46
56″ Wide						
31×31	0.0134″	0.0197″	36%	500	9275T6	20.75
57″ Wide						
20.3×20.3	0.0173″	0.0331″	45%	840	9275T3	20.39
51×51	0.0085″	0.0117″	34%	297	9275T8	18.97
58″ Wide						
14×14	0.0236″	0.0469″	42%	1,190	9275T63	23.54
17.3×17.3	0.0197″	0.0394″	45%	1,000	9275T65	25.76
26.9×26.9	0.0142″	0.0232″	39%	590	9275T5	20.75
PEEK						
40″ Wide						
356×356	0.0015″	0.0014″	22%	35	9289T12	104.62
48″ Wide						
86×86	0.0028″	0.0086″	56%	220	9289T11	105.69

Polypropylene Mesh Assortments

These sheets are ideal for filtering, sizing, repairing, testing, and evaluating material. Choose from large-, medium-, and small-opening mesh assortments. The assortments contain one each of the mesh openings per square inch listed. Maximum temperature is 194°F. Color is opaque to translucent white. Sheet size is 12″×12″.

6-Piece Large-Opening Mesh Assortment— Includes the following mesh openings: 5.8×5.8, 9.1×9.1, 10.2×10.2, 14×14, 17.3×17.3, and 20.3×20.3.

93245T21 ..... **Each** $119.40

6-Piece Medium-Opening Mesh Assortment— Includes the following mesh openings: 22.9×22.9, 26.9×26.9, 31×31, 35×35, 41×41, and 51×51.

93245T22 ..... **Each** $113.76

6-Piece Small-Opening Mesh Assortment— Includes the following mesh openings: 56×56, 69×69, 76×76, 98×98, 110×110, and 121×121.

93245T23 ..... **Each** $113.76

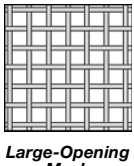
Large-Opening Mesh

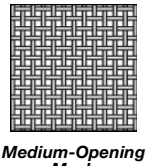
Medium-Opening Mesh

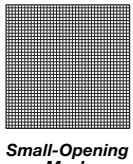
Small-Opening Mesh

Polyester Mesh Discs

Polyester mesh has good strength in wet conditions. Maximum temperature is 260°F. Color is opaque to translucent white.

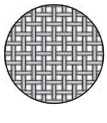

Openings per Sq. In.	Thread Dia.	Opening Size (Sq.)	Open Area	Micron Rating	*2¾″ Dia.*	Each	*3⅝″ Dia.*	Each	*4″ Dia.*	Each	*4⁹⁄₁₆″ Dia.*	Each
20.3×20.3	0.0157″	0.0331″	46%	840	93185T17	$1.13	93185T37	$1.74	93185T57	$1.38	93185T77	$1.77
45.7×45.7	0.0074″	0.0148″	46%	375	93185T15	1.58	93185T35	1.69	93185T55	1.60	93185T75	1.66
72.4×72.4	0.0048″	0.0091″	43%	230	93185T13	1.05	93185T33	1.69	93185T53	1.23	93185T73	1.44
86×86	0.0060″	0.0056″	24%	143	93185T11	1.33	93185T31	1.09	93185T51	1.88	93185T71	1.59

Plastic Mesh

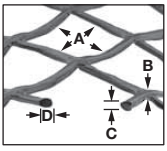

Unlike woven material, extruded plastic mesh will not unravel. Mesh is not micron rated.

Polyethylene mesh is flexible and suitable for indoor and outdoor use. Maximum temperature is 200° F. Color is black except 9314T21, which is white.

Polypropylene mesh is rugged, FDA compliant, and ideal for tough applications such as screening and material handling, as well as parts separation and protection. Maximum temperature is 200° F. Color is off-white.

PTFE mesh is suitable for high-temperature applications. It provides good chemical resistance and is FDA compliant for food contact. Maximum temperature is 500° F. Color is white.

To Order: Please specify length in 5-ft. increments up to the maximum length listed.

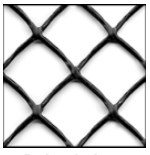

Polyethylene 1.23″×1.23″

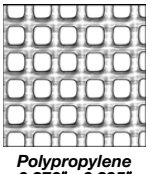

Polypropylene 0.270″×0.295″

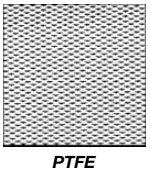

PTFE 0.025″×0.005″

Opening Size, Lg.×Wd. (A)	Joint Thick. (B)	Strand Ht. (C)×Wd. (D)	Wd.	Max. Length		Per Ft.
Polyethylene						
0.060″×0.060″	0.055″	0.045″×0.020″	48″	50 ft.	9314T21	$1.63
0.060″×0.060″	0.055″	0.030″×0.030″	20″	100 ft.	9314T23	1.07
0.100″×0.100″	0.085″	0.040″×0.040″	36″	50 ft.	9314T26	1.90
0.150″×0.150″	0.050″	0.025″×0.030″	36″	50 ft.	9314T29	1.20
0.200″×0.200″	0.090″	0.043″×0.050″	36″	50 ft.	9314T32	1.35
0.220″×0.220″	0.090″	0.052″×0.065″	48″	50 ft.	9314T34	2.27
0.260″×0.260″	0.075″	0.055″×0.060″	36″	50 ft.	9314T33	1.37
0.450″×0.450″	0.120″	0.100″×0.080″	48″	50 ft.	9314T35	2.33
0.680″×0.680″	0.140″	0.100″×0.090″	48″	50 ft.	9314T36	2.07
1.180″×1.180″	0.140″	0.105″×0.170″	48″	50 ft.	9314T41	2.48
1.230″×1.230″	0.140″	0.110″×0.150″	48″	50 ft.	9314T37	1.97
1.560″×1.560″	0.200″	0.150″×0.225″	48″	50 ft.	9314T43	2.23
Polypropylene						
0.030″×0.025″	0.014″	0.012″×0.014″	43.5″	300 ft.	9265T41	4.09
0.050″×0.035″	0.036″	0.031″×0.025″	47.5″	300 ft.	9265T32	7.94
0.080″×0.055″	0.020″	0.019″×0.014″	54.5″	300 ft.	9265T51	3.43
0.100″×0.080″	0.047″	0.045″×0.055″	43.5″	300 ft.	9265T47	7.72
0.160″×0.100″	0.035″	0.035″×0.038″	43.5″	300 ft.	9265T49	4.09
0.270″×0.295″	0.112″	0.105″×0.110″	48″	300 ft.	9265T61	12.47
0.270″×0.295″	0.112″	0.105″×0.110″	60″	300 ft.	9265T67	16.17
0.300″×0.270″	0.095″	0.095″×0.047″	48″	400 ft.	9265T63	6.43
PTFE						
0.025″×0.005″★	0.007″	0.004″×0.015″	12″	100 ft.	1100T41	13.14
0.045″×0.025″★	0.018″	0.014″×0.014″	18″	100 ft.	1100T43	20.77
0.080″×0.025″★	0.028″	0.020″×0.023″	18″	100 ft.	1100T45	24.55
0.150″×0.050″★	0.045″	0.040″×0.060″	18″	100 ft.	1100T47	31.35
0.320″×0.140″★	0.070″	0.057″×0.040″	18″	100 ft.	1100T59	40.50

★ Opening size is measured from corner to corner.

Polyester Filtering Fabric

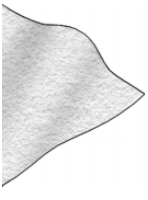

Ideal for filtering water, light oil, and various coolants (water soluble and synthetic) in metal polishing, grinding, finishing, and honing operations. Fabric can also be used on filter systems driven by gravity, pressure, or vacuum action, as well as for filtering air and petroleum. Color is white. Furnished in 50-yd. rolls.

Rayon/Polyester Blend (Unifil)—Use in gravity coolant applications. Maximum temperature is 250° F.

100% Polyester (Reemay)—FDA compliant with high strength when wet and dry. Maximum temperature is 300° F.

Thick., mils	Micron Rating	Density, oz./sq. yd.	Wd.		Each
Rayon/Polyester Blend (Unifil)					
6	69	0.7	20″	92255T21	$42.89
6	69	0.7	30″	92255T51	51.90
6	69	0.7	50″	92255T61	76.43
7	65	0.8	20″	92255T22	48.72
7	65	0.8	30″	92255T52	59.74
7	65	0.8	50″	92255T62	83.12
8	54	1	20″	92255T23	60.83
8	54	1	30″	92255T53	75.96
8	54	1	50″	92255T63	103.55
10	44	1.25	20″	92255T24	60.98
10	44	1.25	30″	92255T54	75.50
10	44	1.25	50″	92255T64	122.56
100% Polyester (Reemay)					
7	100	0.6	20″	92255T31	53.72
7	100	0.6	30″	92255T35	63.45
7	100	0.6	50″	92255T45	86.13
9	80	0.75	20″	92255T32	59.40
9	80	0.75	30″	92255T36	68.85
9	80	0.75	50″	92255T46	99.74
10	60	1	20″	92255T33	63.45
10	60	1	30″	92255T37	94.74
10	60	1	50″	92255T47	125.69
10	50	1.35	20″	92255T34	77.76
10	50	1.35	30″	92255T38	106.65
10	50	1.35	50″	92255T48	159.84

Thermoplastic Perforated Sheets

Staggered Hole Pattern

Flexible Polypropylene—More flexible than PVC, polypropylene resists organic solvents and degreasing agents, has high tensile strength, and resists impact and abrasion. Max. temp. is 200° F. Color is off-white.

High Strength PVC (Polyvinyl Chloride)—A Type I, Class I material that meets Fed. Spec. LP-535E and ASTM D1784. PVC has higher tensile strength and greater impact and abrasion resistance than polypropylene. Max. temp. is 140° F. Color is dark gray.

Thick.	Hole Dia.	Center-to-Center Spacing	Open Area	32″×48″ Sheets	Each	48″×96″ Sheets	Each
Flexible Polypropylene							
Straight Hole Pattern							
1/8″	3/16″	1/2″	10%	9293T53	$34.44	9293T33	$107.98
1/8″	1/4″	1/2″	20%	9293T55	38.44	9293T35	107.98
1/4″	3/16″	1/2″	10%	9293T54	63.78	9293T34	181.06
1/4″	1/4″	1/2″	20%	9293T56	63.78	9293T36	181.06
Staggered Hole Pattern							
1/16″	3/32″	3/16″	25%	9293T45	34.33	9293T25	96.28
1/16″	1/8″	3/16″	40%	9293T47	34.33	9293T27	96.28
1/8″	3/32″	3/16″	25%	9293T46	44.89	9293T26	129.04
1/8″	1/8″	3/16″	40%	9293T48	44.89	9293T28	129.04
1/8″	1/8″	1/4″	23%	9293T49	43.23	9293T29	121.49
1/8″	3/16″	5/16″	32%	9293T51	41.11	9293T31	115.53
3/16″	1/8″	1/4″	23%	9293T5	54.33	9293T3	159.89
3/16″	3/16″	5/16″	32%	9293T52	54.78	9293T32	154.89
High Strength PVC (Polyvinyl Chloride)							
Straight Hole Pattern							
1/8″	1/4″	1/2″	20%	92985T25	51.11	92985T46	144.68
1/4″	1/4″	1/2″	20%	92985T26	92.78	92985T47	264.36
Staggered Hole Pattern							
1/16″	1/8″	3/16″	40%	92985T17	44.34	92985T42	124.89
1/8″	3/32″	3/16″	25%	92985T16	58.44	92985T41	165.74
1/8″	1/8″	3/16″	40%	92985T18	58.44	92985T43	165.74
1/8″	3/16″	5/16″	32%	92985T21	53.89	92985T44	152.23
3/16″	3/16″	5/16″	32%	92985T22	67.56	92985T45	191.60
3/16″	3/8″	9/16″	40%	92985T27	65.11	92985T48	184.47
1/4″	1/2″	11/16″	48%	92985T28	92.78	92985T49	264.38
Clear PETG							
Staggered Hole Pattern							
1/8″	1/8″	3/16″	40%	_____	____	3318T21	232.69

About Perforated Metal

Perforated metal is manufactured with hole patterns which are uniform and accurate in size. The surface is smooth and easy to clean. Perforated metal is well suited for architectural work, light construction, sorting, separating, and fabricating custom parts. It's also ideal for machine guards, ventilating grills, and acoustical supports.

These hole size illustrations are actual size and can help you determine the correct opening for your requirements.

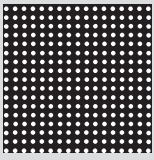

.024″ Hole Dia.
23% Open, Straight
9255T121

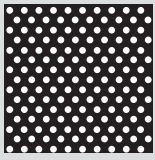

.033″ Hole Dia.
20% Open, Staggered
9255T151

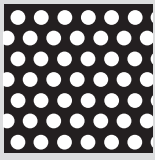

.078″ Hole Dia.
36% Open, Staggered
9255T521

.1875″ Hole Dia.
51% Open, Staggered
9255T781

.250″ Hole Dia.
40% Open, Staggered
9255T861

Steel Perforated Sheets

A good economical choice for general purpose applications. This low carbon steel is rigid, yet is easy to form and cut. Sheets are 36″×40″, except where noted.

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Each
Straight Hole Pattern						
.018″	26	0.024″	0.044″	23%	9255T121●	$62.66
.024″	24	0.033″	0.055″	28%	9255T111	87.91
.024″	24	0.045″	0.066″	37%	9255T191	72.89
Staggered Hole Pattern						
.024″	24	0.033″	0.077″	20%	9255T151	91.00
.024″	24	0.045″	0.086″	28%	9255T131	53.48
.030″	22	0.050″	3/32″	26%	9255T231	52.30
.030″	22	0.0625″	1/8″	23%	9255T411	39.40
.030″	22	0.079″	7/64″	45%	9255T471	45.10
.030″	22	0.094″	5/32″	33%	9255T611	37.49
.030″	22	0.125″	3/16″	40%	9255T661	34.33
.030″	22	0.156″	3/16″	63%	9255T741	39.92
.036″	20	0.0625″	1/8″	23%	9255T381	53.17
.036″	20	0.0625″	7/64″	30%	9255T321	49.91
.036″	20	0.0625″	3/32″	41%	9255T251	31.79
.036″	20	0.075″	0.1″	51%	9255T431	40.08
.036″	20	0.079″	7/64″	45%	9255T451	53.16
.036″	20	0.094″	5/32″	33%	9255T581	43.99
.036″	20	0.125″	3/16″	40%	9255T651	43.36
.036″	20	0.141″	3/16″	51%	9255T691	36.83
.036″	20	0.156″	3/16″	63%	9255T731	37.43
.036″	20	0.1875″	1/4″	51%	9255T791	39.87
.036″	20	0.250″	3/8″	40%	9255T871	38.50
.036″	20	0.250″	5/16″	58%	9255T841	41.86
.048″	18	0.0625″	1/8″	23%	9255T361	59.89
.048″	18	0.0625″	7/64″	30%	9255T291	48.51

● 30″×40″ sheet size.

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Each
Staggered Hole Pattern (Cont.)						
.048″	18	0.078″	1/8″	36%	9255T521	$55.31
.048″	18	0.094″	5/32″	33%	9255T561	52.24
.048″	18	0.125″	3/16″	40%	9255T641	44.37
.048″	18	0.141″	3/16″	51%	9255T681	32.31
.048″	18	0.156″	7/32″	46%	9255T761	50.71
.048″	18	0.1875″	1/4″	51%	9255T781	42.60
.048″	18	0.250″	5/16″	58%	9255T831	41.88
.060″	16	0.0625″	1/8″	23%	9255T341	67.16
.060″	16	0.0625″	7/64″	30%	9255T271	60.54
.060″	16	0.078″	1/8″	36%	9255T491	59.88
.060″	16	0.094″	5/32″	33%	9255T541	59.78
.060″	16	0.125″	3/16″	40%	9255T631	57.34
.060″	16	0.141″	3/16″	51%	9255T671	50.25
.060″	16	0.156″	7/32″	46%	9255T751	56.09
.060″	16	0.156″	3/16″	63%	9255T721	58.88
.060″	16	0.1875″	5/16″	33%	9255T811	55.03
.060″	16	0.1875″	1/4″	51%	9255T771	50.25
.060″	16	0.250″	3/8″	40%	9255T861	50.47
.060″	16	0.250″	5/16″	58%	9255T821	55.31
.060″	16	0.3125″	7/16″	47%	9255T881	47.74
.060″	16	0.375″	9/16″	40%	9255T911	52.18
.060″	16	0.500″	11/16″	48%	9255T941	51.16
.060″	16	0.750″	1″	51%	9255T971	50.25
.075″	14	0.250″	3/8″	40%	9255T851	60.00
.075″	14	0.375″	9/16″	40%	9255T891	62.70
.075″	14	0.500″	11/16″	48%	9255T931	58.41
.250″	—	0.250″	3/8″	40%	9255T211	147.37

Type 304 Stainless Steel Perforated Sheets

Type 304 stainless steel has good corrosion and abrasion resistance. All sheets have a staggered hole pattern. Sheets are 36″×40″.

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Each
.024″	24	0.0625″	7/64″	30%	9358T121	$87.50
.030″	22	0.0625″	1/8″	23%	9358T131	117.00
.030″	22	0.0625″	3/32″	41%	9358T281	116.71
.030″	22	0.125″	3/16″	40%	9358T241	114.29
.036″	20	0.156″	3/16″	63%	9358T291	127.14
.036″	20	0.1875″	1/4″	51%	9358T151	125.71
.036″	20	0.250″	3/8″	40%	9358T271	125.71
.036″	20	0.250″	5/16″	58%	9358T161	125.71
.048″	18	0.094″	5/32″	33%	9358T311	162.86
.048″	18	0.125″	3/16″	40%	9358T321	161.43

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Each
.048″	18	0.1875″	1/4″	51%	9358T331	$161.43
.048″	18	0.250″	3/8″	40%	9358T351	177.14
.048″	18	0.250″	5/16″	58%	9358T341	160.00
.060″	16	0.125″	3/16″	40%	9358T141	175.82
.060″	16	0.1875″	1/4″	51%	9358T251	211.43
.060″	16	0.250″	3/8″	40%	9358T171	193.00
.060″	16	0.250″	5/16″	58%	9358T261	188.57
.075″	14	0.125″	3/16″	40%	9358T461	236.71
.075″	14	0.250″	3/8″	40%	9358T381	225.80
.120″	11	0.250″	3/8″	40%	9358T371	356.43

Alloy 3003-H14 Aluminum Perforated Sheets

Material is lightweight, has good corrosion resistance, excellent workability, and can be welded. Sheets have a staggered hole pattern. Sheet size is 36″×40″.

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Each
.032″	20	0.0625″	1/8″	23%	9232T111	$39.58
.032″	20	0.0625″	7/64″	30%	9232T161	36.58
.032″	20	0.125″	3/16″	40%	9232T121	37.69
.032″	20	0.1875″	1/4″	51%	9232T131	38.05
.032″	20	0.250″	5/16″	58%	9232T221	41.84
.050″	16	0.0625″	1/8″	23%	9232T141	53.46
.050″	16	0.0625″	7/64″	30%	9232T151	56.50

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Each
.050″	16	0.125″	3/16″	40%	9232T181	$50.25
.050″	16	0.1875″	1/4″	51%	9232T211	43.83
.050″	16	0.250″	3/8″	40%	9232T241	48.97
.063″	14	0.125″	3/16″	40%	9232T171	66.61
.063″	14	0.1875″	1/4″	51%	9232T191	60.22
.063″	14	0.250″	3/8″	40%	9232T231	62.36

Alloy 260 Brass and Type 304 Stainless Steel Narrow-Width Perforated Rolls

Roll width is 24″. Maximum continuous length is 50 linear feet.
Alloy 260 brass is a soft material with good corrosion resistance.
Type 304 stainless steel is abrasion resistant and more corrosion resistant than brass. It stands up to outdoor exposure and high temps.

Alloy 260 Brass

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Per Lin. Ft. 1-9	Per Lin. Ft. 10-Up
Straight Hole Pattern							
.016″	26	0.016″	0.026″	30%	9360T12	$45.89	$35.69
.016″	26	0.020″	0.03″	30%	9360T14	29.06	22.59
.016″	26	0.024″	0.044″	23%	9360T16	26.00	20.22
.016″	26	0.027″	0.05″	23%	9360T17	23.20	18.04
.016″	26	0.033″	0.055″	28%	9360T18	22.26	17.31
.016″	26	0.038″	0.05″	45%	9360T29	23.89	18.57
.016″	26	0.040″	0.066″	29%	9360T19	20.22	15.73
.016″	26	0.045″	0.066″	37%	9360T21	20.23	15.74
.016″	26	0.057″	0.086″	34%	9360T23	18.09	14.07
.016″	26	0.065″	0.1″	33%	9360T24	18.09	14.07
.016″	26	0.079″	0.11″	41%	9360T25	18.25	14.20
.016″	26	0.103″	0.132″	48%	9360T26	17.49	13.60
.016″	26	0.138″	0.1875″	43%	9360T27	14.89	11.58
Staggered Hole Pattern							
.016″	26	0.016″	0.035″	22%	9360T13	39.23	30.52
.016″	26	0.020″	0.04″	22%	9360T15	32.41	25.21

Type 304 Stainless Steel

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Per Lin. Ft. 1-9	Per Lin. Ft. 10-Up
Straight Hole Pattern							
.008″	35	0.020″	0.03″	30%	9329T1	$96.11	$78.64
.018″	26	0.033″	0.055″	28%	9329T7	43.33	35.45
Staggered Hole Pattern							
.008″	35	0.020″	0.04″	22%	9329T2	78.22	64.00

Type 316 Stainless Steel Micro-Perforated Sheets

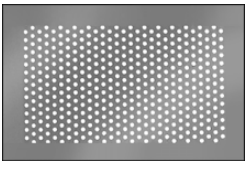

Produced from a photochemical machining process, these high-quality sheets have precise hole size, shape, and placement. Smooth edges minimize particle entrapment and bacterial contamination. Sheets have a staggered hole pattern and offer excellent chemical and corrosion resistance. The minimum perforated area is 18″×21″. Overall sheet size will vary.

Thick.	Ga.	Hole Dia.	Micron Size	Center-to-Center Spacing	Open Area		Each
0.005″	42	0.006″	152	0.0112″	27%	92315T101	$189.62
0.014″	29	0.015″	381	0.0310″	21%	92315T131	303.20
0.014″	29	0.018″	457	0.0310″	31%	92315T132	303.20

Hexagon-Hole Perforated Sheets

Material has a staggered hole pattern. Sheet size is 36″×40″.
Alloy 3003-H14 aluminum is lighter and more corrosion resistant than steel.

Thick.	Ga.	Hole Dia.	Center-to-Center Spacing	Open Area		Each
1008/1010 Cold-Rolled Steel						
.030″	22	1/4″	9/32″	79%	92725T22	$41.54
Alloy 3003-H14 Aluminum						
.032″	20	1/4″	9/32″	79%	92725T42	44.31

Activated-Carbon Filter Felt

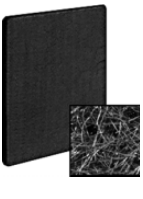

Easier to handle and less messy than activated-carbon granules, these sheets can be used to purify and remove odor from liquids, as well as for air purification and respiratory protection. They can be cut-to-size and inserted in fillable cartridges (see 9007T on page 388). Max. temperature is not rated. Color is black.

Density, g/m^2	Thick.	***10″×10″ Sheets*** Each
265	0.125″	8997T61 $7.35
485	0.250″	8997T62 7.68

Polyester Filter Felt

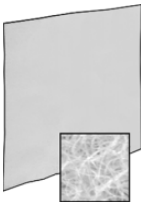

Ideal for very fine filtering of water, organic solvents, organic acids, petroleum oils, weak alkalies, and mineral acids. Sold in individually packaged sheets for convenience. Max. temperature is 300° F. Color is white.

Micron Rating	Thick.	***12″×12″ Sheets***	Each	***36″×36″ Sheets***	Each
5	0.08″	6376T11	$1.84	6376T31	$10.77
25	0.08″	6376T14	1.84	6376T34	10.86
50	0.08″	6376T15	1.84	6376T35	10.77
100	0.10″	6376T17	1.84	6376T37	10.30

Multipurpose Filter Paper

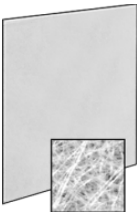

Cut these convenient sheets to any size and shape you need. Or, pleat them to make your own sediment-removal cartridge. Made of 100% synthetic fibers with no binders or adhesives. Package quantity is 6. Color is white. ***Polypropylene*** has a max. temperature of 145° F. ***Polyester*** has a max. temperature of 210° F.

Micron Rating	Thick.	***12″×12″ Sheets*** Per Pkg.	***12″×24″ Sheets*** Per Pkg.
Polypropylene			
5	0.020″	9337T11 $11.16	9337T21 $14.58
100	0.008″	9337T14 10.06	9337T24 12.46
Polyester			
20	0.020″	9337T12 10.25	9337T22 12.55
50	0.016″	9337T13 9.33	9337T23 12.40

Lab-Testing Ultra-Fine Filter Paper

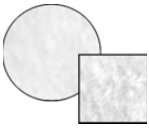

Ideal for laboratory filtration. All readily absorb water (hydrophilic) and can be sterilized with steam (autoclave). Color is white. ***Glass-fiber*** filter paper has high holding capacity and strength, even when wet. Use for first-stage filtration, analytical testing, and sample cleanup. Max. temperature is 1022° F. ***Cellulose-fiber*** filter paper is good for air monitoring and microbiological analysis. Max. temperature is 165° F.

Dia.	Micron Rating	Thick.	Pkg. Qty.		Per Pkg.
Glass Fiber					
1 7/8″	1.00	0.013″	100	6737T27	$55.40
5 5/8″	1.00	0.013″	25	6737T44	54.00
Cellulose Fiber					
1″	0.45	0.006″	100	6872T11	93.69
1″	0.80	0.006″	100	6872T21	63.20
1 7/8″	0.45	0.006″	100	6872T15	145.11
1 7/8″	0.80	0.006″	100	6872T25	150.66

Lab-Testing Cellulose Filter Paper

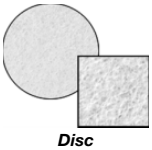

Disc

Pleated Disc

All are made of super-refined cellulose and can be used for a variety of filtering tasks. Max. temperature is not rated. Package quantity is 100. Color is white.
Pleated discs have a large surface area for fast filtration and high dirt retention.
Smooth-surface filters are made of cellulose and fine cotton fibers. They are ideal for separating and identifying substances in a mixture.

Size	Micron Rating	Thick.		Per Pkg.
Semismooth-Surface Sheet				
18 1/8″ Lg. × 22 7/16″ Wd.	20-25	0.008″	6205T32	$244.58
Smooth-Surface Discs				
1 7/8″ Dia.	8	0.007″	6205T27	13.45
2 3/16″ Dia.	11	0.007″	6205T29	15.39
2 3/16″ Dia.	20-25	0.008″	6205T52	26.26
4 15/16″ Dia.	<2	0.006″	6205T28	25.47
Smooth-Surface Pleated Discs				
4 15/16″ Dia.	2	0.006″	6205T42	49.71
Textured Pleated Discs				
12 5/8″ Dia.	30-35	0.01″	6205T12	108.30

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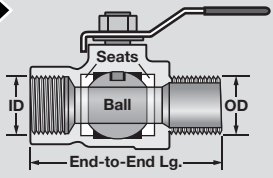

About Ball Valves

Reliable and simple to use, valves provide on/off control in your pipeline. Just a quarter turn of the handle opens or closes the valve.

Determining Pipe Size of Your Valve: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and find the corresponding pipe size listed in the chart.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Brass Ball Valves

NPT:
- Max. Pressure for Water, Oil, and Inert Gas: 1/4″-2″: 600 psi @ 100°F; 2 1/2″-4″: 450 psi @ 100°F
- Max. Pressure for Steam: 150 psi @ 366°F
- Temp. Range: –50° to +400°F
- Vacuum Rating: 29.9″ Hg

Solder End (Unthreaded) When Used with 95/5 Solder:
- Max. Pressure for Water, Oil, and Inert Gas: 1/2″-1″: 500 psi @ 100°F; 1 1/4″-2″: 400 psi @ 100°F; 2 1/2″-3″: 300 psi @ 100°F
- Max. Pressure for Steam: 15 psi @ 250°F
- Temp. Range: 0° to 250°F
- Vacuum Rating: 29.9″ Hg

The choice for simple on/off control in general applications. Body is brass, ball is chrome-plated brass, and seats are PTFE. Valves have unrestricted flow (full port). *Valves with up to 2″ pipe size* or *tube size* are UL and C-UL certified.

NPT—Female×female have a fluoroelastomer seal, except t-handle valves, which have a PTFE seal. All are CSA and CSA-US certified. *Valves with up to 2″ pipe size* are FM approved. ***Male×female*** have PTFE packing. *Valves with up to 2″ pipe size* are CSA and CSA-US certified and FM approved.

Solder End (Unthreaded)— Packing is PTFE. Valves meet ANSI B16.22.

Lockable valves can be locked in position using a padlock (not included) with shackle diameter of 9/32″. ***Spring-close lever valves*** close automatically when the lever is released to ensure your valve is open only when an operator is present. ***T-handle*** and ***lockable oval*** are snag resistant; handle does not turn when bumped.

NPT Female×Female

Pipe Size	End-to-End Lg.	Lever	Each	Lockable Lever	Each	Spring-Close Lever	Each	T-Handle	Each	Lockable Oval	Each
1/4″	1 3/4″	47865K21	$8.25	4629K11	$10.85	4088T8	$31.26	4082T12	$9.66	4901K41	$19.56
3/8″	1 3/4″	47865K22	8.25	4629K12	10.85	4088T9	31.26	4082T13	9.66	4901K42	19.56
1/2″	2 5/16″	47865K23	9.46	4629K13	11.44	4088T11	32.88	4082T14	10.94	4901K43	21.26
3/4″	2 1/2″	47865K24	13.34	4629K14	15.82	4088T12	40.47	4082T15	15.30	4901K44	25.38
1″	3 3/16″	47865K25	21.45	4629K15	24.74	4088T13	49.74	4082T16	24.01	4901K45	33.68
1 1/4″	3 11/16″	47865K26	35.36	4629K16	39.69	4088T14	74.99	4082T17	38.96	4901K46	47.36
1 1/2″	4″	47865K27	42.85	4629K17	48.30	4088T15	91.65	4082T18	47.55	4901K47	55.90
2″	4 3/4″	47865K28	63.65	4629K18	66.43	4088T16	125.34	4082T21	68.81	4901K48	81.37
2 1/2″	6 1/8″	47865K71	180.71	4629K71	194.18	—	—	—	—	4901K67	225.28
3″	7″	47865K72	241.50	4629K72	259.32	—	—	—	—	4901K49	282.69
4″	8 1/2″	47865K73	346.17	4629K73	365.85	—	—	—	—	4901K61	403.44

NPT Female×Male

Pipe Size	End-to-End Lg.	Lever	Each	Lockable Lever	Each	Short Lever	Each	T-Handle	Each	Lockable Oval	Each
1/4″	2 1/4″	47865K41	$9.30	4629K41	$12.24	47865K11	$11.37	4082T42	$10.46	4901K51	$20.48
3/8″	2 1/4″	47865K42	9.30	4629K42	12.24	47865K12	11.37	4082T43	10.46	4901K52	20.48
1/2″	2 3/4″	47865K43	10.75	4629K43	13.54	47865K13	12.89	4082T44	12.09	4901K53	22.52
3/4″	3″	47865K44	14.93	4629K44	18.54	47865K14	17.87	4082T45	16.80	4901K54	26.94
1″	3 5/8″	47865K45	24.09	4629K45	27.89	47865K15	27.45	4082T46	26.42	4901K55	37.05
1 1/4″	4 3/16″	47865K46	41.59	4629K46	48.10	47865K16	46.63	4082T47	45.04	4901K62	55.91
1 1/2″	4 7/16″	47865K47	46.08	4629K47	54.07	47865K17	51.99	4082T48	50.27	4901K63	64.69
2″	5 1/4″	47865K48	68.68	4629K48	78.74	47865K18	76.85	4082T51	75.24	4901K64	91.43
3″	8″	47865K49	295.81	4629K49	311.47	—	—	—	—	4901K65	314.70
4″	9 3/8″	47865K51	457.68	4629K51	479.72	—	—	—	—	4901K66	512.06

NPT Female×Female—
Extended Stem for Insulated Pipe

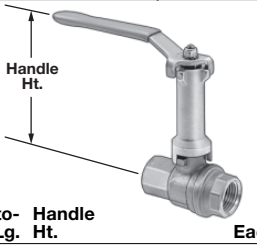

Pipe Size	End-to-End Lg.	Handle Ht.		Each
1/4″	1 3/4″	3 11/16″	4075T21	$22.53
1/2″	2 5/16″	3 15/16″	4075T23	23.78
3/4″	2 1/2″	4 3/16″	4075T24	31.70
1″	3 3/16″	4 5/16″	4075T25	40.79

Solder End (Unthreaded) Female×Female

Tube Size ♦	Actual Tube OD	End-to-End Lg.	Lever	Each	Lockable Lever	Each	T-Handle	Each
1/2″	5/8″	2 1/4″	47865K53	$8.99	4629K53	$12.17	4082T31	$10.11
3/4″	7/8″	2 7/8″	47865K54	13.98	4629K54	18.94	4082T32	15.73
1″	1 1/8″	3 3/8″	47865K55	20.81	4629K55	25.75	4082T33	23.38
1 1/4″	1 3/8″	3 13/16″	47865K56	36.67	4629K56	42.60	4082T34	40.23
1 1/2″	1 5/8″	4 1/2″	47865K57	47.91	4629K57	54.45	4082T35	51.82
2″	2 1/8″	5 7/16″	47865K58	65.71	4629K58	76.81	4082T36	73.33
2 1/2″	2 5/8″	6 5/8″	47865K81	179.37	4629K81	193.37	—	—
3″	3 1/8″	7 5/8″	47865K82	240.43	4629K82	258.92	—	—

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

NSF-Certified Brass Ball Valves for Drinking Water

NPT:
- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100° F
- Max. Pressure for Steam is 150 psi @ 366° F
- Temp. Range: –50° to +400° F
- Vacuum Rating: 29.9″ Hg

Solder End (Unthreaded) When Used with 95/5 Solder:
- Max. Pressure for Water, Oil, and Inert Gas:
  1/2″-1″: 500 psi @ 100° F; 1 1/2″-2″: 400 psi @ 100° F
- Max. Pressure for Steam is 15 psi @ 250° F
- Temp. Range: –50° to +250° F
- Vacuum Rating: 29.9″ Hg

These valves are NSF 61 certified for use with drinking (potable) water in all states as of September 1, 2010. Connections are female. Body is brass, ball is chrome/nickel-plated brass, and seats are PTFE. All have PTFE packing. Valves have unrestricted flow (full port).

Solder end (unthreaded) valves meet ANSI B16.22.

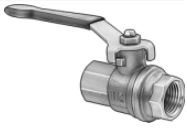

NPT

Pipe Size	End-to-End Lg.		Each
1/4″	1 3/4″	4286K13	$9.78
3/8″	1 3/4″	4286K15	10.06
1/2″	2 5/16″	4286K17	12.41
3/4″	2 1/2″	4286K19	17.73
1″	3 3/16″	4286K23	24.12
1 1/4″	3 11/16″	4286K25	37.89
1 1/2″	4″	4286K27	47.61
2″	4 3/4″	4286K29	72.84

Solder End (Unthreaded)

Tube Size ♦	Actual Tube OD	End-to-End Lg.		Each
1/2″	5/8″	2 1/4″	4286K77	$12.16
3/4″	7/8″	2 7/8″	4286K79	16.25
1″	1 1/8″	3 3/8″	4286K83	22.32
1 1/2″	1 5/8″	4 1/2″	4286K87	44.08
2″	2 1/8″	5 7/16″	4286K89	67.59

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Safety Air-Exhaust Brass Ball Valves

- Max. Pressure for Air:
  1/4″-1″: 200 psi @ 210° F
  1 1/4″-2″: 200 psi @ 72° F
- Max. Pressure for Steam: Not rated
- Temp. Range: 1/4″-1″: –40° to +350° F
  1 1/4″-2″: 15° to 210° F
- Vacuum Rating: Not rated

Meet OSHA requirements for safety and control in your compressed air system. When closed, these valves vent air pressure through the exhaust port on the bottom so you can disconnect air tools safely.

Connections are NPT female. Body is brass and ball is chrome-plated brass. Seats, seals, and packing are PTFE. The handle can be locked in the shut-off position using a padlock (not included) with shackle diameter of 9/32″. *Valves with 1/4″ through 1″ pipe sizes* have a 10-32 threaded exhaust port and slightly restricted flow (standard port). *Valves with 1 1/4″ through 2″ pipe sizes* have a 1/4″ NPT threaded exhaust port and unrestricted flow (full port).

Pipe Size	End-to-End Lg.		Each
1/4″	2″	4628K81	$12.89
3/8″	2″	4628K82	12.89
1/2″	2 7/16″	4628K83	13.11
3/4″	2 11/16″	4628K84	17.89
1″	3 1/16″	4628K85	$21.99
1 1/4″	3 5/8″	4628K56	55.85
1 1/2″	4″	4628K97	76.17
2″	4 3/4″	4628K58	128.50

Brass Ball Valves with Easy-Access Strainer

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100° F
- Max. Pressure for Steam: 150 psi @ 358° F
- Temp. Range: –40° to +365° F
- Vacuum Rating: Not rated

Remove debris or replace the screen without disconnecting your pipeline. Valves have an integral Y-strainer with a Type 304 stainless steel 50-mesh screen to keep liquids particle free. Connections are NPT female. Body is brass, ball is chrome-plated brass, seats are PTFE, and seals are fluoroelastomer. Valves have unrestricted flow (full port).

Pipe Size	End-to-End Lg.	Valves	Each	Replacement Screens	Each
1/2″	3 7/16″	4064T14	$16.79	4064T25	$1.08
3/4″	4″	4064T16	26.35	4064T26	.94

Hot-Water NSF-Certified Brass Ball Valves

NPT:
- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 212° F
- Max. Pressure for Steam: 150 psi @ 366° F
- Temp. Range: –40° to +366° F

Solder End (Unthreaded) When Used with 95/5 Solder:
- Max. Pressure for Water, Oil, and Inert Gas:
  1/2″-1″: 500 psi @ 100° F; 1 1/4″-2″: 400 psi @ 100° F
- Max. Pressure for Steam: 15 psi @ 250° F
- Temp. Range: 0° to 250° F

These valves are tested at 180° F for use with hot water. All are NSF 61 certified for use with drinking (potable) water in all states as of July 1, 2010. Connections are female. Body is brass and ball is tin-coated brass. Seats, seal, and packing are PTFE. Valves have unrestricted flow (full port).

NPT valves are UL listed for use with LP gas, CSA and CSA-US certified, and FM approved.

NPT

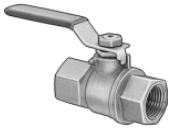

Pipe Size	End-to-End Lg.		Each
1/2″	2″	4190K41	$7.17
3/4″	2 5/16″	4190K42	10.20
1″	2 11/16″	4190K43	15.85
1 1/4″	3 7/32″	4190K44	29.03
1 1/2″	3 11/16″	4190K45	36.40
2″	4 9/32″	4190K46	50.80

Solder End (Unthreaded)

Tube Size ♦	Actual Tube OD	End-to-End Lg.		Each
1/2″	5/8″	2 1/2″	4190K81	$7.12
3/4″	7/8″	3 1/4″	4190K82	10.79
1″	1 1/8″	3 15/16″	4190K83	16.55
1 1/4″	1 3/8″	4 1/16″	4190K84	30.43
1 1/2″	1 5/8″	4 1/2″	4190K85	37.43
2″	2 1/8″	5 13/32″	4190K86	53.15

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Cleaned and Bagged High-Vacuum Brass Ball Valves

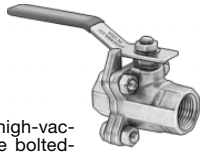

- Max. Pressure for Water, Oil, and Inert Gas:
  1/4″-1″: 600 psi @ 200° F;
  1 1/4″-2″: 400 psi @ 100° F
- Max. Pressure for Steam: 149 psi @ 365° F
- Temp. Range: –20° to +400° F
- Vacuum Rating: 29.9″ Hg (10^{-2} torr)

Ideal for high-purity applications, these high-vacuum valves come cleaned and bagged. The bolted-body design provides strength for superior leak resistance and a long service life. Connections are NPT female. Body is brass and ball is Type 316 stainless steel. Seats, seal, and packing are PTFE. Valves have slightly restricted flow (standard port). UL and C-UL listed.

Pipe Size	End-to-End Lg.		Each	Pipe Size	End-to-End Lg.		Each
1/4″	2 3/8″	4649K61	$84.76	1″	3 1/16″	4649K65	$120.45
3/8″	2 3/8″	4649K62	84.76	1 1/4″	3 7/16″	4649K66	153.00
1/2″	2 3/8″	4649K63	84.76	1 1/2″	3 3/4″	4649K67	193.37
3/4″	2 9/16″	4649K64	100.92	2″	4 1/16″	4649K68	257.83

LP and Natural Gas Brass Ball Valves

- Max. Pressure for LP and Natural Gas: 5 psi
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +125° F
- Vacuum Rating: Not rated

Perfect for your low-pressure gas applications, these valves are CSA and CSA-US certified for low-pressure liquefied petroleum (LP) and natural gas service and are UL listed. Body is brass, ball is chrome-plated brass, and seats and packing are PTFE. Valves have slightly restricted flow (standard port). For information about flared tube fittings, see page 180.

NPT Female × Female

Pipe Size	End-to-End Lg.		Each
1/2″	2 3/16″	48915K61	$4.78
3/4″	2 7/16″	48915K62	7.04
1″	2 7/8″	48915K63	15.28

NPT Female × 45° Male Flare

Pipe Size	End-to-End Lg.		Each
1/2″▲	2 7/16″	48915K73	$7.82
1/2″	2 1/2″	48915K74	8.04
3/4″▲	3″	48915K75	11.14

▲ Flare size is 1/8″ less than pipe size.

Brass Ball Valves

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

Elbow Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 250 psi @ 250° F
- Max. Pressure for Steam: 150 psi @ 350° F
- Temp. Range: –50° to +350° F
- Vacuum Rating: 29″ Hg

Make it easier to service your pipeline by adding on/off control at 90° bends. Connections are NPT. Body is brass and ball is chrome-plated brass. Seats, seal, and packing are PTFE. Valves have unrestricted flow (full port).

Male × Female

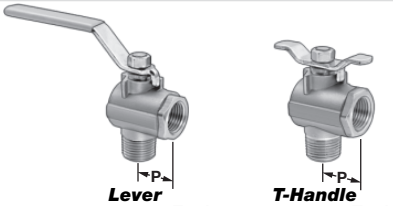

Pipe Size	Port-to-Port Lg. (P)	Lever	Each	T-Handle	Each
1/4″	1″	4847K11	$19.92	4847K14	$21.25
3/8″	1″	4847K12	20.35	4847K15	23.02
1/2″	1 1/8″	4847K13	20.40	4847K16	23.30

Male × Male

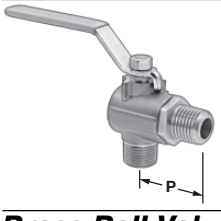

Pipe Size	Port-to-Port Lg. (P)	Lever	Each
1/4″	1 9/16″	4847K21	$19.51
3/8″	1 9/16″	4847K22	20.27
1/2″	1 7/8″	4847K23	22.74

Brass Ball Valves with Yor-Lok Fittings

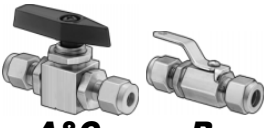

A&C **B**

- Max. Pressure for Water, Oil, and Inert Gas: See table
- Max. Pressure for Steam: Not rated
- Temp. Range:
  Styles A&B: –40° to +300° F
  Style C: –30° to +400° F
- Vacuum Rating: 29″ Hg

Get a leak-free compression seal between your valve and tubing. Connections are Yor-Lok double-ferrule compression tube fittings which are compatible with Swagelok®, Parker A-Lok, Gyrolok, Bilok, and Tylok fittings. For Yor-Lok fittings, see page 174. Valves have a brass body, PTFE seats, and slightly restricted flow (standard port), unless noted.

Styles A&C have threads and a hex nut below the handle for mounting through an instrument panel. *Style A* have a nickel-plated brass ball, a fluoroelastomer seal, and a Buna-N seal. *Style C* have a Type 316 stainless steel ball, a PTFE seal, and PTFE packing.

Style B has a nickel-plated brass ball and fluoroelastomer seal.

For Tube OD	Max. psi @ 70° F■	End-to-End Lg.	Panel Cutout, dia.		Each
High-Pressure Valves					
A 1/8″	1500	1 13/16″	5/8″	4114T41	$54.20
A 1/4″	1500	1 15/16″	5/8″	4114T43	57.40
A 3/8″	1000	2″	5/8″	4114T45	58.47
A 1/2″	1000	2 7/16″	5/8″	4114T47	94.87
B 3/8″	1000	2″	—	4112T37	26.76
Ultra-High-Pressure Valves					
C 1/8″	3000	3 1/8″	3/4″	4566K11	46.53
C 1/4″	3000	3 5/16″	3/4″	4566K12	62.03
C 3/8″	3000	3 7/16″	3/4″	4566K13▲	82.04
C 1/2″	3000	4 1/16″	13/16″	4566K14	129.31

■ For water, oil, and inert gas. ▲ Restricted flow (reduced port).

Brass Ball Valves with Compression Tube Fittings

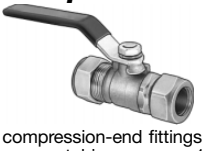

- Max. Pressure for Water, Oil, and Inert Gas: 150 psi @ 100° F
- Max. Pressure for Steam: Not rated
- Temp. Range: 40° to 180° F
- Vacuum Rating: Not rated

Connection to copper tubing is easy with the compression-end fittings on these valves. Suitable for use with Type L copper tubing on page 154. Body and ball are brass. Seats, seal, and packing are PTFE. All have slightly restricted flow (standard port). NSF 61 certified for use with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012.

Tube Size ♦	Actual Tube OD	End-to-End Lg.		Each
1/2″	5/8″	2 13/16″	4067T11	$8.87
3/4″	7/8″	3 5/16″	4067T12	13.30
1″	1 1/8″	3 1/2″	4067T13	18.13

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Brass Ball Valves with Push-to-Connect Fittings

- Max. Pressure for Water: 200 psi @ 180° F
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +180° F
- Vacuum Rating: Not rated

Forget your solder, clamp, and wrench—valves have push-to-connect fittings that make a tight seal around copper, CPVC, and PEX tubing. Body is brass, ball is chrome-plated brass, and seats and seal are PTFE. All have unrestricted flow (full port). This product is ANSI certified for use with drinking (potable) water in all states as of January 1, 2011.

Tube Size ♦	Actual Tube OD	End-to-End Lg.		Each
1/2″	5/8″	3 13/16″	2615K2	$30.68
3/4″	7/8″	4 9/16″	2615K4	39.30
1″	1 1/8″	5″	2615K8	56.89

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Single-Flanged Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100° F
- Max. Pressure for Steam: Not rated
- Temp. Range: 32° to 350° F
- Vacuum Rating: Not rated

Made to connect to industry-standard two-bolt flanged circulator pumps, these valves fit pumps from Bell and Gossett, Taco, Grundfos, and Armstrong. A single-piece valve body simplifies pump isolation and reduces the chance of leaks. Pipe connection is NPT female. Body is brass, ball is chrome-plated brass, and seats and seal are PTFE. Valves have unrestricted flow (full port). Mounting fasteners included.

Pipe Size	End-to-End Lg.	Mounting Hole Size	Mounting Hole Ctr.-to-Ctr.		Each
1/2″	2 1/4″	1/2″	3 3/16″	2693K21	$23.75
3/4″	2 3/8″	1/2″	3 3/16″	2693K22	24.93
1″	2 11/16″	1/2″	3 3/16″	2693K23	30.25
1 1/4″	2 7/8″	1/2″	3 3/16″	2693K24	36.25
1 1/2″	4″	1/2″	3 3/16″	2693K25	52.25
2″	4 7/16″	1/2″ × 5/8″ Slot	3 1/2″	2693K26	69.34

Brass Ball Valves with Gauge Port

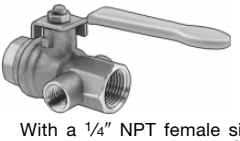

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100° F
- Max. Pressure for Steam: Not rated
- Temp. Range: –50° to +400° F
- Vacuum Rating: 29.9″ Hg

With a 1/4″ NPT female side port, these valves are ideal for attaching a pressure gauge. Side port also allows access to drain or divert fluids and comes with a plug. Connections are NPT female. Body is brass, ball is chrome-plated brass, seats are PTFE, and seal is fluoroelastomer. Valves have unrestricted flow (full port). UL and C-UL listed and CSA and CSA-US certified.

Pipe Size	End-to-End Lg.		Each
1/2″	2 9/16″	4085T21	$14.42
3/4″	2 3/4″	4085T22	19.71
1″	3 7/16″	4085T23	34.12
1 1/4″	3 7/8″	4085T24	55.59
1 1/2″	4 1/4″	4085T25	68.62
2″	5″	4085T26	111.73

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Compact High-Pressure Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 70°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +300°F
- Vacuum Rating: 29″ Hg

Great for use in tight spaces, these compact valves are suitable for high-pressure applications. Connections are NPT. Body is brass, ball is nickel-plated brass, seats are PTFE, and seal is fluoroelastomer. Valves have unrestricted flow (full port).

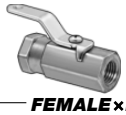

Pipe Size	FEMALE×FEMALE End-to-End Lg.	Lever Each	T-Handle Each	FEMALE×MALE End-to-End Lg.	Lever Each	T-Handle Each	MALE×MALE End-to-End Lg.	Lever Each	T-Handle Each
1/8″	1 7/8″	4112T12 $11.34	4112T52 $11.47	1 7/8″	4112T13 $11.34	4112T53 $11.47	1 15/16″	4112T11 $11.34	4112T51 $11.50
1/4″	1 15/16″	4112T22 11.45	4112T62 11.61	1 15/16″	4112T23 11.47	4112T63 11.61	2 1/16″	4112T21 11.47	4112T61 11.61

Easy-to-Identify Brass Ball Valves

- Max. Pressure for Water: 600 psi @ 64°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –25° to +300°F
- Vacuum Rating: Not rated

Label your valve for easy identification. Use a black felt pen to write on the included white inserts or replace them with one of three colored inserts (sold separately). Handle and stem inserts snap out easily for replacement.

Connections are NPT female. Body is brass, ball is chrome-plated brass, seats are PTFE, and seal is fluoroelastomer. Valves have unrestricted flow (full port). CSA and CSA-US certified. *Valves with 1/2″ and 3/4″ pipe size* are FM approved to 250 psi, and UL and C-UL listed.

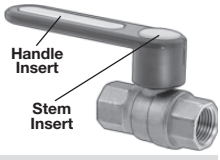

Valves (with White Inserts)

Pipe Size	End-to-End Lg.		Each
1/4″	2″	4049T21	$12.78
3/8″	2″	4049T22	12.51
1/2″	2 7/16″	4049T23	14.27
3/4″	2 13/16″	4049T24	17.78

Replacement Inserts—10/Pkg.

Color	Handle	Per Pkg.	Stem	Per Pkg.
Blue	4049T412	$7.71	4049T512	$6.51
Green	4049T413	7.71	4049T513	6.51
Red	4049T411	7.71	4049T511	6.51
White	4049T414	7.71	4049T514	6.51

Panel-Mount Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas:
  - Inline: 1/8″-1/4″: 1500 psi @ 70°F
    3/8″-1/2″: 1000 psi @ 70°F
  - Elbow: 1/8″-1/4″: 1500 psi @ 70°F
    3/8″-1/2″ Using Bottom Port Inlet: 1000 psi @ 70°F
    3/8″-1/2″ Using Side Port Inlet: 600 psi @ 70°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +300°F
- Vacuum Rating: 29″ Hg

Valves have threads and a hex nut below the handle for simple installation in your instrument panel. They're ideal for vacuum service. Connections are NPT. Body is brass and ball is nickel-plated brass. All have PTFE seats, a fluoroelastomer seal, and a Buna-N seal. Require a 9/16″ diameter panel cutout. *Valves with 1/8″ and 1/4″ pipe size* have unrestricted flow (full port); *valves with 3/8″ and 1/2″ pipe size* have slightly restricted flow (standard port).

Female×Female

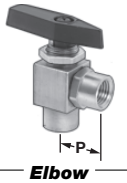

Pipe Size	Inline End-to-End Lg.		Each	Elbow Port-to-Port Lg. (P)		Each
1/8″	1 13/16″	4114T21	$34.89	15/16″	4118T62	$33.42
1/4″	1 13/16″	4114T23	34.95	15/16″	4118T64	33.58
3/8″	2 1/4″	4114T25	71.95	1 1/8″	4118T66	78.11
1/2″	2 3/8″	4114T27	81.74	1 3/16″	4118T68	83.45

Male×Male

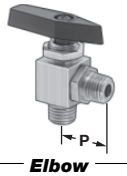

Pipe Size	Inline End-to-End Lg.		Each	Elbow Port-to-Port Lg. (P)		Each
1/8″	1 15/16″	4114T11	$38.41	1″	4118T52	$36.84
1/4″	2″	4114T13	38.51	1″	4118T54	37.05
3/8″	2 1/8″	4114T15	70.05	1 1/16″	4118T56	67.71
1/2″	2 5/8″	4114T17	83.34	1 5/16″	4118T58	83.37

Flow-Indicating Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas:
  1/4″-3/4″: 600 psi @ 235°F
  1″-2″: 500 psi @ 279°F
- Max. Pressure for Steam: 150 psi @ 366°F
- Temp. Range: –40° to +366°F
- Vacuum Rating: 29.89″ Hg

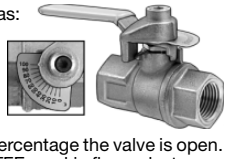

An easy-to-read indicator points to the percentage the valve is open. Connections are NPT female. Seats are PTFE, seal is fluoroelastomer, and packing is PTFE. Valves have unrestricted flow (full port). UL listed for use with LP gas, CSA and CSA-US certified, and FM approved.

Brass— Body is brass; ball is nickel-plated brass.

Nickel-Plated Brass— Valves have a nickel-plated brass body and Type 316 stainless steel ball for greater corrosion resistance.

Pipe Size	End-to-End Lg.	Brass	Each	Nickel-Plated Brass	Each
1/4″	1 13/16″	4209K41	$16.56	4256K51	$26.82
3/8″	1 7/8″	4209K42	16.56	4256K52	26.82
1/2″	2 1/2″	4209K43	17.22	4256K53	26.82
3/4″	2 3/4″	4209K44	21.38	4256K54	34.38
1″	3 5/16″	4209K45	32.02	4256K55	49.99
1 1/2″	4 3/16″	4209K47	65.26	4256K57	91.32
2″	5″	4209K48	85.80	4256K58	117.08

Any-Direction Diverting 3-Port Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 400 psi @ 176°F
- Max. Pressure for Steam: 100 psi @ 338°F
- Temp. Range: –4° to +344°F
- Vacuum Rating: 29″ Hg

Change these valves to use any port as the inlet—handle is removable for repositioning, allowing you to alter the flow to fit your application. Direct flow between the center port and either side port or shut off flow completely.

Different from industry-standard diverting brass ball valves, these have a flexible seat design and double-seal construction, which provide consistent leak-free operation and easier handle rotation under high pressure for a long service life. Connections are NPT female. Body is brass (brass meets ASTM-B283) and ball is chrome-plated brass. Seats are PTFE cushioned by a fluoroelastomer O-ring and seals are fluoroelastomer. Valves have slightly restricted flow (standard port).

Pipe Size	End-to-End Lg.		Each	Pipe Size	End-to-End Lg.		Each
1/4″	2 5/8″	4093T21	$40.43	1″	3 3/4″	4093T25	$73.57
3/8″	2 5/8″	4093T22	41.25	1 1/4″	4 3/8″	4093T26	110.40
1/2″	2 7/8″	4093T23	43.05	1 1/2″	4 7/8″	4093T27	166.65
3/4″	3 3/16″	4093T24	48.25	2″	5 3/4″	4093T28	272.27

Diverting Brass Ball Valves

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Diverting 3-Port Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: See table
- Max. Pressure for Steam: Not rated
- Temp. Range:
  Medium-Pressure: –20° to +180°F
  High-Pressure: –40° to +300°F
- Vacuum Rating:
  Medium-Pressure: Not rated
  High-Pressure: 29″ Hg

Flow Options

Direct flow from the bottom inlet to one of two side outlets or stop flow completely. Connections are NPT. Body is brass, ball is nickel-plated brass, and seats are PTFE. All have unrestricted flow (full port), unless noted.

Medium-pressure valves have Buna-N seals. ***High-pressure valves*** have a fluoroelastomer seal and a Buna-N seal.

T-handle and ***wedge handle valves*** have threads and a hex nut below the handle for mounting through an instrument panel. *Medium-pressure* have a panel cutout of 13/16″ diameter; *high-pressure* have a panel cutout of 9/16″ diameter.

Medium-Pressure Valves

Pipe Size	Max. psi @ 180°F■	FEMALE×FEMALE×FEMALE End-to-End Lg.	T-Handle	Each	Wedge Handle	Each	FEMALE×MALE×FEMALE End-to-End Lg.	Lever	Each
1/8″	500	1 1/2″	46095K41	$35.78	46095K61	$32.44	1 3/4″	46095K21▲	$20.01
1/4″	500	1 3/4″	46095K42	35.75	46095K62	32.39	1 3/4″	46095K51▲	20.01
3/8″	500	1 15/16″	46095K43	35.75	46095K63	32.39	—	—	—
1/2″	500	2 3/16″	46095K44▲	42.03	46095K64▲	38.67	—	—	—

■ For water, oil, and inert gas. ▲ Restricted flow (reduced port).

High-Pressure Valves

Pipe Size	Max. psi @ 70°F■	FEMALE×FEMALE×FEMALE End-to-End Lg.	T-Handle	Each	MALE×MALE×MALE End-to-End Lg.	T-Handle	Each
1/8″	1500	1 13/16″	4149T41	$35.55	1 15/16″	4149T11	$44.08
1/4″	1500	1 13/16″	4149T42	35.63	1 15/16″	4149T12	44.11
3/8″	1000	2 1/4″	4149T43♠	78.55	2 11/16″	4149T13♠	91.74
1/2″	1000	2 3/8″	4149T44♠	83.74	2 5/8″	4149T14♠	96.05

■ For water, oil, and inert gas. ♠ Slightly restricted flow (standard port).

Diverting 3-Port Brass Ball Valves with Yor-Lok Fittings

- Max. Pressure for Water, Oil, and Inert Gas: See table
- Max. Pressure for Steam: Not rated
- Temp. Range: High-Pressure: –40° to +300°F
  Ultra-High-Pressure: –30° to +400°F
- Vacuum Rating: 29″ Hg

Flow Options for High-Pressure

Flow Options for Ultra-High-Pressure

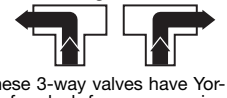

Ideal for instrumentation applications, these 3-way valves have Yor-Lok double-ferrule compression tube fittings for a leak-free compression seal between your valve and tubing. Use valves to direct flow from the bottom inlet to one of the side outlets. Connections are compatible with Swagelok®, Parker A-Lok, Gyrolok, Bilok, and Tylok fittings. For Yor-Lok fittings, see page 174. Body is brass; seats are PTFE. All have slightly restricted flow (standard port), unless noted. Valves mount through an instrument panel using the threads and hex nut below the handle.

High-pressure valves have a nickel-plated brass ball, a fluoroelastomer seal, and a Buna-N seal. Valves have a shut-off position to stop flow completely. ***Ultra-high-pressure valves*** have a Type 316 stainless steel ball; seal and packing are PTFE. Valves do not have a shut-off position.

For Tube OD	Max. psi @ 70°F■	End-to-End Lg.	Panel Cutout, dia.		Each
High-Pressure Valves					
1/8″	1500	1 13/16″	9/16″	4149T71	$63.73
1/4″	1500	1 15/16″	9/16″	4149T72	57.76
3/8″	1000	2 1/16″	9/16″	4149T73	66.63
1/2″	1000	2 7/16″	9/16″	4149T74	101.34
Ultra-High-Pressure Valves					
1/8″	3000	3 1/8″	3/4″	4566K21	51.61
1/4″	3000	3 5/16″	3/4″	4566K22	64.69
3/8″	3000	3 7/16″	3/4″	4566K23▲	99.74
1/2″	3000	4″	13/16″	4566K24	170.40

■ For water, oil, and inert gas. ▲ Restricted flow (reduced port).

Wye-Shape 3-Port Brass Ball Valves

With NPT Connections:

- Max. Pressure for Water, Oil, and Inert Gas:
  Without Exhaust: 600 psi @ 200°F
  With Exhaust: 250 psi @ 200°F
- Max. Pressure for Steam:
  Without Exhaust: 150 psi @ 358°F
  With Exhaust: Not rated
- Temp. Range: –40° to +365°F
- Vacuum Rating: 29″ Hg

With Fire Hose Connections:

- Max. Pressure for Water: 300 psi @ 150°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –20° to +150°F
- Vacuum Rating: Not rated

Control flow in two directions from a single source—valves have two balls for independent control and shut-off of each outlet. All have one female inlet, two male outlets, and a brass body.

Valves with NPT Connections— Inlet is 1″ female; outlets are 3/4″ male; length from inlet port to outlet ports is 3 1/4″. Balls are chrome-plated brass, seats and seals are PTFE, and packing is fluoroelastomer. Valves have slightly restricted flow (standard port). *Valve with safety exhaust* is ideal for use with compressed air; when closed, valve vents air pressure through the exhaust port so you can disconnect air tools safely.

Valves with Fire Hose Connections— Exclusively for use with water. Inlet is 2 1/2″ female; outlets are 1 1/2″ male; length from inlet port to outlet ports is 5 5/8″. Balls are acetal, seats are UHMW polyethylene, and seals are Buna-N. Valves have restricted flow (reduced port). For information about fire hose connections, see page 252.

		Each
NPT without Safety Exhaust	4017T14	$34.10
NPT with Safety Exhaust	4017T16	41.98
Fire Hose NPSH (National Pipe Straight Hose)	6504T4	279.24
Fire Hose NH (National Hose)	6504T5	279.24

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Chrome-Plated Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 212°F
- Max. Pressure for Steam: 150 psi @ 366°F
- Temp. Range: –40° to +366°F
- Vacuum Rating: 29″ Hg

For better corrosion resistance than standard brass ball valves, these have a chrome-plated brass body and ball. Connections are NPT. Seats and packing are PTFE. All have unrestricted flow (full port).

Lockable Lever— Lock your handle in position using a padlock (not included) with shackle diameter of 9/32″.

Female x Female

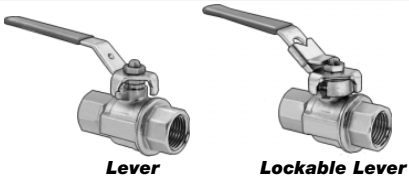

Pipe Size	End-to-End Lg.	Lever	Each	Lockable Lever	Each
1/4″	2″	33325K21	$8.14	4749K11	$11.80
3/8″	2″	33325K22	8.14	4749K12	12.43
1/2″	2 7/16″	33325K23	10.05	4749K13	13.72
3/4″	2 11/16″	33325K24	14.61	4749K14	17.64
1″	3 1/16″	33325K25	26.07	4749K15	26.38
1 1/4″	3 7/16″	33325K26	41.76	4749K16	43.31
1 1/2″	3 7/8″	33325K27	57.51	4749K17	60.26
2″	4 5/16″	33325K28	83.63	4749K18	83.38
2 1/2″	5 5/8″	33325K41	192.32	4749K21	196.89
3″	6 7/16″	33325K42	271.54	4749K22	324.97
4″	7 5/8″	33325K43	466.57	4749K23	540.54

Female x Male

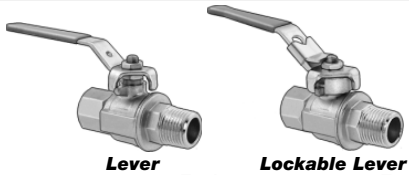

Pipe Size	End-to-End Lg.	Lever	Each	Lockable Lever	Each
1/4″	2 5/16″	33325K31	$8.40	4749K51	$12.32
3/8″	2 5/16″	33325K32	8.40	4749K52	12.57
1/2″	2 13/16″	33325K33	10.98	4749K53	14.46
3/4″	3 1/8″	33325K34	14.64	4749K54	17.16
1″	3 9/16″	33325K35	22.33	4749K55	27.88

Nickel-Plated Brass Ball Valves

NPT:

- Max. Pressure for Water, Oil, and Inert Gas:
  Lever: 1/4″-3/4″: 600 psi @ 235°F
  1″-2″: 500 psi @ 279°F
  3″: 400 psi @ 320°F
  T-Handle: 600 psi @ 100°F
- Max. Pressure for Steam: 150 psi @ 366°F
- Temp. Range: –40° to +366°F
- Vacuum Rating: 29.89″ Hg

Solder End (Unthreaded) When Used with 95/5 Solder:

- Max. Pressure for Water, Oil, and Inert Gas: 1/2″-1″: 500 psi @ 100°F
  1 1/2″: 400 psi @ 100°F
- Max. Pressure for Steam: 15 psi @ 250°F
- Temp. Range: 0° to 250° F
- Vacuum Rating: 29.89″ Hg

A nickel-plated brass body gives these valves greater corrosion resistance than any other brass valve. Seats are PTFE and seals are fluoroelastomer. Valves have unrestricted flow (full port). All are UL listed and FM approved, except 4465K39. Connections are female. ***NPT valves*** are CSA and CSA-US certified.

Lever valves have a Type 316 stainless steel ball and PTFE packing. ***T-Handle valves*** are snag-resistant for use in tight spaces; handle does not turn when bumped. Ball is chrome-plated brass.

NPT

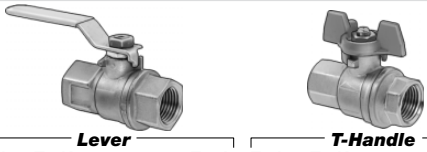

Pipe Size	Lever End-to-End Lg.	Lever Each	T-Handle End-to-End Lg.	T-Handle Each
1/4″	1 13/16″	4465K29 $19.19	1 3/4″	4073T11 $8.36
3/8″	1 7/8″	4465K21 19.19	1 3/4″	4073T12 8.36
1/2″	2 1/2″	4465K32 19.19	2 5/16″	4073T13 8.90
3/4″	2 3/4″	4465K33 25.68	2 9/16″	4073T14 12.72
1″	3 5/16″	4465K34 37.72	3 3/16″	4073T21 19.70
1 1/4″	3 13/16″	4465K35 56.45	3 11/16″	4073T22 35.21
1 1/2″	4 3/16″	4465K36 75.40	4″	4073T23 42.09
2″	5″	4465K37 102.78	4 3/4″	4073T24 65.05
3″	7 1/16″	4465K39 410.67		

Solder End (Unthreaded)

Tube Size ♦	Actual Tube OD	Lever End-to-End Lg.	Lever Each
1/2″	5/8″	2 1/2″	4465K41 $19.19
3/4″	7/8″	3 1/4″	4465K42 25.68
1″	1 1/8″	3 15/16″	4465K43 37.72
1 1/2″	1 5/8″	5 1/16″	4465K45 75.40

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Miniature Chrome-Plated Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: Lever and T-Handle: 200 psi @ 100°F
  Wedge Handle and Screwdriver Style: 450 psi @ 100°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –50° to +200°F
- Vacuum Rating: 29.9″ Hg

With a chrome-plated brass body and ball, these miniature valves are not only ideal for small spaces, but they also have greater corrosion resistance than standard brass valves. Seats are PTFE and seal is fluoroelastomer. All have slightly restricted flow (standard port). ***BSPP (British Standard Pipe Parallel) valves*** meet ISO 228.

Wedge handle and ***screwdriver style valves*** are UL recognized to standard 207 for use with refrigeration systems. *Screwdriver style* have a slotted screw to open and close the valve. ***NSF-certified wedge handle valves*** are NSF 61 certified for use with drinking (potable) water in all states except California, Maryland, and Vermont, as of January 1, 2012.

NPT Female x Female

Pipe Size	End-to-End Lg.	Lever	Each	T-Handle	Each	Wedge Handle	Each	NSF-Certified Wedge Handle	Each	Screwdriver Style	Each
1/8″	1 11/16″	4912K16	$6.48	4912K76	$6.48	4912K46	$5.47	4264K14	$8.31	4912K51	$7.35
1/4″	1 11/16″	4912K17	6.60	4912K77	6.60	4912K47	5.76	4264K16	8.45	4912K52	7.54
3/8″	1 11/16″	4912K18	6.74	4912K78	6.74	4912K48	5.90	4264K18	8.67	4912K53	7.72
1/2″	2 1/8″	4912K19	7.88	4912K79	7.88	4912K49	6.87	4264K21	11.03	4912K54	8.54

BSPP Female x Female

Pipe Size	End-to-End Lg.	T-Handle	Each
1/8″	1 11/16″	8156K31	$7.98
1/4″	1 11/16″	8156K32	8.33
3/8″	1 11/16″	8156K33	8.33
1/2″	1 15/16″	8156K34	10.29

NPT Female x Male

Pipe Size	End-to-End Lg.	Lever	Each	T-Handle	Each	Wedge Handle	Each	NSF-Certified Wedge Handle	Each	Screwdriver Style	Each
1/8″	1 11/16″	4912K6	$6.48	4912K86	$6.48	4912K71	$5.47	4264K44	$8.31	4912K96	$7.35
1/4″	1 11/16″	4912K7	6.60	4912K87	6.60	4912K72	5.76	4264K46	8.45	4912K97	7.54
3/8″	1 11/16″	4912K8	6.74	4912K88	6.74	4912K73	5.90	4264K48	8.67	4912K98	7.72
1/2″	2 1/8″	4912K9	7.88	4912K89	7.88	4912K74	6.87	4264K51	11.03	4912K99	8.54

BSPP Female x Male

Pipe Size	End-to-End Lg.	T-Handle	Each
1/8″	1 11/16″	8156K51	$7.98
1/4″	1 11/16″	8156K52	8.33
3/8″	1 11/16″	8156K53	8.33
1/2″	1 15/16″	8156K54	10.29

Nickel-Plated Brass & Bronze Ball Valves

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size (NPT)	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Nickel-Plated Brass Ball Valves with British Standard Threads

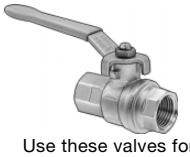

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –50° to +400°F
- Vacuum Rating: 29.9″ Hg

Use these valves for your imported equipment with BSPT (British Standard Pipe Taper) or BSPP (British Standard Pipe Parallel) connections; all are female. Body is nickel-plated brass for superior corrosion resistance. Ball is chrome-plated brass, seats are PTFE, and seal is fluoroelastomer. All have unrestricted flow (full port).

Pipe Size	BSPT End-to-End Lg.		Each	BSPP End-to-End Lg.		Each
3/8″	1 3/4″	4841K25	$9.19	2 3/8″	8173K14	$9.19
1/2″	2 5/16″	4841K26	10.08	2 15/16″	8173K16	10.08
3/4″	2 1/2″	4841K28	13.78	3 1/8″	8173K18	13.78
1″	3 3/16″	4841K32	22.52	3 9/16″	8173K23	22.51

Bronze Ball Valves with Check Valve

- Max. Pressure for Water, Oil, and Inert Gas: 235 psi @ 160°F
- Max. Pressure for Steam: Not rated
- Temp. Range: 33° to 160°F
- Vacuum Rating: Not rated

Valves have a spring-loaded disk inside the ball to prevent flow reversal in your application. Connections are NPT female. Body is bronze and ball is chrome-plated brass. Seats are carbon/glass-filled PTFE, and seal and packing are PTFE. The check valve is acetal and SBR rubber and has a Type 316 stainless steel spring. It has an initial opening (cracking) pressure of less than 0.25 psi. Valves have slightly restricted flow (standard port).

Pipe Size	End-to-End Lg.		Each	Pipe Size	End-to-End		Each
1/2″	2 1/4″	47265K31	$47.88	1 1/4″	3 7/8″	47265K34	$131.88
3/4″	2 13/16″	47265K32	71.33	1 1/2″	4 1/4″	47265K35	164.71
1″	3 7/16″	47265K33	97.46	2″	4 13/16″	47265K36	231.38

Extended-Life Bronze Ball Valves

NPT and SAE:

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100°F
- Max. Pressure for Steam: 150 psi @ 365°F
- Temp. Range: –20° to +450°F
- Vacuum Rating: 29″ Hg

Solder-End (Unthreaded) When Used with 95/5 Solder:

- Max. Pressure for Water, Oil, and Inert Gas: 3/8″-1″: 500 psi @ 100°F; 1 1/4″-2″: 400 psi @ 100°F
- Max. Pressure for Steam: 15 psi @ 250°F
- Temp. Range: 0° to 250°F
- Vacuum Rating: 29″ Hg

Spend less time on valve maintenance—bronze is harder, stronger, and more corrosion resistant than brass, giving these valves a longer service life. Body is bronze and ball is chrome-plated brass. Seats are glass-filled PTFE, seals are PTFE, and packing is glass-filled PTFE. Valves with unrestricted flow are full port; valves with slightly restricted flow are standard port.

SAE valves have an O-ring that forms a tight seal for a leak-resistant connection. ***Union NPT valves*** are quick and easy to install. Handle can be locked in position using a padlock (not included) with shackle diameter of 1/4″.

Spring-close lever valves close automatically when the lever is released to ensure your valve is open only when an operator is present.

NPT Female×Female

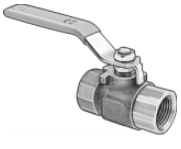

Pipe Size	Lever with Unrestricted Flow End-to-End Lg.		Each	Lever with Slightly Restricted Flow End-to-End Lg.		Each	Spring-Close Lever w/ Slightly Restricted Flow End-to-End Lg.		Each
1/4″	2″	5754T22	$13.15	2 1/16″	4726K21	$11.01	2 1/4″	4171K21★	$82.39
3/8″	2 1/8″	5754T29	13.15	2 1/16″	4726K22	11.01	2 1/4″	4171K22★	82.39
1/2″	2 1/4″	5754T31	13.15	2 1/4″	4726K23	11.01	2 1/4″	4171K23★	82.39
3/4″	2 11/16″	5754T32	21.50	3″	4726K24	18.13	3″	4171K24	92.26
1″	3 1/16″	5754T33	27.16	3 3/8″	4726K25	22.82	3 3/8″	4171K25	98.54
1 1/4″	4 1/16″	5754T34	60.73	4″	4726K26	37.51	4″	4171K26	127.37
1 1/2″	4 1/4″	5754T35	80.61	4 3/8″	4726K27	48.00	4 3/8″	4171K27	151.54
2″	4 7/8″	5754T36	138.83	4 11/16″	4726K28	60.01	4 11/16″	4171K28	178.28
2 1/2″	6 3/8″	5754T37	421.41	6 1/4″	4726K29	313.32			
3″				6 3/4″	4726K31	350.99			
4″				7 3/8″	4726K35	413.95			

SAE Female×Female

SAE Thread Size	Lever with Unrestricted Flow End-to-End Lg.		Each
9/16″-18	2 1/4″	4581K42	$20.23
3/4″-16	2 1/4″	4581K43	20.23
1 1/16″-12	3 1/8″	4581K44	36.14
1 5/16″-12	3 5/8″	4581K45	50.61
1 5/8″-12	4 1/4″	4581K46	71.42
1 7/8″-12	4 3/4″	4581K47	90.16
2 1/2″-12	5 3/8″	4581K48	148.50

NPT Female×Union NPT Female

Pipe Size	Lever with Slightly Restricted Flow End-to-End Lg.		Each
1/4″	2 15/16″	45135K61★	$22.56
3/8″	2 15/16″	45135K62★	22.56
1/2″	3 1/8″	45135K63★	23.79
3/4″	4″	45135K64	36.85
1″	4 1/2″	45135K65	48.44
1 1/2″	5 1/16″	45135K67	98.70
2″	5 5/8″	45135K68	144.11

NPT Female×Male

Pipe Size	Lever with Slightly Restricted Flow End-to-End Lg.		Each
1/4″	2 7/16″	4726K46	$13.97
3/8″	2 1/2″	4726K47	13.97
1/2″	2 13/16″	4726K48	13.97
3/4″	3 1/2″	4726K49	23.23
1″	4″	4726K51	32.44

Solder End (Unthreaded) Female×Female

Tube Size♦	Actual Tube OD	Lever with Unrestricted Flow End-to-End Lg.		Each	Lever with Slightly Restricted Flow End-to-End Lg.		Each
3/8″	1/2″	2 1/4″	5754T39	$13.15			
1/2″	5/8″	2 9/16″	5754T41	13.15	2 7/8″	4726K81	$11.01
3/4″	7/8″	3 1/16″	5754T42	21.50	3 7/8″	4726K82	18.13
1″	1 1/8″	3 5/8″	5754T43	27.16	4 1/2″	4726K83	22.82
1 1/4″	1 3/8″	4 7/16″	5754T44	60.73	4 5/8″	4726K84	37.51
1 1/2″	1 5/8″	4 7/8″	5754T45	80.61	5 1/4″	4726K86	48.00
2″	2 1/8″	6 1/16″	5754T46	138.83	6 3/8″	4726K87	60.01

★ Unrestricted flow (full port). ♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Easy-Maintenance Bronze Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100°F
- Max. Pressure for Steam: 150 psi @ 365°F
- Temp. Range: –20° to +450°F
- Vacuum Rating: 29″ Hg

Save time on valve maintenance. A three-piece bolted-body design provides quick, easy access to replace seats, packing, or ball without removing your valve from the pipeline. Connections are female. Body is bronze, ball is chrome-plated brass, seats are glass-filled PTFE, and packing is carbon/graphite-filled PTFE. Valves have unrestricted flow (full port).

NPT

Pipe Size	End-to-End Lg.		Each
1/4″	2 9/16″	4489K21	$29.52
3/8″	2 9/16″	4489K22	29.52
1/2″	2 13/16″	4489K23	34.22
3/4″	3 7/16″	4489K24	41.95
1″	3 7/8″	4489K25	55.28
1 1/4″	4 3/4″	4489K26	79.23
1 1/2″	5 1/4″	4489K27	102.56
2″	6 1/16″	4489K28	178.23
2 1/2″	7 1/4″	4489K33	392.51

Solder End (Unthreaded)

Tube Size ♦	Actual Tube OD	End-to-End Lg.		Each
1/2″	5/8″	2 13/16″	5464T12	$36.99
3/4″	7/8″	3 7/16″	5464T13	51.24
1″	1 1/8″	3 7/8″	5464T14	66.32
1 1/4″	1 3/8″	4 3/4″	5464T15	90.31
1 1/2″	1 5/8″	5 1/4″	5464T16	115.46
2″	2 1/8″	6 1/16″	5464T17	204.31

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Diverting 3-Port Bronze Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 400 psi @ 100°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –20° to +450°F
- Vacuum Rating: Not rated

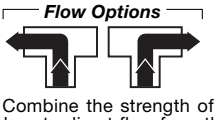

Combine the strength of bronze with diverting capabilities—use valves to direct flow from the center inlet to one of the side outlets. Valves have no shut-off position. Connections are NPT female. Body is bronze, ball is chrome-plated brass, seats are glass-filled PTFE, and packing is carbon/graphite-filled PTFE. Valves have two mounting holes for attaching an actuator. *Valves with 1/4″ to 1/2″ pipe size* have unrestricted flow (full port); *valves with 3/4″ to 2″ pipe size* have slightly restricted flow (standard port). *Valves with 1 1/2″ and 2″ pipe size* have a PTFE seal.

Pipe Size	End-to-End Lg.	Mounting Hole Size		Each
1/4″	2 1/4″	10-24	4373K51	$23.83
3/8″	2 1/4″	10-24	4373K52	23.83
1/2″	2 1/4″	10-24	4373K53	23.90
3/4″	2 5/8″	10-24	4373K54	32.20
1″	2 7/8″	10-24	4373K55	42.62
1 1/4″	3 1/8″	1/4″-20	4373K59	70.08
1 1/2″	3 3/8″	1/4″-20	4373K56	79.32
2″	4 11/16″	1/4″-20	4373K57	107.39

High-Pressure Steam Bronze Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100°F
- Max. Pressure for Steam: 250 psi @ 406°F
- Temp. Range: –20° to +500°F
- Vacuum Rating: 29″ Hg

These valves withstand steam pressure up to 250 psi. Connections are NPT female. Body is bronze, ball is Type 316 stainless steel, and seats and packing are carbon/graphite-filled PTFE. *Valves with 1/4″ to 1/2″ pipe size* have unrestricted flow (full port); *valves with 3/4″ to 2″ pipe size* have slightly restricted flow (standard port). *Valves with 1 1/4″ to 2″ pipe size* have a PTFE seal.

Pipe Size	End-to-End Lg.		Each	Pipe Size	End-to-End Lg.		Each
1/4″	2 1/16″	4485K31	$28.44	1″	3 3/8″	4485K35	$53.74
3/8″	2 1/16″	4485K32	28.44	1 1/4″	4″	4485K36	89.87
1/2″	2 1/4″	4485K33	28.44	1 1/2″	4 3/8″	4485K37	113.99
3/4″	3″	4485K34	45.83	2″	4 11/16″	4485K38	146.16

Safety Air-Exhaust Bronze Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 125 psi @ 200°F
- Max. Pressure for Steam: Not rated
- Temp. Range: 50° to 200°F
- Vacuum Rating: Not rated

Meet OSHA requirements for safety and control in your compressed air system. All valves have a 1/4″ NPT female exhaust port; when closed, valves vent air pressure so you can disconnect air tools safely.

Valves have NPT female connections. Body is bronze and ball is chrome-plated brass. Seats are glass-filled PTFE, seals are PTFE, and packing is glass-filled PTFE. Valves have unrestricted flow (full port). The handle can be locked in the shut-off position using a padlock (not included) with a shackle diameter of 1/4″. *Valves with 3/4″ to 2 1/2″ pipe size* have two mounting holes for attaching an actuator.

Pipe Size	End-to-End Lg.	Mounting Hole Size		Each
1/4″	2 1/16″	—	4875K21	$37.74
3/8″	2 1/16″	—	4875K22	38.08
1/2″	2 3/16″	—	4875K23	38.43
3/4″	3 1/8″	10-24	4875K24	56.80
1″	3 5/8″	1/4″-20	4875K25	71.42
1 1/4″	4 1/4″	1/4″-20	4875K26	92.31
1 1/2″	4 3/4″	5/16″-24	4875K27	111.19
2″	5 3/8″	5/16″-24	4875K28	198.68
2 1/2″	6 1/2″	1/4″-20	4875K29	401.74

Bronze Ball Valves with Garden Hose Thread Outlet

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 300°F
- Max. Pressure for Steam: 150 psi @ 450°F
- Temp. Range: 33° to 350°F
- Vacuum Rating: Not rated

Increase utility in your pipeline by adding an easy-to-use connection for garden hose. Valves include a screw-on cap with retaining chain to protect from dust and debris when your hose is disconnected. Inlet is NPT female; outlet is 3/4″ garden hose thread (GHT) male. Body is bronze, ball is a chrome-plated brass, seats are PTFE, and packing is glass-filled PTFE. Valves have slightly restricted flow (standard port).

Pipe Size	End-to-End Lg.		Each
1/2″	2 15/16″	47315K41	$22.65
3/4″	3 1/2″	47315K42	32.40

Low-Profile Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 200°F
- Max. Pressure for Steam: 150 psi @ 358°F
- Temp. Range: –36° to +368°F
- Vacuum Rating: 29.9″ Hg

Perfect for high-pressure applications with limited space. Connections are NPT. Body and ball are Type 316 stainless steel; seats and seal are PTFE. The handle can be locked in position using a padlock (not included) with a shackle diameter of 9/32″. *Valves with 1/4″ pipe size* have unrestricted flow (full port); *valves with 3/8″ and 1/2″ pipe size* have restricted flow (reduced port).

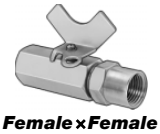

Pipe Size	End-to-End Lg.	*Female×Female*	Each	*Female×Male*	Each	Pipe Size	End-to-End Lg.	*Male×Male*	Each
1/4″	2 13/16″	45395K131	$34.60	45395K121	$37.18	1/4″	2 15/16″	45395K101	$43.76
3/8″	2 13/16″	45395K133	40.16	45395K112	42.86	3/8″	2 15/16″	45395K103	45.81
1/2″	3 3/8″	45395K135	45.45	45395K114	50.84	1/2″	3 7/16″	45395K105	59.35

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Type 316 Stainless Steel Ball Valves

With Unrestricted Flow:
- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 200°F
- Max. Pressure for Steam: 150 psi @ 366°F
- Temp. Range: 0° to 450°F
- Vacuum Rating: Not rated

With Restricted Flow:
- Max. Pressure for Water, Oil, and Inert Gas: 800 psi @ 100°F
- Max. Pressure for Steam: 50 psi @ 298°F
- Temp. Range: 0° to 450°F
- Vacuum Rating: 28.95″ Hg

Ideal for your harsh environment, these valves have a Type 316 stainless steel body and ball for exceptional corrosion resistance. Connections are NPT female. The handle can be locked in position using a padlock (not included) with a shackle diameter of 1/4″.

Valves with unrestricted flow are full port. Seats are glass-filled PTFE and seals are PTFE. ***Valves with restricted flow*** are reduced port. Seats and packing are PTFE.

Oval handle valves are snag resistant; handle does not turn when bumped.

Pipe Size	End-to-End Lg.	Lever	Each	Oval Handle	Each
With Unrestricted Flow					
1/4″	2″	46495K18	$30.83	46495K38	$33.98
3/8″	2″	46495K19	30.83	46495K39	33.98
1/2″	2 3/8″	46495K21	31.72	46495K41	34.78
3/4″	2 3/4″	46495K22	42.35	46495K42	45.04
1″	3 1/4″	46495K23	60.35	46495K43	63.32
1 1/4″	3 13/16″	46495K24	105.21	46495K44	107.71
1 1/2″	4 5/16″	46495K25	117.42	46495K45	117.36
2″	5 1/4″	46495K26	157.49	46495K46	157.97
2 1/2″	6 9/16″	46495K27	401.05	—	—
3″	7 9/16″	46495K28	488.66	—	—
With Restricted Flow					
1/4″	1 9/16″	46325K26	21.00	46325K86	28.04
3/8″	1 3/4″	46325K27	21.00	46325K87	28.03
1/2″	2 1/4″	46325K28	22.49	46325K88	29.01
3/4″	2 5/16″	46325K29	30.60	46325K89	38.15
1″	2 13/16″	46325K31	36.26	46325K91	45.47
1 1/4″	3 1/16″	46325K32	54.06	46325K92	62.35
1 1/2″	3 1/4″	46325K33	76.72	46325K93	85.19
2″	3 15/16″	46325K34	89.15	46325K94	99.76

Super-Miniature Type 303 Stainless Steel Ball Valves

- Max. Pressure: 250 psi @ 150°F
- Max. Pressure for Steam: Not rated
- Temp. Range: See table
- Vacuum Rating: 25″ Hg

Great for low-flow applications and extremely tight spaces, these tiny valves have an end-to-end length of 11/16″. They have 10-32 straight female threads for connection to miniature fittings and tubing. Body is Type 303 stainless steel and ball is Type 316 stainless steel. Valves have restricted flow (reduced port).

Seat and Seal Material	Temp. Range		Each
Water-Resistant EPDM	–60° to +300°F	4059K36	$74.75
Oil-Resistant Buna-N	–60° to +250°F	4059K32	72.50
Chemical-Resistant Fluoroelastomer	0° to +400°F	4059K34	76.12

Type 316 Stainless Steel Ball Valves with Yor-Lok Fittings

Lockable Lever:
- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 100°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –30° to +400°F
- Vacuum Rating: Not rated

T-Handle:
- Max. Pressure for Water, Oil, and Inert Gas: 6000 psi @ 125°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –30° to +280°F
- Vacuum Rating: 29″ Hg

High corrosion resistance is combined with the leak-free compression seal of a Yor-Lok fitting. Valves connect with tubing; connections are Yor-Lok double-ferrule compression tube fittings, which are compatible with Swagelok®, Parker A-Lok, Bilok, and Tylok fittings. For Yor-Lok fittings, see page 174. Body and ball are Type 316 stainless steel. All valves have slightly restricted flow (standard port) except 45775K58, which has restricted flow (reduced port).

Lockable Lever— Seats, seal, and packing are PTFE. The handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″.

T-Handle— Rated for extremely high pressure, these valves are ideal for use in instrumentation. Seats are Kel-F, and seal and packing are PTFE. Valves mount through a panel using the threads and hex nut below the handle. *Valves for 1/16″ to 3/8″ tube OD* require a panel cutout of 3/4″ dia.; *1/2″ tube OD valve* requires a panel cutout of 13/16″ dia.

Lockable Lever

For Tube OD	End-to-End Lg.		Each
1/4″	3 9/16″	4537K21	$60.26
3/8″	3 9/16″	4537K22	70.85
1/2″	3 3/4″	4537K23	88.49
3/4″	4 7/16″	4537K24	132.51
1″	5 1/8″	4537K25	182.01

T-Handle

For Tube OD	End-to-End Lg.		Each
1/16″	2 3/4″	45775K55	$91.80
1/8″	3 1/8″	45775K56	92.92
1/4″	3 5/16″	45775K57	103.08
3/8″	3 7/16″	45775K58	136.41
1/2″	4 1/16″	45775K59	236.89

Compact Type 316 Stainless Steel Ball Valves with Yor-Lok Fittings

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 300°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –65° to +300°F
- Vacuum Rating: Not rated

With a compact body that's ideal for confined spaces, these valves are a suitable replacement for Swagelok® 40 series valves. They provide a leak-tight compression seal for tubing. Connections are Yor-Lok double-ferrule compression tube fittings, which are compatible with Swagelok®, Parker A-Lok, Bilok, and Tylok fittings. For Yor-Lok fittings, see page 174. Body and ball are Type 316 stainless steel. Seats, seal, and packing are PFA (perfluoroalkoxy). Valves have restricted flow (reduced port). All mount through an instrument panel using the threads and hex nut below the handle.

For Tube OD	End-to-End Lg.	Panel Cutout, dia.		Each
1/16″	1 11/16″	19/32″	2840K21	$97.18
1/8″	2″	19/32″	2840K23	89.76
1/4″	2 1/4″	19/32″	2840K25	86.18
3/8″	2 5/8″	25/32″	2840K27	110.41
1/2″	3 7/8″	1 1/2″	2840K29	277.92

Type 316 Stainless Steel Ball Valves with British Standard Threads

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 100°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –30° to +400°F
- Vacuum Rating: Not rated

Get superior corrosion resistance for your metric pipe—valve connections are BSPP (British Standard Pipe Parallel) for use with BSPP threads. Body and ball are Type 316 stainless steel, seats and seal are PTFE, and packing is glass-filled PTFE. Valves have slightly restricted flow (standard port). Valves have a handle that can be locked in position using a padlock (not included) with a shackle diameter of 5/16″, unless noted.

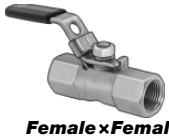

Pipe Size	End-to-End Lg.	Female × Female	Each	Female × Male	Each
1/4″	2″	4932K22	$42.01	4932K52	$58.05
3/8″	2 3/8″	4932K23	52.89	—	—
1/2″	3″	4932K24	51.91	4932K53★	61.31

★ Handle is not lockable.

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Cleaned and Bagged Easy-Maintenance Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1440 psi @ 100° F
- Max. Pressure for Steam: 250 psi @ 406° F
- Temp. Range: –50° to +400° F
- Vacuum Rating: 29″ Hg

Ideal for oxygen service, these valves come cleaned and bagged. The three-piece bolted-body design provides quick, easy access to replace seats, seal, packing, or ball. Valves are also suitable for highly corrosive applications; all comply with NACE MR0175 for crack resistance in environments containing hydrogen sulfide.

Body and ball are Type 316 stainless steel. Seats, seal, and packing are PTFE. Valves have unrestricted flow (full port). The handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″.

Socket-weld valves are female unthreaded; they are for welded connections with unthreaded pipe (male). ***Butt-weld valves*** are unthreaded; they are for welded connections with standard wall (Schedule 40) pipe.

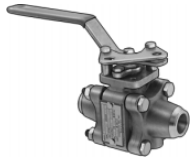

Pipe Size	NPT Female×Female End-to-End Lg.		Each	Socket Weld End-to-End Lg.		Each	Butt Weld End-to-End Lg.		Each
1/2″	2 13/16″	3043K51	$208.10	2 13/16″	3043K61	$208.12	3 13/16″	3043K71	$214.37
3/4″	3 11/16″	3043K52	289.38	3 11/16″	3043K62	289.39	4 11/16″	3043K72	298.80
1″	4 3/16″	3043K53	340.60	4 3/16″	3043K63	340.61	5 3/16″	3043K73	353.17
1 1/4″	4 1/2″	3043K54	419.42	4 1/2″	3043K64	419.42	5 1/2″	3043K74	461.52
1 1/2″	5″	3043K55	536.05	5″	3043K65	536.05	6″	3043K75	553.78
2″	5 7/8″	3043K56	894.98	5 7/8″	3043K66	862.44	6 13/16″	3043K76	895.29

Easy-Maintenance Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 220° F
- Max. Pressure for Steam: 150 psi @ 366° F
- Temp. Range: 0° to 450° F
- Vacuum Rating: Not rated

Make valve maintenance quick and simple. A three-piece bolted-body design allows access to replace the seats, seal, packing, or ball without removing your valve from the pipeline. Body and ball are Type 316 stainless steel for superior corrosion resistance in harsh conditions. Valves have unrestricted flow (full port). The handle can be locked in position using a padlock (not included) with a shackle diameter of 1/4″. *Valves with 1/4″ to 2″ pipe size* have PTFE seats, seal, and packing. *Valves with 2 1/4″ to 4″ pipe size* have modified PTFE seats and seal and carbon/graphite-filled PTFE packing.

Socket-weld valves are female unthreaded; they are for welded connections with unthreaded pipe (male).

Valves with Type 316 stainless steel connections are ideal for highly corrosive environments.

Valves

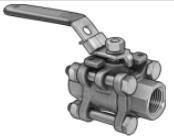

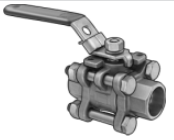

Pipe Size	End-to-End Lg.	NPT Female×Female	Each	Socket Weld	Each
With Type 316 Stainless Steel Connections					
1/4″	2 1/2″	4632K141	$28.98	4866K71	$28.98
3/8″	2 1/2″	4632K142	29.50	4866K72	29.50
1/2″	2 13/16″	4632K143	36.47	4866K73	36.47
3/4″	3 3/8″	4632K144	43.98	4866K74	43.98
1″	3 5/8″	4632K145	64.40	4866K75	64.40
1 1/4″	4 5/16″	4632K146	78.27	4866K76	78.27
1 1/2″	4 13/16″	4632K147	107.21	4866K77	107.21
2″	5 9/16″	4632K148	155.37	4866K78	155.37
2 1/2″	6 7/8″	4632K151	295.24	4866K79	295.24
3″	7 5/8″	4632K149	498.29	4866K81	498.29
4″	10 13/16″	4632K152	875.99	4866K82	875.99
With Steel Connections					
1/4″	2 1/2″	4632K161	28.68	4866K11	28.68
3/8″	2 1/2″	4632K162	29.20	4866K12	29.20
1/2″	2 13/16″	4632K163	34.93	4866K13	34.93
3/4″	3 3/8″	4632K164	43.58	4866K14	43.58
1″	3 5/8″	4632K165	62.90	4866K15	62.90
1 1/4″	4 5/16″	4632K166	77.53	4866K16	77.53
1 1/2″	4 13/16″	4632K167	111.08	4866K17	111.08
2″	5 9/16″	4632K168	153.23	4866K18	153.23
2 1/2″	6 7/8″	4632K169	294.82	4866K19	294.82
3″	7 5/8″	4632K171	464.37	4866K21	464.37
4″	10 13/16″	4632K172	816.60	4866K22	816.60

Repair Kits—Include replacement seats, seals, and packing.

For Pipe Size		Each	For Pipe Size		Each
1/4″	4632K31	$24.26	1 1/4″	4632K36	$62.36
3/8″	4632K32	24.26	1 1/2″	4632K37	72.76
1/2″	4632K33	32.72	2″	4632K38	86.25
3/4″	4632K34	39.88	2 1/2″	4632K43	159.85
1″	4632K35	51.96	3″	4632K45	183.53
			4″	4632K47	246.28

Sanitary Easy-Maintenance Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas:
  1/2″-2″: 1000 psi @ 100° F
  2 1/2″-3″: 800 psi @ 100° F
- Max. Pressure for Steam: Not rated
- Temp. Range: 0° to 300° F
- Vacuum Rating: Not rated

Meet 3-A sanitary standard health and safety requirements for food, beverage, dairy, pharmaceutical, and biotechnology applications. Valves have a three-piece bolted-body design for easy access to replace seats, seal, packing, or ball without removing your valve from the pipeline. Body and ball are Type 316 stainless steel. Seats, seal, and packing are PTFE. Valves have unrestricted flow (full port). The handle can be locked in position using a padlock (not included). *Valves for 1/2″ to 1″ tube OD* accept a padlock with a shackle diameter of 3/16″; *valves for 1 1/2″ to 3″ tube OD* accept a padlock with a shackle diameter of 7/32″.

Quick-clamp valves connect with quick-clamp fittings on pages 208-210. ***Butt-weld valves*** are unthreaded; they are for welded connections with tubing.

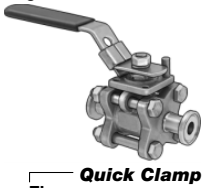

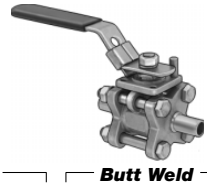

For Tube OD	End-to-End Lg.	Quick Clamp Flange OD		Each	Butt Weld	Each
1/2″	3 1/2″	1″	44755K51	$79.15	44755K61	$74.63
3/4″	4 1/16″	1″	44755K52	94.19	44755K62	107.69
1″	4 1/2″	2″	44755K53	149.05	44755K63	138.18
1 1/2″	5 7/16″	2″	44755K54	244.86	44755K64	229.66
2″	6 1/4″	2 1/2″	44755K55	371.24	44755K65	339.96
2 1/2″	7 3/4″	3″	44755K56	520.66	44755K66	568.55
3″	9″	3 9/16″	44755K57	722.82	44755K67	792.50

Extreme-Pressure Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 10,000 psi @ 266° F
- Max. Pressure for Steam: 10,000 psi @ 266° F
- Temp. Range: –40° to +446° F
- Vacuum Rating: Not rated

Ideal for high-pressure hydraulic oil and water applications, these valves withstand up to 10,000 psi. Connections are NPT female. Body and ball are Type 316 stainless steel. Seats and seals are PEEK, PTFE, and RTFE. Valves have restricted flow (reduced port).

With 1/4″-3/4″ Pipe Size

Pipe Size	End-to-End Lg.		Each
1/4″	3 1/2″	3553K21	$171.95
3/8″	3 5/8″	3553K23	174.96
1/2″	3 3/4″	3553K25	178.09
3/4″	4 5/16″	3553K27	183.73
1″	4 7/8″	3553K29	372.49

Type 316 Stainless Steel Ball Valves

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

Easy-Access Type 316 Stainless Steel Ball Valves

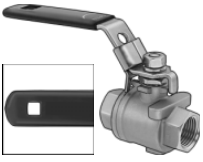

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 100° F
- Max. Pressure for Steam: 150 psi @ 365° F
- Temp. Range: –25° to +400° F
- Vacuum Rating: 29″ Hg

Install these valves in tough-to-reach locations—use your 3/8″ square ratchet to turn the handle easily. Connections are NPT female. Body and ball are Type 316 stainless steel. Seats are glass-filled PTFE and seal and packing are PTFE. Valves have unrestricted flow (full port). The handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″.

Pipe Size	End-to-End Lg.		Each
1″	3 5/16″	5539T25	$78.37
1 1/4″	3 11/16″	5539T26	126.25
1 1/2″	4 1/8″	5539T27	185.00
2″	4 15/16″	5539T28	230.77

Diverting 3-Port Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 800 psi @ 100° F
- Max. Pressure for Steam: Not rated
- Temp. Range: –50° to +450° F
- Vacuum Rating: Not rated

Flow Options

Direct flow from the center inlet to one of the side outlets at full capacity, or to both side outlets simultaneously at a reduced capacity. Valves have no shut-off position.

Valves have NPT female connections. Body and ball are Type 316 stainless steel. Seats are glass-filled PTFE, seal is PTFE, and packing is carbon/graphite-filled PTFE. Valves have two mounting holes for attaching an actuator. *Valves with 1/4″ to 1/2″ pipe sizes* have unrestricted flow (full port); *valves with 3/4″ to 2″ pipe sizes* have slightly restricted flow (standard port).

Pipe Size	End-to-End Lg.	Mounting Hole Size		Each
1/4″	2 5/16″	10-24	4467K41	$114.88
3/8″	2 5/16″	10-24	4467K42	114.88
1/2″	2 5/16″	10-24	4467K43	114.68
3/4″	2 5/8″	10-24	4467K44	153.90
1″	2 7/8″	10-24	4467K45	191.37
1 1/2″	3 3/8″	1/4″-20	4467K46	378.57
2″	4″	1/4″-20	4467K47	486.01

Diverting 3-Port Type 316 Stainless Steel Ball Valves with Yor-Lok Fittings

- Max. Pressure for Water, Oil, and Inert Gas: 6000 psi @ 125° F
- Max. Pressure for Steam: Not rated
- Temp. Range: –30° to +280° F
- Vacuum Rating: 29″ Hg

Flow Options

The corrosion resistance of Type 316 stainless steel is combined with the leak-free seal of a Yor-Lok double-ferrule compression tube fitting. Use valves to direct flow from the bottom inlet to one of the side outlets or shut off flow completely. For Yor-Lok fittings, see page 174. Connections are also compatible with Swagelok®, Parker A-Lok, Bilok, and Tylok fittings.

Valves have a Type 316 stainless steel body and ball. Seats are Kel-F and seal and packing are PTFE. Valves mount through an instrument panel using the threads and hex nut below the handle. *Valves for 1/16″ to 3/8″ tube OD* have slightly restricted flow (standard port); *valve for 1/2″ tube OD* has restricted flow (reduced port).

For Tube OD	End-to-End Lg.	Panel Cutout, dia.		Each
1/16″	2 3/4″	49/64″	45165K39	$118.57
1/8″	3 1/8″	49/64″	45165K41	119.21
1/4″	3 5/16″	49/64″	45165K42	151.86
3/8″	3 7/16″	49/64″	45165K43	201.37
1/2″	4 1/16″	13/16″	45165K44	266.81

Stainless Steel Ball Valves with High-Vacuum Tube Fittings

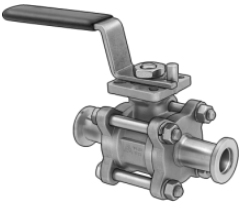

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 150° F
- Max. Pressure for Steam: 40 psi @ 267° F
- Temp. Range: 0° to 300° F
- Vacuum Rating: 10^{-5} torr (unless noted)

Create a strong seal for high-vacuum applications. These valves have Type 304 stainless steel high-vacuum tube fitting connections, also known as NW fittings, that are compatible with High-Vacuum Tube Fittings on pages 214-215. They meet 3-A sanitary standard requirements. Body and ball are Type 316 stainless steel. Seats, seal, and packing are PTFE. Valves have unrestricted flow (full port). The handle can be locked in position using a padlock (not included). *Valves for 1/2″ to 1″ tube OD* accept a padlock with a shackle diameter of 1/4″; *valves for 1 1/2″ and 2″ tube OD* accept a padlock with a shackle diameter of 5/16″.

For Tube OD	Flange OD	Trade No.	End-to-End Lg.		Each
1/2″	1 3/16″	16	4 5/16″	4123K41	$277.73
3/4″	1 3/16″	16	4 11/16″	4123K43	293.12
1″	1 9/16″	25	4 7/8″	4123K45	326.19
1 1/2″	2 3/16″	40	5 5/8″	4123K47	$421.11
2″	2 15/16″	50	6 3/8″	4123K49★	529.08

★ Vacuum rating is 10^{-4} torr.

Low-Profile Type 316 Stainless Steel and Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 500 psi @ 200° F
- Max. Pressure for Steam: Not rated
- Temp. Range: 40° to 200° F
- Vacuum Rating: Not rated

Use these valves where space is at a premium. Seats, seal, and packing are PTFE.

Type 316 stainless steel valves provide excellent corrosion resistance. Body and ball are Type 316 stainless steel. All have slightly restricted flow (standard port).

Nickel-plated steel valves provide good corrosion resistance. Body and ball are nickel-plated steel. All have unrestricted flow (full port).

NPT

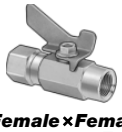

Pipe Size	End-to-End Lg.	Female×Female	Each	Female×Male	Each	Male×Male	Each
Type 316 Stainless Steel							
1/4″	2 7/8″	—	—	—	—	4310K11	$55.12
3/8″	2 7/8″	4310K19	$59.71	4310K23	$60.85	4310K17	58.63
Nickel-Plated Steel							
1/4″	3″	—	—	—	—	4307K22	37.09
3/8″	3″	—	—	4307K24	37.09	4307K28	37.09

Quick-Assembly Compression Tube Fitting Female × NPT Male

For Tube OD	Pipe Size	End-to-End Lg.		Each
Type 316 Stainless Steel				
3/8″	3/8″	3 1/4″	4310K31	$72.28

Quick-Assembly Compression Tube Fitting Female × Female

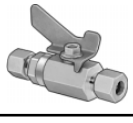

For Tube OD	End-to-End Lg.		Each
Type 316 Stainless Steel			
3/8″	3 9/16″	4310K29	$92.52

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

High-Pressure Type 316 Stainless Steel and Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas:
  Lockable Lever: 1/4"-1": 1800 psi @ 0°F
  1 1/4"-2": 1500 psi @ 75°F
  2 1/2"-3": 800 psi @ 250°F
  Spring-Close Lever: 1/4"-1": 2000 psi @ 50°F
  1 1/4"-2": 1500 psi @ 100°F
- Max. Pressure for Steam: 150 psi @ 365°F
- Temp. Range: Lockable Lever: –20° to +450°F
  Spring-Close Lever: –20° to +500°F
- Vacuum Rating: 29" Hg

A great choice for on/off control in high-pressure applications. All valves have NPT female connections. All have slightly restricted flow (standard port).

Lockable-lever valves have a handle that can be locked in position using a padlock (not included). Seats and packing are glass-filled PTFE and seal is PTFE. Valves have mounting holes for attaching an actuator. *Type 316 stainless steel valves* accept a padlock with a shackle diameter of 1/4"; *steel valves* accept a padlock with a shackle diameter of 5/16".

Spring-close lever valves close automatically when the lever is released to ensure your valve is open only when an operator is present. Seats and packing are carbon/graphite-filled PTFE and seal is PTFE.

Type 316 stainless steel valves have excellent corrosion resistance. Body and ball are Type 316 stainless steel. ***Steel valves*** have a steel body and a chrome-plated steel ball.

Lockable Lever

Pipe Size	End-to-End Lg.	Mounting Holes Size	Mounting Holes Qty.	Type 316 Stainless Steel	Each	Steel	Each
1/4"	2 1/16"	10-24	2	49355K31	$50.35	49355K81	$31.62
3/8"	2 1/16"	10-24	2	49355K32	50.85	49355K82	31.62
1/2"	2 1/4"	10-24	2	49355K33	51.36	49355K83	31.62
3/4"	3"	10-24	2	49355K34	82.98	49355K84	43.37
1"	3 3/8"	10-24	2	49355K35	99.74	49355K85	59.05
1 1/4"	4"	1/4"-20	2	49355K26	171.09	49355K86	111.19
1 1/2"	4 3/8"	1/4"-20	2	49355K27	178.62	49355K87	139.89
2"	5 1/2"	1/4"-20	2	49355K28	230.70	49355K88	186.14
2 1/2"	6 3/4"	1/4"-20	4	49355K37	654.46	49355K89	375.52
3"	6 3/4"	1/4"-20	4	49355K38	710.66	49355K96	409.05

Spring-Close Lever

Pipe Size	End-to-End Lg.	Type 316 Stainless Steel	Each	Steel	Each
1/4"	2 1/16"	45155K51	$106.52	45155K61	$90.80
3/8"	2 1/16"	45155K52	106.52	45155K62	90.80
1/2"	2 1/4"	45155K53	106.52	45155K63	90.80
3/4"	3"	45155K54	137.91	45155K64	100.94
1"	3 3/8"	45155K55	155.00	45155K65	108.23
1 1/4"	4"	45155K56	252.34	45155K66	193.36
1 1/2"	4 3/8"	45155K57	272.35	45155K67	237.53
2"	5 1/2"	45155K58	326.23	45155K68	297.78

Ultra-High-Pressure Type 316 Stainless Steel and Steel Ball Valves

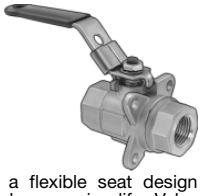

- Max. Pressure for Water, Oil, and Inert Gas:
  1/4"-1": 4500 psi @ 120°F
  1 1/4"-2": 3000 psi @ 150°F
- Max. Pressure for Steam: Not rated
- Temp. Range:
  Stainless Steel: –40° to +230°F
  Steel: –20° to +230°F
- Vacuum Rating: Not rated

Ideal for ultra-high-pressure applications, a flexible seat design provides consistent leak-free operation for a long service life. Valve performance exceeds ANSI/FCI 70-2 Class VI standards for leakage. Connections are NPT female. Ball is Type 316 stainless steel, seats are acetal, and seals and packing are PTFE. The handle can be locked in position using a padlock (not included) with a shackle diameter of 9/32". Valves have three mounting holes for mounting to a panel. *Valves with 1/4" to 3/4" pipe size* have unrestricted flow (full port); *valves with 1" to 2" pipe size* have slightly restricted flow (standard port).

Type 316 stainless steel valves have a Type 316 stainless steel body for excellent corrosion resistance. ***Steel valves*** have a steel body.

Pipe Size	End-to-End Lg.	Mounting Hole Size	Type 316 Stainless Steel	Each	Steel	Each
1/4"	2 3/4"	9/32"	47275K41	$111.30	9786K21	$72.22
3/8"	2 3/4"	9/32"	47275K42	111.30	9786K22	72.22
1/2"	2 3/4"	9/32"	47275K43	134.44	9786K23	84.44
3/4"	3 1/2"	11/32"	47275K44	166.67	9786K24	101.11
1"	3 5/8"	11/32"	47275K45	235.56	9786K25	123.33
1 1/4"	3 15/16"	13/32"	47275K46	331.11	9786K26	186.99
1 1/2"	4 9/16"	13/32"	47275K47	409.18	9786K27	218.15
2"	4 15/16"	13/32"	47275K48	501.13	9786K28	326.67

Easy-Maintenance High-Pressure-Steam Type 316 Stainless Steel and Steel Ball Valves

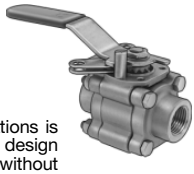

- Max. Pressure for Water, Oil, and Inert Gas: 1440 psi @ 200°F
- Max. Pressure for Steam: See table
- Temp. Range: 0° to 550°F
- Vacuum Rating: Not rated

Maintenance in high-pressure-steam applications is quick and simple. A three-piece bolted-body design allows access to replace the seats, seal, or ball without unthreading the valve connections from your pipeline. Body has enclosed fasteners to minimize dust buildup during use for a long service life.

Valves have NPT female connections. Ball is Type 316 stainless steel, seats are carbon/graphite-filled TFE, seal is flexible graphite, and packing is carbon/graphite-filled TFE. All have unrestricted flow (full port). The handle can be locked in position using a padlock (not included) with a shackle diameter of 1/4". *Valves with 1/4" to 1 1/2" pipe size* have a lever handle; *valves with 2" pipe size* have a pipe-style lever handle.

Type 316 stainless steel valves have a Type 316 stainless steel body for excellent corrosion resistance. ***Steel valves*** have a steel body.

Pipe Size	Max. Pressure for Steam	End-to-End Lg.	Type 316 Stainless Steel	Each	Steel	Each
1/4"	450 psi @ 460°F	2 5/8"	3778T911	$148.09	3639T511	$102.02
3/8"	450 psi @ 460°F	2 5/8"	3778T921	147.97	3639T521	102.02
1/2"	425 psi @ 454°F	2 7/8"	3778T931	168.56	3639T531	128.61
3/4"	400 psi @ 448°F	3 3/4"	3778T941	233.73	3639T541	167.19
1"	350 psi @ 435°F	4 1/4"	3778T951	281.81	3639T551	213.27
1 1/4"	325 psi @ 429°F	4 9/16"	3778T961	350.60	3639T561	253.19
1 1/2"	300 psi @ 421°F	5 1/16"	3778T971	420.86	3639T571	348.59
2"	250 psi @ 406°F	5 7/8"	3778T981	628.14	3639T581	562.03

Flanged Type 316 Stainless Steel and Steel Ball Valves

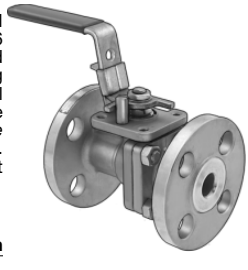

- Max. Pressure for Water, Oil, and Inert Gas: 275 psi @ 100°F
- Max. Pressure for Steam: 100 psi @ 366°F
- Temp. Range: 0° to 500°F
- Vacuum Rating: 28" Hg

Simply bolt these valves with unthreaded ANSI Class 150 flange connections to ANSI flanges of the same pipe size for ease of installation and maintenance. Ball is Type 316 stainless steel, seats are modified PTFE, seals are PTFE, and packing is glass-filled PTFE. Valves have unrestricted flow (full port). The handle can be locked in position using a padlock (not included). Valves have four mounting holes for attaching an actuator. All meet ASME B16.5 and ASME B16.10. *Valves with 1/2" to 2" pipe size* have a lever handle that accepts a padlock with a shackle diameter of 9/32"; *valves with 2 1/2" to 4" pipe size* have a pipe-style lever handle that accepts a padlock with a shackle diameter of 5/16".

Type 316 stainless steel valves have a Type 316 stainless steel body for excellent corrosion resistance. ***Steel valves*** have a steel body.

Pipe Size	End-to-End Lg.	Flange OD	Flange Bolt Circle Dia.	Flange Bolt Hole Qty.	Flange Bolt Hole Size	Actuator Mounting Hole Size	Type 316 Stainless Steel	Each	Steel	Each
1/2"	4 1/4"	3 1/2"	2 3/8"	4	5/8"	M5	45995K81	$173.02	—	—
3/4"	4 5/8"	3 7/8"	2 3/4"	4	5/8"	M5	45995K82	215.33	—	—
1"	5"	4 1/4"	3 1/8"	4	5/8"	M6	45995K83	243.73	46155K23	$225.20
1 1/2"	6 1/2"	5"	3 7/8"	4	5/8"	M8	45995K84	328.54	46155K24	281.35
2"	7"	6"	4 3/4"	4	3/4"	M8	45995K85	434.94	46155K25	320.27
2 1/2"	7 1/2"	7"	5 1/2"	4	3/4"	M10	45995K86	606.17	46155K26	431.66
3"	8"	7 1/2"	6"	4	3/4"	M10	45995K87	804.74	46155K27	540.49
4"	9"	9"	7 1/2"	8	3/4"	M10	45995K88	1,191.97	46155K28	762.41

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	6 5/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″

Fire-Tested Type 316 Stainless Steel and Steel Ball Valves

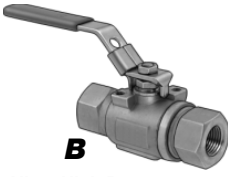

High-Pressure Steam:
- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 200°F
- Max. Pressure for Steam: 250 psi @ 400°F
- Temp. Range: –20° to +500°F
- Vacuum Rating: Not rated

High Pressure:
- Max. Pressure for Water, Oil, and Inert Gas: 2000 psi @ 250°F
- Max. Pressure for Steam: 150 psi @ 366°F
- Temp. Range: –20° to +450°F
- Vacuum Rating: 26″ Hg

Ultra-High Pressure:
- Max. Pressure for Water, Oil, and Inert Gas: 3600 psi @ 100°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +185°F
- Vacuum Rating: 29.4″ Hg

Extreme Pressure:
- Max. Pressure for Water, Oil, and Inert Gas: 6000 psi @ 100°F
- Max. Pressure for Steam: 250 psi @ 406°F
- Temp. Range: –70° to +550°F
- Vacuum Rating: 29.4″ Hg

Choose "safety first" for your applications that handle flammable fluids. Valves are fire-tested to American Petroleum Institute (API) standard 607, Edition 4 and have a one-piece body for secure fluid isolation. Connections are NPT female. Ball is Type 316 stainless steel. The handle can be locked in position using a padlock (not included). *Style A* has restricted flow (reduced port). *Style B* has unrestricted flow (full port).

High-pressure steam valves have glass-filled PTFE seats and a graphite seal.

High-pressure valves have glass-filled PTFE seats and graphite packing.

Ultra-high-pressure and ***extreme-pressure valves*** are ideal for use in chemical, power, and petroleum-processing systems. They have a fluoroelastomer seal and graphite packing. All have three mounting holes for attaching an actuator; mounting hole size is 1/4″-20. Valves comply with NACE MR0175 for crack resistance in environments containing hydrogen sulfide. Meet API standard 608 and ANSI B16.34. *Ultra-high-pressure valves* have acetal seats; *extreme-pressure valves* have PEEK seats.

Type 316 stainless steel valves have a Type 316 stainless steel body for excellent corrosion resistance. ***Steel valves*** have a steel body.

	Pipe Size	End-to-End Lg.	Padlock Shackle Dia.	*Type 316 Stainless Steel*	Each	*Steel*	Each
High-Pressure Steam Valves							
A	1/4″	2 13/16″	9/32″	**47215K13**	$45.56	**4631K28**	$26.67
A	3/8″	2 13/16″	9/32″	**47215K14**	45.56	**4631K21**	26.67
A	1/2″	2 13/16″	9/32″	**47215K15**	45.56	**4631K22**	26.67
A	3/4″	3 1/16″	9/32″	**47215K16**	53.33	**4631K23**	35.56
A	1″	3 3/4″	9/32″	**47215K17**	67.78	**4631K14**	45.56
A	1 1/4″	3 7/8″	9/32″	**47215K18**	96.67	**4631K15**	67.78
A	1 1/2″	4 1/8″	9/32″	**47215K19**	118.89	**4631K16**	81.11
A	2″	4 11/16″	9/32″	**47215K21**	155.56	**4631K17**	107.78
High-Pressure Valves							
A	1/4″	2 5/16″	1/4″	**4040T61**	44.51	**4024T71**	39.50
A	3/8″	2 5/16″	1/4″	**4040T62**	44.51	**4024T72**	39.50
A	1/2″	2 5/8″	1/4″	**4040T63**	44.51	**4024T73**	39.50
A	3/4″	2 13/16″	1/4″	**4040T64**	56.50	**4024T74**	45.60
A	1″	3 1/4″	1/4″	**4040T65**	69.60	**4024T75**	55.20
A	1 1/4″	3 9/16″	1/4″	**4040T66**	113.24	**4024T76**	91.33
A	1 1/2″	3 7/8″	1/4″	**4040T67**	147.71	**4024T77**	112.19
A	2″	4 5/16″	1/4″	**4040T68**	171.71	**4024T78**	140.67
Ultra-High-Pressure Valves							
B	1/4″	3″	5/16″	**4357T11**	104.64	———	———
B	3/8″	3″	5/16″	**4357T12**	104.64	———	———
B	1/2″	4″	5/16″	**4357T13**	106.10	———	———
B	3/4″	4 5/16″	5/16″	**4357T14**	225.38	———	———
B	1″	4 13/16″	5/16″	**4357T15**	292.68	———	———
Extreme-Pressure Valves							
B	1/4″	3″	5/16″	**4357T51**	163.90	———	———
B	3/8″	3″	5/16″	**4357T52**	163.90	———	———
B	1/2″	4″	5/16″	**4357T53**	175.61	———	———
B	3/4″	4 5/16″	5/16″	**4357T54**	292.68	———	———
B	1″	4 13/16″	5/16″	**4357T55**	471.95	———	———

Diverting 3-Port Hydraulic Steel Ball Valves

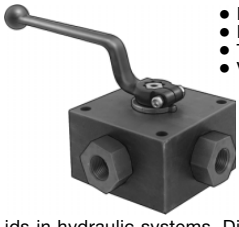

- Max. Pressure for Oil: See table
- Max. Pressure for Steam: Not rated
- Temp. Range: 14° to 176°F
- Vacuum Rating: Not rated

Flow Options

Rated for extremely high pressure, these valves are great for use with fluids in hydraulic systems. Direct flow between two ports or shut off flow completely. Connections are NPT female. Body is steel, ball is chrome-plated steel, seats are polyacetal, and seals are fluoroelastomer. Valves have restricted flow (reduced port).

Pipe Size	Max. psi @ 176°F	End-to-End Lg.		Each
1/4″	7250	3 15/16″	**46185K511**	$251.04
3/8″	7250	4 9/16″	**46185K512**	309.10
1/2″	5800	5 5/16″	**46185K513**	413.60
3/4″	4500	5 11/16″	**46185K514**	764.52

Easy-Maintenance Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1500 psi @ 100°F
- Max. Pressure for Steam: 150 psi @ 365°F
- Temp. Range: –50° to +500°F
- Vacuum Rating: 29″ Hg

A three-piece bolted-body design provides quick, easy access to replace seats, seal, packing, or ball without unthreading the valve connections from your pipeline. Connections are NPT female. Body is steel and ball is Type 316 stainless steel. Seats are TFM and seal and packing are PTFE. Valves have unrestricted flow (full port). The handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″.

Pipe Size	End-to-End Lg.		Each
1/2″	2 13/16″	**9788K81**	$84.52
3/4″	3 11/16″	**9788K82**	99.74
1″	4 3/16″	**9788K83**	116.89
1 1/4″	4 1/2″	**9788K84**	146.70
1 1/2″	5″	**9788K85**	192.70
2″	5 7/8″	**9788K86**	267.35

Sure-Fit Flanged Cast Iron Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 150°F
- Max. Pressure for Steam: 125 psi @ 212°F
- Temp. Range: –20° to +353°F
- Vacuum Rating: Not rated

Swap out your flanged gate valve for actuation capabilities and quicker on/off control; flange dimensions match flanged gate valves of the same pipe size. Connections are unthreaded ANSI Class 125 flanges that bolt to ANSI flanges of the same pipe size for simple installation. Body and ball are cast iron and seats and seal are glass-filled PTFE. Valves have unrestricted flow (full port). The handle can be locked in position using a padlock (not included) with a shackle diameter of 1/4″. Valves have four mounting holes for attaching an actuator. Meet ANSI B16.5/B16.10 and MSS-SP-72.

		Flange					
Pipe Size	End-to-End Lg.	OD	Bolt Circle Dia.	Bolt Hole Qty.	Bolt Hole Size	Actuator Mounting Hole Size	Each
1/2″	4 1/4″	3 1/2″	2 3/8″	4	1/2″	1/4″	**3634K51** $98.49
3/4″	4 5/8″	3 5/8″	2 3/4″	4	1/2″	1/4″	**3634K52** 113.78
1″	5″	4 1/4″	3 1/8″	4	1/2″	1/4″	**3634K53** 127.45
2″	7″	6″	4 3/4″	4	5/8″	M8	**3634K55** 248.60
2 1/2″	7 1/2″	7″	5 1/2″	4	5/8″	7/16″	**3634K56** 255.29
3″	8″	7 1/2″	6″	4	5/8″	7/16″	**3634K57** 289.73
4″	9″	9″	7 1/2″	8	5/8″	7/16″	**3634K58** 388.63
6″	10 1/2″	11″	9 1/2″	8	3/4″	1/2″	**3634K59** 597.68

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Hydraulic Extreme-Pressure Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: See table
- Max. Pressure for Steam: Not rated
- Temp. Range: –20° to +212° F
- Vacuum Rating: Not rated

Ideal for use with extremely high-pressure hydraulic oil systems. Connections are female. Body is zinc-plated steel, ball is chrome-plated steel, seats are acetal filled with molybdenum disulfide, and seal is fluoroelastomer. Valves have unrestricted flow (full port).

Lockable-lever valves have a handle that can be locked in position using a padlock (not included) with a shackle diameter of 5/16″.

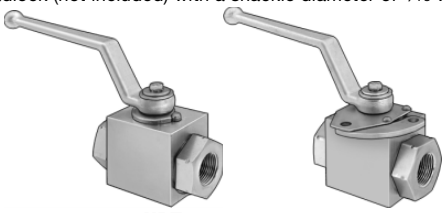

NPT

Pipe Size	Max. psi @ 212° F■	End-to-End Lg.	Lever	Each	Lockable Lever	Each
1/8″	7,250	2 3/4″	4715K11	$38.17	4776K11	$70.10
1/4″	7,250	2 3/4″	4715K12	38.58	4776K12	75.53
3/8″	7,250	2 7/8″	4715K43	43.03	4776K43	79.64
1/2″	7,250	3 5/16″	4715K44	45.66	4776K44	83.06
3/4″	6,000	3 3/4″	4715K45	78.88	4776K45	116.99
1″	6,000	4 7/16″	4715K46	99.74	4776K46	143.89
1 1/4″	6,000	4 3/4″	4715K47	188.89	4776K47	220.74
1 1/2″	6,000	5 1/8″	4715K48	230.67	4776K48	261.98
2″	6,000	5 1/2″	4715K49	303.76	4776K49	324.13

■ For water, oil, and inert gas.

SAE

SAE Thread Size	Max. psi @ 212° F■	End-to-End Lg.	Lever	Each	Lockable Lever	Each
7/16″-20	7,250	2 3/4″	4715K15	$40.13	4776K22	$76.81
9/16″-18	7,250	2 7/8″	4715K63	45.28	4776K63	82.56
3/4″-16	7,250	3 5/16″	4715K64	52.00	4776K64	89.01
1 1/16″-12	6,000	3 3/4″	4715K65	84.85	4776K65	121.53
1 5/16″-12	6,000	4 7/16″	4715K66	104.78	4776K66	146.36
1 5/8″-12	6,000	4 3/4″	4715K67	188.89	4776K67	220.74
1 7/8″-12	6,000	5 1/8″	4715K68	230.67	4776K68	261.98
2 1/2″-12	6,000	5 1/2″	4715K69	303.76	4776K69	324.13

■ For water, oil, and inert gas.

Compact Low-Pressure PVC Ball Valves

- Max. Pressure: 125 psi @ 140° F
- Temp. Range: 33° to 140° F
- Vacuum Rating: Not rated

Compact and lightweight, these valves are great for low-pressure applications in tight locations. Ideal for use with water, oil, and inert gas, valves have a PVC body and ball for good strength and corrosion resistance. Seats and seal are Buna-N. Color is gray. Valves are NSF 61 certified for use with drinking (potable) water. All have unrestricted flow (full port), except valves with a 3/4″ pipe size, which have slightly restricted flow (standard port).

NPT Female × Female

Pipe Size	End-to-End Lg.	Each
1/4″	2 1/4″	2772T11 $17.06
1/2″	2 5/8″	2772T12 17.06

NPT Female × Male

Pipe Size	End-to-End Lg.	Each
1/2″	2 5/8″	2772T31 $17.06
3/4″	2 3/4″	2772T32 17.06

NPT Male × Male

Pipe Size	End-to-End Lg.	Each
1/2″	2 5/8″	2772T21 $17.06
3/4″	2 5/8″	2772T22 17.06

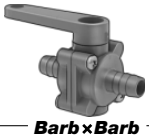

Barb × Barb

For Tube ID	End-to-End Lg.	Each
1/2″	2 7/8″	2772T42 $17.06
5/8″	2 3/4″	2772T43 17.06

Aluminum Ball Valves with 37° Flared Tube Fittings

- Max. Pressure for Water, Oil, Leaded Gasoline, Diesel Fuel, and Methanol: 200 psi @ 72° F
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +250° F
- Vacuum Rating: Not rated

Get a leak-free seal between your valve and tubing. Valve connections are AN fittings, which are manufactured to tighter tolerances than other 37° flared fittings. Use with 37° flared tubing and fittings; for tubing, see page 152, for fittings, see page 183.

Valves have an Alloy 6061-T6 aluminum body and ball, so they are lighter than similar valves made of other materials. Seats and seal are PTFE. All have unrestricted flow (full port).

For Tube OD	End-to-End Lg.	Mounting Hole Size		Each
3/8″	2 9/16″	9/16″-18	3710K31	$134.64
1/2″	2 11/16″	3/4″-16	3710K33	134.64
5/8″	3 1/4″	7/8″-14	3710K35	141.72
3/4″	3 7/16″	11/16″-12	3710K37	141.72
1″	4 5/16″	1 5/16″-12	3710K39	175.60

Ultra-Chemical-Resistant Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 720 psi @ 150° F
- Max. Pressure for Steam: 150 psi @ 359° F
- Temp. Range: –50° to +450° F
- Vacuum Rating: 29.9″ Hg

Perfect for use in aggressive environments, these valves have the highest chemical resistance of any we offer. Connections are NPT female. Seats and seals are glass-filled PTFE. All have restricted flow (reduced port).

Alloy 20 (stainless steel alloy) valves have an Alloy 20 body and ball for excellent resistance to acidic solutions.

Monel (nickel-copper alloy) valves have a Monel body and ball for superior resistance to acidic and alkaline solutions.

Pipe Size	End-to-End Lg.	Alloy 20	Each	Monel	Each
1/2″	2 3/16″	4072T15	$210.67	4072T55	$249.55
3/4″	2 1/4″	4072T17	278.25	4072T57	324.63
1″	2 3/4″	4072T21	404.13	4072T61	463.75

Low-Pressure PVC and CPVC Ball Valves

- Max. Pressure: 150 psi @ 73° F
- Temp. Range: PVC: 40° to 140° F; CPVC: 40° to 200° F
- Vacuum Rating: 26″ Hg

Ideal for low-pressure water lines, these valves are NSF 61 certified for use with drinking (potable) water and corrosion resistant. Use with Schedule 40 and 80 pipe and fittings. Connections are female. Seats are PTFE/HDPE (high-density polyethylene) and seal is EPDM. Valves have unrestricted flow (full port).

PVC valves have a PVC body and ball. **To Order:** Please specify color: white or dark gray.

CPVC valves handle higher temperatures than PVC; body and ball are CPVC. Color is dark gray.

NPT

Pipe Size	End-to-End Lg.	PVC	Each	CPVC	Each
1/2″	2 11/16″	4876K11	$6.56	4724K71	$8.64
3/4″	3″	4876K12	7.78	4724K72	10.98
1″	3 3/8″	4876K13	10.58	4724K73	11.93
1 1/4″	3 7/8″	4876K14	14.01	4724K74	16.81
1 1/2″	4 11/16″	4876K15	21.39	4724K75	26.07
2″	5 3/16″	4876K16	27.03	4724K76	32.42
3″	8 3/8″	4876K17	82.98		
4″	9 11/16″	4876K18	152.09		

Socket Weld (Unthreaded)

Pipe Size	End-to-End Lg.	PVC	Each	CPVC	Each
1/2″	2 11/16″	4876K21	$6.56	4724K81	$8.64
3/4″	3″	4876K22	7.78	4724K82	10.98
1″	3 3/8″	4876K23	10.58	4724K83	11.93
1 1/4″	3 7/8″	4876K24	14.01	4724K84	16.81
1 1/2″	4 11/16″	4876K25	21.39	4724K85	26.07
2″	5 3/16″	4876K26	27.03	4724K86	32.42
3″	8 3/8″	4876K27	82.98		
4″	9 11/16″	4876K28	152.09		

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″

PVC and CPVC Ball Valves

- Max. Pressure: 235 psi @ 73°F
- Temp. Range:
  PVC: 40° to 140°F
  CPVC: 40° to 200°F
- Vacuum Rating: 26″ Hg

Rated to withstand up to 235 psi, these valves are NSF 61 certified for use with drinking (potable) water and are corrosion resistant. Use with Schedule 40 and 80 pipe and fittings. Valves have female connections, PTFE seats, and unrestricted flow (full port).

PVC valves are ideal for use with water. Body and ball are PVC and seal is EPDM. Color is dark gray. ***CPVC valves*** handle higher temperatures than PVC and have a fluoroelastomer seal for good chemical resistance. Body and ball are CPVC. Color is light gray.

Pipe Size	End-to-End Lg.	PVC	Each	CPVC	Each
NPT					
1/2″	3 3/8″	4506K41	$15.87	5052K21	$20.80
3/4″	4 1/16″	4506K42	21.67	5052K22	27.72
1″	4 7/16″	4506K43	23.64	5052K23	34.66
1 1/4″	4 15/16″	4506K44	42.39	5052K24	69.30
1 1/2″	5 5/8″	4506K45	52.49	5052K25	81.04
2″	6 1/2″	4506K46	56.56	5052K26	91.84
Socket Weld (Unthreaded)					
1/2″	3 3/8″	4506K26	15.87	5052K51	20.80
3/4″	4 1/16″	4506K27	21.67	5052K52	27.72
1″	4 7/16″	4506K28	23.64	5052K53	34.66
1 1/4″	4 15/16″	4506K35	42.39	5052K54	69.30
1 1/2″	5 5/8″	4506K29	52.49	5052K55	81.04
2″	6 1/2″	4506K31	56.56	5052K56	91.84

Easy-to-Install Single-Union PVC Ball Valves

- Max. Pressure: 1/2″-2″: 235 psi @ 100°F
  3″: 150 psi @ 100°F
- Temp. Range: 40° to 140°F
- Vacuum Rating: 26″ Hg

With a single union fitting for easy installation, these valves are NSF 61 certified for use with drinking (potable) water and are corrosion resistant. Use with Schedule 40 and 80 pipe and fittings. Connections are female. Valves have a PVC body and ball, PTFE seats, and unrestricted flow (full port). Color is dark gray.

Oil-resistant valves have a Buna-N seal. ***Chemical-resistant valves*** have a fluoroelastomer seal.

Pipe Size	End-to-End Lg.	Oil Resistant	Each	Chemical Resistant	Each
NPT					
1/2″	3 1/16″	4953K711	$14.88	4953K53	$18.34
3/4″	3 9/16″	4953K712	18.74	4953K54	23.16
1″	3 7/8″	4953K713	22.06	4953K55	27.20
1 1/2″	4 5/8″	4953K715	38.55	4953K57	49.74
2″	5 1/2″	4953K716	44.65	4953K58	55.09
3″	8 1/2″	4953K717	135.06	4953K59	193.49
Socket Weld (Unthreaded)					
1/2″	3 1/16″	4953K721	14.88	4953K22	18.34
3/4″	3 9/16″	4953K722	18.74	4953K23	23.16
1″	3 7/8″	4953K723	22.06	4953K24	27.20
1 1/2″	4 5/8″	4953K725	38.55	4953K26	49.74
2″	5 1/2″	4953K726	44.65	4953K27	55.09
3″	8 1/2″	4953K727	135.06	4953K28	193.49

Easy-to-Install Double-Union PVC and CPVC Ball Valves

Extended Life

- Max. Pressure: 225 psi @ 70°F
- Temp. Range:
  PVC: 40° to 140°F
  CPVC: 40° to 180°F
- Vacuum Rating: 26″ Hg

Union fittings make these valves easy to install and allow for maintenance without detaching your pipe connections. Use with Schedule 40 and 80 pipe and fittings. Valves have female connections, PTFE seats, and unrestricted flow (full port). *NPT* and *socket weld (unthreaded) valves* include fittings for each connection. ***PVC valves*** have a dark gray PVC body and ball. ***CPVC valves*** have a light gray CPVC body and ball.

Water-resistant valves have an EPDM seal. ***Chemical-resistant valves*** have a fluoroelastomer seal.

Extended-life and ***lockable valves*** are NSF 61 certified for use with drinking (potable) water. *Extended-life* have thicker walls. *Lockable* have a handle that can be locked in position using a padlock (not included) with a shackle diameter of 1/4″.

Pipe Size	End-to-End Lg.	PVC Water Resistant	Each	PVC Chemical Resistant	Each	PVC Replacement Union Fittings	Per Pair	CPVC Water Resistant	Each	CPVC Chemical Resistant	Each	CPVC Replacement Union Fittings	Per Pair
NPT and Socket Weld (Unthreaded)													
Standard													
1/2″	4 1/2″	4852T51	$18.77	4852T61	$22.19	4852T91	$26.56	4852T71	$24.94	4852T81	$29.83	4852T1	$20.74
3/4″	5 5/16″	4852T52	20.78	4852T62	24.95	4852T92	28.00	4852T72	29.83	4852T82	36.03	4852T2	21.10
1″	5 7/8″	4852T53	24.95	4852T63	29.09	4852T93	31.40	4852T73	37.46	4852T83	45.73	4852T3	42.14
1 1/4″	6 5/8″	4852T54	36.04	4852T64	38.93	4852T94	31.00	4852T74	55.41	4852T84	66.45	4852T4	36.04
1 1/2″	6 7/8″	4852T55	42.29	4852T65	46.47	4852T95	54.26	4852T75	62.35	4852T85	74.81	4852T5	36.04
2″	8 3/16″	4852T56	57.55	4852T66	61.71	4852T96	65.70	4852T76	83.86	4852T86	101.12	4852T6	120.24
Extended Life													
1/2″	4 11/16″	4887K51	22.02	4887K33	26.20	4887K11	14.13	4719K11	29.80	4719K41	32.22	4719K21	19.62
3/4″	4 3/4″	4887K52	26.61	4887K34	31.11	4887K12	14.25	4719K12	37.30	4719K42	39.91	4719K22	19.76
1″	5 1/4″	4887K53	31.63	4887K35	36.93	4887K15	15.15	4719K13	45.62	4719K43	49.12	4719K23	20.90
1 1/4″	6 5/16″	4887K54	41.59	4887K36	49.74	4887K16	21.19	4719K14	63.55	4719K44	68.56	4719K24	29.44
1 1/2″	6 3/4″	4887K55	52.46	4887K37	61.22	4887K17	23.23	4719K15	75.48	4719K45	81.37	4719K25	31.91
2″	8″	4887K56	69.02	4887K38	80.77	4887K18	25.80	4719K16	104.27	4719K46	111.89	4719K26	35.23
Lockable													
1/2″	4 3/16″	4812T21	24.99	4812T33	27.80	4812T51	13.28	4823T45	33.01	4823T57	36.68	4823T31	19.24
3/4″	4 3/4″	4812T23	29.57	4812T35	32.90	4812T53	17.25	4823T47	41.57	4823T59	46.20	4823T33	21.66
1″	5 1/8″	4812T25	35.22	4812T37	39.22	4812T55	19.51	4823T49	49.49	4823T61	54.99	4823T35	24.69
1 1/2″	6 1/4″	4812T29	58.68	4812T41	65.14	4812T57	28.77	4823T53	83.09	4823T65	92.33	4823T37	39.29
2″	7 3/4″	4812T31	77.43	4812T43	85.27	4812T59	41.47	4823T55	111.13	4823T67	127.75	4823T39	48.54
NPT—*Extended Life*													
3″	10 9/16″	4887K71	181.53	4887K13	196.51	4887K26	56.36	4719K31	296.74	4719K57	279.86	4719K35	60.86
4″	12 5/8″	4887K72	241.90	4887K14	278.45	4887K27	63.34	4719K32	444.52	4719K58	480.72	4719K36	65.02
Socket Weld (Unthreaded)—*Extended Life*													
2 1/2″	10 11/16″	4887K43	161.30	4887K41	190.60	4887K29	33.55	4719K47	225.10	4719K28	243.70	4719K37	46.54
3″	10 9/16″	4887K75	168.03	4887K23	196.51	4887K31	34.31	4719K71	296.74	4719K67	279.86	4719K38	47.65
4″	12 5/8″	4887K76	241.90	4887K24	278.45	4887K32	35.61	4719K72	444.52	4719K68	480.72	4719K39	49.42
BSPP (British Standard Pipe Parallel)—*Extended Life*													
1″	6 9/16″	4543K53	63.83	4543K43	71.10	4543K63	11.94	4727K43	89.70	4727K33	99.68	4727K53	17.68
1 1/2″	8 1/16″	4543K55	106.40	4543K45	118.08	4543K65	21.52	4727K45	150.63	4727K35	167.38	4727K55	31.09
2″	8 13/16″	4543K57	140.37	4543K46	154.57	4543K66	28.29	4727K46	201.47	4727K36	231.58	4727K56	41.41

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

PVC Ball Valves with Garden Hose Threads

- Max. Pressure: 125 psi @ 140°F
- Temp. Range: 33° to 140°F
- Vacuum Rating: Not rated

Connect garden hose threaded (GHT) fittings to your pipeline for use in water-based applications. Valves have a PVC body and ball and PTFE seats. Seals are Buna-N, Santoprene, and PTFE. Valves have unrestricted flow (full port). Color is gray.

Pipe Size	End-to-End Lg.	GHT Female × GHT Male	Each	GHT Female × NPT Male	Each	GHT Female × NPT Female	Each	NPT Female × GHT Male	Each
3/4"	2 15/16"	9848K21	$12.77	9848K31	$12.77	9848K34	$12.77	9848K24	$12.77

Miniature PVC and Nylon Ball Valves

- Max. Pressure: 125 psi @ 140°F
- Temp. Range: 33° to 140°F
- Vacuum Rating: Not rated

Great for low-pressure applications in confined spaces, these miniature valves are good for use with water and oil. All have Buna-N seats and seal, unless otherwise stated.

Low-Flow Valves—*PVC valves* have a corrosion-resistant PVC body and ball and slightly restricted flow (standard port). Color is gray. *Nylon valves* have a nylon body, a glass-filled polypropylene ball, and unrestricted flow (full port). Color is black.

High-Flow Valves—These have a slightly larger overall size for greater capacity than low-flow valves. Body and ball are PVC for good corrosion resistance. Valves have unrestricted flow (full port). Color is gray. *Valves with 3/4" pipe size* have PTFE seats and PTFE, Buna-N, and chemical-resistant Santoprene seals.

Low-Flow PVC and Nylon Valves

Pipe Size	End-to-End Lg.	NPT FEMALE×FEMALE PVC	Each	NPT FEMALE×FEMALE Nylon	Each	End-to-End Lg.	NPT FEMALE×MALE PVC	Each	NPT FEMALE×MALE Nylon	Each	End-to-End Lg.	NPT MALE×MALE PVC	Each	NPT MALE×MALE Nylon	Each
1/8"	1 7/8"	4757K11	$11.12	4796K31	$11.97	2 1/8"	4757K13	$11.12	4796K37	$11.97	2 3/8"	4757K15	$11.12	4796K46	$11.97
1/4"	1 7/8"	4757K12	11.12	4796K32	11.97	2 3/16"	4757K14	11.12	4796K38	11.97	2 1/2"	4757K16	11.12	4796K47	11.97

For Tube ID	End-to-End Lg.	BARB×BARB PVC	Each	BARB×BARB Nylon	Each
1/4"	3 3/16"	4757K17	$11.12	4796K71	$11.97
3/8"	3 3/16"	4757K18	11.12	4796K73	11.97
1/2"	3 3/16"	4757K19	11.12	4796K75	11.97

For Tube OD	End-to-End Lg.	PUSH-TO-CONNECT×PUSH-TO-CONNECT PVC	Each	PUSH-TO-CONNECT×PUSH-TO-CONNECT Nylon	Each
1/4"	2 5/8"	4757K21	$14.04	4796K54	$14.49
3/8"	2 5/8"	4757K22	14.39	4796K55	15.49

High-Flow PVC Valves—Inline

Pipe Size	End-to-End Lg.	NPT Female×Female	Each	End-to-End Lg.	NPT Female×Male	Each	Pipe Size	For Tube ID	End-to-End Lg.	NPT Female×Barb	Each	End-to-End Lg.	NPT Male×Barb	Each
1/4"	2 1/2"	45975K25	$5.93	3"	45975K26	$5.93	1/4"	3/8"-5/8"	3 5/8"	45975K61	$6.43	4 1/8"	45975K63	$6.43
3/8"	2 1/2"	45975K28	5.93	3 1/16"	45975K32	5.93	3/8"	3/8"-5/8"	3 5/8"	45975K62	6.43	4 1/8"	45975K64	6.43
3/4"	3 1/4"	9848K44	12.77	3 1/4"	9848K41	12.77								

Pipe Size	For Tube OD	End-to-End Lg.	NPT Female×Compression Tube Fitting	Each
1/4"	1/4"	2 7/8"	45975K27	$6.43
1/4"	3/8"	2 15/16"	45975K33	6.43

For Tube OD	Pipe Size	End-to-End Lg.	Push-to-Connect×NPT Female	Each
1/4"	1/4"	2 11/16"	45975K34	$8.11
3/8"	1/4"	2 11/16"	45975K35	8.28

High-Flow PVC Valves—Elbow

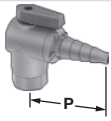

Pipe Size	Port-to-Port Lg. (P)	NPT Female×Female	Each	Port-to-Port Lg. (P)	NPT Male×Female	Each	Pipe Size	For Tube ID	Port-to-Port Lg. (P)	NPT Female×Barb	Each	NPT Male×Barb	Each
1/4"	1 3/16"	45975K51	$6.97	1 11/16"	45975K53	$6.97	1/4"	3/8"-5/8"	2 1/4"	45975K71	$7.47	45975K73	$7.47
3/8"	1 3/16"	45975K56	6.97	1 3/16"	45975K58	6.97	3/8"	3/8"-5/8"	2 1/4"	45975K72	7.47	45975K74	7.47

Miniature Diverting 3-Port PVC Ball Valves

- Max. Pressure: 125 psi @ 140°F
- Temp. Range: 33° to 140°F
- Vacuum Rating: Not rated

Get diverting capabilities in a miniature valve—direct flow from the bottom inlet to one of two side outlets or stop flow completely. Valves are great for use in low-pressure applications with water, oil, and inert gas. Body and ball are PVC and seats and seals are Buna-N. Valves have slightly restricted flow (standard port). Color is gray.

Flow Options

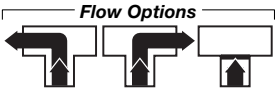

Pipe Size	End-to-End Lg.	NPT Female×Female×Female	Each	NPT Female×Male×Female	Each
1/8"	1 7/8"	4757K51	$15.82	4757K53	$15.82
1/4"	1 7/8"	4757K52	15.82	4757K54	15.82

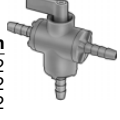

For Tube ID	End-to-End Lg.	Barb	Each
1/4"	3 3/16"	4757K57	$15.82
3/8"	3 3/16"	4757K58	15.82
1/2"	3 3/16"	4757K59	15.82

For Tube OD	End-to-End Lg.	Push-to-Connect	Each
1/4"	2 5/8"	4757K61	$20.20
3/8"	2 5/8"	4757K62	20.73

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″	4 1/2″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″	4″

Diverting 3-Port PVC and CPVC Ball Valves

- Max. Pressure: 150 psi @ 70°F
- Temp. Range: PVC: 40° to 140°F
  CPVC: 40° to 190°F
- Vacuum Rating: 28″ Hg

Flow Options

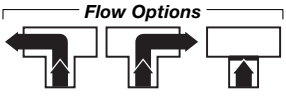

Use these lightweight diverting valves to direct flow from the bottom inlet to one of the side outlets or stop flow completely. Valves have union fittings for maintenance without detaching your pipe connections. Use with Schedule 40 and 80 pipe and fittings. Valves have PTFE seats and unrestricted flow (full port).

PVC valves have a PVC body and ball. Color is dark gray. ***CPVC valves*** handle higher temperatures than PVC; body and ball are CPVC. Color is light gray.

Water-resistant valves have an EPDM seal. ***Chemical-resistant valves*** have a fluoroelastomer seal.

Valves with 1/2″ to 2″ pipe size come with NPT female and socket weld (unthreaded) female connections. For *valves with 3″ and 4″ pipe size*, choose NPT female or socket weld (unthreaded) female connections.

To Order: For valves with 3″ and 4″ pipe size, please specify NPT or socket weld (unthreaded).

		PVC				CPVC			
		Water Resistant		***Chemical Resistant***		***Water Resistant***		***Chemical Resistant***	
Pipe Size	**End-to-End Lg.**		**Each**		**Each**		**Each**		**Each**
1/2″	4 5/8″	**4667K21**	$85.84	**4667K11**	$95.89	**4697K61**	$100.80	**4697K41**	$144.49
3/4″	5 1/8″	**4667K22**	97.24	**4667K12**	109.41	**4697K62**	144.94	**4697K42**	163.05
1″	6″	**4667K23**	104.78	**4667K13**	117.50	**4697K63**	124.40	**4697K43**	174.98
1 1/2″	8 5/8″	**4667K24**	198.17	**4667K14**	237.69	**4697K64**	250.48	**4697K44**	352.57
2″	8 13/16″	**4667K25**	265.69	**4667K15**	317.38	**4697K65**	337.42	**4697K45**	355.17
3″	11 13/16″	**4667K26**	510.85	**4667K16**	549.95	**4697K66**	801.84	**4697K46**	844.02
4″	14″	**4667K27**	1,024.16	**4667K17**	1,078.06	**4697K67**	1,273.37	**4697K47**	1,340.37

Easy-Access Diverting 3-Port PVC Ball Valves

- Max. Pressure: 232 psi @ 73°F
- Temp. Range: 40° to 140°F
- Vacuum Rating: 29″ Hg

Flow Options

Great for tight locations, the handle on these valves is perpendicular to pipe connections for easy access. Use any port as the inlet—direct flow to one of two outlets or to both outlets simultaneously at a reduced capacity. Valves have no shut-off position. They have union fittings for maintenance without detaching your pipe connections; valves come with NPT female and socket-weld (unthreaded) female connections. Use with Schedule 40 and 80 pipe and fittings. Valves have a PVC body and ball, PTFE seats, and unrestricted flow (full port). Color is dark gray. NSF 61 certified for use with drinking (potable) water. ***Water-resistant valves*** have an EPDM seal. ***Chemical-resistant valves*** have a fluoroelastomer seal.

		Water Resistant		***Chemical Resistant***	
Pipe Size	**End-to-End Lg.**		**Each**		**Each**
1/2″	5″	**47125K81**	$74.54	**47125K91**	$78.01
3/4″	5 3/4″	**47125K82**	98.52	**47125K92**	119.90
1″	6 9/16″	**47125K83**	107.67	**47125K93**	110.23
1 1/4″	7 3/4″	**47125K84**	102.14	**47125K94**	129.34
1 1/2″	8 5/16″	**47125K85**	149.01	**47125K95**	150.31
2″	10″	**47125K86**	178.47	**47125K96**	258.59

FDA Plastic Ball Valves

- Max. Pressure: 150 psi @ 70°F
- Temp. Range: With Unrestricted Flow: 35° to 200°F
  With Restricted Flow: 35° to 150°F
- Vacuum Rating: With Unrestricted Flow: Not rated
  With Restricted Flow: 29.9″ Hg

Meet health and safety standards for food-processing applications. Materials in these valves meet FDA requirements for use with food.

Valves with unrestricted flow are full port. They have a polypropylene body, a polysulfone ball, and an EPDM seal. Color is white.

Valves with restricted flow are reduced port. They have an acetal body and ball and a Buna-N seal. Color is light gray. Valves are NSF 61 certified for use with drinking (potable) water.

Push-to-Connect×NPTF (Dryseal) Male

For Tube OD	Pipe Size	End-to-End Lg.		Each
With Unrestricted Flow				
1/4″	1/4″	2 1/4″	**4379K41**	$6.81
3/8″	3/8″	2 1/2″	**4379K42**	7.45

Push-to-Connect×Push-to-Connect

For Tube OD	End-to-End Lg.		Each
With Unrestricted Flow			
1/4″	2 1/4″	**4379K61**	$7.10
3/8″	2 3/4″	**4379K62**	7.90
With Restricted Flow			
3/8″	2 1/2″	**4379K67**	9.45
1/2″	2 3/4″	**4379K69**	9.55

Flow-Indicating Easy-to-Install PVC Ball Valves

- Max. Pressure: 150 psi @ 68°F
- Temp. Range: 32° to 140°F
- Vacuum Rating: Not rated

An easy-to-read indicator points to the angle of the valve opening. Valves have union fittings that make them easy to install and allow for maintenance without detaching your pipe connections. Use with Schedule 40 and 80 pipe and fittings. Connections are female. Valves have 1/2″ pipe size and 4 1/2″ end-to-end length. Body and ball are PVC and seats are PTFE. Valves have restricted flow (reduced port). Color is dark gray. ***Water-resistant valves*** have an EPDM seal. ***Chemical-resistant valves*** have a fluoroelastomer seal.

	Water Resistant		***Chemical Resistant***	
		Each		**Each**
NPT	**4490K22**	$87.25	**4490K24**	$94.12
Socket Weld (Unthreaded)	**4490K12**	87.25	**4490K14**	94.12

Nylon Ball Valves with Push-to-Connect Tube Fittings

- Max. Pressure: 145 psi @ 175°F
- Temp. Range: –4° to +175°F
- Vacuum Rating: 28″ Hg

With push-to-connect fittings that make a tight seal around the outside of plastic and rubber tubing, these valves are ideal for use with water and compressed air. Body is nylon, ball is nickel-plated brass, seats are PTFE, and seal is EPDM. Valves have slightly restricted flow (standard port). Color is black.

For Tube OD	End-to-End Lg.		Each	For Tube OD	End-to-End Lg.		Each
Inch				***Metric***			
5/32″	2″	**4764K41**	$19.00	4 mm	2″	**4764K45**	$19.00
1/4″	2″	**4764K42**	18.98	6 mm	2″	**4764K46**	19.66
5/16″	2″	**4764K43**	17.31	8 mm	2″	**4764K47**	17.31
3/8″	2 5/8″	**4764K44**	22.17	10 mm	2 5/8″	**4764K48**	21.37

Polypropylene Ball Valves

- Max. Pressure: 100 psi @ 150°F
- Temp. Range: 40° to 150°F
- Vacuum Rating: Not rated

Chemical resistant and lightweight, these valves are a great option for low-pressure general-purpose applications. They have an easy-access grease fitting for adding lubricants to the seals. Connections are NPT female. Body, ball, and seats are glass-filled polypropylene. Seals are fluoroelastomer. Valves have unrestricted flow (full port). Color is black.

Pipe Size	End-to-End Lg.		Each
1/2″	3″	**48015K21**	$15.50
3/4″	3″	**48015K22**	15.50
1″	4 3/8″	**48015K23**	24.47
1 1/4″	4 3/8″	**48015K24**	24.47

For information about ball valves, see page 426. For information about pipe size, see pages 2-3.

Easy-to-Install Double-Union Polypropylene Ball Valves

Lever and T-Handle:
- Max. Pressure: 125 psi @ 140° F
- Temp. Range: 32° to 140° F
- Vacuum Rating: Not rated

NSF-Certified T-Handle:
- Max. Pressure: 150 psi @ 73° F
- Temp. Range: 32° to 180° F
- Vacuum Rating: 29″ Hg

Don't spend more time than necessary—union fittings on these valves simplify installation. They also allow for maintenance without unthreading your pipe connections. Use with Schedule 40 and 80 pipe and fittings. Connections are NPT female. Valves have unrestricted flow (full port), unless otherwise stated.

Lever and ***T-handle valves*** have a glass-filled polypropylene body and ball and PTFE-filled polypropylene seats. Color is black. *Valves with 1″ and 2″ pipe size* have slightly restricted flow (standard port).

NSF-certified T-handle valves are NSF 61 certified for use with drinking (potable) water. Body and ball are polypropylene and seats are PTFE. Color is tan.

Water-resistant valves have an EPDM seal. ***Chemical-resistant valves*** have a fluoroelastomer seal.

	LEVER				T-HANDLE				NSF-CERTIFIED T-HANDLE			
		Water Resistant		Chemical Resistant		Water Resistant		Chemical Resistant		Water Resistant		Chemical Resistant
Pipe Size	End-to-End Lg.		Each		End-to-End Lg.		Each		End-to-End Lg.		Each	
1/2″	4 3/4″	4973K21	$26.30	4973K61	4 3/4″	4973K11	$24.31	4973K51	4 3/4″	4848K71	$43.37	4848K51	$55.01
3/4″	4 3/4″	4973K22	27.77	4973K62	4 3/4″	4973K12	25.78	4973K52	4 3/4″	4848K72	54.20	4848K52	69.73
1″	4 3/4″	4973K23	28.01	4973K63	4 3/4″	4973K13	26.02	4973K53	5 5/16″	4848K73	63.96	4848K53	81.94
1 1/4″	6 1/4″	4973K24	36.65	4973K64	6 1/4″	4973K14	34.66	4973K54	6 1/4″	4848K74	93.22	4848K54	118.56
1 1/2″	6 1/4″	4973K25	40.98	4973K65	6 1/4″	4973K15	38.99	4973K55	6 1/4″	4848K75	107.30	4848K55	134.02
2″	6 1/4″	4973K26	45.52	4973K66	6 1/4″	4973K16	43.53	4973K56	7 5/16″	4848K76	145.26	4848K56	179.43

Easy-to-Install Single-Union Polypropylene Ball Valves

- Max. Pressure: 100 psi @ 70° F
- Temp. Range: –20° to +150° F
- Vacuum Rating: Not rated

A single union fitting makes these valves easy to install and maintain. Use in water-based applications with Schedule 40 and 80 pipe and fittings. Connections are NPT female. Body is glass-filled polypropylene, ball is polypropylene, seats are PTFE, and seal is EPDM. Valves have unrestricted flow (full port). Color is black.

Pipe Size	End-to-End Lg.		Each	Pipe Size	End-to-End Lg.		Each
1/2″	3 1/16″	46055K21	$14.34	1 1/4″	4 3/4″	46055K24	$30.80
3/4″	3 1/16″	46055K22	14.34	1 1/2″	4 3/4″	46055K25	30.74
1″	3 3/8″	46055K23	17.93	2″	5 13/16″	46055K26	38.83

Diverting 3-Port Easy-Maintenance Polypropylene Ball Valves

- Max. Pressure: 100 psi @ 70° F
- Temp. Range: –20° to +150° F
- Vacuum Rating: Not rated

Flow Options for Valves with Bottom Inlet

Flow Options for Valves with Side Inlet

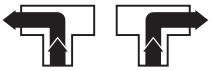

Choose the port configuration that suits your application—use these valves to direct flow from the inlet to one of two outlets. They have a three-piece bolted-body design that provides quick, easy access to replace seats, seal, or ball. Connections are NPT female. Valves have a fiberglass-filled polypropylene body and a fluoroelastomer seal for good chemical resistance. Ball is polypropylene and seats are PTFE. Valves have unrestricted flow (full port). Color is black.

Valves with bottom inlet can shut off flow completely. They have a T-handle, unless noted. ***Valves with side inlet*** have no shut-off position. They have a lever handle, unless noted.

Pipe Size	End-to-End Lg.	With Bottom Inlet	Each	With Side Inlet	Each
3/4″	4 3/16″	97745K24	$41.34	97745K54	$41.34
1″	4 3/16″	97745K26	41.34	97745K56	41.34
1 1/4″	4 5/8″	97745K28	53.46	97745K58★	53.46
1 1/2″	4 5/8″	97745K34	53.46	97745K64★	53.46
2″	5 1/2″	97745K36■	81.59	97745K66	81.59

■ Has a lever handle. ★ Has a T-handle.

Easy-Maintenance Polypropylene Ball Valves

- Max. Pressure: 1/2″-2″: 150 psi @ 70° F; 3″: 100 psi @ 70° F; 4″: 75 psi @ 70° F
- Temp. Range: –20° to +150° F
- Vacuum Rating: Not rated

A three-piece bolted-body design provides quick, easy access to replace seats, seal, or ball without unthreading the valve connections from your pipeline. Valves have a fiberglass-filled polypropylene body and fluoroelastomer seal for good chemical resistance. Connections are NPT female. Ball is polypropylene and seats are PTFE. Color is black.

Valves with unrestricted flow are full port. ***Valves with slightly restricted flow*** are standard port and have a smaller overall size.

	With Unrestricted Flow			With Slightly Restricted Flow		
Pipe Size	End-to-End Lg.		Each	End-to-End Lg.		Each
1/2″	3 7/16″	9771K22	$28.63	—	—	—
3/4″	3 7/16″	9771K24	28.63	—	—	—
1″	4 3/16″	9771K26	31.59	3 7/16″	9771K25	$28.63
1 1/4″	4 11/16″	9771K29	40.60	4 3/16″	9771K28	31.59
1 1/2″	4 11/16″	9771K32	40.60	—	—	—
2″	5 1/2″	9771K34	57.15	4 11/16″	9771K33	40.60
3″	6 3/8″	9771K39	136.59	6 1/16″	9771K36	92.02
4″	—	—	—	7 7/8″	9771K41	291.40

Self-Cleaning Easy-Maintenance Polypropylene Ball Valves

- Max. Pressure: 125 psi @ 73° F
- Temp. Range: 15° to 180° F
- Vacuum Rating: 29″ Hg

Designed to stay clean by sweeping out particles, these valves have a unique two-piece body that slides apart for easy access to replace seals. Ideal for use with water, oil, and inert gas, valves have chemical-resistant fluoroelastomer seals. Connections are NPT female. Body and ball are polypropylene. Valves have unrestricted flow (full port). Color is black.

2-port valves can be used for on/off control.

3-port valves for diverting direct flow from the right inlet to the center or left outlet. Valves have no shut-off position.

3-port valves for mixing join flow from two inlets to one outlet; any port can be used as an inlet or outlet. Valves can also be used to direct flow between two ports, divide flow from one inlet to two outlets, or shut off flow completely.

	2-PORT			3-PORT			
				Diverting		Mixing	
Pipe Size	End-to-End Lg.		Each		Each		Each
1/4″	2 1/4″	45695K12	$26.88	45695K221	$44.62	45695K32	$47.31
3/8″	3″	45695K13	31.72	45695K231	52.69	45695K33	54.84
1/2″	3″	45695K14	31.72	45695K241	52.69	45695K34	54.84
3/4″	3 1/2″	45695K15	44.62	45695K251	59.68	45695K35	63.44

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

Flanged Plastic Ball Valves

- Max. Pressure: 250 psi @ 100° F
- Temp. Range: –50° to +215° F
- Vacuum Rating: 29.92″ Hg

Get the easy installation and maintenance of flanged connections with lightweight plastic construction. Simply bolt these valves with unthreaded ANSI Class 150 flange connections to ANSI flanges with the same pipe size. Great for use with water, oil, inert gas, and harsh chemicals such as hydrochloric acid; these valves have a glass-filled vinyl ester body and ball for excellent corrosion resistance. Seats, seal, and packing are PTFE. Valves have slightly restricted flow (standard port). The handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″. Valves meet ASME B16.5 and ASME B16.10.

Pipe Size	End-to-End Lg.	Flange OD	Flange Bolt Circle Dia.	Flange Bolt Hole Qty.	Flange Bolt Size		Each
1″	5″	4 1/4″	3 1/8″	4	5/8″	5927T11	$332.67
2″	7″	6″	4 3/4″	4	3/4″	5927T13	533.83
3″	8″	7 1/2″	6″	4	3/4″	5927T14	765.23

About Actuated Ball Valves

Actuated ball valves provide remote on/off control for automated applications. *Note: Valve, End-to-End Lg.* is the port-to-port length of only the valve. *Overall Size* is the length and height of the entire unit including the valve and the actuator.

Air-driven valves open and close faster than motor-driven valves. They operate on compressed air and electricity; an electric solenoid turns the air supply on and off, which opens and closes the valve. Air-driven valves come in two styles. ***Air-to-open/air-to-close*** use air pressure to open and to close the valve. ***Air-to-open/spring close*** ensure your valve is open only when the air is on; they use compressed air to open and a spring to close the valve automatically when the air turns off.

Motor-driven valves operate on electricity alone and are great for use where compressed air is not accessible.

Valves with direct mount have the actuator mounted directly to the valve body, which minimizes movement during operation for reduced wear. They also have a more compact overall size than bracket mount. ***Valves with bracket mount*** have a bracket that secures the actuator to the valve body for easy disassembly, maintenance, and repair.

Air-Driven Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 100° F
- Max. Pressure for Steam: Not rated
- Valve Temp. Range: –50° to +400° F
- Vacuum Rating: 29.9″ Hg

Use compressed air to operate these valves remotely. Connections are NPT female. Body is brass, ball is Type 316 stainless steel, seats are graphite-filled PTFE, and seal is fluoroelastomer. Valves have unrestricted flow (full port). Can be used in horizontal and vertical pipeline.

The actuator is direct mount and has a visual indicator that shows if flow is on or off. Requires an air supply of 80 to 120 psi; inlet is 1/4″ NPT female. Housing is aluminum. Comes with a solenoid that operates on 120 VAC at 60 Hz. Has 12″ wire leads and a DIN electrical connection with a 1/2″ conduit port. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments. Actuator/solenoid temp. range is 0° to 130° F.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
Air-to-Open/Air-to-Close					
1/2″	2 5/8″	5 3/4″	4 5/8″	3672T33	$220.36
3/4″	2 15/16″	5 3/4″	5 1/8″	3672T34	229.40
1″	3 9/16″	5 3/4″	5 1/2″	3672T35	252.20
1 1/4″	4 1/8″	7 5/8″	8 1/16″	3672T36	338.52
1 1/2″	4 5/8″	7 5/8″	8 5/8″	3672T37	360.22
2″	5 5/16″	7 5/8″	9 1/8″	3672T38	403.28
Air-to-Open/Spring Close					
1/2″	2 5/8″	6 3/4″	5 5/8″	3672T43	242.80
3/4″	2 15/16″	6 3/4″	6 1/4″	3672T44	251.84
1″	3 9/16″	6 3/4″	6 5/8″	3672T45	272.75
1 1/2″	4 5/8″	7 5/8″	8 5/8″	3672T47	412.90
2″	5 5/16″	7 5/8″	9 1/8″	3672T48	462.55

Air-Driven Nickel-Plated Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 600 psi @ 250° F
- Max. Pressure for Steam: 150 psi @ 366° F
- Valve Temp. Range: –20° to +400° F
- Vacuum Rating: 29.91″ Hg

A nickel-plated brass body gives these valves greater corrosion resistance than other actuated brass ball valves. Connections are NPT female. Ball is Type 316 stainless steel, seats are PTFE, and seal is fluoroelastomer. Valves have unrestricted flow (full port). Can be used in horizontal and vertical pipeline.

The actuator is direct mount and has a visual indicator that shows if flow is on or off. Requires an air supply of 40 to 120 psi; inlet is 1/4″ NPT female. Housing is aluminum. Comes with a solenoid that operates on 120 VAC at 50/60 Hz. Has screw terminals with a DIN electrical connection. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments. Actuator/solenoid temp. range is –4° to +180° F.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
Air-to-Open/Air-to-Close					
1/2″	2 1/2″	3 11/16″	4 7/8″	48165K34	$252.41
3/4″	2 15/16″	5 7/16″	6 5/16″	48165K35	290.02
1″	3 1/2″	5 7/16″	6 7/16″	48165K36	298.97
2″	5 1/8″	7 7/8″	9 5/16″	48165K39	472.43
Air-to-Open/Spring Close					
1/2″	2 1/2″	5 7/16″	5 11/16″	48165K54	288.22
3/4″	2 15/16″	5 7/16″	6 1/4″	48165K55	311.50
1″	3 1/2″	6″	7 5/16″	48165K56	367.02
1 1/2″	4 1/2″	9 1/16″	9 5/8″	48165K58	508.78
2″	5 1/8″	10 3/4″	11″	48165K59	556.80

Air-Driven Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 720 psi @ 150° F
- Max. Pressure for Steam: 150 psi @ 366° F
- Valve Temp. Range: –50° to +450° F
- Vacuum Rating: 29.9″ Hg

A Type 316 stainless steel body and ball give these air-driven valves exceptional corrosion resistance for use in remote on/off control of your applications. Connections are NPTF (Dryseal) female. Seats and seal are glass-filled PTFE. Valves have slightly restricted flow (standard port). Can be used in horizontal and vertical pipeline.

The actuator is direct mount and has a visual indicator that shows if flow is on or off. Requires an air supply of 50 to 125 psi; inlet is 1/8″ NPT female. Housing is aluminum. Comes with a solenoid that operates on 120 VAC at 50/60 Hz. Has screw terminals with a DIN electrical connection. Rated IP65 for resistance to splashing water. Actuator/solenoid temp. range is –20° to +140° F. **Also Available:** Solenoids that operate on 240 VAC, 24 VAC, and 24 VDC. Please ask for 47005K15 and specify 240 VAC, 24 VAC, or 24 VDC.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
Air-to-Open/Air-to-Close					
1/4″	2 3/16″	3 5/8″	4 3/8″	5759T31	$362.42
1/2″	2 5/8″	3 5/8″	4 5/8″	5759T33	384.92
3/4″	2 15/16″	3 5/8″	5 1/8″	5759T34	403.30
1″	3 5/16″	3 5/8″	7 7/16″	5759T35	442.80
1 1/2″	4 1/4″	5 5/16″	9 3/8″	5759T37	719.20
Air-to-Open/Spring Close					
1/4″	2 3/16″	8 5/16″	4 3/8″	5759T41	513.53
1/2″	2 5/8″	8 5/16″	4 5/8″	5759T43	536.05
3/4″	2 15/16″	8 5/16″	5 1/8″	5759T44	554.42
1″	3 5/16″	8 5/16″	7 7/16″	5759T45	593.47

For information about ball valves, see page 426; for actuated ball valves, see page 444.

Diverting 3-Port Air-Driven Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 400 psi @ 176° F
- Max. Pressure for Steam: 100 psi @ 344° F
- Valve Temp. Range: –4° to +344° F
- Vacuum Rating: 29″ Hg

Flow Options

Combine flow-diverting capabilities with remote valve operation—these air-driven valves direct flow from the center inlet to one of the side outlets. Connections are NPT female. Body is brass, ball is chrome-plated brass, seats are PTFE, and seals are PTFE and fluoroelastomer. Valves have slightly restricted flow (standard port). Can be used in horizontal and vertical pipeline.

The actuator is direct mount. Requires an air supply of 20 to 120 psi; inlet is 1/4″ NPT female. Housing is aluminum. Comes with a solenoid that operates on 110 VAC at 60 Hz. Has 12″ wire leads and a DIN electrical connection with a 1/2″ conduit port. Rated NEMA 4X for indoor/outdoor use and resistance to splashing liquids, corrosive agents, and dusty environments. Actuator/solenoid temp. range is 0° to 130° F.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
Air-to-Divert/Air-to-Return					
1/4″	2 11/16″	4 5/16″	4 7/16″	5883T21	$283.86
3/8″	2 11/16″	4 5/16″	4 7/16″	5883T22	283.86
1/2″	2 7/8″	4 5/16″	4 7/16″	5883T23	285.46
3/4″	3 3/16″	4 5/16″	4 5/8″	5883T24	291.27
1″	3 3/4″	5 1/2″	6 3/16″	5883T25	349.43
1 1/2″	4 7/8″	5 1/2″	7 5/16″	5883T27	428.21
2″	5 3/4″	6 3/8″	8 9/16″	5883T28	512.86
Air-to-Divert/Spring Return					
1/4″	2 11/16″	5 1/2″	5 3/8″	5883T61	362.05
3/8″	2 11/16″	5 1/2″	5 3/8″	5883T62	362.05
1/2″	2 7/8″	5 1/2″	5 3/8″	5883T63	363.83
3/4″	3 3/16″	5 1/2″	5 1/2″	5883T64	369.95
1″	3 1/4″	5 1/2″	6 3/16″	5883T65	382.19
1 1/2″	4 7/8″	6 3/8″	7 3/4″	5883T67	491.97
2″	5 15/16″	9 3/8″	9 11/16″	5883T68	654.33

High-Pressure Air-Driven Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 200° F
- Max. Pressure for Steam: 150 psi @ 365° F
- Valve Temp. Range: –20° to +450° F
- Vacuum Rating: 29.9″ Hg

A great choice for remote control in high-pressure applications. Valves have a Type 316 stainless steel body and ball for exceptional corrosion resistance. Connections are NPT female. Seats are glass-filled PTFE and seal and packing are PTFE. Valves have unrestricted flow (full port). Can be used in horizontal and vertical pipeline.

The actuator is direct mount and has a visual indicator that shows if flow is on or off. Requires an air supply of 40 to 118 psi; inlet is 1/4″ NPT female. Housing is aluminum. Comes with a solenoid that operates on 120 VAC at 50/60 Hz. Has screw terminals with a DIN electrical connection. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments. Actuator/solenoid temp. range is 32° to 122° F.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
Air-to-Open/Air-to-Close					
1/2″	2 9/16″	4 5/8″	4 15/16″	7554T24	$259.08
3/4″	2 15/16″	5 7/16″	6 1/4″	7554T25	281.55
1″	3 1/2″	5 7/16″	6 7/8″	7554T26	298.74
1 1/2″	4 3/8″	8 1/4″	9 3/8″	7554T28	436.75
2″	4 15/16″	8 1/4″	10″	7554T29	474.83
Air-to-Open/Spring Close					
1/2″	2 9/16″	5 7/16″	5 13/16″	7554T64	302.03
3/4″	2 15/16″	6 1/8″	6 7/8″	7554T65	337.17
1″	3 1/2″	6 1/8″	7 1/2″	7554T66	353.78
1 1/4″	4″	8 1/4″	8 9/16″	7554T67	427.47
1 1/2″	4 3/8″	9″	9 3/4″	7554T68	519.72
2″	4 15/16″	11 1/16″	11″	7554T69	640.03

High-Use Air-Driven Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 500 psi @ 100° F
- Max. Pressure for Steam: Not rated
- Valve Temp. Range: –20° to +350° F
- Vacuum Rating: Not rated

Designed to withstand frequent on/off flow control, these air-driven valves provide excellent wear resistance for remote operation in high-use applications. Valves have a Type 316 stainless steel body and ball for exceptional corrosion resistance. Connections are NPTF (Dryseal) female. Seats are glass-filled PTFE and seal is fluoroelastomer. Valves have slightly restricted flow (standard port). Can be used in horizontal and vertical pipeline.

The actuator is direct mount and double-acting (air-to-open/air-to-close). Requires an air supply of 60 to 125 psi; inlet is 1/8″ NPT female. Housing is aluminum. Actuator temp. range is –20° to +140° F.

Required solenoid valves (sold separately) are necessary to operate air-driven ball valves. They operate at 50/60 Hz and have screw terminals with a DIN electrical connection. Rated IP65 for resistance to splashing water. Solenoid temp. range is –20° to +140° F.

Valves

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
1/4″	1 3/4″	3 5/16″	4 7/16″	5048K51	$273.80
1/2″	2 5/16″	3 5/16″	4 11/16″	5048K52	298.74
3/4″	2 1/2″	3 5/16″	4 15/16″	5048K53	321.23
1″	3 1/16″	3 5/16″	5 3/16″	5048K54	370.82

Required Solenoid Valves

Voltage		Each	Voltage		Each
120 VAC	5048K65	167.08	12 VDC	5048K68	$167.08
240 VAC	5048K66	167.08	24 VDC	5048K67	167.08

Ultra-High-Pressure Air-Driven Type 316 Stainless Steel Ball Valves

Direct Mount:
- Max. Pressure for Water, Oil, and Inert Gas: 1500 psi @ 100° F
- Max. Pressure for Steam: 100 psi @ 338° F
- Valve Temp. Range: 0° to 338° F
- Vacuum Rating: 28″ Hg

Bracket Mount:
- Max. Pressure for Water, Oil, and Inert Gas: 1/2″-1″: 2000 psi @ 100° F; 1 1/2″-2″: 1500 psi @ 100° F
- Max. Pressure for Steam: 150 psi @ 365° F
- Valve Temp. Range: –20° to +450° F
- Vacuum Rating: 29″ Hg

Perfect for remote on/off control in ultra-high-pressure applications, these valves have the highest pressure rating of our air-driven valves. A Type 316 stainless steel body and ball provide exceptional corrosion resistance. Connections are NPT female. Valves have unrestricted flow (full port).

The actuator has an aluminum housing. Comes with a solenoid that operates on 120 VAC at 60 Hz.

Direct Mount—Seats and packing are modified PTFE and seal is PTFE. Use in vertical pipeline. The actuator has a visual indicator that shows if flow is on or off. Requires an air supply of 80 psi; inlet is 1/4″ NPT female. Solenoid has screw terminals and a DIN electrical connection with a 1/2″ conduit port. Rated NEMA 4X for indoor/outdoor use and resistance to splashing liquids, corrosive agents, and dusty environments. Actuator/solenoid temp range is –4° to +140° F.

Bracket Mount—Seats, seal, and packing are glass-filled PTFE. Can be used in horizontal and vertical pipeline. The actuator requires an air supply of 60 to 125 psi; inlet is 1/4″ NPT female. Solenoid has 12″ wire leads and a DIN electrical connection with a 1/2″ conduit port. Actuator/solenoid temp. range is –4° to +185° F.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
Direct Mount					
Air-to-Open/Air-to-Close					
3/8″	2 13/16″	3 5/16″	6 5/16″	6278K72	$340.84
1/2″	2 13/16″	3 5/16″	6 5/16″	6278K73	351.54
3/4″	3″	3 5/16″	6 7/16″	6278K74	351.54
1″	3 7/16″	3 5/16″	6 15/16″	6278K75	418.20
1 1/2″	4 1/2″	4 1/16″	8 7/16″	6278K77	506.27
2″	5 7/16″	4 1/16″	9 1/8″	6278K78	502.49
Air-to-Open/Spring Close					
3/8″	2 13/16″	4 5/16″	6 5/16″	6278K82	383.88
1/2″	2 13/16″	4 5/16″	6 5/16″	6278K83	383.88
3/4″	3″	4 5/16″	6 7/16″	6278K84	424.29
1″	3 7/16″	5 5/16″	7 7/16″	6278K85	470.77
1 1/2″	4 1/2″	6 7/16″	9 1/8″	6278K87	548.13
2″	5 7/16″	6 7/16″	9 13/16″	6278K88	721.49
Bracket Mount					
Air-to-Open/Air-to-Close					
1/2″	2 9/16″	4 5/16″	7 7/16″	4573K24	320.75
1″	3 1/2″	5 15/16″	7 9/16″	4573K26	344.71
2″	4 15/16″	8 1/8″	10 1/4″	4573K29	514.85
Air-to-Open/Spring Close					
1/2″	2 9/16″	5 15/16″	6 7/16″	4573K34	392.84
3/4″	2 15/16″	6 7/16″	7 1/2″	4573K35	402.60
1″	3 1/2″	8 1/8″	8 11/16″	4573K36	476.25
1 1/2″	4 3/8″	9 3/8″	9 15/16″	4573K38	532.65
2″	4 15/16″	10 11/16″	11 3/4″	4573K39	646.07

For information about ball valves, see page 426; for actuated ball valves, see page 444.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

Easy-Maintenance Air-Driven Type 316 Stainless Steel Ball Valves

Direct Mount

Direct Mount:
- Max. Pressure for Water, Oil, and Inert Gas: 1/2″-1″: 1500 psi @ 100°F; 1 1/2″: 1200 psi @ 150°F; 2″: 1000 psi @ 200°F
- Max. Pressure for Steam: 150 psi @ 365°F
- Valve Temp. Range: –20° to +450°F
- Vacuum Rating: 29.9″ Hg

Bracket Mount:
- Max. Pressure for Water, Oil, and Inert Gas: 1480 psi @ 100°F
- Max. Pressure for Steam: 100 psi @ 338°F
- Valve Temp. Range: –4° to +338°F
- Vacuum Rating: 28″ Hg

Simplify maintenance—these air-actuated ball valves have a three-piece bolted-body design for access to replace the seats, seal, packing, or ball without unthreading pipe connections. All have a Type 316 stainless steel body and ball to provide exceptional corrosion resistance. Connections are NPT female.

The actuator has an aluminum housing. Air inlet is 1/4″ NPT female, unless noted. Comes with a solenoid that operates on 120 VAC at 60 Hz.

Direct Mount— Seats are glass-filled TFE and seal and packing are PTFE. Valves have unrestricted flow (full port). Can be used in horizontal and vertical pipeline. The actuator has a visual indicator that shows if flow is on or off. Requires an air supply of 40 to 118 psi. Solenoid has screw terminals with a DIN electrical connection. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments. Actuator/solenoid temp. range is 32° to 122°F.

Bracket Mount— Seats and seal are modified PTFE and packing is polyethylene. Valves have slightly restricted flow (standard port). Use in horizontal pipeline. The actuator requires an air supply of 80 psi. Solenoid has screw terminals and a DIN electrical connection with a 1/2″ conduit port. Rated NEMA 4X for indoor/outdoor use and resistance to splashing liquids, corrosive agents, and dusty environments. Actuator/solenoid temp. range is –4° to +140°F.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
Direct Mount					
Air-to-Open/Air-to-Close					
1/2″	2 5/8″	4 5/8″	5 3/8″	5197T41■	$252.62
3/4″	3″	5 7/16″	6 9/16″	5197T42■	275.78
1″	3 3/8″	5 7/16″	7″	5197T43■	298.92
1 1/2″	4 11/16″	8 1/4″	9 1/2″	5197T44	435.30
2″	5 3/16″	8 1/4″	10 1/16″	5197T45	481.67
Air-to-Open/Spring Close					
1/2″	2 5/8″	5 7/16″	6 1/4″	5197T51■	293.42
3/4″	3″	6 1/8″	7 3/16″	5197T52	328.65
1″	3 3/8″	6 1/8″	7 5/8″	5197T53	349.07
1 1/2″	4 11/16″	9″	9 7/8″	5197T54	514.12
2″	5 3/16″	11 1/16″	11 1/16″	5197T55	639.30
Bracket Mount					
Air-to-Open/Air-to-Close					
2″	5 1/16″	5 3/16″	12 1/16″	47995K16	875.40
Air-to-Open/Spring Close					
1/2″	2 5/8″	4 5/16″	7 1/16″	47995K17	525.30
3/4″	2 7/8″	4 5/16″	7 5/16″	47995K18	632.39
1″	3 3/4″	5 5/16″	8 3/4″	47995K19	745.54
1 1/2″	4 5/8″	6 7/16″	10″	47995K41	883.78
2″	5 1/16″	7 1/2″	11 1/8″	47995K42	1,032.37

■ Air inlet is 1/8″ NPT female.

Motor-Driven Brass Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1/2″-1 1/2″: 720 psi @ 150°F; 2″: 600 psi @ 150°F
- Max. Pressure for Steam: 1/2″-1 1/2″: 150 psi @ 366°F; 2″: Not rated
- Valve Temp. Range: 1/2″-1 1/2″: –50° to +450°F; 2″: –20° to +400°F
- Vacuum Rating: 1/2″-1 1/2″: 29.9″ Hg; 2″: 29″ Hg

Get remote on/off control in your pipeline when compressed air is not accessible. Valves have NPTF (Dryseal) female connections. Body is brass, ball is Type 316 stainless steel, and seats and seal are PTFE, unless noted. Can be used in horizontal and vertical pipeline.

The actuator is direct mount. It has a visual indicator that shows if flow is on or off and a manual override. Turns flow on or off in 6 seconds. Temp. range is 40° to 150°F. Housing is thermoplastic. Operates on 120 VAC at 50/60 Hz. Has screw terminals with two 1/2″ conduit connections.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
With Unrestricted Flow (Full Port)					
1/2″	2 15/16″	6 1/4″	8 7/8″	46005K31	$506.52
3/4″	3 5/16″	6 1/4″	9 5/16″	46005K32	531.26
1″	3 3/4″	6 1/4″	10 1/16″	46005K33	617.48
1 1/2″	4 9/16″	6 1/4″	10 15/16″	46005K35	666.70
2″	4 13/16″	6 1/4″	12 5/16″	46005K37▲	1,155.83
With Restricted Flow (Reduced Port)					
3/4″	2 1/4″	6 1/4″	8 9/16″	47095K12	509.48
1″	2 3/4″	6 1/4″	8 7/8″	47095K13	514.61
2″	4 1/16″	6 1/4″	10 9/16″	47095K16	617.63

▲ Has fluoroelastomer and TFE seals.

Motor-Driven Brass Ball Valves with Solder End Tube Fittings

- Max. Pressure for Water: 300 psi @ 250°F
- Max. Pressure for Steam: 15 psi @ 250°F
- Valve Temp. Range: 32° to 250°F
- Vacuum Rating: Not rated

Ideal for remote on/off control of water and steam in cooling and heating systems, these motor-driven valves connect to copper pipe with solder-end fittings (required and sold separately). Body, ball, and seats are brass. Seal is Nitrile. Valves have restricted flow (reduced port). Can be used in horizontal and vertical pipeline. UL and C-UL listed.

The actuator is direct mount and has a manual override. It turns flow on or off in 9 seconds. Temp. range is –40° to +160°F. Housing is aluminum. Has 18″ wire leads.

Valves

Voltage @ 50/60 Hz	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
24 VAC	3 1/2″	3 11/16″	4 1/4″	19005K51	$152.77
120 VAC	3 1/2″	3 11/16″	4 1/4″	19005K53	152.77

Required Solder-End Fittings

Tube Size ♦	Actual Tube OD		Each
1/2″	5/8″	19005K61	$10.75
3/4″	7/8″	19005K62	11.50
1″	1 1/8″	19005K63	22.25

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Easy-to-Install Air-Driven PVC Ball Valves

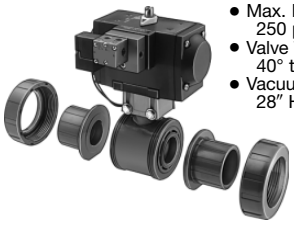

- Max. Pressure: 250 psi @ 70°F
- Valve Temp. Range: 40° to 140°F
- Vacuum Rating: 28″ Hg

Union fittings make these air-driven valves easy to install and allow for maintenance without detaching your pipe connections. Valves come with NPT female and socket-weld (unthreaded) female pipe connections. A PVC body and ball provide good corrosion resistance. Use with Schedule 40 and 80 pipe and fittings in horizontal and vertical pipeline. Valves have PTFE seats, a fluoroelastomer seal, and unrestricted flow (full port). Color is dark gray.

The actuator is bracket mount and has a visual indicator that shows if flow is on or off. Requires an air supply of 80 to 120 psi; inlet is 1/4″ NPT female. Housing is plastic. Comes with a solenoid that operates on 110 VAC at 60 Hz. Has 16″ wire leads with a 1/2″ conduit connection. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments. Actuator/solenoid temp. range is 0° to 120°F.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.	Air-to-Open/Air-to-Close	Each	Air-to-Open/Spring Close	Each
1″	5 1/4″	5 1/4″	8 15/16″	5005K33	$545.11	5005K43	$580.47
1 1/2″	6 3/4″	6 3/4″	9 7/8″	5005K35	564.29	5005K45	599.67
2″	8″	8″	10 13/16″	5005K36	603.51	5005K46	638.90

For information about ball valves, see page 426; for actuated ball valves, see page 444.

Motor-Driven Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 720 psi @ 150° F
- Max. Pressure for Steam: ½″-1″: 150 psi @ 366° F; 2″: Not rated
- Valve Temp. Range: –20° to +400° F
- Vacuum Rating: ½″-1″: 29.9″ Hg; 2″: 29″ Hg

These motor-driven valves have a Type 316 stainless steel body and ball for exceptional corrosion resistance. Connections are NPTF (Dryseal) female. Seats and seal are PTFE, unless noted. Can be used in horizontal and vertical pipeline.

The actuator is direct mount. It has a visual indicator that shows if flow is on or off and a manual override. Actuator turns flow on or off in 10 seconds. Temp. range is 40° to 150° F. Housing is thermoplastic, unless noted. Operates on 120 VAC at 50/60 Hz. Has screw terminals with two ½″ conduit connections.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.		Each
With Unrestricted Flow (Full Port)					
½″	2 15/16″	6¼″	8⅞″	46005K81	$544.71
¾″	3 5/16″	6¼″	9 5/16″	46005K82	596.46
1″	3¾″	6¼″	10 1/16″	46005K83	780.50
2″	4 15/16″	6¼″	11½″	46005K96▲	1,228.78
With Restricted Flow (Reduced Port)					
1″	2¾″	6¼″	8⅞″	47095K23	557.79
2″	4 1/16″	6¼″	10 9/16″	47095K26	728.32

▲ Has fluoroelastomer and TFE seals. Housing is aluminum.

High-Pressure Motor-Driven Type 316 Stainless Steel Ball Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 100° F
- Max. Pressure for Steam: 150 psi @ 366° F
- Valve Temp. Range: 0° to 450° F
- Vacuum Rating: Not rated

Get remote on/off control in your high-pressure applications where compressed air is not available. These valves have a Type 316 stainless steel body and ball for exceptional corrosion resistance. Connections are NPT female. Seats are TFM, packing is carbon-filled PTFE, and seal is PTFE. Valves have unrestricted flow (full port). Use in vertical pipeline.

The actuator is direct mount and has a manual override. Temp. range is –22° to +149° F. Housing is aluminum. Operates on 120 VAC at 50/60 Hz. Has screw terminals with two ½″ conduit connections. Rated NEMA 4X for indoor/outdoor use and resistance to splashing liquids, corrosive agents, and dusty environments.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.	On/Off Time, sec.		Each
1″	3 7/16″	4 13/16″	8⅛″	12	6132K85	$608.08
1½″	4 7/16″	4 13/16″	8 11/16″	12	6132K87	803.89
2″	5⅜″	4 13/16″	10⅞″	20	6132K88	849.17

Motor-Driven PVC Ball Valves

- Max. Pressure: 235 psi @ 100° F
- Valve Temp. Range: 40° to 140° F
- Vacuum Rating: 26″ Hg

Combine lightweight plastic with motor-driven on/off control for applications where compressed air is not accessible. Body and ball are PVC and seats are PTFE. Color is dark gray. Valves have unrestricted flow (full port). Use with Schedule 40 and 80 pipe and fittings in horizontal or vertical pipeline. NSF 61 certified for use with drinking (potable) water.

The actuator is direct mount. It turns flow on or off in 5 seconds. Temp. range is 32° to 110° F. Housing is polypropylene. Operates on 115 VAC at 60 Hz. Has screw terminals and two ½″ conduit connections. Rated NEMA 4X for indoor/outdoor use and resistance to splashing liquids, corrosive agents, and dusty environments.

Water-resistant valves have an EPDM seal. ***Chemical-resistant valves*** have a fluoroelastomer seal. **To Order:** Please specify pipe connection: NPT female or socket weld (unthreaded) female.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.	Water Resistant	Each	Chemical Resistant	Each
½″	4⅞″	5 7/16″	7 3/16″	4729K61	$371.35	4729K71	$409.25
¾″	4 11/16″	5 5/16″	7⅞″	4729K62	380.45	4729K72	422.82
1″	4 7/16″	5 5/16″	7¼″	4729K63	387.28	4729K73	429.54
1¼″	4 15/16″	6⅛″	7 9/16″	4729K64	400.95	4729K74	453.11
1½″	5⅝″	6⅛″	9″	4729K65	412.37	4729K75	461.93
2″	6½″	6 3/16″	9 1/16″	4729K66	430.56	4729K76	480.23

Easy-Maintenance Motor-Driven Type 316 Stainless Steel Ball Valves

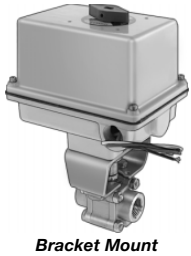

Bracket Mount

Direct Mount:
- Max. Pressure for Water, Oil, and Inert Gas: ½″-1″: 1500 psi @ 100° F; 1½″: 1200 psi @ 150° F; 2″: 1000 psi @ 200° F
- Max. Pressure for Steam: 150 psi @ 365° F
- Valve Temp. Range: –20° to +450° F
- Vacuum Rating: 29.9″ Hg

Bracket Mount:
- Max. Pressure for Water, Oil, and Inert Gas: 1440 psi @ 100° F
- Max. Pressure for Steam: 100 psi @ 338° F
- Valve Temp. Range: –4° to +338° F
- Vacuum Rating: 28″ Hg

Maintenance of your motor-driven ball valve is easy—these have a three-piece bolted-body design for access to replace the seats, seal, packing, or ball without unthreading your pipe connections. Valves have a Type 316 stainless steel body and ball to provide exceptional corrosion resistance. Connections are NPT female.

The actuator has a visual indicator that shows if flow is on or off and a manual override. Housing is aluminum. Operates on 115 VAC at 60 Hz. Has screw terminals with a ½″ conduit connection. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments.

Direct Mount— Seats are glass-filled PTFE and seal and packing are PTFE. Valves have unrestricted flow (full port). Can be used in horizontal and vertical pipeline. Actuator temp. range is 0° to 150° F.

Bracket Mount— Seats and seal are PTFE and packing is polyethylene. Valves have slightly restricted flow (standard port). Use in horizontal pipeline. Actuator temp. range is –40° to +150° F.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.	On/Off Time, sec.		Each
Direct Mount						
½″	2⅝″	5⅝″	7¾″	2.5	5241T21	$360.07
¾″	3″	5⅝″	8″	2.5	5241T22	367.10
1″	3⅜″	5⅝″	8 7/16″	2.5	5241T23	391.47
1½″	4 11/16″	7″	12½″	10	5241T24	930.59
2″	5 3/16″	7″	13⅛″	15	5241T25	1,115.44
Bracket Mount						
½″	2⅝″	5¾″	8½″	2.5	4687K31	525.13
¾″	2⅞″	5¾″	8¾″	2.5	4687K32	570.67
1″	3¾″	5¾″	9 13/16″	2.5	4687K33	672.51

Easy-to-Install Motor-Driven PVC and CPVC Ball Valves

- Max. Pressure: 250 psi @ 70° F
- Valve Temp. Range: PVC: 40° to 140° F; CPVC: 40° to 190° F
- Vacuum Rating: 28″ Hg

Union fittings make these motor-driven valves easy to install and allow for maintenance without detaching your pipe connections. A PVC or CPVC body and ball provide good corrosion resistance. Valves come with NPT female and socket-weld (unthreaded) female pipe connections. Seats are PTFE. Valves have unrestricted flow (full port). Use with Schedule 40 and 80 pipe and fittings in horizontal or vertical pipeline.

The actuator is bracket mount and has a visual indicator that shows if flow is on or off. It turns flow on or off in 2.5 seconds. Temp. range is 32° to 110° F. Housing is polypropylene. Operates on 115 VAC at 50/60 Hz. Has screw terminals with a ½″ conduit connection. Rated NEMA 4X for indoor/outdoor use and resistance to splashing liquids, corrosive agents, and dusty environments.

PVC valves have a PVC body and ball. Color is dark gray. ***CPVC valves*** handle higher temperatures than PVC. Body and ball are CPVC. Color is light gray.

Water-resistant valves have an EPDM seal. ***Chemical-resistant valves*** have a fluoroelastomer seal.

Pipe Size	Valve, End-to-End Lg.	Overall Size Lg.	Overall Size Ht.	Water Resistant	Each	Chemical Resistant	Each
PVC Valves							
½″	4⅝″	4⅞″	9½″	5017K31	$410.63	5017K51	$412.20
¾″	4¾″	4⅞″	9 15/16″	5017K32	416.95	5017K52	420.15
1″	5¼″	4⅞″	10⅝″	5017K33	432.82	5017K53	435.98
1½″	6¾″	4⅞″	11½″	5017K35	450.26	5017K55	453.42
2″	8″	4⅞″	12½″	5017K36	485.14	5017K56	489.89
CPVC Valves							
1″	5¼″	4⅞″	10⅝″	5025K63	474.04	5025K83	477.20
1½″	6¾″	4⅞″	11½″	5025K65	497.82	5025K85	497.74
2″	8″	4⅞″	12½″	5025K66	545.39	5025K86	551.73

About Butterfly Valves

Butterfly valves are ideal for on/off and flow control (throttling) in your pipeline. Just a quarter turn of the handle opens or closes the valve. Like ball valves, butterfly valves provide a tight seal when closed, but their disc design creates less turbulence in your application when changing flow. With a small number of moving parts, these valves are long lasting and easy to maintain. Use manual valves for on/off and flow-control applications. Actuated butterfly valves are for use only in on/off applications.

Please Note: To choose the correct pipe size, measure the unthreaded inside diameter (ID) of your flange or outside diameter (OD) of your pipe and read down to find the corresponding pipe size.

Unthreaded ID or OD	2 3/8″	2 7/8″	3 1/2″	4 1/2″	5 9/16″	6 5/8″	8 5/8″
Pipe Size	2″	2 1/2″	3″	4″	5″	6″	8″

ANSI Flange Alignment

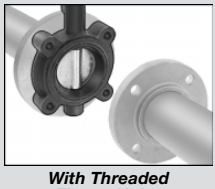

With Threaded Flange Holes

With Alignment Guides

Extended-Life Ductile Iron Butterfly Valves

Manual Lever with Threaded Flange Holes

Motor Driven with Alignment Guides

Water Resistant:
- Max. Pressure: 250 psi @ 225° F
- Temp. Range: –20° to +225° F

Oil Resistant:
- Max. Pressure: 250 psi @ 180° F
- Temp. Range: –20° to +180° F

Chemical Resistant:
- Max. Pressure: 250 psi @ 300° F
- Temp. Range: –20° to +300° F

Spend less time on valve maintenance—ductile iron is stronger and more pressure resistant than cast iron for a longer service life. Valves fit ANSI Class 125 and 150 flanges with the same pipe size. Meet API (American Petroleum Institute) 609 for flow regulation and MSS-SP-67.

Valves with threaded flange holes have a hole pattern that matches ANSI flanges with the same pipe size for connection between two flanges or to a single flange. You can disassemble your pipeline on one side of the valve without depressurizing the other side. Max. pressure for use with a single flange is 200 psi. *Valves with alignment guides* must be sandwiched between two flanges.

Manual valves with lever can be locked in position using a padlock (not included) with a shackle diameter of 1/4″.

Air-driven valves open and close faster than motor-driven valves; they turn flow on or off in one second. Require an air supply of 80 psi. Actuator temp. range is –40° to +212° F. *Air-to-open/air-to-close valves* are the most popular form of actuated butterfly valve. 2″ to 4″ sizes have a 1/8″ NPT female air inlet; 5″ and 6″ sizes have a 1/4″ NPT female air inlet. *Air-to-open/spring-close valves* shut off flow automatically when the air turns off. 2″ size has a 1/8″ NPT female air inlet; 3″ to 6″ sizes have a 1/4″ NPT female air inlet.

Solenoid valve (sold separately) is necessary to operate air-driven butterfly valves. Operates on 120 VAC at 60 Hz. Has 18″ wire leads and a 1/2″ conduit connection. Solenoid temp. range is 5° to 140° F. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments.

Motor-driven valves turn flow on or off in 15 seconds, except valves with 6″ pipe size, which turn flow on or off in 30 seconds. Actuator temp. range is –40° to +140° F. Operate on 110 VAC at 50/60 Hz. Have screw terminals with a 1/2″ conduit connection.

Water-Resistant Valves— Disc is ductile iron and seat is EPDM.
Oil-Resistant Valves— Disc is ductile iron and seat is Buna-N.
Chemical-Resistant Valves— Disc is Type 316 stainless steel and seat is fluoroelastomer.

To Order: Please specify water resistant or oil resistant where necessary.

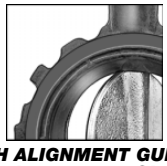

Pipe Size	Flange Thick.	O'all Ht.	Fits ANSI Flange OD	Bolt Circle Dia.	Bolt Size	WITH THREADED FLANGE HOLES: Bolt Hole Qty.	Water Resistant or Oil Resistant	Each	Chemical Resistant	Each	WITH ALIGNMENT GUIDES: Water Resistant or Oil Resistant	Each	Chemical Resistant	Each
Manual Valves														
Lever— *10 Flow-Control (Throttling) Positions*														
2″	1 13/16″	9 1/2″	6″	4 3/4″	5/8″-11	4	5024K811	$135.48	5024K71	$294.40	5024K311	$120.92	5024K24	$276.54
2 1/2″	1 15/16″	10 3/8″	7″	5 1/2″	5/8″-11	4	5024K812	139.28	5024K72	330.38	5024K312	124.72	5024K25	311.77
3″	1 15/16″	10 3/4″	7 1/2″	6″	5/8″-11	4	5024K813	155.11	5024K73	370.99	5024K313	132.95	5024K26	344.34
4″	2 3/16″	12 1/8″	9″	7 1/2″	5/8″-11	8	5024K814	186.76	5024K74	446.33	5024K314	160.81	5024K27	419.11
5″	2 5/16″	13 3/8″	10″	8 1/2″	3/4″-10	8	5024K815	257.03	5024K75	539.13	5024K315	205.12	5024K28	501.99
6″	2 5/16″	14 9/16″	11″	9 1/2″	3/4″-10	8	5024K816	289.16	5024K76	647.65	5024K316	262.10	5024K29	611.09
Handwheel— *Fully Adjustable Flow*														
6″	2 5/16″	14 9/16″	11″	9 1/2″	3/4″-10	8	5024K911	440.00	5024K2	764.90	5024K411	402.01	5024K54	740.51
8″	2 1/2″	17″	13 1/2″	11 3/4″	3/4″-10	8	5024K912	494.79	5024K3	980.55	5024K412	469.20	5024K55	983.52
Air-Driven Valves														
Air-to-Open/Air-to-Close														
2″	1 13/16″	14 5/8″	6″	4 3/4″	5/8″-11	4	47075K911	375.81	47075K121	543.03	47075K201	360.41	47075K29	523.44
2 1/2″	1 15/16″	15 1/2″	7″	5 1/2″	5/8″-11	4	47075K912	380.70	47075K122	580.81	47075K202	365.23	47075K31	560.52
3″	1 15/16″	15 7/8″	7 1/2″	6″	5/8″-11	4	47075K913	393.30	47075K123	617.89	47075K203	372.31	47075K32	595.51
4″	2 3/16″	17″	9″	7 1/2″	5/8″-11	8	47075K914	418.86	47075K124	679.13	47075K204	391.57	47075K33	652.54
5″	2 5/16″	18 5/8″	10″	8 1/2″	3/4″-10	8	47075K915	514.12	47075K125	838.23	47075K205	461.64	47075K34	795.62
6″	2 5/16″	20 5/8″	11″	9 1/2″	3/4″-10	8	47075K916	715.51	47075K126	1,052.00	47075K206	679.77	47075K35	1,015.43
Air-to-Open/Spring Close														
2″	1 13/16″	14 3/8″	6″	4 3/4″	5/8″-11	4	47075K331	384.98	47075K147	554.59	47075K481	371.97	47075K56	535.00
3″	1 15/16″	16″	7 1/2″	6″	5/8″-11	4	47075K333	469.34	47075K149	693.93	47075K483	448.35	47075K58	671.55
4″	2 3/16″	18 1/4″	9″	7 1/2″	5/8″-11	8	47075K334	639.66	47075K151	868.36	47075K484	612.37	47075K59	857.76
6″	2 5/16″	22 1/16″	11″	9 1/2″	3/4″-10	8	47075K336	1,173.39	47075K153	1,557.57	47075K486	1,140.03	47075K62	1,521.01
Solenoid Valve													47075K198	Each $249.72
Motor-Driven Valves														
2″	1 13/16″	17 3/4″	6″	4 3/4″	5/8″-11	4	47075K401	923.38	47075K174	1,047.57	47075K211	908.61	47075K83	1,012.16
3″	1 15/16″	19″	7 1/2″	6″	5/8″-11	4	47075K403	1,124.56	47075K176	1,295.82	47075K213	1,085.27	47075K85	1,253.69
4″	2 3/16″	22 3/8″	9″	7 1/2″	5/8″-11	8	47075K404	1,490.42	47075K177	1,651.80	47075K214	1,439.72	47075K86	1,627.83
6″	2 5/16″	24 3/4″	11″	9 1/2″	3/4″-10	8	47075K406	1,841.06	47075K179	2,148.50	47075K216	1,838.39	47075K88	2,113.68

For information about butterfly valves, see page 448. For information about pipe size, see pages 2-3.

Air Actuators for Ball and Butterfly Valves

Use your compressed air system to operate valves remotely—these actuators open and close ball valves, butterfly valves, and dampers for use in a wide range of fluid-handling and chemical-processing applications. Actuators have a Namur hole pattern on the bottom that meets ISO 5211 for attaching your valve. Require an air supply of 40 to 115 psi. Housing is aluminum. Actuator temp. range is 32° to 175° F. *Air-to-open/spring close* shut off flow automatically when the air turns off.

Solenoid valve (sold separately) is necessary to operate actuators. Operates on 120 VAC at 60 Hz. Has 18″ wire leads. Solenoid temp. range is 32° to 175° F. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments.

Torque, in.-lbs. Air @ 80 psi	Spring Close	Overall Size Lg.	Wd.	Ht.	Air Inlet, NPT Female		Each
Air-to-Open/Air-to-Close							
158	—	7¾″	2¾″	3″	⅛″	49935K71	$133.09
327	—	8″	3½″	4½″	⅛″	49935K74	159.27
703	—	9½″	4½″	9″	¼″	49935K78	199.74
1431	—	11½″	5¼″	14½″	¼″	49935K75	331.64
Air-to-Open/Spring Close							
61	49	7¾″	2¾″	3½″	⅛″	49935K81	146.18
103	82	8″	3½″	6″	⅛″	49935K84	177.82
282	215	9½″	4½″	11″	¼″	49935K88	233.45

Solenoid Valve ..... 49935K95 **Each** $125.75

Extended-Life Ductile Iron Butterfly Valves with Grooved Ends

- Max. Pressure for Water: 300 psi @ 73° F
- Temp. Range: –20° to +200° F

Get the long service life of durable ductile iron combined with the easy installation and maintenance of grooved-end pipe connections. Use with grooved-end pipe fittings on page 80. Valves are ideal for use in HVAC and water-based applications. Body is ductile iron with an NSF-certified polyamide coating, disc is EPDM-coated ductile iron, and seat is water-resistant EPDM. Valves have 10 flow-control (throttling) positions; the handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″. Valves meet MSS-SP-67.

Pipe Size	OD	ID	End-to-End Lg. (A)	O'all Ht.		Each
2″	2⅜″	2 5/16″	3 5/16″	8 7/16″	3953T51	$163.93
3″	3½″	3⅜″	3⅞″	9 3/16″	3953T53	212.57
4″	4½″	4 5/16″	4 9/16″	10 15/16″	3953T54	265.21
6″	6⅝″	6 7/16″	5⅞″	14 5/16″	3953T56	508.44

Cast Iron Butterfly Valves

Water Resistant:
- Max. Pressure: 200 psi @ 275° F
- Temp. Range: –30° to +275° F

Oil Resistant:
- Max. Pressure: 200 psi @ 180° F
- Temp. Range: 10° to 180° F

Chemical Resistant:
- Max. Pressure: 200 psi @ 275° F
- Temp. Range: 10° to 275° F

A good option for low-pressure applications, these valves are ideal for use in HVAC systems. Valves fit ANSI Class 125 and 150 flanges with the same pipe size. All have a nickel-plated ductile iron disc. Valves meet MSS-SP-67.

Valves with threaded flange holes have a hole pattern that matches ANSI flanges with the same pipe size for connection between two flanges or to a single flange. You can disassemble your pipeline on one side of the valve without depressurizing the other side. Max. pressure for use with a single flange is 200 psi. *Valves with alignment guides* must be sandwiched between two flanges.

Manual valves with lever can be locked in position using a padlock (not included) with a shackle diameter of 5/16″.

Air-driven valves open and close faster than motor-driven valves; they turn flow on or off in less than two seconds. Require an air supply of 80 to 100 psi; inlet is ¼″ NPT female. Actuator temp. range is –10° to +176° F.

Solenoid valve (sold separately) is necessary to operate air-driven butterfly valves. Operates on 120 VAC at 60 Hz. Has 18″ wire leads and a ½″ conduit connection. Solenoid temp. range is 5° to 140° F. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments.

Motor-driven valves are ideal for use where compressed air is not accessible. Operate on 120 VAC at 60 Hz. Have screw terminals with a ½″ NPT female conduit connection. Actuator temp. range is –13° to +131° F. *Valves with 3″ pipe size* turn flow on or off in 13 seconds; *valves with 4″ pipe size* turn flow on or off in 25 seconds.

Water-Resistant Valves— Seat is EPDM.
Oil-Resistant Valves— Seat is Buna-N.
Chemical-Resistant Valves— Seat is fluoroelastomer.
To Order: Please specify water resistant or oil resistant where necessary.

Manual Lever with Alignment Guides

Air Driven with Threaded Flange Holes

Pipe Size	Flange Thick.	O'all Ht.	Fits ANSI Flange OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.	WITH THREADED FLANGE HOLES Water Resistant or Oil Resistant	Each	Chemical Resistant	Each	WITH ALIGNMENT GUIDES Water Resistant or Oil Resistant	Each	Chemical Resistant	Each
Manual Valves														
Lever— *10 Flow-Control (Throttling) Positions*														
2″	1¾″	10⅞″	6″	4¾″	⅝″-11	4	5158K911	$103.65	46165K111	$216.60	5158K811	$88.95	46165K101	$189.66
2½″	1⅞″	11⅞″	7″	5½″	⅝″-11	4	5158K921	109.53	46165K112	216.60	5158K821	96.27	46165K102	199.17
3″	1⅞″	12⅜″	7½″	6″	⅝″-11	4	5158K931	116.13	46165K113	223.47	5158K831	104.37	46165K103	205.51
4″	2⅛″	14″	9″	7½″	⅝″-11	8	5158K941	134.46	46165K114	297.96	5158K841	119.07	46165K104	220.83
5″	2¼″	15″	10″	8½″	¾″-10	8	5158K951	166.25	46165K115	387.33	5158K851	148.68	46165K105	315.78
6″	2¼″	16″	11″	9½″	¾″-10	8	5158K961	196.95	46165K116	427.89	5158K861	186.18	46165K106	359.44
Handwheel— *Fully Adjustable Flow*														
8″	2½″	19¾″	13½″	11¾″	¾″-10	8	5158K981	386.90	46165K118	720.90	5158K881	357.93	46165K108	631.78
Air-Driven Valves														
Air-to-Open/Air-to-Close														
2″	1¾″	14 7/16″	6″	4¾″	⅝″-11	4	50215K343	294.46	50215K317	434.60	50215K323	284.94	50215K274	420.04
3″	1⅞″	15⅞″	7½″	6″	⅝″-11	4	50215K345	304.44	50215K294	457.00	50215K325	294.44	50215K276	437.96
4″	2⅛″	18⅜″	9″	7½″	⅝″-11	8	50215K346	354.14	50215K295	568.60	50215K326	339.14	50215K277	486.84
6″	2¼″	21⅛″	11″	9½″	¾″-10	8	50215K348	490.60	50215K297	782.70	50215K328	469.10	50215K279	690.30
Solenoid Valve ..... 47075K198 **Each** $249.72														
Motor-Driven Valves														
3″	1⅞″	16½″	7½″	6″	⅝″-11	4	49985K743	726.69	49985K933	876.22	49985K733	715.05	49985K871	856.44
4″	2⅛″	19″	9″	7½″	⅝″-11	8	49985K744	1,039.21	49985K934	1,361.67	49985K734	1,023.48	49985K872	1,279.42

For information about butterfly valves, see page 448. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the unthreaded inside diameter (ID) of your flange or outside diameter (OD) of your pipe and read down to find the corresponding pipe size.

Unthreaded ID or OD	1 5/16″	1 29/32″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	5 9/16″	6 5/8″
Pipe Size	1″	1 1/2″	2″	2 1/2″	3″	4″	5″	6″

Sure-Fit Flanged Cast Iron Butterfly Valves

Water Resistant:
- Max. Pressure: 200 psi @ 73°F
- Temp. Range: –20° to +225°F

Oil Resistant:
- Max. Pressure: 212 psi @ 73°F
- Temp. Range: –20° to +180°F

Upgrade your industry standard flanged gate or globe valve for quicker on/off control and throttling capabilities—these have the same end-to-end length as valves of the same pipe size to swap out easily. Valves have threaded ANSI Class 125 and 150 flanges and fit flanges with the same pipe size. Body is polyamide-coated cast iron. They have 10 flow-control (throttling) positions. The handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″. Valves meet ANSI B16.10, MSS-SP-25, and -67.

Choose from ***water-resistant valves*** with an EPDM seat and EPDM-coated ductile iron disc and ***oil-resistant valves*** with a Buna-N seat and a Buna-N-coated ductile iron disc.

To Order: Please specify water resistant or oil resistant.

Pipe Size	End-to-End Lg.	O'all Ht.	Fits ANSI Flange: OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
2 1/2″	7 1/2″	10 1/4″	7″	5 1/2″	5/8″-11	4	3967T24	$269.01
3″	8″	10 3/4″	7 1/2″	6″	5/8″-11	4	3967T34	300.53
4″	9″	12 9/16″	9″	7 1/2″	5/8″-11	8	3967T44	408.62
5″	10″	13 9/16″	10″	8 1/2″	3/4″-10	8	3967T54	640.93
6″	10 1/2″	15 1/2″	11″	9 1/2″	3/4″-10	8	3967T64	620.36

NPT Threaded Bronze Butterfly Valves

- Max. Pressure for Water, Oil, and Inert Gas: 175 psi @ 100°F
- Temp. Range: –20° to +275°F

Swap out your ball valve with NPT female connections for the flow control (throttling) of a butterfly valve. Body is bronze, disc is Type 304 stainless steel, and seat is chemical-resistant fluoroelastomer.

Manual valves are UL listed and CSA and CSA-US certified. *Valves with flow-indicating lever* point to the percentage the valve is open.

Actuated air-driven valves open and close faster than motor-driven valves; they turn flow on or off in two seconds. All are air-to-open/air-to-close. Require an air supply of 80 psi; inlet is 1/4″ NPT female. Come with a solenoid that operates on 120 VAC at 60 Hz. Have screw terminals and a DIN electrical connection with a 1/2″ conduit port. Actuator/solenoid temp. range is 5° to 104°F.

Actuated motor-driven valves turn flow on or off in 2.5 seconds, except 2″ pipe size, which turns flow on or off in 5 seconds. Operate on 115 VAC at 60 Hz. Have screw terminals with a 1/2″ conduit port. Actuator temp. range is –40° to +140°F. Rated NEMA 4 for indoor/outdoor use and resistance to splashing liquids and dusty environments.

Manual Valves

Pipe Size	End-to-End Lg.	O'all Ht.	Lever	Each	Flow-Indicating Lever	Each
1/4″	2 1/4″	1 1/2″	9798K31	$11.10	4682K52	$18.30
3/8″	2 3/8″	1 1/2″	9798K32	11.10	4682K53	18.30
1/2″	1 7/8″	1 1/2″	9798K33	10.80	4682K54	18.30
3/4″	2″	1 9/16″	9798K34	17.40	4682K55	24.40
1″	2 1/8″	1 3/4″	9798K35	21.80	4682K56	28.60
1 1/4″	2 5/8″	2 3/16″	9798K36	35.10	4682K57	43.20
1 1/2″	2 7/8″	2 5/16″	9798K37	43.70	4682K58	51.60
2″	3 1/4″	3 5/8″	9798K38	53.50	4682K59	61.10

Actuated Valves

Pipe Size	End-to-End Lg.	Air Driven: O'all Ht.		Each	Motor Driven: O'all Ht.		Each
1″	2 1/8″	5 1/4″	4686K85	$469.63	6 1/4″	4532K35	$497.74
1 1/2″	2 7/8″	5 1/2″	4686K87	492.54	6 1/2″	4532K37	517.37
2″	3 1/4″	5 3/4″	4686K88	561.28	6 3/4″	4532K38	568.91

Chemical-Resistant Cast Iron Butterfly Valves

- Max. Pressure for Water, Oil, and Inert Gas: 150 psi @ 150°F
- Temp. Range: 10° to 150°F

The right choice for your applications with petroleum-based liquids—seat is PTFE-lined Buna-N for superior chemical resistance. Valves have threaded flange holes and fit ANSI Class 125 and 150 flanges with the same pipe size. Body is cast iron and disc is Type 316 stainless steel. They have 10 flow-control (throttling) positions. The handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″. Valves meet API (American Petroleum Institute) 609 for flow regulation and MSS-SP-67.

Pipe Size	Flange Thick.	O'all Ht.	Fits ANSI Flange: OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
2″	1 11/16″	9 11/16″	6″	4 3/4″	5/8″-11	4	46305K412	$460.09
2 1/2″	1 13/16″	10 7/16″	7″	5 1/2″	5/8″-11	4	46305K422	516.36
3″	1 13/16″	11 1/8″	7 1/2″	6″	5/8″-11	4	46305K432	549.82
4″	2 1/16″	12 3/8″	9″	7 1/2″	5/8″-11	8	46305K442	652.91
6″	2 3/16″	14 11/16″	11″	9 1/2″	3/4″-10	8	46305K452	890.43

Lightweight Aluminum Butterfly Valves

Water Resistant:
- Max Pressure: 150 psi @ 250°F
- Temp. Range: –40° to +250°F

Oil Resistant:
- Max Pressure: 150 psi @ 212°F
- Temp. Range: 0° to +212°F

An aluminum body provides strength and corrosion resistance at a lighter weight than other metal butterfly valves. Valves have alignment guides and fit ANSI Class 125 and 150 flanges with the same pipe size. Disc is Type 316 stainless steel. Valves have 10 flow-control (throttling) positions. The handle can be locked in position using a padlock (not included) with a shackle diameter of 3/16″.

Choose from ***water-resistant valves*** with an EPDM seat and ***oil-resistant valves*** with a Buna-N seat.

To Order: Please specify water resistant or oil resistant.

Pipe Size	Flange Thick.	O'all Ht.	Fits ANSI Flange: OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
2″	1 5/8″	7 1/2″	6″	4 3/4″	5/8″-11	4	4850K2	$78.76
3″	1 3/4″	9″	7 1/2″	6″	5/8″-11	4	4850K4	101.00
4″	2″	10 15/16″	9″	7 1/2″	5/8″-11	8	4850K6	126.25
6″	2 1/8″	12 7/16″	11″	9 1/2″	3/4″-10	8	4850K8	197.80

Ultra-High-Performance Butterfly Valves

- Max. Pressure for Water, Oil, and Inert Gas: 285 psi @ 100°F
- Temp. Range: Stainless Steel: –100° to +500°F
  Steel: –20° to +500°F

Designed to operate at a low torque to minimize wear and provide a long service life, these valves have the highest temperature and pressure ratings of our flange connection butterfly valves. Seat is PTFE for good chemical resistance and use with steam; max. pressure for steam is 50 psi at 400°F. Valves fit ANSI Class 150 flanges with the same pipe size. Disc is Type 316 stainless steel. Valves have 10 flow-control (throttling) positions. The handle can be locked in position using a padlock (not included) with a shackle diameter of 5/16″. Valves meet API (American Petroleum Institute) 609 for flow regulation, ANSI B16.5/B16.34, MSS-SP-25, -61, and -68.

Pipe Size	Flange Thick.	O'all Ht.	Fits ANSI Flange: OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
Corrosion-Resistant Type 316 Stainless Steel Valves								
3″	1 15/16″	11 9/16″	7 1/2″	6″	5/8″-11	4	4147T33	$922.70
4″	2 1/8″	12 15/16″	9″	7 1/2″	5/8″-11	8	4147T34	1,084.32
Steel Valves								
3″	1 15/16″	11 9/16″	7 1/2″	6″	5/8″-11	4	4147T13	689.73
4″	2 1/8″	12 15/16″	9″	7 1/2″	5/8″-11	8	4147T14	770.27

For information about butterfly valves, see page 448. For information about pipe size, see pages 2-3.

Sanitary Stainless Steel Butterfly Valves

Water Resistant:
- Max. Pressure:
  EPDM:
  147 psi @ 300° F
  Silicone:
  147 psi @ 450° F
- Temp. Range:
  EPDM:
  –60° to +300° F
  Silicone:
  –80° to +450° F

Chemical Resistant:
- Max. Pressure:
  Fluoroelastomer:
  147 psi @ 400° F
  PTFE:
  60 psi @ 450° F
- Temp. Range:
  Fluoroelastomer:
  –20° to +400° F
  PTFE:
  –40° to +450° F

Ideal for applications that require cleanliness, these valves are polished to a fine finish to inhibit bacterial growth and allow for cleaning in place. *Valves with 12 flow-control (throttling) positions* have a handle that can be locked in position using a padlock (not included) with a shackle diameter of 1/4″. ***Quick-clamp valves*** connect with quick-clamp fittings on pages 208-210. ***Butt-weld valves*** are unthreaded; they are for welded connections.

Type 304L stainless steel valves have a Type 304L stainless steel body and disc.
Type 316L stainless steel valves have a Type 316L stainless steel body and disc.

Choose from ***water-resistant valves*** with an EPDM seat, ***water-resistant valves*** with a silicone seat, ***chemical-resistant valves*** with a fluoroelastomer seat, and ***chemical-resistant valves*** with a PTFE seat. **To Order:** Please specify water resistant with an EPDM or a silicone seat or chemical resistant with a fluoroelastomer or a PTFE seat.

Quick Clamp with 4 Flow-Control Positions

Butt Weld with 12 Flow-Control Positions

For Tube OD	End-to-End Lg.	O'all Ht.	Flange OD	QUICK CLAMP Type 304L Stainless Steel	Each	QUICK CLAMP Type 316L Stainless Steel	Each	BUTT WELD Type 304L Stainless Steel	Each	BUTT WELD Type 316L Stainless Steel	Each
With 12 Flow-Control (Throttling) Positions and Plastic Lever											
1″	2 11/16″	4 3/4″	2″	4933K313	$140.25	4933K333	$165.09	4933K323	$132.08	4933K343	$155.66
1 1/2″	3″	5 1/4″	2″	4933K314	151.73	4933K334	179.25	4933K324	143.67	4933K344	169.81
2″	3 1/8″	5 3/4″	2 33/64″	4933K315	179.90	4933K335	211.32	4933K325	171.47	4933K345	201.89
3″	3 1/4″	6 1/2″	3 9/16″	4933K317	236.95	4933K337	279.25	4933K327	224.46	4933K347	265.09
4″	3 1/2″	8″	4 11/16″	4933K318	350.94	4933K338	414.15	4933K328	333.96	4933K348	395.28
With 4 Flow-Control (Throttling) Positions and Stainless Steel Lever											
1″	2 11/16″	4 3/4″	2″	47065K43	189.62	4820K43	214.15	47065K83	181.13	4820K83	204.72
1 1/2″	3″	5 1/4″	2″	47065K44	199.09	4820K44	228.30	47065K84	192.45	4820K84	218.87
2″	3 1/8″	5 3/4″	2 33/64″	47065K45	229.25	4820K45	297.17	47065K85	218.74	4820K85	250.94
2 1/2″	3 1/8″	6″	3 1/16″	47065K46	261.32	4820K46	302.83	47065K86	247.29	4820K86	287.74
3″	3 1/4″	6 1/2″	3 9/16″	47065K47	286.79	4820K47	328.30	47065K87	273.58	4820K87	314.15
4″	3 1/2″	8″	4 11/16″	47065K48	399.25	4820K48	463.21	47065K88	383.02	4820K88	444.34

Corrosion-Resistant Type 316 Stainless Steel Butterfly Valves

Water Resistant:
- Max. Pressure:
  150 psi @ 250° F
- Temp. Range:
  –40° to +250° F

Oil Resistant:
- Max. Pressure:
  150 psi @ 212° F
- Temp. Range:
  0° to +212° F

A Type 316 stainless steel body and disc provide excellent corrosion resistance. Valves have threaded flange holes and fit ANSI Class 125 and 150 flanges with the same pipe size. They have 10 flow-control (throttling) positions. The handle can be locked in position using a padlock (not included) with a shackle diameter of 3/16″. Choose from ***water-resistant valves*** with an EPDM seat and ***oil-resistant valves*** with a Buna-N seat. **To Order:** Please specify water resistant or oil resistant.

Pipe Size	Flange Thick.	O'all Ht.	Fits ANSI Flange OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
2″	1 5/8″	7 1/2″	6″	4 3/4″	5/8″-11	4	4854K1	$272.34
3″	1 3/4″	8 15/16″	7 1/2″	6″	5/8″-11	4	4854K3	312.02
4″	2″	11 5/16″	9″	7 1/2″	5/8″-11	8	4854K5	362.53
6″	2 1/8″	12 7/8″	11″	9 1/2″	3/4″-10	8	4854K7	533.87

Tuff-Lite PVC Butterfly Valves

- Max. Pressure for Water:
  150 psi @ 73° F
- Temp. Range:
  40° to 140° F

A PVC body and disc provide good strength with the lightest weight of all our butterfly valves. They have an EPDM seat for use in general-purpose water applications. All fit ANSI Class 125 and 150 flanges with the same pipe size; use with Schedule 40 and 80 pipe and fittings. Valves have 12 flow-control (throttling) positions. The handle can be locked in position using a padlock (not included) with a shackle diameter of 3/16″.

Note: Valves have four alignment guides (unthreaded holes) to assist in alignment between two flanges. Guides do not match ANSI flange pattern; use two of the four holes for alignment.

Pipe Size	Flange Thick.	O'all Ht.	Fits ANSI Flange OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
3″	1 15/16″	9 1/8″	7 1/2″	6″	5/8″-11	4	4842K22	$120.22
4″	2 3/16″	10 1/8″	9″	7 1/2″	5/8″-11	4	4842K23	144.19
6″	2 3/4″	12 5/8″	11″	9 1/2″	3/4″-10	4	4842K25	221.04

PVC and CPVC Butterfly Valves

- Max. Pressure: 150 psi @ 70° F
- Temp. Range: PVC: 40° to 140° F; CPVC: 40° to 200° F

Lightweight and corrosion resistant, these valves have alignment guides and fit ANSI Class 125 and 150 flanges with the same pipe size; use with Schedule 40 and 80 pipe and fittings.

Water-resistant valves are NSF 61 certified for use with drinking (potable) water. Seat is EPDM.
Chemical-resistant valves have a fluoroelastomer seat.

Manual Valves— Have seven flow-control (throttling) positions. The handle can be locked in position using a padlock (not included) with a shackle diameter of 7/16″. All are FM approved. ***PVC valves*** have a PVC body and disc. ***CPVC valves*** handle higher temperatures than PVC; body and disc are CPVC.

Air-Driven Valves— Great for remote on/off control, these turn flow on or off in about one second. All are air-to-open/spring close. Body is PVC and disc is polypropylene. Actuator requires an air supply of 80 to 120 psi; inlet is 1/4″ NPT female. Come with a solenoid that operates on 120 VAC at 60 Hz. Have 12″ wire leads with a 1/2″ conduit connection. Actuator/solenoid temp. range is 0° to 176° F.

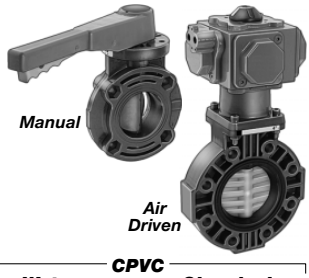
Manual
Air Driven

Pipe Size	Flange Thick.	O'all Ht.	Fits ANSI Flange OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.	PVC Water Resistant	Each	PVC Chemical Resistant	Each	CPVC Water Resistant	Each	CPVC Chemical Resistant	Each
Manual Valves														
2″	1 15/16″	9 3/8″	6″	4 3/4″	5/8″-11	4	4984K76	$249.48	4984K82	$455.55	4930K15	$307.47	4930K18	$602.88
3″	2 3/32″	11 1/2″	7 1/2″	6″	5/8″-11	4	4984K23	251.92	4984K43	497.74	4930K53	355.86	4930K73	649.38
4″	2 9/32″	13″	9″	7 1/2″	5/8″-11	8	4984K24	291.52	4984K44	601.15	4930K54	411.14	4930K74	797.76
6″	2 3/4″	16 7/16″	11″	9 1/2″	3/4″-10	8	4984K26	414.59	4984K46	932.48	4930K56	573.65	4930K76	1,209.23
Air-Driven Valves														
3″	2″	15 5/8″	7 1/2″	6″	5/8″-11	4	48065K57	1,191.33	48065K47	1,408.50	____	____	____	____
4″	2 3/16″	18 3/16″	9″	7 1/2″	5/8″-11	8	48065K58	1,282.64	48065K48	1,421.70	____	____	____	____

For information about pipe size, see pages 2-3.

About Gate Valves

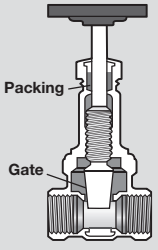

Gate valves are used to start or stop flow in a pipeline. They are designed for use either fully open or fully closed and are not for flow control (throttling). All have a gate that provides a tight seal when closed. Most gate valves require multiple turns of a wheel handle to open or close. Gate valves with a class rating correspond to pressure specifications of ANSI B16.34. Valves with flanged connections can be used with class-rated flanges that correspond to ANSI B16.5 for dimensions.

Valves with a rising stem have a stem that rises as the valve is opened. They provide a visual indication that flow is on or off and allow for easy access for stem lubrication. Because the stem does not touch your process media, these have a longer service life than valves with a nonrising stem. ***Valves with a nonrising stem*** have a stem that stays at the same height whether it is open or closed, so they are good for use in tight spaces.

Determining Pipe Size of Your Valve: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and find the corresponding pipe size listed in the chart.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″	4 1/2″	6 5/8″	8 5/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	2 1/2″	3″	4″	6″	8″

Bronze Gate Valves

Class 125:
- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 100°F
- Max. Pressure for Steam: 125 psi @ 353°F
- Temp. Range: –20° to +406°F

Class 150:
- Max. Pressure for Water, Oil, and Inert Gas: 300 psi @ 100°F
- Max. Pressure for Steam: 150 psi @ 366°F
- Temp. Range: –20° to +406°F

Class 200:
- Max. Pressure for Water, Oil, and Inert Gas: 400 psi @ 100°F
- Max. Pressure for Steam: 200 psi @ 388°F
- Temp. Range: –20° to +550°F

Class 300:
- Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 100°F
- Max. Pressure for Steam: 300 psi @ 422°F
- Temp. Range: –20° to +550°F

A bronze body and gate provide strength and corrosion resistance. Connections are NPT female. Packing is graphite. Valves meet MSS-SP-80.

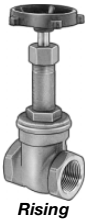
Rising Stem

Nonrising Stem

Pipe Size	Class 125 End-to-End Lg.	Class 125 Each	Class 150 End-to-End Lg.	Class 150 Each	Class 200 End-to-End Lg.	Class 200 Each	Class 300 End-to-End Lg.	Class 300 Each
Rising Stem								
1/4″	1 3/4″	**4619K31**	1 3/4″	**4599K41**	1 3/4″	**4857K11**	1 13/16″	**4606K11**
3/8″	1 13/16″	**4619K32**	1 7/8″	**4599K42**	1 7/8″	**4857K12**	1 7/8″	**4606K12**
1/2″	2″	**4619K33**	2 1/8″	**4599K43**	2 1/4″	**4857K13**	2 1/4″	**4606K13**
3/4″	2 1/8″	**4619K34**	2 1/4″	**4599K44**	2 1/2″	**4857K14**	2 1/2″	**4606K14**
1″	2 9/16″	**4619K35**	2 7/8″	**4599K45**	2 7/8″	**4857K15**	3″	**4606K15**
1 1/4″	2 13/16″	**4619K36**	2 13/16″	**4599K46**	3 1/4″	**4857K16**	3 3/8″	**4606K16**
1 1/2″	2 13/16″	**4619K37**	3 1/4″	**4599K47**	3 1/2″	**4857K17**	3 1/2″	**4606K17**
2″	3 5/16″	**4619K38**	3 5/8″	**4599K48**	3 3/4″	**4857K18**	3 3/4″	**4606K18**
2 1/2″	4 3/16″	**4619K42**	4 1/2″	**4599K51**	4 5/8″	**4857K29**	4 5/8″	**4606K29**
3″	4 5/8″	**4619K39**	4 7/8″	**4599K49**	5″	**4857K19**	5″	**4606K19**
Nonrising Stem								
1/4″	1 3/4″	**4619K11**	1 3/4″	**4599K19**	1 13/16″	**4857K21**	1 13/16″	**4606K21**
3/8″	1 13/16″	**4619K12**	1 13/16″	**4599K21**	1 7/8″	**4857K22**	1 7/8″	**4606K22**
1/2″	2″	**4619K13**	2″	**4599K22**	2 1/4″	**4857K23**	2 1/4″	**4606K23**
3/4″	2 1/8″	**4619K14**	2 1/8″	**4599K23**	2 1/2″	**4857K24**	2 1/2″	**4606K24**
1″	2 9/16″	**4619K15**	2 9/16″	**4599K24**	2 7/8″	**4857K25**	3″	**4606K25**
1 1/4″	2 13/16″	**4619K16**	2 13/16″	**4599K25**	3 1/4″	**4857K26**	3 3/8″	**4606K26**
1 1/2″	2 13/16″	**4619K17**	2 13/16″	**4599K26**	3 1/2″	**4857K27**	3 1/2″	**4606K27**
2″	3 5/16″	**4619K18**	3 5/16″	**4599K27**	3 3/4″	**4857K28**	3 3/4″	**4606K28**
2 1/2″	4 3/16″	**4619K43**	4 3/16″	**4599K29**	—	—	—	—
3″	4 5/8″	**4619K41**	4 5/8″	**4599K28**	—	—	—	—

Bronze Gate Valves with Solder-End Connections

Nonrising Stem

- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 100°F
- Max. Pressure for Steam: 15 psi @ 250°F
- Temp. Range: –20° to +250°F

Incorporate on/off control in your copper tubing lines—these valves have solder end (unthreaded) female connections. Body and gate are bronze and packing is graphite. Valves meet MSS-SP-80 and are rated Class 125.

Tube Size ♦	Actual Tube OD	End-to-End Lg.	Rising Stem	Rising Stem Each	Nonrising Stem	Nonrising Stem Each
3/8″	1/2″	1 5/8″	**4923K21**	$24.54	**4923K11**	$22.50
1/2″	5/8″	1 7/8″	**4923K22**	21.76	**4923K12**	23.15
3/4″	7/8″	2 1/2″	**4923K23**	27.41	**4923K13**	24.17
1″	1 1/8″	3″	**4923K24**	36.20	**4923K14**	32.41
1 1/4″	1 3/8″	3 1/4″	**4923K25**	57.50	**4923K15**	49.17
1 1/2″	1 5/8″	3 5/8″	**4923K26**	64.26	**4923K16**	55.83
2″	2 1/8″	4 5/16″	**4923K27**	89.17	**4923K17**	77.22

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Quick-Opening Brass Gate Valves

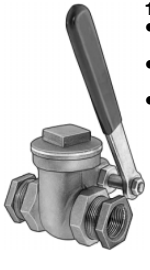

1″ and 1 1/4″ Pipe Size:
- Max. Pressure for Oil: 125 psi @ 120°F
- Max. Pressure for Steam: Not rated
- Temp. Range: +32° to +150°F

1 1/2″-3″ Pipe Size:
- Max. Pressure for Water and Oil: 200 psi @ 70°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +150°F

Quickly transition between full flow and shut off with a lever instead of the common multiple-turn wheel handle. Connections are NPT female. Body and gate are brass. *Valves with 1″ and 1 1/4″ pipe size* have a Buna-N seal; *valves with 1 1/2″ to 3″ pipe size* have PTFE fiber packing.

Valves with a spring-assist lever close more easily than lever valves, but still require an operator.

Pipe Size	End-to-End Lg.	Lever	Lever Each	Spring-Assist Lever	Spring-Assist Lever Each
1″	4 3/8″	**4684K82**	$176.41	**4684K42**	$172.95
1 1/4″	2 7/8″	**4684K83**	163.61	**4684K43**	172.95
1 1/2″	3 7/16″	**4684K11**	207.99	**4684K21**	217.10
2″	3 11/16″	**4684K12**	250.06	**4684K22**	263.53
3″	5 1/16″	**4684K13**	528.93	**4684K23**	536.57

For information about gate valves, see page 452. For information about pipe size, see pages 2-3.

Flanged Cast Iron Gate Valves

Cast Iron:
- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 150°F
- Max. Pressure for Steam: 125 psi @ 353°F
- Temp. Range: –20° to +450°F

Epoxy-Coated Cast Iron:
- Max. Pressure for Water: 200 psi @ 140°F
- Max. Pressure for Steam: Not rated
- Temp. Range: +33° to +140°F

A rugged cast iron body provides strength and durability in these industry standard gate valves. They have unthreaded ANSI Class 125 flange connections that bolt to ANSI flanges of the same pipe size for simple installation. Meet ANSI B16.10 and MSS-SP-70.

Cast Iron— Gate is cast iron and packing is synthetic fiber with graphite.

Epoxy-Coated Cast Iron— An epoxy coating on the valve body provides extra corrosion resistance. Gate is rubber-coated cast iron for resistance to large pressure drops in your pipeline. Valves meet ASTM A126 Class B specifications and AWWA (American Water Works Association) Standard C509.

Epoxy-coated valves with a rising stem are ideal for fire-main shut off and distribution service. Gate is SBR rubber-coated and packing is graphite fiber. UL listed and FM approved.

Epoxy-coated valves with a nonrising stem are good for use with drinking water and sewage disposal. Gate is encased in Buna-N and packing is Buna-N.

Pipe Size	End-to-End Lg.	Fits ANSI Flange OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.	CAST IRON Rising Stem	Each	CAST IRON Nonrising Stem	Each	EPOXY-COATED CAST IRON Rising Stem	Each	EPOXY-COATED CAST IRON Nonrising Stem	Each
2"	7"	6"	4¾"	⅝"-11	4	3991K11	$330.47	49505K51	$363.39	—	—	—	—
2½"	7½"	7"	5½"	⅝"-11	4	3991K12	340.60	49505K52	376.06	47815K21	$432.24	—	—
3"	8"	7½"	6"	⅝"-11	4	3991K13	373.52	49505K53	379.85	47815K22	475.61	47575K13	$411.65
4"	9"	9"	7½"	⅝"-11	8	3991K14	524.79	49505K54	540.66	47815K23	637.73	47575K14	523.85
6"	10½"	11"	9½"	¾"-10	8	3991K15	849.73	49505K56	873.50	47815K24	1,014.55	47575K15	834.71
8"	11½"	13½"	11¾"	¾"-10	8	—	—	—	—	47815K25	1,718.18	—	—

Boiler Blow-Off Cast Iron Gate Valves

- Max. Pressure for Water: 250 psi @ 350°F
- Max. Pressure for Steam: Not rated
- Temp. Range: 33° to 350°F

The rotating gate makes these valves perfect for boiler blow-off applications. Connections are NPT female. Body and gate are cast iron and packing is EPDM and nylon. Meet ASME Section 1 Codes for Boiler and Pressure Vessels, ANSI B16.31 for power piping, and ANSI B31.1.

Lever valves open and close quickly.

Wheel handle valves open and close slowly to provide more controlled, shock-resistant flow. Stem is nonrising.

Pipe Size	End-to-End Lg.	Lever	Each	Wheel Handle	Each
1"	3⅝"	4692K31	$485.51	7917T51	$943.36
1¼"	3⅝"	4692K32	577.71	7917T52	1,014.43
1½"	4½"	4692K33	721.80	7917T53	1,086.89
2"	4⅝"	4692K34	836.07	7917T54	1,293.11

Quick-Opening Cast Iron Air-Blast Gate Valves

- Max. Pressure for Air and Inert Gas only:
  1"-3": 20 psi @ 1000°F
  4": 10 psi @ 1000°F
  6": 5 psi @ 1000°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +1000°F

Often used as blast gates in low-pressure air conditioning and ventilating systems, these valves have a pull handle for quick opening and closing. A thumb screw locks the gate in position. Body is cast iron, gate is Type 304 stainless steel, and packing is graphite. Stem is rising.

Flanged valves have unthreaded holes that fit ANSI Class 125 and 150 flanges with the same pipe size.

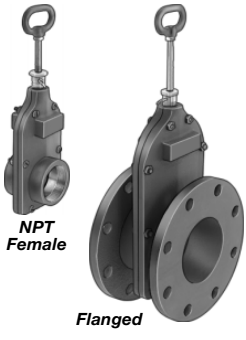

NPT Female

Pipe Size	End-to-End Lg.		Each	Pipe Size	End-to-End Lg.		Each
1"	2 13/16"	4723K31	$178.69	3"	3 5/16"	4723K35	$250.17
1½"	2 13/16"	4723K32	190.61	4"	3 5/16"	4723K26	331.93
2"	2 13/16"	4723K33	202.52	6"	3 13/16"	4723K28	562.89
2½"	2 13/16"	4723K34	238.26				

Flanged

Pipe Size	End-to-End Lg.	Fits ANSI Flange OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
4"	5¼"	9"	7½"	⅝"-11	8	4723K41	$434.83
6"	5¾"	11"	9½"	¾"-10	8	4723K43	693.94

Flanged Cast Iron Knife Gate Valves

For Dry Materials:
- Max. Pressure for Water and Inert Gas: 150 psi @ 400°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –50° to +400°F

For Thick Liquids:
- Max. Pressure for Water and Inert Gas: 150 psi @ 212°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –50° to +212°F

A knife-style gate cuts through materials that would otherwise prevent valve closure. Unthreaded holes fit ANSI Class 150 flanges with the same pipe size. Body is cast iron with a 300 series stainless steel liner and gate. Stem is rising.

For Dry Materials— Seat is Type 316 stainless steel for use with dry media.

For Thick Liquids— Seat is EPDM for a tight seal when used with viscous liquids.

Pipe Size	End-to-End Lg.	Fits ANSI Flange OD	Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
For Dry Materials							
2"	1⅞"	6½"	4¾"	⅝"-11	4	6312T31	$416.39
3"	2"	7⅞"	6"	⅝"-11	4	6312T32	495.08
4"	2"	9 1/16"	7½"	⅝"-11	8	6312T33	662.30
5"	2¼"	10"	8½"	¾"-10	8	6312T34	702.29
6"	2¼"	11¼"	9½"	¾"-10	8	6312T35	877.05
For Thick Liquids							
3"	2"	7⅞"	6"	⅝"-11	4	6312T13	545.90
4"	2"	9 1/16"	7½"	⅝"-11	8	6312T14	708.20
6"	2¼"	11¼"	9½"	¾"-10	8	6312T16	939.34

Lockable Safety-Air-Exhaust Gate Valves

- Max Pressure for Compressed Air:
  ½"-1": 250 psi @ 250°F
  1½" and 2": 125 psi @ 250°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –40° to +250°F

Meet OSHA requirements for safety and control in your compressed air system. When closed, these valves vent air pressure through the exhaust port so you can disconnect air tools safely. Connections are NPT female. Gate is aluminum and seals are polyethylene and acetal. Stem is rising. Valves lock in any of four positions using a padlock (not included) with a shackle diameter of ⅜".

Valves with ½" to 1" pipe size have an aluminum body; *valves with 1½" and 2" pipe size* have a cast iron body.

Pipe Size	End-to-End Lg.	Exhaust Port, dia.		Each
½"	2¾"	¼"	4707K34	$280.78
¾"	2¾"	¼"	4707K35	259.99
1"	2¾"	¼"	4707K36	265.03
1½"	3½"	½"	4707K37	691.54
2"	3½"	½"	4707K38	703.15

For information about gate valves, see page 452. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″	4 1/2″	6 5/8″
Pipe Size	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″	3″	4″	6″

Super-High-Pressure Steel Gate Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1975 psi @ 100° F
- Max. Pressure for Steam: 715 psi @ 800° F
- Temp. Range: –20° to +800° F

A forged steel body and gate provide strength and safety in super-high-pressure applications. Valves are rated Class 800, making them ideal for use in petroleum, chemical, and power-processing systems. Connections are female. Packing is graphite. Stem is rising. Valves meet API (American Petroleum Institute) 602 and ASTM A105N.

Socket-weld valves are unthreaded; they are for welded connections with unthreaded pipe (male).

Pipe Size	End-to-End Lg.	NPT	Each	Socket Weld	Each
1/4″	3 1/8″	4784K31	$55.80	4784K11	$55.80
3/8″	3 1/8″	4784K32	55.80	4784K12	55.80
1/2″	3 1/8″	4784K33	55.80	4784K13	55.80
3/4″	3 1/2″	4784K34	61.55	4784K14	61.55
1″	4 3/8″	4784K35	74.21	4784K15	74.21
1 1/4″	5″	4784K36	140.94	4784K16	140.94
1 1/2″	5″	4784K37	140.94	4784K17	140.94
2″	5 1/4″	4784K38	182.94	4784K18	182.94

Type 316 Stainless Steel Gate Valves

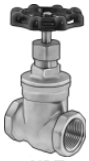

NPT

- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 350° F
- Max. Pressure for Steam: 120 psi @ 350° F
- Temp. Range: 0° to 350° F

Ideal for your harsh environment, body and gate are Type 316 stainless steel for exceptional corrosion resistance. Connections are female. Packing is PTFE. Stem is nonrising. Meet ASTM A351.

Socket-weld valves are unthreaded; they are for welded connections with unthreaded pipe (male).

Pipe Size	End-to-End Lg.	NPT	Each	Socket Weld	Each
1/2″	2 1/8″	4741K23	$78.11	4874K53	$87.36
3/4″	2 5/16″	4741K24	91.30	4874K54	101.55
1″	2 9/16″	4741K25	113.16	4874K55	127.94
1 1/4″	2 15/16″	4741K26	154.36	4874K56	173.09
1 1/2″	3 1/16″	4741K27	225.26	4874K57	252.68
2″	3 7/16″	4741K28	265.74	4874K58	298.74

Flanged Steel Gate Valves

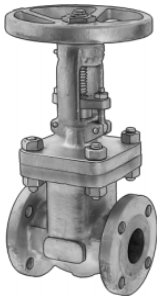

- Max. Pressure for Water, Oil, and Inert Gas: 285 psi @ 100° F
- Max. Pressure for Steam: 150 psi @ 366° F
- Temp. Range: –20° to +800° F

Get the strength and rigidity of steel combined with the ease of installation of flanged connections. Simply bolt these valves with threaded ANSI Class 150 flange connections to ANSI flanges of the same pipe size. Body and gate are steel and packing is graphite. Stem is rising. Valves meet API (American Petroleum Institute) 600 and ASTM A216-WCB.

Pipe Size	End-to-End Lg.	OD	Fits ANSI Flange: Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
2″	7″	6″	4 3/4″	5/8″-11	4	49265K11	$546.51
2 1/2″	7 1/2″	7″	5 1/2″	5/8″-11	4	49265K12	744.69
3″	8″	7 1/2″	6″	5/8″-11	4	49265K13	759.32
4″	9″	9″	7 1/2″	5/8″-11	8	49265K14	927.33

Flanged Type 316 Stainless Steel Gate Valves

- Max. Pressure for Water: 275 psi @ 100° F
- Max. Pressure for Steam: 150 psi @ 366° F
- Temp. Range: 0° to 375° F

Simply bolt these valves with unthreaded ANSI Class 150 flange connections to ANSI flanges of the same pipe size for ease of installation and maintenance. Body and gate are Type 316 stainless steel for exceptional corrosion resistance. Packing is PTFE. Stem is rising. Valves meet API (American Petroleum Institute) 603 and ASME B16.34.

Pipe Size	End-to-End Lg.	OD	Fits ANSI Flange: Bolt Circle Dia.	Bolt Size	Bolt Hole Qty.		Each
1″	5″	4 1/4″	3 3/16″	1/2″-13	4	47305K34	$406.69
1 1/2″	6 1/2″	5″	3 7/8″	1/2″-13	4	47305K35	593.47
2″	7″	6″	4 3/4″	5/8″-11	4	47305K36	621.76
3″	8″	7 1/2″	6″	5/8″-11	4	47305K38	1,157.10
4″	9″	9″	7 1/2″	5/8″-11	8	47305K39	1,452.61

Quick-Opening PVC Gate Valves

- Max Pressure for Water: See table
- Temp. Range: 35° to 120° F

Transition quickly between full flow and shut off—these valves have a pull handle instead of the common multiple-turn wheel handle. Use with Schedule 40 pipe and fittings. Body is white PVC. Stem is rising. ***Valves with a glass-filled polypropylene gate*** have a Buna-N seat. ***Valves with a Type 304 stainless steel gate*** have a Santoprene rubber seat.

Socket connections are female unthreaded; they are for connection to male unthreaded pipe and fittings. ***Unthreaded outlet connections*** are for dispensing or connection to hose using a hose clamp.

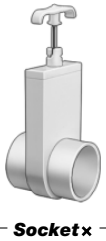
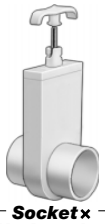

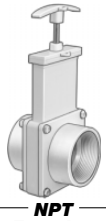
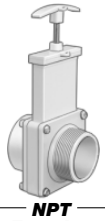
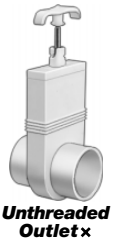

Pipe Size	Max. psi For Water @ 120° F	End-to-End Lg.	Socket × Socket	Each	Socket × Unthreaded Outlet	Each	Socket × NPT Female	Each	NPT Female × Female	Each	NPT Female × Male	Each	Unthreaded Outlet × Unthreaded Outlet	Each
Glass-Filled Polypropylene Gate														
1 1/2″	75	3 3/8″	46065K81	$17.73	46065K82	$17.73	46065K91	$18.59	—	—	46065K92	$21.92	46065K83	$17.73
2″	40	3 1/2″	46065K84	22.46	46065K85	22.46	—	—	—	—	—	—	46065K86	22.46
Type 304 Stainless Steel Gate														
2″	40	3 1/2″	3999K11	44.30	3999K12	44.30	3999K19	48.50	3999K17	$52.48	3999K18	48.50	3999K13	44.30
3″	30	4 1/2″	3999K31	50.85	3999K22	50.85	3999K38	53.37	3999K36	57.74	3999K37	54.22	3999K23	50.85
4″	20	5 3/16″	3999K32	111.40	—	—	—	—	—	—	—	—	—	—
6″	10	11 1/8″	3999K33	303.69	—	—	—	—	—	—	—	—	—	—

For information about gate valves, see page 452. For information about pipe size, see pages 2-3.

PVC and Acetal Gate Valves

- Max. Pressure: 150 psi @ 73°F
- Temp. Range: PVC: 33° to 140°F Acetal: 33° to 180°F

Designed for use with liquids, these valves are NSF 61 certified for use with drinking (potable) water. Connections are female. Stem is nonrising. ***Socket-weld valves*** are unthreaded; they are for welded connections with unthreaded pipe (male).

PVC Valves— Body and ball are PVC and seal is EPDM. Choose from white valves for use with only Schedule 40 pipe and fittings and gray valves for use with Schedule 40 and Schedule 80 pipe and fittings. **To Order:** Please specify color: white or gray.

Acetal Valves— Handle higher temperatures than PVC and have a fluoroelastomer seal for good chemical resistance. Body and ball are acetal. Color is bronze.

Pipe Size	End-to-End Lg.	NPT PVC	Each	NPT Acetal	Each	SOCKET WELD PVC	Each
1/2"	2 3/16"	9762K11	$7.73	97705K31	$9.47	9762K21	$7.73
3/4"	2 5/16"	9762K12	9.58	97705K32	11.23	9762K22	9.58
1"	2 13/16"	9762K13	12.22	97705K33	14.81	9762K23	12.22
1 1/4"	3 1/16"	9762K14	16.89	97705K34	$20.59	9762K24	$16.89
1 1/2"	3 1/16"	9762K15	21.39	97705K35	25.09	9762K25	21.39
2"	4 3/16"	9762K16	25.64	97705K36	33.92	9762K26	25.64

High-Pressure PVC and CPVC Gate Valves

- Max. Pressure: 200 psi @ 73°F
- Temp. Range: PVC: 40° to 140°F CPVC: 40° to 200°F

Thick walls and rugged construction withstands high pressure. NSF 61 certified for use with drinking (potable) water. Use with Schedule 40 and 80 pipe and fittings. Connections are female. Stem is nonrising. Color is gray. ***Socket-weld valves*** are unthreaded; they are for welded connections with unthreaded pipe (male).

Oil-Resistant PVC Valves— A Buna-N seal makes these good for use with oil and water in general purpose applications. Body is PVC and gate is polypropylene.

Chemical-Resistant PVC and CPVC Valves— Have a fluoroelastomer seal for good chemical resistance. *PVC valves* have a PVC body and a polypropylene gate. *CPVC valves* handle higher temperatures than PVC. Body and gate are CPVC.

Oil-Resistant PVC Valves

Pipe Size	End-to-End Lg.	NPT	Each	Socket Weld	Each
1/2"	2 13/16"	4974K61	$24.84	4974K67	$24.84
3/4"	2 13/16"	4974K62	30.37	4974K68	30.37
1"	3 5/16"	4974K63	36.01	4974K69	36.01
1 1/2"	3 9/16"	4974K85	58.77	4974K91	58.77
2"	3 15/16"	4974K66	75.48	4974K72	75.48

Chemical-Resistant PVC and CPVC Valves

Pipe Size	End-to-End Lg.	NPT PVC	Each	NPT CPVC	Each	SOCKET WELD PVC	Each	SOCKET WELD CPVC	Each
1/2"	2 13/16"	—	—	4931K51	$65.77	—	—	4931K71	$65.77
3/4"	2 13/16"	4974K32	$35.20	—	—	4974K45	$35.20	—	—
1"	3 5/16"	4974K33	43.66	4931K53	77.93	4974K46	43.66	4931K73	77.93
1 1/2"	3 9/16"	4974K35	71.10	—	—	4974K48	71.10	—	—
2"	3 15/16"	4974K36	91.35	4931K56	173.11	4974K49	91.35	4931K76	173.11

About Globe Valves

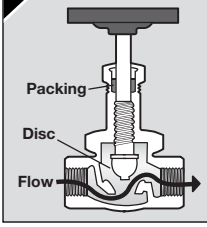

Globe valves are used for frequent on/off control and flow control (throttling) in your pipeline. All have a disc that provides a tight seal when closed. Most globe valves require multiple turns of a wheel handle to open or close. With seats that extend into the center of the valve, they are not for applications that require unobstructed flow. Globe valves with a class rating meet pressure specifications of ANSI B16.34.

Valves with a rising stem have a stem that rises as the valve is opened. They provide a visual indication that flow is on or off and allow for easy access for stem lubrication. Because the stem does not touch your process media, these have a longer service life than valves with a nonrising stem. ***Valves with a nonrising stem*** have a stem that stays at the same height whether it is open or closed, so they are good for use in tight spaces.

Bronze Globe Valves

Class 125:
- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 150°F
- Max. Pressure for Steam: 125 psi @ 353°F
- Temp. Range: –20° to +406°F

Class 150:
- Max. Pressure for Water, Oil, and Inert Gas: 300 psi @ 150°F
- Max. Pressure for Steam: 150 psi @ 366°F
- Temp. Range: –20° to +406°F

Class 200:
- Max. Pressure for Water, Oil, and Inert Gas: 400 psi @ 150°F
- Max. Pressure for Steam: 200 psi @ 388°F
- Temp. Range: –20° to +550°F

Class 300:
- Max. Pressure for Water, Oil, and Inert Gas: Inline: 1000 psi @ 150°F Elbow: 600 psi @ 150°F
- Max. Pressure for Steam: 300 psi @ 421°F
- Temp. Range: –20° to +550°F

A bronze body provides strength and corrosion resistance. Connections are NPT female. Packing is graphite. Stem is rising. Meet MSS-SP-80.

Inline— Class 125 have a bronze disc; Class 150 have a PTFE disc; Class 200 have a bronze disc; and Class 300 have a Type 420 stainless steel disc.

Elbow— Class 125 have a brass disc; Class 150 have a PTFE disc; and Class 300 have a bronze disc.

Pipe Size	Class 125 Port-to-Port Lg. (P)		Each	Class 150 Port-to-Port Lg. (P)		Each	Class 200 Port-to-Port Lg. (P)		Each	Class 300 Port-to-Port Lg. (P)		Each
Inline												
1/4"	1 5/8"	4600K11	$46.02	2 1/16"	4889K11	$50.41	2 1/16"	3983K11	$60.10	2 1/8"	9769K11	$99.39
3/8"	1 13/16"	4600K12	46.02	2 1/16"	4889K12	50.41	2 1/16"	3983K12	60.10	2 3/8"	9769K12	99.39
1/2"	2 5/16"	4600K13	46.02	2 7/16"	4889K13	50.41	2 7/16"	3983K13	60.10	2 3/4"	9769K13	99.39
3/4"	2 9/16"	4600K14	53.06	2 15/16"	4889K14	64.69	2 15/16"	3983K14	78.47	3 3/16"	9769K14	140.92
1"	2 15/16"	4600K15	77.67	3 7/16"	4889K15	115.89	3 3/4"	3983K15	130.78	3 5/8"	9769K15	188.78
1 1/4"	3 3/8"	4600K16	105.11	3 7/8"	4889K16	201.54	4 1/4"	3983K16	213.78	4 1/8"	9769K16	250.89
1 1/2"	3 11/16"	4600K17	138.56	4 1/2"	4889K17	220.87	4 3/4"	3983K17	236.44	4 3/4"	9769K17	356.18
2"	4 7/16"	4600K18	207.89	5 3/4"	4889K18	319.32	5 3/4"	3983K18	356.30	5 1/8"	9769K18	540.40
Elbow												
1/4"	3/4"	4600K41	50.41	1 1/16"	4889K61	62.35	—	—	—	1 1/16"	9769K31	69.29
3/8"	15/16"	4600K42	50.41	1 3/16"	4889K62	62.35	—	—	—	1 3/16"	9769K32	69.29
1/2"	1"	4600K43	50.41	1 3/16"	4889K63	62.35	—	—	—	1 1/4"	9769K33	69.29
3/4"	1 1/4"	4600K44	69.08	1 7/16"	4889K64	64.69	—	—	—	1 1/2"	9769K34	94.80
1"	1 7/16"	4600K45	97.89	1 3/4"	4889K65	120.78	—	—	—	1 3/4"	9769K35	150.44
1 1/4"	1 11/16"	4600K46	138.56	2 1/16"	4889K66	158.44	—	—	—	2 1/16"	9769K36	196.22
1 1/2"	1 13/16"	4600K47	171.22	2 1/4"	4889K67	218.78	—	—	—	2 1/4"	9769K37	264.11
2"	2 3/16"	4600K48	221.33	2 3/4"	4889K68	332.28	—	—	—	2 3/4"	9769K38	415.00

For information about globe valves, see page 455. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

Bronze Globe Valves with Solder-End Connections

- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 150°F
- Max. Pressure for Steam: 15 psi @ 250°F
- Temp. Range: –20° to +406°F

Incorporate on/off and flow control (throttling) in your applications with copper tubing—connections are solder end (unthreaded) female. Body is bronze, disc is TFE, and packing is graphite fiber. Stem is rising. Valves are rated Class 125.

Tube Size ♦	Actual Tube OD	End-to-End Lg.		Each
1/2″	5/8″	2 9/16″	4947K42	$69.54
3/4″	7/8″	3 1/16″	4947K43	92.49
1″	1 1/8″	3 11/16″	4947K44	122.87
1 1/4″	1 3/8″	4 5/16″	4947K46	174.18
1 1/2″	1 5/8″	4 11/16″	4947K47	207.26
2″	2 1/8″	5 5/8″	4947K48	318.65

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Cleaned and Bagged Cryogenic Globe Valves

Compact

Extended Handle

- Max. Pressure for Water, Oil, and Inert Gas: 1/4″-1″: 600 psi @ 150°F; 1 1/2″ and 2″: 400 psi @ 150°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –320° to +150°F

Cleaned and bagged to meet CGA G-4.1 standards for oxygen service, these valves withstand extremely cold temperatures. All have a CTFE seat for a tight seal at cryogenic temperatures. Connections are NPT female. Packing is PTFE.

Compact valves are commonly used with portable liquid oxygen cylinders. Body is brass. Stem is non-rising.

Extended-handle valves are designed to keep valve components from freezing. Body is bronze, disc is brass, and seal is glass-filled PTFE. Stem is rising.

Pipe Size	End-to-End Lg.	O'all Height		Each
Compact Valves				
1/4″	2 1/2″	3 1/4″	68075K81	$72.83
3/8″	2 1/2″	3 1/4″	68075K82	72.83
1/2″	2 1/2″	3 1/4″	68075K83	72.83
Extended-Handle Valves				
1/2″	2 5/8″	8 15/16″	49415K32	224.12
1″	3 3/4″	11 13/16″	49415K34	295.32
1 1/2″	4 3/4″	16 3/4″	49415K36	484.25
2″	5 3/4″	17 11/16″	49415K38	601.21

Type 316 Stainless Steel Globe Valves

Socket Weld

- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 350°F
- Max. Pressure for Steam: 120 psi @ 350°F
- Temp. Range: 0° to 350°F

A Type 316 stainless steel body and disc provide exceptional corrosion resistance. Connections are female. Packing is PTFE. Stem is rising.

Socket-weld valves are unthreaded; they are for welded connections with unthreaded pipe (male). Meet ASTM A351.

BSPT (British Standard Pipe Taper) valves are for connection with BSPT threads.

Pipe Size	End-to-End Lg.	*NPT*	Each	*Socket Weld*	Each	*BSPT*	Each
1/2″	2 9/16″	4742K13	$75.63	4110K53	$84.44	4098K53	$101.39
3/4″	3 3/16″	4742K14	91.06	4110K54	103.33	4098K54	117.87
1″	3 9/16″	4742K15	100.83	4110K55	111.42	4098K55	138.31
1 1/4″	4 1/8″	4742K16	154.34	4110K56	187.83	4098K56	199.61
1 1/2″	4 3/4″	4742K17	228.73	4110K57	253.99	4098K57	285.18
2″	5 1/2″	4742K18	307.88	4110K58	336.34	4098K58	370.74

Low-Pressure Bronze Globe Valves

- Max. Pressure for Water: 175 psi @ 150°F
- Max. Pressure for Steam: Not rated
- Temp. Range: –20° to +150°F

A good choice for low-pressure plumbing applications, these valves are commonly used in boiler maintenance to discharge water. Connections are NPT female. Body is bronze, disc is EPDM, and packing is graphite fiber. Stem is rising. *Valves with 1/2″ to 2″ pipe size* are UL listed for trim and drain use in fire-protection services.

Pipe Size	End-to-End Lg.		Each	Pipe Size	End-to-End Lg.		Each
1/4″	2″	4695K63	$24.19	1″	3 1/8″	4695K59	$45.27
3/8″	2″	4695K66	25.17	1 1/4″	4 5/16″	4695K6	75.53
1/2″	2 5/16″	4695K64	26.47	1 1/2″	4 11/16″	4695K61	106.32
3/4″	2 5/16″	4695K65	31.77	2″	5 3/8″	4695K62	134.14

Quick-Opening Globe Valves

Hand-Grip Lever

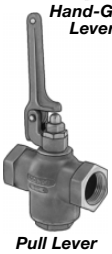

Pull Lever

- Max. Pressure for Water, Oil, and Inert Gas: See table
- Max. Pressure for Steam: Brass: Not rated; Bronze: 200 psi @ 550°F
- Temp. Range: Brass: 0° to +200°F; Bronze: –20° to +550°F

Perfect for applications that require manual discharge of liquids and compressed air, these valves provide fast-opening, self-closing operation. Commonly used in spraying, washing, and liquid-transfer applications. Connections are NPT female. Stem is nonrising.

Brass Valves— Body is brass and disc and packing are Buna-N. Choose from valves with a hand-grip lever and valves with a pull lever. ***Valves with a pull lever*** have a hole in the lever to attach a cord or chain for operation from below. **To Order:** Please specify hand-grip or pull lever.

Bronze Valves— Body and disc are bronze and packing is Kevlar fiber. All have a pull lever; lever has a hole to attach a cord or chain for operation from below. Valves meet MSS-SP-80 and are rated Class 200.

Brass Valves

Pipe Size	End-to-End Lg.	Handle Hole, dia.▲	*150 psi @ 60°F*■	Each	*400 psi @ 60°F*■	Each
1/4″	2 3/16″	1/4″	4625K61	$61.47	4625K81	$61.47
3/8″	3 3/16″	1/4″	4625K62	67.54	4625K82	67.54
1/2″	2 11/16″	1/4″	4625K63	81.37	4625K83	99.64
3/4″	3 1/16″	1/4″	4625K64	121.26	4625K84	122.61
1″	4″	1/4″	4625K65	124.96	4625K85	156.83

■ Max. psi for water, oil, and inert gas. ▲ Hole in pull-lever style only.

Bronze Valves

Pipe Size	End-to-End Lg.	Handle Hole, dia.	*200 psi @ 550°F*■	Each
1/2″	2 1/2″	1/4″	4608K4	$236.81
3/4″	2 15/16″	1/4″	4608K41	333.83
1″	3 7/16″	5/16″	4608K42	389.75

■ Max. psi for water, oil, and inert gas.

Super-High-Pressure Steel Globe Valves

- Max. Pressure for Water, Oil, and Inert Gas: 1975 psi @ 100°F
- Max. Pressure for Steam: 715 psi @ 800°F
- Temp. Range: –20° to +800°F

Ideal for use in petroleum, chemical, and power-processing systems, body and disc are forged steel for strength in extreme-pressure applications. Connections are NPT female. Packing is graphite. Stem is rising. Valves meet API (American Petroleum Institute) 602, ASTM A105N, and are rated Class 800.

Pipe Size	End-to-End Lg.		Each	Pipe Size	End-to-End Lg.		Each
1/4″	3 3/16″	4737K51	$86.29	1″	4 5/16″	4737K55	$129.44
3/8″	3 3/16″	4737K52	86.29	1 1/4″	6″	4737K56	252.54
1/2″	3 3/16″	4737K53	86.29	1 1/2″	6″	4737K57	252.54
3/4″	3 9/16″	4737K54	98.95	2″	7 1/8″	4737K58	314.37

PVC Globe Valves

- Max. Pressure: 150 psi @ 70° F
- Temp. Range: 40° to 120° F

A PVC body provides chemical resistance at a light weight. For use with Schedule 40 and 80 pipe and pipe fittings. Stem is rising. NPT connections are female.

Compact valves are ideal for confined spaces and are for use with water. Packing is EPDM, disc is polypropylene, and color is blue-gray.

Compact *Y Style*

Y-style valves are NSF 61 certified for use with drinking (potable) water. Seal is EPDM, disc is polyethylene, and color is dark gray.

Pipe Size	NPT End-to-End Lg.		Each	Socket Weld (Unthreaded) End-to-End Lg.		Each
Compact						
1/2"	3 3/8"	47535K21	$47.45	4 3/8"	47535K41	$47.45
3/4"	3 3/4"	47535K22	49.61	5 1/8"	47535K42	49.61
1"	4 3/8"	47535K23	83.04	5 15/16"	47535K43	83.04
1 1/2"	5 1/2"	47535K25	236.18	5 1/2"	47535K45	236.18
Y Style						
1"	7"	7314T26	117.85	4 3/4"	7314T46	111.71

Brass Plug Valves

- Max. Pressure for Water, Oil, and Inert Gas: 250 psi @ 175° F
- Temp. Range: –40° to +175° F

Flow direction is shown on the handle for easy visual checks. Valves have a brass body, nitrile seals, and a glass-filled acetal plug. Connections are NPTF (Dryseal).

To Order: Please specify male inlet × male outlet, male inlet × female outlet, or female inlet × female outlet.

Pipe Size	End-to-End Lg.		Each
1/8"	1 11/16"	4886K21	$14.95
1/4"	2 1/8"	4886K22	13.60

Steam-Rated Bronze Plug Valve

- Max. Pressure for Steam: 125 psi @ 250° F
- Temp. Range: 212° to 250° F

A bronze body and plug are ideal for use with steam. Valve has a square head that requires a wrench to open or close (sold separately). Connections are NPT female.

Pipe Size	End-to-End Lg.	Valve	Each	Wrench	Each
1/2"	2 1/8"	48535K73	$28.26	4508K13	$12.84

Brass Plug Valves with Tube Fittings

- Max. Pressure for Water, Oil, and Inert Gas: 30 psi @ 125° F
- Temp. Range: 32° to 125° F

Designed for low-pressure tubing applications. Body and plug are brass for a metal-to-metal seal.

NPTF Male × Compression: Pipe Size	Tube OD	End-to-End Lg.		Each	Compression × Compression: Tube OD	End-to-End Lg.		Each
1/8"	1/4"	2 5/16"	5045K5	$17.35	1/4"	2 3/8"	5045K1	$17.89
1/4"	1/4"	2 3/16"	5045K6	16.90	3/8"	2 7/16"	5045K3	21.39
1/4"	3/8"	2 1/4"	5045K9	22.53				

Multiport Diverting Brass Plug Valves

- Max. Pressure for Water, Oil, and Inert Gas: 250 psi @ 70° F
- Temp. Range: –60° to +400° F

A quarter turn of the handle diverts flow through multiple ports. Body is brass, seals are fluoroelastomer, and plug is PTFE. Valves have four 1/4"-20 holes for mounting and panel mount in a 7/8" dia. cutout. Use with compressed air. Connections are NPTF (Dryseal) female.

Three-way valve has one inlet and two outlets.
Four-way valve has two inlets and two outlets.

Pipe Size	End-to-End Lg.	Three Way	Each	Four Way	Each
1/4"	1 7/8"	8159K542	$122.64	8159K543	$122.64

Fuel Shut-Off Brass Plug Valves

- Max. Pressure: Standard: 30 psi @ 70° F; UL Listed and UL/Marine: 15 psi @ 70° F
- Temp. Range: –40° to +250° F

Body and plug are brass, and seals are Buna-N. Connections are NPTF (Dryseal). ***Standard*** valves are for use with gasoline, oil, kerosene, LP gas, and gas/air mixtures. ***UL listed*** valves are for fuel oils (1 and 2) and LP gas. ***UL/marine*** valves are for use in marine environments.

Standard Male × Female

Pipe Size	End-to-End Lg.	Standard	Each	UL Listed	Each	UL/Marine	Each
Female × Female							
1/4"	2 1/8"	7910K15	$14.45	7910K55	$15.81	7910K85	$19.78
Male × Female							
1/8"	2"	7910K11	14.06	—	—	—	—
1/4"	2 1/4"	7910K12	14.06	7910K52	15.45	7910K82	19.12
3/8"	2 7/16"	7910K13	15.67	7910K53	18.86	7910K83	22.65

Natural Gas Plug Valves

- Max. Pressure for Natural Gas: See table
- Temp. Range: Bronze Body: +32° to +125° F; Cast Iron Body: –20° to +150° F

Use with natural gas as a main-line shut-off. All have a bronze plug and body with a top handle stop, except valves with 100 max. psi, which have a cast iron body and do not have a handle stop. The top handle stop prevents the valve from turning past the fully open or fully closed position. Connections are NPT female. ***Square-head*** valves require a wrench to open or close (sold separately).

Square Head

Pipe Size	Max. psi	End-to-End Lg.	Valves	Each	Wrenches	Each
1/2"	5	2"	4786K291	$15.33	4508K12	$12.84
1/2"	25	2 1/8"	4786K283	36.25	4508K13	12.84
1/2"	100	2 1/2"	46725K41	26.22	4508K14	15.98
3/4"	5	2 3/8"	4786K292	18.86	4508K13	12.84
3/4"	100	2 7/8"	46725K42	28.20	4508K14	15.98
1"	2	2 3/4"	4786K293	36.27	4508K13	12.84
1"	100	3 1/4"	46725K43	37.85	4508K15	19.84
1 1/2"	2	3 3/8"	4786K295	67.52	4508K16	19.84
2"	2	4 3/8"	4786K296	110.22	4508K17	28.57
2"	100	5 5/8"	46725K46	92.31	4508K18	40.34

Lever Handle

Pipe Size	Max. psi	End-to-End Lg.		Each
1/4"	2	1 3/4"	4786K31	$18.29
1/4"	25	1 7/8"	4786K371	37.53
3/8"	25	1 7/8"	4786K372	37.53
1/2"	5	2"	4786K33	16.88
1/2"	25	2 1/8"	4786K373	38.92
3/4"	5	2 3/8"	4786K34	20.76
3/4"	25	2 3/8"	4786K374	46.55
1"	2	2 3/4"	4786K35	37.98
1"	25	3"	4786K375	62.41
1 1/4"	2	3 1/4"	4786K36	50.91

Flat/Tee Head

Pipe Size	Max. psi	End-to-End Lg.		Each
1/2"	5	2"	4786K13	$15.33
1/2"	100	2 7/8"	46725K61▲	32.69
3/4"	5	2 3/8"	4786K14	18.86
3/4"	100	3 1/8"	46725K62▲	32.69
1"	25	3"	4786K155	55.79
1"	100	3 3/8"	46725K63▲	41.18
1 1/4"	25	3 1/4"	4786K156	66.51
1 1/4"	100	3 7/8"	46725K64▲	61.37
1 1/2"	100	4 5/8"	46725K65▲	88.07
2"	100	5 5/8"	46725K66▲	120.10

▲ Handle can be locked in position using a padlock (not included) with a shackle dia. of 1/2".

Plug & Needle Valves

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Plastic Plug Valves with Push-to-Connect Tube Fittings

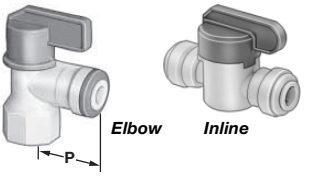

- Max. Pressure: 125 psi @ 73° F
- Temp. Range: 33° to 140° F

Push-to-connect tube fittings and a quick quarter-turn shut-off make these valves easy to install and use. All valves have EPDM seals for use with drinking water.

Polypropylene valves are white.

PVC valves are gray.

Polypropylene and PVC Elbow Valves

NPT FEMALE × PUSH-TO-CONNECT

Pipe Size	For Tube OD	Port-to-Port Lg. (P)	Polypropylene	Each	PVC	Each
1/4″	1/4″	1 1/4″	7953K52	$5.22	7952K22	$5.22
1/4″	3/8″	1 1/4″	7953K55	5.37	7952K25	5.37

Polypropylene Inline Valves

NPTF (Dryseal) Male × Push-to-Connect					***Push-to-Connect × Push-to-Connect***			
Pipe Size	For Tube OD	End-to-End Lg.		Each	For Tube OD	End-to-End Lg.		Each
1/4″	1/4″	2″	4503K33	$8.13	1/4″	1 15/16″	4503K23	$8.13
3/8″	3/8″	2 9/16″	4503K35	8.58	3/8″	2 1/2″	4503K25	8.58

About Needle Valves

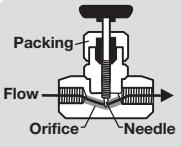

Needle valves are designed for precision flow control. A finely threaded needle, or tapered plug, on the end of the valve stem functions as the control. Needle valves with packing have a nut that must be tightened to pack down the seat if it starts to leak, while valves with a seal are maintenance free.

Cv factor (coefficient of volume) is the amount of water (in gpm) with a specific gravity of 1 at 60° F that will pass through a fully open valve with a pressure drop of 1 psi. For pressure drops other than 1 psi, use this formula:

$$\text{GPM} = \text{Cv}\sqrt{\frac{\text{Pressure Drop}}{\text{Specific Gravity of the Liquid}}}$$

Needle Valves

- Max. Pressure for Water, Oil, and Inert Gas: Brass: 2000 psi @ 400° F; Steel and Type 303 Stainless Steel: 5000 psi @ 400° F
- Temp. Range: –15° to +400° F

The included locknut prevents unwanted changes in adjustment. Seals are fluoroelastomer and PTFE, and seat is metal-to-metal. Connections are NPTF (Dryseal) female or BSPT (British Standard Pipe Taper thread) female.

Brass valves are ideal for water and have a brass needle. ***Steel*** valves are ideal for hydraulic oil and have a stainless steel needle. ***Type 303 stainless steel*** valves are ideal for hydraulic oil and water and have a stainless steel needle.

Single-direction flow control valves provide controlled flow in one direction; a built-in check valve allows free flow in the other direction.

				NPTF (DRYSEAL)						***BSPT***	
Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.	***Brass***	Each	***Steel***	Each	***Type 303 Stainless Steel***	Each	***Brass***	Each
Dual-Direction Flow Control											
1/8″	1 1/2″	0.20	0.107″	4995K11	$22.16	4995K21	$22.70	4995K41	$62.76	—	—
1/4″	2″	0.43	0.156″	4995K13	26.51	4995K23	27.02	4995K42	77.90	7822K11	$29.93
3/8″	2 1/4″	0.78	0.219″	4995K15	34.78	4995K25	32.13	4995K43	95.73	7822K12	41.64
1/2″	2 11/16″	1.24	0.281″	4995K17	51.57	4995K27	40.76	4995K44	130.32	—	—
3/4″	2 15/16″	1.93	0.343″	4995K19	79.47	—	—	—	—	—	—
Single-Direction Flow Control											
1/8″	1 3/4″	0.23	0.107″	7824K11	24.77	7824K21	27.72	7824K31	82.75	—	—
1/4″	2 3/8″	0.54	0.156″	7824K12	29.86	7824K22	31.05	7824K32	94.39	7822K21	36.34
3/8″	2 3/4″	0.83	0.219″	7824K13	39.32	7824K23	36.62	7824K33	125.10	7822K22	46.16
1/2″	3 3/16″	1.47	0.281″	7824K14	61.88	7824K24	48.29	7824K44★	181.77	—	—
3/4″	3 9/16″	1.90	0.343″	7824K15	97.45	7824K25	88.20	—	—	—	—

★ Has a T-handle knob and is made of Type 316 stainless steel.

Easy-Set Needle Valves

Dual-Direction Flow Control

- Max. Pressure for Water, Oil, and Inert Gas: Brass: 2000 psi @ 400° F; Steel: 5000 psi @ 400° F
- Temp. Range: –15° to +400° F

Single-Direction Flow Control

- Max. Pressure for Water, Oil, and Inert Gas: Brass: 2000 psi @ 190° F; Steel and Type 303 Stainless Steel: 5000 psi @ 190° F
- Temp. Range: –15° to +200° F

Handle threads are color-coded, providing a visual reference point for repeated settings (one full turn per color). Seal is fluoroelastomer and seat is metal-to-metal. Connections are NPTF (Dryseal) female.

Brass valves are ideal for water and have a brass needle. ***Steel*** valves are ideal for hydraulic oil and have a stainless steel needle. ***Type 303 stainless steel*** valves are ideal for hydraulic oil and water and have a stainless steel needle.

Single-direction flow control valves provide controlled flow in one direction; a built-in check valve allows free flow in the other direction.

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.	***Brass***	Each	***Steel***	Each	***Type 303 SS***	Each
Dual-Direction Flow Control									
1/8″	1 7/16″	0.25	0.125″	46425K11	$30.44	46425K21	$39.48	—	—
1/4″	1 3/4″	0.51	0.187″	46425K12	34.12	46425K22	42.90	—	—
3/8″	2 1/16″	0.92	0.250″	46425K13	40.93	46425K23	49.74	—	—
1/2″	2 1/2″	1.20	0.312″	46425K14	58.27	46425K24	63.69	—	—
3/4″	2 3/4″	1.84	0.375″	46425K15	82.33	46425K25	85.35	—	—
1″	4 1/2″	9.60	0.875″	46425K16■	280.53	46425K26♦	183.56	—	—
Single-Direction Flow Control									
1/8″	1 15/16″	0.28	0.125″	4982K71	35.64	4982K81	41.13	4982K91	$85.20
1/4″	2 7/16″	0.53	0.187″	4982K72	40.25	4982K82	43.08	4982K92	126.48
3/8″	2 7/8″	0.76	0.250″	4982K73	47.26	4982K83	52.22	4982K93	145.83
1/2″	3 7/16″	0.93	0.312″	4982K74	71.69	4982K84	72.89	4982K94	198.53
3/4″	3 3/4″	1.43	0.375″	4982K75	95.52	4982K85	105.79	—	—
1″	4 1/2″	8.00	0.875″	4982K76■	330.16	4982K86♦	244.62	—	—

■ Body is bronze. ♦ Body is ductile iron.

For information about pipe size, see pages 2-3.

Medium-Pressure Needle Valves

- Max. Pressure for Water, Oil, and Inert Gas: 6000 psi @ 200° F
- Temp. Range: –10° to +200° F

All valves have fluoroelastomer and PTFE packing and a Type 316 stainless steel needle. Connections are NPT.

Brass valves are ideal for water. ***Nickel-plated steel*** valves are corrosion-resistant and are ideal for hydraulic oil. ***Type 316 stainless steel*** valves are highly polished and provide superior corrosion resistance. Ideal for water and hydraulic oil.

Metal-to-metal seat valves are resistant to temperature fluctuation. ***Bubble-tight shutoff soft seat*** valves provide a tighter seal than metal-to-metal when the valve is completely closed.

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.	Brass	Each	Nickel-Plated Steel	Each	Type 316 Stainless Steel	Each
Metal-to-Metal Seat									
Female × Female									
1/8″	1 13/16″	0.42	0.172″	7833K75	$24.41	7833K85	$24.53	7833K95	$59.23
1/4″	1 13/16″	0.42	0.172″	7833K76	24.41	7833K86	24.53	7833K96	59.23
Male × Female									
1/8″	1 13/16″	0.42	0.172″	7833K73	24.41	7833K83	24.53	7833K93	59.23
1/4″	1 13/16″	0.42	0.172″	7833K74	24.41	7833K84	24.53	7833K94	59.23
Male × Male									
1/8″	1 13/16″	0.42	0.172″	7833K71	24.41	7833K81	24.53	7833K91	59.23
1/4″	1 13/16″	0.42	0.172″	7833K72	24.41	7833K82	24.53	7833K92	59.23
Bubble-Tight Shutoff Soft Seat									
Female × Female									
1/4″	2 1/2″	0.76	0.187″	———	———	4559K32	35.70	4559K42	79.58
1/2″	2 1/2″	0.76	0.187″	———	———	4559K34	38.73	4559K44	86.20
Male × Female									
1/4″	3 1/2″	0.76	0.187″	———	———	4559K36	39.58	4559K46	99.17
1/2″	3 1/2″	0.76	0.187″	———	———	4559K38	42.86	4559K48	107.95

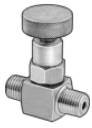

Brass

Nickel-Plated Steel and Type 316 Stainless Steel

High-Pressure Needle Valves

- Max. Pressure for Water, Oil, and Inert Gas: 10,000 psi @ 100° F
- Temp. Range: –50° to +1000° F

Made of bar stock, a one-piece body ensures high-pressure performance up to 10,000 psi. All valves have a metal-to-metal seat. Connections are NPT female.

Steel valves are ideal for hydraulic oil and have a Type 316 stainless steel needle. ***Type 316 stainless steel*** valves are more corrosion resistant than steel and are ideal for hydraulic oil and water. They have a Type 316 stainless steel needle.

Panel-mount valves come with a mounting nut. They require an 11/16″ diameter panel cutout.

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.	Steel	Each	Type 316 Stainless Steel	Each
Inline Mount							
1/4″	2 1/4″	0.60	0.172″	4644K47	$48.36	4644K32	$108.74
3/8″	2 1/4″	0.87	0.250″	4644K48	49.84	4644K33	112.71
1/2″	2 3/4″	0.77	0.250″	4644K49	57.12	4644K34	137.92
3/4″	3 3/16″	2.67	0.438″	4644K5	95.24	4644K35	215.71
1″	3 5/8″	2.61	0.438″	4644K51	109.40	4644K36	260.50
Panel Mount							
1/4″	2 1/4″	0.60	0.172″	6321T62	68.46	6321T72	98.36

Inline Mount

Extreme-Pressure Type 316 Stainless Steel Needle Valves

- Max. Pressure for Water, Oil, and Inert Gas: 15,000 psi @ 72° F
- Temp. Range: –100° to +450° F

Heavy duty stainless steel construction provides the strength to stand up to your highest pressure applications. Valves have a metal-to-metal seat, glass-filled PTFE packing, and a 17-4 PH stainless steel needle. Connections are NPT female.

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.		Each
1/4″	2 1/2″	0.73	0.250″	4617K15	$107.63
3/8″	2 1/2″	0.73	0.250″	4617K17	117.53
1/2″	2 1/2″	1.75	0.250″	4617K19	143.03

Type 316 Stainless Steel Needle Valves with Yor-Lok Tube Fittings

- Max. Pressure for Water, Oil, and Inert Gas: Standard: 5000 psi @ 200° F; High Temperature: 6000 psi @ 100° F
- Temp. Range: Standard: –51° to +446° F; High Temperature: –65° to +700° F

The Yor-Lok connections on these valves have a double-ferrule design to provide a leak-free seal. They are interchangeable with Swagelok®, Parker A-Lok, Gyrolok, Bilok, Tylok, and Let-Lok tube fitting connections.

Standard— Has PTFE packing. Needle is Type 316 stainless steel.

High Temperature— Has flexible graphite packing for higher temperature applications than standard. Needle is Type 630 stainless steel.

For Tube OD	End-to-End Lg.	Cv Factor	Orifice Dia.		Each
Standard					
1/8″	2″	0.09	0.080″	45585K85	$83.05
1/4″	2 5/16″	0.37	0.172″	45585K86	78.60
3/8″	2 5/8″	0.73	0.250″	45585K87	106.06
1/2″	2 13/16″	0.73	0.250″	45585K88	106.63
High Temperature					
1/4″	2 3/4″	0.65	0.177″	45585K75	157.89
3/8″	3 3/16″	0.77	0.187″	45585K76	216.65
1/2″	3″	1.03	0.250″	45585K77	216.70
3/4″	3 15/16″	2.67	0.437″	45585K78	381.78

Ultra-Precision Needle Valves

- Max. Pressure for Water, Oil, and Inert Gas: Brass: 3000 psi @ 450° F; Type 303 Stainless Steel: 5000 psi @ 450° F
- Temp. Range: –65° to +450° F

Ensure highly accurate flow adjustment. While ordinary valves open with 10 turns or less, these valves open with 20 turns, giving you more precise flow control. All have a metal-to-metal seat, PTFE packing, and a Type 303 stainless steel needle. Connections are NPT female.

Brass valves are ideal for use with water.

Type 303 stainless steel valves provide better corrosion resistance than brass. Ideal for use with hydraulic oil and water.

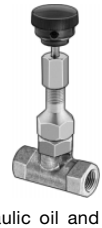

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.	Brass	Each	Type 303 Stainless Steel	Each
1/8″	1 3/8″	0.02	0.031″	7832K21	$86.67	7836K25	$143.72
1/8″	1 3/8″	0.08	0.063″	7832K22	76.56	7836K26	116.28
1/8″	1 3/8″	0.22	0.125″	7832K24	76.56	7836K28	116.28

High-Temperature Type 316 Stainless Steel Needle Valves

- Max. Pressure for Water, Oil, and Inert Gas: 6000 psi @ 100° F
- Temp. Range: –65° to +700° F

Flexible graphite packing extends service life and allows for high-temperature use. Body is Type 316 stainless steel for superior corrosion resistance. All have a metal-to-metal seat and a Type 630 stainless steel needle.

NPT— Attach to pipe.

Socket Weld (Unthreaded)— Attach to stainless steel tubing.

Connection Size	End-to-End Lg.	Cv Factor	Orifice Dia.		Each
NPT					
1/4″ Pipe Size	2 1/16″	0.82	0.228″	4800K62	$135.54
3/8″ Pipe Size	2 5/8″	1.31	0.312″	4800K63	196.00
1/2″ Pipe Size	3″	1.31	0.312″	4800K64	299.79
3/4″ Pipe Size	3 1/4″	2.67	0.437″	4800K65	481.86
Socket Weld (Unthreaded)					
For 1/4″ Tube OD	1 13/16″	0.65	0.177″	4800K72	162.84
For 3/8″ Tube OD	2 1/4″	0.94	0.228″	4800K73	220.99
For 1/2″ Tube OD	2 1/2″	1.31	0.312″	4800K74	221.38
For 3/4″ Tube OD	3 1/8″	2.67	0.437″	4800K75	360.27

Needle Valves

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Dual Needle Valve Type 316 Stainless Steel Manifolds

- Max. Pressure for Water, Oil, and Inert Gas: 10,000 psi @ 266° F
- Temp. Range: –4° to +446° F

Two needle valves with two vent ports and plugs allow you to isolate your pressure gauge or pressure transducer for maintenance, calibration, replacing components, or sampling without interrupting the process. Also known as block and bleed valves, these have a Type 316 stainless steel body, metal-to-metal seats, fiberglass-filled PTFE packing, and 17/4 PH stainless steel needles. Connections are NPT female.

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.		Each
1/4″	2 1/2″	0.30	0.197″	4330K35	$148.75
1/2″	2 1/2″	0.75	0.197″	4330K36	147.38

High-Flow Steam-Rated Bronze Needle Valves

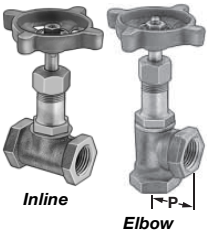

Inline *Elbow*

- Max. Pressure for Water, Oil, and Inert Gas: 400 psi @ 150° F
- Temp. Range: –20° to +450° F

Valves meet MSS-SP-80, provide high flow, and are rated for steam up to 200 psi at 450° F. They have a bronze globe-style body, a metal-to-metal seat, and a silicon aluminum bronze needle. All valves have graphite packing, except 1″ pipe size, which has Kevlar fiber packing. Connections are NPT female.

Inline

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.		Each
1/8″	1 3/16″	0.16	0.125″	4647K11	$59.41
1/4″	1 9/16″	0.37	0.189″	4647K12	54.73
3/8″	1 13/16″	0.51	0.256″	4647K13	61.76
1/2″	2″	1.09	0.311″	4647K14	69.57
3/4″	2 5/16″	2.25	0.437″	4647K15	108.67
1″	3 1/4″	4.24	0.563″	4647K16	233.80

Elbow

Pipe Size	Port-to-Port Lg. (P)	Cv Factor	Orifice Dia.		Each
1/2″	1 1/16″	5.75	0.311″	7834K54	$103.18

Miniature Elbow Needle Valves

- Max. Pressure for Water, Oil, and Inert Gas: Barb: 180 psi @ 150° F; Threaded: 300 psi @ 70° F
- Temp. Range: Barb: –40° to +200° F; Threaded: –4° to +430° F

Just what you need for compressed air flow-control applications. Use with soft tubing. All valves have a metal-to-metal seat. *Note:* Cv factor is not rated for barb valves and is 0.024 for UNF male×female valves.

Nickel-plated brass valves have a nickel-plated brass needle and a Buna-N seal. They require a 5/16″ diameter panel cutout.

Type 303 and ***Type 316 stainless steel*** valves have a Type 316 stainless steel needle and fluoroelastomer packing. Type 316 stainless steel is more corrosion resistant than Type 303 stainless steel.

Tamper-Resistant Screw Adjustment

Knob Adjustment

For Tube ID	Port-to-Port Lg. (P)	Orifice Dia.		Each
Tamper-Resistant Screw Adjustment— *Barb*				
Nickel-Plated Brass				
1/16″	7/16″	0.025″	48965K12	$17.12
1/8″	9/16″	0.025″	48965K14	17.12
Knob Adjustment— *Barb*				
Nickel-Plated Brass				
1/16″	7/16″	0.025″	48965K22	17.12
1/8″	9/16″	0.025″	48965K24	17.12

Thread Size	Port-to-Port Lg. (P)	Orifice Dia.		Each
Knob Adjustment— *UNF Male×Female*				
Type 303 Stainless Steel				
10-32	5/16″	0.032″	48965K32	$33.38
Type 316 Stainless Steel				
10-32	5/16″	0.032″	48965K34	68.89

Panel-Mount Brass Needle Valves

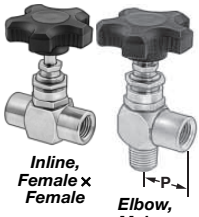

Inline, Female × Female *Elbow, Male × Female*

- Max. Pressure for Water, Oil, and Inert Gas: 500 psi @ 180° F
- Temp. Range: –20° to +180° F

Valves are brass and include a nut for panel mounting. All have a metal-to-metal seat. *Note:* Cv factor is not rated.

Inline valves have PTFE packing and a Kel-F soft-tip needle for bubble-tight shutoff, providing a leak-free seal. ***Elbow*** valves with 1/8″ pipe size have a Buna-N seal. Valves with 1/4″ pipe size have PTFE packing and a Kel-F soft-tip needle for bubble-tight shutoff, providing a leak-free seal.

Inline

Pipe Size	Needle Material	End-to-End Lg.	Orifice Dia.	Panel Cutout, Dia.		Each
NPT Female × NPT Female						
1/4″	Brass	1 3/4″	0.156″	9/16″	7810K11	$29.41
1/4″	Type 303 SS	1 3/4″	0.156″	9/16″	7810K12	32.34

Elbow

Pipe Size	Needle Material	Port-to-Port Lg. (P)	Orifice Dia.	Panel Cutout, Dia.		Each
NPT Female×NPT Female						
1/4″	Brass	15/16″	0.156″	9/16″	7810K13	$32.64
1/4″	Type 303 SS	15/16″	0.156″	9/16″	7810K14	35.56
NPT Male×NPT Female						
1/4″	Brass	15/16″	0.156″	9/16″	7810K15	32.64
1/4″	Type 303 SS	15/16″	0.156″	9/16″	7810K16	35.56
NPT Male×Barb for 1/8″ ID Tube						
1/8″	Brass	3/4″	0.094″	1/2″	7810K17	26.15

Brass Needle Valves with Compression Tube Fittings

- Max. Pressure for Water, Oil, and Inert Gas: 150 psi @ 70° F
- Temp. Range: –45° to +250° F

Prevent your tubing from collapsing. These brass valves have compression connections with Type 316 stainless steel tube supports. A brass nut and acetal sleeve on the fittings protect your tubing. Valves have a metal-to-metal seat, neoprene packing, and a brass needle. *Note:* Cv factor is not rated.

For Tube OD	End-to-End Lg.	Orifice Dia.		Each
1/4″	1 3/4″	0.16″	4555K13	$7.36
3/8″	1 15/16″	0.22″	4555K15	11.27

High-Pressure Steel Elbow Needle Valves

Female × Female

- Max. Pressure for Water, Oil, and Inert Gas: 10,000 psi @ 100° F
- Temp. Range: –20° to +500° F

Take on high temperatures and high-pressure applications up to 10,000 psi. Valves are engineered from thick AISI 1213 alloy steel with an integral metal-to-metal seat design. All have PTFE packing and a Type 416 stainless steel needle. Connections are NPT.

Mounting nuts are Type 303 stainless steel.

Pipe Size	Port-to-Port Lg. (P)	Cv Factor	Orifice Dia.	***Valves***	Each	***Mounting Nuts***	Per Pair
Female×Female							
1/8″	1″	0.7	0.187″	4999K11	$41.23	4999K31	$18.22
1/4″	1″	0.8	0.187″	4999K12	37.33	4999K31	18.22
3/8″	1 11/16″	1.6	0.312″	4999K13	44.69	4999K52	18.22
1/2″	1 11/16″	1.5	0.312″	4999K14	54.98	4999K52	18.22
3/4″	2″	4.4	0.437″	4999K15	131.44	4999K33	18.22
Male×Female							
1/4″	1″	0.6	0.187″	4999K17	49.56	4999K31	18.22
1/2″	1 11/16″	1.5	0.312″	4999K18	57.50	4999K52	18.22

Brass Elbow Needle Valves

Low Flow
- Max. Pressure for Water, Oil, and Inert Gas: 150 psi @ 250° F
- Temp. Range: –45° to +250° F

High Flow
- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 70° F
- Temp. Range: –20° to +250° F

Also known as truck valves, these are for draining or shutting off process lines. Body and needle are brass. Seat is metal-to-metal.

Low-flow valves have a neoprene seal that is ideal for water lines. *Note:* Cv factor is not rated.

High-flow valves have a fluoroelastomer seal (unless noted). They are ideal for use with gasoline, diesel fuel, and kerosene.

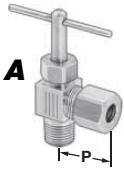

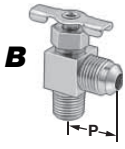

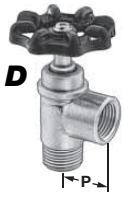

Low Flow

Pipe Size	For Tube OD	Port-to-Port Lg. (P)	Orifice Dia.		Each
(A) NPTF Male × Compression					
1/8″	1/4″	7/8″	0.172″	5049K1	$5.11
1/8″	5/16″	7/8″	0.172″	5049K2	10.09
1/4″	3/8″	15/16″	0.259″	5049K4	6.94
(B) NPTF Male × SAE 45° Flared Compression					
1/8″	1/4″	3/4″	0.172″	5049K6	5.54
1/4″	3/8″	1″	0.259″	5049K9	6.74

High Flow

Pipe Size	For Tube ID	Port-to-Port Lg. (P)	Cv Factor	Orifice Dia.		Each
(C) NPTF Male × Barb						
3/8″	3/8″	1 1/8″	1.5	0.275″	45065K26★	$9.07
3/8″	5/8″	1 5/16″	2.9	0.390″	45065K37	11.49
1/2″	5/8″	1 1/2″	4.4	0.480″	45065K28★	16.41
1/2″	3/4″	1 7/16″	5.5	0.562″	45065K46	20.72
(D) NPTF Male × Female						
3/8″	—	15/16″	4.4	0.480″	45065K47	12.52
1/2″	—	1 1/8″	5.5	0.562″	45065K48	19.72

★ Seal is Buna-N.

Compact Plastic Needle Valves

- Max. Pressure: 125 psi @ 140° F
- Temp. Range: 33° to 140° F

Our corrosion- and water-resistant plastic valves are small enough to fit in tight areas. Seal is EPDM rubber, which makes them ideal for use with water. *Note:* Cv factor is not rated.

PVC valves have a PVC seat and are gray. ***Polypropylene*** valves have a polypropylene seat and are white.

Valves can be panel mounted and include a nylon nut. They require a 7/8″ diameter hole for panel mounting. ***Optional panel-mounting nuts*** are nickel-plated brass.

Female × Male

Push-to-Connect × Push-to-Connect

NPT × NPT

Pipe Size	End-to-End Lg.	Orifice Dia.	*PVC*	Each	*Polypropylene*	Each
Female × Female						
1/8″	2″	0.175″	7781K21	$17.55	7792K51	$19.84
1/4″	2″	0.175″	7781K25	17.55	7792K55	19.84
Female × Male						
1/8″	2 1/4″	0.175″	7781K22	17.55	7792K52	19.84
1/4″	2 3/8″	0.175″	7781K26	17.55	7792K56	19.84
Male × Male						
1/4″	2 11/16″	0.175″	7781K27	17.55	7792K57	19.84

Barb × Barb

For Tube ID	End-to-End Lg.	Orifice Dia.	*PVC*	Each	*Polypropylene*	Each
1/4″	3 3/8″	0.175″	7781K31	$17.55	7792K61	$19.84
3/8″	3 3/8″	0.175″	7781K33	17.55	7792K63	19.84
1/2″	3 3/8″	0.175″	7781K35	17.55	7792K65	19.84

Push-to-Connect × Push-to-Connect

For Tube OD	End-to-End Lg.	Orifice Dia.	*PVC*	Each	*Polypropylene*	Each
1/4″	2 13/16″	0.175″	7781K41	$21.63	7792K71	$24.35
3/8″	2 13/16″	0.175″	7781K42	22.03	7792K72	24.91

Optional Panel-Mounting Nuts

Pkg. of 10	7781K88	Per Pkg.	$3.41

Plastic Needle Valves

- Max. Pressure: 150 psi @ 70° F
- Temp. Range:
  PVC: 40° to 150° F;
  Polypropylene: 40° to 260° F

The plastic body with fluoroelastomer seal provides chemical resistance at a light weight. Valves are ideal for use with water. They require a 15/16″ diameter hole for panel mounting. All have PTFE seats. Connections are NPT female.

PVC valves have a PVC needle and are dark gray. ***Polypropylene*** valves have a polypropylene needle and are black.

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.	*PVC*	Each	*Polypropylene*	Each
1/4″	2 1/2″	0.64	0.25″	4981K11	$49.69	4803K25	$55.78
3/8″	2 1/2″	0.72	0.25″	4981K12	57.93	4803K26	65.24
1/2″	2 1/2″	0.79	0.25″	4981K13	57.93	4803K27	65.24

Easy-Set Polyester Needle Valves

- Max. Pressure: 200 psi @ 200° F
- Temp. Range: 0° to 200° F

Handle threads are color coded and visible through a slot in the handle, a providing visual reference point for repeated settings (one full turn per color). A ring lock prevents accidental adjustments. Body is glass-reinforced polyester; needle is zinc-plated steel; seals are Buna-N for oil resistance; and seat is polyester. Color is black. Connections are NPTF (Dryseal) female.

Single-Direction Flow Control with Check Valve— Safely provide controlled flow in one direction; a built-in check valve allows free flow in the opposite direction.

Optional panel-mounting nuts are composite plastic. *1/8″ and 1/4″ sizes* require a 1″ diameter panel cutout; *3/8″ to 3/4″ sizes* require a 1 3/8″ diameter panel cutout.

Valves

Pipe Size	End-to-End Lg.	Cv Factor	Orifice Dia.	*Dual-Direction Flow Control*	Each	*Single-Direction Flow Control with Check Valve*	Each
1/8″	1 15/16″	0.26	0.101″	4891K71	$19.74	48995K31	$22.32
1/4″	1 15/16″	0.48	0.136″	4891K72	25.48	48995K33	26.86
3/8″	2 7/8″	1.06	0.187″	4891K73	33.26	48995K35	33.74
1/2″	2 7/8″	1.35	0.300″	4891K74	41.78	48995K37	42.50
3/4″	3″	1.96	0.347″	4891K75	44.82	48995K39	61.20

Optional Panel-Mounting Nuts

		Each
For 1/8″ and 1/4″ pipe sizes	4891K61	$3.62
For 3/8″, 1/2″, and 3/4″ pipe sizes	4891K62	3.54

Stop-and-Drain Brass Faucets

- Max. Pressure for Water: 125 psi @ 100° F
- Temp. Range: 40° to 180° F

Prevent freezing in sprinkler systems. A capped side port can be opened to drain water when the faucet is closed. Made of brass. CSA certified.

Pipe Size	End-to-End Lg.		Each
1/2″	2 3/16″	4792K71	$15.11
3/4″	2 5/16″	4792K72	17.34

High-Temperature Brass Faucets

- Max. Pressure for Water: 200 psi @ 240° F
- Max. Pressure for Steam: 150 psi @ 366° F
- Temp. Range: 33° to 366° F

Also known as radiator supply valves, these control the flow of high-temperature steam or water. Body is brass. Inlet connection is NPT female; outlet connection is male union.

Pipe Size	End-to-End Lg.		Each
1/2″	3 3/4″	1812K25	$78.25
3/4″	4 1/4″	1812K26	84.36
1″	4 13/16″	1812K27	114.63

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″

Faucets with 3/4″ Garden Hose Male Outlet

- Max. Pressure for Water: Brass: 125 psi @ 100° F; Acetal Plastic: 150 psi @ 73° F
- Temp. Range: 40° to 180° F

A&E

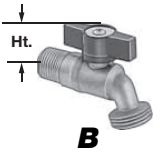

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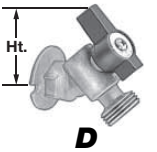

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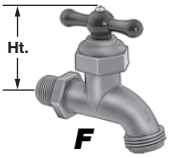

F

G

Brass Lockout for Styles A-D

Brass—*NPT*

	Inlet Pipe Size	Height		Each
A	1/2″ Female	3 1/4″	**4792K33**	$11.25
A	1/2″ Male	3 11/16″	**4792K31**	11.25
A	3/4″ Male	3 3/4″	**4792K32**	12.24
B	1/2″ Male	1 1/4″	**4792K61**	7.49
B	3/4″ Male	1 1/4″	**4792K62**	8.30
C	1/2″ Female	1 1/4″	**4792K63**	7.49
C	3/4″ Female	1 1/4″	**4792K64**	7.25
D	1/2″ Female	2 3/8″	**4792K65**	8.45
D	3/4″ Female	2 5/8″	**4792K66**	9.39

Brass—*Solder End (Unthreaded)*

	Inlet Tube Size	Actual Tube OD	Height		Each
D	1/2″ ♦	5/8″	2 1/8″	**4792K67**	$8.03
D	3/4″ ♦	7/8″	2 3/8″	**4792K68**	9.68

♦ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Acetal Plastic—*NPT*

	Inlet Pipe Size	Height		Each
E	1/2″ Male	4″	**4950K55**	$3.35
E	3/4″ Female	3 3/4″	**4950K59**	3.71
E	3/4″ Male	4 1/4″	**4950K56**	3.44
F	1/2″ Male	4 1/4″	**4950K41**	3.38
F	3/4″ Male	4 1/4″	**4950K42**	3.44
G	1/2″ Male	4 1/4″	**4950K47**	3.40
G	3/4″ Male	4 1/4″	**4950K48**	3.52

Brass Lockout for Styles A-D—Accepts padlocks with 1/4″ and 9/32″ diameter shackles (padlock not included) ..... **4642K15** **Each** $15.98

Frostproof Outdoor Faucets with Garden Hose Outlet

- Max. Pressure for Water: Through-Wall: 85 psi @ 140° F; Tamper-Resistant Through-Wall and In-Ground: 125 psi @ 140° F
- Temp. Range: Through-Wall and Tamper-Resistant Through-Wall: +35° to +140° F; In-Ground: −40° to +140° F

Also known as frostproof water hydrants, these faucets drain when closed to prevent freezing.

Through-Wall—Body is brass. Inlet is dual-threaded 1/2″ NPT female×3/4″ NPT male. Outlet is 3/4″ garden hose thread (GHT) male.

Tamper-Resistant Through-Wall—To prevent tampering, these faucets require a key to open and close. Body is chrome-plated brass; pipe is brass. Inlet is dual-threaded 1″ NPT male×3/4″ NPT female. Outlet is 3/4″ garden hose thread (GHT) male.

In-Ground—Body is cast iron; in-ground pipe is stainless steel with a galvanized steel casing. Inlet is 3/4″ NPT female. Outlet is 3/4″ garden hose thread (GHT) male.

Through-Wall

Wall Thickness	*With Vacuum Breaker*	Each	*Without Vacuum Breaker*	Each
6″	**4728K81**	$25.76	**4728K91**	$19.42
8″	**4728K82**	27.24	**4728K92**	20.76
10″	**4728K83**	28.67	**4728K93**	22.04
12″	**4728K84**	30.23	**4728K94**	23.40
14″	**4728K85**	33.56	**4728K95**	24.68

Tamper-Resistant Through-Wall

Wall Thickness		Each
4″	**47335K431**	$244.28
6″	**47335K432**	244.28
8″	**47335K433**	244.28
10″	**47335K461**	233.10
12″	**47335K462**	233.10
Replacement Key	**47335K57**	4.26

In-Ground

Max. Burying Depth	O'all Ht.		Each
2 ft.	4′4 3/4″	**4728K51**	$78.68
3 ft.	5′4 1/2″	**4728K52**	84.85
4 ft.	6′5″	**4728K53**	90.22
5 ft.	7′5″	**4728K54**	94.05

Air-Shut-Off Brass Stop Cocks

- Max. Pressure: 100 psi @ 150° F
- Temp. Range: 32° to 150° F

Pipe Size	*NPTF FEMALE×FEMALE* End-to-End Lg.	*Lever*	Each	*T-Handle*	Each	*NPTF FEMALE×MALE* End-to-End Lg.	*Lever*	Each	*T-Handle*	Each	*NPTF MALE×MALE* End-to-End Lg.	*Lever*	Each	*T-Handle*	Each
1/8″	1 5/8″	**4793K51**	$9.43	**4793K75**	$8.62	1 3/4″	**4793K46**	$9.60	**4793K71**	$8.94	1 3/4″	**4793K37**	$10.17	**4793K59**	$9.25
1/4″	1 15/16″	**4793K52**	10.00	**4793K76**	9.15	1 15/16″	**4793K47**	10.04	**4793K72**	9.43	1 15/16″	**4793K38**	10.51	**4793K61**	9.72
3/8″	2″	**4793K48**	11.72	**4793K73**	10.51	2 1/16″	**4793K44**	11.99	**4793K68**	11.26	2″	**4793K35**	10.70	**4793K57**	10.28
1/2″	2 1/2″	**4793K49**	15.40	—	—	2 9/16″	**4793K45**	15.43	—	—	2 3/16″	**4793K36**	13.60	**4793K58**	11.59

Pipe Size	*NPTF MALE×BARB FOR 3/8″ ID TUBE* End-to-End Lg.	*Lever*	Each	*Lever*	Each	*NPTF MALE×DRAIN* End-to-End Lg.	*Lever*	Each	*T-Handle*	Each	*NPTF MALE×SPOUT* End-to-End Lg.	*Lever*	Each	*T-Handle*	Each
1/8″	2 1/4″	**4793K1**	$13.82	**8179K72**■	$32.23	1 1/2″	**4793K42**	$8.07	**4793K64**	$7.18	2 3/16″	**4793K33**	$13.04	**4793K55**	$12.22
1/4″	2 5/16″	**4793K2**	14.77	**8179K74**■	34.41	1 9/16″	**4793K43**	8.57	**4793K65**	7.65	2 5/16″	**4793K34**	13.13	**4793K56**	12.66
3/8″	2 3/8″	**4793K3**	15.56	**8179K76**■	36.20	1 3/4″	**4793K39**	9.79	**4793K62**	8.85	2 1/2″	**4793K31**	14.37	**4793K53**	14.14
1/2″	2 7/16″	**4793K4**	16.90	**8179K78**■	39.39	1 7/8″	**4793K41**	10.70	**4793K63**	9.72	2 3/8″	**4793K32**	14.77	**4793K54**	14.60

■ Body is chrome-plated brass.

For information about pipe size, see pages 2-3.

Extended-Life Bronze Stop Cocks

- Max. Pressure for Water, Oil, and Inert Gas: 500 psi @ 212° F
- Temp. Range: –20° to +550° F

Made from bronze for a long service life. Seal is Grafoil.

Pipe Size	End-to-End Lg.	NPT Female×Female	Each	NPT Male×Female	Each	NPT Male×Male	Each	NPT Male×Unthreaded	Each
1/8″	1 13/16″	4794K14	$55.60	4794K12	$55.60	4794K13	$55.60	4794K11	$55.60
1/4″	2″	4794K24	55.60	4794K22	55.60	4794K23	55.60	4794K21	55.60

Type 316 Stainless Steel Stop Cocks

- Max. Pressure for Water, Oil, and Inert Gas: 150 psi @ 300° F
- Temp. Range: 0° to 300° F

For use with liquids and air, these valves have a corrosion-resistant Type 316 stainless steel body and a PTFE seal. ***Sampling stop cocks*** have a spout connection and a polished body.

Stop Cocks

Pipe Size	End-to-End Lg.	NPT Female×Female	Each	NPT Male×Female	Each	NPT Male×Male	Each	NPT Male×Barb for 3/8″ ID Tube	Each
1/8″	2 1/4″	5172K51	$65.27	5172K71	$65.27	5172K61	$65.27	4983K12	$87.38
1/4″	2 1/4″	5172K54	66.52	5172K74	66.52	5172K64	66.52	4983K14	88.69
3/8″	2 1/4″	5172K56	67.95	5172K76	67.95	5172K66	67.95	4983K16	88.32
1/2″	2 1/4″							4983K18	89.58

Sampling Stop Cocks

Pipe Size	End-to-End Lg.	NPT Female×Spout	Each	NPT Male×Spout	Each
1/8″	2 13/16″	4983K22	$86.09		
1/4″	2 13/16″	4983K24	87.38	4983K33	$87.38
3/8″	2 13/16″	4983K26	88.32	4983K36	88.32
1/2″	2 13/16″			4983K38	89.58

Drain-Handle Brass Stop Cocks

- Max. Pressure for Water, Oil, and Inert Gas (unless otherwise stated): 150 psi @ 250° F
- Temp. Range: See table

Install on your tank for easy draining. Body is brass. ***Wing-nut-handle*** stop cocks are for use with water and oil only. ***Thumb-screw-handle*** and ***cable-pull*** stop cocks are for use with compressed air only (250 psi at 250° F). ***Removable handle*** stop cocks can be disassembled for cleaning. ***Cable-pull*** stop cock has a 5-ft. cable for opening and closing.

External seal stop cocks are for higher flow applications. Inlet connection is NPT male. Outlet connection is vented to atmosphere, unless noted.

Wing-Nut Handle

Removable Handle

Cable Pull

Pipe Size	Temp. Range	Height		Each
Wing-Nut Handle—*External Seal*				
1/8″	–65° to +250° F	15/16″	4921K32	$2.17
1/8″	–65° to +250° F	1 1/2″	4921K43★	5.97
1/4″	–40° to +350° F	1″	4921K16	2.46
1/4″	–65° to +250° F	19/16″	4921K44♣	3.36
3/8″	–65° to +250° F	1 1/4″	4921K34	6.90
1/2″	–65° to +250° F	1 1/2″	4921K35	16.02
Wing-Nut Handle—*Internal Seal*				
1/8″	–65° to +250° F	15/16″	4921K41	11.46
1/4″	–65° to +250° F	15/16″	4921K42	7.49
Thumb-Screw Handle—*External Seal*				
1/4″	–40° to +250° F	1 1/8″	4921K31	1.98
Removable Handle—*Internal Seal*				
1/8″	–65° to +250° F	19/16″	4921K1	5.50
1/4″	–65° to +250° F	1 11/16″	4921K2	5.98
3/8″	–65° to +250° F	1 13/16″	4921K3	7.22
Cable Pull—*Internal Seal*				
1/4″	–40° to +250° F	1 1/4″	49375K15	5.45

★ Outlet is a barb for 1/4″ ID tube.
♣ Outlet is a barb for 3/8″ ID tube.

FDA Luer-Lock Polycarbonate Stop Cocks

- Max. Pressure: 60 psi @ 72° F
- Temp. Range: Not rated

Made of FDA-approved materials for food-processing applications. Body is transparent polycarbonate. Use with inert gases and liquids. Their polyethylene handle is available in six colors. ***Male*** and ***female*** connect to Luer-Lock couplings (see 51525K on page 207). Use ***barb*** with 1/8″ ID tube. **To Order:** Please specify black, blue, green, red, white, or yellow handle.

Male×Male

Connections	End-to-End Lg.		Each
Male×Female	1 5/8″	7033T14	$2.26
Male×Male	1 13/16″	7033T11	2.49
Male×Barb	1 13/16″	7033T12	2.26
Female×Female	1 1/2″	7033T16	1.76
Female×Barb	1 5/8″	7033T15	1.76
Barb×Barb	1 13/16″	7033T13	1.76

Easy-Grip Brass Stop Cocks

- Max. Pressure for Water, Oil, and Inert Gas: 200 psi @ 150° F
- Temp. Range: 32° to 150° F

The large knob is easy to grip for drain applications. Ideal as replacement stop cocks in liquid-level compression gauges. Body is brass. Connections are NPT male.

Pipe Size	Port-to-Port Lg. (P)		Each
1/2″	7/8″	4801K6	$53.28
3/4″	1″	4801K7	58.22

Chemical-Resistant Plastic Stop Cocks

- Max. Pressure:
  Polyethylene: 7 psi @ 176° F
  Polypropylene: Not rated
  PVC: 15 psi @ 73° F
- Temp. Range:
  Polyethylene: 40° to 176° F
  Polypropylene: 32° to 275° F
  PVC: 32° to 120° F

Barb×Barb

For low-pressure liquid uses, these stop cocks have a thermoplastic body for chemical resistance. ***Polyethylene*** stop cocks are white. ***Polypropylene*** stop cock has a TFE elastomer seal. Color is white. ***PVC*** stop cocks have an EPDM seal. Color is black.

Connection Size	End-to-End Lg.		Each
Polyethylene			
3/8″ Barb×3/8″ Barb	3 3/16″	46555K25	$15.00
1/2″ Barb×1/2″ Barb	3 7/8″	46555K27	19.20
Polypropylene			
1/4″ Barb×1/4″ Barb	2 9/16″	48285K24	55.76
PVC			
1/4″ NPT Female×1/4″ NPT Female	2 13/16″	47205K44	26.36
1/4″ NPT Male×1/4″ NPT Female	2 3/4″	47205K52	26.36
1/4″ NPT Male×3/8″ Barb	3 1/2″	47205K24♠	26.36
3/8″ Barb×3/8″ Barb	4 3/8″	47205K22♠	26.36

♠ Barb can be used with 3/8″ to 5/8″ ID tube.

Multiconnection PVC Stop Cock

- Max. Pressure for Water and Oil: 150 psi @ 70° F
- Temp. Range: 40° to 140° F

Get six connection combinations in one. Stop cock is PVC. It has two 1/4″ NPT female connections and includes two 1/4″ NPT male adapters and two barb adapters for 1/4″ to 7/16″ ID tube. Seal is EPDM. End-to-end length is 2 1/8″ without adapters.

46975K31 ..... **Each** $20.20

Toggle & Pinch Valves

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″

Panel-Mount Brass Toggle Valves

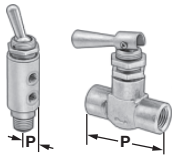

Miniature Elbow Style — *Compact Inline Style*

- Max. Pressure for Water, Oil, and Inert Gas: Miniature: 150 psi @ 70° F; Compact: 200 psi @ 70° F
- Temp. Range: Miniature: +32° to +230° F; Compact: –40° to +250° F

Easily switch from open to closed. Ideal for use in test equipment as well as gas sampling and analysis systems. Body is brass with a metal toggle, unless noted. All include a nut for panel mounting.

Miniature valves have a Buna-N seal. Panel mount in a 15/32″ diameter cutout. ***Compact*** valves have a fluoroelastomer seal. Panel mount in a 9/16″ diameter cutout.

Manual-return valves remain open or closed when the toggle is moved into position. *Spring-return* valves open when the toggle is moved, and snap closed when the toggle is released (normally closed).

Pipe Size	Port-to-Port Lg. (P)		Each
Miniature			
Elbow Style with Manual Return			
10-32 UNF Female × 10-32 UNF Female	5/16″	6791T21	$14.68
1/8″ NPT Male × 10-32 UNF Female	5/16″	6791T13★	11.93
1/8″ NPT Male × 10-32 UNF Female	5/16″	6791T22	14.68
Elbow Style with Spring Return			
10-32 UNF Female × 10-32 UNF Female	5/16″	6791T14★	10.77
1/8″ NPT Male × 10-32 UNF Female	5/16″	6791T15	11.72
Compact			
Inline Style with Manual Return			
1/8″ NPTF Female × 1/8″ NPTF Female	1 7/16″	3662T12	32.11
1/4″ NPTF Female × 1/4″ NPTF Female	1 7/8″	3662T24	32.69
Elbow Style with Manual Return			
1/8″ NPTF Female × 1/8″ NPTF Female	3/4″	3662T36	31.34
1/4″ NPTF Female × 1/4″ NPTF Female	3/4″	3662T48	31.91

★ Has a plastic toggle.

Diverting Aluminum Toggle Valves

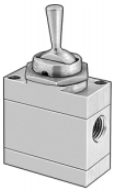

- Max. Pressure for Water and Oil: 250 psi @ 70° F
- Temp. Range: –30° to +230° F

Direct flow from either side port to the bottom port or from the bottom port to either side port. Valves have a spring-return toggle control that opens when the toggle is moved to either position and snaps closed when the toggle is released to the middle position (normally closed). Seal is Buna-N. Valves come with a nut for panel mounting. Connections are NPT female.

Pipe Size	End-to-End Lg.	Panel Cutout, Dia.		Each
1/8″	1 5/8″	3/4″	2674T11	$93.33
1/4″	2″	1″	2674T13	118.10

Toggle Valves

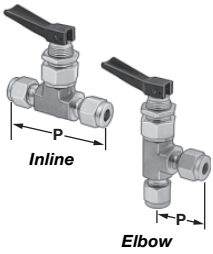

Inline — *Elbow*

- Max. Pressure for Water, Oil, and Inert Gas: 300 psi @ 200° F
- Temp. Range: –20° to +200° F

Get a leak-free seal when you connect to your metal tubing. Valves have manual-return toggle control—the toggle remains open or closed when it is moved into position. Seals are PTFE and fluoroelastomer. Furnished with a nut for panel mounting in a 17/32″ diameter cutout. Valves for tubing have Yor-Lok compression fittings that are compatible with Swagelok™, Parker A-Lok, Bilok, and Tylok.

Connection Size	Port-to-Port Lg. (P)	Brass	Each	Type 316 Stainless Steel	Each
Inline					
1/8″ NPT Male	1 3/4″	4736K12	$45.33	4736K76	$72.61
1/4″ NPT Male	2″	4736K14	42.71	4736K77	68.78
For 1/8″ Tube OD	2″	4736K11	40.45	4736K78	81.87
For 1/4″ Tube OD	2 1/4″	4736K13	42.61	4736K79	72.31
Elbow					
1/4″ NPT Male	1″	4736K24	40.45	4736K88	72.61
For 1/4″ Tube OD	1 1/8″	4736K23	57.93	4736K89	70.44

Brass Saddle Valves for Tubing

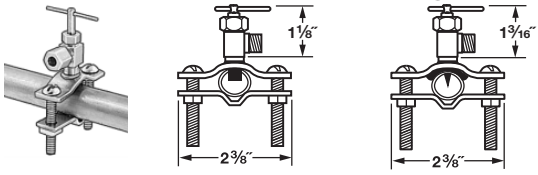

Saddle Valve — *Self-Piercing Saddle Valve*

- Max. Pressure for Water, Oil, and Inert Gas: 150 psi @ 250° F
- Temp. Range: –30° to +250° F

Also known as humidifier valve clamps, these valves allow you to tap into an existing water line for another use. They clamp onto tubing and pipe with 0.375″ to 1.315″ OD. Outlet connection is a 1/4″ compression tube fitting.

Saddle Valve— For iron, copper, and brass tubing and pipe. Requires a 1/4″ dia. drilled hole.

Self-Piercing Saddle Valve— For copper tubing.

		Each
Saddle Valve	4863K15	$12.46
Self-Piercing Saddle Valve	4863K11	9.80

Clamp-Style Pinch Valves for Tubing

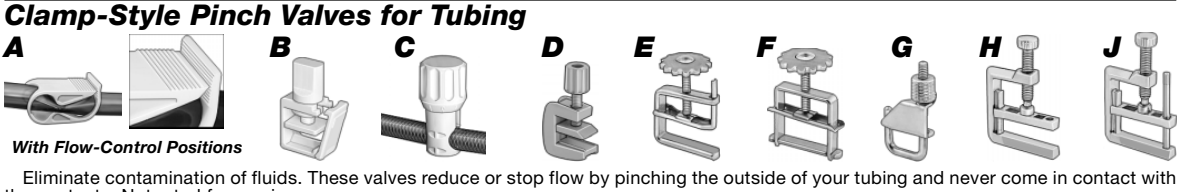

With Flow-Control Positions

Eliminate contamination of fluids. These valves reduce or stop flow by pinching the outside of your tubing and never come in contact with the contents. Not rated for maximum pressure.

	Body Material	For Tubing OD	Max. Tubing Durometer	Temp. Range	Pkg. Qty.		Per Pkg.
A	Acetal	3/32″-1/4″	Not Rated	+32° to +200° F	25	5031K11	$2.70
A	Acetal with Flow-Control Positions	3/32″-7/16″	Not Rated	+32° to +200° F	10	5031K12	5.44
A	Polyester with Flow-Control Positions	3/32″-3/4″	Not Rated	+32° to +150° F	5	5031K13	9.94
							Each
B	Acetal	3/32″-1/2″	60A	+32° to +140° F	—	5192K13	$10.62
C	Acetal with Dial and 1-10 mm Scale	5/32″-1/4″	60A	Not Rated	—	53345K31	11.11
C	Acetal with Dial and 1-10 mm Scale	5/16″-3/8″	60A	Not Rated	—	53345K35	13.89
C	Acetal with Dial and 1-10 mm Scale	7/16″-1/2″	60A	Not Rated	—	53345K39	16.67
D	Nylon	3/32″-1/4″	60A	+32° to +140° F	—	5192K12	5.74
E	Nickel-Plated Brass	3/32″-5/8″	50A	–100° to +450° F	—	5330K22	6.67
F	Nickel-Plated Brass with Guide	3/32″-3/4″	50A	–100° to +450° F	—	5330K23	7.27
G	Zinc-Plated Steel	3/32″-1/2″	50A	–100° to +500° F	—	5330K14	10.91
H	Zinc Alloy	3/32″-7/8″	50A	–50° to +400° F	—	5330K32	17.27
J	Zinc Alloy with Guide	3/32″-7/8″	50A	–50° to +400° F	—	5330K31	18.18

For information about pipe size, see pages 2-3.

Air Fill Valves

- Use with air
- Max. Pressure: 200 psi
- Temp. Range: –40° to +225° F

Also known as Schrader valves, use these to rapidly fill or empty compressed air tanks. They have 0.305″-32 straight threads for connection to your air supply. All connections are male. Valves come with a cap.

Style 2 is nickel-plated brass for greater corrosion resistance than plain brass.

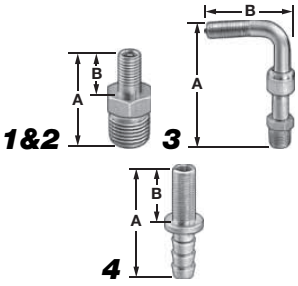

Connection Size	(A)	(B)		
Brass Valves with Pipe-Thread Connection				
1 ..... 1/8 NPT	15/16″	3/8″	**8063K33**	$5.23
1 ..... 1/8 NPT	1 5/16″	3/4″	**8063K31**	4.40
1 ..... 1/8 NPT	1 5/16″	7/8″	**8063K41**	3.57
1 ..... 1/4 NPT	1 5/16″	9/16″	**8063K37**	3.94
1 ..... 1/4 NPT	1 3/8″	5/8″	**8063K38**	4.43
2 ..... 1/8 NPT	1 5/16″	7/16″	**6281T13**	4.32
3 ..... 1/8 NPT	2 1/2″	1 7/16″	**8063K51**	10.26
3 ..... 1/4 NPT	2 1/2″	1 7/16″	**8063K52**	10.38
Brass Valve with Barbed Connection				
4 ..... For 1/4″ Tube ID	1 11/16″	3/4″	**8063K39**	10.62

Squeeze-Grip Zinc Alloy Valves

- Use with air and water
- Max. Pressure: 150 psi
- Temp. Range: –40° to +200° F

Put flow control in the palm of your hand. For applications that require intermittent operation such as blow guns, press down on the lever to start flow. Valve closes upon release to stop flow. Body is zinc alloy and seal is Buna-N. Port-to-port length is 2 1/8″. Connections are 1/4 NPT female.

6852K11 ..... $11.67

Safety-Lockout Aluminum Air Valves

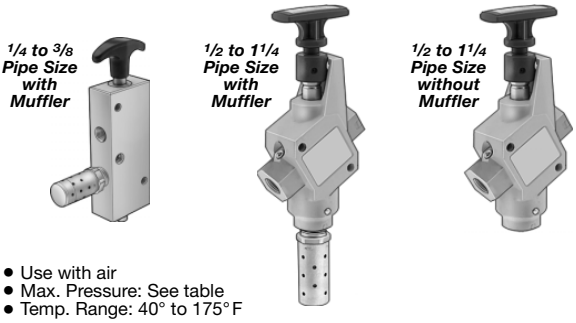

- Use with air
- Max. Pressure: See table
- Temp. Range: 40° to 175° F

Comply with OSHA regulation 29 CFR Part 1910 for lockout/tagout procedures. The valve handle can be locked in the shut-off position using a padlock (not included) with a shackle diameter of 9/32″. Body is aluminum and seals are PTFE. Handle is plastic. Inlet, outlet, and exhaust connections are NPT female.

Valves with muffler come with a muffler in the exhaust port to reduce the noise level.

Pipe Size	Max. psi	Lg.	Ht.		
With Muffler					
1/4	145	1″	6 1/2″	**48125K51**	$125.87
3/8	145	1″	6 1/2″	**48125K52**	127.34
1/2	150	4 7/16″	11 1/2″	**48125K53**	159.78
3/4	150	4 7/16″	11 1/2″	**48125K54**	159.77
1	150	5 1/2″	14 3/4″	**48125K56**	211.94
1 1/4	150	5 1/2″	14 3/4″	**48125K57**	211.94
Without Muffler					
1/4	145	1″	6 1/2″	**48125K41**	91.70
3/8	145	1″	6 1/2″	**48125K42**	119.45
1/2	300	4 7/16″	8 7/8″	**48125K43**	121.37
3/4	300	4 7/16″	8 7/8″	**48125K44**	125.42
1	300	5 1/2″	10 13/16″	**48125K46**	152.41
1 1/4	300	5 1/2″	10 13/16″	**48125K47**	172.73

Brass Shuttle Valves

- Use with air, oil, and water
- Max. Pressure: 250 psi
- Temp. Range: 32° to 230° F

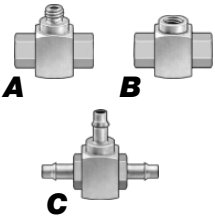

Direct flow between one of two side inlets and the center outlet. Valves switch automatically between inlets based on pressure. Flow is directed from the higher-pressure inlet to the outlet, while flow from the lower-pressure inlet is off.

Body is brass and seal is Buna-N. Mount inline or directly to valves or cylinders.

Connection Size	Inlets	Outlet	Lg.		
With Straight-Thread Connections					
A ... 10-32 UNF	Female	Male	13/16″	**6667T11**	$8.78
B ... 10-32 UNF	Female	Female	13/16″	**6667T12**	8.80
With Barbed Connections					
C ... For 1/16″ Tube ID	Barbed	Barbed	15/16″	**6667T13**	9.17
C ... For 1/8″ Tube ID	Barbed	Barbed	1 3/16″	**6667T14**	9.17

Sliding-Sleeve Brass Air Valves

- Use with air
- Max. Pressure: 232 psi
- Temp. Range: 14° to 176° F

Slide the knurled sleeve in one direction to stop flow, and slide it back to start flow again. Body is nickel-plated brass, seal is Buna-N, and sliding sleeve is aluminum. Valves vent air to the atmosphere when closed. Connections are NPT.

Pipe Size	Male × Female Lg.			Female × Female Lg.		
1/8	2 1/4″	**4622K51**	$21.24	1 15/16″	**4622K31**	$17.93
1/4	2 13/16″	**4622K53**	26.51	2 5/16″	**4622K33**	22.98
3/8	3 1/4″	**4622K55**	31.44	2 11/16″	**4622K35**	28.22
1/2	3 9/16″	**4622K57**	38.39	3 3/16″	**4622K37**	34.90

Brass Push-Button Valves

- Use with water, hydraulic oil, inert gas, LP gas, and natural gas
- Max. Pressure: See table
- Temp. Range: 32° to 230° F

Open or close these valves with the push of a button. Body is brass and seal is Buna-N. Connections are female.

Normally closed valves open when the button is pushed and spring closed when the button is released.

Normally open valves close when the button is pushed and spring open when the button is released.

Connection Size	Max. psi	Lg.	Low-Profile Style		Mushroom Style	
Closed Unless Button Is Pushed (Normally Closed)						
10-32 UNF	300	5/16″	**6790T41**	$10.83	**6790T45**	$22.17
1/8 NPT	300	9/16″	**6790T42**	16.42	**6790T46**	26.67
Open Unless Button Is Pushed (Normally Open)						
10-32 UNF	150	5/16″	**6790T43**	12.08	**6790T47**	22.67
1/8 NPT	150	9/16″	**6790T44**	17.00	**6790T48**	26.50

Safety Auto-Shutoff Brass Air Valves

- Use with air
- Max. Pressure: 250 psi
- Temp. Range: 0° to 180° F

Also known as air fuses, valves close automatically to stop air flow when pressure exceeds the set closing flow rate (see table). They reopen when pressure drops below the closing flow rate. Body is brass. Seal is acetal, except 5000K88, which is brass. Connections are NPTF (Dryseal) female.

Pipe Size	Valve Closes At	Lg.		
1/4	20 cfm @ 100 psi	2 3/16″	**5000K71**	$29.99
3/8	50 cfm @ 100 psi	2 1/2″	**5000K72**	29.33
1/2	80 cfm @ 100 psi	3 1/8″	**5000K82**	31.09
3/4	130 cfm @ 100 psi	3 11/16″	**5000K84**	46.98
1	210 cfm @ 100 psi	4 5/8″	**5000K86**	69.91
1 1/2	450 cfm @ 100 psi	5 7/8″	**5000K88**	266.05

About Solenoid Valves

Solenoid valves provide flow control for your automated applications. They require electricity for operation. To keep foreign particles from affecting the performance of your valve, we recommend installing an inline strainer before the solenoid valve in your system. For inline strainers, see pages 373-377.

Some high-flow and medium-flow solenoid valves require a ***pressure drop across the valve*** for operation; your upstream pressure must be greater than your downstream pressure. If you're not sure about your pressure drop, select a valve with "none required."

Use the chart below to choose the valve that fits your application.

	Pipe Size	Max. Pressure	Pressure Drop Across Valve	Amp Draw	Also Known As	Pages
High Flow	3/8-2	Low	None to 20 psi Required	Very Low	Diaphragm Pilot Operated	466-469
Medium Flow	1/4-2	Medium	None to 20 psi Required	Low	Piston Pilot Operated	470-471
Low Flow	1/8-1	High	None Required	Medium	Direct Acting	472-475

High-Flow Solenoid Valves

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2"	5/8"	3/4"	1"	1 3/8"	1 5/8"	1 7/8"	2 3/8"
Pipe Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

Premium Brass Solenoid Valves

- Use with air, water, and inert gas
- Pressure Drop Across Valve: None required
- Temp. Range:
  VAC Valves: 32° to 180° F
  VDC Valves: 32° to 150° F

Built for a long service life, these valves have a solenoid housed in a NEMA 4X enclosure (indoor/outdoor; washdown/corrosion resistant). They're interchangeable with Parker Hannifin Gold Ring 23C series and Asco Red Hat 8210G series.

Connections are NPT female. Body is brass and diaphragm is Buna-N. Valves are closed unless energized (normally closed). They have wire leads, a 1/2" conduit port, and draw a max. of 0.84 amps. Mount in horizontal pipe with the solenoid on top. UL listed and CSA certified.

Pipe Size	Lg.	Ht.	VAC VALVES Max. psi	120 VAC	240 VAC	24 VAC		VDC VALVES Max. psi	24 VDC	
3/8	2 13/16"	4 1/8"	150	2660K12	2660K13	2660K11	$123.86	40	2660K14	$123.86
1/2	2 13/16"	4 1/8"	150	2660K22	2660K23	2660K21	123.86	40	2660K24	123.86
3/4	2 15/16"	4 3/8"	150	2660K32	2660K33	2660K31	138.19	40	2660K34	138.19

Brass Solenoid Valves

The standard choice for automated flow control—no pressure drop is required for operation. Commonly used with heat exchangers, recirculating lines, and automated equipment, and to control flow to tanks and nozzles. Connections are NPT female. Body is brass.

For Air, Water, and Oil—Buna-N Diaphragm

- Use with air, water, oil, inert gas, and ethylene glycol
- Pressure Drop Across Valve: None required
- Temp. Range: 14° to 195° F

Valves have a DIN electrical connection with a 1/2" conduit port and draw a max. of 1.12 amps. Enclosure is NEMA 4 (indoor/outdoor; washdown resistant). Mount in any position.

Pipe Size	Lg.	Ht.	Max. psi	120 VAC	240 VAC	24 VAC	24 VDC	
Closed Unless Energized (Normally Closed)								
1/4	2 3/16"	3 1/2"	200	4711K511	4711K514	4711K513	4711K512	$97.57
3/8	2 3/16"	3 1/2"	200	4711K621	4711K625	4711K623	4711K622	97.57
1/2	2 3/4"	4"	200	4711K731	4711K735	4711K733	4711K732	104.30
3/4	2 3/4"	4"	200	4711K841	4711K845	4711K843	4711K842	104.30
1	4 1/16"	4 1/4"	200	4711K951	4711K956♣	4711K953	4711K954♣	169.89

♣ Max. pressure is 85 psi.

For Degreasing Fluid and Ethylene Glycol—Fluoroelastomer Diaphragm

- Use with degreasing fluid, ethylene glycol, and inert gas; also for oil (unless not rated)
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 230° F

Valves have wire leads, a 1/2" conduit port, and draw a max. of 1.12 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position. UL listed.

Pipe Size	Lg.	Ht.	Max. psi Water	Max. psi Oil	VAC VALVES 120 VAC	24 VAC		VDC VALVES Max. psi	24 VDC	
Closed Unless Energized (Normally Closed)										
3/8	2 7/8"	4"	140	90	48765K411	48765K412	$161.19	70	48765K74	$161.19
1/2	2 7/8"	4"	140	90	48765K511	48765K512	161.19	70	48765K75	161.19
3/4	2 7/8"	4 1/8"	140	90	48765K611	48765K612	182.11	70	48765K76	182.11
1	3 3/4"	5 1/8"	100	Not Rated	48765K77	48765K78	268.10	—	—	—
1 1/4	4 3/8"	5 7/8"	100	Not Rated	48765K79	48765K81	383.03	—	—	—
1 1/2	4 3/8"	5 7/8"	100	Not Rated	48765K82	48765K83	388.78	—	—	—
Open Unless Energized (Normally Open)										
3/8	2 7/8"	4 1/2"	200	200	48765K84	48765K85	217.05	125	48765K86	217.05
1/2	2 7/8"	4 1/2"	200	200	48765K87	48765K88	217.05	125	48765K89	217.05
3/4	2 7/8"	4 5/8"	200	200	48765K91	48765K92	220.28	125	48765K93	220.28

For Steam—EPDM Diaphragm

- Use with steam and hot water
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 300° F

Valves have wire leads, a 1/2" conduit port, and draw a max. of 0.19 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount valves in horizontal pipe with the solenoid on top.

Pipe Size	Lg.	Ht.	Max. psi Steam	Max. psi Hot Water	120 VAC	
Closed Unless Energized (Normally Closed)						
3/8	2 13/16"	3 7/8"	50	150	47905K72	$137.24
1/2	2 13/16"	3 7/8"	50	150	47905K73	146.74
3/4	2 15/16"	4 1/8"	50	150	47905K74	164.82

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Premium Energy-Efficient Brass Solenoid Valves

- Use with air, water, oil, and inert gas
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: VAC Valves: 32° to 180°F; VDC Valves: 32° to 150°F

These top-of-the-line valves combine energy efficiency with a NEMA 4X enclosure (indoor/outdoor; washdown/corrosion resistant) for a long service life. Operation is assisted by the pressure in your pipeline, which reduces the electricity required. They're interchangeable with Parker Hannifin Gold Ring 22C and 24C series and Asco Red Hat 8210G series.

Connections are NPT female. Body is brass and diaphragm is Buna-N. Valves are closed unless energized (normally closed). They have wire leads, a 1/2″ conduit port, and draw a max. of 0.84 amps. Mount in horizontal pipe with the solenoid on top. UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi Air	Max. psi Water	Max. psi Oil	VAC VALVES 120 VAC	VAC VALVES 240 VAC	VAC VALVES 24 VAC		VDC VALVES Max. psi	VDC VALVES 24 VDC	
3/8	2 13/16″	4 1/8″	200	135	135	2663K12	2663K13	2663K11	$98.08	100	2663K14	$98.08
1/2	2 13/16″	4 1/8″	200	135	135	2663K22	2663K23	2663K21	99.79	100	2663K24	99.79
3/4	2 15/16″	4 3/8″	200	135	135	2663K32	2663K33	2663K31	129.56	—	—	—
1	3 3/4″	6 3/8″	150	150	100	2663K42	2663K43	2663K41	230.20	125	2663K44	230.20

Energy-Efficient Brass Solenoid Valves

Use less energy to control flow—operation is assisted by pressure in your pipeline. Connections are NPT female. Body is brass.

For Air, Water, and Oil—Buna-N Diaphragm

- Use with air, water, oil, and ethylene glycol
- Pressure Drop Across Valve: At least 7 psi required
- Temp. Range: 14° to 195°F

Valves have a DIN electrical connection and draw a max. of 0.60 amps. Mount in any position. *Style A* have an IP65 (resists splashing water) enclosure. *Style B* have a NEMA 4 (indoor/outdoor; washdown resistant) enclosure.

A

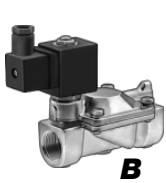

B

Pipe Size	Lg.	Ht.	Max. psi	VAC VALVES 120 VAC	VAC VALVES 240 VAC	VAC VALVES 24 VAC		VDC VALVES Max. psi	VDC VALVES 24 VDC	
Closed Unless Energized (Normally Closed)										
A 3/8	2 3/8″	3 1/4″	230	4738K601	4738K801	4738K701	$95.88	230	4738K501	$95.88
A 1/2	2 5/8″	3 1/2″	230	4738K602	4738K802	4738K702	98.64	230	4738K502	98.64
A 3/4	3 1/8″	3 1/2″	175	4738K603	4738K803	4738K703	150.23	175	4738K503	150.23
A 1	4 1/8″	4 1/4″	175	4738K604	4738K804	4738K704	177.15	175	4738K504	177.15
A 1 1/4	4 1/2″	5 3/8″	145	4738K605	4738K805	4738K705	384.44	145	4738K505	384.44
A 1 1/2	5 9/16″	5 5/8″	145	4738K606	4738K806	4738K706	414.38	145	4738K506	414.38
A 2	6 3/16″	6 1/8″	145	4738K607	4738K807	4738K707	501.92	145	4738K507	501.92
B 1/4	2″	3 5/8″	300	4738K138	4738K809	4738K137	77.32	150	4738K151	77.32
B 3/8	2″	3 5/8″	300	4738K147	4738K821	4738K149	79.47	150	4738K152	79.47
B 1/2	2 7/8″	3 5/8″	300	4738K157	4738K822	4738K158	81.74	150	4738K153	81.74
B 3/4	4 1/16″	4 1/8″	230	4738K167	4738K823	4738K169	118.20	230	4738K168	118.20
B 1	4 1/16″	4 1/2″	230	4738K177	4738K824	4738K179	127.90	230	4738K178	127.90
Open Unless Energized (Normally Open)										
A 1/2	2 5/8″	3 3/8″	175	4738K712	4738K713	4738K714	105.18	120	4738K815	105.18
A 3/4	3 1/8″	3 5/8″	175	4738K722	4738K723	4738K724	115.46	120	4738K825	115.46
A 1	4 1/8″	4 1/4″	175	4738K732	4738K733	4738K734	171.84	90	4738K835	171.84

For Cutting Oil and Ethylene Glycol—Fluoroelastomer Diaphragm

- Use with cutting oil, ethylene glycol, water, and hydraulic oil
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: 32° to 230°F

Valves have wire leads, a 1/2″ conduit port, and draw a max. of 0.55 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position. UL listed and CSA certified.

C

Pipe Size	Lg.	Ht.	Max. psi Water	Max. psi Oil	VAC VALVES 120 VAC	VAC VALVES 24 VAC		VDC VALVES Max. psi Water	VDC VALVES Max. psi Oil	VDC VALVES 24 VDC	
Closed Unless Energized (Normally Closed)											
C 3/8	3 3/16″	4 1/4″	250	250	4868K31	4868K32	$119.76	150	150	4868K33	$119.76
C 1/2	3 3/16″	4 1/4″	250	250	4868K71	4868K72	119.76	150	150	4868K73	119.76
C 3/4	3 7/8″	4 1/2″	250	250	4868K75	4868K76	163.26	150	150	4868K77	163.26
C 1	3 3/4″	4 3/4″	150	100	4868K78	4868K79	252.91	150	100	4868K81	252.91
C 1 1/4	4 3/8″	5 1/2″	150	85	4868K82	4868K83	329.25	150	85	4868K84	329.25
C 1 1/2	4 3/8″	5 1/2″	150	85	4868K93	4868K94	340.40	150	85	4868K95	340.40
C 2	5 5/8″	6 1/8″	150	85	4868K96	4868K97	526.84	150	85	4868K98	526.84

For Hot Water and Inert Gas—PTFE Diaphragm

- Use with hot water, inert gas, and oil
- Pressure Drop Across Valve: At least 1 psi required
- Temp. Range: 32° to 180°F

Valves have wire leads, a 1/2″ conduit port, and draw a max. of 0.16 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position. *3/8* and *3/4 pipe size* are UL listed.

D

Pipe Size	Lg.	Ht.	Max. psi Air	Max. psi Water	Max. psi Oil	120 VAC	
Closed Unless Energized (Normally Closed)							
D 3/8	2 7/16″	3 7/8″	300	235	225	48365K81	$163.58
D 1/2	2 7/16″	3 7/8″	300	235	235	48365K83	178.50
D 3/4	3 1/8″	4 1/8″	300	235	235	48365K85	186.68

Anti Water-Hammer Brass Solenoid Valves

- Use with water
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: 32° to 185°F

Minimize rattle and bang in your pipeline. Connections are NPT female. Body is brass and diaphragm is Buna-N. Valves are closed unless energized (normally closed). They have wire leads, a 1/2″ conduit port, and draw a max. of 0.15 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount valves in horizontal pipe with the solenoid on top. UL and C-UL listed.

Pipe Size	Lg.	Ht.	Max. psi	120 VAC	
1/2	2 3/16″	3 5/8″	150	4241T44	$261.87
3/4	3 15/16″	4 3/4″	230	4241T42	278.78
1	3 15/16″	4 3/4″	230	4241T43	486.95

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

Brass Solenoid Valves for Fuel

- Use with diesel fuel and heavy fuel oil (#6)
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: For Diesel Fuel: 15° to 176°F For Heavy Fuel Oil (#6): 158° to 240°F

Use one of these UL listed safety valves for flow control in heating and power systems. Connections are NPT female. Body is brass and diaphragm is fluoroelastomer. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.25 amps. Enclosure is NEMA 2 (indoor only; resists light splashing). Mount valves in horizontal pipe with the solenoid on top. UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi Diesel Fuel	Max. psi Heavy Fuel Oil (#6)		
1/4	1 3/4″	3 1/4″	300	150	47545K13	$178.00
3/8	2″	3 1/2″	300	150	47545K14	197.50

Brass Solenoid Valves with Adjustable Flow Control

- Use with water, chlorinated water, ethylene glycol, and soap solutions
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: 32° to 150°F

Commonly used in landscaping, just turn the handle to adjust flow. Connections are NPT female. Body is brass and diaphragm is EPDM. Valves are closed unless energized (normally closed). They have wire leads, a 1/2″ conduit port, and draw a max. of 0.83 amps. Mount in any position.

Pipe Size	Lg.	Ht.	Max. psi	110 VAC	24 VAC	
3/4	3 1/4″	4 1/2″	200	4903K862	4903K861	$193.13
1	4 1/2″	5″	200	4903K872	4903K871	206.41
1 1/4	5″	6″	200	4903K882	4903K881	219.05
1 1/2	6″	7″	200	4903K892	4903K891	245.38
2	7″	7 1/2″	200	4903K962	4903K961	286.28

Directional Control 3-Port Brass Solenoid Valves

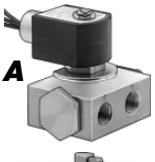

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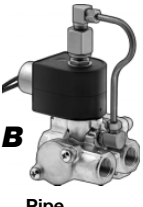

B

- Use with air, water, inert gas, oil, and hydraulic oil
- Pressure Drop Across Valve: At least 10 psi required
- Temp. Range: 32° to 180°F

Operate your actuated equipment—the 3-port body switches the direction of flow to apply and exhaust pressure. Also known as 3-way valves, they are commonly used with single-acting spring-return cylinders.

Connections are NPT female. Body is brass and diaphragm is Buna-N. Valves have wire leads, a 1/2″ conduit port, and draw a max. of 0.71 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position.

Normally closed valves exhaust unless energized; *normally open* pressurize unless energized.

	Pipe Size	Lg.	Ht.	Max. psi Air & Water	Max. psi Oil	120 VAC	24 VAC	
Closed Unless Energized (Normally Closed)								
A	1/4	1 3/4″	3 5/8″	150	95	49085K21	49085K57	$162.38
A	1/4	3 1/4″	3 3/8″	200	200	49085K22	49085K58	284.59
A	3/8	3 1/4″	3 3/8″	200	200	49085K23	49085K59	284.83
B	3/8	2 5/8″	5 3/8″	180	180	4274T411	4274T412	363.25
B	1/2	3 1/8″	5 5/8″	180	180	4274T413	4274T421	363.25
B	3/4	3 3/8″	6 1/2″	180	180	4274T422	4274T423	497.74
Open Unless Energized (Normally Open)								
A	1/4	1 3/4″	3 5/8″	160	95	49085K77	49085K87	162.38
A	1/4	3 1/4″	3 3/8″	200	200	49085K78	—	294.21
A	3/8	3 1/4″	3 3/8″	200	200	49085K79	49085K88	294.45

Brass Solenoid Valves for Steam

- Use with steam
- Pressure Drop Across Valve: At least 1 psi required (unless noted)
- Temp. Range: 32° to 353°F (unless noted)

Designed to stand the high temperatures of steam applications. Connections are NPT female. Body is brass and diaphragm is PTFE (unless noted). Valves have wire leads, a 1/2″ conduit port, and draw a max. of 0.83 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount valves in horizontal pipe with the coil on top. UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi	120 VAC	24 VAC	
Closed Unless Energized (Normally Closed)						
3/8	2 7/16″	3 7/8″	125	47905K61	47905K62	$208.66
1/2	2 7/16″	3 7/8″	125	47905K63	47905K64	220.39
3/4	3 1/8″	4 1/8″	125	47905K65	47905K66	247.12
1	4 7/16″	4 5/8″	50	47905K71★	—	339.27
1	4 7/16″	4 5/8″	125	47905K67	47905K68	469.66
1	5 7/16″	5″	150	49225K76▲	49225K71▲	398.30
Open Unless Energized (Normally Open)						
3/4	3 7/8″	5″	100	49225K83	49225K74	299.75

★ Diaphragm is EPDM. Temp. range is 32° to 300°F.
▲ A pressure drop of at least 10 psi is required for operation.

Brass Solenoid Valves with Easy-Access Strainer

- Use with air, water, inert gas, oil, hydraulic oil, ethylene glycol, and soap solutions
- Pressure Drop Across Valve: At least 3 psi required
- Temp. Range: 32° to 180°F

An integral 60-mesh strainer keeps your liquids particle free and your valve working efficiently. The easy-access clean-out port lets you remove debris without disconnecting your pipeline.

Connections are NPT female. Body is brass and diaphragm is EPDM. Valves are closed unless energized (normally closed). They have a 1/4″ quick-disconnect electrical connection and draw a max. of 0.48 amps. Enclosure is NEMA 1 (indoor only).

Dimensions are 2 7/16″ Lg. × 4″ Ht. Mount valves in horizontal pipe with the solenoid on top.

Pipe Size	Max. psi	120 VAC	240 VAC	24 VAC	24 VDC	
1/4	125	4590K13	4590K16	4590K15	4590K14	$46.90
3/8	125	4590K23	4590K26	4590K25	4590K24	49.11

Nickel-Plated Brass Solenoid Valves

- Use with water, inert gas, oil, benzene, ethylene glycol, and mineral spirits
- Pressure Drop Across Valve: At least 2 psi required
- Temp. Range: 14° to 280°F

Nickel plating provides greater corrosion resistance than plain brass. Connections are NPT female. Body is nickel-plated brass and diaphragm is fluoroelastomer. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have a DIN electrical connection and draw a max. of 0.33 amps. Enclosure is NEMA 4 (indoor/outdoor; washdown resistant). Mount in any position.

Pipe Size	Lg.	Ht.	115 VAC Max. psi	115 VAC	24 VDC Max. psi	24 VDC	
1/4	2″	3 5/8″	300	7944K212	150	7944K32	$90.59
3/8	2″	3 5/8″	300	7944K222	150	7944K34	90.59
1/2	2 7/8″	3 5/8″	300	7944K232	150	7944K36	90.59
3/4	4 1/16″	4 1/8″	230	7944K242	230	7944K38	133.06
1	4 1/16″	4 1/2″	230	7944K252	230	7944K41	169.92
1 1/4	5 11/16″	5″	150	7944K262	150	7944K47	284.64
1 1/2	5 11/16″	5″	150	7944K272	150	7944K44	296.28
2	6 13/16″	5 5/8″	150	7944K282	150	7944K46	373.32

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Corrosion-Resistant Stainless Steel Solenoid Valves

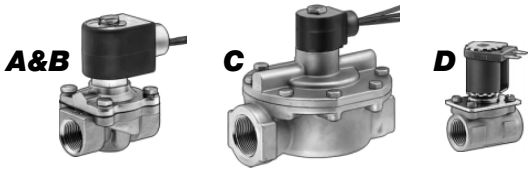

A stainless steel body provides exceptional corrosion resistance in your harsh environment. Connections are NPT female. Valves are closed unless energized (normally closed). They operate on 120 VAC and draw a max. of 0.16 amps.

(A) For Air, Water, and Oil—Buna-N Diaphragm

- Use with air, water, inert gas, and oil
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: 32° to 180°F

Body is Type 316 stainless steel. Valves have wire leads and a 1/2″ conduit port; enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position. UL listed.

Pipe Size	Lg.	Ht.	Max. psi		
3/8	2 13/16″	4 1/8″	150	48025K711	$317.73
1/2	2 13/16″	4 1/8″	150	48025K721	524.53
3/4	2 15/16″	4 3/8″	150	48025K741	535.50
1	3 3/4″	6 3/8″	100	48025K731	898.62

(B) For Ethylene Glycol—Fluoroelastomer Diaphragm

- Use with ethylene glycol, 70% sodium hydroxide, air, water, inert gas, and oil
- Pressure Drop Across Valve: None required
- Temp. Range: 14° to 302°F

Body is Type 316 stainless steel. Valves have wire leads and a 1/2″ conduit port; enclosure is NEMA 2 (indoor only; resists light splashing). Mount in any position. UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi		
3/8	2 3/4″	4 3/8″	150	47795K11	$265.20
1/2	2 3/4″	4 3/8″	150	47795K12	276.73
3/4	2 3/4″	4 3/8″	150	47795K13	302.18
1	3 3/8″	5 3/8″	150	47795K14	378.33

(C) For Steam—PTFE Diaphragm

- Use with steam and hot water
- Pressure Drop Across Valve: At least 10 psi required
- Temp. Range: 32° to 366°F

Body is Type 316 stainless steel. Valves have wire leads and a 1/2″ conduit port; enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in horizontal pipe with the solenoid on top. UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi		
1 1/4	6 5/16″	5 7/8″	150	49225K77	$444.30
1 1/2	6 5/16″	5 7/8″	150	49225K78	465.27
2	6 5/16″	6 5/8″	150	49225K79	672.07

(D) For Drinking Water—EPDM Diaphragm

- Use with drinking (potable) water
- Pressure Drop Across Valve: At least 3 psi required
- Temp. Range: 32° to 180°F

Valves are NSF 61 certified for use with drinking (potable) water. Body is Type 303 stainless steel. Valves have a 1/4″ quick-disconnect electrical connection and a NEMA 1 (indoor only) enclosure. Mount in horizontal pipe with the solenoid on top.

Pipe Size	Lg.	Ht.	Max. psi		
3/8	1 7/8″	3″	125	4530T11	$108.24
1/2	1 7/8″	3″	125	4530T12	111.62

Directional Control 4-Port Aluminum Solenoid Valves

- Use with air and inert gas
- Pressure Drop Across Valve: At least 20 psi required
- Temp. Range: 120 VAC: 0° to 135°F
  24 VDC: 0° to 77°F

Control your actuated equipment—a 4-port body switches the direction of flow to apply and exhaust pressure. Also known as 4-way valves, they're often used with double-acting (push/pull) cylinders. Connections are NPT female. Body is aluminum and seals are Buna-N. Valves have wire leads and draw a max. of 0.29 amps. Mount in any position. CSA certified.

Pipe Size	Lg.	Ht.	Max. psi	120 VAC	24 VDC	
1/4	1 1/2″	4 1/4″	150	4368T44	4368T48	$306.64

Nylon Solenoid Valves with Adjustable Flow Control

- Use with water
- Pressure Drop Across Valve: At least 10 psi required
- Temp. Range: 35° to 150°F

Body is glass-filled nylon for a lightweight valve that stands up to UV light. Often used in landscaping, adjust flow by turning the handle. Connections are NPT female. Diaphragm is EPDM. Valves have wire leads, a 1/2″ conduit port, and draw a max. of 0.3 amps. Mount in any position.

Pipe Size	Lg.	Ht.	Max. psi	110 VAC	24 VAC	
Closed Unless Energized (Normally Closed)						
1	4 1/4″	5 1/2″	175	4903K972	4903K971	$44.14
1 1/2	5 13/16″	7 3/8″	160	4903K982	4903K981	82.50
2	6 5/8″	8 1/2″	160	4903K992	4903K991	111.42
Open Unless Energized (Normally Open)						
1	4 1/4″	5 1/2″	175	4903K661	4903K762	101.60

Chemical-Resistant PVC and CPVC Solenoid Valves

- Use with caustic chemicals, water, and oil
- Pressure Drop Across Valve: None required
- Temp. Range: PVC: 34° to 140°F
  CPVC: 34° to 190°F

Get good chemical resistance at a lighter weight than metal options. Valves come with a set of NPT female and socket weld (unthreaded) union fittings for each pipe connection. Diaphragm is fluoroelastomer. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have a DIN electrical connection with a 1/2″ conduit port and draw a max. of 0.16 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position. CSA certified.

Pipe Size	Lg.	Ht.	Max. psi		
With PVC Valve Body					
1/2	5 5/16″	6 3/8″	120	4744K24	$290.42
3/4	5 1/2″	6 5/8″	120	4744K25	395.70
1	5 1/2″	6 5/8″	120	4744K26	428.34
With High-Temperature CPVC Valve Body					
1/2	5 5/16″	6 3/8″	120	4865K34	312.18
3/4	5 1/2″	6 5/8″	120	4865K35	400.46
1	5 1/2″	6 5/8″	120	4865K36	435.00

Replacement Parts for Solenoid Valves

If you don't see the replacement part you need, just tell us what you're looking for and we'll get it for you.

Replacement Coils

For Voltage	Parker Gold Ring Series 22 and 24		Parker Skinner Series 7000		ASCO S-Series		Granzow Series 21		Burkert Series 6213	
120 VAC	8049T11	$44.52	8049T21	$41.60	4738K113	$36.03	4738K211	$15.65	8048T11	$37.56
24 VDC	8049T12	57.85	8049T22	41.60	4738K114	36.03	4738K212	16.42	8048T12	47.88

Repair Kits for 120 VAC Valves—Include Buna-N seals, springs, and plunger assembly

For Pipe Size	Parker Gold Ring Series 22 and 24		Parker Skinner Series 7000		ASCO Red Hat and S-Series		Granzow Series 21		Burkert Series 6213	
1/2	8049T13	$80.60	8049T23	$99.74	4738K412	$49.67	4738K217	$35.04	8048T13	$30.84
3/4	8049T14	87.75	8049T24	72.15	4738K417	69.33	4738K217	35.04	8048T14	32.88
1	8049T15	98.15	8049T25	155.03	4738K411	78.82	4738K215	35.51	8048T15	88.92

Medium-Flow Solenoid Valves

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

Bronze Solenoid Valves

Harder, stronger, and more corrosion resistant than brass valves, no pressure drop is required for operation. Connections are NPT female. Body and piston are bronze. Valves operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 2 amps. Mount in horizontal pipe with the solenoid on top.

For Air, Water, and Oil—Buna-N Seal

- Use with air, water, inert gas, and oil
- Pressure Drop Across Valve: None required
- Temp. Range: –40° to +212° F

Pipe Size	Lg.	Ht.	Max. psi		
Closed Unless Energized (Normally Closed)					
1/2	3 1/4″	7″	110	4640K31	$210.50
1/2	3 1/4″	7″	200	4640K51	219.57
1/2	3 1/4″	7″	300	4640K71	231.64
1/2	3 1/4″	8″	500	4640K18	389.61
3/4	3 1/2″	7 1/8″	50	4640K12	241.29
3/4	3 1/2″	7 1/8″	110	4640K32	241.29
3/4	3 1/2″	7 1/8″	160	4640K111	291.91
1	4 1/8″	7 7/8″	50	4640K13	291.91
1	4 1/8″	7 7/8″	110	4640K33	291.91
1	4 1/8″	7 7/8″	160	4640K19	334.13
1	4 1/8″	8 7/8″	200	4640K53	382.44
1	4 1/8″	8 7/8″	300	4640K73	393.47
1	4 1/8″	8 7/8″	500	4640K34	530.74
1 1/4	4 1/2″	8 3/8″	90	4640K113	364.34
1 1/2	4 7/8″	10″	50	4640K15	560.99
1 1/2	4 7/8″	10″	115	4640K35	560.99
2	6″	11″	100	4640K36	826.41
Open Unless Energized (Normally Open)					
1/2	3 1/4″	8 1/8″	110	4640K21	307.64
1/2	3 1/4″	8 1/8″	200	4640K22	317.52
1/2	3 1/4″	8 1/8″	300	4640K23	323.32
1	4 1/8″	9″	110	4640K29	392.03
1	4 1/8″	10″	200	4640K41	498.26
1 1/2	4 7/8″	11 3/8″	115	4640K44	694.91
2	6″	12 3/8″	100	4640K48	984.45

For Cryogenic Liquefied Gas—Glass-Filled PTFE Seal

- Use with liquid argon, liquid nitrogen, and liquid oxygen
- Pressure Drop Across Valve: None required
- Temp. Range: –500° to +400° F

Valves are cleaned, degreased, and bagged.

Pipe Size	Lg.	Ht.	Max. psi		
Closed Unless Energized (Normally Closed)					
1/2	3 1/4″	7″	110	4710T11	$304.80
1/2	3 1/4″	7″	200	4710T12	316.80
3/4	3 1/2″	7 1/8″	110	4710T13	336.00
1	4 1/8″	8″	110	4710T17	386.40

For Steam—Glass-Filled PTFE Seal

- Use with steam
- Pressure Drop Across Valve: None required
- Temp. Range: –500° to +400° F

Pipe Size	Lg.	Ht.	Max. psi		
Closed Unless Energized (Normally Closed)					
1/2	3 1/4″	7″	90	7841K35	$261.80
1/2	3 1/4″	7″	140	7841K37	269.03
1/2	3 1/4″	8″	180	7841K11	357.60
3/4	3 1/2″	7 1/8″	50	7841K42	293.16
3/4	3 1/2″	7 1/8″	110	7841K46	298.74
3/4	3 1/2″	8 1/8″	180	7841K12	392.40
1	4 1/8″	8″	50	7841K52	353.49
1	4 1/8″	8″	90	7841K55	363.14
1	4 1/8″	8 7/8″	180	7841K13	465.60
1 1/4	4 1/2″	9 3/8″	140	7841K14	524.40
1 1/2	4 7/8″	10″	90	7841K75	646.65
1 1/2	4 7/8″	11″	180	7841K78	956.25
2	6″	12″	115	7841K86	1,363.27
2	6″	12″	180	7841K88	1,419.97

Energy-Efficient Bronze Solenoid Valves

The strength of bronze is paired with low energy consumption—valve operation is assisted by the pressure in your pipeline, which reduces the electricity required.

Connections are NPT female. Body is bronze and piston is brass. Valves have wire leads, a 1/2″ conduit port, and draw a max. of 1 amp. Enclosure is NEMA 1 (indoor only). Mount valves in horizontal pipe with the solenoid on top.

For Air, Water, and Oil—Buna-N Seal

- Use with air, water, inert gas, oil, ethylene glycol, and soap solutions
- Pressure Drop Across Valve: At least 10 psi required
- Temp. Range: –40° to +220° F

Pipe Size	Lg.	Ht.	Max. psi	***120 VAC***	***24 VDC***	
Closed Unless Energized (Normally Closed)						
3/8	2 3/4″	6 3/8″	150	4809K113	_____	$158.16
1/2	2 3/4″	6 3/8″	150	4809K114	_____	158.16
3/4	3 1/4″	6 3/4″	150	4809K115	_____	193.91
1	3 13/16″	7″	150	4809K116	_____	249.28
Open Unless Energized (Normally Open)						
1/4	2 3/4″	7 3/8″	150	4635K161	4635K102	164.50
1/4	2 3/4″	7 3/8″	300	4635K289	4635K132	177.62
3/8	2 3/4″	7 3/8″	150	4635K162	4635K104	166.31
1/2	2 3/4″	7 3/8″	150	4635K163	4635K112	171.98
1/2	2 3/4″	7 3/8″	300	4635K311	4635K134	181.66
3/4	3 1/4″	7 3/4″	150	4635K164	4635K114	207.66
1	3 13/16″	8″	150	4635K165	4635K116	296.84
1	3 13/16″	8″	300	4635K313	4635K138	306.34
1 1/4	4 1/4″	8 3/4″	150	4635K166	4635K118	338.07
1 1/2	4 7/8″	9 3/8″	150	4635K167	4635K122	440.53
2	5 7/8″	9 7/8″	150	4635K168	4635K142	608.18
2	5 7/8″	9 7/8″	300	4635K314	4635K272	614.01

For Steam—PTFE Seal

- Use with steam, air, and hot water
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: –40° to +365° F

Valves are UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi	***120 VAC***	
Closed Unless Energized (Normally Closed)					
1/4	2 3/4″	6 3/8″	150	9766K122	$194.11
3/8	2 3/4″	6 3/8″	150	9766K123	194.11
1/2	2 3/4″	6 3/8″	150	9766K124	194.11
3/4	3 1/4″	6 3/4″	150	9766K131	231.55
1	3 13/16″	7″	150	9766K126	308.43
1 1/4	4 1/4″	7 7/8″	150	9766K127	403.27
1 1/2	4 7/8″	8 3/8″	150	9766K128	523.18
2	5 7/8″	8 7/8″	150	9766K129	785.25

High-Use Brass Solenoid Valves

- Use with air, water, inert gas, oil, ethylene glycol, and soap solutions
- Pressure Drop Across Valve: At least 3 psi required
- Temp. Range: 32° to 200° F

Designed to withstand the wear of applications involving frequent on/off flow control. Connections are NPT female. Body and piston are brass; seal is PTFE. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.24 amps. Mount in horizontal pipe with the solenoid on top. UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi		
3/8	2 1/16″	3 3/4″	150	7862K38	$99.08
1/2	2 3/8″	3 7/8″	150	7862K42	109.00
3/4	3″	4 1/4″	150	7862K44	150.07
1	3 1/2″	4 3/4″	150	7862K51	205.65

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Cleaned and Bagged Cryogenic Brass Solenoid Valves

- Use with liquid argon, liquid nitrogen, and liquid oxygen
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: Style A: –320° to +122° F
  Style B: –321° to +356° F

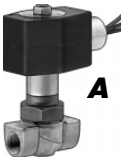

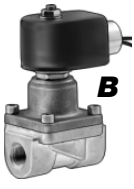

Able to withstand the extreme cold of liquefied gas, valves are cleaned and bagged for high-purity applications. Connections are NPT female. Body is brass and seal is PTFE. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.23 amps. Mount in any position.

Style A have a Type 304 stainless steel piston and a NEMA 4X (indoor/outdoor; washdown/corrosion resistant) enclosure.

Style B have greater flow than Style A of the same pipe size. Piston is brass and enclosure is NEMA 2 (indoor only; resists light splashing).

	Pipe Size	Lg.	Ht.	Max. psi		
A	1/4	2 1/16″	4 1/2″	225	7902K41	$217.35
A	3/8	2 1/16″	4 1/2″	225	7902K42	217.35
A	1/2	2 3/16″	5 1/4″	225	7902K43	287.14
B	3/8	2 1/2″	4 7/8″	125	50585K38	297.84
B	1/2	2 1/2″	4 7/8″	125	50585K39	308.11

Washdown Energy-Efficient Bronze Solenoid Valves

Equipped with a NEMA 4X enclosure and a corrosion-resistant bronze body to endure splashing water and washdown conditions. Also energy-efficient, valve operation is assisted by the pressure in your pipeline, which reduces the electricity required.

Connections are NPT female. Piston is brass. Valves are closed unless energized (normally closed). They have wire leads, a 1/2″ conduit port, and draw a max. of 1 amp. Mount in horizontal pipe with the solenoid on top.

For Air, Inert Gas, Water, and Oil—Buna-N Seal

- Use with air, inert gas, water, oil, ethylene glycol, alcohol, borax, and soap solutions
- Pressure Drop Across Valve: At least 10 psi required
- Temp. Range: –40° to +220° F

120/240 VAC valves are CSA certified for air and water and UL listed.

Pipe Size	Lg.	Ht.	Max. psi	*120/240 VAC*	*24 VDC*	
1/4	2 3/4″	5 1/8″	125	4635K172	4635K235	$130.50
1/4	2 3/4″	5 1/8″	250	4635K32	4635K255	136.36
3/8	2 3/4″	5 1/8″	125	4635K173	4635K237	130.50
1/2	2 3/4″	5 1/8″	125	4635K174	4635K239	130.50
1/2	2 3/4″	5 1/8″	250	4635K34	4635K259	136.36
3/4	3 1/4″	5 1/2″	125	4635K175	4635K242	166.39
3/4	3 1/4″	5 1/2″	250	4635K35	4635K262	171.89
1	3 13/16″	5 3/4″	125	4635K176	4635K244	256.14
1	3 13/16″	5 3/4″	250	4635K36	4635K264	260.52
1 1/4	4 1/4″	6 1/2″	125	4635K177	4635K246	287.76
1 1/2	4 7/8″	7 1/8″	125	4635K178	4635K248	398.78
1 1/2	4 7/8″	7 1/8″	250	4635K38	4635K268	402.34
2	5 7/8″	8″	125	4635K179	4635K251	541.40
2	5 7/8″	8″	250	4635K41	4635K271	545.80

For Steam—PTFE Seal (unless noted)

- Use with steam, air, and hot water
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: –40° to +356° F (unless noted)

Valves are CSA certified for steam (unless noted) and UL listed.

Pipe Size	Lg.	Ht.	Max. psi	*120 VAC*	
1/4	2 3/4″	5 1/8″	125	9766K91	$158.00
3/8	2 3/4″	5 1/8″	125	9766K92	158.00
1/2	2 3/4″	5 1/8″	125	9766K93	158.00
3/4	3 1/4″	5 1/2″	50	9766K45★	179.39
3/4	3 1/4″	5 1/2″	125	9766K94	198.66
1	3 13/16″	5 3/4″	50	9766K46★	230.14
1	3 13/16″	5 3/4″	125	9766K95	280.52
1 1/4	4 1/4″	6 1/2″	125	9766K96	368.48
1 1/2	4 7/8″	7 1/8″	125	9766K97	437.84

★ Seal is EPDM. Temp. range is –40° to +298° F. Not CSA certified.

Hazardous-Location Bronze Solenoid Valves

- Use with air, water, inert gas, oil, and ethylene glycol
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: –40° to +220° F

Meet the challenges of your environment with an enclosure that's rated NEMA 7 (indoor only; meets Class I, Group D and Class II, Groups E, F, and G) for protection in hazardous locations.

Connections are NPT female. Body is bronze, piston is brass, and seal is Buna-N. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.32 amps. Mount in horizontal pipe with the solenoid on top. Valves are UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi		
1/2	2 3/4″	7″	150	4691K14	$227.27
3/4	3 1/4″	7 3/8″	150	4691K15	262.70
1	3 13/16″	7 5/8″	150	4691K16	308.98
2	5 7/8″	9 7/8″	150	4691K19	567.23

Stainless Steel Solenoid Valves

- Use with air, water, inert gas, oil, ammonia, and deionized water
- Pressure Drop Across Valve: None required
- Temp. Range: –320° to +400° F

High corrosion resistance is coupled with ease of use. Valves operate on electricity alone, so you don't have to measure the pressure drop in your pipeline.

Connections are NPT female. Body is Type 304 stainless steel, piston is Type 303 stainless steel, and seal is glass-filled PTFE. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.8 amps. Mount in horizontal pipe with the solenoid on top.

Pipe Size	Lg.	Ht.	Max. psi		
1/2	3 1/4″	7″	110	8117K35	$430.13
1/2	3 1/4″	7″	200	8117K36	469.87
1/2	3 1/4″	8″	300	8117K37	640.52
3/4	3 1/2″	7 1/8″	110	8117K45	515.45
1	4 1/8″	8″	110	8117K55	593.77
1	4 1/8″	8 7/8″	200	8117K56	748.05

Extended-Life Stainless Steel Solenoid Valves

A Type 316 stainless steel body and Type 303 stainless steel piston make these the most corrosion resistant of our medium-flow solenoid valves, in addition to providing a long service life. They're also energy efficient; valve operation is assisted by the pressure in your pipeline, which reduces the electricity required.

Connections are NPT female. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.6 amps. Enclosure is NEMA 1 (indoor only). Mount valves in horizontal pipe with the solenoid on top.

For Air, Water, and Inert Gas—Buna-N Seal

- Use with air, water, inert gas, oil, and naphtha
- Pressure Drop Across Valve: At least 5 psi required
- Temp. Range: –40° to +300° F

Pipe Size	Lg.	Ht.	Max. psi		
1/2	3 1/8″	6 3/4″	150	4665K64	$448.57
3/4	3 3/4″	7 1/8″	150	4665K65	541.38
1	4 3/16″	7 1/2″	150	4665K66	650.70

For Ammonia and Ethylene Glycol—PTFE Seal

- Use with ammonia, ethylene glycol, and water
- Pressure Drop Across Valve: At least 20 psi required
- Temp. Range: –40° to +300° F

Pipe Size	Lg.	Ht.	Max. psi		
1/2	3 1/8″	6 3/4″	1,000	4665K24	$436.69
1	4 3/16″	7 1/2″	1,000	4665K26	673.96

Low-Flow Solenoid Valves

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″
Pipe Size	1/8	1/4	3/8

Compact Brass Solenoid Valves

A

For automated applications in confined spaces. Connections are NPT female. Body is brass. Valves are closed unless energized (normally closed) and draw a max. of 1.08 amps. Mount in any position.

For Air and Water—Buna-N Seal

- Use with air, water, inert gas, oil, and ethylene glycol
- Pressure Drop Across Valve: None required
- Temp. Range: Style A: 0° to 195° F
  Style B: 32° to 120° F

Style A have a DIN electrical connection with a 1/2″ conduit port. Enclosure is NEMA 1 (indoor only).

Style B have wire leads and a 1/2″ conduit port. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). UL listed and CSA certified.

B

			Max. psi			VAC VALVES			VDC VALVES	
Pipe Size	Lg.	Ht.	Air	Water	Oil	120 VAC	24 VAC		Max. psi	24 VDC
A 1/4	1 5/8″	3 1/4″	50	50	50	8077K141	8077K142	$69.47	36	8077K143 $69.47
A 1/4	1 5/8″	3 1/4″	120	120	120	8077K131	8077K132	70.85	60	8077K133 70.85
A 1/4	1 11/16″	2 5/8″	100	100	100	8077K121	8077K122	59.24	50	8077K123 59.24
A 1/4	1 11/16″	3″	290	290	290	8077K111	8077K112	68.62	230	8077K113 68.62
B 1/4	1 1/4″	3″	140	165	90	8077K523	8077K522	62.55	60	8077K521 62.55
B 3/8	1 7/8″	3 1/4″	100	100	100	8077K533	8077K532	104.31	25	8077K531 104.31

For Ethylene Glycol and Naphtha—Fluoroelastomer Seal

- Use with ethylene glycol, naphtha, air, water, inert gas, and oil
- Pressure Drop Across Valve: None required
- Temp. Range: 14° to 195° F

Valves have a DIN electrical connection. Enclosure is IP65 (resists splashing water).

C

			Max. psi			VAC VALVES			VDC VALVES	
Pipe Size	Lg.	Ht.	Air	Water	Oil	120 VAC	24 VAC		Max. psi	24 VDC
C 1/8	1″	2 1/8″	87	87	87	7994K571	7994K572	$59.18	43	7994K573 $59.18
C 1/8	1″	2 1/8″	116	116	116	7994K561	7994K562	58.03	65	7994K563 58.03
C 1/8	1″	2 1/8″	174	174	174	7994K551	7994K552	56.89	87	7994K553 56.89
C 1/8	1 11/16″	2 5/8″	100	90	90	4807T221	4807T222	66.29	17	4807T223 66.29
C 1/8	1 5/16″	2 7/8″	290	230	230	4807T211	4807T212	67.62	230	4807T213 67.62
C 1/4	1 11/16″	3″	175	175	175	4807T231	4807T232	68.96	60	4807T233 68.96

For Oil—Man-Made Ruby Seal

- Use with fuel oil and hydraulic oil
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 210° F

Valves have wire leads and a 1/2″ conduit port. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). UL listed and CSA certified.

D

			Max. psi			VAC VALVES			VDC VALVES	
Pipe Size	Lg.	Ht.	Air	Water	Oil	120 VAC	24 VAC		Max. psi	24 VDC
D 1/8	1 9/16″	3 1/8″	500	500	500	46365K311	46365K312	$94.56	175	46365K313 $94.56
D 1/4	1 9/16″	3 1/8″	365	365	365	46365K351	46365K352	96.45	125	46365K353 96.45
D 1/4	1 9/16″	3 1/8″	500	500	500	46365K341	46365K342	98.40	175	46365K343 98.40
D 1/4	1 9/16″	3 1/8″	700	700	700	46365K331	46365K332	99.74	260	46365K333 99.74
D 1/4	1 9/16″	3 1/8″	1,100	1,100	1,100	46365K321	46365K322	102.34	435	46365K323 102.34

Brass Solenoid Valves for LP and Natural Gas

- Use with LP gas and natural gas
- Pressure Drop Across Valve: None required
- Temp. Range: 14° to 176° F

Equipped with a Buna-N seal, these UL listed safety valves are good for use in LP (liquefied petroleum) and natural gas service. They're also suitable for vacuum service. Connections are NPT female. Body is brass. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.16 amps. Enclosure is NEMA 2 (indoor only; resists light splashing). Mount valves in horizontal pipe with the solenoid on top. CSA certified.

Pipe Size	Lg.	Ht.	Max. psi		
1/8	1 3/4″	3 1/8″	10	47545K32	$117.98
1/4	1 3/4″	3 1/8″	10	47545K33	123.60
3/8	2 1/2″	3 1/2″	10	47545K34	155.50

Top-Connect Directional Control 3-Port Brass Solenoid Valves

- Use with air, water, inert gas, and oil
- Pressure Drop Across Valve: None required
- Temp. Range: 14° to 176° F

Designed with the exhaust port on top to fit in narrow spaces, the 3-port body switches the direction of flow to apply and exhaust pressure to control your actuated equipment. Also known as 3-way valves, they're commonly used to operate cylinders and presses.

Connections are NPT female. Body is brass and seal is Buna-N. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.16 amps. Enclosure is NEMA 2 (indoor only; resists light splashing). Mount in any position. UL listed and CSA certified.

Pipe Size	Lg.	Ht.	Max. psi		
1/4	1 3/4″	3 5/8″	85	47835K251	$132.14
1/4	1 3/4″	3 5/8″	100	47835K231	134.77
1/4	1 3/4″	3 5/8″	155	47835K211	137.48

Cleaned and Bagged Cryogenic Compact Brass Solenoid Valves

- Use with liquid argon, liquid nitrogen, and liquid oxygen
- Pressure Drop Across Valve: None required
- Temp. Range: –321° to +356° F

Able to withstand media temperatures as low as –321° F, these little valves come cleaned and bagged for use with liquefied gas. Connections are NPT female. Body is brass and seal is PTFE. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.16 amps. Enclosure is NEMA 2 (indoor only; resists light splashing). Mount in any position.

Pipe Size	Lg.	Ht.	Max. psi		
1/8	1 3/4″	3 1/8″	300	50585K21	$206.00
1/4	1 3/4″	3 1/8″	120	50585K23	234.09

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Compact Directional Control 3-Port Brass Solenoid Valves

Actuate automated equipment in tight spaces. Also known as 3-way valves, the 3-port body switches the direction of flow to apply and exhaust pressure. Commonly used with presses and single-acting spring-return cylinders.

Connections are NPT female. Body is brass. Valves exhaust unless energized (normally closed) and operate on 120 VAC. They have wire leads, a ½″ conduit port, and draw a max. of 0.26 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position. Valves are UL listed and CSA certified.

For Air, Water, and Oil—Buna-N Seal

- Use with air, water, inert gas, and oil
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 180°F

Pipe Size	Lg.	Ht.	Max. psi		
⅛	1³⁄₁₆″	3⅛″	40	8111K311	$96.36
⅛	1³⁄₁₆″	3⅛″	100	8111K611	97.83
⅛	1³⁄₁₆″	3⅛″	200	8111K331	99.56
¼	1¹⁵⁄₁₆″	3½″	125	8111K351	110.34
¼	2¹⁄₁₆″	3¾″	50	8111K632	115.00
¼	2¹⁄₁₆″	3¾″	100	8111K642	115.00
¼	2¹⁄₁₆″	3¾″	125	8111K652	119.90

For Ethylene Glycol—Fluoroelastomer Seal

- Use with ethylene glycol, air, water, inert gas, and oil
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 200°F

Pipe Size	Lg.	Ht.	Max. psi		
⅛	1³⁄₁₆″	3⅛″	200	8111K431	$106.66
¼	1⁹⁄₁₆″	3¾″	125	8111K441	120.63

Sure-Seal Stainless Steel Solenoid Valves

- Use with air, water, inert gas, hydraulic oil, and ethylene glycol
- Pressure Drop Across Valve: None required
- Temp. Range: −40° to +185°F

Normally Closed

Normally Open

The magnetic quality of Type 430 stainless steel gives these valves superior performance. Also providing good corrosion resistance, valves are interchangeable with industry standard valves from ASCO, Parker Gold Ring, and Skinner.

Connections are NPT female. Body is Type 430 stainless steel and seal is Buna-N. Valves have wire leads, a ½″ conduit port, and draw a max. of 0.41 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position. UL listed and CSA certified.

Normally open valves have a top outlet.

Pipe Size	Lg.	Ht.	120 VAC Max. psi		24 VDC Max. psi		
Closed Unless Energized (Normally Closed)							
⅛	1⅝″	2⅞″	200	4639K74	150	4639K743	$82.36
¼	1⅝″	2⅞″	40	4639K161	10	4639K163	84.05
¼	1⅝″	2⅞″	110	4639K151	60	4639K153	85.73
¼	1⅝″	2⅞″	200	4639K78	150	4639K783	86.77
¼	1⅝″	2⅞″	275	4639K77	275	4639K772	88.51
¼	1⅝″	2⅞″	450	4639K75	450	4639K752	90.27
Open Unless Energized (Normally Open)							
⅛	1⅝″	3¹¹⁄₁₆″	250	4639K53	250	4639K532	107.36
¼	1⅝″	3⅞″	250	4639K62	250	4639K622	109.55
¼	1⅝″	3⅞″	400	4639K54	400	4639K542	111.73

Compact Stainless Steel Solenoid Valves

A Type 303 stainless steel body provides greater corrosion resistance than Type 430 stainless steel. Connections are NPT female. Valves are closed unless energized (normally closed) and draw a max. of 0.48 amps. Mount in any position.

A&B

For Air, Water, and Oil—Buna-N Seal

- Use with air, water, inert gas, hydraulic oil, and ethylene glycol
- Pressure Drop Across Valve: None required
- Temp. Range: 120 VAC: 32° to 180°F
  24 VDC: 32° to 120°F

Valves have wire leads, a ½″ conduit port, and a NEMA 4X (indoor/outdoor; washdown/corrosion resistant) enclosure. UL listed and CSA certified (unless noted).

C

Pipe Size	Lg.	Ht.	120 VAC Max. psi Air	Water	Oil		24 VDC Max. psi Air	Water	Oil		
A ¼	1⁹⁄₁₆″	3″	40	50	40	8214K543	17	20	21	8214K541★	$106.34
A ¼	1⁹⁄₁₆″	3″	360	340	160	8214K521	150	125	125	8214K523	108.46
A ¼	1⁹⁄₁₆″	3″	750	750	500	8214K511	500	500	500	8214K513	110.65
A ¼	1⁹⁄₁₆″	3⅛″	145	150	150	8214K532	45	40	40	8214K531	112.58

★ Not UL listed or CSA certified.

For Natural Gas and Ethylene Glycol—Fluoroelastomer Seal

- Use with natural gas, ethylene glycol, air, water, inert gas, and oil
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 212°F

Style B have wire leads, a ½″ conduit port, and a NEMA 4X (indoor/outdoor; washdown/corrosion resistant) enclosure. UL listed.

Style C have a DIN electrical connection and an IP65 (resists splashing water) enclosure.

Pipe Size	Lg.	Ht.	120 VAC Max. psi Air	Water	Oil		24 VDC Max. psi Air	Water	Oil		
B ⅛	1″	2⅝″	320	320	320	7900K853	130	130	130	7900K851	$75.46
B ⅛	1″	2⅝″	950	950	950	7900K843	390	390	390	7900K841	76.98
C ⅛	1″	2⅛″	87	87	87	7900K931	43	43	43	7900K933	77.60
C ⅛	1″	2⅛″	116	116	116	7900K921	65	65	65	7900K923	90.61
C ⅛	1″	2⅛″	174	174	174	7900K911	87	87	87	7900K913	95.63

Submersible Stainless Steel Solenoid Valves

- Use with air, water, inert gas, oil, ethylene glycol, and soap solutions
- Pressure Drop Across Valve: None required
- Temp. Range: 0° to 150°F

Applications that include temporary submersion require valves equipped with an encapsulated solenoid in a NEMA 6 enclosure (indoor/outdoor; protection against submersion). Valves are also NSF 169 certified for beverage- and food-equipment components and suitable for vacuum service.

Connections are NPT female. Body is Type 430 stainless steel and seal is fluoroelastomer. Valves are closed unless energized (normally closed). They have wire leads and draw a max. of 0.60 amps. Mount in any position.

Pipe Size	Lg.	Ht.	VAC VALVES Max. psi	120 VAC	24 VAC		VDC VALVES Max. psi	12 VDC	24 VDC	
⅛	1″	2½″	260	5077T111	5077T112	$67.93	175	5077T114	5077T113	$67.93
⅛	1″	2½″	470	5077T121	5077T122	69.50	325	5077T124	5077T123	69.50
¼	1⅝″	2¾″	300	5077T131	5077T132	77.79	250	5077T134	5077T133	77.79
¼	1⅝″	2¾″	400	5077T141	5077T142	79.35	400	5077T144	5077T143	79.35

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″
Pipe Size	1/8	1/4	3/8	1/2	3/4	1

Directional Control 3-Port Stainless Steel Solenoid Valves

Control actuated equipment in your harsh environment. Made of corrosion-resistant Type 430 stainless steel, the 3-port body switches the direction of flow to apply and exhaust pressure. Also known as 3-way valves, they're often used with presses and single-acting spring-return cylinders.

Connections are NPT female. Valves have wire leads, a 1/2″ conduit port, and draw a max. of 0.42 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Mount in any position. UL listed and CSA certified.

For Air, Water, and Oil—Buna-N Seal

- Use with air, water, inert gas, hydraulic oil, and ethylene glycol
- Pressure Drop Across Valve: None required
- Temp. Range: –20° to +185° F

Pipe Size	Lg.	Ht.	Max. psi	120 VAC	24 VDC	
Closed Unless Energized (Normally Closed)						
1/8	1 5/8″	3 11/16″	90	7889K74	7889K94	$112.62
1/8	1 5/8″	3 11/16″	125	7889K23	7889K63	114.87
1/8	1 5/8″	3 11/16″	200	7889K22	7889K62	117.17
1/4	1 5/8″	3 7/8″	25	7889K28	7889K68	116.26
1/4	1 5/8″	3 7/8″	90	7889K27	7889K67	118.58
1/4	1 5/8″	3 7/8″	125	7889K26	7889K66	120.97
1/4	1 5/8″	3 7/8″	200	7889K25	7889K65	123.37
1/4	1 5/8″	3 7/8″	250	7889K24	7889K64	125.84
Open Unless Energized (Normally Open)						
1/4	1 5/8″	3 7/8″	125	7889K78	7889K98	120.97
1/4	1 5/8″	3 7/8″	150	7889K73	7889K93	123.37
1/4	1 5/8″	3 7/8″	250	7889K72	7889K92	125.84

For LP Gas and Natural Gas—Fluoroelastomer Seal

- Use with LP gas, natural gas, ethylene glycol, air, water, inert gas, and hydraulic oil
- Pressure Drop Across Valve: None required
- Temp. Range: –10° to +185° F

Pipe Size	Lg.	Ht.	Max. psi	120 VAC	24 VDC	
Closed Unless Energized (Normally Closed)						
1/4	1 5/8″	3 7/8″	90	5184T121	5184T123	$118.38
1/4	1 5/8″	3 7/8″	125	5184T131	5184T133	120.75
1/4	1 5/8″	3 7/8″	250	5184T151	5184T153	125.63

Hazardous-Location Stainless Steel Solenoid Valves

Normally Closed

Normally Open

- Use with air, water, inert gas, and hydraulic oil
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 185° F

A fully encapsulated solenoid in a NEMA 7 enclosure provides protection in hazardous locations. Enclosure is UL listed for Class I, Groups A, B, C, D, and Class II, Groups E, F, G.

Connections are NPT female. Body is Type 430 stainless steel and seal is Buna-N. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.42 amps. Mount in any position. UL listed and CSA certified.

Normally open valves have a top outlet.

Pipe Size	Lg.	Ht.	120 VAC Max. psi		24 VDC Max. psi		
Closed Unless Energized (Normally Closed)							
1/4	1 5/8″	2 7/8″	200	7918K171	150	7918K173	$136.35
1/4	1 5/8″	2 7/8″	275	7918K161	275	7918K163	139.07
Open Unless Energized (Normally Open)							
1/4	1 5/8″	3 7/8″	250	7918K191	250	7918K193	162.11

High-Pressure Stainless Steel Solenoid Valves

These valves do their best work under high pressure. Connections are NPT female. Body is Type 430 stainless steel. Valves are closed unless energized (normally closed). They have wire leads, a 1/2″ conduit port, and draw a max. of 0.41 amps. Enclosure is NEMA 4X (indoor/outdoor; washdown/corrosion resistant). Valves are 1 5/8″ Lg. x 2 7/8″ Ht. Mount in horizontal pipe with the solenoid on top.

For Air and Inert Gas—PCTFE Seal

- Use with air, water, inert gas, and hydraulic oil
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 165° F

Valves are UL listed and CSA certified.

Pipe Size	120 VAC Max. psi			24 VDC Max. psi		
1/8	1,000	48325K411	$93.15	520	48325K413	$93.15
1/4	1,000	48325K441	95.01	520	48325K443	95.01

For Hydraulic Oil—PTFE Seal

- Use with hydraulic oil, air, water, and inert gas
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 185° F

Valves are UL listed and CSA certified.

Pipe Size	120 VAC Max. psi			24 VDC Max. psi		
1/8	1,500	48325K27	$145.75	1,000	48325K282	$145.75
1/4	1,500	48325K37	148.66	1,000	48325K382	148.66

For Water—Nylon Seal

- Use with water
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 185° F

Pipe Size	120 VAC Max. psi			24 VDC Max. psi		
1/8	3,000	48325K25	$151.70	2,500	48325K262	$151.70
1/4	3,000	48325K35	154.73	2,500	48325K362	154.73

Miniature Stainless Steel Solenoid Valves

- Use with air, inert gas, helium, and nitrogen
- Pressure Drop Across Valve: None required
- Temp. Range: 32° to 77° F

Great for low-flow applications and extremely tight spaces, these tiny valves have a 3/4″ dia. Connections are UNF female. Body is 300 series stainless steel and seal is fluoroelastomer. Valves are closed unless energized (normally closed). They have wire leads and draw a max. of 0.05 amps. Mount in any position.

Thread Size	Ht.	Max. psi	12 VDC	24 VDC	
10-32 UNF	1 1/2″	50	5001T323	5001T322	$125.41
10-32 UNF	1 1/2″	110	5001T313	5001T312	125.41

Aluminum Solenoid Valves for Natural Gas

- Use with natural gas, butane, and propane
- Pressure Drop Across Valve: None required
- Temp. Range: 14° to 176° F

Use one of these UL listed safety valves in your natural gas service. They're also suitable for vacuum. Connections are NPT female. Body is aluminum and seal is Buna-N. Valves are closed unless energized (normally closed) and operate on 120 VAC. They have wire leads, a 1/2″ conduit port, and draw a max. of 0.15 amps. Enclosure is NEMA 2 (indoor only; resists light splashing). Mount in any position. UL listed.

Pipe Size	Lg.	Ht.	Max. psi		
3/8	2 1/4″	3 5/8″	2.0	4689K43	$137.20
1/2	2 1/4″	3 5/8″	2.0	4689K44	144.61
3/4	3 3/8″	4 1/4″	1.5	4689K46	152.03
1	4 3/8″	4 1/2″	1.5	4689K47	191.58

For information about solenoid valves, see page 466. For information about pipe size, see pages 2-3.

Pinch-Style Aluminum Solenoid Valves for Tubing

- Use with water, inert gas, oil, ethylene glycol, and soap solutions
- Pressure Drop Across Valve: None required
- Temp. Range: 14° to 140° F

Ensure your process media is free from contamination. Also known as pinch valves, these pinch the outside of your tubing to stop flow, so valves never make contact with the contents.

Body is anodized aluminum and pinch mechanism is acetal copolymer. Valves are closed unless energized (normally closed). They have spade terminals for a DIN electrical connection and draw a max. of 1.08 amps. Enclosure is IP65 (resists splashing water). Mount in any position.

Note: Use with tubing with a max. durometer of 50A (tubing not included).

For Tube OD	ID	Lg.	Ht.	Max. psi	12 VDC	24 VDC	
1/8"	1/16"	5/8"	2 1/8"	15	5431T111	5431T112	$99.00
3/16"	1/8"	1"	3 3/8"	15	5431T121	5431T122	137.39
3/8"	1/4"	1 3/16"	4"	15	5431T131	5431T132	265.50

Polycarbonate Solenoid Valves with Push-to-Connect Tube Fittings

Just insert tubing into the push-to-connect fittings to make a tight seal. They're also suitable for vacuum service. Valves are closed unless energized (normally closed). They have a 1/4" quick-disconnect electrical connection and draw a max. of 0.78 amps. Mount in any position. CSA certified.

For Water and Inert Gas—Buna-N Seal

- Use with water and inert gas
- Pressure Drop Across Valve: None required
- Temp. Range: –10° to +100° F

For Tube OD	Lg.	Ht.	Max. psi	120 VAC	24 VDC	
1/4"	2 1/16"	3"	40	5489T451	5489T453	$58.17
1/4"	2 1/16"	3"	80	5489T431	5489T433	59.32
1/4"	2 1/16"	3"	120	5489T411	5489T413	60.52
3/8"	2 3/8"	3"	5	5489T491	5489T493	59.55

For Food Equipment—EPR Seal

- Use with water and inert gas
- Pressure Drop Across Valve: None required
- Temp. Range: –10° to +100° F

NSF 169 certified for food-equipment components.

For Tube OD	Lg.	Ht.	Max. psi	120 VAC	24 VDC	
1/4"	2 1/16"	3"	40	5489T651	5489T653	$58.17
1/4"	2 1/16"	3"	80	5489T631	5489T633	59.32
1/4"	2 1/16"	3"	120	5489T611	5489T613	60.52
3/8"	2 3/8"	3"	15	5489T671	5489T673	59.55

Chemical-Resistant Miniature Polypropylene Solenoid Valves

D

E

- Use with air, water, inert gas, oil, ethylene glycol, and soap solutions
- Pressure Drop Across Valve: None required
- Temp. Range: 33° to 120° F

Chemical resistant and compact, valves are also NSF 61 certified for use with drinking (potable) water and suitable for vacuum service. They're ideal for replacing valves in existing polypropylene systems.

Connections are NPT female. Body is glass-filled polypropylene and seal is Buna-N. Valves are closed unless energized (normally closed) and draw a max. of 0.29 amps. Enclosure is NEMA 2 (indoor only; resists light splashing). Dimensions are 1" Lg. × 2 3/8" Ht. Mount in horizontal pipe with the solenoid on top.

Style D have a 1/4" quick-disconnect connection.
Style E have wire leads and a 1/2" conduit port.

Pipe Size	VAC VALVES Max. psi	120 VAC	24 VAC	VDC VALVES Max. psi	12 VDC	
D.. 1/8	30	7877K311	7877K312	25	7877K313	$27.82
D.. 1/8	150	7877K23	7877K21	100	7877K25	28.38
E.. 1/8	30	7877K611	7877K612	25	7877K613	29.23
E.. 1/8	150	7877K53	7877K51	100	7877K55	29.81

Create-a-Manifold Solenoid Valves

Three Valves Shown Assembled as Manifold

- Use with air, water, inert gas, oil, and ethylene glycol
- Pressure Drop Across Valve: None required
- Temp. Range: 0° to 150° F

Save space and organize—combine multiple process lines into a single unit with one common inlet and multiple outlets. Valves attach to each other horizontally and have fluoroelastomer O-rings to seal the connection points. Suitable for vacuum service.

Pipe connections are NPT female. Seal is fluoroelastomer. Valves are closed unless energized (normally closed), operate on 120 VAC, and draw a max. of 0.07 amps. Enclosure is NEMA 1 (indoor only). Mount in any position.

Note: 6-32 threaded rods and locknuts are required (sold separately) to assemble valves into a manifold. Valves are sold individually.

Pipe Size	Lg.	Ht.	Max. psi		
Brass Body					
1/8	1 1/8"	2 1/2"	50	4919T21	$65.31
1/8	1 1/8"	2 1/2"	135	4919T22	66.62
1/8	1 1/8"	2 1/2"	260	4919T23	67.95
Type 303 Stainless Steel Body					
1/8	1 1/8"	2 1/2"	50	3830T41	74.12
1/8	1 1/8"	2 1/2"	135	3830T42	75.59
1/8	1 1/8"	2 1/2"	260	3830T43	77.11
6-32 Fully Threaded Rod—2 ft. Length				98804A007	1.45
6-32 Hex Locknuts (Pkg. of 100)				91831A007	4.88

NSF-Certified Acetal Solenoid Valves

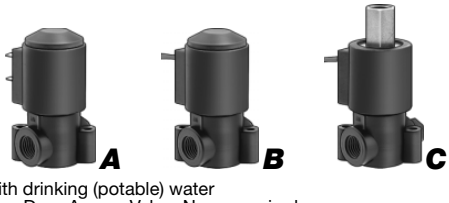

- Use with drinking (potable) water
- Pressure Drop Across Valve: None required
- Temp. Range: 35° to 120° F

A good option for beverage and food-processing applications, valves are NSF 61 certified for use with drinking (potable) water. They're also suitable for vacuum service. Connections are NPT female. Body is acetal and seal is Buna-N. Valves draw a max. of 1.10 amps. Enclosure is NEMA 1 (indoor only). Valves have two 11/64" dia. mounting holes (fasteners not included); mount in horizontal pipe with the solenoid on top.

Style A have a 1/4" quick-disconnect electrical connection, a side inlet, and a side outlet.
Style B have wire leads, a side inlet, and a side outlet.
Style C have wire leads, a side inlet, and a top outlet.

Pipe Size	Lg.	Ht.	Max. psi	120 VAC	12 VDC	
Closed Unless Energized (Normally Closed)						
A.. 1/4	1 1/2"	3"	250	7876K16	7876K18	$51.53
A.. 3/8	1 1/2"	3"	250	7876K26	7876K28	53.61
B.. 1/4	1 1/2"	3"	250	7876K56	7876K58	51.53
B.. 3/8	1 1/2"	3"	250	7876K66	7876K68	53.61
Open Unless Energized (Normally Open)						
C.. 1/4	1 1/2"	3 1/2"	250	7876K211	7876K213	68.57

Miniature Acetal Solenoid Valves

- Use with air, water, inert gas, oil, hydraulic oil, ethylene glycol, and soap solutions
- Pressure Drop Across Valve: None required
- Temp. Range: 0° to 150° F

An acetal body and fluoroelastomer seal provide chemical resistance at a lower cost than stainless steel valves. Plus, they're compact for use in tight spaces. Also suitable for vacuum service.

Connections are NPT female. Valves are closed unless energized (normally closed). They have wire leads and draw a max. of 0.23 amps. Enclosure is NEMA 1 (indoor only).

Dimensions are 1 9/16" Lg. × 2 1/4" Ht. Valves have two 1/4" dia. mounting holes (fasteners not included); mount in any position.

Pipe Size	120 VAC Max. psi			24 VDC Max. psi		
1/8	125	5760T111	$38.85	30	5760T113	$38.85
1/8	300	5760T121	38.85	100	5760T123	38.85

Air-Driven Piston & Diaphragm Valves

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

About Air-Driven Piston and Diaphragm Valves

Air-driven piston and diaphragm valves use compressed air to control flow in automated applications. They have higher flow capacities than solenoid valves and are smaller than air-driven ball valves.

Air-driven piston valves withstand the wear of applications with frequent on/off flow control.

Air-driven diaphragm valves handle dirty and thick fluids.

Air-Driven Bronze Piston Valves

Use compressed air to control flow. Also known as angle-seat valves, piston valves require less space than air-driven diaphragm valves.

All connections are NPT female. Body is bronze, piston is Type 431 stainless steel, and seal is PTFE.

For Air, Water, and Oil

- Use with air, water, inert gas, oil, hydraulic oil, and ethylene glycol
- Temp. Range: 14° to 355° F

Pipe Size	Max. psi	Lg.	Ht.	Air Supply Inlet Pipe Size	Air Supply Required psi		
Closed Unless Air Is On (Normally Closed)							
1/2	240	2 9/16″	6″	1/8	60-150	7942K41	$195.19
3/4	150	3″	7″	1/8	60-150	7942K42	203.19
3/4	240	3″	8″	1/8	60-150	7942K11	210.35
1	90	3 9/16″	7″	1/8	60-150	7942K12	224.01
1	150	3 9/16″	8″	1/8	60-150	7942K43	253.96
1 1/4	90	4 3/8″	9″	1/8	60-150	7942K13	363.45
1 1/4	200	4 3/4″	12″	1/4	73-145	7942K44	391.64
1 1/2	60	4 3/4″	10″	1/8	60-150	7942K14	413.20
1 1/2	240	4 3/4″	13″	1/4	60-150	7942K45	682.80
2	40	5 15/16″	10″	1/8	60-150	7942K15	477.87
2	150	6″	13″	1/4	60-150	7942K46	728.15
Open Unless Air Is On (Normally Open)							
1/2	240	2 9/16″	7″	1/8	65-150	7942K51	276.65
3/4	240	3″	8″	1/8	65-150	7942K52	277.67
1	240	3 9/16″	8″	1/8	65-150	7942K53	292.11

For Steam

- Use with steam
- Temp. Range: 15° to 366° F

Pipe Size	Max. psi	Lg.	Ht.	Air Supply Inlet Pipe Size	Air Supply Required psi		
Closed Unless Air Is On (Normally Closed)							
1/2	150	2 9/16″	7″	1/8	65-150	4923T61	$302.68
3/4	150	3″	8″	1/8	65-150	4923T62	306.73
1	150	3 9/16″	8″	1/8	65-150	4923T63	328.02
1 1/4	150	4 7/16″	9″	1/8	65-150	4923T64	486.75
1 1/2	150	4 3/4″	10″	1/8	65-150	4923T65	558.75
2	135	5 15/16″	10″	1/8	65-150	4923T96	633.05

Compact Air-Driven Stainless Steel Piston Valves

- Use with air, water, inert gas, steam, and oil
- Temp. Range: 15° to 366° F

Control low-flow applications in tight spaces with compressed air. Also known as angle-seat valves. A Type 316 stainless steel body and piston provide exceptional corrosion resistance for a long life in harsh environments.

All connections are NPT female. Seal is PTFE. Valves are closed unless air is on (normally closed). Require an air supply of 60-150 psi.

Pipe Size	Max. psi Liquid	Max. psi Steam	Lg.	Ht.	Air Inlet Pipe Size		
3/8	240	150	2 3/16″	4″	1/8	5032T11	$315.47
1/2	180	150	2 9/16″	4″	1/8	5032T12	315.47
3/4	90	90	3″	4″	1/8	5032T13	354.88

Air-Driven Stainless Steel Piston Valves

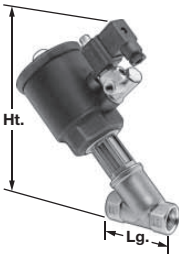

- Use with steam and oil
- Temp. Range: 14° to 356° F

Exceptional corrosion resistance is paired with ease of use—these come with a solenoid that controls air supplied to the valve. Also known as angle-seat valves. A visual indicator shows if the valve is open or closed. *Normally open valves* are also for use with water.

Pipe connections are NPT female. Body is Type 316 stainless steel, piston is polyamide, and seal is PTFE. Valves require an air supply of 25-150 psi; inlet is BSPP female. UL listed.

Solenoid operates on 120 VAC @ 60 Hz and has a DIN conduit connection. Enclosure is IP65 (resists splashing water).

Pipe Size	Max. psi Liquid	Max. psi Steam	Lg.	Ht.	Air Inlet Pipe Size		
Closed Unless Air Is On (Normally Closed)							
1/2	240	130	2 9/16″	5″	1/4	8161K22	$262.72
1/2	290	130	2 9/16″	7″	1/8	49475K31	360.38
3/4	240	130	3″	5″	1/4	8161K44	290.23
3/4	290	130	3″	7″	1/8	49475K32	381.01
1	290	130	3 9/16″	8″	1/8	49475K33	383.76
1 1/4	230	130	4 3/8″	8″	1/8	49475K34	504.81
1 1/2	230	130	4 3/4″	8″	1/8	49475K35	588.71
2	160	130	5 15/16″	8″	1/8	49475K36	715.04
Open Unless Air Is On (Normally Open)							
1/2	230	130	2 9/16″	7″	1/8	49475K61	405.77
3/4	230	130	3″	7″	1/8	49475K62	418.15
1	230	130	3 9/16″	8″	1/8	49475K63	470.42
1 1/4	230	130	4 3/8″	8″	1/8	49475K64	570.83
1 1/2	230	130	4 3/4″	8″	1/8	49475K65	653.36
2	175	130	5 15/16″	8″	1/8	49475K66	799.17

High-Temperature Air-Driven Stainless Steel Piston Valves

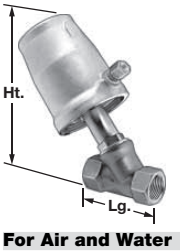

Equipped with a PEEK seal to handle applications with high temperatures and pressures. Also known as angle-seat valves.

All connections are NPT female. Body is Type 316 stainless steel and piston is brass. Valves are closed unless air is on (normally closed).

For Air and Water

- Use with air and water
- Temp. Range: −22° to +430° F

Pipe Size	Max. psi	Lg.	Ht.	Air Supply Inlet Pipe Size	Air Supply Required psi		
1/2	380	2 9/16″	6″	1/8	85-145	5200T21	$292.94
3/4	360	3″	8″	1/4	50-145	5200T22	385.98
1	250	3 9/16″	8″	1/4	65-145	5200T23	481.31
1 1/4	175	4 3/8″	8″	1/4	80-145	5200T24	622.48

For Steam

- Use with steam
- Temp. Range: −22° to +430° F

Pipe Size	Max. psi	Lg.	Ht.	Air Supply Inlet Pipe Size	Air Supply Required psi		
1/2	330	2 9/16″	6″	1/8	65-145	5200T41	$291.77
3/4	330	3″	6″	1/4	82-145	5200T42	333.67
1	330	3 9/16″	8″	1/4	64-145	5200T43	469.67
1 1/4	330	4 3/8″	8″	1/4	83-145	5200T44	607.29

For information about air-driven piston and diaphragm valves, see page 476; for pipe size, see pages 2-3.

Air-Driven Plastic Piston Valves

- Use with water
- Temp. Range: PVC Valves: 32° to 140° F
  Polypropylene Valves: 0° to 180° F

With no metal parts to corrode, these valves are commonly used in chemical processing and water treatment applications. All connections are NPT female. Piston is polypropylene and seal is fluoroelastomer. Valves are closed unless air is on (normally closed). Require an air supply of 40-80 psi. PVC valves are gray; polypropylene are white.

Valves have four holes on the bottom for mounting. Fasteners are not included. *Valves with 1/2 pipe size* use 1/4"-20 screws; *valves with 3/4* and *1 pipe size* use 3/8"-16 screws.

PVC Valve

Pipe Size	Max. psi	Lg.	Ht.	Air Inlet Pipe Size	PVC Valves		Polypropylene Valves	
1/2	150	3"	4"	1/8	8170K23	$186.38	8170K53	$217.02
3/4	150	4"	5"	1/8	8170K24	250.21	8170K54	262.98
1	150	4"	5"	1/2	8170K25	319.15	8170K55	357.45

Aluminum Diaphragm Valves for Dust Collectors

- Use with air and inert gas
- Temp. Range: –40° to +179° F

Designed for use in dust-collection systems, these valves release bursts of air to knock debris from air filter bags. The valve's inlet connects to your air supply, and the outlet connects to the blow tube in your system.

All connections are NPT female. Body is aluminum and diaphragm is Buna-N. Valves are closed unless air is on (normally closed). Require an air supply of 5-125 psi.

For electrical actuation, the ***solenoid valve*** (sold separately) connects to the exhaust port. **To Order:** Specify 120 VAC, 240 VAC, or 24 VDC.

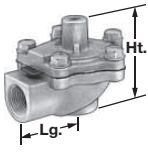

Pipe Size	Max. psi	Lg.	Ht.	Exhaust Port Pipe Size		
3/4	125	2 3/16"	3"	1/8	5496T11	$63.88
1	125	2 1/2"	3"	1/8	5496T12	79.32
1 1/2	125	3"	5"	1/8	5496T13	146.57
Solenoid Valve (1/8 NPT)					5222T11	60.17

Low-Profile Air-Driven Bronze Diaphragm Valves

- Use with air, water, inert gas, hydraulic oil, ethylene glycol, LP gas, and soap solutions
- Temp. Range: –20° to +180° F

At less than half the height of our other air-driven diaphragm valves, these fit well in small spaces. All connections are NPT female. Body is bronze, diaphragm is Buna-N and nylon, and seal is Type 303 stainless steel.

Repair kits include a diaphragm, spring, and seals.

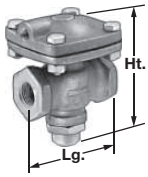

Pipe Size	Max. psi	Lg.	Ht.	Air Supply Inlet Pipe Size	Air Supply Required psi	Valves		Repair Kits	
Closed Unless Air Is On (Normally Closed)									
1/2	250	2 7/8"	4"	1/8	20	8168K11	$249.14	8168K82	$95.85
3/4	250	2 7/8"	4"	1/8	20	8168K12	254.11	8168K82	95.85
1	250	5 7/8"	7"	1/4	20	8168K13	699.00	8168K83	266.40
1 1/4	250	5 7/8"	7"	1/4	20	8168K14	699.00	8168K83	266.40
Open Unless Air Is On (Normally Open)									
1/2	250	2 7/8"	4"	1/8	20-45	8168K21	243.06	8168K81	95.85
3/4	250	2 7/8"	4"	1/8	20-45	8168K22	254.11	8168K81	95.85

Severe-Duty Air-Driven Bronze Diaphragm Valves

- Use with water and steam
- Temp. Range: –40° to +400° F

Applications that handle dirty liquids are no match for these valves. They're commonly used with water or steam in heating and cooling applications. Valves meet ANSI Class IV for tight shutoff (leakage rate of less than 0.01%).

All connections are NPT female. Body is bronze, diaphragm is molded EPDM, and seal is PTFE-coated stainless steel.

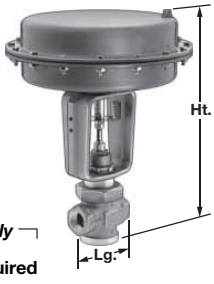

Pipe Size	Max. psi	Lg.	Ht.	Air Supply Inlet Pipe Size	Air Supply Required psi		
Closed Unless Air Is On (Normally Closed)							
1/2	250	3 5/8"	15"	1/4	8-20	5693T31	$813.81
3/4	250	3 5/8"	15"	1/4	8-20	5693T32	813.81
1	250	4 1/8"	15"	1/4	6-18	5693T33	1,066.26
1 1/4	240	5 3/8"	16"	1/4	8-20	5693T34	1,360.24
1 1/2	180	5 3/8"	16"	1/4	8-20	5693T35	1,360.24
2	110	7 1/2"	17"	1/4	8-20	5693T36	1,661.51
Open Unless Air Is On (Normally Open)							
3/4	250	3 5/8"	15"	1/4	3-23	5693T42	813.81
1	250	4 1/8"	15"	1/4	3-20	5693T43	1,066.26
1 1/2	180	5 3/8"	16"	1/4	3-23	5693T45	1,360.24
2	110	7 1/2"	17"	1/4	3-23	5693T46	1,661.51

Severe-Duty Air-Driven Stainless Steel Diaphragm Valves

- Use with air, water, inert gas, steam, hydraulic oil, ethylene glycol, dirty liquids, and soap solutions
- Temp. Range: –40° to +450° F

Tackle dirty and corrosive liquids in high pressure and high temperature applications. These air-driven diaphragm valves have a Type 316 stainless steel body for superior corrosion resistance. Valves meet ANSI Class IV for tight shutoff (leakage rate of less than 0.01%) and ANSI B16.34.

All connections are NPT female. Diaphragm is fabric-reinforced EPDM and seal is PTFE-coated stainless steel. Valves are closed unless air is on (normally closed).

Pipe Size	Max. psi	Lg.	Ht.	Air Supply Inlet Pipe Size	Air Supply Required psi		
1/2	250	3 1/8"	14"	1/4	8-20	4544K31	$1,350.11
1	190	4"	14"	1/4	8-20	4544K33	1,572.42
1	250	4"	15"	1/4	6-18	4544K35	1,766.82
1 1/2	180	5"	17"	1/4	8-20	4544K37	2,230.09
2	110	7 1/2"	19"	1/4	8-20	4544K39	2,312.68

Ultra-Chemical-Resistant Air-Driven PTFE Diaphragm Valves

- Use with air, water, deionized water, inert gas, hydraulic oil, ethylene glycol, and soap solutions
- Temp. Range:
  46545K43: –58° to +212° F
  45185K24: –15° to +300° F

Get superior chemical resistance in a lightweight compact valve. Also known as Weir-style valves, these are commonly used with deionized water and acids in high-purity applications. Also suitable for vacuum service.

All connections are NPT female. Body and diaphragm are PTFE. Valves are closed unless air is on (normally closed).

46545K43 has two 4-40 studs on the bottom for mounting.

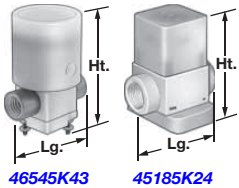

46545K43 *45185K24*

Pipe Size	Max. psi	Lg.	Ht.	Air Supply Inlet Pipe Size	Air Supply Required psi		
1/4	60	2 1/4"	3"	1/8	40-60	46545K43	$241.55
1/2	60	2 3/4"	4"	1/8	60-80	45185K24	272.84

Float Valves

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″
Pipe Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	3

Brass Float Valves

With Fixed Copper Float

With Bobbing Polypropylene Float

- Use with water
- Temp. Range: 50° to 175° F

Control flow in processing tanks and cooling towers. Valves are elbow style. Valve body and float rod are brass and seal is Buna-N. Mount in an open tank.

Valves with bobbing float are for use in tanks where the float may get jostled. Because the float moves independently of the rod, valve operation is not disrupted.

Connection Size	Flow Rate @ 50 psi	Max. psi	Float Dia.	Rod Lg.	With Fixed Copper Float		With Bobbing Copper Float		With Bobbing Polypropylene Float	
NPT Male Inlet and NPT Male Outlet										
3/8	10.4 gpm	125	5″	10″	4661K61	$63.75	—	—	—	—
1/2	16 gpm	125	5″	10″	4661K62	66.96	7884K32	$58.00	7884K35	$40.39
3/4	28.8 gpm	100	5″	10″	4661K63	69.64	7884K33	69.00	7884K36	43.21
1	55 gpm	100	6″	10″	4661K64	99.74	7884K34	85.71	7884K37	61.07
NPT Female Inlet and NPT Female Outlet										
1 1/4	98 gpm	125	5″	10″	4661K65	185.71	—	—	—	—
1 1/2	98 gpm	125	6″	10″	4661K66	190.00	—	—	—	—
NPT Female Inlet and Unthreaded Outlet										
1 1/4	140 gpm	115	8″	12″	4661K47	164.38	—	—	—	—
1 1/2	140 gpm	115	8″	12″	4661K48	176.10	—	—	—	—
2	140 gpm	115	8″	12″	4661K59	191.18	—	—	—	—

Compact Brass Float Valves

- Use with water
- Temp. Range: 50° to 175° F

Convenient for containers with limited space. Valves are elbow style. Valve body and float rod are brass and seal is Buna-N. Mount in an open tank. Floats are polyethylene, except 4607K44 has a polypropylene float.

Connection Size	Flow Rate @ 50 psi	Max. psi	Float Lg.	Float Wd.	Float Ht.	Rod Lg.		
NPT Male Inlet and Unthreaded Outlet								
3/8	1.5 gpm	125	3 3/4″	2 5/8″	1 7/16″	6″	4607K42	$12.97
3/8	1.5 gpm	125	5 1/4″	1 1/2″	1 1/2″	6″	4607K44	14.67
NPT Male Inlet and 3/8″ OD Compression Tube Fitting Outlet								
1/2	1.3 gpm	125	3 3/4″	2 5/8″	1 7/16″	6″	4607K43	19.54
Barbed Inlet and Unthreaded Outlet								
1/4″	1.5 gpm	125	3 3/4″	2 5/8″	1 7/16″	6″	4607K41	11.90

Extended-Life Bronze Float Valves

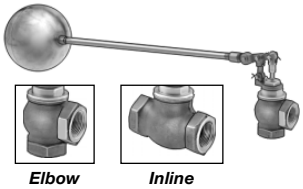

Elbow *Inline*

- Use with water and hydraulic oil
- Temp. Range:
  Tight Shutoff: –50° to +180° F
  High Temperature: –50° to +350° F

A rugged bronze body and heavy duty assembly provide strength and durability for demanding environments. The joint between the valve and rod rotates 360° for positioning, allowing you to alter the angle to fit your tank. Valve body is bronze, float is copper, and float rod is brass. Mount in an open tank. Connections are NPT female.

Tight-shutoff valves have a neoprene seal. ***High-temperature valves*** have a PTFE seal.

Pipe Size	Flow Rate @ 50 psi	Max. psi	Float Dia.	Rod Lg.	TIGHT SHUTOFF Elbow Style		TIGHT SHUTOFF Inline Style		HIGH TEMPERATURE Elbow Style		HIGH TEMPERATURE Inline Style	
1/2	30 gpm	100	5″	16″	47365K91	$186.57	4656K71	$193.29	47365K71	$223.43	4656K81	$229.31
3/4	50 gpm	100	5″	16″	47365K92	186.36	4656K72	193.29	47365K72	223.43	4656K82	229.31
1	75 gpm	100	6″	18″	47365K93	216.40	4656K73	233.28	47365K73	266.17	4656K83	279.76
1 1/4	100 gpm	100	6″	18″	47365K94	255.41	4656K74	272.64	47365K74	320.67	4656K84	350.05
1 1/2	125 gpm	100	6″	18″	47365K95	287.22	4656K75	305.02	47365K75	372.40	4656K85	378.90
2	175 gpm	75	8″	18″	47365K96	525.60	4656K76	591.29	47365K76	648.79	4656K86	787.22
3	400 gpm	75	9″	24″	47365K97	762.16	4656K77	1,009.60	47365K77	940.14	4656K87	1,190.51

NSF-Certified Stainless Steel Float Valves

- Use in food processing
- Temp. Range:
  High Temperature: 33° to 450° F
  Super-High Temperature: 33° to 550° F

Built to withstand corrosive solutions and high temperatures, these valves tolerate the harsh cleaning procedures required for food-processing applications. They are NSF 169 certified for food-equipment components. Valves are elbow style. Valve body, float, and float rod are Type 316 stainless steel. Mount in an open tank. Connections are NPT female.

High-temperature valves have a fluoroelastomer seal. ***Super-high-temperature valves*** have a PTFE seal.

Pipe Size Inlet	Pipe Size Outlet	Flow Rate @ 50 psi	Max. psi	Float Dia.	Rod Lg.	High Temperature		Super-High Temperature	
3/8	3/8	48 gpm	85	5″	10″	4634K29	$868.14	4634K59	$930.74
1/2	1/2	48 gpm	85	5″	10″	4634K31	869.47	4634K61	930.74
3/4	3/4	48 gpm	85	5″	10″	4634K33	869.47	4634K63	930.72
1	3/4	57.5 gpm	85	8″	10″	4634K41	1,018.05	4634K71	1,076.72

For information about pipe size, see pages 2-3.

Easy-Adjust Extended-Life Float Valves

- Use with water and hydraulic oil
- Temp. Range:
  Tight Shutoff: 33° to 125°F
  High Temperature: 33° to 406°F

Get the performance of a rugged bronze or cast iron valve body in a float valve that adjusts to fit. Position the joint between the lever and float rod at the right angle and length for your tank. Float is Type 304 stainless steel and float rod is brass. Mount in an open tank. Connections are NPT female.

Tight-shutoff valves have a neoprene seal.
High-temperature valves have a bronze seal.

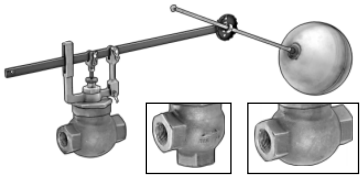

Elbow *Inline*

Pipe Size	Float Dia.	Rod Lg.	TIGHT SHUTOFF Flow Rate @ 50 psi	Max. psi	Elbow Style		Inline Style		HIGH TEMPERATURE Flow Rate @ 50 psi	Max. psi	Elbow Style		Inline Style	
With Bronze Valve Body														
1/2	7″	16″	46 gpm	130	4812K2	$571.88	4651K11	$571.88	—	—	—	—	—	—
3/4	7″	16″	46 gpm	130	4812K3	580.95	4651K12	580.95	40 gpm	150	4812K33	$515.87	4651K52	$515.87
1	7″	16″	94 gpm	100	4812K4	623.81	4651K43	623.81	64 gpm	150	4812K34	579.37	4651K53	579.37
1 1/4	7″	16″	134 gpm	80	4812K5	696.83	4651K44	696.83	108 gpm	120	4812K35	623.81	4651K54	623.81
1 1/2	7″	16″	215 gpm	65	4812K6	763.49	4651K45	763.49	154 gpm	100	4812K36	734.92	4651K55	734.92
With Cast Iron Valve Body														
2	7″	16″	430 gpm	50	4812K7	939.06	4651K46	939.06	377 gpm	75	4812K37	943.75	4651K58	943.75

Corrosion-Resistant Stainless Steel Float Valves

- Use with water, hydraulic oil, acetone, and alcohol
- Temp. Range: 32° to 350°F

A Type 316 stainless steel valve body provides exceptional corrosion resistance in harsh environments. Seal is PTFE. Float rod is Type 316 stainless steel and float is Type 304 stainless steel. Connections are NPT female.

Valves for open tanks are for use only in an open tank.
Valves for closed tanks are designed to withstand the pressure in a closed tank.

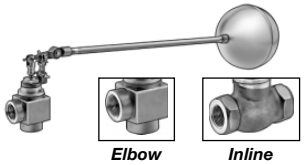

Elbow *Inline*

Pipe Size	Flow Rate @ 50 psi	Max. psi	Float Dia.	Rod Lg.	FOR OPEN TANKS Elbow Style		Inline Style		FOR CLOSED TANKS Elbow Style		Inline Style	
1/2	30 gpm	100	5″	16″	7903K51	$463.16	7903K71	$473.05	47395K51	$593.81	47395K71	$602.98
3/4	50 gpm	100	5″	16″	7903K52	464.03	7903K72	473.05	47395K52	576.53	47395K72	602.98
1	75 gpm	100	6″	18″	7903K53	593.29	7903K73	616.48	47395K53	767.62	47395K73	790.50
1 1/2	125 gpm	100	6″	18″	7903K54	884.28	7903K74	910.34	47395K54	1,037.33	47395K74	989.10

Compact Corrosion-Resistant Stainless Steel Float Valves

- Use with water
- Temp. Range: 33° to 175°F

Sized for small tanks and containers, these float valves provide exceptional corrosion resistance. They're also NSF 169 certified for food-equipment components. Valves are inline style. Valve body and float rod are Type 316 stainless steel and seal is fluoroelastomer. Mount in an open tank. Inlet connection is NPT male; outlet is unthreaded.

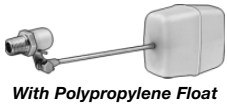

With Polypropylene Float

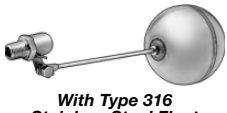

With Type 316 Stainless Steel Float

Pipe Size	Flow Rate @ 50 psi	Max. psi	Float Lg.	Float Wd.	Float Ht.	Rod Lg.		
With Polypropylene Float								
1/4	1.6 gpm	125	3 3/4″	2 11/16″	1 7/16″	6″	4605K81	$38.72
With Type 316 Stainless Steel Float								
1/4	1.6 gpm	125	3″	3″	—	6″	4605K89	70.93

Cast Iron Float Valves for Draining Condensate

- Use with inert gas
- Temp. Range: 32° to 450°F

Automatically remove condensate from compressed air or inert gas lines—valves have a float-operated drain control. Install as a condensate trap after the separator in your system. Valves have a top inlet, bottom outlet, and a drain with a plug.

Valve body and float are stainless steel. Housing is cast iron; meets ASTM Class 30. Mount with the inlet on top. Connections are NPT female.

Medium-capacity valves have a vent on top and a 1/4 NPT female drain. *High-capacity valve* has a 3/4 NPT female drain.

Pipe Size	Capacity @ 70°F	Max. psi	Overall Ht.	Overall Wd.		
Medium Capacity						
1/2	600 lbs./hr.	250	6 11/16″	5 5/8″	4915K2	$143.77
3/4	600 lbs./hr.	250	6 11/16″	5 5/8″	4915K5	143.77
High Capacity						
3/4	1,750 lbs./hr.	250	5 1/2″	6 3/4″	4915K3	214.84

Medium Capacity

PVC Float Valves

- Use with water
- Temp. Range: 35° to 110°F

Chemical resistant and lightweight, these are a great alternative to all-metal float valves. Valves are elbow style. Valve body is PVC, seal is Santoprene, and float rod is Type 318 stainless steel. Mount in an open tank. Connections are NPT male.

Style B have extended threads on the inlet for installation through a tank wall. Include a nut and washer for mounting.

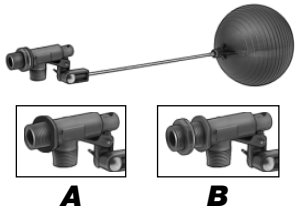

A ***B*** *With Nut and Washer*

	Pipe Size	Flow Rate @ 50 psi	Max. psi	Float Dia.	Rod Lg.		
A	3/4	15 gpm	100	6″	12″	5741K25	$35.32
A	3/4	32 gpm	100	6″	12″	5741K18	35.32
B	3/4	15 gpm	100	6″	12″	5741K28	36.66
B	3/4	32 gpm	100	6″	12″	5741K26	36.66

Float Valves

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

PVC and Polypropylene Float Valves

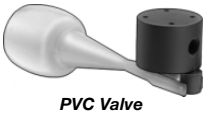

PVC Valve

- Use with water
- Temp. Range:
  PVC Valves: 35° to 110° F
  Polypropylene Valves: 35° to 175° F

All-plastic construction makes these float valves corrosion resistant and lightweight. Valves are inline style. Seal is fluoroelastomer; float and float rod are polypropylene. Mount in an open tank. Connections are NPT female. PVC valves are gray; polypropylene are white.

Pipe Size	Flow Rate @ 40 psi	Max. psi	Float Dia.	Rod Lg.	*PVC Valves*		*Polypropylene Valves*	
1/4	3 gpm	65	4 1/2″	8 3/8″	9799K21	$205.33	9799K41	$256.12
1/2	3 gpm	65	4 1/2″	8 3/8″	9799K23	251.29	9799K43	272.18
3/4	7 gpm	65	4 3/4″	10 1/2″	9799K24	314.29	9799K44	374.81
1	12.5 gpm	65	4 3/4″	10 1/2″	9799K25	382.86	9799K45	442.53

Polypropylene Float Valves with Compression Tube Fitting

- Use with water
- Temp. Range: 35° to 175° F

Ideal for small-scale applications using tubing. Valves are inline style. Body is polypropylene and seal is Buna-N. Float is polyethylene and float rod is brass. Mount in an open tank.

For Tube OD	Flow Rate @ 55 psi	Max. psi	Float Lg.	Float Wd.	Float Ht.	Rod Lg.	*For Copper Tubing*		*For Plastic Tubing*	
1/4″	1.59 gpm	125	4 1/2″	2 1/2″	1 1/2″	6″	4609K74	$5.14	4609K75	$4.94

Compact Nylon Float Valves

- Use with water
- Temp. Range: 34° to 160° F

Get high flow in a small package. These valves also minimize noisy water hammer. They're elbow style. Valve body is fiberglass-reinforced nylon and diaphragm is polyurethane. Float is polyethylene and float rod is brass. Mount in an open tank. Connections are NPT female. 4482K71 includes adapters to reduce to 3/8, 1/2, and 3/4 pipe size.

Pipe Size	Flow Rate @ 50 psi	Max. psi	Float Lg.	Float Wd.	Rod Lg.		
1	84 gpm	80	4″	3 1/4″	5 3/4″	4482K71	$68.02
1 1/2	182 gpm	80	4″	3 1/4″	5 3/4″	4482K75	119.37

Space-Saving Nylon Float Valves

- Use with water
- Temp. Range: See table

Control the water level in spaces where a rod and lever won't fit. When the water level reaches the bottom of the valve, the float inside rises to stop flow. Valve body is glass-filled nylon and seal is silicone. Float is ABS plastic. Mount in an open tank. Connections are NPT female. Valves are 3 3/4″ Dia. × 5″ Ht.

Pipe Size	Temp. Range, °F	Flow Rate @ 50 psi	Max. psi		
1/2	33° to 90°	22 gpm	65	46585K41	$26.45
1/2	33° to 150°	22 gpm	65	46585K42	28.82
1	33° to 90°	70 gpm	100	46585K43	26.45
1	33° to 150°	70 gpm	100	46585K44	28.82

Compact Float Valves with Plastic Reservoir

With Top Inlet

- Use with water
- Temp. Range: 33° to 175° F

Commonly used in ice-making machines, these valves are NSF 169 certified for food-equipment components. Reservoir is clear polycarbonate; cover is removable. Dimensions are 5″ Lg. × 2 1/2″ Wd. × 4 1/2″ Ht. Valves have an outlet and two drains on the bottom for soft tube with 1/2″ ID.

Float valve with top inlet has a brass valve body.
Float valve with side inlet has an acetal valve body.

For Tube OD	Flow Rate @ 55 psi	Max. psi	*With Top Inlet*		*With Side Inlet*	
1/4″	0.3 gpm	125	7973K48	$38.22	7973K55	$34.48

Float Valve Bodies

Create float valves that meet exact specifications. Floats and float rods are sold separately on pages 463 and 464. Use Brass Thread Adapters (page 3268) to connect valves with rods of differing thread types.

Brass Valves

- Use with water
- Temp. Range: Buna-N Seal: 35° to 180° F
  Fluoroelastomer Seal: 33° to 450° F

Pipe Size	Flow Rate @ 50 psi	Max. psi	For Rod Size	*Buna-N Seal*		*Fluoroelastomer Seal*	
NPT Male Inlet and NPT Male Outlet							
3/8	10.4 gpm	125	1/4″-20	4652K11	$23.84	4652K15	$29.04
1/2	16 gpm	125	1/4″-20	4652K12	25.56	4652K16	33.00
3/4	28.8 gpm	100	1/4″-20	4652K13	28.85	4652K17	35.96
1	55 gpm	100	1/4″-20	4652K14	40.80	4652K18	37.60
NPT Female Inlet and NPT Female Outlet							
1 1/4	98 gpm	125	1/4″-20	4664K51	126.02	4664K53	129.56
1 1/2	98 gpm	125	1/4″-20	4664K52	128.73	4664K54	135.60
NPT Female Inlet and Unthreaded Outlet							
1 1/4	140 gpm	115	1/8 NPT	4664K63	114.16	4664K66	129.67
1 1/2	140 gpm	115	1/8 NPT	4664K64	114.16	4664K67	135.70
2	140 gpm	125	1/8 NPT	4664K65	85.59	4664K68	101.59
NPSM Male Inlet and NPT Male Outlet							
3/8	10.4 gpm	125	1/4″-20	4652K21	28.20	4652K24	29.93
1/2	16 gpm	125	1/4″-20	4652K22	29.79	4652K25	33.23
3/4	28.8 gpm	100	1/4″-20	4652K23	31.46	4652K26	37.36

Type 316 Stainless Steel Valves

- Use with water and caustic fluids
- Temp. Range: 33° to 450° F

Pipe Size Inlet	*Pipe Size* Outlet	Flow Rate @ 50 psi	Max. psi	For Rod Size		*Fluoroelastomer Seal*	
NPT Female Inlet and NPT Female Outlet							
1/2	1/2	48 gpm	85	1/4″-20		4531K54	$794.95
3/4	3/4	48 gpm	85	1/4″-20		4531K56	807.05
1	3/4	57.5 gpm	85	3/8″-16		4531K59	877.85
1 1/4	1 1/4	140 gpm	100	3/8″-16		4531K61	1,353.77
1 1/2	1 1/2	140 gpm	100	3/8″-16		4531K63	1,425.84
2	2	140 gpm	100	3/8″-16		4531K65	1,774.36

Type 316 Stainless Steel Valves with High-Temp. Seal

- Use with water and caustic fluids
- Temp. Range: 33° to 550° F

Pipe Size Inlet	*Pipe Size* Outlet	Flow Rate @ 50 psi	Max. psi	For Rod Size	*PTFE Seal*	
NPT Female Inlet and NPT Female Outlet						
1/2	1/2	48 gpm	85	1/4″-20	4531K14	$855.64
3/4	3/4	48 gpm	85	1/4″-20	4531K16	867.74
1	3/4	57.5 gpm	85	3/8″-16	4531K19	937.51
1 1/4	1 1/4	140 gpm	100	3/8″-16	4531K21	1,411.49
1 1/2	1 1/2	140 gpm	100	3/8″-16	4531K23	1,482.61
2	2	140 gpm	100	3/8″-16	4531K25	1,826.78

Float Rods

Connect valve bodies (page 480) and floats (pages 481 and 482) to create float valves that meet exact specifications. Rods have male threads on both ends. Use Brass Thread Adapters (page 3268) to connect rods with valves and balls of differing thread types.

Type 316 stainless steel float rods provide greater corrosion resistance than brass float rods.

Connection Size	Rod Lg.	Brass Thread Lg.			Type 316 Stainless Steel Thread Lg.		
With Straight-Thread Connections							
1/4"-20	8"	1 1/2"	4551K31	$1.84	1/2"	4551K21	$7.85
1/4"-20	10"	1 1/2"	4551K32	2.36	1/2"	4551K22	8.45
1/4"-20	12"	1 1/2"	4551K33	2.83	1/2"	4551K23	8.85
5/16"-18	12"	1/2"	4551K12	7.78	—	—	—
3/8"-16	12"	1/2"	4551K13	10.93	1/2"	4551K25	16.29
With Pipe-Thread Connections							
1/8 NPT	12"	1/2"	4551K14	14.49	—	—	—

Stainless Steel, Copper, and Steel Floats

Use with valve bodies and rods (sold separately) or replace an existing float. All connections are female.

Stainless steel floats provide excellent corrosion resistance for use with water and oil. Use in an open or closed tank. Temp. range is –30° to +225° F.

Copper floats are for use with water in an open tank. Pressure is not rated. Temp. range is +50° to +180° F.

Steel floats are for use with oil. Use in an open or closed tank. Do not use with water. Temp. range is +32° to +212° F.

Round *Oblong*

Stainless Steel Floats

Dia.	Conn. Size	Max. psi	Ga.	Type 304		Type 316	
Round with Straight-Thread Connection							
2"	8-32	750	25	2817K11	$12.82	2762K31	$17.04
2"	1/4"-20	750	25	2817K12	12.31	2762K32	17.56
2 1/2"	1/4"-20	375	24	2817K13	14.24	2762K33	22.60
2 3/4"	1/4"-20	250	26	2817K14	14.94	—	—
3"	1/4"-20	150	26	2817K15	20.85	2762K35	22.77
3"	1/4"-20	750	21	2817K16	20.46	2762K36	21.19
3 1/4"	1/4"-20	250	24	2817K17	27.28	2762K37	39.52
5"	1/4"-20	337	20	2817K24	43.25	2762K44	51.61
6"	1/4"-20	450	18	2817K27	71.86	2762K47	105.37
6"	3/8"-16	300	20	2817K51	70.80	2762K71	104.34
Round with Pipe-Thread Connection							
3 1/2"	1/8 NPT	250	24	2817K18	25.82	2762K38	30.43
3 1/2"	1/8 NPT	750	21	2817K19	25.04	2762K39	28.72
4"	1/8 NPT	112	24	2817K21	36.00	2762K41	66.34
4"	1/8 NPT	750	20	2817K22	37.65	2762K42	45.36
4 1/2"	1/8 NPT	562	20	2817K83	44.32	2762K83	60.88
5"	1/4 NPT	675	19	2817K25	46.32	2762K85	72.87
6"	1/4 NPT	300	20	2817K28	66.40	2762K48	104.34
6"	1/4 NPT	450	18	2817K29	71.86	2762K49	105.37

Dia.	Lg.	Conn. Size	Max. psi	Ga.	Type 304		Type 316	
Round with Pipe-Thread Connection (Cont.)								
7"	—	3/8 NPT	250	20	2817K32	$100.89	2762K52	$132.67
7"	—	3/8 NPT	350	18	2817K33	84.03	2762K53	140.41
8"	—	3/8 NPT	175	20	2817K34	141.27	2762K54	147.06
8"	—	3/8 NPT	275	18	2817K35	147.33	2762K55	156.64
8"	—	3/8 NPT	425	14	—	—	2762K56	393.18
9"	—	3/8 NPT	250	18	—	—	2762K57	345.31
10"	—	3/8 NPT	200	18	2817K37	235.28	—	—
10"	—	3/8 NPT	300	14	2817K38	416.92	2762K58	657.78
12"	—	3/8 NPT	250	14	2817K39	424.85	2762K59	727.33
14"	—	1/2 NPT	160	14	2817K41	652.16	—	—
Oblong with Straight-Thread Connection								
2 1/2"	4"	1/4"-20	75	26	2817K42	26.80	2762K62	25.24
3"	5"	1/4"-20	137	20	2817K43	59.54	2762K63	58.82
3"	6"	1/4"-20	137	20	2817K44	64.89	2762K64	63.71
3"	7"	1/4"-20	150	20	2817K45	43.11	2762K65	60.93
4"	7"	1/4"-20	150	20	2817K46	58.43	2762K66	81.76
Oblong with Pipe-Thread Connection								
4"	6"	1/4 NPT	125	20	2817K47	78.43	2762K67	97.11
6"	8"	1/4 NPT	125	20	2817K48	142.75	2762K68	158.07

Copper Floats

Dia.	Connection Size	Ga.		
Round with Straight-Thread Connection				
2"	8-32	24	2892K11	$11.87
2"	1/4"-20	24	2892K12	16.05
2 1/2"	1/4"-20	24	2892K14	14.58
3"	1/4"-20	24	2892K15	15.95
4"	1/4"-20	22	2892K17	24.66
5"	1/4"-20	22	2892K21	28.09
6"	1/4"-20	23	2892K24	31.53
6"	5/16"-18	23	2892K25	28.47
6"	3/8"-16	23	2892K26	43.81
8"	3/8"-16	20	2892K32	80.00
10"	3/8"-16	20	2892K35	106.60
12"	3/8"-16	18	2892K37	143.49

Dia.	Lg.	Connection Size	Ga.		
Round with Pipe-Thread Connection					
4"	—	1/8 NPT	23	2892K18	$21.95
5"	—	1/4 NPT	23	2892K22	26.57
6"	—	1/4 NPT	23	2892K27	32.76
7"	—	3/8 NPT	21	2892K31	39.27
8"	—	3/8 NPT	21	2892K33	45.03
9"	—	3/8 NPT	20	2892K34	82.69
10"	—	3/8 NPT	19	2892K36	97.06
12"	—	1/2 NPT	18	2892K38	136.72
Oblong with Straight-Thread Connection					
3"	7"	1/4"-20	24	2892K41	29.38
4"	5"	1/4"-20	24	2892K42	41.36
4"	7"	1/4"-20	24	2892K43	29.40

Steel Floats

Dia.	Connection Size	Max. psi	Ga.		
Round with Straight-Thread Connection					
2"	10-32	210	24	46595K11	$9.69
3"	1/4"-20	175	24	46595K14	13.76
4"	1/4"-20	175	22	46595K16	18.27
5"	1/4"-20	280	20	46595K17	22.04
5"	1/4"-20	490	18	46595K18	23.90
Round with Pipe-Thread Connection					
6"	1/4 NPT	105	20	46595K21	29.16
6"	1/4 NPT	490	16	46595K23	36.34
7"	3/8 NPT	105	20	46595K25	41.79

Dia.	Lg.	Connection Size	Max. psi	Ga.		
Round with Pipe-Thread Connection (Cont.)						
7"	—	3/8 NPT	280	18	46595K26	$43.57
8"	—	3/8 NPT	210	18	46595K28	49.12
8"	—	3/8 NPT	490	14	46595K31	54.99
10"	—	3/8 NPT	175	16	46595K33	74.74
10"	—	3/8 NPT	280	14	46595K34	82.11
12"	—	1/2 NPT	245	14	46595K35	131.87
Oblong with Straight-Thread Connection						
3"	5 1/2"	1/4"-20	350	18	46595K41	28.86
4"	6"	1/4"-20	280	20	46595K42	27.89

Stainless Steel Floats without Connections

All are free-floating and have excellent corrosion resistance. Use in an open or closed tank. Temp. range is –30° to +225° F.

Dia.	Max. psi	Ga.	Type 304		Type 316	
2"	250	26	2833K42	$17.52	2833K92	$22.45
3"	250	24	2833K16	24.27	2833K66	27.82
4"	375	20	2833K21	50.45	2833K71	58.52
5"	500	18	2833K24	68.28	2833K74	84.62

Dia.	Max. psi	Ga.	Type 304		Type 316	
6"	450	18	2833K26	$74.55	2833K76	$109.33
8"	275	18	2833K32	147.33	2833K82	169.86
10"	200	18	2833K36	332.82	—	—
12"	150	14	2833K97	493.04	2833K98	595.09

Floats & Fire-Safety Valves

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

Through-Hole Copper and Stainless Steel Floats

Copper

Stainless Steel

An unthreaded connection allows these floats to slide up and down a vertical float rod. You can also set them in a fixed position using clamps. (Float rod and clamps are not included.) Use floats in an open tank.

Copper floats are for use with water. Temp. range is +50° to +180° F. Pressure is not rated.

Stainless steel floats provide excellent corrosion resistance for use with water and hydraulic oil, except for 2″ dia. floats, which are not for use with hydraulic oil. Temp. range is –30° to +225° F.

Copper Floats

Dia.	Lg.	Through Hole Dia.	Ga.		
3″	7″	1/4″	24	2892K46	$39.02
3″	7″	3/8″	24	2892K47	39.67
3″	7″	1/2″	24	2892K48	40.43
4″	7″	1/4″	24	2892K49	40.01
4″	7″	3/8″	24	2892K51	40.81
4″	7″	1/2″	24	2892K52	42.17
6″	8″	3/8″	22	2892K53	86.36
6″	10″	3/8″	22	2892K54	108.05

Stainless Steel Floats

Dia.	Through Hole Dia.	Max. psi	Ga.	Type 304		Type 316	
2″	1/4″	300	24	2832K11	$15.17	2885K11	$17.70
3″	1/4″	250	24	2832K13	21.90	2885K13	24.33
4″	1/4″	500	20	2832K14	42.47	2885K14	45.70
4″	3/8″	500	20	2832K15	42.47	2885K15	45.70
5″	3/8″	400	20	2832K21	57.16	2885K21	60.63
6″	1/4″	150	20	2832K23	68.18	2885K23	70.54
6″	3/8″	150	20	2832K24	68.18	2885K24	70.54
6″	1/2″	150	20	2832K25	68.18	2885K25	70.54
7″	3/8″	150	20	2832K27	84.15	2885K27	90.80
8″	3/8″	150	20	2832K29	87.92	2885K29	106.82
8″	1/2″	150	20	2832K31	92.53	2885K31	116.88

Polypropylene and Polyethylene Floats

Round

Oblong

Cylindrical

Rectangular

Get good corrosion resistance in a lightweight float. Use in an open tank. All connections are female; floats with a threaded connection come threaded or are self-tapping when used with a threaded rod. *Round floats* are UV resistant. Color is black. *Oblong*, *cylindrical*, and *rectangular floats* are off-white.

Polypropylene floats are for use with water. Temp. range is 33° to 175° F.

Polyethylene floats are for use with salts and caustic fluids. Temp. range is 33° to 140° F.

Polypropylene Floats

Dia.	Lg.	Connection Size		
Round with Straight-Thread Connection				
5″	—	1/4″-20	9775K14	$9.34
6″	—	1/4″-20	9775K16	9.50
6″	—	5/16″-18	9775K51	9.50
8″	—	1/4″-20	9775K52	21.82
8″	—	5/16″-18	9775K54	21.82
8″	—	3/8″-16	9775K53	21.82
Round with Pipe-Thread Connection				
8″	—	3/8 NPT	9775K18	18.79
Oblong with Straight-Thread Connection				
4″	5″	1/4″-20	9775K12	5.45
Cylindrical with Straight-Thread Connection				
1 1/2″	2 1/2″	8-32	9775K34	3.10
1 1/2″	3″	6-32/8-32	9775K63	3.00

Dia.	Lg.	Wd.	Ht.	Connection Size		
Cylindrical with Straight-Thread Connection (Cont.)						
1 1/2″	3 3/4″	—	—	6-32/8-32	9775K29	$3.62
1 5/8″	5 1/4″	—	—	8-32	9775K25	3.80
2″	3/4″	—	—	6-32	9775K35	2.88
2″	3 3/4″	—	—	8-32	9775K38	4.17
2 3/4″	1 3/4″	—	—	8-32	9775K27	3.00
2 3/4″	1 3/4″	—	—	1/4″-20	9775K62	3.05
4″	6″	—	—	1/4″-20	9775K21	6.05
Rectangular with Straight-Thread Connection						
—	2 1/4″	3 3/8″	1″	8-32	9775K64	3.33
—	3 3/4″	2 5/8″	2 1/4″	8-32	9775K23	2.85
—	3 3/4″	2 5/8″	2 1/4″	1/4″-20	9775K61	2.60
Rectangular with Unthreaded Connection						
—	2 3/4″	1 1/4″	1 1/4″	—	9775K41	9.25

Polyethylene Floats

Dia.	Connection Size		
Round with Straight-Thread Connection			
6″	1/4″-20	8154K11	$14.74
6″	5/16″-18	8154K21	17.54
8″	1/4″-20	8154K51	18.46

Dia.	Lg.	Wd.	Ht.	Connection Size		
Round with Straight-Thread Connection (Cont.)						
8″	—	—	—	5/16″-18	8154K41	$18.10
8″	—	—	—	3/8″-16	8154K31	16.98
Rectangular with Straight-Thread Connection						
—	3 3/4″	2 1/2″	1 7/16″	8-32	8154K61	3.35

Self-Closing Brass Fire-Safety Valves

Minimize fire hazard in diesel and kerosene lines. When the ambient temperature reaches 165° F, these valves close automatically and the wheel handle fuses in place permanently. To reuse the valve, replace the wheel handle (sold separately). Designed for oil-burner installation, they can also be operated manually.

Body is brass. Seal is heat-resistant rubber. Temp. range is 20° to 165° F. Connections are NPT female.

Pipe Size	Max. psi	Lg.	Valves		Replacement Wheel Handle	
UL Listed						
1/4	10	1 3/4″	4716K71	$16.55	4716K23	$2.48
3/8	10	1 3/4″	4716K72	15.60	4716K23	2.48
1/2	10	2″	4716K53	37.86	4716K23	2.48
Non-UL Listed						
3/4	10	2 1/2″	4716K54	83.33	4716K23	2.48
1	10	2 5/8″	4716K55	243.75	4716K22	27.25

Low-Pressure Aluminum Flame-Check Valves

Prevent flashback in flammable gas pipe lines. The flame-arresting element inside these valves absorbs the heat from a fire, which extinguishes the flame. Valves are commonly used in pilot lines connected to waste gas burners. They can be disassembled for inspection and cleaning.

Body is aluminum and the flame-arresting element is Type 316 stainless steel. Max. temp. is 176° F. Connections are NPT female.

Pipe Size	Max. psi	Lg.		
1/4	25	3″	4717K31	$311.40
1/2	25	3 3/4″	4717K32	335.09
3/4	25	3 3/4″	4717K33	335.83
1	25	3 3/4″	4717K34	399.17
1 1/2	25	3 3/4″	4717K35	476.67
2	25	4 3/4″	4717K36	558.33

For information about pipe size, see pages 2-3.

About Pop-Safety and Relief Valves

Pop-safety and relief valves protect equipment, tanks, and pipe by opening at a set point to relieve excess pressure. Install as close as possible to the vessel or system they protect.

Pop-safety valves provide immediate pressure relief. They "pop" open at the set pressure and remain fully open until the pressure is restored to the set pressure. *ASME-code pop-safety valves* are factory set, tested, and sealed; they are National Board certified.

Relief valves provide gradual pressure relief. They begin opening at the set pressure and are fully open at about 10% over the set pressure. Valves begin closing as the pressure drops and are fully closed when the pressure is restored below the set pressure.

ASME-Code Brass Pop-Safety Valves

- Meet ASME Code Section VIII for Air and Inert Gas
- Temp. Range: Styles A&C: –40° to +400° F
  Style B: –15° to +250° F

A&B

Protect against damage in air lines and air-powered equipment, such as air receivers and compressor tanks. Valves meet ASME standards for compressed air.

Body is brass. Valves exhaust to the atmosphere. Pipe connection is NPT male. *High-flow valves* have twice the flow capacity of medium-flow valves.

(A) Valves with Test Ring—Seal is brass. Vent is on the side.

(B) Extended-Life Valves with Test Ring—Seal is silicone for a longer service life in applications that operate close to the set pressure. Vent is on the side.

To Order: For *Styles A and B*, please specify set pressure: from 25 to 150 psi in 5 psi increments or from 175 to 300 psi in 25 psi increments, unless noted.

(C) Valves with Test Lever—Seal is brass. Vent is on the top. **To Order:** For *Style C*, please specify set pressure: 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 110, 125, 130, 140, 150, 175, or 200 psi.

C

For flow capacities, go to mcmaster.com and search for **48435KAC**.

Pipe Size	Ht.		
(A) Valves with Test Ring			
Medium Flow			
1/8	2 1/8"	**9889K15**▲	$9.19
1/4	3 1/8"	**9889K19**	18.98
3/8	3 1/8"	**9889K29**	20.98
1/2	3 3/4"	**9889K39**	36.34
High Flow			
1/4	3 3/16"	**9889K25**	29.08
3/8	3 9/16"	**9889K35**	45.06
1/2	3 13/16"	**9889K45**	47.84
3/4	5 7/16"	**9889K49**	82.25
1	5 3/4"	**9889K59**	89.00
(B) Extended-Life Valves with Test Ring			
Medium Flow			
1/8	2"	**48435K71**	5.26
1/4	2"	**48435K72**	5.26
3/8	2"	**48435K81**	6.12
1/2	3 3/8"	**48435K82**▲	16.13
3/4	3 5/8"	**48435K91**	53.47
1	4 7/16"	**48435K92**	56.59
1 1/4	4 7/16"	**48435K93**	83.82
High Flow			
1/2	3 5/8"	**48435K83**	51.35
(C) Valves with Test Lever			
Medium Flow			
1/4	2 7/8"	**4701K11**	55.35
3/8	2 7/8"	**4701K21**	55.35
1/2	2 7/8"	**4701K31**	55.35

▲ Available from 50 to 150 psi in 5 psi increments or from 175 to 250 psi in 25 psi increments.

High-Pressure ASME-Code Brass Pop-Safety Valves

- Meet ASME Code Section VIII for Air and Inert Gas
- Temp. Range: –20° to +300° F

Designed for high set pressures, these valves are often used with multistage air compressors and aftercoolers and in instrument and control lines. Valves have a brass body and seal and a test ring. They exhaust to the atmosphere; vent is on the side. Pipe connection is NPT male.

To Order: Please specify set pressure: 60; 100; 250; 300; 400; 500; 750; 1,000; 1,500; 2,000; 2,500; 3,000; 3,500; or 4,000 psi.

For flow capacities, go to mcmaster.com and search for **5825TAC**.

Pipe Size	Ht.		
1/4	3 7/8"	**5825T21**	$101.66

ASME-Code Nickel-Plated Brass Pop-Safety Valves

- Meet ASME Code Section VIII for Air
- Temp. Range: –15° to +250° F

A nickel-plated brass body provides greater corrosion resistance than plain brass. Often used with air compressors. Valves have a silicone seal and a test ring. They exhaust to the atmosphere; vent is on the side. Pipe connection is NPT male.

To Order: Please specify set pressure: from 50 to 250 psi in 25 psi increments.

For flow capacities, go to mcmaster.com and search for **5784TAC**.

Pipe Size	Ht.		
1/8	2"	**5784T11**	$15.03
1/4	2"	**5784T12**	15.81
3/8	2"	**5784T13**	17.11

Cleaned and Bagged Cryogenic ASME-Code Brass Pop-Safety Valves

- Meet ASME Code Section VIII for Cryogenic Gas
- Temp. Range: –320° to +150° F

Meet ASME standards for low-temperature liquefied gas service of carbon dioxide, nitrogen, oxygen, argon, hydrogen, helium, and methane. Valves come cleaned, degreased, and bagged for oxygen service. Body and seal are brass. Pipe connections are NPT; inlet is male (bottom port) and outlet is female (side port).

To Order: Please specify set pressure: from 20 to 300 psi in 10 psi increments.

For flow capacities, go to mcmaster.com and search for **8089KAC**.

Pipe Size Inlet	Pipe Size Outlet	Ht.		
1/2	3/4	6 13/16"	**8089K12**	$187.41
3/4	1	6 13/16"	**8089K14**	210.44

Brass Pop-Safety Valves

- Use with air and inert gas
- Temp. Range: –30° to +400° F

D

Unlike ASME-code valves, you can take these apart for cleaning and servicing. Body and seal are brass. Valves exhaust to the atmosphere. Pipe connection is NPT male.

Styles D & E—Vent is on the side. **To Order:** For *Style D*, please specify set pressure: from 5 to 100 psi in 5 psi increments. For *Style E*, please specify set pressure: 10, 15, or 20 psi.

Style F—Vent is on the top. **To Order:** For *Style F*, please specify set pressure: 5 or 10 psi.

E

For flow capacities, go to mcmaster.com and search for **4772KAC**.

F

Pipe Size	Ht.		
(D) Valves without Test Ring			
1/8	1 1/2"	**4772K2**	$7.80
1/4	2 1/2"	**4772K4**	10.66
3/8	2 1/2"	**4772K6**	11.28
1/2	3 1/8"	**4772K8**	29.96
(E) Valves with Test Ring			
1/4	3 1/8"	**9024K11**	18.98
3/8	3 1/8"	**9024K12**	20.98
1/2	3 3/4"	**9024K13**	36.34
3/4	5 7/16"	**9024K14**	82.25
1	5 3/4"	**9024K15**	89.00
(F) Valves with Test Lever			
1/4	2 7/8"	**4701K56**	55.35
3/8	2 7/8"	**4701K57**	55.35
1/2	2 7/8"	**4701K58**	55.35

Pop-Safety Valves

For information about pop-safety valves, see page 483. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″
Pipe Size	1/4	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3

Remote-Discharge ASME-Code Bronze Pop-Safety Valves

Protect your work environment from venting pressure relief. Valves have a threaded outlet to direct discharge to a remote location. The two-port design also provides higher flow capacities than pop-safety valves that exhaust to the atmosphere.

All have a bronze body. Pipe connections are NPT; inlet is male (bottom port) and outlet is female (side port).

(A-E) For Air and Inert Gas

A

- Meet ASME Code Section VIII for Air and Inert Gas
- Temp. Range: −15° to +406° F

Styles A-D— Seal is brass. *Style C* have a swivel test lever that moves 360° around the valve body to fit in confined areas.

Style E— Seal is fluoroelastomer for a longer service life in applications that operate close to the set pressure.

To Order: For *Styles A, B, and C*, please specify set pressure: from 15 to 150 psi in 5 psi increments or from 175 to 250 psi in 25 psi increments. For *Styles D and E*, please specify set pressure: from 15 to 150 psi in 5 psi increments or from 175 to 300 psi in 25 psi increments.

For flow capacities, go to mcmaster.com and search for **4712KAC**.

B

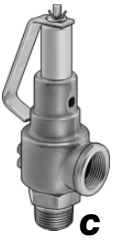

C

D&E

Pipe Size Inlet	Outlet	Ht.		
(A) Valves without Test Lever				
1/2	3/4	5 7/8″	**4673K71**	$115.68
3/4	1	5″	**4673K72**	125.16
1	1 1/4	7 1/2″	**4673K73**	144.13
1 1/4	1 1/2	8 1/2″	**4673K74**	191.53
1 1/2	2	9 3/4″	**4673K75**	221.89
2	2 1/2	11 1/8″	**4673K76**	331.85
(B) Valves with Test Lever				
1/2	3/4	6 1/2″	**4673K31**	117.58
3/4	1	6 7/8″	**4673K32**	127.05
1	1 1/4	7 1/2″	**4673K33**	146.03
1 1/4	1 1/2	8 1/2″	**4673K34**	195.32
1 1/2	2	9 3/4″	**4673K35**	227.57
2	2 1/2	11 1/8″	**4673K36**	337.58
(C) Valves with Swivel Test Lever				
1/2	3/4	7 5/16″	**4755K31**	143.30
3/4	3/4	7 5/16″	**4755K32**	153.00
1	1	7 5/8″	**4755K33**	196.39
1 1/4	1 1/4	8 5/8″	**4755K34**	249.24
2	2	10 7/8″	**4755K36**	370.61
(D) Heavy Duty Valves with Test Lever				
1/2	3/4	6 1/2″	**4700K31**	161.15
3/4	1	7 1/2″	**4700K72**	180.74
1	1 1/4	8 1/2″	**4700K83**	207.10
1 1/4	1 1/2	9 5/8″	**4700K11**	261.45
1 1/2	2	10 5/8″	**4700K15**	313.60
2	2 1/2	13 5/8″	**4700K19**	433.50
(E) Extended-Life Valves with Test Lever				
1/2	3/4	6 1/2″	**6017T11**	139.24
3/4	1	7 1/2″	**6017T12**	155.89
1	1 1/4	8 1/2″	**6017T13**	174.76
1 1/4	1 1/2	9 5/8″	**6017T14**	227.24
1 1/2	2	10 5/8″	**6017T15**	272.45
2	2 1/2	13 5/8″	**6017T16**	377.22

(F) For High-Pressure Air and Inert Gas

F

- Meet ASME Code Section VIII for Air and Inert Gas
- Temp. Range: −60° to +422° F

Valves have a Type 316 stainless steel seal and a test lever.

To Order: Please specify set pressure: from 300 to 900 psi in 25 psi increments.

For flow capacities, go to mcmaster.com and search for **6338TAC**.

Pipe Size Inlet	Outlet	Ht.		
1/2	3/4	7 1/2″	**6338T11**	$329.53
3/4	3/4	7 1/2″	**6338T12**	334.62
1	1 1/4	9″	**6338T13**	434.94

(G) For Liquids

G

- Meet ASME Code Section VIII for Liquids
- Temp. Range: −60° to +406° F

Valves have a Type 316 stainless steel seal.

To Order: Please specify set pressure: from 20 to 100 psi in 10 psi increments or from 125 to 300 psi in 25 psi increments.

For flow capacities, go to mcmaster.com and search for **6270TAC**.

Pipe Size Inlet	Outlet	Ht.		
1/2	3/4	7 1/2″	**6270T11**	$204.42
3/4	3/4	7 1/2″	**6270T12**	214.70
1	1 1/4	9″	**6270T13**	245.53
1 1/2	2	13 1/4″	**6270T16**	361.18

(H) For Low-Pressure Steam

H

- Meet ASME Code Section IV for Low-Pressure Steam
- Max. Temp.: +250° F

Valves have an EPDM seal with a PTFE coating and a test lever. Set pressure is 15 psi.

For flow capacities, go to mcmaster.com and search for **9153KAC**.

Pipe Size Inlet	Outlet	Ht.		
3/4	3/4	3 11/16″	**4699K45**	$47.14
1	1	3 7/8″	**4699K46**	49.74
1 1/4	1 1/2	4 1/2″	**4699K55**	85.03
1 1/2	2	5 1/4″	**4699K65**	122.38
2	2	6″	**4699K7**	186.40
2 1/2	2 1/2	8 1/2″	**4699K8**	263.31
3	3	9 1/2″	**4699K9**	339.06

(J-L) For Steam

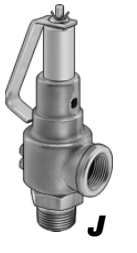

J

- Meet ASME Code Section I for Steam
- Temp. Range: −60° to +400° F

Styles J & K— Seal is brass. *Style J* have a swivel test lever that moves 360° around the valve body to fit in confined areas.

Style L— Seal is EPR (ethylene propylene) for a longer service life in applications that operate close to the set pressure.

To Order: Please specify set pressure: from 15 to 95 psi in 5 psi increments or from 100 to 250 psi in 25 psi increments.

For flow capacities, go to mcmaster.com and search for **4700KAC**.

K&L

Pipe Size Inlet	Outlet	Ht.		
(J) Valves with Swivel Test Lever				
1/2	3/4	7 5/16″	**4755K11**	$143.30
3/4	3/4	7 5/16″	**4755K12**	153.00
1	1	7 5/8″	**4755K13**	196.39
1 1/2	1 1/2	9 1/4″	**4755K15**	290.98
(K) Heavy Duty Valves with Test Lever				
1/2	3/4	6 1/2″	**4700K23**	161.15
3/4	1	7 1/2″	**4700K24**	178.04
1	1 1/4	8 1/2″	**4700K25**	201.85
1 1/4	1 1/2	9 5/8″	**4700K26**	258.24
1 1/2	2	10 5/8″	**4700K27**	313.60
2	2 1/2	13 5/8″	**4700K28**	422.64
(L) Extended-Life Valves with Test Lever				
1/2	3/4	6 1/2″	**6187T17**	139.24
3/4	1	7 1/2″	**6187T18**	155.89
1	1 1/4	8 1/2″	**6187T19**	178.19

For information about pop-safety valves, see page 483. For information about pipe size, see pages 2-3.

Multirange Brass Pop-Safety Valves

- Use with air and inert gas
- Temp. Range: –15° to +250° F

Change your pressure range as needed—valve comes with four color-coded springs: yellow for 25-50 psi, red for 51-100 psi, silver for 101-150 psi, and blue for 151-200 psi. Remove the thumbscrew to exchange springs; turn it to adjust the set pressure within the range. Body is brass and seal is silicone rubber. Valve exhausts to the atmosphere; vent is on the side. Pipe connection is NPT male.

Pipe Size	Ht.		
1/4	1 5/8"	50265K23	$5.88

Brass Pop-Safety Valves for Air Compressors

- Use with air
- Temp. Range: –15° to +250° F

A handy accessory for air compressors, these valves combine protection from excess pressure with convenient connection options. They have inlet and outlet ports for an inline connection, an 1/4 NPT female gauge port, and one of the connections below.

Valves have a brass body, a silicone seal, and a test ring. They exhaust to the atmosphere. Pipe connections are NPT; inlet is male (bottom port) and outlet is female (side port).

With Air Fill Valve

To Order: Please specify set pressure: 125, 135, or 150 psi.

Pipe Size Inlet	Pipe Size Outlet	Ht.		
1/2	1/4	1 7/8"	5867T11	$10.72

With Pressure Switch Port

Pressure switch port is 1/4 NPT male.

To Order: Please specify set pressure: 100, 125, 135, or 150 psi.

For flow capacities, go to mcmaster.com and search for **5867TAC**.

Pipe Size Inlet	Pipe Size Outlet	Ht.		
1/2	1/4	2 1/2"	5867T21	$13.97

Temperature-and-Pressure Bronze Pop-Safety Valves

- Use with water
- Max. Temp.: 210° F

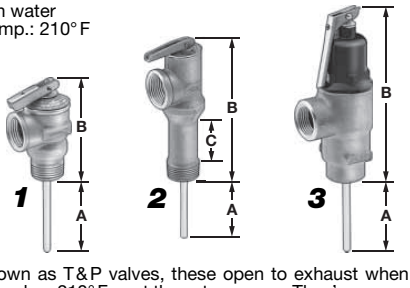

Also known as T&P valves, these open to exhaust when the temperature reaches 210° F or at the set pressure. They're commonly used with water heaters and storage tanks. All are CSA certified. *Valves with 3/4 to 2 pipe size* meet ASME Code Section IV for hot water.

Valves have a bronze body, a silicone seal, and a test lever. Pipe connections are NPT; outlet is female (side port).

Style 2 have an extended body to fit tanks with an insulation thickness of (C).

For flow capacities, go to mcmaster.com and search for **9761KAC**.

Pipe Size Inlet	Pipe Size Outlet	Set Pressure, psi	(A)	(B)	(C)		
(1) With Male Inlet							
1/2	1/2	150	1"	3 5/8"	—	9761K61	$17.35
3/4	3/4	150	1"	3 7/16"	—	9761K62	15.96
3/4	3/4	150	3"	3 7/16"	—	9761K63	16.32
1	1	150	2"	6 1/4"	—	9777K52	215.25
1	1	150	4"	6 1/4"	—	9777K62	228.04
2	1 1/2	150	3"	8 1/2"	—	9761K17	447.90
(2) With Male Inlet							
3/4	3/4	150	2 1/2"	4 3/4"	2 1/2"	9777K22	20.62
3/4	3/4	150	3 1/2"	5 5/8"	1 5/8"	9777K32	178.11
3/4	3/4	150	5"	7 5/8"	3 5/8"	9777K42	184.57
(3) With Female Inlet							
3/4	3/4	125	3"	5 7/8"	—	9761K13	87.85
3/4	3/4	150	3"	5 7/8"	—	9761K14	87.85

Cleaned and Bagged Cryogenic Brass Pop-Safety Valves

- Use with liquid argon, liquid nitrogen, and liquid oxygen
- Temp. Range: –250° to +350° F

Able to withstand the extreme cold of liquefied gas, valves are cleaned, degreased, and bagged for oxygen service. Body is brass and seal is PTFE. Valves exhaust to the atmosphere; vent is on the side. Pipe connection is NPT male.

To Order: Please specify set pressure: 88 psi or any pressure from 5 to 400 psi in 5 psi increments.

Pipe Size	Ht.		
1/4	2 5/16"	9137K11	$37.77

Hot Water ASME-Code Bronze Pop-Safety Valves

- Meet ASME Code Section IV for Hot Water
- Temp. Range: 33° to 250° F

Protect your water-heating system. Valves meet ASME standards for heating boilers and have a threaded outlet to direct discharge to a remote location. They have a bronze body, a silicone seal, and a test lever. Pipe connections are NPT female; inlet is on the bottom and outlet is on the side.

To Order: Please specify set pressure: 30, 50, 60, 75, 100, 125, or 150 psi.

For flow capacities, go to mcmaster.com and search for **4702KAC**.

Pipe Size Inlet	Pipe Size Outlet	Ht.		
3/4	3/4	5 5/16"	4702K49	$71.40
3/4	1	5 5/16"	4702K51	72.94
1	1	6 3/4"	4702K61	116.70
1	1 1/4	6 3/4"	4702K52	122.95
1 1/4	1 1/2	8 7/16"	4702K53	180.61
1 1/2	2	10 13/16"	4702K54	273.50
2	2	14"	4702K62	324.79

Large-Pipe ASME-Code Cast Iron Pop-Safety Valves

Quickly relieve a large volume of air or steam. Valves have a cast iron body, a bronze seal, and a test pin or lever. Pipe connections are NPT; inlet is male (bottom port) and outlet is female (side port).

For flow capacities, go to mcmaster.com and search for **8175KAC**.

For Air

- Meet ASME Code Section VIII for Air
- Temp. Range: –20° to +406° F

Valves are for medium-pressure applications such as high-volume blowers and compressors.

To Order: Please specify set pressure: from 2 to 60 psi in 2 psi increments.

Pipe Size	Ht.		
2	7"	8175K12	$324.77
2 1/2	8"	8175K14	454.41
3	9"	8175K16	567.82

For Low-Pressure Steam

- Meet ASME Code Section IV for Low-Pressure Steam
- Temp. Range: –20° to +250° F

Set pressure is 15 psi.

Pipe Size	Ht.		
2	7 1/4"	4698K14	$294.01
2 1/2	8 1/4"	4698K15	409.90
3	8 3/4"	4698K16	537.28

Pop-Safety & Relief Valves

For information about pop-safety and relief valves, see page 483. For pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″
Pipe Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	3

Low-Pressure Steam Bronze Pop-Safety Valves

A

B

- Use with steam
- Max. Temp.: 250° F

Designed for use with low-pressure steam heating boilers. Valves have a bronze body, EPDM seal, and a test lever. Pipe connections are NPT; all have a male inlet (bottom port).

Style A—Valves exhaust to the atmosphere; vent is on the top. *ASME-code valve* meets Section IV for low-pressure steam. Set pressure is 15 psi.

Style B—Valves have an NPT female outlet (side port) to direct discharge to a remote location.

To Order: For *standard valves*, please specify set pressure: 5, 6, 8, 10, or 12 psi.

For flow capacities, go to mcmaster.com and search for **4699KAC**.

	Pipe Size Inlet	Pipe Size Outlet	Ht.	Standard Valves		ASME-Code Valve	
A	3/4	—	2 7/8″	4699K11	$41.69	4699K35	$41.69
B	3/4	3/4	3 11/16″	4699K12	47.14	—	—
B	1	1	3 7/8″	4699K13	49.74	—	—

ASME-Code Stainless Steel Pop-Safety Valves

- ASME Code Section VIII for Air and Inert Gas
- Temp. Range: –40° to +400° F

All-stainless construction stands up to harsh environments. Valves have a Type 304 stainless steel body and seal and a test ring. They exhaust to the atmosphere; vent is on the side. Pipe connection is NPT male.

To Order: Please specify set pressure: from 25 to 300 psi in 25 psi increments.

For flow capacities, go to mcmaster.com and search for **98905KAC**.

Pipe Size	Ht.		
1/4	3 1/8″	98905K15	$90.23
1/2	3 3/4″	98905K18	132.10

Custom-Set Stainless Steel Pop-Safety Valves

ASME-Code with Male Inlet

- Use with air or inert gas

Get a valve that's customized to your media (air or inert gas), pressure, and temperature requirements. Not for use with oxygen, carbon dioxide, or steam. Body is Type 316 stainless steel and seal is fluoroelastomer. Pipe connections are NPT; outlet is female (side port).

Standard valves do not have a test lever.

ASME-code valves meet Section VIII for air and inert gas and have a test lever.

To Order: Please specify media (air or inert gas), set pressure (from 25 to 2,500 psi), and maximum temperature (from –15° to +450° F).

	Pipe Size Inlet	Pipe Size Outlet	Ht.	Standard Valves		ASME-Code Valves	
With Male Inlet							
	3/4	3/4	9″	6872K12	$440.92	6872K22	$546.41
	1	1	9″	6872K13	440.92	6872K23	546.41
With Female Inlet							
	1/2	3/4	9″	6872K11	440.92	6872K21	546.41

Brass Relief Valves

With Male Inlet

- Use with water
- Temp. Range: 33° to 180° F

Commonly used with pumps in low-pressure water systems, these nonadjustable valves ensure the set pressure stays the same. Body is brass and seal is rubber on brass. Pipe connections are NPT; outlet is female (side port).

To Order: For *valves with 1/2, 3/4, and 1 pipe size*, please specify set pressure: 30 or 75 psi. For *valves with 1 1/4 and 2 pipe size*, please specify set pressure: 30 or 65 psi.

Pipe Size	Ht.		
With Male Inlet			
1/2	4 3/16″	4780K11	$60.35
3/4	4 11/16″	4780K12	65.23
1	5 1/2″	4780K13	88.73
1 1/4	6 1/16″	4780K14	136.38
With Female Inlet			
2	6 9/16″	4780K16	267.58

Cleaned and Bagged Cryogenic Brass Relief Valves

Valve

- Use with liquid carbon dioxide, liquid nitrogen, and liquid oxygen
- Temp. Range: –320° to +165° F

Valves come cleaned, degreased, and bagged to meet CGA G-4.1 standards for oxygen service. Body is brass. Inlet is NPT male (bottom port) and outlet is 3/4″-20 UNEF female (top port). Valves with set pressures of 125 psi and below have a fluorosilicone seal; set pressures of 150 psi and above have a PTFE seal.

Adapters (sold separately) convert the outlet connection from UNEF female threads to NPT female threads. 49315K94 is 3/8 NPT; 49315K96 is 1/2 NPT.

To Order: Please specify set pressure: 22, 35, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400, or 450 psi.

Pipe Size	Ht.	Valves		Adapters	
1/4	2 5/8″	49315K71	$36.88	49315K94	$9.07
3/8	2 5/8″	49315K72	39.81	49315K94	9.07
1/2	2 13/16″	49315K73	51.04	49315K96	10.62

Adjustable Bronze Relief Valves

Adjustable Valve

Precision-Adjustable Valve

- Use with water
- Temp. Range: 33° to 200° F

Change your set pressure without guesswork. Valves are marked in 25 psi increments to indicate the set pressure; adjust within the range. They're often used for thermal expansion protection and low-capacity pump relief. Body is bronze and seal is silicone rubber. Pipe connections are NPT; inlet is male (bottom port) and outlet is female (side port).

Adjustable valves can be set from 50 to 175 psi in 25 psi increments.

Precision-adjustable valves can be set from 25 to 175 psi in 1 psi increments.

	Pipe Size Inlet	Pipe Size Outlet	Ht.		
Adjustable Valves					
	1/2	1/2	3 7/16″	4612K16	$24.97
	3/4	1/2	3 7/16″	4612K18	26.98
Precision-Adjustable Valves					
	1/2	1/2	4 1/8″	8088K14	25.42
	3/4	3/4	4 1/8″	8088K16	27.42

Vacuum and Pressure Adjustable Brass Relief Valves

- Use with vacuum and air
- Temp. Range: –15° to +250° F

Protect against excess vacuum and pressure with one valve. Adjust vacuum from 0 to 27″ Hg and pressure from 0 to 20 psi. Body is brass. Valves exhaust to the atmosphere; vent is on the top. Pipe connection is NPT male. *Valve with 1/4 pipe size* has a Type 440C stainless steel seal; *valves with 3/8 and 3/4 pipe size* have a Buna-N seal.

Pipe Size	Ht.		
1/4	1 3/4″	48935K25	$7.53
3/8	2 1/16″	48935K35	12.61
3/4	2 3/4″	48935K45	26.13

For information about relief valves, see page 483. For information about pipe size, see pages 2-3.

Adjustable Brass Relief Valves

Change the set pressure to suit your application. Adjust set pressure within the range. Valves have a brass body.

For Water, Dyes, and Oil

- Use with water, dyes, and oil
- Temp. Range: –30° to +160° F

Valves have a lock nut to prevent accidental changes in pressure. Pipe connections are NPT; inlet is male (bottom port) and outlet is female (side port).

Medium-pressure valves have a brass seal.

To Order: For *medium-pressure valves*, please specify pressure range: 0-50, 0-300, or 0-700 psi.

High-pressure valves have a 400 Series stainless steel seal. Pressure range is 0-1,200 psi.

Pipe Size	Ht.		
Medium-Pressure Valves			
1/2	6 5/8″	9763K11	$53.61
3/4	6 5/8″	9763K12	53.61
High-Pressure Valves			
1/2	6 5/8″	9763K55	101.54
3/4	6 5/8″	9763K65	101.54

For Fuel

- Use with diesel fuel, fuel oil, gasoline, and kerosene
- Temp. Range: –20° to +400° F

Seal is Type 416 stainless steel. Pipe connections are NPT female.

To Order: Please specify pressure range: 3-15, 7-35, 30-100, 60-175, 150-350, or 300-500 psi (250-600 psi for valves with 2 pipe size).

Pipe Size	Ht.		
3/8	5 3/8″	7844K51	$126.87
1/2	6 3/16″	7844K52	150.03
3/4	6 15/16″	7844K53	193.91
1	8 1/4″	7844K54	240.22
1 1/4	9 9/16″	7844K55	312.12
1 1/2	11 1/16″	7844K56	385.25
2	13″	7844K57	615.59

For Air and Hydraulic Oil

- Use with air and hydraulic oil
- Temp. Range: –40° to +250° F

Pipe connections are NPT female.

To Order: Please specify pressure range: 4-15; 10-50; 40-125; 115-250; 235-450; 430-650; 630-850; 630-1,020; 800-1,500; 1,400-2,100; 1,500-2,750; 2,000-3,100; or 3,000-3,600 psi.

Pipe Size	Ht.		
1/4	3 11/16″	4706K53	$204.33
3/8	3 3/4″	4706K55	233.47
1/2	5 7/8″	4706K57	241.75
3/4	5 15/16″	4706K59	276.99

Tamper-Resistant Adjustable Steel Relief Valves

- Use with hydraulic oil
- Temp. Range: –300° to +450° F

With Male Inlet

With Female Inlet

Prevent unintentional changes to set pressure—valves have an internal adjustment nut to block access while installed. Adjust set pressure within the range. Valves also have two outlets to fit various pipe configurations. They include a plug for the unused outlet. Body is zinc-plated steel and seal is PTFE. Pipe connections are NPT; outlet is female (side and top ports).

To Order: Please specify pressure range: 50-400; 300-1,000; or 900-2,000 psi.

Pipe Size Inlet	Pipe Size Outlet	Ht.		
With Male Inlet				
1/4	1/4	4 3/8″	5026K51	$68.18
3/8	1/4	4 3/8″	5026K52	68.18
1/2	1/4	4 1/2″	5026K53	68.18
With Female Inlet				
1/4	1/4	3 3/4″	5026K61	68.18
3/8	1/4	3 3/4″	5026K73	68.18
1/2	1/4	3 7/8″	5026K72	68.18

Extended-Life Adjustable Relief Valves

Combine the durability of thick walls and rugged construction with the convenience of adjustable pressure. Adjust set pressure within the range.

Precision-Adjustable Valves

- Use with water, diesel fuel, fuel oil, gasoline, hydraulic oil, kerosene, and natural gas
- Temp. Range: –60° to +450° F

Fine screw threads provide greater precision in pressure adjustments. Body and seal are bronze except valves with 1/2 and 3/4 pipe size, which have a brass body and seal. Pipe connections are NPT; inlet is male (bottom port) and outlet is female (side port).

To Order: Please specify pressure range: 0-14, 15-25, 26-40, 41-75, 76-110, 111-130, 131-150, 151-200, or 201-400 psi.

Pipe Size	Ht.		
1/2	5 7/8″	4703K54	$119.26
3/4	6″	4703K55	121.70
1	7 1/2″	4703K56	141.11
1 1/4	8 1/2″	4703K57	185.15
1 1/2	9 3/4″	4703K58	222.26
2	11 1/8″	4703K59	329.54
3	13 1/2″	4703K62	806.30

Pressure-Maintaining Valves

- Use with water, diesel fuel, fuel oil, and hydraulic oil
- Temp. Range: –40° to +450° F

Commonly used in hydraulic systems for back-pressure relief, install these valves after pumps to maintain discharge pressure. Body is bronze and seal is Type 303 stainless steel. Pipe connections are NPT female.

To Order: Please specify pressure range: 15-75, 50-150 (50-140 for valve with 1/4 pipe size), 100-300, or 200-600 psi.

Pipe Size	Ht.		
1/4	5 1/4″	4662K46	$174.21
3/8	5 1/4″	4662K48	174.21
1/2	7″	4662K32	271.31
3/4	7″	4662K34	271.31
1	9 3/4″	4662K36	564.60
1 1/4	9 3/4″	4662K38	564.60

Heavy Duty Valves

- Use with water, diesel fuel, fuel oil, and hydraulic oil
- Temp. Range: –320° to +420° F

Body is bronze and seal is Type 316 stainless steel. Pipe connections are NPT; inlet is male (bottom port) and outlet is female (side port).

To Order: Please specify pressure range: 15-75, 50-150, 100-300, 200-600, or 600-900 psi. Note: The 1 1/2 pipe size is not available at 600-900 psi.

Pipe Size Inlet	Pipe Size Outlet	Ht.		
1/2	3/4	7 1/4″	4460K81	$349.81
3/4	3/4	7 1/4″	4460K82	370.67
1	1	7 1/2″	4460K83	410.00
1 1/4	1 1/4	8″	4460K84	457.01
1 1/2	1 1/2	8 7/8″	4460K85	553.07

Adjustable Cast Iron Relief Valves

- Use with diesel fuel, fuel oil, and hydraulic oil
- Temp. Range: –20° to +400° F

Often used in hydraulic and lubrication systems, these valves can handle thick liquids at high temperatures. Adjust set pressure within the range. Body is cast iron and seal is Type 416 stainless steel. Pipe connections are NPT female.

To Order: Please specify pressure range: 3-15, 7-35, 30-100, 60-175, 150-350, or 300-500 psi (250-600 psi for valves with 2 pipe size).

Pipe Size	Ht.		
3/8	5 3/8″	4704K32	$107.38
1/2	6 3/16″	4704K11	112.25
3/4	6 15/16″	4704K12	134.19
1	8 1/4″	4704K13	168.31
1 1/4	9 9/16″	4704K14	208.53
1 1/2	11 1/16″	4704K25	269.47
2	13″	4704K26	430.34

For information about relief valves, see page 483. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

Adjustable Pressure-Maintaining Cast Iron Relief Valves

- Use with water, hydraulic oil, diesel fuel, and fuel oil
- Temp. Range: –40° to +200° F

Maintain consistent discharge pressure from process equipment. Also known as back-pressure relief valves and regulators, install them after the equipment they protect. They're commonly used as bypass lines after centrifugal, reciprocating, and rotary pumps. Adjust set pressure within the range. Body is cast iron and seal is brass. Pipe connections are NPT female. Inlet and outlet are on the side; exhaust/bypass port is on the bottom.

To Order: Please specify pressure range from those listed in the table.

Pipe Size	Available Pressure Ranges, psi	Ht.		
1/2	0-25, 5-50, 30-100, 75-175, 150-400	8 3/8″	4675K21	$617.12
1 1/4	20-85, 40-125, 50-230, 175-380, 300-400	12 13/16″	4675K25	1,093.65
1 1/2	10-55, 30-100, 40-200, 125-300, 200-400	13 3/8″	4675K26	1,265.06
2	10-55, 30-100, 40-200, 125-300, 200-400	14″	4675K27	1,398.96

Adjustable Pressure-Maintaining Aluminum Relief Valves

- Use with air
- Temp. Range: –20° to +160° F

Protect instruments in systems supplied by a compressor. Also known as back-pressure regulators, these valves maintain consistent air pressure in your pipeline. Adjust set pressure within the range. They have a cast aluminum body, Buna-N seal, and 1/4 NPT female gauge port. Valves exhaust to the atmosphere; vent is on the side. Pipe connections are NPT female. Inlet and outlet are on the side.

To Order: Please specify pressure range: 0-2, 0-10, 0-30, 0-60, or 0-150 psi.

Pipe Size	Ht.		
1/4	6 1/16″	4783K51	$113.57
3/8	6 1/16″	4783K53	113.57
1/2	6 1/16″	4783K55	130.31

Custom-Set Stainless Steel Relief Valves

With Male Inlet

- Temp. Range: –15° to +400° F

Set specifically for your media and pressure, these valves have the highest set pressures we offer. Body is Type 316 stainless steel and seal is fluoroelastomer. Pipe connections are NPT; outlet is female (side port).

To Order: Please specify media (air, inert gas, water, hydraulic oil, fuel oil, gasoline, or diesel fuel) and set pressure (from the range in the table).

Pipe Size Inlet	Pipe Size Outlet	Available Pressures, psi	Ht.		
With Male Inlet					
3/4	3/4	5-3,500	9″	6871K32	$419.83
1	1	5-3,500	9″	6871K33	419.83
With Female Inlet					
1/4	3/4	10-6,000	9″	6871K28	419.83
3/8	3/4	10-6,000	9″	6871K29	419.83
1/2	3/4	5-3,500	9″	6871K31	419.83

Adjustable Pressure-Maintaining Compact Plastic Relief Valves

- Use with air
- Temp. Range: 40° to 150° F

Maintain consistent pressure in small-scale systems supplied by an air compressor. Also known as back-pressure regulators, these valves are often used to protect instruments and control devices. Adjust set pressure within the range. Body is polysulfone and seal is silicone. Mount with four #4-40 UNC holes. Fasteners are not included. Pipe connections are female. Inlet and outlet are on the side.

To Order: Please specify pressure range: 0.5-3.5, 0.5-10, 0.5-30, 0.5-60, or 0.5-90 psi.

Connection Size	Ht.		
10-32 UNF	3 1/8″	99045K12	$30.40
1/8 NPT	3 1/8″	99045K11	36.88

Adjustable Stainless Steel Relief Valves

Pair the corrosion resistance of stainless steel with the convenience of adjustable pressure. Adjust set pressure within the range.

Type 303 Stainless Steel Valves

- Use with air and hydraulic oil
- Temp. Range: –40° to +250° F

Seal is Buna-N. Pipe connections are NPT female.

To Order: Please specify pressure range: 4-15, 10-50, or 40-125 psi.

Pipe Size	Ht.		
1/2	5 7/8″	4706K67	$480.51
3/4	5 15/16″	4706K69	478.54

Type 316 Stainless Steel Valves

- Use with water, diesel fuel, fuel oil, gasoline, hydraulic oil, and kerosene
- Temp. Range: +40° to +250° F

Seal is Type 316 stainless steel. Pipe connections are NPT. Inlet is male (bottom port); outlet is female (side port).

To Order: Please specify pressure range: 30-100; 101-400; 401-1,000; or 1,001-2,000 psi.

Pipe Size	Ht.		
1/2	4 3/16″	5027K11	$291.58

Chemical-Resistant Adjustable PVC Relief Valves

With no metal parts to corrode, these valves are well suited for corrosive liquids. Adjust set pressure within the range. Body is PVC; color is gray. Pipe connections are NPT female.

Relief Valves

- Use with water, aluminum bromide, aluminum chloride, boric acid, and hydrogen sulfide
- Temp. Range: 40° to 140° F

Valves have an EPDM seal and 1/4 NPT female gauge port. Inlet is on the bottom; outlet is on the side.

Pipe Size	Pressure Range, psi	Ht.		
1/2	5-75	6 3/4″	5007K61	$310.51
3/4	5-75	6 7/8″	5007K62	352.23
1	5-75	8 3/4″	5007K63	421.20
1 1/2	5-75	13 1/4″	5007K64	546.55
2	5-75	15 1/2″	5007K65	648.23

3-Port Relief Valves

1/2 and 1 Pipe Size

- Use with water, potassium sulfate, and sodium hypochlorite
- Temp. Range: 0° to 140° F

Install these valves inline for continuous flow in your pipeline. They have a threaded outlet to route discharge back through your system or to a remote location. Seal is PTFE. Inline connections are on the side; outlet is on the bottom.

Pipe Size	Pressure Range, psi	Ht.		
1/4	10-150	3 17/32″	46315K24	$175.00
1/2	10-250	5 5/8″	46315K25	314.41
1	10-250	5 15/16″	46315K27	405.00

For information about relief valves, see page 483. For information about pipe size, see pages 2-3.

Miniature PVDF Relief Valves

- Use with air
- Temp. Range: 26° to 255° F

Relieve excess pressure in air lines. Valve body is PVDF, also known as Kynar. Seal is Buna-N. Valves exhaust to the atmosphere; vent is on top.

To Order: Please specify set pressure: 0.5, 1, 1.5, 3, 6, or 10 psi.

NPT Male

Valves are often used in air tanks.

Pipe Size	Ht.		
1/8	7/8"	4277T51	$19.89
1/4	1 1/16"	4277T52	19.89

Push-to-Connect Tube Fittings

Valves have an inlet and outlet to connect tubing.

For Tube OD	Ht.		
1/4"	1 1/2"	4320T13	$27.78
5/16"	1 5/8"	4320T14	27.78
3/8"	1 7/8"	4320T15	27.78
1/2"	2 1/8"	4320T16	27.78

Brass Pipe-Fitting Rupture Discs

- Temp. Range: –50° to +750° F

Prevent damage from excess pressure in tanks and pipe lines. If your system exceeds the burst pressure, rupture discs break open for instant relief. They are one-time-use—once a disc has burst, it cannot be used again. Body is brass. Connections are NPT male.

Style A discs vent to the atmosphere. Vent is muffled.

Style B discs have a threaded outlet to direct discharge to a remote location.

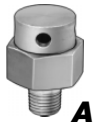

A

B

To Order: Please specify burst pressure: 100, 125, 150, 200, 250, 500, or 750 psi.

	Pipe Size Inlet	Pipe Size Outlet	Lg.	Ht.		
A	1/4	—	—	1 5/8"	4412T11	$97.95
B	3/8	1/2	2 1/8"	—	4412T12	98.74
B	1/2	1/2	2 1/4"	—	4412T13	97.95

Graphite Flange-Mount Rupture Discs

- Temp. Range: –20° to +392° F

Safeguard against excess pressure. If your system exceeds the burst pressure, rupture discs break open, providing unrestricted flow for instant relief. They are one-time-use—once a disc has burst, it cannot be used again. Disc is resin-impregnated graphite, which resists wear from large changes in pressure and temperature. They come with two neoprene gaskets; install between ANSI Class 150 flanges.

Discs for low pressure have supports to resist rupture caused by vacuum. They withstand up to 29.92" Hg.

To Order: Please specify burst pressure from those listed in the table.

Pipe Size	OD	Thick.	Discs for Low Pressure: Available Burst Pressures, psi			Discs for Medium Pressure: Available Burst Pressures, psi		
1	2 1/2"	1 1/8"	15	4858K701	$211.76	20, 25, 30, 40, 50, 60, 75, 100, 125, 150, 175, 200, 250	4858K501	$143.14
1 1/2	3 1/4"	1 1/8"	10, 15	4858K703	221.57	20, 25, 30, 40, 50, 60, 75, 100, 125, 150, 175, 200, 250	4858K503	152.94
2	4"	1 1/8"	5, 10, 15	4858K705	229.41	20, 25, 30, 40, 50, 60, 75, 100, 125, 150, 175, 200, 250	4858K505	156.86
3	5 1/4"	1 1/8"	5, 10, 15	4858K707	239.22	20, 25, 30, 40, 50, 60, 75, 100, 125, 150, 175, 200, 250	4858K507	170.59
4	6 3/4"	1 1/8"	5, 10, 15	4858K709	280.39	20, 25, 30, 40, 50, 60, 75, 100, 125, 150, 175, 200, 250	4858K509	198.04
6	8 5/8"	1 1/8"	5, 10, 15	4858K711	341.18	20, 25, 30, 40, 50, 60, 75, 100, 125, 150, 175, 200, 250	4858K511	247.06

About Check Valves and Backflow Prevention Valves

Check valves and backflow prevention valves stop backward flow in your pipeline. They only allow flow in one direction.

Check valves open when flow moves in the correct direction and close when flow stops or reverses.

Backflow prevention valves protect your water supply from contamination due to backward flow. They are an assembly of at least two check valves separated by an air gap for maximum protection.

Brass Check Valves

- Use with: See table
- Max. Pressure: See table
- Temp. Range: –20° to +180° F

A spring-close design prevents slamming when valves close to stop backward flow. Body is brass. At least 1 psi is required to open valves. Install in any direction. Connections are NPT.

Pipe Size	Max. psi @ 70° F	Female Inlet × Female Outlet: Lg.		Female Inlet × Male Outlet: Lg.		Male Inlet × Male Outlet: Lg.		Male Inlet × Female Outlet: Lg.	
For Water, Inert Gas, and Air— *Buna-N Seal*									
Medium-Pressure Valves									
1/8	500	1 3/8"	7768K11	1 1/16"	7768K21	1 3/16"	7768K15	1 1/4"	7768K25
1/4	500	1 13/16"	7768K12	1 3/8"	7768K22	1 1/2"	7768K16	1 5/8"	7768K26
3/8	500	2 1/4"	7768K13	1 11/16"	7768K23	1 3/4"	7768K17	1 15/16"	7768K29
1/2	500	2 9/16"	7768K14	2 1/8"	7768K24	2"	7768K18	1 7/8"	7768K28
3/4	500	3"	7768K41	3"	7768K43	—	—	—	—
High-Pressure Valves									
1/4	3,000	2 9/16"	8549T11	2 11/16"	8549T13	2 11/16"	8549T17	2 9/16"	8549T15
3/8	3,000	2 9/16"	8549T12	2 11/16"	8549T14	2 11/16"	8549T18	2 9/16"	8549T16
1/2	2,000	3 3/16"	8549T31	3 3/16"	8549T33	3 3/16"	8549T37	3 3/16"	8549T35
For Oil, Diesel Fuel, and Gasoline— *Fluoroelastomer Seal*									
Medium-Pressure Valves									
1/8	500	1 3/8"	7768K51	1 1/16"	7768K61	1 3/16"	7768K55	1 1/4"	7768K65
1/4	500	1 13/16"	7768K52	1 3/8"	7768K62	1 1/2"	7768K56	1 5/8"	7768K66
3/8	500	2 1/4"	7768K53	1 11/16"	7768K63	1 3/4"	7768K57	1 15/16"	7768K69
1/2	500	2 9/16"	7768K54	2 1/8"	7768K64	2"	7768K58	1 7/8"	7768K68
3/4	500	3"	7768K42	3"	7768K44	—	—	—	—
High-Pressure Valves									
1/4	3,000	2 9/16"	8549T21	2 11/16"	8549T23	2 11/16"	8549T27	2 9/16"	8549T25
3/8	3,000	2 9/16"	8549T22	2 11/16"	8549T24	2 11/16"	8549T28	2 9/16"	8549T26
1/2	2,000	3 3/16"	8549T32	3 3/16"	8549T34	3 3/16"	8549T38	3 3/16"	8549T36

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8"	1/2"	5/8"	3/4"	1"	1 3/8"	1 5/8"	1 7/8"	2 3/8"	2 7/8"	3 1/2"
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3

Super-Quiet Brass Check Valves

- Use with: See table
- Max. Pressure: 200 psi @ 70° F (unless otherwise stated)
- Temp. Range: 33° to 225° F (unless otherwise stated)

Prevent noisy slamming—valves have a spring-close design that stops backward flow quietly. At least 2 psi is required to open valves. Install in any direction. Connections are NPT female.

Valves with Type 303 stainless steel seal are also for use with steam at a max. pressure of 75 psi @ 300° F and temp. range of 33° to 300° F.

Nickel-plated brass valves provide greater corrosion resistance than plain brass.

Pipe Size	Lg.	Brass		Nickel-Plated Brass	
For Steam, Water, Oil, and Air—*Type 303 Stainless Steel Seal*					
3/8	2 5/8"	4753K41	$31.00	4753K51	$33.83
1/2	2 11/16"	4753K42	32.68	4753K52	34.91
3/4	3 5/16"	4753K43	36.19	4753K53	38.11
1	3 11/16"	4753K44	49.74	4753K54	52.34
1 1/4	4 9/16"	4753K45	59.09	4753K55	62.96
1 1/2	4 7/8"	4753K46	73.15	4753K56	78.45
2	5 9/16"	4753K47	110.04	4753K57	123.66
2 1/2	6 13/16"	4753K61	257.45	4753K62	266.53
3	7 7/16"	4753K63	440.87	4753K64	459.17
For Water, Inert Gas, and Air—*Buna-S Seal*					
3/8	2 5/8"	7746K49	29.83	4753K75	31.74
1/2	2 11/16"	7746K39	29.83	4753K76	31.74
3/4	3 5/16"	7746K821	30.04	4753K77	31.96
1	3 11/16"	7746K831	40.09	4753K78	42.21
1 1/4	4 9/16"	7746K841	46.89	4753K79	50.77
1 1/2	4 7/8"	7746K851	61.66	4753K81	66.96
2	5 9/16"	7746K861	96.49	4753K82	105.53
2 1/2	6 13/16"	7746K43	219.15	4753K83	228.23
3	7 7/16"	7746K46	402.57	4753K84	420.87
For Oil and Gasoline—*Buna-N Seal*					
3/8	2 5/8"	7746K37	29.83	4753K65	31.74
1/2	2 11/16"	7746K41	29.83	4753K66	31.74
3/4	3 5/16"	7746K822	30.04	4753K67	33.72
1	3 11/16"	7746K832	40.09	4753K68	44.96
1 1/4	4 9/16"	7746K842	46.89	4753K69	55.06
1 1/2	4 7/8"	7746K852	61.66	4753K71	76.21
2	5 9/16"	7746K862	96.49	4753K72	119.06
2 1/2	6 13/16"	7746K44	232.19	4753K73	241.28
3	7 7/16"	7746K47	402.57	4753K74	420.87
For Ethylene Glycol—*EPDM Seal*					
3/8	2 5/8"	7746K38	29.83	4753K85	31.74
1/2	2 11/16"	7746K42	29.83	4753K86	31.74
3/4	3 5/16"	7746K823	30.04	4753K87	34.34
1	3 11/16"	7746K833	40.09	4753K88	43.98
1 1/4	4 9/16"	7746K843	46.89	4753K89	55.06
1 1/2	4 7/8"	7746K853	61.66	4753K91	76.21
2	5 9/16"	7746K863	96.49	4753K92	119.06
2 1/2	6 13/16"	7746K45	232.19	4753K93	241.28
3	7 7/16"	7746K48	402.57	4753K94	420.87

Check Valves with Yor-Lok Tube Fittings

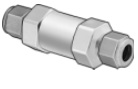

- Use with water, oil, inert gas, air, diesel fuel, gasoline, and natural gas
- Max. Pressure: See table
- Temp. Range: Brass: –30° to +275° F
  Type 316 SS: –10° to +375° F

Get a leak-free compression seal between your valve and tubing. Connections are Yor-Lok double-ferrule compression tube fittings which are compatible with Swagelok® and Parker A-Lok fittings. For information about Yor-Lok fittings, see page 174. Valves are often used in process-control and instrumentation applications. At least 1 psi is required to open valves. Install in any direction.

Brass valves have a Buna-N seal.

Type 316 stainless steel valves have excellent corrosion resistance. Seal is fluoroelastomer.

For Tube OD	Max. psi @ 70° F	Brass Lg.		Type 316 SS Lg.	
1/8"	3,000	2 3/8"	1056T1	$31.45	2 1/4"	45385K53	$65.20
1/4"	3,000	2 1/2"	1056T2	30.38	2 3/8"	45385K54	56.35
3/8"	2,300	3 3/8"	1056T3	59.71	2 1/2"	45385K55	109.11
1/2"	2,200	4 1/8"	1056T4	62.53	3"	45385K56	118.40
3/4"	1,900	4 3/8"	1056T5	187.79	3 1/2"	45385K59	323.93
1"	1,500	4 5/8"	1056T6	195.79	4 3/4"	45385K58	410.93

NSF-Certified Brass Check Valves for Drinking Water

- Use with drinking water
- Max. Pressure: 400 psi @ 167° F
- Temp. Range: 10° to 210° F

Meet requirements for drinking (potable) water. Valves are NSF 61 certified in all states as of April 1, 2011. Body is brass and seal is Buna-N. At least 0.5 psi is required to open valves. Install in any direction. Connections are NPT female.

Pipe Size	Lg.			Pipe Size	Lg.		
1/2	2 5/16"	8517T23	$11.68	1 1/4	2 15/16"	8517T26	$31.46
3/4	2 9/16"	8517T24	15.87	1 1/2	3 3/16"	8517T27	56.05
1	2 13/16"	8517T25	21.74	2	3 3/8"	8517T28	65.70

Quick-Opening Brass Check Valves

- Use with: See table
- Max. Pressure: Buna-N Seal: 1,000 psi @ 70° F
  Fluoroelastomer Seal: 1,000 psi @ 70° F
- Temp. Range: Buna-N Seal: –40° to +300° F
  Fluoroelastomer Seal: +10° to +400° F

Get flow at minimal pressure levels—just 0.3 psi is required to open. Valves are often used in instrumentation applications. Body is brass. Install in any direction. Connections are NPTF (Dryseal).

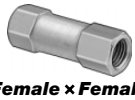

Pipe Size	Female × Female Lg.			Male × Male Lg.		
For Water, Oil, and Air—*Buna-N Seal*						
1/8	2"	7775K11	$12.75	1 1/4"	7775K21	$11.90
1/4	2 1/16"	7775K12	12.49	1 13/16"	7775K22	12.98
3/8	2 3/8"	7775K13	20.66	2 7/16"	7775K23	21.25
1/2	2 1/2"	7775K14	20.66	2 1/2"	7775K24	21.28
For Diesel Fuel and Gasoline—*Fluoroelastomer Seal*						
1/8	2"	7775K51	13.87	1 1/4"	7775K61	12.56
1/4	2 1/16"	7775K52	14.04	1 13/16"	7775K62	13.77
3/8	2 3/8"	7775K53	22.33	2 7/16"	7775K63	22.92
1/2	2 1/2"	7775K54	22.33	2 1/2"	7775K64	22.92

Pipe-to-Tube Adapter Brass Check Valves

- Use with water, oil, and air
- Max. Pressure: 400 psi @ 70° F
- Temp. Range: –65° to +250° F

Protect against backward flow while adapting pipe to tube. Inlet is NPT male and outlet is a compression fitting for a tight seal with copper, brass, and aluminum tubing. Body and seal are brass. At least 3 psi is required to open valves. Install in any direction.

Pipe Size	Fits Tube OD	Lg.		
1/8	1/8"	1"	4292K21	$16.22
1/8	1/4"	1 3/16"	4292K22	13.65
1/4	3/8"	1 1/2"	4292K23	18.25

Silicon Bronze Check Valves

- Use with water
- Max. Pressure: See table
- Temp. Range: 32° to 190° F

Made of silicon bronze for greater strength and corrosion resistance than brass. Seal is Buna-N. At least 2 psi is required to open valves. Install for horizontal or upward flow. Connections are NPT female.

Pipe Size	Max. psi @ 70°F	Lg.		
1/2	400	2 5/8"	4616K91	$25.45
3/4	400	3 3/8"	4616K92	25.77
1	400	3 5/8"	4616K93	27.13
1 1/4	400	3 3/4"	4616K94	37.18
1 1/2	400	4 1/8"	4616K95	51.97
2	600	5 1/8"	4616K96	84.08
2 1/2	600	7 3/8"	4616K97	320.08
3	600	7 1/4"	4616K98	366.66

For information about check valves, see page 489. For information about pipe size, see pages 2-3.

Bronze Check Valves

- Use with water, oil, inert gas, air, steam, and diesel fuel
- Max. Pressure:
  Class 125: Water, Oil, and Inert Gas: 200 psi @ 150° F; Steam: 125 psi @ 353° F
  Class 150: Water, Oil, and Inert Gas: 300 psi @ 150° F; Steam: 150 psi @ 366° F
  Class 200: Water, Oil, and Inert Gas: 400 psi @ 150° F; Steam: 200 psi @ 388° F
  Class 300: Water, Oil, and Inert Gas: 600 psi @ 150° F; Steam: 300 psi @ 422° F
- Temp. Range:
  Class 125 and Class 150: –20° to +406° F
  Class 200 and Class 300: –20° to +550° F

Meet industry standards for pressure and temperature—valves are class-rated and meet MSS-SP-80. Also known as swing check valves. A threaded cap provides easy access for maintenance. Body is bronze and seal is metal. At least 0.5 psi is required to open valves. Install for horizontal or upward flow. Connections are NPT female.

Pipe Size	HIGH FLOW Lg.	Class 125		MEDIUM FLOW Lg.	Class 125		Class 150		Class 200		Class 300	
1/4	2 1/8"	4708K51	$27.70	2 1/4"	9770K41	$35.10	9773K51	$47.50	9770K61	$47.28	9770K71	$50.48
3/8	2 1/8"	4708K52	27.70	2 1/4"	9770K42	35.10	9773K52	47.50	9770K62	47.48	9770K72	50.68
1/2	2 5/16"	4708K53	27.70	2 5/8"	9770K43	35.10	9773K53	47.50	9770K63	47.66	9770K73	50.89
3/4	2 5/8"	4708K54	32.88	3"	9770K44	43.37	9773K54	59.90	9770K64	60.78	9770K74	63.25
1	3 1/4"	4708K55	44.13	3 11/16"	9770K45	57.88	9773K55	78.56	9770K65	74.36	9770K75	84.92
1 1/4	3 9/16"	4708K56	61.25	4 3/8"	9770K46	84.71	9773K56	109.52	9770K66	102.66	9770K76	110.78
1 1/2	4"	4708K57	73.56	4 5/8"	9770K47	99.23	9773K57	140.58	9770K67	136.07	9770K77	147.66
2	4 3/4"	4708K58	95.69	5 7/8"	9770K48	129.74	9773K58	176.12	9770K68	176.27	9770K78	191.36
2 1/2	6"	4708K59	227.16	7"	9770K49	352.24	9773K59	380.00	9770K69	439.82	9770K79	617.73
3	6 7/8"	4708K61	321.97	7 15/16"	9770K51	519.05	9773K61	546.55	9770K82	645.09	9770K81	932.55

Bronze Check Valves with Solder-End Connections

- Use with water, oil, inert gas, air, and steam
- Max. Pressure:
  Water, Oil, and Inert Gas: 200 psi @ 70° F
  Steam: 125 psi @ 353° F
- Temp. Range: –20° to +406° F

Incorporate protection against backward flow in tubing lines. Also known as swing check valves. A threaded cap provides easy access for maintenance. Body and seal are bronze. At least 0.5 psi is required to open valves. Install for horizontal or upward flow. Rated Class 125 and meet MSS-SP-80. Connections are solder-end (unthreaded) female.

Tube Size★	Actual Tube OD	Lg.	Class 125	
1/4	3/8"	2 1/16"	9782K12	$44.51
3/8	1/2"	2 1/16"	9782K14	46.31
1/2	5/8"	2 9/16"	9782K16	49.92
3/4	7/8"	3 3/8"	9782K18	67.36
1	1 1/8"	4 1/16"	9782K22	96.83
1 1/2	1 5/8"	5 1/4"	9782K26	162.99
2	2 1/8"	6 3/8"	9782K28	239.98

★ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

High-Use Bronze Check Valves

- Use with water, oil, inert gas, air, steam, diesel fuel, and gasoline
- Max. Pressure:
  Class 125:
  Water, Oil, and Inert Gas: 200 psi @ 70° F
  Steam: 175 psi @ 353° F
  Class 300:
  Water, Oil, and Inert Gas: 1,000 psi @ 70° F
  Steam: 520 psi @ 421° F
- Temp. Range:
  Class 125: –20° to +406° F
  Class 300: –20° to +450° F

Designed to withstand the frequent opening and closing of pulsating flow. A threaded cap provides easy access for maintenance. Body and seal are bronze, except 4894K47 has a brass seal. At least 2 psi is required to open valves. Install for horizontal or upward flow. Meet MSS-SP-80. Connections are NPT female.

Pipe Size	Class 125 Lg.			Class 300 Lg.		
1/2	2 3/16"	4894K47	$52.62	2 9/16"	4894K81	$124.19
3/4	2 1/2"	4894K12	83.07	3"	4894K82	150.00
1	3 1/16"	4894K13	106.00	3 1/2"	4894K83	255.37
1 1/4	3 5/8"	4894K14	139.75	4 1/16"	4894K84	341.00
1 1/2	3 7/8"	4894K15	187.13	4 5/8"	4894K85	369.55
2	4 11/16"	4894K16	278.02	5 3/4"	4894K86	458.23

Extended-Life Bronze Check Valves

- Use with water, oil, inert gas, air, steam, diesel fuel, gasoline, and natural gas
- Max. Pressure: Water, Oil, and Inert Gas: 400 psi @ 70° F
  Steam: 125 psi @ 350° F
- Temp. Range: –20° to +350° F

Spend less time on valve maintenance—the strength and corrosion resistance of bronze is paired with the durability of PTFE for a longer service life. Body is bronze and seal is PTFE. At least 0.5 psi is required to open valves. Install for horizontal or upward flow. Connections are NPT.

Pipe Size	Female Inlet × Female Outlet Lg.			Male Inlet × Female Outlet Lg.		
1/4	2 1/16"	47715K21	$26.23	2 3/8"	47715K41	$29.60
3/8	2 1/8"	47715K22	26.52	2 3/8"	47715K42	29.93
1/2	2 5/16"	47715K23	26.82	2 9/16"	47715K43	30.26
3/4	2 7/8"	47715K24	37.32	3 1/8"	47715K44	39.02
1	3 1/2"	47715K25	51.30	3 7/8"	47715K45	57.29
1 1/4	4 3/16"	47715K26	77.34	4 7/16"	47715K46	85.14
1 1/2	4 15/16"	47715K27	98.66	5 3/16"	47715K47	106.15
2	6"	47715K28	160.63	6 1/2"	47715K48	177.24

High-Temperature Bronze Check Valves

- Use with: See table
- Max. Pressure: 300 psi @ 70° F
- Temp. Range: 50° to 500° F

A heat-resistant rubber seal allows these valves to withstand temperatures up to 500° F. They also have a threaded cap for easy access for maintenance. Body is bronze. At least 2 psi is required to open valves. Install for horizontal or upward flow. Connections are NPT female.

Pipe Size	Lg.		
For Water, Oil, and Inert Gas— *Silicone Seal*			
1/4	2 1/8"	4872K201	$72.38
3/8	2 1/8"	4872K301	74.29
1/2	2 1/2"	4872K401	87.62
3/4	2 3/4"	4872K501	99.05
1	3 3/8"	4872K601	112.38
1 1/4	3 3/4"	4872K701	131.43
For Ethylene Glycol and Diesel Fuel— *Fluoroelastomer Seal*			
1/4	2 1/8"	4872K12	74.29
3/8	2 1/8"	4872K13	76.19
1/2	2 1/2"	4872K14	89.52
3/4	2 3/4"	4872K15	100.95
1	3 3/8"	4872K16	114.29
1 1/4	3 3/4"	4872K17	133.33

For information about check valves, see page 489. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3

Stainless Steel Check Valves

- Use with water, oil, air, diesel fuel, and gasoline; valves with PTFE seal are also for use with steam
- Max. Pressure: See table
- Temp. Range: −4° to +350° F

The excellent corrosion resistance of a Type 316 stainless steel body is paired with quiet operation—a spring-close design prevents valves from slamming closed. At least 3.6 psi is required to open valves. Install for horizontal or upward flow. Connections are NPT female.

Pipe Size	Max. psi Water and Air	Max. psi Steam	Lg.		
With PTFE Seal					
Medium-Pressure Valves					
1/4	400 @ 70° F	125 @ 350° F	2 1/16″	47885K71	$57.31
3/8	400 @ 70° F	125 @ 350° F	2 1/8″	47885K72	58.64
1/2	400 @ 70° F	125 @ 350° F	2 5/16″	47885K73	69.27
3/4	400 @ 70° F	125 @ 350° F	2 7/8″	47885K74	110.99
1	400 @ 70° F	125 @ 350° F	3 1/2″	47885K75	128.97
1 1/4	400 @ 70° F	125 @ 350° F	4 3/16″	47885K76	182.12
1 1/2	400 @ 70° F	125 @ 350° F	4 15/16″	47885K77	276.46
2	400 @ 70° F	125 @ 350° F	6″	47885K78	472.77
With Fluoroelastomer Seal					
Medium-Pressure Valves					
1/8	580 @ 70° F	Not Rated	2″	8605T12	89.43
1/4	580 @ 70° F	Not Rated	2 1/8″	8605T14	89.43
3/8	580 @ 70° F	Not Rated	2 7/8″	8605T16	102.21
1/2	580 @ 70° F	Not Rated	3 1/16″	8605T18	107.95
3/4	400 @ 70° F	Not Rated	2 7/8″	47885K64	116.55
1	400 @ 70° F	Not Rated	3 1/2″	47885K65	135.41
High-Pressure Valves					
1/8	3,000 @ 70° F	Not Rated	1 3/4″	7838K53	64.11
1/4	3,000 @ 70° F	Not Rated	2 1/8″	7838K54	56.46
3/8	3,000 @ 70° F	Not Rated	2 1/16″	7838K55	108.39
1/2	3,000 @ 70° F	Not Rated	3 1/16″	7838K56	118.40
3/4	2,000 @ 70° F	Not Rated	3 3/8″	7838K59	323.23
1	2,000 @ 70° F	Not Rated	4 1/4″	7838K58	352.67

Easy-to-Install Check Valves

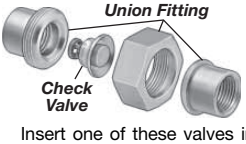

- Use with water, oil, inert gas, air, diesel fuel, gasoline, and natural gas
- Max. Pressure: 1,500 psi @ 70° F
- Temp. Range: −10° to +400° F

Insert one of these valves into a 45° ground joint union pipe fitting for an easy solution to backward flow. ***Check valves*** have a Type 316 stainless steel body and fluoroelastomer seal. At least 0.5 psi is required to open. Install for horizontal or upward flow. ***Union fittings*** (sold separately) are Type 316 stainless steel. Connections are NPT female.

Pipe Size	Check Valves Lg.			Union Fittings Lg.		
1/2	13/16″	8615T32	$72.13	1 15/16″	8615T52	$107.42
1	1 1/16″	8615T36	98.24	2 7/16″	8615T56	220.98
1 1/2	1 5/16″	8615T42	142.14	3″	8615T62	477.29
2	1 9/16″	8615T44	166.89	3 7/16″	8615T64	606.83

Miniature Check Valves

- Use with water, inert gas, and air
- Max. Pressure: NPT Connections: 200 psi @ 70° F
  UNF Connections: 125 psi @ 70° F
- Temp. Range: NPT Connections: 32° to 300° F
  UNF Connections: 32° to 150° F

Add protection against backward flow to small-scale applications. Seal is Type 304 stainless steel. At least 2 psi is required to open valves. Install in any direction.

With UNF Female × Female Connections

Thread Size	Lg.	Brass		Type 303 Stainless Steel	
10-32	13/16″	8567T31	$19.94	8567T32	$23.94

With NPT Male × Male Connections

Pipe Size	Lg.	Brass		Type 303 Stainless Steel	
1/8	1″	8567T11	$18.68	8567T12	$22.89
1/4	1 3/8″	8567T21	19.73	8567T22	25.22

High-Flow Stainless Steel Check Valves

With Socket Weld Connections

- Use with water, oil, inert gas, air, steam, diesel fuel, and gasoline
- Max. Pressure:
  Water, Oil, and Inert Gas: 200 psi @ 70° F
  Steam: 150 psi @ 350° F
- Temp. Range: −20° to +400° F

Combine excellent corrosion resistance with high flow. Also known as swing-check valves. Body and seal are Type 316 stainless steel. At least 0.5 psi is required to open valves. Install for horizontal or upward flow. Connections are female.

With NPT Connections

Pipe Size	Lg.			Pipe Size	Lg.		
1/4	2 3/8″	46635K62	$65.93	1 1/4	4 1/4″	46635K67	$105.96
3/8	2 3/8″	46635K63	65.93	1 1/2	4 13/16″	46635K68	151.81
1/2	2 9/16″	46635K64	65.93	2	5 1/2″	46635K69	203.31
3/4	3 1/8″	46635K65	85.45	2 1/2	7″	46635K71	333.51
1	3 1/2″	46635K66	91.18	3	7 7/8″	46635K72	432.74

With Socket Weld (Unthreaded) Connections

Pipe Size	Lg.			Pipe Size	Lg.		
1/4	2 3/8″	7766K51	$71.13	1 1/4	4 1/4″	7766K56	$118.84
3/8	2 3/8″	7766K52	71.13	1 1/2	4 13/16″	7766K57	166.63
1/2	2 9/16″	7766K53	71.13	2	5 1/2″	7766K58	222.11
3/4	3 1/8″	7766K54	94.23	2 1/2	7″	7766K59	413.51
1	3 1/2″	7766K55	99.74	3	7 7/8″	7766K61	475.16

Sanitary Quick-Clamp Stainless Steel Check Valves

- Use with food and beverage
- Max. Pressure: 150 psi @ 400° F
- Temp. Range: −20° to +400° F

Meet 3-A sanitary standard requirements for food, beverage, pharmaceutical, and biotechnology applications. Valves are polished to a fine finish to inhibit bacterial growth and have quick-clamp connections for easy cleaning in place. Body is Type 316L stainless steel. At least 0.5 psi is required to open valves. Install for upward flow. Use with quick-clamp fittings on pages 208-210.

For Tube OD	Flange OD	Lg.		
Valves with PTFE Seal				
1″	2″	3 3/4″	46295K71	$257.02
1 1/2″	2″	3 3/4″	46295K72	343.75
2″	2 17/32″	4 1/16″	46295K73	447.40
Valves with Fluoroelastomer Seal				
1″	2″	3 3/4″	46295K61	257.02
1 1/2″	2″	3 3/4″	46295K62	343.75
2″	2 17/32″	4 1/16″	46295K63	447.40
3″	3 9/16″	4 7/16″	46295K65	862.02

Extended-Life Iron Check Valves

For Inert Gas and Steam

- Use with: See table
- Max. Pressure:
  Type 303 SS Seal: 5,000 psi @ 70° F
  Ductile Iron Seal:
  Inert Gas: 1,000 psi @ 70° F
  Steam: 700 psi @ 450° F
- Temp. Range:
  Type 303 SS Seal: −30° to +200° F
  Ductile Iron Seal: −20° to +550° F

A rugged iron body provides strength and durability for a long service life. Valves have a threaded cap for easy access for maintenance. At least 2 psi is required to open valves. Install for horizontal or upward flow. Connections are NPT female.

Valves for inert gas and steam are rated Class 300.

Pipe Size	Lg.		
For Water— *Type 303 Stainless Steel Seal*			
1	4 1/2″	4620K45	$146.41
For Steam and Inert Gas— *Ductile Iron Seal*			
1	4 1/16″	4900K3	398.03
1 1/2	5 7/16″	4900K5	514.49
2	6 5/8″	4900K6	562.40

For information about check valves, see page 489. For information about pipe size, see pages 2-3.

High-Pressure Compact Check Valves

- Use with: See table
- Max. Pressure:
  Brass: 2,000 psi @ 70° F
  Steel and Type 303 SS: 3,000 psi @ 70° F
- Temp. Range: –30° to +190° F

Great for use in tight spaces, these small valves are suitable for high-pressure applications. At least 2.5 psi is required to open valves. Install in any direction. Connections are NPTF (Dryseal) male.

Brass valves are more corrosion resistant than steel valves.

Steel valves are harder and stronger than brass valves.

Type 303 stainless steel valves provide greater corrosion resistance than brass or steel valves.

Pipe Size	Lg.	Brass		Steel		Type 303 Stainless Steel	
For Water— *Buna-N Seal*							
1/8	1"	46105K59	$20.82	—	—	—	—
1/4	1 3/8"	46105K69	19.25	46105K74	$18.85	46105K77	$36.67
3/8	1 5/8"	46105K71	24.85	46105K75	22.06	46105K78	49.21
1/2	2 1/8"	46105K72	34.41	46105K76	30.07	—	—
3/4	2 1/4"	46105K73	47.39	—	—	—	—
For Oil— *Metal Seal*							
1/8	1"	46105K61	16.48	—	—	—	—
1/4	1 3/8"	46105K62	19.22	46105K65	19.44	46105K68	40.31
3/8	1 5/8"	46105K63	24.51	46105K66	23.21	—	—
1/2	2 1/8"	46105K64	34.81	46105K67	30.50	—	—

Flange-Mount Check Valves

- Use with: See table
- Max. Pressure:
  Cast Iron: 200 psi @ 70° F
  Type 316 Stainless Steel: 275 psi @ 70° F
- Temp. Range:
  Cast Iron: –20° to +250° F
  Type 316 Stainless Steel: –20° to +1000° F

Add protection against backward flow in flanged pipelines. Easy to install and maintain, sandwich valves between two flanges. At least 1.25 psi is required to open. Install for horizontal or upward flow.

Valves for water, oil, and inert gas have a cast iron body and Buna-N seal. They fit ANSI Class 125 and 150 flanges with the same pipe size. FM approved.

Valves for water and ethylene glycol have a Type 316 stainless steel body and seal. They fit ANSI Class 150 and 300 flanges with the same pipe size. Meet API 594 and API 598.

Pipe Size	Thick.	Fits Flange OD	Bolt Circle Dia.	Bolt Hole Qty.	Bolt Size		
For Water, Oil, and Inert Gas— *Cast Iron Body*							
2	2 1/8"	6"	4 3/4"	4	5/8"	5023K31	$63.74
2 1/2	2 1/8"	7"	5 1/2"	4	5/8"	5023K32	70.29
3	2 1/4"	7 1/2"	6"	4	5/8"	5023K33	87.16
4	2 1/2"	9"	7 1/2"	8	5/8"	5023K44	138.74
5	2 3/4"	10"	8 1/2"	8	3/4"	5023K45	179.96
6	3"	11"	9 1/2"	8	3/4"	5023K46	255.16
8	3 3/4"	13 1/2"	11 3/4"	8	3/4"	5023K47	391.36
10	4 1/4"	16"	14 1/4"	12	7/8"	5023K51	620.63
For Water and Ethylene Glycol— *Type 316 Stainless Steel Body*							
2	2 3/8"	6 1/2"	5"	8	5/8"	7767K31	404.48
2 1/2	2 5/8"	7 1/2"	5 7/8"	8	3/4"	7767K32	468.70
3	2 7/8"	8 1/4"	6 5/8"	8	3/4"	7767K33	502.02
4	2 7/8"	10"	7 7/8"	8	3/4"	7767K34	681.82
6	3 7/8"	11"	9 1/2"	8	3/4"	7767K36	1,081.65
8	5"	13 1/2"	11 3/4"	8	3/4"	7767K37	1,472.50

Super High-Pressure Check Valves

- Use with water and oil
- Max. Pressure:
  Brass: 2,000 psi @ 70° F
  Steel: 5,000 psi @ 70° F
  Type 303 Stainless Steel: 5,000 psi @ 70° F
- Temp. Range:
  High-Flow Valves: –30° to +200° F
  High-Temperature Valves: –15° to +400° F

Thick walls and rugged construction withstands high pressure. Often used in hydraulic applications. Seal is Type 440 stainless steel. At least 1 psi is required to open valves. Install in any direction. Connections are NPTF (Dryseal) female.

Brass valves are more corrosion resistant than steel valves.

Steel valves are harder and stronger than brass valves.

Type 303 stainless steel valves provide greater corrosion resistance than brass or steel valves.

Pipe Size	Lg.	Brass		Steel		Type 303 Stainless Steel	
High-Flow Valves							
1/4	2"	4620K21	$22.70	4620K41	$28.96	4620K81	$83.16
3/8	2 1/2"	4620K22	31.06	4620K42	35.02	4620K82	96.54
1/2	2 7/8"	4620K23	43.18	4620K43	43.32	4620K83	108.67
3/4	3 1/4"	4620K24	59.81	4620K44	59.64	4620K84	179.77
High-Temperature Valves							
1/8	1 1/2"	5010K71	14.29	5010K51	16.75	5010K61	49.54
1/4	2"	5010K72	20.54	5010K52	22.22	5010K62	65.98
3/8	2 1/4"	5010K73	27.69	5010K53	26.02	5010K63	77.01
1/2	2 3/4"	5010K74	38.38	5010K54	31.94	5010K64	104.11
3/4	3"	5010K46	62.21	5010K26	46.91	—	—

Super Duty High-Temperature Steel Check Valves

With NPT Connections

- Use with water, oil, inert gas, air, diesel fuel, and gasoline
- Max. Pressure: 1,975 psi @ 100° F
- Temp. Range: –20° to +800° F

Withstand the harsh conditions of petroleum and power-processing systems. Rated Class 800, valves have a steel body for strength at high temperatures and pressures. Seal is Type 304 stainless steel and graphite. At least 1.1 psi is required to open valves. Install in any direction. Meet API 598, API 602, and ASME B16.34. All connections are female.

High-use valves resist wear from frequent opening and closing of pulsating flow.

High-flow valves are also known as ball check valves.

With NPT Connections

Pipe Size	Lg.	High-Use Valves		High-Flow Valves	
1/2	3 5/16"	4895K63	$72.83	4618K71	$104.74
3/4	3 9/16"	4895K64	78.20	4618K72	133.26
1	4 3/8"	4895K65	91.93	4618K73	173.37
1 1/4	6 1/2"	4895K66	130.92	4618K74	214.63
1 1/2	6 1/2"	4895K67	180.28	4618K75	291.22
2	7"	4895K68	252.51	4618K76	335.56

With Solder End (Unthreaded) Connections

Pipe Size	Lg.	High-Use Valves		High-Flow Valves	
3/4	3 9/16"	4895K84	$78.20	4618K82	$133.26
1	4 3/8"	4895K85	91.93	4618K83	173.37
2	7"	4895K88	252.51	4618K86	335.56

Sure-Seal Steel Check Valves for Hydraulic Oil

- Use with hydraulic oil, water, oil, inert gas, and air
- Max. Pressure: 3,000 psi @ 70° F
- Temp. Range: –30° to +250° F

Commonly used in hydraulic applications, a soft seal design prevents leakage at high pressures. Body is zinc-plated steel for excellent strength and corrosion resistance. Seal is Buna-N. At least 2 psi is required to open valves. Install in any direction. Connections are NPT.

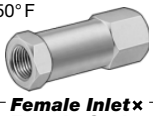

Pipe Size	Female Inlet × Female Outlet Lg.			Female Inlet × Male Outlet Lg.			Male Inlet × Male Outlet Lg.			Male Inlet × Female Outlet Lg.		
1/8	1 15/16"	5843T41	$35.78	2"	5843T31	$39.35	2 3/8"	5843T21	$40.43	2 5/16"	5843T11	$39.35
1/4	2 11/16"	5843T43	39.21	2 11/16"	5843T33	43.13	3"	5843T23	44.31	3 1/8"	5843T13	43.13
3/8	2 5/8"	5843T45	44.17	2 7/8"	5843T35	48.59	3 1/2"	5843T25	49.91	3 3/16"	5843T15	48.59
1/2	3 3/16"	5843T47	49.37	3 3/8"	5843T37	54.31	4 1/16"	5843T27	55.78	3 7/8"	5843T17	54.31
3/4	3 11/16"	5843T49	77.36	3 3/4"	5843T39	85.10	4 7/16"	5843T29	87.42	4 3/8"	5843T19	85.10

Check Valves

For information about check valves, see page 489. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	3

Flanged Class 125 Cast Iron Check Valves

- Use with oil, air, steam, diesel fuel, and natural gas
- Max. Pressure:
  Water, Oil, and Inert Gas: 200 psi @ 70° F
  Steam: 125 psi @ 353° F
- Temp. Range: –20° to +406° F

Easy to install, simply bolt these valves with ANSI Class 125 flange connections to flanges of the same pipe size. Body is cast iron and seal is bronze. At least 1 psi is required to open valves. Install for horizontal flow. Meet MSS-SP-71.

Pipe Size	Lg.	Fits Flange OD	Bolt Circle Dia.	Bolt Hole Qty.	Bolt Size		
2	8″	6″	4 3/4″	4	5/8″	8200T11	$165.76
2 1/2	8 1/2″	7″	5 1/2″	4	5/8″	8200T12	202.76
3	9 1/2″	7 1/2″	6″	4	5/8″	8200T13	248.64
4	11 1/2″	9″	7 1/2″	8	5/8″	8200T14	393.68
5	13″	10″	8 1/2″	8	3/4″	8200T15	577.20
6	14″	11″	9 1/2″	8	3/4″	8200T16	577.20
8	19 1/2″	13 1/2″	11 3/4″	8	3/4″	8200T17	1,015.03
10	24 1/2″	16″	14 1/4″	12	7/8″	8200T18	2,347.65

Easy-View PVC Check Valves with Socket Weld Connections

- Use with: See table
- Max. Pressure: 150 psi @ 70° F
- Temp. Range: 32° to 140° F

View and remove debris without disconnecting your pipeline. Valves have a transparent body and a threaded cap for easy access for maintenance. Use with Schedule 40 and 80 fittings. Body is PVC. At least 0.29 psi is required to open. Install in any direction. Connections are unthreaded pipe end (male).

Pipe Size	Lg.		
For Water— *EPDM Seal*			
1/2	5 5/8″	4754K52	$40.11
3/4	6 5/16″	4754K53	47.59
1	6 7/8″	4754K54	56.45
1 1/2	8 1/8″	4754K56	99.74
2	8 7/8″	4754K57	144.79
3	12 1/4″	4754K58	322.06
For Ethylene Glycol— *Fluoroelastomer Seal*			
1/2	5 5/8″	4754K42	48.67
3/4	6 5/16″	4754K43	59.41
1	6 7/8″	4754K44	67.71

Easy-to-Install Plastic Check Valves

- Use with water, oil, and diesel fuel
- Max. Pressure: 150 psi @ 70° F
- Temp. Range: 40° to 140° F

Union fittings simplify installation and allow for maintenance without detaching your pipe connections. Use with Schedule 80 pipe and fittings. Seal is fluoroelastomer. At least 1 psi is required to open valves. Install for horizontal or upward flow. Connections are female.

PVC valves are dark gray. ***CPVC valves*** are gray. ***Polypropylene valves*** are most corrosion resistant. Color is white.

Pipe Size	Lg.	PVC		CPVC		Polypropylene	
With NPT Connections							
1/2	3 3/4″	4721K13	$34.46	4810K31	$48.34	4851K41	$90.98
3/4	4 3/8″	4721K14	38.46	4810K32	58.93	4851K42	103.90
1	4 3/4″	4721K15	49.27	4810K33	68.05	4851K43	136.80
1 1/4	4 3/4″	4721K16	64.02	4810K34	94.81	____	____
1 1/2	6 3/16″	4721K17	81.77	4810K35	118.49	4851K44	178.00
2	7 1/4″	4721K18	109.02	4810K36	157.36	4851K45	238.70
With BSPP Connections							
1/2	4 13/16″	7909K91	50.28	____	____	____	____
1	5 1/8″	7909K93	70.53	____	____	____	____

PVC Check Valves

- Use with water
- Max. Pressure: 125 psi @ 70° F (unless noted)
- Temp. Range: 34° to 140° F

Choose these valves for low-pressure water applications. Body is PVC and seal is Buna-N, unless noted. At least 1 psi is required to open valves. Install for horizontal or upward flow. Color is gray.

With Tube Connections

Barb × Barb: For Tube ID	Lg.		
1/4″	3 1/2″	7933K31	$12.04
3/8″	3 1/2″	7933K33	12.04
1/2″	3 1/2″	7933K35	12.04

Push-to-Connect × Push-to-Connect: For Tube OD	Lg.		
1/4″	3″	7933K32	$15.49
3/8″	3″	7933K34	15.91

With NPT Connections

Pipe Size	Female Inlet × Female Outlet: Lg.			Female Inlet × Male Outlet: Lg.			Male Inlet × Male Outlet: Lg.		
1/8	2 1/4″	7933K24	$12.04	2 1/2″	7933K25	$12.04	2 3/4″	7933K26	$12.04
1/4	2 1/4″	7933K27	12.04	2 1/2″	7933K28	12.04	2 7/8″	7933K29	12.04
1/4	3″	4721K11★	30.49	____	____	____	____	____	____
3/8	3″	4721K12★	30.49	____	____	____	____	____	____

★ Max. pressure is 150 psi @ 70° F. Seal is fluoroelastomer.

NSF-Certified PVC Check Valves

With NPT Connections

With Socket Weld Connections

- Use with drinking water
- Max. Pressure: 150 psi @ 70° F
- Temp. Range: 33° to 140° F

A good option for beverage and food-processing systems, valves are NSF 61 certified for use with drinking (potable) water. Use with Schedule 40 pipe and fittings. Body is PVC and seal is EPDM. At least 0.5 psi is required to open valves. Install for horizontal or upward flow. Connections are female.

Quiet-close valves have a spring-close design to stop noisy slamming when they close and prevent damage from pump start-ups.

High-flow valves provide reduced resistance to flow in your pipeline. They're also known as swing check valves.

With NPT Connections

Pipe Size	QUIET CLOSE Lg.	White		HIGH FLOW Lg.	White		Clear	
1/2	3 1/4″	46835K32	$7.10	4 5/8″	45275K42	$10.35	6274T82	$16.14
3/4	3 3/4″	46835K33	7.30	4 5/8″	45275K43	10.41	6274T83	16.71
1	4 1/4″	46835K34	10.65	4 5/8″	45275K44	10.84	6274T84	17.17
1 1/4	5 1/4″	46835K35	14.30	5 1/8″	45275K45	11.24	6274T85	18.09
1 1/2	5 1/2″	46835K36	14.99	5 7/16″	45275K46	11.88	6274T86	19.57
2	6 1/8″	46835K37	20.90	6 1/4″	45275K47	18.53	6274T87	28.20

With Socket Weld (Unthreaded) Connections

Pipe Size	QUIET CLOSE Lg.	White		HIGH FLOW Lg.	White		Clear	
1/2	3 1/4″	46835K52	$7.10	4 5/8″	45275K52	$10.35	6274T92	$16.14
3/4	3 3/4″	46835K53	7.30	4 5/8″	45275K53	10.41	6274T93	16.71
1	4 1/4″	46835K54	10.65	4 5/8″	45275K54	10.84	6274T94	17.17
1 1/4	5 1/4″	46835K55	14.30	5 1/8″	45275K55	11.24	6274T95	18.09
1 1/2	5 1/2″	46835K56	14.99	5 7/16″	45275K56	11.88	6274T96	19.57
2	6 1/8″	46835K57	20.90	6 1/4″	45275K57	18.53	6274T97	28.20

For information about check valves, see page 489. For information about pipe size, see pages 2-3.

Drain, Waste, and Vent PVC Check Valves with Socket Weld Connections

- Use with water
- Max. Pressure: 0 psi (gravity flow)
- Temp. Range: 33° to 140° F

Prevent backward flow of waste water. A threaded cap provides easy access for maintenance. Use with Schedule 40 pipe and fittings. Body and seal are PVC. Valves are gravity flow; 0 psi is required to open. Install for horizontal flow. Valves meet ASTM D1784, D2665, and D3311 and are ICC, CSA, and IAPMO certified. Color is white. Connections are unthreaded socket end (female).

Pipe Size	Lg.		
1½	4 3/16″	4670K12	$23.88
2	4½″	4670K14	23.88
3	7 5/16″	4670K16	26.42
4	9¾″	4670K18	30.38
6	15 3/16″	4670K22	134.26

Polypropylene Check Valves

- Use with: See table
- Max. Pressure: 125 psi @ 70° F
- Temp. Range: 33° to 140° F

A glass-filled polypropylene body provides good strength in a lightweight valve. At least 0.33 psi is required to open. Install in any direction. Color is black. Connections are NPT female.

Pipe Size	Lg.		
For Water, Inert Gas, and Air— *Buna-N Seal*			
¼	2″	5492K11	$10.62
⅜	2 1/16″	5492K12	10.97
½	2½″	5492K13	11.67
¾	2½″	5492K14	13.27
For Oil and Diesel Fuel— *Fluoroelastomer Seal*			
¼	2″	5492K51	11.12
⅜	2 1/16″	5492K52	11.50
½	2½″	5492K53	12.27
¾	2½″	5492K54	13.93

Plastic Check Valves with Barbed Tube Fittings

- Use with: See table
- Max. Pressure:
  Buna-N & Fluoroelastomer Seal: 125 psi @ 70° F
  Silicone Seal: 50 psi @ 70° F
- Temp. Range: 33° to 140° F

Barbed connections make a tight seal with tubing. At least 1 psi is required to open valves. Install in any direction. Color is white.

Nylon valves are more impact resistant than polypropylene valves. *Valves with silicone seal* are made of FDA-compliant materials.

For Tube ID	Lg.	***Polypropylene***		***Nylon***	
For Water— *Silicone Seal*					
⅛	1 5/16″	—	—	2987K45	$3.92
3/16″	1 11/16″	—	—	2987K46	3.92
¼″	1 11/16″	—	—	2987K47	3.92
⅜″	1 15/16″	—	—	2987K48	4.12
For Inert Gas, Air, and Water— *Buna-N Seal*					
⅛″	1⅜″	7757K41	$3.54	6079T54	3.96
3/16″	1¾″	7757K42	3.54	6079T55	3.96
¼″	2 1/16″	7757K43	3.54	6079T56	3.96
For Oil, Diesel Fuel, and Water— *Fluoroelastomer Seal*					
⅛″	1⅜″	7757K44	3.54	6079T57	3.96
3/16″	1¾″	7757K45	3.54	6079T58	3.96
¼″	2 1/16″	7757K46	3.54	6079T59	3.96

Nylon Check Valves with Push-to-Connect Tube Fittings

- Use with air
- Max. Pressure: 145 psi @ 70° F
- Temp. Range: 32° to 158° F

With push-to-connect fittings that make a tight seal around tubing, these valves are well suited for use with air. Body is nylon and seal is Buna-N. At least 7 psi is required to open valves. Install in any direction. Color is black.

For Tube OD	Lg.		
5/32″	1½″	1096T1	$13.14
¼″	1⅝″	1096T2	18.44
5/16″	2 1/16″	1096T3	16.92
⅜″	2½″	1096T4	20.44

For Tube OD	Lg.		
4 mm	1½″	1096T5	$13.14
6 mm	1⅝″	1096T6	14.12
8 mm	2 1/16″	1096T7	16.92
10 mm	2½″	1096T8	20.44
12 mm	2⅝″	1096T9	27.98

Chemical-Resistant PVDF Check Valves

- Use with water, oil, inert gas, diesel fuel, and gasoline
- Max. Pressure: 220 psi @ 70° F
- Temp. Range: 40° to 180° F

Strength and wear resistance are combined with chemical resistance—valve body is PVDF, also known as Kynar, and seal is fluoroelastomer. At least 2.5 psi is required to open valves. Install in any direction. Color is white. Connections are NPT male.

Pipe Size	Lg.		
⅛	1″	46505K21	$11.22
¼	1 7/16″	46505K31	11.94
⅜	1½″	46505K33	12.73
½	1 13/16″	46505K35	14.37

Ultra Chemical-Resistant PFA Check Valves

- Use with ammonia hydroxide, deionized water, methanol, and mineral spirits
- Max. Pressure: 100 psi @ 150° F
- Temp. Range: 0° to 300° F

Suitable for high-purity chemical handling, a PFA body provides a strong friction-resistant surface and excellent corrosion resistance. Seal is chemical-resistant Kalrez. At least 1.8 psi is required to open valves. Install in any direction. Color is white. Connections are NPT female.

Pipe Size	Lg.		
¼	2⅜″	47155K81	$162.25
½	3⅜″	47155K83	189.45

Polyethylene Check Valves for Vacuum Service

- Use with water, inert gas, air, and vacuum
- Max. Vacuum: 29.9″ Hg
- Temp. Range: 33° to 150° F

Stop backward flow caused by back pressure in vacuum lines. Body is polyethylene and seal is neoprene. Max. pressure is 20 psi. Install in any direction. Color is white. Connections are tapered ends.

For Tube ID	Lg.		
¼″ to 5/16″	2¾″	4610K13	$6.30
⅜″ to ½″	3 3/16″	4610K17	8.70

Nylon Check Valves

- Use with water and air
- Max. Pressure: 125 psi @ 70° F
- Temp. Range: –20° to +180° F

Made of nylon for high strength and impact resistance. Seal is Buna-N. At least 1 psi is required to open valves. Install for horizontal or upward flow. Color is white.

Pipe-to-Pipe Connectors

Connections are NPT male.

Pipe Size	Lg.		
⅛	1″	1424T11	$15.00
⅜	1¼″	1424T19	15.00
¼	1¼″	1424T15	15.00
½	1½″	1424T37	16.43
¾	1½″	1424T45	16.43

Pipe-to-Tube Adapters

Inlet is NPT male and outlet is a barbed tube fitting.

Connection Size Inlet	Outlet	Lg.		
⅛ NPT	For 3/16″ Tube ID	1½″	1371T12	$15.00
¼ NPT	For ¼″ Tube ID	1⅝″	1371T36	15.00
¼ NPT	For ⅜″ Tube ID	1⅝″	1371T42	15.00
½ NPT	For ⅜″ Tube ID	1¾″	1371T76	15.00
½ NPT	For ½″ Tube ID	1¾″	1371T78	16.43

For information about check valves, see page 489. For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

Acetal Check Valves with Push-to-Connect Tube Fittings

- Use with: See below
- Max. Pressure: Acetal Seal: 145 psi @ 68° F
  Buna-N Seal: 125 psi @ 70° F
- Temp. Range: 40° to 100° F

An acetal body provides greater moisture resistance than nylon for use in humid environments. Push-to-connect tube fittings make a tight seal around the outside of tubing. Minimum pressure required to open valves is not rated. Install for horizontal flow.

Tube-to-Tube Connectors—For Drinking Water

Valves are NSF 61 certified for use with drinking (potable) water. Seal is acetal. Color is white. Connections are push-to-connect tube fittings.

For Tube OD Inlet	Outlet	Lg.		
1/4″	1/4″	1 15/16″	3208K14	$12.94
5/16″	5/16″	2″	3208K16	12.96
3/8″	3/8″	2 5/8″	3208K18	13.25

Pipe-to-Tube Adapters—For Water and Air

Seal is Buna-N. Color is gray. Inlet is NPT male and outlet is push-to-connect.

Connection Size Inlet	Outlet	Lg.		
1/8 NPT	For 5/32″ Tube OD	1″	1866T11	$14.43
1/8 NPT	For 1/4″ Tube OD	1 1/8″	1866T17	14.58
1/4 NPT	For 1/4″ Tube OD	1 3/16″	1866T19	14.58
1/4 NPT	For 3/8″ Tube OD	1 7/16″	1866T33	15.57
3/8 NPT	For 3/8″ Tube OD	1 1/4″	1866T35	15.57
1/2 NPT	For 1/2″ Tube OD	1 1/2″	1866T41	18.14

Pipe-to-Tube Elbow Adapters—For Air

Seal is acetal. Color is black. Inlet is NPT male and outlet is push-to-connect.

Connection Size Inlet	Outlet	Lg.		
1/8 NPT	For 1/4″ Tube OD	1 1/2″	3208K22	$14.74
1/4 NPT	For 1/4″ Tube OD	1 9/16″	3208K24	16.57
1/4 NPT	For 3/8″ Tube OD	1 3/4″	3208K26	16.57

High-Use Plastic Check Valves

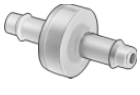

- Use with: See table
- Max. Pressure: 15 psi @ 70° F
- Temp. Range: –20° to +250° F

Designed for frequent operation, these valves can be cycled as often as once per second. At least 0.5 psi is required to open valves. Install for horizontal flow. Connections are barbed, except valves for 1/8″ tube ID have straight ends.

Polypropylene valves are white. ***Nylon valves*** are more impact resistant than polypropylene valves. Color is white and black, except 47245K25 is green and K17 is white and gray. ***PVDF valves*** resist abrasion and UV light. Color is white, except 47245K35 is blue.

For Tube ID	Lg.	Polypropylene		Nylon		PVDF	
For Water and Air—*Fluorosilicone Diaphragm*							
1/8″	1 5/8″	—	—	47245K25	$5.05	—	—
3/16″	1 11/16″	—	—	47245K26	4.92	—	—
1/4″	1 9/16″	—	—	47245K27	4.05	—	—
5/16″	1 3/4″	—	—	47245K24	9.05	—	—
For Oil, Diesel Fuel, and Water—*Fluoroelastomer Diaphragm*							
1/8″	1 5/8″	47245K11	$5.84	—	—	47245K35	$22.85
3/16″	1 11/16″	47245K12	5.84	47245K17	6.16	—	—
1/4″	1 9/16″	47245K13	5.30	47245K18	6.73	47245K37	11.54
5/16″	1 3/4″	47245K14	8.51	—	—	—	—

Backflow Prevention Valves for Water

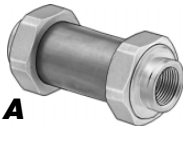

A

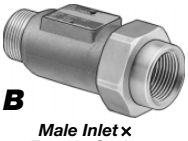

B

Male Inlet × Female Outlet

- Max. Pressure: 150 psi @ 180° F
- Temp. Range: 33° to 180° F

Protect your water supply—valves prevent backward flow caused by back pressure. Seal is Buna-N. At least 10 psi is required to open valves. Install for horizontal or upward flow. Valves meet ASSE 1024. Connections are NPT.

Style A are NSF 61 certified for drinking (potable) water in all states as of April 1, 2011. Body is copper.

Style B have thick walls and a rugged bronze body for a long service life. They can be used for drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012. CSA certified.

Pipe Size	O'all Lg.	Female Inlet × Female Outlet		Male Inlet × Female Outlet	
(A) NSF-Certified Copper Valves for Drinking Water					
1/2	4 7/16″	9117K41	$55.37	—	—
3/4	4 7/16″	9117K42	59.32	—	—
1	4 11/16″	9117K43	63.27	—	—
(B) Extended-Life Bronze Valves for Water					
3/4	4 3/8″	49235K75	56.94	49235K76	$62.32
1	4 3/8″	49235K77	66.02	49235K78	66.02

Safe-Venting Brass Backflow Prevention Valves for Water

C

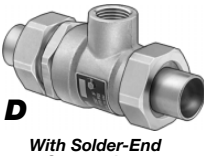

D

With Solder-End Connections

- Max. Pressure:
  Style C: 150 psi @ 140° F
  Style D: 175 psi @ 250° F
- Temp. Range:
  Style C: 33° to 140° F
  Style D: 33° to 250° F

Safeguard water supply lines to boilers, laboratory equipment, and processing tanks. Also known as dual-check backflow prevention valves, these have two internal check valves with a vent between them to discharge water in case of failure. Install for horizontal or upward flow. CSA certified.

Style C has an unthreaded vent. At least 2 psi is required to open valve. Body is chrome-plated brass. Meets ASSE 1035. Inlet is male and outlet is female.

Style D have an integral strainer to prevent debris from blocking the check valves. At least 25 psi is required to open valves. Body is brass. Vent is 1/2 NPT female. Meet ASSE 1012. Connections are female.

With NPT Connections

Pipe Size	O'all Lg.		
(C) Chrome-Plated Brass Valve			
3/8	2 3/8″	4760K63	$60.85
(D) Brass Valves			
1/2	4 15/16″	4760K51	62.92
3/4	4 1/2″	4760K52	65.08

With Solder-End (Unthreaded) Connections

Tube Size★	Actual Tube OD	O'all Lg.		
(D) Brass Valves				
1/2	5/8″	4 3/8″	4760K66	$62.92
3/4	7/8″	4 13/16″	4760K67	65.09

★ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Sump Pump ABS Check Valves with Hose Clamps

- Use with water
- Max. Pressure: 25 psi @ 70° F
- Temp. Range: 33° to 130° F

Prevent dirty water from flowing back to your pump. Valves have flexible couplers with hose clamps to slip over ABS, PVC, or steel pipe or copper tubing for easy installation. Body is ABS and seal is EPDM rubber and stainless steel. At least 2 psi is required to open valves. Install for horizontal or upward flow. 7744K11 is black and 7744K12 is green.

For Pipe Size	Lg.		
1 1/4 and 1 1/2	4 13/16″	7744K11	$12.81
2	6″	7744K12	25.49

For information about backflow prevention valves, see page 489. For information about pipe size, see pages 2-3.

Easy-Service Bronze Backflow Prevention Valves for Water

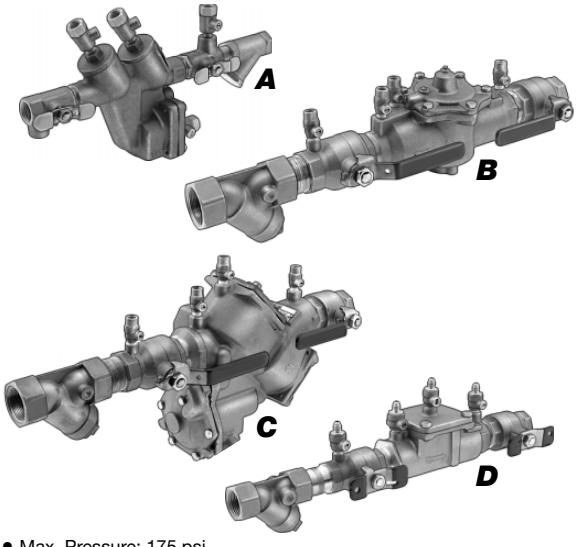

- Max. Pressure: 175 psi
- Temp. Range: Styles A, B, and D: 33° to 180°F
  Style C: 33° to 140°F

Get maximum protection against contamination while simplifying maintenance—valves have integral test cocks and ball valves to control flow for inspection or service. They also include two check valves and a strainer. Valves are ANSI certified for use with drinking (potable) water in all states as of July 1, 2011. Pipe connections are NPT.

Styles A-C—Also known as reduced pressure zone valves, these have an integral relief valve to discharge water in case of failure. They are ASSE 1013 listed and USC approved. *Styles A and B* must be installed for horizontal flow. *Style B* is NSF 61 certified. *Style C* have an additional air inlet to provide high capacity relief in emergency conditions. It is NSF 61 certified. Install in any position.

Style D—Thick-wall construction provides durability in demanding environments. Also known as dual-check backflow prevention valves. Install in any direction. They're ASSE 1015 listed, NSF 61 and CSA certified, and USC approved.

	Pipe Size	Lg.		
With Female Connections				
With Relief Valve				
A	1/2	14 1/2"	**47845K25**	$231.13
B	3/4	13 15/16"	**45265K41**	271.70
B	1	20 1/2"	**45265K42**	309.14
B	1 1/4	21 13/16"	**45265K43**	557.33
B	1 1/2	22 3/4"	**45265K44**	644.13
B	2	27 5/16"	**45265K45**	736.07
C	3/4	18 1/16"	**4777K81**	527.99
C	1	19 5/8"	**4777K82**	627.25
Without Relief Valve				
D	1/2	12 3/4"	**4775K61**	205.53
D	3/4	14 5/16"	**4775K62**	217.41
D	1	17"	**4775K63**	249.73
D	1 1/2	21 5/8"	**4775K64**	423.13
D	2	24 13/16"	**4775K65**	505.29
With Male Connections				
With Relief Valve				
C	1 1/2	24 3/8"	**4777K83**	1,014.03
C	2	25 15/16"	**4777K84**	1,202.33

High-Pressure Stainless Steel Vacuum-Breaking Valves

- Max. Pressure: 1,500 psi @ 70°F
- Temp. Range: –10° to +400°F

Add protection against backward flow in high-pressure applications. Well suited for tight spaces, the bushing-style design requires minimal space for inline installation. Use with water, oil, inert gas, and air. Body is Type 316 stainless steel. Connections are NPT; inlet is female and outlet is male.

Pipe Size Inlet	Outlet	Lg.		
1/2	3/4	15/16"	**8537T74**	$92.31
3/4	1	1 7/8"	**8537T76**	106.82

Vacuum-Breaking Valves

- Max. Pressure:
  Water, Inert Gas, and Air: 300 psi @ 70°F
  Steam: 300 psi @ 365°F
- Temp. Range: –20° to +365°F

Protect against damage to equipment and backward flow. Valves have a spring-close design for a tight seal at near-vacuum conditions. Often used on steam coils, heat exchangers, and space heaters. Install in pipeline and tanks. Inlet is NPT male.

(E) With NPT Female Threaded Outlet

Pipe Size Inlet	Outlet	Ht.	Brass		Type 303 Stainless Steel	
1/2	3/8	1 3/4"	**4817K14**	$63.75	**4817K24**	$115.78
3/4	1/2	2 1/8"	**4817K15**	75.27	**4817K25**	150.54
1	3/4	2 3/8"	**4817K16**	135.09	**4817K26**	195.29

(F) With Unthreaded Outlet

Inlet, Pipe Size	Outlet, For Tube OD	Ht.	Brass		Type 303 Stainless Steel	
1/2	11/16"	1 3/4"	**4817K34**	$63.75	**4817K44**	$115.78
3/4	13/16"	2 1/8"	**4817K35**	75.27	**4817K45**	150.54
1	1 1/16"	2 3/8"	**4817K36**	135.09	**4817K46**	195.29

Elbow Vacuum-Breaking Valves

- Max. Pressure: 125 psi @ 70°F
- Temp. Range: 33° to 180°F

Prevent backward flow of dirty water in applications with intermittent flow, such as the water supply to laboratory equipment. Valves meet Uniform Plumbing Code for atmospheric discharge, are ASSE 1001 listed, and CSA certified. Connections are NPT female.

Pipe Size	Lg.	Ht.		
Brass				
1/2	1 5/16"	2 1/2"	**47685K12**	$17.33
1	1 3/4"	3 5/8"	**2670K15**	80.93
Chrome-Plated Brass				
1/4	1"	2 3/8"	**9903K31**	19.44
3/8	1"	2 3/8"	**9903K33**	19.44
1/2	1 1/4"	2 5/8"	**9903K35**	19.03
3/4	1 1/2"	3"	**9903K37**	20.25
Polished Chrome-Plated Brass				
1/4	1"	2 3/8"	**9903K51**	21.94
3/8	1"	2 3/8"	**9903K53**	21.94
1/2	1 1/4"	2 5/8"	**9903K55**	23.59
3/4	1 1/2"	3"	**9903K57**	26.95
1	1 3/4"	3 5/8"	**3086K35**	129.02
Bronze				
3/4	1 1/2"	2 15/16"	**47685K34**	21.54
1	1 5/8"	2 5/16"	**47685K36**	43.36
1 1/4	2"	4 1/2"	**47685K44**	79.83
1 1/2	2 1/4"	4 7/8"	**47685K46**	84.69
2	2 3/4"	5 9/16"	**47685K48**	125.27

Brass Vacuum-Breaking Valves with Garden Hose Connections

- Max. Pressure: 125 psi @ 70°F
- Temp. Range: 32° to 180°F

Stop backward flow in hose and pipe that have garden hose threads (GHT). For intermittent use with water on service sinks and faucets. Body is brass. Valves meet ANSI A112.1.3, are ASSE 1011 listed, and CSA certified B64.2. Connections are 3/4 GHT; inlet is female and outlet is male.

Removable Valves—Tighten set screw to secure in place.

Tamper-Resistant Valves—Tighten set screw until the head breaks off to prevent removal. Valves can be drained.

Permanent-Mount Valves—An internal spring locks valve in place; it cannot be removed. Valves can be drained.

Mount Type	Ht.	Brass		Chrome-Plated Brass	
(G) For Use with Service Sinks					
Removable	1 1/2"	**46605K55**	$18.87	**46605K58**	$24.57
Tamper Resistant	1 1/2"	**46605K75**	10.33	**46605K85**	22.03
Permanent Mount	1 1/2"	**46605K65**	22.63	**46605K68**	25.93
(H) For Use with Frostproof Outdoor Faucets					
Tamper Resistant	2"	**46605K88**	23.93	**46605K89**	35.60

Air-Release Valves & Flow-Control Orifices

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	3 1/2″
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	3

Air-Release Valves

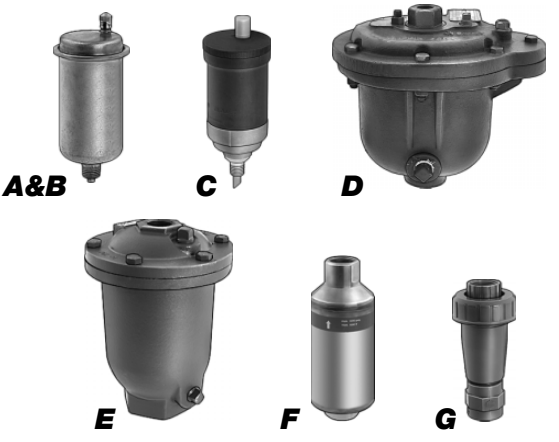

Improve efficiency in pressurized pipelines—valves eliminate air pockets to maintain consistent flow and prevent equipment damage from water hammer. Install vertically. Connections are NPT.

(A-C) With Vented Outlet

Also known as air vents and venting valves, these are commonly used in cooling and heating systems, unless noted. They exhaust to the atmosphere.

Pipe Size, Inlet	Max. psi	Temp. Range	Ht.		
(A) For Water— *Brass Body*					
1/8 Female	75	32° to 240° F	4 3/8″	**4928K1**	$27.01
1/8 Male	75	32° to 240° F	4 3/8″	**4928K8**	30.91
1/4 Female	150	32° to 240° F	4 3/8″	**4928K3**	31.82
1/4 Male	150	32° to 240° F	4 3/4″	**4928K9**	31.82
3/8 Female	125	20° to 450° F	6″	**4926K31**	96.28
3/4 Male	150	32° to 240° F	4 3/4″	**4928K4**	39.54
(B) For Steam— *Brass Body*					
3/4 Male	15	212° to 450° F	6″	**4926K51**	70.91
3/4 Male	125	212° to 450° F	6″	**4926K41**	154.54
(C) For Water— *Plastic Body*					
1/8 Male	90	40° to 180° F	5 1/4″	**47225K63**	27.62
1/8 Male	90	40° to 212° F	5 1/4″	**47225K83★**	29.84

★ For cooling systems only.

(D-G) With NPT Threaded Outlet

Valves have a threaded outlet for inline connection. Use with pumps for increased efficiency.

Style E are NSF 61 certified for use with drinking (potable) water.

Pipe Size Inlet	Pipe Size Outlet	Max. psi	Temp. Range	Ht.		
(D) For Water— *Cast Iron Body*						
3/8	3/8	150	+32° to +150° F	5 3/4″	**48045K93**	$149.62
1/2	3/8	150	+32° to +150° F	5 3/4″	**48045K94**	149.62
1/2	1/2	300	+32° to +150° F	5 1/2″	**48045K71**	92.25
3/4	3/8	150	+32° to +150° F	5 3/4″	**48045K95**	214.88
3/4	1/2	300	+32° to +150° F	5 1/2″	**48045K72**	92.25
1	3/8	150	+32° to +150° F	5 3/4″	**48045K96**	234.00
1	1/2	150	+32° to +150° F	9″	**48045K81**	267.75
1	1/2	300	+32° to +150° F	5 1/2″	**48045K73**	97.87
2	1/2	150	+32° to +150° F	9″	**48045K87**	276.41
2	1/2	150	+32° to +150° F	10 1/2″	**48045K83**	507.94
(E) For Drinking Water— *Cast Iron Body*						
1/2	1/2	300	+33° to +225° F	7″	**4790T31**	199.96
1	1	300	+33° to +225° F	9 1/2″	**4790T32**	243.55
2	2	300	+33° to +225° F	12″	**4790T33**	420.44
3	3	300	+33° to +225° F	12″	**4790T34**	592.20
(F) For Water, Diesel Fuel, and Hydraulic Oil— *Type 304 SS Body*						
3/4	1/2	400	–20° to +500° F	7″	**8126K12**	234.09
(G) For Water— *PVC Body*						
1/2	1/2	150	+32° to +140° F	3″	**48515K16**	48.76
3/4	3/4	232	+40° to +140° F	5 7/8″	**48515K31**	255.92
1	1	150	+32° to +140° F	3 7/8″	**48515K17**	60.68
1 1/4	1 1/4	232	+40° to +140° F	7 7/8″	**48515K32**	344.08
2	2	232	+40° to +140° F	9 3/4″	**48515K33**	492.61

Inline Bronze Air-Release Valves

- Max. Pressure: 125 psi
- Temp. Range: 40° to 240° F

Designed to prevent corrosion and increase efficiency of water lines, these valves have an internal wire brush that traps and removes even the smallest air bubbles. Often used in heating and cooling systems. Body is bronze. Valves exhaust to the atmosphere; vent is on top. Install vertically. Connections are NPT female.

Pipe Size	Lg.	Ht.		
3/4	2 11/16″	6 15/16″	**4742T11**	$96.49
1	3 1/8″	6 1/2″	**4742T12**	104.45

Key-Operated Brass Air-Release Valves

- Max. Pressure: 150 psi
- Temp. Range: 33° to 200° F

Add manual venting control to hot water applications, such as radiators and heaters. Turn the key to adjust flow. Valve is nickel-plated brass. Connection is 1/8 NPT male.

Valve with Key	**1813K31**	$10.00
Replacement Key	**1813K21**	2.97

Pressure-Compensating Flow-Control Orifices

Female × Female

- Max. Pressure: 200 psi
- Temp. Range: 33° to 180° F

Regulate flow to conserve water and energy. A flexible design adjusts to changing inlet pressure for consistent outlet flow. Orifices are suitable for use with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012. Connections are NPT.

To Order: Please specify outlet flow from those listed in the table.

Pipe Size	Available Outlet Water Flow, gpm		
Male × Female— *Brass*			
3/4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	**8105K11**	$47.88
Female × Female— *Nickel-Plated Brass*			
3/8	0.13, 0.19, 0.25, 0.35, 0.5, 0.75, 1	**4762K41**	39.66
1/2	1, 1.5, 2, 2.5, 3, 3.5, 4, 5, 6	**4762K43**	40.90
3/4	1, 1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 9, 10	**4762K45**	48.27
1	1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30	**4762K47**	92.76
Female × Female— *Type 316 Stainless Steel*			
3/8	0.13, 0.19, 0.25, 0.35, 0.5, 0.75, 1	**4762K51**	152.22
1/2	1, 1.5, 2, 2.5, 3, 3.5, 4, 5, 6	**4762K53**	167.14
3/4	1, 1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 9, 10	**4762K55**	192.84
1	1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30	**4762K57**	317.62
Male × Male— *Zinc-Plated Steel*			
1 1/2	1, 2, 3, 5, 6, 8, 10, 15, 30	**8107K33**	109.42

Flow-Control Valves for Dry Materials

- Max. Pressure: Not rated
- Max. Temp.: 230° F

Adjust the flow of dry bulk materials, such as powder, grain, and packaging. Commonly used to control flow from bins and hoppers. Rotate the handle to adjust flow; twist to lock in any position. Body is aluminum and iris-style opening is nylon.

Max. Opening Dia.	Housing Dia.	Thickness		
4″	6″	1 1/4″	**8153K11**	$456.25
6″	9 1/8″	1 3/8″	**8153K13**	525.00
8″	11 1/8″	1 3/8″	**8153K15**	637.50
10″	13 1/2″	1 5/8″	**8153K17**	893.75

For information about pipe size, see pages 2-3.

Flow-Control Orifices

Get high-precision control in liquid and gas applications. Also known as precision orifice valves and flow restrictors, use orifices for accurate restriction and throttling. They're commonly used to calibrate the timing of air-powered and hydraulic circuits and the speed of cylinders and actuators.

Threaded-insert orifices are often installed in manifolds to provide a precise flow rate and in air lines for slow venting.

To Order: Please specify orifice diameter from the chart.

Also Available: Orifice diameters not listed. Please ask for 2712T999 and specify the connection style, connection size, and orifice diameter desired.

Available Orifice Diameters

Dia.	Flow @ 40 psi Air, scfm	Flow @ 40 psi Water, gpm	Dia.	Flow @ 40 psi Air, scfm	Flow @ 40 psi Water, gpm	Dia.	Flow @ 40 psi Air, scfm	Flow @ 40 psi Water, gpm
0.010″	0.078	0.0158	0.025″	0.458	0.089	0.038″	1.12	0.202
0.016″	0.168	0.0348	0.026″	0.498	0.101	0.040″	1.186	0.228
0.018″	0.22	0.0462	0.028″	0.568	0.114	0.042″	1.281	0.247
0.020″	0.275	0.056	0.029″	0.618	0.12	0.047″	1.571	0.304
0.021″	0.296	0.061	0.032″	0.745	0.152	0.052″	1.983	0.373
0.023″	0.388	0.076	0.033″	0.795	0.158	0.055″	2.2	0.43
0.024″	0.423	0.082	0.035″	0.875	0.177	0.063″	2.833	0.557

Pipe-to-Pipe Connector Orifices

- Max. Pressure:
  Brass: 2,000 psi @ 70°F
  Stainless Steel: 4,000 psi @ 70°F
- Temp. Range: +35° to +200°F

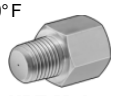

Pipe Size	NPT Male × NPT Male		NPT Male × NPT Female	
Brass				
1/8	2712T41	$9.07	2712T44	$9.07
1/4	2712T42	10.82	2712T45	10.82
3/8	2712T43	15.94	2712T46	17.81
1/2	———	———	2712T47	23.69
Type 303 Stainless Steel				
1/8	2822T11	14.69	2822T14	14.69
1/4	2822T12	21.57	2822T15	21.57
3/8	2822T13	23.13	2822T16	23.13
1/2	———	———	2822T17	42.82

Threaded-Insert Orifices

- Max. Pressure:
  Brass: 2,000 psi @ 70°F
  Stainless Steel: 4,000 psi @ 70°F
- Temp. Range: +35° to +200°F

Pipe Size	Hex Socket, NPT Male		Hex Head, NPT Male	
Brass				
1/8	2712T51	$9.07	2712T48	$9.07
1/4	2712T52	10.82	2712T49	10.82
Type 303 Stainless Steel				
1/8	2822T21	14.69	2822T18	14.69
1/4	2822T22	21.57	2822T19	21.57

- Max. Pressure:
  Brass: 2,000 psi @ 70°F
  Stainless Steel: 4,000 psi @ 70°F
- Temp. Range: +35° to +200°F

Thread Size	Lg.	Hex Socket, UNF Male	
Brass			
10-32	3/16″	2943T887	$8.12
10-32	1/4″	2943T888	8.12
Type 316 Stainless Steel			
10-32	3/16″	3928T987	11.19
10-32	1/4″	3928T988	11.19
10-32	3/8″	3928T989	11.19
1/4″-20	1/4″	3928T991	12.44
1/4″-20	3/8″	3928T992	12.44
1/4″-20	1/2″	3928T993	12.44

Tube-to-Tube Connector Orifices

- Max. Pressure: Not rated
- Temp. Range: Not rated

For Tube OD	Push-to-Connect × Push-to-Connect	
Acetal		
1/4″	6349T42	$11.00
3/8″	6349T43▲	11.29
1/2″	6349T44▲	11.29

▲ Orifice diameter 0.010 not available.

Tube-to-Pipe Adapter Orifices

- Max. Pressure: Not rated
- Temp. Range: Not rated

For Tube OD	Pipe Size	Push-to-Connect × NPT Male	
Acetal			
1/4″	1/8	6349T12	$10.71
1/4″	1/4	6349T13	13.57
Brass			
1/4″	1/4	3962T98	22.87

- Max Pressure: 125 psi @ 70°F
- Temp. Range: –40° to +200°F

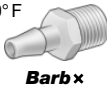

For Tube ID	Pipe Size	Barb × NPT Male	
Nylon			
1/8″	1/8	6183T45	$9.19
3/16″	1/4	6183T61	8.87
1/4″	1/4	6183T63	8.87
3/8″	1/4	6183T67	8.87

Nylon Threaded-Insert Flow-Control Orifices

- Max. Pressure: 100 psi @ 75°F
- Temp. Range: 40° to 120°F

Vent, bleed, or purge your system to the atmosphere at a controlled rate. Use with water, inert gas, and air. Body is nylon. Orifices are colored for easy identification. Have a hex head. Connection is NPT male.

Pipe Size	Orifice Dia.	Flow Rate @ 40 psi Air, scfm	Flow Rate @ 40 psi Water, gpm	Color		
1/8	0.004″	0.010	0.0022	Purple	4926T12	$8.87
1/8	0.007″	0.040	0.0076	Aqua	4926T15	8.87
1/8	0.010″	0.083	0.0158	Yellow	4926T16	8.87
1/8	0.020″	0.283	0.0560	Blue	4926T19	8.87

Brass Pressure Regulators

Reduce inlet pressure to the outlet pressure you need. Adjust the outlet pressure within the range. Body is brass. Connections are NPT female.

Styles A&B—Often used with humidifiers and air-powered tools. *Regulators with gauge port* have a 1/4 NPT female gauge port on the side. ***Style A*** have a strainer to trap debris. Diaphragm is Buna-N. ***Style B*** provide higher flow than Style A. Diaphragm is neoprene.

Style C—Suitable for low-temperature liquefied gas service of oxygen, carbon dioxide, nitrogen, and argon. Come cleaned, degreased, and bagged for oxygen service. Diaphragm is bronze.

To Order: Please specify outlet pressure range from those listed in the table.

A&C

B

Pipe Size	Max. Inlet Pressure, psi	Temp. Range	Available Outlet Pressure Ranges, psi	Lg.	Without Gauge Port		With Gauge Port	
(A) For Water, Hydraulic Oil, Inert Gas, and Air—*Buna-N Seal*								
1/4	250	+32° to +180°F	2-30, 10-50, 25-90, 80-120, 100-180	2 1/4″	4677K51	$114.34	4677K61	$137.07
3/8	250	+32° to +180°F	2-30, 10-50, 25-90, 80-120, 100-180	2 1/4″	4677K55	114.34	4677K65	137.07
(B) For Water, Hydraulic Oil, Inert Gas, and Air—*Buna-N Seal*								
1/4	400	+32° to +180°F	0-5, 2-35, 20-70, 60-125, 75-200, 100-250	2 1/2″	5022K21	197.94	5022K41	213.24
3/8	400	+32° to +180°F	0-5, 2-35, 20-70, 60-125, 75-200, 100-250	2 1/2″	5022K23	197.94	5022K43	213.24
1/2	400	+32° to +180°F	0-5, 2-25, 20-60, 40-80, 75-125, 75-200, 100-250	2 7/8″	5022K25	222.93	5022K45	241.88
(C) For Cryogenic Gas—*PTFE Seal*								
1/4	600	–320° to +150°F	15-65, 75-175, 100-250	2 1/4″	47435K31	163.67	———	———
3/8	600	–320° to +150°F	15-65, 75-175, 100-250	2 1/4″	47435K32	163.67	———	———

Pressure Regulators

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″	2 7/8″	3 1/2″
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3

High-Purity Cleaned and Bagged Brass Pressure Regulators

- Use with argon, nitrogen, oxygen, carbon monoxide, helium, hydrogen, neon, and xenon
- Max. Inlet Pressure: 435 psi
- Temp. Range: –40° to +165° F

Designed for use in medical and industrial applications, regulators come cleaned, degreased, and bagged to meet CGA G-4.1 standards for oxygen service. Adjust the outlet pressure within the range. Body is brass, seal is fluoroelastomer, and diaphragm is Buna-N. Regulators have two 1/4 NPT female gauge ports. Connections are NPT female.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
1/2	5-55, 40-110, 100-200	3 5/8″	**49305K21**	$182.50
3/4	5-55, 40-110, 100-200	4 11/16″	**49305K22**	225.67
1	5-55, 40-110, 100-200	4 11/16″	**49305K23**	225.67

Compact Brass Pressure Regulators

With Gauge

- Use with water
- Max. Inlet Pressure: NPT Connections: 300 psi
  Garden Hose Thread (GHT) Connections: 150 psi
- Temp. Range: 33° to 140° F

Regulate water supply to small tanks in tight spaces. Adjust the outlet pressure within the range. Body is brass and seal and diaphragm are Buna-N. *Regulators with NPT connections* have a female inlet and outlet. *Regulators with GHT connections* are IAPMO listed. Inlet is female and outlet is male.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.	*Without Gauge*		*With Gauge*	
With NPT Connections						
1/8	0-25, 0-60, 0-125	1 1/2″	**3823T11**	$44.15	**3823T31**	$63.78
1/4	0-25, 0-60, 0-125	1 1/2″	**3823T12**	44.15	**3823T32**	63.78
With GHT Connections						
3/4	10-60	3″	**3823T21**	51.37	**3823T41**	72.80

Miniature Nickel-Plated Brass Pressure Regulators

- Use with water, inert gas, and air
- Max. Inlet Pressure: 80 psi
- Temp. Range: 32° to 180° F

Great for extremely tight spaces. Regulators are nickel-plated brass for corrosion resistance. Adjust the outlet pressure within the range. Seal is Buna-N. Mount through a panel with a 1/2″ dia. cutout. Inlet is on the bottom and outlet is on the side. *Note:* Length is the distance from the center of the inlet to the side of the regulator.

Thread Size	Outlet Pressure Range, psi	Lg.		
10-32 UNF	5-80	3/8″	**3834T51**	$15.40

Brass Low-Pressure Regulators

- Use with water and diesel fuel
- Max. Inlet Pressure: 300 psi
- Temp. Range: 0° to 120° F

Get precision regulation for low-pressure applications. Regulators have a strainer to trap debris. Adjust the outlet pressure within the range. Seal is Type 303 stainless steel and diaphragm is Buna-N coated nylon. Connections are NPT female.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
1/4	0-8, 0-20, 0-50	4 1/4″	**3878T41**	$224.09

Brass High-Pressure Regulators

- Use with air, nitrogen, argon, helium, and hydrogen
- Max. Inlet Pressure: 3,500 psi
- Temp. Range: –40° to +165° F

Ideal for gas service, these regulators are suitable for inlet pressures up to 3,500 psi. They have a strainer to trap debris and a 1/4 NPT female gauge port. Adjust the outlet pressure within the range. Body is brass, seal is PTFE, and diaphragm is Type 316 stainless steel. Mount through a panel with a 1 3/8″ dia. cutout. Meet ANSI/ASME B31.3. Connections are NPT female.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
1/4	0-25, 0-50, 0-100, 0-250, 0-500	2″	**3811T11**	$261.16

Brass Extreme-Pressure Regulators

- Use with air, argon, helium, and nitrogen
- Max. Inlet Pressure: 6,000 psi
- Temp. Range: –40° to +165° F

With the highest inlet pressure we offer, these regulators are rated up to 6,000 psi. They have a strainer to trap debris and two 1/4 NPT female gauge ports. Adjust the outlet pressure within the range. Seal is polyimide. Mount through a panel with a 2 1/4″ dia. cutout. Meet ANSI/ASME B31.3. Connections are NPT female.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
1/4	0-500; 0-800; 10-1,500; 15-2,500; 25-4,000; 50-6,000	2 1/8″	**3950T21**	$709.82

Extended-Life Brass Pressure Regulators

- Use with water and air
- Max. Inlet Pressure: 300 psi
- Temp. Range: 32° to 180° F

Thick walls and rugged construction provide a long service life and durability in harsh environments. Regulators have a strainer to trap debris. Adjust the outlet pressure within the range. Body is brass, seal is Type 304 stainless steel, and diaphragm is ethylene propylene. Connections are NPT female.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
1/2	10-40, 20-70, 71-150	5″	**4676K31**	$175.73
3/4	10-40, 20-70, 71-150	9″	**4676K32**	208.68
1	10-40, 20-70, 71-150	10 1/4″	**4676K33**	318.20
1 1/4	10-40, 20-70, 71-150	12 1/2″	**4676K34**	628.90
1 1/2	10-40, 20-70, 71-150	13 1/8″	**4676K35**	697.74
2	10-40, 20-70, 71-150	16″	**4676K36**	986.02

Bronze Pressure Regulators with Garden Hose Connections

With Gauge

- Use with water
- Max. Inlet Pressure: 150 psi
- Temp. Range: 33° to 140° F

Add pressure regulation to light duty water applications with garden hose threads (GHT). Adjust the outlet pressure within the range. Body is bronze, seal is Buna-N coated nylon, and diaphragm is EPDM. Connections are GHT; inlet is female and outlet is male.

Regulator without gauge has a 1/8 NPT female gauge port.

Pipe Size	Outlet Pressure Range, psi	Lg.	*Without Gauge*		*With Gauge*	
3/4	10-60	3″	**4000T11**	$92.42	**4000T31**	$131.00

For information about pipe size, see pages 2-3.

Plumbing-Code Bronze Pressure Regulators

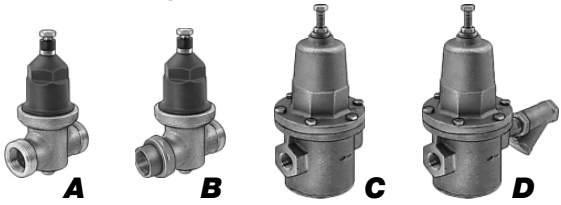

- Use with drinking water
- Max. Inlet Pressure: 400 psi (unless noted)
- Temp. Range: 33° to 140° F

Ensure that your water supply conforms to plumbing standards—regulators are ANSI certified for use with drinking (potable) water in all states as of June 1, 2011. They're also ASSE 1003 listed, IAPMO listed, and CSA certified. Adjust the outlet pressure within the range. Body is bronze and diaphragm is Buna-N. Connections are NPT female.

(A&B) Lightweight Regulators—Regulators are NSF 61 certified. They have a strainer to trap debris, a UV-resistant plastic cover, and a 1/4 NPT female gauge port. Seal is Buna-N. *Style B* come with a union fitting for maintenance without detaching the pipe connection.

(C&D) Heavy Duty Regulators—An all-bronze body provides durability in harsh environments. They have an internal bypass to protect against thermal expansion. Seal is bronze. *Style D* come with a y-strainer to trap debris.

To Order: Please specify outlet pressure range from those listed.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
(A) Lightweight Regulators				
1/2	15-75	3 1/2"	**4946K11**	$50.73
3/4	15-75	3 1/2"	**4946K12**	51.19
1	15-75	4"	**4946K13**	69.66
(B) Lightweight Regulators with Union Fitting				
1/2	15-75	4 3/8"	**4946K21**	59.58
3/4	15-75	4 7/16"	**4946K22**	62.78
1	15-75	4 15/16"	**4946K23**	80.05
1 1/4	15-75	6 3/16"	**4946K24**	199.74
1 1/2	25-75	6 5/16"	**4946K25**★	279.83
2	25-75	6 1/4"	**4946K26**★	316.11
(C) Heavy Duty Regulators				
1/2	10-35, 25-75, 75-125	4 1/8"	**8138K71**	182.28
3/4	10-35, 25-75, 75-125	4 1/8"	**8138K72**	182.28
1	10-35, 25-75, 75-125	4 13/16"	**8138K73**	210.57
1 1/4	10-35, 25-75, 75-125	6 3/16"	**8138K74**	430.50
1 1/2	10-35, 25-75, 75-125	6 3/4"	**8138K75**	466.50
2	10-35, 25-75, 75-125	8 1/8"	**8138K76**	772.50
2 1/2	10-35, 25-75, 75-125	8 1/8"	**8138K77**	867.00
3	10-35, 25-75, 75-125	10 3/8"	**8138K78**	1,323.00
(D) Heavy Duty Regulators with Y-Strainer				
1/2	10-35, 25-75, 75-125	8 3/8"	**8138K79**	207.43
3/4	10-35, 25-75, 75-125	9"	**8138K81**	223.15
1	10-35, 25-75, 75-125	10 1/4"	**8138K82**	264.00
1 1/4	10-35, 25-75, 75-125	12 1/2"	**8138K83**	583.50
1 1/2	10-35, 25-75, 75-125	13 1/8"	**8138K84**	615.00
2	10-35, 25-75, 75-125	16"	**8138K85**	913.50
2 1/2	10-35, 25-75, 75-125	17 11/16"	**8138K86**	1,245.00
3	10-35, 25-75, 75-125	20 1/2"	**8138K87**	1,599.00

★ Max. inlet pressure is 300 psi.

Dial-Set Bronze Pressure Regulators

- Use with water
- Max. Inlet Pressure: 400 psi
- Temp. Range: 33° to 180° F

Change your pressure without using a gauge—turn the dial to adjust the outlet pressure in 10 psi increments. Regulators have a strainer to trap debris and come with union fittings for maintenance without detaching pipe connections. Body is bronze. Seal and diaphragm are Buna-N. Regulators are CSA certified. Connections are NPT female.

Pipe Size	Outlet Pressure Range, psi	Lg.		
1/2	15-90	4 15/16"	**45805K62**	$61.60
3/4	15-90	5 3/16"	**45805K63**	66.66
1	15-90	6 1/16"	**45805K64**	90.96
1 1/4	15-130	7 5/16"	**45805K49**	160.26
1 1/2	15-130	9 3/16"	**45805K51**	281.53
2	15-130	9 3/16"	**45805K52**	361.86

Heavy Duty Bronze Pressure Regulators

- Use with: See table
- Max. Inlet Pressure:
  Water, Air, Diesel Fuel, and Natural Gas: 400 psi
  Steam: 250 psi
  Cryogenic Gas: 400 psi
- Temp. Range:
  Water, Air, Diesel Fuel, and Natural Gas: +32° to +180° F
  Steam: –20° to +400° F
  Cryogenic Gas: –320° to +150° F

Thick-walled bronze construction provides dependability in demanding environments. Regulators have a strainer to trap debris. Adjust the outlet pressure within the range. Body is bronze. Connections are NPT female.

Regulators for water, air, diesel fuel, and natural gas have a Buna-N diaphragm. *Regulators for steam* have a bronze diaphragm. *Regulators for cryogenic gas* come cleaned, degreased, and bagged for oxygen service. Diaphragm is bronze.

To Order: Please specify outlet pressure range from those listed.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
For Water, Air, Diesel Fuel, and Natural Gas—*Buna-N Seal*				
1/4	2-25, 20-60, 20-100, 50-150	3"	**47345K11**	$221.84
3/8	2-30, 20-70, 40-110, 90-150	3 7/8"	**47345K12**	239.61
1/2	2-30, 10-50, 30-125, 50-150	4 1/2"	**47345K13**	298.11
3/4	2-20, 10-35, 30-75, 50-110, 105-150	5 1/8"	**47345K14**	355.40
1	2-20, 10-45, 20-60, 55-100, 90-150	5 7/8"	**47345K15**	520.87
1 1/4	2-15, 10-30, 20-50, 45-100, 90-150	6 3/4"	**47345K16**	697.74
1 1/2	2-15, 10-30, 20-50, 45-100, 90-150	6 3/4"	**47345K17**	754.22
2	2-20, 10-60, 20-100, 90-150	9 1/4"	**47345K18**	1,371.39
For Steam—*PTFE Seal*				
1/4	2-25, 20-60, 20-100, 50-150	3"	**47345K31**	221.84
3/8	2-30, 20-70, 40-110, 90-150	3 7/8"	**47345K32**	239.61
1/2	2-30, 10-50, 30-125, 50-150	4 1/2"	**47345K33**	298.11
3/4	2-20, 10-35, 30-75, 50-110, 105-150	5 1/8"	**47345K34**	355.40
1	2-20, 10-45, 20-60, 55-100, 90-150	5 7/8"	**47345K35**	520.87
1 1/4	2-15, 10-30, 20-50, 45-100, 90-150	6 3/4"	**47345K36**	697.74
1 1/2	2-15, 10-30, 20-50, 45-100, 90-150	6 3/4"	**47345K37**	754.22
2	2-20, 10-60, 20-100, 90-150	9 1/4"	**47345K38**	1,371.39
For Cryogenic Gas—*PTFE Seal*				
1/4	10-30, 20-100, 50-200, 75-250	3"	**49165K39**	309.57
1/2	10-30, 20-75, 20-100, 50-250	4 1/2"	**49165K59**	596.86
1	10-35, 20-60, 20-100, 75-250	5 7/8"	**49165K79**	920.15

Cast Iron Pressure Regulators

- Use with: See table
- Max. Inlet Pressure:
  Water, Inert Gas, and Air: 200 psi
  Steam: 150 psi
- Temp. Range:
  Water, Inert Gas, and Air: +32° to +180° F
  Steam: –20° to +400° F

A cast iron body makes these ideal for use in an existing iron piping system. Regulators have a strainer to trap debris. Adjust the outlet pressure within the range. Connections are NPT female.

Regulators for water, inert gas, and air have a Buna-N diaphragm. *Regulators for steam* have a bronze diaphragm.

To Order: Please specify outlet pressure range from those listed.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
For Water, Inert Gas, and Air—*Buna-N Seal*				
1/4	2-25, 20-60, 20-100, 50-125	3"	**4674K41**	$163.81
3/8	2-30, 20-70, 40-110, 90-125	3 7/8"	**4674K42**	193.52
1/2	2-30, 10-50, 30-125, 50-125	4 1/2"	**4674K43**	204.96
3/4	2-20, 10-35, 30-75, 50-110, 105-125	5 1/8"	**4674K44**	247.99
1	2-20, 10-45, 20-60, 55-100, 90-125	5 7/8"	**4674K45**	323.66
1 1/4	2-15, 10-30, 20-50, 45-100, 90-125	6 3/4"	**4674K46**	432.57
1 1/2	2-15, 10-30, 20-50, 45-100, 90-125	6 3/4"	**4674K47**	481.10
2	2-20, 10-60, 20-100, 90-125	9 1/4"	**4674K48**	648.12
For Steam—*PTFE Seal*				
1/4	2-25, 20-60, 20-100, 50-125	3"	**4674K61**	163.81
3/8	2-30, 20-70, 40-110, 90-125	3 7/8"	**4674K62**	193.52
1/2	2-30, 10-50, 30-125, 50-125	4 1/2"	**4674K63**	204.96
3/4	2-20, 10-35, 30-75, 50-110, 105-125	5 1/8"	**4674K64**	247.99
1	2-20, 10-45, 20-60, 55-100, 90-125	5 7/8"	**4674K65**	323.66
1 1/4	2-15, 10-30, 20-50, 45-100, 90-125	6 3/4"	**4674K66**	432.57
1 1/2	2-15, 10-30, 20-50, 45-100, 90-125	6 3/4"	**4674K67**	481.10
2	2-20, 10-60, 20-100, 90-125	9 1/4"	**4674K68**	648.12

Pressure Regulators

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2

Heavy Duty Cast Iron Pressure Regulators

- Use with: See table
- Max. Inlet Pressure: 250 psi
- Temp. Range:
  Water, Inert Gas, and Air: +32° to +180° F
  Steam: –20° to +400° F

Built tough for harsh environments, thick wall construction and a Type 420 stainless steel seal provide durability and a long service life. Adjust the outlet pressure within the range. Connections are NPT female.

Regulators for water, inert gas, and air have a neoprene/nylon diaphragm. *Regulators for steam* have a bronze diaphragm.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
For Water, Inert Gas, and Air				
3/8	0-10, 10-50, 40-100, 100-200	3 1/4″	**9796K17**	$256.20
1/2	0-10, 10-50, 40-100, 100-200	3 1/4″	**9796K18**	256.20
3/4	0-10, 10-50, 40-100, 100-200	3 1/4″	**9796K19**	256.20
1	0-10, 10-30, 30-50, 40-85	4 1/2″	**9796K31**	324.54
2	0-10, 10-30, 30-50, 40-85	6 1/2″	**9796K34**	635.21
For Steam				
1/2	0-10, 10-50, 40-100, 100-200	3 1/4″	**9796K38**	256.20
3/4	0-10, 10-50, 40-100, 100-200	3 1/4″	**9796K39**	256.20
1	0-10, 10-30, 30-50, 40-85	4 1/2″	**9796K91**	324.54
1 1/4	0-10, 10-30, 30-50, 40-85	4 1/2″	**9796K92**	461.10
1 1/2	0-10, 10-30, 30-50, 40-85	6 1/2″	**9796K93**	538.02
2	0-10, 10-30, 30-50, 40-85	6 1/2″	**9796K94**	635.21

High-Precision Cast Iron Pressure Regulators for Steam

- Use with steam
- Max. Inlet Pressure: 250 psi
- Temp. Range: 40° to 450° F

Accurate to ±1 psi, a control valve maintains pressure in steam lines. Adjust the outlet pressure within the range. Body is cast iron, seal is Type 420 stainless steel, and diaphragm is Type 301 stainless steel. Meet ANSI Class IV for tight shutoff (max. leakage rate of 0.01%). Install 1/4 NPT male pipe (not included) between the control valve and your downstream steam line. Connections are NPT female. **To Order:** Please specify outlet pressure range from those listed in the table.

Repair kits include replacement seals, diaphragm, spring, and stem assembly.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.	***Regulators***		***Repair Kits***	
1/2	3-20, 5-50, 10-100, 20-150	4 3/8″	**9792K19**	$916.23	**9792K32**	$287.88
3/4	3-20, 5-50, 10-100, 20-150	4 3/8″	**9792K21**	1,018.47	**9792K33**	323.24
1	3-20, 5-50, 10-100, 20-150	5 3/8″	**9792K23**	1,079.47	**9792K34**	366.01
1 1/4	3-20, 5-50, 10-100, 20-150	6 1/2″	**9792K25**	1,273.08	**9792K35**	430.99
1 1/2	3-20, 5-50, 10-100, 20-150	7 1/4″	**9792K27**	1,450.83	**9792K36**	497.74
2	3-20, 5-50, 10-100, 20-150	7 1/2″	**9792K29**	1,790.30	**9792K37**	666.23

Stainless Steel Pressure Regulators

A

B&C

Often used with beverage dispensers, paint spraying equipment, humidifiers, and fountains, these regulators have a Type 316 stainless steel body for excellent corrosion resistance in harsh environments. Connections are NPT female.

Style A have a 1/4 NPT female gauge port.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Max. Inlet Pressure, psi	Temp. Range	Available Outlet Pressure Ranges, psi	Lg.		
(A) For Deionized Water and Diesel Fuel—*Buna-N Seal*						
1/4	400	+33° to +120° F	1-25, 3-50, 10-125, 20-175, 100-300	2 5/8″	**8119K44**	$544.20
3/8	400	+33° to +120° F	1-25, 3-50, 10-125, 20-175, 100-300	2 5/8″	**8119K46**	583.07
1/2	400	+33° to +120° F	1-25, 3-50, 10-125, 50-175, 100-300	2 5/8″	**8119K48**	573.59
(B) For Air, Water, and Hydraulic Oil—*Buna-N Seal*						
1/2	720	+32° to +200° F	2-30, 10-50, 30-125, 50-150	4 5/8″	**8099K11**	1,604.55
3/4	720	+32° to +200° F	2-20, 10-35, 30-75, 50-110, 105-150	5 1/4″	**8099K21**	2,025.22
1	720	+32° to +200° F	2-20, 10-45, 20-60, 55-100, 90-150	5 7/8″	**8099K31**	2,412.07
(C) For Steam—*Stainless Steel-Filled PTFE Seal*						
1/2	400	–40° to +450° F	2-30, 10-50, 30-125, 50-150	4 5/8″	**8099K41**	1,604.55
3/4	400	–40° to +450° F	2-20, 10-35, 30-75, 50-110, 105-150	5 1/4″	**8099K51**	2,025.22
1	400	–40° to +450° F	2-20, 10-45, 20-60, 55-100, 90-150	5 7/8″	**8099K61**	2,412.07

Quick-Response High-Precision Steel Pressure Regulators

- Use with water, inert gas, air, and diesel fuel
- Max. Inlet Pressure: 300 psi
- Temp. Range: 32° to 550° F

Get quick responses to large changes in inlet pressure without the noise of conventional pressure regulators. Adjust the outlet pressure within the range. Body is steel, seal is Type 303 stainless steel, and diaphragm is Type 316 stainless steel. Meet ANSI Class IV for tight shutoff (max. leakage rate of 0.01%). Connections are NPT female.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
1/2	2-23, 10-38, 20-55, 35-160, 95-220	3 5/8″	**46395K21**	$1,189.55
3/4	2-23, 10-38, 20-55, 35-160, 95-220	3 5/8″	**46395K23**	1,189.55
1	5-20, 10-30, 20-45, 30-95, 60-160	4 1/8″	**46395K25**	2,105.97
1 1/2	5-20, 10-30, 20-45, 30-95, 60-160	4 7/8″	**46395K27**	2,474.63
2	5-20, 10-30, 20-45, 30-95, 60-160	5 1/2″	**46395K29**	3,038.81

Stainless Steel High-Pressure Regulators

D

E

- Use with water, inert gas, air, hydraulic oil, and diesel fuel
- Max. Inlet Pressure:
  Style D: 6,000 psi; Style E: 3,000 psi
- Temp. Range:
  Style D: 32° to 165° F; Style E: 32° to 300° F

Designed for high inlet pressures, these regulators also have a stainless steel body for corrosion resistance in harsh environments. Adjust the outlet pressure within the range. Seal is PTFE. Connections are NPT female.

Style D have two 1/4 NPT female gauge ports. Body is Type 316 stainless steel. Inlet and outlet are on the side.

Style E have a Type 303 stainless steel body. Inlet is on the side and outlet is on the bottom.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
D 1/4	0-1,500; 0-2,500	2″	**4289T21**	$550.04
E 2	150-450; 250-1,200; 500-2,200	2 1/2″	**4256T16**	2,332.31

For information about pipe size, see pages 2-3.

Cleaned and Bagged Stainless Steel Pressure Regulators

- Use with inert gas, air, argon, helium, hydrogen, nitrogen, and natural gas
- Max. Inlet Pressure: 1/4 pipe size: 3,500 psi
  1/2 pipe size: 300 psi
- Temp. Range: –40° to +160°F

Suitable for use in high-purity applications, these regulators come cleaned, degreased, and bagged for oxygen service. Adjust the outlet pressure within the range. Body is Type 316 stainless steel and seal is PCTFE. Regulators have two 1/4 NPT female gauge ports. Can be surface mounted with two 10-32 UNF holes. Fasteners are not included. Connections are NPT female.

Regulators with 1/4 pipe size have a Type 316 stainless steel diaphragm; *1/2 pipe size* have a Hastelloy diaphragm.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
1/4	1-30, 2-100, 5-200, 5-300	2 1/4"	8166T21	$283.26
1/2	1-30, 2-100, 5-150	2 5/8"	8166T22	486.68

Clean Room Stainless Steel Pressure Regulators

- Use with air, deionized water, oxygen, and nitrogen
- Max. Inlet Pressure: 150 psi
- Temp. Range: 41° to 140°F

Meet pollutant-free standards for clean room environments. Regulators are assembled, cleaned, and packaged in a Class 100 clean room and have a smooth finish to resist dust collection. Body is Type 316 stainless steel and diaphragm is fluoroelastomer. Can be panel mounted through a 1 1/4" dia. cutout. Connections are UNF female.

Thread Size	Outlet Pressure Range, psi	Lg.		
10-32	1.4-28	1 3/16"	4390T111	$167.82
10-32	7-99	1 3/16"	4390T112	167.82

Miniature Nickel-Plated Aluminum Pressure Regulators

- Use with water, inert gas, air, diesel fuel, and argon
- Max. Inlet Pressure: 6,000 psi
- Temp. Range: –15° to +165°F

Handy for tight spaces, these tiny regulators have a lightweight nickel-plated aluminum body and a polyimide seal for good corrosion resistance. Adjust the outlet pressure within the range. Regulators have two 1/4 NPT female gauge ports. Can be panel mounted through a 1 3/8" dia. cutout. Connections are NPT female.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe Size	Available Outlet Pressure Ranges, psi	Lg.		
1/4	0-80; 0-140; 0-220	1 5/8"	4428T23	$299.25
1/4	0-700; 0-1,200; 0-1,800	1 5/8"	4428T24	402.34

Panel-Mount Polysulfone Pressure Regulators

- Use with: See table
- Max. Inlet Pressure: 150 psi
- Temp. Range: 40° to 150°F

Regulate pressure at your instrument panel—mount through a 9/16" dia. cutout with the threads and hex nut below the knob. Adjust the outlet pressure within the range. Body is polysulfone, seal is polyurethane, and diaphragm is Buna-N/EPDM. Color is black. Connections are female.

To Order: Please specify outlet pressure range from those listed in the table.

Pipe/ Thread Size	Available Outlet Pressure Ranges, psi	Lg.		
For Air				
1/8 NPT	0.5-3.5, 0.5-10, 0.5-30, 0.5-90	1 9/16"	43275K16	$40.88
10-32 UNF	0.5-3.5, 0.5-30, 0.5-60, 0.5-90	1 3/16"	43275K36	35.07
For Air and Water				
1/8 NPT	0.5-10, 0.5-60	1 9/16"	43275K46	48.88
10-32 UNF	0.5-3.5, 0.5-10, 0.5-30, 0.5-90	1 3/16"	43275K66	43.07

Chemical-Resistant Plastic Pressure Regulators

- Use with water, hydrochloric acid, and sulfuric acid
- Max. Inlet Pressure: 125 psi
- Temp. Range:
  PVC: 40° to 140°F
  Polypropylene: 35° to 180°F

A fluoroelastomer seal and diaphragm provide good corrosion resistance for use with water and in harsh environments. Adjust the outlet pressure within the range. Color is dark gray. Connections are NPT female.

Polypropylene regulators withstand higher temperatures than PVC.

Pipe Size	Outlet Pressure Range, psi	Lg.	PVC		Polypropylene	
1/2	10-80	3"	45965K31	$354.00	45965K41	$363.00
3/4	10-80	4"	45965K32	402.00	45965K42	498.00
1	10-80	4"	45965K33	537.00	45965K43	576.00
1 1/2	10-80	5 3/4"	45965K34	756.00		
2	10-80	5 3/4"	45965K35	967.06		

Miniature Plastic Pressure Regulators

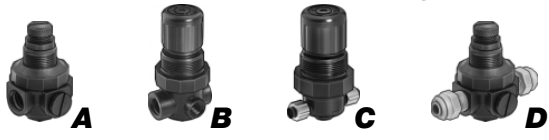

- Use with water and deionized water
- Max. Inlet Pressure: Styles A and D: 300 psi
  Style B: 150 psi
  Style C: 250 psi
- Temp. Range: 35° to 125°F

Suitable for use in food and beverage applications, these have a body made from NSF-approved materials and a seal and diaphragm made from FDA-compliant materials. Adjust the outlet pressure within the range. Color is black.

Styles A & D have three outlets to fit various pipe configurations; come with plugs for unused outlets. Body is Noryl and seal and diaphragm are Buna-N. Gauge port is 1/4 NPT female.

Styles B & C have an acetal body and EPDM seal. *Style B* have an acetal/nylon reinforced Buna-N diaphragm and 1/8 NPT female gauge port. *Style C* have a stainless steel/Buna-N diaphragm.

To Order: Please specify outlet pressure range from those listed in the table.

Connection Size	Available Outlet Pressure Ranges, psi	Lg.		
With NPT Female Connections				
A .. 1/4 NPT	0-25, 0-60, 0-125	1 9/16"	8113K11	$43.27
B .. 1/4 NPT	5-50, 5-125	1 5/8"	4545T61	26.91
With Compression Tube Fittings				
C .. For 1/4" Tube OD	1-10, 2-50, 5-100	2"	4545T51	64.31
With Push-to-Connect Tube Fittings				
D .. For 1/4" Tube OD	0-25, 0-60, 0-125	1 9/16"	8113K41	43.27

Brass Vacuum Regulators

E

F

- Use Style E with air and nitrogen
  Use Style F with inert gas, air, carbon dioxide, and nitrogen
- Temp. Range:
  Style E: –40° to +150°F
  Style F: –20° to +180°F

Maintain an accurate vacuum level in your process. Adjust the outlet vacuum within the range. Connections are NPT female.

Style E has threads and a hex nut below the knob for installation in your instrument panel. Comes with a 2" dia. gauge. Body is nickel-plated brass and seal is Buna-N. Panel mount through a 1" dia. cutout. Inlet is on the side and outlet is on the bottom.

Style F are designed to mount inline before a vacuum pump. Body is brass and diaphragm is EPR (ethylene propylene). Regulators have a 1/8 NPT female gauge port (gauge not included). Inlet is on the bottom and outlet is on the side.

Pipe Size	Outlet Vacuum Range	Lg.		
E ... 1/8	0-20" Hg	1 3/8"	4172K12	$170.21
F ... 1/4	0-15" Hg	2 1/4"	5021K14	230.25
F ... 1/4	10-30" Hg	2 1/4"	5021K24	230.25

Vacuum Regulators & Temperature-Regulating Valves

For information about pipe size, see pages 2-3.

Please Note: To choose the correct pipe size, measure the threaded inside diameter (ID) or outside diameter (OD) of your pipe or valve, round up to the nearest threaded ID or OD below, and read down to find the corresponding pipe size.

Threaded ID or OD	3/8″	1/2″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8	1/4	1/2	3/4	1	1 1/4	1 1/2	2

Precision Brass Vacuum Regulators

- Use with inert gas, air, argon, and nitrogen
- Temp. Range: –40° to +165° F

Sensitive to changes in your system, these regulators provide high accuracy in low-vacuum applications. They have a 1/4 NPT female gauge port. Adjust the outlet vacuum within the range. Body is brass and seal and diaphragm are Buna-N. Can be panel mounted through a 1 3/8″ dia. cutout. Connections are NPT female.

Pipe Size	Outlet Vacuum Range	Lg.		
1/8	0-28″ Hg	2 1/8″	**4640T71**	$622.77
1/4	0-28″ Hg	2 1/8″	**4640T72**	622.77

Panel-Mount Polysulfone Vacuum Regulators

- Use with air
- Temp. Range: 40° to 150° F

Regulate vacuum from your instrument panel—mount with the threads and hex nut below the knob. Adjust the outlet vacuum within the range. Regulators have a polysulfone body, a Buna-N diaphragm, and an EPDM diaphragm. Requires a 9/16″ dia. panel cutout. Connections are female.

Pipe/ Thread Size	Outlet Vacuum Range	Lg.		
1/8 NPT	0-30″ Hg	1 9/16″	**41585K43**	$56.70
10-32 UNF	0-30″ Hg	1 3/16″	**41585K41**	50.55

Bronze Vacuum Regulators

- Use with air and inert gas
- Temp. Range: –20° to +180° F

A rugged bronze body provides durability for a long service life. Adjust the outlet vacuum within the range. Seal is chrome-plated bronze and diaphragm is neoprene/nylon. Connections are NPT female.

Pipe Size	Outlet Vacuum Range	Lg.		
1/2	2-30″ Hg	2 7/8″	**4710K11**	$390.59
3/4	2-30″ Hg	2 7/8″	**4710K13**	390.59
1	2-30″ Hg	4 1/2″	**4710K15**	941.52
1 1/4	2-30″ Hg	4 1/2″	**4710K17**	941.52
1 1/2	8-30″ Hg	5 3/4″	**4710K18**	1,229.14
2	8-30″ Hg	5 3/4″	**4710K19**	1,229.14

Bronze Temperature-Regulating Valves

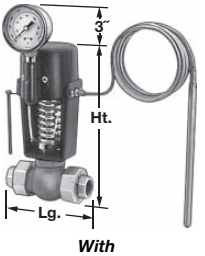

With Temperature Gauge

Automate temperature control in your system without electricity—valves open and close in response to the changing temperature in your tank. Connections are NPT female. Valve body is bronze. Sensor is copper and has 8 feet of armored copper tubing. Valves come set at the minimum of the temperature range; turn the adjustment nut to change the temperature within the range.

Valves with temperature gauge display the sensor temperature. Gauge case is stainless steel. Rotates for easy viewing. Install an *optional thermowell* (sold separately) in your tank to protect the sensor and enable you to remove it without draining your system. Choose Type 316 stainless steel for greater corrosion resistance than brass.

Valves for Heating— Often used with boilers and steam tables and in washing/sterilizing applications. Also known as direct-acting valves, install between your hot water supply and tank.

Valves for Cooling— Often used to cool oil or water from heat exchangers, chillers, and compressors. Also known as reverse-acting valves, install between your cold water supply and tank.

Temperature-Regulating Valves

To Order: Please specify temperature range from the chart.

Available Temperature Ranges

Temp. Range	Sensor Lg.	Sensor Dia.	Temp. Range	Sensor Lg.	Sensor Dia.
45° to 145° F	19″	1″	120° to 200° F	13 3/8″	5/8″
65° to 140° F	15 5/8″	1″	120° to 230° F	13 3/8″	5/8″
65° to 170° F	15 5/8″	1″			

Pipe Size	Max. psi	Lg.	Ht.	With Temperature Gauge		Without Temperature Gauge	
For Heating							
1/2	250	5 1/2″	10″	**4872T21**	$1,049.78	**4872T11**	$876.80
3/4	90	5 1/2″	10″	**4872T22**	1,070.06	**4872T12**	897.11
3/4	250	7 1/4″	13″	**4872T41**	1,302.42	**4872T31**	1,129.47
1	65	7 1/4″	13″	**4872T23**	1,165.56	**4872T13**	992.61
1	250	7 1/4″	13″	**4872T42**	1,254.07	**4872T32**	1,098.42
1 1/4	250	9″	13″	**4872T43**	1,386.04	**4872T33**	1,230.37
1 1/2	30	9″	13″	**4872T25**	1,241.20	**4872T15**	1,085.55
1 1/2	250	9″	13″	**4872T44**	1,425.29	**4872T34**	1,269.64
2	250	9″	13″	**4872T45**	1,594.49	**4872T35**	1,438.82
For Cooling							
1/2	250	5 1/2″	10″	**5473T21**	1,049.78	**5473T11**	876.80
3/4	90	5 1/2″	10″	**5473T22**	1,070.06	**5473T12**	897.11
1	65	7 1/4″	13″	**5473T23**	1,165.56	**5473T13**	992.61
1	250	7 1/4″	13″	**5473T42**	1,254.07	**5473T32**	1,098.42
1 1/4	40	9″	13″	**5473T24**	1,189.11	**5473T14**	1,033.43
2	250	9″	13″	**5473T45**	1,594.49	**5473T35**	1,438.82

Optional Thermowells

For Temp. Range	For Sensor Lg.	Brass		Type 316 Stainless Steel	
45° to 145° F	19″	**4872T48**	$203.20	**4872T49**	$555.66
65° to 140° F	15 5/8″	**4872T51**	186.80	**4872T53**	468.63
65° to 170° F	15 5/8″	**4872T51**	186.80	**4872T53**	468.63
120° to 200° F	13 3/8″	**4872T52**	176.25	**4872T54**	367.47
120° to 230° F	13 3/8″	**4872T52**	176.25	**4872T54**	367.47

Compact Brass Temperature-Regulating Valves

Get the same automated temperature control without electricity as our other temperature-regulating valves, but in a smaller size. Valves open and close in response to the changing temperature in your tank. Connections are NPT female. Valve body is brass. Sensor is 6 3/8″ Lg. × 5/8″ Dia. and has 6 feet of tubing. Turn the adjustment nut to change the temperature within the range.

Install an *optional thermowell* (sold separately) in your tank to protect the sensor and enable you to remove it without draining your system. Choose Type 304 stainless steel for greater corrosion resistance than brass.

Valves for Heating— Often used with boilers and steam tables and in washing/sterilizing applications. Also known as direct-acting valves, install between your hot water supply and tank.

Valves for Cooling— Often used to cool oil or water from heat exchangers, chillers, and compressors. Also known as reverse-acting valves, install between your cold water supply and tank.

Temperature-Regulating Valves

To Order: Please specify temperature range from the chart.

Available Temperature Ranges

40° to 100° F	80° to 170° F	105° to 145° F	130° to 170° F
55° to 95° F	85° to 125° F	110° to 190° F	185° to 225° F

Pipe Size	Max. psi	Lg.	Ht.	With Brass Sensor and Copper Tubing		With Type 304 SS Sensor and Tubing	
For Heating							
1/2	125	6 1/8″	7 3/16″	**4678K42**	$542.02	**4678K46**	$778.75
3/4	125	6 1/8″	7 3/16″	**4678K43**	553.43	**4678K47**	790.17
1	125	6 1/8″	7 3/16″	**4678K44**	582.50	**4678K48**	819.25
For Cooling							
1/2	125	6 1/8″	7 3/16″	**4678K82**	542.02	**4678K86**	778.75
3/4	125	6 1/8″	7 3/16″	**4678K83**	553.43	**4678K87**	790.17
1	125	6 1/8″	7 3/16″	**4678K84**	582.50	**4678K88**	819.25

Optional Thermowells

Brass	**4678K39**	$79.29
Type 304 Stainless Steel	**4678K49**	114.40

For information about pipe size, see pages 2-3.

Water Mixing Valves

- Max. Inlet Pressure: 150 psi
- Max. Inlet Temp.: 212° F

With NPT Connections

Maintain a set temperature from your water source. Valves adjust flow in response to the changing temperature of the water supply. Often used with pumps, boilers, and water heaters. Knob is lockable to prevent unintentional changes. Body is PTFE coated brass and seal is EPDM. Valves are ANSI certified for use with drinking (potable) water in all states as of April 1, 2011. They're also ASSE 1017 listed, IAPMO listed, and CSA certified.

Note: Do not use where scald protection is required.

To Order: Specify outlet temp. range: 70° to 120° F or 70° to 145° F.

With NPT Female Connections

Pipe Size	Max. Flow Rate, gpm	Lg.		
1/2	8	4 13/16″	9156K91	$113.94
3/4	12	6 1/2″	9156K92	118.84
1	16	7″	9156K93	136.50

With Solder-End (Unthreaded) Connections

Tube Size★	Actual Tube OD	Max. Flow Rate, gpm	Lg.		
1/2	5/8″	8	4 3/8″	9156K64	$119.01
3/4	7/8″	12	4 7/8″	9156K65	114.44

★ Tube size is the accepted designation of the copper tubing industry, not the actual OD.

Low-Flow Water Mixing Valves

- Max. Inlet Pressure: 150 psi
- Max. Inlet Temp.: 180° F

Set a maximum temperature at low-flow faucets and fixtures to protect against scalding. Valve adjusts flow in response to the water supply temperature. Knob is lockable to prevent unintentional changes. Comes with an adapter for installation on a two-handle sink.

Max. flow rate is 3 gpm. Outlet temp. range is 80° to 110° F. Body is bronze and seal is EPDM. Length is 3 1/2″. Valve is ANSI certified for use with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012. It's also ASSE 1070 listed. Connections are compression tube fittings for 3/8″ tube OD.

5847T75 ..... $78.68

Manual-Adjustment Water Mixing Valves

- Max. Inlet Pressure: 125 psi
- Max. Inlet Temp.: 180° F

Adjust water temperature with the turn of a dial. This valve is for use with faucets with a constant inlet temperature and pressure. Tighten the set screw on the dial to prevent unintentional temperature changes. It has check valves to stop backward flow.

Max. flow rate is 2 gpm. Outlet temp. range is 40° to 175° F. Body is chrome-plated brass. Length is 2 3/16″. Valve is for use with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012. CSA B125 certified. Connections are compression tube fittings for 3/8″ tube OD.

Note: Do not use where scald protection is required.

9158K11 ..... $37.18

Water Mixing Valves for Eye- and Face-Wash Stations

- Max. Inlet Pressure: 125 psi
- Max. Inlet Temp.: 180° F

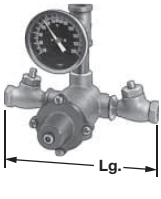

Meet standards of temperature control for emergency washing equipment. Designed for use with eye wash and shower stations that meet ANSI Z358.1, these valves provide at least 15 minutes of constant water flow. When hot water fails, valves allow uninterrupted cold water flow. When cold water fails, valves stop hot water flow. Outlet temp. range is 60° to 95° F. Body is bronze. Valves are ASSE 1071 listed. Connections are NPT female.

Pipe Size Inlet	Pipe Size Outlet	Flow Rate Range, gpm	Lg.		
1/2	1/2	1-12.3	7 3/4″	6208T14	$529.12
3/4	1	3-46.5	11 11/16″	6208T15	905.36
1 1/4	1 1/2	3-118	16″	6208T16	1,566.63

Flow-Compensating Water Mixing Valves

- Max. Inlet Pressure: 125 psi
- Max. Inlet Temp.: 200° F

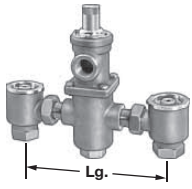

Reduce the hot water flow from pumps and water heaters when your cold water supply fails. Valves maintain a set temperature; they adjust in response to the water supply temperature. Integral check valves with screens stop backward flow and trap debris. Body is bronze. Valves are ASSE 1017 listed and CSA B125 certified. Connections are NPT female.

Note: Do not use where scald protection is required.

To Order: Specify outlet temp. range: 60° to 90° F or 90° to 160° F.

Pipe Size Inlet	Pipe Size Outlet	Flow Rate Range, gpm	Lg.		
3/4	3/4	3-42	9 1/8″	7827K61	$545.23
3/4	1	4-64	9 1/8″	7827K63	622.06
1 1/4	1 1/4	5-110	12 5/8″	7827K64	745.63
1 1/4	1 1/2	7-144	12 5/8″	7827K66	941.85

Steam and Water Mixing Valves

- Max. Inlet Pressure: 80 psi
- Max. Inlet Temp.: 240° F

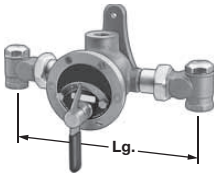

Get instant hot water. This valve mixes steam and cold water to maintain the temperature you need. It adjusts flow in response to the water supply temperature. Integral check valves with screens stop backward flow and trap debris.

Flow rate is 13-25 gpm. Outlet temp. range is 60° to 180° F. Body is bronze. Lg. is 12″. Connections are 3/4 NPT female.

Note: Do not use where scald protection is required.

4714K2 ..... $638.38

Steam and Water Mixing Valves with Hose Rack

- Max. Inlet Pressure:
  Steam: 80 psi
  Water: 125 psi
- Max. Inlet Temp.: 240° F

For Automatic Mixing

Mix hot water or steam with cold water to get to your desired temperature. Each valve includes two ball valves for manual control of the water supply and a dial thermometer to display the outlet temperature. An integral vacuum breaker and check valves stop backward flow. Outlet temp. range is 60° to 180° F. Hose rack is Type 302 stainless steel. Inlets are 3/4 NPT female and outlet is 3/4 garden hose thread (GHT) male.

Valves for manual mixing provide independent control over hot and cold water supply. Hose rack mounts to valve. *Valve with safety-shut-off* stops flow automatically when the cold water supply fails.

Valve for automatic mixing maintains your set temperature. It adjusts flow in response to the water supply temperature. Hose rack mounts to wall.

Note: Do not use where scald protection is required.

Mixing Valves with Hose Rack

Valve Body Material	Max. Flow Rate, gpm	Lg.		
For Manual Mixing				
Chrome-Plated Bronze	9	6″	3062K9	$891.65
Type 316 Stainless Steel	7	6″	3062K31	1,086.72
For Manual Mixing with Safety-Shut-Off				
Bronze	7	6″	3062K51	1,314.90
For Automatic Mixing				
Chrome-Plated Bronze	9	7 1/2″	3062K29	1,455.36

Optional 50-Ft. Hose with Fittings

Hose has a 3/4 GHT female inlet. Both are cream-colored EPDM rubber and have a trigger spray nozzle. Max. temp. is 180° F @ 200 psi.

With Bronze Nozzle	3062K55	$462.07
With Type 303 Stainless Steel Nozzle	3062K77	566.88

About Selecting a Mixer

Consider the following when selecting a mixer:

Power Source— Choose an air-powered or an electric mixer.

Air-powered mixers are typically run on plant air and have variable speed control using the control valve included with each mixer. And since they don't have an integral motor they can't be overloaded, won't create sparks, and are lighter than electric mixers of equal horsepower.

Electric mixers are more cost-efficient than air-powered mixers that run on plant air.

Horsepower— You need a motor that's strong enough to mix your material. When in doubt, choose a motor with a higher horsepower to avoid overloading. For mixing low-viscosity (thin) materials in containers of 25-gal. or less, consider mixers with 1/4 hp or smaller.

Speed— *High-speed mixers* are ideal for quick mixing of low-viscosity (thin) materials. They have direct-drive motors. *Low-speed mixers* are ideal for high-viscosity (thick) materials. They have gear-drive motors.

Viscosity (centipoise)— Refers to the thickness of your material, or its resistance to flow. It's often measured in centipoise.

Viscosity, centipoise	Example	HORSEPOWER OF MIXER Tank Size (gallons) 25	50	100	500	1,000	2,000	3,000
1	Water	1/4	1/4	1/4	1/3	1/3	1/3	1/3
100	Olive Oil	1/4	1/3	1/3	1/3	1/3	1/3	1/2
500	Paint	1/3	1/3	1/3	1/3	1/2	1	1 1/2
1,000	Castor Oil	1/3	1/3	1/3	1/3	3/4	1 1/2	2
3,000	Liquid Soap	—	1/3	1/3	3/4	1 1/2	3	—
5,000	Honey	—	1/3	1/3	1	2	3	—
15,000	Molasses	—	1/2	1/2	3	—	—	—

■ High speed recommended. ▒ Low speed recommended.

Air-Powered Mixers

Clamp-Mount Air-Powered Mixers

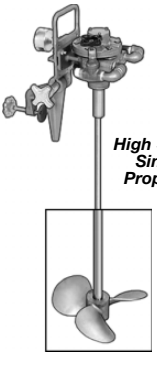

High Speed Single Propeller

Clamp these mixers to the side of large containers and tanks. The shaft and propellers are Type 316 stainless steel; they are removable. Propellers move clockwise when viewed from above.

Also Available: Replacement shafts, propellers, and clamps. Please ask for 34685K1 and specify part required and the McMaster-Carr part number.

hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Prop. Dia.	Air Consumption	Air Inlet, NPT	Single Propeller		Dual Propeller	
High Speed										
1	300-3,000	27″	5/8″	6″	16 cfm @ 70 psi	1/4″ Female	34685K51	$788.06	34685K61	$897.62
1	300-3,000	36″	5/8″	6″	16 cfm @ 70 psi	1/4″ Female	34685K52	805.56	34685K62	911.43
1	300-3,000	48″	5/8″	6″	16 cfm @ 70 psi	1/4″ Female	34685K53	855.27	34685K63	922.48
2	300-3,000	27″	3/4″	8″	20 cfm @ 70 psi	1/2″ Female	34685K71	1,141.59	—	—
2	300-3,000	36″	3/4″	8″	20 cfm @ 70 psi	1/2″ Female	34685K72	1,158.16	34685K82	1,352.37
2	300-3,000	48″	3/4″	8″	20 cfm @ 70 psi	1/2″ Female	34685K73	1,183.02	34685K83	1,378.19
2	300-3,000	60″	3/4″	8″	20 cfm @ 70 psi	1/2″ Female	34685K74	1,185.78	34685K84	1,402.13
Low Speed										
1/2	0-400	30″	3/4″	9″	13 cfm @ 80 psi	1/4″ Female	—	—	3486K42	1,280.41
1	0-400	40″	3/4″	11″	25 cfm @ 80 psi	1/4″ Female	—	—	3486K44	1,427.43
3	0-400	48″	1″	13″	89 cfm @ 80 psi	1/2″ Female	—	—	3486K46	2,980.15

Flange-Mount Air-Powered High-Speed Mixers

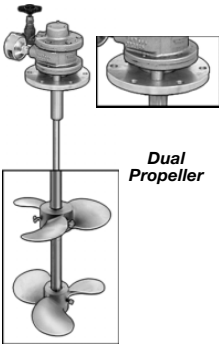

Dual Propeller

The flange mount on these mixers makes them ideal for secure attachment with minimal vibration on a tank or drum. The shaft and propellers are Type 316 stainless steel; they are removable. All have six mounting holes (fasteners not included).

Single-propeller mixers can be set to move clockwise or counterclockwise.

Dual-propeller mixers move material in opposing directions for increased flow compared to mixers that move material in one direction.

Also Available: Replacement shafts and propellers. Please ask for 34705K1 and specify part required and the McMaster-Carr part number.

hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Prop. Dia.	Air Consumption	Air Inlet, NPT	Flange OD	Bolt Circle Dia.	Mount. Hole Dia.		
Single Propeller											
2	300-3,000	27″	3/4″	8″	20 cfm @ 70 psi	1/2″ Female	7″	6″	1/2″	34705K67	$1,259.83
2	300-3,000	48″	3/4″	8″	20 cfm @ 70 psi	1/2″ Female	7″	6″	1/2″	34705K68	1,310.74
2	300-3,000	60″	3/4″	8″	20 cfm @ 70 psi	1/2″ Female	7″	6″	1/2″	34705K69	1,335.70
3	300-3,000	48″	1″	10″	30 cfm @ 70 psi	1/2″ Female	7″	6″	1/2″	34705K78	1,580.28
Dual Propeller											
1	300-3,000	15″	5/8″	6″	16 cfm @ 70 psi	1/4″ Female	6″	5″	11/32″	34705K55	873.49
1	300-3,000	27″	5/8″	6″	16 cfm @ 70 psi	1/4″ Female	6″	5″	11/32″	34705K57	888.47
1	300-3,000	48″	5/8″	6″	16 cfm @ 70 psi	1/4″ Female	6″	5″	11/32″	34705K58	908.43

Stand-Mount Air-Powered Mini Mixers

High Speed with Optional Stand

A shorter shaft allows these mixers to get into tight spaces. All include a 9/16″ Dia. × 10″ Lg. bar for mounting on the optional stand (sold separately).

Mixers have a Type 316 stainless steel shaft and propeller; they are removable. The propeller moves clockwise when viewed from above.

These mixers operate on 13 cfm at 80 psi air consumption. Air inlet is 1/4″ NPT female; a 4-ft. air hose is included.

Optional stand includes a swivel connector.

hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Prop. Dia.		
High Speed						
1/3	1,000-10,000	12″	3/8″	2 1/2″	3498K71	$307.23
Low Speed						
1/3	200-1,200	12″	3/8″	2 1/2″	3498K81	449.04
1/3	30-170	12″	3/8″	2 1/2″	3498K91	635.85
Optional Stand					35265K11	319.95

Hand-Held Air-Powered High-Speed Mixers

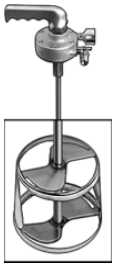

Convenient for small batches, use this hand-held mixer in small pails, buckets, and drums without a mounting clamp or stand.

Mixers have a Type 304 stainless steel shaft with a built-in propeller. The shaft is removable; for replacement shafts with propellers, see page 512. The propeller moves clockwise when viewed from above.

Mixers operate on 25 cfm at 80 psi air consumption. Air inlet is 1/4″ NPT female.

3489K51 is ideal for 1- and 2-gal. containers; *K52* for 5- and 10-gal. containers; and *K53* for 55-gal. containers.

hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Prop. Dia.		
1/2	300-3,000	15″	1/4″	2 5/8″	3489K51	$458.32
1/2	300-3,000	21″	1/2″	5″	3489K52	522.57
1/2	300-3,000	40″	1/2″	5″	3489K53	577.41

For information about selecting a mixer, see page 506.

Air-Powered High-Speed Drum Mixers

Collapsible propellers allow you to insert this mixer into a 55-gal. drum without removing the lid. Mixers fit into a standard 2″ bung opening, except 3476K71, which fits into a 1½″ bung opening. The shaft and propellers are Type 304 stainless steel (unless noted) and are removable. Propellers move clockwise when viewed from above.

Hand-held mixers let you manually direct mixing for maximum effectiveness. Recommended for thin materials where operator monitoring of the mixing process is desirable.

Bung-mount mixers screw into the opening of a drum for hands-free mixing. *35005K71* comes with an attached clamp to reduce vibration during operation.

Clamp-mount mixers clamp onto a container wall or drum lip.

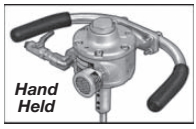
Hand Held

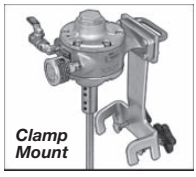
Clamp Mount

Bung Mount (35005K61)

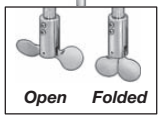
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hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Propeller Qty.	Propeller Dia.	Air Consumption	Air Inlet, NPT		
Hand Held									
1½	300-3,000	29″	⅜″	3	4″	60 cfm @ 80 psi	¼″ Female	**3476K71**	$608.62
1½	300-3,000	36″	½″	4	6″	60 cfm @ 80 psi	¼″ Female	**3476K73**	748.25
Bung Mount									
½	300-1,750	29″	⅝″	1	3¾″	38 cfm @ 80 psi	¼″ Female	**35005K61**●	539.33
1½	300-3,000	36″	½″	4	6″	60 cfm @ 80 psi	¼″ Female	**35005K71**	968.66
Clamp Mount									
½	300-1,750	33″	⅝″	1	3¾″	18 cfm @ 80 psi	¼″ Female	**35005K63**●	687.30
1½	300-3,000	36″	½″	4	6″	60 cfm @ 80 psi	¼″ Female	**35005K73**	915.07

●Shaft and propeller are Type 316 stainless steel.

Easy-Mount Air-Powered High-Speed Mixers

Get the right configuration for your job. These mixers are available with a pipe-clamp mount, c-clamp mount, or stand mount. Propellers are Type 316 stainless steel. The shaft and propellers are removable and move clockwise when viewed from above. Mixers operate on 25 cfm at 80 psi air consumption and have a ¼″ NPT female air inlet.

Single-Propeller Mixers— Come with four shafts; lengths are listed in the table below. Shafts are Type 304 stainless steel.

Dual-Propeller Mixers— Have one Type 316 stainless steel shaft with adjustable propellers.

Pipe-clamp-mount mixers mount to 1½″ dia. vertical pipe (not included).

C-clamp-mount mixers mount to the side of a tank or container.

Stand-mount mixers include a heavy aluminum base and a swinging arm that can be fixed at any height along the ¾″ dia. upright support.

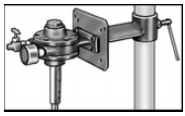
Pipe-Clamp Mount (Pipe not included)

Stand Mount Single Propeller

	hp	Speed, rpm	Shaft Dia.	Prop. Dia.	Single Propeller Shaft Lg.			Dual Propeller Shaft Lg.		
Pipe-Clamp Mount	½	300-3,000	⅝″	4″	12″, 16″, 20″, 24″	**3477K56**	$557.90	32″	**3477K23**	$374.36
C-Clamp Mount	½	300-3,000	⅝″	4″	12″, 16″, 20″, 24″	**3477K73**	587.37	35″	**3477K16**	562.51
Stand Mount	½	300-3,000	½″	4″	12″, 16″, 20″, 24″	**3477K39**	578.16	35″	**3477K41**	598.41

Intermediate Bulk Container High-Speed Mixers

Mixers are mounted to a nonadjustable 39½″ wide bracket that fits the opening of intermediate bulk containers (not included, see 3783K21 on page 1719). The mixer is bolted to the bracket, securing the mixer in place and keeping the propeller centered in your container. Shaft and propellers are Type 316 stainless steel; both are removable. Propellers move clockwise when viewed from above.

Electric Mixer— Has a totally enclosed, fan-cooled (TEFC) motor and 4″ wire leads.

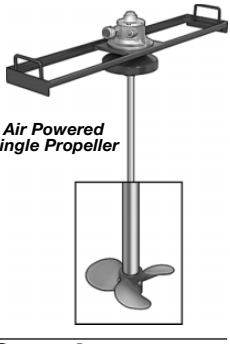
Air Powered Single Propeller

Air-Powered Mixers

hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Propeller Qty.	Propeller Dia.	Air Consumption	Air Inlet, NPT		
½	600-2,000	32″	1″	1	5″	43 cfm @ 80 psi	¼″ Female	**3528K41**	$1,289.91
1	600-2,000	32″	1″	1	6″	43 cfm @ 80 psi	¼″ Female	**3528K42**	1,433.50
2	600-2,000	35″	1″	2	6″	80 cfm @ 80 psi	½″ Female	**3528K43**	1,670.02

Electric Mixer

hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Propeller Qty.	Propeller Dia.	VAC @ 60 Hz (Phase)	Amps		
½	1,750	32″	1″	1	5″	115/230 (1)	7.4/3.7	**3528K44**	$1,223.27

Self-Contained Air-Powered High-Speed Mixers

Great for small batches, these are built into a container for easy mixing and dispensing. Containers have a dispensing valve. A locking ring holds the cover in place.

Mixers have a Type 304 stainless steel shaft with a Type 316 stainless steel propeller; both shaft and propeller are removable. The propeller moves clockwise when viewed from above.

Mixers operate on 20 cfm at 80 psi air consumption. Air inlet is ¼″ NPT female; a 10-ft. air hose is included.

5-gal. Steel

Also Available: Replacement lids, containers, locking rings, shafts, and propellers. Please ask for 3513K1 and specify part required, container size, and container material.

Container Size	hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Prop. Dia.		
Steel Container							
5 gal.	½	0-2,000	10″	½″	5″	**3513K11**	$558.97
10 gal.	½	0-2,000	12″	½″	5″	**3513K12**	638.82
Type 316 Stainless Steel Container							
5 gal.	½	0-2,000	10″	½″	5″	**3513K21**	944.76
10 gal.	½	0-2,000	12″	½″	5″	**3513K22**	1,079.63

Clamp-Mount Variable-Speed Electric Mixers

With adjustable speed control, these electric mixers can tackle a variety of material thicknesses. A simple clamp-mount makes them easy to attach to most tanks and containers. Come with a high-flow propeller; the blades are designed for better flow efficiency with thicker materials than conventional propellers.

Shaft and propeller are Type 316 stainless steel; both are removable. The propeller moves clockwise when viewed from above. Mixers have a totally enclosed, nonventilated (TENV) motor and a 6-ft. power cord with three-prong plug.

High Speed

hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Prop. Dia.	VAC @ 60 Hz (Phase)	Amps		
High Speed								
¼	90-1,750	36″	⅝″	3 13/16″	115 (1)	1.3	**3475K61**	$1,863.78
¼	90-1,750	48″	⅝″	3 13/16″	115 (1)	1.3	**3475K63**	1,875.39
½	90-1,750	48″	¾″	5 3/16″	115 (1)	1.3	**3475K65**	2,637.54
Low Speed								
¼	20-350	36″	¾″	10″	115 (1)	1.3	**3475K71**	2,328.64
¼	20-350	48″	¾″	10″	115 (1)	1.3	**3475K73**	2,343.15

For information about selecting a mixer, see page 506.

Clamp-Mount Electric Mixers

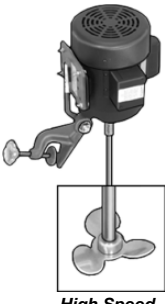

High Speed Standard Single Propeller

High-Flow Dual Propeller

The large adjustable clamp on these mixers makes them ideal for attaching to your container wall. The shaft and propeller are Type 316 stainless steel and are removable. Propellers move clockwise when viewed from above. All have a totally enclosed, fan-cooled (TEFC) motor except hazardous-location mixers. Mixers have 4″ wire leads, unless otherwise stated.

Light Duty Mini Single-Propeller Mixers—Have a thin shaft, small propeller, and low horsepower for small batches of thin materials. Mixers have a 6-ft. power cord with three-prong plug.

High-Flow Propeller Mixers—Come with a high-flow propeller; the blades are designed for better flow efficiency with thicker materials than standard propellers.

Hazardous-Location Mixers—Motor is UL listed for Class I, Groups C and D and Class II, Groups F and G locations.

Also Available: Replacement shafts, propellers, and clamp assemblies. Please ask for 3473K1 and specify part required and the McMaster-Carr part number.

hp	Shaft Lg.	Shaft Dia.	Prop. Dia.	VAC @ 60 Hz (Phase)	Amps		
High Speed							
Light Duty Mini Single Propeller—*1,550 rpm*							
1/20	12″	5/16″	3″	115 (1)	1.6	3497K21	$334.77
1/20	18″	5/16″	3″	115 (1)	1.6	3497K16	302.89
1/20	24″	5/16″	3″	115 (1)	1.6	3497K17	307.77
1/20	30″	5/16″	3″	115 (1)	1.6	3497K18	312.82
Standard Single Propeller—*1,750 rpm (unless noted)*							
1/3	32″	1/2″	4″	115/230 (1)	6.6/3.3	3473K14	448.10
1/2	32″	5/8″	4″	115/230 (1)	7.8/3.9	3473K15	498.74
1/2	32″	5/8″	4″	110/220 (1)	8.2/4.1	3473K25▲	545.39
High-Flow Single Propeller—*1,750 rpm*							
1/4	36″	5/8″	3 13/16″	115/230 (1)	4.4/2.2	34945K51	1,084.86
1/4	36″	5/8″	3 13/16″	230/460 (3)	1.3/0.6	34945K52	1,106.30
1/4	48″	5/8″	3 13/16″	115/230 (1)	4.4/2.2	34945K53	1,095.03
Standard Dual Propeller—*1,750 rpm*							
3/4	48″	3/4″	4″	115/230 (1)	10.8/5.4	3473K54	1,376.18
1	60″	1″	5″	230/460 (3)	3.6/1.9	3473K55	1,587.09
Hazardous-Location Standard Dual Propeller—*1,750 rpm*							
1	60″	1″	5″	230/460 (3)	4.2/2.1	3473K69	1,891.49
Low Speed							
Standard Single Propeller—*350 rpm*							
1/3	32″	3/4″	6″	115/230 (1)	6.6/3.3	3488K94	1,336.76
1/3	32″	3/4″	6″	230/460 (3)	1.6/0.8	3488K96	1,370.06
High-Flow Single Propeller—*350 rpm*							
1/4	36″	3/4″	7 5/8″	115/230 (1)	4.4/2.2	34945K74	1,540.17
1/4	48″	3/4″	10″	115/230 (1)	4.4/2.2	34945K61	1,579.29
1/3	48″	3/4″	11 3/16″	115/230 (1)	6.0/3.0	34945K65	1,745.53
1/3	48″	3/4″	11 3/16″	230/460 (3)	1.6/0.8	34945K66	1,766.56
Standard Dual Propeller—*350 rpm*							
1/2	48″	3/4″	10″	115/230 (1)	8.0/4.0	3487K12	2,006.06
3/4	60″	3/4″	11″	115/230 (1)	10.8/5.4	3487K14	2,296.06
1 1/2	60″	1″	13″	230/460 (3)	4.4/2.2	3487K18	2,573.17
High-Flow Dual Propeller—*350 rpm*							
1/3	36″	3/4″	7 5/8″	115/230 (1)	6.0/3.0	34945K76	1,946.73
1/3	60″	3/4″	10″	115/230 (1)	6.0/3.0	34945K63	1,996.17
1/3	60″	3/4″	10″	230/460 (3)	1.6/0.8	34945K64	1,968.52
3/4	48″	3/4″	11 3/16″	230/460 (3)	3.3/1.5	34945K72	2,457.01
3/4	60″	3/4″	11 3/16″	230/460 (3)	3.3/1.5	34945K67	2,519.41
Hazardous-Location Standard Dual Propeller—*350 rpm*							
1/2	48″	3/4″	10″	115/230 (1)	8.0/4.0	3487K32	2,207.68
3/4	60″	3/4″	11″	115/230 (1)	10.6/5.3	3487K34	2,639.46
1 1/2	60″	1″	13″	230/460 (3)	5.0/2.5	3487K38	2,890.79

▲Motor is 50 Hz; speed is 1,425 rpm.

Drum-Mount Electric High-Speed Mixers

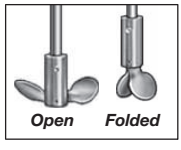

Mix the contents of a 55-gal. drum without removing the lid—the 3 3/4″ dia. propeller on these mixers collapses to fit through a standard 2″ bung opening.

Mixers are 1/2 horsepower with a speed of 1,750 rpm. All operate on 115/230 VAC, 60 Hz at 8/4 amps. Motor is single phase. The shaft and propeller are Type 316 stainless steel; both are removable. Propeller moves clockwise when viewed from above. Mixers have 4″ wire leads.

Standard mixers have a totally enclosed, fan-cooled (TEFC) motor.

Hazardous-location mixer with bung mount has a motor that is UL listed for Class I, Groups C and D and Class II, Groups F and G locations.

Hazardous-location mixer with clamp mount has a motor that is UL listed for Class I, Group D and Class II, Groups F and G locations.

Bung-Mount Mixers—Screw into a standard 2″ female bung opening.

Clamp-Mount Mixers—Clamp onto a container wall or drum lip.

	Shaft Lg.	Shaft Dia.	Standard		Hazardous Location	
Bung Mount	29″	5/8″	3484K59	$782.03	3484K48	$1,147.11
Clamp Mount	33 1/8″	5/8″	3492K75	820.70	3492K88	1,167.93
Replacement Propeller			3484K78	$100.53		

Stand-Mount Electric Variable-Speed Mini Mixers

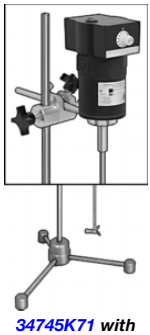

34745K71 with Optional Stand

With small propellers, a small motor, and a thin shaft, these mixers are perfect for your small mixing jobs. And with adjustable speed, you'll be able to handle changing viscosities. The shaft and propeller are Type 316 stainless steel and are removable. Mixers have a totally enclosed, nonventilated (TENV) motor and a 6-ft. power cord with three-prong plug.

The propeller moves clockwise when viewed from above. Mixers include a 9/16″ Dia.×10″ Lg. aluminum rod for mounting to a stand (sold separately below).

Optional stand includes a swivel connector. Mixers can be mounted anywhere along the support.

hp	Speed, rpm	Shaft Lg.	Shaft Dia.	Prop. Dia.	VAC @ 60 Hz (Phase)	Amps		
1/15	0-2,000	12″	3/8″	2 1/2″	120 (1)	0.8	34745K71	$517.68
1/10	0-1,000	12″	3/8″	2 1/2″	120 (1)	1.14	34745K75	647.11
1/40	0-4,000	12″	3/8″	2 1/2″	120 (1)	0.51	3522K41	408.89
1/40	0-4,000	18″	3/8″	2 1/2″	120 (1)	0.51	3522K42	415.56
1/40	0-4,000	24″	3/8″	2 1/2″	120 (1)	0.51	3522K43	425.56
1/40	0-4,000	30″	3/8″	2 1/2″	120 (1)	0.51	3522K44	428.89
Optional Stand							35265K11	319.95

Blenders

1 liter

Great for grinding small batches of powder, combining multiple liquids, and creating slurries. All blenders include speed control, a Type 304 stainless steel container, stainless steel blades, a plastic cover, and a 6-ft. power cord with three-prong plug. UL listed.

1-liter blenders have a die cast zinc housing with an epoxy finish. *64-oz. blender* has a polycarbonate housing.

Also Available: Replacement covers and container and cover sets. Please ask for 34985K1 and specify part required.

Capacity	No. of Speeds	Max. Speed, rpm	VAC @ 50/60 Hz (Phase)	Amps		
1 liter	1	22,000	115/120 (1)	3.6	34985K73	$298.74
1 liter	2	22,000	115/120 (1)	3.6	34985K74●	463.83
64 oz.	2	24,300	115/120 (1)	7.5	34985K75	553.86

●Includes a 3-minute timer.

For information about selecting a mixer, see page 506.

Compact Air-Powered Paint Shaker

Mount this shaker to your bench top and stop mixing by hand. It shakes aerosol, pint, quart, and gallon cans 700 times per minute. Operates on 4.3 cfm at 70 to 150 psi air consumption. Air inlet is 1/4″ NPT female. Shaker is rated for continuous duty. The base and can basket are aluminum. Shaker must be mounted to a bench top or the optional pedestal stand before operation; includes four 3/8″ machine bolts for mounting.

Optional maintenance kit includes a bushing, a wear ring, an air hose, hose clamps, and O-rings.

Also Available: Replacement parts. Please ask for 9593T777 and specify part required.

Maximum Container Weight Cap.	Ht. × Dia.	O'all Size, Ht. × Wd. × Dp.		
16 lbs.	10 1/4″ × 7″	14″ × 8″ × 10 1/2″	9593T41	$560.20
Optional Steel Pedestal Stand			9593T12	84.41
Optional Maintenance Kit			9593T13	52.48

Tabletop Vibrating Electric Shakers

10-lb. Capacity

Delivering 3,600 vibrations per minute, these shakers handle your tamping and mixing jobs. All have a single phase motor that operates on 120 VAC at 60 Hz. Include a 5 1/2-ft. power cord with three-prong plug.

8-lb. capacity table is rated for intermittent duty; maximum of 15 minutes on with a minimum of 5 minutes off between cycles. Housing is aluminum with a rubber-covered steel platform.

10-lb. capacity table is rated for continuous duty. Housing is aluminum with a plastic platform.

Weight Cap.	Platform, Wd. × Dp.	Amps	O'all Size, Ht. × Wd. × Dp.		
8 lbs.	10 1/2″ × 7 1/2″	3	4 1/2″ × 10 1/2″ × 7 1/2″	5817K18	$311.15
10 lbs.	10″ × 7″	1	6 1/8″ × 10″ × 7″	5714K61	981.31

Wooden Paint Stirrers

Lg. × Wd.	Pkg. Qty.		Pkg.
6″ × 11/16″	500	77985T54	$13.75
12″ × 11/8″	12	77985T71	3.05
21″ × 13/4″	6	77985T72	5.89

Electric Paint Shakers

For Container Size	A	B&C	D&E
Aerosol	✓		
Pint	✓		✓
Quart	✓		✓
1 Gal.	✓	✓	✓
2 Gal.		✓	
5 Gal.		✓	

A

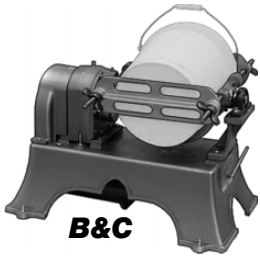

B&C

D

E

Mix paints in their containers with the lid intact for a neat and easy job.

(A) Shakes with side-to-side, up-and-down, and circular motions 1,050 times per minute. Has a 15-minute timer and a 7-ft. power cord with three-prong plug. Rated for continuous duty. Shaker is steel with three rubber footpads; it is not designed for mounting.

Also Available: Replacement parts. Please ask for 7828T888 and specify part required.

(B&C) Mix contents of large containers with 370 shakes per minute. All have a 10-ft. power cord with three-prong plug. Rated for intermittent duty; 80% duty cycle with a max. "on" time of 60 minutes. Housing is cast iron with four 7/16″ holes for floor mounting (fasteners not included). Motor is UL listed. *Style B* has a 30-minute timer. *Style C* meets Class 1, Group D for hazardous locations.

(D&E) Mix two cans simultaneously at 570 shakes per minute. Rated for intermittent duty; 80% duty cycle with a max. "on" time of 60 minutes. Housing is steel. Base has three 3/8″ holes for mounting to a bench top (fasteners not included). Motor is UL listed. *Style D* has a 30-minute timer and a 10-ft. power cord with three-prong plug. *Style E* meets Class 1, Group D for hazardous locations. It has 18″ wire leads.

Features	Maximum Container Weight Cap.	Ht. × Dia.	hp	VAC @ 60 Hz (Phase)	Amps	O'all Size, Ht. × Wd. × Dp.		
A Multidirectional	11 lbs.	7 7/8″ × 6 7/8″	1/4	115 (1)	2	24″ × 16″ × 12″	7828T41	$452.40
B Large-Capacity	80 lbs.	15 1/2″ × 11″	1/2	115/230 (1)	8/4	21″ × 28″ × 19″	9584T11	3,460.51
C Large-Capacity for Hazardous Locations	80 lbs.	15 1/2″ × 11″	1/2	115/230 (1)	8/4	21″ × 28″ × 19″	9584T12	4,210.53
D Dual-Can	17 lbs.★	9″ × 7″	1/3	115 (1)	6.8	23″ × 19″ × 11″	7910T2	1,496.24
E Dual-Can for Hazardous Locations	17 lbs.★	9″ × 7″	1/3	115/230 (1)	4.4/2.2	44″ × 19″ × 11″	7910T3	2,421.05

★ Maximum is for a single container; shaker holds two containers.

No-Mess Electric Drum Mixers

(Drum Not Included)

Mix large batches without the mess, while ensuring materials at the bottom of the drum are equally incorporated. Simply put your covered drum (not included) on the mixer and turn it on. Mixers accept 15-, 30-, and 55-gal. steel drums; add the optional attachment for mixing 1- and 5-gal. cans.

Mixers have a variable-speed control that lets you rotate a 55-gal. drum at 10 to 24 rpm. They can handle dry loads up to 400 lbs. at 10 rpm; 300 lbs. at 20 rpm; and 250 lbs. at 24 rpm. They also handle liquid loads up to 500 lbs. at any rpm.

All mixers have a 1/2-hp motor with thermal overload protection, a chain and guard, and a grounding strap. They also have four 3″ dia. casters for mobility and an integral handle that allows the mixer to be tilted for drum changes. Mixers are 20″ Ht. × 35″ Wd. × 21″ Dp. UL listed. Shipped assembled.

Mixer with totally enclosed, fan-cooled (TEFC) motor has a 6″ power cord with three-prong plug and an on/off switch.

Mixer with hazardous-location motor meets Class I, Group D and Class II, Groups F and G. Mixer has 5″ wire leads.

Motor Style	VAC @ 60 Hz (Phase)	Amps		
TEFC	115 (1)	7.4	2889T12	$2,010.23
Hazardous Location	115/230 (1)	7.4/3.7	2889T17	2,225.41
Optional Attachment for 1-gal. and 5-gal. Cans			2889T16	128.79
Replacement 4″ Drive Wheel for Attachment			2889T19	55.05

Easy-Pour Electric Drum Mixers

Mobile

Stationary

With a handle and an adjustable drum, you can set your mixing angle for the best mix and an easy pour. Both have a steel frame and 5.5 cu. ft./41-gal. drum with a mixing capacity of 3 cu. ft./22-gal. The drum is 24″ dia. at the widest point, 15 1/4″ dia. at the opening. Both mixers are 48″ Ht. × 46″ Wd. × 30″ Dp. and include a 1-ft. power cord with three-prong plug. Shipped assembled.

Mobile Mixer— Furnished with two 10″ semi-pneumatic wheels for hand towing (not designed for vehicle towing). Mixing drum comes with two blades and two mixing paddles that are replaceable.

Stationary Mixer— Includes a seamless polyethylene liner with molded blades that's easy to clean and is replaceable.

	hp	Speed, rpm	VAC @ 60 Hz (Phase)	Amps		
Mobile	1/3	22-25	115 (1)	5.9	7666T13	$1,981.95
Stationary	1/3	22-25	115 (1)	5.9	7595T12	1,729.80
Replacement Drum Liner for Stationary Mixer					7595T22	216.46

For information about selecting a mixer, see page 506.

Compact Electric 5-Gallon Pail Mixer

Mix and carry your batch away in the same container. The bucket rotates at 60 rpm while a motionless mixing paddle stirs things up. Complete mixer includes a 1/4-hp motor, 5-gal. metal bucket, lid, 3/4″ Dia.×10 3/4″ Lg. shaft with mixing paddle, stand, and an 8-ft. power cord with inline switch and three-prong plug. Overall size is 24″ Ht.×16″ Wd.×13″ Dp. Mixing capacity is 5 gal. for fluids and 50 lbs. for cement. Shipped assembled.

	VAC @ 60 Hz (Phase)	Amps		
Complete Mixer	110 (1)	5	7658T11	$564.11
Replacement Paddle			7658T12	50.51
Replacement Bucket with Lid			7658T1	44.23

Drum-Mount Proportional Mixers

Mix and dispense in one step. Simply attach your water line to the inlet of these mixers and simultaneously draw from drum contents to mix. The ratio of your mix is adjustable. Mixers fit 15- to 55-gal. drums with 2 1/2″ dia. bung openings. Water line connection has a quarter-turn shutoff valve.

PVC Mixer for Soap and Water

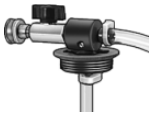

Use the metering screw to adjust soap-to-water ratio from 1 oz.:1 gal. to 30 oz.:1 gal. Water inlet connection is 3/4″ GHT (garden hose thread) female. Intake tube is vinyl and 42″ long. Discharge connection is 1/2″ OD hose barb. Discharge hose is vinyl and 3-ft. long. Min. inlet pressure is 10 psi. Max. pressure is 125 psi at 70° F.

Flow Rate	Max. Temp.		
5 gallons/minute	160° F	3478K51	$80.12

Brass Mixers for Coolant or Soluble Oil and Water

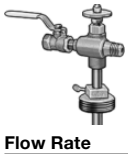

A needle valve dial allows you to adjust the water-to-oil ratio. Intake tube is galvanized steel and 3-ft. long. Water inlet connection is 3/8″ NPT female. Discharge connection is 1/2″ NPT male. Min. inlet pressure is 25 psi. Max. pressure is not rated.

Flow Rate	Water-to-Oil Ratio	Max. Temp.		
3 gallons/minute	3:1 to 15:1	150° F	9977K3	$221.85
3 gallons/minute	15:1 to 45:1	150° F	9977K1	221.85

Tee-Fitting Proportional Mixers

The internal tapered design on these tees creates a vacuum to draw oxygen, steam, or fluid into your mixture for aeration or blending. Tees are cast iron. Max. pressure is 125 psi at 70° F.

Pipe Size, NPT	Max. Temp.	O'all Lg.		
1/2″ Female	406° F	3 3/4″	4563K61	$53.60
3/4″ Female	406° F	5″	4563K62	60.66
1″ Female	406° F	5 5/8″	4563K63	63.93

Porcelain Mortars and Pestles

OD	Mortar		Pestle	
3 1/8″	43095T52	$18.50	43095T62	$19.41
5 1/8″	43095T53	45.21	43095T63	30.87
8 1/4″	43095T54	181.04	43095T64	85.44

Mixing Nozzles

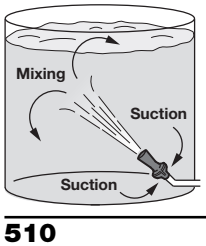

Keep the mixture in your containers uniform by pumping it through these nozzles, also known as eductors. The mixing action is created by their shape—as 1 gallon flows in through the inlet, suction draws approximately 4 gallons from your tank for mixing. This action keeps your mixture circulating and prevents particles from settling.

Nozzles are made of durable glass-reinforced polypropylene for corrosion and chemical resistance. Connection is NPT male. Max. pressure is 50 psi at 70° F.

Pipe Size	Max. Temp.	Dia.×Lg.		
1/4″	200° F	1 1/4″ × 3″	8328K11	$33.66
3/8″	200° F	21/16″ × 4″	8328K12	38.40

Inline Pipe Mixers

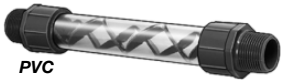

PVC

Also known as static mixers, these mixers require no power source to mix the materials in your process. They have no moving parts, are maintenance-free, and are simple to install with NPT male connections. Internal spiral blades turn fluids in your pipeline in opposite directions for thorough, homogenous mixing with no back pressure.

$$Re = \frac{3{,}157(Q)(S)}{\mu D}$$

Where: Q=flow rate (gpm)
S=specific gravity
μ=viscosity (centipoise)
D=pipe ID (inches)

Re (Reynolds Number)	Required Blades
> 1,000	6
500–1,000	12
500–2,000	18

Use this formula to determine if you need a 6-, 12-, or 18-blade mixer.

Nylon mixers are made of nylon pipe and brass fittings with acetal blades. They're ideal for mixing water-based liquids, common solvents, and adhesives.

PVC mixers are made of clear PVC for monitoring the mixing process. Use to dilute mixtures such as polymers and flocculants in water treatment, pH control, and chlorination operations.

Stainless steel mixers are Type 304 stainless steel and are ideal for wastewater treatment and chemical processing.

Pipe Size	Max. psi @ 70° F	With 6 Blades Lg.			With 12 Blades Lg.		
Nylon—Max. temp. is 250° F							
1/4″	460	—	—	—	7 1/2″	3067K14	$20.29
1/4″	460	—	—	—	9 19/32″	3067K15★	24.64
3/8″	350	—	—	—	8 1/2″	3067K16	26.87
3/8″	350	—	—	—	11 3/32″	3067K17★	33.40
PVC—Max. temp. is 140° F							
3/8″	310	6 1/2″	35385K21	$80.43	11″	35385K31	93.48
1/2″	300	7″	35385K22	106.52	12″	35385K32	117.39
3/4″	240	9″	35385K23	113.04	15″	35385K33	129.35
1″	220	11″	35385K24	123.91	18″	35385K34	163.04
1 1/4″	180	14″	35385K25	136.96	25″	35385K35	175.00
1 1/2″	170	15″	35385K26	150.00	28″	35385K36	186.96
2″	140	19″	35385K27	180.43	35″	35385K37	204.35
Stainless Steel—Max. temp. is 500° F							
1/2″	1,500	5″	3529K41	241.18	10″	3529K51	349.41
3/4″	1,250	7″	3529K42	255.29	13″	3529K52	371.76
1″	1,150	9″	3529K43	271.76	17″	3529K53	424.71
1 1/2″	850	13″	3529K44	368.24	26″	3529K54	575.29
2″	750	17″	3529K45	575.29	33″	3529K55	881.11

★ Comes with 18 blades.

Inline Tube Mixers

(Cut-Away View)

A series of internal blades are permanently mounted inside these tubes to mix everything from thin liquids to thick resins. Materials are mixed as they pass over the blades, so no external power source is required. Both the housing and the blades are Type 316 stainless steel. Max. temp. is 1000° F.

Mixers have plain ends and are easy to install—simply secure them into your process line with compression or push-to-connect fittings (not included). *Note:* When mixing two thick liquids, use two 21-blade mixers.

Tube OD	Tube ID	Max. psi @ 70° F	Overall Lg.	No. of Blades		
For Silicones, Polyesters, Two-Part Epoxies						
3/8″	0.319″	2,800	11″	21	3530K51	$138.62
1/2″	0.430″	2,100	16 3/8″	21	3530K61	186.21
For Polyurethanes, Polysulfides, Suspensions						
1/4″	0.194″	4,200	11 1/2″	34	3530K43	164.48
3/8″	0.319″	2,800	17″	32	3530K53	164.48
1/2″	0.430″	2,100	24 3/4″	32	3530K62	205.90

Air Bubbler

Also known as a diffuser, use this air bubbler to introduce air into your tank for aeration and oxygenation. It is easily incorporated into your system, just connect your compressed air supply to the 1/2″ NPT male connection. Air bubbler is ABS plastic with a clog-resistant rubber diaphragm. Bubbler is 5″ Dia.×4 1/2″ Lg. and has a max. air pressure of 5 psi at 70° F.

3699K36 ..... $27.46

Aerators

Mix the contents of your tank while oxygenating your mixture. Aerators include a rubber air bubbler (also known as a diffuser), which provides more uniform bubble distribution for more consistent oxygenation. Also include an air pump and PVC hose. Operate on unfiltered, nonlubricated air. Max. pressure is 3.5 psi at 70°F. Max. water depth is 6 feet. Overall size of air pump is 6 11/16″ Ht.× 8″ Wd.×5 7/16″ Dp. Come with a 6-ft. power cord with three-prong plug. Rated for continuous duty.

Hose Lg.	VAC @ 60 Hz (Phase)	Amps		
5 ft.	120 (1)	0.3	3555K24	$287.69
10 ft.	120 (1)	0.3	3555K26	295.24
20 ft.	120 (1)	0.3	3555K28	310.34

Injectors

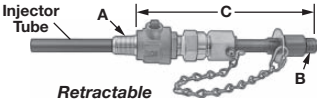

Retractable

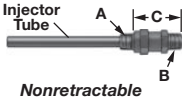

Nonretractable

Inject liquids directly into your process line or tank without draining your system. The injector tube has a 6″ insertion length. Process connection and inlet connection are NPT male. Seal is EPDM, except 3347K42, K44, K52, and K54, which have a chemical-resistant fluoroelastomer seal.

Retractable injectors, also known as corporation stops, have a ball valve so you can remove the injector without disturbing your process.

Nonretractable injectors, also known as injection quills, are for permanent installation in your tank. These are ideal for injecting chemicals in your boiler, cooling tower, and other water treatment applications.

All injectors with CPVC and PVC injector tubes can be cut to the length you need within the 6″ cuttable range.

Process Conn. (A)	Inlet Conn. (B)	Injector Tube Material	Lg. (C)	O'all Lg.		
Retractable Injectors						
With CPVC Ball Valve						
3/4″	1/2″	CPVC	11 1/2″	17 1/2″	3347K42	$487.30
1″	1/2″	CPVC	15″	21″	3347K44	598.41
With Bronze Ball Valve						
3/4″	1/2″	PVC	11″	17″	3347K22	353.97
1″	1/2″	PVC	12 1/2″	18 1/2″	3347K24	458.73
1 1/2″	1″	PVC	15 3/4″	21 3/4″	3347K28	895.24
With Type 316 Stainless Steel Ball Valve						
3/4″	3/8″	316 SS	10 1/4″	16 1/4″	3347K32	904.76
1″	1/2″	316 SS	12 1/2″	18 1/2″	3347K34	1,117.46
1 1/2″	1″	316 SS	16″	22″	3347K38	1,754.31
Nonretractable Injectors						
With PVC Check Valve						
1/2″	1/2″	PVC	3 1/4″	9 1/4″	3347K52	117.46
3/4″	1/2″	PVC	3 1/4″	9 1/4″	3347K54	117.46
With Type 316 Stainless Steel Check Valve						
1/2″	1/2″	316 SS	3 1/4″	9 1/4″	3347K56	341.67

Replacement Parts for Mixers and Blenders

If you don't see the replacement part you need, just tell us what you're looking for and we'll get it for you.

For Series

Lightnin Repair Kits		
Include Bearings, Seals, Gaskets, Retaining Rings, Coupling, Shaft		
EV direct-drive (high-speed)—1/4 to 1/3 hp	3752K14	$484.57
EV gear-drive (low-speed)—1/4 to 3/4 hp	3752K15	970.29
Include Gears, Bearings, Seals, Grip Springs, and Chuck Hardware		
ND and XJ gear-drive (low-speed)—1/4 to 1/2 hp	3752K19	893.13
ND and XJ gear-drive (low-speed)—3/4 to 1 hp	3752K21	988.66
ND and XJ gear-drive (low-speed)—1 1/2 to 3 1/2 hp	3752K22	1,637.71
Includes Bearings, Seals, and Chuck Hardware		
NS and XD direct-drive (high-speed)—1/4 to 1/3 hp	3752K18	209.45
Neptune Repair Kits		
Include Bearings, Seals, Washers, and Grease		
C, D, and DT	3752K11	224.48
JD, JG, JGR, and JDR—1/3 to 1 1/2 hp	3752K12	224.48
JD, JG, JGR, and JDR—2 hp and larger	3752K13	304.14
Waring Repair Kits		
Include Drive Coupling and Blending Assembly		
700S and 7010S	3752K23	48.64
HGB150	3752K24	52.32

Stainless Steel Propellers

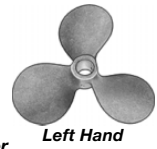

Left Hand

Suitable for standard mixing applications, these corrosion-resistant Type 316 stainless steel propellers include two stainless steel set screws to attach to your mixing shaft. They have a relatively flat blade angle for smooth, even mixing.

Selecting a Left-Hand or a Right-Hand Propeller

Most mixers require a left-hand propeller. To determine whether you need a left- or right-hand propeller, view your propeller from the side. As pictured below, the blades of a left-hand propeller point up to the left. The blades of a right-hand propeller point up to the right.

On most mixers, the shaft and propeller move clockwise when viewed from above. Using a left-hand propeller pushes material down into your container.

Prop. Dia.	Bore Size	Left Hand		Right Hand	
3″	1/2″	8004K41	$72.25	8004K81	$76.95
3″	5/8″	8004K11	72.25	8004K61	76.95
3″	3/4″	8004K12	72.25	—	—
4″	1/2″	8004K421	81.67	8004K821	86.94
4″	5/8″	8004K131	81.67	8004K621	86.94
4″	3/4″	8004K141	81.67	8004K631	86.94
5″	1/2″	8004K431	93.18	8004K831	99.31
5″	5/8″	8004K151	93.18	8004K641	99.31
5″	3/4″	8004K161	93.18	8004K651	99.31
6″	5/8″	8004K48	103.85	8004K86	110.34
6″	3/4″	8004K49	103.85	8004K87	110.34
6″	1″	8004K191	110.38	8004K681	117.28
6″	1 1/4″	8004K211	110.38	8004K691	117.28
7″	3/4″	8004K221	129.37	8004K841	137.54
7″	1″	8004K231	129.38	8004K711	137.54
8″	3/4″	8004K251	160.71	8004K731	170.45
8″	1 1/4″	8004K261	171.74	8004K741	182.15
9″	3/4″	8004K441	192.53	—	—
9″	1″	8004K271	203.29	—	—
10″	1″	8004K281	249.31	8004K751	264.42
12″	1″	8004K291	281.03	8004K761	297.56
12″	1 1/4″	8004K471	281.03	8004K851	297.56
14″	1 1/4″	8004K311	418.38	8004K771	440.39

Super-Mixing Stainless Steel Propellers

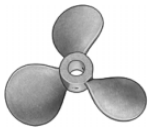

With more steeply angled blades, these Type 316 stainless steel propellers deliver 50% more mixing action and require greater horsepower to operate than standard propellers of the same diameter. Propellers include two stainless steel set screws to attach to your mixing shaft; all are left hand.

Prop Dia.	Bore Size			Prop Dia.	Bore Size		
3″	1/2″	34695K68	$207.65	5″	5/8″	34695K75	$284.73
3″	5/8″	34695K69	207.65	6″	5/8″	34695K29	311.50
4″	1/2″	34695K71	247.85	8″	1″	34695K77	355.05
4″	5/8″	34695K72	247.85	11″	3/4″	34695K78	479.36
5″	1/2″	34695K74	242.32	13″	1 1/2″	34695K81	797.50

High-Flow Stainless Steel Propellers

Also known as hydrofoil propellers, these are designed to produce high flow at low speeds (40% higher flow than conventional propellers). They are most effective when used with thin mixtures and low-speed mixers. All are Type 316 stainless steel, have two stainless steel set screws to attach to your mixing shaft, and are left hand.

Prop. Dia.	Bore Size			Prop. Dia.	Bore Size		
8″	3/4″	80055K33	$286.45	12″	3/4″	80055K63	$440.69
8″	1″	80055K35	289.78	12″	1″	80055K65	445.81
9″	3/4″	80055K43	337.86	14″	3/4″	80055K73	479.86
10″	3/4″	80055K53	367.24	14″	1″	80055K75	485.44
10″	1″	80055K55	371.51	18″	1″	80055K95	734.41

Adjustable Stainless Steel Propellers

Bend the blades to your desired pitch. All propellers are 2″ dia., left hand, and come riveted to a 1/4″ dia. shaft. The shaft is Type 303 stainless steel; the propeller is Type 304 stainless steel.

O'all Lg.			O'all Lg.		
6″	34865K51	$33.22	12″	34865K55	$45.50
9″	34865K53	37.97	24″	34865K59	51.33

Lightweight Aluminum Propellers

Lightweight yet sturdy, these propellers have a relatively flat blade angle for smooth, even mixing. Made of aluminum alloy A356 with two stainless steel set screws for attaching to your mixing shaft. All propellers are left hand.

Prop. Dia.	Bore Size		
4″	1/2″	3502K122	$26.21
4″	5/8″	3502K142	26.21
7″	1/2″	3502K182	41.67
7″	5/8″	3502K222	41.67
7″	3/4″	3502K242	41.67
10″	5/8″	3502K282	62.63
10″	3/4″	3502K322	$62.63
10″	1″	3502K362	62.63
12″	5/8″	3502K422	81.31
12″	3/4″	3502K442	81.31
12″	1″	3502K482	81.31
12″	1 1/4″	3502K542	81.31

Plastic Propellers

Fixed T *Fixed U* *Collapsible T*

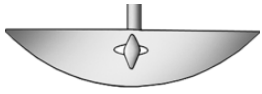

Fixed Wing (Shown w/Shaft, Sold Separately)

Polypropylene Propellers with Coated-Steel Shaft

Propeller	Prop. Dia.	Shaft Dia.	Shaft Lg.		
Fixed T	1 9/16″	5/16″	13 3/4″	34935K65	$20.63
Fixed U	2 9/16″	5/16″	13 3/4″	34935K66	23.84
Collapsible T	2 1/4″	5/16″	13 3/4″	34935K67	32.86
Collapsible T	3 7/8″	5/16″	13 3/4″	34935K68	47.69

Chemical-Resistant PTFE Propeller and Shaft

	O'all Size		
Fixed-Wing Propeller	5 15/16″ Wd. × 1″ Ht.	34895K49	$17.67
Shaft	3/8″ Dia. × 21 5/8″ Lg.	34895K55	103.63

Mixing Attachments for Power Tools

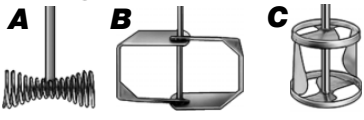

Turn your power tool into a mixer with these versatile attachments. Select a shaft diameter that will fit into the chuck of your power tool.

***A** Coiled Spring Attachments*—The coil design generates a centrifugal force that requires about 50% less speed than a propeller to achieve the same mixing results. Made of Type 304 stainless steel, these attachments have rounded ends to prevent damage to plastic containers. Use in viscosities up to 12,000 centipoise (similar to molasses).

For Container Cap., gal.	Coil Lg.	Shaft Dia.	Shaft Lg.	Max. rpm		
1/4	1 1/2″	1/4″	8″	2,500	35325K51	$30.20
1/2	2 1/2″	1/4″	12″	2,500	35325K53	38.43
1-2	3 1/2″	3/8″	12″	2,500	35325K55	53.53
3-10	5″	3/8″	24″	2,500	35325K57	71.37

***B** Paint and Drywall Attachments*—Made entirely of steel. Use in viscosities up to 24,000 centipoise (similar to SAE 70 oil).

For Container Cap., gal.	Propeller Dia.	Propeller Ht.	Shaft Dia.	Shaft Lg.	Max. rpm		
5-10	8 1/2″	4 1/2″	3/8″	28″	2,100	34775K55	$16.81
5-10	8 1/2″	4 1/2″	3/8″	36″	2,100	34775K57	18.63

***C** Dual-Propeller Attachments*—Designed for good flow efficiency with thick materials. Attachments are Type 304 stainless steel. Not rated for viscosity.

For Container Cap., gal.	Prop. Dia.	Shaft Dia.	Shaft Lg.	Max. rpm		
1/8	1 1/4″	1/4″	10 1/4″	1,200	3471K5	$16.05
1-2	2 5/8″	1/4″	10 1/4″	1,200	3471K7	17.17
1-2	2 5/8″	1/4″	14 3/4″	1,200	3471K2	20.62
1-2	2 5/8″	1/4″	30″	800	3471K4	24.84
2-5	3 3/4″	3/8″	20 1/2″	1,000	3471K25	63.83
5-10	5 1/8″	1/2″	20 1/2″	800	3471K1	70.31
10-50	5 1/8″	1/2″	40″	450	3471K28	86.49

Mixing Blades

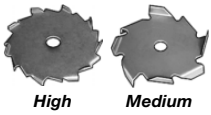

High *Medium*

Incorporate cutting action while mixing materials with solid particles. Blades and shafts are sold separately.

Mixing blades are Type 304 stainless steel. All have a 1/2″ bore size. *High-speed blades* have shallow teeth that allow them to operate at very high speeds. *Medium-speed blades* have teeth that are set at a steeper angle to power through thicker materials.

Shaft assemblies are Type 303 stainless steel and fit a 1/2″ bore. They come with a stepped washer and nut.

Blades—High Speed

2″ Dia. Blade	3518K62	$49.74
3″ Dia. Blade	3518K64	52.60
4″ Dia. Blade	3518K65	53.79
5″ Dia. Blade	3518K66	76.51
6″ Dia. Blade	3518K67	92.05

Blades—Medium Speed

4″ Dia. Blade	3518K73	$107.59
6″ Dia. Blade	3518K78	192.46
8″ Dia. Blade	3518K81	243.86
10″ Dia. Blade	3518K82	272.55

Shaft Assemblies

Lg.		
12″	3518K11	$48.61
48″	3518K12	$62.40

Stirring Paddles

Handle Lg.	Paddle Size, Lg. × Wd.	Max. Temp.	With Holes		Without Holes	
FDA-Compliant White Polypropylene Tapered Blade						
27″	13″ × 6″	176° F	3494K12	$62.67	3494K14	$62.67
39″	13″ × 6″	176° F	3494K16	68.26	3494K18	68.26
Lightweight White Polyethylene Flat Blade						
3 ft.	6″ × 3″	248° F	—	—	3485K14	44.48
6 ft.	6″ × 3″	248° F	—	—	3485K15	55.87

Air-Powered Bin Aerator

Create flow in your bin or hopper—this aerator combines vibration and aeration to dislodge and convey compacted materials. It's especially effective for granular, powdery, and abrasive materials. Aerator operates on a 5 to 60 psi air supply and has a 1/4″ NPT female air connection. Body consists of a durable 4″ diameter white silicone pad mounted on a threaded stainless steel center shaft. Mounting hole size is 15/16″; comes with mounting hardware. Rated for continuous duty.

Install the aerator directly through a hole in your bin or hopper wall above the container outlet. For best results, mount several aerators together in rows set 6″ to 18″ apart.

59145K12 ..... $40.35

Electric Vibrating Feeders

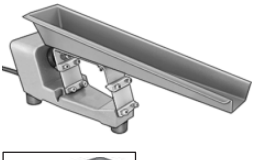

Don't worry about sizing the right vibrator to your feeder, these have a built-in vibrator. Ideal for controlling bulk material input in feeding, mixing, grinding, and packaging operations. Vibrating feeders are electromagnetic so there are no mechanical parts to wear out and no need for lubrication. They're quiet, too—at just 60 dB, their noise level is similar to normal conversation. Vibrating feeders and required controller are sold separately. All feeders are dust resistant and rated for continuous duty. Body is steel. Troughs come mounted to the vibrating drive unit. Max. operating temp. is 150° F. All have a 10-ft. cable with 2″ wire leads. CSA certified. 58815K18 and *K17* are splash resistant.

Feeders with a ***Type 304 stainless steel trough*** are great for use in food and pharmaceutical applications.

Required controller (sold separately) is necessary to operate feeders and is for use indoors. It has adjustable speed control and operates on 115 VAC with screw terminal connections. Has two 7/32″ mounting holes (fasteners not included).

Required Controller

Maximum Capacity	VAC (Phase)	Amps	Trough Size Lg.	Trough Size Wd.	Trough Size Dp.	Steel Trough		Type 304 Stainless Steel Trough		Required Controller	
1,250 lbs./hr.	115 (1)	0.35	12″	1 1/2″	1 1/16″	58815K12	$572.22	58815K11	$803.70	5876K83	$235.19
4,000 lbs./hr.	115 (1)	0.9	18″	3″	1 13/16″	58815K14	888.89	58815K13	1,083.93	5876K83	235.19
8,000 lbs./hr.	115 (1)	2.0	20″	5″	2 1/16″	58815K16	1,194.64	58815K15	1,435.71	5876K83	235.19
10,000 lbs./hr.	115 (1)	2.3	24″	6″	2 1/16″	58815K18	1,237.50	58815K17	1,478.57	5876K83	235.19

About Selecting a Vibrator for Bins and Hoppers

Choose a low-impact or high-impact vibrator depending on your application. The vibration intensity given in the tables below is an index we've created based on bulk materials with densities less than 75 lbs. per cubic foot. *Note:* If your material has a density greater than 75 lbs. per cubic foot, choose a vibrator with the next greater intensity.

Densities of Common Materials

Material	Density	Material	Density
Grain	27 lbs./cu. ft.	Coal	52 lbs./cu. ft.
Flour	37 lbs./cu. ft.	Fine Salt	75 lbs./cu. ft.
Asphalt	45 lbs./cu. ft.	Sand	100 lbs./cu. ft.

Low-Impact Vibrators— Ideal for maintaining a steady flow of material through your bin or hopper, these rotary motion vibrators produce high-frequency vibration. To choose the correct low-impact vibrator for your application, find the volume of the sloped portion of your container; then read down to find the approximate output force required and the corresponding vibration intensity.

Volume (Sloped Portion of Bin)	1 cu. ft.	2 cu. ft.	7 cu. ft.	20 cu. ft.	35 cu. ft.	50 cu. ft.	100 cu. ft.	200 cu. ft.	400 cu. ft.
Approximate Force Required	15 lbs.	40 lbs.	100 lbs.	200 lbs.	400 lbs.	600 lbs.	1,000 lbs.	1,500 lbs.	2,000 lbs.
VIBRATION INTENSITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**

High-Impact Vibrators— Ideal for dislodging materials that get stuck, caked, or form voids in your bin or hopper, these linear motion vibrators produce a sharp pounding, similar to striking a sledgehammer against the bin wall. To choose the correct high-impact vibrator for your application, find the wall thickness of your bin; then read down the column to find the approximate output force required and the corresponding vibration intensity.

Bin Wall Thickness	24 ga.	22 ga.	20 ga.	1/16″	1/8″	3/16″	7/32″	1/4″	3/8″
Approximate Force Required	10 lbs.	50 lbs.	100 lbs.	250 lbs.	450 lbs.	600 lbs.	1,000 lbs.	1,250 lbs.	2,750 lbs.
VIBRATION INTENSITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**

Installation Tips— *Low-impact vibrators* induce flow in the direction they rotate, so you can enhance flow by aligning your vibrator with your flow direction. *High-impact vibrators* produce strong pounding action, so a solid mount is necessary—performance can be significantly impaired without it.

For best results, mount vibrator to a channel bracket welded to the bin or hopper, not directly to the bin wall. Use more than one vibrator when the diameter or length of your container wall is greater than 10 feet.

Low-Impact Air-Powered Vibrators

Keep materials moving uniformly in your bin or hopper. Using high-frequency vibration, these air-powered ball vibrators create flow without jarring your container walls. Vibrators are lubrication free, but can be run on lubricated air for a longer life except Style E, which require nonlubricated air. All vibrators are rated for continuous duty and have a muffler. Mounting fasteners are not included.

(A-D) High-strength ductile iron vibrators with NPT threads have rugged construction and are dust tight. Inlet and outlet ports are NPT female. Max. operating temp. is 250° F, unless noted.

(E) Sanitary aluminum vibrators with BSPP threads are food grade, lubrication free, dust tight, and watertight. Inlet and outlet ports are BSPP (British Standard Pipe Parallel) female. Max. operating temp. is 210° F.

(F) Tuff-Lite thermoplastic vibrators with NPT threads are durable, lightweight, and dust resistant with high rust and impact resistance. Inlet and outlet ports are NPT female. Max. operating temp. is 275° F.

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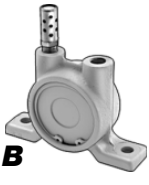
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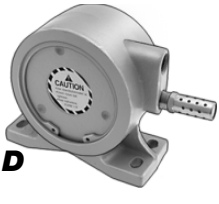
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Vibration Intensity	Force, lbs. (@ 60 psi)	Vibrations per Minute (@ 60 psi)	cfm (@ 60 psi)	dB (@ 60 psi)	Port Size	Overall Size Ht.	Overall Size Wd.	Overall Size Dp.	Mounting Holes Size (Qty.)	Mounting Holes Ctr.-to-Ctr.		
(A) High-Strength Ductile Iron with NPT Threads—Side Inlet												
2	45	22,000	9.0	85	1/8″	1 15/16″	3 1/8″	1 1/8″	11/32″ (2)	—	**5807K46**	$77.97
2	86	19,500	8.8	81	1/8″	2 3/8″	3 11/16″	1 5/16″	3/8″ (2)	—	**5807K27**♦	105.00
3	110	14,000	8.2	84	1/4″	2 1/2″	4″	1 15/16″	13/32″ (2)	—	**5807K48**	95.80
4	200	13,000	11.0	84	1/4″	2 13/16″	4 1/2″	1 1/2″	13/32″ (2)	—	**5807K49**	112.51
4	230	8,200	16.0	82	1/4″	3 1/4″	5 1/4″	1 13/16″	17/32″ (2)	—	**5807K65**	128.10
(B) High-Strength Ductile Iron with NPT Threads—Top Inlet												
1	18	25,000	4.5	86	1/8″	2 1/8″	3 3/4″	1 1/8″	1/4″ (2)	3″	**5807K21**♦	115.00
3	110	20,000	15.0	84	1/8″	2 3/4″	5 1/4″	1 1/4″	13/32″ (2)	4″	**5807K66**	104.71
4	210	13,000	12.0	83	1/4″	3 7/16″	5 1/8″	1 1/2″	13/32″ (2)	4″	**5807K7**	119.19
5	540	6,000	25.0	84	3/8″	5 7/16″	7 15/16″	2 5/16″	11/16″ (2)	6″	**5807K75**	202.73
(C) High-Strength Ductile Iron with NPT Threads—Side Inlet												
1	20	15,500	6.0	81	1/8″	2 3/16″	3 15/16″	1 3/16″	5/16″ (2)	3″	**5807K68**♦	102.86
2	52	15,100	8.1	81	1/8″	2 5/8″	5 1/16″	1 5/16″	3/8″ (2)	4″	**5807K69**♦	128.57
3	184	13,250	11.1	85	1/4″	3 5/16″	5 1/16″	1 11/16″	3/8″ (2)	4″	**5807K71**♦	142.86
4	313	9,700	12.8	82	1/4″	4 3/8″	6 3/8″	2 5/16″	1/2″ (2)	5″	**5807K72**♦	160.53
6	689	10,750	14.7	81	1/4″	4 3/8″	6 3/8″	2 5/16″	1/2″ (2)	5″	**5807K73**♦	173.68
(D) High-Strength Ductile Iron with NPT Threads—Side Inlet												
5	416	3,600	22.5	79	3/8″	6″	6 3/8″	3 1/8″	3/8″ (4)	5 1/2″	**5807K82**♦	317.50
5	533	5,000	20.8	78	3/8″	6″	6 3/8″	3 1/8″	3/8″ (4)	5 1/2″	**5807K81**♦	260.00
(E) Sanitary Aluminum with BSPP Threads—Top Inlet												
2	58	31,000	5.1	75	1/4″	2″	3 3/8″	13/16″	0.27″ (2)	2 11/16″	**5874K61**	174.91
3	106	28,000	5.3	77	1/4″	2″	3 3/8″	13/16″	0.27″ (2)	2 11/16″	**5874K62**	192.52
3	124	18,000	5.6	78	1/4″	2 9/16″	4 1/2″	15/16″	0.35″ (2)	3 9/16″	**5874K63**	226.67
3	180	17,000	7.1	81	1/4″	2 9/16″	4 1/2″	1 1/16″	0.35″ (2)	3 9/16″	**5874K64**	244.74
4	275	14,000	8.1	85	1/4″	3 3/16″	5 1/16″	1 5/16″	0.35″ (2)	4 1/8″	**5874K65**	281.82
4	353	12,000	10.2	82	1/4″	3 3/16″	5 1/16″	1 1/2″	0.35″ (2)	4 1/8″	**5874K66**	353.93
(F) Tuff-Lite Thermoplastic with NPT Threads—Top Inlet												
2	55	25,000	5.0	83	1/8″	2 5/8″	5″	1 7/16″	3/8″ (2)	4″	**5873K73**	60.13
2	96	20,000	5.0	80	1/8″	2 5/8″	5″	1 7/16″	3/8″ (2)	4″	**5873K75**	73.33
3	155	16,500	9.0	87	1/4″	3 1/2″	5 5/8″	1 3/4″	1/2″ (2)	4 5/8″	**5873K77**	80.18
4	270	16,000	11.0	87	1/4″	3 1/2″	5 5/8″	1 3/4″	1/2″ (2)	4 5/8″	**5873K79**	88.20
4	380	11,500	13.0	82	1/4″	4″	6 1/2″	2 5/16″	1/2″ (2)	5 1/4″	**5873K81**	110.24
6	685	10,000	17.0	85	1/4″	4″	6 1/2″	2 5/16″	1/2″ (2)	5 1/4″	**5873K83**	117.33
6	775	5,000	28.0	98	1/2″	5 7/8″	9″	2 1/2″	11/16″ (2)	7 1/2″	**5873K91**	190.67

♦ Max. operating temp. is 350° F.

Energy-Efficient Low-Impact Air-Powered Vibrators

A

Cut down on air consumption and noise. With turbine design, these vibrators use less air to create more vibrations per minute, are quieter, and have a longer service life than our other low-impact air-powered vibrators. All are rated for continuous duty and are dust resistant. All are lubrication free and have a muffler. Mounting fastener is included, except Style C.

(A) Miniature acetal vibrators with push-to-connect fitting are compact and corrosion resistant. Max. operating temp. is 180° F.

(B) High-strength ductile iron vibrators with NPT threads have the same mounting style as Style A on page 513 and are easy to swap out as a quieter option. Inlet and outlet ports are NPT female. Max. operating temp. is 200° F.

(C) Food-processing aluminum vibrators with BSPP threads are ideal for use in food, pharmaceutical, and clean room applications. Inlet and outlet ports are BSPP (British Standard Pipe Parallel) female. Max. operating temp. is 230° F.

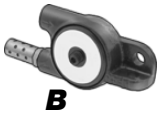

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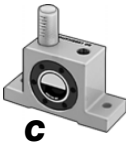

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Vibration Intensity	Force, lbs. (@ 60 psi)	Vibrations per Minute (@ 60 psi)	cfm (@ 60 psi)	dB (@ 60 psi)	Port Size	Overall Size Ht.	Overall Size Wd.	Overall Size Dp.	Mounting Holes Size (Qty.)	Mounting Holes Ctr.-to-Ctr.		
(A) Miniature Acetal Vibrators with Push-to-Connect Fitting—Side Inlet												
1	24	20,500	1.1	64	1/4″★♣	1 1/4″	1 5/8″	1 5/16″	7/32″ (1)	—	3987K62	$175.10
2	41	10,600	2.2	79	1/4″★▲	1 3/4″	2 3/4″	1 1/4″	11/32″ (1)	—	3987K65	214.39
2	76	7,800	3.8	71	1/4″★	2 1/2″	4″	1 5/8″	3/8″ (1)	—	3987K68	260.40
(B) High-Strength Ductile Iron Vibrators with NPT Threads—Side Inlet												
3	102	16,600	2.5	82	1/8″	1 3/4″	3 1/8″	1 1/4″	5/16″ (2)	—	3886K41	182.96
4	204	12,800	3.8	71	1/4″	2 1/2″	4″	1 5/8″	3/8″ (2)	—	3886K43	231.22
5	422	8,700	4.0	71	1/4″	3 1/2″	5 3/8″	2 3/16″	17/32″ (2)	—	3886K44	307.50
(C) Food-Processing Aluminum Vibrators with BSPP Threads—Top Inlet												
4	290	34,000	3.0	69	1/8″	2″	3 7/16″	1 5/16″	9/32″ (2)	2 11/16″	5794K52	256.29
5	450	21,000	7.0	72	1/4″	2 9/16″	4 1/2″	1 11/16″	11/32″ (2)	3 9/16″	5794K24	383.51
5	450	41,000	3.0	70	1/8″	2″	3 7/16″	1 5/16″	9/32″ (2)	2 11/16″	5794K22	261.86
5	530	29,000	7.0	74	1/4″	2 9/16″	4 1/2″	1 11/16″	11/32″ (2)	3 9/16″	5794K53	358.76
6	870	20,000	12.0	75	1/4″	3 3/16″	5 1/16″	2 3/16″	11/32″ (2)	4 1/8″	5794K55	494.85
7	1,100	14,000	12.0	80	3/8″	3 15/16″	6 5/16″	3″	7/16″ (2)	5 1/8″	5794K26	688.66
7	1,150	10,000	19.0	78	3/8″	3 15/16″	6 5/16″	3″	7/16″ (2)	5 1/8″	5794K57	729.90

★ Inlet port is push-to-connect fitting for 1/4″ tube OD. ♣ Outlet port is 10-32 UNF. ▲ Outlet port is 1/8″ NPT female.

High-Impact Air-Powered Vibrators

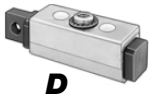

D

Get high force linear motion perpendicular to your bin or hopper with a compact piston vibrator. All are dust resistant.

(D) Vibrators without muffler use metal-to-metal contact to provide higher force. Body and piston are steel. Inlet and outlet ports are NPT female, unless noted; all have a top inlet. Rated for intermittent duty; 67% duty cycle with a max. "on" time of 16 hours. Max. operating temp. is 200° F. Vibrators end mount; fastener is included.

(E) Cushioned-impact vibrators with muffler have cushioned ports so the piston does not slam against your container wall. Body and piston are steel. Inlet and outlet ports are NPT female; all have a top inlet, unless noted. Rated for intermittent duty; 67% duty cycle with a max. "on" time of 16 hours. Max. operating temp. is 200° F. Vibrators end mount; fastener is included.

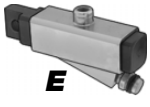

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(F) High-force vibrators without muffler maximize vibration and force by side mounting at the same level and in the same direction as your material flow. Body is ductile iron; piston is steel. Inlet port is NPT female; all have a top inlet. Rated for continuous duty. Max. operating temp. is 250° F. Mounting fasteners are not included.

(G) Corrosion-resistant vibrators with muffler have an aluminum body and bronze piston for great corrosion resistance. Inlet and outlet ports are BSPP (British Standard Pipe Parallel) female; all have a top inlet. Rated for continuous duty. Max. operating temp. is 280° F. Vibrators have a female threaded hole to end mount; fastener is included.

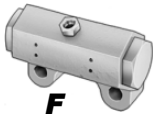

F

G

Vibration Intensity	Force, lbs. (@ 60 psi)	Vibrations per Minute (@ 60 psi)	cfm (@ 60 psi)	dB (@ 60 psi)	Port Size	Overall Size Ht.	Overall Size Wd.	Overall Size Dp.	Hole Size (Qty.)		
(D) Vibrators without Muffler											
1	14	14,000	1.6	90	1/8″♥	1/2″	2 1/8″	1/2″	3/16″ (1)	5804K25	$82.50
2	87	16,000	3.8	83	1/8″	1 7/16″	5 3/16″	1″	5/16″ (1)	5799K12	112.42
2	95	14,100	4.0	87	1/4″	1 9/16″	5 3/8″	1 1/8″	3/8″ (1)	5799K13	119.04
3	150	12,700	5.0	87	1/4″	1 3/4″	5 3/8″	1 5/16″	3/8″ (1)	5799K14	124.55
3	230	11,000	5.0	88	1/4″	2 1/16″	5 15/16″	1 5/8″	1/2″ (1)	5799K16	148.80
4	300	7,600	6.0	93	1/4″	2 3/4″	7 5/8″	1 7/8″	1/2″ (1)	5799K17	189.57
(E) Cushioned-Impact Vibrators with Muffler											
1	20	3,450	2.0	69	1/4″■	1 15/16″	5 3/4″	1 3/16″	3/8″ (1)	5884K12	134.75
3	100	4,700	3.4	76	1/4″	2 1/4″	5 7/8″	1 1/2″	1/2″ (1)	5884K13	131.09
3	110	3,300	5.5	78	1/4″	2 5/8″	7 3/4″	2″	1/2″ (1)	5884K14	182.41
(F) High-Force Vibrators without Muffler											
4	330	8,500	7.0	82	1/8″◤	2″	4 3/4″	3″	1/2″ (2)	5798K2	179.81
5	480	5,600	8.0	87	1/4″◤	2 1/4″	8″	3 11/16″	1/2″ (2)	5798K3	190.38
6	630	4,000	10.0	90	1/4″◤	2 3/4″	8″	4 1/8″	5/8″ (2)	5798K4	277.88
(G) Corrosion-Resistant Vibrators with Muffler											
1	13	6,000	0.14	59	1/8″	1 5/16″ Dia.	3 3/16″	—	M8 (1)	58765K57	254.82
1	30	5,000	1.00	64	1/8″	1 5/8″ Dia.	3 11/16″	—	M10 (1)	58765K58	284.63
2	82	3,800	1.76	72	1/8″	2″ Dia.	4 9/16″	—	M12 (1)	58765K59	400.52
3	175	4,000	2.93	74	1/4″	2 9/16″ Dia.	4 9/16″	—	M12 (1)	58765K61	518.68

♥ Inlet port is 1/8″ ID male hose barb. Outlet port is 10-32 UNF. ■ Has a side inlet. ◤ Has no outlet port.

Portable High-Impact Air-Powered Vibrators

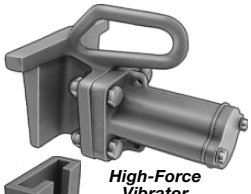

High-Force Vibrator

Weld-On Bracket

Weld a steel bracket to each of your containers and move your high-impact vibrator wherever it's needed. All have a piston that provides impact perpendicular to your container. Vibrators have a ductile-iron body and a hardened steel piston. All are dust resistant. Inlet port is NPT female; all have a side inlet. Max. operating temp. is 200° F.

Low-force is suitable for small bins and hoppers. ***High-force*** are commonly used on rail cars and large bins.

Vibration Intensity	Force, lbs. (@ 60 psi)	Vibrations per Minute (@ 60 psi)	cfm (@ 60 psi)	dB (@ 60 psi)	Port Size	Overall Size Ht.	Overall Size Wd.	Overall Size Dp.	Wt.	Vibrators		Weld-On Bracket	
Low-Force Vibrator													
4	270	4,640	7.2	93	1/4″	5″	7 1/2″	3″	8 lbs.	5728K21	$164.09	5728K33	$30.00
High-Force Vibrators													
5	503	4,500	7.2	96	1/4″	7 1/2″	10 1/4″	5 1/2″	33 lbs.	5875K14	392.32	5875K24	111.38
8	1,331	3,350	18.5	101	3/8″	11 1/2″	13 9/16″	6″	83 lbs.	5875K16	646.22	5875K27	137.50
9	3,390	2,400	21	92	1/2″	11 1/2″	15 1/4″	6″	93 lbs.	5875K17	788.46	5875K27	137.50

For information about vibrator selection, see page 513.

Base-Mount High-Impact Air-Powered Vibrators

Distribute high-impact force evenly on your bin or hopper wall with these base-mount vibrators. Vibrators have a piston that provides impact perpendicular to your container. Body is rugged ductile iron and piston is hardened steel. All are dust resistant. Inlet and outlet ports are NPT female, unless noted; all have a side inlet. Rated for intermittent duty; 67% duty cycle with a max. "on" time of 16 hours. Max. operating temp. is 200° F. Mounting fasteners are included.

High-force vibrators without muffler make direct contact with your container for greater force of impact.

Cushioned-impact vibrators with muffler have cushioned ports so the piston does not slam against your container wall. These vibrators also have a muffler for reduced noise.

Vibrators with setup kit include a mounting channel, a hand-operated valve, an automatic lubricator, and a 5-ft. hose with fittings.

Vibration Intensity	@ 60 psi Force, lbs.	Vibrations per Minute	cfm	dB	Port Size	Overall Size Ht.	Wd.	Dp.	Mounting Holes Size (Qty.)	Ctr.-to-Ctr.	Without Setup Kit		With Setup Kit	
High-Force Vibrators without Muffler														
4	270	5,000	7.4	94	1/4"	4 11/16"	3"	3"	3/8" (4)	2"	5800K81	$154.00	5800K21	$297.36
5	454	4,000	7.4	98	1/4"●	6 3/8"	4 3/8"	4 3/8"	5/8" (4)	3"	5800K82	193.41	5800K22	352.45
5	503	3,000	10.0	96	1/4"●	6 3/4"	4 3/8"	4 3/8"	5/8" (4)	3"	5800K83	229.16	5800K23	385.04
8	1,331	2,500	21.5	101	3/8"◆	8 7/16"	5 3/4"	5 3/4"	3/4" (4)	4 1/8"	5800K84	418.68	5800K24	644.00
Cushioned-Impact Vibrators with Muffler														
3	200	4,500	8.0	85	1/4"	4 11/16"	3"	3"	3/8" (4)	2"	5800K72	160.41	5800K2	303.06
4	360	3,600	9.0	89	1/4"●	6 3/8"	4 3/8"	4 3/8"	5/8" (4)	3"	5800K73	198.91	5800K3	356.78
4	370	2,700	11.0	87	1/4"●	6 3/4"	4 3/8"	4 3/8"	5/8" (4)	3"	5800K74	240.16	5800K4	393.75
6	769	1,990	21.5	91	3/8"◆	8 7/16"	5 3/4"	5 3/4"	3/4" (4)	4 1/8"	5800K75	432.25	5800K5	656.25

●Outlet port is 3/8". ◆Outlet port is 1/2".

Super-Quiet Low-Impact Electric Vibrators

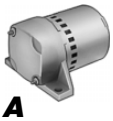

A

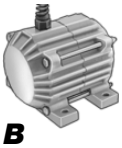

B

C

D

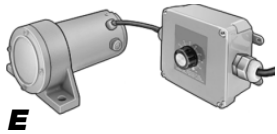

E

Quieter than most air-powered vibrators, these electric-motor vibrators produce smooth force without a jarring impact. All are dust resistant except Style A, and are rated for continuous duty, unless otherwise stated. Vibrators have a max. operating temp. of 104° F. Mounting fasteners are not included.

A Nonadjustable Force— Body is aluminum. All have a 3-ft. cord with 3-prong plug.

5802K11 and 5802K12 have an open motor enclosure; 5802K13, 5802K14, and 5802K15 have a totally enclosed motor.

B Nonadjustable Force with Watertight Body— Use indoors and outdoors in wet and dusty environments. Vibrators are suitable for washdown applications, but are not submersible. Body is aluminum. Motor is totally enclosed with a 3-ft. cord with 3-prong plug.

C Nonadjustable Force with Mounting Channel— Has a rugged ductile iron body. Motor is totally enclosed with 36" wire leads.

D Adjustable Force— Force adjusts from 0 to 100% by adding or removing the internal weights. Body and end covers are aluminum, unless noted. Motor is totally enclosed.

5808K61 has a 10-ft. cord with a 3-prong plug. Body and end covers are plastic for harsh environments. 5805K28 includes a manual starter and a mounting plate. It has a 10-ft. cord with 3-prong plug. *230/460 VAC vibrators* have a sealed motor for splash resistance and screw terminal connections.

E Adjustable Force and Speed— Vibrators are fully adjustable while running, allowing you to get the right force and speed for every job. A speed control is mounted on the cord. Additional force adjustments can be made by changing the position of internal weights.

Body is cast iron. Motor is totally enclosed with a 12-ft. cord with 3-prong plug. Vibrators are rated for continuous duty at 950-2,500 vibrations per minute. They're rated for intermittent duty at 0-950 and 2,500-4,000 vibrations per minute (50% duty cycle with a max. "on" time of 30 minutes).

Vibration Intensity	VAC (Phase)	Amps	Force, lbs.	Vibrations per Minute	dB	Overall Size Ht.	Wd.	Dp.	Mounting Holes Size (Qty.)	Ctr.-to-Ctr.		
(A) Nonadjustable Force												
1	115 (1)	0.5	15	1,600	45	3 1/2"	5"	5"	3/8" (2)	4"	5802K11	$207.25
1	115 (1)	0.8	20	3,200	48	3 1/2"	5"	5"	3/8" (2)	4"	5802K12	196.43
1	115 (1)	1.4	25	1,600	45	4 1/4"	7"	6"	3/8" (2)	5"	5802K13	264.63
2	115 (1)	1.5	60	3,200	48	4 1/4"	7"	6"	3/8" (2)	5"	5802K14	280.07
2	115 (1)	1.7	80	3,200	50	4 1/4"	7"	6"	3/8" (2)	5"	5802K15	288.84
(B) Nonadjustable Force with Watertight Body												
1	115 (1)	1.4	20	3,200	45	6 1/2"	5 3/8"	5 1/2"	3/8" (4)	4 3/4", 2 3/4"	58805K72	420.92
2	115 (1)	1.5	60	3,200	48	6 1/2"	5 3/8"	5 1/2"	3/8" (4)	4 3/4", 2 3/4"	58805K74	379.30
2	115 (1)	1.7	80	3,200	50	6 1/2"	5 3/8"	5 1/2"	3/8" (4)	4 3/4", 2 3/4"	58805K75	445.32
(C) Nonadjustable Force with Mounting Channel												
1	110 (1)	0.39	30	3,465	58	3 7/16"	5 5/16"	4 1/4"	11/32" (4)	3 9/16", 1 3/4"	5805K26	321.55
(D) Adjustable Force												
2	115 (1)	0.3	100	3,600	65	3 5/16"	5"	6 1/16"	1/4" (4)	3 3/8", 2 3/8"	5808K61	596.42
4	110 (1)	1.3	209	3,600	76	5 3/8"	8 5/16"	3 3/4"	5/16" (4)	4 3/16", 2 7/16"	5805K28	476.80
4	230/460 (3)	0.36/0.18	209	3,600	76	5 3/8"	8 5/16"	3 3/4"	5/16" (4)	4 3/16", 2 7/16"	5805K8	291.43
5	230/460 (3)	0.7/0.35	417	3,600	76	6 1/4"	8 9/16"	4 3/4"	5/16" (4)	4 3/16", 2 7/16"	5805K82	357.14
6	230/460 (3)	1.0/0.5	432	1,800	76	7"	10 1/4"	5 11/16"	1/2" (4)	4 15/16", 3 9/16"	5879K83	497.74
7	230/460 (3)	1.72/0.86	933	1,800	76	7"	13 5/16"	6 1/8"	1/2" (4)	5 1/2", 4 1/8"	5879K85	601.72
8	230/460 (3)	2.82/1.41	1,570	1,800	76	8 5/16"	15 5/8"	8 1/4"	5/8" (4)	6 11/16", 4 3/4"	5879K88	750.00
9	230/460 (3)	3.4/1.7	2,474	1,800	76	8 5/16"	17 3/4"	8 1/4"	5/8" (4)	6 11/16", 4 3/4"	5879K89	987.80
Optional Manual Starter for 5805K8, 5805K82, and 5879K83											5879K84	154.86
Optional Manual Starter for 5879K85, 5879K88, and 5879K89											5879K87	154.86
(E) Adjustable Force and Speed												
3	115 (1)	1.3	100	0-4,000	68	4 1/4"	6 3/4"	6"	3/8" (2)	5"	5877K82	571.85
4	115 (1)	2.6	200	0-4,000	70	4 1/8"	8 3/16"	4 7/8"	1/2" (2)	3 1/2"	5877K84	739.14
5	115 (1)	3.5	500	0-4,000	70	6 1/2"	13 3/16"	5 3/4"	1/2" (4)	4 1/2", 8 5/16"	5877K86	1,229.38
7	115 (1)	6.5	1,000	0-4,000	72	7 1/2"	14 1/4"	6 1/2"	5/8" (4)	5", 9 3/8"	5877K88	1,507.03

Electric Vibrators

For information about vibrator selection, see page 513.

Extended-Life High-Impact Electric Vibrators

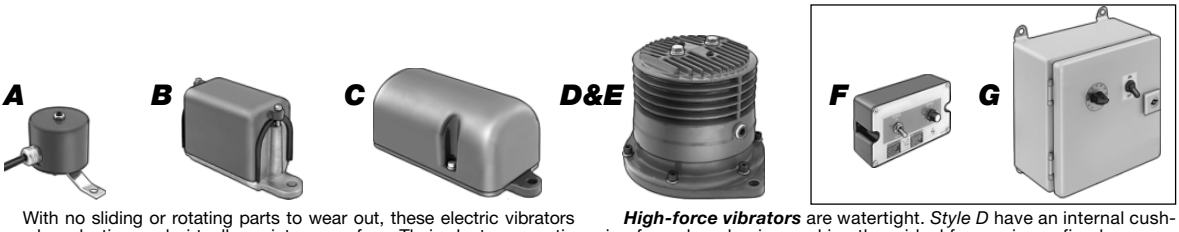

With no sliding or rotating parts to wear out, these electric vibrators are long lasting and virtually maintenance free. Their electromagnetic design provides greater force of impact with less noise than air-powered vibrators. Vibrators and required controllers are sold separately; mounting fasteners are not included. All vibrators are dust resistant and rated for continuous duty. Body is aluminum and steel. Max. operating temp. is 200° F. All have a 10-ft. cable with 2″ wire leads.

High-force vibrators are watertight. *Style D* have an internal cushion for reduced noise, making them ideal for use in confined spaces.

Required controllers (sold separately) are necessary to operate vibrators. All have adjustable speed control and screw terminal connections. *Style F* are for use indoors and have two 7/32″ dia. mounting holes. *Style G* has an enclosure rated NEMA 4 for resistance to splashing liquids and dusty environments. It has four 5/16″ dia. mounting holes.

Vibration Intensity	VAC (Phase)	Amps	Force, lbs.	Vibrations per Minute	dB	Overall Size Ht.	Overall Size Wd.	Overall Size Dp.	Mounting Holes Size (Qty.)	Mounting Holes Ctr.-to-Ctr.	Vibrators		Required Controller Style	Required Controller	
Compact Vibrators															
A 1	115 (1)	0.3	12	3,600	58	3 1/16″	4 1/4″	2 7/8″	13/32″ (1)	—	**5876K31**	$270.37	***F***	**5876K83**	$235.19
A 1	115 (1)	0.3	12	7,200	58	3 1/16″	4 1/4″	2 7/8″	13/32″ (1)	—	**5876K31**	270.37	***F***	**5876K81**	235.19
A 1	230 (1)	0.18	12	3,600	58	3 1/16″	4 1/4″	2 7/8″	13/32″ (1)	—	**5876K51**	224.62	***F***	**5876K84**	227.78
B 2	115 (1)	0.9	47	3,600	64	4 1/4″	6 7/8″	3″	17/32″ (1)	—	**5876K33**	340.74	***F***	**5876K83**	235.19
B 2	115 (1)	0.9	47	7,200	64	4 1/4″	6 7/8″	3″	17/32″ (1)	—	**5876K34**	350.00	***F***	**5876K81**	235.19
C 3	115 (1)	1.2	130	3,600	41	4 1/16″	10 1/4″	4 1/4″	7/16″ (2)	9 1/4″	**5876K35**	539.66	***F***	**5876K83**	235.19
C 4	115 (1)	2.0	245	3,600	57	4 5/16″	10 1/4″	5 1/8″	7/16″ (2)	9 1/4″	**5876K36**	535.19	***F***	**5876K83**	235.19
High-Force Vibrators															
D 5	115 (1)	3.5	525	3,600	68	6 1/2″	9 3/8″	7 3/8″	17/32″ (2)	8 1/4″	**5876K37**	988.89	***F***	**5876K83**	235.19
D 7	115 (1)	4.5	1,090	3,600	70	7 1/4″	10 3/4″	9 3/4″	11/16″ (2)	9 1/4″	**5876K38**	1,039.29	***F***	**5876K83**	235.19
E 8	115 (1)	4.5	1,270	3,600	95	7 1/4″	10 3/4″	9 3/4″	11/16″ (2)	9 1/4″	**5876K39**	1,058.18	***F***	**5876K83**	235.19
E 9	115 (1)	7.0	2,880	3,600	103	8 3/4″	11 1/2″	10 5/8″	11/16″ (4)	10″, 7″	**5876K42**	1,858.33	***G***	**5876K85**	731.22

Water Heaters & Heat-Sink Compounds

Point-of-Use Instant-Heat Electric Water Heaters

Single Fixture

Temperature Maintaining Single Fixture

Also known as tankless electric water heaters, these provide instant hot water at the point of use, while taking up less space than heaters with a tank. And compared to gas heaters, electric heaters are easier to install and don't require a relief valve. They turn on when water flows through the heater and turn off when flow stops. These products are ANSI certified for use with drinking (potable) water in all states as of July 1, 2011. Connections are compression tube fittings, except 57565K83, which is NPT male. Use with water pressure between 25 and 150 psi.

Fixed-Output Water Heaters— Deliver constant heat to your water. All are UL and C-UL listed and meet ASSE 1070. *Single-fixture heaters* comply with OSHA requirement of 105°–110° F for handwashing. *Double-fixture heater* handles two side-by-side utility or handwashing sinks. Complies with OSHA requirement of 105°–110° F for handwashing. *Four-fixture heater* can be used with circular multistation wash fountains or a single shower.

Automatic-Temperature-Maintaining Water Heaters— Use when precise water temperature is needed. Adjust their internal thermostat to the exact output temperature you need. Heaters are UL and C-UL listed and meet ASSE 1070, except 57565K81, K83, and K85, which are ETL listed. *Sanitation* and *deionized water heaters* are for dishwashing and parts washing applications.

Max. Temp. Rise @ Flow Rate	Temp. Output	Flow Rate, gpm	Watts	VAC (Phase)	Amps	For Tube OD	Size, Ht. × Wd. × Dp.	Heaters		Repl. Element	
Fixed-Output Water Heaters											
Single Fixture											
41° F @ 0.5 gpm	110° F Max.	0.5	3,000	120 (1)	25	3/8″	10 3/4″ × 5 1/4″ × 2 7/8″	**3556K32**	$229.68	**3556K2**	$74.16
48° F @ 0.5 gpm	110° F Max.	0.5	3,500	240 (1)	15	3/8″	10 3/4″ × 5 1/4″ × 2 7/8″	**3556K41**	255.33	**3556K6**	75.01
56° F @ 0.5 gpm	110° F Max.	0.5	4,100	277 (1)	15	3/8″	10 3/4″ × 5 1/4″ × 2 7/8″	**3556K53**	257.94	**3556K8**	77.67
56° F @ 0.5 gpm	110° F Max.	0.5	4,100	208 (1)	20	3/8″	10 3/4″ × 5 1/4″ × 2 7/8″	**3556K52**	260.60	**3556K7**	76.78
75° F @ 0.5 gpm	110° F Max.	0.5	5,500	240 (1)	23	3/8″	10 3/4″ × 5 1/4″ × 2 7/8″	**3556K42**	263.32	**3556K7**	76.78
Double Fixture											
65° F @ 1.0 gpm	110° F Max.	0.75-2.0	9,500	240 (1)	40	1/2″	10 3/4″ × 5 1/4″ × 2 7/8″	**3556K44**	279.59	**57565K3**	59.25
Four Fixture											
87° F @ 1.5 gpm	110° F Max.	0.7 -3.0	19,000	240 (1)	80	1/2″	10″ × 9″ × 3″	**57565K42**	484.90	**57565K3**	59.25
Automatic-Temperature-Maintaining Water Heaters											
Single Fixture											
59° F @ 0.75 gpm	100°-140° F	0.7 -2.5	6,500	240 (1)	27	1/2″	9 7/8″ × 5 1/4″ × 4″	**57565K81**	471.10	**57565K3**	59.25
87° F @ 0.75 gpm	100°-140° F	0.7 -2.5	9,500	240 (1)	40	1/2″	9 7/8″ × 5 1/4″ × 4″	**57565K85**	480.01	**57565K8**	40.79
86° F @ 1.5 gpm	100°-140° F	0.7 -3.0	19,000	240 (1)	80	3/4″	10 1/2″ × 11″ × 4 1/2″	**57565K83**	856.25	**57565K3**	59.25
Single-Fixture Sanitation											
87° F @ 1.5 gpm	140°-180° F	1.5 -4.0	19,000	240 (1)	80	1/2″	10″ × 9″ × 4″	**57565K41**	561.77	**57565K3**	59.25
Single-Fixture Deionized											
87° F @ 0.75 gpm	100°-140° F	0.75-3.0	9,500	240 (1)	40	1/2″	10 3/4″ × 5 1/4″ × 2 7/8″	**35295K45**	1,337.04	**35295K7**	117.72

Heat-Sink Compounds

These compounds operate as thermal transfer agents. ***Silicone*** compound has a thermal conductivity of 1.8×10^{-3} Cal./Sec./cm/° C. ***Dow Corning 340 silicone*** compound has a thermal conductivity of 1.4×10^{-3} Cal./Sec./cm/° C. ***Silicone-free*** compound won't creep like silicone can. It has a thermal conductivity of 1.7×10^{-3} Cal./Sec./cm/° C.

Type	Temp. Range	Tube Size		
Silicone	–40° to +400° F	8 oz.	**10405K79**	$40.04
Dow Corning 340 Silicone	–40° to +392° F	5 oz.	**10405K83**	36.00
Silicone Free	–40° to +320° F	2 oz.	**3883K24**	11.70

Water Heaters

Standard Electric

Heat water for long pipe runs through your facility. These heaters include a thermostat for accurate water temperature output. Water connections are ¾″ NPT male, except for commercial heaters, which are 1½″ NPT male; 3598K64, which is 1″ NPT male; and tankless heater, which is ½″ NPT male. Connections are on the top of the heater, unless noted.

Standard units have polyurethane insulation.

Electric Water Heaters— A heavy steel jacket and glass-lined tank protects against corrosion. Elements are made of tin-coated copper. UL listed. Heaters require hardwiring, except 3572K41 which includes a 4-ft. cord with standard three-prong plug. *Commercial* unit has 3″ of fiberglass insulation that meets ASHRAE (American Society of Heating and Refrigeration Engineers) energy efficiency standards.

Natural-Gas Water Heaters— A heavy steel jacket and glass-lined tank protect against corrosion. *Standard* units have a pilot-light ignition. Gas connections are ½″ NPT female. *75- and 100-gallon units* meet ANSI Z21.10.3 for water heaters. *Commercial* unit has spark ignition and up to 2″ of polyurethane insulation. Gas connections are ¾″ NPT female. CSA certified.

Tankless Natural-Gas Water Heater— Provides instant hot water and is more energy and space efficient. Pilot requires at least 0.6 gpm to ignite; no electrical connection is needed. Operates on 30-150 psi water pressure. Gas connection is ¾″ NPT male on the bottom of the unit. Unit measures 25¾″ Ht.×16¾″ Wd.×8½″ Dp.

Electric Water Heaters

Cap., gal.	Watts	Amps	Ht.	Dia.		
Standard, 120 VAC, Single Phase—Output Temp.: 120° to 160°F						
2	1,500	12.5	12¼″	10″	**3572K41**	$366.82
6	1,500	12.5	16½″	14″	**3572K51**■	424.79
12	1,500	12.5	27¾″	14″	**3572K42**■	446.52
19	1,500	12.5	24¾″	18″	**3572K53**■	504.57
Standard, 240 VAC, Single Phase—Output Temp.: 120° to 160°F						
6	1,500	6.3	16½″	14″	**3572K61**■	390.81
12	1,500	6.3	27¾″	14″	**3572K62**■	455.03
19	1,500	6.3	24¾″	18″	**3572K54**■	517.25
30	4,500	18.8	47″	18″	**3570K31**	483.16
50	4,500	18.8	46½″	22″	**3570K32**	471.05
65	4,500	18.8	59¼″	22″	**3570K33**	891.01
80	4,500	18.8	59″	24″	**3570K34**	894.91
119	4,500	18.8	63¾″	28″	**3570K35**	1,563.51
Commercial, 480 VAC, 3 Phase—Output Temp.: 110° to 180°F						
119	54,000	65	64½″	30¼″	**3624K86**▲	5,837.26

■ Has side water connections. ▲ Has top and front water connections.

Natural-Gas Water Heaters

Cap., gal.	Btu/Hr.	Watts	Ht.	Dia.	Vent Dia.		
Standard—Output Temp.: 120° to 160°F							
40	34,000	9,960	59½″	18″	3″	**3598K62**	$580.04
75	76,000	22,270	63¾″	24½″	4″	**3598K64**	1,087.15
Commercial—Output Temp.: Adjusts up to 180°F							
100	199,999	58,600	75″	30¼″	6″	**3598K67**♣	5,738.75

♣ Has top and front water connections and 2″ back water connection.

Tankless Natural-Gas Water Heater

Btu/Hr.	Watts	Max. Temp. Rise @ 4.25 gpm	Vent Dia.		
117,000	34,290	45°F	5″	**3511K18**♥	$597.74

♥ Has bottom water connections.

Water Heater Replacement Parts

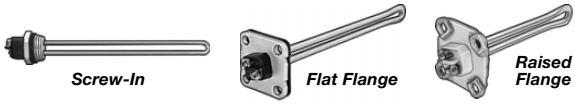

Heater elements are made of zinc-plated copper and must be mounted horizontally. *Screw-in* style have 1″ NPSM threads. *Flat flange* and *raised flange* styles have four bolt holes on a 2½″ dia. circle (gaskets are included; 5⁄16″ dia. bolts are not). Flange is steel.

Thermostats are for 120 to 480 VAC. Temp. range is 120° to 160°F.

Pilot-light thermocouples include adapter nut. CSA certified.

Heater Elements

Watts	VAC (Phase)	Amps	Min. Tank Dia.		
Screw-In					
1,500	120 (1)	12.5	8½″	**35555K31**	$10.26
1,500	240 (1)	6.25	8½″	**35555K34**	10.65
4,500	240 (1)	18.75	12″	**35555K32**	9.67
5,500	240 (1)	22.92	12″	**35555K33**	15.02
Flat Flange Bolt-In					
1,500	120 (1)	12.5	8½″	**35555K21**	12.58
4,500	240 (1)	18.75	12″	**35555K22**	13.19
5,500	240 (1)	22.92	12″	**35555K23**	19.58
Raised Flange Bolt-In					
1,500	120 (1)	12.5	8½″	**35555K41**	12.35
4,500	240 (1)	18.75	12″	**35555K42**	11.93

Thermostats

Lower Thermostat for Two-Element Heater	**35555K14**	$10.14
Upper Thermostat for Two-Element Heater	**35555K16**	20.98
Thermostat for One-Element Heater	**35555K18**	18.63

Pilot-Light Thermocouples

O'all Lg.			O'all Lg.		
18″	**4148K14**	$7.23	36″	**4148K17**	$8.21
24″	**4148K15**	7.56	48″	**4148K19**	9.49

Portable Recirculating Water Heaters

Take these lightweight heaters anywhere you need hot water. When connected below a sink, tank, or process bath, heaters use gravity and a heavy duty drive pump to provide continuous hot water. A graduated control dial lets you adjust and maintain water temperature to within ¼°F.

Heaters operate on 120 VAC, single phase. They include a stainless steel cover and a 7-ft. long cord with standard three-prong plug (a ground fault outlet, sold separately, is recommended for safety). Heaters measure 7″ Ht.×9″ Wd.×17″ Dp.

36255K63 has 5⁄8″ OD barbed inlet and outlet and a 6-ft. long, 5⁄8″ ID water hose for connecting to your bath or sink. 36255K64 has ½″ OD smooth inlet and barbed outlet and a 6-ft. long, ½″ ID water hose.

Note: Do not run dry.

Temp. Range	gpm @ 3-ft. Rise	Watts	Amps	Wt., lbs.		
75° to 110°F	8	1,000	8.3	13	**36255K63**	$626.57
75° to 175°F	8	1,500	14	15	**36255K64**	863.45

15-amp Ground Fault Outlet w/One Connector	**6975K63**	19.48

Corrosion-Inhibiting Rods and Pads

Also known as sacrificial anodes, these rods and pads are attacked and consumed by any corrosive action that would otherwise attack and consume your valuable equipment.

Rods have a reinforcing steel core that holds the zinc or magnesium in place until it's completely consumed. They come with NPT hex brass plugs. Connections are NPT male. *Zinc rods* protect from corrosion and scaling in hot water applications. Ideal for use in salt water. They can also be used in cold water. *Magnesium rods* protect from heavy corrosion in cold and hot fresh water applications.

Pads have a low-profile for use in your water-circulating process equipment. They have a 5⁄8″ dia. center hole for mounting (fastener not included). *Zinc alloy pads* provide corrosion protection in salt water and hot water applications. Meet MIL-A-18001. *Aluminum alloy pads* last longer than zinc alloy and can be used in both dirty fresh water and salt water applications. Meet MIL-A-24779.

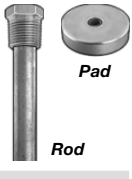

Corrosion-Inhibiting Rods

Pipe Size	Rod Lg.	Rod Dia.		
Zinc				
¼″	3″	⅜″	**3606K6**	$6.32
¼″	6″	⅜″	**3606K1**	7.82
⅜″	3″	½″	**3606K7**	7.02
⅜″	6″	½″	**3606K2**	8.09
½″	3″	⅝″	**3606K8**	7.74
½″	6″	⅝″	**3606K3**	9.98
¾″	3½″	13⁄16″	**3606K9**	11.73
¾″	7″	13⁄16″	**3606K4**	15.67
1″	4″	1″	**3606K21**	20.11
1″	6″	1″	**3606K22**	22.95
1″	8″	1″	**3606K23**	28.99
1″	12″	1″	**3606K5**	31.27
1″	14″	1″	**3606K24**	34.16
Magnesium				
½″	4″	⅝″	**3642K11**	$22.02
½″	6″	⅝″	**3642K12**	23.24
½″	8″	⅝″	**3642K13**	24.46
½″	10″	⅝″	**3642K14**	25.71
½″	12″	⅝″	**3642K15**	26.93
½″	14″	⅝″	**3642K16**	28.16
¾″	4″	¾″	**3642K17**	22.96
¾″	6″	¾″	**3642K18**	23.92
¾″	8″	¾″	**3642K19**	26.18
¾″	10″	¾″	**3642K21**	27.80
¾″	12″	¾″	**3642K22**	29.41
¾″	14″	¾″	**3642K23**	31.01

Corrosion-Inhibiting Pads

Size		
Zinc Alloy		
2″ Dia.×1″ Thick.	**3609K2**	$12.12
3″ Dia.×1″ Thick.	**3609K3**	20.07
4″ Dia.×1″ Thick.	**3609K4**	28.00
6″ Lg.×6″ Wd.×1″ Thick.	**3609K1**	69.50
Aluminum Alloy		
2″ Dia.×1″ Thick.	**3590K2**	9.53
3″ Dia.×1″ Thick.	**3590K3**	12.53
4″ Dia.×1″ Thick.	**3590K4**	18.25
6″ Lg.×6″ Wd.×1″ Thick.	**3590K1**	43.12

About Immersion Heaters

Immersion heaters are designed to heat water, oil, solvents, process solutions, and viscous liquids through direct contact. When choosing an immersion heater, make sure the heating element material and the watt density are right for your fluid.

Note: To prevent heater failure, do not run heaters dry and keep elements free from sludge, scaling, and mineral deposits.

Heating Element Materials

Liquid To Be Heated	Max. Watt Density (watts/sq. in.)	Heating Element Material
Mild Acid Solutions (acetic, chromic)	40	Quartz
Mild Acid Solutions (tartaric)	40	Type 316 Stainless Steel
Anodizing Solutions	Not Rated	PTFE Covered
Caustic Soda, 2%	48	Incoloy
Caustic Soda, 10%	25	Incoloy
Caustic Soda, 75%	25	Incoloy
Chrome-Plating Solutions	Not Rated	Titanium
Ethylene Glycol	30	Type 304 Stainless Steel
Oil, Fuel (Grades 1 and 2, Distillate)	23	Steel
Oil, Heat Transfer	23	Steel
Oil, Lubrication (SAE 10-30)	23	Steel
Oil, Mineral	23	Steel
Organic Salts	Not Rated	Titanium
Pickling Solutions	Not Rated	PTFE Covered
Plating Solutions	Not Rated	PTFE Covered
Water, Clean (less than 1% solution)	Not Rated	Copper
Water, Process (less than 3% solution)	60	Types 304 or 316 Stainless Steel
Water, Process (less than 6% solution)	60	Incoloy
Water, Salt	Not Rated	Titanium

Watt Density

Watt density is the power (watts) produced per square inch of surface area of the heater. The higher the watt density, the higher the potential for a surface to transmit heat energy. If watt density is too high, carbonization and overheating can damage the heating element and the liquid being heated.

Some liquids such as water, vegetable oil, and salt baths can withstand a high watt density. Others, such as petroleum oil and sugar syrups, must use lower watt densities because they do not readily absorb or conduct the heat being generated.

Wattage Required to Heat Water

The chart shows the approximate wattage required to heat room-temperature water in a tank. The figures are based on a warm-up time of 6 hrs. Thick solutions, low initial temperatures, and shallow, uninsulated tanks will all increase warm-up times and heat requirements. Multiply watts by 3.412 to convert to Btu/Hr.

	Wattage Required to Heat Water					
Gallons	to 100° F	to 130° F	to 150° F	to 170° F	to 190° F	to 210° F
5	67	134	179	224	268	313
10	134	268	358	448	537	627
15	201	403	537	672	806	940
25	336	672	896	1,120	1,344	1,568
50	672	1,344	1,792	2,240	2,688	3,136
100	1,344	2,688	3,584	4,480	5,376	6,272
200	2,688	5,376	7,168	8,960	10,752	12,544
400	5,376	10,752	14,336	17,921	21,505	25,089
800	10,752	21,505	28,673	35,842	43,010	50,179
1,000	13,440	26,881	35,842	44,802	53,763	62,724

To heat water in situations not shown in the chart above, use the following formula for determining wattage:

$$\frac{\text{Gallons} \times \text{Temp. Rise (°F)}}{372 \times \text{Heat-up Time (Hrs.)}} \times 1{,}000 = \text{Watts}$$

To heat liquids other than water, use the following formula for determining wattage:

$$\frac{\text{Liquid Wt. (lb.)} \times \text{Specific Heat [Btu/(lb. ×°F)]} \times \text{Temp. Rise (°F)}}{3.412 \times \text{Heat-up Time (Hrs.)}} = \text{Watts}$$

Screw-Plug Immersion Heaters

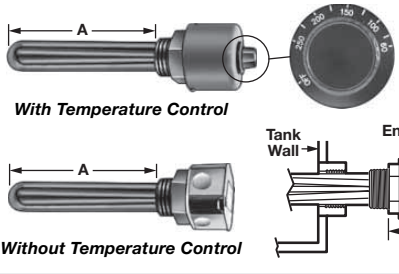

With NPT threads on the screw plug, these heaters are easy to insert into any tank with a threaded hole. The result is direct-contact heating of liquids for very efficient heat transfer. Mount horizontally or vertically, as long as the element is completely immersed in liquid. Enclosures are NEMA 1 rated (indoor use only), except for hazardous-location heaters. All have screw terminals for hardwiring. For bulkhead fittings, see pages 115-116.

Heaters with temperature control are adjustable from 60° to 250° F, unless noted. ***Three-phase heaters*** require a three-pole magnetic contactor (see 6564K on page 902).

To calculate amps, use the following formulas:
Single phase: amps = total watts ÷ voltage;
3 phase: amps = total watts ÷ (voltage × 1.73).
Example for 3656K175: amps = 3,000 watts ÷ (240 × 1.73) = 7.23

Type 304 Stainless Steel Element and Screw Plug

For heating process water with less than 3% alkaline or acid content and maximum pH range of 5-9. Also suitable for use with soap and detergent solutions, soluble cutting oils, and where corrosion protection is necessary. Elements are UL recognized and CSA certified. *120-VAC heaters* have a 4⅝″ Dia.×2⅝″ Lg. enclosure size. *240-* and *480-VAC heaters* have a 4″ Dia.×3½″ Lg. enclosure size.

Watts	Watt Density, watts/sq. in.	Pipe Size, NPT	Elem. Lg. (A)	With Temp. Control		Without Temp. Control	
120 VAC, Single Phase							
500	47	1″	6⅜″	3656K167	$284.23	3656K148	$206.13
750	71	1″	6⅜″	3656K187	289.80	3656K186	209.51
1,000	94	1″	6⅜″	3656K168	295.60	3656K149	212.29
1,000	94	1¼″	6⅛″	3656K169	302.00	3656K151	166.84
1,500	63	1″	9¼″	3656K171	342.60	3656K152	209.64
1,500	71	1¼″	6⅛″	3656K172	282.34	3656K153	249.82
240 VAC, Single Phase							
1,500	67	1¼″	9 1/16″	3656K173	293.58	3656K154	206.40
3,000	54	2″	8″	3656K174	413.94	3656K155	313.00
240 VAC, Three Phase							
3,000	54	2″	8″	3656K175	$413.94	3656K156	$313.00
4,500	52	2″	12″	3656K176	421.87	3656K157	321.97
7,500	51	2″	19½″	3656K178	439.29	3656K159	341.55
10,500	48	2″	28″	3656K181	457.52	3656K162	362.06
480 VAC, Three Phase							
4,500	52	2″	12″	3656K177	421.87	3656K158	321.97
7,500	51	2″	19½″	3656K179	439.29	3656K161	341.55
10,500	49	2″	28″	3656K182	457.52	3656K163	362.06
12,000	48	2½″	32¼″	3656K183	472.94	3656K164	404.00
15,000	48	2½″	39⅞″	3656K184	491.39	3656K165	424.77
18,000	48	2½″	47⅜″	3656K185	502.75	3656K166	435.26

(Continued on following page)

For information about immersion heaters, see page 518. For information about pipe size, see pages 2-3.

Screw-Plug Immersion Heaters *(Continued from previous page)*

Type 316 Stainless Steel Element and Screw Plug

For use with deionized water, electroplating solutions, acid solutions, and salt water. Elements are passivated. They're also UL recognized and CSA certified. Enclosure size is 4⅝″ Dia.×2⅝″ Lg.

Watts	Watt Density, watts/sq. in.	Pipe Size, NPT	Elem. Lg. (A)	With Temp. Control		Without Temp. Control	
120 VAC, Single Phase							
1,000	94	1″	6⅜″	3656K341	$345.37	3656K342	$298.89
1,500	63	1″	9¼″	3656K343	345.37	3656K344	298.89
2,000	61	1¼″	9¼″	3656K345	350.81	3656K346	314.81

Incoloy Element and Type 304 Stainless Steel Screw Plug

For heating severe industrial process and solution water with 6% or less alkalines or acids and maximum pH range of 5-9. Offers better overall corrosion protection than heaters with a Type 304 stainless steel element. Elements are UL recognized and CSA certified. Enclosure size is 4″ Dia.×3½″ Lg.

Watts	Watt Density, watts/sq. in.	Pipe Size, NPT	Elem. Lg. (A)	With Temp. Control		Without Temp. Control	
120 VAC, Single Phase							
475	21	1″	12⁹⁄₁₆″	3656K211	$244.79	3656K204	$139.40
1,100	20	1″	28⁷⁄₁₆″	3656K212	270.53	3656K205	153.16
1,325	20	1″	34⅞″	3656K213	276.38	3656K206	159.88
240 VAC, Single Phase							
5,000	30	2″	22″	3656K551	368.03	3656K541	329.00
240 VAC, Three Phase							
5,000	30	2″	22″	3656K552	379.08	3656K542	345.89
480 VAC, Single Phase							
5,000	30	2″	22″	3656K553	360.51	3656K543	342.65
480 VAC, Three Phase							
5,000	30	2″	22″	3656K554	392.89	3656K544	329.00
10,000	30	2″	43″	3656K558	469.51	3656K548	390.23
12,000	48	2½″	32¼″	3656K214	525.58	3656K207	385.65
15,000	48	2½″	39⅞″	3656K215	555.68	3656K208	415.81
18,000	48	2½″	47⅜″	3656K216	567.10	3656K209	429.77

Copper Element and Brass Screw Plug

Use to heat clean water only. Elements are UL recognized and CSA certified. Enclosure size is 4⅝″ Dia.×2⅝″ Lg.

Watts	Watt Density, watts/sq. in.	Pipe Size, NPT	Elem. Lg. (A)	With Temp. Control		Without Temp. Control	
120 VAC, Single Phase							
500	47	1″	6⅜″	3656K141	$261.28	3656K103	$159.63
750	70	1″	6⅜″	3656K232	265.31	3656K231	162.64
1,000	94	1″	6⅜″	3656K142	253.77	3656K104	165.77
1,000	51	1¼″	6¼″	3656K111	264.47	3656K11	120.60
1,500	63	1″	9¼″	3656K143	293.94	3656K105	189.15
1,500	61	1¼″	7¼″	3656K112	255.65	3656K12	139.20
2,000	61	1¼″	9¼″	3656K113	264.71	3656K13●	169.05
240 VAC, Single Phase							
1,500	52	1¼″	9¹⁄₁₆″	3656K144	326.81	3656K106	220.08
240 VAC, Three Phase							
3,000	46	2″	10″	3656K114	314.50	3656K14	203.14
4,000	54	2″	11″	3656K236	327.02	3656K235	255.56
5,000	67	2″	11″	3656K115	327.02	3656K15	262.11
7,500	63	2″	16″	3656K117	342.44	3656K16	282.32
10,000	55	2″	22″	3656K119	362.08	3656K65	314.22
480 VAC, Three Phase							
5,000	67	2″	11″	3656K116	327.02	3656K61	274.98
7,500	63	2″	16″	3656K118	342.44	3656K63	291.70
10,000	58	2″	22″	3656K121	362.08	3656K67	314.22
12,000	44	2½″	32¼″	3656K145	658.25	3656K107	595.65
18,000	44	2½″	47⅜″	3656K147	748.88	3656K109	568.38

● Watt density is 72 watts/sq. in.

Incoloy Element and Brass Screw Plug

For process water and mild corrosive solutions (less than 2% concentration) such as caustic soda, sodium hydroxide, and sodium hydride. Elements are UL recognized and CSA certified. Enclosure is 4″ Dia.×3½″ Lg.

Watts	Watt Density, watts/sq. in.	Pipe Size, NPT	Elem. Lg. (A)	With Temp. Control		Without Temp. Control	
120 VAC, Single Phase							
475	21	1″	12⁹⁄₁₆″	3656K197	$250.70	3656K191	$137.44
1,500	52	1¼″	11″	3656K132	252.96	3656K79	144.75
3,000	52	1¼″	15½″	3656K133	281.67	3656K82	174.62
240 VAC, Three Phase							
5,000	51	2″	13″	3656K134	365.09	3656K84	303.53
7,500	49	2″	20″	3656K136	370.20	3656K88	295.97
10,000	51	2″	25″	3656K138	416.99	3656K93	321.16
480 VAC, Three Phase							
5,000	51	2″	13″	3656K135	398.97	3656K86	307.52
7,500	49	2″	20″	3656K137	387.05	3656K91	315.48
10,000	51	2″	25″	3656K139	421.88	3656K95	321.16

Steel Element and Screw Plug

Heat lightweight oils, heat-transfer oils, degreasing solutions, fuel oils (Grades 1 and 2), and mineral oil. Elements are UL recognized and CSA certified. Enclosure is 4⅝″ Dia.×3¹³⁄₁₆″ Lg. for heaters with temp. control and 4″ Dia.×2⅛″ Lg. for heaters without temp. control.

Watts	Watt Density, watts/sq. in.	Pipe Size, NPT	Elem. Lg. (A)	With Temp. Control		Without Temp. Control	
120 VAC, Single Phase							
475	21	1″	12⁹⁄₁₆″	3656K424	$248.13	3656K221	$154.17
1,000	23	1¼″	12¾″	3656K322	220.67	3656K17	122.29
1,100	21	1″	28⁷⁄₁₆″	3656K425	284.04	3656K222	184.10
1,325	19	1″	34⅞″	3656K326	296.95	3656K223	194.17
1,500	23	1¼″	18½″	3656K423	227.14	3656K18	124.56
240 VAC, Three Phase							
3,000	21	2″	18″	3656K724	314.52	3656K19	236.26
5,000	20	2″	29″	3656K625	336.13	3656K21	255.72
7,500	22	2″	43½″	3656K627	366.29	3656K22	291.03
10,000	21	2″	57½″	3656K629	369.68	3656K75	306.00
480 VAC, Three Phase							
5,000	22	2″	29″	3656K526	336.13	3656K71▲	255.72
7,500	22	2″	43½″	3656K528	366.29	3656K73	282.65
10,000	21	2″	57½″	3656K531	380.65	3656K77	309.32

▲ Watt density is 20 watts/sq. in.

Hazardous-Location Steel Element and Screw Plug

Use with same liquids as steel-element heaters above. Heaters are CSA NRTL/C (Nationally Recognized Testing Laboratory/CSA International) certified and labeled. Their terminal enclosure meets Class I, Div. 1, Groups B, C, and D; Class II, Groups E, F, and G; and Class III specifications. Enclosure is 6¼″ Dia.×5¹³⁄₁₆″ Lg. for 120-VAC heaters and 7⅞″ Dia.×6⁷⁄₁₆″ Lg. for 240- and 480-VAC heaters, unless noted. Heaters *with temperature control* adjust from 60° to 240°F.

Watts	Watt Density, watts/sq. in.	Pipe Size, NPT	Elem. Lg. (A)	With Temp. Control		Without Temp. Control	
120 VAC, Single Phase							
1,000	22	1¼″	12¾″	3656K811	$784.68	3656K311★	$667.16
1,500	22	1¼″	18½″	3656K812	796.64	3656K312★	680.55
240 VAC, Single Phase							
3,000	22	2″	18″	3656K813	782.08	3656K314★	640.38
5,000	21	2″	29″	3656K815	838.20	3656K317★	698.61
480 VAC, Three Phase							
5,000	21	2″	29″	3656K819	838.20	3656K318★	542.62
7,500	20	2″	43½″	3656K824	984.26	3656K323★	874.64

★ Enclosure is 3¾″ Dia.×2⁹⁄₁₆″ Lg.

Compact Cartridge-Style Immersion Heaters

More compact than screw-plug immersion heaters, but with the same efficient heat-transfer properties. Use with water and 90% water-soluble liquids. Connects with wire leads. Mount horizontally or vertically. Max. temp. is 212°F. Heaters should be used with a temperature control switch (not included; see pages 604-606). Heaters with a ***Type 316 stainless steel element*** have a UL-recognized and CSA-certified element. Screw plug is NPT male and made of Type 316 stainless steel. Heaters with an ***Incoloy element*** have a Type 304 stainless steel NPT male screw plug.

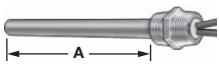

Watts	Watt Density, watts/sq. in.	Amps	Pipe Size	Elem. Lg. (A)	Elem. OD		
Type 316 Stainless Steel Element— *120 VAC, Single Phase*							
55	51	0.46	⅛″	1⅝″	¼″	4668T51	$61.96
75	49	0.63	¼″	1⁹⁄₁₆″	⅜″	4668T53	65.06
170	49	1.42	⅛″	4⅝″	¼″	4668T52	70.98
250	49	2.08	¼″	4⁹⁄₁₆″	⅜″	4668T54	74.00
405	49	3.38	½″	4⁷⁄₁₆″	⅝″	4668T56	99.00
Incoloy Element— *120 VAC, Single Phase*							
500	127	4.2	¾″	4⅞″	⅝″	4654T11	138.31
750	191	6.3	¾″	4⅞″	⅝″	4654T12	138.31
Incoloy Element— *120 VAC, Single Phase (Cont.)*							
1,000	254	8.3	¾″	4⅞″	⅝″	4654T13	$138.31
Incoloy Element— *240 VAC, Single Phase*							
500	127	2.1	¾″	4⅞″	⅝″	4654T21	195.88
750	191	3.1	¾″	4⅞″	⅝″	4654T22	138.31
1,000	254	4.2	¾″	4⅞″	⅝″	4654T23	138.31
1,500	300	6.3	¾″	5⅜″	⅝″	4654T24	140.89
2,000	291	8.3	¾″	6⅜″	⅝″	4654T25	145.89
3,000	300	12.5	¾″	7⅞″	⅝″	4654T26	152.99

For information about immersion heaters, see page 518.

Flange-Mount Immersion Heaters

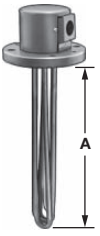

For high-volume applications, these extra-large immersion heaters have a welded-on flange for mounting to large tanks. Heating element is Incoloy 800 for use with process and solution water with a maximum pH range of 5-9 and less than 6% alkalines or acids.

Heaters accept a thermostat switch with 3/8″ dia. probe (not included; see pages 604-605) and have screw terminals for hardwiring to a power source. Watt density is 45 watts/sq. in. UL listed and CSA certified. All are three phase. Flange mounting holes are 3/4″ dia. Heaters for *3″ pipe size* have four flange mounting holes; heaters for *5″ pipe size* have eight flange mounting holes.

To Order: Please specify 240 or 480 volts.

Watts	Amps @ 240 VAC	Amps @ 480 VAC	Pipe Size	Flange OD	Flange Bolt Circle	Element Lg. (A)★		
6,000	14.5	7.3	3″	7 1/2″	6″	18″	35065K11	$553.80
12,000	28.9	14.5	3″	7 1/2″	6″	33″	35065K12	746.66
12,000	28.9	14.5	5″	10″	8 1/2″	18″	35065K14	778.81
18,000	43.4	21.7	3″	7 1/2″	6″	48″	35065K13	828.12
24,000	57.8	28.9	5″	10″	8 1/2″	33″	35065K15	936.17
40,000	96.4	48.2	5″	10″	8 1/2″	52″	35065K16	1,190.10

★ *Note:* The 4″ of element length below the flange is unheated.

Freeze-Protection Immersion Heaters

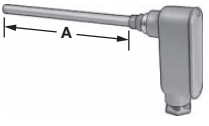

Built-in temperature control keeps your fluids between 70° and 90° F to protect against freezing and icing. They have a weatherproof NEMA 4 enclosure for outdoor use and an easy-to-install, cartridge-style element with a threaded brass screw plug. Element is Type 316 stainless steel for heating machine oil (SAE 30), mineral oil, and hydraulic oil. Watt density is 15 watts/sq. in. Heaters have a 1/2″ conduit connection and wire leads for hardwiring. Mount horizontally only. UL recognized and CSA certified. All heaters are single phase. **To Order:** Please specify 120 or 240 volts.

Watts	Amps @ 120 VAC	Amps @ 240 VAC	Pipe Size	Element Dia. × Lg. (A)	For Tank Size, gal.		
250	2.1	1.0	1/2″	11/16″ × 10 1/2″	5- 25	3493K11	$154.73
500	4.2	2.1	3/4″	3/4″ × 17″	25- 50	3493K12	227.65
1,000	8.4	4.2	3/4″	3/4″ × 31″	50-100	3493K13	259.02

De-Icing Floating-Tank Immersion Heaters

Keep outdoor water tanks from freezing in temperatures as low as –20° F. These heaters float on the surface and automatically turn on when tank contents cool down to 45° F; they turn off when contents reach 55° F. Housing is heavy duty polypropylene. Heaters have an Incoloy stainless steel tubular heating element that will automatically shut off if the heater is removed from the tank. Heaters are furnished with a 6-ft. long cord with standard three-prong plug. Operate on 120 VAC, single phase. UL listed.

For use with metal tanks. To use on a nonmetal tank, use the ***clip-on heater guard*** to keep heater from coming in contact with the tank walls.

Watts	Amps	O'all Size Ht. × Dia.	For Approx. Tank Cap., gal.		
1,000	8.3	5″ × 7 1/2″	150	3639K47	$29.92
1,500	12.5	5″ × 8″	200	3639K48	30.26
Clip-On Heater Guard				3639K61	14.19

High-Temperature Inline Immersion Heaters

Often connected to high-flow blowers and used in plastic injection-molding and extrusion applications, these heat your process air and liquids up to 800° F. Use with clean air, inert gases, and medical and food applications. They have an elbow-style design with a 3/8″ NPT male inlet and 1/2″ NPT female outlet for easy installation into your pipeline. Element and body are Type 316 stainless steel. Heaters have screw terminals for electrical connections; connections are housed in a NEMA 1 enclosure (indoor use only). All are 120 VAC, single phase.

Watts	Watts Density, watts/in.	Amps	O'all Lg.		
400	100	3.4	8 3/4″	7400T11	$292.49
600	100	5.0	10 3/4″	7400T12	336.29
1,000	125	8.4	12 3/4″	7400T13	354.08
1,200	120	10.0	14 3/4″	7400T14	378.16

Through-Hole Mount Immersion Heaters

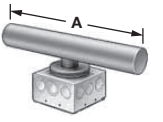

Mount these Type 316L stainless steel heaters permanently through a 27/16″ unthreaded hole in the bottom or side of a tank (For hole saw, see 41005A42 on page 2404). A silicone rubber gasket seals the heater into the tank hole.

Heaters have automatic low-water emergency shutoff and restart, plus a low-fluid-level pilot light. They have wire leads for hardwiring. Use them in steam tables, humidifiers, and water tanks. UL recognized.

Watts	Watt Density, watts/ sq. in.	VAC (Phase)	Amps	Element Dia. × Lg. (A)		
1,500	56	240 (1)	6.3	1 15/16″ × 8″	35015K61	$389.45
3,000	59	240 (1)	12.5	1 15/16″ × 12″	35015K62	405.33
4,000	64	240 (1)	16.7	1 15/16″ × 14″	35015K63	415.86
4,000	64	480 (1)	8.3	1 15/16″ × 14″	35015K64	456.65
5,000	58	240 (1)	20.8	1 15/16″ × 18″	35015K65	447.61
5,000	58	240 (3)	12.0	1 15/16″ × 18″	35015K71	550.85
5,000	58	480 (3)	6.0	1 15/16″ × 18″	35015K72	556.47
7,000	63	240 (3)	16.8	1 15/16″ × 22″	35015K73	562.02
7,000	63	480 (3)	8.4	1 15/16″ × 22″	35015K74	621.61

Inline Immersion Heaters

Titanium Element

Easily connect these into your pipeline—they have NPT threads on each end so they're able to heat circulating liquid while taking up less space than a circulation heater. To prevent burnout, heaters automatically shut off at a set temperature.

Heater with an Incoloy element has a thermostat that regulates liquid temperature from 90° to 109° F; heating element shuts off at 121° F. It includes a 3-ft. long cord with standard three-prong plug. Connections are 1 1/2″ NPT male.

Heaters with titanium element have a thermostat that regulates liquid temperature from 90° to 190° F; heating element shuts off at 210° F. Enclosure is NEMA 4 rated (indoor/outdoor use). They have wire leads for hardwiring, unless noted. Connections are 1 1/2″ NPT female. Heaters are for use with oils, naphtha, sodium nitrate, and ammonium hydroxide.

Watts	Watt Density, watts/sq. in.	VAC (Phase)	Amps	O'all Lg.		
Incoloy Element and Type 304 Stainless Steel Body						
1,500	211	120 (1)	12.5	11″	4831T51	$167.68
Titanium Element and Type 304 Stainless Steel Body						
1,500	63	120 (1)	12.5	15″	4745T41■	347.89
2,000	111	240 (1)	8.3	15″	4745T42	347.89
3,000	121	240 (1)	12.5	15″	4745T43	347.89
4,000	114	240 (1)	16.6	15″	4745T44	368.81
5,000	121	240 (1)	20.8	15″	4745T45	368.81
6,000	160	240 (1)	25.0	15″	4745T46	368.81

■ Has 6-ft. long cord with standard three-prong plug.

Ultra-Fast-Response Circulation Immersion Heaters

These compact heaters are extremely powerful, yet still maintain a low watt density. Element is passivated Type 304L stainless steel for use with deionized water, air, inert gases, ethylene glycol, and petroleum-based oils.

Heaters have a Type 304 stainless steel body, a Type K thermocouple with 4-ft. leads for temperature measurement, and wire leads for hardwiring. Connections are NPT female.

Note: Heaters are dual voltage. All are single phase.

Watts	Watt Density, watts/ sq. in.	Amps	Pipe Size	O'all Size, Dia. × Lg.		
120/240 VAC						
250/ 1,000	4/17	2.1/ 4.2	1/4″	1 29/32″ × 12″	7287T11	$536.25
500/ 2,000	8/29	4.2/ 8.4	1/4″	1 29/32″ × 12″	7287T12	590.42
1,000/ 4,000	10/40	8.4/16.7	1/4″	1 29/32″ × 12″	7287T13	751.83
1,500/ 6,000	10/39	12.5/25.0	1/2″	2 7/8″ × 16″	7287T14	784.33
240/480 VAC						
2,000/ 8,000	11/43	8.4/16.7	1/2″	2 7/8″ × 16″	7287T15	915.42
2,500/10,000	13/50	10.5/20.9	1/2″	2 7/8″ × 16″	7287T16	1,033.50

For information about immersion heaters, see page 518.

Circulation Immersion Heaters

Liquid flows directly past the heating element for efficient, evenly distributed direct-contact heating. They install directly into your pipeline—no need to tap a hole into your tank. All have wire leads for hardwiring to a power source.

Heaters with an ***Incoloy element*** have a fiberglass-insulated steel chamber and are good for heating process water solutions. They have a 60° to 250°F thermostat and NPT male pipe connections. Watt density is 45 watts/sq. in. *Hazardous-location* heaters have a housing that is CSA NRTL/C certified and meets Class I, Div. 1, Groups B, C, and D; Class II, Groups E, F, and G; and Class III specifications.

Heaters with a ***steel element*** have a carbon steel chamber. Use to heat lubricating oils such as SAE 10-30. They have a 150° to 560°F thermostat and NPT female pipe connections. Watt density is 23 watts/sq. in.

Heaters with a ***copper element*** have a brass chamber and are for use with very clean water only. They have a 60° to 180°F thermostat and NPT female pipe connections. Watt density is 60 watts/sq. in.

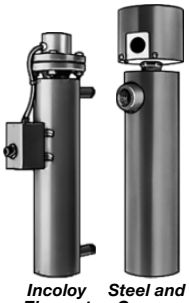

Incoloy Element — *Steel and Copper Element*

Watts	VAC (Phase)	Amps	Pipe Size	O'all Size, Lg. × Dia.		
Incoloy Element						
6,000	240 (3)	14.5	1″	33¾″×6″	35705K111	$966.66
6,000	480 (3)	7.3	1″	33¾″×6″	35705K112	966.66
12,000	240 (3)	29	1″	44½″×6″	35705K121	1,033.32
12,000	480 (3)	14.5	1″	44½″×6″	35705K122	1,033.32
18,000	240 (3)	43.4	1″	56¼″×6″	35705K131	1,109.36
18,000	480 (3)	21.7	1″	56¼″×6″	35705K132	1,109.36
24,000	240 (3)	58	2″	43¼″×8″	35705K151	1,366.29
24,000	480 (3)	29	2″	43¼″×8″	35705K152	1,366.29
40,000	240 (3)	96	2″	62″ ×8″	35705K161	1,654.70
40,000	480 (3)	48	2″	62″ ×8″	35705K162	1,654.70
Hazardous Location with Incoloy Element						
6,000	240 (3)	14.5	1″	37½″×6″	35705K811	1,177.34
6,000	480 (3)	7.3	1″	37½″×6″	35705K812	1,177.34
12,000	240 (3)	29	1″	48¼″×6″	35705K821	1,247.05
12,000	480 (3)	14.5	1″	48¼″×6″	35705K822	1,247.05
18,000	240 (3)	43.4	1″	60″ ×6″	35705K831	1,326.54
18,000	480 (3)	21.7	1″	60″ ×6″	35705K832	1,326.54
24,000	240 (3)	58	2″	45⅞″×8″	35705K851	1,612.36
24,000	480 (3)	29	2″	45⅞″×8″	35705K852	1,612.36
40,000	240 (3)	96	2″	64⅝″×8″	35705K861	1,913.89
40,000	480 (3)	48	2″	64⅝″×8″	35705K862	1,913.89
Steel Element						
500	120 (1)	4.2	1″	22″ ×4″	3595K61	733.96
750	120 (1)	6.3	1″	22″ ×4″	3595K62	744.75
1,000	240 (1)	4.2	1″	22″ ×4″	3595K63	816.04
Copper Element						
1,500	120 (1)	12.5	1″	18″ ×4″	3595K31	757.92
2,000	120 (1)	16.7	1″	18″ ×4″	3595K32	772.18
3,000	240 (1)	12.5	1″	22″ ×4″	3595K33	796.34

Acid-Resistant Fuse-Protected Immersion Heaters

To prevent fire and element burnout, a replaceable fuse cuts off power to the heater if the element is exposed to air and its temperature exceeds 190°F. Their quartz element is excellent for use with bright nickel, clear chromate, copper, and acids such as nitric, hydrochloric, and sulfuric. Do not use with fluorides or alkaline-based, caustic, or cyanide processes. Includes a polypropylene guard to protect element.

Heaters are for use with open-style tanks. They come with a plastic plate under the head with two ½″ OD mounting holes to simplify attachment to tank. Includes 3 feet of flexible conduit with wire leads. Use with a temperature control switch (not included; see 35055K series on page 604). All heaters are single phase. Watt density is 35 watts/sq. in.

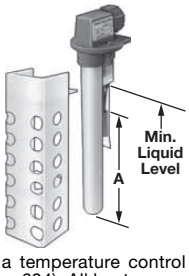

To Order: Please specify 120, 240, or 480 VAC where applicable.

Watts	Amps @ 120 VAC	240 VAC	480 VAC	Element Lg. (A)	Min. Liquid Level		
500	4.2	—	—	6″	8″	3560K39	$317.65
1,000	8.4	4.2	—	7″	9″	3560K51	325.47
2,000	—	8.4	4.2	12″	14″	3560K52	452.31
3,000	—	12.5	6.3	18″	20″	3560K53	507.50
4,000	—	16.7	8.4	28″	30″	3560K54	551.83
6,000	—	25	12.5	39″	41″	3560K55	702.33

Replacement Fuse for up to 190°F 3560K33 $45.77
Optional Fuse for up to 375°F 3560K34 53.53

Immersion Heaters for 55-Gallon Drums

Heat all the way to the bottom of 55-gallon drums. These have an adjustable stainless steel bracket for hanging on the 2″ diameter bung of any standard 55-gallon drum. The heated portion of the element is located in the horizontal section and the bottom 4″ of the vertical section (min. liquid level); this improves flow of high-viscosity solutions. All include a thermostat in a NEMA 1 enclosure (indoor use only) and have screw terminals for hardwiring to a power source. Thermostat temp. range is 60° to 250°F.

Type 321 Stainless Steel Element—Use the *1,000-watt* unit for heavy oils, silica gels, molasses, and linseed oil. The *4,000-watt* unit is for process water, electroplating solutions, ethylene glycol, and chlorite solutions.

Incoloy Element—The *1,000-watt* unit is good for melting oils, fats, and tar. Use the *4,000-watt* unit for solvents, water, and water-based solutions.

Steel Element—Use *1,000-watt* unit for fuel oils, mineral oils, light- and medium-weight oils, paraffin, and wax. *4,000-watt* unit is for alkaline soaking cleaners, soapy solutions, and caustic solutions.

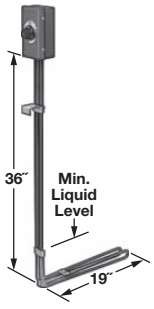

Element Material	Watts	Watt Density, watts/sq. in.	VAC (Phase)	Amps		
Type 321 SS	1,000	8	120 (1)	8.4	3567K411	$540.80
Type 321 SS	4,000	32	240 (1)	16.7	3567K412	540.80
Incoloy	1,000	8	120 (1)	8.4	3567K211	719.75
Incoloy	4,000	32	240 (1)	16.7	3567K212	719.75
Steel	1,000	8	120 (1)	8.4	3567K811	470.40
Steel	4,000	32	240 (1)	16.7	3567K812	480.00

Immersion Heaters for Small Tanks

Shorter heights and element lengths make these heaters ideal for 5-10 gallon tanks. Not for use with plastic containers. Heaters must be immersed in liquid up to at least the minimum liquid level.

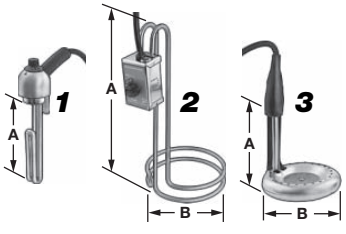

1 ***Clip-On Heaters with Type 316 Stainless Steel Straight Element***—For water-based solutions with stable liquid levels. They include a thermostat that adjusts from room temp. up to 212°F (dial graduations are from 1 to 11) and have a 6-ft. cord with three-prong plug.

2 ***Side-Hanging Heaters with Type 316 Stainless Steel Circular Element***—Use to heat water-based solutions with fluctuating liquid levels. All include a thermostat for control from room temperature to 212°F. They have a 6-ft. cord with three-prong plug. Those with *pulsating-step temperature control* maintain constant heat by cycling on and off. Those with *thermostat control* provide faster heating than pulsating control.

3 ***Flat-Base Heater with Incoloy Circular Element***—Has a circular base that sits in the middle of your tank—ideal when there's nothing to clip onto. Use with clean water only. Remove from water when desired temperature is reached. To prevent element burnout, an internal temperature control shuts off power if heater is operated outside of water for 2-3 minutes. All have a 5½-ft. long cord. UL listed. *120 VAC heaters* have a standard three-prong plug; *240 VAC heater* has a NEMA 6-15 plug.

Watts	Watt Density, watts/sq. in.	VAC (Phase)	Amps	Element Lg. (A) × Dia. (B)	Min. Liquid Level		
(1) Clip-On Heaters with Type 316 SS Straight Element							
Thermostat Control							
500	11	115 (1)	4.4	20″	18½″	3551K32	$202.91
500	29	115 (1)	4.4	6″	4½″	3551K31	165.82
1,100	24	115 (1)	9.6	20″	18½″	3551K34	202.91
1,100	64	115 (1)	9.6	6″	4½″	3551K33	165.82
(2) Side-Hanging Heaters with Type 316 SS Circular Element							
Pulsating-Step Temperature Control							
1,500	20	115 (1)	13.1	14″×13″	5″	35605K73	291.27
1,500	25	115 (1)	13.1	14″×10½″	5″	35605K71	274.91
1,500	35	115 (1)	13.1	14″× 7″	5″	35605K68	246.55
Thermostat Control							
1,500	20	115 (1)	13.1	14″×13″	5″	35605K74	332.73
1,500	25	115 (1)	13.1	14″×10½″	5″	35605K72	316.36
1,500	35	115 (1)	13.1	14″× 7″	5″	35605K69	288.00
(3) Flat-Base Heaters with Incoloy Circular Element							
Constant Wattage							
1,150	NR●	120 (1)	9.6	5½″×5″	1½″	3583K91	68.82
1,150	NR●	120 (1)	9.6	11½″×5″	1½″	3583K92	73.12
1,550	NR●	240 (1)	6.5	5½″×5″	1½″	3583K93	70.97

● NR = Not rated.

For information about immersion heaters, see page 518.

Alkaline-Resistant Fuse-Protected Immersion Heaters

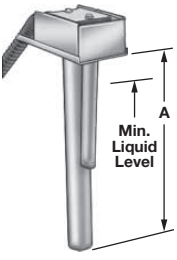

Single Element, Single Phase

Three Element, Three Phase

Use in plating baths and printed circuit-board applications. To prevent element burnout and possible fires, a replaceable fuse cuts power if the element reaches 190° F. Element must be kept scale and sludge free. Element tube is 2″ dia., unless noted.

Heaters have a mounting flange with two 3/8″ OD bolt holes for attaching to the top of a tank. For use with open-style tanks. Watt density is 35 watts/sq. in.

All are made of Type 304 stainless steel, which is good for most alkaline and cyanide-based processes. Ideal for silver cyanide, alkaline soaking cleaners, and alkaline cleaners (electrified).

Immersion heaters include 3 feet of flexible conduit with wire leads. Heaters should be used with a temperature control switch (not included; see 35055K series on page 604).

Immersion heaters with temperature control come complete with digital control box and a cord with plug. No hardwiring required. For safety, they include a plug that only fits the receptacle in the temperature control box. The temperature control box has an 8-ft. long cord with standard three-prong plug and an 8-ft. long PTFE RTD sensor for easy insertion into tank. Heaters also have a clip for attaching to a rimless tank.

To Order: Please specify 120, 240, or 480 VAC where applicable.

Watts	Amps @ 120 VAC	Amps @ 240 VAC	Amps @ 480 VAC	Element Lg. (A)	Min. Liquid Level		
Immersion Heaters—Single Element, Single Phase							
1,000	8.3	4.2	—	11″	9″	35435K11★	$166.15
2,000	—	8.3	4.2	17″	12″	35435K12	193.65
3,000	—	12.5	6.3	22″	16″	35435K13	217.71
4,000	—	16.7	8.3	29″	21″	35435K14	244.06
6,000	—	25	12.5	38″	30″	35435K15	303.65
9,000	—	37.5	18.8	52″	43″	35435K16	370.07
Immersion Heaters—Three Element, Three Phase							
3,000	—	7.3	—	11″	9″	35435K31★	415.89
6,000	—	14.5	7.3	17″	12″	35435K32	530.63
9,000	—	21.7	10.9	22″	16″	35435K33	565.26
12,000	—	29	14.5	29″	21″	35435K34	614.36
18,000	—	43.4	21.7	38″	30″	35435K35	755.43
27,000	—	65.1	32.6	52″	43″	35435K36	919.00
Immersion Heaters w/Temp. Control—Single Element, Single Phase							
500	4.2	—	—	11″	9″	3616K11★	470.00
1,000	8.3	—	—	11″	9″	3616K12★	492.19
1,500	12.5	—	—	17″	12″	3616K33	514.48
1,500	12.5	—	—	28″	12″	3616K34	534.43
Replacement Fuse for up to 190° F						3560K33	45.77
Optional Fuse for up to 375° F						3560K34	53.53

★ Element tube is 1¼″ dia.

Ultra-Chemical-Resistant Fuse-Protected Immersion Heaters

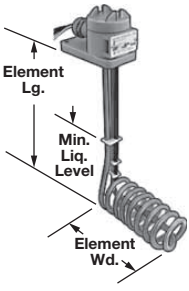

A stainless steel element with a thick PTFE cover gives these heaters superior corrosion resistance compared to our other immersion heaters. That, along with a low watt density of 10 watts/sq. in., makes them ideal for use with aqueous acid, alkaline, anodizing, and pickling solutions.

Horizontal portion of element is 3″ dia. To prevent element burnout and possible fires, a replaceable fuse cuts power if the element reaches 190° F. Use with open- and closed-style tanks. Heaters have a mounting flange with two 9/32″ OD bolt holes for attaching to the top of a tank.

Heaters are supplied with 3 feet of flexible conduit with wire leads. They should be used with a temperature control switch (not included; see 35055K series on page 604). All units are single phase. UL listed and CSA certified and CE approved. **To Order:** Please specify voltage where an amp rating is listed in the table.

Watts	Amps @ 120 VAC	Amps @ 240 VAC	Amps @ 480 VAC	Element Lg. × Wd.	Min. Liquid Level		
1,000	8.3	4.2	—	12″ × 8″	5″	3617K71	$408.21
2,000	—	8.3	4.2	18″ × 12″	5″	3617K73	533.57
3,000	—	12.5	6.3	18″ × 17″	5″	3617K75	645.00
4,000	—	16.7	8.3	18″ × 20″	5″	3617K77	868.93
6,000	—	25	12.5	18″ × 29″	5″	3617K82	1,017.04
Replacement Fuse						3617K26	42.00

Water-Tank Immersion Heaters

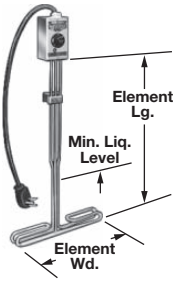

The only choice when you need to heat very clean, filtered water. In addition, their T-shaped, stainless steel element evenly distributes heat in tanks with low or fluctuating water levels. Heaters include a thermostat that lets you adjust and maintain a constant temperature from 60° to 212° F. They have an adjustable bracket for attachment to the tank. For use with open- and closed-style tanks no larger than 20″ Lg. × 20″ Wd. × 18″ Dp.

The bottom horizontal portion of the heater element is 2″ high. *120-VAC* heaters have a 4-ft. long cord with standard three-prong plug; *240-VAC* heaters have a 4-ft. long cord with a NEMA 6-30 plug (see page 787 for illustration).

Watts	Amps	Watt Density, watts/sq. in.	Element Lg. × Wd.	Min. Liquid Level		
120 VAC, Single Phase						
1,000	8.3	14	26″ × 13″	6″	35505K31	$420.09
1,500	12.5	16	26″ × 17″	6″	35505K32	435.93
240 VAC, Single Phase						
4,000	16.7	56	26″ × 13″	6″	35505K33	419.91
6,000	25	65	26″ × 17″	6″	35505K34	435.93

Bendable Tubular Immersion Heater Elements

Easily formed by hand, these heater elements can be configured into virtually any shape. Minimum bend radius is 15/16″ for 0.260″ dia. heaters; 1 1/16″ for 0.315″ dia.; and 1½″ for 0.430″ dia. Use to heat air, liquids, and gases. Maximum operating temperature is 1700° F. Elements are Incoloy for use in corrosive environments and have 2½″ of unheated length on each end. Each end has a ceramic insulator and a 10-32 threaded stud with washer, nut, and terminal. UL recognized. Heaters should be used with a temperature control switch (see 3626K on page 604, 7079K on page 605, and 7981K on page 606).

0.260″ Diameter

Element Lg.	Watts	Amps	Watts/sq. in.		
120 VAC, Single Phase					
16″	250	2.1	28	3540K31	$27.83
20″	350	2.9	29	3540K32	29.85
25″	450	3.8	28	3540K33	33.06
28″	500	4.2	27	3540K34	34.06
32″	650	5.4	29	3540K35	35.13
36″	750	6.3	30	3540K36	36.45
40″	850	7.1	30	3540K37	37.87
46″	1,000	8.3	30	3540K38	39.45
50″	1,100	9.2	30	3540K39	43.16
55″	1,200	10.0	29	3540K41	44.03
60″	1,350	11.3	30	3540K42	46.10
65″	1,500	12.5	31	3540K43	46.90

0.315″ Diameter

Element Lg.	Watts	Amps	Watts/sq. in.		
120 VAC, Single Phase					
16″	275	2.3	25	3540K11	$28.87
20″	400	3.3	27	3540K12	30.09
25″	650	5.4	33	3540K13	32.28
28″	625	5.2	28	3540K14	33.25
32″	750	6.3	28	3540K15	35.45
40″	975	8.1	28	3540K17	39.02
50″	1,300	10.8	29	3540K29	43.42
240 VAC, Single Phase					
36″	850	3.5	28	3540K16	36.38
46″	1,150	4.8	28	3540K18	40.74
55″	1,450	6.0	29	3540K21	45.52
60″	1,600	6.7	29	3540K22	47.77
65″	1,750	7.3	30	3540K23	49.74

0.430″ Diameter

Element Lg.	Watts	Amps	Watts/sq. in.		
240 VAC, Single Phase					
16″	400	1.7	27	3540K51	$40.19
20″	550	2.3	27	3540K52	42.58
25″	750	3.1	28	3540K53	45.94
28″	850	3.5	27	3540K54	48.06
32″	1,000	4.2	27	3540K55	50.68
36″	1,100	4.6	26	3540K56	53.13
40″	1,250	5.2	26	3540K57	57.23
46″	1,500	6.3	27	3540K58	62.45
50″	1,700	7.1	28	3540K59	64.65
55″	1,850	7.7	27	3540K61	68.32
60″	2,000	8.3	27	3540K62	71.03
65″	2,250	9.4	28	3540K63	74.84

Replacement Ceramic Insulators (10 per pkg.) ..... 3540K75 **Pkg.** $11.28

About Heat Cable, Tape, and Rope

Heat cable can be used to maintain the temperature and viscosity of process fluids, protect pipes from freezing, and keep roofs and gutters free from snow and ice buildup.

Use fiberglass tape to secure heat cable onto pipes (see 7574A on page 3445). You should also wrap insulation around the pipe to protect the cable and ensure maximum heat output (see 5556K on page 3515).

Total watt output = cable length × watts/ft.
Amp draw = total watt output ÷ volts

Self-Regulating Heat Cable— Adjusts its power output in relation to surface as well as ambient (surrounding) temperatures. The hotter the ambient temperature, the lower the wattage output. As a result, no temperature controlling device is needed unless a specific, consistent temperature is desired.

Constant-Wattage Heat Cable— Always puts out the designated amount of watts per foot, no matter what the ambient (surrounding) temperature is. Because it's designed to continually supply wattage into the object being heated, it should be used with a temperature controlling device to prevent burnout. This also lets you maintain more precise temperatures.

Note: Constant-wattage cable cannot be overlapped. There must not be air gaps between the cable and the surface to be heated.

Watts/ft. Needed for Temperature Change

Temperature rise is the fluid temperature you need to maintain minus the minimum ambient (surrounding) temperature. Watts/ft. ratings are based on using fiberglass insulation.

Watts/ft. Needed for Temperature Change							
Temp. Rise	Insulation Thickness	Pipe Size					
		½″	¾″	1″	1¼″	1½″	2″
50° F	1″	1.7	1.9	2.2	2.5	2.8	3.3
50° F	1½″	1.3	1.5	1.7	1.9	2.1	2.5
50° F	2″	1.2	1.3	1.4	1.6	1.8	2
100° F	1″	3.5	3.9	4.5	5.3	5.8	6.8
100° F	1½″	2.8	3.1	3.5	4.1	4.4	5.1
100° F	2″	2.4	2.7	3	3.4	3.7	4.3
200° F	1″	7.5	8.6	9.9	11.5	12.6	14.9
200° F	1½″	6.1	6.8	7.7	8.9	9.7	11.2
200° F	2″	5.3	5.9	6.6	7.5	8.1	9.3

For example, to maintain a fluid temperature of 150° F with a minimum ambient temperature of 50° F (for a temperature change of 100° F), 1½″ of insulation, and a 1″ pipe, you need a heat cable with at least 3.5 watts/ft.

Power-Saving Heat Cable

The internal conductive core of this self-regulating cable adjusts power use based on the temperature. The colder it gets, the greater the heat output; as the temperature increases, the heat output automatically decreases. Requires the power-connection kit (sold separately) for hardwiring. To turn unit on and off, a temperature controller is recommended (see pages 604-606). Use on metal and plastic pipes for freeze protection and low temperature process maintenance. All cable has 16-ga., plated copper bus wires encased in a self-regulating, conductive core. The cable has a tinned-copper overbraid to provide a low-resistance ground.

Voltage is single phase. Cable can be safely overlapped but is not suitable for burying underground. UL listed, CSA certified, and FM approved Class I, Div. 2, Groups B, C, and D (unless noted).

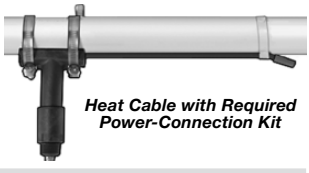

Heat Cable with Required Power-Connection Kit

Heat Cable

Cable with jacket has a fluoropolymer outer covering that's designed for corrosive environments.

Low-Temperature Heat Cable— Maximum heat output is 150° F. Exposure temperature range is –40° to +185° F. *Standard cable* measures approximately 13/32″ Wd. × 3/16″ Thick. *Cable with jacket* measures approximately 29/64″ Wd. × 7/32″ Thick.

Medium-Temperature Heat Cable— Maximum heat output is 250° F. Exposure temperature range is –40° to +250° F. Cable measures approximately 13/32″ Wd. × 3/16″ Thick. Not CSA certified or FM approved.

Medium-Temperature Heat Cable with High Exposure Temperature— Maximum heat output is 250° F. Exposure temperature range is –40° to +375° F. *Standard cable* measures approximately 3/8″ Wd. × 5/32″ Thick. *Cable with jacket* measures approximately 13/32″ Wd. × 3/16″ Thick.

Watts/ft.	120 VAC Max. Lg.	120 VAC Standard	120 VAC Standard Per Ft.	120 VAC With Jacket	120 VAC With Jacket Per Ft.	240 VAC Max. Lg.	240 VAC Standard	240 VAC Standard Per Ft.	240 VAC With Jacket	240 VAC With Jacket Per Ft.
Low-Temperature Heat Cable										
3	325 ft.	3597K52	$4.62	3597K63	$6.26	650 ft.	3597K53	$5.37	3597K64	$8.88
5	270 ft.	3597K56	5.39	3597K67	7.14	540 ft.	3597K57	6.11	3597K68	9.01
8	210 ft.	3597K58	5.58	3597K69	7.99	420 ft.	3597K59	6.81	3597K71	9.56
10	180 ft.	3597K61	6.97	3597K72	8.57	360 ft.	3597K62	8.41	3597K73	10.51
Medium-Temperature Heat Cable										
10	190 ft.	—	—	3597K81	12.24	375 ft.	—	—	3597K82	12.94
15	135 ft.	—	—	3597K83	12.84	270 ft.	—	—	3597K84	13.48
20	105 ft.	—	—	3597K85	13.26	210 ft.	—	—	3597K86	13.97
Medium-Temperature Heat Cable with High Exposure Temperature										
3	395 ft.	36005K29	10.26	—	—	—	—	—	—	—
5	310 ft.	36005K31	11.39	36005K41	13.65	—	—	—	—	—
8	225 ft.	36005K32	12.16	36005K42	13.90	—	—	—	—	—
10	190 ft.	36005K33	12.71	36005K43	15.00	375 ft.	36005K63	13.81	—	—
12	170 ft.	36005K34	15.39	36005K44	16.94	335 ft.	36005K64	16.55	36005K74	17.81
15	135 ft.	36005K35	16.35	36005K45	19.77	—	—	—	—	—
18	125 ft.	36005K11	18.44	36005K13	21.83	245 ft.	36005K12	19.23	36005K14	22.83
20	105 ft.	36005K37	19.23	36005K47	23.23	210 ft.	36005K67	20.74	36005K77	24.06

Connection Kits

Power-Connection Kit— Includes parts necessary to connect power to a run of cable. Includes standoff for connection to an electrical box, and parts to allow connection to the end of the cable. Use with both low- and medium-temperature cable.

3597K99 ..... $62.00

Cable-Extension Kits— Contain parts to let you add new cables to the end of an existing cable. *Low temp. kit* includes shrink tube and splices to add up to two lengths to an existing cable. *Medium temp. kit* contains parts to add one length to an existing cable.

For Low Temp. ..... 3597K28 ... $49.54
For Medium Temp. ..... 3597K93 ... 62.00

Additional-Cable Kit— Contains the parts to connect and terminate three additional runs of cable to an existing electrical box. Requires the power-connection kit to be previously installed.

3597K25 ..... $16.98

Ready-to-Use Power-Saving Heat Cable

An included 30″ power cord makes this cable ready to use and eliminates the need for termination and power kits. Cable is self-regulated so it does not require a temperature controller. The colder it gets, the higher the heat output; as the temperature increases, the heat output automatically decreases. Use for freeze protection on plastic and metal pipes up to 2½″ dia. Cable can be safely overlapped. Made of nickel-plated copper bus wire and a tinned-copper braid with waterproof polyolefin cover. Size is 7/16″ Wd. × 3/16″ Thick. Maximum heat output is 120° F. Exposure temperature range is –40° to +150° F. Watts/ft. rating is 6 @ 40° F. UL listed and CSA certified for pipe heating. Voltage is single phase. ***120 VAC*** cable includes a standard three-prong plug. It is also UL listed and CSA certified for roof and gutter de-icing applications. ***240 VAC*** cable has three stripped leads for hardwiring.

120 VAC

120 VAC Lg.	Watts	Amps		
6 ft.	30	0.25	3580K22	$53.73
12 ft.	60	0.5	3580K24	68.09
18 ft.	90	0.75	3580K26	85.49
24 ft.	120	1	3580K28	99.74
50 ft.	250	2.08	3580K31	$172.81
75 ft.	375	3.13	3580K32	238.14
100 ft.	500	4.17	3580K33	298.74

240 VAC Lg.	Watts	Amps		
6 ft.	30	0.13	3580K52	$56.16
12 ft.	60	0.25	3580K54	74.07
18 ft.	90	0.38	3580K56	89.64
24 ft.	120	0.5	3580K58	108.71

For information about heat cable, see page 523.

Hot-Environment Heat Cable

Heat Cable with Connection/ Termination Kit

The nichrome resistance wire in this constant-wattage cable provides continuous high heat output in high temperature environments. Use if you need higher temperatures or precise temperature control. Designed for process temperature maintenance. Temperature controller is required; see pages 604-606. Also requires a connection/termination kit or end-termination kit (sold separately). Cable is single phase and approximately 21/64″ Wd.×7/32″ Thick. FM approved Class I, Div. 2, Groups B, C, and D. Use with metal pipe only.

Note: To prevent hot spots and burnout, keep cable in direct contact with pipe (no air gap between cable and pipe) and do not overlap.

Heat Cable

High-Temperature Heat Cable— Maximum heat output is 400° F. Exposure temperature range is –30° to +400° F. Cable braid is corrosion- and abrasion-resistant stainless steel. CSA certified.

Ultra-High Temperature Heat Cable— Maximum heat output is 500° F. Exposure temperature range is –30° to +550° F. Braid is tinned copper covered in nonflammable PTFE jacket for moisture protection.

Watts/ ft.	120 VAC Max. Lg.		Per Ft.	240 VAC Max. Lg.		Per Ft.
High-Temperature Heat Cable						
3	360 ft.	35535K31	$7.24	720 ft.	35535K32	$7.24
5	275 ft.	35535K33	7.24	—	—	—
8	220 ft.	35535K35	7.24	440 ft.	35535K36	7.24
12	180 ft.	35535K37	7.24	—	—	—
Ultra-High Temperature Heat Cable						
4	310 ft.	35535K72	8.45	—	—	—
8	220 ft.	35535K73	8.45	440 ft.	35535K75	8.45
12	180 ft.	35535K74	8.45	360 ft.	35535K76	8.45

Termination Kits

Connection/Termination Kits— Use to connect a single cable to a power source. Include a standoff suitable for connection to an electrical box, a cable splice, and two terminations.

End-Termination Kits— Include five power connections and five end terminations. For use with existing standoff, or to add multiple cables to connection/termination kit.

Tee-Splice Kits— Include three power connections and one end termination. Enough to complete one inline or tee splice.

For Cable	Connection/ Termination Kits		End-Termination Kits		Tee-Splice Kits	
High	35535K52★	$56.56	35535K53★	$47.54	35535K54★	$26.59
Ultra-High	35535K62	56.56	35535K63	33.77	35535K64	25.76

★ Kits include shrink tubes.

Extreme-Environment High-Intensity Heat Cable

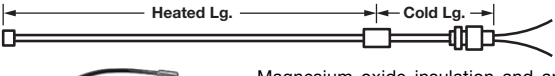

Magnesium oxide insulation and an Incoloy sheath allow this constant-wattage cable to withstand temperatures from –40° to +1100° F. Ideal for floor warming. It can even be buried in concrete to melt snow as it lands. Cable diameter is 3/16″. Cold length is 7 ft. for all. They have wire leads for hardwiring. Max. heat output is 1100° F. For temp. controller, see pages 604-606.

Heated Lg.	Watts	Watts/ft.	Amps		
120 VAC					
10 ft.	80	8	0.7	7225T11	$386.37
20 ft.	194	9.7	1.6	7225T12	446.78
50 ft.	555	11.1	4.6	7225T13	628.23
240 VAC					
10 ft.	320	32	1.3	7225T21	386.37
20 ft.	514	25.7	2.1	7225T22	446.78
50 ft.	1,150	23	4.8	7225T23	628.23

Heat-Transfer Putty

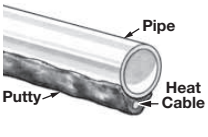

To conduct heat and prevent burnout and premature failure when your heat cable can't make direct contact with the pipe, just mold this putty around the cable and stick it directly to the pipe. It withstands temperatures from –320° to +750° F and resists impact and thermal shock. Sets to a rock-like hardness in 24 hours.

1 gallon	3568K1	$31.96
5 gallon	3568K3	146.69

Roof and Gutter Heat Cable

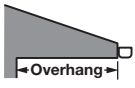

Install these constant-wattage cables on roofs and in gutters and downspouts to prevent damage caused by ice buildup. *Note:* Cable must be installed before ice begins to form. Cables operate on 120 VAC and come with a 6-ft. long power cord with standard three-prong plug. To prevent burnout, they must not be overlapped. CSA certified. Cables include enough roof clips and downspout spacers for the length ordered. Extra clips and spacers are offered below.

Optional ***cable controller*** turns cable on when moisture is detected and temperature drops below 40° F; it turns off when moisture is no longer detected. Includes a 6-ft. long power cord with standard three-prong plug. Compatible with all cables listed below.

To determine the length of cable you need for a roof (in addition to cable needed for gutters and downspouts): Measure the length of roof and multiply by the number below, based on roof overhang.

Overhang	Multiplier	Overhang	Multiplier
12″	4	48″	8.1
24″	5.3	60″	9.6
36″	6.8	72″	11.2

For example, for a 24-ft. long roof with a 12″ overhang: 24 × 4 = 96 ft. of cable needed

Lg.	Watts	Amps	No. of Clips	No. of Spacers		Each
30 ft.	150	1.3	19	16	3546K34	$76.38
60 ft.	300	2.5	38	32	3546K35	87.57
80 ft.	400	3.3	57	48	3546K36	104.65
100 ft.	500	4.2	76	64	3546K37	112.54
120 ft.	600	5	76	64	3546K44	167.14
160 ft.	800	6.7	95	80	3546K45	180.40
200 ft.	1,000	8.3	133	112	3546K46	221.72
240 ft.	1,200	10	152	128	3546K47	242.88

Cable Controller	3546K41	Each	$127.69
Extra Roof Clips (19) and Spacers (16)	3546K51	Pkg.	$10.70

Ready-to-Use Freeze-Protection Heat Cable

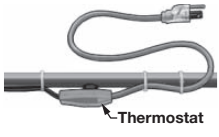

These constant-wattage cables are ready to go right out of the box—they include a temperature controller and a 30″ power cord with standard three-prong plug. Just plug them in and use to keep water flowing through plastic and metal pipes that are 3/4″ to 1 1/2″ dia. The controller turns the cable on when temperature goes below 38° F and off when it reaches 45° F. Cables are rated at 7 watts/ft., operate on 120 VAC, single phase, and have a weather-resistant PVC outer jacket. Size is 1/2″ Wd.×3/16″ Thick. Exposure temp. range is –40° to +155° F. UL listed and CSA certified.

Note: Apply cable straight along pipe; to prevent premature failure, do not overlap or spiral. Do not use cable that is longer than the pipe.

Lg., ft.	Watts	Amps		
3	21	0.18	3554K21	$37.56
6	42	0.35	3554K22	40.65
9	63	0.53	3554K23	42.65
12	84	0.7	3554K24	46.52
15	105	0.88	3554K25	48.46
18	126	1.1	3554K26	51.41
24	168	1.4	3554K27	$55.02
30	210	1.75	3554K28	59.04
40	280	2.33	3554K29	69.94
60	420	3.5	3554K31	88.04
80	560	4.67	3554K32	113.96

Copper-Tubing Heaters

The 1/4″ dia. copper-tubing jacket on these constant-wattage heaters makes them more water and oil resistant than rubber-coated heat cable. Use indoors and out to protect pipes between 1/2″ and 24″ dia. The stiff copper jacket snakes around your pipes and stays in place. Ideal for freeze protection on oil lines, compressor drain lines, and sprinkler systems. Max. heat output is 220° F. Max. exposure temp. is 450° F.

To use, run the heater along the length of pipe. For a higher concentration of heat, spiral-wrap the heater around the pipe. Watts/ft. rating is 10. Voltage is 120 VAC, single phase. Heaters include a 6-ft. long power cord with standard three-prong plug.

Note: To prevent burnout, do not overlap. Do not use on plastic pipe.

Lg.	Watts	Amps		
5 ft.	50	0.4	3566K21	$185.82
10 ft.	100	0.8	3566K22	229.70
15 ft.	150	1.3	3566K23	271.73
20 ft.	200	1.7	3566K24	346.03

For information about heat cable, see page 523.

Easy-to-Wrap Heat Tape with Temperature Controller

This flexible constant-wattage heat tape is chemical and moisture resistant. It's made of braided wire elements wrapped in fiberglass and encapsulated in silicone rubber. Perfect for bending plastics, thawing frozen pipes, and applications requiring rapid heating. The attached controller lets you regulate the on and off time of the tape. Maximum continuous heat output is 450° F. Tape can be exposed to temperatures from –60° to +450° F. To prevent burnout, heat tape must not be overlapped and all of the tape must be in constant contact with the surface being heated. To determine amp draw, divide total watt output by volts.

Tape is 1/8″ thick, single phase, and has a 6-ft. long power cord. ***120 VAC*** tape includes a standard two-prong plug; ***240 VAC*** tape does not include a plug.

To Order: Please specify 120 or 240 VAC.

Lg.	1/2″ Wide Watts	1/2″ Wide Watts/ft.			1″ Wide Watts	1″ Wide Watts/ft.			2″ Wide Watts	2″ Wide Watts/ft.			3″ Wide Watts	3″ Wide Watts/ft.		
2 ft.	72	36	3631K15	$123.09	144	72	3631K26	$118.49	288	144	3631K37	$179.88	432	216	3631K48	$199.74
4 ft.	144	36	3631K16	131.07	288	72	3631K27	128.91	576	144	3631K38	191.85	864	216	3631K49	213.03
6 ft.	216	36	3631K17	139.66	432	72	3631K28	140.59	864	144	3631K39	204.13	1,296	216	3631K56	227.15
8 ft.	288	36	3631K18	148.88	576	72	3631K29	149.79	1,152	144	3631K46	217.64	1,440	180	3631K57	241.27
10 ft.	360	36	3631K19	160.53	720	72	3631K36	161.76	1,440	144	3631K47	234.83	1,440	144	3631K58★	260.30

★ 240 VAC heat tape is rated at 1,800 watts (180 watts/ft.).

Super-High-Temperature Heat Rope

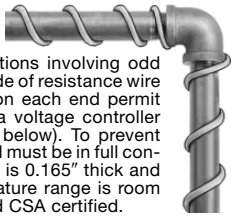

With a maximum heat output of 900° F, this constant-wattage rope really concentrates the heat. Ideal for spot warming metal pipes and situations involving odd shapes. Heaters are single phase and made of resistance wire covered with a fiberglass braid. Leads on each end permit easy connection to a power source or a voltage controller (recommended for use; sold separately below). To prevent burnout, rope must not be overlapped and must be in full contact with the surface being heated. Rope is 0.165″ thick and operates on 120 VAC. Exposure temperature range is room temperature to 900° F. UL recognized and CSA certified.

Lg.	Watts	Watts/ft.	Amps		
6″	25	50	0.25	3641K21	$16.31
12″	50	50	0.5	3641K22	16.51
24″	100	50	1	3641K23	16.71
36″	125	41.5	1.5	3641K24	19.63
60″	250	50	2.5	3641K25	26.95
96″	400	50	4	3641K26	47.61
120″	500	50	5	3641K27	64.54
Variable Voltage Controller (0-118 Volts)				3641K43	92.50

Extreme-Temperature Heat Tape

With a max. heat output of 1400° F, this constant-wattage tape is the highest temperature heat tape we offer. Use on short runs for fast, high heat. It's thin, wide, and flexible to easily conform to any surface shape. Insulation is fiberglass yarn. Tape is 1/2″ wide, 1/8″ thick, single phase, and has wire leads for hardwiring. Exposure temp. range is –60° to +1400° F. For temperature controller, see pages 604-606. *Note:* Not for use on plastic surfaces. To avoid hot spots and burnout, do not overlap. **To Order:** Please specify 120 VAC or 240 VAC.

Lg.	Watts	Watts/ft.	Amps @ 120 VAC	Amps @ 240 VAC		
2 ft.	104	52	0.9	0.4	4550T21	$39.47
2 ft.	156	78	1.3	0.7	4550T11	39.47
4 ft.	208	52	1.7	0.9	4550T22	48.24
4 ft.	312	78	2.6	1.3	4550T12	48.24
6 ft.	312	52	2.6	1.3	4550T23	60.30
6 ft.	468	78	3.9	1.9	4550T13	60.30
8 ft.	416	52	3.5	1.7	4550T24	73.46
8 ft.	624	78	5.2	2.6	4550T14	73.46
10 ft.	520	52	4.3	2.2	4550T25	89.90

About Heat Strips, Sheets, Film, and Blankets

Unlike other types of heaters, heat strips, sheets, film, and blankets (also known as flexible heaters) conform to flat and curved surfaces. They also fit into tight spaces and small gaps. Commonly used for warming solutions in ultrasonic cleaning tanks, spot warming, and condensation prevention.

Flexible heaters cannot be bent around a corner. They cannot be cut or overlapped and must remain in contact with the surface to be heated at all times. Overlapping or air gaps will cause the heating element to burn out. To remove all air gaps and bubbles from below the surface of adhesive-backed flexible heaters, we recommend applying with a rubber roller. Apply only to clean surfaces free of scale, rust, oxidation, and oils.

DC Voltage Flexible Silicone-Rubber Heat Strips

DC voltage is ideal for mobile and laboratory applications running on battery power. They work on metal and plastic tanks and have adhesive backing for sticking to very clean surfaces. Watt density is 5 watts/sq. in. They have 1-ft. wire leads for hardwiring. Max. heat output is 300° F. Exposure temperature range is –40° to +300° F.

To Order: Please specify 12 VDC or 24 VDC.

Size, Lg. × Wd.	Watts	Amps @ 12 VDC	Amps @ 24 VDC		
1″ × 2″	10	0.8	0.4	7945T52	$17.75
1″ × 3″	15	1.3	0.6	7945T53	28.15
1″ × 5″	25	2.1	1.0	7945T54	28.75
2″ × 2″	20	1.7	0.8	7945T51	28.85
2″ × 5″	50	4.2	2.1	7945T55	27.30
2″ × 6″	60	5.0	2.5	7945T56	28.16

Heavy Duty Silicone-Rubber Heat Sheets

Made of a braided and knitted serpentine-wound heating element and protected by a thick layer of fiberglass-reinforced silicone rubber, these sheets are more rugged and will last longer than the Flexible Silicone-Rubber Heat Sheets and Strips on the next page. Their low watt density is ideal for the slow, gentle warming of large-surface-area vessels. Use on flat and slightly curved surfaces. Sheets are 3/16″ thick. Exposure temperature range is –60° to +450° F. All include 4-ft. silicone-rubber wire leads for hardwiring to a temperature control device (required for use; see pages 604-606). ***Adhesive-backed*** sheets have a nonreusable pressure-sensitive silicone adhesive. ***Plain-backed*** sheets can be attached with an RTV silicone rubber adhesive (see pg. 3417). *Sheets for plastic containers* have a watt density of 1.25 watts/sq. in. Max. heat output is 185° F. *Sheets for metal containers* have a watt density of 2.5 watts/sq. in. Max. heat output is 450° F.

Size, Lg. × Wd.	Watts	VAC (Phase)	Amps	Adhesive Backed		Plain Backed	
For Plastic Containers							
6″ × 12″	90	120 (1)	0.8	35285K211	$82.79	35285K411	$78.89
6″ × 24″	180	120 (1)	1.5	35285K231	129.53	35285K431	122.07
6″ × 36″	270	120 (1)	2.3	35285K251	199.74	35285K451	189.26
12″ × 12″	180	120 (1)	1.5	35285K271	129.54	35285K471	122.07
12″ × 24″	360	120 (1)	3	35285K291	230.19	35285K491	212.98
12″ × 36″	540	120 (1)	4.5	35285K311	376.94	35285K511	352.91
24″ × 36″	1,080	120 (1)	9	35285K391	584.40	35285K591	514.92
For Metal Containers							
6″ × 12″	180	120 (1)	1.5	3596K25	82.79	3596K111	78.89
6″ × 12″	180	240 (1)	0.8	3596K35	82.79	—	—

Size, Lg. × Wd.	Watts	VAC (Phase)	Amps	Adhesive Backed		Plain Backed	
For Metal Containers (Cont.)							
6″ × 24″	360	120 (1)	3	3596K26	127.09	3596K131	122.07
6″ × 36″	540	120 (1)	4.5	3596K41	199.74	3596K151	189.27
12″ × 12″	360	120 (1)	3	3596K27	127.09	3596K171	122.07
12″ × 24″	720	120 (1)	6	3596K28	230.19	3596K191	212.98
12″ × 24″	720	240 (1)	3	3596K38	230.19	—	—
12″ × 36″	1,080	120 (1)	9	3596K43	376.94	3596K611	352.91
24″ × 24″	1,440	120 (1)	12	3596K29	439.27	3596K671	405.18
24″ × 36″	2,160	120 (1)	18	3596K45	584.40	3596K691	514.92
24″ × 36″	2,160	240 (1)	9	3596K55	584.40	—	—

For information about heat sheets, strips, and film, see page 525.

Flexible Silicone-Rubber Heat Sheets and Strips

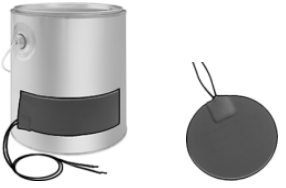

For flexibility and efficient heat distribution, these heaters have nickel-alloy wire embedded in fiberglass-reinforced silicone rubber. They're designed to heat metal containers with both flat and oddly curved surfaces. Thickness is 0.035″-0.07″. Exposure temperature range is –70° to +450° F. All units are single phase and operate on 115 VAC. They have 1-ft. wire leads for hardwiring to a temperature-control device (recommended for use; see pages 604-606). UL and CSA recognized.

Adhesive-backed heaters are for use on very clean surfaces only. They have a nonreusable pressure-sensitive acrylic adhesive. Maximum heat output is 295° F.

Plain-backed heaters can be attached with Dow Corning 736 Silicone-Rubber Adhesive (see page 3419). Maximum heat output is 450° F.

Choose from three watt densities (unless noted): ***2.5 watts/sq. in.*** is suitable for gentle warming, ***5 watts/sq. in.*** is a good all-purpose choice, and ***10 watts/sq. in.*** is for rapid warm-up and higher temperatures.

To Order: Please specify watt density: 2.5, 5, or 10 watts/sq. in., unless noted.

Size	@ 2.5 watts/sq. in. Watts	Amps	@ 5 watts/sq. in. Watts	Amps	@ 10 watts/sq. in. Watts	Amps	Adhesive Backed		Plain Backed	
Round Sheets										
3″ Dia.	18	0.16	35	0.30	71	0.62	35765K122	$28.77	35765K111	$26.17
6″ Dia.	71	0.62	141	1.23	283	2.46	35765K123	46.39	35765K114	42.17
9″ Dia.	159	1.38	318	2.77	636	5.53	35765K124	61.80	35765K117	56.20
12″ Dia.	283	2.46	565	4.91	1,130	9.83	35765K125	83.55	35765K121	75.91
Square Sheets										
1″× 1″	—	—	—	—	10	0.09	35765K126●	24.11	35765K14●	21.91
3″× 3″	23	0.20	45	0.39	90	0.78	35765K127	26.12	35765K134	23.75
6″× 6″	90	0.78	180	1.57	360	3.13	35765K128	42.16	35765K143	38.30
9″× 9″	203	1.77	405	3.52	810	7.04	35765K129	56.16	35765K147	51.07
10″×10″	250	2.17	500	4.35	1,000	8.70	35765K611	65.15	35765K511	62.02
12″×12″	360	3.13	720	6.26	1,440	12.52	35765K163	75.89	35765K153	68.99
Rectangular Strips										
1″× 2″	—	—	10	0.09	20	0.17	35765K164★	24.41	35765K132★	22.17
1″× 3″	8	0.07	15	0.13	30	0.26	35765K165	24.67	35765K133	22.42
1″× 5″	13	0.11	25	0.22	50	0.43	35765K166	25.22	35765K135	22.95
1″× 6″	15	0.13	30	0.26	60	0.52	35765K167	25.58	35765K139	23.23
1″× 9″	23	0.20	45	0.39	90	0.78	35765K168	21.64	35765K144	19.66
1″×12″	30	0.26	60	0.52	120	1.04	35765K169	23.13	35765K148	21.06
1″×18″	45	0.39	90	0.78	180	1.57	35765K171	26.13	35765K154	23.75
1″×24″	60	0.52	120	1.04	240	2.09	35765K172	29.06	35765K158	26.42
1″×30″	75	0.65	150	1.30	300	2.61	35765K621	33.24	35765K521	30.24
2″× 5″	25	0.22	50	0.43	100	0.87	35765K173	23.95	35765K136	21.74
2″× 6″	30	0.26	60	0.52	120	1.04	35765K174	24.68	35765K141	22.46
2″×12″	60	0.52	120	1.04	240	2.09	35765K631	30.47	35765K531	27.73
2″×24″	120	1.04	240	2.09	480	4.17	35765K641	40.23	35765K541	36.56
3″× 5″	38	0.33	75	0.65	150	1.30	35765K175	28.22	35765K137	25.68
3″× 6″	45	0.39	90	0.78	180	1.57	35765K176	29.25	35765K142	26.62
3″× 9″	68	0.59	135	1.17	270	2.35	35765K189	32.50	35765K145	29.55
3″×12″	90	0.78	180	1.57	360	3.13	35765K177	35.62	35765K149	32.40
3″×18″	135	1.17	270	2.35	540	4.70	35765K178	42.05	35765K155	38.21
3″×24″	180	1.57	360	3.13	720	6.26	35765K179	48.43	35765K159	44.03
4″× 5″	50	0.43	100	0.87	200	1.74	35765K181	31.03	35765K138	28.22
6″× 9″	135	1.17	270	2.35	540	4.70	35765K182	47.78	35765K146	43.46
6″×12″	180	1.57	360	3.13	720	6.26	35765K183	53.40	35765K151	48.57
6″×18″	270	2.35	540	4.70	1,080	9.39	35765K184	64.74	35765K156	58.84
6″×24″	360	3.13	720	6.26	1,440	12.52	35765K185	75.94	35765K161	69.03
6″×36″	540	4.70	1,080	9.39	2,160	18.78	35765K671	102.35	35765K571	93.05
9″×12″	270	2.35	540	4.70	1,080	9.39	35765K186	64.68	35765K152	58.81
12″×18″	540	4.70	1,080	9.39	2,160	18.78	35765K187	98.53	35765K157	89.53
12″×24″	720	6.26	1,440	12.52	—	—	35765K188■	121.07	35765K162■	110.05
12″×48″	1,440	12.52	2,880	20.00	—	—	35765K821■	196.11	35765K721■	193.82

● 10 watts/sq. in. only. ★ 5 and 10 watts/sq. in. only. ■ 2.5 and 5 watts/sq. in. only.

Ultra-Thin Polyimide Heat Film

With a thickness of 0.008″, these slim heat patches conform to any flat or curved surface and slip into the smallest gaps. Use only on metal containers with very clean surfaces. They have adhesive backing for easy application. Heating elements are encapsulated in polyimide for excellent stretch and tear resistance. They're also resistant to chemicals, oils, and radiation. Maximum heat output is 300° F. Exposure temperature range is –40° to +300° F. Heaters have 1-ft. wire leads for hardwiring to a temperature-control device (recommended; see pages 604-606).

Choose from two watt densities: ***5 watts/sq. in.*** is a good all-purpose choice, and ***10 watts/sq. in.*** is for rapid warm-up and higher temperatures. **To Order:** Please specify watt density: 5 or 10 watts/sq. in., unless noted.

Size	VAC (Phase)	@ 5 watts/sq. in. Watts	Amps	@ 10 watts/sq. in. Watts	Amps		
Round							
2″ Dia.	115 (1)	—	—	31.4	0.27	35475K12●	$40.37
Square							
1″ × 1″	28 (1)	5	0.18	10	0.36	35475K24	34.26
2″ × 2″	28 (1)	20	0.71	40	1.43	35475K26	34.26
2″ × 2″	115 (1)	20	0.17	40	0.35	35475K16	36.22
3″ × 3″	115 (1)	45	0.39	90	0.78	35475K18	44.88
6″ × 6″	115 (1)	180	1.57	360	3.13	35475K63	69.37
Rectangular							
½″× 2″	28 (1)	5	0.18	10	0.36	35475K28	38.89
1″ × 2″	28 (1)	10	0.36	20	0.71	35475K42	39.80
1″ × 3″	28 (1)	15	0.54	30	1.07	35475K44	39.79
1″ × 3″	115 (1)	—	—	30	0.26	35475K334●	39.79
1″ × 5″	28 (1)	25	0.89	50	1.79	35475K46	41.95
1″ × 5″	115 (1)	25	0.22	50	0.43	35475K36	41.95
2″ × 5″	115 (1)	50	0.43	100	0.87	35475K71	46.25
4″ × 6″	115 (1)	120	1.04	240	2.09	35475K75	58.42
6″ ×12″	115 (1)	360	3.13	720	6.26	35475K77	103.27
10″ ×12″	115 (1)	600	5.22	1,200	10.43	35475K38	110.92

● 10 watts/sq. in. only.

Super-Flexible Foil Heat Strips

When you need maximum flexibility, bend these heaters around edges and corners without breaking the internal heating element. They're made of durable aluminum foil and a nickel-chrome heat wire. Thickness is 0.2″. Max. heat output is 300° F. Exposure temp. range is –40° to +300° F. All include 18″ wire leads for hardwiring to a power source. Voltage is 120 VAC, single phase. Watt density is 5 watts/sq. in.

Size	Watts	Amps		
2″× 6″	25	0.21	8009T11	$17.16
2″×10″	50	0.42	8009T12	17.82
2″×12″	60	0.50	8009T13	18.18
4″× 6″	60	0.50	8009T14	18.18
4″×10″	110	0.92	8009T15	21.32
4″×12″	130	1.08	8009T16	24.32
6″× 6″	95	0.79	8009T17	20.52
6″×10″	170	1.42	8009T18	28.50
6″×12″	205	1.71	8009T19	33.52
6″×24″	420	3.50	8009T21	74.94

15-in-1 Ultra-Thin Polyimide Heat Film

Unsure of the wattage or shape you need? This film has 15 shapes (3 round, 3 square, 9 rectangular) to choose from—simply cut one out. Elements are encapsulated in polyimide for excellent stretch and tear resistance as well as resistance to chemicals, oils, and radiation. Film has an adhesive backing for attaching to very clean surfaces. Flat foil electrical connections let you attach alligator clips or solder wire leads. All shapes operate on 12 VAC, 28 VAC, 115 VAC, and 230 VAC. Film measures 12″×12″ and 0.008″ Thick. Max. heat output is 300° F. Exposure temp. range is –328° to +300° F.

7980T11 ..... $124.52

For information about heat blankets, see page 525.

Silicone-Rubber Drum and Pail Heat Blankets

Maintain and improve the flow of materials stored in drums and pails. These fiberglass-reinforced silicone rubber-coated heaters offer flexibility and moisture resistance. For a snug fit around the drum, heaters include clips. All are single phase and have a 6-ft., 3-wire power cord. ***120 VAC blankets*** include a standard three-prong plug. ***240 VAC blankets*** have stripped ends for hardwiring.

Note: Not for heating flammable materials or for use in hazardous areas. Contents of drum should be monitored with a thermometer (not included).

3″ Wide Blankets— For low-wattage heating. Exposure temp. range is –40° to +450° F.

4″ Wide Blankets— Have three layers of silicone rubber for reinforced construction and durability. Exposure temp. range is –40° to +500° F.

9½″ Wide Blankets— Maximize surface area contact and heat distribution. Ideal for heating substances that are sensitive to high heat concentrations. Exposure temp. range is –80° to +390° F. *Expansion straps* (sold separately) fit the heaters to drums 1½″ to 11″ larger in circumference (2 straps required per heater).

For Drum Cap.	For Drum Dia.	Watts	Watt Density, watts/sq. in.	VAC	Amps		
Heat Blankets for Metal Drums							
3″ Wide Heaters with 50° to 425° F Thermostat							
5 gal.	11¼″	300	4.5	120	2.5	3545K41	$101.38
15 gal.	14½″	500	5.3	120	4.2	3545K42	114.54
30 gal.	18¼″	750	5.2	120	6.3	3545K43	118.78
55 gal.	22½″	1,000	5.5	120	8.3	3545K44	123.84
55 gal.	22½″	1,000	5.5	240	4.2	3545K54	123.84
4″ Wide Heaters with 50° to 425° F Thermostat							
5 gal.	11⅛″	550	4.5	120	4.6	3630K27	194.26
15 gal.	14″	700	4.5	120	5.8	3630K28	214.18
15 gal.	14″	700	4.5	240	2.9	3630K58	214.18
30 gal.	18 5/16″	1,000	4.5	120	8.3	3630K29	235.74
30 gal.	18 5/16″	1,000	4.5	240	4.2	3630K59	235.74
55 gal.	22⅝″	1,200	4.5	120	10.0	3630K31	263.91
55 gal.	22⅝″	1,200	4.5	240	5.0	3630K61	263.91
4″ Wide Heaters without Thermostat *(see req'd thermostat below)*							
5 gal.	11⅛″	550	4.5	120	4.6	3630K12	143.15
15 gal.	14″	700	4.5	120	5.8	3630K13	166.35
30 gal.	18 5/16″	1,000	4.5	120	8.3	3630K14	183.11
55 gal.	22⅝″	1,200	4.5	120	10.0	3630K15	204.77
9½″ Wide Heaters with 70° to 190° F Thermostat							
5 gal.	11½″	1,000	3.0	120	8.3	3544K33	236.38
15 gal.	13½″	1,000	2.4	120	8.3	3544K35	298.74
55 gal.	22½″	1,500	2.4	120	12.5	3544K39	434.99
Heat Blankets for Plastic Drums							
4″ Wide Heaters with 50° to 160° F Thermostat							
5 gal.	11⅛″	150	1.1	120	1.3	35275K27	194.26
15 gal.	14″	200	1.1	120	1.7	35275K28	214.18
15 gal.	14″	200	1.1	240	0.8	35275K58	214.18
30 gal.	18 5/16″	250	1.1	120	2.1	35275K29	235.74
30 gal.	18 5/16″	250	1.1	240	1.0	35275K59	235.74
55 gal.	22⅝″	300	1.1	120	2.5	35275K31	263.91
55 gal.	22⅝″	300	1.1	240	1.3	35275K61	263.91
9½″ Wide Heaters with 70° to 140° F Thermostat							
5 gal.	11½″	300	1.0	120	2.5	3544K31	236.38
55 gal.	22½″	750	1.2	120	6.3	3544K38	434.99
Accessories							
120-Volt Thermostat (60° to 250° F)						3630K19	145.17
Expansion Strap for 9½″ Wide Heaters						3544K71	34.77

Extreme-Temperature Band Heaters

The ceramic insulation on these heaters allows for accurate heating to 1200° F. It also offers excellent heat retention, long heater life, and perfect heat distribution across the band. Heaters are 19/32″ thick and single phase. All have ¼″-20 stud and screw terminals, and a Type 430 stainless steel sheath.

To Order: Please specify 120 VAC or 240 VAC where an amp rating is shown in the table.

For Container Diameter	Wd.	Watts	Watt Density, watts/sq. in.	Amps @ 120 VAC	Amps @ 240 VAC		
3½″	3″	1,000	45	8.3	4.2	8160T41	$94.79
3½″	3¾″	1,800	45	15.0	7.5	8160T42	97.35
4″	4″	1,500	45	12.5	6.3	8160T43	108.51
4½″	4″	1,800	45	15.0	7.5	8160T44	119.05
6½″	1½″	1,200	45	10.0	5.0	8160T45	119.05
7½″	3″	2,700	45	___	11.3	8160T46	141.56
8″	8″	2,000	45	16.7	8.3	8160T47	290.25
8½″	2″	1,800	45	15.0	7.5	8160T48	119.05
9½″	4″	2,500	45	___	10.4	8160T49	193.73

Adjustable-Diameter Silicone-Rubber Heat Blankets

Fit nonstandard sizes of drums, pails, tubs, and beakers—these silicone-rubber heat blankets have hook-and-loop to adjust to fit a wide range of metal and fiberglass vessels. Heaters are single phase and include a 6-ft. long power cord. Exposure temp. range is 70° to 370° F. 8063T51-*T53* have a max. heat output of 325° F; 8063T54 and *T55* have a max. heat output of 250° F.

120 VAC heaters include a standard two-prong plug. ***220 VAC heaters*** have stripped ends for hardwiring.

To Order: Please specify 120 VAC or 220 VAC.

For Container Diameter	Blanket Size, Wd. × Lg.	Watts	Watt Density, watts/sq. in.	Amps @ 120 VAC	Amps @ 220 VAC		
2″- 5″	4″ ×20″	200	2.5	1.7	0.9	8063T51	$166.30
6″- 9″	4¾″ ×32″	400	2.6	3.3	1.8	8063T52	232.68
10″-13″	5¾″ ×50″	575	2	4.8	2.6	8063T53	264.00
14″-17″	8″ ×65″	1,300	2.5	10.8	5.9	8063T54	389.28
18″-21″	10″ ×82″	2,000	2.5	16.7	9.1	8063T55	627.93

Drum-Insulating Heat Blankets

For rapid heat-up and complete coverage of 55-gallon drums, choose these heat blankets. They feature a heating element enclosed in silicone-impregnated fiberglass cloth and 1″ thick fiberglass insulation for increased flexibility and heat retention. Ideal for drums stored in unheated warehouses (for indoor use only). Heaters fit 22⅝″ Dia. × 34″ Ht. drums. They have hook-and-loop edges for secure closing. *Note:* Not for warming flammable materials or for use in hazardous areas.

Heaters include a digital temperature controller that can be set between 50° and 450° F on heaters for metal drums and between 50° and 160° F on heater for plastic drums. All heaters have a 6-ft. long power cord.

120 VAC blankets include a standard three-prong plug. ***240 VAC blanket*** has stripped ends for hardwiring; see pages 784-789 for plugs and illustrations to select a plug that matches your receptacle.

Watts	Watt Density, watts/sq. in.	VAC (Phase)	Amps		
Heaters for Metal Drums					
1,600	2.5	120 (1)	13.3	3571K21	$1,177.65
1,600	2.5	240 (1)	6.7	3571K22	1,177.65
Heater for Plastic Drums					
770	1.25	120 (1)	6.4	3571K31	1,177.65

Heated Drum Dollies

Heat your 55-gallon drums while keeping them portable. Just place your drum on the dolly's ¼″ Thick. × 15¼″ Sq. plate; the heating element is enclosed in the plate. An adjustment control dial regulates the ratio of on and off time. Perfect for heating thick, nonflammable, and nonhazardous materials such as chocolate, honey, and wax. For use with metal drums only. Max. capacity is 900 lbs. Size is 28½″ OD (24″ ID) × 6″ Ht. They have four 3″ dia. phenolic casters and a 6-ft. long power cord with plug (for illustrations of plugs, see page 787). UL listed.

Watts	Watt Density, watts/sq. in.	VAC (Phase)	Amps	NEMA Plug		
1,750	11.0	120 (1)	14.6	5-20	3622K41	$570.69
1,920	11.5	240 (1)	8.0	6-15	3622K61	570.69

Adjustable Quick-Clamp Stainless Steel Band Heaters

A quick-release hose clamp lets you attach these heaters to nonstandard containers, including air tanks, condenser tanks, and food-storage containers. Their sealed construction makes them oil and moisture resistant and submersible in salt water. Clamp is ¾″ wide and made of Type 301 stainless steel. Have 6-ft. wire leads and a grounding wire for hardwiring.

For Container Diameter	Watts	Watt Density, watts/sq. in.	VAC (Phase)	Amps		
5¼″- 6½″	40	3.6	120 (1)	0.33	8101T31	$37.97
6¼″- 7¼″	40	3.0	230 (1)	0.17	8101T32	38.27
6½″- 7½″	40	3.0	460 (1)	0.09	8101T33	39.05
7¼″- 8½″	70	4.2	230 (1)	0.30	8101T34	40.19
7¼″- 8½″	70	4.2	460 (1)	0.15	8101T35	41.02
9¾″-11½″	90	3.8	230 (1)	0.40	8101T36	43.84
9¾″-11½″	90	3.8	460 (1)	0.20	8101T37	44.26

Noncontact Band Heaters for Sensitive Liquids

5-gal.

55-gal.

Get uniform heat that surrounds 80% of your pail or drum. These band heaters eliminate hot spots by heating the air around your vessel and never coming in direct contact with it. Fiberwool insulation and top and bottom gaskets minimize heat loss. They're ideal for heating heat-sensitive substances such as adhesives, sealants, and food. Heaters are thermostatically controlled. Choose temperature ranges of 60° to 250°F or 100° to 550°F. Heaters are furnished with an 8-ft. long power cord with plug (see table below for plug type). For use with metal pails and drums only. *Note:* Not for use with flammable materials or in hazardous areas.

The ***5-gallon capacity heaters*** let you set the pail in from the top. The ***55-gallon capacity heaters*** are mounted on casters and can be wrapped around the drum and secured.

Watts	VAC (Phase)	Amps	O'all Size OD	O'all Size Ht.	NEMA Plug★	60° to 250°F		100° to 550°F	
5-Gallon Capacity—11¼″ Max. Pail Dia.									
1,350	115 (1)	11.7	22″	13″	5-15	3542K93	$833.11	3542K95	$833.11
1,350	230 (1)	5.9	22″	13″	L6-20	—	—	3542K97	930.66
55-Gallon Capacity—22⅞″ Max. Drum Dia.									
1,500	115 (1)	13	35″	30½″	L5-15	3542K11	2,417.47	—	—
4,400	230 (1)	19.1	35″	30½″	L6-20	3542K51	2,417.47	3542K5	2,417.47
4,400	230 (3)	12	35″	30½″	L15-20	3542K71	2,803.37	3542K7	2,803.37
4,400	460 (3)	6	35″	30½″	L16-20	3542K91	3,108.00	3542K9	3,108.00

★ For illustrations of plugs, see pages 784 and 787.

Steel-Band Pail and Drum Heaters

With a higher wattage output, these heaters warm up faster than silicone-rubber heaters. Elements are enclosed in corrosion-resistant aluminized steel. A spring-loaded toggle clamp adjusts for a snug fit around pails and drums. Heaters are 5″ wide (unless noted) and include a 6-ft. long power cord with plug (see table below for plug type). Heaters operate on 50-60 Hz. UL listed and CSA certified.

Note: Not for heating flammable materials or for use in hazardous areas. Heaters must be positioned at the base of the pail or drum.

Variable-cycle heaters for metal pails and drums have one dial that regulates the ratio of on and off time. A second dial controls heat output with three settings: high, medium, and low. ***Thermostat-controlled heaters for metal pails and drums*** have a thermostat that controls on and off settings. They are offered with a 60° to 250°F, 70° to 250°F, or 200° to 400°F thermostat. All also have a dial with three heat output settings: high, medium, and low. ***Heater for plastic drums*** has an on/off switch and a nonadjustable thermostat that does not let the heater exceed 165°F.

For Drum Cap., gal.	For Drum Dia.	Watts	Watt Density, watts/sq. in.	VAC (Phase)	Amps	NEMA Plug★		
Heaters for Metal Pails and Drums								
Variable-Cycle								
5	11¼″	1,500	12.5	120 (1)	12.5	5-15	3552K71	$243.36
16	14½″	1,500	9.4	120 (1)	12.5	5-15	3552K72	261.70
30	18½″	1,750	8.8	120 (1)	14.6	5-20	3552K73	262.49
55	22½″	1,750	6.8	120 (1)	14.6	5-20	3552K74	269.43
55	22½″	3,000	11.5	240 (1)	12.5	6-15	3552K75	269.43
60° to 250°F Thermostat-Controlled								
5	11¼″	1,500	12.5	120 (1)	12.5	5-15	3549K41	237.96
16	14½″	1,500	9.4	120 (1)	12.5	5-15	3549K43	261.07
30	18½″	1,920	9.6	120 (1)	16.0	5-20	3549K45	267.63
55	22½″	1,750	6.7	120 (1)	14.6	5-15	3549K72	292.79
55	22½″	1,920	7.4	120 (1)	16.0	5-20	3549K47	284.99
55	22½″	3,000	11.5	240 (1)	12.5	6-15	3549K49	284.99
70° to 250°F Thermostat-Controlled								
55	22½″	3,000	11.5	240 (1)	12.5	6-15	3620K65	345.22
200° to 400°F Thermostat-Controlled								
5	11¼″	1,500	12.5	120 (1)	12.5	5-15	3549K42	237.96
16	14½″	1,500	9.4	120 (1)	12.5	5-15	3549K44	261.07
30	18½″	1,920	9.6	120 (1)	16.0	5-20	3549K46	267.63
55	22½″	1,750	6.7	120 (1)	14.6	5-15	3549K73	292.79
55	22½″	1,920	7.4	120 (1)	16.0	5-20	3549K48	284.99
55	22½″	3,000	11.5	240 (1)	12.5	6-15	3549K51	284.99
Heater for Plastic Drums								
Nonadjustable 165°F Thermostat								
55	22½″	800	1.7	120 (1)	6.6	5-15	3526K57 ♦	314.90

★ NEMA 5-15 is a standard three-prong plug. For illustrations of other plugs, see page 787. ♦ Heater is 9″ wide.

Guard for Steel-Band Drum Heaters

Clamp this guard around your 55-gallon drum above your band drum heater to protect the heater from spills. Guard is made of durable 16-ga. aluminum. OD is 30½″; ID is 22½″.

3526K64 ..... $157.97

High-Temperature Barrel Band Heaters

Aluminum

Mica

Wrap around the barrels of extrusion and injection-molding machinery and blown-film dies.

Voltage is single phase. Heaters should be used with a temperature control switch (see 3626K on page 604, 7079K on page 605, and 7981K on page 606).

Aluminum heaters have rugged refractory-insulated tubular heating elements that warm up quickly and maintain even heat output. Furnished with a terminal box and a 3-ft. long galvanized armor cable with leads. Max. heat output is 650°F.

Mica heaters have screw terminals and rust-resistant steel sheaths with mica-insulated ribbon wire elements. Max. heat output is 900°F.

To Order: Please specify 120 or 240 VAC.

For Barrel Dia.	Wd.	120 VAC Watts	120 VAC Watts/sq. in.	120 VAC Amps	240 VAC Watts	240 VAC Watts/sq. in.	240 VAC Amps		
Aluminum Heaters									
4″	1½″	—	—	—	750	47	3.1	3671K24	$154.85
6″	1½″	—	—	—	1,100	44	4.6	3671K32	169.71
7″	1½″	—	—	—	1,300	43	5.4	3671K36	178.53
8″	1½″	—	—	—	1,475	43	6.1	3671K41	186.62
9″	1½″	—	—	—	1,675	43	7	3671K45	195.15
10″	1½″	—	—	—	1,850	38	7.7	3671K49	202.94
Mica Heaters									
3″	1½″	400	49	3.3	400	43	1.7	3671K51	46.91
3½″	1½″	500	47	4.2	500	45	2.1	3671K52	47.65
3½″	2″	650	51	5.4	650	43	2.7	3671K53	51.47
4″	1″	400	52	3.3	400	52	1.7	3671K54	51.76
4″	2″	550	32	4.6	550	31	2.3	3671K55	55.74
4″	4″	1,250	39	10.4	1,250	39	5.2	3671K56	79.12
4½″	2½″	1,000	45	8.3	1,000	39	4.2	3671K58	61.32
5″	1½″	700	52	5.8	700	44	2.9	3671K59	56.47
6″	1½″	850	44	7.1	850	44	3.5	3671K62	61.62
6″	2″	1,200	50	10	1,200	39	5	3671K63	68.68
7″	1½″	1,000	46	8.3	1,000	45	4.2	3671K64	67.50
8″	2″	1,500	40	12.5	1,500	42	6.3	3671K65	82.50
9″	1½″	1,200	46	10	1,800	62	7.5	3671K66	77.65
10″	1½″	1,300	46	10.8	1,300	43	5.4	3671K67	81.32
12″	2″	1,700	31	14.2	2,300	45	9.6	3671K68	107.79
14″	1½″	1,600	37	13.3	1,900	41	7.9	3671K69	103.09

Super-High-Temperature Nozzle Band Heaters

Mineral Insulated

Clamp around nozzles of extrusion, injection, and blow-molding machines. All are single phase, have 10″ wire leads, and should be used with a temperature control switch (see 3626K on page 604, 7079K on page 605, and 7981K on page 606). Maximum heat output is 1400°F. To determine amps, divide watts by volts.

All heaters have a Type 430 stainless steel sheath.

Mineral-insulated heaters produce high concentrations of heat and warm up rapidly.

To Order: Please specify 120 or 240 VAC.

For Nozzle Dia.	Wd.	Mica Watts	Mica Watts/sq. in.			Mineral Insulated Watts	Mineral Insulated Watts/sq. in.		
1″	1″	100	38	3594K11	$60.83	150	57	3594K19	$77.65
1″	1½″	150	38	3594K12	60.83	200	51	3594K25	79.95
1″	2″	200	38	3594K13	60.83	275	52	3594K26	85.72
1½″	1″	150	36	3594K14	62.27	225	53	3594K49	77.65
1½″	1½″	300	48	3594K15	62.27	350	55	3594K97	79.95
1½″	2″	300	36	3594K16	62.27	400	48	3594K98	85.72
2″	1½″	300	35	3594K17	62.27	425	49	3594K99	79.95
2½″	1½″	350	32	3594K21	65.08	525	48	3594K111	79.95

Strip Heaters

1½″ Wide

3″ Wide

Use for high temperature applications in plastic injection molding. These heaters have mica insulation and are extra thin for tight spaces. Max. heat output is 1200° F for 1½″ wide heaters; 900° F for 3″ wide heaters. All are single phase, UL recognized, and CSA certified.

Note: Heaters should be used with a temperature controller (see 3626K on page 604, 7079K on page 605, and 7981K on page 606).

1½″ wide heaters are 3/16″ thick and have a Type 430 stainless steel sheath and 10-24 screw terminals with 3/4″ high threaded studs. Mounting holes are 1/4″ dia. ***3″ wide*** heaters are 3/16″ thick and have a rust-resistant steel sheath and two 3/4″ high stainless steel stud and nut terminals with 10-32 threads. Mounting holes are 9/32″ Lg.×3/8″ Wd.

To Order: Please specify voltage: 120 VAC or 240 VAC.

Watts	Watts/ sq. in.	Amps @ 120 VAC	Amps @ 240 VAC	O'all Lg.	Ctr.-to-Ctr. Lg.		
1½″ Wide Heaters							
75	12	0.6	0.3	4″	3½″	**3619K11**	$39.25
100	11	0.8	0.4	6″	5½″	**3619K12**	37.46
150	12	1.3	0.6	8″	7½″	**3619K13**	44.72
200	13	1.7	0.8	10″	9½″	**3619K14**	49.48
300	17	2.5	1.3	12″	11½″	**3619K15**	51.83
400	17	3.3	1.7	16″	15½″	**3619K16**	60.06
600	17	5	2.5	24″	23½″	**3619K17**	69.35
3″ Wide Heaters							
120	10	1	0.5	4″	3⅜″	**3619K81**	13.87
180	14.3	1.5	0.8	6″	5⅜″	**3619K82**	14.41
240	16.4	2	1	8″	7½″	**3619K83**	16.57
300	14.8	2.5	1.5	10″	9⅜″	**3619K84**	19.69
360	13.7	3	1.5	12″	11⅜″	**3619K85**	21.75
450	11.8	3.8	1.9	16″	15⅜″	**3619K86**	25.47
600	9.6	5	2.5	24″	23⅜″	**3619K87**	30.55

Freeze-Protection Strip Heaters

Side View

Also known as convection heaters, these are ideal for freeze protection on flat surfaces. They're also used on electrical enclosures and cabinets for humidity and condensation protection. The heating element is encapsulated in silicone rubber and bonded to a 2⅛″ wide aluminum surface plate with a ½″ wide angled mounting bracket. Mounting holes are 1/4″ dia. (fasteners not included). Heaters have 4-ft. wire leads for hardwiring. All operate on 115 VAC, single phase and are UL recognized and CSA certified. Watt density is 5 watts/sq. in. Heaters include one of three nonadjustable thermostats—choose a heater with a thermostat that turns on at 40° F and off at 60° F, on at 105° F and off at 140° F, or on at 150° F and off at 175° F.

60-watt heaters are 6″ Lg.; mounting holes have a 4″ Ctr.-to-Ctr. Lg. *120-watt heaters* are 12″ Lg.; mounting holes have a 10″ Ctr.-to-Ctr. Lg.

Temp. Range	60 Watts Amps			120 Watts Amps		
40° to 60° F	0.52	**3654K12**	$109.63	1.04	**3654K22**	$119.62
105° to 140° F	0.52	**3654K13**	109.63	1.04	**3654K23**	119.62
150° to 175° F	0.52	**3654K14**	109.63	1.04	**3654K24**	119.62

Heavy Duty Freeze-Protection Strip Heaters

With Thermostat

For durability and long life, these heaters have a Type 304 stainless steel alloy-sheathed tubular heater element protected by a perforated steel sheath. Ideal for freeze protection on flat surfaces such as square liquid tanks. They can also be used on electrical panels and mechanical equipment for humidity and condensation protection. Also known as convection heaters, their perforated steel sheath provides even heat distribution and has 8-32 screw terminals and 3/8″ diameter mounting holes for easy installation. Size is 8⅜″ Lg.×1½″ Wd.×3½″ Ht. Choose a heater with or without an adjustable thermostat with temp. range of 30° to 150° F.

Watts	Watts/ sq. in.	VAC (Phase)	Amps	*w/Thermostat*		*w/out Thermostat*	
100	8.7	125 (1)	0.8	**36415K22**	$84.13	**36415K32**	$35.77
150	6.0	120 (1)	1.3	**36415K23**	84.13	**36415K42**	35.77
150	6.0	240 (1)	0.6	**36415K55**	84.13	**36415K44**	35.77
250	10.0	125 (1)	2.0	**36415K24**	84.13	**36415K34**	35.77
250	10.0	250 (1)	1.0	**36415K57**	84.13	**36415K35**	35.77
350	14.0	125 (1)	2.8	**36415K25**	84.13	**36415K36**	35.77
350	14.0	250 (1)	1.4	**36415K59**	84.13	**36415K37**	35.77
500	20.0	120 (1)	4.2	**36415K26**	84.13	**36415K43**	35.77
500	20.0	240 (1)	2.1	**36415K61**	84.13	**36415K45**	35.77

Moisture-Resistant Strip Heaters

Style A Channel

Style A Finned

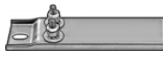

Style B Channel

Style C Channel

Ceramic insulation encased in a seamless Type 304 stainless steel sheath gives these heaters moisture resistance and high heat output. Maximum heat output is 1200° F. All are single phase. Size is 1½″ Wd.×5/16″ Thick. Heaters have two ½″ Lg.×5/16″ Wd. mounting slots and two 5/8″ high stainless steel stud and nut terminals with 10-32 threads. Choose from three different terminal configurations. *Note:* Heaters should be used with a temperature controller (see 7981K on page 606).

Channel Strip Heaters

Mount to metal surfaces using steel strapping or clamps (surface mounting clamps sold separately below). They should maintain contact with the surface at all times. **To Order:** Please specify 120 or 240 VAC and terminal configuration style (A, B, or C, where applicable) shown above.

Watts	Watts/sq. in. Style A	Style B	Style C	Amps @ 120 VAC	240 VAC	O'all Lg.	Ctr.-to-Ctr. Lg.		
125	—	28	28	1.0	0.5	5¼″	4¼″	**3576K11●**	$35.86
150	21	21	21	1.3	0.6	6″	5″	**3576K45**	36.91
250	13	11	12	2.1	1.0	10½″	9½″	**3576K22**	42.06
250	23	17	21	2.1	1.0	8″	7″	**3576K12**	34.38
300	—	47	—	2.5	1.3	5¾″	4¾″	**3576K13♦**	36.91
350	12	12	13	2.9	1.5	12″	11″	**3576K14**	37.12
500	15	14	15	4.2	2.1	14″	13″	**3576K15**	43.70
500	—	32	42	4.2	2.1	8″	7″	**3576K46●**	36.91
750	8	8	8	6.3	3.1	29¼″	28¼″	**3576K16**	64.79
750	11	10	11	6.3	3.1	23¾″	22¾″	**3576K25**	55.75
750	16	15	16	6.3	3.1	17⅞″	16⅞″	**3576K17**	49.45
1,000	9	9	9	8.3	4.2	34⅝″	33⅝″	**3576K18**	80.74
1,000	9	9	9	8.3	4.2	35⅞″	34⅞″	**3576K26**	82.94
1,200	23	21	23	10.0	5.0	19½″	18½″	**3576K48**	55.79
1,500	13	12	13	12.5	6.3	37¼″	36¼″	**3576K19**	81.37
Mounting Hardware									
Monel Stud (5/16″-18×1½″)								**3576K94**	5.51
Monel Stud (5/16″-18×2″)								**3576K93**	5.51
Monel Nut (5/16″-18)								**3576K95**	2.88
Steel Washer (5/16″)								**3576K96**	2.88
Surface Mounting Clamps									
Clamp for mounting two strip heaters								**3576K91**	13.12
Clamp for mounting three strip heaters								**3576K92**	16.37

● Not available in Style A. ♦ Available in Style B only.

Finned Strip Heaters

The fins provide a large surface area for excellent heat dissipation in forced-air heating equipment. Mount in ducts and at the bottom of cabinet-type ovens for air heating and food warming. Fins are nickel-plated steel and 2″ Wd.×1⅜″ Ht. UL recognized. **To Order:** Please specify terminal configuration style (A, B, or C) shown above.

Watts	Watts/sq. in. Style A	Style B	Style C	Amps	O'all Lg.	Fin Lg.■	Ctr.-to-Ctr. Lg.		
120 VAC									
500	34	21	24	4.2	10½″	5¾″	9½″	**3575K41**	$38.73
725	45	31	35	6.0	10½″	5¾″	9½″	**3575K42**	39.50
750	28	21	23	6.3	14″	9¼″	13″	**3575K36**	48.32
900	40	31	34	7.5	12″	7¼″	11″	**3575K43**	47.55
1,100	37	31	33	9.2	14″	9¼″	13″	**3575K44**	49.89
1,250	37	31	33	10.4	15¼″	10½″	14¼″	**3575K45**	51.50
1,550	38	31	33	12.9	17⅞″	13⅛″	16⅞″	**3575K46**	62.69
1,700	34	31	31	14.2	19½″	14¾″	18½″	**3575K47**	64.57
1,900	33	31	33	15.8	21″	16¼″	20″	**3575K48**	65.87
240 VAC									
500	25	21	24	2.1	10½″	5¾″	9½″	**3575K51**	38.73
725	45	31	35	3.0	10½″	5¾″	9½″	**3575K52**	39.50
750	28	21	23	3.1	14″	9¼″	13″	**3575K85**	49.89
900	40	31	34	3.8	12″	7¼″	11″	**3575K53**	47.55
1,100	37	31	33	4.6	14″	9¼″	13″	**3575K54**	51.00
1,250	37	31	33	5.2	15¼″	10½″	14¼″	**3575K55**	51.50
1,550	38	31	33	6.5	17⅞″	13⅛″	16⅞″	**3575K56**	62.69
1,700	36	31	33	7.1	19½″	14¾″	18½″	**3575K57**	64.57
1,900	36	31	30	7.9	21″	16¼″	20″	**3575K58**	67.71
2,200	30	31	33	9.2	23¾″	19″	22¾″	**3575K61**	86.70
2,400	35	32	33	10.0	25½″	20¾″	24½″	**3575K63**	107.04
2,500	34	30	32	10.4	26¾″	22″	25¾″	**3575K64**	112.55
2,800	29	30	31	11.7	30½″	25¾″	29½″	**3575K67**	130.48
3,150	29	30	31	13.1	33½″	28¾″	32½″	**3575K68**	149.05
3,450	29	31	31	14.4	35⅞″	31⅛″	34⅞″	**3575K69**	165.38
4,150	31	31	31	17.3	42½″	37¾″	41½″	**3575K71**	174.29

■ For Style B, fin length is approx. 3/4″ longer.

Moisture-Resistant Strip Heaters with Wire Leads

Similar to our Moisture-Resistant Strip Heaters on the previous page, except these have 10″ wire leads for fast and easy installation. Made of ceramic insulation encased in a Type 304 stainless steel sheath for high heat output and to keep moisture out. Measuring only 1½″ Wd. × 5/16″ Thick., they are perfect for tight spaces. Connection to a temperature controller is recommended (see 3626K on page 604, 7079K on page 605, and 7981K on page 606). Heaters produce a maximum heat output of 1000° F; wire lead max. temperature is 482° F. Voltage is single phase. UL recognized.

Watts	Watts/ sq. in.	Lg.	120 VAC Amps			240 VAC Amps		
200	44	4″	1.7	3625K55	$58.58	—	—	—
240	46	4½″	2	3625K56	62.48	—	—	—
300	44	5½″	2.5	3625K57	61.07	—	—	—
325	43	6″	2.7	3625K58	65.15	—	—	—
350	42	6½″	2.9	3625K59	65.69	—	—	—
425	41	8″	3.5	3625K61	68.19	—	—	—
475	40	9″	4	3625K62	72.73	2	3625K82	$72.73
625	38	12″	5.2	3625K63	79.68	2.6	3625K83	79.68
950	37	18″	7.9	3625K64	87.86	4	3625K84	87.86
1,275	37	24″	10.6	3625K65	113.59	5.3	3625K85	113.59

Miniature High-Temperature Cartridge Heaters

For very small hot plates or spot heating of small dies, these heaters have a diameter of only 1/8″. All have an Inconel sheath with 1-ft. wire leads for hardwiring. Max. heat output is 1400° F. Wire lead max. temp. is 480° F.

Cartridge Lg.	Watts	VAC (Phase)	Amps		
1¼″	25	120 (1)	0.21	8376T21	$27.35
1¼″	35	240 (1)	0.15	8376T23	27.60
1¼″	50	120 (1)	0.42	8376T22	27.87
1½″	30	120 (1)	0.25	8376T24	28.86
1½″	60	120 (1)	0.50	8376T25	29.42
2″	50	120 (1)	0.42	8376T26	29.84
2″	100	120 (1)	0.83	8376T27	30.01

Disc and Ring Heaters

Disc Heater (Full Sheath)

Ring Heater with Optional Mounting Clamps

The flat bottom of these heaters provides a large surface area for excellent heat transfer. Great for use with hot plates, dies, and platens. Heaters have two screw terminals. CSA certified. Heaters should be used with a temperature control switch (see 3626K on page 604, 7079K on page 605, and 7981K on page 606). *Note:* Not for use where moisture is present.

Half-sheath heaters provide faster heat-up. *Full-sheath* heaters are impervious to dirt and are UL recognized.

For better surface contact, mount with the *optional mounting clamps*, sold separately below.

Disc heaters have a maximum heat output of 750° F. Heaters have an iron sheath and a center hole for mounting. Screw terminal size is 6-32 × 7/16″ high.

Ring heaters have a maximum heat output of 1200° F. Sheath is chrome steel. Screw terminal size is 10-32 × 9/16″ high.

Watts	Watts/ sq. in.	VAC (Phase)	Amps	OD	ID	Thick.		
Disc Heaters—Half Sheath								
200	11	120 (1)	1.7	3¼″	5/16″★	11/32″	3559K25	$45.53
400	21	120 (1)	3.3	3¼″	5/16″★	11/32″	3559K23	45.53
Disc Heaters—Full Sheath								
400	24	120 (1)	3.3	3¼″	13/64″★	5/16″	3559K24	47.51
400	24	240 (1)	1.7	3¼″	13/64″★	5/16″	3559K26	47.51
Ring Heaters—Full Sheath								
200	12	120 (1)	1.7	3″	7/8″	1/4″	3682K21	58.05
300	12	240 (1)	1.3	4″	1 11/16″	5/16″	3682K32	58.05
300	18	120 (1)	2.5	3″	7/8″	1/4″	3682K22	58.05
500	19	120 (1)	4.2	4″	1 11/16″	5/16″	3682K23	58.05
550	17	240 (1)	2.3	4 5/8″	2 1/4″	5/16″	3682K33	61.12
660	12	120 (1)	5.5	6 1/8″	3″	5/16″	3682K36	75.68
750	13	240 (1)	3.1	7 7/16″	5 5/16″	5/16″	3682K34	88.23
1,000	19	120 (1)	8.3	6 1/8″	3″	5/16″	3682K25	75.68
1,000	19	240 (1)	4.2	6 1/8″	3″	5/16″	3682K26	75.68
1,500	16	240 (1)	6.3	11″	8½″	5/16″	3682K35	126.39
1,800	19	120 (1)	15.0	11″	8½″	5/16″	3682K37	126.39
1,800	19	240 (1)	7.5	11″	8½″	5/16″	3682K31	126.39

Optional Mounting Clamp (4 recommended) 3682K45 12.23

★ Center mounting hole diameter.

Cartridge Heaters

Insert into a well or hole to transfer heat across metal surfaces. These heaters are insulated with magnesium oxide and encased in a Type 304 stainless steel sheath. All have 10″ wire leads. They're ideal for heating plates, molds, dies, and platens. Max. heat output is 1000° F; wire lead max. temperature is 400° F for 3/16″ and 1/4″ dia. heaters and 482° F for 3/8″ to 5/8″ dia. heaters. UL recognized and CSA certified. Heaters should be used with a temperature control switch (see 3626K on page 604, 7079K on page 605, and 7981K on page 606).

Cartridge Lg.	Watts	Amps		
120 VAC, Single Phase				
3/16″ (0.183″) Dia.				
1½″	20	0.2	3618K511	$23.57
2″	30	0.3	3618K122	23.17
3″	45	0.4	3618K514	28.94
4″	65	0.5	3618K123	32.56
5″	80	0.7	3618K518	36.39
1/4″ (0.245″) Dia.				
2″	32	0.3	3618K412	20.36
2½″	30	0.3	3618K413	22.71
4″	100	0.8	3618K416	26.39
6″	150	1.3	3618K419	33.33
3/8″ (0.370″) Dia.				
1½″	40	0.3	3618K311	19.99
2″	50	0.4	3618K312	21.01
2½″	75	0.6	3618K313	22.29
3″	100	0.8	3618K34	21.54
3½″	120	1.0	3618K35	25.63

Cartridge Lg.	Watts	Amps		
120 VAC, Single Phase (Cont.)				
3/8″ (0.370″) Dia. (Cont.)				
4″	130	1.1	3618K314	$25.87
4½″	150	1.3	3618K37	28.95
5″	200	1.7	3618K315	29.14
5½″	200	1.7	3618K38	30.77
6″	225	1.9	3618K39	31.88
1/2″ (0.494″) Dia.				
1½″	60	0.5	3618K21	20.50
2″	75	0.6	3618K22	21.52
2½″	125	1.0	3618K211	23.59
3″	150	1.3	3618K24	25.37
3½″	150	1.3	3618K25	27.17
4″	180	1.5	3618K26	29.21
4½″	200	1.7	3618K27	31.00
5″	200	1.7	3618K212	32.29
5½″	300	2.5	3618K28	33.42
6″	300	2.5	3618K29	34.91

Cartridge Lg.	Watts	Amps		
120 VAC, Single Phase (Cont.)				
5/8″ (0.620″) Dia.				
2″	100	0.8	3618K12	$24.34
2½″	150	1.3	3618K111	25.11
3″	175	1.5	3618K112	26.65
4″	200	1.7	3618K114	29.98
4½″	240	2.0	3618K115	31.72
5″	250	2.1	3618K116	32.50
6″	300	2.5	3618K118	35.69
240 VAC, Single Phase				
1/2″ (0.494″) Dia.				
3″	150	0.6	3618K908	25.37
4″	180	0.8	3618K911	29.21
6″	300	1.3	3618K914	31.01
5/8″ (0.620″) Dia.				
6″	300	1.3	3618K924	46.13

Easy-to-Insert High-Temperature Cartridge Heaters

A bonded-graphite coating greatly eases insertion and removal, and improves heat transfer. Heaters have an Incoloy sheath and 1-ft. wire leads. Max. heat output is 1600° F; wire lead max. temperature is 842° F. All operate on 120 VAC, single phase. UL recognized and CSA certified. Heaters should be used with a temperature control switch (see 3626K on page 604, 7079K on page 605, and 7981K on page 606).

Cartridge Lg.	Watts	Amps		
1/4″ (0.248″) Dia.				
1″	80	0.7	3614K34	$39.56
1½″	100	0.8	3614K35	39.89
2″	200	1.7	3614K36	39.98
3/8″ (0.371″) Dia.				
1″	100	0.8	3614K51	37.17
1½″	150	1.3	3614K52	36.98

Cartridge Lg.	Watts	Amps		
3/8″ (0.371″) Dia. (Cont.)				
2″	200	1.7	3614K531	$37.57
2½″	250	2.1	3614K541	39.24
3″	375	3.1	3614K551	41.31
4″	250	2.1	3614K571	45.83
4½″	450	3.8	3614K58	48.02
6″	600	5.0	3614K621	54.96

Cartridge Lg.	Watts	Amps		
1/2″ (0.496″) Dia.				
2″	300	2.5	3614K691	$39.89
6″	850	7.1	3614K781	59.19
5/8″ (0.621″) Dia.				
3″	500	4.2	3614K861	47.45
6″	1,000	8.3	3614K931	63.12

High-Temperature Cartridge Heaters

Tightly wound heating elements are insulated by magnesium oxide and condensed to produce a more durable heater with high heat output and resistance to impact and vibration. Heaters are protected by an Incoloy sheath and have 1-ft. wire leads. Max. heat output is 1600° F; wire lead max. temperature is 842° F. All are single phase, UL recognized, and CSA certified. Heaters should be used with a temperature control switch (see 3626K on page 604, 7079K on page 605, and 7981K on page 606). *Note:* To calculate amps, divide watts by volts.

Braided Lead Covering— Braid is stainless steel for added protection of wire leads.

Armored Lead Covering— For superior protection against abrasion. Armor is stainless steel.

To Order: Please specify 120 or 240 VAC (unless noted) and wattage (where applicable).

Cartridge Heater with Standard Lead Covering

Braided Lead Covering — *Armored Lead Covering*

Standard Lead Covering and Braided Lead Covering

Cart. Lg.	Available Watts	Standard		Braided	
1/4″ (0.248″) Dia.					
1″	80, 100	3618K291♣	$27.94	3618K398	$27.94
1½″	100, 150, 200	3618K292	31.29	3618K399	31.29
2″	125, 150, 200, 250	3618K293	31.49	3618K401	39.36
2½″	200, 250	3618K294	32.06	3618K402	40.10
3″	100, 200, 250, 300	3618K295	35.34	3618K403	44.15
3½″	300	3618K296	35.64	3618K404	44.58
4″	200, 265, 300	3618K297	40.27	3618K405	50.36
4½″	325	3618K298	40.29	3618K487	50.35
5″	350, 400	3618K299	40.55	3618K406	50.64
6″	300, 400, 450	3618K301	43.65	3618K407	54.57
7″	525, 600	3618K498	49.07	3618K499	61.31
7½″	525	3618K302	49.39	3618K488	61.79
8″	600	3618K303	50.74	3618K408	63.43
9½″	525	3618K501	52.27	3618K502	65.35
10″	750	3618K304	53.68	3618K409	67.06
5/16″ (0.310″) Dia.					
1″	80	3618K503	27.40	3618K504	34.26
1½″	100	3618K305	28.03	3618K417	35.03
2″	150	3618K505	28.97	3618K506	36.20
2½″	150, 200	3618K306	29.98	3618K418	36.21
3″	225	3618K507	32.15	3618K508	40.17
6″	450	3618K307	42.54	3618K489	53.20
3/8″ (0.371″) Dia.					
1″	100, 150	3618K351	28.11	3618K451	35.19
1½″	100, 150, 200, 250	3618K352	29.02	3618K452	36.34
2″	100, 200, 300, 400	3618K353	29.03	3618K453	36.39
2½″	200, 250, 400, 500	3618K354	26.57	3618K454	36.39
3″	200, 250, 375, 400	3618K355	29.27	3618K455	36.62
3½″	250, 300, 350, 500	3618K356	29.41	3618K456	36.78
4″	250, 300, 400, 500	3618K357	27.09	3618K457	37.08
4½″	300, 450, 500	3618K358	29.90	3618K458	50.05
5″	150, 300, 400, 500	3618K359	30.34	3618K459	37.94
5½″	550, 600, 1,000	3618K361	31.58	3618K461	39.43
6″	250, 400, 500, 600	3618K362	32.45	3618K462	40.59
7″	350, 400, 600, 1,000	3618K363	47.03	3618K463	56.56
7½″	600, 725, 1,000	3618K541	48.37	3618K542	60.42
8″	300, 500, 600, 900	3618K364	49.95	3618K464	62.42
3/8″ (0.371″) Dia. (Cont.)					
9½″	200, 600, 1,000	3618K365	$56.04	3618K491	$70.04
10″	600, 1,000	3618K366	58.29	3618K465	72.84
1/2″ (0.496″) Dia.					
1″	50, 150	3618K371	19.69	3618K466	24.62
1½″	150, 200	3618K372	25.65	3618K492	32.07
2″	200, 250, 300, 400	3618K373	26.15	3618K467	32.70
2½″	250, 300, 400, 500	3618K374	26.80	3618K468	33.50
3″	250, 300, 400, 500	3618K375	27.11	3618K469	33.90
3½″	250, 500	3618K376	27.76	3618K471	34.69
4″	300, 400, 500, 750	3618K377	28.01	3618K472	35.04
4½″	500, 650, 750	3618K378	40.13	3618K493	49.74
5″	200, 400, 500, 750	3618K379	41.40	3618K473	51.73
5½″	500, 750	3618K543	43.42	3618K544	54.30
6″	500, 750, 850, 1,000	3618K381	44.56	3618K474	55.72
7″	500, 600, 1,000	3618K382	51.29	3618K494	64.10
7½″	500, 1,000	3618K545	52.67	3618K546	65.87
8″	500, 750, 1,000	3618K383	54.44	3618K475	68.09
9½″	800, 1,000	3618K547	59.63	3618K548	74.56
10″	500, 1,000, 1,500	3618K384	61.00	3618K476	76.17
5/8″ (0.621″) Dia.					
2″	200, 250	3618K549	26.88	3618K551	33.61
2½″	275, 400	3618K385	27.57	3618K477	34.48
3″	250, 500, 750	3618K386	27.96	3618K478	34.95
4″	250, 500, 750	3618K387	29.00	3618K479	36.26
4½″	750	3618K552	29.47	3618K553	36.83
5″	500, 750, 1,000	3618K388	29.93	3618K481	37.42
6″	500, 750, 1,000, 1,500	3618K389	31.20	3618K482	36.71
8″	1,000, 1,200, 1,500	3618K554	56.07	3618K555	71.42
10″	800, 1,000, 1,500	3618K391	65.02	3618K483	81.24
3/4″ (0.746″) Dia.					
3″	500, 600	3618K392	36.94	3618K495	46.17
4″	500, 1,000	3618K393	37.71	3618K484	47.16
5″	500, 1,000	3618K556	42.43	3618K557	53.03
6″	1,000, 1,200, 2,000	3618K394	45.26	3618K485	60.42
7″	1,000, 1,500	3618K395	66.37	3618K496	82.95
8″	1,000, 2,000	3618K396	72.92	3618K497	91.10
10″	1,000, 2,000	3618K397	85.14	3618K486	104.67

Armored Lead Covering

Cart. Lg.	Available Watts		
1/4″ (0.248″) Dia.			
1″	80, 100	8222T11	$44.82
1½″	100, 150, 200	8222T12	45.07
2″	125, 150, 200, 250	8222T13	45.13
3″	100, 200, 250, 300	8222T15	48.64
4″	200, 265, 300	8222T16	52.34
6″	300, 400, 450	8222T17	59.91
3/8″ (0.371″) Dia.			
1″	100, 150	8222T19	42.95
3/8″ (0.371″) Dia. (Cont.)			
1½″	100, 150, 200, 250	8222T21	$42.82
2″	100, 200, 300, 400	8222T22	43.31
2½″	200, 250, 400, 500	8222T23	44.58
3″	200, 250, 375, 400	8222T24	46.22
4″	250, 300, 400, 500	8222T26	49.67
5″	300, 400, 500	8222T27	54.82
6″	250, 400, 500, 600	8222T28	56.70
10″	600, 1,000	8222T29	69.49
1/2″ (0.496″) Dia.			
2″	200, 250, 300, 400	8222T31	$45.07
2½″	250, 300, 400, 500	8222T32	46.70
3″	250, 300, 400, 500	8222T33	48.16
4″	300, 400, 500, 750	8222T34	52.10
5″	200, 400, 500, 750	8222T35	56.09
6″	500, 750, 850, 1,000	8222T36	59.91
8″	500, 750, 1,000	8222T37	67.30
10″	500, 1,000, 1,500	8222T38	73.00

♣ 80 watt is only available in 240 VAC.

Metric High-Temperature Cartridge Heaters

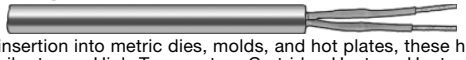

For insertion into metric dies, molds, and hot plates, these heaters are similar to our High-Temperature Cartridge Heaters. Heaters have an Incoloy sheath and 10″ wire leads for hardwiring. Max. heat output is 1600° F; wire lead max. temperature is 842° F. All are single phase. Use with a temp. control switch (see 3626K on page 604, 7079K on page 605, and 7981K on page 606). *Note:* To calculate amps, divide watts by volts. **To Order:** Please specify 120 or 240 VAC.

Dia.	Cart. Lg.	Watts @ 120/240 VAC		
6.5 mm	60 mm	250/250	8320T11	$57.44
8.0 mm	80 mm	500/500	8320T12	60.14
8.0 mm	100 mm	600/600	8320T14	64.88
10.0 mm	80 mm	600/600	8320T13	57.78
10.0 mm	130 mm	800/1,000	8320T24	70.06
10.0 mm	200 mm	800/1,200	8320T25	84.40
12.5 mm	100 mm	1,000/1,000	8320T15	75.72
12.5 mm	160 mm	1,150/1,300	8320T18	81.26
12.5 mm	200 mm	1,150/1,300	8320T21	90.90
16.0 mm	100 mm	1,000/1,000	8320T16	71.19
16.0 mm	200 mm	1,900/2,000	8320T22	96.76
20.0 mm	250 mm	2,000/2,000	8320T23	126.33

High-Temperature Cartridge Heaters with Internal Temperature Sensors

Monitor temperature right at the source of the heat. All have an internal Type K thermocouple and are ideal for precise temperature control in applications up to 1400° F. Thermocouple measures from 200° to 2300° F. Sheath is Incoloy. Wire leads are 14″ long and have a stainless steel braid. Wire lead max temp. is 480° F. Single phase, UL listed, and CSA certified. *Note:* To calculate amps, divide watts by volts. **To Order:** Please specify 120 or 240 VAC and wattage (where applicable) from choices listed.

Cart. Lg.	Available Watts		
1/4″ Dia.			
2½″	200	8440T11	$77.37
3″	200	8440T12	78.40
4″	200, 300	8440T13	82.50
6″	300, 400	8440T14	89.35
3/8″ Dia.			
3″	200, 400	8440T15	78.40
6″	400, 500	8440T16	87.92
3/8″ Dia. (Cont.)			
8″	600	8440T17	$103.54
1/2″ Dia.			
4″	500	8440T18	83.87
6″	500, 1,000	8440T19	90.71
8″	500, 1,000	8440T21	106.85
10″	500, 1,000	8440T22	113.69

Heat Exchangers

Also known as shell-and-tube heat exchangers because of their straight, internal tubes that exchange thermal energy with the liquid in the shell. For superior heat transfer and strength, tubes are baffled so liquid makes four passes through the tubes. Ideal for applications that require a low pressure drop across the exchanger. More forgiving with viscous fluids than brazed-plate exchangers. Suitable for water heating; oil, gas, and water cooling; and temperature control. Built-in mounting feet rotate 90° for easy installation. Tubes can be cleaned. Connections are NPT female. *Note:* Cooling capacity is based on cooling 180° F process water with 85° F water and a 10 psi pressure differential.

Steel Heat Exchangers— Recommended for cooling lube oil when brass can't be used and the corrosion resistance of stainless steel isn't necessary. All have a steel shell, copper tubes, and cast iron caps. Maximum working pressure is 300 psi shell side; 150 psi tube side. Maximum working temperature is 300° F.

Brass Heat Exchangers— These nonferrous heat exchangers have brass shell, copper tubes, and cast iron caps. They also have corrosion-inhibiting, renewable zinc rods. Recommended for use with fluids that are hard to heat and cool, such as oil. Maximum working pressure is 300 psi shell side; 150 psi tube side. Maximum working temperature is 300° F.

Stainless Steel Heat Exchangers— For heating and cooling deionized water and corrosive liquids. All parts that come in contact with fluids are made of Type 316 stainless steel. Maximum working pressure is 225 psi shell side; 150 psi tube side. Maximum working temp. is 450° F.

ⓘ For additional information about shell-and-tube heat exchangers, including additional dimensions, go to mcmaster.com and search for **3222KAC**.

Surface Area, sq. ft.	Cooling Capacity, Btu/hr.	Flow Capacity, gpm: Steel Shell	Brass Shell	Stainless Steel Shell	Tube	Pipe Size: Shell	Tube	Overall Size, Head Dia. x Lg.	Steel		Brass		Stainless Steel	
2.4	240,000	—	24	32	12	1″	¾″	4½″×10⅞″	—	—	34965K52	$506.71	35185K52	$909.46
4.3	270,000	22	24	32	12	1″	¾″	4½″×17⅛″	3222K53	$582.56	34965K53	543.92	35185K53	1,089.17
7.3	330,000	30	24	32	12	1″	¾″	4½″×27⅛″	3222K54	624.90	34965K54	594.93	35185K54	1,271.59
9.1	525,000	32	60	76	30	1½″	1″	6¾″×18 13/16″	3222K55	858.66	34965K55	1,007.65	35185K55	1,729.06
15.7	700,000	43	60	76	30	1½″	1″	6¾″×28 13/16″	3222K56	938.83	34965K56	1,076.06	35185K56	1,742.17
23.0	1,350,000	51	73	126	57	2″	1½″	7¾″×29⅛″	3222K57	1,156.48	34965K57	1,300.76	35185K57	2,334.79
34.0	1,600,000	103	73	126	57	2″	1½″	7¾″×41⅛″	3222K58	1,245.21	34965K58	1,451.56	35185K58	2,509.85
41.0	2,400,000	103	140	220	105	3″	2″	10½″×30⅝″	3222K59	1,794.07	34965K59	1,894.97	35185K59	3,334.91
62.0	2,750,000	103	140	220	105	3″	2″	10½″×42⅝″	3222K61	1,811.78	34965K61	2,342.50	35185K61	3,974.10

Heavy Duty Heat Exchangers

Standard

Consisting of a steel shell with copper tubes and cast iron caps, these heat exchangers have a heavy duty, two-pass U-tube configuration for excellent heat transfer. Ideal for using steam to heat water or other liquids. The internal U-tubes expand slightly when used with steam, unlike our other heat exchangers, which have a fixed mechanical design. Connections are NPT female.

Standard exchangers have a maximum working pressure of 100 psi and a maximum working temperature of 400° F. ***ASME-code*** exchangers have a maximum working pressure of 150 psi and a maximum working temperature of 375° F.

Note: Cooling capacity is based on changing water temp. from 60° to 120° F using 15 psi of steam.

Surface Area, sq. ft.	Cooling Cap., Btu/hr.	Flow Cap., gpm	Pipe Size: Shell Inlet/Outlet	Tube	Overall Size, Head Dia. x Lg.	Heat Exchangers		Repl. U-Tube	
Standard									
15.0	Not Rated	38	2½″/1¼″	1¼″	6 13/16″×28⅝″	3586K31	$2,037.79	3586K51	$1,597.81
21.5	Not Rated	100	4″ Flange/1½″	2″	10¾″ ×27¾″	3586K32	2,874.32	3586K52	2,155.74
30.2	Not Rated	100	4″ Flange/1½″	2″	10¾″ ×39¾″	3586K33	3,245.09	3586K53	2,433.85
38.8	Not Rated	100	4″ Flange/1½″	2″	10¾″ ×51¾″	3586K34	3,566.81	3586K54	2,675.11
72.4	Not Rated	180	6″ Flange/2″	2½″	14″ ×53″	3586K35	5,179.94	3586K55	4,216.25
ASME Code									
4.5	150,000	5	2″/1″	1½″	7¼″ ×28⅜″	3586K41	1,258.92	3586K411	781.60
6.8	420,000	14	2″/1″	1½″	7¼″ ×40⅜″	3586K42	1,327.40	3586K421	819.01
9.2	720,000	24	3″/1″	1½″	7¼″ ×52⅜″	3586K43	1,365.23	3586K431	854.96
17.4	1,350,000	45	2½″/1″	2″	10½″ ×53¼″	3586K44	2,074.88	3586K441	1,340.41

Miniature Heat Exchangers

Their small size makes these heat exchangers good for use in areas with space constraints. The Type 316 stainless steel tube and shell offer excellent corrosion resistance. Ideal for high pressure condensing, evaporating, and heating and cooling applications. Maximum working pressure is 1,000 psi shell side; 1,500 psi tube side. Maximum working pressure for steam is 125 psi. Maximum working temperature is 800° F. Connections are NPT female.

Note: Cooling capacity is based on cooling 180° F process water with 85° F water and a 10 psi difference.

Surface Area, sq. ft.	Cooling Capacity, Btu/hr.	Flow Capacity, gpm: Shell	Tube	Pipe Size: Shell	Tube	Overall Size, Head Dia. x Lg.		
0.4	53,400	4.7	11.2	¼″	⅜″	1⅛″× 9¾″	3771K14	$1,269.86
0.58	78,200	4.8	10	¼″	⅜″	1⅛″× 9¾″	3771K11	1,269.86
0.61	65,600	4.3	9.6	¼″	⅜″	1⅛″×13¾″	3771K15	1,350.68
0.81	76,100	4.1	8.4	¼″	⅜″	1⅛″×17¾″	3771K16	1,432.88
0.89	92,500	4.4	8.7	¼″	⅜″	1⅛″×13¾″	3771K12	1,350.68
1.19	101,500	4.2	7.5	¼″	⅜″	1⅛″×17¾″	3771K13	1,432.88

ASME-Code Expandable Heat Exchangers

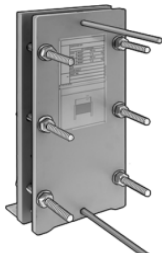

Add or remove corrugated plates from these heat exchangers to expand or reduce cooling capacity by changing the surface area. Plates are not welded or brazed together—they are held together by threaded rod and separated and sealed by Buna-N gaskets for easy cleaning and servicing. Extra plates are sold separately. Outer cover is steel. Exchangers meet the American Society of Mechanical Engineers (ASME) pressure vessel U-1 code stamp for overpressurization. They are also certified to the Air Conditioning and Refrigeration Institute (ARI) Standard 400. Plates are made of Type 316 stainless steel for superior corrosion resistance. Max. working pressure is 150 psi. Max. working temperature is 248° F. Connections are NPT female.

Note: Cooling capacity is based on cooling 100° F water to 90° F using 85° F water with 10 psi pressure drop.

Surface Area, sq. ft.★	Cooling Capacity★	Flow Cap., gpm★	Plates Included	Max. Plates	Pipe Size	Overall Size, Lg. x Wd. x Ht.★	Heat Exchangers		Extra Plate	
5.6	12,000 Btu/hr.	2.5	15	21	1″	12″ × 8½″×19″	8601T31	$1,814.76	8601T91	$28.69
8.2	24,000 Btu/hr.	5	21	40	1″	12″ × 8½″×19″	8601T32	2,026.73	8601T91	28.69
13.4	36,000 Btu/hr.	7.5	33	40	1″	15¼″× 8½″×19″	8601T33	2,090.24	8601T91	28.69
17.7	48,000 Btu/hr.	10	43	78	1″	21¾″× 8½″×19″	8601T34	2,361.60	8601T91	28.69
14.5	60,000 Btu/hr.	12.5	11	39	2″	15¾″×12⅛″×34″	8601T41	2,550.37	8601T92	60.92
24.2	120,000 Btu/hr.	25	17	39	2″	15¾″×12⅛″×34″	8601T42	2,833.53	8601T92	60.92
33.9	180,000 Btu/hr.	37.5	23	39	2″	15¾″×12⅛″×34″	8601T43	3,118.65	8601T92	60.92

★ Values are for exchangers with the included number of plates installed. Values will vary if plates are added or removed.

Space-Saving High-Efficiency Heat Exchangers

Also known as brazed-plate exchangers, these are more compact with more efficient heat transfer than shell-and-tube heat exchangers. Their corrugated plates are brazed in a vacuum furnace to ensure 100% sealed construction. Channels within the exchangers allow efficient heat transfer.

Standard exchangers have a max. working temp. of 350° F. All have four 3/8″-16×1″ mounting studs, except for 35115K61, which has two 1/4″-20×3/4″ mounting studs; and 35115K66-*K67* and 3253K21, which have four 1/2″-13×1 1/2″ mounting studs. Connections are NPT male. *Copper-brazed* units have a max. working pressure of 450 psi. Plates are Type 316 stainless steel. UL listed. *Nickel-brazed* units have a max. working pressure of 300 psi. Plates are marine-alloy stainless steel.

ASME-code exchangers meet the American Society of Mechanical Engineers (ASME) pressure vessel code for overpressurization; they have a U-1 code stamp. Two tabs on the frame with mounting holes provide easy installation (3/4″ units have 9/32″ dia. mounting holes, 1″ units have 13/32″ dia. holes, and 2″ units have 1/2″ dia. mounting holes). Plates are Type 316 stainless steel. Max. working pressure is 435 psi; max. working temp. is 450° F. Connections are NPT male, except for *water-only* units, which have 1″ NPT male connections on the water side and 7/8″ male sweat connections on the cooling-fluid side.

Standard

Standard

Surface Area, sq. ft.	Cooling Cap., Btu/hr.▲	Flow Cap., gpm	Pipe Size	O'all Size, Ht.×Wd.×Dp.		
Copper Brazed—*For water, glycol, and oils*						
2.0	58,400	8	3/4″	7 13/16″×3 5/16″×2 11/16″	35115K61	$207.67
3.1	78,300	6	1″	12 3/16″×4 7/8″×2 9/16″	35115K62	289.33
6.9	153,600	14	1″	12 3/16″×4 7/8″×3 1/2″	35115K63	422.10
14.6	287,400	28	1″	12 3/16″×4 7/8″×5 3/8″	35115K64	575.48
22.2	406,400	40	1 1/4″	12 3/16″×4 7/8″×7 3/8″	35115K65	809.71
36.8	743,400	76	2″	20 5/16″×9 13/16″×4 15/16″	35115K66	1,723.64
63.0	1,239,000	121	2″	20 5/16″×9 13/16″×6 13/16″	35115K67	2,150.91
Nickel Brazed—*For ground water, sea water, steam, oils, and solvents*						
3.1	22,122	7	1″	12 3/16″×4 15/16″×2 7/16″	3253K11	805.67
6.9	43,630	14	1″	12 3/16″×4 15/16″×3 1/4″	3253K12	1,111.09
10.7	61,451	20	1″	12 3/16″×4 15/16″×4 3/16″	3253K13	1,456.64
14.6	82,959	27	1″	12 3/16″×4 15/16″×4 15/16″	3253K14	1,949.18
36.8	212,007	69	2″	20 5/16″×9 13/16″×4 15/16″	3253K21	3,072.72

▲ For copper-brazed exchangers, cooling capacity is based on chilling water from 120° to 100° F using 70° F water. For nickel-brazed, it is based on chilling oil from 140° to 120° F using 70° F water.

ASME Code

Surface Area, sq. ft.	Cooling Cap., Btu/hr.♣	Flow Cap., gpm	Pipe Size	O'all Size, Ht.×Wd.×Dp.		
Copper Brazed—*For water, glycol, and oils*						
5.7	5,090	23	3/4″	8 3/16″×3 1/16″×4 9/16″	8546T11	$403.59
8.4	12,725	24	1″	12 3/16″×4 3/8″×4 3/16″	8546T12	439.33
11.2	17,815	32	1″	12 3/16″×4 3/8″×5 1/8″	8546T13	519.20
16.7	50,900	18	1″	20 11/16″×4 3/8″×4 3/16″	8546T14	601.18
27.9	76,350	27	1″	20 11/16″×4 3/8″×6 1/16″	8546T15	755.33
32.0	127,250	50	2″	24 5/16″×7 1/2″×5 11/16″	8546T16	1,046.85
85.5	381,750	126	2″	24 5/16″×7 1/2″×10 15/16″	8546T17	1,837.45
Copper Brazed—*For water only*						
2.2	6,000	8	1″	12 3/16″×4 3/8″×2 5/16″	8546T21	283.78
3.3	12,000	11	1″	12 3/16″×4 3/8″×2 11/16″	8546T22	317.41
8.9	30,000	28	1″	12 3/16″×4 3/8″×4 9/16″	8546T23	475.06
14.5	60,000	16	1″	20 11/16″×4 3/8″×4″	8546T24	499.52
22.3	90,000	24	1″	20 11/16″×4 3/8″×5 5/16″	8546T25	636.18

♣ For 8546T11-T17, cooling capacity is based on chilling 100 SSU oil to 125° F using 85° F water. For 8546T21-T25, it is based on chilling water from 54° to 44° F using R22 refrigerant at 35° F.

Flat-Panel Open-Tank Heat Exchangers

Provide fast heating and cooling of liquids in open tanks. Tube passageways are embossed into both sides of the panel for smooth flow of steam and hot or cold fluids. Pipe connections are NPT male and located above the liquid level for easy removal without emptying the tank. Flow capacity is 18 gpm. Cooling capacity is not rated.

Steel heat exchangers have a max. working pressure of 300 psi and a max. working temperature of 500° F. ***Type 316L stainless steel*** heat exchangers have a max. working pressure of 250 psi and a max. working temperature of 406° F.

Exchangers *for steam heating* have a multizone coil configuration, which delivers steam simultaneously to all levels of the heater from top to bottom. Exchangers *for liquid heating and cooling* have a serpentine coil configuration.

Optional ***hanger hooks*** hang over tank edge to support heaters (use one pair per heater).

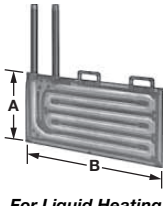

For Liquid Heating and Cooling

Surface Area, sq. ft.	Ht. (A)	Lg. (B)	Pipe Size Inlet	Pipe Size Outlet	Steel	Steel Each	Type 316L Stainless Steel	Type 316L Stainless Steel Each
For Steam Heating								
4.3	12″	23″	1″	3/4″	3603K111	$542.18	3603K541	$1,020.47
6.5	12″	35″	1″	3/4″	—	—	3603K561	1,197.74
6.8	18″	23″	1″	3/4″	3603K11	616.63	3603K31	1,250.39
8.0	22″	23″	1″	3/4″	3603K21	647.18	3603K41	1,283.33
10.1	22″	29″	1″	3/4″	3603K22	727.37	—	—
12.2	22″	35″	1″	3/4″	3603K23	889.09	3603K43	1,653.54
16.4	22″	47″	1″	3/4″	3603K24	924.79	3603K44	1,935.82
20.6	22″	59″	1 1/2″	3/4″	3603K25	1,087.70	—	—
24.8	22″	71″	1 1/2″	3/4″	3603K26	1,125.38	—	—
For Liquid Heating and Cooling								
4.3	12″	23″	3/4″	3/4″	3603K112	542.18	3603K542	1,020.47
5.4	12″	29″	3/4″	3/4″	3603K212	639.54	3603K552	1,162.20
6.5	12″	35″	3/4″	3/4″	—	—	3603K562	1,197.74
10.1	22″	29″	3/4″	3/4″	3603K282	754.09	—	—
12.2	22″	35″	3/4″	3/4″	3603K292	889.09	3603K722	1,567.16
16.4	22″	47″	3/4″	3/4″	—	—	3603K732	1,932.94

Steel Hanger Hooks	3603K61	Pair	$94.28
Stainless Steel Hanger Hooks	3603K62	Pair	$136.73

Dura-Last Heat Exchangers

For durability and long life, these brazed-plate heat exchangers are made of welded Type 316L stainless steel. They are more compact than shell-and-tube exchangers and offer better corrosion resistance and higher working temperatures than the other brazed-plate exchangers we offer. Use in liquid/liquid, gas/liquid, steam/liquid, gas/gas, and refrigerant applications. Cooling cap. is not rated. Max. working pressure is 150 psi. Max. working temp. is 500° F. Connections are NPT male. *Note:* Connections are on the ends, except for 35095K61, which has them on the top.

35095K63-K67

Surface Area, sq. ft.	Flow Cap., gpm	Pipe Size	O'all Size Lg.	O'all Size Wd.	O'all Size Ht.		
3	23	3/4″	12″	4″	1 3/4″	35095K61	$1,711.67
5	37	1″	16″	4″	2 1/2″	35095K63	2,283.87
7	47	1″	16″	4″	3 1/4″	35095K65	2,703.08
12	74	1 1/4″	16″	4″	5 1/8″	35095K67	4,025.37

Wrap-Around Drum Heat Exchangers

Flow hot water, oil, or steam through these coils to heat the contents of your 55-gallon drums. Cool using cold water or refrigerant. They wrap around the outside of the drum (up to 22 3/4″ dia.) and clamp for a snug fit. Made of steel. Surface area is 4.13 sq. ft./section. Cooling and flow cap. are not rated. Max. working pressure is 150 psi. Those *with hose assembly* have a max. working temp. of 380° F. Those *without hose assembly* have a max. working temp. of 500° F. ***Single-section units*** are 8 1/2″ high. Inlet and outlet connections are 1/2″ NPS (male for heaters *with hose assembly*; female for heaters *without hose assembly*). ***Three-section units*** are 32 1/4″ high. Inlet and outlet connections are 1/2″ NPT female.

Three Sections with Hose Assembly

	w/Hose Assembly		w/out Hose Assembly	
Single-Section Unit	3550K12	$1,237.40	3550K11	$952.06
Three-Section Unit	3550K19	3,101.62	3550K18	2,926.88

Portable Sampling Heat Exchangers

Test high-temperature liquid samples by first cooling them to safe levels. Sample liquid enters the steel shell and flows through a series of coiled tubes. Cold water from an external water supply flows around the tubes, reducing the temperature of the liquid so it can be drawn and safely tested. Cooling and flow capacities are not rated. Connections are NPT.

Surface Area, sq. ft.	Max. psi Shell	Max. psi Tube	Max. Temp. Shell	Max. Temp. Tube	Pipe Size Shell	Pipe Size Tube	Head Dia.	O'all Lg.	Copper		Stainless Steel	
1.30	150	300	200° F	421° F	1/4″ Female	1/4″ Female	3 1/2″	17 1/4″	3613K31	$395.00	3613K41★	$617.65
1.64	250	300	650° F	400° F	1/2″ Female	1/4″ Male	7″	19″	3613K26	355.00	3613K22●	454.00
3.80	150	5,000	200° F	1000° F	3/8″ Female	1/4″ Female	5″	34″	—	—	3613K61	885.80

★ Max. tube psi is 1,200; max. tube temp. is 1000° F. ● Max. tube psi is 900; max. tube temp. is 750° F.

3613K26 and 3613K22

Fan-Cooled Heat Sinks

A built-in fan directs hot air away from the heat sink to efficiently cool any liquid running through the tubes. The heat sinks also have flanges with 13/64″ wide slots for mounting to a frame or cabinet (fasteners included). Fans operate on 115 VAC, single phase and include a 24-26″ power cord with two-prong plug. They're UL recognized and CSA certified. For maximum heat transfer, the exchanger tubes (copper as well as stainless steel) are formed into copper cooling fins. Maximum working pressure is 150 psi. Maximum working temperature is 400° F.

Copper Tubes—For use with water.

Type 316L Stainless Steel Tubes—For use with corrosive as well as high-purity solutions, such as deionized water.

To Order: Please specify tube ends: plain or with a 37° flared fitting.

Cooling Cap., Btu/Hr. at 2 gpm	Flow Cap., gpm	Tube OD	No. of Fans	w/Copper Tubes Overall Size,■ Ht. × Wd. × Dp.		w/Type 316L Stainless Steel Tubes Overall Size,■ Ht. × Wd. × Dp.	
1,024	2	3/8″	1	6 5/8″ × 5 13/16″ × 2 13/16″	35145K71 ... $217.92	6 5/8″ × 5 13/16″ × 2 13/16″	35145K81 ... $382.61
1,365	2	3/8″	1	5 13/16″ × 5 13/16″ × 3 5/16″	35145K72 ... 217.92	5 13/16″ × 4 7/8″ × 3 3/8″	35145K82 ... 518.50
2,730	2	3/8″	2	5 13/16″ × 10 1/2″ × 3 5/16″	35145K73 ... 329.22	5 13/16″ × 9 11/16″ × 3 3/8″	35145K83 ... 686.38
4,095	2	3/8″	1	9″ × 9 1/2″ × 4 1/2″	35145K74 ... 388.42	9″ × 8″ × 4 1/2″	35145K84 ... 770.80
6,000	4	1/2″	1	12″ × 11 1/2″ × 5 5/8″	35145K46 ... 509.01	12″ × 10″ × 6″	35145K36 ... 1,222.09
6,996	2	3/8″	2	9″ × 17 5/8″ × 4 1/2″	35145K75 ... 605.61	9″ × 16 1/16″ × 4 1/2″	35145K85 ... 1,089.01
9,400	4	1/2″	2	12″ × 21 5/8″ × 5 5/8″	35145K47 ... 843.55	12″ × 20 1/16″ × 6″	35145K37 ... 1,610.32

■ Overall size does not include tube ends.

Fan-Cooled Heat Sinks w/Internal Pump

A built-in pump and internal reservoir ensure a consistent flow of cooled fluid, while a high-efficiency, fan-cooled copper heat exchanger dissipates unwanted heat without using refrigerant. The entire unit is self-contained in a cabinet housing for quiet operation and to keep out debris. Ideal for liquid-to-air cooling of water and other noncorrosive fluids in applications where precise temperature control is not required. All operate on 115 VAC, single phase and include a 7 1/2-ft. power cord with three-prong plug. Pumps have a high-output positive-displacement pump and a max. pressure of 60 psi, unless noted. Max. working temperature is 131° F. Connections are NPT female.

Cooling Capacity, Btu/Hr.▲	Flow Cap., gpm	Pipe Size	Overall Size, Ht. × Wd. × Dp.		
4,450	2.5	1/2″	13 5/16″ × 17 5/16″ × 15 1/8″	35205K13★	$2,198.54
8,200	4	1/2″	24″ × 15″ × 15″	35205K15	2,403.69
12,000	4	1/2″	24″ × 15″ × 15″	35205K16	2,513.54

▲ Cooling capacity based on water with an initial temp. differential of 77° F. ★ Has a centrifugal pump and max. pressure of 15 psi.

High-Capacity Fan-Cooled Heat Sinks

More surface area and larger fans give these heat sinks more cooling capacity than the fan-cooled heat sinks on this page. Use to cool hydraulic and lubricating oils in air compressors and hydraulic cylinders without the expense and space requirements of a cooling tower. Heat sinks have a rugged, brazed aluminum bar and plate construction with louvered fins for excellent heat transfer. The fan operates on 208-230/460 VAC, three phase and includes a junction box for hardwiring. Max. working pressure is 250 psi. Max. working temp. is 250° F. 3579K15 and *K16* have a 2″ four-bolt SAE flange connection.

Cooling Cap., Btu/Hr.	Flow Cap., gpm	Pipe Size	Overall Size, Ht. × Wd. × Dp.		
17,640	50	1 5/16″ SAE	12 7/16″ × 15 3/4″ × 14 3/4″	3579K11	$1,200.94
46,140	50	1 5/16″ SAE	16 1/4″ × 19 7/8″ × 15 5/8″	3579K12	1,438.16
75,900	80	1 5/8″ SAE	20 5/8″ × 26 3/8″ × 17 3/4″	3579K13	2,021.84
102,900	80	1 5/8″ SAE	22 7/16″ × 30 5/16″ × 18 3/4″	3579K14	2,194.20
196,560	200	2″ Flange	28 1/4″ × 37″ × 22 5/8″	3579K15	3,044.22
314,460	200	2″ Flange	37 7/16″ × 40 15/16″ × 24 3/4″	3579K16	5,065.97

Radiator-Style Heat Sinks

Dozens of heat-dissipating aluminum fins and copper coolant tubes quickly transfer unwanted heat to the atmosphere. Designed for cooling oil, these heat sinks are not to be used with water. Max. working pressure is 300 psi. Max. working temperature is 350° F. Connections are NPT female.

Cooling and flow capacities are based on 50 SSU oil, 1,000 feet per minute of air, 50° F initial temperature difference, and 10 psi pressure drop.

Mounting kits (sold separately) are recommended for installation. They include two each of the following: rubber blocks, carriage bolts, nuts, flat washers, and locknut washers.

Cooling Cap., Btu/Hr.	Flow Cap., gpm	Pipe Size	Overall Size, Ht. × Wd. × Dp.	Mounting Kits Needed		
3,400	7	1/2″	4 1/2″ × 15″ × 1 1/2″	2	3525K11	$124.44
6,100	9	1/2″	6 1/2″ × 18″ × 1 1/2″	4	3525K21	153.33
8,000	7	1/2″	6 1/2″ × 24″ × 1 1/2″	4	3525K12	161.47
9,700	11	1/2″	8 1/2″ × 21″ × 1 1/2″	4	3525K13	181.11
11,000	9	3/4″	12 3/4″ × 18″ × 1 1/2″	4	3525K14	235.56
24,000	22	3/4″	18 3/4″ × 24″ × 1 1/2″	6	3525K25	354.44
31,000	28	1″	25″ × 24″ × 1 1/2″	8	3525K26	444.44
49,000	30	1″	31″ × 30″ × 1 1/2″	8	3525K27	642.22
57,000	36	1 1/4″	37 7/16″ × 30″ × 1 1/2″	8	3525K28	721.11
Mounting Kit					3525K41	19.40

Strap-On Heat Sinks for Pipes

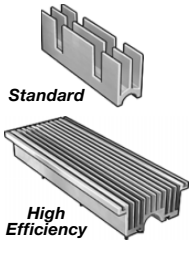

Cool fluids without breaking into your pipeline. Simply clamp these aluminum heat sinks to your existing pipe and their fins provide plenty of surface area to transfer heat from your process to the atmosphere.

Standard heat sinks have three fins and two 5/8″ slots for pipe clamps (not included).

High-efficiency heat sinks have more surface area due to their 11 densely spaced fins. They also have slots in the frame that accept 8-32 button head screws for attaching a fan (not included). They include straps for mounting to the pipe and thermal grease for improved heat transfer.

For Pipe Size	For Pipe OD	Fin Ht.	O'all Lg.	O'all Wd.		
Standard						
1/2″	0.84″	1 1/2″	6″	1 3/8″	8717T13	$35.10
3/4″	1.05″	1 3/4″	6″	1 9/16″	8717T15	37.47
1″	1.31″	2″	6″	1 15/16″	8717T17	41.00
High Efficiency						
1/2″	0.84″	1″-1 1/2″●	6″	4 3/4″	8774T31	116.50
1/2″	0.84″	1″-1 1/2″●	12″	4 3/4″	8774T32	145.62
3/4″	1.05″	1″-1 1/2″●	6″	4 3/4″	8774T33	116.50
3/4″	1.05″	1″-1 1/2″●	12″	4 3/4″	8774T34	145.62
1″	1.32″	1″-1 1/2″●	6″	4 3/4″	8774T35	116.50
1″	1.32″	1″-1 1/2″●	12″	4 3/4″	8774T36	145.62

● Has five 1″ fins and six 1 1/2″ fins.

Flat-Surface Heat Sinks

Standard Pin Style

Cool flat metal surfaces and liquid processes with these easy-to-use black-anodized aluminum heat sinks. They can also be used to cool electrical panels and components. Use the included thermal tape to mount. ***High-efficiency fin-style*** sinks have more surface area to dissipate heat more efficiently.

	Overall Size, Lg. × Wd. × Ht.	No. of Pins/Fins		
Standard Pin Style	1″ × 1″ × 3/8″	49 Pins	8822T11	$6.60
Standard Pin Style	1 5/8″ × 1 5/8″ × 1/4″	225 Pins	8822T12	7.76
High-Efficiency Fin Style	1 9/16″ × 2 1/4″ × 5/16″	15 Fins	8822T14	21.36
High-Efficiency Fin Style	2″ × 2 5/8″ × 5/16″	34 Fins	8822T13	10.48

Heat-Transfer Fluids

With an added corrosion inhibitor, these fluids are perfect for both heating and cooling applications in heat exchangers. Containers are five gallons each. Temperature ranges are for closed systems only.

Type	Temp. Range (°F)		
Propylene Glycol	–20° to +250°	8673T21	$170.34
Ethylene Glycol	–40° to +250°	8673T22	160.32

Cold Plates

Air-cooled heat sinks don't always do the trick—that's why we offer these cold plates that use cold liquid to provide contact cooling. All have U-shaped tubes (see table for material) that pass through a thermally conductive aluminum plate. Connect them to process chillers and liquid-to-air cooling systems for a continuously cooled surface. The plates can be drilled or tapped for easy mounting. Maximum temperature is 392° F.

Cold plates ***with copper tubes*** are recommended for use with water. Cold plates ***with Type 316 stainless steel tubes*** are for use with corrosive as well as high-purity fluids, such as deionized water.

Tube Material	Max. psi	Tube OD	Plate Size, Lg. × Wd. × Thick.			Tube Material	Max. psi	Tube OD	Plate Size, Lg. × Wd. × Thick.		
Copper	150	3/8"	6" × 3 1/2" × 1/2"	35035K32	$58.95	Stainless Steel	200	3/8"	6" × 3 1/2" × 1/2"	35035K36	$88.42
Copper	150	3/8"	12" × 3 1/2" × 1/2"	35035K42	73.68	Stainless Steel	200	3/8"	12" × 3 1/2" × 1/2"	35035K46	108.68

About Liquid Chillers

Using refrigerant, liquid chillers provide constant, uniform cooling to temperature-sensitive equipment such as spot-welding systems, molds, lasers, X-ray diffraction equipment, and water jackets. The chillers we offer are designed to cool either water or water mixed with ethylene or glycol. They can be used for cooling metalworking coolants or fluids.

To select a liquid chiller, you need to determine the amount of heat (referred to as heat load) you need to remove from your process to maintain the required temperature. Heat load is typically expressed in Btu/Hr. Use the following formula to determine your heat load (Btu/Hr.):

$$\textit{Btu/Hr.} = \textit{gph} \times \textit{Wt.} \times \textit{SH} \times \Delta T\ °F$$

gph = Flow rate of liquid being cooled
Wt. = Weight of cooling liquid per gallon
SH = Specific heat of cooling liquid
ΔT °F = Difference between cooling liquid inlet and outlet temperature

For example: Let's say you need to cool water that's flowing at a rate of 120 gallons per hour ***(gph)***. Water has a weight ***(Wt.)*** of 8.34 lbs. per gallon and a specific heat ***(SH)*** of 1. You've determined the difference in temperature ***(ΔT °F)*** between the inlet (supply) liquid and the outlet (return) liquid is 6° F. Now let's plug all of this information into the formula: ***gph (120) × Wt. (8.34) × (SH)1 × ΔT °F (6) = Btu/Hr. (6,005).*** You will need to select a liquid chiller with at least 6,005 Btu/Hr. to remove heat from your process.

High-Flow Circulating Process Chillers

11,360 Btu/Hr.

These self-contained chillers are equipped with a heavy duty pump to achieve higher flow rates than our other chillers. Cooling liquid temperature is adjustable and thermostatically controlled from 50° to 90° F. They cool water mixed with a maximum of 50% inhibited ethylene or propylene glycol. All chillers have an air-cooled condenser, electrical controls with shut-off switch, and a liquid-level sight glass. Connect them to coolant lines and a power source to get them up and running. For indoor use only.

Chillers rated 5,040 and 11,360 Btu/Hr. contain R134A refrigerant and have casters and NPT female connections. These units have an internal tank made of Type 304 stainless steel and can cool plain water. They also include a 6-ft. power cord with a NEMA 5-20 plug (see page 787 for illustrations). Chillers rated 24,000 Btu/Hr. and up contain R407C refrigerant and have an internal tank made of high-density polypropylene. They have screw terminals for hardwiring, NPT female connections, a cleanable air-intake filter, and a manual bypass valve to adjust flow. These units cannot be used to cool plain water.

Btu/Hr. ♦	VAC (Phase)	Amps	Compressor hp	Tank Size, gal.	Pump Cap., gpm @ psi	*Pipe Size* Inlet	*Pipe Size* Outlet	Overall Size, Ht. × Wd. × Dp.		
5,040	115 (1)	20	1/2	5	4 @ 50	1/2"	1/2"	27" × 21" × 22"	3531K11	$4,265.07
11,360	230 (1)	14	1	10	4 @ 50	1/2"	1/2"	32" × 26" × 29"	3531K12	5,137.61
24,000	230 (1)	21	2	10	10 @ 35	1"	1"	50" × 28" × 31"	3531K21	7,413.59
24,000	230 (3)	20	2	10	10 @ 35	1"	1"	50" × 28" × 31"	3531K22	7,943.03
36,000	460 (3)	13	3	36	9 @ 45	1 1/4"	1 1/4"	70" × 34" × 37"	3531K23	8,927.96
60,000	460 (3)	17.5	5	36	15 @ 43	1 1/4"	1 1/4"	70" × 34" × 37"	3531K24	10,421.25

♦ Rated at 65° F liquid temperature; 90° F ambient temp.

Low-Temperature Circulating and Open-Loop Process Chillers

6,000-12,000 Btu/Hr.

For extra-cool applications, these compact and efficient chillers offer temperature control from 30° to 100° F. They cool water or water mixed with a maximum of 30% inhibited ethylene or propylene glycol. Ideal for applications where a fan cannot be used to cool, such as lasers. All have an air-cooled condenser and a low-pressure safety control (unless noted). Chillers rated 20,000 Btu/Hr. and up also have a high-pressure safety control and a relief valve that ensures pump will not "dead head" if flow is restricted (in other words, the pump will continue to pump). Choose from closed-circulating and open-loop types. Connections are NPT female. For indoor use only. All have screw terminals for hardwiring, unless noted. Chillers contain 134A refrigerant.

Circulating liquid chillers have an internal tank (except for the 3,000 Btu/Hr. model, which has an external tank on the back) and are for closed-loop cooling of liquids in process equipment. ***Open-loop liquid chillers*** are perfect for cooling liquids in a process bath, coolant spray system, or an external tank. Furnished without a tank.

Btu/Hr.♣	VAC (Phase)	Amps	Compressor hp	Pump Cap., gpm @ psi	Pipe Size	Overall Size, Ht. × Wd. × Dp.	*Circulating Liquid Chillers* Tank Size, gal.			*Open-Loop Liquid Chillers*	
3,000	115 (1)	6.4	1/4	2 @ 8	1/2"	13" × 14" × 17"	1/2	3538K65▲	$2,970.59	—	—
6,000	115 (1)	12.5	1/2	2 @ 8	1/2"	28" × 15" × 17"	2	3538K66	3,614.71	35045K56♥	$3,505.88
9,000	115 (1)	17	3/4	3 @ 10	3/4"	30" × 18" × 25"	5	3538K67	4,379.71	35045K57	4,336.23
12,000	230 (1)	10	1	3 @ 10	3/4"	30" × 18" × 25"	5	3538K68	4,950.00	35045K58	4,872.20
20,000	230 (3)	10	1 1/2	10 @ 35	3/4"	41" × 28" × 28"	10	3538K75	8,010.67	35045K81	7,752.00
24,000	230 (3)	14	2	12 @ 50	3/4"	41" × 28" × 28"	10	3538K79	8,093.51	35045K82	7,815.58

♣ Rated at 68° F liquid temp.; 80° F ambient temp. ▲ Includes 10-ft. power cord with standard three-prong plug. No low-pressure safety control. Can be used in circulating and open-loop applications. ♥ Pump capacity is 3 gpm @ 10 psi.

Precision Circulating Process Chillers

Using refrigerant and internal heaters, these chillers maintain an accurate and precise temperature between 14° and 158° F. Ideal for cooling water or ethylene glycol. An LED display shows temperature, pressure, and flow and lets you manage them for precise control of your process. All have a 6-ft. power cord and a 1.1-gallon internal tank. Max. flow is 3.5 gpm. Refrigerant is 134A. Connections are NPT female. For indoor use only. Chiller rated 2,728 Btu/Hr. has a NEMA 5-15 plug. Chiller rated 4,092 Btu/Hr. has a NEMA 6-20 plug. Chillers rated 8,525 Btu/Hr. and up have a NEMA 6-15 plug (see page 787 for illustration).

Btu/Hr.	VAC (Phase)	Amps	Compressor hp	Pipe Size	Overall Size, Ht. × Wd. × Dp.		
2,728	120 (1)	12.5	1/4	1/2"	22 5/8" × 14 1/2" × 27 5/8"	8886T11	$4,176.45
4,092	120 (1)	13.5	1/3	1/2"	22 5/8" × 14 1/2" × 27 5/8"	8886T12	4,462.02
8,525	208/230 (1)	12.2	3/4	1/2"	22 5/8" × 14 1/2" × 27 5/8"	8886T13	5,142.70
9,889	208/230 (1)	12.5	1	1/2"	22 5/8" × 14 1/2" × 27 5/8"	8886T14	5,664.92

For pipe size information, see pages 2-3.

Shatter-Resistant Plastic Domed Sights

Threaded

Bolt On

Press Fit

View these domed sights from any angle. And since the dome is plastic, they're more shatter resistant than glass. Ideal for water and hydraulic oil in radiators, oil sumps, and reservoirs. Dome is clear SAN (styrene acrylonitrile) plastic, seal is rubberized cork (unless noted), and temperature range is 0° to 160° F.

Threaded sights have NPT male threads.

Bolt-on sight requires socket-head cap screws (not included).

Press-fit sights simply slide into a nonthreaded hole; hold them in place with a sealant (not included, see pages 3418-3419). They include a neoprene seal. Do not use in pressurized tanks.

Threaded—Zinc-Plated Steel Body

Pipe Size	Hex Wd.	Window Dia.	Max. psi @ 70° F		
3/4"	1 3/8"	15/16"	10	1128K3	$22.98
1"	1 1/2"	15/16"	10	1128K4▲	26.40
1 1/4"	1 7/8"	1 1/4"	10	1128K5▲	50.40
1 1/2"	2 1/4"	1 11/16"	10	1128K6	55.58

▲Seal is neoprene.

Bolt On—Zinc Body

Flange OD	Bolt Circle	Screw Size	Window Dia.	Max. psi @ 70° F		
2 1/4"	1 7/8"	#8	1 1/4"	10	1128K22	$47.07

Press Fit—Brass Body

For Hole Size	OD	Window Dia.		
1 1/4"	1 1/4"	15/16"	1128K11	$16.72
1 1/2"	1 1/2"	1 1/4"	1128K12	22.17
2"	2"	1 11/16"	1128K13	37.95

Shatter-Resistant All-Plastic Sights

BSPP Male

Shatter resistant and suitable for water and hydraulic oil. Body and window are nylon; seal is Buna-N. ***BSPP male*** sights have a max. temp. of 194° F. Not rated for pressure. ***NPT male*** sights have a max. pressure of 4 psi at 70° F. Temp. range is –20° to +210° F.

Pipe Size	Hex Wd.	Window Dia.		
BSPP Male				
1/4"	5/8"	7/16"	5095K1	$3.60
3/8"	3/4"	1/2"	5095K2	3.66
1/2"	15/16"	5/8"	5095K3	4.03
3/4"	1 1/16"	3/4"	5095K4	5.23
1"	1 3/8"	1 1/16"	5095K5	6.94
BSPP Male (Cont.)				
1 1/4"	1 13/16"	1 3/8"	5095K6	$8.65
NPT Male				
1/2"	15/16"	9/16"	5095K11	6.10
3/4"	1 1/4"	11/16"	5095K12	7.36
1"	1 1/2"	7/8"	5095K13	10.20

High-Pressure Glass Sights

w/Reflector

For very high-pressure tanks, these sights have a glass window fused to a metal body. Connections are NPT male. ***Sights without reflector*** are best for viewing clear liquids. ***Sights with reflector*** allow better viewing of dark liquids.

Nickel-Plated Steel—Use with compressed air and hydraulic oil. Window is soda-lime glass. Temperature range is –40° to +500° F.

Type 2205 Stainless Steel—Even better corrosion resistance than Type 316 stainless steel. Use with water, compressed air, and hydraulic oil. Window is borosilicate glass. Temp. range is –22° to +536° F.

Pipe Size	Hex Wd.	Window Dia.	Max. psi @ 70° F	*Without Reflector*		*With Reflector*	
Nickel-Plated Steel							
1/4"	5/8"	3/8"	2,000	1079K18	$6.97	———	———
3/8"	3/4"	7/16"	1,850	1079K11	7.60	1079K41	$10.45
1/2"	15/16"	9/16"	1,750	1079K12	9.17	1079K42	11.45
3/4"	1 1/16"	3/4"	1,500	1079K13	9.62	1079K43	12.19
1"	1 3/8"	15/16"	1,250	1079K14	13.38	1079K44	15.76
1 1/4"	1 3/4"	1 3/16"	1,000	1079K15	18.51	1079K45	20.98
1 1/2"	2"	1 7/16"	750	1079K16	25.84	1079K46	28.22
2"	2 1/2"	1 7/8"	500	1079K17	31.89	1079K47	34.18
Type 2205 Stainless Steel							
1/2"	1 1/16"	9/16"	1,400	5207K42	154.29	———	———
3/4"	1 3/8"	11/16"	1,400	5207K43	161.14	———	———
1"	1 5/8"	7/8"	1,400	5207K44	166.86	———	———
2"	2 3/4"	1 7/16"	1,400	5207K46	277.71	———	———

Glass Sights

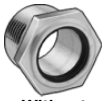

Without Reflector

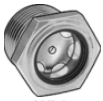

With Reflector

A glass window makes these sights great for inspecting tanks, gear cases, bearing housings, vessels, and mixers.

Sights without reflector are best for viewing clear liquids. ***Sights with reflector*** allow better viewing of dark liquids, especially in poorly lit areas.

Brass and ***High-Pressure Brass—***Use with hydraulic oil. Window is soda-lime glass; seal is Buna-N. Temp. range is –40° to +180° F. Connections are NPTF male (Dryseal).

Aluminum and ***High-Temperature Aluminum—***Withstand higher pressures than brass sights. Use in hydraulic systems with water and hydraulic oil. Connections are BSPP male. Min. temp. is not rated.

Aluminum sights have a soda-lime glass window and Buna-N seal. Max. temp. is 212° F. *High-temperature aluminum* sights have a borosilicate glass window and a fluoroelastomer seal. Max. temp. is 356° F.

Plated Steel and ***Easy-to-See Plated Steel—***Window is fused to the body for long life. Use with water and hydraulic oil. Body is zinc plated for 3/8" to 3/4" sizes; nickel plated for 1" and up. Window is soda-lime glass. Temp. range is 33° to 250° F. Connections are NPT male, unless noted.

Easy-to-see plated steel sights have a reflector plus an aluminum ball to give you maximum visibility for hard-to-see liquids.

Pipe Size	Hex Wd.	Window Dia.	Max. psi @ 70° F	*Without Reflector*		*With Reflector*	
Brass							
1/4"	5/8"	5/16"	150	1210K21	$6.04	———	———
3/8"	3/4"	7/16"	100	1210K22	6.13	1210K32	$6.96
1/2"	7/8"	9/16"	100	1210K23	7.10	1210K33	7.72
3/4"	1 1/8"	3/4"	60	1210K24	8.62	1210K34	9.14
1"	1 7/16"	1"	60	1210K25	11.14	1210K35	12.08
1 1/4"	1 3/4"	1 3/16"	25	1210K26	20.56	1210K36	21.60
1 1/2"	2"	1 3/8"	25	1210K27	23.31	1210K37	23.48
2"	2 1/2"	1 7/8"	10	1210K28	39.99	1210K38	39.97
High-Pressure Brass							
1/4"	5/8"	5/16"	675	1322K71	9.86	———	———
3/8"	3/4"	7/16"	415	1322K72	11.53	1322K82	14.55
1/2"	7/8"	9/16"	250	1322K73	9.26	1322K83	10.36
3/4"	1 1/8"	3/4"	200	1322K74	11.20	1322K84	12.69
1"	1 7/16"	1"	100	1322K75	14.29	1322K85	16.13
1 1/4"	1 3/4"	1 3/16"	60	1322K76	24.03	1322K86	25.81
1 1/2"	2"	1 3/8"	50	1322K77	33.63	1322K87	36.09
2"	2 1/2"	1 7/8"	20	1322K78	44.83	1322K88	46.12
Aluminum							
3/8"	3/4"	7/16"	725	3434K11	12.05	3434K32	12.33
1/2"	7/8"	1/2"	725	3434K13	12.23	3434K33	13.26
3/4"	1 3/16"	11/16"	360	3434K15	17.30	3434K35	17.68
1"	1 7/16"	15/16"	290	3434K17	20.48	3434K37	21.03
1 1/4"	1 13/16"	1 1/4"	180	3434K19	24.65	3434K39	25.28
High-Temperature Aluminum							
3/4"	1 3/16"	11/16"	360	3434K63	24.68	3434K55	25.02
1"	1 7/16"	15/16"	290	3434K65	29.36	3434K57	29.93
Plated Steel							
3/8"	3/4"	7/16"	125	3277K12◆	6.49	3277K32◆	9.01
1/2"	15/16"	9/16"	125	3277K14	7.32	3277K34	9.99
3/4"	1 1/16"	3/4"	125	3277K16◆	9.21	3277K36◆	11.40
1"	1 3/8"	15/16"	125	3277K18	11.30	3277K38	12.18
1 1/4"	1 3/4"	1 3/16"	125	3277K23	20.19	3277K43	21.71
1 1/2"	2"	1 7/16"	125	3277K25	23.93	3277K45	27.41
2"	2 1/2"	1 7/8"	125	3277K27	29.02	3277K47	32.33
Easy-to-See Plated Steel							
3/8"	3/4"	7/16"	125	———	———	3277K52◆	12.31
1/2"	15/16"	9/16"	125	———	———	3277K54	13.53
3/4"	1 1/16"	3/4"	125	———	———	3277K56◆	15.14
1"	1 3/8"	15/16"	125	———	———	3277K58	16.96
1 1/4"	1 3/4"	1 3/16"	125	———	———	3277K63	25.38
1 1/2"	2"	1 7/16"	125	———	———	3277K65	29.48
2"	2 1/2"	1 7/8"	125	———	———	3277K67	35.44

◆Connections are NPTF (Dryseal) male.

Sure-Seal Through-Wall Glass Sights

Without Reflector

A nonthreaded hole is all you need to install these sights. They have straight (UNS) threads and attach to the tank with the included nut. Installation requires access to the inside of the tank; tank walls cannot be more than 1/4" thick. (For information about through-wall fittings, see page 115.) Use with hydraulic oil. Sights have an aluminum body, a soda-lime glass window, and Buna-N seal. Temp. range is –40° to +180° F. ***Sights with reflector*** allow better viewing of dark liquids, especially in poorly lit areas.

For Hole Size	Hex Wd.	Window Dia.	Max. psi @ 70° F	*Without Reflector*		*With Reflector*	
3/4"	7/8"	9/16"	50	1116K21	$9.50	1116K31	$12.07
1"	1 1/8"	3/4"	50	1116K22	11.88	1116K32	14.55
1 1/4"	1 3/8"	1"	25	1116K23	15.83	1116K33	18.31
1 7/8"	2"	1 3/8"	25	1116K24	33.94	1116K34	36.69
2 3/8"	2 5/8"	1 7/8"	10	1116K25	36.54	1116K35	39.88

For pipe size information, see pages 2-3.

Large-View Weld-On Glass Sights

Weld these stainless steel sights to any single-wall tank to observe its contents—no threading required. The sights are great for looking into process vessels, silos, mixers, and separators. All have a borosilicate glass window to withstand high temperatures.

With Easy-Access Window

Sights with an ***easy-access window*** allow you to unscrew the viewing window from the base for access to your tank or to clean the glass. Use with water and compressed air. Body is Type 316L stainless steel. Seal is silicone. Temperature range is –20° to +392° F. They meet DIN 11851 (dairy fitting standard).

Sight with a ***bolt-on window*** can be used with hydraulic oil. Body is Type 304 stainless steel. Seal is FDA-compliant silicone. Temperature range is –40° to +300° F.

For Hole Size	Window Dia.	OD	Max. psi @ 70° F		
With Easy-Access Window					
1 15/16″	1 15/16″	3 5/8″	90	4814K54	$143.02
2 9/16″	2 9/16″	4 7/16″	90	4814K55	177.64
3 1/8″	3 1/8″	5″	90	4814K56	261.82
3 15/16″	3 15/16″	5 13/16″	90	4814K57	392.73
4 15/16″	4 15/16″	7″	90	4814K58	596.95
With Bolt-On Window					
5″	3 1/2″	5″	60	4201K32	274.25

Plastic Sights for Sanitary Quick-Clamps

Sight

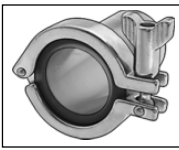

Sight shown assembled with gasket, quick clamp, and tube fitting (all sold separately on pages 208-210)

Sanitary quick-clamps come apart and go back together easily for clean-in-place applications. Use with water. For sanitary quick-clamp fittings, see pages 208-210. Sights are made entirely of polycarbonate for impact-, shatter-, and crack-resistance. Temperature range is –40° to +240° F.

For Tube OD	Window Dia.	Max. psi @ 70° F		
1″ and 1 1/2″	1 5/16″	100	4942K1	$32.91
2″	1 13/16″	100	4942K3	37.36
2 1/2″	2 1/2″	100	4942K5	45.73
3″	2 13/16″	100	4942K7	54.46
4″	3 9/16″	100	4942K9	63.18

Extreme-Temperature Glass Sights for Ovens and Furnaces

For ovens, kilns, and furnaces, these glass sights—also known as peep sights—resist temperatures up to 1600° F. Not rated for use with liquids or compressed air. Sights have a steel body, a quartz window, and a flexible graphite seal. Connection is NPT male.

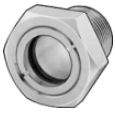

Pipe Size	Hex Wd.	Window Dia.	Max. psi @ 1600° F		
1/2″	1 1/4″	1/2″	5	4791K51	$211.76
3/4″	1 1/2″	3/4″	5	4791K52	231.43
1″	1 3/4″	1″	5	4791K53	251.09
1 1/4″	2″	1 1/4″	5	4791K54	$266.22
1 1/2″	2 1/4″	1 1/2″	5	4791K55	284.37
2″	2 3/4″	2″	5	4791K56	314.62

Oil-Level Indicators

With two tank connections, these level indicators are great for pressure-rated applications. All have an aluminum guard (unless noted) and Buna-N seals. Use with hydraulic oil.

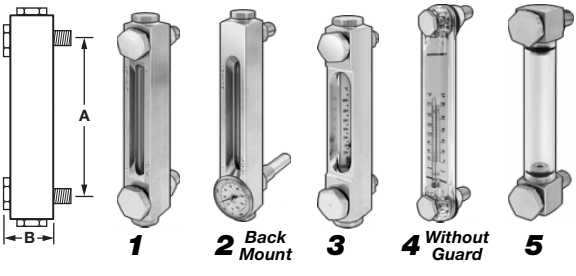

(1) Glass Indicators

These indicators have an easy-view red line on their borosilicate glass sight. Thread into 1/2″-20 UNF holes—there's no need to get inside your tank to install. Temperature range is –40° to +250° F.

(A)	O'all Ht.	Window Ht.	(B)	Max. psi @ 70° F		
3″	4 5/8″	1 1/2″	1 1/8″	290	1188K18	$21.95
5″	6 5/8″	3 1/2″	1 1/8″	290	1188K11	22.53
6″	7 5/8″	4 1/2″	1 1/8″	290	1188K15	24.76
7″	8 5/8″	5 1/2″	1 1/8″	290	1188K12	26.56
9″	10 5/8″	7 1/2″	1 1/8″	290	1188K13	32.69
10″	11 5/8″	8 1/2″	1 1/8″	275	1188K27	34.47
12″	13 5/8″	10 1/2″	1 1/8″	270	1188K25	49.09

(2) Glass Indicators with Dial Thermometer

You'll get accurate temperature readings with these gauges—each has a dual-scale stainless steel thermometer with a 1 3/8″ dia. dial that reads 50° to 300° F/10° to 150° C. The sight is borosilicate glass with a red line to enhance liquid-level visibility. Maximum pressure is 125 psi at 70° F. Temperature range is –40° to +225° F. ***Front-mount gauges*** thread into two 1/2″-20 UNF holes—there's no need to get inside your tank to install. ***Back-mount gauges*** require you to tighten the nuts (included) from the inside of your tank. Use on open tanks with walls up to 3/4″ thick. Two 33/64″ dia. holes for mounting are required.

(A)	O'all Ht.	Window Ht.	(B)	*Front Mount*		*Back Mount*	
4″	5 5/8″	2 1/2″	1 1/2″	1118K61	$43.23	1118K67	$39.30
5″	6 5/8″	3 1/2″	1 1/2″	1118K62	44.14	1118K68	39.93
6″	7 5/8″	4 1/2″	1 1/2″	1118K63	45.39	1118K69	41.81
7″	8 5/8″	5 1/2″	1 1/2″	1118K64	46.75	1118K71	45.72
8″	9 5/8″	6 1/2″	1 1/2″	1118K65	47.77	1118K72	47.35
12″	13 5/8″	10 1/2″	1 1/2″	1118K66	56.13	1118K73	55.37

(3) Glass Indicators with Linear Thermometer

With just one gauge, you can check the level and temperature of the liquid in your tank. Sight is borosilicate glass. Thread into 1/2″-20 UNF holes or use the included nuts to mount to tanks with walls less than 1/2″ thick (requires access to the inside of your tank). Temperature range is –40° to +180° F for 1305K61 and –40° to +220° F for 1305K62 and 1305K63.

(A)	O'all Ht.	Window Ht.	(B)	Max. psi @ 70° F		
+60° to +180° F/+15.6° to +82.2° C Thermometer Range						
3″	4 5/8″	1 1/2″	1 1/4″	20	1305K61	$17.38
0° to +220° F/–17.8° to +104.4° C Thermometer Range						
5″	6 5/8″	3 1/2″	1 1/4″	20	1305K62	17.92
10″	11 5/8″	8 1/2″	1 1/4″	20	1305K63	29.10

(4) UV-Resistant Nylon Indicators with Linear Thermometer

For outdoor applications, these indicators have a UV- and shatter-resistant nylon body and sight. They also have a built-in thermometer so you can check the level and temperature of your liquid with just one gauge. Thermometer is dual scale and reads 32° to 212° F/0° to 100° C. Thread into 1/2″-13 UNF holes or use the included nuts to mount to tanks with walls less than 3/4″ thick (requires access to the inside of your tank). Temperature range is –65° to +212° F.

(A)	O'all Ht.	Window Ht.	(B)	Max. psi @ 70° F		
Without Guard						
3″	4 1/4″	2 1/16″	1 3/16″	10	4748K21	$14.40
5″	6 1/4″	4 1/16″	1 3/16″	10	4748K23	12.18
10″	11 1/4″	9 1/16″	1 3/16″	10	4748K26	25.44
With Aluminum Guard						
3″	4 3/4″	2 1/16″	15/16″	10	4748K22	19.84
5″	6 3/4″	4 1/16″	15/16″	10	4748K24	16.70
10″	11 3/4″	9 1/16″	15/16″	10	4748K27	31.56
With Glass-Filled Nylon Guard						
5″	6 3/4″	4 1/16″	1″	10	4748K25	16.70

(5) Unobstructed-View Nylon Indicators

With no guard, rods, or shields to obstruct your view and a 13/16″ dia. transparent, shatter-resistant nylon sight, you can see your liquid level from any angle. Gauges thread into 1/2″-20 UNF holes—there's no need to get inside your tank to install. Temperature range is –40° to +225° F.

(A)	O'all Ht.	Window Ht.	(B)	Max. psi @ 70° F		
3″	3 7/8″	1 5/16″	1 1/8″	125	1192K16	$19.46
5″	5 7/8″	3 5/16″	1 1/8″	125	1192K21	20.63
6″	6 7/8″	4 5/16″	1 1/8″	125	1192K11	22.56
7″	7 7/8″	5 5/16″	1 1/8″	125	1192K12	23.31
8″	8 7/8″	6 5/16″	1 1/8″	125	1192K13	24.76
10″	10 7/8″	8 5/16″	1 1/8″	125	1192K14	27.16
12″	12 7/8″	10 5/16″	1 1/8″	125	1192K15	27.47

For pipe size information, see pages 2-3.

Vented Oil-Level Indicators

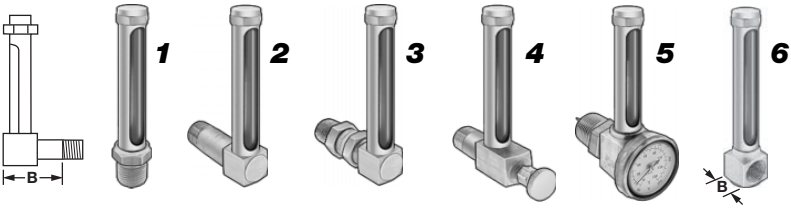

For nonpressure applications such as gear boxes, crank cases, and other reservoirs, these indicators require only one tank connection. A hole (vent) in the top prevents pressure buildup. For optimum viewing, the gauge shields rotate 360°. Use with hydraulic oil. All have a brass connection and gauge shield, a soda-lime glass sight, and Buna-N seals. They thread into the outside of your tank—access to the inside of your tank is not required. Temperature range is –40° to +250° F. Connections are NPTF (Dryseal).

(1) Male Straight

Gauges with filter keep contaminants out with a 40-micron filter.

Pipe Size	Window Ht.	Without Filter O'all Ht.			With Filter O'all Ht.	
1/8"	1 3/8"	2 13/16"	1141K11	$12.90	3 5/16"	1281K71	$21.98
1/8"	1 7/8"	3 5/16"	1141K23	13.55	3 13/16"	1281K74	34.35
1/8"	4 1/4"	5 13/16"	1141K36	18.20	6 5/16"	1281K79	26.02
1/4"	1 3/8"	3"	1141K12	12.65	3 1/2"	1281K72	21.98
1/4"	1 7/8"	3 1/2"	1141K13	12.98	4"	1281K75	22.61
1/4"	2 3/4"	4 1/2"	1141K14	13.49	5"	1281K77	23.79
1/4"	4 1/4"	6"	1141K37	16.43	6 1/2"	1281K81	26.45
1/4"	7 1/2"	9 1/4"	1141K43	28.36	9 3/4"	1281K85	40.85
3/8"	1 3/8"	3"	1141K31	12.65	3 1/2"	1281K73	21.98
3/8"	1 7/8"	3 1/2"	1141K32	$12.98	4"	1281K76	$24.76
3/8"	2 3/4"	4 1/2"	1141K35	13.49	5"	1281K78	23.68
3/8"	4 1/4"	6"	1141K16	16.43	6 1/2"	1281K82	26.45
3/8"	9 1/2"	11 1/4"	1141K45	31.89	11 3/4"	1281K87	45.74
3/8"	12 1/2"	14 1/4"	1141K47	34.45	14 3/4"	1281K89	50.33
1/2"	4 1/4"	6 3/16"	1141K17	23.30	6 11/16"	1281K84	35.26
1/2"	7 1/2"	9 7/16"	1141K44	27.10	9 15/16"	1281K86	39.65
1/2"	9 1/2"	11 7/16"	1141K46	31.28	11 15/16"	1281K88	45.87
1/2"	12 1/2"	14 7/16"	1141K48	35.87	14 15/16"	1281K91	48.12

(2-5) Male Elbow

(4) With Drain—Great for viewing oil level and draining from the same connection.
(5) With Dial Thermometer—Thermometer is 1 3/8" diameter, dual scale, and reads 50° to 300° F/10° to 150° C.

Pipe Size	Window Ht.	O'all Ht.	(B)		
(2) Standard					
1/8"	1 3/8"	2 3/4"	1 1/4"	1224K11	$16.35
1/8"	1 3/8"	2 3/4"	1 3/4"	1142K12	18.96
1/8"	1 7/8"	3 1/4"	1 1/4"	1224K14	16.55
1/8"	2 3/4"	4 1/4"	1 1/4"	1224K17	17.43
1/8"	2 3/4"	4 1/4"	1 3/4"	1142K24	21.45
1/4"	1 3/8"	2 3/4"	1 1/16"	1224K12	16.04
1/4"	1 3/8"	2 3/4"	1 9/16"	1142K13	17.74
1/4"	1 7/8"	3 1/4"	1 1/16"	1224K15	16.24
1/4"	1 7/8"	3 1/4"	1 9/16"	1142K16	19.54
1/4"	2 3/4"	4 1/4"	1 1/16"	1224K18	17.09
1/4"	2 3/4"	4 1/4"	1 9/16"	1142K17	21.06
1/4"	4 1/4"	5 3/4"	1 1/16"	1224K21	19.13
3/8"	1 3/8"	2 3/4"	1 1/16"	1224K13	16.35
3/8"	1 3/8"	2 3/4"	1 9/16"	1142K22	18.53
3/8"	1 7/8"	3 1/4"	1 1/16"	1224K16	16.55
3/8"	1 7/8"	3 1/4"	1 9/16"	1142K23	20.37
3/8"	2 3/4"	4 1/4"	1 1/16"	1224K19	17.43
3/8"	2 3/4"	4 1/4"	1 9/16"	1142K25	21.45
3/8"	3 1/4"	4 3/4"	1 9/16"	1142K18	21.89
3/8"	4 1/4"	5 3/4"	1 9/16"	1142K19	22.55
3/8"	4 1/4"	5 7/8"	1 5/8"	1224K23	28.75
3/8"	7 1/2"	9 1/8"	1 5/8"	1224K25	35.18
3/8"	7 1/2"	9 1/8"	2 3/8"	1142K27	35.95
3/8"	12 1/2"	14 1/8"	1 5/8"	1224K27	41.30
(2) Standard (Cont.)					
1/2"	4 1/4"	5 7/8"	1 7/16"	1224K24	$28.21
1/2"	4 1/4"	5 7/8"	2 3/16"	1142K21	31.80
1/2"	7 1/2"	9 1/8"	1 7/16"	1224K26	33.65
1/2"	7 1/2"	9 1/8"	2 3/16"	1142K28	35.95
1/2"	12 1/2"	14 1/8"	1 7/16"	1224K28	42.17
1/2"	12 1/2"	14 1/8"	2 3/16"	1142K31	41.28
(3) With Union Coupling					
1/8"	1 3/8"	2 3/4"	1 1/2"	1111K11	19.02
1/8"	1 7/8"	3 1/4"	1 1/2"	1111K14	19.67
1/8"	2 3/4"	4 1/4"	1 1/2"	1111K17	19.23
1/4"	1 3/8"	2 3/4"	1 13/16"	1111K12	19.02
1/4"	1 7/8"	3 1/4"	1 13/16"	1111K15	18.92
1/4"	2 3/4"	4 1/4"	1 13/16"	1111K18	18.69
1/4"	4 1/4"	5 3/4"	1 13/16"	1111K22	21.06
1/4"	7 1/4"	8 3/4"	1 13/16"	1111K24	24.89
3/8"	1 3/8"	2 3/4"	1 7/8"	1111K13	17.94
3/8"	1 7/8"	3 1/4"	1 7/8"	1111K16	18.92
3/8"	2 3/4"	4 1/4"	1 7/8"	1111K19	19.23
3/8"	4 1/4"	5 7/8"	2 7/16"	1111K25	30.87
3/8"	7 1/2"	9 1/8"	2 7/16"	1111K27	36.76
3/8"	12 1/2"	14 1/8"	2 7/16"	1111K29	45.95
1/2"	4 1/4"	5 7/8"	2 1/4"	1111K26	30.02
1/2"	7 1/2"	9 1/8"	2 1/4"	1111K28	35.58
1/2"	12 1/2"	14 1/8"	2 1/4"	1111K31	48.09
(4) With Drain					
1/8"	1 7/8"	3 1/4"	2 7/8"	1225K14	$32.42
1/8"	2 3/4"	4 1/4"	2 7/8"	1225K17	46.86
1/4"	1 3/8"	2 3/4"	2 11/16"	1225K12	30.08
1/4"	1 7/8"	3 1/4"	2 11/16"	1225K15	33.60
1/4"	2 3/4"	4 1/4"	2 11/16"	1225K18	31.79
1/4"	4 1/4"	5 3/4"	2 11/16"	1225K21	33.80
3/8"	1 3/8"	2 3/4"	2 11/16"	1225K13	35.51
3/8"	1 7/8"	3 1/4"	2 11/16"	1225K16	31.24
3/8"	2 3/4"	4 1/4"	2 11/16"	1225K19	32.74
3/8"	4 1/4"	5 7/8"	3 3/16"	1225K23	42.03
3/8"	7 1/2"	9 1/8"	3 3/16"	1225K25	48.63
3/8"	12 1/4"	14 1/8"	3 3/16"	1225K27	54.07
1/2"	4 1/4"	5 7/8"	3"	1225K24	41.05
1/2"	7 1/2"	9 1/8"	3"	1225K26	49.28
1/2"	12 1/4"	14 1/8"	3"	1225K28	54.40
(5) With Dial Thermometer					
1/4"	1 7/8"	4 1/16"	2 1/8"	1226K23	56.20
1/4"	2 3/4"	5 1/16"	2 1/8"	1226K24	55.59
3/8"	1 3/8"	3 9/16"	2 1/8"	1226K22	56.20
3/8"	2 3/4"	5 1/16"	2 1/8"	1226K25	57.23
1/2"	2 3/4"	5 1/16"	1 7/8"	1226K26	57.23
1/2"	4 1/4"	6 9/16"	1 7/8"	1226K27	60.41
1/2"	5 1/4"	7 9/16"	1 7/8"	1226K28	60.41
3/4"	7 1/4"	9 9/16"	1 7/8"	1226K31	68.80

(6) Female Elbow

Pipe Size	Window Ht.	O'all Ht.	(B)		
1/8"	2 3/4"	4 11/16"	7/8"	1201K7	$19.71
1/4"	1 3/8"	3 3/16"	7/8"	1201K2	16.89
1/4"	1 7/8"	3 11/16"	7/8"	1201K5	17.94
1/4"	2 3/4"	4 11/16"	7/8"	1201K8	18.48
1/4"	4 1/4"	6 3/16"	7/8"	1201K11	20.72
1/4"	5 1/4"	7 3/16"	7/8"	1201K12	$21.26
3/8"	1 3/8"	3 3/16"	7/8"	1201K3	21.35
3/8"	1 7/8"	3 11/16"	7/8"	1201K6	23.05
3/8"	2 3/4"	4 11/16"	7/8"	1201K9	18.84
3/8"	4 1/4"	6 1/4"	1"	1201K13	27.13
3/8"	7 1/2"	9 1/2"	1"	1201K15	$36.70
3/8"	12 1/2"	14 1/2"	1"	1201K17	47.09
1/2"	4 1/4"	6 1/4"	1"	1201K14	27.13
1/2"	7 1/2"	9 1/2"	1"	1201K16	36.70
1/2"	12 1/2"	14 1/2"	1"	1201K18	52.82

Oil-Level Indicators with NPT Connections

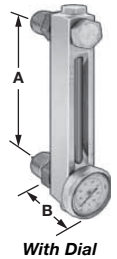

With Dial Thermometer

Equipped with brass pipe connections that fit in any tank with NPT female threaded holes, these indicators provide easy mounting in tank walls that are 1/2" to 3/4" thick. All have an aluminum body, a borosilicate glass sight with an easy-view red line, and Buna-N seals. Access to the inside of your tank is not required to install. Temperature range is –40° to +250° F.

Gauges with dial thermometer have a 1 1/2" dia. dual-scale thermometer that reads 50° to 300° F/10° to 150° C.

To Order: Please specify pipe size: 1/4", 3/8", 1/2", or 3/4" NPTF (Dryseal) male.

(A)	O'all Ht.	Window Ht.	Max. psi @ 70° F	Without Thermometer (B)			With Dial Thermometer (B)		
5"	6 5/8"	3 1/2"	290	1 13/16"	1106K1	$32.01	2 1/16"	1104K35	$64.74
6"	7 5/8"	4 1/2"	290	1 13/16"	1106K2	36.30	2 1/16"	1104K36	75.49
7"	8 5/8"	5 1/2"	290	1 13/16"	1106K5	37.18	2 1/16"	1104K91	70.35
8"	9 5/8"	6 1/2"	290	1 13/16"	1106K6	38.33	2 1/16"	1104K92	70.00
9"	10 5/8"	7 1/2"	290	1 13/16"	1106K3	39.30	2 1/16"	1104K37	83.47
10"	11 5/8"	8 1/2"	275	1 13/16"	1106K7	43.20	2 1/16"	1104K93	98.90
12"	13 5/8"	10 1/2"	270	1 13/16"	1106K4	47.05	2 1/16"	1104K38	77.67
15"	16 5/8"	13 1/2"	260	1 13/16"	1106K12	60.91	2 1/16"	1104K94	96.46
18"	19 5/8"	16 1/2"	240	1 13/16"	1106K16	72.81	2 1/16"	1104K95	99.74
24"	25 5/8"	22 1/2"	210	1 13/16"	1106K18	99.74	2 1/16"	1104K96	133.70

For pipe size information, see pages 2-3.

Flexible Vinyl Liquid-Level Indicators

Thanks to the flexible, clear vinyl sight, you can mount these indicators on curved and uneven surfaces. Bend radius is 3¼″. Indicators have aluminum end blocks with steel connections and Buna-N seals. Thread into a tank with two ½″-20 UNF holes—access to the inside of your tank is not needed to install. Use with water and hydraulic oil. Maximum temperature is 165° F; minimum temperature is not rated.

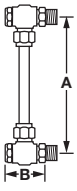

(A)	O'all Ht.	Window Ht.	(B)	Max. psi @ 70° F		
3″	3¾″	1½″	15/16″	30	3280K13	$23.20
5″	5¾″	3½″	15/16″	30	3280K15	23.94
6″	6¾″	4½″	15/16″	30	3280K16	23.94
7″	7¾″	5½″	15/16″	30	3280K17	25.58
8″	8¾″	6½″	15/16″	30	3280K18	25.58
10″	10¾″	8½″	15/16″	30	3280K19	27.27
12″	12¾″	10½″	15/16″	30	3280K22	29.06
14″	14¾″	12½″	15/16″	30	3280K24	30.37
16″	16¾″	14½″	15/16″	30	3280K26	33.28
18″	18¾″	16½″	15/16″	30	3280K28	36.14
20″	20¾″	18½″	15/16″	30	3280K29	38.50
22″	22¾″	20½″	15/16″	30	3280K42	38.33
24″	24¾″	22½″	15/16″	30	3280K44	40.91
30″	30¾″	28½″	15/16″	30	3280K49	48.72

Spill-Proof Liquid-Level Indicators

A magnetic float contained inside a stainless steel tube means there's no glass; thus, there's no chance of glass breaking and spilling your liquid. A highly visible fluorescent magnetic scale provides a quick, easy-to-see reading, even from a distance. Indicators have a Type 316 stainless steel frame and float, fluoroelastomer seal, removable bottom flange, and ½″ NPT female drain plug. Connections are ½″ NPT male; access to the inside of your tank is not needed to install. Temperature range is –40° to +300° F.

Indicators for oil-based liquids are for liquids with a specific gravity of 0.83 to 0.88 such as hydraulic oil and diesel fuel.

Indicators for water-based liquids are for liquids with a specific gravity of 0.93 to 1.1 such as water and glycol.

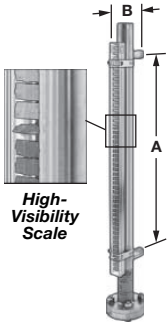

(A)	O'all Ht.	Scale Ht.	(B)	Max. psi @ 70° F	For Oil-Based Liquids		For Water-Based Liquids	
12″	20″	14″	3½″	150	3332K42	$735.50	3332K41	$735.50
18″	26″	20″	3½″	150	3332K44	789.42	3332K18	789.23
24″	32″	26″	3½″	150	3332K46	843.33	3332K45	843.33
36″	44″	38″	3½″	150	3332K48	951.42	3332K47	951.42

Liquid-Level Indicators with Shutoff Valves

In case of glass breakage, these heavy duty liquid-level indicators have shutoff valves so you can change the glass without removing the indicator from your system. All have a borosilicate glass sight. Connections are NPT male.

Indicators with safety spill control have a ball check in both valves for quick, temporary shutdown if the gauge glass should break. *Note:* Valves must be closed manually for permanent shutoff.

1 ***Clog-resistant brass*** indicators have a needle point in the stem of the lower shutoff valve that clears out the orifice as the valve is closed. Use with water, salt water, hydraulic oil, and steam. They include a ¼″ dia. drain cock, fluoroelastomer gaskets, and graphite stem packing.

2&3 ***Compact elbow-style bronze*** indicators are designed for confined spaces with a 90° angle shutoff valve for easy access. Use with water and steam. They include EPDM gaskets and PTFE stem packing.

4 ***Type 316 stainless steel*** indicators are great for use on expansion tanks. Use with water, hydraulic oil, and steam. They include a stainless steel drain valve, Hypalon-reinforced PTFE gaskets, and PTFE stem packing.

5 ***Naval brass*** indicators are ideal for use with water and hydraulic oil. Gaskets and stem packing are fluoroelastomer.

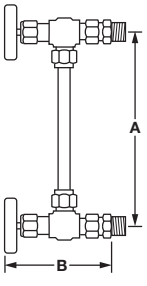

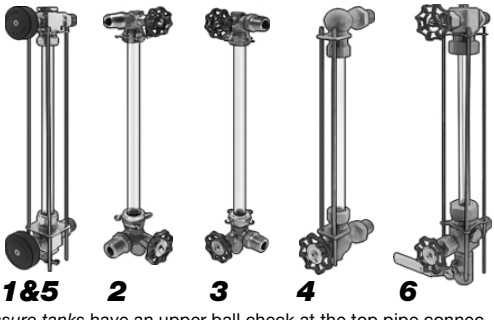

Indicators for pressure tanks have an upper ball check at the top pipe connection, and a lower ball check in the valve stem at the base of the glass sight.

Indicators for gravity tanks have ball checks located at the pipe connections.

6 ***ASME-rated Type 316 stainless steel*** indicators conform to ASME A18 requirements and are ideal for alcohol-based solvents, acetic acid, and ketones, as well as water, hydraulic oil, and steam. They have Type 316 stainless steel ball checks, a ball-valve-style drain, Hypalon-reinforced PTFE gaskets, and PTFE stem packing.

(A)	O'all Ht.	Window Ht.	(B)	Pipe Size	Max. psi @ 70° F	Max. psi, Steam @ 400° F	Temp. Range	No. of Guard Rods		
Standard										
Clog-Resistant Brass										
1	11½″	14″	8½″	2″	⅜″	200	150	32° to 400° F	2	3695K11 $102.97
1	13½″	16″	10½″	3 15/16″	½″	200	150	32° to 400° F	2	3695K12 106.81
1	13½″	15¾″	10½″	3⅞″	½″	400	250	32° to 400° F	4	3695K19 268.21
1	17½″	20″	14½″	3⅞″	¾″	200	150	32° to 400° F	2	3695K13 135.51
1	18″	20½″	14½″	4 1/16″	¾″	200	150	32° to 400° F	4	3695K18 204.59
1	18″	20¼″	14½″	4¼″	¾″	400	250	32° to 400° F	4	3695K21 277.36
Compact Elbow-Style Bronze Right-Hand Mount										
2	13¼″	15¼″	10″	1 13/16″	½″	205	125■	33° to 350° F	None	3721K75 67.95
2	13¼″	15¼″	10″	1 13/16″	½″	205	125■	33° to 350° F	4	3721K77 82.43
Compact Elbow-Style Bronze Left-Hand Mount										
3	13¼″	15¼″	10″	1 13/16″	½″	205	125■	33° to 350° F	None	3721K76 67.95
3	13¼″	15¼″	10″	1 13/16″	½″	205	125■	33° to 350° F	4	3721K78 82.04
Type 316 Stainless Steel										
4	14″	15¾″	10¼″	3 15/16″	½″	410	305▲	33° to 425° F	2	3703K3 367.62
4	14″	15¾″	10¼″	3 15/16″	¾″	410	305▲	33° to 425° F	2	3703K4 367.62
With Safety Spill Control										
Clog-Resistant Brass										
1	11½″	14″	8½″	2″	⅜″	200	150	32° to 400° F	2	3695K41 110.52
1	13½″	16″	10½″	3 15/16″	½″	200	150	32° to 400° F	2	3695K42 115.10
1	13½″	15¾″	10½″	4¼″	½″	400	250	32° to 400° F	4	3695K49 283.13
1	17½″	20″	14½″	3⅞″	¾″	200	150	32° to 400° F	2	3695K43 144.03
1	18″	20½″	14½″	4 1/16″	¾″	200	150	32° to 400° F	4	3695K48 213.77
1	18″	20¼″	14½″	4¼″	¾″	400	250	32° to 400° F	4	3695K51 328.92
Naval Brass for Pressure Tanks										
5	13½″	15¾″	12″	3⅞″	½″	400	Not rated	32° to 150° F	4	3706K21 270.71
5	18″	20¼″	16″	4¼″	¾″	400	Not rated	32° to 150° F	4	3706K23 288.75
Naval Brass for Gravity Tanks										
5	13½″	15¾″	12″	3⅞″	½″	Not rated	Not rated	32° to 150° F	4	3706K22 275.23
5	18″	20¼″	16″	4¼″	¾″	Not rated	Not rated	32° to 150° F	4	3706K24 292.96
ASME-Rated Type 316 Stainless Steel										
6	14″	20¾″	10″	4⅞″	½″	410	305■	33° to 425° F	4	3712K43 565.41
6	18″	24¾″	12″	4⅞″	¾″	370	280■	33° to 425° F	4	3712K44 561.89

■ Max. steam pressure at 350° F. ▲ Max. steam pressure at 425° F.

Build-Your-Own Liquid-Level Indicators

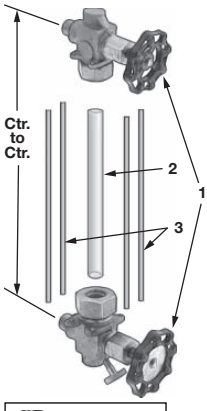

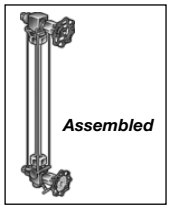

(1) Select a Valve Pair

Includes two valves with automatic shutoff, aluminum handles, a neoprene gasket, graphite-composite stem packing, and a 3/8″ NPT female drain cock with thumb-wheel handle. Connections are NPT male. Not for steam service.

Pipe Size	For Gauge Glass Size, OD × Wall Thick.	Bronze Max. psi @ 300°F★	Bronze Pair		Ductile Iron Max. psi @ 300°F★	Ductile Iron Pair		Type 316 Stainless Steel Max. psi @ 300°F★	Type 316 Stainless Steel Pair	
1/2″	5/8″×3/32″	165	3713K3	$223.54	375	3700K11	$238.09	500	3700K13	$554.56
3/4″	3/4″×7/64″	335	3713K4	223.54	375	3700K12	238.09	500	3700K14	554.56

★ Pressures listed are subject to the limitations of the gauge glass used.

(2) Select Your Gauge Glass

See the Tubular Gauge Glass on this page for our complete selection of gauge glass. Determine the glass length you'll need by subtracting 2″ from the desired center-to-center length between your two valves. Then choose your gauge glass based on the nonsteam service pressure listed.

(3) Select a Set of Guard Rods

Choose *bronze rods* for bronze and ductile-iron valves and *Type 303 stainless steel rods* for Type 316 stainless steel valves. All are 3/16″ dia. Set includes four rods, which is enough for one complete indicator. **Also Available:** Guard rods in lengths not listed here. Ask for 3713K888 and specify length and material (bronze or Type 303 stainless steel).

For Glass Lg.	For Ctr.-to-Ctr. Lg.	Guard Rod Lg.	Bronze	Bronze Set	Type 303 Stainless Steel	Type 303 Stainless Steel Set
8″	10″	9 1/4″	3713K41	$11.95	3713K141	$23.59
9″	11″	10 1/4″	3713K102	13.34	3713K161	27.60
10″	12″	11 1/4″	3713K105	14.73	3713K162	30.96
11″	13″	12 1/4″	3713K151	17.11	3713K163	32.97
12″	14″	13 1/4″	3713K107	17.52	3713K164	35.67
13″	15″	14 1/4″	3713K152	19.89	3713K165	38.36
14″	16″	15 1/4″	3713K112	20.30	3713K166	41.06
15″	17″	16 1/4″	3713K153	22.69	3713K167	43.73
16″	18″	17 1/4″	3713K43	23.09	3713K147	44.60
17″	19″	18 1/4″	3713K44	24.40	3713K168	49.13
18″	20″	19 1/4″	3713K45	$25.88	3713K148	$49.74
20″	22″	21 1/4″	3713K47	28.67	3713K171	57.21
22″	24″	23 1/4″	3713K48	31.46	3713K63	60.88
23″	25″	24 1/4″	3713K155	33.86	3713K142	63.58
24″	26″	25 1/4″	3713K51	34.25	3713K65	66.29
30″	32″	31 1/4″	3713K118	42.63	3713K67	82.49
36″	38″	37 1/4″	3713K57	51.01	3713K144	98.69
42″	44″	43 1/4″	3713K125	59.39	3713K72	116.44
48″	50″	49 1/4″	3713K132	67.76	3713K149	131.12

Tubular Gauge Glass

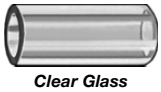

Clear Glass

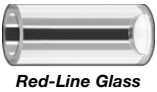

Red-Line Glass

Made of borosilicate glass, this gauge glass stands up to rapid temperature changes. It offers good resistance to corrosion and will remain clear; it has no graduations. Cut to size with a glass tube cutter (see 36755A21 on page 2339). Length tolerance is ±1/16″.

Red-line glass is transparent like the clear glass, but a red line between two white lines makes it easier to see your liquid level.

Glass Lg.	Standard, 5/8″ OD, 3/32″ Wall Thick. Max. psi Nonsteam Service @ 150°F	Max. psi Steam Service @ 425°F		1-2	3-Up	Small, 1/2″ OD, 5/64″ Wall Thick. Max. psi Nonsteam Service @ 150°F	Max. psi Steam Service @ 425°F		1-2	3-Up	Large, 3/4″ OD, 7/64″ Wall Thick. Max. psi Nonsteam Service @ 150°F	Max. psi Steam Service @ 425°F		1-2	3-Up
Clear Glass																
8″	435	320	3724K11	$10.58	$10.49	460	340	3723K11	$9.17	$7.70	425	315	3725K11	$10.90	$8.48
9″	420	315	3724K12	12.63	11.23	445	335	3723K12	9.36	7.48	410	310	3725K12	12.28	9.82
10″	420	315	3724K13	13.25	11.91	445	335	3723K13	10.46	8.48	410	310	3725K13	13.19	10.45
11″	410	305	3724K14	15.38	12.35	435	325	3723K14	11.26	9.13	400	300	3725K14	15.62	12.93
12″	410	305	3724K15	17.63	12.75	435	325	3723K15	12.15	9.72	400	300	3725K15	15.94	13.43
13″	390	295	3724K16	14.44	12.93	415	315	3723K16	12.96	10.36	385	290	3725K16	16.54	13.53
14″	390	295	3724K17	15.47	13.63	415	315	3723K17	13.41	9.99	385	290	3725K17	16.97	13.75
15″	380	290	3724K18	16.26	13.84	405	310	3723K18	14.49	11.59	375	285	3725K18	18.03	13.84
16″	375	285	3724K19	16.92	14.34	400	300	3723K19	15.62	12.93	370	280	3725K19	18.91	14.66
17″	360	280	3724K21	17.83	14.54	385	295	3723K21	16.88	13.50	355	275	3725K21	21.61	14.87
18″	360	280	3724K22	20.18	15.07	385	295	3723K22	17.81	13.75	355	275	3725K22	23.08	15.55
20″	350	270	3724K24	21.13	15.79	375	285	3723K24	18.76	14.51	345	265	3725K24	24.38	16.61
22″	335	265	3724K26	25.17	17.24	355	280	3723K26	20.77	14.92	330	260	3725K26	27.73	18.73
23″	320	255	3724K27	26.56	18.22	340	270	3723K27	22.52	18.00	315	250	3725K27	29.38	19.50
24″	320	255	3724K28	28.13	18.66	340	270	3723K28	25.61	17.60	315	250	3725K28	32.12	20.65
30″	280	♦	3724K29	30.18	19.96	295	♦	3723K29	27.01	20.71	275	♦	3725K29	33.48	21.73
36″	245	♦	3724K31	33.49	22.42	260	♦	3723K31	28.89	20.19	240	♦	3725K31	39.46	24.41
42″	195	♦	3724K32	37.43	27.69	205	♦	3723K32	32.95	25.09	190	♦	3725K32	44.39	30.56
48″	195	♦	3724K33	42.93	30.48	205	♦	3723K33	35.13	26.42	190	♦	3725K33	48.43	33.28
Red-Line Glass																
8″	370	280	3729K11	12.76	10.19	390	300	3728K11	12.01	9.69	360	280	3730K11	15.75	12.66
9″	345	275	3729K12	13.25	10.60	370	295	3728K12	13.28	10.62	340	275	3730K12	16.90	15.93
10″	345	275	3729K13	13.72	10.97	370	295	3728K13	15.05	12.98	340	275	3730K13	17.69	15.14
11″	335	275	3729K14	16.50	13.39	360	295	3728K14	16.24	11.56	330	275	3730K14	18.42	17.99
12″	335	275	3729K15	16.98	13.79	360	295	3728K15	18.02	14.59	330	275	3730K15	19.76	16.82
13″	325	270	3729K16	17.89	14.72	345	290	3728K16	18.72	14.97	320	270	3730K16	21.57	19.48
14″	325	270	3729K17	19.57	15.65	345	290	3728K17	19.74	15.81	320	270	3730K17	23.31	17.98
15″	315	265	3729K18	21.35	17.08	335	285	3728K18	20.52	16.41	310	265	3730K18	25.16	20.65
16″	315	265	3729K19	22.30	17.84	335	285	3728K19	21.86	16.95	310	265	3730K19	26.73	19.58
17″	305	260	3729K61	22.71	21.40	325	280	3728K21	23.15	19.03	300	260	3730K21	27.68	22.82
18″	305	260	3729K22	23.91	19.48	325	280	3728K22	24.95	18.64	300	260	3730K22	28.74	22.05
20″	290	260	3729K24	27.09	23.10	310	280	3728K24	29.05	19.71	285	260	3730K24	31.87	23.21
22″	265	250	3729K26	27.99	24.41	280	270	3728K26	31.40	22.81	260	250	3730K26	35.98	25.85
23″	265	250	3729K27	29.71	25.52	280	270	3728K27	32.27	25.91	260	250	3730K27	37.48	28.80
24″	265	250	3729K28	31.37	26.97	280	270	3728K28	33.42	24.04	260	250	3730K28	38.95	28.92
30″	235	♦	3729K29	36.44	28.40	250	♦	3728K29	37.94	26.54	230	♦	3730K29	47.02	31.55
36″	205	♦	3729K71	39.82	32.50	215	♦	3728K31	42.55	30.95	200	♦	3730K31	55.60	36.02
42″	165	♦	3729K32	46.29	40.12	175	♦	3728K32	53.82	38.69	160	♦	3730K32	60.72	43.20
48″	165	♦	3729K33	52.82	43.71	175	♦	3728K33	55.32	41.53	160	♦	3730K33	72.11	53.82

♦ Lengths over 24″ should not be used for steam service.

Gaskets for Tubular Gauge Glass

Neoprene—Max. temp. is 220° F. Color is gray.
EPDM Rubber—Max. temp. is 300° F. Color is black.
TFE with Hypalon—Max. temp. is 450° F. Color is off-white.

Fits Gauge Glass OD	Overall Size, OD × ID × Thick.	Pkg. Qty.		Pkg.
Neoprene				
1/2″	11/16″ × 7/16″ × 5/16″	24	3733K12	$7.42
5/8″	13/16″ × 9/16″ × 5/16″	24	3733K14	7.97
5/8″	1 1/8″ × 5/8″ × 1/4″	24	3733K16	9.25
3/4″	15/16″ × 11/16″ × 5/16″	24	3733K18	8.46
3/4″	1 1/4″ × 3/4″ × 1/4″	24	3733K21	9.89
EPDM Rubber				
1/2″	11/16″ × 7/16″ × 5/16″	24	3250K22	9.60
5/8″	27/32″ × 39/64″ × 11/32″	24	3250K24	10.27
3/4″	29/32″ × 47/64″ × 25/64″	12	3250K26	12.80
TFE with Hypalon				**Each**
5/8″	29/32″ × 5/8″ × 7/16″	—	3712K52	$2.05
3/4″	29/32″ × 3/4″ × 7/16″	—	3712K51	2.05

Flat Oval Gauge Glass and Gaskets

Use this flat and reflective borosilicate gauge glass in armored-style liquid-level gauges. Glass is 1 5/16″ Wd. × 11/16″ Thick. Temperature range is –425° to +470° F. Glass meets DIN 7080 and 7081, JIS B 8211, and MIL-G-16356D.

Gaskets—Made of 1/16″ thick rubber and fiber. Suitable for temperatures between –40° and +600° F and nonsteam service pressures up to 1,200 psi. For other gasket materials, see pages 3474-3481.

Gauge Glass ***Gasket***

Glass Size	Glass Ht.	Max. psi Nonsteam Service @ 70° F	Max. psi Steam Service @ 425° F	Gauge Glass		Gasket	
1	4 1/2″	4,000	500	36885K21	$34.72	36885K81	$4.19
2	5 1/2″	4,000	500	36885K22	38.33	36885K82	4.19
3	6 1/2″	4,000	500	36885K53	39.44	36885K83	4.19
4	7 1/2″	4,000	500	36885K54	40.56	36885K84	4.19
5	8 5/8″	4,000	500	36885K55	42.08	36885K85	4.19
6	9 7/8″	4,000	500	36885K56	43.06	36885K86	4.19
7	11″	4,000	500	36885K57	49.44	36885K87	4.19
8	12 5/8″	4,000	500	36885K58	54.17	36885K88	4.19
9	13 3/8″	4,000	500	36885K59	57.22	36885K89	4.19

Liquid-Level Gauges

Don't worry about gears, cams, and magnets wearing out—these gauges are fully mechanical and float operated. They have a threaded aluminum connection that screws into the opening of your tank and a polyethylene float that's connected to a liquid-level indicator. The indicator is 4″ long and has a cellulose-acetate sight with a UV inhibitor. The float rod measures half the length of the drum/tank depth. Use with water and hydraulic oil. Maximum tank pressure is 70 psi. Maximum temperature is 110° F. Minimum temperature is not rated.

Gauges for Drums

For 30-Gallon Drums—Indicator is graduated in gallons, liters, and volume fractions (Full, 7/8, 3/4, 5/8, 1/2, 3/8, 1/4, 1/8, and Empty).

For 55-Gallon Drums—Indicator is graduated in gallons, liters, and volume fractions (Full, 7/8, 5/8, 3/8, 1/8, and Empty).

For Drum Size	For Drum Depth	Fits 3/4″ NPT Opening		Fits 2″ NPT Opening	
Galvanized Steel Float Rod					
30 Gal.	27 1/2″	1119K52	$55.44	1119K54	$41.78
55 Gal.	33 1/2″	1119K31	55.44	1119K33	41.78
Type 316 Stainless Steel Float Rod					
30 Gal.	27 1/2″	3753K21	94.89	3753K23	71.67
55 Gal.	33 1/2″	3753K32	94.89	3753K34	71.67

Indicator for Tanks

Gauges for Tanks

Indicator is graduated in volume fractions (Full, 7/8, 3/4, 5/8, 1/2, 3/8, 1/4, 1/8, and Empty). Float rod is galvanized steel.

Gauges are available in 1″ increments at any length between 6″ and 72″. **To Order:** Please specify exact tank depth within the range listed.

Available Tank Depths	Fits 1 1/2″ NPT Opening		Fits 2″ NPT Opening	
6″ through 12″	3711K7	$41.85	3711K8	$41.85
13″ through 18″	3711K9	35.76	3711K21	35.76
19″ through 46″	3711K1	28.37	3711K2	28.37
47″ through 60″	3711K41	36.85	3711K61	36.85
61″ through 72″	3711K3	53.15	3711K5	53.15

Liquid-Level Gauges for Fuels

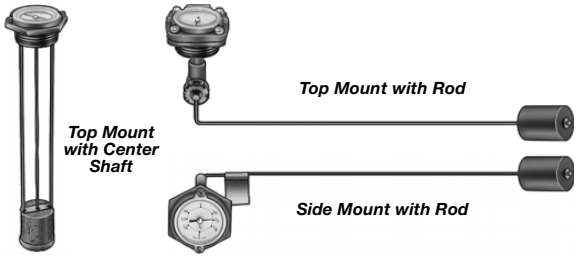

Designed specifically for use with gasoline, diesel fuel, and fuel oil, all gauges have a nitrile rubber float connected to a 2″ dia. aluminum dial with a clear thermoplastic lens. The dial reads in volume fractions (Full, 3/4, 1/2, 1/4, and Empty). Temperature range is –40° to +158° F. Connections are NPT male.

Top Mount with Center Shaft—The float travels on the center shaft; the shaft is brass and measures 1/2″ to 3/4″ shorter than the tank depth to prevent it from touching bottom. Guide rods are zinc-plated steel.

Top Mount with Rod—Have an aluminum float rod connected to a 3″ long stem. Float is 1 3/8″ Dia. × 1 3/4″ Lg. UL listed MH8786 for use with gasoline, diesel fuel, and fuel oil.

Side Mount with Rod—Have an aluminum float rod connected to a 4″ long support tube. Float is 1 3/8″ Dia. × 1 3/4″ Lg. UL listed MH8786 for use with gasoline, diesel fuel, and fuel oil.

Fits Tank Opening, NPT Male	For Tank Depth	Max. Tank Pressure, psi		
Top Mount with Center Shaft				
1 1/2″	8″	25	3610K41	$58.80
1 1/2″	12″	25	3610K43	60.11
1 1/2″	18″	25	3610K44	72.67
1 1/2″	19 1/2″	25	3610K45	75.00
1 1/2″	24″	25	3610K46	86.57
1 1/2″	30″	25	3610K47	101.28
1 1/2″	36″	25	3610K42	114.35
Top Mount with Rod				
1 1/2″	Up to 30″●	25	3718K73	78.15
2″	Up to 30″●	25	3718K74	81.00
Side Mount with Rod				
1 1/4″	Up to 50″●	10	3717K66	50.46
1 1/2″	Up to 21 1/2″●	10	3717K67	50.46

● For shallower tanks, cut the rod to 1/2″ to 1″ shorter than the tank depth to prevent it from touching bottom.

Precision Liquid-Level Gauges

Get a precise reading of the liquid level in your tank. All gauges have a 2″ aluminum NPT male connection and are for use with water and hydraulic oil.

Digital—These have a 4-digit LCD that's accurate to 0.1″. They have a corrosion-resistant PVC housing and a polyurethane-coated cork float attached to a nylon-coated Type 301 stainless steel cable. Gauges operate on a 9-volt lithium battery (included) and automatically turn off when not in use. Overall size is 3″ Dia. × 4 3/4″ Ht.; float is 8 1/2″ long.

Digital ***Dial***

Dial—Reading is in 1/8″ increments; the small hand reads feet, the large hand reads inches. Includes decals to mark high and low levels. The dial face is 4 7/8″ dia. and is vapor tight. Gauge housing is anodized aluminum; the float and cable are Type 304 stainless steel. Height from the top of the dial to bottom of threads is 8 7/16″; float is 7 3/4″ long.

For Tank Depth	Max. Tank Pressure, psi	Temp. Range (°F)		
Digital				
4 Ft.	Not rated	+30° to +140°	8212T17	$403.61
5 Ft.	Not rated	+30° to +140°	8212T18	403.61
Dial				
12 Ft.	5	–10° to +150°	6151T83	486.27

Pop-Up Full-Tank Indicators

A pop-up indicator lets you know when your tank is almost full. Use on vertical tanks and drums with a 3/4″ NPT female opening. Indicators are made of high-density polyethylene. Use with water and hydraulic oil. Max. pressure is not rated. Temperature range is 0° to 120° F.

O'all Ht.		
5″	3780K26	$12.15
11″	3780K27	17.45

For pipe size information, see pages 2-3.

Vented Liquid-Level Gauges for 55-Gallon Drums

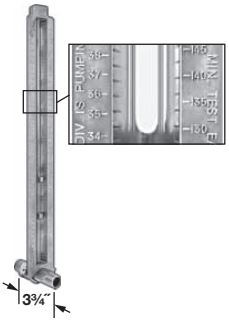

For accurate measurement of liquid in 55-gallon drums, these gauges have an aluminum frame and a soda-lime glass sight that's graduated in gallons and liters. The sight also has two sliding indicators for marking the specific levels you choose. Gauges vent to the atmosphere. Use with water and hydraulic oil.

Gauges have TFE O-rings and are not rated for pressure. Temp. range is 32° to 150° F. Connections are ¾" NPT male.

O'all Ht.	Window Ht.		
Steel			
22 7/16"	19 5/8"	**3878K11**	$45.16
Type 304 Stainless Steel			
22 7/16"	19 5/8"	**3878K21**	56.45

Drop-In Liquid-Level Transmitters

Standard

Also known as level loggers, level sensors, and pressure transducers, these easy-to-use submersible transmitters sit at the bottom of your tank so they don't require a process connection—simply drop in your tank. They include 40 feet of cable and have a 4-20 mA output signal for remote use. Transmitters run on 12-40 VDC and are accurate to ±0.25%. Body is Type 316L stainless steel and seal is fluoroelastomer. Temperature range is –10° to +175° F. CSA certified and FM approved for Class I, II, and III; Division I; Groups A-G.

Standard—Use in applications with debris-free water. A nose cone provides the sensing element with additional protection against contact.

Clog Resistant—The open-face sensing element avoids clogging and sludge buildup when used in water with particulate and sewage.

To Order: Please specify liquid-level range from those listed below.

Available Liquid-Level Ranges, feet of water	*Standard*		*Clog Resistant*	
0-3, 0-5, 0-10, 0-15, 0-30	**3450K71**	$496.68	**3450K72**	$576.37

High-Performance Compact Flow Sights

1/4" to 3/4" Sizes

1" to 1 1/2" Sizes

For compact flow sights that can handle extreme conditions, set your target on these "bull's eye" sights. Use with water, compressed air, and hydraulic oil. Flow can move in either direction. Mount at any angle. Connections for all are NPT female.

High-pressure sights have a borosilicate glass window and a PTFE seal. Maximum pressure is 600 psi at 70° F. Temperature range is –40° to +450° F. FM approved.

High-temperature sights are rated between –40° and +850° F. They have a quartz glass window and a graphite seal. Maximum pressure is 450 psi at 70° F for ½" and ¾" pipe size sights, and 300 psi at 70° F for 1" and 1½" pipe size sights.

Pipe Size	Window Dia.	O'all Size, Lg. × Ht. × Dp.	*Steel*		*Type 316 Stainless Steel*	
High Pressure						
1/4"	3/4"	2" Dia. × 3 3/8" Dp.	**5019K41**	$304.01	**5019K61**	$365.82
1/2"	3/4"	2" Dia. × 3 3/8" Dp.	**5019K42**	304.01	**5019K62**	365.82
3/4"	3/4"	2" Dia. × 3 1/2" Dp.	**5019K43**	304.01	**5019K63**	365.82
1"	1 1/2"	5 1/2" × 2 3/4" × 4"	**5019K44**	415.92	**5019K64**	549.65
1 1/4"	1 1/2"	5 1/2" × 2 3/4" × 4 3/8"	**5019K45**	415.92	**5019K65**	549.65
1 1/2"	1 1/2"	5 1/2" × 2 3/4" × 4 5/8"	**5019K46**	415.92	**5019K66**	549.65
High Temperature						
1/2"	3/4"	2" Dia. × 3 3/8" Dp.	**5146K12**	373.18	**5146K32**	438.48
3/4"	3/4"	2" Dia. × 3 1/2" Dp.	**5146K14**	373.18	**5146K34**	438.48
1"	1 1/2"	5 1/2" × 2 3/4" × 4 1/2"	**5146K16**	469.95	**5146K36**	613.89
1 1/2"	1 1/2"	5 1/2" × 2 3/4" × 5 1/8"	**5146K18**	469.95	**5146K38**	613.89

Flow Sights

A

B

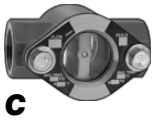
C

Front and back tempered-glass windows permit backlighting, so flow variations are easy to see—even through dark, murky liquids. All have a soda-lime glass window, except high-pressure flow sights, which have a borosilicate glass window. All are for use with water and hydraulic oil except Type 316 stainless steel sights, which are for use with water only. Connections are NPT female.

(A) Flow Sights—Flow can move in either direction. Mount at any angle. *Bronze* sights have Buna-N seals. Temperature range is –15° to +200° F. *Type 316 stainless steel* sights have PTFE seals. Temperature range is 40° to 200° F.

(B) Flow Sights with Indicator—Have a Type 304 stainless steel flapper that shows the movement of the liquid. Flow can move in one direction only. Mount at any angle. *Standard* sights have Buna-N seals and a temperature range of 0° to 250° F. *High-temperature* sights have fluoroelastomer seals. Temperature range is 0° to 400° F.

(C) High-Pressure Flow Sights with Indicator—A Ryton flapper shows the movement of the liquid. Seals are fluoroelastomer. Flow can move in either direction. Mount horizontally. Temperature range is 0° to 150° F.

Pipe Size	Window Dia.	O'all Size, Lg. × Ht. × Dp.	Max. psi @ 70° F		
(A) Bronze Flow Sights					
3/8"	1 3/4"	3 3/16" × 2 1/8" × 2 1/4"	125	**4206K22**	$95.65
1/2"	2"	3 13/16" × 2 7/16" × 2 7/16"	125	**4206K23**	99.40
3/4"	2"	3 13/16" × 2 7/16" × 2 7/16"	125	**4206K24**	103.15
1"	2"	4 3/8" × 3 1/8" × 3"	125	**4206K25**	105.03
1 1/4"	2"	4 3/8" × 3 1/8" × 3"	125	**4206K26**	110.65
1 1/2"	2"	4 5/8" × 4" × 3 13/16"	125	**4206K37**	241.94
2"	2"	4 5/8" × 4" × 3 13/16"	125	**4206K38**	253.19
(A) Type 316 Stainless Steel Flow Sights					
3/8"	1 5/8"	3 1/16" × 2 1/8" × 2 1/4"	125	**4206K72**	198.28
1/2"	2"	4 1/16" × 2 9/16" × 2 3/4"	125	**4206K73**	222.89
3/4"	2"	4 1/16" × 2 9/16" × 2 3/4"	125	**4206K74**	229.05
1"	2"	4 3/8" × 2 9/16" × 3 1/8"	125	**4206K75**	254.89
1 1/2"	2 7/8"	5 1/2" × 4 1/16" × 3 11/16"	125	**4206K77**	557.66
2"	2 7/8"	5 1/2" × 4 1/16" × 3 11/16"	125	**4206K78**	574.89
(B) Brass Flow Sights with Indicator					
3/8"	1 7/8"	3 5/16" × 2 1/4" × 2 1/16"	150	**4213K161**	123.33
1/2"	1 7/8"	3 5/16" × 2 1/4" × 2 1/16"	150	**4213K162**	119.66
3/4"	1 7/8"	3 7/16" × 2 1/4" × 2 5/16"	150	**4213K163**	121.18
1"	2 11/16"	5 7/16" × 3 1/8" × 2 9/16"	150	**4213K164**	168.50
1 1/2"	2 11/16"	5 9/16" × 3 1/8" × 2 3/4"	150	**4213K166**	174.47
2"	2 11/16"	6 7/16" × 3 1/8" × 3 1/4"	150	**4213K167**	203.39
(B) Brass High-Temperature Flow Sights with Indicator					
3/8"	1 7/8"	3 5/16" × 2 1/4" × 2 1/16"	150	**4213K141**	126.79
1/2"	1 7/8"	3 5/16" × 2 1/4" × 2 1/16"	150	**4213K142**	126.70
3/4"	1 7/8"	3 7/16" × 2 1/4" × 2 5/16"	150	**4213K143**	128.32
1"	2 11/16"	5 7/16" × 3 1/8" × 2 9/16"	150	**4213K144**	184.67
1 1/4"	2 11/16"	5 7/16" × 3 1/8" × 2 9/16"	150	**4213K145**	184.67
1 1/2"	2 11/16"	5 9/16" × 3 1/8" × 2 3/4"	150	**4213K146**	182.96
2"	2 11/16"	6 7/16" × 3 1/8" × 3 1/4"	150	**4213K147**	217.17
(B) Ductile Iron High-Temperature Flow Sights with Indicator					
3/8"	1 7/8"	3 5/16" × 2 1/4" × 2 1/16"	150	**4213K151**	119.64
1/2"	1 7/8"	3 5/16" × 2 1/4" × 2 1/16"	150	**4213K152**	119.85
3/4"	1 7/8"	3 7/16" × 2 1/4" × 2 5/16"	150	**4213K153**	119.73
1"	2 11/16"	5 7/16" × 3 1/8" × 2 9/16"	150	**4213K154**	134.86
1 1/2"	2 11/16"	5 9/16" × 3 1/8" × 2 3/4"	150	**4213K156**	152.19
2"	2 11/16"	6 7/16" × 3 1/8" × 3 1/4"	150	**4213K157**	184.67
(C) Steel High-Pressure Flow Sights with Indicator					
1/2"	1 1/8"	3 5/8" × 2 9/16" × 2"	400	**4196K61**	273.05
3/4"	1 1/2"	4 1/4" × 3 7/16" × 2 9/16"	400	**4196K62**	298.25
1"	1 1/2"	4 1/4" × 3 7/16" × 2 9/16"	400	**4196K63**	383.32
1 1/2"	2"	5 5/8" × 4 1/2" × 3 5/16"	400	**4196K64**	538.67
2"	2"	5 5/8" × 4 1/2" × 3 5/16"	400	**4196K65**	569.53
(C) Type 316 Stainless Steel High-Pressure Flow Sights w/Indicator					
1/2"	1 1/8"	3 5/8" × 2 9/16" × 2"	400	**4196K41**	397.70
1"	1 1/2"	4 1/4" × 3 7/16" × 2 9/16"	400	**4196K42**	512.35

Tube-Style Flow and Level Sights

A translucent tubular window provides an unobstructed 360° view for monitoring liquid flow in a pipeline or liquid level in a tank. Sights have Type 316 stainless steel fittings and an FEP (fluorinated ethylene propylene) thermoplastic window for excellent corrosion resistance. Use with water and hydraulic oil. Flow can move in either direction. Mount at any angle. Maximum pressure is 150 psi. Temperature range is –100° to +250° F. Connections are NPT male.

Pipe Size	Window Size, Dia. × Lg.	O'all Lg.		
1/2"	11/16" × 4"	9"	**5071K41**	$110.42
1/2"	11/16" × 6"	11"	**5071K61**	115.58
1/2"	11/16" × 12"	17"	**5071K31**	131.05
1/2"	11/16" × 24"	29"	**5071K81**	161.98
3/4"	15/16" × 4"	9 1/2"	**5071K42**	$181.61
3/4"	15/16" × 6"	11 1/2"	**5071K62**	189.99
3/4"	15/16" × 12"	17 1/2"	**5071K32**	215.11
3/4"	15/16" × 24"	29 1/2"	**5071K82**	265.41
1"	1 1/4" × 4"	10 1/4"	**5071K43**	$223.94
1"	1 1/4" × 6"	12 1/4"	**5071K63**	236.53
1"	1 1/4" × 12"	18 1/4"	**5071K33**	264.93
1"	1 1/4" × 24"	30 1/4"	**5071K83**	337.77

High-Visibility Rotary-Indicating Flow Sights

With Front Window

With Front and Back Windows

Check flow with just a quick glance—a rotor inside the window spins as liquid flows past. Flow moves in either direction, except Style E, in which flow moves right to left only; and all mount at any angle, except Styles C and D, which must be horizontal. Connections are NPT female. All are for use with water and hydraulic oil except Style F which is for use with water. Glass windows give a clearer view than polysulfone windows. Sights *with front and back windows* allow back-lighting for better viewing of dark liquids.

(A) Bronze with Glass Windows—Seals are Buna-N; rotor is acetal. Max. pressure is 125 psi at 70° F. Temp. range is –30° to +200° F.

(B) Brass with Polysulfone Window—Seals are fluoroelastomer; rotor is nylon. Max. pressure is 200 psi at 70° F. Temp. range is –20° to +212° F.

(C) Type 316 Stainless Steel with Polysulfone Window—Seals are fluoroelastomer; rotor is nylon. Max. pressure is 200 psi at 70° F. Temp. range is –20° to +212° F.

(D) Glass-Filled Polypropylene with Polysulfone Window—Seals are Buna-N; rotor is nylon. Max. pressure is 100 psi at 70° F. Temp. range is –20° to +180° F.

(E) High-Pressure Bronze with Glass Windows—Seals are fluoroelastomer; rotor is Ryton. Max. pressure is 400 psi at 70° F. Temp. range is 0° to +350° F.

(F) Type 316 Stainless Steel with Glass Windows—Seals are PTFE; rotor is Type 316 stainless steel. Max. pressure is 125 psi at 70° F. Temp. range is 40° to 200° F.

Pipe Size	Window Dia.	Overall Size, Lg. × Ht. × Dp.	Rotor Color		
With Front Window					
(A) Bronze with Soda-Lime Glass Window					
1/4"	1 3/4"	3 3/16" × 2 1/8" × 2 1/4"	White	4195K13	$71.27
3/8"	1 3/4"	3 3/16" × 2 1/8" × 2 1/4"	White	4195K14	73.14
1/2"	2"	3 13/16" × 2 7/16" × 2 7/16"	White	4195K15	78.77
3/4"	2"	3 13/16" × 2 7/16" × 2 7/16"	White	4195K16	84.40
1"	2"	4 3/8" × 3 1/8" × 3"	White	4195K17	97.52
1 1/4"	2"	4 3/8" × 3 1/8" × 3"	White	4195K18	108.78
1 1/2"	2"	4 5/8" × 4" × 3 13/16"	White	4195K19	159.41
2"	2"	4 5/8" × 4" × 3 13/16"	White	4195K21	174.42
(B) Brass with Polysulfone Window					
1/4"	2 1/16"	3" × 2 3/8" × 1 3/8"	Blue	3468K31	130.29
1/4"	2 1/16"	3" × 2 3/8" × 1 3/8"	Orange	3468K11	130.32
1/2"	2 1/16"	3" × 2 3/8" × 1 3/8"	Blue	3468K32	132.24
1/2"	2 1/16"	3" × 2 3/8" × 1 3/8"	Orange	3468K12	132.27
3/4"	2 1/16"	3 15/16" × 2 3/8" × 2"	Blue	3468K33	136.31
3/4"	2 1/16"	3 15/16" × 2 3/8" × 2"	Orange	3468K13	136.34
1"	2 1/16"	3 15/16" × 2 3/8" × 2"	Blue	3468K34	138.44
1"	2 1/16"	3 15/16" × 2 3/8" × 2"	Orange	3468K14	138.47
(C) Type 316 Stainless Steel with Polysulfone Window					
1/2"	2 1/16"	3" × 2 3/8" × 1 3/8"	Blue	3468K42	182.72
1/2"	2 1/16"	3" × 2 3/8" × 1 3/8"	Orange	3468K22	182.75
3/4"	2 1/16"	3 15/16" × 2 3/8" × 2"	Blue	3468K43	195.46
3/4"	2 1/16"	3 15/16" × 2 3/8" × 2"	Orange	3468K23	195.51
1"	2 1/16"	3 15/16" × 2 3/8" × 2"	Blue	3468K44	198.61
1"	2 1/16"	3 15/16" × 2 3/8" × 2"	Orange	3468K24	198.66
(D) Glass-Filled Polypropylene with Polysulfone Window					
1/4"	2 1/16"	3 1/16" × 2 3/8" × 1 3/8"	Blue	80135K21	56.33
1/4"	2 1/16"	3 1/16" × 2 3/8" × 1 3/8"	Orange	80135K11	56.33
1/2"	2 1/16"	3 1/16" × 2 3/8" × 1 3/8"	Blue	80135K22	58.28
1/2"	2 1/16"	3 1/16" × 2 3/8" × 1 3/8"	Orange	80135K12	58.28
With Front and Back Windows					
(A) Bronze with Soda-Lime Glass Windows					
1/8"	1 3/4"	3 3/16" × 2 1/8" × 2 1/4"	White	4200K38	89.09
1/4"	1 3/4"	3 3/16" × 2 1/8" × 2 1/4"	White	4200K41	92.73
3/8"	1 3/4"	3 3/16" × 2 1/8" × 2 1/4"	White	4200K42	96.35
1/2"	2"	3 13/16" × 2 7/16" × 2 7/16"	White	4200K43	99.74
3/4"	2"	3 13/16" × 2 7/16" × 2 7/16"	White	4200K31	101.82
1"	2"	4 3/8" × 3 1/8" × 3"	White	4200K32	107.49
1 1/4"	2"	4 3/8" × 3 1/8" × 3"	White	4200K35	109.09
1 1/2"	2"	4 5/8" × 4" × 3 13/16"	White	4200K33	240.00
2"	2"	4 5/8" × 4" × 3 13/16"	White	4200K34	250.91
(E) High-Pressure Bronze with Borosilicate Glass Windows					
1/4"	1 1/8"	3 1/4" × 2 9/16" × 2"	Gray	4195K31	251.31
3/8"	1 1/8"	3 1/4" × 2 9/16" × 2"	Gray	4195K32	251.31
1/2"	1 1/8"	3 1/4" × 2 9/16" × 2"	Gray	4195K33	271.75
3/4"	1 1/2"	4 1/8" × 3 7/16" × 2 9/16"	Gray	4195K34	281.60
1"	1 1/2"	4 1/8" × 3 7/16" × 2 9/16"	Gray	4195K35	316.84
(F) Type 316 Stainless Steel with Borosilicate Glass Windows					
1/4"	1 5/8"	3 1/16" × 2 1/8" × 2 1/4"	Gray	5088K53	185.66
3/8"	1 5/8"	3 1/16" × 2 1/8" × 2 1/4"	Gray	5088K54	194.28
1/2"	2"	4 1/16" × 2 9/16" × 2 3/4"	Gray	5088K55	211.51
3/4"	2"	4 1/16" × 2 9/16" × 2 3/4"	Gray	5088K56	221.35
1"	2"	4 3/8" × 2 9/16" × 3 1/8"	Gray	5088K57	248.43
1 1/4"	2"	4 3/8" × 2 9/16" × 3 1/8"	Gray	5088K58	253.35
1 1/2"	2 7/8"	5 1/2" × 4 1/16" × 3 11/16"	Gray	5088K59	525.97
2"	2 7/8"	5 1/2" × 4 1/16" × 3 11/16"	Gray	5088K61	545.66

Ball-Indicating Low-Flow Domed Sights

Brass

Bronze and Type 316 SS

Get an indication of flow at even the slightest amounts. These flow sights have a domed window and balls that indicate when flow is present. Flow can move in either direction. Connections are NPT female.

Brass sights have three balls—two white polyethylene and one green acrylic—that make viewing especially easy. Use with water. Mount horizontally or vertically. Unit can also be panel mounted with a 2 3/8" cutout. Sights have Buna-N seals and a self-cleaning polycarbonate window. Maximum pressure is 150 psi at 70° F. Temp. range is 35° to 150° F.

Bronze and ***Type 316 stainless steel*** sights have a white polyethersulfone ball and a borosilicate glass window. Use with water, compressed air, and hydraulic oil. Mount horizontally. Maximum pressure is 100 psi at 70° F.

1/2" *pipe size* sights have fluoroelastomer seals. Temperature range is 14° to 250° F.

3/4" *pipe size* sight has Buna-N seals. Temperature range is 14° to 180° F.

Type 316 stainless steel sight resists corrosion.

Pipe Size	Window Dia.	Overall Size, Lg. × Ht. × Dp.		
Brass				
1/4"	1 1/2"	3" × 2 3/16" × 2 3/8"	4202K12	$70.47
3/8"	1 1/2"	3" × 2 3/16" × 2 3/8"	4202K14	79.53
1/2"	1 1/2"	3" × 2 3/16" × 2 3/8"	4202K16	87.28
3/4"	1 1/2"	3" × 2 3/16" × 2 3/8"	4202K18	103.45
1"	1 1/2"	3" × 2 5/8" × 2 3/8"	4202K19	164.22
Bronze				
1/2"	1 11/16"	2 7/8" × 2 3/4" × 2 3/4"	4220K63	205.96
3/4"	2 7/8"	4 5/16" × 3 3/4" × 3 11/16"	4220K17	388.24
Type 316 Stainless Steel				
1/2"	1 11/16"	2 7/8" × 2 3/4" × 2 3/4"	4220K85	485.29

Slim-Line Flow Sights

With Indicator

These slender sights fit nicely into tight spots. Mount horizontally or vertically. All have a tubular borosilicate glass window that can be viewed from both the front and back. Use with hydraulic oil. Seals are Buna-N.

Brass—Temperature range is –40° to +180° F. Connections are NPTF (Dryseal) female. *Sights with indicator* have a white nylon ball for easier viewing of dark fluids and fluids in dimly lit areas.

Steel—Body is plated steel. Maximum temperature is 225° F. Minimum temperature is not rated. Connections are NPT female.

Pipe Size	Window Lg.	O'all Lg.	Hex Size	Max. psi @ 70° F	*Without Indicator*		*With Indicator*	
Brass								
1/8"	1 1/16"	3 5/16"	7/8"	435	1138K51	$34.92	1138K61	$36.39
1/4"	1 1/16"	3 9/16"	7/8"	435	1138K52	28.30	1138K62	36.06
3/8"	1 1/8"	4 1/4"	1 1/16"	425	1138K53	37.13	1138K63	43.19
1/2"	1 5/16"	4 5/8"	1 1/4"	380	1138K54	43.27	1138K64	49.74
3/4"	1 3/8"	5 1/4"	1 3/8"	345	1138K55	53.08	1138K65	60.02
1"	1 1/2"	6 5/16"	1 5/8"	270	1138K56	145.68	1138K66	160.54
Steel								
1/8"	1 1/16"	2 1/4"	13/16"	125	5069K51	13.40	_____	_____
1/4"	1 1/16"	2 1/4"	13/16"	125	5069K53	14.16	_____	_____
3/8"	1 3/8"	2 7/8"	15/16"	125	5069K55	17.11	_____	_____
1/2"	1 3/8"	3 5/8"	1 1/16"	125	5069K57	31.73	_____	_____
3/4"	1 1/2"	3 13/16"	1 1/4"	125	5069K59	36.41	_____	_____

Slim-Line Sanitary Quick-Clamp Flow Sights

Sanitary quick-clamp connections make these sights great for food and dairy applications (see pages 208-210 for quick-clamp fittings). They are electropolished to eliminate any cavities that can collect debris and bacteria. Sights also can be used with water and compressed air. Flow can move in either direction and you can mount at any angle. Body is Type 316L stainless steel and window is borosilicate glass. Seals are made of EPDM, are FDA compliant, and meet USP (United States Pharmacopeia) Class IV standards for food applications. Temperature range is –20° to +300° F.

For Tube OD	Window Lg.	O'all Lg.	Max. psi @ 70° F		
1/2"	13/16"	3"	150	4357K81	$498.19
3/4"	1 3/16"	3 7/16"	150	4357K82	549.29
1"	1 3/16"	3 9/16"	150	4357K83	556.26
1 1/2"	1 1/4"	4 1/8"	150	4357K84	582.75
2"	1 7/8"	4 3/4"	135	4357K85	722.18

For pipe size information, see pages 2-3.

Full-View Flow Sights

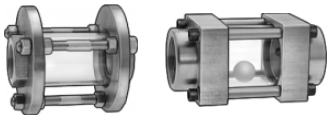

Without Indicator *With Indicator*

A 360° window provides an unobstructed view of fluid movement, clarity, and color. Flow can move in either direction. Mount at any angle, except sights with indicator, which must be horizontal or vertical.

Bronze sights withstand high temperatures. They have neoprene seals and a borosilicate glass window. Use with water. Temperature range is –20° to +250° F. Connections are NPT female.

Brass sights with indicator have a white nylon ball to indicate when flow is present. Seals are Buna-N, and window is borosilicate glass. Use with hydraulic oil. Temperature range is –40° to +212° F, unless noted. Connections are NPTF (Dryseal) female.

Type 316 stainless steel sights are for corrosive applications. They have PTFE seals and a borosilicate glass window. Use with water. Temperature range is 40° to 200° F. Connections are NPT female.

PVC sights provide excellent chemical resistance. They have fluoroelastomer seals and an acrylic window. Use with water. Temperature range is 40° to 140° F. Connections are NPT female.

Pipe Size	Window Lg.	O'all Size, Lg. × Dia.	Max. psi @ 70° F		
Bronze					
3/4″	2 5/8″	4 1/2″ × 3 3/4″	150	**4203K74**	$172.65
1″	2 11/16″	4 1/2″ × 4 1/4″	150	**4203K75**	203.19
1 1/2″	2 11/16″	4 3/4″ × 4 3/4″	120	**4203K83**	331.08
2″	3 1/4″	5 1/2″ × 5 3/4″	100	**4203K84**	346.34
Brass with Indicator					
1/2″	1 3/8″	4 1/4″ × 2″■	130	**4470K24**	114.03
3/4″	1 3/8″	4 1/4″ × 2″■	130	**4470K25**	116.84
1″	1 3/8″	4 7/8″ × 2 1/4″■	130	**4470K26**	150.15
1 1/4″	2 1/8″	5 5/8″ × 3″■	100	**4470K27**▲	281.74
1 1/2″	2 1/8″	5 7/8″ × 3″■	100	**4470K28**▲	225.03
2″	3 3/4″	7 1/2″ × 4″■	60	**4470K29**♥	365.68
Type 316 Stainless Steel					
1/2″	2 7/8″	4 1/2″ × 3 1/2″	50	**4756K21**	291.88
3/4″	3 3/8″	5 1/8″ × 3 7/8″	50	**4756K22**	315.94
1″	3 7/8″	5 5/8″ × 4 1/4″	50	**4756K23**	364.06
PVC					
1/2″	2 1/4″	4 3/4″ × 2 1/2″	110	**4338K21**	162.50
3/4″	2 1/4″	4 3/4″ × 2 1/2″	110	**4338K23**	173.33
1″	2 1/4″	5 1/4″ × 3″	110	**4338K25**	184.17
1 1/2″	2 1/2″	5 7/8″ × 3 1/2″	110	**4338K27**	249.17
2″	3 1/8″	7 3/8″ × 4″	110	**4338K29**	292.50

■ Body is square; dimensions are Lg. × Wd.
▲ Temp. range is –40° to +185° F. ♥ Temp. range is –40° to +150° F.

Flanged Full-View Flow Sights

For large pipelines and high flow, these sights have easy-to-connect ANSI Class 150 flanges. Use with water, compressed air, and hydraulic oil. Flow can move in either direction; mount at any angle. Inner window is borosilicate glass; sights also have a protective plastic outer shield. Seals are PTFE.

Flange Dimensions				
Pipe Size	Flange Dia.	Bolt Circle Dia.	No. of Holes	Hole Dia.
1″	4 1/4″	3 1/8″	4	5/8″
1 1/2″	5″	3 7/8″	4	5/8″
2″	6″	4 3/4″	4	3/4″
3″	7 1/2″	6″	4	3/4″
4″	9″	7 1/2″	8	3/4″

Pipe Size	Inner Window Lg.	O'all Lg.	Max. psi @ 70° F	Temp. Range, °F		
Steel						
1″	2 11/16″	4″	150	–20° to +450°	**4641K61**	$352.80
1 1/2″	2 9/16″	4″	120	–20° to +450°	**4641K62**	418.80
2″	3 3/16″	4 3/4″	100	–20° to +450°	**4641K63**	495.87
3″	3 7/16″	5 3/8″	100	–20° to +450°	**4641K64**	753.82
4″	5 9/16″	7 1/2″	70	–20° to +450°	**4641K65**	974.06
Type 316 Stainless Steel						
1″	2 11/16″	4″	150	–20° to +450°	**4641K81**	421.20
1 1/2″	2 9/16″	4″	120	–20° to +450°	**4641K82**	460.80
2″	3 3/16″	4 3/4″	100	–20° to +450°	**4641K83**	527.23
3″	3 7/16″	5 3/8″	100	–20° to +450°	**4641K84**	784.36
4″	5 9/16″	7 1/2″	70	–20° to +450°	**4641K85**	1,129.37

Flow Sight for Tubing

Made of clear polycarbonate that can be viewed from both the front and back, this sight has a white nylon ball that rotates in the circular channel to indicate flow. Use with water and compressed air. Flow can move in one direction only.

Sight is 2 15/16″ Lg. × 2 3/16″ Ht. × 1/2″ Dp. Mount at any angle. Maximum pressure is 10 psi at 70° F. Temperature range is 32° to 180° F. Has barbed connections that accept 1/4″ to 3/8″ ID tubing.

4218K61 ..... $25.43

About Liquid-Level Switches

Liquid-level switches are actuated when the liquid content reaches the float. As the float rises and falls, a magnet attracts and releases the contacts, opening and closing the switch. For more information about electrical switches, see page 855.

Wired "Off to On" (Normally Open)

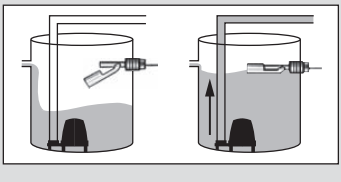

Wired "On to Off" (Normally Closed)

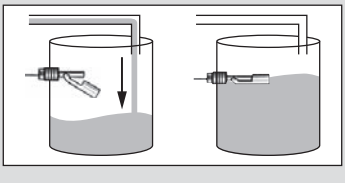

The first illustration shows a switch set so it is normally open—it turns one circuit from "off" to "on." When the tank fills, the switch trips, completing the circuit and turning on the internal pump to begin removing water.

The second illustration shows a switch set so it is normally closed—it turns one circuit from "on" to "off." When the tank fills, the switch trips, breaking the circuit and turning off an external pump to stop filling the tank.

Specific Gravity

Specific gravity is the ratio of the density of a given substance to the density of water. A liquid less dense than water will have a specific gravity less than one, while a liquid denser than water will have a specific gravity greater than one.

For example, hydraulic oil is less dense than water and has a specific gravity between 0.88 and 0.94.

Do You Need a Relay?

Most of our liquid-level switches have an amp rating too low to actuate a pump or valve directly. In these cases, you'll need to install a relay to provide the power these components require. See 47475K on page 545, or for our entire selection of relays, see pages 902-914.

Dual-Level Switch Kits for Liquids

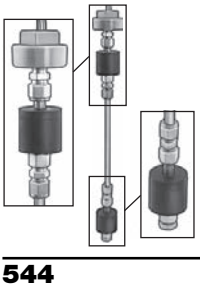

These kits include all you need to set up a custom dual-level switch quickly and easily—switches, fittings, and cut-to-length tubing with the lead wires already threaded. They have two single pole, single throw (SPST) switches that actuate at two separate levels to indicate when your tank is empty and when it's full. Both switches can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). All are rated for use at 120/240 VAC. Switches mount vertically to the top of your tank and have 60″ wire leads. Tank connections are 2″ NPT male. Brass and stainless steel tubing is 7/16″ ID × 1/2″ OD. Polypropylene tubing is 3/8″ ID × 1/2″ OD. For additional brass tubing, see page 155; for stainless steel tubing, see pages 144-150; and for polypropylene tubing, see page 132.

Float/Tube Material	Max. psi @ 70° F	Temp. Range, °F	Min. Liq. Specific Gravity	Amps @ 120/ 240 VAC	O'all Dia.	Float Lg.	Max. Insertion Lg.	Max. O'all Lg.		
Buna-N/Brass	150	+33° to +180°	0.55	0.17/0.08	1 7/8″	1 11/16″	30″	31 5/8″	**5267K84**	$532.11
Type 316 Stainless Steel	750	–40° to +275°	0.75	0.17/0.08	2 1/16″	2″	30″	32 1/8″	**5267K88**	849.00
Polypropylene	100	+33° to +221°	0.75	0.5/0.4	1 1/2″	2″	36″	38 3/4″	**5267K44**	267.28

For information about liquid-level switches, see page 544.

Relays for Low-Amp Liquid-Level Switches

Are the amps on your liquid-level switch too low to actuate a pump or valve? Then connect your switch to one of these general purpose relays—they offer the power you need to get the job moving. The relays work with any of our single pole, single throw (SPST) liquid-level switches (sold separately on this page and page 546). They have a terminal block connection and a 10-second time delay to minimize false signals in turbulent liquid. Relays are single pole, double throw (SPDT) and can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). They accept 120/240 VAC signal input. Rated for 8 amps @ 240 VAC. Temperature range is –4° to +122° F.

Compact model has knockouts in the base and sides for easy cable entry. Housing is made of white ABS plastic and is 3⅜″ Ht.×3⅜″ Wd.×1 9/16″ Dp. Model ***with sealed cable connections*** offers protection against dust and low-pressure jets. Housing is made of gray polycarbonate and is 3 3/16″ Ht.×6 5/16″ Wd.×2⅜″ Dp. Relay has an IP65/IEC 144 rating.

Relay with Sealed Cable Connections

Compact	47475K62	$87.16
With Sealed Cable Connections	47475K82	166.29

Vertical-Mount Liquid-Level Switches

Connect to the top or bottom of your tank (unless noted). All can be set to turn one circuit from "off" to "on" (normally open—NO) or from "on" to "off" (normally closed—NC), unless noted. Each float travels between about one-quarter to one-half of the float height, except *Style H* switches, which have a travel length of 4⅞″. All switches operate on 120/240 VAC, unless noted. All have 24″ wire leads, except bracket-mount switches, which have 72″ leads, and hazardous location switches, which have 6″ leads. Minimum temp. is 33° F, unless noted. Connections are NPT male, except ⅜″-16 and 7/16″-20 sizes, which have straight threads.

Low-amp switches require a relay in order to actuate a motor or pump (see 47475K on this page or pages 902-914). They are single pole, single throw (SPST). High-amp switches are single pole, double throw (SPDT).

Low-amp switches with slosh guard prevent unnecessary switching caused by turbulence in your tank.

Bracket-mount low-amp switches with slosh guard mount to the inside of your tank with two 9/32″ mounting holes (fasteners not included).

Hazardous location switches have a NEMA 4 housing (for indoor/outdoor use and exposure to splashing liquids and dusty environments) and a ¾″ NPT female conduit connection. All meet Class I, Groups C and D; Class II, Groups E, F, and G.

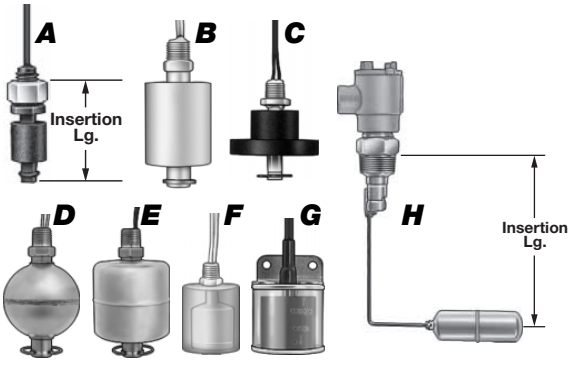

	Float/Stem Material	Pipe/ Thread Size	Max. psi @ 70° F	Max. Temp.	Min. Liq. Specific Gravity	Amps @ 120/240 VAC	O'all Dia.	Float Ht.	Insertion Lg.	Ratings♥			
Low-Amp Switches													
A	Polypropylene (NO)	⅜″-16	50	221° F	0.95	0.12■	9/16″	⅝″	1¼″	UR	50195K74	$26.31	***A***
A	Polypropylene (NC)	⅜″-16	50	221° F	0.95	0.12■	9/16″	⅝″	1¼″	UR	50195K73	26.31	***A***
B	Polypropylene	⅜″-16	150	150° F♣	0.90	0.17/0.08	1″	1″	1 11/16″	UR, CSA	50195K76	41.57	***B***
B	Polypropylene	⅛″	50	225° F♣	0.60	0.17/0.08	1″	1″	1⅝″	UR, CSA	50195K11	38.89	***B***
B	Polypropylene	⅛″	100	221° F	0.90	0.28/0.14	1″	1″	1⅞″	UR, CSA, NSF	50195K93	10.00	***B***
B	Polypropylene	⅛″	150	150° F♣	0.90	0.17/0.08	¾″	1″	1 11/16″	UR, CSA	50195K65	29.67	***B***
B	Polypropylene	⅛″	150	150° F♣	0.90	0.17/0.08	1″	1″	1⅝″	UR, CSA	50195K75	35.59	***B***
B	Polypropylene	¼″	100	221° F	0.85	0.50/0.40	1½″	2″	2 15/16″	UR, CSA, NSF	50195K85	45.59	***B***
B	Polypropylene	7/16″-20	150	150° F♣	0.90	0.17/0.08	¾″	1″	1 11/16″	UR, CSA	50195K67	29.64	***B***
B	Polypropylene/CPVC	¼″	100	221° F	0.85	0.50/0.40	1½″	2″	2 15/16″	—	50195K41	70.00	***B***
B	Polypropylene/CPVC	¼″	100	221° F	0.85	1.00/0.40	1½″	2″	2 15/16″	—	50195K62	41.91	***B***
B	Polysulfone	¼″	50	225° F♣	0.55	0.83/0.40	1⅞″	1⅞″	2⅞″	—	5128K23	95.21	***B***
B	Polypro./Type 316 SS	¼″	100	221° F	0.85	0.50/0.40	1½″	2″	2 15/16″	UR, CSA, NSF	50195K13	35.05	***B***
B	Kynar	⅛″	15	221° F	0.95	0.28/0.14	1″	1″	1⅞″	UR, NSF	44785K13	45.43	***B***
B	CPVC	¼″	15	180° F♣	0.85	0.17/0.08	1½″	1 13/16″	3 3/16″	—	5127K21	83.49	***B***
B	PTFE/Type 316 SS (NO)	⅛″	1,000	300° F♣	0.75	0.17/0.08	⅞″	1″	1 11/16″	—	48265K26♦	88.24	***B***
B	PTFE/Type 316 SS (NC)	⅛″	1,000	300° F♣	0.75	0.17/0.08	⅞″	1″	1 11/16″	—	48265K46♦	88.24	***B***
B	Buna-N/Nylon	⅛″	150	250° F♣	0.45	0.17/0.08	1″	1″	1⅝″	UR, CSA	48095K11	40.23	***B***
B	Buna-N/PBT★	⅛″	150	149° F	0.55	0.28/0.14	1″	1″	1⅞″	UR, CSA	48095K61	16.71	***B***
B	Buna-N/PBT★	¼″	150	149° F	0.55	0.50/0.40	1¼″	2″	2 15/16″	UR, CSA	48095K81	48.82	***B***
C	Buna-N/Polypro. (NC)	⅛″	50	150° F♣	0.72	0.17/0.08	1⅞″	1″	1 11/16″	UR, CSA	48095K41	24.41	***C***
D	Type 316 SS	¼″	500	392° F	0.80	1.00/0.40	2 1/16″	2 1/16″	2 15/16″	NSF	4646K53	94.07	***D***
D	Type 316 SS	¼″	750	300° F♣	0.73	0.17/0.08	2 3/16″	2″	2⅞″	NSF	4646K21	90.23	***D***
D	Type 316 SS	¼″	750	300° F♣	0.73	0.83/0.40	2 3/16″	2″	2⅞″	NSF	4646K23	88.24	***D***
D	Type 316 SS	½″	300	300° F♣	0.40	0.83/0.40	3½″	3½″	4¾″	—	4646K37	276.89	***D***
E	Type 316 SS	⅛″	300	392° F	0.80	0.28/0.14	1⅛″	1 3/16″	1⅞″	UR, CSA, NSF	4646K83	61.20	***E***
E	Type 316 SS	⅛″	400	300° F♣	0.80	0.17/0.08	1⅛″	1 1/16″	1 11/16″	UR, CSA, NSF	4646K11	73.44	***E***
E	Type 316 SS	¼″	200	392° F	0.65	0.50/0.40	2⅛″	2″	2 15/16″	UR, CSA, NSF	4646K85	64.17	***E***
E	Type 316 SS	¼″	200	482° F	0.65	0.50/0.40	2⅛″	2″	2 15/16″	UR, CSA, NSF	4646K15	77.29	***E***
E	Type 316 SS/PTFE	⅛″	400	300° F♣	0.80	0.17/0.08	1⅛″	1 1/16″	1 11/16″	UR, CSA	4646K12	98.80	***E***
Low-Amp Switches with Slosh Guard													
F	Polypropylene	⅛″	100	221° F	0.90	0.28/0.14	1½″	1″	1⅞″	UR, CSA	50195K94	19.71	***F***
F	Polypropylene	¼″	100	221° F	0.85	0.50/0.40	2″	2″	2 15/16″	UR, CSA	50195K84	45.30	***F***
F	Kynar	⅛″	15	221° F	0.95	0.28/0.14	1½″	1″	1⅞″	UR	44785K16	67.33	***F***
F	Buna-N/PBT★	⅛″	150	149° F	0.55	0.28/0.14	1½″	1″	1⅞″	UR, CSA	48095K62	37.01	***F***
F	Buna-N/PBT★	¼″	150	149° F	0.55	0.50/0.40	2″	2″	2 15/16″	UR, CSA	48095K82	58.33	***F***
F	Type 316 SS	¼″	200	482° F	0.65	0.50/0.40	2⅜″	2″	2 15/16″	UR, CSA	4646K16	102.00	***F***
Bracket-Mount Low-Amp Switches with Slosh Guard													
G	Polypropylene (NC)	—	100	221° F	0.85	0.50/0.40	2″	2″	3⅞″	—	4666K73	65.11	***G***
G	Buna-N/Type 316 SS (NO)	—	150	140° F♣	0.55	0.17/0.08	2⅝″	1 13/16″	3 11/16″	UR	4879K21	165.00	***G***
G	Buna-N/Type 316 SS (NC)	—	150	140° F♣	0.55	0.17/0.08	2⅝″	1 13/16″	3 11/16″	UR	4879K23	165.00	***G***
G	Buna-N/Type 316 SS (NO)	—	150	140° F♣	0.55	0.40/0.20	2⅝″	1 13/16″	3 11/16″	—	4879K25	178.17	***G***
G	Buna-N/Type 316 SS (NC)	—	150	140° F♣	0.55	0.40/0.20	2⅝″	1 13/16″	3 11/16″	—	4879K27	178.17	***G***
G	Type 316 SS (NC)	—	85	230° F	0.65	0.50/0.40	2⅜″	2″	3⅞″	—	4666K74	110.69	***G***
Hazardous Location High-Amp Switches													
H	Type 316 SS	1½″	100	275° F	0.70	10.00/10.00	1⅝″	4½″	6 13/16″	UL, CSA	4914K96♦●	358.95	***H***
H	Type 316 SS	1½″	100	275° F	0.70	10.00/10.00	1⅝″	4½″	6 13/16″	UL, CSA	4914K97♦	497.74	***H***

♥ UR = UL recognized; CSA = CSA certified; NSF = NSF certified; UL = UL listed. ■ Not rated for 240 VAC.
♣ Minimum temperature is –40° F. ♦ Top mount only. ★ PBT = Polybutylene Terephthalate. ● Body is made of brass.

For information about liquid-level switches, see page 544.

Horizontal-Mount Liquid-Level Switches

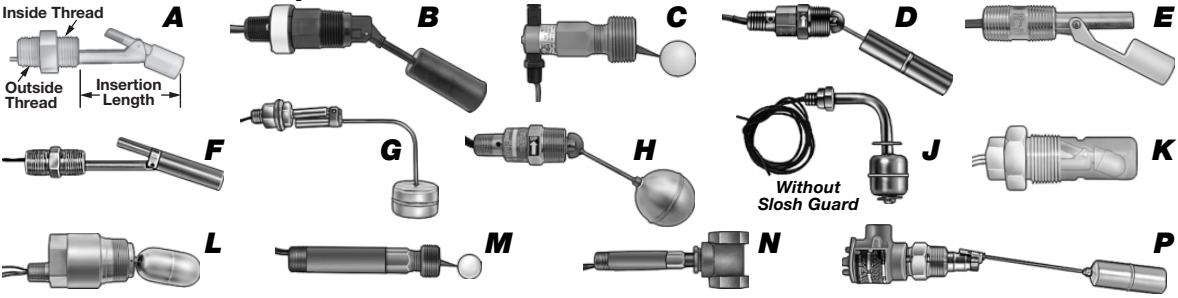

Mount these switches horizontally at any level along the inside wall of your tank or vessel. All can be set to turn one circuit from "off" to "on" (normally open—NO) or from "on" to "off" (normally closed—NC), except *Style G* switches, which come set either normally open or normally closed and cannot be changed. All are rated for 120/240 VAC and have 18″-24″ wire leads, unless noted. Minimum temperature is 40° F, unless noted.

All connections are NPT male, except for *Style N* switches, which have NPT female inside threads; *Style P* switches, which have NPT female outside threads; and ⅜″-24, ½″-13, ⅝″-11, ¾″-16, and ⅞″-14 sizes, which have straight threads.

Low-amp switches are single pole, single throw (SPST), unless noted, while high-amp switches are single pole, double throw (SPDT).

Low-amp switches require a relay in order to actuate a motor or pump (see 47475K on page 545). Those *with slosh guard* prevent unnecessary switching caused by turbulence in your tank.

For Hazardous Locations—*46815K* switches meet Class I, Groups A, B, C, and D; Class II, Groups E, F, and G; Class III. *5300K* switches meet Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Type 4. *4909K* switches meet Class I, Groups B, C, and D (stainless steel body also meets Group A); Class II, Groups E, F, and G. *4914K* switches meet Class I, Groups C and D; Class II, Groups E, F, and G.

	Float/Stem Material	Pipe Size Outside Thread	Pipe Size Inside Thread	Max. psi @ 70° F	Max. Temp.	Min. Liq. Specific Gravity	Amps @ 120/240 VAC	Insertion Lg.	Ratings♥			
Low-Amp Switches												
Standard												
A	Polypropylene	¼″	½″	100	221° F	0.70	0.28/0.14	2¾″	—	46515K43	$28.31	A
A	Polypropylene	—	½″	100	221° F	0.70	0.28/0.14	2¾″	UR, CSA, NSF	46515K45	10.83	A
A	Polypropylene	½″	½″	100	221° F	0.70	0.28/0.14	2¾″	UR, CSA, NSF	46515K41	13.95	A
A	Polybutylene	—	½″	100	149° F	0.80	0.28/0.14	2¾″	UR, CSA	50205K31	24.76	A
A	Polybutylene	—	½″	100	149° F	0.80	0.28/0.14	2¾″	UR, CSA	50205K35★	24.12	A
A	Polybutylene	½″	½″	100	149° F	0.80	0.28/0.14	2¾″	UR, CSA	50205K32	24.12	A
A	Polybutylene	⅝″-11	—	100	149° F	0.80	0.28/0.14	2⅞″	UR, CSA	50205K33	27.23	A
A	Polybutylene	¾″-16	⅞″-14	100	149° F	0.80	0.28/0.14	3⁵⁄₁₆″	UR, CSA	50205K34	37.05	A
A	Kynar	½″	½″	100	221° F	0.85	0.28/0.14	2¾″	UR, NSF	5082K21	32.29	A
B	Polyphenylene Sulfide	½″	1″	150	212° F	0.60	1.00■	5¾″	UR	46235K27●	85.81	B
C	Polypro./Type 301 SS	⅛″	1″	1,000	200° F	0.90	0.50■	1¾″	UR, CSA	48255K26	85.81	C
C	Type 304 SS/301 SS	⅛″	1″	350	200° F	0.70	0.50■	1¾″	UR, CSA	48255K31	165.14	C
D	Buna-N/Brass	½″	1″	150	180° F♣	0.80	0.17/0.08	3⅞″	UR, CSA	5126K19●	249.45	D
D	Type 304 SS/316 SS	½″	1″	500	300° F♣	0.85	0.17/0.08	5⁵⁄₁₆″	UL	46815K14●	365.92	D
E	Polysulfone	—	½″	150	225° F♣	0.70	0.16/0.08	2¹¹⁄₁₆″	UR, CSA, NSF	49175K37	27.34	E
E	Polysulfone	½″-13	—	150	225° F♣	0.70	0.16/0.08	2¹¹⁄₁₆″	UR, CSA, NSF	49175K38	35.74	E
E	Polysulfone	⅝″-11	—	150	225° F♣	0.70	0.16/0.08	2¹¹⁄₁₆″	UR, CSA, NSF	49175K39	40.00	E
E	Polypro./Type 316 SS	½″	½″	100	225° F♣	0.55	0.17/0.08	3¹¹⁄₁₆″	UR, CSA	46515K12	218.61	E
E	Nylon/Zinc Alloy	—	½″	100	250° F♣	0.65	0.17/0.08	2⅞″	UR, CSA	5123K21	57.68	E
E	Nylon/Type 316 SS	½″	½″	100	250° F♣	0.65	0.17/0.08	3¹¹⁄₁₆″	UR, CSA	5123K22	218.61	E
F	Type 316 SS	½″-13	—	100	392° F	0.80	0.28/0.14	3³⁄₁₆″	—	46815K23	70.92	F
G	Type 316 SS (NO)	½″	—	50	392° F	0.70	0.28/0.14	5¾″	—	5089K43	97.06	G
G	Type 316 SS (NC)	½″	—	50	392° F	0.70	0.28/0.14	5¾″	—	5089K41	97.06	G
H	Type 316 SS	½″	1″	900	300° F♣	0.90	0.17/0.08	4⅛″	UR, CSA	46815K12●	382.74	H
J	Type 316 SS	⅜″-24	—	300	392° F	0.80	0.28/0.14	2⅛″	UR, CSA, NSF	46815K17	44.06	J
With Slosh Guard												
J	Buna-N/Brass	⅜″-24	—	100	149° F	0.55	0.28/0.14	2⅜″	UR, CSA	5126K22	51.88	J
J	Type 316 SS	⅜″-24	—	300	392° F	0.80	0.28/0.14	2⅜″	UR, CSA	46815K18	68.86	J
K	Polypropylene	—	1″	100	221° F	0.70	0.28/0.14	2⅞″	UR	46515K71	44.81	K
K	Polypropylene	½″	1″	100	221° F	0.70	0.28/0.14	2⅞″	UR	46515K81	23.79	K
K	Polybutylene	—	1″	100	149° F	0.80	0.28/0.14	2⅞″	UR, CSA	50205K36★	66.53	K
K	Kynar	½″	1″	100	221° F	0.85	0.28/0.14	2⅞″	UR	5082K22	78.00	K
With Type 316 Stainless Steel Body for Hazardous Locations												
F	Type 316 SS	¼″	½″	300	392° F	0.70	0.28/0.14	4⅝″	UR, CSA, NSF	46815K11	132.22	F
F	Type 316 SS	½″	½″	300	392° F	0.70	0.28/0.14	4⅝″	UR, CSA, NSF	46815K22	139.78	F
F	Type 316 SS	½″	1″	300	392° F	0.70	0.28/0.14	4⅝″	UR, CSA, NSF	46815K21	158.60	F
L	Type 316 SS	½″	1½″	1,500	300° F♣	0.40	0.80/0.40	3⅜″	UR, CSA	5300K55	284.48	L
L	Type 316 SS	½″	2″	1,500	300° F♣	0.40	0.80/0.40	3⅜″	UR, CSA	5300K58	310.34	L
High-Amp Switches												
Standard												
B	Polyphenylene Sulfide	½″	1″	150	212° F	0.60	5.00/5.00	5¾″	UR	46235K25	74.48	B
E	Polypropylene	½″	½″	100	250° F♣	0.55	5.00/5.00	2⅞″	UR, CSA	46515K13	164.96	E
With Brass Body for Hazardous Locations												
M	Polypro./Type 301 SS	¾″	1″	1,000	220° F	0.90	5.00/5.00	1¾″	UL	4909K63	156.51	M
M	Type 304 SS/301 SS	¾″	1″	200	220° F	0.50	5.00/5.00	2⅞″	UL	4909K11	180.25	M
M	Type 304 SS/301 SS	¾″	1″	350	220° F	0.70	5.00/5.00	1¾″	UL	4909K12	192.13	M
N	Polypro./Type 301 SS	¾″	1″	250	220° F	0.90	5.00/5.00	2½″	UL	4909K64	195.37	N
P	Type 316 SS	¾″	1½″	100	275° F	0.70	10.00/10.00	13³⁄₁₆″	UL, CSA	4914K86♦	358.95	P
With Type 303 Stainless Steel Body for Hazardous Locations												
M	Polypro./Type 301 SS	¾″	1″	2,000	220° F	0.90	5.00/5.00	1¾″	UL	4909K65	199.68	M
M	Type 304 SS/301 SS	¾″	1″	200	220° F	0.50	5.00/5.00	2⅞″	UL	4909K13	229.90	M
N	Polypro./Type 301 SS	¾″	1″	2,000	220° F	0.90	5.00/5.00	2½″	UL	4909K66	289.27	N
With Type 316 Stainless Steel Body for Hazardous Locations												
P	Type 316 SS	¾″	1½″	100	275° F	0.70	10.00/10.00	13³⁄₁₆″	UL, CSA	4914K87♦	497.74	P

♥ UR = UL recognized; CSA = CSA certified; NSF = NSF certified; UL = UL listed. ★ Has ¼″ male spade connectors (no wire leads included).
■ Not rated for 240 VAC. ● Single pole, double throw (SPDT). ♣ Minimum temperature is –40° F. ♦ Has 6″ wire leads.

For information about liquid-level switches, see page 544.

Liquid-Level Float Switches

Installation couldn't be easier—simply hang these free-floating mechanical switches in your tank, and as your water level rises, the float turns and trips the switch. All are single pole, single throw (SPST).

Fixed-level float switches actuate and deactuate at a single level—ideal for triggering an alarm. They require 3″ clearance from the tank wall plus at least 10″ of vertical movement to actuate.

Switches for Water—Common with sump pumps. Float is ABS thermoplastic. Include a cable with a three-prong, "piggyback" plug, which is great for troubleshooting because it is not wired to the pump. UL listed.

Switches for Highly Viscous Liquids and Slurries—A polypropylene float gives these switches increased buoyancy, even in viscous media. Include wire leads. CSA certified.

Adjustable-level float switches allow you to adjust the actuation and deactuation points to prevent excessive wear on your equipment. They require at least 13″ of vertical movement to actuate and include wire leads.

Low-Amp Switches for Water—Commonly connected to relays to control small motors (see 47475K on page 545). Float is ABS thermoplastic. 49045K2 and 49045K4 let you set the on/off points between 8″ and 39″; set the on/off points for 49045K6 and 49045K8 between 12″ and 157″.

Switches for Highly Viscous Liquids and Slurries—A polypropylene float provides increased buoyancy in viscous media. Set the on/off points between 10″ and 50″ (unless noted). CSA certified.

Fixed-Level Switch for Water with "Piggyback" Plug

Adjustable-Level Switch for Viscous Liquids

Cable Lg.	Max. psi @ 70°F	Temp. Range, °F	Min. Liquid Specific Gravity	Amps @ 120 VAC	Float Dia.	Float Lg.	Wired "Off" to "On" (Normally Open)		Wired "On" to "Off" (Normally Closed)	
Fixed-Level Float Switches										
Switches for Water										
9½ ft.	20	32° to 140°	1	15	2½″	3¼″	51445K811	$32.21	51445K813	$32.21
9½ ft.	20	32° to 140°	1	15	3½″	3¼″	51445K911	33.93	51445K912	33.93
19½ ft.	20	32° to 140°	1	15	2½″	3¼″	51445K821	40.19	51445K823	40.19
19½ ft.	20	32° to 140°	1	15	3½″	3¼″	51445K921	42.34	51445K922	42.34
29½ ft.	20	32° to 140°	1	15	2½″	3¼″	51445K831	50.91	51445K832	50.91
29½ ft.	20	32° to 140°	1	15	3½″	3¼″	51445K931	53.63	51445K932	53.63
49½ ft.	20	32° to 140°	1	15	2½″	3¼″	51445K841	61.66	51445K842	61.66
49½ ft.	20	32° to 140°	1	15	3½″	3¼″	51445K941	64.95	51445K942	64.95
Switches for Highly Viscous Liquids and Slurries										
16 ft.	28	14° to 140°	0.7	6	6 11/16″	6⅛″	47025K39	117.67	47025K38	117.67
16 ft.	28	14° to 140°	0.95	6	3″	4⅞″	47025K15	92.09	47025K16	92.09
50 ft.	28	14° to 140°	0.7	6	6 11/16″	6⅛″	47025K17	205.93	47025K18	205.93
50 ft.	28	14° to 140°	0.95	6	3″	4⅞″	47025K19	176.51	47025K25	176.51
Adjustable-Level Float Switches										
Low-Amp Switches for Water										
19½ ft.	29	32° to 122°	0.7	0.5♣	2 13/16″	4¾″	49045K2	116.40	49045K4	116.40
19½ ft.	29	32° to 122°	0.9	0.5♣	3 5/16″	6½″	49045K6	158.60	49045K8	158.60
Switches for Highly Viscous Liquids and Slurries										
16 ft.	28	14° to 140°	0.7	6	6 11/16″	6⅛″	47025K49	171.40	47025K48	171.40
16 ft.	28	14° to 140°	0.95	6	3″	4⅞″	47025K26★	133.02	47025K27★	133.02
50 ft.	28	14° to 140°	0.7	6	6 11/16″	6⅛″	47025K28	267.33	47025K29	267.33
50 ft.	28	14° to 140°	0.95	6	3″	4⅞″	47025K31★	221.28	47025K32★	221.28

♣ Also operates at 240 VAC. ★ Maximum actuation point is 40″.

Wear-Resistant Level Switches for Conductive Liquids

With no moving parts, these switches are less prone to wear, so they're less prone to premature failure. They have two Type 316 stainless steel tips to monitor the level of conductive liquids. They stand up to dirty liquids and those with high solid content. Their compact design fits almost anywhere and their NEMA 6 housing withstands occasional submersion. Mount horizontally or vertically.

Switches have a single pole, double throw (SPDT) relay that can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). They also have a 6-ft. cable with wire leads. Rated for 1 amp at 30 VDC. Minimum liquid specific gravity is 1.0. Connections are ¾″ NPT male. ***Caution:*** Do not use in flammable solutions.

Polypropylene switches have a maximum pressure of 85 psi at 70°F and a temp. range of –10° to +140°F. ***Ryton*** switches have a maximum pressure of 290 psi at 70°F. Temp. range is –10° to +176°F.

Insertion Length	*Polypropylene*		*Ryton*	
1½″	3915K13	$191.25	3915K11	$201.32
3″	3915K14	214.64	3915K12	227.63

Easy-View Liquid-Level Switches

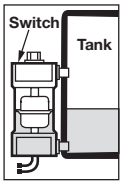

With these switches, you can visually monitor the liquid level, as well as maintain the switch, all from outside your tank. You can even remote mount them away from your tank. They have a Type 316 stainless steel float encased in a clear acrylic reservoir with ½″ NPT female connections that mount vertically to the outside of your tank. They have aluminum alloy end plates, Buna-N gaskets, and 24″ long wire leads. They are SPST (single pole, single throw) and operate on 0.4/0.2 amps at 120/240 VAC. Normally open switches turn one circuit from "off" to "on," while normally closed switches turn one circuit from "on" to "off." Minimum liquid specific gravity is 0.6. Maximum pressure is 125 psi at 70°F. Temperature range is 33° to 170°F. Overall size is 3 5/16″ Dia. × 6⅜″ Ht.

Wired "Off" to "On" (Normally Open)	4288K51	$131.29
Wired "On" to "Off" (Normally Closed)	4288K52	131.29

Probe-Style Level Switches for Conductive Liquids

Instead of a float, these switches feature probes that reach deep into your tank to detect the level of any conductive liquid—circuit is closed when the liquid reaches the probes. To customize your level detection, probes can be cut to any length (minimum ⅛″). With no moving parts, these switches are less prone to premature failure or catching on tank walls. Tank connection is 2″ NPT male. Switches have screw terminals and a single pole, double throw (SPDT) relay that can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). Switches are rated for 10 amps at 120 VAC for controlling small pumps and motors. Designed for indoor use. All include a polypropylene control box and Type 316 stainless steel probes that are encased in PTFE. The control box has two 11/64″ dia. mounting holes (fasteners not included). Maximum pressure is 250 psi at 70°F. Temperature range is –40° to +150°F. UL listed and CSA certified. ***Caution:*** Do not use in flammable solutions.

Single-level switches include two probes to detect a single level change.

Dual-level switches have three probes for detecting two independent levels.

Probe Length	*Single Level*		*Dual Level*	
6″	46715K21	$343.64	46715K91	$405.45
12″	46715K22	343.64	46715K92	404.55
18″	46715K23	381.82	46715K93	461.82
24″	46715K24	381.82	46715K94	461.82
36″	46715K25	$420.00	46715K95	$520.00
48″	46715K26	460.00	46715K96	578.18
60″	46715K27	498.18	46715K97	636.36

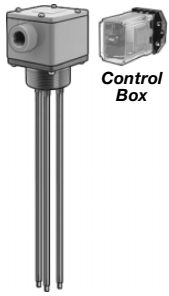

Dual-Level Switch

For information about liquid-level switches, see page 544.

Vibration-Resistant Liquid-Level Switches

BSPP Male Connection

Control the liquid level in your tank without a float. These optical switches use an infrared light beam in place of a float and won't be affected by any vibrations in your tank that could cause a float to malfunction or wear prematurely. Switches are sensitive to light, so they need to be shielded or used in an enclosed tank. All are single pole, single throw (SPST). Maximum output is at the input voltage. Mount horizontally or vertically, unless noted. Minimum specific gravity is not rated. Switches with a BSPP male connection have an external LED for a visual indication of when the output is on. *Polyamide* housing is best for use with solvents, *polysulfone* offers higher chemical resistance than polyamide, and *steel* housing is the choice for high-pressure applications.

Actuates When Wet (Normally Open)—When the tip becomes immersed in liquid, the beam refracts and actuates the sensor output.

Actuates When Dry (Normally Closed)—When the tip becomes exposed to air, the beam stops refracting and actuates the sensor output.

Housing Material	Pipe Size	Max. psi @ 70°F	Temp. Range, °F	Input Voltage	Max. Output	Insertion Lg.	O'all Lg.	Hex Size	Wire Lead Lg.	Actuates When Wet (Normally Open)		Actuates When Dry (Normally Closed)	
BSPP Male Connection													
Polyamide	3/8"	145	–4° to +176°	10-40 VDC	200 mA	1 3/4"	2 15/16"	1 1/16"	78"	4949K45	$114.61	4949K43	$114.61
Polysulfone	3/8"	145	–4° to +176°	10-40 VDC	200 mA	1 3/4"	2 15/16"	1 1/16"	78"	4949K35	114.61	4949K33	114.61
NPT Male Connection													
Polysulfone	1/4"	150	0° to +176°	10-28 VDC	40 mA	1/4"	2 3/16"	5/8"	12"	46455K48	143.95	46455K38	143.95
Steel	1/2"	2,500	–40° to +212°	5 VDC	18 mA	1/4"	1 3/8"	7/8"	12"	5094K32●	151.58	5094K22●	151.58

● Mount horizontally only.

Level Switches for Dry Materials

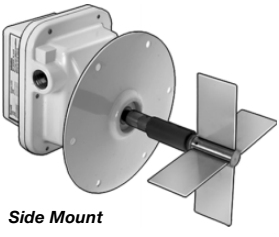

Side Mount

It's easy to tell when bins of dry material are full or empty. These switches have a paddle that rotates at 1 rpm; if rotation is impeded, a sensor will actuate a relay.

Switches are housed in a polyester-coated aluminum enclosure that's rated for NEMA 4X (washdown/corrosion resistant) and NEMA 5 (dust/lint resistant). They have a Type 304 stainless steel paddle and an 8" dia. steel mounting plate with six 11/32" mounting holes (fasteners not included). Paddle measures 1 1/2" Wd. × 5" Lg., unless noted. Switches have a single pole, double throw (SPDT) relay that can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). They have 3/4" NPT female conduit connections for wiring. Maximum pressure is 30 psi at 70°F. Temperature range is –30° to +160°F. UL listed and CSA certified. Use ***side-mount*** switches with materials weighing less than 30 lbs./cu. ft. ***Top-mount*** switches are for use with materials weighing 30-75 lbs./cu. ft.

Standard switches are rated for 20 amps at 120 VAC. ***Safety*** switches are rated for 10 amps at 120 VAC. They also have a second SPDT relay rated for 0.6 amps at 120 VAC that can be used as an alarm relay or to indicate failure. Two LEDs indicate proper operation and alarm condition, and an external function test lets you verify proper operation while the unit is installed and operating.

Insertion Lg.	O'all Lg.	Standard Switches		Safety Switches	
Side Mount					
6 5/8"	12 1/2"	49005K51★	$381.65	49005K26★	$528.35
Top Mount					
12"	15 3/4"	49005K52	398.74	49005K36	554.11
Top Mount (Cont.)					
24"	27 3/4"	49005K53	$437.83	49005K37	$590.61
36"	39 3/4"	49005K54	474.32	49005K38	633.06
48"	51 3/4"	49005K55	510.82	49005K39	663.60

★ Paddle measures 2" Wd. × 7" Lg.

Noncontact Liquid-Level Switches

Set multiple switch points for controlling liquid level and activating alarms. These noncontact ultrasonic switches mount on top of your tank and use sound waves to detect liquid level so they never come into contact with the liquid itself. Use with harsh chemicals and dirty and highly viscous liquids. Switches have a polycarbonate NEMA 4X enclosure (washdown/corrosion resistant) with a PVDF-covered ultrasonic transducer. They have three single pole, double throw (SPDT) relays rated for 0.5 amps at 120 VAC. Relays can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). Switches operate on 95 to 250 VAC and include screw terminals with two 1/2" NPT female conduit connections. Max. pressure is 30 psi at 70°F. Temp. range is –7° to +140°F. Connection is NPT male.

Operating Range	Pipe Size	O'all Size, Lg. × Wd.		
0.33 to 9.8 ft.	1"	3 15/16" × 5 3/16"	3785K11	$937.50
0.67 to 26.2 ft.	2"	5 1/2" × 5 3/16"	3785K12	1,023.15

Liquid-Level Switches with Compressed-Air Output

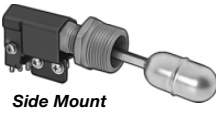

Side Mount

Top Mount

Instead of an electrical signal, these switches actuate a three-way compressed air valve for use in harsh environments without electricity. Switches have a Type 304 stainless steel float that is magnetically coupled to the air valve; air supply remains closed until the float rises and opens the valve. Requires a 30-100 psi air supply. Stem is Type 301 stainless steel. Float measures 1" Dia. × 2" Lg. Minimum liquid specific gravity is 0.5. Maximum pressure is 200 psi at 70°F. Temperature range is 35° to 140°F. Tank connection is 1" NPT male; the valve and air connections accept 3/32" ID tubing.

Mounting Position	Insertion Lg.	O'all Lg.		
Brass Body				
Side Mount	3"	6 7/8"	3792K31	$286.36
Top Mount	3 1/2"	7 11/16"	3792K32	369.09
Type 303 Stainless Steel Body				
Side Mount	3"	6 7/8"	3792K41	330.91
Top Mount	3 1/2"	7 11/16"	3792K42	432.73

External-Mount Dry- and Liquid-Level Switch for Plastic Tanks

Shown with Mounting Bracket (included)

Don't worry about chemical compatibility—install this level switch on the outside of your tank. It never comes in direct contact with the material inside, so it can be used with harsh chemicals and highly viscous liquids. It reads dry and liquid levels through any thermoplastic tank less than 1" thick by monitoring the capacitance between the switch and the material in the tank. When the material drops below or rises above the switch's position, the capacitance changes and actuates the switch. Mount horizontally or vertically.

Switch has a single pole, single throw (SPST) relay that can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). Rated for 0.35 amps maximum at the supply voltage. Operates at 20 to 240 VAC, 50-60 Hz. Switch has a set screw and an indicating light to make calibration quick and easy. It includes 6 1/2-ft. long wire leads and a mounting bracket with one 3/16" hole and one 3/16" × 13/16" slotted hole (fasteners not included). Switch (without bracket) measures 1 3/16" Dia. × 3" Lg. Mounting bracket measures 2" Lg. × 1 5/16" Wd. × 1 3/16" Ht. Temperature range is –13° to +176°F. UL listed and CSA certified.

Note: Cannot be mounted to a metallic surface.

4696K21 ..... $255.08

Continuous-Level Transmitter for Liquids and Dry Materials

Continuously monitor the level in your tank without contaminating its contents. This ultrasonic transmitter uses sound waves to monitor the fluid level and sends the results via a 4-20 mA signal output. It mounts at the top of your tank and will never come in contact with the fluid, so you don't have to worry about chemical compatibility or viscosities. Housing is polycarbonate and rated NEMA 4X (washdown/corrosion resistant). Transmitter operates on 12/24 VDC and has a conduit box with 6-ft. wire leads. Max. pressure is 15 psi at 70°F. Temp. range is –40° to +140°F. Connection is NPT male.

Operating Range	Pipe Size	Overall Size, Dia. × Lg.		
4" to 70"	3/4"	3" × 4 1/4"	5354K23	$357.14

Compact Low-Flow Switches

In low-flow applications, these switches are ideal for detecting the presence or absence of flow and actuating alarms that protect pumps. All have 24″ wire leads; 4960K2 also has a ½″ NPT female conduit connection. Use with water. Switches mount horizontally or vertically, unless noted. All are UL recognized, unless noted.

Styles A-D are single pole, single throw normally open (SPST-NO). They turn one circuit from "off" to "on." *Styles E* and *F* are single pole, double throw (SPDT). They turn one circuit from "off" to "on" or from "on" to "off."

Straight switches have NPT male process connections, unless noted. ***90° elbow*** switches have NPT female process connections, unless noted.

Switches are available in your choice of setpoints, except for Style C, which is available at 0.5 gpm only. **To Order:** Please specify setpoint from those listed below.

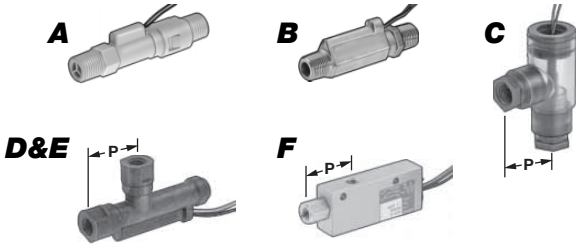

Pipe Size	Available Setpoints, gpm	Body Material	Seal Material	Max. psi @ 70° F	Temp. Range, °F	Amps @ 120/240 VAC	Port-to-Port Lg. (P)		
Straight									
A ... ⅜″	0.25, 0.5, 1, 1.5, 2	Polypropylene	Ryton	125	0° to +212°	0.08♠	4″	**42015K2**▲	$50.85
A ... ¼″	0.1, 0.25, 0.5, 0.75, 1	Polypropylene	Fluoroelastomer	200	+32° to +194°	0.5/0.5	4⅞″	**2371K4**	46.40
A ... ¼″	0.1, 0.25, 0.5, 0.75, 1	Acetal	Fluoroelastomer	200	+32° to +194°	0.5/0.5	4⅞″	**2371K5**	57.13
B ... ⅜″	0.25, 0.5, 1, 1.5, 2	Brass	Ryton	1,500	–20° to +275°	0.17/0.08	3⁷⁄₁₆″	**4960K5**	103.00
B ... ⅜″	0.25, 0.5, 1, 1.5, 2	Type 316 SS	Ryton	1,500	–20° to +275°	0.17/0.08	3⁷⁄₁₆″	**4960K7**	245.35
B ... ½″	0.25, 0.5, 1, 1.5, 2	Brass	Ryton	1,500	–20° to +275°	0.17/0.08	3⁷⁄₁₆″	**4960K6**	106.03
90° Elbow									
C ... ½″	0.5	PVC	Buna-N	120	0° to +120°	0.17/0.08	2¹⁄₁₆″	**42015K5**■	97.06
D ... ¼″	0.1, 0.25, 0.5, 0.75, 1	Polypropylene	Fluoroelastomer	200	+32° to +194°	0.5/0.5	1⅞″	**2371K2**	52.73
D ... ¼″	0.1, 0.25, 0.5, 0.75, 1	Acetal	Fluoroelastomer	200	+32° to +194°	0.5/0.5	1⅞″	**2371K3**	65.31
E ... ¼″	0.1, 0.25, 0.5, 0.75, 1, 1.5	Ryton	Fluoroelastomer	250	0° to +225°	0.17/0.08	1¼″	**42015K4**	108.90
F ... ¼″	0.1, 0.25, 0.5, 0.75, 1, 1.5	Brass	Fluoroelastomer	1,000	–20° to +225°	0.17/0.08	2¹⁄₁₆″	**4960K2**	217.76
F ... ¼″	0.1, 0.25, 0.5, 0.75, 1, 1.5	Type 316 SS	Fluoroelastomer	1,000	–20° to +300°	0.17/0.08	2¹⁄₁₆″	**4960K4**	519.33

♠ Operates on 120 VAC only. ▲ Not UL recognized. ■ Mount vertically only.

Adjustable Flow Switches

Adjustable to any flow rate within their range, these switches handle higher flow rates than the compact switches above. They have a bronze body and are single pole, double throw (SPDT)—they can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). They're rated 0.17/0.08 amps @ 120/240 VAC. All have 24″ wire leads and a ½″ NPT male conduit connection. Seals are fluoroelastomer. Use with water. Mount at any angle. Maximum pressure is 400 psi at 70° F. Process connections are NPT female. UL recognized, CSA certified, and CE approved.

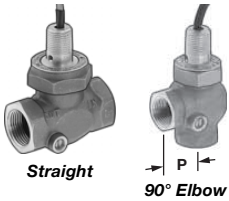

Straight *90° Elbow*

Straight switches have a temperature range of –20° to +200° F.
90° elbow switches have a temperature range of –20° to +180° F.

To Order: Please specify setpoint range from those listed below.

Pipe Size	Available Setpoint Ranges, gpm	Port-to-Port Lg. (P)		
Straight				
1″	1-6, 2-8, 5-15	3¼″	**4980K2**	$227.81
90° Elbow				
¾″	0.75-4, 2-8, 7-14	1⅜″	**4980K4**	230.25

Hazardous-Location Adjustable Low-Flow Switches

UL listed Class I, Groups B, C, and D; and Class II, E, F, and G for use in hazardous locations. These switches monitor low-flow applications with compressed gas (air, natural gas, nitrogen, carbon dioxide, and methane) and water and have an adjustable setpoint. They're single pole, double throw (SPDT) and can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed).

Switches operate on 5 amps at 120/240 VAC and have 18″ wire leads with a ¾″ NPT male conduit connection. Mount at any angle. Maximum pressure is 1,450 psi at 70° F. Temperature range is –4° to +220° F. Process connections are NPT female.

Pipe Size	Setpoint Range: Compressed Gas, scfm	Setpoint Range: Water, gpm	Port-to-Port Lg.		
Brass					
½″	0.18-2.7	0.04-0.75	3⅝″	**91445K23**	$196.13
Type 304 Stainless Steel					
½″	0.18-2.7	0.04-0.75	3⅝″	**91445K24**♥	289.79

♥ Also UL listed Class I, Group A.

Paddle-Style Flow Switches

For small to large pipes, these switches include paddles that can be removed or trimmed to fit your specific application. Install directly into a threaded fitting in horizontal pipe runs. The paddle extends into the flow and actuates the switch when flow reaches the setpoint.

NEMA 1 switches are for indoor use.

NEMA 4X switches are for outdoor, washdown, and corrosive environments.

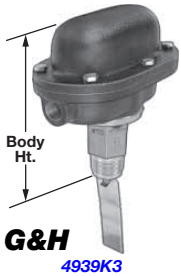

G&H *4939K3*

G&H Switches are single pole, double throw (SPDT) and can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). They operate on 7.4/3.7 amps at 120/240 VAC. Connect with screw terminals. Use with water and hydraulic oil. Temperature range is 32° to 300° F, unless noted. UL listed and CSA certified.

Style G switches fit 1″ to 6″ pipe sizes. They have a 1″ NPT male process connection and four paddles (1″, 2″, 3″, and 6″ long). Setpoint ranges from 6 to 166 gpm (unless noted) depending on the pipe size, fluid, and paddle used.

Style H fit 1¼″ to 16″ pipe sizes. They have a 1¼″ NPT male process connection and include two paddles (1″ and 6″ long). Setpoint is adjustable and ranges from 5 to 998 gpm depending on the pipe size and paddle used. 4939K3 and 4939K4 have a ½″ NPT conduit connection.

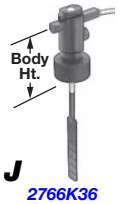

J *2766K36*

J Switches fit 1½″ to 3″ pipe sizes. They include a ¾″ socket weld connection (unless noted) and one 5″ paddle. Setpoint ranges from 8 to 24 gpm depending on the pipe and paddle size. Switches are single pole, single throw normally open (SPST-NO). They turn one circuit from "off" to "on." They operate on 1 amp at 120/240 VAC or 12/24 VDC; they have a 5-ft. cable without a plug. Use with water. Temperature range is 34° to 230° F.

Body Material	Paddle Material	Max. psi @ 70°F	Body Ht.		
NEMA 1					
G ... Brass	Type 304 SS	160	5″	**4971K3**	$119.87
G ... Type 316 SS	Type 304 SS	160	5″	**4971K4**	372.03
H ... Brass	Bronze	300	7⁹⁄₁₆″	**4939K1**	326.16
H ... Type 316 SS	Type 301 SS	1,000	7⁹⁄₁₆″	**4939K2**	546.56
NEMA 4X					
G ... Brass	Type 304 SS	160	4¹⁵⁄₁₆″	**4971K5**♣	162.75
H ... Brass	Bronze	300	6¹³⁄₁₆″	**4939K3**	399.66
H ... Type 316 SS	Type 301 SS	1,000	6¹³⁄₁₆″	**4939K4**	638.54
J ... PVC	Noryl	365	2⅝″	**2766K36**	90.82
J ... PVC	Noryl	365	2⅝″	**2766K38**◣	92.64

♣ Maximum temperature is 225° F; setpoint range varies from 5 to 245 gpm, depending on the pipe size and paddle used.
◣ Process connection is ½″ NPT male.

For information about pipe size, see pages 2-3.

Hazardous-Location Flow Switches

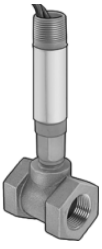

UL listed for Class I, Groups B, C, and D; and Class II, E, F, and G hazardous locations. Use with compressed gas (air, natural gas, nitrogen, carbon dioxide, and methane) and water. Switches are single pole, double throw (SPDT) and can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). Switches operate on 5 amps at 120/240 VAC and include 18" wire leads with a ¾" NPT male conduit connection. Mount at any angle. Temperature range is –4° to +220° F. Process connections are NPT female.

Pipe Size	Setpoint Compressed Gas, scfm	Water, gpm	Max. psi @ 70° F	Port-to-Port Lg.		
Brass						
½"	6.5	1.5	250	2¼"	**47565K31**	$145.07
¾"	10	2	250	2⅜"	**47565K32**	151.30
1"	14	3	250	2½"	**47565K33**	174.82
1¼"	21	4	250	2⅝"	**47565K34**	197.48
1½"	33	6	250	2⅞"	**47565K35**	232.90
2"	43	10	250	3"	**47565K36**	295.80
Iron						
½"	6.5	1.5	1,000	2½"	**47565K41**	190.12
¾"	10	2	1,000	2⅝"	**47565K42**	196.35
Type 304 Stainless Steel						
½"	6.5	1.5	2,000	2¼"	**47565K61**★	201.73
¾"	10	2	2,000	2⅝"	**47565K62**★	244.52
1"	14	3	2,000	3"	**47565K63**★	278.52
2"	43	10	2,000	4¾"	**47565K66**★	475.72

★ Also UL listed Class I, Group A.

Hazardous-Location Paddle-Style High-Flow Switches

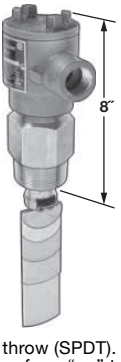

These customizable switches include five Type 316 stainless steel paddles that can be removed or trimmed to fit any pipe size between 1½" and 20". They're UL listed for Class I, Groups C and D; and Class II, Groups E, F, and G hazardous locations. Switches are also CE approved and CSA certified. They work with flow ranges from 7 to 2,400 gpm for water and 32 to 10,000 scfm for compressed gases (air, natural gas, nitrogen, carbon dioxide, and methane). Flow rates and set points vary based on pipe size and paddle used. Switches have a 1½" NPT male process connection and install directly into a threaded fitting in horizontal pipe runs.

The paddle extends into the flow and actuates the switch when flow reaches the setpoint. They operate on 10 amps at 120/240 VAC and include 6" wire leads with a ¾" NPT female conduit connection. Paddles measure 1¼", 2", 3", 4", and 6". Temperature range is –4° to +275° F.

Switches for one circuit are single pole, double throw (SPDT). They turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed).

Switches for two circuits are double pole, double throw (DPDT). They turn two circuits from "off" to "on" (normally open) or from "on" to "off" (normally closed).

Body Material	Max. psi @ 70° F	*For One Circuit*		*For Two Circuits*	
Brass	1,000	**48005K53**	$297.36	**48005K54**	$330.37
Type 316 SS	2,000	**48005K55**	425.70	**48005K56**	459.54

Washdown Adjustable Flow Switches

A NEMA 4X enclosure keeps these switches sealed for use outdoors and in washdown and corrosive environments. They're adjustable to any flow rate within their range and are ideal for use with water and hydraulic oil. They control valves, pumps, or alarms and are single pole, double throw (SPDT). They can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). Switches operate on 0.4 amps at 120 VAC and include screw terminals with a ½" through hole for conduit connection. Mount at any angle. Body is bronze. Maximum pressure is 400 psi at 70° F. Temperature range is –30° to +212° F. Process connections are NPT female. CSA certified.

To Order: Please specify setpoint range from those listed below.

Pipe Size	Available Setpoint Ranges, gpm	Port-to-Port Lg.		
¼"	0.3-2, 0.4-3, 0.5-4	3 1/16"	**2913T21**	$275.12
½"	0.3-2, 0.4-3, 0.5-4, 0.5-6, 1.5-10	3 1/16"	**2913T22**	273.28
¾"	0.5-6, 1.5-10, 2-15, 3-20	3 1/16"	**2913T23**	284.58
1"	2-15, 3-20, 4-30, 5-40	3 1/16"	**2913T24**	290.30
1½"	4-30, 5-40, 5-60, 15-100	3 1/16"	**2913T25**	314.00
2"	5-40, 5-60, 15-100, 20-150, 30-200	3 3/16"	**2913T26**	349.55

Dial-Indicating High-Flow Switches

In addition to switching at a single, fixed setpoint, these flow switches have a pointer that shows you the relative flow rate on a numberless dial scale. They have a NEMA 4 housing (indoor/outdoor use) and are good for use with water and lubricating oil. Switches are single pole, double throw (SPDT) and can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). They operate on 15/7 amps at 120/240 VAC and include screw terminals with a ½" NPT female conduit connection. Mount at any angle. Housing is bronze. Maximum pressure is 125 psi at 70° F. Temp. range is –10° to +200° F. Process connections are NPT female.

Pipe Size	Setpoint, gpm	Indicating Range, gpm	Port-to-Port Lg.		
½"	2.5	2-28	3⅝"	**4228K11**	$705.10
¾"	4.5	4-32	3¾"	**4228K12**	862.20
1"	7	6-60	3¼"	**4228K13**	903.31
1½"	9	8-65	4¾"	**4228K14**	983.13
2"	11	10-75	6½"	**4228K15**	1,582.48

High-Visibility Rotary-Indicating Flow Transmitters

Monitor flow up close or remotely—these transmitters have a clear polycarbonate window and white acetal rotor for visual flow indication. They also produce a 4-20 mA output signal for transmitting to a data recorder, logger, or display (not included; see page 950). Use with water. Body is Type 316 stainless steel. All operate on 0.35 amps at 12-35 VDC and have a 10-ft. cable without plug. Mount at any angle. Maximum pressure is 200 psi at 70° F. Temperature range is 20° to 225° F. Process connections are NPTF (Dryseal) female.

Pipe Size	Flow Range, gpm	Port-to-Port Lg.		
½"	0.5-5	3 11/16"	**9701K12**	$538.46
½"	1.5-15	3 11/16"	**9701K16**	538.46
¾"	2-20	5¼"	**9701K18**	627.88
1"	3-30	5¼"	**9701K24**	627.88
1"	5-50	5¼"	**9701K28**	627.88

Rotary-Indicating Flow Transmitters and Adjustable Switches

Transmitter

Switch

For easy viewing, these transmitters and switches have a polysulfone window and a black Ryton rotor. Use with water. Process connections are NPT female. UL recognized and CE approved. Mount horizontally or vertically.

Choose a ***transmitter*** to produce a pulsed output signal for connecting to a data recorder, logger, or display (not included; see page 950). They operate on 0.07 amps at 24 VDC and have 24" wire leads.

Switches actuate when flow reaches the setpoint, which you can adjust to anywhere within the range listed. They're single pole, double throw (SPDT) and can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). They operate on 0.3 amps at 120 VAC and have 24" wire leads.

Pipe Size	Flow/Setpoint Range, gpm	Body Material	Max. psi @ 70° F	Temp. Range, °F	Port-to-Port Lg.	*Transmitters*		*Switches*	
¼"	0.1-5	Polypropylene	100	–20° to +180°	3 1/16"	**9687K11**	$124.00	**4138K11**	$281.28
¼"	0.1-5	Brass	200	–20° to +212°	3"	**9687K21**	178.51	**4138K13**	365.21
½"	1.5-20	Polypropylene	100	–20° to +180°	3 1/16"	**9687K12**	124.02	**4138K12**	286.09
½"	1.5-20	Brass	200	–20° to +212°	3"	**9687K22**	178.51	**4138K14**	369.87
½"	1.5-20	Type 316 SS	200	–20° to +212°	3"	**9687K32**	213.35	**4138K18**	398.75
¾"	5-30	Brass	200	–20° to +212°	3 15/16"	**9687K23**	178.51	**4138K15**	374.66
¾"	5-30	Type 316 SS	200	–20° to +212°	3 15/16"	**9687K33**	232.93	**4138K19**	408.46
1"	8-60	Brass	200	–20° to +212°	3 15/16"	**9687K24**	178.51	**4138K16**	381.23
1"	8-60	Type 316 SS	200	–20° to +212°	3 15/16"	**9687K34**	232.93	**4138K21**	415.75

About Flowmeters

Flowmeters measure the rate of flow for a liquid or a gas.

Unless noted, all of our flowmeters have a ***direct-reading scale***, which is calibrated and labeled to read in specific units, typically gpm (gallons per minute) for water and scfm (standard cubic feet per minute) for air.

Install a filter upstream of the flowmeter to clean out debris and ensure accurate flow readings, except where noted. For all of our flowmeters, we provide an accuracy specification; this is stated as a percentage of the full scale, unless indicated otherwise.

Vertical-mount flowmeters, also called rotameters, have a float that's housed in a vertical tube. They must be installed vertically and flow can move in one direction only—from the bottom of the meter to the top—as shown in the illustration.

Versa-mount flowmeters (beginning on page 555) have a spring-loaded piston that moves in proportion to the flow rate. These can be installed in any position—vertically, horizontally, and anywhere in between. They are also more shock and vibration resistant than standard flowmeters and are better suited for high-pressure applications.

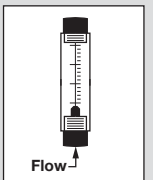

Vertical-Mount Flowmeters

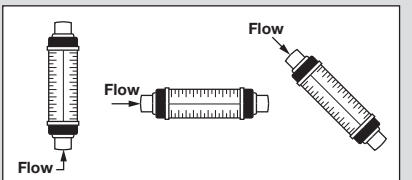

Versa-Mount Flowmeters

Vertical-Mount Flowmeters

For information about pipe size, see pages 2-3.

Panel-Mount Flowmeters

These flowmeters have inlet and outlet connections located on the back, so they extend through your control panel for quick installation. Must mount vertically; flow moves from bottom to top.

They have an easy-to-read flat surface and an acrylic tube that stands up to direct sunlight for outdoor use. All have a Type 316L stainless steel float and rod, and ethylene propylene (EPR) O-rings. Fittings are PVC, except flowmeters with 1/4″ NPT female connections, which have brass end fittings, and those with a Type 316 stainless steel control valve, which have Type 316 stainless steel fittings.

For Water— Maximum pressure is 125 psi @ 70° F. Temperature range is 33° to 130° F.

For Air— Maximum pressure is 100 psi @ 70° F. Temperature range is 33° to 100° F.

Flowmeters ***with control valve*** let you make inline flow adjustments. Choose Type 316 stainless steel for corrosion resistance.

Flowmeters ***with a NIST certificate*** include a certificate traceable to the National Institute of Standards and Technology (NIST). Certificates have a calibration date and a put-to-service date. Flowmeters must be calibrated again after a set period of time from the put-to-service date, not the calibration date; they do not begin to fall out of calibration until they are actually put in service.

Without Control Valve — *With Control Valve*

Flow Range		Accuracy	Pipe Size	Scale Ht.	O'all Ht.	Ctr.-to-Ctr. Ht. (A)	Without Control Valve		With Brass Control Valve		With Type 316 SS Control Valve	
For Water												
NPT Female												
0.7-7	gallons/hour	±6%	1/4″	2″	4 1/8″	3″	4351K51	$55.31	4351K81	$70.61	4351K22	$110.92
1-12	gallons/hour	±6%	1/4″	2″	4 1/8″	3″	4351K11	55.31	4351K31	70.61	4351K23	110.92
2-22	gallons/hour	±6%	1/4″	2″	4 1/8″	3″	4351K12	55.31	4351K32	70.61	4351K24	110.92
4-44	gallons/hour	±6%	1/4″	2″	4 1/8″	3″	4351K13	55.31	4351K33	70.61	4351K25	110.92
6-60	gallons/hour	±6%	1/4″	2″	4 1/8″	3″	4351K14	55.31	4351K34	70.61	4351K26	110.92
7.5-75	gallons/hour	±6%	1/4″	2″	4 1/8″	3″	4351K15	55.31	4351K35	70.61	4351K27	110.92
0.2-2	gallons/minute	±2%	1/2″	10″	14 1/2″	12 1/4″	4351K68	158.29	4351K88	193.45	4351K28	335.97
0.35-3.5	gallons/minute	±2%	1/2″	10″	14 1/2″	12 1/4″	4351K21	158.29	4351K41	193.45	4351K29	335.97
0.5-5	gallons/minute	±2%	1/2″	10″	14 1/2″	12 1/4″	4351K69	158.29	4351K89	193.45	4351K42	335.97
1-10	gallons/minute	±2%	1/2″	10″	14 1/2″	12 1/4″	4351K71	158.29	4351K91	193.45	4351K43	335.97
NPT Female with NIST Certificate												
0.7-7	gallons/hour	±6%	1/4″	2″	4 1/8″	3″	3281K21	273.08	3281K31	272.10	3281K41	305.41
2.2-22	gallons/hour	±6%	1/4″	2″	4 1/8″	3″	3281K22	273.08	3281K32	272.10	3281K42	305.41
0.5-5	gallons/minute	±2%	1/2″	10″	14 1/2″	12 1/4″	3281K23	400.58	3281K33	370.67	3281K43	507.56
Dual Threaded (Internal NPT Female Threads and External NPT Male Threads)												
0.1-1	gallons/minute	±4%	1/4″ and 1/2″	3″	6 13/16″	5″	4351K52	72.29	4351K82	87.30	4351K44	187.24
0.1-1	gallons/minute	±3%	1/4″ and 1/2″	5″	8 3/8″	6 7/16″	4351K18	91.53	4351K38	106.71	4351K45	208.21
0.2-2	gallons/minute	±4%	1/4″ and 1/2″	3″	6 13/16″	5″	4351K16	72.29	4351K36	87.30	4351K46	187.24
0.2-2	gallons/minute	±3%	1/4″ and 1/2″	5″	8 3/8″	6 7/16″	4351K66	88.73	4351K86	106.71	4351K47	208.21
0.3-3.5	gallons/minute	±4%	1/4″ and 1/2″	3″	6 13/16″	5″	4351K17	72.29	4351K37	87.30	4351K48	187.24
0.5-5	gallons/minute	±4%	1/4″ and 1/2″	3″	6 13/16″	5″	4351K53	72.29	4351K83	87.30	4351K49	187.24
0.5-5	gallons/minute	±3%	1/4″ and 1/2″	5″	8 3/8″	6 7/16″	4351K67	88.73	4351K87	106.71	4351K61	208.21
NPT Male												
1-10	gallons/minute	±4%	1″	4″	9 1/8″	6 1/2″	4351K54	108.29	4351K84	169.36	4351K62	339.62
1.5-15	gallons/minute	±4%	1″	4″	9 1/8″	6 1/2″	4351K19	108.29	4351K39	169.36	4351K63	339.62
2-20	gallons/minute	±4%	1″	4″	9 1/8″	6 1/2″	4351K55	108.29	4351K85	169.36	4351K64	339.62
For Air												
NPT Female												
2-20	standard cubic feet/hour	±6%	1/4″	2″	4 1/8″	3″	41945K32	55.31	41945K74	70.61	41945K11	110.92
3-30	standard cubic feet/hour	±6%	1/4″	2″	4 1/8″	3″	41945K33	55.31	41945K75	70.61	41945K12	110.92
6-60	standard cubic feet/hour	±6%	1/4″	2″	4 1/8″	3″	41945K34	55.31	41945K76	70.61	41945K13	110.92
10-100	standard cubic feet/hour	±6%	1/4″	2″	4 1/8″	3″	41945K35	55.31	41945K77	70.61	41945K14	110.92
15-180	standard cubic feet/hour	±6%	1/4″	2″	4 1/8″	3″	41945K41	55.31	41945K51	70.61	41945K15	110.92
0.4-4	standard cubic feet/minute	±6%	1/4″	2″	4 1/8″	3″	41945K31	55.31	41945K73	70.61	41945K16	110.92
2-20	standard cubic feet/minute	±2%	1/2″	10″	14 1/2″	12 1/4″	41945K38	164.43	41945K82	195.40	41945K17	335.97
4.2-42	standard cubic feet/minute	±2%	1/2″	10″	14 1/2″	12 1/4″	41945K39	164.43	41945K83	195.40	41945K18	335.97
NPT Female with NIST Certificate												
2-20	standard cubic feet/hour	±6%	1/4″	2″	4 1/8″	3″	3281K24	273.08	3281K34	272.10	3281K44	305.41
6-60	standard cubic feet/hour	±6%	1/4″	2″	4 1/8″	3″	3281K25	273.08	3281K35	272.10	3281K45	305.41
0.4-4	standard cubic feet/minute	±6%	1/4″	2″	4 1/8″	3″	3281K26	273.08	3281K36	272.10	3281K46	305.41
Dual Threaded (Internal NPT Female Threads and External NPT Male Threads)												
0.8-8.2	standard cubic feet/minute	±4%	1/4″ and 1/2″	3″	6 13/16″	5″	41945K42	71.56	41945K52	87.83	41945K19	187.24
0.8-8.2	standard cubic feet/minute	±3%	1/4″ and 1/2″	5″	8 3/8″	6 7/16″	41945K44	87.83	41945K54	107.36	41945K21	208.21
2.2-22	standard cubic feet/minute	±3%	1/4″ and 1/2″	5″	8 3/8″	6 7/16″	41945K45	87.83	41945K55	107.36	41945K23	208.21
2.3-23	standard cubic feet/minute	±4%	1/4″ and 1/2″	3″	6 13/16″	5″	41945K43	71.56	41945K53	87.83	41945K22	187.24
NPT Male												
4-40	standard cubic feet/minute	±4%	1″	4″	9 1/8″	6 1/2″	41945K36	119.22	41945K78	171.07	41945K24	339.62
6-60	standard cubic feet/minute	±4%	1″	4″	9 1/8″	6 1/2″	41945K37	119.22	41945K79	171.07	41945K25	339.62

For information about flowmeters, see page 551. For information about pipe size, see pages 2-3.

Extended-Life Panel-Mount Flowmeters

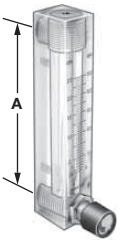

Stainless steel components and fluoroelastomer O-rings provide long life with good accuracy. These flowmeters have inlet and outlet connections located on the back, so they extend through your control panel for quick installation. Must be mounted vertically; flow moves from bottom to top.

Flowmeters have an outdoor-safe acrylic tube, Type 316 stainless steel fittings, Type 303 stainless steel float and rod, fluoroelastomer O-rings, and a Type 303 stainless steel control valve for inline flow adjustments, unless noted. Max. pressure is 100 psi at 70° F. Max. temperature is 150° F. Min. water temperature is 32° F. Not rated for min. air temperature. Connections are NPT female.

Flow Range	Accuracy	Pipe Size	Scale Ht.	O'all Ht.	Ctr.-to-Ctr. Ht. (A)		
***For Water—** Gallons per Minute*							
0.25-2.5 gpm	±3%	1/4"	4"	6 5/8"	5 1/2"	2968K31	$133.58
0.5-5 gpm	±3%	1/4"	4"	6 5/8"	5 1/2"	2968K34	133.58
1-10 gpm	±2%	1"	5"	10 7/8"	8 1/2"	2968K36●	239.27
2-20 gpm	±2%	1"	5"	10 7/8"	8 1/2"	2968K38●	239.27
***For Air—** Standard Cubic Feet per Minute*							
0.5-5 scfm	±3%	1/4"	4"	6 5/8"	5 1/2"	2968K42✔	133.58
4-20 scfm	±3%	1/4"	4"	6 5/8"	5 1/2"	2968K44	133.58
4-50 scfm	±2%	1"	5"	10 7/8"	8 1/2"	2968K46●	239.27

● Fittings are PVC and O-rings are Buna-N. ✔ Float is aluminum.

Panel-Mount High-Temperature Water Flowmeters

Without Control Valve

These flowmeters have a polysulfone tube that's good for use with high temperatures and a dual scale that's graduated in both gallons per minute and liters per minute. Must mount vertically; flow moves from bottom to top.

They have 90° polysulfone fittings that allow you to mount them in a control panel. They have a Type 316 stainless steel float and rod (unless noted), and fluoroelastomer O-rings. Accuracy is ±5%. Scale height is 2". Overall height is 7", unless noted. Maximum pressure is 150 psi at 70° F. Maximum temperature is 212° F. Not rated for minimum temperature.

Flowmeters ***with control valve*** let you make inline flow adjustments. Valve is polysulfone, polypropylene, and CPVC.

Flow Range	Without Control Valve		With Control Valve	
With 3/8" NPT Male Connections				
0.025-0.25 gpm/0.1-1 lpm	4215K66♣	$103.10	4215K76♣	$153.03
0.1-1 gpm/0.4-4 lpm	4215K67	103.10	4215K77	153.03
0.2-2 gpm/0.8-8 lpm	4215K68	103.10	4215K78	153.03
0.5-5 gpm/1.8-18 lpm	4215K69	103.10	4215K79	153.03
With 1/2" NPT Male Connections				
0.025-0.25 gpm/0.1-1 lpm	4215K61♣	103.10	4215K71♣	153.03
0.1-1 gpm/0.4-4 lpm	4215K62	103.10	4215K72	153.03
0.2-2 gpm/0.8-8 lpm	4215K63	103.10	4215K73	153.03
0.5-5 gpm/1.8-18 lpm	4215K64	103.10	4215K74	153.03
With 3/4" NPT Male Connections				
1-10 gpm/5-37.5 lpm	4215K65■	120.48	4215K75■	170.45

♣ Float is polyvinylidene fluoride (PVDF).
■ Center-to-center height is 6 13/16"; overall height is 8".

Dual-Scale Water Flowmeters

Forget conversion formulas—these flowmeters have a dual scale that's graduated in both gallons per minute and liters per minute. Must mount vertically; flow moves from bottom to top.

The acrylic tube stands up to direct sunlight, so they can be used outdoors. Flowmeters have polypropylene fittings, a Type 316 stainless steel float and rod (unless noted), and fluoroelastomer O-rings. Accuracy is ±5%. Scale height is 4", unless noted. Use with water. Max. pressure is 150 psi at 70° F. Max. temperature is 150° F; min. temperature is not rated. Connections are NPT female.

Flow Range	Pipe Size	O'all Ht.		
0.025-0.25 gpm/0.1-1 lpm	1/4"	8 3/16"	4350K45♣	$119.60
0.1-1 gpm/0.4-4 lpm	3/8"	8 3/16"	4350K41♣	102.28
0.2-2 gpm/1-7.5 lpm	3/8"	8 3/16"	4350K46	102.28
0.3-3 gpm/1.5-11 lpm	3/8"	8 3/16"	4350K47	110.27
0.5-5 gpm/2-20 lpm	1/2"	8 3/16"	4350K42	102.28
1-10 gpm/4-38 lpm	3/4"	11"	4350K43▲	197.03
1-17 gpm/4-64 lpm	1"	11"	4350K48▲	197.03
2-20 gpm/8-80 lpm	1"	11"	4350K44▲	197.03

♣ Float is polyvinylidene fluoride (PVDF). ▲ Scale height is 5".

Flowmeters

High Flow

The scale on these flowmeters has a white background, so it's easy to read. Must mount vertically; flow moves from bottom to top.

All have an acrylic tube, a Type 316L stainless steel float and rod, and ethylene propylene (EPR) O-rings. Max. pressure is 116 psi at 70° F, unless noted. Min. temperature is 33° F. Max. temperature for water is 130° F. Max. temperature for air is 100° F.

Low Flow— Connections are NPT male.

High Flow— Connections are NPT female, unless noted.

Flow Range	Accuracy	Pipe Size	Scale Ht.	O'all Ht.		
Low Flow with PVC Fittings						
***For Water—** Gallons per Hour*						
1-12 gph	±6%	1/4"	2"	4 3/4"	8051K15	$46.71
2.2-22 gph	±6%	1/4"	2"	4 3/4"	8051K16	46.71
4.4-44 gph	±6%	1/4"	2"	4 3/4"	8051K17	46.71
6-60 gph	±6%	1/4"	2"	4 3/4"	8051K18	46.71
***For Air—** Standard Cubic Feet per Hour*						
6-70 scfh	±6%	1/4"	2"	4 3/4"	8051K31	50.45
10-100 scfh	±6%	1/4"	2"	4 3/4"	8051K32	50.45
10-180 scfh	±6%	1/4"	2"	4 3/4"	8051K33	50.45
High Flow with PVC Fittings						
***For Water—** Gallons per Minute*						
0.2-2 gpm	±5%	1/2"	2 1/2"	6 1/2"	8051K11	61.03
0.2-2 gpm	±3%	1/2"	5"	9 1/4"	8051K13	88.98
0.4-5 gpm	±5%	1/2"	2 1/2"	6 1/2"	8051K12	61.03
0.5-5 gpm	±3%	1/2"	5"	9 1/4"	8051K14	88.98
0.5-5 gpm	±3%	1"	5"	10 1/4"	9746K28★	209.26
0.5-5 gpm	±2%	3/4"	10"	14 13/16"	8051K28	146.28
1-10 gpm	±4%	1"	4"	8 3/8"	8051K25	99.74
1-10 gpm	±3%	1"	5"	10 1/4"	9746K31★	209.26
1-10 gpm	±2%	3/4"	10"	14 13/16"	8051K29	146.28
1.5-15 gpm	±4%	1"	4"	8 3/8"	8051K26	99.74
1.5-15 gpm	±3%	1"	5"	10 1/4"	9746K29★	209.26
2-20 gpm	±4%	1"	4"	8 3/8"	8051K27	99.74
2.1-21 gpm	±3%	1"	5"	10 1/4"	9746K32★	209.26
3-30.5 gpm	±3%	1"	5"	10 1/4"	9746K33★	220.93
4-40 gpm	±6%	1 1/2"♠	5"	12 1/16"	9746K34★	265.47
5-50 gpm	±6%	1 1/2"♠	5"	12 1/16"	9746K35★	265.47
6-60 gpm	±4%	2"	5"	13 1/4"	9746K36★	606.15
8-80 gpm	±4%	2"	5"	13 1/4"	9746K41★	606.15
20-100 gpm	±4%	2"	5"	14 13/16"	9746K37★	606.15
45-160 gpm	±6%	2"	5"	13 1/4"	9746K38★	606.15
55-200 gpm	±6%	2"	5"	13 1/4"	9746K39★	606.15
***For Air—** Standard Cubic Feet per Minute*						
0.4-4 scfm	±6%	1/4"♠	2"	4 3/4"	8051K34	50.45
0.8-8 scfm	±5%	1/2"	2 1/2"	6 1/2"	8051K21	61.03
0.8-8.2 scfm	±3%	1/2"	5"	9 1/4"	8051K23	88.98
2-20 scfm	±5%	1/2"	2 1/2"	6 1/2"	8051K22	61.03
2-20 scfm	±2%	3/4"	10"	14 13/16"	8051K37	146.28
2-21 scfm	±3%	1/2"	5"	9 1/4"	8051K24	88.98
4-40 scfm	±4%	1"	4"	8 3/8"	8051K35	99.74
4-42 scfm	±2%	3/4"	10"	14 13/16"	8051K38	146.28
6-60 scfm	±4%	1"	4"	8 3/8"	8051K36	99.74
High Flow with Stainless Steel Fittings						
***For Water—** Gallons per Minute*						
0.1-1 gpm	±5%	1/2"	2 1/2"	6 1/2"	8051K51	122.00
0.2-2 gpm	±3%	1/2"	5"	9 1/4"	8051K54	151.65
0.35-3.5 gpm	±3%	1/2"	5"	9 1/4"	8051K56	151.65
0.5-5 gpm	±5%	1/2"	2 1/2"	6 1/2"	8051K53	122.00
***For Air—** Standard Cubic Feet per Minute*						
0.82-8.2 scfm	±3%	1/2"	5"	9 1/4"	8051K55	151.65
1.5-15 scfm	±5%	1/2"	2 1/2"	6 1/2"	8051K52	122.00

★ Max. pressure is 150 psi at 70° F. ♠ Connections are NPT male.

Oxygen Flowmeters

Cleaned, packaged, and calibrated for oxygen service, these flowmeters are graduated in liters per minute and are ideal for welding applications. Must mount vertically; flow moves from bottom to top. A built-in Type 316 stainless steel control valve lets you make inline flow adjustments. Meters have an impact-resistant polycarbonate tube, a brass fitting, a glass float (unless noted), and Buna-N O-rings. Scale height is 3 1/4". Overall height is 6 7/8". Maximum pressure is 100 psi at 70° F. Maximum temperature is 150° F; minimum temperature is not rated. The side inlet connection is 1/8" NPT female; bottom outlet connection is barbed for 1/4" ID tubing.

Flow Range, lpm	Accuracy		
1/8-3 1/2	±0.2 lpm	3505K44	$69.68
1/4-8	±0.4 lpm	3505K45	69.68
1/2-15	±0.6 lpm	3505K46♥	69.68

♥ Float is Type 316 stainless steel.

For information about flowmeters, see page 551. For information about pipe size, see pages 2-3.

Easy-to-Install Dual-Scale Flowmeters

Conveniently graduated in both gallons per minute and liters per minute, these dual-scale flowmeters also have union fittings so they're easy to install. Must mount vertically; flow moves from bottom to top. Use with water.

All have a polysulfone tube and fittings, a Type 316 stainless steel rod and float (unless noted), and fluoroelastomer O-rings. Accuracy is ±5%, unless noted. Maximum pressure is 150 psi at 70° F. Maximum temperature is 200° F; minimum temperature is not rated.

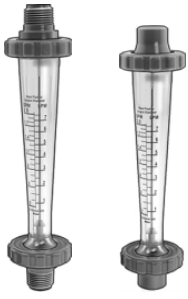

NPT Male *NPT Female*

Flow Range	Pipe Size	Scale Ht.	O'all Ht.		
NPT Male					
0.1-1 gpm/0.4-4 lpm	1/2"	4"	8 7/8"	4400K62 ♦	$90.24
0.2-2 gpm/1-7.5 lpm	1/2"	4"	8 7/8"	4400K63	90.24
0.5-5 gpm/2-20 lpm	1/2"	4"	8 7/8"	4400K52	90.24
0.5-5 gpm/2-20 lpm	3/4"	4"	9 3/8"	4400K65	90.24
1-10 gpm/4-40 lpm	3/4"	4"	10"	4400K53	104.21
NPT Female					
0.1-1 gpm/0.4-4 lpm	3/8"	4"	8 7/8"	4400K49 ♦	90.24
0.2-2 gpm/1-7.5 lpm	3/8"	4"	8 7/8"	4400K51	90.24
0.5-5 gpm/2-20 lpm	3/8"	4"	8 7/8"	4400K64	90.24
2-20 gpm/6-76 lpm	1"	5 7/8"	14 1/2"	4400K54 ▲	310.36
3-30 gpm/10-110 lpm	1"	5 3/4"	14 1/2"	4400K55 ▲	340.05
4-40 gpm/15-155 lpm	1"	5 7/8"	14 1/2"	4400K56 ▲	356.96
6-100 gpm/20-380 lpm	2"	8"	18 7/8"	4400K59 ●	599.15
20-130 gpm/80-500 lpm	2"	8"	18 7/8"	4400K61 ●	637.51

♦ Float is PTFE. ▲ Accuracy is ±3%. ● Accuracy is ±2%.

Panel-Mount Impact-Resistant Flowmeters

With a polycarbonate tube and case, these panel-mount flowmeters are more impact resistant than those with just an acrylic tube. Must mount vertically; flow moves from bottom to top. They have Type 303 stainless steel fittings and fluoroelastomer O-rings. Accuracy is ±4%. Scale height is 2 3/16"; overall height is 4 13/16". Maximum pressure is 100 psi at 70° F. Maximum temperature is 150° F; minimum temperature is not rated. Connections are 1/8" NPT female. Choose with or without a Type 303 stainless steel control valve for inline flow adjustment.

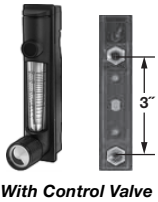

With Control Valve

Flow Range	Float Material	*Without Control Valve*		*With Control Valve*	
For Water—*Gallons per Hour*					
0.2-2.5 gph	Ceramic	5079K12	$40.11	5079K52	$49.74
0.4-5 gph	Type 303 SS	5079K15	40.11	5079K53	49.74
1-10 gph	Glass	5079K16	40.11	5079K54	49.74
2-25 gph	Type 316 SS	5079K17	40.11	5079K55	49.74
4-40 gph	Type 303 SS	5079K18	40.11	5079K56	49.74
For Air—*Standard Cubic Feet per Hour*					
0.1-1 scfh	Aluminum	5079K22	39.62	5079K62	49.68
0.2-2.5 scfh	Type 316 SS	5079K23	40.11	5079K63	49.74
0.4-5 scfh	Glass	5079K24	40.11	5079K64	49.74
1-11 scfh	Glass	5079K25	40.11	5079K65	49.74
2-22 scfh	Type 316 SS	5079K26	40.11	5079K66	49.74
4-60 scfh	Glass	5079K27	40.11	5079K67	49.74

Water-Flow Wheel Calculator

Calculate the potential flow in a new system, or learn the capacity of your current system. Made of acrylic, this wheel has precision three-color engraving and calculates an extremely wide range of parameters. Wheel diameter is 7 5/8".

One side calculates the rational formula for water flow in pipes; it is graduated from 1.5 to 1,000,000 gpm with pressure drop from 0.01 to 1,000 ft. The other side calculates the Manning formula for flow in open channels; it is graduated 50 to 5,000,000 gpm with a channel area of 0.7 to 2,000 sq. ft. and slope from 1 ft. per 100,000 ft. to 1 ft. per 10 ft.

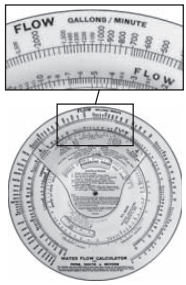

9632K22 ..... $159.94

Easy-to-Install Flowmeters

Union fittings make these flowmeters easy to install. Must mount vertically; flow moves from bottom to top. All have fluoroelastomer O-rings and NPT female connections.

Ultrapure flowmeters are made entirely of plastic so they're ideal for high-purity applications, such as deionized water. They have a polysulfone tube, PVC fittings, a PTFE float (unless noted), and a polysulfone rod. Accuracy is ±6%. Maximum pressure is 150 psi at 70° F. Temperature range is 33° to 130° F.

High-flow meters are for larger pipes and flow rates. They have an acrylic tube and Type 303 stainless steel fittings, float, and rod. Accuracy is ±5%. Maximum pressure is 100 psi at 70° F. Maximum temperature is 150° F; minimum temperature is not rated.

Flow Range	Pipe Size	Scale Ht.	O'all Ht.		
Ultrapure					
For Water—*Gallons per Minute*					
0.05-0.5 gpm	1/2"	5"	10"	9747K69 ▲	$234.92
0.1-1 gpm	1/2"	5"	10"	9747K72	234.92
0.24-2.4 gpm	3/4"	5"	10"	9747K73	279.12
0.5-5 gpm	3/4"	5"	10"	9747K74	279.12
0.76-7.6 gpm	1"	5"	12"	9747K75	349.02
1-10 gpm	1"	5"	12"	9747K76	349.02
1.5-15 gpm	1"	5"	12"	9747K77	349.02
2-20 gpm	1"	5"	12"	9747K78	349.02
High Flow					
For Water—*Gallons per Minute*					
3-30 gpm	1 1/2"	9 1/8"	13 3/8"	5077K52	569.79
4-40 gpm	1 1/2"	9 1/8"	13 3/8"	5077K54	569.79
5-50 gpm	1 1/2"	9 1/8"	13 3/8"	5077K56	569.79
6-60 gpm	2"	9 3/16"	13 1/2"	5077K32	976.21
8-80 gpm	2"	9 3/16"	13 1/2"	5077K34	976.21
10-100 gpm	2"	9 3/16"	13 1/2"	5077K36	976.21
For Air—*Standard Cubic Feet per Minute*					
10-110 scfm	1 1/2"	9 1/8"	13 3/8"	5077K22	569.79
15-160 scfm	1 1/2"	9 1/8"	13 3/8"	5077K24	569.79
20-200 scfm	1 1/2"	9 1/8"	13 3/8"	5077K26	569.79
25-250 scfm	2"	9 3/16"	13 1/2"	5077K42	976.21
30-330 scfm	2"	9 3/16"	13 1/2"	5077K44	976.21
40-400 scfm	2"	9 3/16"	13 1/2"	5077K46	976.21

▲ Float is PVDF.

Flowmeters with Protective Case

Get built-in protection from impact, splashing liquids, and leaks and spills. These flowmeters have a Type 304 stainless steel case with a polycarbonate window. Must mount vertically; flow moves from bottom to top. Measure water (gallons per minute) and air (standard cubic feet per minute) on two interchangeable scales. Fittings are Type 316 stainless steel. Temperature range is 33° to 200° F. Connections are NPT female.

Polysulfone flowmeters have a polysulfone tube, Type 316 stainless steel float and rod, and fluoroelastomer O-rings. Accuracy is ±3%.

Glass flowmeters have a borosilicate glass tube, Type 316 stainless steel float, and fluoroelastomer O-rings. 5083K36 and K37 also have a Type 316 stainless steel rod. Accuracy is ±5% for all, unless noted.

Glass

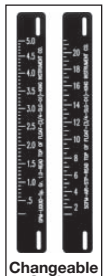

Changeable Scales

Flow Range For Water, gpm	For Air, scfm	Pipe Size	Max. psi @ 70° F	Scale Ht.	O'all Ht.		
Polysulfone							
0.15-1.5	0.61-6.1	1/2"	200	5"	12 7/8"	4212K31	$535.84
0.3-3	1.2-12.4	1/2"	200	5"	12 7/8"	4212K32	535.84
0.6-6	2.5-25	3/4"	200	5"	12 7/8"	4212K33	623.69
1-10	4.1-41	3/4"	200	5"	12 7/8"	4212K34	623.69
1.8-18	7.6-76	1"	200	5"	12 7/8"	4212K36	712.70
2.5-25	10-100	1"	200	5"	12 7/8"	4212K37	712.70
Glass							
0.05-0.5	0.2-2	1/2"	200	3"	7 3/4"	5083K38	422.98
0.06-0.64	0.3-2.7	3/4"	300	10"	19 11/16"	5083K31 ●	733.73
0.1-1	0.4-4	1/2"	200	3"	7 3/4"	5083K12	422.98
0.14-1.44	0.6-6.1	3/4"	300	10"	19 11/16"	5083K32 ●	733.73
0.2-2	0.8-8.2	1/2"	200	3"	7 3/4"	5083K39	422.98
0.3-3	1.2-12	3/4"	250	10"	19 11/16"	5083K33 ●	733.73
0.5-5.2	2.2-22	3/4"	250	10"	19 11/16"	5083K34 ●	733.73
1.2-12	5-50	3/4"	250	10"	19 11/16"	5083K36 ●	1,013.42
2-21.6	10-100	3/4"	250	10"	19 11/16"	5083K37 ●	1,013.42

● Accuracy is ±2%.

For information about flowmeters, see page 551. For information about pipe size, see pages 2-3.

Slimline Glass Flowmeters

A slender design makes these flowmeters ideal for low-flow laboratory applications. In addition, their dual scale lets you use them with water or air. Must mount vertically; flow moves from bottom to top.

All have a borosilicate glass tube protected by a polycarbonate shield, PTFE fittings, a glass float, and fluoroelastomer O-rings. Scale height is 4½″; overall height is 8″, unless noted. Accuracy is ±5% of the flow or 2 mm, whichever is greater. Temp. range is –15° to +150° F. Connections are ¼″ NPT male, unless noted.

Flow Range For Water	Flow Range For Air	Max. psi @ 70° F		
Milliliters per Minute				
0.002-1.1	0.2-90	125	**41695K31**	$222.20
0.01-4	1-280	125	**41695K32**	210.10
0.2-40	20-2,100	100	**41695K33**	201.30
Liters per Minute				
0.002-0.3	0.2-14	75	**41695K34**	205.70
0.01-0.85	1-36	60	**41695K35**●	299.20
0.03-1.9	3-77	50	**41695K36**●	325.60

● O'all ht. is 9¾″. Connections are ½″ NPT male.

Digital Water Flowmeters/Totalizers for Large PVC Pipe

Monitor flow in water treatment and sub-metering applications—these flowmeters/totalizers connect to 3″ or 4″ Schedule 80 PVC pipe. The six-digit display shows flow rate (in either gallons per minute or liters per minute), total flow volume (up to 999,999 gallons or liters), and batch flow volume. Total flow volume is nonresettable. Batch flow volume can be reset to measure flow during a single use. Digit height is ⅜″. Mount horizontally or vertically.

Body is PVC. Maximum pressure is 225 psi at 70° F. Temp. range is 32° to 140° F. Batteries included.

Flowmeters/totalizers with unthreaded connections have male socket-weld connections (also known as a spigot). Connect with PVC cement and primer.

Flowmeters/totalizers with flanged connections bolt to ANSI Class 150 flanges of the same pipe size. 3777K12 has a 7½″ OD with a 6″ dia. bolt circle and requires 4 ⅝″ bolts. 3777K14 has a 9″ OD with a 7½″ dia. bolt circle and requires 8 ⅝″ bolts.

Flow Range, gpm /lpm	Pipe Size	O'all Lg.	*With Unthreaded Connections*		*With Flange Connections*	
40-400/151-1,514	3″	12″	**3777K11**	$619.14	**3777K12**	$782.28
60-600/227-2,271	4″	14″	**3777K13**	659.43	**3777K14**	832.40

Changeable-Scale Panel-Mount Glass Flowmeters

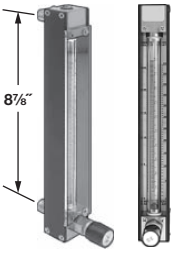

You'll get two scales with these flowmeters: a permanently mounted correlated scale and a snap-on, direct-reading dual scale graduated for water (gallons per hour) and for air (standard cubic feet per hour). Correlated scales can be adapted for various liquids and gases at different pressures. Must mount vertically; flow moves from bottom to top.

Accuracy for the correlated scale is ±2% of the reading or ±1 of the scale divisions, whichever is greater. For the direct-reading scale, accuracy is ±5% of the reading or ±2 of the scale divisions, whichever is greater.

Flowmeters also come with two floats (one glass and one Type 316 stainless steel), which can be interchanged depending on your application. They have a borosilicate glass tube protected by a Type 303 stainless steel case with a polycarbonate window. They also include a PTFE control valve for inline flow adjustments. Fittings are Type 303 stainless steel and O-rings are fluoroelastomer. Scale height is 5⅞″. Overall height is 10″. Maximum pressure is 200 psi at 70° F. Temperature range is 15° to 250° F. Connections are ⅛″ NPT female.

Flow Range For Water, gph	Flow Range For Air, scfh		
0.0003-0.02	0.003-0.215	**40425K31**	$487.24
0.001-0.067	0.01-0.63	**40425K32**	488.28
0.01-0.25	0.05-2.0	**40425K33**	367.24
0.02-0.70	0.10-4.8	**40425K34**	375.52
0.05-2.15	0.25-13	**40425K35**	478.97
0.2-4.8	1.0-29	**40425K36**	483.10
0.2-9.6	1.0-55	**40425K37**	368.28

Low-Flow Compact Glass Flowmeters with Protective Case

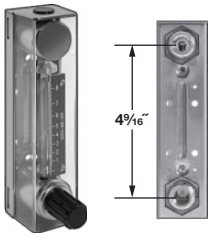

Choose these compact flowmeters for low flows in tight spots—they have ¼″ NPT female connections and a shorter overall height than other flowmeters on this page. Must mount vertically; flow moves from bottom to top.

They also are protected by a Type 316 stainless steel case with a clear polycarbonate window. All have a borosilicate glass tube, Type 316L stainless steel fittings and float (unless noted), and fluoroelastomer O-rings. Accuracy is ±6%. Maximum pressure is 200 psi at 70° F. Temperature range is 33° to 200° F.

Flow Range	Scale Ht.	O'all Ht.		
For Water—*Gallons per Hour*				
0.15-1.75 gph	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K81**	$212.42
0.1-2.6 gph	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K83**♦	212.42
0.8-8.2 gph	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K87**♦	212.42
1-19 gph	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K89**	212.42
For Air—*Standard Cubic Feet per Hour*				
0.04-0.42 scfh	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K19**	212.42
0.4-4.4 scfh	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K22**♦	212.42
0.82-8.2 scfh	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K33**	212.42
1-28 scfh	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K55**	212.42
5-90 scfh	2⁹⁄₁₆″	6¹⁄₁₆″	**5084K77**	212.42

♦ Float is made of glass.

Panel-Mount Glass Flowmeters with Conversion Chart

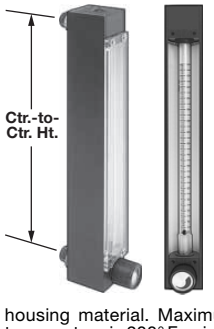

Get precision and adaptability from these flowmeters that feature a correlated scale instead of a direct-reading scale. Correlated scales can be adapted for various liquids and gases at different pressures. Must mount vertically; flow moves from bottom to top. Flowmeters include a conversion chart for water, compressed air, nitrogen, oxygen, argon, and helium in cubic centimeters per minute.

All have a borosilicate glass tube that's protected by a metal housing with a clear polycarbonate magnifying window for easy viewing. They also have a glass float and a Type 316 stainless steel control valve so you can make inline flow adjustments. Fitting material is the same as the housing material. Maximum pressure is 200 psi at 70° F. Maximum temperature is 200° F; minimum temperature is not rated. Connections are ⅛″ NPT female.

Flowmeters with an ***aluminum case*** have Buna-N O-rings; those with a ***Type 316 stainless steel case*** have fluoroelastomer O-rings.

Compact flowmeters are for use in locations where space is an issue. Accuracy is ±5%. Scale height is 2⁹⁄₁₆″, center-to-center height is 4½″, and overall height is 5½″.

Standard flowmeters have an accuracy of ±3%. Scale height is 5⅞″, center-to-center height is 8¹³⁄₁₆″, and overall height is 9¹³⁄₁₆″.

Flow Range, ccm For Water	Flow Range, ccm For Air	*Aluminum Case*		*Type 316 Stainless Steel Case*	
Compact					
———	0-49.9	**4112K91**	$131.89	**4112K92**	$246.10
———	0-104	**4112K93**	131.89	**4112K94**	246.10
———	0-400	**4112K95**	131.89	**4112K96**	246.10
0-18.3	0-905	**4112K34**	131.89	**4112K74**	246.10
0-55.6	0-2,580	**4112K35**	131.89	**4112K75**	246.10
0-90.7	0-3,842	**4112K36**	131.89	**4112K76**	246.10
0-133	0-6,009	**4112K37**	131.89	**4112K77**	246.10
0-239	0-10,100	**4112K38**	131.89	**4112K78**	246.10
0-376	0-15,700	**4112K39**	131.89	**4112K79**	246.10
0-569	0-23,600	**4112K41**	131.89	**4112K81**	246.10
Standard					
———	0-49.64	**4112K97**	156.69	**4112K98**	270.91
———	0-103	**4112K431**	156.69	**4112K831**	270.91
———	0-405	**4112K441**	156.69	**4112K841**	270.91
0-17.2	0-855	**4112K45**	156.69	**4112K85**	270.91
0-50	0-2,291	**4112K46**	156.69	**4112K86**	270.91
0-78.4	0-3,426	**4112K47**	156.69	**4112K87**	270.91
0-216	0-9,180	**4112K48**	156.69	**4112K88**	270.91
0-567	0-23,740	**4112K49**	156.69	**4112K89**	270.91

For information about flowmeters, see page 551. For information about pipe size, see pages 2-3.

Vertical-Mount Shatterproof High-Pressure Water Flowmeters

A Type 304 stainless steel body and Type 316 stainless steel fittings give these flowmeters great impact resistance to prevent shattering and spilling. For use with water. Scale is graduated in gallons per minute. Window is acrylic. Mount vertically; flow moves from bottom to top. O-rings are fluoroelastomer. Accuracy is ±3%. Maximum pressure is 1,500 psi at 70° F. Temperature range is 33° to 350° F. Connections are NPT female.

Flow Range, gpm	Pipe Size	O'all Ht.		
0.2-2	½″	11″	**1791K72**	$633.76
0.4-4	½″	11″	**1791K73**	633.76
0.6-6	½″	11″	**1791K74**	633.76
1-10	1″	13¼″	**1791K75**	792.23
1.6-16.5	1″	13¼″	**1791K76**	792.23
2.5-25	1″	13¼″	**1791K77**	792.23

Versa-Mount Transparent-Body Flowmeters

Quickly spot problems from a distance—these flowmeters have a transparent body so you can monitor flow in addition to reading the scale. All have a shock-resistant spring-loaded piston so they can be mounted horizontally, vertically, or at any angle. The dual scale shows flow rate in both gallons per minute and liters per minute. Body is polysulfone, except for 4161A61-A66 and 4161A41-A46, which have a polycarbonate body. O-rings are Buna-N. Accuracy is ±5%. Maximum pressure is 325 psi at 70° F.

Easy-to-install flowmeters have union fittings.

Flowmeters ***for water*** have a minimum temperature of 33° F.

Flowmeters ***for hydraulic oil*** are not rated for minimum temperature.

Flow Range, gpm/lpm	Pipe Size	Max. Temp.	Scale Lg.	O'all Lg.		
For Water						
Polysulfone Fittings—NPTF (Dryseal) Male						
0.5-4 / 2-15	1″	250° F	2½″	5¼″	**4197K11**	$65.35
1-7 / 4-26	1″	250° F	2½″	5¼″	**4197K12**	65.35
1-10 / 4-35	1″	250° F	2½″	5¼″	**4197K13**	65.35
1-16 / 5-60	1″	250° F	2½″	5¼″	**4197K14**	65.35
3-18 / 15-65	1″	250° F	2½″	5¼″	**4197K15**	65.35
4-28 / 20-100	1″	250° F	2½″	5¼″	**4197K16**	65.35
Brass Fittings—NPTF (Dryseal) Female						
0.5-4 / 2-15	½″	250° F	2½″	7¾″	**4197K21**	110.42
1-7 / 4-26	½″	250° F	2½″	7¾″	**4197K22**	110.42
1-10 / 4-35	½″	250° F	2½″	7¾″	**4197K23**	110.42
1-16 / 5-60	½″	250° F	2½″	7¾″	**4197K24**	110.42
Brass Fittings—NPTF (Dryseal) Male						
0.5-4 / 2-15	¾″	250° F	2½″	8¼″	**4197K31**	114.93
1-10 / 4-35	¾″	250° F	2½″	8¼″	**4197K28**	114.93
1-16 / 5-60	¾″	250° F	2½″	8¼″	**4197K25**	114.93
4-28 / 20-100	¾″	250° F	2½″	8¼″	**4197K27**	114.93
Easy-to-Install for Water						
Polysulfone Fittings—NPTF (Dryseal) Female						
0.5-5 / 2-20	½″	200° F	1¾″	7³⁄₁₆″	**4161A61**	103.17
1-10 / 4-40	¾″	200° F	1⅝″	7⁹⁄₁₆″	**4161A63**	120.73
1-15 / 5-55	¾″	200° F	1¾″	7⁹⁄₁₆″	**4161A64**	120.73
3-30 / 12-108	1″	200° F	1⅝″	7⁹⁄₁₆″	**4161A66**	120.73
Brass Fittings—NPTF (Dryseal) Female						
0.5-5 / 2-20	½″	200° F	1¾″	7³⁄₁₆″	**4161A41**	150.37
1-10 / 4-40	½″	200° F	1⅝″	7³⁄₁₆″	**4161A42**	150.37
1-10 / 4-40	¾″	200° F	1⅝″	7⁹⁄₁₆″	**4161A43**	167.93
1-15 / 5-55	¾″	200° F	1¾″	7⁹⁄₁₆″	**4161A44**	167.93
1-15 / 5-55	1″	200° F	1¾″	7⁹⁄₁₆″	**4161A45**	167.93
3-30 / 12-108	1″	200° F	1⅝″	7⁹⁄₁₆″	**4161A46**	167.93
Easy-to-Install for Hydraulic Oil						
Polysulfone Fittings—NPTF (Dryseal) Female						
0.5-5 / 3-20	½″	250° F	1¹⁵⁄₁₆″	7³⁄₁₆″	**4161A71**	107.56
1-10 / 4-40	½″	250° F	1¹³⁄₁₆″	7³⁄₁₆″	**4161A72**	107.56
1-10 / 4-40	¾″	250° F	1¹³⁄₁₆″	7⁹⁄₁₆″	**4161A73**	125.12
1-15 / 5-55	¾″	250° F	1¹⁵⁄₁₆″	7⁹⁄₁₆″	**4161A74**	125.12
1-15 / 5-55	1″	250° F	1¹⁵⁄₁₆″	7⁹⁄₁₆″	**4161A75**	125.12
3-30 / 15-110	1″	250° F	2″	7⁹⁄₁₆″	**4161A76**	125.12
Brass Fittings—NPTF (Dryseal) Female						
0.5-5 / 3-20	½″	250° F	1¹⁵⁄₁₆″	7³⁄₁₆″	**4161A51**	154.76
1-10 / 4-40	½″	250° F	1¹³⁄₁₆″	7³⁄₁₆″	**4161A52**	154.76
1-10 / 4-40	¾″	250° F	1¹³⁄₁₆″	7⁹⁄₁₆″	**4161A53**	172.32
1-15 / 5-55	¾″	250° F	1¹⁵⁄₁₆″	7⁹⁄₁₆″	**4161A54**	172.32
1-15 / 5-55	1″	250° F	1¹⁵⁄₁₆″	7⁹⁄₁₆″	**4161A55**	172.32
3-30 / 15-110	1″	250° F	2″	7⁹⁄₁₆″	**4161A56**	172.32

Versa-Mount Shock-Resistant Air Flowmeters

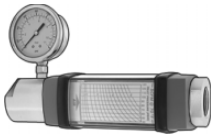

With Pressure Gauge

These air flowmeters have a shock-resistant spring-loaded piston so they can operate in any position—horizontal, vertical, or at an angle. The scale rotates 360° for easy viewing and is protected by a polycarbonate shield. Scale shows flow rate in standard cubic feet per minute. All flowmeters have an anodized aluminum body and fluoroelastomer O-rings. Accuracy is ±2%, except ¼″ pipe size flowmeters, which are not rated. Temperature range is –20° to +240° F. Connections are NPTF (Dryseal) female.

Scale shows flow rate relative to pressure. If pressure is unknown or fluctuates, use flowmeters ***with pressure gauge***, which have a glycerin-filled pressure gauge that measures pressure from 0 to 160 psi.

Flow Range, scfm	Max. psi @ 70° F	Pipe Size	Scale Lg.	O'all Lg.		
Without Pressure Gauge						
0.5-5	1,000	¼″	1¼″	4¹³⁄₁₆″	**4216K12**	$173.68
1-10	1,000	¼″	1¼″	4¹³⁄₁₆″	**4216K14**	173.68
2-20	1,000	¼″	1¼″	4¹³⁄₁₆″	**4216K42**	173.68
3-25	1,000	½″	2⅛″	6⅝″	**4216K41**	222.11
3-30	1,000	¼″	1¼″	4¹³⁄₁₆″	**4216K16**	173.68
5-50	1,000	½″	2⅛″	6⅝″	**4216K53**	222.11
5-50	1,000	¾″	2¾″	7¼″	**4216K56**	318.95
10-100	1,000	½″	2⅛″	6⅝″	**4216K54**	222.11
10-100	1,000	¾″	2¾″	7¼″	**4216K34**	318.95
15-150	1,000	½″	2⅛″	6⅝″	**4216K55**	222.11
15-150	1,000	¾″	2¾″	7¼″	**4216K77**	318.95
15-150	1,000	1″	2¾″	7¼″	**4216K81**	318.95
25-250	1,000	¾″	2¾″	7¼″	**4216K78**	318.95
25-250	1,000	1″	2¾″	7¼″	**4216K82**	318.95
40-400	1,000	1½″	5¼″	12¼″	**4216K83**	650.00
With Pressure Gauge						
0.5-5	600	¼″	1¼″	6⅛″	**4216K11**	328.42
1-10	600	¼″	1¼″	6⅛″	**4216K13**	328.42
2-20	600	¼″	1¼″	6⅛″	**4216K22**	328.42
3-25	600	½″	2⅛″	8″	**4216K43**	344.21
3-30	600	¼″	1¼″	6⅛″	**4216K15**	328.42
5-50	600	½″	2⅛″	8″	**4216K23**	344.21
5-50	600	¾″	2¾″	8¹⁵⁄₁₆″	**4216K26**	465.26
10-100	600	½″	2⅛″	8″	**4216K24**	344.21
10-100	600	¾″	2¾″	8¹⁵⁄₁₆″	**4216K33**	465.26
15-150	600	½″	2⅛″	8″	**4216K25**	344.21
15-150	600	¾″	2¾″	8¹⁵⁄₁₆″	**4216K27**	465.26
15-150	600	1″	2¾″	8¹⁵⁄₁₆″	**4216K91**	465.26
25-250	600	¾″	2¾″	8¹⁵⁄₁₆″	**4216K28**	465.26
25-250	600	1″	2¾″	8¹⁵⁄₁₆″	**4216K92**	465.26
40-400	600	1½″	5¼″	13¹³⁄₁₆″	**4216K93**	770.83

Versa-Mount High-Pressure Water Flowmeters

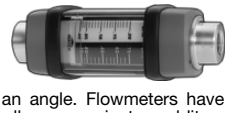

Choose these heavy duty flowmeters for use in high-pressure applications—they're built to withstand water pressures up to 3,500 psi at 70° F. All have a shock-resistant spring-loaded piston so they can operate in any position—horizontal, vertical, or at an angle. Flowmeters have a dual scale that shows flow rate in both gallons per minute and liters per minute. Scale rotates 360° for easy viewing and is protected by a polycarbonate shield. Flowmeters have a brass body, Type 303 stainless steel fittings, and fluoroelastomer O-rings. Accuracy is ±2%, except ¼″ pipe size flowmeters, which are not rated. Temperature range is –20° to +240° F. Connections are NPTF (Dryseal) female.

Flow Range, gpm/lpm	Pipe Size	Scale Lg.	O'all Lg.		
0.02-0.2 / 0.1-0.75	¼″	1¼″	4¹³⁄₁₆″	**4230K41**	$209.47
0.05-0.5 / 0.2-1.9	¼″	1¼″	4¹³⁄₁₆″	**4230K42**	209.47
0.1-1 / 0.5-3.75	¼″	1¼″	4¹³⁄₁₆″	**4230K24**	209.47
0.2-2 / 1-7.5	¼″	1¼″	4¹³⁄₁₆″	**4230K25**	209.47
0.2-2 / 1-7.5	½″	2⅛″	6⅝″	**4230K31**	272.63
0.5-5 / 2-19	½″	2⅛″	6⅝″	**4230K81**	272.63
0.5-5 / 2-19	¾″	2¾″	7¼″	**4230K32**	418.95
1-10 / 5-38	¾″	2¾″	7¼″	**4230K33**	418.95
1-15 / 4-56	½″	2⅛″	6⅝″	**4230K93**	272.63
2-20 / 10-76	¾″	2¾″	7¼″	**4230K95**	418.95
2-20 / 10-76	1″	2¾″	7¼″	**4230K43**	418.95
3-30 / 10-115	¾″	2¾″	7¼″	**4230K86**	418.95
3-30 / 10-115	1″	2¾″	7¼″	**4230K44**	418.95
5-50 / 20-190	1″	2¾″	7¼″	**4230K45**	418.95
5-50 / 20-190	1¼″	5¼″	12¼″	**4230K78**	1,005.83
10-100 / 50-380	1¼″	5¼″	12¼″	**4230K88**	1,005.83
10-100 / 50-380	1½″	5¼″	12¼″	**4230K46**	1,005.83
10-150 / 50-560	1¼″	5¼″	12¼″	**4230K29**	1,005.83
10-150 / 50-560	1½″	5¼″	12¼″	**4230K47**	1,005.83

For information about flowmeters, see page 551. For information about pipe size, see pages 2-3.

Versa-Mount High-Pressure Hydraulic Oil Flowmeters

Flowmeter without Test Kit

Handle hydraulic oil pressures up to 3,500 psi at 70° F with these heavy duty flowmeters. All have a shock-resistant spring-loaded piston so they can operate in any position—horizontal, vertical, or at any angle. Flowmeters have a dual scale that's graduated in both gallons per minute and liters per minute. Scale rotates 360° for easy viewing and is protected by a polycarbonate shield. Flowmeters have an anodized aluminum body, Type 303 stainless steel fittings, and fluoroelastomer O-rings. Accuracy is ±2%, except 1/4″ pipe size flowmeters, which are not rated. Temperature range is –20° to +240° F. Connections are NPTF (Dryseal) female.

Flowmeters ***with test kit*** detect worn components and verify flow and pressure control settings. Kit includes a flowmeter, pressure gauge, and valve. The pressure gauge is glycerin filled.

Flow Range, gpm/lpm	Pipe Size	Scale Lg.	O'all Lg.		
Without Test Kit					
0.02-0.2 / 0.1-0.75	1/4″	1 1/4″	4 13/16″	**4263K16**	$160.00
0.05-0.5 / 0.2-1.9	1/4″	1 1/4″	4 13/16″	**4263K25**	160.00
0.1-1 / 0.5-3.75	1/4″	1 1/4″	4 13/16″	**4263K41**	160.00
0.1-1 / 0.5-3.75	1/2″	2 1/8″	6 5/8″	**4263K15**	203.90
0.2-2 / 1-7.5	1/4″	1 1/4″	4 13/16″	**4263K14**	160.00
0.5-5 / 2-19	1/2″	2 1/8″	6 5/8″	**4263K81**	203.90
1-10 / 5-38	1/2″	2 1/8″	6 5/8″	**4263K12**	203.90
1-10 / 5-38	3/4″	2 3/4″	7 1/4″	**4263K84**	292.68
1-10 / 5-38	1″	2 3/4″	7 1/4″	**4263K42**	292.68
1-15 / 4-56	1/2″	2 1/8″	6 5/8″	**4263K83**	203.90
2-20 / 10-76	3/4″	2 3/4″	7 1/4″	**4263K85**	292.68
2-20 / 10-76	1″	2 3/4″	7 1/4″	**4263K43**	292.68
3-30 / 10-115	3/4″	2 3/4″	7 1/4″	**4263K87**	292.68
3-30 / 10-115	1″	2 3/4″	7 1/4″	**4263K44**	292.68
4-40 / 15-150	1″	2 3/4″	7 1/4″	**4263K23**	292.68
5-50 / 20-190	1 1/4″	5 1/4″	12 1/4″	**4263K61**	718.14
10-100 / 50-380	1 1/4″	5 1/4″	12 1/4″	**4263K64**	718.14
With Test Kit					
1-15 / 4-56	1/2″	2 1/8″	10 5/16″	**4263K54**	609.76
2-20 / 10-76	3/4″	2 3/4″	11 5/16″	**4263K57**	683.90
3-30 / 10-115	3/4″	2 3/4″	11 5/16″	**4263K58**	683.90
10-100 / 50-380	1 1/4″	5 1/4″	20 1/2″	**4263K62**	1,030.83

Versa-Mount Dial-Indicating Flowmeters

Mount these flowmeters horizontally, vertically, or at any angle—all have a shock-resistant spring-loaded piston so they can be installed in any position. Overall length is 3 5/8″, unless noted. Maximum pressure is 3,000 psi @ 70° F. Maximum temperature is 150° F. Minimum temperature is not rated. Connections are NPT female.

For Water— Accuracy is ±2%. *Aluminum* and *brass body* flowmeters have Buna-N O-rings. *Type 316 stainless steel body* flowmeters have fluoroelastomer O-rings.

For Air— Accuracy is ±5%. O-rings are Buna-N.

Flow Range	Pipe Size	*2 1/2″ Dial Size*		*4 1/2″ Dial Size*	
For Water— *Gallons per Minute*					
Aluminum Body					
0-1 gpm	1/4″	**41995K41**	$168.85	**41995K71**	$173.77
0-2 gpm	1/4″	**41995K42**	168.85	**41995K72**	173.77
0-5 gpm	1/2″	**41995K43★**	177.05	**41995K73★**	183.61
0-10 gpm	1/2″	**41995K44★**	177.05	**41995K74★**	183.61
Brass Body					
0-1 gpm	1/4″	**41995K51**	226.23	**41995K81**	231.15
0-2 gpm	1/4″	**41995K52**	226.23	**41995K82**	231.15
0-5 gpm	1/2″	**41995K53★**	247.54	**41995K83★**	252.46
0-10 gpm	1/2″	**41995K54★**	247.54	**41995K84★**	252.46
Type 316 Stainless Steel Body					
0-1 gpm	1/4″	**41995K61**	344.26	**41995K91**	347.54
0-2 gpm	1/4″	**41995K62**	344.26	**41995K92**	347.54
0-5 gpm	1/2″	**41995K63★**	359.02	**41995K93★**	368.85
0-10 gpm	1/2″	**41995K64★**	359.02	**41995K94★**	368.85
For Air— *Standard Cubic Feet per Minute*					
Aluminum Body					
0-10 scfm	1/4″	**9909K11**	168.85	**9909K31**	173.77
0-15 scfm	1/4″	**9909K12**	168.85	**9909K32**	173.77
0-20 scfm	1/4″	**9909K13**	168.85	**9909K33**	173.77
0-25 scfm	1/4″	**9909K14**	168.85	**9909K34**	173.77

★ Overall length is 5 3/4″.

Versa-Mount High-Temperature Hydraulic Oil Flowmeters

Looking for a flowmeter that can take the heat? These flowmeters can continuously handle high-temperature hydraulic oil up to 400° F. All have a shock-resistant spring-loaded piston so they can be mounted horizontally, vertically, or at any angle. Flowmeters include a dual scale that shows flow rate in both gallons per minute and liters per minute. The scale rotates 360° for easy viewing and is protected by a borosilicate glass shield. Flowmeters have an anodized aluminum body, Type 303 stainless steel fittings (unless noted), and fluoroelastomer O-rings. Accuracy is ±2%, unless noted. Maximum pressure is 3,500 psi at 70° F. Temperature range is –20° to +400° F, unless noted. Connections are NPTF (Dryseal) female.

Flow Range, gpm/lpm	Pipe Size	Scale Lg.	O'all Lg.		
0.05-1 / 0.5-4	1/4″	1 7/8″	6 9/16″	**42145K51★**	$285.60
0.2-2 / 1-7.5	1/4″	1 1/4″	6 5/8″	**42145K52**	313.17
0.5-5 / 2-19	3/4″	2 3/4″	7 1/4″	**42145K53**	438.05
1-10 / 5-38	3/4″	2 3/4″	7 1/4″	**42145K54**	438.05
1-10 / 5-38	1″	2 3/4″	7 1/4″	**42145K55**	442.26
3-30 / 10-115	1″	2 3/4″	7 1/4″	**42145K56**	438.05
10-100 / 50-380	1 1/2″	5 1/4″	12 1/4″	**42145K57**	828.84

★ Has anodized aluminum fittings. Accuracy is ±4%. Minimum temperature is not rated.

Dial-Indicating Flowmeters

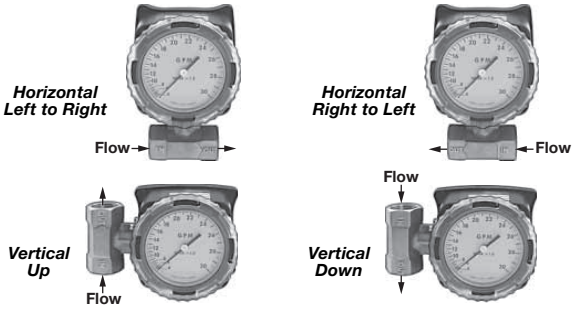

Check flow more quickly with an easy-to-read dial. These flowmeters are available in four styles (shown above), so you can choose the orientation that fits your needs. All have a bronze body and Buna-N O-rings. Dial size is 3 1/2″. Accuracy is ±3%. Maximum pressure is 180 psi at 70° F. Temperature range is –30° to +212° F. Connections are NPT female. *Note:* For accurate readings, install flowmeters at a minimum distance of 10 times the pipe diameter downstream from any fittings.

To Order: Please specify mounting orientation and direction of flow: horizontal left-to-right, horizontal right-to-left, vertical up, or vertical down.

For Water— Gallons per Minute

Flow Range, gpm	Pipe Size	O'all Size, Lg. × Ht.		
0.5-4	1/2″	4 9/16″ × 6 11/16″	**9858K51**	$483.43
0.5-6	1/2″	4 9/16″ × 6 11/16″	**9858K92**	483.43
1.5-10	3/4″	4 9/16″ × 6 11/16″	**9858K52**	545.14
2-15	3/4″	4 9/16″ × 6 11/16″	**9858K93**	545.14
3-20	1″	4 9/16″ × 6 15/16″	**9858K53**	570.86
4-30	1″	4 9/16″ × 6 15/16″	**9858K94**	570.86
5-60	1 1/2″	4 9/16″ × 7 5/8″	**9858K54**	648.00
15-100	1 1/2″	4 9/16″ × 7 5/8″	**9858K95**	648.00
15-100	2″	4 9/16″ × 8 3/8″	**9858K55**	750.86
30-200	2″	4 9/16″ × 8 3/8″	**9858K56**	750.86
40-300	3″	4 9/16″ × 9 13/16″	**9858K57**	915.17

For Air— Standard Cubic Feet per Minute

Flow Range, scfm	Pipe Size	O'all Size, Lg. × Ht.		
3-20	1/4″	4 9/16″ × 6 11/16″	**42005K38**	$637.98
5-40	1/2″	4 9/16″ × 6 11/16″	**42005K31**	637.98
20-150	3/4″	4 9/16″ × 6 11/16″	**42005K32**	706.95
40-300	1″	4 9/16″ × 6 15/16″	**42005K33**	735.70
50-600	1 1/2″	4 9/16″ × 7 5/8″	**42005K34**	821.91
100-800	2″	4 9/16″ × 8 3/8″	**42005K35**	936.86
150-1,000	2″	4 9/16″ × 8 3/8″	**42005K36**	936.86
300-2,000	3″	4 9/16″ × 9 13/16″	**42005K37**	1,149.53

For information about flowmeters, see page 551. For information about pipe size, see pages 2-3.

Clog-Resistant Dial-Indicating Flowmeters

Ideal for use with water containing solid particles (up to 1/4″ dia.) that clog conventional meters, these flowmeters have a 17-7 PH stainless steel vane inside the flowmeter that moves in proportion to flow rate. There are no floats that could stick and no tubes to clean. Scale is graduated in gallons per minute. Flowmeters have a brass body (unless noted) and EPDM O-rings. Accuracy is ±2%. Maximum pressure is 200 psi at 70° F. Temp. range is –10° to +400° F. Connections are NPT female, unless noted.

To Order: Specify mounting orientation and direction of flow: horizontal left to right, horizontal right to left, vertical up, or vertical down.

Flow Range, gpm	Pipe Size	O'all Lg.		
0.5-5	1/2″	5 11/16″	4165K111	$359.27
1-10	1/2″	5 11/16″	4165K121	359.27
1.5-15	3/4″	5 11/16″	4165K131	359.27
2-20	1″	5 11/16″	4165K141	359.27
5-50	1″	5 11/16″	4165K151	359.27
15-150	1 1/2″	12″	4165K161■	532.26
25-250	2″	12″	4165K171■	554.03
30-300	3″	12″	4165K181■	616.94

■ Body is brass and steel. Connections are NPT male.

Super-Low-Flow Compact Flowmeters

At just 2″ Dia.×2 1/2″ Ht., these flowmeters fit into tight spaces and measure flow rates as low as 1 milliliter per minute. They have an internal disc that senses flow and are designed for use with any particle-free low-viscosity liquid up to 25 centipoise (similar to antifreeze), except deionized water. For horizontal pipe; mount with wire leads on top. Body is Type 316 stainless steel and O-rings are PTFE. Flowmeters operate on 8-30 VDC and produce a 0-5 VDC pulse output signal. All include 3 feet of cable with wire leads. Accuracy is ±0.5%. Max. pressure is 500 psi at 70° F. Temp. range is –40° to +180° F. CSA certified. Connections are 1/4″ NPT female.

Optional display meter accepts the output signal of the flow sensor, registering flow rates and totals. It has screw terminals and a six-digit display that can be manually reset. Digit height is 5/16″. Overall size is 1 7/8″ Lg.×15/16″ Ht.×2 11/16″ Dp.

Flow Range, ml/min.		
1-250	4126K47	$1,153.85
5-1,250	4126K48	909.23
Optional Display Meter	4126K38	174.57

Digital Air Flowmeters

It's easy to accurately pinpoint flow rates with these digital flowmeters. The flow rate is measured by a thermal sensor and registered on a dual-line LCD display. Digit height is 3/16″. Flowmeters have an RS-232 port and produce a 0-5 VDC output signal that can be transmitted to a remote display. Mount horizontally. Fittings are Type 316 stainless steel; body is ABS plastic and Type 316 stainless steel. All operate on 90-240 VAC and include a 5-ft. power cord with a two-prong plug. Overall length is 4 13/16″. Accuracy is ±3%. Max. pressure is 150 psi at 70° F. Temperature range is 32° to 122° F. Connections are 1/8″ compression tube fittings.

Flow Range			
1-50	cubic centimeters/minute	9365K61	$1,169.23
4-200	cubic centimeters/minute	9365K62	1,169.23
10-500	cubic centimeters/minute	9365K63	1,169.23
0.02-1	liter/minute	9365K64	1,169.23
0.1-5	liters/minute	9365K65	1,169.23

Water Flowmeters for PVC Pipe

There's no need to disassemble your pipeline to install these flowmeters. Just drill a 5/80 dia. hole into horizontal Schedule 40 PVC pipe and mount the flowmeter using the included clamps. Flowmeters have a dual scale that measures in both gallons per minute and liters per minute. They have an acrylic body, a Type 316 stainless steel float, and a neoprene O-ring. Accuracy is ±10%. Maximum pressure is 150 psi at 70° F. Maximum temperature is 190° F. Minimum temperature is not rated.

Flow Range, gpm/lpm	Pipe Size	Scale Ht.	O'all Ht.		
5-35 / 20-160	1″	3 1/8″	6″	4349K1	$84.05
15-75 / 60-280	1 1/4″	3 1/8″	6″	4349K2	84.05
20-100 / 75-375	1 1/2″	3 1/8″	6″	4349K3	84.05
40-150 / 150-550	2″	3 1/8″	6″	4349K4	90.36
80-300 / 300-1,125	3″	3 1/8″	6″	4349K6	116.20
125-500 / 550-2,000	4″	3 1/2″	6″	4349K7	126.74

Easy-Check Portable Digital Flowmeters

Use these handheld ultrasonic meters to easily spot-check flow. Also known as Doppler flowmeters, they measure flow from the outside of the pipe, so they never come in contact with the liquid. Use with liquids containing suspended solids with a minimum dia. of 0.004″ (100 microns); particle-free liquids will not produce a reading.

Flowmeters measure fluid velocities from 0.3 to 30 feet per second; a flow calculator is included to convert velocity to flow rate. They have an 11/16″ high, four-digit LCD and an ABS plastic NEMA 12K housing (for indoor use; will stand up to seeping oil and dusty environments). Overall size is 4″ Lg.×7 11/16″ Ht.×1 11/16″ Dp. All come furnished with a carrying case. Accuracy is ±2%. Temperature range is –28° to +140° F. Batteries included.

For Pipe Size		
1/4″-120″	42195K9	$1,752.38
1″-120″	42195K8	1,242.86

Easy-Mount Clamp-On Digital Flowmeters

Monitor flow rates from outside the pipe with these ultrasonic flowmeters. All have a two-piece clamp that fits over the pipe and secures in place with the included screw and wing nut. Meters measure flow for debris-free liquids and display flow rate on an eight-digit LCD in both gallons per minute and liters per minute. Digit height is 11/16″. Body is ABS plastic and rated NEMA 3 (for indoor/outdoor use). Flowmeters operate on 11-30 VDC and have screw terminals for hardwiring to a power source. They include an optional AC/DC adapter for operation on 120 VAC. Adapter has a 6-ft. power cord with a two-prong plug. Flowmeters also include a 6-ft. RS-232 cable for connection to a PC (software must be downloaded; PC with internet connection required). Overall size is 6″ Lg.×3″ Ht.×2 1/2″ Dp. Accuracy is ±1%. Temperature range is 0° to 185° F.

Flow Range, gpm/lpm	For Pipe Size		
2-100 / 8-375	1″	2218K5	$1,372.22
8-400 / 30-1,500	2″	2218K6	1,578.57

About Totalizers and Flowmeters/Totalizers

Totalizers measure the cumulative total flow volume. ***Flowmeters/totalizers*** display both the flow rate and the cumulative total flow volume. For accurate readings, install totalizers or flowmeter/totalizers at a minimum distance of 10 times the pipe diameter from any fittings. In liquid applications, the pipe must be full of liquid for accurate readings; install a filter upstream from the totalizer or flowmeter/totalizer to remove debris.

Digital Totalizers

Track the total number of gallons or liters that flow through your pipes. All totalizers have a four-digit LCD that displays the total flow volume, up to 9,999 gallons or liters. Total flow volume can be reset to zero. Digit height is 3/8″. Mount horizontally or vertically. Overall length is 4″. Accuracy is ±5%. Temp. range is 14° to 130° F. Connections are NPT female. Batteries included.

Totalizers ***for water*** have a nylon body and Type 316 stainless steel seals. Maximum pressure is 150 psi at 70° F.

Totalizers ***for fuel*** have an aluminum body and Type 316 stainless steel seals. For use with kerosene, gasoline, and diesel fuel. Maximum pressure is 300 psi at 70° F.

Flow Range	Pipe Size	*For Water*		*For Fuel*	
3-30 gallons per minute	1″	9978K75	$166.88	9978K77	$166.88
10-100 liters per minute	1″	9978K76	166.88	9978K78	166.88

For information about flowmeters/totalizers, see page 557. For information about pipe size, see pages 2-3.

Digital Water Flowmeters/Totalizers for PVC Pipe

With Threaded Connections

Perfect for your PVC piping system, these flowmeters/totalizers are available with two types of connections: threaded or unthreaded. The six-digit display shows flow rate (in either gallons per minute or liters per minute) and total flow volume (up to 999,999 gallons or liters). Total flow volume is nonresettable. Digit height is 3/8″. Mount horizontally or vertically. They have a PVC body and a Type 316 stainless steel seal. Accuracy is ±3%. Maximum pressure is 225 psi at 70° F. Temperature range is 32° to 140° F. Batteries included.

Flowmeters/totalizers ***with threaded connections*** have NPT female threads and fit Schedule 80 threaded pipe.

Flowmeters/totalizers ***with unthreaded connections*** have male socket-weld connections (also known as a spigot) and fit Schedule 80 unthreaded pipe. They connect to pipe with PVC cement and primer (see page 86).

Flow Range, gpm/lpm	Pipe Size	*With Threaded Connections* O'all Lg.			*With Unthreaded Connections* O'all Lg.		
1-10 / 3.8-38	1/2″	5 13/32″	2400T31	$277.46	3 13/16″	5020T71	$257.35
2-20 / 7.6-76	3/4″	5 13/32″	2400T32	303.60	3 11/16″	5020T72	283.49
5-50 / 19-190	1″	6 3/32″	2400T33	351.85	4 3/32″	5020T73	331.00
10-100 / 38-380	1 1/2″	7 19/32″	2400T34	402.12	5 5/16″	5020T74	368.45
20-200 / 76-760	2″	7 13/16″	2400T35	432.28	5 1/2″	5020T75	402.12

High-Accuracy Digital Flowmeters/Totalizers

Precise flow readings are simple with these digital flowmeters/totalizers. The easy-to-read six-digit LCD shows the flow rate in gallons per minute and also registers the total flow volume up to 999,999 total gallons. Total flow volume is nonresettable. Digit height is 3/8″. All are calibrated for liquids with a specific gravity of 1, but they can also be calibrated for other liquids with viscosities from 1 to 100 centipoise (similar to cough syrup). They operate on two 3-volt lithium batteries (included). Mount vertically or horizontally. Flowmeters/totalizers have Type 316 stainless steel seals, except those with PVDF bodies, which have fluoroelastomer seals. Temperature range is 14° to 140° F. Connections are NPT female. Flowmeters/totalizers with nylon, aluminum, brass, and Type 316 stainless steel bodies are also rated NEMA 4 (for indoor/outdoor use) and FM approved intrinsically safe for Class 1, Div. 1 hazardous locations.

Flow Range, gpm	Accuracy	Max. psi @ 70° F	Pipe Size	O'all Lg.	*Flowmeters/ Totalizers*		*Repl. Display*	
***Nylon Body—**For Water*								
0.3-3	±5%	150	1″	4″	4352K63	$481.40	4352K631	$316.59
3-50	±1.5%	150	1″	4″	4352K64	471.34	4352K641	316.59
***PVDF Body—**For Water and Chemicals*								
1.2-12	±1.5%	150	1/2″	7 5/16″	9937K71	719.15	9937K311	316.59
5-50	±1%	150	1″	8 1/8″	9937K72	721.05	9937K321	316.59
***Aluminum Body—**For Petroleum Products*								
0.3-3	±5%	300	1″	4″	4352K67	457.28	4352K631	316.59
3-50	±1.5%	300	1″	4″	4352K68	446.22	4352K641	316.59
30-300	±1.5%	300	2″	6″	4352K69	948.24	4352K691	316.59
***Brass Body—**For Water*								
1-10	±1.5%	300	1/2″	4 3/16″	4118K41	623.20	4352K511	316.59
2-20	±1%	300	3/4″	4 5/16″	4118K42	633.65	4352K521	316.59
5-50	±1%	300	1″	4 1/2″	4118K43	656.45	4352K531	316.59
10-100	±0.75%	300	1 1/2″	5 5/16″	4118K44	888.25	4352K541	316.59
20-200	±0.75%	300	2″	6 5/16″	4118K45	1,071.66	4352K551	316.59
***Type 316 Stainless Steel Body—**For Water, Petroleum Products, and Corrosive Chemicals*								
1-10	±1.5%	1,500	1/2″	4 3/16″	4352K51	640.31	4352K511	316.59
2-20	±1%	1,500	3/4″	4 5/16″	4352K52	650.75	4352K521	316.59
5-50	±1%	1,500	1″	4 1/2″	4352K53	662.15	4352K531	316.59
10-100	±0.75%	1,500	1 1/2″	5 5/16″	4352K54	925.31	4352K541	316.59
20-200	±0.75%	1,500	2″	6 5/16″	4352K55	1,175.40	4352K551	316.59

Pulse Output Module—For flowmeters/totalizers with a PVDF, brass, or Type 316 stainless steel body. Can transmit pulse signals up to 5,000 feet away to a data recorder, logger, or remote display (not included). Includes 10 feet of cable with wire leads.

4352K224 ..... $85.59

Wireless Transmitter and Receiver—For flowmeters/totalizers with PVDF, brass, and Type 316 stainless steel bodies. Includes a transmitter that sends pulse signals up to 300 feet away and an 8-channel receiver that sends a signal to a data recorder, logger, or remote display (not included). Transmitter operates on the included batteries. Receiver includes 25 feet of cable with wire leads.

4352K81 ..... $704.77

4-20 mA Output Module—For flowmeters/totalizers with PVDF, brass, and Type 316 stainless steel bodies. Connect module to a data recorder, logger, or remote display (not included). Includes a main module, circuit assembly, and 10 feet of cable with wire leads.

4352K226 ..... $316.21

Remote Mounting Kit—For flowmeters/totalizers with PVDF, brass, and Type 316 stainless steel bodies. Kit allows you to panel mount the meter's display up to 100 feet away. Furnished with a sensor module and 10 feet of cable with wire leads.

4352K22 ..... $208.79

Repl. 3-Volt Lithium Battery—For all flowmeters/totalizers above.

7821K71 ..... $11.50

Digital Flowmeters/Totalizers with Sanitary Quick-Clamp Connections

Great for food and pharmaceutical applications, these flowmeters/totalizers have a Type 316 stainless steel body and quick-clamp connections that meet 3-A sanitary standard requirements (for quick-clamp fittings, see pages 208-210). Flowmeters/totalizers have an eight-digit LCD that displays the flow rate (in either gallons per minute or liters per minute) and also registers the total flow volume (up to 999,999.99 gallons or liters). Total flow volume can be reset to zero. Digit height is 3/4″. Use with water and corrosive chemicals. Flowmeters/totalizers are calibrated for water, but can be calibrated for other liquids with viscosities from 1 to 30 centipoise (similar to vinegar). Mount horizontally or vertically. Batteries included. Temperature range is –22° to +158° F. CSA certified.

Flow Range, gpm/lpm	Accuracy	Max. psi @ 70° F	For Tube OD	Flange OD	O'all Lg.		
0.6-3.0 / 2.27-11.36	±1%	1,000	3/4″	1″	5 3/4″	3893K52	$997.74
0.75-7.5 / 3.0-30	±1%	1,000	1 1/2″	2″	5 3/4″	3893K56	1,057.63
2.0-15.0 / 7.5-57	±1%	1,000	3/4″	1″	5 3/4″	3893K54	953.90
2.0-15.0 / 7.5-57	±1%	1,000	1 1/2″	2″	5 3/4″	3893K58	1,057.63

For information about flowmeters/totalizers, see page 557. For information about pipe size, see pages 2-3.

Digital Flowmeters/Totalizers for High-Viscosity Liquids

The rotating gears inside these flowmeters/totalizers are ideal for measuring viscous fluids up to 1,000 centipoise, including fuel oil, hydraulic oil, and oil-based paint. Flowmeters/totalizers have a six-digit LCD that shows flow rate (either in gallons per hour or gallons per minute) and also registers total flow volume (up to 999,999 gallons). Total flow volume can be reset to zero. Digit height is 3/8″. Mount horizontally or vertically. O-ring is fluoroelastomer. Process connections are NPT female.

Flowmeters/totalizers ***with pulse output*** can be connected to a data recorder or logger (cable with wire leads not included). Operates on included batteries.

Flowmeters/totalizers ***with 4-20 mA output*** send a signal to a data recorder, logger, or a remote display (not included). They operate on 8.5-35 VDC and have a liquid-tight cord-grip connection with screw terminals.

4136K28

Flow Range	Accuracy	Max. psi @ 70° F	Pipe Size	Temp. Range	O'all Lg.	With Pulse Output		With 4-20 mA Output	
Ryton Body									
0.53-26.4 gallons per hour	±1%	75	1/4″	–40° to +176° F	2 9/16″	4136K32	$1,055.43	4136K78	$1,099.05
4.0-132 gallons per hour	±1%	75	1/4″	–40° to +176° F	2 9/16″	4136K34	1,113.28	4136K82	1,156.90
0.8-21 gallons per minute	±0.5%	150	1″	–40° to +176° F	4 1/4″	4136K28	1,419.00	4136K86	1,461.17
Aluminum Body									
0.13-13.2 gallons per hour	±1%	75	1/8″	+14° to +176° F	2 9/16″	4136K22	1,056.00	4136K26	1,098.17
0.53-7.9 gallons per minute	±0.5%	800	1/2″	–40° to +176° F	3 15/16″	4136K46	1,351.17	4136K84	1,393.33
1.6-32 gallons per minute	±0.5%	800	1″	–40° to +176° F	6 11/16″	4136K48	1,752.67	4136K88	1,736.94
2.6-66 gallons per minute	±0.5%	800	1 1/2″	–40° to +176° F	8 5/16″	4136K52	2,195.83	4136K92	2,234.17
Type 316 Stainless Steel Body									
4.0-132 gallons per hour	±1%	150	1/4″	+14° to +248° F	2 9/16″	4136K36	1,388.75	4136K38	1,430.92

High-Pressure Flowmeters/Totalizers for Lubricants

Also known as lube meters, these flowmeters/totalizers measure the flow rate and total flow volume of engine oil and transmission fluid up to 1,000 centipoise and handle pressures up to 1,500 psi at 70° F. Mount horizontally or vertically. Body is aluminum and O-ring is Buna-N. Temperature range is 23° to 131° F. Connections are NPT female.

Flowmeter/totalizer ***with LCD*** has a six-digit display that indicates flow rate in gallons per minute or liters per minute and also shows total flow volume up to 999,999 gallons or liters. Total flow volume can be reset to zero. Digit height is 1/2″. Batteries included.

Flowmeter/totalizer ***with pulse output*** sends a pulse signal to a data recorder, logger, or display (not included). Includes 3 feet of cable with wire leads.

With LCD

Flow Range, gpm/lpm	Accuracy	Pipe Size	O'all Lg.	With LCD		With Pulse Output	
0.26-7.8 / 1-30	±0.5%	1/2″	3 1/2″	4060K64	$294.50	4060K68	$232.22

Splash-Resistant Digital Water Flowmeters and Totalizers

A NEMA 4X-rated display on these flowmeters and totalizers withstands washdowns and outdoor environments. For use with water. All have a six-digit LCD. O-ring is fluoroelastomer. Mount horizontally or vertically.

Flowmeters measure the flow rate (in gallons per minute). ***Totalizers*** register the total flow volume (up to 999,999 gallons). Total flow volume can be reset to zero; you can disable the reset function to prevent tampering. ***Flowmeters/totalizers*** measure both the flow rate (in gallons per minute) and register total flow volume (up to 999,999 gallons). Total flow volume can be reset to zero; you can disable the reset function to prevent tampering.

For Pipe—LCD digit height is 5/16″. Body is polypropylene. Temperature range is 32° to 200° F. Batteries included.

For Tubing—LCD digit height is 3/16″. Body is PVDF. Flowmeters/totalizers operate on 115 VAC and include a 9-ft. power cord with a two-prong plug. Temperature range is 32° to 130° F.

Flowmeter for Pipe

Flow Range, gpm	Accuracy	Max. psi @ 70° F	Pipe/Tube Size	O'all Lg.	Flowmeters		Totalizers		Flowmeters/Totalizers	
For Pipe—*NPT Male Connections*										
0.8-8	±2%	300	3/8″	4 3/4″	3562K11	$303.57	3562K21	$325.27	3562K31	$484.28
2-20	±2%	300	1/2″	5 1/8″	3562K12	303.57	3562K22	325.27	3562K32	484.28
3-30	±2%	300	3/4″	5 1/4″	3562K13	303.57	3562K23	325.27	3562K33	484.28
5-50	±2%	300	1″	5 1/8″	3562K14	303.57	3562K24	325.27	3562K34	484.28
6-60	±2%	300	1 1/2″	6 1/2″	3562K15	380.98	3562K25	403.99	3562K35	572.69
10-100	±2%	300	2″	6 3/4″	3562K16	396.02	3562K26	419.03	3562K36	587.72
For Tubing—*Compression Tube Fittings*										
0.008-0.08	±6%	130	3/8″	5″	—	—	—	—	4261K81	302.97
0.027-0.27	±6%	130	3/8″	5″	—	—	—	—	4261K82	302.97
0.055-0.55	±6%	130	3/8″	5″	—	—	—	—	4261K83	302.97
0.133-1.33	±6%	130	3/8″	5″	—	—	—	—	4261K85	302.97
0.188-1.88	±6%	130	3/8″	5″	—	—	—	—	4261K86	302.97

Remote-Monitoring Digital Water Flowmeters/Totalizers for PVC Pipe

Check water flow rate and volume from a remote location. For a complete unit, you'll need to order an LCD, a sensor, and a tee fitting. For use in schedule 80 unthreaded PVC pipe. Max. pressure is 180 psi at 70° F. Temp. range is 0° to 194° F.

LCD

LCD

LCD has a two-line display that shows flow rate with four 1/2″ high digits and total flow volume with eight 1/4″ high digits (up to 99,999,999 gallons or liters; nonresettable). It displays flow rate in gallons or liters per second, minute, hour, or day. Rated NEMA 4X (for use outdoors and in washdown and corrosive environments). Designed for panel mounting, size is 1/4 DIN (96 mm × 96 mm × 50 mm). Accuracy is ±0.5%. Batteries included. *Optional surface mounting bracket for LCD* has four 3/16″ × 3/4″ mounting slots (fasteners not included).

LCD	4114K335	$541.21
Optional Surface Mounting Bracket for LCD	4114K94	34.07

Sensor

Sensor has a polypropylene body and a fluoroelastomer O-ring. It includes 25 feet of cable with wire leads for connection to the LCD so you can monitor flow remotely. Accuracy is ±1%.

4114K222 ..... $305.95

Sensor

Tee Fittings

Tee fittings ensure the sensor is correctly positioned. Made of PVC. Mount directly in horizontal or vertical pipe. Fittings have socket-weld connections and connect to pipe with PVC cement and primer (see page 86).

Flow Range, gpm/lpm	Pipe Size		
1-19 / 4-72	1/2″	4114K231	$123.00
1.7-34 / 6-129	3/4″	4114K232	123.00
2.7-54 / 10-204	1″	4114K233	99.74
6.4-127 / 24-481	1 1/2″	4114K235	$119.48
10.6-210 / 40-795	2″	4114K236	202.93
24-461 / 91-1,745	3″	4114K238	233.28

Tee Fitting

For information about flowmeters and totalizers, see page 557. For information about pipe size, see pages 2-3.

Extended-Life Water Flowmeters and Flowmeters/Totalizers

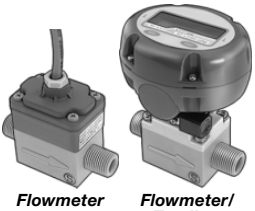

Flowmeter *Flowmeter/ Totalizer*

No moving parts means there's less wear and maintenance so these flowmeters/totalizers last longer. They work by creating vortices (whirls of water) that are proportional to the velocity of your flowing media. Mount horizontally or vertically. Body is made of Ryton and is rated NEMA 4X (for use outdoors and in washdown and corrosive environments). Maximum pressure is 150 psi at 70° F. Temperature range is –4° to +176° F. Connections are NPT male.

Flowmeters transmit a pulse output signal to a data recorder, logger, or display (not included). They operate on 12-24 VDC and include 3 feet of cable with wire leads. O-ring is fluoroelastomer.

Flowmeters/totalizers have an eight-digit LCD that indicates flow rate (in gallons per minute) as well as total flow volume (up to 99,999,999 gallons). Display is nonresettable. Digit height is 3/8″. Battery included.

Flow Range, gpm	Accuracy	Pipe Size	O'all Lg.	Flowmeters		Flowmeters/ Totalizers	
0.105-1.1	±3%	3/8″	5 1/8″	3437K61	$532.14	3437K51	$921.05
0.75-11.4	±1%	3/4″	5 1/8″	3437K63	575.00	3437K53	952.63
2.2-35.1	±1%	1 1/4″	7 1/2″	3437K64	594.64	3437K54	1,105.26

NSF-Certified Cold-Water Totalizers

Totalizer

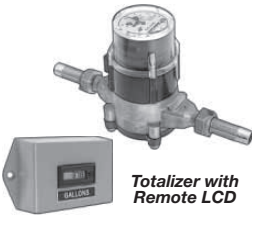

Totalizer with Remote LCD

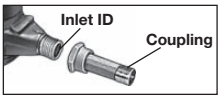

Perfect for cold-water service, these totalizers have a brass body and a low-flow indicator that detects leaks in the system. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010. All have a nonresettable dial that indicates the total flow volume. Mount horizontally. Fittings are bronze and O-ring is neoprene. Accuracy is ±1.5%. Maximum pressure is 150 psi at 70° F. Temperature range is 33° to 80° F. Meet AWWA (American Water Works Association) C700 standards. All include couplings.

Style A— Coupling connections are NPT male. *Totalizers* register up to 10,000,000 gallons. *Totalizers with remote LCD* register up to 9,999,990 gallons; they generate a pulse to the remote display every gallon.

Style B— Coupling connections are NPT female. *Totalizers* register up to 100,000,000 gallons. *Totalizers with remote LCD* register up to 99,999,000 gallons; they generate a pulse to the remote display every 10 gallons.

Style C— Coupling connections are NPT male. *Totalizers* register up to 1,000,000 cubic feet. *Totalizers with remote LCD* register up to 999,990 cubic feet; they generate a pulse to the remote display every cubic foot.

Totalizers with remote LCD allow you to place the display up to 500 feet away from the totalizer—ideal when the totalizer is located in an inaccessible or inconvenient area. Display is nonresettable. Digit height is 1/4″. Battery included. *Cable for remote LCD* (sold separately below) is required for connecting the display to the totalizer.

Flow Range	Inlet ID	Coupling Pipe Size	O'all Lg.	Totalizers		Totalizers with Remote LCD	
A..0.5-20 gallons per minute	5/8″	1/2″	12 1/2″	4041K21	$104.02	3786K91	$329.00
A..0.5-20 gallons per minute	5/8″	3/4″	12 3/4″	4041K22	111.67	3786K92	336.56
A..0.75-30 gallons per minute	3/4″	3/4″	14 1/4″	4041K61	178.82	3786K81	393.04
A..0.75-30 gallons per minute	3/4″	1″	14 1/2″	4041K62	199.74	3786K82	434.24
A..1-50 gallons per minute	1″	1″	16 1/4″	4041K23	276.45	3786K93	502.70
A..1-50 gallons per minute	1″	1 1/4″	16 3/8″	4041K24	349.92	3786K94	553.94
B..2-100 gallons per minute	1 1/2″	1 1/2″	12 5/8″	4041K25	671.08	3786K95	891.06
B..2.5-160 gallons per minute	2″	2″	15 1/4″	4041K26	1,021.24	3786K96	1,236.04
C..0.067-2.67 cubic feet per minute	5/8″	1/2″	12 1/2″	4041K71	104.02	3786K41	329.00
C..0.067-2.67 cubic feet per minute	5/8″	3/4″	12 3/4″	4041K72	111.67	3786K42	336.56
C..0.134-6.68 cubic feet per minute	1″	1″	16 1/4″	4041K73	276.45	3786K43	502.70
C..0.134-6.68 cubic feet per minute	1″	1 1/4″	16 3/8″	4041K74	349.92	3786K44	553.94

Cable for Remote LCD ..... 70985K81 **Per Foot** $0.13

Cold-Water Totalizers with Switch

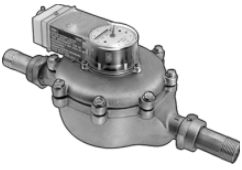

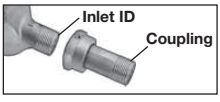

Coupling with NPT Male Connection

The switch on these piston-style totalizers closes each time the set amount of water passes through the totalizer. Switches are single pole, single throw normally open (SPST-NO). They turn one circuit from "off" to "on" and can be used to activate a pump, valve, or alarm. They operate on 20/10 amps at 120/250 VAC and include screw terminal connections.

Totalizers have a nonresettable dial that registers the total flow volume up to 9,999,999 gallons. Mount horizontally. Body is bronze. O-ring is Buna-N. Temperature range is 35° to 105° F. All include couplings; connections are NPT male, unless noted.

To Order: Please specify the amount of water that will close the switch each time that amount passes through. For 4187K41-K45, please specify: 5, 10, 20, 25, 50, 100, 200, 250, or 500 gallons. For 4187K47 and K48, please specify: 50, 100, 200, 250, 500, or 1,000 gallons.

Flow Range, gpm	Accuracy	Max. psi @ 70° F	Inlet ID	Coupling Pipe Size	O'all Lg.		
0.25-20	±1.5%	150	5/8″	1/2″	12 1/4″	4187K41	$467.72
0.25-20	±1.5%	150	5/8″	3/4″	12 1/2″	4187K42	479.05
0.5-30	±1.5%	150	3/4″	3/4″	14″	4187K43	654.55
0.75-50	±1.5%	150	1″	1″	16″	4187K45	885.45
2-100	±1.5%	150	1 1/2″	1 1/2″	18 5/16″	4187K47■	1,394.55
2-160	±1.5%	150	2″	2″	21 5/16″	4187K48■	1,775.46

■ Couplings have NPT female connections.

Corrosion-Resistant Cold-Water Totalizers

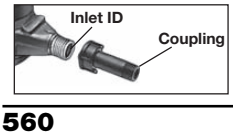

Deionized water won't damage these totalizers—all are made of nylon for added corrosion resistance. Totalizers have a nonresettable dial that registers the total flow volume up to 9,999,999 gallons. Mount horizontally. O-ring is Buna-N. Temperature range is 35° to 115° F. All include couplings; connections are NPT male.

Flow Range, gpm	Accuracy	Max. psi @ 115° F	Inlet ID	Coupling Pipe Size	O'all Lg.		Each
0.25-13	±2%	100	5/8″	1/2″	10 1/4″	4119K41	$145.45
0.25-22	±2%	100	3/4″	3/4″	11 5/8″	4119K42	180.91

		Pair
Replacement 1/2″ Pipe Size Couplings	4119K77	$25.00
Replacement 3/4″ Pipe Size Couplings	4119K79	25.00

For information about totalizers, see page 557. For information about pipe size, see pages 2-3.

High-Flow Flanged Cold-Water Totalizers

Dealing with high flow rates and large pipe sizes? Use these cold-water totalizers to keep tabs on the total number of gallons flowing through your pipes. These products can be used with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012. Totalizers have a nonresettable dial that registers the flow volume up to 99,999,990 gallons, unless noted. Dial size is 2½″. Mount horizontally. Body is bronze and O-ring is rubber. Temperature range is 33° to 120° F. Meet AWWA (American Water Works Association) Standard C-701 Class II. Connections are flanged.

Round flanges are drilled to accommodate AWWA Class D and ANSI 150-lb. flanges.

Use the *optional flange kit* to convert elliptical flanges to NPT female connections.

With Elliptical Flanges

Flow Range, gpm	Accuracy	Max. psi @ 70° F	Pipe Size	Flange OD	Bolt Circle Dia.	No. of Bolt Holes	Hole Dia.	O'all Lg.		
With Elliptical Flanges										
4-350	±1.5%	175	2″	5⅞″	4½″	2	⅝″	10″	**4189K12**	$814.64
With Round Flanges										
5-530	±1.5%	175	3″	7½″	6″	4	⅝″	12″	**4189K13**	1,118.41
9-1,350	±1.5%	175	4″	8⅞″	7½″	8	¾″	14″	**4189K14** ♦	1,712.93

Optional Flange Kit for Elliptical Flanges ..... **4189K22** $136.69

♦ Dial registers up to 999,999,000 gallons.

Hot-Water Totalizers

Best suited for moderate flow, these totalizers are painted red to designate hot-water service. All have a brass body and a nonresettable dial that registers the total flow volume up to 9,999,990 gallons. Dial size is 2½″. Mount horizontally. O-ring is rubber. Temperature range is 33° to 155° F. All include couplings; connections are NPT male. Meet AWWA (American Water Works Association) Standard C-708.

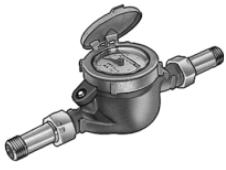

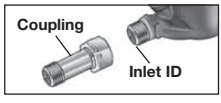

Flow Range, gpm	Accuracy	Max. psi @ 155° F	Inlet ID	Coupling Pipe Size	O'all Lg.		
1-20	±1.5%	150	⅝″	½″	7½″	**9817K11**	$280.07
1-20	±1.5%	150	⅝″	¾″	7½″	**9817K12**	284.08
3-50	±1.5%	150	1″	1″	10¾″	**9817K17**	379.67

Corrosion-Resistant Hot-Water Totalizers

Use with water up to 200° F—these totalizers withstand high temperatures with their heavy-duty construction and nickel-plated brass body. Totalizers have a nonresettable odometer-style display that registers the total flow volume up to 9,999,999.9 gallons. O-ring is fluoroelastomer. Mount horizontally or vertically. Accuracy is ±1.5%. Maximum pressure is 150 psi at 200° F. Temperature range is –200° to +200° F. Couplings are included; connections are NPT male.

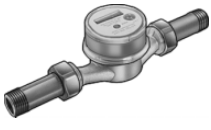

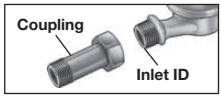

Flow Range, gpm	Inlet ID	Coupling Pipe Size	O'all Lg.		
0.13-13	¾″	½″	9 1/16″	**4115K41**	$216.22
0.22-20	1″	¾″	10⅛″	**4115K42**	229.73

High-Accuracy Fuel Totalizers

Accurately measure deliveries of gasoline, diesel, and kerosene with these totalizers—they have a small internal disc that senses flow volume with an accuracy of ±2%. Ideal for low-flow, low-pressure applications. The flow volume registers on a two-line display: batch total on one line, with four ⅝″ high digits (up to 999.9 gallons; resettable), and accumulated total flow volume on the other line, with eight 3/16″ high digits (up to 999,999.9 gallons; nonresettable). Mount horizontally or vertically. Display rotates 360° for easy viewing. Both have a weather-resistant die cast aluminum body, Buna-N O-rings, and a 10×10 mesh strainer. Overall size is 7″ Ht.× 7⅝″ Wd.×6⅛″ Dp. Maximum pressure is 50 psi at 70° F. Temperature range is –20° to +125° F. Connections are 1″ NPT female.

Flow Range		
5-30 gallons per minute	**9854K11**	$212.07
19-114 liters per minute	**9854K12**	212.07

High-Accuracy Digital Oil Totalizers

A small internal disc inside these totalizers senses the flow of hydraulic and motor oil with an accuracy of ±0.5%. Totalizers can be programmed to measure flow volume in ounces, gallons, or liters. All have a seven-digit LCD that registers the total flow volume up to 999,999.9 units. Digit height is ¾″. Totalizers activate automatically or manually and automatically shut down 40 seconds after flow stops. Mount horizontally, vertically, or at any angle. O-ring is fluoroelastomer. Batteries included. Connections are NPT male.

Totalizer with nylon body is 5¼″ Ht.×5¼″ Wd.×4″ Dp.

Totalizer with Type 316 stainless steel body is 5 7/16″ Ht.× 5 7/16″ Wd.×4½″ Dp.

Flow Range	Max. psi @ 70° F	Pipe Size	Temp. Range		
Nylon Body					
2-30 gpm	60	1″	33° to 150° F	**41935K49**	$255.69
Type 316 Stainless Steel Body					
2-30 gpm	100	1″	33° to 185° F	**41935K98**	343.15

Natural Gas Totalizers

With a nonresettable odometer-style display, these totalizers register the total flow volume up to 999,900 cubic feet. Body is aluminum and O-ring is Buna-N. Mount horizontally. Accuracy is ±1%. Temperature range is –30° to +140° F.

¾″ pipe size totalizer has NPT female side connections; overall size is 12 5/16″ Ht.× 8 13/16″ Wd.×8 11/16″ Dp.

1¼″ pipe size totalizer has NPT male top connections; overall size is 15″ Ht.×10⅝″ Wd.× 10″ Dp.

Flow Range, cfh	Pipe Size	Max. psi @ 70° F		
0-250	¾″	5	**4360K21**	$226.75
0-425	1¼″	10	**4360K22**	477.98

Graduated Tubes

Also known as calibration columns, these clear PVC tubes are great for calibrating flow rates on metering pumps. All tubes have a scale that's graduated in gallons per hour. Fittings are PVC. Maximum pressure is not rated. Temperature range is 32° to 140° F. Connections are NPT female.

Flow Range, gph	Tube Volume, ml	Pipe Size	O'all Ht.		
0-1.5	100	½″	12½″	**4446K71**	$49.08
0-4	250	½″	16¼″	**4446K72**	54.55
0-8	500	¾″	16″	**4446K73**	57.82
0-16	1,000	¾″	25″	**4446K74**	64.36
0-32	2,000	1″	24″	**4446K75**	142.76
0-64	4,000	1″	34″	**4446K76**	158.28
0-160	10,000	2″	27″	**4446K77**	423.10
0-320	20,000	2″	46″	**4446K78**	513.10

About Pressure and Vacuum Gauges

Pressure gauges measure pressure above atmospheric pressure (positive pressure).

Vacuum gauges measure pressure below atmospheric pressure (negative pressure).

Compound gauges measure both pressure and vacuum.

Differential gauges measure the difference between two pressures.

Most gauges sense pressure changes with the use of an internal Bourdon pressure tube—a curved or coiled tube behind the dial that uncoils when pressure increases and coils more tightly when pressure decreases. Gauges for very low pressures have a diaphragm instead of a Bourdon pressure tube.

General service pressure gauges can be used with noncorrosive gases and liquids, such as air and water. The connection and Bourdon pressure tube or diaphragm are made of a copper alloy, such as brass or bronze.

Corrosive service pressure gauges can be used with more corrosive media that could attack brass or bronze components. The connection and Bourdon pressure tube or diaphragm are usually Type 316 stainless steel. If you're dealing with highly corrosive media, we recommend using a gauge guard (diaphragm seal) between the medium and your gauge (see page 578).

Use a *coiled pipe (siphon)* to protect gauges in steam and other high-temperature applications (see page 578). The pipes prevent high-temperature fluids from reaching the internal parts of the gauge where they can cause damage.

Temperature Range

Ambient temperature refers to the temperature of the environment to which the exterior of the gauge is exposed.

Process temperature refers to the temperature of the process media to which the internal components of the gauge are exposed (i.e., the Bourdon pressure tube or diaphragm).

Gauge Accuracy

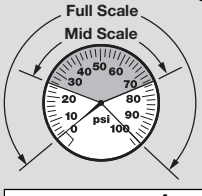

Gauge accuracy and grade are categorized by ASME (ANSI) standard B40.1. Gauges that are "Not Graded" do not meet one of the ASME (ANSI) B40.1 guidelines. For example, a gauge with ±1.5% full-scale accuracy falls between Grades A and 1A, so it is listed as "Not Graded." We offer gauges in the following ASME (ANSI) grades:

Accuracy	Grade
±5% Full Scale	D
±2% Mid Scale; ±3% Rest of Scale	B
±1% Mid Scale; ±2% Rest of Scale	A
±1% Full Scale	1A
±0.5% Full Scale	2A
±0.25% Full Scale	3A

NIST Certificates

Many gauges are available with a certificate of calibration traceable to the National Institute of Standards and Technology (NIST). This certificate shows you that your gauge has been tested against a gauge certified by NIST and proven to fall within a required tolerance.

Certificates have a calibration date and a put-to-service date. Gauges must be calibrated again after a set period of time from the put-to-service date, not the calibration date; they do not begin to fall out of calibration until they are actually put in service.

Range Selection

Choose a gauge with a full-scale pressure range that is approximately double your normal operating pressure. Your maximum operating pressure should not exceed 75% of the full-scale range.

Dial Face

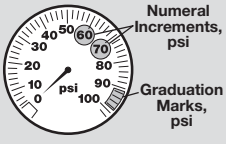

Numeral increments refer to the pressure increments between numbers on the dial face. For example, the dial face shown has a numeral every 10 psi.

Graduation marks are the hash marks between the numerals. For example, the dial face shown has a graduation mark every 2 psi.

Case Materials

In a clean, dry, noncorrosive environment, a painted-steel-case gauge is sufficient. Brass is a good choice for damp areas, and stainless steel and thermoplastic cases are better in corrosive environments.

Dry or Glycerin-Filled

Most of the gauges we offer are dry, containing only the gauge mechanism inside the case. These work well for most applications. In some environments, however, vibrations and pulsation (pressure fluctuations) can cause the gauge needle to flutter, making the gauge difficult to read. Glycerin-filled gauges reduce this flutter. In addition, most glycerin-filled gauges have an air bubble inside that allows for expansion due to temperature changes.

Common Units of Pressure

psi—Pounds per square inch
kPa—Kilopascals
kg/cm²—Kilograms per square centimeter
bar—100 Kilopascals
oz./in.²—Ounces per square inch
in. of H_2O—Inches of water
in. of Hg—Inches of mercury
ft. of H_2O—Feet of water

General Service Pressure Gauges

Miniature Gauges—
±5% Full-Scale Accuracy (Grade D)

- Use with compressed air, water, ethyl alcohol, and nitrogen
- Bourdon Pressure Tube Material: Beryllium copper
- Connection: Brass NPT male or brass BSPT male
- Case Material: ABS thermoplastic
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150° F
  Process: –40° to +150° F

When you're in a tight spot choose these miniature gauges. Their pressure tube transmits motion directly to the pointer so there are no gears or bearings to wear out. Choose from gauges with NPT and BSPT (British Standard Pipe Taper) threads.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0-60	10	5	0-200	40	10
0-100	20	5	0-300	50	25
0-160	40	10			

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	CENTER BACK CONNECTION NPT Male		BSPT Male	
29/32″	1/8″	38105K51	$9.92	38105K61	$11.02

High-Pressure Miniature Gauges—
±5% Full-Scale Accuracy (Grade D)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Bronze
- Connection: Nickel-plated brass NPT male
- Case Material: Nickel-plated brass
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: –50° to +160° F
  Process: –50° to +160° F

For high-pressure applications, these gauges come in pressure ranges up to 6,000 psi. They have a 1″ hex size dial with no bushing so the gauge mounts flush in an NPT female opening. They have a gearless design for long life and porous brass in the connection that reduces pulsation.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0-160	40	8	0-1,200	400	80
0-300	100	20	0-4,000	1,000	200
0-500	200	20	0-5,000	1,000	200
0-750	200	50	0-6,000	1,000	500

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Center Back Connection	
1″	1/8″	9767T21	$10.78

For information about pressure gauges, see page 562.

Multipurpose Gauges—±2% Mid-Scale Accuracy (Grade B)

- Use with compressed air, hydraulic oil, nitrogen, and ethyl alcohol
- Bourdon Pressure Tube Material: Bronze
- Connection: Brass NPT male
- Case Material: See table
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150° F
  Process: –40° to +150° F

For general use with compressors, pumps, filters, and regulators. Choose from gauges with an ABS thermoplastic and a steel case.

ABS thermoplastic cases are more corrosion resistant than steel cases. Gauges *with NIST certificate* include a certificate of calibration traceable to NIST.

Single-scale gauges display psi pressure ranges. ***Dual-scale*** gauges give readings in both psi and kPa pressure ranges.

To Order: Please specify pressure range in psi from the listing below.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Numeral Increments psi	Numeral Increments kPa	Grad. Marks psi	Grad. Marks kPa
0- 15	0- 100	1	10	0.5	2
0- 30	0- 200	5	20	0.5	5
0- 60	0- 400	5	50	1	10
0- 100	0- 700	10	100	2	20
0- 160	0- 1,100	20	200	5	20
0- 200	0- 1,400	20	200	5	20
0- 300	0- 2,000	30	200	5	50
0- 400	0- 2,800	50	400	10	50
0- 600	0- 4,000	50	1,000	10	100
0-1,000	0- 7,000	200	1,000	20	200
0-2,000	0-14,000	400	2,000	50	200
0-3,000	0-20,000	500	5,000	100	1,000
0-4,000	0-28,000	1,000	5,000	100	1,000
0-5,000	0-35,000	1,000	5,000	100	1,000
0-6,000	0-40,000	1,000	10,000	200	1,000

Dual Scale with Bottom Connection

Single Scale with Center Back Connection

Steel Case Panel Mount Conn. (Back View)

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Panel Mount Connection: Panel Cutout Dia. (min. to max.)		
ABS Thermoplastic Case								
Single Scale (psi)								
1½"	⅛"	3847K71■	$10.70	3847K72■	$10.32	1 55/64"-1 31/32"	3847K73■	$14.64
2"	¼"	4089K61	9.20	4089K62	11.50	2 21/64"-2 7/16"	4089K63	17.92
2½"	¼"	4089K64	10.50	4089K65	12.60	2 63/64"-3 7/64"	4089K66	21.98
3½"	¼"	4089K81	14.83	4089K82	16.80	3 57/64"-4 1/64"	4089K83	26.17
Single Scale (psi) with NIST Certificate								
1½"	⅛"	9796T11■	76.18	9796T12■	75.20	1 55/64"-1 31/32"	9796T13■	81.31
2"	¼"	9796T21	76.89	9796T22	76.49	2 21/64"-2 7/16"	9796T23	82.60
2½"	¼"	9796T31	76.00	9796T32	77.87	2 63/64"-3 7/64"	9796T33	86.20
3½"	¼"	9796T41	79.84	9796T42	81.60	3 57/64"-4 1/64"	9796T43	89.93
Black Painted-Steel Case								
Single Scale (psi)								
1½"	⅛"	3846K1■	10.70	3846K2■	10.32	1 5/8" -1 3/4"	3846K4■	13.38
2"	¼"	3846K6	9.38	3846K8	11.12	2 3/32" -2 7/32"	3846K9	14.12
2½"	¼"	3846K312	9.88	3846K313	11.62	2 39/64"-2 3/4"	3846K99	16.25
3½"	¼"	3846K311	13.38	3846K18	14.38	3 5/8" -3 13/16"	3846K19	21.52
4½"	¼"	3846K21	19.87	—	—	—	—	—
Dual Scale (psi/kPa)								
1½"	⅛"	4000K717■	10.70	4000K718■	10.32	1 5/8" -1 3/4"	4000K719■	13.38
2"	¼"	4000K721	9.38	4000K791	11.12	2 3/32" -2 7/32"	4000K728	14.12
2½"	¼"	4000K722	9.88	4000K726	11.62	2 39/64"-2 3/4"	4000K729	16.25
3½"	¼"	4000K713	13.38	4000K727	14.38	3 5/8" -3 13/16"	4000K741	21.52
4½"	¼"	4000K724	19.87	—	—	—	—	—

■ Available only in pressure ranges up to 1,000 psi.

Square Panel-Mount Gauges—±2.5% Full-Scale Accuracy (Not Graded)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass dual-thread ⅛" NPT male/ 10-32 SAE straight thread female
- Case Material: ABS thermoplastic
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: 0° to 140° F; Process: 0° to 140° F

Panel mount these gauges in a square cutout.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks
0- 15	1	0.5
0- 30	5	1
0- 60	10	2
0-100	10	1
0-160	20	5
0-200	20	2
0-300	50	10

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Panel Cutout Square	Panel Mount Connection	
2"	⅛" NPT/10-32 SAE	1 49/64"	3814K11	$22.13

Compact Glycerin-Filled Gauges—±2.5% Full-Scale Accuracy (Not Graded)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: ABS thermoplastic
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: 0° to 140° F
  Process: 0° to 140° F

Glycerin-filled gauges reduce needle flutter due to small vibrations and pulsation.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 30	5	0.5	0- 300	50	5
0- 60	10	1	0-2,000	400	40
0-100	20	2	0-3,000	500	50
0-160	40	4	0-5,000	1,000	100

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Center Back Connection	
1½"	⅛"	38055K21	$33.62

Top-Connect Water Gauge—±2% Mid-Scale Accuracy (Grade B)

- Use with water
- Bourdon Pressure Tube Material: Copper alloy
- Connection: Copper alloy GHT female
- Case Material: Black painted steel
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: 32° to 160° F
  Process: 32° to 160° F

Garden hose threads (GHT) connect directly to a standard water hose or valve. Gauge has a dual-scale dial that gives readings in both psi and kPa.

Dial Size	Pipe Size	Pressure Range, psi/kPa	Numeral Increments, psi/kPa	Grad. Marks, psi/kPa	Top Connection	
2½"	¾"	0-300/0-2,100	50/500	10/50	9823T11	$17.98

For information about pressure gauges, see page 562.

Silicone-Filled Shock-Resistant Gauges—±2% Mid-Scale Accuracy (Grade B)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Copper alloy
- Connection: Nickel-plated brass NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: –40° to +158°F; Process: –40° to +158°F

Center Back Conn.

Rugged, compact, and filled with silicone, these resist sudden shocks such as water hammer. Silicone also reduces needle flutter due to vibrations and pulsation. Their dual-scale dial gives pressure readings in both psi and kPa. ***Panel-mount*** gauges require a 1⅝″ cutout.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi	Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi
0- 15	0- 100	3	0.5	0- 200	0- 1,400	50	5
0- 30	0- 200	5	1	0- 300	0- 2,000	50	10
0- 60	0- 400	10	2	0- 600	0- 4,000	100	20
0-100	0- 700	10	2	0-1,000	0- 7,000	100	20
0-160	0-1,100	20	5	0-3,000	0-20,000	500	50

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	Center Back Connection		Panel Mount Connection	
1½″	⅛″	9780T11	$18.75	9780T21	$21.48

Brass-Case Gauges—±2% Mid-Scale Accuracy (Grade B)

- Use with compressed air, noncorrosive gases, water, and hydraulic oil
- Bourdon Pressure Tube Material:
  For 2½″ Dial: Brass
  For 3½″ Dial: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Brass
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: –40° to +140°F; Process: –40° to +140°F

Gauges have a brass case for good water resistance. Their dual-scale dial gives pressure readings in both psi and kPa.

Available Pressure Ranges

Pressure Range, psi	Pressure Range, kPa 2½″	Pressure Range, kPa 3½″	Numeral Increments, psi 2½″	Numeral Increments, psi 3½″	Grad. Marks, psi 2½″	Grad. Marks, psi 3½″
0- 15	0- 102	0- 100	3	3	0.2	0.2
0- 30	0- 205	0- 210	5	5	0.5	1
0- 60	0- 410	0- 400	10	10	1	1
0- 100	0- 680	0- 700	20	10	2	2
0- 160	0-1,100	0-1,100	20	20	2	2
0- 200	0-1,350	0-1,400	50	20	5	4
0- 300	0-2,050	0-2,100	50	50	5	10
0- 400	0-2,750	0-2,800	100	50	10	5
0- 600	0-4,100	0-4,000	100	100	10	10
0-1,000	0-6,800	—	200	—	20	—

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	Bottom Connection	
2½″	¼″	4023K211	$27.06
3½″	¼″	4023K311♣	29.65

♣ Not available in 0-1,000 psi pressure range.

Stainless Steel-Case Gauges—±2% Mid-Scale Accuracy (Grade B)

- Use with compressed air, water, hydraulic oil, nitrogen, and ethyl alcohol
- Bourdon Pressure Tube Material: Bronze
- Connection: Brass NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150°F
  Process: –40° to +150°F

Center Back Conn.

Made with a Type 304 stainless steel case for good corrosion resistance in harsh environments. Panel-mount gauge with 2½″ dial fits in a 2⁹⁄₁₆″ cutout; panel mount gauge with 4″ dial fits in a 3³¹⁄₃₂″ cutout.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 15	3	0.5	0- 600	100	10
0- 30	5	0.5	0-1,000	200	10
0- 60	10	1	0-1,500	200	20
0-100	20	2	0-2,000	400	20
0-160	20	2	0-3,000	500	50
0-200	40	5	0-4,000	1,000	100
0-300	50	5	0-5,000	1,000	100
0-400	50	10	0-6,000	1,000	100

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Panel Mount Connection	
2½″	¼″	4003K11	$21.52	4003K71	$23.41	4003K93	$28.59
4″	¼″	4003K61	30.83	4003K81	34.85	4003K95	41.77

Metric Gauges with BSPT Threads—±2% Mid-Scale Accuracy (Grade B)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass BSPT male
- Case Material: ABS thermoplastic
- Lens Material: Polystyrene
- Temperature Ranges:
  Ambient: –4° to +140°F; Process: –4° to +158°F

Center Back Conn.

With metric BSPT (British Standard Pipe Taper) threads, these gauges are ideal for connections on pumps, filters, and regulators. Their dual-scale dial gives pressure readings in both psi and kPa.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi	Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi
0- 30	0- 200	5	1	0- 200	0-1,400	40	5
0- 60	0- 400	10	2	0- 300	0-2,000	50	10
0-100	0- 700	20	2	0- 600	0-4,000	100	20
0-160	0-1,100	20	5	0-1,000	0-7,000	200	20

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection	
40 mm (1⁹⁄₁₆″)	⅛″	9804T51	$8.00	9804T61	$8.00
50 mm (2″)	¼″	9804T52	9.18	9804T62	9.18
63 mm (2½″)	¼″	9804T53	10.40	9804T63	10.40

Extended-Life Gauges—±2% Mid-Scale Accuracy (Grade B)

- Use with compressed air, water, hydraulic oil, nitrogen, and ethyl alcohol
- Bourdon Pressure Tube Material: Beryllium copper
- Connection: ABS thermoplastic NPT male
- Case Material: ABS thermoplastic
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150°F
  Process: –40° to +150°F

With a pressure tube that transmits motion directly to the needle, these gauges have no gears to wear out for long gauge life.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 60	10	5	0-200	20	5
0-100	20	2	0-300	50	10
0-160	20	5	0-400	100	20

To Order: Please specify pressure range from the listing.

Dial Size	Pipe Size	Center Back Connection	
1½″	⅛″	3793K21	$9.33
2″	¼″	3793K22	9.95

For information about pressure gauges, see page 562.

Compact Stainless Steel-Case Gauges

- Accuracy is ±2% at the mid point, ±5% below the mid point, and ±8% above the mid point
- Use with compressed air, water, hydraulic oil, nitrogen, and ethyl alcohol
- Bourdon Pressure Tube Material: Beryllium copper
- Connection: Brass NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150°F; Process: –40° to +150°F

A compact Type 304 stainless steel case provides good corrosion resistance in harsh environments. The pressure tube transmits motion directly to the needle so there are no gears to wear out.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 60	10	2	0-1,200	300	50
0-100	20	2	0-1,500	300	50
0-160	20	5	0-2,000	500	50
0-200	20	5	0-3,000	1,000	100
0-300	50	10	0-4,000	1,000	100
0-700	100	25			

To Order: Please specify pressure range from the listing above.

Pressure Ranges	Dial Size	Pipe Size	Center Back Connection	
0-60 to 0-300	1½″	⅛″	40565K51	$6.83
0-700 to 0-4,000	1½″	⅛″	40565K52	11.60

Welding and Compressed Gas Gauges—±2% Mid-Scale Accuracy (Grade B)

- Use with compressed air, acetylene, carbon dioxide, and oxygen
- Bourdon Pressure Tube Material: Brass
- Connection: Brass NPT male
- Case Material: Brass
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +140°F; Process: –40° to +140°F

Designed for welding and compressed gas applications, these gauges are UL 252A listed for ranges up to 1,000 psi and UL 404 listed for ranges 2,000 psi and higher. They're also cleaned to ASME B40.1, Level IV, making them safe for use with oxygen.

Available Pressure Ranges (psi)

Press. Range	Numeral Increments 2″	Numeral Increments 2½″	Grad. Marks 2″	Grad. Marks 2½″	Press. Range	Numeral Increments 2″	Numeral Increments 2½″	Grad. Marks 2″	Grad. Marks 2½″
0- 30	5	5	1	1	0- 600	100	100	10	10
0- 60	10	10	1	1	0-1,000	200	200	20	20
0-100	20	20	2	2	0-2,000	400	400	50	50
0-200	40	40	5	5	0-3,000	500	500	50	50
0-400	50	50	10	10	0-4,000	500	500	100	100

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection	
2″	¼″	32255K7	$19.71
2½″	¼″	32255K6	19.95

Gauges with Isolating Guard—±2% Mid-Scale Accuracy (Grade B)

- Use with water, hydraulic oil, sodium hypochlorite, and alkaline solutions
- Bourdon Pressure Tube Material: Copper alloy
- Connection: NPT Female gauge guard
- Case Material: Black painted steel
- Lens Material: Acrylic
- Ambient Temperature Range: –40° to +140°F
- Process Temperature Ranges:
  PVC Guard: 32° to 140°F
  CPVC Guard: 0° to 200°F
  Polypropylene Guard: 32° to 180°F

The attached guard with internal fluoroelastomer diaphragm keeps your process liquid from coming into contact with the gauge internals, protecting them from chemical corrosion. Gauges have a dual-scale dial that gives readings in both psi and kg/cm^2.

Available Pressure Ranges for Gauges

Pressure Range psi	Pressure Range kg/cm^2	Numeral Increments psi	Numeral Increments kg/cm^2	Grad. Marks psi	Grad. Marks kg/cm^2
0- 30	0- 2.1	5	0.5	0.5	0.05
0- 60	0- 4.2	10	1	1	0.1
0-160▲	0-11.2	20	2	2	0.2

▲ Gauge guard max. pressure is 150 psi.

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	BOTTOM GAUGE-GUARD CONNECTION with PVC Guard		with CPVC Guard		with Polypropylene Guard	
2″	¼″	4091K23	$99.74	4147K41	$114.26	4134K23	$138.02
2″	½″	4091K24	99.74	4147K42	114.26		

Glycerin-Filled Gauges with NIST Certificate

Bottom Connection

- Accuracy: For 2½″ Dial: 1.5% full scale (not graded)
  For 4″ Dial: 1% full scale (Grade 1A)
- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Brass
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: 0° to 160°F; Process: 0° to 160°F

These gauges include a certificate of calibration traceable to NIST. They are glycerin filled to reduce needle flutter due to vibrations and pulsation.

Available Pressure Ranges (psi)

Press. Range	Numeral Increments 2½″	Numeral Increments 4″	Grad. Marks 2½″	Grad. Marks 4″	Press. Range	Numeral Increments 2½″	Numeral Increments 4″	Grad. Marks 2½″	Grad. Marks 4″
0- 30	5	5	0.5	0.5	0- 800	200	100	20	10
0- 60	10	10	1	1	0- 1,000	200	200	20	20
0-100	20	20	2	2	0- 1,500	300	300	20	20
0-160	40	20	4	2	0- 2,000	400	400	40	40
0-200	40	40	4	4	0- 3,000	500	500	50	50
0-300	50	50	5	5	0- 5,000	1,000	1,000	100	100
0-400	100	50	10	5	0- 6,000	1,000	1,000	100	100
0-600	100	100	10	10	0-10,000	2,000	2,000	200	200

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Lower Back Connection	
2½″	¼″	3481K11	$140.51	3481K21	$138.30		
4″	¼″	3481K12	218.79			3481K22	$224.58

Fire-Sprinkler-System Gauges—±2% Mid-Scale Accuracy (Grade B)

- Bourdon Pressure Tube Material: Bronze
- Connection: Brass NPT male
- Case Material: ABS thermoplastic
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150°F; Process: –40° to +150°F

All gauges are UL 393 listed and FM approved.
Water Gauge—Use in wet systems where water is immediately available to sprinkler heads.
Air/Water Gauge—Use in dry systems where lines are filled with air from 0-80 psi until system is activated with water at 80-250 psi. Pointer movement slows (retards) from 80 to 250 psi.

Air/Water

	Dial Size	Pipe Size	Pressure Range, psi	Numeral Increments, psi	Grad. Marks, psi	Bottom Connection	
Water	3½″	¼″	0-300	30	5	3806K11	$14.97
Air/Water	3½″	¼″	0-80/250	10	2	3806K12	16.15

For information about pressure gauges, see page 562.

Glycerin-Filled Stainless Steel-Case Gauges with BSPP Threads—
±1.5% Full-Scale Accuracy (Not Graded)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass BSPP male
- Case Material: Type 304 stainless steel
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: 0° to 140°F; Process: 0° to 140°F

These metric-threaded BSPP (British Standard Pipe Parallel) gauges are ideal for installation into equipment. They have a dual-scale dial for readings in both bar and psi. Gauges are glycerin filled to reduce needle flutter due to vibrations and pulsation.

Available Pressure Ranges

Pressure Range bar	Pressure Range psi	Numeral Increments bar	Numeral Increments psi	Grad. Marks bar	Grad. Marks psi
0- 1	0- 14.4	0.2	4	0.02	0.4
0- 1.6	0- 22.8	0.4	6	0.04	0.6
0- 2.5	0- 36	0.5	10	0.05	1
0- 4	0- 57.6	1	16	0.1	1.6
0- 6	0- 86	1	20	0.1	2
0- 10	0- 144	2	40	0.2	4
0- 16	0- 228	4	60	0.4	6
0- 25	0- 360	5	100	0.5	10
0- 40	0- 576	10	160	1	16
0- 60	0- 860	10	200	1	20
0-100	0-1,440	20	400	2	40
0-160	0-2,280	40	600	4	60
0-250	0-3,600	50	1,000	5	100
0-400	0-5,800	100	1,000	10	100
0-600	0-8,600	100	2,000	10	200

To Order: Please specify pressure range in bar from the listing above.

Dial Size	Pipe Size	Bottom Connection	
2½"	¼"	3548K11	$28.64

Low-Pressure Diaphragm Gauges

Bottom Connection

- Accuracy:
  Bottom Connection: ±1.6% full scale (not graded)
  Center Back Connection: ±1.5% full scale (not graded)
- Use with compressed air, water, and hydraulic oil
- Diaphragm Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Black painted steel
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: 0° to 140°F; Process: 0° to 140°F

Designed with a phosphor-bronze diaphragm to measure very low pressures. Gauges *with NIST certificate* include a certificate of calibration traceable to NIST.

Available Pressure Ranges

Pressure Range	Numeral Increments	Grad. Marks
oz./in.²		
0- 10	2	0.2
0- 15	3	0.2
0- 30	5	0.5
0- 60	10	1
0-100	20	2
0-160	40	4
in. of H_2O		
0- 10	2	0.2
0- 15	3	0.2
in. of H_2O (Cont.)		
0- 30	5	0.5
0- 60	10	1
0-100	20	2
0-160	40	4
0-200	40	4
psi		
0- 3	0.5	0.05
0- 5	1	0.1
0- 10	2	0.2

To Order: Please specify scale (oz./in.², in. of H_2O, or psi) and pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection	
Standard					
2½"	¼"	4026K3	$55.54	4026K5	$57.23
With NIST Certificate					
2½"	¼"	4026K4	136.82	4026K6	138.38

Max-Indicating Glycerin-Filled Gauges—
±1.5% Full-Scale Accuracy (Not Graded)

Center Back Connection

- Use with compressed air, water, hydraulic oil, carbon dioxide, and ethanol
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Brass
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: 0° to 160°F; Process: 0° to 160°F

You can't monitor your gauges all day and night, so these have a red maximum-indicating pointer that shows you the highest pressure your system reached since your last checkup. These gauges are also glycerin filled to reduce needle flutter due to vibrations and pulsation. Gauges *with NIST certificate* include a certificate of calibration traceable to NIST.

Panel-mount gauges require a 2½" dia. cutout.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 15	3	0.2	0- 600	100	10
0- 30	5	0.5	0- 1,000	200	20
0- 60	10	1	0- 1,500	300	20
0-100	20	2	0- 3,000	500	50
0-160	40	4	0- 5,000	1,000	100
0-200	40	4	0- 7,500	1,500	100
0-300	50	5	0-10,000	2,000	200
0-400	100	10	0-15,000	3,000	200

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Panel Mount Connection	
Standard							
2½"	¼"	3842K11	$138.39	3842K21	$107.92	3842K81	$140.07
With NIST Certificate							
2½"	¼"	3842K31	183.85	3842K41	187.50	3842K83	228.87

Glycerin-Filled Gauges—
±1% Mid-Scale Accuracy (Grade A)

Center Back Connection

- Use with compressed air, water, hydraulic oil, and petrochemicals
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: ABS thermoplastic
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: 0° to 140°F; Process: 0° to 140°F

Gauges are filled with glycerin to reduce needle flutter due to small vibrations and pulsation. They have a dual-scale dial that gives readings in both psi and kPa.

Panel-mount gauge requires a 2 7/16" dia. cutout.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Numeral Increments psi	Numeral Increments kPa	Grad. Marks psi	Grad. Marks kPa
0- 30	0- 205	5	50	0.5	5
0- 60	0- 410	10	100	1	10
0- 100	0- 680	20	200	2	20
0- 160	0- 1,100	40	400	4	40
0- 200	0- 1,360	40	400	4	40
0- 300	0- 2,050	50	500	5	50
0- 400	0- 2,700	100	1,000	10	100
0- 600	0- 4,100	100	1,000	10	100
0-1,000	0- 6,800	200	2,000	20	200
0-1,500	0-10,200	300	3,000	20	200
0-2,000	0-13,600	400	4,000	40	400
0-3,000	0-20,500	500	5,000	50	500
0-5,000	0-34,000	1,000	10,000	100	1,000
0-6,000	0-41,000	1,000	10,000	100	1,000

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Panel Mount Connection	
2½"	¼"	3845K1	$18.49	3845K7	$19.33	3845K5	$26.18

For information about pressure gauges, see page 562.

Glycerin-Filled Stainless Steel-Case Gauges

Center Back Connection

- Accuracy:
  1½″ and 2½″ Dials: ±1% mid scale (Grade A)
  4″ Dial: ±1% full scale (Grade 1A)
- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material:
  1½″ Dial: Phosphor bronze
  2½″ and 4″ Dials: Copper alloy
- Connection: Brass NPT male
- Case Material: Type 304 stainless steel
- Lens Material: 1½″ and 4″ Dials: Acrylic
  2½″ Dial: Polycarbonate
- Temperature Ranges:
  Ambient: –4° to +140°F; Process: –4° to +140°F

Gauges are glycerin filled to reduce needle flutter due to small vibrations and pulsation. They have a Type 304 stainless steel case for corrosion resistance and a dual-scale dial that reads in psi and kPa. Gauges *with NIST certificate* include a certificate of calibration traceable to NIST.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Numeral Increments, psi 1½″	Numeral Increments, psi 2½″	Numeral Increments, psi 4″	Grad. Marks, psi 1½″	Grad. Marks, psi 2½″	Grad. Marks, psi 4″
0- 15	0- 100	2	3	3	0.2	0.2	0.2
0- 30	0- 200	5	5	5	0.5	0.5	0.5
0- 60	0- 400	10	10	10	1	1	1
0- 100	0- 680	20	20	10	2	2	1
0- 160	0- 1,100	20	20	20	2	2	2
0- 200	0- 1,350	50	50	20	5	5	2
0- 300	0- 2,000	50	50	50	5	5	5
0- 400	0- 2,700	100	100	50	20	10	5
0- 600	0- 4,000	100	100	100	10	10	10
0- 1,000	0- 6,800	200	200	100	20	20	10
0- 1,500	0-10,000	200	300	300	20	20	20
0- 2,000	0-13,500	500	500	200	50	50	20
0- 3,000	0-20,000	500	500	500	50	50	50
0- 5,000	0-34,000	1,000	1,000	500	100	100	50
0-10,000	0-68,000	—	2,000	1,000	—	200	100

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Lower Back Connection	
Standard							
1½″	⅛″	3850K2★	$23.76	3850K3★	$23.76	—	—
2½″	¼″	4053K15	24.55	4053K18	24.55	—	—
4″	¼″	4053K16	41.02	—	—	4053K17	$41.02
With NIST Certificate							
2½″	¼″	4053K23	140.71	4053K25	141.27	—	—
4″	¼″	4053K24	164.09	—	—	4053K26	165.11

★ Available only in pressure ranges up to 5,000 psi.

Colored-Case Gauges—
±1% Full-Scale Accuracy (Grade 1A)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Bronze
- Connection: Brass NPT male
- Case Material: Polyester
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150°F
  Process: –40° to +150°F

Cases come in four colors for quick and easy visual identification of your pressure gauges. Dial is dual-scale for readings in both psi and kPa.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi	Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi
0- 15	0-100	2	0.1	0-160	0-1,100	20	1
0- 30	0-200	5	0.2	0-200	0-1,380	20	2
0- 60	0-400	10	0.4	0-300	0-2,000	50	2
0-100	0-690	10	1	0-400	0-2,760	40	4

To Order: Please specify pressure range in psi from the listing above and case color: black, blue, red, or yellow.

Dial Size	Pipe Size	Bottom Connection	
4″	¼″	4240K8	$80.48

Low Pressure Diaphragm Gauges with Safety Case—
±1% Mid-Scale Accuracy (Grade A)

- Use with compressed air and noncorrosive gases
- Diaphragm Material: Copper alloy
- Connection: Brass NPT male
- Case Material: Polyester
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: –4° to +140°F
  Process: –40° to +212°F

Designed with a copper alloy diaphragm to measure very low pressures. A solid front and blowout back protect anyone reading the front of the gauge in the event of diaphragm failure. They also have a dual-scale dial that gives readings in inches of H_2O/ounces per square inch or psi/inches of Hg.

Available Pressure Ranges (inches of H_2O/oz. per in.^{2})

Pressure Range in. of H_2O	Pressure Range oz./in.^{2}	Numeral Increments in. of H_2O	Numeral Increments oz./in.^{2}	Grad. Marks in. of H_2O	Grad. Marks oz./in.^{2}
0- 10	0- 6	1	1	0.1	0.1
0- 15	0- 9	3	1	0.2	0.1
0- 20	0-12	2	1	0.2	0.1
0- 30	0-18	5	2	0.2	0.2
0- 40	0-24	5	2	0.5	0.2
0- 60	0-35	10	5	1	0.5
0- 80	0-45	10	5	1	0.5
0-100	0-57	10	10	1	1
0-150	0-90	30	10	2	1

Available Pressure Ranges (psi/inches of Hg)

Pressure Range psi	Pressure Range in. of Hg	Numeral Increments psi	Numeral Increments in. of Hg	Grad. Marks psi	Grad. Marks in. of Hg
0- 5	0-10	0.5	1	0.05	0.1
0- 8	0-16	1	2	0.1	0.2
0-10	0-20	1	2	0.1	0.2

To Order: Please specify scale (inches of H_2O/oz. per in.^{2} or psi/inches of Hg) and pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection	
4½″	¼″	4221K31	$314.67

Oxygen-Service Stainless Steel-Case Gauges

Center Back Connection

- Accuracy: 2½″ Dial: ±1% mid scale (Grade A)
  4″ Dial: ±1% full scale (Grade 1A)
- Use with oxygen
- Bourdon Pressure Tube Material: Copper alloy
- Connection: Copper alloy NPT male
- Case Material: Type 304 stainless steel
- Lens Material:
  2½″ Dial: Polycarbonate
  4″ Dial: Acrylic
- Temperature Ranges:
  Ambient: –40° to +160°F; Process: –40° to 140°F

Gauges are cleaned and bagged to ASME B40.1, Level IV for oxygen service. All have a dual scale that gives readings in both psi and kPa.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa 2½″ Dial	Pressure Range kPa 4″ Dial	Numeral Increments, psi 2½″ Dial	Numeral Increments, psi 4″ Dial	Grad. Marks, psi 2½″ Dial	Grad. Marks, psi 4″ Dial
0- 15	0- 102	0- 103	3	3	0.2	0.2
0- 30	0- 205	0- 206	5	5	0.5	0.5
0-100	0- 680	0- 680	20	10	2	1
0-200	0-1,350	0-1,360	50	20	5	2
0-300	0-2,050	0-2,060	50	50	5	5
0-600	0-4,100	0-4,100	100	100	10	10

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Lower Back Connection	
2½″	¼″	9816T11	$33.53	9816T21	$30.67	—	—
4″	¼″	9816T12	57.49	—	—	9816T22	$58.56

For information about pressure gauges, see page 562.

Glycerin-Filled Brass-Case Gauges

NPT Male

- Accuracy: 2½″ Dial: ±1.5% full scale (not graded)
  4″ Dial: ±1% full scale (Grade 1A)
- Use with hydraulic oil, compressed air, and water
- Bourdon Pressure Tube Material:
  NPT and Quick-Disconnect Gauges: Copper alloy
  SAE Gauges: Phosphor bronze
- Connection: Brass
- Case Material: Brass
- Lens Material: Acrylic
- Temperature Ranges for NPT and Quick-Disconnect Gauges:
  Ambient: –4° to +140°F
  Process (2½″ Dial and 4″ Dial up to 1,500 psi): –4° to +140°F
  Process (4″ Dial above 1,500 psi): –4° to +212°F
- Temperature Ranges for SAE Gauges:
  Ambient: 0° to +160°F; Process: 0° to +160°F

For hydraulic applications, these gauges have a rugged, one-piece brass case and connection. Glycerin filled to reduce needle flutter due to vibrations and pulsation. Choose NPT male threads, SAE male straight threads, or a quick-disconnect tube connection (for information, see pages 298-300).

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments 2½″ Dial	Numeral Increments 4″ Dial	Grad. Marks 2½″ Dial	Grad. Marks 4″ Dial	Pressure Range	Numeral Increments 2½″ Dial	Numeral Increments 4″ Dial	Grad. Marks 2½″ Dial	Grad. Marks 4″ Dial
0- 60	10	10	1	1	0- 600	100	100	10	10
0-100	20	10	2	1	0-1,000	200	100	20	10
0-160	20▲	20	2▲	2	0-1,500	300	300	20	20
0-200	50▲	20	5▲	2	0-2,000	500★	200	50★	20
0-300	50	50	5	5	0-3,000	500	500	50	50
0-400	100	50	10	5	0-5,000	1,000	500	100	50

▲ SAE gauge has 40 psi numeral increments and 4 psi grad. marks.
★ SAE gauge has 400 psi numeral increments and 40 psi grad. marks.

To Order: Please specify pressure range from the listing above.

Dial Size	Conn. Size	Bottom Connection		Center Back Connection		Lower Back Connection	
NPT Male							
2½″	¼″	4090K15	$46.64	4090K12	$48.68	—	—
4″	¼″	4090K17	126.88	—	—	4090K14	$128.79
SAE Male							
2½″	7/16″-20	9842T21	58.10	9842T22	58.98	—	—
Quick-Disconnect Sleeve-Lock Hose Coupling							
2½″	¼″	9849T56✓	57.82	9849T57✓	59.89	—	—
4″	¼″	9849T58✓	130.22	—	—	9849T59✓	139.98

✓ Not available in pressure ranges 0-400 psi and above.

Low-Pressure Stainless Steel-Case Gauges—±1% Full-Scale Accuracy (Grade 1A)

- Use with compressed air, water, and hydraulic oil
- Diaphragm Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Glass
- Temperature Ranges:
  Ambient: 0° to 140°F
  Process: 0° to 140°F

Designed with a phosphor-bronze diaphragm for use in very low pressure applications.

Available Pressure Ranges

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
oz./in.²			***in. of H_2O (Cont.)***		
0-10	2	0.2	0- 60	10	1
0-15	3	0.2	0-100	20	2
0-30	5	0.5	0-160	20	2
0-60	10	1	0-200	40	4
in. of H_2O			***psi***		
0-10	2	0.2	0- 3	0.5	0.05
0-15	3	0.2	0- 5	1	0.1
0-30	5	0.5	0-10	2	0.2

To Order: Please specify scale (oz./in.², in. of H_2O, or psi) from the listing above.

Dial Size	Pipe Size	Bottom Connection	
4″	¼″	4269K11	$122.58

Leak-Resistant Glycerin-Filled Gauges—±1% Full-Scale Accuracy (Grade 1A)

Bottom Connection

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material:
  Up to 1,000 psi: Phosphor bronze;
  1,500 psi and above:
  Beryllium copper, unless noted
- Connection: Brass NPT male, unless noted
- Case Material: Nylon
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: –40° to +150°F
  Process: –40° to +150°F

A unique bladder behind the dial absorbs changes in glycerin volume due to temperature changes; this prevents the glycerin from leaking and eliminates the air bubble in the dial face that can distort readings. Glycerin reduces needle flutter due to vibrations and pulsation.

Freeze-resistant gauges have an internal seal to prevent freezing, clogging, and corrosion.

Gauges ***with NIST certificate*** include a certificate of calibration traceable to NIST.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks
0- 15	3	0.2
0- 30	5	0.5
0- 60	10	1
0- 100	10	1
0- 160	20	2
0- 200	20	2
0- 300	50	5
0- 600	100	10
0-1,000	100	10
0-1,500	300	20
0-2,000	200	20
0-3,000	500	50
0-5,000	500	50
0-6,000	1,000	100
0-7,500	1,500	100

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection	
Standard					
2½″	¼″	3708K21	$41.84	3708K51	$43.50
3½″	¼″	3708K31	88.74	3708K61	95.63
4½″	¼″	3708K41 ♦	106.41	3708K71	112.33
Freeze Resistant					
2½″	¼″	3715K21	67.78	3715K51	71.97
3½″	¼″	3715K31	106.37	3715K61	113.23
4½″	¼″	3715K41 ♦	122.23	3715K71	128.13
With NIST Certificate					
2½″	¼″	3543K21	62.50	3543K51	64.22
3½″	¼″	3543K31	114.31	3543K61	120.97
4½″	¼″	3543K41 ♦	129.38	3543K71	135.44

♦ Gauges with 0-1,500 psi and above have a Type 316L stainless steel Bourdon pressure tube and connection.

Auto-Shutoff Digital Gauges—±1% Full-Scale Accuracy (Grade 1A)

- Use with dry air and noncorrosive gases only
- Sensor Material: Type 316L stainless steel
- Connection: Type 304L stainless steel NPT male
- Case Material: ABS thermoplastic
- Lens Material: Glass with polycarbonate coating
- Temperature Ranges:
  Ambient: 30° to 122°F
  Process: 30° to 122°F

To save power, these gauges shut off automatically after three minutes. Gauges are powered by a 9-volt battery (included). They also have a 4-digit LCD for precise readings.

Pressure Range, psi	Resolution, psi	Dial Size	Pipe Size	LCD Ht.	Bottom Connection	
0- 30	0.01	2½″	¼″	9/16″	2798K21	$88.89
0-100	0.1	2½″	¼″	9/16″	2798K22	88.89
0-300	0.1	2½″	¼″	9/16″	2798K23	88.89

For information about pressure gauges, see page 562.

Water Level (Altitude) Gauges—
±1% Full-Scale Accuracy (Grade 1A)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Aluminum with black coating
- Lens Material: Glass
- Temperature Ranges:
  Ambient: –40° to +180°F
  Process: –40° to +212°F

Ideal for measuring feet of head in pump and tank applications, these gauges have a dual-scale dial that reads in both feet of H_2O and psi. They have an additional needle that you can manually adjust to mark any point on the dial. Wall or panel mount with the attached flange and three mounting holes.

Available Pressure Ranges

Pressure Range ft. of H_2O	Pressure Range psi	Numeral Increments, ft. of H_2O: 4½″ & 6″ Dial	Numeral Increments, ft. of H_2O: 8½″ Dial	Grad. Marks, ft. of H_2O: 4½″ & 6″ Dial	Grad. Marks, ft. of H_2O: 8½″ Dial
0- 35	0- 15	5	5	0.5	0.5
0- 70	0- 30	10	10	1	1
0-140	0- 60	10	10	2.5	1
0-230	0-100	50	50	5	5
0-370	0-160	50	40	5	5
0-460	0-200	50	40	5	10
0-700★	0-300	100	50	10	10

★ Pressure range is 0-690 for gauge with an 8½″ dial.

To Order: Please specify pressure range in ft. of H_2O from the listing above.

Dial Size	Pipe Size	Flange Dimensions: Flange OD	Flange Dimensions: Mount. Hole Circle	Flange Dimensions: Mount. Hole Dia.	Back Flange Bottom Connection	
4½″	¼″	5⅞″	5⅜″	13/64″	3704K24	$102.03
6″	¼″	7½″	6¾″	13/64″	3704K26	154.53
8½″	¼″	10¼″	9⅝″	13/64″	3704K28	294.26

High Accuracy Test Gauges—
±0.5% Full-Scale Accuracy (Grade 2A)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Aluminum with black coating
- Lens Material: Glass
- Temperature Ranges for Standard Gauges:
  Ambient: –40° to +150°F
  Process: –40° to +212°F
- Temperature Ranges for High Temp. Gauges:
  Ambient: –20° to +250°F
  Process: –20° to +250°F

Wall mount these highly accurate gauges using their attached flange with three mounting holes. All gauges have a dual-scale dial that gives readings in both psi and kPa.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa Std.	Pressure Range kPa Hi Temp.	Numeral Increments, psi Std.	Numeral Increments, psi Hi Temp.	Grad. Marks, psi Std.	Grad. Marks, psi Hi Temp.
0- 15	0- 100	0- 100	1	1	0.1	0.2
0- 30	0- 200	0- 200	5	5	0.2	0.5
0- 60	0- 400	0- 400	5	5	0.5	1
0- 100	0- 690	0- 700	10	10	1	1
0- 160	0-1,100	0-1,100	20	20	1	2
0- 200	0-1,380	0-1,400	20	20	2	2
0- 300	0-2,000	0-2,000	50	25	2	5
0- 400	0-2,700	0-3,000	50	50	5	5
0- 600	0-4,000	0-4,000	50	50	5	10
0-1,000	0-6,900	0-7,000	100	100	10	10

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	Flange Dimensions: Flange OD	Flange Dimensions: Mount. Hole Circle	Flange Dimensions: Mount. Hole Dia.	Back Flange Bottom Connection	
Standard						
4½″	¼″	5⅞″	5⅜″	13/64″	4007K2	$99.00
6″	¼″	7½″	6¾″	13/64″	4007K3	131.09
High Temperature						
4½″	½″	5 13/16″	5⅜″	7/32″	4010K11	114.01
6″	½″	7⅞″	7″	9/32″	4010K21	146.02

Large Dial Boiler Gauges—
±1% Full-Scale Accuracy (Grade 1A)

Back Flange w/ Bottom Conn.

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material:
  8½″ Dial: Phosphor bronze
  10″ Dial: Copper alloy
- Connection:
  8½″ Dial: Brass NPT male
  10″ Dial: Copper alloy NPT male
- Case Material:
  8½″ Dial: Black-painted aluminum
  10″ Dial: Black-painted steel
- Lens Material: Glass
- Temperature Ranges for 8½″ Dial:
  Ambient: –40° to +180°F
  Process: –40° to +180°F
- Temperature Ranges for 10″ Dial:
  Ambient: –40° to +140°F
  Process: –40° to +140°F

Large dials are easy to read from a distance. Gauges with *8½″ dial* have a flange with three 13/64″ mounting holes, 10¼″ flange OD, and 9⅝″ mounting hole circle. Gauges with *10″ dial* have a dual-scale dial that gives readings in both psi and bar.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments 8½″ Dial	Numeral Increments 10″ Dial	Grad. Marks 8½″ Dial	Grad. Marks 10″ Dial	Pressure Range	Numeral Increments 8½″ Dial	Numeral Increments 10″ Dial	Grad. Marks 8½″ Dial	Grad. Marks 10″ Dial
0- 30	5	5	0.25	0.5	0-300	30	50	2	5
0- 60	5	10	0.5	1	0-400	50	50	5	5
0-100	10	10	1	1	0-600	50	100	10	10
0-200	20	20	2	2					

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Back Flange Bottom Connection	
8½″	¼″	———	———	3705K38	$233.69
10″	½″	3508K21	$263.09	———	———

Ultra-High Accuracy Test Gauges—
±0.25% Full-Scale Accuracy (Grade 3A)

- Use with compressed air, water, ethyl alcohol, nitrogen, and hydraulic oil
- Bourdon Pressure Tube Material:
  Up to 400 psi: Phosphor bronze
  600 to 10,000 psi: Monel
- Connection:
  Up to 400 psi: Brass NPT male
  600 to 10,000 psi: Monel NPT male
- Case Material: Black-painted aluminum
- Lens Material: Glass
- Temperature Ranges:
  Ambient: 0° to 150°F
  Process: 0° to 250°F

Fine tune your measurements with the externally adjustable calibration dial on these gauges. They have an attached flange with three blind threaded holes for wall or panel mounting. Gauges *with NIST certificate* include a certificate of calibration traceable to NIST.

Available Pressure Ranges (psi)

Pressure Range	Num. Inc.	Grad. Marks 4½″ Dial	Grad. Marks 6″ Dial	Pressure Range	Num. Inc.	Grad. Marks 4½″ Dial	Grad. Marks 6″ Dial
0- 15	0.5	0.05	0.05	0- 600	50	2	2
0- 30	1	0.1	0.1	0- 1,000	50	5	2
0- 60	5	0.2	0.2	0- 1,500	100	5	5
0-100	5	0.5	0.2	0- 3,000	200	10	10
0-200	10	0.5	0.5	0- 5,000	500	20	10
0-400	20	1	1	0-10,000	500	50	20

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size■	Flange Dimensions: Flange OD	Flange Dimensions: Mount. Hole Circle	Flange Dimensions: Mount. Hole Dia.	Front Flange Bottom Connection	
Standard						
4½″	¼″	6 3/32″	5⅜″	10-24	4009K81	$214.43
6″	¼″	7 9/16″	7″	¼″-20	4009K82	256.43
With NIST Certificate						
4½″	¼″	6 3/32″	5⅜″	10-24	4009K93	356.58
6″	¼″	7 9/16″	7″	¼″-20	4009K94	422.11

■ Pipe size is ½″ for gauges with pressure range greater than 0-600 psi.

For information about pressure gauges, see page 562.

Stainless Steel-Case Gauges—±2% Mid-Scale Accuracy (Grade B)

Dry with Bottom Connection

Glycerin Filled with Center Back Connection

- Use with compressed air, water, hydraulic oil, naphthalene, and nitric acid (95%)
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: 1½″ Dial: Glass; 2½″ and 4″ Dials: Polycarbonate
- Temperature Ranges for Dry Gauges: Ambient: –20° to +200°F; Process: –20° to +200°F
- Temperature Ranges for Glycerin-Filled Gauges: Ambient: +20° to +200°F; Process: +20° to +200°F

Measure the pressure of corrosive liquids with these gauges that have a Type 304 stainless steel case and a Type 316 stainless steel pressure tube and connection. Required cutout for panel mount gauges is 1 45/64″ for gauges with a 1½″ dial, 2 17/32″ for gauges with a 2½″ dial, and 3 31/32″ for gauges with a 4″ dial.

Glycerin-filled gauges reduce needle flutter due to small vibrations and pulsation.

To Order: Please specify pressure range from the listing.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 30	5	0.5	0- 400	50	5
0- 60	10	1	0- 600	100	10
0-100	20	2	0-1,000	200	20
0-160	20	2	0-2,000	400	50
0-200	40	5	0-3,000	500	50
0-300	50	5	0-5,000	1,000	100

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Panel Mount Connection	
Dry							
1½″	⅛″	4066K21	$64.38	4066K31	$72.31	4066K81	$76.79
2½″	¼″	4066K41	39.50	4066K51	45.48	4066K83	50.52
4″	¼″	4066K61	75.66	4066K71	83.60	4066K85	90.05
Glycerin Filled							
1½″	⅛″	3795K11	78.65	3795K12	87.56	3795K74	92.03
2½″	¼″	3795K13	44.33	3795K14	50.85	3795K76	55.89
4″	¼″	3795K15	84.23	3795K16	93.78	3795K78	101.06

Stainless Steel-Case Gauges with Sanitary Quick-Clamp Connection

Dry

- Accuracy: Up to 60 psi: ±2% full scale (not graded); 100 psi and above: ±1.5% full scale (not graded)
- Use with water, dairy applications, and pharmaceutical applications
- Bourdon Pressure Tube and Diaphragm Material: Type 316 stainless steel
- Connection: Type 316 stainless steel quick-clamp (also known as tri-clamp)
- Case Material: Type 304 stainless steel
- Lens Material: Polycarbonate
- Temperature Ranges: Ambient: 0° to 150°F; Process: 0° to 250°F

A Type 316 stainless steel quick-clamp (tri-clamp) connection meets 3-A sanitary standard 74-02 requirements for liquid pressure and level-sensing devices. For information about quick-clamp connections, see page 208.

Glycerin-filled gauges reduce needle flutter due to vibrations and pulsation.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 30	5	0.5	0-300	30	5
0- 60	5	1	0-400	50	5
0-100	10	1	0-600	50	10
0-200	20	2			

To Order: Please specify pressure range from the listing above.

Dial Size	For Tube OD	BOTTOM QUICK-CLAMP CONNECTION Dry		Glycerin Filled	
2½″	1½″	3844K91	$306.28	3844K95	$314.53
2½″	2″	3844K92	314.53	3844K96	319.69
3½″	1½″	3844K93	319.69	3844K97	330.00
3½″	2″	3844K94	330.00	3844K98	335.16

Stainless Steel-Case Gauges with Compression Tube Connections—±1.5% Full-Scale Accuracy (Not Graded)

Bottom Connection

- Use with compressed air, water, hydraulic oil, carbon dioxide, and alcohol
- Bourdon Pressure Tube Material: Type 304 stainless steel
- Connection: Type 316 stainless steel compression tube fitting
- Case Material: Type 304 stainless steel
- Lens Material: Polycarbonate
- Temperature Ranges: Ambient: 14° to 149°F; Process: 14° to 149°F

Designed to fit into your tubing process line, these gauges include a Type 316 stainless steel tee fitting that has a compression tube connection on each end. Fittings are compatible with Swagelok®, Yor-Lok, Parker A-Lok, and Let-Lok. Gauges have a dual-scale dial that gives readings in both psi and kPa. All are glycerin filled to reduce needle flutter due to vibrations and pulsation. Panel-mount gauge requires a 2 33/64″ panel cutout.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Numeral Increments psi	Numeral Increments kPa	Grad. Marks psi	Grad. Marks kPa
0- 30	0- 200	5	50	0.5	5
0- 60	0- 400	10	100	1	10
0- 100	0- 700	20	100	2	10
0- 160	0-1,100	20	200	2	20
0- 300	0-2,000	50	500	5	50
0-1,000	0-7,000	200	1,000	20	100

To Order: Please specify pressure range in psi from the listing above.

Dial Size	For Tube OD	Bottom Connection		Center Back Connection		Panel Mount Connection	
2½″	¼″	9871T45	$74.13	9871T46	$77.09	9871T56	$85.75

Corrosive-Service Auto-Shutoff Digital Gauges—±1% Full-Scale Accuracy

- Use with compressed air, water, and hydraulic oil
- Sensor Material: Type 316L stainless steel
- Connection: Type 316L stainless steel NPT male
- Case Material: ABS thermoplastic
- Lens Material: Glass with polycarbonate coating
- Temperature Ranges: Ambient: 30° to 122°F; Process: 30° to 122°F

Getting a precise reading is easy with these gauges that have a 4-digit LCD. Gauges are powered by a 9-volt battery (included) and shut off after three minutes to save power.

Available Pressure Ranges (psi)

Pressure Range	Resolution	Pressure Range	Resolution
0- 5	0.001	0- 500	0.1
0- 30	0.01	0-1,000	1
0-100	0.1	0-3,000	1
0-200	0.1	0-5,000	1

To Order: Please specify pressure range from the listing.

Dial Size	Pipe Size	LCD Ht.	Bottom Connection	
2½″	¼″	9/16″	3834K21	$161.40

For information about pressure gauges, see page 562.

Stainless Steel-Case Gauges with Isolating Guard—
±1% Mid-Scale Accuracy (Grade A)

- Use with compressed air, water, hydraulic oil, and ammonia
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT female
- Case Material: Type 304 stainless steel
- Lens Material: Acrylic
- Temperature Ranges for Dry Gauges: Ambient: –40° to +325°F Process: –40° to +250°F
- Temp. Ranges for Glycerin-Filled Gauges: Ambient: +33° to +250°F Process: +33° to +250°F

Dry with Dual Scale

A Type 316 stainless steel isolating guard with a Type 316 stainless steel diaphragm protects these gauges by preventing thick liquids from clogging the gauge internals. ***Glycerin-filled*** gauges reduce needle flutter due to vibrations and pulsation.

Single-scale gauges give readings in psi. Gauges with a ***dual-scale*** dial give readings in both psi and kPa.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Numeral Increments psi	Numeral Increments kPa	Grad. Marks psi	Grad. Marks kPa
0- 15	0- 100	1	10	0.2	2
0- 30	0- 200	5	20	0.5	5
0- 60	0- 400	5	50	1	10
0- 100	0- 700	10	100	1	10
0- 160	0- 1,100	20	100	2	20
0- 200	0- 1,400	20	200	2	20
0- 300	0- 2,000	30	200	5	50
0- 400	0- 2,800	50	500	5	50
0- 600	0- 4,000	50	1,000	10	100
0-1,000	0- 7,000	100	1,000	10	100
0-2,000	0-14,000	200	2,000	20	200

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	BOTTOM GAUGE-GUARD CONNECTION Dry		Glycerin Filled	
Single Scale (psi)					
2½″	¼″	3813K3	$133.60	3813K5	$143.36
2½″	½″	3813K4	133.60	3813K6	143.36
Dual Scale (psi/kPa)					
4″	¼″	3813K1	160.89	3813K7	169.53
4″	½″	3813K2	160.89	3813K8	169.53

Stainless Steel-Case Gauges

- Accuracy: 2½″ Dial: ±1.5% full scale (not graded) 4″ Dial: ±1% full scale (Grade 1A)
- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: 2½″ Dial: Nylon; 4″ Dial: Glass
- Temperature Ranges for Dry Gauges: Ambient: –40° to +260°F Process: 2½″ Dial: –40° to +260°F; 4″ Dial: –40° to +392°F
- Temp. Ranges for Glycerin-Filled Gauges: Ambient: 0° to +160°F; Process: 0° to +160°F

Dry with Bottom Connection

Measure the pressure of corrosive liquids with these gauges that have a Type 304 stainless steel case and a Type 316 stainless steel pressure tube and connection. ***Panel-mount bracket*** requires a 2⁷⁄₁₆″ panel cutout.

Glycerin-filled gauges reduce needle flutter due to vibrations and pulsation. Gauges ***with NIST certificate*** include a certificate of calibration traceable to NIST.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 15	3	0.2	0- 600	100	10
0- 30	5	0.5	0- 1,000	200	20
0- 60	10	1	0- 1,500	300	20
0-100	20	2	0- 2,000	400	40
0-160	40✓	4✓	0- 3,000	500	50
0-200	40	4	0- 5,000	1,000	100
0-300	50	5	0- 6,000	1,000	100
0-400	100♦	10♦	0-10,000	2,000	200

✓ For 4″ dial, numeral increments are 20 psi and grad. marks are 2 psi.
♦ For 4″ dial, numeral increments are 50 psi and grad. marks are 5 psi.

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Lower Back Connection	
Dry							
2½″	¼″	3852K125	$72.28	3852K225	$82.50	—	—
4″	½″	3852K875	110.05	—	—	3852K925	$121.64
Dry with Panel-Mount Bracket							
2½″	¼″	—	—	3852K425	108.14	—	—
Dry with NIST Certificate							
2½″	¼″	3906K11	171.71	3906K31	184.45	—	—
4″	½″	3906K21	214.49	—	—	3906K41	230.18
Glycerin Filled with NIST Certificate							
2½″	¼″	3902K11	180.21	3902K41	196.34	—	—
4″	½″	3902K21	258.03	—	—	3902K51	255.26

Glycerin-Filled Stainless Steel-Case Gauges

- Accuracy: 2½″ and 4″ Dials: ±1% full scale (Grade 1A) 6″ Dial: ±0.5% full scale (Grade 2A)
- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Glass
- Temperature Ranges for 2½″ and 6″ Dials: Ambient: –32° to +200°F Process: –32° to +400°F
- Temperature Ranges for 4″ Dial: Ambient: –4° to +140°F Process: –4° to +212°F

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 15	3	0.25■	0- 600	100	10
0- 30	5	0.5	0- 1,000	100	10
0- 60	10	1	0- 1,500	300	25♣
0-100	10	1	0- 2,000	200	20
0-160	20	2	0- 3,000	500	50
0-200	20	2	0- 5,000	500	50
0-300	50♥	5	0-10,000	1,000	100
0-400	50	5			

■ 0.2 psi for 4″ dial-size gauges. ♥ 30 psi for 6″ dial-size gauges. ♣ 20 psi for 4″ dial-size gauges.

Front Flange with Lower Back Connection

Measure the pressure of corrosive liquids with these gauges that have a Type 304 stainless steel case and a Type 316 stainless steel pressure tube and connection. They are also glycerin filled to reduce needle flutter due to vibrations and pulsation.

Gauges with a ***front flange*** have three mounting holes for wall or panel mounting.

To Order: Please specify pressure range from the listing.

Dial Size	Pipe Size	Bottom Connection		Lower Back Connection		Front Flange with Lower Back Conn. Flange Dimensions: Flange OD	Mounting Hole Circle	Mounting Hole Dia.	
2½″	¼″	4088K3	$79.02	4088K6	$83.52	3⁵⁄₁₆″	2¹⁵⁄₁₆″	⁹⁄₆₄″	4088K7 $92.67
4″	¼″	4088K511	96.84	4088K821	108.11	5³⁄₁₆″	4⅝″	³⁄₁₆″	4088K92 125.64
6″	¼″	4088K1	213.23	4088K2	243.30	7¾″	7″	¹⁵⁄₆₄″	4088K4 285.33

For information about pressure gauges, see page 562.

Leak-Resistant Glycerin-Filled Gauges—
±1% Full-Scale Accuracy (Grade 1A)

Bottom Connection

- Use with compressed air, water, hydraulic oil, and deionized water
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Nylon
- Lens Material: Acrylic
- Temperature Ranges: Ambient: –40° to +150° F Process: –40° to +200° F

A unique bladder behind the dial absorbs changes in glycerin volume due to temperature changes; this prevents the glycerin from leaking and eliminates the air bubble in the dial face that can distort readings. Glycerin reduces needle flutter due to vibrations and pulsation.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 30	5	0.5	0-1,000	100	10
0- 60	10	1	0-1,500	300	20
0-100	10	1	0-2,000	200	20
0-160	20	2	0-3,000	500	50
0-200	20	2	0-5,000	500	50
0-300	50	5	0-6,000	1,000	100
0-600	100	10			

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection	
2½″	¼″	9880T11	$76.67	9880T21	$76.67
3½″	¼″	9880T12	88.22	9880T22	88.22
4½″	¼″	9880T13	101.86	9880T23	101.86

Extreme-Duty Mil-Spec Gauges—
±1% Full-Scale Accuracy (Grade 1A)

Bottom Connection

- Use with compressed air, water, hydraulic oil, salt water, and refrigerant
- Bourdon Pressure Tube Material: Inconel
- Connection: Type 316 stainless steel NPT male
- Case Material: Aluminum
- Lens Material: Polycarbonate
- Temperature Ranges: Ambient: +40° to +145° F Process: –4° to +145° F

The most shock and vibration resistant gauges we offer, these have a solid front aluminum case; Inconel and stainless steel internal parts; and a gearless, direct-drive design. Cases meet the environmental requirements of MIL-G-18997E and are salt spray and washdown tested. A solid front and blowout back protect anyone reading the front of the gauge in the event of pressure tube failure. Wall mount with the attached flange with three 7/32″ dia. mounting holes.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks 3½″ Dial	Grad. Marks 4½″ Dial
0- 100	10	1	1
0- 200	20	2	2
0- 300	50	2	2
0- 400	50	5	5
0-1,000	100	10	10
0-1,500	150	10	10
0-2,000	200	20	20
0-3,000	300	20	25
0-5,000	500	50	50

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Flange Dimensions: Flange OD	Flange Dimensions: Mounting Hole Circle	Back Flange Bottom Connection		Back Flange Lower Back Connection	
3½″	¼″	4¾″	4¼″	9918T11	$245.41	9918T12	$245.41
4½″	¼″	5 13/16″	5⅜″	9918T21	253.04	9918T22	253.04

Gauges with Isolating Guard—
±1% Full-Scale Accuracy (Grade 1A)

Dry

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT female gauge guard
- Case Material: Polypropylene
- Lens Material: Dry Gauges: Glass; Glycerin-Filled Gauges: Acrylic
- Temperature Ranges for Dry Gauges: Ambient: 0° to 250° F Process: 0° to 400° F
- Temp. Ranges for Glycerin-Filled Gauges: Ambient: 0° to 200° F Process: 0° to 400° F

The attached guard provides good corrosion resistance by keeping your process liquid from coming in direct contact with gauge internals. Guard has a chrome-plated steel top, a Type 316 stainless steel bottom and diaphragm, and a PTFE gasket. All gauges have three 7/32″ dia. mounting holes. Case OD is 5 13/16″. Mounting hole circle is 5⅜″. Gauges also have an adjustable needle. Choose from dry and glycerin-filled gauges. ***Glycerin-filled*** gauges reduce needle flutter from vibrations and pulsation.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 15	1	0.1	0-160	20	1
0- 30	5	0.2	0-200	20	2
0- 60	5	0.5	0-300	50	2
0-100	10	1	0-800	100	10

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Gauge-Guard Connection: Dry		Bottom Gauge-Guard Connection: Glycerin Filled	
4½″	½″	3812K83	$352.61	3812K93	$387.96
4½″	1″	3812K86	352.61	3812K96	387.96

High-Temp Shock-Resistant Gauges—
±0.5% Mid-Scale Accuracy (Not Graded)

Bottom Connection

- Use with compressed air, water, hydraulic oil, deionized water, and salt water
- Bourdon Pressure Tube Material: Inconel
- Connection: Type 316 stainless steel NPT male
- Case Material: 2½″ and 3½″ Dials: Aluminum with black coating; 4½″ Dial: Nylon
- Lens Material: Glass
- Temperature Ranges: Ambient: –65° to +400° F Process: –65° to +600° F

Inconel internal parts make these gauges ideal for process temperatures up to 600° F. They have a gearless, direct-drive design and rugged case for shock resistance and long life.

Gauge with a *3½″ dial* has a back flange with three 7/32″ dia. mounting holes, 4¾″ flange diameter, and 4¼″ mounting hole circle.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 30	5	0.5	0- 500	50	5
0- 60	5	0.5	0- 600	100	5
0-100	10	1	0- 1,000	100	10
0-150	15	1	0- 3,000	500 ♦	25
0-200	20	2	0- 5,000	500 ♥	50
0-300	50	2	0-10,000	1,000	100

♦ 3½″ dial is 300 psi with 20 psi grad. marks. ♥ 2½″ dial is 1,000 psi.

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Back Flange Bottom Connection	
2½″	¼″	9891T23	$221.67		
3½″	¼″			9891T24	$225.42
4½″	½″	9891T25	229.31		

For information about pressure gauges, see page 562.

Stainless Steel-Case Test Gauges—±0.5% Full-Scale Accuracy (Grade 2A)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Heat-treated Type 316L stainless steel
- Connection: Heat-treated Type 316L stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Acrylic
- Temperature Ranges:
  Ambient: –20° to +180°F
  Process: –20° to +250°F

Lower Back Connection

These highly accurate gauges have an adjustable needle for calibration. Their Type 304 stainless steel case provides good corrosion resistance. *Note:* The Bourdon pressure tube and connection are made of Type 316L stainless steel that has been heat treated, giving it the color of bronze.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 30	5	0.2	0- 600	50	5
0- 60	5	0.5	0-1,000	100	10
0-100	10	1	0-1,500	200	20
0-200	20	2	0-2,000	200	20
0-300	50	2	0-3,000	500	20
0-400	50	5	0-5,000	500	50

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Lower Back Connection	
4½″	½″	3904K11	$170.10	3904K21	$172.31
6″	½″	3904K12	242.47	3904K22	255.07

Stainless Steel-Case Test Gauges with NIST Certificate—±0.5% Full-Scale Accuracy (Grade 2A)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Glass
- Temp. Ranges: Ambient: –40° to +180°F
  Process: –40° to +350°F

Gauges include a certificate of calibration traceable to NIST. Their Type 304 stainless steel case provides good corrosion resistance.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 15	1	0.1	0- 600	50	5
0- 30	5	0.2	0- 800	100	10
0- 60	5	0.5	0- 1,000	100	10
0-100	10	1	0- 1,500	200	10
0-160	20	1	0- 2,000	200	20
0-200	20	2	0- 3,000	500	20
0-300	50	2	0- 5,000	500	50
0-400	50	5	0-10,000	1,000	100
0-500	50	5			

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection	
4½″	½″	3702K44	$182.09

Stainless Steel-Case Pocket Test Gauges—±0.5% Full-Scale Accuracy (Grade 2A)

- Use with compressed air, water, hydraulic oil, sodium hydroxide, and citric acid
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150°F
  Process: –40° to +250°F

Perform high-accuracy, on-the-spot inspections with these test gauges that include a lens cover and cushioned pouch with a carrying strap. They also have a calibration screw for in-the-field calibration.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 15	1	0.1	0- 200	20	1
0- 30	2	0.2	0- 300	20	2
0- 60	5	0.5	0- 400	50	2
0-100	10	0.5	0- 600	50	5
0-160	20	1	0-1,000	100	5

To Order: Please specify pressure range from the listing.

Dial Size	Pipe Size	Bottom Connection	
3″	¼″	4005K4	$179.71

Test Gauges with Safety Case—±1% Full-Scale Accuracy (Grade 1A)

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Polyester
- Lens Material: Acrylic
- Temperature Ranges for Dry Gauges:
  Ambient: –40° to +150°F
  Process: –40° to +212°F
- Temperature Ranges for Glycerin-Filled Gauges:
  Ambient: –4° to +150°F
  Process: –4° to +212°F

Lower Back Connection

A solid front and blowout back protect anyone reading the front of the gauge in the event of pressure tube failure. All gauges have three ¼″ dia. mounting holes. Case OD is 5 13/16″. Mounting hole circle is 5 3/8″.

Choose dry or glycerin-filled gauges. *Glycerin-filled* gauges reduce needle flutter due to vibrations and pulsation.

Single-scale gauges give readings in psi only. *Dual-scale* gauges give readings in both psi and kPa.

Luminescent gauges have a dial that glows in the dark after being exposed to light.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi	Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi
0- 15	0- 103	1	0.1	0- 1,000	0- 6,850	100	10
0- 30	0- 206	5	0.2	0- 1,500	0- 10,300	200★	10
0- 60	0- 410	5	0.5	0- 2,000	0- 13,700	200	20
0-100	0- 685	10	1	0- 3,000	0- 20,600	500	20
0-160	0-1,100	20	1	0- 5,000	0- 34,400	500	50
0-200	0-1,370	20	2	0-10,000	0- 68,500	1,000	100
0-300	0-2,060	50	2	0-15,000	0-103,000	2,000■	100
0-400	0-2,740	50	5	0-20,000	0-137,000	2,000	200
0-600	0-4,100	50	5				

★ 4065K3 and K6 are 100.
■ 4065K3 and K6 are 1,000.

To Order: Please specify pressure range in psi from the listing.

Dial Size	Pipe Size	Bottom Connection		Lower Back Connection	
Standard					
Single Scale (psi)					
Dry	4½″	½″	4065K7	$95.37	____
Glycerin Filled	4½″	½″	4065K8	110.50	____
Dual Scale (psi/kPa)					
Dry	4½″	½″	4065K3	93.53	____
Glycerin Filled	4½″	½″	4065K6	110.43	____
Luminescent					
Single Scale (psi)					
Dry	4½″	½″	4063K11	80.73	4063K12 $80.73
Glycerin Filled	4½″	½″	4063K23	96.53	4063K24 94.44

For information about pressure gauges, see page 562.

Test Gauges—±0.5% Full-Scale Accuracy (Grade 2A)

Back Flange Bottom Connection

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Aluminum
- Lens Material: Glass
- Temp. Ranges: Ambient: –40° to +150° F
  Process: –40° to +350° F

These gauges have flanges with three mounting holes that allow you to mount them to a wall or panel. They also have a dual-scale dial that gives readings in both psi and kPa. Needle can be manually adjusted.

Available Pressure Ranges

Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi	Pressure Range psi	Pressure Range kPa	Num. Inc., psi	Grad. Marks, psi
0- 15	0- 103	1	0.1	0- 600	0- 4,100	50	5
0- 30	0- 206	5	0.2	0- 1,000	0- 6,850	100	10
0- 60	0- 410	5	0.5	0- 1,500	0-10,300	100	10
0-100	0- 685	10	1	0- 2,000	0-13,700	200	20
0-160	0-1,100	20	1♥	0- 3,000	0-20,600	500	20
0-200	0-1,370	20	2	0- 5,000	0-34,400	500	50
0-300	0-2,060	50	2	0-10,000	0-68,500	1,000	100
0-400	0-2,740	50	5				

♥ Grad. marks are every 2 psi for gauge with 6″ dial.

To Order: Please specify pressure range in psi from the listing above.

Dial Size	Pipe Size	Mounting Hole Dia.	Back Flange Bottom Conn. Flange OD	Back Flange Bottom Conn. Mounting Hole Circle			Front Flange Lower Back Conn. Flange OD	Front Flange Lower Back Conn. Mounting Hole Circle		
4 1/2″	1/2″	13/64″	5 7/8″	5 3/8″	4008K2	$121.16	6 5/16″	5 3/8″	4008K6	$123.97
6″	1/2″	13/64″	7 1/2″	6 3/4″	4008K3	158.43	7 7/8″	7″	4008K7	158.43

Test Gauges with Isolating Guard—±0.5% Full-Scale Accuracy (Grade 2A)

Dry

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT female
- Case Material: Phenolic
- Lens Material: Glass
- Temperature Ranges for Dry Gauges: Ambient: –40° to +325° F
  Process: –40° to +250° F
- Temp. Ranges for Glycerin-Filled Gauges: Ambient: +33° to +250° F
  Process: +33° to +250° F

A Type 316 stainless steel guard with a Type 316 diaphragm protects these gauges by preventing thick liquids from clogging the gauge internals. A solid front and blowout back protect anyone reading the front of the gauge in the event of pressure tube failure. All gauges have three 15/64″ dia. mounting holes. Case OD is 5 13/16″. Mounting hole circle is 5 3/8″. ***Glycerin-filled*** gauges reduce needle flutter due to vibrations and pulsation.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 15	1	0.1	0- 200	20	2
0- 30	3	0.2	0- 300	30	2
0- 60	5	0.5	0- 400	50	5
0-100	10	1	0- 600	50	5
0-160	20	2	0-1,000	100	10

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	BOTTOM GAUGE-GUARD CONNECTION Dry		Glycerin Filled	
4 1/2″	1/4″	3965K1	$212.53	3965K3	$228.40
4 1/2″	1/2″	3965K2	212.53	3965K4	228.40

Shock-Resistant Extended-Life Gauges—
±0.5% Mid-Scale Accuracy (Not Graded)

With Snap-On Flange

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Inconel
- Connection: Type 316 stainless steel NPT male
- Case Material: ABS thermoplastic
- Lens Material: Acrylic
- Temp. Ranges: Ambient: –65° to +190° F
  Process: –65° to +400° F

Their gearless direct-drive design, Inconel Bourdon pressure tube, and rugged ABS case give these gauges high shock resistance and long life. Gauges with 4 1/2″ and 6″ dials have a snap-on flange with three mounting holes.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 30	5	0.2	0- 1,500	100	10
0- 60	5	0.5	0- 2,000	200	20
0- 100	10	1	0- 3,000	500	20
0- 150	10	1	0- 4,000	500	50
0- 200	20	2	0- 5,000	1,000	50
0- 300	50	2	0- 6,000	1,000	50
0- 500	50	5	0- 8,000	1,000	100
0- 600	50	5	0-10,000	1,000	100
0-1,000	100	10			

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Flange Dimensions Flange OD	Mounting Hole Circle	Mounting Hole Dia.	Bottom Connection	
2 1/2″	1/4″	—	—	—	3929K11	$189.00
4 1/2″	1/4″	5 7/8″	5 3/8″	7/32″	3929K21	223.02
6″	1/4″	7 5/8″	7″	9/32″	3929K31	315.00

Ultra-High Accuracy Gauges with NIST Certificate—
±0.25% Full-Scale Accuracy (Grade 3A)

With Snap-On Flange

- Use with compressed air, water, and hydraulic oil
- Bourdon Pressure Tube Material: Inconel
- Connection: Type 316 stainless steel NPT male
- Case Material: ABS thermoplastic
- Lens Material: Acrylic
- Temp. Ranges: Ambient: –65° to +190° F
  Process: –65° to +400° F

These highly accurate gauges include a certificate of calibration traceable to NIST. A gearless direct-drive design, Inconel Bourdon pressure tube, and rugged ABS case give them high shock resistance and long life. *4 1/2″ and 6″ dials* have a snap-on flange with three mounting holes.

Available Pressure Ranges (psi)

Pressure Range	Numeral Increments	Grad. Marks	Pressure Range	Numeral Increments	Grad. Marks
0- 30	5	0.2	0- 1,000	100	5
0- 60	10	0.5	0- 1,500	100	10
0-100	10	0.5	0- 2,000	100	10
0-150	10	1	0- 3,000	500	25
0-200	10	1	0- 5,000	1,000	20
0-300	50	2	0- 6,000	1,000	25
0-500	100	5	0- 8,000	1,000	50
0-600	100	5	0-10,000	1,000	50

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Flange Dimensions Flange OD	Mounting Hole Circle	Mounting Hole Dia.	Bottom Connection	
2 1/2″	1/4″	—	—	—	3920K11	$316.36
4 1/2″	1/4″	5 7/8″	5 3/8″	7/32″	3920K21	381.82
6″	1/4″	7 5/8″	7″	9/32″	3920K31	474.55

For information about gauges, see page 562.

Ultra-High-Accuracy Digital Pressure Gauges—±0.25% Full-Scale Accuracy

- Use with compressed air, water, and hydraulic oil
- Sensor Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Aluminum
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –4° to +185° F; Process: –4° to +185° F

Gauges with pressure range up to 0-1,000 psi have a 3½-digit LCD. Those with a pressure range of 0-3,000 psi and above have a 4-digit LCD display. All have an on/off button except 3943K13, which has an on button.

Battery-powered gauges automatically shut off after five minutes and have a low-battery indicator. They are powered by two AA batteries (included). ***AC/DC-powered*** gauges accept 8-24 VAC or 9-32 VDC power and have 3-ft. wire leads for hardwiring.

Available Pressure Ranges (psi)

Pressure Range	Resolution	Pressure Range	Resolution	Pressure Range	Resolution
0- 3	0.01	0-100	0.1	0-1,000	1
0- 5	0.01	0-199.9	0.1	0-3,000	1
0-15	0.01	0-300	1	0-5,000	1
0-30	0.1	0-500	1		

To Order: Please specify pressure range from the listing above.

Power	Pressure Range, psi	Dial Size, Wd. x Ht.	Pipe Size	LCD Ht.	Bottom Connection	
Battery	0-3 to 0-1,000	3⅜″×2⅞″	¼″	⅞″	3943K11	$336.72
Battery	0-3,000 to 0-5,000	3⅜″×2⅞″	¼″	⅞″	3943K13	336.72
AC/DC	0-3 to 0-1,000	3⅜″×2⅞″	¼″	⅞″	3943K14	336.72
AC/DC	0-3,000 to 0-5,000	3⅜″×2⅞″	¼″	⅞″	3943K16	336.72

Vacuum and Compound Gauges—±2% Mid-Scale Accuracy (Grade B)

Vacuum Gauge with Center Back Connection

- Bourdon Pressure Tube Material:
  ABS-Case Gauges: Copper alloy
  Steel-Case Gauges: Brass
- Connection:
  ABS-Case Gauges: Copper alloy NPT male
  Steel-Case Gauges: Phosphor bronze NPT male
- Case Material: ABS thermoplastic or black-painted steel
- Lens Material: ABS-Case Gauges: Acrylic; Steel-Case Gauges: Polycarbonate
- Temp. Ranges:
  Ambient: –40° to +140° F; Process: –40° to +140° F

For general use with pumps and filters.

Vacuum Gauges

Gauges have a 30″ Hg to 0 vacuum range with 5″ Hg numeral increments and 0.5″ Hg graduation marks.

Panel-mount gauge requires a 1⅝″ panel cutout.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Panel Mount Center Back Connection	
With ABS Case							
1½″	⅛″	3935K11	$11.30	3935K21	$11.78	____	____
2″	⅛″	3935K52	13.43	3935K62	10.80	____	____
With Steel Case							
1½″	⅛″	4002K15	11.31	4002K35	10.99	4002K25	$14.44

Compound Gauges

Available Pressure Ranges (in. of Hg/psi)

Vacuum/ Pressure Range	Numeral Increments 2½″ Dial	Numeral Increments 4″ Dial	Grad. Marks 2½″ Dial	Grad. Marks 4″ Dial
30″ Hg to 0/0- 15	10″/ 5	5″/ 3	1″/0.5	1″/0.5
30″ Hg to 0/0- 30	10″/10	10″/ 5	2″/1	1″/0.5
30″ Hg to 0/0- 60	30″/20	10″/10	2″/2	2″/2
30″ Hg to 0/0-100	30″/20	30″/10	5″/2	5″/2
30″ Hg to 0/0-160	30″/20	30″/20	10″/5	5″/5
30″ Hg to 0/0-200	30″/50	30″/20	10″/5	5″/5

To Order: Please specify vacuum/pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection	
With ABS Case					
2½″	¼″	3941K53	$12.05	3941K63	$12.77
4″	¼″	3941K74	15.15	____	____

Extreme-Accuracy Digital Pressure Gauges with NIST Certificate—±0.05% Full-Scale Accuracy

- Use with compressed air, water, and hydraulic oil
- Sensor Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: 300 series stainless steel
- Lens Material: Polyester
- Temperature Ranges:
  Ambient: 0° to 150° F; Process: 0° to 150° F

Get precise readings with these 5-digit LCD gauges. Gauge accuracy is Grade 5A of ASME standard B40.7. All include a certificate of calibration traceable to NIST, low-battery indicator, auto-shutoff (select from never, 2 min., 5 min., 15 min., and 30 min.), bar graph function, min./max. function, tare function to zero out the gauge, and on/off button. Powered by three AAA batteries (included). Case is NEMA 4 rated (indoor/outdoor). All are CSA certified and FM approved as intrinsically safe for Class I, II, and III; Division 1; Groups A, B, C, D, E, F, and G; T4 temperature code.

Available Pressure Ranges (psi)

Pressure Range	Resolution	Pressure Range	Resolution	Pressure Range	Resolution
0- 10	0.0001	0-160	0.01	0-1,000	0.1
0- 15	0.001	0-200	0.01	0-2,000	0.1
0- 30	0.001	0-300	0.01	0-3,000	0.1
0- 60	0.001	0-600	0.01	0-5,000	0.1
0-100	0.01	0-800	0.01		

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	LCD Ht.	Bottom Connection	
3″	¼″	1⅛″	3584K31	$991.13

Dual-Scale Vacuum and Compound Gauges—±2% Mid-Scale Accuracy (Grade B)

Compound Gauge with Center Back Connection

- Bourdon Pressure Tube Material:
  Phosphor bronze
- Connection: Brass NPT male
- Case Material: Black-painted steel
- Lens Material: Polycarbonate
- Temperature Ranges:
  Ambient: –40° to +150° F
  Process: –40° to +150° F

No conversions necessary—these gauges have a dual-scale dial that gives readings in kPa in addition to inches of Hg and psi.

Panel-mount gauges require a panel cutout for installation: use a 2⅛″ cutout for 2″ gauges; a 2⅝″ cutout for 2½″ gauges; and a 3⅝″ cutout for 3½″ gauges.

Available Vacuum/Pressure Ranges

Vacuum/ Pressure Range, in. of Hg/psi	kPa	Numeral Increments, in. of Hg/psi	Grad. Marks, in. of Hg/psi
Vacuum Gauge			
30″ Hg to 0/____	–100 to 0	5″/____	0.5″/____
Compound Gauges			
30″ Hg to 0/0- 15	–100 to +100	5″/ 5	1″ / 0.5
30″ Hg to 0/0- 30	–100 to +200	5″/ 5	1″ / 1
30″ Hg to 0/0- 75	–100 to +500	10″/10	2″ / 5
30″ Hg to 0/0-100	–100 to +700	15″/10	5″ / 2
30″ Hg to 0/0-160	–100 to +1,100	30″/20	5″ / 2
30″ Hg to 0/0-200★	–100 to +1,400	30″/20	5″ / 2
30″ Hg to 0/0-300	–100 to +2,100	30″/50	15″ /10

★ Not available in 4½″ dial size.

To Order: Please specify vacuum/pressure range in inches of Hg/psi from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Panel Mount Center Back Connection	
2″	¼″	4004K62	$10.10	4004K72	$11.50	4004K52	$14.47
2½″	¼″	4004K63	11.22	4004K73	12.96	4004K53	16.88
3½″	¼″	4004K64	15.43	4004K74	15.22	4004K54	22.38
4½″	¼″	4004K65	20.11	____	____	____	____

For information about gauges, see page 562.

Pressure and Temperature Gauges—
±2.5% Full-Scale Accuracy (Not Graded)

Center Back Connection

- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Black-painted steel
- Lens Material: Acrylic
- Temperature Ranges: Ambient: –40° to +140° F/–40° to +60° C Process: +70° to +320° F/+20° to +160° C

A built-in bimetal thermometer lets you measure both pressure and temperature in boiler applications. Gauges have a dual-scale dial that gives pressure readings in psi and ft. of H_2O and temperature readings in °F and °C.

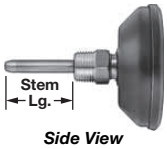

Side View

Available Pressure Ranges

Pressure Range, psi/ft. of H_2O	Numeral Increments, psi	Grad. Marks, psi
0 to 75/0 to 170	20	5
0 to 230/0 to 520★	50	10

★ Range listed is for bottom connection. For center back, it is 0-200 psi/0-460 ft. of H_2O.

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Bottom Conn. Stem Lg.		Center Back Conn. Stem Lg.	
3¼″	½″	2⅜″	4013K61 $37.96	1⅞″	4013K62 $25.20

3-in-1 Compound Test Gauges—
±2% Mid-Scale Accuracy (Grade B)

- Bourdon Pressure Tube Material: Brass
- Connection: Neoprene hose with steel NPTF (Dryseal) male fitting
- Case Material: Steel
- Lens Material: Polycarbonate
- Temp. Ranges: Ambient: –40° to +150° F; Process: –40° to +150° F

For vacuum and pressure testing in hydraulic applications, these portable units have three dual-scale gauges in a single housing. The first gauge measures 30″ Hg to 0/0-150 psi (cm of Hg/kg/cm²); the second measures 0-600 psi (kg/cm²); and the third measures 0-5,000 psi (kg/cm²). An internal mechanism seals off the lower pressure-range gauges as the maximum pressure is exceeded.

O'all Dia.	Pipe Size	12″ Hose		36″ Hose	
6⁷⁄₁₆″	⅛″	4054K63	$308.96	4054K64	$305.25

Glycerin-Filled Vacuum and Compound Gauges—
±1.5% Full-Scale Accuracy (Not Graded)

Center Back Connection

- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: ABS thermoplastic
- Lens Material: Acrylic
- Temperature Ranges: Ambient: 0° to 140° F; Process: 0° to 140° F

Gauges are glycerin filled to reduce needle flutter from vibrations and pulsation. Their dual-scale dial reads in both inches of Hg/psi and kPa.

Available Vacuum/Pressure Ranges

Vacuum/Pressure Range in. of Hg/psi	kPa	Num. Inc., in. of Hg/psi	Grad. Marks, in. of Hg/psi
Vacuum Gauge			
30″ Hg to 0/___	–100 to 0	5″/___	0.5″/___
Compound Gauges			
30″ Hg to 0/0- 15	–100 to +100	10″/ 5	1″ /0.5
30″ Hg to 0/0- 30	–100 to +200	30″/10	2″ /1
30″ Hg to 0/0- 60	–100 to +400	30″/20	5″ /2
30″ Hg to 0/0-100	–100 to +680	30″/20	5″ /2

To Order: Please specify vacuum/pressure range in inches of Hg/psi from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection	
2½″	¼″	38465K41	$21.80	38465K42	$21.80

Digital Vacuum and Compound Gauges—±0.5% Full-Scale Accuracy

- Sensor Material: Type 17-4 PH stainless steel
- Connection: Type 17-4 PH stainless steel NPT female
- Case Material: Polycarbonate
- Lens Material: Glass
- Temperature Ranges: Ambient: –40° to +150° F; Process: +32° to +130° F

After one hour, these gauges automatically shut off to save battery power. They have a 4-digit LCD and measure 4″ Ht.×2½″ Wd.×1¾″ Dp. Powered by a 9-volt battery (sold separately below). ***Vacuum*** gauge displays inches of Hg and psi. ***Compound*** gauge displays psi, bar, kg/cm², and atmosphere.

	Vacuum/ Pressure Range	Reso-lution, psi	Pipe Size	LCD Ht.	Bottom Connection	
Vacuum	29.9″ Hg to 0	0.1	⅛″	½″	3840K8	$196.15
Compound	–14 to +1,000 psi	1	⅛″	½″	3840K6	216.59
9-volt Battery					71455K56	2.75

Glycerin-Filled Stainless Steel-Case Vacuum and Compound Gauges

Center Back Connection

- Accuracy: 1½″ and 2½″ Dials: ±1% mid scale (Grade A); 4″ Dial: ±1% full scale (Grade 1A)
- Bourdon Pressure Tube Material: 1½″ Dial: Phosphor bronze; 2½″ and 4″ Dials: Copper alloy
- Connection: 1½″ Dial: Brass NPT male; 2½″ and 4″ Dials: Copper alloy NPT male
- Case Material: Type 304 stainless steel
- Lens Material: 1½″ and 2½″ Dials: Polycarbonate; 4″ Dial: Acrylic
- Temperature Ranges: 1½″ Dial: Ambient: –4° to +140° F; Process: –4° to +140° F 2½″ and 4″ Dials: Ambient: –5° to +150° F; Process: –5° to +150° F

Case is made of Type 304 stainless steel for good corrosion resistance. Gauges are also glycerin filled to reduce needle flutter from vibrations and pulsation.

Panel mount bracket for standard gauge with 1½″ dial requires a 1³⁹⁄₆₄″ cutout; bracket for standard gauge with 2½″ dial requires a 2³¹⁄₆₄″ cutout. ***Gauges with NIST certificate*** include a certificate of calibration traceable to NIST.

To Order: Please specify vacuum/pressure range from the listing.

Available Vacuum/Pressure Ranges (in. of Hg/psi)

Vacuum/ Pressure Range	Numeral Increments 1½″ Dial	2½″ Dial	4″ Dial	Grad. Marks 1½″ Dial	2½″ Dial	4″ Dial
Vacuum Gauges						
30″ Hg to 0/___	5″/___	5″/___	5″/___	0.5″/___	0.5″/___	0.5″/___
Compound Gauges						
30″ Hg to 0/0- 15	10″/ 5	10″/ 5	5″/ 3	1″/0.5	1″/0.5	1″/0.5
30″ Hg to 0/0- 30	10″/10	10″/10	10″/ 5	1″/1	2″/1	1″/0.5
30″ Hg to 0/0- 60	10″/10	30″/20	10″/10	2″/1	2″/2	2″/2
30″ Hg to 0/0-100	30″/20	30″/20	30″/10	5″/2	5″/2	5″/2
30″ Hg to 0/0-160★	30″/20	30″/40	30″/20	5″/2	10″/5	5″/5
30″ Hg to 0/0-200✓	___	30″/50	30″/20	___	10″/5	5″/5
30″ Hg to 0/0-300	30″/50	30″/50	30″/50	10″/5	10″/5	10″/5

★ 30″ Hg to 0/0-150 for 1½″ dials. ✓ Not available in 1½″ dial size.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Lower Back Connection	
Standard							
1½″	⅛″	38545K4	$23.71	38545K5■	$23.71	___	___
2½″	¼″	38545K16	22.20	38545K17	22.20	___	___
4″	¼″	38545K18	50.37	___	___	38545K12	$50.37
Standard with Panel-Mount Bracket							
1½″	⅛″	___	___	38545K11■	28.33	___	___
2½″	¼″	___	___	38545K19	26.66	___	___
With NIST Certificate							
2½″	¼″	38545K32	105.91	38545K35	105.90	___	___
4″	¼″	38545K33	144.92	___	___	38545K36	149.24

■ Not available with 30″ Hg to 0/0-300 psi vacuum/pressure range.

For information about gauges, see page 562.

Refrigerant Ammonia Compound Gauges—±1.6% Full-Scale Accuracy (Grade B)

- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Polycarbonate
- Temperature Ranges: Ambient: –40° to +200°F; Process: –40° to +200°F

Designed specifically for refrigerant applications, these gauges have a dial that displays the equivalent ammonia temperature at a given pressure. Ideal for use with chillers and refrigeration systems. **To Order:** Please specify pressure range from the listing below.

Available Vacuum/Pressure Ranges

Vacuum/ Pressure Range	Numeral Increments	Grad. Marks
30″ Hg to 0/0-150 psi	30″ Hg/20 psi	5″ Hg/5 psi
30″ Hg to 0/0-300 psi	30″ Hg/25 psi	5″ Hg/5 psi

Dial Size	Pipe Size	Bottom Connection	
2½″	¼″	3967K51	$40.71
4″	¼″	3967K52	66.85

Corrosive-Service Stainless Steel-Case Vacuum and Compound Gauges

- Accuracy: 2½″ Dial: ±1.5% full scale (not graded); 3″ Dial: ±0.5% full scale (Grade 2A); 4″ Dial: ±1% full scale (Grade 1A)
- Bourdon Pressure Tube Material: Type 316 stainless steel
- Connection: Type 316 stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: 2½″ Dial: Nylon; 3″ Dial: Polycarbonate; 4″ Dial: Glass
- Temperature Ranges for Dry Gauges: 2½″ Dial: Ambient: –40° to +260°F; Process: –40° to +260°F; 3″ Dial: Ambient: –40° to +250°F; Process: –40° to +250°F; 4″ Dial: Ambient: –40° to +260°F; Process: –40° to +450°F
- Temperature Ranges for Glycerin-Filled Gauges: Ambient: 0° to +160°F; Process: 0° to +160°F

Dry with Bottom Connection

To withstand corrosive environments and processes, these gauges have a Type 304 stainless steel case and a Type 316 stainless steel connection and pressure tube. ***Glycerin-filled*** gauges reduce needle flutter due to small vibrations and pulsation. ***Panel-mount*** gauges require a 2 7/16″ cutout.

Gauges with a *3″ dial* include a 300 series stainless steel lens cover and a cushioned pouch with carrying strap.

Available Vacuum/Pressure (in. of Hg/psi)

Vacuum/ Pressure Range	Numeral Increments 2½″ Dial	Numeral Increments 3″ Dial	Numeral Increments 4″ Dial	Grad. Marks 2½″ Dial	Grad. Marks 3″ Dial	Grad. Marks 4″ Dial
Vacuum Gauges						
30″ Hg to 0/	5″/	2″/	5″/	0.5″/	0.2″/	0.5″/
Compound Gauges						
30″ Hg to 0/0- 15	10″/ 5	5″/ 2	10″/ 5	1″ /0.5	0.5″/0.2	1″ /0.5
30″ Hg to 0/0- 30	30″/10	10″/ 5	10″/ 5	2″ /1	1″ /0.5	1″ /0.5
30″ Hg to 0/0- 60	30″/20	10″/10	10″/10	5″ /2	2″ /1	2″ /1
30″ Hg to 0/0-100	30″/20	30″/10	30″/20	5″ /2	2″ /1	5″ /2
30″ Hg to 0/0-160	30″/40		30″/20	10″ /4		5″ /2
30″ Hg to 0/0-200	30″/40		30″/40	10″ /4		5″ /4
30″ Hg to 0/0-300	30″/50	30″/50	30″/50	10″ /5	5″ /2	10″ /5

To Order: Please specify vacuum/pressure range from the listing above.

Dial Size	Pipe Size	Bottom Connection		Center Back Connection		Panel Mount Center Back Connection	
Dry							
2½″	¼″	38595K1	$63.96	38595K2★	$73.18	38595K5★	$83.50
3″	¼″	3961K2	193.69				
4″	½″	38595K3	95.92				
Glycerin Filled							
2½″	¼″	38605K1	76.71	38605K2★	89.46	38605K7★	99.74
4″	½″	38605K3	123.25				

★ Not available in 30″ Hg to 0/0-200 psi.

Hazardous-Location Digital Compound Gauges

- Pressure Accuracy: ±0.05% full scale
- Vacuum Accuracy: ±0.25% full scale
- Sensor Material: Type 316 stainless steel
- Conn.: Type 316 stainless steel NPT male
- Case Material: Type 304 stainless steel
- Lens Material: Polycarbonate
- Temperature Ranges: Ambient: 14° to 131°F; Process: 14° to 131°F

CSA approved as intrinsically safe for use in Class 1, Division 2, Groups A, B, C, and D locations. Case is NEMA 4 rated (indoor/outdoor). Toggle between units of measure with just the push of a button—units include psi, bar, torr, and inches of water. LCD has five, 0.65″ high digits and shuts off automatically after 30 minutes. Powered by three AA batteries (included).

Pressure Range, psi	Reso-lution, psi	Dial Size	Pipe Size	Bottom Connection	
–5 to +15	0.001	4⅜″	¼″	3924K11	$897.74
–5 to +30	0.001	4⅜″	¼″	3924K12	897.74
–14.5 to +100	0.01	4⅜″	¼″	3924K13	897.74

Ultra-Low Vacuum Diaphragm Gauges

- Accuracy: 2½″ Dial: ±1.6% full scale (not graded); 4″ Dial: ±1% full scale (Grade 1A)
- Diaphragm Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: 2½″ Dial: Black-painted steel; 4″ Dial: Type 304 stainless steel
- Lens Material: 2½″ Dial: Acrylic; 4″ Dial: Glass
- Temp. Ranges: Ambient: 0° to 140°F; Process: 0° to 140°F

A sensitive internal diaphragm lets you measure very low vacuum with these gauges. ***Gauges with NIST certificate*** include a certificate of calibration traceable to NIST.

Available Vacuum Ranges (in. of H_2O)

Vacuum Range	Num. Inc.	Grad. Marks	Vacuum Range	Num. Inc.	Grad. Marks
15″ to 0	3	0.2	60″ to 0	10	1
30″ to 0	5	0.5	100″ to 0	20	2

To Order: Please specify vacuum range in inches of H_2O from the listing above.

Dial Size	Pipe Size	BOTTOM CONNECTION Standard		BOTTOM CONNECTION w/NIST Certificate	
2½″	¼″	4106K1	$57.08	3843K3	$140.42
4″	¼″	4106K2	122.58	3843K4	199.10

Ultra-High Accuracy Vacuum Gauges—±0.25% Full-Scale Accuracy (Grade 3A)

- Bourdon Pressure Tube Material: Phosphor bronze
- Connection: Brass NPT male
- Case Material: Aluminum
- Lens Material: Glass
- Temperature Ranges: Ambient: –40° to +250°F; Process: –40° to +250°F

Front Flange Bottom Connection

Ideal for testing and laboratory equipment, these highly accurate gauges have a large, dual-scale dial that gives readings in both inches of Hg and kPa. They also have a mounting flange with three mounting holes and an externally adjustable dial for calibration.

Dial Size	Pipe Size	Vacuum Range, in. of Hg/kPa	Numeral Increments, in. of Hg	Grad. Marks, in. of Hg	Flange Dimensions: Flange OD	Mount. Hole Circle	Mount. Hole Dia.	Front Flange Bottom Connection		Front Flange Lower Back Connection	
4½″	¼″	30″ Hg to 0/–100 to 0	2″	0.1″	6 3/32″	5⅜″	10-24	4105K21	$311.78	4105K23	$311.78
6″	¼″	30″ Hg to 0/–100 to 0	2″	0.1″	7 9/16″	7″	¼″-20	4105K22	372.73	4105K24	372.73

For information about gauges, see page 562.

Gauge-Protecting Steam Siphon Tubes

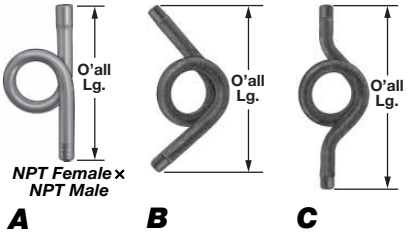

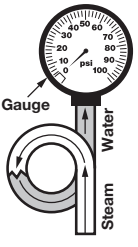

Coiled tubes (also known as siphons and pigtails) protect non-liquid-filled gauges from high-temperature fluids and steam. Just add water to the coil to act as a barrier and prevent steam from coming in contact with your gauge internals.

Style A—Ideal for connecting a bottom-connection gauge to vertical pipe.

Style B—Use these tubes in applications where you have space constraints.

Style C—Extra bends in the tube give you better water retention for long gauge life.

Pipe Size	O'all Lg.	Standard Max. Pressure			High Pressure Max. Pressure		
NPT Male × NPT Male							
Welded Carbon Steel—*ASTM A53, Grade F*							
A ..1/4″	5 1/2″	308 psi @ 400° F	4031K11	$5.54	1,046 psi @ 400° F	4031K41	$6.75
A ..1/2″	8 7/8″	—	—	—	1,097 psi @ 400° F	4031K81	21.50
B ..1/4″	6 1/2″	308 psi @ 400° F	4031K13	7.41	1,046 psi @ 400° F	4031K43	7.62
C ..1/4″	7 1/4″	308 psi @ 400° F	4031K14	9.21	1,046 psi @ 400° F	4031K44	11.44
Seamless Carbon Steel—*ASTM A106, Grade B*							
A ..1/4″	5 1/2″	588 psi @ 750° F	4031K21	10.82	2,000 psi @ 750° F	4031K51	13.44
A ..1/2″	8 7/8″	1,072 psi @ 700° F	4031K82	23.98	1,742 psi @ 800° F	4031K83	25.77
B ..1/4″	6 1/2″	588 psi @ 750° F	4031K23	12.92	2,000 psi @ 750° F	4031K53	15.57
C ..1/4″	7 1/4″	588 psi @ 750° F	4031K24	17.73	2,000 psi @ 750° F	4031K54	19.96
Red Brass—*ASTM B-43*							
A ..1/4″	4″	250 psi @ 400° F	4031K28	8.40	1,020 psi @ 400° F	4031K68	13.20
A ..1/4″	5 5/8″	250 psi @ 400° F	4031K65	10.90	1,020 psi @ 400° F	4031K61	14.70
B ..1/4″	6 1/2″	250 psi @ 400° F	4031K66	13.43	1,020 psi @ 400° F	4031K63	15.25
C ..1/4″	7 1/2″	250 psi @ 400° F	4031K67	14.00	1,020 psi @ 400° F	4031K64	19.00
Type 304 Stainless Steel—*ASTM A312*							
A ..1/4″	5 1/2″	443 psi @ 750° F	4031K71	19.17	1,538 psi @ 700° F	4031K26	31.06
Type 316 Stainless Steel—*ASTM A312*							
A ..1/4″	5 1/2″	457 psi @ 750° F	4965K35	33.86	1,584 psi @ 750° F	4965K76	105.97
A ..1/2″	8 7/8″	737 psi @ 800° F	4965K36	75.05	1,596 psi @ 800° F	4965K67	122.85
B ..1/4″	6 1/2″	457 psi @ 750° F	4965K37	33.76	1,584 psi @ 750° F	4965K78	107.35
B ..1/2″	7 1/2″	737 psi @ 800° F	4965K38	95.70	1,596 psi @ 800° F	4965K69	149.05
C ..1/4″	9 1/2″	457 psi @ 750° F	4965K39	40.81	1,584 psi @ 750° F	4965K84	124.30
C ..1/2″	12″	737 psi @ 800° F	4965K42	104.27	1,596 psi @ 800° F	4965K86	172.25
NPT Female × NPT Male							
Red Brass—*ASTM B-43*							
A ..1/4″	4″	220 psi @ 400° F	4031K31	10.45	950 psi @ 400° F	4031K32	15.51
A ..1/4″	5 5/8″	220 psi @ 400° F	4031K33	12.13	950 psi @ 400° F	4031K34	17.18

Gauge Guards

Prolong the life and accuracy of your pressure gauges by protecting them from debris, sludge, and corrosive chemicals. All gauge guards (also known as diaphragm seals) have a corrosion-resistant thermoplastic body and fluoroelastomer diaphragm. The guards are furnished dry—fill with hydraulic fluid (not included; see page 2176 for ISO Grade 32 hydraulic oil) before use. Max. pressure is 150 psi at 70° F. Connections are NPT female.

Body Material	Connections Process	Connections Gauge	Max. Temp.	O'all Ht.		
PVC	1/4″	1/4″	140° F	2 11/16″	4143K11	$61.74
PVC	1/2″	1/4″	140° F	2 11/16″	4143K21	61.74
CPVC	1/4″	1/4″	200° F	2 11/16″	4334K31	75.47
CPVC	1/2″	1/4″	200° F	2 11/16″	4334K41	75.47
Polypropylene	1/4″	1/4″	180° F	2 11/16″	4199K51	122.20
PVDF	1/2″	1/4″	280° F	2 11/16″	4354K81	129.62

High-Temperature Gauge Guards

With Flushing Port

Made with a Type 316L stainless steel body and diaphragm for resistance to high temperatures and pressures. Also known as diaphragm seals, these mini gauge guards have a housing diameter of just 1 9/16″. The guards are furnished dry—fill with glycerin (not included; see page 2038) before use. Pressure range is 100-2,500 psi. Max. temperature is 400° F. Connections are NPT female.

Guards with flushing port have a plugged port for in-service flushing of the gauge-guard chamber below the diaphragm. The port is 1/8″ NPT female.

Connections Process	Connections Gauge	Standard O'all Ht.			With Flushing Port O'all Ht.		
1/4″	1/4″	1 7/16″	3882K51	$82.40	2″	3882K54	$147.02
1/2″	1/4″	1 9/16″	3882K52	82.40	2 1/8″	3882K55	147.02
1/2″	1/2″	1 3/4″	3882K53	82.40	2 5/16″	3882K56	147.02

Pressure-Limiting Gauge Guards

Prevent the principle cause of pressure gauge failure: overpressure. These gauge guards block excess pressure from reaching your gauge internals, protecting them from blowout and keeping them in calibration.

Guards include three color-coded springs that allow you to set the shutoff pressure point anywhere from 50 to 5,000 psi—silver spring is for 50-120 psi, black spring is for 100-1,100 psi, and gold spring is for 1,000-5,000 psi. Once the guard is closed, it won't reopen until the pressure is reduced by 10% of the set pressure. No external reset is required. Max. temperature is 250° F. Connections are NPT female.

Connections Process	Connections Gauge	O'all Ht.	Brass Body		Type 316 Stainless Steel Body	
1/4″	1/4″	2 11/16″	1977K17	$171.03	1977K14	$215.17
1/2″	1/2″	2 11/16″	1977K13	201.75	1977K15	242.76

Pulsation-Damping Snubbers

Snubbers reduce the flow of fluids into your pressure instruments to dampen vibration, pulsation, and pressure spikes. Process connection is NPT male; gauge connection is NPT female.

Standard snubbers are for use in low-pressure applications. They have a miniature orifice—the smaller the orifice, the greater the reduction in flow. **To Order:** Please specify orifice size: 0.004″, 0.008″, or 0.015″.

Snubbers with filtering disc have a porous disc that keeps particles out of your pressure equipment. Orifice is 3/16″ for 1/8″ snubbers and 1/4″ for 1/4″ and 1/2″ snubbers. **To Order:** Please specify micron rating: 0.5, 1, 2-5, 7, 10, 40-45, or 75 microns.

Maximum Pressure, psi	Connections Process, NPT male	Connections Gauge, NPT Female	O'all Ht.		
Standard Brass					
2,000	1/8″	1/8″	7/8″	3820K26	$8.46
2,000	1/4″	1/4″	1 1/4″	3820K27	9.52
2,000	1/2″	1/2″	1 11/16″	3820K28	19.41
Standard Type 303 Stainless Steel					
4,000	1/8″	1/8″	7/8″	3820K36	15.43
4,000	1/4″	1/4″	1 1/4″	3820K37	18.35
4,000	1/2″	1/2″	1 11/16″	3820K38	37.23
Brass with Filtering Disc					
3,000	1/8″	1/8″	1 1/8″	4034K1	8.55
10,000	1/4″	1/4″	1 1/2″	4034K2	11.30
10,000	1/2″	1/2″	2 3/16″	4034K3	22.11
Type 303 Stainless Steel with Filtering Disc					
5,000	1/8″	1/8″	1 1/8″	4034K4	10.88
15,000	1/4″	1/4″	1 1/2″	4034K5	14.21
15,000	1/2″	1/2″	2 3/16″	4034K6	35.97

Multi-Setting Pulsation-Damping Snubbers

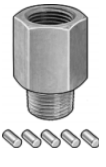

Furnished with five different pistons so you can choose the precise amount of damping you need to reduce vibration and pulsation on your pressure system. To change piston, remove set screw and existing piston. Then, insert new piston and replace set screw.

All resist clogging and are self-cleaning. They are not micron rated. Process connection is NPT male; gauge connection is NPT female.

Maximum Pressure, psi	Connections Process, NPT Male	Connections Gauge, NPT Female	O'all Ht.		
Brass					
6,000	1/4″	1/4″	1 9/16″	4072K6	$26.85
6,000	1/2″	1/2″	1 7/8″	4072K7	65.82
Type 316 Stainless Steel					
15,000	1/4″	1/4″	1 9/16″	4072K8	53.41
15,000	1/2″	1/2″	1 7/8″	4072K9	88.00

For information about gauges, see page 562.

Compact Pressure Indicators

For simple pressure indication in a process, these indicators change color when the minimum actuation pressure is reached. They're ideal for showing when pressure is present in a tank or compressed air line. Body material is brass. Max. input pressure is 150 psi; temperature range is 32° to 230° F. ***Panel-mount indicators*** require a panel cutout: 1/4″ for 1808K31 and 1/2″ for 1808K32.

Panel Mount — *End View When Actuated*

To Order: Please specify indicator color from those listed.

Pipe Size	Available Indicator Colors	Actuation Pressure	O'all Lg.		
Standard					
10-32 UNF	White	12 psi	5/8″	1808K21	$6.26
1/8″ NPT	Green, Red, White, Yellow	15 psi	1 1/2″	1808K22	13.06
Panel Mount					
10-32 UNF	White	12 psi	5/8″	1808K31	6.03
10-32 UNF	Green, Red, White, Yellow	15 psi	1 1/4″	1808K32	12.16

Low-Pressure Differential Gauges

Measure small pressure drops in air and noncorrosive gases. These differential pressure gauges are great for monitoring clogged filters, measuring fan and blower pressures, and checking air velocity. Their rugged aluminum case provides good shock and vibration resistance. Connect using either the side or back low- and high-pressure ports.

Compound Gauge

Side View

All have a silicone-rubber diaphragm sensing element, aluminum NPT female connections, and acrylic lens. Accuracy is ±2% full scale, unless noted. Max. input pressure is 15 psi. Ambient and process temperature ranges are 20° to 140° F.

Standard gauges display the difference between the low- and high-pressure ports. ***Compound gauges*** are for processes where the low- and high-pressure ports vary; they display a positive or negative difference.

Optional Portable Accessory Kit— Convert your differential-pressure gauge into a portable gauge. Kit includes a 9-ft., 3/16″ ID tube; two pipe-to-tube adapters; a stand-or-hang bracket; a terminal tube with holder; and carrying case.

Available Differential Pressure Ranges (in. of H_2O)

Pressure Range	Numeral Increments	Grad. Marks
Standard Gauges		
0- 0.25★	0.05	0.01
0- 0.5■	0.1	0.02
0- 1	0.25	0.05
0- 2	0.25	0.05
0- 3	1	0.1
0- 4	1	0.1
0- 5	1	0.2
0- 8	2	0.2
0-10	5	0.5
0-15	5	1
0-20	5	0.5
0-30	10	1

Pressure Range	Num. Inc.	Grad. Marks
Standard Gauges (Cont.)		
0- 50	10	1
0- 80	20	2
0-100	20	2
0-150	50	5
Compound Gauges		
–0.25 to +0.25■	0.1	0.01
–0.5 to +0.5	0.2	0.02
–1 to +1	0.25	0.05
–5 to +5	2	0.2
–10 to +10	5	0.5
–15 to +15	10	1

★ ±4% full-scale accuracy. ■ ±3% full-scale accuracy.

To Order: Please specify pressure range from the listings above.

Dial Size	Pipe Size		
4″	1/8″	4021K11	$76.42
Optional Portable Accessory Kit		4021K31	60.31

Color-Band Differential Pressure Indicators

Colored bands let you identify with just a glance when a differential pressure limit is reached. Commonly used to indicate clogged filters.

They have a green/yellow/red dial that indicates multiple differential pressure points. For example, 2238K21 changes from green to yellow at 2 psid and from yellow to red at 2.5 psid.

All have a Type 316 stainless steel sensing element, 1/4″ NPT female connections, a glass-filled nylon case and a polyester lens. Accuracy is ±5% full scale; maximum input pressure is 300 psi. Port-to-port length is 3 1/4″. Ambient and process temperature ranges are –40° to +200° F.

Indication Points, psid		
0/2/2.5	2238K21	$61.63
0/3/4.5	2238K22	61.63
0/5/7.5	2238K23	61.63
0/6/9	2238K24	61.63
0/ 7.5/12	2238K25	$61.63
0/11/ 18.5	2238K26	61.63
0/13/ 20	2238K27	61.63
0/19.5/29.5	2238K28	61.63

Pressure Test Plugs

Check the pressure in your process without permanently installing a gauge. Simply install the brass NPT male test plug into your process line; the required adapters (sold separately) have a 1/4″ NPT female connection on one end for connecting to your gauge and a stem on the other end for inserting into the test plug.

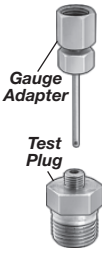

Standard plugs have an EPDM seal for use with liquids and gases. Max. input pressure is 1,000 psi; temp. range is –20° to +350° F. 1493K11 can be used only with the 0.063″ stem adapter. Gauge adapters are chromate-plated steel.

High-pressure plugs have fluoroelastomer seals for hydraulic applications up to 6,000 psi. Temp. range is –20° to +350° F. *Gauge adapter* has a brass body and Type 304 stainless steel stem.

Pipe Size	O'all Lg.		
Standard Plugs			
1/8″	1 1/4″	1493K11	$3.12
1/4″	1 1/2″	1493K12	3.51
1/4″	3″	1493K13	4.76
1/4″	4″	1493K14	5.49
1/2″	1 1/2″	1493K15	4.59
Standard Gauge Adapter with 0.063″ Dia. Stem		1493K28	15.85
Standard Gauge Adapter with 0.125″ Dia. Stem		1493K29	16.83
High-Pressure Plugs			
1/8″	1 3/4″	3194K55	13.02
1/4″	1 7/8″	3194K56	13.44
High-Pressure Gauge Adapter		3194K59	19.54

High-Pressure Differential Gauges

Monitor large pressure drops in high-pressure pump and filtration applications. Choose gauges with aluminum or Type 316 SS piston, case, and connections. All connections are NPT female.

Water Tight for Liquids

Gauges for liquids have an internal piston design for use with water and hydraulic oil. Aluminum gauges have Buna-N seals; Type 316 Stainless steel gauges have fluoroelastomer seals. Accuracy is ±2% full scale. Lens is acrylic. Max. input pressure is 3,000 psi. Ambient and process temp. ranges are –40° to +150° F. CSA certified.

Water-tight gauges for liquids have a NEMA 4X housing (washdown/corrosion resistant) and a piston design for use with water and hydraulic oil in extremely high-pressure washdown environments. They have Buna-N seals, a stainless steel piston, and an acrylic lens. Accuracy is ±2% mid scale. Max. input pressure is 6,000 psi. Ambient and process temp. ranges are –40° to +200° F.

Gauges for gases and liquids have a Buna-N diaphragm design for use with compressed air, water, and hydraulic oil. Lens is acrylic. Accuracy is ±2% full scale. Max. input pressure is 1,500 psi. Ambient and process temp. ranges are –40° to +150° F. CSA certified.

Available Differential Pressure Ranges (psid)

Press. Range	Num. Inc.	Grad. Marks 2 1/2″ Dial	Grad. Marks 3 1/2″, 4 1/2″ Dials
For Liquids			
0- 10	2	0.5	0.5
0- 15	3	1	0.5
0- 20	5	1	1
0- 25	5	1	1
0- 30	10	2	1
0- 40	10	2	2
0- 50	10	2.5	2.5
0- 60	20	5	2.5
0- 80	20	5	5
0-100	20	5	5
Water-Tight for Liquids			
0- 10	2●	0.5	0.5
0- 25	5	1	1
0- 30	5	1	1

●1 increment for 4 1/2″ dial size.

Pressure Range	Numeral Increments	Grad. Marks
For Gases and Liquids		
0- 1	0.2	0.05
0- 2	0.5	0.1
0- 3	1	0.2
0- 5	1	0.25
0- 8	2	0.5
0-10	2	0.5
0-15	3	1
0-20	5	1
0-25	5	1
0-30	10	2
0-40	10	2▲
0-50	10	2.5

▲2.5 grad marks for 2 1/2″ dial size.

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	Port-to-Port Lg.	Aluminum		Type 316 Stainless Steel	
Gauges for Liquids						
2 1/2″	1/4″	3 5/8″	4107K7	$154.19	4232K1	$298.74
3 1/2″	1/4″	3 5/8″	4107K6	171.12	4232K3	314.53
4 1/2″	1/4″	3 5/8″	4107K5	186.15	4232K5	326.50
Water-Tight Gauges for Liquids						
2 1/2″	1/4″	2 1/8″♦	2958K11	148.97	2958K21	292.41
4 1/2″	1/4″	2 1/8″♦	2958K12	176.55	2958K22	320.00
Gauges for Gases and Liquids						
2 1/2″	1/4″	4 1/2″♣	4028K1	238.65	4028K4	517.24
3 1/2″	1/4″	4 1/2″♣	4028K2	253.56	4028K5	532.76
4 1/2″	1/4″	4 1/2″♣	4028K3	266.61	4028K6	546.55

♦ Distance is from center-to-center of the two back ports.
♣ Length is 5″ for ranges 0-20 psid and above.

U-Tube Manometers

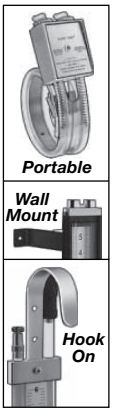

U-tube manometers measure low pressure or low differential pressure in a process. They use an indicating liquid with a known weight in a graduated tube bent to form two columns; as the liquid moves up and down the columns, the differential between the two columns gives you the pressure in your process. All have numeral increments of 1″ H_2O and graduation marks of 0.1″ H_2O. Not rated for accuracy.

Portable manometers have a flexible vinyl U-tube that rolls up for easy transport. Connections are barbed nylon for 3/16″ ID tubing. They include magnetic mounting clips and 3/4 oz. of concentrated green indicating liquid (specific gravity of 1).

Stationary manometers have a butyrate U-tube and brass compression fittings for 1/4″ OD tubing. They include magnetic mounting clips and 3/4 oz. of full-strength red indicating liquid (specific gravity of 0.826).

Wall-mount manometers have an aluminum frame with a rigid glass U-tube that can handle high input pressures. They include a pair of wall-mount brackets with two 0.2″ mounting holes, Type 316 stainless steel 1/4″ NPT female connections, an acrylic cover, and 2 oz. of full-strength green indicating liquid (specific gravity of 1).

Hook-on manometers have a butyrate U-tube and a brass needle valve with connections for 5/16″ ID tubing. Use for natural gas applications. Include a mounting hook, two mounting magnets, 4 ft. of neoprene tubing, and 1 oz. of concentrated green indicating liquid (specific gravity of 1).

Pressure Range, in. of H_2O	Scale Range, in. of H_2O	O'all Ht.	Max. Input Pressure		
Portable Manometers					
0- 8	4 -0- 4	18 1/2″	4.3 psi	3986K11	$76.19
0- 12	6 -0- 6	22 1/4″	4.3 psi	3986K12	83.74
0- 16	8 -0- 8	25 3/4″	4.3 psi	3986K13	84.37
0- 24	12 -0-12	34″	4.3 psi	3986K14	89.41
0- 30	15 -0-15	39 1/2″	4.3 psi	3986K15	93.19
0- 36	18 -0-18	45 1/2″	4.3 psi	3986K16	93.81
0- 48	24 -0-24	58 1/2″	4.3 psi	3986K17	111.44
0- 60	30 -0-30	70″	4.3 psi	3986K18	117.11
0- 72	36 -0-36	82″	4.3 psi	3986K19	117.11
0-120	60 -0-60	132″	4.3 psi	3986K2	124.67
Stationary Manometers					
0- 8	4 -0- 4	19 7/8″	100 psi	3985K41	84.62
0- 12	6 -0- 6	24 5/8″	100 psi	3985K42	85.28
0- 16	8 -0- 8	30 3/8″	100 psi	3985K13	85.94
0- 20	10 -0-10	34 3/8″	100 psi	3985K14	77.44
0- 24	12 -0-12	39 1/8″	100 psi	3985K15	90.57
0- 36	18 -0-18	53 5/8″	100 psi	3985K17	94.54
0- 50	25 -0-25	72″	100 psi	3985K18	214.60
Wall-Mount Manometers					
0- 10	5 -0- 5	14 1/4″	250 psi	4044K32	208.33
0- 15	7 1/2-0- 7 1/2	17 15/16″	250 psi	4044K33	225.83
Hook-On Manometers					
0- 12	6 -0- 6	21 1/2″	50 psi	3979K1	62.33
0- 16	8 -0- 8	21 1/2″	50 psi	3979K2	63.83

Hand-Held Digital Manometers

Check differential pressure at multiple points in your process with these hand-held digital manometers. To save time you'd normally waste doing conversions, these let you select from various units of measure for pressure, differential pressure, and vacuum. Accuracy is ±0.5% full scale. FM approved as intrinsically safe for hazardous locations Class 1, Div. 1, Groups A, B, C, D, with temperature code T4. All have barbed connections for 1/8″ and 3/16″ ID rubber and vinyl tubing. They operate on one 9-volt battery (included) and measure 6 9/16″ Ht.×2 13/16″ Wd.

Dual-scale manometers give readings in inches of H_2O and kPa. They have an LCD with 7/16″ high digits.

Multiscale manometers give readings in inches of H_2O, psid, inches of Hg, kPa, bar, and millibars. They have both visual and audible overpressure alarms, and their memory function lets you store up to 20 readings. They have a backlit LCD with 7/16″ high digits.

Pressure Range	Resolution	Max. Input Pressure		
Dual-Scale for Air/Noncorrosive and Natural Gas				
0- 19.99 inches of H_2O	0.01	10	4125K21	$220.37
0-199.9 inches of H_2O	0.1	30	4125K23	170.00
0- 10 psid	0.01	30	4125K24	170.00
0- 30 psid	0.1	60	4125K25	170.00
Multiscale for Air/Noncorrosive and Natural Gas				
0- 20 inches of H_2O	0.01	10	4125K31	389.09
0-200 inches of H_2O	0.1	30	4125K33	327.86
0- 10 psid	0.01	30	4125K36	327.86
0- 20 psid	0.01	60	4125K35	327.86
Optional Nylon Carrying Case			4125K11	60.00

Compact Inclined-Scale Manometers

Inclined-scale manometers are more compact and easier to read than traditional U-tube manometers. Accuracy is ±3% full scale. Max. input pressure is 10 psi. Furnished with mounting screws, 8 ft. of flexible thermoplastic tubing, and 3/4 oz. of indicating liquid (see below for color and specific gravity). They have a styrene-acrylonitrile housing with barbed connections for 1/8″ ID tubing.

Air pressure manometers measure pressure, differential pressure, and vacuum. ***Air velocity*** manometers include a 12″ stainless steel pitot tube.

Range	Color	Indicating Liquid Specific Gravity	O'all Ht.	O'all Wd.		
Air Pressure						
0-3 in. of H_2O	Red	0.826	5 15/16″	7 7/16″	3974K1	$40.56
0-7 in. of H_2O	Blue	1.91	5 15/16″	7 7/16″	3974K2	97.23
Air Velocity						
0- 7,000 ft./min.	Red	0.826	5 15/16″	7 7/16″	3974K3	121.82
0-10,500 ft./min.	Blue	1.91	5 15/16″	7 7/16″	3974K4	149.12

Manometer Indicating Liquids

We've got the liquid refills you need for your manometers. For accurate readings, make sure you select a liquid that has the same specific gravity as the original liquid in your manometer.

Concentrated Liquid Refills— When added to distilled water, these refills act as a dye that improves the visibility of the water column for accurate gauge readings.

Full-Strength Liquid Refills— These refills are used full-strength to improve visibility for accurate gauge readings.

Color	Specific Gravity	Size	Temp. Range		
Concentrated Liquid Refills					
Green	1	3/4 oz.	+35° to +150°F	3985K71	$12.51
Green	1	15 oz.	+35° to +125°F	4037K22	69.00
Full-Strength Liquid Refills					
Red	0.826	3/4 oz.	–40° to +140°F	3974K7	8.57
Red	0.827	16 oz.	+35° to +125°F	4037K21	45.50
Blue	1.91	3/4 oz.	+32° to +140°F	3974K11	102.02
Blue	1.75	7 oz.	+20° to +150°F	4037K26	121.88

Pressure/Velocity Pitot Tubes for Air Ducts

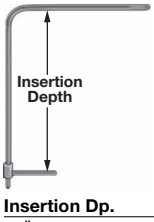

Use these with the hand-held digital manometers on this page to measure velocity pressure (the difference between static pressure and total pressure) in 10″ diameter and larger ducts. All have a 5/16″ OD tube with inch graduation marks on both sides. They come with an air-velocity slide chart and direct-reading flow chart. Comply with AMCA (Air Movement and Control Association) and ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) specifications.

Insertion Dp.			Insertion Dp.		
8″	4039K17	$64.03	36″	4039K14	$83.30
12″	4039K11	65.73	48″	4039K15	85.00
18″	4039K12	70.83	60″	4039K16	104.37
24″	4039K13	73.67			

Static Pressure Tubes for Air Ducts

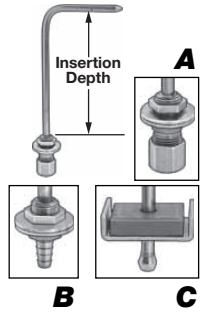

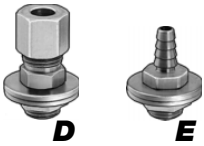

Use these brass fittings and tubes with the hand-held digital manometers on this page to sense static pressure drop across an air filter, cooling coil, and blower in air-handling equipment. All mount in a 3/8″ hole in duct.

Tube style have higher accuracy and are for higher flow applications. They have a 3/16″ OD tube and a 4″ insertion depth.

Fitting style are for use in smooth, low-flow applications that don't require high accuracy.

Connection Size			
Tube Style			
A 1/4″ OD Compression	4077K51	$11.22	
B 1/8″-3/16″ Barb	4077K52	10.31	
Magnet-Mount Tube Style			
C 3/16″ ID Barb	4077K53	15.87	
Fitting Style			
D 1/4″ OD Compression	4077K55	6.01	
E 1/8″-3/16″ Barb	4077K56	4.65	

About Pressure Transducers

Pressure transducers (also known as pressure sensors and pressure transmitters) sense and then convert pressure into electrical output signals. You can send the output signals to a monitoring device (see panel meters on page 950) where they can be saved, displayed, or used to control pressure in a system.

The example at right shows a transducer with a 0-100 psi pressure range and a 4-20 mA output signal. Because the relationship between pressure and output is linear, in this case the transducer produces a 4 mA signal at 0 psi, a 12 mA signal at 50 psi, and a 20 mA signal at 100 psi.

Maximum Pressure—The highest pressure a transducer can withstand without damage.

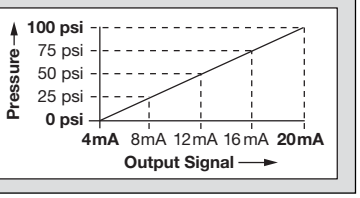

Pressure Transducers

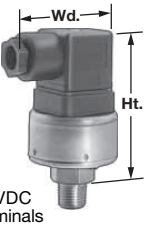

- Use with compressed air, water, and hydraulic oil
- Accuracy: See table
- Repeatability: See table
- Response Time:
  0.5% Accuracy Switches: 4 milliseconds
  0.25% Accuracy Switches: 1 millisecond
- Pressure Connection: Type 316 stainless steel NPT male
- Case Material: ***3196K***: Type 316L stainless steel; ***3200K***: Type 304 stainless steel
- Power Supply: ***3196K***: 8-30 VDC; ***3200K***: 10-30 VDC
- Electrical Connection: DIN connector with screw terminals
- Temp. Ranges: Ambient: 32° to 176° F; Process: 32° to 176° F

Pressure transducers provide remote pressure monitoring for automated applications. All have Type 316 stainless steel wetted parts. ***3196K*** switches with a range of 0-200 psi and up also have Type 13-8 PH stainless steel wetted parts. ***3200K*** switches with a range of 0-500 psi and above also have Type 17-4 PH stainless steel wetted parts. All are CE approved.

Transducers with NIST certificate include a certificate of calibration traceable to the National Institute of Standards and Technology (NIST).

Switches with 0.5% accuracy are 1⅞″ Wd.×2⅜″ Ht.
Switches with 0.25% accuracy are 1⅞″ Wd.×3¾″ Ht.

Available Pressure Ranges (psi)

Pressure Range	3196K Maximum Pressure	3200K Maximum Pressure	Pressure Range	3196K Maximum Pressure	3200K Maximum Pressure
0- 10	—	58	0- 300	600	1,160
0- 15	30	58	0- 500	1,000	1,160
0- 25	60	145	0- 1,000	1,740	1,740
0- 50	100	240	0- 1,500	2,900	1,740
0- 60	100	240	0- 3,000	6,000	7,200
0-100	200	500	0- 5,000	10,000	11,600
0-200	400	1,160	0-10,000	17,400	17,400

To Order: Please specify pressure range from the listing above.

Accuracy, Full Scale	Repeatability, Full Scale	Output Signal	Pipe Size		
Standard					
0.5%	0.1%	4-20 mA, 2 wire	¼″	**3196K5**■	$161.02
0.25%	0.05%	4-20 mA, 2 wire	½″	**3200K1**	393.84
With NIST Certificate					
0.5%	0.1%	4-20 mA, 2 wire	¼″	**3196K7**■	240.62
0.25%	0.05%	4-20 mA, 2 wire	½″	**3200K3**	509.78

■ Not available in 0-10 psi range.

Extended-Life Compact Pressure Transducers

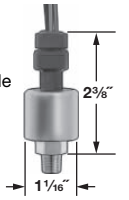

- Use with compressed air, water, and hydraulic oil
- Accuracy: ±2% full scale
- Repeatability: ±0.1% full scale
- Response Time: 10 milliseconds to 63% of full scale
- Pressure Connection: Type 316 stainless steel NPT male
- Case Material: Type 316 stainless steel
- Power Supply: 4.5 to 5.5 VDC
- Electrical Connection: 12″ wire leads
- Temperature Ranges:
  Ambient: –40° to +257° F; Process: +2° to +257° F

Get long-term performance out of these transducers that handle high vibrations, shock, and high-cycle pressure while maintaining high accuracy. And at only 2⅜″ tall, they'll fit into tight spaces. They have ceramic, Type 316 stainless steel, and fluoroelastomer wetted parts for corrosive applications.

Available Pressure Ranges (psi)

Pressure Range	Maximum Pressure	Pressure Range	Maximum Pressure
0-15	75	0- 100	300
0-30	150	0- 200	600
0-50	250	0- 500	1,000
0-75	375	0-1,000	2,000

To Order: Please specify pressure range from the listing above.

Output Signal	Pipe Size		
0.5 to 4.5 VDC, 3 wire	⅛″	**2388K11**	$285.71
0.5 to 4.5 VDC, 3 wire	¼″	**2388K21**	285.71

Extreme-Temperature Pressure Transducers

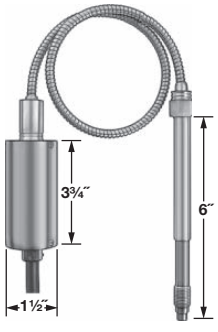

- Use with plastic and polymer extrusions, compressed air, water, and hydraulic oil
- Accuracy: ±1% full scale
- Repeatability: ±0.2% full scale
- Response Time: Not rated
- Pressure Connection: Type 15-5 PH stainless steel UNF male straight thread
- Case Material: Aluminum
- Power Supply: 14-36 VDC
- Electrical Connection: Includes adapter with 10-ft. wire leads
- Max. Temperatures (Min. Temperatures Not Rated): Ambient: 185° F; Process: 750° F

Measure pressure in extremely high temperature processes up to 750° F. These transducers have an 18″ armored cable filled with sodium potassium that keeps the sensing component away from the process while maintaining good accuracy. Wetted parts are Type 15-5 PH stainless steel with abrasion-resistant coating.

Available Pressure Ranges (psi)

Pressure Range	Maximum Pressure	Pressure Range	Maximum Pressure
0- 500	1,000	0- 3,000	6,000
0- 750	1,500	0- 5,000	10,000
0-1,000	2,000	0- 7,500	15,000
0-1,500	3,000	0-10,000	20,000

To Order: Please specify pressure range from the listing above.

Output Signal	Connection Size		
4-20 mA, 2 wire	½″-20 UNF	**2529K96**	$1,037.11

Washdown Vacuum and Pressure Transducers

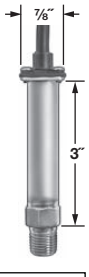

- Use with compressed air, water, and hydraulic oil
- Accuracy: See table
- Repeatability: See table
- Response Time: 5 milliseconds
- Pressure Connection: Type 316 stainless steel NPT male
- Case Material: 300 series stainless steel
- Power Supply: 10-36 VDC
- Electrical Connection: 36″ long, PVC-shielded cable
- Temperature Ranges:
  Ambient: –20° to +180° F; Process: –20° to +180° F

For washdown and corrosion resistance, these transducers have a NEMA 4X electrical enclosure and 17-4 PH stainless steel wetted parts.

Available Pressure Ranges

Pressure Range	Maximum Pressure	Pressure Range	Maximum Pressure
Vacuum Transducer		***Pressure Transducers (Cont.)***	
30″ Hg to 0	60 psi	0- 300 psi	600 psi
Pressure Transducers		0- 500 psi	1,000 psi
0- 15 psi	30 psi	0- 750 psi	1,500 psi
0- 30 psi	60 psi	0-1,000 psi	2,000 psi
0- 60 psi	120 psi	0-1,500 psi	3,000 psi
0-100 psi	200 psi	0-2,000 psi	4,000 psi
0-150 psi	300 psi	0-3,000 psi	4,500 psi
0-200 psi	400 psi	0-5,000 psi	7,500 psi

To Order: Please specify vacuum or pressure range from the listing above.

Accuracy, Full Scale	Repeatability, Full Scale	Output Signal	Pipe Size		
±1%	±0.07%	4-20 mA, 2 wire	¼″	**31685K7**	$328.89
±1%	±0.07%	1-5 VDC, 3 wire	¼″	**31685K1**	312.43
±0.5%	±0.05%	4-20 mA, 2 wire	¼″	**31685K8**♦	393.46
±0.5%	±0.05%	1-5 VDC, 3 wire	¼″	**31685K2**♦	393.46

♦ Not available in 30″ Hg to 0, and 0-15, 0-30, 0-60, and 0-5,000 psi.

For information about pressure transducers, see page 581.

Digital-Display Pressure Transducers

- Use with compressed air, water, and hydraulic oil
- Accuracy: ±0.25% full scale
- Repeatability: ±0.25% full scale
- Response Time: 50 milliseconds
- Pressure Connection: Type 316 stainless steel NPT male
- Case Material: NEMA 4X polycarbonate and ABS
- Power Supply: 8-32 VDC
- Electrical Connection: 36″ wire leads
- Temperature Ranges:
  Ambient: –4° to +185° F; Process: 32° to 158° F

An electrical output added to a general service pressure gauge provides good accuracy and the convenience of both local and remote pressure monitoring. They have Type 316 stainless steel wetted parts and a polycarbonate lens. Housing size is 3″ Ht.×3½″ Wd.×2″ Dp. Digits are ½″ high.

Available Pressure Ranges (psi)

Pressure Range	Maximum Pressure	Numeral Increments
0- 30	60	0.1
0- 60	120	0.1
0- 100	200	0.1
0- 300	600	1
0- 500	1,000	1
0-1,000	2,000	1

To Order: Please specify pressure range from the listing above.

Output Signal	Pipe Size		
4-20 mA, 2 wire	¼″	2821K61	$397.07

Programmable Digital-Display Pressure Transducers

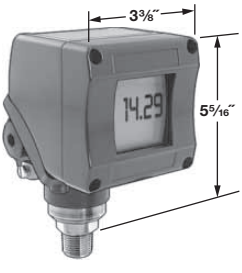

- Use with compressed air, water, and hydraulic oil
- Accuracy: 0.15% full scale
- Repeatability: <0.05% full scale
- Response Time: <10 milliseconds
- Pressure Connection: Types 316 and 17-4 PH stainless steel NPT male
- Case Material: Epoxy-coated aluminum
- Power Supply: 12-36 VDC
- Electrical Connection: Screw terminals with ¾″ female conduit connection
- Temperature Ranges:
  Ambient: –4° to +158° F;
  Process: –22° to +221° F

An LCD makes it easy to view pressure ratings at the point of use. And in addition to multiple units of measure (psi, bar, millibar, mA, % of span, millimeters, meters, inches, feet, Pa, and kPa), you can program these transducers to show bar graphs, trend displays, and two extra lines of text for minimum and maximum pressure readings and sensor temperature. They have ½″ high digits, a NEMA 4 (indoor/outdoor) case, stainless steel wetted parts, and an impact-resistant glass lens. CE approved.

Pressure Range, psi	Maximum Pressure, psi	Output Signal	Pipe Size		
0- 5	30	4-20 mA, 2 wire	½″	3199K21	$829.54
0- 25	150	4-20 mA, 2 wire	½″	3199K22	829.54
0-100	500	4-20 mA, 2 wire	½″	3199K23	829.54

Differential Pressure Transducers for Tubing

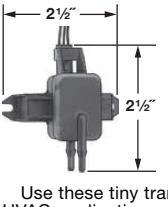

- Use with air and dry inert gases
- Accuracy: ±1.5% full scale
- Repeatability: 0.05% full scale
- Response Time: 5 milliseconds
- Pressure Connection: Polyester barb
- Case Material: Polyester
- Power Supply: 5 VDC
- Electrical Connection: 12″ wire leads
- Temperature Ranges:
  Ambient: 32° to 140° F; Process: 32° to 140° F

Use these tiny transducers to test very low pressure differentials in HVAC applications.

Differential Pressure Range	Max. Pressure, psi	Output Signal	For Tube ID		
0- 2″ H_2O	1	0.25 to 4 VDC, 3 wire	3⁄16″	2948K11	$147.06
0- 5″ H_2O	1	0.25 to 4 VDC, 3 wire	3⁄16″	2948K13	147.06
0-10″ H_2O	1	0.25 to 4 VDC, 3 wire	3⁄16″	2948K14	147.06

Vacuum and Pressure Transducers

- Accuracy: ±0.25% full scale
- Repeatability: ±0.05% full scale
- Response Time: 0.5 milliseconds
- Pressure Connection: Type 17-4 PH stainless steel NPT male
- Case Material: Type 316 stainless steel
- Power Supply: 7-35 VDC
- Electrical Connection: 36″ long PVC-shielded cable
- Temperature Ranges:
  Ambient: –5° to +180° F; Process: –5° to +180° F

Get high accuracy when monitoring pressure up to 100 psi and vacuum down to 30″ Hg. CE approved.

Available Vacuum/Compound Ranges

Vacuum/Pressure Range	Maximum Pressure
Vacuum Transducer	
30″ Hg to 0/_____	30 psi
Compound Transducers	
30″ Hg to 0/0 to 15 psi	60 psi
30″ Hg to 0/0 to 45 psi	120 psi
30″ Hg to 0/0 to 100 psi	200 psi

To Order: Please specify vacuum or compound range from the listing above.

Output Signal	Pipe Size		
4-20 mA, 2 wire	¼″	3591K21	$408.76

Differential Pressure Transducers

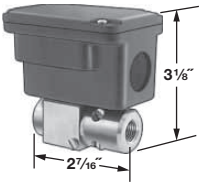

- Use with liquids and gases
- Accuracy: ±0.25% full scale
- Repeatability: 0.05% full scale
- Response Time: 30 to 50 milliseconds
- Pressure Connection: Type 17-4 PH stainless steel NPT female
- Case Material: Aluminum
- Power Supply: 9-30 VDC
- Electrical Connection: Screw terminals
- Temperature Ranges:
  Ambient: 0° to 175° F; Process: 0° to 250° F

Take differential pressure measurements of liquids as well as gases. All have a NEMA 4 (indoor/outdoor) aluminum case with a ⅞″ conduit opening. Wetted parts are Type 300 series and 17-4 PH stainless steel, fluoroelastomer, and silicone. Furnished with mounting brackets and hardware.

Available Pressure Ranges (psi)

Pressure Range	Maximum Pressure	Pressure Range	Maximum Pressure
0-1	250	0-10	250
0-2	250	0-25	250
0-5	250	0-50	250

To Order: Please specify pressure range from the listing above.

Output Signal	Pipe Size		
4-20 mA, 2 wire	¼″	9917K5	$687.93
0-5 VDC, 3 wire	¼″	9917K6	687.93

Dial-Indicating Differential Pressure Transducers

- Use with air and noncombustible, noncorrosive gases
- Accuracy: ±2% full scale
- Repeatability: Not rated
- Response Time: Not rated
- Pressure Connection: Aluminum NPT female
- Case Material: Aluminum
- Power Supply: 10-35 VDC
- Electrical Connection: Screw terminals
- Temperature Ranges:
  Ambient: 20° to 120° F;
  Process: 20° to 120° F

Monitor low differential pressure locally and remotely. Excellent for HVAC systems. Transducers have an acrylic lens and silicone diaphragm.

Available Pressure Ranges

Pressure Range	Maximum Pressure	Pressure Range	Maximum Pressure
0-0.5″ H_2O	25 psi	0- 6″ H_2O	5 psi
0-1″ H_2O	25 psi	0-10″ H_2O	5 psi
0-2″ H_2O	0.36 psi	0-20″ H_2O	20 psi
0-3″ H_2O	5 psi	0-30″ H_2O	20 psi

To Order: Please specify pressure range from the listing above.

Output Signal	Dial Size	Pipe Size		
4-20 mA, 2 wire	4″	⅛″	38525K21	$288.50

For information about electrical switches, see page 855.

About Pressure and Vacuum Switches

Pressure switches provide alarm, shutdown, and control functions for equipment.

Actuation Point— The point at which the switch actuates; it's also known as setpoint. Most of our switches have an adjustable actuation point that can be set to actuate anywhere within its actuation range. For best results, choose a switch with a pressure range where your required actuation point is close to the middle of its actuation range.

Deactuation Point— The point at which the switch resets itself.

Deactuation range, also known as deadband, is the difference between the actuation point and the deactuation point. In the example at right, the switch actuates when the pressure reaches 100 psi. When the pressure drops to 90 psi, the switch deactuates, so the switch has a deactuation range of 10 psi.

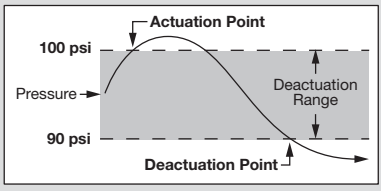

Repeatability— The ability of a switch to repeatedly actuate at the actuation point under consistent operating conditions. The percentage shown is the possible variance from the actuation point.

Differential Switches— These respond to the difference in pressure between two pressure connections. When the differential pressure exceeds the actuation point, the switch is activated.

Electrical Switches— All of our switches are Single Pole, Double Throw (SPDT), unless noted. SPDT contacts are a set of single contacts that open or close a single circuit. Wire as either normally open or normally closed to actuate as the pressure increases or decreases. For more information about electrical switches, see page 855.

Tamper-Resistant Nonadjustable Pressure Switch

- Repeatability: ±1 psi or ±5% of actuation point, whichever is greater
- Pressure Sensing Element: Buna-N diaphragm-sealed piston
- Pressure Connection: 1/8″ brass NPT male
- Case Material: Brass
- Electrical Switch: SPDT, 10 amps at 125/250 VAC
- Temp. Ranges: Ambient: –40° to +250° F; Process: –40° to +250° F

This tamper-resistant switch has fixed actuation and deactuation points. Use with compressed air, water, and hydraulic oil. Deactuation point is fixed at approximately 15% above or below the actuation point. Max. pressure is 2,000 psi. Switch has a NEMA 4 (indoor/outdoor) and NEMA 13 (dust/oil resistant) enclosure and #8-32 screw terminals. Wetted parts are brass and Buna-N. UL recognized. **To Order:** Please specify actuation point from 10 to 300 psi in 5 psi increments.

3454K1 ..... $48.08

Pressure Switches

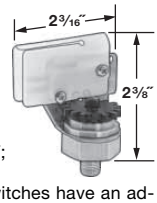

- Repeatability: ±1 psi or ±5% of actuation point, whichever is greater
- Pressure Sensing Element: Buna-N diaphragm-sealed piston
- Pressure Connection: Brass NPT male
- Case Material: Brass
- Electrical Switch: SPDT, 10 amps at 125/250 VAC
- Temp. Ranges: Ambient: –40° to +250° F; Process: –40° to +250° F

Sized just right for tight spots, these switches have an adjustable actuation point. Use with compressed air, water, and hydraulic oil. Max. pressure is 250 psi. Connect with spade terminals. Wetted parts are brass and Buna-N. UL recognized.

Actuation Range, psi	Deactuation Range, psi	Pipe Size		
2- 10	0.5- 1.5	1/8″	**3460K21**	$28.14
6- 30	0.9- 4.5	1/8″	**3460K41**	28.14
20-120	3 -18	1/8″	**3460K61**	28.14

Easy-Adjust High-Pressure Switches

NEMA 4

- Repeatability:
  All 1,000, 1,500, and 2,500 Max. psi Switches: ±1% of actuation range
  8,000 and 10,000 Max. psi Switches: ±1.5% of actuation range
- Pressure Sensing Element:
  Standard Switches with 1,000, 1,500, and 2,500 Max. psi: Buna-N diaphragm
  Standard Switches with 8,000 and 10,000 Max. psi: Type 303 stainless steel piston
  Switches for Oxygen Service: Fluoroelastomer diaphragm
- Pressure Connection: Brass NPT male
- Case Material: Aluminum with corrosion-resistant coating
- Electrical Switch: SPDT, 5 amps at 125/250 VAC
- Temperature Ranges:
  Ambient: 0° to +160° F; Process: –10° to +200° F

For high-pressure processes such as pump and hydraulic power applications, these switches withstand maximum pressures of at least 1,000 psi. They have a set screw protected by an outer ring for easy adjustment of your actuation point. Use with compressed air, water, and hydraulic oil. Wetted parts are brass, Type 316L stainless steel, and Buna-N. Diameter is 1 1/4″ for all; for height, see the table. All are UL recognized, CSA certified, and CE approved. Pipe size for all switches with maximum pressure of 1,000 to 2,500 psi is 1/8″. Switches with an 8,000 and 10,000 psi maximum pressure have a pipe size of 1/4″.

Switches ***for oxygen service*** come cleaned and bagged for use with oxygen.

Switches with *NEMA 1 enclosures* (indoor use only) have 1/4″ quick-disconnect terminals; switches with *NEMA 4 enclosures* (indoor/outdoor) have 20″ wire leads.

Actuation Range, psi	Deactuation Range, psi	Max. Press., psi	NEMA 1 Ht.			NEMA 4 Ht.		
Standard								
4- 50	1- 6	1,000	2 3/4″	**3427K81**	$67.56	2 7/8″	**3427K85**	$74.29
10- 150	2- 10	1,500	2 3/4″	**3427K1**	67.56	2 7/8″	**3427K4**	74.29
30- 600	8- 60	2,500	2 3/4″	**3427K2**	67.56	2 7/8″	**3427K5**	74.29
100-1,500	20-220	8,000	2 7/8″	**3427K82**	67.43	3″	**3427K86**	74.29
180-3,000	50-400	8,000	2 7/8″	**3427K3**	67.43	3″	**3427K6**	74.29
400-4,700	100-600	8,000	2 7/8″	**3427K83**	67.43	3″	**3427K87**	74.29
4,000-7,500	400-950	10,000	2 7/8″	**3427K84**	67.56	3″	**3427K88**	74.29
For Oxygen Service								
4- 50	1- 6	1,000	2 3/4″	**3427K11**	102.11	2 7/8″	**3427K12**	110.86
10- 150	2- 10	1,500	2 3/4″	**3427K13**	102.11	2 7/8″	**3427K14**	110.86
30- 600	8- 60	2,500	2 3/4″	**3427K15**	102.11	2 7/8″	**3427K16**	110.86

Easy-Adjust Vacuum and Pressure Switches

- Repeatability: ±2% of actuation range
- Pressure Sensing Element: Buna-N diaphragm-sealed piston
- Pressure Connection: Brass NPT male
- Case Material: Brass and polysulfone
- Electrical Switch: SPDT, 5 amps at 125/250 VAC
- Temperature Ranges for Vacuum Switches: Ambient: 0° to 165° F; Process: 0° to 165° F
- Temperature Ranges for Pressure Switches: Ambient: –20° to +165° F; Process: –20° to +165° F

Change your actuation point with just a simple twist of the outer ring. Use with compressed air, water, and hydraulic oil. Wetted parts are brass and Buna-N.

Switches with *NEMA 1 enclosures* (indoor use only) have 1/4″ quick-disconnect terminals and are UL recognized; switches with *NEMA 4 enclosures* (indoor/outdoor) have 12″ wire leads and are UL listed.

NEMA 1

Actuation Range	Deactuation Range	Maximum Pressure, psi	Pipe Size	NEMA 1		NEMA 4	
Vacuum Switches							
30″ to 1″ Hg	6″ to 1″ Hg	30	1/4″	**46995K33**	$76.92	**46995K34**	$97.50
Pressure Switches							
2.5- 15 psi	0.5- 2.2 psi	1,000	1/4″	**46995K8**	74.21	**46995K98**	94.79
5 - 35 psi	1 - 4 psi	1,000	1/4″	**46995K13**	74.21	**46995K14**	94.79
8.5- 50 psi	1.5- 6 psi	1,000	1/4″	**46995K15**	74.21	**46995K16**	94.79
22.5-125 psi	2.5-13 psi	1,000	1/4″	**46995K17**	74.21	**46995K18**	94.79
70 -250 psi	10 -30 psi	1,000	1/4″	**46995K21**	74.21	**46995K22**	94.79
110 -500 psi	20 -60 psi	1,000	1/4″	**46995K23**	74.21	**46995K24**	94.79

For information about pressure switches, see page 583. For information about electrical switches, see page 855.

Vacuum and Pressure Switches

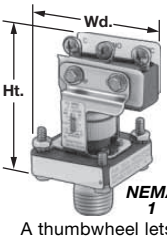

NEMA 1

- Repeatability: ±2% of actuation range
- Pressure Sensing Element: Buna-N diaphragm-sealed piston
- Pressure Connection: Brass dual-threaded 1/2″ NPT male × 1/8″ NPT female, unless noted
- Electrical Switch: SPDT, 10 amps at 125/250 VAC
- Temperature Ranges: Ambient: –20° to +165° F Process: –20° to +165° F

A thumbwheel lets you easily adjust your actuation point. Use with compressed air, water, and hydraulic oil. Wetted parts are brass and Buna-N, except for 40925K91, which has nickel-plated aluminum and Buna-N parts. All have screw terminals.

NEMA 1 (indoor use only) switches measure 3 5/8″ Ht. × 2 13/16″ Wd. UL recognized and CSA certified. ***NEMA 4*** (indoor/outdoor) switches have an aluminum enclosure with a 1/2″ female conduit connection. They measure 4 1/16″ Ht. × 3 3/16″ Wd. UL listed and CSA certified.

Actuation Range	Deactuation Range	Maximum Pressure		
NEMA 1 Vacuum Switch				
30″ to 0.5″ Hg	–0.3″ to –1.7″ Hg	30″ Hg	**40925K91★**	$91.54
NEMA 1 Pressure Switches				
0.5- 15 psi	0.1- 1.2 psi	1,000 psi	**40925K92**	73.12
3 - 90 psi	0.5- 8 psi	1,000 psi	**40925K93**	73.12
10 -250 psi	1 -20 psi	1,000 psi	**40925K94**	73.12
25 -500 psi	4 -28 psi	1,000 psi	**40925K95**	73.12
NEMA 4 Pressure Switches				
0.5- 15 psi	0.1- 1.2 psi	1,000 psi	**40925K11**	105.62
3 - 90 psi	0.5- 8 psi	1,000 psi	**40925K12**	105.62

★ Pressure connection is nickel-plated aluminum.

High-Temperature Pressure Switches

- Repeatability: ±1.5% of actuation range
- Pressure Sensing Element: Type 316 stainless steel diaphragm
- Pressure Connection: NPT female Type 316 stainless steel
- Case Material: Epoxy-coated aluminum
- Electrical Switch: SPDT, 15 amps at 125/250/480 VAC
- Temp. Ranges: Ambient: –40° to +160° F Process: –70° to +400° F

Choose for liquid processes up to 400° F. Use with compressed air, water, and hydraulic oil. All switches are housed in a NEMA 4X enclosure (washdown/corrosion resistant) with screw terminals and a 1/2″ NPT female conduit connection. Wetted parts are Type 316 stainless steel. UL and C-UL listed, and CE approved.

Switches with ***dual actuation point*** have two built-in switches, each controlling its own electrical circuit, allowing you to set two actuation points from a single pressure port.

Actuation Range, psi	Deactuation Range, psi	Maximum Pressure, psi	Pipe Size		
Single Actuation Point					
5- 30	1 - 3	1,500	1/2″	**47515K71**	$176.47
10- 100	1 - 8	1,500	1/2″	**47515K72**	176.47
15- 300	3 - 18	1,500	1/2″	**47515K73**	176.47
20- 500	4 - 30	1,500	1/2″	**47515K74**	176.47
80-1,700	5 -120	2,000	1/2″	**47515K75**	176.47
Dual Actuation Point					
0- 30	0.2- 1.2	30	1/2″	**47515K81**	502.35
0- 100	0.4- 1.6	100	1/2″	**47515K82**	502.35
0- 300	4 - 18	300	1/2″	**47515K83**	404.71

Washdown Pressure Switches

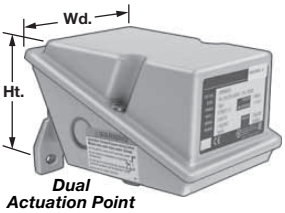

Dual Actuation Point

- Repeatability: ±1% of actuation range
- Pressure Sensing Element: Single Actuation Point: Fluoroelastomer diaphragm-sealed piston Dual Actuation Point: Fluoroelastomer diaphragm
- Pressure Connection: Type 316L stainless steel NPT female
- Case Material: Epoxy-coated aluminum
- Electrical Switch: SPDT, 15 amps at 125/250/480 VAC
- Temperature Ranges: Ambient: –20° to +150° F Process: +20° to +300° F

Hose down these switches—they'll still work. They're housed in a NEMA 4X enclosure (washdown/corrosion resistant). Use with compressed air, water, and hydraulic oil. Connect with screw terminals and 3/4″ NPT female conduit. Wetted parts are Type 316 stainless steel and fluoroelastomer. UL listed, CSA certified, and CE approved.

Dual Actuation Point— Two built-in switches, each controlling its own electrical circuit, allow you to set two actuation points from a single pressure port.

Actuation Range	Maximum Pressure, psi	Pipe Size	***Single Actuation Point*** Deactuation Range	Dimensions, Ht. × Wd.			***Dual Actuation Point*** Deactuation Range	Dimensions, Ht. × Wd.		
4.5″-30″ H_2O	20	1/4″	2.1″-3.5″ H_2O	5 1/8″ × 4″	**46025K51**	$282.20	2.9″-6.8″ H_2O	4″ × 4 1/8″	**46025K62**	$418.11
2.25- 15 psi	500	1/4″	0.7- 2.1 psi	5 1/8″ × 4″	**46025K55**	163.05	1.9- 2.9 psi	4″ × 4 1/8″	**46025K65**	288.12
4.5 - 30 psi	500	1/4″	0.7- 2.1 psi	5 1/8″ × 4″	**46025K56**	163.05	1.9- 7 psi	4″ × 4 1/8″	**46025K66**	288.12
9 - 60 psi	500	1/4″	1.4- 4.9 psi	5 1/8″ × 4″	**46025K57**	163.05	4.2- 9.8 psi	4″ × 4 1/8″	**46025K67**	288.12
15 - 100 psi	1,000	1/4″	2.1- 7 psi	5 1/8″ × 4″	**46025K58**	163.05	9.8- 16.8 psi	4″ × 4 1/8″	**46025K68**	288.12
30 - 200 psi	1,000	1/4″	7 -18.2 psi	5 1/8″ × 4″	**46025K59**	163.05	14 - 32.2 psi	4″ × 4 1/8″	**46025K69**	288.12
60 - 400 psi	2,400	1/4″	7 -33.6 psi	5 1/8″ × 4″	**46025K81**	163.05	30.8- 58.8 psi	4″ × 4 1/8″	**46025K71**	288.12
90 - 600 psi	2,400	1/4″	12.6-42 psi	5 1/8″ × 4″	**46025K82**	163.05	30.8- 98 psi	4″ × 4 1/8″	**46025K72**	288.12
150 -1,000 psi	12,000	1/4″	42 -154 psi	5 1/8″ × 4″	**46025K83**	211.85	98 -252 psi	4″ × 4 1/8″	**46025K73**	341.36

Hazardous-Location Pressure Switches

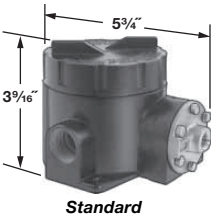

Standard

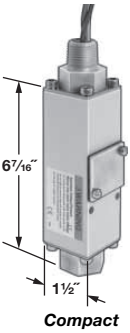

Compact

Standard Switches

- Repeatability: ±1% of actuation range
- Pressure Sensing Element: Fluoroelastomer diaphragm-sealed piston
- Pressure Connection: Type 316L stainless steel NPT female
- Case Material: Epoxy-coated aluminum
- Electrical Switch: SPDT, 15 amps at 125/250/480 VAC
- Temperature Ranges: Ambient: –20° to +150° F Process: +20° to +300° F

Compact Switches

- Repeatability: ±1% of actuation range
- Pressure Sensing Element: Type 316 stainless steel diaphragm-sealed piston
- Pressure Connection: Type 316 stainless steel NPT female
- Case Material: Aluminum
- Electrical Switch: SPDT, 5 amps at 125/250 VAC
- Temperature Ranges: Ambient: –20° to +150° F Process: –20° to +200° F

Use in hazardous locations with water, compressed air, and hydraulic oil. Wetted parts are Type 316 stainless steel for all; *standard switches* also have fluoroelastomer. All are UL listed, CSA certified, and CE approved. ***Standard*** switches meet NEMA 7 for hazardous location Class I, Divisions 1 and 2, Groups B, C, and D; and NEMA 9 for hazardous location Class II, Divisions 1 and 2, Groups E, F, and G. They have screw terminals and a 3/4″ NPT female conduit connection. ***Compact*** switches meet NEMA 4 for indoor and outdoor use, and NEMA 7 for hazardous location Class I, Division 1, Groups A, B, C, and D. They have 12″ wire leads and a 1/2″ NPT male conduit connection.

Actuation Range, psi	Deactuation Range, psi	Maximum Pressure, psi	Pipe Size		
Standard					
2.25- 15	0.7-2.1	500	1/4″	**4636K56**	$345.92
15 -100	2.1-7	1,000	1/4″	**4636K58**	345.92
Compact					
6 - 30	0.5-3.5	1,000	1/2″	**46985K61**	392.18
Compact (Cont.)					
12- 60	0.5- 4	1,000	1/2″	**46985K62**	$392.18
20-100	1 - 6	1,000	1/2″	**46985K63**	392.18
40-200	1 -12	1,000	1/2″	**46985K64**	392.18
80-400	2 -20	1,600	1/2″	**46985K65**	392.18

For information about pressure switches, see page 583. For information about electrical switches, see page 855.

High-Accuracy Pressure Switches

- Repeatability: ±0.5% of actuation range
- Pressure Sensing Element: Type 17-4 PH stainless steel
- Pressure Connection: Type 316 stainless steel Standard: NPT female; Digital: NPT male
- Case Material: Epoxy-coated aluminum
- Electrical Switch: SPDT, 10 amps at 250 VAC
- Temperature Ranges: Ambient: –20° to +180° F Process: –20° to +180° F

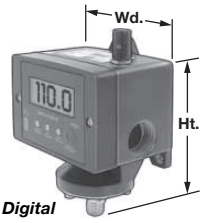

Digital

A precision sensor similar to those in pressure transducers gives these switches very high repeatability for critical applications. All switches are housed in a NEMA 4X (washdown/corrosion resistant) enclosure with a ¾″ NPT female conduit connection. Wetted parts are Types 316 and 17-4 PH stainless steel. Dimensions for all are 5″ Ht.×4″ Wd.

Digital switches have an LED front panel with ½″ high digits that shows current pressure, actuation point, and deactuation point. Adjust your settings using the keypad for higher precision than you'll get from a dial or thumbwheel. Operates on 110 VAC, 50/60 Hz.

Actuation Range, psi	Deactuation Range, psi	Maximum Pressure, psi	Pipe Size		
Standard					
3- 60	0.06- 57	120	¼″	**45335K11**	$446.25
5- 100	0.1 - 95	200	¼″	**45335K12**	446.25
15- 300	0.3 - 285	600	¼″	**45335K13**	446.25
150-3,000	3 -2,850	4,500	¼″	**45335K18**	446.25
Digital					
3- 60	0.06- 57	120	¼″	**7564T11**	672.72
5- 100	0.1 - 95	200	¼″	**7564T12**	672.72
10- 200	0.2 - 190	400	¼″	**7564T13**	672.72
150-3,000	3 -2,850	4,500	¼″	**7564T19**	672.72

Well-Water Pump and Air-Compressor Pressure Switches

- Repeatability: ±5% of actuation range
- Pressure Sensing Element: Buna-N coated nylon diaphragm, unless noted
- Pressure Connection: Zinc NPT female, unless noted
- Case Material: Polycarbonate, unless noted
- Electrical Switch: Double Pole Single Throw (DPST), Normally Closed (see table for amp ratings)
- Maximum Temperatures (Minimum Not Rated): Ambient: 160° F; Process: 212° F

Air Compressor Switch with Unloader Valve

Control a pump or an air compressor with these switches. All are double pole single throw, normally closed (DPST-NC); they'll turn two circuits from "on" to "off." Connect to electricity using screw terminals; all have a ⅞″ hole for ½″ conduit. UL listed and CSA certified. Maximum pressure not rated.

Well-water pump pressure switches are for automatic well-water pumps and water pumping systems. Wetted parts are zinc alloy and Buna-N coated nylon. Dimensions are 3³⁄₁₆″ Ht.×3⅝″ Wd.

Air-compressor switches measure 3⁷⁄₁₆″ Ht.×3⅝″ Wd.

Air-compressor switches with unloader valve exhaust air into compression chambers to provide no-load motor starting. Dimensions are 3⅞″ Ht.×3½″ Wd.

Air-compressor switches with unloader valve and reset are just like the switches above, but allow manual as well as automatic operation. Dimensions are 3¼″ Ht.×3½″ Wd.

Actuation Range, psi	Deactuation Range, psi	Amps @ 120/240 VAC	Pipe Size		
Well-Water Pump Pressure Switches					
1- 12	3- 5	24/34	¼″	**41535K98**	$50.43
3- 35	6-15	24/34	¼″	**41535K96**	50.43
5- 65	15-30	24/24	¼″	**41535K93**	30.00
5- 80	15-30	24/34	¼″	**41535K94**	45.71
Air-Compressor Pressure Switches					
10-125	20-35	35/24	⅜″	**4154K825**★	114.29
60-110	15-25	24/24	¼″	**4154K612**	36.14
50-145	25-33	24/24	¼″	**4154K616**	36.14
40-250	35-60	35/24	⅜″	**4154K811**★	114.29
Air-Compressor Pressure Switches with Unloader Valve					
10-125	20-35	35/24	⅜″	**4154K265**★	137.14
60-110	15-25	24/24	¼″	**4154K622**	42.00
50-145	25-33	24/24	¼″	**4154K626**	42.00
40-250	35-60	35/24	⅜″	**4154K261**★	137.14
Air-Compressor Pressure Switches with Unloader Valve and Reset					
60-110	15-25	24/24	¼″	**4154K242**	42.86
50-145	25-33	24/24	¼″	**4154K246**	42.86

★ Has a neoprene diaphragm, zinc-plated steel pressure connection, and a steel case.

Miniature Digital Pressure Switches

- Repeatability: ±0.2% of actuation range
- Pressure Sensing Element: Silicone
- Pressure Connection: Nickel-plated brass
- Case Material: Polybutylene terephthalate
- Electrical Switch: 80 milliamps @ 28 VDC; see table for switch output
- Temperature Ranges: Ambient: 32° to 122° F Process: 32° to 122° F

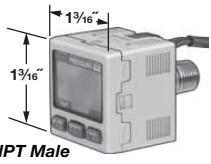

⅛″ NPT Male

Ultra compact for fitting into tight spaces. Ideal for use with a programmable logic controller (PLC). A programmable digital display makes it easy to view current pressure; high repeatability and a keypad let you be precise in your settings. Use with air and inert gases. Switches have ⅜″ high digits and 78″ wire leads. Max. pressure is 215 psi. All switches have silicone, nickel-plated brass, and nitrile wetted parts. *For ¼″ tube OD* switches also have acetal, polybutylene terephthalate, and Type 304 stainless steel wetted parts.

In general, choose the switch output (NPN or PNP) that is the opposite type of your PLC input. For example, if your PLC has a PNP input, choose an NPN pressure switch. For more information about NPN and PNP switches, see page 896.

Optional panel-mount bracket requires a 1⁷⁄₃₂″×1⁷⁄₃₂″ cutout.

Connection Type	Switch Output	Actuation Range, psi	Deactuation Range, psi		
⅛″ NPT Male	NPN	0-145	1-145	**3167K13**	$119.74
⅛″ NPT Male	PNP	0-145	1-145	**3167K14**	119.74
For ¼″ Tube OD	NPN	0-145	1-145	**3167K15**	119.74
For ¼″ Tube OD	PNP	0-145	1-145	**3167K16**	119.74
Optional Panel-Mount Bracket				**3167K91**	4.09

Vacuum and Pressure Switches with On/Off Indicator

- Repeatability: ±1% of actuation range
- Pressure Sensing Element: Brass Bourdon tube
- Pressure Connection: Brass NPT male
- Case Material: Steel
- Electrical Switch: SPDT, 10 amps at 120/240 VAC
- Temp. Ranges: Ambient: 32° to 180° F Process: 32° to 180° F

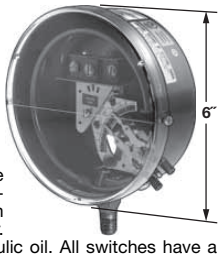

Like a pressure gauge, these switches have a Bourdon pressure tube and a clear, polycarbonate lens with a graduated scale so you can clearly see set points and the on/off indicator. Use with compressed air, water, and hydraulic oil. All switches have a NEMA 1 enclosure (indoor use only), screw terminals, and a ½″ hole for a conduit hub. Wetted parts are brass. UL listed and CSA certified.

Actuation Range	Deactuation Range	Maximum Pressure, psi	Pipe Size		
Vacuum Switch					
30″ Hg to 0	30″ to 9″ Hg	0	¼″	**4941K51**	$284.26
Pressure Switches					
0.125- 15 psi	4- 15 psi	15	¼″	**4941K52**	284.26
2 - 60 psi	6- 60 psi	60	¼″	**4941K53**	284.26
5 -100 psi	9-100 psi	100	¼″	**4941K54**	284.26
5 -150 psi	16-150 psi	150	¼″	**4941K55**	284.26
10 -200 psi	16-200 psi	200	¼″	**4941K56**	314.36
10 -300 psi	25-300 psi	300	¼″	**4941K57**	314.36

Extended-Life Pressure Switches

- Repeatability: ±2% of actuation range
- Pressure Sensing Element: Type 416 stainless steel piston with Buna-N O-ring
- Pressure Connection: Type 416 stainless steel NPT female
- Case Material: Aluminum
- Electrical Switch: SPDT, 10 amps at 125/250/480 VAC
- Temp. Ranges: Ambient: –40° to +165° F Process: –40° to +165° F

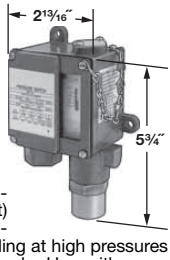

A sealed piston design and a durable, anodized-aluminum NEMA 13 enclosure (dust/oil resistant) protect these switches in the nastiest of environments giving them long life. They handle rapid cycling at high pressures in hydraulic presses, compactors, and machine tools. Use with compressed air, water, and hydraulic oil. They have a ½″ NPT female conduit connection and a scale on the face of the unit for easy actuation-point adjustments. Wetted parts are Type 416 stainless steel and Buna-N.

Actuation Range, psi	Deactuation Range, psi	Maximum Pressure, psi	Pipe Size		
20- 200	5- 20	3,000	¼″	**4735K43**	$331.02
75- 540	10- 35	3,000	¼″	**4735K45**	331.02
100-1,500	30-100	7,000	¼″	**4735K46**	322.59
235-3,400	60-200	7,000	¼″	**4735K48**	320.79
425-6,000	120-360	12,000	¼″	**4735K49**	322.59

For information about pressure switches, see page 583. For information about electrical switches, see page 855.

Dual-Actuation Pressure Switches

- Repeatability: See table
- Pressure Sensing Element: Type 17-7 PH stainless steel piston with Buna-N O-ring
- Pressure Connection: Zinc-chromate steel 1⁄8″ NPT female
- Case Material: Steel with zinc-chromate finish
- Electrical Switch: SPDT, 5 amps at 250 VAC/28 VDC
- Temperature Ranges: Ambient: –65° to +225° F Process: –65° to +225° F

Two built-in switches, each controlling its own electrical circuit, allow you to set two actuation points from a single pressure port. Use with compressed air, water, and hydraulic oil. All switches are housed in a NEMA 1 enclosure (indoor use only) and have 12″ wire leads on each end. Wetted parts are steel, Type 17-7 PH stainless steel, and Buna-N. UL recognized and CE approved.

Actuation Range, psi	Deactuation Range, psi	Repeat-ability, psi	Maximum Pressure, psi		
1- 30	0.7- 2.3	±0.7	30	80015K11	$122.20
3-125	1.3- 3.8	±2	125	80015K12	122.20
8-250	2 -10	±5	250	80015K13	122.20

Ultra-Low-Pressure Switches

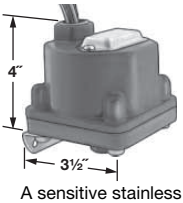

- Repeatability: ±0.5% of actuation range
- Pressure Sensing Element: Type 304 stainless steel diaphragm
- Pressure Connection: Type 17-7 PH stainless steel NPT female
- Case Material: Aluminum
- Electrical Switch: SPDT, 10 amps at 125/250 VAC
- Temp. Ranges: Ambient: –65° to +165° F Process: –65° to +165° F

A sensitive stainless steel diaphragm actuates these switches at very low pressure points. Use with compressed air, water, and hydraulic oil. They have a NEMA 4 enclosure (indoor/outdoor use) and 1⁄2″ NPS female conduit with 18″ wire leads. Wetted parts are Types 304 and 17-7 PH stainless steel. ***Dual Actuation Point—*** Two built-in switches, each controlling its own electrical circuit, allow you to set two actuation points from one pressure port.

Actuation Range, psi	Deactuation Range, psi	Maximum Pressure, psi	Pipe Size		
Single Actuation Point					
0.018- 1.7	0.02-0.05	3	1⁄4″	5004K51	$174.54
0.03 - 3	0.09-0.24	10	1⁄4″	5004K52	174.54
0.4 -18	0.1 -0.2	60	1⁄4″	5004K53	174.54
Dual Actuation Point					
0.4 -18	0.12-0.26	60	1⁄4″	5004K63	204.63

Vibration-Resistant Vacuum and Pressure Switches

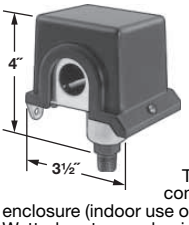

- Repeatability: ±1% of actuation range
- Pressure Sensing Element: Buna-N diaphragm and O-ring
- Pressure Connection: Aluminum NPT male
- Case Material: Polycarbonate
- Electrical Switch: SPDT, 15 amps at 125/250/480 VAC
- Temp. Ranges: Ambient: 0° to 160° F Process: –10° to +200° F

Tested to withstand high vibrations. Use with compressed air and hydraulic oil. All have a NEMA 1 enclosure (indoor use only) with screw terminals and a 7⁄8″ conduit hole. Wetted parts are aluminum and Buna-N. UL listed and CE approved.

Actuation Range	Deactuation Range	Maximum Pressure, psi	Pipe Size		
Vacuum Switch					
30″ Hg to 0	3.5″ to 1″ Hg	0	1⁄4″	4779K11	$106.29
Pressure Switches					
3- 30 psi	0.4-1.3 psi	50	1⁄4″	4779K22	106.29
10-100 psi	1 -2.5 psi	100	1⁄4″	4779K23	106.29
30-300 psi	1.3-4 psi	300	1⁄4″	4779K24	106.29

Differential-Pressure Switches

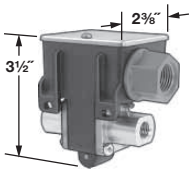

- Repeatability: ±1% of actuation range
- Pressure Sensing Element: Buna-N diaphragm
- Pressure Connection: Brass NPT female
- Case Material: Polyester with 300 series stainless steel cover
- Electrical Switch: SPDT, 5 amps at 125/250 VAC
- Temp. Ranges: Ambient: +30° to +160° F Process: –10° to +200° F

Detect the difference in pressure between two process lines—these switches have two pressure connections and actuate when the differential exceeds your actuation point. Ideal for identifying clogged filters. Use with compressed air, water, and hydraulic oil. Max. pressure is 150 psi. All switches have screw terminals with a 7⁄8″ conduit hole. Wetted parts are brass and Buna-N. UL listed, C-UL listed, and CE approved. Choose a switch with a NEMA 1 (indoor use only) or a NEMA 4 (indoor/outdoor use) enclosure.

Actuation Range, psid	Deactuation Point, psid	Pipe Size	*NEMA 1*		*NEMA 4*	
1-10	0.75	1⁄4″	46845K71	$99.74	46845K81	$124.57
4-45	1	1⁄4″	46845K72	99.74	46845K82	124.57

Low Differential-Pressure Switches

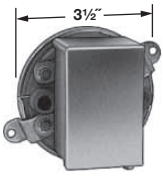

- Repeatability: ±3% of actuation range
- Pressure Sensing Element: Silicone rubber diaphragm
- Pressure Connection: Zinc-plated aluminum NPT female
- Case Material: Zinc-plated brass
- Electrical Switch: SPDT, 15 amps at 120/240/480 VAC
- Temperature Ranges: Ambient: –30° to +180° F Process: –30° to +180° F

Switches actuate under very low differential pressures. They're ideal for HVAC applications, ovens, and dryers. Use with air and other noncorrosive, noncombustible gases. Maximum pressure is 45″ H_2O. Connect with screw terminals. All have a 7⁄8″ conduit hole. UL listed, CSA certified, FM approved, and CE approved.

Actuation Range, inches of H_2O	Deactuation Point, inches of H_2O	Pipe Size		
0.07″- 0.15″	0.04″	1⁄8″	40915K54	$49.11
0.15″- 0.55″	0.1″	1⁄8″	40915K56	46.14
0.4″ - 1.6″	0.16″	1⁄8″	40915K61	46.14
1.4″ - 5.5″	0.3″	1⁄8″	40915K62	46.14
3″ -11.75″	0.4″	1⁄8″	40915K63	46.14
4″ -20″	0.5″	1⁄8″	40915K65	46.14

Dial-Indicating Differential-Pressure Switches

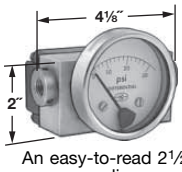

- Repeatability: ±2% of actuation range
- Pressure Sensing Element: Brass piston
- Pressure Connection: Brass NPT female
- Case Material: Brass
- Electrical Switch: SPDT, 0.25 amps at 120 VAC
- Temperature Ranges: Ambient: –4° to +176° F Process: –4° to +176° F

An easy-to-read 2½″ dial shows you the pressure differential across your process lines, making these switches a convenient choice to monitor your process. Use with compressed air, water, and hydraulic oil. All switches are housed in a NEMA 4X enclosure (washdown/corrosion resistant) with a glass lens. Switches have screw terminals with a 1⁄2″ NPT female conduit connection. Wetted parts are brass, Type 302 stainless steel, ceramic, PTFE, and Buna-N. Gauge accuracy is ±2% of the range. CSA certified.

Actuation Range, psid	Deactuation Point, psid	Maximum Pressure, psi	Pipe Size		
3-15	3	5,000	1⁄4″	40945K81	$316.95
6-30	6	5,000	1⁄4″	40945K82	316.95
10-50	10	5,000	1⁄4″	40945K83	316.95

Multi-Speed Pressure Chart Recorder

Select one of four recording speeds (6 hours, 24 hours, 7 days, or 31 days), three pressure ranges (0-50 psi, 0-150 psi, or 0-500 psi), and two chart rotations (single turn and continuous) to handle all of your pressure-recording needs. Use with compressed air, water, and hydraulic oil. It has a three-digit, 1⁄2″ LED display; 6″ chart diameter; and can be used freestanding or wall mounted with the included keyhole slots for 1⁄2″ dia. screw. Measures 9 1⁄4″ Ht. × 7 1⁄4″ Wd. × 2 3⁄4″ Dp.

Accuracy is ±1% full scale; response time is 1 second. Pressure connection is Type 17-4 PH stainless steel 1⁄4″ NPT male with 6-ft. cable for optional remote pressure monitoring. Case and lens material is polycarbonate. Ambient and process temperature ranges are 32° to 140° F. Recorder operates on 120 VAC, 50/60 Hz and has a battery backup (eight AA batteries required; not included). Furnished with two black recorder pens and one package (60/pkg.) of charts.

Chart Recorder	3446K66	Each	$595.73	Replacement Charts (60/Pkg.)	3446K49	Pkg.	$25.68
Replacement Black Recorder Pen	3446K53	Each	$12.66	AA Alkaline Batteries (4/Pkg.)	71455K53	Pkg.	$2.94

Pressure Chart Recorders

Continuously measure and document critical gas and liquid pressures for troubleshooting system problems as well as recording important process parameters. Furnished with one AA battery and one red recorder pen. All have ±2% full-scale accuracy and a brass NPT male pressure connection. Ambient and process temperature ranges are –22° to +122°F. Charts are not included (sold separately below). All have NEMA 4X enclosures for washdown and corrosion resistance.

4″ Chart Diameter

Recorders with a ***4″ chart diameter*** have a switch to select 24-hour or 7-day recording speed. They have one 3/16″ diameter hole for wall mounting. Response time is 1 sec. Case material is polybutylene terephthalate (PBT). Dimensions are 6¼″ Ht.×6″ Wd.×2⅞″ Dp. Recorders with an ***8″ chart diameter*** have two ⅜″ dia. keyhole slots for wall mounting. Response time is 5 sec. Case material is plastic. Dimensions are 10 5/16″ Ht.×9½″ Wd.×3 19/32″ Dp., unless noted.

To Order: For 8″ chart diameter recorders and all charts, please specify recording speed: 24 hour or 7 day, unless noted.

Pressure Range, psi	Pipe Size	Recorders	Each	Charts (60/Pkg.)	Pkg.
4″ Chart Diameter					
0- 100	¼″	**4069K75**	$486.42	**4069K11**	$37.92
0- 200	¼″	**4069K76**	486.42	**4069K13**	37.92
0- 300	¼″	**4069K77**	486.42	**4069K14**	37.92
0- 500	¼″	**4069K78**	486.42	**4069K15**	37.92
8″ Chart Diameter					
0- 200	¼″	**38045K2**♣	648.92	**38045K9**	37.92
0-1,000	¼″	**38045K3**▲	721.26	**38045K625**▲	37.92
Replacement Red Recorder Pen				**4069K98** Each	$9.32

▲ Not available in 7-day recording speed. ♣ Recorder with a 24-hour recording speed measures 9½″ Ht.×9½″ Wd.×4⅛″ Dp.

Washdown Pressure Data Loggers with Digital Display

This combination data logger and pressure display is great for local pressure monitoring as well as for storing measurements to download to a computer. Easily transfer data to your PC using the high-speed USB 2.0 connection or a portable flash memory card. Memory capacity is 64,000 data samples. Use with compressed air and water. Housed in an IP68 (protection against prolonged water submersion) enclosure. Has an LCD with 9/32″ high digits. Powered by one DL123 lithium battery (included).

Sampling interval is 1 sec. to 24 hours; response time is 45 seconds. All have a Type 316 stainless steel pressure sensor, a Type 316 stainless steel NPT male pressure connection, and a glass-filled ABS plastic case and lens. Dimensions are 3⅜″ Dia.×2 13/16″ Ht. Ambient and process temperature ranges are –22° to +176°F.

Software program is compatible with Windows 98 or better. PC requirements are a 386 or higher microprocessor, 16 MB RAM, a USB 2.0 port, and CD-ROM drive. It can be used with more than one logger. Cable is 6 ft. long.

Pressure Range	Accuracy, Full Scale	Resolution, psi	Pipe Size		
0-100 psi	±1%	0.1	¼″	**3053K21**	$540.58
0-300 psi	±1%	0.1	¼″	**3053K22**	540.58
0-500 psi	±1%	0.1	¼″	**3053K23**	648.92
Software Program and Download Cable				**3053K91**	99.74

Easy-Grip Pressure Testers

Use these pumps to generate test pressures. All testers have a vernier adjustment for pressure control.

Models ***with gauge*** are accurate to ±0.5%. They can also be used as calibrators.

Tester with a ***T-style handle*** also has an NPT female connection and a bleed valve for pressure venting. Wetted parts are acetal, stainless steel, and Buna-N.

Testers with a ***scissor-grip*** or a ***pistol-grip handle*** have a shutoff valve, 24″ long hose, and (where applicable) ¼″ swivel fitting for the reference gauge. Wetted parts for *compressed air* models are aluminum, brass, stainless steel, nylon, and Buna-N. *Hydraulic* models have a test-fluid reservoir and wetted parts of aluminum, brass, stainless steel, polycarbonate, and Buna-N.

With T-Style Handle

With Gauge and Pistol-Grip Handle

Application	Max. Gauge Pressure	Max. Pump Pressure	Pipe Size		
Without Gauge					
T-Style Handle					
Compressed Air	———	200 psi	⅛″	**3363K22**	$396.27
Scissor-Grip Handle					
Compressed Air	———	580 psi	¼″	**40135K11**	490.72
Pistol-Grip Handle					
Hydraulic	———	3,000 psi	¼″	**40135K31**	397.69
With Gauge					
Scissor-Grip Handle					
Compressed Air	30 psi	30 psi	¼″	**40135K51**	569.02
Compressed Air	100 psi	200 psi	¼″	**40135K52**	569.02
Compressed Air	200 psi	200 psi	¼″	**40135K53**	569.02
Pistol-Grip Handle					
Hydraulic	1,000 psi	3,000 psi	¼″	**40135K54**	443.30
Hydraulic	2,000 psi	3,000 psi	¼″	**40135K55**	465.85
Hydraulic	3,000 psi	3,000 psi	¼″	**40135K56**	484.51

Precision Pressure Testers

These precise testers use deadweights (nonmagnetic cast alloy or aluminum) and a hydraulic, single-screw piston pump to create a consistent, true pressure accurate to ±0.1%. They come furnished with a certificate of calibration traceable to the National Institute of Standards and Technology (NIST). They also include a test manifold, one or two piston and cylinder assemblies, a ratchet handle, O-ring, testing oil, and a carrying case. Pressure connections are ¼″ and ½″ NPT female. Wetted parts are aluminum, brass, stainless steel, Buna-N, and PTFE. The minimum weight increment (see table) is the smallest increment for producing and adjusting pressure.

Single-range testers have one piston and cylinder assembly to produce a specific pressure range. ***Dual-range*** have two interchangeable assemblies; each produces a different specified pressure range.

Pressure Range, psi	Min. Weight Increment, psi	No. of Weights		
Single Range				
10- 200	0.1	18	**4055K31**	$3,142.00
10- 400	0.1	20	**4055K32**	3,251.07
10- 600	0.1	22	**4055K33**	3,773.07
50-3,000	0.5	22	**4055K36**	3,968.96
Dual Range				
10-200, 50-1,000	0.1 and 0.5	18	**4055K37**	3,945.59
10-600, 50-3,000	0.1 and 0.5	22	**4055K39**	4,328.46
Replacement O-Ring Kit			**4055K54**	40.96

Pressure-Recording Film Sheets

Get an instant, permanent "topographical" image of pressure variation. Simply place one of these sheets between any two contacting surfaces and apply pressure. Use to measure pressing forces in bolted joints, welding fixtures, and jigs.

Low pressure sheet produces a gray-scale image of the pressure distribution, but does not measure magnitude. Sheets cannot be cut. Not rated for accuracy and resolution. Temp. range is 0° to 150°F.

Standard sheets produce a colored image of the pressure distribution; compare to the color chart (sold separately) to determine magnitude. Sheets can be cut. Accuracy is ±10%; resolution is 5-15 microns. Temp. range is 41° to 95°F.

Sample pack includes a color chart and one 3″×4″ piece of film for each of the five pressure ranges.

Low Pressure

Pressure Range, psi	11″×17″ Sheets	Each
0.020″ Thick		
2-20	**3145K22**	$18.95

Standard

Pressure Range, psi	10 5/8″×12″ Sheets	Each	10 5/8″×24″ Sheets	Each	10 5/8″×36″ Sheets	Each
0.008″ Thick★						
28- 85	**31705K631**	$83.85	**31705K632**	$167.69	**31705K633**	$251.54
70- 350	**31705K641**	68.64	**31705K642**	137.27	**31705K643**	205.91
350- 1,400	**31705K651**	35.63	**31705K652**	71.25	**31705K653**	106.88
0.004″ Thick						
1,400- 7,100	**31705K661**	35.63	**31705K662**	71.25	**31705K663**	106.88
7,100-18,500	**31705K671**	35.63	**31705K672**	71.25	**31705K673**	106.88
Color Chart			**31705K711**	Each		$5.00
Sample Pack			**31705K16**	Pkg.		$60.24

★ Includes two 0.004″ thick sheets of film that must be used together.

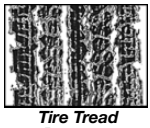

Tire Tread Pressure Distribution

Standard

About Dial Thermometers and Thermowells

Dial thermometers are the most common style of temperature gauge used in pipelines and tanks. They provide highly accurate measurements and have an easy-to-read dial. These thermometers are durable and work in a variety of applications. When choosing your stem length, please note that stem lengths listed include the threaded male connection.

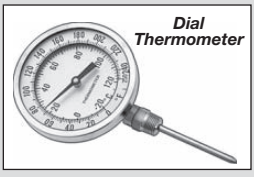

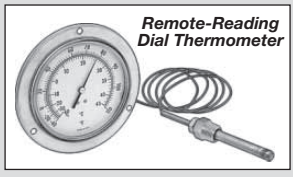

Remote-reading dial thermometers have a dial and sensor that are connected by a flexible cable, so you can mount the dial away from the sensor, for temperature monitoring at a distance or in panel installations. They provide greater resistance to vibration and shock, reducing needle flutter for easier temperature readings. These thermometers are often used in refrigeration applications.

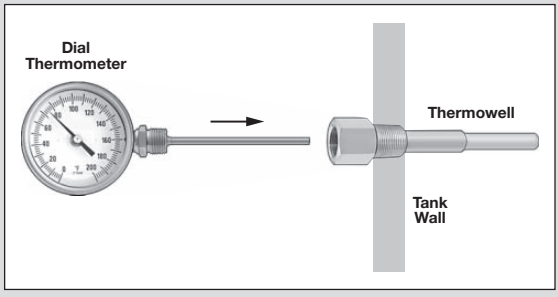

Why Use a Thermowell?

Thermowells (see page 590) are commonly used with threaded dial thermometers. They provide a protective barrier between the thermometer and application contents to minimize vibration, shock, pressure, and corrosion. Thermowells also allow you to replace your thermometer without draining your tank.

Dial Thermometers

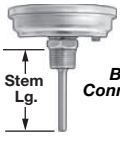

Back Connection

Bottom Connection

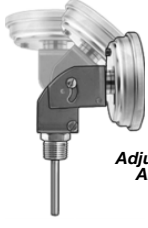

Adjustable Angle

Incorporate an easy-to-read dial thermometer into your application for quick temperature readings. Thermometers are made of Type 304 stainless steel. They have an airtight dial case to eliminate fogging and an external calibration adjustment screw. Stem dia. is ¼″. Accuracy is ±1% of full scale. Choose from thermometers with ½″ NPT male and ½″ BSPT (British Standard Pipe Taper) male connections.

To Order: Please specify temperature range from the listing below.

Dry thermometers have a glass lens. ***Silicone-filled thermometers*** reduce needle flutter due to vibration. They have an acrylic lens.

Back-connection thermometers with NIST certificate come with a certificate of calibration traceable to NIST (National Institute of Standards and Technology). *Adjustable-angle thermometers* have a dial case that pivots 90° from parallel to perpendicular to the stem and the thermometer rotates 360° to obtain the best viewing angle. Included set screws secure the desired angle.

Available Temperature Ranges

Temp. Range	Grads.	Temp. Range	Grads.	Temp. Range	Grads.	Temp. Range	Grads.
–40° to +160° F	2° F	+50° to +300° F	2° F	–20° to +120° C	1° C	0° to +250° F/–20° to +120° C	2° F/1° C
–20° to +120° F	2° F	+50° to +400° F	5° F	0° to +150° C	1° C	+25° to +125° F/ –5° to +50° C■	1° F/0.5° C
0° to +200° F	2° F	+50° to +550° F★	5° F			+50° to +500° F/+10° to +260° C★	5° F/2° C
+20° to +240° F	2° F	+150° to +750° F★	10° F				

★ Not available in silicone-filled. ■ Not available in bottom connection or adjustable angle in 2½″ stem length.

Stem Lg.	BACK CONNECTION 3″ Dial Size		BACK CONNECTION 3″ Dial Size with NIST Cert.		BACK CONNECTION 5″ Dial Size		BOTTOM CONNECTION 3″ Dial Size		BOTTOM CONNECTION 5″ Dial Size		ADJUSTABLE ANGLE 3″ Dial Size		ADJUSTABLE ANGLE 5″ Dial Size	
½″ NPT Male Connection														
Dry Thermometers														
2½″	3946K11	$47.54	3897K11	$149.42	3949K11	$55.70	3956K11	$73.23	3944K11	$86.08	3826K51	$85.23	3948K51	$108.48
4″	3946K14	47.54	3897K14	149.42	3949K14	55.70	3956K14	73.23	3944K12	86.08	3826K53	85.23	3948K53	108.48
6″	3946K17	47.54	3897K17	149.42	3949K17	55.70	3956K17	73.23	3944K14	86.08	3826K55	85.23	3948K55	108.48
9″	3946K21	47.54	3897K21	149.42	3949K21	55.70	3956K21	73.23	3944K19	86.08	3826K57	85.23	3948K57	108.48
12″	3946K24	53.29	3897K24	153.58	3949K22	59.42	3956K24	82.00	3944K22	90.82	3826K61	92.03	3948K61	114.27
15″	3946K26	61.38	3897K26	156.71	3949K25	67.21	3956K26	91.29	3944K24	96.51	3826K63	101.13	3948K63	123.53
18″	3946K31	68.00	3897K31	161.20	3949K29	74.59	3956K29	101.12	3944K27	102.45	3826K66	109.69	3948K66	131.82
24″	3946K41	82.23	3897K41	170.84	3949K31	87.57	3956K31	117.42	3944K31	115.11	3826K69	124.86	3948K69	147.08
30″	3946K92	96.53	3897K92	179.49	3949K41	107.78	3956K51	133.53	3944K41	129.25	3826K72	139.65	3948K72	162.23
36″	3946K93	111.32	3897K93	188.09	3949K42	125.03	3956K52	150.58	3944K42	143.00	3826K75	154.95	3948K75	177.90
Silicone-Filled Thermometers														
2½″	38295K11	76.20	3897K51	184.56	4070K11	89.31	4071K101	102.09	4071K5	119.67	33155K51	114.20	38425K51	139.36
4″	38295K14	76.20	3897K53	184.56	4070K13	89.31	4071K121	102.09	4071K52	119.67	33155K53	114.20	38425K53	139.36
6″	38295K17	76.20	3897K55	184.56	4070K15	89.31	4071K141	102.09	4071K53	119.67	33155K55	114.20	38425K55	139.36
9″	38295K21	76.20	3897K57	184.56	4070K17	89.31	4071K161	102.10	4071K55	119.67	33155K57	114.20	38425K57	139.36
12″	38295K24	81.95	3897K59	190.31	4070K19	96.19	4071K181	109.85	4071K56	128.48	33155K61	122.04	38425K61	146.43
½″ BSPT (British Standard Pipe Taper) Male Connection														
Dry Thermometers														
2½″	3898K21	60.20	3897K61	156.21	3898K31	77.51	3898K41	93.79	3898K51	111.69	3898K46	107.44	3898K63	129.82
4″	3898K22	60.20	3897K63	156.21	3898K32	77.51	3898K42	93.79	3898K52	111.69	3898K48	107.44	3898K65	129.82
6″	3898K23	60.20	3897K65	156.21	3898K33	77.51	3898K43	93.79	3898K53	111.69	3898K56	107.44	3898K68	129.82
9″	3898K24	60.20	3897K67	156.21	3898K34	77.51	3898K44	93.79	3898K54	111.69	3898K58	107.44	3898K76	129.82
12″	3898K25	67.51	3897K69	160.87	3898K35	86.34	3898K45	105.91	3898K55	121.73	3898K61	114.62	3898K78	139.40

For information about dial thermometers and thermowells, see page 588.

Dial Thermometers with Corrosion-Resistant Stem

A stainless steel stem gives these thermometers superior corrosion resistance. Choose from a Type 316 stainless steel stem and a PFA-coated Type 304 stainless steel stem for additional chemical resistance. Thermometers have a glass lens, an airtight dial case to eliminate fogging, and an external calibration adjustment screw. Stem diameter is 1/4". Accuracy is ±1% of full scale. Thermometers have a 1/2" NPT male back connection.

To Order: Please specify temperature range from the listing.

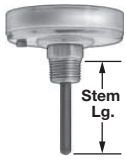

Available Temperature Ranges	
Temp. Range	**Grads.**
–40° to +160° F	2° F
0° to +200° F	2° F
0° to +250° F	2° F
+50° to +300° F	2° F
+50° to +500° F	5° F

Stem Lg.	3" Dial Size		5" Dial Size	
Type 316 Stainless Steel Stem				
2 1/2"	3541K41	$58.98	3541K61	$79.04
4"	3541K42	58.98	3541K62	79.04
6"	3541K43	58.98	3541K63	79.04
9"	3541K44	66.47	3541K64	85.63
12"	3541K45	75.15	3541K65	90.12
PFA-Coated Type 304 Stainless Steel Stem				
2 1/2"	3541K11	62.86	3541K21	76.92
4"	3541K13	62.86	3541K23	76.92
6"	3541K15	62.86	3541K25	76.92
9"	3541K17	74.08	3541K27	93.09
12"	3541K19	92.49	3541K29	101.02

Side-Connection Dial Thermometers

Great for use in tight areas, these thermometers mount with a side-connection but face upright for easy viewing. Thermometers are Type 304 stainless steel. They have a glass lens, an airtight dial case to prevent fogging, and an external calibration adjustment screw. Dial size is 3". Stem diameter is 1/4". Accuracy is ±1% of full scale. Connection is 1/2" NPT male.

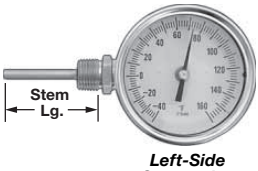

Left-Side Connection

To Order: Please specify temperature range from the listing.

Available Temperature Ranges			
Temp. Range	**Grads.**	**Temp. Range**	**Grads.**
–40° to +160° F	2° F	+50° to +400° F	5° F
0° to +200° F	2° F	+50° to +550° F	5° F
+20° to +240° F	2° F	0° to +250° F/–20° to +120° C	2° F/1° C

Stem Lg.	Left-Side Connection		Right-Side Connection	
2 1/2"	38575K1	$78.62	38575K9	$78.62
4"	38575K2	78.62	38575K13	78.62
6"	38575K3	78.62	38575K16	78.62

Heavy Duty Dial Thermometers with Thermowell

Equipped with a thermowell, these sturdy thermometers hold up against vibration, shock, pressure, and corrosive liquids. They have a back connection with dual 1/2" and 3/4" NPT male threads to fit most connections.

Thermometers are made of Type 304 stainless steel. They have an acrylic lens, an airtight dial case to eliminate fogging, and an external calibration adjustment screw. Dial size is 3". Accuracy is ±1% of full scale. With the thermowell, thermometers have a maximum pressure of 1,200 psi at 70° F.

To Order: Please specify temperature range from the listing.

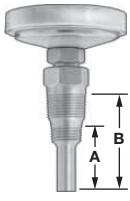

Available Temperature Ranges	
Temp. Range	**Grads.**
0° to 200° F	2° F
20° to 240° F	2° F
50° to 300° F	2° F
50° to 400° F	5° F
50° to 500° F	5° F

Lg. (A)	Lg. (B)	With Brass Thermowell		With Type 316 SS Thermowell	
1 3/4"	2 1/2"	3470K51	$130.95	3470K61	$167.71
3 3/4"	4 1/2"	3470K52	157.24	3470K62	191.19
5 3/4"	6 1/2"	3470K53	194.45	3470K63	217.00

Minimum/Maximum-Indicating Dial Thermometers

Keep tabs on minimum or maximum temperatures. The red pointer on these thermometers shows you the lowest or highest temperature reached since the last setting.

Thermometers are made of Type 304 stainless steel with a glass lens, an airtight dial case to eliminate fogging, and an external calibration adjustment screw. Dial size is 3". Stem diameter is 1/4". Accuracy is ±1% of full scale. Thermometers have a 1/2" NPT male back connection.

To Order: Please specify temperature range from the listing.

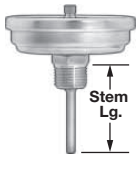

Available Temperature Ranges	
Temp. Range	**Grads.**
–40° to +160° F	2° F
0° to +140° F	1° F
0° to +200° F	2° F
+50° to +300° F	2° F
+150° to +750° F	10° F

Stem Lg.		
2 1/2"	3988K2	$76.53
4"	3988K4	76.53
6"	3988K6	76.53
9"	3988K8	76.52
12"	3988K9	76.53

Long-Reach Dial Thermometers

With an extra-long pointed stem, these thermometers extend into hard-to-reach areas with ease. They are often used in composting, waste management, and meat processing. Thermometers are made of Type 304 stainless steel. They have an acrylic lens, an airtight dial case to eliminate fogging, and an external calibration adjustment screw. Dial size is 3". Accuracy is ±1% of full scale. Thermometers have a 1/2" NPT male back connection.

***With Gripping Handle*—**Thermometers have a removable aluminum handle that threads onto the 1/2" NPT male connection. Dial has a dual temperature range of 0° to +200° F/–15° to +90° C with graduations of 2° F/1° C.

***Without Handle*—**Dial has a temperature range of 0° to +200° F with graduations of 2° F.

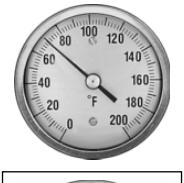

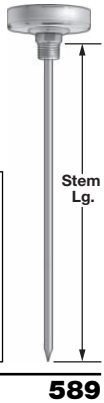

With Gripping Handle

Stem Lg.	With Gripping Handle: 1/4" Dia. Stem		With Gripping Handle: 3/8" Dia. Stem		Without Handle: 5/16" Dia. Stem	
12"	3564K11	$92.87	3564K21	$130.42	3657K12	$79.32
18"	3564K12	103.08	3564K22	140.58	3657K18	89.05
24"	3564K13	116.08	3564K23	165.34	3657K24	92.79
36"	3564K14	139.21	3564K24	199.74	3657K36	109.25
48"	3564K15	162.39	3564K25	235.34	3657K48	142.47
60"	3564K16	185.71	3564K26	288.16	3657K61	198.29
72"	3564K17	218.08	3564K27	326.45	3657K72	244.69

For information about dial thermometers and thermowells, see page 588.

Shock-Resistant Dial Thermometers

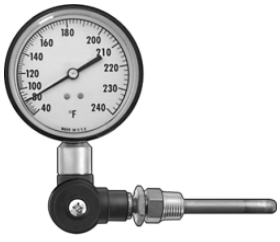

Get clear temperature readings in your high-shock environment with these dial thermometers. They reduce needle flutter caused by vibration, shock, and pressure surges. Dial case pivots 180° and swivels 180° to obtain the best viewing angle. Included set screw secures the desired angle. Dial case is Type 304 stainless steel and has a polycarbonate lens. Thermometers have a 7/16″ diameter copper stem. Accuracy is ±1% of full scale. Thermometers have a 1/2″ NPT male bottom connection. *Optional brass thermowell* has a 1/2″ NPT male connection.

Temp. Range	Grads.	Stem Lg.	3 1/2″ Dial Size		4 1/2″ Dial Size	
0° to +150° F/–15° to +65° C	2° F/1° C	3 3/8″	3938K73	$121.21	3938K63	$130.30
0° to +180° F/–20° to +80° C	1° F/1° C	3 3/8″	3938K74	121.21	3938K64	130.30
+40° to +240° F	2° F	3 3/8″	3938K75	121.21	3938K65	130.30
Optional Brass Thermowell			3960K3	$35.61		

Thermowells

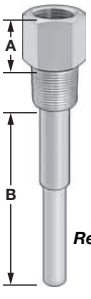

Quick Response

Use a thermowell in your tank to protect your thermometer from vibration, shock, pressure, and corrosive liquids. They also enable you to exchange thermometers without disturbing or draining the system. Thermowells have an external NPT male connection for installation in your tank or vessel and are for use with dial thermometers with a 1/2″ NPT male connection.

Brass thermowells have a maximum temperature of 400° F. Maximum pressure is 5,000 psi at 70° F. *Type 304 stainless steel* and *Type 316 stainless steel* thermowells have a maximum temperature of 1650° F. Maximum pressure is 7,000 psi at 70° F. Type 304 stainless steel has good corrosion resistance. Type 316 stainless steel has excellent corrosion resistance.

Quick-response thermowells have thinner walls that allow for faster heat transfer and quicker temperature readings. ***Thermowells for insulated tanks*** have an extra-long nut to accommodate insulated tank walls. ***Heavy duty thermowells*** have thicker walls and a tapered shank to withstand high-pressure and high-flow applications.

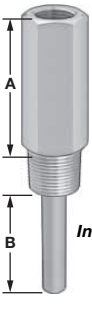

For Insulated Tanks

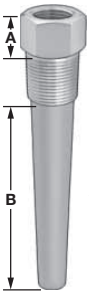

Heavy Duty

For Thermometer Stem Lg.	External Pipe Size	Nut Lg. (A)	Insertion Lg. (B)	Brass		Type 304 Stainless Steel		Type 316 Stainless Steel	
Quick-Response Thermowells									
For Thermometers with 1/4″, 5/32″, and 9/64″ Stem Dia.									
2 1/2″	1/2″	1 1/16″	1 1/8″	3957K67	$20.33	3957K68	$23.55	3957K69	$25.84
2 1/2″	3/4″	3/8″	1 5/8″	3957K77	20.33	3957K78	25.15	3957K79	31.76
4″	1/2″	1″	2 1/2″	3957K64	22.14	3957K65	24.39	3957K66	30.66
4″	3/4″	3/4″	2 1/2″	3957K11	22.50	3957K21	26.27	3957K54	33.44
4″	1″	3/4″	2 1/2″	3957K46	33.75	3957K47	44.07	3957K58	48.61
6″	1/2″	1″	4 1/2″	3957K37	29.32	3957K38	36.87	3957K51	44.43
6″	3/4″	3/4″	4 1/2″	3957K12	30.93	3957K22	36.79	3957K55	46.13
6″	1″	3/4″	4 1/2″	3957K48	45.07	3957K49	61.05	3957K59	65.90
9″	1/2″	1″	7 1/2″	3957K39	45.39	3957K41	59.25	3957K52	66.23
9″	3/4″	3/4″	7 1/2″	3957K13	45.39	3957K23	62.25	3957K56	69.06
9″	1″	3/4″	7 1/2″	3957K91	61.25	3957K92	82.73	3957K93	89.76
12″	1/2″	1″	10 1/2″	3957K42	63.04	3957K43	83.97	3957K53	99.15
12″	3/4″	3/4″	10 1/2″	3957K44	63.04	3957K45	85.89	3957K57	99.15
12″	1″	3/4″	10 1/2″	3957K94	83.02	3957K95	108.05	3957K96	118.85
18″	1/2″	1″	16 1/2″	3957K71	117.43	3957K72	129.39	3957K73	150.39
18″	3/4″	3/4″	16 1/2″	3957K84	93.93	3957K85	133.64	3957K86	150.39
24″	3/4″	3/4″	22 1/2″	3957K87	140.54	3957K88	176.25	3957K89	199.87
For Thermometers with 3/8″ and 5/16″ Stem Dia.									
4″	1/2″	1″	2 1/2″	3957K221	24.39	3957K222	31.14	3957K223	44.89
4″	3/4″	3/4″	2 1/2″	3957K261	27.85	3957K262	30.39	3957K263	44.89
6″	1/2″	1″	4 1/2″	3957K231	31.14	3957K232	43.14	3957K233	54.39
6″	3/4″	3/4″	4 1/2″	3957K271	31.14	3957K272	45.79	3957K273	56.14
9″	1/2″	1″	7 1/2″	3957K241	47.57	3957K242	67.71	3957K243	83.07
9″	3/4″	3/4″	7 1/2″	3957K281	47.57	3957K282	67.75	3957K283	83.07
Thermowells for Insulated Tanks									
For Thermometers with 1/4″, 5/32″, and 9/64″ Stem Dia.									
6″	3/4″	2 3/4″	2 1/2″	3957K31	32.14	3957K32	36.82	3957K61	44.91
9″	1/2″	4″	4 1/2″	3957K24	47.57	3957K25	62.16	3957K26	66.46
9″	3/4″	3 3/4″	4 1/2″	3957K33	47.57	3957K34	62.16	3957K62	66.37
Heavy Duty Thermowells									
For Thermometers with 1/4″, 5/32″, and 9/64″ Stem Dia.									
4″	3/4″	3/4″	2 1/2″	3957K137	28.14	3957K138	30.00	3957K139	42.75
4″	1″	3/4″	2 1/2″	3957K162	36.14	3957K163	45.21	3957K164	54.32
6″	3/4″	3/4″	4 1/2″	3957K141	30.93	3957K142	40.89	3957K143	51.75
9″	3/4″	3/4″	7 1/2″	3957K144	45.39	3957K145	64.50	3957K146	82.50
12″	3/4″	3/4″	10 1/2″	3957K147	61.89	3957K148	82.50	3957K149	101.50

Thermowells with Sanitary Quick-Clamp Connection

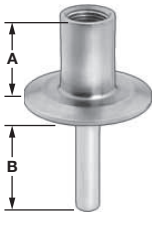

Now you can use your standard dial thermometer in a sanitary application with one of these thermowells. Safe for use in food, beverage, pharmaceutical, and similar applications, these thermowells meet 3-A sanitary standard requirements and have a sanitary quick clamp connection. For sanitary quick-clamp fittings, see pages 208-210. Thermowells accept dial thermometers with a 1/2″ NPT male connection and 1/4″ stem diameter. They are made of Type 316L stainless steel that's polished to a 16-20 Ra finish. The pressure and temperature ratings vary based on the sanitary clamp and gasket used.

For Thermometer Stem Lg.	Lg. (A)	Insertion Lg. (B)	For 1″ and 1 1/2″ Tube OD Flange OD			For 2″ Tube OD Flange OD		
2 1/2″	1 1/16″	1 5/8″	2″	3998K12	$94.63	2 1/2″	3998K31	$124.19
4″	1 3/4″	2 1/2″	2″	3998K14	106.30	2 1/2″	3998K33	128.07
6″	1 3/4″	4 1/2″	2″	3998K16	125.74	2 1/2″	3998K35	136.11
9″	1 3/4″	7 1/2″	2″	3998K18	147.13	2 1/2″	3998K37	155.17

For information about dial thermometers, see page 588.

Compact Light Duty Dial Thermometers

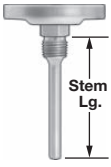

Don't struggle with a standard connection that's too big—these thermometers have a 1/4″ NPT male back connection that's perfect for smaller locations. Thermometers are made of Type 304 stainless steel. They have a glass lens and an airtight dial case to eliminate fogging. Stem diameter is 1/4″. Accuracy is ±1% of full scale.

To Order: Please specify temperature range from the listing below.

Available Temperature Ranges

Temp. Range	Grads.	Temp. Range	Grads.
–40° to +160° F	2° F	+50° to +400° F	5° F
0° to +200° F	2° F	+150° to +750° F	10° F
0° to +250° F	2° F	–50° to +100° C	2° C
+50° to +300° F	2° F	0° to +200° C	2° C

Stem Lg.	2″ Dial Size		3″ Dial Size	
2 1/2″	3989K2	$40.76	3989K81	$53.93
4″	3989K5	40.76	3989K82	53.93
6″	3989K7	40.76	3989K83	53.93
9″	3989K91	40.76	3989K84	53.99
12″	3989K92	46.28	3989K85	61.69
24″	3989K93	64.78	3989K86	79.96

Panel-Mount Dial Thermometers

The back flange on these thermometers makes them ideal for mounting on instrument or control panels. Flange is made of Type 304 stainless steel and has three mounting holes.

Dial case is Type 430 stainless steel and is sealed with a silicone gasket for water resistance. The 1/4″ diameter stem is Type 304 stainless steel. Thermometers have a glass lens. Dial size is 2″. Thermometers have an unthreaded back connection.

Stem Lg.	Accuracy	Flange OD	Bolt Circle Dia.	Mounting Hole Dia.		
–40° to +160° F Temp. Range; 2° Graduations						
4″	±3° F	3 1/4″	2 7/8″	5/32″	3561K12	$20.60
6″	±3° F	3 1/4″	2 7/8″	5/32″	3561K22	21.75
9″	±3° F	3 1/4″	2 7/8″	5/32″	3561K42	23.36
0° to +220° F Temp. Range; 2° Graduations						
4″	±2° F	3 1/4″	2 7/8″	5/32″	3561K13	20.60
6″	±2° F	3 1/4″	2 7/8″	5/32″	3561K23	21.75
9″	±2° F	3 1/4″	2 7/8″	5/32″	3561K43	23.36

Clip-On Dial Thermometers

Attach these thermometers to the rims of tanks, trays, vats, and other containers. The clip accommodates wall thicknesses from 1/2″ to 3/4″. Thermometer and clip are made of Type 304 stainless steel. They have an airtight dial case to eliminate fogging and an external calibration adjustment screw. Stem diameter is 3/16″. Accuracy is ±1% of full scale. Thermometers have an unthreaded back connection.

1 3/4″ dial size thermometers with a maximum temperature of 300° F/110° C have a polycarbonate lens; those with a maximum temperature higher than 300° F have a glass lens. ***2″ dial size*** thermometers have a glass lens. ***3″ dial size*** thermometers have a polycarbonate lens.

To Order: Please specify temperature range from the listing below.

Available Temperature Ranges

Temp. Range	Grads.	Temp. Range	Grads.
–40° to +160° F	2° F	+50° to +300° F	2° F
0° to +140° F	2° F	+50° to +400° F	5° F
0° to +180° F	2° F	+50° to +500° F	5° F
0° to +220° F	2° F	+150° to +750° F	10° F
0° to +250° F	2° F	–10° to +110° C	1° C
+25° to +125° F	1° F		

Stem Lg.	1 3/4″ Dial Size		2″ Dial Size		3″ Dial Size	
5″	39675K21	$24.35	4101K51	$33.68	____	____
8″	39675K11	24.35	4101K31	33.68	38305K33	$38.17

Dial Thermometers for Food Processing

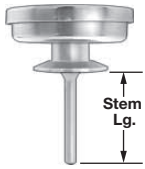

Sanitary Quick Clamp

Nonglass lenses make these thermometers especially suitable for use in food-processing environments. Thermometers are made of Type 304 stainless steel. They have a back connection and an airtight dial case to eliminate fogging.

1/2″ NPT male connection thermometers have an external calibration adjustment screw. Stem diameter is 1/4″. Accuracy is ±1% of full scale. *3″ dial size* have a polycarbonate lens; *5″ dial size* have an acrylic lens.

Sanitary quick-clamp connection thermometers have a sanitary fitting and meet 3-A sanitary standard requirements. For sanitary quick-clamp fittings, see pages 208-210. Thermometers have an acrylic lens. Stem diameter is 5/16″. Accuracy is within one graduation.

To Order: Please specify temperature range from the listing below.

Available Temperature Ranges

Temp. Range	Grads.	Temp. Range	Grads.
–40° to +120° F ♦	2° F	+50° to +550° F ♣	5° F
0° to +200° F	2° F	0° to +100° C	1° C
0° to +250° F	2° F	0° to +150° C	1° C
+50° to +300° F	2° F		

♦ Graduations are 1° F for sanitary quick-clamp style.
♣ Not available in sanitary quick-clamp style.

Stem Lg.	3″ Dial Size		5″ Dial Size	
1/2″ NPT Male Connection				
2 1/2″	32665K21	$60.12	32665K51	$95.27
4″	32665K22	60.12	32665K52	95.27
6″	32665K23	60.12	32665K53	95.27
1 1/2″ Sanitary Quick-Clamp Connection				
2 1/2″	32665K11	192.82	32665K15	221.82
4 1/2″	32665K12	192.82	32665K16	221.82
2″ Sanitary Quick-Clamp Connection				
2 1/2″	32665K41	224.34	32665K43	253.33
4 1/2″	32665K42	224.34	32665K44	253.33

Pocket Dial Thermometers

Small enough to fit in your pocket, these thermometers are made of 300 series stainless steel. They have a polycarbonate lens and an external calibration adjustment screw. Stem is 1/8″ Dia. × 5″ Lg. Accuracy is ±1% of full scale. Thermometers have an unthreaded back connection. All come with a protective plastic sleeve.

Temp. Range	Grads.	1″ Dial Size		1 3/4″ Dial Size	
Standard					
–40° to +160° F	2° F	3950K11	$13.08	____	____
+50° to +550° F	5° F	3950K14	13.08	3950K34	$21.61
0° to +150° C	2° C	____	____	3950K36	21.61
0° to +250° C	2° C	____	____	3950K37	21.61
NSF-Certified for Food Service					
0° to +220° F	2° F	3950K12	13.75	3950K32	20.62
+25° to +125° F	1° F	3950K13	13.75	____	____

Pocket Glow-in-the-Dark Dial Thermometers

Don't strain your eyes in low light. A luminescent dial face gives clear temperature readings in all lighting conditions. Thermometers are made of Type 304 stainless steel. They have a polycarbonate lens and an external calibration adjustment screw. Stem is 1/8″ Dia. × 5″ Lg. Accuracy is ±1% of full scale. Thermometers have an unthreaded back connection. They come with a protective plastic sleeve.

Temp. Range	Grads.	Dial Size		
–40° to +160° F	2° F	1″	4129K11	$20.04
–40° to +160° F	2° F	1 3/8″	4129K25	22.69
0° to +220° F	2° F	1″	4129K12	20.04
0° to +220° F	2° F	1 3/8″	4129K21	22.69

Remote-Reading Dial Thermometers

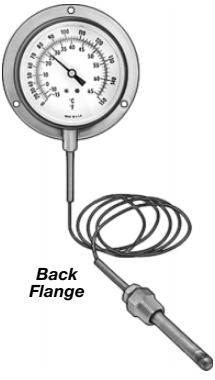

With greater shock and vibration resistance than standard dial thermometers, these remote-reading dial thermometers are ideal for refrigeration applications. A cable connects the dial and the stem so you can mount the dial away from your system. Dial case is made of 300 series stainless steel and has a polycarbonate lens. Cable and 7/16″ diameter stem are copper. Accuracy is ±1% of full scale. Connection is 1/2″ NPT male. *Note:* To ensure accuracy, the dial must be mounted no more than 5 feet above or below the stem.

Back flange and ***front flange*** mount thermometers have three mounting holes. Front flange thermometers with a 3 1/2″ dial size require a 3 5/8″ panel cutout; 4 1/2″ dial size require a 4 5/8″ panel cutout.

Bracket mount thermometers have an adjustable bracket that allows the dial to pivot 90° front to back. Bracket has two mounting holes spaced 1 1/2″ center-to-center.

Optional brass thermowell with 1/2″ NPT male connection is sold separately below.

To Order: Please specify temperature range from the listing below.

Available Temperature Ranges

Temp. Range	Grads.
–40° to +110° F/–40° to +43° C	1° F/1° C
–20° to +100° F/–30° to +35° C	2° F/1° C
0° to +150° F/–15° to +65° C	2° F/1° C
0° to +180° F/–20° to +80° C	1° F/1° C
+30° to +300° F/ 0° to +150° C	2° F/1° C
+40° to +240° F	2° F
+100° to +350° F	2° F

Dial Size	Cable Lg.	Stem Lg.	FLANGE Flange OD	Bolt Circle Dia.	Mounting Hole Dia.	Back		Front		BRACKET MOUNT Mounting Hole Dia.		
3 1/2″	5 ft.	3 1/4″	4 3/4″	4 5/16″	5/32″	3960K91	$75.76	3960K81	$75.76	1/4″	33125K11	$78.79
3 1/2″	10 ft.	3 1/4″	4 3/4″	4 5/16″	5/32″	3960K92	95.45	3960K82	95.45	1/4″	33125K12	98.48
3 1/2″	15 ft.	3 1/4″	4 3/4″	4 5/16″	5/32″	3960K93	115.15	3960K83	115.15	1/4″	33125K13	118.18
3 1/2″	20 ft.	3 1/4″	4 3/4″	4 5/16″	5/32″	3960K94	134.85	3960K84	134.85	1/4″	33125K14	137.88
4 1/2″	5 ft.	3 1/4″	5 7/8″	5 3/8″	7/32″	3952K81	104.55	3952K11	104.55	1/4″	33125K21	107.58
4 1/2″	10 ft.	3 1/4″	5 7/8″	5 3/8″	7/32″	3952K82	124.24	3952K12	124.24	1/4″	33125K22	127.27
4 1/2″	15 ft.	3 1/4″	5 7/8″	5 3/8″	7/32″	3952K83	143.94	3952K13	143.94	1/4″	33125K23	146.97
4 1/2″	20 ft.	3 1/4″	5 7/8″	5 3/8″	7/32″	3952K84	163.64	3952K14	163.64	1/4″	33125K24	166.67
Optional Brass Thermowell											3960K3	$35.61

High-Temperature Remote-Reading Dial Thermometers with Thermowell

Measure high temperatures while keeping yourself out of the heat. This remote-reading thermometer tolerates high temperatures and includes a protective thermowell. Thermometer dial and stem are connected by an armored cable, allowing the dial to be mounted away from your system. Dial case is enamel-coated aluminum and has a back flange mount with three mounting holes. The lens is glass. Cable is Type 302 stainless steel and stem is Type 304 stainless steel. Stem diameter is 5/8″. Accuracy is ±1% of full scale.

A thermowell with a 3/4″ NPT male connection is included. Thermowell is brass with a maximum psi of 5,200 at 70° F, except for temperature ranges of 0° to 500° F and 50° to 750° F, for which the thermowell is Type 304 stainless steel with a maximum psi of 7,000 at 70° F.

To Order: Please specify temperature range from the listing below.

Available Temperature Ranges

Temp. Range	Grads.	Temp. Range	Grads.
–20° to +120° F	2° F	0° to +500° F	5° F
0° to +200° F	2° F	+30° to +240° F	2° F
0° to +300° F	2° F	+50° to +750° F	10° F

Dial Size	Cable Lg.	Thermowell Lg.	Flange OD	Bolt Circle Dia.	Mounting Hole Slot	Back Flange	
4 1/2″	5 ft.	3 1/2″	5 7/8″	5 3/8″	1/4″ × 5/16″	3953K12	$474.88
4 1/2″	10 ft.	3 1/2″	5 7/8″	5 3/8″	1/4″ × 5/16″	3953K15	496.42
4 1/2″	20 ft.	3 1/2″	5 7/8″	5 3/8″	1/4″ × 5/16″	3953K19	534.94

NSF-Certified Remote-Reading Dial Thermometers with Unthreaded Stem

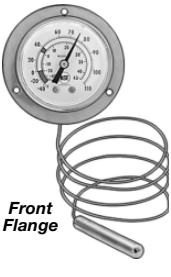

Ideal for use in food-processing and preparation areas, these NSF-certified thermometers are also more resistant to shock and vibration than standard dial thermometers. With an unthreaded stem, they're ready for use—simply drop the stem into your system. Thermometer dial and stem are connected by a thin cable, allowing the dial to be mounted away from your system. Dial case is 300 series stainless steel with an acrylic lens. Cable and stem are tin-plated copper. Stem diameter is 3/8″. Accuracy is ±1% of full scale. Flange has three mounting holes.

Front flange mount thermometers with a 2″ dial size require a 2 1/16″ panel cutout; 2 1/2″ dial size require a 2 9/16″ panel cutout; and 4 1/2″ dial size require a 4 5/8″ panel cutout.

To Order: Please specify temperature range from the listing below.

Available Temperature Ranges

Temp. Range	Grads.
–40° to +60° F/–40° to +15° C	2° F/1° C
–40° to +110° F/–40° to +43° C	2° F/1° C
+40° to +240° F/ 0° to +115° C	2° F/1° C

Dial Size	Cable Lg.	Stem Lg.	Flange OD	Bolt Circle Dia.	Mounting Hole Dia.	Back Flange		Front Flange	
2″	4 ft.	2 1/2″	2 15/16″	2 9/16″	9/64″	38515K51	$48.53	38515K53	$48.53
2 1/2″	4 ft.	2 1/2″	3 11/16″	3 5/16″	11/64″	38515K25♣	51.33	38515K55	51.33
4 1/2″	4 ft.	2 1/2″	5 7/8″	5 3/8″	7/32″	38515K57	89.62	38515K59	89.61

♣ Only available in –40° to +110° F/–40° to +43° C.

Floating Dial Thermometers

Stay on top of changing temperatures—a removable Santoprene rubber float keeps these thermometers on the surface of liquid-filled containers. Thermometers are Type 304 stainless steel with a polycarbonate lens. They have an airtight dial case to eliminate fogging and an external calibration adjustment screw. Dial size is 1 3/4″. Stem diameter is 1/8″. Accuracy is ±1% of full scale. Thermometers have an unthreaded back connection.

Stem Lg.	Temp. Range	Grads.		
5″	0° to 140° F	2° F	3992K13	$30.05
5″	0° to 220° F	2° F	3992K14	30.05
8″	0° to 140° F	2° F	3992K23	30.05
8″	0° to 220° F	2° F	3992K24	30.05

For information about dial thermometers, see page 588.

Magnetic-Back Dial Surface Thermometers

Don't guess the temperature of your metallic surfaces—these thermometers can measure the temperature of dies, annealing ovens, welded materials, and generators. All dial cases are made of aluminum. Accuracy is ±2% of full scale.

A&B—Lens is glass. Dial is 2″ Dia.×½″ Ht. *Style B* have min./max. indicating needles. Needles are reset with a magnetic wand (included).

C—Lens is polycarbonate. Dial is 2⅛″ Dia.×15/16″ Ht. and is fully enclosed for extra durability.

D—These are perfect for monitoring the temperature of gas tanks. Lens is polycarbonate. Dial diameter is 1¾″. Overall size is 4¼″ Lg.×2¼″ Wd.×9/16″ Thick.

A&C

B

D

Temp. Range	Grads.	Holding Force of Magnets		
(A) Plain Dial				
–100° to +160° F	2° F	1.3 lbs.	**3982K17**	$38.71
0° to +150° F	1° F	1.3 lbs.	**3982K19**	38.71
0° to +250° F	2° F	1.3 lbs.	**3982K11**	38.71
0° to +500° F	5° F	1.3 lbs.	**3982K12**	38.71
+50° to +750° F	10° F	1.3 lbs.	**3982K13**	38.71
–20° to +120° C	1° C	1.3 lbs.	**3982K14**	38.71
–20° to +250° C	2° C	1.3 lbs.	**3982K15**	38.71
+10° to +400° C	5° C	1.3 lbs.	**3982K16**	38.71
(B) Min./Max. Indicating Dial				
–100° to +160° F	2° F	1.3 lbs.	**3982K41**	56.48
0° to +150° F	1° F	1.3 lbs.	**3982K42**	56.48
0° to +250° F	2° F	1.3 lbs.	**3982K43**	56.48
0° to +500° F	5° F	1.3 lbs.	**3982K44**	56.48
+50° to +750° F	10° F	1.3 lbs.	**3982K45**	56.48
–20° to +120° C	1° C	1.3 lbs.	**3982K47**	56.48
–20° to +250° C	2° C	1.3 lbs.	**3982K48**	56.48
+10° to +400° C	5° C	1.3 lbs.	**3982K51**	56.48
(C) Heavy-Duty Dial				
–20° to +160° F	2° F	13 lbs.	**3412K55**	107.41
(D) Heavy-Duty Dial for Mounting on Tanks				
0° to +150° F	1° F	13 lbs.	**3391K43**	129.63
0° to +250° F	2° F	13 lbs.	**3391K45**	129.63

Pipe-Mount Dial Surface Thermometers

Measure surface temperatures on pipes and other cylindrical objects. Thermometers are aluminum with a glass lens. Dial is 2″ Dia.×1″ Ht. Accuracy is ±2% of full scale.

Strap-on thermometer comes with three flexible, 300 series stainless steel springs that wrap around pipe.

Snap-on thermometers have a spring-loaded steel clip that holds them firmly in place.

To Order: Please specify temperature range from the listing below.

Strap On

Snap On

Available Temperature Ranges

Temp. Range	Grads.	Temp. Range	Grads.
–50° to +250° F	2° F	–40° to +120° C	2° C
0° to +150° F	2° F	+20° to +180° C	2° C
+70° to +370° F	2° F	+20° to +260° C▲	2° C
+70° to +500° F▲	5° F	▲ Not available in snap-on style.	

For Pipe OD

Strap On		
¾″ to 6″	**4155K9**	$50.28
Snap On		
¾″ to ⅞″	**4100K4**	50.28
1″ to 1⅝″	**4100K5**	50.28
1⅝″ to 2⅜″	**4100K6**	50.28

Pocket Glass Thermometers

Small enough to slide into your pocket, these total-immersion glass thermometers have an aluminum case with a utility clip. These mercury-free thermometers are filled with red spirits (isoamyl benzoate). Thermometers are 5½″ long.

Armored thermometers have a protective aluminum housing to prevent damage from being dropped and bumped.

Temp. Range	Grads.		
Plain			
–30° to +120° F	2° F	**3913K71**	$16.64
0° to +220° F	2° F	**3913K72**	16.62
–40° to +50° C	1° C	**3913K73**	16.65
–10° to +110° C	1° C	**3913K74**	16.65
Armored			
–30° to +120° F	2° F	**3913K81**	17.75
0° to +220° F	2° F	**3913K82**	17.75
–40° to +50° C	1° C	**3913K83**	17.75
–10° to +110° C	1° C	**3913K84**	17.75

Plain

Armored

Glass Thermometers

No longer filled with mercury, glass thermometers are quick, safe, and handy tools for on-the-go temperature readings. All thermometers are filled with spirits (isoamyl benzoate). Thermometers are 12″ long, unless noted.

Partial-immersion thermometers are great for shallow areas where total immersion is not possible. Partial-immersion depth is 3″.

Style F thermometers are FEP coated to absorb shock and contain glass and liquid in case of breakage. ***Style G*** thermometers are armored with a protective nickel-plated brass housing to prevent damage from being dropped and bumped.

		TOTAL IMMERSION				***PARTIAL IMMERSION***			
Temp. Range	**Grads.**	***Blue Fill***		***Red Fill***		***Blue Fill***		***Red Fill***	
(E) Plain									
–30° to +120° F	1° F	—	—	**38935K21**	$31.00	—	—	**38935K41**	$16.88
–4° to +230° F	2° F	**6182K41**	$13.38	**38935K25**	12.76	**6182K51**	$14.27	**38935K42**	24.37
0° to +300° F	2° F	**6182K42**	14.27	**38935K26**	13.84	**6182K52**	14.27	**38935K43**	13.84
+20° to +500° F	2° F	—	—	—	—	**6182K53**♦	16.01	—	—
–35° to +50° C	1° C	**6182K43**	14.27	—	—	**6182K54**	14.27	—	—
–20° to +110° C	1° C	**6182K44**	13.96	**38935K28**	23.84	**6182K55**	13.96	**38935K47**	13.78
–20° to +150° C	1° C	**6182K45**	13.96	**38935K29**	13.84	**6182K56**	13.96	**38935K48**	13.64
(F) FEP Coated									
–4° to +230° F	2° F	**6442K31**	29.47	**6442K74**★	29.56	**6442K81**	29.47	—	—
0° to +300° F	2° F	**6442K32**	29.35	—	—	**6442K82**	29.35	—	—
–20° to +110° C	1° C	**6442K33**	29.41	—	—	**6442K83**	29.41	—	—
–20° to +150° C	1° C	**6442K34**	29.33	—	—	**6442K84**	29.42	—	—
(G) Armored									
–30° to +120° F	1° F	—	—	**38935K38**	47.18	—	—	**38935K71**	47.18
–4° to +230° F	2° F	**6182K61**	31.40	—	—	**6182K71**	30.55	—	—
0° to +300° F	2° F	**6182K62**	32.57	—	—	**6182K72**	32.57	—	—
+20° to +500° F	2° F	—	—	—	—	**6182K73**♦	43.93	—	—
–35° to +50° C	1° C	**6182K63**	32.57	—	—	—	—	—	—
–20° to +110° C	1° C	**6182K64**	31.14	—	—	**6182K74**	31.14	—	—
–20° to +150° C	1° C	**6182K65**	31.72	—	—	**6182K75**	31.72	—	—

♦ Thermometer is 16″ long. ★ –4° to +230° F/–20° to +110° C; grads. are 2° F/1° C.

E&F

G

Compact Glass Thermometers with Thermowell

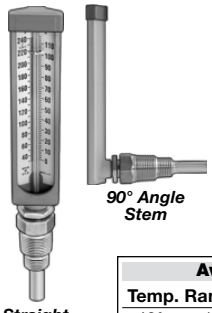

90° Angle Stem

Straight Stem

Protected from shock, pressure, corrosion, and breakage, these glass thermometers have a detachable brass thermowell and fixed-angle ABS plastic housing with glass viewing window. With a 5″ scale height, they are also good for low-clearance areas.

Thermometers are filled with mercury-free blue spirits (kerosene). Scale shows °F/°C. The stem is brass and is 2¾″ long. Included thermowell has dual ½″ and ¾″ NPT male threads to fit most connections.

To Order: Please specify temperature range from the listing below.

Available Temperatures Ranges

Temp. Range	Grads.
–40° to +110° F/–40° to +40° C	2° F/2° C
+20° to +180° F/ –6° to +80° C	2° F/1° C
+30° to +240° F/ 0° to +114° C	2° F/2° C
+50° to +400° F/+10° to +204° C	5° F/2° C

Stem Style		
Straight	7671K41	$43.33
90° Angle	7671K43	43.33

Adjustable-Angle Solar-Powered Digital Thermometers

Without Thermowell

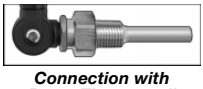

Connection with Brass Thermowell

Operating on indoor light, there are no batteries to replace on these digital thermometers. Case pivots 180° and swivels 180° to obtain the best viewing angle. Included set screw secures the desired angle. Housing is ABS plastic. Thermometers are °F/°C selectable with a temperature range of –50° to +300° F/ –45° to +150° C. Readings update every 10 seconds. Resolution is 1° F/1° C. Accuracy is ±1% of full scale.

Thermometers without thermowell have a 1¼″-18 swivel union connection.

Thermometers with brass thermowell have a ¾″ NPT male connection on the thermowell.

Stem Lg.	Without Thermowell		With Brass Thermowell	
3½″	8020K21	$63.05	8020K11	$74.14
6″	8020K22	74.75	8020K12	89.72

Adjustable-Angle Glass Thermometers

Aluminum-Housed Without Thermowell

Great for heating, ventilating, and air conditioning applications, these thermometers pivot 180° and swivel 180° to obtain the best viewing angle. They are mercury-free. Scale shows °F/°C.

Aluminum-Housed Blue-Fill Thermometers

Thermometers are filled with blue spirits (kerosene). They have an acrylic viewing window. Stem is zinc.

To Order: Please specify temperature range from the listing below.

Thermometers without thermowell come with a fitting to convert the straight threads to a ¾″ NPT male connection.

Thermometers with thermowell are protected from shock and pressure in your tank or pipeline. Connection is ¾″ NPT male.

Available Temperature Ranges

Temp. Range	Grads.
–40° to +110° F	2° F
0° to +160° F	2° F
+20° to +180° F	2° F
+30° to +240° F	2° F
+30° to +300° F	5° F ♦
+50° to +400° F	5° F

♦ For 9″ scale, graduations are 2° F.

Stem Lg.	Without Thermowell		With Brass Thermowell		With Type 316 SS Thermowell	
7″ High Scale						
3½″	3938T74	$46.67	3938T76	$49.87	3938T78	$119.79
9″ High Scale						
3½″	3938T83	46.67	3938T85	49.87	3938T87	119.79
6″	3938T84	53.31	3938T86	64.54	3938T88	170.54

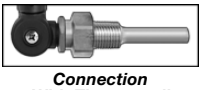

Connection With Thermowell

ABS Plastic-Housed Green-Fill Thermometers

Thermometers are filled with green spirits (mineral oil). Scale is 9″ high. Thermometers have a glass viewing window and detachable brass thermowell. Stem is zinc and 2½″ long. Thermowell connection is ¾″ NPT male.

Temp. Range	Grads.		
+20° to +180° F/ –6° to +82° C	2° F/1° C	3565K28	$55.43
+30° to +240° F/ 0° to +115° C	2° F/1° C	3565K29	55.43
+50° to +400° F/+10° to +204° C	5° F/2° C	3565K41	55.43

Digital Thermometers with NIST Certificate

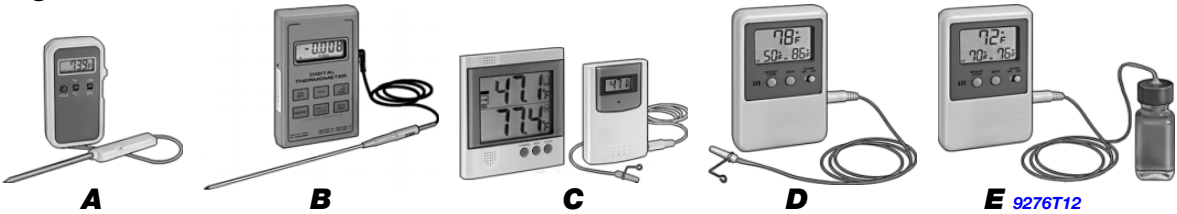

A **B** **C** **D** **E** *9276T12*

All thermometers conform to NIST (National Institute of Standards and Technology) standards and include a certificate of calibration traceable to NIST. Thermometers are °F/°C selectable. Batteries are included.

ⓘ For a specification sheet with additional information such as probe dimensions, go to mcmaster.com and search for the part number.

		Temp. Range	Accuracy	Probe Style		
(A)	Palm-Grip Thermometer	–58° to +302° F	±1.8° F	Air/Immersion	9264T11	$35.89
(B)	High-Accuracy Thermometer with Min./Max. Memory	–58° to +302° F	±0.6° F	Air/Immersion	9266T21	467.71
(C)	Wireless Remote-Monitoring Thermometer	–58° to +158° F	±1.8° F	Air/Immersion	4097K12	97.43
(D)	Thermometer with Min./Max. Display	–58° to +158° F	±1.8° F	Air/Immersion	9268T24	52.85
(E)	Freezer Thermometer with Min./Max. Display	–58° to +158° F	±1.8° F	Bottle	9276T12	56.11
(E)	High-Accuracy Freezer Thermometer	–58° to +158° F	±0.9° F	Bottle	9276T22	68.06

Waterproof Digital Thermometers

With a rubberized keypad and an ABS plastic housing, this thermometer will do the job, rain or shine. °F/°C selectable. Temperature range is –58° to +302°F. Accuracy is ±0.8°F. Has minimum/maximum memory and comes with an immersion probe. Batteries are included.

For a specification sheet with additional information such as probe dimensions, go to mcmaster.com and search for the part number.

Thermometer	40055K11	$154.74
Replacement Immersion Probe	40055K21	61.05
Optional Air Probe	40055K22	85.26
Optional Penetration Probe	40055K23	61.05

Pocket Digital Thermometers

Keep one of these digital thermometers in your pocket for temperature readings on the go. Stem is 300 series stainless steel (unless noted) and approximately 1/8″ in diameter.

Thermometers are °F/°C selectable (unless noted) and have 0.1° resolution. All come with a protective plastic sleeve. Batteries are included, unless noted. *Note:* Resolutions and accuracies are at the middle of temperature ranges and may be less accurate at range limits.

Thermometers *with NIST certificate* include a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

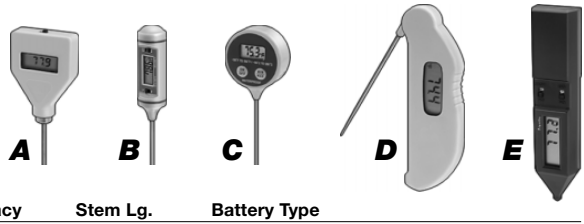

	Features	Temp. Range	Accuracy	Stem Lg.	Battery Type		
A	Easy reading	–58° to +302°F	±0.5°F	4 1/8″	LR44 coin cell	3096K61▲	$34.74
B	Standard	–40° to +302°F	±1.8°F	3 1/2″	LR44 coin cell	3312K3	17.94
B	Long reach with NIST Certificate	–58° to +302°F	±0.4°F	8″	SR44 coin cell	3569K58	53.92
B	Long reach with NIST Certificate	–58° to +302°F	±1.8°F	8″	SR44 coin cell	3569K56	26.71
B	Long reach with NIST Certificate	–58° to +572°F	±0.9°F	11 3/8″	SR44 coin cell	3569K69	53.60
B	Waterproof	–58° to +392°F	±1.8°F	5″	LR44 coin cell	3126K11	27.15
B	Waterproof	–58° to +572°F	±1.8°F	5″	LR44 coin cell	3126K16	29.92
B	High-temperature	–58° to +572°F	±1.8°F	3 1/2″	LR44 coin cell	39915K55	27.13
C	Waterproof with min./max. memory	–58° to +392°F	±1°F	4 1/8″	LR44 coin cell	8058K21	21.28
D	Fold-up	–58° to +428°F	±0.5°F	4 5/8″	AA	3315K51▲	75.79
D	Fold-up with min./max. memory	–58° to +572°F	±1.8°F	4 1/2″	AAA	3129K11	29.82
E	Pen style without stem	–40° to +199.9°F	±1°F●	——	9-volt (not included)	3892K8▲★	51.39
	9-Volt Battery for Style E					71455K56	2.75

▲Scale is in °F only. ●Accuracy for air is ±1°F; for surface is ±0.2°F. ★Tip is nickel-plated steel.

Top-Reading Pocket Digital Thermometers

Especially convenient for checking temperatures of liquids in open containers, these top-reading digital thermometers are a useful everyday tool. Thermometer stems are 300 series stainless steel and approximately 1/8″ in diameter. They are °F/°C selectable and have 0.1° resolution, unless noted. All are furnished with a protective plastic sleeve and batteries. *Note:* Resolutions and accuracies are at the middle of temperature ranges and may be less accurate at range limits.

	Features	Temp. Range	Accuracy	Stem Lg.	Battery Type		
F	Easy-to-read	–58° to +302°F	±2°F	4 7/8″	SR48 coin cell	4135K27♠	$19.60
F	Easy-to-read	–58° to +302°F	±2°F	12″	SR48 coin cell	4135K28♠	24.73
F	NSF certified; waterproof	–40° to +450°F	±1°F	4 3/4″	LR44 coin cell	3099K42	20.14
G	Pivoting head	–58° to +302°F	±1.8°F	5″	LR44 coin cell	3305K34	28.45
G	Pivoting head	–58° to +536°F	±1.8°F	8″	LR44 coin cell	3305K54	30.23
G	Min./max. memory; waterproof	–40° to +500°F	±1°F	5″	CR2032 coin cell	38285K29	28.34
H	T-handle	–58° to +572°F	±1.8°F	8″	LR44 coin cell	5643T52	28.75
H	Waterproof; T-handle	–58° to +536°F	±2°F	4 1/2″	LR44 coin cell	3051K33	38.29
J	High-temperature; pivoting head	–58° to +662°F	±1.8°F	7 3/4″	AAA	3074K11	110.50

♠Thermometers have 1° resolution.

Palm-Grip Infrared Thermometers

Quickly scan and measure surface temperatures without making contact. All thermometers have a thermoplastic housing and an LCD. They are °F/°C selectable, shut off automatically, and have a response time equal to or less than one second. CE approved. Batteries are included.

Note: Accuracies listed in the table below are at the middle of the temperature range and may be lower at range limits.

Styles K&P—Come with a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

Style N—Meets UL standards for use in the food industry.

Style Q—Meets IP67 for protection against water submersion.

	Temp. Range	Resolution	Accuracy	Maximum Working Distance	NIST Certificate Included	Overall Size, Ht. × Wd. × Dp.	Battery Type	Carrying Case Included		
For Dark Surfaces										
K	–7° to +230°F	0.1°F	±1.8°F	10″	Yes	2 1/2″ × 1 1/2″ × 1/2″	3-volt	No	9203T75	$47.74
L	–58° to +518°F	1°F	±3°F	3 ft.	No	3 3/4″ × 2″ × 1″	AAA	Yes	9212T21	65.44
M	–25° to +999°F	0.01°F	±2°F	12 ft.	No	8 1/16″ × 2 7/16″ × 2 3/16″	9-volt	Yes	3612K12	111.20
N	–25° to +400°F	1°F	±2°F	4 ft.	No	7 1/4″ × 1 3/4″ × 1 1/2″	9-volt	No	9250T25	105.13
Adjustable for Light, Dark, and Shiny Surfaces										
P	–67° to +482°F	0.1°F	±1.8°F	6 ft.	Yes	4″ × 2″ × 3/4″	3-volt	No	9233T44	80.19
Q	+32° to +932°F	1°F	±3.6°F	39″	No	6 5/16″ × 1 11/16″ × 1 11/16″	9-volt	No	6614T31	313.19

Pistol-Grip Infrared Thermometers

Go the distance with these infrared thermometers, which allow you to measure surface temperatures without making contact. A built-in laser assists in accurate aim.

All thermometers have a thermoplastic housing and an LCD. They are °F/°C selectable. Thermometers have a response time equal to or less than one second and shut off automatically. CE approved, unless noted. Batteries are included.

Note: Accuracies listed in the table below are at the middle of temperature ranges and may be lower at range limits.

Thermometers with NIST certificate include a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

A

B

C

D

E

F

Temp. Range	Resolution	Accuracy	Maximum Working Distance	O'all Size, Ht. × Wd. × Dp.	Battery Type	Carrying Case Included	Thermometers Without NIST Cert.		Thermometers With NIST Cert.	
For Light and Dark Surfaces										
A ... –76° to +932° F	1° F	±2%	4 ft.	7″ × 1½″ × 3″	AAA	No	—	—	**9248T57**♦	$126.38
B ... 0° to +750° F	0.5° F	±2%	5 ft.	6″ × 1½″ × 4″	9-volt	No	**3734K42**	$73.47	—	—
B ... –20° to +932° F	0.5° F	±1.5%	6 ft.	6″ × 1½″ × 4″	9-volt	Yes	**3734K62**	97.44	—	—
Adjustable for Light, Dark, and Shiny Surfaces										
C ... –58° to +1200° F	0.1° F	±2%	20 ft.	6⅜″ × 1⅝″ × 3¼″	9-volt	Yes	**9254T61**	109.08	**9254T72**	219.98
D ... –40° to +1022° F	0.1° F	±1%	7 ft.	7″ × 2″ × 6½″	AA	Yes	**11175K91**	175.25	**11175K51**	290.69
E ... –40° to +1202° F	0.1° F	±1%	15 ft.	7″ × 2″ × 6½″	AA	Yes	**11175K93**	389.72	**11175K53**	505.16
E ... –40° to +1472° F	0.1° F	±1%	25 ft.	7″ × 2″ × 6½″	AA	Yes	**11175K94**	514.13	**11175K54**	625.85
F ... –25° to +1600° F	0.2° F	±0.75%	35 ft.	7⅞″ × 2″ × 6 11/16″	AA	Yes	**40045K31**	874.03	**40045K41**	1,121.03

♦ Not CE approved.

Thermal Imaging Guns

Detect hot spots or moisture problems in your system before they cause an outage. These thermal imaging guns reveal hot spots on bearings, in HVAC systems, and in instrument panels, which may signal electrical problems or safety concerns. Imaging guns come with a memory card, recording software, and a USB cable. Data and images can be uploaded to your PC. All have a rechargeable battery and a charger/adapter. °F/°C selectable. Accuracy is ±2% of full scale. CE approved.

4006K5 has a thermoplastic housing and a 2.8″ color LCD.

4006K8 has a plastic housing, a 3.5″ color LCD, a built-in laser, visual and thermal image overlay capabilities, and comes with a carrying case.

Temp. Range	O'all Size, Ht. × Wd. × Dp.		
32° to 482° F	8 13/16″ × 3⅛″ × 3 5/16″	**4006K5**	$1,572.54
32° to 662° F	9 11/16″ × 3 11/16″ × 4⅛″	**4006K8**	3,968.54

Penlight Infrared Thermometer

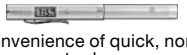

Bring the convenience of quick, noncontact temperature measurement wherever you go with this pocket-sized infrared thermometer. Includes a bright white LED light for dimly lit areas. It has a chrome-coated brass housing and a digital display. Two LR44 coin cell batteries for the thermometer and one AAA battery for the LED are included. Thermometer is °F/°C selectable and has a response time of one second. Accuracy is ±2.5% at the middle of the temperature range and may be lower at range limits. Maximum working distance is 12 feet. Thermometer is 6″ Ht. × ½″ Dia. and comes with a case.

Temp. Range		
–27° to +428° F	**4231K24**	$51.02

About Thermocouple and RTD Temperature Sensors

Choosing a Sensor for a New System

Both thermocouples and RTDs (resistance temperature detectors) measure a wide variety of temperature ranges and are accurate, durable, and easy to replace. Use this chart to choose the sensor that fits your application.

	Thermocouple	RTD
Max. Temperature	Extremely high; up to 2282° F	Moderate; up to 932° F
Accuracy	Moderate	High
Reliability Over Time	Decreases	Consistent
Vibration and Shock Resistance	High	Low
Cost	Low	Moderate

Replacing a Sensor in an Existing System

When replacing a sensor or other component, remember that thermocouples and RTDs are not interchangeable. Furthermore, types of thermocouples (J, K, and T) and RTDs (100 ohms and 1,000 ohms) are also not interchangeable. If you are replacing an RTD, the most common are 100 ohm.

Generally speaking, J and K are the most frequently used thermocouple types. Use this chart to identify your thermocouple by its wire colors.

Type	Wire Color
J	White and Red
K	Yellow and Red
T	Blue and Red

Adding System Accessories

Signal converters (also known as transmitters; see page 603), convert the input signal to a common 4-20 mA signal. With this signal, you can incorporate panel instruments, switches, controllers, and recorders within your system. Also use signal converters to amplify a signal for accurate long-range transmission.

Switches and controllers (see pages 604-606) turn your system "on" and "off" at specified temperatures. *Controllers* also have the capacity for customized programming to track and react based on your system's activity.

For information about thermocouples and RTDs, see page 596.

Thermocouple Thermometers

Get accurate and quick temperature readings with these thermocouple thermometers. All are CE approved. Batteries are included.

(A) With NIST Certificate— Comes with a certificate of calibration traceable to NIST (National Institute of Standards and Technology). Has min./max. memory. Accuracy is ±1.8° F. °F/°C selectable.

(B) With Built-In Data Logger— Has a data logger that measures up to 8,800 readings. Comes with two surface-contact probes, an RS-232 computer cable, and software. Has min./max. memory. °F/°C/Kelvin selectable. Accuracy is ±(0.05% of reading + 1.5° F).

(C) Waterproof— Have an IPX7 rating. Protected against water immersion for 30 minutes at a depth of 1 meter. Accuracy is ±0.9° F. °F/°C selectable. 38785K11 is also NSF certified.

ⓘ For a specification sheet with additional information such as probe dimensions, go to mcmaster.com and search for the part number.

		Temp. Range	Probe Style		
(A)	With NIST Certificate	–40° to +482° F	Air/Immersion	**9277T24**	$141.55
(B)	With Built-In Data Logger	–22° to +572° F	Surface Contact	**9281T44**	249.58
(C)	Waterproof	–100° to +500° F	Surface Contact	**38785K15**	264.66
(C)	Waterproof and NSF Certified	–100° to +500° F	Air/Immersion	**38785K11**	308.85

Fluke Thermocouple Thermometers

Known for their high accuracy, ±(0.05% of reading + 0.5° F), these thermometers provide reliable and precise temperature measurement. *Single-input* thermometers come with one surface-contact thermocouple probe; *dual-input* thermometers include two probes. All probes have a temperature range of –40° to +500° F. Thermometers are °F/°C/Kelvin selectable and have min./max. memory. CSA certified and CE approved. Batteries are included.

Thermometers *with logging mode* have data logging for up to 500 readings.

Single Input

ⓘ For a specification sheet with additional information such as probe dimensions, go to mcmaster.com and search for the part number.

	Fluke No.		
Single Input	51-2	**40255K31**	$238.59
Dual Input	52-2	**40255K32**	284.94
Single Input with Logging Mode	53-2B	**40255K33**	337.20
Dual Input with Logging Mode	54-2B	**40255K34**	388.48

Thermocouple Calibrators/Thermometers

Calibrate thermometers for eight different thermocouple types: J, K, T, E, C, R, S, and N. These units can also operate as thermometers using a thermocouple probe with a male flat-pin (mini) connector (not included, see pages 598-599).

Have a memory function that allows you to store up to five calibration values. All have a rechargeable battery and a 115 VAC adapter/charger. Accuracy is ±(0.15% of reading + 1.8° F). CE approved.

Calibrator/thermometer with NIST certificate comes with a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

ⓘ For a specification sheet with additional information such as probe dimensions, go to mcmaster.com and search for the part number.

Calibrator/Thermometer	**3835K81**	$366.93
Calibrator/Thermometer with NIST Certificate	**3835K92**	510.31

Magnetic-Back Thermocouple Thermometers

With a magnetic back that mounts to any flat metal surface, these thermocouple thermometers are great for hands-free operation. Come with an immersion probe. Accuracy is ±(0.25% of reading, ±1 digit). Batteries are included.

ⓘ For a specification sheet with additional information such as probe dimensions, go to mcmaster.com and search for the part number.

With Probe	Temp. Range		
Type J	–50° to +1200° F	**38855K72**	$115.78
Type K	–50° to +1000° F	**38855K74**	115.78
Type T	–100° to +700° F	**38855K76**	115.78

Wall/Panel-Mount Hazardous-Location Thermocouple Thermometers

Meet your safety or environmental needs with these rugged thermometers. They have a Type 302 stainless steel sealed NEMA 4X enclosure (for indoor/outdoor use; exposure to splashing liquids, corrosive agents, and dusty environments). Thermometers are also intrinsically safe for Classes I, II, and III, Division 1, Groups A, B, C, D, E, and G hazardous locations. FM approved.

Thermometers have a ¼ DIN (3 19/32″×3 19/32″) housing with a ½″ NPT female Type 303 stainless steel connection. They can be calibrated to within 1°. Include an LCD and a low-power indicator. Resolution is 1°. Accuracy is ±1% of full scale. Require eight AA batteries (not included; sold separately below). Choose from thermometers for Type J or K thermocouple probes (see pages 598-599 for thermocouple probes).

Wall/pipe-mount thermometers have an attached bracket with six mounting holes for #10 screws (not included). They also have a ½″ NPT female connection for mounting onto a pipe.

Panel-mount thermometers fit into a 3⅝″×3⅝″ panel cutout.

Wall/Pipe Mount

For Probe	Temp. Range	***Wall/Pipe Mount***		***Panel Mount***	
Type J	–50° to +450° F	**4128K15**	$348.09	**4128K16**	$348.09
Type K	–50° to +450° F	**4128K11**	348.09	**4128K12**	348.09
Type K	–50° to +250° C	**4128K19**	348.09	**4128K17**	348.09
AA Batteries (Pkg. of 4)		**71455K53**	**Pkg.**		$2.94

Panel-Mount Thermocouple/RTD Thermometers

Also known as panel meters, these compact, mountable thermometers provide accessible temperature readings. They have an LED display and a ⅛ DIN (3 25/32″×1 57/64″) housing. All are °F/°C selectable, except 4068K73, K58, K59, and K74, which are °F only. Resolution is 1° (unless noted). Operate on 115/230 VAC, 50/60 Hz. All have wire lead connections for thermocouple, RTD, and power supply units. Probes are not included; see pages 598-602 for probes.

For Probe	Temp. Range	Accuracy		
Thermocouple Probes				
Type J	–346° to +1400° F	±3.7° F	**4068K61**	$119.02
Type J	0° to +1000° F	±5.0° F	**4068K73**	139.58
Type J	+32° to +428° F	±2.8° F	**4068K58**	85.48
Type K	–157° to +1999° F	±3.7° F	**4068K62**	119.02
Type K	–2° to +752° F	±3.3° F	**4068K59**	85.48
Type K	0° to +1999° F	±11.0° F	**4068K74**	139.58
Type T	–157° to +752° F	±2.5° F	**4068K63**	119.02
RTD Probes				
100-ohm RTD	–58° to +199.9° F	±1.2° F	**4068K65▲**	119.02
100-ohm RTD	–58° to +1562° F	±2.0° F	**4068K66**	119.02

▲Resolution is 0.1°.

NSF-Certified Panel-Mount RTD Thermometers

Suitable for the food industry, these water-tight thermometers are NSF certified. Thermometers have 8-ft. wire leads. They require a 2″ dia. panel cutout. Operate on 110 VAC.

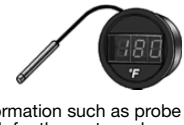

ⓘ For a specification sheet with additional information such as probe dimensions, go to mcmaster.com and search for the part number.

Temp. Range	Accuracy		
–40° to +199° F	±2° F	**38675K11**	$99.75
0° to +250° F	±2° F	**38675K12**	99.75
–40° to +120° C	±2° C	**38675K13**	99.75

For information about thermocouples and RTDs, see page 596.

RTD Thermometers

These RTD thermometers provide accurate temperature readings for the life of the thermometer. °F/°C selectable, except 3263K32 which is °F only. Batteries are included. 9282T22 and 38655K18 are CE approved.

Styles A&B include a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

Style C logs up to 2,000 temperature readings with time and date stamp.

For a specification sheet with additional information such as probe dimensions, go to mcmaster.com and search for the part number.

	Temp. Range	Accuracy	Probe Style		
(A) With NIST Certificate	–76° to +500° F	±1° F	Penetration/Immersion	3263K32	$254.93
(B) With NIST Certificate	–58° to +752° F	±2° F	Air/Immersion	9282T22	357.52
(C) With Logger	–58° to +932° F	±0.1° F	Penetration	38655K18	466.94

Air/Immersion Thermocouple Probes with Flat-Pin (Mini) Connector

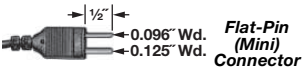

All probes have a male flat-pin (mini) connector. *Note:* Response times listed below are approximate.

(1&2) Have perforated probe tips for measuring air temperatures. *Style 2* has a Type 304 stainless steel clip.

(3-6) Have bendable probes that adjust to the area being tested. Designed to measure air and liquid temperatures.

(7-9) Have bare tips for measuring air temperatures.

Probe Type (Temp. Range)	Probe Lg.	Response Time, sec.	Max. Cable Temp.		
(1) Type 304 SS Probes (1/8" dia.) with 4-ft. Coiled PVC Cable					
J (+32° to +500°F)	4"	10	176°F	3868K42	$63.89
K (–100° to +500°F)	4"	10	176°F	3868K43	63.89
(2) Type 304 SS Probes (1/4" dia.) with 46" Fiberglass Cable					
J (+32° to +896°F)	2⅛"	10	896°F	3868K641	63.89
K (+32° to +896°F)	2⅛"	10	896°F	3868K642	63.89
(3) Type 316 SS Probes (1/8" dia.) without Cable					
J (+32° to +1400°F)	12"	0.5	—	39095K61	19.33
J (+32° to +1400°F)	18"	0.5	—	39095K62	19.33
J (+32° to +1400°F)	24"	0.5	—	39095K63	22.44
J (+32° to +1400°F)	36"	0.5	—	39095K241	25.56
K (+32° to +1700°F)	12"	0.5	—	39095K64	19.33
K (+32° to +1700°F)	18"	0.5	—	39095K65	19.33
K (+32° to +1700°F)	24"	0.5	—	39095K66	22.44
K (+32° to +1700°F)	36"	0.5	—	39095K242	25.56
T (–328° to +700°F)	12"	0.5	—	39095K67	19.33
T (–328° to +700°F)	18"	0.5	—	39095K68	19.33
(4) Type 316 SS Probes (1/8" dia.) with 3-ft. Fiberglass Cable					
J (+32° to +1400°F)	12"	0.5	900°F	39095K51	34.44
J (+32° to +1400°F)	18"	0.5	900°F	39095K52	36.00
J (+32° to +1400°F)	24"	0.5	900°F	39095K53	36.30
K (+32° to +1700°F)	12"	0.5	900°F	39095K54	34.44
K (+32° to +1700°F)	18"	0.5	900°F	39095K55	36.00
K (+32° to +1700°F)	24"	0.5	900°F	39095K56	36.30
(4) Type 316 SS Probes (1/8" dia.) with 3-ft. Fiberglass Cable (Cont.)					
T (–328° to +700°F)	12"	0.5	900°F	39095K57	$34.44
T (–328° to +700°F)	18"	0.5	900°F	39095K58	36.00
T (–328° to +700°F)	24"	0.5	900°F	39095K59	36.30
(5) Type 316 SS Probes (1/16" dia.) with 3-ft. PVC Cable					
J (+32° to +1400°F)	7"	0.3	221°F	39095K95	36.11
K (+32° to +1700°F)	7"	0.3	221°F	39095K96	36.78
T (–328° to +700°F)	7"	0.3	221°F	39095K97	37.33
(6) Type 316 SS Probes (3/16" dia.) with 3-ft. Type 302 SS Cable					
J (+32° to +1400°F)	24"	1	900°F	39095K11	45.89
K (+32° to +1700°F)	24"	1	900°F	39095K12	43.33
(7) Bare-Tip Probes (3/16" dia.) with 3-ft. PTFE Cable					
J (+32° to +400°F)	⅛"	7	400°F	6441T671	27.79
K (–328° to +400°F)	⅛"	7	400°F	6441T672	27.79
T (–328° to +400°F)	⅛"	7	400°F	6441T673	27.79
(8) Bare-Tip Probes (3/16" dia.) with 15-ft. PTFE Cable					
J (+32° to +400°F)	⅛"	7	400°F	6441T821	58.21
K (–328° to +400°F)	⅛"	7	400°F	6441T822	58.21
T (–328° to +400°F)	⅛"	7	400°F	6441T823	58.21
(9) Bare-Tip Probes (3/16" dia.) with 4-ft. Fiberglass Cable					
J (+32° to +896°F)	⅛"	9	896°F	6441T941	36.11
K (+32° to +896°F)	⅛"	9	896°F	6441T942	36.11
T (+32° to +752°F)	⅛"	9	896°F	6441T944	36.11

Penetration/Immersion Thermocouple Probes with Flat-Pin (Mini) Connector

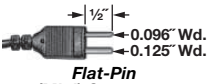

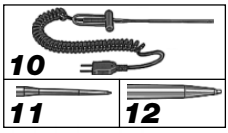

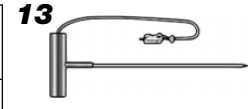

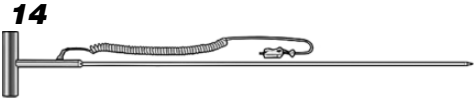

Measure the temperature of your soft materials and liquids with these thermocouple probes. All are made of Type 304 stainless steel (unless noted) and have a male flat-pin (mini) connector.

Note: Response times listed below are approximate.

(10-12&14)— Have a self-retracting coiled cable.

(16)— Have a blue PFA-coated stem.

Probe Type (Temp. Range)	Probe Lg.	Response Time, sec.	Max. Cable Temp.		
(10) Straight-Tip Probes (1/8" dia.) with 4-ft. Coiled PVC Cable					
J (+32° to +500°F)	4½"	4	176°F	39105K76	$63.89
K (–40° to +500°F)	4½"	4	176°F	39105K72	63.89
T (–40° to +500°F)	4½"	4	176°F	39105K91	63.89
(11) Reduced-Tip Probes (3/32" dia.) with 4-ft. Coiled PVC Cable					
J (+32° to +500°F)	6"	2	176°F	39105K651	73.16
K (–40° to +500°F)	6"	2	176°F	39105K652	73.16
(12) Reduced-Round-Tip Probes (1/16" dia.) with 4-ft. Coiled PVC Cable					
J (+32° to +932°F)	12"	1	176°F	39105K411	141.47
K (–40° to +932°F)	12"	1	176°F	39105K412	141.47
(13) Pointed-Tip Probes (1/4" dia.) with T-Handle and 5-ft. Type 304 SS Cable					
J (–310° to +1400°F)	11½"	10	900°F	39105K211♣	98.78
K (–418° to +1652°F)	11½"	10	900°F	39105K212♣	98.78
(14) Heavy Duty Pointed-Tip Probe (5/16" dia.) with T-Handle and 6-ft. Coiled Polyurethane Cable					
K (–166° to +400°F)	36"	15	220°F	9261T36	$250.62
(15) Chisel-Tip Probes (1/16" dia.) with 3-ft. PVC Cable					
J (+32° to +500°F)	4"	3	220°F	39105K511	118.32
K (–40° to +500°F)	4"	3	220°F	39105K512	118.32
(16) PFA-Coated Round-Tip Probes (1/8" dia.) w/32" Type 304 SS Cable					
J (–148° to +500°F)	12"	3	500°F	9260T51	145.80
K (–148° to +500°F)	12"	3	500°F	9260T53	145.80
(17) Hypodermic-Tip Probes (1/16" dia.) with 32" Type 304 SS Cable					
J (–325° to +600°F)	2"	0.25	550°F	9262T22	97.80
K (–325° to +600°F)	2"	0.25	550°F	9262T32	97.80
K (–325° to +600°F)	6"	0.25	550°F	9262T34	97.80
K (–325° to +1500°F)	2"	0.25	550°F	9262T62 ♦	97.80

♣ Probe is Type 316 stainless steel.

♦ Probe is Type 310 stainless steel.

For information about thermocouples and RTDs, see page 596.

Surface-Contact Thermocouple Probes with Flat-Pin (Mini) Connector

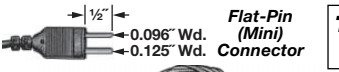

Flat-Pin (Mini) Connector

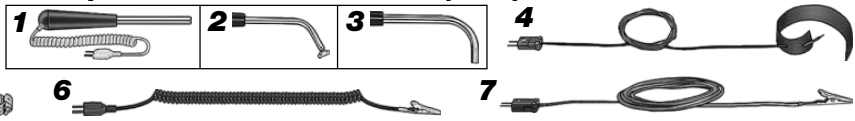

Designed for measuring surface temperatures, these probes are a useful addition to your thermocouple thermometer. All have a male flat-pin (mini) connector. *Note:* Response times listed below are approximate.

Styles 1-3—Straight, 60°, and 90° Probes

Probe Type (Temp. Range)	Probe Lg.	Response Time, sec.	Max. Cable Temp.		
(1) Type 304 SS Straight Probes (7/16″ dia.) with 4-ft. PVC Cable					
J (+32° to +1202°F)	4″	1	176°F	3861K36	$94.95
K (–40° to +1202°F)	4″	1	176°F	3861K37	94.95
T (–40° to +752°F)	4″	1	176°F	3861K311	94.95
(2) Type 304 SS 60° Probes (11/16″ dia.) with 4-ft. PVC Cable					
J (+32° to +500°F)	4½″	4	176°F	3861K631	91.68
K (–40° to +500°F)	4½″	4	176°F	3861K632	91.68
T (–40° to +500°F)	4½″	4	176°F	3861K633	91.68
(3) Type 304 SS 90° Probes (7/16″ dia.) with 4-ft. PVC Cable					
J (+32° to +1202°F)	5″	1	176°F	3861K321	104.53
K (–40° to +1202°F)	5″	1	176°F	3861K322	104.53

Style 4—Hook-and-Loop Probes

Probe Type (Temp. Range)	Strap Lg.	Response Time, sec.	Max. Cable Temp.		
(4) Nylon Probes (1″ wide strap) with 10-ft. PVC Cable					
J (–310° to +250°F)	8″	10	250°F	37045K191	$34.95
K (–418° to +250°F)	8″	10	250°F	37045K192	34.95

Style 5—Hose-Clamp Probes

Probe Type (Temp. Range)	Clamp Dia.	Response Time, sec.	Max. Cable Temp.		
(5) Type 301 SS Probes with 10-ft. Type 304 SS Cable					
J (+32° to +250°F)	11/16″-1¼″	5	900°F	37045K511	$25.39
J (+32° to +250°F)	13/16″-1½″	5	900°F	37045K521	28.44
J (+32° to +250°F)	1¼″-2¼″	5	900°F	37045K531	30.47
K (+32° to +250°F)	11/16″-1¼″	5	900°F	37045K512	25.39
K (+32° to +250°F)	13/16″-1½″	5	900°F	37045K522	28.44
K (+32° to +250°F)	1¼″-2¼″	5	900°F	37045K532	30.47

Styles 6 & 7—2″ Long Clip-On Probes

Probe Type (Temp. Range)	Jaw Size	Response Time, sec.	Max. Cable Temp.		
(6) Chrome-Plated Brass Probes with 5-ft. Coiled PVC Cable					
J (–310° to +250°F)	⅜″	5	250°F	6443T211	$30.51
K (–418° to +250°F)	⅜″	5	250°F	6443T212	30.51
(7) Chrome-Plated Brass Probes with 10-ft. Type 304 SS Cable					
J (–310° to +850°F)	⅜″	5	900°F	6443T811	42.72
K (–418° to +850°F)	⅜″	5	900°F	6443T812	42.72

Air/Immersion Thermocouple Probes with Bare Wire Leads

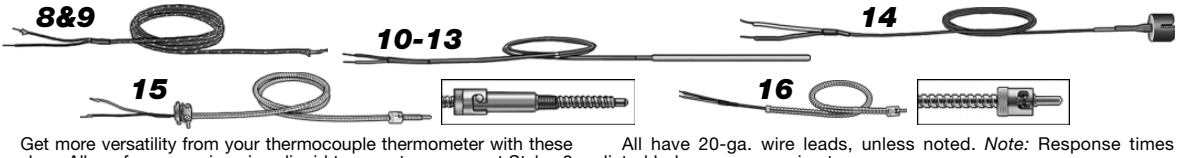

Get more versatility from your thermocouple thermometer with these probes. All are for measuring air or liquid temperatures, except Styles 8 and 9, which are for air and flat surface readings; Style 14, which is for surface-contact readings; Style 15, which is for air readings; and Style 16 which is for surface-contact and air readings. Cables can be cut to length, except Styles 15 and 16, which are adjustable and cannot be cut.

All have 20-ga. wire leads, unless noted. *Note:* Response times listed below are approximate.

(14) Probes have a magnetic holding force of 16 lbs.

(15) Probes have a bayonet connection and 1¾″ long mounting adapter with ⅜″-24 male connections.

(16) Probes have a bayonet connection.

Probe Type (Temp. Range)	Probe Lg.	Response Time, sec.	Max. Cable Temp.		
(8) Bare-Tip Probes (1/16″ dia.) with 3-ft. Fiberglass Cable					
J (+32° to +900°F)	1/16″	1.8	900°F	9251T91	$17.60
K (+32° to +900°F)	1/16″	1.8	900°F	9251T93	17.30
(9) Bare-Tip Probes (1/16″ dia.) with 6-ft. Fiberglass Cable					
J (+32° to +900°F)	1/16″	1.8	900°F	9251T92	19.30
K (+32° to +900°F)	1/16″	1.8	900°F	9251T94	19.70
T (+32° to +500°F)	1/16″	1.8	900°F	9251T96	19.00
(10) Type 316 SS Probes (3/16″ dia.) with 4-ft. Fiberglass Cable					
J (+32° to +900°F)	6″	3	900°F	3871K52	24.05
J (+32° to +900°F)	12″	3	900°F	3871K811	32.40
K (+32° to +900°F)	6″	3	900°F	3871K54	24.05
K (+32° to +900°F)	12″	3	900°F	3871K812	32.40
T (+32° to +700°F)	6″	3	900°F	3871K66	26.54
(11) Type 316 SS Probes (1/4″ dia.) with 4-ft. Fiberglass Cable					
J (+32° to +900°F)	6″	3	900°F	3871K53	22.60
J (+32° to +900°F)	12″	3	900°F	3871K821	32.40
K (+32° to +900°F)	6″	3	900°F	3871K55	23.49
K (+32° to +900°F)	12″	3	900°F	3871K822	32.40
T (+32° to +700°F)	6″	3	900°F	3871K77	23.18
T (–328° to +700°F)	12″	3	900°F	3871K823	32.40
(12) Type 316 SS Probes (3/16″ dia.) with 4-ft. Fiberglass Cable					
J (+32° to +1400°F)	6″	3	900°F	3871K911	$48.89
K (+32° to +1650°F)	6″	3	900°F	3871K912	55.45
(13) Type 316 SS Probes (1/4″ dia.) with 4-ft. Fiberglass Cable					
J (+32° to +1400°F)	6″	3	900°F	3871K921	52.52
K (+32° to +1650°F)	6″	3	900°F	3871K922	52.52
(14) Type 304 SS Magnetic-Tip Probes (1″ dia.) w/6-ft. Fiberglass Cable					
J (+32° to +1000°F)	13/16″	2	1000°F	6445T64★	128.18
K (+32° to +1000°F)	13/16″	2	1000°F	6445T68★	128.18
(15) Type 316 SS Probes (3/16″ dia.) with Adjustable 3-ft. Type 302 SS Armored Cable and Ring-Terminal End					
J (+32° to +900°F)	¼″	8	900°F	3860K96	41.46
K (+32° to +900°F)	¼″	8	900°F	3860K97	42.81
Repl. Mounting Adapter for Style 15				3860K73	10.20
(16) Type 304 SS Probes (3/16″ dia.) with Adjustable 8-ft. Type 304 SS Armored Cable					
J (+32° to +1382°F)	½″	5	900°F	3860K53	31.28
K (+32° to +2282°F)	½″	5	900°F	3860K59	31.28

★ Wire is 24 ga.

Air/Immersion Thermocouple Probes with Round-Pin Male Plug

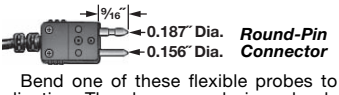

Round-Pin Connector

Bend one of these flexible probes to suit the needs of your application. They have round-pin male plugs (also known as standard connectors) and are Type 316 stainless steel. Response time is 0.6 seconds for 1/8″ dia. probes, 0.9 seconds for 3/16″ dia. probes, and 1.3 seconds for 1/4″ dia. probes. ***Probes with cable*** have a 3 ft. long fiberglass cable. Maximum cable temperature is 900°F.

To Order: Please specify thermocouple probe type: Type J (32° to 1400°F), Type K (32° to 1700°F), or Type T (–328° to +700°F).

Probes without Cable

Probe Lg.	1/8″ Dia. Probe		3/16″ Dia. Probe		1/4″ Dia. Probe	
6″	3856K91	$20.33	3856K71	$22.88	3856K72	$27.78
12″	3856K33	20.44	3856K94	22.89	3856K74	27.77
18″	3856K35	22.00	3856K95	25.44	3856K76	32.04
24″	3856K37	23.55	3856K96	28.01	3856K77	36.11

Probes with Cable

Probe Lg.	1/8″ Dia. Probe		3/16″ Dia. Probe		1/4″ Dia. Probe	
6″	3857K21	$34.44	3857K23	$36.89	3857K22	$41.78
12″	3857K84	34.44	3857K24	38.22	3857K85	42.11
18″	3857K86	34.89	3857K25	36.89	3857K87	45.89
24″	3857K88	37.56	3857K26	42.00	3857K89	49.74

For information about thermocouples and RTDs, see page 596.

Extended-Life Thermocouple Probes

Replace your standard thermocouple probe with one of these high-temperature probes. They have large-gauge wire and ceramic-sleeve insulation for a long service life. Thermocouple probes work well in aluminum die casting, heat-treating, and high-temperature furnace applications. They can be used alone or in a thermowell or protection tube. Probes have two wire leads that extend 1½″ past insulation. Response time is 5 seconds.

Type	Temp. Range
J	32° to 1400° F
K	32° to 2300° F

Type	O'all Dia.	Wire Gauge	12″ Length		18″ Length		24″ Length	
J	¼″	14	3859K41	$5.06	3859K42	$7.42	3859K43	$9.78
J	½″	8	3859K31	10.00	3859K32	14.83	3859K33	19.66
K	¼″	14	3859K44	6.29	3859K45	9.33	3859K46	12.36
K	½″	8	3859K34	15.96	3859K35	23.82	3859K36	31.69

Thermocouple and RTD Protection Tubes

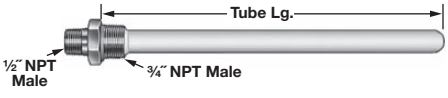

An alternative to thermowells, these ceramic tubes hold up in hostile chemical environments where stainless steel and brass can't survive. Tubes have a 7/16″ ID and 11/16″ OD and accept probes up to ⅜″ dia. Maximum temperature is 3100° F. Cement used to connect ceramic tube to the fitting is chemical-set silicate cement. Connections are NPT male.

Tube Lg.		
12″	3822K11	$28.22
18″	3822K12	42.82
24″	3822K13	47.32

Noncontact Infrared Thermocouple Probes

Replace contact probes with these noncontact infrared probes. Since they can check the temperature without touching the surface, there's less mechanical wear—resulting in longer life and less downtime. All have a ¾″-16 UNF threaded body and a rugged NEMA 4, IP65, Type 316 stainless steel housing for protection against splashing liquids and dusty environments. Probes have a Type J thermocouple output, 39″ PVC cable, and two mounting nuts. They require 12-24 VDC power, 20 mA max. Use the *optional 110 VAC adapter* to convert your 110 VAC power supply to 24 VDC.

Temp. Range	Max. Working Distance	O'all Size, Dia. × Lg.		
32° to 662° F	4 ft.	¾″ × 3½″	3889K111	$255.98
86° to 932° F	4 ft.	¾″ × 3½″	3889K211	255.98
Optional 110 VAC Adapter			3889K31	111.16
Optional Mounting Bracket			3889K32	40.25

Easy-to-Attach Thermocouple Probes

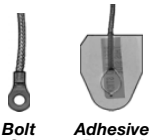

Bolt On *Adhesive Backed*

For an easily attached thermocouple to monitor your surface temperature, choose from a bolt-on or adhesive-backed probe. Wire leads are 48″ long. Probe is nickel with fiberglass insulation. Response time is 2 seconds.

Bolt-on thermocouple probes hold securely in high-vibration areas. Probe jacket is 300 series stainless steel. Bolt hole size is 3/16″. Mounting bolt is not included.

Adhesive-backed thermocouple probes are low-profile for tight-fitting areas. Probe jacket is fiberglass.

Type	Temp. Range	O'all Size, Lg. × Wd. × Thick.	Wire Gauge		
Bolt On					
J	32° to 900° F	⅝″ × 5/16″ × 1/16″	24	3648K22	$22.90
K	32° to 900° F	⅝″ × 5/16″ × 1/16″	24	3648K24	22.90
T	32° to 900° F	⅝″ × 5/16″ × 1/16″	24	3648K26	22.90
Adhesive Backed					
J	32° to 400° F	1¼″ × 1″ × 1/16″	30	3648K32	37.34
K	32° to 400° F	1¼″ × 1″ × 1/16″	30	3648K34	37.34
T	32° to 400° F	1¼″ × 1″ × 1/16″	30	3648K36	37.34

Ready-to-Use Thermocouple Probes

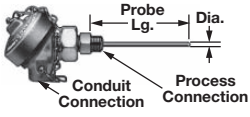

Fast Response

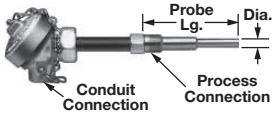

With SS Thermowell

Take the guesswork out of building your thermocouple probe—these come ready to install. Probes come assembled with a protective head, an internal terminal block, and an NPT process connection.

To Order: Please specify thermocouple type from those listed.

Fast-Response Thermocouple Probes

Have a response time of 6 seconds. All probes have a cast aluminum head with a Type 316 stainless steel probe.

Available Temp. Ranges	
Type	Temp. Range
J	+32° to +1400° F
K	+32° to +1600° F
T	−328° to +700° F

Probe Dia.	Probe Lg.	O'all Lg.	Process Connection, NPT Male	Conduit Connection, NPT Female		
3/16″	6″	10″	½″	¾″	3872K51	$90.57
3/16″	12″	16″	½″	¾″	3872K81	91.67
¼″	6″	10″	½″	¾″	3872K52	90.57
¼″	12″	16″	½″	¾″	3872K91	97.06

Heavy Duty Fast-Response Thermocouple Probes

Probes have thicker walls for harsh applications. They are Type 446 stainless steel and have a Type 316 stainless steel compression fitting. Head is cast iron. Response time is 4.5 seconds. Head is FM approved.

Available Temp. Ranges	
Type	Temp. Range
J	+32° to +1400° F
K	+32° to +2100° F

Probe Dia.	Probe Lg.	O'all Lg.	Process Connection, NPT Male	Conduit Connection, NPT Female		
½″	10¾″	17¼″	½″	¾″	3864K33	$192.94
½″	16¾″	23¼″	½″	¾″	3864K34	211.51
½″	22¾″	29¼″	½″	¾″	3864K35	230.11

Thermocouple Probes with Stainless Steel Thermowell

Equipped with a thermowell, these thermocouple probes are protected from pressure and corrosive liquids. Head is cast iron. Response time is 30 seconds.

Probes with Type 316 stainless steel thermowell have greater corrosion resistance and chemical compatibility than Type 304.

Available Temp. Ranges	
Type	Temp. Range
J	+32° to +1400° F
K	+32° to +1600° F
T	−328° to +700° F

Probe Dia.	Probe Lg.	O'all Lg.	Process Connection, NPT Male	Conduit Connection, NPT Female		
Probes with Type 304 Stainless Steel Thermowell						
½″	5¼″	13⅜″	¾″	¾″	3865K91	$96.54
½″	8¼″	16⅜″	¾″	¾″	3865K92	120.48
½″	11¼″	19⅜″	¾″	¾″	3865K93	143.32
Probes with Type 316 Stainless Steel Thermowell						
½″	5½″	13⅛″	¾″	¾″	6447T77	117.51
½″	8½″	16⅛″	¾″	¾″	6447T78	139.00
½″	11½″	19⅛″	¾″	¾″	6447T79	156.00

High-Accuracy RTD Probes

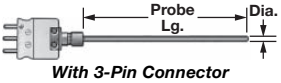

With 3-Pin Connector

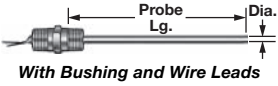

With Bushing and Wire Leads

For continual high accuracy over time, as well as signal strength for long-range transmission, these RTD probes are ideal temperature sensors. Probes are Type 304 stainless steel and have a 100-ohm three-wire platinum element. Temperature range is −58° to +400° F. Response time is 10 seconds.

Probes with bushing and wire leads have a ½″ NPT male Type 303 stainless steel bushing with three wire leads. Wire leads are 14 ga. and 3″ long.

Dia.	With 3-Pin Connector: Probe Lg.			With Bushing and Wire Leads: Probe Lg.		
¼″	6″	3866K85	$77.94	6⅝″	3866K43	$79.52
¼″	12″	3866K86	79.84	12⅝″	3866K44	82.12

For information about thermocouples and RTDs, see page 596.

Ready-to-Use RTD Probes

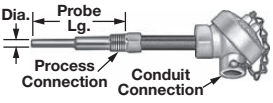

With NPT Process Connection

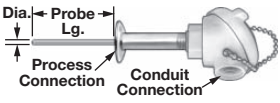

With Quick-Clamp Connection

Ready to go whenever you are, these RTD probes come assembled with a protective head and process connection. All have a ¾″ NPT female conduit connection for simple connection to your RTD wire (see page 603). Probes have a 100-ohm three-wire platinum element.

Probes with NPT Process Connection

Come with a Type 304 stainless steel thermowell that protects the probe from harsh applications. Head is cast iron with an internal terminal block and a screw-on cap with retaining chain. Process connection is ¾″ NPT male. Terminal block accepts a maximum of 14-ga. wire. Probes are Type 304 stainless steel. Temperature range is –58° to +400° F. Response time is 30 seconds.

Probe Dia.	Probe Lg.	O'all Lg.	Conduit Connection, NPT Female	
½″	5½″	14⅛″	¾″	6581T51 $183.71
½″	8½″	17⅛″	¾″	6581T52 214.00
½″	11½″	20⅛″	¾″	6581T53 248.22

Sanitary Probes with Quick-Clamp Connection

Meet 3-A sanitary standard requirements and have a sanitary quick-clamp connection. For sanitary quick-clamp fittings, see pages 208-210. Quick-clamp flange is Type 304 stainless steel polished to a #4 sanitary finish. Head is white polypropylene with a screw-on cap and retaining chain. Probes have screw terminal connections and accept a maximum of 10-ga. wire. Probes are Type 316 stainless steel. Temperature range is –328° to +400° F. Response time is 5 seconds.

Flange OD	Tube OD	Probe Dia.	Probe Lg.	O'all Lg.	Conduit Connection, NPT Female	
2″	1½″	¼″	4″	11″	¾″	3858K11 $126.67
2½″	2″	¼″	4″	11″	¾″	3858K12 132.22

Cryogenic RTD Probes

With Wire Leads

With Process Connection

Don't get caught in the cold without the right RTD probe for the job. These cryogenic RTD probes are insulated to tolerate temperatures to –320° F, and they have a moisture-resistant seal. Probes include a certificate of calibration traceable to NIST (National Institute of Standards and Technology). They are Type 316 stainless steel and have a 100-ohm three-wire platinum element. Wire leads are 22 ga. Cable is PTFE insulated with an FEP jacket. Temperature range is –320° to +392° F. Response time is 12 seconds.

Probes with process connection have a ¼″ NPT male connection.

Dia.	With Wire Leads Probe Lg.		W/Process Connection Probe Lg.	
3/16″	4″	3776K14 $285.00	4″	3776K16 $306.25
3/16″	6″	3776K15 285.00	6″	3776K17 306.25
¼″	6″	3776K12 285.00	6″	3776K13 306.25

Create-Your-Own Thermocouple/RTD Probes

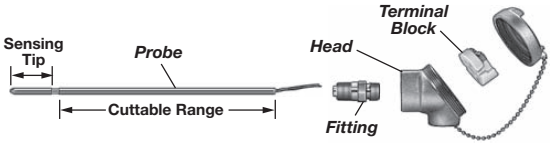

Create a custom assembly—simply choose a probe that fits your temperature range, cut it to the length you need, and add a head, terminal block, and fitting.

Probes

All are Type 304 stainless steel with 6″ wire leads and a 3″ sensing tip. Cut probe with a pipe cutter to your required length within the cuttable range. *Thermocouples* have two wire leads. *RTDs* have a 100-ohm three-wire platinum element.

24″ length has a 21″ cuttable range.

48″ length has a 45″ cuttable range.

Type	Temp. Range	Probe Dia.	24″ Length		48″ Length	
Thermocouples						
J	+32° to +400° F	¼″	38705K41	$61.96	38705K31	$96.39
J	+32° to +900° F	¼″	38705K26	56.56	38705K27	91.80
J	+32° to +1300° F	¼″	38705K51	71.07	38705K35	105.90
K	+32° to +400° F	¼″	38705K42	61.96	38705K32	96.39
K	+32° to +900° F	¼″	38705K28	65.25	38705K29	96.23
K	+32° to +1300° F	¼″	38705K52	81.79	38705K36	111.31
T	–330° to +400° F	¼″	38705K43	60.71	38705K33	93.28
RTDs—100-ohm						
—	–58° to +400° F	¼″	38705K44	80.89	38705K34	107.38
—	–58° to +900° F	¼″	38705K37	84.46	38705K38	114.92

Heads, Terminal Blocks, and Fittings

Heads include a screw-on cap with retaining chain, except 38705K86, which has a hinged cap. Process connection is ½″ NPT female. Conduit connection is ¾″ NPT female. *Hazardous-location cast iron head* is approved for use in Class I, Division I, Groups C and D, and Class II, Groups E, F, and G environments. UL listed.

Terminal blocks accept a maximum of 14-ga. wire.

Fittings are Type 303 stainless steel with a ½″ NPT male connection. *Oil-sealed spring-loaded fitting* has a chemical-resistant O-ring.

Heads		
White Polypropylene	38705K22	$29.34
White Polypropylene	38705K86	30.54
Cast Aluminum	38705K85	32.14
Cast Iron	38705K84	43.75
Type 316 Stainless Steel	38705K21	120.60
Hazardous-Location Cast Iron	38705K92	91.00
Hazardous-Location Type 316 Stainless Steel	38705K23	122.40
Terminal Blocks		
For Thermocouple	38705K82	10.36
For RTD	38705K83	13.29
Fittings		
Spring Loaded	38705K81	39.46
Oil-Sealed Spring Loaded	38705K91	49.64

Easy-to-Attach RTD Probes

Choose from bolt on or adhesive backed for an easily attached RTD probe to monitor surface temperature. Probes have a platinum element and a 40″ wire lead.

100-ohm RTD probes are the most commonly used RTD.

1,000-ohm RTD probes offer greater accuracy.

A-E ***Bolt-on RTD probes*** attach with a bolt for a secure hold in high-vibration areas. All meet MS202 (Method 204, test condition D), which tests temperature measurement in environments with high vibration. Probe bodies are Type 304 stainless steel (unless noted). All except Style B have a mounting hole (bolts not included). *Style B* has an attached bolt that fits a ¼″ threaded hole.

F ***Adhesive-backed RTD probes*** are low profile and have a pressure-sensitive adhesive back for use on flat surfaces.

Temp. Range	Probe Size, Lg.×Wd.×Thick.	Bolt Hole Size	Wire Ga.	Resp. Time, sec.	100-ohm 3-Wire		1,000-ohm 2-Wire	
Bolt-On Probes								
With PTFE Insulation and Jacket								
A –58° to +500° F	1″ × ½″ × 3/16″	17/64″	26	10	6577T35▲	$60.60	6577T25▲★	$60.67
B –58° to +500° F	¼″-20 × ⅜″ Lg.	—	26	10	6577T38	64.76	6577T28★	64.65
C –58° to +500° F	⅜″ × ½″ × 3/16″	5/32″	26	10	6577T37	70.36	6577T27★	70.40
High Temperature with Mica-Glass Insulation and Jacket								
D –94° to +932° F	1¼″ × 5/16″ × 3/16″	5/32″	22	10	6577T32	86.79	6577T22	86.69
E –94° to +932° F	1″ × ½″ × 3/16″	5/32″	22	10	6577T31	99.74	6577T21	99.74
Adhesive-Backed Probes with Polyimide Insulation and Jacket								
F –4° to +350° F	⅜″ × 13/16″ × 1/16″	—	26	0.9	6568T46	44.38	6568T16	50.49
F –4° to +350° F	3/16″ × ⅝″ × 1/16″	—	26	1	6568T43	45.38	6568T13	64.83
F –4° to +350° F	5/16″ × ⅝″ × 1/16″	—	22	1.2	6568T47	51.47	6568T17	51.36
F –4° to +350° F	3/16″ × ⅝″ × 1/16″	—	26	0.4	6568T49	76.55	6568T19	76.55

▲ Probe bodies are nickel-plated copper. ★ Wire leads are 24 ga.

For information about thermocouples and RTDs, see page 596.

Ready-to-Use RTD Probes with 4-20 mA Output

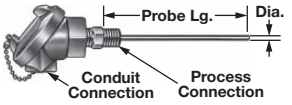

With NPT Conduit Connection

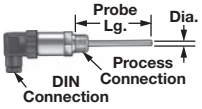

With DIN Connection

Incorporate panel instruments, switches, controllers, and recorders into your system using one of these RTD probes with a built-in transmitter. The transmitter converts the probe signal to a common 4-20 mA signal for use with standard electrical wire. All probes are Type 316 stainless steel. They have a 100-ohm three-wire platinum element and a ½″ NPT male process connection. Probes operate on 10 to 30 VDC.

Probes with NPT conduit connection have an aluminum head with a screw-on cap and retaining chain. Conduit connection is ¾″ NPT female. Probes have a spring-loaded fitting that compresses the probe length by ⅜″. The transmitter has screw terminal connections.

Probes with DIN connection have an overall head size of 1 1/16″ Dia. × 3 5/32″ Ht. CE approved; IP65 rated.

Temp. Range	Probe Dia.	Probe Lg.	O'all Lg.		
With NPT Conduit Connection					
0° to +400° F	¼″	4 5/8″	8¼″	40705K35	$210.42
0° to +400° F	¼″	6 5/8″	10¼″	40705K45	210.42
0° to +400° F	¼″	9 5/8″	13¼″	40705K55	210.42
0° to +400° F	¼″	12 5/8″	16¼″	40705K65	210.42
With DIN Connection					
–40° to +120° F	¼″	4″	7 3/16″	6467T21	218.44
0° to +140° F	¼″	6″	9 3/16″	6467T24	224.83
0° to +200° F	¼″	9″	12 3/16″	6467T26	226.95

Panel-Mount Thermocouple Female Connection Strips

Flat-Pin (Mini)

Organize your thermocouples on an instrument panel with these connection strips. They have thermoplastic bodies and withstand temperatures up to 400° F. All connections are female. Strips mount into place with self-contained machine screws.

Flat-pin (mini) panel-mount connection strips accept a maximum wire size of 24 ga. Panel cutout is 1″ high for all.

Round-pin (standard) panel-mount connection strips accept a maximum wire size of 14 ga. Panel cutout is 1¼″ high for all.

Type	Color	Flat-Pin (Mini) Panel Cutout, Wd.			Round-Pin (Standard) Panel Cutout, Wd.		
2 Connections							
J	Black	1¼″	3921K21	$14.13	1 5/16″	3921K41	$15.56
K	Yellow	1¼″	3921K22	14.13	1 5/16″	3921K42	15.56
T	Blue	1¼″	3921K23	14.13	1 5/16″	3921K43	15.56
4 Connections							
J	Black	2 5/8″	3921K24	28.27	2 13/16″	3921K44	31.10
K	Yellow	2 5/8″	3921K25	28.27	2 13/16″	3921K45	31.10
T	Blue	2 5/8″	3921K26	28.27	2 13/16″	3921K46	31.10
6 Connections							
J	Black	4″	3921K27	42.40	4 5/16″	3921K47	46.67
K	Yellow	4″	3921K28	42.40	4 5/16″	3921K48	46.67
T	Blue	4″	3921K29	42.40	4 5/16″	3921K49	46.67
8 Connections							
J	Black	5 3/8″	3921K31	56.53	5 13/16″	3921K51	62.22
K	Yellow	5 3/8″	3921K32	56.53	5 13/16″	3921K52	62.22
T	Blue	5 3/8″	3921K33	56.53	5 13/16″	3921K53	62.22

Thermocouple and RTD Connectors

(1-3) Thermocouple Connectors

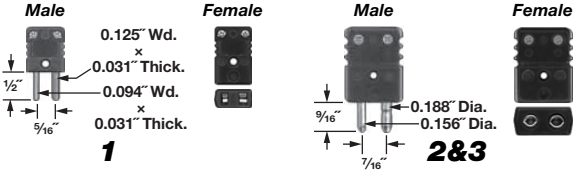

All thermocouple connectors have a thermoplastic body and alloy contacts.

(1) Flat-Pin (Mini)—Accept a maximum wire size of 24 ga.

(2) Round-Pin (Standard)—Accept a maximum wire size of 14 ga.

(3) Round-Pin Quick Wire (Standard)—Just insert wire through the bottom and tighten exposed screw terminals for simple installation.

Type	Color	Male		Female	
400° F Max. Temp.					
1 J	Black	3869K33	$3.41	3869K32	$3.97
1 K	Yellow	3869K35	3.41	3869K34	3.97
1 T	Blue	3869K37	3.41	3869K36	3.97
2 J	Black	3869K23	3.65	3869K22	4.81
2 K	Yellow	3869K25	3.65	3869K24	4.81
2 T	Blue	3869K27	3.65	3869K26	4.81
3 J	Black	3869K16	4.10	3869K13	5.42
3 K	Yellow	3869K17	4.10	3869K14	5.42
3 T	Blue	3869K18	4.10	3869K15	5.42
800° F Max. Temp.					
1 J	Red	3869K41	6.67	3869K44	7.57
1 K	Red	3869K42	6.67	3869K45	7.57
1 T	Red	3869K43	6.67	3869K46	7.57
2 J	Red	3869K51	10.37	3869K54	12.43
2 K	Red	3869K52	10.37	3869K55	12.43
2 T	Red	3869K53	10.37	3869K56	12.43
3 J	Red	3869K87	10.37	3869K63	12.43
3 K	Red	3869K58	10.37	3869K64	12.43
3 T	Red	3869K59	10.37	3869K65	12.43

(4) Thermocouple Round-Pin Male to Flat-Pin Male Adapters

Convert a round-pin (standard) male connector to a flat-pin (mini) male connector. Have thermoplastic bodies and alloy contacts.

Type	Color		
J	Black	3869K69	$8.25
K	Yellow	3869K71	8.25

(5) Panel-Mount Thermocouple Female Connectors

Flat-Pin Front View *Flat-Pin Side View*

Mount your thermocouple connection through a control panel. All connections are female. Maximum temperature is 400° F.

Type	Color	Flat-Pin (Mini) Panel Cutout			Round-Pin (Standard) Panel Cutout		
J	Black	7/8″ Dia.	3869K47	$10.82	1 1/8″ Dia.	3869K66	$11.75
K	Yellow	7/8″ Dia.	3869K48	10.82	1 1/8″ Dia.	3869K67	11.75
T	Blue	7/8″ Dia.	3869K49	10.82	1 1/8″ Dia.	3869K68	11.75

(6) Thermocouple Female Connectors w/NPT Connection

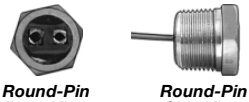

Round-Pin Front View *Round-Pin Side View*

Connectors have an NPT male process connection. They have a female thermocouple connection (socket) on one end and thermocouple wire leads on the other. Connectors have a Type 304 stainless steel body. Wire leads are 24 ga., 4-ft. long, and have PTFE insulation and jacket. Temperature range is –40° to +250° F.

Flat-pin (mini) connectors have a ½″ NPT male connection; *round-pin (standard) connectors* have a ¾″ NPT male connection.

Type	Flat-Pin (Mini)		Round-Pin (Standard)	
J	3877K221	$54.55	3877K241	$71.43
K	3877K222	54.55	3877K242	71.43
T	3877K223	54.55	3877K243	71.43

(7) RTD Connectors

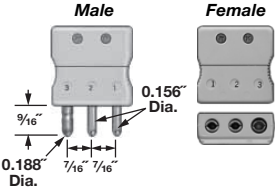

Connectors have white thermoplastic bodies and copper contacts. They accept a maximum wire size of 14 ga.

Male	3869K77	$5.75
Female	3869K76	8.41

(8&9) Wire-Clamp Brackets

Provide extra stability to keep wires attached to the connection. Made of Type 304 stainless steel.

8	For Flat-Pin (Mini) Connectors	3869K62	$2.00
9	For Round-Pin (Standard) and RTD Connectors	3869K61	2.11

For information about thermocouples and RTDs, see page 596.

Thermocouple Extension Wire with Connectors

6-ft. Length

10, 25, and 50-ft. Lengths

Lengthen the reach of your thermocouple probes when you use these cable extensions. They have a connector at each end, so they snap right into your existing connections.

6-ft. wires are self-retracting. They have 28-ga. wire with thermoplastic insulation and jacket. Maximum temperature is 259°F. ***10-ft., 25-ft., and 50-ft. wires*** have 24-ga. wire with PVC insulation and jacket. Maximum temperature is 221°F.

Lg.	Type J		Type K		Type T	
Flat-Pin (Mini) Connectors— *Male to Female*						
6 ft.★	3873K271	$33.70	3873K272	$33.70	3873K273	$33.70
10 ft.	3873K211	30.45	3873K212	30.45	3873K213	30.45
25 ft.	3873K221	40.61	3873K222	40.61	3873K223	40.61
50 ft.	3873K231	56.84	3873K232	56.84	3873K233	56.84
Flat-Pin (Mini) Connectors— *Male to Male*						
6 ft.★	3873K61	38.46	3873K62	38.46	3873K63	38.46
10 ft.	3873K64	35.00	3873K65	35.00	3873K66	35.00
25 ft.	3873K67	45.71	3873K68	45.71	3873K69	45.71
50 ft.	3873K71	63.57	3873K72	63.57	3873K73	63.57
Round-Pin (Standard) Connectors— *Male to Female*						
10 ft.	3873K241	32.47	3873K242	32.47	3873K243	32.47
25 ft.	3873K251	43.34	3873K252	43.34	3873K253	43.34
50 ft.	3873K261	56.84	3873K262	56.84	3873K263	56.84

★ Extended length.

Thermocouple and RTD Signal Converters

Thermocouple Head Mount

Panel Mount

Also known as transmitters, these convert signals from a thermocouple or RTD to a common 4-20 mA signal. With this signal, you can incorporate panel instruments, switches, controllers, and recorders within your system. All have screw terminal connections. Signal converters for thermocouples accept two wire leads; those for RTDs accept three wire leads. Thermocouple and RTD probes are sold separately; see pages 598-602.

Head Mount— Also known as hockey pucks, these small 1 11/16″ Dia. × 13/16″ Dp. disc-style converters mount easily inside a head. They have an LED that varies in brightness according to the output signal strength, giving you visual indication of temperature. Accept a maximum of 24-ga. wire. Operate on 12 to 36 VDC.

Panel Mount with Digital Display— Have an aluminum 1/8 DIN housing that fits a 1 3/4″ Ht. × 3 5/8″ Wd. panel cutout. All have a 1/2″ high LCD and a resolution of 1°. Accept a maximum of 16-ga. wire. They operate on 115/230 VAC.

For Probe	Temp. Range		
Head Mount			
J Thermocouple	+32° to +572°F	38875K81	$78.66
J Thermocouple	+32° to +1292°F	38875K73	62.70
K Thermocouple	+32° to +1112°F	38875K82	78.66
K Thermocouple	+32° to +2192°F	38875K74	62.70
RTD—100-ohm	0° to +250°F	38875K77	74.10
RTD—100-ohm	0° to +500°F	38875K78	74.10
Panel Mount with Digital Display			
J Thermocouple	−238° to +1400°F	38535K43	226.86
K Thermocouple	−58° to +1999°F	38535K42	226.86
RTD—100-ohm	−50° to +850°C	38535K56	226.86

Thermocouple and RTD Wire

Make your own thermocouples and RTDs or lengthen existing connections with this wire. All wire has insulation and a jacket to withstand high temperatures. Full coil length/maximum continuous length is 100 ft. We offer standard lengths of 10, 20, and 50 ft. as well as any length you may need.

Solid Thermocouple Wire

RTD Wire

Thermocouple Wire

Thermocouple wire lets you make new thermocouples. *Solid wire* is more rigid and easier to cut. *Stranded wire* is very flexible. ***Thermocouple extension wire*** lets you lengthen existing connections. UL recognized.

Type	Max. Temp.	Wire Color Positive	Wire Color Negative	Jacket Color	24 Gauge	Per Ft. 1-99	Per Ft. 100-Up	20 Gauge	Per Ft. 1-99	Per Ft. 100-Up	16 Gauge	Per Ft. 1-99	Per Ft. 100-Up
Solid Thermocouple Wire													
With FEP Insulation and Jacket													
J	400°F	White	Red	Brown	3870K31	$1.05	$0.82	3870K61	$1.16	$0.96	3870K49	$1.82	$1.42
K	400°F	Yellow	Red	Brown	3870K32	1.20	.97	3870K62	1.24	.95	3870K51	3.04	2.36
T	400°F	Blue	Red	Brown	3870K33	.89	.69	3870K57	1.00	.78	3870K56	1.85	1.44
With Fiberglass Insulation and Jacket													
J	900°F	White	Red	Brown/Black	3870K34	.97	.78	3870K63	.90	.70	3870K52	2.09	1.61
K	900°F	Yellow	Red	Brown/Yellow	3870K35	1.08	.84	3870K64	1.09	.83	3870K53	2.20	1.71
T	900°F	Blue	Red	Brown/Blue	3870K36	.93	.72	3870K59	.99	.77	3870K58	2.09	1.61
With Vitreous Silica Insulation and Jacket													
KK	1600°F	White	White/Red	White	—	—	—	3870K65	3.06	2.38	3870K54	6.45	4.99
With Ceramic Fiber Insulation and Jacket													
KK	2200°F	White	White/Red	White/Yellow	—	—	—	3870K66	3.47	2.67	3870K55	6.97	5.37
Stranded Thermocouple Wire													
With FEP Insulation and Jacket													
J	400°F	White	Red	Brown	6579T37	1.20	.92	6579T21	1.32	1.01	6579T91	2.49	1.93
K	400°F	Yellow	Red	Brown	6579T38	1.32	1.01	6579T22	1.84	1.42	6579T92	3.34	2.60
T	400°F	Blue	Red	Brown	6579T39	1.26	.97	6579T23	1.37	1.05	6579T93	2.22	1.73
With Polyimide Insulation and Jacket													
J	600°F	White	Red	Brown	—	—	—	6579T53	1.54	1.19	—	—	—
K	600°F	Yellow	Red	Brown	—	—	—	6579T51	2.01	1.56	—	—	—
With Fiberglass Insulation and Jacket													
J	900°F	White	Red	Brown/Black	6579T41	1.04	.77	6579T24	1.28	.95	6579T94	2.29	1.78
K	900°F	Yellow	Red	Brown/Yellow	6579T42	1.34	1.00	6579T25	1.64	1.28	6579T95	2.83	2.20
T	900°F	Blue	Red	Brown/Blue	6579T43	1.18	.87	6579T26	1.46	1.08	6579T96	2.17	1.69
Solid Thermocouple Extension Wire													
With PVC Insulation and Jacket													
JX	220°F	White	Red	Black	—	—	—	3870K82	.48	.38	3870K69	.87	.67
KX	220°F	Yellow	Red	Yellow	—	—	—	3870K81	.85	.66	3870K71	1.13	.87
TX	220°F	Blue	Red	Blue	—	—	—	3870K86	.51	.39	3870K72	.91	.78

RTD Wire

For use with two-wire or three-wire 100-ohm and 1,000-ohm RTD probes. All RTD wire is stranded.

	Max. Temp.	Wire Color Positive	Wire Color Negative	Jacket Color	24 Gauge	Per Ft. 1-99	Per Ft. 100-Up	22 Gauge	Per Ft. 1-99	Per Ft. 100-Up
With PVC Insulation and Jacket	220°F	White	Red	White	—	—	—	4062K61	$0.51	$0.41
With FEP Insulation and Jacket	400°F	White	Red	White	—	—	—	4062K62	1.05	.85
With Fiberglass Insulation and Jacket	900°F	White	Red	White/Red	4062K66	$0.80	$0.64	4062K63	1.71	1.36

For information about thermocouples, see page 596. For information about electrical switches, see page 855.

Adjustable Temperature Switches

A

B

Take control of your temperature with the turn of a dial. These switches are rated for high amps, so they can control a heater directly without a relay or contactor. Adjust the actuation point within the temperature range. All are for use indoors. *Two-circuit switches* are double pole, single throw (DPST) to turn two circuits from "on" to "off" (normally closed), and *three-circuit switches* are triple pole, single throw (3PST) to turn three circuits from "on" to "off" (normally closed). All have screw terminal connections and three 7/32" mounting holes (fasteners not included). Probe and cable are copper, unless noted. Cable is 7-ft. long. Accuracy is not rated.

Switches with pilot light indicate when the switch is on. *Switches without enclosure* may be panel mounted. Panel cutout for 3626K47 and *K87* is 2 5/8" Ht. × 1 3/4" Wd.; for 3626K44 and *K84*, it is 2 5/8" Ht. × 2 1/8" Wd.

Optional packing seal and brass fitting seals the probe in tanks and pipes. Fitting has 3/8"-18 male threads.

Temp. Range	Amps	VAC (Phase)	Probe, Dia. × Lg.	O'all Size, Ht. × Wd. × Dp.	Without Pilot Light		With Pilot Light	
(A) Two-Circuit Switches without Enclosure								
60° to 250° F	30	120/277 (1 or 3)	1/4" × 5 3/16"	4 1/16" × 2 5/8" × 2 1/4"	3626K47	$116.49	3626K87	$128.30
200° to 550° F	30	120/277 (1 or 3)	5/16" × 4 1/2"	4 1/16" × 2 5/8" × 2 1/4"	3626K44	168.04	3626K84	179.69
(B) Two-Circuit Switches with Enclosure								
0° to 100° F	30	120/277 (1 or 3)	3/8" × 3 3/4"	4 1/16" × 2 5/8" × 2 1/4"	3626K11	212.78	3626K61	225.15
60° to 250° F	30	120/277 (1 or 3)	1/4" × 5 3/16"	4 1/16" × 2 5/8" × 2 1/4"	3626K17	146.91	3626K67	159.12
200° to 550° F	30	120/277 (1 or 3)	5/16" × 4 1/2"	4 1/16" × 2 5/8" × 2 1/4"	3626K23	198.45	3626K73	211.08
300° to 700° F	30	120/277 (1 or 3)	5/16" × 4 7/8"	4 1/16" × 2 5/8" × 2 1/4"	3626K19♣	248.14	3626K66♣	260.36
(B) Three-Circuit Switches with Enclosure								
60° to 250° F	30	120/277 (3)	3/8" × 4 1/8"	4 1/16" × 2 5/8" × 2 1/4"	3626K14	285.57	3626K64	297.94
200° to 550° F	30	120/277 (3)	3/8" × 3"	4 1/16" × 2 5/8" × 2 1/4"	3626K15	282.73	3626K65	294.85
Optional Packing Seal and Brass Fitting							3626K31	$16.01

♣ Probe and cable are steel.

Splash-Resistant Adjustable Temperature Switches

Dial Switch with Door

Digital Switch with Door

Self-contained in polycarbonate enclosures, these switches are splash-resistant. They are rated for high amps, so they can control a heater directly without a relay or contactor. Adjust the actuation point within the temperature range. All switches are set to turn circuits from "on" to "off" (normally closed). They are triple pole, single throw (3PST) to turn three circuits "on" or "off" except 35055K71, which is single pole, double throw (SPDT) to turn one circuit "on" or "off." All have screw terminal connections and four 1/4" dia. mounting holes (fasteners not included).

Switches with door are rated NEMA 4X for resistance to splashing liquids, corrosives, and dust. Door is translucent.

Dial switches, also known as bulb and capillary thermostats, are set with a dial. Probe and cable are copper with a PTFE sleeve. Cable is 5' 8" long. Accuracy is ±4° F. *Digital switches* have an LED display that is °F/°C selectable. Temperature is set with a button. Probe is a Type J thermocouple. Probe and cable are PTFE coated. Cable is 10-ft. long. Accuracy is ±1° F.

Temp. Range	Amps	VAC (Phase)	Probe, Dia. × Lg.	O'all Size, Ht. × Wd. × Dp.	Without Door		With Door	
Dial								
70° to 245° F	25	120/240 (1)	1/4" × 6 3/8"	6" × 6" × 3"	35055K74	$135.62	35055K71	$212.33
70° to 245° F	50	240 (1 or 3)	1/4" × 6 3/8"	6" × 6" × 4"	35055K75	432.03	35055K72	444.06
70° to 245° F	50	480 (1 or 3)	1/4" × 6 3/8"	8" × 8" × 4"	35055K76	499.84	35055K73	510.78
Digital								
32° to 999° F	30	120 (1 or 3)	1/4" × 7/8"	6" × 6" × 4"	—	—	5621T31	586.72
32° to 999° F	30	240 (1 or 3)	1/4" × 7/8"	6" × 6" × 4"	—	—	5621T32	586.72
32° to 999° F	30	480 (1 or 3)	1/4" × 7/8"	8" × 8" × 4"	—	—	5621T33	651.88
32° to 999° F	50	240 (1 or 3)	1/4" × 7/8"	6" × 6" × 4"	—	—	5621T35	650.46
32° to 999° F	50	480 (1 or 3)	1/4" × 7/8"	8" × 8" × 4"	—	—	5621T36	723.15

Heavy Duty Adjustable Temperature Switches

Probe with 6-ft. Cable

Immersion Probe with Threaded Stem

Rugged enclosures and sealed probes make these temperature switches suitable for harsh environments. When your actuation point is reached, switches activate an alarm or other device. Adjust the actuation point within the temperature range. All switches have a single pole, double throw (SPDT) relay that can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). All have screw terminal connections and mounting holes (fasteners not included). Accuracy is not rated. UL listed and CSA certified.

Indoor Switches— Have a NEMA 1 polycarbonate enclosure for indoor use. *Probes with 6-ft. cable* have a copper probe and cable and two 3/16" dia. mounting holes. *Immersion probes with threaded stem* have a brass probe with 3/8" NPT male threads.

Watertight Switches— Have an aluminum enclosure designed to resist splashing liquids. CE approved. *Probes with 6-ft. cable* have two 17/64" dia. mounting holes. *Switches with one actuation point* have a copper probe and cable; units *with two actuation points* have a Type 304 stainless steel probe and cable. *Immersion probes with threaded stem* have a nickel-plated brass probe with 1/2" NPT male threads.

Hazardous-Location Switches— Have an aluminum enclosure designed for resistance to splashing liquids. Enclosures are UL listed and C-UL certified for Class I, Div. 1 and 2, Groups B, C, D and Class II, Div. 1 and 2, Groups E, F, G hazardous locations. All have four 17/64" dia. mounting holes. *Probes with 6-ft. cable* have a Type 304 stainless steel probe and cable. *Immersion probes with threaded stem* have a brass probe with 1/2" NPT male threads.

Temp. Range	Amps	VAC (Phase)	Probe, Dia. × Lg.	Body Size, Ht. × Wd. × Dp.	With One Actuation Point		With Two Actuation Points	
Probes with 6-ft. Cable								
Indoor Switches								
−130° to +120° F	15	125/250/480 (1)	3/8" × 4 1/2"	3 1/4" × 3 1/2" × 3 13/16"	47525K61	$189.47	—	—
0° to +150° F	15	125/250/480 (1)	3/8" × 6 7/8"	3 1/4" × 3 1/2" × 3 13/16"	47525K62	189.47	—	—
+50° to +300° F	15	125/250/480 (1)	3/8" × 4 1/2"	3 1/4" × 3 1/2" × 3 13/16"	47525K63	189.47	—	—
+150° to +650° F	15	125/250/480 (1)	3/8" × 3 5/8"	3 1/4" × 3 1/2" × 3 13/16"	47525K64	189.47	—	—
Watertight Switches								
+30° to +250° F	15	125/250/480 (1)	3/8" × 2 7/16"	8 11/16" × 4" × 2 3/8"	5029K53	322.68	5029K73	$480.00
+100° to +400° F	15	125/250/480 (1)	3/8" × 2 1/8"	8 11/16" × 4" × 2 3/8"	5029K54	322.68	5029K74	480.00
Hazardous-Location Switches								
+30° to +250° F	15	125/250/480 (1)	3/8" × 2 7/16"	9 5/16" × 5 1/8" × 2 13/16"	5032K66	609.76	5032K86	617.80
Immersion Probes with Threaded Stem								
Indoor Switches								
0° to +225° F	15	125/250/480 (1)	3/8" × 2 1/8"	3 5/16" × 3 3/8" × 2 13/16"	47525K71	138.95	—	—
+200° to +425° F	15	125/250/480 (1)	3/8" × 2 1/8"	3 5/16" × 3 3/8" × 2 13/16"	47525K72	138.95	—	—
Watertight Switches								
0° to +225° F	15	125/250/480 (1)	9/16" × 1 7/8"	7 1/2" × 4" × 2 3/8"	5029K56	265.26	5029K76♦	391.58
+200° to +425° F	15	125/250/480 (1)	9/16" × 1 7/8"	7 1/2" × 4" × 2 3/8"	5029K52	265.26	5029K72♦	391.58
Hazardous-Location Switches								
0° to +225° F	15	125/250/480 (1)	9/16" × 1 7/8"	8 1/4" × 5 1/8" × 5 3/16"	5032K67	429.47	5032K87	563.83

♦ Body size is 5 1/2" Ht. × 5 1/8" Wd. × 5 1/2" Dp.

For information about electrical switches, see page 855.

Cartridge-Style Adjustable Temperature Switches

Control the temperature of your tank or process by incorporating one of these switches. They are suitable for nonvibration applications located away from the heat source. Simply turn the adjustment screw to change the actuation point within the temperature range. Probe housing is Type 304 stainless steel. Switches have two 8″ long wire leads with fiberglass insulation. Accuracy is not rated. UL recognized. Switches with a 5/8″ cartridge OD are also CSA certified.

Turns "on" to "off" switches are single pole, single throw (SPST), set to turn one circuit from "on" to "off" (normally closed) at your actuation point. ***Turns "off" to "on" switches*** are single pole, single throw (SPST), set to turn one circuit from "off" to "on" (normally open) at your actuation point.

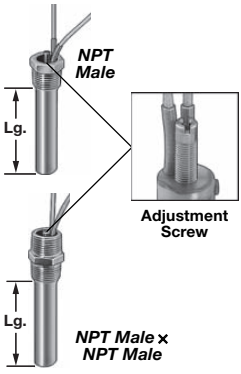

Cartridge OD	Pipe Size	Temp. Range	Amps @ 120/240 VAC (Phase)	Turns "On" to "Off" (Normally Closed) Lg.			Turns "Off" to "On" (Normally Open) Lg.		
Unthreaded									
1/2″	—	–100° to +600° F	5/3 (1)	2 1/2″	7079K23	$65.29	2 5/8″	7079K91	$65.29
5/8″	—	–100° to +600° F	10/5 (1)	3 5/8″	7079K12	65.29	3 3/4″	7079K92	65.29
Threaded—NPT Male									
1/2″	3/8″	–100° to +600° F	5/3 (1)	2″	7079K51	79.76	2 1/8″	7079K93	79.76
5/8″	1/2″	–100° to +600° F	10/5 (1)	3″	7079K21	79.76	3 1/8″	7079K94	79.76
Threaded—NPT Male × NPT Male									
1/2″	3/8″	–100° to +600° F	5/3 (1)	2″	7079K61	85.22	2 1/8″	7079K95	85.22
5/8″	1/2″	–100° to +600° F	10/5 (1)	3″	7079K16	85.22	3 1/8″	7079K96	85.22

Nonadjustable Surface-Temperature Switches

Also known as thermostats, these switches maintain the temperature of your flat surface or pipe within the specified range. Switches are single pole, double throw (SPDT) to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). These are set to turn your heater on when it drops below the minimum actuation point and turn your heater off when the surface temperature rises above the maximum actuation point. Switches are nonadjustable and come with minimum/maximum temperature actuation points already set. Accuracy is not rated.

Switches have a Type 304 stainless steel flange with two 11/64″ dia. mounting holes (fasteners not included). Include 4-ft. long wire leads. Maximum ambient temperature is 221° F. Housing is phenolic. Overall height is 2 15/16″. CSA certified and UL recognized. FM approved for Class I, Div. 2, Groups A, B, C, and D hazardous locations.

Actuation Points Min. (Heater On)	Max. (Heater Off)	Amps	VAC (Phase)		
45° F	60° F	25	240 (1)	3599K42	$58.00
60° F	75° F	25	240 (1)	3599K43	58.00
90° F	105° F	25	240 (1)	3599K44	58.00
185° F	200° F	25	240 (1)	3599K45	58.00

Remote Room-Monitoring Adjustable Temperature Switch

Optional Remote Temperature Sensor

Be aware of changing air temperatures with this high/low-indicating temperature switch. Adjust the actuation point within the temperature range. When the temperature rises above or falls below your actuation point, the digital display flashes the current temperature reading and displays "HI" or "LO."

Switch has two single pole, double throw (SPDT) relays that can each be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). Relays can activate remote alarms. The switch is °F/°C selectable and has a 0-120 minute time delay. It includes a built-in 32° to 122° F probe for ambient temperature. Can be used simultaneously with one of the optional remote temperature sensors (sold separately). The switch has an ABS plastic housing that mounts flush and a 7/8″ high LCD. Accuracy is ±1° F; resolution is 1° F. It requires a 12 VDC power supply (sold separately).

Remote-mount buzzer sounds at 90 dB when temperature is above or below actuation points. It has two wire leads that attach to the alarm. ***Optional remote temperature sensors*** have two wire leads that attach to the alarm.

Switch and Accessories

	O'all Size, Ht. × Wd. × Dp.		
Switch	4 3/4″ × 6″ × 1 1/4″	7525K61	$102.62
12 VDC Output/120 VAC Input Power Supply		7525K92	28.87
Remote-Mount Buzzer		7525K95	30.93

Optional Remote Temperature Sensors

Temp. Range	Max. Cable Lg.	Accuracy		Each
–58° to +158° F	1,000 ft.	±1° F	7525K12	$48.52
+32° to +299° F	1,000 ft.	±1° F	7525K11	67.96
22/2 AWG Sensor Extension Wire			71055K71★ Per Ft.	$0.20

★ **To Order:** Please specify 10-, 25-, 50-, 100-, or 250-ft. length.

Plug-In Temperature Variable Switch with NIST Certificate

Control power to your equipment based on your programmed temperature settings. Switch conforms to NIST (National Institute of Standards and Technology) standards and includes a certificate of calibration traceable to NIST. Switch is single pole, single throw (SPST) to turn one circuit from "off" to "on" (normally open). Turns any piece of equipment that is rated for 115 VAC up to 15 amps on or off when temperature rises above or falls below your actuation points. Accuracy is ±1.8° F.

Switch accepts up to three pairs of timed on/off events per day; a manual override lets you turn the equipment on or off without disturbing programmed settings. Switch includes two units—the switch body and a relay, each measuring 5 1/2″ Ht. × 2 3/4″ Wd. × 1 1/4″ Dp. Plugs into a three-prong outlet. Switch has a 1/2″ high LCD that's powered by two included batteries. Resolution is 0.1° F. °F/°C selectable. Probe is attached to a 3 1/2-ft. cable.

Temp. Range	Amps	VAC (Phase)	Probe, Dia. × Lg.		
–4° to +140° F	15	115 (1)	1/4″ × 1″	3313K21	$168.40

Plug-In Temperature Variable Switches

Just plug your heating equipment into one of these switches and turn the knob to adjust the power supplied to your heating device. A separate thermometer is required to monitor temperature. Switches are single pole, single throw (SPST) to turn one circuit from "off" to "on" (normally open). They have a 6-ft. power cord with three-prong plug. Operate on 115 VAC (single phase) and provide 115 VAC up to 1,500 watts. Accuracy is not rated. *Solid-state model* reduces arcing of the switch contacts.

	O'all Size, Ht. × Wd. × Dp.		
Standard Switch	3 5/8″ × 2″ × 2 1/4″	35655K88	$102.86
Solid-State Switch	3 5/8″ × 2″ × 2 1/4″	35655K89	114.29

Easy-to-Use Programmable Temperature Controllers

With a simple menu and digital keypad, setting these controllers is a snap! Just adjust the actuation points for your heater or other devices. Controllers compare the input from your temperature probe (sold separately, see pages 598-602) to your programmed actuation point and then signal your heater to turn on or off.

All controllers have a single pole, double throw (SPDT) relay that can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). °F/°C selectable and include a panel-mount adapter. They accept probes with bare wire leads. Overall size is 2 13/16″ Ht. × 2 13/16″ Wd. × 2″ Dp. UL recognized, CSA certified, and CE approved.

For Probe	Temp. Range	Amps @ VAC (Phase)	DIN Size		
J Thermocouple	32° to 392° F	8 @ 120 (1)	1/8	4314K2	$177.33
K Thermocouple	32° to 2192° F	8 @ 120 (1)	1/8	4314K6	177.33
RTD-100-ohm	32° to 1472° F	8 @ 120 (1)	1/8	4314K8	177.33

For information about thermocouples and RTDs, see pg. 596. For information about electrical switches, see pg. 855.

Dial-Set Temperature Controllers

It's easy to see and adjust your actuation point with the simple dial on these temperature controllers. All controllers are single pole, double throw (SPDT) and can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). They have a dual-scale (°F/°C) setting dial and include a panel-mount adapter. All have pins to connect to standard 8-pin circular sockets with screw terminal connections (sold separately; see page 910). Controllers accept probes with bare wire leads (sold separately; see pages 599-601). All operate on 100 to 120 VAC. UL recognized; CSA certified.

On/Off Control—Designed for simple on/off applications. When the temperature reaches your actuation point, output turns off until temperature falls below your actuation point again.

P-D (Proportional-Derivative) Control—These controllers stabilize the temperature better than the on/off control. When the temperature nears your actuation point, output slows to avoid temperature overshoot.

For Probe	Temp. Range	Amps @ VAC (Phase)	DIN Size	O'all Size, Ht. × Wd. × Dp.	On/Off Control		P-D Control	
J Thermocouple	32° to 392° F	3 @ 250 (1)	1/16	1 3/4″ × 1 3/4″ × 2 7/8″	33215K71	$141.46	33215K75	$112.20
J Thermocouple	32° to 752° F	3 @ 250 (1)	1/16	1 3/4″ × 1 3/4″ × 2 7/8″	33215K21	117.07	33215K22	117.07
K Thermocouple	32° to 392° F	3 @ 250 (1)	1/16	1 3/4″ × 1 3/4″ × 2 7/8″	33215K72	117.07	33215K76	117.07
K Thermocouple	32° to 752° F	3 @ 250 (1)	1/16	1 3/4″ × 1 3/4″ × 2 7/8″	33215K73	126.15	33215K77	126.15
K Thermocouple	32° to 2192° F	3 @ 250 (1)	1/16	1 3/4″ × 1 3/4″ × 2 7/8″	33215K31	117.07	33215K32	126.15
RTD—100-ohm	32° to 392° F	3 @ 250 (1)	1/16	1 3/4″ × 1 3/4″ × 2 7/8″	33215K81	126.15	—	—

Precision Programmable Temperature PID Controllers

Controllers compare the input from your temperature probe (probes sold separately, see pages 598-602) to your programmed actuation point and then signal your heater to turn on or off. Internal software (fuzzy logic control with proportional-integral-derivative/PID) learns the behavior of your process and reacts accordingly. Controllers have multiple programming options for maintaining your actuation point and reacting to process changes, which eliminates actuation point overshoot during start-up and process disturbances. All are auto/manual selectable, °F/°C selectable, and have screw terminal connections. UL and C-UL recognized and CE approved.

Thermocouple and RTD Controllers

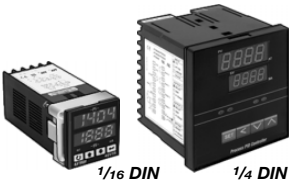

1/16 DIN 1/4 DIN

Controllers accept input from thermocouple types J, K, and T and 100-ohm RTDs. All operate on 90 to 264 VAC.

Relay output controllers are single pole, single throw (SPST) to turn one circuit from "off" to "on" (normally open). Have screw terminal connections. Include mounting brackets.

1/16 DIN size units have one control and two alarm relays.

1/4 DIN size units have two control and two alarm relays.

Type	Temp. Range	Accuracy
J	−58° to +1832° F	±1.8°
K	−58° to +2498° F	±1.8°
T	−454° to +752° F	±1.8°
RTD	−328° to +932° F	±0.36°

DIN Size	LED Ht.	O'all Size, Ht. × Wd. × Dp.	Relay Output Amps @ VAC (Phase)		4-20 mA Current Output	
1/16	1/4″	1 7/8″ × 1 7/8″ × 4″	5 @ 110 (1)	38615K71	$215.08	38615K73	$249.04
1/4	1/2″	3 3/4″ × 3 3/4″ × 3 1/4″	5 @ 110 (1)	38615K72	338.16	38615K74	370.89

Splash-Resistant Thermocouple Controllers

1/32 DIN 1/8 DIN

NEMA 4X faceplates protect these controllers from exposure to splashing liquids, corrosives, and dust. Controllers accept input from thermocouple types J, K, and T. All sizes operate on 100 to 240 VAC. The ***1/32 DIN size*** has one control relay. The ***1/16 DIN size*** has one control and one alarm relay. ***1/8*** and ***1/4 DIN sizes*** have one control and two alarm relays. ***1/16***, ***1/8***, and ***1/4 DIN sizes*** also have dual LEDs that show the actuation point and process variable simultaneously.

Relay output controller for ***1/32 DIN size*** is single pole, single throw (SPST) to turn one circuit from "off" to "on" (normally open). Relay output for ***1/16***, ***1/8***, and ***1/4 DIN sizes*** are single pole, double throw (SPDT), which can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed).

Solid-state relay voltage output controllers actuate an external solid-state relay (sold separately; see 7456K on page 905).

Type	Temp. Range	Accuracy
J	+32° to +1472° F	±0.5%
K	+32° to +2192° F	±0.5%
T	−238° to +752° F	±0.5%

DIN Size	LED Ht.	O'all Size, Ht. × Wd. × Dp.	Relay Output Amps @ VAC (Phase)			Solid-State Relay Voltage Output VDC			4-20 mA Current Output	
1/32	7/16″	1″ × 2″ × 4″	3 @ 220 (1)	7981K81	$167.37	12 to 16	7981K82	$167.37	—	—
1/16	17/32″, 7/16″	1 7/8″ × 1 7/8″ × 3 11/16″	3 @ 220 (1)	7981K11	248.42	17 to 25	7981K14	233.68	7981K13	$248.42
1/8	1/2″, 7/16″	2 1/16″ × 3 5/16″ × 3 13/16″	3 @ 220 (1)	7981K21	288.42	17 to 25	7981K24	288.42	7981K23	288.42
1/4	3/4″, 1/2″	3 15/16″ × 3 15/16″ × 3 13/16″	3 @ 220 (1)	7981K31	352.80	17 to 25	7981K34	352.80	7981K33	352.80

Temperature Indicating Crayons and Liquid

Apply directly on the surface you're monitoring. The mark melts when the rated temperature has been reached. These are nonreversible—once a mark has melted, it cannot be used to indicate again. Accuracy is ±1%. Crayons and liquid are labeled with °F and °C temperatures.

Crayons

Crayons are 1/2″ Dia. × 5″ Lg. Each includes an aluminum holder.

To Order: Please specify temperature from the listing below.

104° F	188° F	256° F	350° F	463° F	650° F	1022° F	1500° F
109° F	194° F	263° F	363° F	475° F	700° F	1050° F	1550° F
119° F	200° F	275° F	375° F	488° F	750° F	1100° F	1600° F
125° F	206° F	288° F	388° F	500° F	800° F	1150° F	1650° F
140° F	213° F	300° F	400° F	518° F	850° F	1200° F	1700° F
150° F	219° F	313° F	413° F	525° F	900° F	1250° F	1800° F
158° F	225° F	325° F	425° F	550° F	932° F	1300° F	1900° F
169° F	239° F	338° F	437° F	575° F	950° F	1400° F	1950° F
175° F	250° F	344° F	450° F	600° F	1000° F	1450° F	2000° F

Crayon with Holder and Pocket Clip ..... 3261K91 .. $10.86

Liquid

Liquid comes in a 2-oz. bottle.

To Order: Please specify temperature from the listing below.

175° F	313° F	425° F	550° F	750° F	1000° F	1200° F	1500° F
200° F	325° F	450° F	575° F	800° F	1022° F	1250° F	1600° F
225° F	350° F	475° F	600° F	850° F	1050° F	1300° F	1700° F
250° F	363° F	488° F	650° F	900° F	1100° F	1400° F	1800° F
275° F	375° F	500° F	700° F	950° F	1150° F	1450° F	1900° F
300° F	400° F	525° F					

Thinner returns liquid to workable consistency when it dries out. Comes in a 2-oz. bottle. This product is compliant under all state VOC rules in effect on June 1, 2011.

Liquid with Brush Applicator ..... 3261K93 .... $14.76
Thinner ..... 3261K96 .... 5.61

Mini Crayon Assortments

Crayons are 1/2″ Dia. × 2 1/2″ Lg. They come in a plastic case with a holder for each crayon.

Qty.	Temperatures		Pkg.
10	125° to 350° F (in 25° increments)	3224K23	$80.45
10	300° to 750° F (in 50° increments)	3224K24	80.45
20	125° to 500° F (in 25° increments); 550° F, 600° F, 700° F, 800° F	3224K32	159.23

One-Time-Use Single-Point Temperature Indicating Labels

Temperature window turns black when the temperature point is reached. These labels are nonreversible—once a window has turned black, it cannot be used to indicate again. Labels are ½″ square and the dots are 3/16″ dia. Accuracy is ±2%. Labels are self-adhesive and have °F and °C markings.

160°F Label

To Order: Please specify temperature from the listing below.

130°F	180°F	220°F	260°F	300°F
140°F	190°F	230°F	270°F	375°F
160°F	200°F	240°F	280°F	400°F
170°F	210°F	250°F	290°F	500°F

Sheet of 21 Labels **5952K21** $12.35

One-Time-Use Low-Temperature Indicating Labels

Monitor foods, pharmaceuticals, and equipment. These labels have a temperature window that turns from clear to red to indicate that the temperature point has been reached. These are nonreversible—once a window has turned red, it cannot be used to indicate again. Size is 11/16″ Ht. × 1 3/8″ Wd. Accuracy is ±3.6°F. Labels are self-adhesive and have °F and °C markings. Package quantity is two.

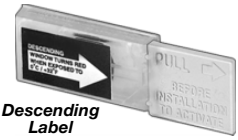

Descending Label

Descending labels indicate that the surface temperature has fallen to your temperature point. ***Ascending labels*** indicate that the surface temperature has risen to your temperature point.

Descending

Temp. Point		Pkg.
+32°F	**4655K11**	$14.96
+36°F	**4655K13**	14.96
+41°F	**4655K15**	14.96
+50°F	**4655K17**	14.96

Ascending

Temp. Point		Pkg.
+46°F	**4655K24**	$14.96
+50°F	**4655K26**	14.96
+77°F	**4655K28**	14.96

One-Time-Use Multiple-Point Temperature Indicating Labels

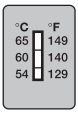

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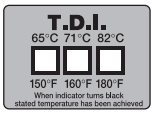

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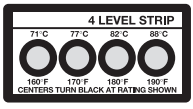

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D

F

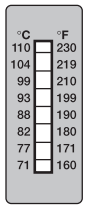

E, G-J

Record incremental surface-temperature changes. These labels have temperature windows that turn black when the temperature point is reached. These are nonreversible—once a window has turned black, it cannot be used to indicate again. Accuracy is ±1.8%. Labels are self-adhesive and have °F and °C markings. Package quantity is 10.

(B) Also known as a thermal disinfection indicator (T.D.I.), label complies with HACCP (Hazard Analysis Critical Control Points) standards for use in the food industry.

Temp. Points, °F		Pkg.
(A) 3 Points— *1″ Ht. × 5/8″ Wd.*		
129, 140, 149	**5955K26**	$10.52
160, 171, 180	**5955K27**	10.52
190, 199, 210	**5955K28**	10.52
219, 230, 241	**5955K29**	10.52
250, 261, 270	**5955K31**	10.52
280, 289, 300	**5955K32**	10.52
309, 320, 331	**5955K33**	10.52
340, 351, 360	**5955K34**	10.52
370, 379, 390	**5955K35**	10.52
399, 410, 421	**5955K36**	10.52
435, 450, 466	**5955K37**	10.52
480, 489, 500	**5955K38**	10.52
(B) 3 Points— *15/16″ Ht. × 13/8″ Wd.*		
150, 160, 180	**5955K42**	9.68
(C) 4 Points— *7/8″ Ht. × 1 3/4″ Wd.*		
100, 125, 150, 175	**5951K41**	15.12
100, 150, 200, 250	**5951K51**	15.12
125, 150, 175, 200	**5951K42**	15.12
140, 150, 160, 170	**5951K25**	15.12
150, 160, 170, 180	**5951K26**	15.12
150, 175, 200, 225	**5951K43**	15.12
150, 200, 250, 300	**5951K52**	15.12
160, 170, 180, 190	**5951K27**	15.12
170, 180, 190, 200	**5951K28**	15.12

Temp. Points, °F		Pkg.
(C) 4 Points (Cont.)— *7/8″ Ht. × 1 3/4″ Wd.*		
175, 200, 225, 250	**5951K44**	$15.12
180, 190, 200, 210	**5951K29**	15.12
190, 200, 210, 220	**5951K31**	15.12
200, 210, 220, 230	**5951K32**	15.12
200, 225, 250, 275	**5951K45**	15.12
220, 230, 240, 250	**5951K34**	15.12
225, 250, 275, 300	**5951K46**	15.12
270, 280, 290, 300	**5951K39**	15.12
(D) 5 Points— *9/16″ Dia.*		
105, 110, 115, 120, 130	**9246T11**	15.16
140, 150, 160, 170, 180	**9246T13**	15.16
190, 200, 210, 220, 230	**9246T15**	15.16
240, 250, 260, 270, 280	**9246T17**	15.16
290, 300, 310, 320, 330	**9246T21**	15.16
340, 350, 360, 370, 380	**9246T23**	15.16
390, 400, 410, 420, 435	**9246T25**	15.16
450, 465, 480, 490, 500	**9246T27**	15.16
(E) 5 Points— *1 1/2″ Ht. × 11/16″ Wd.*		
171, 180, 190, 199, 210	**5948K23**	12.98
219, 230, 241, 250, 261	**5948K24**	12.98
270, 280, 289, 300, 309	**5948K25**	12.98
320, 331, 340, 351, 360	**5948K26**	12.98
370, 379, 390, 399, 410	**5948K27**	12.98
421, 435, 450, 466, 480	**5948K28**	12.98

Temp. Points, °F		Pkg.
(F) 6 Points— *7/16″ Ht. × 1 1/4″ Wd.*		
149, 160, 171, 180, 190, 199	**5950K32**	$15.42
210, 219, 230, 241, 250, 261	**5950K34**	15.42
270, 280, 289, 300, 309, 320	**5950K35**	15.42
331, 340, 351, 360, 370, 379	**5950K37**	15.42
390, 399, 410, 421, 435, 450	**5950K38**	15.42
466, 480, 489, 500, 536, 554	**5950K31**	15.42
(G) 8 Points— *2″ Ht. × 11/16″ Wd.*		
160, 171, 180, 190, 199, 210, 219, 230	**5956K16**	18.93
241, 250, 261, 270, 280, 289, 300, 309	**5956K17**	18.93
320, 331, 340, 351, 360, 370, 379, 390	**5956K18**	18.93
(H) 9 Points— *2″ Ht. × 11/16″ Wd.*		
399, 410, 421, 435, 450, 466, 480, 489, 500	**5956K19**	18.93
(J) 10 Points— *2″ Ht. × 11/16″ Wd.*		
171, 180, 190, 199, 210, 219, 230, 241, 250, 261	**5957K63**	20.70
270, 280, 289, 300, 309, 320, 331, 340, 351, 360	**5957K64**	20.70
370, 379, 390, 399, 410, 421, 435, 450, 466, 480	**5957K65**	20.70

Temperature Indicating Labels

Get a visual indication of your changing surface temperature. These labels have temperature windows that turn from black to green to measure approximate temperature. When the surface cools, the window color returns to black. Accuracy is ±1.8°F. Labels are self-adhesive and have °F and °C markings. Package quantity is 10.

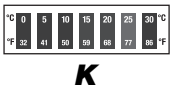

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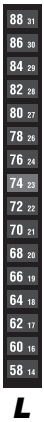

L

Temp. Range	Increments		Pkg.
(K) Horizontal, 7 Points— *1/2″ Ht. × 1 3/4″ Wd.*			
–22° to +32°F	9°F	**59535K11**	$10.71
+32° to +86°F	9°F	**59535K12**	10.71
+86° to +140°F	9°F	**59535K13**	10.71
+140° to +194°F	9°F	**59535K14**	10.71
+194° to +248°F	9°F	**59535K15**	10.71
(L) Vertical, 16 Points— *5″ Ht. × 1/2″ Wd.*			
+26° to +56°F	2°F	**59485K21**	14.36
+58° to +88°F	2°F	**59485K22**	14.36
+77° to +212°F	9°F	**59485K26**	14.36
+90° to +120°F	2°F	**59485K23**	14.36
+122° to +152°F	2°F	**59485K24**	14.36
+154° to +184°F	2°F	**59485K25**	14.36

Temperature Indicating Liquid and Thermal Sheets

Liquid crystals change color to indicate surface temperature. As the temperature increases, the crystal color changes from black to red, red to green, and green to blue within your temperature range. As crystals cool, they return from blue to black.

Temperature liquid can be brushed onto a clean black surface and washes off with water. Accuracy is ±1.8°F.

Thermal sheets are self-adhesive and can be cut. Accuracy is ±2°F.

Liquid

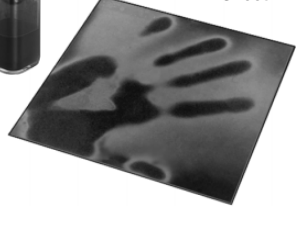

6″×6″ Sheet

Temp. Range	*.88-oz. Liquid*		*6″×6″ Sheets*		*12″×12″ Sheets*	
77° to 86°F	**5106K64**	$61.67	**5106K52**	$8.70	**5106K51**	$27.00
86° to 95°F	**5106K65**	61.67	**5106K54**	8.70	**5106K53**	27.00
95° to 104°F	**5106K66**	61.67	**5106K56**	8.70	**5106K55**	27.00
104° to 113°F	**5106K67**	61.67	**5106K58**	8.70	**5106K57**	27.00
113° to 122°F	**5106K68**	61.67	**5106K61**	8.70	**5106K59**	27.00

Temperature Indicating "Hot" Labels

A

B

Safety is first with these self-adhesive labels that change color and display a message of "hot" when the temperature point is reached. All labels with a temperature point of ***122°F*** change from yellow to orange, and those with a temperature point of ***157°F*** change from red to black. When the surface cools, labels return to their original color. Accuracy is ±1.8°F. Package quantity is 10.

	Style A			Style B		
Temp. Point	**Dia.**		**Pkg.**	**Ht.×Wd.**		**Pkg.**
122°F	1½"	**83375T83**	$9.84	⅝"×1½"	**9257T14**	$8.87
157°F	1½"	**83375T82**	9.84	⅝"×1½"	**9257T16**	8.87

Humidity Cards with NIST Certificate

Monitor exposure of your sensitive materials to relative humidity. Cards conform to NIST (National Institute of Standards and Technology) standards and include a certificate of calibration traceable to NIST.

Indicators on the card change color to show both the current relative humidity and maximum relative humidity reached. The current relative humidity indicator is reversible—it changes continuously based on conditions. The maximum relative humidity indicator is nonreversible—once the paper has turned blue, it cannot be used to indicate again. The current relative humidity range is 0% to 100%; maximum relative humidity range is 50% to 90%, both expressed in increments of 10%. Accuracy is ±5%. Size is 4"×4". Package quantity is two.

5311K12 ..... **Pkg.** $15.40

High/Low Alarm Temperature Chart Recorder with Probe

Keep track of out-of-range conditions with a programmable audio/visual high/low temperature alarm with remote-sensing capability in one recorder. Includes a 4-ft. long bare wire probe. Add an optional 10-ft. probe extension (sold separately below) for greater reach. LCD has 1" high digits. Recording period and temperature range are selectable. (See charts sold separately below for available recording periods and temperature ranges.) Accuracy is ±1.8°F.

Recorder operates on 120 VAC with a 6-ft. cord and two-prong plug. Comes with power backup (four AA batteries included). Housing is high-impact ABS plastic. Size is 9³⁄₁₆" Ht.×9³⁄₁₆" Wd.×3⅛" Dp.

Recorder and Accessories

Recorder	**33185K11**		$567.73
Probe Extension (10 ft.)	**33185K22**		56.33
Replacement Red Pen	**4069K98**		9.32

8" Charts

Temp. Range	Pkg. Qty.	24 Hour		7 Day	
			Pkg.		Pkg.
–50° to +50°F/C	60	**33185K311**	$33.46	**33185K312**	$33.46
0° to +100°F/C	60	**38045K621**	36.81	**38045K721**	36.81
0° to +250°F/C	60	**33185K331**	33.46	**33185K332**	33.46
0° to +500°F/C	60	**33185K341**	33.46	**33185K342**	33.46

Temperature and Humidity Chart Recorder with NIST Certificate

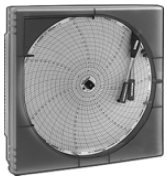

Get two for one with this recorder that tracks both temperature and relative humidity. Recorder conforms to NIST (National Institute of Standards and Technology) standards and includes a certificate of calibration traceable to NIST. Recorder has a built-in sensor. Accuracy is ±1.8%. Relative humidity sensor range is 0% to 95%; accuracy is ±3%. Recording period and temperature range are selectable. (See charts sold separately below for available recording periods and temperature ranges in °F or °C.)

Recorder operates on four AA batteries (included). Housing is ABS plastic. Size is 9³⁄₁₆" Ht.×9³⁄₁₆" Wd.×3⅛" Dp.

Recorder and Accessories

Recorder	**39025K86**	$525.45
Replacement Red Pen	**4069K98**	9.32
Replacement Blue Pen	**39815K61**	9.32

8" Charts

Temp. Range	Record Period	Pkg. Qty.		Pkg.
–20° to +120°F	24 Hour	60	**38755K151**	$33.46
–20° to +120°F	7 Day	60	**38755K152**	33.46
–20° to +50°C	7 Day	60	**38755K172**	33.46

Compact Temperature Chart Recorders

Recorder with Display

At only 5³⁄₁₆" Ht.×5³⁄₁₆" Wd.×2⅜" Dp., these recorders are great for tight spaces. They have a built-in temperature sensor. Accuracy is ±2%. Recorders operate on one AA battery (included). Housing is high-impact ABS plastic. Charts are not included (sold separately below).

Recorders with display have an LCD with ⅝" high digits that displays the current temperature.

Temp. Range	Recorders		Recorders with Display	
0° to +100°F	**39805K32**	$246.59	**38395K42**	$267.84
–22° to +122°F	**39805K33**	246.59	**38395K43**	267.84
Replacement Red Pen	**4069K98**	9.32		

4" Charts

Temp. Range	Record Period	Pkg. Qty.		Pkg.
0° to +100°F	7 Day	60	**4069K141**	$37.92
–22° to +122°F	7 Day	60	**39805K114**	33.46

Temperature Chart Recorders with Probe

A probe with 15-ft. cable lets you monitor temperatures remotely. You can also add up to 100 feet of extension wire (see 3870K on page 603). Probe is Type 304 stainless steel. Recorders have a LED display with ½" high digits. Recording period and temperature range are selectable. (See charts sold separately below for available recording periods and temperature ranges in °F or °C.) Accuracy is ±2°F.

Recorders are freestanding or can be wall mounted (two keyhole slots accept screws with ⁵⁄₁₆" dia. heads, not included). Operate on 120 VAC with a 6-ft. cord and two-prong plug. Power backup requires eight AA batteries, sold separately below. Recorders come with 60 assorted charts. Included charts come in three temperature ranges (°F or °C) and all recording periods below. Housing is polycarbonate. Size is 9¼" Ht.×7¼" Wd.×2¾" Dp. CE approved.

Recorders and Accessories

Fahrenheit with Three Temp. Ranges	**32635K31**	**Each**	$325.00
Celsius with Three Temp. Ranges	**32635K21**	**Each**	$325.00
Replacement Black Pen	**32635K4**	**Each**	$11.90
AA Batteries (4/Pkg.)	**71455K53**	**Pkg.**	$2.94

Extra 6" Charts—60/Pkg.

To Order: Please specify 6-hr., 24-hr., or 7-day recording period.

Temperature Range, °F		Pkg.	Temperature Range, °C		Pkg.
–40° to +30°	**32635K12**	$25.20	–40° to 0°	**32635K15**	$25.20
–20° to +50°	**32635K13**	25.20	–30° to +10°	**32635K16**	25.20
+50° to +120°	**32635K14**	25.20	+10° to +50°	**32635K17**	25.20

Temperature, Humidity, and Dew Point Chart Recorder with Probe

Have it all—record temperature, relative humidity, and dew point. Recording period and temperature range are selectable. (See charts sold separately below for available recording periods and temperature ranges in °F or °C.) The LCD is selectable to display actual and min./max. readings of temperature, or relative humidity and calculated dew point. LCD digit height is 1". Recorder includes one audio and one visual high/low alarm and a 10-ft. long cable with an ABS plastic probe.

Temperature accuracy is ±1.8°F (±1°C). Relative humidity sensor range is 0% to 95%; accuracy is ±3%. Dew point range is –22° to +122°F (–30° to +50°C); dew point accuracy is ±7.2°F (±4°C).

Operates on 120 VAC with 6-ft. cord and two-prong plug. Comes with power backup (4 AA batteries included). Housing is high-impact ABS plastic. Size is 9³⁄₁₆" Ht.×9³⁄₁₆" Wd.×3⅛" Dp.

Recorder and Accessories

Recorder	**38755K44**	$679.45
Replacement Red Pen	**4069K98**	9.32
Replacement Blue Pen	**39815K61**	9.32

8" Charts

To Order: Please specify 24-hour, 7-day, or 31-day recording period.

Temp. Range	Pkg. Qty.		Pkg.
–20° to +120°F	60	**38755K15**	$33.46
+40° to +110°F	60	**38755K16**	33.46
–20° to +50°C	60	**38755K17**	33.46

Programmable Temperature, Humidity, and Pressure Chart Recorders

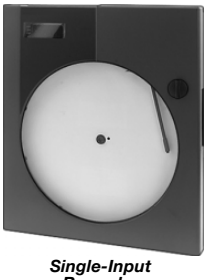

Single-Input Recorder

Keep a record of temperature, relative humidity, or pressure in your process on a single chart. Simply use the keypad to set the recorder for your application. Use set recording periods of 8 hours, 24 hours, and 7 days, or program charts for any length of time from 6-744 hours.

Recorders accept input from a common 4-20 mA signal, thermocouple types J, K, and T, and 100-ohm RTDs. Thermocouple and RTD probes are sold separately, see pages 598-602.

Recorders operate on 120/240 VAC. All have screw terminal connections. They can be mounted on a wall or an instrument panel. Housing is Noryl. Size is 16½″ Ht. × 14″ Wd. × 5⅝″ Dp. Include 100 blank charts and a pressure-sensitive stylus.

Single-input recorder accepts input from a single sensor.

Dual-input recorder accepts input from two sensors. It can document input from both sensors on a single chart and timeline.

			Each
Single-Input Recorder	**41295K81**		$2,077.48
Dual-Input Recorder	**41295K82**		2,444.09
Extra 12″ Charts (100/Pkg.)	**41295K79**	**Pkg.**	$53.01
Replacement Stylus	**41295K8**	**Each**	$250.90

USB-Connection Temperature and Humidity Logger

Track and store temperature and relative humidity—this logger saves your data for upload via USB connection to your PC. Logger stores up to 32,000 sample points. It records data in 1-second increments in intervals from once per second to once per day. Logger records in °F and °C.

Temperature range is –10° to +176° F. Temperature accuracy is ±0.8° F at 20° to 120° F, ±1.8° F at –10° to +20° F, and ±1.8° F at 120° to 176° F. Relative humidity range is 0% to 95%. Relative humidity accuracy is ±2%. Housing is polycarbonate. Size is 3 1/16″ Ht. × 2 1/16″ Wd. × ⅞″ Dp. Powered by a CR2450 coin cell battery (included).

Software program (sold separately below) is required and includes a 6-ft. USB cable. *System Requirements*: Windows 98 or newer, a USB port, and a CD-ROM drive.

Temperature/Humidity Logger	**3272K47**	$198.23
Software Program and 6-ft. USB Cable	**3053K91**	99.74

Oven Thermometer

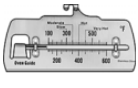

Check your oven for proper calibration. Thermometer has a temperature range of 100° to 600° F with graduations of 10° F. It is mercury-free and filled with spirits (alcohol) and blue dye. Thermometer stands on a flat surface or hangs from the attached clip. Tube is made of glass. Housing is Type 430 stainless steel. Overall size is 2½″ Ht. × 4⅞″ Wd.

7974K32		$18.51

Freezer Thermometers

NSF Certified

Bottle Style

Keep tabs on the temperature inside freezers, coolers, and storage areas. Thermometers are mercury-free.

NSF Certified— Tube is made of glass and filled with spirits (diesel fuel) and red dye. Housing is polycarbonate. Has Type 430 stainless steel clips for hanging.

Bottle-Style— The bottle design insulates your thermometer from rapid temperature changes, such as when opening a freezer door, for more accurate readings. Thermometers include a serial number and a statement of accuracy traceable to NIST (National Institute of Standards and Technology). The thermometer and bottle are glass and filled with spirits (a citrus-based oil) and green dye. Bottle is 2½″ Ht. × 1½″ Wd. × 1½″ Dp.

Temp. Range	Grad.	Lg.		
NSF Certified				
–20° to +80° F/–30° to +30° C	2° F/2° C	4⅝″	**4132K11**	$6.28
Bottle-Style				
–30° to 0° C	0.5° C	5 5/16″	**3383K61**	70.14
–5° to +15° C	0.5° C	4⅞″	**3383K63**	70.14

Hand-Held Temperature and Humidity Recorder

Record temperature and relative humidity on the go with this hand-held, battery-powered printing recorder. Displays and prints min./max. readings and the month, day, hour, and minute in 24-hr. format. It takes readings every 10 seconds and can be programmed to print in selected increments from 10 seconds to 59 minutes, 59 seconds.

Temperature accuracy is ±1.8° F (±1° C). Relative humidity accuracy is ±5%. Two-line LCD display has ⅜″ high digits. Housing is ABS plastic. Size is 7½″ Ht. × 3″ Wd. × 1½″ Dp. Includes a remote temperature/relative humidity probe with 4-ft. cord, probe holder stand, roll of paper, 6 AAA batteries, and carrying case.

Temp. Range	Humidity Range		Each
–4° to +140° F	10% to 95%	**38495K21**	$398.51
Replacement Paper (2 Rolls/Pkg.)		**38495K62**	**Pkg.** $12.29

Temperature/Humidity Loggers

Record data over a long period of time—loggers track and store your temperature and relative humidity for upload to your PC. Units store up to 16,000 sample points. They are selectable to record data in intervals from once every 10 seconds to once every 2 hours. Digital display shows your current temperature. °F/°C selectable.

Temperature range is –22° to +122° F. Temperature accuracy is ±1° F. Resolution is 1° F. They have an LCD with two digits that are ⅜″ high, an internal 3.6-volt lithium battery, and include software and cable to transfer data to your PC. Housing is ABS plastic. Size is 2 13/16″ Dia. × ⅞″ Dp. *System requirements*: Windows 98 or newer, a CD-ROM drive, and an RS-232 serial port.

9199K24 is IP65 (protected against dust and water jets) rated. **9199K26** is IP60 (dustproof) rated.

Temperature/humidity logger records temperature as stated above and relative humidity from 0% to 100%. Relative humidity accuracy at room temperature is ±3% from 0% to 90%, ±6% from 90% to 100%.

Optional external temperature probe allows for remote monitoring. Probe is Type 316 stainless steel.

Temperature Logger	**9199K24**	$136.36
Temperature/Humidity Logger	**9199K26**	213.21
Optional External Temp. Probe with 8-ft. Cable	**9199K41**	60.54

Temperature and Pressure Logger

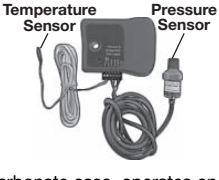

Logger tracks and stores temperature and pressure data for upload to your PC. Use with compressed air, water, and hydraulic oil. Memory capacity is 21,500 data samples (10,750 temperature; 10,750 pressure). Temperature sensor has a 15-ft. cable and an accuracy of ±1° F. Pressure sensor has a 6-ft. cable, a Type 17-4 PH stainless steel NPT male connection, and an accuracy of ±3 psi. Set the sampling interval from 1 sec. to 18 hours. Logger has a polycarbonate case, operates on one 9-volt battery (sold separately), and measures 2½″ Ht. × 3″ Wd.

Software program can be used with more than one logger. Comes with a 6-ft. USB cable. *System Requirements*: Windows 95 or newer, a USB port, and a CD-ROM drive.

Temp. Range	Pressure Range	Pipe Size		
–40° to +150° F	0-500 psi	¼″	**3440K44**	$228.92
Software Program and PC Interface			**3440K54**	56.72
9-Volt Battery			**71455K56**	2.75

Outdoor Thermometers

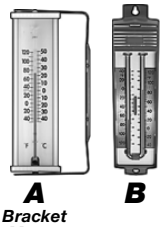

A ***B***

Bracket Mount

Get current temperature readings with these mercury-free thermometers that can be mounted outdoors. Thermometers have a glass tube.

Style A have a temperature range of –50° to +120° F/–45° to +50° C with graduations of 2° F/1° C. Tubes are filled with spirits (diesel fuel) and red dye. Housing is aluminum. *Wall mount* has two ⅛″ dia. mounting holes. *Bracket mount* has two ¼″ dia. mounting holes.

Style B has min./max.-indicating markers. Thermometer has a temperature range of –40° to +120° F/–40° to +50° C with graduations of 2° F/1° C. Tube is filled with spirits (alcohol) and blue dye. Housing is ABS plastic. It has two 5/16″ dia. mounting holes.

	Ht. × Wd.			
(A) Wall Mount	9″ × 2⅝″	**11165K63**	$6.51
(A) Bracket Mount	8½″ × 5″	**3934K2**	6.84
(B) Wall Mount w/Min./Max.	9¾″ × 2¼″	**7859K58**	26.60

Indoor and Outdoor Thermometers with Probe

Monitor indoor and outdoor temperatures simultaneously. Temperature ranges are 23° to 122° F indoor and –58° to +158° F outdoor. Thermometers have an ABS plastic housing. They include probes with 10-ft. cable for outdoor readings. Both have a min./max. memory feature. They are wall-mountable and also have flip-out stands.

°F/°C Selectable with Clock

Has a three-line LCD with 3/4″ high digits that shows time of day and indoor and outdoor temperatures. Also has a programmable audible alarm clock with eight-minute snooze. Accuracy is ±6° F. Resolution is 0.2° F. Size is 4 1/2″ Ht. × 2 1/2″ Wd. × 3/4″ Dp. Has one 5/16″ dia. mounting hole. Operates on two AAA batteries (included).

40195K11 ..... $46.51

Big Digit

Thermometer has a two-line LCD with 1 1/8″ high digits that shows indoor and outdoor temperatures. Accuracy is ±6° F. Resolution is 0.1° F. Size is 4″ Ht. × 4″ Wd. × 5/8″ Dp. Has two 1/8″ dia. mounting holes. Operates on one AAA battery (included).

40195K21 ..... $27.32

Panel-Mount Mini Thermometer

Great for tight spaces—incorporate this thermometer into your instrument panel. Temperature range is –40° to +300° F. Thermometer is °F/°C selectable. Accuracy is ±1.8° F. Resolution is 0.1° F. It has an LCD with 3/8″ high digits. Housing is ABS plastic. Size is 2″ Ht. × 2 7/8″ Wd. × 1 1/8″ Dp. Requires a panel cutout of 2 3/4″ Wd. × 1 1/2″ Ht. Has two 1/8″ dia. mounting holes. Includes a remote sensor with a nickel-plated brass tip and 10-ft. cable. Operates on one AAA battery (included). *Note:* Accuracy is at the middle of temperature range and may be less accurate at range limits.

4141K11 ..... $25.66

Panel-Mount Refrigerator Thermometer with Audible Alarm

Stay on top of your temperature—an alarm sounds (85 dB at 3.9″) and the 9/16″ high red LED digits flash when the temperature rises above your actuation point. The stainless steel faceplate and metal enclosure make this thermometer suitable for harsh environments. Comes with a 6-ft. refrigerator probe. Probe has 1 1/2″ wire leads.

Temperature reading range is –25° to +99° F; actuation point range is –15° to +50° F. Thermometer is °F/°C selectable. Accuracy is ±3° F. Resolution is ±1° F. Designed for panel mounting, it is 5″ Ht. × 3 1/8″ Wd. × 1 1/16″ Dp. and has two mounting holes (fasteners included). Requires a panel cutout of 3 7/8″ Ht. × 2 7/8″ Wd. Alarm works on 12 to 28 VDC/AC (power supply sold separately below).

Thermometer with Alarm	**3825K2**	$145.90
12 VAC Output/120 VAC Input Power Supply	**3825K11**	18.51

Compact Dial Thermometers

The small size of these dial thermometers makes them perfect for use in tight spaces. Designed for measuring air temperature, they have a perforated dial case that allows air to flow into the unit for a faster response time. All are made of anodized aluminum and have a glass lens.

Thermometers sit on a flat surface. 3389K18 and 3389K19 can also be mounted on a wall using the optional bracket sold separately below.

4033K11 has a reference pointer that you set to indicate when a critical temperature is reached.

Temp. Range	Grads.	Accuracy	O'all Size, Dia. × Ht.		
–20° to +160° F	2° F	±3.2° F	2″ × 1″	**3389K18**	$76.53
0° to 150° F	1° F	±1° F	3 3/4″ × 1 1/4″	**4033K11**	107.84
0° to 250° F	2° F	±5° F	2″ × 1″	**3389K19**	76.53
Optional Wall-Mount Bracket for 3389K18, K19				**3389K84**	36.48

Easy-to-Read Dial Thermometers

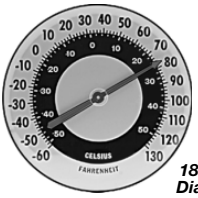

18″ Dial

See your temperature easily with these extra-large dials that can be read from a distance. Thermometers can be used indoors and outdoors and are designed to hang on a wall. Temperatures are shown in °F and °C.

3997K12 displays relative humidity from 30% to 90% with an accuracy of ±8%.

3881K41 displays relative humidity from 0% to 100% with an accuracy of ±7%.

Dial Size	Temperature Range	Graduation Marks	Accuracy	Face Material	Lens Material		
12″	–60° to +120° F/–50° to +50° C	2° F/ 1° C	±4° F	Aluminum	Plastic	**3997K12**	$25.44
12″	–40° to +120° F/–40° to +50° C	2° F/10° C	±3° F	Plastic	Plastic	**3881K41**	35.73
13 1/2″	–60° to +120° F/–50° to +50° C	2° F/ 1° C	±4° F	Plastic	Plastic	**3881K56**	16.36
18″	–60° to +130° F/–50° to +50° C	2° F/ 2° C	±4° F	Aluminum	Plastic	**3881K15**	31.89

Temperature and Humidity Meters

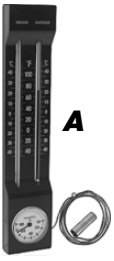

A

B

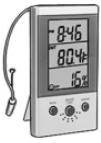

C

D

E

Get temperature and relative humidity readings from a single source. Meters have an ABS plastic housing. Mounting fasteners are not included, except for Style A. *Digital meters* have an LCD with 1/2″ high digits and include batteries.

Note: Accuracies are at the middle of temperature ranges and may be less accurate at range limits.

A Analog Indoor/Outdoor Thermometer with Indoor Humidity Meter—Includes a probe with 36″ cable for measuring outdoor temperatures. Has two mercury-free thermometers and a relative humidity dial indicator. Fasteners included.

B Digital Indoor Meter with Memory—Includes memory recall of min./max. temperatures and relative humidity. °F/°C selectable. Has two 3/32″ dia. mounting holes and a pull-out stand.

C Digital Indoor/Outdoor Thermometer with Indoor Humidity Meter—Comes with a probe with 10-ft. cable for measuring outdoor temperatures. Includes memory recall of min./max. temperatures and relative humidity. °F/°C selectable. Has one 3/32″ dia. mounting hole and a pull-out stand.

D Digital Indoor Meter—Mounts with two 3/8″ dia. keyhole slots and has a pull-out stand.

E Digital Indoor High-Accuracy Meter with NIST Certificate—Measure dew point in addition to temperature and relative humidity. Conforms to NIST (National Institute of Standards and Technology) standards and includes a certificate of calibration traceable to NIST. Dew point range is –40° to +140° F with ±0.8° F accuracy. Meter has audible high/low alarms. °F/°C selectable. Cable is 4-ft. long.

Optional software and RS-232 cable allow you to upload data directly to your PC. (Requires Windows 98 or newer, a 3 1/2″ disk drive, and an RS-232 serial port.)

	Indoor Temp. Range	Indoor Temp. Accuracy	Indoor Humidity Range	Indoor Humidity Accuracy	Outdoor Temp. Range	Outdoor Temp. Accuracy	Battery Type	O'all Size, Ht. × Wd. × Dp.		
A	–50° to +110° F	±4° F	10% to 80%	±8%	–50° to +110° F	±4° F	—	9 3/4″ × 1 7/8″ × 5/8″	**3933K21**	$17.58
B	+32° to +122° F	±1.8° F	25% to 95%	±5%	—	—	AAA	3 7/8″ × 2 5/8″ × 5/8″	**39175K21**	55.27
C	+32° to +122° F	±2° F	25% to 95%	±5%	–58° to +158° F	±2° F	AAA	4 1/2″ × 2 1/2″ × 3/4″	**39175K22**	68.03
D	–58° to +158° F	±4° F	20% to 95%	±6%	—	—	AAA	2 1/2″ × 5 3/8″ × 5/8″	**39175K11**	67.50
E	–40° to +220° F	±0.8° F	5% to 95%	±1.5%	—	—	9-volt	5 1/2″ × 3 1/2″ × 1 1/4″	**6455T17**	553.28
Optional Software and RS-232 Cable for Style E									**6455T19**	377.79

Temperature and Humidity Dial Indicators

Wall mount these dial indicators for a clear view of indoor conditions. *Note:* Accuracies listed below are at the middle of temperature and humidity ranges and may be less accurate at range limits.

A ***Humidity-Only Indicator—*** Includes mounting fasteners and has a polystyrene lens.

B ***Certified Temperature/Humidity Indicators—*** Accuracy is certified to DIN EN ISO 9001 (certificate included). All have a glass lens. 3993K62 has one 1/4″ dia. keyhole slot (fastener not included); *K61* and *K71* have a 3/8″ wide flange and include fasteners.

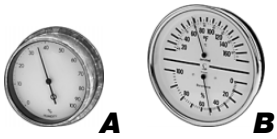

	Dial Size	Temperature Range	Temperature Accuracy	Humidity Range	Humidity Accuracy	Case Material		
A	3 1/2″			0% to 100%	±6%	Galvanized Steel	2131K5	$19.93
B	5″	10° to 170° F (–12° to +76° C)	±2° F (±1.1° C)	0% to 100%	±3%	Stainless Steel	3993K62	260.00
B	5″	10° to 170° F (–12° to +76° C)	±2° F (±1.1° C)	0% to 100%	±3%	Black-Finish Aluminum	3993K61	265.33
B	5″	10° to 170° F (–12° to +76° C)	±2° F (±1.1° C)	0% to 100%	±3%	Brass	3993K71	280.00

Hand-Held Temperature and Humidity Meters

Carry one of these battery-operated meters with an easy-to-read LCD to make fast system checks. Meters are °F/°C selectable and include batteries. Housing is ABS plastic.

C&D ***Pen-Style Meters—*** Display temperature and relative humidity simultaneously. Can also display minimum and maximum readings. Come with a belt clip. LCD digits are 3/4″ high.

Style D conforms to NIST (National Institute of Standards and Technology) standards and includes a certificate of calibration traceable to NIST.

E ***Meter with Built-in Probe—*** Two-line display is selectable for relative humidity/dew point. Displays time and date. Has min./max., average, and data-hold functions. LCD digits are 1/2″ high.

F ***Meter with Remote Probe—*** Probe has a 3-ft. cable for checking hard-to-reach spots. Display is selectable for relative humidity/dew point. LCD digits are 1/2″ high.

	Meter Type	Temperature Range	Temperature Accur.	Humidity Range	Humidity Accur.	Battery Type	O'all Sz., Ht. × Wd. × Dp.		
C	Pen	+32° to +122° F	±1.8° F	20% to 95%	±5%	AAA	5 1/2″ × 7/8″ × 21/32″	32705K11	$56.61
D	Pen w/ NIST Certificate	+32° to +122° F	±1.8° F	20% to 95%	±3.5%	AAA	5 1/2″ × 7/8″ × 21/32″	32705K16	82.72
E	With Built-In Probe	–4° to +122° F	±0.6° F	0% to 98%	±2%	AA	9 1/4″ × 3 5/16″ × 1 1/4″	6495T98	376.36
F	With Remote Probe	+32° to +140° F	±1° F	20% to 95%	±4%	9-volt	6 1/2″ × 3″ × 1 13/16″	4103K22	139.66

Humidity Sensor and Controller

Monitor and adjust your relative humidity with this sensor and controller. Range is 10% to 100% relative humidity with ±3% accuracy from 10% to 90%. Housing is ABS plastic.

Sensor

Controller

Sensor— Generates 0-1 VDC output for accurate sensing. Temperature range is 32° to 140° F. Connects to controller with 3-ft. wire leads. Has two 1/4″ dia. mounting holes. Fasteners not included.

Controller— Has high/low actuation points for calibration. Temperature range is 20° to 158° F. Has a relay that is single pole, double throw (SPDT), which can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). Relay is rated for 4 amps. Install in a 1 11/32″ Ht. × 3 3/32″ Wd. panel cutout. LED digits are 3/8″ high. Operates on 24 VAC. UL recognized.

	O'all Size, Ht. × Wd. × Dp.		
Sensor	3 1/4″ × 2 1/4″ × 1 13/16″	39635K11	$120.00
Controller	1 1/2″ × 3 3/16″ × 2 1/2″	39635K22	99.95

Sling Psychrometers

Measure your relative humidity with these mercury-free psychrometers.

Psychrometer with 5″ thermometer has a built-in slide rule to help you determine relative humidity without complex tables. Relative humidity range is 10% to 100%; resolution is 1° F. Housing is ABS plastic. Includes one wick.

Psychrometer with 9″ thermometer has a relative humidity range of 10% to 99.9%; resolution is 0.1° F. Housing is Type 304 stainless steel. Includes relative humidity calculation table, 12 extra wicks, and an ABS plastic carrying case.

9 Inch

	Temp. Range		Each
With 5″ Thermometer	25° to 120° F	3980K7	$76.33
With 9″ Thermometer	20° to 120° F	3995K14	135.33

Replacement Parts

5″ Thermometer	3980K9	Each	$36.73
Wicks for 5″ Thermometer (4/Pkg.)	3980K8	Pkg.	23.27
Wicks for 9″ Thermometer (12/Pkg.)	3970K6	Pkg.	11.85

Hand-Held Psychrometer

Carry readings of temperature, relative humidity, and dew point in the palm of your hand. Temperature range is –4° to +122° F; accuracy is ±1.8° F. °F/°C selectable. Relative humidity range is 0% to 100%; accuracy is ±5%. Dew point range is –22° to +122° F. Has min./max. temperature memory and hold feature. Size is 6 11/16″ Ht. × 1 13/16″ Wd. × 1/2″ Dp. LCD digits are 1/4″ high. Housing is ABS plastic. Operates on two AAA batteries (included).

3823K31 ..... $121.10

Psychrometer

Get continuous wet and dry measurements so you can calculate your relative humidity. Also known as a mason's hygrometer, this psychrometer consists of two mercury-free thermometers with a wick and glass water bulb. Temperature range is 0° to 130° F; accuracy is ±2° F; resolution is 2° F. Relative humidity range is 14% to 96%. Case is polystyrene. Overall size is 10″ Ht. × 4″ Wd. × 1 3/16″ Dp. Psychrometer has one 3/16″ dia. hole for wall mounting (fastener not included). Comes with a relative humidity calculation table.

Psychrometer	3970K9	Each	$41.52
Repl. Wicks (12/Pkg.)	3970K6	Pkg.	$11.85

Wireless Remote Rain Gauge

Monitor rainfall without getting wet. The rain sensor is a bucket that uses radio signals to update the wireless display monitor up to 100 ft. away.

The rain sensor bucket is polypropylene and 8″ Dia. × 8″ Ht. It transmits rainfall data to the display monitor in 0.01″ increments. Meets National Weather Service specifications for statistical accuracy. Mounting screws included.

The digital display monitor has dual 1/2″ high LCDs that show current measurement of an individual rainfall (up to 9.99″) and accumulation measurement (up to 99.9″) over a period of time. Monitor is for indoor use only and includes mounting fasteners. Operates on five AA batteries (sold separately).

Monitor Rain Sensor

Wireless System	5729K5		$255.26
AA Battery	65605T72		.68

Plastic Tube Rain Gauges

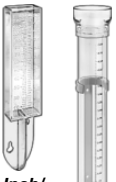

Inch/mm *Inch*

Measure up to 5″ of rainfall with one of these easy-to-read clear gauges.

Inch/mm gauge has inch and mm (up to 127 mm) markings and a pointed base that you can drive into the ground. Made of polystyrene. Has two 5/16″ dia. holes for mounting to a post. Fasteners not included.

Inch gauge is marked in inches. Made of polycarbonate. Includes a mounting bracket with two 1/4″ dia. holes and fasteners for mounting.

Scale	O'all Lg.	Grads.		
Inch/mm	9 3/4″	0.1″/2 mm	3940K1	$3.59
Inch	11 7/8″	0.05″	3940K2	12.66

Desktop Multifunction Barometers

Get readings of temperature, relative humidity, atmospheric pressure, and time right on your desktop. Barometers graphically display a rolling 24-hour pressure trend as a weather forecast. Have an LCD with 1/2″ high digits. Displays are selectable for °F/°C and inches of mercury/millibars.

Temperature range is 32° to 131°F; accuracy is ±1.8°F. Relative humidity range is 25% to 95%; accuracy is ±5%. Barometric pressure range is 23.45″ to 31.01″ Hg; accuracy is ±0.15″ Hg. Have one 1/4″ dia. hole for wall mounting (fastener not included). Housing is black ABS plastic. Overall size is 7 1/4″ Ht. × 5 1/4″ Wd. × 1″ Dp. Operate on four AAA batteries (included).

Barometer with NIST Certificate conforms to NIST (National Institute of Standards and Technology) standards and includes a certificate of calibration traceable to NIST.

Standard	3964K41	$132.95
With NIST Certificate	3964K81	160.16

Hand-Held Storm Detector

Don't be blown away—receive alerts of storms up to 75 miles away. Track a storm's range, speed, and estimated time of arrival at your location. An alarm sounds and an alert is shown on the two-line LCD when a storm is within range. LCD digits are 1/4″ high. Housing is ABS plastic with a neoprene grip. Comes with a carrying case, a nylon belt pouch, and a wall/vehicle dash mount that has two 3/16″ dia. mounting holes (fasteners not included). Overall size is 6 7/16″ Ht. × 3 7/16″ Wd. × 1 1/2″ Dp. Operates on the included 9-volt battery or 120 VAC adapter.

2778K1	$661.76

Weather/Hazard Alert Radios

Benchtop with AM/FM Reception

Hand Held

Get up-to-the-minute local weather and hazard alerts. Radios use SAME (Specific Area Message Encoding) technology to sound an alert when weather and other emergencies threaten the counties you select. They receive information from seven NOAA (National Oceanic and Atmospheric Administration) channels and can display more than 60 different alert messages. Radios have siren, voice, and visual alert settings, as well as an LED display that indicates the degree of alert (statement, watch, or warning).

Benchtop radios have a 12-hour clock display, alarm, and snooze functions. Operate on 120 VAC with a 6-ft. cord and two-prong plug. In case of power loss, radios have emergency power backup.

Benchtop radio can be programmed for up to 25 counties. Emergency power backup operates on three AA batteries (not included). Overall size is 2″ Ht. × 5 1/8″ Wd. × 6 1/4″ Dp.

Benchtop radio with AM/FM reception can be programmed for up to 23 counties. Emergency power backup operates on four AA batteries (not included). Overall size is 2 1/2″ Ht. × 7″ Wd. × 5 1/2″ Dp.

Hand-held radio operates up to 50 miles away from the transmitter (depending on terrain). It can be programmed for up to nine counties and includes a digital clock. Overall size is 7″ Ht. × 3″ Wd. × 1 1/2″ Dp. Operates on three AA batteries (not included).

Benchtop Radio	3338K33	$60.58
Benchtop Radio with AM/FM Reception	3338K32	97.08
Hand-Held Radio	3338K31	62.38
AA Battery	65605T72	.68

Barometers

Dial

Digital

Use these barometers to monitor atmospheric pressure changes in both inches of mercury (Hg) and millibars (mB).

Dial and ***precision-dial*** barometers have a 4 3/4″ dia. face, a white dial, and are enclosed in a polished solid brass case with glass lens. Both include fasteners for wall mounting.

Digital barometer has a trend indicator to track pressure changes, an audible alarm, and an LCD with 1 3/8″ high digits. Housing is aluminum. Set on a desk or wall mount using the 1 1/16″ Ht. × 7 5/8″ Wd. slot on the back (fasteners not included). Size is 3″ Ht. × 7 13/16″ Wd. × 1 9/16″ Dp. Operates on one 9-volt battery (included).

	Pressure Range	Accuracy		
Dial	28″-31″ Hg	±0.1″ Hg	4109K3	$177.78
Precision Dial	27.5″-31.5″ Hg	±0.05″ Hg	4109K4	363.64
Digital	27″-31.5″ Hg	±0.05″ Hg	4109K5	198.89

Hand-Held Weather Meter

Check the weather anytime, anyplace. This pocket-sized weather meter measures temperature, relative humidity, and wind speed. With these measurements, it calculates heat index, dew point, and wind chill.

Temperature and dew point range is –20° to +158°F. °F/°C selectable. Heat index range is 70° to 130°F. Wind chill range is –50° to +50°F. Accuracy is ±1.8°F for temperature and wind chill and ±3.6°F for heat index and dew point. Wind speed range is 0.8-89 mph and can be displayed in km/hr, m/sec, fpm, Beaufort, and knots. Relative humidity range is 5% to 95%; accuracy is ±3%. Resolution is 0.1 for all except fpm and mph.

Meter has an LCD with 3/8″ high digits. Comes with a lanyard and a case. Housing is waterproof polycarbonate/ABS plastic and overall size is 4 13/16″ Ht. × 1 11/16″ Wd. × 11/16″ Dp. Operates on one CR2032 coin-cell battery (included).

6273K6	$192.00

Windsocks

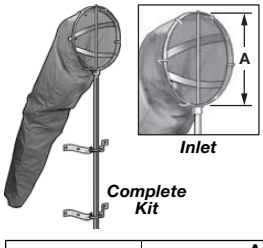

Inlet

Complete Kit

Visually determine wind direction and approximate speed. Windsocks are made of bright orange nylon and have brass grommets. They slide over a round inlet frame and secure with the included mounting ties.

If you are replacing an existing windsock, you will need to determine the inlet diameter. To do this, lay the windsock flat and measure inlet (A) and multiply that height by 0.63.

	Approximate Wind Speed	
Sock Position	Low Velocity	High Velocity
At Rest	0-4 mph (0-3 knots)	0-7 mph (0-6 knots)
At 45°	4-8 mph (3-7 knots)	7-13 mph (6-11 knots)
At 60°	8-14 mph (8-14 knots)	14-20 mph (12-17 knots)
Straight	14-18 mph (12-16 knots)	21-29 mph (19-25 knots)

Low-Velocity Windsocks

Made of urethane-coated nylon, these windsocks react to the slightest wind movement. ***Complete kits*** include a windsock, ties, a round aluminum inlet frame, a 30″ long metal pole, and brackets to mount pole onto a flat vertical surface.

Diameter Inlet	Outlet	Lg.	Windsocks		Complete Kits	
8″	4″	36″	6491T42	$30.70	6491T12	$77.80
13″	6 1/2″	54″	6491T44	41.55	6491T14	98.71
18″	9 1/2″	60″	6491T46	50.33	6491T16	117.87
18″	13 1/4″	96″	6491T48	60.30	6491T18	129.29

High-Velocity Windsocks

Made of PVC-coated nylon, these windsocks react to stronger wind movement. ***Round aluminum inlet frames*** (sold separately) mount onto a 1 1/4″ NPT threaded pipe (sold separately; see page 60).

Diameter Inlet	Outlet	Lg.	Windsocks		Inlet Frame	
8″	4″	24″	3836K11	$28.57	3836K21	$59.52
10″	5″	30″	3836K12	34.52	3836K22	62.14
13″	6 1/2″	36″	3836K13	38.10	3836K23	65.48
18″	9″	48″	3836K14	41.67	3836K24	76.62
24″	12″	96″	3836K15	51.19	3836K25	78.12
36″	18″	120″	3836K16	83.33	3836K26	155.08

Rugged-Service Weather Sensors and Displays

When long life with little maintenance is critical, rely on the same rugged weather equipment used by the National Weather Service. For a complete weather station, you'll need at least one sensor, a sensor cable, and either the Weather Data Center Display or one of the Real-Time Displays.

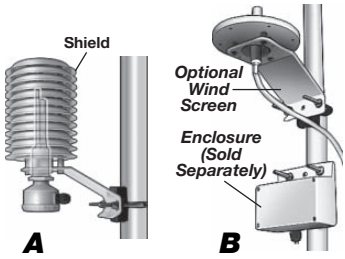

Sensors and Accessories

All mount on vertical 1″ pipe (1 3/8″ OD). Mounting hardware is included; pipe is not included. Connect to power using screw terminals.

(A) Temperature/Relative Humidity Sensor— Includes a shield that maintains accurate temperature readings by reducing sensor exposure to solar radiation and precipitation. Operates on 10-28 VDC. Output is 4-20 mA.

(B) Barometric Pressure Sensor— Operates on 7-30 VDC. Output is 4-20 mA. *Enclosure* (sold separately) is required. *Optional wind screen* reduces variance in measurements caused by wind gusts.

(C) Wind Speed/Wind Direction Sensor— Operates on 8-15 VDC. Output is pulse for wind speed and analog voltage for wind direction. *Optional line driver* converts the output into 4-20 mA for use with standard PLCs (programmable logic controllers).

(D) Rainfall Intensity Sensor— Does not require a power supply. Output is pulse.

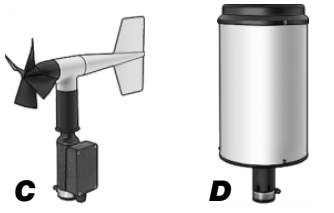

	Sensor	Range	Accuracy	Sensors Each	Sensor Cables Per Ft.
A	Temperature/ Relative Humidity	–58° to +122° F 0% to 100%	±0.6° F ±2%	4975K37 $1,063.64	4975K44 $1.00
B	Barometric Pressure	14.8″ to 32.5″ Hg	±0.01″ Hg	4975K14 720.90	4975K35 .75
C	Wind Speed/ Wind Direction	0 to 134 mph 360°	±5% ±5°	4975K11 839.55	4975K35 .75
D	Rainfall Intensity	0 to 2 in./hr.	±3%	4975K13 521.64	4975K44 1.00

Enclosure for Barometric Pressure Sensor	4975K16	Each	$109.70
Optional Wind Screen for Barometric Pressure Sensor	4975K15	Each	$158.96
Optional Line Driver for Wind Speed/Wind Direction Sensor	4975K12	Each	$521.64
Sensor Cable for Optional Line Driver	4975K44	Per Ft.	$1.00

Weather Data Center Display (For Sensors A-D)

Presents live readings from up to eight sensors and logs more than two million readings for later upload to your PC using an RS-232 serial communication cable (sold separately). It can also be programmed to activate alarms on up to four readings. Resolution is 0.1° F for temperature, 1% for relative humidity, 0.01″ Hg for barometric pressure, 1 mph for wind speed, 1° for wind direction, and 0.01″ for rainfall. Display operates on 10-30 VDC or the included 115 VAC adapter with 6-ft. power cord and two-prong plug. Overall size is 5 11/16″ Ht. × 7 7/8″ Wd. × 2 1/8″ Dp.

Display	4975K3	$2,166.43
RS-232 Serial Communication Cable	4975K6	32.50

Real-Time Displays (For Sensors A&C)

Get accurate, real-time data from either the temperature/relative humidity sensor or wind speed/wind direction sensor. Alarms activate when your chosen thresholds are reached. Resolution is 0.1° F for temperature, 1% for relative humidity, 1 mph for wind speed, and 10° for wind direction. Displays can be linked in parallel to feed multiple displays from a single sensor. They operate on 12-30 VDC or the included 110 VAC adapter with 6-ft power cord and two-prong plug. Overall size is 5 11/16″ Ht. × 5 11/16″ Wd. × 1 7/16″ Dp.

Temperature/Relative Humidity Display	4975K33	$951.49
Wind Speed/Wind Direction Display	4975K4	982.84

Rugged-Service Wireless Weather Station

This wireless station stands up to extreme weather conditions. Station comes with a durable sensor and an indoor receiver. The sensor measures temperature, relative humidity, barometric pressure, wind speed/direction, rainfall, wind chill, and dew point. Output from the sensor is wirelessly transmitted to the receiver using a 2.4 GHz radio signal (transmits up to one mile unobstructed). Measurements update every two seconds. Receiver connects to your PC with the included RS-232 serial communication cable and comes with software that allows you to customize the display and track real-time data. (A PC with Windows 2000 or newer and a CD-ROM drive is required.) Stores up to three months of data.

Mount sensor to a roof or exterior wall (bracket included). Sensor is 51″ tall when mounted. It runs on a solar-powered battery system that can operate up to 25 days without sunlight. The receiver runs on a 9-volt DC wall transformer and has an 8-hour battery backup, which requires 6 AA NiCAD batteries (not included).

Optional display console lets you see all measurements and records minimum and maximum values for temperature, relative humidity, barometric pressure, wind speed, and dew point. Display size is 13″ Lg. × 6 7/8″ Ht. Comes in a wood frame. Place it on a flat surface or mount it to a wall. Display runs on a 9-volt wall transformer and has a 20-hour battery backup, which requires 5 AAA batteries (not included).

Wireless Weather Station

Optional Display Console

Sensor	Range	Accuracy	Resolution
Temperature	–66° to +166° F	±0.5° F	0.1° F
Relative Humidity	0% to 100%	±2%	1%
Barometric Pressure	16.3″ to 32″ Hg	±0.05″ Hg	0.01″ Hg
Wind Speed	0 to 150 mph	±3 mph	1 mph
Wind Direction	360°	±22.5°	22.5°
Rainfall Total	Unlimited	±2%	0.01″

Rugged-Service Wireless Weather Station	1470K1	$1,415.41
Optional Display Console	1470K2	486.89

Wireless Weather Station

Monitor weather conditions without a tangled mess of wires. Station consists of an indoor console and an outdoor sensor unit. The console has a touch-screen monitor and built-in sensors that measure indoor temperature and humidity. The outdoor sensor unit measures outdoor temperature, relative humidity, wind speed/wind direction, rainfall rate/rainfall total, barometric pressure, heat index, wind chill, and dew point. Output from the outdoor sensor is wirelessly transmitted to the console using a 928 MHz radio signal (transmits up to 1,000 feet unobstructed). Humidity and temperature update every 1 minute, wind speed/wind direction update every 2 to 3 seconds, and rainfall updates every 24 seconds.

Place the console on a desk or mount it to a wall. The outdoor sensor mounts on a vertical 1″ to 1 3/4″ pipe (not included) or to a flat vertical surface. Console operates on the included 120 VAC adapter with 10-ft. cord and two-prong plug or three C batteries (not included). Outdoor sensor is solar powered and comes with a CR123 lithium battery backup.

Outdoor Sensor Unit

Console

Sensor	Range	Accuracy	Resolution
Indoor Temperature	32° to 140° F	±1° F	0.1° F
Indoor Relative Humidity	0% to 90%	±3%	1%
Outdoor Temperature	–40° to +150° F	±2° F	0.1° F
Outdoor Relative Humidity	0% to 90%	±3%	1%
Wind Speed	2 to 150 mph	±5%	1 mph
Wind Direction	360°	±3°	22.5°
Rainfall Rate	0.04 to 96 in. per hr.	±5%	0.01″
Rainfall Total	0″ to 200″	±4%	0.01″
Barometric Pressure	16″ to 32.5″ Hg	±0.03″ Hg	0.01″ Hg

Wireless Weather Station	3011K38	$489.04

Water-Quality Test Kits

Want on-the-spot results when testing for specific substances in water? These color-comparison kits contain all the necessary chemicals and labware you'll need.

Boiler/Cooling Tower Combination Test Kit— Includes approximately 100 tests for alkalinity (phenolthalein and total; 0-100/0-300 ppm), chloride (0-100/0-1,000 ppm), dissolved oxygen (0.0-10.0 ppm), hardness (total; 0.0-30.0/0-300 ppm), and sulfite (0.0-20.0/0-200 ppm), and 50 tests for phosphate (0-5 ppm).

Also Available: Refill chemicals, except tests for arsenic, bacteria, and lead. Please ask for 1439T31 and specify test type required.

Test For	No. of Tests		
Alkalinity (Total; 0-200 ppm)	50	1439T15	$36.49
Arsenic (0.002-0.030 ppm)	2	1450T2	26.47
Bacteria (1 colony per 100 ml water)	1	1439T12	4.55
Chloride (0-200/0-20,000 ppm) ♦	50	1439T17	47.35
Chlorine (Free and Total; 0.2-3.0 ppm)	50	1439T8	68.13
Dissolved Oxygen (0-10 ppm)	50	1439T13	54.49
Hardness (Total; 0-200 ppm)	50	1439T19	60.27
Iron (0.5-10 ppm)	90	1439T23	60.87
Lead (0.015 ppm)	2	5829T61	26.18
Molybdate (1-10 ppm)	100	1439T33	71.13
Nitrate Nitrogen (0.25-10.0 ppm)	40	1439T22	76.31
Phosphate (1.0-10.0/10-100 ppm) ♦	50	1439T21	94.85
pH (3-10.5 pH)	100	1439T2	41.45
Boiler/Cooling Tower Combination Test Kit		1439T11	302.07

♦ The second range given is the range reached through dilution.

Water-Quality Test Strips

Here's a quick, easy, and reliable way to test water conditions. Simply dip one test strip into a water-based solution—the strip will change color to indicate the value reached. Just match the color of the strip to the color chart on the bottle for your results.

5-in-1 Test Strips— Test five water-quality measurements on one strip.
Note: gpg = grains per gallon.

Test For	No. of Strips		
Alkalinity (Total; 0-240 ppm)	50	11235T51	$10.72
Chloride (0.005-0.1%; 30-600 ppm)	40	11235T59	42.02
Chlorine (Free and Total; 0-10 ppm)	50	11235T53	15.37
Chlorine (Free; 0-800 ppm)	50	11235T31	20.40
Copper (0-3 ppm)	25	11235T55	20.13
Hardness (Total; 0-25 gpg)	50	11235T41	10.72
Hardness (Total; 0-180 ppm)	50	11235T32	12.00
Hydrogen Peroxide (0-90 ppm)	25	11235T33	10.29
Iron (0-5 ppm)	25	11235T42	20.13
Molybdenum (0-5 ppm)	50	11235T34	52.86
Nitrate (0-50 ppm)/Nitrite (0-3 ppm)	25/25	11235T45	18.40
Peracetic Acid (0-160 ppm)	50	11235T35	11.37
pH (4-9 pH)	50	11235T57	10.72
Salinity (0-150% concentration)	50	11235T38	16.84
5-in-1 Test Strips— Alkalinity (Total; 0-240 ppm), Chlorine (Free and Total; 0-10 ppm), Hardness (Total; 0-25 gpg), pH (6.2-8.4 pH)	50	11235T47	16.57

Lead-Check Swabs

Perfect for checking painted surfaces for lead. Rub a swab on any surface to detect lead (down to 2 micrograms).

Pkg. Qty.		Pkg.
8	58095T21	$29.71

Liquid Samplers

T-Handle Sampler

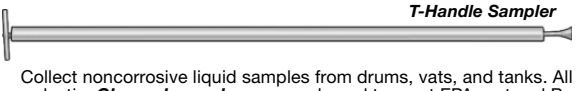

Collect noncorrosive liquid samples from drums, vats, and tanks. All are plastic. ***Cleaned samplers*** are packaged to meet EPA protocol B.

Open-Top Samplers— Also known as thief samplers. Create a vacuum by using your thumb to seal the top opening to collect a sample.

T-Handle Samplers— Also known as coliwasa (composite liquid waste) samplers. Use the T-handle to open and close the plug at the bottom to collect a sample.

OD	Lg.	Volume	Standard		Cleaned	
Open-Top Samplers						
1/2″	42″	100 ml	8221K11	$2.64	8221K13	$3.44
5/8″	42″	150 ml	8221K16	3.05	8221K18	3.86
T-Handle Samplers						
7/8″	18″	75 ml	8221K26	4.84	8221K28	6.39
7/8″	42″	250 ml	8221K33	6.87	8221K35	8.80
7/8″	84″	500 ml	8221K47	9.14	____	____
1 1/2″	42″	1,000 ml	____	____	8221K57	10.54

pH, Conductivity, and TDS Solutions

Calibrate your pH, conductivity, and total dissolved solids (TDS) sensors with one of these ready-made solutions.

Also Available: Calibrating solutions with a certificate of analysis. Solutions conform to NIST (National Institute of Standards and Technology) standards and include a certificate of analysis traceable to NIST. Please ask for 3108T3 and specify solution and size required.

	Size		
Calibrating pH Buffer Solutions			
4.0 pH Buffer	500 ml	21315T396	$11.14
4.0 pH Buffer	1 gal.	21315T496	32.79
7.0 pH Buffer	500 ml	21315T397	11.14
7.0 pH Buffer	1 gal.	21315T497	32.79
10.0 pH Buffer	500 ml	21315T398	11.14
10.0 pH Buffer	1 gal.	21315T498	32.79
Cleaning Solution for pH Sensors	500 ml	21315T501	18.00
Storing Solution for pH Sensors	500 ml	21315T502	18.20
Calibrating Conductivity Solutions			
84 µS	500 ml	21315T601	18.20
1,413 µS	500 ml	21315T602	18.20
12,880 µS	500 ml	21315T603	18.20
Calibrating Total Dissolved Solids Solution			
1,382 ppm	500 ml	21315T605	18.20

pH Testing Paper Rolls

Single Range

Also known as litmus paper, this pH testing paper changes color to indicate pH value. Apply water-based solution to paper or dip paper into your sample. Simply match the color of the testing paper to the color chart on the dispenser to determine pH value.

Single-Range Testing Paper Rolls— 1/2″ Wd. × 50-ft. Lg. Rolls

Range	Color Points	Increments	Paper Rolls with Dispenser		Refill Roll	
0 -13.0	14	1	1434T31	$12.11	1434T41	$11.31
1.0- 2.5	4	0.5	1434T14	12.11	1434T24	11.31
1.0- 6.0	6	1	1434T12	12.11	1434T22	11.31
1.0-11.0	11	1	1434T11	12.11	1434T21	11.31
3.0- 5.5	6	0.5	1434T15	12.11	1434T25	11.31
3.0- 9.0	7	1	1434T13	12.11	1434T23	11.31
6.0- 8.0	5	0.5	1434T16	12.11	1434T26	11.31
8.0- 9.5	4	0.5	1434T17	12.11	1434T27	11.31
10.0-12.0	5	0.5	1434T18	12.11	1434T28	11.31
12.5-14.0	4	0.5	1434T19	12.11	1434T29	11.31

pH Testing Paper Roll Assortment

Includes seven 1/2″ Wd. × 50-ft. Lg. rolls of pH testing paper, one each of the following ranges: 0.0-13.0, 1.0-2.5, 3.0-5.5, 6.0-8.0, 8.0-9.5, 10.0-12.0, and 12.5-14.0. Each roll comes in its own dispenser.

1434T3 ..... $85.75

Hydrometers

Use readings from these hydrometers to calculate the concentration of your solutions. Made of thick-walled glass tubing, all hydrometers are calibrated at 60° F test liquid/60° F water. Length is 12″. Overall dia. for wide-scale hydrometers (except 4099K17) is 9/16″. For 4099K17 and fine-scale hydrometers, dia. is 11/16″.

Specific gravity is the ratio of the density of the test liquid at 60° F to the density of water at 60° F.

Scale	Range	Grads.		
Wide-Scale Hydrometers				
For Light Liquids— *Specific Gravity < 1*				
Specific Gravity	0.650 to 1.000	0.005	4099K16	$15.72
Specific Gravity/ Baume	0.600 to 1.000/ 10° to 100°	0.005/ 1°	4099K24	15.72
For Heavy Liquids— *Specific Gravity > 1*				
Specific Gravity	1.000 to 2.000	0.010	4099K14	15.72
Baume	0° to 50°	1°	4099K11	15.72
Baume	0° to 70°	1°	4099K13	15.72
Specific Gravity/ Baume	1.000 to 2.000/ 0° to 72°	0.010/ 1°	4099K23	15.72
For Salt Water				
Saturation	0 to 100%	1%	4099K17	15.72
Fine-Scale Hydrometers				
For Light Liquids— *Specific Gravity < 1*				
Specific Gravity	0.700 to 0.810	0.001	38865K11	15.72
Specific Gravity	0.800 to 0.910	0.001	38865K12	15.72
Specific Gravity	0.900 to 1.000	0.001	38865K13	15.72
For Heavy Liquids— *Specific Gravity > 1*				
Specific Gravity	1.000 to 1.220	0.002	38865K14	15.72
Specific Gravity	1.200 to 1.420	0.002	38865K15	15.72
Specific Gravity	1.600 to 1.820	0.002	38865K17	15.72

For a specification sheet with additional information for the meters on this page such as resolution and dimensions, go to mcmaster.com and search for the part number.

pH, ORP, Conductivity, TDS, and Dissolved Oxygen Meters

Quick and handy tools for on-the-go measurement, these water chemistry meters are splash-resistant and protected against dust, unless noted. All have automatic temperature compensation (ATC), unless noted. Automatic temperature compensation adjusts readings to correct for temperature variation. Readings are standardized to 77° F. Batteries are included. CE approved, unless noted.

Note: To maintain the accuracy of these meters, use calibrating solutions on page 614.

Features	Range	Accuracy	ATC Range	Meters		Repl. Sensor	
pH Meters							
For Use With Clean Liquids							
A .. Pocket-size	0 to 14 pH	±0.1 pH	32° to 122° F	1196T33 ●	$57.03	—	—
C .. Clamshell; with memory	0 to 14 pH	±0.02 pH	32° to 212° F	1124T3 ★	280.15	1124T32	$57.11
D .. Remote reading	0 to 12 pH	±0.01 pH	32° to 158° F	1122T11	260.74	1122T61	49.51
D .. PC output; w/ memory; remote reading	0 to 14 pH	±0.01 pH	32° to 212° F	14345T61	549.47	14345T63	81.43
E .. Waterproof; pocket-size	0 to 14 pH	±0.1 pH	32° to 122° F	13945T12	69.00	—	—
For Use With Dirty Liquids							
A .. Pocket-size; nonglass sensor	2 to 12 pH	±0.1 pH	41° to 104° F	13945T17 ★	271.64	13945T72	67.64
B .. Waterproof; pocket-size	0 to 14 pH	±0.01 pH	32° to 122° F	13945T19	128.91	13945T29	66.20
D .. Remote reading; nonglass sensor	0 to 14 pH	±0.01 pH	32° to 212° F	1131T21	693.91	1131T22	346.79
Oxidation Reduction Potential (ORP) Meters							
A .. Pocket-size; for clean liquids	–999 to +999 mV	±5 mV	—	1196T99 ● ▲	100.84	—	—
B .. Waterproof; pocket-size; for dirty liquids	–999 to +1,000 mV	±2 mV	32° to 122° F	13945T18	198.95	13945T28	84.81
Conductivity Meters							
A .. Pocket-size	0 to 1,999 µS	±2%	32° to 122° F	1196T55 ●	66.53	—	—
B .. Microrange; waterproof; pocket-size	0 to 2,000 µS/0 to 20 mS	±1%	32° to 122° F	13945T35	90.84	13945T39	46.96
B .. Multirange; waterproof; pocket-size	0 to 2,000 µS/0 to 20 mS	±1%	32° to 122° F	1145T72	122.24	1145T41	55.93
D .. Remote reading; multirange	0 to 2,000 µS/0 to 200 mS	±1%	32° to 122° F	1122T32	363.27	1122T82	166.42
Total Dissolved Solids (TDS) Meters							
A .. Pocket-size	0 to 1,999 ppm	±2%	32° to 122° F	1196T77 ●	66.53	—	—
B .. Waterproof; pocket-size	0 to 10 ppt	±1%	32° to 122° F	13945T34	90.84	13945T39	46.96
B .. Multirange; waterproof; pocket-size	0 to 2,000 ppm/0 to 10 ppt	±1%	32° to 122° F	1145T75	122.24	1145T41	55.93
D .. Remote reading; multirange	0 to 1,000 ppm/1 to 200 ppt	±1%	32° to 122° F	1122T42	363.27	1122T82	166.42
E .. Microrange; waterproof; pocket-size	0 to 1,990 ppm	±1%	32° to 122° F	13945T33	67.23	—	—
Dissolved Oxygen Meters							
B .. Waterproof; pocket-size	0 to 20 ppm	±2%	32° to 122° F	13945T62	250.89	13945T64	83.99
F .. Remote reading	0 to 20 ppm	±2%	0° to 50° C	1122T3	595.24	1122T33	224.14

● Not CE approved. Not splash-resistant or dust proof. ★ Includes calibrating pH buffer solutions. ▲ Does not have ATC.

Multifunction pH, ORP, Conductivity, TDS, and Salinity Meters

Get the convenience of multiple water chemistry measurements from a single meter. All have automatic temperature compensation (ATC), which adjusts readings to correct for temperature variation. Readings are standardized to 77° F. Batteries are included. CE approved.

Meters with *pH* and *oxidation reduction potential (ORP)* functions are for clean liquids.

Style G are rated IP57 (protection against dust and water submersion). 14345T75 has PC output.

Style J are rated NEMA 6 (for occasional submersion) and IP67 (dust-proof and protection against water submersion). They also measure resistivity from 10 kilohms to 30 megohms with ±1% accuracy and have a memory function.

Note: To maintain the accuracy of these meters, use calibrating solutions on page 614.

	Range	Accuracy	ATC Range		
Multifunction Meters					
G .. pH	0 to 14 pH	±0.01 pH			
Oxidation Reduction Potential (ORP)	–999 to +999 mV	±4 mV			
Chlorine	0.01 to 10 ppm	±1.55 ppm	32° to 194° F	1160T11	$241.35
G .. Conductivity	0 to1,999 µS	±2%			
Total Dissolved Solids (TDS)	0 to 1,999 ppm	±2%			
Salinity	0 to 999 ppm	±2%	32° to 149° F	13945T52	107.98
H .. pH	0 to 12 pH	±0.01 pH			
Oxidation Reduction Potential (ORP)	–1,000 to +1,000 mV	±2 mV	32° to 212° F	1122T22	367.40
H .. Conductivity	0 to1,999 µS/0 to199 mS	±1%			
Total Dissolved Solids (TDS)	0 to 999 ppm/0 to 99 ppt	±1%	32° to 212° F	14345T75	627.37
Extended-Life Multifunction Meters					
J .. pH	0 to 14 pH	±0.01 pH			
Oxidation Reduction Potential (ORP)	–999 to +999 mV	±1 mV			
Conductivity	0 to 9,999 µS/10 to 200 mS	±1%			
Total Dissolved Solids (TDS)	0 to 9,999 ppm/10 to 200 ppt	±1%	32° to 160° F	1134T8	943.85
J .. Conductivity	0 to 9,999 µS/10 to 200 mS	±1%			
Total Dissolved Solids (TDS)	0 to 9,999 ppm/10 to 200 ppt	±1%	32° to 160° F	1134T6	706.14

Replacement Sensors

	For Meter No.			For Meter No.		
pH Sensor	1160T11	1160T21	$45.10	1122T22	1122T61	$49.51
ORP Sensor	1160T11	1160T22	56.38	1122T22	1122T23	76.67
Chlorine Sensor	1160T11	1160T23	112.77	14345T75	14345T79	130.71
Conductivity Sensor	13945T52	13945T54	47.99	1134T8	1134T9	179.54

Bench-Top pH, Conductivity, and TDS Meters

1128T137

Spot trends and variations in pH, conductivity, and total dissolved solids (TDS) measurements with these easy-to-read analog meters. All meters have automatic temperature compensation (ATC), which adjusts readings to correct for temperature variation. Readings in the range of 50° to 160° F (unless noted) are standardized to 77° F. Batteries are included.

13485T64 for pH and conductivity is for use with clean liquids.

Note: To maintain the accuracy of these meters, use calibrating solutions on page 614.

ⓘ For a specification sheet with additional information such as meter dimensions, go to mcmaster.com and search for the part number.

Function	Range	Accuracy		
Single-Function Meters				
Conductivity	0 to 5,000 µS	±2%	1128T14★	$374.09
Conductivity	0 to 10,000 µS	±2%	1128T137	362.24
TDS	0 to 5,000 ppm	±2%	1128T16	332.36
Dual-Function Meter				
pH/Conductivity	2 to 12 pH/ 0 to 10,000 µS	±0.2 pH/ ±2%	13485T64	528.17
Replacement pH Sensor			13485T62	111.72
Optional Carrying Case			1128T15	48.57

★ ATC range is 50° to 120° F; readings are standardized to 77° F.

pH and ORP Sensors

Hand Held

With NPT Connection

Bayonet Connection

Replace your pH or oxidation reduction potential (ORP) sensor with one of these sensors. All sensors have a bayonet connection, which is the common connection to meters and controllers with a remote sensor. pH sensors have a range of 0 to 14 pH. ORP sensors have a range of –1,999 to +1,999 mV. Temperature range is 32° to 176° F.

Sensors with automatic temperature compensation (ATC) adjust readings to correct for temperature variation. Readings within the temperature range are standardized to 77° F.

Flat-tip pH sensors are more resistant to breakage.

Hand Held— These sealed glass sensors are for use with clean liquids, except the ORP sensor, which is for use with dirty liquids. **To Order:** Please specify cable length: 3, 10, or 20 feet.

With NPT Connection— Have a ¾″ NPT male connection for incorporation in your process. All are for use with dirty liquids. **To Order:** Please specify cable length: 10 or 20 feet.

Function	Hand Held		With NPT Connection	
pH	14775T21	$65.44	14775T91	$154.50
pH with ATC	14775T22	96.34	14775T92	199.83
Flat-Tip pH	14775T23	80.98	14775T93	154.76
Flat-Tip pH with ATC	14775T24	125.83	14775T94	206.18
ORP	14775T25	113.96	14775T95	225.21

Easy-Mount pH, ORP, and Conductivity Controllers

Controllers compare the input from your sensor to your programmed actuation point and have relays and a common 4-20 mA output to control a pump, mixer, valve, or other process mechanism.

Multifunction Panel-Mount Controllers

Controllers accept pH and oxidation reduction potential (ORP) sensors (not included; see 14775T above) that have a bayonet connection. A switch on these controllers allows you to select between pH and ORP measurement. All have automatic temperature compensation, which adjusts readings to correct for temperature variation. Readings in the range of 32° to 212° F are standardized to 77° F. Controllers have a ¼ DIN thermoplastic housing.

Controllers have one control and two alarm relays. Relays are single pole, double throw (SPDT) and can be set to turn one circuit from "off" to "on" (normally open) or from "on" to "off" (normally closed). Relays have a max. load of 5 amps at 115 VAC.

Controller with LED display is better for low-light conditions.

Function	Range	Resolution	Accuracy
pH	0 to 14 pH	0.01 pH	±0.01 pH
ORP	–1,999 to +1,999 mV	1.0 mV	±0.1%

Display	O'all Size, Ht. × Wd. × Dp.	VAC @ 50/60 Hz		
LCD	3 13/16″ × 3 13/16″ × 4 11/16″	115/230	11305T44	$327.98
LED	3 13/16″ × 3 13/16″ × 4 11/16″	115/230	11305T66	327.98

Wall-Mount Controllers and Sensors

Pair these controllers with sensors (sold separately below) to control pH or conductivity. All have automatic temperature compensation, which adjusts readings to correct for temperature variation. Readings in the range of 32° to 132° F are standardized to 77° F. Controllers have an ABS plastic housing and four 3/16″ dia. mounting holes (fasteners not included).

Controllers have one control and one alarm relay. Relays are single pole, single throw (SPST) and can be set to turn one circuit from "off" to "on" (normally open). Relays have a max. load of 2 amps at 240 VAC.

Function	Range	Resolution	Accuracy	O'all Size, Ht. × Wd. × Dp.	VAC @ 50/60 Hz		
pH	0 to 14 pH	0.01 pH	±0.02 pH	7 1/8″ × 8 11/16″ × 3 7/16″	110/115	13915T45	$596.79
pH	0 to 14 pH	0.01 pH	±0.02 pH	7 1/8″ × 8 11/16″ × 3 7/16″	220/240	13915T47	596.79
Conductivity	0 to 10 mS	0.01 mS	±2%	7 1/8″ × 8 11/16″ × 3 7/16″	110/115	13915T18	602.14
Conductivity	0 to 10 mS	0.01 mS	±2%	7 1/8″ × 8 11/16″ × 3 7/16″	220/240	13915T19	602.14

Sensors— For use with wall-mount controllers above. Both have a process connection and a 10-ft. cable for remote readings.

pH sensor is for use with clean liquids. It has a ¾″ UNF process connection.

Conductivity sensor has a ½″ NPT male process connection.

Sensor For		
pH	13915T24	$130.71
Conductivity	13915T27	171.43

Refractometers

Eyepiece Refractometer

Digital Refractometer

Use two or three drops of your sample to measure concentrations in water-based solutions. All come in a plastic case. *Refractometers with automatic temperature compensation (ATC)* adjust readings to correct for temperature variation. Readings within the temperature range are standardized to 77° F.

Eyepiece Refractometers— Look through the eyepiece to see your results. Body is aluminum (unless noted).

With Brix (sugar) scale measure cutting/grinding coolants, oil/water concentrations, cleaning solutions, anodizing solutions, plating/acid baths, and chromating solutions.

Eyepiece refractometers with automatic temperature compensation have a range of 50° to 86° F.

With freezing-point scale measure antifreeze and battery fluid. They measure the freezing-point of propylene glycol and ethylene glycol as well as the specific gravities of battery acids from 1.15 to 1.30.

Digital Pocket Refractometers— Read your results on the LCD. ATC range is 50° to 167° F. Meters comply with HACCP (Hazard Analysis Critical Control Points) standards for use in food applications. All have a plastic body.

Range	Resolution	O'all Lg.		
Eyepiece Refractometers with Brix (Sugar) Scale				
Without Automatic Temperature Compensation				
0-10%	0.1%	7 1/2″	8500T511	$95.26
0-18%	0.1%	7 3/4″	8500T531	95.26
0-32%	0.2%	7 1/4″	8500T551 ♠	95.26
0-90%	0.2%	7 1/2″	8500T591	343.75
With Automatic Temperature Compensation				
0-10%	0.1%	7 1/2″	8500T11	105.77
0-18%	0.1%	7 3/4″	8500T12	105.77
0-32%	0.2%	6 1/2″	8500T15	105.77
Eyepiece Refractometers with Freezing-Point Scale				
With Automatic Temperature Compensation				
–60° to +32° F	2° F	6 1/4″	7718K2●	97.90
–50° to 0° C	1° C	6 1/4″	7718K1●	114.08
Digital Pocket Refractometers with Brix (Sugar) Scale				
With Automatic Temperature Compensation				
0-53%	0.1%	4 1/4″	2982T64	368.75
45-93%	0.1%	4 1/4″	2982T68	400.00

♠ Has a plastic body. ● Has a nickel-plated brass body.

Heating & Cooling

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About Choosing the Right Heater

There are several factors to consider when choosing a heater: the power source, the type of heat transfer that best suits your environment, and the heat output measured in watts or Btu/hr.

Power Source— Determine the available source: electric, gas, oil, hot water, or steam.

Heat Transfer— Forced-air, convection, or radiant heat.

Forced-air heaters use the force of a fan to distribute heat quickly for instant relief from the cold. If properly arranged for maximum circulation, they can also be used to heat an entire warehouse. Forced-air heaters also cool off quickly. Best suited for well-insulated areas and to quickly restore heat to an area that gets occasional exposure to the outdoors.

Convection heaters offer excellent circulation and produce even warmth. Initial warm-up is gradual; however, they continue circulating warm air long after they're turned off. Ideal for maintaining even heat levels in areas that are well insulated and have few drafts.

Radiant heaters transmit heat waves through the air, warming objects and people in their path instead of warming the air. They are excellent for spot heating, and if properly arranged, they can also be used to heat an entire warehouse. Unaffected by drafts, they are good for heating open areas such as loading docks.

Heat Output Required— A heater should be large enough to replace the heat lost through the floor, walls, and ceiling of the space you are trying to heat. The amount of heat lost depends on how well an area is sealed and insulated. You may need to consider more than one heater to meet your total requirement.

Follow these steps to estimate your heat requirement:

For Forced-Air and Convection Heaters

Step 1: Determine the volume of space to be heated in cubic ft. (Lg.×Wd.×Ht.).

Step 2: Estimate your heat loss factor by choosing the description that best fits your building:
- Very well sealed and insulated = 0.25
- Well sealed, but not insulated = 0.75
- Not well sealed or insulated = 1.25

Step 3: Decide how much you want the temperature to rise in °F: If you don't currently have interior heat, this would be the difference between the outside temperature and your desired temperature. If adding to existing heat, this would be the difference between your current temperature and your desired temperature.

Step 4: Multiply the results from Steps 1-3 for your estimated Btu/hr. requirement.

Step 5: If you are sizing an electric heater by watts, multiply the result in Step 4 by 0.293.

For Radiant Heaters

Step 1: Determine the area to be heated in sq. ft. (Lg.×Wd.).

Step 2: Determine the heating environment factor:
- General building heating = 0.5
- Indoor spot heating = 1
- Outdoor spot heating = 2

Step 3: Decide how much you want the temperature to rise in °F. (See Step 3 above.)

Step 4: Multiply the results from Steps 1-3 for watts.

Step 5: Divide the result in Step 4 by 0.293 for your estimated Btu/hr. requirement.

Portable Electric Heaters

Light Duty Small-Area Forced-Air Heater

Easily move to areas that need quick spot heating. Heater has two heat levels, a built-in thermostat that adjusts from 42° to 95°F, and a tip-over switch that shuts off the unit if it falls over. Housing is made of steel and aluminum. Operates on 60 Hz and has a 6-ft. cord with two-prong plug. ETL listed.

Volts	Phase	Watts	Btu/Hr.	Amps	Ht.×Wd.×Dp.		
120 VAC	Single	1,500	5,100	12.5	15″×10⅝″×8 11/16″	**1810K7**	$54.17

Light Duty Under-Desk Radiant Heater

Provide warmth to anyone sitting at a desk, counter, or table. Heater has a fiberglass heating element and an on/off switch. Housing is off-white steel and includes a stand. You can also mount the heater using the included hook and loop tape. Operates on 60 Hz and has a 6-ft. cord with three-prong plug. UL listed.

Optional thermostat adjusts from 40° to 100° F and has a 6-ft. cord with three-prong plug. Mounts with included hook and loop tape. Operates on 120 VAC, 60 Hz and is rated for 10 amps.

Volts	Phase	Watts	Btu/Hr.	Amps	Ht.×Wd.×Dp.		
120 VAC	Single	170	580	1.4	15″×22″×1″	**1733K11**	$98.65
Optional Thermostat						**1733K21**	68.40

Multi-Mount Forced-Air Heater

Ceiling-Mount Position

NEMA 6-30 Plug

The versatile bracket can be used as a floor stand or to mount heater to the wall or ceiling. It has four 5/16″ dia. mounting holes (fasteners not included). Heater has a built-in thermostat that adjusts from 35° to 85°F, an overheat safety shutoff, and a steel heating element. Housing is made of steel. Operates on 60 Hz and has a 6-ft. cord with NEMA 6-30 plug. UL and C-UL listed.

Note: When operating on 208 VAC, heat output (Btu/hr.) and watts are reduced by 25%.

Volts	Phase	Watts	Btu/Hr.	cfm	Amps	Ht.×Wd.×Dp.		
208/240 VAC	Single	5,600	19,107	262	23.4	17½″×13½″×11½″	**3688K72**	$258.93

DC Mini Forced-Air Heaters

Don't shiver in slow-to-warm vehicles. Hardwire these compact units to your battery using the three 1½″ long leads. Heaters have a quartz tube heating element, built-in thermostat that adjusts from –31° to +155°F, remote on/off switch, overheat safety shutoff, and fuse. Housing is black ABS plastic. Heaters come with a multimount bracket that allows for floor or wall mounting (fasteners included).

Volts	Watts	Btu/Hr.	cfm	Amps	Ht.×Wd.×Dp.		
12 VDC	300	1,100	102	25	8¼″×7¾″×5¼″	**17075K71**	$119.70
24 VDC	600	2,200	102	25	8¼″×7¾″×5¼″	**17075K81**	196.00

For information about choosing a heater, see page 618.

High-Output Portable Forced-Air Heaters

A high-output steel heating element combined with a powerful fan result in superior heat coverage for your indoor applications. These heaters pivot to direct warmth where it's needed and have a black powder-coated steel stand with two wheels for mobility. They're intended for work environments with ceiling heights of less than 15 ft. 10,000-watt heater is for areas smaller than 1,000 sq. ft.; 15,000-watt heaters are for areas smaller than 1,500 sq. ft.; and 30,000-watt heater is for areas smaller than 2,000 sq. ft. All have a thermostat that adjusts from 40° to 100° F and an overheat safety shutoff. Housing is yellow steel. Operate on 50/60 Hz. UL and C-UL listed.

Power cords are 25 ft. long and are furnished with ring terminals. Plugs are sold separately on pages 787-789.

Volts	Phase	Watts	Btu/Hr.	cfm	Amps	Ht. × Wd. × Dp.	Heaters		Power Cord (Without Plug)	
208 VAC	Three	15,000	51,195	800	42	40″ × 27″ × 21″	1714K42	$826.09	1714K93	$179.37
240 VAC	Single	10,000	34,130	800	42	40″ × 27″ × 21″	1714K19 ♦	838.24	—	—
240 VAC	Three	15,000	51,195	800	36	40″ × 27″ × 21″	1714K12	826.09	1714K93	179.37
480 VAC	Three	15,000	51,195	800	18	40″ × 27″ × 21″	1714K22	826.09	1714K92	80.95
480 VAC	Three	30,000	102,390	1,100	36	40″ × 27″ × 23″	1714K32	1,276.60	1714K93	179.37

♦ Includes a 10-ft. cord with NEMA 14-50 plug.

Indoor/Outdoor Portable Radiant Heaters

For convenient spot heating of indoor and dry outdoor environments, choose these efficient radiant heaters. They have aluminum reflectors and a safety screen to protect the heating element from damage. Element is made of nickel chromium and has a corrosion-resistant nickel alloy sheath. All heaters operate on 50/60 Hz.

Stand-mounted heaters have three 6″ wire leads, unless noted.

Wheel-mounted heaters are attached to a hand cart with two wheels. They have four 6″ wire leads and can be rewired for single-phase operation, except 1747K52.

Power cords are 25 ft. long and furnished with ring terminals. Plugs are sold separately on pages 787-789.

Optional wall-mount thermostat adjusts from 40° to 110° F. It's single pole, double throw (SPDT) and has three 6″ wire leads and four 5/16″ dia. mounting holes (fasteners not included). Operates on 120/277 VAC and is rated for 22 amps. UL listed. For 480 VAC heaters or heaters 6,000 watts or greater, a contactor is required to work between the heater and thermostat; see pages 902-904.

Stand Mounted, 120 VAC

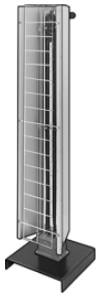

Stand Mounted, 208 to 480 VAC

Wheel Mounted

Volts	Phase	Watts	Btu/Hr.	Amps	Ht. × Wd. × Dp.	Heaters		Replacement Element		Power Cord (Without Plug)	
Stand Mounted											
120 VAC	Single	1,800	6,143	15.0	28½″ × 11½″ × 13½″	1747K35 ■	$242.65	1747K351	$70.42	—	—
208 VAC	Single	4,500	15,359	21.6	48″ × 11½″ × 13½″	1747K41	285.29	1747K411	96.67	1747K412	$81.67
240 VAC	Single	4,500	15,359	18.8	48″ × 11½″ × 13½″	1747K42	285.29	1747K421	96.67	1747K422	68.33
480 VAC	Single	4,500	15,359	9.4	48″ × 11½″ × 13½″	1747K44	285.29	1747K441	96.67	1747K442	55.42
Wheel Mounted											
240 VAC	Three	6,000	20,478	14.4	37″ × 20″ × 16″	1747K51	455.71	1747K831	70.42	1747K512	70.42
240 VAC	Three	13,500	46,076	33.0	59″ × 27½″ × 19″	1747K52	829.29	1747K421	96.67	1747K26	146.25
480 VAC	Three	6,000	20,478	7.5	37″ × 20″ × 16″	1747K54	455.71	1747K541	70.42	1747K512	70.42
480 VAC	Three	13,500	46,076	17.0	59″ × 27½″ × 19″	1747K64	757.14	1747K441	96.67	1714K92	80.95
Optional Wall-Mount Thermostat										1747K87	$63.20

■ Has a 15-ft. cord with three-prong plug instead of wire leads.

Portable Ceiling-Mount Radiant Heaters

Complete with all the necessary hardware, these heaters mount easily to the ceiling for indoor spot heating. The quartz tube heating element provides more efficient radiant heating than sheathed elements. Mount heaters a minimum of 3″ from the ceiling using the two 2-ft. long suspension chains and S-hooks. All operate on 50/60 Hz. UL listed.

1751K11 has a steel housing, two quartz tubes with independent switches, and an 8-ft. cord with three-prong plug. Recommended mounting height is 6 to 8 ft.

1896K58 and 1896K59 are rated for outdoor use (when sheltered from the elements) and have a galvanized steel housing, one quartz tube, and a 6-ft. cord. C-UL listed. 1896K58 has a three-prong plug. Recommended mounting height is 7 to 9 ft. 1896K59 has a NEMA 6-15 plug. Recommended mounting height is 8 to 10 ft.

Optional wall-mount thermostat adjusts from 40° to 110° F. It has a single pole, double throw (SPDT) switch, three 6″ wire leads, and four 5/16″ dia. mounting holes (fasteners not included). Operates on 120/277 VAC and is rated for 22 amps. UL listed.

1751K11

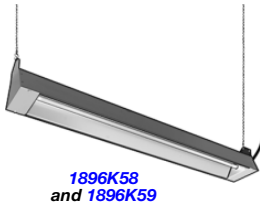

1896K58 and 1896K59

NEMA 6-15 Plug

Volts	Phase	Watts	Btu/Hr.	Amps	Ht. × Wd. × Dp.	Heaters		Repl. Tube	
120 VAC	Single	450/900	1,535/3,072	3.8/7.5	4 13/16″ × 16½″ × 5 13/16″	1751K11	$197.10	1751K12	$39.91
120 VAC	Single	1,500	5,120	12.5	6½″ × 42″ × 5⅜″	1896K58	148.19	1896K71	55.08
240 VAC	Single	3,000	10,239	12.5	6½″ × 53″ × 5⅜″	1896K59	172.83	1896K72	62.50
Optional Wall-Mount Thermostat								1747K87	$63.20

Permanent-Mount Electric Heaters

For information about choosing a heater, see page 618.

Compact Forced-Air Heaters

Low-profile design allows permanent, horizontal mounting under counters, in soffits, and in other recessed locations. Heaters are wired for 1,500 watts (can be field-wired for 750 watts) and have two 6″ wire leads and a thermostat that adjusts from 45° to 80° F. Heating element is nickel chromium; housing is galvanized steel with a white grille. Heaters require a 3⅝″ Ht. × 14¼″ Wd. × 9″ Dp. opening for installation and include two mounting fasteners. Operate on 50/60 Hz. UL listed.

120 VAC heater is single pole, single throw (SPST).

208/240 VAC heater is double pole, single throw (DPST). *Note:* When operating on 208 VAC, the heat output (Btu/hr.) and watts are reduced by 25%.

Volts	Phase	Watts	Btu/Hr.	cfm	Amps	Ht. × Wd. × Dp.		
120 VAC	Single	1,500/750	5,120/2,560	70	12.5	3½″ × 14½″ × 8″	17045K72	$187.89
208/240 VAC	Single	1,500/750	5,120/2,560	70	6.3	3½″ × 14½″ × 8″	17045K82	194.12

Compact Stainless Steel Radiant Heaters

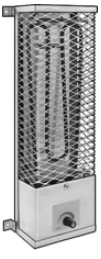

Perfect for tight indoor spaces, these heaters mount vertically or horizontally. Housing, grille, and heating element are made of Type 304 stainless steel for excellent corrosion resistance. Heaters have a built-in thermostat that adjusts from 40° to 90° F and two 6″ wire leads. Operate on 50/60 Hz. The included mounting bracket has four 3/16″ holes (fasteners not included).

Note: When 208/240 VAC heaters operate on 208 VAC, heat output (Btu/hr.) and watts are reduced by 25%.

				120 VAC			208/240 VAC		
Watts	Phase	Btu/Hr.	Ht. × Wd. × Dp.	Amps			Amps		
500	Single	1,707	17″ × 6¼″ × 3⅝″	4.2	1991K65	$161.92	2.1	1991K75	$161.92
750	Single	2,560	17″ × 6¼″ × 3⅝″	6.3	1991K66	161.92	3.1	1991K76	161.92
1,000	Single	3,413	17″ × 6¼″ × 3⅝″	8.3	1991K67	161.92	4.2	1991K77	161.92

Baseboard Convection Heaters

Analog Thermostat

Single Receptacle

Adapt these heaters to your installation needs by using the indentations to punch your own mounting holes. They have a steel housing and heating element, six 6″ wire leads, and an overheat safety shutoff. Housing has an almond finish. Operate on 60 Hz. UL listed. All require a thermostat (sold separately).

Note: When 208/240 VAC heaters operate on 208 VAC, heat output (Btu/hr.) and watts are reduced by 25%.

Analog heater-mount thermostats adjust from 45° to 90° F and are rated for 22 amps. *120 VAC* is single pole, single throw (SPST) and has two 6″ wire leads. *208/240 VAC* is double pole, single throw (DPST) and has four 6″ wire leads.

Digital heater-mount thermostat adjusts from 41° to 85° F and has four 6″ wire leads. You can program up to four daily temperature changes. It's double pole, single throw (DPST) and is rated for 12.6 amps.

Heater-mount single receptacle allows you to safely add an outlet to your 120 VAC heater. It has one three-prong outlet, three screw terminals, and one 1/8″ dia. mounting hole (fastener not included). Rated for 120 VAC, 60 Hz, and 15 amps.

				120 VAC			208/240 VAC		
Watts	Phase	Btu/Hr.	Ht. × Wd. × Dp.	Amps			Amps		
500	Single	1,707	6¾″ × 30″ × 2½″	4.2	1778K41	$38.78	2.1	1778K52	$40.43
750	Single	2,560	6¾″ × 36″ × 2½″	6.3	1778K42	44.90	3.1	1778K54	46.81
1,000	Single	3,413	6¾″ × 48″ × 2½″	8.3	1778K43	53.06	4.2	1778K56	55.43
1,250	Single	4,267	6¾″ × 60″ × 2½″	—	—	—	5.2	1778K57	64.00
1,500	Single	5,120	6¾″ × 72″ × 2½″	12.5	1778K44	71.43	6.3	1778K58	70.00
2,000	Single	6,824	6¾″ × 96″ × 2½″	—	—	—	8.3	1778K19	88.00
2,500	Single	8,535	6¾″ × 96″ × 2½″	—	—	—	10.4	1778K23	108.00

Accessories

Analog Heater-Mount Thermostat for 120 VAC Heaters	1778K71	$18.18
Analog Heater-Mount Thermostat for 208/240 VAC Heaters	1778K72	29.55
Digital Heater-Mount Thermostat for 208/240 VAC Heaters	1778K74	63.08
Heater-Mount Single Receptacle for 120 VAC Heaters	1778K82	19.65

Wall-Mount Forced-Air Heaters

Flush Mount

Surface Mount with Optional Mounting Frame

Choose your own installation method: cut a hole in a wall to flush mount or use a mounting frame (sold separately) to surface mount. Heaters have a built-in adjustable thermostat with overheat safety shutoff and two 8″ wire leads. All except 1726K28 come set at the highest wattage and can be field-wired to a lower wattage. Heating element is nickel chromium; housing is steel with an off-white finish. Operate on 60 Hz. UL listed.

1726K24 and ***K26*** have a thermostat temperature range of 40° to 85° F. 1726K853***, K28,*** and ***K832*** have a thermostat temperature range of 40° to 90° F.

Optional mounting frames have two 3/16″ × ½″ mounting slots (fasteners not included).

Volts, VAC	Phase	Watts	Btu/Hr. @ Max. Watts	cfm	Amps	Ht. × Wd. × Dp.	Heaters		Optional Mounting Frame	
120	Single	375, 750, 1,125, 1,500	5,120	45	12.5	12¼″ × 10½″ × 3¾″	1726K24	$127.00	1726K37	$40.44
208/240	Single	375, 750, 1,125, 1,500/ 500, 1,000, 1,500, 2,000	6,824	45	8.3	12¼″ × 10½″ × 3¾″	1726K26■	127.00	1726K37	40.44
208/240	Single	1,500, 3,000/2,000, 4,000	13,652	100	16.7	19 3/16″ × 15¾″ × 3¾″	1726K853■	248.64	1726K619	63.18
208/240	Single	3,600/4,800	16,382	100	20.0	19 3/16″ × 15¾″ × 3¾″	1726K28■	251.22	1726K619	63.18
240/277	Single	1,500, 3,000/2,000, 4,000	13,652	100	14.4	19 3/16″ × 15¾″ × 3¾″	1726K832■	248.62	1726K619	63.18

■ When operating on the lower voltage, heat output (Btu/hr.) and watts are reduced by 25%.

For information about choosing a heater, see page 618.

High-Output Forced-Air Heaters

Deliver maximum heat circulation to large areas. These heaters have an overheat safety shutoff and a terminal block with box lug connections. Cabinet is steel with adjustable louvers. Heating element is also steel. Operate on 60 Hz.

Horizontal-mount heaters require a *thermostat* (sold separately). ETL listed.

Multi-mount heaters mount horizontally or vertically using the brackets sold separately below. Horizontal air flow provides maximum circulation; vertical air flow provides effective spot heating. The fan is centered in the heating coils for even air warming. Fan override circuit turns fan off after the element so that all heat can be discharged from the heater. For better heat regulation, use an optional thermostat (sold separately). UL listed. 2022K11, *K12,* and *K13* can be field-wired to three phase.

5,000- to *20,000-watt* heaters have a single-speed motor. *25,000-* to *50,000-watt* heaters have a two-speed motor.

Horizontal Mount

Multi-Mount, Vertical Air Flow

Heaters

Volts	Phase	Watts	Btu/Hr.	Amps	Horizontal Mount cfm	Horizontal Mount Ht.×Wd.×Dp.			Multi-Mount cfm	Multi-Mount Ht.×Wd.×Dp.		
240 VAC	Single	5,000	17,100	20.8	400	20″×13″×11″	1702K21	$459.18	400	17¾″	×14 7/16″ × 6½″	2022K11★ $420.41
240 VAC	Single	7,500	25,600	31.3	575	20″×13″×11″	1702K22	542.55	700	24 5/16″	×21½″ × 6½″	2022K12★ 563.89
240 VAC	Single	10,000	34,100	41.7	575	20″×13″×11″	1702K23	638.64	700	24 5/16″	×21½″ × 6½″	2022K13★ 603.75
240 VAC	Three	15,000	51,200	36.1	—	—	—	—	1,100	28 11/16″	×21½″ × 6½″	2022K14★ 1,055.56
480 VAC	Three	5,000	17,100	6.1	400	20″×13″×11″	1702K36	556.25	400	17¾″	×14 7/16″ × 6½″	2022K21 538.46
480 VAC	Three	7,500	25,600	9.1	575	20″×13″×11″	1702K37	647.83	700	24 5/16″	×21½″ × 6½″	2022K22 620.37
480 VAC	Three	10,000	34,100	12.1	575	20″×13″×11″	1702K33	706.67	700	24 5/16″	×21½″ × 6½″	2022K23 694.44
480 VAC	Three	15,000	51,200	18.1	800	22″×15″×11″	1702K38	904.35	1,100	28 11/16″	×21½″ × 6½″	2022K24 1,096.49
480 VAC	Three	20,000	68,300	24.1	1,350	24″×17″×17″	1702K64	1,250.00	1,100	28 11/16″	×21½″ × 6½″	2022K25 1,289.47
480 VAC	Three	25,000	85,300	30.1	—	—	—	—	2,000	34″	×29¼″ × 10 1/16″	2022K26 1,379.31
480 VAC	Three	30,000	102,400	36.2	1,350	24″×17″×17″	1702K65	1,377.55	—	—	—	—
480 VAC	Three	39,000	133,100	47.0	—	—	—	—	3,100	34″	×29¼″ × 10 1/16″	2022K28 2,151.72
480 VAC	Three	40,000	136,500	48.2	2,275	26″×19″×23″	1702K56	1,759.26	—	—	—	—
480 VAC	Three	48,000	163,800	57.8	2,275	26″×19″×23″	1702K57	1,857.14	—	—	—	—
480 VAC	Three	50,000	170,600	60.3	—	—	—	—	3,100	34″	×29¼″ × 10 1/16″	2022K29 2,658.33

★ 208/240 volts. When operating on 208 VAC, the heat output (Btu/hr.) and watts are reduced by 25%.

Thermostats

	Temp. Range	Connection	Amp Rating	Switch▲		
Required for Horizontal-Mount Heaters						
Heater-Mount Thermostat	40° to 90° F	Two 6″ Wire Leads	25	SPST	1702K62	$63.13
Wall-Mount Thermostat for 1702K21	50° to 90° F	Screw Terminals	22	SPST	17395K93	17.64
Wall-Mount Thermostat for All Except 1702K21	50° to 90° F	Screw Terminals	1	SPST	17225K51	14.89
Optional for Multi-Mount Heaters						
Heater-Mount Thermostat	45° to 90° F	Two 6″ Wire Leads	25	SPST	2022K41	54.00
Heater-Mount Thermostat for 2022K11 Three Phase Only	45° to 90° F	Four 6″ Wire Leads	25	DPST	2022K43	93.50

▲ SPST = single pole, single throw. DPST = double pole, single throw.

Mounting Brackets for Horizontal-Mount Heaters

Mount heater at any angle up to 45° from horizontal. Fasteners not included. Use one bracket per heater.

For Heaters	Hole Dia. (Qty.)		
5,000 to 15,000 watt	11/32″ (4)	1702K61	$42.78
20,000 to 30,000 watt	11/32″ (4)	1702K58	52.25
40,000 to 48,000 watt	11/32″ (4)	1702K59	71.11

Mounting Brackets for Multi-Mount Heater

Fasteners not included. Use one bracket per heater.

For Heaters	Horizontal Mount Hole Dia. (Qty.)			Vertical Mount Hole Dia. (Qty.)		
5,000 watt	3/8″ (4)	2022K31	$58.00	17/32″ (14)	2022K34	$118.50
7,500 to 20,000 watt	3/8″ (4)	2022K32	71.00	17/32″ (18)	2022K35	147.00
25,000 to 50,000 watt	3/8″ (4)	2022K33	84.00	17/32″ (22)	2022K36	160.89

Hazardous-Location Convection Heaters

These heaters meet NEC Class 1, Div. 1 and 2, Groups B, C, and D for use in hazardous locations. Cabinet is gray steel and rated NEMA 4 for indoor use and exposure to splashing liquids. Heaters have a stainless steel element, two 6″ wire leads, and a wall mounting bracket with four 13/32″ dia. holes (fasteners not included). Operate on 50/60 Hz. UL listed.

Optional wall-mount thermostat adjusts from 50° to 90° F and is double pole, double throw (DPDT). It has two 3/4″ NPT female conduit connections and two 1/4″ dia. mounting holes (fasteners not included). For 480 VAC or 22 amps and greater, a contactor is required to work between the heater and thermostat; see pages 902-904. Contactors must be located outside the hazardous location.

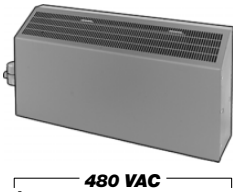

Watts	Phase	Btu/Hr.	Ht.×Wd.×Dp.	120 VAC Amps			208 VAC Amps			240 VAC Amps			480 VAC Amps		
1,800	Single	6,143	18″×34″×9″	15.0	1752K71	$868.97	8.7	1752K72	$868.97	7.5	1752K73	$854.24	—	—	—
3,600	Single	12,286	18″×34″×9″	—	—	—	17.3	1752K74	1,132.20	15.0	1752K75	1,132.20	7.5	1752K76	$1,132.20
7,600	Single	25,938	18″×58″×9″	—	—	—	36.5	1752K77	1,652.54	31.7	1752K78	1,652.54	15.8	1752K79	1,598.36

Optional Wall-Mount Thermostat 1877K25 $218.00

High-Output Hazardous-Location Forced-Air Heaters

The liquid-filled heat exchangers are sealed to meet NEC Class 1, Div. 1 and 2, Groups C and D; and Class II, Div. 1 and 2, Groups E, F, and G. Heaters have a steel cabinet with adjustable louvers, a nickel chromium alloy heating element, an overheat safety shutoff, and pressure relief valves. Operate on 60 Hz and have a terminal block with box lug connections.

Mounting brackets have eight 3/8″ dia. holes for wall mounting (fasteners not included). Use one bracket per heater.

Optional wall-mount thermostat adjusts from 50° to 90° F and is single pole, double throw (SPDT). It has two 3/4″ NPT female conduit connections and two 1/4″ dia. mounting holes (fasteners not included). Operates on 24 to 277 VAC and is rated for 22 amps.

Watts	Phase	Btu/Hr.	cfm	Ht.×Wd.×Dp.	240 VAC Heaters Amps			480 VAC Heaters Amps			Mounting Bracket	
7,500	Three	25,600	580	17¾″×22⅜″×19¾″	19.4	1799K15	$3,995.33	9.7	1799K16	$3,995.33	1799K34	$207.41
10,000	Three	34,100	1,500	20¾″×26⅜″×20¾″	25.5	1799K17	4,125.00	12.7	1799K18	4,125.00	1799K35	207.41
25,000	Three	85,400	2,450	24¾″×30⅜″×22½″	—	—	—	31.1	1799K23	4,915.25	1799K36	207.41

Optional Wall-Mount Thermostat 1877K23 $219.15

For information about choosing a heater, see page 618.

Washdown Forced-Air Heaters

Wiring compartment is sealed to NEMA 4X standards, making these heaters ideal for areas requiring periodic washdown. Motor is totally enclosed and has an overheat safety shutoff. Cabinet is Type 304 stainless steel with adjustable louvers. Heating element is nickel-copper alloy. All units have screw-terminal connections and operate on 50/60 Hz. UL listed.

Note: When 208/240 VAC heaters operate on 208 VAC, heat output (Btu/hr.) and watts are reduced by 25%.

Mounting brackets are for wall or ceiling use and have four ½″ dia. mounting holes (fasteners not included). Use one bracket per heater.

Optional wall-mount thermostat adjusts from 40° to 100° F and is single pole, double throw (SPDT). It has four 6″ wire leads and four 3/16″ dia. mounting holes (fasteners not included). NEMA 4X rated for exposure to splashing liquids and corrosive agents. Operates on 120 to 277 VAC and is rated for 25 amps.

Volts	Phase	Watts	Btu/Hr.	cfm	Amps	Ht. × Wd. × Dp.	Heaters		Mounting Bracket	
208/240 VAC	Single	5,000	17,065	400	20.8	16½″ × 15″ × 11″	19625K52	$1,501.18	19625K61	$108.00
208/240 VAC	Three	10,000	34,100	725	24.0	16½″ × 15″ × 18″	19625K13	2,606.81	19625K62	137.00
208/240 VAC	Three	20,000	68,300	1,100	48.1	16½″ × 15″ × 18″	19625K19	3,847.63	19625K62	137.00
480 VAC	Three	5,000	17,065	400	6.0	16½″ × 15″ × 18″	19625K55	2,542.66	19625K62	137.00
480 VAC	Three	10,000	34,100	725	12.0	16½″ × 15″ × 18″	19625K33	2,685.27	19625K62	137.00
480 VAC	Three	20,000	68,300	1,100	24.1	16½″ × 15″ × 18″	19625K39	3,465.58	19625K62	137.00

Optional Wall-Mount Thermostat 19625K71 $125.77

Enclosure Heaters

Protect sensitive electrical equipment from low temperatures, condensation, and corrosion.

Surface-mount heaters have terminals for hardwiring and mount inside enclosures using the included fasteners. They have an aluminum housing and a thermostat that adjusts from 0° to 100° F. Operate on 50/60 Hz. Components are UL recognized. CSA certified.

DIN rail-mount heaters have a plastic housing. 1365K1 and *K2* include a thermostat that adjusts from 32° to 140° F. Components are UL recognized. *Optional thermostat for 120/240 VAC heaters* adjusts from 32° to 140° F. It's SPST (single pole, single throw) and has two screw terminal connections.

Surface Mount

DIN Rail Mount

Surface Mount—To Order: Please specify 115 or 230 VAC.

Watts	Btu/Hr.	Amps @ 115 VAC	Amps @ 230 VAC	Ht. × Wd. × Dp.		
100	341	1.0	0.5	5½″ × 4″	× 4″	19095K71 $224.92
200	683	1.9	1.0	5½″ × 4″	× 4″	19095K72 270.28
400	1,365	3.7	1.9	7½″ × 4¼″	× 4⅜″	19095K73 293.80
800	2,730	7.4	3.7	7½″ × 4¼″	× 4⅜″	19095K74 333.26

DIN Rail Mount

Volts, VAC	Watts	Btu/Hr.	Amps	Ht. × Wd. × Dp.			
100/120	650	2,210	15.0	3 15/16″ ×	6½″ ×	5″	1365K2 $223.50
120	950	3,240	7.9	3⅞″ ×	6 5/16″ ×	7¼″	1365K1 264.50
120/240	20	68	2.5	3⅞″ ×	1½″ ×	3″	1365K5 59.05
120/240	50	170	2.5	4 5/16″ ×	2⅜″ ×	3½″	1365K3 93.85
120/240	100	341	4.5	4 5/16″ ×	2⅜″ ×	3½″	1365K4 143.11

Optional Thermostat for 120/240 VAC Heaters 1365K6 33.12

Bulb Socket Screw-In Heaters

Simply screw these heaters into standard lamp sockets. They prevent moisture, mildew, and freezing in electrical enclosures and cabinets. Heating element is nickel chromium. Housing is brass. Heaters are 1⅜″ Dia. × 4¾″ Lg.

Watts	Btu/Hr.	Amps		
120 VAC				
50	170	0.4	1900K11	$74.53
75	256	0.6	1900K12	74.53
100	341	0.8	1900K14	74.53
150	512	1.3	1900K15	74.53
200	683	1.7	1900K16	74.53
240 VAC				
75	256	0.3	1900K22	74.53
100	341	0.4	1900K24	74.53
150	512	0.6	1900K25	74.53
200	683	0.8	1900K26	74.53

Ceiling-Mount Radiant Heaters

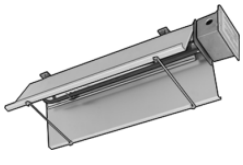

Excellent for indoor spot heating, these units have an aluminum housing and nickel chromium heating element with a nickel alloy sheath. Mount using included ceiling brackets (fasteners not included). Operate on 50/60 Hz. UL listed. CSA certified.

2,000- and ***4,500-watt*** heaters have three 6″ wire leads. ***6,000-*** and ***13,500-watt*** heaters have four 6″ wire leads.

Optional safety screens prevent contact between the heating element and surrounding objects.

Optional wall-mount thermostat adjusts from 40° to 110° F. It's single pole, double throw (SPDT) and has three 6″ wire leads. Mount using the four 5/16″ dia. holes (fasteners not included). Operates on 120/277 VAC and is rated for 22 amps. UL listed. For 480 VAC heaters or heaters 6,000 watts or greater, a contactor is required between the heater and thermostat; see pages 902-904.

Watts	Phase	Btu/Hr.	Ht. × Wd. × Dp.			Mtg. Ht., ft.	240 VAC Heaters Amps		480 VAC Heaters Amps		Replacement Element▲		Optional Safety Screen	
2,000	Single	6,826	7¼″ ×	26″	× 9″	8-10	8.5	1818K71 $195.52	4.2	1818K81 $195.52	1747K91	$70.42	1818K92	$26.67
4,500	Single	15,359	7¼″ ×	46¼″	× 9″	8-12	18.8	1818K72 241.79	9.5	1818K82 241.79	1747K92	96.67	1818K93	30.83
6,000	Three	20,478	7½″ ×	28½″	× 19⅞″	10-14	14.5	1818K73★ 408.21	7.5	1818K83★ 408.21	1747K91	70.42	1818K94	42.92
13,500	Three	46,076	7½″ ×	50½″	× 19⅞″	12-16	33.0	1818K64 665.62	17.0	1818K84★ 635.82	1747K92	96.67	1818K95	68.75

Optional Wall-Mount Thermostat 1747K87 $63.20

▲ **To Order:** Please specify 240 or 480 VAC. ★ Can be field-wired to single phase.

Indoor/Outdoor Radiant Heaters

For indoor and outdoor spot heating, these offer the highest heat concentration of any of our electric radiant heaters. They have a quartz-tube heating element, steel housing, and aluminum reflectors. Heaters include two ceiling brackets for surface or chain mounting. Brackets have one 7/32″ dia. hole (fasteners not included) and let you position heaters at up to a 45° angle. Heaters have four 24″ to 36″ wire leads. Operate on 50/60 Hz. UL listed.

Optional safety screens are made of Type 304 stainless steel. *Optional wall-mount thermostat* adjusts from 40° to 110° F. It's single pole, double throw (SPDT) and has three 6″ wire leads. Mount using the four 5/16″ dia. holes (fasteners not included). Operates on 120/277 VAC and is rated for 22 amps. UL listed. For 480 VAC heaters or heaters in three-phase operation, a contactor is required between the heater and thermostat; see pages 902-904. *Optional wall mounting brackets* are made of Type 304 stainless steel and have four 7/32″ dia. holes (fasteners not included).

Volts, VAC	Phase	Watts	Btu/Hr.	Ht. × Wd. × Dp.	Amps	Indoor/Outdoor Mtg. Ht., ft.	Heaters		Replacement Element		Optional Safety Screen	
240	Single■	3,200	10,922	10⅞″ × 24″ × 15″	13.3	12-18/8-14	1765K81	$317.65	1765K31	$61.67	1765K43	$26.25
480	Single■	5,000	17,065	10⅞″ × 33″ × 15″	10.4	12-18/8-14	1765K83	417.65	1765K34	75.83	1765K44	30.42
480	Single■	7,300	24,915	10⅞″ × 46″ × 15″	15.2	12-18/8-14	1765K85	525.00	1765K37	111.67	1765K46	32.92

Optional Wall-Mount Thermostat 1747K87 $63.20

Optional Wall Mounting Brackets ..... 1765K49 Pair $107.50

■ Can be field-wired to three phase.

For information about choosing a heater, see page 618.

Ceiling Tile Radiant Heating Panels

Designed like a ceiling tile, these heaters slip into the grid of a drop ceiling. Panels are steel with a white finish and have a graphite heating element and high-density thermal insulation to prevent upward heat loss. They have a 36″ long flexible cable with 6″ long wire leads for hardwiring. 120/240 VAC panels have three leads; 277 VAC panels have two leads. All operate on 60 Hz. ETL listed.

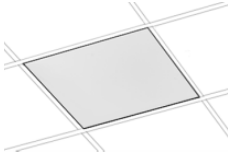

Panel Size, ft.	Phase	Watts	Btu/Hr.	Mounting Ht., ft.	120/240 VAC Amps			277 VAC Amps		
2×2	Single	375	1,280	8-12	3.1/1.6	1775K24	$156.92	1.4	1775K44	$156.92
2×4	Single	750	2,560	8-12	6.3/3.1	1775K23	216.67	2.7	1775K43	216.67

Compact Portable Convection Heaters

A circular design distributes heat in all directions, plus there's no electrical cord to tie you down. Heaters have pilot ignition and safety shutoff that cuts the gas supply if the flame goes out. Housing and base are aluminized steel.

Propane gas heaters come with a 20-ft. hose and regulator with a POL connection (the same kind you use to connect your gas grill to the propane tank). CSA certified. Tanks are not included; see page 3391.

Natural gas heater has a ½″ SAE flare male gas connection.

Propane Gas

Fuel	Btu/Hr.	Propane Use, lbs./Hr.	Min. Propane Tank Cap., lbs.	Dia.×Ht.		
Propane Gas	30,000-80,000	1.4-3.7	20	14″×20″	1738K11	$125.03
Propane Gas	75,000-200,000	3.5-9.3	100	14″×26″	1738K16	129.22
Natural Gas	30,000-60,000	—	—	14″×20″	1738K21	125.42

Portable Gas Radiant Heaters

Stay warm at your work site with these heaters. They don't require electricity and are unaffected by drafts—perfect for open areas. All have pilot ignition (unless noted) and a safety shutoff that cuts the gas supply to the heater if the flame goes out. *8,000* to *35,000 Btu/hr.* units are steel with a stainless steel heating element. Ideal for spot heating. *125,000* and *212,000 Btu/hr.* heat in a 360° pattern. *125,000 Btu/hr.* have a stainless steel heating element enclosed in a steel housing. *212,000 Btu/hr.* has a stainless steel housing and heating element.

Propane gas heaters include a regulator with a POL connection (the same kind you use to connect your gas grill to the propane tank). 1719K2 and 1719K3 mount directly to the propane tank (hardware included). 1719K3 also comes with a 14″ hose. 1719K8 and 1715K11 have a 20-ft. hose to connect to the propane tank. Tanks not included; see page 3391.

Natural gas heaters have a ½″ NPT female gas connection.

1719K2

1719K8

1715K14

Fuel	Btu/Hr.	Propane Use, lbs./Hr.	Min. Propane Tank Cap., lbs.	Ht.×Wd.×Dp.		
Propane Gas	8,000-15,000	0.4-0.64	20	8½″ Dia.×5″ Dp.♦	1719K2●	$56.70
Propane Gas	8,000-30,000	0.4-1.3	20	10″×15″× 5¾″♦	1719K3●	120.35
Propane Gas	35,000	1.6	20	34″×12″× 9″♦	1719K8	179.93
Propane Gas	125,000	5.8	100	35″×15″×15″♦	1715K11	236.32
Natural Gas	125,000	—	—	35″×15″×15″	1715K12	215.49
Natural Gas	212,000	—	—	18″ Dia. ×48 9/16″ Ht.	1715K14	510.00

♦ Size does not include tank. ● Match light.

Portable Gas Forced-Air Heaters

Move these powerful heaters where you need them to distribute heat quickly for fast relief from the cold. They have a steel housing, a safety shutoff that turns the heater off if the flame goes out, and a cord with three-prong plug. Operate on 120 VAC, 60 Hz. CSA certified. All except 1722K18 have a built-in thermostat.

Propane gas heaters include a 20-ft. hose and regulator with a male POL connection (the same kind you use to connect your gas grill to your propane tank). Cord is 6″ long. Tanks not included; see page 3391.

Natural gas heater has a ½″ NPT female gas connection. Cord is 6″ long.

Dual gas heater switches between propane and natural gas with a turn of a lever. It has two wheels and a handle for mobility. Cord is 2 ft. long. Operate on natural gas pressure less than ½ psi; however, if you are using propane gas or natural gas with a pressure greater than ½ psi, a *regulator* (sold separately) is required.

Propane and Natural Gas

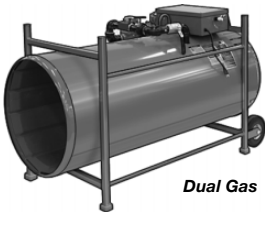

Dual Gas

Btu/Hr.	Phase	cfm	Amps	Propane Gas Use, lbs./Hr.	Minimum Propane Tank Cap., lbs.	Ht.×Wd.×Dp.		
Propane Gas								
50,000-85,000	Single	300	3	2.3-3.9	20	13″ ×10″ ×21″	1722K18	$218.31
125,000-170,000	Single	450	4	5.8-7.8	100	17″ ×10″ ×25½″	1722K14	398.74
250,000-400,000	Single	1,400	4	11.5-18.5	100	21″ ×14″ ×38½″	1722K16	663.94
Natural Gas								
150,000	Single	450	4	—	—	17″ ×10″ ×25½″	1722K24	390.00
Dual Gas								
850,000-1,500,000	Single	7,000	15	37.3-69.5	1,000×2	41½″×32″ ×69″	17175K73	5,865.53
Regulator for Dual Gas (for propane gas and natural gas pressure greater than ½ psi)							17175K83	114.46

Portable Kerosene/Fuel-Oil Forced-Air Heaters

Use economical kerosene or #1 fuel oil to operate these heaters. All have a safety shutoff that turns the heater off if the flame goes out, a steel housing, and a 6″ long cord with three-prong plug, unless noted. Fan operates on 120 VAC, 60 Hz.

75,000 to *175,000 Btu/hr.* heaters have a thermostat that adjusts from 33° to 99° F.

Style A heaters have a built-in carrying handle. ***Style B*** heaters have two wheels and a handle for mobility.

A

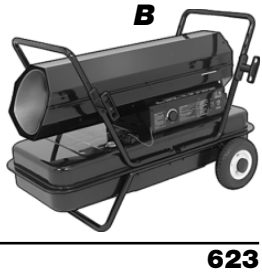

B

	Btu/Hr.	Phase	cfm	Amps	Fuel Use, gph	Fuel Tank Cap., gal.	Ht.×Wd.×Dp.		
A	50,000	Single	165	3.5	0.38	4	15½″×12″×31″	1744K73	$179.22
A	75,000	Single	240	4.0	0.56	6	16″ ×14″×31″	1744K3	219.74
B	125,000	Single	275	5.5	0.77	14	25″ ×18″×41″	1744K2	330.08
B	175,000	Single	400	5.5	1.15	14	25″ ×20″×39″	1744K26	356.14
B	610,000	Single	2,800	10.5	4.40	35.6	39″ ×27″×76″	1744K75♣	2,323.97

♣ Cord is 8″ long.

For information about choosing a heater, see page 618.

Gas Radiant Heaters

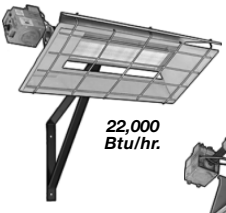

22,000 Btu/hr.

40,000 to 120,000 Btu/hr. with Mounting Bracket Kit

Ideal for high-efficiency spot heating, or use multiple units to heat large areas. Heaters have an aluminized steel housing and reflectors and ceramic burners. Gas connections are ½″ NPT female. Units that include extra burners let you reduce or increase heat output to suit your needs. All heaters have a safety shutoff that cuts off the gas supply if the flame goes out. CSA certified. *22,000* and *25,000 Btu/hr.* heaters include wall-mounting brackets and hardware. All other heaters require *mounting bracket kit* (sold separately) to attach to the ceiling.

Pilot-ignition heaters don't require electricity. They include a wall-mount thermostat that adjusts from 35° to 75° F and is single pole, single throw (SPST).

Spark-ignition heaters are good for environments subjected to drafts. Operate on 120 VAC, 60 Hz (1.5 amps). They're single phase and include a 24-volt transformer with screw terminal connections.

Optional chain hanging kit for heaters 40,000 Btu/hr. and up allows you to hang your heater from the ceiling horizontally or at a 45° angle. It includes two 4 ft. long chains, two 1 ft. long chains, and eight S-hooks. *Note:* Ceiling mounting hardware not included.

Optional thermostat for spark ignition heaters adjusts from 35° to 75° F. It has a single pole, single throw (SPST) switch and screw terminal connections. Operates on 120 VAC, 60 Hz, is rated for 0.5 amps, and has a three-prong plug on the back.

Btu/Hr. w/ Installed Burners	Extra Burners Min. Btu/Hr.	Extra Burners Max. Btu/Hr.	Ht.×Wd.×Dp.	Mount. Ht., ft.	PROPANE GAS Pilot Ignition		PROPANE GAS Spark Ignition		NATURAL GAS Pilot Ignition		NATURAL GAS Spark Ignition	
22,000	—	—	7″×29¾″×12¼″	7-9	17855K35	$340.57	—	—	17855K37●	$340.57	—	—
40,000	30,000	—	12″×30¼″×19¼″	10-12	17855K45	382.37	17855K41	$388.00	17855K47	376.00	17855K43	$390.51
60,000	50,000	70,000	12″×45¼″×19¼″	13-15	—	—	—	—	17855K57	432.00	17855K53	488.42
100,000	80,000★	—	11″×60½″×21½″	15-28	17855K75	628.57	17855K71	650.77	17855K77	694.74	17855K73	679.02
120,000	100,000	140,000	11″×82½″×21½″	18-Up	—	—	—	—	17855K87	778.06	17855K83	785.88

Required Mounting Bracket Kit for Heaters 40,000 Btu/Hr. and Up	17855K98	$29.40
Optional Chain Hanging Kit for Heaters 40,000 Btu/Hr. and Up	17855K99	11.88
Optional Thermostat for Spark Ignition Heaters	17855K11	63.00

● 25,000 Btu/hr. ★ Second extra burner is rated for 90,000 Btu/hr.

Steam- and Hot Water-Powered Forced-Air Heaters

Horizontal Air Flow for Steam

Horizontal Air Flow for Steam and Hot Water

Vertical Air Flow for Steam and Hot Water

Transfer the heat from steam or water to the air. These heaters provide warmth without the low humidity of other systems. Heat output for all units is based on a 2 psi steam input. All hazardous location motors are rated for NEMA Class I, Division 1, Group D and Class II, Division I, Groups F and G for indoor use.

Horizontal Air Flow Heaters for Steam— Max. steam pressure is 200 psi. Max. temperature is 600° F. They have a steel cabinet and galvanized steel heating element to resist the stress of constant expansion and contraction. Heaters have six ½″ dia. mounting holes (fasteners not included). Connections are NPT female. *115/230 VAC* have seven 6″ wire leads. *230/460 VAC* have nine 6″ wire leads.

Horizontal Air Flow Heaters for Steam and Hot Water— Heaters have a steel cabinet to protect the condenser, an aluminum-finned copper heating element, and a junction box for hardwiring. They have two ½″-13 threaded mounting holes (fasteners not included). Connections are NPT female. CSA certified. *230/460 VAC* heaters convert to 230/460 volts when connected to included transformer. Wiring instructions are included. *Heaters with a totally enclosed motor* have a max. steam pressure of 150 psi, and a max. temperature of 375° F. *Heaters with a hazardous location motor* have a max. steam pressure of 87 psi, and a max. temperature of 329° F. They are also rated for NEMA Class III, Division I and II.

Vertical Air Flow Heaters for Steam and Hot Water— Heaters have a steel cabinet to protect the condenser, an aluminum-finned copper heating element, a wire fan guard, and a junction box for hardwiring. Connections are NPT male. CSA certified. *115 VAC* have four ½″-13 mounting holes (fasteners not included); *230/460 VAC* have eight ⅝″ dia. mounting holes (fasteners not included). *Heaters with a totally enclosed motor* have a max. steam pressure of 150 psi, and a max. temperature of 375° F. *Heaters with a hazardous location* motor have a max. steam pressure of 87 psi, and a max. temperature of 329° F. They are also rated for NEMA Class III, Division I and II.

Volts, VAC	Phase	Btu/Hr.	cfm	NPT Conn. Inlet	NPT Conn. Outlet	Ht.×Wd.	Totally Enclosed Motor Dp.	Totally Enclosed Motor Amps			Hazardous Location Motor Dp.	Hazardous Location Motor Amps		
Horizontal Air Flow Heaters for Steam														
115/230	Single	70,600	1,265	1½″	1½″	17⅝″ ×15¾″	21¾″	2.5/1.3	1732K3	$1,146.15	25⅜″	2.5/1.3	1732K13	$1,425.49
115/230	Single	106,000	1,940	2″	2″	21″ ×18¼″	21¾″	2.5/1.3	1732K5	1,277.10	25⅜″	2.5/1.3	1732K15	1,555.26
115/230	Single	120,300	1,910	2″	2″	24⅝″ ×22″	21⅜″	3.0/1.5	1732K6	1,508.63	—	—	—	—
115/230	Single	157,300	2,890	2″	2″	24⅝″ ×22″	23¼″	3.7/1.9	1732K8	1,503.22	26½″	3.7/1.9	1732K18	1,862.75
115/230	Single	267,800	4,770	2½″	2½″	32¾″ ×28¼″	25⁹⁄₁₆″	4.0/2.0	1732K9	2,382.75	28⁷⁄₁₆″	4.0/2.0	1732K19	2,885.07
230/460	Three	267,800	4,770	2½″	2½″	32¾″ ×28¼″	24³⁄₁₆″	1.9/1.0	1732K39	2,309.93	—	—	—	—
Horizontal Air Flow Heaters for Steam and Hot Water														
115	Single	24,000	370	¾″	¾″	12⅜″ ×13″	12½″	1.6	1836K81	409.01	18″	3.1	1836K91	1,109.49
115	Single	47,000	730	1¼″	1¼″	16⅜″ ×17½″	16¾″	2.2	1836K82	550.32	21″	3.1	1836K92	1,177.76
115	Single	63,000	1,120	1¼″	1¼″	20⁷⁄₁₆″ ×21½″	16¾″	2.2	1836K83	602.64	21½″	3.1	1836K93	1,232.92
115	Single	86,000	1,340	1¼″	1¼″	20⁷⁄₁₆″ ×21½″	17¾″	2.3	1836K84	653.59	21½″	3.1	1836K94	1,326.01
115	Single	121,000	1,775	1¼″	1¼″	24⁷⁄₁₆″ ×25½″	17″	2.8	1836K85	868.29	20½″	4.1	1836K95	1,559.77
115	Single	165,000	3,240	1¼″	1¼″	30½″ ×30½″	18¾″	5.4	1836K86	1,068.71	23¼″	6.1	1836K96	1,945.92
115	Single	193,000	2,900	1¼″	1¼″	30½″ ×30½″	18¾″	5.4	1836K88	1,212.75	23¼″	6.1	1836K97	2,121.75
115	Single	258,000	4,560	1¼″	1¼″	38½″ ×38½″	23″	7.5	1836K87	1,493.35	26½″	5.8	1836K98	2,427.91
115	Single	340,000	5,130	1¼″	1¼″	38½″ ×44½″	23″	7.5	1836K48	2,079.68	26½″	5.8	1836K99	2,997.74
230/460	Three	340,000	5,130	1¼″	1¼″	38½″ ×44½″	23″	7.5	1836K9	2,304.79	—	—	—	—
Vertical Air Flow Heaters for Steam and Hot Water														
115	Single	59,000	1,155	1¼″	1¼″	9½″ ×24¾″ Dia.	—	1.9	1880K1	563.91	—	4.1	1880K71	1,385.31
115	Single	95,000	1,665	1¼″	1¼″	10¾″ ×24¾″ Dia.	—	2.4	1880K2	719.50	—	4.1	1880K72	1,587.20
115	Single	139,000	2,660	1½″	1″	9⅞″ ×34¾″ Dia.	—	2.8	1880K3	849.26	—	4.1	1880K73	1,627.54
115	Single	161,000	2,945	1½″	1″	11⅜″ ×34¾″ Dia.	—	5.4	1880K4	897.74	—	6.1	1880K74	1,866.62
115	Single	193,000	3,500	1½″	1″	12⅞″ ×34¾″ Dia.	—	5.4	1880K5	1,043.58	—	6.1	1880K75	2,160.70
115	Single	247,000	4,820	2″	1¼″	15⅞″ ×34¾″ Dia.	—	7.5	1880K6	1,530.04	—	5.8	1880K76	2,465.84
115	Single	279,000	5,460	2″	1¼″	17⅜″ ×34¾″ Dia.	—	7.5	1880K7	1,621.76	—	5.8	1880K77	2,621.34
230/460	Three	385,000	7,680	2½″	1½″	18″ ×43¼″ Dia.	—	4.0/2.0	1880K38	2,170.04	—	—	—	—
230/460	Three	500,000	10,390	2½″	1½″	22½″ ×43¼″ Dia.	—	5.2/2.6	1880K39	2,881.39	—	—	—	—

Gas Forced-Air Heaters

Designed for efficiency, these heaters offer excellent performance without wasting energy. They have a spark ignition activated by a thermostat (sold separately) and an automatic safety shutoff that cuts the gas supply if the flame goes out. Housing and burners are aluminized steel.

36,000 and ***80,000 Btu/hr.*** heaters have a shaded pole motor.
100,000 to ***320,000 Btu/hr.*** heaters have a permanent split capacitor motor.

All motors are single phase and operate on 115 VAC, 60 Hz. They have three 5″ long wire leads and a built-in transformer for 24-volt controls. Heaters have 3/8″ mounting holes. Fasteners not included. CSA certified.

Note: Heaters need to be vented to the outdoors. Vent pipe not included; see page 634.

Wall-mount thermostat adjusts from 50° to 90° F. It's SPDT (single pole double throw) and has screw terminals. Operates on 5 to 30 VAC, 50/60 Hz (0.5 amps). Mounting hardware included.

36,000 to 100,000 Btu/hr.

200,000 and 320,000 Btu/hr.

Btu/Hr.	cfm	Gas Conn., NPT Female	Amps	Ht.×Wd.×Dp.	Max. Mtg. Ht., ft.	Required Vent Pipe Dia.	No. Mtg. Holes	Propane Gas	Each	Natural Gas	Each
36,000	720	1/2″	3.7	13 1/4″×26 13/16″×22″	10	3″	10	1736K112	$619.08	1736K132	$619.08
80,000	1,490	1/2″	4.7	21 1/2″×35 1/2″×31″	12	4″	14	1736K114	809.86	1736K134	809.86
100,000	1,980	1/2″	2.6	21 1/2″×35 1/2″×31″	16	4″	14	1736K115	915.47	1736K135	915.47
200,000	3,700	1/2″	7.7	40 1/4″×25 5/8″×34 3/4″	19	6″	2	1736K121	1,409.46	1736K141	1,409.46
320,000	5,440	3/4″	11.1	40 1/4″×40″×38 3/16″	19	6″	4	1736K241	1,857.24	1736K242	1,857.24

Wall-Mount Thermostat	17225K51	Each	$14.89
Optional L-Shaped Mounting Bracket for 36,000, 80,000 and 100,000 Btu/hr. Heaters	1736K98	Pair	$62.10

Galvanized Steel Rectangular Duct and Fittings

Duct, elbow, tab collar, and ***end cap*** sizes through 14″ Wd.×8″ Ht. are 28 ga.; 16″ Wd.×8″ Ht. and larger are 26 ga. (unless noted). Duct consists of two halves with seams and includes hardware for easy assembly.

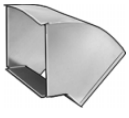

Wd.×Ht.	Duct Lg.		90° Horizontal Elbows		45° Horizontal Elbows		90° Vertical Elbows		45° Vertical Elbows		Tab Collars		End Caps	
8″×8″	4 ft.	1964K81	$35.39	1964K31	$27.90	1964K21	$22.07	1964K51	$27.90	1964K41	$20.64	1964K61	$9.71	1964K71	$3.93
10″×8″	4 ft.	1964K82	38.81	1964K32	31.05	1964K22	22.63	1964K52	29.17	1964K42	21.71	1964K62	10.55	1964K72	4.17
12″×8″	4 ft.	1964K83	42.09	1964K33	34.26	1964K23	24.57	1964K53	30.38	1964K43	22.86	1964K63	11.10	1964K73	4.48
14″×8″	4 ft.	1964K84	44.64	1964K34	37.86	1964K24	27.67	1964K54	32.36	1964K44	24.17	1964K64	11.55	1964K74	4.76
16″×8″	4 ft.	1964K85	51.42	1964K35	43.05	—	—	1964K55	32.07	—	—	1964K65	21.70	1964K75	9.02
20″×8″	4 ft.	1964K86	58.48	1964K36	59.99	—	—	1964K56	42.11	—	—	1964K66	26.80	1964K76	10.21
24″×8″	4 ft.	1964K87■	77.37	1964K37	67.72	—	—	1964K57	47.65	—	—	1964K67	28.75	1964K77	11.73

■ 24 ga.

Reducer is 28 ga. and reduces duct width by 2″.
"S" and ***drive cleat*** connectors can be cut to the desired length.

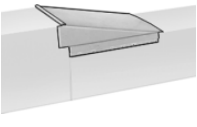

Wd.×Ht.	Reducer		Lg.	"S" Cleat		Drive Cleat	
2″×8″	1964K12	$7.62	5 ft.	1964K92	$4.84	1964K94	$4.64

Turning Vane

Direct the air flow around corners in rectangular duct. To assemble, cut vanes to the height of your duct and fit between two pieces of rail cut to your duct width. Secure using the mounting tabs on the rails. Tabs are spaced 2 1/2″ apart. Vane is 26 ga. Rail is 24 ga.

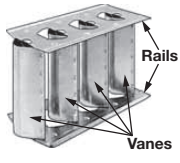

	Lg.		
Vane	6 ft.	1000K5	$14.67
Rail	6 ft.	1000K2	15.21

Aluminum Snap-Lock Duct and Fittings

Aluminum offers good corrosion resistance and is lighter weight than other duct materials. Duct and fittings are 26 ga.

Duct has a seam that snaps together without any tools and is crimped at one end. ***90° elbows*** are adjustable from straight to 90° and have one crimped end. ***Dampers*** have one crimped end. ***Reducers*** are crimped at the smaller end. ***Increasers*** are crimped at the larger end.

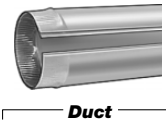

Dia.	Duct Lg.		90° Elbows		Dampers Lg.		Dia.	Reducers Lg.		Dia.	Increasers Lg.	
3″	2 ft.	1773K11	$7.80	1773K21	$6.29	5 3/4″	1773K41	$38.86	4″/3″	7 7/8″	1773K31	$42.81	3″/4″	7 7/8″	1773K51	$42.81
3″	5 ft.	1773K72	15.52	1773K21	6.29	5 3/4″	1773K41	38.86	5″/4″	7 1/2″	1773K32	45.60	4″/5″	7 1/2″	1773K52	45.60
4″	2 ft.	1773K12	8.51	1773K22	6.19	5 3/4″	1773K42	42.73	6″/4″	7 1/4″	1773K33	47.87	4″/6″	7 1/4″	1773K53	47.87
4″	5 ft.	1773K73	16.54	1773K22	6.19	5 3/4″	1773K42	42.73	7″/4″	8″	1773K34	49.06	4″/7″	8″	1773K54	49.06
5″	2 ft.	1773K13	10.78	1773K23	8.53	5 7/8″	1773K43	43.63	7″/5″	7 1/2″	1773K35	49.63	5″/7″	7 1/2″	1773K55	49.63
6″	2 ft.	1773K14	14.00	1773K24	11.42	5 7/8″	1773K44	46.44	8″/6″	7 1/2″	1773K36	52.33	6″/8″	7 1/2″	1773K56	52.33
7″	2 ft.	1773K15	14.35	1773K25	19.12	6 7/8″	1773K45	51.81	10″/6″	8″	1773K37	54.43	6″/10″	8″	1773K57	54.43
8″	2 ft.	1773K16	20.21	1773K26	20.28	6 7/8″	1773K46	57.25	10″/8″	7 3/4″	1773K38	57.24	8″/10″	7 3/4″	1773K58	57.24
10″	2 ft.	1773K18	24.56	1773K28	24.56	9 3/4″	1773K47	148.75	12″/8″	8 1/8″	1773K39	61.99	8″/12″	8 1/8″	1773K59	61.99
12″	2 ft.	1773K19	28.75	1773K29	44.22	10 3/4″	1773K48	163.85	12″/10″	7 1/2″	1773K49	63.53	10″/12″	7 1/2″	1773K69	63.53

Vents

Dia.	Lg.			Dia.	Lg.		
3″	14″	1773K61	$8.64	6″	9″	1773K63	$52.40
4″	14″	1773K62	9.23	8″	9″	1773K64	79.07

Galvanized Steel Snap-Lock Duct and Fittings

Duct has a urethane gasketed seam for a more energy-efficient seal than duct tape or adhesives and snaps together without tools.

2-ft. Long Duct

Dia.	Ga.			Dia.	Ga.		
3″	26	1766K11	$6.17	12″	26	1766K19	$13.83
4″	26	1766K12	6.06	14″	26	1766K21	16.81
5″	26	1766K13	6.25	16″	26	1766K22	21.52
6″	26	1766K14	7.45	18″	26	1766K23	23.25
7″	26	1766K15	8.44	20″	24	1766K24	61.22
8″	26	1766K16	9.64	22″	24	1766K25	79.64
9″	26	1766K17	10.64	24″	24	1766K26	95.93
10″	26	1766K18	11.53				

5-ft. Long Duct

Dia.	Ga.			Dia.	Ga.		
4″	28	1766K49	$14.10	9″	26	1766K55	$24.74
5″	26	1766K51	14.54	10″	26	1766K56	27.10
6″	26	1766K52	17.33	12″	26	1766K57	32.17
7″	26	1766K53	19.62	14″	26	1766K58	39.10
8″	26	1766K54	22.43				

Elbows are adjustable to straight, and they're crimped at one end. Sizes through 12″ dia. are 26 ga.; 14″ dia. and larger are 24 ga. All ***end caps*** and ***tab collars*** are 28 ga., unless noted. ***Self-sealing collars*** are crimped at one end and have an adhesive-backed fire-retardant polyethylene gasket on the other for a better seal than tab collars. All are 24 ga.

Dia.	90° Elbows		45° Elbows		Plain End Caps		Crimped End Caps		Plain Tab Collars		Crimped Tab Collars		Self-Sealing Collars	
3″	1766K31	$5.65	1766K871	$4.65	17135K36	$5.04	17135K46	$5.04	2015K36	$2.96	2015K56	$2.96	—	—
4″	1766K32	6.10	1766K872	5.25	17135K91	5.22	17135K81	5.22	2015K32	2.97	2015K52	2.97	—	—
5″	1766K33	7.42	1766K873	6.00	17135K92	5.29	17135K82	5.29	2015K37	3.02	2015K57	3.25	6766K41	$8.77
6″	1766K34	8.28	1766K874	6.85	17135K93	6.10	17135K83	6.10	2015K45	3.09	2015K46	3.50	6766K42	9.65
7″	1766K35	10.75	1766K875	9.18	17135K94	6.81	17135K84	6.81	—	—	—	—	6766K43	10.08
8″	1766K36	11.62	1766K876	9.88	17135K95	7.37	17135K85	7.37	2015K34	4.61	2015K54	4.61	6766K44	10.40
9″	1766K37	15.15	1766K877	10.92	17135K96	7.50	17135K86	7.50	—	—	—	—	—	—
10″	1766K38	17.40	1766K878	12.12	17135K97	10.00	17135K87	10.25	2015K38	5.04	2015K58	5.04	6766K45	11.76
12″	1766K39	23.60	1766K879	14.59	17135K98	13.10	17135K88	12.78	2015K39	5.88	2015K59	5.70	6766K46	15.85
14″	1766K41	38.26	1766K881	30.52	17135K99	18.46	17135K89	18.46	2015K41	6.30	2015K61	6.30	6766K47	22.64
16″	1766K42	62.40	1766K882	46.62	17135K31	23.23	17135K41	20.65	2015K42	8.38	2015K62	8.38	6766K48	27.61
18″	1766K43	77.27	1766K883	57.35	17135K32	24.87	17135K42★	24.66	2015K43	10.57	2015K63	10.57	6766K49	41.48
20″	1766K44	91.11	1766K884	68.15	17135K33▲	20.35	17135K43▲	20.35	2015K51	11.97	2015K64	11.97	—	—
22″	1766K45	106.04	1766K888	71.20	17135K34▲	29.28	17135K44▲	29.46	—	—	—	—	—	—
24″	1766K46	135.83	1766K889	74.87	17135K35▲	32.26	17135K45▲	32.36	—	—	—	—	—	—

★ 26 ga. ▲ 24 ga.

Reducers are crimped at the smaller end. ***Increasers*** are crimped at the larger end. All are 28 ga., unless noted.
Tees and ***45° wyes*** are 26 ga. and (A) is crimped, unless noted.

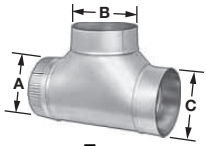

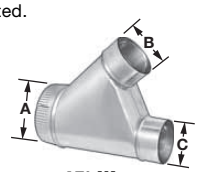

Reducers

Dia.	Lg.			
4″/ 3″	8″	2013K38	$8.18
5″/ 4″	7½″	2013K14	9.20
6″/ 4″	7¼″	2013K58	9.85
6″/ 5″	7¼″	2013K15	9.97
7″/ 6″	7¼″	2013K21	11.33
8″/ 6″	7½″	2013K22	12.58
8″/ 7″	7½″	2013K26	11.40
9″/ 6″	7⅞″	2013K23	15.61
9″/ 7″	7⅞″	2013K27	17.72
9″/ 8″	7⅞″	2013K31	15.24
10″/ 6″	8″	2013K24	16.11
10″/ 7″	6¾″	2013K28	18.46
10″/ 8″	7¾″	2013K32	15.49
10″/ 9″	7¾″	2013K34	17.28
12″/ 6″	8⅛″	2013K25	19.58
12″/ 7″	7⅞″	2013K29	20.07
12″/ 8″	8⅛″	2013K33	18.12
12″/ 9″	8⅛″	2013K35	20.51
12″/10″	7½″	2013K36	21.99

Increasers

Dia.	Lg.			
4″/ 6″	7¼″	2013K57	$10.10
6″/ 7″	7¼″	2013K41	11.33
6″/ 8″	7½″	2013K42	12.27
6″/ 9″	7⅞″	2013K43	15.61
6″/10″	8″	2013K44	16.11
6″/12″	8⅛″	2013K45	17.72
7″/ 8″	7½″	2013K46	12.66
7″/12″	7⅞″	2013K49	18.10
8″/ 9″	7⅞″	2013K51	15.64
8″/10″	7¾″	2013K52	16.30
8″/12″	8⅛″	2013K53	18.58
9″/10″	7¾″	2013K54	17.28
9″/12″	8⅛″	2013K55	20.51
10″/12″	7½″	2013K56	21.99
10″/14″	8¼″	2013K59	16.75
12″/14″	7½″	2013K61★	16.75
12″/16″	8¼″	2013K62★	22.97
14″/16″	7¼″	2013K63★	22.97
16″/18″	7⅜″	2013K64★	28.10

★ 26 ga.

Tees

(A)×(B)×(C)			
3″× 3″× 3″	1766K62	$18.25
4″× 3″× 4″	1766K626♠	26.80
4″× 4″× 4″	1766K65	18.88
5″× 3″× 5″	1766K69♠	29.88
5″× 5″× 5″	1766K67	20.93
6″× 3″× 6″	1766K64♠	31.70
6″× 4″× 6″	1766K66♠	31.70
6″× 6″× 6″	1766K68	23.75
7″× 7″× 7″	1766K99	26.90
8″× 8″× 8″	1766K645	28.76
9″× 9″× 9″	1766K656	30.20
10″×10″×10″	1766K667	33.08
12″×12″×12″	1766K678	41.00
14″×14″×14″	1766K671●	41.60
16″×16″×16″	1766K672●	51.27
18″×18″×18″	1766K673●	60.80
20″×20″×20″	1766K674●	64.71

♠ Only (B) and (C) are crimped.
● Not crimped.

45° Wyes

(A)×(B)×(C)		
4″× 3″× 3″	1766K861	$20.38
5″× 3″× 4″	1766K862	19.23
5″× 3″× 5″	1766K866	21.88
6″× 3″× 4″	1766K867	21.88
6″× 4″× 4″	1766K868	23.97
6″× 4″× 5″	1766K863	31.70
7″× 5″× 6″	1766K864	33.12
8″× 6″× 6″	1766K865	36.92
10″× 8″× 8″	1766K869	42.35
12″× 8″× 8″	1766K843	47.10
12″×10″×10″	1766K845♦♠	59.92
14″×10″×10″	1766K846♦♠	66.50
16″×12″×12″	1766K847♠	91.84
16″×14″×14″	1766K848♠	102.69

♦ 28 ga.
♠ Only (B) and (C) are crimped.

Connector sleeves secure with two bolts (included).

Ball joints are made of cold-rolled steel and used for adjustable-angle connections.

Take-offs allow you to connect round and rectangular duct. Just cut a hole in your rectangular duct and fit the tabbed take-off end inside.

Connector Sleeves

Dia.	Ga.		
3″	—	—	—
4″	30	1766K91	$4.85
5″	30	1766K92	5.03
6″	30	1766K93	5.15
7″	30	1766K94	5.33
8″	30	1766K95	5.50
10″	30	1766K96	6.83
12″	30	1766K97	8.20

Ball Joints

Ga.		
20	1790K21	$100.82
20	1790K22	106.75
20	1790K23	122.55
20	1790K24	128.49
20	1790K25	146.27
18	1790K26	166.05
16	1790K28	206.58

Take-Offs

Ga.		
—	—	—
—	—	—
30	2015K26	$13.34
30	2015K44	7.24
30	2015K27	17.64
30	2015K28	22.80
—	—	—
—	—	—

(Continued on following page)

Galvanized Steel Snap-Lock Duct and Fittings *(Continued from previous page)*

Dampers and ***damper blades*** include a position-locking handle.

Dampers Dia.	Lg.	Ga.			Damper Blades Ga.		
4″	4½″	20	17355K59	$49.53	28	3996K11	$3.25
5″	4½″	20	17355K51	56.00	28	3996K14	3.32
6″	4½″	20	17355K61	49.83	28	3996K17	3.41
7″	4½″	20	17355K53	57.67	28	3996K2	4.35
8″	4½″	20	17355K63	51.02	28	3996K23	4.60
9″	4½″	20	17355K55	59.11	26	3996K26	4.82
10″	4½″	20	17355K65	44.43	26	3996K29	5.55
12″	4½″	20	17355K67	49.21	26	3996K32	6.47
14″	4½″	20	17355K69	52.54	24	3996K35	8.17
16″	4½″	20	17355K71	59.43	—	—	—
18″	4½″	20	17355K73	63.02	—	—	—
20″	4½″	18	17355K75	78.01	—	—	—
22″	4½″	18	17355K57	98.89	—	—	—
24″	4½″	18	17355K76	88.40	—	—	—

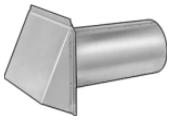

Vents with Damper Dia.	Ga.	Lg.			Vents with Screen Lg.		
4″	30	15¼″	1766K484	$16.45	5¼″	1766K481	$12.50
5″	30	15¼″	1766K485	17.10	5¼″	1766K482	12.62
6″	30	15¼″	1766K492	18.32	5¼″	1766K497	12.80
7″	30	16¼″	1766K486	22.95	6¼″	1766K483	22.60
8″	30	16¼″	1766K493	20.22	6¼″	1766K498	13.95

Damper Hardware

Attach to your round or rectangular flat sheet metal (up to 0.022″ thick) to create an instant damper. A ¾″ threaded mount acts as the pivot. For larger dampers, use the second mount to increase stability. Sheet metal not included (see page 3656).

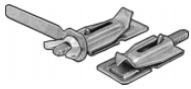

1786K21 ..... $4.62

Downdraft diverters prevent the pilot flame from going out. Mount vertically only.

Dia.	Ga.	Rain Caps		Downdraft Diverters	
3″	26	1766K71	$12.93	1785K11	$41.30
4″	26	1766K72	10.95	1785K12	41.71
5″	26	1766K73	15.70	1785K13	44.01
6″	26	1766K74	12.30	1785K14	53.87
7″	26	1766K75	15.39	1785K15	56.50
8″	26	1766K76	17.96	1785K16	73.50
9″	26	1766K77	21.88	1785K17	97.96
10″	26	1766K78	27.32	1785K18	129.22
12″	26	1766K79	35.15	1785K19	193.75

Thimbles

Use a thimble to connect your furnace to a masonry chimney.

Dia.	Lg.	Ga.		
4″	6¼″	26	1766K82	$11.62
5″	6¼″	26	1766K83	12.08
6″	6¼″	26	1766K84	12.39

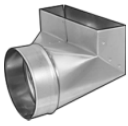

Dia.	Lg. × Wd.	Ga.	90° Register Boots		Straight Register Boots	
6″	10″ × 2¼″	30	1844K14	$8.21	1844K34	$8.05
6″	10″ × 4″	30	1844K17	8.28	1844K37	8.57
6″	12″ × 2¼″	30	1844K15	8.34	1844K35	8.57
6″	12″ × 4″	30	1844K21	9.90	1844K41	9.10

Galvanized Steel Spiral Duct and Fittings

Duct has a spiral seam for increased rigidity to handle more demanding applications than snap-lock duct of the same gauge. A ***connector sleeve*** is required to join two lengths of duct. ***End caps*** up to 5″ dia. are crimped. ***Self-sealing collars*** have a double-faced polyethylene gasket for a tight seal without tape or adhesives. **Also Available:** 45° wyes. Please ask for 5078K99 and specify diameter.

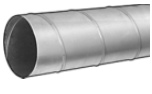

Dia.	Ga.	2-ft. Long Duct		5-ft. Long Duct		Connector Sleeves	
3″	26	—	—	5078K16	$25.23	5078K44★	$6.67
4″	26	5078K71	$10.09	5078K19	25.23	5078K45★	6.80
5″	26	5078K72	10.09	5078K22	25.23	5078K47★	6.80
6″	26	5078K73	11.53	5078K15	28.83	5078K48★	6.80
8″	26	5078K74	15.36	5078K17	38.40	5078K51★	7.03
10″	26	5078K75	19.19	5078K18	47.97	5078K53★	7.80
12″	26	5078K76	20.60	5078K21	51.51	5078K54★	7.70
14″	24	5078K78	27.35	5078K81	68.38	5078K83▲	8.80
16″	24	5078K79	31.26	5078K82	78.15	5078K84▲	9.17

★ 24 ga. ▲ 22 ga.

Dia.	Ga.	90° Elbows		45° Elbows		End Caps	
3″	26	5078K23	$10.83	5078K771	$12.47	5078K33	$12.35
4″	26	5078K24	10.83	5078K772	12.47	5078K35★	12.35
5″	26	5078K26	12.63	5078K773	13.80	5078K36★	12.35
6″	26	5078K27	12.63	5078K774	13.80	5078K38★	12.09
8″	26	5078K29	15.53	5078K776	16.68	5078K39★	14.84
10″	26	5078K31	20.33	5078K778	20.00	5078K41★	16.96
12″	26	5078K32	25.40	5078K779	25.27	5078K42▲	18.20
14″	24	5078K87	43.53	5078K781	35.03	5078K85▲	25.50
16″	24	5078K89	62.50	5078K782	50.27	5078K86▲	26.99

★ 24 ga. ▲ 22 ga.

Dia.	Ga.	Lg.	Self-Sealing Collars		Lg.	Self-Sealing Collars with Damper		Tees	
3″	24	—	—	—	—	—	—	5078K881	$66.55
4″	24	3½″	5078K11	$8.93	—	—	—	5078K882	53.88
5″	24	3½″	5078K12	8.93	—	—	—	5078K883	46.35
6″	24	3″	5078K111	6.70	5″	5078K121◆	$11.60	5078K884	39.15
8″	24	3″	5078K112	7.08	5″	5078K122◆	12.88	5078K886	47.58
10″	24	3″	5078K113	7.85	5″	5078K123◆	14.68	5078K888	60.15
12″	24	3″	5078K114	10.43	7″	5078K124◆	18.27	5078K889	73.55
14″	24	3″	5078K115	11.07	7″	5078K125	22.15	5078K891	103.95
16″	24	3½″	5078K116	11.85	7″	5078K126	40.17	5078K892	120.97

◆ 26 ga.

Reducers

Dia.	Lg.	Ga.		
4″/ 3″	10″	24	5078K56	$30.90
5″/ 4″	10″	24	5078K57	30.90
6″/ 4″	11″	24	5078K59	30.90
6″/ 5″	10″	24	5078K63	30.90
8″/ 6″	7¼″	24	5078K62	24.73
10″/ 6″	9″	24	5078K61	23.83
10″/ 8″	7¼″	24	5078K65	27.80
12″/ 6″	15″	24	5078K66	44.57
12″/ 8″	9″	24	5078K68	31.40
12″/10″	7¼″	24	5078K69	31.40
14″/12″	7¼″	24	5078K91	34.17
16″/14″	7¼″	24	5078K92	40.87

Floor Sweep for 6″ Dia. Duct

Ga.		
18	17345K11	$195.92

Sure Seal Galvanized Steel Spiral Duct and Fittings

The EPDM gasketed ends on the fittings provide a more efficient, energy-saving seal than duct tape or adhesives. A ***connector sleeve*** is required to join two lengths of duct.

Dia.	Duct Lg.	Duct Ga.			Connector Sleeves Ga.			90° Elbows Ga.			45° Elbows Ga.		
4″	5 ft.	26	2226K45	$18.97	26	2226K26	$7.74	24	2226K11	$15.84	24	2226K15	$14.32
6″	5 ft.	26	2226K46	27.26	26	2226K27	8.88	24	2226K12	19.62	24	2226K16	16.01
8″	5 ft.	26	2226K47	42.50	26	2226K28	11.50	22	2226K13	27.62	22	2226K17	19.67
10″	5 ft.	26	2226K48	44.73	26	2226K29	18.12	22	2226K14	40.36	22	2226K18	27.10
12″	5 ft.	26	2226K49	54.10	26	2226K31	21.82	22	2226K43	50.46	22	2226K44	34.21

End Caps Dia.	Ga.			Reducers Dia.	Lg.	Ga.			Tees Dia. (all)	Ga.		
4″	24	2226K32	$9.11	6″/ 4″	8¼″	22	2226K19	$22.24	4″	24	2226K37	$22.17
6″	24	2226K33	10.26	8″/ 6″	8¼″	22	2226K21	27.30	6″	24	2226K38	28.06
8″	24	2226K34	14.70	10″/ 6″	8¼″	22	2226K22	34.52	8″	24	2226K39	36.52
10″	24	2226K35	21.34	10″/ 8″	8¼″	22	2226K23	34.54	10″	24	2226K41	52.14
12″	24	2226K36	28.44	12″/ 8″	8¼″	22	2226K24	49.36	12″	24	2226K42	66.60
				12″/10″	8¼″	22	2226K25	49.36				

Heavy Duty Galvanized Steel Duct and Fittings

Duct has an overlapping lengthwise seam already locked in place.

Dia.	2-FT. LONG DUCT 24 Gauge		22 Gauge		20 Gauge		5-FT. LONG DUCT 24 Gauge		22 Gauge		20 Gauge	
3″							1768K97	$34.67	1768K98	$43.40		
4″	1768K101	$26.10	1768K111	$32.93			1768K41	43.50	1768K51	54.89		
5″	1768K102	35.74	1768K112	43.40	1768K122	$50.65	1768K42	59.56	1768K52	72.33	1768K62	$84.42
6″	1768K103	39.00	1768K113	47.43	1768K123	57.75	1768K43	65.00	1768K53	79.05	1768K63	96.25
7″	1768K104	47.53	1768K114	52.35	1768K124	62.31	1768K44	79.21	1768K54	87.25	1768K64	103.85
8″	1768K105	51.47	1768K115	59.37	1768K125	68.31	1768K45	85.79	1768K55	98.95	1768K65	113.85
10″	1768K106	58.58	1768K116	65.37	1768K126	76.65	1768K47	97.63	1768K57	108.95	1768K67	127.75
12″	1768K107	69.17	1768K117	77.53	1768K127	88.31	1768K48	115.28	1768K58	129.21	1768K68	147.18

Elbows are ideal for handling light sawdust and noncorrosive powders. *Welded elbows* have an airtight seal.
Dampers have a 6″ long actuator rod to control airflow. Adjust from fully open to fully closed. They have a 14-ga. blade and neoprene seal.

Dia.	90° ELBOWS Ga.	Not Welded		Welded		45° ELBOWS Ga.	Not Welded		Welded		DAMPERS Lg.	Ga.		
3″	22	1768K79	$18.80	1768K88	$127.33	22	1768K1	$13.22	1768K71	$86.22				
4″	22	1768K9	22.31	1768K89	130.23	22	1768K2	14.92	1768K72	88.18	10″	20	2041K31	$131.80
5″	22	1768K82	28.71	1768K91	121.63	22	1768K3	19.75	1768K73	82.33				
6″	22	1768K83	34.82	1768K92	128.84	22	1768K4	24.89	1768K74	87.14	10″	20	2041K32	142.80
7″	22	1768K84	45.48	1768K93	133.95	22	1768K5	30.65	1768K75	90.49				
8″	22	1768K85	54.88	1768K94	145.35	22	1768K6	37.06	1768K76	99.52	10″	20	2041K33	149.20
10″	20	1768K86	97.25	1768K95	198.44	20	1768K7	62.05	1768K77	131.56	10″	20	2041K34	158.60
12″	20	1768K87	122.31	1768K96	234.67	20	1768K8	89.17	1768K78	154.44	10″	20	2041K35	161.76

Antimicrobial Galvanized Steel Spiral Duct and Fittings

Safeguard your ventilation system. The inside of this duct and fittings has an antimicrobial coating that inhibits the growth of mold, mildew, and bacteria. Duct and fittings are 26 ga. A ***connector sleeve*** is required to join two lengths of duct.

Dia.	5-ft. Long Duct		Connector Sleeves		90° Elbows		End Caps		Collars		Reducers Dia.	Lg.			
3″	5129K13	$22.09	5129K301	$12.84	5129K22	$69.50	5129K43	$31.56	5129K73	$30.16	4″/ 3″	7″	5129K83	$91.46
4″	5129K14	25.99	5129K302	13.60	5129K25	85.46	5129K55	31.56	5129K76	32.76	5″/ 4″	7″	5129K84	98.11
5″	5129K94	29.87	5129K303	14.32	5129K28	102.27	5129K58	35.00	5129K77	35.52	6″/ 4″	8″	5129K85	105.46
6″	5129K95	33.77	5129K304	15.04	5129K34	116.67	5129K64	37.78	5129K78	38.13	6″/ 5″	7″	5129K86	108.17
8″	5129K15	42.86	5129K305	16.32	5129K37	151.68	5129K67	44.56	5129K79	44.37	8″/ 6″	8″	5129K87	110.00
10″	5129K16	51.96	5129K306	17.45	5129K46	133.70	5129K71	53.38	5129K81	50.62	10″/ 6″	10″	5129K88	117.87
12″	5129K19	59.74	5129K307	18.90	5129K49	161.38	5129K72	60.32	5129K82	57.36	10″/ 8″	8″	5129K89	117.87
											12″/ 6″	12″	5129K91	135.11
											12″/ 8″	10″	5129K92	135.11
											12″/10″	8″	5129K93	135.11

Type 304 Stainless Steel Snap-Lock Duct and Fittings

When your application requires corrosion resistance, you need stainless steel. All components are 26 ga.

Duct has a seam that snaps together without any tools. One end is crimped. ***90° elbows*** are adjustable from straight to 90°. One end is crimped. ***Tab collars*** are crimped at one end.

Duct

Dia.	Lg.			Dia.	Lg.		
3″	2 ft.	1767K11	$57.46	8″	3 ft.	1767K45	$91.70
4″	3 ft.	1767K41	56.00	8″	5 ft.	1767K95	136.08
4″	5 ft.	1767K91	79.48	9″	3 ft.	1767K46	106.86
5″	3 ft.	1767K42	60.62	9″	5 ft.	1767K96	136.96
5″	5 ft.	1767K92	86.28	10″	3 ft.	1767K47	120.24
6″	3 ft.	1767K43	69.21	10″	5 ft.	1767K97	157.72
6″	5 ft.	1767K93	100.82	12″	3 ft.	1767K48	140.00
7″	3 ft.	1767K44	77.41	12″	5 ft.	1767K98	188.65
7″	5 ft.	1767K94	115.97				

Dia.	90° Elbows		End Caps		Tab Collars	
3″	1767K21	$35.41	1767K61	$35.80	—	—
4″	1767K22	40.85	1767K62	38.97	1767K771	$42.65
5″	1767K23	42.09	1767K63	36.34	1767K772	45.36
6″	1767K24	45.81	1767K64	36.72	1767K773	46.23
7″	1767K25	53.81	1767K65	46.55	1767K774	47.39
8″	1767K26	63.03	1767K66	47.29	1767K775	48.57
9″	1767K29	75.01	1767K67	49.42	1767K776	50.45
10″	1767K27	87.34	1767K68	70.85	1767K777	51.74
12″	1767K28	106.20	1767K69	75.60	1767K779	52.96

Reducers are crimped at the smaller end. ***Increasers*** are crimped at the larger end. ***Tees*** are crimped at one end.

Reducers

Dia.	Lg.		
4″/ 3″	7¼″	1767K81	$58.26
6″/ 4″	6¾″	1767K82	59.58
8″/ 4″	7¾″	1767K83	65.58
8″/ 6″	8⅜″	1767K84	67.22
10″/ 6″	8⅜″	1767K85	74.26
10″/ 8″	8″	1767K86	75.94
12″/10″	9⅛″	1767K87	105.33

Increasers

Dia.	Lg.		
4″/ 6″	6¾″	1767K72	$55.93
6″/ 8″	8½″	1767K73	67.22
8″/10″	8″	1767K75	74.74
8″/12″	8¼″	1767K76	84.89

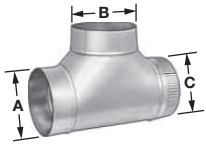

Tees

(A)×(B)×(C)		
6″×3″×6″	1767K51	$61.01
6″×4″×6″	1767K52	61.23
6″×5″×6″	1767K53	61.70
6″×6″×6″	1767K54	63.10
7″×7″×7″	1767K55	79.88
8″×8″×8″	1767K57	88.54

Dia.	Dampers		Rain Caps	
3″	1767K881	$113.76	1767K31	$53.52
4″	1767K882	121.13	1767K32	54.89
5″	1767K883	124.84	1767K33	56.71
6″	1767K884	130.27	1767K34	58.50
7″	1767K885	132.99	1767K35	64.32
8″	1767K886	136.70	1767K36	65.74
9″	1767K887	140.41	—	—
10″	1767K888	148.32	1767K37	67.88
12″	1767K889	158.21	1767K38	93.02

Heavy Duty Type 304 Stainless Steel Duct and Fittings

For more demanding applications and excellent corrosion resistance, build your system with these components.

Spiral

Duct has a spiral seam for increased rigidity.

A ***connector sleeve*** is required to join two lengths of duct.

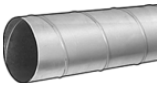

Dia.	Ga.	2-ft. Long Duct		5-ft. Long Duct		Connector Sleeves	
4″	24	2561K11	$18.15	2561K41	$40.33	2561K33	$18.93
6″	24	2561K12	27.30	2561K42	60.67	2561K34	19.60
8″	24	2561K13	36.45	2561K43	81.00	2561K35	20.98
10″	24	2561K14	45.40	2561K44	100.89	2561K36	23.73

Dia.	Ga.	90° Elbows		45° Elbows	
4″	20	2561K15	$54.89	2561K19	$48.73
6″	20	2561K16	71.11	2561K21	61.84
8″	20	2561K17	98.16	2561K22	80.40
10″	20	2561K18	148.98	2561K23	117.51

End Caps

Dia.	Ga.		
4″	24	2561K24	$30.95
6″	24	2561K25	36.08
8″	24	2561K26	41.25
10″	24	2561K27	48.10

Reducers

Dia.	Lg.	Ga.		
6″/4″	8″	24	2561K28	$54.56
8″/6″	8″	24	2561K29	59.60
10″/6″	8″	24	2561K31	71.34
10″/8″	8″	24	2561K32	64.16

Locked Seam

Ideal for exhausting vapors, light dust, and powder.

Duct has an overlapping lengthwise seam that's already locked in place. Crimped at one end.

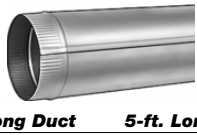

Dia.	Ga.	2-ft. Long Duct		5-ft. Long Duct	
4″	24	18005K29	$81.27	18005K22	$150.50
5″	24	18005K31	97.34	18005K23	180.25
6″	24	18005K32	114.75	18005K24	212.50
7″	24	18005K33	123.39	18005K25	228.50
8″	24	18005K34	138.65	18005K26	256.75
10″	24	18005K35	167.00	18005K27	309.25
12″	24	18005K36	177.68	18005K28	355.35

Elbows are welded for airtight seams.

Dia.	Ga.	90° Elbows		45° Elbows	
4″	20	17805K73	$231.95	17805K53	$141.62
5″	20	17805K74	233.17	17805K54	158.25
6″	20	17805K75	260.24	17805K55	169.51
7″	20	17805K76	282.58	17805K56	192.38
8″	20	17805K77	338.86	17805K57	216.74
10″	20	17805K78	469.56	17805K58	278.77
12″	20	17805K79	607.78	17805K59	366.00

Quick-Assembly Duct and Fittings

Connection clamps that open and close quickly provide a tight seal and enable fast connection and disconnection. Quick-assembly design makes cleanout convenient and is great for ventilation and dust collection systems. ***Type 304 stainless steel*** offers increased corrosion resistance.

Duct has rolled ends. One ***connection clamp*** is required to join two components. ***Elbows*** 8″ dia. and larger are segmented. ***Heavy duty elbows*** are tubed.

Dia.	Ga.	59″ Long Duct		Connection Clamps	
Galvanized Steel					
4″	22	1761K12	$29.72	1761K22	$10.07
5″	22	1761K13	32.60	1761K23	10.61
6″	22	1761K14	39.21	1761K24	11.16
8″	22	1761K117	53.99	1761K137	12.06
10″	22	1761K118	62.92	1761K138	13.50
12″	22	1761K119	75.21	1761K139	14.74
14″	20	1761K121	88.24	1761K145	15.63
16″	20	1761K122	114.40	1761K146	17.03
Type 304 Stainless Steel					
4″	22	2538K111	67.54	2538K131	21.31
5″	22	2538K112	74.11	2538K132	22.84
6″	22	2538K113	86.15	2538K133	24.22
8″	22	2538K114	114.75	2538K134	27.24
10″	22	2538K115	142.94	2538K135	30.05
12″	22	2538K116	170.41	2538K136	33.32
14″	20	2538K651	205.07	2538K668	36.89
16″	20	2538K652	251.87	2538K669	40.83

Dia.	Ga.	Reducers		End Caps	
Galvanized Steel					
5″/ 4″	22	1761K203	$47.53	1761K163	$14.41
6″/ 4″	22	1761K72	54.48	1761K164	15.65
6″/ 5″	22	1761K73	54.48	1761K165	17.55
8″/ 6″	22	1761K206	51.26	1761K166	20.88
10″/ 6″	22	1761K207	58.42	1761K171	24.00
10″/ 8″	22	1761K208	58.42	1761K172	25.28
12″/ 8″	22	1761K209	68.85	1761K173	26.96
12″/10″	22	1761K211	68.04	1761K174	28.19
14″/12″	22	1761K212	82.12		
16″/14″	20	1761K213	113.27		
Type 304 Stainless Steel					
5″/ 4″	22	2538K706	97.33	2538K679	30.35
6″/ 4″	22	2538K241	110.19	2538K681	35.64
6″/ 5″	22	2538K242	110.19	2538K682	38.02
8″/ 6″	22	2538K709	106.26	2538K683	44.72
10″/ 6″	22	2538K71	122.93	2538K684	52.53
10″/ 8″	22	2538K711	122.93	2538K685	55.91
12″/ 8″	22	2538K712	147.23	2538K686	59.09
12″/10″	22	2538K713	147.23	2538K687	62.44
14″/12″	22	2538K714	171.67		
16″/14″	20	2538K715	236.67		

Use ***connector sleeves*** with duct (one rolled end of the duct must be cut off) to create a slip-joint connection. Sleeves include a rubber O-ring. **Also Available:** Replacement O-rings. Please ask for 1761K51 and specify dia.

Dia.	Ga.	Dampers		Ga.	Connector Sleeves	
Galvanized Steel						
4″	22	1761K151	$56.41	22	1761K32	$17.96
5″	22	1761K152	56.79	22	1761K33	18.54
6″	22	1761K153	57.34	22	1761K34	18.96
8″	22	1761K154	60.67	22	1761K127	23.19
10″	22	1761K155	62.91	22	1761K128	24.80
12″	20	1761K156	66.26	22	1761K129	28.43
14″	20	1761K161	75.72	20	1761K123	37.19
16″	20	1761K162	80.37	20	1761K124	42.64
Type 304 Stainless Steel						
4″	22	2538K671	136.23	22	2538K121	44.05
5″	22	2538K672	137.09	22	2538K122	45.43
6″	22	2538K673	138.65	22	2538K123	47.77
8″	22	2538K674	148.01	22	2538K124	57.38
10″	22	2538K675	160.59	22	2538K125	62.04
12″	20	2538K676	159.92	22	2538K126	71.33
14″	20	2538K677	182.50	20	2538K653	90.03
16″	20	2538K678	195.69	20	2538K654	103.83

Dia.	Ga.	90° Elbows		45° Elbows		30° Elbows	
Galvanized Steel							
4″	24	1761K42	$53.72	1761K424	$45.91	1761K427	$45.91
5″	24	1761K43	59.72	1761K435	50.81	1761K438	50.81
6″	24	1761K44	67.13	1761K446	59.80	1761K449	62.68
8″	22	1761K147	130.38	1761K157	90.98	1761K167	86.41
10″	22	1761K148	136.03	1761K158	93.43	1761K168	90.40
12″	22	1761K149	165.54	1761K159	95.16	1761K169	91.37
14″	20	1761K125	170.10	1761K131	102.54	1761K241	99.74
16″	20	1761K126	174.63	1761K132	137.65	1761K242	110.89
Type 304 Stainless Steel							
8″	22	2538K144	319.68	2538K154	195.91	2538K164	172.51
10″	22	2538K145	335.69	2538K155	216.08	2538K165	179.64
12″	22	2538K146	415.28	2538K156	235.04	2538K166	190.15
14″	20	2538K655	449.67	2538K657	261.72	2538K431	182.45
16″	20	2538K656	482.65	2538K658	320.89	2538K432	243.96
Heavy Duty Galvanized Steel							
4″	16	1761K214	61.48	1761K218	61.48	1761K301	61.48
5″	14	1761K215	118.15	1761K219	118.15	1761K302	118.15
6″	14	1761K216	158.55	1761K221	158.55	1761K303	158.55
8″	14	1761K217	312.21	1761K222	312.21	1761K304	312.21
Heavy Duty Type 304 Stainless Steel							
4″	14	2538K141	115.04	2538K151	115.04	2538K161	115.04
5″	14	2538K142	227.66	2538K152	227.66	2538K162	227.66
6″	14	2538K143	277.90	2538K153	277.90	2538K163	277.90
8″	14	2538K719	497.96	2538K724	497.96	2538K304	480.49

Dia. (all)	Ga.	Tees		45° Wyes		Double Wyes	
Galvanized Steel							
4″	22	1761K52	$113.72	1761K175	$112.16	1761K191	$142.78
5″	22	1761K53	117.50	1761K176	116.87	1761K192	151.82
6″	22	1761K54	123.64	1761K181	121.95	1761K193	158.34
8″	22	—	—	1761K182	126.87	1761K194	168.61
10″	22	—	—	1761K183	141.53	1761K195	182.28
12″	22	—	—	1761K184	155.86	1761K196	207.35
14″	20	—	—	1761K185	183.05	1761K201	249.68
16″	20	—	—	1761K186	212.48	1761K202	277.80
Type 304 Stainless Steel							
4″	22	2538K211	267.19	2538K688	249.33	2538K697	319.23
5″	22	2538K212	272.43	2538K689	254.23	2538K698	323.49
6″	22	2538K213	278.58	2538K691	259.84	2538K699	337.53
8″	22	—	—	2538K692	272.93	2538K701	362.41
10″	22	—	—	2538K693	298.74	2538K702	391.23
12″	22	—	—	2538K694	337.21	2538K703	445.80
14″	20	—	—	2538K695	397.30	2538K704	536.66
16″	20	—	—	2538K696	456.84	2538K705	597.83

Duct Dia.	(A)	Ga.	90° Saddles		30° Saddles	
Galvanized Steel						
6″	6″	22	1761K522	$60.01	1761K56	$60.01
8″	6″	22	1761K532	65.27	1761K57	65.27
10″	6″	22	1761K542	67.22	1761K58	67.22
12″	6″	22	1761K235	74.68	1761K225	74.68
Type 304 Stainless Steel						
6″	6″	22	2538K231	125.11	2538K221	125.11
8″	6″	22	2538K232	127.62	2538K222	127.62
10″	6″	22	2538K233	130.22	2538K223	130.22
12″	6″	22	2538K234	132.93	2538K224	132.93

(Continued on following page)

Quick-Assembly Duct and Fittings *(Continued from previous page)*

Use these ***adapters*** to connect quick-assembly duct to other duct systems or equipment. ***Cast aluminum blast gates*** have a galvanized steel slide. ***Intake hoods*** are 12″ Wd.×6″ Dp. and made of galvanized steel.

Dia.	Ga.	ADAPTERS To Straight Duct		Duct-to-Hose		W/Angle Flange	
Galvanized Steel							
4″	22	1761K742	$23.02	1761K62	$22.62	1761K752	$46.81
5″	22	1761K743	25.61	1761K63	25.17	1761K753	49.28
6″	22	1761K744	30.05	1761K64	29.52	1761K754	59.36
8″	22	1761K177	33.57	1761K197	34.22	1761K187	66.82
10″	22	1761K178	37.83	1761K198	38.55	1761K188	78.89
12″	22	1761K179	40.35	1761K199	41.11	1761K189	87.25
14″	20	1761K135	41.19	1761K141	41.94	1761K143	87.00
16″	20	1761K136	43.07	1761K142	43.88	1761K144	95.56
Type 304 Stainless Steel							
4″	22	2538K171	44.31	2538K191	45.10	2538K181	89.99
5″	22	2538K172	50.99	2538K192	51.90	2538K182	99.99
6″	22	2538K173	60.99	2538K193	62.08	2538K183	111.87
8″	22	2538K174	70.56	2538K194	71.82	2538K184	126.37
10″	22	2538K175	79.87	2538K195	81.29	2538K185	134.72
12″	22	2538K176	84.53	2538K196	86.02	2538K186	141.26
14″	20	2538K662	90.94	2538K664	110.15	2538K666	155.67
16″	20	2538K663	97.38	2538K665	99.09	2538K667	168.24

Also Available: Type 304 stainless steel hose clamps for duct-to-hose applications. Please ask for 2538K64 and specify dia.

BLAST GATES

For Duct Dia.	Cast Aluminum		Type 304 SS	
4″	1761K66	$46.88	2538K251	$196.04
5″	1761K67	48.85	2538K252	220.29
6″	1761K68	64.12	2538K253	245.19
8″	1761K257	87.66	2538K254	327.01
10″	1761K258	149.26	2538K255	379.09
12″	1761K259	193.52	2538K256	451.48
14″	1761K133	296.55	2538K659	535.43
16″	1761K134	431.48	2538K661	588.36

Intake Hoods

Dia.	Ga.		
4″	20	1761K77	$161.17
5″	20	1761K78	164.09
6″	20	1761K79	169.46
8″	20	1761K81	181.16
10″	20	1761K82	199.07

Chemical-Resistant PVC Duct and Fittings

Ideal for use with corrosive exhaust vapors and fumes. Wall thickness is 3/16″, unless otherwise stated. Color is gray. Use PVC cement (sold separately on page 3421) to secure components.

A ***connector sleeve*** is required to join two lengths of duct.

Dia.	5-ft. Long Duct		10-ft. Long Duct	
4″	2051K67	$20.45	2051K186	$38.59
6″	2051K61	57.18	2051K11	107.88
8″	2051K62	86.10	2051K31	162.45
10″	2051K63	108.34	2051K51	208.35
12″	2051K64	127.48	2051K71	242.81
14″	2051K65	154.75	2051K91	291.99
16″	2051K66	179.15	2051K41	338.01

Connector Sleeves Dia.	Lg.		90° Elbows		45° Elbows	
4″	4 1/2″	2051K357	$19.52	2051K27	$30.18	2051K145	$42.00
6″	5 7/8″	2051K15	25.92	2051K12	81.87	2051K14	64.18
8″	5 7/8″	2051K35	29.08	2051K32	99.93	2051K34	68.00
10″	5 7/8″	2051K55	34.10	2051K52	109.05	2051K54	76.62
12″	5 7/8″	2051K75	37.36	2051K72	123.72	2051K74	82.43
14″	5 7/8″	2051K95	45.36	2051K92	161.78	2051K94	107.83
16″	5 7/8″	2051K45	47.32	2051K42	192.88	2051K44	128.72

End Caps

Dia.		
4″	2051K127	$28.52
6″	2051K121	63.85
8″	2051K122	80.11
10″	2051K123	80.76
12″	2051K124	85.37
14″	2051K125	84.25
16″	2051K126	153.37

Reducers

Dia.	Lg.		
6″/ 4″	8 3/4″	2051K21	$44.95
8″/ 6″	9″	2051K22	64.67
10″/ 8″	8 5/8″	2051K23	74.61
12″/ 8″	13 1/4″	2051K273	175.08
12″/10″	9 3/4″	2051K24	88.01
14″/10″	14 3/4″	2051K276	230.74
14″/12″	8 1/2″	2051K25	123.52
16″/14″	8 1/2″	2051K26	141.64

Tees

Dia. (all)		
4″	2051K281	$49.27
6″	2051K282	114.32
8″	2051K283	124.88
10″	2051K284	150.45
12″	2051K285	178.75
14″	2051K286	213.57

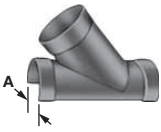

45° Saddles

Dia.	(A)		
6″	8″	2051K742	$120.33
8″	10″	2051K743	130.50
10″	12″	2051K744	181.00
12″	14″	2051K745	189.22

Dampers

Dia.	Lg.		
4″	7 1/2″	2051K165	$151.03
6″	8 1/4″	2051K16	171.84
8″	10 1/2″	2051K36	191.41
10″	13″	2051K56	204.98
12″	14 1/2″	2051K76	219.07

Rain Caps

Dia.		
4″	2051K8	$141.52
6″	2051K18	153.95
8″	2051K38	172.92
10″	2051K58	180.40
12″	2051K78	209.88
14″	2051K98	235.47
16″	2051K48	279.43

Intake Hoods

Collect and exhaust unwanted fumes from your work area. Hoods have a 1/2″ bottom drain and two 1″ high slots. Sidewalls are 1/4″ thick.

Dia.	Ht.×Wd.×Dp.	Slot Wd.		
4″	12″×12″× 4 1/2″	10″	2051K873	$211.67
6″	14″×24″× 6 1/2″	22″	2051K874	281.60
8″	19″×30″× 8 1/2″	28″	2051K875	321.77
10″	21″×36″×10 1/2″	34″	2051K876	439.40
12″	27″×48″×12 1/2″	46″	2051K877	590.43

Harsh-Environment PVC-Coated Steel Spiral Duct and Fittings

A 4-mil white PVC coating inside and out makes these components ideal in exhaust and high-humidity applications as well as underground installations. All are 24 ga., unless noted.

Duct has a spiral seam for increased rigidity and is 26 ga. A ***connector sleeve*** is required to join two lengths of duct. Sleeves are 26 ga. ***Reducers*** are 22 ga.

Dia.	5-ft. Long Duct		Connector Sleeves		90° Elbows		45° Elbows		End Caps	
4″	1889K211	$38.56	1889K311	$14.67	1889K351	$51.03	1889K341	$31.55	1889K331	$13.89
5″	1889K212	48.10	1889K312	15.67	1889K352	63.26	1889K342	36.17	1889K332	18.48
6″	1889K213	53.55	1889K313	16.50	1889K353	68.99	1889K343	39.45	1889K333	20.46
7″	1889K214	66.72	1889K314	18.82	1889K354	78.08	1889K344	45.75	1889K334	25.90
8″	1889K215	70.46	1889K315	20.88	1889K355	83.38	1889K345	53.62	1889K335	29.04
9″	1889K216	79.81	1889K316	25.65	1889K356	91.25	1889K346	69.11	1889K336	34.86
10″	1889K217	88.35	1889K317	28.70	1889K357	109.60	1889K347	72.52	1889K337	39.08
12″	1889K219	109.53	1889K319	36.73	1889K359	163.13	1889K348	104.63	1889K339	52.45

Reducers

Dia.	Lg.		
5″/ 4″	10″	1889K372	$39.38
6″/ 4″	10″	1889K381	41.97
6″/ 5″	10″	1889K382	43.04
7″/ 6″	10″	1889K374	47.39
8″/ 6″	10″	1889K383	52.02
8″/ 7″	10″	1889K384	53.36
9″/ 8″	10″	1889K376	57.87
10″/ 8″	10″	1889K385	62.71
10″/ 9″	10″	1889K386	64.32
12″/10″	10″	1889K387	77.44

Tees

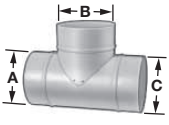

(A) × (B) × (C)		
4″ × 4″ × 4″	1889K321	$37.93
6″ × 4″ × 6″	1889K323	55.35
6″ × 6″ × 6″	1889K324	56.78
8″ × 6″ × 8″	1889K325	66.11
8″ × 8″ × 8″	1889K326	67.68
10″ × 8″ × 10″	1889K327	82.52
10″ × 10″ × 10″	1889K328	91.48
12″ × 8″ × 12″	1889K329	101.57
12″ × 12″ × 12″	1889K302	116.96

45° Wyes

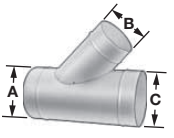

(A) × (B) × (C)		
6″ × 4″ × 6″	1889K361	$60.64
6″ × 6″ × 6″	1889K362	63.67
8″ × 6″ × 8″	1889K363	72.60
8″ × 8″ × 8″	1889K364	75.97
10″ × 8″ × 10″	1889K365	87.90
10″ × 10″ × 10″	1889K366	105.18
12″ × 10″ × 12″	1889K367	134.53

Accessories

Sealing Tape (2″ Wd. × 108 ft. Lg.)	1889K391	$22.80

Polyethylene Fabric Duct

Made of durable woven polyethylene with evenly spaced air holes, duct connects easily to a blower or fan to heat and cool your entire facility. Sewn-in snap hooks allow easy installation on cable, beams, and cord. Duct attaches at the top and bottom, so you can direct air either up or down. Slip duct over fan shrouds or blower nozzles and secure with worm-drive clamps (sold separately). Duct is flame retardant. Melting temperature is 180° F. Color is off-white.

Dia.	Suggested cfm	25-ft. Long Duct		50-ft. Long Duct		Worm-Drive Clamps	
12″	1,000-1,500	1771K25	$151.51	1771K55	$281.00	1771K13	$15.05
15″	1,500-2,500	1771K26	164.00	1771K56	303.08	1771K13	15.05
18″	2,500-3,500	1771K27	176.51	1771K57	326.00	1771K13	15.05
24″	3,500-5,000	1771K28	210.00	1771K58	387.00	1771K14	20.16
30″	6,500-8,000	1771K31	234.51	1771K61	431.00	1771K14	20.16

Duct Noise Reducers

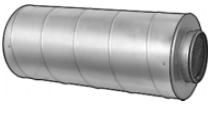

Mount these noise reducers directly in a run of round ductwork to cut noise levels by as much as 50%. They're made of 26-ga. spiral galvanized steel and have a flange at each end for inserting into existing duct. Inlet and outlet have a rubber seal to prevent leakage.

For Duct Dia.	O'all Dia.	O'all Lg.	Flange Lg.		
4″	8″	23⅝″	1½″	2775K1	$83.12
5″	9″	23⅝″	1½″	2775K2	96.10
6″	10¼″	23⅝″	1½″	2775K3	108.50
8″	12½″	23⅝″	1½″	2775K4	122.50
10″	14″	35½″	2″	2775K5	185.90
12″	17¾″	35½″	2″	2775K6	262.50

Vibration-Damping Duct Connectors

Reduce vibration in sheet metal duct systems. Connectors consist of a 4″ wide fabric strip with a 2″ wide strip of galvanized steel at either edge. Just unfold the steel strips and connect to duct with sheet metal screws (not included). Cut to desired length with sheet metal snips.

Canvas fabric resists moisture and mildew. Install on the cool side of the return. Color is green.

Neoprene fabric is waterproof and resists grease and gasoline. Install on the warm or cool side of the return. Color is black.

Fiberglass fabric resists most acids, alkalies, and solvents. Install on the warm side of the return. Color is off-white.

	Max. Temp.	25-ft. Lengths		50-ft. Lengths	
Canvas	180° F	1781K26	$64.18	1781K1	$115.42
Neoprene	200° F	1781K47	82.13	1781K3	151.24
Fiberglass	500° F	1781K88	69.55	1781K7	123.08

Airflow Dampers for Square Duct

Control airflow by adjusting dampers from fully open to fully closed. They're 16-ga. galvanized steel and 5½″ deep and have a vinyl seal.

Fits Duct, Wd. × Ht.		
12″ × 12″	2041K12	$155.00
14″ × 14″	2041K13	174.00
16″ × 16″	2041K14	180.50
24″ × 24″	2041K22	248.00
36″ × 36″	2041K27	412.55

Fire Dampers

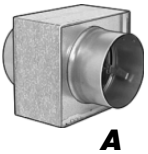
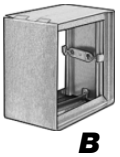

A **B**

Prevent fire from traveling through duct and spreading throughout your facility. In the event of a fire, dampers have a fusible link that melts at 165° F and automatically closes the blades. Dampers are 22-ga. galvanized steel and 4⅞″ deep.

UL classified for up to 1½ hour fire rating. Meet UL Standard 555.

Replacement 165° F fusible link can be used with all dampers.

19215K32 ..... $5.25

Fits Duct, Wd. × Ht.		
(A) For Round Duct		
4″ Dia.	19215K26	$63.18
6″ Dia.	19215K27	64.47
8″ Dia.	19215K28	74.25
10″ Dia.	19215K29	89.62
12″ Dia.	19215K31	91.57
(B) For Rectangular Duct		
8″ × 8″	2263K29	27.79
8″ × 12″	2263K71	28.80
10″ × 10″	2263K86	43.53
12″ × 8″	2263K87	29.89
12″ × 12″	2263K88	36.71
12″ × 20″	2263K89	61.47
14″ × 14″	2263K91	58.40
18″ × 12″	2263K92	52.51
18″ × 18″	2263K93	70.36
20″ × 8″	2263K94	51.80
24″ × 12″	2263K95	61.36
24″ × 18″	2263K96	82.05
24″ × 24″	2263K97	88.29
30″ × 24″	2263K98	107.12

Duct Inspection Doors

Gain easy access for inspection and cleaning. Just slip one of these corrosion-resistant doors (also known as cleanouts) into a cutout on the side of your metal duct.

Aluminum doors attach to duct using the six 7/32″ dia. mounting holes (fasteners not included). ***Galvanized steel*** doors attach to duct by tightening the two knobs. All have polyester foam insulation, unless noted.

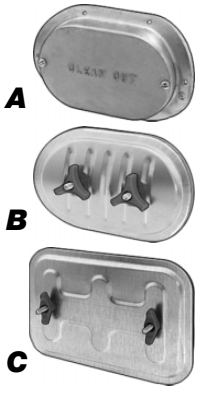

For Duct Dia.	Door Size, Ht. × Wd.		
(A) Aluminum for Round Duct—5/16″ Thick.			
4″	3 9/16″ × 6″	3978K41	$42.50
6″	5 1/2″ × 9″	3978K42	45.00
8″	5 9/16″ × 9″	3978K43	45.00
10″	5 11/16″ × 9 1/16″	3978K44	45.00
12″	5 5/8″ × 8 11/16″	3978K45	45.00
(B) Galvanized Steel for Round Duct—22 ga.			
5″- 7″	6″ × 10″	5252K1	66.27
8″- 9″	6″ × 10″	5252K2	66.27
10″-12″	6″ × 10″	5252K3	66.27
13″-14″	6″ × 10″	5252K4	66.27
15″-16″	6″ × 10″	5252K5	66.27
17″-20″	6″ × 10″	5252K6	66.27

For Duct Dia.	Door Size, Ht. × Wd.		
(B) Galvanized Steel for Round Duct—22 ga. (Cont.)			
21″-24″	6″ × 10″	5252K7	$66.27
24″-28″	6″ × 10″	5252K8	66.27

Fits Min. Duct Size, Ht. × Wd.	Door Size Ht. × Wd.	Ga.		
(C) Galvanized Steel for Rectangular Duct				
10″ × 14″	6″ × 10″	22	1815K66 ♦	$32.11
12″ × 16″	8″ × 12″	22	1815K67 ♦	46.22
18″ × 22″	14″ × 18″	20	1815K68 ♦	89.33
22″ × 28″	18″ × 24″	18	1815K71 ●	153.31

♦ Insulation is fiberglass. ● Door is oval-shaped.

Angle Rings

Slip these rings over pipe and duct to make connections in ventilation, exhaust, and material handling systems. Angle rings ***without holes*** can be welded or soldered in place. Angle rings ***with holes*** can be bolted or riveted (fasteners not included).

Galvanized steel provides good corrosion resistance.
Type 304 stainless steel provides excellent corrosion resistance.

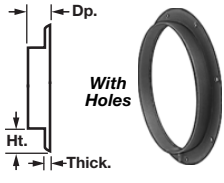

For Duct Dia.	O'all Dp.	Flange Ht.	Flange Thick.	WITHOUT HOLES Steel		WITHOUT HOLES Type 304 SS		WITH HOLES Mtg. Holes Dia.	Qty.	WITH HOLES Steel		WITH HOLES Galvanized Steel		WITH HOLES Type 304 SS	
3″	1″	1″	1/8″	1764K81	$3.51	—	—	9/32″	6	1764K41	$3.51	1758K12	$9.47	—	—
4″	1″	1″	1/8″	1764K82	4.31	1734K12	$28.57	9/32″	6	1764K42	4.31	1758K13	10.88	1734K83	$28.57
5″	1″	1″	1/8″	1764K83	4.78	1734K13	31.34	9/32″	6	1764K43	4.78	1758K14	11.94	1734K53	31.34
6″	1 1/4″	1 1/4″	1/8″	1764K51	5.84	1734K14	23.97	3/8″	6	1764K11	5.84	1758K15	13.00	1734K54	23.97
7″	1 1/4″	1 1/4″	1/8″	1764K52	7.13	1734K15	27.51	3/8″	6	1764K12	7.13	1758K16	14.84	1734K55	27.51
8″	1 1/4″	1 1/4″	1/8″	1764K53	8.27	1734K16	27.37	3/8″	6	1764K23	8.27	1758K17	15.94	1734K26	27.37
9″	1 1/4″	1 1/4″	1/8″	1764K54	9.53	1734K17	31.00	3/8″	6	1764K25	9.53	1758K18	18.61	1734K28	31.00
10″	1 1/4″	1 1/4″	1/8″	1764K55	10.64	1734K18	35.06	3/8″	6	1764K27	10.64	1758K19	20.48	1734K31	35.06
11″	1 1/4″	1 1/4″	1/8″	1764K56	12.33	1734K19	37.33	3/8″	6	1764K88	12.33	1758K36	23.26	1734K33	37.33
12″	1 1/2″	1 1/2″	1/8″	1764K57	14.29	1734K21	41.25	7/16″	8	1764K32	14.29	1758K21	26.73	1734K35	41.25
13″	1 1/2″	1 1/2″	1/8″	1764K58	16.00	1734K22	45.12	7/16″	8	1764K34	16.00	1758K22	29.61	1734K37	45.12
14″	1 1/2″	1 1/2″	1/8″	1764K59	17.67	1734K23	47.50	7/16″	8	1764K37	17.67	1758K23	31.94	1734K39	47.50
15″	1 1/2″	1 1/2″	1/8″	1764K61	18.71	1734K24	54.52	7/16″	8	1764K38	18.71	1758K24	35.51	1734K42	54.52
16″	1 1/2″	1 1/2″	3/16″	1764K62	20.07	1734K25	62.27	7/16″	8	1764K39	20.07	1758K25	37.34	1734K43	62.27
18″	1 1/2″	1 1/2″	3/16″	1764K64	21.53	1734K27	68.67	7/16″	8	1764K44	21.53	1758K27	39.87	1734K44	68.67
20″	1 1/2″	1 1/2″	3/16″	1764K66	23.40	1734K29	77.91	7/16″	12	1764K45	23.40	1758K29	43.50	1734K45	77.91
22″	1 1/2″	1 1/2″	3/16″	1764K68	24.49	1734K32	88.58	7/16″	12	1764K46	24.49	1758K33	46.27	1734K46	88.58
24″	1 1/2″	1 1/2″	3/16″	1764K71	26.11	1734K34	91.33	7/16″	12	1764K47	26.11	1758K35	49.51	1734K47	91.33
26″	2″	2″	3/16″	1764K73	36.27	1734K36	139.20	7/16″	16	1764K48	36.27	1758K37	65.77	1734K48	139.20
28″	2″	2″	3/16″	1764K75	38.07	1734K38	146.93	7/16″	16	1764K49	38.07	1758K39	69.55	1734K49	146.93
30″	2″	2″	3/16″	1764K76	40.60	1734K41	158.27	7/16″	16	1764K63	40.60	1758K41	74.36	1734K82	158.27

Chemical-Resistant PVC Angle Rings

Make connections in ventilation, exhaust, and material handling systems that will hold up in harsh environments. Just slip over pipe or duct and bolt into place (fasteners not included). Color is gray.

For Duct Dia.	Ht. × Dp. × Thick.	Mtg. Holes Dia.	Qty.		
4″	2″ × 2 1/4″ × 1/4″	5/16″	4	5124K9	$43.54
6″	1 11/16″ × 3 1/4″ × 1/4″	5/16″	8	5124K19	49.74
8″	1 11/16″ × 3 1/4″ × 1/4″	5/16″	10	5124K39	52.49
10″	1 5/8″ × 3 1/4″ × 1/4″	5/16″	12	5124K59	65.93
12″	1 5/8″ × 3 1/2″ × 1/4″	5/16″	16	5124K79	69.07
14″	2″ × 3 1/2″ × 1/4″	5/16″	16	5124K99	96.35
16″	2″ × 3 1/2″ × 1/4″	5/16″	18	5124K49	122.05

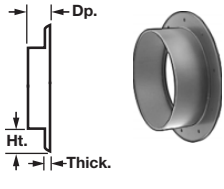

Impact-Resistant ABS Blast Gates

Sturdy ABS plastic construction provides impact and abrasion resistance. These blast gates allow you to control the flow of air and material. Slide stays in position without locking screws. Color is black.

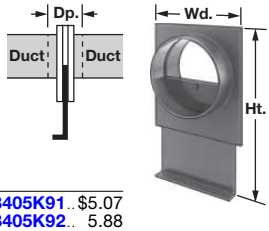

For Duct Dia.	Ht. × Wd. × Dp.		
3″	8″ × 4 1/2″ × 3 5/16″	38405K91	$5.07
4″	10″ × 5 1/2″ × 3 5/16″	38405K92	5.88
5″	12″ × 6 1/2″ × 3 5/16″	38405K97	10.98
6″	14″ × 7 1/2″ × 3 5/16″	38405K98	13.28

Chemical-Resistant PVC Blast Gates

Use these PVC blast gates where chemical and corrosion resistance is a necessity. They allow you to control the flow of air and material. Slide stays in position with included locking screw. Color is gray.

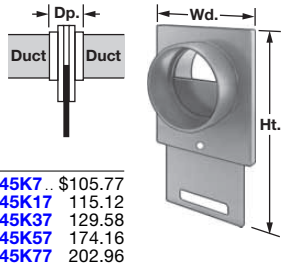

For Duct Dia.	Ht. × Wd. × Dp.		
4″	14″ × 7 1/2″ × 5″	3445K7	$105.77
6″	17″ × 9 5/8″ × 6 3/8″	3445K17	115.12
8″	20 3/4″ × 11 5/8″ × 6 3/8″	3445K37	129.58
10″	24″ × 13 3/4″ × 6 3/8″	3445K57	174.16
12″	26 3/4″ × 15 3/4″ × 6 3/8″	3445K77	202.96

Blast Gates

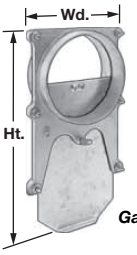

Gate

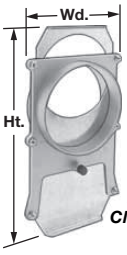

Self-Cleaning Gate

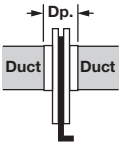

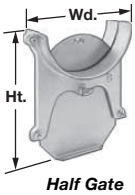

Half Gate

Control the flow of air and material with these corrosion-resistant blast gates. Slide is held in position by the included locking screw.

Install ***gates*** and ***self-cleaning gates*** between lengths of duct or pipe using the circular collar. *Self-cleaning gates* are ideal for grain, grit, and packing material. Push the slide through the body to clear debris.

Install ***half gates*** by cutting a thin slot in the duct and mounting the circular collar on the outside. Ideal for retrofitting your current system since you don't need to disassemble the duct to install.

Blast gates ***with Type 304 stainless steel slide*** resist corrosive gases. ***Type 316L stainless steel*** blast gates withstand harsh environments.

Gates

For Duct Dia.	ALUMINUM BODY — With Galvanized Steel Slide Ht.×Wd.×Dp.			ALUMINUM BODY — With Type 304 SS Slide Ht.×Wd.×Dp.			TYPE 316L SS BODY AND SLIDE Ht.×Wd.×Dp.		
2″	6″ × 3⅞″ × 1⅞″	1788K41	$10.28				6⅝″ × 3½″ × 2⁵⁄₁₆″	2712K2	$125.40
3″	8″ × 4¼″ × 2¼″	1788K11	12.06	7⁹⁄₁₆″ × 4″ × 1⅞″	1822K312	$17.03	8¹³⁄₁₆″ × 5″ × 2⅞″	2712K4	142.98
3½″	9″ × 4⅝″ × 2⅝″	1788K42	19.04						
4″	10″ × 5⅛″ × 2⁷⁄₁₆″	1788K12	11.72	9¹⁵⁄₁₆″ × 5″ × 1⅞″	1822K313	21.69	11¼″ × 6″ × 3⁵⁄₁₆″	2712K5	168.67
4½″	11⅜″ × 5¾″ × 2⅝″	1788K43	21.64						
5″	12″ × 6⅛″ × 2¹¹⁄₁₆″	1788K13	17.36	12½″ × 6¼″ × 2⅛″	1822K314	25.03	14¼″ × 7″ × 3⁵⁄₁₆″	2712K6	184.03
6″	14½″ × 7⅛″ × 2¾″	1788K14	18.00	14½″ × 7¼″ × 2⅛″	1822K315	30.13	16¾″ × 8″ × 3⁵⁄₁₆″	2712K8	203.89
7″	17″ × 8″ × 2⅝″	1788K15	27.24	15⅞″ × 8¼″ × 2½″	1822K316	39.88	19¼″ × 9″ × 3⁵⁄₁₆″	2712K9	224.97
8″	19½″ × 9¼″ × 3⅜″	1788K16	29.92	18″ × 9⅝″ × 4″	1822K317	50.65	21¼″ × 10″ × 4⁵⁄₁₆″	2712K11	254.00
9″	21½″ × 10½″ × 3⅝″	1788K17	51.02				23¾″ × 11″ × 4⁵⁄₁₆″	2712K13	283.95
10″	23½″ × 11⅜″ × 3⅝″	1788K18	64.69	21¾″ × 11⅜″ × 3¾″	1822K319	81.28	26⅝″ × 12″ × 4⁵⁄₁₆″	2712K15	327.89
12″	27½″ × 13⅜″ × 3⅝″	1788K19	69.31	27⅜″ × 13¼″ × 3⅝″	1822K322	96.62	32″ × 14″ × 4⁵⁄₁₆″	2712K17	484.75
14″	31½″ × 15¾″ × 4¼″	1788K25	119.87	30⁵⁄₁₆″ × 15¾″ × 4⅜″	1822K324	146.47	36⅝″ × 16″ × 4⁵⁄₁₆″	2712K24	596.22
16″	36″ × 18″ × 4¼″	1788K27	139.05	35⁹⁄₁₆″ × 17⅞″ × 4⅜″	1822K326	179.80	42¼″ × 18″ × 4⁵⁄₁₆″	2712K26	879.97
18″	40″ × 20¼″ × 6⅞″	1788K29	248.50	41¼″ × 20⅛″ × 7″	1822K328	292.78			

Self-Cleaning Gates and Half Gates—Aluminum Body

For Duct Dia.	Ht.×Wd.×Dp.	W/Galvanized Steel Slide		W/Type 304 SS Slide	
Self-Cleaning Gates					
2″	6¾″ × 3⅝″ × 1⅞″	17385K71	$10.38		
3″	7⅞″ × 4″ × 1⅞″	17385K72	11.55	1822K412	$17.00
4″	10⅜″ × 5″ × 1⅞″	17385K74	13.11	1822K414	23.23
5″	11½″ × 6″ × 2⅛″	17385K76	15.68	1822K416	25.52
6″	14⅝″ × 7″ × 2⅛″	17385K77	17.29	1822K417	31.05
7″	16⅝″ × 8″ × 2½″	17385K78	24.25	1822K418	43.42
8″	18½″ × 9⅝″ × 4″	17385K79	29.65	1822K419	57.37
10″	22¼″ × 11⅜″ × 3¾″	17385K82	49.16	1822K422	91.17
12″	26½″ × 13¼″ × 3⅝″	17385K83	57.56	1822K424	109.67
Half Gates					
3″	6″ × 4½″ × 2¼″	1789K1	16.36	1822K212	35.20
3½″	6⁵⁄₁₆″ × 4⅝″ × 2⁹⁄₁₆″	1789K23	25.72		
4″	7⅛″ × 5⅝″ × 2⅜″	1789K2	18.96	1822K213	39.55
4½″	7¾″ × 5¾″ × 2⁹⁄₁₆″	1789K24	30.32		

For Duct Dia.	Ht.×Wd.×Dp.	W/Galvanized Steel Slide		W/Type 304 SS Slide	
Half Gates (Cont.)					
5″	9″ × 6¾″ × 2¼″	1789K3	$18.80	1822K214	$42.82
6″	10½″ × 7⅞″ × 2¾″	1789K4	25.84	1822K215	58.55
7″	12⅛″ × 8½″ × 2½″	1789K5	31.73	1822K216	66.65
8″	13″ × 10″ × 2¾″	1789K6	34.13	1822K217	72.20
9″	13⁷⁄₁₆″ × 10⁷⁄₁₆″ × 3⅜″	1789K7	49.74		
9″	15⅝″ × 11⅛″ × 2¾″			1822K218	103.25
10″	14⁷⁄₁₆″ × 11⅝″ × 3½″	1789K8	58.31		
10″	16½″ × 12″ × 3″			1822K219	119.71
12″	16½″ × 13¼″ × 3⅝″	1789K9	72.91		
12″	19″ × 14⅛″ × 3″			1822K222	171.16
14″	18¹¹⁄₁₆″ × 15⁹⁄₁₆″ × 4⅛″	1789K21	120.22		
14″	24″ × 16½″ × 4¼″			1822K223	244.53
16″	20¾″ × 17¹¹⁄₁₆″ × 4⅛″	1789K22	131.38		
16″	26¼″ × 18½″ × 4¼″			1822K224	327.67

Insulated Chimney Vents

Double-walled with 1″ of tightly packed insulation, these chimney vent components provide excellent heat and corrosion resistance. To join components, simply twist ends together and secure with the included locking band. Use with gas- and oil-fired equipment such as steam and hot water boilers. Maximum temperature is 1000° F. UL listed.

Pipe, tees, and ***rain caps*** are 28-ga. Type 304 stainless steel. Tees have a removable cap.

Dia.	18″ Long Pipe		36″ Long Pipe		Tees Lg.			Rain Caps	
6″	1716K16	$81.03	1716K136	$152.89	11½″	1716K26	$231.33	1716K46	$88.41
8″	1716K17	116.89	1716K137	220.54	13⅜″	1716K27	339.23	1716K47	131.42
10″	1716K18	203.93	1716K138	384.78	16¾″	1716K28	482.57	1716K48	244.67
12″	1716K19	240.14	1716K139	453.09	18¾″	1716K29	615.35	1716K49	370.11

Pipe adapters connect single-wall flue pipes to insulated pipes. They're 28-ga. Type 304 stainless steel. 6″ and 8″ dia. have a black finish. ***Ceiling supports*** are 27-ga. galvanized steel with a Type 304 stainless steel adapter. 6″ and 8″ dia. have a black finish. ***Wall bands*** are Type 304 stainless steel and stabilize the chimney along the wall (chimneys should be supported every 8 ft.).

For Pipe Dia.	Pipe Adapters		Ceiling Supports		Wall Bands	
6″	1716K56	$32.85	1716K66	$97.27	1716K76	$31.07
8″	1716K57	44.59	1716K67	117.46	1716K77	40.62
10″	1716K58	53.96	1716K68	238.71	1716K78	49.74
12″	1716K59	102.21			1716K79	63.39

Roof Flashing

Use on roofs with a pitch up to 6/12 to cover where the chimney penetrates the roof. All include a storm collar and are made of 28-ga. steel with a zinc and aluminum alloy coating.

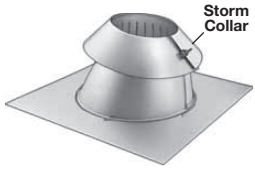

Dia.	Roof Flashing		Repl. Storm Collars	
6″	1716K711	$63.39	1716K96	$19.63
8″	1716K8	81.23	1716K97	22.29
10″	1716K9	102.72	1716K98	28.68
12″	1716K6	138.57	1716K99	47.77

Vent Caps

Reduce downdrafts and clogging in your exhaust applications.

Chimney Caps

Round

Square Steel

Round caps are UL listed.

Square and ***rectangular caps*** have 1⅝″×¾″ expanded mesh for spark protection. *Steel* have a black powder-coated finish. *Type 304 stainless steel* have excellent corrosion resistance.

For Size	Material		
Round			
2⅞″ to 5″ Dia.	27-ga. Aluminum	1803K11	$38.82
4⅞″ to 7″ Dia.	27-ga. Aluminum	1803K13	51.11
6⅞″ to 9″ Dia.	27-ga. Aluminum	1803K15	70.89
8⅞″ to 11″ Dia.	27-ga. Aluminum	1803K17	104.53
11⅞″ to 14½″ Dia.	27-ga. Aluminum	1803K19	163.62
Square			
7½″× 7½″ to 9½″× 9½″	22-ga. Steel	1826K31	67.18
11½″×11½″ to 13½″×13½″	22-ga. Steel	1826K37	80.71
11½″×11½″ to 13½″×13½″	22-ga. Type 304 SS	1826K57	110.54
Rectangular			
7½″×11½″ to 9½″×13½″	22-ga. Steel	1826K33	68.87

Roof and Wall Caps

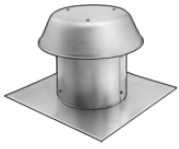
Flat Roof

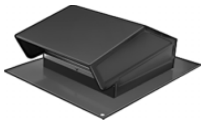
Sloped Roof

Wall

Flat roof cap is 23-ga. aluminum.

Sloped roof cap is 24-ga. steel with a black-epoxy finish and has a built-in bird screen and backdraft damper.

Wall cap is 24-ga. steel with a black-epoxy finish and has a built-in bird screen, backdraft damper, and four 3⁄16″ dia. mounting holes (fasteners not included).

	For Duct Size	Lg.×Wd.×Ht.		
Flat Roof	8″ Dia.	15″ ×15″ ×9⅞″	6904K22	$50.26
Sloped Roof	3¼″×10″▲	18¾″×14¼″×6⅝″	6904K34	27.73
Wall	3¼″×10″	9¼″×12¾″×5⅝″	6904K36	18.30

▲ Also fits up to 8″ dia. duct.

Inline Flue-Gas Exhausters

Mount exhausters directly to your duct to start air flow, increasing furnace efficiency. They're made of aluminized steel and have a single-phase open motor that operates on 115 VAC, 60 Hz. Maximum flue gas temperature at exhauster inlet is 575° F. Mounting hardware is included.

Note: Cannot be used for sidewall venting applications.

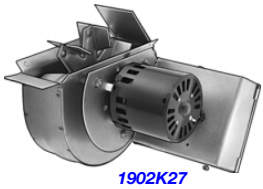
1902K27

1902K11 and ***K14*** have three 6″ wire leads for hardwiring.
1902K27 has screw terminals.

Optional safety switch (sold separately) prevents combustion in case of exhauster failure. It won't allow the burner to fire unless draft is adequate. Switch is zinc-plated steel and includes mounting hardware.

Vent Dia.	Motor Amps	Motor hp	Motor rpm	Cutout Required		
3″ to 6″	0.43	1⁄70	1,550	7⅝″×2⅝″	1902K11	$118.29
5″ to 8″	0.96	1⁄20	1,550	8⅝″×3⅛″	1902K14	162.83
8″ to 12″	5.40	¼	1,725	12¾″×4″	1902K27	405.13
Optional Safety Switch					1902K51	70.93

Sidewall Furnace Venters

Vent through a sidewall rather than a chimney. Just mount and wire one of these venters to your oil- or natural gas-powered 24/115 VAC furnace. A thermostat signal starts the venter and a safety circuit ensures proper draft prior to operation. Maximum flue gas temperature is 600° F.

Note: For a complete system you will also need a vent hood (sold separately).

Venters are made of aluminized steel and have a single-phase, open dripproof, 3,000 rpm motor. They have screw terminal connections and operate on 24/115 VAC, 60 Hz. 3972K4 is 1⁄8 hp. 3972K7 is 5⁄16 hp.

Vent hoods are made of aluminum and include mounting hardware.

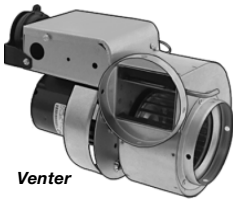
Venter

Vent Hood

Furnace Btu/Hr.	Vent Dia.	Amps	Venters		Vent Hoods	
150,000-300,000	4″ to 6″	1.76	3972K4	$302.40	3972K13	$115.63
300,000-600,000	6″ to 8″	2.01	3972K7	430.89	3972K18	126.60

Draft Controls

Maintain consistent airflow by regulating drafts in your heating system. Controls are made of cold-rolled steel.

Controls ***with single-acting damper*** open inward to regulate drafts. Controls ***with double-acting damper*** open both inward and outward to relieve positive (above atmospheric) pressures. Use with gas-fired furnaces, boilers, and conversion burners. Controls ***with single/double-acting damper*** can be set to open inward or outward.

For Dia.	Usage		
With Single-Acting Damper			
5″, 6″ and 7″	Oil, Coal	1782K22	$64.81
7″, 8″ and 9″	Oil, Coal	1782K24	95.71
With Double-Acting Damper			
5″ and 6″	Gas Only	1782K18	75.91
7″ and 8″	Gas Only	1782K12	104.93
With Single/Double-Acting Damper			
9″ and 10″	Gas, Oil, Coal	1782K13	166.53
11″ and 12″	Gas, Oil, Coal	1782K14	217.37

Type B Gas Vents

Use with gas-fired appliances such as water heaters and furnaces. Maximum temperature is 550° F. UL listed.

Pipe, tees, and ***elbows*** have a corrosion-resistant aluminum inner wall for rapid warm-up and a 28-ga. galvanized steel outer wall for durability. One end is slightly flared to allow connection with another component. ***Elbows*** are adjustable to straight.

Rain caps have aluminum inner and outer walls. 4″ to 6″ dia. have a 26-ga. outer wall; 7″ and 8″ dia. have a 22-ga. outer wall.

Roof flashing requires a ***storm collar*** (sold separately) and is for use on roofs with a pitch up to 6/12. Flashing and collars are made of single-layer 28-ga. galvanized steel.

4″-6″

Dia.	18″ Lg. Pipe		Tees		45° Elbows		60° Elbows		Rain Caps		Roof Flashing		Storm Collars	
4″	2117K12	$14.66	2117K32	$31.64	—	—	2117K27	$15.47	2117K42	$13.38	2117K52	$11.23	2117K62	$2.85
5″	2117K13	17.14	2117K33	42.20	—	—	2117K28	18.04	2117K43	19.24	2117K53	18.51	2117K63	7.42
6″	2117K14	19.97	2117K34	46.70	—	—	2117K29	22.02	2117K44	24.60	2117K54	25.32	2117K64	6.62
7″	2117K15	31.73	2117K35	61.42	2117K25	$32.61	—	—	2117K45	33.40	2117K55	31.77	2117K65	8.47
8″	2117K16	33.95	2117K36	66.41	2117K26	39.09	—	—	2117K46	44.47	2117K56	34.80	2117K66	9.29

Drop-Ceiling Diffusers

Fit these diffusers into the 2 ft.×2 ft. grid of your drop ceiling. They're made of stamped steel with a white finish.

Diffusers

Perforated diffusers are most often used in retrofit applications.

Grid diffusers disperse a thin layer of cool air along the ceiling surface. As warm air rises, it displaces the cool air, which descends to cool your area.

Diffusers *with fiberglass back panel* have R6 insulation. Diffusers *with steel back panel* have R6 fiberglass insulation with a foil vapor blanket for moisture protection.

Connect diffusers to round duct with a snap-on collar (sold separately). Diffusers fit all collar sizes offered below.

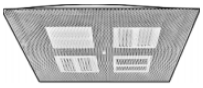

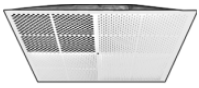

For Duct Dia.	Perforated Diffusers		Grid Diffusers	
With Fiberglass Back Panel				
6″ to 12″	1837K21	$30.37	1837K45	$40.01
With Steel Back Panel				
6″ to 12″	1837K23	68.47	1837K46	65.63
Replacement Diffuser Faces				
Perforated	1837K22	$27.33		
Grid	1837K47	29.08		

Snap-on collars are galvanized steel and attach to diffuser with the included push-in fasteners.

Collar for 6″ Dia. Duct	18525K44	$6.83
Collar for 8″ Dia. Duct	18525K45	6.83
Collar for 10″ Dia. Duct	18525K46	6.99
Collar for 12″ Dia. Duct	18525K47	7.15

Ready-to-Connect Diffusers

Easily connect these diffusers to round duct using the included 2 1/16″ high collar. Back panel is steel.

Insulated diffusers have R1 fiberglass insulation with a foil vapor blanket for moisture protection.

For Duct Dia.	Diffusers		Insulated Diffusers	
6″	17905K38	$56.45	17905K54	$75.26
8″	17905K39	56.45	17905K55	75.26
10″	17905K41	56.45	17905K56	75.26
12″	17905K42	57.88	17905K57	77.59
14″	17905K43	58.70		

Dampers

For use with diffusers and ready-to-connect diffusers. Mount to a collar and control airflow with the removable T-bar handle. Made of galvanized steel.

Damper for 6″ Dia. Duct	18525K81	$11.30
Damper for 8″ Dia. Duct	18525K82	11.53
Damper for 10″ Dia. Duct	18525K83	12.55
Damper for 12″ Dia. Duct	18525K84	13.98

Fire-Rated Drop-Ceiling Diffusers

Fit these diffusers into your drop ceiling to prevent the spread of smoke. In case of fire, the fusible link melts at 165°F, closing the damper. Diffusers are white steel and fit 2 ft.×2 ft. openings. UL classified for up to a 3-hour fire rating.

For Duct Dia.	Perforated		Louvered	
6″	1572K5	$99.74	1572K1	$114.04
8″	1572K6	104.14	1572K2	117.55
10″	1572K7	107.86	1572K3	124.56
12″	1572K8	113.44	1572K4	128.07

Ceiling Diffusers

Diffuser

Collar

Damper

Diffusers are made of stamped steel with a white finish and include mounting fasteners.

Collars allow you to connect the diffuser to round duct. They have an open-ring design for continuous airflow and are made of galvanized steel.

Dampers provide open-to-close adjustment of airflow. They have a T-bar handle and an installation collar. Made of galvanized steel.

For Duct Dia.	Diffusers O'all Dia.			Collar		Damper	
6″	10″	1988K31	$7.89	1988K41	$5.77	1988K35	$12.22
8″	12″	1988K32	8.92	1988K42	6.73	1988K36	12.47
10″	14″	1988K33	11.06	1988K43	8.51	1988K37	15.31
12″	16″	1988K29	14.54	1988K44	10.13	1988K39	19.63
14″	18″	1988K34	18.29	1988K46	11.46	1988K45	23.44

Ceiling Diffusers with Damper

A

B

Save on assembly time—diffusers come with collar and damper already in place. Install easily with the included mounting clips. Collar adjusts to fit 6″, 7″, and 8″ duct. They're made of white ABS plastic for impact, abrasion, and chemical resistance and have a molded one-piece base for an airtight fit.

	Overall Size		
A	11 1/4″ Sq.	2559K5	$27.53
B	12 1/8″ Dia.	2559K9	27.53

Wall/Ceiling Registers

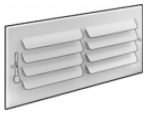

One-Way Airflow

Three-Way Airflow

Four-Way Airflow

Control airflow using the damper on these registers. All are made of stamped steel with a white finish. Overall size is 1 3/8″ greater than the duct size. Mounting fasteners are included.

For Duct Size, Wd.×Ht.		
One-Way Airflow		
8″× 4″	18425K81	$8.44
10″× 4″	18425K83	9.20
12″× 6″	18425K87	10.36
14″× 6″	18425K89	11.33
Three-Way Airflow		
10″× 4″	18425K65	7.98
10″× 6″	18425K67	8.40
12″× 6″	18425K69	9.40
Four-Way Airflow		
10″×10″	18425K57	15.25
12″×12″	18425K59	19.71
14″×14″	18425K72	27.12
16″×16″	18425K74	32.79

Wall/Ceiling Registers with Movable Louvers

Adjust louvers to direct airflow. These white stamped steel registers have a damper and include mounting fasteners. Overall size is 1 3/8″ larger than duct size.

For Duct Size, Wd.×Ht.		
8″×6″	18395K62	$22.65
10″×6″	18395K64	24.07
12″×4″	18395K52	24.07
12″×6″	18395K66	26.18
12″×8″	18395K68	31.54
14″×6″	18395K72	30.29
14″×8″	18395K74	33.73
16″×4″	18395K76	32.19
16″×6″	18395K83	32.73
16″×8″	18395K78	37.76

Floor Registers

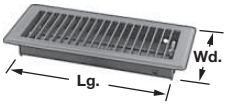

These registers include a damper for airflow adjustment and are made of stamped steel. Overall size is 1⅜″ greater than the duct size.

To Order: Please specify finish color: brown or white.

For Duct Size, Lg.×Wd.		
10″×2¼″	2004K31	$7.09
10″×4″	2004K34	6.49
10″×6″	2004K37	11.70
12″×2¼″	2004K32	7.46
12″×4″	2004K35	8.51
12″×6″	2004K38	$12.55
14″×2¼″	2004K33	8.48
14″×4″	2004K36	9.73
14″×6″	2004K39	13.16

Return Grilles

Stamped Steel

Standard grilles have a white finish and include mounting fasteners. Overall size is 1¾″ greater than the duct size.

Filtering grilles have a white finish. They hold a 1″ thick filter (not included; see pages 675-678) and have eight ⅜″×⅛″ mounting slots (fasteners not included). Overall size is 2⅜″ greater than the duct size.

For Duct Size, Wd.×Ht.		
Standard		
12″× 6″	2009K1	$4.08
12″× 8″	2009K2	5.23
12″×10″	2009K3	7.70
12″×12″	2009K4	7.96
14″× 6″	2009K5	4.41
14″× 8″	2009K6	5.36
14″×10″	2009K7	8.77
14″×12″	2009K8	9.47
14″×14″	2009K18	10.45
14″×24″	2009K31	21.64
14″×30″	2009K32	27.24
16″×16″	2009K36	16.13
16″×20″	2009K37	19.77
20″×16″	2009K23	20.24
20″×20″	2009K19	24.98
24″×14″	2009K43	21.98
24″×24″	2009K87	33.28

For Duct Size, Wd.×Ht.		
Filtering		
12″×24″	20105K26	$29.60
14″×14″	20105K32	23.80
14″×20″	20105K34	29.11
14″×24″	20105K35	31.93
16″×16″	20105K42	29.49
16″×20″	20105K43	31.17
16″×25″	20105K45	41.59
20″×14″	20105K52	29.55
20″×16″	20105K53	31.98
25″×16″	20105K62	41.96
25″×20″	20105K63	41.71
30″×14″	20105K72	42.33

Aluminum

Grilles have a grid pattern for increased airflow and durability. Finish color is white. Overall size is 1¾″ greater than the duct size. Mounting fasteners are included.

For Duct Size, Wd.×Ht.		
6″× 6″	1847K11	$17.19
8″× 8″	1847K13	17.83
10″×10″	1847K16	20.58
12″×12″	1847K19	23.25

Drop-Ceiling Filtering Return Grilles

Perforated Face

Louvered Face

Keep dust and dirt from returning to your system by using a 20″×20″×1″ filter inside these grilles. Filter not included; see pages 675-678. Grilles fit into the 2 ft.×2 ft. grid of your drop ceiling and are made of stamped steel with a white finish.

Perforated Face	2532K5	$44.48
Louvered Face	2532K7	44.43

Airflow Switch

Detect airflow in your duct with this adjustable switch. The paddle extends into duct and actuates the switch when airflow reaches the setpoint. Switch is SPDT (single pole, double throw) and has screw terminal connections. Temperature range is 32° to 104°F. UL listed and CSA certified.

Enclosure is steel, rated NEMA 1 for indoor use, and has a ⅞″ hole for ½″ conduit and a 1³⁄₃₂″ knockout for ¾″ conduit. Paddle is 3⅛″ Wd.×6⅞″ Ht. and made of Type 301 stainless steel. It can be trimmed to fit duct size. Paddle should be mounted vertically.

Setpoint Range, fpm	Amps @ 120 VAC	Amps @ 240 VAC		
350-500	16	8	1783K13	$139.47

High-Sensitivity Airflow Switches

Even small pressure changes between two points in your system activate these switches. They're SPDT (single pole, double throw) with screw terminal connections and have a spring-loaded Buna-N diaphragm pressure-sensing element. Enclosure is made of carbon steel and plastic and rated NEMA 1 for indoor use. Temperature range is –40° to +165°F. UL listed and CSA certified.

Pressure connection is ⅛″ NPT female for low-pressure side and ⅛″ NPT female inside × ½″ NPSM (National Pipe Straight Mechanical) outside for high-pressure side. Maximum pressure is 1 psi.

Setpoint Range, inches of H_2O	Accuracy, inches of H_2O	Amps @ 120 VAC	Amps @ 240 VAC		
0.05 to 5	±0.025	5.8	2.9	1795K1	$90.32
0.05 to 5	±0.04	9.8	4.9	1795K6	90.32

Damper Actuators

Position and control airflow dampers with these actuators. They're adjustable for clockwise and counterclockwise rotation and setpoint from 0° to 90° (unless noted). No linkages required—they directly operate the damper shaft. All operate on 24 VAC, 50/60 Hz or 24 VDC except 1742K16, K17, and K24, which operate on VAC only. UL listed.

Incremental input signal activates when the system varies from the setpoint by a certain amount. Actuator moves only until the system requirement is met.

Proportional input signal provides improved control because the actuator is constantly being positioned in response to system requirements. Responds to a 0 to 10 VDC or 0 to 20 mA control signal.

Actuators ***without spring return*** have a plastic enclosure rated NEMA 2 for indoor use except 1742K16, which has an enclosure rated NEMA 1 for indoor use. CSA certified.

Actuators ***with spring return*** can be set to return the damper from either direction and have a manual crank for precise adjustment. All have an aluminum enclosure rated NEMA 2 for indoor use.

Torque, in.-lbs.	NEMA Rating	Amps▲	Electrical Connection	Maximum Damper Shaft Round	Maximum Damper Shaft Square	Ht.×Wd.×Dp.	*Incremental*		*Proportional*	
Without Spring Return										
35	1	0.08	Screw Terminal	½″	⅜″	5.95″ ×4.2″ ×2.15″	1742K16★	$80.44	—	—
53	2	0.1	Spade Terminal	½″	⅜″	5.9″ ×4.2″ ×2.64″	1742K17★	84.77	1742K24★	$107.24
70	2	0.27	Screw Terminal	¾″	⅝″	7.09″ ×3.94″ ×2.54″	1742K61	123.16	1742K69	147.19
140	2	0.27	Screw Terminal	¾″	⅝″	7.09″ ×3.94″ ×2.54″	1742K63	154.24	1742K71	187.75
210	2	0.31	Spade Terminal	¾″	⅝″	7.09″ ×3.94″ ×2.54″	1742K65	220.91	1742K73	252.00
With Spring Return										
177	2	0.32	Wire Leads	½″, ¾″	⅜″, ½″	10.31″ ×4″ ×3.18″	1742K81★	277.96	1742K82★	307.15

▲ At 24 VAC. ★ Adjustable from 30° to 90° rotation.

Low-Voltage Thermostats

Control your low-voltage (24 VAC) heating and cooling systems with these single-stage thermostats. They have screw terminal connections and are rated for 1 amp. All are mercury free and include mounting fasteners.

Rectangular thermostats can be installed horizontally and vertically. Color is off-white.

Round thermostats are white.

For System Type	VAC	Temp. Range, °F	Ht. × Wd. × Dp.		
Rectangular					
Heating (Electric)	Millivolt to 30	50° to 90°	3¼″ × 5″ × 1⅜″	**17225K51**	$14.89
A/C	20-30	50° to 90°	3¼″ × 5″ × 1⅜″	**17225K52**	15.68
Heating (Gas, Oil, Electric) and A/C	20-30	50° to 90°	3¼″ × 5″ × 1⅜″	**17225K57**	18.07
Round					
Heating (Gas, Oil)	20-30	40° to 90°	3 11/16″ Dia. × 1¾″ Dp.	**1893K44**	29.72
Heating (Gas, Oil, Electric) and A/C	20-30	40° to 90°	3 11/16″ Dia. × 1¾″ Dp.	**1893K45**	46.22

Low-Voltage Programmable Thermostats

A

B

Set an individual program for weekdays, Saturday, and Sunday with up to four temperature changes per day. These thermostats control low-voltage (24 VAC) heating and cooling systems. They're rated for 1.5 amps and have battery back up (two AA included) to retain your program even if the power fails. Display is a backlit LCD. All are mercury free and include mounting fasteners. Color is white.

Style B have a touch-screen display. You can also set one program for each day of the week.

Single-stage thermostat model 1821K17 can support one remote sensor (sold separately).

Multistage thermostat can control up to three heating stages and two cooling stages and support one remote sensor (sold separately).

Optional remote sensor for Style B takes temperature readings up to 300 ft. from the thermostat.

For System Type	VAC	Temp. Range, °F	Ht. × Wd. × Dp.		
Single Stage					
A Heating (Gas, Oil, Electric, Hydronic, Heat Pump) and A/C	Millivolt to 30	45° to 90°	3¾″ × 4¾″ × 1½″	**1821K34**	$57.20
B Heating (Gas, Oil, Electric, Hydronic, Heat Pump) and A/C	Millivolt to 30	45° to 99°	4⅝″ × 5⅞″ × 1¼″	**1821K17**	139.80
Multistage					
B Heating (Gas, Oil, Electric, Hydronic, Heat Pump) and A/C	Millivolt to 30	45° to 99°	4⅝″ × 5⅞″ × 1¼″	**1821K19**	158.47
Optional Remote Sensor for Style B			2⅛″ × 3½″ × ¾″	**1821K23**	32.75
Replacement AA Battery				**65605T72**	.68

Line-Voltage Thermostats

C

E

G

J

L

D

F

H

K

All are mercury free and UL listed except Style K, which are ETL listed. Only Style C includes mounting fasteners.

NEMA 1 enclosures are for indoor use. *NEMA 4X* are for indoor/outdoor use and exposure to splashing liquids, corrosive agents, and dusty environments. *NEMA 7* meet Class I, Group D. *NEMA 9* meet Class II, Groups E, F, and G. Both NEMA 7 and 9 are for indoor hazardous duty.

Style D has a 6-ft. long cord with a piggyback plug for connection to an outlet and your heater. Includes a hanging bracket.

Styles E and ***F*** have four ¾″ × ⅛″ mounting slots.

Style G has an easy-to-read LCD, a three-button keypad for setup and adjustment, and four ⅜″ keyholes for DIN rail mounting.

Styles H and ***J*** are ideal for sensing temperature of liquids, such as in hydronic heating systems. ***Style J*** has four ¼″ × ⅛″ mounting slots.

Style K have four 5/32″ dia. mounting holes.

Style L has two ⅜″ dia. mounting holes.

VAC	Amps	Temp. Range, °F	Switch Type ♦	Sensor	Ht. × Wd. × Dp.	Enclosure Rating	Wiring Connection		
Heating Only									
C 120 to 277	22	+50° to +90°	SPST	Built In	4½″ × 2¾″ × 1½″	NEMA 1	6″ Wire Leads	**17395K93**	$17.64
C 125 to 277	22	+50° to +90°	DPST	Built In	4½″ × 2¾″ × 2″	NEMA 1	Screw Terminal	**17395K95**	22.61
Heating Only, Plug In									
D 110 to 125	13	+40° to +90°	SPST	Built In	5½″ × 2⅛″ × 2 3/16″	NEMA 1	Three-Prong Plug	**1940K8**	70.00
Heating or Cooling									
E 120 to 277	22	–30° to +100°	SPDT	8-ft. Remote	5″ × 2¼″ × 1 13/16″	NEMA 1	Screw Terminal	**1846K26**	59.35
F 120 to 277	22	+40° to +110°	SPDT	2-ft. Remote	5½″ × 2⅛″ × 2 3/16″	NEMA 1	6″ Wire Leads	**1846K29**	51.80
Heating or Cooling, DIN Rail Mount									
G 120 to 240	15	–30° to +212°	SPDT	6½-ft. Remote	5″ × 2⅜″ × 2⅜″	NEMA 1	Screw Terminal	**1760K77**	67.27
Heating or Cooling with 1/2″ NPT Thermowell									
H 120 to 240	10	+100° to +240°	SPDT	Built In	4½″ × 2¼″ × 1⅞″	NEMA 1	Screw Terminal	**1962K6**	110.66
J 120 to 240	10	+100° to +240°	SPDT	8-ft. Remote	4½″ × 2¼″ × 1⅞″	NEMA 1	Screw Terminal	**1962K7**	115.46
Heating or Cooling for Washdown Applications									
K 120 to 277	22	+40° to +100°	SPDT	Built In	6⅞″ × 3⅛″ × 4″	NEMA 4X	6″ Wire Leads	**9705K54**	114.50
K 120 to 277	22	+40° to +100°	DPDT	Built In	6⅞″ × 3⅛″ × 4″	NEMA 4X	6″ Wire Leads	**9705K56**	118.50
Heating or Cooling for Hazardous Locations									
L 120 to 277	22	+20° to +80°	SPDT	6-ft. Remote	5⅞″ × 3″ × 3¼″	NEMA 7, 9	Screw Terminal	**1877K24**	419.56

♦ SPST = single pole, single throw; DPST = double pole, single throw; SPDT = single pole, double throw; DPDT = double pole, double throw.

Low-Voltage/Line-Voltage Thermostats

A

B

C

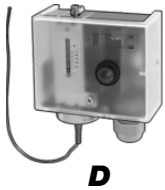
D

In addition to line-voltage applications, these versatile thermostats also support low-voltage (24 VAC) systems. They're mercury free and have screw terminal connections and built-in sensors. All except Style C include mounting fasteners.

NEMA 1 enclosures are for indoor use. *NEMA 4X* is for indoor/outdoor use and exposure to splashing liquids, corrosive agents, and dusty environments. *NEMA 7* meet Class I, Groups C and D. *NEMA 9* meet Class II, Groups E, F, and G. Both are for indoor hazardous duty.

Style B can be set to activate 3½° to 18° F after the first stage.

Style C have two ¼″ dia. mounting holes.

Style D protect equipment either by shutting it down or, when the temperature gets too low, closing a damper to stop the flow of cold air. For added safety, thermostats must be reset manually. They also include a remote sensor with 10-ft. cord that can be threaded through equipment to sense temperatures at multiple points.

VAC	Amps	Temp. Range, °F	Switch Type●	Ht. × Wd. × Dp.	Enclosure Rating	UL Listed		
Heating or Cooling								
A 24 to 277	22	40° to 90°	SPDT	4¾″ × 3″ × 1⅜″	———	Yes	1856K12	$129.19
Heating or Cooling Multistage Washdown								
B 24 to 250	15	32° to 140°	Two SPDT	6″ × 2¾″ × 2⅞″	NEMA 4X	No	9207K14	154.00
Heating or Cooling for Hazardous Locations								
C 24 to 277	22	50° to 90°	SPDT	5⅝″ × 6⅜″ × 4½″	NEMA 7, 9	Yes	1877K23	219.15
C 24 to 277	22	50° to 90°	DPDT	5⅝″ × 6⅜″ × 4½″	NEMA 7, 9	Yes	1877K25	218.00
Freeze Protection								
D 24 to 250	15	14° to 54°	SPDT	4⅛″ × 3⅜″ × 2⅛″	NEMA 1	No	9242K25	135.47
D 24 to 250	15	14° to 54°	Two SPDT■	4⅛″ × 3⅜″ × 2⅛″	NEMA 1	No	9242K27	171.91

● SPDT = single pole, double throw; DPDT = double pole, double throw. ■ Both switches activate at the same temperature.

Modular DIN Rail-Mount Thermostats

Build a multistage thermostat to control multiple devices. Thermostats and additional stages plug together and can be DIN rail or surface mounted. Units are 5″ Ht. × 2⅜″ Wd. × 2⅜″ Dp. and have four ⅛″ wide mounting slots (fasteners not included). Operate on 24 VAC, 50/60 Hz and control 120-240 VAC loads. UL listed.

Thermostats can be used for both heating and cooling and have a built-in sensor with two 9¾″ leads. They're rated for 10 amps and have an SPDT (single pole, double throw) switch. They have screw terminal connections, a ⅞″ dia. opening for conduit, and can accommodate up to nine additional stages.

Additional stage has a SPDT (single pole, double throw) switch and is rated for 10 amps.

Power supply produces 24 VDC power from 120/240 VAC input to run a thermostat and additional stages. It has screw terminals and a ⅞″ dia. opening for conduit.

Also Available: Additional accessories and replacement parts. Please ask for 4733K88.

	Temp. Range, °F		
Thermostat	−30° to +130°	4733K71	$123.94
Thermostat	+90° to +250°	4733K62	123.94
Additional Stage		4733K73	79.87
Power Supply		4733K91	72.16

Air-Powered Thermostats

Powered by compressed air, these thermostats do the job when electricity is not practical or available. They're also known as two-pipe thermostats. The air supply feeds directly to the thermostat and then through the relay, which in turn delivers air to your device. Max. pressure is 30 psi. They use 15.6 scim (standard cubic inches/minute) @ 20 psi. Air connections have internal filters. Calibration point is set at 9 psi.

Thermostats have a built-in sensor and include a universal fitting kit that consists of a cover, blank cover conversion, mounting plate, dial stops, screws, tubing reducers, tubing, and mounting hardware.

Direct-Action Thermostat— As the temperature goes up, the pressure in the system goes up.

Reverse-Action Thermostat— As the temperature goes up, the pressure in the system goes down.

Test kit lets you conveniently check thermostats without the use of an air compressor. Kit includes a pressure gauge, hand pump, ⅛″ NPT male and female pipe fittings, and a carrying case.

Calibration kit enables quick adjustment of air-powered thermostats. Kit includes a pressure gauge with ⅛″ NPT male connection, a 3/16″ NPT male adapter, adjustment wrench, Allen wrench, and screwdriver. Furnished in a plastic case.

	Temp. Range, °F		
Direct-Action Thermostat	55° to 85°	17245K73	$189.55
Reverse-Action Thermostat	55° to 85°	17245K74	185.33
Test Kit		4012K11	81.38
Calibration Kit		17245K75	166.86
Replacement Squeeze Bulb for Test Kit		4012K34	28.04

Thermostat Guards

Deter tampering and protect thermostats from damage. All guards mount horizontally and vertically and are vented and keyed alike (one key included). Guards with a ring base mount without removing the thermostat from the wall.

Thermoplastic guards include both a solid base and a ring base except 1852K1, which only has a solid base.

To Order: Please specify clear or opaque, unless noted. Clear guards allow you to see the temperature settings through the guard. Opaque guards are beige except for 1852K2, which is off-white.

Steel guards 1852K27, K22, K43, and K45 have a hinged cover.

Thermoplastic

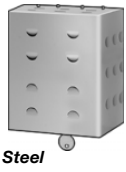
Steel

Thermoplastic

Max. Thermostat Size, Ht. × Wd. × Dp.		
3⅞″ × 3½″ × 2½″	1852K1	$11.82
4⅛″ × 7 1/16″ × 2¼″	1852K2	16.69
5¼″ × 4⅝″ × 3¼″	1852K3	15.16
6⅜″ × 3½″ × 3¼″	1852K4	13.20
8⅛″ × 4⅝″ × 3⅝″	1852K19▲	16.51
8⅛″ × 4⅝″ × 3⅝″	1852K5	14.54

▲ Come in clear with a bronze tint only.

Steel with Solid Base

Max. Thermostat Size, Ht. × Wd. × Dp.		
3⅞″ × 3½″ × 2½″	1852K23	$22.52
5¼″ × 4⅝″ × 3″	1852K31	24.25
6¼″ × 4¾″ × 3″	1852K27	20.23
6⅜″ × 3½″ × 3″	1852K37	24.25
7¼″ × 5⅜″ × 3½″	1852K28	20.23
9⅜″ × 6¾″ × 3″	1852K43	26.00

Steel with Ring Base

Max. Thermostat Size, Ht. × Wd. × Dp.		
5¼″ × 4⅝″ × 3¼″	1852K33	$23.10
6″ × 3 13/16″ × 3⅛″	1852K22	19.81
6⅜″ × 3½″ × 3¼″	1852K39	21.56
6¾″ × 4¼″ × 3 9/16″	1852K21	19.26
8¼″ × 5½″ × 3″	1852K45	26.00

Extra Key 1852K24 $1.50

Humidity Controls

2123K14

The single-knob control allows easy adjustment of humidity equipment. Mounting hardware is included. 2123K18 has spade terminal connections and mounts to a wall or duct. 2123K14 has screw terminal connections and fits standard outlet boxes.

VAC	Amps	Relative Humidity	Switch Type▲	Ht. × Wd. × Dp.	Color		
For Humidifiers Only							
24 to 30	2	10 to 60%	SPST	3 3/16″ × 5″ × 1 3/4″	White	2123K18	$24.11
For Humidifiers and Dehumidifiers							
120, 208, 240	6, 3.5, 3	0 to 70%	SPDT	4 3/4″ × 3″ × 3″	Beige	2123K14	117.53

▲SPST = single pole, single throw. SPDT = single pole, double throw.

Low-Velocity Airflow Meter

Measure airflow in spray booths and exhaust hoods. This swinging vane-style meter has a range of 25-400 fpm. It's 3 7/8″ Ht. × 3 7/8″ Wd. × 1 5/16″ Dp. and includes a spare vane and steel mounting bracket with ten 3/16″ dia. holes (fasteners not included).

			Each
Air Flow Meter	4075K61		$33.22
Repl. Vanes (2/Pkg.)	4075K74	Pkg.	$13.85

Remote-Reading Digital Airflow/Temperature Meters

A

B

Access hard-to-reach places in your ductwork with these meters. All have an RS-232 port and an LCD that simultaneously displays airflow and temperature. Airflow can be displayed in mph, knots, m/sec., and km/hr. 4120K35 and *K37* also measure air volume (cfm).

(A) Meter with Fan Probe— Comes with a 39″ cable. Operates on one 9-volt battery (included). Size is 7″ Ht. × 2 15/16″ Wd. × 1 5/16″ Dp.

(B) Meters with Telescoping Probe— 4120K54 has a 47″ long cable and 1/2″ dia. probe that extends to 37″ long. Operates on six AAA batteries (included). Overall size is 7″ Ht. × 2 13/16″ Wd. × 1 5/16″ Dp. 4120K37 has a 66″ long cable and a 1/2″ dia. probe that extends to 36″ long. Operates on four AA batteries (included). Overall size is 7 15/16″ Ht. × 3″ Wd. × 1 1/2″ Dp.

Data Software and Cable— Transfer data from the meter to your PC using Windows 95/98/NT/2000/XP. The cable has a 9-pin serial port connector. For a USB connection, you'll also need a *USB adapter cable* (sold separately).

Airflow, fpm	Air Volume, cfm	Temp. Range, °F		
(A) Meter with Fan Probe				
100 to 6,890	0 to 999,900	32° to 175°★	4120K35	$379.98
(B) Meters with Telescoping Probe				
40 to 3,940	———	32° to 122°●	4120K54	409.98
40 to 3,346	0 to 1,271,200	32° to 122°●	4120K37	489.98
Accessories				
Data Software and Cable			4120K65	76.35
USB Adapter Cable			4120K67	54.53
Vinyl Carrying Case			4120K66	21.81
Repl. 9-Volt Battery			71455K56	2.75
Repl. AAA Battery			65605T71	.79
Repl. AA Battery			65605T72	.68

★0° to 80° C. ●0° to 50° C.

Smoke Generators

Detect airflow and leaks in your duct system.

Candles— Light the wick for instant billowing gray-white smoke.

Burning Time	Smoke Volume	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
30 Seconds	4,000 cu. ft.	12	4093K14	$6.41	$5.85
1 Minute	8,000 cu. ft.	12	4093K13	7.21	6.58
3 Minutes	40,000 cu. ft.	12	4093K12	13.14	11.99

Pen— Produce a continuous trail of smoke—just expose about 3/8″ of the wick and light. Replace cap to extinguish until next use. Pen includes six wicks, which provide up to 360 individual 30-second tests.

			Each
Pen	4101T5		$54.42
Refill Wicks (6/Pkg.)	4101T7	Pkg.	$43.50

Powdered Smoke— Furnished in a 2-oz. bottle. Squeeze to produce a white cloud.

3880K31 ..... Each $5.58

Airflow/Static Pressure Meter

Dual airflow and static pressure scales indicate high and low ranges.

This easy-to-use meter includes a 14″ long tube, grille probes, an extra plastic float ball, an airflow calculator, and a carrying case.

Airflow, fpm	Static Pressure, inches of H_2O		
260 to 4,000	0.005 to 1.0	4020K71	$40.45

Compact Digital Airflow/Temperature Meters

Small enough for your pocket, these meters fit into duct openings that other meters can't access. Airflow measurement range is 100-5,500 fpm; meters also display in mph, knots, m/sec., km/hr. Measure temperatures 0° to 122° F (–18° to +50° C). The LCD displays airflow and one other measurement simultaneously. Other functions include hold and automatic shutoff. Operate on one lithium battery (included). Meters are 5 1/4″ Ht. × 2 3/4″ Wd. × 3/4″ Dp. and extend to 9″. Housing is water-resistant ABS plastic. Furnished with a lanyard.

Airflow/temperature meter reads airflow, temperature, and wind chill.

Airflow/temperature/humidity meter reads airflow, temperature, wind chill, relative humidity (10 to 95%), and dew point (32° to 122° F).

Airflow/Temperature Meter	1410K14	$111.85
Airflow/Temperature/Humidity Meter	1410K15	152.53
Vinyl Carrying Case	1410K18	11.10
Replacement Lithium Battery	7701K34	1.92

Digital Air Volume Meter

Simply hold the hood on this meter up to diffusers, registers, or grilles to measure air volume and balance airflow in your system. Meter also reads temperature, humidity, and other common HVAC measurements. It has a six-digit LCD, 18″ probe, and an RS-232 connector. Operates on four AA rechargeable NiCad batteries (included). Hood is 2 ft. × 2 ft. Other sizes sold separately.

Set of two hoods includes sizes 1 ft. × 4 ft. and 2 ft. × 4 ft. ***Set of four hoods*** includes sizes 1 ft. × 4 ft.; 1 ft. × 5 ft.; 2 ft. × 4 ft.; and 3 ft. × 3 ft.

Air Volume, cfm	Relative Humidity	Temp. Range, °F		
25 to 2,500	0 to 95%	–40° to +250°	38385K33	$3,778.48
Set of 2 Hoods			38385K45	607.59
Set of 4 Hoods			38385K46	1,215.19

Fog Generator

Use fog to detect airflow and leaks in your duct system. This generator warms up in five minutes and the fluid level is visible from outside the machine. Generator is 14.4″ Lg. × 8″ Wd. × 6″ Ht. and includes a remote control with a 30-ft. cord. Operates on 120 VAC, 60 Hz (10 amp draw) and has a 6-ft. cord with three-prong plug.

A well inside the machine holds 1 liter of fog fluid (sold separately), which provides one hour of service.

Fog Machine	38985K62	$533.08
Fog Fluid (1 liter)	38985K63	20.04
Fog Fluid (1 gallon)	38985K65	70.85

Air Conditioning Charging and Testing Hoses

Hoses are made of rubber. ***Style A*** have SAE 45° flared brass fittings on both ends. ***Style B*** have an SAE 45° flared brass fitting at one end and a 1/4″ SAE flared brass ball valve at the other for faster refrigerant recovery and a tighter seal. Hoses with 1/4″ fittings are UL recognized. **To Order:** For individual hoses, please specify color where necessary.

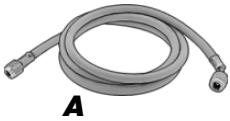
A

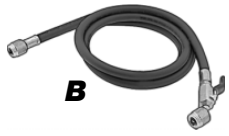
B

	SAE Flared Fitting Size	Hose Lg.	Pressure, psi Working	Pressure, psi Burst	Available Colors	Individual Hoses	Each	3-Color Hose Sets	Set
A	1/4″	36″	800	4,000	Blue, Red, Yellow	1874K3	$15.09	1874K49	$51.63
A	1/4″	60″	800	4,000	Blue, Red, Yellow	1874K5	19.06	1874K59	59.70
A	1/4″	72″	800	4,000	Blue, Red, Yellow	1874K7	21.40	1874K69	68.08
A	3/8″	36″	600	3,000	Black	1874K11	30.28	—	—
A	3/8″	72″	600	3,000	Black	1874K12	43.98	—	—
B	1/4″	72″	800	4,000	Blue, Red, Yellow	1874K26	37.04	1874K96	117.73

Accessories

1/4″ SAE Male × 1/4″ Quick-Disconnect Female Brass Coupling	1884K12	Each	$8.72
1/4″ SAE Male × 3/8″ Quick-Disconnect Female Brass Coupling	1884K14	Each	13.38

Air Conditioning Charging and Testing Manifolds

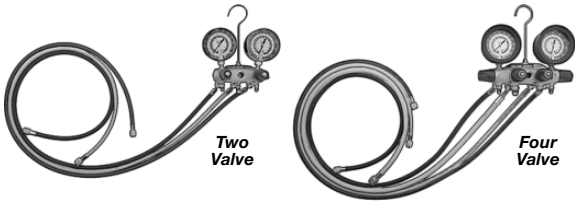

Check refrigerant pressure and monitor recharging with these manifolds. They have double O-ring piston valves and two 3 1/8″ dia. gauges (color-coded blue and red) with a polycarbonate lens, unless noted.

Two-valve and ***four-valve manifolds*** have SAE flared vacuum ports for speedy charging and evacuation, aluminum valve bodies, and a sight glass for inspecting refrigerant, unless noted. *Two-valve manifolds* have 1/4″ fittings. *Four-valve manifolds* have 3/8″ fittings and let you troubleshoot, evacuate, and charge a system without switching hoses.

Automotive two-valve manifold has brass valve bodies and hoses with 1/2″ Acme fittings. Ports have 1/4″ SAE flared fittings.

Optional rubber gauge cover set includes one blue and one red. Use with all manifolds except 1873K79 and K23.

Refrigerant Types	Qty.	Hose Lg.		Each
Two-Valve Manifolds				
R-12, R-22, and R-502	3	60″	1873K31	$153.40
R-134a, R-404A, and R-407C	3	60″	1873K32	153.40
R-410A	3	60″	1873K79★◆	113.38
Four-Valve Manifolds				
R-12, R-22, and R-502	4	60″	1873K34	222.92
R-134a, R-404A, and R-407C	4	60″	1873K35	222.92
Automotive Two-Valve Manifold				
R-134a	3	60″	1873K23◆	274.71
Replacement Gauges				
R-12, R-22, and R-502 (Blue)			1873K44	23.40
R-12, R-22, and R-502 (Red)			1873K43	23.40
R-134a, R-404A, and R-407C (Blue)			1873K46	23.40
R-134a, R-404A, and R-407C (Red)			1873K45	23.40
R-410A (Blue)			1873K83	16.85
R-410A (Red)			1873K82	16.85
Optional Rubber Gauge Cover Set			1873K81	Set $15.96

★ Valve bodies are brass; manifold does not include sight glass.
◆ Gauges are 2 1/2″ dia.

Condenser and Evaporator Fin-Straightening Tools

Easily select the right straightener—just match the fin spacing on your condenser and evaporator.

Long-handle comb kits include a handle and six interchangeable heads.

Double-Ended Comb

Long-Handle Comb Kit

Fins per Inch		
Double-Ended Combs		
8 and 10	1727K11	$2.77
9 and 15	1727K12	2.97
11 and 13	1727K13	2.97
12 and 14	1727K14	2.85
16 and 17	1727K16	2.89
18 and 20	1727K18	3.07
Long-Handle Comb Kits		
8, 9, 10, 11, 12, 14	1750K11	9.63
13, 15, 16, 17, 18, 20	1750K21	9.84
Additional Long-Handle Comb Heads		
21 and 22	1750K31	2.67
23 and 24	1750K33	2.67

Refrigerant Recovery Machine

Recover all common CFC (chlorofluorocarbon), HFC (hydrofluorocarbon), and HCFC (hydrochlorofluorocarbon) refrigerants with this machine. The compressor is oilless; handles liquids and vapor; and can purge itself of moisture, contaminants, and excess refrigerant.

Machine has a 1/4″ SAE flared hose connection, 12″ Ht. × 9″ Wd. × 17″ Dp. polypropylene housing, and a handle for portability. Operates on 115 VAC, 60 Hz (12-amp draw) and has an 78″ cord with three-prong plug.

18035K7 ..... $596.34

Refrigerant Recovery Cylinders

Store recovered refrigerant in these reusable carbon steel cylinders prior to recycling. Cylinders meet D.O.T. specifications 4BA and 4BW. All except the 15-lb. capacity cylinder have a 1/4″ air tank valve opening and a plugged 3/4″ opening for installing an optional *fill-level switch* (sold separately) that prevents cylinder from overfilling.

1/4″ SAE Y-valve cylinders are gray and yellow. ***Acme Y-valve*** cylinders are light blue.

15-lb. Cap.

Cap., lbs.	Pressure Rating	Dia. × Ht.	1/4″ SAE Y-Valve		Acme Y-Valve	
15	400 psi	8″ × 12 1/16″	17305K77	$74.98	—	—
30	350 psi	8 7/8″ × 18 3/16″	17305K72	79.75	17305K73	$90.03
50	350 psi	12 3/16″ × 18 5/8″	17305K74	103.06	—	—
50	400 psi	12″ × 18 5/8″	17305K76	117.48	17305K75	121.20
Fill-Level Switch for 30- and 50-lb. Capacity			17305K41	44.29		

Refrigerant Cylinder Charging Scales

Weigh your refrigerant cylinder precisely so you can dispense the right charge to your air conditioning system. The LCD displays weight in lbs. and kg.

Nonprogrammable scale operates on one 9-volt battery (included).

Programmable scale can be set to dispense an exact amount of refrigerant. Operates on four AA batteries and one 9-volt battery (included).

Nonprogrammable

	Charging Range	Lg. × Wd. × Dp.		Each
Nonprogrammable	0-110 lbs.	15 1/4″ × 10 1/2″ × 2 1/2″	1779K8	$159.34
Programmable	0-220 lbs.	16 1/2″ × 11 3/4″ × 2 3/4″	1779K7	347.25
Replacement 9-volt Battery (1/Pkg.)			71455K56	Pkg. $2.75
Replacement AA Batteries (4/Pkg.)			71455K53	Pkg. $2.94

Coil Cleaners

Aerosol cleaner cleans and deodorizes without rinsing.

1- and ***5-gal. cleaners*** contain acid for tougher jobs. Spray or brush these liquids on; then rinse off.

Brush has a 10 1/4″ long section of black nylon bristles that tapers from 1 1/2″ to 3/4″ dia. Handle is polypropylene. Overall length is 26″.

18-oz. Aerosol Cleaner	17315K25	$9.53
1-gal. Container Cleaner	17315K26	15.00
5-gal. Container Cleaner	17315K27	68.10
Brush	7326T11	9.94

Air Conditioning Service Valves

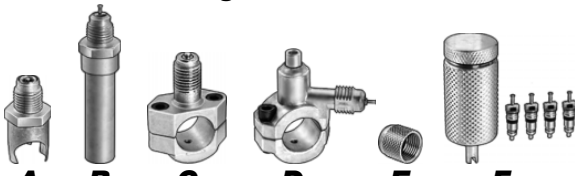

Tap into refrigerant lines to charge and evacuate a system. All valves have a 1/4″ SAE flared male port and include a 1/4″ nickel-plated brass valve core and 1/4″ die cast zinc cap except *Style A*, which has a brass cap.

Self-piercing valves can be installed without evacuating the system.

Extended-tube valves offer greater reach for easier servicing.

Valves with ***removable core*** provide unobstructed flow for your refrigerant once the core is removed.

Solder-On Valves

For Tube OD	Lg.		Each
(A) Self-Piercing—*Made of copper.*			
1/4″	1 1/2″	1804K31	$4.30
5/16″	1 1/2″	1804K32	4.30
3/8″	1 1/2″	1804K33	4.30
1/2″	1 9/16″	1804K34	4.67
5/8″	1 5/8″	1804K35	5.47
3/4″	1 11/16″	1804K36	6.16

For Tube OD	Lg.	Pkg. Qty.		Pkg.
(B) Extended Tube and Removable Core—*Made of brass.*				
1/8″	3 1/8″	5	1885K12	$11.32
1/4″	3 1/16″	5	1885K14	11.47
5/16″	2 3/4″	5	1885K15	12.20
3/8″	2 3/4″	5	1885K16	12.20
1/2″	2 3/4″	3	1885K17	18.60

Clamp-On Valves—Made of die cast zinc.

For Tube OD	Lg.		Each
(C) Self-Piercing			
1/4″, 5/16″, 3/8″	1 3/4″	9778K12	$3.65
1/2″, 5/8″	2 1/8″	9778K14	3.97
(D) Self-Piercing with Removable Core			
1/4″, 5/16″, 3/8″	1 1/2″	1809K28	5.20
1/2″, 5/8″	1 13/16″	1809K29	6.80

Accessories—Style E are brass. Style F is steel and brass.

	Pkg. Qty.		Pkg.
(E) 1/4″ SAE Cap	10	1883K12	$5.53
(E) 3/8″ SAE Cap	3	1883K14	5.58
1/4″ Replacement Valve Cores	6	1756K33	2.47
			Each
(F) 1/4″ Core Remover/Storer with 4 Valve Cores		1756K31	$8.71

Fan-Motor Kits for Refrigeration Equipment

Everything you need to replace almost any fan motor on commercial refrigeration units, appliances, and small fans and blowers. Kits contain a reversible motor, two adjustable H mounting brackets, two fan blades (unless noted), and all necessary hardware. Motor is single speed (except 19265K7, which is two speed) and has leads for hardwiring.

Motor components for 19265K8, ***K5***, and ***K9*** are UL recognized.

19265K7 and ***K6*** motors are UL listed.

Blade Dia.	cfm	rpm	Amps		
115 VAC, 60 Hz					
3 1/2″, 4″	91, 110	3,000	0.31	19265K8	$19.98
4″, 5 1/2″	110, 240	3,000	0.31	19265K5	17.76
4″, 5 1/2″	110, 240	1,500/3,000	0.31	19265K7	23.11
4″, 5 1/2″, 5 9/16″	110, 220, 240	3,000	0.31	19265K9●	24.18
230 VAC, 50/60 Hz, Single Phase					
4″, 5 1/2″	110, 240	3,000	0.16	19265K6	22.69

● Includes three blades.

Enclosure Air Conditioners

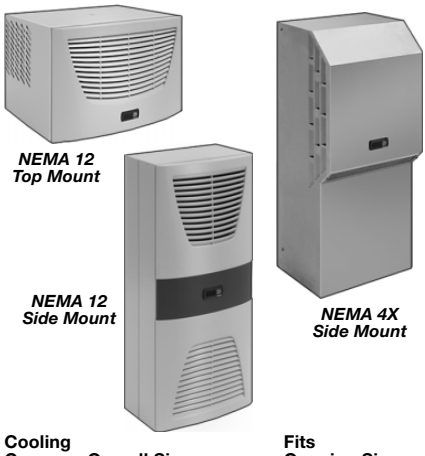

When the heat's too much for a fan, upgrade to air conditioners that use environmentally friendly R-134a refrigerant. They have a thermostat that adjusts from 68° to 131° F and terminal blocks for hardwiring. Air conditioners operate at 50/60 Hz, unless noted. Components are UL and C-UL recognized. Units include mounting hardware and templates for creating the cutouts required for mounting. All except 17495K19 and K25 have a programmable alarm and an LCD temperature display.

NEMA 12 air conditioners resist dirt and light water splashes.

NEMA 4X air conditioners are waterproof and corrosion resistant.

How much cooling capacity do you need? Calculate the area of your enclosure with the following formula:

$$2(\text{Ht.} \times \text{Wd.}) + 2(\text{Dp.} \times \text{Ht.}) + (\text{Wd.} \times \text{Dp.})$$

Next, determine the desired enclosure air temperature, **T1**. At the hottest time of the year, with all the doors closed, measure the actual internal enclosure air temperature, **T2**. Calculate the temperature differential—**T2 – T1**.

Use the table at right to find the temperature differential nearest to yours and the corresponding Btu/Hr./ft.^{2}. Multiply that by the enclosure area.

T2 – T1	Btu/Hr./ft.^{2}	T2 – T1	Btu/Hr./ft.^{2}
5° F	4.9	25° F	24.2
10° F	9.7	30° F	29.1
15° F	14.5	35° F	34.0
20° F	19.4	40° F	38.8

Example:

Enclosure is 5 ft. high × 4 ft. wide × 3 ft. deep.

Enclosure area: $2(5 \times 4) + 2(3 \times 5) + (4 \times 3) = 82$ ft.^{2}

T2 – T1 = 30° F

Cooling Capacity: 82 × 29.1 = 2,386 Btu/Hr.

Cooling Cap., Btu/Hr.	Overall Size, Ht.×Wd.×Dp.	Fits Opening Size, Ht.×Wd.	115 VAC Single Phase Amps			230 VAC Single Phase Amps			460 VAC Three Phase Amps		
NEMA 12 Top Mount											
3,688	16 5/16″ × 23 1/2″ × 18 3/4″	15 3/8″ × 19 5/16″	8.7	17495K12	$2,393.23	—	—	—	—	—	—
5,191	16 5/16″ × 23 1/2″ × 18 3/4″	15 3/8″ × 19 5/16″	14.1	17495K13	2,610.18	—	—	—	—	—	—
7,274	16 5/16″ × 23 1/2″ × 18 3/4″	15 3/8″ × 19 5/16″	14.2	17495K29	3,679.26	—	—	—	—	—	—
NEMA 12 Side Mount											
1,093	21 5/8″ × 11″ × 5 1/2″	19 3/4″ × 9 7/8″	3.3	17495K19★	1,509.71	1.7	17495K25	$1,546.15	—	—	—
2,083	21 5/8″ × 11″ × 7 7/8″	19 3/4″ × 9 7/8″	5.7	17495K21★	1,742.92	2.6	17495K26	1,805.71	—	—	—
3,620	37 3/8″ × 15 3/4″ × 10 3/16″	9 1/4″ × 13 5/8″, 13 3/4″ Sq. ♦	10.0	17495K22	2,064.71	4.4	17495K27	2,152.73	—	—	—
5,157	37 3/8″ × 15 3/4″ × 10 3/16″	9 1/4″ × 13 5/8″, 13 3/4″ Sq. ♦	12.5	17495K23	2,420.14	6.0	17495K31	2,581.91	2.6	17495K32	$3,121.30
8,026	62 3/16″ × 15 3/4″ × 11 3/8″	60 5/8″ × 14 7/8″	—	—	—	8.5	17495K33	2,925.31	3.0	17495K34	3,375.09
NEMA 4X Side Mount											
2,080	24 3/8″ × 11 3/16″ × 11 11/16″	18 7/8″ × 10 1/2″	5.7	17495K41★	2,462.56	2.6	17495K42	2,555.35	—	—	—
3,620	40 3/16″ × 15 7/8″ × 14 1/8″	9 1/4″ × 13 5/8″, 13 3/4″ Sq. ♦	10.0	17495K43	2,935.92	4.4	17495K44	3,063.95	—	—	—

★ Operates at 60 Hz. ♦ Requires two openings.

Optional Data-Logging Software—Compatible with Windows 98, 2000, NT, and XP. This software allows you to upload temperature and maintenance data to your computer using the included RS-232 cable. *Note:* Cannot be used with 17495K19 or K21.

17495K981 ..... $263.50

Enclosure Fans

Circulate air to dissipate heat in your electrical enclosure. These fans are reversible to pull hot air out or draw cooler outside air in through a filter that removes dirt and dust. Motors operate on 115 VAC, 50/60 Hz and have UL recognized components.

(A) Corrosion Resistant (IP54) with Disposable Filter— To reverse airflow, unbolt fan motor from plastic housing, turn motor 180°, and use the same holes to install. Grille is Noryl plastic. Fans include mounting fasteners. IP54 rated for protection against dust and water splashes. *Replacement filters* come in packages of five.

(B) With Washable Aluminum Filter— Position the tabs to mount inside or outside the enclosure for either intake or exhaust. Filter is aluminum mesh and removes easily for cleaning and maintenance. Grille is zinc-plated steel. Fans have 0.22″ dia. mounting holes (fasteners not included).

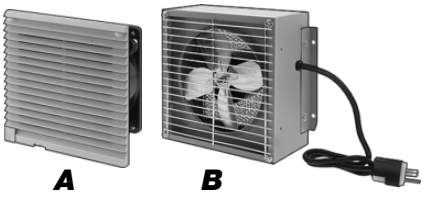

cfm	rpm	Amps	Connections	Overall Size, Ht.×Wd.×Dp.	Fits Opening Size, Ht.×Wd.	Fans	Each	Repl. Filters	Pkg.
(A) Corrosion Resistant (IP54) with Disposable Filter									
39	3,100	0.24	Terminal Block	5 13/16″ × 5 13/16″ × 2 5/8″	4 7/8″ × 4 7/8″	19115K5	$168.87	19115K15	$24.12
71	3,100	0.24	Terminal Block	8″ × 8″ × 3 11/16″	7″ × 7″	19115K6	199.74	19115K16	35.02
156	3,250	0.53	Terminal Block	10″ × 10″ × 4 5/8″	8 13/16″ × 8 13/16″	19115K7	236.95	19115K17	39.68
353	2,800	0.58	Terminal Block	12 3/4″ × 12 3/4″ × 5″	11 1/2″ × 11 1/2″	19115K8	320.73	19115K18	52.90
(B) With Washable Aluminum Filter									Each
275	3,000	0.85	2 1/2-ft. Cord w/ 3-Prong Plug	8 7/8″ × 10 1/8″ × 4 13/16″	8 15/16″ × 8 15/16″	19115K1	293.75	19115K11	$27.91
390	1,600	1.1	4 1/2-ft. Cord w/ 3-Prong Plug	8 7/8″ × 10 1/8″ × 4 13/16″	8 15/16″ × 8 15/16″	19115K2	337.50	19115K11	27.91
725	1,600	1.2	4 1/2-ft. Cord w/ 3-Prong Plug	12 1/8″ × 13 3/8″ × 4 13/16″	12 3/16″ × 12 3/16″	19115K3	383.33	19115K12	30.23
1,200	1,500	1.5	3 1/2-ft. Cord w/ 3-Prong Plug	15 1/8″ × 16 3/8″ × 7 11/16″	15 3/16″ × 15 3/16″	19115K4	595.83	19115K13	30.23

Enclosure Fan Trays

Slide these trays in to cool your standard 19″ wide enclosure. They are sized and notched in accordance with Electronic Industry Association (EIA) standards. Tray is steel; fan blades are glass-filled plastic. Operate on 115 VAC, 50/60 Hz and have a 6-ft. cord with three-prong plug. Components are UL recognized. CSA certified. Mounting fasteners included.

Three-Fan Tray

cfm	Amps	Ht.×Wd.×Dp.	No. of Fans		
330	0.41	1 3/4″ × 19″ × 7 1/4″	3	1985K11	$175.00
660	0.82	1 3/4″ × 19″ × 13″	6	1985K13	275.00
990	1.21	1 3/4″ × 19″ × 18″	9	1985K15	375.00

Enclosure-Cooling Blowers

For smaller spaces that can't accommodate enclosure fans, try one of these blowers. They draw cooler outside air into your enclosure and expel hot air through a louvered outlet vent. Incoming air is filtered to keep out dust and contaminants. The main filter is made of pleated paper and wrapped in a polyester prefilter. Blowers have a steel housing and galvanized steel fan blades. Both units operate on 115 VAC, 60 Hz and have leads for hardwiring.

1730K11 has an open dripproof (ODP) motor.
1730K12 has a totally enclosed nonventilated (TENV) motor.

60 cfm
155 cfm

cfm	rpm	Amps	hp	Overall Size, Ht.×Wd.×Dp.	Blowers		Replacement Prefilter		Replacement Main Filter	
60	3,030	0.42	1/125	10 1/2″ × 6 1/2″ × 6 1/2″	1730K11	$271.45	1730K21	$21.05	1730K22	$73.68
155	2,350	0.72	1/8	11″ × 7 1/4″ × 6 3/4″	1730K12	457.42	1730K23	28.24	1730K24	91.23

Air-Powered Vortex-Tube Enclosure Coolers

Drawing on a supply of compressed air, these coolers incorporate a vortex tube that lowers the temperature of incoming air by 50°F or more while positively pressurizing your enclosure to keep dust and other contaminants out. Coolers require a compressed air source of 80 to 100 psi. They come with an inline compressed air filter and an outlet ducting kit to distribute cool air throughout the enclosure. UL listed.

Coolers ***without thermostat*** operate solely on compressed air; no electricity is required.

Coolers ***with thermostat*** provide protection from high temperatures and conserve air by switching on only when needed. *Electric* thermostats adjust from 50° to 140°F and require a second opening of 11/16″ dia., unless noted. They operate on 115 VAC, 60 Hz and have leads for hardwiring. NEMA 12 draw 0.08 amps. NEMA 4 and 4X draw 0.05 amps. *Mechanical* thermostats don't require electricity. They're nonadjustable and provide protection from 80° to 90°F.

NEMA 12 coolers are rated for indoor use and resist dirt and light water splashes.

NEMA 4 coolers are rated for indoor/outdoor and washdown use.

NEMA 4X coolers are waterproof and corrosion resistant. ***Quiet*** coolers are perfect for low-noise environments such as labs and clean rooms, or keeping your loud environment below noise-level standards.

NEMA 12

Quiet NEMA 4X

Cooling Cap., Btu/Hr.	cfm	Air Connect., NPT	dB @ 1 ft.	Overall Size, Ht.×Dia.	Fits Opening Dia.	Without Thermostat		With Thermostat Operation		
NEMA 12—Aluminum										
400	8	1/8″ Male	70	7 1/16″ × 7/8″	1 1/8″	1754K29	$366.45	Electric	1754K28	$567.09
900	15	1/4″ Female	75	10 3/4″ × 1 3/4″	1 1/8″	1754K27	437.86	Electric	1754K26	601.84
1,500	25	1/4″ Female	75	10 3/4″ × 1 3/4″	1 1/8″	1754K32	456.11	Electric	1754K33	614.12
2,500	35	1/4″ Female	85	10 3/4″ × 1 3/4″	1 1/8″	1754K25	471.13	Electric	1754K24	673.62
NEMA 4—Aluminum										
900	15	1/4″ Female	82	6 3/4″ × 2 1/8″	1 15/16″	—	—	Mechanical	1754K34	640.08
1,500	25	1/4″ Female	82	6 3/4″ × 2 1/8″	1 15/16″	—	—	Mechanical	1754K31	610.10
2,500	35	1/4″ Female	82	6 3/4″ × 2 1/8″	1 15/16″	—	—	Mechanical	1754K35	705.12
2,500	35	1/4″ Female	88	9 15/16″ × 2″	1 15/16″	1754K36	560.58	Electric	1754K37▲	960.00
NEMA 4X—Type 304 Stainless Steel										
900	15	1/4″ Female	72	9 15/16″ × 2″	1 15/16″	1754K38	989.09	—	—	—
1,700	25	1/4″ Female	83	9 15/16″ × 2″	1 15/16″	1754K22	911.11	Electric	1754K23	1,097.92
Quiet NEMA 4X—Polycarbonate				**Ht.×Wd.×Dp.**						
1,500	25	3/8″ Female	64	8″ × 4 3/4″ × 5 3/8″	1 15/16″	—	—	Mechanical	1754K41	1,085.96
2,500	35	3/8″ Female	64	8″ × 4 3/4″ × 5 3/8″	1 15/16″	—	—	Mechanical	1754K42	1,112.22

▲ Requires a second opening of 7/8″ dia.

Equipment-Cooling Fans

Square

Round

Oblong

Compact and ready to install, these fans are a popular choice for cooling heat-sensitive equipment. They're also known as muffin fans. Mounting fasteners not included. For fan guards, filters, and thermostat, see following page.

AC fans have a single-phase motor and operate at 50/60 Hz except 1976K27 and K64, which operate at 60 Hz. CSA certified, unless noted. All have UL recognized components, unless noted. Frame is aluminum and blades are steel, unless noted. 1976K26, *K81*, and *K82* include a plastic-coated steel fan guard. Fans with *quick-disconnect (QD) terminals* are compatible with the power cords on the following page.

DC fans have UL recognized components. *Square fans* have a plastic frame and blades, unless noted. *Round fans* have an aluminum frame and plastic blades, unless noted.

AC Fans

Fan Size	Fan Dp.	cfm	Mounting Holes Ctr.-to-Ctr.	Mounting Holes Dia.	Connections	115 VAC Amps			230 VAC Amps		
Square											
3.15″ (80 mm) sq.	1″	18	2.81″	0.19″	Wire Leads	0.17	1976K91 Δ	$22.97	0.09	1976K92 Δ	$24.05
3.15″ (80 mm) sq.	1.5″	21	2.81″	0.17″	Wire Leads	0.06	1976K67 ♦	34.19	0.04	1976K84 ♥ ♧	31.16
3.15″ (80 mm) sq.	1.5″	36	2.81″	0.17″	Wire Leads	0.09	1976K37 ♦	34.19	0.04	1976K32 ♦	34.68
3.62″ (92 mm) sq.	1″	36	3.25″	0.18″	Wire Leads	0.21	1976K93 Δ	23.78	0.10	1976K94 Δ	24.86
3.62″ (92 mm) sq.	1.5″	45	3.25″	0.17″	Wire Leads	0.15	1976K71 Δ	25.00	0.15	1976K72 Δ	26.08
3.62″ (92 mm) sq.	1.5″	52	3.25″	0.17″	Wire Leads	0.10	1976K14 ♦	49.33	0.05	1976K12 ♦	49.88
4.69″ (119 mm) sq.	1″	59	4.13″	0.17″	QD Terminals	0.07	1976K11 ●	48.14	0.04	1976K13 ●	51.13
4.69″ (119 mm) sq.	1″	80	4.13″	0.17″	QD Terminals	0.10	1976K18 ●	44.22	0.06	1976K16 ●	44.60
4.69″ (119 mm) sq.	1″	80	4.13″	0.18″	Wire Leads	0.19	1976K95 Δ	24.32	0.12	1976K96 Δ	25.41
4.69″ (119 mm) sq.	1.5″	56	4.13″	0.17″	QD Terminals	0.08	1976K41 ♦	27.36	0.04	1976K44 ♦	27.67
4.69″ (119 mm) sq.	1.5″	71	4.13″	0.17″	QD Terminals	0.10	1976K42 ♦	27.36	0.05	1976K45 ♦	27.67
4.69″ (119 mm) sq.	1.5″	106	4.13″	0.17″	QD Terminals	0.16	1976K43 ♦	26.94	0.07	1976K46 ♦	27.22
5″ (127 mm) sq.	1.5″	106	4.46″	0.19″	QD Terminals	0.12	1976K47 ●	46.83	0.12	1976K61 ● □	50.34
5″ (127 mm) sq.	1.5″	121	4.46″	0.19″	QD Terminals	0.15	1976K48 ●	47.82	0.12	1976K62 ● ▲	47.82
5.31″ (135 mm) sq.	1.5″	159	4.46″	0.17″	QD Terminals	0.23	1976K15 ♦	74.97	0.13	1976K17 ♦	78.16
8.86″ (225 mm) sq.	3.15″	500	6.69″	0.18″	Screw Terminals	0.52	1976K23	140.85	0.26	1976K26 ♥	159.54
8.86″ (225 mm) sq.	3.15″	607	6.69″	0.18″	Screw Terminals	0.69	1976K81	137.10	0.34	1976K82	138.55
11.02″ (280 mm) sq.	3.15″	1,100	8.19″	0.21″	Screw Terminals	1.52	1976K27	238.15	0.87	1976K29	217.69
Round											
5.91″ (150 mm) dia.	2.17″	224	6.38″	0.18″	QD Terminals	0.33	1976K77	65.69	0.17	1976K78	66.41
5.91″ (150 mm) dia.	2.17″	250	6.38″	0.18″	Wire Leads	0.40	1976K35	75.04	0.20	1976K28	75.87
6.75″ (172 mm) dia.	2″	294	6.38″	0.18″	QD Terminals	0.25	1976K19 ★	103.39	0.13	1976K21 ★	103.39
10″ (254 mm) dia.	3.5″	550	9.68″	0.18″	QD Terminals	0.24	1976K98 Δ	76.20	0.16	1976K99 Δ	80.20
Oblong											
5.91″ Ht. × 6.75″ Wd. ♠	1.5″	175	6.38″	0.17″	QD Terminals	0.14	1976K63	86.64	0.07	1976K65	83.46
5.91″ Ht. × 6.75″ Wd. ♠	1.5″	230	6.38″	0.17″	QD Terminals	0.23	1976K64	79.32	0.12	1976K66	80.25

Δ Plastic blades. ♦ Steel frame and blades. ♥ Components are not UL recognized. ♧ Not CSA certified. Has aluminum blades and 18 cfm. ● Steel frame; plastic blades. □ Has 105 cfm and 0.18″ mounting hole dia. ▲ Has wire leads. ★ Has two mounting holes. ♠ 150 mm Ht. × 172 mm Wd.

DC Fans

Fan Size	Fan Dp.	cfm	Mounting Holes Ctr.-to-Ctr.	Mounting Holes Dia.	Connections	12 VDC Amps			24 VDC Amps		
Square											
0.98″ (25 mm) sq.	0.39″	1	1.10″	0.11″	Wire Leads	0.05	1939K18	$24.18	—	—	—
1.57″ (40 mm) sq.	0.39″	4	1.26″	0.14″	Wire Leads	0.05	1939K17	16.32	—	—	—
1.57″ (40 mm) sq.	0.39″	5	1.26″	0.14″	Wire Leads	0.13	1939K41	23.68	0.06	1939K43	$24.00
1.57″ (40 mm) sq.	0.79″	5	1.26″	0.14″	Wire Leads	0.09	1939K44	23.68	0.07	1939K45	24.00
1.57″ (40 mm) sq.	0.79″	8	1.26″	0.17″	Wire Leads	0.13	1939K39	24.95	0.07	1939K22	25.98
1.97″ (50 mm) sq.	0.59″	12	1.65″	0.15″	Wire Leads	0.08	1939K46	21.53	0.04	1939K42	21.85
2.36″ (60 mm) sq.	1″	12	1.97″	0.17″	Wire Leads	0.09	1939K58	25.00	0.08	1939K59	25.33
2.36″ (60 mm) sq.	1″	18	1.97″	0.15″	Wire Leads	0.08	1939K31	28.76	0.05	1939K32	30.04
2.36″ (60 mm) sq.	1″	20	1.97″	0.17″	Wire Leads	0.13	1939K56	27.14	0.12	1939K57	27.54
2.36″ (60 mm) sq.	1″	23	1.97″	0.15″	Wire Leads	0.16	1939K48	36.97	0.09	1939K47	38.57
3.15″ (80 mm) sq.	1″	26.5	2.81″	0.17″	Wire Leads	0.05	1939K33	34.61	0.05	1939K34	30.89
3.15″ (80 mm) sq.	1″	41	2.81″	0.17″	Wire Leads	0.17	1939K55	22.23	0.08	1939K49	22.50
3.15″ (80 mm) sq.	1″	47	2.81″	0.17″	Wire Leads	0.18	1939K65	27.50	0.10	1939K66	27.83
3.15″ (80 mm) sq.	1.26″	19	2.81″	0.17″	Wire Leads	0.08	1939K11	28.05	0.04	1939K12	28.34
3.15″ (80 mm) sq.	1.26″	32	2.81″	0.17″	Wire Leads	0.18	1939K13	28.05	0.10	1939K14	28.34
3.15″ (80 mm) sq.	1.5″	78	2.81″	0.17″	Wire Leads	0.85	1939K51	43.93	0.45	1939K52	43.93
3.62″ (92 mm) sq.	1″	49	3.25″	0.17″	Wire Leads	0.18	1939K35	28.43	0.10	1939K36	28.84
3.62″ (92 mm) sq.	1″	60	3.25″	0.17″	Wire Leads	0.26	1939K67	33.64	0.13	1939K68	33.76
3.62″ (92 mm) sq.	1.26″	50	3.25″	0.17″	Wire Leads	0.29	1939K61	38.57	0.13	1939K62	39.00
4.69″ (119 mm) sq.	1″	82	4.13″	0.17″	Wire Leads	0.27	1939K28	42.47	0.13	1939K29	43.00
4.69″ (119 mm) sq.	1.5″	70	4.13″	0.18″	Wire Leads	0.18	1939K23	54.85	0.09	1939K24 ♦ ■	60.90
4.69″ (119 mm) sq.	1.5″	94	4.13″	0.18″	QD Terminals	0.29	1939K25 ♦	50.55	0.14	1939K26 ♦	51.06
4.69″ (119 mm) sq.	1.5″	100	4.13″	0.18″	Screw Terminal	—	—	—	0.10	1939K27 ♦ ♣	58.98
5″ (127 mm) sq.	1.5″	130	4.46″	0.19″	QD Terminals	0.49	1939K71 ♦	68.14	0.23	1939K72 ♦	68.90
5″ (127 mm) sq.	1.5″	148	4.46″	0.17″	Wire Leads	0.82	1939K77	77.78	0.40	1939K69	78.08
Round											
5.91″ (150 mm) dia.	1.5″	212	6.38″	0.17″	Wire Leads	1.00	1939K79 ◤	114.39	0.50	1939K78 ♦	88.52
5.91″ (150 mm) dia.	1.5″	247	6.38″	0.17″	Wire Leads	—	—	—	0.79	1939K82 ◤	98.30
5.91″ (150 mm) dia.	2.17″	203	6.38″	0.16″	Wire Leads	1.16	1939K73 ♦	120.91	0.58	1939K74 ♦	122.18
6.75″ (172 mm) dia.	2″	206	5.25″	0.17″	QD Terminals	1.00	1939K81	118.44	0.50	1939K83	119.66
6.75″ (172 mm) dia.	2″	283	5.25″	0.17″	QD Terminals	—	—	—	0.54	1939K84	122.41
7.87″ (200 mm) dia.	2.76″	530	5.81″	0.17″	Wire Leads	—	—	—	3.88	1939K86	275.10

♦ Steel frame and blades. ■ Has QD terminal connections. ♣ Operates on 48 VDC. ◤ Aluminum frame and blades.

Corrosion-Resistant Equipment-Cooling Fans (IP54)

IP54 rated for protection from dust and water splashes, these fans are also known as muffin fans. They have leads for hardwiring. Mounting fasteners are not included.

AC fans have plastic blades and UL recognized components. CSA certified. Operate at 50/60 Hz. *Square* and *oblong* fans have a plastic frame. *Round* fan has a steel frame.

DC fans have a plastic frame and blades and UL and C-UL recognized components.

Square

Round

Oblong

Fan Shape	Fan Size, Ht. × Wd.	Fan Dp.	cfm	Volts	Amps	Mounting Holes Ctr.-to-Ctr.	Mounting Holes Dia.		
AC Fans									
Square	3.15″ (80 mm) × 3.15″ (80 mm)	2.52″	47	100-240 VAC	0.08	2.81″	0.17″	9602K31	$87.60
Square	3.62″ (92 mm) × 3.62″ (92 mm)	2.78″	86	100-240 VAC	0.11	3.25″	0.17″	9602K32	102.13
Round	6.75″ (172 mm) Dia.	3.28″	206	100-240 VAC	0.14	6.38″	0.17″	9602K33	130.34
Oblong	6.3″ (160 mm) × 6.75″ (172 mm)	3.33″	206	100-240 VAC	0.14	6.38″	0.17″	9602K34	123.38
DC Fans									
Square	4.72″ (120 mm) × 4.72″ (120 mm)	1.5″	105	12 VDC	0.50	4.13″	0.18″	9602K41	76.67
Square	4.72″ (120 mm) × 4.72″ (120 mm)	1.5″	105	24 VDC	0.32	4.13″	0.18″	9602K42	76.67
Square	5″ (127 mm) × 5″ (127 mm)	1.5″	161	12 VDC	0.76	4.46″	0.18″	9602K43	76.67
Square	5″ (127 mm) × 5″ (127 mm)	1.5″	161	24 VDC	0.41	4.46″	0.18″	9602K23	86.25

Equipment-Cooling Fan Accessories

Fan Guards

Square Nickel-Plated Steel

Square Plastic

Round Plastic

Square EMI/RFI

Square Plastic with Filter

Sized to fit the fans on this and the previous page.

EMI/RFI fan guards have stainless steel mesh screens in an aluminum frame to shield against electromagnetic and radio-frequency interference.

Plastic fan guards with filter include a foam filter and a plastic retainer to keep it in place. Original and replacement filters for 19155K2, K3, and K4 can filter 30 ppi (particles per inch), 45 ppi for 19155K22 and K23, and 60 ppi for 19155K5.

For Fan Size	Mounting Holes, Ctr.-to-Ctr.	Nickel-Plated Steel	Each	Plastic	Each	EMI/RFI	Each	Plastic with Filter	Each	Repl. Filters Pkg. Qty.	Repl. Filters	Pkg.
0.98″ (25 mm) Sq.	1.10″	19155K89★	$1.00									
1.57″ (40 mm) Sq.	1.26″	19155K91	1.07	19155K42	$0.77			19155K2	$2.09	5	19155K6	$2.33
1.97″ (50 mm) Sq.	1.65″	19155K92	1.11									
2.36″ (60 mm) Sq.	1.97″	19155K93	1.19	19155K43	.83	19155K35	$5.37	19155K3	2.40	5	19155K7	2.33
3.15″ (80 mm) Sq.	2.81″	19155K94	1.19	19155K44	1.00	19155K36	5.74	19155K4	2.48	5	19155K8	2.62
3.62″ (92 mm) Sq.	3.25″	19155K95	1.24	19155K45	1.10	19155K37	5.89	19155K22	2.72	5	19155K52	2.83
4.69″ (119 mm) Sq.	4.13″	19155K96	1.50	19155K46	1.17	19155K38	6.00	19155K23	3.20	5	19155K53	3.67
5″ (127 mm) Sq.	4.46″	19155K97	1.92			19155K39	6.86					
5.31″ (135 mm) Sq.	4.46″	19155K97	1.92			19155K39	6.86					
6.75″ (172 mm) Dia.	6.38″	19155K98★	3.00	19155K47★	2.56	19155K48★	8.75	19155K5★	5.83	5	19155K9	5.00
6.91″ (176 mm) Sq.	6.01″	19155K14	2.07									
7.87″ (200 mm) Dia.	5.81″	19155K27	7.40									
8.86″ (225 mm) Sq.	6.69″	19155K28	7.93									
10″ (254 mm) Dia.	9.68″	19155K99	5.77									
11.02″ (280 mm) Sq.	8.19″	19155K29	8.45									

★ Has two mounting holes.

Quick-Disconnect (QD) Power Cords

Cords plug into fans with quick-disconnect terminals. UL listed. CSA certified.

Lg.	Straight Female Receptacle		45° Female Receptacle		90° Female Receptacle	
115 VAC with Wire Leads						
2 ft.	19155K34	$2.50	19155K33	$2.51	19155K31	$2.50
3 ft.	19155K64	2.86	19155K63	2.77	19155K61	2.77
115 VAC with Two-Prong Plug						
3 ft.	19155K71	6.00	19155K73	6.00	19155K72	6.14
6 ft.	19155K75	6.92	19155K77	7.08	19155K76	6.94
115 VAC with Three-Prong Plug						
2 ft.	19155K56	14.52	19155K59	14.52	19155K67	14.52
3 ft.	19155K57	14.58	19155K65	15.28	19155K68	14.58
6 ft.	19155K58	15.71	19155K66	15.71	19155K69	15.44
230 VAC with NEMA 6-15 Plug						
6 ft.	19155K32	22.12	19155K41	21.30	19155K81	21.82

Straight with Wire Leads

45° with Three-Prong Plug

90° with Wire Leads

90° with NEMA 6-15 Plug

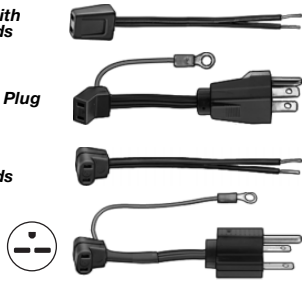

Thermostat

Control air temperature in your enclosure. This thermostat adjusts from 32° to 140° F and has screw terminal connections. The switch is SPST (single pole, single throw) and rated 15 amps @ 120 VAC, 10 amps @ 250 VAC, and 30 watts at 12-24 VDC. Overall size is 2.4″ Ht. × 1.3″ Wd. × 1.7″ Dp. Mounts on a 35 mm DIN rail.

19155K16 ..... $33.20

Equipment-Cooling Fan Kits

With Steel Fan Guard, 115 VAC

With Filter and Plastic Fan Guard, 115 VAC

Here's everything you need to start cooling your equipment. Kits include a fan, guard, and 72″ cord. 115 VAC have a two-prong plug; 230 VAC have a three-prong plug. Fans have an aluminum frame, plastic blades, and operate at 50/60 Hz. Components are UL recognized. Cord is UL listed. Fasteners not included.

Kits ***with filter and plastic fan guard*** include a foam filter held in place by a plastic retainer. 3.15″ fans filter 30 ppi (particles per inch); 4.69″ and 6.77″ fans filter 45 ppi. For replacement filters, see previous page.

Fan Size	cfm	Amps	Mount. Holes Ctr.-to-Ctr.	Mount. Holes Dia.	With Steel Fan Guard Dp.			With Filter and Plastic Fan Guard Dp.		
115 VAC										
3.15″ (80 mm) sq.	32	0.10	2.81″	0.17″	1.72″	9191K1	$39.00	1.91″	9191K4	$39.00
4.69″ (119 mm) sq.	75	0.13	4.13″	0.18″	1.72″	9191K2	39.76	1.91″	9191K5	39.63
4.69″ (119 mm) sq.	100	0.21	4.13″	0.18″	1.72″	9191K3	40.00	1.91″	9191K6	40.12
6.77″ (172 mm)▲	240	0.25	6.38″	0.18″	2.25″	9191K7	86.21	2.37″	9191K9★	90.30
10″ (254 mm) dia.	525	0.24	6.85″	0.18″	3.7″	9191K8	108.56	—	—	—
230 VAC, Single Phase										
3.15″ (80 mm) sq.	36	0.05	2.81″	0.17″	1.72″	9191K11	60.68	1.91″	9191K41	60.68
4.69″ (119 mm) sq.	65	0.06	4.13″	0.18″	1.72″	9191K21	63.72	1.91″	9191K51	63.72
4.69″ (119 mm) sq.	105	0.07	4.13″	0.18″	1.72″	9191K31	63.72	1.91″	9191K61	64.47
6.77″ (172 mm)▲	240	0.12	6.38″	0.18″	2.25″	9191K71	106.00	2.37″	9191K91★	106.00
10″ (254 mm) dia.	550	0.16	6.85″	0.18″	3.7″	9191K81	109.02	—	—	—

▲ Two sides are square; two are round. ★ Fan size is 6.38″ (162 mm).

Heaters for Equipment-Cooling Fans

Maintain an optimum temperature and reduce humidity inside your enclosure by heating the airflow from your equipment-cooling fan. These heaters have a black-painted aluminum frame that protects the heating element and fits the same-size equipment-cooling fans on pages 644-645. They're single phase, operate at 60 Hz, and have leads for hardwiring. Install in place of a fan guard using the 3/16″ dia. mounting holes (fasteners not included). Components are UL recognized.

Watts	Mounting Holes, Ctr.-to-Ctr.	120 VAC Amps			230 VAC Amps		
3.13″ Sq. × 1.25″ Dp.							
200	2.81″	1.67	20055K111	$43.00	0.87	20055K311	$43.00
400	2.81″	3.37	20055K112	43.00	1.74	20055K312	43.00
4.69″ Sq. × 1.25″ Dp.							
200	4.13″	1.67	20055K24	43.00	0.87	20055K44	43.00
400	4.13″	3.37	20055K25	43.00	1.74	20055K45	43.00
600	4.13″	5.00	20055K26	43.00	2.61	20055K46	43.00
800	4.13″	6.67	20055K27	43.00	3.48	20055K47	43.00

Low-Profile Enclosure-Cooling Fans

Small in size but big on power, these fans fit tight spaces in your enclosure or duct. Also called motorized impellers, they include a run capacitor and inlet ring. Air enters at the center and is exhausted from the perimeter of the fan. Motor is single phase and has leads for hardwiring. Frame is plastic.

cfm	O'all Dia.	Inlet Dia.	Dp.	VAC	Hz	Amps		
203	5.24″	3.65″	3.58″	115	60	0.13	19285K54	$103.88
365	7.48″	5.16″	2.70″	115	50/60	0.34	19285K56	114.56
530	8.66″	6.26″	2.80″	115	50/60	0.40	19285K57	123.30
530	8.66″	6.26″	2.80″	230	60	0.40	19285K72	123.31

Equipment-Cooling Blowers

Great for spaces where fans with straight-through airflow won't fit. Air enters these blowers through the center of the unit and then exhausts out the side. Blowers have leads for hardwiring and are made of fiberglass-reinforced plastic with a galvanized steel base plate. Components are UL recognized. CSA certified.

5.31″ and *7.09″* blowers have 0.17″ dia. mounting holes; *8.66″* blowers have 0.21″ dia. mounting holes (fasteners not included).

115 VAC blowers operate at 60 Hz.

Blower Size, Sq.	Blower Dp.	Mount. Holes, Ctr.-to-Ctr.	115 VAC cfm	115 VAC Amps			12 VDC cfm	12 VDC Amps			24 VDC cfm	24 VDC Amps		
5.31″ (135 mm)	1.5″	4.8″	28	0.19	8677K47	$64.83	24	0.15	8677K31	$66.03	32	0.23	8677K32	$66.03
7.09″ (180 mm)	1.6″	6.5″	55	0.16	8677K48	75.08	52	0.41	8677K33	82.31	52	0.20	8677K34	82.31
8.66″ (220 mm)	2.2″	8.0″	131	0.43	8677K49	116.57	123	1.75	8677K35	141.48	123	0.83	8677K36	141.48

Air-Powered Vortex-Tube Equipment Coolers

Connect one of these vortex tubes to your compressed air supply for instant cold air without the need for electricity. The generator cools air to –20°F. Adjust the temperature with the valve on the hot-air exhaust end of the tube. Coolers are made of Type 303 stainless steel and have no moving parts, so they're maintenance free.

Note: Vortex tubes require a filter (4274K31, sold separately) on the air supply.

Kits include a vortex tube, airflow adjusters, cold-air muffler, tube, tube fitting, and clips. *Three-adjuster kit* has a 4.13″ long vortex tube. *Five-adjuster kit* has a 5.68″ long vortex tube.

Airflow adjusters let you change the airflow (cfm) of your vortex tube. **To Order:** For 31035K31, please specify 2, 4, or 8 cfm. For 31035K41, please specify 10, 15, 25, 30, or 40 cfm.

Air Consump., @ 100 psi	Cooling Cap., Btu/hr. @ 100 psi	O'all Lg.	Air Inlet, NPT Male	Air Outlet, NPT Female		
Vortex Tubes						
2 cfm	135	4.13″	1/8″	1/4″	31035K11	$172.95
4 cfm	275	4.13″	1/8″	1/4″	31035K12	172.95
8 cfm	550	4.13″	1/8″	1/4″	31035K13	172.95
10 cfm	650	5.68″	1/4″	3/8″	31035K14	212.90
15 cfm	1,000	5.68″	1/4″	3/8″	31035K15	212.90
25 cfm	1,700	5.68″	1/4″	3/8″	31035K16	212.90
30 cfm	2,000	5.68″	1/4″	3/8″	31035K17	212.90
40 cfm	2,800	5.68″	1/4″	3/8″	31035K18	212.90
Filter (required)					4274K31	67.03
Vortex Tube Kits						
Three-Adjuster Kit (2, 4, and 8 cfm)					31035K21	230.31
Five-Adjuster Kit (10, 15, 25, 30, and 40 cfm)					31035K22	287.02
Accessories						
Airflow Adjuster for 4.13″ Long Vortex Tubes					31035K31	15.57
Airflow Adjuster for 5.68″ Long Vortex Tubes					31035K41	13.43
Cold-Air Muffler for 4.13″ Long Vortex Tubes					31035K51	38.73
Cold-Air Muffler for 5.68″ Long Vortex Tubes					31035K52	38.58
Hot-Air Muffler for All Vortex Tubes					31035K55	36.25

Air Conditioners

Stay cool. These air conditioners have an adjustable thermostat (63° to 90° F), adjustable louvers for directing airflow, a slide-out chassis for easy maintenance, and a cord with three-prong NEMA plug. Operate at 60 Hz. UL and C-UL listed. All have a remote and electronic controls.

115 VAC have a 6-ft. cord.

208/230 VAC have a 4-ft. cord, except 1843K97, which has a 2½-ft. cord.

Note: The higher the energy efficiency ratio, the more energy efficient the unit.

5-15

6-15

6-30

A

B

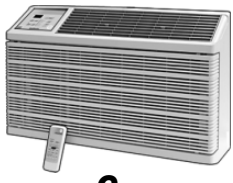
C

	Cooling Capacity, Btu/Hr.	Energy Efficiency Ratio (EER)	cfm	Amps	NEMA Plug Style	Overall Size, Ht. × Wd. × Dp.	Fits Window		
Window Mount									
115 VAC									
A	5,500	11.2	170	4.5	5-15	14″ × 19¾″ × 21⅜″	22″ to 42″ Wd.	1843K81	$505.33
A	7,500	10.7	175	6.3	5-15	14″ × 19¾″ × 21⅜″	22″ to 42″ Wd.	1843K84	562.67
B	12,000	11.2	300	10.0	5-15	15 15/16″ × 25 15/16″ × 27⅜″	27⅜″ to 42″ Wd.	1843K45	785.33
208-230 VAC, Single Phase									
B	14,500	10.3	360	6.8	6-15	15 15/16″ × 25 15/16″ × 27⅜″	27⅜″ to 42″ Wd.	1843K47	881.33
B	20,800	10	425	10.3	6-15	17 15/16″ × 25 15/16″ × 27⅜″	27⅜″ to 42″ Wd.	1843K51	972.00
B	36,000	8.5	725	20.5	6-30	20 3/16″ × 28″ × 33⅝″	29⅞″ to 42″ Wd.	1843K57	1,589.33
Through-the-Wall Mount									
115 VAC							Cutout Required		
C	11,900	9.4	295	11.8	5-15	15¾″ × 26½″ × 21″	16¾″ Ht. × 27″ Wd.	1843K92	772.00
208-230 VAC, Single Phase									
C	15,600	8.5	290	8.0	6-15	15¾″ × 26½″ × 21″	16¾″ Ht. × 27″ Wd.	1843K97	894.37
Optional Mounting Sleeve for Through-the-Wall Mount Units (required for new installations)								1843K93	109.09

Combination Air Conditioner/Heaters

Keep your work area comfortable year-round. These energy-efficient units have a remote control, electronic controls, an adjustable thermostat (60° to 99° F), a slide-out chassis for easy maintenance, and a 1/32″ thick antimicrobial washable filter. They're single phase, operate on 208-230 VAC, 60 Hz, and have a 4-ft. cord with three-prong plug. UL and C-UL listed.

You can mount these units in a window 27⅜″ to 42″ wide using a *mounting kit* (sold separately) or through a wall with a 7⅜″ max. wall thickness. 18505K22 requires a 16 3/16″ Ht. × 26 3/16″ Wd. wall cutout. 18505K24 and K43 require an 18 3/16″ Ht. × 26 3/16″ Wd. wall cutout.

Note: The higher the energy efficiency ratio, the more energy efficient the unit.

6-20

6-30

Cap., Btu/Hr. Cooling	Cap., Btu/Hr. Heating	Energy Efficiency Ratio (EER)	cfm	Amps Cool	Amps Heat	NEMA Plug Style	Overall Size, Ht. × Wd. × Dp.	Air Conditioner/ Heaters		Optional Window Mounting Kits	
11,700	10,700	11.4	275	4.9	16.0	6-20	15 15/16″ × 25 15/16″ × 27⅜″	18505K22	$958.46	18505K26	$47.27
17,500	13,000	10.7	350	8.0	19.5	6-30	17 15/16″ × 25 15/16″ × 27⅜″	18505K24	1,144.78	18505K27	47.27
23,500	13,000	9.4	390	19.5	17.0	6-30	17 15/16″ × 25 15/16″ × 29″	18505K43	1,281.43	18505K27	47.27

Hazardous-Location Air Conditioners

UL listed for Class 1, Division 2, Groups A, B, C, D hazardous locations. These air conditioners have an adjustable temperature control, adjustable louvers for directing airflow, and a slide-out chassis for easy maintenance. Units are single phase, operate on 208-230 VAC, 60 Hz, and have leads for hardwiring. Mount in a window 27⅞″ to 42″ wide or through a wall with a maximum thickness of 6″. 1817K79 requires a 16⅜″ Ht. × 26 3/16″ Wd. wall cutout. 1817K89 requires an 18⅜″ Ht. × 26 3/16″ Wd. wall cutout.

Note: The higher the energy efficiency ratio, the more energy efficient the unit.

Cooling Cap., Btu/Hr.	Energy Efficiency Ratio (EER)	cfm	Amps	Overall Size, Ht. × Wd. × Dp.		
14,500	9.7	375	7.4	15 15/16″ × 25 15/16″ × 27⅜″	1817K79	$2,153.42
19,500	9.4	375	10.0	17 15/16″ × 25 15/16″ × 27⅜″	1817K89	2,497.74

Portable Air Conditioners

When things heat up, simply roll these air conditioners to the area that needs cooling. They're air cooled, so they don't require an outside source of water. Units have a built-in pump with two 2.5-gallon condensate tanks and a control panel with off-fan-cool switch. Operate at 60 Hz and have a 6-ft. cord with three-prong plug.

To exhaust air through your duct work, use the included air discharge kit. It fits 24″ wide ceiling tiles and includes duct, flange, and a ceiling tile.

Optional thermostat has a temperature range of 60° to 95° F.

5-15

6-20

115 VAC

208-230 VAC

Cooling Cap., Btu/Hr.	cfm Low	cfm High	Amps	NEMA Plug Style	Overall Size, Ht. × Wd. × Dp.		
115 VAC							
13,500	370	440	11.7	5-15	45″ × 18½″ × 32¾″	7669K4	$3,701.84
208-230 VAC, Single Phase							
28,000	900	1,100	16.0	6-20	55″ × 36″ × 24″	7669K7	4,811.09
Optional Thermostat						7669K9	183.08

Industrial Duty Fans

All fans are direct drive with a totally enclosed motor that operates at 60 Hz. *115* and *120 VAC* fans are single phase. *208-230/460 VAC* fans are three phase. UL listed.

Premium quality fans have precision-balanced cast aluminum blades for enhanced efficiency and long life. ***High-output*** fans deliver higher cfm per blade diameter than Premium Quality or Valu-Cool. *120 VAC* fans have steel blades. *208-230/460 VAC* fans have galvanized steel blades. ***Valu-Cool*** fans have stamped steel blades.

Premium Quality Fans
- Chrome-plated steel guard
- 15-ft. cord with three-prong plug
- Oscillating fans have a heavy duty gear box and can be fixed or set to oscillate through a 45° or 90° arc

High-Output Fans
- *120 VAC*—12-ft. cord with three-prong plug; gray powder-coated steel guard
- *208-230/460 VAC*—Leads for hardwiring; chrome-plated steel guard

Valu-Cool Fans
- Black powder-coated steel guard
- 10-ft. cord with three-prong plug, unless noted
- Oscillating fans can be fixed or set to oscillate through a 90° arc

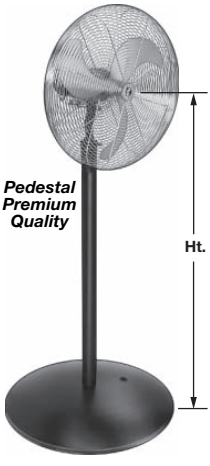

Pedestal Premium Quality

Pedestal

All have a solid base and an adjustable-height pedestal. Base and pedestal are black powder-coated steel.

Blade Dia.	cfm	dB	Max. rpm (No. of Speeds)	hp	Nonoscillating Amps	Nonoscillating Each	Oscillating Amps	Oscillating Each
Premium Quality, 115 VAC—*Height range is 4 to 8 ft.*								
24″	5,387/4,356/3,125	72 @ 3 ft.	1,070 (3)	1/3	2.5	1718K51 ... $431.16	2.5	1718K91 ... $613.28
30″	7,996/5,859/4,063	75 @ 3 ft.	1,045 (3)	1/3	2.8	1718K52 ... 447.53	2.6	1718K92 ... 627.44
High Output, 120 VAC—*Height range is 4 to 5 ft.*								
24″	7,300/5,500	87 @ 5 ft.	1,100 (2)	1/2	8.1	2024K41 ... 420.47	—	—
30″	9,200/6,900	86 @ 5 ft.	1,100 (2)	1/2	8.1	2024K42 ... 446.05	—	—
High Output, 208-230/460 VAC—*Height range is 5 to 8 ft.*								
30″	12,400	80 @ 3 ft.	1,125 (1)	1	4/2	2024K61 ... 763.82	—	—
Valu-Cool, 120 VAC—*Height range is 3′6″ to 4′3″.*								
18″	3,190/2,970/2,660	67 @ 3 ft.	1,500 (3)	1/6	1.5	2035K71▲ 215.38	—	—
20″	3,670/3,330/2,940	62 @ 3 ft.	1,500 (3)	1/6	1.6	2035K73▲ 204.76	—	—
Valu-Cool, 120 VAC—*Height range is 4 to 6 ft.*								
24″	5,130/4,490/3,670	72 @ 3 ft.	1,060 (3)	1/4	2.4	2035K83 ... 306.06	2.4	2035K11 ... 340.91
30″	7,400/6,360/4,980	75 @ 3 ft.	1,040 (3)	1/4	2.4	2035K85 ... 312.50	2.4	2035K13 ... 352.27

▲ Has 9-ft. cord with three-prong plug.

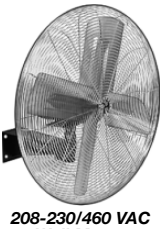

208-230/460 VAC Wall Mount High Output

Wall Mount

Mounting bracket has 3/8″ dia. holes, unless noted. Fasteners not included.

Blade Dia.	cfm	dB	Max. rpm (No. of Speeds)	hp	Nonoscillating Amps	Nonoscillating Each	Oscillating Amps	Oscillating Each
Premium Quality, 115 VAC								
24″	5,387/4,356/3,125	72 @ 3 ft.	1,070 (3)	1/3	2.5	1718K53■ $419.49	2.5	1718K93■ $537.02
30″	7,996/5,859/4,063	75 @ 3 ft.	1,045 (3)	1/3	2.8	1718K54■ 407.81	2.6	1718K94■ 598.50
High Output, 120 VAC								
24″	7,300/5,500	87 @ 5 ft.	1,100 (2)	1/2	8.1	2024K45 ... 353.50	—	—
30″	9,200/6,900	86 @ 5 ft.	1,100 (2)	1/2	8.1	2024K46 ... 379.15	—	—
High Output, 208-230/460 VAC								
30″	12,400	80 @ 3 ft.	1,125 (1)	1	4/2	2024K62■ 690.76	—	—
Valu-Cool, 120 VAC								
18″	3,190/2,970/2,660	67 @ 3 ft.	1,500 (3)	1/6	1.5	2035K51▲ 166.67	—	—
20″	3,670/3,330/2,940	62 @ 3 ft.	1,500 (3)	1/6	1.6	2035K52▲ 167.86	—	—
24″	5,130/4,490/3,670	72 @ 3 ft.	1,060 (3)	1/4	2.4	2035K53 ... 262.50	2.4	2035K55 ... 274.43
30″	7,400/6,360/4,980	75 @ 3 ft.	1,040 (3)	1/4	2.4	2035K54 ... 267.28	2.4	2035K56 ... 291.13

■ Mounting bracket has 5/16″ dia. holes. ▲ Has 9-ft. cord with three-prong plug.

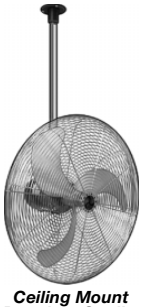

Ceiling Mount Premium Quality

Ceiling Mount

Premium quality and *High-output 208-230/460 VAC* fans have a bracket with 5/16″ dia. holes (fasteners not included).
High-output 120 VAC fans include a bracket and bolts.
Valu-Cool fans have 5/16″ dia. holes (fasteners not included).
Extension pipes for mounting are sold separately on page 61.

Blade Dia.	cfm	dB	Max. rpm (No. of Speeds)	hp	Amps	Extension Pipe Required (Pipe Size)	Nonoscillating Each
Premium Quality, 115 VAC							
24″	5,588/4,556/3,325	72 @ 3 ft.	1,110 (3)	1/3	2.5	Yes (1″)	1718K55 ... $410.27
30″	8,402/6,259/4,463	75 @ 3 ft.	1,098 (3)	1/3	2.8	Yes (1″)	1718K56 ... 445.58
High Output, 120 VAC							
24″	7,300/5,500	87 @ 5 ft.	1,100 (2)	1/2	8.1	Yes (1 1/2″)	2024K49 ... 367.62
30″	9,200/6,900	86 @ 5 ft.	1,100 (2)	1/2	8.1	Yes (1 1/2″)	2024K51 ... 393.18
High Output, 208-230/460 VAC							
30″	12,400	80 @ 3 ft.	1,125 (1)	1	4/2	Yes (1″)	2024K64 ... 681.26
Valu-Cool, 120 VAC							
18″	3,190/2,970/2,660	67 @ 3 ft.	1,500 (3)	1/6	1.5	No	2035K67▲ 229.49
20″	3,670/3,330/2,940	62 @ 3 ft.	1,500 (3)	1/6	1.6	No	2035K69▲ 225.60
24″	5,130/4,490/3,670	72 @ 3 ft.	1,060 (3)	1/4	2.4	No	2035K87 ... 283.97
30″	7,400/6,360/4,980	75 @ 3 ft.	1,040 (3)	1/4	2.4	No	2035K89 ... 271.43

▲ Has 9-ft. cord with three-prong plug.

I-Beam Mount Valu-Cool

I-Beam Mount

Blade Dia.	cfm	dB	Max. rpm (No. of Speeds)	hp	Nonoscillating Amps	Nonoscillating Each	Oscillating Amps	Oscillating Each
Premium Quality, 115 VAC—*Fits I-beams 2″ to 15″ wide.*								
24″	5,387/4,356/3,125	72 @ 3 ft.	1,070 (3)	1/3	2.5	1718K57 ... $454.33	2.5	1718K95 ... $579.53
30″	7,996/5,859/4,063	75 @ 3 ft.	1,045 (3)	1/3	2.8	1718K58 ... 489.63	2.6	1718K96 ... 607.99
High Output, 120 VAC—*Fits I-beams 1″ to 16″ wide.*								
24″	7,300/5,500	87 @ 5 ft.	1,100 (2)	1/2	8.1	2024K47 ... 389.83	—	—
30″	9,200/6,900	86 @ 5 ft.	1,100 (2)	1/2	8.1	2024K48 ... 415.38	—	—
High Output, 208-230/460 VAC—*Fits I-beams 2″ to 24″ wide.*								
30″	12,400	80 @ 3 ft.	1,125 (1)	1	4/2	2024K63 ... 729.72	—	—
Valu-Cool, 120 VAC—*Fits I-beams 1″ to 25″ wide.*								
18″	3,190/2,970/2,660	67 @ 3 ft.	1,500 (3)	1/6	1.5	2035K68▲ 282.05	—	—
20″	3,670/3,330/2,940	62 @ 3 ft.	1,500 (3)	1/6	1.6	2035K72▲ 259.52	—	—
24″	5,130/4,490/3,670	72 @ 3 ft.	1,060 (3)	1/4	2.4	2035K88 ... 320.45	2.4	2035K57 ... 377.27
30″	7,400/6,360/4,980	75 @ 3 ft.	1,040 (3)	1/4	2.4	2035K92 ... 365.91	2.4	2035K58 ... 381.82

▲ Has 9-ft. cord with three-prong plug.

High-Visibility Fans

The safety yellow guard reduces the chance of accidental contact. These direct-drive fans are nonoscillating and have a single-phase, totally enclosed air-over (TEAO) motor that's cooled by air from the fan. Operate at 60 Hz.

Pedestal fans have rubber wheels for mobility. Height is measured from the floor to the center of the guard. *24″* and *30″ blade dia.* fans adjust from 5 ft. to 8 ft. high. *32″* and *36″ blade dia.* fans are 3′9″ high.

Wall-mount fans have a bracket with 7/16″ dia. holes (fasteners not included).

Standard fans are two speed and have galvanized steel blades and a PVC-coated steel guard. Operate at 115 VAC.

Heavy duty fans are single phase and have cast aluminum blades and a powder-coated steel guard that's supported by a polyethylene ring for more efficient airflow. Operate on 115 VAC but can be field-wired for 230 VAC.

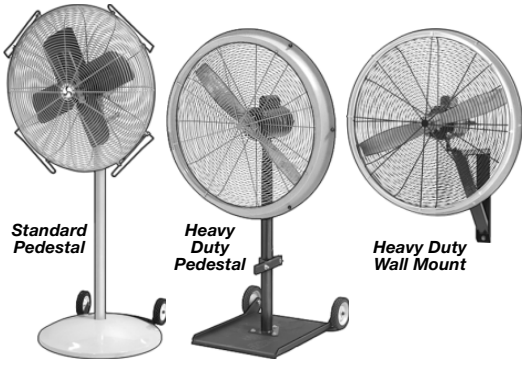

Blade Dia.	cfm	dB @ 5 ft.	Max. rpm	Amps	Pedestal	Each	Wall Mount	Each
Standard— *1/3 hp motor; 18-ft. cord with three-prong plug.*								
24″	5,280/3,980	67	1,120	2.3/1.8	**4789T21**	$464.69	**4789T22**	$403.65
30″	6,915/5,000	74	1,115	2.5/1.9	**4789T23**	502.25	**4789T24**	415.55
Heavy Duty— *1/2 hp motor; 6-ft. cord with three-prong plug.*								
32″	11,187	71	1,100	6.0	**4789T3**	1,041.67	**4789T6**	858.33
36″	13,450	74	1,100	6.0	**4789T4**	1,166.67	**4789T9**	958.33

Washdown Fans

Built to hold up in washdown environments, these fans meet UL 507 spray test requirements. All are nonoscillating and direct-drive with a single-phase, totally enclosed motor. Bakery Industry Sanitation Standards Committee (BISSC) certified for food service use.

Pedestal fans are 5 ft. high, measured from the floor to the center of the guard.

Wall-mount fans have a bracket with 1/2″ dia. mounting holes (fasteners not included).

Steel/aluminum fans are white epoxy-painted steel with a zinc-plated steel guard and aluminum blades. Operate on 120 VAC, 60 Hz. FDA compliant for kitchens and food preparation areas. Components are UL recognized. *Type 304 stainless steel* fans are all stainless steel and operate on 115/230 VAC, 60 Hz. Meet USDA standards. Meet ANSI/NSF 51. UL and C-UL listed.

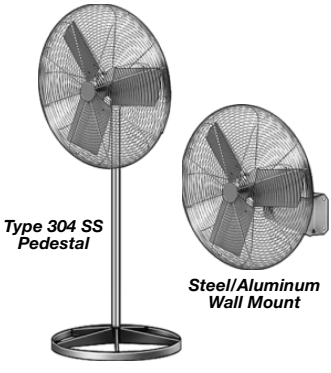

Blade Dia.	cfm	dB	Max. rpm (No. of Speeds)	hp	Amps	Pedestal	Each	Wall Mount	Each
Steel/Aluminum— *5-ft. cord with three-prong plug.*									
24″	6,800/5,200	69 @ 15 ft.	1,175 (2)	1/3	4.0	**1729K2**	$560.60	**1729K41**	$436.12
30″	8,600/6,200	73 @ 15 ft.	1,175 (2)	1/3	4.1	**1729K5**	661.77	**1729K43**	485.05
Type 304 Stainless Steel— *Leads for hardwiring.*									
30″	8,800	74 @ 3 ft.	1,075 (1)	1/3	4.0	**1729K11**	1,194.29	**1729K21**	1,053.55
Type 304 Stainless Steel— *12-ft. cord with three-prong plug.*									
30″	8,800	74 @ 3 ft.	1,075 (1)	1/3	4.0	**1729K13**	1,394.16	**1729K23**	1,221.39

Hazardous-Location Fans

The motor on these direct-drive fans is UL listed for Class 1, Group D and Class 2, Groups E, F, and G hazardous environments. Fans are nonoscillating, single speed, and have a single-phase, 1/4 hp motor. Operate on 115/230 VAC, 60 Hz (6.9/3.5 amps) and have leads for hardwiring. Blades are spark-resistant cast aluminum; guard is chrome-plated steel.

Pedestal fans adjust from 5 ft. to 8 ft. high (measured from the floor to the center of the guard) and have a black-painted steel base and pedestal.

Wall-mount fans have a bracket with 3/8″ dia. mounting holes (fasteners not included).

Ceiling-mount fans have a bracket with 5/16″ dia. mounting holes (fasteners not included).

I-beam-mount fans fit 2″ to 15″ wide I-beams and include all mounting hardware.

For photos of wall-, ceiling-, and I-beam-mount fans, see the previous page.

Blade Dia.	cfm	dB @ 3 ft.	rpm	Pedestal	Each	Wall Mount	Each
24″	5,739	72	1,140	**2188K33**	$857.55	**2188K42**	$803.23
30″	8,723	75	1,140	**2188K34**	904.50	**2188K43**	823.46
				Ceiling Mount		***I-Beam Mount***	
24″	5,739	72	1,140	**2188K51**	742.98	**2188K61**	804.00
30″	8,723	75	1,140	**2188K52**	761.97	**2188K62**	820.75

Jet-Stream Wall-Mount Fans

For a concentrated stream of air that travels two to three times farther than airflow from conventional fans, choose these venturi tube-style fans. They're perfect for cooling a production line or moving air through warehouse aisles.

Fans are direct-drive, single speed, and have a totally enclosed air-over (TEAO) motor that's cooled by air from the fan. Blades are stamped aluminum; housing and guard are steel. Mounting bracket has 11/16″ dia. holes (fasteners not included).

Oscillating fans cover a 75° arc.

115 VAC fans are single phase and have a 12-ft. cord with three-prong plug.

208-230/460 VAC fans are three phase and have a junction box for hardwiring.

	Blade Dia.	cfm	dB @ 25 ft.	rpm	hp		Each
115 VAC, 60 Hz (6 amps)							
Nonoscillating	22″	5,570	68	1,725	1/2	**2138K73**	$826.18
Oscillating	22″	5,570	68	1,725	1/2	**2138K63**	1,360.14
208-230/460 VAC, 60 Hz (4.0/1.8 amps)							
Nonoscillating	30″	12,000	65	1,800	1	**2138K74**	1,238.28
Oscillating	30″	12,000	65	1,800	1	**2138K64**	1,755.86

Long-Reach Wall-Mount Fans

Provide relief to workers loading and unloading trailers on your dock. These fans attach to a pivoting steel extension arm that allows you to direct air where you need it. Fans are nonoscillating, direct-drive, and three speed. They have aluminum blades, a chrome-plated steel guard, and a single-phase, totally enclosed motor. Operate on 115 VAC, 60 Hz (2.2 amps) and have a 5-ft. cord with three-prong plug. Mounting hardware included. UL and C-UL listed.

Optional light kit uses PAR38 and R40 medium screw-base bulbs up to 300 watts (not included; see pages 687-688). UL and C-UL listed.

Blade Dia.	cfm	dB @ 15 ft.	Max. rpm	hp	With 24″ Arm	Each	With 40″ Arm	Each	With 60″ Arm	Each
18″	5,750/4,700/3,200	65	1,750	1/8	**2102K25**	$198.21	**2102K27**	$244.83	**2102K29**	$252.89

Optional Light Kit ..... **2102K351** Each $44.64
Replacement Motor ..... **2102K43** Each $78.18

Suspension-Mount Fans

A

B

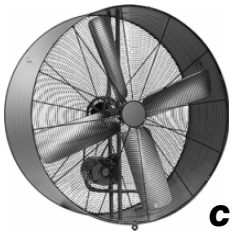

C

Keep walkways and aisles clear without sacrificing comfort when you suspend these fans from your ceiling. All are nonoscillating, single speed, and have a steel housing, unless noted. Operate at 60 Hz.

Direct Drive— Fewer moving parts to wear out or replace and typically take up less space than belt-drive fans with the same horsepower. Their venturi tube design provides a concentrated stream of air that travels farther than airflow from conventional fans. All have stamped aluminum blades, a steel guard, and a totally enclosed air-over (TEAO) motor that's cooled by air from the fan. Suspend these fans using straight-link steel chain with a minimum 2/0 trade size and 545-lb. work load limit (see page 1399). *115 VAC* fan has a 12-ft. cord with three-prong plug. *208-230/460 VAC* fan has a junction box for hardwiring.

Belt Drive— More efficient than comparably sized direct-drive fans, producing more cfm for the same horsepower. ***High-output*** fans have a steel guard and an open dripproof (ODP) motor (except 2214K55, which has a totally enclosed motor). UL listed. *115 VAC* fans have steel blades, a mounting yoke with 9/16″ dia. holes (fasteners not included), and a 10-ft. cord with three-prong plug. C-UL listed. *230/460 VAC* fans have stamped aluminum blades and a junction box for hardwiring. Housing is high-density polyethylene. Suspend using Grade 70 steel chain with a minimum 1/4″ trade size and 3,150-lb. work load limit (see page 1397).

Hazardous-location fans have spark-resistant stamped aluminum blades, a steel guard, and a motor that's UL listed for Class I, Group D and Class II, Groups E, F, and G hazardous environments. The junction box has connections for hardwiring, so you can wire fans without removing the guard. Suspend using Grade 70 steel chain with a minimum 1/4″ trade size and 3,150-lb. work load limit (see page 1397).

	Blade Dia.	cfm	dB	rpm	hp	Amps	Overall Size		Each
Direct Drive									
High Output, 115 VAC—*Single Phase*									
A	22″	5,570	68 @ 25 ft.	1,725	1/2	6.0	29″ Dia. × 16″ Dp.	**5561T43**	$743.11
High Output, 208-230/460 VAC—*Three Phase*									
A	30″	12,000	65 @ 25 ft.	1,800	1	4.0/1.8	37″ Dia. × 22″ Dp.	**5561T44**	1,074.48
Belt Drive									
High Output, 115 VAC—*Single Phase*									
B	36″	12,100	Not Rated	500	1/2	7.5	51″ Ht. × 44″ Wd. × 18″ Dp.	**2214K51**	893.64
B	48″	19,460	Not Rated	475	1	11.0	63″ Ht. × 57″ Wd. × 24″ Dp.	**2214K55**	1,285.00
High Output, 230/460 VAC—*Three Phase*									
C	36″	14,500	69 @ 15 ft.	500	1/2	2.3/1.1	39″ Dia. × 17″ Dp.	**2074K21**	749.09
C	48″	22,700	69 @ 15 ft.	390	1	3.8/1.9	51″ Dia. × 20″ Dp.	**2074K25**	918.18
Hazardous Location, 115/230 VAC—*Single Phase*									
C	36″	14,500	67 @ 15 ft.	500	1/2	7.8/3.9	39″ Dia. × 23″ Dp.	**2137K51**	1,118.64
C	48″	22,700	73 @ 15 ft.	390	1	13.2/6.6	51″ Dia. × 23″ Dp.	**2137K55**	1,375.00

Machine-Mount Fans

Often used to cool transformers, you can mount these single-speed fans directly to machinery that doesn't ordinarily accommodate fans. They have aluminum blades, a galvanized steel guard, and a single-phase, totally enclosed air-over (TEAO) motor that's cooled by air from the fan. Operate on 115/208-230 VAC, 60 Hz and have terminal board connections.

Optional mounting kit includes a bracket and hardware for attaching fans to machinery.

Blade Dia.	cfm	dB @ 6 ft.	rpm	hp	Amps	O'all Size, Dia. × Dp.		Each
18″	5,060	58	1,725	1/4	2.8/1.5	20 1/2″ × 15″	**1929K11**	$545.77
24″	6,790	62	1,725	1/2	4.6/2.4	28 3/4″ × 15″	**1929K17**	597.74
Optional Mounting Kit							**1929K81**	68.75

Air-Powered Fans

When you can't use electricity, count on these fans to keep you cool. Air power allows variable speed and reversible airflow. Fans are nonoscillating and have an adjustable-height pedestal. Blades are aluminum. Guard, pedestal, and stand are steel. Air connection is 1/4″ NPS male. Height is measured from the floor to the center of the guard.

18″ blade dia. fan adjusts from 24″ to 35″ high. Air consumption is 5 cfm at 90 psi.

24″ blade dia. fan adjusts from 48″ to 49 3/4″ high. Air consumption is 7 cfm at 90 psi.

Note: Lubricated air is required for proper operation.

Blade Dia.	Max. cfm	dB @ 5 ft.	Max. rpm	hp		Each
18″	2,640	50	1,000	1/8	**1746K15**	$567.88
24″	3,460	50	1,000	1/4	**1746K13**	690.58

Evaporative Cooling Fans

Where air conditioning is impractical, roll out these evaporative fans, also known as swamp coolers. Setup is simple—just connect to your water supply and plug into a power source to start cooling. Fans take in water, which soaks into evaporative pads. When air passes through the pads, the water evaporates to produce cool air. Fans have a leakproof molded plastic housing, casters with plastic wheels, and a single-phase, 1/3 hp, open dripproof (ODP) motor. Operate at 60 Hz and have a 16-ft. cord with three-prong plug. Water connection is 3/4″ GHT.

24″ and ***36″ blade dia.*** fans are direct drive and operate on 120 VAC.

48″ blade dia. fan is belt drive and operates on 115 VAC.

Optional water tank comes in handy when you don't have access to another water supply. Capacity is 50 gallons.

Blade Dia.	cfm	dB @ 3 ft.	Max. rpm (No. of Speeds)	Amps	Overall Size, Ht. × Wd. × Dp.	***Fans***	Each	***Replacement Pads*** No. Req'd.		Each
24″	3,900 to 6,700	37	1,080 (Variable)	4.5	53″ × 50″ × 25″	**2073K41**	$2,058.90	4	**2073K51**	$45.64
36″	4,300 to 10,100	34	780 (Variable)	6.3	67″ × 62″ × 32″	**2073K47**	2,604.61	5	**2073K52**	52.70
48″	11,000/20,000	30	1,725 (2)	8.7	86″ × 74″ × 36″	**2073K49**	3,655.86	6	**2073K53**	58.72
Optional Water Tank									**2073K62**	Each $550.70

Portable Direct-Drive Fans

Valu-Cool

Valu-Cool Multi-Mount

Valu-Cool with Tilt Stand

Corrosion Resistant

Wheel these nonoscillating fans wherever you need air circulated. Direct-drive fans have fewer moving parts to wear out or replace than belt-drive fans.

Valu-Cool fans have a totally enclosed motor (except 20445K21, which has an open dripproof motor) and a 10-ft. cord with three-prong plug. Housing and blades are steel; wheels are plastic. UL listed. *Valu-cool* have a steel wire guard. C-UL listed. *Valu-cool multi-mount* have a black epoxy-coated steel guard and a tilt stand that converts to a wall/ceiling bracket with ½″ dia. holes (fasteners not included). You can also suspend them using the included chain and S-hooks. *Valu-cool with tilt stand* allow you to position the fan head and lock it in place. Guard is steel. C-UL listed.

Corrosion-resistant fans have a totally enclosed motor and an 8-ft. cord with three-prong plug. Motor is UL and C-UL listed. Housing is aluminum, guard is black powder-coated steel, and wheels are plastic. *30″ blade dia.* fan has stamped aluminum blades. *36″ blade dia.* fan has galvanized steel blades.

Washdown fan has a totally enclosed air-over (TEAO) motor that's rated IP55 for washdown applications and cooled by air from the fan. Motor has UL recognized components. Fan has a 10-ft. cord with three-prong plug. Housing and guard are steel, blades are cast aluminum, and wheels are rubber. CSA certified.

Jet-stream fans have a totally enclosed air-over (TEAO) motor that's cooled by air from the fan. The venturi tube design creates a stream of air that travels farther than airflow from conventional fans. All have a steel housing and guard, aluminum blades, and rubber wheels. *22″ blade dia.* fan has a 12-ft. cord with three-prong plug. *30″ blade dia.* fan has a junction box.

Premium-quality fans have a totally enclosed motor and must be hardwired. Housing and guard are steel, blades are aluminum, and wheels are plastic. *24″* and *30″ blade dia.* fans have a conduit box. *36″ blade dia.* fan has wire leads.

Hazardous-location fans have a motor that's UL listed for Class I, Group D and Class II, Groups F and G hazardous environments. Have a steel housing and guards, aluminum blades, plastic wheels, and leads for hardwiring.

Jet Stream

Premium Quality

Hazardous Location

Blade Dia.	cfm	dB	Max. rpm (No. of Speeds)	hp	Amps	Overall Size, Ht.×Wd.×Dp.		Each
Valu-Cool, 115 VAC, 60 Hz—Single Phase								
30″	8,200/6,600	Not Rated	1,090 (2)	¼	3.5	34″×33″×15″	20445K21	$284.94
36″	10,900	Not Rated	825 (1)	½	6.0	40″×39″×21″	20445K13	440.84
42″	13,600	Not Rated	825 (1)	½	6.0	46″×45″×21″	20445K15	554.21
48″	19,100	Not Rated	850 (1)	1	9.1	52″×51″×25″	20445K31	823.37
Valu-Cool Multi-Mount, 115 VAC, 60 Hz—Single Phase								
30″	5,670/4,590/3,410	76 @ 3 ft.	1,110 (3)	¼	2.9	36″×35″×14″	20375K12	468.32
36″	11,200/8,090	78 @ 3 ft.	830 (2)	½	4.6	40″×39″×15″	20375K14	506.77
Valu-Cool with Tilt Stand, 115 VAC, 60 Hz—Single Phase								
42″	13,600	Not Rated	825 (1)	½	6.0	54″×51″×27″	20375K21	729.04
48″	19,100	Not Rated	850 (1)	1	9.1	60″×57″×26″	20375K23	1,028.25
Corrosion Resistant, 115 VAC, 50/60 Hz—Single Phase								
30″	9,100	65 @ 15 ft.	825 (1)	½	7.0	33″×32″×15″	3721T21	638.46
36″	11,800	68 @ 15 ft.	825 (1)	½	7.0	38″×37″×15″	3721T27	675.00
Washdown, 115 VAC, 60 Hz—Single Phase								
36″	9,800	77 @ 3 ft.	850 (1)	½	5.3	46″×46″×15″	2441K44	1,060.73
Jet Stream, 115 VAC, 60 Hz—Single Phase								
22″	5,570	68 @ 25 ft.	1,725 (1)	½	6.0	63″×29″×30″	2138K93	861.62
Jet Stream, 208-230/460 VAC, 60 Hz—Three Phase								
30″	12,000	65 @ 25 ft.	1,800 (1)	1	4.0/1.8	70″×37″×30″	2138K94	1,284.14
Premium Quality, 115/230 VAC, 60 Hz—Single Phase								
24″	7,890	83 @ 10 ft.	1,750 (1)	1	13.6/6.8	58″×36″×33″	2029K25	1,540.74
Premium Quality, 230/460 VAC, 60 Hz—Three Phase								
30″	13,000	84 @ 10 ft.	1,150 (1)	2	6.4/3.2	61″×42″×33″	2029K31	2,146.67
36″	20,000	90 @ 10 ft.	1,750 (1)	3	8.2/4.1	61″×45″×37″	2029K56	2,071.88
Hazardous Location, 115/230 VAC, 60 Hz—Single Phase								
24″	7,890	82 @ 10 ft.	1,725 (1)	1	12.8/6.4	45″×30″×32″	1903K58	1,798.52
Hazardous Location, 230/460 VAC, 60 Hz—Three Phase								
36″	20,000	90 @ 10 ft.	1,725 (1)	3	8.2/4.1	51″×42″×32″	1903K72	2,509.63

Heavy Duty Direct-Drive Fans

Built to withstand the most demanding environments, these fans have a heavy gauge steel housing and stand. Direct-drive fans have fewer moving parts to wear out or replace than belt-drive fans. They're single speed and nonoscillating. Blades are cast aluminum; guard is zinc-plated steel. *115/230 VAC* fans are single phase; *230/460 VAC* fans are three phase.

Premium-quality fans have a totally enclosed motor and must be hardwired. *18″* and *24″ blade dia.* fans have a conduit box. *30″* and *36″ blade dia.* fans have wire leads.

Hazardous-location fans have a motor that's UL listed for Class I, Group D, and Class II, Groups F and G hazardous environments. Have leads for hardwiring and a 180° pivoting head.

Premium Quality

Hazardous Location

Blade Dia.	cfm	dB @ 10 ft.	rpm	hp	Overall Size, Ht.×Wd.×Dp.	115/230 VAC, 60 Hz Amps		Each	230/460 VAC, 60 Hz Amps		Each
Premium Quality											
18″	4,000	78	1,750	½	21″×18″×20″	7.6/3.8	2029K1	$970.27	2.0/1.0	2029K2	$944.44
24″	7,890	83	1,750	1	28″×24″×21″	13.6/6.8	2029K5	1,153.06	3.4/1.7	2029K6	1,213.73
30″	11,000	92	1,750	1½	34″×30″×20″	18.0/8.8	2029K9	1,486.89	—	—	—
36″	20,000	90	1,750	3	40″×36″×24″	—	—	—	8.2/4.1	2029K46	1,726.23
Hazardous Location											
18″	4,000	76	1,725	⅓	38″×24″×32″	6.0/3.0	1903K54	1,497.74	—	—	—
24″	7,890	82	1,725	1	41″×30″×32″	12.8/6.4	1903K112	1,640.00	3.2/1.6	1903K65	1,623.70
36″	20,000	90	1,725	3	47″×42″×32″	—	—	—	8.2/4.1	1903K74	2,287.41

Portable Belt-Drive Fans

A

B

C

D

Typically more energy efficient than comparably sized direct-drive fans, these belt-drive fans produce a higher cfm for the same horsepower. They're nonoscillating and have wheels for mobility.

High-output fans have an open dripproof (ODP) motor except 2214K65 and K75, which have a totally enclosed motor. Housing, guard, and blades are steel (except 2074K45, which has high-density polyethylene housing and stamped aluminum blades) and wheels are plastic. UL listed. *115 VAC* fans have a 10-ft. cord with three-prong plug. *240/480 VAC* fan has a junction box for hardwiring.

Hazardous-location fans have a motor that's UL listed for Class I, Group D and Class II, Groups E, F, and G hazardous environments. They have a steel housing and guard, stamped aluminum blades, rubber wheels, and a junction box for hardwiring.

Corrosion-resistant fans have an aluminum housing and guard, galvanized steel blades, plastic wheels, and a 10-ft. cord with three-prong plug. *42″ blade dia.* fan has an open dripproof (ODP) motor. *48″ blade dia.* fan has a totally enclosed motor.

	Blade Dia.	cfm	dB @ 15 ft.	Max. rpm (No. of Speeds)	hp	Amps	Overall Size, Ht. × Wd. × Dp.		Each
High Output, 115 VAC, 60 Hz—*Single Phase*									
A	36″	12,100	Not Rated	500 (1)	½	7.5	42″ × 40″ × 21″	**2214K21**	$626.40
A	42″	15,850	Not Rated	505 (1)	¾	13.0	47″ × 45″ × 24″	**2214K63**	810.79
A	48″	19,460	Not Rated	475 (1)	1	11.0	51″ × 50″ × 28″	**2214K65**	1,116.00
High Output with Tilt Stand, 115 VAC, 60 Hz—*Single Phase*									
B	36″	12,100	Not Rated	500 (1)	½	7.5	47″ × 45″ × 21″	**2214K71**	909.76
B	42″	16,900	Not Rated	505 (1)	¾	13.0	54″ × 52″ × 27″	**2214K73**	1,077.75
B	48″	19,460	Not Rated	475 (1)	1	11.0	60″ × 58″ × 26″	**2214K75**	1,293.91
High Output with Tilt Stand, 240/480 VAC, 60 Hz—*Three Phase*									
C	48″	22,700	69	390 (1)	1	3.8/1.9	60″ × 26″ × 24″	**2074K45**	1,160.71
Hazardous Location with Tilt Stand, 120/240 VAC, 60 Hz—*Single Phase*									
C	36″	14,500	67	500 (1)	½	7.8/3.9	47″ Dia. × 26″ Dp.	**2137K71**	1,317.24
C	48″	22,700	73	390 (1)	1	13.2/6.6	60″ Dia. × 26″ Dp.	**2137K75**	1,654.55
Corrosion Resistant, 115 VAC, 60 Hz—*Single Phase*									
D	42″	14,440/10,015	Not Rated	536 (2)	¾	9.1	47″ × 46″ × 23″	**3721T34**	877.36
D	48″	23,500	72	525 (1)	1	9.6	50″ × 49″ × 23″	**3721T38**	897.44

U.S. Navy Fan

So rugged and dependable, this direct-drive, all-steel fan meets U.S. Navy specification MIL-F-68F for use on ships. It's two speed, nonoscillating, and adjusts 90° vertically and horizontally. Wall or bench mount using the included bracket with 3/8″ dia. holes (fasteners not included). Fan has a single-phase, open dripproof (ODP) motor and leads for hardwiring. Operates on 115 VAC, 50/60 Hz.

Blade Dia.	cfm	dB @ 3 ft.	Max. rpm	hp	Amps		Each
12″	2,200/1,500	22	1,400	1/15	1	**1936K44**	$212.52

Heat-Recovery Ceiling Fans

Collect warmer air from the ceiling and bring it down to where it's needed. Suspend these fans from a ceiling, beam, or other overhead structure using the included mounting hardware. Blades and housing are plastic.

Fans have a single-phase, shaded pole, open face motor, an adjustable thermostat (60° to 105° F), and 45 ft. of 7½″ dia. flexible vinyl duct. Operate on 120 VAC, 60 Hz and have a 6-ft. cord with three-prong plug. Blade dia. is 6½″; housing dia. is 10″.

cfm	rpm	hp	Amps		Each
For Ceilings Up to 24 ft. High					
250	3,000	1/100	0.7	**1918K14**	$135.45
For Ceilings Over 24 ft. High					
400	3,000	1/50	1.3	**1918K13**	155.05
Additional Duct (45-ft. Length)				**1918K51**	34.65

Ceiling Fans

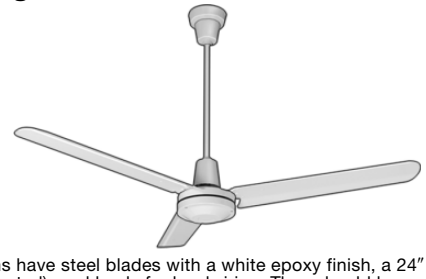

All fans have steel blades with a white epoxy finish, a 24″ downrod (unless noted), and leads for hardwiring. They should be mounted on flat ceilings at least 10 ft. above the floor and include mounting hardware and a safety cable for additional support. Fans are nonreversible and have a single-phase, totally enclosed motor. Operate at 50/60 Hz. UL and C-UL listed. ***Three-speed*** fan has a pull chain.

Optional installation kit includes an adjustable brace, two positioning feet, an electrical box, and mounting hardware.

Blade Dia.	cfm	dB @ 4 ft.	Max. rpm	hp	Amps		Each
Single Speed, 120 VAC							
36″	12,500	50	395	1/10	0.7	**2056K82**★	$128.47
48″	21,000	49	315	1/8	0.9	**2056K84**★	137.67
56″	24,000	50	265	1/10	1.0	**2056K88**	211.91
56″	25,500	50	265	1/7	1.0	**2056K86**★	162.58
60″	46,000	55	315	1/7	1.4	**2056K95**	209.75
Single Speed, 277 VAC							
56″	26,000	50	260	1/7	0.6	**2056K93**	164.64
Three Speed, 120 VAC							
56″	25,500/16,830/9,600	50	265	1/7	1.0	**1917K33**	177.19
Optional Installation Kit						**2042K77**	19.82

★ Also includes one 8″ downrod.

Ceiling Fan Speed Controls

3-amp model

8- and 12-amp models

Convert one or more single-speed ceiling fans to variable speed. These controls have a knob for turning the fan on and off and for adjusting speed from low to high. Connect them to a single-gang switch box using the wire leads. Mounting fasteners are included.

Capacity	120 VAC	Each	277 VAC	Each
3 amps	**2042K58**	$23.09	—	—
8 amps	**2042K59**	54.57	**2042K79**	$65.46
12 amps	**2042K71**	78.46	**2042K73**	94.70

Light Duty Pedestal Fans

Adjust the height of these three-speed fans by raising or lowering the pedestal. Fans have a single-phase, open drip-proof (ODP) motor. Operate on 120 VAC, 60 Hz and have a 6-ft. cord with three-prong plug. Height is measured from the floor to the center of the guard.

Tilt fan is nonoscillating and has a vertically pivoting head. It adjusts from 39″ to 49″ high. Base and blades are steel; guard is chrome-plated steel. UL listed.

Oscillating fan turns through a 90° arc or locks in a fixed position for concentrated airflow. Height adjusts from 28″ to 44¾″. Front guard is steel; rear guard, blades, and base are plastic. ETL listed.

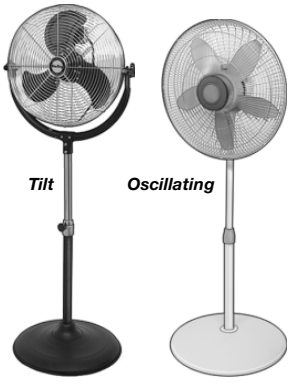

	Blade Dia.	cfm	Max. rpm	hp	Amps		Each
Tilt	18″	2,873/2,549/2,266	1,497	1/5	1.5	20965K65	$106.86
Oscillating	18″	1,970/1,520/1,170	1,000	1/20	1.1	20965K82	52.22

Light Duty Box Fan

Whether you require a window or surface installation, this three-speed fan is easy to move if your needs change.

It has a steel housing, plastic blades and guard, and a single-phase, open dripproof (ODP) motor. Operates on 120 VAC, 60 Hz and has a 6-ft. cord with three-prong plug. Overall size is 24″ Ht. × 21″ Wd. × 6″ Dp. ETL listed.

Optional wheeled stand is made of tubular steel and has plastic wheels for mobility. Stand raises fan 28″ above the floor and allows it to pivot 360°.

Blade Dia.	cfm	Max. rpm	hp	Amps		Each
20″	2,220/1,920/1,530	955	1/25	1.8	2027K34	$33.33
Optional Wheeled Stand					2027K26	35.20

Light Duty Window-Mount Fans

Airflow reverses with the flip of a switch to push stale air out or draw fresh air in. These three-speed fans have side panels that expand to fit your window, enabling you to mount the fan and still close the window. Housing is plastic; guard is steel. Fans are single-phase, operate on 120 VAC, 60 Hz, and have a 6-ft. power cord with three-prong plug. ETL listed. *16″ blade dia.* fan has plastic blades. *20″ blade dia*. fan has steel blades.

Blade Dia.	cfm	Max. rpm	hp	Amps	Overall Size, Ht. × Wd. × Dp.	Max. Wd., Expanded		Each
16″	2,470/1,700/1,360	1,370	1/6	0.8	22″ × 27″ × 8″	34″	2098K23	$79.55
20″	3,560/3,120/2,510	1,600	1/6	1.4	26″ × 27″ × 11″	38″	2098K22	177.00

Light Duty Tilt Fans

Tilt the head of these nonoscillating fans to direct air where it's needed. Fans have a steel guard and blades except 24″ blade dia., which has aluminum blades. They're single phase, operate on 120 VAC, 60 Hz, and have a 9-ft. cord with three-prong plug except 24″ blade dia., which has a 10-ft. cord. All are ETL listed except 1907K25. *12″ blade dia*. fans have an open dripproof (ODP) motor; *18″* and *24″ blade dia.* fans have a totally enclosed motor. *24″ blade dia.* fan is C-UL listed.

Multi-mount fans have a versatile steel bracket with a ½″ dia. hole (fastener not included).

Blade Dia.	cfm	Max. rpm (No. of Speeds)	hp	Amps	Overall Size, Ht. × Wd. × Dp.		Each
Multi-Mount							
12″	1,360/1,170/1,010	1,545 (3)	1/25	0.8	15″ × 15″ × 12″	1907K14	$83.67
18″	3,190/2,970/2,660	1,500 (3)	1/6	1.5	21″ × 22″ × 16″	1907K15	112.98
Portable with Floor Stand							
12″	1,360/1,170/1,010	1,500 (3)	1/25	0.8	17″ × 16″ × 9″	1907K12	94.75
18″	3,190/2,970/2,660	1,500 (3)	1/6	1.5	22″ × 22″ × 10″	1907K13	107.90
24″	6,800/5,000	1,150 (2)	1/4	2.2	29″ × 29″ × 14″	1907K25	262.86
Portable with Wheeled Stand							
18″	3,190/2,970/2,660	1,500 (3)	1/6	1.5	48″ × 24″ × 25″	1907K11	136.50

Light Duty Wall-Mount Fans

Set these three-speed fans to oscillate through a 90° arc or concentrate airflow by locking in a fixed position. Fans are made of impact-resistant plastic with a steel guard. They're single-phase, operate on 120 VAC, 60 Hz, and have a 6-ft. cord with three-prong plug. ETL listed. Mounting hardware included.

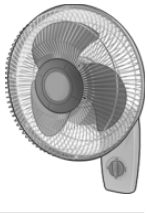

Blade Dia.	cfm	Max. rpm	hp	Amps	Overall Size, Ht. × Wd. × Dp.		Each
12″	930/780/620	1,450	1/50	0.4	21″ × 14″ × 16″	1908K53	$45.36
16″	1,710/1,500/1,330	1,545	1/20	0.7	23″ × 18″ × 14″	1908K54	51.76
18″	1,970/1,520/1,170	1,000	1/20	1.1	23″ × 20″ × 16″	1908K55	60.94

Light Duty Desktop Fans

Keep cool with one of these compact personal fans. Base and blades are plastic; guard is steel. Fans are single-phase, operate on 120 VAC, 60 Hz, and have a 6-ft. cord with three-prong plug. ETL listed. Both ***tilt*** fans have a vertically pivoting head. ***Tilt clip-on*** fan secures to surfaces up to 1½″ thick. ***Oscillating*** fans move through a 90° arc or lock in a fixed position.

Blade Dia.	cfm	Max. rpm (No. of Speeds)	Amps	Overall Size, Ht. × Wd. × Dp.		Each
Tilt						
6″	566/488	2,460 (2)	0.2	10″ × 6″ × 8″	2021K31	$16.67
Tilt Clip-On						
6″	566/488	2,460 (2)	0.2	10″ × 6″ × 8″	2021K32	17.24
Oscillating						
12″	930/780/620	1,450 (3)	0.4	20″ × 14″ × 12″	1908K51	34.17
16″	1,710/1,500/1,330	1,545 (3)	0.7	24″ × 18″ × 11″	1908K52	45.30

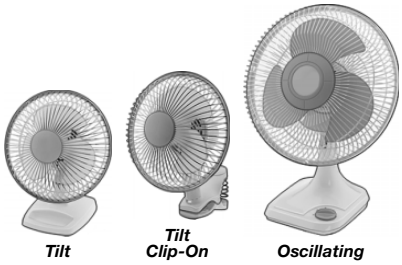

DC Fans

A screw-down base allows you to mount these nonoscillating fans on your benchtop, in your vehicle, or wherever you need cooling. Base is black die cast zinc, blades are aluminum, and guard is chrome-plated steel. Fans are direct-drive with a totally enclosed motor and one lead for hardwiring. Overall size is 9″ Ht.×8″ Wd.×5″ Dp. Mounting fasteners included.

VDC	Blade Dia.	cfm	Max. rpm (No. of Speeds)	Amps		Each
12	6½″	260/215	3,410 (2)	2.6	19065K85	$72.08
24	6½″	275/245	3,580 (2)	1.1	19065K89	76.25
36	6½″	260	3,000 (Variable)	0.9	19065K92	85.60

Light Duty Fan Blades

Compact Square Tip

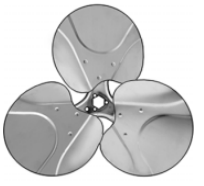

Round Tip

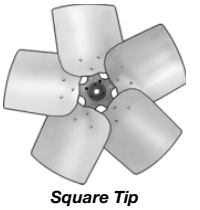

Square Tip

For low-airflow applications, choose these stamped aluminum blades. Rotation is clockwise when viewed from the front of the fan. Cfm is measured at 0″ SP (static pressure).

Compact Square Tip

Blades are just the right size for electrical equipment and appliances. They have an integral hub and include a set screw for mounting to motor shaft.

Blade Dia.	No. of Blades	Pitch	Max. rpm	@ Max. rpm cfm	hp	Bore Dia.		Each
2½″	10	45°	4,200	25	0.001	3/16″	17545K61	$2.36
3″	10	45°	4,200	45	0.004	3/16″	17545K62	2.43
3½″	10	45°	4,200	60	0.005	3/16″	17545K63	2.52
4″	10	45°	4,200	85	0.01	3/16″	17545K64	2.57
4½″	10	45°	4,200	120	0.018	3/16″	17545K65	3.18
5″	10	45°	4,200	190	0.03	3/16″	17545K66	3.41
6″	4	20°	4,200	320	0.02	3/16″	17545K31	3.56
6½″	4	20°	4,200	350	0.03	3/16″	17545K32	3.94
7″	5	30°	3,600	550	0.1	1/4″	17545K41	5.67
8″	5	30°	3,600	850	0.17	1/4″	17545K42	6.77
9″	5	25°	3,600	875	0.12	1/4″	17545K83	7.42
10″	5	21°	1,725	825	0.06	1/4″	17545K44	8.17
12″	5	24°	1,725	1,375	0.18	5/16″	17545K45	11.76
14″	5	32°	1,725	1,900	0.27	1/2″	17545K46	15.12

Round Tip and Square Tip

Blades are riveted to a steel center and include a steel shaft collar that installs on either side of the blade. 5/8″ and 3/4″ dia. have a keyway. Round-tip blades are for circulating fans and exhaust fans in low static pressure applications. Square-tip blades (also called condenser-style blades) handle higher static pressure, such as venturi tube fans.

To Order: Please specify shaft collar size (except for 30″ blade dia., which has fixed hub that fits a 1/2″ dia. shaft). For 10″ to 18″ blade dia., specify 1/4″, 5/16″, 3/8″, 1/2″, 5/8″, or 3/4″. For 20″ to 26″ blade dia., specify 1/2″, 5/8″, or 3/4″.

Blade Dia.	No. of Blades	Pitch	Max. rpm	@ Max. rpm cfm	hp		Each
Round Tip							
12″	3	23°	1,725	750	0.022	2090K129	$32.19
14″	3	23°	1,725	1,200	0.043	2090K139	35.29
16″	3	23°	1,725	2,000	0.072	2090K149	40.88
18″	3	23°	1,725	2,600	0.150	2090K159	43.04
18″	4	23°	1,725	2,700	0.185	2090K249	50.79
20″	3	23°	1,725	3,500	0.340	2090K169	46.96
20″	4	23°	1,725	3,500	0.320	2090K259	54.06
24″	3	18°	1,725	5,400	0.525	2090K189	58.58
24″	4	18°	1,725	5,373	0.657	2090K279	66.81
30″	3	23°	1,140	7,713	0.571	2090K512	51.10
Square Tip							
10″	3	27°	1,725	702	0.036	2090K179	31.52
10″	4	23°	1,725	646	0.033	2090K199	30.81
12″	4	23°	1,725	1,162	0.065	2090K219	32.08
14″	4	23°	1,725	1,810	0.123	2090K329	35.35
14″	5	27°	1,725	2,015	0.191	2090K419	42.62
16″	4	23°	1,725	2,602	0.218	2090K339	40.75
16″	5	27°	1,550	2,883	0.323	2090K429	47.69
18″	3	27°	1,725	4,404	0.537	2090K619	43.04
18″	3	33°	1,725	4,870	0.682	2090K629	43.04
18″	5	27°	1,625	4,086	0.457	2090K439	56.62
20″	3	22°	1,140	2,800	0.169	2090K639	46.96
20″	3	30°	1,140	3,700	0.220	2090K649	46.96
20″	5	27°	1,625	5,416	0.956	2090K449	62.92
22″	5	27°	1,625	7,697	1.374	2090K459	67.85
24″	3	33°	1,625	10,072	1.857	2090K659	58.58
24″	5	27°	1,140	6,942	0.749	2090K469	71.60
26″	5	27°	1,140	8,850	1.209	2090K479	70.71

Medium Duty Fan Blades

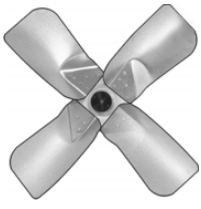

Four Blade

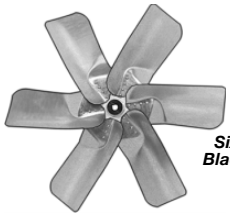

Six Blade

With a heavier construction than light duty, these blades produce higher airflow. They have a zinc-plated steel hub plate and a carbon steel shaft collar. Rotation is clockwise when viewed from the front of the fan. Cfm is measured at 0″ SP (static pressure). **To Order:** Please specify shaft collar size: 1/2″, 5/8″, 3/4″, 7/8″, 1″, 1 1/8″, 1 3/16″, 1 1/4″, or 1 3/8″.

Blade Dia.	No. of Blades	Pitch	Max. rpm	@ Max. rpm cfm	hp		Each
Galvanized Steel							
18″	4	36°	2,140	4,412	0.8	19055K67	$96.11
20″	4	36°	1,936	5,606	1	19055K68	98.91
24″	4	36°	1,335	7,920	1	19055K81	102.13
26″	4	38°	1,140	9,014	1.1	19055K82	106.77
28″	4	38°	950	10,267	1	19055K83	107.50
30″	4	35°	950	10,513	1.3	19055K84	112.00
30″	6	38°	1,140	16,150	3.5	19055K16	214.50
36″	4	38°	765	15,155	1.5	19055K85	148.50
36″	6	38°	860	20,670	3.8	19055K18	230.50
42″	4	38°	630	19,441	2	19055K86	167.00
42″	6	32°	650	23,154	3.7	19055K22	257.50
48″	4	39°	525	24,913	2.5	19055K87	199.00
48″	6	34°	500	28,270	3	19055K24	312.00
Type 304 Stainless Steel							
18″	4	36°	2,140	4,412	0.8	19055K77	174.50
24″	4	36°	1,335	7,920	1	19055K91	195.00
26″	4	38°	1,140	9,014	1.1	19055K92	207.50
28″	4	38°	950	10,267	1	19055K93	218.00
30″	4	35°	950	10,513	1.3	19055K94	232.50
36″	4	38°	765	15,155	1.5	19055K95	307.00
42″	4	38°	630	19,441	2	19055K96	353.00
48″	4	39°	525	24,913	2.5	19055K97	417.00

Heavy Duty Corrosion-Resistant Polypropylene Fan Blades

Made of fiberglass-reinforced polypropylene, these blades are lightweight yet generate high airflow. All have a cast aluminum hub and a keyway. Rotation is counterclockwise when viewed from the front of the fan. Cfm is measured at 0″ SP (static pressure). *12″ to 24″ dia.* blades have two set screws and a 5/8″ bore dia. except 24″, which have a 7/8″ bore dia. *30″ and 36″ dia.* blades require a quick-disconnect (QD) bushing (see 6086K12 on page 1045).

Blade Dia.	No. of Blades	Pitch	Max. rpm	@ Max. rpm cfm	hp		Each
12″	4	35°	1,725	1,360	0.1	5352K11	$59.85
12″	6	35°	1,750	1,500	0.15	5352K31	60.60
14″	4	35°	1,725	2,000	0.18	5352K12	61.18
14″	6	35°	1,750	2,210	0.25	5352K32	61.98
15″	4	35°	1,725	2,600	0.24	5352K13	62.57
15″	6	35°	1,750	2,730	0.3	5352K33	63.42
16″	4	35°	1,725	3,130	0.28	5352K14	64.02
16″	6	35°	1,750	3,280	0.37	5352K34	64.93
18″	4	35°	1,725	4,250	0.4	5352K15	67.71
18″	6	35°	1,750	4,360	0.55	5352K35	68.73
20″	4	35°	1,725	6,000	0.7	5352K16	69.37
20″	6	35°	1,750	5,480	0.72	5352K36	70.45
24″	4	35°	1,725	8,620	1.1	5352K17	73.15
24″	6	35°	1,750	8,310	1.75	5352K37	95.28
30″	4	32.5°	1,725	17,700	4.2	5352K18	172.84
30″	6	30°	1,750	14,000	4.6	5352K38	144.84
36″	4	32.5°	1,725	26,000	7.54	5352K19	210.42
36″	6	30°	1,750	24,300	7.4	5352K39	206.22

Heavy Duty Cast Aluminum Fan Blades

By far our most durable, these blades are cast aluminum with an integral hub. They're also precision balanced to generate high airflow while running smoothly and quietly. Blade pitch is 12°. Cfm is measured at 0″ SP (static pressure). Rotation is clockwise when viewed from the front of the fan. Furnished with two set screws for mounting to motor shaft.

To Order: Please specify bore diameter from available diameters listed below.

Blade Dia.	No. of Blades	Max. rpm	@ Max. rpm cfm	@ Max. rpm hp	Keyway	Available Bore Dia.		Each
12″	3	1,725	1,255	1/25	No	1/2″	1910K113	$60.49
14″	3	1,725	1,800	1/20	No	1/2″, 5/8″	1910K35	65.37
15″	3	1,725	2,800	1/10	No	1/2″, 5/8″	1910K36	74.42
16″	3	1,725	3,100	1/8	No	1/2″, 5/8″	1910K38	84.44
18″	3	1,725	3,900	1/6	No	1/2″, 5/8″, 3/4″	1910K39	99.57
20″	3	1,725	4,840	1/4	No	1/2″, 5/8″, 3/4″	1910K41	107.20
24″	2	1,725	4,850	1/4	No	1/2″, 5/8″	1910K47	79.11
24″	3	1,725	8,165	1/2	No	1/2″, 5/8″, 3/4″, 7/8″	1910K42	139.20
30″	2	1,725	9,500	1/2	No	1/2″, 5/8″, 7/8″	1910K48	99.57
30″	3	1,725	14,500	1	No	1/2″, 5/8″, 7/8″, 1″	1910K43	195.20
36″	2	1,750	18,000	1 1/2	Yes	7/8″, 1″, 1 1/8″	1910K51	163.20
36″	3	1,725	28,000	3	No	7/8″, 1″	1910K44	284.80
36″	4	1,750	21,000	3	Yes	7/8″, 1″, 1 1/8″, 1 3/8″	1910K54	272.00
42″	2	1,750	28,000	3	Yes	1 1/8″, 1 3/8″	1910K52	163.20
42″	4	1,750	31,000	5	Yes	1″, 1 1/8″, 1 3/8″	1910K55	320.00
48″	2	1,750	33,500	5	Yes	1 1/8″, 1 3/8″	1910K53	170.00
48″	4	1,750	41,000	7 1/2	Yes	1″, 1 1/8″, 1 3/8″	1910K56	320.00

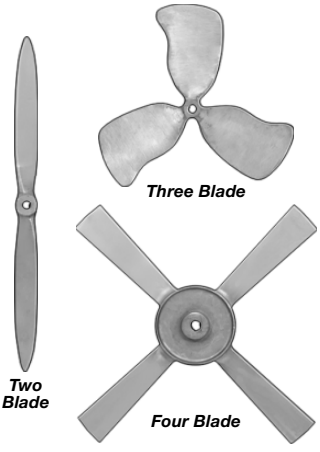

NEMA 48Y Pedestal Fan Motors

Mount one of these single phase, totally enclosed air-over (TEAO) motors directly to a fan column. They're reversible and cooled by air from the fan. They have a permanent split capacitor, thermal overload protection, and a NEMA 48Y frame (unless noted). Operate on 115/230 VAC, 60 Hz and have leads for hardwiring. Service factor is 1.0. Components are UL recognized. CSA certified. Four 10-32 threaded mounting studs extend 1″ for mounting a fan shroud. Mounting bracket on motor base has a 0.53″ dia. hole (fasteners not included). Motors with a 5/8″ shaft dia. have a keyway.

For information about electric motors including service factor, see page 1020.

Note: When selecting a fan blade, be sure the rpm and hp are compatible and the bore size of the blade matches the shaft diameter of the motor.

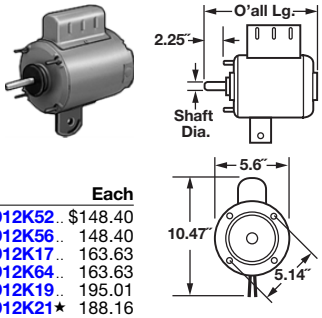

rpm	hp	Full Load Amps	O'all Lg.	Shaft Dia.		Each
1,075	1/4	2.4/1.2	10.95″	1/2″	1912K33	$176.40
1,075	1/4	2.4/1.2	10.95″	5/8″	1912K58	176.40
1,075	1/3	3.0/1.5	11.46″	1/2″	1912K45	182.61
1,075	1/3	3.0/1.5	11.46″	5/8″	1912K68	182.61
1,075	1/2	5.0/2.5	11.93″	1/2″	1912K62	187.55
1,075	1/2	5.0/2.5	11.93″	5/8″	1912K73★	187.54
1,625	1/4	2.6/1.3	10.95″	1/2″	1912K52	$148.40
1,625	1/4	2.6/1.3	10.95″	5/8″	1912K56	148.40
1,625	1/3	3.4/1.7	10.95″	1/2″	1912K17	163.63
1,625	1/3	3.4/1.7	10.95″	5/8″	1912K64	163.63
1,625	1/2	4.6/2.3	10.95″	1/2″	1912K19	195.01
1,625	1/2	4.6/2.3	10.95″	5/8″	1912K21★	188.16

★ Has a NEMA 48YZ frame.

Fan Guards

Attach these two-piece guards to through-bolts on NEMA 48, 48Y, and 56 frame motors. Then snap them together to enclose the fan blades. Guards are made of chrome-plated steel.

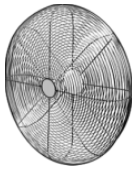

Fits Blade Dia.	Guard Dia.		Each
18″ to 20″	22 7/8″	1938K1	$54.65
24″	26 7/8″	1938K2	68.95
30″	33 3/8″	1938K3	93.34

Room Exhaust Fans

Extract stale air and humidity with these exhaust fans. All have a white plastic grille, damper (except 2213K36), and leads for hardwiring.

All fans have a single-phase, permanently lubricated motor and operate on 120 VAC, 60 Hz. UL listed. Mounting fasteners are not included.

For more information about exhaust fans, see page 656.

Styles A and ***D*** have a galvanized steel housing.

Styles B and ***C*** have a black-painted steel housing.

Style D have a fan and light in one convenient unit. Use one screw-base bulb up to 100 watts (sold separately). The fan and light can operate independently or share a switch.

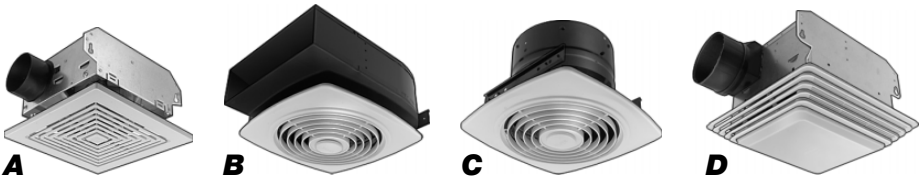

Duct Size	cfm	Grille Size, Lg. × Wd.	Mounting Size, Lg. × Wd. × Dp.	Mounting Hole Dia.	Amps	Sones		Each
Ceiling/Wall Mount								
(A) Fans with Horizontal Discharge for Round Duct								
3″ Dia.	50	9 1/4″ × 9″	7 1/2″ × 7 1/4″ × 3 5/8″	1/8″	0.9	4.0	2213K31	$16.45
3″ Dia.	70	9 1/4″ × 9″	7 1/2″ × 7 1/4″ × 3 5/8″	1/8″	1.2	6.0	2213K32	34.33
4″ Dia.	110	11 1/8″ × 10 5/8″	8 1/4″ × 8″ × 5 3/4″	3/16″	1.3	4.0	2213K1	66.32
(B) Fans with Horizontal Discharge for Rectangular Duct								
3 1/4″ Ht. × 10″ Wd.	160	11 1/2″ × 11 1/2″	14″ × 12″ × 3 1/4″	3/16″	1.5	5.0	2213K46	82.89
3 1/4″ Ht. × 10″ Wd.	270	13 1/2″ × 13 1/2″	16 3/4″ × 13 7/8″ × 3 1/4″	3/16″	1.7	8.0	2213K54	115.74
Ceiling Mount Only								
(C) Fans with Vertical Discharge for Round Duct								
8″ Dia.	180	11 1/2″ × 11 1/2″	8 1/4″ Dia. × 7″ Dp.	3/16″	1.5	6.5	2213K17	67.60
10″ Dia.	350	13 1/2″ × 13 1/2″	10 1/4″ Dia. × 7″ Dp.	3/16″	1.7	6.5	2213K36	99.49
(D) Fans with Light and Horizontal Discharge for Round Duct								
4″ Dia.	50	11 1/8″ × 10 5/8″	8 1/4″ × 8″ × 5 3/4″	3/16″	1.6	2.5	2213K48	43.88
4″ Dia.	70	11 1/8″ × 10 5/8″	8 1/4″ × 8″ × 5 3/4″	3/16″	2.0	3.5	2213K56	53.61
4″ Dia.	110	10 1/2″ × 10 1/2″	8 3/4″ × 8 3/4″ × 5 3/8″	3/8″	1.7	4.0	2213K57	84.73
100-Watt Incandescent Light Bulb (2/Pkg.)							1728K91	Per Pkg. $7.18

About Exhaust Fans

Air Capacity— To select the exhaust fan that's right for your facility, you'll need to determine the proper capacity. To calculate your rate of air exchange—measured in cfm (cubic feet per minute)—use the formula below. Divide the cubic feet of your facility by how often you want to exchange the air.

For example, if your facility is 12,000 cubic feet and you want to exchange the air every 6 minutes, your cfm would be 2,000.

$$\text{cfm} = \frac{12{,}000 \text{ cubic feet}}{6 \text{ minutes}} = 2{,}000$$

Air Exchange Frequencies	
Type of Facility	**Air Exchange**
Engine Room	Every 1 to 3 Minutes
Boiler Room, Foundry, Laboratory	Every 1 to 5 Minutes
Factory	Every 2 to 5 Minutes
Office, Warehouse	Every 2 to 10 Minutes

Static Pressure (SP)— The amount of airflow resistance created by louvers, dampers, filters, and ductwork. The higher the SP, the greater the pressure against which the exhaust fan operates. Measured in inches of water.

Sones— A loudness measurement for exhaust fans. Use the following chart to convert sones to dB (decibels).

Sones	dB
Less than 9	Less than 60
9 to 13	60 to 65
13 to 18	65 to 70
18 to 50	70 to 84
50 and Up	84 and Up

Ultra-Quiet Room Exhaust Fans

A

B

Keep noise to a minimum with these ceiling/wall-mount exhaust fans. They have a low rpm motor, 1/2″ thick acoustical insulation, and resilient motor mounts for quiet operation while still generating excellent airflow. All have a galvanized steel housing, white-painted steel grille (except Style A, which has a paintable plastic grille), backdraft damper, and leads for hardwiring. Fans have a single-phase, permanently lubricated motor and operate on 120 VAC, 60 Hz. UL listed. Mounting fasteners are included.

Optional variable-speed fan control fits a single gang electrical box (6 amp draw) and has leads for hardwiring. Mounting fasteners included.

Duct Size	cfm	Grille Size, Lg. × Wd.	Mounting Size, Lg. × Wd. × Dp.	Amps	Sones		Each
(A) Fan with Horizontal Discharge for Round Duct							
8″ Dia.	231	14″ × 14″	12¼″ × 12¼″ × 11¾″	1.8	1.6	2083K41	$153.15
(B) Fans with Horizontal Discharge for Rectangular Duct							
4½″ Ht. × 18½″ Wd.	480	23¼″ × 14″	21½″ × 12¼″ × 11¾″	1.4	2.0	2083K42	240.71
8″ Ht. × 12″ Wd.	918	23⅞″ × 19⅞″	22″ × 18″ × 18″	3.0	3.8	2083K43	396.88
Optional Variable-Speed Fan Control						2083K24	41.21

Through-the-Wall Exhaust Fans

Interior Wall

Exterior Wall

Mount these fans in your wall to exhaust air and humidity. Grille is white plastic. All fans are single phase and have leads for hardwiring. UL listed.

Interior wall fan has an adjustable sleeve for mounting in walls 3¾″ to 5″ thick and a variable-speed control. Housing is galvanized steel. Motor is open dripproof (ODP) and operates on 115 VAC, 60 Hz.

Exterior wall fans provide ventilation to the outside without the need to cut a hole in the roof or add duct. They adjust to fit walls 4½″ to 9½″ thick and have 3/16″ dia. mounting holes (fasteners not included). Fans have a black-painted steel housing and permanently lubricated plug-in motor. Operate on 120 VAC, 60 Hz.

180 cfm and *270 cfm* fans wire to your wall switch and have a backdraft damper. *470 cfm* fan has a pull chain and an insulated door.

cfm	Grille Size, Ht. × Wd.	Fits Opening Size, Ht. × Wd.	Amps	Sones		Each
Interior Wall						
254	11″ × 13¾″	10¼″ × 12¾″	0.5	2.2	1895K11	$108.41
Exterior Wall						
180	11½″ × 11½″	14¼″ × 14¼″	1.5	6.5	2089K5	76.53
270	13½″ × 13½″	14¼″ × 14¼″	1.7	6.0	2089K34	118.67
470	13½″ × 13½″	14¼″ × 14¼″	1.7	8.0	2089K6	118.41

Wall Fan Guards

Supply Side

Exhaust Side

Mount these galvanized steel guards using the included hardware.

Fits Fan Blade Dia.	O'all Size, Ht. × Wd. × Dp.		Each
Supply Side			
12″	16¼″ × 16¼″ × 16″	19555K11	$99.74
14″ to 16″	22¼″ × 22¼″ × 16″	19555K12	125.38
18″	18″ × 24¼″ × 16″	19555K13	139.80
20″ to 24″	30½″ × 30½″ × 25″	19555K14	162.42
30″	36½″ × 36½″ × 25″	19555K16	203.48
36″	42½″ × 42½″ × 28″	19555K18	273.07
42″	48½″ × 48½″ × 34½″	19555K21	380.95
48″	54½″ × 54½″ × 36½″	19555K22	440.88
Exhaust Side			
12″	13¾″ × 13¾″ × 6″	19555K51	84.49
14″ to 16″	19¾″ × 19¾″ × 6″	19555K52	98.65
18″	21¾″ × 21¾″ × 6″	19555K53	107.05
20″ to 24″	27¾″ × 27¾″ × 6″	19555K54	123.25
30″	33¾″ × 33¾″ × 6″	19555K56	150.80
36″	39¾″ × 39¾″ × 6″	19555K58	189.35
42″	45¾″ × 45¾″ × 6″	19555K61	212.57
48″	51¾″ × 51¾″ × 6″	19555K63	258.32

For information about exhaust fans, see page 656.

Direct-Drive Wall Exhaust Fans

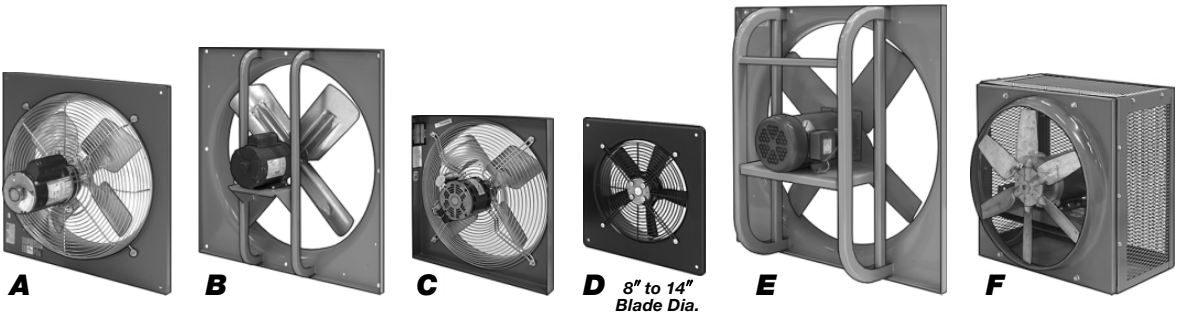

A **B** **C** **D** *8″ to 14″ Blade Dia.* **E** **F**

Direct-drive fans have fewer moving parts to wear out or replace and require less space than the same diameter belt-drive fans. All have a steel frame and blades except Styles A, C, and F, which have aluminum blades.

Add an ***optional wall collar*** for easy installation of a louver (sold separately; see page 660). Collars are galvanized steel and support the fan at the correct distance from the louver for optimum performance.

Optional Wall Collar (louver and fan sold separately)

Medium Duty

Styles A, C, and D include a steel guard.

With Totally Enclosed Motor—*24″, 30″* and *36″ blade dia.* fans have leads for hardwiring. *12″, 16″, 18″,* and *20″ blade dia.* fans have ½″ NPT female conduit connections. *8″* and *10″ blade dia.* have both. All have ⅜″ dia. mounting holes except *24″, 30″,* and *36″ blade dia.* fans, which have ⅝″ dia. holes (fasteners not included).

With Open Dripproof (ODP) Motor—Fans have a junction box for hardwiring. Drill mounting holes as needed. UL listed.

Flush Mount with Open Motor—Low profile to fit tight spaces, these fans mount flush to the wall. *8″* to *14″ blade dia.* fans have ¼″ dia. mounting holes; *16½″ dia.* fans have ⅜″ dia. holes (fasteners not included). Motor has UL recognized components and leads for hardwiring.

Heavy Duty

These fans move larger volumes of air than medium duty. All have leads for hardwiring.

With Totally Enclosed Motor—All have ⅝″ dia. mounting holes except 18″ blade dia. fan, which has ⅜″ dia. holes (fasteners not included).

With Hazardous-Location Motor—UL listed for Class I, Group D and Class II, Groups F and G hazardous environments, unless noted. Drill mounting holes as needed.

	Blade Dia.	cfm	rpm	hp	Amps	Sones	Overall Size, Ht.×Wd.×Dp.	Fans	Each	Optional Wall Collars Fits Opening Size, Ht.×Wd.×Dp.	Each
Medium Duty											
With Totally Enclosed Motor—*115 VAC, 60 Hz, Single Phase*											
A	8″	400	1,550	1/40	1.1	4	13″ × 6⅝″	2187K28	$226.11	—	—
A	10″	600	1,550	1/40	1.1	6	13″ × 6⅝″	2187K29	251.52	—	—
A	12″	1,380	1,650	¼	3.5	6	20″ × 7⅞″	2187K31	353.33	17″ × 17″ × 12″	5353K11 $104.42
A	16″	2,975	1,750	⅓	5.6	10	24″ × 12 11/16″	2187K32	429.07	21″ × 21″ × 12″	5353K12 111.55
A	18″	4,250	1,750	½	8.0	12	26″ × 13 15/16″	2187K33	520.99	25″ × 25″ × 12″	5353K13 133.24
A	20″	6,200	1,750	¾	7.2	15	28″ × 15⅝″	2187K34▲	641.09	25″ × 25″ × 12″	5353K13 133.24
A	24″	4,860	870	½	5.0	11.6	30″ × 15½″	2187K22	477.48	31″ × 31″ × 14″	5353K14 169.52
B	30″	7,380	845	½	5.0	16.7	36″ × 13¾″	2187K23	698.37	37″ × 37″ × 14½″	5353K15 211.93
B	36″	8,664	840	½	5.0	20.5	42″ × 12¼″	2187K24	754.44	43″ × 43″ × 17″	5353K16 247.26
With Totally Enclosed Motor—*208-230/460 VAC, 60 Hz, Three Phase*											
A	24″	4,610	825	¼	1.2/0.9	11.6	30″ × 15½″	2187K25	825.41	31″ × 31″ × 14″	5353K14 169.52
B	30″	7,380	845	½	3.0/1.9	16.7	36″ × 13¾″	2187K26	797.74	37″ × 37″ × 14½″	5353K15 211.93
B	36″	8,664	840	½	3.0/1.9	20.5	42″ × 12¼″	2187K27	888.73	43″ × 43″ × 17″	5353K16 247.26
With Open Dripproof Motor—*115 VAC, 60 Hz, Single Phase*											
C	12″	1,548	1,550	⅛	1.7	11.1	16 3/16″ × 16 3/16″ × 10 5/16″	1932K13	286.53	17¼″ × 17¼″ × 14 5/16″	5353K22 157.61
C	20″	4,825	1,050	⅓	4.8	15.8	24 3/16″ × 24 3/16″ × 13⅞″	1932K17	417.19	25¼″ × 25¼″ × 17½″	5353K25 213.95
C	24″	6,609	1,050	¾	10.0	16.8	30 3/16″ × 30 3/16″ × 14 13/16″	1932K18	537.43	31 5/16″ × 31 5/16″ × 18 11/16″	5353K26 238.69
Flush Mount With Open Motor—*115 VAC, 60 Hz, Single Phase*											
D	8″	520	3,200	1/10	0.7	NR★	12¼″ × 3⅛″	2058K1	175.90	—	—
D	10″	1,060	2,650	¼	1.5	NR★	14½″ × 3¾″	2058K2	191.44	—	—
D	12″	1,589	2,850	5/16	1.8	NR★	17″ × 3⅛″	2058K3	232.13	—	—
D	14″	1,877	1,540	¼	1.7	NR★	19″ × 3⅛″	2058K4	282.68	—	—
D	16½″	3,310	1,680	⅜	1.3	NR★	21⅜″ Dia. × 3⅛″	2058K7	359.97	—	—
Heavy Duty											
With Totally Enclosed Motor—*230 VAC/460 VAC, 60 Hz, Three Phase*											
E	18″	3,900	1,750	½	2.0/1.0	23	24″ × 24″ × 10″	2222K5	691.24	25″ × 25″ × 12″	5353K13 133.24
E	24″	6,860	1,750	1	3.7/1.7	35.4	30″ × 30″ × 12¼″	2222K7	841.62	31″ × 31″ × 14″	5353K14 169.52
E	30″	14,400	1,750	3	8.2/4.1	60.1	36″ × 36″ × 14¼″	2222K11	1,070.79	37″ × 37″ × 14½″	5353K15 211.93
E	36″	20,300	1,750	5	15.4/7.1	76.5	42″ × 42″ × 15¾″	2222K14	1,360.31	43″ × 43″ × 17″	5353K16 247.26
E	42″	26,640	1,150	5	16.3/7.5	62.3	48″ × 48″ × 20″	2222K17	1,755.43	49″ × 49″ × 19″	5353K17 284.82
E	48″	37,100	1,150	7½	23.0/11.1	70.2	54″ × 54″ × 22½″	2222K19	2,426.71	55″ × 55″ × 21″	5353K18 315.32
With Hazardous-Location Motor—*115 VAC/230 VAC, 60 Hz, Single Phase*											
F	12″	1,663	1,725	¼	4.2/2.1	11.8	16 3/16″ × 16 3/16″ × 14″	2208K41	654.51	17¼″ × 17¼″ × 14 5/16″	5353K22 157.61
F	16″	2,893	1,725	⅓	6.0/3.0	17.9	20 3/16″ × 20 3/16″ × 18⅝″	2208K42	955.35	21¼″ × 21¼″ × 15 5/16″	5353K24 187.91
F	20″	4,811	1,725	½	7.4/3.7	23	24 3/16″ × 24 3/16″ × 20¾″	2208K43	1,036.74	25¼″ × 25¼″ × 17½″	5353K25 213.95
F	24″	6,570	1,140	¾	11.4/5.7	19.7	30 3/16″ × 30 3/16″ × 21¼″	2208K44 ♦	1,546.44	31 5/16″ × 31 5/16″ × 18 11/16″	5353K26 238.69
With Hazardous-Location Motor—*230 VAC/460 VAC, 60 Hz, Three Phase*											
F	20″	4,811	1,725	½	2.0/1.0	23	24 3/16″ × 24 3/16″ × 20¾″	2208K51	1,186.90	25¼″ × 25¼″ × 17½″	5353K25 213.95
F	30″	11,099	1,140	1½	5.1/2.5	29	36 3/16″ × 36 3/16″ × 21⅜″	2208K52	1,733.65	37 5/16″ × 37 5/16″ × 18 11/16″	5353K27 239.10
F	36″	15,595	1,140	2	6.0/3.0	35	42 3/16″ × 42 3/16″ × 29¼″	2208K53	1,947.03	43 5/16″ × 43 5/16″ × 19 7/16″	5353K28 311.02

▲115/230 VAC. ★NR = Not rated. ♦ UL listed for Class I, Group D hazardous environments only.

For information about exhaust fans, see page 656.

Direct-Drive Wall Exhaust Fans with Movable-Blade Louvers

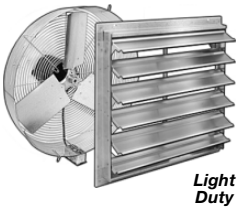

Light Duty

Heavy Duty

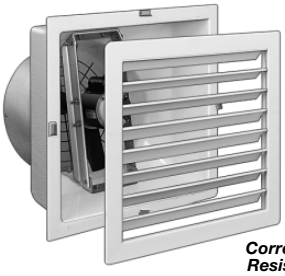

Corrosion Resistant

Don't worry about matching the right size louvers with your fan—these one-piece units combine a powerful fan and movable-blade louvers. Louvers are gravity operated and open when air flows through them. Direct-drive fans have fewer moving parts to wear out or replace and usually require less space than the same diameter belt-drive fan.

Light duty fans are for use in environments with minimal static pressure. Frame, guard, and louvers are steel; blades are aluminum. Fans have a totally enclosed motor, leads for hardwiring, and 1/2″ × 1/4″ mounting slots (fasteners not included). *12″* and *16″ blade dia.* fans have dial speed control. *24″* and *30″ blade dia.* fans have a pull chain and UL recognized components.

Heavy duty fans mount through the wall and fit varying wall thicknesses when used with the two included lengths of angled sheet metal. Frame, cabinet, and louvers are galvanized steel; blades are aluminum. Fans have a wire mesh inlet guard, open dripproof (ODP) motor (unless noted), and leads for hardwiring. UL and C-UL listed. Drill mounting holes as needed.

Corrosion-resistant fans have a durable fiberglass housing and polypropylene blades that won't rust, crack, or require painting. Louvers are polypropylene; guard is gray epoxy-coated steel. Fans have a totally enclosed motor and can be hardwired. Drill mounting holes as needed.

Blade Dia.	cfm	Max. rpm (No. of Speeds)	hp	Amps	Sones	Overall Size, Ht. × Wd. × Dp.	Fits Opening Size, Ht. × Wd.		Each
Light Duty									
115 VAC, 60 Hz, Single Phase									
12″	2,000/1,600/1,150	1,612 (3)	1/10	1.1	Not Rated	15″ × 15″ × 5 1/4″	12 1/2″ × 12 1/2″	**19455K21**	$203.60
16″	3,000/2,650/2,250	1,677 (3)	1/6	1.1	Not Rated	19″ × 19″ × 5 5/8″	16 1/2″ × 16 1/2″	**19455K22**	255.09
24″	5,000/4,200	1,144 (2)	1/4	2.2	Not Rated	27″ × 27″ × 11 3/8″	24 1/2″ × 24 1/2″	**19455K23**	341.70
30″	7,800/6,600	1,107 (2)	1/4	2.4	Not Rated	33″ × 33″ × 11 3/8″	30 1/2″ × 30 1/2″	**19455K24**	397.01
Heavy Duty									
115 VAC, 60 Hz, Single Phase									
10″	873	1,550 (1)	1/20	1.9	7.1	19 1/2″ × 19 1/2″ × 20 3/4″	17 1/4″ × 17 1/4″	**19105K18**	499.60
12″	1,548	1,615 (1)	1/8	1.7	11.1	19 1/2″ × 19 1/2″ × 20 3/4″	17 1/4″ × 17 1/4″	**19105K19**	533.08
16″	2,556	1,115 (1)	1/6	2.2	10.1	23 1/2″ × 23 1/2″ × 25 1/4″	21 1/4″ × 21 1/4″	**19105K24**	685.52
18″	3,809	1,095 (1)	1/3	3.8	12.8	27 1/2″ × 27 1/2″ × 30 1/4″	25 1/4″ × 25 1/4″	**19105K25**	755.13
24″	6,609	1,050 (1)	3/4	10.0	16.8	33 1/2″ × 33 1/2″ × 30 1/4″	31 1/4″ × 31 1/4″	**19105K26**	1,039.97
208-230/460 VAC, 60 Hz, Three Phase									
24″	5,227	1,140 (1)	1/2	2.7/1.4	17.4	33 1/2″ × 33 1/2″ × 30 1/4″	31 1/4″ × 31 1/4″	**19105K27**	1,263.57
30″	8,462	1,140 (1)	1	3.8/1.7	25.0	39 1/2″ × 39 1/2″ × 27 1/2″	37 1/4″ × 37 1/4″	**19105K28**	1,507.74
230/460 VAC, 60 Hz, Three Phase									
36″	12,304	860 (1)	1 1/2	6.0/3.0	25.0	45 1/2″ × 45 1/2″ × 31 1/2″	43 1/4″ × 43 1/4″	**19105K32** ■	1,966.07
Corrosion Resistant									
115/230 VAC, 50/60 Hz, Single Phase									
12″	1,330	1,725 (1)	1/3	1.0/0.5	Not Rated	21″ × 21″ × 20″	17 1/2″ × 18 1/2″	**6658T81**	417.74
16″	2,470	1,725 (1)	1/3	3.5/1.7	Not Rated	24 1/2″ × 24 1/2″ × 22″	21 1/2″ × 23″	**6658T82**	619.90
20″	3,110	1,703 (1)	1/3	2.6/1.3	Not Rated	28 1/2″ × 28 1/2″ × 24″	25 3/4″ × 25 3/4″	**6658T83**	817.78
24″	4,750	1,717 (1)	1/2	4.4/2.2	Not Rated	34 1/2″ × 34 1/2″ × 26 1/2″	31 1/2″ × 31 1/2″	**6658T84**	923.81

■ Totally enclosed fan-cooled (TEFC) motor.

Light Duty Direct-Drive Wall Exhaust Fans

12″ and 16″ Blade Dia.

For everyday exhausting applications, choose these direct-drive fans, which have fewer moving parts to wear out or replace and usually require less space than the same diameter belt-drive fan. All have a steel frame, aluminum blades, and a silver powder-coated steel guard. Fans have a single-phase, totally enclosed motor, leads for hardwiring, and 1/4″ × 1/2″ mounting slots (fasteners not included). Operate on 115 VAC, 60 Hz. Not rated for sones.

12″ and *16″ blade dia.* fans have a dial switch. *22″ blade dia.* fan has a pull chain.

Blade Dia.	cfm	Max. rpm (No. of Speeds)	hp	Amps	Overall Size, Ht. × Wd. × Dp.	Fits Opening Size, Sq.		Each
12″	2,000/1,600/1,150	1,612 (3)	1/10	1.1	17 3/4″ × 17 3/4″ × 5 1/4″	12″ × 12″	**1915K81**	$190.00
16″	3,000/2,650/2,250	1,677 (3)	1/6	1.1	21″ × 21″ × 5 5/8″	16″ × 16″	**1915K82**	299.71
22″	4,200/3,700	1,155 (2)	1/4	2.1	27 1/2″ × 27 1/2″ × 10 3/4″	24″ × 24″	**1915K83**	362.49

Supply/Exhaust DC Fans

When AC power is not practical or available, use one of these reversible DC fans. They have impact-resistant nylon blades and guard, leads for hardwiring, and 1/4″ mounting holes (fasteners not included). Fans have a sealed motor and operate on 12 VDC. They come set up for exhaust but can easily be reversed to supply. Not rated for sones.

Blade Dia.	cfm	rpm	Amps	O'all Dia.		Each
10″	950	2,850	7.9	11 3/16″	**5159T41**	$117.78
12″	1,155	2,380	7.7	13 3/16″	**5159T42**	123.89
14″	1,555	2,260	10.1	15 1/16″	**5159T43**	130.56
16″	2,170	2,750	17.7	16 5/16″	**5159T45**	161.67

Belt-Drive Wall Exhaust Fans

Adjust the belt of these fans to fine-tune the speed and get the exact airflow you need. Fans have leads for hardwiring and 5/8″ dia. mounting holes (fasteners not included).

For information about exhaust fans, see page 656.

Medium duty fans have an open dripproof (ODP) motor. ***Heavy duty*** fans have a totally enclosed motor.

Add an ***optional wall collar*** for easy installation of a louver (sold separately; see page 660). Collars are galvanized steel and support the fan at the correct distance from the louver for optimum performance.

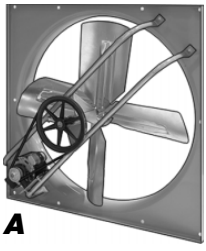

A

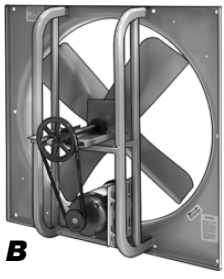

B

Optional Wall Collar (louver and fan sold separately)

Blade Dia.	cfm	rpm	hp	Amps	Sones	Overall Size, Ht. × Wd. × Dp.	Fans	Each	Optional Wall Collars: Fits Opening Size, Ht. × Wd. × Dp.	Each
Medium Duty— *115 VAC, 60 Hz, Single Phase*										
A 30″	8,249	600	1/2	6.0	11.7	36″ × 36″ × 18 3/8″	**2192K64**	$594.13	37″ × 37″ × 14 1/2″	**5353K15** $211.93
A 36″	10,616	440	1/2	6.0	11.5	42″ × 42″ × 18 5/8″	**2192K67**	652.47	43″ × 43″ × 17″	**5353K16** 247.26
B 48″	18,535	406	1	11.0	16.8	54″ × 54″ × 24 3/4″	**2192K77**	1,055.23	55″ × 55″ × 21″	**5353K18** 315.32
Medium Duty— *230/460 VAC, 60 Hz, Three Phase*										
A 30″	8,249	600	1/2	1.7/0.9	11.7	36″ × 36″ × 18 3/8″	**2192K22**	647.04	37″ × 37″ × 14 1/2″	**5353K15** 211.93
A 36″	10,616	440	1/2	1.7/0.9	11.5	42″ × 42″ × 18 5/8″	**2192K32**	721.21	43″ × 43″ × 17″	**5353K16** 247.26
B 48″	18,535	406	1	3.0/1.5	16.8	54″ × 54″ × 24 3/4″	**2192K53**	1,215.71	55″ × 55″ × 21″	**5353K18** 315.32
Heavy Duty— *230/460 VAC, 60 Hz, Three Phase*										
B 30″	10,085	820	1	3.4/1.7	20.8	36″ × 36″ × 18 5/8″	**1922K92**	1,108.80	37″ × 37″ × 14 1/2″	**5353K15** 211.93
B 36″	14,207	820	1 1/2	4.2/2.1	26.3	42″ × 42″ × 19 1/8″	**1922K93**	1,296.44	43″ × 43″ × 17″	**5353K16** 247.26
B 48″	23,556	535	2	5.6/2.8	26.1	54″ × 54″ × 24 7/8″	**1922K94**	1,314.31	55″ × 55″ × 21″	**5353K18** 315.32
B 48″	26,858	610	3	8.2/4.1	35.5	54″ × 54″ × 24 7/8″	**1922K95**	1,454.59	55″ × 55″ × 21″	**5353K18** 315.32
B 54″	37,686	527	5	14.2/7.1	31.8	60″ × 60″ × 23 7/16″	**1922K96**	2,655.27	61″ × 61″ × 23″	**5353K19** 369.66
B 60″	50,002	510	7 1/2	20.2/10.1	57.2	66″ × 66″ × 23 7/16″	**1922K97**	3,256.30	67″ × 67″ × 25″	**5353K21** 436.74

Belt-Drive Wall Exhaust Fans with Movable-Blade Louvers

With the correct-size louvers already matched to the fan, these one-piece units are ready to go. Adjust the belt for proper tension. Housing, blades, and frame are steel; louvers are aluminum. All have leads for hardwiring and 5/8″ dia. mounting holes (fasteners not included). For information about exhaust fans, see page 656.

Blade Dia.	cfm	rpm	hp	Amps	Sones	Overall Size, Ht. × Wd. × Dp.		Each
115 VAC, 60 Hz, Single Phase— *Open Dripproof Motor*								
30″	6,066	574	1/2	5.9	10.9	36 1/2″ × 36 1/2″ × 19″	**2101K12**	$1,009.01
36″	8,143	415	1/2	5.9	9.5	42 1/2″ × 42 1/2″ × 19″	**2101K13**	1,125.09
42″	11,039	413	3/4	10.0	12.6	48 1/2″ × 48 1/2″ × 19″	**2101K14**	1,764.48
48″	14,970	372	1	11.9	12.5	54 1/2″ × 54 1/2″ × 19″	**2101K15**	1,930.25
230/460 VAC, 60 Hz, Three Phase— *Totally Enclosed Fan-Cooled Motor*								
30″	6,066	574	1/2	2.0/1.0	10.9	36 1/2″ × 36 1/2″ × 25″	**2101K22**	1,250.18
36″	8,143	415	1/2	2.0/1.0	9.5	42 1/2″ × 42 1/2″ × 25″	**2101K23**	1,430.32
42″	11,039	413	3/4	2.3/1.2	12.6	48 1/2″ × 48 1/2″ × 25″	**2101K24**	1,814.38
48″	14,970	372	1	3.0/1.5	12.5	54 1/2″ × 54 1/2″ × 25″	**2101K25**	1,936.40

Light Duty Movable-Blade Wall Louvers

Single Panel

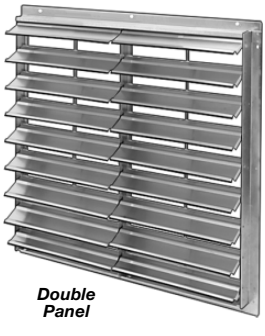

Double Panel

The economical choice for light duty applications. These louvers are gravity operated, so they remain open as long as air flows. All have a flange with 1/4″ Ht. × 1/2″ Wd. slots for surface mounting (fasteners not included). Frame is 3″ deep and made of 19-ga. galvanized steel. Blades are 26-ga. aluminum. Temperature range is –40° to +180°F.

Fits Opening Size, Wd. × Ht.	O'all Size, Wd. × Ht.●	Max. Air Velocity, fpm		Each
Single-Panel Louvers				
10 1/2″ × 10 1/2″	13″ × 13″	2,600	**20015K61**	$25.10
12 1/2″ × 12 1/2″	15″ × 15″	2,600	**20015K62**	27.78
16 1/2″ × 16 1/2″	19″ × 19″	2,600	**20015K63**	35.94
18 1/2″ × 18 1/2″	21″ × 21″	2,600	**20015K64**	40.24
20 1/2″ × 20 1/2″	23″ × 23″	2,600	**20015K65**	42.90
24 1/2″ × 24 1/2″	27″ × 27″	2,600	**20015K66**	51.18
30 1/2″ × 30 1/2″	33″ × 33″	2,600	**20015K67**	61.04
36 1/2″ × 36 1/2″	39″ × 39″	2,600	**20015K68**	80.72
Double-Panel Louvers				
36 1/2″ × 36 1/2″	39″ × 39″	2,600	**20015K71**	101.02
42 1/2″ × 42 1/2″	45″ × 45″	2,600	**20015K72**	118.08
48 1/2″ × 48 1/2″	51″ × 51″	2,600	**20015K73**	134.29
54 1/2″ × 54 1/2″	57″ × 57″	2,600	**20015K74**	204.56

● Overall size has a tolerance of ± 1/8″.

Corrosion-Resistant Movable-Blade Wall Louvers

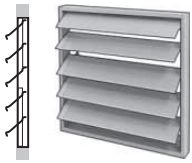

PVC, Single Panel

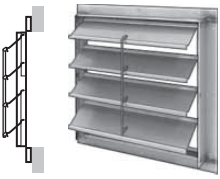

Type 304 Stainless Steel

All are gravity-operated, so louvers remain open as long as air flows.

PVC louvers are drop-in mount. Frame is 1 5/8″ deep; blades are 1/16″ thick. Temperature range is 5° to 140°F.

Type 304 stainless steel louvers have a flange with 1/4″ dia. holes for surface mounting (fasteners not included). Frame is 2 3/8″ deep; blades are 26 ga. Temperature range is –20° to +200°F.

Fits Opening Size, Wd. × Ht.	O'all Size, Wd. × Ht.	Max. Air Velocity, fpm		Each
PVC— *12″ to 18″ are single panel; 24″ to 36″ are double panel.*				
12″ × 12″	11 7/8″ × 11 7/8″	1,200	**19615K35**	$71.59
16″ × 16″	15 7/8″ × 15 7/8″	1,200	**19615K37**	81.43
18″ × 18″	17 7/8″ × 17 7/8″	1,200	**19615K39**	81.86
24″ × 24″	23 7/8″ × 23 7/8″	1,200	**19615K47**	125.78
30″ × 30″	29 7/8″ × 29 7/8″	1,200	**19615K53**	147.72
36″ × 36″	35 3/4″ × 35 3/4″	1,200	**19615K57**	170.21
Type 304 Stainless Steel				
12″ × 12″	15″ × 15″	2,500	**6420T18**	217.98
16″ × 16″	19″ × 19″	2,500	**6420T22**	263.96
18″ × 18″	21″ × 21″	2,500	**6420T24**	274.09
20″ × 20″	23″ × 23″	2,500	**6420T26**	315.77
24″ × 24″	27″ × 27″	2,500	**6420T29**	375.35
30″ × 30″	33″ × 33″	2,500	**6420T33**	420.00
36″ × 36″	39″ × 39″	2,500	**6420T37**	510.68

Heavy Duty Movable-Blade Wall Louvers

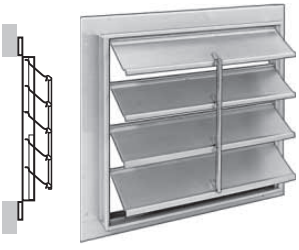

Surface Mount

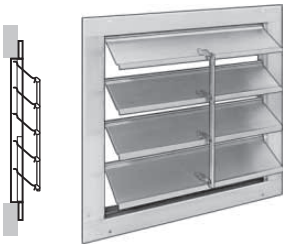

Recessed Mount

Drop-In Mount

Built to last, these louvers have 24-ga. aluminum blades except louvers 30″ and wider, which have 22-ga. blades. Maximum air velocity is 2500 fpm. Temperature range is –10° to +200° F except motorized units, which have a maximum temperature of 130° F.

To Order Please specify mounting style: surface mount, recessed mount, or drop-in mount.

Surface Mount—Frame and flange mount outside the wall. Flange has 1/4″ dia. mounting holes (fasteners not included). Overall size is 3″ larger than opening size.

Recessed Mount—Frame rests in the wall. The flange has 1/4″ dia. holes for mounting to the outside of the wall (fasteners not included). When the blades close, they're flush with the wall surface. Overall size is 2 7/8″ larger than opening size.

Drop-In Mount—Fit inside a wall or duct. Overall size is 1/8″ smaller than opening size.

Aluminum frame is 0.063″ thick and 1 7/8″ deep except for drop-in mount louvers smaller than 50″ wide, which are 0.05″ thick and have a frame depth of 1 1/2″.

Galvanized steel frame is 14 ga. Surface and recessed mount are 2 3/8″ deep; drop-in mount are 1 1/2″ deep.

Gravity Operated—Also called automatic, these louvers stay open as long as air flows.

Pull Chain—Also called manual, these louvers open and close with a tug on the chain.

Motorized—A motor opens and closes these louvers. It's single phase, operates on 120/240 VAC, 60 Hz, and has leads for hardwiring.

Fits Opening Size, Wd. × Ht.	WITH ALUMINUM FRAME Gravity Operated	Each	Pull Chain	Each	Motorized	Each	WITH GALVANIZED STEEL FRAME Gravity Operated	Each	Pull Chain	Each	Motorized	Each
Single-Panel Louvers												
10″ × 10″	2047K311	$41.69	2047K411	$101.30	2047K511	$234.22	2030K111	$90.78	2030K211	$136.33	2030K311	$278.88
12″ × 12″	2047K312	50.77	2047K412	113.70	2047K512	237.50	2030K112	105.44	2030K212	150.56	2030K312	288.27
14″ × 14″	2047K336	50.62	2047K436	113.60	2047K536	244.72	2030K142	106.44	2030K242	148.26	2030K342	290.49
16″ × 16″	2047K313	60.54	2047K413	126.60	2047K513	253.21	2030K113	122.00	2030K213	162.83	2030K313	306.70
18″ × 18″	2047K314	62.38	2047K414	131.30	2047K514	257.55	2030K114	126.11	2030K214	166.63	2030K314	312.50
20″ × 20″	2047K315	73.69	2047K415	144.50	2047K515	265.93	2030K115	143.89	2030K215	179.68	2030K315	321.67
22″ × 22″	2047K316	83.08	2047K416	157.10	2047K516	269.72	2030K116	155.43	2030K216	193.62	2030K316	320.38
24″ × 24″	2047K317	93.08	2047K417	170.70	2047K517	276.09	2030K117	171.20	2030K217	204.17	2030K317	333.65
26″ × 26″	2047K318	94.08	2047K418	172.00	2047K518	283.45	2030K118	173.80	2030K218	206.46	2030K318	336.23
28″ × 28″	2047K319	107.77	2047K419	187.20	2047K519	295.73	2030K119	190.74	2030K219	225.73	2030K319	350.19
30″ × 30″	2047K321	109.62	2047K421	192.70	2047K521	298.74	2030K121	194.15	2030K221	224.49	2030K321	337.24
32″ × 32″	2047K322	126.85	2047K422	211.96	2047K522	322.91	2030K122	215.42	2030K222	248.37	2030K322	354.09
34″ × 34″	2047K337	137.15	2047K437	221.15	2047K537	323.45	2030K143	230.83	2030K243	257.70	2030K343	355.40
36″ × 24″	2047K339	114.92	2047K439	190.10	2047K539	308.73	2030K145	194.79	2030K245	236.98	2030K345	345.41
36″ × 36″	2047K323	150.38	2047K423	238.37	2047K523	377.27	2030K123	245.51	2030K223	271.10	2030K323	378.57
38″ × 38″	2047K324	157.85	2047K424	243.30	2047K524	352.09	2030K124	251.30	2030K224	275.57	2030K324	378.92
Double-Panel Louvers												
40″ × 40″	2047K325	212.00	2047K425	320.18	2047K525	422.09	2030K125	305.19	2030K225	341.16	2030K325	436.82
42″ × 42″	2047K326	219.08	2047K426	328.91	2047K526	429.64	2030K126	314.01	2030K226	350.12	2030K326	444.64
44″ × 44″	2047K327	245.00	2047K427	360.64	2047K527	461.45	2030K127	341.64	2030K227	374.16	2030K327	467.95
48″ × 48″	2047K328	264.93	2047K428	391.27	2047K528	490.45	2030K128	378.67	2030K228	407.84	2030K328	506.97
50″ × 50″	2047K329	268.15	2047K429	395.36	2047K529	510.55	2030K129	377.25	2030K229	412.91	2030K329	525.61
54″ × 54″	2047K331	304.15	2047K431	433.18	2047K531	538.18	2030K131	408.94	2030K231	434.59	2030K331	553.79
56″ × 56″	2047K333	317.43	2047K433	456.82	2047K533	564.82	2030K133	432.72	2030K233	449.14	2030K333	581.26
60″ × 60″	2047K334	351.15	2047K434	491.36	2047K534	597.82	2030K134	452.12	2030K234	481.43	2030K334	614.43
Triple-Panel Louvers												
66″ × 66″	2047K335	489.23	2047K435	697.74	2047K535	932.00	2030K135	603.75	2030K235	669.72	2030K335	950.17

Light Duty Fixed-Blade Wall Louvers

You can surface or recess mount these economical louvers. All have a 1″ wide flange and a 0.04″ thick frame.

White plastic louvers have 1/16″ thick blades and a 1 3/8″ deep frame. ***Aluminum*** louvers have 0.013″ thick blades and a 1 7/8″ deep frame.

Fits Opening Size, Wd. × Ht.	WHITE PLASTIC O'all Size, Wd. × Ht.		Each	ALUMINUM O'all Size, Wd. × Ht.	Plain	Each	White Painted	Each
8″ × 8″	10 1/2″ × 10 1/2″	2038K1	$8.47	—	—	—	—	—
12″ × 12″	14 1/2″ × 14 1/2″	2038K2	9.97	14 1/2″ × 14 5/8″	2038K14	$16.62	2038K61	$19.35
12″ × 18″	14 1/2″ × 20 1/2″	2038K3	13.60	14 1/2″ × 20 1/2″	2038K16	20.52	2038K62	23.27
14″ × 24″	—	—	—	16 1/2″ × 26 3/8″	2038K59	27.70	2038K63	32.02
18″ × 24″	20 3/4″ × 26 3/4″	2038K7	25.02	20 1/2″ × 26 3/8″	2038K21	36.20	2038K64	39.17
24″ × 30″	—	—	—	26 1/2″ × 32 1/4″	2038K23	52.45	2038K65	60.48

Low-Profile Fixed-Blade Wall Louvers

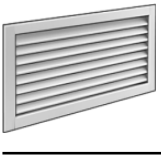

Perfect in openings that are too short to accommodate most louvers, these are commonly installed in block and brick walls. They're made of 1/8″ thick extruded aluminum, 1 1/2″ deep, and have an insect screen.

Fits Opening Size, Wd. × Ht.	O'all Size, Wd. × Ht.	Replaces No. of Blocks	Bricks		Each
8 1/8″ × 7 3/4″	10 1/8″ × 9 3/4″	1/2	3	19715K76	$60.98
15 5/8″ × 7 3/4″	17 5/8″ × 9 3/4″	1	6	19715K78	80.49
16 1/2″ × 7 3/4″	18 1/2″ × 9 3/4″	—	6	19715K79	80.49

Heavy Duty Fixed-Blade Wall Louvers

Sturdier, more durable construction gives these louvers a longer service life.

Surface-mount PVC louvers have a 1″ wide flange for mounting outside your wall. They're 1¾″ deep and have a 1/8″ thick frame and plastic insect screen. Blades are 1/16″ thick.

Drop-in louvers mount inside your wall. They're 4″ deep and have a built-in bird screen. Blades are designed to direct water away from the louvers.

Extruded aluminum louvers have 0.08″ thick blades.

Galvanized steel louvers have 16-ga. blades.

Surface-Mount PVC

Fits Opening Size, Wd. × Ht.	O'all Size, Wd. × Ht.		Each
12″ × 12″	13¾″ × 13¾″	20405K11	$82.38
12″ × 18″	13¾″ × 19¾″	20405K12	90.70
12″ × 24″	13¾″ × 25¾″	20405K13	117.11
14″ × 24″	15¾″ × 25¾″	20405K14	117.21

Surface-Mount PVC

Drop-In

Fits Opening Size, Wd. × Ht.	O'all Size, Wd. × Ht.	*Extruded Aluminum*	Each	*Galvanized Steel*	Each
18″ × 18″	17½″ × 17½″	2100K251	$154.57	2100K151	$177.28
24″ × 24″	23½″ × 23½″	2100K252	220.74	2100K152	204.26
24″ × 36″	23½″ × 35½″	2100K254	257.21	2100K154	250.76
36″ × 24″	35½″ × 23½″	2100K253	265.85	2100K153	258.33
36″ × 36″	35½″ × 35½″	2100K255	312.31	2100K155	311.27
36″ × 48″	35½″ × 47½″	2100K258	430.26	2100K158	361.55
48″ × 36″	47½″ × 35½″	2100K256	358.98	2100K156	363.10
48″ × 48″	47½″ × 47½″	2100K259	431.25	2100K159	424.08
60″ × 48″	59½″ × 47½″	—	—	2100K161	471.67
60″ × 60″	59½″ × 59½″	2100K264	591.47	2100K164	565.35

Drop-In

Fixed-Blade Wall Louvers with Adjustable Register

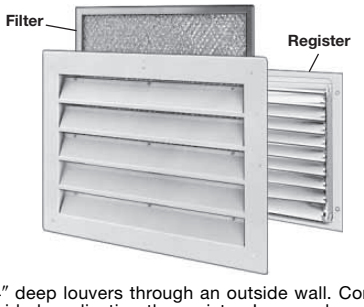

Louver with Filter

Mount these 4″ deep louvers through an outside wall. Control airflow from the inside by adjusting the register. Louvers have a white powder-coated 20-ga. steel frame and blades and an aluminum insect screen. Flange is 1½″ wide with 1/8″ dia. mounting holes (fasteners not included). Overall size is 3″ larger than opening size.

Louvers with filter include a washable aluminum filter.

Fits Opening Size, Wd. × Ht.	*Louvers*	Each	*Louvers with Filter*	Each	*Repl. Filters*	Each
14″ × 10″	2039K4	$161.11	2039K1	$175.15	2039K91	$24.55
20″ × 14″	2039K5	192.00	2039K2	202.32	2039K92	31.30

Adjustable-Width Fixed-Blade Wall Louvers

Slide horizontally to adjust the width of these recessed-mount louvers. Made of corrosion-resistant aluminum, they have a 4″ deep frame (mounting fasteners included) and 0.04″ thick blades. Louvers include a galvanized steel bird screen.

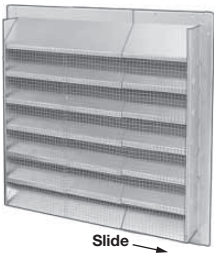

Fits Opening Wd.	Ht.		Each
12″ to 18″	14″	1152T52	$86.08
18″ to 24″	18″	1152T54	118.24
21″ to 36″	30″	1152T58	210.38
24″ to 36″	36″	1152T63	256.46
36″ to 48″	48″	1152T61	366.35

Mini Wall Louvers

Steel

Polypropylene

Aluminum

Relieve heat buildup in small, enclosed areas.

Rectangular louvers are 14 ga., surface mount, and include mounting fasteners. *Steel* louvers have a gray powder-coated finish.

Round louvers are drop-in mount. Just drill a hole and insert.

Rectangular

Fits Opening Size, Wd. × Ht.	O'all Size, Wd. × Ht.	*Steel*	Each	*Type 316 SS*	Each
1¾″ × 2″	3¼″ × 3¼″	1667T34	$24.72	1667T71	$102.16
3″ × 2⅝″	4½″ × 3⅞″	1667T36	25.81	1667T73	107.02
3″ × 3½″	4½″ × 4¾″	1667T51	21.10	1667T75	111.54
4″ × 3¼″	5½″ × 4½″	1667T38	22.10	1667T77	111.43
4″ × 4⅜″	5½″ × 5⅝″	1667T55	21.21	1667T79	118.65
6″ × 4⅜″	7½″ × 5⅝″	1667T59	24.10	1667T82	126.27
6″ × 6⅝″	7½″ × 7⅞″	1667T62	25.27	1667T84	131.24
8″ × 4 9/16″	9½″ × 5 13/16″	1667T43	30.68	1667T86	130.44
8″ × 6 15/16″	9½″ × 8 3/16″	1667T45	34.80	1667T88	144.44
8″ × 9 5/16″	9½″ × 10 9/16″	1667T68	38.78	1667T91	157.32
8″ × 14 1/16″	9½″ × 15 5/16″	1667T47	45.87	1667T93	181.28

Round

Fits Opening Size, Dia.	Overall Size, Dia. × Dp.	Pkg. Qty.		Per Pkg.
White Polypropylene *—0.03″ Thick*				
2″	2½″ × 1″	1	2016K23	$2.43
3″	3½″ × 1″	1	2016K25	3.64
4″	4½″ × 1″	1	2016K26	5.90
Aluminum *—0.015″ Thick*				
1″	1⅛″ × ⅜″	12	2016K1	6.61
1½″	1¾″ × ⅜″	12	2016K2	10.08
2″	2⅜″ × ½″	12	2016K3	12.19
2½″	3″ × ¾″	1	2016K4	1.16
3″	3⅜″ × ⅝″	1	2016K35	1.31
4″	4½″ × ¾″	1	2016K36	1.63
White Painted Aluminum *—0.015″ Thick*				
1″	1⅛″ × ⅜″	12	2016K11	8.35
2″	2⅜″ × ½″	1	2016K43	1.30
3″	3⅜″ × ⅝″	1	2016K45	1.68
4″	4½″ × ¾″	1	2016K46	2.08
Black Anodized Aluminum *—0.015″ Thick*				
4″	4½″ × ¾″	1	2016K9	8.76

Combination Fixed- and Movable-Blade Wall Louvers

One side has fixed blades that channel water away from the louver; the reverse side has blades that you can open and close. These louvers are drop-in mount and have a 0.08″ thick extruded aluminum frame and blades. They include an aluminum bird screen that can be removed for cleaning. Frame is 6″ deep.

Fits Opening Size, Wd. × Ht.	O'all Size, Wd. × Ht.		Each
18″ × 18″	17½″ × 17½″	1999K81	$294.23
24″ × 24″	23½″ × 23½″	1999K91	369.72
30″ × 30″	29½″ × 29½″	1999K82	462.07
36″ × 36″	35½″ × 35½″	1999K92	548.71
42″ × 42″	41½″ × 41½″	1999K83	691.92
48″ × 48″	47½″ × 47½″	1999K93	801.58

Door Louvers

Let air in while keeping prying eyes out with these through-the-door louvers. They have fixed blades and include mounting hardware.

Indoor

Louvers have a 20-ga. frame and 24-ga. blades. *Style A* fit 1⅜″-1¾″ thick doors. Overall size is 2″ larger than the opening size. *Style B* fit 1⅜″-2¼″ thick doors. Overall size is 1½″ larger than the opening size.

Fits Opening Size, Wd.×Ht.		Each
(A) Steel		
12½″×12½″	**1911K31**	$49.79
18½″×12½″	**1911K32**	59.18
24½″×12½″	**1911K33**	68.96
24½″×18½″	**1911K34**	88.36
24½″×24½″	**1911K35**	96.16
(B) Steel		
8½″× 8½″	**2037K511**	52.00
10½″× 4½″	**2037K521**	50.40
10½″× 6½″	**2037K531**	52.00
12½″× 6½″	**2037K541**	56.00
12½″× 8½″	**2037K551**	57.60
12½″×12½″	**2037K561**	60.80
14½″× 8½″	**2037K581**	59.20
14½″×10½″	**2037K591**	60.80
14½″×12½″	**2037K611**	71.20
16½″× 6½″	**2037K631**	59.20
16½″× 8½″	**2037K641**	60.80

Fits Opening Size, Wd.×Ht.		Each
(B) Steel (Cont.)		
16½″×10½″	**2037K651**	$63.20
16½″×12½″	**2037K661**	72.80
16½″×16½″	**2037K671**	72.80
18½″×12½″	**2037K68**	76.80
18½″×24½″	**2037K831**	104.87
20½″× 8½″	**2037K691**	72.80
20½″×10½″	**2037K711**	76.80
20½″×12½″	**2037K721**	80.00
20½″×14½″	**2037K731**	82.40
20½″×16½″	**2037K741**	87.20
20½″×20½″	**2037K751**	97.83
24½″× 6½″	**2037K761**	76.80
24½″×10½″	**2037K771**	82.40
24½″×12½″	**2037K781**	87.20
24½″×16½″	**2037K791**	97.83
24½″×18½″	**2037K811**	104.87
24½″×24½″	**2037K821**	110.25

Indoor/Outdoor

Louvers resist corrosion and fit 1¾″ thick doors. *Style C* louvers are made of 0.04″ thick anodized aluminum. Overall size is 2¼″ larger than the opening size. *Style D* louvers have an 18-ga. frame and 22-ga. blades spaced 1″ apart. Overall size is ⅞″ larger than the opening size.

Fits Opening Size, Wd.×Ht.		Each
(C) Aluminum		
8″× 8″	**19605K511**	$66.86
10″× 4″	**19605K521**	60.82
12″× 8″	**19605K551**	74.34
12″×12″	**19605K561**	78.85
14″× 8″	**19605K581**	77.17
14″×12″	**19605K611**	92.55
16″× 8″	**19605K641**	80.64
16″×16″	**19605K671**	114.23
18″×12″	**19605K891**	93.98
20″×12″	**19605K711**	106.65
20″×12″	**19605K721**	109.56
20″×14″	**19605K731**	117.72

Fits Opening Size, Wd.×Ht.		Each
(C) Aluminum (Cont.)		
20″×16″	**19605K741**	$125.74
20″×20″	**19605K751**	137.61
24″×12″	**19605K781**	116.27
24″×16″	**19605K791**	140.36
24″×18″	**19605K811**	147.52
24″×24″	**19605K821**	177.85
(D) Type 304 Stainless Steel		
12″×12″	**19475K72**	219.61
18″×12″	**19475K74**	249.23
24″×12″	**19475K76**	295.85
24″×18″	**19475K78**	328.57
24″×24″	**19475K82**	386.21

Fire-Rated Door Louvers

A spring-loaded, fusible link locks the blades in the closed position if the temperature reaches 165°F. These louvers are UL classified for a 90-minute fire rating. They're 16-ga. powder-coated steel and fit 1¾″ thick doors. Overall size is 1⅜″ larger than the opening size. Mounting hardware is included.

Fits Opening Size, Wd.×Ht.		Each
12″×12″	**1157T3**	$222.61
18″×12″	**1157T4**	242.76
18″×18″	**1157T5**	259.75
18″×24″	**1157T6**	295.66

Fits Opening Size, Wd.×Ht.		Each
24″×12″	**1157T7**	$261.37
24″×18″	**1157T8**	295.66
24″×24″	**1157T9**	304.71

Replacement Fusible Link ..... **1157T11** **Each** $16.20

Wind-Driven Turbine Exhaust Fans

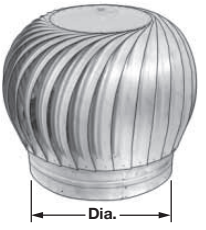

Designed to spin freely with the slightest breeze, these fans create a vacuum that draws out stale air and fumes from buildings and ventilation systems. No electricity is required. Mount fans on your roof away from wind obstructions. Maximum temperature is 150°F.

For information about exhaust fans, see page 656.

Steel exhaust fans have a zinc and aluminum coating for added corrosion resistance except 1992K25 and K27, which are galvanized with a gray painted finish.

Dia.	O'all Ht.	cfm @ 8 mph	Ga.	*Steel*	Each	*Type 304 SS*	Each
6″	11¾″	170	26	**1992K12**	$72.71	**1992K43**	$158.29
8″	13″	303	26	**1992K14**	73.20	**1992K45**	164.09
10″	14½″	472	26	**1992K16**	85.00	**1992K47**	179.60
12″	15½″	680	24	**1992K17**	89.28	**1992K48**	208.85
14″	17½″	927	24	**1992K18**	99.74	**1992K49**	251.65
16″	20¼″	1,212	24	**1992K21**	127.29	**1992K52**	304.85
18″	22½″	1,533	24	**1992K22**	147.57	**1992K53**	373.69
20″	24½″	1,888	24	**1992K23**	159.35	**1992K54**	403.53
24″	29″	2,719	24	**1992K24**	209.60	**1992K55**	530.96
30″	32″	4,252	22	**1992K25**	506.25	**1992K56**	1,282.05
36″	38″	6,123	22	**1992K27**	689.80		

Bases for Wind-Driven Exhaust Fans

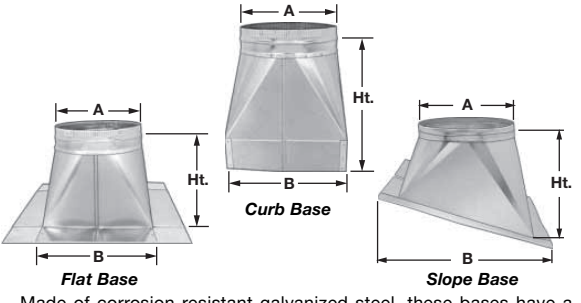

Made of corrosion-resistant galvanized steel, these bases have a square bottom and round top. All have a 4″ wide flashing flange to simplify installation.

To Order: For slope bases, please specify pitch. To determine pitch, calculate rise divided by run. To do so, measure the run in any increment of 12″. Then measure the rise (see illustration).

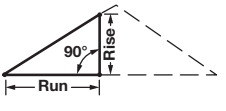

(A)	(B)	Ht.	*Flat Bases*	Each	*Curb Bases*	Each	*Slope Bases*	Each
8″	10″	10″	**2003K91**	$45.88	**2003K51**	$45.88	**2003K31**	$69.63
10″	12″	10″	**2003K92**	47.58	**2003K52**	47.58	**2003K32**	72.95
12″	14″	10″	**2003K93**	49.27	**2003K53**	49.27	**2003K33**	76.27
14″	16″	10″	**2003K94**	74.45	**2003K54**	74.45	**2003K34**	104.33
16″	18″	10″	**2003K95**	98.00	**2003K55**	98.00	**2003K35**	138.89
18″	22″	10″	**2003K96**	104.33	**2003K56**	104.33	**2003K36**	147.76
20″	24″	10″	**2003K97**	108.76	**2003K57**	108.76	**2003K37**	161.98
24″	30″	12″	**2003K98**	133.04	**2003K58**	135.93	**2003K38**	192.58
30″	36″	12″	**2003K99**	193.88	**2003K59**	193.88	**2003K39**	264.04

Adjustable Bases for Wind-Driven Exhaust Fans

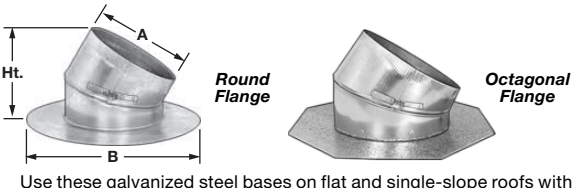

Use these galvanized steel bases on flat and single-slope roofs with a pitch up to 7/12. To install, place the flange flush with the roof. Then rotate the top section until it is parallel with the ground. An integral locking clip maintains the slope adjustment.

Flange	(A)	(B)	Ht.		Each
Round	6″	14″	7″	**2231K55**	$21.74
Round	8″	16″	7″	**2231K56**	22.45
Round	10″	18″	7″	**2231K57**	23.17
Round	14″	22″	7″	**2231K59**	35.17
Octagonal	12″	20″	7″	**2231K58**	23.92

For information about exhaust fans, see page 656.

Roof Exhaust Fans

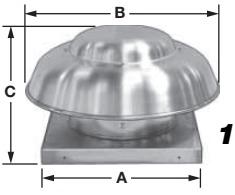

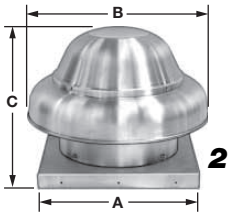

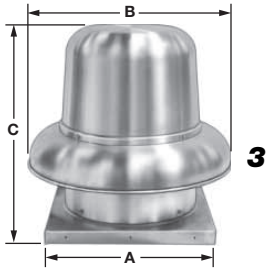

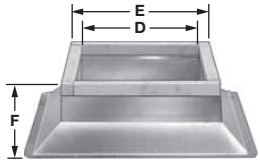

Roof Curb

Downdraft exhaust fans are more economical than upblast units. They draw air out and then direct it back toward the roof. Fans are all aluminum and include a bird screen.

Upblast exhaust fans are used when exhausting air laden with dirt and other contaminants that you don't want directed back at the roof.

Direct-drive fans have fewer moving parts to wear out or replace than belt-drive fans. *Belt-drive* fans let you adjust fan speed and airflow.

Roof curbs are made of galvanized steel.

Note: SP = static pressure.

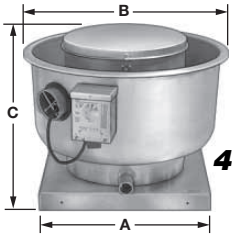

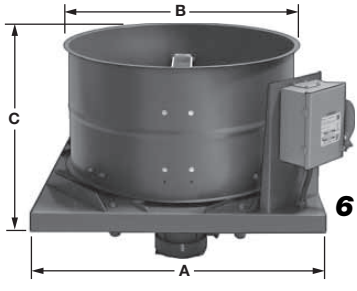

(1) Downdraft Direct-Drive Exhaust Fans

Fans have a NEMA 1 rated (indoor use) disconnect switch so power can be turned off during servicing. They have a single-phase, totally enclosed air-over (TEAO) motor, which is cooled by air from the fan, and a junction box for hardwiring. Maximum temperature is 110° F. UL listed.

cfm @ 0″ SP	cfm @ ½″ SP	Blade Dia.	(A)	(B)	(C)	rpm	hp	VAC @ 60 Hz	Amps	Sones	Exhaust Fans	Each	Roof Curbs (D)	(E)	(F)		Each
500	63	10″	19″	18 5/16″	11 3/4″	1,500	1/30	115	1.1	Not rated	2050K21	$235.85	14 1/2″	17 1/2″	8″	2230K11	$83.09
830	436	12″	19″	20 5/16″	12 1/4″	1,500	1/10	115	1.2	Not rated	2050K22	301.89	14 1/2″	17 1/2″	8″	2230K11	83.09
1,160	521	14″	21″	27 5/16″	14 5/8″	1,100	1/6	115	2.2	Not rated	2050K13	390.57	16 1/2″	19 1/2″	8″	2230K13	88.37
2,400	1,293	18″	26″	33 9/16″	16 3/8″	1,100	1/3	115	4.5	Not rated	2050K16	543.14	21 1/2″	24 1/2″	8″	2230K16	101.99

(2&3) High-Output Downdraft Exhaust Fans

The motor on these fans is mounted out of the way from the exhaust stream to prevent damage from contaminants. Fans have a single-phase, open dripproof (ODP) motor (except 2207K13, which is three phase) and screw terminals for hardwiring. Maximum temperature is 150° F. ETL listed.

Direct-drive fans have a speed control box mounted on the unit that can be relocated for accessibility.

cfm @ 0″ SP	cfm @ ½″ SP	Blade Dia.	(A)	(B)	(C)	rpm	hp	VAC @ 60 Hz	Amps	Sones	Exhaust Fans	Each	Roof Curbs (D)	(E)	(F)		Each
(2) Direct Drive																	
800	600	10 1/2″	19″	23 3/4″	16 1/4″	1,625	3/16	115	2	10.6	2011K54	$401.79	14 1/2″	17 1/2″	8″	2230K11	$83.09
1,409	1,211	11 3/4″	21″	26 1/4″	19 1/8″	1,625	1/4	115	4	13.4	2011K65	416.92	16 1/2″	19 1/2″	8″	2230K13	88.37
2,551	2,206	13 3/4″	21″	29 3/4″	21 3/4″	1,650	1/2	115	8.1	18.5	2011K57	601.85	16 1/2″	19 1/2″	8″	2230K13	88.37
(3) Belt Drive																	
3,077	2,400	15 3/4″	24 3/4″	33 1/4″	32 5/8″	1,189	1/2	115/208-230	8/4	13.6	2207K11	744.00	20″	23″	12″	2230K34	113.92
5,281	4,500	20 3/4″	28″	38 1/4″	34 1/4″	921	1	115/208-230	14/7	16.1	2207K12	1,122.00	23 1/2″	26 1/2″	12″	2230K35	123.77
7,382	6,500	24 3/4″	33″	42 1/2″	39 1/4″	779	1 1/2	208-230/460	4.7/2.3	18.7	2207K13	1,462.00	28 1/2″	31 1/2″	12″	2230K39	137.12

(4&5) Upblast Exhaust Fans

Fans are aluminum and have a single-phase, open dripproof (ODP) motor (except 6905K18 and K19, which are three phase) and a junction box for hardwiring. Maximum temperature is 300° F. UL listed.

Direct-drive fans have a speed control box mounted on the unit that can be relocated for accessibility. ***Belt-drive*** fans are tested to AMCA standards and include a built-in disconnect switch so power can be turned off during servicing.

cfm @ 0″ SP	cfm @ ½″ SP	Blade Dia.	(A)	(B)	(C)	rpm	hp	VAC @ 60 Hz	Amps	Sones	Exhaust Fans	Each	Roof Curbs (D)	(E)	(F)		Each
(4) Direct Drive																	
718	402	10 1/2″	19″	22″	18″	1,625	3/16	115	2	9.4	2232K55	$475.81	14 1/2″	17 1/2″	12″	2230K64	$99.39
1,342	1,116	11 3/4″	21″	25 1/2″	25 1/4″	1,725	1/3	115	4.1	12.9	2232K23	539.39	16 1/2″	19 1/2″	12″	2230K31	103.66
3,177	2,827	15 3/4″	24 3/4″	31 7/8″	30 1/2″	1,525	3/4	115	13	20	2232K24	875.93	20″	23″	12″	2230K34	113.92
(5) Belt Drive																	
3,960	3,250	18 3/4″	28″	39 3/8″	33 3/4″	1,730	3/4	115/208-230	12/6	15.3	6905K35	957.63	23 1/2″	26 1/2″	12″	2230K35	123.77
6,600	5,400	24 3/4″	33″	43 3/8″	37 1/2″	1,710	1 1/2	208-230/460	4.7/2.3	17.2	6905K18	1,412.07	28 1/2″	31 1/2″	12″	2230K39	137.12
11,400	10,200	30 3/4″	40″	52 3/4″	40″	1,730	3	208-230/460	9.5/4.7	19.8	6905K19	2,208.33	35 1/2″	38 1/2″	12″	2230K94	155.70

(6) High-Output Upblast Direct-Drive Exhaust Fans

Butterfly dampers protect these fans from weather, opening with air flow when the motor is turned on and closing when fan stops. Fans have a NEMA 3R rated (indoor/outdoor use with falling liquids) disconnect switch so power can be turned off during servicing. All are steel with cast aluminum blades. They have a three-phase, totally enclosed fan-cooled (TEFC) motor and leads for hardwiring. Fans can also be field-wired to 230 VAC. Maximum temperature is 105° F.

cfm @ 0″ SP	cfm @ ½″ SP	Blade Dia.	(A)	(B)	(C)	rpm	hp	VAC @ 60 Hz	Amps	Sones	Exhaust Fans	Each	Roof Curbs (D)	(E)	(F)		Each
7,400	—	24″	36″	30″	20 3/4″	1,750	3/4	460	1.2	31	2081K19	$1,218.28	31 1/2″	34 1/2″	12″	2230K66	$147.53
11,773	7,540	30″	42″	36″	20 3/4″	1,160	2	460	3.5	28.8	2081K13	1,829.27	37 1/2″	40 1/2″	12″	2230K45	158.43
14,800	—	36″	48″	44″	26 3/4″	1,160	1	460	1.7	39	2081K21	1,748.44	43 1/2″	46 1/2″	12″	2230K48	173.20
24,764	17,020	42″	54″	50″	26 3/4″	1,160	3	460	4.6	58	2081K15	2,434.38	49 1/2″	52 1/2″	12″	2230K49	193.05
34,348	25,543	48″	60″	56″	38 3/4″	1,160	5	460	7.5	61	2081K17	2,788.15	55 1/2″	58 1/2″	8″	2230K26	175.40

Dampers for Roof Exhaust Fans

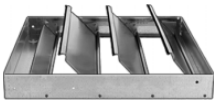

Damper

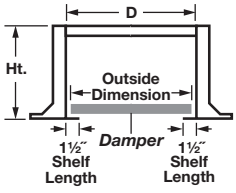

Roof Curb

The blades on these dampers open when your roof-curb mounted exhaust fan goes on and close when it's off, preventing backdraft. They have a galvanized steel frame and aluminum blades for corrosion resistance. Felt seals on the face of the blades ensure quiet closing and better protection from the weather. Dampers fit the base of the roof curb and must be secured to the shelf of the curb with sheet metal screws (not included; see pages 3022-3030). Frame is 19 ga. and 2″ deep; blades are 26 ga. Temperature range is –40° to +180° F. Roof curbs are galvanized steel.

Also Available: Additional damper sizes. Please ask for 8061T999 and specify damper outside dimensions, roof curb inside width (D) and height, and shelf length.

Dampers: Outside Dim., Lg. × Wd.	Max. Air Velocity, fpm		Each	8″ High Roof Curbs: Inside Wd. (D)		Each	12″ High Roof Curbs: Inside Wd. (D)		Each
13¾″ × 13¾″	2,000	8061T3	$31.08	14½″	2230K11	$83.09	14½″	2230K64	$99.39
15¾″ × 15¾″	2,000	8061T5	33.36	16½″	2230K13	88.37	16½″	2230K31	103.66
17¾″ × 17¾″	2,000	8061T9	36.58	—	—	—	19½″	2230K33	113.92
19¾″ × 19¾″	2,000	8061T14	39.71	21½″	2230K16	101.99	—	—	—
21¾″ × 21¾″	2,000	8061T16	45.29	—	—	—	23½″	2230K35	123.77
23¾″ × 23¾″	2,000	8061T19	56.13	—	—	—	25½″	2230K36	129.85
27¾″ × 27¾″	2,000	8061T26	65.44	—	—	—	28½″	2230K39	137.12
34¾″ × 34¾″	2,250	8061T28	91.53	35½″	2230K63	134.70	35½″	2230K94	155.70
36¾″ × 36¾″	2,250	8061T29	96.82	—	—	—	37½″	2230K45	158.43

Roof Supply Fans

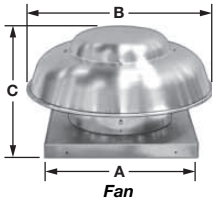

Fan

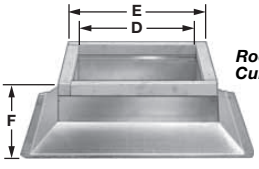

Roof Curb

Replace exhausted air from your building with fresh air from outside and reduce the static pressure on your exhaust fan. These fans mount on your roof and include a bird screen and a built-in disconnect switch so power can be turned off during servicing. They're made of aluminum and have a single-phase, totally enclosed air over (TEAO) motor that's cooled by air from the fan and a conduit connection. Operate on 115 VAC, 60 Hz. Maximum temperature is 110° F. Not rated for sones.

Roof curbs are galvanized steel.

cfm @ 0″ SP★	cfm @ ¼″ SP★	Blade Dia.	(A)	(B)	(C)	rpm	hp	Amps	Fans:	Each	8″ High Roof Curbs: (D)	(E)	Each
1,450	904	14″	21″	27 5/16″	14 5/8″	1,100	1/6	2.4	20415K61	$441.51	16½″	19½″	2230K13 $88.37
2,460	1,980	18″	26″	33 9/16″	16 3/8″	1,100	1/3	4.5	20415K62	552.83	21½″	24½″	2230K16 101.99

★ SP = static pressure.

Wall Exhaust Fans

Install these direct-drive fans to an outside wall to diffuse air in a 360° pattern. Ideal for areas where you don't have room for a roof-mount unit, these aluminum fans work with or without duct (angle ring sold separately; see 1764K on page 633). Motor is single-phase, open dripproof (ODP), and sealed against contaminants. All have a junction box and operate on 115 VAC, 60 Hz except 18″ dia. fan, which operates on 115/230 VAC. Fans include mounting fasteners. Maximum temperature is 180° F. UL and C-UL listed. For information about exhaust fans, see page 656.

Grilles are steel. ***Louvers*** are aluminum. Blades open when air flows and close when it stops.

Blade Dia.	cfm @ 0″ SP★	cfm @ ¼″ SP★	Fits Opening Dia.	Fits Opening Sq.	Overall Size, Dia. × Dp.	rpm	hp	Amps	Sones	Fans:	Each	Grilles:	Each	Louvers:	Each
7″	194	—	8″	8″	17⅛″ × 13″	1,050	1/25	0.7	5.0	1925K1	$371.73	1925K81	$31.76	1925K91	$48.57
10″	554	254	10″	10″	21⅛″ × 16″	1,050	1/25	0.7	6.6	1925K2	392.28	1925K82	35.49	1925K92	49.50
13½″	1,656	1,436	12″	12″	30 3/16″ × 28¾″	1,075	1/6	1.8	9.8	1925K4	725.72	1925K84	42.03	1925K93	51.37
16½″	2,857	2,459	14″	16″	34 11/16″ × 30⅞″	1,075	1/3	3.8	14.2	1925K5	936.80	1925K85	59.78	1925K94	60.71
18″	4,311	4,063	18″	20″	39 7/16″ × 35⅝″	1,140	3/4	10.0	17.8	1925K62	1,314.94	1925K87	93.40	1925K97	77.52

★ SP = static pressure.

Direct-Drive Duct Fans

Plastic

Galvanized Steel

Mount these direct-drive fans at any point along your ductwork. They have a single-phase, totally enclosed air over (TEAO) motor that's cooled by air from the fan. Direct-drive fans have fewer moving parts to wear out or replace and usually require less space than the same diameter belt-drive fan. Operate on 115 VAC, 60 Hz. Max. temperature is 140° F. UL and C-UL listed.

Fans with plastic housing are UV resistant and have a weatherproof seal and terminal block connections.

Fans with galvanized steel housing include a mounting bracket with 3/16″ dia. holes. *Fans with 6-ft. cord* have a three-prong plug.

Also Available: Mounting clamps, sold in pairs. Please ask for 1967K74 and specify your duct diameter.

cfm @ 0″ SP★	cfm @ 0.6″ SP★	For Duct Dia.	O'all Size, Dia. × Dp.	rpm	Amps	Fans:	Each	Fans with 6-ft. Cord:	Each
Plastic Housing									
122	55	4″	9½″ × 9⅝″	2,900	0.2	19135K65	$167.41	—	—
148	47	5″	9½″ × 8″	2,950	0.2	19135K92	175.33	—	—
263	167	6″	11¾″ × 9⅝″	2,750	0.7	19135K66	190.19	—	—
408	259	8″	13¼″ × 12¼″	2,750	1.1	19135K67	265.47	—	—
429	332	8″	13¼″ × 12¼″	3,100	1.4	19135K95	311.04	—	—
649	506	10″	13¼″ × 9¼″	2,850	2.4	19135K96	354.62	—	—
Galvanized Steel Housing						***Fans with Junction Box***			
135	55	4″	8¾″ × 6½″	3,000	0.2	1967K11	158.49	1967K21	$163.44
156	66	5″	8¾″ × 5½″	3,000	0.2	1967K12	166.42	1967K22	171.37
303	196	6″	11⅜″ × 6″	2,700	0.7	1967K13	178.30	1967K23	183.25
461	295	8″	13⅜″ × 6″	2,550	1.1	1967K14	248.63	1967K24	253.58
502	388	8″	13⅜″ × 6″	2,950	1.5	1967K15	296.47	1967K25	299.15
589	503	10″	13⅜″ × 5⅞″	3,100	2.0	1967K16	336.79	1967K26	341.75
741	515	12″	16″ × 8¼″	2,600	1.9	1967K17	407.12	1967K27	412.08

★ SP = static pressure.

High-Output Direct-Drive Duct Fans

For high-airflow applications, choose these direct-drive fans. They have spark-resistant cast-aluminum blades and a heavy duty steel housing. Direct-drive fans have fewer moving parts to wear out or replace and usually require less space than the same diameter belt-drive fan. They have a conduit box and operate at 60 Hz. Maximum temperature is 104° F. Flanges have 7/16″ dia. mounting holes (fasteners not included).

Hazardous-location motor is UL listed for Class I, Group D and Class II, Groups F and G hazardous locations. *Note:* Conduit box must be mounted separate from the fan.

cfm @ 1/8″ SP★	cfm @ 3/8″ SP★	For Duct Dia.	O'all Lg.	Flange OD	rpm	hp	dB @ 10 ft.	Totally Enclosed Fan-Cooled Motor Amps	Totally Enclosed Fan-Cooled Motor Each	Hazardous-Location Motor Amps	Hazardous-Location Motor Each
115/230 VAC, Single Phase											
2,020	1,912	12″	20″	14 1/16″	3,450	1/2	72	7.0/3.5	1927K51 $535.86	7.4/3.7	1927K61 $764.29
2,745	2,175	15″	20″	17 1/16″	1,750	1/2	63	7.4/3.7	1927K53 652.75	7.4/3.7	1927K63 976.67
4,540	3,960	18″	20″	20 1/16″	1,750	3/4	63	8.4/4.2	1927K14 735.00	10.6/5.3	1927K34 1,038.33
5,960	4,931	24″	21″	26 11/16″	1,750	3/4	69	8.4/4.2	1927K16 744.57	10.6/5.3	1927K36 1,038.33
230/460 VAC, Three Phase											
2,020	1,912	12″	20″	14 1/16″	3,450	1/2	72	7.4/3.7	1927K52 544.18	2.2/1.1	1927K62 880.25
2,745	2,175	15″	20″	17 1/16″	1,750	1/2	63	2.0/1.0	1927K54 628.69	2.0/1.0	1927K64 958.41
4,540	3,960	18″	20″	20 1/16″	1,750	3/4	63	3.0/1.5	1927K56 697.74	3.0/1.5	1927K66 1,005.00
5,960	4,931	24″	21″	26 11/16″	1,750	3/4	69	3.0/1.5	1927K57 709.09	3.0/1.5	1927K67 1,034.65

★ SP = static pressure.

Belt-Drive Duct Fans

Adjust the belt to fine-tune motor speed and airflow on these fans. They have a conduit box and mounting flanges with 7/16″ dia. holes (fasteners not included). *115/230 VAC* fans are single phase. *230/460 VAC* fans are three phase.

Fans with steel housing and aluminum blades have four screws on the motor base for easy alignment. Maximum temperature is 175° F. Tested to AMCA standards. ***Hazardous-location motor*** is UL listed for Class I, Group D and Class II, Groups F and G hazardous locations.

Fans with Type 304 stainless steel housing and Type 316 stainless steel blades provide excellent corrosion resistance. Maximum temperature is 200° F.

cfm @ 1/8″ SP★	cfm @ 3/8″ SP★	For Duct Dia.	Flange OD	O'all Lg.	O'all Ht. w/ Motor	rpm	hp	VAC @ 60 Hz	Amps	dB @ 10 ft.	Each
Fans with Steel Housing and Aluminum Blades											
Totally Enclosed Fan-Cooled Motor											
1,708	1,420	12″	14 1/16″	12″	23 7/16″	3,036	1/2	115/230	7.0/3.5	67	2097K32 $697.14
3,202	2,890	15″	17 1/16″	12″	26 15/16″	2,288	3/4	115/230	8.4/4.2	66	2097K93 814.29
3,500	2,565	18″	20 1/16″	12″	30 3/16″	1,610	1/2	115/230	7.4/3.7	61	2097K35 828.12
4,825	4,400	18″	20 1/16″	12″	30 3/16″	2,153	1	230/460	3.4/1.7	66	2097K36 884.13
7,950	6,975	24″	26 11/16″	12″	36 11/16″	1,820	1 1/2	230/460	4.4/2.2	74	2097K38 1,117.46
15,350	13,250	36″	39 1/4″	16″	49 1/4″	1,015	2	230/460	5.8/2.9	69	2097K88 1,646.97
Hazardous-Location Motor											
1,708	1,420	12″	14 1/16″	12″	23 7/16″	3,036	1/2	115/230	7.4/3.7	67	2097K52 834.29
3,202	2,890	15″	17 1/16″	12″	26 15/16″	2,288	3/4	115/230	10.6/5.3	66	2097K94 1,042.86
3,500	2,565	18″	20 1/16″	12″	30 3/16″	1,610	1/2	115/230	7.4/3.7	61	2097K55 1,012.86
4,825	4,400	18″	20 1/16″	12″	30 3/16″	2,153	1	230/460	3.4/1.7	66	2097K56 1,081.50
7,950	6,975	24″	26 11/16″	12″	36 11/16″	1,820	1 1/2	230/460	4.4/2.2	74	2097K58 1,468.57
15,350	13,250	36″	39 1/4″	16″	49 1/4″	1,015	2	230/460	5.8/2.9	69	2097K96 2,114.29
Fans with Type 304 Stainless Steel Housing and Type 316 Stainless Steel Blades											
Totally Enclosed Fan-Cooled Motor											
1,866	1,670	12″	14 1/16″	20″	25 5/8″	3,051	3/4	230/460	2.6/1.3	60	2357K13 2,543.33
4,802	4,670	18″	20 1/16″	20″	32 11/16″	2,374	1 1/2	230/460	4.4/2.2	67	2357K37 3,220.00
7,955	7,200	24″	26 11/16″	21″	38 3/4″	1,711	2	230/460	5.8/2.9	69	2357K62 3,953.33

★ SP = static pressure.

Duct Booster Fans

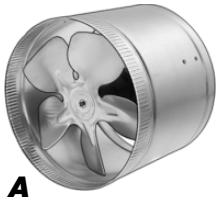

A

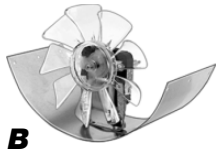

B

Increase air volume through ductwork to eliminate undue strain on your ventilation system. These fans have a galvanized steel housing; a single-phase, open motor; and leads for hardwiring. Operate on 120 VAC, 60 Hz.

Single-speed fans have aluminum blades except 1850K11 and 1850K22, which have plastic blades.

Two-speed fans have plastic blades.

Optional thermostat adjusts from 40° to 110° F. It has a 6-ft. cord with three-prong plug. Operates on 110 VAC, 60 Hz and is rated for 5 amps.

	cfm @ 0″ Static Pressure	For Duct Dia.	O'all Lg.	rpm	Amps	dB @ 6 ft.	Max. Temp.	Each
Single Speed								
A	80	4″	6″	1,500	0.3	52	140° F	1850K11♣ $35.71
A	240	6″	7 1/4″	2,250	0.6	Not Rated	266° F	1850K12 45.20
A	420	8″	7 1/4″	2,700	0.6	Not Rated	266° F	1850K14 56.75
A	650	10″	8″	1,400	0.4	Not Rated	257° F	1850K16 84.38
A	800	12″	8″	1,300	1.5	55	140° F	1850K18 70.00
A	1,350	14″	9 1/8″	1,500	0.8	Not Rated	257° F	1850K27 106.20
B	250	6″ to 8″	11″	1,950	0.4	50	140° F	1850K22 35.00
Two Speed								
A	160/300	6″	6″	1,950/2,200	0.4	52	140° F	1850K13 46.00
A	450/600	8″	8″	1,350/1,750	0.9	55	140° F	1850K15 56.25
Optional Thermostat								1850K52 45.00

♣ Both ends are crimped.

DC Duct Fans

When AC power isn't available, install these compact fans directly into a duct run. They're made of reinforced plastic and have a maximum temperature of 200° F. Mount them to any flat surface using the 3/16″ × 3/8″ mounting slots (fasteners not included). Operate on 12 VDC and have leads for hardwiring.

cfm @ 0″ Static Pressure	For Duct Dia.	O'all Size, Lg. × Wd. × Ht.	Amps	dB @ 3 ft.	Each
135	3″	5 1/4″ × 5″ × 3 3/16″	2.9	68	19665K11 $61.63
235	4″	5 1/4″ × 6″ × 4 3/16″	4.3	68	19665K21 69.85

Crossflow Blowers

Distributing an even pattern of air across the entire length of their aluminum wheel, these blowers provide uniform cooling and ventilating. They have an aluminum housing and Type 430 stainless steel flanges with 1/4″ × 1/2″ mounting slots (fasteners not included). Blowers have a single-phase, thermally protected, shaded-pole motor and leads for hardwiring. Operate on 120 VAC, 60 Hz. Components are UL recognized and CSA certified. Temperature range is 30° to 140° F.

cfm @ 0″ Static Pressure	Wheel Lg.	Overall Size, Ht. × Wd. × Dp.	rpm	hp	Amps	dB @ 5 ft.		
120	7″	4 1/4″ × 11″ × 3 1/2″	2,600	1/60	1.1	61	2087K14	$90.64
160	10″	4 1/4″ × 14″ × 3 1/2″	2,600	1/50	1.3	69	2087K17	101.20
220	13″	4 1/4″ × 17 5/8″ × 3 1/2″	2,600	1/40	1.4	58	2087K22	107.85

Miniature Blowers

When space is limited, fire up one of these blowers to transfer heat buildup generated by electronic equipment, induction heaters, and high-wattage bulbs. They have a single-phase, open dripproof (ODP) motor and leads for hardwiring. All have an aluminum housing, a galvanized steel wheel, and 1/4″ dia. mounting holes, unless noted (fasteners not included). Wheel rotates clockwise facing the motor side. Blowers operate on 115 VAC, 60 Hz. Inlet is round and outlet is rectangular.

cfm @ 0″ SP★	Temp. Range	Inlet Dia.	Outlet Size, Ht. × Wd.	Wheel Dia.	Overall Size, Ht. × Wd. × Dp.	rpm	hp	Amps	dB @ 3 ft.		
56	-13 to +158° F	2 9/16″	1 5/8″ × 2 1/4″	3 5/16″	4 9/16″ × 3 1/2″ × 4 5/8″	2,800	1/32	0.3	57	1699K23	$175.04
91	-13 to +131° F	3 1/4″	2″ × 3″	4 1/4″	6 5/8″ × 4 1/2″ × 6 1/4″	1,800	1/32	0.3	54	1699K24♣	159.01
152	-13 to +140° F	3 15/16″	2″ × 3″	4 3/4″	7 1/2″ × 4 1/2″ × 6 7/8″	3,360	1/8	0.8	62	1699K21	144.79
251	-13 to +104° F	4 5/8″	3 5/8″ × 3 3/4″	5 1/2″	10 1/4″ × 5 1/8″ × 8 7/8″	2,200	1/4	1.6	67	1699K22	188.28

★ SP = static pressure. ♣ Has 5/16″ diameter mounting holes.

Blowers

Steel

Cast Aluminum

For your everyday ventilating and exhausting applications, choose these blowers. Wheel rotates clockwise facing the motor side. Operate at 60 Hz.

Steel Housing— Welded for strength and durability. Blowers have a steel wheel, terminal block, and 3/8″ dia. mounting holes on the base (fasteners not included). Inlet is round. Outlet is rectangular and adjusts to eight positions. Temperature range is –15° to +180° F.

Cast Aluminum Housing— Spark and corrosion resistant. Blowers have a conduit box and 7/16″ dia. mounting holes on the base (fasteners not included). Inlet and outlet are round. Outlet adjusts to four positions. Temperature range is 0° to 150° F.

Blowers with a *totally enclosed fan-cooled (TEFC) motor* have a steel wheel.

Blowers with a *hazardous-location motor* are UL listed for Class I, Group D, and Class II, Groups F and G hazardous locations. All have an aluminum wheel except 1955K64, which has a steel wheel.

ⓘ For performance curves of these blowers, go to mcmaster.com and search for **1963KAC**.

Steel Housing

cfm @ 1/4″ SP★	cfm @ 3/4″ SP★	Inlet Dia.	Outlet Size, Ht. × Wd.	Wheel Dia.	Overall Size, Ht. × Wd. × Dp.	rpm	hp	Amps	dB @ 5 ft.		
Open Dripproof (ODP) Motor— *115/230 VAC (unless noted), Single Phase*											
515	300	6″	7 3/8″ × 4 1/4″	6 1/4″	15 5/8″ × 15″ × 11″	1,750	1/6	3.8	54	1963K13●	$298.74
1,050	865	8″	8 1/4″ × 5 3/8″	7 3/4″	16 1/2″ × 16 1/4″ × 13 5/8″	1,750	1/3	6.0/3.0	59	1963K15	357.94
1,125	855	9″	10 3/4″ × 6 1/2″	9″	18 5/8″ × 17 5/8″ × 14 7/8″	1,150	1/3	7.0	56	1963K37●	635.71
1,870	1,500	10″	11 3/4″ × 8″	10 5/8″	22″ × 20 1/2″ × 17 1/4″	1,150	3/4	10.0/5.0	61	1963K39	1,036.31
Open Dripproof (ODP) Motor— *230/460 VAC, Three Phase*											
515	300	6″	7 3/8″ × 4 1/4″	6 1/4″	15 5/8″ × 15″ × 11″	1,750	1/4	1.3/0.7	54	1963K24	401.88
1,050	865	8″	8 1/4″ × 5 3/8″	7 3/4″	16 1/2″ × 16 1/4″ × 13 5/8″	1,750	1/3	1.6/0.8	59	1963K26	480.22
1,125	855	9″	10 3/4″ × 6 1/2″	9″	18 5/8″ × 17 5/8″ × 14 7/8″	1,150	1/3	1.8/0.9	56	1963K48	649.61
1,870	1,500	10″	11 3/4″ × 8″	10 5/8″	22″ × 20 1/2″ × 17 1/4″	1,150	3/4	3.0/1.5	61	1963K31	719.23

★ SP = static pressure. ● Motor operates on 115 VAC.

Cast Aluminum Housing

cfm @ 1/4″ SP★	cfm @ 1″ SP★	Inlet Dia.	Outlet Dia.	Wheel Dia.	Overall Size, Ht. × Wd. × Dp.	rpm	hp	Amps	dB @ 5 ft.		
Totally Enclosed Fan-Cooled Motor— *115/230 VAC, Single Phase*											
387	340	5″	4″	4 3/4″	12 5/8″ × 9 7/8″ × 12 1/4″	3,450	1/3	6.0/3.0	70	1955K52	$526.67
506	296	6″	6″	6 1/4″	14 1/8″ × 12 3/16″ × 13 3/16″	1,750	1/4	4.6/2.3	65	1955K53	550.00
997	—	8″	8″	8 1/4″	18 11/16″ × 14 11/16″ × 15 5/16″	1,150	1/3	7.4/3.7	65	1955K55	978.33
1,072	996	6″	6″	6 1/4″	14 1/8″ × 12 3/16″ × 13 3/16″	3,450	1 1/2	17.0/8.5	77	1955K54	806.67
Hazardous-Location Motor— *115/230 VAC, Single Phase*											
387	340	5″	4″	4 3/4″	12 5/8″ × 9 7/8″ × 12 1/4″	3,450	1/3	7.0/3.5	70	1955K62	828.69
506	296	6″	6″	6 1/4″	14 1/8″ × 12 3/16″ × 13 3/16″	1,750	1/3	6.0/3.0	65	1955K63	948.23
997	—	8″	8″	8 1/4″	18 11/16″ × 14 11/16″ × 15 5/16″	1,150	1/3	6.8/3.4	65	1955K81	1,313.31
1,072	996	6″	6″	6 1/4″	14 1/8″ × 12 3/16″ × 13 3/16″	3,450	1 1/2	17.0/8.5	77	1955K82	1,088.77

★ SP = static pressure.

Heavy Duty Blowers

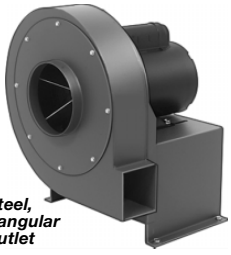

Steel, Rectangular Outlet

Steel, Round Outlet

Cast Aluminum

Type 304 Stainless Steel

When the air you're moving contains light dust or contaminants, these direct-drive blowers get the job done. Wheel is aluminum and rotates clockwise facing the motor side. All blowers have a round inlet. Operate at 60 Hz.

115/230 VAC blowers are single phase. *230/460 VAC* blowers are three phase. *Hazardous-location motor* is UL listed for Class I, Group D, and Class II, Groups F and G hazardous locations.

Steel Housing— Welded for strength and durability. Blowers with *rectangular outlet* adjust to eight outlet positions. They have a conduit box and 3/8″ dia. mounting holes on the base (fasteners not included). Temperature range is –15° to +180° F. Blowers with a *round outlet* adjust to four outlet positions. They have a conduit box and 7/16″ dia. mounting holes (fasteners not included). Temperature range is –15° to +150° F.

Cast Aluminum Housing— Spark and corrosion resistant. Blowers have a conduit box and 7/16″ dia. mounting holes on the base (fasteners not included). Adjust to four outlet positions. Temperature range is –20° to +150° F.

Type 304 Stainless Steel Housing— Superior corrosion resistance. Blowers have a terminal box and 3/8″ mounting holes on the base (fasteners not included). Adjust to eight outlet positions. Temperature range is –15° to +180° F.

ⓘ For performance curves of these blowers, go to mcmaster.com and search for **1953KAC**.

Steel Housing

cfm @ 3″ SP★	cfm @ 5″ SP★	Inlet Dia.	Outlet Size, Ht.×Wd.	Wheel Dia.	Overall Size, Ht.×Wd.×Dp.	Motor●	rpm	hp	Amps	dB @ 5 ft.		
115 VAC/230 VAC—Rectangular Outlet												
346	195	5″	3 1/2″×3 1/2″	9″	15 3/4″×20 3/4″×13 5/8″	ODP	3,500	3/4	9.4/4.7	84	**1953K13**	$487.74
346	195	5″	3 1/2″×3 1/2″	9″	15 3/4″×20 3/4″×13 5/8″	TEFC	3,500	3/4	9.6/4.8	84	**1953K22**	533.08
635	508	6″	4″×3 1/2″	10 5/8″	19″×20 3/4″×15 5/8″	ODP	3,500	1 1/2	12.8/6.4	86	**1953K14**	606.11
635	508	6″	4″×3 1/2″	10 5/8″	19″×20 3/4″×15 5/8″	TEFC	3,500	1 1/2	16.0/8.0	86	**1953K23**	729.00
230 VAC/460 VAC—Rectangular Outlet												
346	195	5″	3 1/2″×3 1/2″	9″	15 3/4″×20 3/4″×13 5/8″	TEFC	3,500	3/4	2.6/1.3	84	**1953K52**	577.23
635	508	6″	4″×3 1/2″	10 5/8″	19″×20 3/4″×15 5/8″	TEFC	3,500	1 1/2	4.6/2.3	86	**1953K53**	636.00
635	508	6″	4″×3 1/2″	10 5/8″	19″×20 3/4″×15 5/8″	Haz. Loc.	3,500	1 1/2	4.6/2.1	86	**1953K63**	909.60
1,866	1,685	8″	7 1/8″×5 3/4″	13 1/2″	23 1/8″×22″×22 3/8″	ODP	3,500	7 1/2	17.4/8.7	93	**1953K35**	815.46
1,866	1,685	8″	7 1/8″×5 3/4″	13 1/2″	23 1/8″×22″×22 3/8″	TEFC	3,500	7 1/2	17.8/8.9	93	**1953K55**	955.93
1,866	1,685	8″	7 1/8″×5 3/4″	13 1/2″	23 1/8″×22″×22 3/8″	Haz. Loc.	3,500	7 1/2	16.0/8.0	93	**1953K65**	1,781.14
230 VAC/460 VAC—Round Outlet												
316	122	5″	3 15/16″ Dia.	9″	17 3/4″×15 3/8″×17 3/4″	TENV	3,450	1/3	1.4/0.7	74	**1953K26**	508.50
681	515	6″	5 15/16″ Dia.	11″	21 1/8″×19 1/8″×18 1/4″	TEFC	3,450	1	3.6/1.8	75	**1953K27**	634.63
1,232	1,080	7″	5 15/16″ Dia.	13″	21 1/8″×19 1/8″×18 1/4″	TEFC	3,450	3	7.6/3.8	78	**1953K66**	776.78
1,989	1,574	8″	7 15/16″ Dia.	14″	26 1/8″×23 3/4″×25 1/4″	TEFC	3,450	5	11.6/5.8	83	**1953K67**	1,318.46

★ SP = static pressure.

● ODP = open dripproof; TEFC = totally enclosed fan-cooled; Haz. Loc. = hazardous location; TENV = totally enclosed nonventilated.

Cast Aluminum Housing—Round Outlet

cfm @ 3″ SP★	cfm @ 5″ SP★	Inlet Dia.	Outlet Dia.	Wheel Dia.	Overall Size, Ht.×Wd.×Dp.	rpm	hp	dB @ 5 ft.	Totally Enclosed Fan-Cooled Motor Amps			Hazardous-Location Motor Amps		
115/230 VAC														
90	—	4″	4″	7″	13 3/4″×12″×12″	3,450	1/3	83	5.6/2.8	**1954K51**	$520.97	4.4/2.2	**1954K61**	$727.42
238	—	4″	4″	8 1/8″	13 3/4″×12″×12″	3,450	1/2	84	7.6/3.8	**1954K52**	543.55	8.4/4.2	**1954K62**	751.61
524	400	6″	5″	9 3/4″	18″×15″×16″	3,450	1	87	12.6/6.3	**1954K54**	761.29	12.4/6.2	**1954K64**	996.77
685	534	6″	5″	10 5/8″	18″×15″×16″	3,450	1 1/2	89	17.0/8.5	**1954K55**	874.19	17.0/8.5	**1954K65**	1,485.48
230/460 VAC														
238	—	4″	4″	8 1/8″	13 3/4″×12″×12″	3,450	1/2	84	1.6/0.8	**1954K57**	554.84	3.2/1.6	**1954K67**	841.94
524	400	6″	5″	9 3/4″	18″×15″×16″	3,450	1	87	2.8/1.4	**1954K59**	741.94	7.2/3.6	**1954K69**	1,104.84
685	534	6″	5″	10 5/8″	18″×15″×16″	3,450	1 1/2	89	4.0/2.0	**1954K72**	819.35	8.0/4.0	**1954K73**	1,198.39

★ SP = static pressure.

Type 304 Stainless Steel Housing—Rectangular Outlet

cfm @ 3″ SP★	cfm @ 5″ SP★	Inlet Dia.	Outlet Size, Ht.×Wd.	Wheel Dia.	Overall Size, Ht.×Wd.×Dp.	rpm	hp	Amps	dB @ 5 ft.		
Totally Enclosed Fan-Cooled (TEFC) Motor—115/230 VAC											
346	195	5″	3 1/2″×3 1/2″	9″	15 3/4″×20 3/4″×13 5/8″	3,500	3/4	9.6/4.8	84	**2283K27**	$853.27
635	508	6″	4″×3 1/2″	10 5/8″	19″×20 3/4″×15 5/8″	3,500	1 1/2	16.0/8.0	86	**2283K33**	1,069.90
Totally Enclosed Fan-Cooled (TEFC) Motor—230/460 VAC											
346	195	5″	3 1/2″×3 1/2″	9″	15 3/4″×20 3/4″×13 5/8″	3,500	3/4	2.6/1.3	84	**2283K39**	916.47
635	508	6″	4″×3 1/2″	10 5/8″	19″×20 3/4″×15 5/8″	3,500	1 1/2	4.6/2.3	86	**2283K44**	1,022.38
1,866	1,685	8″	7 1/8″×5 3/4″	13 1/2″	23 1/8″×22″×22 3/8″	3,500	7 1/2	17.4/8.7	93	**2283K56**	1,782.12

★ SP = static pressure.

Portable Blowers

Light in weight but heavy on power, these blowers offer go-anywhere convenience. They adjust to three outlet positions (level, 45°, and 90°) and run at three speeds. Housing is blue polyethylene with an easy-grip handle. Blowers have a thermally protected motor that's rated for continuous use and a drying vent under the unit. Operate on 115 VAC, 60 Hz and have a 25-ft. cord with three-prong plug. UL and C-UL listed.

cfm @ 0″ Static Pressure	Outlet Size, Ht.×Wd.	Overall Size, Ht.×Wd.×Dp.	hp	Amps	dB @ 5 ft.		
2,700/900/700	4 3/4″×16 3/4″	18 13/16″×17″×18 5/16″	1/3	4.0	65	**3225K31**	$346.67
3,500/1,300/1,100	4 3/4″×16 3/4″	18 13/16″×17″×18 5/16″	1	10.4	75	**3225K32**	416.92

Chemical- and Corrosion-Resistant Blowers

115/230 VAC

208-230/460 VAC

The rigid plastic housing protects these blowers in harsh environments. All have a PVC housing except 2093K11, K12, K13, and K14, which have a fiberglass-reinforced polyester housing. PVC resists strong oxidizing acids such as chromic, nitric, sulfuric, and phosphoric but is not recommended for use with perchloric acid. Fiberglass-reinforced polyester tolerates many organic chemicals. All blowers have a polyurethane-coated steel base with 3/8″ dia. mounting holes (fasteners not included) and a conduit box, unless noted. Motor is direct drive and operates at 60 Hz. Wheel rotates counterclockwise facing the motor side. Inlet is round. Air discharges out of the top. Not rated for temperature or decibels.

115/230 VAC blowers are single phase and have a polypropylene wheel, unless noted. *208-230/460 VAC* blowers are three phase and have a PVC wheel. For duct applications, use an optional round adapter (sold separately) to convert a rectangular outlet to a round outlet.

Hazardous-location motor is UL listed for Class I, Group D, and Class II, Groups F and G hazardous locations.

115/230 VAC—Round Outlet

cfm @ 1/2″ SP★	cfm @ 1″ SP★	Inlet Dia.	Outlet Dia.	Wheel Dia.	Overall Size, Ht. × Wd.	rpm	hp	Amps	Totally Enclosed Fan-Cooled Motor Dp.		Hazardous-Location Motor Dp.	
185	Not Rated	5 5/8″	4 1/2″	5 1/2″	12 1/4″ × 11″	1,725	1/6	1.9	14 1/2″	2093K24 $1,625.98	15 1/2″	2093K27▲ $1,875.05
965	810	8″	8″	7 1/8″	16 3/4″ × 15 1/8″	1,725	1/3	3.0	18 1/2″	2093K11 1,619.16	21 1/2″	2093K12 1,950.10
965	810	8″	8″	7 1/4″	16 3/4″ × 15 1/8″	1,725	1/3	3.0	18 1/2″	2093K13♠ 1,979.37	21 1/2″	2093K14♠ 2,323.10

★ SP = static pressure. ▲3.3 amp draw. Has wire leads for hardwiring. ♠ Blower wheel is PVC.

208-230/460 VAC—Rectangular Outlet

cfm @ 1″ SP★	cfm @ 1 1/2″ SP★	Inlet Dia.	Outlet Size, Ht. × Wd.	Wheel Dia.	Overall Size, Ht. × Wd. × Dp.	rpm	hp	Amps	Totally Enclosed Fan-Cooled Motor		Hazardous-Location Motor	
2,325	2,100	9 3/4″	9 3/8″ × 6 11/16″	11 3/4″	24 3/16″ × 23″ × 24 1/4″	1,725	1 1/2	2.1	2093K75	$3,232.16	2093K76	$3,955.74
4,650	4,400	12 3/4″	11 7/8″ × 9 11/16″	14 1/2″	31 9/16″ × 30″ × 29 3/4″	1,725	5	6.7	2093K85	3,918.55	2093K95■	5,566.52

Optional PVC Outlet Adapters

Adapter for 1 1/2-hp Blowers (convert to 10 3/4″ round outlet) 2093K78 $311.45

Adapter for 5-hp Blowers (convert to 14″ round outlet) 2093K98 363.62

★ SP = static pressure. ■230/460 VAC.

DC Blowers

Essential where you don't have access to AC service, these blowers run on a DC power source such as your vehicle battery. All have a direct-drive motor, leads for hardwiring, and a polypropylene housing. Wheel is acetal and rotates clockwise facing the motor side. Inlet and outlet are round, so installing flexible duct is easy. Maximum temperature is 130° F. The included mounting bracket lets you rotate the blower to discharge air in any direction. Bracket has 1/4″ dia. mounting holes (fasteners not included).

cfm @ 0″ Static Pressure	Inlet Dia.	Outlet Dia.	Wheel Dia.	Overall Size, Ht. × Wd. × Dp.	rpm	VDC	Amps	dB @ 10 ft.		
105	3″	3″	3″	5 1/2″ × 5″ × 6 3/4″	1,000	12	4.3	86	2059K12	$61.50
250	4″	4″	4″	9 5/8″ × 9 1/4″ × 8 3/4″	1,000	12	12.0	86	2059K14	118.90
250	4″	4″	4″	9 5/8″ × 9 1/4″ × 8 3/4″	1,000	24	5.3	86	2059K24	158.51

Portable Air-Powered Blower/Exhausters

With Steel Diffuser

With Polyethylene Diffuser

Using compressed air for power eliminates the need for electricity and the potential for sparks in hazardous locations. These blower/exhausters are powerful enough to be used in ducted applications and have a cast aluminum inlet housing with 3/8″ wide mounting slots except 2002K29, which has 1″ wide slots (fasteners not included). They also include a static grounding cable.

With Steel Diffuser—2002K26 and K29 are galvanized. Temperature range is –40° to +350° F. 2002K11, K12, and K14 have a yellow powder-coated finish for added corrosion resistance. Temperature range is 0° to 350° F.

With Polyethylene Diffuser—Virtually indestructible, it can be flexed back to its original shape if dented. Temperature range is 0° to 160° F. Color is black.

Blower/Exhausters

cfm with 80 psi Air Supply: Discharge w/o Duct	Discharge w/ 50-ft. Duct	Consumption	For Duct Dia.	O'all Lg.	Base Dia.	Air Supply: Max. psi	Connection, NPT Female	dB @ 5 ft.	With Steel Diffuser		With Polyethylene Diffuser	
1,182	800	62	6″	16 3/4″	7 5/16″	150	1/2″	85	2002K26	$304.50	—	—
1,530	Not Rated	61	6″	16 1/2″	7 1/2″	150	1/2″	88	2002K11	331.61	2002K21	$398.74
1,700	1,350	61	8″	33″	7 1/2″	150	1/2″	88	2002K12	386.88	2002K22	443.27
4,500	3,580	126	12″	44 1/5″	11 1/2″	150	1″	92	2002K14	652.93	2002K24	678.77
7,304	Not Rated	274	16″	48″	17″	150	1″	90	2002K29	732.15	—	—

Duct and Accessories

Duct Carrier

Quick-attach PVC-coated polyester duct includes belt-and-buckle connectors—no additional fittings are required.

Neoprene/polyester duct requires connectors (sold separately). ***Steel clamp connectors*** allow you to attach duct to your blower. ***Aluminum couplings*** let you connect multiple sections of duct.

Polyethylene duct carriers hold up to 25 feet of duct.

Quick-Attach PVC-Coated Polyester Duct

6″ Dia. × 25 ft. Lg. Duct ..... 5473K34 ..... $115.10

8″ Dia. × 25 ft. Lg. Duct ..... 5473K35 ..... 157.02

12″ Dia. × 25 ft. Lg. Duct ..... 5473K39 ..... 168.54

Neoprene/Polyester Duct

16″ Dia. × 25 ft. Lg. Duct ..... 9429K72 ..... 429.83

Steel Clamp Connectors

Connector for 16″ Dia. Duct ..... 53185K57 ..... 25.32

Aluminum Couplings

Coupling for 6″ Dia. Duct ..... 5518K15 ..... $18.48

Coupling for 8″ Dia. Duct ..... 5518K17 ..... 20.82

Coupling for 12″ Dia. Duct ..... 5518K21 ..... 25.10

Polyethylene Duct Carriers

Carrier for 8″ Dia. Duct ..... 8193K3 ..... 98.48

Carrier for 12″ Dia. Duct ..... 8193K7 ..... 108.33

High-Output Air-Powered Blower/Exhausters

Powerful enough to ventilate tanks and vessels, these blower/exhausters operate on compressed air—no electricity required. The inlet and outlet flanges are identical, so it's easy to turn the units around and switch from supply to exhaust applications—perfect for use with American Petroleum Institute (API) standard tanks. Flanges have 1″ mounting slots. All blower/exhausters have heavy duty sealed ball bearings and a durable cast aluminum housing and blades. Temperature range is 0° to 150° F.

cfm with 80 psi Air Supply: Discharge w/o Duct	Discharge w/ 50-ft. Duct	Consumption	For Duct Dia.	O'all Size, Dia. × Dp.	Air Supply: Max. psi	Connection, NPT Female	dB @ 5 ft.		
11,000	9,000	210	20″	24¾″ × 10¼″	100	¾″	108	2054K13	$3,505.67
16,900	14,350	400	24″	31¼″ × 11⅝″	100	1″	111	2054K15	4,724.86

Electric Blower/Exhausters

Ducted applications are no problem for these tough blower/exhausters. Connect flexible duct directly to the inlet or outlet. All units have a single-phase motor.

Blower/Exhausters

All have a built-in handle, polypropylene blades, and a totally enclosed air over (TEAO) motor that's cooled by air from the fan. Operate on 115 VAC, 60 Hz.

Steel Housing—These blower/exhausters have a powder-coated finish and a cord with three-prong plug. Temperature range is –10° to +150° F. 1983K1 cord is 6 ft. 1983K5 cord is 20 ft.

Polyethylene Housing—Double walls protect motor and propeller even if outer wall is damaged. Blower/exhausters are stackable for increased airflow or storage. All have a 20-ft. cord with three-prong plug. Temperature range is –20° to +150° F.

Steel Housing

Polyethylene Housing

cfm: Discharge w/o Duct	Discharge w/50-ft. Duct	For Duct Dia.	Overall Size, Lg. × Wd. × Ht.	rpm	hp	Amps	dB		
Steel Housing									
778	Not Rated	8″	12″ × 8″ × 10″	3,200	⅓	3.6	70 @ 10 ft.	1983K1	$408.33
1,763	Not Rated	12″	12½″ × 12″ × 16″	3,320	⅓	3.3	84 @ 10 ft.	1983K5	602.04
Polyethylene Housing									
848	483	8″	18½″ × 12½″ × 18½″	3,200	¼	2.5	86 @ 5 ft.	20025K11	385.71
2,091	1,643	12″	17″ × 14″ × 21″	3,425	1	7.1	76 @ 5 ft.	20025K12	508.33

High-Output Blower/Exhausters

Move high volumes of air with or without duct attached. These blower/exhausters have a rolled steel and cast aluminum housing. Motor operates at 50/60 Hz. Temperature range is 0° to +150° F. Units rest on the floor with the built-in base or mount on the optional pivoting tripod stand (sold separately). *¾-hp* units have glass-filled polyester blades. *1-hp* units have cast aluminum blades.

Totally Enclosed Fan-Cooled (TEFC) Motor—All have a 15-ft. cord. *115 VAC* units include three-prong plug. *230 VAC* units can be hardwired or add your own plug.

Hazardous-Location Motor—All have a junction box for hardwiring. Motor is UL listed for Class I, Division I, Group D, and Class II, Division I, Groups E, F, and G hazardous locations.

With Optional Pivoting Tripod Stand

cfm: Discharge w/o Duct	Discharge w/ 50-ft. Duct	For Duct Dia.	Overall Size, Lg. × Wd. × Ht.	rpm	hp	VAC	Amps	dB @ 5 ft.		
Totally Enclosed Fan-Cooled Motor										
1,500	1,080	8″	39″ × 11⅜″ × 13¾″	3,450	¾	115	9.5	90	2215K11	$1,803.08
3,000	2,440	12″	36″ × 13¼″ × 15⅝″	3,450	1	115	12.4	92	2215K15	2,620.62
3,000	2,440	12″	36″ × 13¼″ × 15⅝″	3,450	1	230	6.2	92	2215K25	2,620.62
Hazardous-Location Motor										
1,500	1,080	8″	39″ × 11⅜″ × 13¾″	3,450	¾	115	9.5	90	2215K13	2,209.48
3,000	2,440	12″	36″ × 13¼″ × 15⅝″	3,450	1	115	12.4	92	2215K16	3,130.77
3,000	2,440	12″	36″ × 13¼″ × 15⅝″	3,450	1	230	6.2	92	2215K26	3,130.77
Optional Pivoting Tripod Stand (26″ high)									2215K14	$473.33

Duct and Accessories

Quick-attach PVC-coated polyester duct includes belt-and-buckle connectors—no additional fittings are required.

Aluminum couplings let you connect multiple sections of duct.

Polyethylene duct carriers hold up to 25 feet of duct.

Quick-Attach PVC-Coated Polyester Duct		
8″ Dia. × 25 ft. Lg. Duct	5473K35	$157.02
12″ Dia. × 25 ft. Lg. Duct	5473K39	168.54
Aluminum Couplings		
Coupling for 8″ Dia. Duct	5518K17	20.82
Coupling for 12″ Dia. Duct	5518K21	25.10
Polyethylene Duct Carriers		
Carrier for 8″ Dia. Duct	8193K3	98.48
Carrier for 12″ Dia. Duct	8193K7	108.33

Duct Carrier

For information about static pressure (SP) and decibels (dB), see page 656.

Premium Quality Fume Exhausters

A step above most fume exhausters, these are made of superior materials and have a variety of mounting options—mount them to a wall, bench, or floor. They have rubber pads on the base that help reduce vibration on uneven surfaces, and a foam-grip handle for portability. Motors are totally-enclosed, fan-cooled (TEFC). Furnished with a flexible 10-ft. wire-reinforced polypropylene hose and a nozzle that you can attach to either the inlet or outlet. Have six 7/16″ dia. mounting holes (fasteners not included).

115 VAC, 60 Hz, Single Phase—1/4-, 1/2-, 3/4-, and 1-hp units have an 8-ft. cord with three-prong plug and an on-off switch. 1 1/2- and 2-hp units have six wire leads for hardwiring.

230/460 VAC, 60 Hz, Three Phase—Have nine wire leads for hardwiring.

High volume exhausters are for short, straight runs of duct. They have a cast aluminum housing and a steel wheel.

High pressure exhausters are for longer runs with bends or turns. Housing is 14-ga. steel and wheel is cast aluminum.

Optional *dual-duct kits* each have two hoses (4″×5 ft. for 2154K62; 6″×10 ft. for K42), two nozzles (5″×5″ for 2154K62; 7″×7″ for K42), a Y connector, and four clamps.

cfm @ 0″ SP	cfm @ 1/4″ SP	cfm @ 1 1/2″ SP	hp	Inlet Dia.	Outlet Dia.	Ht.×Wd.×Dp.	dB @ 5 ft.	Nozzle Size	115 VAC, 60 Hz Single Phase Amps			230/460 VAC, 60 Hz Three Phase Amps		
High Volume														
338	312	—	1/4	6″	6″	17 7/8″×13 3/4″×18 1/4″	69	8″×8″	5.4	2154K15	$834.55	1.3/.65	2154K25	$767.27
670	655	575	1	6″	6″	17 7/8″×13 3/4″×18 1/4″	74	8″×8″	11.2	2154K32	838.60	3.2/1.6	2154K33	821.82
875	842	435	3/4	8″	8″	20 1/2″×16 1/4″×19 3/8″	69	8″×8″	11.0	2154K34	1,149.09	3.0/1.5	2154K35	1,087.27
High Pressure														
345	333	280	1/2	4″	4″	18 3/4″×17 1/2″×16″	72	4″×8″	6.8	2111K11	745.61	1.9/.95	2111K18	714.04
630	605	475	3/4	6″	6″	21 3/8″×21 1/2″×16 1/2″	80	8″×8″	8.8	2111K13	712.20	2.4/1.2	2111K19	705.74
756	740	660	1	6″	6″	21 3/8″×21 1/2″×16 1/2″	82	8″×8″	11.2	2111K37	720.90	3.2/1.6	2111K38	687.98
810	795	733	1 1/2	6″	6″	21 3/8″×21 1/2″×16 1/2″	83	8″×8″	16.0/8.0	2111K14■	803.17	4.4/2.2	2111K15	815.79
923	895	835	2	6″	6″	21 3/8″×21 1/2″×16 1/2″	85	8″×8″	20.0/10.0	2111K16■	839.68	5.6/2.8	2111K17	840.35

Dual-Duct Kit for 2154K32-K33, 2111K13-K17, K19, K37-K38 ..... 2154K62 $191.07

Dual-Duct Kit for 2154K34-K35 ..... 2154K42 310.71

■ 115/230 VAC.

Fume Exhausters

Floor Mount

Wall Mount

Designed for continuous use in light-to-medium duty applications, these exhausters remove vapors, fumes, and fine dust particles. Housings are 26-ga. galvanized steel. Motors operate on 115 VAC, 60 Hz. Bases are steel and have four 0.281″ dia. mounting holes (fasteners not included).

Floor mount exhausters have a 1/3-hp motor, 6″ dia. inlet, and 6″ dia. outlet.

Wall mount exhausters have a 1/4-hp motor, 4″ dia. inlet, and 4″ dia. outlet. Units have a mounting panel that installs through the wall.

Open dripproof motor (ODP) exhausters have a steel wheel and an opening to receive a 1/2″ conduit connector.

Hazardous location motor exhausters have a stamped aluminum wheel and seven 18″ wire leads for hardwiring. Motor is UL listed for Class I, Groups C and D; Class II, Groups E, F, and G.

Mount Style	cfm @ SP	Amps	Ht.×Wd.×Dp.		dB @ 4 ft.		
Open Dripproof Motor (ODP)							
Floor	700 @ 1.2″	6.8	15 1/8″	×16″ ×20 3/8″	74	1951K1	$462.45
Wall	360 @ 0.5″	4.3	16″	×16″ × 8 7/8″	70	1951K3	343.95
Hazardous Location Motor							
Floor	700 @ 1.2″	6.8	15 1/8″	×18 1/4″ ×20 3/8″	76	1951K5	778.77
Wall	360 @ 0.5″	5.1	16″	×17 5/8″ × 8 7/8″	72	1951K7	633.82

Suspended Hood Fume Exhausters

Position the hood of these exhausters directly over drums, distillers, and tanks to vent fumes at the source. You can vary the hood's height or use an optional swivel bracket to swing it out of the way. Optional swivel brackets have three 3/8″ dia. mounting holes (fasteners not included).

Exhausters operate on 115 VAC, 60 Hz and have a 6″ cord with three-prong plug. Furnished with spun aluminum hood, blower, counterbalance, 10 feet of 6″ dia. duct, installation kit, and outside vent kit.

Also Available: Hazardous location exhausters. Operate on 115/230 VAC, 60 Hz, single phase and have seven 6″ wire leads for hardwiring. Motor is UL listed Class 1, Group D and Class 2, Groups F and G. Please ask for 21105K78 and specify hood diameter.

Hood Dia.	cfm @ 0″ SP	hp	Amps	dB @ 5 ft.		
27″	450	1/8	3.6	68	21105K21	$541.74
32″	450	1/8	3.6	68	21105K22	567.10
37″	450	1/8	3.6	68	21105K23	591.45
44″	450	1/8	3.6	68	21105K24	664.49

Swivel Wall Bracket for 27″-37″ dia. ..... 21105K75 ..... 73.23

Swivel Wall Bracket for 44″ dia. ..... 21105K76 ..... 124.92

Bench-Top Fume Exhausters

A compact hood draws fumes away from your workbench while the carbon-impregnated filter absorbs 80% of contaminants. Exhausters have a polycarbonate housing and work well for soldering jobs. Hood is 8″ Ht.×8 1/4″ Wd.×6″ Dp. Exhausters operate on 115 VAC, 50/60 Hz, 0.14 amps and have a 6-ft. cord with three-prong plug. Not rated for dB.

Static dissipative exhausters have a static dissipative housing.

Tilt Base—The base rests on your bench top.

Adjustable Arm—Have a 24″ long arm that's made of painted steel. Exhausters have a clamp with 2 1/2″ adjustment range for bench mounting.

	cfm	Exhausters with Tilt Base	Each	Exhausters with Adjustable Arm	Each
Standard	105	4518T45	$136.41	4518T47	$315.00
Static Dissipative	105	4518T46	162.23	4518T48	311.76
Replacement Filters (Pkg. of 3)		4518T49	Pkg.	$22.71	

Fume Exhauster Arms with Duct

Position these arms at the source of fumes. Arms come with self-supporting duct, a collection hood/nozzle, and mounting brackets (fasteners not included). Blowers are sold separately on pages 666-668.

A Compact design makes this arm suitable for workbench use. A 360° swivel bracket allows exact positioning. Arm has a fiberglass/PVC hose and powder-coated aluminum suction hood.

B Arms have a large diameter for high-volume fume extraction. Mount on wall or ceiling. Hood flange swivels for arm positioning. The 4″ dia. units have a Santoprene suction hose and aluminum hood; 6″ and 8″ dia. units have a neoprene-coated cotton/polyester suction hose and steel hood.

C Arm extends from 3.3 to 6.6 feet to reach a large working radius. For high-volume use in low ceiling/confined space areas. Suction hose is PVC-coated woven polyamide. Hood is anodized steel with plastic collar.

	Dia.	Lg.	Nozzle Dia.	Mounting Holes No. of	Mounting Holes Dia.		
A	3″	5 ft.	4 5/8″	4	5/8″	2105K36	$287.72
B	4″	4 ft.	8 1/2″	6	1/2″	2105K11	823.33
B	4″	6 ft.	8 1/2″	6	1/2″	2105K12	1,102.50
B	4″	8 ft.	8 1/2″	6	1/2″	2105K13	1,216.09
B	6″	8 ft.	9″ & 10 1/2″	6	7/16″	2105K14	1,474.59
B	6″	10 ft.	9″ & 10 1/2″	6	7/16″	2105K15	1,587.70
B	8″	10 ft.	12 3/8″ & 12 7/8″	6	7/16″	2105K18	1,809.84
C	6 1/4″	3.3 ft.★	11 13/16″	4	1/2″	2105K21	1,231.58

★ Extends to 6.6 feet.

For information about static pressure (SP) and decibels (dB), see page 656.

Exhaust Hose Support Extension Arms

Move these versatile extension arms in and out, up and down to position exhaust duct where you need it. They're made of plated steel tubing and have cast aluminum fittings. Each arm has four 9/32″ dia. mounting holes for bench or wall mounting (fasteners not included).

Furnished with wire ties for securing hose to arms. For hose, see pages 222-233; for blowers, see pages 666-668.

Adjustable model has heavy cast aluminum joints and fittings that allow the arm to "lock" into position.

Counterbalanced with removable arm models have two steel tension springs to keep arm in place. Removable extension arms offer greater reach.

Counterbalanced with adjustable arm model has three steel tension springs and an arm that extends from 3 to 9 feet for extra reach.

For Hose Dia.	For Hose Lg.	Arm Lg.	Extension Lg.		
Adjustable					
Up to 6″	5 ft.	60″	—	2116K1	$205.75
Counterbalanced with Removable Arm					
Up to 6″	5 or 10 ft.	84″	36″	2116K3	263.06
Up to 8″	10 ft.	60″	34″	2116K4	243.08
Counterbalanced with Adjustable Arm					
Up to 8″	10 or 15 ft.	36″–108″	—	2116K5	329.50

Fume Control Cabinet

In addition to temporarily storing your commonly used chemicals, this cabinet prevents chemical-vapor odors from affecting your facility. Simply choose the pair of filters (sold separately) you need to handle your specific vapor odor problem.

Cabinet has a 22-ga. galvanized steel housing with an epoxy-polyester anti-acid coating. It operates on 115 VAC, 60 Hz and includes an 8-ft. cord with three-prong plug.

Cabinet has four 1/2″×1/8″ mounting holes (fasteners not included), so you can mount it directly to your bench top or work table. *Optional wall-mount bracket* has three 1/4″ dia. mounting holes (fasteners not included).

cfm @ 0″ SP	Shelf Size, Ht.×Wd.×Dp.	Overall Size, Ht.×Wd.×Dp.		Each
44	13 5/8″×30 7/8″×7 3/8″	22 5/8″×32 3/8″×8″	4422T46	$986.56
Filters—One pair required.				**Pair**
Organic Vapors			4422T23	$239.53
Acid Vapors			4422T24	366.41
Ammonia Vapors			4422T25	407.97
Formaldehyde Vapors			4422T26	345.62
				Each
Optional Wall-Mount Bracket			4422T32	$47.42

Fume Exhaust Hoods

Chemical-resistant, one-piece molded low-density polyethylene (LDPE) shell has rounded inside corners for easy cleaning. Hoods have a clear acrylic sliding panel that allows for open, closed, and partially open use. The closed position has a small gap for continuous air flow. Blowers are sold separately on pages 666-668.

cfm @ 0″ SP	Ht.×Wd.×Dp.	Front Opening, Ht.×Wd.	Outlet Dia.		
200	22″×27″×13″	12″×22″	4″/6″	20995K61	$470.54
350	30″×42″×20″	14 1/2″×34 1/2″	6″	20995K62	1,173.85

About Calculating the cfm Required for Air Cleaning

Follow these steps to calculate the cfm you need in an air cleaner:

1. Determine the cubic feet (cu. ft.) of your facility (Lg.×Wd.×Ht.).

2. Decide how many air changes per hour you need. The air is typically changed 6 to 8 times per hour in industries such as metal working, welding, woodworking, and plastics.

3. Use this formula:

[Cu. ft. of facility×No. of air changes per hour] ÷ 60 min. = cfm

Example: Suppose you want to change the air 6 times per hour in a 30-ft. Lg.×30-ft. Wd.×10-ft. Ht. facility.

1. 30 ft.×30 ft.×10 ft. = 9,000 cu. ft.

2. 6 changes per hour.

3. [9,000 cu. ft.×6]/60 min. = 900 cfm

To change the air 6 times per hour in a 9,000 cu. ft. facility, you need an air cleaner with a capacity of at least 900 cfm.

Portable Air Cleaners

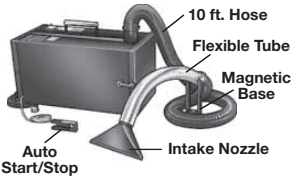

A carrying handle makes it easy to take these compact, lightweight cleaners right to the source of contaminants. A spark trap catches heavy particles, while a replaceable HEPA filter removes even finer particles (99.97% efficient for particles as small as 0.3 microns). If you work with smelly fumes, add the optional odor filter. Housing is 20-ga. polyester-coated steel. Cleaners come with a prefilter, a HEPA filter, a 10-ft. rubber hose with polyester reinforcement, flexible tube, intake nozzle, magnetic base to hold tube in place, and a 10-ft. cord with three-prong plug. Operate on 120 VAC, 60 Hz. Size is 12″ Ht.×27″ Wd.×12″ Dp. UL listed. Cleaners are compliant under all state air cleaner rules in effect on November 1, 2010.

Optional auto start/stop plugs into an electrical outlet and turns unit on/off by sensing current on the cable. A delay switch keeps the motor running 5-20 seconds after unit turns off to purge any remaining fumes. Operates on 120 VAC, 60 Hz, 0.11 amps. Has a 6-ft. cord with three-prong plug.

cfm @ 0″ SP	hp	Amps	Inlet Dia.	dB @ 5 ft.		
113	1/4	7	2 1/2″	85	2141K14	$1,126.91
226	1/2	14	2 1/2″	85	2141K16	1,569.25
Replacement Filters and Accessories						
Replacement HEPA Filter					2141K32	237.11
Replacement Prefilter					2141K36	12.99
Optional Odor Filter					2141K34	25.70
Optional Auto Start/Stop					2141K26	385.53

Combination Portable/Bench-Mount Air Cleaner

This air cleaner takes on many tasks. When used upright, it's a mobile fume cleaner that captures fumes at their source. It also has two flexible, self-supporting polypropylene extractor arms and a detachable caster base with four 2″ dia. casters. Housing is 18-ga. enamel painted steel. Cleaner is compliant under all state air cleaner rules in effect on November 1, 2010.

Also use this cleaner as a downdraft system (contaminants are drawn down into the unit) by using the slotted inlet cover in place of the arm assembly.

Cleaner in upright position.

Cleaner in bench-top position with acrylic hood and outlet deflector.

For bench-top use, lay the unit on its side. You can attach the acrylic hood and use it as a fume cleaning booth. An adjustable outlet deflector directs exhaust flow out of your way.

Cleaner has a 350-watt motor that operates on 120 VAC, 60 Hz, 2.8 amps. Furnished with a 7-ft. cord with three-prong plug and polyester prefilters. Main filters and odor after-filter are sold separately.

cfm @ 0.5″ SP	Inlet Dia.	Overall Size, Ht.×Wd.×Dp.	dB @ 6 ft.		
350	2 1/2″	19 1/2″×12 1/2″×12 1/2″	66	2113K11	$1,382.09
Filters					
Standard Efficiency Particle Main Filter (99% Efficient @ > 3 Microns)				2113K22	143.22
HEPA Main Filter (99.97% Efficient @ > 0.3 Microns)				2113K23	198.31
Odor Main Filter (With 60% Efficient Pleated Filter)				2113K25	363.56
Odor After-Filter for 2113K22 and K23				2113K24	124.58
Replacement Carbon for 2113K24 and K25				2113K26	39.54
Replacement Pleated Filter for 2113K25				2113K28	28.44
					Pkg.
Replacement Polyester Prefilters (Pkg. of 4)				2113K27	$66.36

Air Cleaners

For information about calculating the cfm required for air cleaning, see page 671.
For information about static pressure (SP) and decibels (dB), see page 656.

Portable Room Air Cleaners

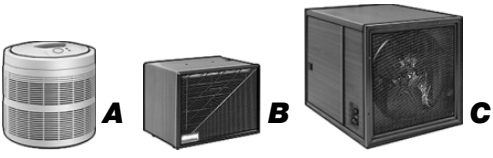

Small enough to be moved from room to room, yet large enough to be effective. Cleaners operate on 120 VAC, 60 Hz. Styles A and C are UL listed.

A Cleaner has three speeds and comes with disposable HEPA and odor filters. Housing is white ABS plastic. Supplied with a 5-ft. cord with two-prong plug. Cleaner is compliant under all state air cleaner rules in effect on November 1, 2010.

B&C Cleaners have two speeds and come with a washable electrostatic filter and a disposable odor filter. Housings are 18-ga. steel with a woodgrain vinyl finish. Furnished with a 5′9″ cord with three-prong plug. Cleaners are compliant under all state air cleaner rules in effect on November 1, 2010 except in California.

	Max. cfm	Max. Filter Efficiency	Min. Particle Size, microns	Amps	Overall Size, Ht.×Wd.×Dp.	dB @ 6″	Cleaners		Repl. HEPA Filter		Repl. Odor Filter	
A	250	99.97%	0.3	1.7	18″ Dia.×19½″ Ht.	64	21265K61	$197.54	21265K63 ♦	$34.24	21265K64	$12.65
B	275	97%	0.01	0.85	13″ ×17″ ×15″	48	2148K71	368.18	—	—	2148K43	21.92
C	2,100	97%	0.01	6.0	21½″×21½″×19″	63	2148K32	1,389.55	—	—	2274K57	34.91

♦ 3 required.

Portable Heavy Duty Air Cleaners

Move these cleaners wherever you need to improve indoor air quality. The 500 cfm unit has a 20-ga. Type 304 stainless steel housing; all other units have a 16-ga. galvanized steel housing with four 5″ dia. wheels for easy transport. All operate on 120 VAC, 60 Hz. Cleaners have three speeds and an 8-ft. cord with a three-prong plug, except the 4,000 cfm unit, which is single speed and has a 15-ft. cord with a three-prong plug. UL listed. All include a prefilter, a secondary filter, and a HEPA filter that collects 99.97% of particles as small as 0.3 microns.

Standard— Cleaners are compliant under all state air cleaner rules in effect on November 1, 2010 except in California.

Cleaners for Gas— Furnished with a filter (required) for either diesel or nonpetroleum-based gases such as acetone, alcohol, toluene, and hydrogen sulfide.

Standard— Open Dripproof Motor (ODP)

cfm @ 0″ SP	hp	Amps	Ht.×Wd.×Dp.	Inlet Size	Outlet Size, OD	dB @ 6 ft.	Cleaners	Each	Replacement Prefilter Pkg. Qty.	Pkg.	Replacement Secondary Filter	Each	Replacement HEPA Filter	Each
500	½	7	13½″×13½″×34¼″	13″×13″	10″	68	2106K41	$1,582.53	3	2106K53 $8.34 Each	2106K55	$11.85	2106K51	$262.59
2,000	¾	15	31″ ×26″ ×42″	24″×24″	12″	72	2106K42	1,863.27	_	2106K43 $5.92	2106K45	15.98	2106K52	325.18
4,000	2	26	52″ ×26″ ×52″	44″×24″	18″	72	2106K64	3,922.22	_	2106K65 11.80	2106K66	36.29	2106K67	622.38

For Gas

cfm @ 0″ SP	hp	Amps	Ht.×Wd.×Dp.	Inlet Size	Outlet Size, OD	dB @ 6 ft.	Cleaners		Replacement Prefilter		Replacement Secondary Filter		Replacement Gas Filter	
For Diesel— *Open Dripproof Motor (OPD)*														
1,050	¾	15	31″×26″×42″	24″×24″	12″	72	2881T13	$2,693.55	2106K43	$5.92	2106K45	$15.98	2881T35	$532.14
For Nonpetroleum-Based Gas— *Open Dripproof Motor (OPD)*														
1,050	¾	15	31″×26″×42″	24″×24″	12″	72	2881T17	2,693.55	2106K43	5.92	2106K45	15.98	2881T38	571.43

Conversion Kit for Mold Sterilization— For use with ¾-hp air cleaners above

After you've cleaned mold-covered surfaces, use this kit with your ¾-hp cleaner to remove mold from the air—some mold and mold spores can stay airborne for several days. Kit includes prefilter, secondary filter, pleated filter, HEPA filter, carbon filter, and an ultraviolet filter with six lamps. Replacement filters sold separately.

2106K74 ..... $1,497.74

Replacement Parts

Prefilter	2106K43	$5.92
Secondary Filter	2106K45	15.98
Pleated Filter	2106K75	24.24
HEPA Filter	2106K76	288.73
Carbon Filter	2106K77	91.30
Ultraviolet Filter	2106K78	318.33
Replacement Lamp	2106K79	50.44

T-Bar Ceiling-Mount Room Air Cleaners

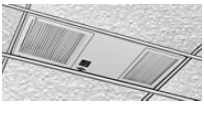

Save valuable floor space in your facility—cleaners are designed to mount in a 2′×4′ grid of a T-bar type ceiling. Housings are 14-ga. steel. All have two speeds; operate on 120 VAC, 60 Hz; and have three 4″ wire leads for hardwiring. Overall size is 23¾″ Lg.×47¾″ Wd.×11″ Ht. Cleaners are compliant under all state air cleaner rules in effect on November 1, 2010 except in California.

All cleaners come with a washable prefilter that should be cleaned frequently to maintain maximum performance. The 900 cfm unit has a disposable HEPA filter with a built-in carbon odor filter. The 1,000 cfm unit includes a disposable carbon odor filter and a washable electrostatic filter. The disposable filters should be replaced regularly.

Max. cfm	Max. Filter Efficiency	Min. Particle Size, microns	Amps	dB @ 3 ft.	White Housing		Black Housing		Disposable Repl. Filter Filter Type		
900	99.97%	0.3	5.0	57	2274K54	$1,168.68	2274K35	$1,168.68	HEPA/Odor	2274K55	$212.28
1,000	95%	0.01	5.0	59	2274K74	1,151.98	2274K31	1,151.98	Odor	2274K57	34.91

High-Volume Ceiling-Mount Air Cleaners

Space-saving and effective, these cleaners suspend from your ceiling and remove 99% of air particles 5 microns and larger. They remove 91% of air particles as small as 1 micron. Housings are 20-ga. steel. Operate on 115 VAC, 60 Hz. Furnished with 6-ft. cord with three-prong plug. Mounting hardware (eyebolts) is included. The optional odor filters are perfect for finishing work. Cleaners are compliant under all state air cleaner rules in effect on November 1, 2010 except in California. 916 cfm unit has three speeds and comes with a radio frequency remote control and one 9V battery. Housing has a powder-coated finish. 1,250/800 cfm unit has two speeds and a pull switch. Housing has a painted finish.

cfm @ 0″ SP	hp	Amps	Ht.×Wd.×Dp.	dB @ 6 ft.	Cleaners		Disposable Prefilter		Washable Electrostatic Prefilter		Replacement Bag Filter		Optional Odor Filter	
916	⅓	4	12″×24″×30″	63	6654T41	$410.91	6654T13★	$11.42	6654T22●	$63.54	6654T17	$62.27	6654T44	$80.75
1,250/800	⅓	6.2	24″×20″×44″	63	6654T42	633.46	6654T26●	13.62	6654T33★	64.60	6654T28	72.44	6654T35	63.45

Replacement 9V Battery for 6654T41 Remote Control 71455K56 $2.75

★ Optional; can be used in place of the filter that comes with the air cleaner. ● Furnished with the air cleaner.

Mist Collectors

Collect oil and coolant mist from machining operations while cleaning the air. These collectors have three-stage filtration that centrifugally separates and removes mist particles from the air stream. Filters are replaceable and are 98% efficient for particles larger than 1 micron. Collectors are 16-ga. steel and have a three-phase, totally-enclosed, fan-cooled (TEFC) motor with twelve 6″ wire leads for hardwiring. Operate on 208/230/460 VAC, 50/60 Hz. All have four 9/16″ dia. holes for mounting directly on machinery (fasteners not included). Collectors are compliant under all state air cleaner rules in effect on November 1, 2010.

cfm @ 0″ Static Pressure	hp	Amps	Inlet Dia.	O'all Size, Ht.×Wd.×Dp.	dB @ 3 ft.	Mist Collectors		Repl. Filter	
165	1/2	2.4/2.2/1.1	4″	19″×15″×15″	70	2210K1	$2,613.70	2210K14	$10.62
380	1	4.6/4.2/2.1	4″	21″×17″×21″	72	2210K3	2,911.04	2210K15	13.80
1,000	3	10.6/9.6/4.8	6″	23″×21″×21″	74	2210K6	3,807.52	2210K16	14.52

Portable Room Humidifiers

3 Gallon

9 Gallon

Small enough to move from room to room, these evaporative humidifiers add cool, invisible moisture to the air without producing white dust. Just fill the reservoir with water and refill as necessary to reach daily capacity. All are three speed and include one evaporative filter. Operate on 120 VAC, 60 Hz and have a 6-ft. cord with two-prong plug. UL listed.

9-gallon humidifier has casters for mobility.

Capacity, gal./day	Effective Volume, cu. ft.●	Amps	O'all Size, Ht.×Wd.×Dp.	Reservoir Tank, gal.	Humidifiers		Repl. Filter	
3	8,400	0.7	14 3/8″× 9 1/8″×16 1/2″	1.3	2120K77	$45.75	2120K87	$10.17
9	18,400	0.7	15 3/4″×13 7/8″×21 7/8″	3.4	2120K78	93.33	2120K88	18.92

● Based on 8-ft. ceilings.

Steam Humidifiers

Free-Standing/ Duct Mount

Wall Mount

Electrical heating elements in these humidifiers boil water to generate steam.

Free-Standing/Duct Mount— Has a Type 304 stainless steel cabinet. Includes a low-water safety cutoff switch, built-in overflow protection, remote humidity control, and installation kit. May be connected to 12″×12″ square duct. Operates on 120 VAC, 60 Hz, 14 amps and has a 5-ft. cord with three-prong plug. Use 1/4″ copper tubing to hook up water supply. UL listed.

Wall Mount— Has a gray and white polycarbonate cabinet. Includes a built-in blower pack to accelerate humidity distribution and a cylinder to trap mineral deposits, white dust, and residue. Operates on 115 VAC or 208-240 VAC, 60 Hz, 12.7 amps, single phase, and has terminal block connections for hardwiring. Capacity varies depending on voltage from 11.5 gal./day (115 VAC) to 23 gal./day (240 VAC). Use 1/4″ copper tubing to hook up water supply. Requires a humidistat (sold separately). UL listed.

Capacity, gal./day	Effective Volume, cu. ft.	O'all Size, Ht.×Wd.×Dp.		
Free-Standing/Duct Mount				
13	11,250	19″ ×13″ ×18 1/2″	2170K11	$762.27
Wall Mount				
11.5▲	15,300▲	21 13/32″ ×11 13/32″× 6 29/32″	2170K21	1,351.56
Replacement Parts and Accessories				
Required Humidistat for 2170K21			2123K14	117.53
Repl. Float Switch Assembly for 2170K11			2170K12	62.96
Repl. Heating Element for 2170K11			2170K13	66.43
Repl. Motor for 2170K11			2170K14	75.33
Repl. Valve for 2170K11			2170K15	16.13
Repl. Cylinder for 2170K21			2170K51	178.57

▲ Capacity and effective volume are shown at 115 VAC.

High Capacity Fine-Mist Humidifiers

Four Head

Multiple spray heads on these humidifiers cover wide areas—excellent for large rooms in textile, paper, printing, and industrial plants and warehouses. Spray nozzles tilt and swivel for optimum dispersion of moisture. Spray gun has a fluid control knob to regulate the flow of moisture. Humidifiers operate on 120 VAC, 60 Hz, 0.2 amps and have a 6-ft. cord with three-prong plug.

Humidifiers have 1/4″ NPT male threaded connections for water and compressed air (water connection and minimum 60-70 psi air pressure are required). They also have an air pressure gauge and regulator. Each spray head requires 1/2 cfm @ 40 psi air pressure.

Capacity, gal./day	Effective Volume, cu. ft.	No. of Spray Heads	O'all Size, Ht.×Wd.×Dp.		
30	30,000	Two	16″×9″×9″	2134K14	$755.68
60	60,000	Four	16″×9″×9″	2134K18	1,029.31
Replacement Parts					
Spray Head				2134K72	154.80
Needle for Spray Head				2134K71	5.41
Fluid Tip for Spray Head				2134K74	9.00
Spray Hose Assembly				2134K73	18.00

Fine-Mist Room Humidifier

Introduce humidity directly into a room by mounting this atomizing unit behind a wall or to the side of your forced-air system return duct. It emits moist air through its nozzle. Humidifier has an ABS reservoir and polyethylene dome for corrosion resistance. Motor is thermally protected and permanently lubricated. Operates on 120 VAC, 50/60 Hz, 0.6 amps and has two 4″ wire leads and a ground screw for hardwiring. Use 1/4″ copper tubing to hook up water supply. Unit has humidity control and a 1/2″ ID brass nipple drain.

Furnished with a hole template (for duct mounting), a mounting bracket, mounting hardware, and instructions.

Capacity, gal./day	Effective Vol., cu. ft.	O'all Size, Dia.×Ht.		
6	9,600	10 1/2″×12″	2165K14	$281.01

Storage Space Dehumidifiers

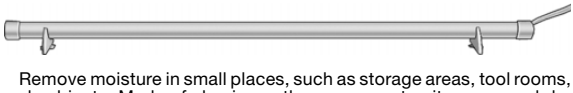

Remove moisture in small places, such as storage areas, tool rooms, and cabinets. Made of aluminum, these compact units warm and dry the air to create constant circulation and prevent air from becoming stagnant. Just plug in—no need for messy chemicals or emptying water reservoirs. Operate on 120 VAC, 50/60 Hz and have a 10-ft. cord with two-prong plug. Mounting hardware is included. UL listed.

Length	Amps		
18″	0.10	8226K18	$31.57
24″	0.13	8226K22	35.46
36″	0.21	8226K25	40.66
48″	0.29	8226K27	48.74

Portable Room Dehumidifiers

6¼ Gallon

Remove moisture from moderately damp areas with these dehumidifiers—they have casters, so you can roll them wherever you need them. Cabinets are ABS plastic. Removal capacity is based on 80°F and 60% relative humidity (RH). Humidity control adjusts RH between 35-85%.

Units have automatic overflow shut-off and automatic frost control that shuts off the compressor when room temperature falls below a minimum temperature while a fan blows warm air on the coil. Dehumidifiers operate on 115 VAC, 60 Hz and have a 6-ft. cord with three-prong plug. Water may be collected in the reservoir or drained directly through a 9/16″ ID×8″ Lg. clear plastic hose (included). Temperature range is 41° to 90°F. UL listed.

Removal Capacity, gal./day	Amps	O'all Size, Ht.×Wd.×Dp.	Reservoir Capacity, gal.		
3¾	3.8	19⅞″×13⅜″× 9 5/16″	1⅓	2149K62	$193.85
6¼	5.6	24½″×15½″×12⅝″	2½	2149K65	244.51
8⅛	6.7	24½″×15½″×12⅝″	2½	2149K67	287.01

Portable Heavy Duty Dehumidifiers

Steel Housing 7¼ Gallon

Steel Housing 13⅛ Gallon

Polyethylene Housing 8 Gallon

Powerful compressors and fans enable these dehumidifiers to remove large quantities of moisture from the air. Wheels and handles allow easy mobility. Hot gas defrost feature prevents freeze-up in temperatures as low as 33°F. Removal capacity is based on 80°F and 60% relative humidity (RH). Operate on 115 VAC, 60 Hz and have a 25-ft. cord with three-prong plug. Dehumidifiers have an internal pump-out system. Water drains through the included hose.

Powder-Coated Steel Housing—Drain hose is 25 ft. long. Maximum temperature is 105°F.

Polyethylene Housing—Unit includes a filter. Drain hose is 40 ft. long. Maximum temperature is 100°F. UL listed.

Removal Capacity, gal./day	Amps	O'all Size, Ht.×Wd.×Dp.		
Powder-Coated Steel Housing				
7¼	2.5	29″×19½″×15½″	2129K35	$893.33
13⅛	3.5	44″×22″ ×24″	2129K38	2,104.17
Polyethylene Housing				
8	6.4	32″×20″ ×19½″	2129K54	1,205.63
Replacement Filter for 2129K54			2129K55	22.25

Desiccant Canisters

Aluminum

Compact, perforated canisters absorb moisture in glass jars, airtight cans, plastic pouches, and tool boxes. They contain silica gel that changes from blue to pink when absorption capacity is reached. Silica gel absorbs up to 21% of its weight in moisture at 40% relative humidity (RH). To reactivate, heat in a 300°F oven for three hours. Plastic canister can also be heated in a 900-watt microwave in three minute intervals until silica gel color returns to blue.

Aluminum Canister—Has a window in the center, so you can monitor color change.

Plastic Canister—Canister material is see-through, so you can monitor color change.

Effective Volume, cu. ft.	Lg.×Wd.×Dp.	Wt., oz.		
Aluminum Canister				
3	4.0″×2.1″×0.57″	1.4	2219K91	$12.41
Plastic Canister				
3	4.2″×2.6″×0.64″	1.4	2219K92	30.23

Humidity Indicating Cards

A fast and easy way to find out the humidity of a container and other enclosed areas. These cards have three spots that indicate 30, 40, or 50% relative humidity (RH). Card is 3″ Ht.×2″ Wd. Package quantity is 100.

2175K11 ..... **Pkg.** $18.23

Desiccant Bags

Great for removing humidity from sealed containers during shipping and storage. Effective volume is calculated at 77°F and 40% relative humidity (RH), unless noted. Generally Recognized As Safe (GRAS) by the FDA, except for indicating silica gel and low-humidity molecular sieve.

Silica Gel—Absorbs up to 21% of its weight in moisture and works best when RH is higher than 40%. FDA CFR 21 compliant. Enclosed in tear-resistant Tyvek bags.

Indicating Silica Gel—Absorbs up to 21% of its weight in moisture. When the silica gel absorbs 8% of its weight, it changes from blue to pink. Bags have a window, so you can monitor color change. Enclosed in tear-resistant Tyvek bags. Should not be used in contact with food products.

Low-Humidity Molecular Sieve—Absorbs up to 20% of its weight in moisture. This desiccant is especially effective in low humidity (below 40% RH) and/or where temperatures exceed 77°F. Enclosed in tear-resistant Tyvek bags.

Clay—Absorbs up to 17% of its weight in moisture. FDA CFR 21 compliant. Enclosed in tear-resistant Tyvek bags.

Anhydrous Calcium Sulfate—Absorbs up to 6% of its weight in moisture. Enclosed in kraft paper bags.

Effective Volume, cu. in.	Lg.×Wd.	Wt., oz.	Pkg. Qty.	Pkg.		Pkg. Qty.	Pkg.	
Silica Gel								
2	0.8″×0.6″	0.01	10	2189K11	$3.43	3,000	2189K31	$80.04
3	1.0″×0.6″	0.02	10	2189K12	3.67	2,000	2189K32	61.84
4	1.3″×0.6″	0.03	10	2189K13	3.70	1,500	2189K33	50.40
6	1.4″×0.8″	0.04	10	2189K14	3.80	1,000	2189K34	42.24
24	1.8″×1.0″	0.11	10	2189K15	4.63	400	2189K35	37.22
237	2.8″×1.0″	0.21	10	2189K16	5.95	250	2189K46	39.18
1,429	6.0″×1.5″	1	5	2189K17	7.53	300	2189K37	209.56
2,857	6.0″×5.0″	2	5	2189K18	12.22	150	2189K38	205.81
5,704	7.1″×5.0″	4	2	2189K19	6.92	100	2189K39	257.73
11,423	8.5″×5.0″	8	2	2189K21	13.32	50	2189K41	260.01
22,860	9.3″×7.5″	16	1	2189K47	10.35	30	2189K48	182.34
Indicating Silica Gel								
6	1.4″×0.8″	0.04	10	3492T11	4.00	1,000	3492T33	53.17
18	1.8″×1.0″	0.11	10	3492T12	4.40	400	3492T34	44.11
36	2.6″×1.0″	0.21	10	3492T13	5.08	300	3492T35	55.87
60	2.8″×1.5″	0.36	10	3492T14	6.81	180	3492T36	53.16
84	3.1″×1.5″	0.5	10	3492T15	7.86	120	3492T37	47.66
Low-Humidity Molecular Sieve								
18	1.8″×1.0″	0.11	10	1523T61	6.11	400	1523T75♣	52.84
42	2.1″×1.5″	0.25	10	1523T62	7.21	200	1523T76	49.12
1,429	3.5″×5.0″	1	5	1523T63	11.68	300	1523T77	659.61
2,857	5.0″×5.0″	2	5	1523T64	15.43	150	1523T78	269.42
5,704	7.0″×5.0″	4	2	1523T65	12.73	100	1523T79	375.54
Clay								
2	1.0″×0.6″	0.01	400	2139K71	17.58	2,500	2139K83	64.02
4	1.5″×0.7″	0.03	300	2139K73	15.68	2,000	2139K85	65.64
6	1.5″×0.9″	0.04	250	2139K74	14.26	1,500	2139K86	53.70
24	2.1″×1.0″	0.11	125	2139K75	11.87	1,000	2139K87	65.64
237	3.1″×0.9″	0.19	50	2139K76	7.95	500	2139K88	56.60
715	2.9″×2.1″	0.58	75	2139K77	19.25	550	2139K89	95.29
1,429	4.5″×3.0″	1.16	50	2139K78	16.70	300	2139K91	70.21
2,857	4.5″×5.0″	2.33	25	2139K79	15.13	150	2139K92	95.48
5,714	6.3″×5.0″	4.66	15	2139K81	14.68	100	2139K93	61.46
11,423	8.3″×4.5″	9.31	7	2139K82	12.93	50	2139K94	61.46
22,857	11.0″×4.5″	18.62	3	2139K96	19.88	25	2139K95	71.04
Anhydrous Calcium Sulfate ♦								
228	3.0″×2.0″	0.11	100	2140K41	15.80	750	2140K51	85.86
456	3.8″×2.0″	0.21	100	2140K42	16.70	750	2140K52	101.59
2,160	4.0″×3.8″	1	25	2140K43	16.78	200	2140K53	48.80
4,320	4.8″×3.8″	2	20	2140K44	17.66	400	2140K54	125.25
8,640	6.3″×3.8″	4	10	2140K45	17.98	200	2140K55	91.36
17,280	6.3″×5.8″	8	5	2140K46	17.12	100	2140K56	83.18

♣ Bags are 1.9″ Lg.×1.0″ Wd. Weight is 0.12 oz.
♦ Effective volume is calculated at 100°F and 100% RH.

Desiccant Cylinders

Perforated aluminum cylinders are great for absorbing humidity in closed compartments. To reactivate desiccant, just heat in an oven; heat for one hour at 425° F for 2202K67 and two to three hours at 450° F for 2202K66. Cylinders contain anhydrous calcium sulfate that absorbs 6% of its weight in moisture.

Effective Volume, cu. ft.	O'all Size, Dia. × Lg.	Wt.		
6	1½″ × 6″	5.3 oz.	2202K67	$24.28
200	4½″ × 16″	10 lbs.	2202K66	50.88

Large Container Desiccants

Protect cargo sent in large containers by truck, railroad, or ship for up to 90 days. Just place these 125-gram bags on top of cargo or on the floor, and they'll prevent condensation from forming. Bags are 5¾″ × 10¼″. They absorb up to 200% of their weight in moisture at 77° F and 80% relative humidity (RH). Made of starch and calcium chloride mixture. 32 bags are recommended for a 20-ft. shipping container; 64 bags are recommended for a 40-ft. container.

Self-adhesive bags come in strips of six bags. Ideal for fitting into the grooves of container walls where desiccants are protected from forklift damage.

Standard			Self Adhesive		
Bags Per Pkg.		Pkg.	Bags Per Pkg.		Pkg.
4	2228K6	$18.70	6	2228K7	$37.41
32	2228K8	90.07	36	2228K9	175.40

Bulk Desiccants

Use these desiccants alone or with moisture-barrier bags.

Silica gel absorbs 23% of its weight in moisture at 40% relative humidity (RH). To reactivate, heat in a 256° F oven for 12 hours. Color is white.

Indicating silica gel changes from blue to pink when it has absorbed 6% of its weight in moisture. Silica gel can absorb 23% of its weight in moisture at 40% RH. To reactivate, heat in a 256° F oven for 12 hours.

Clay absorbs 17% of its weight in moisture at 40% RH. To reactivate, heat in a 220° F oven for 12 hours. Color is white.

Wt.	Silica Gel		Indicating Silica Gel		Clay	
1 lb.	2181K91	$8.91	2181K93	$14.38	2181K75	$14.47
5 lbs.	2181K92	35.00	2181K94	52.43	2181K76	50.47
10 lbs.	2181K98	66.88	2181K97	89.38	2181K77	84.40

Desiccant Containers and Cartridges

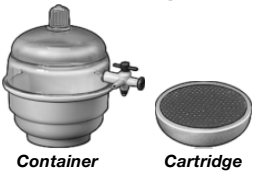

Container *Cartridge*

Store materials and keep them dry at the same time. These compact, shatterproof containers can hold a vacuum of 29″ Hg for 24 hours. Top is clear polycarbonate to allow inspection of the material; bottom and release valve are white polypropylene. You need both the ***container*** and the ***desiccant cartridge***, each sold separately. The cartridge fits in the bottom of the container and holds the indicating silica gel that changes from blue to pink when maximum absorption is reached. The silica gel absorbs 30% of its weight in moisture at 70% relative humidity (RH). To reactivate, heat in a 300° F oven for three hours or until silica gel color returns to blue.

Desiccant Container				Desiccant Cartridge		
O'all Size, Dia. × Ht.	Inside Dia.			Wt., lbs.		
6¾″ × 8⅛″	5⅞″	2204K5	$82.02	0.4	2204K51	$37.56
10¾″ × 12⅛″	9 7/16″	2204K7	138.81	2.9	2204K71	131.48

Electrostatic Panel Air Filters

An inherent electrostatic charge draws pollen and other particles onto multiple layers of woven polypropylene and one layer of nonwoven polyester. Frame is aluminum, unless noted. These reusable filters are washable and meet UL Class 2 flame retardance requirements. Maximum temperature is 285° F, unless noted.

Actual length and width are ⅜″ less than trade size shown, unless noted.

Trade Size		
1″ Thick		
10″ × 10″	2065K12	$50.42
10″ × 20″	2065K13	55.46
12″ × 12″	2065K22	55.46
12″ × 24″	2065K23	55.46
14″ × 20″	2065K24	55.46
16″ × 20″	2065K14	55.46
16″ × 24″	2065K32●	59.80
16″ × 25″	2065K16	55.46
18″ × 25″	2065K33●	66.73
20″ × 20″	2065K17	55.46

Trade Size		
1″ Thick (Cont.)		
20″ × 24″	2065K34●	$66.73
20″ × 25″	2065K18	55.46
20″ × 30″	2065K35●	70.12
24″ × 24″	2065K36●	70.12
2″ Thick		
16″ × 20″	2065K61●	67.90
16″ × 25″	2065K62●	67.90
20″ × 20″	2065K63●	67.90
20″ × 25″	2065K64●	74.68

● Has a galvanized steel frame; actual length and width are ½″ less than trade size shown. Maximum temperature is 200° F.

Fiberglass Panel Air Filters

These filters are perfect as replacements for original filters in HVAC equipment. Frame is fiberboard with two struts bonded on each side (unless noted) for reinforcement and sealed corners to prevent dust leakage. Filters are marked with size and airflow direction. Meet UL Class 2 flame retardance requirements. Max. temperature is 180° F. Pkg. qty. is 12.

Standard

Actual length and width may be up to ⅜″ less than trade size for ½″ and 1″ thick filters and up to ⅝″ less than trade size for 2″ thick filters.

Trade Size		
½″ Thick		
5¼″ × 26″	2063K12♦	$51.13
6½″ × 23⅞″	2063K111♦	48.00
7″ × 23⅜″	2063K113♦	48.00
7 3/16″ × 9 11/16″	2063K114♦	43.13
7⅜″ × 16½″	2063K115♦	43.13
8″ × 8″	2063K141♦	43.14
8″ × 10⅜″	2063K116♦	43.14
8″ × 22″	2063K117♦	48.00
8⅜″ × 11¼″	2063K18♦	43.14
9″ × 11¾″	2063K122♦	43.13
9⅜″ × 16½″	2063K123♦	48.00
9⅞″ × 16½″	2063K125♦	48.00
10½″ × 12″	2063K126♦	43.13
10½″ × 14″	2063K127♦	43.13
10⅝″ × 23½″	2063K129♦	48.56
11¾″ × 13½″	2063K132♦	48.00
12″ × 12″	2063K323♦	43.13
12″ × 20″	2063K133♦	48.56
13⅛″ × 13⅛″	2063K138▲	48.00
14″ × 20½″	2063K139▲	51.07
1″ Thick		
6″ × 6″	2063K19♦	35.53
7″ × 7″	2063K431♦	42.14
8″ × 8″	2063K21♦	43.13
10″ × 10″	2063K543■	25.12
10″ × 16″	2063K24♦	50.40
10″ × 20″	2063K144	25.12
10″ × 24″	2063K145	25.12
12″ × 12″	2063K453■	30.98
12″ × 18″	2063K463	34.08
12″ × 20″	2063K467	25.12
12″ × 24″	2063K146	25.12
12″ × 25″	2063K28	27.01
12″ × 30⅝″	2063K147	35.16
14″ × 14″	2063K473■	36.86
14″ × 20″	2063K148	24.56
14″ × 24″	2063K31	36.01
14″ × 25″	2063K149	24.56
14″ × 30″	2063K34	40.57

Trade Size		
1″ Thick (Cont.)		
15″ × 20″	2063K151	$25.12
15″ × 25″	2063K35	27.62
15″ × 30⅝″	2063K154	34.05
16″ × 16″	2063K533	25.40
16″ × 20″	2063K153	22.33
16″ × 22¼″	2063K152	32.18
16″ × 24″	2063K553	36.01
16″ × 25″	2063K155	22.33
16″ × 30″	2063K66	46.88
18″ × 18″	2063K563	36.01
18″ × 20″	2063K565	36.31
18″ × 24″	2063K36	36.01
18″ × 25″	2063K156	33.77
18″ × 30″	2063K566	53.54
20″ × 20″	2063K158	22.33
20″ × 22¼″	2063K157	32.93
20″ × 24″	2063K573	36.01
20″ × 25″	2063K161	25.11
20″ × 30″	2063K37	40.46
22″ × 22″	2063K69	33.76
24″ × 24″	2063K773	36.58
24″ × 30″	2063K41	43.32
25″ × 25″	2063K163	34.88
2″ Thick		
10″ × 10″	2063K164	33.21
10″ × 20″	2063K165	34.00
12″ × 24″	2063K683	34.88
14″ × 20″	2063K42	34.88
14″ × 25″	2063K685	35.72
15″ × 20″	2063K168	33.77
16″ × 20″	2063K72	34.57
16″ × 24″	2063K713	36.78
16″ × 25″	2063K78	34.57
18″ × 24″	2063K59	44.10
20″ × 20″	2063K79	34.57
20″ × 24″	2063K62	44.10
20″ × 25″	2063K798	38.79
24″ × 24″	2063K753	41.02
25″ × 25″	2063K67	41.87

♦ Has a steel grid bonded to one side for reinforcement.
▲ Has a steel grid bonded to both sides for reinforcement.
■ Has one strut bonded to each side for reinforcement.

Custom

Don't see fiberglass air filters in the size you need? We'll get them for you. Just multiply the length × width you need to determine square inches. Then, see sq. inch ranges below for pricing. Minimum filter size for prices listed is 4″ × 4″. Maximum filter size for prices listed is 23″ × 30″. Filters are actual size. Frames have a steel grid bonded to each side for reinforcement, except for 1″ thick filters that are 12″ wide or less, which have a steel grid bonded to one side.

To Order: Please specify length and width.

Also Available: ½″ thick filters and larger sizes. Please ask for 3884T999 and specify thickness, length, and width. ½″ thick filters that are 12″ wide or less have a steel grid bonded to one side.

Sq. Inch	Pkg. Qty.	1″ Thick	Pkg.	2″ Thick	Pkg.
16-149	12	3884T11	$43.57	3884T34	$47.61
150-199	12	3884T13	48.47	3884T36	51.61
200-249	12	3884T15	50.24	3884T38	59.11
250-299	12	3884T17	52.76	3884T42	67.24
300-399	12	3884T21	56.29	3884T44	72.10
400-499	12	3884T22	59.13	3884T46	77.61
500-599	12	3884T23	64.87	3884T48	83.67
600-690	12	3884T25	66.59	3884T53	90.47

Poly-Coated Fiberglass Panel Air Filters

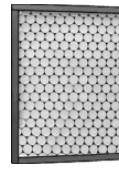

Trap more dust particles than fiberglass filters—the media in these filters is polyester-coated fiberglass. The frame is made of fiberboard and has two tin-plated steel grills (one bonded to each side) as well as sealed corners to prevent dust leakage. Filters are marked with size and airflow direction. Actual length and width are 3/8″ less than trade size shown, unless noted. Filters meet UL Class 2 flame retardance requirements. Maximum temperature is 180°F. Package quantity is 12.

Trade Size		Pkg.
1″ Thick		
10″×10″	2191K22	$29.99
10″×20″	2191K11	29.99
10″×24″	2191K13	29.99
12″×12″	2191K14	36.79
12″×16″	2191K37	36.53
12″×18″	2191K39	45.90
12″×20″	2191K16	29.99
12″×24″	2191K38	29.99
12″×25″	2191K17	29.99
14″×14″	2191K41	42.01
14″×18″	2191K43	46.70
14″×20″	2191K19	29.99
14″×24″	2191K42	42.01
15″×20″	2191K44	29.99
16″×16″	2191K26	30.78
16″×20″	2191K47	27.91
16″×24″	2191K45	42.01
16″×25″	2191K48	27.91
16″×30″	2191K46	52.16
18″×18″	2191K53	42.01
1″ Thick (Cont.)		
18″×20″	2191K57	$38.87
18″×24″	2191K58	42.01
18″×30″	2191K59	54.78
20″×20″	2191K51	27.91
20″×24″	2191K29	42.01
20″×25″	2191K52	29.74
20″×30″	2191K61	46.70
24″×24″	2191K54	40.70
2″ Thick		
10″×10″	2191K63	42.26
12″×24″	2191K69★	43.83
15″×20″	2191K75	43.04
16″×20″	2191K76	43.04
16″×24″	2191K72	46.43
16″×25″	2191K79	43.04
18″×24″	2191K73	48.25
20″×20″	2191K83	43.04
20″×24″	2191K87★	48.25
20″×25″	2191K85	48.26
24″×24″	2191K86★	50.34

★ Actual length and width are 5/8″ less than trade size.

High-Temp. Expanded Galvanized Steel and Stainless Steel Air Filters

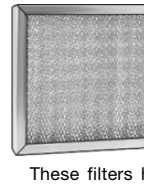

Galvanized Steel

Type 304 Stainless Steel

These filters have an expanded, corrugated mesh that increases dust and dirt holding capacity. All are 2″ thick. Actual length and width are 1/2″ less than trade size shown. These reusable filters are washable and meet UL Class 2 flame retardance requirements.

Galvanized Steel—Maximum temperature is 425°F. Optional handles are sold separately.

Type 304 Stainless Steel—Maximum temperature is 900°F. Furnished with stainless steel handles.

Trade Size	Galvanized Steel	Each	Type 304 Stainless Steel	Each
10″×20″	2157K12	$19.32	22115K22	$78.33
16″×20″	2157K14	23.86	22115K24	81.56
16″×25″	2157K16	29.97	22115K26	90.56
20″×20″	2157K18	29.97	22115K28	87.89
20″×25″	2157K22	33.67	22115K32	97.78

Handles for Galvanized Steel Units..... 2157K32 Pair $6.07

Polyester Bag Air Filters

The pockets in these bag filters form a tubular shape that allows even air flow with minimal pressure drop. The results are even loading and long filter life. Filters are supported by a galvanized steel frame. Actual length and width are 5/8″ less than trade size shown. Maximum temperature is 175°F.

For information about MERV (Minimum Efficiency Rating Value) ratings, see page 677.

Trade Size	Dp.	FILTERING EFFICIENCY 45-50%		60-65% (MERV 12)		90-95% (MERV 15)	
5 Pocket							
24″×20″	22″	22905K21	$21.39	22905K23	$23.72	22905K27	$33.42
6 Pocket							
20″×20″	22″	22905K22	27.22	22905K24	29.48	22905K28	38.05
24″×24″	12″	22905K43	22.11				
24″×24″	20″	22905K41	25.48				
24″×24″	22″			22905K25	32.57	22905K29	40.38
24″×24″	30″			22905K26	35.18	22905K61	38.18
24″×24″	36″					22905K63	42.00

Expanded Aluminum Panel Air Filters

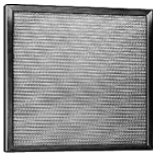

Multiple layers of expanded, corrugated aluminum sheets are stacked in staggered directions to let dust and dirt deep into the filter. Filters are reusable; clean with steam or hot water spray. Meet UL Class 2 flame retardance requirements.

Light Duty Filters—Frame is 0.019″ thick aluminum, unless noted. Max. temp. is 240°F.

Heavy Duty Filters—Frame is 0.040″ thick aluminum to handle rugged conditions. Maximum temperature is 250°F.

Light Duty—Actual length and width are 3/8″ less than trade size

Trade Size		
1/2″ Thick		
13″×16″	2061K21■	$9.38
1″ Thick		
12″×12″	2061K23	10.48
15″×20″	2061K15	12.33
16″×20″	2061K14	10.59
16″×25″	2061K13	12.01
18″×18″	2061K25	18.66
20″×20″	2061K12	12.15
1″ Thick (Cont.)		
20″×25″	2061K11	$13.76
24″×24″	2061K26	26.07
25″×25″	2061K27	35.52
2″ Thick		
16″×20″	2061K19	26.72
16″×25″	2061K18	28.53
20″×20″	2061K17	28.58
20″×24″	2061K28	45.60
20″×25″	2061K16	30.73

■ Frame is 0.012″ thick.

Light Duty—Actual size is the same as trade size

Trade Size		
1/2″ Thick		
13″ ×16 1/2″	2061K73■	$9.15
1″ Thick		
10″ ×10″	2061K74	9.20
11 3/8″×17 3/8″	2061K84	13.52
1″ Thick (Cont.)		
11 1/2″×23 1/2″	2061K81	$16.28
13″ ×13″	2061K77	11.43
20″ ×28″	2061K86	31.93
23 1/2″×23 1/2″	2061K82	31.67

■ Frame is 0.012″ thick.

Heavy Duty—Actual length and width are 1/2″ less than trade size

Trade Size		
1/2″ Thick		
6″ ×18″	2150K15	$23.33
12″ ×12″	2150K16	24.78
13″ ×16″	2150K17	28.55
18″ ×18″	2150K18	34.00
1″ Thick		
9 1/2″× 9 1/2″	2150K19	19.23
10″ ×10″	2150K21	23.33
10″ ×20″	2150K22	28.33
12″ ×24″	2150K23	32.55
14″ ×25″	2150K24	36.89
15″ ×20″	2150K25	34.00
15″ ×24″	2150K26	36.89
15″ ×30″	2150K27	41.44
16″ ×20″	2150K54	23.78
16″ ×25″	2150K55	27.56
18″ ×18″	2150K28	34.00
1″ Thick (Cont.)		
18″ ×24″	2150K29	$40.44
20″ ×20″	2150K56	27.56
20″ ×25″	2150K57	29.22
22 1/4″×30 1/4″	2150K31	51.22
24″ ×24″	2150K59	29.78
30″ ×30″	2150K32	89.22
2″ Thick		
10″ ×20″	2150K61	26.11
15″ ×20″	2150K33	37.78
16″ ×20″	2150K63	28.56
16″ ×25″	2150K64	30.11
20″ ×20″	2150K65	30.11
20″ ×25″	2150K66	32.44
24″ ×24″	2150K67	35.79
4″ Thick		
24″ ×24″	2150K34	82.78

Heavy Duty—Actual size is the same as trade size

Trade Size		
1/2″ Thick		
7″ ×23 3/8″	2150K41	$25.78
8 3/4″ ×20 7/8″	2150K42	27.56
9 3/8″ ×16 1/2″	2150K43	30.89
1/2″ Thick (Cont.)		
12 1/16″×21 3/4″	2150K45	$30.77
13 1/8″ ×13 1/8″	2150K46	25.78

Custom Heavy Duty—Actual Size

Don't see a heavy duty aluminum panel air filter in the size you need? We'll get it for you. Just multiply the length×width you need to determine square inches. Then, see sq. inch ranges below for pricing. **To Order:** Please specify length and width.

Also Available: Filters 600 sq. in. and larger. Please ask for 2150K999 and specify thickness, length, and width.

Sq. Inch	1/2″ Thick		1″ Thick		2″ Thick	
1-299	2150K91	$28.30	2150K93	$28.96	2150K95	$32.56
300-599	2150K92	42.39	2150K94	43.37	2150K96	47.44

Polyester Wire-Reinforced Air Filters

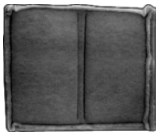

A wire grid provides a snug fit. These filters have a continuous seal around their outer edge. All are 2-ply; one media layer is dry, and the other is tacky. Thickness is 1″. Actual length and width are 5/8″ less than trade size shown. Filters have a MERV (Minimum Efficiency Rating Value) efficiency rating of 7. (For information about MERV ratings, see page 677.) Max. temp. is 220°F.

Trade Size	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.
16″×20″	2	2167K32	$9.42	12	2167K62	$56.52
16″×25″	2	2167K33	10.54	12	2167K63	63.24
20″×20″	2	2167K34	10.55	12	2167K64	63.30
20″×25″	2	2167K35	11.90	12	2167K65	71.40
20″×50″	2	2167K37	23.04	12	2167K67	138.24
24″×24″	2	2167K36	12.95	12	2167K66	77.70

About Air Filter Efficiency

ASHRAE (American Society of Heating, Refrigeration, and Air-Conditioning Engineers) standards 52.1 and 52.2 are used to define an air filter's efficiency. For filters tested in accordance with one or both of these standards, we list an efficiency rating as described below. *Note:* It's common for lower efficiency filters (disposable, washable, and electrostatic) not to have published efficiency ratings.

MERV stands for minimum efficiency rating value. The larger the MERV number, the more efficient the filter.

Dust spot efficiency describes a filter's ability to remove naturally occurring atmospheric dust.

Arrestance describes the percentage of test dust, by weight, that a filter is able to capture.

MERV Rating	Dust Spot Efficiency	Arrestance	Micron Size of Contaminant	Typical Air Filter
1	<20%	<65%	>10 microns (pollen, sanding dust, spray paint dust, carpet fibers)	***Disposable—*** Fiberglass or synthetic panel ***Washable—*** Aluminum mesh or foam panel ***Electrostatic—*** Self-charging panel
2	<20%	65-70%		
3	<20%	70-75%		
4	<20%	75-80%		
5	<20%	80-85%	3-10 microns (mold, spores, cement dust)	Pleated
6	<20%	85-90%		
7	25-30%	>90%		
8	30-35%	>90%		
9	40-45%	>90%	1-3 microns (lead dust, milled flour, coal dust, auto emissions, welding fumes)	Bag, Box, Pleated
10	50-55%	>95%		
11	60-65%	>95%		
12	70-75%	>95%		
13	80-90%	>98%	0.3-1 microns (bacteria, most smoke, insecticide dust, most paint pigments)	Bag, Box
14	90-95%	>98%		
15	>95%	N/A		
16	N/A	N/A		

Pleated Panel Filters

Designed for long life and reduced maintenance, these pleated 100% synthetic fiber filters provide greater surface area and higher efficiency than standard flat panel filters without reducing airflow. The filter media is bonded to a galvanized steel support grid that prevents sagging and air bypass. The grid is installed in a cardboard frame that's treated to handle humidity. Filters are marked with trade size and airflow direction. Actual length and width are ½″ less than trade size shown, unless noted. Meet UL Class 2 flame retardance requirements. Maximum temperature is 225° F.

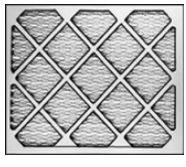

MERV 7 Efficiency Rating

Trade Size	Pkg. of 2	Pkg.	Pkg. of 12	Pkg.
1″ Thick				
10″×10″	2209K94	$8.95	2209K39	$51.46
12″×12″	2209K89★	9.85	2209K99★	56.64
12″×24″	2209K51★	8.60	2209K111★	49.45
14″×20″	2209K95	9.25	2209K49	53.17
14″×24″	2209K96	9.45	2209K59	54.34
14″×25″	2209K52	9.90	2209K112	56.91
15″×20″	2209K53	9.25	2209K113	53.19
16″×20″	2209K54	9.05	2209K114	52.03
16″×25″	2209K55	9.70	2209K115	55.77
18″×25″	2209K81	11.10	2209K91	63.82
20″×20″	2209K56	9.70	2209K116	55.77
20″×24″	2209K97	11.10	2209K79	63.82
20″×25″	2209K57	10.45	2209K117	60.09
20″×30″	2209K82	12.40	2209K92	71.30
24″×24″	2209K58★	11.30	2209K118★	64.98
2″ Thick				
12″×12″	2209K129★	9.50	2209K84★	54.62
12″×24″	2209K61★	8.65	2209K119★	49.74
14″×20″	2209K147	8.85	2209K85	50.88
15″×20″	2209K62	8.85	2209K121	50.89
16″×20″	2209K63	8.85	2209K122	50.89
16″×24″	2209K88	9.70	2209K98	55.77
16″×25″	2209K64	9.70	2209K123	55.77
16″×30″	2209K146	15.85	2209K87	91.14
18″×20″	2209K145	9.70	2209K86	55.77
18″×24″	2209K65	10.15	2209K124	58.33
20″×20″	2209K66	9.70	2209K125	55.75
20″×24″	2209K67	10.35	2209K126	59.51
20″×25″	2209K68	10.55	2209K127	60.40
24″×24″	2209K69★	12.00	2209K128★	68.70
30″×20″	2209K83	20.90	2209K93	94.05
4″ Thick	***Pkg. of 2***		***Pkg. of 6***	
12″×24″	2209K71★	$12.80	2209K131★	$36.10
16″×20″	2209K72	13.20	2209K132	37.22
16″×25″	2209K73	14.25	2209K133	40.18
18″×24″	2209K74	15.10	2209K134	42.58
20″×20″	2209K75	14.45	2209K135	40.75
20″×24″	2209K76	16.15	2209K136	45.54
20″×25″	2209K77	15.90	2209K137	44.84
24″×24″	2209K78★	17.35	2209K138★	48.93

★ Actual length and width are ⅝″ less than trade size.

Custom MERV 7 Efficiency Rating

Don't see MERV 7 pleated panel filters in the size you need? We'll get them for you. Just multiply the length × width you need to determine square inches. Then, see sq. inch ranges below for pricing. Minimum filter size is 6″×6″. Maximum filter size is 23″×30″. Actual length and width will be ½″ less than specified. **To Order:** Please specify length and width.

Also Available: 4″ thick standard filters and larger sizes. Please ask for 3923T999 and specify thickness, length, and width.

Sq. Inch	Pkg. Qty.	1″ Thick	Pkg.	2″ Thick	Pkg.
36-199	12	3923T11	$81.48	3923T27	$82.20
200-299	12	3923T12	86.10	3923T28	92.10
300-399	12	3923T13	87.60	3923T29	102.00
400-499	12	3923T14	96.60	3923T33	115.80
500-599	12	3923T15	108.30	3923T34	130.50
600-699	12	3923T16	113.10	3923T35	135.60

High Efficiency—MERV 11 Efficiency Rating

Trade Size	Pkg. of 2	Pkg.	Pkg. of 12	Pkg.
1″ Thick				
12″×24″	3881T41★	$11.11	3881T2★	$63.33
14″×25″	3881T42	11.89	3881T3	67.77
15″×20″	3881T43	11.61	3881T4	66.18
16″×20″	3881T44	11.39	3881T5	64.92
16″×25″	3881T45	12.17	3881T6	69.37
18″×24″	3881T46	13.94	3881T7	79.46
20″×20″	3881T51	12.17	3881T8	69.37
20″×24″	3881T52	13.94	3881T9	79.46
20″×25″	3881T56	13.17	3881T11	75.07
24″×24″	3881T57★	14.17	3881T13★	80.77
2″ Thick				
12″×24″	3881T61★	11.33	3881T15★	63.45
14″×25″	3881T62	13.11	3881T16	74.73
15″×20″	3881T63	11.83	3881T17	66.25
16″×20″	3881T64	11.83	3881T18	66.25
16″×24″	3881T65	13.11	3881T19	74.73
18″×24″	3881T66	13.61	3881T21	67.77
20″×20″	3881T67	13.11	3881T22	74.73
20″×24″	3881T68	14.17	3881T23	80.77
20″×25″	3881T69	14.39	3881T24	82.02
24″×24″	3881T71★	16.44	3881T25★	93.71
4″ Thick	***Pkg. of 2***		***Pkg. of 6***	
16″×25″	3881T73	$19.40	3881T27	$55.87
20″×20″	3881T74	19.40	3881T28	55.87
20″×24″	3881T75	20.15	3881T29	58.03
20″×25″	3881T76	20.80	3881T31	59.90
24″×24″	3881T77★	22.55	3881T32★	64.94

★ Actual length and width are ⅝″ less than trade size.

For information about air filter efficiency ratings, see page 677.

Odor-Removal Panel Air Filters

The carbon in these air filters removes odor while dust and contaminants are being trapped. Filter media is polyester and carbon (the greater the amount of carbon, the better the odor control). Frame is made of reinforced cardboard that's treated to resist humidity. A galvanized steel backing supports the frame. Filters are marked with trade size and airflow direction. Actual length and width are 1/2″ less than trade size shown. Meet UL Class 2 flame retardance requirements.

Filters with 10 grams of carbon/sq. ft.—Less odor control than filters with 300 grams of carbon. Filters are pleated and have a MERV 4 efficiency rating. Maximum temperature is 225° F.

Filters with 300 grams of carbon/sq. ft.—More carbon equals better odor control; use for demanding applications. Filters have a MERV 7 efficiency rating. Maximum temperature is 250° F.

Trade Size	10 GRAMS OF CARBON/SQ. FT. 1″ Thick		10 GRAMS OF CARBON/SQ. FT. 2″ Thick		300 GRAMS OF CARBON/SQ. FT. 2″ Thick	
12″×24″	20695K81	$13.21	20695K81	$15.35	4043T41	$41.75
16″×20″	20695K62	13.81	20695K82	16.19	4043T42	42.22
16″×25″	20695K63	15.60	20695K83	19.41	4043T43	54.18
18″×24″	—	—	—	—	4043T44	55.49
20″×20″	20695K64	15.60	20695K84	19.41	4043T45	43.50
20″×24″	—	—	—	—	4043T46	47.14
20″×25″	20695K65	18.58	20695K85	22.85	4043T47	48.01
24″×24″	20695K66	20.48	20695K86	25.72	4043T48	58.84

Antimicrobial Pleated Panel Air Filters

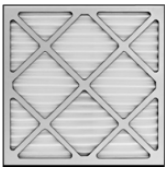

An antimicrobial agent effectively controls the growth of mold, mildew, and fungi on these pleated filters. The pleated design provides greater surface area and longer life expectancy than similar flat panel filters. Frame is reinforced cardboard and filter media is a polyester blend. All are marked with trade size and airflow direction. Actual length and width are 5/8″ less than trade size shown. Filters meet UL Class 2 flame retardance requirements and have a MERV 7 efficiency rating. Maximum temperature is 220° F.

Trade Size	Pkg. of 2	Pkg.	Pkg. of 12	Pkg.
1″ Thick				
12″×24″	2211K101	$18.29	2211K11	$84.13
14″×25″	2211K102	19.60	2211K12	90.16
15″×20″	2211K103	18.38	2211K13	84.55
16″×20″	2211K104	18.38	2211K14	84.55
16″×25″	2211K105	19.60	2211K15	90.16
18″×24″	2211K106	21.21	2211K16	97.57
20″×20″	2211K107	19.43	2211K17	89.38
20″×25″	2211K108	21.92	2211K18	100.83
24″×24″	2211K109	22.92	2211K19	105.43
2″ Thick				
12″×24″	2211K111	19.71	2211K61	90.67
14″×25″	2211K112	23.57	2211K62	108.42
15″×20″	2211K113	21.23	2211K63	97.66
16″×20″	2211K114	21.25	2211K64	97.75
16″×25″	2211K115	23.60	2211K65	108.56
18″×24″	2211K116	25.86	2211K66	118.96
20″×20″	2211K117	24.03	2211K67	110.30
20″×24″	2211K118	26.84	2211K68	123.46
20″×25″	2211K119	27.19	2211K69	125.07
24″×24″	2211K121	29.50	2211K81	135.70
4″ Thick	***Pkg. of 2***		***Pkg. of 6***	
12″×24″	2211K122	$33.67	2211K82	$80.81
16″×20″	2211K123	36.27	2211K83	87.05
16″×25″	2211K124	41.60	2211K84	99.84
20″×25″	2211K125	47.90	2211K85	114.96
24″×24″	2211K126	49.74	2211K86	119.38

HEPA Filters

Particleboard Frame

Galvanized Steel and Type 304 Stainless Steel Frame

Control dust and contaminants in the most demanding environments with these HEPA filters. They're 99.97% efficient at trapping particles as small as 0.3 microns. Filter media is ultrafine glass fiber. All have a neoprene gasket on the downstream side of the filter.

Particleboard Frame—Frame is 3/4″ thick. Maximum temperature is 180° F. The *5 7/8″ thick* and *11 1/2″ thick* filters meet UL Class 2 flame retardance requirements.

Galvanized Steel Frame and ***Type 304 Stainless Steel Frame***—Maximum temperature is 200° F. *2 3/4″ thick* filters have a 20-ga. frame (unless noted) and meet UL Class 2 flame retardance requirements. *5 7/8″ thick* and *11 1/2″ thick* filters have an 18-ga. frame and meet UL Class 1 flame retardance requirements.

Actual Size	Particleboard Frame		Galvanized Steel Frame		Type 304 Stainless Steel Frame	
2 3/4″ Thick						
12″ ×12″	—	—	5612T2★	$142.69	5612T24	$284.36
24″ ×12″	—	—	5612T3★	163.69	5612T25	298.74
24″ ×24″	—	—	5612T4★	198.00	5612T26	340.41
3″ Thick						
12″ ×12″	2153K31	$73.68	—	—	—	—
24″ ×12″	2153K33	102.74	—	—	—	—
24″ ×24″	2153K35	160.13	—	—	—	—
36″ ×24″	2153K37	223.33	—	—	—	—
5 7/8″ Thick						
8″ × 8″	2153K49	73.84	5612T5	144.82	5612T27	254.53
12″ ×12″	2153K59	89.10	5612T6	158.62	5612T28	282.04
24″ ×12″	2153K69	136.78	5612T7	187.79	5612T31	398.74
24″ ×24″	2153K73	190.99	5612T8	222.19	5612T32	371.71
11 1/2″ Thick						
23 3/8″×23 3/8″	2153K14	217.70	5612T11	286.16	5612T34	478.88
24″ ×12″	2153K75	157.43	5612T9	216.81	5612T33	385.42
24″ ×24″	2153K71	217.73	5612T12	302.75	5612T35	496.77
24″ ×30″	2153K16	287.09	5612T13	387.14	5612T36	660.35

★ Has a 16-ga. aluminum frame.

Extended-Surface Rigid Box Air Filters

A metal frame with dense fiberglass filter media and corrugated aluminum media separators make these filters great for use in variable air volume systems. (These systems maintain comfort in the areas they serve by varying the volume of conditioned air.) Thanks to their rigid construction, these filters maintain their shape when your system is not running—unlike bag filters, which lose their shape during system downtime. Filters meet UL Class 1 flame retardance requirements. Actual length and width are 5/8″ less than trade size shown.

180° F max. temperature filters have a 26-ga. galvanized steel frame. ***900° F max. temperature*** filters have a 26-ga. aluminized steel frame.

Trade Size	180° F MAX. TEMP. 6″ Thick		180° F MAX. TEMP. 12″ Thick		900° F MAX. TEMP. 12″ Thick	
60-65% Efficiency—MERV 11 Efficiency Rating						
12″×24″	8231T15	$50.31	8231T12	$57.32	8231T45	$132.11
20″×24″	8231T16	60.83	8231T13	80.57	8231T46	171.91
24″×24″	8231T14	64.67	8231T11	86.31	8231T44	173.82
90-95% Efficiency—MERV 14 Efficiency Rating						
12″×24″	8231T22	56.31	8231T18	65.76	8231T42	142.34
20″×24″	8231T23	65.90	8231T19	86.50	8231T43	181.43
24″×24″	8231T21	72.19	8231T17	98.94	8231T41	183.73

Antimicrobial Panel Air Filters

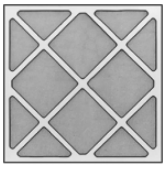

The economical alternative to pleated filters, these have a flat panel design and are treated with an antimicrobial agent that controls the growth of mold, mildew, and fungi on the filter. Frame is fiberboard. Filter media is polyester that's treated with a tackifier to retain more dust particles. Filters are marked with trade size. All are 1″ thick. Actual length and width are 5/8″ less than trade size shown. Meet UL Class 2 flame retardance requirements and have a MERV 8 efficiency rating. Maximum temperature is 220° F.

Trade Size	Pkg. of 2	Pkg.	Pkg. of 12	Pkg.
12″×24″	3941T34	$15.26	3941T11	$74.77
14″×25″	3941T37	15.68	3941T13	76.83
15″×20″	3941T41	13.86	3941T15	67.91
16″×20″	3941T44	14.26	3941T17	69.87
16″×25″	3941T46	16.14	3941T22	79.09
18″×24″	3941T51	17.13	3941T24	83.94
20″×20″	3941T53	16.14	3941T26	79.09
20″×25″	3941T55	17.46	3941T28	85.38
24″×24″	3941T57	19.82	3941T29	97.12

Antimicrobial Wire-Reinforced Air Filters

A semirigid wire grid placed between layers of nonwoven polyester media provides excellent filter strength without compromising filtering efficiency. Filters are treated with an antimicrobial agent that controls the growth of mold, mildew, and fungi on the filter—great for high-humidity applications. Filter media is treated with a tackifier to retain more dust particles. All filters are three-ply and 1½″ thick. They provide both a snug fit and a continuous seal around their outer edge. Actual length and width are 1″ greater than trade size shown. Filters meet UL Class 2 flame retardance requirements and have a MERV 8 efficiency rating (see page 677 for information about MERV ratings). Max. temperature is 220° F.

Trade Size			Trade Size		
12″×24″	2096K71	$6.91	20″×20″	2096K75	$8.26
16″×20″	2096K72	7.37	20″×25″	2096K76	9.09
16″×24″	2096K73	8.31	20″×50″	2096K77	18.20
16″×25″	2096K74	8.09	24″×24″	2096K78	10.37

Polyester Air Filter Rolls

It's easy to cut these polyester rolls to size. They can be used in filter media pad frames (not included; see 2169K on page 680). Meet UL Class 2 flame retardance requirements. Maximum temperature is 225° F, except 2″ thick rolls, which have a maximum temperature of 150° F.

Choose from dry and tacky rolls. ***Dry rolls*** are white. ***Tacky rolls*** retain dust particles and prevent them from migrating into your ducts. Rolls are blue on one side and white on the other.

Shorter Roll Lengths

Roll Wd.	*Dry Rolls*	Roll	*Tacky Rolls*	Roll
½″ Thick—15-ft. Rolls				
8″	2122K301	$5.84	2122K311	$6.03
10″	2122K302	6.68	2122K312	7.34
12″	2122K303	7.94	2122K313	8.72
14″	2122K304	9.81	2122K314	10.01
16″	2122K305	10.90	2122K315	11.45
20″	2122K306	12.54	2122K316	13.49
25″	2122K307	13.57	2122K317	14.56
26″	2122K111	19.72	2122K114	20.32
28″	2122K112	20.41	2122K115	21.09
30″	2122K308	20.38	2122K318	22.17
36″	2122K309	24.55	2122K319	26.82
48″	2122K113	35.38	2122K116	33.90
1″ Thick—15-ft. Rolls				
6″	2122K101	5.53	2122K107	5.83
8″	2122K321	7.12	2122K331	7.39
10″	2122K322	8.40	2122K332	9.29
12″	2122K323	9.89	2122K333	10.17
14″	2122K324	11.65	2122K334	11.87
16″	2122K325	13.61	2122K335	13.95
20″	2122K326	16.18	2122K336	16.60
25″	2122K327	17.90	2122K337	19.27
30″	2122K328	24.93	2122K338	26.67
36″	2122K329	31.96	2122K339	32.68
40″	2122K102	36.72	2122K131	38.00
48″	2122K103	43.18	2122K132	44.75
2″ Thick—15-ft. Rolls				
8″	2122K351	13.00	2122K361	7.92
12″	2122K353	16.00	2122K363	18.11
20″	2122K356	19.87	2122K366	18.47
25″	2122K357	21.84	2122K367	23.04
36″	2122K359	31.70	2122K369	33.42

Longer Roll Lengths

Roll Wd.	*Dry Rolls*	Roll	*Tacky Rolls*	Roll
½″ Thick—135-ft. Rolls				
8″	2122K141	$35.04	2122K241	$36.52
10″	2122K142	40.55	2122K242	44.79
12″	2122K143	44.25	2122K243	52.82
14″	2122K144	58.45	2122K244	60.78
16″	2122K145	66.14	2122K245	69.27
20″	2122K146	76.69	2122K246	81.81
25″	2122K147	82.55	2122K247	87.64
26″	2122K121	119.01	2122K124	121.25
28″	2122K122	122.94	2122K125	127.81
30″	2122K148	124.51	2122K248	133.25
36″	2122K149	147.20	2122K249	163.47
48″	2122K123	214.23	2122K126	209.04
1″ Thick—90-ft. Rolls				
6″	2122K104	22.27	2122K108	23.46
8″	2122K151	28.79	2122K251	28.69
10″	2122K152	33.85	2122K252	37.23
12″	2122K153	39.64	2122K253	40.98
14″	2122K157	47.55	2122K257	49.30
16″	2122K154	56.12	2122K254	56.84
20″	2122K155	63.40	2122K255	67.16
25″	2122K156	72.28	2122K256	77.81
30″	2122K158	99.77	2122K258	110.78
36″	2122K159	129.26	2122K259	136.81
40″	2122K105	150.38	2122K133	170.56
48″	2122K106	176.07	2122K134	191.91
2″ Thick—45-ft. Rolls				
8″	2122K401	24.37	2122K501	25.37
12″	2122K403	32.82	2122K503	33.49
20″	2122K406	36.66	2122K506	41.27
25″	2122K407	45.06	2122K507	46.90
36″	2122K409	66.08	2122K509	67.43

Rigid Polyester Air Filter Rolls

Rigid polyester is easy to cut, yet firm enough to be used without a frame. You can use it as a direct replacement for neoprene-coated natural fiber (also known as hog hair).

Material has low resistance to air flow, stands up well to water and humidity, and is reusable. Rolls meet UL Class 2 flame retardance requirements. Max. temp. is 225° F. Color is blue.

Roll Wd.	*12-ft. Rolls*	Roll	*36-ft. Rolls*	Roll
½″ Thick				
25″	2069K81	$30.39	2069K91■	$97.44
1″ Thick				
20″	2069K82	26.57	2069K92	73.81
25″	2069K83	29.76	2069K93	82.68
28″	2069K84	36.48	2069K94	101.33
30″	2069K85	39.10	2069K95	108.60
36″	2069K23	47.80	2069K24	132.77
48″	2069K25	63.74	2069K26	177.05
72″	2069K27	95.59	2069K28	265.52

■ 48-ft. roll.

Fiberglass Air Filter Rolls

Bulk fiberglass rolls can be cut to size to replace fiberglass air filters. These rolls have a skin backing for support, but installation in a filter media pad frame (not included; see 2169K on page 680) may be necessary for added support. Meet UL Class 2 flame retardance requirements. Maximum temperature is 300° F. Color is white.

Rolls are 20 ft. long.

Nominal Roll Wd.		Roll
1″ Thick		
8″	4438K1	$6.50
10″	4438K5	9.22
12″	4438K8	10.09
24″	4438K4	14.14
30″	4438K2	14.99
36″	4438K3	18.38
2″ Thick		
20″	4438K6	14.11
25″	4438K7	16.62

Polyurethane Foam Air Filter Rolls

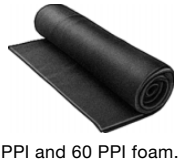

In addition to being washable, these filter rolls have high tear resistance and very low airflow resistance. Meet UL Class 2 flame retardance requirements. Maximum temperature is 200° F. Color is charcoal gray.

All rolls are 48″ wide. ***30 PPI*** (pores per inch) rolls are for general-purpose filtering. ***60 PPI*** rolls are for filtering small particles and pollen.

Sample pack contains one piece each of 30 PPI and 60 PPI foam. Each sample piece is 3″ Ht.×3″ Wd.×¼″ Thick.

Thick.	*30 PPI*	Roll	*60 PPI*	Roll
10-ft. Rolls				
⅛″	2195K51	$26.71	2195K61	$26.71
¼″	2195K52	53.40	2195K62	53.40
½″	2195K53	106.84	2195K63	106.84
¾″	2195K54	160.25	2195K64	160.25
1″	2195K55	213.65	2195K65	213.65
25-ft. Rolls				
⅛″	2195K21	48.93	2195K31	48.93
¼″	2195K22	106.94	2195K32	106.94
½″	2195K23	210.46	2195K33	210.46
¾″	2195K24	311.58	2195K34	311.58
1″	2195K25	397.10	2195K35	397.10

Sample Pack ..... 2195K99 **Pkg.** $7.14

Automatic Air Filter Rolls

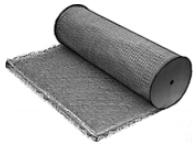

Filter media is wrapped onto a core for mounting in automatic and semiautomatic filtering equipment where large volumes of air must be constantly filtered. Sewn-in heavy kraft paper leaders and trailers make installation easy. A tough scrim backing provides durability. Meet UL Class 2 flame retardance requirements. All rolls are 65 ft. long.

Fiberglass— Filter media is fiberglass that's treated with a tackifier to retain more dust particles. Rolls are 2″ thick. Maximum temperature is 250° F. Color is blue.

Polyester— Filter media is nonwoven polyester to trap more dust than fiberglass. Rolls are ⅝″ thick. Maximum temperature is 220° F. Color is white.

Replacement For	Core Wd.	*Fiberglass*	Roll	*Polyester*	Roll
American Air Filter	32¾″	2115K11	$95.74	2179K12	$97.93
American Air Filter	44¾″	2115K17	115.98	2179K13	118.65
American Air Filter	56¾″	2115K23	136.23	2179K14	139.37
Continental	43⅞″	2115K41	115.98	2179K33	118.65
Continental	55⅞″	2115K42	125.37	2179K34	139.37
Continental	67⅞″	2115K43	159.50	2179K35	160.07
Farr	32¾″	2115K31	95.74	2179K42	97.93
Farr	44¾″	2115K32	115.98	2179K43	118.65
Farr	56¾″	2115K33	125.37	2179K44	139.37

Foam and Aluminum Air Filter Rolls

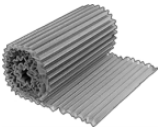

Polyurethane foam (to trap small particles) is sandwiched between two layers of aluminum mesh (to trap large particles). Media is washable. Foam is green and has 30 PPI (pores per inch). Meet UL Class 2 flame retardance requirements. Maximum temperature is 250° F.

Roll Wd.	10-ft. Rolls	Roll	25-ft. Rolls	Roll
1/2″ Thick				
15 1/8″	2072K11	$34.81	2072K3	$78.00
19 1/8″	2072K12	41.27	2072K4	94.92
24 1/8″	2072K13	57.10	2072K5	128.69
1″ Thick				
15 1/8″	2072K14	36.57	2072K6	83.73
19 1/8″	2072K15	47.78	2072K7	105.08
24 1/8″	2072K16	58.00	2072K8	132.92

Polyester Air Filter Media Pads

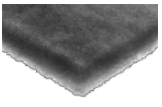

Polyester pads trap more dust than comparable fiberglass pads. Install pads in the filter media pad frames sold separately on this page. Meet UL Class 2 flame retardance requirements. Maximum temperature is 220° F. ***1″ thick*** pads are treated with a tackifier to retain more dust particles.

Package quantity is 10.

Size	1″ Thick	Pkg.	2″ Thick	Pkg.
12″×24″	2182K11	$17.92		
16″×20″	2182K12	17.74	2182K32	$17.30
16″×25″	2182K13	22.22	2182K33	19.23
20″×20″	2182K14	22.22	2182K34	19.23
20″×25″	2182K15	27.79	2182K35	21.79
24″×24″	2182K16	23.72	2182K36	27.57

Rigid Polyester Air Filter Pads

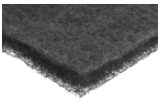

Firm enough to be used without a frame, these polyester pads are also easy to cut to size. This material is a direct replacement for neoprene-coated natural fiber (also known as hog hair).

Rigid polyester has low resistance to air flow, stands up well to water and humidity, and is reusable. Meet UL Class 2 flame retardance requirements. Maximum temperature is 225° F.

Size	Pkg. Qty.		Pkg.
1/2″ Thick			
14″×25″	4	2069K61	$12.29
15″×24″	4	2069K62	12.61
48″×25″	1	21205K22	9.71
1″ Thick			
16″×20″	4	2069K63	12.77
16″×25″	2	2069K64	7.88
20″×20″	2	2069K65	8.04
1″ Thick (Cont.)			
20″×25″	2	2069K66	$9.99
20″×30″	2	2069K67	11.98
48″×20″	1	21205K15	8.71
48″×25″	1	21205K12	10.87
48″×28″	1	21205K17	12.17
48″×30″	1	21205K25	13.05

Polyurethane Foam Air Filter Pads

These washable foam pads allow maximum airflow during dust collection. They meet UL Class 2 flame retardance requirements. Maximum temperature is 250° F.

All pads are 72″ Ht.×48″ Wd. Just trim pads to size to install them in the filter media pad frames sold separately on this page. Choose lower PPI (pores per inch) pads for filtering larger particles; choose higher PPI pads for filtering smaller and microscopic particles. **To Order:** Please specify 20, 45, 65, 80, or 100 PPI.

Sample pack contains one piece each of 20, 45, 65, 80, and 100 PPI foam. Each sample piece is 6″ Ht.×6″ Wd.×1/8″ Thick.

Thick.		Each	Thick.		Each
1/8″	9803K2	$25.49	3/4″	9803K5	$152.03
1/4″	9803K3	50.39	1″	9803K6	188.84
1/2″	9803K4	89.27	2″	9803K7	396.84

Sample Pack ..... 9803K99 Pkg. $11.94

Air Filter Tackifiers

A light coat of these water-soluble tackifiers will increase the efficiency of all air filters by attracting dirt, dust, and pollen.

Apply by spraying or brushing new and freshly washed filters. Dirt and adhesive wash away at the next cleaning.

10-oz. Pump Spray	2071K3	$6.10
1-gal. Container	2071K1	45.10
5-gal. Container	2071K2	190.91

Fiberglass Air Filter Media Pads

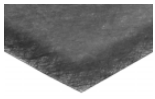

Made of continuous fiberglass strands, these pads are lightweight, easy to replace, and economical. Filter media is treated with a tackifier to retain dust particles. Install pads in the filter media pad frames sold separately on this page. Meet UL Class 2 flame retardance requirements. Maximum temperature is 350° F.

Size	Pkg. of 6	Pkg.	Pkg. of 50	Pkg.
1″ Thick				
12″×24″	2173K61	$7.85	2173K81	$42.32
16″×20″	2173K62	8.28	2173K82	44.42
16″×25″	2173K63	10.06	2173K83	47.41
20″×20″	2173K64	10.06	2173K84	47.41
20″×25″	2173K65	10.85	2173K85	60.71
24″×24″	2173K66★	7.51	2173K86	66.07
2″ Thick				
16″×20″	2173K72	9.43	2173K92	49.06
16″×25″	2173K73	12.00	2173K93	53.32
20″×20″	2173K74	12.00	2173K94	53.32
20″×25″	2173K75★	7.86	2173K95	66.00
24″×24″	2173K76★	8.74	2173K96	85.67

★ Package quantity is 3.

Filter Media Pad Frames

1″ and 2″ Thick

Use these frames for mounting cut-to-size and precut filter media. Frames are 24-ga. galvanized steel with a 16-ga. back grid. Actual length and width are 1/2″ less than trade size shown.

1″ and ***2″ thick*** frames have hinged filter retaining wires that swing out of the way for filter replacement.

Trade Size	1/2″ Thick		1″ Thick		2″ Thick	
12″×24″	2169K63	$7.48	2169K41	$10.42	2169K51	$10.63
16″×20″	2169K64	7.80	2169K12	10.20	2169K22	10.39
16″×25″	2169K65	8.40	2169K13	10.68	2169K23	11.53
20″×20″	2169K68	8.40	2169K14	10.90	2169K24	11.53
20″×25″	2169K66	8.40	2169K15	11.10	2169K25	11.94
24″×24″	2169K67	8.80	2169K16	11.09	2169K26	12.50

Panel Filter Frames

Mount permanent and disposable panel filters. Frames are 2 1/8″ thick and made of 16-ga. galvanized steel to handle the most demanding filter applications. They have holes for bolt assembly (hardware included) and can be welded together to hold more filters if needed. All have filter retaining clips and a foam gasket for a tight seal.

Actual Size			Actual Size		
12″×24″	20615K91	$20.14	20″×20″	20615K94	$21.86
16″×20″	20615K92	20.86	20″×25″	20615K95	22.71
16″×25″	20615K93	21.86	24″×24″	20615K96	23.57

Grease Filters

Two layers of baffles allow grease-laden air to swirl, throwing grease against the side of the baffle where it drains down to the bottom. The baffle design protects the blower and prevents flames from passing through the filter and into ductwork. Filters have handles to allow easy removal for cleaning with water or steam. All are marked with airflow direction.

Filters are 2″ thick. Actual width and height are 1/2″ less than trade size shown. All are UL listed to meet National Fire Protection Association Standard 96.

All three material choices are corrosion resistant. ***Aluminum*** filters have a maximum temperature of 250° F. ***Galvanized steel*** filters have a maximum temperature of 450° F. ***Type 304 stainless steel*** filters have a maximum temperature of 900° F.

Use the optional *filter removal tool* when changing filters to avoid handling greasy metal. It's made of galvanized steel and has a 4 1/2-ft. long handle.

Note: Install filters with baffles running vertically (as shown).

Trade Size, Wd.×Ht.	Aluminum		Galvanized Steel		Type 304 Stainless Steel	
16″×25″	2092K17	$22.67	2092K27	$15.64	2092K37	$58.63
20″×10″	2092K15	21.61	2092K25	12.90	2092K35	46.55
20″×16″	2092K14	21.46	2092K24	14.04	2092K34	55.17
20″×20″	2092K12	22.67	2092K22	15.82	2092K32	58.62
20″×25″	2092K16	28.45	2092K26	19.19	2092K36	71.55
25″×16″	2092K13	22.94	2092K23	15.26	2092K33	59.74
25″×20″	2092K11	28.82	2092K21	19.45	2092K31	76.36

Filter Removal Tool 2092K99 $49.74

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About Light Bulbs

Light Bulb Terminology

Lumens— The amount of light output produced by a light source. The higher the lumens, the brighter the light.

Energy Efficiency (Lumens per Watt)— The amount of light (lumens) produced for each watt of energy used. The higher the lumens per watt, the greater the energy efficiency.

Rated Life— The amount of time (in hours or years) it takes for 50% of a group of identical bulbs to burn out.

Color Rendering Index (CRI)— Ability of a light source to represent an object's true colors. Measured on a scale of 0-100 with 100 representing the level at which colors appear most natural. Incandescent, halogen, and natural daylight have a CRI of 100.

Light Appearance— Measured in Kelvins (K), light appearance indicates how cool or warm light appears. Cool light provides more contrast, so it's better for visual tasks. Warmer light—between 2,700K and 3,600K—works best for general indoor or task lighting. The chart below compares the effects of different light appearances.

	Warm	Neutral	Cool	Daylight
Light Appearance	3,000K	3,500K	4,100K	5,000K+
Suggested Applications	Restaurants, Hotel Lobbies, Libraries, Office Areas	Public Reception Areas, Showrooms, Office Areas, Retail Stores	Office Areas, Conference Rooms, Classrooms, Mass Merchandisers, Hospitals	Galleries, Museums, Jewelry Stores, Printing Companies

ⓘ For information about Color Rendering Index (CRI) and light appearance, go to mcmaster.com and search for **15115KAC**.

Light Bulb Types

Incandescent— The original light bulbs for basic lighting needs. They can be replaced with halogen and compact fluorescent screw-in bulbs without changing the fixture.

Halogen— A good alternative to incandescent bulbs, halogen bulbs last longer and produce brighter, whiter light. Ideal for use in spot and flood, accent, display, and track lighting.

LED— These bulbs emit a focused beam of a single color and are ideal for use in indicating light fixtures, panel boards, and where brightness and directional lighting are important and general illumination is not. They last much longer than traditional miniature bulbs, resist vibration, and are energy efficient.

Fluorescent— Longer lasting and more energy efficient than incandescent and halogen bulbs, these bulbs also generate less heat. For use in residential and office areas, hotels, restaurants, hospitals, conference rooms, and classrooms. Available as compact screw-in, compact plug-in, and tubular bulbs, all offer a range of light appearance options. *Compact fluorescent screw-in* bulbs can directly replace incandescent and halogen bulbs without changing the fixture.

High-Intensity Discharge (HID)— When energy costs are a concern, select these light bulbs. All require a warm-up period to start. *Mercury vapor* are less expensive but are not as energy efficient as metal halide and high-pressure sodium bulbs. They produce a blue-green colored light and have below average color rendering. For use as landscape, roadway, parking lot, and building floodlighting. *High-pressure sodium* are the perfect choice when energy efficiency is important but CRI is not critical. They produce a yellowish light and are used as floodlighting for parking areas and warehouses. *Metal halide* produce a crisp white light and have the best color rendering among HID bulbs. For use in shopping malls, retail and commercial buildings, roadways, parking lots, and building floodlighting, as well as sports and warehouse lighting.

	Incandescent	*Halogen*	*LED*	*Fluorescent*		*High-Intensity Discharge (HID)*		
				Compact Screw-In/ Plug-In	**Tubular**	**Mercury Vapor**	**High-Pressure Sodium**	**Metal Halide**
Color Rendering Index (CRI)	100	100	68-75	82	52-86	40-45	20-25	65-90
Light Appearance	2,400-2,900K	3,000K	2,900-5,500K	2,700-6,500K	3,000-6,500K	3,700K	2,100K	4,000K
Energy Efficiency (Lumens per Watt)	6-21	15-30	40-80	40-80	45-100	35-55	65-130	65-110
Dimming Capability	Full	Full	No	Limited	No	No	No	No
Ballast Required	No	No	Included	Included/Yes	Yes	Yes	Yes	Yes

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Incandescent Light Bulbs

Incandescent Light Bulbs

Base Type

Medium

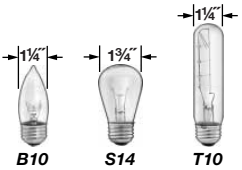

B10 *S14* *T10*

Bulbs are typically used in dry, indoor environments. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use. Ratings are provided at voltage shown.

Screw-In Medium Base— 1 1/16″ Base Dia.

Watts	Description/ Use	Glass Type	Volts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Per Pkg.
Bullet Shape B10— *1 1/4″ Bulb Dia.*											
40	General	Clear	120	320	2.7	$4.82	Not Rated	3 13/16″	2	**1628K65**	$3.92
60	General	Clear	120	480	2.7	7.23	Not Rated	3 13/16″	2	**1628K66**	3.67
Short S14— *1 3/4″ Bulb Dia.*											
10	General	Clear	120	75	1.4	1.20	Not Rated	3 1/2″	1	**1628K61**	2.92
11	General	Frosted	120	80	4.6	1.32	Not Rated	3 1/2″	1	**1628K62**	2.50
Tubular T10— *1 1/4″ Bulb Dia.*											
25	General	Clear	120	230	0.9	3.01	2,900K	5 5/8″	1	**1611K18**	2.97
25	General	Frosted	120	255	0.9	3.01	Not Rated	5 5/8″	1	**1611K15**	3.52
40	General	Clear	120	440	0.9	4.82	Not Rated	5 5/8″	1	**1611K19**	3.15
40	General	Frosted	120	435	0.9	4.82	Not Rated	5 5/8″	1	**1611K16**	3.19

(Continued on following page)

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Incandescent Light Bulbs *(Continued from previous page)*

Bulbs are typically used in dry, indoor environments, unless otherwise indicated. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use. Ratings are provided at voltage shown.

Long-life bulbs last up to 20 times longer than general service incandescent bulbs.

Rough-service bulbs have reinforced filaments for better shock and vibration resistance.

Shatter-resistant bulbs have a silicone outer coating (unless noted) that prevents shattering when water splashes the bulb and retains glass shards if the bulb breaks.

Rough-service/shatter-resistant bulbs combine the features of both for added life and durability.

Daylight bulbs have a special coating that creates a whiter light than traditional incandescent bulbs, allowing colors to appear brighter and more vivid.

Energy-saver bulbs consume less energy without a significant reduction in light output.

Colored bug bulbs won't attract insects.

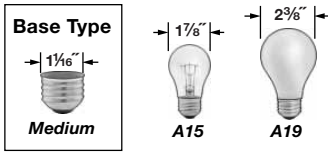

Screw-In Medium Base—1 1/16″ Base Dia. (Cont.)

Watts	Description/Use	Glass Type	Volts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Per Pkg.
Small Standard Household A15— *1 7/8″ Bulb Dia.*											
15	General	Clear	120	105	2.3	$1.81	2,900K	3 1/2″	2	**15115K73**	$5.28
15	General	Frosted	120	100	2.3	1.81	2,900K	3 1/2″	2	**15115K72**	4.32
25	Oven	Frosted	120	210	0.9	3.01	Not Rated	3 1/2″	1	**1628K55**	5.29
40	Shatter Resistant/Refrigerator	Frosted	120	420	0.9	4.82	Not Rated	3 1/2″	6	**1628K56**	13.68
40	Oven	Clear	120	430	0.9	4.82	Not Rated	3 1/2″	1	**1628K54**	1.24
40	Oven	Frosted	120	245	4.6	4.99	2,700K	3 1/2″	2	**1628K32**	4.58
Standard Household A19— *2 3/8″ Bulb Dia.*											
22	General	Clear	120	170	4.6	3.12	2,600K	4 1/2″	4	**1728K82**	4.66
22	General	Frosted	120	170	4.6	3.12	2,600K	4 1/2″	4	**1728K81**	4.66
25	General	Frosted	120	230	2.3	3.01	Not Rated	4 7/16″	2	**15115K61**	4.24
25	Rough Service	Frosted	120	235	0.9	3.01	Not Rated	3 15/16″	2	**1506K26**	8.32
25	Shatter Resistant/Refrigerator	Frosted	120	Not Rated	2.3	3.01	Not Rated	3 15/16″	2	**1532K29**	9.82
25	Colored	Blue	120	180	2.7	3.01	2,900K	3 15/16″	1	**1473K21**	3.47
25	Colored	Green	120	180	2.7	3.01	2,900K	3 15/16″	1	**1473K23**	3.47
25	Colored	Red	120	Not Rated	2.7	3.01	Not Rated	3 15/16″	1	**1473K19**	3.30
25	Colored	Yellow	120	180	2.7	3.01	2,900K	3 15/16″	1	**1473K61**	3.47
25	Low Voltage	Frosted	12	385	0.9	3.01	2,900K	3 15/16″	2	**8357K13**	7.28
34	Energy Saver	Frosted	120	310	2.3	4.10	2,900K	4 7/16″	4	**1622K33**	3.24
35	General	Clear	120	325	4.6	4.99	2,600K	4 1/2″	4	**1728K84**	4.66
35	General	Frosted	120	325	4.6	4.99	2,600K	4 1/2″	4	**1728K83**	4.66
40	General	Clear	120	460	1.4	4.82	2,700K	4 7/16″	2	**15115K52**	2.72
40	General	Frosted	120	495	1.4	4.82	Not Rated	4 1/8″	2	**15115K51**	1.54
40	Daylight	Frosted	120	350	1.4	4.82	2,900K	4 7/16″	4	**2747K11**	5.19
40	Shatter Resistant/Refrigerator	Frosted	120	500	1.4	4.82	Not Rated	4 7/16″	2	**1532K31**	11.22
50	Rough Service	Frosted	120	480	0.9	6.02	Not Rated	3 15/16″	2	**1506K51**	5.33
50	Rough Serv./Shatter Resist.	Frosted	120	Not Rated	0.9	6.02	Not Rated	3 15/16″	2	**1532K41**	11.06
50	Low Voltage	Frosted	12	875	0.9	6.02	Not Rated	4 1/4″	1	**8357K14**	4.32
50	Oven	Clear	120	500	0.9	6.02	Not Rated	3 15/16″	2	**1628K53**	12.24
52	Energy Saver	Frosted	120	660	1.8	6.26	Not Rated	4 7/16″	2	**1622K45**	4.76
53	Colored Bug	Yellow	120	Not Rated	4.6	7.49	1,500K	4 1/2″	2	**1473K63**	3.34
60	General	Clear	120	900	1.4	7.23	Not Rated	4 7/16″	2	**15115K54**	2.88
60	General	Frosted	120	870	0.9	7.23	2,900K	4 7/16″	4	**15115K53**	2.29
60	General	Soft White	120	830	1.4	7.23	2,800K	4 7/16″	4	**15115K71**	3.96
60	Daylight	Frosted	120	640	0.9	7.23	2,900K	4 7/16″	4	**2747K12**	5.25
60	Long Life	Clear	120	560	18.3	7.23	2,700K	4 7/16″	2	**1728K95**	7.24
60	Long Life	Frosted	120	560	18.3	7.23	2,700K	4 7/16″	2	**1728K96**	7.24
60	Rough Service	Frosted	120	450	4.6	7.23	2,900K	4 7/16″	2	**1241K11**	6.18
60	Shatter Resistant/Long Life	Frosted	120	560	18.3	7.23	2,700K	4 7/16″	1	**1728K44**■	7.53
60	Shatter Resistant/Refrigerator	Frosted	120	Not Rated	0.9	7.23	Not Rated	4 7/16″	2	**1532K33**	9.15
60	Colored	Blue	120	Not Rated	2.3	7.23	Not Rated	4 1/4″	1	**1473K17**	3.25
60	Colored	Green	120	Not Rated	2.3	7.23	Not Rated	4 1/2″	1	**1473K13**	3.20
66	Shatter Resistant/Oven	Frosted	120	650	4.6	9.36	2,700K	4 1/2″	4	**1532K24**	11.20
67	Energy Saver	Frosted	120	970	1.8	8.07	Not Rated	4 7/16″	2	**1622K46**	2.41
75	General	Clear	120	1,080	1.4	9.03	Not Rated	4 7/16″	2	**15115K56**	2.94
75	General	Frosted	120	1,220	0.7	9.03	Not Rated	4 1/8″	2	**15115K55**	.59
75	Daylight	Frosted	120	850	0.7	9.03	2,900K	4 7/16″	4	**2747K13**	5.19
75	Long Life	Clear	120	790	18.3	9.03	2,700K	4 7/16″	2	**1728K97**	7.24
75	Long Life	Frosted	120	790	18.3	9.03	2,700K	4 7/16″	2	**1728K98**	7.24
75	Rough Service	Frosted	120	650	4.6	9.03	2,900K	4 7/16″	2	**1241K12**	6.18
75	Rough Service	Frosted	120	710	0.9	9.03	Not Rated	3 15/16″	1	**1506K52**	3.52
75	Shatter Resistant/Long Life	Frosted	120	790	18.3	9.03	2,700K	4 7/16″	1	**1728K49**■	7.53
90	Energy Saver	Frosted	120	1,400	1.4	10.84	Not Rated	4 7/16″	2	**1622K47**	2.18
100	General	Clear	120	1,580	1.4	12.05	Not Rated	4 7/16″	2	**15115K58**	2.86
100	General	Frosted	120	1,600	0.7	12.05	Not Rated	4 7/16″	2	**15115K57**	1.26
100	Daylight	Frosted	120	1,270	0.7	12.05	2,900K	4 7/16″	4	**2747K14**	5.25
100	Long Life	Clear	120	1,100	18.3	12.05	2,700K	4 7/16″	2	**1728K99**	7.24
100	Long Life	Frosted	120	1,100	18.3	12.05	2,700K	4 7/16″	2	**1728K91**	7.18
100	Rough Service	Frosted	120	840	4.6	12.05	2,900K	4 7/16″	2	**1241K13**	6.18
100	Shatter Resistant	Frosted	120	1,100	18.3	12.05	2,700K	4 7/16″	1	**1728K89**■	7.53
100	Colored Bug	Yellow	120	Not Rated	1.2	12.05	Not Rated	4 7/16″	2	**1473K87**	5.43

■ PTFE coated.

(Continued on following page)

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Incandescent Light Bulbs *(Continued from previous page)*

Base Types

½″
Candelabra

1¹⁄₁₆″
Medium

Bulbs are typically used in dry, indoor environments, unless otherwise indicated. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use. Ratings are provided at voltage shown.

Long-life bulbs last up to 20 times longer than general service incandescent bulbs.

Rough-service bulbs have reinforced filaments for better shock and vibration resistance.

Shatter-resistant bulbs have a silicone outer coating (unless noted) that prevents shattering when water splashes the bulb and retains glass shards if the bulb breaks.

Rough-service/shatter-resistant bulbs combine the features of both for added life and durability.

Energy-saver bulbs consume less energy without a significant reduction in light output.

Screw-In Medium Base—1¹⁄₁₆″ Base Dia.

Watts	Description/ Use	Glass Type	Volts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	Pkg. Qty.		Per Pkg.
***Standard Household A21—**2⅝″ Bulb Dia.; 5⁵⁄₁₆″ O'all Length (unless noted)*										
30/70/100	3 Way	Soft White	120	285/920/1,205	1.6	$3.61/$8.43/$12.05	Not Rated	1	1628K43	$2.38
50/100/150	3 Way	Soft White	120	575/1,440/2,015	1.6	6.02/12.05/18.07	2,700K/2,800K/2,800K	1	1628K45	2.43
75	Rough Service	Frosted	120	660	0.9	9.03	2,700K	1	1532K43	6.26
75	Low Voltage	Frosted	12	1,420	0.9	9.03	2,900K	1	8357K16	4.43
88	Low Voltage	Frosted	12	1,750	4.6	12.48	2,700K	1	8357K17	5.60
100	Rough Service	Frosted	120	1,230	0.9	12.05	Not Rated	2	1506K53	6.20
100	Shatter Resist./ Refrigerator	Frosted	120	Not Rated	0.7	12.05	Not Rated	2	1532K35	10.21
100	Rough Serv./ Shatter Resist.	Frosted	120	Not Rated	0.9	12.05	Not Rated	2	1532K45	11.53
100	High Voltage	Frosted	240	1,230	0.9	12.05	2,900K	1	8358K45	5.02
100	High Voltage	Frosted	240	1,260	0.9	12.05	2,900K	1	8358K16	4.04
135	Energy Saver	Frosted	120	2,300	0.9	16.26	Not Rated	2	1622K48	6.07
137	Rough Serv./ Shatter Resist.	Frosted	120	1,380	9	18.07	2,700K	2	1532K47■	14.48
150	Long Life	Clear	120	1,750	18.3	18.07	2,700K	2	1728K92	9.59
150	Long Life	Frosted	120	1,750	18.3	18.07	2,700K	2	1728K93	9.35
150	Rough Service	Frosted	120	2,205	0.9	18.07	Not Rated	2	1506K54	10.97
***Large Standard Household A23—**2⅞″ Bulb Dia.; 6⁵⁄₁₆″ O'all Length*										
132	General	Frosted	120	1,770	4.6	18.72	2,700K	1	1728K87	2.44
150	General	Clear	120	2,255	0.7	18.07	2,800K	2	15115K64	5.57
150	General	Frosted	120	1,935	0.7	18.07	2,700K	2	15115K63	6.52
200	General	Clear	120	3,665	1.4	24.09	Not Rated	1	15115K66	3.00
200	General	Frosted	120	3,800	0.7	24.09	Not Rated	2	15115K65	5.24
***Globe Shape G25—**3⅛″ Bulb Dia.; 4⁷⁄₁₆″ O'all Length*										
25	General	Clear	120	235	1.8	3.01	Not Rated	1	1449T15	1.83
40	General	Clear	120	460	1.8	4.82	Not Rated	1	1449T16	2.00
***Globe Shape G40—**5″ Bulb Dia.; 6¹⁵⁄₁₆″ O'all Length*										
40	General	Clear	120	370	2.7	4.82	Not Rated	1	1449T19	7.10
40	General	White	120	335	2.7	4.82	Not Rated	1	1449T18	6.10
***Pear Shape PS25—**3⅛″ Bulb Dia.; 6¹⁵⁄₁₆″ O'all Length (unless noted)*										
150	Shatter Resist.	Frosted	120	2,200	0.9	18.07	2,900K	1	1532K37	9.76
150	High Voltage	Clear	240	1,840	2.3	18.07	Not Rated	2	8358K27	16.55
173	General	Frosted	120	2,335	4.6	24.97	2,700K	1	1728K77★	3.31
200	High Voltage	Frosted	240	3,000	0.9	24.09	Not Rated	2	8358K28	13.32
264	General	Frosted	120	3,595	4.6	37.45	2,700K	1	1728K78★	4.04
300	General	Clear	120	6,280	0.7	36.14	Not Rated	1	15115K68	5.47
300	General	Frosted	120	6,300	0.7	36.14	Not Rated	1	15115K67	4.95
***Pear Shape PS30—**3¾″ Bulb Dia.; 8¹⁄₁₆″ O'all Length*										
200	Rough Service	Frosted	120	2,800	0.9	24.09	Not Rated	1	1449T11	9.36
200	Shatter Resist.	Frosted	120	2,980	0.7	24.09	Not Rated	1	1449T12	9.39
200	Rough Serv./ Shatter Resist.	Frosted	120	2,715	0.9	24.09	Not Rated	1	1449T13	10.03
300	General	Frosted	120	5,860	Not Rated	Not Rated	Not Rated	1	1449T24	6.03

■ PTFE coated. O'all length is 4¹⁵⁄₁₆″. ★ O'all length is 6¹³⁄₁₆″.

Screw-In Candelabra Base—½″ Base Dia.

Bulb Shape	Watts	Description/ Use	Glass Type	Volts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Per Pkg.
B10	32	General	Crystal	120	290	3.7	$3.85	2,900K	3⅞″	2	1628K28	$6.14
B10	40	General	Clear	120	320	2.7	4.82	2,900K	3⅞″	2	1628K35	2.97
C7	4	General	Clear	120	15	1.4	0.48	2,400K	2⅛″	10	1628K175	6.67
C7	7	General	Clear	120	30	0.9	0.84	2,400K	2⅛″	10	1628K178	6.67
S6	3	General	Clear	120	5	1.8	0.36	2,400K	1⅞″	1	1628K26	1.29
S6	6	General	Clear	120	20	0.9	0.72	2,400K	1⅞″	10	1628K34	12.05
S6	6	Low Voltage	Clear	12	30	0.9	0.72	2,400K	1⅞″	10	8357K25	9.03
S6	6	Low Voltage	Clear	24	35	0.9	0.72	2,400K	1⅞″	10	1628K73	12.05
S6	6	Low Voltage	Clear	75	30	0.9	0.72	2,400K	1⅞″	10	1628K74	12.04
S6	10	High Voltage	Clear	240	30	0.9	1.20	2,400K	1⅞″	1	8358K11	2.05
S11	25	General	Clear	120	160	0.9	3.01	2,400K	2¼″	1	1317T11	2.57
T6	10	Long Life	Clear	120	30	18	1.20	2,700K	4½″	1	1317T12	3.14
T6	15	General	Clear	120	105	1.8	1.87	2,700K	3¹⁄₁₆″	1	1611K71	3.00
T6	15	General	Clear	120	110	1.8	1.81	Not Rated	3¹⁄₁₆″	1	1611K26	4.08
T8	25	General	Clear	120	160	0.9	3.01	2,400K	2⅝″	1	1611K27	1.80

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For information about light bulbs, see page 682.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Incandescent Light Bulbs *(Continued from previous page)*

Screw-In Intermediate Base—11/16″ Base Dia.

Bulb Shape	Watts	Description/ Use	Glass Type	Volts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Per Pkg.
A15	40	Ceiling Fan	Clear	120	250	0.9	$7.49	2,700K	3½″	2	1317T21	$2.55
A15	60	Ceiling Fan	Clear	120	750	0.9	4.99	2,700K	3½″	2	1317T22	3.07
S11	10	General	Clear	120	30	0.9	1.20	2,400K	2 5/16″	1	1317T16	2.42
S11	10	General	Clear	120	65	5	1.20	2,700K	2 5/16″	1	1317T17	2.97
S11	40	General	Frosted	120	355	0.9	4.82	2,400K	2 5/16″	1	1317T18	2.48
T6	10	Long Life	Clear	120	30	18	1.20	2,700K	4½″	1	1317T19	3.14
T6½	20	General	Frosted	120	150	0.9	2.41	Not Rated	5½″	1	1611K22	5.00
T6½	25	General	Clear	120	185	0.9	3.01	Not Rated	5⅜″	1	1611K17	4.63
T6½	25	General	Frosted	120	225	0.9	3.01	2,900K	5½″	1	1611K14	4.30
T6½	40	Refrigerator	Clear	120	365	0.9	4.82	2,900K	5½″	1	1611K37	5.24
T7	15	General	Clear	120	100	0.9	1.81	Not Rated	2¼″	1	1611K13	3.35
T8	25	General	Clear	120	230	0.9	3.01	2,900K	2⅝″	1	1611K91	4.16

Screw-In Mogul Base—1 5/8″ Base Dia.

Bulb Shape	Watts	Description/ Use	Glass Type	Volts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Per Pkg.
PS35	300	General	Frosted	120	5,070	2.3	$36.14	2,900K	9⅜″	1	1449T21	$6.98

Double-Contact (DC) Bayonet Base—5/8″ Base Dia.

Bulb Shape	Watts	Description/ Use	Glass Type	Volts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Per Pkg.
S6	6	General	Clear	24	35	0.9	$0.72	2,400K	1 13/16″	10	1628K81	$12.05
S6	6	General	Clear	120	20	0.9	0.72	2,400K	1 13/16″	10	1628K82	12.05
S11	30	General	Clear	24	50	0.9	3.61	Not Rated	2¼″	1	1317T13	5.78
S11	30	General	Clear	75	285	0.9	3.61	2,400K	2¼″	1	1317T14	2.31
T6	10	Long Life	Clear	120	30	18	1.20	2,700K	4½″	1	1317T15	3.14
T6½	20	General	Clear	120	125	0.9	2.41	2,400K	5½″	1	1611K72	3.45
T6½	20	General	Frosted	120	90	9.1	2.41	2,900K	5 9/16″	1	1611K21	4.45
T6½	25	General	Clear	120	160	0.9	3.01	2,400K	5½″	1	1611K32	4.32
T6½	25	General	Frosted	120	145	0.9	3.01	2,400K	5½″	1	1611K31	4.60
T8	25	General	Clear	120	195	0.9	3.01	Not Rated	2 5/16″	1	1611K29	3.73

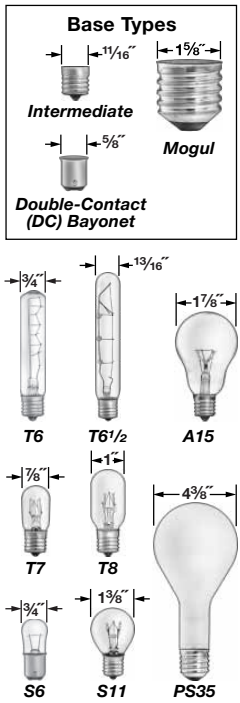

Spiral Screw-In Compact Fluorescent Light Bulbs

Made of one continuous tube, these bulbs cast light like standard incandescent bulbs but require less energy. Bulbs have an integral ballast and operate on 120 volts. CRI (color rendering index) is 80-86. Bulbs are typically used in dry, indoor environments, unless otherwise indicated. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use. *Note:* Bulbs contain mercury. For more on clean up and safe disposal, visit www.epa.gov/cfl.

Yellow spiral bulb won't attract insects. *Shatter-resistant spiral* bulbs have a silicone outer coating that retains glass shards if the bulb breaks.

Watts	Equivalent Incandescent Bulb, watts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Size, Dia. × Lg.	Min. Start Temp.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Spiral Shape											
5	25	300	11	$0.60	2,700K	1⅞″ × 3″	–20°F	12	1949K62	$7.52	$6.40
9	40	600	7.3	1.08	2,700K	1⅜″ × 4 5/16″	–27°F	12	1949K81	4.49	3.82
9	40	600	11	1.08	2,700K	1 13/16″ × 3⅝″	–20°F	12	1949K11	7.37	6.27
9	40	600	11	1.08	4,100K	1 13/16″ × 3⅝″	–20°F	12	1949K21	7.37	6.27
12/21/ 33	50/100/ 150	600/1,500/ 2,200	9.1	1.45/2.53/ 3.85	2,700K	2 11/16″ × 5 3/16″	–27°F	12	1949K65	14.90	12.68
13	60	800	7.3	1.57	4,100K	1⅜″ × 4 5/16″	–27°F	12	1949K48	4.49	3.82
13	60	800	7.3	1.57	6,500K	1⅜″ × 4 5/16″	–27°F	12	1949K49	4.49	3.82
13	60	925	11	1.57	2,700K	1 13/16″ × 3 29/32″	–20°F	12	1949K55	8.36	7.11
13	60	925	11	1.57	4,100K	1 13/16″ × 3 15/16″	–20°F	12	1949K23	7.37	6.27
18	75	1,170	7.3	2.17	4,100K	2¼″ × 4⅝″	–27°F	12	1949K51	5.65	4.80
18	75	1,170	7.3	2.17	6,500K	2¼″ × 4⅝″	–27°F	12	1949K54	5.64	4.80
18	75	1,300	11	2.17	2,700K	2 13/32″ × 4″	–20°F	12	1949K56	8.54	7.27
18	75	1,300	11	2.17	4,100K	2 7/16″ × 4″	–20°F	12	1949K24	8.45	7.18
23	100	1,650	11	2.77	2,700K	2 13/32″ × 4 13/32″	–20°F	12	1949K57	9.38	8.12
23	100	1,650	11	2.77	4,100K	2 7/16″ × 4 7/16″	–20°F	12	1949K25	9.02	7.66
25	100	1,800	9.1	3.01	2,700K	2¼″ × 5″	–27°F	12	1949K53	7.95	6.76
27	100	1,850	11	3.25	2,700K	2 7/16″ × 5⅛″	–20°F	12	1949K16	10.12	8.60
27	100	1,850	11	3.25	4,100K	2 7/16″ × 5⅛″	–20°F	12	1949K26	10.12	8.60
30	125	2,000	7.3	3.61	2,700K	2¼″ × 5⅛″	–27°F	12	1949K63	10.26	8.72
40	200	2,800	9.1	4.82	2,700K	2¾″ × 7 3/16″	–27°F	12	1949K64	12.39	10.53
42	150	2,800	11	5.06	4,100K	2 7/16″ × 5 11/16″	–20°F	12	1949K27	19.94	16.94
42	150	2,850	11	5.06	2,700K	2 7/16″ × 5 11/16″	–20°F	12	1949K17	19.94	16.94
65	300	3,900	7.3	7.83	2,700K	4¼″ × 10½″	–27°F	12	1949K18	24.20	20.57
80.5	400	5,440	9	9.70	6,500K	3¾″ × 9¾″	–13°F	12	1949K19	44.51	37.83
103	500	6,720	9	12.43	6,500K	4″ × 10½″	–13°F	6	1949K36	57.10	48.54
Yellow Spiral Shape											
13	60	Not Rated	7.3	1.57	Not Rated	1⅜″ × 4½″	–27°F	12	9653K1	10.53	8.95
Shatter-Resistant Spiral Shape											
19	75	1,200	9.1	2.29	2,700K	2 5/16″ × 4⅜″	–20°F	10	9591K1	25.61	21.76
23	100	1,400	9.1	2.77	2,700K	2 5/16″ × 4 13/16″	–20°F	10	9591K2	25.67	21.82
Dimmable Spiral Shape—*20-100% Dimming Range*											
23	100	1,400	9.1	2.77	4,100K	2⅜″ × 4⅞″	–20°F	12	1949K28	16.40	14.39
23	100	1,500	9.1	2.77	2,700K	2 7/16″ × 4 15/16″	–20°F	12	1949K73	18.22	15.19

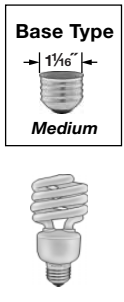

Fluorescent, Halogen & LED Light Bulbs

For information about light bulbs, see page 682.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Screw-In Compact Fluorescent Light Bulbs

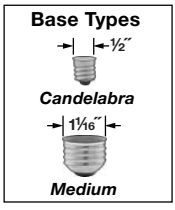

Replace your incandescent bulbs with these energy-saving alternatives—they offer equal light output but use less wattage. Bulbs have an integral ballast and operate on 120 volts. CRI (color rendering index) is 81-88. Bulbs are typically used in dry, indoor environments. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use. *Note:* Bulbs contain mercury. For more on clean up and safe disposal, visit www.epa.gov/cfl.

Candelabra base bulbs offer increased versatility by including an adapter that permanently converts bulbs to fit medium-base sockets.

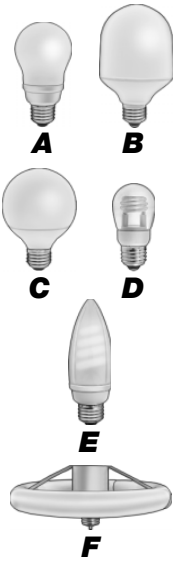

Watts	Equivalent Incandescent Bulb, watts	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Size, Dia.×Lg.	Min. Start Temp.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Medium Base— *1 1/16″ Base Dia.*											
(A) Standard Household											
4	25	225	Not Rated	Not Rated	2,700K	1 13/16″	×3 15/16″	–20°F	12	**1685K32**	$10.73	$9.12
9	40	475	7.3	$1.08	2,700K	2 1/4″	×4 1/8″	–20°F	12	**1685K34**	10.32	8.77
14	60	800	7.3	1.69	2,700K	2 7/16″	×4 7/16″	–20°F	12	**1685K36**	11.47	9.75
23	100	1,480	7.3	2.77	2,700K	2 1/2″	×5 3/4″	–27°F	12	**1685K43**	12.27	10.43
(A) Dimmable Standard Household— *5-100% Dimming Range*											
5	30	200	22.8	0.60	2,900K	2 3/8″	×4 1/4″	+5°F	15	**2117T11**	16.88	14.35
5	30	200	22.8	0.60	4,100K	2 3/8″	×4 1/4″	+5°F	15	**2117T12**	16.88	14.35
8	45	325	16.4	0.96	2,900K	2 3/8″	×4 7/8″	+5°F	15	**2117T13**	18.12	15.41
8	45	325	16.4	0.96	4,100K	2 3/8″	×4 7/8″	+5°F	15	**2117T14**	18.12	15.41
(B) Dome Shape											
14	60	800	7.3	1.69	2,700K	2 1/2″	×5 3/8″	+20°F	12	**1685K73**	17.00	14.45
14	60	900	7.3	1.69	2,700K	3″	×5 1/4″	+20°F	6	**1685K4**	17.00	14.45
19	75	1,100	7.3	2.29	2,700K	3″	×5 5/8″	+20°F	6	**1685K5**	19.44	16.52
(C) Globe Shape											
9	40	520	7.3	1.08	2,700K	3 1/8″	×4 7/16″	–20°F	6	**1685K26**	9.28	7.89
12	60	640	7.3	1.45	2,700K	3 1/8″	×4 1/4″	–27°F	12	**1685K44**	8.95	7.61
14	60	800	7.3	1.69	2,700K	3 1/8″	×4 7/16″	–20°F	6	**1685K28**	10.71	9.10
(D) Short											
2	11	80	22.8	0.24	2,700K	1 3/4″	×3 5/8″	+5°F	1	**1685K2**	——	16.67
(E) Bullet Shape											
9	40	425	7.3	1.08	2,700K	1 3/4″	×4 13/16″	+20°F	12	**1685K71**	12.76	10.85
14	60	720	7.3	1.69	2,700K	1 3/4″	×5 7/16″	+20°F	12	**1685K72**	13.29	11.30
(F) Circline Shape											
22	90	1,400	Not Rated	Not Rated	2,900K	6″	×3 11/16″	–20°F	12	**1685K94**	17.33	14.73
30	120	2,000	Not Rated	Not Rated	2,900K	9″	×3 11/16″	–20°F	10	**1685K95**	17.33	14.73
Candelabra Base with Medium-Base Adapter— *½″ Base Dia. (1 1/16″ dia. with adapter)*											
(E) Bullet Shape											
3	15	120	7.3	0.36	2,700K	1 1/2″	×4 1/4″	–27°F	12	**8806K1**	9.52	8.10
7	40	280	7.3	0.84	2,700K	1 1/2″	×4 13/16″	–27°F	12	**8806K2**	9.52	8.10

Screw-In Halogen Light Bulbs

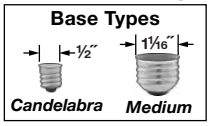

Get brighter, whiter light by replacing incandescent bulbs with their longer-lasting halogen counterparts. Halogen bulbs last two to three times longer and operate on 120 volts. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use.

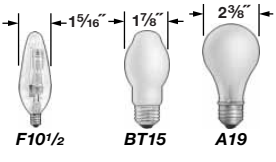

Bulb Shape	Watts	Glass Type	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Medium Base— *1 1/16″ Base Dia.*											
Standard Household A19	60	Frosted	965	2.7	$7.23	2,900K	4 3/8″	12	**1721K19**	$5.50	$4.68
Standard Household A19	75	Frosted	1,315	2.7	9.03	2,900K	4 3/8″	12	**1721K21**	5.50	4.68
Standard Household A19	100	Frosted	1,800	2.7	12.05	2,900K	4 3/8″	12	**1721K22**	6.89	5.85
Bullet Shape BT15	150	White	2,650	2.7	18.07	Not Rated	4″	10	**1721K23**	5.89	5.02
Candelabra Base— *½″ Base Dia.*											
Flame F10½	25	Clear	300	2.7	3.01	Not Rated	4 3/8″	4	**1721K31**	7.11	6.04
Flame F10½	40	Clear	540	2.7	4.82	Not Rated	4 3/8″	4	**1721K32**	7.11	6.04

Screw-In LED Light Bulbs

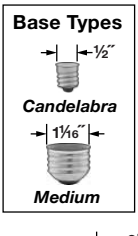

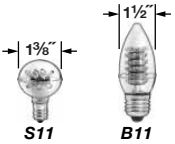

Save energy and replacement costs with LED bulbs—they last up to 10 times longer than incandescent bulbs and five times longer than fluorescent bulbs. Bulbs operate on 120 volts and are not dimmable. CRI (color rendering index) is 68-75. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use.

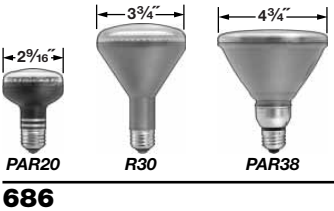

Bulb Shape	Watts	Beam Spread	Glass Type	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.		Each
Medium Base— *1 1/16″ Base Dia.*										
Floodlight										
R30	4.5	50°	Clear	190	Not Rated	Not Rated	3,000K	5 5/16″	**8715K15**	$136.46
PAR20	2.5	50°	Clear	200	Not Rated	Not Rated	3,000K	3 1/2″	**8715K14**	73.27
PAR20	2.5	50°	Clear	200	Not Rated	Not Rated	5,500K	3 1/2″	**8715K11**	69.54
PAR38	2.5	50°	Clear	180	Not Rated	Not Rated	5,500K	5 1/2″	**8715K13**	117.75
PAR38	4.5	50°	Clear	180	Not Rated	Not Rated	3,000K	5 1/2″	**8715K16**	140.00
Bullet Shape										
B11	2.4	——	Clear	50	Not Rated	Not Rated	3,000K	4 1/8″	**8697K11**	62.83
B11	2.4	——	Frosted	35	Not Rated	Not Rated	3,000K	4 1/8″	**8697K13**	62.83
Candelabra Base— *½″ Base Dia.*										
Globe Shape										
S11	1.3	——	Clear	80	Not Rated	Not Rated	3,000K	2″	**8697K21**	33.84
S11	1.3	——	Clear	80	Not Rated	Not Rated	7,000K	2″	**8697K22**	33.84

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Incandescent Spotlight and Floodlight Bulbs

Commonly called reflector bulbs, these bulbs work best for directional illumination. Bulbs are typically used in dry, indoor environments. PAR38 bulbs can also be used outdoors in an open fixture. All operate on 120 volts. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use.

Spotlight Bulbs—Generate a more concentrated beam of light.

Floodlight Bulbs—Generate a wider beam of light. *Shatter-resistant* bulbs have a PTFE outer coating that prevents shattering when water splashes the bulb and retains glass shards if the bulb breaks.

Watts	Bulb Shape	Beam Spread	Glass Type	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Spotlight Bulbs												
Screw-In Medium Base—1 1/16″ Base Dia.												
65	BR30	20°	Translucent	610	2.3	$7.83	Not Rated	5 3/8″	12	1509K11	$4.63	$3.59
Screw-In Medium Skirt Base—1 1/16″ Base Dia.												
150	PAR38	12°	Clear	2,175	0.7	18.07	2,900K	5 5/16″	15	1509K14 Ⓔ	8.37	6.60
Floodlight Bulbs												
Screw-In Medium Base—1 1/16″ Base Dia.												
30	R20	30°	Frosted	205	2.3	3.61	Not Rated	3 15/16″	12	1509K26	6.11	5.16
50	ER30	Not Rated	Frosted	430	1.8	6.02	2,700K	6 3/8″	24	14725K31	6.35	5.05
57	BR30	80°	Frosted	580	4.6	8.11	2,700K	5 3/8″	12	14725K73	4.24	3.39
65	BR30	60°	Frosted	620	1.8	7.83	2,900K	5 3/8″	24	14725K42	4.51	3.62
65	BR40	60°	Frosted	630	2.3	7.83	Not Rated	6 1/2″	8	14725K43	6.35	5.05
300	BR40	Not Rated	Frosted	2,480	1.8	36.14	Not Rated	6 1/2″	24	14725K11	14.65	11.66
Screw-In Medium Skirt Base—1 1/16″ Base Dia.												
150	PAR38	30°	Clear	2,175	0.7	18.07	2,900K	5 5/16″	15	1506K91 Ⓔ	11.07	9.03
Screw-In Mogul Base—1 5/8″ Base Dia.												
300	R40	60°	Frosted	300	0.3	36.14	2,700K	7 1/4″	24	1509K4	33.21	28.22
500	R40	Not Rated	Frosted	6,500	1.8	60.27	2,700K	7 1/4″	24	1509K44	48.95	41.57
Screw-In Intermediate Base—11/16″ Base Dia.												
25	R14	30°	Frosted	200	1.4	3.01	Not Rated	2 5/8″	12	1509K31	9.47	7.57
Plug-In Medium Side-Prong Base—1 1/2″ Base Dia.												
150	PAR38	30°	Clear	2,175	1.8	18.07	2,900K	4 5/16″	12	1509K79	16.41	13.05
Shatter-Resistant Floodlight Bulbs												
Screw-In Medium Base—1 1/16″ Base Dia.												
30	R20	40°	Translucent	220	1.8	3.61	2,700K	3 15/16″	12	1532K54	14.22	10.85
65	BR30	60°	Translucent	640	1.8	7.83	2,700K	5 3/8″	12	1532K56 Ⓔ	13.83	11.71
Screw-In Medium Skirt Base—1 1/16″ Base Dia.												
150	PAR38	30°	Translucent	2,175	0.7	18.07	Not Rated	5 5/16″	12	1532K53 Ⓔ	20.76	17.63
Colored Floodlight Bulbs												
Screw-In Medium Skirt Base—1 1/16″ Base Dia.												
100	PAR38	30°	Blue	Not Rated	1.8	12.05	2,900K	5 5/16″	6	1473K33	14.43	11.65
100	PAR38	30°	Green	Not Rated	1.8	12.05	2,900K	5 5/16″	6	1473K35	14.43	11.65
100	PAR38	30°	Red	Not Rated	1.8	12.05	2,900K	5 5/16″	6	1473K31	12.97	10.89
100	PAR38	30°	Yellow	Not Rated	1.8	12.05	2,900K	5 5/16″	6	1473K89	12.97	10.48

Ⓔ Meets federal minimum efficiency standards.

Base Types

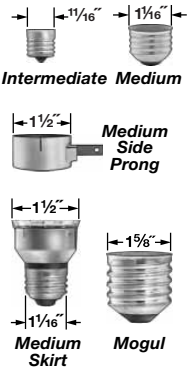

Bulb Shapes

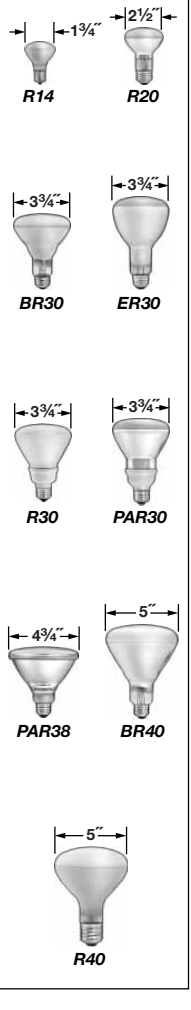

Compact Fluorescent Floodlight Bulbs

Achieve the same light output using less wattage than the incandescent alternative. All bulbs have an integral ballast, operate on 120 volts, and can be used outdoors in an open fixture, unless noted. CRI (color rendering index) is 82. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use. *Note:* Bulbs contain mercury. For more on clean up and safe disposal, visit www.epa.gov/cfl.

Dimmable Bulbs—Dimming range is 5-100% except 1685K52 and 2117T82, which have a 20-100% range.

Watts	Equivalent Incandescent Bulb, watts	Bulb Shape	Beam Spread	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	Min. Start Temp.	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Screw-In Medium Base—1 1/16″ Base Dia.													
9	25	R20	60°	400	7.3	$1.08	2,700K	−20° F	3 13/16″	12	1685K21	$12.89	$10.74
14	50	R20	Not Rated	500	7.3	1.69	2,700K	−20° F	4 5/16″	12	1685K24	12.89	10.74
14	65	R30	60°	650	7.3	1.69	2,700K	−20° F	5 7/16″	12	1685K31	12.89	10.74
15	65	R30	40°	750	7.3	1.81	4,100K	−27° F	5 1/8″	12	1685K51 ♥	10.59	9.00
16	75	PAR30	Not Rated	750	7.3	1.93	2,700K	−20° F	5 3/4″	12	1685K25	16.29	13.57
18	75	PAR38	40°	950	7.3	2.17	2,700K	−27° F	5 13/16″	12	1685K53	12.25	10.41
19	85	R40	60°	950	7.3	2.29	2,700K	−20° F	5 15/16″	12	1685K38	17.35	14.77
19	85	PAR38	60°	1,000	7.3	2.29	2,700K	−20° F	5 15/16″	12	1685K39	17.15	14.60
23	90	PAR38	60°	1,000	7.3	2.77	2,700K	−20° F	5 5/16″	12	1685K41	16.10	13.42
23	90	PAR38	Not Rated	1,200	7.3	2.77	2,700K	−20° F	6 1/4″	12	1685K74	17.88	15.21
23	120	R40	40°	1,300	9.1	2.77	2,700K	−27° F	6 5/16″	12	1685K54 ♥	13.62	12.27
23	120	PAR38	40°	1,300	9.1	2.77	2,700K	−27° F	5 13/16″	12	1685K58	12.84	10.91
Dimmable with Screw-In Medium Base—1 1/16″ Base Dia.													
5	30	R20	Not Rated	200	22.8	0.60	2,900K	+5° F	4 1/16″	15	2117T21	19.38	16.47
8	45	BR30	Not Rated	325	16.4	0.96	2,900K	+5° F	5 3/8″	6	2117T81	22.13	18.81
15	65	R30	40°	720	5.5	1.81	2,700K	−27° F	5 1/8″	12	1685K52 ♥	14.21	12.08
15	65	BR30	120°	560	5.5	1.81	2,700K	+0° F	5 1/2″	6	2117T82 ♥	26.14	22.25

♥ Not for outdoor use in an open fixture.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Halogen Spotlight and Floodlight Bulbs

Base Types

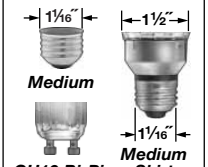

Boasting brighter, whiter light and longer life, halogen bulbs serve as great substitutes for incandescent bulbs. Comparable to Masterline and Capsylite bulbs. Bulbs can be used outdoors in an open fixture, except *GU10 bi-pin base* bulbs, which are typically used in a dry, indoor environment. All operate on 120 volts. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use.

Spotlight Bulbs—Generate a more concentrated beam of light.

Floodlight Bulbs—Generate a wider beam of light. *Long-life* bulbs last up to twice as long as standard bulbs.

Watts	Bulb Shape	Beam Spread	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Spotlight Bulbs											
Screw-In Medium Base—1 1/16" Base Dia.											
45	PAR16	10°	450	1.8	$5.42	Not Rated	3 3/16"	15	14675K45	$16.29	$14.09
50	PAR20	10°	550	2.3	6.02	2,900K	3 1/4"	15	14675K55Ⓔ	8.68	7.37
50	PAR30L	10°	570	2.7	6.02	2,800K	4 1/2"	15	14675K81	9.22	7.98
60	PAR30S	10°	785	2.7	7.23	2,800K	3 5/8"	15	14675K71	10.22	8.84
75	PAR30L	10°	975	2.7	9.03	2,900K	4 1/2"	15	14675K82	9.22	7.98
75	PAR30S	10°	1,020	3.2	9.03	2,900K	3 5/8"	15	14675K29	8.40	7.27
Screw-In Medium Skirt Base—1 1/16" Base Dia.											
45	PAR38	10°	540	2.7	5.42	2,800K	5 5/16"	12	14675K24	8.04	7.05
60	PAR38	10°	1,145	2.7	7.23	2,800K	5 5/16"	12	14675K27	11.26	10.06
75	PAR38	10°	1,025	2.7	9.03	2,900K	5 5/16"	12	14675K37	8.30	7.28
90	PAR38	10°	1,340	2.7	10.84	2,900K	5 5/16"	12	14675K21	7.88	6.57
Floodlight Bulbs											
Screw-In Medium Base—1 1/16" Base Dia.											
45	PAR16	27°	450	1.8	5.42	Not Rated	3 3/16"	15	14675K41	16.00	13.84
50	PAR20	25°	550	1.8	6.02	Not Rated	3 3/8"	15	14675K57	8.64	7.33
50	PAR30L	40°	570	2.7	6.02	2,800K	4 1/2"	15	14675K86	9.22	7.98
50	PAR30S	25°	600	2.7	6.02	2,800K	3 5/8"	15	14675K65	9.22	7.83
50	PAR30S	40°	600	2.7	6.02	2,800K	3 5/8"	15	14675K66	9.22	7.83
60	PAR16	27°	580	1.8	7.23	Not Rated	3 3/16"	15	14675K42	16.00	13.84
60	PAR30S	25°	785	2.7	7.23	2,800K	3 5/8"	15	14675K73	10.22	8.84
60	PAR30S	40°	785	2.7	7.23	2,800K	3 5/8"	15	14675K69	10.22	8.84
75	PAR30L	40°	975	2.7	9.03	2,900K	4 1/2"	15	14675K89	9.22	7.98
75	PAR30S	25°	1,020	3.2	9.03	2,900K	3 5/8"	15	14675K33	8.40	7.27
75	PAR30S	40°	1,020	3.2	9.03	2,900K	3 5/8"	15	14675K36	8.40	7.27
Long-Life with Screw-In Medium Base—1 1/16" Base Dia.											
50	PAR20	28°	500	4.6	6.02	3,000K	3"	15	2291K11Ⓔ	8.03	6.90
50	PAR30	28°	560	4.6	6.02	3,000K	4 1/2"	15	2291K31Ⓔ	8.25	7.10
50	PAR30	28°	580	4.6	6.02	3,000K	3 1/2"	15	2291K21Ⓔ	8.03	6.90
50	PAR38	28°	530	4.6	6.02	3,000K	5 3/8"	15	2291K41Ⓔ	8.25	7.01
60	PAR30	28°	750	4.6	7.23	3,000K	3 1/2"	15	2291K22Ⓔ	8.03	6.90
75	PAR38	28°	940	4.6	9.03	3,000K	5 3/8"	15	2291K42Ⓔ	8.45	7.18
Screw-In Medium Skirt Base—1 1/16" Base Dia.											
45	PAR38	25°	540	2.7	5.42	2,800K	5 5/16"	12	14675K25	7.88	6.91
60	PAR38	25°	800	2.7	7.23	2,900K	5 5/16"	12	14675K28	11.26	10.06
75	PAR38	25°	1,025	2.7	9.03	2,900K	5 5/16"	12	14675K38	8.30	7.28
75	PAR38	50°	1,060	2.3	9.03	2,900K	5 5/16"	15	14675K46Ⓔ	10.12	8.68
90	PAR38	25°	1,340	2.7	10.84	2,900K	5 5/16"	12	14675K22	7.88	6.91
90	PAR38	50°	1,310	2.3	10.84	2,900K	5 5/16"	15	14675K47Ⓔ	9.86	8.45
120	PAR38	30°	1,800	2.7	14.45	3,000K	5 5/16"	15	14675K48Ⓔ	14.78	12.67
GU10 Bi-Pin Base											
35	PAR16	30°	280	2.7	4.22	2,800K	2 1/4"	6	14675K12	12.01	10.22
50	PAR16	30°	450	2.7	6.02	2,800K	2 1/4"	6	14675K11	12.72	10.80
50	PAR16	40°	400	0.9	6.02	2,800K	2 1/8"	10	14675K13	17.88	15.19

Ⓔ Meets federal minimum efficiency standards.

Tubular Halogen Bulbs

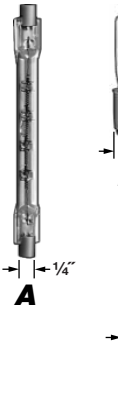

Small but powerful, these slender bulbs provide brilliant light. Bulbs operate in any position, unless noted.

Trade Number	Watts	Volts	Brightness, lumens	Rated Life, hours	O'all Size, Dia. × Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
(A) Double-Ended Recessed Single-Contact (SC) Base									
100T3Q/CL	100	120	1,750	2,000	3/8" × 3 1/16"	12	1513K19	$10.66	$8.46
150T3Q/CL	150	120	2,400	2,000	3/8" × 3 1/16"	12	1513K21	9.93	8.40
150T3Q/117/CL	150	120	2,400	1,500	5/16" × 4 11/16"	12	1513K16	9.25	7.71
250T3Q/CL	250	120	4,500	2,000	5/16" × 3 1/8"	12	1513K17	9.25	7.71
300T3Q/P/CL (EHM)	300	120	5,200	2,000	3/8" × 4 5/8"	12	1513K5	7.03	5.50
300T4Q/CL	300	120	5,900	2,000	5/16" × 3 1/8"	12	1513K18	6.40	5.44
500T3Q/P/CL (FCL)	500	120	9,500	2,000	3/8" × 4 5/8"	12	1513K2	6.49	5.47
500T3Q/P/CL	500	125/130	9,200	2,000	3/8" × 4 5/8"	12	1513K24	6.21	5.24
1000 T3Q/CL	1,000	240	21,000	3,000	3/8" × 10"	12	1513K6♠	31.60	26.78
1500 T3Q/P/CL	1,500	240	32,250	2,000	3/8" × 10"	12	1513K4♠	14.39	11.51
1500 T3Q/CL	1,500	277	33,000	3,000	3/8" × 10"	12	1513K42♠	14.31	11.44
(B) Single-Ended Double-Contact (DC) Bayonet Base									
100Q/CL/DC (ESR)	100	120	1,900	1,000	1/2" × 2 3/4"	12	1513K32	20.56	15.79
150Q/CL/DC (ETC)	150	120	2,800	2,000	1/2" × 2 7/16"	10	1513K33▲	13.75	11.70
250Q/CL/DC (ESS)	250	120	5,000	2,000	1/2" × 3 1/8"	12	1513K8	18.26	14.26
(C) Single-Ended Mini-Candelabra Base									
100Q/CL (ESN)	100	120	1,600	1,000	1/2" × 2 3/4"	12	1513K22	25.25	20.20
150Q/CL (ETG)	150	120	2,800	1,000	1/2" × 3"	12	1513K23	22.90	18.31
250Q/CL (EHT)	250	120	5,000	1,000	1/2" × 3 1/8"	12	1513K11	19.42	15.53
500Q/CL (EVR)	500	120	10,000	2,000	1/2" × 3 5/8"	12	1513K26	21.11	16.89

♠ Operates in horizontal position. ▲ Base diameter is 19/32".

For information about light bulbs, see page 682.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Stage and Studio Halogen Bulbs

Create a dramatic effect. Bulbs are ideal for professional photography, TV and video production, and stage lighting. Use in an enclosed, protected fixture.

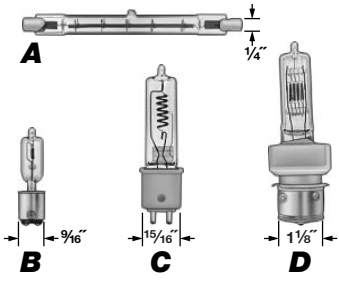

Trade Number	Watts	Volts	Brightness, lumens	Rated Life, hours	Bulb Dia.	O'all Lg.		Each
(A) Double-Ended Recessed Single-Contact (SC) Base— *Horizontal Operating Position*								
FCM	1,000	120	27,000	300	½″	4 11/16″	2286K11	$13.24
(B) Double-Contact (DC) Bayonet Base— *Any Operating Position*								
FEV	200	120	5,500	50	½″	2 7/16″	2286K21	16.91
(C) Medium Bi-Pin Base— *Any Operating Position*								
FEL	1,000	120	27,500	375	¾″	4 1/16″	2286K31	29.41
(D) Medium Prefocus Single-Contact (SC) Base— *Base-Down and Horizontal Operating Position*								
BTL	500	120	11,000	500	¾″	5″	2286K51	38.24
BTM	500	120	13,000	100	¾″	5″	2286K52	42.65
BTR	1,000	120	28,500	250	15/16″	5″	2286K55	41.88

MR-16 Halogen Spotlight and Floodlight Bulbs

Use the controlled beam of brilliant, white light from these bulbs for directional and accent lighting. Bulbs operate on 12 volts, have a bi-pin base, and do not have a lens (unless noted). Package quantity is 12. *Long-life bulbs* last at least twice as long and have a glass lens.

Spotlight Bulbs— Generate a more concentrated beam of light.

Floodlight Bulbs— Generate a wider beam of light.

Note: Light intensity is measured in candlepower, which indicates the intensity of light emitted. The higher the candlepower, the brighter the bulb.

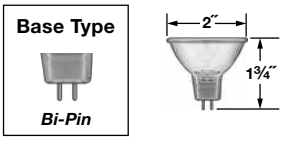

Trade Number	Watts	Beam Spread	Candle-power	Rated Life, hours		Each Partial Pkg.	Each Full Pkg.
Spotlight Bulbs							
ESX	20	12°	3,500	5,000	1465K1	$4.68	$3.98
EXT	50	12°	11,000	5,000	1465K4	4.68	3.98
EXZ	50	24°	3,600	5,000	1465K5	4.68	3.98
EYF	75	12°	13,000	5,000	1465K8	4.68	3.98
Long-Life Spotlight Bulbs							
FMV	35	24°	1,700	10,000	1835K1	11.76	9.99
EXT	50	12°	8,600	10,000	1835K3	11.76	9.80
EXZ	50	24°	2,700	10,000	1835K4	11.76	9.80

✓ Has a glass lens.

Trade Number	Watts	Beam Spread	Candle-power	Rated Life, hours		Each Partial Pkg.	Each Full Pkg.
Floodlight Bulbs							
BAB	20	36°	600	5,000	1465K3	$4.68	$3.98
BAB	20	36°	600	5,000	1465K35✓	5.81	4.94
EXN	50	36°	2,000	5,000	1465K6	4.68	3.98
EYC	75	36°	2,700	5,000	1465K7	4.68	3.98
Long-Life Floodlight Bulbs							
BAB	20	36°	450	12,000	1835K6	19.19	16.53
FMW	35	36°	950	10,000	1835K2	11.76	9.99
FMW	35	60°	370	18,000	1835K7	19.19	16.53
EXN	50	36°	1,500	10,000	1835K5	11.76	9.80
FNV	50	60°	620	18,000	1835K8	19.19	16.53

MR-16 LED Light Bulbs

Reduce time spent replacing burned out bulbs by using LEDs—they last up to 25 times longer than conventional alternatives. Bulbs operate on 12 volts, have a bi-pin base, and have an aluminum body that dissipates heat. Lens is acrylic. CRI (color rendering index) is 85.

Note: Light intensity is measured in candlepower, which indicates the intensity of light emitted. The higher the candlepower, the brighter the bulb.

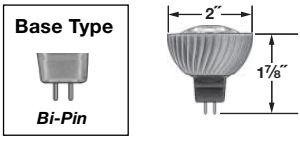

Light Appearance	Watts	Beam Spread	Candlepower	Rated Life, hours		Each
3,000K	6	40°	300	35,000	8643T5	$59.20
5,000K	6	40°	424	35,000	8643T1	59.20

Infrared Heat Bulbs

Radiate a warm glow that's perfect for heating, drying, and baking. Bulbs have a medium base, unless noted. ***Shatter-resistant*** bulbs have a PTFE outer coating that prevents shattering when the bulb is splashed with water and retains glass shards if the bulb breaks.

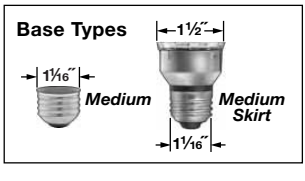

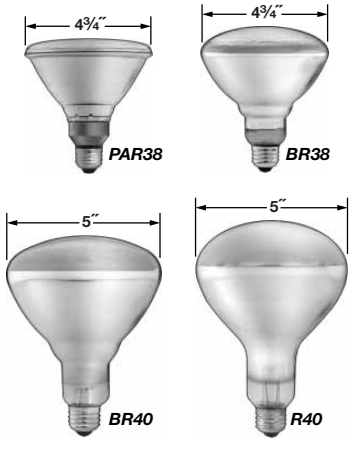

Watts	Bulb Shape	Glass Type	Volts	Rated Life, hours	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Medium Base— *1 1/16″ Base Dia.*									
125	BR40	Clear	120	5,000	6½″	4	1547K13	$6.03	$5.12
175	PAR38	Clear	120	5,000	5 5/16″	12	1547K17♣	15.97	13.58
250	BR40	Clear	120	5,000	6½″	4	1547K14	6.37	5.71
250	R40	Red	120	5,000	6⅞″	4	1547K15	15.75	13.12
375	BR40	Frosted	120	5,000	6½″	12	1547K16♣	18.80	15.98
Shatter Resistant with Medium Base— *1 1/16″ Base Dia.*									
125	BR40	Clear	120	6,000	6½″	12	2300K11	11.84	9.69
175	BR38	Clear	130	8,000	5 5/16″	12	2300K12	13.05	10.68
250	BR40	Clear	120	6,000	6½″	12	2300K13	11.84	9.69
375	R40	Clear	125	5,000	6½″	12	2300K14	16.91	13.84

♣ Medium skirt base.

Sealed-Beam & Audiovisual Light Bulbs

For information about light bulbs, see page 682.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Sealed-Beam Bulbs

Base Types

Screw Terminals

Slip-On Terminals

2 Contact Lugs

3 Contact Lugs

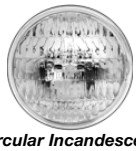

Circular Incandescent

Rectangular Halogen

Commonly used in industrial vehicles and cars, these clear bulbs are also suitable for spot, flood, and emergency lighting. Use bulbs both indoors and out. *Note:* Light intensity is measured in candlepower, which indicates the intensity of light emitted. The higher the candlepower, the brighter the bulb.

Use bulbs with *contact lugs* for automotive headlamps: two lugs for high beam, three lugs for low/high beam.

Also Available: Additional sealed-beam bulbs. Please ask for 9855T888 and specify bulb trade number.

Trade Number	Bulb Shape	Volts	Watts	Candlepower	Base Type	Rated Life, hours	O'all Size, Dia.×Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Incandescent—Circular											
4014	PAR36	6.4	18	1,500	Screw Terminals	200	4½″×2¾″	12	8351K53	$9.87	$8.39
4340	PAR36	48	80	2,500	Slip-On Terminals	400	4½″×2¾″	6	8351K651	15.19	12.91
4350	PAR36	36	60	2,100	Slip-On Terminals	400	4½″×2¾″	1	8351K66	—	26.74
4406	PAR36	12.8	35	600	Screw Terminals	300★	4½″×2¾″	6	8351K951	10.21	8.68
4411	PAR36	12.8	35	4,000	Screw Terminals	300★	4½″×2¾″	6	8351K681	9.29	7.90
4412	PAR46	12.8	35	11,000	Screw Terminals	300	5¾″×3¾″	6	8351K541	10.36	8.81
4416	PAR36	12.8	30	35,000	Screw Terminals	300	4½″×2¾″	6	8351K161	10.26	8.72
4419	PAR46	12.8	35	1,600	Screw Terminals	300	5¾″×3¾″	12	8351K232	12.22	11.00
4422	PAR36	12	35	600	Screw Terminals	300	4½″×2¾″	12	8351K71	16.51	14.04
4505	PAR36	28	50	45,000	Screw Terminals	400	4½″×2¾″	12	8351K271	19.84	17.86
4509	PAR36	13	100	110,000	Screw Terminals	25	4½″×2¾″	6	8351K233	9.29	7.90
4515	PAR36	6.4	30	55,000	Screw Terminals	100	4½″×2¾″	6	8351K211	9.95	8.46
4537	PAR46	13	100	200,000	Screw Terminals	25	5¾″×3⅛″	6	8351K741	15.83	13.45
4589	PAR36	28	50	5,000	Screw Terminals	400	4½″×2¾″	6	8351K771	10.32	8.77
5001	PAR46	12.8	50	Not Rated	2 Contact Lugs	200★	5¾″×4″	6	8351K35	9.95	8.46
7613	PAR36	6	8	400	Screw Terminals	50	4½″×2¾″	6	8351K871	9.35	7.95
Halogen—Circular											
H6024	PAR56	12.8	65/35	Not Rated	3 Contact Lugs	150/320★	7″×5″	6	8351K56	11.74	9.99
H7550	PAR36	6	8	25,000	Screw Terminals	50	4½″×2¾″	12	8351K98	27.34	23.25
H7551	PAR36	6	8	550	Screw Terminals	50	4½″×2¾″	12	8351K57	24.12	20.50
H7553	PAR36	6	12	850	Screw Terminals	50	4½″×2¾″	12	8351K58	22.25	18.91
H7557	PAR36	12	12	850	Screw Terminals	50	4½″×2¾″	12	8351K59	21.47	19.32
H7604	PAR36	12.8	50	100,000	Screw Terminals	100	4½″×2¾″	12	8351K94	28.13	23.91
H7635	PAR46	12.8	50	160,000	Screw Terminals	100	5¾″×3¾″	12	8351K841	28.57	25.71
Halogen—Rectangular							**Lg.×Wd.×Ht.**				
H4656	REC-58	12.8	35/35	Not Rated	3 Contact Lugs	200/320★	4¼″×6½″×4⅛″	6	8351K61	9.06	7.71
H6054	REC-68	12.8	65/35	Not Rated	3 Contact Lugs	150/300★	4¾″×7¾″×5½″	6	8351K42	9.47	8.06

★ Rated at 14 volts.

Audiovisual/Projector Light Bulbs

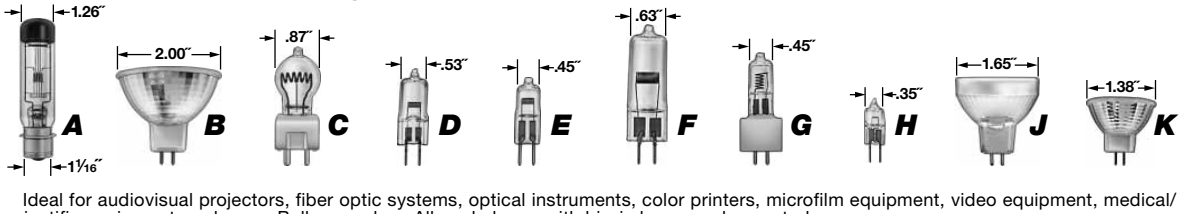

Ideal for audiovisual projectors, fiber optic systems, optical instruments, color printers, microfilm equipment, video equipment, medical/scientific equipment, and more. Bulbs are clear. All are halogen with bi-pin bases, unless noted.

Also Available: Additional bulbs. Please ask for 9992T888 and specify bulb trade number.

Trade Number	Style	Volts	Watts	Rated Life, hours	O'all Lg.		Each
CZX/DAB	*A*	120	500	25	5.75″	1535K61▲	$70.42
DDL	*B*	20	150	500	1.75″	1535K31	16.39
DDM	*B*	19	80	50	1.75″	1535K79	27.22
DYS/DYV/BHC	*C*	120	600	75	2.5″	1535K51	16.67
EFM	*B*	8	50	50	1.64″	1535K33	17.55
EFP	*B*	12	100	50	1.65″	1535K34	29.07
EFR	*B*	15	150	50	1.65″	1535K53	19.86
EHJ	*D*	24	250	50	2.17″	1535K97	13.30
EJA	*B*	21	150	40	1.75″	1535K35	19.85
EJL	*B*	24	200	50	1.75″	1535K74	26.48
EJV	*B*	21	150	40	1.75″	1535K56	18.99
EKE	*B*	21	150	200	1.75″	1535K36	21.67
EKZ	*B*	10.8	30	200	1.75″	1535K54	28.74
ELC	*B*	24	250	50	1.76″	1535K37	18.06
ELH	*B*	120	300	35	1.75″	1535K75	17.38
ENH	*B*	120	250	175	1.75″	1535K38	24.39
ENX	*B*	82	360	75	1.75″	1535K39	$19.25
EPX	*B*	14.5	90	500	1.75″	1535K77	26.12
ETJ	*B*	120	250	175	1.75″	1535K55	30.07
EVA	*E*	12	100	2000	1.73″	1535K41	17.26
EVD	*F*	36	400	50	2.36″	1535K42	19.44
EVW	*B*	82	250	50	1.75″	1535K57	20.68
EYB	*G*	82	360	75	2.24″	1535K43	15.53
FCR	*E*	12	100	50	1.73″	1535K44	8.53
FCS	*D*	24	150	50	1.97″	1535K78	9.21
FDT	*G*	12	100	50	2.24″	1535K58	18.03
FHE/ESB	*H*	6	20	100	1.18″	1535K45	7.03
FHS	*J*	82	300	70	1.75″	1535K46	20.68
FTB	*K*	12	20	2000	1.38″	1535K98	9.85
FTD	*K*	12	20	2000	1.38″	1535K59	12.74
FXL	*B*	82	410	75	1.75″	1535K47	22.82
JCR	*B*	12	100	1000	1.65″	1535K99	28.75

▲ Incandescent bulb with a medium prefocus base.

For information about light bulbs, see page 682.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Miniature Halogen Bulbs

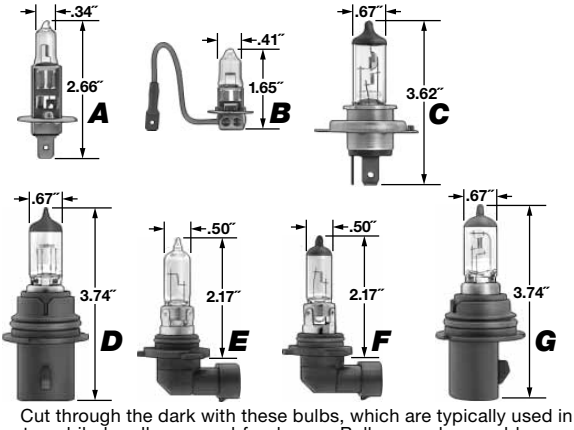

Cut through the dark with these bulbs, which are typically used in automobile headlamps and fog lamps. Bulbs are clear and have a single filament, unless noted.

Also Available: Additional miniature halogen bulbs. Please ask for 9613T888 and specify bulb trade number.

Trade Number	Style	Volts	Watts	Brightness, lumens		Each
H1	*A*	12	100	1850	9613T22	$6.75
H1	*A*	12	130	2600	9613T23	9.00
H1	*A*	24	70	1900	9613T21	7.25
H3	*B*	12	55	1450	9613T24	5.29
H3	*B*	12	100	1950	9613T26	6.00
H3	*B*	24	70	1750	9613T25	6.67
H4	*C*	12	60/55	1650/1000	9613T27 ♦	7.58
H4	*C*	12	100/80	Not Rated	9613T28 ♦	7.49
9003	*C*	12	60/55	1500/910	9613T29 ♦	9.90
9004	*D*	12	65/45	1200/700	9613T31 ♦	4.93
9005	*E*	12	65	1700	9613T32	6.53
9006	*F*	12	55	1000	9613T33	5.43
9007	*G*	12	65/55	1350/1000	9613T34 ♦	6.38

♦ Dual-filament, high/low beam.

Halogen and Xenon Bi-Pin Bulbs

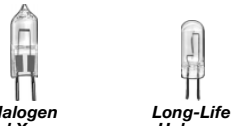

Halogen and Xenon — *Long-Life Halogen*

Equip optical instruments and task lights with these compact, low-voltage bulbs. All are clear, have a bi-pin base, and can operate in any position.

Long-life halogen bulbs last up to twice as long as other halogen bulbs. ***Xenon*** bulbs emit less heat and last much longer than halogen bulbs.

Trade Number	Watts	Brightness, lumens	O'all Size, Dia.×Lg.	Rated Life, hours		Each
12-Volt Bulbs						
Halogen						
Q5T3/CL	5	60	0.35″×1.18″	2,000	1997K21	$6.25
Q10T3/CL	10	175	0.35″×1.10″	300	1997K22	6.25
Q20T3/CL	20	350	0.35″×1.18″	2,000	1997K23	7.50
Q35T4/CL	35	650	0.43″×1.73″	2,000	1997K24	10.55
Q50T4/CL	50	1,000	0.43″×1.73″	2,000	1997K25	7.50
Q75T4/CL	75	1,600	0.43″×1.73″	2,000	1997K26	8.00
Q100T4/CL	100	2,300	0.43″×1.73″	2,000	1997K27	13.15
Long-Life Halogen						
35T4Q/CL/AX	35	600	0.5″ ×1.75″	4,000	2451K21	9.05
50T4Q/CL/AX	50	910	0.5″ ×1.75″	4,000	2451K22	9.05
Xenon						
_____	10	100	0.37″×1.34″	10,000	2794K13	9.75
_____	15	150	0.37″×1.34″	10,000	2794K14	9.75
_____	20	200	0.37″×1.34″	5,000	2794K15	9.75
24-Volt Bulbs						
Halogen						
Q20T3/CL/24	20	280	0.35″×1.18″	2,000	2288K11	13.25
Q50T3/CL/24	50	750	0.41″×1.73″	2,000	2288K12	16.30
Q100T3/CL/24	100	1,800	0.43″×1.73″	2,000	2288K13	17.50
Xenon						
_____	10	95	0.37″×1.34″	10,000	2874K13	9.75
_____	15	150	0.37″×1.34″	10,000	2874K14	9.75
_____	20	200	0.37″×1.34″	5,000	2874K15	9.75

Flashlight Bulbs

Provide portable light when and where you need it most. All bulbs are clear. ***Krypton*** bulbs last longer than incandescent bulbs while offering the same light quality. ***Halogen*** bulbs also last longer than incandescent bulbs, and cast a whiter light. ***Xenon*** bulbs last longer than halogen bulbs while offering the same light quality.

Also Available: Additional flashlight bulbs. Please ask for 9722T888 and specify bulb trade number.

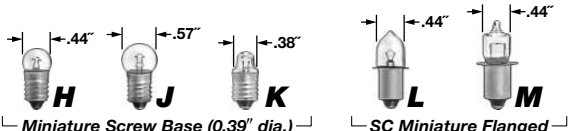

Miniature Screw Base (0.39″ dia.) — *SC Miniature Flanged Base (0.36″ dia.)*

Trade Number	Style	Volts	Amps	O'all Lg.	Pkg. Qty.		Per Pkg.
Incandescent							
13	*H*	3.7	0.3	0.94″	10	1505K111	$5.23
14	*H*	2.47	0.3	0.94″	10	1505K34	5.23
27	*J*	4.9	0.3	1.06″	10	1505K123	5.23
112	*K*	1.2	0.22	0.94″	10	1505K581	6.05
222	*K*	2.25	0.25	0.94″	10	1505K41	6.38
243	*K*	2.33	0.27	0.94″	10	1505K116■	13.50
245	*H*	2.46	0.5	0.94″	10	1505K415	5.98
425	*J*	5	0.5	1.06″	10	1505K47	9.38
502	*J*	5.1	0.15	1.06″	10	1505K582	7.48
605	*J*	6.15	0.5	1.06″	10	1505K583	7.48
PR2	*L*	2.38	0.5	1.25″	10	1505K24	6.00
PR3	*L*	3.57	0.5	1.25″	10	1505K25	6.00
PR4	*L*	2.33	0.27	1.25″	10	1505K26	6.00
PR6	*L*	2.47	0.3	1.25″	10	1505K27	6.00
PR7	*L*	3.7	0.3	1.25″	10	1505K28	6.00
PR12	*L*	5.95	0.5	1.25″	10	1505K29	6.00
PR13	*L*	4.75	0.5	1.25″	10	1505K31	6.00
PR15	*L*	4.82	0.5	1.25″	10	1505K51	6.00
PR17	*L*	4.9	0.3	1.25″	10	1505K584	6.00
PR18	*L*	7.2	0.55	1.25″	10	1505K127	6.00
PR20	*L*	8.63	0.5	1.25″	10	1505K128	6.00
PR29	*L*	3.6	0.2	1.25″	10	1505K585	6.00

■ Bulb dia. is 0.41″.

Trade Number	Style	Volts	Amps	O'all Lg.	Pkg. Qty.		Per Pkg.
Krypton							
K1	*L*	2.4	0.49	1.25″	10	1505K136	$9.50
K2	*L*	2.4	0.7	1.25″	10	1505K145	9.50
K3	*L*	3.6	0.9	1.25″	10	1505K138	9.50
K4	*L*	2.2	0.47	1.25″	10	1505K139	9.50
K12	*L*	5.95	0.7	1.25″	10	1505K141	9.50
K13	*L*	4.75	0.7	1.25″	10	1505K142	9.50
K18	*L*	7.2	0.55	1.25″	10	1505K587	9.50
KPR12	*L*	12	0.7	1.10″	1	1505K588	3.96
KPR101	*L*	2.4	0.52	1.25″	10	1505K155	9.50
KPR102	*L*	2.4	0.7	1.25″	10	1505K137	9.50
KPR103	*L*	3.6	0.75	1.25″	10	1505K146	9.50
KPR104	*L*	2.2	0.47	1.25″	10	1505K225	9.50
KPR112	*L*	6	0.75	1.25″	10	1505K151	9.50
KPR113	*L*	4.8	0.75	1.25″	10	1505K143	9.50
Halogen							
HPR50	*M*	5.2	0.85	1.25″	1	1505K172	5.90
HPR51	*M*	6.5	0.7	1.25″	1	1505K173	5.90
HPR52	*M*	2.8	0.85	1.25″	1	1505K174	5.90
HPR53	*M*	4	0.85	1.25″	1	1505K175	5.90
Xenon							
XPR12	*L*	12	0.7	1.10″	1	9722T114	4.55
XPR14	*L*	14.4	0.7	1.10″	1	1505K589	2.39
XPR18	*L*	18	0.6	1.10″	1	1505K591	4.11

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Miniature Incandescent Bulbs

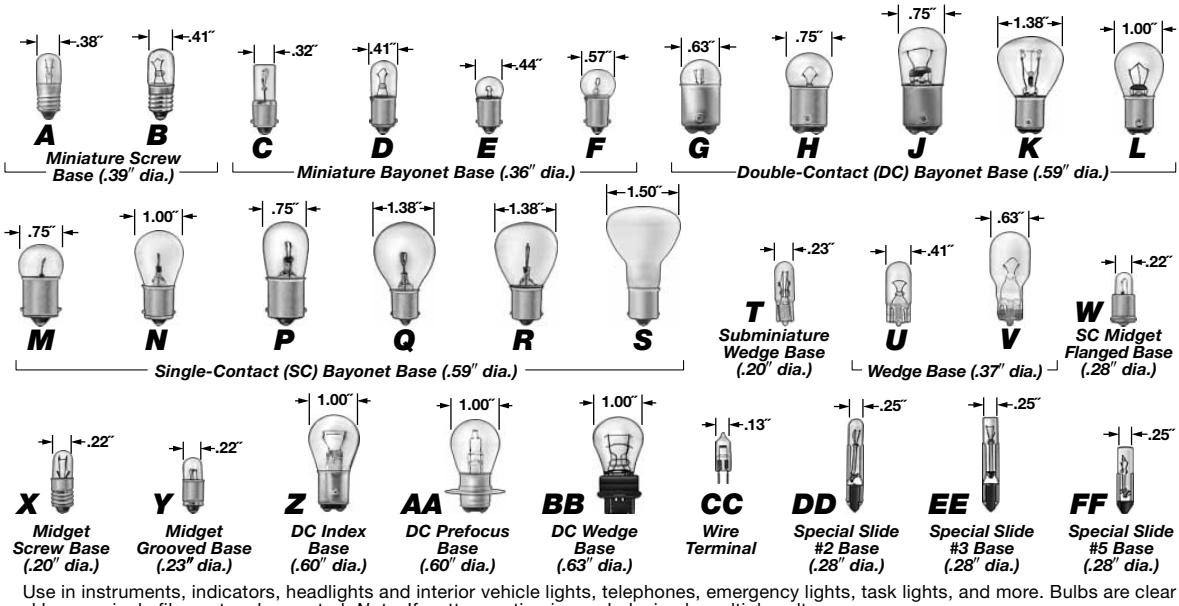

Use in instruments, indicators, headlights and interior vehicle lights, telephones, emergency lights, task lights, and more. Bulbs are clear and have a single filament, unless noted. *Note:* If wattage rating is needed, simply multiply volts×amps.

Also Available: Additional miniature bulbs. Please ask for 9527T888 and specify trade number.

Trade Number	Style	Volts	Amps	O'all Lg.	Pkg. Qty.		Per Pkg.
6PSB	*FF*	6	0.14	1.11″	5	1505K559	$11.50
24E	*EE*	24	0.04	1.69″	5	1505K561	12.85
24MB	*C*	24	0.07	1.19″	5	1505K563	12.85
24PSB	*FF*	24	0.07	1.11″	5	1505K564	11.50
24X	*DD*	24	0.04	1.69″	5	1505K565	11.81
28PSB	*FF*	28	0.04	1.11″	5	1505K566	11.50
40	*B*	6.3	0.15	1.19″	10	1505K355	5.63
44	*D*	6.3	0.25	1.19″	10	1505K15	4.48
46	*B*	6.3	0.25	1.19″	10	9527T184	5.63
47	*D*	6.3	0.15	1.19″	10	1505K21	4.48
48PSB	*FF*	48	0.05	1.11″	5	1505K568	12.85
51	*E*	7.5	0.22	0.94″	10	1505K197	5.23
53	*E*	14.4	0.12	0.94″	10	1505K214	4.86
55	*F*	7	0.41	1.07″	10	1505K13	5.23
57	*F*	14	0.24	1.07″	10	1505K52	4.86
63	*M*	7	0.63	1.44″	10	9527T06	5.59
64	*H*	7	0.63	1.44″	10	1505K358	6.75
67	*M*	13.5	0.59	1.44″	10	1505K53	5.23
73	*T*	14	0.08	0.8″	10	1505K198	5.98
74	*T*	14	0.1	0.8″	10	1505K359	5.98
85	*T*	28	0.04	0.8″	10	1505K371	7.48
86	*T*	6.3	0.2	0.8″	10	1505K372	7.48
89	*M*	13	0.58	1.44″	10	1505K373	5.63
93	*N*	12.8	1.04	2″	10	1505K11	5.98
105	*P*	12.8	1	1.75″	10	1505K374	5.98
120MB	*C*	120	0.025	1.19″	5	1505K95	9.90
120PSB	*FF*	120	0.03	1.11″	5	1505K571	12.32
130MB	*C*	130	0.025	1.19″	5	1505K226	13.75
147	*U*	7	0.43	1.06″	10	1505K378	6.75
155MB	*C*	155	0.025	1.19″	1	1505K572	3.75
161	*U*	14	0.19	1.06″	10	1505K82	5.23
168	*U*	14	0.35	1.06″	10	1505K83	5.23
193	*U*	14	0.33	1.06″	10	9527T506	5.21
194	*U*	14	0.27	1.06″	10	1505K84	4.48
259	*U*	6.3	0.25	1.06″	10	1505K381	4.86
285	*U*	5	0.09	1.06″	10	1505K91	9.36
302	*G*	28	0.17	1.38″	10	9527T054	14.25
306	*L*	28	0.51	2″	5	1505K382	11.30
311	*Q*	28	1.29	2.38″	1	1505K383	2.78
313	*D*	28	0.17	1.19″	10	1505K96	10.50
327	*W*	28	0.04	0.63″	10	1505K64	9.36
328	*W*	6	0.2	0.63″	5	1505K65	5.33
330	*W*	14	0.08	0.63″	5	1505K66	$6.30
334	*Y*	28	0.04	0.63″	10	9527T147	13.10
338	*W*	2.7	0.06	0.63″	5	1505K32	7.88
345	*W*	6	0.04	0.63″	5	1505K67	8.15
382	*W*	14	0.08	0.63″	5	1505K35	8.15
386	*Y*	14	0.08	0.63″	5	1505K385	6.90
387	*W*	28	0.04	0.63″	5	1505K36	5.08
388	*Y*	28	0.04	0.63″	5	1505K89	7.22
623	*M*	28	0.37	1.44″	5	1505K389	7.22
624	*H*	28	0.37	1.44″	10	9527T086	14.25
655	*U*	28	0.2	1.06″	10	9527T702	7.48
656	*U*	28	0.06	1.06″	10	1505K86	7.48
657	*U*	28	0.08	1.06″	10	1505K391	7.48
755	*D*	6.3	0.15	1.19″	10	1505K81	5.98
756	*D*	14	0.08	1.19″	10	1505K392	5.98
757	*D*	28	0.08	1.19″	10	1505K393	5.98
908	*V*	6	1.5	1.49″	10	1505K394	7.48
909	*V*	6	0.62	1.49″	10	1505K395	7.48
912	*V*	12.8	1	1.49″	10	1505K341	7.48
915	*V*	12	0.75	1.49″	10	1505K342	7.48
918	*V*	12.8	0.56	1.49″	10	1505K218	7.48
921	*V*	12.8	1.4	1.49″	10	1505K396	7.48
923	*V*	12.8	0.91	1.49″	10	1505K219	7.48
927	*V*	6	1.2	1.49″	10	1505K224	7.48
939	*V*	6	0.9	1.49″	10	1505K421	7.48
949	*D*	130	0.022	1.08″	1	1505K422●	9.86
1004	*J*	12.8	0.94	1.75″	10	9527T008	5.98
1062	*K*	40	0.92	2.25″	1	1505K48	13.70
1073	*N*	12.8	1.8	2″	10	1505K23	5.98
1076	*L*	12.8	1.8	2″	10	9527T26	5.98
1133	*R*	6.2	3.91	2.25″	5	1505K12	10.40
1141	*N*	12.8	1.44	2″	10	1505K461	5.98
1156	*N*	12.8	2.1	2″	10	1505K71	5.98
1157	*Z*	12.8	2.1	2″	10	1505K58●	4.86
1183	*R*	5.5	6.25	2.25″	1	1505K72	3.40
1184	*K*	5.5	6.25	2.25″	1	1505K56	3.65
1195	*R*	12.5	3	2.25″	5	1505K442	11.50
1196	*K*	12.5	3	2.25″	5	1505K443	12.63
1252	*H*	28	0.23	1.44″	10	9527T082	14.25
1383	*S*	13	1.5	2.63″	1	9527T09★	5.21
1450	*E*	24	0.035	0.94″	10	1505K398	11.25
1459	*N*	4	0.8	2″	1	1505K112	9.95

● Dual-filament bulb. ★ Bulb is frosted.

(Continued on following page)

For information about light bulbs, see page 682.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Miniature Incandescent Bulbs *(Continued from previous page)*

Trade Number	Style	Volts	Amps	O'all Lg.	Pkg. Qty.		Per Pkg.
1460	*AA*	6.5	2.75	2″	1	1505K59	$11.43
1460X	*AA*	6.5	2.75	2″	1	1505K79	14.40
1477	*A*	24	0.17	1.19″	10	9527T175	9.38
1493	*L*	6.5	2.75	2″	1	1505K61	5.91
1630	*AA*	6.5	2.75	2″	1	1505K62	4.29
1631X	*AA*	6.5	2.75	2″	1	1505K63	6.56
1767	*X*	2.5	0.2	0.63″	1	1505K114	1.23
1767-69L	*X*	2.5	0.2	0.63″	5	1505K555	14.29
1815	*D*	14	0.2	1.19″	10	1505K17	4.86
1816	*D*	13	0.33	1.19″	10	9527T301	4.85
1818	*D*	24	0.17	1.19″	5	1505K399	7.22
1819	*D*	28	0.04	1.19″	10	1505K94	8.70
1820	*D*	28	0.1	1.19″	10	1505K97	9.36
1821	*B*	28	0.17	1.19″	10	1505K199	12.60
1822	*D*	36	0.1	1.19″	5	1505K92	7.22
1828	*D*	37.5	0.05	1.19″	5	1505K411	$7.22
1829	*D*	28	0.07	1.19″	10	1505K98	9.36
1835	*D*	55	0.05	1.19″	5	1505K412	7.22
1847	*D*	6.3	0.15	1.19″	10	1505K22	5.98
1850	*D*	5	0.09	1.19″	10	1505K76	7.48
1866	*D*	6.3	0.25	1.19″	10	1505K18	9.24
1873	*D*	28	0.2	1.19″	10	1505K222	8.25
1891	*D*	14	0.24	1.19″	10	1505K93	5.23
1893	*D*	14	0.33	1.19″	10	9527T505	4.82
1906	*D*	5	0.07	0.94″	10	1505K413	9.90
2057	*Z*	14	0.48	2″	10	1505K87●	5.23
2357	*Z*	14	0.59	2″	10	1505K215●	5.98
3157	*BB*	12.8	2.1	2.13″	10	1505K216●	12.77
7219	*CC*	12	0.06	0.25″	10	1505K414	7.48

● Dual-filament bulb.

Miniature LED Bulbs

Swap out miniature incandescent bulbs for these long-lasting, energy-efficient, and durable alternatives. Great for use in panel boards, exit signs, indicating light fixtures, and as accessory lights for vehicles. LED bulbs last longer than incandescent bulbs (up to 100,000 hours) and use 80-90% less energy than conventional filament bulbs. They withstand shock, vibration, temperature changes, and frequent on/off cycling.

To Order: Specify green, red, or white. *Style 4* bulbs are also available in blue and yellow.

	Replaces Miniature Incandescent Bulb Trade Number	Volts	Amps	O'all Lg.		Each
Single Bulbs						
Screw-In Candelabra Base						
1	6S6	30 VAC/VDC	0.028	1.66″	8607K2	$16.46
1	3S6, 6S6	120 VAC/VDC	0.012	1.66″	8607K1	16.46
2	4C7, 6S6	120 VAC/VDC	0.03	1.78″	8607K3	15.27
Double-Contact (DC) Bayonet Base						
3	3S6, 6S6	30 VAC/VDC	0.025	1.66″	8620K2	16.50
3	3S6, 6S6	120 VAC/VDC	0.013	1.66″	8620K1	16.50
Miniature Bayonet Base						
4	6MB, 44, 47, 755	5 VDC/6 VDC	0.02	1.1″	6570T1	10.88
4	12MB, 756	12 VDC/14 VDC	0.02	1.1″	6570T2	10.88
4	24MB	24 VDC	0.02	1.1″	6570T3	10.88
4	120MB	130 VDC	0.008	1.1″	6570T4	10.88
4	313, 757, 1819, 1829	28 VDC	0.02	1.1″	6570T5	10.88
Subminiature Wedge Base						
5	18, 37, 73, 74	12 VDC/14 VDC	0.02	0.8″	6932K1	9.94
5	17, 85	24 VDC	0.015	0.8″	6932K2	9.94
5	17, 85	28 VDC	0.015	0.8″	6932K3	9.94
Miniature Wedge Base						
6	124, 658, 936, 2080	12 VDC/14 VDC	0.02	0.9″	7997K1	12.92
6	400, 464, 655, 656, 657	28 VDC	0.02	0.9″	7997K2	12.92
Midget Flanged Base						
7	330, 382, 394	12 VDC/14 VDC	0.02	0.65″	7890K1	11.06
7	327, 376, 387	24 VDC	0.015	0.65″	7890K2	11.06
7	327, 376, 387	28 VDC	0.015	0.65″	7890K3	11.06
#5 Telephone Slide Base						
8	24PSB	24 VDC	0.015	1.12″	8034K1	11.06
8	28PSB	28 VDC	0.015	1.12″	8034K2	11.06
8	120PSB	120 VAC	0.01	1.12″	8034K3	11.06
Four-Bulb Clusters						
Miniature Bayonet Base						
9	6MB, 44, 47, 755	5 VDC/6 VDC	0.08	1.02″	6570T6	22.20
9	12MB, 756	12 VDC/14 VDC	0.04	1.02″	6570T7	22.20
9	24MB	24 VDC	0.02	1.02″	6570T8	22.20
9	120MB	130 VDC	0.008	1.02″	6570T9	22.20
9	313, 757, 1819, 1829	28 VDC	0.02	1.02″	6570T11	22.20

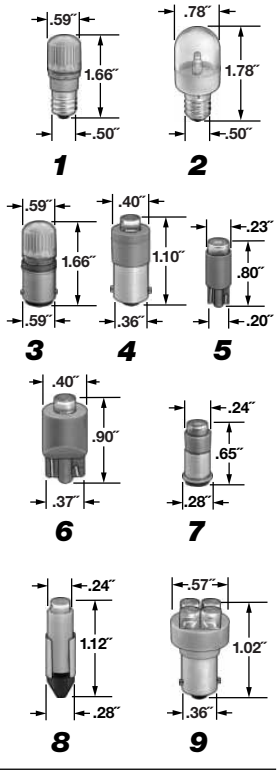

Bulb Holders for Miniature Incandescent and LED Bulbs

Pair a bulb holder with a lens cap to create a miniature lamp. ***Bulb holders*** are made of metal except *Style 13*, which is made of plastic. *Style 11* has a sealing gasket. ***Lens caps*** are plastic.

To Order: For lens caps, please specify clear, green, red, white, or yellow, unless noted.

For Bulb Base Type	Panel Cutout Dia.	Volts, AC	*Bulb Holders*	Each	*Lens Caps*	Each
For Single Bulbs						
10 Miniature Bayonet	11/16″	2-120	8275K21	$10.57	8275K22	$4.17
11 Miniature Bayonet (Oiltight)	11/16″	2-120	8275K31	12.94	8275K32	6.87
12 Midget Flange	15/32″	1.35-28	8275K11	12.73	8275K12	3.69
For Four-Bulb Clusters						
13 Miniature Bayonet	7/8″	0-120	8275K42	10.03	8275K52♥	1.82

♥Not available in white or yellow.

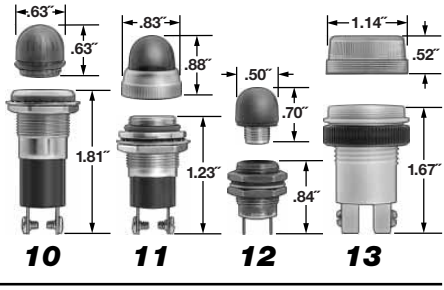

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Neon Indicating Light Bulbs

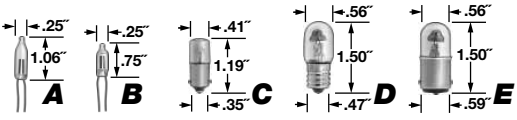

Thanks to their no-filament design, these long-lasting bulbs withstand shock and vibration. Bulbs operate on 105-125 volts and cast an orange glow. To function properly, neon bulbs require resistance in their power circuitry. A built-in resistor in *Styles D* and *E* provides the required resistance.

Trade Number	Style	Base Type	Watts	Milliamps	Rated Life, hours	Series Resistance, ohms	Pkg. Qty.		Per Pkg.
A1A	*A*	Wire Terminal	0.059	0.5	25,000	150,000	10	1510K29	$9.75
A9A	*B*	Wire Terminal	0.067	0.7	25,000	100,000	10	1510K31	9.64
B1A	*C*	Miniature Bayonet	0.04	0.3	15,000	220,000	10	1510K28	14.49
B2A	*C*	Miniature Bayonet	0.25	1.2	25,000	47,000	10	1510K36	14.49
B7A	*D*	Candelabra	0.25	2	7,500	30,000	1	1510K45	5.60
B9A	*E*	Double-Contact (DC) Bayonet	0.25	2	7,500	30,000	1	1510K46	5.60
C2A	*B*	Wire Terminal	0.067	2	25,000	30,000	10	1510K34	7.50

LED Status-Indicating Light Bulbs

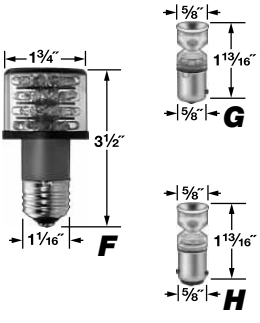

Save time and money by choosing these LED bulbs—they're energy efficient and last at least 50,000 hours.

Stand-alone bulbs, often called beacon lights, provide low-power, high-intensity signal light. They are perfect for security warning devices, flasher circuits, and industrial automation equipment. Each stand-alone bulb contains 48 LEDs.

Status-indicating bulbs make great replacements for stack lights.

To Order: Please specify color from those listed.

Available Colors	Rated Life, hours	120 VAC	Each	24 VDC	Each
(F) Stand-Alone Light Bulbs with Screw-In Medium Base					
Amber, Red	100,000	6585T2	$72.03	—	—
Blue, Green, White	100,000	6585T1	107.20	—	—
(G) Status-Indicating Light Bulbs with Single-Contact (SC) Bayonet Base					
Amber, Red	100,000	6575T78	18.90	6575T76	$18.90
Blue, Green, White	50,000	6575T77	23.40	6575T75	23.40
(H) Status-Indicating Light Bulbs with Double-Contact (DC) Bayonet Base					
Amber, Red	100,000	6575T74	18.90	6575T72	18.90
Blue, Green, White	50,000	6575T73	23.40	6575T71	23.40

LED Exit Sign Light Bulb Kits

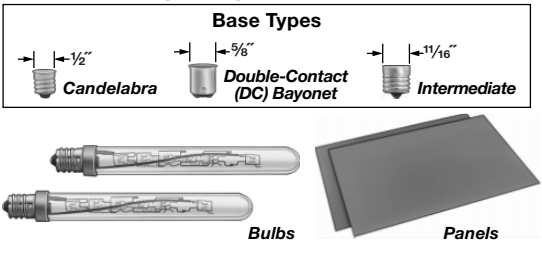

Replace standard incandescent bulbs with these longer-lasting, easy-to-install alternatives. Compatible with most single- and double-sided exit signs. Each kit contains two bulbs and two 12″ Lg.×8″ Ht.×0.031″ Thick. diffuser panels (bulbs and panels are the same color). Bulbs operate on 120 VAC, use 2.2 watts, and last up to 100,000 hours. Meet UL 924 requirements.

Equivalent Incandescent Bulb Shape	Bulb Base Type	Color	O'all Lg.		Per Kit
T6 (¾″ dia.)	Candelabra	Green	4⅝″	1557K26	$45.27
T6 (¾″ dia.)	Candelabra	Red	4⅝″	1557K25	35.61
T6½ (13/16″ dia.)	DC Bayonet	Red	4 27/32″	1557K15	35.61
T6½ (13/16″ dia.)	Intermediate	Red	4 27/32″	1557K35	35.61

Plug-In Compact LED Light Bulb

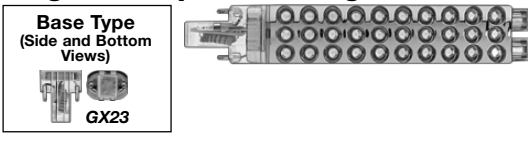

Replace your 13-watt 2-pin (GX23) base compact fluorescent bulb with this LED alternative—it lasts up to 10 times longer and is more durable. Bulb operates on 120 VAC.

Watts	Base Type	O'all Lg.	Rated Life, hours		Each
3	GX23	6⅞″	100,000	8746T1	$32.63

Plug-In Compact Fluorescent Light Bulbs with Ballast

Light Bulbs—Choose these energy-efficient spiral bulbs, and you can skip the search for a compatible ballast. Each bulb has a ballast built into the base. CRI is 82. Bulbs have a 2-pin base. Life rating and yearly energy cost are based on three hours per day, $0.11 per kWh. Cost depends on rates and use. Ratings are provided at 120 volts. *Note:* Bulbs contain mercury. For more on clean up and safe disposal, visit www.epa.gov/cfl.

Locking Adapter—Screw this adapter into a standard socket for medium-base bulbs (1 1/16″ dia.) and it will accept GU24 plug-in base bulbs instead. Adapter will permanently adapt sockets.

Watts	Equivalent Incandescent Bulb, watts	O'all Lg.	Brightness, lumens	Rated Life, years	Est. Yearly Energy Cost	Light Appearance		Each
9	45	3.4″	600	Not Rated	Not Rated	4,100K	1528K23	$5.07
13	60	3.8″	900	9.1	$1.57	2,700K	1528K12	5.86
13	60	3.6″	900	Not Rated	Not Rated	4,100K	1528K84	5.22
18	75	3.8″	1,200	Not Rated	Not Rated	4,100K	1528K3	6.85
18	75	3.8″	1,200	Not Rated	Not Rated	2,700K	1528K8	6.85
23	90	4.4″	1,600	Not Rated	Not Rated	4,100K	1528K111	7.57
23	100	4.2″	1,600	9.1	2.77	2,700K	1528K16	7.86
27	100	4.8″	1,800	Not Rated	Not Rated	4,100K	1528K4	9.64
27	100	4.8″	1,800	Not Rated	Not Rated	2,700K	1528K9	9.64
32	120	5.1″	2,100	Not Rated	Not Rated	4,100K	1528K59	14.97
42	150	5.9″	2,800	Not Rated	Not Rated	4,100K	1528K7	16.02
Locking Adapter							1528K1	3.60

For information about light bulbs, see page 682. For information about light appearance, see page 696.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Plug-In Compact Fluorescent Light Bulbs

Comparable to PL, Dulux, and Biax bulbs, these fluorescent bulbs last longer and use less energy than incandescent and halogen options. CRI (color rendering index) is 82. ***Shatter-resistant bulbs*** have a plastic coating that retains glass shards if the bulb breaks.

Use *2-pin bulbs* with magnetic ballasts and *4-pin bulbs* with electronic ballasts. *Note:* Bulbs do not come with a ballast.

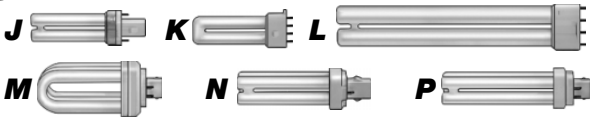

Base Types (Side and Bottom Views)

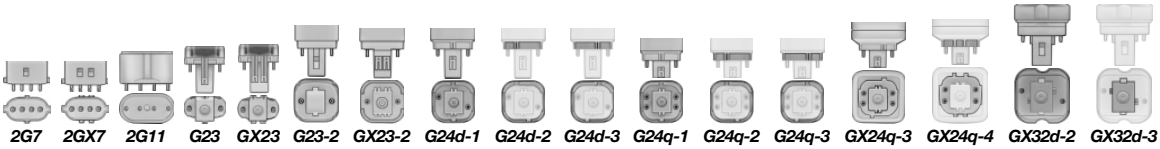

Watts	Base Type	O'all Lg.	Light Appearance	Brightness, lumens	Rated Life, hours	Philips	Equivalent To Osram/Sylvania	General Electric		Each
(J) Short Twin-Tube—2-Pin Base										
5	G23	4.1″	2,700K	250	10,000	PL-S 5W/827/2P/ALTO	CF5DS/827	F5BX/SPX27	**1528K94**	$4.26
7	G23	5.3″	2,700K	400	10,000	PL-S 7W/827/2P/ALTO	CF7DS/827	F7BX/SPX27	**1528K91**	4.26
7	G23	5.3″	3,500K	400	10,000	PL-S 7W/835/2P/ALTO	CF7DS/835	F7BX/SPX35	**1528K49**	4.34
7	G23	5.3″	4,000K	400	10,000	PL-S 7W/841/2P/ALTO	CF7DS/841	F7BX/SPX41	**1528K66**	4.26
9	G23	6.6″	2,700K	600	10,000	PL-S 9W/827/2P/ALTO	CF9DS/827	F9BX/SPX27	**1528K92**	4.26
9	G23	6.6″	3,500K	600	10,000	PL-S 9W/835/2P/ALTO	CF9DS/835	F9BX/SPX35	**1528K52**	4.34
9	G23	6.6″	4,000K	600	10,000	PL-S 9W/841/2P/ALTO	CF9DS/841	F9BX/SPX41	**1528K65**	4.26
13	GX23	7″	2,700K	825	10,000	PL-S 13W/827/2P/ALTO	CF13DS/827	F13BX/SPX27	**1528K93**	4.26
13	GX23	7″	3,500K	825	10,000	PL-S 13W/835/2P/ALTO	CF13DS/835	F13BX/SPX35	**1528K53**	4.26
13	GX23	7″	4,000K	825	10,000	PL-S 13W/841/2P/ALTO	CF13DS/841	F13BX/SPX41	**1528K51**	4.26
13	GX23	7″	5,000K	810	10,000	PL-S 13W/850/2P/ALTO	CF13DS/850	F13BX/SPX50	**1528K101**	4.26
(J) Shatter-Resistant Short Twin-Tube—2-Pin Base										
7	G23	5.3″	4,100K	410	10,000	PL-S 7W/841	CF7DS/841	F7BX/SPX41	**8621K1**	12.32
9	G23	6.4″	4,100K	590	10,000	PL-S 9W/841	CF9DS/841	F9BX/SPX41	**8621K2**	12.32
13	GX23	6.9″	4,100K	800	10,000	PL-S 13W/841	CF13DS/841	F13BX/SPX41	**8621K3**	13.51
(K) Short Twin-Tube—4-Pin Base										
9	2G7	5.7″	4,100K	580	10,000	—	CF9DS/E/841	—	**1528K54**	7.78
13	2GX7	6.2″	2,700K	800	10,000	—	CF13DS/E/827	—	**1528K57**	7.52
13	2GX7	6.2″	4,100K	800	10,000	—	CF13DS/E/841	—	**1528K56**	7.52
(L) Long Twin-Tube—4-Pin Base										
18	2G11	8.9″	3,000K	1,250	15,000	PL-L 18W/830/4P	FT18DL/830/RS	F18BX/SPX30/RS	**1528K81**	14.37
18	2G11	8.9″	3,500K	1,250	15,000	PL-L 18W/835/4P	FT18DL/835/RS	F18BX/SPX35/RS	**1528K26**	14.37
18	2G11	8.9″	4,100K	1,250	15,000	PL-L 18W/841/4P	FT18DL/841	F18BX/SPX41	**1528K98**	14.34
24	2G11	12.7″	4,000K	1,800	15,000	PL-L 24W/841/4P	FT24DL/841	F27/24BX/SPX41	**1528K99**	14.37
36	2G11	16.4″	3,000K	2,900	15,000	PL-L 36W/830/4P	FT36DL/830	F39/36BX/SPX30	**1528K83**	14.37
36	2G11	16.4″	3,500K	2,900	15,000	PL-L 36W/835/4P	FT36DL/835	F39/36BX/SPX35	**1528K24**	14.37
36	2G11	16.4″	4,000K	2,900	15,000	PL-L 36W/841/4P	FT36DL/841	F39/36BX/SPX41	**1528K79**	14.37
40	2G11	22.5″	3,000K	3,300	20,000	PL-L 40W/830/4P RS/IS	FT40DL/830/RS	F40/30BX/SPX30	**1528K88**	14.37
40	2G11	22.5″	4,000K	3,300	10,000	PL-L 40W/841/4P RS/IS	FT40DL/841/RS	F40/30BX/SPX41	**1528K78**	14.37
50	2G11	22.5″	3,000K	4,300	20,000	PL-L 50W/830/4P RS	—	F50BX/SPX30/RS	**1528K41**	17.50
55	2G11	21.1″	4,100K	4,800	12,000	—	FT55DL/841/ECO	F55BX/841	**1528K42**	24.89
(M) Triple-Tube—4-Pin Base										
26	GX24q-3	5″	3,000K	1,800	12,000	PL-T 26W/830/4P/ALTO	CF26DT/E/IN/830	F26TBX/SPX30/A/4P	**1528K61**	16.37
32	GX24q-3	5.6″	3,000K	2,400	12,000	PL-T 32W/830/4P/ALTO	CF32DT/E/IN/830	F32TBX/SPX30/A/4P	**1528K63**	16.37
32	GX24q-3	5.6″	4,000K	2,400	12,000	PL-T 32W/841/4P/ALTO	CF32DT/E/IN/841	F32TBX/SPX41/A/4P	**1528K18**	16.37
42	GX24q-4	6.2″	3,000K	3,200	12,000	PL-T 42W/830/4P/ALTO	CF42DT/E/IN/830	F42TBX/SPX30/A/4P	**1528K45**	16.37
42	GX24q-4	6.3″	4,000K	3,200	12,000	PL-T 42W/841/4P/ALTO	CF42DT/E/IN/841	F42QBX/SPX41/A/4P	**1528K21**	16.37
(N) Quad-Tube—2-Pin Base										
9	G23-2	4.3″	2,700K	525	10,000	—	CF9DD/827/ECO	F9DBX23T4/SPX27	**1528K55**	12.75
13	GX23-2	4.8″	2,700K	760	10,000	PL-C 13W/827/USA/2P/ALTO	CF13DD/827	F13DBX23T4/SPX27	**1528K74**	10.71
13	GX23-2	4.8″	4,000K	760	10,000	PL-C 13W/835/USA/2P/ALTO	CF13DD/835	F13DBX23T4/SPX35	**1528K33**	10.71
13	GX23-2	4.8″	4,000K	760	10,000	PL-C 13W/841/USA/2P/ALTO	CF13DD/841	F13DBX23T4/SPX41	**1528K47**	10.71
13	G24d-1	5.5″	2,700K	900	10,000	PL-C 13W/827/2P/ALTO	—	F13DBXT4/SPX27	**1528K85**	10.89
18	G24d-2	5.9″	2,700K	1,200	10,000	PL-C 18W/827/2P/ALTO	CF18DD/827	F18DBXT4/SPX27	**1528K86**	11.63
18	G24d-2	5.9″	3,500K	1,200	10,000	PL-C 18W/835/2P/ALTO	CF18DD/835	F18DBXT4/SPX35	**1528K32**	11.63
18	G24d-2	5.9″	4,000K	1,200	10,000	PL-C 18W/841/2P/ALTO	CF18DD/841	F18DBXT4/SPX41	**1528K89**	11.63
22	GX32d-2	6″	2,700K	1,200	10,000	PL-C 15MM/22W/827/2P	—	—	**1528K71**	22.08
26	G24d-3	6.8″	2,700K	1,800	10,000	PL-C 26W/827/2P/ALTO	CF26DD/827	F26DBXT4/SPX27	**1528K87**	11.63
26	G24d-3	6.8″	3,500K	1,800	10,000	PL-C 26W/835/2P/ALTO	CF26DD/835	F26DBXT4/SPX35	**1528K31**	11.63
26	G24d-3	6.8″	4,000K	1,800	10,000	PL-C 26W/841/2P/ALTO	CF26DD/841	F26DBXT4/SPX41	**1528K14**	11.63
28	GX32d-3	6.8″	2,700K	1,600	10,000	PL-C 15MM/28W/827/40P	—	—	**1528K73**	22.08
(P) Quad-Tube—4-Pin Base										
13	G24q-1	5.2″	2,700K	900	10,000	PL-C 13W/827/4P/ALTO	CF13DD/E/827	F13DBX/SPX27/4P	**1528K72**	11.63
13	G24q-1	5.2″	3,500K	900	10,000	PL-C 13W/835/4P/ALTO	CF13DD/E/835	F13DBX/SPX35/4P	**1528K29**	11.63
13	G24q-1	5.6″	4,000K	900	10,000	PL-C 13W/841/4P/ALTO	CF13DD/E/841	F13DBX/SPX41/4P	**1528K77**	11.63
18	G24q-2	5.6″	2,700K	1,200	10,000	PL-C 18W/827/4P/ALTO	CF18DD/E/827	F18DBX/SPX27/4P	**1528K69**	13.08
18	G24q-2	5.6″	3,500K	1,200	10,000	PL-C 18W/835/4P/ALTO	CF18DD/E/835	F18DBX/SPX35/4P	**1528K28**	13.08
18	G24q-2	5.6″	4,000K	1,200	10,000	PL-C 18W/841/4P/ALTO	CF18DD/E/841	F18DBX/SPX41/4P	**1528K76**	13.08
26	G24q-3	6.5″	2,700K	1,800	10,000	PL-C 26W/827/4P/ALTO	CF26DD/E/827	F26DBX/SPX27/4P	**1528K67**	13.08
26	G24q-3	6.5″	3,500K	1,800	10,000	PL-C 26W/835/4P/ALTO	CF26DD/E/835	F26DBX/SPX35/4P	**1528K27**	13.08
26	G24q-3	6.5″	4,000K	1,800	10,000	PL-C 26W/841/4P/ALTO	CF26DD/E/841	F26DBX/SPX41/4P	**1528K68**	13.08

Fluorescent Light Bulbs

For information about light bulbs, see page 682.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

About Matching Light Appearance to Your Current Fluorescent Light Bulb

Light appearance, measured in degrees Kelvin, indicates how warm or cool light appears. Simply find the light appearance (3,000K), description, or abbreviation (shown at right) listed on your bulb and choose a replacement to match.

For additional information about CRI (color rendering index) and light appearance, go to mcmaster.com and search for **15115KAC**.

Light Appearance	Description	Possible Abbreviations
2,700K	Warm	#27, 827
3,000K	Warm White	#30, 730, 830, 930 or WW
3,500K	Neutral	#35, 735, 835
4,100K	Cool White	#41, 741, 841, or CW, CWX
5,000K	Daylight	#50, 750, 850, 950
6,500K	Cool Daylight	#65, 765, 865, or D, DX

T12 (1½" Diameter) Fluorescent Light Bulbs

Medium Bi-Pin Base

Single-Pin Base

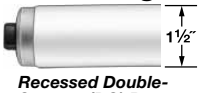

Recessed Double-Contact (DC) Base

Use these bulbs in dry environments. *Low-mercury bulbs* (comparable to Alto, Eco, Ecologic, and Ecolux bulbs) are more environmentally friendly than standard fluorescent bulbs. Bulbs ***for use with preheat ballasts*** require a starter for operation (see page 704) and may take several seconds to warm up.

Shatter-resistant bulbs have a plastic coating that retains glass shards if the bulb breaks and can be used in an open fixture rated for outdoor use. USDA approved, FDA compliant, and meet OSHA regulations.

Watts	Bulb Lg.	Trade Number♠	Light Appearance	Brightness, lumens	Rated Life, hours	CRI ✓	Low Mercury	Mini Package Pkg. Qty.	Mini Package Per Pkg.	Standard Package Pkg. Qty.	Standard Package Per Pkg.
General Service Bulbs											
For Use with Preheat Ballasts— *Medium Bi-Pin Base*											
14	15"	F14T12	4,100K	710	9,000	62	No	6	**1501K6**	30	**1501K1** $188.08
15	18"	F15T12	4,100K	800	9,000	62	No	6	**1501K7** 51.76	30	**1501K3** 196.43
20	24"	F20T12	4,100K	1,200	9,000	62	Yes	6	**1501K24** 28.38	30	**1501K4** 90.19
For Use with Rapid-Start Ballasts— *Medium Bi-Pin Base*											
30	36"	F30T12	4,100K	2,250	18,000	62	Yes	6	**1501K71** 43.59	30	**1501K53** 180.42
34	48"	F34T12	3,000K	2,700	20,000	53	Yes	6	**1683K42** 26.27	30	**1683K52** 83.49
34	48"	F34T12	3,500K	2,800	20,000	82	Yes	6	**1683K75** 37.37	30	**1683K19** 133.43
34	48"	F34T12	4,100K	2,650	20,000	62	Yes	6	**1683K12** 22.68	30	**1683K13** 55.83
34	48"	F34T12	4,100K	2,800	20,000	82	Yes	6	**1683K63** 37.37	30	**1683K11** 133.43
34	48"	F34T12	5,000K	2,950	24,000	85	Yes	6	**1683K44** 45.27	30	**1683K54** 168.59
34	48"	F34T12	6,500K	2,025	20,000	84	Yes	6	**1683K76** 40.87	30	**1683K17** 159.37
40	48"	F40T12	3,500K	3,200	20,000	82	Yes	6	**1683K77** 32.59	30	**1683K18** 130.37
40	48"	F40T12	4,100K	3,200	20,000	82	Yes	6	**1683K41** 36.27	30	**1501K57** 132.48
40	48"	F40T12	4,100K	3,600	24,000	85	Yes	6	**1683K46** 41.22	30	**1683K56** 159.03
40	48"	F40T12	5,000K	3,600	24,000	85	Yes	6	**1683K47** 43.97	30	**1683K57** 174.93
40	48"	F40T12	6,500K	2,325	20,000	84	Yes	6	**1683K74** 33.37	30	**1683K16** 113.51
For Use with Instant-Start Ballasts— *Single-Pin Base*											
39	48"	F48T12	4,100K	2,950	9,000	62	Yes	6	**8355K43** 77.24	15	**8355K72** 157.19
56	72"	F72T12	4,100K	4,450	12,000	62	Yes	6	**8355K52** 60.52	15	**8355K75** 160.97
60	96"	F96T12	3,500K	5,900	12,000	85	Yes	6	**8355K51** 66.33	15	**8355K38** 199.33
60	96"	F96T12	4,100K	5,400	12,000	62	Yes	6	**8355K56** 48.03	15	**8355K31** 84.43
60	96"	F96T12	4,100K	5,900	12,000	85	Yes	6	**8355K54** 66.33	15	**8355K37** 199.33
75	96"	F96T12	3,000K	6,420	12,000	70	Yes	6	**8355K44** 68.14	15	**8355K78** 142.12
75	96"	F96T12	4,100K	6,600	12,000	85	Yes	6	**8355K45** 88.45	15	**8355K39** 181.29
75	96"	F96T12	5,000K	6,500	12,000	85	Yes	6	**8355K46** 99.52	15	**8355K81** 176.40
For Use with High-Output Ballasts— *Recessed Double-Contact (DC) Base*											
35	24"	F24T12/HO	4,100K	1,650	9,000	62	No	6	**1504K97** 74.07	30	**1504K44** 282.90
60	48"	F48T12/HO	4,100K	4,050	12,000	62	Yes	6	**1504K65** 50.96	15	**1504K67** 106.52
75	60"	F60T12/HO	4,100K	5,150	12,000	62	No	6	**1504K28** 90.33	15	**1504K24** 255.77
85	72"	F72T12/HO	4,100K	6,350	12,000	62	Yes	6	**1504K16** 61.73	15	**1504K25** 177.54
95	96"	F96T12/HO	3,000K	7,700	12,000	52	No	6	**1504K17** 55.61	15	**1504K26** 112.79
95	96"	F96T12/HO	3,500K	8,350	12,000	70	No	6	**1504K32** 65.04	15	**1504K12** 141.92
95	96"	F96T12/HO	4,100K	8,000	12,000	62	Yes	6	**1504K98** 51.73	15	**1504K56** 123.46
110	96"	F96T12/HO-O	4,100K	8,800	12,000	62	Yes	6	**1504K18** 48.97	15	**1504K87** 104.79
110	96"	F96T12/HO	4,100K	9,500	12,000	85	Yes	6	**1504K19** 67.83	15	**1504K85** 181.06
For Use with Very-High-Output Ballasts— *Recessed Double-Contact (DC) Base*											
110	48"	F48T12/VHO	4,100K	7,050	12,000	62	No	6	**1504K93** 102.47	15	**1504K34** 212.99
185	96"	F96T12/VHO	4,100K	13,000	12,000	62	No	6	**1504K94** 117.93	15	**1504K57** 231.98
215	96"	F96T12/VHO	4,100K	15,200	12,000	62	No	6	**1504K95** 115.33	15	**1504K59** 218.49
Shatter-Resistant Bulbs											
For Use with Preheat Ballasts— *Medium Bi-Pin Base*											
20	24"	F20T12	4,100K	1,050	9,000	62	Yes	15	**1539K48** 177.39	30	**1539K38** 268.00
For Use with Rapid-Start Ballasts— *Medium Bi-Pin Base*											
34	48"	F34T12	4,100K	2,280	20,000	62	No	6	**1539K54** 56.17	30	**1539K44** 231.65
40	48"	F40T12	4,100K	3,040	20,000	82	Yes	15	**1539K57** 265.02	30	**1539K47** 497.88
For Use with Instant-Start Ballasts— *Single-Pin Base*											
60	96"	F96T12	4,100K	4,750	12,000	62	No	6	**1539K56** 126.35	15	**1539K46** 240.80
For Use with High-Output Ballasts— *Recessed Double-Contact (DC) Base*											
95	96"	F96T12/HO	4,100K	6,950	12,000	62	No	6	**1539K24** 201.29	15	**1539K34** 413.71

♠Represents the first portion of the part number printed on the bulb. ✓Color Rendering Index.

For information about light bulbs, see page 682. For information about light appearance, see page 696.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

T8 (1″ Diameter) Fluorescent Light Bulbs

These slim bulbs achieve greater light output than T12 bulbs, but use less wattage. Bulbs are typically used in dry environments. *Low-mercury bulbs* (comparable to Alto, Eco, Ecologic, and Ecolux bulbs) are more environmentally friendly than standard fluorescent bulbs. Bulbs ***for use with preheat ballasts*** require a starter for operation (see page 704) and may take several seconds to warm up.

Shatter-resistant bulbs have a plastic coating that retains glass shards if the bulb breaks and can be used in an open fixture rated for outdoor use. USDA approved, FDA compliant, and meet OSHA regulations.

Medium Bi-Pin Base — *Single-Pin Base* — *Recessed Double-Contact (DC) Base*

Watts	Bulb Lg.	Trade Number♠	Light Appearance	Brightness, lumens	Rated Life, hours	CRI ✓	Low Mercury	Mini Package Pkg. Qty.	Mini Package Per Pkg.	Standard Package Pkg. Qty.	Standard Package Per Pkg.
General Service Bulbs											
For Use with Preheat Ballasts—*Medium Bi-Pin Base*											
15	18″	F15T8	3,000K	900	7,500	85	Yes	2	1501K12 $17.58	6	1501K55 $44.21
15	18″	F15T8	4,100K	870	7,500	62	Yes	2	1501K13 11.76	25	1501K2 131.98
15	18″	F15T8	6,500K	750	7,500	79	Yes	2	1501K14 17.06	25	1501K51 181.81
18	24″	F18T8	4,100K	1,175	7,500	62	Yes	6	1501K35 74.07	24	1501K19 255.67
30	36″	F30T8	4,200K	2,180	7,500	60	No	6	1501K27 37.02	24	1501K28 133.26
For Use with Rapid-Start Ballasts—*Medium Bi-Pin Base*											
17	24″	F17T8, FO17	3,500K	1,375	30,000	85	Yes	6	1501K32 34.09	25	1501K16 176.61
17	24″	F17T8, FO17	4,100K	1,375	30,000	85	Yes	6	1501K81 51.21	25	1501K15 120.84
25	36″	F25T8, FO25	3,500K	2,150	30,000	85	Yes	6	1501K34 41.77	25	1501K18 104.17
25	36″	F25T8, FO25	4,100K	2,150	30,000	85	Yes	6	1501K75 37.05	25	1501K43 106.62
28	48″	F28T8, FO28	3,500K	2,725	36,000	85	Yes	6	1683K95 59.83	30	1683K91 201.00
32	48″	F32T8, FO32	3,000K	2,800	30,000	78	Yes	6	1683K32 25.81	25	1683K22 62.95
32	48″	F32T8, FO32	3,000K	2,800	36,000	78	Yes	6	1683K34 29.28	25	1683K24 70.48
32	48″	F32T8, FO32	3,500K	2,800	30,000	78	Yes	6	1683K71 26.29	25	1683K28 61.06
32	48″	F32T8, FO32	3,500K	2,950	30,000	85	Yes	6	1683K72 30.77	25	1683K26 86.92
32	48″	F32T8, FO32	4,100K	2,800	30,000	78	Yes	6	1683K14 27.00	25	1683K15 60.71
32	48″	F32T8, FO32	4,100K	2,800	36,000	78	Yes	6	1683K35 31.71	25	1683K25 71.96
32	48″	F32T8, FO32	4,100K	2,950	30,000	85	Yes	6	1683K73 30.77	25	1683K27 86.92
32	48″	F32T8, FO32	4,100K	3,000	36,000	85	Yes	6	1683K82 46.06	30	1683K78 158.65
32	48″	F32T8, FO32	5,000K	2,700	30,000	78	Yes	6	1683K33 27.97	25	1683K23 66.00
32	48″	F32T8, FO32	5,000K	2,850	36,000	85	Yes	6	1683K83 48.12	30	1683K79 164.42
40	60″	F40T8, FO40	4,100K	3,775	20,000	86	Yes	6	1501K36 56.83	25	1501K59 181.12
For Use with Instant-Start Ballasts—*Single-Pin Base*											
59	96″	F96T8, FO96	4,100K	5,700	24,000	78	Yes	6	8355K85 74.60	25	8355K95 235.97
For Use with High-Output Ballasts—*Recessed Double-Contact (DC) Base*											
86	96″	F96T8/HO	4,100K	8,200	24,000	85	Yes	6	1504K92 121.68	25	1504K81 523.26
Shatter-Resistant Bulbs											
For Use with Rapid-Start Ballasts—*Medium Bi-Pin Base*											
32	48″	F32T8, FO32	4,100K	2,710	20,000	78	Yes	6	1539K21 80.26	25	1539K45 279.42
For Use with Instant-Start Ballasts—*Single-Pin Base*											
59	96″	F96T8	4,100K	5,190	15,000	75	No	6	1539K22 165.94	24	1539K32 627.93

♠ Represents the first portion of the part number printed on the bulb. ✓ Color Rendering Index.

T5 (5/8″ Diameter) Fluorescent Light Bulbs

Save energy with T5 bulbs—they're thinner than T8 and T12 bulbs and provide greater light output using less wattage. Bulbs are typically used in dry environments. Bulbs ***for use with preheat ballasts*** require a starter for operation (see page 704) and may take several seconds to warm up.

Shatter-resistant bulb has a plastic coating that retains glass shards if the bulb breaks and can be used in an open fixture rated for outdoor use.

Miniature Bi-Pin Base

Watts	Bulb Lg.	Trade Number♠	Light Appearance	Brightness, lumens	Rated Life, hours	CRI ✓	Mini Package Pkg. Qty.	Mini Package Per Pkg.	Standard Package Pkg. Qty.	Standard Package Per Pkg.
General Service Bulbs										
For Use with Preheat Ballasts—*Miniature Bi-Pin Base*										
4	6″	F4T5	4,100K	135	6,000	62	2	1562K41 $13.50	25	1562K14 $159.80
6	9″	F6T5	4,100K	295	7,500	62	2	1562K42 10.74	25	1562K15 117.14
6	9″	F6T5	6,500K	230	7,500	79	2	1562K18 16.58	25	1562K43 195.17
8	12″	F8T5	3,000K	400	7,500	52	2	1562K19 18.12	24	1562K44 128.73
8	12″	F8T5	4,100K	400	7,500	62	2	1562K45 10.76	25	1562K16 117.69
8	12″	F8T5	6,500K	330	7,500	79	2	1562K21 21.53	25	1562K46 169.09
13	21″	F13T5	4,100K	820	7,500	62	2	1562K48 16.00	25	1562K17 170.47
For Use with Programmed Start Ballasts—*Miniature Bi-Pin Base*										
14	22″	F14T5, FP14	3,500K	1,350	25,000	85	2	1562K22 26.64	—	—
14	22″	F14T5, FP14	4,100K	1,350	25,000	85	2	1562K51 26.64	—	—
21	34″	F21T5, FP21	3,500K	2,100	25,000	85	6	1562K23 74.04	—	—
21	34″	F21T5, FP21	4,100K	2,100	25,000	85	6	1562K52 74.04	—	—
28	46″	F28T5, FP28	3,500K	2,900	25,000	85	6	1562K24 74.04	—	—
28	46″	F28T5, FP28	4,100K	2,900	25,000	85	6	1562K53 74.04	—	—
For Use with High-Output Programmed Start Ballasts—*Miniature Bi-Pin Base*										
24	22″	F24T5/HO, FP24/HO	4,100K	2,000	25,000	85	2	1562K55 43.63	—	—
39	34″	F39T5/HO, FP39/HO	4,100K	3,500	25,000	85	6	1562K56 83.14	—	—
54	48″	F54T5/HO, FP54/HO	3,500K	4,450	30,000	85	6	1562K58 93.88	—	—
54	48″	F54T5/HO, FP54/HO	4,100K	4,450	30,000	85	6	1562K59 93.88	—	—
54	48″	F54T5/HO, FP54/HO	4,100K	5,000	25,000	85	6	1562K57 93.58	—	—
54	48″	F54T5/HO, FP54/HO	5,000K	4,360	30,000	85	6	1562K61 80.03	—	—
Shatter-Resistant Bulbs										
For Use with High-Output Programmed Start Ballasts—*Miniature Bi-Pin Base*										
54	46″	F54T5/HO	4,100K	4,740	25,000	85	1	1539K77 28.66	—	—

♠ Represents the first portion of the part number printed on the bulb. ✓ Color Rendering Index.

For information about light bulbs, see page 682. For information about light appearance, see page 696.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Glow-in-the-Dark Emergency Fluorescent Light Bulb

Exit the building safely during a power failure, aided by this bulb. Thanks to an inner phosphor coating, it will glow for up to 1½ hours after a blackout. This general service bulb is a T8 (1″ dia.) bulb with a medium bi-pin base. For use with instant-start ballasts.

Watts	Bulb Lg.	Trade Number♠	Light Appearance	Brightness, lumens	Rated Life, hours	CRI ✓		Each
32	48″	F32T8	5,000K	3,540	20,000	86	9914K1	$25.32

♠Represents the first portion of the part number printed on the bulb. ✓ Color Rendering Index.

Circline Fluorescent Light Bulbs

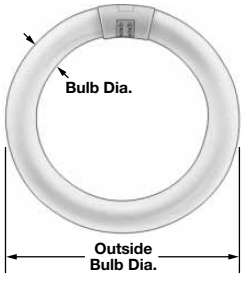

Bulbs have a 4-pin base.

Watts	Outside Bulb Dia.	Trade Number♠	Light Appearance	Brightness, lumens	Rated Life, hours	CRI ✓	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
T9 (1¹/₈″ Dia.) Bulbs—*For Use with Preheat, Rapid-Start, and Trigger-Start Ballasts*										
20	6½″	FC6T9/CW	4,100K	800	12,000	62	12	1614K13	$12.43	$10.56
22	8″	FC8T9/DSW/RP	3,000K	1,100	12,000	70	6	1614K19	11.56	9.82
22	8″	FC8T9/HL CW	4,100K	1,050	12,000	62	12	1614K14	9.12	7.75
22	8″	FC8T9/D/RS	6,500K	900	12,000	76	12	1614K17	11.00	9.37
32	12″	FC12T9/HL CW	4,100K	1,800	12,000	62	12	1614K15	10.46	8.89
32	12″	FC12T9/DX	6,500K	1,570	12,000	79	12	1614K18	14.74	12.53
40	16″	FC16T9/CW/RS	4,200K	2,500	8,000	60	12	1614K16	16.30	13.89
T5 (⁵/₈″ Dia.) Bulb—*For Use with Rapid-Start and Instant-Start Ballasts*										
22	9″	FPC22	3,500K	1,800	12,000	82	12	1614K21	34.44	29.52
T5 (⁵/₈″ Dia.) Bulbs—*For Use with Programmed Rapid-Start Ballasts*										
40	12″	FPC40	3,500K	3,200	12,000	82	12	1614K22	30.41	27.25
55	12″	FPC55	3,500K	4,000	12,000	82	12	1614K23	41.32	35.41

♠ Represents the first portion of the part number printed on the bulb. ✓ Color Rendering Index.

U-Shaped Fluorescent Light Bulbs

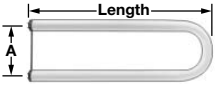

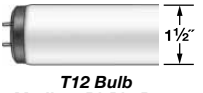

T12 Bulb
Medium Bi-Pin Base

T8 Bulb
Medium Bi-Pin Base

Bulbs have a medium bi-pin base. Choose ***low-mercury bulbs*** (comparable to Alto, Ecologic, and Eco bulbs) for a more environmentally responsible option.

Watts	(A)♦	Bulb Lg.	Trade Number♠	Light Appearance	Brightness, lumens	Rated Life, hours	CRI ✓	Low Mercury	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
T12 (1½″ Dia.) Bulbs—*For Use with Rapid-Start Ballasts*												
34	6″	22⁷/₁₆″	FB34	3,000K	2,400	18,000	53	Yes	12	8315K32	$12.92	$10.98
34	6″	22⁷/₁₆″	FB34	3,500K	2,760	18,000	73	Yes	12	8315K35	15.50	13.18
34	6″	22⁷/₁₆″	FB34	4,100K	2,400	18,000	62	Yes	12	8315K13	8.95	7.68
40	6″	22⁷/₁₆″	FB40	3,000K	3,050	18,000	70	Yes	12	8315K34	15.46	13.14
40	6″	22⁷/₁₆″	FB40	3,500K	3,050	18,000	73	Yes	12	8315K36	15.46	13.14
40	6″	22⁷/₁₆″	FB40	4,100K	3,050	18,000	70	Yes	12	8315K15	22.86	19.43
T8 (1″ Dia.) Bulbs—*For Use with Rapid-Start Ballasts*												
31	1⅝″	22½″	FBO31	3,500K	2,725	20,000	82	No	15	8315K83	17.96	15.26
31	1⅝″	22½″	FBO31	4,100K	2,725	20,000	82	No	15	8315K84	17.96	15.26
32	6″	22½″	FB32T8, FBO32	3,000K	2,750	20,000	75	Yes	16	8315K85	16.42	13.97
32	6″	22½″	FB32T8, FBO32	4,100K	2,750	20,000	75	Yes	16	8315K19	16.42	13.97
T8 (1″ Dia.) Bulbs—*For Use with Rapid-Start and Instant-Start Ballasts*												
29	1⅝″	22½″	FBO29	3,500K	2,775	24,000	85	Yes	15	8315K24	22.86	20.00
29	1⅝″	22½″	FBO29	4,100K	2,775	24,000	85	Yes	15	8315K25	22.86	20.00
30	6″	22½″	FBO30	3,500K	2,800	24,000	85	Yes	16	8315K26	17.74	15.52
30	6″	22½″	FBO30	4,100K	2,800	24,000	85	Yes	16	8315K27	17.74	15.52
32	6″	22½″	FBO32	3,500K	2,900	24,000	85	Yes	16	8315K28	19.43	17.00

♦ Center-to-center. ♠ Represents the first portion of the part number printed on the bulb. ✓ Color Rendering Index.

Blacklight Blue Fluorescent Light Bulbs

T12 Bulb
Medium Bi-Pin Base

T8 Bulb
Medium Bi-Pin Base

T5 Bulb
Miniature Bi-Pin Base

An integral blue filter absorbs the visible light produced by these bulbs, allowing blacklight blue long wave ultraviolet (UVA) light to pass through. Bulbs appear black when they are off. For blacklight bulbs used in bug zappers, which appear white when off, see page 2116. Bulbs *for use with preheat ballasts* require a starter for operation (see page 704) and may take several seconds to warm up. Those *for use with rapid-start ballasts* have a very slight start-up delay.

Shatter-resistant bulbs have a plastic coating that retains glass shards if the bulb breaks. They are USDA approved, FDA compliant, and meet OSHA regulations.

Watts	For Use with Ballast Type	Bulb Lg.	Trade Number♠	Rated Life, hours	***General Service***	Each	***Shatter Resistant***	Each
T12 (1½″ Dia.) Bulbs—*Medium Bi-Pin Base*								
20	Preheat	24″	F20T12	9,000	8311K39	$17.33	1539K39	$32.62
40	Rapid Start	48″	F40T12	20,000	8311K37	33.36	1539K52	38.27
T8 (1″ Dia.) Bulb—*Medium Bi-Pin Base*								
15	Preheat	18″	F15T8	7,500	8311K38	25.78	1539K37	56.49
T5 (⁵/₈″ Dia.) Bulbs—*Miniature Bi-Pin Base*								
4	Preheat	6″	F4T5	6,000	8311K41	16.86	—	—
6	Preheat	9″	F6T5	7,500	8311K42	17.32	—	—
8	Preheat	12″	F8T5	7,500	8311K43	16.54	—	—

♠ Represents the first portion of the part number printed on the bulb.

For information about light bulbs, see page 682. For information about light appearance, see page 696.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Ultraviolet Germicidal Light Bulbs

Shortwave ultraviolet radiation emitted from these bulbs makes them well-suited for disinfection and sterilization applications. Bulbs are clear and may take several seconds to warm up. Use with preheat ballasts. ***Caution:*** Bulbs emit ultraviolet radiation, which is harmful to skin and eyes. Only install in fixtures with adequate protection.

T8 Bulb
Medium Bi-Pin Base

T5 Bulb
Miniature Bi-Pin Base

Bulb Shape	Watts	Bulb Dia.	Bulb Lg.	Trade Number♠	Base Type	Rated Life, hours	Amps		Each
T8	15	1″	18″	G15T8	Medium Bi-Pin	9000	0.34	9188K13	$44.12
T8	30	1″	36″	G30T8	Medium Bi-Pin	9000	0.37	9188K14	61.08
T5	8	5/8″	12″	G8T5	Miniature Bi-Pin	8000	0.015	9188K12	43.42

♠Represents the first portion of the part number printed on the bulb.

High-Pressure Sodium Light Bulbs

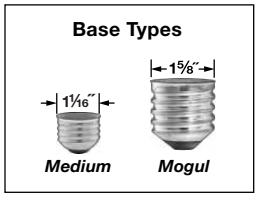

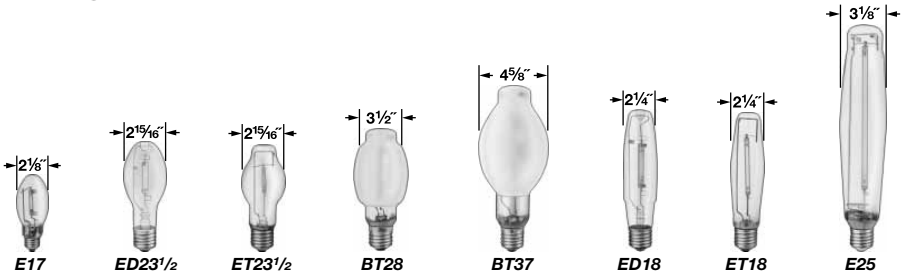

E17 ***ED23½*** ***ET23½*** ***BT28*** ***BT37*** ***ED18*** ***ET18*** ***E25***

Preferable to metal halide bulbs if energy efficiency is more important than CRI (color rendering index). These bulbs are a popular choice for street, parking lot, and building floodlighting and are typically used in dry environments, unless otherwise indicated.

Light appearance is 1,900-2,200K. CRI is 21-22 except for *high-color rendering bulbs*, which have a CRI of 65. Initial start time is 3-5 minutes with a 1-minute restart. *Instant-restart bulbs* restart without delay. Coated bulbs are white to reduce glare. Bulbs operate in any position, unless noted. *Note:* Bulbs should only be used with the ballast that has the matching ANSI ballast number listed below.

End-of-life shut-off bulbs clearly indicate when the bulb needs to be replaced. They remain off at the end of their service life instead of cycling on and off like standard high-pressure sodium bulbs.

Long-life bulbs with instant restart have two arc tubes that allow instant restart during a momentary power interruption.

High-color rendering bulbs provide whiter light than other high-pressure sodium bulbs without changing your current ballast.

Shatter-resistant bulbs have a plastic outer coating that retains glass shards if the bulb breaks, making them ideal for use outdoors in open fixtures.

Watts	Bulb Shape	Glass Type	O'all Lg.	Brightness, lumens	Rated Life, hours	ANSI Ballast No.	Equivalent To: Philips	Osram/Sylvania	General Electric		Each
General Service—Screw-In Medium Base (1 1/16″ Base Dia.)											
35	E17	Clear	5 7/16″	2,250	16,000	S76	C35S76/M	LU35/MED	LU35/MED	8293K55	$26.59
50	E17	Clear	5 7/16″	4,000	24,000	S68	C50S68/M	LU50/MED	LU50/MED	8293K56	26.59
50	E17	Coated	5 7/16″	3,700	24,000	S68	C50S68/D/M	LU50/D/MED	LU50/D/MED	8293K66	26.59
70	E17	Clear	5 7/16″	6,300	24,000	S62	C70S62/M	LU70/MED	LU70/MED	8293K57	24.94
70	E17	Coated	5 7/16″	5,800	24,000	S62	C70S62/D/M	LU70/D/MED	LU70/D/MED	8293K67	26.59
100	E17	Clear	5 7/16″	9,500	24,000	S54	C100S54/M	LU100/MED	LU100/MED	8293K58	26.59
100	E17	Coated	5 7/16″	8,800	24,000	S54	C100S54/D/M	LU100/D/MED	LU100/D/MED	8293K68	26.60
150	E17	Clear	5 7/16″	15,800	24,000	S55	C150S55/M	LU150/55/MED	LU150/MED	8293K59	24.94
150	E17	Coated	5 7/16″	14,500	24,000	S55	C150S55/D/M	LU150/55/D/MED	LU150/D/MED	8293K69	26.60
General Service—Screw-In Mogul Base (1 5/8″ Base Dia.)											
50	ET23½	Clear	7 3/4″	4,000	24,000	S68	C50S68/ALTO	LU50/ECO	LU50	8352K15	26.59
70	ET23½	Clear	7 3/4″	6,300	24,000	S62	C70S62/ALTO	LU70/ECO	LU70/ECO	8352K5	26.59
70	ET23½	Coated	7 3/4″	5,500	24,000	S62	C70S62/D/ALTO	LU70/D	LU70/D	8352K18	26.60
100	ET23½	Clear	7 3/4″	9,500	24,000	S54	C100S54/ALTO	LU100/ECO	LU100/ECO	8352K58	26.60
150	ET23½	Clear	7 3/4″	16,000	24,000	S55	C150S55/ALTO	LU150/55/ECO	LU150/55/ECO	8352K54	24.93
150	ET23½	Coated	7 3/4″	14,000	24,000	S55	C150S55/D/ALTO	LU150/55/D	LU150/55/D	8352K22	26.59
250	BT28	Coated	8 5/16″	26,000	24,000	S50	C250S50/D/ALTO	LU250/D	LU250/D	8352K23	32.54
250	ET18	Clear	9 3/4″	29,000	24,000	S50	C250S50/ALTO	LU250/ECO	LU250/ECO	8352K55	24.93
400	BT37	Coated	11 1/2″	47,500	24,000	S51	C400S51/D/ALTO	LU400/D	LU400/D	8352K24	34.49
400	ET18	Clear	9 3/4″	50,000	24,000	S51	C400S51/ALTO	LU400/ECO	LU400/ECO	8352K56	24.45
1000	E25	Clear	15 1/16″	130,000	24,000	S52	C1000S52/ALTO	LU1000/ECO	LU1000/ECO	8352K57	90.03
End-of-Life Shut-Off—Screw-In Medium Base (1 1/16″ Base Dia.)											
100	E17	Clear	5 7/16″	10,000	30,000	S54	—	LU100/PLUS/MED	—	8135K27	39.52
End-of-Life Shut-Off—Screw-In Mogul Base (1 5/8″ Base Dia.)											
150	ET23½	Clear	7 3/4″	16,000	30,000	S55	C150S55/ALTO/NC	LU150/55/PLUS/ECO	LU150/ECO/NC	8135K22	38.16
200	ET18	Clear	9 3/4″	22,000	30,000	S66	—	LU200/PLUS/ECO	LU200/ECO/NC	8135K26	39.51
250	ET18	Clear	9 3/4″	29,000	30,000	S50	C250S50/ALTO/NC	LU250/PLUS/ECO	LU250/ECO/NC	8135K23	38.15
400	ET18	Clear	9 3/4″	50,000	30,000	S51	C400S51/ALTO/NC	LU400/PLUS/ECO	LU400/ECO/NC	8135K24	39.51
Long Life with Instant Restart—Screw-In Mogul Base (1 5/8″ Base Dia.)											
250	ET18	Clear	9 3/4″	27,500	40,000	S50	C250S50/2	LU250/SBY	LU250/SBY/XL	8352K87	50.84
400	ET18	Clear	9 3/4″	47,500	40,000	S51	C400S51/2	LU400/SBY	LU400/SBY/XL	8352K89	50.81
1000	E25	Clear	15 1/16″	127,000	24,000	S52	C1000S52/2	LU1000/SBY	LU1000/SBY/XL	8352K88	136.54
High-Color Rendering—Screw-In Mogul Base (1 5/8″ Base Dia.)											
150	ED23½	Clear	7 3/4″	12,000	15,000	S55	C150S55/C	—	LU150/55/DX	8352K95	55.78
400	ED18	Clear	9 3/4″	32,500	15,000	S51	C400S51/C	—	LU400/DX	8352K99	47.52
Shatter Resistant—Screw-In Mogul Base (1 5/8″ Base Dia.)											
250	ED18	Clear	9 3/4″	25,600	24,000	S50	—	—	—	8144K11★	38.73
400	ED18	Clear	9 3/4″	45,000	24,000	S51	—	—	—	8144K12★	47.41

★ Operates base-up.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Metal Halide Replacements for High-Pressure Sodium Light Bulbs

Base Type

Mogul

If yellowish high-pressure sodium bulbs aren't bright enough, trade them in for the brighter, whiter light of metal halide bulbs—no ballast change necessary. CRI (color rendering index) is 65-70. Bulbs are clear and have a light appearance of 4,000K, unless noted. Can be used outdoors in a fixture rated for outdoor use.

Note: Bulbs should only be used with the ballast that has the matching ANSI ballast number listed below.

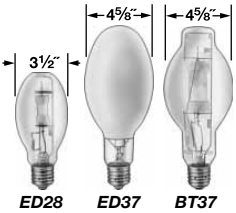

ED28 *ED37* *BT37*

Watts	Bulb Shape	O'all Lg.	Brightness, lumens	Rated Life, hours	ANSI Ballast No.	Equivalent To: General Electric	Equivalent To: Venture		Each
Bulbs for Enclosed Fixtures									
Screw-In Mogul Base (1⅝″ Base Dia.)—Any Operating Position									
250	ED28	8⁵⁄₁₆″	20,000	10,000	S50	—	MH 250W/U/LU	16135K55	$39.91
400	ED28	8⁵⁄₁₆″	41,000	20,000	S51	MVR400/U/ED28/R	MH 400W/U/LU/ED28	16135K49	40.39
400	ED37	11½″	39,000	20,000	S51	MVR400/C/VBU/R	MH 400W/C/U/LU	16135K77▲	43.62
400	ED37	11½″	41,000	20,000	S51	MVR400/VBU/R	MH 400W/U/LU	16135K75	41.85
750	BT37	11½″	72,000	12,000	S111	—	MH 750W/U/LU/BT37	16135K79	75.89
Screw-In Mogul Base (1⅝″ Base Dia.)—Base-Up and Base-Down Operating Position									
1000	BT37	11½″	110,000	20,000	S52	—	MS 1000W/V/LU/BT37	16135K46	67.49
Bulbs for Open and Enclosed Fixtures									
Screw-In Mogul Base (1⅝″ Base Dia.)—Base-Up Operating Position									
250	ED28	8⁵⁄₁₆″	19,000	10,000	S50	—	MPI 250W/BU/LU	16135K51	43.62
400	BT37	11½″	39,000	20,000	S51	—	MPI 400W/BU/LU	16135K78	43.62

▲ Bulb is coated; glass is white to reduce glare. Light appearance is 3,700K.

Metal Halide Light Bulbs

Base Types

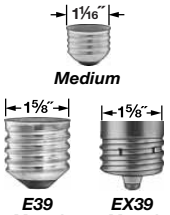

Medium

E39 Mogul *EX39 Mogul*

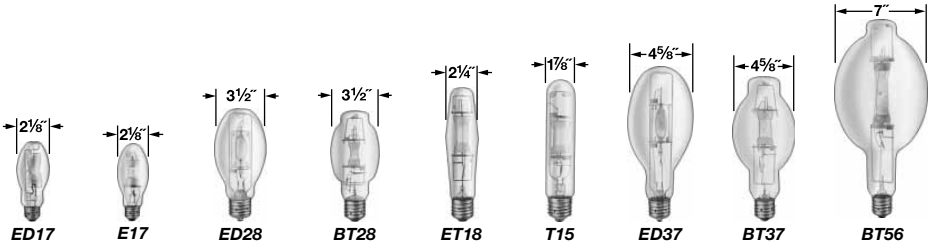

ED17 *E17* *ED28* *BT28* *ET18* *T15* *ED37* *BT37* *BT56*

For crisp white light and better color rendering, replace high-pressure sodium bulbs with these alternatives. They are more energy efficient than fluorescent bulbs as well. Light appearance ranges from 3,600-4,200K, unless noted. CRI (color rendering index) is 55-82, unless noted. Initial start time is 2-5 minutes. Restart time is 5-8 minutes for *pulse-start bulbs* and 10-15 minutes for the rest. Coated bulbs are white to reduce glare. Can be used outdoors in a fixture rated for outdoor use.

Note: Bulbs should only be used with the ballast that has the matching ANSI ballast number listed below.

Shatter-resistant bulbs have a plastic coating that retains glass shards if the bulb breaks. ***Pulse-start bulbs*** offer a faster restart time than standard metal halide bulbs. *True color bulbs* are closest to natural sunlight, with a light appearance of 5,000K and a CRI of 90.

Watts	Bulb Shape	Glass Type	O'all Lg.	Brightness, lumens	Rated Life, hours	ANSI Ballast No.	Equivalent To: Philips	Equivalent To: Osram/Sylvania	Equivalent To: General Electric		Each
Bulbs for Enclosed Fixtures											
Screw-In Medium Base (1¹⁄₁₆″ Base Dia.)—Any Operating Position											
150	ED17	Clear	5⁷⁄₁₆″	12,250	10,000	M107	MH150/U/M	—	—	8293K27	$44.48
150	ED17	Coated	5⁷⁄₁₆″	12,800	10,000	M107	—	—	—	8293K19	41.82
175	E17	Clear	5⁷⁄₁₆″	14,400	10,000	M57	MH175/U/M	M175/U/MED	MVR175/U/MED	8293K29	31.16
175	E17	Coated	5⁷⁄₁₆″	13,000	10,000	M57	MH175/C/U/M	M175/C/U/MED	MVR175/C/U/MED	8293K28	38.12
Screw-In Mogul (E39) Base (1⅝″ Base Dia.)—Any Operating Position											
150	ED28	Clear	8⁵⁄₁₆″	13,500	10,000	M107	—	M150/SS/U/BT28	MVR150/U/WM	8352K42	45.36
175	BT28	Clear	8⁵⁄₁₆″	14,400	10,000	M57	MH175/U	M175/U	MVR175/U	8352K61	24.79
175	BT28	Coated	8⁵⁄₁₆″	14,000	10,000	M57	MH175/C/U	M175/C/U	MVR175/C/U	8352K75	27.36
250	BT28	Clear	8⁵⁄₁₆″	22,000	10,000	M58	MH250/U	M250/U	MVR250/U	8352K62	24.79
250	BT28	Coated	8⁵⁄₁₆″	21,500	10,000	M58	MH250/C/U	M250/C/U	MVR250/C/U	8352K76	27.36
400	BT28	Clear	8⁵⁄₁₆″	36,000	20,000	M59	MH400/U/ED28	M400/U/BT28	MVR400/U/ED28	8352K72	42.26
400	BT28	Coated	8⁵⁄₁₆″	36,000	20,000	M59	MH400/U/ED28	M400/C/U/BT-28	MVR400/C/U/ED28	8352K13	40.45
400	BT37	Clear	11½″	36,000	20,000	M59	MH400/U	M400/U	MVR400/U	8352K63	23.55
400	BT37	Coated	11½″	36,000	20,000	M59	MH400/C/U	M400/C/U	MVR400/C/U	8352K77	25.45
400	ET18	Clear	9¾″	36,000	20,000	M59	—	M400/U/ET18	—	8352K79	41.97
400	T15	Clear	9¾″	36,000	15,000	M59	—	—	—	8352K43	68.42
1,000	BT37	Clear	11½″	110,000	15,000	M47	MH1000/U/BT37	M1000/U/BT37	MVR1000/U/BT37	8352K19	61.23
1,000	BT56	Clear	15⅜″	110,000	18,000	M47	MH1000/U	M1000/U	MVR1000/U	8352K64	53.70
1,000	BT56	Coated	15⅜″	107,000	18,000	M47	MH1000/C/U	M1000/C/U	MVR1000/C/U	8352K26	64.19
Screw-In Mogul (E39) Base (1⅝″ Base Dia.)—Base-Up Operating Position											
360	BT37	Clear	11½″	36,000	20,000	M59	MS360/BU/EW	MS360/SS/BU-HOR	MVR360/VBU/WM	8352K12■●	36.88
400	BT37	Clear	11½″	42,000	20,000	M59	MS400/BU	MS400/BU-ONLY	MVR400/VBU	8352K73	41.97
400	BT37	Coated	11½″	42,000	20,000	M59	MS400/C/BU	MS400/C/BU-ONLY	MVR400/C/VBU	8352K17	43.24
400	ED28	Clear	8⁵⁄₁₆″	40,000	20,000	M59	MS400/BU/ED28	—	MVR400/VBU/ED28	8352K14	41.44
1,500	BT56	Clear	15⅜″	170,000	3,000	M48	MH1500/BU	M1500/BU-HOR	MVR1500/HBU	8352K65■	81.40

■Also operates horizontally. ● Also for ANSI ballast M165.

(Continued on following page)

For information about light bulbs, see page 682. For information about light appearance, see page 696.

Don't see the light bulb you need? Just tell us what you're looking for and we'll get it for you.

Metal Halide Light Bulbs *(Continued from previous page)*

Watts	Bulb Shape	Glass Type	O'all Lg.	Brightness, lumens	Rated Life, hours	ANSI Ballast No.	Equivalent To: Philips	Osram/Sylvania	General Electric		Each
Bulbs for Open and Enclosed Fixtures											
Screw-In Mogul (EX39) Base (1⅝″ Base Dia.)— *Base-Up Operating Position*											
175	BT28	Clear	8⁵⁄₁₆″	14,400	10,000	M57	MP175/BU	MP175/BU-ONLY	MPR175/VBU/O	8352K27	$57.23
175	ED28	Clear	8⁵⁄₁₆″	14,000	10,000	M57	MP175/BU	MP175/BU-ONLY	—	8352K44	38.76
250	BT28	Clear	8⁵⁄₁₆″	23,000	10,000	M58	MP250/BU	MP250/BU-ONLY	MPR250/VBU/O	8352K29	59.01
360	BT37	Clear	11½″	36,000	20,000	M59	MP360/BU/EW	MSP360/SS/BU-ONLY	MPR360/VBU/WM	8352K45●	44.49
360	BT37	Coated	11½″	34,000	20,000	M59	MP360/C/BU/EW	MSP360/C/SS/BU	MPR360/C/VBU/WM	8352K46●	46.98
400	BT37	Clear	11½″	40,000	20,000	M59	MP400/BU	MP400/BU-ONLY	MPR400/VBU	8352K36	52.12
400	BT37	Coated	11½″	38,500	20,000	M59	MP400/C/BU	MP400/C/BU-ONLY	MPR400/C/VBU	8352K37	54.46
1,000	BT56	Clear	15⅜″	109,000	15,000	M47	MP1000/BU	MP1000/BU-ONLY	MPR1000/VBU/O	8352K38	116.69
1,000	BT56	Coated	15⅜″	102,000	15,000	M47	—	MP1000/C/BU-ONLY	—	8352K39♥	106.28
Shatter-Resistant Bulbs for Open Fixtures											
Screw-In Mogul (E39) Base (1⅝″ Base Dia.)— *Base-Up Operating Position*											
250	BT28	Coated	8⁵⁄₁₆″	22,000	10,000	M58	—	—	—	8144K23	49.54
400	BT37	Clear	11½″	25,000	20,000	M59	—	—	—	8144K21	49.83
400	BT37	Coated	11½″	25,000	20,000	M59	—	—	—	8144K22	53.32
Pulse-Start Bulbs for Enclosed Fixtures											
Screw-In Medium Base (1¹⁄₁₆″ Base Dia.)— *Base-Up Operating Position*											
175	ED17	Clear	5⁷⁄₁₆″	17,500	15,000	M137	—	MS175/PS/BU-ONLY	MVR175/VBU/MEDPA	1970K15	67.40
Screw-In Mogul (E39) Base (1⅝″ Base Dia.)— *Any Operating Position*											
250	BT28	Clear	8⁵⁄₁₆″	22,000	15,000	M132	—	M250/PS/U	—	1970K27♠	48.09
320	ED28	Clear	8⁵⁄₁₆″	30,000	20,000	M132	MS320/U/PS	—	—	1970K11♦	48.53
400	BT37	Clear	11½″	42,000	20,000	M135	—	M400/PS/U	—	1970K28★	48.10
1,000	BT37	Clear	11½″	110,000	15,000	M141	MS1000/BU/BT37	M1000/PS/U/BT37	MVR1000/U/BT37/PA	1970K18	114.46
Screw-In Mogul (E39) Base (1⅝″ Base Dia.)— *Base-Up Operating Position*											
250	BT28	Clear	8⁵⁄₁₆″	23,000	20,000	M153	—	MS250/PS/BU-ONLY	MVR250/VBU/PA	1970K26	55.17
350	ED37	Clear	11½″	37,000	20,000	M131	—	—	—	1970K12♣	47.40
400	ED37	Clear	11½″	42,600	20,000	M135	MS400/BU/PS	MS400/PS/BU-ONLY	—	1970K24★	43.67
400	ED37	Clear	11½″	44,000	20,000	M135	—	MS400/PS/BU-ONLY	MVR400/VBU/XHOPA	1970K13★♣	48.31
750	BT37	Clear	11½″	78,000	16,000	M149	—	MS750/PS/BU-HOR	MVR750/VBU/PA	1970K17■	83.97
Pulse-Start Bulbs for Open and Enclosed Fixtures											
Screw-In Medium Base (1¹⁄₁₆″ Base Dia.)— *Any Operating Position*											
50	E17	Clear	5⁷⁄₁₆″	3,450	20,000	M110	—	MP50/U/MED	MXR50/U/MED/O	8293K21◤	43.13
70	E17	Clear	5⁷⁄₁₆″	5,200	15,000	M98	—	MP70/U/MED	MVR70/U/MED	8293K23◤	43.11
100	E17	Clear	5⁷⁄₁₆″	8,400	7,500	M90	—	MPD100/U/MED/840	—	8293K25	47.38
Screw-In Mogul (EX39) Base (1⅝″ Base Dia.)— *Base-Up Operating Position*											
320	ED28	Clear	8⁵⁄₁₆″	31,000	20,000	M132	—	—	—	1970K21♦	53.00
350	ED37	Clear	11½″	35,000	20,000	M131	—	—	—	1970K22♣	55.24
400	ED37	Clear	11½″	41,000	20,000	M135	—	—	—	1970K23★♣	51.98
True Color Screw-In Mogul (EX39) Base (1⅝″ Base Dia.)— *Base-Up Operating Position*											
250	ED28	Clear	8⁵⁄₁₆″	16,500	20,000	M153	—	—	—	8469K1	66.24
320	ED28	Clear	8⁵⁄₁₆″	22,500	20,000	M154	—	—	—	8469K2	80.40
320	ED37	Clear	11½″	22,500	20,000	M154	—	—	—	8469K3	78.00
350	ED28	Clear	8⁵⁄₁₆″	24,000	20,000	M131	—	—	—	8469K4	62.40
350	ED37	Clear	11½″	24,000	20,000	M131	—	—	—	8469K5	62.40
400	ED28	Clear	8⁵⁄₁₆″	28,500	20,000	M155	—	—	—	8469K6	84.42
400	ED37	Clear	11½″	28,500	20,000	M155	—	—	—	8469K7	65.87

● Also for ANSI ballast M165. ♥ Light appearance is 3,200K. ♠ Also for ANSI ballast M153. ♦ Also for ANSI ballast M154.
★ Also for ANSI ballast M155. ♣ Also operates base-down. ■ Also operates horizontally. ◤ Light appearance is 3,000K.

Mercury Vapor Light Bulbs

Here's a less-expensive alternative to metal halide bulbs but with a lower CRI (color rendering index) and less energy efficiency. CRI is 40-45. Initial start and restart time is 10-15 minutes. Bulbs are made of white coated glass, operate in any position, and are commonly used in street, flood, and parking lot lighting.

Note: Bulbs should be used only with the ballast that has the matching ANSI ballast number listed below.

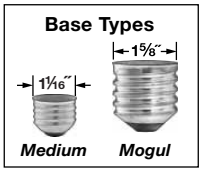

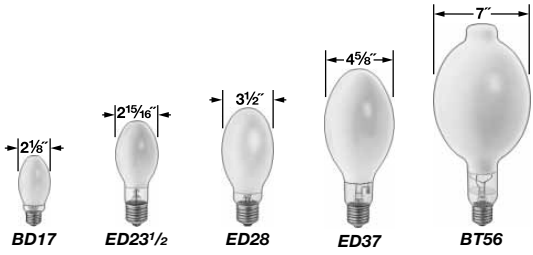

Watts	Bulb Shape	O'all Lg.	Brightness, lumens	Rated Life, hours	Light Appearance	ANSI Ballast No.	Equivalent To: Philips	Osram/Sylvania	General Electric		Each
Screw-In Medium Base (1¹⁄₁₆″ Base Dia.)											
50	BD17	5¹⁄₁₆″	1,800	24,000	3,200K	H46	H46DL-40-50/DX	H45/46DL-40/50/DX	HR40/50DX45-46	8293K45	$46.75
75	BD17	5⁷⁄₁₆″	3,300	24,000	3,200K	H43	H43AV-75/DX	H43AV-75/DX	HR75DX43	8293K46	38.95
Screw-In Mogul Base (1⅝″ Base Dia.)											
100	ED23½	7½″	4,200	24,000	3,700K	H38	H38JA-100/DX	H38JA-100/DX	HR100DX38	8352K41	22.77
175	ED28	8⁵⁄₁₆″	7,600	24,000	4,100K	H39	H39KC-175/DX	H39KC-175/DX	HR175DX39	8352K31	19.10
250	ED28	8⁵⁄₁₆″	12,000	24,000	3,700K	H37	H37KC-250/DX	H37KC-250/DX	HR250DX37	8352K32	23.23
400	ED37	11½″	21,000	24,000	3,700K	H33	H33GL-400/DX	H33GL-400/DX	HR400DX33	8352K34	23.23
1,000	BT56	15⅜″	59,000	24,000	3,700K	H36	H36GW-1000/DX	H36GW-1000/DX	HR1000DX36	8352K35	49.90

About Replacing a Ballast

When it's time to replace your ballast, check the label for the following information.

Voltage— This may be listed in several formats, including 120V, 277 volts, 480 VAC, and so on.

Ballast Type— Older ballasts that do not list this information are often magnetic. ***Magnetic ballasts*** provide reliable service and long life. ***Electronic ballasts*** are quieter and more energy efficient, plus they run cooler and reduce the flicker effect associated with magnetic ballasts. They operate at a higher frequency. *Low-frequency rapid-start electronic ballasts* don't interfere with high-frequency electronic equipment.

Start Type—

- ***Preheat ballasts*** need a starter (see page 704) to properly light a bulb (except ballasts for 2-pin compact fluorescent bulbs, which do not require a starter). They may take several seconds to heat up, causing the bulb to flicker. *Preheat ballasts with built-in starter* use high voltage supplied by the starter to light preheat bulbs.
- ***Rapid-start ballasts*** provide starting voltage to heat the filament and light the bulb. Because they are typically wired in series, the entire circuit will shut off if one bulb fails. These ballasts have a slight turn-on delay compared to instant-start alternatives. Some rapid-start ballasts are specifically designed for use with high-output or very-high-output light bulbs.
- ***Programmed-start/programmed rapid-start ballasts*** use precise voltage to heat the filament initially, and light the bulb as soon as enough voltage is present. These two ballasts are often referred to interchangeably. Wired in series—which means the entire circuit will shut off if one bulb fails—these ballasts are ideal in applications where bulbs have high on/off cycles. Programmed-start ballasts provide up to 50,000 bulb starts, so bulbs last longer in frequent-starting applications. Programmed rapid-start ballasts provide up to 30,000 bulb starts.
- ***Instant-start ballasts*** use high initial voltage to light a bulb immediately—no need to preheat the filament. Because they are wired in parallel, all other bulbs in the circuit will remain lit if one fails. They are more energy efficient than rapid-start ballasts.

Bulb Type and Quantity— One ballast can operate several bulbs. Your ballast may list many bulb trade numbers, plus a bulb quantity. For example, (2)F32T8 means the ballast will power two F32T8 (32-watt, T8-sized bulbs). This information might appear under the heading "lamp type" on your label. High-intensity discharge (HID) bulbs use magnetic ballasts, which work with metal halide, metal halide pulse-start, and high- and low-pressure sodium bulbs. Use ANSI ballast codes to match bulbs and ballasts.

Other Helpful Data—

- Minimum start temperature, also listed on ballast labels, can help confirm your selection.
- Check the wiring diagram on your ballast or count the number of wires sticking out of the ballast to make sure there are enough for your application. You may not need all of the wires. Take note of ballast size to confirm it will fit in your fixture.

Fluorescent Ballasts

Expect good performance and energy savings from these high-efficiency ballasts. They are compatible with all standard and energy-saving fluorescent bulbs, and can be used indoors and out. UL listed.

For Bulb Trade Number	For Bulb Type	For Bulb Watts	For No. of Bulbs	No. of Wires	Min. Start Temp.	Lg. × Wd. × Dp.	120 VAC	120 VAC Each	277 VAC	277 VAC Each
Magnetic Ballasts										
Preheat (Requires a Starter)										
F20T12	T12	20	1	2	+50° F.	3 1/16″ × 1 3/8″ × 1 13/16″	8345K131	$6.06	—	—
F30T12, F40T12	T12	30, 40	1	3	+50° F.	6 1/2″ × 1 15/16″ × 1 3/8″	8345K141	28.79	—	—
F15T8	T8	15	1	2	+50° F.	3 1/16″ × 1 3/8″ × 1 13/16″	8345K131	6.06	—	—
F30T8	T8	30	1	3	+50° F.	6 1/2″ × 1 15/16″ × 1 3/8″	8345K141	28.79	—	—
F4T5, F6T5, F8T5	T5	4, 6, 8	1	2	+50° F.	3 1/16″ × 1 3/8″ × 1 13/16″	8345K151	7.15	—	—
Preheat with Built-In Starter										
F14T8, F15T12, F20T12	T12	14, 15, 20	1	5	+50° F.	6 1/2″ × 1 15/16″ × 1 3/8″	8345K111	24.86	—	—
F15T12, F20T12	T12	15, 20	2	8	+50° F.	6 1/2″ × 2 3/8″ × 1 1/2″	8345K121	38.10	—	—
F13T8	T8	13	1	5	+20° F.	6 1/2″ × 1 15/16″ × 1 3/8″	8345K111	24.86	—	—
F13T8	T8	13	2	8	+30° F.	6 1/2″ × 2 3/8″ × 1 1/2″	8345K121	38.10	—	—
F15T8	T8	15	1	5	+50° F.	6 1/2″ × 1 15/16″ × 1 3/8″	8345K111	24.86	—	—
F15T8	T8	15	2	8	+50° F.	6 1/2″ × 2 3/8″ × 1 1/2″	8345K121	38.10	—	—
Rapid Start										
F34T12	T12	34	4	16	+60° F.	17″ × 2 3/8″ × 1 1/2″	8345K38	106.04	—	—
F40T12	T12	40	4	16	+50° F.	17″ × 2 3/8″ × 1 1/2″	8345K38	106.04	—	—
F32T8	T8	32	1	6	+50° F.	9 1/2″ × 2 3/8″ × 1 1/2″	8345K261	47.20	—	—
F32T8	T8	32	2	8	+50° F.	9 1/2″ × 2 3/8″ × 1 1/2″	8345K281	42.28	8345K291	$44.37
FC6T9, FC8T9	T9 Circline	20, 22	1	6	+50° F.	6 1/2″ × 1 15/16″ × 1 3/8″	9131K52	26.74	—	—
FC12T9, FC16T9	T9 Circline	32, 40	1	6	+50° F.	6 1/2″ × 1 15/16″ × 1 3/8″	9131K53	26.74	—	—
Rapid Start for High-Output Bulbs										
F24T12/HO, F36T12/HO, F42T12/HO	T12	35, 50, 55	2	8	–20° F.	11 3/4″ × 3 3/16″ × 2 5/8″	8345K311	78.76	8345K312	127.75
F48T12/HO, F60T12/HO, F64T12/HO	T12	60, 75, 80	1 or 2	8	–20° F.	11 3/4″ × 3 3/16″ × 2 5/8″	8345K311	78.76	8345K312	127.75
F72T12/HO	T12	85	1 or 2	8	–20° F.	11 3/4″ × 3 3/16″ × 2 5/8″	8345K311	78.76	8345K312	127.75
F96T12/HO	T12	110	1	8	–20° F.	11 3/4″ × 3 3/16″ × 2 5/8″	8345K311	78.76	8345K312	127.75
Rapid Start for Very-High-Output Bulbs										
F48T12/VHO, F72T12/VHO	T12	116, 168	1 or 2	8	–20° F.	14 5/16″ × 3 3/16″ × 2 5/8″	8345K342★	138.98	8345K352★	147.20
F72T12/VHO, F96T12/VHO	T12	168, 215	2	8	–20° F.	14 5/16″ × 3 3/16″ × 2 5/8″	8345K341	117.21	8345K351	140.17
F96T12/VHO	T12	185	2	8	+60° F.	14 5/16″ × 3 3/16″ × 2 5/8″	8345K341	117.21	8345K351	140.17
Instant Start										
F40T17	T17	40	2	4	0° F.	9 1/2″ × 3 1/8″ × 1 13/16″	8345K411	41.57	8345K421♠	70.06
F40T12, F42T12, F48T12	T12	34, 39, 40	2	4	0° F.	9 1/2″ × 3 1/8″ × 1 13/16″	8345K411	41.57	8345K421♠	70.06
Electronic Ballasts										
Rapid Start										
F25T12, F30T12, F34T12, F40T12	T12	25, 30, 34, 40	1	6	+50° F.	9 1/2″ × 1 11/16″ × 1 3/16″	—	—	8345K49	19.87
F30T12, F40T12	T12	30, 40	2	8	+50° F.	9 1/2″ × 1 5/16″ × 1″	8345K47	22.25	8345K47	22.25
F34T12	T12	34	2	8	+60° F.	9 1/2″ × 1 5/16″ × 1″	8345K47	22.25	8345K47	22.25
F34T12, F40T12	T12	34, 40	1	6	+32° F.	9 1/2″ × 1 11/16″ × 1 3/16″	8345K55	24.96	—	—
F34T12, F40T12	T12	34, 40	2	8	+50° F.	9 1/2″ × 1 5/16″ × 1″	8345K56	25.74	—	—
Rapid Start for High-Output Bulbs										
F48T12/HO, F60T12/HO, F72T12/HO, F96T12/HO	T12	60, 75, 85, 110	2	8	–20° F.	11 3/4″ × 2 3/16″ × 1 5/8″	8345K71	50.91	8345K71	50.91
F96T12/HO/SS	T12	95	2	8	+60° F.	11 3/4″ × 2 3/16″ × 1 5/8″	8345K71	50.91	8345K71	50.91

★ Operates one bulb when using F72T12 bulbs. ♠ Number of wires is 6.

(Continued on following page)

Fluorescent Ballasts *(Continued from previous page)*

For Bulb Trade Number	For Bulb Type	For Bulb Watts	For No. of Bulbs	No. of Wires	Min. Start Temp.	Lg. × Wd. × Dp.	120 VAC	Each	277 VAC	Each
Electronic Ballasts (Cont.)										
Low-Frequency Rapid Start										
F32T8	T8	32	2	8	+50°F	9½″ × 2⅜″ × 1½″	8345K27	$38.11	8345K28	$39.21
Programmed Start										
F17T8, F25T8, F32T8	T8	17, 25, 32	1	6	0°F	9½″ × 1 11/16″ × 1 3/16″	8345K61	46.76	8345K61	46.76
F17T8, F25T8, F32T8	T8	17, 25, 32	2	8	0°F	9½″ × 1 11/16″ × 1 3/16″	8345K63	46.77	8345K63	46.77
F14T5, F21T5, F28T5, F35T5	T5	14, 21, 28, 35	1 or 2	9	0°F	9½″ × 1 5/16″ × 1″	8345K46	53.75	8345K46	53.75
Programmed Start for High-Output Bulbs										
F96T8/HO	T8	86	1 or 2	8	–20°F	11¾″ × 2⅞″ × 1 13/16″	8345K95	73.98	8345K95	73.98
F54T5/HO	T5	54	3 or 4	9	–20°F	16 11/16″ × 1 11/16″ × 1 3/16″	8345K45	99.74	8345K45	99.74
F54T5/HO	T5	54	3 or 4	9	–20°F	24″ × 1 3/16″ × 1″	8345K44	99.74	8345K44	99.74
Programmed Rapid Start for High-Output Bulbs										
F24T5/HO, F39T5/HO, FP24/HO, FP39/HO	T5	24, 39	2	8	0°F	14 3/16″ × 1 3/16″ × ⅞″	8345K43	56.97	8345K43	56.97
F54T5/HO, FP54/HO	T5	54	2	8	–20°F	16¾″ × 1 3/16″ × 1″	8345K431	55.85	8345K431	55.85
Instant Start										
F72T12, F96T12	T12	57, 75	1 or 2	5	0°F	9½″ × 1 11/16″ × 1 3/16″	8345K53	37.00	8345K53	37.00
F96T12	T12	60	1 or 2	5	+60°F	9½″ × 1 11/16″ × 1 3/16″	8345K53	37.00	8345K53	37.00
F96T8	T8	59	1 or 2	5	+32°F	9½″ × 1 11/16″ × 1 3/16″	8345K78	42.55	8345K78	42.55
FBO16, FBO24, FBO31, FBO32, FB32T8	T8 U-Shaped	17, 25, 30, 32	1 or 2	5	–20°F	9½″ × 1 11/16″ × 1 3/16″	9127K25	19.15	9127K25	19.15
Instant Start— *Also for use with rapid-start T8 bulbs*										
F17T8, F25T8, F32T8	T8	17, 25, 32	1	4	0°F	9½″ × 1 1/16″ × 1 1/16″	8345K91	39.31	8345K91	39.31
F17T8, F25T8, F32T8	T8	17, 25, 32	2	5	0°F	9½″ × 1 1/16″ × 1 1/16″	8345K92	41.48	8345K92	41.48
F17T8, F25T8, F32T8	T8	17, 25, 32	3 or 4	8	0°F	9½″ × 1 5/16″ × 1″	8345K81	19.43	8345K81	19.43
F17T8, F25T8, F32T8, F40T8	T8	17, 25, 32, 40	1 or 2	5	0°F	9½″ × 1 5/16″ × 1″	8345K94✓	19.53	8345K94✓	19.53
F25T8, F32T8	T8	25, 32	2 or 3	6	0°F	9½″ × 1 5/16″ × 1″	8345K57	18.72	8345K57	18.72

✓ Operates one bulb when using F40T8 bulbs.

Ballasts for Plug-In Compact Fluorescent Bulbs

Use these ballasts with compact fluorescent bulbs indoors and out. (For compact fluorescent light bulbs, see page 695.) Ballasts operate on 120 VAC, except ***universal voltage ballasts*** can operate anywhere from 120 to 277 VAC. UL listed.

For No. of Bulbs	For Bulb Watts	Min. Start Temp.	Lg. × Wd. × Dp.		Each
Magnetic Preheat Ballasts					
For Short Twin-Tube (2-Pin) Bulbs					
1	5, 7	0°F	2⅜″ × 1⅜″ × 1⅜″	8305K21	$10.45
1	9	+25°F	2⅜″ × 1⅜″ × 1⅜″	8305K21	10.45
1	13	+32°F	3 1/16″ × 1 7/16″ × 1 13/16″	8305K24	6.54
For Long Twin-Tube (4-Pin) Bulbs					
1	18	+50°F	3 1/16″ × 1 7/16″ × 1 13/16″	8305K24▲	6.54
For Quad-Tube (2-Pin) Bulbs					
1	9	+25°F	2⅜″ × 1⅜″ × 1⅜″	8305K21	10.45
1	13	+32°F	3 1/16″ × 1 7/16″ × 1 13/16″	8305K24	6.54
1	26	+50°F	6½″ × 2⅜″ × 1½″	8305K44	51.84
For 2-D Tube (4-Pin) Bulbs					
1	21	+25°F	6½″ × 2⅜″ × 1½″	8305K44▲	51.84
Electronic Programmed Rapid-Start Ballast					
For Long Twin-Tube (4-Pin) Bulbs					
1	40	0°F	9½″ × 1 19/32″ × 1″	8305K38	44.58
Universal Voltage Electronic Programmed-Start Ballasts					
For Long Twin-Tube (4-Pin) Bulbs					
1	24, 36, 40	0°F	16 11/16″ × 1 3/16″ × 1″	1492T15	43.97
1 or 2	24, 36	0°F	16 11/16″ × 1 3/16″ × 1″	8305K39	66.56
1 or 2	36, 50, 55	–20°F	16 11/16″ × 1 3/16″ × 1″	8305K71	77.31
3 or 4	36, 50, 55	–20°F	16 11/16″ × 1 11/16″ × 1 3/16″	8345K45	99.74
3 or 4	36, 50, 55	–20°F	24″ × 1 3/16″ × 1″	8345K44	99.74
For Triple-Tube and Quad-Tube (4-Pin) Bulbs					
1 or 2	13	0°F	4⅝″ × 2 7/16″ × 1″	1492T11	37.74
1 or 2	18	0°F	4⅝″ × 2 7/16″ × 1″	1492T12	37.74
1 or 2	26	0°F	4⅝″ × 2 7/16″ × 1″	1492T13	35.69
2	26, 32, 42	0°F	4 9/16″ × 3″ × 1 5/16″	1492T14	46.12
Universal Voltage Electronic Instant-Start Ballasts					
For Long Twin-Tube (4-Pin) Bulbs					
1 or 2	40	0°F	9½″ × 1 11/16″ × 1 3/16″	8305K18	57.31
2 or 3	40	0°F	9½″ × 1 11/16″ × 1 3/16″	8305K19	61.18

▲ Requires a starter.

High-Pressure Sodium and Metal Halide Magnetic Ballast Kits

Operate one bulb at 120, 208, 240, or 277 volts (unless noted) with these ballast kits. Use indoors and out. Kits include ballast, capacitor, mounting brackets, hardware, and instructions (unless noted). ***High-pressure sodium*** and ***metal halide pulse start*** kits also include an ignitor. ***Metal halide*** kits do not require an ignitor.

For Bulb Watts	ANSI Number	Lg. × Wd. × Dp.		Each
High-Pressure Sodium— *Min. Start Temperature –40°F*				
35	S76	2⅝″ × 2 3/16″ × 1 13/16″	14615K21♣	$51.16
50	S68	3 15/16″ × 2 13/16″ × 2¼″	14615K22♦	98.89
70	S62	3 15/16″ × 2 13/16″ × 2 13/16″	14615K66	114.42
100	S54	3 15/16″ × 2 13/16″ × 3 7/16″	14615K45	114.44
150	S55	3 15/16″ × 2 13/16″ × 3⅞″	14615K67	121.45
250	S50	4¾″ × 4¼″ × 3½″	14615K83	138.64
250	S50	4¾″ × 4¼″ × 3⅝″	14615K91■	150.27
400	S51	4¾″ × 4¼″ × 4″	14615K84	159.01
400	S51	4¾″ × 4¼″ × 4⅜″	14615K92■	165.35
750	S111	6″ × 4¼″ × 5 3/16″	14615K65	346.15
1000	S52	6″ × 4¼″ × 6″	14615K43	238.99
1000	S52	6″ × 4¼″ × 6″	14615K93■	274.93
Metal Halide— *Min. Start Temperature –20°F*				
175	M57	3 15/16″ × 2 13/16″ × 4″	14615K71■	90.32
250	M58	4¾″ × 4¼″ × 3″	14615K81	106.55
250	M58	4¾″ × 4¼″ × 3⅛″	14615K94■	110.18
400	M59	4¾″ × 4¼″ × 3 11/16″	14615K82	103.83
400	M59	4¾″ × 4¼″ × 4″	14615K95■	115.15
1000	M47	6″ × 4¼″ × 4 11/16″	14615K96■	198.71
1000	M47	6″ × 4¼″ × 4⅞″	14615K38	194.28
1500	M48	6″ × 4¼″ × 6 1/16″	14615K72	251.91
Metal Halide Pulse Start— *Min. Start Temperature –20°F*				
50	M110	3 15/16″ × 2 13/16″ × 2⅜″	14615K69	97.55
70	M98	3 15/16″ × 2 13/16″ × 2⅞″	14615K32	111.24
100	M90	3 15/16″ × 2 13/16″ × 3″	14615K34	120.15
150	M81	3 15/16″ × 2 13/16″ × 3 13/16″	14615K36	135.92
320	M132, M154	4¾″ × 4¼″ × 3 11/16″	14615K58♥	139.62
350	M131, M171	4¾″ × 4¼″ × 3 11/16″	14615K68	139.48
400	M135, M155	4¾″ × 4¼″ × 4 1/16″	14615K73■	158.59
750	M149	6″ × 4¼″ × 4⅜″	14615K74	230.02
1000	M141	6″ × 4¼″ × 4 13/16″	14615K75	236.70

♣ Operates at 120 volts only. Includes ballast and ignitor only.
♦ Operates at 120 or 277 volts only. ■ Also operates at 480 volts.
♥ Also for ANSI number M170.

For information about light bulbs, see page 682.

Fluorescent Starters

Use these starters with preheat fluorescent bulbs and ballasts. UL listed and CSA certified.

Starter Trade Number	Watts	Dia. × Lg.		Each
FS-2	14, 15, 20	3/4″ × 1 1/2″	1623K1	$1.02
FS-4	30, 40	3/4″ × 1 1/2″	1623K2	1.02
FS-5	4, 6, 8	3/4″ × 1 1/2″	1623K3	1.02
FS-12	32 (Circline)	3/4″ × 1 1/2″	1623K5	1.02
FS-22	22 (Circline)	3/4″ × 1 1/2″	1623K6	1.02
FS-25	25	3/4″ × 1 1/2″	1623K7	1.02

High-Pressure Sodium Starters

Start bulbs quickly and effectively by pairing these starters with your high-pressure sodium bulb ballasts. Furnished with a mounting clamp, unless noted. UL recognized and CSA certified.

Watts	ANSI Ballast No.	Max. Mounting Distance from Ballast	Dia. × Lg.		Each
35-150	S76-S54	2 ft.	1 5/16″ × 2″	14595K48	$56.68
150-400	S56-S51	2 ft.	1 5/16″ × 2 1/2″	14595K49	56.45
1000	S52	5 ft.	4 3/4″ × 2 1/8″ × 1 3/8″	14595K52★	75.62

★ Oval shape; dimensions are Lg. × Wd. × Dp. Furnished with mounting tabs.

Fluorescent Ballast Connectors

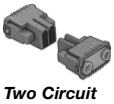

Two Circuit

Three Circuit

Replacing a ballast is quick and easy when you install these quick-disconnect connectors. To install, simply strip the wires between the ballast and power source and push each wire into the connector. They accept solid wire size 18-12 AWG and stranded wire size 14-12 AWG. Connectors comply with National Electric Code requirements for connecting linear fluorescent lights.

Made of orange nylon with copper alloy contacts. Maximum temperature is 221°F. Maximum voltage is 600 VAC. UL listed and CSA certified.

Choose the ***three-circuit ballast connector*** if your fixture has an integral switch or dimmer.

Number of Circuits	Amps @ 120 VAC	Pkg. Qty.		Per Pkg.
2	6	3	8807K1	$6.76
2	6	25	8807K2	35.92
3	6	20	8807K4	50.61

Light Bulb Lubricant

Sick of stubborn bulbs sticking in sockets? A light coating of this nontoxic, environmentally safe lubricant makes installing and removing light bulbs simple. It won't run, drip, or harden. Apply lubricant to the metal sides of any light bulb before installation. Net weight is 0.5 oz.

7112K1 ..... **Each** $5.43

Fluorescent Light Bulb Changer

Easily install and remove fluorescent bulbs from spring-loaded sockets. This changer works with T12 (1 1/2″ dia.) bulbs up to 8 ft. long. Nylon jaws snap onto bulbs for a secure grip, and the telescoping aluminum pole extends your reach up to 12 1/2 ft.—no ladder required.

8376K11 ..... **Each** $172.00

Miniature Light Bulb Changers

A

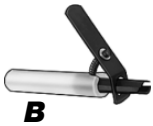

B

Install and remove miniature bulbs with ease, even in hard-to-reach areas.

Style A has two ends to accommodate a wide range of bulbs. It is made of rubber.

Style B has a steel lever with a rubber handle. Insert bulb and grasp lever for a secure grip.

For Bulb Diameters	O'all Lg.		Each
A ... 1/4″ to 13/32″ and 3/4″ to 1″	3″	9820K1	$5.64
B ... 13/64″ to 5/16″	4″	9820K2	25.78

Light Bulb Changers and Broken Bulb Remover

Grip light bulbs firmly for easy installation and removal of hard-to-reach bulbs. Use with 1 1/16″ dia. medium-base and 1 5/8″ dia. mogul-base incandescent and high-intensity discharge (HID) bulbs.

C Spring-Clip Changers with Pole—Furnished with a 5-ft. long steel pole (1701K18 below). Overall length is 5 7/8 ft.

D Spring-Clip Adjustable-Angle Changers with Pole—Similar to Style C, but with a flexible joint that works on bulbs mounted at an angle. Furnished with a 5-ft. long steel pole (1701K18 below). Overall length is 6 1/4 ft.

E Suction Cup Changers—Work on recessed fixtures. Pole is not included (1701K18 sold separately below). Length is 5 1/4″.

For Bulb Shape		Each
C.. BT37, BT46, E37, ED37	1701K11	$119.20
C.. BT28, E21, E23, E23 1/2, E25, E28, ED23 1/2, ED28	1701K12	63.70
C.. B17, E17, E18, ED17, ED18	1701K13	85.97
C.. G40, G48, PS35, PS40	1701K16	71.66
C.. ER30, ER40, PAR30, PAR36, PAR38, R30, R40	1701K17	94.83
D.. A15, A17, A19, G16 1/2, G18 1/2	1701K14	79.35
D.. A19, A21, A23, G25, G30, P25, PS25, PS30, PS35	1701K15	65.22
E.. ER30, PAR20, R20, R30	1701K31	22.98
E.. PAR30, PAR36, PAR38	1701K21	23.85
E.. R40, R52, RB52	1701K22	59.60

F Broken Bulb Remover—Fits onto the pole of the above changers as well as 1701K18 sold separately below. It removes the base of broken medium- and mogul-base bulbs. It is 6 1/2″ long.

1701K19 ..... **Each** $23.19

Add-on pole is 5 ft. long and made of lightweight, wood-insulated steel. Connect up to four poles.

1701K18 ..... **Each** $26.83

Vacuum-Assisted Light Bulb Changers and Broken Bulb Remover

Get a firm grip on hard-to-reach incandescent and halogen bulbs. Just place the flexible rubber cup on the bulb and pull down on the piston rod to create a vacuum. Use with 1 1/16″ dia. medium-base and 1 5/8″ dia. mogul-base bulbs. Changers come with one 4-ft. aluminum pole, but you can attach up to five add-on poles (sold separately below).

G Changer for 15- to 1500-watt bulbs works with any size smooth-surface bulb. It is 4 1/2 ft. long.

1689K1 ..... **Each** $70.37

G Changer for externally beaded (grooved) PAR38 flood bulbs is 4 1/2 ft. long.

1689K14 ..... **Each** $80.56

H Adjustable-angle adapter allows you to change bulbs mounted at an angle. It's made of flexible neoprene and attaches between the pole and rubber cup of the above changers. It is 1 ft. long.

1689K15 ..... **Each** $38.89

J Broken bulb remover fits on the pole of the above changers and 1689K12 sold separately below to safely remove medium- and mogul-base bulbs. It has a hardwood body and is 8 1/4″ long.

1689K3 ..... **Each** $32.41

Add-on pole is 4 ft. long and made of aluminum.

1689K12 ..... **Each** $33.33

For information about light bulbs, see page 682.

Lighting Maintenance Cart

Made to hold everything you need to change a light bulb, this cart is ready to roll when a bulb burns out. It comes with a tool box and has compartments for fluorescent bulbs up to 4-ft. long as well as all sizes of incandescent and reflector bulbs. Use the three built-in steps to reach ceilings up to 9-ft. high (maximum capacity is 250 lbs.). Steps open up to reveal three of the four storage compartments. Two polypropylene wheels provide mobility while adjustable front stoppers provide stability. Cart is black and measures 34¾″ Lg. × 22¾″ Wd. × 53⅛″ Ht.

1603K44 ..... **Each** $589.18

Shown with Bulbs (Not Included)

Light Bulb Recycling Containers

Safely dispose of your used fluorescent and HID light bulbs by recycling them. When the container is full, use the preprinted address label to ship the bulbs to a recycling facility. The price of the container includes pickup and transportation costs as well as a certificate of recycling once the bulbs are received and recycled.

For Bulb Type (Capacity)		Each
Boxes		
4-ft. T12 Fluorescent (32) or 4-ft. T8 Fluorescent (64) or U-Shaped Fluorescent (30) or HID (10)	**7580K11**	$59.98
4-ft. T12 Fluorescent (60) or 4-ft. T8 Fluorescent (120) or U-Shaped Fluorescent (50) or HID (20)	**7580K31**	119.20
8-ft. T12 Fluorescent (15) or 8-ft. T8 Fluorescent (30)	**7580K21**	65.98
Bucket		
Compact Fluorescent (90)	**7580K41**	95.38

Ballast Recycling Container

Discard your nonleaking magnetic and electronic ballasts quickly and easily. This plastic container holds up to 55 lbs. Use the preprinted address label to ship the ballasts to a recycling facility. The price of the container includes pickup and transportation costs as well as a certificate of recycling once the ballasts are received and recycled.

9710K1 ..... **Each** $110.82

Fluorescent Light Bulb Safety Shields

Prevent broken glass from falling into your work space. These shields slip over bulbs to contain the glass if a bulb breaks. Each has two end caps with holes so it's easy to connect to the bulb holders. Shields are made of transparent polycarbonate, unless otherwise indicated. *Shield for T5 bulbs* works with miniature bi-pin base bulbs; *shields for T8* and *T12 bulbs* work with medium bi-pin base and single-pin base bulbs, unless otherwise indicated. FDA and USDA compliant, and meet OSHA requirements and NEC standards.

Shields for high-output bulbs and ***shields for very-high-output bulbs*** work with recessed double-contact bases.

UV filtering shields are made of transparent acrylic. They filter out rays from 0 to 385 nanometers.

To Order: Please specify color where necessary.

Shields—Sold in packages of 24.

For Bulb Length	Fits Bulb Trade Number	Available Colors		Each Partial Pkg.	Each Full Pkg.
Shields for T12 (1½″ Dia.) Bulbs					
48″	F40T12	Clear	**1626K31**	$3.45	$3.09
48″	F40T12	Amber, Green, Red	**1626K4**	6.37	5.72
48″	F40T12	Yellow Bug Light	**1626K45**	6.37	5.72
96″	F96T12	Clear	**1626K32**	7.51	6.65
96″	F96T12	Amber, Green, Red	**1626K5**	11.58	10.43
96″	F96T12	Yellow Bug Light	**1626K55**	11.58	10.43
Shield for T12 (1½″ Dia.) High-Output Bulbs					
96″	F96T12/HO	Clear	**1626K84**	12.02	10.81
Shield for T12 (1½″ Dia.) Very-High-Output Bulbs					
96″	F96T12/VHO	Clear	**1626K85**	12.02	10.83
Shields for T8 (1″ Dia.) Bulbs					
48″	F32T8	Clear	**1626K61**	3.08	2.76
48″	F32T8	Amber, Green, Red	**1626K7**	5.84	5.25
48″	F32T8	Yellow Bug Light	**1626K65**	5.84	5.25
96″	F96T8	Clear	**1626K62**	7.27	6.28
Shield for T5 (⅝″ Dia.) Bulbs					
48″	F28T5	Clear	**1626K29**	3.93	3.52
UV Filtering Shields for T12 (1½″ Dia.) Bulbs					
48″	F40T12	Clear	**1626K81**	13.78	12.41
96″	F96T12	Clear	**1626K83**	25.98	23.39
UV Filtering Shield for T8 (1″ Dia.) Bulbs					
48″	F32T8	Clear	**1626K71**	12.77	11.51

Replacement Parts

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
End Cap for T12 Shields	48	**1626K13**	$0.67	$0.53
End Cap for T8 Shields	48	**1626K11**	.67	.53
End Cap for T5 Shields	48	**1626K12**	1.16	.92
Heat Sink Screen for HO and VHO Shields	50	**1626K14**	1.13	.88

Light Meters

You'll love the easy-to-read LCD screens on these digital meters. They work with most types of visible lights but cannot be used with LEDs or lasers. All include a light sensor, a 3¾-ft. long cable, and a 9-volt battery. Choose from meters with or without a certificate traceable to NIST (National Institute of Standards and Technology).

Basic meters have ±5% accuracy and a ½″ LCD.

Standard meters have ±5% accuracy and a ½″ LCD. Use them to transmit data to a recorder via analog output.

Deluxe meters allow you to select lighting type (tungsten/daylight, fluorescent, sodium, and mercury) for better (±4%) accuracy. They also have a 1⅜″ LCD and an RS-232 output for downloading to a PC (optional Windows 95/98/NT/2000/XP compatible software and RS-232 cable sold separately below).

Standard

	Measurement Range● Footcandles	Lux	Meters	Each	Meters with NIST Certificate	Each
Basic	0-2,000	———	**14855K31**	$93.09	**14855K32**	$172.97
Standard	0-5,000	0-50,000	**14855K41**	144.81	**14855K42**	226.19
Deluxe	0-5,000	0-50,000	**14855K51**	196.53	**14855K52**	288.36

Accessories

Vinyl Pouch Carrying Case for Standard Light Meter	**14855K43**	**Each**	$16.36
Vinyl Pouch Carrying Case for Deluxe Light Meter	**14855K44**	**Each**	$21.81
PC Software and RS-232 Cable for Deluxe Light Meter	**14855K65**	**Each**	$76.35

● Footcandle = one lumen per square foot; lux = one lumen per square meter.

Fluorescent Light Bulb Locking Clips

If you're worried about vibration shaking your light bulbs loose, count on these clips to lock bulbs securely into their holders. Clips are made of natural-color nylon and are CSA certified (8364K14 is also UL listed).

For Bulb and Base Types		Each
T12 (1½″ Dia.) and T8 (1″ Dia.) Medium Bi-Pin	**8364K12**	$2.25
T12 (1½″ Dia.) Single Pin and Recessed Double-Contact (DC)	**8364K14**	3.35

Light Bulb Accessories

For information about light bulbs, see page 682.

Light Diffusers

Smooth

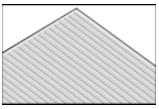
Grooved

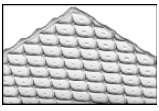
Prismatic

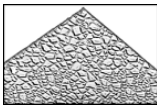
Cracked Ice

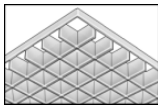
Egg Crate

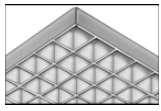
Parabolic

Cut these 2 ft. × 4 ft diffusers to size with a saw.

Keep bulbs hidden behind ***smooth***, ***grooved***, ***prismatic*** or ***cracked ice diffusers.*** *Smooth* models reduce shadows and reflected light. *Smooth* and *grooved* models distribute light evenly.

For maximum light output, and free air circulation which cools operating temperature, choose the open cell design of ***egg crate*** or ***parabolic diffusers*** (also called louver panels). *Parabolic* models are mirrored to reflect light and reduce glare.

Acrylic panels have UV stabilizers to prevent yellowing. *Polystyrene* panels are the most economical but have a tendency to yellow over time. *Polyester* panels do not yellow and are stronger than acrylic. *Polycarbonate* panels are suitable for rough-service environments. *Aluminum* panels are more rigid and noncombustible.

Material	Color/ Finish	Panel Thick.	Cell Size, Lg. × Wd. × Dp.	Mini Package Pkg. Qty.		Mini Package Per Pkg.	Standard Package Pkg. Qty.		Standard Package Per Pkg.
Smooth									
Acrylic	White	5/64″	—	2	1624K54	$89.82	10	1624K29	$280.77
Grooved									
Acrylic	Clear	5/64″	—	2	1624K36	118.53	10	1624K38	356.78
Acrylic	Clear	7/64″	—	2	1624K37	150.69	10	1624K39	447.47
Prismatic									
Polystyrene	Clear	3/32″	—	2	1624K48	39.81	10	1624K18	111.02
Acrylic	Clear	7/64″	—	2	1624K49	47.69	10	1624K24	129.31
Polyester	Clear	1/8″	—	2	1624K55	82.74	10	1624K56	271.10
Polycarbonate	Clear	1/8″	—	2	1624K3	115.15	—	—	—
Cracked Ice									
Polystyrene	Clear	5/64″	—	2	1624K51	37.77	20	1624K25	185.75
Acrylic	Clear	5/64″	—	2	1624K52	69.40	25	1624K26	581.53
Egg Crate									
Polystyrene	White	3/8″	1/2″ × 1/2″ × 3/8″	2	1624K45	31.07	5	1624K15	76.18
Polystyrene	White	1/2″	1/2″ × 1/2″ × 1/2″	2	1624K44	38.61	5	1624K14	98.53
Acrylic	White	3/8″	1/2″ × 1/2″ × 3/8″	2	1624K47	57.54	5	1624K17	109.92
Acrylic	White	1/2″	1/2″ × 1/2″ × 1/2″	2	1624K46	83.94	5	1624K16	156.22
Aluminum	White	1/2″	1/2″ × 1/2″ × 1/2″	2	14655K11	103.10	5	14655K1	184.29
Aluminum	Silver	1/2″	1/2″ × 1/2″ × 1/2″	2	14655K12	84.02	5	14655K2	151.73
Parabolic									
Polystyrene	Silver	7/16″	5/8″ × 5/8″ × 7/16″	2	1624K27	78.46	—	—	—

Sockets for Fluorescent Light Bulbs

1

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One bulb fits snugly between a pair of these white plastic sockets, which slide into your fixture (unless noted). Use with solid or stranded 18 AWG wire (unless noted). Rated at 660 watts and 600 volts (unless noted). UL listed and CSA certified.

Choose *locking bulb sockets* for areas subject to vibration. To prevent the installation of T12 (1 1/2″ dia.) bulbs in T8 fixtures, choose 1462K73 or K74 for your T8 bulbs.

	For Use with Ballast Type	Ht. × Wd. × Dp.	For Panel Thick.		Per Pair
For Bulbs w/Medium Bi-Pin Base—*For T12 (1 1/2″ Dia.) and T8 (1″ Dia.) Bulbs*					
1 Nonlocking	Preheat, Rapid Start	1 43/64″ × 1 1/4″ × 23/32″	20-18 ga.	1462K75	$4.77
1 Nonlocking	Preheat, Rapid Start	2 3/64″ × 1 1/4″ × 23/32″	20-18 ga.	1462K77	4.77
1 Nonlocking	Instant Start	1 11/16″ × 1 1/4″ × 23/32″	20-18 ga.	1462K76	4.97
1 Nonlocking	Instant Start	2 3/64″ × 1 1/4″ × 23/32″	18 ga.	1462K71	5.97
2 Locking	Preheat, Rapid Start	1 21/64″ × 1 1/8″ × 43/64″	25-22 ga.	1462K72	5.97
For Bulbs w/Medium Bi-Pin Base—*For T8 (1″ Dia.) Bulbs*					
2 Locking	Rapid Start	1 21/64″ × 1 1/8″ × 43/64″	25-22 ga.	1462K73	5.97
2 Locking	Instant Start	1 21/64″ × 1 1/8″ × 43/64″	25-22 ga.	1462K74	5.97
For Bulbs w/Miniature Bi-Pin Base—*For T5 (5/8″ Dia.) Bulbs*					
3 Nonlocking	Rapid Start	21/32″ × 19/32″ × 31/64″	—	1462K78★	8.70
For Bulbs w/Single-Pin Base—*For T12 (1 1/2″ Dia.) and T8 (1″ Dia.) Bulbs*					
4 Nonlocking	Instant Start	1 27/32″ × 1 5/16″ × 1 25/32″	20 ga.	1462K16	6.25
For Bulbs w/Recessed Double-Contact Base—*For High-Output/Very-High-Output T12 and T8 Bulbs*					
5 Nonlocking	Preheat, Rapid Start	2 19/64″ × 1 7/16″ × 1 31/32″	20 ga.	1462K14	12.64

★ Has two 1/8″ dia. mounting holes and two 6″ 18 AWG wire leads. Rated 75 watts and 250 volts.

Sockets for Plug-In Style Compact Fluorescent Light Bulbs

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7

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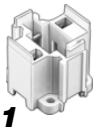
11

Easily insert plug-in style compact fluorescent bulbs into these white plastic sockets. Use with solid or stranded 18 AWG wire (unless noted). Rated at 75 watts and 600 volts. UL listed and CSA certified.

Styles 6 and ***7*** snap into 0.023″–0.039″ thick panels. ***Styles 8*** and ***9*** have two 5/32″ mounting holes, and ***Styles 10*** and ***11*** have four 5/32″ mounting holes to screw onto panels.

	Watts	Base Type	Mounting Style		Each
For Short Twin-Tube Bulbs—*2-Pin Base*					
6	5, 7, 9	G23, G23-2	Horizontal Snap-In	8310K11	$4.53
6	13	GX23, GX23-2	Horizontal Snap-In	8310K21	4.53
7	5, 7, 9	G23	Vertical Snap-In	8310K12	4.53
7	13	GX23	Vertical Snap-In	8310K22	4.53
8	5, 7, 9	G23, G23-2	Horizontal Screw-Down	8310K13	4.53
8	13	GX23, GX23-2	Horizontal Screw-Down	8310K23	4.53
For Long Twin-Tube Bulbs—*4-Pin Base*					
9	18 to 75	2G11	Horizontal/Bottom Screw-Down	8310K62■	4.88
For Triple-Tube Bulbs—*4-Pin Base*					
10	42	GX24q-4	Bottom Screw-Down	8310K58	11.43
For Quad-Tube Bulbs—*2-Pin Base*					
11	18	G24d-2	Bottom Screw-Down	8310K33	6.93
11	26	G24d-3	Bottom Screw-Down	8310K34	6.93
For Triple-Tube and Quad-Tube Bulbs—*4-Pin Base*					
10	10, 13	G24q-1	Bottom Screw-Down	8310K55	10.52
10	18	G24q-2	Bottom Screw-Down	8310K56	10.52
10	26, 32	G24q-3, GX24q-3	Bottom Screw-Down	8310K57	10.52

■ For use with 18 AWG solid wire.

For information about light bulbs, see page 682.

Light Bulb Sockets, Adapters, and Replacement Parts

Sockets

Without Switch

With Pull Switch and Receptacle

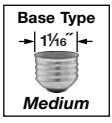

Mount these porcelain sockets to 3¼″ or 4″ outlet boxes. Sockets have screw-terminal connections and an overall diameter of 4½″. Each accepts a medium-base bulb. UL listed and CSA certified.

Socket without switch requires a remote switch. ***Socket with pull switch and receptacle*** has a three-prong grounding receptacle rated 15 amps @ 125 VAC.

	Max. Watts	Max. Volts		Each
Without Switch	660	250	16895K12	$3.58
With Pull Switch	250	250	16895K8	5.82
With Pull Switch and Receptacle	250	125	16895K9	9.16

Adapters and Replacement Parts

Styles A-M are UL listed, unless noted. For bead chain, see page 1403. For ¼″ locknuts, order 44705K412.

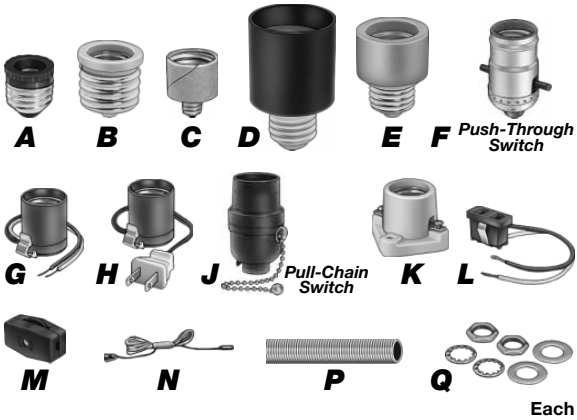

			Each
A	Med.-Socket to Candelabra-Socket Reducer	14695K41	$1.90
A	Med.-Socket to Intermediate-Socket Reducer	14695K16	2.32
B	Mogul-Socket to Medium-Socket Reducer	14695K93	4.04
C	Candelabra-Socket to Medium-Socket Enlarger	14695K42●	2.24
D	Medium-Socket to Mogul-Socket Enlarger	14695K95	4.50
E	Porcelain Med.-Socket Extender—1¼″ Extension	14695K94	5.52
F	Brass Medium Socket—No Switch	14695K51	4.62
F	Brass Medium Socket—Push-Through Switch	14695K52	3.52
F	Brass Medium Socket—Pull-Chain Switch	14695K53	2.83
F	Brass Medium Socket—Turn-Knob Switch	14695K82	3.80
G	Phenolic Medium Socket—Two 6″ Leads	14695K73	2.52
H	Phenolic Medium Socket—Two-Prong Plug	14695K74	3.24
J	Phenolic Med. Socket—High Heat, No Switch	14695K55	3.07
J	Phenolic Medium Socket—High Heat, Pull-Chain Switch	14695K56	8.05
K	Porcelain Medium-Socket Receptacle	14695K18	6.29
L	Convenience Outlet—Two 6″ Leads	14695K71	1.12
L	Convenience Outlet—Two 6″ Leads and Ground	14695K72	1.60
M	Inline On/Off Switch	14695K91	2.48
N	Braided Pull-Cord w/Bell Pendant—3-ft. Lg.	14695K65	.52
P	Threaded Pipe—30″ Lg.×⅛″ NPSM✓ Male Threads	14695K11	4.52
P	Threaded Pipe—36″ Lg.×¼″ NPSM✓ Male Threads	14695K17	8.32
Q	Nut/Washer Assortment—⅛″ NPSM✓ Female Threads (2 nuts, 2 lock washers, 2 flat washers)	14695K14	.80

● Not UL Listed. ✓ NPSM = National Pipe Straight Mechanical Thread.

Light-Absorbing Black-Out Paper

Block light from entering dark rooms, laboratories, and other light-sensitive areas with this paper. Its raised, velvety surface absorbs light. Temporarily mount ***plain-back paper*** using black masking tape (see page 3441). Or, skip the tape and choose ***adhesive-back paper*** for quick, easy mounting.

	Size	Thick.	Pkg. Qty.		Per Pkg.
Plain Back	27″×36″	0.01″	2	9019T1	$32.60
Adhesive Back	20″×30″	0.02″	2	9019T2	34.65

Incandescent Light Bulb Guards

Guards meet OSHA requirements.

Style R opens easily for quick bulb changes. It fits 1⅝″ dia. socket collars. Color is yellow. ***Style S*** fits 1½″ dia. socket collars. ***Style T*** fits 2⅝″ dia. socket collars.

	For Bulb Type	Dia.	Max. Watts	Ht.	OD		Each
Polypropylene							
R	A23	2⅞″	200	6 5/32″	5 3/32″	8349K11	$2.67
Steel							
S	A19, A21	2⅝″	100	5¾″	3 13/32″	1591K11	15.30
S	A23, PS25, PS30	3¾″	200	8¼″	4½″	1591K12	17.04
T	PAR38	4¾″	100	5⅜″	6″	1591K14	26.80

Polycarbonate Incandescent Light Bulb Guards

Protect bulbs—and retain broken glass if one breaks—with these impact-resistant bulb guards. Each guard is made of clear polycarbonate and consists of a base and globe. The base accepts a medium-base (1 1/16″ dia.) incandescent bulb. Mount guards base up as shown. Meet OSHA and FDA regulations and NEC standards.

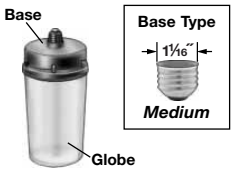

ID	Max. Watts	Ht.	OD	Guards	Each	Repl. Globes	Each
3 3/16″	75	6½″	3¾″	8350K14	$52.13	8350K51	$26.97
3 3/16″	100	9″	4¾″	8350K18	75.45	8350K52	35.96
4¼″	150	9″	4¾″	8350K26	107.06	8350K53	35.79

Colored Light Bulb Covers

Slip these reusable silicone covers over incandescent bulbs for a quick color change. Temperature range is −112° to +400° F.

To Order: Please specify amber, blue, green, red, or yellow. 16925K22 is also available in clear.

	For Bulb Type	Dia.	Ht.	OD	Pkg. Qty.		Per Pkg.
U	T1	⅛″	5/16″	3/16″	10	16925K11	$6.50
U	T1¾	¼″	5/16″	¼″	10	16925K12	6.50
U	T3¼	7/16″	11/16″	7/16″	10	16925K14	6.50
V	S6	13/16″	1¼″	13/16″	1	16925K16	6.33
V	A19	2⅜″	3⅜″	2¾″	1	16925K22	19.49

Light Filters

Also called gels, these filters block or transmit specific light wavelengths. Use scissors to cut sheets to fit in front of any light source. Max. temperature is 257° F, unless otherwise indicated.

Red, ***blue***, and ***green filters*** allow only the same color lightwave to pass through. ***IR filter*** has a reflective coating that absorbs the infrared spectrum. It's rated for use with up to 1000-watt light sources. ***UV filter*** blocks the transmission of ultraviolet light. ***Polarizer filter*** reduces glare from smooth, reflective surfaces. Max. temperature is 140° F.

Individual Filters

Filter Type	Sheet Size	Thick.		Each
Red	20″×24″	0.002″	7769T1	$14.44
Blue	20″×24″	0.002″	7769T2	14.44
Green	20″×24″	0.002″	7769T3	14.44
IR	12″×12″	0.007″	7769T4	43.50
UV	20″×24″	0.002″	7769T5	14.44
Polarizer	17″×20″	0.006″	7769T6	75.60

Multicolor Filter Pack

Fan out this handy pack and flip through 200 options before choosing the perfect color. Pack measures 1½″×3¼″.

7769T9 ..... Each $5.25

Also Available: Individual colors in 20″×24″ sheets. Please ask for 7769T88 and specify a color number from the filter pack (7769T9).

For information about light bulbs, see page 682. For information about ballasts, see page 702.

Fluorescent Strip Lights

Mount lights under cabinets and shelves. Each has an on/off switch and a removable white ribbed acrylic lens. Housing is steel with white finish; it has two mounting slots (hardware included). Operate on 120 VAC. Choose lights with 5-ft. cord and three-prong plug or lights with hardwire connections. Min. start temp. is 0°F. UL listed.

Bulbs are sold separately (except lights with ballasts for T5 bulbs, which include bulbs). 8342K73 and K74 use two bulbs (one 8-watt and one 13-watt). All bulbs have a light appearance of 4100K (cool, white light). *T5 bulbs* have a miniature bi-pin base; *T8 bulbs* have a medium bi-pin base. For other bulb options, see page 697.

O'all Size, Lg.×Wd.×Ht.	Lights with 5-ft. Cord	Each	Lights with Hardwire Connections	Each	Replacement Lenses	Each	Bulbs No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
Standard Lights											
With Electronic Rapid-Start Ballast for T5 (5/8″ Dia.) Bulbs											
12½″×3⅝″×1¼″	8342K31	$35.33	8342K41	$24.00	8342K37	$5.00	1	8	2	1562K45	$10.76
21½″×3⅝″×1¼″	8342K32	45.00	8342K42	29.00	8342K38	7.00	1	13	2	1562K48	16.00
33½″×3⅝″×1¼″	8342K73	57.20	8342K74	44.50	———	——	1	8	2	1562K45	10.76
							1	13	2	1562K48	16.00
With Electronic Rapid-Start Ballast for T8 (1″ Dia.) Bulbs											
24¼″×4″ ×1⅜″	8342K51	46.50	8342K61	30.50	8342K56	6.20	1	17	6	1501K81	51.21
36¼″×4″ ×1⅜″	8342K52	51.00	8342K62	35.00	8342K57	8.75	1	25	6	1501K75	37.05
48¼″×4″ ×1⅜″	8342K53	57.90	8342K63	42.00	8342K58	12.11	1	32	6	1683K14	27.00
Lights for Tandem Bulbs (two bulbs mounted end-to-end)											
With Electronic Rapid-Start Ballast for T5 (5/8″ Dia.) Bulbs											
24½″×3⅝″×1¼″	8342K33	47.00	8342K43	35.90	8342K47	7.50	2	8	2	1562K45	10.76
42½″×3⅝″×1¼″	8342K35	62.00	8342K45	44.50	8342K48	9.40	2	13	2	1562K48	16.00

Space Saver Fluorescent Strip Lights

Shown with Optional Reflector and Bulb

Narrow enough to fit in display cases or underneath shelves and cabinets, lights mount individually or end-to-end (mounting hardware included). Housing is steel with a white finish. Lights have knockouts for hardwire connections, operate on 120 VAC, and include an electronic instant-start ballast (min. start temp. is 50° F). UL listed.

Optional reflectors are made of steel with a white finish. They mount onto the fixture and concentrate light in one direction. ***Bulbs*** (sold separately) have a light appearance of 4100K (cool, white light). *T5 bulbs* have a miniature bi-pin base; *T8 bulbs* have a medium bi-pin base. For other bulb options, see page 697.

O'all Size, Lg.×Wd.×Ht.	Bulb Shape	Lights	Each	Optional Reflectors	Each	Bulbs No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
9 1/16″×1⅜″×2 1/16″	T5 (5/8″ Dia.)	8343K31	$39.29	8343K21	$9.52	1	4	2	1562K41	$13.50
12 1/16″×1⅜″×2 1/16″	T5 (5/8″ Dia.)	8343K32	37.06	8343K22	8.25	1	6	2	1562K42	10.74
15 1/16″×1⅜″×2 1/16″	T5 (5/8″ Dia.)	8343K35	37.20	8343K25	8.25	1	8	2	1562K45	10.76
21 1/16″×1⅜″×2 1/16″	T8 (1″ Dia.)	8343K33	37.06	8343K23	8.90	1	15	2	1501K13	11.76
40⅝″ ×1⅜″×2 1/16″	T8 (1″ Dia.)	8343K34	58.33	8343K24	9.52	2	15	2	1501K13	11.76

Plug-In Fluorescent Strip Lights

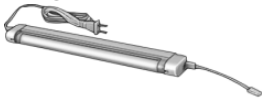

Trade the hassle of hardwiring for instant illumination. Lights come with a 6″ connecting cable to attach additional lights (up to 60 watts for 3963K22 and up to 130 watts for 3963K24), a 60″ cord, a two-prong plug, and an integral on/off switch. Operate on 120 VAC. Each has a white polycarbonate housing (mounting hardware included) and a snap-in acrylic lens. Electronic instant-start ballast (minimum start temperature is 0°F) included. UL listed.

Bulb is included. Each light uses one T5 (5/8″ dia.) miniature bi-pin base bulb. Light appearance is 4100K (cool, white light).

O'all Size, Lg.×Wd.×Ht.	Lights	Each	Replacement Bulbs Watts per Bulb	Pkg. Qty.		Per Pkg.
10″×1″×1½″	3963K22	$17.60	6	2	1562K42	$10.74
21″×1″×1½″	3963K24	20.37	13	2	1562K48	16.00

DIN-Rail Mount Fluorescent Light

Illuminate your enclosures and control cabinets. Mount this light on a 35 mm DIN rail or use the magnetic back for quick mounting to steel surfaces. It includes a compact fluorescent twin tube bulb and electronic instant start ballast. Has three screw-terminal connections, a switch, and a three-prong outlet rated 15 amps at 120 VAC. Housing is gray polyamide with a protective plastic lens. Size is 14″ Ht.×2½″ Wd.×2¾″ Dp. Meets IP20 for protection from solid objects greater than 12.5 mm in diameter. CE approved.

		Each
Light	9185K5	$139.48
Repl. 9-Watt/600-Lumen Bulb	1528K92	4.26
35 mm Wd. DIN Rail (1 m Lg.)	8961K15	4.96

Ultra-Slim Incandescent Strip Lights

A row of incandescent bulbs lines these extra-slender strip lights, making them ideal for tight spaces. All come with a self-adhesive strip for mounting. They operate on 120 VAC, have a two-prong plug, and can be used with a dimmer. Install the on/off switch (included) anywhere on the 8-ft. cord. UL listed.

Steel housing has a chrome finish. **To Order:** For aluminum housing, please specify black or white finish.

Bulbs (included) last up to 40,000 hours and are not replaceable.

O'all Size, Lg.×Wd.×Ht.	No. of Bulbs	Total Watts	Steel	Each	Aluminum	Each
10″×½″×½″	5	7.5	15015K72	$17.49	15015K11	$17.49
20″×½″×½″	10	15	15015K82	24.32	15015K22	24.32
30″×½″×½″	15	22.5	15015K32	31.89	15015K55	31.89
40″×½″×½″	20	30	15015K42	38.62	15015K66	38.62

Xenon Strip Lights

The included xenon bulbs burn cooler and last longer than halogen bulbs and cast warmer light than fluorescent bulbs. Lights have a high/low/off switch. They have an aluminum housing with a white finish (mounting hardware included) and a frosted glass lens. Lights operate on 110 VAC. Choose lights with a 5-ft. cord and two-prong plug or lights with hardwire connections. UL listed.

O'all Size, Lg.×Wd.×Ht.	No. of Bulbs	Lights with 5-ft. Cord	Each	Lights w/Hardwire Connections	Each
9″ ×4⅝″×1¼″	1	1657K12	$50.98	1657K11	$48.04
17½″×4⅝″×1¼″	2	1657K14	60.78	1657K13	57.84
26″ ×4⅝″×1¼″	3	1657K16	76.47	1657K15	73.53
34½″×4⅝″×1¼″	4	1657K18	92.16	1657K17	89.22

18-Watt Replacement Bulb ..... 1657K19 Each $3.00

LED Strip Lights

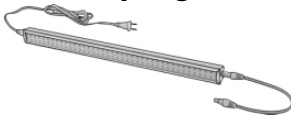

Save energy and reduce costs with these long-life LED lights. They come with a 7⅜″ connecting cable to attach additional lights, a 5-ft. cord with two-prong plug, and an on/off switch. Housing is aluminum. Mounting brackets and hardware are also included. Operate on 120 VAC. UL listed.

Bulbs (included) last up to 30,000 hours. Light appearance is 5000K (daylight light).

O'all Size, Lg.×Wd.×Ht.	No. of Bulbs	Total Watts	Each
12⅛″×1½″×⅞″	56	5.5	2714K1 $69.73
19″ ×1½″×⅞″	80	6.6	2714K2 86.45

For information about light bulbs, see page 682.

Wall-Mount Fluorescent Lights

A three-sided white acrylic lens lets these lights shine brightly in every direction: up, down, and outward. Housing and ends are made of anodized aluminum (unless noted). Lights include an on/off switch, a 120 VAC rated outlet (for three-prong plug), an electronic ballast for T8 (1″ dia.) bulbs, and knockouts for hardware connections. They operate on 120 VAC. UL listed for damp locations.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light) and a medium bi-pin base. For other bulb options, see page 697.

O'all Size, Lg.×Ht.×Dp.	Ballast Type	Min. Start Temp.	*Lights*	Each	*Replacement Lens*	Each	Bulbs: No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
24⅜″×2⅝″×4¼″	Instant Start	0°F	1634K32	$72.26	1634K51	$8.34	1	17	6	1501K81	$51.21
36⅜″×2⅝″×4¼″	Instant Start	0°F	1634K33	80.45	1634K53	8.68	1	25	6	1501K75	37.05
48⅜″×2⅝″×4¼″	Instant Start	0°F	1634K36	72.69	1634K54	11.75	1	32	6	1683K14	27.00
48⅜″×3¼″×5½″	Instant Start	0°F	1634K37♣	99.32	1634K45	13.90	2	32	6	1683K14	27.00

♣ Housing is aluminum.

Track Lighting

Position this series of lights exactly where you want it, then swivel and slide individual lights along the track for precise beam direction. UL and C-UL listed.

Track lighting kit comes with a 4-ft. aluminum track and three lights (mounting hardware is included, bulbs are not). Track and lights are white. Position the power feed anywhere on the track—it has screw terminals for hardwire connections. Lights operate on 120 VAC and use medium-base R20 incandescent bulbs (75 max. watts) or PAR20 halogen bulbs (50 max. watts). For bulbs, see pages 687-688.

Optional large bulb light comes with an on/off switch. It uses one medium-base PAR30L halogen bulb (75 max. watts), BR30 incandescent bulb (65 max. watts), or standard household A19 incandescent bulb (100 max. watts). For bulbs, see pages 683, 687, and 688.

1467K11

1467K62

	Light Size, Lg.×Wd.		Each
Track Lighting Kit	6⅛″×3½″	1467K11	$67.85
Optional Large Bulb Light	6⅝″×4½″	1467K62	27.69

Recessed Incandescent Lights

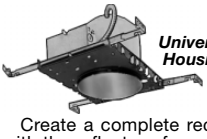

Universal Housing

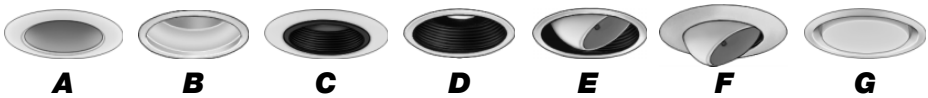

A ***B*** ***C*** ***D*** ***E*** ***F*** ***G***

Create a complete recessed light by pairing a universal housing with the reflector of your choice (each sold separately). Lights have hardwire connections and Romex connectors for easy installation. They operate on 120 VAC. UL and C-UL listed for damp locations; 1495K61 is also UL and C-UL listed for wet locations.

Bulbs are not included, see pages 683, 687, and 688.

Universal Housing

Mount this housing in ceilings with or without insulation (mounting hardware included). Complete housing measures 14⅛″ Lg.×13⅜″ Wd.×7½″ Dp. It requires a 7″ diameter opening and has a 6⅞″ ID. Hanger bars adjust horizontally from 13¼″ to 25¼″.

1495K41 ..... **Each** $12.75

Reflectors

	Trim Style	For Use with Incandescent Bulbs/ Max. Watts	For Use with Halogen Bulbs/ Max. Watts		Each
A	Open, White	BR30/65	PAR30/75	1495K51	$13.07
B	Open, White	A19/100, BR40/120, PAR38/150	PAR38/90	1495K58	13.07
C	Black Baffle with White Reflector	A19/40, BR30/65	PAR30/75	1495K62	15.68
D	Black Baffle with White Reflector	A19/100, BR40/120, PAR38/150	PAR38/90	1495K53	49.74
E	Black Baffle with Recessed White Eyeball	BR30/65	PAR30/75	1495K54	38.24
F	White Eyeball	BR30/65	PAR30/75	1495K56	24.79
G	White Shower Light with Lens	A19/60	———	1495K61	17.23

Recessed Fluorescent Lights

Also known as troffers, these lights fit standard suspended T-bar ceiling grids. Each has a steel housing with a white reflective finish and T-bar safety clips to secure the light in place. Lights have knockouts for hardwire connections and operate on 120/277 VAC. Minimum start temperature is 0°F. For replacement diffusers, see page 706. UL listed.

Prismatic diffusers are acrylic and disperse light evenly. ***Parabolic diffusers*** are aluminum and aim light directly at your work surface to avoid light scatter and reduce glare.

Lights have electronic ballasts. *Rapid-start ballasts* are best for applications that require many on/off switches per day. *Instant-start ballasts* light the bulb immediately and are best for applications that require few switches per day.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light) and a medium bi-pin base. For other bulb options, see page 697.

Light with Prismatic Diffuser

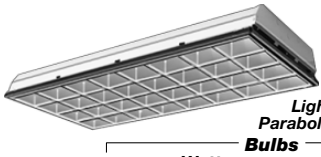

Light with Parabolic Diffuser

O'all Size, Lg.×Wd.×Ht.	Ballast Type	No. of Louver Cells	*Lights*	Each	Bulbs: No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
Lights with Prismatic Diffuser—*For T8 (1″ Dia.) Bulbs*									
24″×24″×3¾″	Instant Start	—	8340K81♦	$76.45	2	32	1	8315K19	$16.42
24″×24″×4½″	Rapid Start	—	8340K251♦	85.60	2	32	1	8315K19	16.42
48″×12″×4½″	Rapid Start	—	8340K261	74.96	2	32	6	1683K14	27.00
48″×12″×4½″	Instant Start	—	8340K34	69.82	2	32	6	1683K14	27.00
48″×24″×3¼″	Rapid Start	—	8340K271	83.07	2	32	6	1683K14	27.00
48″×24″×3¼″	Rapid Start	—	8340K281	102.19	4	32	6	1683K14	27.00
48″×24″×3¼″	Instant Start	—	8340K91	73.82	2	32	6	1683K14	27.00
48″×24″×3¼″	Instant Start	—	8340K92	71.23	4	32	6	1683K14	27.00
Lights with Parabolic Diffuser—*For T8 (1″ Dia.) Bulbs*									
24″×24″×4½″	Instant Start	9	1466K87♦	92.10	2	32	1	8315K19	16.42
48″×12″×7¼″	Instant Start	9	1466K68	132.08	2	32	6	1683K14	27.00
48″×24″×4½″	Instant Start	12	1466K69	102.50	2	32	6	1683K14	27.00
48″×24″×4½″	Instant Start	18	1466K62	92.11	3	32	6	1683K14	27.00
48″×24″×4½″	Instant Start	32	1466K71	113.66	4	32	6	1683K14	27.00

♦ Uses U-shaped bulbs.

Surface-Mount Fluorescent Lights

Surface mount one light individually or several end-to-end. Lights can also be stem mounted. Mounting hardware is not included. Each has a steel housing with a white enamel finish, plus a prismatic acrylic lens. Lights have knockouts for hardwire connections and operate on 120 and 277 VAC. They use T8 (1″ dia.) bulbs. UL listed.

Lights have electronic ballasts. *Rapid-start ballasts* are best for applications that require many on/off switches per day. *Instant-start ballasts* light the bulb immediately and are best for applications that require few switches per day.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light) and a medium bi-pin base. For other bulb options, see page 697.

O'all Size, Lg.×Wd.×Ht.	Ballast Type	Min. Start Temp.	Lights	Each	Bulbs No. Req'd	Bulbs Watts per Bulb	Bulbs Pkg. Qty.	Bulbs	Per Pkg.
24″×24¼″×3½″	Rapid Start	32° F	1654K71 ♦	$153.26	2	32	1	8315K19	$16.42
48″×12¼″×4¾″	Rapid Start	32° F	1654K74	145.37	2	32	6	1683K14	27.00
48″×24¼″×3½″	Rapid Start	32° F	1654K75	222.09	4	32	6	1683K14	27.00
48″×24¼″×3½″	Instant Start	0° F	1654K52	146.84	2	32	6	1683K14	27.00
48″×24¼″×3½″	Instant Start	0° F	1654K53	176.19	4	32	6	1683K14	27.00

♦ Uses U-shaped bulbs.

Wraparound Lens Fluorescent Lights

Brighten large areas with these lights—their wraparound lens allows light to shine from both sides as well as the bottom. Lights have a prismatic acrylic lens and a steel housing with a white finish. They have knockouts for hardwire connections and operate on 120 and 277 VAC. Lights can be surface mounted. The 48″ long lights and 48¾″ long damp-location lights can also be stem mounted. Mounting hardware is not included. UL listed.

Damp-location lights are UL and C-UL listed for damp locations. Mount on walls or ceilings. ***Wet-location lights*** are UL and C-UL listed for wet locations on covered ceilings only.

Rapid-start and *programmed-start ballasts* are best for applications that require many on/off switches per day. *Instant-start ballasts* light the bulb immediately and are best for applications that require few switches per day.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light). *T8 bulbs* have a medium bi-pin base; *T5 bulbs* have a miniature bi-pin base. For other bulb options, see page 697.

O'all Size, Lg.×Wd.×Ht.	Ballast Type	Min. Start Temp.	Lights	Each	Bulbs No. Req'd	Bulbs Watts per Bulb	Bulbs Pkg. Qty.	Bulbs	Per Pkg.
Standard Lights									
With Electronic Ballast for T8 (1″ Dia.) Bulbs									
24″ × 8⅜″ ×2⅞″	Rapid Start	0° F	1619K711	$94.58	2	17	6	1501K81	$51.21
24″ × 8⅜″ ×2⅞″	Instant Start	0° F	1619K38	83.63	2	17	6	1501K81	51.21
48″ × 7″ ×4½″	Instant Start	0° F	1619K36	102.29	1	32	6	1683K14	27.00
48″ × 7″ ×4½″	Rapid Start	0° F	1619K721	97.84	1	32	6	1683K14	27.00
48″ × 8⅜″ ×2⅞″	Rapid Start	0° F	1619K731	67.50	2	32	6	1683K14	27.00
48″ × 8⅜″ ×2⅞″	Instant Start	0° F	1619K83	64.62	2	32	6	1683K14	27.00
48″ ×13¾″ ×2⅞″	Rapid Start	0° F	1619K741	116.19	4	32	6	1683K14	27.00
48″ ×13¾″ ×2⅞″	Instant Start	0° F	1619K84	88.72	4	32	6	1683K14	27.00
With Electronic Ballast for T5 (⅝″ Dia.) Bulbs									
48″ × 8⅜″ ×2⅞″	Programmed Start	0° F	1619K11	93.50	2	54	6	1562K57	93.58
48″ ×14⅝″ ×2⅞″	Programmed Start	0° F	1619K12	133.77	4	54	6	1562K57	93.58
Lights for Tandem Bulbs (two bulbs mounted end-to-end)									
With Electronic Ballast for T8 (1″ Dia.) Bulbs									
96″ × 8⅜″ ×2⅞″	Rapid Start	0° F	1619K751	155.74	4	32	6	1683K14	27.00
Damp-Location Lights									
With Electronic Ballast for T8 (1″ Dia.) Bulbs									
48¾″ × 8⅜″ ×2¾″	Instant Start	0° F	16215K71	194.55	2	32	6	1683K14	27.00
48¾″ ×12⅜″ ×2¾″	Instant Start	0° F	16215K72	254.55	4	32	6	1683K14	27.00
Wet-Location Lights									
With Electronic Ballast for T8 (1″ Dia.) Bulbs									
48¾″ × 8⅜″ ×2¾″	Instant Start	0° F	16215K73	219.00	2	32	6	1683K14	27.00
48¾″ ×12⅜″ ×2¾″	Instant Start	0° F	16215K74	270.91	4	32	6	1683K14	27.00

Plug-In Exposed-Bulb Fluorescent Lights with Reflector

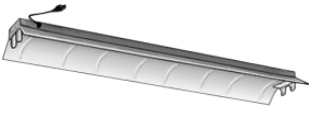

Get all the portable, plug-in convenience of a shop light plus industrial-grade toughness with these lights. They have a steel housing with a white finish and come with two 9″ hanging chains for mounting. Each light has a three-prong plug and a pull switch. They operate on 120 VAC. UL listed.

Rapid-start ballast is best for applications that require many on/off switches per day. *Instant-start ballast* lights the bulb immediately and is best for applications that require few switches per day.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light) and a medium bi-pin base (unless noted). For other bulb options, see pages 696-697.

O'all Size, Lg.×Wd.×Ht.	Ballast Type	Min. Start Temp.	Cord Lg.	Lights	Each	Bulbs No. Req'd	Bulbs Watts per Bulb	Bulbs Pkg. Qty.	Bulbs	Per Pkg.
With Electronic Ballast for T12 (1½″ Dia.) Bulbs										
24″× 6½″×3⅝″	Rapid Start	0° F	1 ft.	1602K9	$46.90	2	20	6	1501K24	$28.38
With Electronic Ballast for T12 (1½″ Dia.) High-Output Bulbs										
96″×11¼″×5″	Rapid Start	–20° F	10 ft.	1602K23●	99.77	2	110	6	1504K18	48.97
With Electronic Ballast for T8 (1″ Dia.) Bulbs										
48″×11¼″×4″	Instant Start	0° F	6 ft.	1602K7	49.26	2	32	6	1683K14	27.00

● Uses bulbs with recessed double-contact (DC) base.

Exposed-Bulb Fluorescent Lights

Hang these lights overhead—individually or in rows—and they'll cast even illumination throughout a large area. Housing is steel with a white finish. Surface or suspension mount (mounting hardware not included). Lights operate on 120/277 VAC and have knockouts for hardware connections. UL listed.

Instant-start ballasts light the bulb immediately and are best for applications that require few on/off switches per day. *Rapid-start* and *programmed-start ballasts* are best for applications that require many on/off switches per day. *Ballasts for high-output bulbs* provide more light.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light) and a medium bi-pin base (unless noted). For other bulb options, see page 697.

O'all Size, Lg. × Wd. × Ht.	Ballast Type	Min. Start Temp.	Lights Each	Bulbs No. Req'd	Watts per Bulb	Pkg. Qty.	Per Pkg.
Standard Lights							
With Electronic Ballast for T8 (1″ Dia.) Bulbs							
24″ × 2 1/8″ × 1 1/2″	Instant Start	0° F	1612K91 $76.92	1	17	6	1501K81 $51.21
24″ × 2 1/8″ × 1 1/2″	Programmed Start	–20° F	1612K92 72.79	1	17	6	1501K81 51.21
24″ × 4 3/8″ × 2 15/16″	Programmed Start	0° F	1612K631 75.00	2	17	6	1501K81 51.21
36″ × 2 1/8″ × 1 1/2″	Instant Start	0° F	1612K93 82.84	1	25	6	1501K75 37.05
36″ × 2 1/8″ × 1 1/2″	Programmed Start	–20° F	1612K94 80.61	1	25	6	1501K75 37.05
48″ × 2 1/8″ × 1 1/2″	Rapid Start	0° F	1612K95 68.81	1	32	6	1683K14 27.00
48″ × 2 1/8″ × 1 1/2″	Instant Start	0° F	1612K96 56.59	1	32	6	1683K14 27.00
48″ × 4 3/8″ × 2 15/16″	Rapid Start	0° F	1612K661 59.48	2	32	6	1683K14 27.00
48″ × 4 3/8″ × 2 15/16″	Instant Start	0° F	1612K82 49.96	2	32	6	1683K14 27.00
96″ × 4 3/8″ × 2 15/16″	Instant Start	0° F	1612K671★ 122.20	1	59	6	8355K85 74.60
96″ × 4 3/8″ × 2 15/16″	Instant Start	0° F	1612K681★ 99.60	2	59	6	8355K85 74.60
With Electronic Ballast for T8 (1″ Dia.) High-Output Bulbs							
96″ × 4 3/8″ × 3″	Programmed Start	–20° F	1612K691● 172.05	2	86	6	1504K92 121.68
Lights for Tandem Bulbs (two bulbs mounted end-to-end)							
With Electronic Ballast for T8 (1″ Dia.) Bulbs							
96″ × 2 1/8″ × 1 1/2″	Rapid Start	0° F	1612K97 86.35	2	32	6	1683K14 27.00
96″ × 2 1/8″ × 1 1/2″	Instant Start	0° F	1612K98 90.63	2	32	6	1683K14 27.00
96″ × 4 1/4″ × 3″	Rapid Start	0° F	1612K741 108.66	4	32	6	1683K14 27.00
96″ × 4 1/4″ × 3″	Instant Start	0° F	1612K86 72.16	4	32	6	1683K14 27.00

★ Uses bulbs with single-pin base. ● Uses bulbs with recessed double-contact (DC) base.

Exposed-Bulb Fluorescent Lights with Reflector

The ballast and electrical hardware are tucked out of the way in the top portion of these lights, making bulb changes simple and leaving room for the steel reflector to provide maximum light output. Also called turret lights, they have a steel housing with a white finish and can be surface or suspension mounted (mounting hardware not included). Lights have knockouts for hardware connections and operate on 120/277 VAC (unless noted). UL listed.

Heavy duty lights have reflector end caps and pressure-lock bulb holders.

Lights with solid-top reflectors reflect all light downward. ***Lights with uplight reflectors*** have openings that allow 8-10% of light to escape, so they provide more ambient light and reduce glare.

Rapid-start and *programmed-start ballasts* are best for applications that require many on/off switches per day. *Instant-start ballasts* light the bulb immediately and are best for applications that require few on/off switches per day. *Ballasts for high-output bulbs* provide more light.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light). *T12* and *T8 bulbs* have a medium bi-pin base (unless noted), and *T5 bulbs* have a miniature bi-pin base. For other bulb options, see pages 696-697.

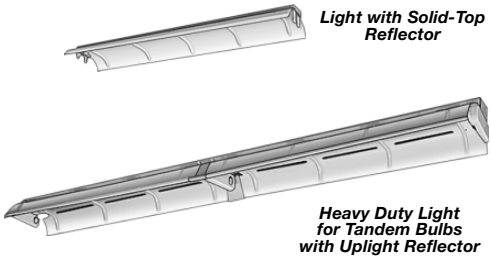

O'all Size, Lg. × Wd. × Ht.	Ballast Type	Min. Start Temp.	Lights with Solid-Top Reflectors Each	Lights with Uplight Reflectors Each	Bulbs No. Req'd	Watts per Bulb	Pkg. Qty.	Per Pkg.
Lights								
With Electronic Ballast for T8 (1″ Dia.) Bulbs								
48″ × 12″ × 4″	Rapid Start	0° F	16235K61 $85.03	1613K67 $70.63	2	32	6	1683K14 $27.00
48″ × 12″ × 4″	Instant Start	0° F	16235K62 68.37	1613K46 56.76	2	32	6	1683K14 27.00
96″ × 12″ × 4″	Instant Start	0° F	16235K64★ 97.27	1613K64★ 110.14	2	59	6	8355K85 74.60
With Electronic Ballast for T8 (1″ Dia.) High-Output Bulbs								
96″ × 12″ × 4″	Programmed Start	–20° F	16235K66● 146.18	1613K65● 181.26	2	86	6	1504K92 121.68
With Electronic Ballast for T5 (5/8″ Dia.) High-Output Bulbs								
46 1/8″ × 4 3/4″ × 2 1/4″	Programmed Start	0° F	16235K68 151.24	— —	2	54	6	1562K57 93.58
Lights for Tandem Bulbs (two bulbs mounted end-to-end)								
With Electronic Ballast for T8 (1″ Dia.) Bulbs								
96″ × 12″ × 4″	Instant Start	0° F	16235K59 120.77	1613K62 120.77	4	32	6	1683K14 27.00
With Electronic Ballast for T5 (5/8″ Dia.) High-Output Bulbs								
92 1/8″ × 4 3/4″ × 2 1/4″	Programmed Start	0° F	16235K67 298.74	— —	4	54	6	1562K57 93.58
Heavy Duty Lights								
With Magnetic Ballast for T12 (1 1/2″ Dia.) Very-High-Output Bulbs								
96″ × 13 3/8″ × 6 5/8″	Rapid Start	–20° F	8338K21●♣ 193.06	8338K19●♣ 193.11	2	215	6	1504K95 115.33
With Electronic Ballast for T8 (1″ Dia.) Bulbs								
49 7/8″ × 13 3/8″ × 6 5/8″	Rapid Start	0° F	8338K111 102.10	8338K121 102.10	2	32	6	1683K14 27.00
49 7/8″ × 13 3/8″ × 6 5/8″	Instant Start	0° F	8338K22 92.48	8338K57 92.48	2	32	6	1683K14 27.00
96″ × 13 3/8″ × 6 5/8″	Instant Start	0° F	8338K131★ 141.98	8338K141★ 172.08	2	59	6	8355K85 74.60
With Electronic Ballast for T8 (1″ Dia.) High-Output Bulbs								
96″ × 13 3/8″ × 6 5/8″	Programmed Start	–20° F	8338K154● 188.10	8338K164● 188.10	2	86	6	1504K92 121.68
Heavy Duty Lights for Tandem Bulbs (two bulbs mounted end-to-end)								
With Electronic Ballast for T8 (1″ Dia.) Bulbs								
99 5/8″ × 13 3/8″ × 6 5/8″	Rapid Start	0° F	8338K171 170.56	8338K181 170.56	4	32	6	1683K14 27.00

★ Uses bulbs with single-pin base. ● Uses bulbs with recessed double-contact (DC) base. ♣ Operates on 277 VAC only.

Wet-Location Fiberglass Fluorescent Lights

Equipped with a one-piece impact-resistant fiberglass housing with full gasketing, these lights are protected from moisture and dirt. They also have corrosion-resistant latches. Housing is white. Lights can be surface or suspension mounted (mounting hardware not included). Not for use in hazardous environments. Lights have knockouts for hardwire connections (unless otherwise indicated) and operate on 120/277 VAC.

Lights can withstand liquid dripping, splashing, or falling. Mount on covered ceilings only. All are UL listed for wet locations.

Lights for T8 bulbs have a shatter-resistant translucent acrylic lens, and ½″ NPT female conduit connections. *Lights for T5 bulbs* have a shatter-resistant clear prismatic polycarbonate lens.

Instant-start ballasts light the bulb immediately and are best for applications that require few on/off switches per day. *Rapid-start* and *programmed-start ballasts* are best for applications that require many switches per day.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light). *T8 bulbs* have a medium bi-pin base (unless noted), and *T5 bulbs* have a miniature bi-pin base. For other bulb options, see page 697.

O'all Size, Lg.×Wd.×Ht.	Ballast Type	Min. Start Temp.	Lights	Each	Bulbs No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
With Electronic Ballast for T8 (1″ Dia.) Bulbs									
50″×7⅝″×4¾″	Instant Start	0°F	1616K22	$129.50	2	32	6	1683K14	$27.00
50″×7⅝″×4¾″	Rapid Start	0°F	1616K671	154.61	2	32	6	1683K14	27.00
98″×7⅝″×5⅝″	Instant Start	0°F	1616K471★	265.63	2	59	6	8355K85	74.60
With Electronic Ballast for T8 (1″ Dia.) High-Output Bulbs									
98″×7⅝″×5⅝″	Programmed Start	−20°F	1616K871●	325.94	2	86	6	1504K92	121.68
With Electronic Ballast for T5 (⁵⁄₈″ Dia.) Bulbs									
26″×7″ ×5¼″	Programmed Start	0°F	5511T11	187.82	2	24	2	1562K55	43.63
50″×7″ ×5¼″	Programmed Start	0°F	5511T21	243.08	2	54	6	1562K57	93.58

★ Uses bulbs with single-pin base. ● Uses bulbs with recessed double-contact (DC) base.

Replacement Parts	Lg.×Wd.×Ht.		Each
Lens for 26″ Lg.×7″ Wd. Light	25¾″ ×6⅜″ ×2¼″	5511T91	$94.10
Lens for 50″ Lg.×7″ Wd. Light	49¾″ ×6⅜″ ×2¼″	5511T92	131.14
Lens for 50″ Lg.×7⅝″ Wd. Lights	49¹⁹⁄₃₂″×7¹⁹⁄₆₄″×2⁷⁄₆₄″	1616K89	40.15
Lens for 98″ Lg.×7⅝″ Wd. Lights	97¹⁹⁄₃₂″×7¹⁹⁄₆₄″×3″	1616K98	65.40
Latch		1616K56	1.55

Damp-Location Steel Fluorescent Light

Moisture, dirt, and dust stay sealed out of this light—its lens fits flush against the housing and is secured by latches. Lens is clear acrylic and housing is steel with a white finish. Light can be surface or stem mounted (mounting hardware not included). It has knockouts for hardwire connections and operates on 120 VAC. Light has an electronic ballast and uses T8 (1″ dia.) bulbs. UL listed for damp locations.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light) and a medium bi-pin base. For other bulb options, see page 697.

O'all Size, Lg.×Wd.×Ht.	Ballast Type	Min. Start Temp.	Light	Each	Replacement Lens	Each	Bulb No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
50⅛″×8″×5⅝″	Instant Start	0°F	1618K75	$196.55	1618K33	$30.45	2	32	6	1683K14	$27.00

Harsh Environment Fluorescent Lights

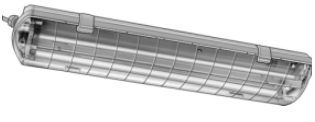

IP66 rated for protection from power jets of water, these lights are resistant to water, weather, dust, and corrosion. Use them both indoors and out. Lights have an off-white polycarbonate housing and a clear prismatic polycarbonate lens. They can be surface or suspension mounted (mounting hardware included). Lights have knockouts for hardwire connections and operate on 120/277 VAC. ETL listed and CSA certified to UL marine standard 595.

Bulbs (sold separately, unless noted) have a light appearance of 4100K (cool, white light). *T8 bulbs* have a medium bi-pin base; *T5 bulbs* have a miniature bi-pin base. For other bulb options, see page 697.

O'all Size, Lg.×Wd.×Ht.	Ballast Type	Min. Start Temp.	Lights	Each	Bulbs No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
With Electronic Ballast for T8 (1″ Dia.) Bulbs									
26″×6½″×4¼″	Instant Start	32°F	8295K551✓	$137.50	2	17	6	1501K81	$51.21
50″×6½″×4¼″	Instant Start	32°F	8295K11	162.50	2	32	6	1683K14	27.00
With Electronic Ballast for T5 (⁵⁄₈″ Dia.) High-Output Bulbs									
26″×6½″×4¼″	Instant Start	32°F	8295K12✓	165.00	2	24	2	1562K55	43.63
50″×6½″×4¼″	Instant Start	32°F	8295K13	190.00	2	54	6	1562K57	93.58

✓ Bulbs are included.

Wet-Location Tubular Fluorescent Lights

Tough enough for food processing environments and other corrosive areas, these lights are NSF C-2 certified to withstand 1200 psi in washdown applications. Lights have an impact-resistant, nonyellowing tubular acrylic lens with silicone gaskets and Type 304 stainless steel end caps. A white aluminum reflector maximizes illumination, and stainless steel mounting straps easily move to align with beams or joists for direct and chain mounting. Lights have hardwire connections and operate on 120/277 VAC. ETL and C-ETL listed for wet locations.

Bulbs (sold separately) have a light appearance of 4100K (cool, white light). *T12 bulbs* have a recessed double-contact (DC) base; *T8 bulbs* have a medium bi-pin base. For other bulb options, see pages 696-697.

O'all Size, Lg.×Dia.	Ballast Type	Min. Start Temp.	Lights	Each	Repl. Lenses	Each	Bulbs No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
With Electronic Ballast for T12 (1½″ Dia.) Bulbs											
51⅜″×5⅞″	Rapid Start	−20°F	8333K13	$290.57	8333K9	$90.00	2	60	6	1504K65	$50.96
With Electronic Ballast for T8 (1″ Dia.) Bulbs											
51⅜″×5⅞″	Instant Start	0°F	8333K11	236.80	8333K9	90.00	2	32	6	1683K14	27.00

Vandal-Resistant Wet-Location Fluorescent Lights

Tamper-resistant Torx screws protect these lights against vandals. They attach the gasket and lens to the white steel base plate. You'll need a T20 pin-in-head Torx driver to remove screws (see pages 2848-2850). Lens is impact-resistant clear prismatic polycarbonate.

Lights operate on 120/277 VAC (unless noted) and have knockouts for hardwire connections and mounting (mounting hardware not included). They have an electronic ballast and use T8 (1″ dia.) bulbs. ETL and C-ETL listed for wet locations on indoor and outdoor covered ceilings (unless noted).

Bulbs (sold separately) have a light appearance of 4100K (cool white light) and a medium bi-pin base. For other bulb options, see page 697.

O'all Size, Lg. × Wd. × Ht.	Ballast Type	Min. Start Temp.	Lights	Each	Bulbs: No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
25½″ × 5″ × 4½″	Instant Start	0° F	1695K72♥	$210.00	1	17	6	1501K81	$51.21
50″ × 4⅞″ × 4⅝″	Instant Start	0° F	1695K81	214.85	1	32	6	1683K14	27.00
50½″ × 9½″ × 3¼″	Instant Start	0° F	1695K82	223.41	2	32	6	1683K14	27.00

♥ Operates on 120 VAC. UL and C-UL listed for wet locations on indoor and outdoor covered ceilings.

Wet-Location Wall-Mount Fluorescent Lights

A sealed steel housing keeps out contaminants and up to 10 psi of sprayed water. Lights are ideal for wet environments and Class 100 to Class 100,000 clean rooms. They have a white finish and a clear prismatic acrylic lens. Lights operate on 120/277 VAC and have knockouts for hardwire connections. Each has an electronic ballast and uses T8 (1″ dia.) bulbs. UL and C-UL listed for wet locations on indoor and outdoor covered ceilings.

Bulbs (sold separately) have a light appearance of 4100K (cool white light) and a medium bi-pin base. For other bulb options, see page 697.

O'all Size, Lg. × Ht. × Dp.	Ballast Type	Min. Start Temp.	Lights	Each	Bulbs: No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
24″ × 6⅞″ × 5⅞″	Instant Start	0° F	1642K31	$242.00	2	17	6	1501K81	$51.21
48″ × 6⅞″ × 5⅞″	Instant Start	0° F	1642K41	310.00	2	32	6	1683K14	27.00

Hazardous-Location Fluorescent Lights

Lights have an electronic ballast (unless noted).

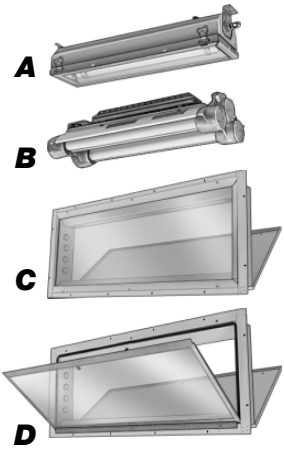

A Stainless Steel Surface-Mount Lights—UL 844 and C-UL listed for Class I, Div. 2, Groups A, B, C, and D hazardous locations; UL 1598A listed for marine duty. Lights have a corrosion-resistant Type 304 stainless steel housing for use in washdown applications, plus a fully gasketed clear acrylic lens secured with Type 304L stainless steel latches. Reflector is white aluminum. Lights operate on 120/277 VAC. They have hardwire connections and ¾″ NPT female conduit mounting hubs on both ends. Surface mount using included hardware.

B Tubular Surface-Mount Lights—UL 844 listed for Class I, Div. 1, Groups C and D; Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 1 and 2, Groups E, F, and G; Class III hazardous locations; UL 1598A listed for marine duty. Lights have a corrosion-resistant aluminum housing for use in washdown applications, plus an aluminum reflector and impact- and heat-resistant glass tubes that protect bulbs. They have a ½″ NPT female conduit hub and hardwire connections. Lights operate on 120/277 VAC, except 8335K31, which operates on 120 VAC. Surface mount, unless noted. Mounting hardware is not included.

C&D Recessed Lights—ETL and C-ETL listed Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 2, Groups F and G hazardous locations. These lights are designed for recessed mounting (mounting hardware included) in wet and damp locations such as paint spray booths. They're made of steel with a white baked enamel finish and have a clear tempered glass lens that is gasketed to seal out vapors, dust, and moisture. Each has two electronic ballasts and hardwire connections. Lights operate on 120 VAC, except 16375K43 and K41, which operate on 120/277 VAC. Open *single-access models* (Style C) through the back door panel. Open *dual-access models* (Style D) from both sides—through a hinged door on the front (two doors on 16375K45 and K46) and a back door panel. The front-access door has a safety interlock switch that can be wired to disable equipment (such as paint sprayers) when door opens.

Bulbs are sold separately, except Style B lights include bulbs. Bulbs have a light appearance of 4100K (cool white light) and a medium bi-pin base (unless noted).

O'all Size, Lg. × Wd. × Dp.	For Bulb Shape	Ballast Type	Min. Start Temp.	Lights	Each	Bulbs: No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
(A) Stainless Steel Surface-Mount Lights										
28¼″ × 8¼″ × 5¾″	T12	Rapid Start	–20° F	1698K87●	$598.39	2	35	6	1504K97	$74.07
28¼″ × 8¼″ × 5¾″	T8	Rapid Start	0° F	1698K13	561.29	2	17	6	1501K81	51.21
52¼″ × 8¼″ × 5¾″	T12	Rapid Start	–20° F	1698K88●	650.00	2	60	6	1504K65	50.96
52¼″ × 8¼″ × 5¾″	T8	Rapid Start	0° F	1698K12	661.29	2	32	6	1683K14	27.00
(B) Tubular Surface-Mount Lights										
29″ × 11½″ × 7″	T12	Rapid Start	+50° F	8335K42	926.90	2	20	6	1501K24	28.38
53″ × 11½″ × 7″	T12	Rapid Start	–20° F	8335K31●▲	1,193.22	2	110	6	1504K93	102.47
53″ × 11½″ × 7″	T12	Rapid Start	+50° F	8335K22	918.64	2	34	6	1683K12	22.68
53″ × 11½″ × 7″	T8	Instant Start	0° F	8335K13	964.41	2	32	6	1683K14	27.00
53″ × 16⅝″ × 9″	T8	Instant Start	0° F	8335K14♣	1,433.90	3	32	6	1683K14	27.00
(C) Recessed Lights with Single Access										
53¼″ × 21¾″ × 5¾″	T12	Rapid Start	+50° F	16375K44	392.73	4	40	6	1683K41	36.27
53¼″ × 21¾″ × 5¾″	T8	Instant Start	0° F	16375K43	392.73	4	32	6	1683K14	27.00
(D) Recessed Lights with Dual Access										
53¼″ × 21¾″ × 5¾″	T12	Rapid Start	+50° F	16375K42	436.36	4	40	6	1683K41	36.27
53¼″ × 21¾″ × 5¾″	T8	Instant Start	0° F	16375K41	436.36	4	32	6	1683K14	27.00
102⅝″ × 21⅝″ × 5⅞″	T12	Rapid Start	–20° F	16375K46●	957.89	4	95	6	1504K98	51.73
102⅝″ × 21⅝″ × 5⅞″	T8	Instant Start	+32° F	16375K45★	957.89	4	59	6	8355K85	74.60

● Uses bulbs with recessed double-contact (DC) base. ▲ Has a magnetic ballast. ♣ For ceiling mounting only. ★ Uses bulbs with single-pin base.

Incandescent Canopy Hood Lights

These lights can take the heat . . . and the grease and water, too. They're commonly used in commercial cooking hoods. Each has a tempered glass lens and an aluminum faceplate. Surface mount (mounting hardware not included). Lights operate on 120 VAC. UL listed, CSA certified, and meet requirements for NEC (National Electrical Code) 410 and NFPA (National Fire Protection Association) 96. Bulbs are sold separately.

Light with Wire Guard

O'all Size, Dia. × Ht.	Wire Guard	Lights	Each	Bulbs: No. Req'd	Watts	Pkg. Qty.		Per Pkg.
5½″ × 8¼″	No	7533T11	$47.77	1	100	2	1241K13	$6.18
5½″ × 8¾″	Yes	7533T21	53.58	1	100	2	1241K13	6.18

For information about light bulbs, see page 682.

Metal Halide and High-Pressure Sodium Bay Lights

Low-Bay Complete Unit

Ballast

Low-Bay Reflector with Lens

Aluminum High-Bay Reflector

Acrylic High-Bay Reflector

Enclosed and Gasketed High-Bay Reflector

Hanging Hook

Lens for High-Bay Reflector

Meet the demands of your industrial and warehouse applications with these energy-efficient lights. ***Complete bay lights*** come ready for installation. To design and assemble your own bay light, choose from ***individual bay-light components***.

Metal halide lights produce a crisp, white light. *High-pressure sodium lights* produce a yellowish light and are more energy efficient than metal halide lights.

Complete Bay Lights

Hardwire these lights to ¾″ NPT male conduit and mount with the included hardware. All operate on 120/208/240/277 VAC and come furnished with a 400-watt ballast, reflector, and bulb (see individual components for detailed descriptions). Complete lights are UL listed. They are also CSA certified when used on 120 or 277 VAC systems. *Low-bay lights* come with a nonyellowing acrylic lens hinged and latched to their white aluminum reflector. Lenses for *high-bay lights* are sold separately (see individual components).

Reflector Type	O'all Size, Dia. × Ht.	Metal Halide	Each	High-Pressure Sodium	Each
Low Bay	23⅛″ × 26⅛″	1807K23	$292.77	1807K13	$286.58
High Bay Aluminum	14¼″ × 23⅝″	1807K21	242.67	1807K11	198.74
High Bay Acrylic	22½″ × 27⅛″	1807K22	331.75	1807K12	247.08

Individual Bay-Light Components and Replacement Parts

Compatible with Hubbell brand bay lights only. Build your own bay light or replace existing parts with our selection of components.

Ballasts— All have Class H insulation and a white, die cast aluminum housing. Hardwire them to ¾″ male NPT conduit and mount with included hardware. Ballasts operate on 120/208/240/277 VAC. All are UL listed for 131° F ambient operation and damp locations. They're also CSA certified when used on 120 or 277 VAC systems. Bulbs are sold separately.

Watts	Ballasts	Each	Bulbs	Each
Metal Halide— *Min. Start Temperature –20° F*				
175	14815K41	$177.33	8352K49	$48.31
250	14815K42	169.75	1970K26	55.17
400	14815K43	168.00	1970K13	48.31
1000	14815K32	275.00	8352K64	53.70
High-Pressure Sodium— *Min. Start Temperature –40° F*				
150	14815K33	144.42	8352K54	24.93
250	14815K37	153.83	8352K55	24.93
400	14815K38	153.83	8352K56	24.45
1000	14815K39	344.67	8352K57	90.03

Low-Bay Reflectors — Mount these white aluminum reflectors on ceilings lower than 25 ft. They'll provide wide light distribution without casting harsh shadows. An acrylic, nonyellowing lens is hinged and latched to each reflector.

Dia. × Ht.	Low-Bay Reflectors with Lens	Each	Replacement Lenses	Each
23⅛″ × 17½″	14815K54	$121.75	14815K61	$64.57
29⅛″ × 19⅝″	14815K58	184.15	14815K62	90.69

Hanging Hook— The bottom threads into a ballast, and the top has a hook for suspension mounting. It has a ¾″ NPS male connection. CSA certified.

14815K81 ..... **Each** $8.17

High-Bay Reflectors— Mount these reflectors on ceilings 25 ft. or higher.

Aluminum models have small openings along the top of each dome that allow light to shine upwards, as well as down. Adjustable reflector brackets let you switch between narrow and wide light distribution.

Acrylic model is made of lightweight nonyellowing acrylic. It produces wide uniform light with minimal glare. Adjustable brackets let you switch between medium and wide light distribution.

Note: Aluminum and acrylic high-bay reflectors listed above require a lens (sold separately) when used with 175- and 250-watt metal halide ballasts unless they're used with a bulb that is rated for open fixtures.

Enclosed and gasketed model has an enclosed design that prevents dust, dirt, and grime from clouding your light. A glass lens is hinged and latched to the white aluminum reflector. UL listed for damp locations.

Reflector for 1000-watt ballast is made of aluminum.

Optional lenses are an economical alternative to using metal halide light bulbs that are rated for use in an open fixture. All are glass except for 14815K75, which is acrylic.

Reflector Type	Dia.	High-Bay Reflectors	Each	Optional Lenses	Each
Aluminum	14″	14815K52	$33.21	14815K71	$26.03
Aluminum	19″	14815K55	70.66	14815K73	38.88
Acrylic	22″	14815K56	88.73	14815K75	72.50
Enclosed and Gasketed	19″	14815K53	113.30	14815K73	38.88
For 1000-watt Ballast	23″	14815K57	85.09	———	———

Hazardous-Location Low-Bay Lights

Durable by design, these lights can handle your toughest environments. Each has a white aluminum reflector and a fully gasketed acrylic lens to seal out dirt, dust, and moisture. Ballast housing is aluminum. Lights have knockouts for hardwire connections and can be ceiling mounted using three ¾″ NPT female hubs or stem mounted (mounting hardware included). They're designed for ceilings less than 20 ft. high. Overall size is 14¾″ Dia. × 14¼″ Ht. UL listed for wet locations and Class I, Div. 2/Zone 2, Groups A, B, C, and D. IP65 rated. NSF and CSA certified. Bulbs are included.

Fluorescent lights have programmed rapid-start electronic ballasts.

Operating Voltage	Min. Start Temp.	Lights	Each	Repl. Bulbs	Each
Fluorescent— *Furnished with Two 42-Watt Bulbs*					
120 VAC	0° F	1948K41	$440.29	1528K45	$16.37
277 VAC	0° F	1948K42	440.20	1528K45	16.37
Metal Halide— *Furnished with One 175-Watt Bulb*					
120/208/240/277 VAC	–20° F	1948K44	726.45	8352K49	48.31
High-Pressure Sodium— *Furnished with One 150-Watt Bulb*					
120/208/240/277 VAC	–40° F	1948K43	403.43	8352K54	24.93

Replacement Parts for Lithonia High-Bay Lights

Ballasts

For Lithonia open high-bay acrylic and aluminum reflectors. All operate on 120/208/240/277 VAC.

Watts	Lithonia Model No.		Each
Metal Halide— *Min. Start Temp. –20° F*			
250	TH 250MP TB SCWA HSG	2135T27	$127.97
400	TH 400MP TB SCWA HSG	2135T28	179.28
1000	TH 1000MP TB HSG	2135T29	169.22
High-Pressure Sodium— *Min. Start Temp. –20° F*			
150	TH 150S TB HSG	2135T11	$132.60
250	TH 250S TB HSG	2135T12	134.73
400	TH 400S TB HSG	2135T13	170.57
1000	TH 1000S TB HSG	2135T14	282.24

Light Hook

Thread the bottom of this hook into a ballast. It has a ¾″ NPS male connection and a hook on top for suspension mounting.

Lithonia Model No.		Each
HKMU	2135T41	$13.14

For information about light bulbs, see page 682.

Fluorescent Bay Lights

You'll get instant illumination from these fluorescent lights rather than waiting for metal halide alternatives to warm up. Lights have knockouts for hardware connections and operate on 120/277 VAC. Furnished with a programmed-start ballast, unless otherwise indicated.

Lights for T8 bulbs are designed for ceilings 15 ft. or lower. *Lights for T5 bulbs* are designed for ceilings 15 ft. or higher.

Lights with exposed bulbs provide the most brightness. Suspension mount using the included hanger. Models *for T8 (1″ dia.) bulbs* have a white steel housing and an instant-start ballast. Models *for T5 (5/8″ dia.) bulbs* have a white aluminum housing. All are UL and C-UL listed for damp locations.

Lights with louvers reduce glare. They have a white steel housing and can be surface or stem mounted (mounting hardware not included). *Narrow light distribution* models are best used in aisles and racks. *Standard light distribution* models are better for open areas.

Bulbs (sold separately) have a light appearance of 4100K (cool white light). *T8 bulbs* have a medium bi-pin base; *T5 bulbs* have a miniature bi-pin base.

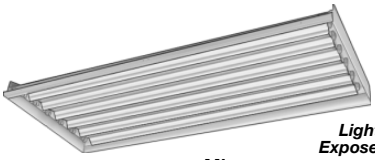

Light with Exposed Bulbs

Light with Louvers

O'all Size, Lg. × Wd. × Dp.	Min. Start Temp.	Lights Each	Bulbs No. Req'd	Watts per Bulb	Pkg. Qty.	Per Pkg.
Lights with Exposed Bulbs— *Standard Light Distribution*						
With Electronic Ballast for T8 (1″ Dia.) Bulbs						
48 1/8″ × 14 1/4″ × 3 7/8″	0° F	8442K5 $169.87	4	32	6	1683K35 $31.71
48 1/8″ × 20 3/8″ × 3 7/8″	0° F	8442K6 178.43	6	32	6	1683K35 31.71
With Electronic Ballast for T5 (5/8″ Dia.) High-Output Bulbs						
48 1/8″ × 14 1/4″ × 3 7/8″	0° F	8442K1 179.33	4	54	6	1562K59 93.88
48 1/8″ × 20 3/8″ × 3 7/8″	0° F	8442K2 227.54	6	54	6	1562K59 93.88
Lights with Louvers— *Narrow Light Distribution*						
With Electronic Ballast for T5 (5/8″ Dia.) Bulbs						
46 1/8″ × 9 3/4″ × 4 1/4″	−20° F	2132T11 250.73	3	54	6	1562K57 93.58
92 1/8″ × 9 3/4″ × 4 1/4″	−20° F	2132T41 307.66	6	54	6	1562K57 93.58
Lights with Louvers— *Standard Light Distribution*						
With Electronic Ballast for T5 (5/8″ Dia.) Bulbs						
46 1/8″ × 9 3/4″ × 4 1/4″	−20° F	2132T12 231.47	3	54	6	1562K57 93.58
92 1/8″ × 9 3/4″ × 4 1/4″	−20° F	2132T42 304.44	6	54	6	1562K57 93.58

Incandescent Ceiling Lights

A white-painted reflector directs 85% of light downward. The reflector is aluminum and has a reinforced beaded edge. Lights operate on 120 VAC and have a 10-ft. 18/3 AWG cord for hardware connections (hardware for mounting to an electrical box is also included). Bulb is not included. Lights are ETL listed for damp locations.

O'all Size, Dia. × Ht.	Lights Each	Bulbs Max. Watts	Pkg. Qty.	Per Pkg.
12″ × 8 3/4″	14685K31 $123.04	150	2	15115K63 $6.52
14″ × 9 3/8″	14685K32 128.50	150	2	15115K63 6.52
16″ × 10″	14685K33 131.02	200	2	15115K65 5.24
18″ × 10 7/8″	14685K34 118.83	300	1	15115K67 4.95

Incandescent Wall Light

Thanks to its frosted translucent polycarbonate lens, this light casts a soft, even glow. Housing is black polycarbonate. Mount over a standard recessed electrical box (mounting hardware included). Light has hardware connections and operates on 120 VAC. Bulb is not included. UL listed for wet locations.

O'all Size, Ht. × Wd. × Dp.	Light Each	Bulb Watts	Pkg. Qty.	Per Pkg.
9 1/8″ × 6 1/8″ × 7 1/4″	14755K73 $58.76	100	2	1728K91 $7.18

Metal Halide and High-Pressure Sodium Wall Lights

All of these lights have hardware connections and operate on 120/208/240/277 VAC, unless noted. Lights are UL and C-UL listed for wet locations, unless noted.

Standard— Equipped with a prismatic glass lens and a bronze-colored aluminum housing. Mount lights over a 4″ round or single-gang electrical box. Lights accept mogul-base bulbs, unless noted.

Vandal Resistant— A heavy duty prismatic polycarbonate lens and bronze-colored polycarbonate housing withstand abuse and the elements. Lens and housing are attached to a rustproof marine-grade aluminum base plate with tamper-resistant Torx screws. To remove screws you'll need a T20 pin-in-head Torx driver; see pages 2848-2850. Mount over 3″ round electrical boxes. Lights accept medium-base bulbs.

Bulbs are included (unless noted). *Metal halide* bulbs produce crisp white light. *High-pressure sodium* bulbs produce yellow light and are more energy efficient than metal halide bulbs.

Standard

Vandal Resistant

O'all Size, Ht. × Wd. × Dp.	Lights Each	Repl. Bulbs Watts	Each
Standard			
With Metal Halide Bulbs— *Min. Start Temperature −20° F*			
9 1/4″ × 8 3/8″ × 7 7/8″	16935K43●★ $164.83	100	8293K25 $47.38
9 1/4″ × 14 1/4″ × 7 3/4″	16935K71★ 217.08	150	8352K51 38.81
10″ × 16 5/8″ × 11 3/8″	16935K66 314.83	250	1970K27 48.09
10″ × 16 5/8″ × 12 3/4″	16935K67 324.75	400	8352K52 44.27
With High-Pressure Sodium Bulbs— *Min. Start Temperature −40° F*			
9 1/4″ × 14 1/4″ × 7 3/4″	16935K24♣★ 190.00	150	8293K59 24.94
10″ × 16 5/8″ × 11 3/8″	16935K56 274.42	250	8352K55 24.93
10″ × 16 5/8″ × 12 3/4″	16935K57 295.50	400	8352K56 24.45

O'all Size, Ht. × Wd. × Dp.	Lights Each	Repl. Bulbs Watts	Each
Vandal Resistant			
With Metal Halide Bulbs— *Min. Start Temperature −20° F*			
12″ × 11 1/2″ × 8 7/8″	15985K31▲ $210.67	70	8293K23 $43.11
12″ × 11 1/2″ × 8 7/8″	15985K33▲ 213.08	100	8293K25 47.38
12″ × 11 1/2″ × 8 7/8″	15985K35▲ 221.40	150	8293K27 44.48
With High-Pressure Sodium Bulbs— *Min. Start Temperature −40° F*			
12″ × 11 1/2″ × 8 7/8″	15985K23♣ 170.84	70	8293K57 24.94
12″ × 11 1/2″ × 8 7/8″	15985K25♣ 212.25	100	8293K58 26.59
12″ × 11 1/2″ × 8 7/8″	15985K27♣ 195.33	150	8293K59 24.94

● Operates on 120/277 VAC only. ★ UL listed for wet locations and CSA certified. Has socket for bulb with medium base. ♣ Operates on 120 VAC only. ▲ Bulb is not included.

Impact-Resistant Dusk-to-Dawn Wall Lights

Protected by a heavy duty polycarbonate lens, these lights withstand abuse. A photo-eye sensor automatically turns them on at dusk and off at dawn. Their bronze-colored polycarbonate housing mounts over a standard recessed electrical box (mounting hardware included). Lights have hardware connections and operate on 120 VAC. Bulbs are included.

Fluorescent light is UL listed for wet locations and C-UL listed. ***High-pressure sodium lights*** are UL listed for wet locations and CSA certified.

O'all Size, Ht. × Wd. × Dp.	Lights Each	Replacement Bulbs Watts	Each
Fluorescent— *Min. Start Temperature 0° F*			
11″ × 6 7/8″ × 5 3/8″	16905K27 $172.42	42	1528K45 $16.37
High-Pressure Sodium— *Min. Start Temperature −40° F*			
11″ × 6 3/4″ × 5 3/8″	16905K41 108.27	35	8293K55 26.59
11″ × 6 3/4″ × 5 3/8″	16905K43 108.27	50	8293K56 26.59
11″ × 6 3/4″ × 5 3/8″	16905K45 110.73	70	8293K57 24.94

Vandal-Resistant Wall and Ceiling Lights

A

B

C

An impact- and tamper-resistant exterior protects these lights from vandals. Each light has a clear prismatic polycarbonate lens, has tamperproof screws, and is fully gasketed. You'll need a T15 pin-in-head Torx driver to remove screws (see page 2849). Lights are ideal for heavy traffic, high-abuse areas both indoors and out. They can be mounted over a standard electrical box (mounting hardware not included). Lights operate on 120 VAC (high-pressure sodium lights also operate on 277 VAC) and have hardware connections. UL and C-UL listed for wet locations. Bulbs are sold separately.

Styles A and *B* have a white steel housing. *Style C* has a bronze-colored aluminum housing.

Bulb Type	O'all Size, Lg. × Wd. × Dp.	Min. Start Temp.	Lights	Each	Bulbs: No. Req'd	Watts per Bulb	Pkg. Qty.		Per Pkg.
Wall Lights									
A... Incandescent	8½″ × 5⅞″ × 3¾″	—	1669K75	$37.10	1	75	2	1728K98	$7.24
A... Fluorescent	8½″ × 5⅞″ × 3¾″	0° F	1669K47	48.54	1	7	1	1528K91	4.26
A... Fluorescent	8½″ × 5⅞″ × 3¾″	0° F	1669K48	57.35	2	7	1	1528K91	4.26
A... Fluorescent	12″ × 6″ × 3⅞″	+32° F	1669K51	70.77	2	13	1	1528K93	4.26
Ceiling Lights									
B... Incandescent	12⅛″ × 12⅛″ × 4¾″	—	1697K74	69.09	2	75	2	1728K98	7.24
B... Fluorescent	12⅛″ × 12⅛″ × 4¾″	+32° F	1697K69	109.09	2	13	1	1528K93	4.26
Wall/Ceiling Lights									
B... Incandescent	8⅝″ × 8⅝″ × 3¾″	—	1697K65	54.55	1	75	2	1728K98	7.24
B... Fluorescent	8⅝″ × 8⅝″ × 3¾″	0° F	1697K71	83.64	2	7	1	1528K91	4.26
C... High-Pressure Sodium	9″ × 9″ × 7⅛″	–40° F	1687K54	205.88	1	70	1	8293K57	24.94
C... High-Pressure Sodium	9″ × 9″ × 7⅛″	–40° F	1697K66	248.53	1	100	1	8293K58	26.59
C... High-Pressure Sodium	12⅜″ × 12⅜″ × 8⅞″	–40° F	1687K84	260.00	1	100	1	8293K58	26.59
C... High-Pressure Sodium	12⅜″ × 12⅜″ × 8⅞″	–40° F	1687K86	281.82	1	150	1	8293K59	24.94

Wet-Location Lights

Ceiling Mount

Wall Mount

Stem Mount

Moisture, dirt, and insects are no match for these lights. All are gasketed to resist moisture, have a heat-resistant glass globe, and are suitable for indoor and outdoor use. Lights have hardwire connections, have female threaded hubs for conduit connections (see listing for thread type and size), and operate on 120 VAC. Mounting hardware is not included. *Note:* These lights are not recommended for hazardous locations.

Bulbs are not included, unless otherwise indicated.

Aluminum lights have rugged construction with stainless steel hardware. UL listed for wet locations and C-UL listed.

Ceiling and *wall lights* include a 4″ dia. electrical box for mounting.

Aluminum vaportight lights have rugged construction with stainless steel hardware. Minimum start temperature is 0° F. Lights include a plug-in compact fluorescent bulb and a 6″ dia. electrical box for mounting. UL listed for wet locations and C-UL listed.

Fiberglass vaportight lights are rated NEMA 4X, so they're made to perform in dusty, wet, and corrosive environments. CSA certified to UL standards for marine luminaries.

Ceiling and *wall lights* have a built-in 4″ dia. electrical box for mounting.

Lights

Mount	O'all Size, Dia. × Ht.	Hub Size	Lights	Each	Bulbs: Max. Watts	Pkg. Qty.		Per Pkg.
Aluminum Lights—*Incandescent*								
Ceiling	4¼″ × 9⅛″	½″ NPT	14915K53	$32.70	100	2	1728K91	$7.18
Ceiling	4¼″ × 9⅛″	¾″ NPT	14915K57	37.02	100	2	1728K91	7.18
Ceiling	5¼″ × 10⅞″	½″ NPT	14915K61	50.10	200	1	1728K77	3.31
Ceiling	5¼″ × 10⅞″	¾″ NPT	14915K63	42.18	200	1	1728K77	3.31
Wall	7¼″ × 9¾″	½″ NPT	14915K54	37.87	100	2	1728K91	7.18
Wall	7½″ × 11⅜″	½″ NPT	14915K66	60.25	200	1	1728K77	3.31
Stem	4⅜″ × 9¾″	½″ NPT	14915K55	37.01	100	2	1728K91	7.18
Stem	5⅜″ × 10⅞″	½″ NPT	14915K59	48.20	200	1	1728K77	3.31
Aluminum Vaportight Lights—*Fluorescent*								
Ceiling	6″ × 9¾″	½″ NPS	15005K43	174.19	26	1	1528K61	16.37
Wall	7⅞″ × 10⅜″	½″ NPS	15005K44	182.26	26	1	1528K61	16.37
Fiberglass Vaportight Lights—*Incandescent*								
Ceiling	4¾″ × 10⅞″	¾″ NPT	14835K96	102.11	150	2	1506K54	10.97
Wall	7¼″ × 12¼″	¾″ NPT	14835K94	130.62	150	2	1506K54	10.97
Stem	4½″ × 11¼″	¾″ NPT	14835K95	95.44	150	2	1506K54	10.97

Replacement Glass Globes

Color	Max. Watts		Each
For 14915K53, K54, K55, K57, and 15005K43, K44			
Clear	100	14915K41	$12.71
Blue	60	14915K42	22.07
Green	60	14915K44	24.80
Red	60	14915K43	25.31
PTFE-Coated Clear	100	14915K39	25.46
For 14915K59, K61, K63, K66			
Clear	200	14915K45	17.23
Blue	75	14915K46	38.90
Green	75	14915K48	36.50
Red	75	14915K47	49.66

Hazardous-Location Incandescent Lights

Ceiling Mount (1576K13)

Wall Mount (1586K87)

Use these lights indoors and out. Each has an aluminum housing, a heat-resistant glass globe, and a ¾″ NPT female conduit hub for hardware connections. Bulbs are sold separately.

Class I, Div. 1 Hazardous-Location Lights— These lights are a great choice for refining and manufacturing plants, marine loading and fuel transfer terminals, and other wet locations. Housing is rated NEMA 4X for corrosion resistance and has a tan finish. Lights operate on up to 250 VAC. UL listed for Class I, Div. 1 and Div. 2, Groups C and D; Class II, Div. 1 and 2, Groups E, F, and G; and Class III, Div. 1 and 2. CSA certified.

Ceiling light has 5⁄16″ dia. mounting holes; *wall light* has ¼″ dia. mounting holes.

Class I, Div. 2 Hazardous-Location Lights— Suited to illuminate walkways, tunnels, loading docks, exits, and stairwells. Housing has a gray finish. Lights operate on 120 VAC. UL listed for Class I, Div. 2, Groups A, B, C, and D. They're also CSA certified and rated NEMA 4.

Ceiling and *stem lights* use the ¾″ NPT female conduit hub for mounting; *wall light* has 9⁄32″ dia. mounting holes.

Mount	O'all Size, Dia. × Ht.	Lights	Each	Bulbs: Max. Watts	Pkg. Qty.		Per Pkg.
Class I, Div. 1 Hazardous-Location Lights							
Ceiling	7½″ × 14⅜″	1576K13	$298.74	150	2	1506K54✓	$10.97
Wall	14½″ × 15⅞″	1576K12	355.88	150	2	1506K54✓	10.97
Class I, Div. 2 Hazardous-Location Lights							
Ceiling	4¼″ × 10⅛″	1586K85	110.67	150	2	1506K54	10.97
Ceiling	5½″ × 13⅛″	1586K45	132.88	300	1	1728K78	4.04
Wall	7″ × 12⅜″	1586K87	135.08	150	2	1506K54	10.97
Stem	4¼″ × 9¾″	1586K84	91.83	150	2	1506K54	10.97

✓ Bulbs for 120 VAC. For 250 VAC (100 max. watts), please order 8358K45 (page 684).

For information about light bulbs, see page 682.

Dusk-to-Dawn Wall/Pole Lights

A photo-eye sensor automatically switches these lights on at dusk and off at dawn. Lights have an open-bottom acrylic lens, a gray aluminum housing, and an 18″ curved arm. Use included bracket to mount lights on poles and walls. Lights operate on 120 VAC and have hardwire connections. Minimum start temperature is –40°F. Lights accept a high-pressure sodium bulb (included). UL listed for wet locations and CSA certified.

O'all Size, Dia.×Ht.	Lights	Each	Repl. Bulbs Watts		Each
9½″×16″	1643K75	$108.27	150	8352K54	$24.93
12″ ×16″	1643K83	131.27	100	8352K58	26.60
12″ ×16″	1643K85	131.27	150	8352K54	24.93

Replacement Photo Eye ..... 1643K91 Each $29.50

Underwater Light with Stand

Safely illuminate and inspect storage tanks, pools, fountains, and ponds. This freestanding light has a cast bronze housing and height-adjustable swivel stand; stainless steel fasteners; a silicone gasket; and a clear tempered-glass lens with rock guard. It operates on 120 VAC and has a 10-ft. submersible cord with wire leads. UL and C-UL listed for fountains and decorative pools.

Bulb is sold separately. Bulb listed is an incandescent 250-watt BR38 bulb. Light accepts up to 250-watt medium-base BR38, BR40, and R40 incandescent bulbs, and up to 150-watt medium-base PAR38 incandescent and halogen bulbs. For other bulbs, see pages 687-688.

O'all Size, Dia.×Ht.	Light	Each	Bulb Watts		Each
7⅝″×11″-14″	14845K68	$657.35	250	1509K51	$23.65

Dusk-to-Dawn Floodlight

A built-in sensor automatically turns this light on at dusk and off at dawn. Light has a gray die cast aluminum housing and two bulb heads that swivel 180°. It comes with a built-in electrical box for surface mounting (mounting hardware included). Light operates on 120 VAC and has hardwire connections. UL and C-UL listed for wet locations.

Bulbs are sold separately. Bulb listed is an incandescent 150-watt PAR38 bulb. Light accommodates two 75- to 150-watt medium-base incandescent bulbs. For other bulbs, see page 687.

O'all Size, Ht.×Wd.×Dp.	Light	Each	Bulb Watts		Each
2¾″×14″×2″	8300K2	$15.62	150	1532K53	$20.76

Floodlights with Motion Sensor

Standard

Quartz Halogen

Motion detected within a 70-ft., 180° scanning radius triggers these lights to turn on. You can adjust lights to stay on from 4-12 minutes. Both models have a weather-resistant polycarbonate motion sensor and a bronze-colored die cast aluminum housing. Wall-mount lights over a 4″ round recessed electrical box (mounting plates and hardware included). UL and C-UL listed for wet locations.

Standard light has two bulb heads and accepts one 150-watt medium-base halogen or incandescent bulb per head. Bulbs are sold separately. Bulb listed is an incandescent 150-watt PAR38 bulb. For other bulbs, see page 687.

Quartz halogen light accepts one 300-watt quartz halogen bulb. Bulb is included.

O'all Size, Ht.×Wd.×Dp.	Lights	Each	Bulbs Watts		Each
Standard Light					
10″ ×15½″×9½″	1459K57	$34.00	150	1532K53	$20.76
Quartz Halogen Light					
9½″× 7½″×7½″	1459K91	38.08	300	1513K5	7.03

Quartz Halogen Floodlights

Dual Swivel Head

Visored Lens

High Wattage

Select one of these economical models to meet your floodlighting needs. Each has a die cast aluminum housing, tempered-glass lens, and ½″ NPS male adjustable mounting stem. Mount lights on a wall (mounting hardware not included, unless otherwise indicated) or a pole (for pole mounting, choose the *pole-top mounting bracket* sold separately below). Lights have hardwire connections and operate on 120 VAC unless otherwise indicated.

Single and Dual Swivel Head— Bulb heads move up and down. Housing is bronze colored. Wall-mounting hardware and bulbs are included. UL and C-UL listed for wet locations.

Visored Lens— The visor reduces glare and protects the lens. Swivel arm allows fixture to move up and down. Light has a bronze-colored housing and includes a bulb. UL and C-UL listed for wet locations.

High Wattage— Stainless steel latches allow easy access for bulb replacement (bulb is sold separately). Housing is gray. UL listed and CSA certified for wet locations. 1594K62 operates on 208/220/240/277 VAC. Bulb listed is for 240 VAC. For 277 VAC, please order bulb 1513K42.

O'all Size, Ht.×Wd.×Dp.	Lights	Each	Bulbs Watts		Each
Single Swivel Head					
3¾″× 5½″×6¼″	1594K41	$11.61	150	1513K21	$9.93
Dual Swivel Head					
4⅞″×13½″×6½″	1594K43	29.82	150	1513K21	9.93
Visored Lens					
4¼″× 5½″×5″	8308K53	19.66	250	1513K17	9.25
High Wattage					
8⅞″× 8⅝″×5¼″	1594K61	38.94	500	1513K2	6.49
8½″×14″ ×5¼″	1594K62	61.79	1500	1513K4	14.39

Pole-Top Mounting Bracket (fits 2⅜″ OD pole).. 1594K53 Each $25.10

Compact Fluorescent Floodlights

Bottom Mount

Ballasts with a 14°F minimum start temperature and energy-efficient compact fluorescent bulbs equip these lights for outdoor use. Lights have an acrylic lens and are mounted on a ½″ NPT male, heavy duty cast aluminum pivoting stem. They operate on 120 VAC and have hardwire connections. UL listed for wet locations.

Bulb is included. Each light uses one bulb (unless noted).

O'all Size, Ht.×Wd.×Dp.	Lights	Each	Repl. Bulbs Watts		Each
Bottom Mount with Black Steel Housing					
4½″×8½″×2½″	15215K27	$53.36	13	1528K93	$4.26
7″ ×9″ ×2½″	15215K28●	75.38	13	1528K93	4.26
Rear Mount with Black Aluminum Housing					
5″ ×9¼″×6½″	15215K17	70.51	13	1528K93	4.26
5″ ×9¼″×6½″	15215K18●	84.36	13	1528K93	4.26
5″ ×9¼″×6½″	15215K29	83.96	26	1528K67	13.08

● Uses two bulbs.

Hazardous-Location Metal Halide and High-Pressure Sodium Floodlights

These floodlights are UL listed for Class I, Div. 2, Groups A, B, C, and D hazardous locations and UL 1598A listed for outdoor salt water marine duty. Each has a heavy duty die cast aluminum housing, a shock-resistant tempered-glass lens, corrosion-resistant hardware, and a bracket with three 9/16″ dia. mounting holes. Housing is bronze-colored. Lights operate on 120/208/240/277 VAC and have a built-in electrical box with ¾″ NPT female conduit connection for hardwiring. The hinged cover makes bulb changes easy.

Bulbs are sold separately. Metal halide bulbs provide crisp white light. High-pressure sodium bulbs produce yellow light and are more energy efficient than metal halide bulbs.

O'all Size, Ht.×Wd.×Dp.	Lights	Each	Bulbs Watts		Each
Metal Halide— *Min. Start Temperature –20°F*					
16¼″×17¼″×7 9/16″	14555K2	$358.45	175	1970K31	$39.93
16¼″×17¼″×7 9/16″	14555K3	378.80	400	8352K53	51.58
High-Pressure Sodium— *Min. Start Temperature –40°F*					
16¼″×17¼″×7 9/16″	14555K1	387.93	400	8352K56	24.45

Metal Halide and High-Pressure Sodium Floodlights

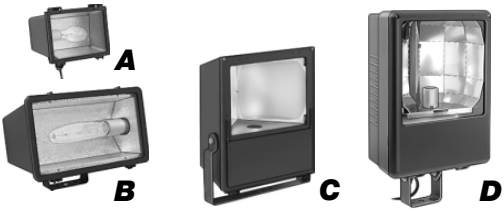

Equipped with a bronze-colored die cast aluminum housing, silicone gasket, and tempered-glass lens, these lights also have a hinged cover that provides easy access for hassle-free bulb replacement. All have hardwire connections.

Metal halide lights produce crisp white light. *High-pressure sodium* lights produce yellow light and are more energy efficient.

Compact lights have a hinged stem with 1/2″ male NPSM (National Pipe Straight Mechanical) threads for flexible positioning. *Metal halide* lights operate on 120/277 VAC; *high-pressure sodium* lights operate on 120 VAC. UL and C-UL listed for wet locations.

Medium lights have a bracket with one 7/8″ dia. and two 11/16″ dia. mounting holes. They operate on 120/208/240/277 VAC. CSA certified for wet locations.

Large lights have a bracket with one 7/8″ dia. and two 9/16″ dia. mounting holes. Reflectors produce a wide horizontal beam of light. They operate on 120/208/240/277 VAC. UL listed and CSA certified for wet locations.

Also Available: Large metal halide lights for 480 VAC operation. Please ask for 8421K88 and specify watts: 400 or 1000.

O'all Size, Ht. × Wd. × Dp.	Lights Each	Bulbs Watts	Bulbs Each
Compact— *Bulbs included*			
(A) Metal Halide— *Min. Start Temperature –20°F*			
8 1/8″ × 9″ × 6 7/8″ 14775K21	$209.54	70 8293K23	$43.11
8 1/8″ × 9″ × 6 7/8″ 14775K23	229.07	100 8293K25	47.38
(A) High-Pressure Sodium— *Min. Start Temperature –40°F*			
8 1/8″ × 9″ × 6 7/8″ 14775K11	111.11	70 8293K57	24.94
8 1/8″ × 9″ × 6 7/8″ 14775K13	111.11	150 8293K59	24.94
Medium— *Bulbs included*			
(B) Metal Halide— *Min. Start Temperature –20°F*			
12″ × 16 1/4″ × 10 3/4″ 84005K45	305.21	250 8352K47	50.40
12″ × 16 1/4″ × 10 3/4″ 84005K47	319.50	400 8352K53	51.58
(B) High-Pressure Sodium— *Min. Start Temperature –40°F*			
12″ × 16 1/4″ × 10 3/4″ 84005K25	328.18	250 8352K55	24.93
12″ × 16 1/4″ × 10 3/4″ 84005K27	332.50	400 8352K56	24.45
Large— *Bulbs sold separately*			
(C) Metal Halide— *Min. Start Temperature –20°F*			
19 7/8″ × 18″ × 9″ 8421K31	408.58	400 8352K53	51.58
(C) High-Pressure Sodium— *Min. Start Temperature –40°F*			
19 7/8″ × 18″ × 9″ 8421K11	407.28	400 8352K56	24.45
(D) Metal Halide— *Min. Start Temperature –20°F*			
21 3/4″ × 16″ × 10 1/8″ 8421K32	538.92	1,000 8352K19	61.23
(D) High-Pressure Sodium— *Min. Start Temperature –40°F*			
21 3/4″ × 16″ × 10 1/8″ 8421K12	630.42	1,000 8352K67	121.23

Mounting Brackets

Pole Mount for Compact Floodlights	1594K53	Each	$25.10
Pole Mount for Medium and Large Floodlights	8421K22	Each	$39.11
Wall Mount for Medium and Large Floodlights	8421K21	Each	$87.50

Walkway Lights

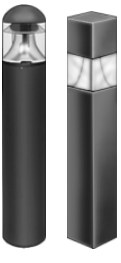

Watch your step with the help of these lights. Also known as bollard lights, they shine low-intensity, glare-free lighting. Both have a seamless bronze-colored aluminum housing and a polycarbonate lens. Lights have hardwire connections and come wired for 120 VAC. They can also operate on 208/240/277 VAC. Minimum start temperature is –20°F. Bulbs are sold separately. CSA certified for wet locations.

Metal halide lights produce crisp white light. *High-pressure sodium* lights produce yellow light and are more energy efficient.

Round lights measure 7″ Dia. × 43 3/8″ Ht. and include a 7″ dia. mounting plate with mounting hardware. They have a 7 1/2″ high lens.

Square lights measure 7″ Sq. × 41″ Ht. and include a 7″ square mounting plate with mounting hardware. They have a 6″ high lens.

Bulb Type	Lights Each	Bulbs Watts	Bulbs Each
Round			
Metal Halide 14645K43	$372.04	100 8293K25	$47.38
High-Pressure Sodium 14645K23	372.04	100 8293K58	26.59
Square			
Metal Halide 14645K42	372.04	100 8293K25	47.38
High-Pressure Sodium 14645K22	372.04	100 8293K58	26.59

120-Volt Landscape Lights

Accent groundwork plus provide safety and security. A swivel stem lets you position the light. Lights operate on 120 VAC. UL listed for wet locations. For bulbs (sold separately) see pages 687-688.

Style E has a 6-ft. cord with three-prong plug, a gray die cast zinc housing, and a spike for ground mounting. It uses one 75- to 150-watt medium-base PAR38 incandescent bulb.

Styles F and ***G*** have a gray die cast aluminum housing and 1/2″ NPT male arm for mounting. Lights have hardwire connections. They use one medium-base PAR38 incandescent or halogen bulb. Style F accepts up to a 250-watt bulb; Style G accepts up to 300 watts.

Accessory H is a black PVC mounting stake with a 1/2″ NPS female bushing and ground wire. ***Accessory J*** is an aluminum mounting box.

Light Style	O'all Size, Dia. × Ht.		Each
E ... Open	2 1/8″ × 13″	8301K11	$10.07
F ... Open	3″ × 6 1/4″	1700K12	12.55
G ... Recessed	6″ × 8 1/2″	1700K34	42.74
H ... 18″ Mounting Stake for Style G		1700K52	27.49
J ... Weatherproof Mounting Box for Styles F and G		7219K92	9.25

12-Volt Landscape Lights

Provide night visibility and security for paths, walkways, and steps with these low-voltage lights. Lights, transformers, and cable are all sold separately. C-UL listed.

Lights have a black (unless noted) aluminum alloy housing and stainless steel fasteners. A polyester powder coat finish helps lights withstand outdoor conditions. Lights come with a bulb. *Models K, L, M,* and *P* are for ground mounting. *Model K* comes with three 6″ anchor rods. *Models L, M,* and *P* have detachable ground stakes. *Model N* is for wall mounting (mounting hardware included). *Models K* and *N* can be surface mounted.

Low-voltage transformers provide safe operation. They have a timer that automatically turns lights on and off, an on/off override switch, and a three-prong plug for any 120 VAC outlet. *Note:* Make sure the total bulb wattage does not exceed the transformer wattage.

Light Style	O'all Size, Dia. × Ht.	Lights Each	Repl. Bulbs Watts	Pkg. Qty.	Per Pkg.
Halogen					
K ... Walkway Bollard	6″ × 14″	14635K51 $230.58	20	1	1997K23 $7.50
L ... Tilt-Angle Flood	2″ × 16 3/8″	14635K52 65.75	20	1	1997K23 7.50
M ... Tilt-Angle Flood	2 13/16″ × 17 13/16″	14635K53 63.65	50	1	1835K5 11.76
N ... Round Surface	3 1/2″	14635K57 54.70	10	1	1997K22 6.25
Incandescent					
P ... Three-Tier Walkway	6″ × 27″	14635K54★ 100.77	27	10	1505K71 5.98

★ Color is green.

Low-Voltage Transformers

200 Watts	14635K85	Each	$94.47
300 Watts	14635K87	Each	$115.66
600 Watts	14635K88	Each	$173.49

Cable

AWG	Wd. × Thick.		Per Ft. 10-499	Per Ft. 500-Up
12/2	0.37″ × 0.19″	5744K31	$0.81	$0.62

Emergency Lights with Plastic Housing

Count on our economical impact- and corrosion-resistant lights to provide 1½ hours of emergency illumination. Lights have a low-voltage disconnect feature to prevent battery discharge and a test switch. Each light has two bulb heads and a white thermoplastic housing, unless otherwise indicated. Lights operate on 120/277 VAC, have hardwire connections, and include sealed lead-calcium batteries, unless otherwise indicated.

(A) Standard— Lights have an acrylic lens and stationary bulb heads. Furnished with krypton bulbs. Surface mount using included universal mounting plate. *Light with cord and plug* has a 6-ft. cord with two-prong plug. All are UL listed and meet ADA fixture specifications when properly installed.

(B) With Semirecessed Bulb Heads— The eyeball-style bulb heads are less likely to suffer damage because they are semirecessed in the housing. Light has a glass lens and comes with halogen bulbs and a sealed lead-acid battery. Wall mount using included universal mounting plate. UL listed and meets ADA fixture specifications when properly installed.

(C) With Swiveling Bulb Heads— Heads swivel to direct light. All have a polycarbonate lens and come with krypton bulbs. Surface mount using included universal mounting plate. 1474K26 is perfect for lighting systems with long restart times because it stays on for up to 17 minutes after power is restored. All are UL listed and meet ADA fixture specifications when properly installed.

(D) With Wet-Location Enclosure— This light resists splashing water, plus damp and corrosive conditions. Housing and bulb heads are gray thermoplastic. Bulb heads have a glass lens and swivel 360°. Furnished with high-intensity tungsten bulbs. Wall mount using included hardware. ETL listed.

A

B

C

D

Battery Volts	Bulb Type	Bulb Watts	Max. Watt Output♥	O'all Size, Ht. × Wd. × Dp.	Lights		Repl. Batteries No. Req'd	Repl. Batteries Each
(A) Standard								
6	T5 Wedge	5.4	12	5″ × 11½″ × 3¾″	8306K23	$49.74	1 8306K31	$43.61
(A) Standard with Cord and Plug								
6	T5 Wedge	5.4	12	5″ × 11½″ × 3¾″	8306K25	61.74	1 8306K31	43.61
(B) With Semirecessed Bulb Heads								
6	MR-16	5	10	5¼″ × 13¼″ × 3⅝″	1488K31	60.65	1 1488K33	16.42
(C) With Swiveling Bulb Heads								
6	T3.25 Wedge	5.4	12	5″ × 12½″ × 3¾″	1474K19	53.88	1 8306K31	43.61
12	T1.75 Wedge	9	54	7″ × 12¾″ × 5⅞″	1474K24	156.45	2 1474K42	46.97
(C) With Swiveling Bulb Heads and Extended Light Time								
12	T1.75 Wedge	9	72	7″ × 12¾″ × 5⅞″	1474K26	263.24	2 1474K42	46.97
(D) With Wet-Location Enclosure								
6	T5 Wedge	7.2	14.4	12½″ × 8½″ × 6″	9296T11	199.13	1 9296T12	65.91

♥ When adding bulb heads, do not exceed this maximum. At this wattage you get 1½ hours of emergency light.

Emergency Lights with Steel Housing

Triggered by their brownout activation feature, these lights turn on when voltage drops. All have a beige steel housing (unless noted), two fully adjustable bulb heads, a test switch, maintenance-free sealed lead-calcium batteries, and low-voltage disconnect feature to prevent battery discharge. Lights operate on 120/277 VAC and have hardwire connections, unless otherwise indicated. Bulbs are included. UL listed and New York City approved.

Style E has polycarbonate bulb heads and lenses and uses high-intensity tungsten bulbs.

Style F has a low-profile design, so it fits into tight spaces. It has polycarbonate bulb heads and lenses and uses incandescent bulbs.

Style G lights have steel bulb heads. *8-watt light* uses incandescent bulbs. *12-watt light* uses halogen bulbs and is City of Chicago approved.

Style H is designed for use with lighting systems that have a long restart time. It can be adjusted to provide light for up to 60 minutes after power is restored. It has steel bulb heads and uses halogen bulbs. City of Chicago approved.

Style J has a 3-ft. cord with three-prong plug. It has steel bulb heads and uses incandescent bulbs.

Style K lights have an ammeter that displays the condition of the battery and charger. Housing is beige with a woodgrain panel. They have steel bulb heads and use incandescent bulbs.

Style L lights have a brown housing. They have steel bulb heads and use halogen bulbs.

E

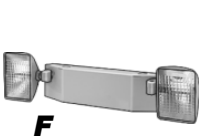
F

G&H

J

K

L

	Battery Volts	Bulb Type	Bulb Watts	Hours of Emergency Light	Max. Watt Output♥	O'all Size, Ht. × Wd. × Dp.	Lights		Repl. Batteries No. Req'd	Repl. Batteries Each
E	6	T5 Wedge	7.2	2	18	12″ × 13″ × 3″	8298K31	$117.83	1 7448K61	$82.39
F	6	T5 Wedge	6	1½	12	6½″ × 15½″ × 4½″	7922K11	111.51	1 8326K61	44.90
G	6	PAR36	8	1½	18	12″ × 13″ × 3″	8368K85	107.26	1 7448K24	17.33
G	6	PAR36	12	2	32	12″ × 13″ × 3″	8368K81	115.36	1 7448K34	23.14
H	6	PAR36	12	2	32	12″ × 13″ × 3″	1996K87	167.16	1 7448K34	23.14
J	6	PAR36	8	1½	18	12″ × 13″ × 3″	16035K21	106.86	1 7448K61	82.39
K	6	PAR36	8	1¾	18	13½″ × 13½″ × 4¾″	8319K21	217.27	1 7448K61	82.39
K	6	PAR36	18	2	36	13½″ × 13½″ × 4¾″	8319K22	244.93	2 7448K61	82.39
K	6	PAR36	25	2	64	13½″ × 13½″ × 4¾″	8319K23	291.24	2 7448K36	30.53
L	6	PAR36	12	6	100	15⅜″ × 10¼″ × 3½″	1500K31	243.33	1 7448K38	74.27
L	12	PAR36	12	4	60	15⅜″ × 10¼″ × 3½″	1500K41	241.98	2 7448K36	30.53

♥ When adding bulb heads, do not exceed this maximum. At this wattage you get 1½ hours of emergency light.

Rechargeable Night Light

Plug this light into your wall and it will provide up to 13 hours of continuous light during a power failure. It turns on in the dark and off when light is detected. Overall size is 1⅞″ Ht. × 5¾″ Wd. × 1⅞″ Dp. Light has three rechargeable NiMH batteries and an incandescent bulb. Operates on 110 VAC. UL and C-UL listed.

Light	1663K44	Each	$15.98
Replacement Batteries (2/Pkg.)	6762K43	Per Pkg.	$11.74

Corrosion-Resistant Washdown and Hazardous-Location Emergency Lights

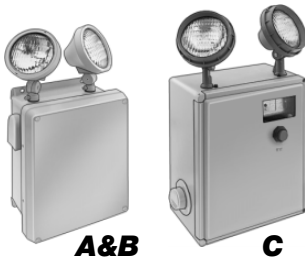

Built to resist corrosion, washdowns, and other harsh environments, these lights have a fully gasketed housing and fully adjustable polycarbonate bulb heads. They have a brownout activation feature that turns lights on when the voltage drops, a low-voltage disconnect feature to prevent battery discharge, and a test switch. They operate on 120/277 VAC. Lights can be wall mounted (mounting hardware not included).

(A) For Indoor Use— Housing is gray fiberglass. Lights have hardwire connections. Furnished with a sealed lead-calcium battery (8369K44 comes with two) and two PAR36 halogen bulbs.

(B) For Indoor/Outdoor Use— Housing is gray fiberglass. Lights have hardwire connections. Furnished with two NiCad batteries and a built-in heater to keep the batteries from freezing when used in temperatures as low as 14° F. Two PAR36 halogen bulbs are included.

(C) Hazardous-Location for Indoor Use— Equipped with a gray fiberglass-reinforced polyester housing, these lights are UL 924 listed and meet Class I, Div. 2, Groups A, B, C, and D; and Class II, Div. 2, Groups F and G. Lights have an AC current indicator, screw terminal connections, and a 3/4″ conduit hub for easy electrical hookup. Furnished with a sealed lead-calcium battery (15955K61 comes with two) and two PAR36 incandescent bulbs.

Battery Volts	Bulb Watts	Hours of Emergency Light	Max. Watt Output♥	O'all Size, Ht. × Wd. × Dp.	Lights	Each	Repl. Batteries No. Req'd		Each
(A) For Indoor Use									
6	8	3	32	16 7/8″ × 9 3/8″ × 5 1/2″	8369K32	$295.22	1	7448K34	$23.14
6	8	6	64	16 7/8″ × 9 3/8″ × 5 1/2″	8369K44	363.57	2	7448K34	23.14
(B) For Indoor/Outdoor Use									
6	8	3	36	16 7/8″ × 9 3/8″ × 5 1/2″	8369K45	396.90	2	8369K47	75.58
(C) Hazardous-Location for Indoor Use									
6	8	2	25	21 7/16″ × 13 1/4″ × 7 1/8″	15955K51	904.61	1	7448K34	23.14
12	12	3	50	21 7/16″ × 13 1/4″ × 7 1/8″	15955K61	1,104.84	2	7448K34	23.14

♥When adding bulb heads, do not exceed this maximum. At this wattage you get 1 1/2 hours of emergency light.

Emergency Lights and Power Packs with Refillable Battery

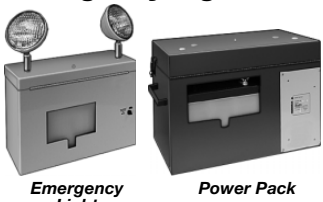

All have refillable lead-acid batteries that withstand harsher environments and more extreme temperatures than sealed batteries. Periodically refill the batteries with distilled water to extend battery life.

All lights and power packs have a brownout activation feature that turns them on when the voltage drops, a low-voltage disconnect feature to prevent battery discharge, and a test switch. Housing is steel. UL listed and City of Chicago approved.

Emergency Lights— Have fully adjustable bulb heads, a beige housing, and operate on 120/277 VAC. 1680K1 has hardwire connections; 1680K7 has a 3-ft. cord and three-prong plug. Both lights can be wall mounted (mounting hardware not included) and include incandescent bulbs.

Emergency Power Packs— Mount bulb heads onto the housing using knockouts or hardwire to power multiple remote bulb heads (bulb heads not included). Packs have a brown housing and a battery capacity indicator. They can be wall mounted or placed on the included mounting shelf (hardware not included). Packs operate on 120 VAC and have hardwire connections.

Battery Volts	No. of Light Heads	Bulb Shape	Bulb Watts	Hours of Emergency Light	Max. Watt Output♥	O'all Size, Ht. × Wd. × Dp.	Lights	Each	Repl. Batteries No. Req'd		Each
Emergency Light											
6	2	PAR36	25	3 1/2	120	12 11/16″ × 11 7/8″ × 4 7/8″	1680K1	$361.44	1	7446K12	$225.17
Emergency Light with Cord and Plug											
6	2	PAR36	25	3 1/2	120	12 11/16″ × 11 7/8″ × 4 7/8″	1680K7	369.49	1	7446K12	225.17
Emergency Power Packs											
6	0	—	—	—	120	12 1/2″ × 18 1/2″ × 8 1/2″	8380K71	697.58	1	7446K15	275.87
12	0	—	—	—	240	12 1/2″ × 18 1/2″ × 8 1/2″	8380K51	825.22	1	7446K18	417.97

♥When adding bulb heads, do not exceed this maximum. At this wattage you get 1 1/2 hours of emergency light.

Remote Location Bulb Heads for Emergency Lights

Extend the reach of your emergency light system by adding a remote bulb head. Heads have a polycarbonate housing and pivot for precise light direction. They have two wire leads and are compatible with most emergency lights. Mount to a 3/4″ knockout and secure with included fasteners.

Style E has a Class I, Div. 2 hazardous rating when used with a Class I, Div. 2 rated emergency light.

Bulb Watts	O'all Size, Ht. × Wd.	Housing Color	6 Volt	Each	12 Volt	Each
(D) PAR36 Sealed-Beam Incandescent Bulb						
25	6 1/4″ × 5 1/8″	Gray	1499K28	$40.52	1499K29	$40.52
(E) Hazardous-Location PAR36 Sealed-Beam Halogen Bulb						
8	6 1/4″ × 5 1/8″	Gray	1499K51	46.30	1499K52	46.30
(F) T2 1/4 Halogen Bulb						
12	3 1/2″ × 4 5/8″	Beige	1499K22	40.75	1499K21	44.44
12	3 1/2″ × 4 5/8″	Black	1499K12	40.75	1499K11	44.45

Fluorescent-Light Emergency Battery Packs

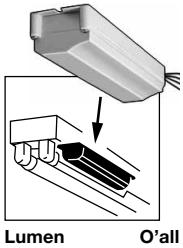

These battery packs automatically turn on when the lights go out, converting your existing fluorescent lights into emergency lights. One pack is wired into your ballast and illuminates one or two bulbs (see chart at right) for a minimum of 1 1/2 hours. They're compatible with most ballasts.

Each includes a maintenance-free sealed NiCad battery (nonreplaceable), an internal constant-current charger, an external test switch, and a pilot light. They operate on 120/277 VAC and are UL listed.

Lumen Output	O'all Size, Lg. × Wd. × Ht.		Each
500	9 1/2″ × 2 1/2″ × 1 3/16″	8385K12	$90.70
600	9 7/16″ × 2 3/16″ × 1 3/16″	8385K13	130.52
1400	13 5/16″ × 2 3/16″ × 1 3/16″	8385K14	168.24

	8385K12	8385K13	8385K14
Lumen Output	500	600	1400
For Bulb Types:	*No. of Bulbs Operated*		
T8 (1″ Dia.) and T12 (1 1/2″ Dia.), 2 ft. to 4 ft.	1	1 or 2	1 or 2
T8 (1″ Dia.) and T12 (1 1/2″ Dia.), 5 ft. to 8 ft.		1	1
T8 (1″ Dia.) and T12 (1 1/2″ Dia.), U-Shape	1	1 or 2	1 or 2
T8 (1″ Dia.) High Output, 8 ft.		1	1
T12 (1 1/2″ Dia.) High Output and Very-High Output, 2 ft. to 8 ft.		1	1
T9 (1 1/8″ Dia.) Circline		1	1
4-Pin Long Compact	1	1	
4-Pin Twin-Tube Compact			1
4-Pin Quad-Tube Compact			1 or 2

For information about cord type, see page 808.

Stand-Mounted Floodlights

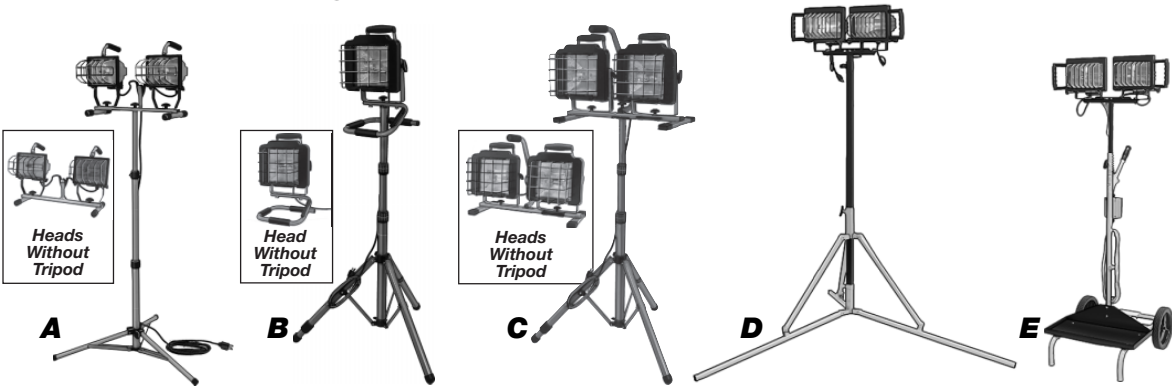

Aim light where you need it—adjust the height of the stands and pivot the light heads horizontally and vertically. Lights have a switch and operate on 120 VAC. All include halogen bulbs.

(A) General Purpose Tripod with Removable Head— Use the head on the tripod or remove it to use as a portable light. Light has a die cast aluminum tubing stand, a glass lens, and an SJTW cord with plug. UL and C-UL listed.

(B&C) Medium Duty Tripod with Removable Head— Use the head on the tripod or remove it to use as a portable light. Lights have a 22-ga. steel tubing stand, a glass lens, and an SJTW cord with plug. Each light head has two independently controlled bulbs. UL and C-UL listed. *Style B* light head is selectable between 250, 500, and 750 watts. *Style C* light heads are selectable between 250; 500; 750; 1,000; 1,250; and 1,500 watts.

(D) Heavy Duty Tripod— Light has a 12-ga. steel tubing stand, a glass lens, weatherproof light heads, and an SJTW cord with plug. ETL and C-ETL listed.

(E) Medium Duty Roll-About— Light has a 16-ga. steel tubing wheeled stand and a tool tray. Lens is glass. Also has a 15-amp duplex GFCI outlet and an SJT cord with plug. ETL and C-ETL listed.

	No. of Heads	Overall Height	Base Size	Cord Lg.	Lights		Replacement Bulb Qty. Req.	Watts	Lumens		
Tripod											
A .. General Purpose w/ Removable Head	2	3′ to 6′	17½″ Dia.	6 ft.	1498K97	$49.35	2	500	9,500	1513K2	$6.49
B .. Medium Duty w/ Removable Head	1	4′ to 8′	25″ Dia.	10 ft.	1571K21	86.37	1	250	4,500	1513K17	9.25
							1	500	9,500	1513K2	6.49
C .. Medium Duty w/ Removable Head	2	4′ to 8′	25″ Dia.	10 ft.	1571K22	131.57	2	250	4,500	1513K17	9.25
							2	500	9,500	1513K2	6.49
D .. Heavy Duty	2	5′9″ to 11′9″	72″ Dia.	15 ft.	1469K73	431.71	2	500	9,500	1513K2	6.49
Roll-About											
E ... Medium Duty	2	5′9″ to 8′9″	22″×24¾″	15 ft.	8436K11	414.05	2	500	9,500	1513K2	6.49

Multi-Mount Floodlights

Hang these lights by their eyelet hook or mount them on ferrous surfaces using the built-in magnet. All have a rugged, corrosion-resistant housing and a polycarbonate gasketed lens. Lights operate on 120 VAC and have a 6-ft. SJTOW cord with plug. Bulbs are included (except 14965K33 requires one bulb that is not included). All lights are ETL listed.

Lights with yellow polycarbonate housing have a watertight seal. *LED* bulbs have a very long life with good impact and vibration resistance. Rated 32 watts and 1,500 lumens.

Long-tube fluorescent light has a handle and comes with an electronic start ballast and two bulbs.

Overall Size Ht.	Wd.	Dp.	Lights		Replacement Bulb Watts	Lumens		
Yellow Polycarbonate Housing								
Incandescent								
9¼″	6¼″	6″	14965K33	$88.31	75	790	1728K98 ♦	$7.24
LED								
12″	12″	9½″	14965K45	478.22	—	—	—	—
Fluorescent								
10¼″	5¼″	4½″	14965K22	123.95	42	3,200	1528K45	16.37
Metal Halide								
9¼″	6¼″	6″	14965K41	227.07	50	3,450	8293K21	43.13
12″	12″	9½″	14965K43	315.18	100	8,400	8293K25	47.38
High-Pressure Sodium								
9¼″	6¼″	6″	14965K42	165.84	70	6,300	8293K57	24.94
12″	12″	9½″	14965K44	236.55	100	9,500	8293K58	26.59
White Reinforced-Fiberglass Housing								
Long-Tube Fluorescent								
8″	26″	4¾″	15145K32	272.17	40	3,300	1528K78	14.37

♦ Package of two.

Rechargeable Floodlights

Bring light to the jobsite without the need for outlets or a generator. Lights have rechargeable batteries and long-lasting LED bulbs. Lens is polycarbonate. All have a switch and a low-battery indicator. Include a 120-240 VAC charger.

Hazardous-Location Hand Held— Light is ETL and C-ETL listed for Class 1, Division 1, Groups C and D. Head tilts up and down and has flood and beam modes. Light has a black polypropylene handle and a stainless steel folding swivel hook. Includes a replaceable NiMH battery pack; charges in 10 hours or fast charges in five hours.

Heavy Duty Hand Held— Use this light folded or raise it to any height within its range. Once extended, the head rotates 360°. Light has high and low settings. Head and body are yellow polycarbonate and ABS plastic. Mast is glass-reinforced plastic. Battery is sealed lead acid and charges in seven hours.

Tripod— Adjust the height of the light anywhere within its range. Head rotates 180° and tilts up and down. Light has high and low settings. Head and body are yellow polycarbonate and ABS plastic. Mast is aluminum. Light has an NiMH battery that charges in eight hours.

Battery Life, hrs.	Lumens	Overall Height	Base Size Wd.	Dp.		
Hazardous-Location Hand Held						
7	270	13″	4½″	6″	1780K1	$405.09
Heavy Duty Hand Held						
8-15	2,000	9″ to 32″	7⅞″	15¾″	1865A1	806.35
Tripod						
3-6	2,400	37″ to 86″	85″ Dia.	—	1805K1	1,007.95
Repl. Battery Pack for Haz. Loc. Floodlight					1780K11	206.00

For information about cord type, see page 808.

High-Impact Fluorescent Floodlights

If it were any more resilient, it would bounce. The rubber housing provides impact resistance. Light also has a polycarbonate lens, ratcheting stand, and two 1/2″ dia. mounting holes (fasteners not included). The included 38-watt fluorescent bulb stays cool and is rated at 3,500 lumens. Light operates on 120 VAC and has an SJTW cord with plug. Meets OSHA nonsparking requirements.

Overall Size Ht.	Wd.	Dp.	Cord Lg.	Light		Repl. Bulb	
12″	12″	3″	20 ft.	7042T5	$98.94	7042T9	$17.72

Indoor/Outdoor Temporary Lighting

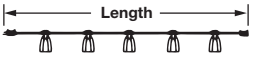

Molded-Vinyl Lighting System

Molded-Rubber Lighting System

Bring safe and effective temporary overhead lighting to the jobsite. Bulb holders come strung with a plug on one end and a female connector on the other end, allowing you to connect systems. Holders have steel wire bulb guards and are spaced at 10-ft. intervals. Systems operate on 120 VAC. Use 150-watt incandescent bulbs, sold separately.

Molded-Vinyl Systems—Each bulb holder has a molded PVC socket and a 1 1/2″×1 5/8″ hole for hanging. Systems have a yellow SJTW cord with plug. UL listed and OSHA approved.

Molded-Rubber Systems—One-piece design has rubber-encased copper sockets and cord. A flexible rubber lip forms a weather-resistant seal around the bulb's neck. Each bulb holder has a 3/8″ dia. hole for hanging. Systems have a yellow SOOW cord with plug. CSA certified.

Lg., ft.	No. of Bulb Holders	Molded-Vinyl Lighting Systems		Molded-Rubber Lighting Systems	
50	5	1560K56	$133.86	83075K57	$394.42
100	10	1560K58	259.67	83075K58	741.87
Repl. Bulb Guard		1560K55	5.28	83075K71	10.78
150-watt/1,770-lumen Bulb				1728K87	$2.44

Temporary Light Bulb Sockets

Pigtail Holder

Holder with Connection Box

Create a temporary light system or replace your string sockets with our molded-rubber, water-resistant holders. They have two 4 1/2″ 14-ga. wire leads and operate on a max. of 600 VAC. Use with incandescent medium-base bulbs. Holders are CSA certified.

Pigtail Holder—Has a rubber lip that molds around the bulb to form a seal. UL listed.

Holder with Connection Box—Strip your cord wires and connect them to the leads inside the housing. Includes a steel hanger hook, no-stress cord grips, and a steel wire bulb guard.

	Max. Watts		
Pigtail Holder	660	8289K31	$7.05
Holder with Connection Box	200	8289K51	78.54

Halogen Floodlights

Flood your worksite with bright portable light. Rugged and easy-to-carry, light head is aluminum and lens is glass with a wire guard. Lights have a 500-watt halogen bulb rated at 9,500 lumens. They operate on 120 VAC and have an SJTW cord with plug.

(A) Light with Stand—Frame is steel. UL and C-UL listed for outdoor use. ***(B) Clamp-Mount Light***—Jaws open up to 3″. Light has a switch. Frame is die cast aluminum. ETL and C-ETL listed.

	Overall Size Ht.	Wd.	Dp.	Cord Lg.	Lights		Repl. Bulb	
A	12 1/2″	8 1/2″	7 1/2″	3 ft.	1549K13	$21.83	1513K2	$6.49
B	12″	9″	10″	15 ft.	8430K21	88.00	1513K2	6.49

Hazardous-Location Floodlights

The cast aluminum housing and heat-resistant, 3/4″ thick, rubber-gasketed glass lens withstand abuse in marine and other demanding environments. Base is 12 1/2″ dia. with three 1/2″ dia. holes for mounting (fasteners not included). Height is 15 7/8″. Use with a 150-watt bulb, sold separately. Lights operate on 120 VAC and come with 100 feet of SOW cord. Plug is not included; see 7461K series on page 789.

UL listed for Class I, Div. 1, Groups C and D. CSA certified for Class I, Div. 2, Groups C and D. UL 1598A listed for marine use.

Bulb Type	Lights		Bulb Lumens		
Incandescent	1666K24	$1,138.71	2,175	1532K53	$20.76
High-Pressure Sodium	1666K56	1,119.35	15,800	8293K59	24.94

Rechargeable Trouble Lights

Fluorescent

LED

Take these battery-operated lights almost anywhere. They have an impact-resistant plastic bulb shield. Turn on and off with the switch. Include an NiMH rechargeable battery pack, charger, and bulb.

Fluorescent light has an ABS plastic handle and a polycarbonate swivel hook. Size is 2 1/2″ Dia.×15″ Lg. Includes a 12 VDC charger with cigarette-lighter plug and a 120 VAC charger. UL and C-UL listed.

LED light uses LEDs for long life and energy efficiency. It has a nylon 6/6 handle and a steel dual hook that rotates and adjusts up and down. Size is 2″ Dia.×12 1/4″ Lg. Includes a 120 VAC charger.

Bulb Type	Lumens	Battery Life, hrs.	Charge Time, hrs.		
Fluorescent	550	1 1/2	1 1/2	7752T21	$48.03
LED	240	5	2	1600K1	150.00
Replacement Bulb for Fluorescent Light				1528K51	4.26
Replacement Battery for Fluorescent Light				7752T27	22.41
Replacement Battery for LED Light				1600K11	51.12

Spring-Clamp Lights

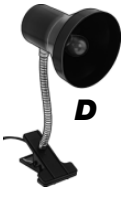

Open the clamp to easily move lights from place to place. All have a metal shade. They operate on 120 VAC and have a switch and a cord with plug, except 1627K46 does not have a switch.

Style C has a 6″ long flexible arm and is ETL listed. Bulb not included. ***Style D*** has an 8″ long flexible arm and is UL listed. Includes a bulb. ***Style E*** do not include a bulb. 1627K11 and 1627K13 are UL listed. 1627K46 is ETL and C-ETL listed. ***Style F*** includes a bulb.

Lamp Head Size	Max. Clip Opening	Cord Lg.	Lights		Bulbs Watts	Lumens	Pkg. Qty.		Pkg.
Incandescent									
C 4 1/2″ Dia.	1 1/2″	5 ft.	1627K48	$10.94	60	—	4	1532K33	$9.15
D 4 1/2″ Dia.	1 1/2″	5 ft.	1627K14	49.97	40	355	1	1317T18	2.48
E 5 1/2″ Dia.	1 3/4″	15 ft.	1627K11	19.63	60	—	4	1532K33	9.15
E 7 5/8″ Dia.	3″	8 ft.	1627K46	25.39	300	6,300	1	15115K67	4.95
E 8 1/2″ Dia.	2 1/4″	15 ft.	1627K13	16.01	150	1,935	2	15115K63	6.52
Halogen									
F 2 5/8″ Sq.	1 1/2″	6 ft.	15195K34	150.00	50	—	1	1465K5♠	4.68

♠Candlepower rating is 3,600.

For information about cord type, see page 808. For more information about light bulbs, see page 682.

About Trouble Light Bulb Types

Incandescent—*Advantages:* Economical to replace and provide a wide spread of light. *Disadvantages:* Bulb is exposed; the bulb and guard can become very hot.

Fluorescent—*Advantages:* Long lasting and energy efficient; provide a wide spread of light; run cooler than other bulbs and have a protective cover. *Disadvantages:* Don't operate well in cold temperatures; more costly to replace than incandescent.

Halogen—*Advantages:* Produce a bright white light; ideal for inspection work. *Disadvantages:* Bulb is exposed; bulb and guard can become very hot; more costly to replace than incandescent.

LED—*Advantages:* Very long life with good impact and vibration resistance. *Disadvantage:* Higher initial cost than other bulbs.

Incandescent Trouble Lights

Hang trouble lights where you need them; a guard protects the bulb from damage. Lights operate on 120 VAC and have a cord with plug (except 1460K91 does not include a cord and plug). Bulbs are sold separately.

Standard—These lightweight lights have a PVC handle with a switch and a 12-amp three-prong outlet. Guard is vinyl-coated metal and has a hook for hanging. Cord is yellow.

Standard with Magnetic Base—Mount with the magnetic base or use the hook for hanging. Lights attach to base with a ball joint for easy positioning. Handle is nylon and has a switch. Guard is steel. Cord is red.

Rough Duty—Lights are impact-, abrasion-, and oil-resistant. Handle is polypropylene and has a switch and a 10-amp three-prong outlet. Guard is steel and has an easy-open design, flat sides to prevent rolling, and a swivel hook for hanging. Cord is yellow. UL listed and CSA certified.

Premium—A one-piece rubber handle provides excellent shock protection. Handle has a switch and a 15-amp three-prong outlet. The guard and hook are vinyl-coated steel. A seal at the bulb base protects from dust. Lights are UL listed. 1460K92 and 1460K93 have a yellow cord and are CSA certified. 1460K91 does not include a cord and plug. For cords, see page 809. For plugs, see page 787.

Standard

Standard with Magnetic Base

Rough Duty

Premium

Cord Lg.	Cord Type	Cord Ga.	Light Lg.	Lights	Lights Each	Bulbs Watts	Bulbs Lumens	Bulbs Pkg. Qty.	Bulbs	Bulbs Pkg.
Standard										
25 ft.	SJEOW	16/3	13½″	**1550K31**	$24.65	75	750	1	**1506K52**	$3.52
50 ft.	SJEOW	16/3	13½″	**1550K33**	35.52	75	750	1	**1506K52**	3.52
Standard with Magnetic Base										
25 ft.	SJ	18/3	11¾″	**1526K5**	85.10	75	750	1	**1506K52**	3.52
50 ft.	SJ	18/3	11¾″	**1526K6**	89.05	75	750	1	**1506K52**	3.52
Rough Duty										
25 ft.	SJTW	16/3	12½″	**8407K11**	61.02	100	1,000	2	**1241K13**	6.18
50 ft.	SJTW	16/3	12½″	**8407K12**	78.51	100	1,000	2	**1241K13**	6.18
Premium										
—	—	—	14″	**1460K91**	92.70	100	945	2	**1506K53**	6.20
25 ft.	SOOW	16/3	14″	**1460K92**	133.57	100	945	2	**1506K53**	6.20
50 ft.	SOOW	16/3	14″	**1460K93**	162.70	100	945	2	**1506K53**	6.20

Incandescent Trouble Lights with Cord Reel

Keep excess cord out of your way—retractable cord reels lock the cord at any length and retract it when not in use. Lights operate on 120 VAC and have a black cord with plug. Bulbs are sold separately.

Standard—Have a swing-open metal guard for easy bulb replacement, a hook for hanging, and a polypropylene handle with switch. Reel is metal with a yellow powder-coated finish and has an eye loop for hanging. *Light with 30-ft. cord* has a 2-ft. feeder cord and a 10-amp three-prong outlet in the handle. UL listed. *Light with 50-ft. cord* has a 7-amp circuit breaker in the plug, a 2-ft. feeder cord, and a 7-amp three-prong outlet in the handle. UL and C-UL listed.

Premium—Made of heavy duty steel, lights have a 6-ft. feeder cord, a steel guard with swivel hook, and an adjustable ball stop. Handle is thermoplastic and has a switch and a 15-amp three-prong outlet. Reel has a yellow powder-coated finish and a 5½″ square mounting plate with three slotted holes for ⅜″ bolts (fasteners not included). UL listed and CSA certified. *Swing mount* moves side to side 150° to 160°.

Standard

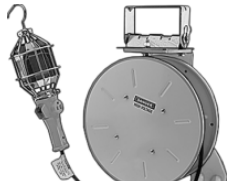

Premium Swing Mount

Cord Lg.	Cord Type	Cord Ga.	Light Lg.	Reel Dia.	Lights	Lights Each	Bulbs Watts	Bulbs Lumens	Bulbs Pkg. Qty.	Bulbs	Bulbs Pkg.
Standard											
30 ft.	SJT	16/3	11″	9½″	**1655K3**	$51.57	100	945	2	**1506K53**	$6.20
50 ft.	SVT	18/3	11″	9½″	**1655K4**	55.35	100	945	2	**1506K53**	6.20
Premium Swing Mount											
25 ft.	SOOW	16/3	12½″	12″	**1596K76**	353.63	100	945	2	**1506K53**	6.20
Premium Rigid Mount											
35 ft.	SOOW	16/3	12½″	12″	**1596K77**	368.63	100	945	2	**1506K53**	6.20
50 ft.	SOOW	16/3	12½″	12″	**1596K78**	413.72	100	945	2	**1506K53**	6.20

Handles and Guards for Trouble Lights

Handle

Guard

For use with incandescent trouble lights. Not for use with wet-location or hazardous-location lights.

Handle is plastic and has a switch and a three-prong outlet. Rated at 10 amps when used with 18/3 cord and 13 amps when used with 16/3 cord. ***Swing-open metal guard*** is for handles up to 1⅝″ dia.

	Lg.		
Handle	5¾″	**1559K2**	$6.63
Swing-Open Metal Guard	7″	**1559K3**	5.27

Watertight Incandescent Trouble Lights

Completely enclosed and gasketed to keep water out, lights are rated NEMA 4X for washdown environments. Operate on 120 VAC. Lights have a swivel hook. Bulbs are sold separately. CSA certified.

Lights with tempered glass globe have a rubber handle and a steel guard. 1548K15 and 1548K16 have a yellow cord with plug. 1548K84 does not include a cord and plug. For cords, see page 809. For plugs, see page 787. ***Lights with shatterproof PTFE globe*** withstand abuse and accidental drops. They have a reinforced polyester handle and a yellow cord with plug.

Light with Shatterproof PTFE Globe

Cord Lg.	Cord Type	Cord Ga.	Light Lg.	Lights	Lights Each	Bulbs Watts	Bulbs Lumens	Bulbs Pkg. Qty.	Bulbs	Bulbs Pkg.
With Tempered Glass Globe										
—	—	—	15″	**1548K84**■	$148.27	100	945	2	**1506K53**	$6.20
25 ft.	SOOW	16/3	15″	**1548K15**	214.92	100	945	2	**1506K53**	6.20
50 ft.	SOOW	16/3	15″	**1548K16**	263.49	100	945	2	**1506K53**	6.20
With Shatterproof PTFE Globe										
25 ft.	SOOW	16/2	7½″	**1546K11**■	258.47	100	945	2	**1506K53**	6.20
50 ft.	SOOW	16/2	7½″	**1546K12**■	293.33	100	945	2	**1506K53**	6.20

Replacement Tempered Glass Globe	**1548K91**	Each	$31.55
Replacement Shatterproof PTFE Globe (hook included)	**1546K13**	Each	$123.36

■ CSA certified and UL listed.

For information about cord type, see page 808.

Fluorescent Trouble Lights

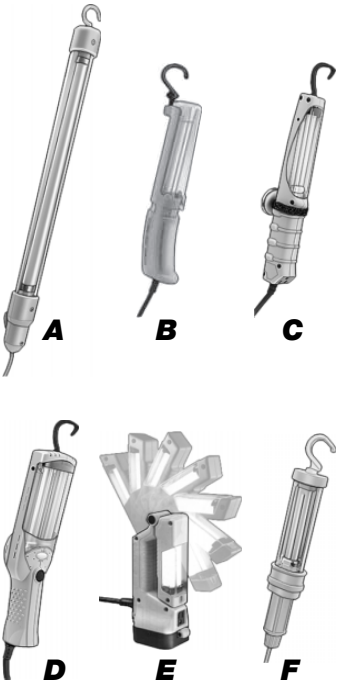

An impact-resistant shield protects the bulb, so you can hang these trouble lights without worry. All have a fluorescent bulb and a switch in the handle. Lights operate on 120 VAC and have a cord with plug. ***Rough duty*** lights have a thicker-gauge cord for more demanding applications.

(A&B) Standard— Lights have a swivel hook for hanging. *Style A* has a polypropylene handle and a ballast mounted at the end of the cord that plugs directly into the outlet. Cord is yellow. UL listed. *Style B* has an ABS handle. Cord is black. UL and C-UL listed.

(C) Rough Duty with Magnet and Outlet— Magnet attaches to light with a hook-and-loop band. Mount with the magnet or use the swivel hook for hanging. Handle is nylon and has a 13-amp three-prong outlet. Cord is black. UL listed and CSA certified.

(D) Rough Duty High Output with Angled Handle and Outlet— With two 13-watt bulbs, this is the brightest fluorescent trouble light we offer. Hook ratchets for easy mounting. Handle is nylon and has a 13-amp three-prong outlet. Cord is black. UL listed and CSA certified.

(E) Rough Duty with Adjustable Head, Magnetic Base, and Outlet— This light has an eight-position adjustable head, magnetic base, nylon handle, and 13-amp three-prong outlet. Cord is black. UL recognized.

(F) Premium— A thick rubber handle and end cap provide excellent durability and shock protection. Lights also have a swivel hook and a 2½-ft. cord from an inline ballast to the plug. Cord is yellow. UL listed and CSA certified.

Cord			Light				Replacement Bulb			
Lg.	Type	Ga.	Dia.	Lg.	Lights		Watts	Lumens		
(A) Standard										
25 ft.	SJT	18/2	2″	26″	1675K41	$24.85	15	870	1501K13♦	$11.76
50 ft.	SJT	18/2	2″	26″	1675K43	35.00	15	870	1501K13♦	11.76
(B) Standard with Angled Handle										
25 ft.	SJT	18/2	2¼″	14¼″	1675K21	24.94	13	825	1528K51	4.26
50 ft.	SJT	18/2	2¼″	14¼″	1675K23	35.73	13	825	1528K51	4.26
(C) Rough Duty with Magnet and Outlet										
25 ft.	SJTOW	16/3	2⅝″	16″	16635K63	53.22	13	825	1528K51	4.26
50 ft.	SJTOW	16/3	2⅝″	16″	16635K65	63.65	13	825	1528K51	4.26
(D) Rough Duty High Output with Angled Handle and Outlet										
25 ft.	SJTOW	16/3	4″	13⅜″	1541K31	77.97	13	825	1528K51	4.26
(E) Rough Duty with Adjustable Head, Magnetic Base, and Outlet										
25 ft.	SJTOW	16/3	4″	16″	1534K11	69.71	13	760	1528K47	10.71
(F) Premium										
25 ft.	SJTOOW	18/3	2⅝″	13½″	1477K66	166.60	13	825	1528K51	4.26
50 ft.	SJTOOW	18/3	2⅝″	13½″	1477K67	185.45	13	825	1528K51	4.26

♦ Package of two.

Fluorescent Trouble Lights with Cord Reel

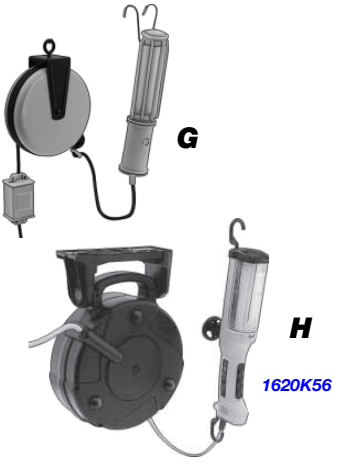

It's easy to keep cords off the floor and out of your way. Lights have a reel that locks the cord at any length and retracts it when not in use. These lights also have a fluorescent bulb, an impact-resistant plastic bulb shield, and mounting fasteners. Operate on 120 VAC. ***Rough duty*** lights have a thicker-gauge cord for more demanding applications.

(G) Standard— A clear lens at the top of these lights lets you inspect tight areas, and a guard protects the rest of the lens from scratches. A dual hook rotates and slides up and down the tube for easy positioning. Handle is PVC and has a switch. Reel is steel and has a 2-ft. feeder cord, an eye loop for hook mounting, and a mounting bracket. UL and C-UL listed. *Light with 20-ft. cord* has a black cord. *Light with 40-ft. cord* has a yellow cord.

(H) Rough Duty with Magnet and Outlet— Use the clip-on magnet to mount the light or the swivel hook for hanging. Handle is ABS plastic and has a switch and a three-prong outlet. Wall- or ceiling-mount the reel with the included bracket. Cord is yellow. ETL and C-ETL listed. *Light with 30-ft. cord* has a steel reel with a black powder-coated finish. The reel has a 2-ft. feeder cord. *Light with 50-ft. cord* has a black ABS plastic reel with a 3-ft. feeder cord.

Cord			Light		Reel			Replacement Bulb			
Lg.	Type	Ga.	Dia.	Lg.	Dia.	Lights		Watts	Lumens		
(G) Standard											
20 ft.	SVT	18/2	2¼″	11″	6½″	1649K6	$66.91	13	825	1528K93	$4.26
40 ft.	SJTOW	18/2	2¼″	11″	9″	1649K7	68.46	13	825	1528K93	4.26
(H) Rough Duty with Magnet and Outlet											
30 ft.	SJT	16/3	3″	14½″	9″	1620K6	72.82	26	1,800	1528K68	13.08
50 ft.	SJT	16/3	3½″	14½″	11½″	1620K56	131.64	26	1,800	1528K68	13.08

Halogen Trouble Lights

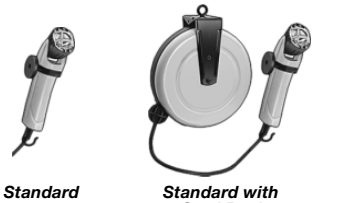

Standard ***Standard with Cord Reel***

A 900-lumen halogen bulb delivers high-intensity illumination. Mount lights using the swivel hook or the removable magnet. Lights have a 90° swivel head and an ABS plastic handle with switch. They operate on 120 VAC and have a black cord with plug. Supplied with a halogen bulb. UL and C-UL listed.

Standard light with cord reel has a 9¼″ dia. steel reel with a yellow powder-coated finish. Reel locks the cord at any length and retracts it to keep the excess out of your way. It has a swivel hook and a 2-ft. feeder cord.

Cord			Light		Replacement Bulb	
Lg.	Type	Ga.	Lg.	Lights		Watts
Standard						
25 ft.	SJT	18/2	10″	1490K11	$26.34	20	1465K35	$5.81
50 ft.	SJT	18/2	10″	1490K12	34.70	20	1465K35	5.81
Standard with Cord Reel								
40 ft.	SJT	18/2	10″	1491K31	61.22	20	1465K35	5.81

For information about cord type, see page 808.

LED Trouble Lights

with Cord Reel

You'll have the toughness of a trouble light and the convenience of never replacing a bulb. Lights have surface-mounted LEDs for durability and a polycarbonate outer tube for impact resistance. A 90-lumen LED on the end acts as a flashlight. Lights also have a steel dual hook that rotates and adjusts up and down. Handle is PVC and has a switch. Lights operate on 120 VAC and have a yellow cord with plug and a 12-amp outlet inline with the cord. ETL and C-ETL listed.

Standard with Cord Reel— Includes a 9″ dia. steel reel with a white painted finish. The reel locks the cord at any length and retracts it when not in use. It has a 2-ft. feeder cord. Mount the reel using the eye loop or the included bracket and hardware.

Cord Lg.	Cord Type	Cord Ga.	Lumens	Light Dia.	Light Lg.		
Standard							
25 ft.	SJTOW	16/3	240	2¼″	11½″	**2163K1**	$118.09
Standard with Cord Reel							
40 ft.	SJTOW	16/3	240	2¼″	11½″	**1794K1**	159.55

Hazardous-Location Incandescent Trouble Lights

This spark- and weather-resistant light is rated for use in hazardous locations. It has a plastic handle, a cord clamp, and a cast aluminum guard with a swivel hook. A tempered glass globe screws into the handle. Light accommodates 16/3 or 14/3 (up to ½″ dia.) SOOW cable. Cord and plug not included; see page 809 for cord and page 789 for plugs.

Light is 16½″ long and operates on 120 VAC. UL listed and CSA certified for Class II, Div. 1, Groups F and G with bulbs up to 75 watts; Class I, Div. 1, Groups C and D with bulbs up to 100 watts. Bulbs are sold separately.

Light	**1545K4**	$384.93
Replacement Glass Globe	**1545K5**	108.10
75-watt/750-lumen Bulb	**1506K52**	3.52
100-watt/945-lumen Bulbs (Pkg. of 2)	**1506K53**	6.20

Low-Voltage Harsh-Environment Incandescent Trouble Lights

Rough Duty

An inline rubber-covered transformer steps down your 120 VAC supply to a safer 12 volts. All lights have a plug, a 10-ft. yellow 16/3 SOOW power cord, and a 25-ft. cord from transformer to light. Supplied with a 75-watt/1,500-lumen incandescent bulb. UL listed and CSA certified.

Rough duty light has a rubber handle and a steel wire guard with swivel hook and reflector.

Watertight light is NEMA 4X rated for washdown protection. It has a rubber handle, a glass globe to seal out water and vapors, and a steel wire guard with a hook. *Note:* Transformer is not rated NEMA 4X.

Hazardous-location light is UL listed for Class II, Div. 1, Groups F and G with a 75-watt bulb; Class I, Div.1, Groups C and D with a 100-watt bulb (sold separately). Light has a rubber handle, glass globe, and an aluminum guard with swivel hook. *Note:* Transformer is not approved for hazardous locations.

75-watt bulb is rated 1,100 lumens. *100-watt* is rated 1,750 lumens.

	Light Lg.		
Rough Duty Light	14″	**1580K13**	$921.92
Watertight Light	18″	**1580K14**	1,013.16
Hazardous-Location Light	16½″	**1580K15**	1,299.94
Replacement Glass Globe for 1580K14		**1548K91**	31.55
Replacement Glass Globe for 1580K15		**1545K5**	108.10
Replacement 75-watt Bulb		**8357K16**	4.43
100-watt Bulb for 1580K15		**8357K17**	5.60

12-Volt Fluorescent Trouble Lights

Use your vehicle or a battery pack to power this low-voltage light. It has a cigarette-lighter plug at the end of a 20-ft. yellow 18/2 SJTOW cord. Operates on 12 VDC. Light has an impact-resistant shield, protective PVC end caps, and a switch. A steel dual hook rotates and slides up and down the outer tube for easy positioning. Overall size is 2″ Dia.×13¼″ Lg. UL and C-UL listed.

Light	**15045K31**	$58.06
Repl. 13-watt/825-lumen Bulb	**1528K51**	4.26

Impact-Resistant Fluorescent Trouble Lights

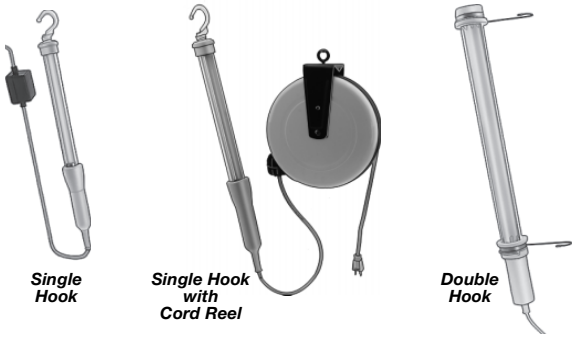

Single Hook *Single Hook with Cord Reel* *Double Hook*

Drops, falls, and rough handling won't stop the illumination. Lights have heavy plastic shields and neoprene end caps and handles for impact resistance. This construction also makes them weather resistant. All operate on 120 VAC. A fluorescent bulb is included. Lights are FM approved.

Single Hook— Lights have a swivel hook for hanging. They also have a 25-ft. yellow 18/2 SJOW cord with an inline ballast.

Single Hook with Cord Reel— Lights have a swivel hook for hanging, a 40-ft. yellow 18/3 SJO cord, and a 9½″ dia. steel reel. Ballast is on the reel. Reel has a 2-ft. feeder cord and an eye loop for hanging.

Double Hook— Hold these lights by their comfortable grip or mount them with the two clip-on hanging hooks. Lights have a 25-ft. yellow 18/3 SJOW cord with plug. Ballast is built into the handle.

Light Dia.	Light Lg.	Lights	Each	Replacement Bulbs Watts	Lumens	Pkg. Qty.		Pkg.
Single Hook								
2″	18½″	**8413K32**	$88.17	8	400	2	**1562K45**	$10.76
2⅜″	24½″	**8413K34**	105.00	15	870	2	**1501K13**	11.76
2⅜″	42¾″	**8413K35**	174.16	30	2,180	6	**1501K27**	37.02
Single Hook with Cord Reel								
2″	18½″	**1615K24**	171.19	8	400	2	**1562K45**	10.76
2⅜″	24½″	**1615K25**	189.88	15	870	2	**1501K13**	11.76
Double Hook								
3⅛″	32″	**8413K14**	133.84	20	1,200	6	**1501K24**	28.38
3⅛″	56″	**8413K24**	199.74	34	2,650	6	**1683K12**	22.68

Hazardous-Location Fluorescent Trouble Lights

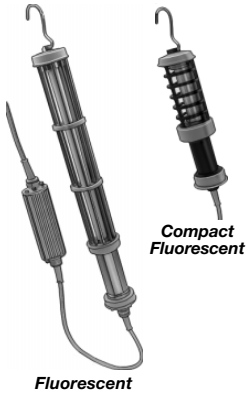

Compact Fluorescent

Fluorescent

Aluminum bodies and guards, rubber bumpers and supports, and annealed glass shields give these lights excellent impact, spark, and shock resistance. The lights have a hook and a fluorescent bulb. They operate on 120 VAC. All have a yellow 16/3 SOOW cord; plugs are not included (see page 789 for plugs).

Fluorescent Lights— Have an inline ballast. FM approved. Meet National Electrical Code (NEC) Class I, Div. 1 and 2, Group D; Class II, Div. 1 and 2, Groups E, F, and G; and Class III, Div. 1 and 2.

Compact Fluorescent Lights— Ballast is built into the handle. Meet NEC Class I, Div. 1, Groups C and D; Class II, Div. 1, Groups E, F, and G; and Class III, Div. 1. Lights are also NEMA 4 rated for washdowns and CSA certified.

Cord Lg.	Lights	Each	Replacement Bulbs Watts	Lumens	Pkg. Qty.		Pkg.
Fluorescent—3¼″ Dia.×23″ Lg.							
25 ft.	**8415K11**	$574.41	15	870	2	**1501K13**	$11.76
50 ft.	**8415K12**	652.16	15	870	2	**1501K13**	11.76
Compact Fluorescent—3½″ Dia.×14½″ Lg.							
25 ft.	**1492K3**	703.93	26	1,710	1	**1492K5**	12.38
50 ft.	**1492K4**	766.73	26	1,710	1	**1492K5**	12.38

Dock Lights

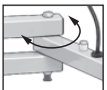
Horizontal Swivel

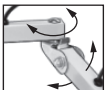
Universal Swivel

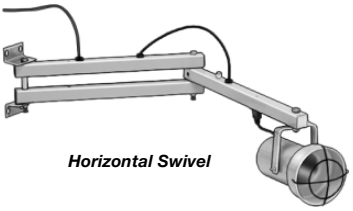
Horizontal Swivel

Universal Swivel LED

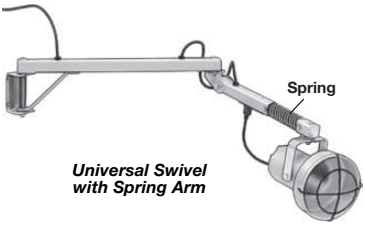

Universal Swivel with Spring Arm

Good lighting is essential at loading docks—swivel these heavy duty lights to direct light wherever you need it. Lights are made of 1½″ steel tubing with a safety-yellow finish. They have a bulb guard (except LED lights), a switch, and a cord with plug. Supplied with a mounting bracket that has four holes for ⅜″ dia. bolts (fasteners not included). Lights operate on 120 VAC.

Horizontal Swivel—Lights swing out from the wall horizontally.

Universal Swivel—A wrist-action joint allows for vertical and horizontal positioning and provides some impact resistance if the light is bumped.

Universal Swivel with Spring Arm—An inline heavy duty steel spring in the arm provides extra impact resistance.

Incandescent lights have a steel head and use PAR38 bulbs (sold separately). UL and C-UL listed.

Fluorescent lights have an aluminum head and include an energy efficient compact spiral bulb that doesn't get as hot as an incandescent bulb. ETL and C-ETL listed.

Halogen lights have an aluminum head. They include a 500-watt bulb that is brighter than an incandescent bulb. ETL and C-ETL listed.

LED lights have an aluminum head with integrated LEDs for long life and energy efficiency. Lens is acrylic. Brightness is 775 lumens. Lights are appropriate for use in food distribution facilities. UL listed.

O'all Lg.	No. of Arms	Arm Length(s)	Cord Lg.	Lights		Bulb Watts	Bulb Lumens		
Horizontal Swivel									
Incandescent									
24″	One	24″	5 ft.	1553K14	$104.62	150	2,175	1532K53	$20.76
40″	Two	22¼″, 22¼″	8 ft.	8403K52	129.27	150	2,175	1532K53	20.76
60″	Two	32¼″, 32¼″	6 ft.	8403K53	143.18	150	2,175	1532K53	20.76
Universal Swivel									
Incandescent									
42″	Two	24″, 16″	5 ft.	1553K16	124.42	150	2,175	1532K53	20.76
60″	Two	34″, 24″	5 ft.	1553K18	146.18	150	2,175	1532K53	20.76
90″	Three	32¼″, 32¼″, 32¼″	6 ft.	8403K74	250.36	150	2,175	1532K53	20.76
Fluorescent									
40″	Two	25½″, 17½″	5 ft.	6778T11	173.76	55	3,300	6778T13	53.31
60″	Two	35½″, 27½″	5 ft.	6778T12	198.00	55	3,300	6778T13	53.31
Halogen									
40″	Two	25½″, 17½″	5 ft.	1489K14	131.67	500	9,500	1513K2	6.49
60″	Two	35½″, 27½″	5 ft.	1489K16	153.75	500	9,500	1513K2	6.49
LED									
42″	Two	24″, 16″	5 ft.	2546K11	368.33	—	—	—	—
60″	Two	34″, 24″	5 ft.	2546K12	385.00	—	—	—	—
Universal Swivel with Spring Arm									
Incandescent									
42″	Two	24″, 16″	11 ft.	1518K11	195.64	150	2,175	1532K53	20.76
60″	Two	34″, 24″	11 ft.	1518K12	219.55	150	2,175	1532K53	20.76

Gooseneck Dock Lights

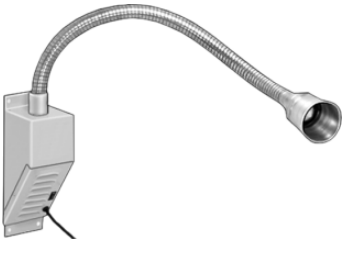

The flexible stainless steel neck gives you endless positioning options and withstands sudden impact. Lights have a welded steel housing, a fan-cooled aluminum light head, a switch, and a cord with plug. They operate on 120 VAC.

Halogen light has a 4″ dia. head and includes a halogen bulb. It has four 7/16″ dia. mounting holes (fasteners not included).

LED light has a 3¼″ dia. head and long-lasting LEDs rated for 85,000 hours. It has four ½″ dia. mounting holes (fasteners not included).

Bulb Type	Lumens	Arm Lg.	Cord Lg.		
Halogen	2,800	42″	3 ft.	1589K11	$398.46
LED	1,025	42″	3 ft.	1589K4	521.54
117-watt/1,950-lumen Bulb for Halogen Light				1589K13	26.36

Wet-Location Dock Lights

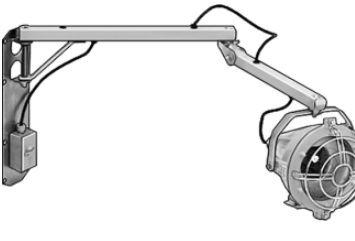

Made of aluminum with a gasketed head to keep shining in wet environments, indoors and out. Lights have two arms with a universal swivel joint for horizontal and vertical positioning, a protective lens, and a wire bulb guard. They also have a switch with a ½″ trade size conduit connection and three screw-terminal connections; operate on 120 VAC.

Supplied with a 20″ Lg.×5″ Wd. wall bracket that has eight holes for ½″ dia. bolts (fasteners not included). Bracket and swivels are corrosion-resistant zinc-plated steel. The swing arm has a chemical-resistant powder-coated finish. Use with incandescent bulbs (sold separately). UL listed for wet locations. CSA certified.

O'all Lg.	Arm Lengths	Lights		Bulb Watts	Bulb Lumens		
42″	24″, 16″	15205K42	$576.19	300	2,480	14725K21	$32.18
60″	34″, 24″	15205K43	576.19	300	2,480	14725K21	32.18

Wet-Location Compact Fluorescent Machine Lights

Need a machine light for a wet location but have limited space? These are smaller than tubular fluorescent machine lights and have a sealed housing for protection from dust, splashing water, washdowns, and oil/coolant dripping and splashing. Housing is aluminum with a black finish; lens is acrylic. Lights have a switch and operate on 120 VAC. They have an 8-ft. power cord with plug and a 7-ft. cord connecting the light to the inline ballast. A T-slot on the back accepts a ¼″-20 square-head bolt for mounting (bolt not included). Bulbs are included.

Overall Size Lg.	Wd.	Ht.	Lights	Each	Replacement Bulbs Qty. Req'd	Watts	Lumens	Pkg. Qty.		Pkg.
7⅞″	4⅜″	2¼″	7102T11	$471.96	2	4	135	2	1562K41	$13.50
13⅞″	10⅜″	2¼″	7102T21	532.47	2	8	400	2	1562K19	18.12

About Workstation and Machine Lights

Machine Lights—Permanently attach these lights to machines.

Gooseneck Lights—Have a shorter arm than adjustable-arm lights but greater flexibility. Ideal for confined work spaces.

Adjustable-Arm Lights—With longer arms than gooseneck lights, these offer more lighting options for larger areas. They also typically hold their position better than gooseneck lights, which is a consideration in high-vibration areas.

Incandescent bulbs are economical to replace and provide a wide spread of light. ***Fluorescent bulbs*** are long lasting and energy efficient; they run cooler than other bulbs. ***Halogen bulbs*** produce a bright white light. ***LED bulbs*** have very long life with good impact and vibration resistance.

For more information about light bulbs, see page 682.

Machine Lights & Gooseneck Lights

For information about NEMA and IP ratings, see page 843.

Wet-Location Tubular Fluorescent Machine Lights

A *17″ Overall Length*

B *29″ Overall Length*

C *18″ Overall Length*

Mount directly to machines in wet locations. Bulbs and mounting fasteners are included.

All lights have a 2¾″ OD clear tube with black end caps. ***Plastic tubes*** are best for water-only areas. ***Glass tubes*** resist discoloration and are for applications involving water as well as heat and chemicals.

(A) Water-Resistant Lights—NEMA 13 rated to protect from water, oils, and coolants. UL listed. The *17″ long lights* have an internal ballast and a 9-ft cord with plug. *20″ long lights* have a remote ballast and include a switch and a 13-ft. cord with plug.

(B) Hardwired Water-Resistant Lights—NEMA 13 rated to protect from water, oils, and coolants. ETL and C-ETL listed. The *29″ long light* has a remote ballast with four 2-ft. long 18-ga. leads from the light to the ballast and 2-ft. long 18-ga. leads from the ballast for hardwiring. The *low-voltage 23″ long light* has an internal ballast and two 2-ft. long 18-ga. leads for hardwiring.

(C) Waterproof Lights—The tube end caps are gasketed at each end to provide IP67 water washdown protection. Lights have a built-in reflector and internal ballast. All have an 8-ft. cord with plug. ETL and C-ETL listed.

O'all Lg.	Voltage	Lights with Plastic Tube Each	Lights with Glass Tube Each	Replacement Bulbs Qty. Req'd	Watts	Lumens	Pkg. Qty.	Pkg.
(A) Water-Resistant Lights—*Compact Bulb*								
17″	120 VAC	1522K11 $166.24	1522K21 $196.22	1	18	1,250	1	1528K26 $14.37
20″	120 VAC	1522K12 238.84	1522K22 257.76	1	36	2,900	1	1528K24 14.37
(B) Hardwired Water-Resistant Light—*Compact Bulb*								
29″	120 VAC	1522K31 336.00	——— ———	1	50	4,300	1	1528K41 17.50
(B) Hardwired Water-Resistant Low-Voltage Light—*Compact Bulb*								
23″	24 VDC	1522K43 264.00	——— ———	1	18	1,250	1	1528K98 14.34
(C) Waterproof Lights—*Compact Bulb*								
18″	120 VAC	14795K55 246.26	14795K56 266.30	1	18	1,250	1	1528K98 14.34
31″	120-277 VAC	14795K87 304.96	14795K93 396.04	1	36	2,900	1	1528K79 14.37
(C) Waterproof Lights—*Bi-Pin Bulb*								
41″	120-277 VAC	14795K18 297.09	14795K19 321.97	1	17	1,375	6	1501K81 51.21

Screw-In Bulb Gooseneck Lights

Position these lights at any angle—they have arms that flex. All have a switch and operate on 120 VAC. Lights accept one incandescent, compact fluorescent, or LED bulb with a standard screw-in base. Bulbs are sold separately.

(D) Lights have a 9-ft. cord with plug. Color is black. UL listed. *Clamp-mount lights* fit surfaces up to 2¾″ thick. *Screw-mount light* has two ¼″ dia. holes for mounting (fasteners not included).

(E&F) Lights have an aluminum heat sink that keeps the shade and switch from getting too hot. All have a 6-ft. cord with plug. Include a mounting kit with a screw-mount surface base and a wall bracket (fasteners included). UL and C-UL listed. *Style F lights* are right-angle. They extend horizontally from the base or wall bracket; great for mounting over a machine.

To Order: For Styles E&F, please specify color: beige, black, or gray.

Accessories for Styles E&F—Bases are black. **To Order:** For replacement shade, please specify color: beige, black, or gray.

D

Weighted Base

Magnetic Base

Clamp Mount

Screw Mount

E

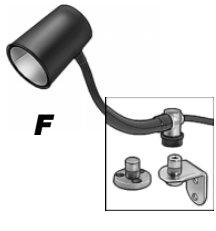

F

Arm Lg.	Head Dia.	Shade Material	Max. Watts		
(D) Weighted-Base Light					
20″	6½″	Metal	100	15575K11	$56.12
(D) Magnetic-Base Light					
22″	6½″	Metal	100	1568K43	60.91
(D) Clamp-Mount Lights					
22″	6½″	Metal	100	1568K63	65.31
33″	6½″	Metal	100	1568K67	73.71
(D) Screw-Mount Light					
22″	6½″	Metal	100	1568K61	53.71
(E) Screw-Mount Lights with Cool-Touch Shade					
12″	4½″	Plastic	100	1606K19	53.05
18″	4½″	Plastic	100	1606K11	54.63
24″	4½″	Plastic	100	1606K12	59.50
(F) Right-Angle Screw-Mount Lights with Cool-Touch Shade					
12″	4½″	Plastic	100	1606K32	53.05
18″	4½″	Plastic	100	1606K33	54.63
24″	4½″	Plastic	100	1606K34	59.50
Accessories for Styles E&F					
Magnetic Base with Adhesive-Backed Disc				1606K15	27.70
Clamp-Mount Base (for surfaces up to 2″ thick)				1606K411	19.40
Shade-Mount 2X (200%) Magnifier				1606K61	30.02
Snap-On Wire Guard				1606K52	5.20
Replacement Shade				1606K51	17.00
Light Bulbs for All Styles					
Incandescent 100-watt Bulbs (Pkg. of 2)				1728K91	7.18
Compact Fluorescent 19-watt Bulb				9591K1	25.61

For information about IP ratings, see page 843. For information about workstation and machine lights, see page 727.

Fluorescent Gooseneck Lights

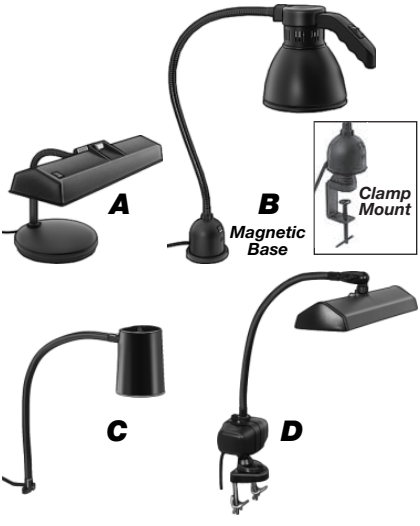

While incandescent and halogen gooseneck lights can get hot, fluorescent lights keep their cool. All have a flexible arm for easy positioning and use cool-running, energy-efficient fluorescent bulbs. Lights have a switch and operate on 120 VAC. Color is black.

(A) Weighted-Base Lights— Have a 9-ft. cord with plug. UL listed.

(B) Magnetic-Base and ***Clamp-Mount Lights with Handle—*** Have a handle on the shade for easy positioning and a 9-ft. cord with plug. *Clamp-mount light* fits surfaces up to 2¾″ thick.

(C) Screw-Mount Light— Has a 6-ft. cord with plug. Mounting fasteners are included. UL listed.

(D) Clamp-Mount Light with Adjustable Head— Fits surfaces up to 2¼″ thick and has a 7-ft. cord with plug. UL listed.

Arm Lg.	Head Size	Shade Material	Lights Each	Bulbs Watts	Bulbs Lumens	Bulbs Pkg. Qty.	Bulbs Pkg.
(A) Weighted-Base Light— *Requires One Bi-Pin Bulb (Included)*							
12″	19⅜″×4⅝″	Plastic	1682K11 $68.36	15	870	2	1501K13 $11.76
(A) Weighted-Base Light— *Requires Two Bi-Pin Bulbs (Included)*							
12″	19⅜″×4⅝″	Plastic	1682K12 81.49	15	870	2	1501K13 11.76
(B) Magnetic-Base Light with Handle— *Requires One Compact Bulb (Not Included)*							
33½″	6″ Dia.	Metal	1569K11 98.95	22	1,200	1	1528K71 22.08
(B) Clamp-Mount Light with Handle— *Requires One Compact Bulb (Not Included)*							
33½″	6″ Dia.	Metal	1569K21 95.75	22	1,200	1	1528K71 22.08
(C) Screw-Mount Light— *Requires One Compact Bulb (Included)*							
24″	4½″ Dia.	Plastic	8394K14 65.70	23	1,400	1	9591K2 25.67
(D) Clamp-Mount Light with Adjustable Head— *Requires Two Bi-Pin Bulbs (Included)*							
20″	18½″×4¼″	Metal	8394K16 186.58	15	750	2	1501K14 17.06

Halogen Gooseneck Lights

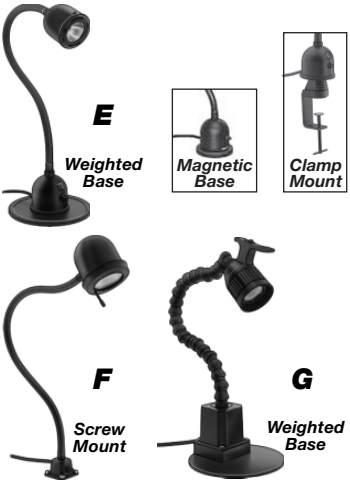

Focus brilliant white light on any small area in your workspace. All lights have a flexible arm for easy positioning and include a halogen bulb. Lens is glass. Lights have a switch and operate on 120 VAC. Color is black. *Clamp-mount lights* fit surfaces up to 2¾″ thick.

(E) Standard Lights— Have a 9-ft. cord with plug. UL listed.

(F) Water-/Oil-Resistant Lights— Have a sealed lamp head and a 7-ft. cord with plug. *Screw-mount light* includes mounting fasteners.

(G) Water-/Corrosion-Resistant Lights with Handle— Rated IP54 for water splash protection. A handle on the shade allows easy positioning and the beaded arm provides the ultimate in precise positioning and holding power. Lights have a 5-ft. cord with plug.

Type of Mount	Arm Lg.	Head Dia.	Shade Material	Lights		Replacement Bulb Watts	Replacement Bulb Lumens		
(E) Standard Lights									
Weighted Base	22″	3″	Metal	8366K36	$111.34	20	350	1997K23	$7.50
Magnetic Base	22″	3″	Metal	8366K34	109.64	20	350	1997K23	7.50
Clamp Mount	22″	3″	Metal	8366K35	108.42	20	350	1997K23	7.50
(F) Water-/Oil-Resistant Lights									
Magnetic Base	30″	3½″	Metal	16335K23	119.24	50	700	16335K11	8.11
Clamp Mount	30″	3½″	Metal	16335K24	117.92	50	700	16335K11	8.11
Screw Mount	30″	3½″	Metal	16335K25	129.80	50	700	16335K11	8.11
(G) Water-/Corrosion-Resistant Lights with Handle									
Weighted Base	20″	2⅞″	Plastic	8366K81	165.91	35	—	1835K2★	11.76
Magnetic Base	20″	2⅞″	Plastic	8366K71	160.91	35	—	1835K2★	11.76

★ Candlepower rating is 950.

LED Gooseneck Lights

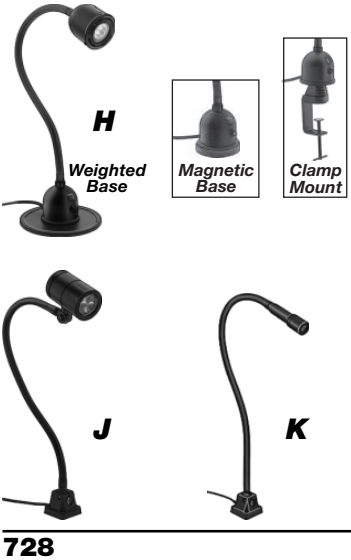

Bend the flexible arm to shine LED light on your work; LEDs outlast other bulbs, consume less power, and resist impact and vibration. All shades have a corrosion-resistant black coating.

(H) Standard Lights— Have a switch and operate on 120 VAC. They have a 9-ft. cord with plug. Rated IP60 for protection from dust. *Clamp-mount light* fits surfaces up to 2¾″.

(J) Water-Resistant Focused-Beam Light— Rated IP65 for water projected from a nozzle. The light has a universal base with four 3/16″ dia. mounting holes (fasteners not included); mount directly to your work surface or use accessories (sold separately) for more mounting options. Light has a switch and operates on 100-240 VAC. It has an 8-ft. cord with plug.

(K) Waterproof Light and ***Waterproof Focused-Beam Light—*** Rated IP67 for water wash-downs. Lights have a universal base with four ¼″ dia. mounting holes (fasteners not included); mount directly to your work surface or use accessories (sold separately) for more mounting options. Have an 8-ft. cord. Choose from 95-240 VAC lights, which have a plug, and 24 VAC/VDC lights, which require hardwiring. **To Order:** Please specify voltage: 95-240 VAC or 24 VAC/VDC.

Type of Mount	Arm Lg.	Head Dia.	Shade Material	Watts	Lumens		
(H) Standard Lights							
Weighted Base	25″	3″	Metal	6	310	1920K112	$198.98
Magnetic Base	25″	3″	Metal	6	310	1920K111	179.25
Clamp Mount	25″	3″	Metal	6	310	1920K1	181.13
(J) Water-Resistant Focused-Beam Light							
Screw Mount	23⅝″	2½″	Metal	9	900	6799T4	555.45
(K) Waterproof Light							
Screw Mount	23⅝″	1⅛″	Metal	3	225	6799T2	403.36
(K) Waterproof Focused-Beam Light							
Screw Mount	23⅝″	1⅛″	Metal	3	225	6799T1	403.36
Accessories for Styles J&K							
Magnetic Base						6799T412	55.48
Clamp Mount—Fits surfaces up to 2¾″ thick						6799T413	48.18

For information about IP ratings, see page 843. For information about workstation and machine lights, see page 727.

Screw-In Bulb Adjustable-Arm Lights

The arm stays in position until you decide to move it. Lights have a switch and operate on 120 VAC. They accept one incandescent, compact fluorescent, or LED bulb with a standard screw-in base. Bulbs are sold separately.

(A) Screw-Mount Light with Mini Arm— Has a swivel head, a vented shade to dissipate heat, and a 9-ft. cord with plug. Color is black. Mounting fasteners are included. UL listed.

(B) Magnetic-Base Light with Mini Arm— An oil-resistant shade makes this light great around machine tools. Mount it to ferrous surfaces. Light has a short swivel arm, a vented shade to dissipate heat, and a 9-ft. cord with plug. Color is gray. UL recognized.

(C) Weighted-Base Light— Has a 5-ft. cord with plug. Color is black. UL listed.

(D) Clamp-Mount Lights— Have a 5-ft. cord with plug. Color is black. UL listed. 1650K51 fits surfaces up to 1½″ thick and has a vented shade to dissipate heat. 1650K71 fits surfaces up to 2¼″ thick.

(E) Clamp-Mount Light with Handle— The shade is vented to dissipate heat and has a handle for easy positioning. An internal reflector produces evenly diffused light and keeps the shade cooler. Light fits surfaces up to 2¾″ thick and has a 9-ft. cord with plug. Color is black.

(F) Screw-Mount Lights— Have a vented shade to dissipate heat and an 8-ft. cord with plug. Color is gray. Mounting fasteners are included. ETL and C-ETL listed.

(G) Screw-Mount Light with Cool-Touch Shade— A heat-shield shade snaps onto the lamp head and stays cool to the touch. Light has an 8-ft. cord with plug. Color is gray. Mounting fasteners are included. ETL and C-ETL listed.

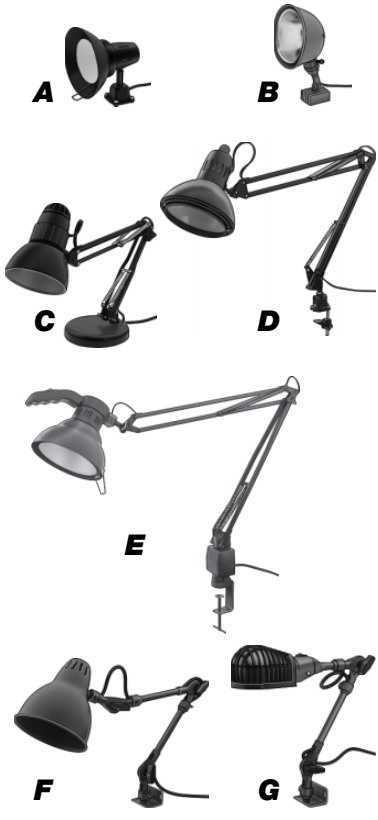

Arm Lg.	Head Size	Shade Material	Max. Watts		
(A) Screw-Mount Light with Mini Arm					
2″	6½″ Dia.	Metal	100	**8374K41**	$43.16
(B) Magnetic-Base Light with Mini Arm					
3″	6″ Dia.	Plastic	75	**1564K5**	156.87
(C) Weighted-Base Light					
18½″	4⅞″ Dia.	Metal	75	**1650K83**	86.80
(D) Clamp-Mount Lights					
32″	6½″ Dia.	Metal	100	**1650K51**	20.04
40″	7″ Dia.	Metal	100	**1650K71**	58.23
(E) Clamp-Mount Light with Handle					
45″	7″ Dia.	Metal	100	**1523K22**	109.75
(F) Screw-Mount Lights					
20″	6⅞″ Dia.	Metal	100	**8400K11**	113.33
30″	6⅞″ Dia.	Metal	100	**8400K21**	114.16
(G) Screw-Mount Light with Cool-Touch Shade					
10″	5″×3⅞″	Metal	60	**1507K11**	101.36
Light Bulbs					
Incandescent 60-watt Bulbs (Pkg. of 2)				**1728K96**	7.24
Incandescent 100-watt Bulbs (Pkg. of 2)				**1728K91**	7.18
Compact Fluorescent 14-watt Bulb				**1949K91**	13.35

Fluorescent Adjustable-Arm Lights

Angle the arm to brighten your workspace with energy-efficient fluorescent light. The arm holds its position. Lights have a switch and operate on 120 VAC. Bulbs are included.

(H) Weighted-Base Light— Has an 8-ft. cord with three-prong plug. Color is light gray. UL listed.

(J) Weighted-Base/Clamp-Mount Light— Comes with a base mount and a clamp mount for surfaces up to 2½″ thick. Has a 5-ft. cord with plug. Color is black.

(K) Clamp-Mount Lights— Fit surfaces up to 2¼″ thick. 1625K8 and 1625K6 have a 7-ft. cord with plug. UL and C-UL listed. 1625K9 has a 5-amp three-prong outlet in the base and a 5-ft. cord with plug. UL listed. **To Order:** For 1625K8 and K6, please specify black or gray; for 1625K9, please specify black or white.

(L) Clamp-Mount Fluorescent/Incandescent Light with Handle— Using two types of bulbs provides a more natural light. Each bulb has its own switch, so you can use fluorescent light, incandescent light, or both. Clamp fits surfaces up to 2½″ thick. Light has a handle on the shade for easy positioning, a 4.5-amp three-prong outlet in the base, and a 5-ft. cord with plug. UL listed. **To Order:** Please specify black or white.

(M) Screw-Mount Light— Has a plastic lens and an 8-ft. cord with plug. Mounting fasteners are included. Color is gray. ETL and C-ETL listed.

(N) Water-Resistant Screw-Mount Light— Has gasketing to keep out water, coolant, dust, and debris. IP54 rated for water splash protection. Light has a polycarbonate lens and a 6-ft. cord with plug. Base has four 15⁄64″ dia. mounting holes (fasteners not included). Color is gray.

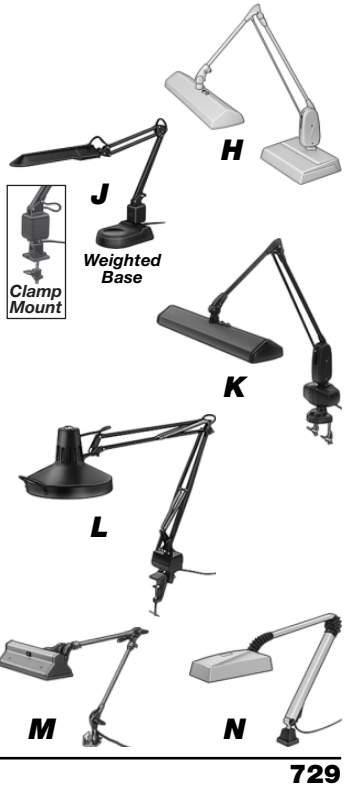

Arm Lg.	Head Size	Shade Material	Lights Each	Replacement Bulbs Qty. Req'd	Watts	Lumens	Pkg. Qty.		Pkg.
(H) Weighted-Base Light— *Bi-Pin Bulbs*									
33″	18″ ×4″	Metal	**1625K92** $210.54	2	15	870	2	**1501K13**	$11.76
(J) Weighted-Base/Clamp-Mount Light— *Compact Bulb*									
28″	12″ ×3″	Plastic	**14605K86** 68.97	1	13	825	1	**1528K121**	13.16
(K) Clamp-Mount Lights— *Bi-Pin Bulbs*									
23″	18½″×4¼″	Metal	**1625K8** 181.90	2	15	870	2	**1501K13**	11.76
40″	18½″×3¾″	Metal	**1625K9** 93.94	2	15	870	2	**1501K13**	11.76
43″	18½″×4¼″	Metal	**1625K6** 196.35	2	15	870	2	**1501K13**	11.76
(L) Clamp-Mount Fluorescent/Incandescent Light with Handle									
45″	9½″ Dia.	Metal	**1644K4** 101.06	1	22	1,050	1	**1614K14**■	9.12
				1	60	560	2	**1728K96**▲	7.24
(M) Screw-Mount Light— *Compact Bulbs*									
30″	10¼″×4½″	Metal	**1525K75** 196.03	2	13	825	1	**1528K93**	4.26
(N) Water-Resistant Screw-Mount Light— *Compact Bulbs*									
31″	10⅛″×4⅛″	Metal	**1525K81** 444.64	2	13	810	1	**1528K101**	4.26

■ Circline fluorescent bulb. ▲ Incandescent bulb.

Halogen Adjustable-Arm Lights

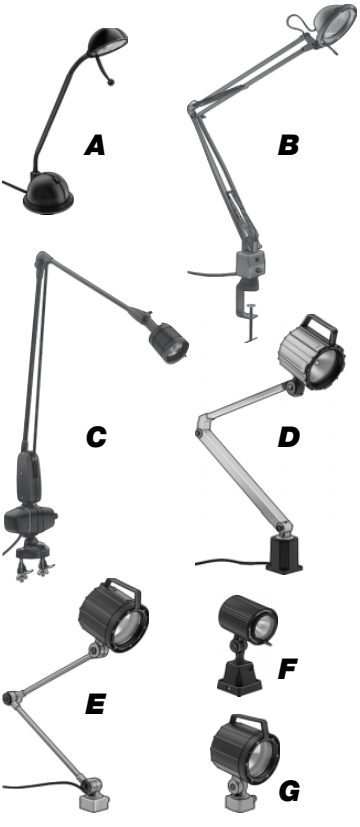

Direct bright, white halogen light anywhere you need it. Lights have a switch (except Style G) and a glass lens. Bulb is included. *Styles A-E* have a built-in transformer (Style E transformer is inline with the cord) and operate on 120 VAC. *Style F* is 12 volt. *Style G* is 24 volt.

(A) Weighted-Base Light— Base dia. is 5⅞″. Light has low and high settings and a 5-ft. cord with plug. Color is black. UL listed.

(B) Clamp-Mount Light— Has an aluminum reflector to diffuse light evenly. Clamp fits surfaces up to 2¾″ thick. Light has a 7-ft. cord with plug. Color is silver.

(C) Clamp-Mount Light with Dimmer— Use the dimmer to control the brightness of the light. Clamp fits surfaces up to 2½″ thick. Light has a 7-ft. cord with plug. Color is black. UL and C-UL listed.

(D) Screw-Mount Light with Handle— The light head is IP65 rated to protect against water projected from a nozzle. Light has a protective heat shield to dissipate heat, a handle on the shade for easy positioning, and a 6-ft. cord with plug. Color is gray. Mounting fasteners are included. UL listed.

(E) Water-Resistant Screw-Mount Light with Handle— The entire light is IP65 rated to protect against water projected from a nozzle. A double glass lens creates a heat barrier that prevents fluids from baking onto the lens. The shade has a handle for easy positioning. Light has a 15-ft. cord with plug. Body is silver; light head is black. Mounting fasteners are included.

(F&G) Low-Voltage Screw-Mount Lights— Must be hardwired to a transformer (sold separately) to connect to 120 VAC. Lights have protective shields to dissipate heat. Color is black. Mounting fasteners are included. *Style F* is 12 volt. *Style G* is 24 volt. It is UL and C-UL listed and IP65 rated to protect against water projected from a nozzle.

Arm Lg.	Head Dia.	Shade Material	Lights		Replacement Bulb Watts	Lumens		
(A) Weighted-Base Light								
22″	3⅝″	Plastic	1543K11	$46.45	50	1,000	1997K25	$7.50
(B) Clamp-Mount Light								
38″	5″	Plastic	2060K32	121.12	50	1,000	1997K25	7.50
(C) Clamp-Mount Light with Dimmer								
38″	2½″	Plastic	2060K4	211.68	20	350	1997K23	7.50
(D) Screw-Mount Light with Handle								
33″	5″	Metal	14805K56	144.42	50	1,000	1997K25	7.50
(E) Water-Resistant Screw-Mount Light with Handle								
32″	5⅜″	Metal	14805K77	345.49	55	1,450	9613T24	5.29
(F) Low-Voltage Screw-Mount Light								
3¼″	2¾″	Metal	16415K35	178.25	20	5,000	16415K75	19.47
Transformer for Style F Light							16415K54	83.48
(G) Low-Voltage Water-Resistant Screw-Mount Light with Handle								
2⅜″	5⅛″	Metal	16415K47	248.81	70	1,750	9613T25	6.67
Transformer for Style G Light							16415K57	180.52

Fiber-Optic Illuminators, Cables, and Adapters

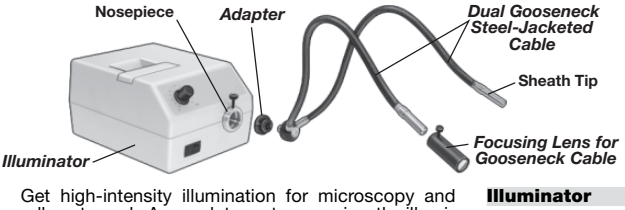

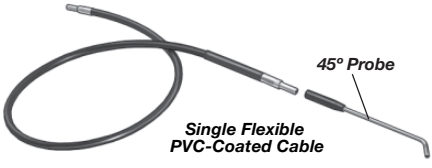

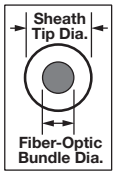

Get high-intensity illumination for microscopy and small-parts work. A complete system requires the illuminator, a cable, and an adapter (each sold separately).

Illuminator— Stays cool to the touch and includes a 150-watt halogen bulb. It has an on/off switch and a knob to control light intensity from 0% to 100%. Light appearance is 3250 Kelvin. Housing is made of light gray impact-resistant ABS plastic. It has a recessed carrying handle and a side panel for easy bulb changing. Bulb life is up to 200 hours. Operates on 120 VAC and has a 7-ft. power cord with plug. UL and C-UL listed.

PVC-Coated Cables— Connect to illuminator with an adapter (sold separately). Cables consist of optical fibers inside a steel monocoil, covered with a PVC sheath for flexibility.

Steel-Jacketed Cables— Connect to the illuminator with an adapter (sold separately). Crush and kink resistant, the steel provides extra protection for the optical fibers while still allowing flexibility. *Flexible cables* are made of stainless steel for added corrosion resistance. *Gooseneck cables* allow precise positioning of the light.

Adapters— Required to connect the illuminator's nosepiece to cable. Made of aluminum.

Accessories— *Probes for ⅛″ dia. fiber-optic bundle* illuminate small areas that have recessed or deep orifices. Probes are made of stainless steel. *Focusing lens for gooseneck cables* concentrates the light beam for more focused illumination. Vary the light spot diameter by sliding the lens along the cable sheath tip.

Illuminator

Ht.	Wd.	Dp.	Illuminator		Replacement Bulb	
5¼″	8½″	6″	14815T41	$337.76	1535K36	$21.67

Cables and Adapters

Sheath Tip Dia.	Fiber-Optic Bundle Dia.	Cable Lg.	PVC-Coated Cables		Steel-Jacketed Cables		Adapters	
Single Flexible Cable								
0.187″	1/16″	48″	6593T4	$47.03	1082T22	$63.06	1040T11	$23.12
0.187″	⅛″	48″	6593T5	47.03	1082T23	66.27	1040T11	23.12
0.187″	⅛″	72″	6593T56	64.13	1082T26	79.10	1040T11	23.12
0.312″	3/16″	48″	6593T59	91.92	1082T29	94.06	1040T12	23.12
0.312″	¼″	48″	6593T7	98.34	1082T25	117.58	1040T12	23.12
0.312″	¼″	72″	6593T57	128.26	1082T27	152.85	1040T12	23.12
0.562″	½″	36″	6593T58	203.08	1082T28	229.81	1040T13	23.12
Dual Flexible Cable								
0.312″	11/64″, ¼″	36″	6593T91	121.85	—	—	1040T12	23.12
Single Gooseneck Cable								
0.590″	¼″	20″	—	—	1082T91	171.02	1040T14	28.90
Dual Gooseneck Cable								
0.460″	9/32″	23″	—	—	1082T92	213.77	1040T14	28.90

Accessories

	Dia. × Lg.		
Straight Probe for ⅛″ Dia. Fiber-Optic Bundle	3/32″ × 4½″	1046T11	$53.44
45° Probe for ⅛″ Dia. Fiber-Optic Bundle	3/32″ × 4⅛″	1046T12	64.13
90° Probe for ⅛″ Dia. Fiber-Optic Bundle	3/32″ × 4″	1046T13	64.13
Focusing Lens for Gooseneck Cables	⅞″ × 2½″	1046T21	37.41

For information about cord type, see page 808.

Vehicle Lights

Position the pedestal mount to shine light where you need it.

(A) Lights have a weather-resistant rubber housing. The head moves horizontally and vertically. Have two 12″ 16-ga. wire leads and come with a 5/16″ bolt and nut for mounting. Bulbs are included. UL recognized as components for lift trucks.

(B) Housing is aluminum with a black finish. The head moves vertically. Light has two 12″ 18-ga. wire leads and comes with an M8 bolt and nut for mounting. Bulbs are included. Light is rated IP67 for protection against dust and temporary submersion.

(C) Housing is steel with a black finish and has a lens guard. The head moves horizontally and vertically. Lights include two 7-ft. 16-ga. wire leads and a 3/8″ fastener and nut for mounting. Bulbs are included. UL recognized as components for lift trucks.

(D) Light has a weather-resistant rubber housing. Head moves horizontally and vertically. Includes two 12″ 16-ga. wire leads and a 1/2″ bolt and nut for mounting. Use an incandescent bulb (sold separately). Bulb listed is 12.8 volts.

Optional mounting angle-bracket for Styles A-C enables you to mount a light to a truck mast or overhead guard. It has two 0.34″ dia. holes (fasteners not included).

With Optional Lens Guard

	Voltage, VDC	Head Size	Lens Material	Lumens	Bulb Type	Lights		Replacement Bulb Watts		
A	12	5 3/8″ × 3 3/8″	Polycarbonate	204	Incandescent	**8404K11**	$42.55	27	**1505K71**●	$5.98
A	24	5 3/8″ × 3 3/8″	Polycarbonate	165	Incandescent	**8404K12**	57.23	28	**8404K61**●	13.70
B	12-48	3 13/16″ × 3 15/16″	Polycarbonate	550	LED	**1934K1**	198.74	—	—	—
C	12	5 5/16″ Dia.	Glass	290	Incandescent	**8404K51**	84.05	35	**8351K681**	9.29
C	24	5 5/16″ Dia.	Glass	660	Incandescent	**8404K52**	102.78	50	**8351K771**	10.32
C	36	5 5/16″ Dia.	Glass	250	Incandescent	**8404K53**	104.62	60	**8351K66**	26.74
C	48	5 5/16″ Dia.	Glass	790	Incandescent	**8404K54**	101.55	80	**8351K651**	15.19
D	12-48	5″ Dia.	—	300	Incandescent	**1635K36**	30.20	35	**8351K681**	9.29

Optional Mounting Angle-Bracket for Styles A-C	**8404K21**	$16.40
Optional In-Line Switch and Fuse for Styles A-C 12- and 24-Volt Lights	**8404K72**	21.19
Optional Heavy Gauge Wire Lens Guard with Self-Locking Outer Rim for Style D	**1635K67**	12.67

● Package of 10.

Vehicle-Mount Spotlights

Screw Mount — *Screw Mount with Handle Control* — *Magnetic Mount*

Illuminate any spot around your vehicle. Lights rotate 360° horizontally and 180° vertically. All operate on 12 VDC. Bulb is included.

Screw-Mount Spotlight— Made of chrome-plated brass/zinc. Light has a switch, a 5-ft. 16-ga. wire lead, and a 3″ dia. screw-mount bracket (fasteners included).

Screw-Mount Spotlight with Handle Control— Aim the spotlight from inside your vehicle with the interior control handle and fingertip switch. Head is plastic; shaft is metal. Shaft length inside vehicle is 7 1/8″. Includes a 6-ft. 16-ga. wire lead, a roof bracket (fasteners included), and a mounting template.

Magnetic-Mount Spotlight— Base is magnetic for easy mounting and removal on metal surfaces. Made of chrome steel. Light has a switch and a 10-ft. cord with 12-volt cigarette-lighter plug.

10-ft. extension cable for magnetic-mount spotlight has a 12-volt cigarette-lighter plug.

Candle-power	Lens Dia.	O'all Ht.	Lights		Replacement Bulb Watts		
Screw Mount— *Halogen*							
160,000	5 3/4″	9″	**14735K66**	$162.25	50	**8351K841**	$28.57
Screw Mount with Handle Control— *Halogen*							
160,000	5 3/4″	7 1/8″	**8303K13**	215.00	50	**8351K841**	28.57
Magnetic Mount— *Incandescent*							
200,000	6″	9 1/2″	**65035T82**	68.80	100	**65035T84**	22.41

10-ft. Ext. Cable for Magnetic-Mount Light	**65045T47**	$7.76

Spot/Floodlights

Great for inspections and temporary lighting, these lights accommodate a spot or flood bulb. They have a steel bulb guard, a switch, and a rubber handle. Choose the light head only or light head with a 16/3 SJTW cord and plug. For use with PAR38 bulbs (sold separately)—a 90-watt halogen bulb or a 23-watt, 1,200 lumen compact fluorescent bulb. Lights have a 5 3/4″ dia. head and are 11 13/16″ long. Operate on 120 VAC.

Light Head Only

Light Head Only	**8408K12**	$60.10
Light Head with 25-ft. Cord	**8408K22**	126.98
Light Head with 50-ft. Cord	**8408K32**	132.96
PAR38 Halogen Spot Bulb	**14675K21**	7.88
PAR38 Compact Fluorescent Flood Bulb	**1685K98**	32.40
Replacement Bulb Guard	**8408K41**	38.10

Water-Resistant Spotlights

Completely sealed to keep out moisture. All lights have a 4 1/2″ dia. polycarbonate lens with a neoprene seal and a polypropylene handle. Plus, the transformer and switch are encapsulated in neoprene. The transformer reduces line voltage to 6 volts, making it ideal for use in tanks and confined spaces. Lights operate on 120 VAC and include a 30-watt incandescent PAR36 sealed-beam bulb rated at 55,000 candlepower.

Spotlight with Reel and Cord

Spotlight with Cord— Has the transformer inline with the cord.

Spotlights with Reel and Cord— Have a 9″ dia. steel reel with a 6-ft. SJO feeder cord. Reel includes brackets for mounting to wall or ceiling (fasteners not included). Transformer is on the side of the reel.

Spotlight with 56-ft. SJO Cord	**8423K11**	$379.25
Spotlight with Reel and 25-ft. SJO Cord	**8424K11**	407.69
Spotlight with Reel and 42-ft. SVO Cord	**8424K12**	440.38
Replacement Bulb	**8351K211**	9.95
Replacement Lens	**8423K13**	29.20

Hand-Held Spotlights

12-Volt Battery Adapter

Your work takes center stage as you direct the focused beam. Spotlights are 12 volt and include a bulb. Housing is ABS plastic.

(E&F) Rechargeable Spotlights— Powered by the included rechargeable battery or the included 12-volt cigarette-lighter adapter, which can be used for charging. *Style E* has a 12-volt battery and charges in 6 hours. It also includes a 120 VAC adapter for charging. Color is black. *Style F* has a NiCad battery pack and charges in 3 to 4 hours. Color is gray. ***(G) Corded Spotlight—*** Has a 10-ft. cord with 12-volt cigarette-lighter plug. Color is black.

	Battery Life, hrs.	Lumens	Bulb Type	Lens Size			
Rechargeable							
E	1/4	900	Halogen	5 1/2″ Dia.	**1521K12**	$49.82
F	1	120	LED	1 1/4″ × 2 3/8″	**1521K16**	33.99
Corded						
G	—	900	Halogen	5 1/2″ Dia.	**6594T92**	24.76

Repl. 100-watt Halogen Bulb for Styles E&G	**6594T93**	7.95
12-Volt Battery Adapter with 3-ft. Cord	**65045T43**	7.00
10-ft. Ext. Cable w/ 12-Volt Cigarette-Lighter Plug	**65045T47**	7.76

For batteries, see page 733.

Lanterns

A

B

C

D

E

F

Compared to ordinary flashlights, lanterns are typically brighter and have a longer battery life. Batteries not included, except Style B comes with a battery.

(A) All-Direction Lantern— Provides 360° lighting. A three-position rotary switch lets you turn on one or both fluorescent bulbs. Housing is weather-resistant black rubber.

(B) Floating Lantern— Housing is polypropylene. Push-button operation.

(C) Floating Lantern with Stand— Allows hands-free light positioning. Housing is yellow high-density polyethylene. Rotary-switch operation.

(D) Submersible High-Output Lantern— Light is submersible to 500 feet. Has a spare bulb stored underneath the reflector. Housing is yellow ABS plastic. Rocker-switch operation.

(E) Hazardous-Location High-Output Lantern— FM approved Class I, Div. 2, Groups C and D, Temp. T1. Includes a dual-filament bulb; when one filament burns out, switch to the other. The handle is removable, so you can change the grip to pistol style. Housing is yellow ABS plastic. Has a three-position switch.

(F) Hazardous-Location Floating Lantern— UL listed Class I, Div. 1 and 2, Groups C and D. MSHA approved. Housing is orange polypropylene. Push-button operation.

Lantern Type	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Lg.	Wd.	Ht.	Lanterns		Repl. Bulb	
Standard											
A ... All Direction	D (8)	15-32	580	Fluorescent	7¾″	7¾″	11½″	1129T25	$38.16	1528K54	$7.78
B ... Floating	6-Volt (1)	12	40	Krypton	7″	4″	5⅝″	10815T21	5.88	8394T16	1.16
C ... Floating with Stand	6-Volt (1)	13-15	51	Krypton	8½″	5¼″	4¾″	1144T13	17.33	8394T19	1.16
D ... Submersible High Output	C (8)	4	276	Xenon	6″	3¼″	7½″	65245T21	60.32	65245T23	10.06
Hazardous Location											
E ... High Output	D (8)	10-12	251	Xenon	9⅜″	4½″	7″	65245T65	98.24	65245T63	16.32
F ... Floating	6-Volt (1)	20	51	Krypton	7¾″	5″	5⅜″	1148T1	17.85	8394T16	1.16
6-Volt Alkaline Battery for Styles B, C, and F										7690K31	$12.94

Rechargeable Lanterns

G

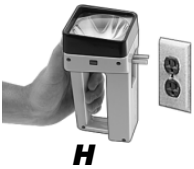
H

J

K

Charge the included batteries and you're ready to go—without the hassle of bringing along fresh batteries. Lanterns are typically brighter and have a longer battery life than ordinary flashlights.

(G) Light Duty Lantern— Plug into a 120 VAC outlet to charge; lantern has a built-in charger and a fold-away plug. Housing is white ABS plastic. Slide-switch operation. UL listed.

(H) Lantern with Fold-Away Plug— To charge, plug into any 120 VAC outlet; lantern has a built-in charger and a fold-away plug. Housing is white ABS plastic. Slide switch to operate between on, off, and standby. UL listed.

(J) Long-Run Lanterns— Get up to nine hours of light on a single charge. Lanterns come with a 120 VAC charger and a 12 VDC charger with cigarette-lighter plug. The head swivels 120° vertically and 300° horizontally. Housing is orange ABS plastic. Push the button to operate. Lanterns include a wall-mount rack and mounting fasteners. *Standard lantern* has a shoulder strap. When plugged in, the *emergency lantern* turns on when power is interrupted. CE approved.

(K) High-Output Lantern— With a rating of 710 lumens, this is our brightest lantern. Push the button to switch between high, low, and strobe settings. The head swivels 120° vertically. Housing is black ABS plastic. Comes with a 120 VAC charger and a shoulder strap. Meets NFPA 1901 for automotive fire apparatus.

Lantern Type	Battery Type (Qty.)	Battery Life, hrs.	Charge Time, hrs.	Lumens	Bulb Type	Lg.	Wd.	Ht.	Lanterns		Repl. Bulb	
G ... Light Duty	NiMH Battery Pack (1)	4	24	50	LED	6″	1½″	1¾″	6521T22	$17.55	———	———
H ... Fold-Away Plug	NiCad (2)	1.5	15	11	Krypton	7¼″	3½″	3½″	11635T66	30.91	8394T12	$1.16
J ... Long-Run Standard	Lead Acid (1)	9	6-8	150	Halogen	11½″	5⅛″	7″	6762T1	184.49	6762T7	10.33
J ... Long-Run Emergency	Lead Acid (1)	9	6-8	150	Halogen	11½″	5⅛″	7″	6762T3	203.02	6762T7	10.33
K ... High Output	NiMH Battery Pack (1)	2	5	710	LED	8¾″	3¾″	4⅞″	2387K1	391.00	———	———
Replacement NiMH Battery Pack for Style G											6521T221	$5.00
Replacement NiCad Battery for Style H (Requires two batteries)											11635T661	3.45
Replacement Lead-Acid Battery for Style J											7448K34	23.14
Replacement NiMH Battery Pack for Style K											2387K11	79.95

Super-Bright Focused-Beam Aluminum Flashlights

High Beam
8446T1

Rechargeable High Beam

Highly engineered optics and a bright LED provide far-reaching brightness required by law enforcement and military personnel. Also known as tactical flashlights, they have an O-ring for water resistance and a knurled handle for a secure grip. Body is one piece and made of aluminum with a black finish. Batteries are included.

High-Beam Flashlights— 8446T1 has a tail-button switch for constant and momentary high, low, and strobe light. Comes with a lanyard. 8446T2 has a switch on the side for high, medium, low, momentary, and strobe light.

Rechargeable High-Beam Flashlight— Light has a switch on the side for high, medium, low, momentary, and strobe light. Includes a 120 VAC charger and a 12 VDC charger with cigarette-lighter plug. Charge time is three hours.

Flashlight Type	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Beam Distance, ft.	Dia.	Lg.		
High Beam	3-Volt Lithium (3)	4	178	LED	590	1″	6¼″	8446T1	$81.36
High Beam	3-Volt Lithium (3)	3	250	LED	670	1⅛″	9″	8446T2	104.17
Rechargeable High Beam	3.6-Volt Lithium (1)	2	227	LED	650	1⅛″	8″	8455T1	138.89
Replacement 3-Volt Lithium Battery for High-Beam Flashlights								7821K63	5.64
Replacement 3.6-Volt Lithium Battery for Rechargeable High-Beam Flashlight								8455T41	20.41

Aluminum Flashlights

You'll recognize the distinctive feel of the tough aluminum body of these flashlights. Turn the head to adjust the light beam from flood to spot. All are water resistant. **To Order:** Please specify color where necessary.

(1&2) Mini Flashlights— Small enough to fit in your pocket. All have a spare bulb in the base cap. Twist-head operation. Batteries are included.

(3) Standard Flashlights— Have a sealed three-position switch. Base has a spare bulb. Batteries not included.

(4) Rechargeable Flashlight— Charges in 16 hours. Includes a 120 VAC charger and a 12 VDC charger with cigarette-lighter plug. Push-button operation. NiMH battery pack is included.

LED/tail-button kit for mini flashlight with AA-cell batteries allows you to replace the Xenon bulb in your flashlight with a 30-lumen LED bulb. Also includes a push-button switch to replace the end cap.

LED kit for standard flashlights with four-to-six D-cell batteries allows you to replace the Krypton bulb in your flashlight with a 700-lumen LED bulb. Has three brightness settings.

	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Dia.	Lg.	Available Body Colors	Flashlights	Each	Repl. Bulbs Pkg. Qty.	Pkg.
Mini											
1	AAA (1)	3	2	Incandescent	½″	3¼″	Black, Blue, Gray, Red, Silver	6545T2	$7.78	2	6545T36 $2.60
2	AAA (2)	2	9	Incandescent	½″	5″	Black, Blue, Gray, Red, Silver	6545T3	9.62	2	6545T15 2.60
2	AA (2)	5	12	Xenon	¾″	5¾″	Black, Blue, Gray, Red, Silver	6545T4	12.22	2	6545T12 2.60
Standard											
3	C (2)	4	20	Krypton	1¼″	9″	Black	6714T85	19.79	2	6714T34 2.60
3	C (3)	4	45	Krypton	1¼″	10⅞″	Black	6714T86	20.57	2	6714T35 2.60
3	C (4)	4	74	Krypton	1¼″	12⅞″	Black	6714T68	21.34	2	6714T36 2.60
3	D (2)	10	19	Krypton	1½″	10″	Black, Blue, Red, Silver	6714T3	21.67	2	6714T34 2.60
3	D (3)	10	45	Krypton	1½″	12⅜″	Black, Blue, Red, Silver	6714T4	22.43	2	6714T35 2.60
3	D (4)	10	72	Krypton	1½″	14¾″	Black, Blue, Red	6714T5	23.17	2	6714T36 2.60
3	D (5)	11	113	Krypton	1½″	17⅛″	Black, Red	6714T6	28.33	2	6714T37 2.60
3	D (6)	11	136	Krypton	1½″	19½″	Black, Red	6714T7	31.52	2	6714T91 2.60
Rechargeable											Each
4	NiMH Pack (1)	2	236	Halogen	1½″	12⅝″	Black	6714T67	115.02	—	6714T38 $6.67

LED/Tail-Button Kit for Mini Flashlight with AA-cell batteries ..... 6545T47 .. Each $10.76
LED Kit for Standard Flashlights with four-to-six D-cell batteries ..... 6714T92 .. Each $108.67

Long-Life LED Aluminum Flashlights

The same tough aluminum body as our Aluminum Flashlights, but with long-lasting LED bulbs. LEDs have a high light output and good impact and vibration resistance. Turn the head to adjust the light beam from flood to spot. **To Order:** Please specify color where necessary.

Mini Flashlight— Slip this light into your pocket for quick access. Twist-head operation. Batteries are included.

Standard Flashlights— Have push-button operation. Batteries are included with 2036K7 and K8.

Rechargeable Flashlight— Has a 120 VAC charger and charges in two hours. NiMH battery pack is included. Also can operate on three C-cell batteries (not included). Push-button operation.

Mini

Standard

Battery Type (Qty.)	Battery Life, hrs.	Lumens	Dia.	Lg.	Available Body Colors		
Mini							
AA (2)	18	69	¾″	6⅝″	Black, Blue, Gray, Red, Silver	2036K1	$22.16
Standard							
C (2)	11-43	119	1¼″	9⅛″	Black	2036K7	55.22
C (3)	35-98	101	1¼″	9⅛″	Black	2036K8	56.86
D (2)	9	114	1½″	10″	Black, Blue, Gray, Red, Silver	2036K2	30.24
D (3)	72	104	1½″	12⅜″	Black, Blue, Gray, Red, Silver	2036K3	31.12
Rechargeable							
NiMH Pack (1)	8-30	258	1¼″	10⅞″	Black	2036K6	111.79

Holsters, Belt Loops, and Accessories for Aluminum Flashlights

Illuminated magnifier lets you see the bottom of tiny holes up to 1″ deep and gives a superior view of detail on flat surfaces. ***Flexible fiber-optic cables*** provide light in hard-to-reach areas; you'll get cables in 6″, 12″, and 18″ lengths. ***Laser pointer*** replaces your flashlight's end cap and is visible from up to 1,500 feet away.

	For Battery/Flashlight Type		
Holsters			
Full-Flap Black Nylon	AAA Mini	6545T25	$3.50
Full-Flap Black Nylon	AA Mini	6545T27	3.90
Full-Flap Black Polyester	AA Mini	6545T33	9.60
Black Leather	AA Mini	6545T13	6.98
Black Leather with Pocket for Folding Knife	AA Mini	6545T31	21.00
Belt Loop Holders			
Black Leather with Nylon Cradle	C Standard	6714T32	5.38
Black Leather with Nylon Cradle	D Standard and Rechargeable	6714T31	5.38
Accessories			
Illuminated 4X (400%) Magnifier	AA Mini	6545T41	9.95
Flexible Fiber-Optic Cables	AA Mini	6545T52	16.76
Laser Pointer	AA Mini	6545T48	14.72

Full-Flap Black Nylon Holster
Black Leather Holster
Belt Loop Holder
Illuminated Magnifier
Flexible Fiber-Optic Cable

Stainless Steel Flashlights

Body is stainless steel to resist corrosion and stand up to the toughest use. Push-button operation. Batteries are included.

	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Dia.	Lg.		
5	AAA (2)	3	7	LED	½″	5½″	2918K16	$8.22
6	AAA (3)	37	110	LED	1″	4⅛″	2918K18	48.47
7	AA (2)	7	7	Krypton	¾″	7¼″	2918K14	12.05

Replacement Bulbs for Style 7 (Pkg. of 2) ..... 2918K34 ... 2.78

Batteries

	Pkg. Qty.		Pkg.
AAAA	2	71455K57	$4.12
AAA	4	71455K62	2.82
AA	4	71455K53	2.94
C	6	71455K54	6.49
D	6	71455K55	7.32
6V Lantern	1	65605T76	12.94
3V Lithium	2	7821K63	5.64

For batteries, see page 733.

High-Impact Plastic and Rubber Flashlights

Built to withstand impact and resist corrosion and shock. Batteries not included.

(A) Standard Polypropylene Flashlights— Have slide-switch operation. *Flashlight with magnet* has a magnet on the side opposite the switch so you can mount the flashlight for hands-free use.

(B&C) Water-Resistant Rubber and ***Polypropylene Flashlights—*** Have a push-button switch.

(D) Waterproof ABS Plastic Flashlight— An LED bulb and special reflector provide a high-output beam with low battery drain. Twist-head operation. ETL listed for Classes I, II, III, Div. 1, Groups A, B, C, D, F, and G.

(E) Waterproof Mil. Spec. ABS Plastic Flashlight— Slide-switch operation. Includes four lenses that store in the base: blue, red, white, and a diffusion lens to provide a broader beam. Meets MIL-F-3747.

	Material	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Dia.	Lg.	Body Color	Flashlights		Repl. Bulb	
Standard												
A	Polypropylene	D (2)	15	10	Incandescent	2¼″	8⅛″	Yellow	1064T1	$5.87	8394T21	$0.83
A	Polypropylene	D (2)	6-8	18	Krypton	2″	8¼″	Yellow	6539T11	6.27	8394T12	1.16
A	Polypropylene	D (3)	6-8	34	Krypton	2″	10½″	Yellow	6539T16	8.14	8394T17	1.16
A	Polypropylene with Magnet	D (2)	6-8	18	Krypton	2″	8¼″	Yellow	6539T12	8.31	8394T12	1.16
Water Resistant												
B	Rubber	D (2)	15	17	Krypton	2¾″	8¼″	Black	6619T4	8.65	8394T12	1.16
C	Polypropylene	D (3)	6-8	19	Incandescent	2″	11″	Yellow	6619T3	10.23	6619T53	.42
Waterproof												
D	ABS Plastic	C (3)	50	65	LED	1¾″	8⅛″	Yellow	8391T1	71.85	—	—
E	Mil. Spec. ABS Plastic	D (2)	6-8	18	Krypton	2″	8″	Green	1031T1	13.93	8394T12	1.16

Hazardous-Location Flashlights

Get dependable illumination while complying with safety regulations.

(F) Water-Resistant and ***Waterproof ABS Plastic Flashlights—*** Turn-head operation. Batteries not included. CSA certified. MSHA approved nonincendive. *Water-resistant flashlight* is UL listed for Class I, Div. 2, Group D. *Waterproof flashlight* is UL listed for Class I, Div. 1, Groups C and D, Temp. T3C.

(G) Waterproof Polypropylene Flashlights— Have a three-position switch. Batteries not included. UL and C-UL listed for Class I, Div. 1, Groups C and D; Class II, Div. 1, Group G. MSHA approved nonincendive.

(H) Waterproof Polymer Flashlights— All are waterproof, corrosionproof, nonconductive, and shock resistant. Push-button operation. 1088T21 and 1088T11 are UL listed for Class I, Div. 1, Group D; Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 2, Groups F and G; Class III, Temp. T3C. 1088T31 is UL listed for Classes I and II, Div. 1, Groups A, B, C, D, F, and G; Class III, Temp. T4A. 1088T11 does not include batteries. 1088T21 and T31 include batteries. **To Order:** Please specify color: black or yellow.

(J&K) Rechargeable Water-Resistant Nylon Flashlights— Have a push-button switch with high and low modes. NiCad battery pack is included. ***Style J*** has a 120 VAC charger and charges in one hour. UL listed for Class I, Div. 1, Groups C and D; Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 2, Groups F and G; Class III, Temp. T4. Meets requirements of NFPA 1901-12.1.7. ***Style K*** has two charging stands, a cord with cigarette-lighter plug, and a cord with 120 VAC adapter. Charges in 10 hours. UL listed for Classes I and II, Div. 1, Groups C, D, F, and G; Class I, Div. 2, Groups A, B, C, and D; Class III, Temp. T3C.

	Material	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Dia.	Lg.	Available Body Colors	Flashlights		Repl. Bulb	
Water Resistant												
F	ABS Plastic	C (2)	8	15	Xenon	1¾″	6″	Orange	6526T11	$28.45	6526T13	$12.54
Waterproof												
F	ABS Plastic	C (3)	5	33	Xenon	2″	7⅞″	Yellow	6518T13	35.08	6518T14	13.27
G	Polypropylene	D (2)	15	10	Incandescent	2¼″	8⅛″	Orange	1065T1	10.59	8394T23	.83
G	Polypropylene	D (3)	15	19	Incandescent	2¼″	10¼″	Orange	1065T2	12.05	8394T22	.83
H	Polymer	AA (4)	155	67	LED	1⅝″	6½″	Black, Yellow	1088T21	36.00	—	—
H	Polymer	C (3)	336	85	LED	2″	8½″	Black, Yellow	1088T11	62.77	—	—
H	Polymer	N (3)	120	30	LED	1″	5¼″	Black, Yellow	1088T31	29.30	—	—
Rechargeable Water Resistant												
J	Nylon	NiCad Battery Pack (1)	3	100	LED	2⅞″	7 1/16″	Orange	11085K61	169.49	—	—
K	Nylon	NiCad Battery Pack (1)	4	130	LED	1¾″	10 3/16″	Yellow	11085K93	145.52	—	—

Traffic-Directing Flashlights

Light the way for vehicles; the entire cone illuminates for excellent visibility. Has amber, blue, green, and red filters that store inside the handle. Slide switch has positions for on, off, and momentary on. Housing is waterproof ABS plastic. Cone is white; handle is gray. Batteries not included. Meets MIL-F-3747 MX-993/U Type IV, Style 1.

Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Dia.	Lg.	Flashlight		Repl. Bulb	
D (2)	6-8	6	Incandescent	2″	15¼″	10695T71	$15.15	8394T23	$0.83

Ultra-Rapid Charge Flashlights

You'll never need batteries—ultra capacitors provide power for up to one hour of light on a 90 second charge. Flashlight has push-button operation and three modes: high, standard, and strobe. Made of durable black polymer. Includes a 12 VDC charger with cigarette-lighter plug and a 120 VAC adapter.

Battery Life, hrs.	Lumens	Bulb Type	Dia.	Lg.		
1 hr.	70	LED	2″	8¾″	4270T2	$174.83

Keychain Flashlights

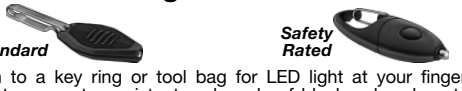

Attach to a key ring or tool bag for LED light at your fingertips. Flashlights are water resistant and made of black polycarbonate. All have push-button operation. Include two replaceable lithium batteries.

Standard Flashlights— Have low, high, strobe, and momentary modes. ***Safety-Rated Flashlights—*** UL and C-UL listed for Class I, Div. 2, Groups A, B, C, and D, Temp. T6. Have high, medium, low, and fast and slow blinking modes.

To Order: Please specify LED color: blue, green, red, or white.

	Battery Life, hrs.	Lumens	Lg.	Wd.		
Standard	22	—	1⅞″	1″	1444T211	$8.17
Safety Rated	36	10	2¾″	1¼″	2049K1	10.39

Mini Flashlights

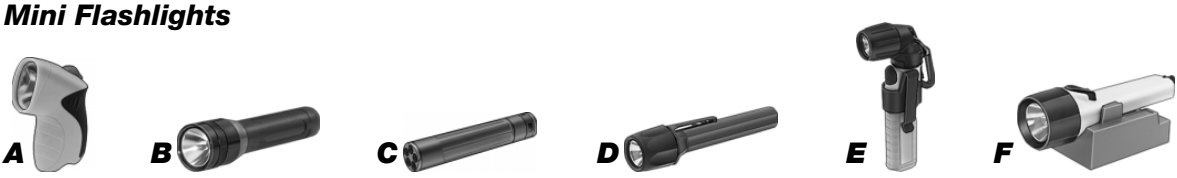

You don't have to sacrifice brightness for a compact design—mini flashlights offer both. Batteries are included.

(A) Plastic Disposable Flashlight— Made of plastic. Has slide-switch operation. Bulb and batteries are not replaceable. CE approved.

(B) Aluminum Easy-Grip Flashlight— Body is aluminum with a black rubber coating. Partially press the tail button for momentary light; fully press the button for continuous on. Head twists to adjust beam from spot to flood. Includes a spare bulb in the base. CE approved.

(C) Aluminum Water-Resistant Flashlights— Body is aluminum with a gray finish; head is Type 303 stainless steel. Partially press the tail button for momentary light; turn the cap for continuous on. *UV light* has an ultraviolet LED that's useful for detecting leaks in piping systems.

(D) Hazardous-Location Water-Resistant Flashlight— Made of black polymer. Partially press the tail button for momentary light; fully press the button for continuous on. ETL listed.

(E) Hazardous-Location Right-Angle Flashlight— Body is waterproof and made of yellow ABS plastic. The head rotates 360°. Partially press the thumb-button switch for momentary light; fully press the button for continuous on. UL and C-UL listed for Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 2, Group G; Class III, Div. 2, Temp. T2A.

(F) Hazardous-Location Rechargeable Flashlight— Body is water-resistant and made of yellow ABS plastic. It has a one-handed flip switch. Includes an NiMH battery pack and a 120 VAC charger. Charges in 2-3 hours. Hard hat attachment sold separately. CSA certified for Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 2, Group G.

Style	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Size	Flashlights		Repl. Bulb	
Plastic									
A ... Disposable	1.5-Volt Alkaline (3)	8	7	Incandescent	4¾″ Ht. × 3″ Wd. × 1¼″ Dp.	6544T11	$4.23	—	—
Aluminum									
B .. Easy Grip	3-Volt Lithium (2)	1	78	Xenon	1¼″ Dia. × 5″ Lg.	6552T2	51.90	6552T47	$7.44
C .. Water Resistant	AA (1)	2	55	LED	¾″ Dia. × 4″ Lg.	65195T8	28.57	—	—
C .. Water Resistant	3-Volt Lithium (2)	17	31	LED	⅞″ Dia. × 4¾″ Lg.	65195T21	41.67	—	—
C .. UV Water Resistant	3-Volt Lithium (2)	10	56	LED	⅞″ Dia. × 4¾″ Lg.	65195T25	41.67	—	—
Hazardous-Location Plastic									
D .. Water Resistant	AA (2)	4	8	Xenon	1⅛″ Dia. × 6¼″ Lg.	6561T5	21.92	6561T8	6.99
E ... Right Angle	AA (4)	4-5	38	Xenon	6¾″ Ht. × 2½″ Wd. × 1½″ Dp.	10735T4	31.52	10735T6	14.32
F ... Rechargeable	NiMH Battery Pack (1)	4	28	Xenon	6½″ Ht. × 1″ Wd. × 2″ Dp.	8665T11	89.09	8665T13	12.29
Swivel Hard-Hat Slide-Slot Attachment for Style F								8665T15	$16.32

Penlights

Small enough to clip to your pocket. Batteries are included.

(G) Disposable Plastic Penlight— Batteries are not replaceable. Press the pocket clip to operate. Made of black PVC.

(H) Plastic Penlight— Has a push-button switch. Color is white.

(J) Hazardous-Location Plastic Penlight— Body is made of water-resistant yellow plastic. Includes a fiber-optic inspection adapter for bending beam 90°. Twist-head operation. ETL listed. CSA certified.

(K) Aluminum Penlight— Has a push-button switch.

(L) Long-Run Aluminum Penlight— Has a push-button switch. Color is black.

(M) Waterproof Aluminum Penlights— Have a waterproof aluminum body with black finish. Use the push button for momentary light or twist the head for continuous on. *UV penlight* has an ultraviolet LED that's useful for detecting leaks in piping systems. **To Order:** For 6535T9, please specify beam color: blue or white.

	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Dia.	Lg.	Penlights		Repl. Bulb	
G .... Disposable Plastic	AAA (2)	3	—	Incandescent	½″	4⅝″	1169T2	$2.96	—	—
H .... Plastic	AAA (2)	¾	—	Incandescent	½″	5¾″	1168T3	3.84	8394T27	$0.88
J .... Hazardous-Location Plastic	AAA (2)	2	7	Xenon	¾″	4⅝″	6522T11	14.71	6522T12	5.47
K .... Aluminum	AA (2)	3	—	Incandescent	⅝″	5″	1172T81	6.10	8394T27	.88
L .... Long-Run Aluminum	AAA (2)	24	9	LED	⅝″	5½″	6655T56	16.63	—	—
M ... Waterproof Aluminum	AAAA (3)	60	1	LED	⅜″	6¼″	6535T9	23.02	—	—
M ... UV Waterproof Aluminum	AAAA (3)	60	—	LED	⅜″	6¼″	6535T4	25.06	—	—

Flashlight Accessories

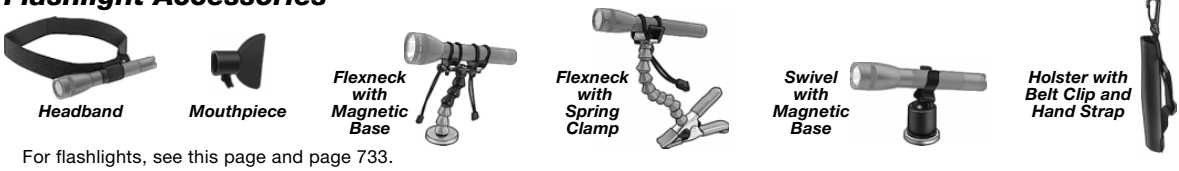

For flashlights, see this page and page 733.

	For Battery/Flashlight Type		
Headband			
Headband with Hook-and-Loop Fastener	AAA- and AA-Cell Mini	11525T85	$5.98
Mouthpiece			
FDA-Compliant Plastic Mouthpiece	AAA- and AA-Cell Mini	11475T15	2.70
Flexneck Holders			
5⅞″ Lg. Flexneck with Magnetic Base	AAA- and AA-Cell Mini	65955T43	24.49
5⅞″ Lg. Flexneck with Spring Clamp	AAA- and AA-Cell Mini	65955T41	24.49
5½″ Lg. Flexneck with Magnetic Base	C- and D-Cell	65955T44	38.46
7 3/16″ Lg. Flexneck with Spring Clamp	C- and D-Cell	65955T42	38.46
Swivel Holder			
Swivel with Magnetic Base	AA-Cell Mini	12105A81	13.27
Holsters			
Holster with Belt Clip and Hand Strap	AA-Cell Mini	10685T33	4.50
Holster with 360° Rotating Belt Clip	AAA-, AA-, C-, and D-Cell	10685T49	8.10
Holster with Belt Clip and Hand Strap	D-Cell	10685T35	8.10

For batteries, see page 733.

Hands-Free Lights

Stop fumbling with a flashlight—wear a light on your head or hard hat. Batteries are included.

(A) General Purpose Headband Light—Has push-button operation with high, medium, low, and blinking modes. Head tilts 90°. Made of black plastic and includes an elastic strap.

(B) Hazardous-Location Headband Lights—Have push-button operation. Head tilts 85°. Made of water-resistant black plastic and include an elastic strap. 2048K53 has high, medium, low, and blinking modes. It is UL and C-UL listed for Class I, Div. 2, Groups A, B, C, and D, Temp. T6. 2048K6 has spot and flood modes and is UL listed for Class 1, Div. 1, Groups A, B, C, and D, Temp. T4.

(C) Hazardous-Location Headband Light with Broad Beam—Has push-button operation with a setting for close work and a 1-watt setting you can focus for flood lighting. Head tilts 90°. Made of water-resistant black plastic and includes an elastic strap. UL and C-UL listed for Class I, Div. 2, Groups A, B, C, and D, Temp. T3.

(D) Hazardous-Location Clip-On Light—Clip to your clothing or the bill of your cap—two LEDs light when you flip the head, which swivels 180°. Body is black water-resistant high-impact plastic. UL listed for Class 1, Div. 1, Groups A, B, C, and D, Temp. T6.

(E) Hazardous-Location Headband Light—Has a swivel head and twist-head operation. Includes a visor/clothing clip, headband, hook-and-loop fastener, and magnet. Body is black plastic. FM approved for Class I, Div. 2, Groups A, B, C, and D, Temp. T4. MSHA approved.

(F) Hazardous-Location Waterproof Light—Has a black plastic body and a thumb switch. Hard-hat attachment for hands-free use is sold separately. UL listed for Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 2, Group G; Class III, Div. 2, Temp. T2A.

	Battery Type (Qty.)	Battery Life, hrs.	Lumens	Bulb Type	Ht. × Wd. × Dp.	Lights		Repl. Bulb	
General Purpose									
A ... Headband	AAA (3)	50-146	43	LED	1¼″ × 2¼″ × 1″	**2048K61**	$29.29		
Hazardous Location									
B ... Headband	AAA (3)	1-50	70	LED	2″ × 2½″ × 1½″	**2048K53**	51.50		
B ... Headband	AAA (3)	1-11	70	LED	1¾″ × 2½″ × 1½″	**2048K6**	66.11		
C ... Headband w/ Broad Beam	AA (3)	96-120	78	LED	1½″ Dia. × 2¼″ Dp.	**2048K57**	59.78		
D ... Clip-On	3-Volt Coin Cell (2)	100	6	LED	3½″ × 1¼″ × 1″	**8669T1**	22.84		
E ... Headband	AA (2)	6	7	Xenon	4¾″ × 1¼″ × 2″	**65135T61**	23.62	**65135T65**	$5.47
F ... Waterproof	AA (4)	4-5	38	Xenon	6⅛″ × 1⅝″ × 1⅜″	**65115T31**	31.58	**65115T47**	14.32
Swivel Hard-Hat Attachment for Style F						**65115T41**	$18.01		

Inspection Flashlights and Penlights

Illuminate hard-to-view areas. Batteries are included. *Styles G-L* have a flexible wand that bends in any direction and stays put. *Penlights (Styles J-M)* have a pocket clip.

(G) Long-Reach Flashlight—Has push-button operation. Includes an 18″ extension that doubles as a cover. Body is black plastic.

(H) Flashlight—Has a push-button switch with steady on and momentary on/off operation. Body is aluminum with a black finish. Includes a magnetic clip holder.

(J-L) Penlights—Have a push-button switch with steady on and momentary on/off operation. Body is aluminum with a black finish. *Styles K* and *L* are waterproof.

(M) Penlight with Mirror—Has twist-head operation and extends from 7½″ to 30½″. Mirror is 2″ Lg. × 1¼″ Wd. and is removable. Body is nickel-plated brass.

	Wand Lg.	Battery Type (Qty.)	Lumens	Bulb Type	Body Dia.	Body Lg.		
G	15¼″	AA (3)	1	Krypton	⅞″	8¾″	**10245T15**	$57.37
H	14″	AA (2)	55	LED	¾″	6⅜″	**1842T4**	46.73
J	7³⁄₁₆″	AAA (1)	13	LED	½″	3¹¹⁄₁₆″	**3954T3**	21.26
K	7″	AAAA (3)	10	LED	⅜″	6¼″	**3954T11**	25.08
L	18¾″	AAAA (3)	10	LED	⅜″	6¼″	**3954T21**	26.64
M	—	LR41 (3)	10	LED	¼″	7½″	**3954T13**	21.77

Chemical Lightsticks

No bulbs or batteries needed—bend and shake for instant emergency light. Lightsticks are waterproof, nontoxic, and safe in combustible areas.

Standard-intensity lightstick provides maximum light between 35° and 80° F. Use ***high*** and ***ultra-high intensity lightsticks*** for max. light or in temperatures below 35° F.

To Order: For *standard-intensity lightstick*, please specify blue, green, orange, red, white, or yellow. For *high-intensity lightstick*, please specify red, white, or yellow. *Ultra-high intensity lightstick* is orange.

	Lg.		Each 1-9	Each 10-Up
8-hrs. Standard Intensity	6″	**5712T42**	$2.19	$1.82
30-min. High Intensity	6″	**5712T43**	2.19	1.82
5-min. Ultra-High Intensity	6″	**5712T52**	2.63	2.19

Mini Tripod Lights

When your hands are full, choose a stationary, hands-free light. Both have push-button operation. Lens is polycarbonate. Operate on three AA batteries.

(N) Tripod Light—Stores up to three batteries in each leg. As batteries in the first leg are depleted, it switches to batteries in the second leg and then the third leg. Made of ABS plastic with aluminum legs. Head tilts vertically. Batteries not included.

(P) Flexible Tripod Light with Magnetic Feet—Legs are made of ABS plastic sections with ball-and-socket joints, allowing the legs to wrap around objects. Tripod can stand on its own and has magnetic feet for more mounting options. Head rotates 360° and tilts vertically and horizontally. Has high, medium, low, and strobe modes. Batteries are included.

	Battery Life, hrs.	Lumens	Bulb Type	Dia.	Lg.		
N	90	20	LED	2″	11″	**9023T1**	$16.50
P	20-80	100	LED	2″	7″	**9023T2**	33.33

Battery-Operated Lightsticks

180° Light

360° Light

Liquid- and chemical-free, these reusable lightsticks are water resistant and made of impact-resistant polycarbonate. They have turn-cap operation and an operating life of 3,000 hours. Batteries not included.

180° light has almost twice the light output of the 360° light. Includes hook-and-loop strips for wall mounting.

360° light provides area-wide illumination.

To Order: Please specify blue, green, orange, red, white, or yellow.

	Battery Type (Qty.)	Battery Life, hrs.	Lg.		
180° Light	AA (2)	50	5½″	**5716T1**	$30.91
360° Light	AA (2)	50	5½″	**5716T2**	33.13

Indoor/Outdoor Rope Lights

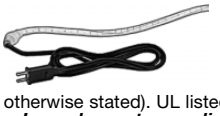

The bulbs are spaced every inch and coated with a flexible PVC layer that's ½″ in diameter. Lights come in a 30-ft. roll and have a 6-ft. cord with plug, an end cap, and mounting clips (fasteners included, unless otherwise stated). UL listed for indoor/outdoor use.

Incandescent rope light is for use in dry areas. Operates on 110 VAC. ***LED rope light*** is for use in wet and dry areas. Operates on 120 VAC. Fasteners not included. This product is energy efficiency compliant in all states as of July 1, 2011.

To Order: Please specify clear, blue, green, orange, red, or yellow.

Incandescent Rope Light	**16995K11**	$69.23
LED Rope Light	**16995K12**	128.00

About Batteries

When choosing a battery, you can compare the ***mA-hours*** among similar sizes. The higher the rating, the longer the battery should last.

If you know the milliamp draw of your device, the mA-hour rating will give you an estimate of battery life.

Note: For many batteries, recycling or other proper disposal is required by law. They should not be thrown in the trash. For rechargeable batteries, visit www.call2recycle.org or call 1-877-2-RECYCLE. For all other batteries, contact the manufacturer.

Don't see the battery you need? Just tell us what you're looking for and we'll get it for you.

Disposable and Rechargeable Batteries

Disposable— The choice for economy and convenience.

Rechargeable— *Nickel cadmium (NiCad)* can be recharged up to 500 times. For maximum life, completely drain these batteries before recharging.

Nickel metal hydride (NiMH) can be recharged up to 200 times. Recharging these batteries without completely draining them does not affect storage capacity.

Long shelf-life nickel metal hydride (NiMH) and *long shelf-life alkaline* are ready to use right out of the package—they hold their charge even after months on the shelf. *NiMH* can be recharged up to 300 times. *Alkaline* can be recharged up to 100 times.

	Volts	mA-hrs.	Small Packs Pkg. Qty.		Small Packs Pkg.	Large Packs Pkg. Qty.		Large Packs Pkg.
AA								
Disposable								
Carbon Zinc	1.5	1,100	4	7697K21	$1.38	48	7697K31	$14.90
Alkaline	1.5	2,850	4	71455K53	2.94	24	71455K61	16.74
Alkaline	1.5	2,850	—	—	—	144	71455K58	81.82
Super Alkaline	1.5	3,000	4	6959K31	5.47	24	6959K41	29.37
Lithium	1.5	3,025	2	7745K55	6.92	12	7745K65	37.58
Rechargeable								
Nickel Cadmium (NiCad)	1.2	850	2	7685K1	5.31	—	—	—
Nickel Metal Hydride (NiMH)	1.2	2,700	2	6762K46	13.50	—	—	—
Long Shelf-Life Nickel Metal Hydride (NiMH)	1.2	2,100	4	6762K12	13.01	—	—	—
Long Shelf-Life Alkaline	1.5	2,000	4	71225K72	9.44	—	—	—
AAA								
Disposable								
Carbon Zinc	1.5	550	2	7697K36	.92	24	7697K26	9.94
Alkaline	1.5	1,250	4	71455K62	2.82	24	71455K64	16.46
Super Alkaline	1.5	1,200	4	6959K32	5.90	24	6959K42	31.26
Lithium	1.5	1,200	2	7745K11	6.88	—	—	—
Rechargeable								
Nickel Cadmium (NiCad)	1.2	350	2	7685K8	4.56	—	—	—
Nickel Metal Hydride (NiMH)	1.2	1,000	2	6762K43	11.74	—	—	—
Long Shelf-Life Nickel Metal Hydride (NiMH)	1.2	800	4	6762K13	13.01	—	—	—
Long Shelf-Life Alkaline	1.5	800	4	71225K71	9.02	—	—	—
AAAA								
Disposable								
Alkaline	1.5	625	2	71455K57	4.12	24	71455K66	46.05
C								
Disposable								
Carbon Zinc	1.5	2,800	6	7697K22	3.18	72	7697K32	34.34
Alkaline	1.5	8,350	6	71455K54	6.49	72	71455K63	67.92
Rechargeable								
Nickel Cadmium (NiCad)	1.2	1,800	2	7685K2	10.11	—	—	—
Nickel Metal Hydride (NiMH)	1.2	3,000	2	6762K47	13.64	—	—	—
D								
Disposable								
Carbon Zinc	1.5	5,600	6	7697K23	3.66	72	7697K33	39.49
Alkaline	1.5	20,500	6	71455K55	7.32	72	71455K65	79.71
Rechargeable								
Nickel Cadmium (NiCad)	1.2	1,800	2	7685K3	11.45	—	—	—
Nickel Metal Hydride (NiMH)	1.2	3,000	2	6762K48	13.64	—	—	—
9V								
Disposable								
Carbon Zinc	9	350	1	7697K24	1.32	12	7697K34	14.36
Alkaline	9	625	1	71455K56	2.75	12	71455K68	27.11
Lithium	9	1,200	1	7745K56	8.54	—	—	—
Rechargeable								
Nickel Cadmium (NiCad)	9	120	1	7685K4	11.70	—	—	—
Nickel Metal Hydride (NiMH)	9	200	1	6762K45	11.94	—	—	—
N								
Disposable								
Alkaline	1.5	1,000	2	71455K69	3.08	12	71455K67	16.33

Battery chargers have a light that indicates charging. They're for use with rechargeable batteries and operate on 120 VAC, 60 Hz.

NiCad/NiMH charger charges batteries in 4-10 hours. It has a 6-ft. long power cord with two-prong plug. Batteries not included. UL listed.

Alkaline charger charges batteries in 12 hours. It has a two-prong plug that fits directly into a wall outlet and includes four AA batteries. Only for use with long shelf-life alkaline batteries above. ETL and C-ETL listed.

Battery tester lets you know when it's time to replace your disposable batteries.

	For Use With		Each
NiCad and NiMH Charger	Four AA, AAA, C, or D, or Two 9V	7685K5	$25.74
Alkaline Charger	Four AA or AAA Long Shelf-Life Alkaline	71225K98	21.58
Battery Tester	AA, AAA, C, D, 9V, and Button/Coin Cell	6946K34	15.23

NiCad and NiMH Battery Charger

Battery Tester

For information about batteries, see page 737.

Don't see the battery you need? Just tell us what you're looking for and we'll get it for you.

Disposable Button/Coin Cell Batteries

Silver Oxide, Alkaline, and Zinc Air

Lithium

Fit into watches, calculators, calipers, and other instruments.

For an additional cross-reference chart that lists other equivalent batteries, go to mcmaster.com and search for **7604KAC**.

Battery No.	Equivalent Batteries	mA-hrs.	Dia.	Ht.		Each
Silver Oxide (1.5 Volts)						
SR41	D384, 384, V384	40	0.31″	0.14″	7604K43	$1.32
SR41	D392, 392, V392	40	0.31″	0.14″	7604K92	.86
SR42	D344, 344, V344	100	0.46″	0.14″	7604K87	2.59
SR42	D350, 350, V350	110	0.46″	0.14″	7604K89	2.74
SR43	D301, 301, V301	95	0.46″	0.17″	7604K95	1.94
SR43	D386, 386, V386	115	0.46″	0.17″	7604K76	1.90
SR43	D386/301, 386, RW44, V386	127	0.46″	0.17″	7604K81	1.76
SR44	D303, 303, V303, WS14	160	0.46″	0.21″	7604K83	2.34
SR44	D357, 357, V357	145	0.46″	0.21″	7604K117	2.08
SR44	EPX76, V76PX, RW22/42	160	0.46″	0.21″	7604K22	3.14
SR45	D394, 394, V394	56	0.37″	0.14″	7604K66	1.66
SR48	D309, 309, V309	70	0.31″	0.21″	7604K96	1.27
SR48	D393, 393, V393	75	0.31″	0.21″	7604K47	1.27
SR54	D389, 389, V389	81	0.46″	0.12″	7604K93	1.27
SR54	D390, 390, V390	60	0.46″	0.12″	7604K44	1.27
SR55	D381, 381, V381	45	0.46″	0.08″	7604K77	1.74
SR55	D391, 391, V391	42	0.46″	0.08″	7604K82	1.27
SR57	D395, 395, V395	42	0.37″	0.11″	7604K67	1.19
SR57	D399, 399, V399	42	0.37″	0.11″	7604K46	1.14
SR58	D361, 361, V361	20	0.31″	0.08″	7604K75	1.27
SR58	D362, 362, V362	21	0.31″	0.08″	7604K118	.96
SR59	D396, 396, V396	27	0.31″	0.10″	7604K78	1.14
SR59	D397, 397, V397	23	0.31″	0.10″	7604K45	.97
SR60	D364, 364, V364	17	0.27″	0.09″	7604K94	.88
SR62	D317, 317, V317	12.5	0.23″	0.06″	7604K114	2.03
SR63	D379, 379, V379	14	0.23″	0.09″	7604K84	1.15
SR64	D319, 319, V319	22.5	0.23″	0.11″	7604K97	2.04
SR65	D321, 321, V321	16	0.27″	0.07″	7604K115	1.89
SR66	D377, 377, SR626SW	24	0.27″	0.10″	7604K85	.92
SR67	D315, 315, V315	23	0.31″	0.07″	7604K113	2.26
SR68	D373, 373, V373	30	0.37″	0.06″	7604K48	2.52
SR69	D370, 370, V370	34	0.37″	0.08″	7604K119	1.07
SR69	D371, 371, V371	35	0.37″	0.08″	7604K79	1.04
Silver Oxide (1.5 Volts) (Cont.)						
329	D329, V329	39	0.31″	0.12″	7604K98	$1.70
335	V335	6	0.23″	0.05″	7604K99	3.81
339	V339	11	0.27″	0.06″	7604K25	3.97
341	322, V341	15	0.31″	0.06″	7604K116	3.29
346	V346	9	0.31″	0.05″	7604K88	3.44
Alkaline (1.5 Volts)						
LR41	192, V3GA, AG3	24	0.31″	0.14″	7604K71	2.00
LR44	PX76A, A76, AG13	125	0.46″	0.21″	7604K74	1.44
LR54	189, LR1130, AG10	50	0.46″	0.12″	7604K51	1.48
LR9	EPX625G, R625, V625U	200	0.61″	0.24″	7604K52	1.44
Lithium (3 Volts)						
BR2325	CR2325, DL2325	165	0.91″	0.10″	7701K36	3.83
BR2330	———	255	0.91″	0.12″	7701K61	5.75
CR1025	———	30	0.39″	0.10″	7701K12	2.57
CR11108	CR1/3N, DL1/3N, 2L76	170	0.46″	0.43″	7821K61	4.80
CR1216	BR1216	27	0.49″	0.06″	7701K27	1.94
CR1220	BR1220, DL1220	35	0.49″	0.08″	7701K28	2.23
CR1616	BR1616, DL1616	50	0.63″	0.06″	7701K29	2.53
CR1620	DL1620	79	0.63″	0.08″	7701K31	1.94
CR1632	———	140	0.63″	0.13″	7701K11	2.50
CR2016	DL2016	90	0.79″	0.06″	7701K32	1.57
CR2025	DL2025	165	0.79″	0.10″	7701K33	1.63
CR2032	DL2032	230	0.79″	0.13″	7701K34	1.92
CR2320	DL2320	135	0.91″	0.08″	7701K55	2.82
CR2430	DL2430	280	0.97″	0.12″	7701K37	2.47
CR2450	DL2450	560	0.97″	0.20″	7701K58	4.17
CR2450N	———	540	0.97″	0.20″	7701K62	3.96
***Zinc Air Medical/Hearing Aid (1.4 Volts)—** 8/Pkg.*						**Per Pkg.**
PR41	DA312, AC312, 312A	120	0.31″	0.14″	71015K41	$10.56
PR44	DA675, AC675, 675A	510	0.46″	0.21″	71015K42★	7.49
PR48	DA13, AC13, 13A	217	0.31″	0.21″	71015K43	10.56
PR70	DA10, AC10, 10A	84	0.23″	0.14″	71015K44	10.56

★Package quantity is 6.

Battery Holders

For AA, AAA, C, and D Batteries

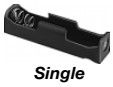

Single

Side-by-Side, Two Cells

End-to-End, Two Cells

Plastic holders have nickel-plated wire springs and two 6″ long, 26 AWG wire leads. ***Aluminum*** holders are lightweight with nickel-plated brass contacts and tin-plated brass solder lugs. ***Steel*** holders are nickel plated with nickel-plated brass contacts and tin-plated brass solder lugs.

	SINGLE		***SIDE-BY-SIDE***				***END-TO-END***			
	One Cell		***Two Cells***		***Three Cells***		***Four Cells***		***Two Cells***		***Three Cells***	
AA												
Plastic	7712K11	$1.10	7712K12	$1.10	7712K13	$1.62	7712K14	$1.69	7712K15	$1.10	———	———
Aluminum	7712K59	1.51	7712K65	2.18	7712K711	5.20	7712K761	8.24	7712K821	2.17	7712K861	$5.21
Steel	7712K31	2.47	7712K32	4.47	7712K33	6.55	7712K37	8.38	7712K34	3.49	7712K35	4.30
AAA												
Plastic	7712K16	1.00	7712K17	1.27	7712K18	1.79	7712K19	2.51	———	———	———	———
Aluminum	7712K58	1.66	7712K64	4.69	7712K69	7.72	7712K751	10.75	7712K811	4.70	———	———
C												
Plastic	7712K92	1.24	7712K93	1.83	———	———	7712K95	3.31	———	———	7712K94	1.63
Aluminum	7712K611	1.66	7712K66	3.33	7712K721	6.36	7712K77	9.39	7712K831	6.37	7712K871	6.36
Steel	7712K41	3.19	7712K42	5.79	7712K43	8.43	7712K47	11.40	7712K44	4.38	7712K45	4.64
D												
Plastic	7712K21	1.49	7712K27	2.49	7712K23	3.26	7712K24	3.49	———	———	7712K26	2.03
Aluminum	7712K621	1.81	7712K67	4.84	7712K73	7.87	7712K89▲	10.89	7712K841	4.84	7712K881	7.87
Steel	7712K51	3.47	7712K52	6.68	7712K53	9.74	7712K57	14.10	7712K54	4.89	7712K55	5.30

▲Two side-by-side by two end-to-end.

For 9-Volt Batteries

Holder is aluminum with nickel-plated steel contacts and tin-plated brass solder lugs.

7712K62 ..... $2.58

I-Style ***T-Style***

Snaps have a plastic-covered fiberboard base with nickel-plated brass contacts and two 24 AWG wire leads.

Lead Lg.	***I-Style***		***T-Style***	
6″	7712K513	$0.62	7712K511	$0.62
12″	7712K614	.62	7712K612	.62

For N-Cell Batteries

Made of plastic, this holder has a nickel-plated wire spring, two 6″ long, 26 AWG wire leads, and nickel-plated brass contacts.

7712K91 ..... $1.03

For Button/Coin Cell Batteries

Holders are plastic and have nickel-plated steel contacts.

For Battery No.	***For Battery Size*** Dia.	Ht.		
CR2016, CR2025, CR2032	0.79″	0.06″-0.14″	6961T11	$1.06
CR2430, DL2430, ECR2430	0.97″	0.12″	6961T12	1.21
CR2450, DL2450	0.97″	0.20″	6961T13	.91

For information about batteries, see page 737.

Don't see the battery you need? Just tell us what you're looking for and we'll get it for you.

Specialty Disposable and Rechargeable Batteries

Choose the battery to fit your photo or other electronic device. ***Style 1*** has a button tab. ***Styles 2, 3,*** and ***4*** have flat terminals.

Charger fits up to two of either rechargeable lithium ion battery. It has a 4½-ft. power cord with two-prong plug and operates on 100-240 VAC, 50/60 Hz.

For an additional cross-reference chart that lists other equivalent batteries, go to mcmaster.com and search for **7735KAC**.

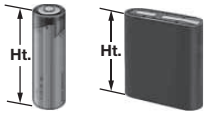

1 ***2***

3 ***4***

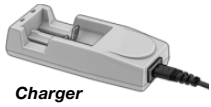

Charger

	Equivalent Batteries	Volts	mA-hrs.	Size		
Disposable						
Alkaline						
1	A23, KE23A-1, MN21, 23A	12	40	0.41″ Dia. × 1.12″ Ht.	7735K33	$1.41
1	A544, PX28A	6	140	0.51″ Dia. × 1.00″ Ht.	7735K31	3.89
2	MN1203, 1289	4.5	6,100	2.60″ Ht. × 2.40″ Wd. × 0.87″ Dp.	7735K11	3.78
3	RJ-1, 7K67, 539	6	500	1.91″ Ht. × 1.40″ Wd. × 0.36″ Dp.	7735K24	4.27
Lithium						
1	CR123A, DL123A, EL123A	3	1,600	0.67″ Dia. × 1.36″ Ht.	7821K63	5.64
1	CR12600SE	3	1,400	0.47″ Dia. × 2.36″ Ht.	7821K71	11.50
1	C Cell	3	4,800	1.01″ Dia. × 1.97″ Ht.	7821K67	21.92
1	DLCR2, EL1CR2, RLCR2-1	3	1,400	0.61″ Dia. × 1.06″ Ht.	7821K62	11.00
4	DLCRV3B, ELCRV3, RLCRV3-1	3	3,300	2.07″ Ht. × 1.14″ Wd. × 0.58″ Dp.	7821K81	15.88
4	DL223A, EL223A, RL223A-1	6	1,600	1.38″ Ht. × 1.42″ Wd. × 0.77″ Dp.	7821K65	10.15
4	DL245, EL2CR5, RL2CR5-1	6	1,400	1.77″ Ht. × 1.34″ Wd. × 0.67″ Dp.	7821K66	10.71
Rechargeable						
Lithium Ion						
1	RCR123A	3	900	0.63″ Dia. × 1.34″ Ht.	1109K2	5.18
1	18650	3.7	2,600	0.72″ Dia. × 2.61″ Ht.	1109K1	12.00
Charger					1109K9	17.25

High-Performance Disposable Lithium Batteries

Designed for long life, these batteries resist humidity and extreme temperatures. They have a button tab except for 6951K18, which has a solder tab.

For Steady Low-Drain Current— Use in applications with low, long-term energy requirements, such as sensors and memory backup.

For High-Drain Current— Use in applications with high energy requirements, such as alarms and metering systems.

AA

Battery Size	Equivalent Batteries	Volts	mA-hrs.	mA Rating Continuous	mA Rating Maximum	Temp. Range, °F		
For Steady Low-Drain Current								
½ AA	LS14250, TL-2150	3.6	1,200	35	100	–76° to +185°	6951K59	$5.19
AA	LS14500, TL-2100	3.6	2,600	50	250	–76° to +185°	6951K57	7.70
⅔ A	LS17330	3.6	2,100	25	120	–76° to +185°	6951K65	7.98
A	LS17500	3.6	3,600	100	250	–76° to +185°	6951K66	9.13
C	LS26500, TL-2200	3.6	7,700	150	300	–76° to +185°	6951K13	19.23
D	LS33600, TL-5930	3.6	17,000	250	400	–76° to +185°	6951K12	25.96
For High-Drain Current								
C	LO29SHX	3	3,750	2,500	6,000	–76° to +158°	6951K16	15.58
C	LSH14	3.6	5,800	1,300	2,000	–76° to +185°	6951K14	32.21
D	LO26SHX	3	7,500	4,000	15,000	–76° to +158°	6951K18	15.58
D	LO26SX	3	7,750	2,500	5,000	–76° to +158°	6951K17	15.58
D	LSH20, TL-2300	3.6	13,000	1,800	4,000	–76° to +185°	6951K15	40.77

Disposable Lantern Batteries

Power not only lanterns but flashlights and barricade lights as well.

	Volts	Terminal Style	Equivalent Batteries	mA-hrs.	Ht.	Wd.	Dp.		
Square									
Alkaline	6	Spring	908AC	20,500	4.5″	2.7″	2.7″	7690K31	$12.94
Alkaline	6	Screw	915A	26,000	4.4″	2.7″	2.7″	7690K32	16.54
Carbon Zinc	6	Spring	908CD	6,100	4.5″	2.7″	2.7″	7690K13	3.29
Carbon Zinc	6	Spring	908CS	8,600	4.5″	2.7″	2.7″	7690K61	4.89
Carbon Zinc	6	Screw	915D	6,100	4.3″	2.7″	2.7″	7690K22	5.20
Rectangular									
Alkaline	6	Screw	918A	35,000	5.0″	5.4″	2.9″	7690K33	26.58
Alkaline	7.5	Screw	903AC	35,000	4.0″	7.3″	4.1″	7690K51	25.79
Carbon Zinc	6	Screw	918	12,400	5.0″	5.4″	2.9″	7690K14	9.67
Carbon Zinc	7.5	Screw	903	23,000	6.4″	7.3″	4.1″	7690K16	27.52
Carbon Zinc	12	Screw	926	7,900	4.9″	5.4″	2.9″	7690K17	13.74

Square with Spring Terminals

Rectangular with Screw Terminals

Disposable Long-Life Air-Alkaline Batteries

When you need long life, choose the battery that last five times longer than standard alkaline and nine times longer than carbon zinc. Activate by removing the tape from the holes in the battery case, allowing oxygen to flow inside. This battery keeps voltage output at a constant level, even during peaks and pulses that can temporarily drain the oxygen. Use in lanterns, barricade lights, and telecommunications devices.

Volts	Terminal Style	mA-hrs.	Ht.	Wd.	Dp.		
6	Spring	45,000	4.33″	2.60″	2.60″	7759K12	$12.07

For information about batteries, see page 737.

Don't see the battery you need? Just tell us what you're looking for and we'll get it for you.

Rechargeable Two-Way Radio Batteries

Battery No.	For Motorola Radio Models	Volts	mA-hrs.	Ht.	Wd.	Dp.		
Nickel Cadmium (NiCad)								
A HNN9018	SP50	7.5	1,200	3.39″	2.01″	0.69″	**7784K77**	$33.33
A HNN9044A	HT10, Radius P10/P50/P60, SP10	7.5	600	2.17″	2.00″	0.69″	**7784K96**	30.00
B NTN7144A	GP900, GP1200, HT1000, MT2000	7.5	1,500	6.08″	2.35″	0.82″	**7784K11**	43.12
Nickel Metal Hydride (NiMH)								
B HNN9009AR	GP320/340/360, HT750/1250/1550	7.5	2,700	4.87″	2.35″	0.87″	**7784K13**	64.68
B HNN9049	Radius P1225	7.5	2,000	5.47″	2.25″	0.85″	**7784K81**	82.05
B WPNN4013A	GP900, GP1200, HT1000, MT2000	7.5	2,100	6.08″	2.35″	0.82″	**7784K12**	53.90
C NNTN4190	Powerphone i500	4.8	1,200	4.09″	1.22″	0.59″	**7784K69**	27.58

Rechargeable Cordless Phone Batteries

Equivalent Batteries	For Phone Brand(s)	Volts	mA-hrs.		
Nickel Cadmium (NiCad)					
D CO100P5, P3305	Bell South, HAC, Southwind	3.6	400	**6745K25**	$11.41
E CO101P2	AT&T, Panasonic, Uniden	3.6	600	**6745K11**	15.11
Nickel Metal Hydride (NiMH)					
E CO100P2, P3302	Panasonic, Sony, Toshiba, Uniden	3.6	750	**6745K23**	14.92
F CO100P3, P3303	AT&T, GE, Goldstar	3.6	750	**6745K24**	14.13
F CO114P3	AT&T, GE	3.6	1,500	**6745K14**	19.46
G CO111P1	Bell South	3.6	750	**6745K13**	21.63
H CO108P4	AT&T, GE, Sanyo, Sharp	3.6	1,200	**6745K12**	19.54

Rechargeable Backup Battery with USB Port

Keep your mobile device powered when its battery runs out. This backup battery connects to your device's USB port and recharges from your computer using the included USB cable. Battery is a 3.7 volt, 1150 mAh lithium ion and has an LED status indicator that illuminates green at full power and red when low or charging.

3935T11 ..... $34.55

Battery Recycling Container

Dispose of your dead batteries without harming the environment. These plastic buckets hold up to 55 lbs. of dry cell batteries including alkaline, nickel, cadmium, nickel metal hydride, iron, zinc carbon, and silver. The price of the container includes pickup and transportation costs, as well as a certificate of recycling once the batteries are received and recycled.

Cap., lbs.		
25	**8393K2**	$104.09
55	**8393K1**	123.04

Ultracapacitors

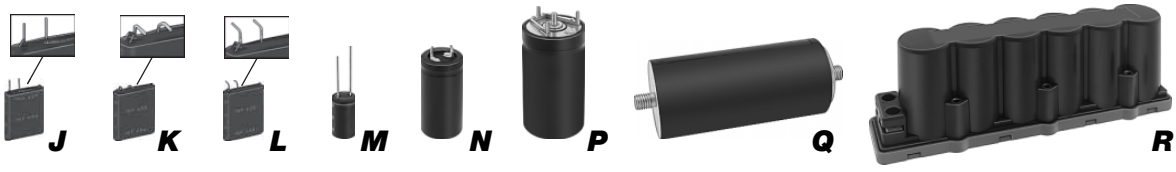

Forget waiting hours for a recharge. Ultracapacitors charge in a matter of minutes to quickly deliver high power to drive systems and actuators, power tools, and telecom networks. Lifespan is 500,000 charge cycles.

They have solder connections except Style Q has M12 threaded studs and Style R has M5 screw terminals.

	Volts	Capacitance Rating, farads	*Amp Rating* Continuous	*Amp Rating* Max.	Size		
J	2.5	10	2.5	4.5	1.16″ Ht. × 0.93″ Wd. × 0.19″ Dp.	**1135K51**	$10.50
K	2.5	10	2.5	4.5	1.41″ Ht. × 0.93″ Wd. × 0.19″ Dp.	**1135K53**	10.50
L	2.5	10	2.5	4.5	1.41″ Ht. × 0.93″ Wd. × 0.19″ Dp.	**1135K52**	10.50
M	2.7	5	1.6	3.6	0.39″ Dia. × 0.79″ Ht.	**1135K11**	2.96
M	2.7	25	4.9	16.5	0.63″ Dia. × 1.02″ Ht.	**1135K13**	7.46
M	2.7	50	7.1	33.8	0.71″ Dia. × 1.61″ Ht.	**1135K14**	11.45
N	2.7	100	8.2	54	0.87″ Dia. × 1.77″ Ht.	**1135K15**	16.22
N	2.7	150	9.1	65.3	0.98″ Dia. × 1.97″ Ht.	**1135K16**	26.77
P	2.7	350	25	220	1.30″ Dia. × 2.40″ Ht.	**1135K22**	25.69
Q	2.7	3,000	147	2,170	2.38″ Dia. × 5.43″ Ht.	**1135K27**	172.16
R	16	58	20	204	2.99″ Ht. × 8.92″ Wd. × 1.95″ Dp.	**1135K31**	297.93

Don't see the battery you need? Just tell us what you're looking for and we'll get it for you.

Rechargeable Lead-Acid Starting and Deep-Cycle Batteries

You'll find these batteries most commonly used in automotive and vehicle applications.

Lead Acid— These wet batteries are shipped ready-to-use with the electrolyte installed except 7238K52 and K56, which are supplied with the electrolyte packaged separately. Batteries may need to be filled with distilled water from time to time. Housing is plastic.

Sealed Lead Acid AGM— Absorbed glass mat (AGM) soaks up the electrolyte, making these dry batteries leak resistant and usable in almost any position except upside down. Housing is plastic.

Starting Batteries

Recommended for starting applications only.

CCA (capacity in cold cranking amps) is the discharge load (in amps) a new, fully charged vehicle battery can continuously deliver for 30 seconds at 0° F.

BCI Group	Volts	CCA Capacity	Terminal Style	Ht.	Wd.	Dp.		
Lead Acid (Wet Cell)								
1	6	625	A	8.6″	8.8″	6.8″	7238K17	$122.12
U1	12	300	B	7.3″	7.8″	5.2″	7238K57	79.07
12N14-3A	12	Not Rated	C	6.6″	5.3″	3.6″	7238K52	60.32
24	12	585	A	9.1″	10.6″	6.8″	7238K67	121.03
31	12	925	D	9.4″	13.0″	6.8″	7238K85	205.76
34/78	12	850	E	8.1″	10.2″	7.1″	7597K11	143.17
50-N18L-A3	12	Not Rated	F	6.4″	8.1″	3.6″	7238K56	113.47
75DT	12	630	E	8.1″	9.4″	6.9″	7597K12	131.97
8D	12	1,300	A	10.0″	20.8″	11.0″	7238K64	335.96
Sealed Lead Acid AGM (Dry Cell)								
YB14-A2	12	210	F	6.6″	5.3″	3.5″	7238K11	122.40
Y50-N18L-A	12	300	F	6.4″	8.1″	3.6″	7238K12	127.60
75/25	12	720	E	7.6″	9.3″	6.8″	7238K13	277.88

Deep-Cycle and Dual-Purpose Deep-Cycle/Starting Batteries

Deep-cycle batteries can handle many charge/deep discharge cycles. They offer maximum performance for floor machines, lift trucks, personnel carriers, and other demanding applications.

Dual-purpose deep-cycle/starting batteries can be used for both starting and deep-discharge applications.

Terminal style J has two sets of dual terminals that include solid posts and threaded posts to accommodate either style battery connection.

Reserve capacity is how many minutes a new, fully charged deep-cycle battery can be continuously discharged at 25 amps at 80° F.

MCA (marine cranking amps) capacity is the discharge load (in amps) a new, fully charged deep-cycle battery can continuously deliver for 30 seconds at 32° F.

BCI Group	Volts	Capacity, amp-hrs.	Reserve Capacity	MCA Capacity	Terminal Style	Ht.	Wd.	Dp.		
Deep Cycle										
Lead Acid (Wet Cell)										
GC2	6	186	390 min.	Not rated	G	10.9″	10.3″	7.1″	71805K81	$147.93
31M	12	115	205 min.	900	H	9.4″	13.0″	6.8″	71805K94	180.89
Dual-Purpose Deep-Cycle/Starting										
Lead Acid (Wet Cell)										
24M	12	70	120 min.	625	J	9.4″	10.3″	6.8″	71805K82	114.47
27M	12	100	160 min.	730	J	9.4″	12.0″	6.8″	71805K83	114.15
Sealed Lead Acid AGM (Dry Cell)										
GC2	6	190	380 min.	900	J	10.9″	10.3″	7.1″	71805K18	298.77
U1	12	32	48 min.	240	B	7.3″	8.3″	5.1″	71805K11	108.84
22NF	12	55	85 min.	420	K	9.3″	9.4″	5.5″	71805K12	166.09
24	12	79	135 min.	735	J	9.9″	10.9″	6.8″	71805K13	220.61
27	12	92	175 min.	810	J	9.9″	12.8″	6.8″	71805K14	260.49
31	12	100	190 min.	1,060	D	9.5″	13.0″	6.8″	71805K42	369.88
31	12	105	200 min.	1,000	J	9.4″	12.9″	6.8″	71805K15	287.82
34/78	12	55	120 min.	970	E	8.0″	10.8″	6.9″	71805K41	264.97
4D	12	198	380 min.	1,420	A	10.0″	20.8″	8.5″	71805K16	486.94
65	12	75	150 min.	980	A	7.6″	12.0″	7.4″	71805K43	305.25
8D	12	245	480 min.	1,800	A	10.0″	20.8″	11.0″	71805K17	586.15

Terminal Styles

A

B

C

D

E

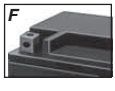
F

G

H

J

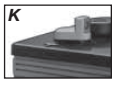
K

Lightweight Quick-Charging Lithium Batteries

A step up from the sealed lead-acid AGM batteries on page 742, these batteries weigh less than half as much and can be recharged thousands of times. Maintenance free and mountable in any position, they're a good choice for uninterruptible power supplies (UPS) and emergency lights. They charge in about two hours (chargers sold separately). Housing is plastic.

Chargers have a 3-amp output and automatically switch between a fast charge and maintaining the charge level. They have an LED mode indicator, a 4-ft. power cord with two-prong plug, and 4-ft. leads with alligator clips. Operate on 110-240 VAC, 50/60 Hz.

2803K1 and K2

2803K3 and K4

Quick-Disconnects

Threaded Inserts

Volts	20-hr. Rate Capacity, amp-hrs.	20-hr. Rate Discharge Rate, mA	Terminal Style	Ht.	Wd.	Dp.		
12.8	6.4	320	0.250″ Quick-Disconnects	3.8″	5.9″	2.5″	2803K1	$145.45
12.8	9.6	480	0.250″ Quick-Disconnects	3.8″	5.9″	2.5″	2803K2	190.91
12.8	19.2	960	Threaded Inserts	6.5″	4.5″	3.5″	2803K3	381.82
25.6	9.6	480	Threaded Inserts	6.5″	4.5″	3.5″	2803K4	350.00
Charger for 12.8-Volt Batteries							2803K9	50.92
Charger for 25.6-Volt Battery							2803K8	61.12

Rechargeable Sealed Lead-Acid Batteries and Chargers

Batteries

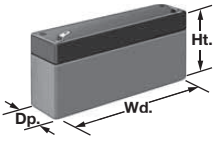

Absorbed glass mat (AGM) soaks up the electrolyte, making these dry batteries leak resistant and usable in almost any position except upside down. Rechargeable hundreds of times, you can use them as a backup power source for emergency lights, alarm systems, and uninterruptible power supplies (UPS) for computers, as well as a primary source for portable tools. All have a plastic housing.

Note: Batteries should always be charged or discharged in a ventilated area.

AGM— 7448K83 and *K44* have universal terminals that accept nut and bolt as well as automotive connections (not shown).

Extended-Life AGM— With a life expectancy of up to 10 years, these batteries last twice as long as AGM. Use in applications where regular replacement is difficult or undesirable.

Terminal Styles

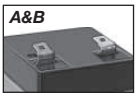

(A) 0.250″ quick-disconnect tabs.

(B) 0.187″ quick-disconnect tabs.

(C) Spring terminals.

(D) Polarized quick-disconnect tabs: 0.250″ (positive) 0.187″ (negative).

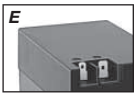

(E) Polarized quick-disconnect tabs: 0.250″ (positive) 0.187″ (negative).

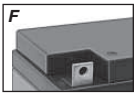

(F) Nut and bolt connections.

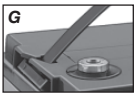

(G) Threaded insert.

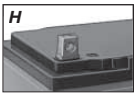

(H) Cast lead post with nut and bolt connections.

Terminal Locations

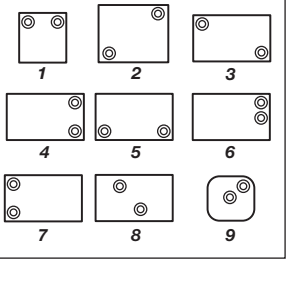

Volts	20-hr. Rate Capacity, amp-hrs.	20-hr. Rate Discharge Rate, mA	Terminal Style	Terminal Location	Ht.	Wd.	Dp.		
AGM (Dry Cell)									
4	4.5	225	A	1	3.7″	1.9″	2.1″	7448K57	$26.14
4	9.0	450	A	5	3.7″	4.0″	1.7″	7448K25	31.05
4	10.0	500	B	5	3.7″	4.0″	2.0″	7448K33	26.55
6	1.1	55	B	2	2.0″	2.0″	1.7″	7448K71	21.89
6	1.4	70	B	5	2.0″	3.8″	0.9″	7448K14	15.81
6	3.5	175	B	5	2.4″	5.3″	1.3″	7448K13	25.08
6	4.0	200	B	2	4.0″	2.8″	1.9″	7448K72	13.75
6	4.5	225	B	2	3.9″	2.8″	1.9″	7448K53	12.25
6	5.0	250	B	9	3.9″	2.6″	2.6″	7448K23	26.14
6	5.0	250	C	9	3.9″	2.6″	2.6″	7448K29	26.14
6	7.0	350	B	5	3.7″	6.0″	1.3″	7448K24	17.33
6	8.0	350	D	5	3.7″	6.0″	1.4″	7448K61★	82.39
6	9.0	450	B	3	4.7″	3.9″	2.2″	7448K15	27.18
6	12.0	600	B	5	3.7″	6.0″	2.0″	7448K34	23.14
6	13.0	650	E	6	5.6″	4.3″	2.8″	7448K36	30.53
6	20.0	1,000	F	5	4.9″	6.2″	3.3″	7448K58	73.80
6	36.0	1,800	A	8	6.5″	6.3″	3.4″	7448K38	74.27
6	210.0	10,500	G	3	8.7″	12.1″	6.7″	7448K27	337.69
8	3.2	160	B	7	2.5″	5.3″	1.4″	7448K12	36.74
12	1.4	70	B	7	2.0″	3.8″	1.7″	7448K17	26.14
12	2.5	125	B	5	2.4″	7.0″	1.4″	7448K18	28.53
12	2.9	145	B	5	2.4″	7.0″	1.4″	7448K22	42.08
12	3.4	170	B	7	2.4″	5.2″	2.6″	7448K19	39.00
12	4.0	200	B	1	4.0″	3.5″	2.8″	7448K75	21.67
12	5.0	250	A	5	4.0″	3.5″	2.8″	7448K26	21.89
12	5.0	250	B	5	4.0″	3.5″	2.8″	7448K49	21.89
12	6.0	300	A	5	4.0″	3.5″	2.8″	7448K81	27.00
12	7.0	350	A	7	3.7″	6.0″	2.6″	7448K87	27.00
12	7.0	350	B	7	3.7″	6.0″	2.6″	7448K39	27.00
12	8.5	425	A	7	3.7″	5.9″	2.6″	7448K82	34.50
12	9.0	450	A	7	3.7″	6.0″	2.6″	7448K21	40.11
12	12.0	600	A	4	3.7″	6.0″	4.0″	7448K31	57.82
12	12.0	600	A	7	3.7″	6.0″	3.9″	7448K32	59.84
12	12.0	600	B	4	3.7″	6.0″	4.0″	7448K28	57.82
12	12.0	600	E	8	5.8″	8.5″	2.8″	7448K35	72.50
12	14.0	700	A	7	3.7″	6.0″	3.9″	7448K11	62.11
12	18.0	900	F	5	6.6″	7.1″	3.0″	7448K51	72.16
12	26.0	1,300	A	5	4.9″	6.6″	7.0″	7448K43	99.86
12	28.0	1,400	F	5	7.0″	6.5″	4.9″	7448K37	102.88
12	35.0	1,750	H	5	6.2″	7.7″	5.1″	7448K52	97.48
12	40.0	2,000	F	5	6.7″	7.8″	6.5″	7448K45	135.21
12	55.0	2,750	H	5	8.2″	9.0″	5.5″	7448K83	164.94
12	75.0	3,750	H	5	8.2″	10.3″	6.6″	7448K44	197.06
12	100.0	5,000	H	5	8.2″	12.0″	6.6″	7448K48	253.31
12	110.0	5,500	G	5	8.4″	13.0″	6.7″	7448K85	264.98
12	140.0	7,000	G	5	10.8″	13.5″	6.7″	7448K86	351.63
Extended-Life AGM (Dry Cell)									
6	7.2	360	B	5	3.7″	5.9″	1.3″	2920K1	31.82
6	12.0	600	B	5	3.7″	5.9″	2.0″	2920K2	37.74
6	226.0	11,300	G	2	9.0″	12.7″	7.0″	2920K5	361.70
12	7.2	360	B	7	3.7″	5.9″	2.5″	2920K3	53.47
12	17.0	850	F	5	6.6″	7.1″	3.0″	2920K4	94.71
12	30.0	1,500	G	5	4.9″	6.6″	7.0″	2920K6	106.38
12	36.0	1,800	G	5	6.2″	7.8″	5.2″	2920K7	124.04
12	45.0	2,250	G	5	6.7″	7.8″	6.5″	2920K8	171.21
12	60.0	3,000	G	5	8.3″	9.0″	5.4″	2920K9	217.29
12	80.0	4,000	G	5	7.0″	13.7″	6.6″	2920K11	271.90
12	80.0	4,000	G	5	8.3″	10.2″	6.6″	2920K12	277.12
12	98.0	4,900	G	5	8.3″	12.1″	6.6″	2920K13	324.18
12	111.0	5,550	G	5	8.4″	13.0″	6.8″	2920K14	338.48
12	129.0	6,450	G	5	8.9″	16.1″	7.0″	2920K15	390.92
12	166.0	8,300	G	5	9.5″	19.1″	6.7″	2920K16	472.38
12	226.0	11,300	G	7	8.6″	20.6″	9.5″	2920K17	583.85

★ Lead-calcium battery.

(Continued on following page)

For information about batteries, see page 737.

Don't see the battery you need? Just tell us what you're looking for and we'll get it for you.

Rechargeable Sealed Lead-Acid Batteries and Chargers *(Continued from previous page)*

Chargers

Chargers automatically switch between a fast charge and maintaining the charge level. They have an LED mode indicator, two-prong plug, and 3-ft. leads with alligator clips. Operate on 120-240 VAC, 50/60 Hz (except 7448K79 operates on 120 VAC only). To select the right charger, match your battery's voltage and amp-hour rating to the battery charger's output voltage and amp-hour rating. Chargers are not offered for 4-volt batteries as they are typically used in systems with built-in chargers.

Output Volts	For Amp-hr. Rating	Output, Max. Amps	Ht.	Wd.	Dp.		
6	1 to 3	0.3	2.6″	2.1″	1.6″	7448K62	$35.17
6	2 to 5	0.5	2.6″	2.1″	1.6″	7448K63	36.38
6	5 to 10	1.0	3.2″	2.2″	1.7″	7448K59	43.60
6	10 to 40	4.0	1.7″	5.4″	2.8″	7448K64	118.13
12	1 to 3	0.3	2.6″	2.1″	1.6″	7448K65	35.17
12	2 to 5	0.5	3.2″	2.2″	1.7″	7448K66	36.38
12	4 to 8	0.8	3.2″	2.2″	1.7″	7448K67	38.33
12	8 to 20	1.8	1.7″	5.4″	2.8″	7448K6	108.00
12	20 to 40	4.0	1.7″	5.4″	2.8″	7448K68	118.17
12	40 to 100	10.0	3.3″	8.8″	5.2″	7448K79	286.67

Rechargeable Battery Packs

Individual battery cells are connected via solder tabs and wrapped in PVC shrink wrap. Use these packs for power tools, portable appliances, and telecommunications devices.

Nickel Cadmium (NiCad)—For maximum battery life, completely drain these batteries before recharging.

Nickel Metal Hydride (NiMH)—Recharging these batteries without completely draining them does not affect capacity.

Side-by-Side

4 Wide × 1 Deep

5 Wide × 2 Deep

Stacked End-to-End

2 High × 1 Wide *2 High × 2 Wide*

Pack Configuration	Total No. of Cells	Total Volts	AA Battery Packs mA-hrs.	AA Pack Size Ht.	AA Pack Size Wd.	AA Pack Size Dp.			Cs (Sub-C) Battery Packs mA-hrs.	Cs Pack Size Ht.	Cs Pack Size Wd.	Cs Pack Size Dp.		
Side-by-Side														
Nickel Cadmium (NiCad)														
2 Wide × 1 Deep	2	2.4	750	2.0″	1.1″	0.6″	69485K11	$7.00	1,800	1.7″	1.8″	0.9″	69485K15	$12.66
2 Wide × 2 Deep	4	4.8	750	2.0″	1.1″	1.1″	69485K16	18.60	1,800	1.7″	1.8″	1.8″	69485K24	22.34
3 Wide × 1 Deep	3	3.6	750	2.0″	1.7″	0.6″	69485K12	8.40	1,800	1.7″	2.7″	0.9″	69485K26	16.91
3 Wide × 2 Deep	6	7.2	750	2.0″	1.7″	1.1″	69485K28	19.57	1,800	1.7″	2.7″	1.8″	69485K29	24.87
4 Wide × 1 Deep	4	4.8	750	2.0″	2.2″	0.6″	69485K13	12.13	1,800	1.7″	3.6″	0.9″	69485K35	20.74
5 Wide × 1 Deep	5	6	750	2.0″	2.9″	0.6″	69485K27	18.17	1,800	1.7″	4.6″	0.9″	69485K36	21.30
5 Wide × 2 Deep	10	12	750	2.0″	2.9″	1.1″	69485K18	30.34	1,800	1.7″	4.6″	1.8″	69485K37	51.60
6 Wide × 1 Deep	6	7.2	750	2.0″	3.4″	0.6″	69485K14	29.90	1,800	1.7″	5.5″	0.9″	69485K38	30.32
Nickel Metal Hydride (NiMH)														
2 Wide × 1 Deep	2	2.4	2,000	2.0″	1.1″	0.6″	6964T11	10.30	3,000	1.7″	1.8″	0.9″	6964T71	30.85
2 Wide × 2 Deep	4	4.8	2,000	2.0″	1.1″	1.1″	6964T21	20.55	3,000	1.7″	1.8″	1.8″	6964T72	50.87
3 Wide × 1 Deep	3	3.6	2,000	2.0″	1.7″	0.6″	6964T12	15.32	3,000	1.7″	2.7″	0.9″	6964T73	38.62
3 Wide × 2 Deep	6	7.2	2,000	2.0″	1.7″	1.1″	6964T22	27.13	3,000	1.7″	2.7″	1.8″	6964T74	75.21
4 Wide × 1 Deep	4	4.8	2,000	2.0″	2.2″	0.6″	6964T13	18.79	2,500	1.7″	3.6″	0.9″	6964T43	43.40
5 Wide × 2 Deep	10	12	2,000	2.0″	2.9″	1.1″	6964T23	36.60	3,000	1.7″	4.5″	1.8″	6964T76	132.13
6 Wide × 1 Deep	6	7.2	2,000	2.0″	3.4″	0.6″	6964T15	27.02	3,000	1.7″	5.5″	0.9″	6964T77	74.68
Stacked End-to-End														
Nickel Cadmium (NiCad)														
1 High × 1 Wide	1	1.2	700	2.0″	0.6″	0.6″	69485K31	5.66	1,800	1.7″	0.9″	0.9″	69485K39	6.28
2 High × 1 Wide	2	2.4	750	3.9″	0.6″	0.6″	69485K19	7.87	1,800	3.4″	0.9″	0.9″	69485K45	11.34
2 High × 2 Wide	4	4.8	750	3.9″	1.1″	0.6″	69485K22	12.45	1,800	3.4″	1.8″	0.9″	69485K54	22.34
3 High × 1 Wide	3	3.6	750	5.9″	0.6″	0.6″	69485K33	11.60	1,800	5.1″	0.9″	0.9″	69485K51	13.40
Nickel Metal Hydride (NiMH)														
2 High × 1 Wide	2	2.4	2,000	3.9″	0.6″	0.6″	6964T31	12.43	3,000	3.4″	0.9″	0.9″	6964T78	26.60
2 High × 2 Wide	4	4.8	2,000	3.9″	1.1″	0.6″	6964T32	16.91	3,000	3.4″	1.8″	0.9″	6964T79	67.02
3 High × 2 Wide	6	7.2	2,000	5.9″	1.1″	0.6″	6964T33	25.09	3,000	5.1″	1.8″	0.9″	6964T81	68.79

Portable Generators

Get power where you need it. These generators have an overhead-valve engine, which is cool running and fuel efficient. They also have a "low oil shutdown" feature to protect the engine. *Rated watts* is the maximum continuous watt output. *Surge watts* is the amount of watts the generator can produce for a short time.

Electric-start generators require a battery (sold separately).

Wheel kits include handles, flat-free wheels, and mounting hardware.

NEMA Receptacles

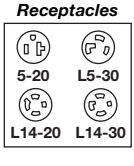

Pull Start

Electric Start

Watts, Rated/Surge	hp	AC Output, volts	Amps	Fuel Tank Cap.	Run Time at 50% Load	AC Receptacles (Qty.)	O'all Size Ht.	O'all Size Wd.	O'all Size Dp.	Wt., lbs.		
Gasoline-Fueled Generators with Pull-Start Honda Engine												
2,400/3,000	5.5	120	20	1 gal.	3 hrs.	5-20 (2)♠	20½″	23½″	17½″	78	7195K11	$954.55
4,500/5,500	9	120/240	37.5/18.8	5 gal.	10.8 hrs.	5-20 (2); L14-20 (1)	25″	28″	22″	132	7195K12	1,396.97
Gasoline-Fueled Generator with Electric-Start Honda Engine												
6,500/7,000	13	120/240	54.2/27.1	8 gal.	13.4 hrs.	5-20 (2); L5-30 (1); L14-30 (1)	25″	30″	24″	213	7195K13	2,193.45
Diesel-Fueled Generator with Electric-Start Lombardini Engine												
5,500/6,000	10	120/240	45.8/22.9	5 gal.	14 hrs.	5-20 (2)♦; L5-30 (1); L14-20 (1)	25″	28″	22″	187	9931K21	3,379.49
Accessories												
Battery for 7195K13											7238K57	79.07
Battery for 9931K21											7238K67	121.03
Wheel Kit for 7195K12 and 7195K13											7195K31	104.62
Wheel Kit for 9931K21											9931K2	240.00

♠ Has one GFCI receptacle. ♦ Both are GFCI receptacles.

Solar Panels

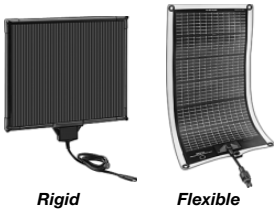

Rigid *Flexible*

Catch some rays for power without an AC or DC outlet. These panels prevent battery discharge during periods of no sunlight. Wire in parallel to increase amp output. Use with wet and AGM dry cell lead-acid batteries.

Rigid panels have everything you need for battery charging, including a built-in controller that prevents overcharging, a 6-ft. output cable with two-pin SAE connector, and 5-ft. leads with alligator clips. Mounting fasteners included.

Flexible panels power 12-volt devices in addition to trickle charging batteries. They're made of vinyl that conforms to curved shapes and rolls for storage. Wire in series to increase voltage output. They have a pin-and-socket connection and 15-ft. leads with 3/8″ and 5/16″ ring terminal connections. Mount using 5/16″ dia. holes; fasteners not included.

Accessories— *12½-ft. extension cord* has a two-pin SAE connector at each end. *18″ adapter cord* has a two-pin SAE connector on one end to attach to the panel and 5/16″ ring terminals on the other to attach to battery posts. *Cigarette lighter adapter cords* allow you to charge a vehicle's battery through the lighter.

Output Watts	Volts	Amps	Lg.	Wd.	Thick.		
Rigid Panels							
5.0	12.0	0.28	16″	16″	3/4″	69205K11	$94.59
10.0	12.0	0.55	29″	16″	3/4″	69205K12	142.97
15.0	12.0	0.83	41″	16″	3/4″	69205K13	182.43
Accessories for Rigid Panels							
12½-ft. Extension Cord						69205K16	9.31
18″ Adapter Cord						69205K14	6.33
18″ Cigarette Lighter Adapter Cord						69205K15	6.33

Output Watts	Volts	Amps	Lg.	Wd.	Thick.		
Flexible Panels							
5.0	15.4	0.30	21″	11½″	3/64″	4859T11	$208.78
10.0	15.4	0.60	38″	11½″	3/64″	4859T12	283.18
20.0	15.4	1.20	73″	12″	3/64″	4859T13	419.98
Accessory for Flexible Panels							
5-ft. Cigarette Lighter Adapter Cord						4859T14	9.80

Battery-Powered Starters

12 Volt *12/24 Volt*

Jump-start batteries at sites without an AC power source. These portable starters have LED charge status indicators and an outlet to power/charge DC power tools and work lights. Use with wet and AGM dry cell lead-acid batteries. Recharge starters using the 12-ft. DC adapter cord with cigarette lighter plug or by plugging them into a 120 VAC, 60 Hz outlet.

12-volt starter is powered by a 12-volt battery (included) and has a 4-ft. power cord with a two-prong plug.

12/24-volt starter runs on two 12-volt, 22 amp-hour batteries (included). Turn the knob to switch between 12 and 24 volts. It does not include a power cord; use an extension cord with two-prong plug.

Starter Voltage	Amps	Ht.	Wd.	Dp.	Booster Cable Lg.		
12	360	10½″	13″	3½″	2½ ft.	7117K21	$152.51
12/24	720/360	15½″	14″	7″	5½ ft.	7117K23	366.93

Automatic Battery Chargers

Plug into an AC outlet and these chargers automatically charge and maintain vehicle and stationary batteries. All have LED charge status indicators and reverse-polarity protection. Operate on 120 VAC, 60 Hz.

(A) Standard charger and ***waterproof chargers*** have a 6-ft. power cord with three-prong plug, 4-ft. output cable with two-pin SAE connector, and 18″ leads with 5/16″ ring terminal connections. Use with wet and AGM dry cell lead-acid batteries. Standard charger also has 18″ leads with clamps. Waterproof chargers have a sealed housing with 3/16″ dia. mounting holes (fasteners not included) and are UL listed.

(B) Harsh-environment chargers have a sealed housing that resists water and dirt, a 2-ft. power cord with three-prong plug, and 6-ft. leads with 3/8″ ring terminal connections. Mount using 3/8″ dia. holes (fasteners not included). Use with wet cell lead-acid batteries.

For Battery Voltage	Charging Amps	Ht.	Wd.	Dp.		
(A) Standard Charger						
12	1.25	2 7/8″	4 7/8″	3¼″	76025K14	$60.00
(A) Waterproof Chargers						
12	5	5″	5¼″	2″	76025K12	110.45
24	2.5	5″	5¼″	2″	76025K13	110.45
(B) Harsh-Environment Chargers						
12	25	6½″	6″	9″	5672T11	277.76
24	25	6½″	6″	9″	5672T12	339.97

Hand-Held Battery Chargers and Charger/Starters

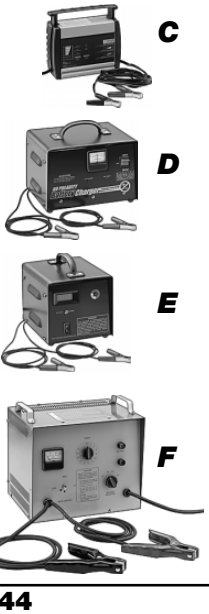

Take these lightweight chargers with you. All operate on 120 VAC, 60 Hz and have a power cord with a three-prong plug. They're for use with wet cell lead-acid batteries except 7206K51, 7558K68, and 7558K69 are for wet cell lead-acid starting batteries only. 1458K1-K4 are also for use with AGM dry cell lead-acid batteries. Styles C-E have LED charge status indicators except 1458K5. Style C is UL listed.

Automatic chargers adjust to the required amp rate and shut off to prevent overcharging. They have reverse-polarity protection except for 1458K5. ***Chargers with dual-polarity connections*** automatically select the correct polarity so you can connect the clamps to your battery without worrying which is negative or positive.

Waterproof automatic chargers have a sealed housing that's waterproof and shockproof. They have auto shut off as well as reverse-polarity, electronic-overload, and thermal protection.

Manual charger has a 24-hour charging timer and can charge multiple voltages.

	For Battery Voltage	Charging Amps	Starter Amps	Ht.	Wd.	Dp.	Booster Cable Lg.	Power Cord Lg.		
Automatic Chargers										
C	6/12	2/4/6	—	5½″	7½″	3″	6 ft.	6 ft.	7206K51	$41.83
C	12	10	—	10″	9″	9″	6 ft.	6 ft.	1458K1	279.91
C	12	20	—	14″	12″	12″	6 ft.	6 ft.	1458K2	378.57
D	6/12	2-10	—	20″	10½″	11″	6 ft.	6 ft.	1458K5★	91.28
E	24	10	—	6½″	7″	8″	8 ft.	7 ft.	1458K3	230.06
E	24	25	—	8½″	10″	9½″	8 ft.	7 ft.	1458K4	368.75
Automatic Charger/Starter										
D	6/12	2/15	100	4 7/8″	9¾″	6¼″	6 ft.	6 ft.	7206K42★	187.61
Automatic Chargers with Dual-Polarity Connections										
D	12/24	0-10	—	7″	10″	8½″	6 ft.	8 ft.	7558K68	307.41
D	12/24	0-25	—	7″	9″	12″	6 ft.	8 ft.	7558K69	418.45
Waterproof Automatic Chargers										
C	12	6	—	3½″	5″	2 3/8″	4 ft.	6 ft.	6061T11	96.96
C	12	10	—	7½″	5″	2 3/8″	4 ft.	6 ft.	6061T12	175.29
Manual Charger										
F	12/24/32/36	25	—	10″	10″	12″	6 ft.	6 ft.	7327K11	850.61

★The 6-volt charge is manual.

Wheeled Battery Charger/Starters

Roll these versatile units right to your battery for charging or starting. They have plastic wheels, a three-prong plug, and operate on 120 VAC, 60 Hz except 7322K52, which has a continental European two-prong plug and operates on 230 VAC, 50/60 Hz.

Indoor Chargers— All have a 2¼ hour timer, a hold position for continuous charging, and overload protection. Use with wet and AGM dry cell lead-acid batteries. UL listed for indoor use only. 7173K21 has a voltmeter. *Charger with load tester* simulates real-world operating conditions. It applies 50 amps to a 6-volt battery and 100 amps to a 12-volt battery.

Indoor/Outdoor Chargers— All have a 1½ hour timer, ammeter, a hold position for continuous charging, and reverse-polarity protection. Use with wet cell lead-acid batteries. 7322K48 is CSA certified, K51 is UL listed, and K52 is CE approved.

Indoor/Outdoor Automatic Charger— Set and connect this unit to automatically charge and maintain your battery. It also operates as a stable power supply for extended servicing of forklifts and other 12-volt industrial equipment. Charger has an ammeter, reverse-polarity protection, and auto shut off. Use with wet and AGM dry cell lead-acid batteries. UL listed.

Continental European Plug (7322K52)

For Battery Voltage	Charging Amps	Starter Amps	O'all Ht.	Wd.	Dp.	Booster Cable Lg.	Power Cord Lg.		
Indoor Chargers									
6/12	2/10/40	200	29″	11¾″	9⅞″	6 ft.	6 ft.	**7173K21**	$171.15
6/12/18/24	30/44/60/80	200	29″	11¾″	9⅞″	6 ft.	6 ft.	**7173K22**	329.94
Indoor Charger with Load Tester									
6/12	30/60	300	29″	11¾″	9⅞″	6 ft.	6 ft.	**7173K25**	288.13
Indoor/Outdoor Chargers									
6/12/24	30/65/70	280	27″	14″	13″	7 ft.	6 ft.	**7322K48**	565.21
6/12/18/24	40/50/80/100	400	34″	11½″	12″	8 ft.	10 ft.	**7322K51**	892.02
Indoor/Outdoor Charger with Continental European Plug									
6/12/24	55/75/90	325/270/180	34″	14″	12″	10 ft.	8 ft.	**7322K52**	884.00
Indoor/Outdoor Automatic Charger									
12	40	130	33″	16″	13″	6 ft.	6 ft.	**1269K1**	594.42

Stationary Industrial Battery Chargers

Designed to charge batteries in lift trucks, pallet jacks, sweepers, and scrubbers, these chargers start immediately after connection and automatically shut off when battery is fully charged. They have lights to indicate charge status, an ammeter, 8-ft. output cable with a 175-amp North American style connector, and 7-ft. power cord with three-prong plug. Operate on 120 VAC, 60 Hz. Use with wet cell lead-acid batteries.

For Battery Voltage	Charging Amps	Ht.	Wd.	Dp.		
12	60	18⅞″	12¼″	13½″	**7559K81**	$875.61
24	40	18⅞″	12¼″	13½″	**7559K82**	775.00
36	30	18⅞″	12¼″	13½″	**7559K84**	855.12

Battery-Testing Hydrometers and Refractometers

Check the condition of battery fluid by testing its state of charge. Use the scale to measure specific gravity.

Hydrometers

Standard

Temperature Compensating

Break Resistant

Standard— Has a plastic barrel with easy-to-read scale.

Temperature Compensating— Built-in thermometer compensates for temperature variations to provide a more accurate reading. Barrel is glass with a glass float.

Break Resistant— Withstands drops from as high as 4 ft. Barrel is plastic with a heavy duty glass float.

	Specific Gravity Range		
Standard	1.10 to 1.30	**4058K81**	$6.71
Temperature Compensating	1.10 to 1.30	**4058K11**	10.66
Break Resistant	1.10 to 1.35	**4058K21**	52.96

Refractometers

Place a few drops of fluid on the tester and view the results through the eyepiece. It also tests freezing point temperatures of propylene and ethylene glycols for anti-freeze protection. Includes a carrying case and dropper.

Antifreeze Scale Range	Specific Gravity Range		
–50° to 0° C	1.15 to 1.30	**7718K1**	$114.08
–60° to +32° F	1.15 to 1.30	**7718K2**	97.90

Multiple-Battery Charger

Automatically charge up to eight 12-volt, 2- to 12-amp batteries independently, then monitor each to ensure it stays fully charged. Eight digital displays indicate the charge status of each battery. Charger is 12″ Ht.×19″ Wd.×12″ Dp. and has eight detachable 6-ft. cords with booster clamps and one 6-ft. power cord with three-prong plug. Operates on 120 VAC, 60 Hz. Use with wet and AGM dry cell lead-acid batteries.

7318K31 ..... $577.02

Includes Eight Cords

Battery Water Filling Equipment

Filler with 6″ Flexible Spout

Filler with Auto Shut Off

Vent Cap

Filler Gun

Battery-Operated Watering Cart

Fillers are made of polyethylene.

Filler gun has a ⅝″ Dia.×9¼″ bent-end nozzle, auto shut off, and built-in regulator that reduces high water pressure to 1.7 gpm. Attach to any ¾″ GHT (garden hose thread) connection and garden hose with a minimum ⅜″ ID, or use with the watering cart (sold separately). Made of ABS plastic.

Also Available: Replacement parts for filler guns. Please ask for 7661K88 and specify the part needed.

Battery-operated watering cart has a 10-gallon polypropylene tank with easy-to-fill opening, a pump with shut-off switch, and a 9-ft. long hose for attaching a filler gun (sold separately). It's 37″ Ht.×17″ Wd.×17″ Dp. and has two wheels. Cart includes a 12-volt rechargeable sealed lead-acid battery and a charger with 6-ft. power cord and two-prong plug. Operates on 120 VAC, 60 Hz.

Vent cap flips open so you can check or fill your battery. It fits all standard bayonet-style (¼ turn) battery vent openings. Cap has a 1″ ID and is made of polypropylene with an EPDM rubber washer for a tight seal.

		Each
6-oz. Filler with 6″ Flexible Spout	**7656K3**	$3.54
72-oz. Filler with Auto Shut Off	**7663K1**	19.85
Replacement Shut-Off Nozzle for 7663K1	**7663K2**	12.62
Filler Gun	**7661K9**	86.81
Battery-Operated Watering Cart	**7667K65**	686.44
		Pkg.
Vent Cap (6/Pkg.)	**7045K8**	$11.76

Battery Surge Protector and Charge Monitor

Take the worry out of jumping and recharging your 12-volt battery—this monitor protects it from damaging surges. It has charge status indicator lights and mounts easily to the top of your battery with the attached adhesive backing. Monitor is 1¾″ Ht.×2¼″ Wd.×1″ Dp. and includes two 20″ wire leads with ⅜″ dia. ring terminal connections.

4261T11 ..... $25.68

Battery Discharge Indicators

Install this gauge on your lift trucks and other electric vehicles to show the condition of the battery. The display flashes at 70% discharge and indicates empty at 80% discharge (accuracy is ±1%).

Indicators have a 6-digit hour meter that monitors use throughout the life of equipment. They're 2″ Dia.×2.2″ Dp., fit a 2 1/16″ dia. panel cutout, and include ready-to-mount quick-disconnect terminals with a tab size of 0.250″ Wd.×0.032″ Thick.

For Battery Voltage		
12	**71165K71**	$111.43
24/36	**71165K72**	111.43
36/48	**71165K73**	111.43

Battery Selector Switch

Alternate between two batteries without interrupting your power. Switch has a polycarbonate housing and three ⅜″ dia. tin-plated copper stud terminals with hex nuts. Surface mount using the ¼″ dia. mounting holes or panel mount in a 3⅝″ dia. cutout.

Switch is rated 32 VDC and has a maximum 350-amp continuous rating when used with 4/0 AWG battery cables. It's 3.9″ Ht.×3.9″ Wd.×3.1″ Dp. and for use in marine applications. UL listed.

69685K61 ..... $44.43

Battery Trays and Hold-Downs

Tray

Hold-Down for Raised Cover

Hold-Down for Flush Cover

Trays are made of vinyl-coated steel and have drain slots to prevent fluid accumulation.

Fits Battery BCI Group	Wd.	Dp.		
1, 2, 17, 22, 23, 24, 42, 54, 55, 56, 72, 74	11″	7½″	**7731K4**	$9.27
4, 27, 29, 31, 53, 60, 77	13″	7½″	**7731K5**	9.75

Hold-downs are made of corrosion-resistant, nonconductive, fiberglass-reinforced polypropylene. Designed to secure the battery to the tray (sold separately), they're adjustable and include zinc-plated steel L-bolts and fasteners.

For Battery Cover	For Battery Wd. and Dp.	*For 8″ Max. Battery Ht.*		*For 10″ Max. Battery Ht.*	
Raised	4″ to 6⅛″	**7764K11**	$9.48	**7764K12**	$9.48
Raised	5½″ to 9″	**7764K8**	9.48	**7764K9**	9.48
Flush	8⅝″ to 14¾″	**7764K3**	9.48	**7764K6**	9.48

Battery Load Testers

Standard Duty

Heavy Duty

In addition to wet and AGM dry cell lead-acid batteries, you can use these testers with alternators and starters.

Standard Duty—7579K41 applies two fixed loads and is for small engine and conventional batteries. It has small clamps for hard-to-reach areas. 7579K23 and *K25* apply a fixed load and have side terminal adapters. 7579K25 includes a 4-ft. lead to test for defective alternator diodes.

Heavy Duty—7451K11 applies a fixed load. 7240K2 and *K1* apply adjustable loads.

For Battery Voltage	Load Cap., amps	Ht.	Wd.	Dp.	Booster Cable Lg.		
Standard Duty							
6/12	60/125	9½″	3½″	3½″	2 ft.	**7579K41**	$160.45
6/12	125	9½″	3½″	3½″	2 ft.	**7579K23**	120.71
Standard Duty with Alternator Test Lead							
6/12	125	9½″	3½″	3½″	2 ft.	**7579K25**	163.68
Heavy Duty							
12	300	8″	4″	10″	3½ ft.	**7451K11**	397.57
6/12	0-500	12″	6″	12″	4 ft.	**7240K2**	650.15
6/12	0-800	10″	10″	12″	6 ft.	**7240K1**	965.69

Battery Voltage and Conductance Tester

Measure the voltage of your batteries as well as the current they can supply. Use on 6- and 12-volt sealed lead-acid batteries with 1.2 to 55 amp-hour capacity. Tester measures voltage from 6 to 14 DC and conductance from 20 to 1,200 siemens. It's 7½″ Ht.×3½″ Wd.×2″ Dp. and has an LED display and 12″ insulated leads with clips.

4863T11 ..... $325.28

Battery Lifters/Carriers

Lifting Strap

Spring-Action Carrier

Side-Lift Carrier

Lifting strap is polyethylene and for use with top-post terminals.

Carriers are for use with top- and side-terminal batteries. *Spring-action carrier* has steel jaws that grip the battery; handle provides a nonslip grip. *Side-lift carrier* is steel and has an adjustable handle and two rubber pads.

	For Battery Size		
Lifting Strap	Any with Posts Spaced Less Than 18″ Apart	**7531K21**	$7.12
Spring-Action Carrier	Up to 10″ Wd.	**69985K78**	17.79
Side-Lift Carrier	4½″ to 7″ Wd.	**69985K79**	20.42

Battery Boxes

Polypropylene

Protect batteries from dirt, debris, and water.

Polypropylene boxes include a tie-down, screws, and bracket.

Polyethylene boxes do not include mounting hardware.

Aluminum box includes a stainless steel hold-down, nuts, and bolts.

Fits Battery BCI Group	*Inside* Ht.	*Inside* Wd.	*Inside* Dp.	*Outside* Ht.	*Outside* Wd.	*Outside* Dp.		
Polypropylene								
U1	7½″	8″	5¼″	8″	10½″	7½″	**69995K81**	$13.44
24	10⅛″	11⅛″	7¾″	10⅝″	14″	9⅝″	**69995K85**	14.26
24-31	9¾″	14½″	7⅞″	10⅞″	17⅝″	9⅝″	**69995K82**	20.87
27	10½″	13⅞″	7¼″	10⅞″	16⅞″	9⅝″	**69995K86**	17.12
6V	11¾″	11″	7⅞″	12½″	14⅛″	10″	**69995K84**	15.15
Polyethylene								
Dual 6V	12″	14¾″	10¾″	14″	18¼″	14¼″	**69995K71**	130.64
4D	11″	21″	9½″	13⅜″	24⅜″	12⅞″	**69995K83**	125.56
8D	10½″	21″	11½″	13″	24½″	15″	**69995K87**	88.77
Aluminum								
24	10⅜″	11¾″	8⅜″	10⅝″	12⅜″	9″	**69995K72**	225.14

Battery Disconnect Switches

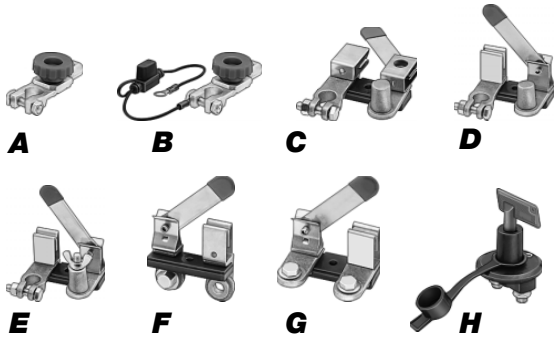

Stop battery drain and prevent theft and unauthorized use. Switches are made of copper and brass except Styles A and B, which are brass only. For *Styles C-G,* flip the lever to stop the current (lever extends 3″). *Style H* has a key.

(A&B) Install on a negative battery post. Turn the knob to disconnect the battery. *Style B* has a fused bypass to maintain trickle current to accessories such as radios and computers.

(C-E) Install on a negative battery post. *Style E* has a threaded post and a wing nut that also accommodates lugs.

(F) Attaches directly to negative side terminals.

(G) Ideal in space-restricted areas or where a battery box prevents normal mounting to battery posts. Mount switch in a remote location, run a new battery cable to switch, and connect battery cable to post on switch. Mounting hole is ¼″ dia.

(H) A removable key prevents unauthorized use; turn 90° to connect or disconnect the battery. Switch has two keys, a waterproof cover, and 3/16″ dia. mounting holes.

Continuous Amp Rating @ 12 Volts	Lg.	Wd.	Ht.		
Top Mount					
A...125	3½″	1½″	1½″	**7110K11**	$8.00
B...125	3½″	1½″	1½″	**7110K41**	13.89
C...250	3¾″	3½″	1½″	**7110K22**	32.71
D...250	4″	3″	2″	**7110K21**	33.34
E...250	4″	3″	2¼″	**7110K23**	35.61
Side Mount					
F...250	3¾″	3¼″	1½″	**7110K39**	33.34
Remote Mount					
G...250	4″	3″	2″	**7110K24**	33.34
H...100	2¼″ Dia. × 2½″ Ht.			**7110K42**	22.48

Battery Cables with Fittings

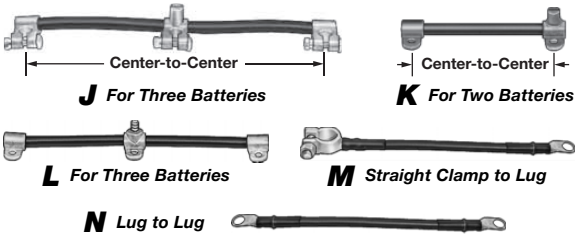

J *For Three Batteries* ***K*** *For Two Batteries*

L *For Three Batteries* ***M*** *Straight Clamp to Lug*

N *Lug to Lug*

Get maximum conductivity from these copper cables that are insulated with oil-resistant PVC. Temperature range is –40° to +221° F. **To Order:** Please specify black (negative) or red (positive).

Styles J-L allow you to wire two or three batteries in parallel for maximum starting power. Connect the positive terminals together and the negative terminals together to get the combined amp-hours of the batteries (voltage remains the same). All have lead connectors. *Style J* has flag clamps with post connection. *Style K* has lugs with post connection. *Style L* has lugs with 3/8″ dia. stud.

Styles M and ***N*** allow you to connect batteries either to electrical systems or to each other. Clamps and lugs are tin-plated copper; lugs have a 3/8″ dia stud.

For battery cable without fittings, see 6948K on page 799.

Ctr.-to-Ctr.	Style J 2/0 AWG		Style K 2/0 AWG		Style L 2/0 AWG	
For Two Batteries						
6 13/16″	**7749K1**	$14.62	**7749K4**	$12.48	**7749K7**	$13.23
7 3/8″	**7749K2**	14.62	**7749K5**	12.71	**7749K8**	13.46
14″	**7749K3**	17.54	**7749K6**	14.96	**7749K9**	21.04
For Three Batteries						
13 5/8″	**7749K11**	25.79	**7749K13**	24.00	**7749K15**	24.27
14 3/4″	**7749K12**	25.79	**7749K14**	24.33	**7749K16**	24.27
	Style M 4 AWG		**Style M 1 AWG**		**Style M 2/0 AWG**	
For Two Batteries						
10″	**69735K51**	14.28	**69735K41**	15.85	**69735K71**	16.96
20″	**69735K52**	16.37	**69735K42**	19.63	**69735K73**	21.37
30″	**69735K53**	18.80	**69735K43**	23.61	**69735K75**	27.07
60″	**69735K54**	25.87	**69735K44**	29.00	**69735K77**	45.63
	Style N 4 AWG		**Style N 1 AWG**		**Style N 2/0 AWG**	
For Two Batteries						
10″	**69735K21**	10.46	**69735K26**	12.43	**69735K31**	14.28
20″	**69735K22**	12.83	**69735K27**	16.39	**69735K32**	18.89
30″	**69735K23**	15.22	**69735K28**	20.43	**69735K33**	24.89
60″	**69735K24**	22.30	**69735K29**	32.24	**69735K34**	43.54

Battery Charging Cable Connectors

High-amp battery charging is no problem for these connectors.

North American Style Connectors

No need to distinguish between male and female—any two connectors of the same size will fit together. You'll need two to make a connection. Designed for use with industrial battery cable and battery charger cable, connectors are polycarbonate with two copper contacts. The amps listed below are based on the largest wire size shown. UL recognized.

To Order: For battery connectors, please specify wire size and color. For replacement contacts, please specify AWG size.

Connector with Optional Handle

Amps	Available Wire Sizes (AWG)	Available Colors	O'all Size Lg.	Wd.	Ht.	Connectors	Each	Repl. Contacts	Pair
50	12-10, 6	Black, Blue, Gray, Red	1.9″	1.4″	0.6″	**7043K21**	$7.69	**7043K41**	$3.67
120	6, 4, 2	Gray	2.5″	1.9″	0.8″	**7043K22**	12.02	**7043K42**	7.13
175	6, 4, 2, 1/0	Blue, Gray, Orange, Red, Yellow	3.1″	2.2″	1.0″	**7043K23**	14.56	**7043K46**	10.10
350	1/0, 2/0, 3/0, 4/0	Blue, Gray, Green, Orange, Red, Yellow	4.3″	2.8″	1.3″	**7043K24**	23.65	**7043K52**	16.33

Optional handles include mounting screws.

Fits Connector Size (amps)	Handle Material		Each
50	Vinyl-Coated Steel	**7043K87**	$5.27
50 and 120	Polycarbonate	**7043K86**	4.59
175 and 350	Vinyl-Coated Steel	**7043K88**	13.73

Optional dust covers protect the connector end when not in use.

Fits Connector Size (amps)	Dust Cover Material		Each
50	Rubber	**7043K15**	$3.91
120	Rubber	**7043K14**	6.25
175	Nylon	**7043K16**	6.88
350	Nylon	**7043K17**	9.38

Euro Style Connectors

Designed for use with European industrial vehicles, these connectors are CE approved and meet DIN 43589. You'll need a female and a male to make a complete connection. All connectors are made of black nylon and have two copper contacts. ***320-amp connectors*** come with a handle.

Optional handles are black nylon and include mounting screws.

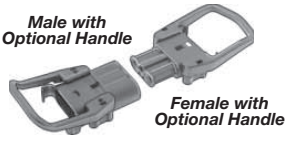

Male with Optional Handle

Female with Optional Handle

Amps	Wire Size (AWG)	Mated Size Lg.	Wd.	Ht.	Female		Male		Optional Handle	
80	4	5.8″	2.7″	1.0″	**5731T11**	$37.56	**5731T21**	$24.31	**5731T52**	$5.55
160	1/0	8.2″	3.3″	1.3″	**5731T12**	39.74	**5731T22**	34.38	**5731T53**	5.56
320	1/0	7.6″	3.5″	1.6″	**5731T13**	48.16	**5731T23**	43.09	____	____

Battery Jumper Cables and Clamps

Cables are stranded copper, insulated, and have ABS plastic clamps. Temperature range is –40° to +158° F. Clamps only are PVC coated. All clamps are color-coded black (negative) and red (positive).

Jumper Cables with Clamps

Wire Size (AWG)	Max. Cranking Amps		Pair
12-ft. Length			
6	350	7234K13★	$46.89
4	400	7234K14	72.67
2	620	7234K52	121.76
16-ft. Length			
6	300	7234K51★	49.74
4	380	7234K15	90.11
2	600	7234K53	147.78

★Clamps are PVC coated.

Wire Size (AWG)	Max. Cranking Amps		Pair
20-ft. Length			
4	350	7234K16	$108.71
2	550	7234K39	181.75
1	700	7234K37★	169.91
25-ft. Length			
4	300	7234K17	139.78
2	500	7234K36	223.55

Clamps Only

Max. Amps		Pair
200	7178K14	$7.86
500	7178K12	11.65
800	7178K9	43.81

Battery Terminal Connectors

A color-coded barrel identifies clamps and lugs by AWG size.

Clamps secure to unthreaded battery terminals by tightening the included nut and bolt except for side-post clamps, which attach to internally threaded battery terminals. **To Order:** Please specify negative or positive, except for clamps with universal polarity.

Lugs are typically used on threaded terminals and require a nut (not included) to secure to the terminal.

Crimp or Solder Style—Made of tin-plated copper.

Connect to cable with a crimping tool or by soldering.
Note: UL listed products are only UL listed if crimped.
Antirotational lugs have serrations on both sides to lock them in place.

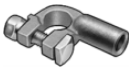

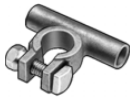

For Wire Size (AWG)	Left Elbow Clamps		Right Elbow Clamps		Flag Clamps	
2					7106K43	$8.31
1/0	7106K37	$9.60	7106K32	$9.60	7106K45	10.80
2/0	7106K38	9.73	7106K33	9.73	7106K46	12.80
3/0	7106K39	9.76	7106K34	9.76	7106K47	12.97
4/0	7106K41	11.40	7106K35	11.40	7106K48	16.57

For Wire Size (AWG)	Straight Clamps		UL Listed Straight Clamps		UL Listed Antirotational 3/8" Lugs	
8			7106K11	$5.09		
6	7106K12●	$6.27	7106K82	5.72	7106K92	$5.10
4	7106K19	6.33	7106K83	6.90	7106K93	5.12
2	7106K14	6.37	7106K84	6.80	7106K94	5.55
1	7106K14	6.37	7106K85	6.80	7106K95	5.22
1/0	7106K26	7.87	7106K86	6.80	7106K96	5.30
2/0	7106K23	7.72	7106K27	6.80	7106K97	5.35
3/0	7106K28	7.66	7106K88	7.15	7106K98	5.60
4/0	7106K29	8.43	7106K89	8.95	7106K99	6.40

●Has universal polarity.

For Wire Size (AWG)	Standard 3/8" Lugs■		Heavy Duty 3/8" Lugs		Heavy Duty 1/2" Lugs	
8			7106K51	$1.53		
6	7106K62	$0.71	7106K52	1.77		
4	7106K16	.81	7106K53	2.23	7106K73	$2.23
2	7106K63	1.09	7106K21	4.47	7106K22	4.47
1	7106K17	1.15	7106K68	4.47	7106K72	4.47
1/0	7106K64	1.35	7106K56	5.47	7106K76	5.47
2/0	7106K18	1.63	7106K57	5.60	7106K77	5.60
3/0	7106K65	2.07	7106K58	6.87	7106K78	6.87
4/0	7106K66	2.57	7106K59	8.40	7106K79	8.40

■Not color coded.

Quick Solder Style—Made of tin-plated copper.

Applying heat to the flux and solder mixture creates a metallic bond nearly twice as strong as crimping or compression connections.

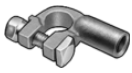

For Wire Size (AWG)	Left Elbow Clamps		Right Elbow Clamps		Heavy Duty Straight Clamps	
6 and 4					7908K41	$6.26
2 and 1	7908K1	$7.39	7908K21	$7.39	7908K42	6.37
1/0	7908K2	7.50	7908K22	7.50	7908K43	6.67
2/0	7908K3	7.72	7908K23	7.72	7908K44	6.98
3/0	7908K4	8.22	7908K24	8.22	7908K45	7.09
4/0	7908K5	9.26	7908K25	9.26	7908K46	8.43

Heavy Duty 3/8" Lugs

For Wire Size (AWG)		
6 and 4	7908K51	$4.35
2 and 1	7908K52	4.61
1/0	7908K53	4.83
2/0	7908K54	5.13
3/0	7908K55	5.28
4/0	7908K56	5.67

Screw-On Style—Made of tin-plated copper.

Insert your stripped cable into the compression nut provided and tighten with ordinary hand tools; no crimping or heat required.
Straight clamps have universal (negative and positive) polarity.

For Wire Size (AWG)	Left Elbow Clamps		Right Elbow Clamps		Straight Clamps	
6					7980K11	$9.22
4	7980K61	$12.05	7980K71	$12.05	7980K12	9.22
2 and 1	7980K62	12.05	7980K72	12.05	7980K13	10.03
1/0	7980K63	12.05	7980K73	12.05	7980K14	9.90
2/0	7980K64	13.47	7980K74	13.47	7980K15	10.66
3/0	7980K65	16.43	7980K75	16.43	7980K16	13.20

Heavy Duty 3/8" Lugs

For Wire Size (AWG)		
6	7980K31	$7.33
4	7980K32	7.33
2 and 1	7980K33	7.93
1/0	7980K34	8.50
2/0	7980K35	9.70
3/0	7980K36	12.18

Multi-Wire-Size Crimpless Style—Made of lead.

Clamp onto a wide range of wire sizes without crimping or soldering. All have universal (negative and positive) polarity. Not color coded.

Tie-bolt clamps tighten around cable for complete wire contact.

For Wire Size (AWG)	Top-Post Clamps		Side-Post Clamp		Top-Post Tie-Bolt Clamp		Side-Post Tie-Bolt Clamp	
6 to 2/0			69645K71	$2.20				
6 to 1	69645K56	$1.88			7118K2	$5.59	7118K3	$6.33
1/0 to 4/0	69645K57	3.49						

Battery Terminal Fasteners and Adapters

Square Head Bolts with Shoulder Nuts

Use with battery terminal clamps. Bolt size is 5/16″-18×1 1/4″. Made of steel with a corrosion-resistant coating. Package quantity is 10.

Black (Negative) ..... 7752K211 **Pkg.** $12.00
Red (Positive) ..... 7752K212 **Pkg.** $12.00

Side Terminal Bolt

Bolt size is 3/8″-16×13/32″. Made of zinc-plated steel. Package quantity is 10.

7752K23 ..... **Pkg.** $11.50

Closed Cap Nuts

Thread size is 3/8″-16. Made of powder-coated stainless steel.

Black (Negative) ..... 7752K241 **Each** $3.05
Red (Positive) ..... 7752K242 **Each** $3.05

Side Terminal Adapter Bolt with Stud

Dual connections let you power two accessories with the same battery. Bolt size is 3/8″-16×1″; stud size is 5/16″-18×1/2″. Made of brass with a zinc-plated steel nut and washer.

7752K31 ..... **Each** $9.70

Stud Terminal to Post Terminal Converters

Made of die cast lead with a 3/8″-16 threaded steel insert. Includes two adapters—one for a negative terminal and one for a positive terminal.

7752K41 ..... **Pair** $5.83

Side Terminal to Post Terminal Converters

Made of die cast lead with a steel stud. Includes two adapters—one for a negative terminal and one for a positive terminal.

7752K42 ..... **Pair** $6.58

Mil. Spec. Terminal Fasteners

Clamp is die cast lead and includes zinc-plated steel nuts and bolts. Meet MIL-A-52425-1/A-52425-2.

Black (Negative) ..... 7738K2 **Each** $4.87
Red (Positive) ..... 7738K1 **Each** $4.87

Marine Terminal Clamps

Made of lead, these clamps fit both negative and positive terminals.

With 5/16″ Stud ..... 69645K59 **Each** $3.16
With 3/8″ Stud ..... 69645K58 **Each** $2.60

Terminal- and Lug-Crimping Tools

Hammer Style

Compact and economical, this tool crimps 8 to 4/0 AWG battery terminal clamps and lugs. Raise the pin to place connector and cable in slot, then hammer the top of the pin to crimp. Tool is 3 1/2″ Ht.×2 1/4″ Wd.×2 1/4″ Dp. and has a malleable iron body and hardened steel pin.

7061K12 ..... $32.58

Lever Style

Adjustable rotating dies provide more consistent crimps than hammer style. Dies are color-coded to match battery cable and connector. Made of heat-treated carbon steel with vinyl grips.

With Ratchet—Tool won't open until fully crimped.

O'all Lg.	Connector Range	*Without Ratchet*		*With Ratchet*	
15″	8 AWG to 1/0 AWG	7061K25	$163.80	—	—
19″	8 AWG to 1 AWG	7061K16	261.31	7061K26	$302.26
26″	8 AWG to 4/0 AWG	7061K18	297.07	7061K28	343.80

Battery Terminal Covers

Insulate terminals to prevent short circuits. Covers are made of flexible plastic.

To Order: Please specify black (negative) or red (positive).

For Wire Size (AWG)	*For Straight Clamp*		*For Snap-On Straight Clamp*	
4	69875K84	$1.50	69875K64★	$1.93
2 and 1	69875K85	1.50	69875K65	1.63
2/0 and 1/0	69875K86	1.50	—	—

★For wire size 6 and 4.

For Wire Size (AWG)	*For Lug*		*For Marine*	
2 and 1	69875K94	$1.93	69875K96	$2.73
2/0 and 1/0	69875K95	1.93	69875K97	2.73

Battery Terminal Corrosion Preventatives

Extend battery life, reduce maintenance costs, and protect exposed parts from moisture, dirt, and other contaminants.

Felt Washers—Impregnated with a corrosion preventative to stop corrosion caused by battery acid fumes leaking at the post or bolt. Washers fit top- and side-mount terminals and are 1 3/4″ OD×11/16″ ID×1/8″ Thick.

Trigger Spray Cleaner—Neutralizes acid and dissolves and removes corrosion. Use on batteries prior to applying washers and coating.

Cleaner and Acid Detector—You'll know acid is present when this yellow foam turns pink. It neutralizes and cleans it away.

Coatings—Form a protective barrier that makes surfaces impregnable to corrosion-causing acid fumes.

		Pkg.
Felt Washers (50/Pkg.)	7450K31	$13.58
		Each
Trigger Spray Cleaner, 16-oz. Bottle	7450K91	$8.62
Cleaner and Acid Detector, 14-oz. Aerosol	7450K32	3.70
Coating, 12-oz. Aerosol	7450K11	4.76
Brush-On Coating, 4-oz. Can	7450K79	13.42
Brush-On Coating, 32-oz. Can	7450K81	48.25

Battery Terminal Cleaners and Tools

Brush

Cleaner

Spreader

Bolt Pliers

Clamp Puller

Brush—Bristles made of high-tensile steel and brass clean standard battery top posts and terminals. Includes a cover.

7455K5 ..... $5.79

Cleaner—The stainless steel brush cleans side terminals; knurled wire cleans battery contacts.

7455K8 ..... $9.77

Spreader—Spreads clamp and cleans the terminal all at once. Made of forged steel.

7455K4 ..... $14.54

Bolt Pliers—Loosen square, hex, and round nuts on terminal clamps. They have a tapered nose for tight spaces and are made of forged steel with vinyl-covered handles.

7455K2 ..... $14.34

Clamp Puller—Removes corroded terminals. It's made of steel and has a 1 1/2″ jaw spread and 1 3/4″ jaw depth.

7455K3 ..... $7.58

For information about wire size (AWG), see page 758.

Terminal Blocks

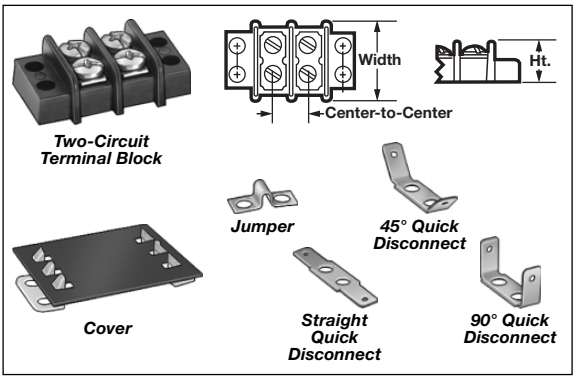

Connect all the wires in your panel or enclosure in one convenient place. Also known as barrier terminal strips, these blocks have screw terminals—just loosen a screw and wrap a stripped wire end around it (or use a spade terminal) and tighten the screw. All have four mounting holes. Color is black. UL recognized and CSA certified.

All ***terminal blocks*** are phenolic and have a maximum temperature of 302° F, except 300 VAC/VDC terminal blocks with 0.38″ and 0.44″ centers, which are thermoplastic and have a maximum temperature of 230° F, and 600 VAC/VDC terminal blocks with 0.44″ centers, which are thermoplastic and have a maximum temperature of 257° F. ***600 VAC/VDC*** blocks are also CE approved.

Accessories—*Covers* for 300 VAC/VDC blocks with 0.38″ and 0.44″ centers protect the top of the strip and prevent accidental contact. They're made from black fiberboard and include mounting hardware. *Marker strips* extend from underneath the blocks. They are blank for custom identification. *Jumpers* let you connect side-by-side terminals. *Quick disconnects* convert screw terminal connections into quick-disconnect connections. Choose from straight, 45°, and 90° styles. Tab size is 0.187″ wide×0.02″ thick for terminal blocks with 0.38″ centers; for blocks with 0.44″ and 0.56″ centers, tab size is 0.25″ wide×0.032″ thick.

Also Available: Multicircuit Jumpers. Please ask for 7527K991 and specify for 300 VAC terminal blocks with 0.38″ center-to-center or 600 VAC terminal blocks with 0.44″ center-to-center, as well as the number of circuits.

Additional 300 VAC/VDC Terminal Block Specifications

For Blocks with Center-to-Center	Amps Per Circuit	For Wire Size, AWG	Terminal Size	Mounting Hole Dia.
0.38″	20	22-12	#6-32	0.17″
0.44″	20	22-12	#6-32	0.18″
0.56″	30	14-12	#8-32	0.21″
0.69″	65	16-6★	#10-32	0.20″

Additional 600 VAC/VDC Terminal Block Specifications

For Blocks with Center-to-Center	Amps Per Circuit	For Wire Size, AWG	Terminal Size	Mounting Hole Dia.
0.44″	20	22-12	#6-32	0.17″
0.56″	30	14-10	#8-32	0.20″
0.69″	30	22-10	#10-32	0.21″
1.13″	90	12-2★	¼″-28	0.27″

★ Use with a lug or ring terminal.

300 VAC/VDC

No. of Circuits	0.38″ Center-to-Center (0.87″ Wd.×0.48″ Ht.) Lg.		Each	0.44″ Center-to-Center (1.13″ Wd.×0.53″ Ht.) Lg.		Each	0.56″ Center-to-Center (1.32″ Wd.×0.64″ Ht.) Lg.		Each	0.69″ Center-to-Center (1.81″ Wd.×0.75″ Ht.) Lg.		Each
Terminal Blocks												
2	1.41″	7527K42	$1.18	1.63″	7527K62	$1.32	2.09″	7527K82	$1.64	2.50″	7527K22	$3.50
3	1.78″	7527K43	1.27	2.06″	7527K63	1.65	2.66″	7527K83	2.42	3.19″	7527K23	4.65
4	2.16″	7527K44	1.73	2.50″	7527K64	2.05	3.22″	7527K84	3.16	3.88″	7527K24	6.65
5	2.53″	7527K45	2.17	2.94″	7527K65	2.45	3.78″	7527K85	3.76	4.56″	7527K25	7.97
6	2.91″	7527K46	2.55	3.38″	7527K66	3.00	4.34″	7527K86	6.09	5.25″	7527K26	11.87
7	3.28″	7527K47	2.85	3.81″	7527K67	3.40	4.91″	7527K87	6.47	—	—	—
8	3.66″	7527K48	3.23	4.25″	7527K68	3.80	5.47″	7527K88	6.96	6.63″	7527K28	14.12
9	4.03″	7527K49	3.62	4.69″	7527K69	4.17	6.03″	7527K89	7.96	—	—	—
10	4.41″	7527K51	3.85	5.13″	7527K71	4.40	6.59″	7527K91	8.51	8.00″	7527K31	16.76
12	5.16″	7527K53	4.35	6.00″	7527K73	5.33	7.72″	7527K93	10.12	9.38″	7527K33	19.28
14	5.91″	7527K54	4.95	6.88″	7527K74	6.42	8.84″	7527K94	9.14	—	—	—
16	6.66″	7527K55	5.78	7.75″	7527K75	7.77	9.97″	7527K95	12.32	—	—	—
18	7.41″	7527K56	6.35	8.63″	7527K76	8.62	11.09″	7527K96	13.61	—	—	—
20	8.16″	7527K41	7.10	9.50″	7527K61	9.35	12.22″	7527K97	14.73	—	—	—
Accessories												
Covers♠	—	7527K21	2.08	—	7527K27	2.08	—	—	—	—	—	—
Marker Strips♠	—	7527K15	1.74	—	7527K17	1.81	—	—	—	—	—	—
		Per Pkg. of 25			**Per Pkg. of 25**			**Per Pkg. of 25**			**Per Pkg. of 25**	
Jumpers	—	7527K59	$2.36	—	7527K79	$2.86	—	7527K99	$6.86	—	7527K39	$7.05
Straight Quick Disconnects	—	7527K11	3.35	—	7527K12	6.05	—	7527K13	7.03	—	—	—
45° Quick Disconnects	—	7527K57	3.22	—	7527K77	5.88	—	7527K37	6.89	—	—	—
90° Quick Disconnects	—	7527K58	3.58	—	7527K78	5.73	—	7527K38	7.21	—	—	—

♠ **To Order:** Please specify number of circuits.

600 VAC/VDC

No. of Circuits	0.44″ Center-to-Center (1.38″ Wd.×0.75″ Ht.) Lg.		Each	0.56″ Center-to-Center (1.31″ Wd.×0.71″ Ht.) Lg.		Each	0.69″ Center-to-Center (1.81″ Wd.×0.75″ Ht.) Lg.		Each	1.13″ Center-to-Center (2.48″ Wd.×1.13″ Ht.) Lg.		Each
Terminal Blocks												
2	1.62″	5566T81	$2.49	2.10″	5566T31	$2.09	2.50″	5566T51	$4.57	4.00″	5566T71	$18.65
3	2.06″	5566T82	3.96	2.66″	5566T32	3.17	3.19″	5566T52	6.74	5.13″	5566T72	28.08
4	2.50″	5566T83	4.91	3.22″	5566T33	3.55	3.88″	5566T53	9.21	6.25″	5566T73	34.07
5	2.94″	5566T84	5.73	3.79″	5566T34	4.36	4.56″	5566T54	11.21	7.38″	5566T74	40.11
6	3.37″	5566T85	6.58	4.35″	5566T35	6.88	5.25″	5566T55	14.48	8.50″	5566T75	40.86
7	3.81″	5566T86	7.42	4.91″	5566T36	7.48	5.94″	5566T56	16.73	—	—	—
8	4.25″	5566T87	8.36	5.47″	5566T37	8.12	6.62″	5566T57	18.94	—	—	—
9	4.69″	5566T88	9.00	6.04″	5566T38	8.88	7.31″	5566T58	21.18	—	—	—
10	5.12″	5566T89	10.00	6.60″	5566T39	9.61	8.00″	5566T59	23.36	—	—	—
12	6.00″	5566T91	11.36	7.72″	5566T41	11.21	9.37″	5566T61	27.39	—	—	—
14	6.87″	5566T92	13.06	8.85″	5566T42	10.99	—	—	—	—	—	—
16	7.75″	5566T93	14.85	9.97″	5566T43	12.70	—	—	—	—	—	—
18	8.62″	5566T94	16.30	11.10″	5566T44	13.92	—	—	—	—	—	—
20	9.50″	5566T95	18.06	12.22″	5566T45	15.67	—	—	—	—	—	—
Accessories												
Marker Strips♠	—	5566T1	1.63	—	5566T3	1.63	—	5566T5	1.00	—	5566T6	1.88
Jumpers	—	5566T26	.80	—	5566T46	.31	—	5566T66	.35	—	5566T76	.97
Straight Quick Disconnects	—	5566T27	.31	—	5566T47	.35	—	—	—	—	—	—
45° Quick Disconnects	—	5566T28	.31	—	5566T48	.35	—	—	—	—	—	—
90° Quick Disconnects	—	5566T29	.31	—	5566T49	.35	—	—	—	—	—	—

♠ **To Order:** Please specify number of circuits.

For information about wire size (AWG), see page 758.

Space Saver Terminal Blocks

Also known as barrier terminal strips, these narrow blocks have a single row of terminals. All are black phenolic with two mounting holes (screws not included). Maximum temperature is 302° F. UL recognized, CSA certified, and CE approved. Blocks with ***0.38″ center-to-center*** are 0.56″ Wd. × 0.41″ Ht. Blocks with ***0.56″ center-to-center*** are 0.75″ Wd. × 0.72″ Ht.

Note: The amp ratings in the table apply only when the included insulation strip is attached to the bottom of the block.

No. of Circuits	0.38″ Center-to-Center Lg.		Each	0.56″ Center-to-Center Lg.		Each
2	1.41″	8173T11	$2.89	2.09″	8173T51	$3.13
4	2.16″	8173T12	3.55	3.22″	8173T52	4.13
6	2.91″	8173T13	4.34	4.34″	8173T53	4.95
8	3.66″	8173T14	5.02	5.47″	8173T54	5.84
10	4.41″	8173T15	5.63	6.59″	8173T55	6.63
12	5.16″	8173T16	6.45	7.72″	8173T56	7.61

Additional Terminal Block Specifications

For Blocks w/Center-to-Center	Amps Per Circuit	For Wire Size, AWG	Screw Terminal Size	Mounting Hole Dia.
0.38″	15 @ 150 VAC/VDC	22-16	#5-40	0.17″
0.56″	30 @ 600 VAC/VDC	14-12	#8-32	0.21″

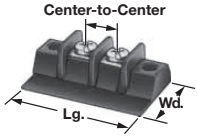

Two Circuit

Touch-Safe Terminal Blocks

Recessed screws and terminals on these blocks prevent accidental contact with a live circuit without the need for additional covers (also known as Eurostyle). To make a connection, insert stripped wire into a terminal opening and tighten the screw. The blocks have a mounting hole between every circuit (screws not included) and can be cut into smaller sections without altering electrical properties.

Made of white nylon. Max. continuous temp. is 221° F. All are UL recognized and CSA certified.

Additional Terminal Block Specifications

For Blocks with Center-to-Center	Amps Per Circuit	For Wire Size, AWG	Mounting Hole Dia.
0.32″	20 @ 600 VAC/VDC	22-12	0.12″
0.39″	30 @ 600 VAC/VDC	18-10	0.15″
0.47″	40 @ 600 VAC/VDC	20-8	0.17″
0.59″	63 @ 600 VAC/VDC	14-6	0.17″

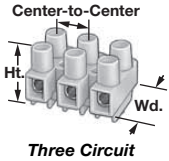

Three Circuit

No. of Circuits	0.32″ Center-to-Center (0.72″ Wd. × 0.68″ Ht.) Lg.		Each	0.39″ Center-to-Center (0.74″ Wd. × 0.76″ Ht.) Lg.		Each	0.47″ Center-to-Center (0.91″ Wd. × 0.83″ Ht.) Lg.		Each	0.59″ Center-to-Center (1.10″ Wd. × 1.04″ Ht.) Lg.		Each
2	0.53″	7618K611	$0.66	0.67″	7618K631	$0.77	0.79″	7618K651	$0.97	0.98″	7618K671	$1.66
3	0.85″	7618K612	.94	1.06″	7618K632	1.11	1.26″	7618K652	1.40	1.58″	7618K672	2.43
4	1.16″	7618K613	1.20	1.46″	7618K633	1.46	1.73″	7618K653	1.86	2.17″	7618K673	3.20
6	1.79″	7618K614	1.74	2.24″	7618K634	2.14	2.68″	7618K654	2.74	3.35″	7618K674	4.74
8	2.42″	7618K615	2.31	3.03″	7618K635	2.83	3.62″	7618K655	3.60	4.53″	7618K675	6.31
9	2.74″	7618K616	2.60	3.43″	7618K636	3.14	4.09″	7618K656	4.03	5.12″	7618K676	7.09
10	3.05″	7618K617	3.31	3.82″	7618K637	4.09	4.57″	7618K657	5.26	5.71″	7618K677	9.31
12	3.68″	7618K618	3.17	4.61″	7618K638	3.94	5.51″	7618K658	5.03	6.89″	7618K678	8.91

Quick-n-Secure Connect Terminal Blocks

Just strip your wire and push it into the spring clamp for a secure connection that withstands vibration and temperature changes better than screw connections. There are four terminals for every circuit and a 0.13″ dia. mounting hole between each circuit (screws not included). You can also mount them to a DIN rail using adapters (sold separately). Size is 1.38″ Wd. × 0.84″ Ht. with 0.47″ centers. Made of nylon. Temperature range is –31° to +221° F. UL recognized and CSA certified.

To Order: Please specify color: black or white.

No. of Circuits	Amps Per Circuit @ 300/600 VAC/VDC	For Wire Size, AWG	Lg.		Each
2	20/5	20-12	0.95″	8841T1	$1.20
3	20/5	20-12	1.42″	8841T2	1.82
4	20/5	20-12	1.89″	8841T3	2.42
5	20/5	20-12	2.36″	8841T4	3.04
DIN 3 Rail Adapter (Two Required for Mounting)				8841T7	1.14
35 mm DIN 3 Rail (1 m Lg.)				8961K15	4.96

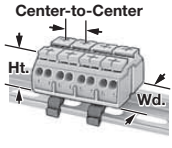

Four Circuit (Shown on DIN 3 Rail with Adapters)

Channel-Mount Terminal Block Kits

Customize a terminal block for as many circuits as you need. Kits include 100 single-circuit blocks, 50 end stops, and channels. Blocks and channels can be cut to desired length with a pair of clippers, such as the ***cutting tool*** (sold separately below).

The channels have mounting holes (screws not included). Blocks and end stops are nylon; channels are Noryl plastic. Channels for 7989K48 are flanged to accommodate marker identification. Max. temp. is 221° F. UL recognized; CSA certified.

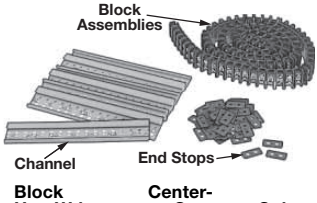

1. Snip It 2. Slide It 3. Snap It

Amps Per Circuit	VAC/VDC	For Wire Size, AWG	Channels Qty.	Channels Lg.	Block Ht. × Wd.	Center-to-Center	Color	Screw Terminal Size	Mounting Hole Dia.		Each
15	300	22-14	7	7¼″	0.28″ × 1.13″	0.44″	Blue	#6-32	11/64″	7989K48	$115.04
30	600	22-10	8	9½″	0.66″ × 1.31″	0.56″	Yellow	#8-32	13/64″	7989K49	116.40

Cutting Tool ..... 3881A11 Each $15.24

High-Amp Terminal Blocks

Enjoy all the benefits of a terminal block, even in high-amp applications. To make a connection, insert stripped wire into a terminal opening and tighten screw. All are black phenolic. Maximum temperature is 302° F. UL recognized; CSA certified. Blocks with 0.44″ centers are CE approved for 18-8 AWG wire and have two mounting holes (screws not included); blocks with 0.63″ centers are CE approved for 18-6 AWG wire and have a mounting hole between each circuit (screws not included).

No. of Circuits	0.44″ Center-to-Center (1.38″ Wd. × 1.03″ Ht.) Amps Per Circuit @ 600 VAC/VDC	For Wire Size, AWG	Lg.	Mount. Hole Dia.		Each	0.63″ Center-to-Center (1.25″ Wd. × 1.13″ Ht.) Amps Per Circuit @ 600 VAC/VDC	For Wire Size, AWG	Lg.	Mount. Hole Dia.		Each
2	65	18-6	1.69″	0.22″	9130K21	$9.09	85	18-4	1.16″	0.18″	9130K41	$4.77
3	—	—	—	—	—	—	85	18-4	1.78″	0.18″	9130K42	7.06
4	65	18-6	2.50″	0.22″	9130K23	11.94	85	18-4	2.41″	0.18″	9130K43	9.52
5	—	—	—	—	—	—	85	18-4	3.03″	0.18″	9130K44	11.71
6	65	18-6	3.38″	0.22″	9130K25	16.57	85	18-4	3.66″	0.18″	9130K45	13.96
8	65	18-6	4.25″	0.22″	9130K26	22.50	85	18-4	4.91″	0.18″	9130K46	18.71
10	—	—	—	—	—	—	85	18-4	6.16″	0.18″	9130K47	23.22
12	65	18-6	6.00″	0.22″	9130K28	34.74	85	18-4	7.41″	0.18″	9130K48	27.87

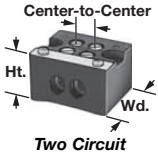

Two Circuit

Six Circuit

For information about wire size (AWG), see page 758.

High-Temperature Terminal Blocks

300 VAC

600 VAC/VDC

Where other terminal blocks warp and melt, these ceramic blocks aren't even getting warmed up. Color is off-white.

300 VAC terminal blocks withstand temperatures up to 1112°F. Blocks have recessed screws to prevent accidental contact with a live circuit. To make a connection, insert your stripped wire into the terminal opening and tighten the screw. They have two mounting holes (mounting screws not included). UL and C-UL recognized.

600 VAC/VDC terminal blocks are ready for temperatures up to 842°F. To make a connection, just loosen a screw and wrap the end of your wire around it. You can also use a high-temperature ring terminal (screw terminal size is #8). They have holes for mounting (mounting screws included).

No. of Circuits	Amps Per Circuit	For Wire Size, AWG	O'all Size, Lg.×Wd.×Ht.	Center-to-Center	Mounting Hole Size		Each
300 VAC							
2	30	20-10	0.98″×0.91″×0.77″	0.59″	0.14″	**5602T21**	$1.60
2	65	18- 6	1.22″×1.10″×0.91″	0.67″	0.14″	**5602T22**	2.30
3	30	20-10	1.61″×0.98″×0.77″	0.59″	0.14″	**5602T23**	2.37
3	65	18- 6	1.85″×1.08″×0.91″	0.67″	0.14″	**5602T24**	3.03
600 VAC/600 VDC							
2	20	20-12	1.56″×1.25″×0.84″	0.88″	0.19″	**1322T11**	14.00
3	20	20-12	2.44″×1.25″×0.84″	0.88″	0.19″	**1322T12**	19.00

Through-Panel Terminal Blocks

Screw Terminals

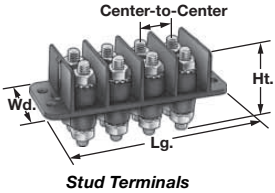

Stud Terminals

If your panel is a gateway for high-amp connections, make those connections simply and safely with these blocks. They mount in a panel cutout and have connections on both sides.

Screw Terminals— Made of black high-impact and chemical-resistant polyester with a maximum temperature of 194°F. All include a cover and two 0.21″ dia. mounting holes (screws not included). Blocks have M5 (5 mm) screw terminals and are UL and C-UL recognized.

Stud Terminals— Made of black thermoplastic with a maximum temperature of 257°F. There are four 0.23″ dia. mounting holes (screws not included). Include nuts for connecting. UL recognized, CSA certified, and CE approved.

No. of Circuits	Amps Per Circuit	VAC/VDC	For Wire Size, AWG	Center-to-Center	O'all Size, Lg.×Wd.×Ht.	Panel Cutout, Lg.×Wd.		Each
Screw Terminals								
1	60	600	10-3	0.63″	1.77″×1.18″×1.81″	0.75″×1.02″	**8056T11**	$7.94
2	60	600	10-3	0.63″	2.40″×1.18″×1.81″	1.38″×1.02″	**8056T12**	10.80
3	60	600	10-3	0.63″	3.03″×1.18″×1.81″	2.01″×1.02″	**8056T13**	15.64
4	60	600	10-3	0.63″	3.66″×1.18″×1.81″	2.64″×1.02″	**8056T14**	20.44
5	60	600	10-3	0.63″	4.29″×1.18″×1.81″	3.27″×1.02″	**8056T15**	25.53
6	60	600	10-3	0.63″	4.92″×1.18″×1.81″	3.90″×1.02″	**8056T16**	30.03
Stud Terminals								
1	175	300	¼″ Stud	0.73″	1.77″×1.50″×1.90″	0.66″×1.29″	**8056T31**	13.54
2	175	300	¼″ Stud	0.73″	2.50″×1.50″×1.90″	1.39″×1.29″	**8056T32**	24.54
3	175	300	¼″ Stud	0.73″	3.23″×1.50″×1.90″	2.12″×1.29″	**8056T33**	35.26
4	175	300	¼″ Stud	0.73″	3.96″×1.50″×1.90″	2.85″×1.29″	**8056T34**	46.54
5	175	300	¼″ Stud	0.73″	4.69″×1.50″×1.90″	3.58″×1.29″	**8056T35**	56.82
6	175	300	¼″ Stud	0.73″	5.42″×1.50″×1.90″	4.31″×1.29″	**8056T36**	65.23

Printed Circuit Board (PCB)-Mount Terminal Blocks

Make wire connections to printed circuit boards. All are rated at 300 VAC/VDC and withstand temperatures up to 230°F. They're UL recognized, CSA certified, and meet UL 94V0 for flammability. Color is black.

One-Piece Screw-Terminal Style

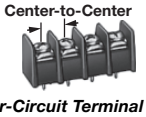

Four-Circuit Terminal Block

Straight Quick Disconnect

45° Quick Disconnect

90° Quick Disconnect

Jumper

Terminal Blocks— Solder the 0.19″ long tin-plated brass pins directly to your circuit board. Body is thermoplastic with barriers to separate the screw terminals. To make a connection, loosen the #6-32 screws and wrap stripped wire around them, or use spade terminals. Optional quick-disconnect terminals are sold separately below.

No. of Circuits	Amps Per Circuit	For Wire Size, AWG	O'all Size, Lg.×Wd.×Ht.	Center-to-Center		Each
2	25	22-12	0.83″×0.63″×0.66″	0.38″	**8076K12**	$0.97
4	25	22-12	1.58″×0.63″×0.66″	0.38″	**8076K14**	1.77
6	25	22-12	2.33″×0.63″×0.66″	0.38″	**8076K16**	2.63
8	25	22-12	3.08″×0.63″×0.66″	0.38″	**8076K18**	3.46
12	25	22-12	4.58″×0.63″×0.66″	0.38″	**8076K23**	5.03

Accessories— *Quick disconnects* easily convert screw-terminal connections into slide-on quick-disconnect connections. Tab is 0.187″ wide×0.02″ thick. *Jumpers* let you connect two side-by-side terminals.

	Pkg. Qty.		Per Pkg.
Straight Quick Disconnects	100	**8076K31**	$12.37
45° Quick Disconnects	100	**8076K27**	12.51
90° Quick Disconnects	50	**8076K28**	9.40
Jumpers	50	**8076K29**	10.19

Two-Piece Screw-Clamp Pluggable Style

Plug

90° Plug

Receptacle

90° Receptacle

Ideal for field repair, these nylon terminal blocks are two pieces (each sold separately below). The receptacle contains the tin-plated brass pins that you solder to your PC board, and the removable plug mates with the top of the receptacle, permitting wire entry either parallel or perpendicular to the PC board. Rated 15 amps per circuit. To make a connection, insert wire into the plug opening and tighten the screw.

To Order: Please specify center-to-center space between pins: 5 mm (0.197″) or 5.08 mm (0.200″).

Plugs are 0.5″ Wd.×1.02″ Ht. and accept 26-12 AWG wire. ***90° plugs*** are 0.72″ Wd.×0.59″ Ht. and accept 26-12 AWG wire. ***Receptacles*** have 0.15″ long pins. They are 0.33″ Wd.×0.47″ Ht. ***90° receptacles*** have 0.15″ long pins. They are 0.47″ Wd.×0.33″ Ht.

No. of Circuits	Lg.	*Plugs*	Each	*90° Plugs*	Each	*Receptacles*	Each	*90° Receptacles*	Each
2	0.4″	**8162K71**	$1.22	**8162K81**	$1.23	**8162K51**	$0.35	**8162K61**	$0.35
3	0.6″	**8162K72**	1.46	**8162K82**	1.50	**8162K52**	.53	**8162K62**	.53
4	0.8″	**8162K73**	2.01	**8162K83**	1.96	**8162K53**	.74	**8162K63**	.74

For information about wire size (AWG), see page 758.

Quick-n-Secure Modular DIN Rail-Mount Terminal Blocks

With spring-clamp connections, these blocks install in a snap and won't loosen in high-vibration applications. They're also unaffected by changes in temperature. To install, insert a screwdriver into the opening slot and slide your stripped wire into the spring-clamp slot. With 4.2 mm blocks, you can push solid or stranded wire with ferrules into the spring-clamp slot without using a tool. Temp. range is –31° to +221° F. UL recognized for AC voltage applications; CSA certified.

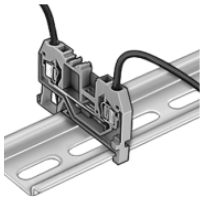

One-Circuit Two-Terminal Standard Block (Shown with Wires Inserted)

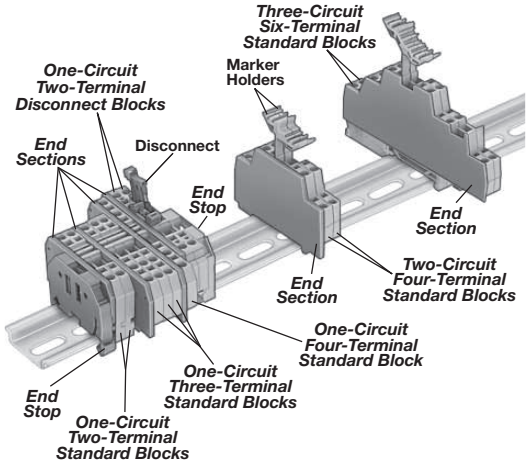

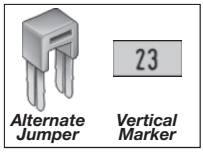

Terminal Blocks

Select blocks with the same number of terminals as the number of wires you want to connect, then mount the blocks side-by-side on a DIN 3 rail. They are made of nylon. For compatible fuse blocks, see page 953. Two- and three-circuit terminal blocks include a marker holder. *Disconnect blocks* have a movable tab so you can open the circuit for testing. *Ground blocks* have an isolated ground (run wire from block to the grounding stud on your panel).

End Sections— Cover the open side of a block to prevent accidental contact with a live circuit. Color is orange. An end section is included with the 16 mm and 25 mm single-circuit standard blocks.

End Stops— Mount at the end of an assembly, providing support to terminal blocks and preventing movement. Color is gray.

Block Width	No. of Terminals	Amps @ 600 VAC/VDC	For Wire Size, AWG	Terminal Blocks: Available Colors		Terminal Blocks: Each ♦	End Sections:	End Sections: Each ♦	End Stops:	End Stops: Each ♦
One Circuit										
Standard Blocks—To Order: *Please specify color from those listed (Yel=Yellow).*										
4.2 mm (0.17″)	2	15	22-14	Blue, Gray, Orange	9473T173	$1.41	9473T191	$0.94	9473T144	$1.26
4.2 mm (0.17″)	3	15	22-14	Blue, Gray, Orange	9473T177	1.87	9473T192	.94	9473T144	1.26
4.2 mm (0.17″)	4	15	22-14	Blue, Gray, Orange	9473T182	2.18	9473T195	.94	9473T144	1.26
5 mm (0.20″)	2	20	28-12	Black, Blue, Gray, Orange, Red, Yel	9473T1	2.27	9473T131	.94	9473T144	1.26
5 mm (0.20″)	3	20	28-12	Black, Blue, Gray, Orange, Red, Yel	9473T8	2.77	9473T132	.94	9473T144	1.26
5 mm (0.20″)	4	20	28-12	Black, Blue, Gray, Orange, Red, Yel	9473T16	3.59	9473T133	.94	9473T144	1.26
6 mm (0.24″)	2	20	28-12	Black, Blue, Gray, Orange, Red, Yel	9473T24	2.53	9473T134	.94	9473T144	1.26
6 mm (0.24″)	3	20	28-12	Black, Blue, Gray, Orange, Red, Yel	9473T32	3.26	9473T135	.94	9473T144	1.26
6 mm (0.24″)	4	20	28-12	Black, Blue, Gray, Orange, Red, Yel	9473T39	4.08	9473T136	.94	9473T144	1.26
8 mm (0.31″)	2	30	24-10	Blue, Gray, Orange	9473T47	3.93	9473T137	1.31	9473T144	1.26
8 mm (0.31″)	3	30	24-10	Blue, Gray, Orange	9473T52	5.54	9473T138	1.31	9473T144	1.26
10 mm (0.39″)	2	50	24-8	Blue, Gray, Orange	9473T56	5.43	9473T139	1.38	9473T144	1.26
10 mm (0.39″)	3	50	24-8	Blue, Gray, Orange	9473T61	9.00	9473T141	1.38	9473T144	1.26
12 mm (0.47″)	2	65	24-6	Blue, Gray, Orange	9473T65	7.02	9473T142	1.60	9473T144	1.26
12 mm (0.47″)	3	65	24-6	Blue, Gray, Orange	9473T69	10.46	9473T143	1.60	9473T144	1.26
16 mm (0.63″)	2	115	8-2	Blue, Gray	9473T74	13.14	—	—	9473T144	1.26
25 mm (0.98″)	2	200	4-4/0	Blue, Gray	9473T77■	38.08	—	—	9473T144	1.26
Disconnect Blocks										
5 mm (0.20″)	2	30	28-12	Gray	9473T166	6.08	9473T167	.96	9473T144	1.26
8 mm (0.31″)	2	30	24-10	Gray	9473T171	8.93	9473T172	1.06	9473T144	1.26
Ground Blocks—To Order: *Please specify number of terminals from those listed.*										
4.2 mm (0.17″)	2, 3, 4	—	22-14	Green/Yellow	9473T186	5.86	9473T196	.94	9473T144	1.26
5 mm (0.20″)	2, 3, 4	—	28-12	Green/Yellow	9473T81	7.44	9473T212	.94	9473T144	1.26
6 mm (0.24″)	2, 3, 4	—	28-12	Green/Yellow	9473T85	9.19	9473T213	.94	9473T144	1.26
8 mm (0.31″)	2, 3	—	24-10	Green/Yellow	9473T89	9.36	9473T214	1.31	9473T144	1.26
10 mm (0.39″)	2, 3	—	24-8	Green/Yellow	9473T93	11.35	9473T215	1.38	9473T144	1.26
12 mm (0.47″)	2, 3	—	24-6	Green/Yellow	9473T96	13.81	9473T216	1.60	9473T144	1.26
16 mm (0.63″)	2	—	8-2	Green/Yellow	9473T99	19.78	—	—	9473T144	1.26
25 mm (0.98″)	2	—	4-4/0	Green/Yellow	9473T111■	52.94	—	—	9473T144	1.26
Two Circuit										
Standard Blocks—To Order: *Please specify color from those listed.*										
5 mm (0.20″)	4	15▲	28-12	Blue, Gray	9473T151	4.93	9473T154	1.00	9473T144	1.26
6 mm (0.24″)	4	20	28-12	Blue, Gray	9473T157	4.89	9473T161	.88	9473T144	1.26
Ground Block										
5 mm (0.20″)	4	—	28-12	Green/Yellow	9473T155	14.88	9473T154	1.00	9473T144	1.26
Three Circuit										
Standard Block—To Order: *Please specify color from those listed.*										
5 mm (0.20″)	6	15▲	28-12	Blue, Gray	9473T162	8.36	9473T165	.96	9473T144	1.26

♦ 15% discount for quantities of 25 or more. ■ To insert wire, use an 8 mm hex wrench (sold on pages 2838-2847). ▲ Amps @ 300 VAC/VDC.

Jumpers

Push in to connect terminal blocks of the same width. *Adjacent jumpers* connect side-by-side blocks. Color is gray. *Alternate jumpers* connect two blocks, skipping a block in between. Color is gray. Only *ground adjacent jumpers* can be used for ground blocks. They are yellow/green.

For Block Width	Adjacent	Adjacent: Each ♦	Alternate	Alternate: Each ♦	Ground Adjacent	Ground Adjacent: Each ♦
4.2 mm	9473T193	$0.57	9473T194	$1.00	—	—
5 mm	9473T112	.74	9473T113	1.32	9473T114	$0.80
6 mm	9473T115	.80	9473T116	1.43	9473T117	.84
8 mm	9473T118	1.09	9473T119	1.84	9473T121	1.17
10 mm	9473T122	1.68	9473T123	1.88	9473T124	1.80
12 mm	9473T125	2.44	9473T126	2.88	9473T127	2.61
16 mm	9473T128	2.29	—	—	—	—
25 mm	9473T129	11.45	—	—	—	—

♦ 15% discount for quantities of 25 or more.

Marker Cards

Identify your blocks. Each marker card contains 10 strips of 10 markers (100 markers per card); choose from blank or numbered. Color is white. Numbered cards have black numbers.

		Each ♦
Blank	9473T145	$5.78
Horizontal Numbered 1-50 (2 of each number)	9473T146	6.58
Vertical Numbered 1-50 (2 of each number)	9473T147	6.58

♦ 15% discount for quantities of 25 or more.

DIN 3 Rails

Length is 39″ (1 meter). ***Zinc-plated steel*** rails have punched holes. For more information and DIN rail accessories, see page 915.

	Width	Height		Each
Zinc-Plated Steel	35 mm (1.38″)	7.5 mm (0.30″)	8961K15	$4.96
Stainless Steel	35 mm (1.38″)	7.5 mm (0.30″)	8961K42	24.09

Modular DIN Rail-Mount Terminal Blocks

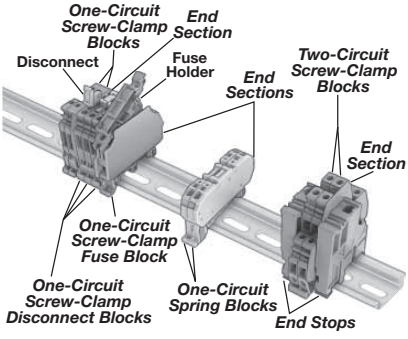

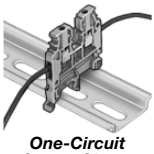

One-Circuit Screw-Clamp Block (Shown with Wires Inserted)

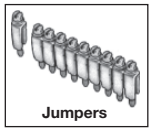

Jumpers

Add as many circuits as you need, then snap onto a DIN rail. They can be removed without disrupting adjacent units. Made of thermoplastic. Temperature range is –40° to +221°F. UL recognized and CE approved, unless noted. All except jumpers are IP20 touchproof.

Terminal Blocks

Place as many blocks as needed side-by-side to make an assembly. **To Order:** Please specify color from those listed (where necessary).

Screw-clamp disconnect blocks have a movable tab so you can open the circuit for testing. ***Screw-clamp fuse blocks*** allow inline fuse wiring to protect components and wires from short-circuit damage. *8 mm blocks* accept 5 mm×20 mm and 5 mm×25 mm fuses; *13 mm blocks* accept 1/4″×1 1/4″ (3AG) fuses; *22 mm blocks* accept 13/32″×1 1/2″ (midget) fuses (see page 920). ***Screw-clamp fuse blocks with blown-fuse indicator*** let you know when the fuse is blown. ***Spring block*** has a screwless top-entry connection for easy access and wiring, plus it withstands vibration. ***Spring-ground block*** for DIN 3 rail has electrical grounding to mounting rail; spring-ground block for DIN 2 rail has an isolated ground (run wire from block to grounding stud on panel).

Terminal Block Accessories

End sections cover the open side of a block to prevent accidental contact with a live circuit. Color is gray, except 7641K84 and K961, which are yellow, and K49, which is black. Where end sections aren't offered, the terminal block's end is closed, so an end section isn't required. ***End stops*** mount at the end of an assembly to resist movement. Color is gray. 7641K35 is for DIN 3 rails only. ***Jumpers*** connect several terminal blocks with the same width. They have 10 circuits and can be cut to size, unless noted. Not for use with ground blocks.

Terminal Blocks and Accessories for DIN 1 and 3 Rails

Block Width	VAC/ VDC	Amps	For Wire Size, AWG	TERMINAL BLOCKS Available Colors		Each ♦	TERMINAL BLOCK ACCESSORIES End Sections	Each ♦	End Stops	Each ♦	Jumpers	Each ♦
One-Circuit Screw-Clamp Blocks												
5 mm (0.20″)	600	30	22-12	Beige, Black, Blue, Gray, Orange, Red, White, Yellow	7641K921	$1.16	7641K33♠	$0.42	7641K35	$0.98	7641K925	$8.26
6 mm (0.24″)	600	30	22-10	Beige, Black, Blue, Gray, Green, Orange, Red, White, Yellow	7641K51	1.16	7641K33♠	.42	7641K35	.98	7641K15	7.14
8 mm (0.32″)	600	50	22-8	Beige, Black, Blue, Gray, Green, Orange, Red, White, Yellow	7641K52	1.70	7641K33♠	.42	7641K35	.98	7641K16	7.42
10 mm (0.39″)	600	65	20-6	Beige, Black, Blue, Gray, Red, White, Yellow	7641K53	2.19	7641K33♠	.42	7641K35	.98	7641K17	8.96
12 mm (0.47″)	600	85	18-6	Beige, Black, Blue, Gray, Red, White, Yellow	7641K151	4.83	7641K191♠	.86	7641K35	.98	7641K221	11.49
16 mm (0.63″)	600	150	10-0	Beige, Black, Blue, Gray, Red, White, Yellow	7641K161	6.63	—	—	7641K35	.98	7641K231	16.81
One-Circuit Screw-Clamp Ground Blocks												
5 mm (0.20″)	—	—	22-12	Green/Yellow	7641K931	5.63	7641K84	.42	7641K35	.98	—	—
6 mm (0.24″)	—	—	22-12	Green/Yellow	7641K81	5.56	7641K84	.42	7641K35	.98	—	—
8 mm (0.32″)	—	—	24-8	Green/Yellow	7641K82	5.91	7641K84	.42	7641K35	.98	—	—
10 mm (0.39″)	—	—	20-6	Green/Yellow	7641K83	6.47	—	—	7641K35	.98	—	—
12 mm (0.47″)	—	—	14-4	Green/Yellow	7641K171	8.12	—	—	7641K35	.98	—	—
16 mm (0.63″)	—	—	10-0	Green/Yellow	7641K181	11.16	—	—	7641K35	.98	—	—
One-Circuit Screw-Clamp Disconnect Blocks												
6 mm (0.24″)	300	10	22-10	Gray	7641K87	5.09	7641K871	.67	7641K35	.98	7641K883✓	3.79
8 mm (0.32″)	300	20	22-8	Gray	7641K88	4.93	7641K881	.72	7641K35	.98	7641K873✓	5.11
One-Circuit Screw-Clamp Fuse Blocks												
8 mm (0.32″)	600	10	22-12	Gray, Orange	7641K55	6.73	7641K37	.58	7641K35	.98	—	—
13 mm (0.51″)	600	25	22-10	Black	7641K36	10.63	7641K49	.86	7641K35	.98	—	—
22 mm (0.87″)	600	55	18-6	Gray	7641K932	14.74	—	—	7641K35	.98	—	—
One-Circuit Screw-Clamp Fuse Blocks with Blown-Fuse Indicator—To Order: For indicator, please specify 110-230 VAC (neon) or 24 VDC (LED).												
8 mm (0.32″)	600	10	22-12	Gray	7641K941	11.81	7641K37	.58	7641K35	.98	—	—
13 mm (0.51″)	600	25	22-10	Black	7641K944	16.44	7641K49	.86	7641K35	.98	—	—
One-Circuit Spring Block (For DIN 3 Rails Only)												
5 mm (0.20″)	600	15	26-12	Blue, Gray, Orange	7641K91	1.30	7641K92	.79	7641K93	1.16	7641K94✓	5.33
One-Circuit Spring-Ground Block (For DIN 3 Rails Only)												
5 mm (0.20″)	—	—	26-12	Green/Yellow	7641K972	4.79	7641K92	.79	7641K93	1.16	—	—
Two-Circuit Screw-Clamp Blocks												
6 mm (0.24″)	600	20	22-12	Beige, Black, Blue, Gray, Green, Orange, Red, White, Yellow	7641K71	3.73	7641K72	1.12	7641K73	2.16	7641K74	7.44
8 mm (0.32″)	600	50	24-8	Beige, Gray	7641K34	6.12	7641K251	.88	7641K73	2.16	7641K16	7.42
Three-Circuit Screw-Clamp Block (For DIN 3 Rails Only)												
6 mm (0.24″)	300	20	20-12	Gray	7641K361♥	5.49	7641K275	.88	7641K73	2.16	7641K281	5.30

♦ 15% discount for quantities of 25 or more. ♠ **To Order:** Please specify blue, gray, or yellow. ✓ Insulated; cannot be cut to size.
♥ Uses 7641K812 and K831 marker cards.

Terminal Blocks and Accessories for DIN 2 Rail

Block Width	VAC/ VDC	Amps	For Wire Size, AWG	TERMINAL BLOCKS Available Colors		Each ♦	TERMINAL BLOCK ACCESSORIES End Sections	Each ♦	End Stops	Each ♦	Jumpers	Each ♦
One-Circuit Screw-Clamp Blocks												
5 mm (0.20″)	300	20	28-12	Gray	7641K61	$1.65	7641K66	$0.56	7641K69	$1.02	7641K56	$8.84
6 mm (0.24″)	250	20	22-12	Blue, Gray	7641K62	1.60	7641K67♣	.56	7641K69	1.02	7641K57	9.67
One-Circuit Screw-Clamp Ground Block												
6 mm (0.24″)	—	—	22-12	Green/Yellow	7641K63	4.16	7641K961	.72	7641K69	1.02	—	—
One-Circuit Screw-Clamp Fuse Block												
8 mm (0.32″)	600	6.3	18-12	Gray	7641K58■	4.93	7641K37	.58	7641K69	1.02	—	—
One-Circuit Spring Block												
5 mm (0.20″)	600	15	26-12	Blue, Gray, Orange	7641K85	1.44	7641K86	.81	7641K69	1.02	7641K94✓	5.33

♦ 15% discount for quantities of 25 or more. ♣ **To Order:** Please specify blue or gray. ■ CSA certified; not UL recognized or CE approved.
✓ Insulated; cannot be cut to size.

(Continued on following page)

For information about wire size (AWG), see page 758.

Modular DIN Rail-Mount Terminal Blocks *(Continued from previous page)*

Marker Cards

Take the guesswork out of identifying your blocks. Each marker card contains 10 strips of 10 markers (100 markers per card); choose from blank or numbered. Color is white. Numbered cards have black numbers. **To Order:** For numbered cards, please specify 1-100 or 101-200 with horizontal or vertical numbers.

For Block Width	FOR DIN 1 & 3 RAIL BLOCKS Blank Each ♦	FOR DIN 1 & 3 RAIL BLOCKS Numbered Each ♦	FOR DIN 2 RAIL BLOCKS Blank Each ♦	FOR DIN 2 RAIL BLOCKS Numbered Each ♦
5 mm (0.20″)	7641K983 $5.07	7641K985 $5.56	7641K811 $5.56	7641K821 $5.56
6 mm (0.24″)	7641K19 5.07	7641K984 5.56	7641K812 5.07	7641K831 5.56
8 mm (0.32″)-22 mm (0.87″)	7641K981 7.12	7641K986 8.26	7641K981 7.12	7641K986 8.26

♦ 15% discount for quantities of 25 or more.

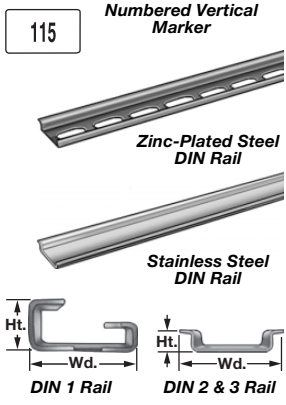

DIN Rails

All are 39″ (1 meter) long. ***Zinc-plated steel*** rails have punched holes. For more information and DIN rail accessories, see page 915.

Style	Width	Height	Length	Each
Zinc-Plated Steel				
DIN 1	32 mm (1.26″)	15 mm (0.59″)	1 m (39″)	8961K11 $8.38
DIN 2	15 mm (0.59″)	5.5 mm (0.20″)	1 m (39″)	8961K13 4.74
DIN 3	35 mm (1.38″)	7.5 mm (0.30″)	1 m (39″)	8961K15 4.96
Stainless Steel				
DIN 3	35 mm (1.38″)	7.5 mm (0.30″)	1 m (39″)	8961K42 24.09

Modular Terminal Blocks

Customize your terminal block assembly with as many circuits as you need, then mount on a channel or directly to a surface. These single-circuit blocks, also known as NEMA-style blocks, are great for power distribution, control wiring, and instrumentation cabinets. To make a connection, insert wire and tighten the screw. Terminal blocks are UL recognized and CSA certified.

Nylon block has a flammability rating of UL 94V2 and a maximum temperature of 257° F. Color is translucent white. ***Polyester*** block has a markable surface, a flammability rating of UL 94V0, and a maximum temperature of 302° F. Color is gray. ***Phenolic*** block has a flammability rating of UL 94V1 and has a maximum temperature of 302° F. Color is black.

Choose from ***surface mount***, which has a flat base for mounting directly to a panel (requires #8 screws, except 7606K21, which requires #4 screws) or ***channel mount***, which has a dovetail base for mounting to a channel (sold separately).

Channels come in 3-ft. lengths. 7606K33 is zinc-plated steel and has a centered row of mounting holes for #4 or #6 screws (screws not included). 7606K71 is aluminum and has a centered row of mounting holes for #10 screws (screws not included). Two ***channel clamps*** (sold separately) are required to secure terminal blocks to a channel (one on each end of a group of blocks).

End sections cover the open side of the block, preventing contact with exposed circuitry. One end section is required per group of terminal blocks.

Jumpers join adjacent terminals.

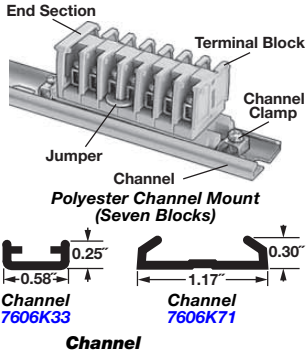

Terminal Material	Mount Style	VAC	Amps Per Circuit	For Wire Size, AWG	Center-to-Center	Terminal Blocks Each ♦	End Sections Each ♦	Channels Each ♦	Channel Clamps Each ♦	Jumpers Each ♦
Nylon	Surface/Channel	300	28	30-12	0.25″	7606K21 $2.37	7606K29 $1.22	7606K33 $26.75	7606K34 $1.44	7606K35 $0.66
Polyester	Surface/Channel	600	30	22-10	0.375″	7606K23 2.63	7606K24 1.08	7606K33 26.75	7606K34 1.44	7606K38 .70
Polyester	Channel	600	30	22-10	0.375″	7606K25 2.59	7606K26 1.13	7606K71 17.30	7606K75 3.79	7606K38 .70
Phenolic	Surface	600	65	18-6	0.56″	7606K52 7.18	7606K53 2.15	—	—	7606K37 2.13
Phenolic	Channel	600	65	18-6	0.56″	7606K62 10.98	7606K63 3.25	7606K71 17.30	7606K75 3.79	7606K37 2.13

♦ 15% discount for quantities of 25 or more.

Touch-Safe DIN Rail-Mount Terminal Blocks

Your wires are supposed to make contact with each other, not with your fingers. These blocks have concealed screw terminals to prevent accidental contact with live circuits. And don't worry about dropping screws—they unfasten without ever coming free from the block. All mount on a 35 mm DIN 3 rail and are made of white polyester. Temperature range is –55° to +300° F. UL and C-UL recognized.

Blocks ***for ring terminals*** give the most secure connection. Screw size is 8-32. Blocks ***for stripped wire*** have grooved clamps to prevent your wire from wiggling out of the terminal.

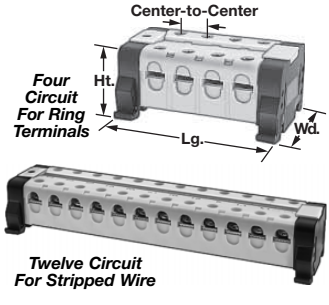

No. of Circuits	Amps Per Circuit @ 600 VAC	For Wire Size, AWG	Center-to-Center	O'all Size, Lg.×Wd.×Ht.	For Ring Terminals Each	For Stripped Wire Each
4	30	18-10	0.56″	3.09″×2.03″×1.37″	8839T11 $29.65	8839T21 $29.65
6	30	18-10	0.56″	4.21″×2.03″×1.37″	8839T12 35.45	8839T22 35.45
12	30	18-10	0.56″	7.57″×2.03″×1.37″	8839T14 47.07	8839T24 38.83

35 mm DIN 3 Rail (1 m Lg.) ..... 8961K15 Each $4.96

Pole-Mount Outlet Box

Mount this versatile outlet box on a wall, pole, or cart leg to allow greater access to electric power. It has two 5/8″ dia. holes for wall mounting (screws not included) and a clamp that allows the box to attach to a 3/4″ to 1 1/2″ dia. pole or cart leg.

It has six three-prong (NEMA 5-15) outlets and includes a 15-ft. 14 AWG gray Type STJ cord with a three-prong (NEMA 5-15) plug.

The outlet box is rated 12 amps @ 125 VAC. Housing is blue polycarbonate/ABS plastic and includes a power indicating light. Size is 5 9/16″ Ht.×5 1/4″ Wd.×3 1/4″ Dp. Temperature range is –4° to +122° F. UL listed.

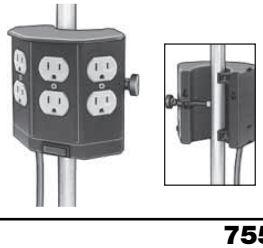

8331K1 ..... Each $119.09

High-Amp Distribution Blocks

Screw-Clamp Style One Circuit

Screw-Clamp Style Three Circuits

Stud Style Two Circuits

Offering very high amp ratings, these distribution blocks take a large wire from your power source (line) and connect it to one or more wires going to your electrical devices (loads). All have a black phenolic base and two mounting holes per circuit, unless noted (screws not included). Maximum temperature is 302° F, except for 115-amp blocks which have a thermoplastic base and a maximum temperature of 257° F. Amp rating is based on NEC table 310-16 using 75° C copper wire. UL recognized, CSA certified, and CE approved.

Screw-Clamp Style— To make a connection, insert a stripped wire into a terminal opening and tighten the screw.

Stud Style— Place wires with ring- or spade-terminals around the stud to make a connection.

Optional Cover— Protects the top of the block and prevents accidental contact with live circuits. Made of clear polycarbonate. Includes two screws for fastening to the block.

To Order: Please specify the part number of the distribution block.

Amps Per Circuit @ 600 VAC/VDC	Line: Connections Per Circuit	Line: For Wire Size, AWG	Load: Connections Per Circuit	Load: For Wire Size, AWG	O'all Size, Ht.×Wd.	Mount. Hole Size	One Circuit Lg.	One Circuit	Each	Two Circuits Lg.	Two Circuits	Each	Three Circuits Lg.	Three Circuits	Each
Screw-Clamp Style															
115	1	14-2	1	14-2	1.52″×2.29″	0.20″	0.83″	7626K21	$6.35	1.46″	7626K22	$9.12	2.10″	7626K23	$13.56
115	1	14-2	4	16-10	1.52″×2.29″	0.20″	0.83″	7626K11	13.18	1.46″	7626K12	20.76	2.10″	7626K13	29.74
175	1	14-2/0	4	14-4	1.78″×2.87″	0.21″	1.13″	7626K41	16.11	1.94″	7626K42	24.82	2.75″	7626K43	29.25
175	1	14-2/0	6	14-4	2.10″×2.90″	0.27″ ♦	—	—	—	4.13″	7626K32	34.84	5.38″	7626K33	40.54
335	1	6-400●	6	14-2	2.61″×4.00″	0.20″	1.94″	7626K61	32.24	3.47″	7626K62	42.19	5.00″	7626K63	54.51
350	2	14-2/0	6	14-4	2.61″×4.00″	0.20″	1.94″	7626K51	31.56	3.47″	7626K52	46.76	5.00″	7626K53	54.70
380	1	4-500★	12	14-2	3.12″×5.50″	0.26″	3.17″	7626K71	68.26	5.88″	7626K72	97.15	8.54″	7626K73	121.85
Stud Style															
200	1	¼″■	1	¼″■	1.78″×2.87″	0.21″	1.13″	7626K81	7.46	1.94″	7626K82	11.62	2.75″	7626K83	18.70
260	1	⅜″■	2	¼″■	2.92″×4.75″	0.20″	2.28″	7626K91	33.92	4.16″	7626K92	52.20	6.04″	7626K93	68.76
Optional Cover														7626K86	Each $4.74

♦ Blocks have two 0.27″ dia. and four 0.22″ dia. mounting holes. ● 6 AWG-400 MCM. ★ 4 AWG-500 MCM. ■ Stud size.

DIN Rail-Mount High-Amp Distribution Blocks

Two Circuits

Similar to the High-Amp Distribution Blocks on this page, except these mount to a DIN 3 rail for quick installation and removal. Distribution blocks take a large wire from your power source (line) and connect it to one or more wires going to your electrical devices (loads). Blocks have screw-clamp style connections; to make a connection, insert a stripped wire into a terminal opening and tighten the screw. Made of polycarbonate with a maximum temperature of 257° F, unless noted. Color is black. Amp rating is @ 600 VAC/VDC and is based on NEC table 310-16 using 75° C copper wire. UL recognized, CSA certified, and CE approved. ***DIN 3 rail*** is zinc-plated steel with punched holes.

Amps Per Circuit	Line: Connections Per Circuit	Line: For Wire Size, AWG	Load: Connections Per Circuit	Load: For Wire Size, AWG	O'all Size, Ht.×Wd.	One Circuit Lg.	One Circuit	Each	Two Circuits Lg.	Two Circuits	Each	Three Circuits Lg.	Three Circuits	Each
175	1	14-2/0	1	14-2/0	2.42″×3.00″	1.00″	6367T11	$9.98	1.81″	6367T12	$15.89	2.57″	6367T13	$17.31
175	1	14-2/0	4	14-4	2.42″×3.00″	1.00″	6367T14	17.78	1.81″	6367T15	27.93	2.57″	6367T16	37.31
175	1	14-2/0	6	14-4	2.42″×3.00″	1.00″	6367T17	23.89	1.81″	6367T18	38.64	2.57″	6367T19	54.64
230	1	2-4/0	11	(2)14-2, (5)14-6, (4)14-8	1.97″×3.78″	1.75″	6367T21▲	25.71	—	—	—	—	—	—
35 mm DIN 3 Rail (1 m Lg.)													8961K15	Each $4.96

▲ Made of nylon; maximum temperature is 221° F.

Circular High-Amp Distribution Posts

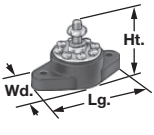

Connect high-amp wire to the center stud for distribution to eight circuits via screw terminals. Base is glass-reinforced nylon and maximum temperature is 248° F. Posts have two mounting holes (screws not included). Color is black. Includes a red PVC cover. CE approved.

Stud Terminal Size	Screw Terminal Size	Amps @ 48 VDC	O'all Size, Lg.×Wd.×Ht.	Mount. Hole Dia.		Each
¼″	#8-32	150	3.30″×1.75″×2.25″	0.26″	9365T3	$25.22
⅜″	#8-32	150	3.30″×1.75″×2.00″	0.26″	9365T4	25.22

Harsh-Environment High-Amp Distribution Bars

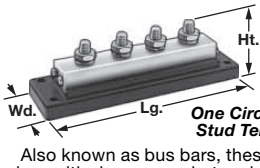

One Circuit with Stud Terminals

One Circuit with Stud and Screw Terminals

Two Circuit with Screw Terminals

Two Circuit with Stud and Screw Terminals

Optional Cover

Also known as bus bars, these serve as connection points between wires with ring or spade terminals. They have a black thermoplastic base, tin-plated copper bus bar, and stainless steel screws and studs to protect against corrosion in harsh environments. The underside is sealed, so the bars can be safely mounted to conductive surfaces. Mounting screws not included. CE approved to 250 VAC.

Optional covers screw onto the mounting surface to protect the top of the bar and prevent accidental contact with live circuits. They're made of black ABS plastic and have two 0.16″ dia. mounting holes, except 9290T23 which has six mounting holes (screws not included).

Amps @ 300 VAC/48 VDC	Stud Terminals No.	Stud Terminals Size	Screw Terminals No.	Screw Terminals Size	O'all Size, Lg.×Wd.×Ht.	Max. Temp.	Mounting Holes No.	Mounting Holes Size	Bars	Each	Optional Covers	Each
One Circuit												
130/150	2	¼″	10	#8-32	6.10″×1.25″×1.38″	248° F	2	0.21″	9290T14	$22.61	9290T21♣	$4.21
130/150	2	¼″	20	#8-32	9.25″×1.25″×1.38″	248° F	2	0.21″	9290T15	34.12	9290T24♣	7.03
130/150	4	¼″	—	—	6.10″×1.25″×1.38″	248° F	2	0.21″	9290T16	29.42	9290T21♣	4.21
250/250	2	5/16″	12	#10-24	7.93″×1.50″×1.66″	266° F	2	0.21″	9290T6	73.45	9290T22	19.65
250/250	4	5/16″	—	—	7.93″×1.50″×1.66″	266° F	2	0.21″	9290T2	67.77	9290T22	19.65
545/600	4	⅜″	—	—	7.00″×2.00″×2.0″	266° F	4	0.27″	9290T3	112.72	9290T23	20.60
545/600	8	⅜″	—	—	11.38″×2.00″×2.0″	284° F	4	0.21″	9290T7	169.11	—	—
Two Circuit												
100/100	—	—	5♥	#8-32	3.01″×1.83″×0.56″	163° F	2	0.21″	9290T12	22.61	9290T25	13.38
100/100	—	—	10♥	#8-32	5.06″×1.83″×0.56″	163° F	2	0.21″	9290T13	29.33	9290T26	15.59
130/150	2♥	¼″	5♥	#10-32	4.88″×2.58″×1.51″	284° F	2	0.21″	9290T11✓	31.19	—	—

♣ Color is clear. ♥ Per circuit. ✓ Includes a clear polycarbonate snap-on cover.

For information about wire size (AWG), see page 758.

Ring Terminals

Simply crimp onto your wire and mount on top of a threaded post or stud for a reliable connection. They are tin-plated copper, except star terminals, which are tin-plated steel. UL listed and CSA certified, unless noted.

To Order: For standard terminals, please specify package quantity where necessary.

Noninsulated terminals are rated to 300° F. Voltage ratings do not apply.

Insulated terminals offer electrical isolation. Rated to 600 volts and 221° F, unless noted. *Nylon insulated* have an internal brass sleeve that provides an extra-tight crimp for high-vibration applications.

Heavy duty terminals are 25% thicker overall than standard terminals.

Star terminals have a serrated edge that digs into coatings as you tighten to provide a good connection.

Multistud terminals have an elongated stud hole that holds on to different stud sizes.

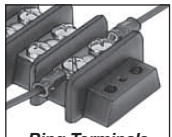

Ring Terminals Shown Installed

For Wire Size (AWG)	For Stud Size	Ring Wd.	Noninsulated	Per Pkg. of 10	Per Pkg. of 100	Insul. Color	Vinyl Insulated	Per Pkg. of 10	Per Pkg. of 100	Nylon Insulated	Per Pkg. of 10	Per Pkg. of 50
Standard												
26-24	#0 (0.060″)	0.14″	7113K801♣	$1.63	$5.89	—	—	—	—	—	—	—
26-24	#2 (0.086″)	0.14″	7113K802♣	1.63	5.94	Yellow	—	—	—	7113K848♣★	$6.47	$19.73
26-24	#4 (0.112″)	0.20″	7113K803♣	1.63	5.94	Yellow	—	—	—	7113K849♣★	6.47	16.39
26-24	#6 (0.138″)	0.20″	7113K804♣	1.63	5.94	Yellow	—	—	—	7113K851♣★	4.73	16.39
26-24	#8 (0.164″)	0.25″	—	—	—	Yellow	—	—	—	7113K852♣★	4.73	16.39
26-24	#10 (0.190″)	0.25″	—	—	—	Yellow	—	—	—	7113K853♣★	5.78	19.75
22-18	#6 (0.138″)	0.25″	7113K807■	1.93	8.31	Red	7113K828	$2.76	$11.72	7113K854	4.96	10.40
22-18	#8 (0.164″)	0.33″	7113K808	2.22	9.71	Red	7113K829	2.76	11.81	7113K855	4.89	10.26
22-18	#10 (0.190″)	0.33″	7113K809	1.88	8.36	Red	7113K831	2.76	11.72	7113K856	4.96	10.40
22-18	1/4″	0.47″	7113K812	2.73	12.10	Red	7113K832	3.10	15.57	7113K857	5.44	12.00
22-18	5/16″	0.47″	7113K813	2.71	12.06	Red	7113K833	4.38	16.56	7113K858	5.09	13.14
22-18	3/8″	0.56″	7113K814	3.08	14.36	Red	7113K834	4.81	20.08	7113K859	5.90	14.87
16-14	#6 (0.138″)	0.25″	7113K815	2.12	9.09	Blue	7113K835	2.77	13.98	7113K861	4.94	11.10
16-14	#8 (0.164″)	0.33″	7113K816	1.16	5.15	Blue	7113K836	2.77	12.50	7113K862	4.95	10.40
16-14	#10 (0.190″)	0.33″	7113K817	1.87	6.87	Blue	7113K837	3.08	12.50	7113K863	4.92	10.41
16-14	1/4″	0.47″	7113K818	2.24	10.03	Blue	7113K838	3.09	14.64	7113K864	6.01	12.78
16-14	5/16″	0.47″	7113K819	2.30	9.99	Blue	7113K839	2.53	14.64	7113K865	6.03	12.67
16-14	3/8″	0.56″	7113K822	2.87	12.32	Blue	7113K841	4.95	21.20	7113K866	6.82	15.23
12-10	#8 (0.164″)	0.38″	7113K823	2.16	10.46	Yellow	7113K842	3.57	17.83	7113K867	6.05	16.05
12-10	#10 (0.190″)	0.38″	7113K824	3.05	12.72	Yellow	7113K843	3.50	17.85	7113K868	5.38	16.05
12-10	1/4″	0.53″	7113K825	2.86	14.98	Yellow	7113K844	4.02	21.04	7113K869	6.10	17.76
12-10	3/8″	0.59″	7113K826	2.37	15.67	Yellow	7113K845	5.69	24.11	7113K871	6.88	18.60
12-10	1/2″	0.75″	7113K827	4.05	21.12	Yellow	7113K846	6.63	30.79	7113K872	7.42	23.19

♣ Not UL listed or CSA certified. ★ For 26-22 AWG. ■ Ring width is 0.31″.

For Wire Size (AWG)	For Stud Size	Ring Wd.	Noninsulated Pkg. Qty.		Per Pkg.	Insul. Color	Vinyl Insulated Pkg. Qty.		Per Pkg.	Nylon Insulated Pkg. Qty.		Per Pkg.
Standard (Cont.)												
8	#10 (0.190″)	0.48″	50	7113K241	$15.50	Red	25	7113K221♠	$10.76	25	7113K449	$11.55
8	1/4″	0.48″	50	7113K242	15.50	Red	25	7113K222♠	10.76	25	7113K444	11.55
8	5/16″	0.60″	50	7113K243	16.42	Red	25	7113K223♠	10.76	25	7113K443	12.33
8	3/8″	0.60″	50	7113K244	16.42	Red	25	7113K224♠	10.63	25	7113K442	13.20
8	7/16″	0.83″	25	7113K555	12.42	Red	25	7113K715♠	13.89	25	7113K735	15.00
8	1/2″	0.83″	25	7113K556	12.42	Red	25	7113K716♠	13.89	25	7113K736	15.73
8	5/8″	1.14″	25	7113K473	16.81	Red	10	7113K717♠	11.96	10	7113K737	11.29
8	3/4″	1.14″	25	7113K474	18.08	Red	—	—	—	10	7113K738	11.29
6	#10 (0.190″)	0.49″	25	7113K445	11.32	Blue	25	7113K225♠	15.00	10	7113K365	11.07
6	1/4″	0.49″	25	7113K446	8.54	Blue	25	7113K226♠	14.81	10	7113K366	11.07
6	5/16″	0.65″	25	7113K447	8.82	Blue	25	7113K227♠	14.77	10	7113K367	11.07
6	3/8″	0.65″	25	7113K448	8.75	Blue	25	7113K228♠	14.49	10	7113K368	11.07
6	7/16″	0.84″	25	7113K475	11.61	Blue	25	7113K719♠	18.08	10	7113K739	10.68
6	1/2″	0.84″	25	7113K476	11.61	Blue	25	7113K721♠	17.21	10	7113K741	10.68
6	3/4″	1.14″	10	7113K477	9.86	Blue	10	7113K722♠	9.05	10	7113K479	12.32
4	1/4″	0.68″	10	7113K249	10.65	Yellow	10	7113K229♠	11.50	10	7113K441	12.94
4	5/16″	0.68″	10	7113K251	10.65	Yellow	10	7113K231♠	11.50	10	7113K469	12.07
4	3/8″	0.68″	10	7113K252	10.65	Yellow	10	7113K232♠	7.67	10	7113K471	12.07
4	1/2″	0.68″	10	7113K253	10.65	Yellow	10	7113K233♠	7.67	10	7113K472	12.07
4	5/8″	1.28″	10	7113K563	13.14	Yellow	10	7113K478♠	11.80	10	7113K743	16.69
4	3/4″	1.28″	10	7113K564	12.11	Yellow	—	—	—	10	7113K744	16.89
Heavy Duty												
16-12	#6 (0.138″)	0.38″	10	9388K41▲	3.68	Yellow	—	—	—	10	9388K31●	5.28
16-12	#8 (0.164″)	0.28″	—	—	—	Yellow	—	—	—	10	9388K32	5.30
16-12	#10 (0.190″)	0.38″	10	9388K43▲	3.68	Yellow	10	9388K53▲	3.53	10	9388K33	5.26
16-12	1/4″	0.61″	—	—	—	Yellow	10	9388K54▲♥	4.23	10	9388K34	6.13
16-12	5/16″	0.61″	10	9388K45▲✓	3.79	Yellow	10	9388K55▲♥	4.23	10	9388K35	6.13
16-12	3/8″	0.61″	—	—	—	Yellow	10	9388K56▲	4.31	10	9388K36	6.09
16-12	7/16″	0.75″	—	—	—	Yellow	10	9388K57▲	4.35	—	—	—
16-12	1/2″	0.75″	—	—	—	Yellow	—	—	—	10	9388K38	7.15
Star												
22-18	#6 (0.138″)	0.39″	100	69665K71♦	6.62	Red	100	69665K74♦	11.50	50	69665K57♦	10.40
22-18	#8 (0.164″)	0.39″	100	69665K72♦	6.62	Red	100	69665K75♦	11.82	50	69665K58♦	10.40
22-18	#10 (0.190″)	0.39″	100	69665K73♦	6.62	Red	100	69665K76♦	11.50	50	69665K59♦	10.03
16-14	#6 (0.138″)	0.39″	100	69665K81	6.62	Blue	100	69665K84♦	12.60	50	69665K67♦	13.94
16-14	#8 (0.164″)	0.39″	100	69665K82	6.49	Blue	100	69665K85♦	12.60	50	69665K68♦	13.94
16-14	#10 (0.190″)	0.39″	100	69665K83	6.49	Blue	100	69665K86♦	12.60	50	69665K69♦	13.29
Multistud												
22-18	#2, #4, #6	0.28″	—	—	—	Red	—	—	—	25	8010K31	5.48
22-18	#6, #8, #10	0.34″	—	—	—	Red	100	8010K12	18.73	50	8010K42	15.36
16-14	#2, #4, #6	0.28″	—	—	—	Blue	50	8010K13	7.89	50	8010K33	12.89
16-14	#6, #8, #10	0.34″	100	8010K24	10.75	Blue	100	8010K14	19.59	50	8010K44	16.04
12-10	#6, #8, #10	0.39″	50	8010K25	7.19	Yellow	50	8010K15	12.09	50	8010K35	17.90

♠ Rated to 300 volts and 194° F. ▲ For 16-14 AWG. ● Ring width is 0.28″. ♥ Ring width is 0.54″.
✓ Ring width is 0.53″. ♦ UL recognized.

Standard

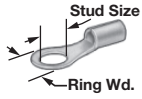

Noninsulated

Insulated

Heavy Duty

Noninsulated

Insulated

Star

Noninsulated

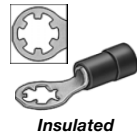

Insulated

Multistud

Noninsulated

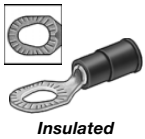

Insulated

About Wire Size (AWG)

AWG stands for American Wire Gauge, a designation of the wire diameter of the electrical conductor. Wire gauges that are larger than 4/0 are given the designation MCM (or KCMIL).

Wire Size (AWG)	Wire Dia. Inches	Wire Dia. mm	Wire Size (AWG)	Wire Dia. Inches	Wire Dia. mm	Wire Size (AWG)	Wire Dia. Inches	Wire Dia. mm	Wire Size (AWG)	Wire Dia. Inches	Wire Dia. mm	Wire Size (AWG)	Wire Dia. Inches	Wire Dia. mm
40	0.003″	0.08	28	0.013″	0.32	16	0.051″	1.29	4	0.204″	5.19	4/0	0.460″	11.68
38	0.004″	0.10	26	0.016″	0.41	14	0.064″	1.63	2	0.258″	6.54	250 MCM	0.500″	12.70
36	0.005″	0.13	24	0.020″	0.51	12	0.080″	2.05	1	0.289″	7.35	300 MCM	0.540″	13.72
34	0.006″	0.16	22	0.025″	0.64	10	0.102″	2.59	1/0	0.324″	8.25	350 MCM	0.590″	14.99
32	0.008″	0.20	20	0.032″	0.81	8	0.129″	3.26	2/0	0.365″	9.27	400 MCM	0.630″	16.00
30	0.010″	0.26	18	0.040″	1.02	6	0.162″	4.12	3/0	0.410″	10.40	500 MCM	0.700″	17.78

High-Temperature Ring Terminals

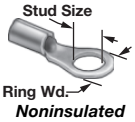

Noninsulated

Insulated

Designed to withstand high temperatures, these crimp-on terminals are your best choice for extremely hot environments.

Noninsulated—Voltage ratings do not apply. **To Order:** Please specify package quantity from those available. *Terminals rated to 900° F* are nickel-plated steel. UL recognized. *Terminals rated to 1200° F* are nickel. UL listed.

Insulated—PVDF insulation provides electrical isolation and prevents wire flexing at the crimp point. All are made of tin-plated copper and are rated to 600 volts. UL listed.

For Wire Size (AWG)	For Stud Size	Ring Wd.	Noninsulated—900° F	Per Pkg. of 10	Per Pkg. of 100	Noninsulated—1200° F	Per Pkg. of 10	Per Pkg. of 50	Insulation Color	Insulated—302° F	Per Pkg. of 5
22-18	#4 (0.112″)	0.25″	—	—	—	—	—	—	Red	8408T11	$8.81
22-18	#6 (0.138″)	0.26″	69405K11	$2.22	$7.41	69405K26	$4.22	$12.99	Red	8408T12	8.79
22-18	#8 (0.164″)	0.26″	69405K12	2.22	7.41	69405K27	4.22	12.92	Red	8408T13	8.91
22-18	#10 (0.190″)	0.32″	69405K13	2.22	7.41	69405K28●	4.22	13.69	Red	8408T14●	8.90
16-14	#4 (0.112″)	0.25″	—	—	—	—	—	—	Blue	8408T21	9.10
16-14	#6 (0.138″)	0.34″	69405K15	2.22	7.41	69405K31▲	4.60	14.49	Blue	8408T22▲	9.09
16-14	#8 (0.164″)	0.37″	69405K16	2.22	7.41	69405K32▲	4.60	14.49	Blue	8408T23▲	9.09
16-14	#10 (0.190″)	0.37″	69405K17	2.22	7.41	69405K33▲	4.60	14.49	Blue	8408T24▲	9.10
16-14	1/4″	0.47″	69405K18	3.17	10.58	69405K34	6.59	24.30	Blue	8408T25	9.86
12-10	#6 (0.138″)	0.37″	69405K21	4.15	13.85	69405K35★	8.05	30.44	Yellow	8408T31★	8.25
12-10	#8 (0.164″)	0.37″	69405K22	3.78	12.60	69405K36★	8.05	31.97	Yellow	8408T32★	8.27
12-10	#10 (0.190″)	0.37″	69405K23	3.01	10.03	69405K37★	8.05	32.93	Yellow	8408T33★	8.30
12-10	1/4″	0.47″	69405K24	4.28	14.26	69405K38◢	9.58	37.99	Yellow	8408T34◢	8.93
12-10	5/16″	0.59″	69405K25	4.05	13.48	69405K39◢	11.12	51.94	—	—	—
12-10	3/8″	0.59″	69405K8	4.60	14.67	69405K43	12.34	43.09	—	—	—

● Ring width is 0.28″. ▲ Ring width is 0.32″. ★ Ring width is 0.39″. ◢ Ring width is 0.54″.

Heat-Shrink Insulated Ring Terminals

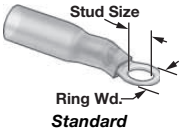

Standard

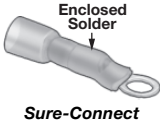

Sure-Connect

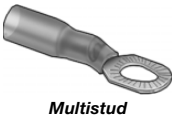

Multistud

A rugged, all-weather connection seals out water, salt, and harsh contaminants. Crimp terminal onto wire and apply heat—the heat-shrink tubing forms an abrasion- and strain-resistant seal. Terminals are tin-plated copper.

Standard terminals have a nylon-like polymer heat shrink tubing with a minimum shrink temperature of 194° F. Rated to 600 volts and 221° F. UL listed and CSA certified.

Sure-connect terminals provide maximum durability. They have an enclosed solder that melts when heat is applied to the polyolefin heat shrink tubing, providing the most reliable electrical connection. Minimum shrink temperature is 275° F. Rated to 600 volts and 221° F.

Multistud terminals have polyolefin heat shrink tubing with a minimum shrink temperature of 302° F. Rated to 600 volts and 257° F.

For Wire Size (AWG)	For Stud Size	Ring Wd.	Insul. Color	Pkg. Qty.		Per Pkg.
Standard						
22-18	#6 (0.138″)	0.32″	Red	10	7036K81	$6.22
22-18	#8 (0.164″)	0.32″	Red	10	7036K61	6.28
22-18	#10 (0.190″)	0.32″	Red	10	7036K32	5.37
22-18	1/4″	0.48″	Red	10	7036K62	7.30
22-18	3/8″	0.54″	Red	10	7036K63	7.30
16-14	#6 (0.138″)	0.32″	Blue	10	7036K83	5.42
16-14	#8 (0.164″)	0.32″	Blue	10	7036K31	5.30
16-14	#10 (0.190″)	0.32″	Blue	10	7036K34	5.30
16-14	1/4″	0.48″	Blue	10	7036K35	6.33
16-14	5/16″	0.48″	Blue	10	7036K36	6.79
16-14	3/8″	0.48″	Blue	10	7036K37	7.27
12-10	#6 (0.138″)	0.39″	Yellow	10	7036K64	6.55
12-10	#8 (0.164″)	0.39″	Yellow	10	7036K72	6.48
12-10	#10 (0.190″)	0.54″	Yellow	10	7036K76	6.47
12-10	1/4″	0.54″	Yellow	10	7036K78	7.61
12-10	5/16″	0.54″	Yellow	10	7036K65	8.46
12-10	3/8″	0.6″	Yellow	10	7036K77	7.61
12-10	1/2″	0.76″	Yellow	10	7036K33	6.76
8	#10 (0.190″)	0.38″	Red	10	7036K71	11.21
8	1/4″	0.46″	Red	10	7036K82	11.21
8	5/16″	0.46″	Red	10	7036K73	11.21
8	3/8″	0.82″	Red	10	7036K74	12.33

For Wire Size (AWG)	For Stud Size	Ring Wd.	Insul. Color	Pkg. Qty.		Per Pkg.
Sure-Connect						
20-18	#6 (0.138″)	0.31″	Red	10	9983K11	$9.03
20-18	#8 (0.164″)	0.31″	Red	10	9983K12	9.03
20-18	#10 (0.190″)	0.31″	Red	10	9983K13	9.03
20-18	1/4″	0.47″	Red	10	9983K14	9.38
20-18	5/16″	0.47″	Red	10	9983K15	9.38
20-18	3/8″	0.56″	Red	10	9983K16	9.55
16-14	#6 (0.138″)	0.31″	Blue	10	9983K17	9.03
16-14	#8 (0.164″)	0.31″	Blue	10	9983K18	9.03
16-14	#10 (0.190″)	0.31″	Blue	10	9983K19	9.03
16-14	1/4″	0.56″	Blue	10	9983K21	9.43
16-14	5/16″	0.56″	Blue	10	9983K22	9.43
16-14	3/8″	0.56″	Blue	10	9983K23	9.53
12-10	#6 (0.138″)	0.38″	Yellow	10	9983K24	10.07
12-10	#8 (0.164″)	0.38″	Yellow	10	9983K25	10.07
12-10	#10 (0.190″)	0.38″	Yellow	10	9983K26	9.60
12-10	1/4″	0.59″	Yellow	10	9983K27	10.45
12-10	5/16″	0.59″	Yellow	10	9983K28	10.45
12-10	3/8″	0.59″	Yellow	10	9983K29	10.45
12-10	1/2″	0.75″	Yellow	10	9983K31	11.75
Multistud						
22-18	#6, #8, #10	0.35″	Red	10	8332K11	5.11
16-14	#6, #8, #10	0.35″	Blue	10	8332K12	5.11
12-10	#6, #8, #10	0.39″	Yellow	10	8332K13	6.84

For information about wire size (AWG), see page 758.

Flag Ring Terminals

"Flag on a flagpole" design lets you connect your wire at a right angle. Great for tight spaces. These crimp-on terminals are made of tin-plated copper and are rated to 300° F. Voltage ratings don't apply to these noninsulated terminals. UL listed.

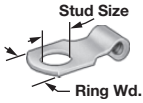

For Wire Size (AWG)	For Stud Size	Ring Wd.	Pkg. Qty.		Per Pkg.
22-18	#6 (0.138")	0.38"	100	73125K61	$11.22
22-18	#8 (0.164")	0.38"	100	73125K62	11.22
22-18	#10 (0.190")	0.38"	100	73125K63	10.67
16-14	#8 (0.164")	0.38"	100	73125K65	11.78
16-14	#10 (0.190")	0.38"	100	73125K66	$11.78
12-10	#8 (0.164")	0.38"	100	73125K68	14.26
12-10	#10 (0.190")	0.38"	100	73125K69	15.00

Metric Ring Terminals

Don't let a fraction of an inch come between your metric wire and metric stud. Now your crimp can be perfect and the terminal will fit snugly. These terminals are made of tin-plated copper.

Noninsulated— These are rated for a maximum temperature of 302° F. Voltage ratings do not apply.

Insulated— Provide electrical isolation and prevent the wire from flexing at the crimp point. All are rated to 600 volts and a maximum temperature of 221° F. *Nylon insulated* terminals have an internal brass sleeve for an extra tight crimp, making them good for high-vibration applications.

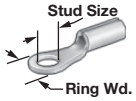

Noninsulated

Vinyl Insulated

Nylon Insulated

For Wire Size, mm²	For Stud Size	Ring Wd.	Insul. Color	Noninsulated Pkg. Qty.		Per Pkg.	Vinyl Insulated Pkg. Qty.		Per Pkg.	Nylon Insulated Pkg. Qty.		Per Pkg.
0.5-1.5	M3 (3 mm)	5.9 mm	Red	10	8429T11	$6.64	10	8429T51	$8.98	5	8429T31	$7.49
0.5-1.5	M4 (4 mm)	7.9 mm	Red	10	8429T12	6.94	10	8429T52	8.98	5	8429T32	7.38
0.5-1.5	M5 (5 mm)	8.9 mm	Red	10	8429T13	6.97	10	8429T53	9.04	5	8429T33	7.19
0.5-1.5	M6 (6 mm)	10.9 mm	Red	—	—	—	10	8429T54	8.29	5	8429T34	6.94
1.5-2.5	M3 (3 mm)	5.9 mm	Blue	10	8429T14	6.85	10	8429T55	9.11	5	8429T35	7.45
1.5-2.5	M4 (4 mm)	7.9 mm	Blue	10	8429T15	6.88	10	8429T56	9.17	5	8429T36	7.66
1.5-2.5	M5 (5 mm)	8.9 mm	Blue	10	8429T16	6.91	10	8429T57	9.17	5	8429T37	7.66
1.5-2.5	M6 (6 mm)	10.9 mm	Blue	—	—	—	10	8429T58	10.46	5	8429T38	7.52
2.5-6.0	M3 (3 mm)	6.0 mm	Yellow	10	8429T17	9.22	10	8429T59	12.92	5	8429T39	8.69
2.5-6.0	M4 (4 mm)	8.0 mm	Yellow	10	8429T18	9.31	10	8429T61	13.01	5	8429T41	10.63
2.5-6.0	M5 (5 mm)	9.5 mm	Yellow	10	8429T19	9.38	10	8429T62	13.10	5	8429T42	10.98
2.5-6.0	M6 (6 mm)	10.9 mm	Yellow	10	8429T21	10.84	10	8429T63	13.90	5	8429T43	11.11
2.5-6.0	M8 (8 mm)	13.3 mm	Yellow	10	8429T22	10.90	10	8429T64	13.93	5	8429T44	11.24

Ring Terminal Assortments

We put our most popular crimp-on ring terminal sizes in one plastic compartmented box, ready for the next maintenance call. Terminals are tin-plated copper.

Noninsulated— These are rated to 300° F. Voltage ratings do not apply.

Insulated— Color coded by wire size: 22-18 AWG are red, 16-14 AWG are blue, and 12-10 AWG are yellow. *Vinyl insulated* terminals are rated to 600 volts and 221° F. *Nylon insulated* terminals have an internal tin-plated brass sleeve to provide an extra tight crimp for high-vibration applications. Rated to 600 volts and 221° F.

All assortments contain 12 different terminals: 22-18 and 16-14 AWG sizes for #6, #8, #10, and ¼" studs, and 12-10 AWG size for #8, #10, ¼", and ⅜" studs. The ***180-piece assortment*** has 15 of each terminal and the ***300-piece assortment*** has 25 of each terminal.

180-Piece Noninsulated

	180 Pieces	Each	300 Pieces	Each
Noninsulated	8853T11	$49.39	8853T12	$65.67
Vinyl Insulated	8853T18	51.10	8853T19	68.76
Nylon Insulated	8853T25	64.04	8853T26	92.07

Hook Terminals

A cross between ring and spade terminals, hook terminals install without removing the mounting screw and they resist being pulled off. Terminals are tin-plated copper. UL listed and CSA certified.

Noninsulated— Rated to 300° F. Voltage ratings don't apply to these terminals.

Insulated— Terminals provide electrical isolation. Rated to 600 volts and 221° F. *Nylon insulated* terminals have an internal tin-plated brass sleeve to provide a tighter crimp compared to vinyl insulated terminals. Good for high-vibration applications.

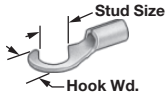

Noninsulated

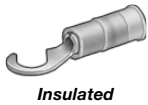

Insulated

For Wire Size (AWG)	For Stud Size	Hook Wd.	Insul. Color	Noninsulated Pkg. Qty.		Per Pkg.	Vinyl Insulated Pkg. Qty.		Per Pkg.	Nylon Insulated Pkg. Qty.		Per Pkg.
22-18	#6 (0.138")	0.33"	Red	—	—	—	—	—	—	50	7472K81	$11.56
22-18	#8 (0.164")	0.33"	Red	—	—	—	100	7472K42	$10.54	50	7472K82	11.56
22-18	#10 (0.190")	0.33"	Red	—	—	—	100	7472K43	9.72	50	7472K83	10.55
16-14	#6 (0.138")	0.36"	Blue	100	7472K34	$8.64	100	7472K44	14.08	50	7472K84	10.53
16-14	#8 (0.164")	0.36"	Blue	100	7472K35	9.07	100	7472K45	14.49	50	7472K85	10.53
16-14	#10 (0.190")	0.36"	Blue	100	7472K36	9.22	100	7472K46	15.23	50	7472K86	12.14
12-10	#10 (0.190")	0.38"	Yellow	100	7472K73	16.27	50	7472K74	10.01	50	7472K95	16.15

Heat-Shrink Insulated Spade Terminals

For an all-weather connection that seals out harsh contaminants, just crimp these terminals onto wire and apply heat. Tubing shrinks to form an abrasion- and strain-resistant seal. Made of tin-plated copper. Rated to 600 volts and 221° F.

Standard— All except 71425K56 are adhesive-lined nylon-like polymer, have a minimum shrink temperature of 194° F and are UL listed. 71425K56 is adhesive-lined polyolefin, has a minimum shrink temperature of 275° F and is not UL listed.

Locking Sure-Connect— Spring-action forks lock in place around stud, holding the terminal in place before tightening. For maximum durability and the best electrical connection, an enclosed solder melts when heat is applied to the polyolefin tubing. Minimum shrink temperature is 275° F.

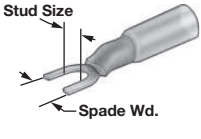

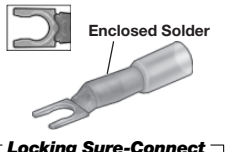

For Wire Size (AWG)	For Stud Size	Insul. Color	Pkg. Qty.	Standard Spade Wd.		Per Pkg.	Locking Sure-Connect Spade Wd.		Per Pkg.
22-18	#6 (0.138")	Red	10	0.32"	71425K21	$5.75	0.25"	9237K11♣	$8.83
22-18	#8 (0.164")	Red	10	0.32"	71425K54	5.75	0.30"	9237K12♣	8.83
22-18	#10 (0.190")	Red	10	0.32"	71425K22	5.76	0.32"	9237K13♣	8.83
16-14	#6 (0.138")	Blue	10	0.37"	71425K23	5.75	0.24"	9237K14	8.88
16-14	#8 (0.164")	Blue	10	0.40"	71425K55	5.75	0.30"	9237K15	8.88
16-14	#10 (0.190")	Blue	10	0.40"	71425K24	5.75	0.32"	9237K16	8.88
12-10	#6 (0.138")	Yellow	10	0.39"	71425K27	6.76	0.28"	9237K17	9.90
12-10	#8 (0.164")	Yellow	10	0.39"	71425K25	6.47	0.32"	9237K18	9.90
12-10	#10 (0.190")	Yellow	10	0.38"	71425K56	10.11	0.32"	9237K19	9.90

♣ For 20-18 AWG.

For information about wire size (AWG), see page 758.

Spade Terminals

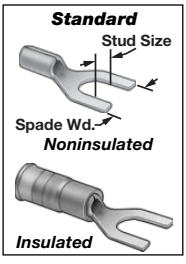

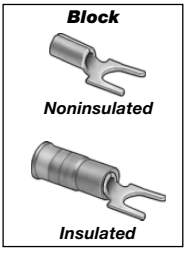

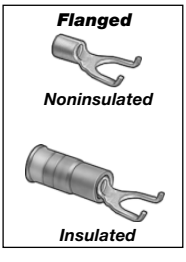

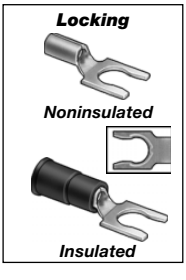

Ever drop a mounting screw? With spade terminals, you don't have to completely remove the mounting screw to install; just loosen it. Terminals are tin-plated copper and simply crimp onto wire. UL listed and CSA certified.

To Order: Please specify package quantity from those available.

Standard terminals are used on studs. ***Block*** terminals have squared shoulders and straight sides to fit tightly into standard terminal blocks. ***Flanged*** terminals have turned-up edges to keep the terminal secure even if the screw loosens—ideal for vertical applications. ***Locking*** terminals have spring-action forks that lock around the stud, holding the terminal in place prior to tightening.

Noninsulated terminals have no voltage ratings. Rated to 300° F, except *locking terminals* are rated to 347° F. ***Insulated*** terminals provide electrical isolation. They're color-coded by wire size: 22-18 AWG are red, 16-14 AWG are blue, and 16-12 and 12-10 AWG are yellow. Rated to 600 volts and 220° F. *Nylon insulated* have an internal tin-plated brass sleeve that provides an extra-tight crimp compared to vinyl. Great for high-vibration applications.

For Wire Size (AWG)	For Stud Size	Spade Wd.	Noninsulated	Per Pkg. of 10	Per Pkg. of 100	Vinyl Insulated	Per Pkg. of 10	Per Pkg. of 100	Nylon Insulated	Per Pkg. of 10	Per Pkg. of 50
Standard											
22-18	#6 (0.138″)	0.34″	69145K137★	$2.78	$9.93	69145K912	$2.27	$13.06	69145K923	$2.97	$10.66
22-18	#8 (0.164″)	0.34″	69145K138	2.84	9.49	69145K913	2.26	13.06	69145K924	3.01	10.68
22-18	#10 (0.190″)	0.34″	69145K139	2.71	9.03	69145K914	2.25	13.06	69145K925	3.01	10.67
16-14	#6 (0.138″)	0.34″	69145K141●	2.88	10.88	69145K915	2.45	14.53	69145K926	3.10	11.32
16-14	#8 (0.164″)	0.34″	69145K142▲	2.88	10.88	69145K916	2.45	14.53	69145K927	3.11	11.33
16-14	#10 (0.190″)	0.34″	69145K143	2.51	9.46	69145K917	2.46	14.53	69145K928	3.09	11.33
12-10	#6 (0.138″)	0.38″	69145K144	3.32	11.07	69145K918	2.99	20.38	69145K929	4.12	16.63
12-10	#8 (0.164″)	0.38″	69145K145	2.76	11.40	69145K919	3.00	20.42	69145K932	3.92	16.48
12-10	#10 (0.190″)	0.38″	69145K146	2.76	11.44	69145K922	3.02	20.42	69145K933	3.94	16.66
Block											
22-18	#4 (0.112″)	0.25″	69145K177	1.55	3.16	69145K201	2.10	11.56	69145K225	3.00	10.04
22-18	#6 (0.138″)	0.25″	69145K178	2.38	7.66	69145K202	2.09	11.58	69145K226	3.00	10.37
22-18	#6 (0.138″)	0.30″	69145K179	2.40	7.67	69145K203	2.10	11.56	69145K227	3.63	10.35
22-18	#8 (0.164″)	0.30″	69145K181	2.40	7.70	69145K204	2.09	11.58	69145K228	3.00	10.36
22-18	#10 (0.190″)	0.30″	69145K182	2.16	7.20	69145K205	2.10	11.55	69145K229	2.90	9.88
16-14	#4 (0.112″)	0.25″	69145K183	2.56	8.55	69145K206	2.21	12.59	69145K231	3.00	10.37
16-14	#6 (0.138″)	0.25″	69145K185	2.50	8.37	69145K208	2.20	12.63	69145K233	3.01	10.42
16-14	#6 (0.138″)	0.30″	69145K184	2.50	8.33	69145K207	2.21	12.62	69145K232	3.01	12.93
16-14	#8 (0.164″)	0.30″	69145K186	2.50	8.33	69145K209	2.18	12.62	69145K234	3.01	10.43
16-14	#10 (0.190″)	0.30″	69145K187	2.50	8.33	69145K221	2.21	12.62	69145K235	3.01	10.40
12-10	#6 (0.138″)	0.32″	69145K188	2.93	10.72	69145K222	2.94	14.96	69145K236	4.07	16.14
12-10	#8 (0.164″)	0.32″	69145K189	2.70	10.48	69145K223	2.93	14.97	69145K237	4.07	16.15
12-10	#10 (0.190″)	0.32″	69145K191	2.70	10.48	69145K224	2.90	15.00	69145K238	4.07	15.65
Flanged											
22-18	#6 (0.138″)	0.30″	—	—	—	7869K61	2.88	12.97	7869K71	4.79	12.05
22-18	#8 (0.164″)	0.30″	—	—	—	7869K62	2.88	12.97	7869K72	4.79	12.05
22-18	#10 (0.190″)	0.30″	7869K53	3.20	10.66	7869K63	2.88	12.97	7869K73	4.96	12.65
16-14	#6 (0.138″)	0.30″	7869K54	2.53	12.30	7869K64	2.97	13.80	7869K74	4.79	12.24
16-14	#8 (0.164″)	0.30″	7869K55	2.53	12.30	7869K65	2.97	13.80	7869K75	4.64	11.53
16-14	#10 (0.190″)	0.30″	7869K56	3.31	11.08	7869K66	2.97	13.80	7869K76	4.79	12.24
12-10	#6 (0.138″)	0.39″	—	—	—	7869K67	3.64	19.41	7869K77	4.98	14.90
12-10	#8 (0.164″)	0.39″	7869K58	2.71	14.57	7869K68	3.64	19.41	7869K78	4.98	14.33
12-10	#10 (0.190″)	0.39″	7869K59	2.71	13.72	7869K69	3.64	19.41	7869K79	4.98	14.90
Locking											
22-18	#4 (0.112″)	0.25″	8007K54	—	9.70	—	—	—	8007K58	—	16.30
22-18	#6 (0.138″)	0.25″	8007K62	2.66	9.49	8007K76	3.44	16.78	8007K41	—	12.49
22-18	#6 (0.164″)	0.30″	8007K63	2.71	9.73	8007K77	3.44	16.78	8007K42	—	14.13
22-18	#10 (0.190″)	0.32″	8007K13	—	9.43	8007K23	—	16.78	8007K43	—	14.09
16-14	#4 (0.112″)	0.25″	—	—	—	8007K51	—	16.53	8007K59	—	16.30
16-14	#6 (0.138″)	0.25″	8007K66	2.70	9.51	8007K81	3.71	16.78	8007K95	4.37	14.17
16-14	#8 (0.164″)	0.30″	8007K67	2.69	9.44	8007K82	3.69	16.81	8007K45	—	14.15
16-14	#10 (0.190″)	0.32″	8007K68	2.67	9.47	8007K83	3.69	16.78	8007K46	—	14.11
16-14	¼″	0.43″	8007K69	1.96	8.84	8007K84	4.12	20.28	8007K47	—	17.81
				Per Pkg. of 10	Per Pkg. of 50		Per Pkg. of 10	Per Pkg. of 50		Per Pkg. of 10	Per Pkg. of 50
12-10	#6 (0.138″)	0.28″	8007K71	$3.12	$6.96	8007K85	$3.95	$9.53	8007K37	—	$20.32
12-10	#8 (0.164″)	0.32″	8007K18	—	6.96	8007K86	3.95	8.71	8007K38	—	20.02
12-10	#10 (0.190″)	0.32″	8007K19	—	6.78	8007K87	3.96	9.53	8007K4	$5.57	20.06
12-10	¼″	0.43″	8007K57	—	8.16	8007K88	5.10	12.94	8007K5	7.76	22.59

★ Spade width is 0.32″. ● Spade width is 0.36″. ▲ Spade width is 0.39″.

Flag Spade Terminals

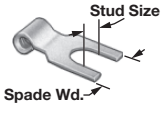

Connect wires at a right angle in those awkward tight spots. Terminals are noninsulated tin-plated copper and rated to 300° F. Voltage ratings don't apply to these terminals. UL listed and CSA certified.

For Wire Size (AWG)	For Stud Size	Spade Wd.	Pkg. Qty.		Per Pkg.
16-14	#8 (0.164″)	0.38″	100	72815K52	$11.73
16-14	#10 (0.190″)	0.38″	100	72815K53	11.18

High-Temperature Spade Terminals

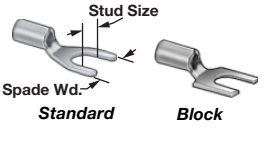

A 900° F temperature rating makes these noninsulated crimp-on terminals perfect for high-heat applications. Spade style lets you install without removing the screw. All are nickel-plated steel. Voltage ratings don't apply.

Block terminals have square shoulders and straight sides that fit tightly in terminal blocks.

	For Wire Size (AWG)	For Stud Size	Spade Wd.	Pkg. Qty.		Per Pkg.
Standard	22-18	#10 (0.190″)	0.34″	100	7874K5	$6.50
Standard	16-14	#10 (0.190″)	0.34″	100	7874K6	6.55
Standard	12-10	#10 (0.190″)	0.38″	100	7874K7	9.61
Block	22-18	#6 (0.138″)	0.30″	100	7874K8	4.92
Block	16-14	#6 (0.138″)	0.30″	100	7874K9	7.01

For information about wire size (AWG), see page 758.

Pin Terminals

Ever try pushing a stranded wire into a small terminal block opening? Crimp one of these onto the wire and you'll have a solid pin instead. Pin is 0.08″ Dia. × 0.37″ Lg., unless noted. Made of tin-plated copper. UL listed and CSA certified. **To Order:** Please specify package quantity.

Noninsulated have no voltage ratings. Rated to 300° F. ***Vinyl insulated*** are rated to 600 volts and 221° F. ***Nylon insulated*** have an internal brass sleeve to provide an extra-tight crimp for high-vibration applications. Rated to 600 volts and 221° F.

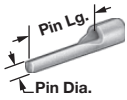

For Wire Size (AWG)	Noninsulated	Per Pkg. of 10	Per Pkg. of 100	Insulation Color	Vinyl Insulated	Per Pkg. of 10	Per Pkg. of 100	Nylon Insulated	Per Pkg. of 10	Per Pkg. of 100
22-18	8009K51	$2.78	$9.29	Red	8009K61	$4.57	$15.45	8009K71	$6.67	$24.56
16-14	8009K52	3.22	10.73	Blue	8009K62	5.47	18.26	8009K72	6.63	22.82
12-10 ♦	8009K53	4.26	14.31	Yellow	8009K63	6.19	20.98	8009K73	7.82	33.62

♦ Pin is 0.12″ Dia. × 0.46″ Lg.

Wire Ferrules and Ferrule Crimpers

Ferrules add strength and stability to stranded wire to prevent damage and allow fast insertion into terminal blocks. Unlike pin terminals, ferrules have a hollow pin that is crimped around the wire strands to make a better electrical connection. All are tin-plated copper and rated to 221° F. CE approved.

To Order: Please specify package quantity where necessary.

Noninsulated wire ferrules do not have voltage ratings. ***Insulated*** wire ferrules have color-coded polypropylene insulation, making it easy to identify wire size. Rated to 600 volts. *Two-wire insulated wire ferrules* let you combine two same-size wires into one terminal block.

Noninsulated Ferrule

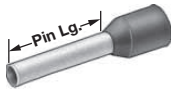

Insulated Ferrule

Noninsulated Wire Ferrules

For Wire Size (AWG)	O'all Lg.		Per Pkg. of 10	Per Pkg. of 100
26-24	0.20″	9681K47	$1.91	$5.10
26-24	0.28″	9681K48	1.91	5.10
24-22	0.20″	9681K49	1.91	5.10
24-22	0.28″	9681K51	1.91	5.10
22-20	0.31″	9681K52	1.91	5.10
22-20	0.39″	9681K53	1.91	5.10
18	0.31″	9681K54	2.12	5.77
18	0.39″	9681K55	2.12	5.77
18	0.47″	9681K56	2.12	5.77
16	0.28″	9681K57	2.06	5.77
16	0.39″	9681K58	2.06	5.77
16	0.47″	9681K59	2.06	5.77
16	0.71″	9681K61	2.06	5.77
14	0.39″	9681K62	2.06	5.77
14	0.47″	9681K63	2.06	5.77
14	0.71″	9681K64	2.06	5.77
12	0.35″	9681K65	2.57	6.92
12	0.47″	9681K66	2.57	6.92
12	0.71″	9681K67	2.57	6.92
10	0.47″	9681K68	2.57	6.92
10	0.71″	9681K69	2.57	6.92
8	0.47″	9681K71	2.68	7.69
8	0.71″	9681K72	2.68	7.69
6	0.71″	9681K73	2.89	8.46
4	0.71″	9681K74	2.89	8.46
2	0.71″	9681K75	3.04	9.62
1	0.98″	9681K76	3.04	9.62
2/0	0.98″	9681K77	3.15	9.62
3/0	0.98″	9681K78	8.00	36.36

Insulated Wire Ferrules

For Wire Size (AWG)	Pin Lg.	Insulation Color		Per Pkg. of 10	Per Pkg. of 100
28-26	0.24″	Gray	7950K75	$1.76	$5.19
26-24	0.24″	Yellow	7950K76	1.78	5.30
26-24	0.31″	Yellow	7950K77	1.81	5.34
24-22	0.24″	Lt. Blue	7950K78	1.84	5.19
24-22	0.31″	Lt. Blue	7950K79	1.86	5.26
22-20	0.24″	White	7950K81	1.60	4.76
22-20	0.31″	White	7950K82	1.63	4.91
22-20	0.39″	White	7950K83	1.65	4.85
20-18	0.24″	Gray	7950K84	1.80	5.30
20-18	0.31″	Gray	7950K85	1.84	5.39
20-18	0.39″	Gray	7950K86	1.84	5.39
20-18	0.47″	Gray	7950K87	1.86	5.43
18	0.24″	Red	7950K88	1.80	5.25
18	0.31″	Red	7950K89	1.81	5.30
18	0.39″	Red	7950K91	1.82	5.34
18	0.47″	Red	7950K92	1.84	5.39
16	0.31″	Black	7950K93	1.78	5.21
16	0.39″	Black	7950K94	1.79	5.25
16	0.47″	Black	7950K95	1.80	5.30
16	0.71″	Black	7950K96	1.81	5.34
14	0.31″	Blue	7950K97	1.79	5.39
14	0.47″	Blue	7950K98	1.80	5.43
14	0.71″	Blue	7950K65	1.81	5.48
12	0.39″	Gray	7950K69	1.98	5.83
12	0.47″	Gray	7950K62	1.99	5.88
12	0.71″	Gray	7950K59	2.00	5.93
10	0.47″	Yellow	7950K56	2.69	8.04
10	0.71″	Yellow	7950K48	2.71	8.18
8	0.47″	Red	7950K49	2.74	8.26

Insulated Wire Ferrules (Cont.)

For Wire Size (AWG)	Pin Lg.	Insulation Color		Per Pkg. of 10	Per Pkg. of 100
8	0.71″	Red	7950K36	$2.77	$8.26
6	0.47″	Blue	7950K37	2.82	8.85
6	0.71″	Blue	7950K38	2.84	8.93

				Per Pkg. of 10	Per Pkg. of 50
4	0.63″	Yellow	7950K39	$2.50	$4.55
4	0.87″	Yellow	7950K1	2.55	4.76
2	0.63″	Red	7950K2	2.59	4.81
2	0.98″	Red	7950K3	2.64	4.85

				Per Pkg. of 5
1	0.98″	Blue	7950K63	$9.49
1/0	0.79″	Yellow	7950K64	9.49
2/0	1.06″	Yellow	7950K66	10.06
3/0	0.98″	Red	7950K67	10.17
4/0	1.06″	Blue	7950K68	10.24

Two-Wire Insulated Wire Ferrules

For Wire Size (AWG)	Pin Lg.	Insulation Color		Per Pkg. of 10	Per Pkg. of 100
20	0.31″	White	9703K23	$3.22	$8.64
20	0.39″	Gray	9703K24	3.22	8.64
18	0.31″	Red	9703K25	3.17	9.13
18	0.39″	Red	9703K26	3.17	9.13
16	0.31″	Black	9703K27	3.04	8.75
16	0.47″	Black	9703K28	3.04	8.82
14	0.39″	Blue	9703K29	2.93	9.13
14	0.51″	Blue	9703K31	2.93	9.13
12	0.47″	Gray	9703K32	3.30	9.96
10	0.55″	Yellow	9703K33	3.77	11.82

Insulated Wire Ferrule Assortments

All ferrules have color-coded polypropylene insulation and are CE approved. Made of tin-plated copper. Rated to 600 volts and 221° F. Furnished in a plastic case.

Single-wire 100-piece assortment includes 20 each of 10 AWG (yellow) and 8 AWG (red); 50 each of 12 AWG (gray); and 10 each of 6 AWG (blue).

Single-wire 400-piece assortment includes 50 each of 22 AWG (white) and 14 AWG (blue); and 100 each of 20 AWG (gray), 18 AWG (red), and 16 AWG (black).

Two-wire 225-piece assortment includes 50 each of 22 AWG (white), 20 AWG (gray), 18 AWG (red), and 16 AWG (black); and 25 each of 14 AWG (blue).

Style	No. of Pieces	For Wire Size (AWG)	O'all Lg.		Each
Single Wire	100	12-6	0.39″-0.47″	9689K12	$23.53
Single Wire	400	22-14	0.31″	9689K11	23.53
Two Wire	225	22-14	0.31″-0.39″	9689K13	27.45

Wire Ferrule Crimpers

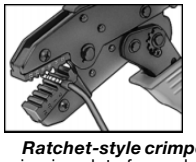

Ratchet-style crimpers are side loading and have individual square crimping slots for each wire size.

For 22-12 AWG ..... **5722K12** **Each** $63.89
For 10-6 AWG ..... **5722K14** **Each** $63.89

Self-adjusting ratchet-style crimper is front loading for ease of use in tight areas and automatically self-adjusts to the proper square crimp size.

For 28-7 AWG ..... **5722K16** **Each** $254.34

For information about wire size (AWG), see page 758.

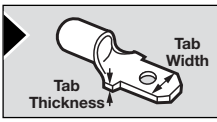

About Quick-Disconnect Terminals

Quick-disconnect terminals give fast, secure connections for your wiring and allow for quick change-outs. Easy snap-in/snap-out design makes these terrific for any application that requires frequent repair or replacement. When an application calls for a 1/4″ quick-disconnect, choose a 0.250″ tab width.

Quick-Disconnect Terminals

Just crimp onto your wires and you're ready to go. Terminals snap in and out for fast, secure connections.

Female terminals are tin-plated brass, except *fully insulated* models, which are tin-plated copper. ***Male*** terminals are zinc-plated copper, except *fully insulated* models, which are tin-plated copper. ***Standard barrel*** terminals require one crimp. ***Double-crimp barrel*** terminals require two crimps and provide an extra-tight grip for high-vibration applications.

Noninsulated

Standard Barrel Female

Standard Barrel Male

Double-Crimp Barrel Female

Double-Crimp Barrel Male

- Voltage ratings don't apply to these noninsulated terminals.
- Rated to 300° F.
- UL listed and CSA certified, unless noted.

For Wire Size (AWG)	Tab Size Wd.	Tab Size Thick.	Female Pkg. Qty.	Female Per Pkg.	Female Pkg. Qty.	Female Per Pkg.	Male Pkg. Qty.	Male Per Pkg.	Male Pkg. Qty.	Male Per Pkg.
Standard Barrel										
26-24	0.110″	0.020″	10	69525K91 ♦	$2.68	100	69525K93 ♦	$8.65	—	—	—	—
22-18	0.110″	0.020″	10	69525K56	2.05	100	69525K11	6.85	—	—	—	—
22-18	0.187″	0.020″	10	69525K57	2.05	100	69525K12	6.62	10	69525K89	$2.12	100	69525K65	$7.04
22-18	0.250″	0.032″	10	69525K58	2.05	100	69525K13	6.62	10	69525K42	2.16	100	69525K66	7.05
16-14	0.110″	0.020″	10	69525K59	2.05	100	69525K14	6.76	—	—	—	—
16-14	0.187″	0.020″	10	69525K74	2.05	100	69525K15	6.62	10	69525K43 ♦	2.16	100	69525K77 ♦	7.22
16-14	0.250″	0.032″	10	69525K75	2.05	100	69525K16	6.62	10	69525K44	2.54	100	69525K68	8.51
12-10	0.250″	0.032″	10	69525K76	2.81	100	69525K17	9.34	10	69525K45 ♦	2.88	100	69525K79 ♦	12.56
Double-Crimp Barrel														
22-18	0.187″	0.020″	10	69525K84	2.28	100	69525K19	7.59	—	—	—	—
22-18	0.250″	0.032″	10	69525K85	2.68	100	69525K61	8.92	10	69525K97 ♦	4.29	50	69525K32 ♦	14.29
16-14	0.187″	0.020″	10	69525K87	2.33	100	69525K63	7.77	10	69525K98 ♦	4.13	50	69525K33 ♦	13.77
16-14	0.250″	0.032″	10	69525K88	2.78	100	69525K64	9.29	10	69525K51 ♦	4.29	50	69525K34 ♦	14.31

♦ Not UL listed or CSA certified.

Insulated Barrel

Standard Barrel Female

Standard Barrel Male

Double-Crimp Barrel Female

Double-Crimp Barrel Male

- Offer everything noninsulated terminals offer, plus they provide electrical isolation and prevent wire flexing at the crimp point.
- ***Standard*** have vinyl insulation; ***double-crimp*** have nylon insulation.
- Rated to 600 volts and 221° F, unless noted.
- UL listed and CSA certified, unless noted.

For Wire Size (AWG)	Tab Size Wd.	Tab Size Thick.	Insulation Color	Female Pkg. Qty.	Female Per Pkg.	Female Pkg. Qty.	Female Per Pkg.	Male Pkg. Qty.	Male Per Pkg.	Male Pkg. Qty.	Male Per Pkg.
Standard Barrel											
26-22	0.110″	0.020″	Yellow	10	7060K41▲	$3.03	50	7060K71▲	$15.68	—	—	—	—
26-22	0.110″	0.032″	Yellow	—	—	—	50	7060K78▲	14.68	—	—	—	—
22-18	0.110″	0.020″	Red	10	7060K13	3.45	100	7060K17	13.94	—	—	—	—
22-18	0.187″	0.020″	Red	10	7060K18	3.45	100	7060K15	13.52	10	7060K79	$3.29	100	7060K25	$11.36
22-18	0.250″	0.032″	Red	10	7060K19	3.45	100	7060K16	11.96	10	7060K81	3.29	100	7060K26	11.96
16-14	0.110″	0.020″	Blue	10	7060K28	3.45	100	7060K27	14.58	—	—	—	—
16-14	0.187″	0.020″	Blue	10	7060K29	3.45	100	7060K11	13.02	10	7060K84 ♦■	3.41	100	7060K211 ♦■	11.87
16-14	0.250″	0.032″	Blue	10	7060K38	3.45	100	7060K12	11.96	10	7060K88	3.68	100	7060K22	12.83
12-10	0.250″	0.032″	Yellow	10	7060K39	4.37	100	7060K14	16.56	10	7060K89	3.68	100	7060K24	18.06
Double-Crimp Barrel											
22-18	0.110″	0.020″	Red	10	7060K48♣	3.27	50	7060K61♣	10.90	—	—	—	—
22-18	0.187″	0.020″	Red	10	7060K49♣	3.04	50	7060K62♣	10.72	10	7060K91 ♦	3.00	50	7060K82 ♦	10.03
22-18	0.250″	0.032″	Red	10	7060K58♣	3.08	50	7060K63♣	10.30	10	7060K92 ♦	3.39	50	7060K83 ♦	11.32
16-14	0.110″	0.020″	Blue	10	7060K59♣	3.04	50	7060K64♣	10.12	—	—	—	—
16-14	0.187″	0.020″	Blue	10	7060K68♣	3.17	50	7060K65♣	10.58	10	7060K93 ♦	3.64	50	7060K96●	8.13
16-14	0.250″	0.032″	Blue	10	7060K69♣	3.08	50	7060K66♣	10.26	10	7060K94 ♦	3.77	50	7060K85 ♦	10.58
12-10	0.250″	0.032″	Yellow	10	7060K74♣	4.05	50	7060K67♣	13.48	10	7060K95 ♦	5.52	50	7060K87 ♦	15.32

▲ Not voltage rated, UL listed, or CSA certified. ♦ Not UL listed or CSA certified. ■ Rated 194° F. ♣ Rated 300 volts. ● Not UL listed.

Fully Insulated

Standard Barrel Female

Standard Barrel Male

Double-Crimp Barrel Female

Double-Crimp Barrel Male

- Offer everything insulated barrel terminals offer, plus insulation completely covers the connection point.
- Insulation is nylon.
- Rated to 600 volts and 220° F, unless noted.
- UL listed and CSA certified.

For Wire Size (AWG)	Tab Size Wd.	Tab Size Thick.	Insulation Color	Female Pkg. Qty.	Female Per Pkg.	Female Pkg. Qty.	Female Per Pkg.	Male Pkg. Qty.	Male Per Pkg.	Male Pkg. Qty.	Male Per Pkg.
Standard Barrel											
26-24	0.187″	0.020″	White	10	7243K41	$5.11	25	7243K46	$9.02	—	—	—	—
22-18	0.250″	0.032″	Red	10	7243K13	3.12	50	7243K11	10.82	10	7243K34	$3.14	50	7243K12	$11.26
16-14	0.250″	0.032″	Blue	10	7243K14	3.12	50	7243K21	10.82	10	7243K37	3.16	50	7243K22	11.27
12-10	0.250″	0.032″	Yellow	10	7243K17	3.88	50	7243K31	15.13	10	7243K38	4.02	50	7243K32	13.76
Double-Crimp Barrel											
22-18	0.110″	0.020″	Red	10	7243K19♣	6.07	25	7243K111♣	12.74	—	—	—	—
22-18	0.187″	0.020″	Red	10	7243K23	4.61	25	7243K112	9.14	10	7243K39	4.77	25	7243K118	9.62
22-18	0.250″	0.032″	Red	10	7243K24	4.61	25	7243K114	9.15	10	7243K91	4.74	25	7243K119	9.62
16-14	0.110″	0.020″	Blue	10	7243K25♣	6.07	25	7243K115♣	12.74	—	—	—	—
16-14	0.187″	0.020″	Blue	10	7243K27	4.63	25	7243K116	9.13	10	7243K92	4.77	25	7243K121	9.61
16-14	0.250″	0.032″	Blue	10	7243K28	4.63	25	7243K117	9.15	10	7243K93	4.75	25	7243K122	9.64
12-10	0.250″	0.032″	Yellow	10	7243K29	5.33	25	7243K69	10.95	10	7243K94	4.36	25	7243K33	9.30

♣ Rated 300 volts.

For information about wire size (AWG) and quick-disconnect terminals, see pages 758 and 762.

Heat-Shrink Insulated Quick-Disconnect Terminals

Just crimp and apply heat for a moisture- and corrosion-resistant connection. Tab size is 0.250″ Wd. × 0.032″ Thick.

Insulated barrel provide electrical isolation for two side-by-side terminals. ***Fully insulated*** have insulation that completely covers the terminal and barrel, providing full electrical isolation.

Standard terminals have a min. shrink temp. of 194° F. Insulation is a nylon-like polymer. Rated to 600 volts and 221° F. Made of tin-plated copper and UL listed, unless noted.

Sure-connect terminals have an enclosed solder that melts when heat is applied for maximum durability and the best electrical connection. Heat shrink is polyolefin with a minimum shrink temperature of 275° F. All are rated to 600 volts and 221° F. Not UL listed. *Female* terminals are tin-plated brass; *male* terminals are tin-plated copper.

For Wire Size (AWG)	Insulation Color	Pkg. Qty.	Female	Per Pkg.	Male	Per Pkg.
Standard						
Insulated Barrel						
22-18	Red	25	7849K31	$11.70	7849K34♥	$11.95
16-14	Blue	25	7849K32	12.24	7849K35♥	12.28
12-10	Yellow	25	7849K33	13.59	7849K36♥	13.88
Fully Insulated						
22-18	Red	10	72625K75	8.87	72625K74	7.55
16-14	Blue	10	72625K77	8.54	72625K76	8.38
12-10	Yellow	10	72625K79	10.23	72625K78	8.54
Sure Connect						
Insulated Barrel						
20-18	Red	10	9397K11	7.49	9397K13	7.51
16-14	Blue	10	9397K14	7.53	9397K16	7.57
12-10	Yellow	10	9397K17	8.17	9397K19	8.34
Fully Insulated						
20-18	Red	10	9397K12	9.00	—	—
16-14	Blue	10	9397K15	9.00	—	—
12-10	Yellow	10	9397K18	9.94	—	—

♥ Made of zinc-plated copper.

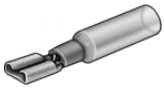

Standard Insulated-Barrel Female

Standard Fully Insulated Male

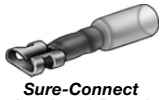

Sure-Connect Insulated-Barrel Female

Quick-Disconnect Terminal Assortments

Our most popular quick-disconnect styles and sizes in a convenient compartmented plastic box. Female terminals are tin-plated brass and male are zinc-plated copper.

Noninsulated are rated to 300° F. Voltage ratings don't apply. ***Insulated*** are rated to 600 volts and 221° F. They're color-coded by wire size: 22-18 AWG are red, 16-14 AWG are blue, 12-10 AWG are yellow. *Insulated barrel* have vinyl insulation. *Fully insulated* have nylon insulation that fully covers the terminal so there is no exposed metal.

150-piece assortments have 25 male/female pairs in 22-18, 16-14, and 12-10 AWG sizes. ***280-piece*** assortments have 50 male/female pairs in 22-18 and 16-14 AWG sizes and 40 male/female pairs in 12-10 AWG size.

	Tab Size Wd.	Tab Size Thick.	150 Pieces	Each	280 Pieces	Each
Noninsulated	0.250″	0.032″	70335K7	$22.62	70335K8	$30.78
Insulated Barrel	0.250″	0.032″	70335K42	28.12	70335K44	41.36
Fully Insulated	0.250″	0.032″	70335K81	34.94	70335K82	51.94

High-Temperature Quick-Disconnect Terminals

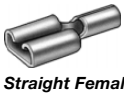

Straight Female

Straight Male

Flag Female

A 900° F temperature rating and quick-disconnect convenience make these ideal for high-heat applications. These crimp-on terminals are noninsulated, nickel-plated steel. Voltage ratings do not apply.

Flag terminals place wire at a 90° angle. Ideal for tight spaces.

For Wire Size (AWG)	Tab Size Wd.	Tab Size Thick.	Pkg. Qty.	Female	Per Pkg.	Male	Per Pkg.
Straight							
16-14	0.187″	0.020″	100	8013K21	$10.94	8013K11	$9.99
16-14	0.250″	0.032″	100	8013K22	10.99	8013K12	10.02
Flag							
16-14	0.250″	0.032″	100	8013K41	9.93	—	—

Flame-Retardant Quick-Disconnect Terminals

Greatly reduce fire hazard with these female crimp-on terminals that are made of special flame retardant, self-extinguishing materials. Simply crimp to install. All are fully insulated and meet UL 94V0 for flame resistance. Made of tin-plated brass. Rated to 600 volts and 221° F. UL listed, unless noted.

Straight terminals have vinyl insulation. ***Flag*** terminals have nylon insulation and are also CSA certified.

For Wire Size (AWG)	Tab Size Wd.	Tab Size Thick.	Insulation Color	Pkg. Qty.	Straight	Per Pkg.	Flag	Per Pkg.
26-24	0.187″	0.020″	Yellow	50	9240K17●	$10.39	—	—
22-18	0.187″	0.020″	Red	50	9240K12	12.33	9240K21	$12.28
22-18	0.250″	0.032″	Red	50	9240K13	11.64	9240K22	13.02
16-14	0.187″	0.020″	Blue	50	9240K14	12.83	9240K23	11.68
16-14	0.250″	0.032″	Blue	50	9240K15	11.32	9240K24	11.27
12-10	0.250″	0.032″	Yellow	50	9240K16	14.21	9240K25■	9.88

● Not UL listed. ■ Package quantity is 25.

Straight

Flag

Flag Quick-Disconnect Terminals

"Flag on a flagpole" design places your wire at a 90° angle, making them great for tight spaces. These female terminals connect with any male quick-disconnect tab of the same wire and tab size. Crimp to install. Terminals are tin-plated brass. UL listed and CSA certified, unless noted.

Noninsulated are rated to 300° F. Voltage ratings don't apply.

Fully insulated have nylon insulation that completely covers the terminal, leaving no exposed metal when connected. Rated to 600 volts and 221° F.

Standard require one crimp. ***Expanded*** have wider barrels for faster wire insertion. ***Double-crimp*** require two crimps and are good for high-vibration applications.

For Wire Size (AWG)	Tab Size Wd.	Tab Size Thick.	Insulation Color	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
Noninsulated									
Standard Barrel									
22-18	0.187″	0.020″	—	10	7769K31	$2.52	100	7769K81	$8.42
22-18	0.250″	0.032″	—	10	7769K32	2.60	100	7769K82	8.65
16-14	0.187″	0.020″	—	10	7769K33	2.52	100	7769K83	8.42
16-14	0.250″	0.032″	—	10	7769K34	2.60	100	7769K84	8.65
12-10	0.250″	0.032″	—	10	7769K35♦	3.91	100	7769K96♦	13.02
Fully Insulated									
Standard Barrel									
22-18	0.187″	0.020″	Red	10	7820K79	4.52	50	7820K11	15.50
22-18	0.250″	0.032″	Red	10	7820K81	4.52	50	7820K12	15.50
16-14	0.187″	0.020″	Blue	10	7820K82	4.36	50	7820K13	14.65
16-14	0.250″	0.032″	Blue	10	7820K83	4.36	50	7820K14	14.78
12-10	0.250″	0.032″	Yellow	10	7820K84	7.32	25	7820K55	16.57
Expanded Barrel									
22-18	0.187″	0.020″	Red	10	7820K85	3.60	50	7820K51	12.01
22-18	0.250″	0.032″	Red	10	7820K86	3.78	50	7820K52	12.61
16-14	0.187″	0.020″	Blue	10	7820K87	3.78	50	7820K53	12.61
16-14	0.250″	0.032″	Blue	10	7820K88	3.78	50	7820K54	12.61
Double-Crimp Barrel									
22-18	0.187″	0.020″	Red	10	7820K89	5.75	25	7820K41	12.14
22-18	0.250″	0.032″	Red	10	7820K91	5.58	25	7820K42	12.27
16-14	0.187″	0.020″	Blue	10	7820K92	6.22	25	7820K43	13.33
16-14	0.250″	0.032″	Blue	10	7820K93	6.22	25	7820K44	13.29
12-10	0.250″	0.032″	Yellow	10	7820K94	8.23	25	7820K35	15.47

♦ Not UL listed or CSA certified.

Noninsulated Standard Barrel

Fully Insulated Standard Barrel

Fully Insulated Expanded Barrel

Fully Insulated Double-Crimp Barrel

For information about wire size (AWG), see page 758.

Vibration-Resistant Quick-Disconnect Terminals

Easy to install, connect, and disconnect, yet difficult to shake loose. These female terminals have an internal tab that provides a secure connection in high-vibration applications. All are nylon-insulated tin-plated brass. Rated to 300 volts and 221° F. UL recognized and CSA certified.

For Wire Size (AWG)	Tab Size Wd.	Tab Size Thick.	Insulation Color	Pkg. Qty.		Per Pkg.
22-18	0.250″	0.032″	Red	5	8414T11	$2.20
16-14	0.250″	0.032″	Blue	5	8414T12	2.20

Piggyback Quick-Disconnect Terminals

Insulated Double-Crimp Barrel

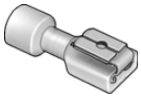

Fully Insulated Expanded Barrel

Easily connect a second wire to the same terminal. Piggyback quick-disconnects are female crimp-on terminals with a male tab "piggybacked" onto them. Made of tin-plated brass. Tab size is 0.250″ Wd. x 0.032″ Thick. All have vinyl insulation except double-crimp barrels, which have nylon insulation. Rated to 221° F. UL listed, unless noted.

Insulated barrel provides electrical isolation when two terminals are used next to each other. ***Fully insulated*** have insulation that covers the entire female terminal and barrel.

Standard and ***expanded barrel*** terminals are rated to 600 volts. *Expanded barrel* have a wider barrel that accommodates two wires in one connector. ***Double-crimp barrel*** allows two crimps for a secure connection. Great for high-vibration applications. Rated to 300 volts.

For Wire Size (AWG)	Insul. Color	Insulated Barrel Pkg. Qty.		Per Pkg.	Fully Insulated Pkg. Qty.		Per Pkg.
Standard Barrel							
22-18	Red	50	72065K31	$11.54	25	72065K24	$10.67
16-14	Blue	50	72065K32	11.30	25	72065K25	9.91
12-10	Yellow	50	72065K33	13.60	25	72065K26	10.83
Expanded Barrel							
22-18	Red	—	—	—	25	72065K51	9.40
16-14	Blue	—	—	—	25	72065K52	9.04
Double-Crimp Barrel							
22-18	Red	25	72065K21	9.91	25	72065K141♥	12.09
16-14	Blue	25	72065K22	10.83	25	72065K151♥	11.90
12-10	Yellow	25	72065K23	10.83	10	72065K161♥	11.90

♥ Not UL listed.

PC Board Quick-Disconnect Terminals

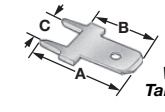

Without Tab Support

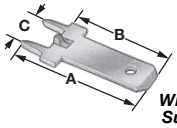

With Tab Support

Add quick-disconnect convenience to a printed circuit board with these male terminals. They work with female quick-disconnect terminals that accept the same tab size. Terminals have solder tails for attachment to your circuit board. Made of tin-plated brass. They are noninsulated, so no voltage ratings apply. Rated to 300° F. UL recognized.

Terminals with tab support provide additional support to prevent side-to-side movement during connection.

Tab Size Wd.	Tab Size Thick.	(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
Without Tab Support							
0.187″	0.020″	0.51″	0.36″	0.20″	100	7956K1	$6.90
0.250″	0.032″	0.56″	0.41″	0.20″	100	7956K2	8.79
With Tab Support							
0.187″	0.032″	0.71″	0.56″	0.20″	100	7956K3	8.83
0.250″	0.032″	0.56″	0.41″	0.20″	100	7956K4	8.42
0.250″	0.032″	0.71″	0.56″	0.20″	100	7956K5	10.21

Stud to Quick-Disconnect Adapters

Round Tongue

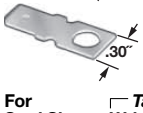

Square Tongue

Turn your screw-style terminals into efficient quick-disconnect style connections. Adapters are male, tin-plated copper, and noninsulated. Rated to 347° F. Voltage ratings don't apply to these noninsulated adapters.

Square tongue adapters fit into terminal block slots to reduce loosening due to vibration.

For Stud Size	Tab Size Wd.	Tab Size Thick.	Pkg. Qty.	Round Tongue	Per Pkg.	Square Tongue	Per Pkg.
#6 (0.138″)	0.250″	0.030″	100	8015K33	$11.08	8015K53	$10.60
#8 (0.164″)	0.250″	0.030″	100	8015K32	11.08	8015K52	11.08
#10 (0.190″)	0.250″	0.030″	100	8015K31	11.08	8015K51	11.08

Quick-Disconnect Terminal Splitters and Adapter

Single Male to Double Male Splitter, Side-by-Side

Single Male to Double Male Splitter, Piggyback

Adapter

Use these crimp-on terminals with any standard 0.250″ wide tab quick-disconnect. Terminals are tin-plated brass.

Single male to double male splitters let you split one male connection into two. They're rated to 300° F and are noninsulated. Voltage ratings don't apply.

Adapter converts a female connector into a male, allowing you to connect two female quick-disconnects together. Insulation is polypropylene. Rated to 300 volts and 221° F.

	Tab Size Wd.	Tab Size Thick.	Pkg. Qty.		Per Pkg.
Single Male to Double Male Splitters					
Side-by-Side	0.250″	0.032″	25	8019K98	$6.09
Piggyback	0.250″	0.032″	25	8019K96	6.48
Adapter					
Inline	0.250″	0.032″	25	8021K96	11.59

Snap-Plug Terminals

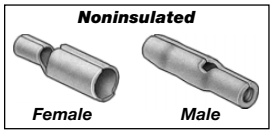

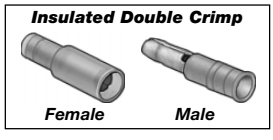

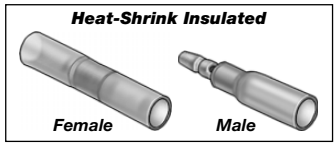

These crimp-on terminals have a space-saving round tab instead of the flat one found on conventional quick-disconnects. UL recognized and CSA certified.

Noninsulated terminals are rated to 300° F. Voltage ratings don't apply to these terminals. *Female* terminals are tin-plated brass; *male* are tin-plated copper.

Vinyl and ***nylon insulated*** terminals provide electrical isolation. Rated to 600 volts, unless noted. *Female* terminals are tin-plated brass; *male* are tin-plated copper. *Vinyl insulated* are rated to 122° F. *Nylon insulated double crimp* allow for two crimps on the barrel for a more secure connection. Great for high-vibration applications. Rated to 221° F.

Heat-shrink insulated terminals seal out water, salt, and contaminants. Just crimp and apply heat—the nylon-like polymer insulation will shrink to form a seal that provides superior abrasion protection and prevents wire flexing at the crimp point. All are tin-plated copper. Insulation is adhesive lined. Min. shrink temperature is 194° F. Rated to 600 volts and 221° F.

For Wire Size (AWG)	Insulation Color	Pkg. Qty.	Female	Per Pkg.	Male	Per Pkg.
0.156″ Plug Diameter						
Noninsulated						
22-18	—	100	71285K11	$7.82	71285K13	$11.27
16-14	—	100	71285K12	7.87	71285K14	11.87
Vinyl Insulated						
22-18	Red	50	71285K91	9.89	71285K93	12.10
16-14	Blue	50	71285K92	9.89	71285K98▲	12.10
Nylon Insulated Double Crimp						
22-18	Red	50	71285K86▲	11.13	71285K88▲	12.60
16-14	Blue	50	71285K87▲	11.32	71285K85♣	13.06
Heat-Shrink Insulated						
22-18	Red	10	7835K55	10.12	7835K53	8.23
16-14	Blue	10	7835K56	10.44	7835K54	8.42
0.180″ Plug Diameter						
Noninsulated						
16-14	—	100	71285K42	8.56	71285K44	13.52
Vinyl Insulated						
22-18	Red	50	71285K94	8.33	71285K96	10.67
16-14	Blue	50	71285K95	8.51	71285K97▲	11.13
Nylon Insulated Double Crimp						
22-18	Red	50	71285K81▲	11.45	71285K83	13.66
16-14	Blue	50	71285K82▲	11.36	71285K84	14.17

▲ Not voltage rated. ♣ Rated to 300 volts.

For information about wire size (AWG), see page 758.

Butt Splices

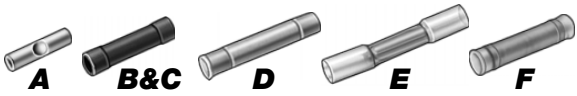

Crimp-on butt splices provide a compact and reliable way to connect two wires. Splices are made of tin-plated copper. UL listed and CSA certified, unless noted.

Noninsulated splices are rated to 300° F. Voltage ratings don't apply. ***Insulated*** splices provide electrical isolation. Rated to 600 volts and 220° F, unless noted. *Nylon-insulated* splices are more durable than vinyl. *Nylon-insulated double-crimp* splices have a barrel that allows two crimps to provide an extra-tight grip in high-vibration applications. *Heat-shrink insulated* splices are made of nylon-like polymer and have adhesive-lined insulation that shrinks when heated to form a seal against moisture and corrosion. Minimum shrink temperature is 194° F. *Nylon-insulated moisture-resistant* splices are filled with moisture-resistant grease.

For Wire Size (AWG)	O'all Lg.	Insul. Color	Pkg. Qty.		Per Pkg.
(A) Noninsulated					
22-18	0.56″	____	100	7227K32	$7.02
16-14	0.56″	____	100	7227K33	6.79
12-10	0.56″	____	100	7227K34	12.25
8	0.81″	____	10	7227K35	5.30
6	1.02″	____	10	7227K36	8.93
4	1.13″	____	10	7227K77	12.82
(B) Vinyl Insulated					
22-18	1.02″	Red	100	7227K12	10.55
16-14	1.02″	Blue	100	7227K13	12.43
12-10	1.05″	Yellow	50	7227K14	8.13
(C) Nylon Insulated					
26-22	0.89″	Yellow	5	7227K74♣	4.68
22-18	1.02″	Red	50	7227K22	9.80
16-14	1.02″	Blue	50	7227K23	9.80
12-10	1.02″	Yellow	50	7227K24	13.37
8	1.44″	Red	10	7227K81♣	9.04
6	1.79″	Blue	10	7227K82♣	8.95
4	2.04″	Yellow	10	7227K83♣	15.72
(D) Nylon Insulated Double Crimp					
22-18	1.01″	Red	25	7227K84	9.72
16-14	1.01″	Blue	25	7227K85	10.39
12-10	1.18″	Yellow	10	7227K86	8.10
(E) Heat-Shrink Insulated					
22-18	1.50″	Red	10	7227K62	9.02
16-14	1.50″	Blue	10	7227K63	9.06
12-10	1.75″	Yellow	10	7227K64	11.78
8	2.00″	Red	5	7227K65	9.38
(F) Nylon Insulated Moisture Resistant					
22-18	1.02″	Red	10	7227K91♦	6.62
16-14	1.06″	Blue	10	7227K92♦	8.21
12-10	1.15″	Yellow	10	7227K73	9.64

♣ Rated to 300 volts. ♦ Not UL listed or CSA certified.

Multiple-Wire Heat-Shrink Butt Splices

Connect a single wire to two wires of the same size with these butt splices. Crimp one wire into the small end of the connector and two into the large end. Use a heat gun to melt the heat shrink and enclosed adhesive for water resistance. Insulation is clear and has color-coded dashes on connector ends to tell you which crimp die to use. An inspection window allows you to check your connection. Splices are tin-plated copper with polyolefin insulation, and should be used with stranded copper wire. Rated to 600 volts and 221° F.

For Wire Size (AWG)	O'all Lg.	Dash Color	Pkg. Qty.		Per Pkg.
24-22	1.84″	White and Red	10	7617K11	$6.95
20-18	2.10″	Red and Blue	10	7617K12	7.77
16-14	2.36″	Blue and Yellow	5	7617K13	4.96
12-10	2.63″	Yellow and Red	5	7617K14	7.16

Modular Quick-Disconnect Terminal Blocks

8238T11

For speedy connection and disconnection, choose these terminal blocks. Modular design allows you to add as many poles (circuits) as you need. Blocks and end stop have one 0.16″ mounting hole (screws not included). Each assembly requires one end stop. These single-pole, white thermoplastic blocks are rated for 40 amps @ 600 VAC/VDC. The block with a screw-clamp terminal is for 22-8 AWG wire. Quick disconnects are 0.250″ Wd. × 0.031″ Thick. Max. temperature is 221° F. UL recognized, CSA certified, and CE approved.

		Each
With 2 Quick Disconnects/1 Screw-Clamp Terminal	8238T11	$4.86
With 4 Quick Disconnects	8238T31	2.43
End Stop	8238T7	1.34

High-Temperature Butt Splices

Designed for use with stranded copper wire and temperatures up to 900° F, these crimp-on, noninsulated splices are perfect for ovens, motors, light fixtures, and other high-heat applications. Made of nickel-plated steel. Voltage ratings don't apply to these splices.

For Wire Size (AWG)	O'all Lg.	Pkg. Qty.		Per Pkg.
22-18	0.56″	100	7971K41	$6.92
16-14	0.56″	100	7971K42	6.91
12-10	0.56″	100	7971K43	11.54

Butt Splices with Inspection Window

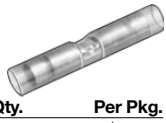

Get visual confirmation and an extra-tight grip—these butt splices have an inspection window and accept two crimps per side. Splices are tin-plated copper with nylon insulation. Rated to 300 volts and 221° F. Meet MIL-T-7928/5.

For Wire Size (AWG)	O'all Lg.	Insul. Color	Pkg. Qty.		Per Pkg.
22-18	1.27″	Red	25	7949K31	$12.79
16-14	1.27″	Blue	25	7949K32	13.39
12-10	1.62″	Yellow	10	7949K33	7.73

Sure-Connect Sealed Butt Splices

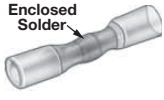

Crimp these butt splices for a strong mechanical connection, then use a heat gun to melt the heat shrink and enclosed solder for water resistance and excellent conductivity. All are tin-plated copper with polyolefin insulation. Rated to 600 volts and 221° F. Min. shrink temp. is 275° F.

For Wire Size (AWG)	O'all Lg.	Color	Pkg. Qty.		Per Pkg.
24-22	0.98″	Clear	10	9895K11	$10.21
20-18	1.47″	Red	10	9895K13	8.68
16-14	1.47″	Blue	10	9895K15	9.06
12-10	1.47″	Yellow	10	9895K17	10.70

3-Way and 4-Way Splices

Vinyl Insulated 3-Way Splice

Connect multiple wires together with these crimp-on tin-plated copper splices. All have insulation, preventing wire flexing at the crimp point. Rated to 600 volts and 221° F. CSA certified, unless noted.

Nylon insulated splices are tougher than vinyl. ***Heat-shrink insulated*** splices are made of nylon-like polymer. An adhesive-lined insulation shrinks when heated to seal against moisture and corrosion. Min. shrink temp. is 194° F. UL listed, unless noted.

For Wire Size (AWG)	Insulation Color	Pkg. Qty.	*3-Way Splices*	Per Pkg.	*4-Way Splices*	Per Pkg.
Vinyl Insulated						
22-18	Red	10	69885K62	$9.55	69885K72	$9.62
16-14	Blue	10	69885K64	10.06	69885K74	10.97
12-10	Yellow	10	69885K66	10.46	69885K76	12.27
Nylon Insulated						
22-18	Red	10	69885K63	10.87	69885K73	13.24
16-14	Blue	10	69885K65	11.37	69885K68	13.88
12-10	Yellow	10	69885K67	11.72	69885K71	14.49
Heat-Shrink Insulated						
22-18	Red	5	69885K79▲	13.16	____	____
16-14	Blue	5	69885K77▲♥	13.96	____	____
12-10	Yellow	5	69885K78▲	13.12	____	____

▲ Not CSA certified. ♥ Not UL listed.

Twist-On Butt Splices

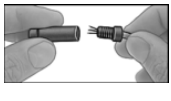

No crimping required—just strip and insert two stranded wires and tighten the threaded end caps to lock wires into place. You can also disconnect and reconnect over and over. Good for high-vibration applications. Made of nylon with a tin-plated brass insert. Rated to 600 volts and 248° F.

Standard splices are UL listed. ***Weather-resistant*** have sealed threads and insulation.

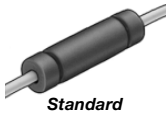
Standard

For Wire Size (AWG)	O'all Lg.	Color	Pkg. Qty.		Per Pkg.
Standard					
24-18	1.06″	Red	9	7829K1	$12.39
16-14	1.08″	Blue	9	7829K12	12.40
12-10	1.50″	Yellow	7	7829K13	12.40
8-6	1.65″	Green	6	7829K14	12.40
Weather Resistant					
18	1.08″	Red	4	7829K18	12.40
16-14	1.50″	Blue	4	7829K15	12.40
12	1.50″	Yellow	4	7829K16	12.40
10	1.65″	Green	4	7829K17	12.40

For information about wire size (AWG), see page 758.

Reducing Butt Splices

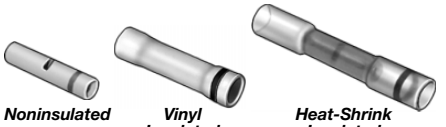

Noninsulated *Vinyl Insulated* *Heat-Shrink Insulated*

Connect two wires of different sizes with these crimp-on splices. Splices have a color-coded stripe on the end for the smaller AWG size. Made of tin-plated copper.

Noninsulated are rated to 300° F. Voltage ratings don't apply to these splices. UL listed and CSA certified. ***Insulated*** terminals are rated to 600 volts. *Vinyl insulated* provide electrical isolation. 7934K17 and K18 have translucent ends and a color-coded stripe for the larger AWG size. Rated to 194° F. *Heat-shrink insulated* have a nylon-like polymer sleeve that shrinks when heated to form a seal against moisture and corrosion. Sleeve is adhesive lined and color-coded for the larger AWG size. Rated to 221° F. Minimum shrink temperature is 194° F.

For Wire Size (AWG)	Insulation Color	Pkg. Qty.	Noninsulated O'all Lg.	Noninsulated	Noninsulated Per Pkg.	Vinyl Insulated O'all Lg.	Vinyl Insulated	Vinyl Insulated Per Pkg.	Heat-Shrink Insulated O'all Lg.	Heat-Shrink Insulated	Heat-Shrink Insulated Per Pkg.
16-14 to 22-18	Blue	10	0.68″	7934K1	$5.23	1.08″	7934K15	$7.29	1.50″	7934K13	$12.83
12-10 to 16-14	Yellow	10	0.83″	7934K2	6.67	1.30″	7934K16	7.94	1.70″	7934K14	16.14
8 to 12-10	Red	10	0.85″	7934K3	9.27	1.44″	7934K17	10.56	—	—	—
6 to 8	Blue	10	1.05″	7934K4	10.75	1.81″	7934K18■	11.77	—	—	—

■ Package quantity is 5.

Terminal/Butt Splice Assortments

Assortments include a crimping tool. Terminals and connectors are UL listed, unless noted.

Noninsulated terminals are rated to 300° F. Voltage ratings don't apply to these terminals.

Vinyl insulated terminals are rated to 600 volts and 221° F, unless noted.

Heat-shrink insulated terminals have a polyolefin sleeve that shrinks (when heated to 248° F) to form an environmental seal with superior abrasion resistance. Rated to 600 volts and 221° F.

Noninsulated Assortments

240-Piece—20 each of 12 different pieces (AWG wire size in parentheses): Ring terminals (16-10); spade terminals (22-14); male and female quick-disconnect terminals (16-14); and butt splices (22-10). Includes a plastic case. Also CSA certified.

7121K11 ..... **Each** $59.42

900-Piece—45 each of 20 different pieces (AWG wire size in parentheses): Ring terminals (22-10); spade terminals (22-10); male and female quick-disconnect terminals (16-14); and butt splices (22-10). Includes a metal case.

7123K2 ..... **Each** $132.96

Vinyl-Insulated Assortments

120-Piece—10 each of 12 different pieces (AWG wire size in parentheses): Ring terminals (16-10); spade terminals (22-14); male and female quick-disconnect terminals (16-14); and butt splices (22-10). Includes a plastic case. Also CSA certified.

7121K13 ..... **Each** $58.61

490-Piece—25 each of 19 different pieces (AWG wire size in parentheses): Ring terminals (22-10); spade terminals (22-10); male and female quick-disconnect terminals (16-14); butt splices (22-10); crimp-on wire connectors (22-10; 22-14 AWG rated to 300 volts); and 15 insulation piercing wire taps (16-14). Includes a metal case.

7123K1 ..... **Each** $127.84

Heat-Shrink Insulated Assortments

50-Piece Butt Splice—Includes 15 each of AWG wire size 22-18; 25 each of AWG wire size 16-14; and 10 each of AWG wire size 12-10. Crimping tool is ratcheted. Includes a plastic case.

69185K33 ..... **Each** $77.55

80-Piece—35 ring terminals (22-10 AWG), 5 spade terminals (16-14 AWG), 5 male and 5 female quick-disconnects (16-14 AWG; not UL listed), and 30 butt splices (22-10 AWG). Includes a plastic case.

69185K53 ..... **Each** $54.44

Terminals Connected to Wire

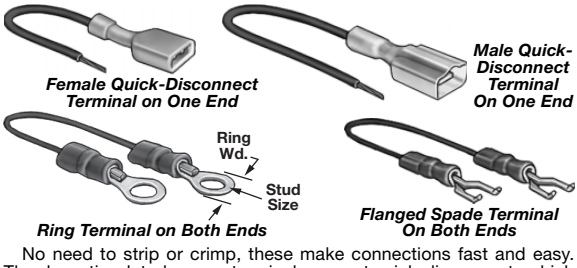

No need to strip or crimp, these make connections fast and easy. They have tin-plated copper terminals, except quick-disconnects which are tin-plated brass. Wires are made of tinned copper wire strands insulated with PVC. Rated to 300 volts. UL listed and CSA certified.

Quick-disconnect terminals are nylon insulated. Tab size is 0.250″ Wd.×0.032″ Thick. ***Ring*** and ***flanged spade*** terminals have vinyl-insulated barrels and accept #10 (.190″) stud size. Ring width is 0.31″; spade width is 0.35″. *22*, *18*, and *16 AWG* wire sizes meet UL 1007 (80° C max.)/UL 1569 (105° C max.) requirements. *14 AWG* wire meets UL 1569 (105° C max.) requirements.

To Order: Please specify overall length (6″, 12″, or 24″), wire gauge (22 AWG, 18 AWG, 16 AWG, or 14 AWG, unless noted), and wire color (black, green, red, or white).

	Pkg. Qty.		Per Pkg. 6″ Lg.	Per Pkg. 12″ Lg.	Per Pkg. 24″ Lg.
Terminal on One End, Wire is Stripped 1/4″ on the Other End					
Female Quick Disconnect	10	7548K3	$6.44	$6.91	$8.97
Male Quick Disconnect	10	7548K4	8.15	9.26	10.80
Ring	10	7548K1	6.08	7.11	9.42
Flanged Spade	10	7548K2▲	7.44	8.75	10.34
Terminal on Both Ends					
Female Quick Disconnect	10	7548K7	9.35	10.25	12.13
Male Quick Disconnect	10	7548K8★	13.48	14.22	7.99
Ring	10	7548K5	11.05	12.20	14.47
Flanged Spade	10	7548K6▲	11.67	12.67	14.68

▲Available only in 16 and 14 AWG. ★Package quantity for 24″ Lg. is 5.

Quick-Disconnect T-Taps

Tap into a wire without cutting or stripping. Just crimp on to install. These female terminals accept male quick-disconnect terminals with a 0.250″ Wd.×0.032″ Thick. tab. Made of tin-plated brass with nylon insulation. Rated to 600 volts and 221° F. UL listed and CSA certified.

For Wire Size (AWG)	Color	Pkg. Qty.		Per Pkg.
22-18	Red	25	69515K23	$8.24
18-14	Blue	25	69515K24	8.24
12	Yellow	25	69515K25	8.80

Insulation-Piercing Wire Taps

Connection Types

A *Tap/Main*

B *Inline*

C *2-Wire Pigtail*

D *3-Wire Pigtail*

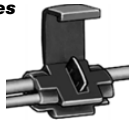

Standard, Flame Retardant, and Moisture Resistant (7063K32)

Moisture Resistant (7063K31)

Easily connect a tap wire to a through (main) wire and insulate the connection with no stripping. Just squeeze with standard pliers—a built-in metal U-shaped contact penetrates the insulation and grips the wire. Use with solid and stranded wire, unless noted. Rated to 600 volts.

Standard taps are UL listed. ***Flame-retardant*** taps are UL listed V2 for flame retardance. CSA certified. ***Moisture-resistant*** taps are filled with gel that insulates and seals out moisture. UL listed and CSA certified.

Connection Type	For Wire Size (AWG) Main	For Wire Size (AWG) Tap	Color	Maximum Temp.	Pkg. Qty.		Per Pkg.
Standard	22-18	22-18	A, B, C	Red	221° F	50	7063K33	$7.05
Standard	18-14	18-14	A, B, C	Blue	221° F	50	7063K34	7.05
Standard	12-10	12-10	A, B, C	Yellow	221° F	50	7063K26♣	10.64
Flame Retardant	22-16	22-16	A	Red	221° F	25	7063K25	7.95
Flame Retardant	12-10	18-14	A	Brown	221° F	25	7063K17	12.45
Moisture Resistant	22-14	22-14	C, D	Blue	221° F	10	7063K31	8.42
Moisture Resistant	18-14●	18-14●	A	Blue	167° F	25	7063K32	12.81

♣ Use with stranded wire only. ● 14 AWG must be stranded wire.

For information about wire size (AWG), see page 758.

Twist-On Wire Connectors

Standard

High Temperature

High Temperature with Set Screw

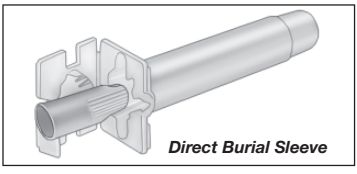
Direct Burial Sleeve

Ultra-High Temperature

Watertight

Obtain a quick, secure connection without crimping. Simply strip wires, insert into the connector, and twist to tighten. Rated to 600 volts, unless noted. UL listed and CSA certified, unless noted.

Standard have a cone-shaped inner coil to secure wires and a plastic outer shell to provide insulation. Rated to 221°F.

High-temperature connectors are similar to standard connectors, but their insulating plastic shell is rated to 302°F. Excellent for higher wattage applications, such as HID lighting and electric heat.

High-temperature connectors with set screw firmly hold wires with a set screw on an inner barrel. An insulating plastic outer shell threads over the inner barrel. Great for high-vibration applications. Rated to 302°F.

Ultra-high temperature connectors are made of porcelain so they can withstand temperatures up to 1200°F.

Watertight connectors are filled with silicone to seal out moisture and prevent corrosion. Suitable for direct burial. Rated to 167°F, unless noted.

Direct burial sleeve connector consists of a twist-on wire connector and plastic insulator tube filled with mineral oil grease. The tube protects your connection from abrasion and the gel creates a moisture-resistant seal. Ideal for irrigation and sprinkler systems, outdoor lighting, and other underground wiring applications. Rated to 120°F.

No. of Wires (AWG Wire Size) Minimum	Maximum	Color	Pkg. Qty.		Per Pkg.
Standard					
1(#20) & 1(#22)	2(#16)	Gray	14	7108K31♣	$3.17
1(#20) & 1(#22)	2(#16)	Gray	100	7108K51♣	5.91
3(#22)	3(#16)	Blue	14	7108K32♣	3.17
3(#22)	3(#16)	Blue	100	7108K81♣	6.59
3(#20)	4(#16) & 1(#20)	Orange	12	7108K33	3.17
3(#20)	4(#16) & 1(#20)	Orange	100	7108K2	7.68
6(#22)	1(#10) & 1(#12)	Yellow	9	7108K34	3.17
6(#22)	1(#10) & 1(#12)	Yellow	100	7108K6	8.85
2(#14)	2(#10) & 2(#12)	Red	6	7108K35	3.17
2(#14)	2(#10) & 2(#12)	Red	100	7108K7	13.21
High Temperature					
3(#20)	4(#16) & 1(#20)	Black	100	6877K7	11.88
1(#14) & 1(#18)	4(#14)	Black	100	6877K8	12.16
High Temperature with Set Screw					
1(#14) & 1(#20)	3(#14) & 2(#18)	Black	10	6878K95	9.24
1(#16) & 3(#18)	2(#10) & 1(#12)	Black	10	6878K97	10.73
Ultra-High Temperature					
2(#18)	1(#18) & 2(#16)	White	10	8206T2♣	8.30
2(#18)	2(#16) & 2(#18)	White	10	8206T3♣	11.20
2(#18)	4(#16)	White	10	8206T4♣	11.80
Watertight					
3(#22)	1(#12)	Gray	20	70615K71♠	12.84
3(#20)	3(#12)	Dark Blue	20	70615K79♠	12.84
4(#18)	2(#12)	Yellow	10	70615K64	11.43
2(#14)	2(#10)	Red	10	70615K65	11.43
3(#22)	3(#8)	Light Blue	2	70615K11	4.15
5(#14 Solid)	2(#6)	Dark Blue	8	70615K67	15.98
Direct Burial Sleeve					
2(#18)	3(#10)	Red/Yellow	2	6879K88★	4.28

♣ Rated to 300 volts. ♠ Rated to 221°F. ★ Not CSA certified.

Twist-On Wire Connector Installation Tools

Installation Tool

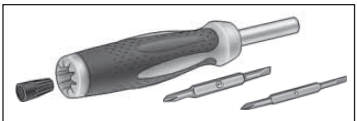
Installation Tool/Screwdriver (Shown with Wire Connector)

Reduce excessive wrist twisting and sore fingers with these convenient tools. Use for fast and secure wire connector installation without having to twist conductors.

Power drive installation tool attaches to your power drill or screwdriver for fast, easy installation.

Installation tool/screwdriver provides leverage and comfort when twisting connectors. The handle fits most twist-on connectors and includes a screwdriver with two bits: one slotted blade and one Phillips round blade.

		Each
Power Drive Installation Tool for #10 and Smaller Wire	8859T2	$11.18
Power Drive Installation Tool for #8 and #6 Wire	8859T3	12.73
Installation Tool/Screwdriver	8859T4	19.81

Twist-On Wire Connectors with Wings

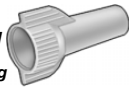
Standard and Grounding

Wide Range

Space Saver

Finger Friendly

Wings on these connectors give you a better grip and increased leverage when tightening. Just strip wires, insert into the connector, and twist to tighten. All have insulating plastic outer shells and are rated to 600 volts and 221°F, unless noted. UL listed and CSA certified.

Grounding connector has a hole in the top that allows a single grounding wire through while multiple ground wires remain connected inside the connector.

Wide range connectors cover a wider range of wire sizes yet still fit into cramped outlet boxes. Rigid plastic top and flexible bottom skirt protect the connection and allow it to conform to tight spaces. Also CE approved.

Space saver connectors have a narrow profile that takes up less space than standard wing connectors.

Finger-friendly connectors have soft molding over the wings, making them exceptionally comfortable to grip.

No. of Wires (AWG Wire Size) Minimum	Maximum	Color	Pkg. Qty.		Per Pkg.
Standard					
2(#22)	3(#12)	Yellow	50	7062K32	$5.24
2(#20)	4(#10)	Red	50	7062K34	6.84
3(#22)	3(#10)	Tan	50	7062K21	5.58
3(#12)	1(#6) & 2(#8)	Blue	50	7062K36	15.51
Grounding					
2(#14)	4(#12)	Green	25	69495K78	4.68
Wide Range					
2(#22)	2(#12)	Orange/Blue	25	6903K41	3.71
2(#18)	2(#8)	Red/Yellow	25	6903K42	5.60
4(#14)	2(#6)	Blue/Gray	25	6903K43	11.81
Space Saver					
2(#18)	2(#10) & 1(#12)	Red	25	7906K48	3.75
2(#18)	3(#12)	Yellow	25	7906K42	3.12
2(#14)	5(#12)	Green	100	7906K43●	16.49
3(#12)	1(#6) & 2(#8)	Blue	50	7906K45	12.50
Finger Friendly					
2(#18)	4(#10)	Red/Yellow	25	8337T3	5.08
2(#18)	4(#10)	Red/Yellow	250	8337T5	46.11

● Not voltage rated; has hole in top for grounding applications.

Snap Plug and Parallel Tap

Combine a snap plug and a parallel tap (sold separately) to tap into a wire with a simple crimp—no cutting or splicing.

Snap plug allows you to rapidly connect and disconnect a wire. This 0.156″ male plug has an insulating sleeve that provides more surface gripping area for easy removal. Has blue nylon insulation with tin-plated copper terminal. Overall length is 0.90″.

Parallel tap is rated to 32 volts and 194°F. It has a black polypropylene housing with tin-plated copper terminal.

Snap Plug

Parallel Tap

	For Wire Size (AWG)	Pkg. Qty.		Per Pkg.
Snap Plug	16-14	10	9675K2	$3.43
Parallel Tap	18-14	10	9675K1	3.11

For information about wire size (AWG), see page 758.

Wire Connector and Tap Assortment

Our 100-piece assortment includes 75 twist-on wire connectors and 25 insulation-piercing wire taps in a compartmented plastic case. Use with solid and stranded wire. Rated to 300 volts and 221° F. UL listed.

Twist-On Wire Connectors

Qty.	For Wire Size (AWG)	Color
25	22-14	Orange
25	22-10	Yellow
25	22- 8	Red

Insulation-Piercing Wire Taps

Qty.	For Wire Size (AWG) Main	Tap	Color
10	12-10	18-14	Brown
10	16-14	16-14	Blue
5	12-10	12-10	Yellow

7064K22 ..... Each $32.00

Push-On Wire Connectors

Four Wire

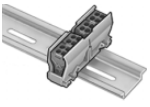

DIN-Rail Mount Adapter with Four Four-Wire Connectors

Getting a cramp from crimping? Tired of twisting? Just push these connectors onto your stripped wires for a reliable connection. A clear polycarbonate housing lets you see the connection has been made. You can also mount them to a DIN rail using the adapter sold separately below (adapters required for hazardous-location connectors). They work with both stranded and solid copper wire. All have individual ports for each wire and a tin-plated copper alloy terminal bus with stainless steel spring. Rated to 600 volts and 221° F. UL listed and CSA certified. Green color is for grounding applications.

Hazardous-location connectors require DIN-rail mount adapters (sold separately). Connectors are ATEX category 2 approved and UL listed, Class I, Zone 0, 1, and 2.

For Wire Size (AWG) Stranded	Solid	No. of Wires	Color	Pkg. Qty.		Per Pkg.
Standard						
16-12	18-12	2	Yellow	100	9915K11	$10.94
16-12	18-12	2	Green	100	9915K19	10.62
14-10	14-10	3	Red	50	9915K14	16.81
16-12	18-12	4	Orange	100	9915K13	11.88
16-12	18-12	4	Green	100	9915K21	11.88
16-12	18-12	6	Black	50	9915K15	13.91
16-12	18-12	6	Green	50	9915K23	13.91
16-12	18-12	8	Dark Gray	50	9915K17	15.26
Hazardous Location						
16-12	18-12	2	Light Gray	100	9856T11	37.90
16-12	18-12	4	Light Gray	100	9856T12	41.27
16-12	18-12	6	Light Gray	50	9856T18	22.43
16-12	18-12	8	Light Gray	50	9856T14	24.05
DIN-Rail Mount Adapters				10	9856T7	5.53

Reusable Lift-Off Wire Connectors

Three Wire

If you frequently disconnect and reconnect wires for motor maintenance or other applications, then you're ready for lift-off connectors. Just lift the orange lever to disconnect a wire and push the lever back down to clamp a wire in place. Rated to 600 volts and 185° F. Both have a gray housing and tin-plated copper alloy terminal bus. UL listed.

For Wire Size (AWG)	No. of Wires	Pkg. Qty.		Per Pkg.
28-12	3	5	8904T2	$4.33
28-12	5	5	8904T3	5.42

Insulated Set Screw Connectors

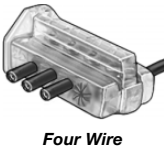

Four Wire

A good alternative to split-bolt connectors, these versatile connectors work in almost any tap or splice application. Just strip your wires, insert your main wire into one of the through-hole ports, then insert each tap wire into either side of each remaining port and tighten the captive screws. One side of each port must remain open. A transparent, fully insulated plastic cover allows visual inspection. Connectors are high-strength aluminum alloy. Suitable for use with copper and aluminum wires. Rated to 600 volts and 194° F. UL listed.

For Wire Size (AWG)	No. of Wires	Lg.	Wd.	Ht.		Each
14-2/0	2	2.61″	2.30″	1.97″	7915K11	$20.36
14-2/0	4	4.30″	2.30″	1.97″	7915K12	26.33
14-2/0	6	5.98″	2.30″	1.97″	7915K13	32.08
6-4/0	2	2.33″	2.49″	2.25″	7915K14	23.30
6-4/0	4	4.19″	2.49″	2.25″	7915K15	29.16
6-4/0	6	6.05″	2.49″	2.25″	7915K16	40.88
6 AWG-350 MCM	2	2.75″	2.69″	2.65″	7915K17	37.97
6 AWG-350 MCM	4	5.06″	2.69″	2.65″	7915K18	40.88
6 AWG-350 MCM	6	7.37″	2.69″	2.65″	7915K19	49.63
4 AWG-600 MCM	2	3.17″	3.20″	3.27″	7915K21	52.65
4 AWG-600 MCM	4	5.73″	3.20″	3.27″	7915K22	55.54
4 AWG-600 MCM	6	8.29″	3.20″	3.27″	7915K23	70.15

Crimp-On Wire Connectors

Noninsulated

Insulated

Just strip wires, twist them together, insert into connector, and crimp for dependable connections.

Noninsulated connectors are made of tin-plated copper. Voltage ratings don't apply to these connectors.

Insulated connectors have a white nylon sleeve around a copper insert. Rated to 600 volts and 221° F, unless noted. UL listed and CSA certified.

No. of Wires (AWG Wire Size) Minimum	Maximum	Pkg. Qty.		Per Pkg.
Noninsulated				
3(#20) & 1(#22)	1(#16) & 1(#18)	50	7242K61	$4.82
3(#20) & 1(#22)	1(#14) & 1(#16)	50	7242K62	5.13
1(#16) & 1(#18)	1(#12) & 1(#16)	50	7242K63	5.88
4(#16) & 1(#18)	1(#8) & 1(#14)	50	7242K58	8.45
Insulated				
3(#20) & 1(#22)	1(#16) & 1(#18)	50	7242K111♣	6.53
3(#20) & 1(#22)	1(#14) & 1(#16)	50	7242K64	4.97
1(#16) & 1(#18)	1(#12) & 1(#16)	50	7242K21	6.32
4(#16) & 1(#18)	1(#8) & 1(#14)	50	7242K65	12.24

♣ Rated to 300 volts.

Insulated Set Screw Tap Connectors

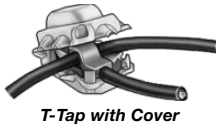

T-Tap with Cover

Parallel (Shown without Cover)

To connect a tap wire to a main wire, just strip the wires, lay in your main wire, tighten set screw, then connect your tap wire (choose from T-tap and parallel connections). Attach the insulating plastic cover to complete installation; no insulation taping is required. Made of high strength, tin-plated aluminum alloy, they are suitable for use with copper and aluminum wires. Rated to 600 volts and 194° F. UL listed and CSA certified. Dimensions listed in table do not include cover.

For Wire Size (AWG) Main	Tap	Lg.	Wd.	Ht.		Each
T-Tap Connectors						
12-2	14-2●	1.25″	0.56″	1.00″	7917K11	$14.08
2-1/0	14-1/0●	1.56″	0.75″	1.13″	7917K12	14.63
1/0-250 MCM	14-1/0●	2.00″	0.88″	1.44″	7917K13	25.19
1/0-250 MCM	6-250 MCM	2.13″	0.88″	1.44″	7917K14	57.48
Parallel Connectors						
12-2	14-2●	1.25″	0.56″	1.00″	7917K18	14.08
2-1/0	14-1/0●	1.56″	0.75″	1.13″	7917K19	14.61
1/0-250 MCM	14-1/0●	2.00″	0.94″	1.44″	7917K21	25.19
1/0-250 MCM	6-250 MCM	2.13″	0.94″	1.44″	7917K22	25.19

● 12 AWG is the small end of the range if used with aluminum wires.

Compact Insulated Set Screw Connectors

Here's a fast and easy way to connect two or three copper wires in a compact area without the hassle of taping to insulate. Ideal for tight spaces such as cable trays, raceways, wireways, and ducts. Also good for motor leads. Connectors are copper alloy with PVC insulation and brass set screws. Plastic plugs cover the set screw opening to protect against contamination. Rated to 600 volts and 194° F. UL and C-UL listed.

For Wire Size (AWG)★	No. of Wires	Lg.	Wd.	Ht.		Each
18 (Sol.)–4 (Str.)	2	1.37″	1.25″	1.40″	8447K11	$30.44
18 (Sol.)–4 (Str.)	3	2.00″	1.25″	1.40″	8447K12	34.81
8 (Sol.)–1/0 (Str.)	2	1.75″	1.50″	1.62″	8447K13	40.21
8 (Sol.)–1/0 (Str.)	3	2.56″	1.50″	1.62″	8447K14	44.23
4 AWG–350 MCM	2	2.56″	2.25″	2.68″	8447K15	79.72
4 AWG–350 MCM	3	3.56″	2.25″	2.68″	8447K16	82.49
4 AWG–500 MCM	2	2.81″	2.40″	2.75″	8447K17	99.74
4 AWG–500 MCM	3	4.12″	2.40″	2.75″	8447K18	132.34

★ Sol.=solid; Str.=stranded.

For information about wire size (AWG), see page 758.

Split-Bolt Connectors

Use these connectors for tapping and splicing wire. No special installation tools are needed—just strip wires, insert, and tighten. Insulate with tape in power applications and corrosive environments. All connectors are rated to 600 volts and 194° F. UL listed and CSA certified.

Copper splices are for use with copper and copper weld wire. Suitable for direct burial, except 6921K68. ***Aluminum splices*** can be used with any combination of copper and aluminum wire.

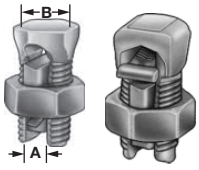

Copper *Aluminum*

Main Wire Range (AWG)♥ Min.	Max.	Min. Tap Wire Size (AWG)▲	Wire Slot Wd. (A)	Head Wd. (B)		Each
Copper						
16 Str.	8 Str.	16 Str.	0.15″	0.38″	6921K56	$3.07
10 Sol.	6 Sol.	16 Sol.	0.17″	0.50″	6921K57	3.57
8 Sol.	4 Sol.	16 Sol.	0.22″	0.56″	6921K58	4.21
6 Sol.	2 Sol.	12 Sol.	0.33″	0.69″	6921K591	6.03
6 Sol.	2 Str.	14 Str.	0.33″	0.69″	6921K61	6.75
4 Sol.	1/0 Str.	14 Sol.	0.38″	0.75″	6921K62	8.72
2 Sol.	2/0 Str.	14 Str.	0.42″	0.81″	6921K63	14.10
2 Sol.	3/0 Str.	12 Sol.	0.47″	0.88″	6921K64	19.34
1/0 Sol.	250 MCM	10 Sol.	0.58″	1.00″	6921K65	22.62
4/0 Str.	350 MCM	8 Sol.	0.75″	1.50″	6921K66	33.91
250 MCM	500 MCM	8 Sol.	0.83″	1.63″	6921K67	44.00
350 MCM	750 MCM	8 Sol.	1.03″	1.94″	6921K68	74.37
Aluminum						
10 Sol.	6 Str.	10 Sol.	0.22″	0.56″	6921K81	8.43
8 Sol.	4 Str.	10 Sol.	0.26″	0.62″	6921K82	11.63
6 Str.	2 Str.	8 Str.	0.32″	0.69″	6921K83	12.58
2 Str.	1/0 Str.	8 Str.	0.38″	0.75″	6921K84	15.99
2 Str.	2/0 Str.	8 Str.	0.44″	0.88″	6921K85	19.52
2 Str.	4/0 Str.	6 Str.	0.55″	1.13″	6921K86	35.05
1/0 Str.	350 MCM	4 Str.	0.71″	1.50″	6921K87	62.03
400 MCM	500 MCM	2 Str.	0.85″	1.73″	6921K88	85.28

♥ With equal size main and tap wires. Str.=stranded; Sol.=solid.
▲ With one max. size main wire.

Set Screw Butt Splices

Just insert stripped wires and tighten set screws. Splices are made of high-conductivity aluminum with tin electroplating to prevent corrosion. They're rated to 600 volts and 194° F. UL listed and CSA certified for use with copper and aluminum wire.

Insulated butt splices have an additional transparent cover with trim-to-fit tip to provide electrical insulation and allow for visual inspection.

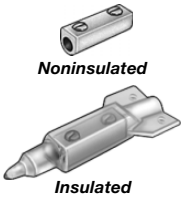

Noninsulated

Insulated

For Wire Size (AWG)	Noninsulated O'all Lg.		Each	Insulated O'all Lg.		Each
14-2	1.19″	6922K51	$3.74	3.83″	7957K1	$13.25
14-1/0	1.91″	6922K42	4.76	4.8″	7957K2	17.78
6-250 MCM	2.31″	6922K53	13.60	7.91″	7957K4	40.64
10-350 MCM	2.46″	6922K55	15.89	7.91″	7957K5	46.18

Sure-Connect Aluminum Lugs

If vibration and temperature changes have you worried about your connections, these are the lugs for you. They have a unique compression design to ensure that your stranded copper or aluminum conductors stay put. They also maintain constant pressure and stay cooler than conventional lugs. Made of corrosion-resistant aluminum alloy.

To install, just insert your wire—the connector grips it as you tighten your nut (nuts and studs not included). Remove the stud to release the wire and reuse the lug. Rated to 2,000 volts and 194° F. UL listed and CSA certified.

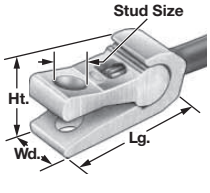

For Wire Size (AWG) Min.	Max.	For Stud Size	For Min. Stud Ht.	Lg.	Wd.	Ht.	Pkg. Qty.		Per Pkg.
8	8	1/4″	1″	1.29″	0.44″	0.59″	6	8565T11	$17.70
2	1	5/16″	1 1/4″	1.89″	0.71″	0.87″	4	8565T12	23.30
1/0	2/0	1/2″	1 1/2″	2.36″	0.87″	1.14″	2	8565T13	15.40

Copper Set Screw Lugs

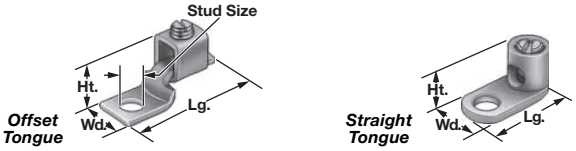

No crimping tools required, just tighten the set screw down onto the wire. Crimpless lugs are ideal for use in power distribution systems and with large motors and generators. They're made of 100% copper for high efficiency (except for 6923K65, which is 90% copper). Rated to 600 volts and 194° F. UL listed and CSA certified when used with stranded copper wire, unless noted.

Offset tongue lugs give you plenty of space to insert your wire. 6923K29 and K31-33 have slotted steel set screws; K51 and K35-39 have steel hex bolts. ***Straight tongue*** lugs allow for more surface contact while saving space. 6923K61 and K62 have slotted steel set screws; K63-65 have hex-socket steel set screws.

For Wire Size (AWG) Min.	Max.	For Stud Size	Lg.	Wd.	Ht.		Each
Offset Tongue							
14	10	5/32″	0.94″	0.31″	0.66″	6923K29	$1.35
14	6	13/64″	1.13″	0.38″	0.75″	6923K31	1.37
14	4	17/64″	1.25″	0.50″	0.81″	6923K32	2.00
8	2	17/64″	1.44″	0.50″	1.00″	6923K33	1.92
8	1/0	17/64″	1.88″	0.63″	1.34″	6923K51	4.47
4	3/0	13/32″	2.25″	0.75″	1.56″	6923K35	6.82
2	4/0	11/32″	2.38″	1.00″	1.81″	6923K36	8.48
1/0	350 MCM	13/32″	3.22″	1.00″	2.63″	6923K37 ♦	15.99
1/0	500 MCM	13/32″	4.06″	1.50″	2.75″	6923K38 ♦	23.31
600 MCM	1,000 MCM	17/32″	4.63″	2.00″	3.69″	6923K39 ♦	54.61
Straight Tongue							
14	8	#10 (0.190″)	0.80″	0.38″	0.42″	6923K61	1.82
14	4	1/4″	1.09″	0.53″	0.55″	6923K62	2.04
8	1/0	5/16″	1.50″	0.75″	0.63″	6923K63	4.59
6	250 MCM	3/8″	1.97″	0.94″	1.06″	6923K64	10.30
4/0	500 MCM	1/2″	2.97″	1.38″	1.44″	6923K65 ♦	31.64

♦ Not CSA certified.

Aluminum Set Screw Lugs

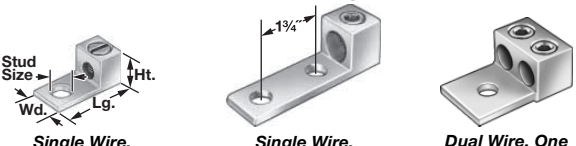

Single Wire, One Mounting Hole *Single Wire, Two Mounting Holes* *Dual Wire, One Mounting Hole*

These high-strength, aluminum alloy crimpless lugs are lightweight and have tin-plated connectors for low contact resistance. No special crimping tools are required—just tighten the set screw down onto the wire. All have tin-plated aluminum hex-socket set screws, unless noted. Great for use on electrical distribution systems. Rated to 600 volts and 194° F. UL listed and CSA certified when used with stranded copper or aluminum wire.

For Wire Size (AWG) Min.	Max.	For Stud Size	Lg.	Wd.	Ht.		Each
Single Wire							
One Mounting Hole							
14	4	1/4″	1.06″	0.50″	0.50″	6920K21 ●	$0.79
14	2	1/4″	1.16″	0.50″	0.56″	6920K22 ●	1.01
14	1/0	1/4″	1.47″	0.63″	0.78″	6920K23 ●	1.35
14	2/0	1/4″	1.47″	0.63″	0.78″	6920K24	1.52
6	250 MCM	5/16″	2.00″	1.00″	1.13″	6920K25	3.27
6	300 MCM	1/4″	2.00″	0.86″	1.13″	6920K27	4.34
4	500 MCM	3/8″	2.81″	1.50″	1.81″	6920K29	8.36
2	600 MCM	3/8″	3.19″	1.50″	1.56″	6920K31	11.14
300 MCM	800 MCM	5/8″	3.38″	1.75″	1.94″	6920K33	17.60
350 MCM	1,000 MCM	5/8″	3.38″	1.75″	1.94″	6920K35	23.81
Two Mounting Holes							
6	350 MCM	1/2″	4.31″	1.13″	1.38″	6920K28	12.21
2	600 MCM	1/2″	4.69″	1.50″	1.38″	6920K32	18.95
300 MCM	800 MCM	1/2″	6.19″	1.75″	1.88″	6920K34	31.35
Dual Wire							
One Mounting Hole							
14	1/0	1/4″	1.47″	1.13″	0.80″	6920K51 ●	2.70
14	2/0	1/4″	1.47″	1.25″	0.80″	6920K52	3.14
6	250 MCM	3/8″	2.56″	1.66″	1.19″	6920K53	8.63
6	350 MCM	1/2″	2.88″	1.89″	1.25″	6920K54	12.06
2	600 MCM	1/2″	3.19″	2.41″	1.56″	6920K55	17.09

● Set screw is zinc-plated steel and has a slotted head.

For information about wire size (AWG), see page 758.

About Compression Crimpers

Crimpers with dies typically produce the most reliable connections. Use the table at right to choose the correct die for your lug and splice. Select die by wire size, color code, or lug markings (table has markings from two prominent manufacturers).

Dieless crimpers offer greater convenience because you don't have to buy and change dies.

Copper Wire Size (AWG)	Color Code	Lug Markings T&B	Lug Markings Burndy
8	Red	21	6
6	Blue	24	7
4	Gray	29	8
2	Brown	33	10
1	Green	37	11
1/0	Pink	42	12
2/0	Black	45	13
3/0	Orange	50	14
4/0	Purple	54	15
250 MCM	Yellow	62	16
300 MCM	White	66H or 66	17
350 MCM	Red	71H or 71	18
400 MCM	Blue	76H or 76	19
500 MCM	Brown	87	21
600 MCM	Green	94H	22
750 MCM	Black	106H	24

Hydraulic Compression Crimpers

Put 12 tons of crimping power in your hands. Each of these tools has a high pressure pumping system that includes a replaceable pressure cartridge good for 10,000 to 12,000 compressions. The tool head swivels 180° for crimping in confined spaces. Use on aluminum and copper compression connectors with solid and stranded wire. Handles are fiberglass. Each crimper includes a plastic carrying case. Overall length is 23″ for 7357K5 and 25⅛″ for 7357K7.

Dies are sold below; crimpers accept U-type dies for Alcoa, Burndy, Panduit, T&B, and Blackburn 12-ton tools.

To Order: For dies, please specify wire size from the table in About Compression Crimpers at the top of the page.

Max. Jaw Opening	For Lug Sizes	For Splice Sizes		Each
1″	8 AWG to 750 MCM	10 AWG to 400 MCM	7357K5	$1,598.02
1⅝″	8 AWG to 750 MCM	8 AWG to 750 MCM	7357K7	1,831.05
Dies			7357K8	113.47
Replacement Pressure Cartridge			7357K6	151.76

Hydraulic Dieless Compression Crimper

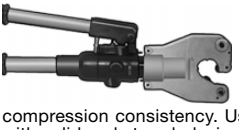

You get 6.2 tons of hydraulic power combined with the convenience of a dieless crimper. Just place a lug or splice in the jaws and pump the handles. Crimper releases when you surpass 6.2 tons of force, assuring compression consistency. Use on aluminum and copper connectors with solid and stranded wire from 10 AWG to 500 MCM. It includes a replaceable pressure cartridge, an aluminum alloy 360° swivel head, a rapid-advance two-stage pumping system, fiberglass handles, and a steel carrying case. Overall length is 22″.

		Each
Crimper	69305K59	$2,051.33
Replacement Pressure Cartridge	7357K6	151.76

Mechanical Rotating-Die Compression Crimper

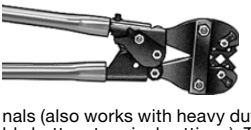

Since the dies are captive in the rotating head, you won't have to worry about losing them. Dies rotate to fit stranded wire with 8 AWG to 3/0 AWG aluminum and 6 AWG to 250 MCM copper lugs, splices, and battery terminals (also works with heavy duty power lugs—you must use comparable battery terminal settings). The controlled-cycle ratchet mechanism won't open until the crimp is completed, so you'll make quality crimps every time. The compound action exerts five tons of equal pressure from all four sides, creating a diamond-shaped crimp. A reference chart on the tool eliminates guesswork by showing you which die to use. Crimper is hardened steel. Handles are enamel-coated steel with rubber grips. Overall length is 25″.

7333K15 ..... Each $243.37

Mechanical Dieless Compression Crimpers

Dieless means there are no dies to buy, change, or lose. A reference chart on the tool gives you the right settings, and a single screw makes adjustments easy. They are more economical than hydraulic crimpers and have a compact head design for convenience in confined areas. Head also has a machined flat surface for standing the tool in a working position on a bench. Use on solid and stranded wire. Body is steel and handles are fiberglass with rubber hand grips. Handles telescope for increased leverage. Overall length with handles retracted is 27″.

Copper Lug/Splice Range	Aluminum Lug/Splice Range		Each
8 AWG to 250 MCM	8 AWG to 4/0	7996K12	$364.93
8 AWG to 500 MCM	8 AWG to 500 MCM	7996K11	739.15

Compression Lugs

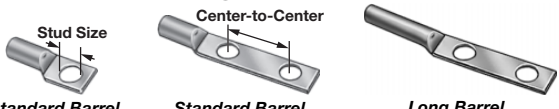

Standard Barrel One Hole — *Standard Barrel Two Holes* — *Long Barrel Two Holes*

Seamless tin-plated copper or aluminum tubing provides secure connections. Rated to 600 volts and 194° F. UL listed and CSA certified, unless noted. ***Copper lugs*** are for use with stranded copper wires only. Lugs are color coded by wire size (see About Compression Crimpers above for colors). *Long-barrel lugs* allow for more than one crimp for a secure connection. ***Aluminum lugs*** can be used with stranded aluminum and copper wires.

For Wire Size (AWG)	For Stud Size	One Hole O'all Lg.		Each	Two Holes O'all Lg.	Ctr.-to-Ctr.		Each
Copper Standard Barrel								
8	#10♣	1 5/32″	6926K73	$1.74	1 25/32″	5/8″	6926K211	$3.75
8	1/4″	1 7/32″	6926K74	1.74	—	—	—	—
8	3/8″	1 11/32″	6926K36	2.10	—	—	—	—
6	1/4″	1 23/32″	6926K75	1.82	2 7/32″	5/8″	6926K212	4.82
6	3/8″	1 27/32″	6926K37	2.29	—	—	—	—
4	1/4″	1 47/64″	6926K51	2.52	2 19/64″	5/8″	6926K213	5.20
4	5/16″	1 49/64″	6926K76	2.52	—	—	—	—
4	3/8″	1 49/64″	6926K53	2.52	—	—	—	—
2	1/4″	1 51/64″	6926K54	4.37	2 21/64″	5/8″	6926K214	5.96
2	3/8″	1 63/64″	6926K77	4.37	—	—	—	—
1	3/8″	2 3/64″	6926K78	4.70	—	—	—	—
1/0	5/16″	2 1/16″	6926K55	5.32	2 13/16″	7/8″	6926K215	7.89
1/0	3/8″	2 1/16″	6926K79	5.32	3″	1″	6926K41	7.56
2/0	3/8″	2 1/8″	6926K56	5.67	—	—	—	—
2/0	1/2″	2 3/8″	6926K81	5.67	4 1/8″	1 3/4″	6926K42	8.36
3/0	3/8″	2 1/4″	6926K57	7.24	3 3/16″	1″	6926K216	10.64
3/0	1/2″	2 1/2″	6926K82	7.24	4 1/4″	1 3/4″	6926K43	10.32
4/0	3/8″	2 5/16″	6926K58	8.04	3 1/4″	1″	6926K217	11.72
4/0	1/2″	2 9/16″	6926K83	8.04	4 5/16″	1 3/4″	6926K44	11.40
250 MCM	1/2″	2 11/16″	6926K84	9.15	4 7/16″	1 3/4″	6926K45	12.60
300 MCM	1/2″	2 3/4″	6926K85	11.36	4 1/2″	1 3/4″	6926K46	23.23
350 MCM	1/2″	2 29/32″	6926K86	11.64	4 5/8″	1 3/4″	6926K47	16.12
400 MCM	5/8″	3 5/16″	6926K87	14.48	4 3/4″	1 3/4″	6926K48■	16.64
500 MCM	5/8″	3 9/16″	6926K88	16.68	5″	1 3/4″	6926K49■	23.48
Copper Long Barrel								
6	1/4″	2 1/16″	6926K11	1.86	2 21/32″	5/8″	6926K96	5.84
4	1/4″	2 1/16″	6926K12	2.50	2 11/16″	5/8″	6926K97	6.69
2	5/16″	2 1/4″	6926K14	5.10	3 7/32″	3/4″	6926K98	7.09
1	5/16″	2 3/8″	6926K15	5.36	3 3/8″	7/8″	6926K99	9.36
1/0	5/16″	2 7/16″	6926K16	5.51	3 5/16″	7/8″	6926K62	8.60
2/0	3/8″	2 11/16″	6926K17	6.49	4 13/16″	1 3/4″	6926K63■	10.11
3/0	1/2″	3 1/8″	6926K18	7.93	4 7/8″	1 3/4″	6926K64	10.01
4/0	1/2″	3 5/16″	6926K19	8.87	5 1/16″	1 3/4″	6926K65	10.95
250 MCM	1/2″	3 3/8″	6926K91	10.32	5 1/8″	1 3/4″	6926K66	13.83
300 MCM	1/2″	3 13/16″	6926K92	12.27	5 9/16″	1 3/4″	6926K67	16.55
350 MCM	1/2″	3 27/32″	6926K93	12.83	5 5/8″	1 3/4″	6926K68	16.53
400 MCM	5/8″	4 5/16″	6926K94	15.17	5 13/16″	1 3/4″	6926K69■	20.19
500 MCM	5/8″	4 1/2″	6926K95	17.32	6″	1 3/4″	6926K71■	23.21
Aluminum Standard Barrel								
8	1/4″	1 9/16″	6896K41●	3.76	—	—	—	—
6	1/4″	1 53/64″	6896K12	4.62	—	—	—	—
4	5/16″	1 57/64″	6896K13	4.94	—	—	—	—
2	3/8″	2 3/32″	6896K14	5.90	—	—	—	—
1	3/8″	2 17/32″	6896K15	7.18	—	—	—	—
1/0	3/8″	2 7/32″	6896K16	8.18	3 17/32″	1″	6896K3	16.07
2/0	1/2″	2 5/8″	6896K17	10.56	4 21/32″	1 3/4″	6896K31	16.33
3/0	1/2″	2 29/32″	6896K18	15.55	4 15/16″	1 3/4″	6896K32	20.44
4/0	1/2″	2 31/32″	6896K19	17.79	5 1/16″	1 3/4″	6896K33	21.78
250 MCM	1/2″	3 7/16″	6896K2	17.03	5 3/16″	1 3/4″	6896K34	22.30
350 MCM	1/2″	3 7/8″	6896K21	23.00	5 9/32″	1 3/4″	6896K35	23.48
500 MCM	5/8″	4 5/8″	6896K22	44.26	6 1/32″	1 3/4″	6896K36	47.04

♣ #10 stud size is 0.190″. ■ 1/2″ stud size. ● Not UL listed.

For information about wire size (AWG), see page 758.

Heavy-Gauge Compression Butt Splices

Perfect for heavier gauge applications such as electrical distribution systems, these splices have a center stop that ensures proper wire insertion depth. Splices are seamless, high-conductivity tin-plated copper or aluminum. Wire size, color, and crimping die reference number are marked on each splice. Rated to 600 volts and 194° F. UL listed and CSA certified, unless noted.

Use ***copper*** splices with stranded copper wire only. *Long barrel* allow more than one crimp for a more secure connection. Use ***aluminum*** splices with stranded aluminum and copper wire.

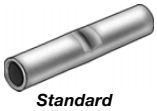

Standard Barrel

Copper Splices

For Wire Size (AWG)	Standard Barrel O'all Lg.		Each	Long Barrel O'all Lg.		Each
8	1 1/16"	8031K21	$2.43			
6	1 3/4"	8031K22	3.69	2 3/8"	8031K51	$4.21
4	1 3/4"	8031K23	4.16	2 3/8"	8031K52	4.74
2	1 7/8"	8031K24	5.21	2 5/8"	8031K53	5.80
1	1 7/8"	8031K25	6.11	2 7/8"	8031K54	6.80
1/0	1 7/8"	8031K26	6.13	2 7/8"	8031K55	7.71
2/0	2"	8031K27	6.70	3 1/8"	8031K56	8.14
3/0	2 1/8"	8031K28	7.63	3 1/8"	8031K57	9.34
4/0	2 1/8"	8031K29	8.30	3 3/8"	8031K58	10.41
250 MCM	2 1/4"	8031K31	10.78	3 3/8"	8031K59	11.14
300 MCM	2 1/4"	8031K32	10.67	4 1/8"	8031K61	14.48
350 MCM	2 3/8"	8031K33	11.13	4 1/8"	8031K62	14.87
400 MCM	2 1/2"	8031K34	13.47	4 3/8"	8031K63	18.69
500 MCM	2 7/8"	8031K35	16.83	4 5/8"	8031K64	22.61

Aluminum Splices (Standard Barrel)

For Wire Size (AWG)	O'all Lg.		Each
8	1 3/4"	8028K22●	$5.43
6	1 5/8"	8028K12	5.46
4	1 7/8"	8028K13	5.86
2	2 3/8"	8028K14	9.07
1	1 15/16"	8028K15	15.57
1/0	2 1/8"	8028K16	15.71
2/0	2 5/16"	8028K17	15.82
3/0	2 5/8"	8028K18	18.25
4/0	2 3/4"	8028K19	19.57

● Not UL listed.

Underground Heat-Shrink Butt Splices

Make watertight, abrasion-resistant underground connections with these kits. The heavy-wall polyolefin heat-shrink tubing included with each kit fits over the copper butt splice connector. They work with both solid and stranded wire and are designed to withstand burial in rocky soil. Minimum shrink temperature is 248° F. Rated to 600 volts and 194° F. UL listed.

Wire splice kits include a set screw butt splice connector for use with copper and aluminum wire. ***UF (underground feeder) cable splice kit*** includes a set screw butt splice connector for use with UF copper cable.

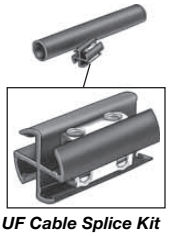

UF Cable Splice Kit

For Wire Size (AWG)	No. of Wires	Tubing Lg.		Each
Wire Splice Kits				
8-2 AWG	1	5" (1) & 2" (1)	7924K12	$13.17
1 AWG-250 MCM	1	8" (1) & 5" (1)	7924K13	23.86
UF (Underground Feeder) Cable Splice Kit				
14-8 AWG	4 (1 ground)	8"	7924K11	16.57

Contact Insertion and Extraction Tools

Insertion Tool

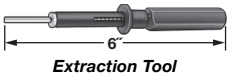

Extraction Tool

Quickly and easily insert and remove round pin or socket contacts in electrical connectors with these tools. The handles are color coded for specific contact diameters (see table below). Tools are made of Type 420 stainless steel and have anodized aluminum handles.

Tool kits contain each of the three tools (insertion or extraction) in a leather zipper case.

Contact Size, AWG	Contact Dia.	Handle Color	Insertion Tools	Each	Extraction Tools	Each
20	0.035"	Red	7867K21	$41.73	7867K31	$49.45
16	0.055"	Blue	7867K22	41.73	7867K32	49.45
12	0.086"	Yellow	7867K23	41.73	7867K33	49.45
Tool Kits			7867K41	133.36	7867K42	157.18

Wire Wrap Gun

Terminal Being Wrapped

Wire Wrapped Terminal

Wire Unwrapping Tool

Want a solderless connection that can be removed later for rewiring? This plastic gun lets you quickly and easily wrap wire around terminals. Simply select the required bit and sleeve (sold separately below) and insert a stripped solid wire into the wire slot. Anchor the wire through the notch on the bit, place the tool over your terminal, then squeeze the trigger. Use it with square or rectangular wire wrap terminals. Maximum terminal post diagonal length is 0.073". *Wire unwrapping tool* (sold separately below) is steel with a plastic handle.

		Each
Wire Wrap Gun (5 3/8" Lg. × 1" Wd. × 5 3/8" Ht.)	8136K11	$112.28
Wire Unwrapping Tool (5" Lg.)	8136K33	21.00
		Per Set
Bit and Sleeve for 26 AWG Wire	8136K22	$61.44
Bit and Sleeve for 24-22 AWG Wire	8136K21	56.33

Cable Jacket Strippers

A unique swivel blade makes end and center strips on cable outer jacketing up to 5/32" thick. The swivel blade turns in the direction you move the tool for better stripping. Handle is ABS thermoplastic with a steel blade. Use on PVC, rubber, nylon, polyimide, fiberglass, fabric, and other materials with solid and stranded wire.

	O'all Lg.		Each
Stripper for 1/4" to 3/4" OD Cable	5 3/4"	7312K11	$27.67
Stripper for 3/4" to 1 1/2" OD Cable	6 3/8"	7312K12	34.67
			Per Pair
Replacement Blades		7312K13	$11.71

Comfort-Grip Cable Jacket Stripper

Specially designed phenolic handle fits the shape of your hand and prevents skinned knuckles caused by hitting the cable sheath. Use to strip sheaths from plastic- and fabric-covered solid and stranded wire. Includes two extra blades. Overall length is 6".

		Each
Stripper	7298K11	$50.75
Replacement Blade Guide Retainer	7298K15	17.35
		Per Pkg.
Replacement Blades (Pkg. of 6)	7298K13	$4.16

Auto-Size Squeeze-n-Strip Flat Cable Stripper

Just feed cable through the front and squeeze the handle to strip cable in the middle or end. The tool's high alloy steel blades automatically adjust for cable size and pull insulation off the cable. Perfect for stripping flat cable up to 15/32" wide with 18-10 AWG solid and stranded conductors. Strips both the outer sheathing and inner insulation without nicking the wire. Ideal for Romex, telephone wire, and ribbon cables. Body is thermoplastic. Overall length is 6 3/4".

8079K11 ..... **Each** $81.20

Multipurpose Wire Stripper

Sixteen tools in one, this handy device can strip and cut 20-10 AWG solid and stranded copper wire. It has a plier nose (great for pulling and looping wire), plus three flat-head screwdrivers, a Phillips screwdriver, wire bender, awl, inch and metric rulers, metal file, wood file, serrated drop point knife, and can/bottle opener. Made of Type 440 stainless steel. Size is 4" × 1 1/8". Includes a nylon pouch with belt loop.

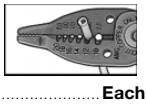

7893K5 ..... **Each** $60.60

For information about wire size (AWG), see page 758.

Insulation-Melting Wire Stripper

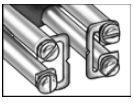

Tips for 25-10 AWG

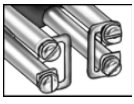

Repl. Tips for 36-26 AWG

This stripper gives you the cleanest possible strip by melting off the insulation instead of cutting it like conventional strippers. It also eliminates the risk of nicking the conductor. Just insert wire, press button to heat tip and melt the wire insulation, and pull off insulation sleeve. The tip heats from ambient to selected temperatures up to 1,700° F in two seconds. Works well on PTFE, Kynar, nylon, vinyl, and neoprene, removing insulation up to 1½″ in length from solid, stranded, and shielded wire. Tips included for 36-26 AWG (tips for 25-10 AWG sold separately). Has a thermoplastic housing and a temperature controller. Weighing just 2 lbs., it can be held or mounted in the included metal bench-top stand. Overall length is 8″. Operates on 120 VAC and has a 6.5-ft. long power cord with three-prong plug. UL listed.

		Each
Stripper	69165K81	$401.22
		Per Pair
Tips for 25-10 AWG	69165K93	$10.97
Replacement Tips for 36-26 AWG	69165K94	10.97

Wire Strippers

Auto-Size Squeeze-n-Strip Wire Strippers

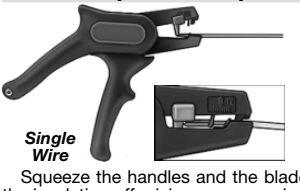

Single Wire

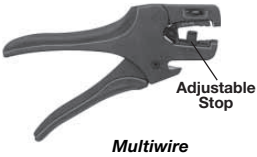

Multiwire

Squeeze the handles and the blades adjust to the wire size and pull the insulation off, giving you a precise, consistent strip with no damage to the wire. They strip PVC-insulated solid and stranded wire. Wire feeds through the front for working in tight spaces. Both have built-in wire cutters and an adjustable stop to set strip length. Overall length is 7½″.

Single-wire stripper strips one wire at a time. It's made of reinforced fiberglass and has a 0.31″ maximum strip length. ***Multiwire*** stripper strips multiple wires of the same gauge simultaneously. It's made of reinforced plastic and has a 0.75″ maximum strip length.

	For Wire Sizes		Each
Single Wire	20-12 AWG	7221K61	$40.98
Multiwire	34-8 AWG	7221K24	63.18

Plier-Nose Wire Strippers

Standard Grip

Ergonomic Grip

These lightweight, smooth-operating tools have a plier nose for pulling wire, holes for looping wire, and built-in wire cutters. All have a spring return to reduce user fatigue. Made of steel. ***Standard grip*** have plastic-coated handles. ***Ergonomic grip*** have curved cushioned handles plus bolt cutters.

For Wire Sizes	O'all Lg.		Each
Standard Grip			
30-22 AWG Solid	6″	7294K59	$11.53
26-16 AWG Stranded	6″	7294K58	10.94
20-10 AWG Solid	6″	7294K57	9.98
16-8 AWG Stranded	6″	7294K56	10.00
14-12 AWG Romex Cable	7¾″	7294K62	16.41
Ergonomic Grip			
32-22 AWG Str./30-20 AWG Sol.	7¼″	7294K22	18.70
20-12 AWG Str./18-10 AWG Sol.	7¼″	7294K21	17.61

1,000 VAC Insulated Handle Wire Strippers

Plier Nose

V-Notch

Insulated, cushioned handles provide protection when working with up to 1,000 volts. For solid and stranded wire. Made of steel. ***Plier-nose*** style has holes for pulling and looping wire. ***V-notch*** style has a screw with locknut to set tool for wire from 22-10 AWG. Wire feeds through the front for work in tight spaces.

	O'all Lg.		Each
Plier Nose for 20-10 AWG Wire	7⅝″	71495K88	$44.55
V-Notch for 22-10 AWG Wire	6″	71495K85	59.28

Squeeze-n-Strip Wire Strippers

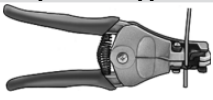

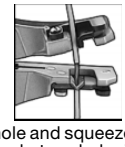

Just insert wire into the proper blade hole and squeeze. Blade closes and moves to pull insulation off solid and stranded wire quickly and consistently. Frame is die cast zinc with thermoplastic grips.

Replacement blades include both upper and lower blades.

For Wire Sizes	O'all Lg.	Strippers	Each	Repl. Blades	Each
26-16 AWG	7″	7292K44	$32.60	7292K554	$13.62
22-10 AWG	7″	7292K42	32.60	7292K552	13.62
12-8 AWG	7″	7292K46	32.75	7292K556	16.69

Stripper Kit— Includes one moving blade stripper and one pair of each of the following blades: 30-20 AWG, 22-10 AWG, RG-59, and RG-58.

7292K66 ..... **Each** $60.69

Compact Precise-Length Wire Strippers

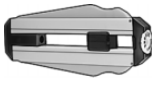

So small they can fit in your pocket, these tools deliver consistent stripping. Just pass wire through the hole and squeeze the handle—your solid and stranded wire will be stripped every time without nicking the wire. A slide adjustment allows you to set the strip length up to 2″ (50 mm). Housing is made of plastic; tips are made of steel. An AWG-to-mm conversion table is printed on the strippers.

ESD-safe stripper is perfect where static-free conditions are required.

	O'all Lg.		Each
Standard for 36-26 AWG	3¾″	7897K13	$69.63
Standard for 30-20 AWG	3¾″	7897K11	61.58
ESD-Safe for 30-20 AWG	3¾″	7897K12	74.25

Compact V-Notch Wire Strippers

Screw Adjustment

Cam Dial Adjustment

Get quick stripping action without nicking the wire. These tools have V-notch blades that fit a wide range of wire sizes. Made of steel with cushioned handles. All have an adjustment feature that sets the blade opening for repeated, consistent stripping.

Screw-adjustment styles have a set screw that slides in a track the length of the handle. Use to strip and cut solid and stranded 20-10 AWG wire. Wire stripper *with spring return* automatically opens blades when you release pressure on the handles.

Cam dial adjustment style has a dial that instantly adjusts to one of eight specific AWG wire sizes within the 26-12 AWG range. Use to strip and cut solid and stranded 26-12 AWG wire.

Adjustment Style	O'all Lg.		Each
Screw Adjustment	5″	7660K11	$11.16
Screw Adjustment w/Spring Return	5″	7660K12	11.31
Cam Dial Adjustment	5⅜″	7660K14	7.05

Plier-Nose Wire Stripper with Built-in Voltage Detector

The handle flashes and beeps when it detects a live circuit, providing a safety check before you work on wires. It has a plier nose for pulling wire, holes for looping wire, and bolt cutters. For 18-10 AWG solid and 20-12 AWG stranded wire. Made of stainless steel with cushioned handles. Two 1.5-volt batteries included. UL listed.

	O'all Lg.		Each
Stripper	7″	8802T11	$29.08
Replacement Battery		7604K81	1.76

For information about wire size (AWG), see page 758.

Multipurpose Wire Strippers/Crimpers

Self-Adjusting Squeeze-n-Strip Stripper/Crimper

Blade self-adjusts to the wire size and removes insulation as handle is squeezed. Consistently strips 24-10 AWG stranded and solid wire and crimps 16-10 AWG insulated and noninsulated terminals. Has a built-in wire cutter and a wire stop that can be set to strip lengths up to ¾″. It is steel with plastic-coated handles. Overall length is 8″.

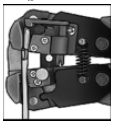

8372K11 ..... **Each** $47.08

Stripper/Crimper/Bolt Cutter

Strips 26-10 AWG stranded wire and 22-8 AWG solid wire; crimps 26-10 AWG insulated and 22-10 AWG noninsulated terminals; and cuts bolt sizes 4-40, 6-32, 8-32, 10-24, and 10-32. Tool is steel with cushioned handles and has a wire cutter, a universal automotive crimping notch, and holes for looping wire. Overall length is 8½″.

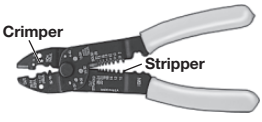

7007K92 ..... **Each** $14.57

Plier-Nose Stripper/Crimper/Bolt Cutters

Standard and Metric

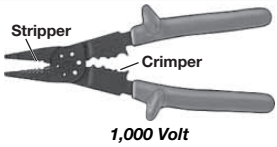

1,000 Volt

***Standard*—** Plier nose is great for pulling and looping wire. Strips 22-10 AWG stranded and solid wire. Crimps 22-10 AWG insulated and noninsulated terminals and 7 mm and 8 mm automotive noninsulated terminals. Cuts bolt sizes 4-40, 5-40, 6-32, 8-32, 10-24, and 10-32. Tool also has a wire cutter. It is steel with cushioned handles. Overall length is 8¼″.

69275K84 ..... **Each** $17.17

***Metric*—** Similar to the plier-nose tool above, except the wire-stripping holes are marked with metric and AWG sizes. Strips 0.75 to 6 mm (22-10 AWG) stranded and solid wire. Crimps 1.5, 2.5, and 6 mm (22-10 AWG) insulated and noninsulated terminals and 7 mm and 8 mm automotive noninsulated terminals. Cuts bolt sizes 2.6, 3, 3.5, 4, 4.5, and 5 mm.

69275K86 ..... **Each** $26.42

***1,000 Volt*—** The bonded, double-layer extra-long insulated handles provide protection up to 1,000 volts. Tool has a plier nose for pulling and looping wire. Strips 22-10 AWG stranded and solid wire. Crimps 22-10 AWG insulated terminals and 7 mm and 8 mm noninsulated terminals. Cuts bolt sizes 4-40, 5-40, 6-32, 8-32, 10-24, and 10-32. Tool also has a wire cutter and is made of steel. Overall length is 9½″.

6908K87 ..... **Each** $43.75

Quick-Change Ratchet Crimper

Different applications require different terminals—they shouldn't require different crimpers. The dies of this ratcheting tool snap quickly in and out, so it's easy to change from one type of terminal to another (dies sold separately below). Crimper is plastic-covered steel. Dies are one piece and marked with a drawing of the terminal style, so they're easy to identify. O'all length is 8⅞″.

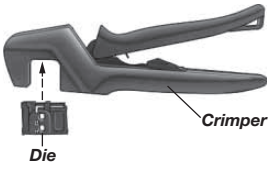

Crimper

8568T1 ..... **Each** $65.33

Dies

For Terminal Style	For Wire Size (AWG)		Each
Noninsulated Terminals	22-10	**8568T11**	$46.33
Insulated Terminals	26-22,12-10	**8568T12**	46.33
Insulated Terminals	22-14	**8568T13**	46.33
Noninsulated and Insulated Ferrules	24-8	**8568T14**	46.33
Noninsulated and Insulated Ferrules	6-4	**8568T15**	46.33
Noninsulated and Insulated Ferrules	2-1/0	**8568T16**	46.33
Noninsulated Quick-Disconnects			
With 0.250″ Tab	22-10	**8568T17**	68.11
With 0.187″ Tab	22-14	**8568T19**	68.11
With 0.110″ Tab	26-18	**8568T18**	68.11
RJ-45 Plugs	____	**8568T21**	46.33

Crimpers

Ratchet Crimpers

Standard for Insulated Ring and Spade Terminals

High Force

Built-in ratchet ensures a complete crimp every time. Tools feature a safety release that allows you to stop a faulty crimp before the crimping cycle is complete. You can change dies using a screwdriver. Made of steel with molded plastic handles.

Crimper for noninsulated terminals has four crimping stations. Crimpers for insulated terminals have three crimping stations that are color coded by size. Crimper for open-barrel contacts has three crimping stations.

Standard styles produce reliable crimps at an economical price. Overall length is 8⅞″. ***High force*** style gives you more than one ton of crimping force with less effort to reduce fatigue. Ergonomically designed for user comfort. Overall length is 10″.

For Terminal Style	For Wire Size (AWG)	Crimpers	Each	Repl. Die Sets	Each
Standard for Ring and Spade Terminals					
Noninsulated	20-8	**69555K63**	$55.08	**69555K76**	$24.07
Insulated	22-10	**69555K62**	55.08	**69555K77**	24.07
Standard for Quick-Disconnect Terminals					
Insulated	22-10	**69555K66**	55.08	**69555K75**	24.07
Standard for Open-Barrel Contacts					
_____	20-10	**69555K65**	55.08	**69555K74**	24.07
High Force for Ring and Spade Terminals					
Insulated	22-10	**69555K64**	154.16	**69555K78**	67.71

Plier Crimpers

Standard

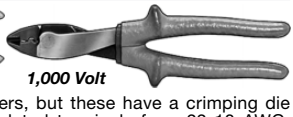

1,000 Volt

They may look like ordinary pliers, but these have a crimping die marked for insulated and noninsulated terminals from 22-10 AWG. Nose has a wire cutter. Made of steel with a 9¾″ overall length.

Standard style has cushioned handles. *1,000 volt insulated-handle* style protects you from shocks when working on or near energized equipment.

		Each
Standard	**7289K1**	$29.51
1,000 Volt Insulated Handle	**7289K2**	53.49

Air-Powered Crimpers

Air power lets you keep crimping with less fatigue and greater crimp consistency. Crimpers work with 22-10 AWG insulated terminals. Operate on 85 to 95 psi air supply. Air inlet connection is ⅛″ NPT male. Tools are steel with an overall length of 12″. All crimpers include a steel die set.

For Insulated Terminal Style	Crimpers	Each	Repl. Die Sets	Each
Rings, Spades, Splices	**7754K1**	$1,182.09	**7754K4**	$356.86
Quick-Disconnects	**7754K2**	1,182.09	**7754K5**	429.85

Pin-and-Socket Connector Crimper

Designed for crimping and splicing pins and sockets used in connectors. Also good for noninsulated, open barrel, closed barrel, and flag terminals. Tool can cut bolt sizes 4-40, 6-32, 8-32, 10-24, and 10-32. Made of steel with cushioned handles. Overall length is 8½″.

7179K41 ..... **Each** $41.70

Wire Cutting Pliers

Cut soft steel wire, copper wire, and cable with these pliers, featuring hardened cutting edges for long-lasting sharpness and durability. They produce a deep, pointed, pinched end. Both have oval-shaped heads and are made of forged steel.

For Max. Wire Size, AWG (Dia.)	O'all Lg.	Jaw Lg.		Each
12 (0.080″)	7¼″	51/64″	**8522A11**	$13.68
6 (0.162″)	8″	51/64″	**8522A12**	20.52

About 0.2″ to 0.85″ Face Diameter Multipole Connectors

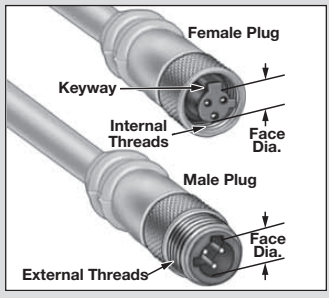

Simplify your hardwired connections to make maintenance much easier. With multipole connectors you can quickly replace a damaged component or cable without hardwiring, saving you labor costs and reducing your system downtime. Primarily used to connect proximity sensors, photoelectric sensors, and limit switches, these connectors are commonly referred to as nano (or pico), micro, and mini connectors.

If you are looking for a multipole connector for a new application, the table below will direct you to the catalog page you need. When replacing an existing connector, consider the following:

Face Diameter— Measure the face diameter of your plug or receptacle as shown in the illustration at right. Do not include the threading or coupling nut in your measurement.

Keyway— Most have keyways on the face that prevent mismating. Each keyway on the female aligns with a keyway notch on the male. Do you have a single or dual keyway?

Number of Poles— Determine by counting the number of pins on a male plug or receptacle, or by deciding how many wires your device will need for power and control.

Gender and Thread Location— The threading of the collar or locknut plays an important role. Threading is defined as internal or external. You need both the gender and threading to be opposites to join multipole connectors. For example, a male plug with external threads will mate with a female plug with internal threads, but a male plug with internal threads will not mate with a female plug with internal threads.

Plug or Receptacle— Plugs typically have cables attached while receptacles have wire leads and are mounted in panels. We also offer cables that have plugs on each end.

The table below summarizes key aspects of the different multipole connector sizes and will direct you to the correct catalog page. Check the individual presentations for exact ratings.

Face Dia.	Common Name	Keyway	Number of Poles	Current Range (amps)	Max. Voltage (VAC/VDC)	Materials Available	Typical Application	Catalog Page
0.2″	Nano, Pico	None	3-5	3-4	60/75	PVC, Thermoplastic	8 mm dia. and smaller sensors	774
0.3″	Micro	Single, Dual	2-5	4-5	300/300	PVC, Thermoplastic, Rubber	12 mm and 18 mm dia. sensors	775-776
0.55″-0.8″	Mini	Single	2-12	5-13	600/600	PVC, Thermoplastic, Rubber	18 mm and 30 mm dia. sensors	776-777
0.85″	___	Single	3-4	15-30	600/600	Rubber	Lighting, small motors	778

Multipole Connectors

0.2″ Face Diameter Nano Connectors

Also called pico connectors, these are the tiniest multipole connectors we offer. Excellent for low-current devices such as 8 mm dia. and smaller proximity sensors, miniature photoelectric sensors, and other miniature control components. They do not have a keyway. All except ***plugs*** without cable (6889K) are UL listed and CSA certified.

Plugs

These black thermoplastic plugs meet IP67 for protection against temporary water submersion and are rated to 185° F. All accept 0.14″ to 0.2″ dia. cable with up to 20 AWG conductors except screw-terminal plugs, which accept up to 22 AWG. All 90° plugs have solder terminals. Other plugs are available with solder and screw terminals. **To Order:** For straight plugs, please specify solder or screw terminals.

No. of Poles	Amps	Face Dia.	Male Plugs w/External Thread	Each	Female Plugs w/Internal Thread	Each
3	4 @ 60 VAC/VDC★	0.2″	6889K21	$22.88	6889K22	$18.97
4	4 @ 30 VAC/VDC★	0.2″	6889K23	30.36	6889K24	23.52

No. of Poles	Amps @ 60 VAC/ 75 VDC	Face Dia.	90° Male Plugs w/External Thread	Each	90° Female Plugs w/Internal Thread	Each
3	4	0.2″	6889K52	$20.34	6889K54	$20.34
4	4	0.2″	6889K62	25.71	6889K64	25.21

★ Solder-terminal plugs are rated 4 amps @ 60 VAC/75 VDC.

Plugs with 13-ft. Cable and Receptacles with 12″ Leads

Good for washdown environments, they meet IP68 and NEMA 6P for protection against water submersion. Rated to 221° F. ***Plugs*** are made of yellow thermoplastic molded to a 13-ft. PVC-jacketed 24 AWG conductor cable. ***Receptacles*** have 12″ long PVC-jacketed 24 AWG wire leads and M8 external threads on the wire-lead side for panel mounting. Made of nickel-plated brass.

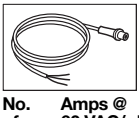

No. of Poles	Amps @ 60 VAC/ 75 VDC	Face Dia.	Male Plugs w/ External Thread	Each	90° Male Plugs w/ External Thread	Each	Female Receptacles w/ Internal Thread	Each	Female Plugs w/ Internal Thread	Each	90° Female Plugs w/ Internal Thread	Each	Male Receptacles w/ External Thread	Each
3	4	0.2″	7138K11	$17.54	7138K17	$17.54	7138K27	$11.82	7138K14	$17.54	7138K21	$17.54	7138K24	$9.82
4	4	0.2″	7138K12	20.86	7138K18	20.86	7138K28	13.07	7138K15	20.86	7138K22	20.86	7138K25	10.86
5	3	0.2″	7138K13	26.85	7138K19	26.85	7138K29	14.53	7138K16	26.85	7138K23	26.85	7138K26	13.63

13-ft. Cables with Plugs on Each End

Consist of a 13-ft. yellow PVC-jacketed 24 AWG conductor cable with yellow thermoplastic plugs. They have a female plug with internal threads on one end and a male plug with external threads on the other end. Good for washdown environments, they meet IP68 and NEMA 6P for protection against water submersion. Rated to 221° F.

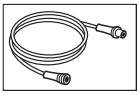

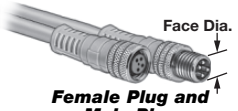

No. of Poles	Amps @ 60 VAC/75 VDC	Face Dia.	Female Plug and Male Plug	Each	Female Plug and 90° Male Plug	Each
3	4	0.2″	7138K51	$29.54	7138K52	$29.54
4	4	0.2″	7138K53	34.51	7138K54	34.51

LED Plug with 13-ft. Cable

This 90° female plug with internal threads has a clear PVC body molded to a 13-ft. yellow PVC-jacketed 24 AWG conductor cable. A green LED indicates input power and a yellow LED indicates output. It is PNP style (see page 896 for an explanation of PNP). Rated to 221° F.

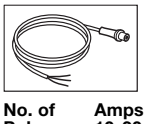

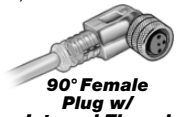

No. of Poles	Amps @ 10-30 VDC	Face Dia.	90° Female Plug w/ Internal Thread	Each
3	4	0.2″	7176K81	$28.94

For information about multipole connectors, see page 774.

0.3″ Face Diameter Micro Connectors

Perfect for 12 mm proximity sensors and washdown environments. Dual keyways are typically used in AC applications while single keyways are used in DC applications. ***Plugs*** meet IP68 for protection against water submersion and are CSA certified. ***Plugs with cable, receptacles with leads,*** and ***cables with plugs on each end*** meet IP68 and NEMA 6P for protection against water submersion and are UL recognized and CSA certified, unless noted.

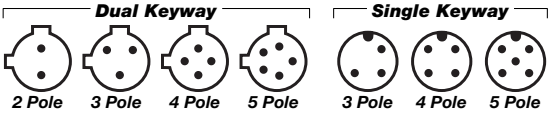

Plugs

Often used to turn an existing cable into a quick-disconnect cable or to replace a damaged connector on an existing cable, these plugs have a single keyway. To assemble, just insert cable (0.13″ to 0.26″ dia. up to 18 AWG) into plug, attach wires to the screw terminals, and screw the plug together. Made of thermoplastic. Rated to 194° F.

No. of Poles	Face Dia.	Amps	Male Plugs w/External Thread Each		90° Male Plugs w/External Thread Each		Female Plugs w/Internal Thread Each	
4	0.3″	4 @ 250 VAC/300 VDC	7209K41	$26.82	7209K42	$26.82	7209K43■	$26.82
5	0.3″	4 @ 30 VAC/36 VDC	7209K44	29.02	7209K45	29.02	7209K46	29.02

■ Same face as the five pole with one pole not used.

Closure Caps

Keyway	For Male Plug/Receptacle w/External Thread Each		For Female Plug/Receptacle w/Internal Thread Each	
Anodized Aluminum				
Dual	6897K61	$8.10	6897K62	$7.81
Single	6897K73	7.86	6897K74	7.81
Stainless Steel				
Dual	6897K63	23.18	6897K39	23.18
Single	6897K75	23.18	6897K59	23.18

Plugs with 12-ft. Cable and Receptacles with 12″ Leads

Plugs are made of PVC molded to 12 ft. of yellow PVC-jacketed 22 AWG conductor cable (13 ft. for single keyway). Rated to 221° F. *Dual-keyway plugs* are UL listed. ***Receptacles*** are made of anodized aluminum. They have 12″ long PVC-jacketed 22 AWG wire leads and ¼″-18 NPT (unless noted) external threads on the wire-lead side for panel mounting. Rated to 176° F. UL listed.

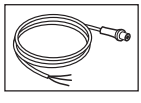

No. of Poles	Amps @ 250 VAC/250 VDC	Face Dia.	Male Plugs w/External Thread Each		90° Male Plugs w/External Thread Each		Female Receptacles w/Internal Thread Each		Female Plugs w/Internal Thread Each		90° Female Plugs w/Internal Thread Each		Male Receptacles w/External Thread Each	
Dual Keyway														
2	4	0.3″	6897K51	$21.64	6897K17	$23.68	6897K52	$12.86	6897K82	$21.64	6897K18	$21.64	6897K83	$10.93
3	4	0.3″	6897K53	24.33	6897K19	26.62	6897K54	13.09	6897K86	24.33	6897K2	24.33	6897K87	11.28
4	4	0.3″	6897K55	31.50	6897K29	34.47	6897K56	15.12	6897K92	31.50	6897K41	31.50	6897K93	12.97
5	4	0.3″	6897K57	39.62	6897K42	43.36	6897K58	15.28	6897K96	39.62	6897K49	43.36	6897K97	13.86
Single Keyway														
3	4	0.3″	6897K25	27.10	6897K11	30.17	6897K28♣	13.03	6897K26♣	27.10	6897K12♣	27.57	6897K27▲♦	10.81
4	4	0.3″	6897K35	32.56	6897K13	36.25	6897K38♣	15.97	6897K36♣	32.56	6897K14♣	33.12	6897K37▲	13.29
5	4	0.3″	6897K45	41.95	6897K15	45.11	6897K48	17.98	6897K46	39.20	6897K16	41.22	6897K47▲	15.22

♣ Same face as five pole with one or two poles not used. ▲ Has ½″-14 NPT threads. ♦ Same face as four pole with one pole not used.

Harsh Environment Plugs with 12-ft. Cable and Receptacles with 12″ Leads

Wire in these durable connectors where resistance to abrasion, oil, and welding slag is a must. ***Plugs*** are rubber molded to 12 ft. of yellow rubber-jacketed 18 AWG conductor cable (13 ft. for single keyway). Rated to 194° F. ***Receptacles*** are stainless steel. They have 12″ long PVC-jacketed 18 AWG wire leads. Male receptacles have ½″ NPT threads; female receptacles have ¼″ NPT threads on the wire-lead side. Rated to 176° F.

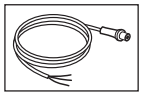

No. of Poles	Amps @ 300 VAC/300 VDC	Face Dia.	Male Plugs w/External Thread Each		90° Male Plugs w/External Thread Each		Female Receptacles w/Internal Thread Each		Female Plugs w/Internal Thread Each		90° Female Plugs w/Internal Thread Each		Male Receptacles w/External Thread Each	
Dual Keyway														
2	5	0.3″	3214K14	$36.11	3214K15	$36.11	3214K16	$26.43	3214K11	$36.11	3214K12	$36.11	3214K13	$25.43
3	5	0.3″	3214K21	41.17	3214K22	41.17	3214K23	29.07	3214K17	41.17	3214K18	41.17	3214K19	27.26
4	5	0.3″	3214K27	46.65	3214K28	46.65	3214K29	31.61	3214K24	46.65	3214K25	46.65	3214K26	29.24
5	5	0.3″	3214K34	52.34	3214K35	52.34	3214K36	33.98	3214K31	52.34	3214K32	52.34	3214K33	30.91
Single Keyway														
3	5	0.3″	3214K45	44.00	3214K46	44.00	3214K47	29.07	3214K42	44.00	3214K43	44.00	3214K44	27.26
4	5	0.3″	3214K52	49.74	3214K53	49.74	3214K54	31.61	3214K48	49.74	3214K49	49.74	3214K51	29.24
5	5	0.3″	3214K58	56.37	3214K59	56.37	3214K61	34.00	3214K55	56.37	3214K56	56.37	3214K57	30.91

6-ft. Cables with Plugs on Each End

These 6-ft. cables have a male plug with external threads on one end and a female plug with internal threads on the other.

Standard cable is yellow 22 AWG PVC. *Dual-keyway* cables are UL listed. ***Harsh environment*** cable is yellow 18 AWG rubber.

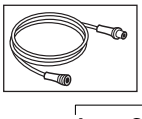

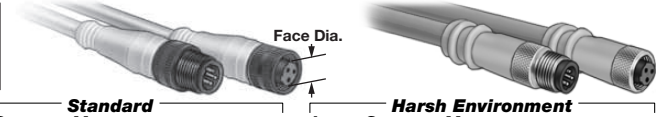

No. of Poles	Face Dia.	Standard Amps @ 250 VAC/VDC	Standard Max. Temp.	Standard Each		Harsh Environment Amps @ 300 VAC/VDC	Harsh Environment Max. Temp.	Harsh Environment Each	
Dual Keyway Female Plug to Male Plug									
2	0.3″	4	221° F	6897K64	$29.97	5	194° F	3214K37	$52.00
3	0.3″	4	221° F	6897K65	31.10	5	194° F	3214K38	57.04
4	0.3″	4	221° F	6897K66	35.54	5	194° F	3214K39	62.96
5	0.3″	4	221° F	6897K67	44.37	5	194° F	3214K41	68.04
Single Keyway Female Plug to Male Plug									
3	0.3″	4	221° F	6897K43	31.52	5	194° F	3214K62	57.07
4	0.3″	4	221° F	6897K68	35.68	5	194° F	3214K63	62.96
5	0.3″	4	221° F	6897K69	44.29	5	194° F	3214K64	68.04

For information about multipole connectors, see page 774. For information about NEMA ratings, see page 843.

0.3″ Face Diameter Quick-n-Secure Micro Connectors

4 Pole

Get a reliable connection with just a push. ***Male plugs*** connect to the ***female receptacle***, and ***female plugs*** connect to the ***male receptacle***. Female plugs and receptacle can also be connected to male sensors and standard multipole connectors with external threads; ***adapter*** is required when using female plugs. *Note:* Male and female plugs cannot be connected together.

All connectors have four poles and a single keyway (female plugs have a five-pole face with the center hole not used). They are IP68 rated for water submersion. Rated 4 amps @ 250 VAC. Maximum temperature is 194° F. CSA certified.

Plugs

Often used to turn an existing cable into a quick-disconnect cable, or to replace a damaged connector on an existing cable. To assemble, just insert cable (0.13″ to 0.26″ dia. up to 18 AWG) into plug, attach wires to the screw terminals, and screw the plug together. Made of nylon.

No. of Poles	Face Dia.	Male Plug	Each	Female Plug	Each	90° Male Plug	Each	90° Female Plug	Each
4	0.3″	8902T13	$27.81	8902T11	$27.81	8902T14	$27.81	8902T12	$27.81

Plugs with 6½-ft. Cable and Receptacles with 12″ Leads

Plugs are polyurethane molded to a 6½-ft. yellow PVC-jacketed 22 AWG conductor cable. Receptacles are epoxy filled and made of nickel-plated brass. They have 12″ long PVC-jacketed 22 AWG wire leads and ½″-14 NPT external threads on the wire-lead side for panel mounting.

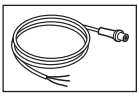

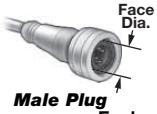

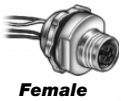

No. of Poles	Face Dia.	Male Plug	Each	90° Male Plug	Each	Female Receptacle w/ Internal Thread	Each	Female Plug	Each	90° Female Plug	Each	Male Receptacle w/ External Thread	Each
4	0.3″	8902T19	$18.24	8902T21	$18.24	8902T16	$20.21	8902T17	$18.60	8902T18	$18.60	8902T15	$16.81

Female Plug Adapter ..... 8902T24 Each $12.66

0.55″ to 0.8″ Face Diameter Mini Connectors

Capable of carrying higher currents than 0.2″ and 0.3″ face dia. connectors, these are great for 18 mm and 30 mm dia. proximity sensors and limit switches, even in washdown environments. All are single keyway and are rated for water submersion. All meet IP68 and NEMA 6P except ***plugs*** without cable (7152K), which are not NEMA 6P rated.

Plugs

Often used to turn an existing cable into a quick-disconnect cable, or to replace a damaged connector on an existing cable. To assemble, just insert cable (0.2″ to 0.48″ dia. up to 15 AWG) into plug, attach wires to the screw terminals, and screw the plug together. Made of thermoplastic. Rated to 176° F. CSA certified.

No. of Poles	Amps @ 600 VAC/VDC	Face Dia.	Male Plugs w/ Internal Thread	Each	Female Plugs w/ Internal Thread	Each
3	13	0.55″	7152K71	$25.42	7152K62	$25.42
5	8	0.55″	7152K72	28.88	7152K64	28.88

Closure Caps and Male-to-Female Plug Adapters

Fits No. of Poles	Closure Caps w/ External Thread for Plugs	Each	Closure Caps w/ Internal Thread for Receptacles	Each	Male-to-Female Plug Adapters w/ External Thread	Each
Aluminum						
2 to 6	69005K21	$12.56	69005K22	$11.14	69005K51	$3.40
7 to 8	69005K31	17.20	69005K32	15.25	69005K52	3.88
9 to 12	69005K41	18.44	69005K42	16.56	69005K53	4.19
Stainless Steel						
2 to 6	69005K61	28.98	69005K62	27.14	69005K67	9.12
7 to 8	69005K63	33.86	69005K64	31.48	69005K68	10.56
9 to 12	69005K65	35.84	69005K66	33.46	69005K69	11.88

Plugs with 12-ft. Cable and Receptacles with 12″ Leads

Standard connectors are rated to 221° F and are UL recognized and CSA certified. *Plugs* are made of PVC molded to a 12-ft. yellow PVC-jacketed oil-resistant (STOOW) 16 AWG conductor cable. *Receptacles* have 12″ long PVC-jacketed 16 AWG wire leads and ½″-14 NPT external threads on wire-lead side for panel mounting. Made of die cast zinc.

High-temperature connectors are rated to 392° F. *Plugs* are silicone rubber molded to a 12-ft. rust-colored silicone-jacketed 16 AWG conductor cable. *Receptacles* have 12″ long PTFE-jacketed 16 AWG wire leads and ½″-14 NPT external threads on the wire-lead side for panel mounting.

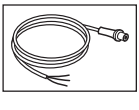

No. of Poles	Amps @ 600 VAC/VDC	Face Dia.	Male Plugs w/ Internal Thread	Each	Female Receptacles w/ External Thread	Each	Female Plugs w/ Internal Thread	Each	90° Female Plugs w/ Internal Thread	Each	Male Receptacles w/ External Thread	Each
Standard												
2	13	0.55″	69355K51	$25.40	69355K54	$16.20	69355K52	$25.40	69355K75	$26.78	69355K53	$12.31
3	13	0.55″	69355K55	28.61	69355K58	17.48	69355K56	29.20	69355K76	30.10	69355K57	12.72
4	10	0.55″	69355K61	37.97	69355K64	17.91	69355K62	38.30	69355K77	40.38	69355K63	14.69
5	8	0.55″	69355K65	46.49	69355K68	17.70	69355K66	47.36	69355K78	48.73	69355K67	15.62
6	8	0.55″	69355K71	60.30	69355K74	23.53	69355K72	60.30	69355K79	64.31	69355K73	21.63
7	8	0.7″	69355K21	94.32	69355K24	41.95	69355K22	94.32	69355K81	99.00	69355K23	34.00
8	7	0.7″	69355K31	105.48	69355K34	48.10	69355K32	105.48	69355K82	112.53	69355K33	39.14
9	7	0.8″	69355K41	114.10	69355K44	63.80	69355K42	114.10	69355K83	125.40	69355K43	53.98
10	7	0.8″	69355K45	131.38	69355K48	72.48	69355K46	131.38	69355K84	144.33	69355K47	60.29
12	5	0.8″	69355K15	155.51	69355K18	79.74	69355K16	155.51	69355K85	168.04	69355K17	66.47
High Temperature												
2	13	0.55″	9524T11	91.74	9524T21	41.28	9524T31	91.74	9524T41	107.89	9524T51	35.20
3	13	0.55″	9524T12	93.52	9524T22	43.50	9524T32	93.52	9524T42	109.98	9524T52	36.01
4	10	0.55″	9524T13	115.23	9524T23	52.57	9524T33	115.23	9524T43	135.56	9524T53	46.30
5	8	0.55″	9524T14	122.06	9524T24	52.99	9524T34	122.06	9524T44	136.22	9524T54	47.04

(Continued on following page)

For information about multipole connectors, see page 774. For information about cord type, see page 808.

0.55″ to 0.8″ Face Diameter Mini Connectors *(Continued from previous page)*

Harsh Environment Plugs with 12-ft. Cable and Receptacles with 12″ Leads

For demanding applications, these connectors provide excellent resistance to abrasion, oil, and welding slag. Rated to 194° F. UL recognized and CSA certified. ***Plugs*** are rubber molded to a 12-ft. yellow rubber-jacketed oil-resistant (SOOW) 16 AWG conductor cable. ***Receptacles*** have 12″ long PVC-jacketed 16 AWG wire leads and ½″-14 NPT external threads on the wire-lead side for panel mounting. Made of stainless steel.

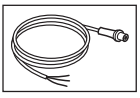

No. of Poles	Amps @ 600 VAC/VDC	Face Dia.	Male Plugs w/ Internal Thread	Each	Female Receptacles w/ External Thread	Each	Female Plugs w/ Internal Thread	Each	90° Female Plugs w/ Internal Thread	Each	Male Receptacles w/ External Thread	Each
2	13	0.55″	3216K11	$40.20	3216K45	$30.07	3216K12	$40.20	3216K13	$44.11	3216K44	$25.70
3	13	0.55″	3216K14	44.98	3216K47	31.91	3216K15	44.98	3216K16	49.48	3216K46	26.15
4	10	0.55″	3216K17	50.59	3216K49	32.46	3216K18	50.59	3216K19	55.65	3216K48	28.39
5	8	0.55″	3216K21	56.58	3216K52	32.89	3216K22	56.58	3216K23	62.23	3216K51	29.63
6	8	0.55″	3216K24	64.64	3216K56	35.41	3216K25	64.64	3216K26	73.96	3216K55	31.07
7	8	0.7″	3216K27	127.86	3216K58	59.25	3216K28	127.86	3216K29	140.64	3216K57	52.35
8	7	0.7″	3216K31	143.68	3216K61	65.15	3216K32	143.68	3216K33	158.06	3216K59	55.40
9	7	0.8″	3216K34	159.12	3216K63	82.36	3216K35	159.12	3216K36	175.08	3216K62	70.86
10	7	0.8″	3216K37	177.34	3216K65	90.40	3216K38	177.34	3216K39	195.02	3216K64	77.46
12	5	0.8″	3216K41	208.46	3216K67	98.16	3216K42	208.46	3216K43	229.32	3216K66	81.42

6-ft. Cables with Plugs on Each End

These 6-ft. long yellow 16 AWG conductor cables have a male plug with internal threads on one end and a female plug with internal threads on the other. UL recognized and CSA certified.

Standard connectors have PVC-jacketed oil-resistant (STOOW) cables with PVC plugs. Rated to 221° F. ***Harsh environment*** connectors provide excellent resistance to abrasion, oil, and welding slag. They have rubber-jacketed SOOW cables with rubber plugs. Rated to 194° F.

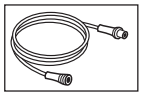

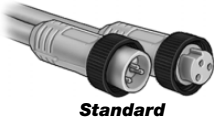

No. of Poles	Amps @ 600 VAC/VDC	Face Dia.	Standard 6-ft. Cables with Male and Female Plugs	Each	Harsh Environment 6-ft. Cables with Male and Female Plugs	Each
2	13	0.55″	69285K11	$33.53	3216K68	$54.96
3	13	0.55″	69285K62	35.68	3216K69	56.17
4	10	0.55″	69285K64	42.34	3216K71	67.22
5	8	0.55″	69285K66	54.29	3216K72	75.52
6	8	0.55″	69285K12	70.72	3216K73	94.14
7	8	0.7″	69285K13	102.78	3216K74	143.54
8	7	0.7″	69285K14	113.60	3216K75	156.88
9	7	0.8″	69285K15	121.78	3216K76	169.54
10	7	0.8″	69285K16	138.27	3216K77	198.70
12	5	0.8″	69285K17	158.08	3216K78	223.52

Square Solenoid Valve Connectors

Make connections with hydraulic valves, pneumatic valves, motors, pumps, and pressure switches. Connectors meet DIN 43650 standard except Style C connectors with 9.4 mm industrial standard contact distance. Contact distance is the distance from the center of one pin or slot to the center of the opposite side pin or slot. All have a durable thermoplastic housing and gasket to meet IP65 for dust and splash protection, except *LED plugs with cable*, which meet IP67.

Female plugs have a right-angle design to fit easily into restricted spaces. They have screw terminals and a vibration-resistant central-locking screw. Rated to 194° F. All are UL recognized except 4985K16.

Style A male receptacles have a ½″ NPT male connection and solder terminals with seals. Rated to 257° F. ***Style C male receptacles*** include two mounting screws for installation and have solder terminals with seals. They are rated to 194° F. Connectors with 8 mm contact distance are UL recognized.

LED plugs with cable have an easy-to-spot yellow LED that indicates power to the plug. Rated to 176° F. *Style A* are molded to 18 AWG PVC-jacketed cable. *Style C* are molded to 20 AWG polyurethane-jacketed cable.

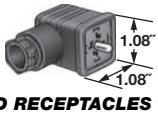

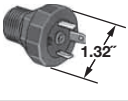

No. of Poles	Amps @ 250 VAC/VDC	For Cable Dia.	PLUGS AND RECEPTACLES Female Plugs	Each	Male Receptacles	Each	LED PLUGS WITH CABLE Amps @ 24 VDC	Cable Length	Female Plugs	Each
DIN Style A Contact Distance— *18 mm (0.71″)*										
2 & Ground	16	1/4″-11/32″	4985K11	$4.17	4985K22	$6.69	10	6.5 ft.	4985K81	$21.60
2 & Ground	8	1/4″-11/32″	4985K16●	11.43	4985K22♥	6.69	10	16.4 ft.	4985K82	25.29
2 & Ground	16	1/2″ NPT Female	4985K15■	4.23	4985K22	6.69	—	—	—	—
3 & Ground	16	1/4″-11/32″	4985K17	4.79	4985K28	5.72	—	—	—	—
3 & Ground	16	1/2″ NPT Female	4985K19■	4.62	4985K28	5.72	—	—	—	—

● Has a neon power indicator. Operates on 120 VAC/VDC. ♥ Rated 16 amps @ 250 VAC/VDC. ■ Accepts ½″ NPT male fitting.

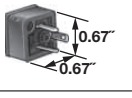

No. of Poles	Amps @ 250 VAC/VDC	For Cable Dia.	PLUGS AND RECEPTACLES Female Plugs	Each	Male Receptacles	Each	LED PLUGS WITH CABLE Amps @ 24 VAC/VDC	Cable Length	Female Plugs	Each
DIN Style C Contact Distance— *9.4 mm (0.37″)*										
2 & Ground	6	5/32″-15/64″	4985K31	$3.02	4985K32	$2.88	4	6.5 ft.	4985K91	$26.48
3 & Ground	6	5/32″-15/64″	4985K33	3.48	4985K34	3.09	4	16.4 ft.	4985K92♣	25.36
Industrial Standard Style C Contact Distance— *9.4 mm (0.37″)*										
2 & Ground	4	5/32″-15/64″	4985K24▲	3.14	4985K35★	3.19	4	6.5 ft.	4985K93	25.82
3 & Ground	4	5/32″-15/64″	4985K26▲	3.29	4985K37★	3.19	4	16.4 ft.	4985K94♣	19.72

♣ 2 poles & ground. ▲ Rated 6 amps @ 250 VAC/VDC. ★ Face is 0.64″ square.

For information about multipole connectors, see page 774. For information about NEMA ratings, see page 843.

0.85″ Face Diameter Harsh Environment Connectors

The largest connectors in the multipole family, these have the highest current-carrying capacity and provide excellent resistance to abrasion, oil, and welding slag. All are single keyway and rated to 221°F. They meet IP68 and NEMA 6P for protection against water submersion. UL recognized and CSA certified.

Plugs are rubber and come with 6 ft. of molded, yellow rubber-jacketed oil-resistant (SOW) cable. ***Receptacles*** have 12″ long PVC-jacketed wire leads. All have ½″-14 NPS external threads on the wire-lead side for panel mounting. Body is thermoplastic.

3 Pole

4 Pole

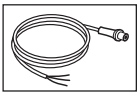

No. of Poles	Amps @ 600 VAC/VDC	Face Dia.	Cable Size (AWG)	Male Plugs w/ Internal Thread	Each	Female Receptacles w/ External Thread	Each	Female Plugs w/ Internal Thread	Each	Male Receptacles w/ External Thread	Each
3	18	0.85″	14/3	70595K51	$44.93	70595K54	$30.60	70595K52	$53.58	70595K53	$22.13
3	30	0.85″	10/3	70595K55	61.27	70595K58	32.11	70595K56	71.29	70595K57	23.62
4	15	0.85″	14/4	70595K61	51.27	70595K64	35.27	70595K62	59.93	70595K63	26.93
4	25	0.85″	10/4	70595K65	71.15	70595K68	37.31	70595K66	79.98	70595K67	28.93

Mil. Spec. Pin-and-Socket Connectors (MIL-C-5015)

2 Pole (10SL-4)

3 Pole (10SL-3)

4 Pole (14S-2)

5 Pole (14S-5)

6 Pole (14S-6)

7 Pole (16S-1)

10 Pole (18-1)

14 Pole (20-27)

17 Pole (20-29)

For applications with high vibration and repeated connection and disconnection, these are the toughest connectors. They meet MIL-C-5015, so they're interchangeable with other manufacturers' products. Their aluminum alloy housing has a green zinc finish and solder terminals. All use 20-16 AWG wire. Rated to 13 amps. Temperature range is –67° to +257°F.

Plugs have an integral cable clamp. ***Receptacles*** have four 0.120″ dia. mounting holes.

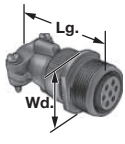

No. of Poles	Contact Pattern	Max. Voltage, VAC/VDC	Male Plugs with Internal Thread: Trade No.	Lg.×Wd.	Each	Female Plugs with External Thread: Trade No.	Lg.×Wd.	Each
2	10SL-4	500/700	MS3106F10SL-4P	2.250″×0.969″	8903T11	MS3101F10SL-4S	2.250″×1.062″	8903T61 $28.12
3	10SL-3	500/700	MS3106F10SL-3P	2.250″×0.969″	8903T12	MS3101F10SL-3S	2.250″×1.062″	8903T62 29.28
4	14S-2	200/250	MS3106F14S-2P	2.250″×1.156″	8903T13	MS3101F14S-2S	2.250″×1.156″	8903T63 26.45
5	14S-5	200/250	MS3106F14S-5P	2.250″×1.156″	8903T14	MS3101F14S-5S	2.250″×1.156″	8903T64 27.38
6	14S-6	200/250	MS3106F14S-6P	2.250″×1.156″	8903T15	MS3101F14S-6S	2.250″×1.156″	8903T65 28.24
7	16S-1	500/700	MS3106F16S-1P	2.250″×1.250″	8903T16	MS3101F16S-1S	2.250″×1.281″	8903T66 37.71
10	18-1	200/250★	MS3106F18-1P	2.688″×1.344″	8903T17	MS3101F18-1S	2.688″×1.344″	8903T67 33.29
14	20-27	500/700	MS3106F20-27P	2.750″×1.469″	8903T18	MS3101F20-27S	2.750″×1.500″	8903T68 42.44
17	20-29	500/700	MS3106F20-29P	2.750″×1.469″	8903T19	MS3101F20-29S	2.750″×1.500″	8903T69 44.90

★ Poles B, C, F, and G are rated 500 VAC/700 VDC.

No. of Poles	Contact Pattern	Max. Voltage, VAC/VDC	Male Plugs with External Thread: Trade No.	Lg.×Wd.	Each	Female Plugs with Internal Thread: Trade No.	Lg.×Wd.	Each
2	10SL-4	500/700	MS3101F10SL-4P	2.250″×1.062″	8903T51	MS3106F10SL-4S	2.250″×0.969″	8903T21 $31.16
3	10SL-3	500/700	MS3101F10SL-3P	2.250″×1.062″	8903T52	MS3106F10SL-3S	2.250″×0.969″	8903T22 32.25
4	14S-2	200/250	MS3101F14S-2P	2.250″×1.156″	8903T53	MS3106F14S-2S	2.250″×1.156″	8903T23 29.06
5	14S-5	200/250	MS3101F14S-5P	2.250″×1.156″	8903T54	MS3106F14S-5S	2.250″×1.156″	8903T24 29.94
6	14S-6	200/250	MS3101F14S-6P	2.250″×1.156″	8903T55	MS3106F14S-6S	2.250″×1.156″	8903T25 30.89
7	16S-1	500/700	MS3101F16S-1P	2.250″×1.281″	8903T56	MS3106F16S-1S	2.250″×1.250″	8903T26 35.16
10	18-1	200/250★	MS3101F18-1P	2.688″×1.344″	8903T57	MS3106F18-1S	2.688″×1.344″	8903T27 33.95
14	20-27	500/700	MS3101F20-27P	2.750″×1.500″	8903T58	MS3106F20-27S	2.750″×1.469″	8903T28 41.77
17	20-29	500/700	MS3101F20-29P	2.750″×1.500″	8903T59	MS3106F20-29S	2.750″×1.469″	8903T29 44.14

★ Poles B, C, F, and G are rated 500 VAC/700 VDC.

No. of Poles	Contact Pattern	Max. Voltage, VAC/VDC	Mounting Holes, Center-to-Center	Female Receptacles with External Thread: Trade No.	Lg.×Wd.	Each	Male Receptacles with External Thread: Trade No.	Lg.×Wd.	Each
2	10SL-4	500/700	0.719″	MS3102R10SL-4S	1.040″×1.000″	8903T41 $11.06	MS3102R10SL-4P	1.040″×1.000″	8903T31 $10.26
3	10SL-3	500/700	0.719″	MS3102R10SL-3S	1.040″×1.000″	8903T42 12.34	MS3102R10SL-3P	1.040″×1.000″	8903T32 10.64
4	14S-2	200/250	0.906″	MS3102R14S-2S	1.040″×1.188″	8903T43 12.78	MS3102R14S-2P	1.040″×1.188″	8903T33 12.78
5	14S-5	200/250	0.906″	MS3102R14S-5S	1.040″×1.188″	8903T44 13.75	MS3102R14S-5P	1.040″×1.188″	8903T34 11.66
6	14S-6	200/250	0.906″	MS3102R14S-6S	1.040″×1.188″	8903T45 14.31	MS3102R14S-6P	1.040″×1.188″	8903T35 11.60
7	16S-1	500/700	0.969″	MS3102R16S-1S	1.040″×1.281″	8903T46 17.73	MS3102R16S-1P	1.040″×1.281″	8903T36 13.02
10	18-1	200/250★	1.062″	MS3102R18-1S	1.400″×1.375″	8903T47 19.45	MS3102R18-1P	1.400″×1.375″	8903T37 15.36
14	20-27	500/700	1.156″	MS3102R20-27S	1.400″×1.500″	8903T48 26.68	MS3102R20-27P	1.400″×1.500″	8903T38 18.04
17	20-29	500/700	1.156″	MS3102R20-29S	1.400″×1.500″	8903T49 28.92	MS3102R20-29P	1.400″×1.500″	8903T39 20.69

★ Poles B, C, F, and G are rated 500 VAC/700 VDC.

Weatherproof Low Voltage DC Pin-and-Socket Connectors

Also known as weather-pack connectors, these low voltage DC connectors are designed to withstand moisture, chemicals, and extreme temperatures, so they're great for harsh environments. Applications include fork lifts, trucks, and trailer lighting.

A complete connector requires a plug, a receptacle, and enough pins, sockets, and wire seals for the number of poles you are connecting. Choose your own components (see ***plugs, receptacles, pins, sockets,*** and ***wire seals,*** sold separately below) or select one of the ***kits*** shown at right. To assemble, position wire seal on the wire, insert stripped wires into pins or sockets, crimp, then insert the pins or sockets into a plug or receptacle. Rated 20 amps @ 16 VDC per pole.

Plugs and Receptacles

Made of heat-stabilized black nylon. Temperature range is –40° to +257° F.

No. of Poles	Pkg. Qty.	Plugs Lg.	Plugs Wd.	Plugs Ht.	Plugs Per Pkg.	Receptacles Lg.	Receptacles Wd.	Receptacles Ht.	Receptacles Per Pkg.
1	5	1.59″	0.54″	0.88″	9171T18 $6.80	1.87″	0.65″	0.68″	9171T23 $5.29
2	5	1.61″	0.85″	0.88″	9171T19 6.86	1.85″	0.94″	0.69″	9171T24 5.12
3	5	1.59″	1.16″	0.89″	9171T21 10.20	1.85″	1.26″	0.76″	9171T25 6.76
4	2	1.59″	1.46″	0.89″	9171T22 5.67	1.84″	1.56″	0.76″	9171T26 3.97

Pins, Sockets, Wire Seals, and Plugs

Pins and ***sockets*** are tin-plated brass and 0.102″ dia. ***Wire seals*** provide an environmental seal between the wire and plug or socket. ***Cavity plugs*** fill unused connector cavities to keep out dust.

For Wire Size (AWG)	Pkg. Qty.	Pins	Pins Per Pkg.	Sockets	Sockets Per Pkg.	Wire Seals	Wire Seals Per Pkg.	Cavity Plugs	Cavity Plugs Per Pkg.
20-18	25	9171T11	$11.11	9171T13	$10.66	9171T16	$6.77	9171T17	$8.20
16-14	25	9171T12	11.11	9171T14	10.66	9171T15	6.77	9171T17	8.20

Kits for 16-14 AWG

Everything you need is included—a plug, a receptacle, wire seals, and one 16-14 AWG pin and socket for each pole.

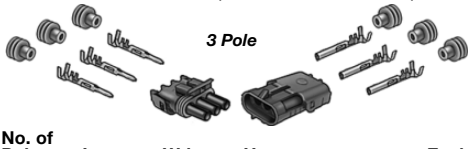

No. of Poles	Lg.	Wd.	Ht.		Each
1	2.54″	0.65″	0.88″	9171T31	$6.62
2	2.69″	0.94″	0.88″	9171T32	7.72
3	2.75″	1.26″	0.89″	9171T33	9.26
4	2.75″	1.56″	0.89″	9171T34	10.60

Extraction Tool and Crimpers

Extraction tool releases the locking mechanism on the pins and sockets so you can remove them from the housing.

		Each
Extraction Tool	9171T7	$6.27
Ratchet Crimper	9171T8	174.64
Non-Ratchet Crimper	9171T9	53.76

Pin-and-Socket Connectors

Have more poles than you have space to connect them? Install these small, lightweight connectors by crimping a pin or socket onto your wire and inserting it into the plug or receptacle housing. A complete connector requires a plug, a receptacle, and enough pins and sockets for the number of poles you're connecting. Choose your own components (see ***plugs, receptacles, pins,*** and ***sockets,*** sold separately) or select one of the ***assembled connectors*** shown below.

Plugs and Receptacles

All are made of white nylon and rated to 221° F. ***600 VAC connectors*** lock together for a secure connection. UL recognized and CSA certified.

No. of Poles	Per Pole Amps	Per Pole VAC	Pkg. Qty.	Plugs Lg.	Plugs Wd.	Plugs Ht.	Plugs Per Pkg.	Receptacles♠ Per Pkg.
250 VAC Connector Components—0.093″ Dia. Pin								
1	14	250	10	1.00″	0.36″	Dia.	69295K81 $0.78	69295K61 $0.78
2	14	250	10	1.00″	0.64″	0.35″	69295K82 1.81	69295K62 1.93
3	14	250	10	1.00″	0.77″	0.34″	69295K83 2.16	69295K63 2.27
4	11	250	10	1.00″	0.97″	0.34″	69295K87 2.43	69295K67 2.49
6	11	250	10	1.00″	0.54″	0.73″	69295K84 3.14	69295K64 3.28
9	11	250	10	1.00″	0.77″	0.73″	69295K85 3.97	69295K65 4.11
12	9.5	250	10	0.98″	0.98″	0.74″	69295K86 4.43	69295K66 4.54
Space-Saver 250 VAC Connector Components—0.062″ Dia. Pin								
1	5	250	10	0.75″	0.30″	Dia.	69295K19 .97	69295K1 1.03
2	5	250	10	0.78″	0.44″	0.30″	69295K25 1.54	69295K2 1.73
3	5	250	10	0.75″	0.59″	0.30″	69295K95 2.05	69295K3 2.22
4	5	250	10	0.75″	0.73″	0.29″	69295K96 2.92	69295K4 3.06
5	5	250	5	0.75″	0.89″	0.31″	69295K97 1.54	69295K5● 3.08
6	5	250	5	0.75″	0.45″	0.60″	69295K98 1.76	69295K6● 2.95
9	5	250	10	0.75″	0.59″	0.59″	69295K35 3.24	69295K7 3.59
12	5	250	10	0.75″	0.74″	0.59″	69295K99 3.33	69295K8 3.62
600 VAC Connector Components—0.084″ Dia. Pin								
2	13.5	600	10	1.08″	0.58″	0.55″	69295K51 1.89	69295K41 5.30
3	13.5	600	10	1.08″	0.58″	0.80″	69295K52 2.27	69295K42 5.70
4	13.5	600	10	1.08″	0.58″	1.05″	69295K53 2.57	69295K43 7.78
6	11	600	10	1.08″	1.08″	0.55″	69295K54 2.95	69295K44 8.38
9	11	600	10	1.08″	1.08″	0.80″	69295K55 3.51	69295K45 10.00

♠ Receptacles are slightly smaller than plugs. ● Package quantity is 10.

Assembled 250 VAC Connectors with Wire Leads—0.093″ Dia. Pin

All necessary components are included. They have 6″ long UL1015 18 AWG wire leads and are ready to install without the use of a crimper.

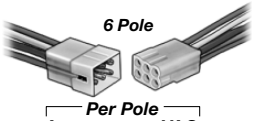

No. of Poles	Per Pole Amps	Per Pole VAC		Each
2	12	250	9552T1	$4.71
6	9	250	9552T2	11.50
9	9	250	9552T3	16.50

Pins and Sockets—Tin-Plated Brass

For Wire Size (AWG)	Pkg. Qty.	Pins	Pins Per Pkg.	Sockets	Sockets Per Pkg.
For 250 VAC Connectors—0.093″ Dia. Pin					
20-14	100	69295K22	$10.54	69295K32	$10.54
22-18	100	69295K23	9.46	69295K33	10.54
For Space-Saver 250 VAC Connectors—0.062″ Dia. Pin					
24-18	100	69295K111	10.54	69295K115	7.57
30-24	100	69295K112	7.30	69295K116	7.03
For 600 VAC Connectors—0.084″ Dia. Pin					
20-14	100	69295K21	4.03	69295K31	5.35

Ratchet Crimpers

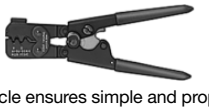

One ratchet cycle ensures simple and proper termination.

For Wire Size (AWG)		Each
For 250 VAC Connectors—0.093″ Dia. Pin		
24-14	69295K92	$161.11
For Space-Saver 250 VAC Connectors—0.062″ Dia. Pin		
24-18	69295K58	161.11
30-24	69295K59	161.11
For 600 VAC Connectors—0.084″ Dia. Pin		
20-14	69295K79	325.53

Insertion and Extraction Tools

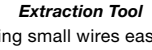

Insertion tools make assembling small wires easy.

For Wire Size (AWG)		Each
For 250 VAC Connectors—0.093″ Dia. Pin		
22-14	69295K57	$28.19
For Space-Saver 250 VAC Connectors—0.062″ Dia. Pin		
30-18	69295K56	28.19

Extraction tools release the locking mechanism on the pins and sockets so you can remove them from the housing.

For Wire Size (AWG)		Each
For 250 VAC Connectors—0.093″ Dia. Pin		
22-14	69295K91	$24.62
For Space-Saver 250 VAC Connectors—0.062″ Dia. Pin		
30-18	69295K48	19.61
For 600 VAC Connectors—0.084″ Dia. Pin		
20-14	69295K89	31.63

For information about NEMA ratings, see page 843.

Modular Pin-and-Socket Connectors

2-Pole Plug

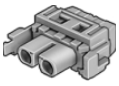
2-Pole Receptacle

5-Pole Plug

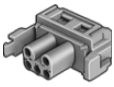
5-Pole Receptacle

A removable clamp allows you to join as many connectors as you need and locks them together so they won't come apart in high-vibration applications. They handle higher amps than compact connectors and have a polycarbonate housing with copper alloy pins and sockets. Rated to 257° F. ***2-pole connectors*** use a 2 mm hex allen wrench to install wire. UL recognized. ***5-pole connectors*** require a screwdriver to open a wire clamp.

No. of Poles	Amps per Pole @ 600 VAC	For Wire Size (AWG)	Mated with Clamp Lg.	Wd.	Ht.	Plugs	Each	Receptacles	Each
2	40	14-8	2.2″	1.8″	0.9″	1864K31	$17.44	1864K33	$20.20
5	16	26-14	2.6″	1.8″	0.9″	1864K35	11.06	1864K37	11.38

Compact Enclosed Pin-and-Socket Connectors

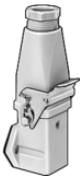
Top-Entry Hood with Side-Entry Base

Side-Entry Hood with Top-Entry Base

Top-Entry Hood with Cable Coupler Base

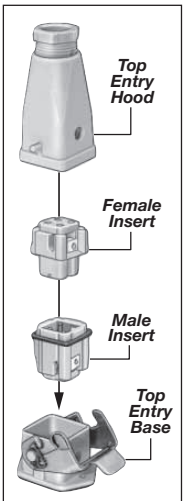

Connector Kit Top Entry

Surrounded and securely locked, your connections are protected from the environment with these slender connectors. Great for applications requiring quick disconnections for repair or replacement. A complete connector consists of a female insert, male insert, hood, and base. All are UL recognized and CSA certified.

Inserts

Made of thermoplastic and include silver-plated copper alloy pins and sockets. They also have easy screw-in terminations. Any hood and base below will work with the inserts.

No. of Poles	Per Pole Amps	VAC/VDC	For Wire Size (AWG)	Female Inserts	Each	Male Inserts	Each
3 & Ground	10	600	20-14	7979K63	$6.02	7979K62	$5.32
4 & Ground	10	600	20-14	7979K65	4.76	7979K64	4.56
6	10	48	20-16	7979K67	6.00	7979K66	5.52

Hoods and Bases

NEMA 4 rated for washdown protection, once connected. ***Hoods*** have a ½″ NPT threaded hub. They accept 0.256″ to 0.630″ OD cable. ***Bases*** accept top- and side-entry hoods. Top- and side-entry bases have two ⅛″ dia. mounting holes. Cable couplers hang from your cable, so they don't have mounting holes.

	Hoods Lg.	Wd.	Ht.		Each	Bases Lg.	Wd.	Ht.		Each
Thermoplastic										
Top Entry	1.06″	1.42″	2.44″	7979K68	$6.80	1.57″	1.10″	0.87″	7979K75	$3.54
Side Entry	1.89″	1.42″	1.89″	7979K71	7.22	1.02″	0.94″	1.59″	7979K77	4.50
Cable Coupler	—	—	—	—	—	0.94″	1.06″	2.56″	7979K79	8.54
Cast Zinc										
Top Entry	1.06″	1.32″	2.24″	7979K69	12.60	1.57″	1.10″	0.87″	7979K76	8.00
Side Entry	1.69″	1.32″	1.89″	7979K72	13.56	1.02″	0.94″	1.59″	7979K78	14.44
Cable Coupler	—	—	—	—	—	0.94″	1.06″	2.36″	7979K81	15.64

Connector Kits

Everything you need for a complete connector is included. All have ⅜″ NPT threaded adapters and accept 0.39″ to 0.47″ OD cable with 20-14 AWG conductors. IP65 rated for washdown protection.

No. of Poles	Hood and Base	Amps Per Pole @ 600 VAC/VDC	Thermoplastic	Each	Cast Zinc	Each
3 & Ground	Side-Entry Hood and Top-Entry Base	10	2419K23	$26.47	2419K15	$49.74
3 & Ground	Top-Entry Hood and Top-Entry Base	10	2419K21	26.54	2419K11	30.33
3 & Ground	Top-Entry Hood and Side-Entry Base	10	2419K22	27.53	2419K12	36.33
4 & Ground	Side-Entry Hood and Top-Entry Base	10	2419K26	27.54	2419K16	34.92
4 & Ground	Top-Entry Hood and Top-Entry Base	10	2419K24	27.69	2419K13	28.33
4 & Ground	Top-Entry Hood and Side-Entry Base	10	2419K25	28.67	2419K14	34.13

Modular Enclosed Rectangular Pin-and-Socket Connector Components

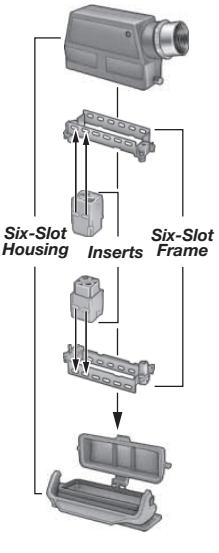

For a complete custom connector, choose inserts, a frame, and a housing that suit your electrical requirements. Select inserts to fill all frame slots. Inserts snap into frames and frames fit into the housings.

Inserts

2 Pole/ 2 Slot Male

2 Pole/ 2 Slot Female

2 Pole/ 1 Slot Male

2 Pole/ 1 Slot Female

5 Pole/ 1 Slot Male

5 Pole/ 1 Slot Female

Male USB

Female USB

Female Compressed Air

1 Slot Space Holder

Standard inserts have a polycarbonate housing with copper alloy contacts. UL recognized. ***USB inserts*** are for patch cable and have gold-plated copper alloy contacts. ***Compressed air inserts*** are for ¼″ ID tubing. They have a Buna-N seal and acetal contacts. *Female* insert has a polypropylene shut-off valve. UL recognized.

No. of Poles	No. of Slots	Amps Per Pole	For Wire Size (AWG)	Male	Each	Female	Each
Standard							
2	2	100 @ 600 VAC/VDC	5-2	1829K21	$42.74	1829K22	$51.67
2	1	40 @ 600 VAC/VDC	14-8	1829K46	18.88	1829K47	22.02
5	1	16 @ 600 VAC/VDC	26-14	1829K48	11.19	1829K49	11.55
USB							
4	1	1 @ 50 VAC/VDC	—	1829K62	6.94	1829K61	28.02
Compressed Air							
2	1	—	—	1829K64	10.90	1829K63	47.14
1-Slot Space Holder						1829K23	Each $3.36

Frames and Housings

Housings are die cast aluminum with four mounting holes. They meet NEMA 4 and 12 for protection from washdowns and oil seepage. Rated to 257° F.

No. of Slots	Frames	Each	Hub Size, NPT	Base	Base Mounting Hole Dia.	Housings Lg.	Wd.	Ht.		Each
2	1829K41	$21.99	½″	Single Lever	0.17″	3.1″	1.7″	2.8″	1829K51	$34.80
3	1829K42	21.36	½″	Single Lever	0.17″	3.7″	1.7″	3.4″	1829K52	48.00
4	1829K43	21.49	¾″	Single Lever	0.17″	4.5″	1.7″	3.6″	1829K53	49.74
6	1829K44	22.45	¾″	Single Lever	0.17″	5.5″	1.7″	4.1″	1829K54	67.50

For information about NEMA ratings, see page 843.

Enclosed Rectangular Pin-and-Socket Connectors

Designed for harsh indoor and outdoor environments, these rugged metallic enclosed connectors bring quick-disconnect convenience to everything from machine-tool control panels to mainframe computer systems. Use them for signal and power circuits. Select a male insert, female insert, hood, and base for a complete connector, or choose a kit that fits your needs. When mated, these components create a connector that meets NEMA 4 and 12 for protection from washdowns and oil seepage. Rated to 257° F.

Inserts are made of thermoplastic with silver-plated copper-alloy pins and sockets. They're keyed to prevent mismating and feature easy screw-in termination for 20-14 AWG wire, unless noted. UL recognized and CSA certified, unless noted.

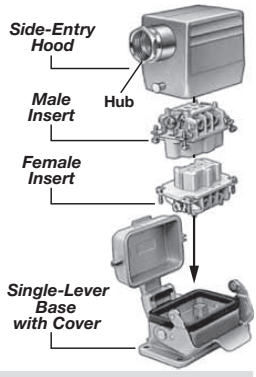

Inserts

No. of Poles	Amps Per Pole @ 600 VAC/VDC	Male Inserts	Each	Female Inserts	Each
6	16	8037K11	$13.12	8037K12	$13.63
10	16	8037K21	16.92	8037K22	15.62
16	16	8037K31	18.71	8037K32	19.15
24	16	8037K41	22.76	8037K42	24.47
32	16	8037K51	41.44	8037K52	39.50
48	16	8037K61	49.78	8037K62	53.94

Hoods and Bases

Housing is powder-coated die cast aluminum alloy (unless noted) with Buna-N gaskets except corrosion-resistant units, which have a black powder-coated finish with stainless steel hardware. The hood hub is where the cable enters the hood. All hood hubs are NPT female. Top and side entry refers to where cable is inserted. ***Bases*** have four mounting holes. Cover (included with base) is designed to protect the base when the hood is disconnected. ***Corrosion-resistant*** units are rated NEMA 4X for protection against corrosive agents.

No. of Poles	Hood Hub Size, NPT	Top-Entry Hoods Lg.	Wd.	Ht.		Each	Side-Entry Hoods Lg.	Wd.	Ht.		Each	Bases with Cover Mtg. Hole Dia.	Lg.	Wd.	Ht.		Each
***Standard—**Single-Lever Base*																	
6	1/2"	2.4"	1.7"	2"	8037K13	$19.18	2.4"	1.7"	2"	8037K14	$18.88	0.17"	3.1"	1.7"	1.8"	8037K15	$25.22
10	1/2"	2.9"	1.7"	2"	8037K23	22.45	2.9"	1.7"	2"	8037K24	23.75	0.17"	3.7"	1.7"	1.8"	8037K25	32.96
16	3/4"	3.7"	1.7"	2.4"	8037K33	22.16	3.7"	1.7"	2.4"	8037K34	21.82	0.17"	4.4"	1.7"	1.8"	8037K35	35.47
24	3/4"	4.7"	1.7"	2.4"	8037K43	23.41	4.7"	1.7"	2.4"	8037K44	21.25	0.17"	5.5"	1.7"	1.8"	8037K45	40.25
48	1"	5.2"	3.5"	4.1"	8037K63	68.14	5.2"	3.5"	4.1"	8037K64	63.24	0.28"	6.5"	3.5"	2.2"	8037K65★	70.41
***Standard—**Dual-Lever Base*																	
32	1"	3.7"	3.1"	3.7"	8037K53	45.10	3.7"	3.1"	3.7"	8037K54	48.04	0.22"	4.9"	3.1"	1.7"	8037K55	111.83
***Corrosion Resistant—**Single-Lever Base*																	
16	3/4"	3.7"	1.7"	2.4"	8037K73	32.90	3.7"	1.7"	2.4"	8037K74	29.37	0.17"	4.4"	1.7"	1.8"	8037K75	38.47
24	1"	—	—	—	—	—	4.7"	1.7"	2.4"	8037K84	37.18	0.17"	5.5"	1.7"	1.8"	8037K85	46.71

★ Cover is made of thermoplastic.

Standard Kits

Housing is powder-coated die cast aluminum with Buna-N gaskets. Single-lever bases have an attached thermoplastic cover.

Single Lever Side Entry

Dual Lever Top Entry

No. of Poles	Hood Hub Size, NPT	Amps Per Pole @ 600 VAC/VDC	Mounting Hole Dia.	Lg.	Wd.	Ht.	Single-Lever Bases With Cover	Each	Dual-Lever Bases Without Cover	Each
Side Entry										
6	1/2"	16	0.17"	3.2"	1.7"	2.8"	3240K15	$59.09	3240K11■	$54.32
10	1/2"	16	0.17"	3.7"	1.7"	3.4"	3240K16	79.55	3240K12	71.14
16	3/4"	16	0.17"	4.5"	1.7"	3.6"	3240K17	85.23	3240K13	77.27
24	3/4"	16	0.17"	5.5"	1.7"	3.6"	3240K18	103.41	3240K14	88.41
32	1 1/4"	16	0.22"	4.9"	3.5"	5.2"	—	—	3240K31	194.32
48	1 1/4"	16	0.25"	6.5"	3.8"	5.4"	3240K19	240.82	—	—
Top Entry										
6	1/2"	16	0.17"	3.2"	1.7"	2.7"	3240K21	61.36	—	—
10	1/2"	16	0.17"	3.7"	1.7"	2.9"	3240K22	85.91	3240K26	70.45
16	3/4"	16	0.17"	4.5"	1.7"	2.9"	3240K23	93.18	3240K27	77.27
24	3/4"	16	0.17"	5.5"	1.7"	4.1"	3240K24	119.89	3240K28	101.14
32	1 1/4"	16	0.22"	4.9"	3.5"	5.2"	—	—	3240K29	190.91
48	1 1/4"	16	0.25"	6.5"	3.8"	5.4"	3240K25	251.02	—	—

■ Base is single lever.

Corrosion-Resistant Kits

All have side entry. Housing is die cast aluminum with a black powder-coated finish. All have stainless steel hardware and fluoroelastomer seals for better chemical and UV resistance. They have a removable die cast aluminum cover, except the 48-pole connector, which has an attached thermoplastic cover.

Dual Lever

No. of Poles	Hood Hub Size, NPT	Amps Per Pole @ 600 VAC/VDC	Mounting Hole Dia.	Lg.	Wd.	Ht.	Base		Each
6	1/2"	16	0.17"	3.2"	1.7"	2.9"	Single Lever	3240K41	$187.50
10	1/2"	16	0.17"	3.7"	1.7"	3.3"	Dual Lever	3240K42	221.28
16	3/4"	16	0.17"	4.5"	1.7"	3.6"	Dual Lever	3240K43	225.53
24	3/4"	16	0.17"	5.5"	1.7"	3.6"	Dual Lever	3240K44	242.86
48	1 1/4"	16	0.25"	6.5"	3.8"	5.4"	Single Lever	3240K45	541.84

Compact Kits

These connectors have a die cast zinc housing and side entry with Buna-N gaskets. The three-pole connector has clamp-style termination for 14 to 8 AWG wires. The five-pole connector is for 26-14 AWG wires. It is not CSA certified.

No. of Poles	Hood Hub Size, NPT	Amps Per Pole @ 600 VAC/VDC	Mounting Hole Dia.	Lg.	Wd.	Ht.	Base		Each
3	3/4"	40	0.13"	1.9"	1.4"	3.3"	Single Lever	8735T2	$92.73
5	3/4"	16	0.13"	1.9"	1.4"	3.3"	Single Lever	8735T1	75.00

High-Amp Kits

Both connectors have side entry and a powder-coated die cast aluminum housing with Buna-N gaskets. The four-pole connector has two control pins to prevent arcing if it is disconnected before the power is turned off. Ideal for brakes or thermo sensors on large motors. Control pins are rated to 300 VAC. For 16-6 AWG wire. The six-pole kit is for 10 AWG wire.

No. of Poles	Hood Hub Size, NPT	Amps Per Pole @ 600 VAC/VDC	Mounting Hole Dia.	Lg.	Wd.	Ht.	Base		Each
4	1"	80	0.17"	4.5"	1.7"	4.1"	Dual Lever	8754T6	$209.09
6	1"	35	0.17"	4.5"	1.7"	4.1"	Dual Lever	8754T5	106.82

For information about NEMA ratings, see page 843.

Modular Connectors

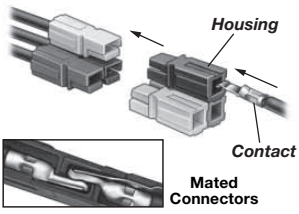

Create your own custom single- or multipole connectors with these modular components. Just crimp a contact onto your wire, then insert into a housing to create a genderless connector. Mate with another connector for a reliable connection with low contact resistance. They are easily stacked to form multipole connectors. All housings are polycarbonate and contacts are silver-plated copper, unless noted. An internal stainless steel spring ensures that the contacts maintain constant pressure. The given amp rating is based on a single-pole configuration using the largest wire shown within each range. Rated to 221°F. UL recognized and CSA certified.

Connector kits consist of housings with contacts. ***Four-pole enclosure*** for 15-, 30-, and 45-amp connectors covers four complete connectors in one unit. Color is black.

To Order: For Connector Kits and Housings, please specify black, blue, green, red, or white.

Amps @ 600 VAC/VDC	For Wire Size (AWG)	Individual Housing Lg.	Wd.	Ht.	Mated Housing Lg.	Pkg. Qty.	Connector Kits	Per Pkg.	Housings	Per Pkg.	Contacts	Per Pkg.
15	20-16	0.97″	0.31″	0.31″	1.63″	5	8026K76	$2.47	8026K5	$2.54	8026K96	$1.17
30	16-12	0.97″	0.31″	0.31″	1.63″	5	8026K1	3.15	8026K5	2.54	8026K91	1.20
45	14-10	0.97″	0.31″	0.31″	1.63″	5	8026K9■	4.71	8026K5	2.54	8026K95■	2.54
75	6	1.88″	0.63″	0.63″	3.20″	1	8026K2	2.96	8026K6	1.58	8026K92	1.05
120	2	2.75″	0.88″	0.88″	4.63″	1	8026K3	7.21	8026K7	5.26	8026K93	5.03
180	1/0	3.25″	1.13″	1.13″	5.50″	1	8026K4	13.03	8026K8	7.42	8026K94	6.01

Four-Pole Enclosure for 15-, 30-, and 45-amp Connectors ..... 8026K19 Each $3.95

■ Contacts are tin-plated copper.

Nylon Pin-and-Sleeve Plugs, Connectors, and Receptacles (IEC 309)

By meeting international pin-and-sleeve standards IEC 309-1 and 309-2, these rugged nylon-housed plugs, connectors, and receptacles are fully interchangeable with other manufacturers' IEC 309 devices. They're safer than steel because they're nonconductive. Ideal for temporary power systems and portable processing equipment. All devices are three pole, four wire (three power pins and one larger grounding pin) and are for use in three-phase voltage systems. They have a single keyway design with brass pins and sleeves. Devices are color coded by voltage (240 and 250 VAC are blue, 480 VAC are red). Housings are sized by amp rating to prevent incorrect mating. All meet IP67 for protection from water projected from a nozzle. UL listed, CSA certified, and CE approved, unless noted. **To Order:** Please specify voltage: 250 or 480 VAC, unless noted.

Switch receptacles have a mechanical interlock that prevents disconnecting the plug until power is switched off. Power cannot be switched on unless plug is properly inserted.

240 and 250 VAC

480 VAC

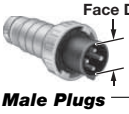

Amps	Male Plugs Face Dia.	Male Plugs Each	Female Connectors Each	Female Receptacles Each	Female Switch Receptacles Each
30	2¼″	68965K31 $159.62	68965K34 $166.36	68965K37 $132.83	68965K27♣ $691.04
60	2¾″	68965K32 236.32	68965K35 288.96	68965K38 223.62	68965K28♣ 923.57
100	3¼″	68965K33 375.77	68965K36 478.52	68965K39 346.45	68965K29♣ 1,204.87

♣ Please specify voltage: 240 or 480 VAC; not CE approved.

Aluminum Pin-and-Sleeve Plugs, Connectors, and Receptacles (UL 1686)

When used together, these plugs, connectors, and receptacles maintain a NEMA 4X watertight, corrosion-resistant connection and meet UL 1686 standards. To connect, just tighten the locking ring on the plug. They are fully interchangeable with UL1686 configured and listed devices including Crouse-Hinds Arktite, Appleton Powertite, and Killark Versamate. Housed in copper-free aluminum with an epoxy/polyester finish, they supply power to both fixed and portable electrical equipment including pumps, welders, and blowers. All have a single keyway. Contacts are brass with a beryllium-copper spring tensioner. Cable diameter range is 0.55″-1.2″ for 30 amp, 0.65″-1.5″ for 60 amp, and 0.88″-1.7″ for 100 amp devices. Rated to 600 VAC (50-400 Hz) and 250 VDC. UL listed and CSA certified.

Receptacles include a mounting box with a conduit entry hole (hub size in table is NPT female and refers to the conduit entry hole size).

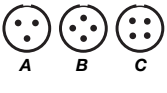
A *B* *C*

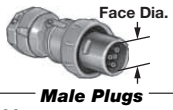

Pin Diagram	Amps	Male Plugs Face Dia.	Male Plugs Each	Female Connectors Each	Female Receptacles Hub Size, NPT	Female Receptacles Each
Three Pole, Three Wire (3 Power Pins)— *Marked 3W3P*						
A	30	1.88″	7316K15 $181.92	7316K41 $199.74	1″	7316K11 $186.60
A	60	2.25″	7316K25 255.78	7316K42 318.81	1½″	7316K21 289.97
A	100	2.47″	7316K35 393.63	7316K43 438.00	1½″	7316K31 462.95
Four Pole, Four Wire (4 Power Pins)— *Marked 4W4P*						
B	30	1.88″	7316K16 203.28	7316K47 203.28	1″	7316K12 207.98
B	60	2.53″	7316K26 251.16	7316K48 373.85	1½″	7316K22 332.55
C	100	2.75″	7316K36 436.24	7316K49 493.90	1½″	7316K32 514.60
Four Pole, Three Wire (3 Power Pins plus 1 Ground Pin)— *Marked 3W4P*						
C	30	1.88″	7316K18 221.03	7316K44 221.03	1″	7316K14 229.76
C	60	2.53″	7316K28 304.98	7316K45 387.33	1½″	7316K24 357.93
B	100	2.75″	7316K38 461.53	7316K46 522.92	1½″	7316K34 542.75

Safe Break Pin-to-Pin Plugs, Connectors, and Receptacles

No need to install a separate disconnect switch—plug, connector, and receptacle combinations have spring-loaded pins that make "safe break" switch-like connections, so you can connect and disconnect with the power on. They can withstand a 100,000-amp short circuit. Made of fiberglass-reinforced polyester with corrosion-resistant silver-nickel pin contacts. Connectors and receptacles have a locking tab that holds the plug to complete the connection. Together, components form a connection that meets NEMA 4X and IP67 for washdowns and corrosion. UL 2682 listed as a switch-rated plug and receptacle for branch circuit disconnect switching and motor circuit disconnect switching. CSA certified.

Plugs are three pole, four wire (three power pins plus one ground pin). ***Receptacles*** have a 30° angle and junction box with conduit entry hole (hub size in table is NPT female and refers to the conduit entry hole size).

To Order: For 20 amp, please specify voltage: 250 or 480 VAC. For 30 amp and 60 amp, please specify 250, 480, or 600 VAC.

3 Pole

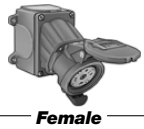

Amps	Male Plugs Face Dia.	Male Plugs Each	Female Connectors Each	Female Receptacles Hub Size, NPT	Female Receptacles Each
20	1.7″	6737K31 $64.96	6737K32 $104.98	1″	6737K33 $182.82
30	1.9″	6737K34 154.63	6737K35 274.11	1″	6737K36 326.66
60	2.2″	6737K37 261.70	6737K38 439.64	1″	6737K39 490.22

Flat Pin-and-Sleeve Plugs and Connectors

Designed so they won't roll when stepped on, these plugs and connectors reduce the likelihood of slips and falls in high traffic areas. Great for use in theaters and auditoriums. Housing is thermoplastic, unless noted. Pins and sleeves are brass. All plugs and connectors have two poles and one ground. UL and C-UL listed. 20-amp devices are also rated 15 amps @ 250 VAC.

Amps @ 125 VAC	Cord Connection	Accepts Cord	Ht.	Wd.	Color	Male Plugs	Each	Female Connectors	Each
20	Crimp Lug	12/3 AWG SO	0.81″	2.18″	Black	8172K1 ♦	$7.10	8172K5 ♦	$7.10
20	Screw Clamp	12/3 AWG SO	0.80″	2.00″	Black	8172K2	5.98	8172K6	5.98
60	Set Screw	4/3 AWG SO to 6 EISL★	1.19″	3.40″	Black	8172K3	29.62	8172K7	29.62
100	Set Screw	2/3 AWG SO to 4 EISL★	1.30″	4.05″	Gray	8172K4	39.47	8172K8	39.47

♦ Housing is phenolic. ★EISL stands for Entertainment Industry Stage and Lighting.

High-Amp Single-Pole Plugs and Connectors

These high-amperage connectors handle big jobs such as industrial machinery, amusement park rides, and movie set lighting. Sleeves and contacts are easily assembled and disassembled with a twist and pull. Sleeves are shatter- and crack-resistant thermoplastic elastomer. Contacts are brass. Amp ratings are based on using these plugs and connectors with the largest size 194°F rated cable in the wire size range in the table (amp ratings decrease as cable size decreases). All are rated NEMA 3R for outdoor use. Plugs and connectors with a 125-, 300-, or 400-amp rating are also UL listed and CSA certified.

To Order: Please specify color: black, blue, green, red, or white.

Amps @ 600 VAC	For Wire Size (AWG)	O'all Dia.	Male Plugs	Each	Female Connectors	Each
125	8-4	0.9″	8030K41	$16.70	8030K51	$16.70
300	2-2/0	1.8″	8030K42	26.98	8030K52	26.98
400	1/0-4/0	1.8″	8030K43	26.98	8030K53	26.98
570	250-350 MCM	2.5″	8030K44	146.66	8030K54	146.66
690	350-500 MCM	2.5″	8030K45	146.66	8030K55	146.66

Rotating Connector Rings

Also known as slip rings, these rings maintain an electrical link between a moving and a stationary part. Typically used on rotating jib cranes, rotating signs, and test equipment.

They have 35-amp, 600 VAC single-brush contacts and are made from copper alloy with moisture-resistant insulators and copper graphite brushes. All have 24″ long 10 AWG wire leads. They rotate in either direction and mount in any position. Rings come with a housing and 10″ dia. mounting plate with four ¼″ dia. holes on 9¼″ centers (bolts not included).

No. of Poles	O'all Size, Dia. × Ht.		Each
2	10¼″ × 8½″	7519K42	$584.79
3	10¼″ × 9⅞″	7519K43	632.55
4	10¼″ × 9⅞″	7519K44	662.37
5	10¼″ × 9⅞″	7519K45	734.98

Easy-Install Power Distribution System

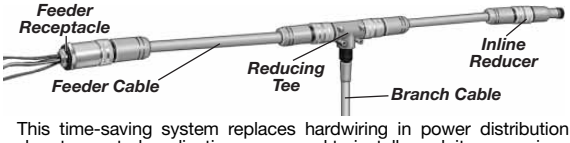

This time-saving system replaces hardwiring in power distribution and motor control applications—no need to install conduit or run wires. Connectors have four poles and 0.84″ face diameters, unless otherwise noted. Plugs are gray PVC. UL recognized and rated IP68.

Receptacles come in two styles. Use a *feeder receptacle* to connect your power supply to the feeder cable. Made of aluminum with ½″-14 NPT external threads on one end and four 4-ft. long PVC-jacketed 10 AWG wire leads on the other. To add a motor or other device, connect a *branch receptacle* to the end of a branch cable. The female branch receptacle is aluminum; the male is die cast zinc. Both branch receptacles have four 1-ft. long PVC-jacketed 14 AWG wire leads.

Feeder cables are the main power line and consist of a 16½-ft. gray PVC-jacketed oil-resistant (STOOW) 10/4 AWG cable with plugs.

Tees are used to connect feeder cable. They have one male and two female plugs. On the *reducing tee* one of the female plugs has a 0.55″ face diameter to connect to the branch cable.

Branch cables allow you to connect a device to the feeder cable and consist of a 16½-ft. gray PVC-jacketed oil-resistant (STOOW) 14/4 AWG cable with plugs. The male plug end has a 0.55″ face diameter that connects to the reducing tee or inline reducer.

Inline reducer allows you to connect a male branch cable with a 0.55″ face diameter connection to the end of a female feeder cable.

	Amps @ 600 VAC		Each
Receptacles			
Feeder Female	25	8932T11	$71.35
Feeder Male	25	8932T12	61.92
Branch Female	15	8932T13	24.35
Branch Male	15	8932T14	19.00
Feeder Cables			
Female Plug on One End	25	8932T15	126.57
Male Plug and Female Plug	25	8932T18	177.23
Male Plug on One End	25	8932T16	126.57
Tees			
Standard	25	8932T21	103.95
Reducing	25	8932T22	95.97
Branch Cables			
Male Plug and Female Plug	15	8932T19	79.40
Male Plug on One End	15	8932T17	58.10
Inline Reducer	15	8932T23	49.88

NEMA Midget Plugs, Connectors, and Receptacles

Perfect for limited-space applications. Blades and contacts are copper alloy. All devices are UL listed and CSA certified.

Plugs and ***connectors*** have a durable nylon housing. ***Receptacles*** have a nylon housing and a flange that allows you to mount the receptacle into a panel cutout (1.1″ dia. mounting hole for ML1-15, 1.25″ dia. for ML2-15 and ML3-15). They come with a nylon or metal flange—choose metal for use in applications with heat and vibration. **To Order:** For receptacles, please specify nylon or nickel-plated brass flange, unless noted.

Turn-lock midget devices are compatible only with other turn-lock midget devices that have the same NEMA style. All except metal-flanged receptacles meet Fed. Spec. WC596. ***Straight-blade*** plugs fit standard NEMA 1-15 and 5-15 connectors and receptacles.

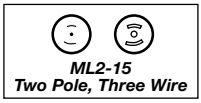

ML2-15
Two Pole, Three Wire

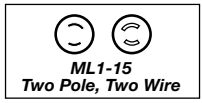

ML1-15
Two Pole, Two Wire

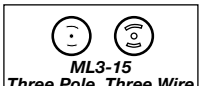

ML3-15
Three Pole, Three Wire

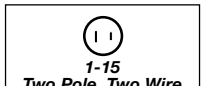

1-15
Two Pole, Two Wire

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Each	90° Male Plugs	Each	Female Connectors	Each	90° Female Connectors	Each	Male Flanged Receptacles	Each	Female Flanged Receptacles	Each
Turn-Lock														
ML2-15	125	15	6755K15	$11.39	6755K51	$17.64	6755K16	$15.02	6755K43	$23.07	6755K17	$14.35	6755K28	$17.02
ML1-15	125	15	6755K11	11.93	6755K41	13.98	6755K12	13.07	6755K42	16.19	6755K13♠	12.77	6755K14	13.15
ML3-15	125/250	15	6755K18	11.63	6755K61	22.07	6755K21	15.53	6755K44	27.67	6755K22	15.87	6755K23	17.96
Straight-Blade														
1-15	125	15	6755K71	10.57	6755K72	11.76	—	—	—	—	—	—	—	—

♠ Available with a nylon or Type 305 stainless steel flange.

About NEMA Turn-Lock Plugs, Connectors, and Receptacles

Plug

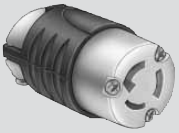

Connector

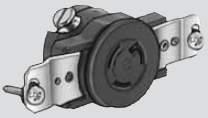

Receptacle

Filled Slots Depict Plugs	Hollow Slots Depict Connectors/ Receptacles

Turn-lock plugs, connectors, and receptacles lock firmly together with just a twist to prevent accidental disconnection. They conform to National Electrical Manufacturers' Association (NEMA) requirements. The diagrams below show the NEMA configurations for plugs and connectors/receptacles. Different NEMA turn-lock styles are not compatible; for example, an L5-15 plug will not fit an L5-20 receptacle. If you are buying a plug, the NEMA style must match your existing NEMA connector or receptacle (see page 786 for non-NEMA styles or page 787 for NEMA straight-blade styles).

First, check the device you want to replace for a NEMA-style number. It may have a NEMA number ending with a "P," "C," or "R" signifying either a plug, connector, or receptacle. For example, an L5-15P is an L5-15 plug. If there is no style number, match the plug, connector, or receptacle you're replacing to a diagram in the chart below, making sure the voltage and amp ratings match your requirements.

Poles— The number of terminals to which current-carrying (power) conductors are connected.

Wires— The total number of poles plus an equipment grounding connection. Also corresponds to the total number of blades/pins on a plug.

Three Blades—Two Power Plus One Ground (Two Pole, Three Wire)

125 VAC, 15 Amps L5-15	125 VAC, 20 Amps L5-20	125 VAC, 30 Amps L5-30	250 VAC, 15 Amps L6-15	250 VAC, 20 Amps L6-20
250 VAC, 30 Amps L6-30	277 VAC, 15 Amps L7-15	277 VAC, 20 Amps L7-20	277 VAC, 30 Amps L7-30	
480 VAC, 20 Amps L8-20	480 VAC, 30 Amps L8-30	600 VAC, 20 Amps L9-20	600 VAC, 30 Amps L9-30	

Four Blades—Three Power Plus One Ground (Three Pole, Four Wire)

125/250 VAC, 20 Amps L14-20	125/250 VAC, 30 Amps L14-30	250 VAC, 20 Amps L15-20	250 VAC, 30 Amps L15-30
480 VAC, 20 Amps L16-20	480 VAC, 30 Amps L16-30	600 VAC, 30 Amps L17-30	

Five Blades—Four Power Plus One Ground (Four Pole, Five Wire)

120/208 VAC 20 Amps L21-20	120/208 VAC 30 Amps L21-30	277/480 VAC 20 Amps L22-20	277/480 VAC 30 Amps L22-30	347/600 VAC 20 Amps L23-20	347/600 VAC 30 Amps L23-30

Two Power Blades (Two Pole, Two Wire)

125 VAC, 15 Amps L1-15	250 VAC, 20 Amps L2-20

Three Power Blades (Three Pole, Three Wire)

125/250 VAC, 20 Amps L10-20	125/250 VAC, 30 Amps L10-30

Four Power Blades (Four Pole, Four Wire)

120/208 VAC 20 Amps L18-20	120/208 VAC 30 Amps L18-30	277/480 VAC 20 Amps L19-20	277/480 VAC 30 Amps L19-30	347/600 VAC 20 Amps L20-20	347/600 VAC 30 Amps L20-30

For information about NEMA turn-lock plugs, connectors, and receptacles, see page 784.

Turn-Lock Plugs, Connectors, and Receptacles

All are UL listed and CSA certified, unless noted. ***Plugs*** and ***connectors*** have cord grips for strain relief, brass blades and contacts, and a durable nylon housing. ***Receptacles*** are made of nylon with copper alloy contacts except 7164K33, K14, K38, and K19, which have brass contacts. See page 832 for wall plates. ***Flanged receptacles*** are thermoplastic with brass contacts.

NEMA Style	Rating VAC	Rating Amps	Male Plugs OD	Male Plugs	Male Plugs Each	90° Male Plugs	90° Male Plugs Each	Female Connectors	Female Connectors Each	Female Receptacles	Female Receptacles Each	Male Flanged Receptacles	Male Flanged Receptacles Each	Female Flanged Receptacles	Female Flanged Receptacles Each
Three Blades—*Two Power Plus One Ground (Two Pole, Three Wire)*															
L5-15	125	15	1.5″	7162K29	$8.89	2351K2	$13.18	7162K32	$14.26	7162K1	$15.00	7162K8	$11.71	7162K77	$15.54
L5-20	125	20	2.2″	7162K36	11.42	2351K5	19.91	7162K38	15.71	7162K4	17.50	7162K9	14.23	7162K94	20.00
L5-30	125	30	2.2″	7162K41	17.65	2351K6	26.23	7162K46	34.86	7162K47	23.62	7162K11	25.66	7162K34	32.56
L6-15	250	15	1.5″	7162K48	9.37	2351K3	15.03	7162K49	16.23	7162K2	16.88	—	—	—	—
L6-20	250	20	2.2″	7162K5	10.48	2351K7	19.91	7162K51	15.71	7162K52	16.81	7162K12	14.23	7162K37	23.91
L6-30	250	30	2.2″	7162K53	17.97	2351K8	24.64	7162K54	32.25	7162K55	25.55	7162K13	21.99	7162K39	30.20
L7-15	277	15	1.5″	7162K56	10.49	2351K4	16.34	7162K57	16.97	7162K42	15.90	—	—	—	—
L7-20	277	20	2.2″	7162K59	11.42	2351K9	19.50	7162K6	15.77	7162K61	17.05	7162K14	15.26	7162K83	23.71
L7-30	277	30	2.2″	7162K62	18.03	2351K14	27.07	7162K63	37.07	7162K64	27.32	7162K15	28.23	7162K84	31.41
L8-20	480	20	2.2″	7162K65	12.00	2351K15	21.86	7162K66	17.24	7162K67	18.68	7162K16	15.60	7162K85	22.91
L8-30	480	30	2.2″	7162K68	18.88	2351K16	27.73	7162K69	32.92	7162K7	27.37	7162K17	26.65	7162K86	33.43
L9-20	600	20	2.2″	7162K71	13.19	2351K17	22.55	7162K72	19.73	7162K73	24.45	7162K18	15.66	7162K87	23.23
L9-30	600	30	2.2″	7162K74	19.17	2351K18	27.20	7162K75	37.87	7162K76	33.52	7162K19	25.92	7162K88	28.38
Four Blades—*Three Power Plus One Ground (Three Pole, Four Wire)*															
L14-20	125/250	20	2.2″	7164K41	17.44	2351K22	25.41	7164K43	21.64	7164K45	23.23	7164K71	21.58	7164K81	29.80
L14-30	125/250	30	2.2″	7164K55	23.40	2351K23	30.41	7164K56	43.57	7164K57	37.02	7164K72	29.57	7164K82	37.80
L15-20	250	20	2.2″	7164K46	18.29	2351K24	26.33	7164K47	21.50	7164K48	24.20	7164K73	22.46	7164K83	29.80
L15-30	250	30	2.2″	7164K49	23.63	2351K25	30.59	7164K5	43.73	7164K51	37.24	7164K74	31.97	7164K84	36.80
L16-20	480	20	2.2″	7164K52	18.40	2351K26	26.43	7164K53	24.46	7164K54	27.32	7164K75	23.31	7164K85	30.97
L16-30	480	30	2.2″	7164K58	23.74	2351K27	30.67	7164K59	45.27	7164K6	37.52	7164K76	33.20	7164K86	37.25
L17-30	600	30	2.2″	7164K61	24.10	2351K28	30.89	7164K62	50.57	7164K63	39.10	7164K77	35.66	7164K87	39.21
Five Blades—*Four Power Plus One Ground (Four Pole, Five Wire)*															
L21-20	120/208	20	2.2″	7184K31	21.97	2351K36	35.26	7184K32	33.95	7184K33	31.44	7184K51	34.49	7184K61	52.70
L21-30	120/208	30	2.2″	7184K34	26.56	2351K37	32.52	7184K35	43.20	7184K36	39.67	7184K52	29.54	7184K62	60.40
L22-20	277/480	20	2.2″	7184K37	23.29	2351K38	37.65	7184K38	34.86	7184K39	29.26	7184K53	39.45	7184K63	50.48
L22-30	277/480	30	2.2″	7184K41	28.13	2351K39	34.84	7184K42	45.36	7184K43	43.73	7184K54	29.70	7184K64	62.67
L23-20	347/600	20	2.2″	7184K44	23.85	2351K41	37.65	7184K45	45.31	7184K46	31.50	7184K55	34.40	7184K65	45.70
L23-30	347/600	30	2.2″	7184K47	28.69	2351K42	35.68	7184K48	59.39	7184K49	45.50	7184K56	35.02	7184K66	63.85
Three Power Blades *(Three Pole, Three Wire)*															
L10-20	125/250	20	2.2″	7162K45	14.20	2351K19	23.61	7162K44	20.26	7162K43	26.55	7162K21	18.66	7162K89▲	26.14
L10-30	125/250	30	2.2″	7162K95▲	21.60	2351K21	29.50	7162K96▲	41.27	7162K97	31.70	7162K23▲	27.29	7162K93	24.09
Four Power Blades *(Four Pole, Four Wire)*															
L18-20	120/208	20	2.2″	7164K3	18.71	2351K29	28.32	7164K4	22.62	7164K1	28.46	7164K78	25.37	7164K88	34.03
L18-30	120/208	30	2.2″	7164K22▲	24.17	2351K31	31.02	7164K23▲	51.63	7164K21	40.77	7164K79▲	36.80	7164K89▲	41.69
L19-20	277/480	20	2.2″	7164K31	29.61	2351K32	42.63	7164K32	40.09	7164K33▲	33.00	7164K34	28.69	7164K35	34.14
L19-30	277/480	30	2.2″	7164K12▲	36.24	2351K33	41.50	7164K13▲	76.43	7164K14▲	48.14	7164K15▲	44.28	7164K16▲	43.97
L20-20	347/600	20	2.2″	7164K36	29.73	2351K34	42.72	7164K37	40.20	7164K38▲	33.00	7164K39	27.77	7164K11	31.60
L20-30	347/600	30	2.2″	7164K17▲	37.20	2351K35	49.97	7164K18▲	67.33	7164K19▲	48.29	—	—	7164K25▲	44.09

▲ Not CSA certified.

Premium Turn-Lock Plugs, Connectors, and Receptacles

Designed for the toughest applications and recognized by the most discriminating users, these durable devices have a ribbed nylon housing with flared end for easy gripping, an internal dust seal, and a two-piece cord grip for strain relief and maximum retention force. Blades and contacts are brass. UL listed and CSA certified, except those with four power blades, which are not CSA certified. See page 832 for wall plates.

NEMA Style	Rating VAC	Rating Amps	Male Plugs OD	Male Plugs	Male Plugs Each	Female Connectors	Female Connectors Each	Female Receptacles	Female Receptacles Each
Three Blades—*Two Power Plus One Ground (Two Pole, Three Wire)*									
L5-15	125	15	1.5″	9081T11	$16.23	9081T31	$28.42	9081T51	$22.02
L5-20	125	20	2.3″	9081T12	20.35	9081T32	31.40	9081T52	25.97
L5-30	125	30	2.3″	9081T13	31.40	9081T33	62.37	9081T53	36.40
L6-15	250	15	1.5″	9081T14	17.20	9081T34	29.30	9081T54	24.82
L6-20	250	20	2.3″	9081T15	20.35	9081T35	31.40	9081T55	25.97
L6-30	250	30	2.3″	9081T16	31.84	9081T36	62.81	9081T56	39.47
Four Blades—*Three Power Plus One Ground (Three Pole, Four Wire)*									
L14-20	125/250	20	2.3″	9081T17	30.71	9081T37	42.98	9081T57	35.96
L14-30	125/250	30	2.3″	9081T18	42.01	9081T38	86.49	9081T58	57.11
L15-20	250	20	2.3″	9081T19	32.89	9081T39	42.98	9081T59	36.15
L15-30	250	30	2.3″	9081T21	42.19	9081T41	86.67	9081T61	57.54
L16-20	480	20	2.3″	9081T22	39.38	9081T42	52.71	9081T62	43.54
L16-30	480	30	2.3″	9081T23	50.31	9081T43	105.83	9081T63	68.54
Five Blades—*Four Power Plus One Ground (Four Pole, Five Wire)*									
L21-20	120/208	20	2.3″	9081T24	39.47	9081T44	64.39	9081T64	43.77
L21-30	120/208	30	2.3″	9081T25	46.67	9081T45	85.96	9081T65	60.88
Four Power Blades *(Four Pole, Four Wire)*									
L18-20	120/208	20	2.3″	9081T26	51.41	9081T46	71.03	9081T66	57.95
L18-30	120/208	30	2.3″	9081T27	64.49	9081T47	135.51	9081T67	85.13
L19-20	277/480	20	2.3″	9081T28	51.41	9081T48	71.03	9081T68	58.21
L19-30	277/480	30	2.3″	9081T29	64.49	9081T49	135.90	9081T69	85.13

For information about NEMA turn-lock plugs, connectors, and receptacles, see page 784.

High-Visibility Turn-Lock Plugs and Connectors

These high-visibility yellow plugs and connectors are easy to spot. Rugged rubber construction provides more abrasion, ozone, oil, and impact resistance than nylon plugs and connectors. Use in applications with no water or moisture present. All have cord grips for strain relief and brass blades and contacts. UL listed and CSA certified, unless noted.

NEMA Style	Rating VAC	Rating Amps	Male Plugs OD	Male Plugs Each	Female Connectors Each	Female Connectors Each
Three Blades— *Two Power Plus One Ground (Two Pole, Three Wire)*						
L5-15	125	15	1.5″	7720K15	$11.54	7720K16	$18.98
L5-20	125	20	1.9″	7720K22	18.04	7720K23	27.63
L5-30	125	30	2.1″	7720K28	26.07	7720K29▲	56.76
L6-15	250	15	1.5″	7720K17	12.00	7720K18	19.76
L6-20	250	20	1.9″	7720K24	17.89	7720K25	27.35
L6-30	250	30	2.1″	7720K31	27.37	7720K32▲	56.76
L7-15	277	15	1.5″	7720K19	14.59	7720K21	25.11
L7-20	277	20	1.9″	7720K26	17.54	7720K27▲	27.11
L7-30	277	30	2.1″	7720K33	27.37	7720K34▲	57.02
Four Blades— *Three Power Plus One Ground (Three Pole, Four Wire)*						
L14-20	125/250	20	1.9″	7720K35	27.30	7720K36	37.09
L14-30	125/250	30	2.1″	7720K42	37.09	7720K43▲	79.54
L15-20	250	20	1.9″	7720K37	27.30	7720K38	37.09

▲ Not CSA certified. ♣ Not UL listed.

NEMA Style	Rating VAC	Rating Amps	Male Plugs OD	Male Plugs Each	Female Connectors Each	Female Connectors Each
Four Blades— *Three Power Plus One Ground (3 Pole, 4 Wire) (Cont.)*						
L15-30	250	30	2.1″	7720K44	$37.09	7720K45▲	$79.54
L16-20	480	20	1.9″	7720K39	27.59	7720K41▲	37.39
L16-30	480	30	2.1″	7720K46	37.41	7720K47▲	80.30
L17-30	600	30	2.1″	7720K48	37.17	7720K49▲	79.09
Five Blades— *Four Power Plus One Ground (Four Pole, Five Wire)*						
L21-20	120/208	20	1.9″	7720K51▲	33.98	7720K52▲	56.67
L21-30	120/208	30	2.1″	7720K57▲	41.02	7720K58▲	75.87
L22-20	277/480	20	1.9″	7720K53▲	34.35	7720K54▲	59.02
L22-30	277/480	30	2.1″	7720K59▲	42.96	7720K61▲	78.59
L23-20	347/600	20	1.9″	7720K55▲	34.35	7720K56▲	59.02
L23-30	347/600	30	2.1″	7720K62▲	44.48	7720K63▲	82.37
Two Power Blades *(Two Pole, Two Wire)*						
L1-15	125	15	1.5″	7720K11♣	11.04	7720K12♣	23.72
L2-20	250	20	1.9″	7720K13	15.15	7720K14	23.83

Watertight High-Visibility Turn-Lock Plugs, Connectors, and Receptacles

A multiple-ring seal keeps out water, oil, and other contaminants. When used together, these yellow plugs, connectors, and receptacles form a connection that meets NEMA 4X, 6P, 12, and IP67 for protection against washdowns, submersion, and corrosive agents. Housing is made of insulated rubber that's heat, weather, and chemical resistant. Blades and contacts are nickel-plated brass. UL listed and CSA certified, unless noted.

Plugs and ***connectors*** have cord grips for strain relief.

Receptacles have a weather-resistant, plastic hinged cover and mounting plate.

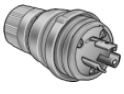

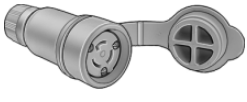

NEMA Style	Rating VAC	Rating Amps	Male Plugs OD	Male Plugs Each	Female Connectors Each	Female Receptacles Each	Female Connectors for Male Receptacles Each	Male Receptacles Each
Three Blades— *Two Power Plus One Ground (Two Pole, Three Wire)*								
L5-15	125	15	1.9″	69435K41	$18.70	69435K42	$28.48	69435K43	$55.15	69435K237♣	$23.84	69435K256♣▲	$57.63
L5-20	125	20	2.5″	69435K44	28.88	69435K45	43.12	69435K46	64.50	69435K238♣	36.52	69435K257♣▲	72.13
L5-30	125	30	2.8″	69435K47	40.26	69435K48▲	67.02	69435K49	70.63	69435K239♣	58.20	69435K258♣▲	89.96
L6-15	250	15	1.9″	69435K27	18.86	69435K28	28.48	69435K29▲	55.15	69435K241♣	36.88	69435K259♣▲	62.72
L6-20	250	20	2.5″	69435K51	28.88	69435K52	43.12	69435K53	64.50	69435K242♣	36.52	69435K261♣▲	72.13
L6-30	250	30	2.8″	69435K54	40.26	69435K55▲	68.60	69435K56	70.63	69435K243♣	59.36	69435K262♣▲	89.96
L7-15	277	15	1.9″	69435K57	20.04	69435K58	31.08	69435K59	55.15	69435K244♣	29.00	69435K263♣▲	60.24
Four Blades— *Three Power Plus One Ground (Three Pole, Four Wire)*								
L14-20	125/250	20	2.5″	69435K77	39.84	69435K78	52.56	69435K79	68.07	69435K247♣	45.00	69435K266♣▲	81.13
L14-30	125/250	30	2.8″	69435K81	51.24	69435K82▲	85.46	69435K83	81.20	69435K248♣	74.52	69435K267♣▲	99.17
L15-20	250	20	2.5″	69435K84	39.84	69435K85	52.56	69435K86	68.07	69435K249♣	45.00	69435K268♣▲	81.13
L15-30	250	30	2.8″	69435K87	51.24	69435K88▲	85.46	69435K89	81.20	69435K251♣	74.52	69435K269♣▲	99.17
L16-20	480	20	2.5″	69435K91	39.40	69435K92▲	51.98	69435K93	68.07	69435K252♣	44.52	69435K271♣▲	82.39
L16-30	480	30	2.8″	69435K94	50.68	69435K95▲	84.04	69435K96	81.20	69435K253♣	73.28	69435K272♣▲	100.85
Five Blades— *Four Power Plus One Ground (Four Pole, Five Wire)*								
L21-20	120/208	20	2.5″	69435K223▲	49.74	69435K224▲	80.10	69435K225▲	74.17	69435K254♣	69.88	69435K273♣▲	101.22
L21-30	120/208	30	2.8″	69435K228▲	59.28	69435K229▲	99.10	69435K231▲	88.15	69435K255♣	86.82	69435K274♣▲	102.13
Two Power Blades *(Two Pole, Two Wire)*								
L1-15	125	15	1.9″	69435K234♣	16.76	69435K235♣	30.66	69435K33	55.15	69435K245♣	25.84	69435K264♣▲	58.89
L2-20	250	20	1.9″	69435K34	24.94	69435K236♣	38.39	69435K36	61.02	69435K246♣	33.82	69435K265♣▲	64.54

♣ Not UL listed. ▲ Not CSA certified.

Non-NEMA Turn-Lock Plugs, Connectors, and Receptacles

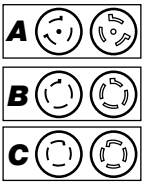

Devices conform to Pass & Seymour Standards and are UL listed. They do not interchange with NEMA devices. All have brass blades and contacts and are made of nylon, except 7175K43, which is made of polycarbonate. See page 832 for wall plates.

Plugs and ***connectors*** have cord grips for strain relief. *Style A* devices, also known as California Standard plugs and connectors, have a 2.4″ OD and are CSA certified. *Styles B* and *C* have a 2.2″ OD.

	Rating VAC	Rating Amps	Male Plugs Each	Female Connectors Each	Female Receptacles Each
Four Blades— *Three Power Plus One Ground (Three Pole, Four Wire)*					
A	125/250	50	7175K41	$96.06	7175K42	$120.64	7175K43	$91.08
Four Power Blades *(Four Pole, Four Wire)*								
B	120/208	20	7175K21	24.74	7175K22	39.30	7175K23	34.20
C	120/208	30	7175K31	29.74	7175K32	53.06	7175K33	35.10

Weather-Resistant Covers for Turn-Lock Plugs and Connectors

Protect your turn-lock plugs and connectors from moisture and light splashing (not intended for immersion or direct spray). These covers work with NEMA and non-NEMA configurations. Their neoprene construction provides extra cushioning and gives you a good grip on your plug or connector.

For Amp Rating	For Plugs Each	For Connectors Each
Black		
15	7305K1	$7.41	7305K2	$10.71
20/30	7305K3	10.65	7305K4	12.11
High-Visibility Yellow		
20/30	7305K5	12.33	7305K6	14.89
50	7305K7	38.39	7305K8	36.20

About NEMA Straight-Blade Plugs, Connectors, and Receptacles

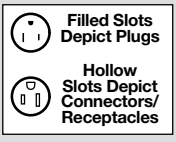

These devices conform to National Electrical Manufacturers' Association (NEMA) requirements. The diagrams below show the NEMA configurations for plugs and connectors/receptacles. For ground fault circuit interrupter (GFCI) receptacles, see page 927.

Note: The 15-amp (5-15; 6-15) receptacles are not compatible with the 20-amp (5-20; 6-20) plugs. For example, a 5-20 plug will not fit in a 5-15 receptacle.

Commercial Grade— Excellent for general purpose use in office and institutional environments.

Industrial Grade— Provide reliable performance and long electrical life in industrial, manufacturing, and processing environments.

Hospital Grade— A step above industrial grade. To earn this rating plugs, connectors, and receptacles must pass a series of abuse and performance tests beyond industrial-grade requirements. Devices meet or exceed UL standard 498 for hospital devices and Fed. Spec. WC596 (unless noted). All hospital-grade devices have a prominent green dot for unmistakable identification.

Poles— The number of terminals to which current-carrying (power) conductors are connected. ***Wires—*** The total number of poles plus an equipment grounding connection (if applicable). Also corresponds to the total number of blades/pins on a plug.

Three Blades—Two Power Plus One Ground (Two Pole, Three Wire)

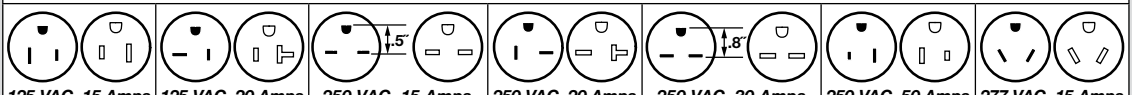

125 VAC, 15 Amps 5-15 | *125 VAC, 20 Amps 5-20* | *250 VAC, 15 Amps 6-15* | *250 VAC, 20 Amps 6-20* | *250 VAC, 30 Amps 6-30* | *250 VAC, 50 Amps 6-50* | *277 VAC, 15 Amps 7-15*

Four Blades—Three Power Plus One Ground (Three Pole, Four Wire)

125/250 VAC, 30 Amps 14-30 | *125/250 VAC, 50 Amps 14-50* | *125/250 VAC, 60 Amps 14-60*

Two Power Blades (Two Pole, Two Wire)

125 VAC, 15 Amps 1-15

Three Power Blades (Three Pole, Three Wire)

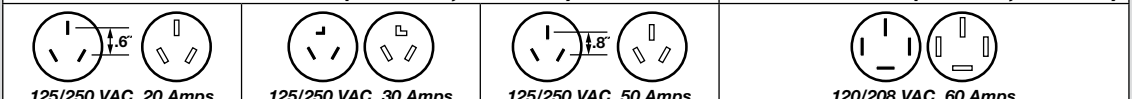

125/250 VAC, 20 Amps 10-20 | *125/250 VAC, 30 Amps 10-30* | *125/250 VAC, 50 Amps 10-50*

Four Power Blades (Four Pole, Four Wire)

120/208 VAC, 60 Amps 18-60

Industrial-Grade Straight-Blade Plugs, Connectors, and Receptacles

All devices have copper alloy blades and contacts and a nylon housing, unless noted. UL listed and CSA certified, unless noted.

Plugs and ***connectors*** come with an adjustable cord grip for a secure connection. *90° male plugs* have a rotating face allowing cord entry at the most convenient angle, except 7120K41.

Female receptacles fit wall plates (see page 832 for wall plates). **To Order:** Please specify color from those listed (where necessary). *Single female receptacles* are wired from the back. *Duplex female receptacles* can be back and side wired.

Flanged receptacles mount in panel cutouts, are back wired, and are white. *Male flanged receptacles* require a 1.61″ dia. panel cutout; *female flanged receptacles* require a 1.47″ dia. panel cutout.

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

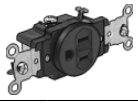
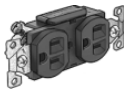

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Male Plugs Each	90° Male Plugs	90° Male Plugs Each	Female Connectors	Female Connectors Each	Available Colors For Receptacles	Single Female Receptacles	Single Female Receptacles Each	Duplex Female Receptacles	Duplex Female Receptacles Each
Three Blades— *Two Power Plus One Ground (Two Pole, Three Wire)*													
5-15	125	15	7196K31	$7.67	8035K51	$12.41	7196K41	$11.48	Brown, Ivory, White	7120K85	$10.62	7120K91 ◤	$7.91
5-20	125	20	7196K34	10.73	8035K52	15.86	7196K44▲	16.96	Brown, Ivory, White	7120K86	11.91	7120K92	8.39
6-15	250	15	7196K32	10.73	8035K53	13.62	7196K42▲	17.44	Brown, Ivory, White	7120K87	14.42	7120K93	14.03
6-20	250	20	7196K33▲	10.73	8035K54	18.07	7196K43▲	13.86	Brown, Ivory, White	7120K88	17.69	7120K94	17.61
6-30	250	30	7120K51	31.78	8035K55	47.15	7120K61	82.57	Black	7120K25	16.21	—	—
6-50	250	50	7120K81	51.02	7120K82	46.46	7120K83	56.53	Black	7120K89	18.48	—	—
7-15	277	15	7120K52	14.26	—	—	7120K69	16.04	Brown	—	—	7120K35	15.94
Four Blades— *Three Power Plus One Ground (Three Pole, Four Wire)*													
14-30	125/250	30	7120K31 ♥	44.35	8035K56	40.31	—	—	Black	7120K11	34.72	—	—
14-50	125/250	50	7120K57	36.09	8035K57	49.12	—	—	Black	7120K13	26.80	—	—
14-60	125/250	60	7120K66	52.85	7120K67	59.29	—	—	Black	7120K68	58.37	—	—
Three Power Blades *(Three Pole, Three Wire)*													
10-20	125/250	20	7120K53▲	17.07	—	—	7120K73▲♣	20.08	Ivory	7120K28▲	15.17	—	—
10-30	125/250	30	7120K54▲	22.59	—	—	7120K65	72.57	Black	7120K32▲	7.56	—	—
10-50	125/250	50	7120K55 ♥	46.50	7120K41▲	21.12	7120K64	71.30	Black	7120K7▲	7.60	—	—
Four Power Blades *(Four Pole, Four Wire)*													
18-60	120/208	60	7120K58	42.37	8035K58	58.97	—	—	Black	7120K19▲	45.15	—	—

▲ Not CSA certified. ♥ Housing is polypropylene. ♣ Housing is phenolic. Not UL listed. ◤ Blades and contacts are brass.

NEMA Style	Rating VAC	Rating Amps	Male Flanged Receptacles	Male Flanged Receptacles Each	Female Flanged Receptacles	Female Flanged Receptacles Each
Three Blades— *Two Power Plus One Ground (Two Pole, Three Wire)*						
5-15	125	15	8036K1	$14.23	8036K5	$19.77
5-20	125	20	8036K2	17.95	8036K6	22.50
6-15	250	15	8036K3	16.36	8036K7	20.00
6-20	250	20	8036K4	21.82	8036K8	25.45

Male Flanged Receptacles

Female Flanged Receptacles

For information about NEMA straight-blade plugs, connectors, and receptacles, see page 787

Premium Industrial-Grade Straight-Blade Plugs, Connectors, and Receptacles

It's all the little extras that set these devices apart from the rest. They have nylon housings with copper alloy blades and contacts, unless noted. UL listed and CSA certified, unless noted.

Plugs and ***connectors*** have a ribbed housing (unless noted) and a variable size single-piece cord grip for maximum retention force. ***Receptacles*** can be back and side wired. They have curved wire clamps for maximum wire retention. See page 832 for wall plates. **To Order:** Please specify color: brown or ivory (unless noted).

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

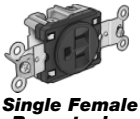
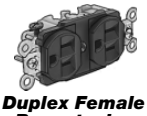

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Male Plugs Each	90° Male Plugs	90° Male Plugs Each	Female Connectors	Female Connectors Each	Single Female Receptacles	Single Female Receptacles Each	Duplex Female Receptacles	Duplex Female Receptacles Each
Three Blades—*Two Power Plus One Ground (Two Pole, Three Wire)*												
5-15	125	15	9096T11	$13.92	9096T51	$19.63	9096T21	$23.83	9096T41	$20.19	9096T31	$19.75
5-20	125	20	9096T12	21.01	9096T52	29.79	9096T22	34.81	9096T42	22.50	9096T32	23.08
6-15	250	15	9096T13	18.52	9096T53	26.41	9096T23	31.85	9096T43	23.88	9096T33	26.48
6-20	250	20	9096T14	24.17	9096T54	34.23	9096T24	37.87	9096T44	26.11	9096T34	32.59
6-30	250	30	—	—	9096T55■	69.54	—	—	9096T45♦	31.57	—	—
6-50	250	50	—	—	9096T56■	72.22	—	—	9096T46♦	36.02	—	—
Four Blades—*Three Power Plus One Ground (Three Pole, Four Wire)*												
14-50	125/250	50	9096T17	93.80	9096T57■	103.59	—	—	9096T47✓	112.61	—	—
Three Power Blades *(Three Pole, Three Wire)*												
10-50	125/250	50	9096T18▲	89.89	9096T58■▲	97.61	9096T28	116.41	9096T48♦▲	32.39	—	—

■ Does not have a ribbed housing. ♦ Housing is black phenolic. ✓ Housing is black PET. ▲ Not CSA certified.

Hospital-Grade Straight-Blade Plugs, Connectors, and Receptacles

Looking for a UL hospital-grade device? Just look for the green dot. All have three blades or contacts—two power plus one ground (two pole, three wire). CSA certified. Meet Fed. Spec. WC596, except quad female receptacles.

Plugs and ***connectors*** have brass-alloy blades and contacts.

Male plugs have an impact-resistant black nylon shell and transparent polycarbonate face.

90° male plugs have a rotating face to permit cord entry at the most convenient angle. A transparent polycarbonate housing and cover allow you to see the wiring terminals.

Female connectors have an impact-resistant black nylon housing and transparent polycarbonate face.

Duplex female receptacles can be back and side wired. They have an ivory nylon face. Terminals accept 14-10 AWG wires. See page 832 for wall plates.

Quad female receptacles have a unique design that accepts up to four plugs. Face is polycarbonate. All four outlets are internally connected and can be wired as a single circuit or split into two circuits. Mount directly to a 4″ square outlet box. Terminals accept up to 12 AWG wire. **To Order:** Please specify color: gray, ivory, red, or white.

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

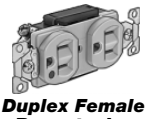

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Male Plugs Each	90° Male Plugs	90° Male Plugs Each	Female Connectors	Female Connectors Each	Duplex Female Receptacles	Duplex Female Receptacles Each	Quad Female Receptacles	Quad Female Receptacles Each
5-15	125	15	7462K11	$11.27	7213K11	$17.20	7213K31	$19.86	7462K21	$11.56	7213K83	$22.96
5-20	125	20	7462K12	17.56	7213K12	20.60	7213K32	24.52	7462K22	14.16	7213K84	24.95
6-15	250	15	7213K46	24.11	7213K13	18.80	7213K33	25.02	7462K23	20.40	—	—
6-20	250	20	7213K47	17.72	7213K14	22.44	7213K34	27.51	7462K24	21.92	—	—

EMI-Limiting Straight-Blade Receptacles

Protect computers and other equipment from interference caused by nearby equipment with high currents or surges. These industrial-grade devices have three brass blades or contacts—two power plus one ground (two pole, three wire). They are orange for easy identification. UL listed and CSA certified.

Receptacles, also known as isolated ground receptacles, have a ground terminal that's insulated from the mounting strap so an isolated ground wire can be run through the conduit. They can be back and side wired and have a nylon housing, except quad female receptacles, which are back wired and have a polycarbonate housing.

Male plugs are not EMI limiting but they are orange to match EMI-limiting receptacles.

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

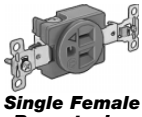
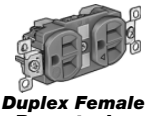

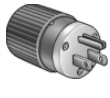

NEMA Style	Rating VAC	Rating Amps	Single Female Receptacles	Single Female Receptacles Each	Duplex Female Receptacles	Duplex Female Receptacles Each	Quad Female Receptacles	Quad Female Receptacles Each	Male Plugs	Male Plugs Each
5-15	125	15	7174K53	$20.96	7174K63	$18.43	7174K73	$24.17	7174K83	$11.88
5-20	125	20	7174K54	24.21	7174K64	23.46	7174K74	30.77	7174K65	14.83

High-Visibility Rubber-Coated Straight-Blade Plugs and Connectors

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

Male Plugs

Female Connectors

A rugged synthetic rubber housing gives these industrial-grade plugs and connectors excellent impact resistance. The high-visibility yellow color makes them easier to see. Blades and contacts are nickel-plated brass. UL listed.

A power indicating light on 71435K67 gives a clear visual signal when the cord is plugged in.

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Male Plugs Each	Female Connectors	Female Connectors Each
Three Blades—*Two Power Plus One Ground (Two Pole, Three Wire)*						
5-15	125	15	71435K41	$11.13	71435K42	$20.79
5-15	125	15	—	—	71435K67	25.91
5-20	125	20	71435K43	14.25	71435K44	20.70
6-15	250	15	71435K45	15.61	71435K46	23.07
6-20	250	20	71435K47	16.00	71435K48	24.83
7-15	277	15	71435K51	11.91	71435K52	17.45
Two Power Blades *(Two Pole, Two Wire)*						
1-15	125	15	71435K23	11.89	71435K22	21.28

For information about NEMA straight-blade plugs, connectors, and receptacles, see page 787.

Watertight High-Visibility Straight-Blade Plugs, Connectors, and Receptacles

The multiple-ring seal and bright yellow synthetic rubber housing are like a built-in raincoat for these industrial-grade devices. They handle water, heat, oils, and chemicals and when mated with each other meet NEMA 4X, 6P, and IP67 for protection from corrosion, washdowns, and submersion. They have three blades—two power plus one ground (two pole, three wire). UL listed and CSA certified, unless noted.

Female connectors also have a one-piece snap-on cover for protection when not in use.

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

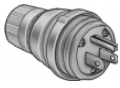
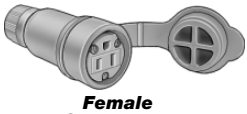

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Each	Female Connectors	Each	Female Receptacles	Each	Female Connectors for Male Receptacles	Each	Male Receptacles	Each
5-15	125	15	7140K21	$18.28	7140K22	$26.73	7140K31	$53.67	7140K65♣	$23.60	7140K55▲♣	$54.06
5-20	125	20	7140K23	20.21	7140K24	29.25	7140K32▲	54.73	7140K66♣	27.73	7140K56▲♣	56.84
6-15	250	15	7140K25	19.73	7140K26	32.04	7140K33	53.67	7140K67♣	30.42	7140K57▲♣	53.58
6-20	250	20	7140K27	22.69	7140K28	33.44	7140K34▲	54.73	7140K68♣	31.81	7140K58▲♣	58.75

♣ Not UL listed. ▲ Not CSA certified.

Corrosion-Resistant High-Visibility Straight-Blade Plugs, Connectors, and Receptacles

Tough on the outside…tough on the inside, too. With an impact- and chemical-resistant yellow nylon housing surrounding nickel-plated brass blades and copper alloy contacts, these industrial-grade devices defy corrosion. All have three blades—two power plus one ground (two pole, three wire). They meet Fed. Spec. WC596 and are UL listed, CSA certified, and CE approved.

Plugs and ***connectors*** have a built-in seal to keep contaminants out. ***Receptacles*** can be back and side wired. See page 832 for wall plates.

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

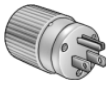
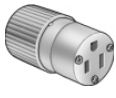
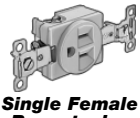
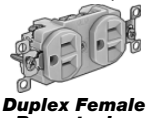

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Each	Female Connectors	Each	Single Female Receptacles	Each	Duplex Female Receptacles	Each
5-15	125	15	70145K21	$9.01	70145K31	$17.92	70145K41	$16.24	70145K51	$16.17
5-20	125	20	70145K22	13.67	70145K32	19.89	70145K42	22.60	70145K54	21.43
6-15	250	15	—	—	—	—	—	—	70145K53	20.37
6-20	250	20	—	—	—	—	70145K44	24.17	70145K56	24.23

Lighted Plugs and Connectors

A small neon bulb provides 360° indication when these devices are properly connected, helpful when troubleshooting a circuit. They have a transparent polycarbonate housing with a white nylon face. Blades and contacts are brass. Bulb included.

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Each	Female Connectors	Each
Three Blades— *2 Power Plus 1 Ground (2 Pole, 3 Wire)*						
5-15	125	15	8094T11	$12.74	8094T21	$20.89
L5-20	125	20	8094T12	17.94	8094T22	27.94
Hospital-Grade Three Blades— *2 Power Plus 1 Ground (2 Pole, 3 Wire)*						
5-15	125	15	8094T13	17.68	—	—

Hazardous-Location Straight-Blade Plugs and Receptacles

Don't take chances where ignitable gas and dust may be present—these aluminum plugs and receptacles are UL listed for Class I, Div. 1 and 2, Groups C and D; Class II, Div. 1 and 2, Groups F and G; and Class III hazardous environments. They have three blades—two power plus one ground (two pole, three wire). Housing is aluminum alloy and blades and contacts are copper alloy. All are CSA certified.

Receptacles have a gray powder-coated epoxy finish and spring-loaded cover for protection when not in use. **To Order:** Please specify ½″, ¾″, or 1″ NPT female threaded hub for conduit entry.

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Each	Female Receptacles	Each
5-15	125	15	7461K21	$78.56	—	—
5-20	125	20	7461K22	78.56	7461K31	$244.10
6-15	250	15	7461K23	78.56	—	—
6-20	250	20	7461K24	78.56	7461K32	244.10

Quick-Wire Commercial-Grade Straight-Blade Plugs and Connectors

With a hinged, impact-resistant nylon housing, these devices stay in one piece—even while you install your wires. They open for easy installation and their color is high-visibility yellow except NEMA 5-15 and 5-20 models, which are also available in gray. All have three brass blades or contacts—two power plus one ground (two pole, three wire). They meet Fed. Spec. WC596, except NEMA 5-15 models. UL listed.

Hinged Housing

To Order: For NEMA 5-15 and 5-20 models, please specify color: gray or yellow.

Note: **The amp rating of your plug should not exceed that of your connector or receptacle.**

NEMA Style	Rating VAC	Rating Amps	Male Plugs	Each	Female Connectors	Each
5-15	125	15	7216K5	$6.35	7216K6	$11.70
5-20	125	20	7216K7	9.47	7216K8	13.96
6-15	250	15	7216K55	6.96	7216K56	14.00
6-20	250	20	7216K57	9.30	7216K58	15.59

Straight-Blade Plugs with Fuse

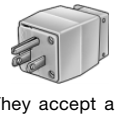

Just pop in a fuse to protect your equipment from electrical overload. If the amps exceed your fuse rating, the fuse breaks the circuit.

Plugs are nylon. They are NEMA 5-15, rated to 125 VAC, and have three nickel-plated brass blades—two power plus one ground (two pole, three wire). They accept a ¼-amp to 15-amp fuse. UL listed.

Fuses are sold separately below. They are ceramic, rated to 250 VAC, and ¼″ Dia.×1¼″ Lg. **To Order:** Please specify amp rating.

Plugs

		Each
High-Visibility Yellow Plugs	7155K11	$29.12
Hospital-Grade Transparent Plugs	7155K12	30.29

Fuses

Available Amps	Pkg. Qty.		Pkg.
¼, ½, ¾, 1, 1½	5	71385K8	$6.14
2, 2½, 3, 4, 5, 6	5	71385K9	6.03
7, 8, 10, 12, 15	5	71385K11	6.03

For information about NEMA straight-blade plugs, connectors, and receptacles, see page 787.

Flush-Mount Straight-Blade Receptacles

Get industrial-grade quality with a sleek, neat appearance. The nylon face of these receptacles is shaped like a GFCI receptacle, so it lies flush with a wall plate that has a rectangular opening (see page 832 for wall plates). Both have three brass contacts—two power plus one ground (two pole, three wire). They can be back and side wired. Meet Fed. Spec. WC596. UL listed and CSA certified. **To Order:** Please specify color: gray, ivory, or white.

NEMA Style	Rating VAC	Rating Amps		Each
5-15	125	15	69105K6	$8.89
5-20	125	20	69105K7	12.46

Commercial-Grade Straight-Blade Receptacles

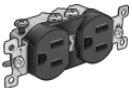

If you're looking for a basic straight-blade receptacle, choose these economical commercial-grade devices. Made of nylon, these receptacles have three brass contacts—two power plus one ground (two pole, three wire). They accommodate two- and three-prong straight-blade plugs and fit all standard duplex wall plates (see page 832 for wall plates). Side wired. UL listed and CSA certified. **To Order:** Please specify color: brown, gray, ivory, or white.

NEMA Style	Rating VAC	Rating Amps		Each
5-15	125	15	7159K3	$2.02
5-20	125	20	7159K4	2.62

Straight-Blade Receptacle Tension Tester

Outlets feel a little loose? Find out with this tester—it checks the spring contact tension of two- and three-prong receptacles (NEMA 1-15, 5-15, and 5-20). Tester gives you a separate reading on each straight blade plus the round grounding pin. Made of thermoplastic. Carrying case included.

7474K11 ..... **Each** $62.57

12-VDC Plug, Receptacle, and Extension Cord

Plug

Receptacle

Extension Cord

When used together, these items lock to create a moisture-resistant seal. Used separately, they are compatible with all devices that have standard 12-volt plugs and receptacles. All are rated 15 amps and have a moisture-proof and corrosion-resistant glass-filled nylon housing. Contacts are nickel-plated copper alloy.

Plug has an LED indicator light and a 10-amp, 1/4″ × 1 1/4″ glass tube fuse. Length is 3.65″.

Receptacle has a cap to seal out moisture when not in use. It also has two male quick-disconnect terminals with a 0.25″ Wd. × 0.032″ Thick. tab size.

Extension cord has a plug on one end and a receptacle on the other. Retracted length is 14″; extended length is 6 ft.

		Each
Plug	6860K1	$9.94
Receptacle	6860K2	16.69
Extension Cord	6860K3	34.00

DIN-Rail Mount Straight-Blade Receptacles

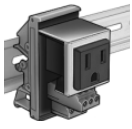

Single

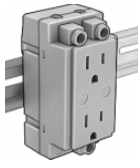

Space-Saver Duplex

Mount these receptacles on a DIN rail as outlets for power tools, lights, test equipment, and computers with standard two-prong (NEMA 1-15) and three-prong (NEMA 5-15) straight-blade plugs. Both have screw terminals and three contacts—two power plus one ground (two pole, three wire). They are rated 15 amps @ 120 VAC. UL recognized.

Single-outlet receptacle mounts horizontally, fits both 32 mm (DIN 1) and 35 mm (DIN 3) rails, and accepts 26-12 AWG wire. Made of black PVC. CSA certified.

Space-saver duplex-outlet model mounts vertically, fits 35 mm (DIN 3) rails, and accepts 18-14 AWG wire. Made of ivory nylon.

	O'all Size, Ht. × Wd. × Dp.		Each
Single Outlet	2 3/4″ × 1 3/8″ × 2 1/8″	1671K11	$22.50
Duplex Space-Saver Outlet	3 5/8″ × 1 3/4″ × 1 3/4″	1671K13	26.18

Panel-Mount Straight-Blade Receptacle

Snap this standard three-prong receptacle into panels 0.03″ to 0.07″ thick with a 31/32″ square cutout—no screws or clips needed. It has three brass contacts—two power plus one ground (two pole, three wire). Made of black thermoplastic with self-stripping terminals that pierce the insulation of 14-12 AWG solid-copper wire. Rated 15 amps @ 125 VAC. UL recognized and CSA certified.

7168K1 ..... **Each** 1-9 $2.13 10-Up $1.81

DC Voltage Turn-Lock Plugs and Receptacle

Plug with Wire Entry

Receptacle

A unique locking configuration provides a secure connection and prevents attachment to AC connectors. All are rated for voltages up to 48 VDC and current up to 30 amps. Housing is glass-filled nylon.

Plugs have an O-ring that seals out moisture when connected to a receptacle. Blades are nickel-plated brass. Plug with wire entry has three entry holes for up to 8 AWG wires. Plug with cord entry has a single entry hole for 1/4″ to 1/2″ dia. cord. ***Receptacle*** fits into a 1 1/8″ dia. mounting hole and accepts two or three wires up to 8 AWG. It has corrosion-resistant electrical components and a water-tight cap. Contacts are nickel-plated brass.

		Each
Plug with Wire Entry	2671K11	$22.59
Plug with Cord Entry	2671K13	22.59
Receptacle	2671K15	26.89

Straight-Blade and Turn-Lock Receptacle Adapters

Plugs into Existing Receptacle Style (from)

New Receptacle Style (to)

Just plug one of these handy devices into an existing receptacle or connector for a new configuration. Adapters have a male plug on one end and a female receptacle on the other end. Made of rubber-coated nylon. CSA certified. All except 6379K37 and K33 are UL listed.

From NEMA L5-15 Turn-Lock Receptacle To NEMA 5-15 Straight-Blade Receptacle	From NEMA L5-20 Turn-Lock Receptacle To NEMA 5-20 Straight-Blade Receptacle	From NEMA 5-15 Straight-Blade Receptacle To NEMA L5-15 Turn-Lock Receptacle	From NEMA 5-15 Straight-Blade Receptacle To Non-NEMA 15 amp, 125 VAC Turn-Lock Receptacle	From Non-NEMA 15 amp, 125 VAC Turn-Lock Receptacle To NEMA 5-15 Straight-Blade Receptacle
From / To	From / To	From / To	From / To	From / To
6379K31 ..... $31.17	6379K34 ..... $53.06	6379K36 ..... $31.17	6379K37 ..... $31.17	6379K33 ..... $31.17

For information about cord type, see page 808. For information about AWG, see page 800.

Power Cords

With Two-Prong Plug

With Three-Prong Plug

With Three-Prong 90° Plug

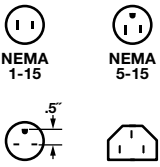

With a molded plug on one end and stripped conductors on the other, these UL-listed cords are ready for installation. Power cords are black and rated @ 125 VAC, unless noted. The numbers 1, 2, and 3 following SPT designate the relative thickness of the cord insulation (1-thinnest to 3-thickest). ***Indoor cords*** are CSA certified.

AWG	Lg.	Cord OD	Rating Amps	Rating Watts		Each
Indoor Cord with Two-Prong (NEMA 1-15) Plug						
PVC Jacket SPT-1—*Flat (–4° to +140°F)*						
18/2	6′	0.11″×0.22″	10	1250	**7248K21**	$2.29
18/2	9′	0.11″×0.22″	10	1250	**7248K22**	3.02
PVC Jacket SPT-2—*Flat (–4° to +140°F)*						
18/2	6′	0.14″×0.27″	10	1250	**7248K23**	3.08
18/2	8′	0.14″×0.27″	10	1250	**7248K24**	3.35
Indoor/Outdoor Cord with Two-Prong (NEMA 1-15) Plug						
Thermoplastic Elastomer Jacket SJEOW—*Round (–58° to +194°F)*						
16/2	6′	0.35″	13	1625	**7248K25**	9.19
16/2	9′	0.35″	13	1625	**7248K26**	13.56
Indoor Cord with Three-Prong (NEMA 5-15) Plug						
PVC Jacket SVT—*Round (–4° to +140°F)*						
18/3	6′7″	0.25″	10	1250	**70355K71**	3.56
18/3	8′	0.25″	10	1250	**70355K72**★	4.15
18/3	9′10″	0.25″	10	1250	**70355K81**	4.50
PVC Jacket SJT—*Round (–4° to +140°F)*						
18/3	6′7″	0.32″	10	1250	**70355K76**	3.95
18/3	9′10″	0.32″	10	1250	**70355K82**	4.78
16/3	9′10″	0.34″	13	1625	**70355K83**	6.36
14/3	9′10″	0.38″	15	1875	**70355K84**	7.32
PVC Jacket SJT—*Round Hospital Grade (–4° to +221°F)*						
18/3	8′	0.32″	10	1250	**70355K21**■	12.31
18/3	10′	0.32″	10	1250	**70355K78**■	16.60
16/3	12′	0.34″	13	1625	**70355K79**■	16.60
PVC Jacket SPT-1—*Flat (–4° to +140°F)*						
18/3	6′	0.11″×0.31″	10	1250	**70355K85**	2.94
18/3	8′	0.11″×0.31″	10	1250	**70355K86**	3.37
PVC Jacket SPT-2—*Flat (–4° to +140°F)*						
18/3	6′	0.15″×0.34″	10	1250	**7025K21**	3.30
18/3	8′	0.15″×0.34″	10	1250	**7025K22**	3.95
16/3	6′	0.16″×0.36″	13	1625	**7025K24**	4.25
16/3	8′	0.16″×0.36″	13	1625	**7025K25**	4.89
PVC Jacket SPT-3—*Flat (–4° to +140°F)*						
18/3	6′	0.18″×0.39″	10	1250	**70355K87**	3.87
18/3	8′	0.18″×0.39″	10	1250	**70355K88**	4.04
16/3	6′	0.18″×0.45″	13	1625	**70355K89**	5.48
16/3	8′	0.18″×0.45″	13	1625	**70355K91**	5.43
Rubber Jacket SJO—*Round Self-Retracting (–4° to +140°F)*						
18/3	1′ to 6′	0.39″	10	1250	**7025K26**	29.90
Indoor Cord with Three-Prong (NEMA 5-15) 90° Plug						
PVC Jacket SJT—*Round (–4° to +140°F)*						
18/3	8′2″	0.32″	10	1250	**9570T1**	6.18
16/3	8′2″	0.34″	13	1625	**9570T2**	7.51
14/3	8′2″	0.38″	15	1875	**9570T3**	8.96
Indoor Cord with Three-Prong (NEMA 6-15) Plug						
PVC Jacket SVT—*Round (–4° to +140°F)*						
18/3	6′7″	0.25″	6	1500	**70355K93**●	3.45
PVC Jacket SJT—*Round (–4° to +140°F)*						
18/3	6′7″	0.32″	6	1500	**70355K77**●	3.62
Indoor Cord with Three-Prong (IEC 320) Plug						
PVC Jacket SJTOW—*Round (–29° to +221°F)*						
18/3	6′7″	0.33″	10	1250	**70355K22**●	6.41
Indoor/Outdoor Cord with Three-Prong (NEMA 5-15) Plug						
Thermoplastic Elastomer Jacket SJEOOW—*Round (–58° to +221°F)*						
16/3	6′	0.33″	13	1625	**70355K33**	12.04
16/3	9′	0.33″	13	1625	**70355K34**	13.31
14/3	6′	0.37″	15	1875	**70355K35**	12.56
14/3	9′	0.37″	15	1875	**70355K36**	15.00

★ Has a gray cord and a gray plug.
■ Has a gray cord and a clear plug with a green dot.
● Rated @ 250 VAC.

Safety Start-Up Power Cords

Cords shut off equipment in the event of a power failure and must be manually reset, preventing automatic restart accidents. They replace the three-wire power cord on equipment driven by small single-phase motors. Connect one end to your equipment switch and the other to your power source. Cords are 14/3 AWG with a 0.36″ OD, and have a black thermoplastic jacket (SJTO). Temp. range is 32° to 167° F. For indoor use. Cords comply with the latest OSHA, NEC, and NFPA safety standards. UL and C-UL recognized.

6906K83

Rating Volts	Rating Amps	For Motor hp	Power End Lg.	Equip. End Lg.		Each
Bare Cord on Each End						
120	18	1	96″	20″	**6906K82**	$119.30
200-240	15	2	96″	20″	**6906K84**	119.30
NEMA 5-15 Plug (Power End); Bare Cord (Equip. End)						
120	15	¾	96″	20″	**6906K83**	119.30
NEMA 5-15 Plug (Power End); NEMA 5-15 Connector (Equip. End)						
120	15	¾	14″	12″	**6906K85**	119.30

Business-Machine Power Cords

For computers, lab equipment, and office machines with IEC 320 male receptacles. Cords are black, except SJT hospital grade, which have a gray cord and clear plug with a green dot. Use indoors.

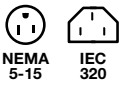

North American Cords

Cord with NEMA 5-15 Plug and IEC 320 Female Connector

Cord with IEC 320 Plug and IEC 320 Female Connector

All are UL listed and CSA certified. Rated @ 125 VAC. Temperature range is –4° to +140° F, unless noted. Shielded cords keep out unwanted electronic interference and come with an insulated ground wire.

AWG	Lg.	Cord OD	Rating Amps	Rating Watts		Each
Cords with NEMA 5-15 Plug and IEC 320 Connector						
PVC Jacket SVT						
18/3	3′	0.25″	10	1250	**71535K41**	$4.31
18/3	6′	0.25″	10	1250	**71535K51**	4.80
18/3	7′6″	0.25″	10	1250	**71535K52**	5.06
18/3	9′10″	0.25″	10	1250	**71535K62**	7.36
PVC Jacket SVT Shielded						
18/3	6′7″	0.26″	10	1250	**71535K81**	6.80
18/3	9′10″	0.26″	10	1250	**71535K82**	9.66
PVC Jacket SJT						
18/3	3′	0.32″	10	1250	**71535K42**	4.50
18/3	6′7″	0.32″	10	1250	**71535K54**	5.28
18/3	9′10″	0.32″	10	1250	**71535K64**	6.14
16/3	3′	0.34″	13	1625	**71535K43**	4.82
16/3	6′7″	0.34″	13	1625	**71535K65**	5.43
16/3	7′6″	0.34″	13	1625	**71535K56**	7.78
PVC Jacket SJT Shielded						
18/3	6′7″	0.33″	10	1250	**71535K84**	9.08
PVC Jacket SJT Hospital Grade						
18/3	8′	0.32″	10	1250	**71535K61**♦	7.41
18/3	10′	0.32″	10	1250	**71535K68**♦	7.10
16/3	8′	0.34″	13	1625	**71535K66**♦	16.47
Cords with IEC 320 Plug and IEC 320 Connector						
PVC Jacket SJT						
18/3	1′8″	0.32″	10	1250	**71535K63**	6.50
18/3	3′3″	0.32″	10	1250	**71535K59**	6.47

♦ Temp. range is –4° to +221° F.

International Cords

1447K16 *International Cord*

All have a country specific straight-blade male plug on one end and an IEC 320 female connector on the other. Length is 8′2″ and cord OD is 0.30″. They have a PVC jacket. Rated 10 amps @ 250 VAC and 2500 watts, unless noted. Temperature range is –4° to +158° F, unless noted.

Country	Cord Type		Each
Australia	GFC3R/HO5VVF	**1447K11**	$9.48
Europe	HO5VVF3	**1447K13**	9.19
Hong Kong, India, South Africa	HO5VVF3	**1447K14**	9.11
Israel	HO5VVF3	**1447K15**	9.61
Italy	HO5VVF3	**1447K16**	9.41
Japan	VCTF/PVC	**1447K17**♥	7.75
Switzerland	HO5VVF3	**1447K18**	7.90
United Kingdom	HO5VVF3	**1447K19**	10.94

♥ Rated 12 amps @125 VAC and 1500 watts. Temperature range is –4° F to +140° F.

For information about cord type, see page 808. For information about AWG, see page 800.

About Extension Cords

Voltage dissipates over the length of an extension cord—the longer your extension cord, the more voltage lost. Too much voltage loss results in decreased efficiency and operating life of your electrical load. To minimize voltage drop, you must select the proper gauge cord for your electrical load. The proper gauge cord to use depends on the power required by your electrical load and the length of the extension cord. Power may be given in amps or watts (watts=volts×amps). See chart for guidance on the smallest gauge cord to select based on the amps required and cord length.

Note: When using multiple outlet extension cords, total amps drawn by all loads must not exceed the amp rating of the extension cord.

	Minimum Gauge of Cord Required	
Amps	Up to 50 ft.	50 to 100 ft.
13	16 AWG	14 AWG
15	14 AWG	12 AWG
20	12 AWG	10 AWG

Indoor/Outdoor Extension Cords

NEMA 5-15

These round extension cords are UL listed and meet OSHA requirements for outdoor use. They have a molded-on three-prong (NEMA 5-15) plug and connector and are rated @ 125 VAC. Cords with the coldest temperature rating are the most flexible. *Medium duty PVC jacket SJTW dark green* extension cords blend in with outdoor surroundings. ***Extension cords with power-indicating light*** have a light molded into the connector end that illuminates when the cord is plugged in.

AWG	Cord OD	Temp. Range, °F	Rating Amps	Rating Watts	10-ft. Long	Each	25-ft. Long	Each	50-ft. Long	Each	100-ft. Long Rating Amps	100-ft. Long Rating Watts	100-ft. Long	Each
Extension Cords														
Medium Duty PVC Jacket SJTW—Orange														
16/3	0.32″	−4° to +140°	13	1625	7438K31	$7.57	7438K32	$12.71	7438K34	$20.87	10	1250	7438K35	$42.50
14/3	0.35″	−4° to +140°	15	1875	5776K19	12.45	7438K62	17.51	7438K73	45.44	13	1625	7438K84	62.63
12/3	0.45″	−4° to +140°	15	1875	5776K21	17.60	7438K41	44.69	7438K42	78.82	15	1875	7438K43	149.90
10/3	0.6″	−4° to +140°	15	1875	5776K22	32.30	7438K44	72.93	7438K45	138.15	15	1875	7438K46	259.84
Medium Duty PVC Jacket SJTW—Dark Green							***20-ft. Long***		***40-ft. Long***		***80-ft. Long***			
16/3	0.32″	−4° to +140°	13	1625	5776K23	8.53	7438K91	12.32	7438K92	24.91	10	1250	7438K93	40.64
Medium Duty Thermoplastic Rubber Jacket SJEOOW—Blue							***25-ft. Long***		***50-ft. Long***		***100-ft. Long***			
16/3	0.33″	−58° to +212°	13	1625	5776K13	10.60	6953K11	18.82	6953K12	28.62	10	1250	6953K13	51.62
14/3	0.36″	−58° to +212°	15	1875	5776K34	12.14	6953K14	24.16	6953K15	39.60	13	1625	6953K16	68.58
12/3	0.43″	−58° to +212°	15	1875	5776K15	18.64	6953K19	33.57	6953K17	62.14	15	1875	6953K18	111.38
Medium Duty Rubber Jacket SJOW—Green														
14/3	0.38″	−40° to +194°	15	1875	—	—	8146K31	34.37	8146K32	62.98	13	1625	8146K33	120.57
12/3	0.45″	−40° to +194°	15	1875	—	—	8146K34	44.76	8146K35	83.95	15	1875	8146K36	148.24
Heavy Duty PVC Jacket STW—Orange														
14/3	0.52″	−4° to +140°	15	1875	5776K11	26.39	7522K51	29.93	7522K52	72.55	13	1625	7522K53	111.14
12/3	0.59″	−4° to +140°	15	1875	5776K31	29.99	7522K75	55.02	7522K76	99.74	15	1875	7522K77	182.60
Extension Cords with Power-Indicating Light														
Medium Duty PVC Jacket SJTW—Yellow														
12/3	0.42″	−4° to +140°	15	1875	—	—	7438K26	32.33	7438K27	53.29	15	1875	7438K28	76.12
10/3	0.57″	−4° to +140°	15	1875	—	—	7438K83	77.31	7438K94	102.37	15	1875	7438K85	172.44
Medium Duty Thermoplastic Rubber Jacket SJEOW—Yellow														
16/3	0.32″	−58° to +194°	13	1625	8047K41	13.29	8047K61	23.08	8047K62	35.07	10	1250	8047K63	58.74
14/3	0.35″	−58° to +194°	15	1875	5776K24	16.11	8047K64	29.58	8047K65	43.50	13	1625	8047K66	73.41
12/3	0.42″	−58° to +194°	15	1875	5776K25	21.71	8047K67	38.92	8047K68	64.56	15	1875	8047K69	111.74
10/3	0.57″	−58° to +194°	15	1875	5776K26	38.40	8047K71	77.82	8047K72	95.88	15	1875	8047K73	199.74
Heavy Duty Thermoplastic Rubber Jacket SEOW—Yellow														
14/3	0.52″	−58° to +194°	15	1875	5776K16	26.53	7522K61	41.62	7522K62	64.02	13	1625	7522K63	143.56
12/3	0.59″	−58° to +194°	15	1875	5776K17	37.80	7522K64	42.95	7522K65	81.55	15	1875	7522K66	141.82

Easy-ID Colored Indoor/Outdoor Extension Cords

SJTW Cords

SJEOW Cords with Power-Indicating Light

NEMA 5-15

Make color coding and identification easy with these medium duty round extension cords. They have a three-prong (NEMA 5-15) plug and connector and are rated @ 125 VAC. Meet OSHA requirements. UL and C-UL listed and CSA certified, unless noted.

Cords with power-indicating light have a light molded into the connector end that illuminates when cord is plugged in.

Color Cord	Color Stripes	AWG	Cord OD	Temperature Range, °F	Rating Amps	Rating Watts	25-ft. Long	Each	50-ft. Long	Each	100-ft. Long	Each
PVC Jacket SJTW Cords												
Yellow	Black	12/3	0.43″	−31° to +140°	15	1,875	—	—	6911K561♠	$41.28	6911K761♠	$77.15
PVC Jacket SJTW Cords with Power-Indicating Light												
Blue	—	12/3	0.42″	−40° to +140°	15	1,875	—	—	8208K71	48.01	8208K81	76.15
Neon Green	—	12/3	0.44″	−31° to +140°	15	1,875	—	—	8208K41	60.33	8208K42	98.74
Neon Pink	—	12/3	0.44″	−31° to +140°	15	1,875	—	—	8208K45	60.33	8208K46	98.74
Neon Red	—	12/3	0.43″	−40° to +140°	15	1,875	—	—	8208K73	60.33	8208K83	98.74
Blue	Red	12/3	0.42″	−40° to +140°	15	1,875	—	—	8208K53	47.14	8208K63	77.45
Blue	Red	10/3	0.57″	−40° to +140°	15	1,875	—	—	8208K92	92.71	8208K94	157.71
Green	Red	10/3	0.57″	−40° to +140°	15	1,875	—	—	8208K91	92.71	8208K93	157.71
Green	Yellow	12/3	0.42″	−40° to +140°	15	1,875	—	—	8208K52	47.14	8208K62	77.45
Orange	Blue	12/3	0.42″	−40° to +140°	15	1,875	—	—	8208K55	47.14	8208K65	77.45
Pink	Lime Green	12/3	0.42″	−40° to +140°	15	1,875	—	—	8208K54	47.14	8208K64	77.45
Red	White	12/3	0.44″	−31° to +140°	15	1,875	—	—	6911K771	56.62	—	—
Neon Green	Red	12/3	0.44″	−31° to +140°	15	1,875	—	—	6911K773	56.69	6911K883	98.74
Thermoplastic Rubber Jacket SJEOW Cords with Power-Indicating Light												
Blue	Orange	12/3	0.44″	−58° to +221°	15	1,875	8208K14	$36.01	8208K24	69.56	8208K34	120.70
Blue	Orange	10/3	0.44″	−58° to +140°	15	1,875	—	—	8208K97	107.12	8208K98	199.12

♠ UL listed only.

For information about cord type, see page 808. For information about AWG, see page 800.
For information about extension cords, see page 792.

Black Indoor/Outdoor Extension Cords

Less conspicuous than other extension cords, these medium duty round extension cords have a three-prong (NEMA 5-15) plug and connector, and are rated @ 125 VAC. UL listed and OSHA compliant.

NEMA 5-15

AWG	Lg., ft.	Cord OD	Rating Amps	Rating Watts		Each
Vinyl Jacket SJTOW *(–22° to +140°F)*						
14/3	1	0.36″	15	1875	**9581T35**	$8.05
14/3	3	0.36″	15	1875	**9581T21**	10.00
14/3	6	0.36″	15	1875	**9581T22**	12.08
14/3	10	0.36″	15	1875	**9581T23**	14.85
14/3	25	0.36″	15	1875	**9581T11**	33.90
14/3	50	0.36″	15	1875	**9581T12**	56.47
14/3	100	0.36″	13	1625	**9581T13**	102.38
PVC Jacket SJTW *(–40° to +140°F)*						
12/3	3	0.44″	15	1875	**9581T14**	10.29
12/3	6	0.44″	15	1875	**9581T15**	12.87
12/3	10	0.44″	15	1875	**9581T16**	16.40
12/3	25	0.44″	15	1875	**9581T17**	29.52
12/3	50	0.44″	15	1875	**9581T18**	50.37
12/3	100	0.44″	15	1875	**9581T19**	90.12
Thermoplastic Rubber Jacket SJEOW *(–76° to +221°F)*						
10/3	10	0.62″	15	1875	**9581T31**	31.46
10/3	25	0.62″	15	1875	**9581T32**	67.53
10/3	50	0.62″	15	1875	**9581T33**	121.90
10/3	100	0.62″	15	1875	**9581T34**	199.74

Locking Indoor/Outdoor Extension Cords

A locking mechanism on the connector prevents your device from becoming unplugged from these medium duty round cords. They have a three-prong (NEMA 5-15) plug and connector with a light molded into the connector end that illuminates when the cord is plugged in. They have a vinyl SJTW cord (14/3 AWG cords are yellow and 12/3 AWG cords are red with a blue stripe). Rated @ 125 VAC. Temperature range is -40° to +140° F. UL listed, CSA certified, and OSHA compliant.

NEMA 5-15

AWG	Lg., ft.	Cord OD	Rating Amps	Rating Watts		Each
14/3	25	0.36″	15	1875	**9609T11**	$21.31
14/3	50	0.36″	15	1875	**9609T1**	38.53
14/3	100	0.36″	13	1625	**9609T3**	71.10
12/3	25	0.43″	15	1875	**9609T12**	30.76
12/3	50	0.43″	15	1875	**9609T2**	58.22
12/3	100	0.43″	15	1875	**9609T4**	111.53

Right-Angle-Plug Indoor Extension Cords

Molded right-angle plugs guide these cords along your wall, guarding against accidental pull-out. For indoor use, they are flat cords with a PVC jacket (SPT-3). Perfect for air conditioners. Color is beige. Each has a three-prong (NEMA 5-15) plug and connector. Rated @ 125 VAC. Temperature range is –4° to +140° F. UL listed and OSHA compliant.

NEMA 5-15

AWG	Lg., ft.	Cord Size	Rating Amps	Rating Watts		Each
14/3	3	0.24″×0.53″	15	1875	**7469K11**	$6.23
14/3	6	0.24″×0.53″	15	1875	**7469K12**	6.51
14/3	9	0.24″×0.53″	15	1875	**7469K13**	7.66
14/3	15	0.24″×0.53″	15	1875	**7469K14**	13.83

Multi-Outlet Extension Cords

NEMA 5-15

Three Outlet — *Three Outlet with Circuit Breaker* — *Four Outlet*

Enjoy the added convenience of multiple outlets. Cords are round and have a three-prong (NEMA 5-15) plug and outlets. Rated 15 amps @ 125 VAC and 1875 watts, unless noted. For indoor and outdoor use, unless noted. Cords with the coldest temperature rating are the most flexible. UL listed and OSHA compliant, unless noted.

Three-outlet easy-ID PVC cord has a black-and-yellow striped jacket. Lighted cords have a power-indicating light molded into the outlet that illuminates when cord is plugged in. ***TPE jackets*** are thermoplastic rubber. ***Three-outlet cords with circuit breaker*** have a resettable circuit breaker that trips at 15 amps to prevent overload damage.

Cord Type	AWG	Lg., ft.	Cord OD	Color		Each
Three Outlet with PVC Jacket *(–40° to +140°F)*						
SJTW	14/3	10	0.37″	Orange	**7468K51**	$18.08
SJTW	14/3	25	0.37″	Orange	**7468K11**	25.20
SJTW	14/3	50	0.37″	Orange	**7468K12**	38.37
SJTW	14/3	100	0.37″	Orange	**7468K13●**	61.91
SJTW	12/3	25	0.43″	Yellow	**7468K34**	42.61
SJTW	12/3	50	0.43″	Yellow	**7468K35**	70.16
SJTW	12/3	100	0.43″	Yellow	**7468K36**	134.28
STOW	12/3	2	0.60″	Yellow	**7468K27**	11.91
Three Outlet with PVC Jacket *(68° to 140°F)*						
SJT	14/3	8	0.36″	Black	**9574T11♠▲**	13.76
SJT	14/3	15	0.36″	Black	**9574T12♠▲**	20.21
Three Outlet Easy-ID with PVC Jacket *(–40° to +140°F)*						
SJTW	14/3	50	0.36″	Stripe	**6786K25**	43.33
Three Outlet Easy-ID Lighted with PVC Jacket *(–40° to +140°F)*						
SJTW	12/3	50	0.42″	Neon Blue	**6786K31**	89.84
SJTW	12/3	50	0.42″	Neon Red	**6786K41**	89.84
SJTW	12/3	100	0.42″	Neon Blue	**6786K32**	158.57
SJTW	12/3	100	0.42″	Neon Red	**6786K42**	158.57
Three Outlet Lighted with TPE Jacket *(–67° to +195°F)*						
SJEOW	12/3	25	0.42″	Yellow	**7468K42**	50.66
SJEOW	12/3	50	0.42″	Yellow	**7468K43**	66.48
SJEOW	12/3	100	0.42″	Yellow	**7468K44**	114.55
SEOW	12/3	2	0.59″	Yellow	**7468K41**	17.39
Three Outlet with Circuit Breaker with PVC Jacket *(–58° to +167°F)*						
SJTW	14/3	6	0.36″	Yellow	**74695K65**	13.70
SJTW	14/3	25	0.36″	Yellow	**74695K66**	29.75
SJTW	14/3	50	0.36″	Yellow	**74695K67**	52.91
SJTW	12/3	6	0.42″	Yellow	**74695K61**	16.60
SJTW	12/3	25	0.42″	Yellow	**74695K62**	42.62
SJTW	12/3	50	0.42″	Yellow	**74695K63**	74.38
SJTW	12/3	100	0.42″	Yellow	**74695K64**	117.63
Four Outlet with PVC Jacket *(–4° to +167°F)*						
SJTW	12/3	6	0.42″	Orange	**6960K71▲**	21.24
SJTW	12/3	25	0.42″	Orange	**6960K72▲**	44.18
SJTW	12/3	50	0.42″	Orange	**6960K73▲**	75.22
SJTW	12/3	100	0.42″	Orange	**6960K74▲**	116.52
STW	12/3	25	0.59″	Orange	**6960K82▲**	60.22
STW	12/3	50	0.59″	Orange	**6960K83▲**	95.98
STW	12/3	100	0.59″	Orange	**6960K84▲**	165.74
Four Outlet Lighted with TPE Jacket *(–58° to +194°F)*						
SJEOW	12/3	6	0.42″	Yellow	**6960K61▲**	26.52
SJEOW	12/3	25	0.42″	Yellow	**6960K62▲**	50.41
SJEOW	12/3	50	0.42″	Yellow	**6960K63▲**	75.75
SJEOW	12/3	100	0.42″	Yellow	**6960K64▲**	129.53
SEOW	12/3	6	0.59″	Yellow	**6960K51▲**	31.90
SEOW	12/3	25	0.59″	Yellow	**6960K52▲**	65.47

● Rated 13 amps @ 125 VAC and 1625 watts.
♠ Not OSHA compliant. ▲For indoor use only.

Multiple Inline Outlet Indoor/Outdoor Extension Cords

An outlet will always be close by with these cords, thanks to the extra outlets along their entire length. These round cords have a heavy duty PVC jacket (STW) and are rated @ 125 VAC. They have a three-prong (NEMA 5-15) plug and outlets. Each outlet has a power-indicating light; extra inline outlets also have a weather-resistant cover. Cords can be used indoors and outdoors. Color is yellow. Temperature range is –40° to +167°F. UL listed, C-UL listed, and OSHA compliant.

NEMA 5-15

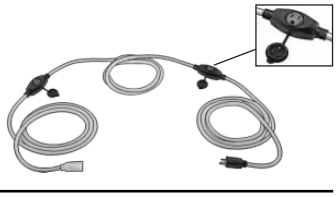

AWG	Lg., ft.	Cord OD	No. of Outlets	Rating Amps	Rating Watts		Each
14/3	25	0.53″	3	15	1875	**7591K42**	$34.92
12/3	50	0.60″	3	15	1875	**7591K43**	94.99

Extension Cords

For information about NEMA plugs and receptacles, see pgs. 784 and 787. For information about AWG, see pg. 800.
For information about cord type, see pg. 808. For information about extension cords, see pg. 792.

Turn-Lock and Straight-Blade Extension Cords

Turn-Lock Cord

NEMA L5-20 · NEMA L2-20 · NEMA L5-15 · NEMA L5-30 · NEMA L6-20 · NEMA L6-30 · NEMA 1-15 · NEMA 5-20 · NEMA 6-20 · NEMA 7-15

Rated for higher work loads than most extension cords, these easy-to-see round yellow cords are for indoor and outdoor use and are also great for use with generators. UL listed.

Turn-lock cords prevent accidental disconnection.

Medium duty cords have a PVC plug and connector. Temperature range is –4° to +140° F. ***Heavy duty cords*** have a heavy duty rubber plug and connector with high abrasion, ozone, oil, and impact resistance. Temperature range is –13° to +199° F.

Plug and Connector NEMA Style	AWG	Rating Amps	Rating VAC	Rating Watts	Cord OD	Lg., ft.		Each
Turn-Lock Cords								
Medium Duty PVC Jacket SJTW								
L5-20	12/3	15	125	1875	0.42″	100	8049K22	$89.38
L5-20	12/3	20	125	2500	0.42″	50	8049K21	55.29
L5-20	12/3	20	125	2500	0.59″	50	8049K23★	70.19
Heavy Duty Neoprene Rubber Jacket SOOW								
L2-20	14/2	18	250	4500	0.5″	25	5839K16	135.17
L5-15	16/3	13	125	1625	0.41″	25	5839K17	119.72
L5-20	14/3	18	125	2250	0.55″	25	5839K18	158.00
L5-30	12/3	25	125	3125	0.62″	25	5839K19	215.04
L6-20	14/3	18	250	4500	0.55″	25	5839K21	158.00
L6-30	12/3	25	250	6250	0.62″	25	5839K22	238.00
Straight-Blade Cords								
Heavy Duty Neoprene Rubber Jacket SOOW								
1-15	16/2	13	125	1625	0.39″	25	5839K11	114.32
5-20	14/3	18	125	2250	0.55″	25	5839K12	141.57
6-20	14/3	18	250	4500	0.55″	25	5839K13	206.71
7-15	14/3	18	277	4986	0.55″	25	5839K14	137.87

★ Cord is heavy duty STW.

Flat-Plug Indoor Extension Cords

NEMA 1-15 · NEMA 5-15

A thin, angled profile means you can keep furniture close to walls while reducing strain on the plug. Plus, they won't block the other outlet. Designed for light duty indoor use, they have a flat cord with a PVC jacket (SPT-2). Rated 13 amps @ 125 VAC and 1625 watts. Temperature range is –4° to +140° F. UL listed.

Plug and Connector NEMA Style	AWG	Color	Cord Size	Lg., ft.		Each
1-15	16/2	Tan	0.15″×0.28″	7	69075K22	$5.43
1-15	16/2	White	0.15″×0.28″	3	69075K11	3.82
1-15	16/2	White	0.15″×0.28″	7	69075K21	5.37
1-15	16/2	White	0.15″×0.28″	13	69075K31	7.40
5-15	16/3	Black	0.16″×0.38″	8	69075K25	10.23
5-15	16/3	White	0.16″×0.38″	8	69075K24	9.30

Cord Locks

Standard

Hook-and-Loop

Weatherproof

Prevent two cords from unplugging (cords not included). ***Standard*** cord lock snaps on. It is made of PVC. ***Weatherproof*** locks twist on and are made of polyolefin. UL listed.

	For Cord Size, AWG	Color	O'all Lg.		Each
Standard	16/3-14/3	Black	8″	7494K59	$5.83
Hook-and-Loop	16/3-12/3	Black	4¼″-5½″	7494K65	4.50
Weatherproof	14/3	Yellow	8″	7494K61	13.31
Weatherproof	12/3	Yellow	8″	7494K62	13.31

Fire-Guard Indoor Extension Cords

Light Duty Cord

Heavy Duty Cord

NEMA 1-15 · NEMA 5-15

"Smart" cords continually monitor their insulation to detect current leakage caused by damaged or worn insulation, and then shut off power before a fire can begin. They are flat with a PVC jacket (SVT). Cords require manual resetting after tripping. UL listed and CSA certified.

Light duty cord is 16/2 AWG and rated @ 120 VAC. It has a two-prong (NEMA 1-15) plug and three-outlet (NEMA 1-15) connector. Color is white. Rated for indoor use at room temperature.

Heavy duty has a ground fault circuit interrupter (GFCI) for shock protection. Cord is 14/3 AWG and rated @ 120 VAC. It has a three-prong (NEMA 5-15) plug and connector. Color is yellow. Use indoors and outdoors. Temperature range is –31° to +150° F.

	Rating Amps	Rating Watts	Cord Size	Lg., ft.		Each
Light Duty	13	1560	0.16″×0.31″	8	71265K41	$20.59
Heavy Duty	15	1800	0.17″×0.5″	25	71265K22	77.75

Self-Retracting Extension Cords

Cord Type SJEOW with Belt Clip

NEMA 5-15

These tangle-resistant, self-coiling extension cords never need winding. They stretch to allow easier movement without having loose cord in the way. Cords have a right-angle, three-prong (NEMA 5-15) plug that prevents accidental pull-out (except the SJEO cord which has a straight NEMA 5-15 plug). All have a three-prong (NEMA 5-15) connector and are 16/3 AWG. Rated 13 amps @ 125 VAC and 1625 watts. UL listed.

SJEO cord has an orange TPE jacket and a temperature range of –58° to +221° F. For indoor use. CSA certified. ***SJEOW*** cords have a black thermoplastic rubber jacket and a temperature range of –67° to +195° F. For indoor and outdoor use. OSHA compliant. 1448K22 includes a belt clip to keep the cord out of the way when using power tools. ***SJT*** cord has an orange PVC jacket and a temperature range of –40° to +140° F. For indoor use. OSHA compliant.

Cord Type	Length, ft. Retracted	Length, ft. Extended	Cord OD	Coil OD		Each
SJEO	2	25	0.36″	1.75″	1448K25	$60.42
SJEOW	1	5	0.37″	1.19″	1448K22	23.56
SJEOW	4	20	0.37″	1.19″	1448K21	28.86
SJT	3	10	0.43″	1.88″	1448K23	30.08

Extension Cord Adapters and Splitters

Adapter

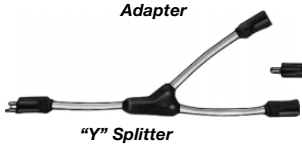

"Y" Splitter

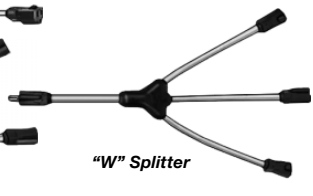

"W" Splitter

NEMA 5-15 · NEMA L5-20

For use indoors and outdoors, these 12/3 AWG cords are PVC-jacketed Type STW and have a 0.6″ OD. Rated @ 125 VAC/VDC. Temperature range is –31° to +140° F. Cords are yellow. UL listed.

Adapters alter your plugs/connectors as indicated below. They have a plug on one end and a connector on the other. "***Y***" ***splitters*** have a plug on one end and connectors on the other two. "***W***" ***splitters*** have a plug on one end and connectors on the other three.

	NEMA Style Plug	NEMA Style Connector(s)	Rating Amps	Rating Watts	Lg.		Each
With Straight-Blade Plug							
Adapter	5-15	L5-20	15	1875	9″	7197K18	$12.12
"Y" Splitter	5-15	5-15	15	1875	24″	7197K39	19.90
"W" Splitter	5-15	5-15	15	1875	24″	7197K38	25.87
With Turn-Lock Plug							
Adapter	L5-20	5-15	15	1875	9″	7197K17	10.30
"Y" Splitter	L5-20	L5-20	20	2500	24″	7197K29	22.90
"W" Splitter	L5-20	L5-20	20	2500	24″	7197K28	29.65

For information about NEMA plugs and receptacles, see pgs. 784 and 787. For information about AWG, see pg. 800.
For information about cord type, see page 804.

Temporary Power Distribution Boxes

This rugged equipment is designed for safe, temporary power distribution (not power generation) in areas such as construction sites. For indoor and outdoor use.

Power Boxes— Have a 50-amp California Standard power inlet that distributes power to seven receptacles and a 50-amp California Standard power outlet for stringing additional boxes to the system. UL listed. Meet OSHA requirements. Steel boxes have a rust-resistant yellow finish.

Accessories— Use the *power inlet cords* to bring power to boxes. They're Type SOW rubber cord with a 50-amp California Standard turn-lock plug on one end and connector on the other. *Replacement plug* connects with the power box outlet. *Replacement connector* connects with the power box inlet. Both are 50 amp @ 125/250 VAC, California Standard turn-lock style.

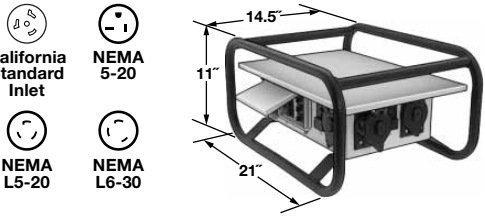

Power Boxes

GFCI Outlets No. of Outlets	GFCI Outlets NEMA Style	GFCI Outlets Amps	GFCI Outlets VAC	Non-GFCI Outlets No. of Outlets	Non-GFCI Outlets NEMA Style	Non-GFCI Outlets Amps	Non-GFCI Outlets VAC	Steel	Steel Each	Stainless Steel	Stainless Steel Each
6	5-20	20	125	1	L6-30	30	250	70855K19	$668.18	70855K43	$742.20
6	L5-20	20	125	1	L6-30	30	250	70855K17	668.18	70855K41	742.20

Accessories

		Each
50-ft. Power Inlet Cord	70855K12	$322.66
100-ft. Power Inlet Cord	70855K13	525.56
Repl. Plug	70855K31	42.74
Repl. Connector	70855K32	52.43

Portable Rubber Outlet Boxes

NEMA 5-15

Standard Box with Outlets

Box without Outlets, with Outlet Covers

Great wherever you use portable power in indoor environments. Made of rubber that's oil, impact, chemical, and scratch resistant. Each box has a nylon strain-relief fitting at the cord entrance to protect the internal wire connections. Color is yellow. Outlet boxes are 3⅜″ deep and rated 15 amps @ 120 VAC and 1800 watts. Temperature range is –13° to +199° F. UL listed and CSA certified.

Standard boxes accept 0.33″ to 0.66″ OD cord. Boxes ***with outlet covers*** have a spring-loaded flip cover over each outlet (outlet hole for those without outlets) for added dust and moisture protection. They accept 0.31″ to 0.63″ OD cord.

Boxes with Outlets— Have four outlets (one duplex receptacle on two sides of the box). ***Boxes without Outlets—*** Build your own outlet box or replace an existing damaged box with these empty boxes. They accept one standard size duplex receptacle on two sides of the box. Interior box size is 2.63″ Ht. × 1.75″ Wd. × 3″ Dp.

NEMA Style	Boxes with Outlets	Boxes with Outlets Each	Boxes without Outlets	Boxes without Outlets Each
Standard				
5-15	1831K32	$81.06	1831K31	$46.13
With Outlet Covers				
5-15	1831K82	141.19	1831K81	107.28

Outlet Adapters

NEMA 1-15 NEMA 5-15

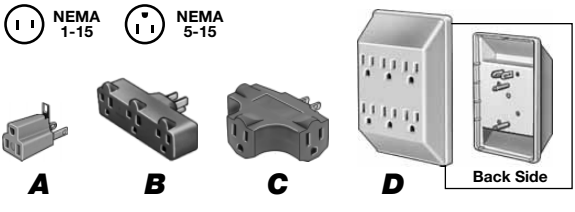

Designed for indoor use, unless noted. Rated 15 amps @ 120 VAC and 1800 watts. UL listed.

A Grounding Plug Adapter— Converts any two-prong (NEMA 1-15) outlet into a three-prong (NEMA 5-15) outlet. Made of gray PVC.

B&C Triple-Outlet Adapters— Convert a single three-prong (NEMA 5-15) outlet into three three-prong (NEMA 5-15) outlets. Made of orange PVC, unless noted. 7163K35 is for indoor and outdoor use. 9508T3 is lighted and made of clear PVC.

D Six-Outlet Adapter— Converts a duplex three-prong (NEMA 5-15) receptacle into six three-prong (NEMA 5-15) outlets. Made of white PVC. Size is 4¾″ Ht. × 3⁵⁄₁₆″ Wd. × 1³⁄₁₆″ Dp. C-UL listed.

			Each
A	Grounding Plug Adapter	7211K16	$1.29
B	Triple-Outlet Adapter	7163K35	5.10
B	Lighted Triple-Outlet Adapter	9508T3	6.15
C	Triple-Outlet Adapter	9508T2	5.81
D	Six-Outlet Adapter	7276K4	5.29

Concealed-Cord Outlet Boxes

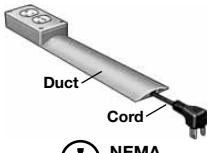

NEMA 5-15

Protect yourself from trip hazards and your cord from damage. Position the lay-flat PVC duct between a wall outlet and wherever you need power. Ducts have a 16/3 AWG Type SPT-2 flat cord with a three-prong (NEMA 5-15) plug that extends two feet beyond one end of the duct. There's a duplex three-prong (NEMA 5-15) outlet on the other end. Install ducts using 2″ Wd. × 10′ Lg. tape with adhesive on both sides (sold separately below). Outlet boxes are rated 13 amps @ 125 VAC. Box size is 4.5″ Lg. × 2.75″ Wd. × 1″ Ht. Temperature range is 0° to 150° F. For indoor use only. UL listed.

Lay-Flat Duct Lg., ft.	Cord Lg., ft.	Black	Black Each	Beige	Beige Each
4	6	6961K16	$41.04	6961K36	$41.04
5	7	6961K17	44.43	6961K37	44.43
6	8	6961K18	45.83	6961K38	45.83
10	12	6961K19	56.88	6961K39	56.88

Tape w/Adhesive on Both Sides ..... 6961K24 Each $5.33

Cabinet-Mount Outlet Strips

NEMA 5-15

NEMA 5-20

Mount these strips directly on your cabinet frame. Just screw the clips to any cabinet and snap strips into place. Mounting clips included. Strips have a resettable circuit breaker and aluminum housing with a gray finish. Rated @120 VAC. Size is 1½″ Wd. × 1³⁄₁₆″ Dp. Temperature range is 32° to 150° F. UL listed.

15-amp outlet strips have a 14/3 AWG Type SJT cord with three-prong (NEMA 5-15) plug and outlets.

20-amp outlet strips have a 12/3 AWG Type SJT cord with a NEMA 5-20 plug and outlets.

No. of Outlets	Outlets, Ctr.-to-Ctr.	Strip Lg.	Cord Lg., ft.	15-amp Outlet Strips	15-amp Outlet Strips Each	20-amp Outlet Strips	20-amp Outlet Strips Each
10	4″	48″	6	71195K51	$66.11	71195K54	$80.00
10	4″	48″	15	71195K71	78.80	71195K74	99.34
11	6″	70″	6	71195K52	76.15	71195K55	100.80
11	6″	70″	15	71195K72	89.64	71195K75	104.54
12	6″	77″	6	71195K53	84.33	71195K56	112.20
12	6″	77″	15	71195K73	96.56	71195K76	118.09

Extension Cord Holders

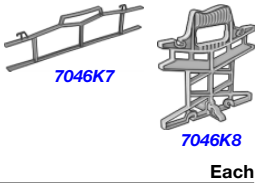

Keep your cord neatly coiled and ready to use with these holders. They accommodate 150 ft. of 16/3 AWG cord; 100 ft. of 14/3 AWG cord; or 50 ft. of 12/3 AWG cord. 7046K7 is made of polypropylene. 7046K8 is made of polyethylene and has a carrying handle and snap-on stand.

Ht. × Wd.	Color		Each
4¼″ × 18¼″	Orange	7046K7	$2.01
11¾″ × 11¾″	Yellow	7046K8	7.76

For information about cord type, see page 808. For surge suppressor outlet strips, see page 928.

Outlet Strips

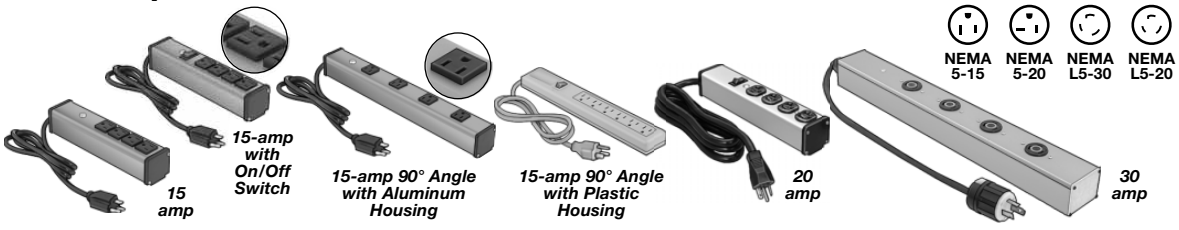

Out of outlets? These strips have a resettable circuit breaker and most have an illuminated master on/off switch (see table). All have Type SJT cords and include mounting clips. Rated @ 120 VAC. Temperature range is 32° to 150° F, unless noted. UL and C-UL listed.

15-amp outlet strips have a 14/3 AWG cord with a molded three-prong NEMA 5-15 plug and outlets. ***20-amp outlet strips*** have a 12/3 AWG cord with a molded three-prong NEMA 5-20 plug and outlets, except 71515K17 and K18, which have two NEMA 5-20 and 22 NEMA 5-15 outlets. ***30-amp outlet strips*** have a 10/3 AWG cord with a NEMA L5-30 turn-lock plug and outlets.

90° angle outlet strips have outlets that are rotated 90° to accommodate plug-in transformers and power supplies.

Hospital-grade outlet strips are for noncritical hospital applications and are more durable than other outlet strips. Each has hospital-grade receptacles and a plug (with a green dot for identification).

Replacement mounting clips are only for use with 2″ wide strips.

No. of Outlets	Outlets, Ctr.-to-Ctr.	Cord Lg., ft.	Dimensions, Lg.×Wd.×Dp.	Color		Each
15-amp Outlet Strips— *Aluminum Housing*						
4	1¼″	6	9¼″×2″×1¾″	Gray	7361K43	$23.81
4	1¼″	15	9¼″×2″×1¾″	Gray	7361K44	28.40
6	1¼″	6	12¼″×2″×1¾″	Gray	7361K47	30.06
6	1¼″	15	12¼″×2″×1¾″	Gray	7361K48	35.10
8	1¼″	6	13″×2″×1¾″	Gray	7361K49	31.02
8	1¼″	15	13″×2″×1¾″	Gray	7361K52	35.67
15-amp Outlet Strips— *Aluminum Housing with On/Off Switch*						
4	1¼″	6	9¼″×2″×1¾″	Gray	7361K41	24.69
4	1¼″	15	9¼″×2″×1¾″	Gray	7361K42	28.87
6	1¼″	6	12¼″×2″×1¾″	Putty	7361K45	29.21
6	1¼″	15	12¼″×2″×1¾″	Putty	7361K46	31.73
8	2″	6	24″×2″×1¾″	Gray	7503K21	52.96
8	2″	15	24″×2″×1¾″	Gray	7503K22	63.20
8	5¼″	6	48″×2″×1¾″	Gray	7503K23	59.94
8	5¼″	15	48″×2″×1¾″	Gray	7503K24	70.08
10	11 5/16″	6	13″×3½″×2″	Putty	7361K53▲	48.91
10	11 5/16″	15	13″×3½″×2″	Putty	7361K54▲	55.06
12	2⅝″	15	36″×1½″×1½″	Gray	7503K9★	53.57
12	5¼″	6	72″×2″×1¾″	Gray	7503K31	60.58
12	5¼″	15	72″×2″×1¾″	Gray	7503K32	69.06
16	2½″	6	48″×2″×1¾″	Gray	7503K33	80.90
16	2½″	15	48″×2″×1¾″	Gray	7503K34	86.42
24	2½″	6	72″×2″×1¾″	Gray	7503K35	89.97
24	2½″	15	72″×2″×1¾″	Gray	7503K36	95.30

Replacement Mounting Clips (Package of 3) ..... 7361K21 **Per Pkg.** $3.28

▲Has two ½″ mounting slots. ★Temperature range is 32° to 104° F. ●Has NEMA L5-20 turn-lock plug.

No. of Outlets	Outlets, Ctr.-to-Ctr.	Cord Lg., ft.	Dimensions, Lg.×Wd.×Dp.	Color		Each
15-amp 90° Angle Outlet Strips— *Aluminum Housing*						
4	3″	6	16″×2″×1¾″	Gray	70225K21	$34.79
4	3″	15	16″×2″×1¾″	Gray	70225K22	40.70
15-amp 90° Angle Outlet Strips— *Plastic Housing with On/Off Switch*						
6	1¼″	6	12″×2¼″×1⅝″	Putty	7147K21▲	12.41
6	1¼″	15	12″×2¼″×1⅝″	Putty	7147K22▲	22.82
15-amp Hospital-Grade Outlet Strips— *Aluminum Housing*						
4	1½″	6	10¾″×2″×1¾″	White	71675K61	57.60
4	1½″	15	10¾″×2″×1¾″	White	71675K62	67.22
6	1½″	6	13¼″×2″×1¾″	White	71675K71	75.98
6	1½″	15	13¼″×2″×1¾″	White	71675K72	81.09
15-amp Hospital-Grade Outlet Strip— *Steel Housing*						
6	1½″	1½	12½″×2½″×1½″	White	71675K45▲★	48.80
20-amp Outlet Strips— *Aluminum Housing with On/Off Switch*						
4	1½″	6	10⅜″×2″×1¾″	Putty	71515K31	89.00
4	1½″	15	10⅜″×2″×1¾″	Putty	71515K32	99.85
6	1½″	6	13¼″×2″×1¾″	Putty	71515K33	90.21
6	1½″	15	13¼″×2″×1¾″	Putty	71515K34	102.76
24	2¾″	15	72″×1½″×1½″	Gray	71515K17★	97.78
24	2¾″	15	72″×1½″×1½″	Gray	71515K18★●	100.74
30-amp Outlet Strips— *Aluminum Housing*						
4	4″	6	24″×3″×2⅝″	Gray	9568T1	235.29
4	4″	15	24″×3″×2⅝″	Gray	9568T2	258.82
8	4″	6	48″×3″×2⅝″	Gray	9568T5	349.02
8	4″	15	48″×3″×2⅝″	Gray	9568T6	372.55

Outlet Strips with Individual Switches

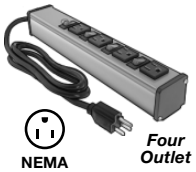

Separately control each device you plug into these strips—each outlet has its own lighted on/off switch. All strips have a resettable circuit breaker, an aluminum housing, and a 14/3 AWG Type SJT cord with a molded three-prong (NEMA 5-15) plug and outlets. You can mount them vertically or horizontally with included hardware. Rated 15 amps @ 120 VAC. Temperature range is 32° to 150° F. UL and C-UL listed.

No. of Outlets	Outlets, Ctr.-to-Ctr.	Cord Lg., ft.	Dimensions, Lg.×Wd.×Dp.	Color		Each
4	2⅛″	6	13″×2″×1¾″	Gray	7166K5	$39.76
4	2⅛″	15	13″×2″×1¾″	Gray	7166K6	44.54
8	1 5/16″	6	13″×3½″×2″	Putty	7362K21	85.22
8	1 5/16″	15	13″×3½″×2″	Putty	7362K31	96.62

Outlet Strips with Remote Switch

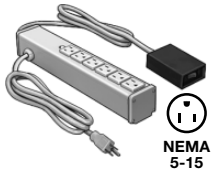

No stooping or bending—the remote on/off switch has a 44″ long cord for easy access to the strip. Strips have a resettable circuit breaker and 14/3 AWG Type SJT cord with a molded three-prong (NEMA 5-15) plug and outlets. They include mounting clips. Housing is aluminum. Rated 15 amps @ 120 VAC. Temperature range is 32° to 150° F. UL and C-UL listed.

No. of Outlets	Outlets, Ctr.-to-Ctr.	Cord Lg., ft.	Dimensions, Lg.×Wd.×Dp.	Color		Each
6	1¼″	6	12¼″×2″×1¾″	Putty	69565K21	$42.80
6	1¼″	15	12¼″×2″×1¾″	Putty	69565K31	47.60

Impact-Resistant Outlet Strips

Made of rugged rubber, these strips are ready for the roughest use. All have three polycarbonate outlets, built-in copper bus bars, and a molded-in cord grip. Outlets measure 2¼″ center-to-center. Strips are 10⅜″ Lg.×3¼″ Wd.×1⅞″ Dp. Color is yellow. Temperature range is –13° to +199° F. UL listed and CSA certified.

Strips without cord accept 0.33″ to 0.66″ diameter cord. ***Strips with cord*** are wired with a 25-ft. long 12/3 AWG Type SOW cord with a plug. Strips have the same NEMA configuration on plug and outlet ends.

NEMA Style	Amps @ 125 VAC	***Strips w/o Cord*** Each	***Strips with Cord*** Each
5-15	15	8056K74 $93.48	8056K75 $206.67
5-20	20	8056K94 118.44	8056K95 226.42

Rotating Outlet Adapter

Never let oddly shaped plugs stop you from using your outlets again. Adapter plugs into a three-prong NEMA 5-15 outlet, and has four three-prong NEMA 5-15 outlets that rotate up to 360°. Each outlet automatically holds the position when you stop turning. Made of white ABS plastic and is 4 3/16″ Ht.×3 15/32″ Wd.×1 3/32″ Dp. Rated 15 amps @ 120 VAC and 1,800 watts. For indoor use. UL listed.

5576K2 ..... $14.38

For information about cord type, see page 808. For surge suppressor outlet strips, see page 928.

Rack-Mount Outlet Strips

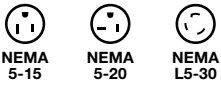

Designed to fit standard 19″ wide electronics racks, enclosures, and cabinets, these strips have front outlets for easy access to external components and rear outlets for components inside your cabinet. Most have an illuminated on/off switch (see table). All have a resettable circuit breaker. Rated @ 120 VAC. All units are black steel and 1¾″ Ht. × 19″ Wd. × 2¾″ Dp., unless noted.

15-amp outlet strips have a 14/3 AWG Type SJT cord with a three-prong NEMA 5-15 plug and outlets. They have four ¼″ dia. mounting holes (fasteners not included, unless noted). Temperature range is 32° to 150° F, unless noted. UL and C-UL recognized. 90° *angle outlet strips* have outlets that are rotated 90° to accommodate plug-in transformers and power supplies. *Hospital-grade outlet strips* are for noncritical hospital applications and have hospital-grade receptacles and plug (with a green dot for identification).

20-amp outlet strips have a 12/3 AWG Type SJT cord with a NEMA 5-20 plug and outlets. They have four ¼″ dia. mounting holes (fasteners not included). Temp. range is 32° to 150° F. UL and C-UL recognized. *Strip with amp meter* displays the total power your devices are using.

24-amp outlet strip has a 10/3 AWG Type SJT cord with a NEMA L5-30 locking plug. It has two circuits and each circuit has a 12-amp thermal breaker and six NEMA 5-20 outlets (two in front and four in rear). Has a green LED power indicator and two 0.110″ and two 0.156″ dia. mounting holes (fasteners not included). Temperature range is 23° to 113° F. UL and C-UL recognized.

32-amp outlet strip has two circuits and each circuit has a 16-amp thermal breaker, a 12/3 AWG Type SJT cord with a NEMA 5-20 plug, and six NEMA 5-20 outlets (two in front and four in rear). Receptacles are each rated 16 amps. Has a green LED power indicator and two 0.110″ and two 0.156″ dia. mounting holes (fasteners not included). Temperature range is 23° to 113° F. UL and C-UL listed.

No. of Outlets Front	Rear	Outlets, Ctr.-to-Ctr.	On/Off Switch	Cord Lg., ft.		Each
15-amp Outlet Strips						
0	6	1½″	No	6	71145K52	$58.98
0	6	1½″	No	15	71145K53	64.13
2	4	1½″	Yes	6	71145K54	58.98
2	4	1½″	Yes	15	71145K55	64.11
6	0	1½″	Yes	6	71145K56	58.87
6	0	1½″	Yes	15	71145K57	64.23
6	6	1¾″	Yes	15	71145K51★♦	73.91
15-amp 90° Angle Outlet Strips						
0	8	1½″	Yes	6	71145K61	54.35
0	8	1½″	Yes	15	71145K62	59.10
6	0	1½″	Yes	6	71145K63	59.30
6	0	1½″	Yes	15	71145K64	64.62
15-amp Hospital Grade Outlet Strip						
6	6	1¾″	Yes	15	71145K91■♦	110.51
20-amp Outlet Strips						
0	6	1½″	No	6	71145K82	81.06
0	6	1½″	No	15	71145K83	86.83
0	6	1½″	Yes	6	71145K84▲	81.04
0	6	1½″	Yes	15	71145K85▲	103.22
6	0	1½″	No	6	71145K86	81.04
6	0	1½″	No	15	71145K87	86.81
6	0	1½″	Yes	6	71145K88▲	81.04
6	0	1½″	Yes	15	71145K89▲	86.81
20-amp Outlet Strip with Amp Meter						
0	6	1½″	No	6	4335K11	165.75
24-amp Outlet Strip						
4	8	3″	Yes	10	5149K31♠▲	253.54
32-amp Dual Circuit Outlet Strip						
4	8	1½″	No	10	5149K21♠	224.97

★ Temperature range is 32° to 131° F. Depth is 4″. ♦ Fasteners included.
■ Temperature range is 32° to 104° F. Depth is 3½″.
▲ Switch is not illuminated. ♠ Depth is 4½″.

Permanent-Mount Hardwired Outlet Strip System

Configure your own outlet system to bring convenient, permanent access to electrically busy areas. Outlet strips and accessories are UL and C-UL listed.

Outlet Strips

Mount these outlet strips by hardwiring them into your existing electrical system. Strips have NEMA 5-15 outlets with 12 AWG insulated solid wire. Strips have knockouts in the back for ½″ trade size conduit and cable connectors. They include two end caps for a finished look. All measure 1⁹⁄₃₂″ Wd. × ¾″ Dp. Temperature range is 32° to 150° F. Rated 15 amps @ 125 VAC.

To Order: For steel outlet strips, please specify color: black, ivory, or white, unless noted.

No. of Outlets	Outlets, Ctr.-to-Ctr.	Strip Lg., ft.	Steel	Each	Type 304 Stainless Steel	Each
4	18″	6	8050K41♥	$49.67		
5	12″	5	8050K11	49.74	9621T13	$81.09
6	6″	3	8050K12	46.06	9621T11	73.67
6	12″	6	8050K13	59.50	9621T15	92.02
8	9″	6	8050K45♥	63.63		
10	6″	5	8050K14	69.38	9621T12	97.85
12	6″	6	8050K15	79.26	9621T14	115.95

♥ Not available in black or white.

Accessories

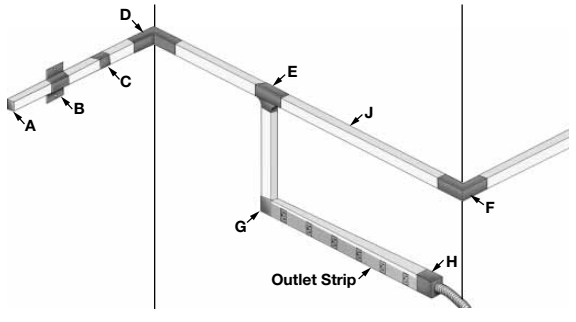

To Order: For steel accessories, please specify color: black, ivory, or white, unless noted.

(A) *Blank end fitting* covers the end of an outlet strip.
(B) *Wall plate adapter* lets you feed power to outlet strips from an existing wall outlet.
(C) *Cover clip* conceals joints between outlet strips.
(D) *Internal elbow* joins outlet strips that meet at an inside corner.
(E) *Tee* allows branching at right angles.
(F) *External elbow* joins outlet strips that meet at an outside corner.
(G) *Flat elbow* permits right angle turns on the same surface.
(H) *Entrance end fitting* mounts to an existing electrical box, adapting outlet strips to an existing power circuit.
(J) *Blank channel* (no wires inside) is used to connect outlet strips. Furnished in a 5-ft. length that you can cut to the length you need.
Mounting clip provides support at any point along an outlet strip.

		Steel	Each	Type 304 Stainless Steel	Each
A	Blank End Fitting	8050K16	$1.18	9621T19	$4.25
B	Wall Plate Adapter	8050K17	13.95	9621T23	27.88
C	Cover Clip	8050K18	1.70	9621T17	4.42
D	Internal Elbow	8050K97♥	3.04		
E	Tee	8050K96♥	17.86		
F	External Elbow	8050K19	5.90	9621T22	14.70
G	Flat Elbow	8050K21	7.46	9621T21	19.00
H	Entrance End Fitting	8050K22	6.81	9621T18	23.90
J	Blank Channel (5-ft. length)	8050K71♥	16.20		
—	Mounting Clip	8050K91♥	2.08		

♥ Not available in black or white.

Receptacle Outlet Caps

Protect your unused outlets from dust and contaminants with these round yellow ABS plastic caps. They fit standard two- and three-prong straight-blade receptacles (NEMA 1-15, 5-15, and 5-20). Sold in packages of 12.

9534T1 ..... Per Pkg. $5.79

For information about NEMA plugs and receptacles, see pages 784 and 787.
For information about cord type, see page 808.

Light Duty Manual-Rewind Reels

Load your extension cords (not included) on these reels and carry them to the worksite with you. Reels keep cords secure and tangle free. All have a carrying handle and hand-crank knob. Reels are high-impact yellow polystyrene.

Capacity, 7/16″ OD Cord	Lg.×Wd.×Ht.		Each
With Zinc-Plated Hardware			
75 ft.	11¼″×6¾″×13⅜″	7040K3	$26.98
125 ft.	14⅝″×7¼″×17¼″	7040K5	62.41
With Type 300 Series Stainless Steel Hardware			
125 ft.	14⅝″×7¼″×17¼″	7040K8	68.66

Medium Duty Manual-Rewind Reel with Outlets

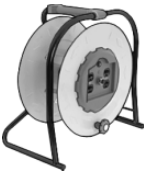

For strength and simplicity, choose this yellow steel reel. It has four NEMA 5-20 outlets and can lay on its side if that's more convenient for you. It has a 15-amp resettable circuit breaker, carrying handle, and power indicator. An adjustable brake allows you to control tension during unwinding or stop the cord from unwinding once you have it at the desired length. Connect it to your power source using the attached 6″ long 12/3 AWG Type SJTW power cord with a three-prong (NEMA 5-15) plug rated 15 amps @ 125 VAC. UL listed.

NEMA 5-15 NEMA 5-20

Cap., 0.59″ OD Cord	Lg.×Wd.×Ht.		Each
100 ft.	17 5/16″×11½″×17 13/16″	9346T1	$118.80

Light Duty Plug-In Spring-Rewind Reels

NEMA 5-15

Single Outlet

Three Outlet

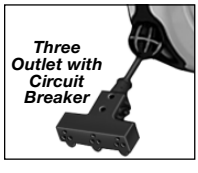

Three Outlet with Circuit Breaker

Reliable performance at an economical price. Reels have molded power connections, an adjustable ball stop, and a cord-locking ratchet that holds the cord at any length, releasing it easily for take-up. Case is made of light-gauge steel. Units mount just about anywhere using the included swivel eye hook, mounting bracket, and hardware. Reels are 9½″ Lg.×3″ Wd.×11¼″ Ht. They come with a 30-ft. long black Type SJT cord on the outlet side and a 24″ long power cord. All have three-prong (NEMA 5-15) plugs and outlets. UL listed and meet OSHA requirements for general use.

Single-outlet and ***three-outlet reels*** have a white powder-coated finish. ***Three-outlet reels with circuit breaker*** have a resettable circuit breaker and a yellow powder-coated finish.

	AWG	Amps @ 125 VAC		Each
Single Outlet	16/3	10	7016K16	$43.37
Three Outlet	16/3	10	7016K71	43.15
Three Outlet w/Circuit Breaker	16/3	10	7016K81	51.85
Three Outlet w/Circuit Breaker	14/3	13	7016K88	60.00

Medium Duty Plug-In Spring-Rewind Reels

NEMA 5-15

More rugged than our light duty reels, these reels are made of high-impact black thermoplastic. They have three three-prong (NEMA 5-15) outlets protected by a resettable circuit breaker and a three-prong (NEMA 5-15) plug. A cord-locking ratchet holds the cord at any length, releasing it easily for take-up. A quick-release bracket and carrying handle give you multiple mounting options. Base is 9¼″ Lg.×3″ Wd. with three ⅜″ dia. mounting holes (hardware included). They come with a yellow Type SJTW cord. Size is 11½″ Lg.×4½″ Wd.×15¼″ Ht. UL and C-UL listed.

Cord Lg., ft.	AWG	Amps @ 125 VAC		Each
40	12/3	15	4804K12	$163.33
50	14/3	13	4804K11	162.41

Heavy Duty Manual-Rewind Reels

Standard Reel

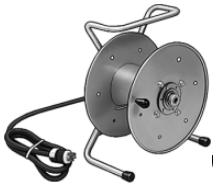

NEMA 5-15

Plug-In Reel

Compact and portable, these reels are great for laying out long lengths of cord over large areas (cord not included). Units are made of steel and have a brake to prevent unwanted rotation, a carrying handle, and nonslip rubber feet. Color is silver.

Plug-in reel includes a 6-ft. long 12/3 AWG Type SO power cord with a three-prong (NEMA 5-15) plug rated 15 amps @ 120 VAC to connect to power source.

Capacity, 9/16″ OD Cord	Lg.×Wd.×Ht.		Each
Standard Reel			
100 ft.	11⅞″×11¾″×15″	7069K13	$165.79
Plug-In Reel			
150 ft.	15½″×14½″×18½″	73015K29	333.06

Heavy Duty Manual-Rewind Reels with GFCI Outlets

Reel with Cord

NEMA 5-20 NEMA 5-15

Plug your power tools into one of the four GFCI (ground fault circuit interrupter) outlets on these reels and work with confidence. Units are made of steel. Reel is yellow. Size is 15″ Lg.×11¾″ Wd.×20¾″ Ht.

	NEMA Outlets	Amps @ 120 VAC		Each
Reel Only (125 ft. Capacity)★	5-20	20	6979K32	$203.79
Reel w/125-ft. Black 12/3 AWG Type SOOW Cord with Plug	5-20■	20	6979K34	559.63
Reel w/200-ft. Black 14/3 AWG Type SOOW Cord with Plug	5-15■	15	6979K46	608.72

★Based on 9/16″ OD cord. ■ Plug is same NEMA style as outlets.

Heavy Duty Plug-In Spring-Rewind Reels

NEMA 5-15 NEMA 5-20

Swing Mount w/Four Outlets

Made of heavy-gauge steel, these reels have an adjustable ball stop, a slip ring with nylon bearings that never need lubricating, an adjustable cord tension mechanism, and automatic take-up that maintains constant tension on the cord. They come with a 6-ft. power cord to connect to your power source. Color is yellow with a powder-coated finish. Reels are rated NEMA 2 for protection against falling liquid and light splashing. Cord is black. Base is 5½″ Lg.×4½″ Wd. and has three ⅜″ Wd. mounting slots (fasteners not included). UL listed and CSA certified.

Overall size of ***rigid-mount reels*** is 12″ Lg.×7¾″ Wd.×13 13/16″ Ht.; for ***swing-mount reels*** it's 12″ Lg.×7¾″ Wd.×17 11/16″ Ht.

Cord Lg., ft.	AWG	Type	Amps @ 125 VAC	Rigid Mount	Each	Swing Mount	Each
With NEMA 5-15 Plug and Bare Ends							
25	16/3	SO	10	74705K11	$284.76	7608K44	$321.31
35	16/3	SO	10	74705K46	310.53	7608K14	344.87
50	16/3	SO	10	74705K66	342.23	7608K16	372.13
With NEMA 5-15 Plug and Four NEMA 5-15 Outlets							
25	16/3	SO	10	74705K12	350.31	7608K64	389.38
35	16/3	SO	10	74705K48	366.61	7608K15	397.45
50	16/3	SO	10	74705K68	413.73	7608K17	428.62
50	14/3	SJE	15	74705K14	482.63	7608K18	541.46
With NEMA 5-20 Plug and Bare Ends							
25	12/3	SJO	20	74705K71	449.29	7608K11	463.79
50	12/3	SJO	20	74705K72	453.41	7608K19	483.64
With NEMA 5-20 Plug and Four NEMA 5-20 Outlets							
25	12/3	SJO	20	74705K13	466.40	7608K12	464.34
50	12/3	SJO	20	74705K15	534.42	7608K21	569.71
With GFCI NEMA 5-20 Plug and Two NEMA 5-20 Outlets							
25	12/3	SJO	20	74705K73	490.66	7608K13	541.46
50	12/3	SJO	20	74705K74	513.77	7608K22	576.79

For information about NEMA plugs and receptacles, see pages 784 and 787.
For information about cord type, see page 808.

Heavy Duty Plug-In Controlled-Rewind Reels

A slower, controlled rewind system prevents cord-whipping action and reduces slamming of reel parts that can occur at the end of recoiling. An eight-position ratchet holds the cord at desired length; a quick pull retracts the cord at a rate of 5 ft. per second. Reels are made of steel with a blue powder-coated finish. They have an adjustable rubber cord stop and an adjustable arm guide for easy mounting to walls, floors, ceilings, and vehicles. They come with a Type SJO cord on the outlet side and a 5-ft. long Type SJO power cord. Plugs and outlet are NEMA 5-20.

Base has two 1/2″ dia. mounting holes and two 1/2″ wide mounting slots (fasteners not included). ***Reels with 50-ft. long cord*** have a 5″ Lg. × 6″ Wd. base and are UL listed. ***Reels with 100-ft. long cord*** have a 6″ Lg. × 6″ Wd. base.

NEMA 5-20

No. of Outlets	AWG	Amps @ 115 VAC	With 50-ft. Lg. Cord: Lg. × Wd. × Ht.		Each	With 100-ft. Lg. Cord: Lg. × Wd. × Ht.		Each
1	12/3	20	13¾″ × 8½″ × 14½″	2781K1	$508.59	17¼″ × 11″ × 18¼″	2781K4	$936.32
2 (GFCI)	12/3	20	13¾″ × 8½″ × 14½″	2781K3	549.02	23″ × 9¾″ × 25¼″	2781K6	1,037.92
4	12/3	20	13¾″ × 8½″ × 14½″	2781K2	574.56	23″ × 9¾″ × 25¼″	2781K5	1,058.68

Extra-Heavy-Duty Hardwired Reels

At the heart of these steel reels is a direct-drive, lifetime-lubricated spring that provides reliable operation and long life. Reels are ratcheted, so cord is held at the length you need … a quick pull on the cord releases the ratchet and retracts the cord. Or, flip a switch to disengage the ratchet and use the automatic takeup feature to maintain constant tension on the cord. Reels include a low-friction, four-roller guide for better winding. Base is 9¼″ Lg. × 4½″ Wd. and has seven 7/16″ dia. mounting holes for floor, wall, and ceiling mounting (fasteners not included).

Standard reels are rated 35 amps @ 600 VAC. The slip ring is enclosed in a gasketed dust- and water-tight NEMA 4X enclosure and has screw terminals for connection to your power source. Cord stops are sold separately below. All have a rust-resistant yellow powder-coated finish. Size is 13½″ Lg. × 14½″ Wd. × 15″ Ht. Reels *with Type SOW* cord are UL and C-UL listed, unless noted. Reels *without cord* have slip rings designed for two or three power conductors.

Hazardous-location reels are rated 30 amps @ 600 VAC. They comply with Class I, Div. I, Groups C and D and Class II, Groups E, F, and G hazardous locations as defined by NEC, and NEMA 4 and NEMA 9 standards. A threaded junction box permits easy connection to sealed lead wires. Come with Type SOW cord and cord stop. All have a gray epoxy-coated finish. Size is 15″ Lg. × 24″ Wd. × 15″ Ht. UL and C-UL listed.

Swivel base (sold separately below) permits 345° rotation.

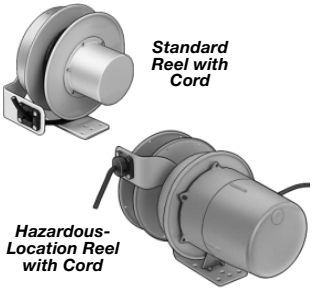

Cord Lg., ft.♠	AWG	3 Conductors (2 Power, Plus Ground): With Type SOW Cord: Amps	Cord OD	Each	Without Cord	Each	4 Conductors (3 Power, Plus Ground): With Type SOW Cord: Amps	Cord OD	Each	Without Cord	Each
Standard Reels											
20	12	20	0.64″	7353K201	$560.70	7353K501	$502.76	16	0.67″	7353K401	$623.91	7353K601	$578.52
20	10	25	0.69″	7353K202	567.34	7353K502	515.53	20	0.75″	7353K402	654.22	7353K602	569.44
30	16	10	0.43″	7353K203	546.94	7353K503	524.97	8	0.49″	7353K403	606.03	7353K603	574.42
30	14	15	0.56″	7353K204	581.27	7353K504	541.23	12	0.61″	7353K404	637.63	7353K604	586.18
30	12	20	0.64″	7353K205	595.05	7353K505	561.68	16	0.67″	7353K405	643.58	7353K605	578.52
30	10	25	0.69″	7353K206	653.43	7353K506	560.84	20	0.75″	7353K406	696.89	7353K606	608.58
40	16	10	0.43″	7353K207	555.20	7353K507	522.63	8	0.49″	7353K407	617.04	—	—
40	14	15	0.56″	7353K208	607.40	—	—	12	0.61″	7353K408	662.68	7353K608	597.31
40	12	20	0.64″	7353K209	663.52	7353K509	555.56	16	0.67″	7353K409	689.37	7353K609	591.66
40	10	25	0.69″	7353K211	693.53	7353K511	571.44	20	0.75″	7353K411	824.03	7353K611	707.22
50	16	10	0.43″	7353K212	561.21	7353K512	522.63	8	0.49″	7353K412	648.31	7353K612	591.66
50	12	20	0.64″	7353K213	690.75	7353K513	583.77	16	0.67″	7353K413	851.77	7353K613	707.22
50	10	25	0.69″	7353K214	1,071.21	7353K514	941.63	20	0.75″	7353K414	1,196.17	7353K303	988.59
70	16	10	0.43″	7353K215	850.43	—	—	8	0.49″	7353K415	959.77	—	—
70	14	15	0.56″	7353K216	999.07	—	—	12	0.61″	7353K416	1,118.50	7353K305	929.09
70	12	20	0.64″	7353K217■	1,124.27	7353K616	986.86	16	0.67″	7353K417▲	1,372.25	7353K306	999.54
Hazardous-Location Reels											
20	14	15	0.56″	70905K22	1,624.37	—	—	12	0.61″	70905K32	1,829.86	—	—
50	14	15	0.56″	70905K24	1,709.24	—	—	12	0.61″	70905K34	1,871.64	—	—

Accessories

Swivel Base (6″ Lg. × 1″ Wd. × 7″ Ht.)	7353K105	Each	$83.11
Cord Stop for 12- and 10-AWG Cord	7353K75	Each	23.43
Cord Stop for 16- and 14-AWG Cord	7353K71	Each	23.43

♠ Applies only to reels sold with Type SOW cord. ■ Not UL listed or C-UL listed. ▲ Cord length is 60 ft.

Battery Cable

A colored stripe along the cable indicates its size, based on SAE standards.

Standard cable is pure copper with PVC insulation. Temperature range is –40° to +194° F. ***High-flex*** cable, also known as welding cable, has finer strands for greater flexibility. It's pure copper cable with synthetic rubber insulation. Temperature range is –58° to +221° F.

Maximum continuous length is 25 ft. **To Order:** Please specify cable color: black or red.

AWG	Standard: OD	Amps★	Volts		Per Ft. 1-24	Per Ft. 25-Up	High Flex: OD	Amps★	Volts		Per Ft. 1-24	Per Ft. 25-Up
8	0.24″	57	60	6948K89	$1.25	$0.95	—	—	—	—	—	—
6	0.31″	82	60	6948K71	1.94	1.48	0.32″	105	600	6948K91	$1.68	$1.27
4	0.35″	110	60	6948K72	2.66	2.00	0.38″	140	600	6948K92	2.39	1.80
2	0.44″	147	60	6948K73	4.21	3.21	0.43″	190	600	6948K93	3.75	2.83
1	0.48″	172	60	6948K74	4.70	3.58	0.51″	220	600	6948K94	4.52	3.40
1/0♣	0.53″	200	60	6948K75	5.99	4.58	0.56″	260	600	6948K95	5.45	4.11
2/0♣	0.58″	233	60	6948K76	7.72	5.88	0.60″	300	600	6948K96	6.89	5.20
3/0♣	0.66″	270	60	6948K77	10.09	7.70	0.66″	350	600	6948K97	8.49	6.40
4/0♣	0.73″	315	60	6948K78	12.80	9.76	0.72″	405	600	6948K98	11.20	8.44

★ Amp rating is the max. value for a single conductor at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple conductors are bundled together, or if conductors are inserted into conduit. ♣ Refers to gauge size only, not number of conductors.

About AWG

AWG stands for American Wire Gauge. It designates the diameter of the electrical conductor. For actual diameter, see About Wire Size (AWG) on page 758. For a multiconductor cable or cord, it also designates the number of electrical conductors. For example, 16/3 indicates a cord has three 16-gauge conductors. Cable and cord do not have a separate ground conductor, except where noted.

Wire

Stranded Wire

Solid Wire

Use this single-conductor PVC-insulated tinned-copper wire, also known as hook-up wire, for product assembly, internal wiring of electrical equipment, and wiring control circuitry. Passes UL VW-1 vertical flame test. UL recognized and CSA certified.

Stranded wire is more flexible, but tends not to hold its shape. Solid wire is more rigid, easier to terminate, and holds its shape well.

Standard— Good for general applications. Temperature range is –40° to +221° F. **To Order:** Please specify length (25, 50, 100, 200, or max. continuous length of 500 ft.) and color (black, blue, brown, gray, green, green/yellow, orange, purple, red, white, or yellow).

Harsh Environment— Has irradiated insulation, resulting in better resistance to chemicals, abrasion, and cuts. ***150 VAC (UL 1429)*** has a temperature range of –67° to +176° F and meets Mil. Spec. MIL-W-16878/1-Type B. **To Order:** Please specify length (25, 50, 100, 200, or max. continuous length of 500 ft.) and color (black, blue, green, orange, red, white, or yellow). ***600 VAC (UL 1431)*** has a temperature range of –40° to +221° F. **To Order:** Please specify length (25, 50, 100, 200, or max. continuous length of 500 ft.) and color (black or white).

Standard

		300 VAC (UL 1007/1569)		Per 100 Ft.		600 VAC (UL 1015)		Per 100 Ft.	
AWG	Amps★	OD		25-499	500-Up	OD		25-499	500-Up
Stranded Wire									
26	5	0.051″	7587K56	$7.15	$5.36	0.095″	7587K36	$8.80	$6.60
24	7	0.056″	7587K51	9.19	6.80	0.095″	7587K37	9.05	6.79
22	10	0.062″	7587K52	9.31	6.99	0.095″	7587K38	10.64	7.95
20	13	0.069″	7587K53	13.21	9.40	0.100″	7587K39	14.48	10.88
18	18	0.077″	7587K54	16.79	12.21	0.110″	7587K41	18.21	13.64
16	24	0.092″	7587K55	26.26	19.59	0.124″	7587K42	27.51	20.62
14	33	0.110″	7587K57	36.23	27.59	0.141″	7587K43	40.99	30.73
12	45	0.125″	7587K2	55.62	42.31	0.160″	7587K4	65.51	49.15
10	58	0.162″	7587K3	77.73	59.81	0.194″	7587K5	97.58	73.10
Solid Wire									
24	7	0.052″	8073K61	7.77	5.85	0.083″	7964K61	9.72	7.32
22	10	0.057″	8073K62	9.92	7.41	0.093″	7964K62	11.88	8.94
20	13	0.064″	8073K63	14.87	11.18	0.098″	7964K63	15.38	11.57
18	18	0.072″	8073K64	19.98	15.00	0.104″	7964K64	20.93	15.68

Harsh Environment

		150 VAC (UL 1429)		Per 100 Ft.		600 VAC (UL 1431)		Per 100 Ft.	
AWG	Amps	OD		25-499	500-Up	Amps	OD	25-499	500-Up
Stranded Wire									
26	4	0.039″	69835K71	$12.51	$9.38	—	—	—	—
24	6	0.044″	69835K72	13.36	10.11	—	—	—	—
22	8	0.050″	69835K73	19.34	14.50	10	0.096″	9615T7■ $15.81	$11.86
20	10	0.058″	69835K74	23.16	17.71	13	0.104″	9615T6♠ 19.60	14.70
18	15	0.068″	69835K75	37.79	28.37	18	0.114″	9615T5■ 22.09	16.57
16	19	0.077″	69835K76	46.20	34.69	24	0.123″	9615T4 32.07	24.05
14	—	—	—	—	—	33	0.138″	9615T3 47.03	35.27
12	—	—	—	—	—	45	0.217″	9615T2 68.15	51.06

■ Only available in white. ♠ Only available in black.

Wire Assortments

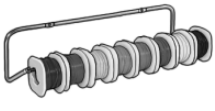

Get the most popular hook-up wire sizes in these portable assortments. Wire is tinned copper with PVC insulation. Temperature range is –40° to +176° F, unless noted. Spools are plastic. Racks are freestanding, or use the two ¼″ dia. mounting holes for wall mounting (hardware not included).

Solid wire assortments pass UL VW-1 vertical flame test and meet UL 1007/1569. UL recognized and CSA certified.

Also Available: Replacement spools of wire. Please ask for 6808K88 and specify assortment part number and color.

AWG	OD	Amps★	VAC	Meets Mil. Spec.	Wire Colors Included		Each
Stranded Wire Assortments with Five 100-ft. Spools of Wire							
22	0.064″	8	1000	MIL-W-76D	Black, Blue, Green, Red, White	6808K24	$88.25
20	0.058″	10	600	MIL-W-16878/1	Black, Green, Red, White, Yellow	6808K13♦	93.38
Stranded Wire Assortments with Eight 25-ft. Spools of Wire							
20	0.070″	10	1000	MIL-W-76D	Black, Blue, Brown, Green, Orange, Red, White, Yellow	6808K22	88.38
18	0.080″	15	1000	MIL-W-76D	Black, Blue, Brown, Green, Orange, Red, White, Yellow	6808K21	93.12
Solid Wire Assortments with Eight 25-ft. Spools of Wire							
20	0.064″	13	300	—	Black, Blue, Brown, Green, Orange, Red, White, Yellow	9948T17	84.62
18	0.072″	18	300	—	Black, Blue, Brown, Green, Orange, Red, White, Yellow	9948T18	81.62

♦ Temperature range is –58° to +221° F. Passes UL VW-1 vertical flame test.

392° F Chemical-Resistant Wire

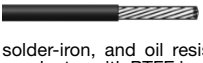

Able to take the heat—all the way to 392° F. Also known as hook-up wire, it's abrasion, solder-iron, and oil resistant. Has a silver-plated, stranded copper conductor with PTFE insulation. Temperature range is –67° to +392° F. Meets MIL-W-16878/4 and passes UL VW-1 vertical flame test.

To Order: Please specify length (10, 25, 50, or max. continuous length of 100 ft.) and color (black, green, red, or white).

AWG	OD	Amps★	VAC		Per Ft. 10-99	100-Up
22	0.050″	13	600	7304K11	$0.67	$0.51
20	0.058″	17	600	7304K12	.70	.53
18	0.068″	24	600	7304K13	.95	.73
16	0.076″	32	600	7304K14	1.45	1.13
14	0.093″	45	600	7304K15	1.61	1.24
12	0.111″	55	600	7304K16	2.85	2.15
10	0.138″	75	600	7304K17	3.23	2.41

North American/European Approved Wire

Designed to meet European requirements, this single-conductor hook-up wire can also be used on North American electronic and electrical equipment. Made of stranded, tinned copper with PVC insulation. Temperature range is –40° to +221° F. Wire conforms to European Harmonization document HD-21 and is UL recognized, CSA certified, and CE approved.

To Order: Please specify length (10, 20, 50, 100, or max. continuous length of 500 ft.) and color (black, blue, or green/yellow).

UL 1015; HAR H07V-K meets NEC Type MTW requirements for use in machine tool wiring.

AWG	OD	Amps★	VAC		Per Ft. 10-499	500-Up
UL 1007/1569; HAR H05V-K						
20	0.094″	10	300	7263K11	$0.28	$0.22
18	0.098″	15	300	7263K12	.35	.27
UL 1015; HAR H07V-K						
16	0.122″	19	600	7263K13	.44	.33
14	0.146″	27	600	7263K14	.75	.57
12	0.173″	40	600	7263K15	1.02	.78
10	0.193″	55	600	7263K16	1.51	1.15

★Amp rating is the max. value for a single conductor at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple conductors are bundled, or if conductors are inserted into conduit.

For information about AWG, see page 800.

Building Wire (THHN)

Stranded Wire

Ideal for use in conduit and cable trays for feeders and branch circuits in commercial and industrial buildings. This rugged single-conductor wire resists abrasion, water, oil, and gasoline, meeting NEC Type THHN requirements for use in damp and dry locations. Conductor is PVC insulated copper with a nylon jacket. Temperature range is –13° to +194° F. Passes UL VW-1 vertical flame test, unless noted. UL listed.

Stranded wire is more flexible, but tends not to hold its shape. ***Solid wire*** is more rigid, easier to terminate, and holds its shape well.

To Order: Please specify length (10, 25, 50, 100, 250, or full spool length of 500 ft.) and color (black, blue, brown, gray, green, orange, red, white, or yellow).

AWG	OD	Amps★	VAC/VDC		Per 100 Ft. Partial Spool	Per 100 Ft. Full Spool
Stranded Wire						
14	0.109″	15	600	7125K44	$25.84	$15.23
12	0.128″	20	600	7125K45	39.72	23.27
10	0.161″	30	600	7125K46	58.58	36.14
8	0.213″	55	600	7125K47	79.92	57.79
6	0.249″	75	600	7125K68	118.74	89.45
4	0.318″	95	600	7125K69	231.49	142.00
3	0.346″	110	600	7125K89	268.00	178.40
2	0.378″	130	600	7125K7	329.26	222.76
1/0	0.474″	170	600	7125K91■	517.90	331.51
2/0	0.518″	195	600	7125K8■	569.55	424.31
Solid Wire						
14	0.102″	15	600	7125K41	24.81	14.06
12	0.119″	20	600	7125K42	36.49	21.48
10	0.150″	30	600	7125K43	50.88	33.71

■ Does not pass UL VW-1 vertical flame test.

Machine Tool Wire (MTW)

This stranded single-conductor wire offers flexibility while meeting NEC Type MTW requirements for use in machine tool wiring. Wire is copper, PVC insulated, and resists oil and coolant. Temperature range is –4° to +194° F. Passes UL VW-1 vertical flame test. UL listed and CSA certified, unless noted.

To Order: Please specify length (10, 25, 50, 100, 250, or full spool length of 500 ft.) and color (black, blue, brown, green, orange, red, white, or yellow, unless noted).

AWG	OD	Amps★	VAC/VDC		Per 100 Ft. Partial Spool	Per 100 Ft. Full Spool
18	0.108″	7	600	71245K1	$16.15	$8.50
16	0.120″	10	600	71245K2	19.46	10.81
14	0.136″	15	600	71245K3	24.53	14.43
12	0.156″	20	600	71245K4	35.04	21.90
10	0.181″	30	600	71245K5	53.86	34.75
8	0.244″	50	600	71245K6✓	88.38	58.92
6	0.314″	65	600	71245K7✓	132.09	91.10

✓ Not available in yellow, orange, or brown. Blue is UL and C-UL listed. Not CSA certified.

Magnet Wire

Great for use in motors, transformers, relays, and other high-speed winding applications. Wire has a single conductor and is made of solid copper. An enamel coating resists moisture and heat, so it can be used in hermetic motors. Maximum temperature is 392° F. Meets NEMA 1000 MW-73C and MW-35C. UL recognized.

Wire OD: 36 AWG is 0.006″, 34 AWG is 0.008″, 32 AWG is 0.010″, 30 AWG is 0.012″, 28 AWG is 0.014″, 26 AWG is 0.018″, 24 AWG is 0.022″, 22 AWG is 0.028″, 20 AWG is 0.035″, 18 AWG is 0.043″, 16 AWG is 0.054″, 14 AWG is 0.068″, and 12 AWG is 0.084″.

AWG	Spool Lg., ft.		Per Spool	AWG	Spool Lg., ft.		Per Spool
36	6,150	7588K27	$16.59	24	2,000	7588K57	$62.11
36	12,300	7588K85	33.18	22	750	7588K79	36.07
34	3,900	7588K28	15.82	22	1,500	7588K59	72.12
34	7,800	7588K87	31.43	20	500	7588K81	47.45
32	4,350	7588K89	29.70	20	900	7588K61	71.16
32	8,700	7588K88	59.39	18	300	7588K83	35.11
30	3,000	7588K71	27.96	18	600	7588K63	64.21
30	6,000	7588K51	55.73	16	125	7588K21	23.14
28	2,000	7588K73	27.00	16	250	7588K22	46.09
28	4,000	7588K53	53.80	14	80	7588K23	22.95
26	1,500	7588K75	25.64	14	160	7588K24	45.71
26	3,000	7588K55	51.30	12	50	7588K25	25.07
24	792	7588K77	24.88	12	100	7588K26	45.52

Easy-Install Bundled Building Wire

Straight

You don't comb one hair at a time—why install one wire at a time? These conductors are bundled together and bound with nylon, making installation quicker. Plus, they're numbered every 1½″ for quick identification. Each conductor is made of NEC Type THHN/THWN stranded copper wire with PVC insulation. Outer layer is marked each foot for accurate measurements. Color is red. Temperature range is 14° to 194° F. UL listed. Maximum continuous length is 100 ft.

Straight bundles can be installed in cable trays where no pulling is required. Ideal when you may need to access individual conductors along the length of the bundle. ***Spiral*** bundles are good for runs when the bundle is pulled through conduit and won't be accessed along its length. Bundle keeps its round shape even when bent.

AWG	OD	Amps★	VAC	*Straight*	Per Ft.●	*Spiral*	Per Ft.●
14/10	0.50″	12	600	7417K12	$3.81	7417K32	$3.81
14/20	0.64″	12	600	7417K14	7.19	7417K34	7.19
14/30	0.76″	11	600	7417K16	10.41	7417K36	10.41
14/40	0.87″	10	600	7417K18	13.49	7417K38	13.49
14/50	1.00″	8	600	7417K22	16.46	7417K42	16.46
14/60	1.06″	8	600	7417K24	19.08	7417K44	19.08
14/70	1.20″	8	600	7417K26	21.32	7417K46	21.32

● Prices are approximately 15% lower when you buy in maximum continuous lengths of 100 ft.

Fixture Wire (TFFN)

For use in lighting fixtures and other enclosed and protected equipment, this stranded single-conductor NEC Type TFFN wire is also great for connecting fixtures to power circuits. Wire resists heat, water, oil, and gasoline. It has a copper conductor with PVC insulation and a nylon jacket. Temperature range is 14° to 194° F. UL listed.

To Order: Please specify length (50, 100, 250, or full spool length of 500 ft.) and color (black, blue, brown, green, orange, red, or white).

AWG	OD	Amps	VAC/VDC		Per 100 Ft. Partial Spool	Per 100 Ft. Full Spool
18	0.085″	6	600	69765K41	$15.91	$7.64
16	0.099″	8	600	69765K42	21.51	11.47

Continuous-Flex Wire

Perfect for continuous flexing applications such as robotics and automation. Wire has a single stranded copper conductor with black PVC insulation and an oil-resistant, flame-retardant black PVC jacket (passes UL VW-1 vertical flame test). Temperature range is 41° to 194° F. UL recognized, CSA certified, and CE approved. Maximum continuous length is 100 ft.

AWG	OD	Amps★	VAC		Per Ft. 1-99	Per Ft. 100-Up
14	0.228″	35	600	9192K1	$1.71	$1.30
12	0.260″	40	600	9192K2	2.33	1.76
10	0.287″	55	600	9192K3	2.78	2.11
8	0.358″	80	600	9192K4	3.78	2.87

Continuous-Flex Miniature Wire

Ideal for use in thermostats, electronic applications, circuitry control, and wherever continuous flexing is required, this small-gauge, single-conductor hook-up wire is very limp and flexible. It resists acids, oils, and solvents, and has a stranded copper conductor covered with a PVC insulation that minimizes kinking and fatigue. Temperature range is –40° to +176° F. Passes UL VW-1 vertical flame test. UL recognized for applications up to 150 VAC, unless noted.

To Order: Please specify length (10, 20, 50, or max. continuous length of 100 ft.) and color (black, green, red, or white).

AWG	OD	Amps★	VAC		Per Ft. 10-99	Per Ft. 100-Up
36	0.016″	0.10	150	7071K51♥	$2.00	$1.54
32	0.023″	0.25	300	7071K13	.54	.42
30	0.031″	0.50	600	7071K15	.74	.57
28	0.035″	0.75	600	7071K17	1.26	.97
26	0.042″	1.25	600	7071K19	1.22	.94
24	0.045″	2.00	600	7071K61	1.32	1.02
22	0.052″	2.80	600	7071K62	2.04	1.57
20	0.061″	4.75	600	7071K63	2.74	2.11
18	0.072″	7.00	600	7071K64	4.72	3.63

♥ UL recognized for applications up to 30 VAC.

★Amp rating is the max. value for a single conductor at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple conductors are bundled, or if conductors are inserted into conduit.

For information about AWG, see page 800.

302° F Wire

With a maximum temperature of 302° F, this silicone rubber-insulated single-conductor wire withstands high heat while maintaining greater flexibility than PVC, PTFE, and braided wire. Also known as hook-up wire and appliance and fixture wire, it's perfect for stoves, dryers, and motors. Conductor is stranded, tinned copper. Temperature range is –40° to +302° F. UL recognized and CSA certified.

To Order: Please specify length (10, 25, 50, 100, 250, or max. continuous length of 500 ft.) and color (black or white).

AWG	OD	Amps★	VAC		Per Ft. 10-499	Per Ft. 500-Up
18	0.142″	17	600	**7479K21**	$0.93	$0.70
16	0.155″	22	600	**7479K22**	1.19	.90
14	0.170″	34	600	**7479K23**	1.46	1.09
12	0.190″	43	600	**7479K24**	1.46	1.09
10	0.219″	55	600	**7479K25**	2.09	1.57

302° F High-Voltage Wire

For use in high temperature and high voltage applications such as stoves, heaters, furnaces, dryers, and electronic devices. Also called corona-resistant hook-up wire, this single-conductor wire is flame retardant and abrasion resistant. It has a stranded tinned copper conductor with silicone rubber insulation. Color is white. Temperature range is –40° to +302° F. UL recognized. Maximum continuous length is 100 ft.

AWG	OD	Amps★	VDC		Per Ft. 1-99	Per Ft. 100-Up
22	0.111″	11	10,000	**8296K11**	$1.91	$1.44
22	0.121″	11	15,000	**8296K12**	1.98	1.49
20	0.118″	14	10,000	**8296K13**	2.08	1.55
20	0.128″	14	15,000	**8296K14**	1.98	1.49
20	0.138″	14	20,000	**8296K15**	2.27	1.70
20	0.188″	14	30,000	**8296K16**	3.03	2.28
18	0.140″	20	15,000	**8296K17**	2.60	1.95
18	0.174″	20	25,000	**8296K18**	2.70	2.02
18	0.244″	20	40,000	**8296K19**	3.09	2.32
16	0.152″	26	15,000	**8296K21**	2.87	2.15
16	0.186″	26	25,000	**8296K22**	3.19	2.39
16	0.256″	26	40,000	**8296K23**	3.37	2.53
14	0.170″	46	15,000	**8296K24**	3.21	2.41
14	0.204″	46	25,000	**8296K25**	3.20	2.40
14	0.274″	46	40,000	**8296K26**	5.72	4.29
12	0.186″	60	15,000	**8296K27**	4.25	3.18
12	0.290″	60	40,000	**8296K28**	5.72	4.29
10	0.220″	80	15,000	**8296K29**	4.34	3.25

392° F High-Voltage/High-Flex Wire

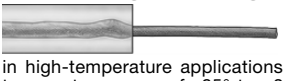

Often found in military and aerospace applications, this single-conductor wire is for use in high-temperature applications that require flexible wire. With a temperature range of –85° to +392° F, this wire remains flexible in low-temperature applications, too. Has a high-flex stranded tinned copper conductor with clear silicone rubber insulation. Passes UL 94V0 vertical flame test. Maximum continuous length is 100 ft.

AWG	OD	Amps★	VDC		Per Ft. 1-99	Per Ft. 100-Up
30	0.212″	3	10,000	**9620T11**	$1.48	$1.18
28	0.214″	5	12,000	**9620T12**	1.51	1.20
26	0.218″	6	12,000	**9620T13**	1.60	1.28
24	0.223″	8	12,000	**9620T14**	1.60	1.28
22	0.229″	11	31,000	**9620T15**	1.88	1.50
20	0.239″	13	31,000	**9620T16**	2.08	1.66
18	0.250″	20	42,000	**9620T17**	2.53	2.02
16	0.264″	26	42,000	**9620T18**	2.76	2.20
14	0.283″	40	42,000	**9620T19**	3.51	2.80
12	0.299″	50	42,000	**9620T21**	3.58	2.86
10	0.330″	70	20,000	**9620T22**	4.41	3.52

392° F High-Flex Miniature Wire

Strands of silver-plated copper finer than human hair are wound into a single conductor and insulated with FEP for outstanding flexibility—so flexible, it is used in medical implantation devices. With an amazing temperature range of –238° to +392° F, this wire withstands severe, repeated flexing in very high and low temperatures.

To Order: Please specify length (10, 25, or max. continuous length of 50 ft.) and color (black, green, red, or white).

AWG	OD	Amps★	VAC/VDC		Per Ft. 10-49	Per Ft. 50-Up
36	0.012″	0.1	30	**9487T1**	$0.65	$0.50
29	0.019″	0.5	30	**9487T2**	.67	.51
26	0.024″	1.0	30	**9487T3**	.74	.56

400° F Ultra-Flex Miniature Wire

Similar to the 392° F High-Flex Miniature Wire, except this wire is insulated with silicone rubber, making it the most flexible wire we offer. Withstands the most severe, repeated flexing in high- and low-temperature environments. Temperature range is –100° to +400° F. Wire has a single stranded corona-resistant copper conductor. Comes in 50-ft. spools.

To Order: Please specify color (black, green, red, or white).

AWG	OD	Amps★	VAC/VDC		Per Spool
36	0.019″	0.6	30	**9511T4**	$17.44
29	0.030″	0.5	30	**9511T5**	16.95
26	0.042″	1.0	30	**9511T6**	16.78

482° F Braided Wire

Resisting temperatures up to 482° F, this single-conductor wire is built for repeated flexing and abuse. Also called hook-up wire and Type TGGT wire, it's moisture resistant and chemically inert. It has a stranded nickel-plated copper conductor with PTFE insulation and a braided fiberglass jacket. Temperature range is –67° to +482° F. Color is tan. UL recognized and CSA certified. Maximum continuous length is 100 ft.

AWG	OD	Amps★	VAC		Per Ft. 1-99	Per Ft. 100-Up
18	0.108″	23	600	**8240K31**	$1.87	$1.42
16	0.123″	29	600	**8240K32**	2.86	2.16
14	0.140″	39	600	**8240K33**	3.48	2.64
12	0.161″	54	600	**8240K34**	3.80	2.88
10	0.184″	73	600	**8240K35**	5.80	4.39
8	0.230″	93	600	**8240K36**	9.32	7.06

842° F Braided Wire

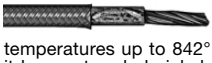

Great for internal wiring of an oven, this flexible single-conductor wire withstands temperatures up to 842° F. Also called lead wire and Type MG wire, it has a stranded nickel-plated annealed copper conductor with an insulation of glass-reinforced mica tape covered with a braided fiberglass jacket. Temperature range is –40° to +842° F. Color is tan. UL recognized and CSA certified. Maximum continuous length is 100 ft.

AWG	OD	Amps★	VAC/VDC		Per Ft. 1-99	Per Ft. 100-Up
20	0.105″	23	600	**8209K11**	$1.24	$0.94
18	0.115″	31	600	**8209K13**	1.45	1.10
16	0.125″	40	600	**8209K15**	1.74	1.32
14	0.140″	55	600	**8209K17**	2.20	1.75
12	0.160″	75	600	**8209K19**	3.17	2.37
10	0.210″	100	600	**8209K21**	4.77	3.62

1832° F Braided Wire

For places as hot as Hades, this single-conductor wire provides heavenly thermal and mechanical protection. It's great for use in nonflexing applications where open flames are present, such as ovens, kilns, and furnaces. Has a stranded nickel conductor insulated with reinforced mica tape, braided ceramic fibers, and a braided Type 304 stainless steel outer jacket. Temperature range is –40° to +1832° F. Passes UL VW-1 vertical flame test. Maximum continuous length is 500 ft.

AWG	OD	Amps★	VAC		Per Ft. 1-99	Per Ft. 100-Up
18	0.201″	11	300	**9457T11**	$4.62	$3.70
16	0.214″	14	300	**9457T12**	5.32	4.25
14	0.228″	21	300	**9457T13**	6.23	4.99
12	0.254″	26	300	**9457T14**	7.60	6.08
10	0.275″	35	300	**9457T15**	10.11	8.10

★Amp rating is the max. value for a single conductor at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple conductors are bundled, or if conductors are inserted into conduit.

For information about AWG, see page 800.

Flexible Aluminum-Armored Multiconductor Building Cable

Also known as BX, this cable is lightweight and easy to cut. Use cable in dry locations. Conductors are color coded (two-conductor cable is black and white; three-conductor cable is black, red, and white; four-conductor cable is black, blue, red, and white). Temperature range is 14° to 194° F. UL listed.

NEC Type MC with ground has solid Type THHN copper conductors with PVC insulation and a green PVC-insulated grounding wire, wrapped in polyester tape and an aluminum jacket. For use in NEC Class I, Division 2; Class II, Division 2; and Class III, Division 1 and 2 hazardous locations. ***NEC Type AC with ground*** has solid Type THHN copper conductors with PVC insulation and a fibrous covering, an uninsulated aluminum grounding wire, and an aluminum jacket.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

			NEC Type MC w/ Ground			NEC Type AC w/ Ground		
				Per Ft.			Per Ft.	
AWG	Amps★	VAC	OD	1-249	250-Up	OD	1-249	250-Up
14/2	15	600	0.44″ 6864K21	$0.89	$0.68	0.46″ 6970K81	$0.91	$0.68
14/3	15	600	0.47″ 6864K22	1.25	.95	0.49″ 6970K82	1.41	1.06
14/4	15	600	0.49″ 6864K23	1.76	1.32	0.52″ 6970K83	1.88	1.42
12/2	20	600	0.48″ 6864K24	1.15	.89	0.50″ 6970K84	1.12	.84
12/3	20	600	0.51″ 6864K25	1.68	1.27	0.52″ 6970K85	1.50	1.13
12/4	20	600	0.54″ 6864K26	1.85	1.40	0.56″ 6970K86	1.97	1.49
10/2	30	600	0.54″ 6864K27	1.93	1.46	0.56″ 6970K87	1.59	1.20
10/3	30	600	0.58″ 6864K28	2.75	2.08	0.59″ 6970K88	2.14	1.61
10/4	30	600	0.62″ 6864K29	3.82	2.88	0.63″ 6970K89	3.06	2.31

Multiconductor Building Cable

Use without conduit for exposed and concealed wiring applications. Cable has solid Type THHN copper conductors, a separate ground wire, inner PVC insulation, and a PVC jacket. Conductors are color coded (two-conductor cable is black and white; three-conductor cable is black, red, and white). Temperature range is 14° to 194° F. UL listed.

Romex-jacketed cable with ground (NEC Type NM-B) is for use in dry locations. Easily fish through walls, ceilings, and masonry blocks. Ground wire is uninsulated. Meets UL 719. ***Underground feeder cable with ground*** (NEC Type UF-B) resists sunlight, moisture, and fungus, and can be buried. Ground wire is uninsulated. Meets UL 493.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

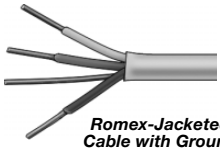

Romex-Jacketed Cable with Ground

Underground Feeder Cable with Ground

AWG	Wd. × Thick.	Amps★	VAC	Color	Per Ft. 10-249	250-Up
Romex-Jacketed Cable with Ground						
14/2	0.36″ × 0.16″	15	600	White 69935K61	$0.54	$0.41
14/3	0.31″ × 0.31″	15	600	White 69935K64	.75	.56
12/2	0.41″ × 0.18″	20	600	Yellow 69935K62	.83	.63
12/3	0.35″ × 0.35″	20	600	Yellow 69935K65	1.13	.88
10/2	0.49″ × 0.21″	30	600	Orange 69935K63	1.31	.99
10/3	0.42″ × 0.42″	30	600	Orange 69935K66	1.61	1.34

AWG	Wd. × Thick.	Amps★	VAC	Color	Per Ft. 10-249	250-Up
Underground Feeder Cable with Ground						
14/2	0.43″ × 0.17″	15	600	Gray 7116K91	$0.60	$0.45
14/3	0.58″ × 0.17″	15	600	Gray 7116K95	.78	.64
12/2	0.46″ × 0.18″	20	600	Gray 7116K92	.86	.65
12/3	0.63″ × 0.18″	20	600	Gray 7116K96	1.18	.97
10/2	0.52″ × 0.22″	30	600	Gray 7116K93	1.33	1.01
10/3	0.73″ × 0.22″	30	600	Gray 7116K97	1.81	1.49

Flexible Multiconductor Cable

Designed for periodic bending and flexing, such as in hand-held controllers, CNC machines, and other automated and mechanical equipment. Cable has stranded copper conductors with black PVC insulation (black conductors are sequentially numbered with white numbers) and a gray oil-resistant PVC jacket. Cable has a green/yellow ground wire conductor, unless noted. Temperature range is 41° to 194° F for flexing applications and –40° to +194° F for non-flexing applications. Passes UL VW-1 vertical flame test. CSA certified and CE approved. Maximum continuous length is 100 ft. *Note:* The total number of conductors includes the ground wire.

Shielded cable has a tinned copper braid to eliminate electromagnetic interference (EMI).

Unshielded

AWG	OD	Amps★	VAC	Per Ft.●
Unshielded				
20/3	0.22″	6	600	9936K11 $0.81
20/4	0.24″	6	600	9936K12 .90
20/7	0.28″	4	600	9936K13 1.45
20/9	0.36″	4	600	9936K41 2.88
20/12	0.38″	3	600	9936K14 2.98
20/16	0.43″	3	600	9936K42 4.12
20/18	0.45″	3	600	9936K15 4.26
20/25	0.55″	2	600	9936K43 6.22
20/34	0.61″	2	600	9936K44 8.50
20/41	0.67″	2	600	9936K45 13.33
20/61	0.78″	2	600	9936K46 18.45
18/2	0.24″	14	600	9936K16■ .76
18/3	0.25″	14	600	9936K17 .90
18/4	0.28″	14	600	9936K18 1.17
18/5	0.31″	11	600	9936K19 1.49
18/7	0.34″	11	600	9936K21 2.07
18/12	0.45″	7	600	9936K22 3.66
18/18	0.54″	7	600	9936K23 4.95
18/25	0.65″	6	600	9936K47 7.09
18/41	0.78″	5	600	9936K48 12.49

AWG	OD	Amps★	VAC	Per Ft.●
Unshielded (Cont.)				
16/2	0.26″	18	600	9936K24■ $1.11
16/3	0.28″	18	600	9936K25 1.47
16/4	0.31″	18	600	9936K26 1.83
16/5	0.34″	14	600	9936K27 2.36
16/7	0.38″	14	600	9936K28 2.95
16/9	0.48″	12	600	9936K49 4.64
16/12	0.50″	9	600	9936K29 5.56
16/18	0.60″	9	600	9936K31 7.88
16/25	0.73″	8	600	9936K32 10.41
16/34	0.83″	7	600	9936K89 14.76
16/41	0.90″	7	600	9936K91 17.72
14/2	0.32″	25	600	9936K33■ 1.80
14/3	0.34″	25	600	9936K34 2.29
14/4	0.37″	25	600	9936K35 2.74
14/7	0.46″	17	600	9936K92 4.73
14/18	0.74″	12	600	9936K93 12.06
12/3	0.40″	30	600	9936K36 3.96
12/5	0.50″	24	600	9936K94 5.59
10/3	0.48″	40	600	9936K37 5.68

AWG	OD	Amps★	VAC	Per Ft.●
Shielded				
20/3	0.32″	6	600	9936K51 $2.85
20/7	0.39″	4	600	9936K53 3.61
20/12	0.48″	3	600	9936K54 6.03
20/25	0.66″	2	600	9936K81 9.31
18/3	0.34″	14	600	9936K57 4.65
18/4	0.37″	14	600	9936K58 5.35
18/5	0.40″	11	600	9936K59 5.89
18/7	0.43″	11	600	9936K61 6.91
18/12	0.54″	7	600	9936K62 10.09
18/18	0.63″	7	600	9936K63 12.76
16/3	0.38″	18	600	9936K65 5.17
16/5	0.43″	14	600	9936K67 6.69
16/7	0.47″	14	600	9936K68 7.81
16/12	0.61″	9	600	9936K69 11.71
16/18	0.71″	9	600	9936K71 16.19
16/25	0.85″	8	600	9936K72 21.79
14/4	0.47″	25	600	9936K75 7.66
14/7	0.57″	20	600	9936K78 9.91

● Prices are approximately 20% lower when you order the maximum continuous length of 100 ft. ■ Does not have a green/yellow ground wire.

Continuous-Flex and Twist Multiconductor Cable

This cable flexes and twists, so it's ideal for applications such as robotics. Cable is oil and UV resistant and can be used in wet and damp areas. Its finely stranded copper conductors have black TPE insulation with white sequential numbers. There is one green/yellow ground conductor. They are wrapped together in a black polyurethane jacket. Temperature range is –40° to +176° F. UL recognized, CSA certified, and CE approved. Maximum continuous length is 100 ft. *Note:* The total number of conductors includes the ground wire.

AWG	OD	Amps★	VAC	Per Ft. 1-99	100-Up
18/3	0.31″	14	600	8559K21 $5.50	$4.67
18/25	0.68″	6	600	8559K22 19.07	16.19
16/3	0.35″	18	600	8559K23 6.65	5.65
16/7	0.46″	12	600	8559K24 9.30	7.90

AWG	OD	Amps★	VAC	Per Ft. 1-99	100-Up
16/12	0.58″	9	600	8559K25 $13.70	$11.72
16/18	0.67″	9	600	8559K26 17.33	14.82
16/25	0.79″	8	600	8559K27 25.28	21.62
14/3	0.41″	25	600	8559K28 7.11	6.03

★Amp rating is the max. value for each conductor (excluding ground) at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple cables are bundled, or if inserted into conduit.

For information about AWG, see page 800.

Continuous-Flex Multiconductor Cable

Unshielded

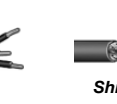

Shielded

The bodybuilder of the wire world, this cable never gets tired of flexing. It has stranded copper conductors and is often used in cable chain and track for robotics, CNC machines, and material handling equipment. It has one green/yellow ground wire, unless noted. CE approved. Maximum continuous length is 100 ft. *Note:* The total number of conductors includes the ground wire.

Shielded cable eliminates electromagnetic interference (EMI).

300-VAC Cable (unless otherwise indicated)

Has black insulated conductors with white sequential numbers. ***Shielded*** cable has tinned copper braided shielding.

Standard— Good for general use; cable withstands periodic exposure to most oils and fluids. It has PVC-insulated conductors surrounded by a green PVC jacket. Temperature range is 23° to 158° F. Passes FT1 vertical flame test. UL recognized and CSA certified.

Oil Resistant— Handles continuous exposure to oil and fluid. It has TPE-insulated conductors surrounded by a gray polyurethane jacket. Temperature range is –31° to +176° F. Passes FT1 vertical flame test. UL and C-UL recognized.

Heavy Duty— Made to last over 17 million high-speed cycles. It's oil, abrasion, and chemical resistant and has TPE-E (thermoplastic elastomer) insulated conductors surrounded by a gray polyurethane jacket. Temperature range is –40° to +194° F.

AWG	OD	Amps★	VAC		Per Ft.●
Standard—Unshielded					
24/36	0.51″	2	300	**7673K53**♣	$5.62
20/3	0.22″	7	300	**7673K21**	.73
20/7	0.31″	5	300	**7673K54**	2.10
20/12	0.41″	4	300	**7673K22**	2.51
20/18	0.50″	4	300	**7673K55**	4.82
20/25	0.61″	3	300	**7673K56**	4.82
18/4	0.25″	12	300	**7673K57**	1.00
18/5	0.26″	9	300	**7673K23**	1.10
18/7	0.35″	9	300	**7673K24**	1.78
18/12	0.46″	7	300	**7673K25**	2.85
18/18	0.60″	6	300	**7673K58**	3.77
18/25	0.66″	5	300	**7673K59**	5.27
18/36	0.87″	5	300	**7673K61**	7.37
18/42	0.91″	4	300	**7673K62**	13.26
16/4	0.29″	18	300	**7673K63**	1.42
16/5	0.32″	14	300	**7673K28**	1.57
16/7	0.40″	14	300	**7673K29**	2.58
16/12	0.55″	10	300	**7673K31**	3.86
16/18	0.71″	9	300	**7673K64**	5.52
16/25	0.84″	7	300	**7673K32**	7.51
14/4	0.40″	26	600	**7673K33**	2.15
Standard—Unshielded (Cont.)					
14/7	0.56″	20	600	**7673K34**	$4.11
14/18	0.99″	13	600	**7673K65**	9.61
Standard—Shielded					
20/5	0.35″	5	300	**7673K41**	2.62
20/9	0.44″	5	300	**7673K42**	4.52
20/12	0.48″	4	300	**7673K43**	5.11
18/5	0.37″	9	300	**7673K44**	2.83
18/7	0.42″	9	300	**7673K45**	3.72
18/12	0.52″	7	300	**7673K46**	5.41
16/5	0.39″	14	300	**7673K49**	3.61
16/7	0.47″	14	300	**7673K51**	4.98
16/12	0.63″	10	300	**7673K52**	7.35
Oil Resistant—Unshielded					
18/5	0.28″	10	300	**8082K61**	1.85
18/7	0.31″	10	300	**8082K62**	2.65
18/12	0.45″	7	300	**8082K63**	4.41
16/4	0.30″	21	300	**8082K65**	2.51
16/7	0.39″	15	300	**8082K66**	3.88
16/12	0.55″	11	300	**8082K67**	5.84
14/4	0.35″	30	300	**8082K78**	3.50
14/7	0.49″	22	300	**8082K79**	5.94
Oil Resistant—Shielded					
20/5	0.33″	7	300	**8082K81**	$2.99
18/3	0.31″	14	300	**8082K82**	2.67
18/5	0.37″	10	300	**8082K83**	3.15
18/12	0.53″	7	300	**8082K84**	6.28
16/4	0.39″	21	300	**8082K85**	3.86
16/7	0.49″	15	300	**8082K86**	5.93
16/12	0.61″	11	300	**8082K87**	8.49
Heavy Duty—Unshielded					
18/3	0.24″	14	300	**9221K51**	5.11
18/5	0.28″	11	300	**9221K52**	7.22
18/7	0.33″	11	300	**9221K53**	9.44
18/12	0.41″	7	300	**9221K54**	15.00
16/3	0.26″	18	300	**9221K55**	6.56
16/5	0.32″	14	300	**9221K56**	8.64
16/7	0.38″	14	300	**9221K57**	12.67
16/12	0.47″	9	300	**9221K58**	19.67
16/18	0.56″	9	300	**9221K59**	25.89
16/25	0.67″	8	300	**9221K61**	35.27
14/4	0.37″	25	300	**9221K62**	10.78
14/7	0.49″	20	300	**9221K63**	16.33
12/4	0.43″	30	300	**9221K64**	15.67

● Prices are approximately 15% lower when you order the maximum continuous length of 100 ft. ♣ Does not have a ground wire.

600-VAC Cable

This cable is oil resistant. It has red PVC-insulated conductors with white sequential numbers surrounded by a black PVC jacket. Temperature range is 41° to 194° F. Passes UL VW-1 vertical flame test. UL recognized and CSA certified.

Shielded cable has tinned copper braided shielding.

AWG	OD	Amps★	VAC		Per Ft.●
Oil Resistant—Unshielded					
20/3	0.23″	6	600	**9204K11**	$3.00
20/4	0.25″	6	600	**9204K12**	3.37
20/5	0.28″	4	600	**9204K13**	3.74
20/7	0.32″	4	600	**9204K14**	5.54
20/12	0.40″	3	600	**9204K71**	8.84
20/18	0.47″	3	600	**9204K72**	10.59
20/25	0.57″	2	600	**9204K73**	15.14
20/34	0.64″	2	600	**9204K74**	17.96
20/50	0.75″	2	600	**9204K75**	33.34
18/3	0.26″	14	600	**9204K15**	3.40
18/4	0.28″	14	600	**9204K16**	3.99
18/5	0.31″	11	600	**9204K17**	4.49
18/7	0.37″	11	600	**9204K18**	6.74
18/12	0.45″	7	600	**9204K19**	10.13
18/18	0.54″	7	600	**9204K21**	12.71
18/25	0.65″	6	600	**9204K22**	17.73
Oil Resistant—Unshielded (Cont.)					
18/34	0.74″	5	600	**9204K77**	$24.10
16/3	0.29″	18	600	**9204K23**	4.51
16/4	0.32″	18	600	**9204K24**	5.37
16/5	0.35″	14	600	**9204K25**	6.74
16/7	0.42″	14	600	**9204K26**	9.48
16/12	0.51″	9	600	**9204K27**	14.95
16/18	0.61″	9	600	**9204K28**	20.97
16/25	0.74″	8	600	**9204K29**	28.28
14/3	0.37″	25	600	**9204K31**	5.62
14/4	0.41″	25	600	**9204K32**	6.62
14/5	0.46″	20	600	**9204K82**	8.44
14/7	0.55″	20	600	**9204K33**	13.73
14/12	0.68″	12	600	**9204K34**	21.60
14/18	0.82″	12	600	**9204K83**	32.83
12/3	0.45″	30	600	**9204K84**	8.23
12/4	0.49″	30	600	**9204K35**	10.24
Oil Resistant—Unshielded (Cont.)					
12/7	0.66″	24	600	**9204K85**	$20.14
10/4	0.57″	40	600	**9204K86**	12.83
Oil Resistant—Shielded					
18/3	0.34″	14	600	**9204K55**	5.72
18/5	0.40″	11	600	**9204K57**	6.97
18/7	0.47″	11	600	**9204K58**	8.74
18/12	0.58″	7	600	**9204K59**	13.11
18/18	0.66″	7	600	**9204K61**	16.12
18/25	0.79″	6	600	**9204K62**	20.99
16/3	0.38″	18	600	**9204K63**	8.46
16/5	0.45″	14	600	**9204K65**	9.11
16/7	0.52″	14	600	**9204K66**	12.11
16/12	0.63″	9	600	**9204K67**	18.48
16/18	0.73″	9	600	**9204K68**	24.43
16/25	0.88″	8	600	**9204K69**	31.42

● Prices are approximately 15% lower when you order the maximum continuous length of 100 ft.

1000-VAC Cable

Has black TPE-insulated conductors with white sequential numbers. ***Shielded*** cable has tinned copper braided shielding.

Oil Resistant— Conductors are surrounded by a dark gray PVC jacket. Temperature range is 23° to 158° F. Passes FT1 vertical flame test. UL recognized and CSA certified. ***Oil and Coolant Resistant—*** Conductors are surrounded by a black TPE jacket. Temperature range is –31° to +194° F. Passes FT1 vertical flame test. UL and C-UL recognized.

AWG	OD	Amps★	VAC		Per Ft.●
Oil Resistant—Unshielded					
14/4	0.39″	30	1000	**9243K11**	$2.42
12/4	0.44″	41	1000	**9243K13**	3.42
12/5	0.48″	31	1000	**9243K14**	3.99
10/4	0.53″	53	1000	**9243K15**	4.75
8/4	0.65″	74	1000	**9243K17**	8.17
8/5	0.78″	56	1000	**9243K18**	10.73
6/4	0.78″	99	1000	**9243K19**	11.03
6/5	0.91″	74	1000	**9243K21**	13.51
4/4	0.98″	131	1000	**9243K22**	18.26
2/4	1.10″	162	1000	**9243K23**	24.31
1/4	1.32″	202	1000	**9243K24**	32.05
Oil Resistant—Shielded					
16/4	0.39″	21	1000	**9243K31**	$3.54
14/4	0.46″	30	1000	**9243K32**	4.29
14/5	0.51″	23	1000	**9243K33**	5.82
12/4	0.51″	41	1000	**9243K34**	5.71
12/5	0.59″	31	1000	**9243K35**	6.85
10/4	0.61″	53	1000	**9243K36**	7.99
10/5	0.65″	40	1000	**9243K37**	8.90
8/4	0.77″	74	1000	**9243K38**	11.01
8/5	0.87″	56	1000	**9243K39**	12.39
4/4	1.11″	131	1000	**9243K42**	24.08
Oil Resistant—Shielded (Cont.)					
6/4	0.91″	99	1000	**9243K41**	$14.91
2/0/4	1.85″	250	1000	**9243K45**	51.93
2/4	1.23″	162	1000	**9243K43**	32.82
1/4	1.46″	202	1000	**9243K44**	37.66
Oil and Coolant Resistant—Shielded					
16/4	0.39″	21	1000	**9243K51**	5.02
12/4	0.51″	41	1000	**9243K53**	7.99
8/4	0.79″	74	1000	**9243K54**	17.99
6/4	0.87″	99	1000	**9243K55**	23.81

● Prices are approximately 15% lower when you order the maximum continuous length of 100 ft.

★Amp rating is the max. value for each conductor (excluding ground) at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple cables are bundled, or if inserted into conduit.

For information about AWG, see page 800.

Cable-Tray Rated Continuous-Flex Multiconductor Cable

Unshielded

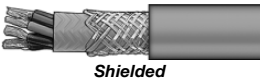

Shielded

Improve versatility and installation time by extending this cable from your cable tray to your machine without the need for conduit. Cable meets UL TC-ER for use in cable trays and is designed for periodic bending and flexing, so it's also good for CNC machines. It has stranded copper conductors with black PVC/nylon insulation (conductors are sequentially numbered with white numbers) and a green/yellow ground wire. Temperature range is 23° to 176° F. UL listed, CSA certified, and CE approved. *Note:* The total number of conductors includes the ground wire.

Unshielded cable has a gray PVC jacket. ***Shielded*** cable has a PVC jacket, a tinned copper braid, and a gray PVC outer jacket.

			Unshielded		Shielded	
AWG	Amps★	VAC	OD	Per Ft.●	OD	Per Ft.●
18/4	14	600	0.33″	9700T11	0.40″	9700T41
18/12	7	600	0.50″	9700T12	0.58″	9700T42
18/18	7	600	0.58″	9700T13	0.66″	9700T43
18/25	6	600	0.69″	9700T14	0.78″	9700T44
16/3	18	600	0.33″	9700T15	0.41″	9700T45
16/4	18	600	0.36″	9700T16	0.43″	9700T46
16/5	14	600	0.39″	9700T17	0.46″	9700T47
16/7	14	600	0.45″	9700T18	0.53″	9700T48
16/12	9	600	0.56″	9700T19	0.64″	9700T49

			Unshielded		Shielded	
AWG	Amps★	VAC	OD	Per Ft.●	OD	Per Ft.●
16/18	9	600	0.65″	9700T21	0.73″	9700T51
16/25	8	600	0.77″	9700T22	0.85″	9700T52
16/33	7	600	0.85″	9700T23	0.93″	9700T53
14/4	25	600	0.39″	9700T24	0.47″	9700T54
14/7	20	600	0.51″	9700T25	0.59″	9700T55
14/12	13	600	0.62″	9700T26	0.69″	9700T56
12/4	30	600	0.49″	9700T27	0.57″	9700T57
10/4	40	600	0.56″	9700T28	0.64″	9700T58
10/5	32	600	0.61″	9700T29	0.69″	9700T59

			Unshielded		Shielded	
AWG	Amps★	VAC	OD	Per Ft.●	OD	Per Ft.●
18/4	14	600	0.33″	$1.34	0.40″	$2.27
18/12	7	600	0.50″	3.87	0.58″	5.66
18/18	7	600	0.58″	4.61	0.66″	6.68
18/25	6	600	0.69″	6.13	0.78″	9.26
16/3	18	600	0.33″	1.69	0.41″	2.25
16/4	18	600	0.36″	1.88	0.43″	3.15
16/5	14	600	0.39″	1.88	0.46″	3.70
16/7	14	600	0.45″	3.34	0.53″	4.56
16/12	9	600	0.56″	3.73	0.64″	7.28

			Unshielded		Shielded	
AWG	Amps★	VAC	OD	Per Ft.●	OD	Per Ft.●
16/18	9	600	0.65″	$5.46	0.73″	$7.56
16/25	8	600	0.77″	6.75	0.85″	11.76
16/33	7	600	0.85″	8.98	0.93″	13.29
14/4	25	600	0.39″	2.22	0.47″	4.61
14/7	20	600	0.51″	3.27	0.59″	6.73
14/12	13	600	0.62″	4.93	0.69″	9.17
12/4	30	600	0.49″	3.99	0.57″	5.59
10/4	40	600	0.56″	5.85	0.64″	7.44
10/5	32	600	0.61″	6.99	0.69″	9.88

● Prices are approximately 20% lower when you order the maximum continuous length of 100 ft.

392° F Multiconductor Cable

Use with controls and instrumentation where high-temperature protection is required. The conductors are stranded silver-plated copper with PTFE insulation, a braided silver-plated copper jacket, and a white PTFE outer jacket. Conductors are color coded (1-black, 2-white, 3-red, 4-green). Temperature range is –67° to +392° F. Meets MIL-W-16878/4.

					Per Ft.	
AWG	OD	Amps★	VAC		1-99	100-Up
24/2	0.13″	8	600	8219K51	$2.33	$1.78
24/3	0.14″	8	600	8219K52	2.85	2.18
24/4	0.15″	8	600	8219K53	4.49	3.43
22/2	0.14″	10	600	8219K54	2.76	2.10
22/3	0.15″	10	600	8219K55	3.85	2.94
22/4	0.16″	10	600	8219K56	4.23	3.24
20/2	0.16″	13	600	8219K57	2.61	2.00
20/3	0.17″	13	600	8219K58	3.46	2.65
20/4	0.19″	13	600	8219K59	4.72	3.61
18/2	0.18″	19	600	8219K61	3.33	2.55
18/3	0.19″	19	600	8219K62	4.13	3.16
18/4	0.21″	19	600	8219K63	5.04	3.85
16/2	0.20″	25	600	8219K64	3.69	2.82
16/3	0.22″	25	600	8219K65	4.93	3.77
16/4	0.24″	25	600	8219K66	6.82	5.22

842° F Multiconductor Cable

Great for ovens and furnaces, this high-temperature cable is serious stuff—made to resist moisture, flames, and oils. The conductors are stranded nickel-plated copper wrapped in reinforced mica tape and a braided fiberglass jacket, which has color-coded tracer threads (1-black, 2-red, 3-blue, 4-orange). They are wrapped together in PTFE and reinforced mica tape with a black braided fiberglass jacket. Temperature range is –40° to +842° F. Maximum continuous length is 500 ft.

					Per Ft.	
AWG	OD	Amps★	VAC		1-99	100-Up
18/2	0.28″	23	600	9464T11	$5.18	$4.15
18/3	0.29″	23	600	9464T12	6.43	5.15
16/2	0.31″	30	600	9464T13	5.86	4.69
16/3	0.33″	30	600	9464T14	7.62	6.10
16/4	0.34″	24	600	9464T15	9.30	7.45
14/2	0.30″	45	600	9464T16	6.71	5.37
14/3	0.35″	45	600	9464T17	8.78	7.03
14/4	0.38″	36	600	9464T18	10.91	8.52
12/3	0.39″	56	600	9464T19	11.19	8.74
12/4	0.43″	44	600	9464T21	13.51	10.80
10/2	0.49″	75	600	9464T22	11.49	8.97
10/3	0.53″	75	600	9464T23	17.84	14.27

Flexible Flat Multiconductor Cable

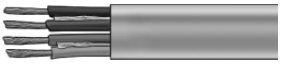

If your cable is too fat to fit, don't try to flatten it—this flat cable tackles tight spaces. Conductors are stranded copper. Maximum continuous length is 500 ft. For connectors, see page 1473.

Cable has a yellow PVC jacket and is oil and UV resistant. Temperature range is –31° to +221° F. UL listed and CSA certified.

AWG	Wd. × Thick.	Amps★	VAC		Per Ft.
16/8	1.11″ × 0.20″	15	600	3120T43	$3.96
16/12	1.61″ × 0.20″	15	600	3120T44	5.36
14/4	0.63″ × 0.21″	25	600	3120T39	2.94
14/8	1.18″ × 0.21″	17	600	3120T45	5.48
14/12	1.70″ × 0.21″	17	600	3120T41	8.09
12/4	0.71″ × 0.23″	30	600	3120T42	4.10
12/8	1.34″ × 0.23″	21	600	3120T46	7.70
10/4	0.88″ × 0.27″	40	600	3120T47	5.78
8/4	1.19″ × 0.37″	50	600	3120T71	9.96
6/4	1.45″ × 0.43″	70	600	3120T72	15.61

Heavy Duty Multiconductor Cable

Unshielded

Get twice the tensile strength and three times the abrasion resistance of PVC-jacketed cable. The black, durable polyurethane jacket resists oils, fuels, solvents, and water, and is easily stripped away with the nylon rip cord. Conductors are made of stranded tinned copper with PVC insulation. Temperature range is –4° to +194° F. Passes UL VW-1 vertical flame test. CSA certified and CE approved. Maximum continuous length is 500 ft.

Unshielded cable has color-coded insulation (1-black, 2-red, 3-white, 4-green, 5-brown, 6-blue, 7-orange, 8-yellow, 9-purple, 10-gray, 11-pink, 12-tan, 13-red/green, 14-red/yellow, 15-red/black). ***Shielded*** cable protects against electromagnetic interference (EMI). It has color-coded insulation (1-black, 2-brown, 3-red, 4-orange, 5-yellow, 6-green) surrounded by an aluminum/polyester shielding.

					Per Ft.	
AWG	OD	Amps★	VAC/VDC		1-499	500-Up
Unshielded						
18/2	0.23″	13	300	8237K11	$3.39	$2.57
18/4	0.26″	13	300	8237K13	5.16	3.91
18/6	0.31″	11	300	8237K15	8.18	6.21
18/15	0.45″	11	300	8237K17	17.73	13.45
Shielded						
22/6	0.23″	6	300	8237K19	5.64	4.28

Floating Multiconductor Cable

A foam coat keeps this flexible cable afloat. Abrasion resistant and UV stable, it stands up to tough environments and is great for underwater equipment. It has stranded copper conductors with color-coded PVC insulation (1-black, 2-white, 3-red, 4-green), a TPE jacket, and a blue foam TPE outer jacket. Temperature range is –11° to +221° F. UL recognized. Maximum continuous length is 100 ft.

					Per Ft.	
AWG	OD	Amps★	VAC		1-24	25-Up
16/2	0.51″	20	300	9715T3	$10.63	$8.70
16/3	0.56″	20	300	9715T2	15.56	12.73
16/4	0.62″	16	300	9715T1	20.38	16.68

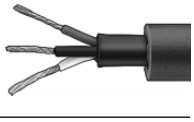

★Amp rating is the max. value for each conductor (excluding ground) at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple cables are bundled, or if inserted into conduit.

For information about AWG, see page 800.

392° F High-Voltage/High-Flex Flat Multiconductor Cable

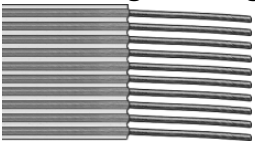

Use this flat cable in any high-voltage, high-temperature application that requires flexibility. With a temperature range of –85° to +392° F, it remains flexible in low-temperature applications, too. Has high-flex stranded tinned copper conductors with clear silicone rubber insulation. Passes UL 94V0 vertical flame test. Maximum continuous length is 100 ft.

AWG	Thick.	Amps★	VDC	2 Conductors Wd.		Per Ft.♦	3 Conductors Wd.		Per Ft.♦	4 Conductors Wd.		Per Ft.♦
28	0.08″	5	12,000	0.13″	9634T101	$1.60	0.18″	9634T102	$1.73	0.23″	9634T103	$1.73
26	0.09″	6	12,000	0.14″	9634T201	1.75	0.19″	9634T202	2.08	0.25″	9634T203	2.08
24	0.09″	8	12,000	0.15″	9634T301	1.75	0.21″	9634T302	2.10	0.27″	9634T303	2.10
22	0.11″	11	18,000	0.18″	9634T401	1.86	0.25″	9634T402	2.23	0.32″	9634T403	2.23
20	0.12″	13	18,000	0.20″	9634T501	2.23	0.28″	9634T502	3.00	0.36″	9634T503	3.00
18	0.14″	20	20,000	0.24″	9634T601	2.62	0.33″	9634T602	3.78	0.43″	9634T603	3.78
16	0.15″	26	20,000	0.26″	9634T701	3.00	0.37″	9634T702	4.55	0.48″	9634T703	4.55

AWG	Thick.	Amps★	VDC	6 Conductors Wd.		Per Ft.♦	8 Conductors Wd.		Per Ft.♦	10 Conductors Wd.		Per Ft.♦
28	0.08″	5	12,000	0.33″	9634T104	$1.88	0.43″	9634T105	$2.05	0.53″	9634T106	$2.21
26	0.09″	6	12,000	0.35″	9634T204	2.38	0.46″	9634T205	2.71	0.57″	9634T206	3.00
24	0.09″	8	12,000	0.38″	9634T304	2.45	0.50″	9634T305	2.77	0.62″	9634T306	3.11
22	0.11″	11	18,000	0.45″	9634T404	2.62	0.59″	9634T405	3.00	0.73″	9634T406	3.38
20	0.12″	13	18,000	0.51″	9634T504	3.78	0.67″	9634T505	4.55	0.83″	9634T506	5.33
18	0.14″	20	20,000	0.62″	9634T604	4.95	0.81″	9634T605	6.08	1.00″	9634T606	6.48
16	0.15″	26	20,000	0.70″	9634T704	6.08	0.92″	9634T705	7.05	1.14″	9634T706	8.47

♦ Prices are approximately 20% lower when you order the maximum continuous length of 100 ft.

Harsh Environment Flat Multiconductor Cable

Ideal for use in wet environments, this flat cable has stranded copper conductors that are annealed for corrosion resistance. Conductors have color-coded PVC insulation (black, green, and white) wrapped in a flame-retardant, white PVC jacket. Temperature range is –13° to +221° F for dry environments and –13° to +167° F for wet environments. Passes UL VW-1 vertical flame test and meets UL 1426 for boat cable.

To Order: Please specify length (10, 25, 50, 100, 250, or max. continuous length of 500 ft.).

AWG	Wd. × Thick.	Amps★	VAC		Per Ft. 10-99	Per Ft. 100-Up
16/3	0.45″ × 0.19″	Not Rated	600	7589K11	$1.11	$0.89
14/3	0.50″ × 0.21″	20	600	7589K13	1.32	1.06
12/3	0.56″ × 0.23″	25	600	7589K15	1.93	1.55
10/3	0.64″ × 0.26″	35	600	7589K17	3.18	2.55

Irrigation Cable

Great for underground sprinkler systems and other direct-burial applications. Conductors are solid copper, have color-coded polypropylene insulation (1-red, 2-white, 3-green, 4-blue, 5-yellow, 6-brown, 7-orange, 8-black, 9-pink), and are surrounded by a black PVC jacket. Temperature range is –4° to +140° F. UL listed.

To Order: Please specify length (10, 25, 50, 100, 250, or max. continuous length of 500 ft.).

AWG	OD	VAC/VDC		Per Ft. 10-499	Per Ft. 500-Up
18/2	0.20″	30	8045K11	$0.24	$0.18
18/3	0.21″	30	8045K12	.33	.25
18/4	0.23″	30	8045K13	.37	.28
18/5	0.25″	30	8045K14	.45	.35
18/6	0.27″	30	8045K15	.52	.40
18/7	0.27″	30	8045K16	.59	.46
18/8	0.29″	30	8045K17	.72	.56
18/9	0.31″	30	8045K18	.82	.63

Drop-Down Multiconductor Cable

Wire equipment and tools from overhead. Also called bus drop cable, it can be used in a wet environment and resists abrasion, oils, lubricants, acids, alkalies, and ozone. Cable has stranded copper conductors that are annealed to prevent brittleness and corrosion and have color-coded PVC insulation (black, red, and white). The conductors, together with three uninsulated copper ground wires, are surrounded by polypropylene insulation and a gray PVC jacket. Temperature range is –4° to +140° F. UL listed. Maximum continuous length is 250 ft.

AWG	OD	Amps★	VAC/VDC		Per Ft. 1-249	Per Ft. 250-Up
12/3	0.42″	25	600	7128K11	$1.86	$1.43
10/3	0.47″	30	600	7128K13	2.71	2.08
8/3	0.63″	40	600	7128K15	4.12	3.17

Multiconductor Cable with Built-In Strain Relief

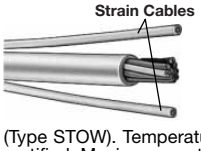

Galvanized steel strain cables are attached to this cable to reduce stress and damage, making it great for overhead equipment and tools, such as pendant switches. Use indoors and out. Conductors are stranded copper, have color-coded PVC insulation, and are surrounded by a yellow PVC jacket (Type STOW). Temperature range is 14° to 221° F. UL listed and CSA certified. Maximum continuous length is 100 ft.

Use the ***strain relief connection kit*** (includes two eyebolts, three cable clamps, two cable ties, four hex nuts, and four washers) to secure the cable to your equipment.

AWG	OD	Amps★	VAC		Per Ft. 1-99	Per Ft. 100-Up
16/8	0.52″	12	600	7741K11	$3.69	$3.13
16/12	0.58″	9	600	7741K13	4.90	4.16
16/16	0.63″	9	600	7741K15	6.16	5.23
16/24	0.76″	8	600	7741K17	8.59	7.29

Strain Relief Connection Kit ..... 7741K2 **Each** $8.87

Harsh Environment Multiconductor Cable

Unarmored

Whether it's an offshore drilling rig or just seems like one, a work site with extreme environmental conditions and high current and voltage requires a tough cable. This one has flexible, stranded annealed tinned copper conductors, color-coded polyolefin insulation (1-black, 2-red, 3-white, 4-green), and a heavy duty black chlorinated polyethylene jacket. Temperature range is –40° to +230° F. UL listed and CSA certified. Maximum continuous length is 100 ft.

Armored and sheathed cable has bronze armor surrounded by a chlorinated polyethylene outer jacket that's flame retardant and resists abrasion.

AWG	OD	Amps★	VAC		Per Ft.●
Unarmored					
16/3	0.39″	19	600	8248K16	$1.91
16/4	0.42″	19	600	8248K21	2.02
14/3	0.42″	31	600	8248K17	2.02
14/4	0.46″	31	600	8248K22	2.64
12/3	0.47″	37	600	8248K18	2.76
12/4	0.51″	37	600	8248K23	3.40
10/3	0.51″	50	600	8248K19	3.58
10/4	0.55″	50	600	8248K24	4.36
8/4	0.70″	63	600	8248K25	6.36
Unarmored (Cont.)					
6/4	0.79″	85	600	8248K26	$10.10
4/4	1.04″	112	600	8248K27	15.56
2/4	1.19″	148	600	8248K28	19.60
Armored and Sheathed					
16/3	0.57″	19	600	8248K46	4.70
16/4	0.60″	19	600	8248K51	4.98
14/3	0.61″	31	600	8248K47	5.26
14/4	0.64″	31	600	8248K52	5.40
12/3	0.65″	37	600	8248K48	5.66
Armored and Sheathed (Cont.)					
12/4	0.69″	37	600	8248K53	$6.18
10/3	0.69″	50	600	8248K49	6.76
10/4	0.73″	50	600	8248K54	8.10
8/4	0.92″	63	600	8248K55	11.20
6/4	1.02″	85	600	8248K56	15.76
4/4	1.26″	112	600	8248K57	22.44
2/4	1.42″	148	600	8248K58	31.60

● Prices are approximately 15% lower when you order the maximum continuous length of 100 ft.

★Amp rating is the max. value for each conductor (excluding ground) at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple cables are bundled, or if inserted into conduit.

For information about AWG, see page 800.

Outdoor Lighting Cable

This weatherproof outdoor lighting cable is ready for direct burial. Conductors are stranded copper with black PVC insulation. Temperature range is –4° to +140° F. UL listed.

To Order: Please specify length (10, 25, 50, 100, 250, or max. continuous length of 500 ft.).

AWG	Wd. × Thick.	Amps★	VAC/VDC		Per Ft. 10-499	Per Ft. 500-Up
16/2	0.31″ × 0.16″	13	150	5744K11	$0.40	$0.32
14/2	0.34″ × 0.17″	18	150	5744K21	.67	.51
12/2	0.37″ × 0.19″	25	150	5744K31	.81	.62

★ Amp rating is the maximum value for each conductor at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple cables are bundled, or if inserted into conduit.

Speaker Cable

Keep your plant running and your stereo pumping with this cable, also called parallel zip wire. It's great for low voltage applications and it doesn't have an outer jacket, so the two conductors can be pulled apart easily. Conductors are stranded copper, one of which is marked for polarity. Temperature range is –4° to +140° F. ETL listed.

70405K33 and *K34* have white PVC insulation. They meet NEC Article 725 and 800, Type CMR/CL2R/CL3R for use in vertical shafts and risers.

70405K85, *K86*, and *K87* have clear PVC insulation. They meet NEC Article 725, Type CL2 for general purpose use.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

AWG	Wd. × Thick.	VAC/VDC		Per Ft. 10-249	Per Ft. 250-Up
22/2	0.16″ × 0.07″	300	70405K33	$0.16	$0.12
18/2	0.20″ × 0.09″	300	70405K34	.24	.19
16/2	0.27″ × 0.13″	150	70405K85	.44	.34
14/2	0.38″ × 0.18″	150	70405K86	.65	.50
12/2	0.41″ × 0.19″	150	70405K87	1.06	.81

Ultra-Thin Speaker Cable

Terminal Block (Two Included)

So thin you can paint over it, this white adhesive-backed cable is perfect for running audio or other low-voltage signals along the wall or under flooring. Use indoors and out. Insert the ends of the cable into the two included screw terminal blocks or solder the connections. Conductors are solid copper with mylar insulation. Temp. range is -70° to +180° F.

AWG	Wd. × Thick.	VAC/VDC	Spool Lg., ft.		Per Spool
22/2	0.50″ × 0.01″	48	10	9668T31	$49.10
22/2	0.50″ × 0.01″	48	25	9668T32	91.07
22/2	0.50″ × 0.01″	48	50	9668T33	116.81
18/2	0.75″ × 0.01″	48	10	9668T21	51.52
18/2	0.75″ × 0.01″	48	25	9668T22	91.07
18/2	0.75″ × 0.01″	48	50	9668T23	132.29
12/2	1.375″ × 0.02″	35	10	9668T14	32.97
12/2	1.375″ × 0.02″	35	25	9668T15	78.13
12/2	1.375″ × 0.02″	35	50	9668T16	119.90

Fire Alarm Cable

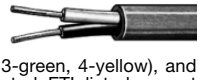

Great for critical control circuits in fire alarm systems, horns, smoke detectors, and fire panels. Conductors are solid copper, have color-coded PVC insulation (1-black, 2-red, 3-green, 4-yellow), and are surrounded by a red PVC jacket, unless noted. ETL listed, except 72195K64, which is UL listed. 72195K63 and *K66* have a foil shield to protect signals from interference.

Plenum cable is approved for use without conduit in duct work and above a drop ceiling. Temperature range is –4° to +167° F. Meets NEC Article 760, Type FPLP. ***Nonplenum cable*** has a temperature range of –4° to +140° F. Meets NEC Article 760, Type FPLR for use in risers.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

AWG	OD	Shielded	VAC/VDC		Per Ft. 10-249	Per Ft. 250-Up
Plenum Cable						
18/2	0.13″	No	300	72195K61	$0.38	$0.30
18/2	0.16″	Yes	300	72195K63	.58	.43
18/4	0.16″	No	300	72195K62	.76	.57
Nonplenum Cable						
18/2	0.15″	Yes	300	72195K66	.43	.36
18/2	0.21″ × 0.105″♠	No	300	72195K64●	.23	.18
18/4	0.15″	No	300	72195K65	.47	.35

♠ Flat cable.

● Does not have a jacket (both conductors have red insulation).

Audio Cable

Use this cable in low-voltage, nonshielded applications such as intercom, security, and other communication systems. Conductors are stranded copper with color-coded insulation (1-black, 2-red, 3-white, 4-green, 5-brown, 6-blue, 7-orange, 8-yellow, 9-purple, 10-gray, 11-pink, 12-tan). ETL listed.

Plenum cable is approved for use without conduit in duct work and above a drop ceiling. Conductors have PVC insulation surrounded by an off-white PVC jacket. Temperature range is –4° to +167° F. Meets NEC Article 725 and 800, Type CMP/CL3P. ***Nonplenum cable*** has polypropylene-insulated conductors surrounded by a gray PVC jacket. Temperature range is –4° to +140° F. Meets NEC Article 725 and 800, Type CMR/CL3R for use in vertical shafts and risers, unless noted.

To Order: Please specify length (10, 25, 50, 100, 250, or max. continuous length of 1000 ft.).

AWG	OD	VAC	Plenum Cable	Per Ft. 10-249	Per Ft. 250-Up	Nonplenum Cable	Per Ft. 10-249	Per Ft. 250-Up
22/2	0.11″	300	—	—	—	71335K51■	$0.17	$0.13
22/4	0.13″	300	71335K59	$0.47	$0.36	71335K52■	.25	.19
22/6	0.16″	300	—	—	—	71335K53	.40	.29
22/12	0.21″	300	—	—	—	71335K54	.67	.50
18/2	0.14″	300	71335K57	.46	.34	71335K55	.30	.23
18/4	0.17″	300	71335K58	.78	.58	71335K56	.52	.39

■ Meets NEC Article 725 and 800, Type CM/CL2 for general purpose use (not in risers or vertical shafts).

Interference-Reducing Audio Cable

With a sound so sweet and static-free, you won't want to tune out the music and PA announcements in your workplace. This cable has 100% foil shielding and a drain ground wire. Conductors are stranded copper, have color-coded insulation (1-black, 2-white, 3-red, 4-green, unless noted), and are surrounded by a PVC jacket. ETL listed.

Plenum cable is approved for use without conduit in duct work and above a drop ceiling. Has an off-white PVC jacket. Temperature range is –4° to +167° F. Meets NEC Article 725 and 800, Type CMP/CL3P. ***Nonplenum cable*** has a gray PVC jacket. Temperature range is –4° to +140° F. Meets NEC Article 725 and 800, Type CMR/CL3R for use in vertical shafts and risers.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

AWG	OD	VAC/VDC	Plenum Cable	Per Ft. 10-249	Per Ft. 250-Up	Nonplenum Cable	Per Ft. 10-249	Per Ft. 250-Up
22/2	0.13″	300	—	—	—	71055K71▲	$0.26	$0.20
22/4	0.16″	300	71055K75	$0.57	$0.43	71055K72	.33	.25
18/2	0.17″	300	71055K76▲	.50	.38	71055K73▲	.51	.38
18/4	0.20″	300	71055K77	.42	.32	71055K74	.55	.42

▲ Insulation is black and red.

Thermostat Cable

Perfect for low-voltage applications such as thermostat controls, heating units, and security systems. Conductors are solid copper, have color-coded polypropylene insulation (1-red, 2-white, 3-green, 4-blue, 5-yellow, 6-brown, 7-orange, 8-black), and are surrounded by a brown flame-retardant PVC jacket. Temperature range is –4° to +140° F. Meets NEC Article 725, Type CL2 for general purpose use. ETL listed.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

AWG	OD	VAC		Per Ft. 10-249	Per Ft. 250-Up
20/2	0.11″	150	70985K71	$0.10	$0.08
20/3	0.12″	150	70985K72	.15	.11
20/4	0.13″	150	70985K73	.17	.13
20/5	0.15″	150	70985K74	.28	.21
20/6	0.16″	150	70985K75	.31	.23
20/8	0.17″	150	70985K76	.38	.29
18/2	0.13″	150	70985K81	.13	.10
18/3	0.14″	150	70985K82	.22	.16
18/4	0.15″	150	70985K83	.26	.20
18/5	0.17″	150	70985K84	.35	.26
18/6	0.19″	150	70985K85	.36	.27
18/8	0.20″	150	70985K86	.48	.37

For information about AWG, see page 800.

About Cord

Listed below are designations (cord type) for cord characteristics based on Underwriters Laboratories (UL) and National Electrical Code (NEC) Article 400. *Note:* Until recently, an outdoor cord was designated with the letters "W-A" at the end of the cord type. To standardize cord type between the United States and Canada, UL has dropped the "-A" from these designations.

S = Standard; rated at 600 VAC.
SJ = Junior; rated at 300 VAC.
E = Elastomer (thermoplastic rubber).
T = Thermoplastic.
O = Oil-resistant outer jacket.
OO = Oil-resistant insulation and outer jacket.
P = Parallel construction (flat).
W = Approved for outdoor use.
V = Lightweight, round vacuum cleaner cord.

Cord Type	Jacket	Voltage Rating	Duty
SO	Thermoset Rubber	600	Heavy
SOW	Thermoset Rubber	600	Heavy
SOOW	Thermoset Rubber	600	Heavy
SEOW	Elastomer	600	Heavy
SEOOW	Elastomer	600	Heavy
ST	Thermoplastic	600	Heavy
STO	Thermoplastic	600	Heavy
STOOW	Thermoplastic	600	Heavy
STW	Thermoplastic	600	Heavy
SJEW	Elastomer	300	Medium
SJO	Thermoset Rubber	300	Medium

Cord Type	Jacket	Voltage Rating	Duty
SJOW	Thermoset Rubber	300	Medium
SJOOW	Thermoset Rubber	300	Medium
SJEO	Elastomer	300	Medium
SJEOW	Elastomer	300	Medium
SJEOOW	Elastomer	300	Medium
SJT	Thermoplastic	300	Medium
SJTO	Thermoplastic	300	Medium
SJTW	Thermoplastic	300	Medium
SVO	Thermoset Rubber	300	Light
SVT	Thermoplastic	300	Light
SPT	Thermoplastic	300	Light

Retracting Cords

These tangle-resistant black cords coil up to stay out of your way. Great for hand tools and portable appliances. Conductors are stranded copper with color-coded rubber insulation (1-black, 2-white, 3-green [ground], 4-red, 5-orange, 6-blue, 7-yellow, 8-brown, 9-gray, 10-purple). UL listed and CSA certified, unless noted.

The ***2-ft. long*** cords extend to 10 feet and ***4-ft. long*** cords extend to 20 feet.

AWG	Cord OD	Coil OD	Amps★	2-ft. Length	Each	4-ft. Length	Each
***Neoprene Rubber Jacket—**300 VAC*							
***SJOW Cord:** –40° to +194°F, indoor/outdoor use*							
18/2	0.32″	1.19″	10	7088K16	$31.71	7088K26	$50.60
18/3	0.35″	1.25″	7	7088K18	35.39	7088K27	61.79
18/4	0.38″	1.31″	5	7088K21	38.42	7088K28	68.28
18/5	0.44″	1.63″	5	7088K22	55.29	7088K34	99.32
16/2	0.36″	1.25″	13	7088K23	33.97	7088K35	61.31
16/3	0.39″	1.31″	10	7088K24	42.01	7088K37	76.40
***SVO Cord:** –40° to +140°F, indoor use*							
18/2	0.26″	0.88″	10	7088K13	24.90	7088K11	38.31
18/3	0.28″	1.00″	7	7088K29	28.79	7088K31	49.29
18/7	0.50″	1.88″	5	7088K83 ♦■	60.63	7088K51 ♦■	103.95
18/15	0.58″	2.03″	3	7088K88 ♦▲	105.45	7088K87 ♦▲	189.95
***Low-Current Cord:** –22° to +140°F, indoor use♣*							
23/2	0.22″	0.75″	1	———	———	69115K85	39.65
23/3	0.22″	0.75″	1	———	———	69115K86 ♥	47.92
23/4	0.25″	0.88″	1	———	———	69115K87	49.74
23/6	0.31″	1.13″	1	———	———	69115K88 ✓	70.92
***Thermoplastic Rubber Jacket—**300 VAC*							
***SJEOW Cord:** –58° to +221°F, indoor/outdoor use*							
18/2	0.31″	1.08″	10	7520K51	31.30	7520K82	33.99
18/3	0.33″	1.12″	10	7520K52	36.81	7520K83	40.43
18/4	0.35″	1.16″	7	7520K53	40.73	7520K84	49.04
16/2	0.34″	1.13″	13	7520K54	38.76	7520K62	40.42
16/3	0.39″	1.24″	13	7520K55	41.00	7520K63	45.55
16/4	0.40″	1.25″	10	7520K56	52.05	7520K64	58.01
***Neoprene Rubber Jacket—**600 VAC*							
***SOW Cord:** –40° to +194°F, indoor/outdoor use*							
18/3	0.39″	1.31″	7	7088K46	40.30	7088K97	70.43
18/4	0.42″	1.50″	5	7088K48	49.55	7088K98	86.45
16/3	0.42″	1.50″	10	7088K55	42.92	7088K99	80.83
16/4	0.45″	1.63″	8	7088K56	54.89	7088K1	104.50
16/5	0.53″	1.81″	8	7088K57	66.32	7088K2	113.04
16/6	0.58″	2.03″	8	7088K58	79.81	7088K3	139.75
16/7	0.58″	2.03″	8	7088K59	98.69	7088K4	188.48
16/8	0.61″	2.10″	7	7088K89	90.12	7088K5	154.68
14/2	0.52″	1.81″	18	7088K91	53.90	7088K6	89.29
14/3	0.55″	2.00″	15	7088K92	64.10	7088K7	115.21
14/4	0.59″	2.06″	12	7088K93	69.60	7088K8	131.07
12/2	0.60″	2.25″	25	7088K94	77.13	7088K9	129.51
12/3	0.63″	2.25″	20	7088K95	90.57	7088K111	162.93
12/4	0.68″	2.38″	16	7088K96	97.56	7088K112	184.99
***Thermoplastic Rubber Jacket—**600 VAC*							
***SEOW Cord:** –58° to +221°F, indoor/outdoor use*							
14/3	0.57″	2.33″	18	7520K57	77.73	7520K43	81.08
12/3	0.60″	2.39″	25	7520K58	81.60	7520K23	110.24

♦ Not SVO cord. ■ Has one brown conductor instead of orange. Not CSA certified. ▲ Has two each of the first five conductor colors. Not UL listed or CSA certified. ♣ Not CSA certified. ♥ Has a red conductor instead of green. ✓ Has a yellow conductor instead of orange.

Titan Severe Duty Retracting Cords

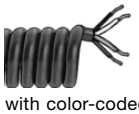

The most abrasion- and cut-resistant self-retracting cords we offer, these are perfect for tough environments. They're also tangle resistant and have high memory retention for extreme extension conditions. Conductors are stranded copper with color-coded thermoplastic rubber insulation (1-black, 2-white, 3-green, 4-red) surrounded by a black thermoplastic rubber jacket. Temperature range is –58° to +194° F. UL listed and CSA certified.

The ***2-ft.*** cords extend to 10 feet and ***4-ft.*** cords extend to 20 feet.

AWG	Cord OD	Coil OD	Amps★	2-ft. Length	Each	4-ft. Length	Each
***SJEOW—**300 VAC*							
18/3	0.31″	1.25″	10	5821K41	$114.68	5821K51	$118.53
16/3	0.37″	1.35″	13	5821K42	159.89	5821K53	166.93
***SEOW—**600 VAC*							
16/4	0.45″	1.80″	10	5821K43	246.81	5821K55	271.32
14/4	0.59″	2.50″	15	5821K44	359.51	5821K56	432.79
12/3	0.59″	2.50″	25	5821K45	392.67	5821K57	449.80

Lamp Cable

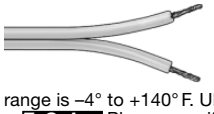

Designed for lamps, radios, and small appliances. Cable has two 18 AWG stranded copper conductors with Type SPT-1 PVC insulation. Rated 10 amps @ 300 VAC. Cable is 0.21″ Wd. × 0.11″ Thick. Temperature range is –4° to +140° F. UL listed and CSA certified.

To Order: Please specify length (50, 100, or max. continuous length of 250 ft.) and color (black, brown, or white).

	Per Ft. 50-249	Per Ft. 250-Up
8104K1	$0.25	$0.19

Cable for Heat-Generating Appliances

Also known as heater cord and zip cord, this oil-resistant cable is designed for small heat-generating appliances such as coffee makers, toasters, and heat guns. Cable has two 16 AWG stranded annealed copper conductors with black Type HPN rubber insulation. Rated 15 amps @ 300 VAC. Cable is 0.300″ Wd. × 0.155″ Thick. Temperature range is –4° to +194° F. UL listed and CSA certified.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

	Per Ft. 10-249	Per Ft. 250-Up
4181T1	$1.16	$0.89

Easy-ID Low-Voltage Cable

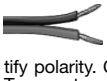

Also known as zip wire, these two-conductor cables pull apart for quick installation. Ideal for DC applications because the red and black wires make it easy to identify polarity. Cables are made of stranded copper with PVC insulation. Temperature range is –40° to +176° F. Meet SAE J1128.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

AWG	Wd. × Thick.	VDC		Per Ft. 10-249	Per Ft. 250-Up
24/2	0.11″ × 0.06″	12	9697T1	$0.19	$0.14
18/2	0.21″ × 0.10″	12	9697T2	.25	.21
14/2	0.29″ × 0.15″	12	9697T3	.57	.48
12/2	0.33″ × 0.16″	12	9697T4	.75	.65
10/2	0.40″ × 0.20″	12	9697T5	1.20	1.05
8/2	0.49″ × 0.25″	12	9697T6	1.79	1.56

★Amp rating is the max. value for each conductor (excluding ground) at a room temperature of 86° F. Amp rating decreases as room temperature increases, if multiple cables are bundled, or if inserted into conduit.

For information about cord type, see page 808. For information about AWG, see page 800.

Service Cords

Commonly used with portable equipment, these cords make a great power cord. Conductors are stranded copper with color-coded insulation (1-black, 2-white, 3-green, 4-red, 5-orange, 6-blue, 7-white with black tracer, 8-red with black tracer, 9-green with black tracer, 10-orange with black tracer). Rated for indoor and outdoor use, unless noted. UL listed and CSA certified, unless noted.

Neoprene rubber-jacket cords are more flexible than thermoplastic rubber-jacket cords. They have EPDM-insulated conductors. ***Thermoplastic rubber-jacket*** cords are more flexible than PVC. They have TPE-insulated conductors. ***PVC-jacket*** cords have PVC-insulated conductors.

To Order: Please specify length (10, 25, 50, 100, or max. continuous length of 250 ft.).

Neoprene Rubber Jacket—300 VAC

AWG	OD	Amps★		Per Ft. 10-249	Per Ft. 250-Up
Black SJOOW: *–40° to +194°F*					
18/2	0.29″	10	7422K2	$0.56	$0.43
18/3	0.31″	10	7422K21	.68	.52
18/4	0.33″	7	7422K11	.99	.76
16/2	0.31″	13	7422K61	.63	.53
16/3	0.33″	13	7422K22	.71	.60
16/4	0.37″	10	7422K23	1.07	.82
14/2	0.34″	18	7422K62	.82	.68
Black SJOOW: *–40° to +194°F (Cont.)*					
14/3	0.37″	18	7422K24	$1.32	$1.12
14/4	0.42″	15	7422K25	1.98	1.50
12/3	0.43″	25	7422K26	1.45	1.23
12/4	0.48″	20	7422K27	2.36	1.80
10/3	0.61″	30	7422K28	2.39	2.00
10/4	0.66″	25	7422K29	3.09	2.37
Yellow SJOOW: *–58° to +221°F*					
18/2	0.31″	10	8042K11	$0.93	$0.72
18/3	0.32″	10	8042K12	1.11	.86
16/2	0.32″	13	8042K13	1.12	.86
16/3	0.34″	13	8042K14	1.26	.96
16/4	0.37″	10	8042K15	1.69	1.29
14/3	0.38″	18	8042K16	2.22	1.77

Thermoplastic Rubber Jacket—300 VAC

AWG	OD	Amps★		Per Ft. 10-249	Per Ft. 250-Up
Black SJEOOW: *–58° to +221°F*					
18/2	0.29″	10	7082K26	$0.63	$0.48
18/3	0.31″	10	7082K21	.73	.55
16/2	0.32″	13	7082K27	.72	.54
16/3	0.33″	13	7082K22	.85	.65
16/4	0.36″	10	7082K82	.92	.71
14/2	0.35″	18	7082K28	1.04	.79
14/3	0.37″	18	7082K23	1.07	.82
Black SJEOOW: *–58° to +221°F (Cont.)*					
14/4	0.40″	15	7082K83	$1.41	$1.06
12/2	0.42″	25	7082K29	1.31	.99
12/3	0.43″	25	7082K24	1.58	1.20
12/4	0.48″	20	7082K84	1.71	1.30
10/3	0.58″	30	7082K85	2.28	1.73
10/4	0.64″	25	7082K86	2.83	2.15
Yellow SJEOOW: *–58° to +221°F*					
18/3	0.31″	10	8046K11	$0.76	$0.57
16/3	0.34″	13	8046K12	.87	.66
16/4	0.36″	10	8046K13	1.01	.76
14/3	0.37″	18	8046K14	.96	.73
14/4	0.40″	15	8046K15	1.86	1.41
12/3	0.44″	25	8046K16	1.73	1.32
10/3	0.58″	30	8046K17	1.92	1.47

PVC Jacket—300 VAC

AWG	OD	Amps★		Per Ft. 10-249	Per Ft. 250-Up
Orange SJTW: *–4° to +167°F*					
18/2	0.27″	10	7394K31	$0.62	$0.46
18/3	0.29″	10	7394K11	.59	.45
16/2	0.31″	13	7394K32	.73	.55
16/3	0.32″	13	7394K33	.76	.58
14/3	0.35″	18	7394K12	.98	.74
Orange SJTW: *–4° to +167°F (Cont.)*					
12/3	0.42″	25	7394K13	$1.38	$1.04
Yellow SJTW: *–4° to +167°F*					
10/3	0.57″	30	7394K14	2.00	1.53
Yellow SJTOW: *–40° to +194°F*					
18/3	0.31″	10	8169K31	.65	.49
Yellow SJTOW: *–40° to +194°F (Cont.)*					
16/3	0.33″	13	8169K32	$0.87	$0.66
16/4	0.37″	10	8169K33	1.16	.88
Black SJT: *–4° to +140°F*					
18/3	0.31″	10	8157K62■	.70	.53
16/3	0.34″	13	8157K64■	.87	.65

■ For indoor use only.

Neoprene Rubber Jacket—600 VAC

AWG	OD	Amps★		Per Ft. 10-249	Per Ft. 250-Up
Black SOOW: *–40° to +194°F*					
18/2	0.35″	10	7081K11	$0.63	$0.49
18/3	0.37″	10	7081K12	.82	.63
18/4	0.39″	7	7081K13	.99	.76
18/5	0.47″	5	7081K18	1.89	1.46
18/6	0.50″	5	7081K19	2.18	1.68
18/8	0.53″	4	7081K39	2.75	2.12
18/10	0.60″	4	7081K79	3.34	2.58
16/2	0.37″	13	7081K14	.74	.57
16/3	0.39″	13	7081K22	.91	.70
16/4	0.42″	10	7081K31	1.44	1.06
16/5	0.50″	8	7081K87	1.82	1.34
16/6	0.52″	8	7081K37	2.90	2.14
16/8	0.58″	7	7081K38	3.80	2.81
16/10	0.65″	5	7081K81	4.64	3.43
14/2	0.51″	18	7081K15	1.05	.88
14/3	0.54″	18	7081K23	1.26	1.05
Black SOOW: *–40° to +194°F (Cont.)*					
14/4	0.58″	15	7081K32	$1.83	$1.43
14/5	0.65″	12	7081K85	2.69	2.11
12/2	0.57″	25	7081K16	1.58	1.14
12/3	0.60″	25	7081K24	1.98	1.63
12/4	0.65″	20	7081K33	2.37	1.83
12/5	0.72″	16	7081K88	3.33	2.57
12/6	0.74″	16	7081K69	5.10	3.93
10/2	0.62″	30	7081K17	1.92	1.61
10/3	0.66″	30	7081K41	2.30	1.81
10/4	0.72″	25	7081K42	2.64	1.87
10/5	0.77″	20	7081K89	4.23	3.61
10/6	0.88″	20	7081K59	5.85	5.00
8/3	0.86″	40	7081K35	5.79	4.28
8/4	0.98″	35	7081K82	7.29	5.40
8/5	0.84″	28	7081K44◆	8.13	6.01
6/3	0.98″	55	7081K84	9.01	6.71
Black SOOW: *–40° to +194°F (Cont.)*					
6/4	1.09″	45	7081K25	$11.32	$8.42
6/5	1.20″	36	7081K26	14.08	10.48
4/4	1.26″	60	7081K28	15.55	11.99
4/5	1.37″	48	7081K29	19.06	14.69
2/4	1.46″	80	7081K34	24.34	17.66
Yellow SOOW: *–58° to +221°F*					
18/3	0.38″	10	8041K51	1.15	.86
16/2	0.37″	13	8041K52	1.22	.92
16/3	0.40″	13	8041K53	1.48	1.12
16/4	0.43″	10	8041K54	1.95	1.47
14/3	0.53″	18	8041K55	2.19	1.65
14/4	0.58″	15	8041K56	2.86	2.16
12/3	0.60″	25	8041K58	3.16	2.39
12/4	0.65″	20	8041K59	3.73	2.82
10/3	0.66″	30	8041K61	3.92	2.96
10/4	0.71″	25	8041K62	4.41	3.33

◆ Not UL listed or CSA certified.

Thermoplastic Rubber Jacket—600 VAC

AWG	OD	Amps★		Per Ft. 10-249	Per Ft. 250-Up
Black SEOOW: *–58° to +221°F*					
18/2	0.35″	10	7080K71	$0.78	$0.58
18/3	0.37″	10	7080K72	.99	.73
18/4	0.40″	7	7080K61	1.07	.79
16/2	0.37″	13	7080K73	.83	.63
16/3	0.39″	13	7080K42	1.01	.76
16/4	0.42″	10	7080K51	1.29	.95
14/2	0.50″	18	7080K74	1.16	.86
14/3	0.53″	18	7080K43	1.65	1.23
14/4	0.57″	15	7080K52	1.97	1.48
12/2	0.57″	25	7080K75	1.77	1.32
Black SEOOW: *–58° to +221°F (Cont.)*					
12/3	0.60″	25	7080K44	$2.12	$1.59
12/4	0.65″	20	7080K53	2.68	2.00
10/3	0.66″	30	7080K45	2.81	2.10
10/4	0.71″	25	7080K54	3.47	2.58
8/3	0.70″	40	7080K66◆	2.99	2.23
8/4	0.78″	35	7080K67◆	4.40	3.28
6/3	0.82″	55	7080K79◆	3.92	2.92
6/4	0.89″	45	7080K89◆	6.33	4.72
Yellow SEOOW: *–76° to +221°F*					
18/3	0.37″	10	7080K11	$1.14	$0.89
16/3	0.39″	13	7080K22	1.16	.87
16/4	0.42″	10	7080K31	1.42	1.06
14/3	0.53″	18	7080K23	1.87	1.40
14/4	0.58″	15	7080K32	2.35	1.75
12/3	0.60″	25	7080K24	2.44	1.82
12/4	0.65″	20	7080K33	3.11	2.31
10/3	0.66″	30	7080K25	3.23	2.99
10/4	0.71″	25	7080K34	4.13	3.08

◆ Not UL listed or CSA certified.

PVC Jacket—600 VAC

AWG	OD	Amps★		Per Ft. 10-249	Per Ft. 250-Up
Yellow STOW: *–40° to +194°F*					
18/3	0.37″	10	8201K41	$0.74	$0.56
16/3	0.40″	13	8201K42	.90	.68
16/4	0.43″	10	8201K43	1.28	.97
Yellow STOW: *–40° to +194°F (Cont.)*					
14/3	0.54″	18	8201K44	$1.46	$1.10
14/4	0.58″	15	8201K45	1.93	1.45
12/3	0.60″	25	8201K46	2.12	1.60
Yellow STOW: *–40° to +194°F (Cont.)*					
12/4	0.65″	20	8201K47	$2.49	$1.88

★Amp rating is the max. value for each conductor (excluding ground) at a room temperature of 86°F. Amp rating decreases as room temperature increases, if multiple cables are bundled, or if inserted into conduit.

Heat-Shrink Tubing Material Selection Guide

Heat-shrink tubing is designed to provide tight-fitting protective insulation for electrical connections, yet it's also great for bundling items, protecting surfaces, and identifying circuits.

Tubing comes stretched to its "ID before shrinking" to fit over your connection. When heat is applied, it shrinks to its "ID after shrinking." The overall length will also shrink slightly (usually less than 15%). The shrink ratio shows the relationship between the "before" and "after" sizes.

Moisture-seal heat-shrink tubing has an adhesive lining that sticks to the connection surface, preventing liquids from penetrating the ends of tubing.

Material	Resistance to Low/High Temp.	Flexibility	Abrasion Resistance	Chemical Resistance	See Page
PVC	Fair/Fair	Good	Good	Excellent	810
PVC—Moisture Seal	Fair/Fair	Fair	Good	Excellent	810
Polyolefin	Good/Good	Good	Fair	Good	810-812
Polyolefin—Moisture Seal	Good/Good	Fair	Fair	Good	812-813
Polyolefin—Wrap-Around Moisture Seal	Good/Good	Fair	Fair	Good	812
Polyolefin—Abrasion Resistant	Good/Good	Poor	Good	Good	813
Polyolefin—Moisture Seal Abrasion Resistant	Good/Good	Poor	Good	Good	813
Food-Grade Olefin	Good/Good	Good	Good	Good	813
FEP	Excellent/Excellent	Poor	Excellent	Excellent	813
PTFE	Excellent/Excellent	Poor	Excellent	Excellent	814
PTFE—Moisture Seal	Excellent/Excellent	Poor	Excellent	Excellent	814
PVDF	Good/Good	Fair	Good	Excellent	814
Kynar/Polyolefin	Good/Good	Good	Good	Excellent	814
Fuel-Resistant Elastomer	Good/Good	Good	Good	Excellent	814
Neoprene Rubber	Good/Good	Good	Good	Good	814
Fluoroelastomer	Good/Excellent	Good	Excellent	Excellent	814
Polyolefin EMI/RFI	Good/Good	Fair	Fair	Good	815
Fabric	Good/Good	Excellent	Excellent	Good	815

Chemical-Resistant PVC Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 212° F
- Temperature Range: –4° to +221° F

PVC is more economical than polyolefin and has better chemical and abrasion resistance. It also resists sunlight.

Choose-a-Color Flame Retardant

- UL 224, VW-1
- AMS-DTL-23053/2 Class 2 (formerly MIL-DTL-23053/2 Class 2)

To Order: Please specify color: black, blue, clear, green, red, white, or yellow.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Pkgs. of 5 6″ Lengths	Per Pkg.	Small Spools Lg., ft.		Small Spools Each	Large Spools Lg., ft.		Large Spools Each	Jumbo Spools Lg., ft.		Jumbo Spools Each
1/64″	3/64″	0.020″	7132K583	$2.32	25	7132K579	$15.12	125	7132K581	$37.71	250	7132K582	$60.63
1/32″	1/16″	0.020″	7132K511	2.41	25	7132K565	16.19	125	7132K531	40.43	250	7132K551	64.66
1/16″	1/8″	0.025″	7132K512	2.49	25	7132K566	16.25	125	7132K532	41.97	250	7132K552	64.83
3/32″	3/16″	0.025″	7132K513	2.60	25	7132K567	16.94	125	7132K533	42.31	250	7132K553	67.75
1/8″	1/4″	0.025″	7132K514	2.73	25	7132K568	17.85	125	7132K534	44.58	250	7132K554	71.20
3/16″	3/8″	0.028″	7132K515	3.23	25	7132K569	21.15	125	7132K535	53.02	250	7132K555	84.95
1/4″	1/2″	0.028″	7132K516	3.30	25	7132K571	21.57	50	7132K536	34.49	100	7132K556	51.92
5/16″	5/8″	0.033″	7132K517	3.36	25	7132K572	21.99	50	7132K537	35.21	100	7132K557	57.25
3/8″	3/4″	0.033″	7132K518	4.73	25	7132K573	35.24	50	7132K538	52.84	100	7132K558	75.43
1/2″	1″	0.038″	7132K519	6.83	25	7132K574	54.08	50	7132K539	69.17	100	7132K559	108.21
3/4″	1 1/2″	0.043″	7132K521	8.96	10	7132K575	28.89	25	7132K541	57.73	100	7132K561	178.32
1″	2″	0.048″	7132K522	11.44	10	7132K576	37.05	25	7132K542	74.12	100	7132K562	239.53
1 1/2″	3″	0.068″	7132K523	15.94	5	7132K577	37.90	25	7132K543	94.75	50	7132K563	148.20
2″	4″	0.073″	7132K524★	13.01	5	7132K578	48.02	25	7132K544	125.17	50	7132K564	238.78

★ Sold in a pkg. of 3.

Black Flame-Retardant Assortment—Includes 100 6″ lengths in these quantities and IDs after shrinking: 25 of 1/32″, 25 of 1/16″, 15 of 1/8″, 15 of 3/16″, 10 of 1/4″, and 10 of 3/8″ (see above for ID before shrinking and wall thickness).

8061K5 ..... **Each** $45.29

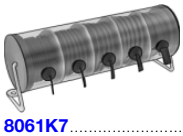

Black Flame-Retardant Mini-Spool Assortment—Use rack alone or wall mount using the two 1/4″ dia. mounting holes (fasteners not included). Assortment includes five spools in these lengths and IDs after shrinking: 100 ft. of 1/32″ and 25 ft. each of 1/16″, 3/32″, 1/8″, and 3/16″ (see above for ID before shrinking and wall thickness). **Also Available:** Replacement spools. Please ask for 8061K9 and specify ID after shrinking.

8061K7 ..... **Each** $105.92

Moisture Seal

Great for outdoor applications; the adhesive lining bonds to the connection surface for excellent moisture protection. Color is black.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Pkgs. of 5 6″ Lengths	Per Pkg.	25-ft. Spools	Each	100-ft. Spools	Each
3/32″	3/16″	0.035″	8195K21	$4.08	8195K31	$17.71	8195K41	$56.45
1/8″	1/4″	0.035″	8195K22	4.14	8195K32	30.68	8195K42	105.28
3/16″	3/8″	0.035″	8195K23	4.33	8195K33	32.63	8195K43	111.09
1/4″	1/2″	0.035″	8195K24	4.61	8195K34	34.84	8195K44	118.25
3/8″	3/4″	0.040″	8195K25	5.90	8195K35	44.52	8195K45	151.30
1/2″	1″	0.045″	8195K26	11.77	8195K36	71.08	8195K46	196.56

Yellow/Green Striped Flexible Polyolefin Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 248° F
- Temperature Range: –67° to +275° F
- UL recognized and CSA certified

The yellow and green stripe on this thin-wall tubing typically identifies ground wire and cable.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Lg., ft.		Each
0.059″	0.118″	0.020″	4	2597K11	$7.06
0.118″	0.236″	0.023″	4	2597K12	10.20
0.197″	0.394″	0.025″	4	2597K13	13.62
0.236″	0.472″	0.025″	4	2597K14	11.86
0.354″	0.748″	0.030″	4	2597K15	17.84
0.512″	1.024″	0.035″	2	2597K17	15.37

For information about heat-shrink tubing, see page 810.

Flexible Polyolefin Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 250° F
- Temperature Range: –67° to +275° F
- UL recognized and CSA certified (except clear tubing)
- AMS-DTL-23053/5 Classes 1 (color tubing) & 2 (clear tubing) (formerly MIL-DTL-23053/5 Classes 1 & 2)

Polyolefin tubing is more flexible than PVC and shrinks less lengthwise. Colored for easy identification.

To Order: Please specify color: black, blue, clear, green, red, white, or yellow.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Pkgs. of 10 12″ Lengths Per Pkg.		4-ft. Lengths Each		25-ft. Spools Each		Large Spools Lg., ft.		Large Spools Each	Jumbo Spools Lg., ft.		Jumbo Spools Each
1/32″	1/16″	0.017″	7496K41	$6.73	7856K11	$1.62	7856K71	$8.75	100	7856K31	$29.34	1000	7856K51	$249.41
3/64″	3/32″	0.020″	7856K67	7.49	7856K12	1.78	7856K72	9.12	100	7856K32	30.23	500	7856K52	128.45
1/16″	1/8″	0.020″	7856K63	7.97	7856K13	1.85	7856K73	12.58	100	7856K33	33.52	500	7856K53	142.35
3/32″	3/16″	0.020″	7496K42	9.14	7856K14	2.25	7856K74	15.79	100	7856K34	40.78	250	7856K54	86.56
1/8″	1/4″	0.025″	7496K43	11.39	7856K15	2.81	7856K75	20.58	100	7856K35	50.82	200	7856K55	86.40
3/16″	3/8″	0.025″	7496K44	12.70	7856K16	3.14	7856K76	24.13	100	7856K36	56.73	200	7856K56	96.40
1/4″	1/2″	0.025″	7496K45	14.31	7856K17	3.54	7856K77	27.10	100	7856K37	63.95	200	7856K57	108.77
3/8″	3/4″	0.030″	7496K46	19.22	7856K18	4.72	7856K78	31.56	50	7856K38	42.71	200	7856K58	145.22
1/2″	1″	0.035″	7856K65	31.26	7856K19	7.06	7856K79	37.57	50	7856K39	63.76	100	7856K59	108.36
3/4″	1 1/2″	0.040″	7856K64	58.94	7856K21	13.16	7856K81	67.65	—	—	—	100	7856K61	195.72
1″	2″	0.045″	7856K66	72.75	7856K22	17.29	7856K82	81.48	—	—	—	100	7856K62	270.45

Flexible Polyolefin Tubing Assortments

- Shrink Ratio: 2 to 1
- Temperature Range: –67° to +275° F

Polyolefin tubing is more flexible than PVC and shrinks less lengthwise.

Multi-Color 133-Piece Assortment

Multi-Color 133-Piece Assortment

- Shrink Temperature: 212° F
- UL recognized and CSA certified, except clear tubing
- AMS-DTL-23053/5 Classes 1 (color tubing) & 2 (clear tubing) (formerly MIL-DTL-23053/5 Classes 1 & 2)

Colored for easy identification—each size comes in seven colors: black, blue, clear, green, red, white, and yellow. Assortment includes 133 6″ lengths: one multi-color package of each of the six sizes listed at right. Comes in a compartmented plastic box.

6334K41 ..... **Each** $67.65

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Refills Pkg. Qty.		Refills Per Pkg.
3/64″	3/32″	0.020″	35 (5 of ea. color)	6334K411	$11.31
1/16″	1/8″	0.020″	28 (4 of ea. color)	6334K412	11.31
3/32″	3/16″	0.020″	21 (3 of ea. color)	6334K413	11.31
1/8″	1/4″	0.025″	21 (3 of ea. color)	6334K414	11.31
3/16″	3/8″	0.025″	14 (2 of ea. color)	6334K415	11.31
1/4″	1/2″	0.025″	14 (2 of ea. color)	6334K416	11.31

Transparent 25-Piece Assortment

- Shrink Temperature: 248° F
- AMS-DTL-23053/5 Class 2 (formerly MIL-DTL-23053/5 Class 2)

Transparent tubing lets you visually inspect your connection. Assortment includes 25 6″ lengths: one package of each size listed at right. Comes in a compartmented plastic box.

73095K48 ..... **Each** $26.33

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Refills Pkg. Qty.		Refills Per Pkg.
1/16″	1/8″	0.020″	5	73095K43	$3.63
1/8″	1/4″	0.025″	5	73095K44	4.56
3/16″	3/8″	0.025″	5	73095K45	4.73
1/4″	1/2″	0.025″	5	73095K46	5.21
3/8″	3/4″	0.030″	5	73095K47	6.71

Black 102-Piece Assortment

- Shrink Temperature: 212° F
- UL recognized and CSA certified
- AMS-DTL-23053/5 Class 1 (formerly MIL-DTL-23053/5 Class 1)

Assortment includes 102 6″ lengths in these quantities and IDs after shrinking: 30 of 3/32″, 28 of 1/8″, 20 of 3/16″, 14 of 1/4″, six of 3/8″, and four of 1/2″. Comes in a compartmented plastic box.

6363K21 ..... **Each** $67.65

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Refills Pkg. Qty.		Refills Per Pkg.
3/32″	3/16″	0.020″	30	6363K211	$11.31
1/8″	1/4″	0.025″	26	6363K212	11.31
3/16″	3/8″	0.025″	24	6363K213	11.31
1/4″	1/2″	0.025″	20	6363K214	11.31
3/8″	3/4″	0.030″	14	6363K215	11.31
1/2″	1″	0.035″	10	6363K216	10.96

Black 45-Piece Assortment

- Shrink Temperature: 194° F
- UL recognized and CSA certified
- AMS-DTL-23053/5 Classes 1 & 3 (formerly MIL-DTL-23053/5 Classes 1 & 3)

Assortment includes 45 6″ lengths in these quantities and IDs after shrinking: twelve of 1/32″; six of 3/64″, 1/16″, and 3/32″; four of 1/8″, 3/16″, and 1/4″; and three of 3/8″.

7496K21 ..... **Each** $35.11

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Refills Pkg. Qty.		Refills Per Pkg.
1/32″	3/64″	0.016″	5	7496K81	$2.39
1/32″	1/16″	0.017″	5	7496K82	2.64
3/64″	3/32″	0.020″	5	7496K83	2.80
1/16″	1/8″	0.020″	5	7496K84	2.99
3/32″	3/16″	0.020″	5	7496K85	3.45
1/8″	1/4″	0.025″	5	7496K86	4.31
3/16″	3/8″	0.025″	5	7496K87	5.05
1/4″	1/2″	0.025″	5	7496K88	6.12
3/8″	3/4″	0.030″	5	7496K89	8.30

Flame-Retardant Flexible Polyolefin Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 194° F
- Temperature Range: –67° to +275° F
- UL 224, VW-1 for flame retardance and CSA certified
- AMS-DTL-23053/5 Classes 1 & 3 (formerly MIL-DTL-23053/5 Classes 1 & 3)

Rated for flame retardance, this polyolefin tubing is more flexible than PVC and shrinks less lengthwise. Color is black.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	4-ft. Lengths Each		25-ft. Spools Each		100-ft. Spools Each	
1/16″	1/8″	0.020″	7864K21	$2.02	7864K31	$10.19	7864K41	$36.12
3/32″	3/16″	0.020″	7864K22	2.16	7864K32	11.14	7864K42	39.16
1/8″	1/4″	0.025″	7864K23	2.48	7864K33	12.89	7864K43	45.29
3/16″	3/8″	0.025″	7864K24	3.16	7864K34	15.24	7864K44	53.96
1/4″	1/2″	0.025″	7864K25	3.60	7864K35	17.68	7864K45	62.51
3/8″	3/4″	0.030″	7864K26	4.23	7864K36	22.14	7864K46	77.38
1/2″	1″	0.035″	7864K27	7.30	7864K37	32.08	7864K47	111.76
3/4″	1 1/2″	0.040″	7864K28	12.72	7864K38	57.81	7864K48	199.51

For information about heat-shrink tubing, see page 810.

Low-Smoke Flame-Retardant Polyolefin Tubing

- Shrink Ratio: 3 to 1
- Shrink Temperature: 250° F
- Temperature Range: –67° to +221° F
- MIL-C-24643

Ideal for enclosed environments such as ships, tunnels, and mass transit vehicles, this tubing emits minimal amounts of smoke and toxic and acid gases during combustion. Also known as halogen-free tubing, it meets ABS (American Bureau of Shipping) standards. Color is black.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	6″ Lengths	6″ Lengths Each	48″ Lengths	48″ Lengths Each
0.1″	0.3″	0.060″	1402T21	$6.17	1402T11	$38.40
0.15″	0.4″	0.060″	1402T22	6.78	1402T12	43.00
0.22″	0.75″	0.080″	1402T23	8.74	1402T13	54.28
0.375″	1.1″	0.105″	1402T24	11.66	1402T14	72.32
0.5″	1.5″	0.120″	1402T25	14.26	1402T15	90.02
0.75″	2″	0.120″	1402T26	17.43	1402T16	109.44
1.25″	3″	0.155″	1402T27	28.61	1402T17	176.52

High-Shrink-Ratio Flexible Polyolefin Tubing

- Shrink Ratio: 4 to 1
- Shrink Temperature: 250° F
- Temperature Range: –67° to +275° F
- UL recognized
- AMS-DTL-23053/5 Class 1 (formerly MIL-DTL-23053/5 Class 1)

The high shrink ratio of this tubing enables it to fit over a wide range of cable and component diameters before shrinking, plus it is more flexible than PVC. Great for irregularly shaped objects. Color is black.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	6″ Lengths	6″ Lengths Each	48″ Lengths	48″ Lengths Each
0.275″	1″	0.045″	2746K11	$11.53	2746K31	$70.78
0.55″	2″	0.045″	2746K12	14.60	2746K32	91.82
0.81″	3″	0.045″	2746K13	21.57	2746K33	139.45
1.05″	4″	0.045″	2746K14	31.55	2746K34	207.65

Moisture-Seal Flexible Polyolefin Tubing

2 to 1 Shrink Ratio

- Shrink Temperature: 250° F
- Temperature Range: –67° to +230° F
- UL recognized
- AMS-DTL-23053/4 Class 2 (formerly MIL-DTL-23053/4 Class 2)

3 to 1 Shrink Ratio

- Shrink Temperature: 250° F
- Temperature Range: –67° to +230° F
- UL recognized
- AMS-DTL-23053/4 Class 3 (formerly MIL-DTL-23053/4 Class 3)

4 to 1 Shrink Ratio

- Shrink Temperature: 230° F
- Temperature Range: –67° to +230° F
- UL recognized, unless noted

4 to 1 Shrink Ratio—*High Temperature*

- Shrink Temperature: 275° F
- Temperature Range: –40° to +266° F
- UL recognized

Adhesive lining melts to bond to the underlying surfaces, preventing moisture from penetrating the ends of the tubing. Color is black, unless noted.

3 to 1 shrink ratio tubing accommodates larger size differences between cables and connectors, but is less flexible than 2 to 1 shrink ratio tubing.

4 to 1 shrink ratio tubing covers the widest range of cable and components as well as irregularly shaped objects. Not as flexible as other shrink ratios, but has better abrasion resistance. *High-temperature* tubing is better at handling heat, but it is less flexible and requires a higher shrink temperature. **To Order:** For high-temperature tubing, please specify color: black or clear (2735K23 only available in black).

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	6″ Lengths Pkg. Qty.	6″ Lengths Per Pkg.	48″ Lengths	48″ Lengths Each
2 to 1 Shrink Ratio						
1/16″	1/8″	0.027″	5	74965K51	74965K61	$4.50
3/32″	3/16″	0.028″	5	74965K52	74965K62	5.33
1/8″	1/4″	0.029″	5	74965K53	74965K63	6.67
3/16″	3/8″	0.029″	5	74965K54	74965K64	7.50
1/4″	1/2″	0.030″	5	74965K55	74965K65	8.50
3/8″	3/4″	0.035″	5	74965K56	74965K66	11.33
1/2″	1″	0.042″	2	74965K57	74965K67	16.83
3/4″	1 1/2″	0.047″	2	74965K58	74965K68	30.00
1″	2″	0.065″	1	74965K59	74965K69	62.86
3 to 1 Shrink Ratio						
1/32″	1/8″	0.040″	22	7861K41	7861K51	7.21
1/16″	3/16″	0.040″	24	7861K42	7861K52	7.84
5/64″	1/4″	0.040″	20	7861K43	7861K53	9.70
1/8″	3/8″	0.055″	16	7861K44	7861K54	11.13
5/32″	1/2″	0.070″	14	7861K45	7861K55	12.63
1/4″	3/4″	0.085″	5	7861K46	7861K56	17.26
5/16″	1″	0.100″	5	7861K47	7861K57	25.75
33/64″	1 1/2″	0.100″	1	7861K48	7861K58	39.78
4 to 1 Shrink Ratio						
1/32″	5/32″	0.039″	1	6855K11▲	6855K21▲	16.28
5/64″	5/16″	0.039″	1	6855K12	6855K22	21.20
1/8″	15/32″	0.055″	1	6855K13	6855K23	29.28
5/32″	5/8″	0.070″	1	6855K14	6855K24	36.32
15/64″	15/16″	0.088″	1	6855K15	6855K25	56.00
5/16″	1 17/64″	0.100″	1	6855K16	6855K26	61.82
1/2″	2 3/64″	0.100″	1	6855K17	6855K27	79.14
4 to 1 Shrink Ratio— *High Temperature*						
3/64″	7/32″	0.047″	2	2735K11	2735K21	12.62
1/16″	9/32″	0.060″	2	2735K12	2735K22	14.18
3/32″	27/64″	0.075″	2	2735K13	2735K23	17.73
11/64″	11/16″	0.095″	2	2735K14	2735K24	43.40

▲ Not UL recognized.

Color Coded

- Shrink Ratio: 2.5 to 1
- Shrink Temperature: 275° F
- Temperature Range: –67° to +230° F
- UL recognized
- AMS-DTL-23053/4 Class 1 (formerly MIL-DTL-23053/4 Class 1)

Similar to the tubing above, except color coded by size for easy identification. Not as flexible as 3 to 1 shrink ratio tubing.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Color	48″ Lengths	48″ Lengths Each
1/64″	1/8″	0.038″	Brown	73115K71	$7.11
1/16″	3/16″	0.043″	Gray	73115K72	7.55
5/64″	1/4″	0.047″	White	73115K73	9.52
1/8″	3/8″	0.050″	Red	73115K74	10.61
3/16″	1/2″	0.055″	Blue	73115K75	12.62
5/16″	3/4″	0.065″	Yellow	73115K76	20.17
25/64″	1″	0.075″	Black	73115K77	26.27

Wrap-Around Moisture-Seal Polyolefin Tubing

- Shrink Ratio: 3 to 1
- Shrink Temperature: 248° F
- Temperature Range: –67° to +230° F

Use this wrap-around tubing for repairs when you can't disconnect your cable to slide on standard tubing. Just wrap it around your cable, fasten with the adhesive strip, and apply heat. Adhesive lining melts to provide increased protection from moisture. Color is black.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	8″ Lengths	8″ Lengths Each	36″ Lengths	36″ Lengths Each
0.30″	1.20″	0.08″	7852K11	$12.58	7852K21	$48.40
0.60″	1.80″	0.08″	7852K12	15.97	7852K22	58.74
0.95″	2.70″	0.08″	7852K13	16.88	7852K23	63.52
1.30″	3.60″	0.08″	7852K14	18.76	7852K24	71.63
1.65″	4.95″	0.08″	7852K15	26.57	7852K25	101.16
2.50″	6.75″	0.08″	7852K16	37.51	7852K26	142.70

For information about heat-shrink tubing, see page 810.

Moisture-Seal Abrasion-Resistant Polyolefin Tubing

An adhesive lining prevents liquids from penetrating the ends of this tubing. It also has thick walls for good abrasion resistance.

9″ and 48″ Lengths

- Shrink Ratio: 3 to 1
- Shrink Temperature: 250° F
- Temperature Range: –67° to +230° F
- UL listed and CSA certified for underground applications

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	9″ Lengths	Each	48″ Lengths	Each
Black						
0.15″	0.4″	0.09″	7270K1	$3.28	7270K81	$19.39
0.2″	0.8″	0.11″	7270K2	3.54	7270K82	20.70
0.37″	1.1″	0.12″	7270K3	4.29	7270K83	25.20
0.5″	1.5″	0.17″	7270K4	5.60	7270K84	32.86
0.65″	2″	0.17″	7270K5	7.56	7270K85	44.30
1″	3″	0.17″	7270K7	11.81	7270K87	66.31
Red						
0.15″	0.4″	0.07″	7270K11	$3.52	7270K12	$17.80
0.22″	0.75″	0.09″	7270K21	3.74	7270K22	20.04
0.375″	1.1″	0.12″	7270K31	4.57	7270K32	24.32
0.5″	1.5″	0.16″	7270K41	5.93	7270K42	30.36
0.75″	2″	0.16″	7270K51	7.96	7270K52	40.84
1.2″	3.5″	0.16″	7270K61	11.95	7270K62	64.37

Color-Coded Short Lengths

- Shrink Ratio: 3 to 1
- Shrink Temperature: 275° F
- Temperature Range: –67° to +230° F
- UL recognized

Insulating single-wire connections? This colored tubing comes cut to ideal lengths. Package quantity is 100, unless noted.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Lg.	Color		Per Pkg.
0.060″	0.183″	0.049″	0.75″	Red	72675K51	$7.83
0.060″	0.183″	0.049″	1.50″	Red	72675K52	13.60
0.070″	0.220″	0.049″	0.75″	Blue	72675K53	7.16
0.070″	0.220″	0.049″	1.50″	Blue	72675K54	$14.32
0.095″	0.255″	0.059″	0.88″	Yellow	72675K55	9.29
0.095″	0.255″	0.059″	1.70″	Yellow	72675K56♣	8.93

♣ Package quantity is 50.

High-Shrink-Ratio Abrasion-Resistant Polyolefin Tubing

- Shrink Ratio: 6 to 1
- Shrink Temperature: 248° F
- Temperature Range: –67° to +230° F

Having the highest shrink ratio allows this tubing to accommodate large size differences between cables and connectors as well as irregularly shaped objects. The thick walls provide good abrasion resistance, but limit flexibility. Color is black.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	6″ Lengths	Each	12″ Lengths	Each	48″ Lengths	Each
0.125″	0.75″	0.123″	7831K41	$22.52	7831K51	$37.54	7831K61	$125.13
0.22″	1.3″	0.135″	7831K42	24.38	7831K52	40.64	7831K62	135.48
0.29″	1.75″	0.140″	7831K43	24.88	7831K53	41.47	7831K63	138.22
0.33″	2″	0.170″	7831K44	25.27	7831K54	42.11	7831K64	140.37
0.46″	2.75″	0.190″	7831K45	28.49	7831K55	47.48	7831K65	158.28
0.67″	3.5″	0.170″	7831K46	35.99	7831K56	59.98	7831K66	199.92
0.9″	4.7″	0.190″	7831K47	45.97	7831K57	76.61	7831K67	255.35

Food-Grade Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 250° F
- Temperature Range: –67° to +250° F
- FDA CFR 177.1330

FDA compliant for contact with food, this acrylated olefin tubing resists moisture and fungus. **To Order:** Please specify color: black, clear, or white.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Pkgs. of 5 6″ Lengths	Per Pkg.	25-ft. Spools	Each	100-ft. Spools	Each
1/16″	1/8″	0.020″	8098K21	$4.78	8098K31	$15.65	8098K41	$55.65
3/32″	3/16″	0.020″	8098K22	5.22	8098K32	15.98	8098K42	56.95
1/8″	1/4″	0.025″	8098K23	5.23	8098K33	17.07	8098K43	62.92
3/16″	3/8″	0.025″	8098K24	5.33	8098K34	17.41	8098K44	63.17
1/4″	1/2″	0.025″	8098K25	7.48	8098K35	24.50	8098K45	79.05

Harsh Environment FEP Tubing

- Shrink Ratio: 1.3 to 1
- Shrink Temperature: 350° F
- Temperature Range: –400° to +400° F
- AMS-DTL-23053/11 (formerly MIL-I-23053/11), unless noted

FEP (fluorinated ethylene propylene) tubing provides excellent abrasion and chemical resistance but doesn't require the high shrink temperature of PTFE. It is transparent.

Low Shrink

Maximum continuous length is 4 ft.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	For Wire Size (AWG)		Per Ft.
0.027″	0.031″	0.008″	24	8703K111	$1.16
0.032″	0.036″	0.008″	22	8703K112	1.21
0.039″	0.045″	0.008″	20	8703K113	1.27
0.049″	0.06″	0.008″	18	8703K114	1.32
0.061″	0.075″	0.009″	16	8703K115	1.35
0.072″	0.092″	0.009″	14	8703K116	1.37
0.089″	0.115″	0.009″	12	8703K117	1.40
0.114″	0.141″	0.010″	10	8703K118	$1.51
0.143″	0.18″	0.010″	8	8703K119	2.28
0.18″	0.225″	0.011″	6	8703K121	2.83
0.226″	0.29″	0.011″	4	8703K122	3.14
0.28″	0.365″	0.012″	2	8703K123	3.91
0.349″	0.44″	0.012″	0	8703K124	4.65
0.448″	0.58″	0.020″	–	8703K125	9.88

Large Diameter Low Shrink

Ideal for protecting conveyor rollers and printing rollers. **To Order:** Please specify length from those listed in the table.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking		Each 1 ft.	2 ft.	3 ft.	4 ft.	6 ft.	8 ft.
0.880″	1.100″	0.020″	8703K87	$17.56	$29.95	$40.81	$51.21	$68.73	$79.14
1.000″	1.300″	0.020″	8703K88	18.57	32.92	43.20	54.20	72.75	83.77
1.400″	1.700″	0.020″	8703K89	22.15	39.23	51.49	64.61	86.72	99.85
1.800″	2.100″	0.020″	8703K91	29.65	52.52	68.93	86.50	116.10	133.69
2.200″	2.600″	0.020″	8703K92	36.17	64.07	84.09	105.52	131.67	163.08
2.700″	3.100″	0.020″	8703K93	44.70	76.28	103.77	130.42	175.04	201.56
3.500″	4.200″	0.020″	8703K94★	65.16	115.43	151.50	190.12	252.61	283.04
4.400″	5.200″	0.020″	8703K95★	80.99	143.47	188.31	236.31	305.52	351.80
5.400″	6.200″	0.020″	8703K96★	97.31	172.38	226.25	273.50	367.07	423.23

★ Does not meet AMS-DTL-23053/11.

For information about heat-shrink tubing, see page 810.

Harsh Environment PTFE Tubing

- Shrink Temperature: 650° F
- AMS-DTL-23053/12 (formerly MIL-I-23053/12)

PTFE (polytetrafluoroethylene) tubing has the best abrasion and chemical resistance of any tubing we offer. It is translucent.
To Order: Please specify 6″ or 48″ length.

Medium Shrink

- Shrink Ratio: 2 to 1
- Temperature Range: –454° to +500° F

Commonly used to insulate wire.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	For Wire Size (AWG)		Each 6″	Each 48″
0.027″	0.05″	0.012″	24	7564K61	$1.82	$4.74
0.032″	0.055″	0.012″	22	7564K65	1.90	4.86
0.039″	0.06″	0.016″	20	7564K66	1.90	4.86
0.049″	0.076″	0.016″	18	7564K67	1.94	5.36
0.061″	0.09″	0.016″	16	7564K68	2.02	5.76
0.072″	0.12″	0.016″	14	7564K69	2.10	6.20
0.089″	0.15″	0.016″	12	7564K71	2.24	7.29
0.112″	0.191″	0.016″	10	7564K72	2.44	8.53
0.141″	0.24″	0.020″	8	7564K73	3.31	14.71
0.178″	0.302″	0.020″	6	7564K62	3.63	16.57
0.224″	0.37″	0.020″	4	7564K63	4.07	19.39
0.278″	0.43″	0.020″	2	7564K64	4.63	23.16

High Shrink

- Shrink Ratio: 4 to 1
- Temperature Range: –454° to +500° F

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking		Each 6″	Each 48″
0.050″	0.187″	0.012″	75665K61	$2.14	$4.56
0.063″	0.25″	0.012″	75665K62	2.38	6.18
0.078″	0.313″	0.012″	75665K63	2.44	7.68
0.096″	0.375″	0.012″	75665K84	2.62	7.58
0.112″	0.438″	0.012″	75665K85	3.22	10.88
0.144″	0.5″	0.015″	75665K86	3.45	11.84
0.155″	0.56″	0.015″	75665K87	4.01	14.71
0.178″	0.625″	0.015″	75665K88	4.27	15.99
0.198″	0.688″	0.015″	75665K89	4.69	18.13
0.224″	0.75″	0.015″	75665K91	4.99	19.62
0.244″	0.875″	0.015″	75665K92	6.00	23.99
0.278″	1″	0.015″	75665K93	6.05	25.17

Moisture Seal

- Shrink Ratio: See table
- Temperature Range: –400° to +400° F

Unique two-layer design—a PTFE outer layer shrinks for a tight fit and an inner layer melts to provide a moisture-proof seal.

ID After Shrinking	ID Before Shrinking	Shrink Ratio	Wall Thick. After Shrinking		Each 6″	Each 48″
0″■	0.065″	_____	0.015″	7960K21	$3.79	$20.20
0.07″	0.19″	2.7 to 1	0.015″	7960K22	6.52	41.48
0.15″	0.24″	1.6 to 1	0.020″	7960K23	8.33	49.36
0.21″	0.35″	1.7 to 1	0.025″	7960K24	10.80	66.19
0.315″	0.48″	1.5 to 1	0.032″	7960K25	20.97	140.82
0.5″	0.7″	1.4 to 1	0.040″	7960K26	27.47	186.93
0.7″	1″	1.4 to 1	0.045″	7960K27	46.45	287.58

■ Inner layers will melt together if no wire or object is present.

Fuel-Resistant High-Flex Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 347° F
- Temperature Range: –103° to +302° F
- AMS-DTL-23053/16 (formerly MIL-DTL-23053/16)

Ideal for vehicles and machines subject to harsh environments, this elastomer tubing resists aviation and diesel fuels, hydraulic fluids, and lubricating oils. The thick walls also provide good abrasion resistance while remaining flexible. Color is black.
To Order: Please specify 6″ or 48″ length.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking		Each 6″	Each 48″
1/16″	1/8″	0.030″	2595K1	$2.77	$16.64
3/32″	3/16″	0.033″	2595K2	2.84	18.20
1/8″	1/4″	0.035″	2595K3	3.18	19.50
3/16″	3/8″	0.040″	2595K4	3.19	19.51
1/4″	1/2″	0.048″	2595K5	4.13	23.10
3/8″	3/4″	0.057″	2595K6	5.72	34.40
1/2″	1″	0.070″	2595K7	7.82	48.20
3/4″	1 1/2″	0.095″	2595K8	15.56	103.14

Ultra-Flex Neoprene Rubber Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 275° F
- Temperature Range: –94° to +250° F
- AMS-DTL-23053/1 Classes 1 & 2 (formerly MIL-DTL-23053/1 Classes 1 & 2), MIL-R-46846 Type I, Class 1

Maintains flexibility even at low temperatures. Tubing is black and comes in packages of five 6″ lengths.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking		Per Pkg.
3/32″	3/16″	0.035″	7505K81	$6.52
1/8″	1/4″	0.035″	7505K82	6.93
3/16″	3/8″	0.040″	7505K83	8.07
1/4″	1/2″	0.048″	7505K84	8.89
5/16″	5/8″	0.052″	7505K85	10.15
3/8″	3/4″	0.057″	7505K86	11.53

High-Temperature Ultra-Flex Fluoroelastomer Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 347° F
- Temperature Range: –67° to +392° F
- AMS-DTL-23053/13 (formerly MIL-DTL-23053/13), MIL-R-46846 Type III, Class 1

Withstands higher temperatures than neoprene tubing and delivers better abrasion and chemical resistance while maintaining flexibility. Tubing is black and comes in 6″ lengths.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking		Each
3/32″	3/16″	0.035″	7501K81	$4.08
1/8″	1/4″	0.035″	7501K82	3.90
3/16″	3/8″	0.035″	7501K83	5.13
1/4″	1/2″	0.035″	7501K84	5.95
5/16″	5/8″	0.042″	7501K85	8.18
3/8″	3/4″	0.042″	7501K86	9.15
1/2″	1″	0.049″	7501K87	13.08

High-Strength Harsh Environment PVDF Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 347° F
- Temperature Range: –67° to +347° F
- UL 224, VW-1 for flame retardance and CSA certified
- AMS-DTL-23053/18 Class 1 (formerly MIL-DTL-23053/18 Class 1) and AMS-DTL-23053/8 (formerly MIL-DTL-23053/8)

Great strength and chemical resistance at high temperatures. Tubing is transparent, allowing for visual inspection.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	6″ Lengths Pkg. Qty.		Per Pkg.	48″ Lengths	Each
1/32″	1/16″	0.010″	—		—	7478K79	$3.38
1/16″	1/8″	0.010″	24	7478K91	$18.98	7478K81	4.15
1/8″	1/4″	0.012″	14	7478K92	18.98	7478K82	8.45
3/16″	3/8″	0.012″	12	7478K93	18.98	7478K83	9.39
1/4″	1/2″	0.012″	8	7478K94	18.98	7478K84	13.33
3/8″	3/4″	0.017″	2	7478K95	10.61	7478K85	26.12
1/2″	1″	0.019″	1	7478K96	10.16	7478K86	51.18

Low-Shrink-Temperature Harsh Environment Kynar (PVDF)/Polyolefin Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 302° F
- Temperature Range: –67° to +275° F
- UL recognized and UL VW-1 for flame retardance
- AMS-DTL-23053/18 Class 2 (formerly MIL-DTL-23053/18 Class 2)

Constructed from a blend of Kynar (PVDF) and polyolefin, this flame-retardant tubing is nearly as strong and abrasion resistant as FEP and Kynar, but shrinks at a lower temperature. Plus, it's more flexible than polyolefin. **To Order:** Please specify color: clear or black.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	Pkgs. of 5 6″ Lengths		Per Pkg.	48″ Lengths	Each
3/32″	3/16″	0.010″	6823K66	$6.20	6823K29	$6.44
1/8″	1/4″	0.012″	6823K67	7.43	6823K45	8.19
3/16″	3/8″	0.012″	6823K68	8.20	6823K46	9.60
1/4″	1/2″	0.012″	6823K69	8.98	6823K47	10.71
3/8″	3/4″	0.017″	6823K85	12.69	6823K48	13.47
1/2″	1″	0.019″	6823K86	15.68	6823K49	19.92

For information about heat-shrink tubing, see page 810.

Sure-Grip Fabric Heat-Shrink Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 230° F
- Temperature Range: –40° to +257° F
- UL recognized

Get the flexibility of fabric sleeving with the grip and protection of heat-shrink tubing. The polyethylene/polyester woven fabric shrinks when heat is applied for a secure grip on your cable and hose. It provides abrasion resistance, resists trapping water, and suppresses noise and rattle. Color is black.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	3-ft. Lengths	Each	Small Spools Lg., ft.		Each
0.24″	0.47″	0.039″	2587K11	$6.09	25	2587K21	$46.70
0.39″	0.79″	0.039″	2587K12	7.95	25	2587K22	56.00
0.59″	1.18″	0.039″	2587K13	9.74	20	2587K23	53.48
0.79″	1.57″	0.039″	2587K14	11.39	20	2587K24	58.87
0.98″	1.97″	0.039″	2587K15	13.70	20	2587K25	72.13
1.18″	2.36″	0.039″	2587K16	14.32	10	2587K26	37.11
1.38″	2.76″	0.039″	2587K17	19.31	10	2587K27	50.47

EPDM Rubber No-Heat Shrink Tubing

Get a permanent, durable environmental seal and complete insulation of your connection without the use of a heat gun or wand. To form a seal, just position the tubing (furnished in its expanded size) and pull out the removable spiral-wound core to shrink tubing. Tubing will insulate wire and cable splices rated to 1000 volts. It resists fungus, acids, alkalies, ozone, and ultraviolet light; the resiliency and grip pressure stay strong even after years of exposure. Tubing can also be buried and submerged. Made of waterproof EPDM rubber with no chlorides or sulfurs. Color is black. Meets ANSI C119.1 water seal requirements. CE approved.

ID After Shrinking	ID Before Shrinking	Max. Length Covered	Length Before Shrinking		Each
0.10″	0.82″	3″	8″	6341K81	$14.18
0.40″	0.82″	3″	8″	6341K82	12.42
0.55″	1.18″	5″	9″	6341K83	14.78
0.55″	1.18″	7″	11″	6341K84	19.23
0.67″	1.38″	2″	6″	6341K85	12.10
0.67″	1.38″	8″	12″	6341K86	22.12
0.67″	1.38″	12″	16″	6341K87	31.97
0.95″	1.94″	2″	6″	6341K88	17.08
0.95″	1.94″	8″	12″	6341K89	31.48
0.95″	1.94″	14″	18″	6341K91	51.28
1.27″	2.67″	2″	6″	6341K92	18.70
1.27″	2.67″	5″	9″	6341K93	27.98
1.27″	2.67″	14″	18″	6341K94	56.05

Radiant Heat-Shrink Wand

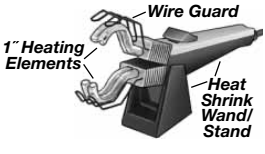

Within seconds, this wand reaches its operating temperature of 1500° F to create a circle of heat for shrinkable tubing, plastic tubing, and solder sleeves. Use as a hand-held portable tool or mount on your bench with the included stand. Wand is 7½″ Lg.×1½″ Wd.×1¾″ Ht. and operates on 115 VAC, 60 Hz. Has a three-prong plug with a 6-ft. cord. CE approved.

Heating elements (sold separately) are required for proper operation. Designed for intermittent use (heating intervals of less than two minutes), they are quartz encapsulated and specially plated to reflect and focus heat. Optional ***wire guards*** (sold separately) protect user from direct contact with elements.

Heat-Shrink Wand and Stand

7498K21	Each	$778.08

Components

Max. Tubing ID	Watts	Heating Elements	Per Pair	Wire Guards	Per Pair
½″	264	7498K12	$291.83	7498K31	$59.50
1″	348	7498K13	310.25	7498K32	59.50
2″	348	7498K14	328.67	7498K33	66.58
3″	440	7498K15	400.92	7498K34	69.42

Heat-Shrink Tubing Adhesives

For an easy, effective, and economical moisture seal, use this adhesive with your heat-shrink tubing. It wraps like tape around the ends of even irregularly shaped objects. Just slide your tubing over and heat to melt the adhesive. Comes on a strip with a peel-off liner.

0.026″ thick adhesive is thermoplastic, just like the adhesive found on the inside of most moisture seal tubing. Temperature range is –67° to +248° F and color is translucent yellow.

0.062″ thick adhesive seals larger gaps, making it ideal for irregular shapes. Made of butyl. Temperature range is –40° to +194° F and color is gray.

0.026″ Thick

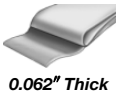

0.062″ Thick

Thickness	Width	1-ft. Lengths	Each	5-ft. Lengths	Each
0.026″	1″	1428T1	$5.09	1428T2	$20.53
0.062″	1″	1428T3	5.64	1428T4	24.10

EMI/RFI-Shield Tubing

- Shrink Ratio: 2 to 1
- Shrink Temperature: 194° F
- Temperature Range: –67° to +275° F

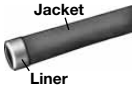

A layer of cloth shielding protects your unshielded wire or cable from EMI/RFI. Use on shielded wire or cable for added protection or for coverage at the terminal where an existing shield has been stripped back for the connector. Tubing is black polyolefin. Note: For proper grounding, a conductive wire (see pages 800-802) or braid strip (see page 930) should be wound around the outside of wires or attached by solder or conductive epoxy (see page 3407) prior to shrinking.

ID After Shrinking	ID Before Shrinking	Wall Thick. After Shrinking	12″ Lengths	Each	48″ Lengths	Each
3/32″	3/16″	0.020″	7937K21	$5.01	7937K31	$15.35
1/8″	1/4″	0.025″	7937K22	7.16	7937K32	22.09
3/16″	3/8″	0.025″	7937K23	9.04	7937K33	27.85
1/4″	1/2″	0.025″	7937K24	10.54	7937K34	32.53
3/8″	3/4″	0.030″	7937K25	15.18	7937K35	46.65
1/2″	1″	0.035″	7937K26	16.19	7937K36	56.16

Electrical Insulating Resins and Large Cable Jacket Repair Kits

Jacket Repair Kit (Resin Sold Separately)

Insulate electrical connections and repair the insulating jacket on service cable. Rated to 194° F.

Permanent 1000 Max. Voltage Resin— This two-part polyurethane resin bonds to most modern cable jackets. It has a low viscosity, so it flows well prior to setting and fills the closure to eliminate voids. Gels in 18 minutes at 73° F; reaches full strength in 24 hours. Color is green.

Permanent 8000 Max. Voltage Resin— Two-part epoxy resin bonds to most modern cable jackets and is oil resistant. Gels in 16 minutes at 73° F; reaches full strength in 24 hours. Color is black.

Permanent Flame-Retardant 1000 Max. Voltage Resin— Polyurethane like the 1000 max. voltage above, but less viscous. Gels in 15 minutes at 73° F; reaches full strength in 24 hours. Color is black.

Re-enterable 1000 Max. Voltage Resin— Soft, two-part polybutadiene resin is for splices that may be accessed later for repair or reconfiguration. Gels in 62 minutes at 73° F; reaches full strength in 36 hours. Color is amber.

Jacket Repair Kits— Contents include reusable wrap-around mold and most materials needed to make 10 jacket repairs and splices of large cable. Insulating resin not included (we recommend the permanent flame-retardant 1000 max. voltage resin described above).

	Size		Each
Permanent Resins			
1000 Max. Voltage	23.8 oz.	6366K44	$66.25
8000 Max. Voltage	3.1 oz.	6366K41	17.02
8000 Max. Voltage	7.2 oz.	6366K42	27.85
8000 Max. Voltage	14.7 oz.	6366K43	51.92
Flame-Retardant 1000 Max. Volt.	7.6 oz.	6366K47	22.30
Flame-Retardant 1000 Max. Volt.	21.7 oz.	6366K48	52.65
Re-enterable Resins			
1000 Max. Voltage	12.3 oz.	6366K45	48.52
1000 Max. Voltage	21.2 oz.	6366K46	64.30
Jacket Repair Kits	**Max. Repair Lg.**		
For Cables 1.60″ to 2.5″	13″ to 15″	6366K51	69.43
For Cables 1.85″ to 4.0″	20″	6366K52	81.43
For Cables 1.85″ to 6.0″	32″	6366K53	122.15

For information about heat-shrink tubing, see page 810.

Moisture-Seal Heat-Shrink End Caps

Seal off cylindrical objects and crimped connections from moisture with these polyolefin end caps. When heated, the adhesive lining bonds to the cable jacket to form a seal. Shrink temperature is 257° F and temperature range is –67° to +230° F. Color is black. Sizes up to 0.09″ ID after shrinking are UL recognized.

ID After Shrinking	ID Before Shrinking	Length After Shrinking	Pkg. Qty.		Per Pkg.
0.02″	0.125″	0.50″	5	72855K21	$4.80
0.08″	0.250″	0.60″	5	72855K23	4.24
0.09″	0.375″	0.72″	5	72855K24	8.63
0.09″	0.500″	0.85″	5	72855K25	13.83
0.30″	0.790″	2.18″	1	72855K71	6.20
0.59″	1.570″	3.54″	1	72855K51	8.23
1.77″	3.940″	6.40″	1	72855K73	15.96

Moisture-Seal Heat-Shrink Cable Splitters

Three-Way Splitter

Insulate and seal cables where the jacket is removed to route individual conductors. Use on armored cable, sheathed cable, and conduit ends. Made of flame-retardant cross-linked polyolefin with an adhesive lining, these splitters provide excellent electrical and mechanical protection. Shrink temperature is 250° F and temperature range is –67° to +275° F. Color is black.

Cable ID After Shrinking	Cable ID Before Shrinking	Conductor ID After Shrinking	Conductor ID Before Shrinking	Overall Lg. After Shrinking		Each
Two-Way Splitters						
0.37″	0.80″	0.11″	0.33″	2.7″	73575K61	$15.92
0.60″	1.20″	0.17″	0.50″	3.5″	73575K62	17.27
0.90″	1.90″	0.30″	0.75″	4.2″	73575K63	20.05
Three-Way Splitters						
0.36″	0.90″	0.12″	0.33″	2.7″	73575K65	18.73
0.50″	1.20″	0.16″	0.50″	3.3″	73575K66	19.77
0.69″	1.50″	0.18″	0.65″	4″	73575K67	21.30
1.40″	2.40″	0.50″	1.25″	5.1″	73575K69	27.74
Four-Way Splitters						
0.43″	0.90″	0.11″	0.28″	2.75″	73575K73	18.68
0.80″	1.25″	0.19″	0.50″	3.3″	73575K74	20.68

Spiral Bundling Wrap-Around Sleeving

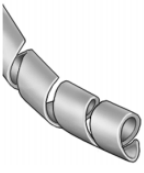

Reusable and flexible, this easy-to-use spiral wrap installs like tape around bundles of wire, tube, and hose. Wrap also permits access anywhere along its length.

Polyethylene— Comes on a spool. Temperature range is –76° to +190° F. Sleeving is abrasion and solvent resistant and is UL recognized. **To Order:** Please specify length from those listed in the table. *Clear* wraps are for indoor use. *Ultraviolet-resistant* wrap is black and ultraviolet-stabilized for outdoor use in direct sunlight. *Choose-a-color* wraps are for indoor use. **To Order:** Please specify blue, green, orange, red, white, or yellow.

Self-Extinguishing Nylon— Self extinguishing, and doesn't produce any toxic or irritating byproducts even if exposed to an open flame or high temperatures. Lightweight and highly abrasion resistant. Temperature range is –40° to +250° F. Comes on a spool. UL recognized. **To Order:** Please specify black or clear and length from those listed in the table. Black wrap is ultraviolet-stabilized for outdoor use in direct sunlight.

PTFE— Chemically inert and meets UL 94V0 for flammability resistance. Temperature range is –454° to +500° F. UL listed. **To Order:** Please specify black or translucent.

OD	Bundle Dia. Range	Wall Thick.	CLEAR POLYETHYLENE	Each 10 ft.	25 ft.	50 ft.	100 ft.	ULTRAVIOLET-RESISTANT BLACK POLYETHYLENE	Each 10 ft.	25 ft.	50 ft.	100 ft.
1/8″	1/16″ to 1/2″	0.032″	7432K36	$2.15	$4.77	$8.75	$15.90	7432K69	$2.36	$5.25	$9.63	$17.50
1/4″	3/16″ to 2″	0.045″	7432K37	3.36	7.51	13.71	25.01	7432K162	3.69	8.26	15.13	27.50
3/8″	5/16″ to 3″	0.052″	7432K38	5.19	11.49	21.13	38.42	7432K63	5.68	12.66	23.27	42.23
1/2″	3/8″ to 4″	0.062″	7432K39	6.74	15.02	27.53	49.74	7432K164	7.40	16.50	30.26	55.04
5/8″	1/2″ to 4 1/2″	0.062″	7432K47	10.83	24.06	44.15	80.26	7432K66	11.91	26.46	48.56	88.30
3/4″	3/4″ to 5″	0.065″	7432K46	12.28	27.27	49.74	90.96	7432K165	13.47	30.00	55.00	99.74
1″	1″ to 7″	0.080″	7432K48	16.73	40.85	74.84	136.13	7432K67	17.05	41.60	78.60	142.95
1 1/2″	1 1/2″ to 10″	0.100″	7432K49	31.15	80.38	147.35	—	7432K68	33.95	84.83	154.71	—

OD	Bundle Dia. Range	Wall Thick.	CHOOSE-A-COLOR POLYETHYLENE	Each 10 ft.	25 ft.	50 ft.	100 ft.	Wall Thick.	SELF-EXTINGUISHING NYLON	Each 10 ft.	25 ft.	50 ft.	100 ft.
1/8″	1/16″ to 1/2″	0.032″	7378K41	$2.35	$5.27	$9.61	$17.48	0.015″	7432K56	$3.70	$8.30	$15.19	$27.60
1/4″	3/16″ to 2″	0.045″	7378K42	3.70	8.26	15.16	27.48	0.025″	7432K57	5.85	13.02	23.86	43.41
3/8″	5/16″ to 3″	0.052″	7378K43	5.70	12.70	23.23	42.27	0.035″	7432K58	8.99	20.03	36.69	66.70
1/2″	3/8″ to 4″	0.062″	7378K44	7.45	16.54	30.26	55.07	0.035″	7432K59	11.74	26.08	47.77	86.91
3/4″	3/4″ to 5″★	0.065″	7378K45	11.94	26.47	48.56	88.30	0.032″	7432K28★	16.96	41.82	76.70	139.41
1″	1″ to 7″	0.080″	7378K46	16.22	30.02	55.03	99.74	0.032″	7432K29	21.30	47.40	86.90	157.99

★ 1/2″ to 5″ for self-extinguishing nylon sleeving.

OD	Bundle Dia. Range	Wall Thick.	Coil Lg., ft.	PTFE	Per Ft. Partial Coil	Full Coil
1/8″	1/16″ to 1/2″	0.03″	100	7432K2	$1.35	$1.00
3/16″	1/8″ to 1″	0.03″	100	7432K3	1.89	1.36
1/4″	3/16″ to 2″	0.03″	100	7432K9	2.37	1.76
3/8″	5/16″ to 3″	0.03″	100	7432K5	4.31	3.20

OD	Bundle Dia. Range	Wall Thick.	Coil Lg., ft.	PTFE	Per Ft. Partial Coil	Full Coil
1/2″	7/16″ to 4″	0.03″	100	7432K6	$5.35	$3.96
3/4″	11/16″ to 6″	0.04″	100	7432K27	8.97	6.64
1″	15/16″ to 8″	0.04″	100	7432K8	15.40	11.41

Easy-Open Polyester Wrap-Around Sleeving

Self-wrapping design keeps this sleeving closed around your cable or bundle of wires without the need for an adhesive strip, tie wraps, or special tools, yet sleeving opens and closes easily for maintenance. Made of black polyester.

Braided

Braided sleeving is UL recognized and CSA certified. Temperature range is –103° to +257° F.

ID	Bundle Dia. Range	Wall Thick.	3-ft. Lengths	Each	25-ft. Lengths	Each
1/8″	1/16″ to 1/8″	0.010″	1459T11	$1.70	1459T21	$10.96
1/4″	3/16″ to 1/4″	0.010″	1459T12	2.80	1459T22	16.70
1/2″	5/16″ to 1/2″	0.010″	1459T13	3.60	1459T23	21.81
3/4″	9/16″ to 3/4″	0.010″	1459T14	5.00	1459T24	32.13
1″	11/16″ to 1″	0.010″	1459T15	6.38	1459T25	41.49
1 1/2″	1 1/4″ to 1 1/2″	0.010″	1459T16	10.21	1459T26	68.57
2″	1 5/8″ to 2″	0.010″	1459T17	13.64	1459T27	88.28

Woven

Woven sleeving provides better abrasion resistance and is flame retardant. Meets ASTM E162. Temperature range is –58° to +257° F.

ID	Bundle Dia. Range	Wall Thick.	3-ft. Lengths	Each
3/16″	1/16″ to 3/16″	0.024″	2649K51	$6.19
5/16″	3/16″ to 5/16″	0.024″	2649K52	7.56
1/2″	5/16″ to 1/2″	0.024″	2649K53	8.72
3/4″	1/2″ to 3/4″	0.024″	2649K54	11.17
1″	3/4″ to 1″	0.024″	2649K55	12.78
1 1/2″	1″ to 1 3/4″	0.024″	2649K56	13.65

Expandable Mesh Sleeving

Sleeving expands to several times its diameter for easy installation, then tightens around your bundle of wire, cable, or tubing (except for easy-install wrap-around sleeving). Durable braided construction provides flexibility, prevents condensation, and permits heat and moisture dissipation. Sleeving also provides good resistance to abrasion and chemicals. Cut sleeving with a hot knife to prevent fraying, unless noted (see page 2361 for hot knives). Temp. range is –103° to +257° F, unless noted. UL recognized and CSA certified except super duty nylon.

Choose-a-color polyester is available in seven colors for color coding your wire bundles. **To Order:** Please specify color: black, blue, green, orange, red, white, or yellow.

Flame-retardant polyester meets UL VW-1 and FR1 as well as MIL-STD-202 for flammability. Color is black with white strand.

Easy-cut polyester has tighter braiding than other sleeving to resist fraying when cut with scissors. Color is black.

Heavy duty polyester is braided from heavier duty monofilament, giving it higher resistance to cuts and abrasion. Great for protecting wire, cable, and tubing that comes in contact with rough surfaces. Color is black.

Super duty nylon is braided with flat, thicker filaments for the best abrasion resistance. Good for hose applications as well as wire, cable, and tubing. Temperature range is –49° to +302° F. Color is black.

Easy-install wrap-around polyester has secure hook-and-loop closure, so there's no need to disconnect wire or cable to install—just wrap the sleeving around them for access anywhere along its length. Color is black.

Choose-a-Color Polyester

Easy-Install Wrap-Around Polyester

Choose-a-Color and Flame-Retardant Polyester—0.025″ Wall Thickness

		CHOOSE-A-COLOR						FLAME RETARDANT					
		10-ft. Lengths		Standard Spools		Jumbo Spools		10-ft. Lengths		Standard Spools			
ID	Bundle Dia. Range		Each	Lg., ft.	Each	Lg., ft.	Each		Each	Lg., ft.	Each		
1/8″	3/32″ to 1/4″	9284K1	$2.52	100	9284K11	500	9284K21	$69.32	9196K1	$2.85	100	9196K11	$19.03
1/4″	1/8″ to 7/16″	9284K2	2.65	100	9284K12	500	9284K22	73.95	9196K2	2.92	100	9196K12	20.12
3/8″	3/16″ to 5/8″	9284K3	4.19	50	9284K13	500	9284K23	127.16	9196K3	5.82	50	9196K13	20.80
1/2″	1/4″ to 3/4″	9284K4	5.30	50	9284K14	500	9284K24	173.35	9196K4	6.54	50	9196K14	25.16
3/4″	1/2″ to 1 1/4″	9284K5	7.95	50	9284K15	250	9284K25	127.11	9196K5	9.90	50	9196K15	38.07
1 1/4″	3/4″ to 1 3/4″	9284K6	9.69	50	9284K16	250	9284K26	167.55	9196K6	13.60	50	9196K16	54.38
1 1/2″	1″ to 2 1/2″	9284K7	11.97	50	9284K17	200	9284K27	166.43	9196K7	15.17	50	9196K17	58.34
1 3/4″	1 1/4″ to 2 3/4″	9284K8	12.82	50	9284K18	200	9284K28	208.02	9196K8	16.71	50	9196K18	92.46
2″	1 1/2″ to 3 1/2″	9284K9	14.53	50	9284K19	200	9284K29	235.77	9196K9	22.00	50	9196K19	122.36

Easy-Cut Polyester—0.024″ Wall Thickness

		10-ft. Lengths		Standard Spools		Jumbo Spools	
ID	Bundle Dia. Range		Each	Lg., ft.	Each	Lg., ft.	Each
1/8″	1/8″ to 1/4″	2837K11	$3.65	100	2837K21	1000	2837K41	$207.98
1/4″	5/32″ to 7/16″	2837K12	4.46	100	2837K22	1000	2837K42	254.20
3/8″	3/16″ to 5/8″	2837K13	6.47	50	2837K31	500	2837K51	196.43
1/2″	1/4″ to 3/4″	2837K14	6.72	50	2837K32	500	2837K52	219.54
3/4″	5/8″ to 1″	2837K15	8.45	50	2837K33	250	2837K61	138.19
1″	3/4″ to 1 3/16″	2837K16	9.18	50	2837K34	250	2837K62	156.00
1 1/4″	1″ to 1 1/2″	2837K17	12.02	50	2837K35	250	2837K63	196.43
1 1/2″	1 1/4″ to 2″	2837K18	14.03	50	2837K36	250	2837K64	219.26

Heavy Duty Polyester—0.038″ Wall Thickness

		3-ft. Lengths		10-ft. Lengths		Standard Spools			Jumbo Spools		
ID	Bundle Dia. Range		Each		Each	Lg., ft.		Each	Lg., ft.		Each
3/8″	3/16″ to 3/4″	9142K31	$2.88	9142K1	$7.39	100	9142K11	$56.86	500	9142K21	$241.64
5/8″	5/16″ to 1″	9142K32	3.54	9142K2	9.08	75	9142K12	60.54	250	9142K22	169.81
1″	1/2″ to 1 1/2″	9142K33	5.09	9142K3	13.05	50	9142K13	54.38	250	9142K23	231.13
1 1/2″	3/4″ to 2″	9142K34	5.83	9142K4	14.96	50	9142K14	67.98	250	9142K24	288.92
2″	1 1/2″ to 3″	9142K35	8.81	9142K5	24.47	50	9142K15	111.22	200	9142K25	378.22
3″	2″ to 4″	9142K36	10.77	9142K6	29.91	50	9142K16	135.96	100	9142K26	231.13
4″	2 1/2″ to 5 1/2″	9142K37	12.66	9142K7	36.71	50	9142K17	166.86	100	9142K27	283.66

Super Duty Nylon—0.041″ Wall Thickness

		3-ft. Lengths		10-ft. Lengths		Standard Spools		
ID	Bundle Dia. Range		Each		Each	Lg., ft.		Each
1/2″	3/8″ to 5/8″	9337K1	$4.32	9337K6	$11.07	100	9337K12	$92.22
3/4″	5/8″ to 1″	9337K2	5.83	9337K7	14.96	50	9337K13	62.33
1 1/4″	1″ to 1 1/2″	9337K4	7.98	9337K9	20.45	50	9337K15	85.22
1 3/4″	1 1/2″ to 2″	9337K5	10.56	9337K11	27.07	25	9337K16	56.40

Easy-Install Wrap-Around Polyester—0.025″ Wall Thickness

			3-ft. Lengths		10-ft. Lengths		25-ft. Spools		100-ft. Spools	
ID	Bundle Dia. Range	Flat Wd.		Each		Each		Each		Each
1/2″	1/4″ to 1/2″	1 3/4″	70085K11	$7.00	70085K21	$20.99	70085K31	$49.97	70085K41	$190.34
3/4″	1/2″ to 3/4″	2 3/8″	70085K12	7.99	70085K22	23.98	70085K32	57.10	70085K42	217.54
1 1/4″	1″ to 1 1/4″	3 1/2″	70085K13	10.99	70085K23	32.98	70085K33	78.52	70085K43	299.11
2″	1 1/2″ to 2″	4 1/2″	70085K14	11.99	70085K24	35.98	70085K34	85.65	70085K44	326.30

Flame-Retardant Plenum-Rated Expandable Mesh Sleeving

Greatly reduce the danger of flame spread and smoke with this braided Halar (ethylene chlorotrifluoroethylene [ECTFE] copolymer monofilament) sleeving. It withstands high temperatures, so it's great for plenum applications and confined spaces. Plus, it resists corrosive chemicals and organic solvents. Temperature range is –94° to +302° F. Color is black with a white strand. UL 2024 and NFPA 262 rated for use in plenums. UL 224 VW-1 rated for flame retardance.

					Per Ft.	
ID	Bundle Dia. Range	Wall Thick.	Roll Lg., ft.		Partial Roll	Full Roll
1/4″	1/8″ to 3/8″	0.025″	100	9344K2	$0.73	$0.56
1/2″	1/4″ to 7/8″	0.025″	50	9344K4	2.21	1.67
3/4″	1/2″ to 1 1/4″	0.025″	50	9344K5	3.09	2.40
1 1/4″	3/4″ to 1 3/4″	0.025″	50	9344K6	4.51	3.48
1 3/4″	1 1/4″ to 2 1/2″	0.025″	50	9344K7	6.41	4.94
2″	1 1/2″ to 3″	0.025″	50	9344K8	7.64	5.85

High-Temperature Expandable PEEK Mesh Sleeving

Great for use in extreme environmental conditions as hot as 500° F. This tough braided PEEK (polyetheretherketone) sleeving is lightweight and highly flexible, and the open weave construction allows sleeving to expand to fit different applications and sizes while remaining resistant to trapping water, heat, and humidity. Great for protecting cable assemblies, hose, and wire harnesses from abrasion, chafing, and cutting. Color is black. Temperature range is –94° to +500° F. Meets UL VW-1 for flame retardance.

					Per Ft.	
ID	Bundle Dia. Range	Wall Thick.	Roll Lg., ft.		Partial Roll	Full Roll
1/4″	1/4″ to 5/8″	0.020″	100	2656K11	$1.86	$1.54
1/2″	1/2″ to 7/8″	0.020″	50	2656K12	5.63	4.69
3/4″	3/4″ to 1 3/8″	0.020″	50	2656K13	8.14	6.79
1 1/4″	1 1/4″ to 1 3/4″	0.020″	50	2656K14	11.54	9.62
1 3/4″	1 3/4″ to 2 1/4″	0.020″	50	2656K15	16.80	14.00
2 1/2″	2 1/2″ to 3″	0.020″	50	2656K16	19.97	16.64

Harsh-Environment Expandable PTFE Mesh Sleeving

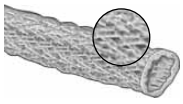

Braided PTFE construction stands up to the most hostile environments and makes this the toughest expandable sleeving we offer. Its monofilaments are heavier than PEEK, giving it better abrasion and chemical resistance. Temperature range is –94° to +482° F. Color is clear.

ID	Bundle Dia. Range	Wall Thick.	Roll Lg., ft.		Per Ft. Partial Roll	Per Ft. Full Roll
1/4″	1/4″ to 5/16″	0.035″	100	1398T1	$1.93	$1.48
1/2″	1/2″ to 3/4″	0.035″	50	1398T3	7.35	5.63
3/4″	3/4″ to 1″	0.035″	50	1398T4	8.52	6.53
1″	1″ to 1 1/4″	0.035″	50	1398T5	11.10	8.51
1 1/4″	1 1/4″ to 1 1/2″	0.035″	50	1398T6	11.62	8.91
2″	2″ to 3″	0.035″	50	1398T7	27.13	20.80

Chemical-Resistant Polyvinyl Chloride (PVC) Sleeving

PVC protects your cable from heat, abrasion, and many chemicals, oils, and acids. Temperature range is –4° to +221° F. Color is black. UL listed and passes UL 224 VW-1 for flame retardance. **To Order:** Please specify length (10, 25, 50, or 100 ft.).

ID	For Wire Size	Wall Thick.	Roll Lg., ft.		Per Ft. Partial Roll	Per Ft. Full Roll
0.022″	24 AWG	0.012″	100	1508T11	$0.22	$0.17
0.027″	22 AWG	0.012″	100	1508T12	.22	.17
0.034″	20 AWG	0.016″	100	1508T13	.23	.18
0.042″	18 AWG	0.016″	100	1508T14	.24	.18
0.053″	16 AWG	0.016″	100	1508T15	.25	.19
0.066″	14 AWG	0.016″	100	1508T16	.25	.19
0.085″	12 AWG	0.016″	100	1508T17	.25	.20
0.106″	10 AWG	0.016″	100	1508T18	.26	.20
0.133″	8 AWG	0.020″	100	1508T19	.29	.23
0.166″	6 AWG	0.020″	100	1508T21	.30	.23
0.186″	3/16″	0.020″	100	1508T22	.31	.25
0.208″	4 AWG	0.020″	100	1508T23	.34	.27
0.234″	3 AWG	0.020″	100	1508T24	.35	.27
0.25″	1/4″	0.020″	100	1508T25	.37	.27
0.263″	2 AWG	0.020″	100	1508T26	.35	.28
0.294″	1 AWG	0.020″	100	1508T27	.37	.28
0.313″	5/16″	0.025″	100	1508T28	.37	.28
0.33″	0 AWG	0.025″	100	1508T29	.45	.35
0.375″	3/8″	0.025″	100	1508T31	.45	.35
0.438″	7/16″	0.025″	100	1508T32	.46	.36
0.5″	1/2″	0.025″	100	1508T33	.51	.39
0.563″	9/16″	0.030″	100	1508T34	.53	.42
0.625″	5/8″	0.030″	100	1508T35	.65	.50
0.75″	3/4″	0.035″	100	1508T36	.88	.69
1″	1″	0.035″	100	1508T37	1.22	.95
1.5″	1 1/2″	0.045″	50	1508T38	1.96	1.53
2″	2″	0.060″	50	1508T39	3.05	2.37

Abrasion-Resistant Nylon Fabric Sleeving

Sleeving is woven from nylon into a highly abrasion-resistant fabric sleeve. Great for protecting painted finishes on chains, cables, and springs. Slip over wire, cable, hose, and more—just secure with nylon cable ties to complete installation (ties not included; see pages 1516-1522). Temperature range is –40° to +250° F. Color is black. MSHA (Mine Safety and Health Administration) approved. Maximum continuous length is 100 ft.

ID	Flat Wd.	Wall Thick.		Per Ft. 1-99	Per Ft. 100-Up
0.77″	1.25″	0.045″	55545K69	$0.93	$0.75
0.9″	1.5″	0.045″	55545K71	1.02	.82
1″	1.66″	0.045″	55545K72	1.07	.85
1.14″	1.88″	0.045″	55545K73	1.14	.91
1.25″	2.03″	0.045″	55545K75	1.16	.93
1.53″	2.5″	0.045″	55545K79	1.36	1.09
1.59″	2.56″	0.045″	55545K81	1.41	1.13
1.75″	2.81″	0.045″	55545K83	1.50	1.20
1.85″	3″	0.045″	55545K85	1.66	1.33
2.07″	3.31″	0.045″	55545K87	1.80	1.44
2.25″	3.63″	0.045″	55545K89	2.00	1.60
2.64″	4.25″	0.045″	55545K92	2.41	1.93
2.96″	4.75″	0.045″	55545K94	3.11	2.49
3.66″	5.81″	0.045″	55545K96	3.39	2.71

Chemical-Resistant Polyester Wrap-Around Sleeving

Just wrap this sleeving around your cable or bundle of wires and close with the adhesive strip for more permanent protection than helical and hook-and-loop mesh sleeving. It has a vinyl coating to resist mild chemicals, solvents, and abrasion. Temp. range is –4° to +212° F. Color is black. UL recognized. Meets UL 224 VW-1 for flame retardance and MIL-C-43006E, Type II, Class 1. Roll length is 25 ft.

ID	Bundle Dia. Range	Flat Wd.	Wall Thick.		Per Ft. Partial Roll	Per Ft. Full Roll
3/8″	Up to 3/8″	9/16″	0.010″	7946K51	$1.78	$1.53
1/2″	1/4″ to 1/2″	3/4″	0.010″	7946K52	1.89	1.63
1″	1/2″ to 1″	1 1/2″	0.010″	7946K53	2.35	2.02
1 1/2″	1″ to 1 1/2″	2 5/16″	0.010″	7946K54	2.73	2.35
2″	1 1/2″ to 2″	3″	0.010″	7946K55	3.35	2.88

EMI/RFI-Shield Polyurethane Wrap-Around Sleeving

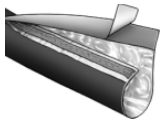

The aluminum foil shield bonded to the inside of this polyurethane sleeving gives it excellent protection against electromagnetic and radio-frequency interference (EMI and RFI). It also includes a braided tin-coated copper grounding strap. Sleeving is easy to install and more permanent than helical and hook-and-loop mesh sleeving—just wrap it around your cable or bundle of wires and close with the adhesive strip. It provides good abrasion resistance and excellent solvent resistance. Temperature range is –40° to +225° F. Color is black. UL recognized and meets UL 224 VW-1 for flame retardance. Roll length is 25 ft.

ID	Bundle Dia Range	Flat Wd.	Wall Thick.		Per Ft. Partial Roll	Per Ft. Full Roll
3/8″	Up to 3/8″	1/2″	0.011″	7940K31	$7.89	$6.79
1/2″	1/4″ to 1/2″	3/4″	0.011″	7940K32	8.11	6.98
1″	1/2″ to 1″	1 1/2″	0.011″	7940K33	9.76	8.40
1 1/2″	1″ to 1 1/2″	2 3/8″	0.011″	7940K34	11.41	9.81
2″	1 1/2″ to 2″	3″	0.011″	7940K35	14.81	12.74

Super-Abrasion-Resistant Expandable Metallic Mesh Sleeving

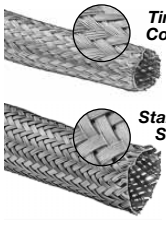

Both strong and flexible, this braided metallic sleeving protects wire, cable, and hose in highly abrasive environments. Sleeving expands for installation—just pull it tight around the bundle for a secure fit. Color is silver. Maximum continuous length is 100 ft.

Tinned copper sleeving works well in EMI shielding and grounding applications. Cut with scissors. ***Stainless steel*** sleeving is Type 304 and corrosion resistant. Cut with sheet metal snips (see page 2346).

ID	Bundle Dia. Range	Wall Thick.	*Tinned Copper*	Per Ft. ♦	*Stainless Steel*	Per Ft. ♦
1/4″	3/16″ to 5/16″	0.010″	5537K26	$1.34	1478T1	$2.10
3/8″	5/16″ to 7/16″	0.010″	5537K14	1.45	1478T2	2.19
1/2″	7/16″ to 9/16″	0.010″	5537K27	2.05	1478T3	2.86
25/32″	3/4″ to 7/8″	0.010″	5537K28	3.00	1478T4	4.10
1″	7/8″ to 1 1/16″	0.025″	5537K32	4.40	1478T5	5.24
1 1/8″	1 1/16″ to 1 3/16″	0.025″	5537K33	5.32	1478T6	6.43
1 1/4″	1 3/16″ to 1 5/16″	0.025″	5537K34	5.59	1478T7	6.76
1 1/2″	1 7/16″ to 1 9/16″	0.025″	5537K36	7.05	1478T8	7.38

♦ Prices are approximately 25% lower when you order the maximum continuous length of 100 ft.

Super-Abrasion-Resistant Ballistic Nylon Wrap-Around Sleeving

If this sleeving were any tougher, it would be made of metal. It is made of woven ballistic nylon, similar to that found on high-quality soft luggage, so it's built for abrasion resistance and flexes easily. Hook-and-loop closure makes it easy to install. Temperature range is –60° to +180° F. Color is black. Roll length is 25 ft.

ID	Bundle Dia. Range	Flat Wd.	Wall Thick.		Per Ft. Partial Roll	Per Ft. Full Roll
1 1/2″	1″ to 1 1/2″	5 5/8″	0.026″	7257K2	$5.69	$4.34
2 1/2″	2″ to 2 1/2″	9 1/4″	0.026″	7257K4	7.21	5.50
3 1/2″	3″ to 3 1/2″	12 7/8″	0.026″	7257K6	10.34	7.89
4 1/2″	4″ to 4 1/2″	15 3/4″	0.026″	7257K8	10.97	8.37

High-Temperature Fiberglass Sleeving

Sleeving made from plastics won't last in these temperatures. Cut this sleeving with scissors.

1000° F

Good for general heat protection, this braided sleeving resists alkalies, water, solvents, and oil. Temperature range is –40° to +1000° F. Color is white. **To Order:** Please specify length (5, 10, 25, 50, or maximum continuous length of 100 ft.).

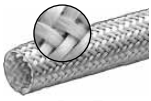

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 5-99	Per Ft. 100-Up
1/16"	0.056" to 0.068"	1/16"	8819K41	$0.23	$0.19
1/8"	0.113" to 0.137"	1/16"	8819K42	.31	.26
3/16"	11/64" to 13/64"	1/16"	8819K43	.37	.30
1/4"	15/64" to 17/64"	1/16"	8819K44	.37	.30
5/16"	9/32" to 11/32"	1/16"	8819K45	.37	.30
3/8"	11/32" to 13/32"	1/16"	8819K46	.37	.30
1/2"	29/64" to 35/64"	1/16"	8819K48	.54	.44
5/8"	9/16" to 11/16"	1/16"	8819K49	.63	.51
3/4"	43/64" to 53/64"	1/16"	8819K51	.66	.53
1"	29/32" to 1 7/64"	1/16"	8819K52	.91	.74
1 1/4"	1 1/8" to 1 3/8"	1/16"	8819K53	1.06	.86
1 1/2"	1 23/64" to 1 21/32"	1/16"	8819K54	1.49	1.21
2"	1 5/64" to 2 3/16"	1/16"	8819K55	1.80	1.47
3"	2 45/64" to 3 19/64"	1/16"	8819K56	2.09	1.70

1200° F

Braided from heat-treated fiberglass and coated with high-temperature resins, this sleeving resists abrasion, chemicals, solvents, and oil. Temp. range is –94° to +1200° F. Color is black. **To Order:** Please specify length (5, 10, 25, 50, or max. continuous length of 100 ft.).

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 5-99	Per Ft. 100-Up
3/8"	3/8" to 15/32"	3/64"	2592K61	$1.36	$1.06
1/2"	1/2" to 5/8"	3/64"	2592K62	1.94	1.52
5/8"	5/8" to 25/32"	3/64"	2592K63	2.18	1.70
3/4"	3/4" to 15/16"	3/64"	2592K64	2.60	2.04
7/8"	7/8" to 1 3/32"	3/64"	2592K65	2.81	2.20
1"	1" to 1 1/4"	1/16"	2592K66	3.51	2.75

1400° F

Get the best temperature resistance of any fiberglass sleeving. This tightly knitted sleeving resists most acids (excluding hydrofluoric), alkalies, oil, grease, ammonia, and detergents. Temp. range is –70° to +1400° F. Color is white. **To Order:** Please specify length (5, 10, 25, or max. cont. length of 50 ft.).

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 5-49	Per Ft. 50-Up
1/2"	7/16" to 9/16"	1/16"	8849K51	$5.17	$4.21
3/4"	11/16" to 13/16"	1/16"	8849K52	8.18	6.65
1"	15/16" to 1 1/16"	1/16"	8849K53	9.31	7.57
1 1/2"	1 7/16" to 1 9/16"	1/16"	8849K54	17.18	13.95
1 3/4"	1 11/16" to 1 13/16"	1/16"	8849K55	18.26	14.83
2"	1 13/16" to 1 15/16"	1/16"	8849K56	19.64	15.96

Heat-Dissipating Fiberglass Sleeving

Put a layer of protection between personnel and hot hoses and piping. The silicone rubber coating over this thick braided fiberglass sleeving allows heat to dissipate. It can reduce the outer temperature of a 380° F steam hose to 130° F. Temperature range is –60° to +600° F. Color is blue. **To Order:** Please specify length (1, 5, 10, 25, or maximum continuous length of 50 ft.).

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 1-49	Per Ft. 50-Up
1/2"	1/4" to 1/2"	0.23"	7569K11	$4.08	$3.18
3/4"	7/16" to 3/4"	0.23"	7569K12	5.03	3.92
1"	11/16" to 1"	0.23"	7569K13	6.10	4.76
1 1/4"	7/8" to 1 1/4"	0.23"	7569K14	7.10	5.54
1 1/2"	1 1/8" to 1 1/2"	0.23"	7569K15	7.59	5.92
1 3/4"	1 3/8" to 1 3/4"	0.23"	7569K16	8.54	6.66
2"	1 5/8" to 2"	0.23"	7569K17	9.15	7.14
2 1/2"	1 7/8" to 2 1/2"	0.23"	7569K18	13.59	10.60
3"	2 3/8" to 3"	0.23"	7569K19	20.56	16.04
3 1/2"	2 7/8" to 3 1/2"	0.23"	7569K21	23.31	18.18

Spark-Resistant High-Temperature Fiberglass Sleeving

Made of fiberglass with a silicone rubber coating, this sleeving sheds sparks and molten metal splash. Exposure to a torch will char the coating but won't scorch the fiberglass inner layer. Sleeving resists hydraulic fuels and lubricating oils. Temperature range is –65° to +500° F. Color is orange. **To Order:** Please specify length (1, 5, 10, 25, or maximum continuous length of 50 ft.).

Standard

Sleeving is knitted.

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 1-49	Per Ft. 50-Up
1/4"	3/16" to 5/16"	9/64"	8772K51	$3.02	$2.58
3/8"	5/16" to 7/16"	9/64"	8772K52	3.80	3.16
1/2"	7/16" to 9/16"	9/64"	8772K54	3.84	3.20
5/8"	9/16" to 11/16"	9/64"	8772K56	4.35	3.70
3/4"	11/16" to 13/16"	9/64"	8772K58	4.83	4.11
7/8"	13/16" to 15/16"	9/64"	8772K11	5.87	5.00
1"	15/16" to 1 1/16"	9/64"	8772K61	6.26	5.33
1 1/4"	1 3/16" to 1 5/16"	9/64"	8772K63	7.43	6.33
1 1/2"	1 7/16" to 1 9/16"	9/64"	8772K65	8.61	7.33
1 3/4"	1 11/16" to 1 13/16"	9/64"	8772K12	10.13	8.63
2"	1 15/16" to 2 1/16"	9/64"	8772K69	11.70	9.96
2 1/4"	2 3/16" to 2 5/16"	9/64"	8772K13	12.87	10.96
2 1/2"	2 7/16" to 2 9/16"	9/64"	8772K73	13.61	11.59
2 3/4"	2 11/16" to 2 13/16"	9/64"	8772K14	15.74	13.41
3"	2 15/16" to 3 1/16"	9/64"	8772K77	19.22	16.37
3 1/2"	3 7/16" to 3 9/16"	9/64"	8772K15	21.33	17.29
4"	3 15/16" to 4 1/16"	9/64"	8772K16	27.83	22.57

High Performance

Sleeving is braided and meets SAE Aerospace Standard AS1072E. Withstands short-term flame exposure up to 2000° F when installed on a hose assembly qualified to SAE Aerospace Standard 1055.

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 1-49	Per Ft. 50-Up
1/4"	3/16" to 5/16"	9/64"	6172T11	$3.27	$2.77
3/8"	5/16" to 7/16"	9/64"	6172T12	4.05	3.42
1/2"	7/16" to 9/16"	9/64"	6172T13	4.86	4.12
5/8"	9/16" to 11/16"	9/64"	6172T14	5.59	4.73
3/4"	11/16" to 13/16"	9/64"	6172T15	6.82	5.77
1"	15/16" to 1 1/16"	9/64"	6172T16	8.41	7.12
1 1/4"	1 3/16" to 1 5/16"	9/64"	6172T17	9.12	7.41
1 1/2"	1 7/16" to 1 9/16"	9/64"	6172T18	9.57	7.88
2"	1 15/16" to 2 1/16"	9/64"	6172T19	11.89	9.79
2 1/2"	2 7/16" to 2 9/16"	9/64"	6172T21	15.57	12.62
3"	2 15/16" to 3 1/16"	9/64"	6172T22	19.73	16.00

Spark-Resistant High-Temperature Fiberglass Wrap-Around Sleeving

Similar to the standard spark-resistant sleeving on this page, but this sleeving has a hook-and-loop strip so you can wrap it easily around your cable, hose, or bundle of wires without disconnecting. Sleeving is braided with a silicone rubber coating. Temperature range is –76° to +500° F. Color is orange. Maximum continuous length is 50 ft.

ID	Bundle Dia. Range	Flat Wd.	Wall Thick.		Per Ft.
7/8"	1/2" to 7/8"	1.37"	9/64"	8266K11	$12.60
1"	11/16" to 1"	1.57"	9/64"	8266K12	13.29
1 1/4"	7/8" to 1 1/4"	1.96"	9/64"	8266K13	14.05
1 1/2"	1 1/8" to 1 1/2"	2.34"	9/64"	8266K14	15.40
1 3/4"	1 3/8" to 1 3/4"	2.74"	9/64"	8266K15	17.45
2"	1 5/8" to 2"	3.14"	9/64"	8266K16	19.10
2 1/4"	1 7/8" to 2 1/4"	3.53"	9/64"	8266K17	22.74
2 1/2"	2 1/8" to 2 1/2"	3.92"	9/64"	8266K18	24.64
3"	2 5/8" to 3"	4.71"	9/64"	8266K19	25.69
3 1/2"	3 1/8" to 3 1/2"	5.5"	9/64"	8266K21	26.21

Heat-Reflective Fiberglass Wrap-Around Sleeving

Protect your critical components with this sleeving. Made of woven fiberglass and laminated with aluminum foil, it withstands ambient heat up to 392° F as well as radiant heat. It also offers good fluid and chemical resistance and maintains a circular profile when flexed. The wrap-around design makes it easy to install over existing wires. Temperature range is –40° to +392° F. Meets ASTM D350 requirements as self extinguishing. Sold in 3-ft. lengths.

ID	Bundle Dia. Range	Flat Wd.	Wall Thick.		Each
3/8"	5/16" to 3/8"	2 1/8"	1/32"	2627K31	$10.15
1/2"	3/8" to 1/2"	2 1/2"	1/32"	2627K32	12.02
3/4"	1/2" to 3/4"	3 1/2"	1/32"	2627K33	14.64
1"	3/4" to 1"	4 1/2"	1/32"	2627K34	15.52

Electrical-Insulating Fiberglass Sleeving

Silicone Rubber Coated

An excellent secondary insulator for individual wires and bundles of wire, this sleeving remains highly flexible while providing increased temperature and abrasion resistance. Insulates up to 7000 volts. All are UL recognized and CSA certified.

***Vinyl Coated*—**Resists waxes, alcohols, petroleum solvents, esters, and many alkalies and acids. Temperature range is –4° to +266° F. Color is black. Meets UL VW-1 for flame retardance.

***High Flex Acrylic Coated*—**The acrylic resin insulation makes this sleeving more flexible than silicone rubber. Resists corrosion and many acids and organic solvents. Temperature range is –13° to +311° F. Color is tan.

***High Temperature Silicone Rubber Coated*—**Resists ozone and weathering and will self extinguish, leaving a nonconductive white ash. Maintains excellent flexibility throughout its temperature range of –94° to +392° F. Meets UL VW-1 for flame retardance. **To Order:** Please specify color: black or white.

***Expandable Rubber Coated*—**Expands to twice its relaxed size, providing the flexibility needed to snugly fit over irregularly shaped objects. Has excellent abrasion, chemical, and moisture resistance. Temperature range is –67° to +392° F. **To Order:** Please specify color: black or white.

Vinyl Coated

ID	For Wire Size	Wall Thick.	10-ft. Lengths	Each	50-ft. Spools	Each
0.085″	12 AWG	0.015″	7408K42	$2.25	7408K21	$9.37
0.106″	10 AWG	0.018″	7408K43	2.55	7408K23	10.61
0.118″	9 AWG	0.018″	7408K44	2.67	7408K24	11.11
0.133″	8 AWG	0.018″	7408K45	2.84	7408K25	11.83
0.166″	6 AWG	0.020″	7408K46	3.32	7408K27	13.83
0.208″	4 AWG	0.020″	7408K47	4.16	7408K29	17.33
0.263″	2 AWG	0.020″	7408K48	4.83	7408K31	20.13

ID	For Wire Size	Wall Thick.	5-ft. Lengths	Each	25-ft. Spools	Each
0.330″	0 AWG	0.025″	7408K49	$3.25	7408K33	$13.54
0.387″	3/8″	0.025″	7408K51	4.85	7408K34	20.22
0.450″	7/16″	0.025″	7408K52	6.45	7408K35	26.88
0.512″	1/2″	0.025″	7408K53	6.78	7408K36	28.27
0.640″	5/8″	0.025″	7408K54	7.91	7408K37	32.95
0.768″	3/4″	0.025″	7408K55	9.76	7408K38	40.66
1.018″	1″	0.020″	7408K56	13.18	7408K41	59.93

High Flex Acrylic Coated

ID	For Wire Size	Wall Thick.	3-ft. Lengths	Each	50-ft. Spools	Each
0.085″	12 AWG	0.015″	8268K11	$1.39	8268K41	$19.10
0.106″	10 AWG	0.018″	8268K12	1.54	8268K42	21.71
0.118″	9 AWG	0.018″	8268K13	1.61	8268K43	22.56
0.133″	8 AWG	0.018″	8268K14	1.72	8268K44	23.86
0.166″	6 AWG	0.020″	8268K15	1.94	8268K45	26.75
0.208″	4 AWG	0.020″	8268K16	2.49	8268K46	34.75
0.263″	2 AWG	0.020″	8268K17	3.08	8268K47	42.93

ID	For Wire Size	Wall Thick.	3-ft. Lengths	Each	25-ft. Spools	Each
0.330″	0 AWG	0.025″	8268K18	$4.28	8268K48	$29.76
0.375″	3/8″	0.025″	8268K19	5.79	8268K49	40.21
0.438″	7/16″	0.025″	8268K21	7.51	8268K51	52.18
0.500″	1/2″	0.025″	8268K22	8.64	8268K52	60.07
0.625″	5/8″	0.025″	8268K23	9.69	8268K53	67.48
0.750″	3/4″	0.025″	8268K24	10.78	8268K54	74.78
1.000″	1″	0.025″	8268K25	14.63	8268K55	110.67

High Temperature Silicone Rubber Coated

ID	For Wire Size	Wall Thick.	10-ft. Lengths	Each	50-ft. Spools	Each
0.085″	12 AWG	0.015″	7453K83	$4.47	7453K43	$18.64
0.106″	10 AWG	0.018″	7453K84	5.09	7453K44	21.22
0.118″	9 AWG	0.018″	7453K85	5.31	7453K45	22.14
0.133″	8 AWG	0.018″	7453K86	6.10	7453K46	25.40
0.166″	6 AWG	0.020″	7453K87	6.27	7453K47	26.14
0.208″	4 AWG	0.020″	7453K88	8.73	7453K48	36.39
0.263″	2 AWG	0.020″	7453K89	11.55	7453K49	48.11

ID	For Wire Size	Wall Thick.	5-ft. Lengths	Each	25-ft. Spools	Each
0.330″	0 AWG	0.025″	7453K91	$6.71	7453K51	$29.16
0.387″	3/8″	0.025″	7453K92	9.34	7453K52	40.63
0.450″	7/16″	0.025″	7453K93	10.70	7453K53	53.51
0.512″	1/2″	0.025″	7453K94	12.50	7453K54	56.69
0.640″	5/8″	0.025″	7453K95	13.32	7453K55	63.43
0.768″	3/4″	0.025″	7453K96	13.82	7453K56	69.12

Expandable Rubber Coated

ID	For Wire Size	Wall Thick.	10-ft. Lengths	Each	50-ft. Lengths	Each
0.076″	13 AWG	0.015″	2573K11	$4.50	2573K21	$18.73
0.118″	9 AWG	0.018″	2573K12	5.47	2573K22	22.80
0.166″	6 AWG	0.020″	2573K13	6.76	2573K23	28.16
0.234″	3 AWG	0.020″	2573K14	9.48	2573K24	39.49

ID	For Wire Size	Wall Thick.	5-ft. Lengths	Each	25-ft. Lengths	Each
0.330″	0 AWG	0.025″	2573K15	$7.53	2573K25	$31.38
0.387″	3/8″	0.025″	2573K16	10.40	2573K26	43.76
0.512″	1/2″	0.025″	2573K17	13.88	2573K27	60.33
0.640″	5/8″	0.025″	2573K18	14.72	2573K28	66.92

Ultra-High-Temperature Silica Sleeving

1800° F

Silica withstands higher temperatures than fiberglass. Cut with scissors. Color is white. **To Order:** Please specify length (1, 5, 10, 25, or maximum continuous length of 50 ft.).

1800° F sleeving has braided continuous fibers for superior strength and abrasion resistance. It has 98% silica content. Sleeving is coated to aid in installation; the coating then decomposes when used in high-temperature applications. Resists acids, grease, alcohol, solvents, petroleum, and molten metal splash. Temperature range is –100° to +1800° F. ***2300° F*** sleeving is woven and has 98% silica content. Resists alkalies, water, detergents, petroleum, UV, flame, and salt. Temperature range is –40° to +2300° F.

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 1-49	50-Up
1800° F					
1/2″	1/4″ to 1/2″	0.100″	8829K81	$3.80	$3.17
1″	3/4″ to 1″	0.100″	8829K82	5.22	4.35
1 1/2″	1 1/4″ to 1 5/8″	0.100″	8829K83	7.54	6.28
2″	1 3/4″ to 2″	0.100″	8829K84	8.86	7.38
3″	2 1/2″ to 3 1/2″	0.100″	8829K85	9.84	8.20
4″	3 1/2″ to 4 1/2″	0.100″	8829K86	13.82	11.52
2300° F					
3/8″	21/64″ to 13/32″	0.125″	88155K61	3.42	2.70
1/2″	29/64″ to 35/64″	0.125″	88155K62	4.34	3.42
5/8″	9/16″ to 11/16″	0.125″	88155K63	5.33	4.21
3/4″	11/16″ to 13/16″	0.125″	88155K64	5.43	4.29
7/8″	51/64″ to 61/64″	0.125″	88155K65	5.43	4.29
1″	29/32″ to 1 7/64″	0.125″	88155K66	7.37	5.82
1 1/4″	1 1/8″ to 1 3/8″	0.125″	88155K67	8.80	6.95
1 1/2″	1 23/64″ to 1 41/64″	0.125″	88155K68	10.47	8.26
1 3/4″	1 37/64″ to 1 59/64″	0.125″	88155K69	11.40	9.00
2″	1 13/16″ to 2 3/16″	0.125″	88155K71	14.60	11.53
2 1/2″	2 1/4″ to 2 3/4″	0.125″	88155K72	14.83	11.71
3″	2 45/64″ to 3 19/64″	0.125″	88155K73	18.00	14.21

Ultra-High-Temperature Ceramic Sleeving

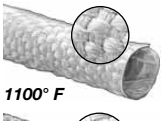

1100° F

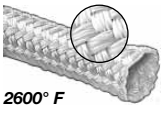

2600° F

Ceramic will not burn, and it resists molten metal splash, abrasion, acids, alkalies, water, ammonia, alcohol, solvents, and petroleum. Expands slightly for easy installation. Not rated for low-end temperature. Cut with scissors. Color is white. Meets MIL-I-24244B. **To Order:** Please specify length from those listed in the table.

***1100° F*—**Braided from calcium aluminum silicate.

***2600° F*—**Braided from alumina, boria, and silica fibers with a high aluminum content (96%) for additional strength, flexibility, and temperature resistance.

1100° F

ID	Bundle Dia. Range	Wall Thick.		Each 3 ft.	25 ft.	100 ft.
1/8″	3/32″ to 1/8″	0.063″	88175K31	$3.28	$21.00	$63.25
1/4″	5/32″ to 1/4″	0.063″	88175K32	3.74	22.59	65.54
3/8″	11/32″ to 3/8″	0.063″	88175K33	3.96	23.22	70.00
1/2″	15/32″ to 1/2″	0.063″	88175K34	4.40	25.76	80.11
3/4″	23/32″ to 3/4″	0.063″	88175K35	7.50	46.80	164.21
1″	31/32″ to 1″	0.063″	88175K36	8.16	54.43	202.50
1 1/2″	1 15/32″ to 1 1/2″	0.063″	88175K37	10.86	70.90	247.00
2″	1 31/32″ to 2″	0.063″	88175K38	14.16	104.19	355.78

2600° F

ID	Bundle Dia. Range	Wall Thick.		Each 3 ft.	5 ft.	10 ft.
1/16″	1/32″ to 1/16″	0.031″	87675K1	$24.07	$47.64	$66.87
1/8″	3/32″ to 1/8″	0.031″	87675K2	34.13	53.33	100.87
1/4″	5/32″ to 1/4″	0.031″	87675K3	51.80	80.20	147.47
1/2″	7/16″ to 1/2″	0.031″	87675K4	76.53	112.78	214.90
1″	15/16″ to 1″	0.031″	87675K5	132.33	195.06	370.71

High-Strength Abrasion-Resistant Nomex Sleeving

Get strength and abrasion resistance unmatched by fiberglass, silica, and ceramic. Nomex sleeving, knitted from Aramid fiber, doesn't irritate the skin like fiberglass and silica. It resists most acids and alkalies, water, hydraulic fluid, alcohol, solvents, waxes, petroleum, UV, flame, and salt. Temperature range is –320° to +400° F. Color is white.

To Order: Please specify length (5, 10, 25, 50, or maximum continuous length of 100 ft.).

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 5-99	Per Ft. 100-Up
1/4"	3/16" to 5/16"	0.063"	8798K31	$1.10	$0.88
3/8"	5/16" to 7/16"	0.063"	8798K32	1.48	1.18
1/2"	7/16" to 9/16"	0.063"	8798K33	2.08	1.66
5/8"	9/16" to 11/16"	0.063"	8798K34	2.40	1.92
3/4"	11/16" to 13/16"	0.063"	8798K35	3.02	2.42
1"	15/16" to 1 1/16"	0.063"	8798K36	3.77	3.02
1 1/4"	1 3/16" to 1 5/16"	0.063"	8798K37	4.28	3.42
1 1/2"	1 7/16" to 1 9/16"	0.063"	8798K38	4.82	3.86
1 3/4"	1 11/16" to 1 13/16"	0.063"	8798K39	5.70	4.56
1 7/8"	1 13/16" to 1 15/16"	0.063"	8798K41	5.97	4.78
2"	1 15/16" to 2 1/16"	0.063"	8798K42	6.28	5.02

High-Temperature Abrasion-Resistant Kevlar-Reinforced Fiberglass Sleeving

Kevlar protects police officers from bullets—imagine the protection it could provide in your application. Get strength, flexibility, and better abrasion resistance than plain fiberglass and silica sleeving with this braided sleeving. It resists acids, alkalies, water, waxes, UV, and flame. Maximum temperature is 650° F. Not rated for low-end temperature. Color is light yellow. **To Order:** Please specify length (5, 10, 25, 50, or maximum continuous length of 100 ft.).

ID	Bundle Dia. Range	Wall Thick.		Per Ft. 5-99	Per Ft. 100-Up
1/4"	3/8" to 13/32"	0.063"	8823K51	$1.00	$0.83
3/8"	1/2" to 17/32"	0.063"	8823K52	1.99	1.66
1/2"	5/8" to 21/32"	0.063"	8823K53	2.13	1.77
5/8"	3/4" to 25/32"	0.063"	8823K54	2.40	1.99
3/4"	7/8" to 29/32"	0.063"	8823K55	2.65	2.20
7/8"	1" to 1 1/32"	0.063"	8823K56	2.95	2.46
1"	1 1/8" to 1 5/32"	0.063"	8823K57	3.26	2.71
1 1/4"	1 3/8" to 1 13/32"	0.063"	8823K61	3.57	2.96
1 1/2"	1 5/8" to 1 21/32"	0.063"	8823K62	4.08	3.40
1 3/4"	1 7/8" to 1 29/32"	0.063"	8823K63	6.07	5.04
2"	2 1/8" to 2 5/32"	0.063"	8823K64	6.71	5.58

Heat-Reflective Easy-Install Convoluted Sleeving

Install this sleeving easily over your bundles of wire, cable, tube, and hose to protect them from ambient heat up to 257° F. Made of nylon copolymer with a highly reflective aluminum surface that resists fluids such as gasoline, oil, brake fluid, and antifreeze. Temperature range is –40° to +257° F. Color is silver. Sold in 3-ft. lengths.

ID	Wall Thick.		Each
1/4"	0.015"	2652K31	$5.63
3/8"	0.015"	2652K32	5.74
1/2"	0.015"	2652K33	6.41
5/8"	0.015"	2652K34	7.10
3/4"	0.015"	2652K35	7.53

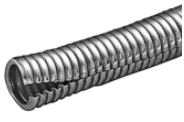

Heat-Reflective Flex-and-Stay Convoluted Sleeving

Often used in engine applications, this flexible, crush-resistant sleeving reflects radiant heat and holds its shape when bent, making it great for routing and protecting wire, cable, and hose. Made of aluminum bonded with woven fiberglass. Temperature range is 0° to 900° F. Color is silver. Max. continuous length is 15 ft.

ID	Wall Thick.		Per Ft.
1/2"	0.065"	7293K1	$3.27
3/4"	0.065"	7293K2	3.97
1"	0.065"	7293K3	4.58
1 1/4"	0.065"	7293K4	5.15
1 1/2"	0.065"	7293K5	6.09
1 3/4"	0.065"	7293K6	7.55
2"	0.065"	7293K7	10.06

Easy-Install Convoluted Sleeving

No need to disconnect your wires and cable for insertion—this conduit-like sleeving spreads open for easy installation. Sleeving won't gap when you bend it, making it a great choice for wire and cable routing. It is also solvent and acid resistant.

Polyethylene provides good abrasion resistance. Temperature range is –40° to +200° F. *Black* and *choose-a-color* are UV-stable for outdoor use. **To Order:** For choose-a-color, please specify color: blue, orange, or red. *Flame retardant* meets UL 94V2. Color is gray.

Nylon offers a higher maximum temperature than polyethylene and has excellent abrasion resistance. Temperature range is –40° to +300° F. Color is black with a gray stripe.

ID	5-ft. Lengths Each		25-ft. Lengths Each		50-ft. Lengths Each		100-ft. Lengths Each	
Black Polyethylene								
1/4"	7840K81	$2.02	7840K11	$8.02	7840K21	$14.69	7840K31	$26.64
3/8"	7840K82	2.42	7840K12	10.39	7840K22	19.03	7840K32	34.61
1/2"	7840K83	2.56	7840K13	11.23	7840K23	20.55	7840K33	38.76
5/8"	7840K84	3.06	7840K14	14.41	7840K24	26.45	7840K34	48.09
3/4"	7840K85	3.24	7840K15	16.53	7840K25	30.28	7840K35	55.09
1"	7840K86	5.18	7840K16	26.44	7840K26	48.48	7840K36	88.12
1 1/4"	7840K87	8.61	7840K17	34.91	7840K27	64.02	7840K37	116.30
1 1/2"	7840K88	9.92	7840K18	47.36	7840K28	86.77	7840K38	157.79
2"	—	—	7840K19	115.82	7840K29	212.32	7840K39	386.09
Choose-a-Color Polyethylene								
1/4"	7700K11	2.58	7700K12	12.36	7700K13	23.64	7700K14	43.00
3/8"	7700K15	2.70	7700K16	12.94	7700K17	24.75	7700K18	45.00
1/2"	7700K19	4.00	7700K21	19.13	7700K22	36.58	7700K23	66.50
5/8"	7700K24	4.91	7700K25	23.50	7700K26	44.97	7700K27	81.75
3/4"	7700K28	5.97	7700K29	28.60	7700K31	54.72	7700K32	99.50
1"	7700K33	10.04	7700K34	48.16	7700K35	92.13	7700K36	167.50
1 1/4"	7700K37	13.00	7700K38	62.25	7700K39	119.05	7700K41	216.50
1 1/2"	7700K42	17.58	7700K43	84.24	7700K44	161.17	7700K45	286.12
2"	7700K46	32.42	7700K47	155.33	7700K48	290.22	7700K49	527.62
Flame-Retardant Polyethylene								
1/4"	7840K91	3.55	7840K41	14.63	7840K51	26.88	7840K61	48.73
3/8"	7840K92	3.43	7840K42	16.27	7840K52	29.75	7840K62	54.12
1/2"	7840K93	3.83	7840K43	20.33	7840K53	37.31	7840K63	67.82
5/8"	7840K94	5.37	7840K44	26.42	7840K54	48.20	7840K64	88.18
3/4"	7840K95	7.23	7840K45	34.08	7840K55	62.51	7840K65	115.92
1"	7840K96	10.74	7840K46	49.74	7840K56	91.84	7840K66	167.03
1 1/4"	7840K97	14.83	7840K47	63.89	7840K57	117.11	7840K67	213.06
1 1/2"	7840K98	15.84	7840K48	105.23	7840K58	192.92	7840K68	350.76
2"	—	—	7840K49	179.32	7840K59	321.08	7840K69	583.77
Nylon								
1/4"	2569K11	2.44	2569K12	6.83	2569K13	15.91	2569K14	28.97
3/8"	2569K21	3.02	2569K22	11.33	2569K23	20.66	2569K24	36.57
1/2"	2569K31	3.31	2569K32	13.00	2569K33	24.11	2569K34	41.90
5/8"	2569K41	3.68	2569K42	14.27	2569K43	26.45	2569K44	45.38
3/4"	2569K51	4.90	2569K52	20.59	2569K53	37.65	2569K54	66.09
1"	2569K61	7.69	2569K62	26.23	2569K63	50.91	2569K64	87.29
1 1/4"	2569K71	9.23	2569K72	41.50	2569K73	75.63	2569K74	128.33
1 1/2"	2569K81	10.96	2569K82	49.41	2569K83	91.54	2569K84	162.65

High-Temperature Chemical-Resistant PTFE Sleeving

Also known as spaghetti tubing due to its small size, this sleeving is flexible, chemically inert, and resistant to melt-off by soldering irons. PTFE (polytetrafluoroethylene) is ideal for electrical insulation as well as transporting chemicals. Tubing also has a smooth, friction-resistant surface. Temperature range is –454° to +500° F. Color is white. Meets AMS 3655, UL 94V0 for flame resistance, and is CSA certified. **To Order:** Please specify length (10, 25, 50, or maximum continuous length of 100 ft.).

ID	For Wire Size (AWG)	Max. psi @ 70° F	Wall Thick.		Per Ft. 10-99	Per Ft. 100-Up
0.012"	30	380	0.009"	5335K9	$0.16	$0.12
0.015"	28	350	0.009"	5335K11	.16	.12
0.022"	24	270	0.010"	5335K12	.16	.12
0.034"	20	240	0.012"	5335K13	.25	.19
0.038"	19	220	0.012"	5335K14	.28	.21
0.047"	17	190	0.012"	5335K15	.32	.24
0.053"	16	170	0.012"	5335K16	.35	.26
0.066"	14	140	0.012"	5335K17	.43	.32
0.076"	13	120	0.012"	5335K18	.45	.34
0.095"	11	100	0.012"	5335K19	.56	.42
0.106"	10	90	0.012"	5335K21	.60	.45
0.133"	8	125	0.015"	5335K22	.96	.72
0.166"	6	92	0.015"	5335K23	1.16	.87
0.208"	4	83	0.015"	5335K24	1.44	1.08

Choose-a-Color Flexible PVC Conduit (ENT) and Fittings

Commonly used in wall, floor, slab, and ceiling applications, this lightweight conduit comes in a variety of colors to easily identify different runs of wire. Temperature range is –4° to +140° F. UL listed and CSA certified. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) thread size of the threaded end.

Conduit

Also known as ENT (electrical nonmetallic tubing), this pliable conduit is easy to install. Made of PVC. **To Order:** Please specify color (blue, yellow, or red) and length (10-, 25-, 50-, 100 ft., or max. continuous length listed in table).

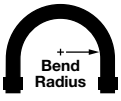

Trade Size	ID	OD	Bend Radius	Max. Cont. Lg., ft.		Per Ft.♦
½″	0.56″	0.84″	4″	200	8067K11	$0.86
¾″	0.76″	1.05″	5″	100	8067K12	1.17
1″	1″	1.31″	6″	100	8067K13	1.91

♦ Prices are approx. 15% lower for the max. continuous length.

Fittings

Fittings are thermoplastic and have tabs that snap in and hold firmly against the ribs in flexible PVC conduit (ENT). Color is blue. UL listed and CSA certified.

Threaded connectors have NPT male threads. For locknuts, see 7945K series on page 826. ***Snap-in connectors*** snap into holes in enclosures and other applications.

Trade Size	Threaded Connectors	Each♦	Snap-In Connectors	Each♦	Couplings	Each♦
½″	8065K21	$3.56	8065K31	$2.07	8065K11	$2.54
¾″	8065K22	6.89	8065K32	4.26	8065K12	3.33
1″	8065K23	9.34	8065K33	6.11	8065K13	5.85

♦ Prices are approx. 15% lower for 10 or more of the same size.

Continuous-Flex Nylon Conduit and Fittings

Protect moving and stationary electrical wires and cable on machinery—even through millions of bending cycles. This highly flexible conduit is perfect for robotics, material handling, and other continuous-motion applications. Conduit and fittings are made of polyamide nylon, which is resistant to solvents, fuels, and hydraulic and lubricating oils. Also UV resistant. Color is black.

Conduit

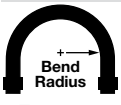

Support Clip

Temperature range is –40° to +203° F. ***Conduit*** is UL recognized, CSA certified, and CE approved. ***Support clips*** hold conduit stationary where needed. All require one M6 screw, except 3185K78, which requires one M5 screw. Mounting hardware not included.

ID	OD	Bend Radius	Max. Cont. Lg., ft.		Conduit Per Ft.	Support Clips (A)	(B)		Each♦
0.47″	0.62″	2.56″	164	3146K23	$2.42	1.06″	0.94″	3185K78	$3.08
0.65″	0.83″	2.56″	164	3146K24	3.96	1.34″	1.18″	3185K79	3.63
0.89″	1.12″	3.54″	164	3146K26	5.95	1.65″	1.52″	3185K81	6.10
1.14″	1.35″	4.33″	164	3146K27	7.50	1.89″	1.79″	3185K82	7.20
1.44″	1.67″	6.5″	98	3146K28	11.26	2.2″	2.19″	3185K88	10.21

♦ Prices are approximately 15% lower for 10 or more of the same size.

Fittings

Straight Connector

90° Elbow Connector

90° Elbow Flanged Connector

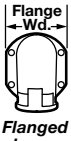

A reinforced locking system resists pull-out from conduit, yet makes these connectors easy to install and remove. The locking system also allows the connector to remain stationary while the conduit pivots and swivels. Temperature range is –40° to +221° F. With an IP66 rating, fittings are resistant to dust and water jets.

Threaded fittings are offered with NPT (National Pipe Tapered) male threads or PG threads (European standard). UL recognized, CSA certified, and CE approved. ***Flanged*** fittings are unthreaded and can be bolted to machinery or electrical boxes. UL recognized and CE approved. ***90° elbow connectors*** have a slim profile for use in tight areas. ***Locknuts*** secure threaded connectors in place. (For NPT locknuts, see 7945K on page 826.)

For Conduit OD	Fitting OD	NPT THREADS Thread Size	Straight Connectors	Each♦	90° Elbow Connectors	Each♦	PG THREADS Thread Size	Straight Connectors	Each♦	90° Elbow Connectors	Each♦	FLANGED 90° Elbow Connectors Flange Wd.	Mtg. Hole Size (No.)		Each♦
0.62″	0.93″	½″	3185K62	$3.96	3185K63	$9.77	PG-11	3185K11	$3.96	3185K16	$9.77	—	—	—	—
0.83″	1.16″	½″	3185K64	4.24	3185K65	9.90	PG-16	3185K12	4.24	3185K17	10.18	1.81″	M5 (2)	3185K45	$9.87
1.12″	1.46″	¾″	3185K66	9.11	3185K67	18.02	PG-21	3185K13	9.11	3185K18	21.94	2.58″	M6 (2)	3185K46	18.02
1.35″	1.73″	1″	3185K68	12.93	3185K69	26.27	PG-29	3185K14	12.93	3185K19	24.59	2.64″	M6 (4)	3185K47	26.27
1.67″	2.11″	1¼″	3185K71	24.12	3185K72	42.02	PG-36	3185K15	24.12	3185K21	51.18	3.35″	M6 (4)	3185K48	42.02

♦ Prices are approximately 15% lower for 10 or more of the same size.

Locknuts

For Thread Size		Each♦	For Thread Size		Each♦	For Thread Size		Each♦
PG-11	3185K91	$0.82	PG-16	3185K93	$1.10	PG-29	3185K95	$3.46
PG-13.5	3185K92	1.04	PG-21	3185K94	1.54	PG-36	3185K96	8.47

♦ Prices are approximately 15% lower for 10 or more of the same size.

Continuous-Flex Liquid-Tight Flexible Nonmetallic Conduit (Type A) and Fittings

Note: Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) thread size of the threaded end.

Conduit

Rated for continuous flexing applications while remaining liquid tight, this conduit resists crushing, abrasion, oil, and sunlight. It has a heavy duty PVC inner core with a nylon-reinforced PVC cover. Temperature range is –4° to +140° F. Color is orange. UL listed (Type A) and CSA certified.

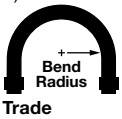

Trade Size	ID	OD	Bend Radius	Max. Cont. Lg., ft.		Per Ft.♦
½″	0.63″	0.92″	3″	100	8465K22	$7.27
¾″	0.83″	1.16″	4″	100	8465K23	10.27
1″	1.04″	1.43″	6″	100	8465K24	13.00
1¼″	1.38″	1.81″	7″	50	8465K25	17.03

♦ Prices are approximately 25% lower for the max. cont. length.

Fittings

Fittings are made of corrosion- and chemical-resistant thermoplastic and have NPT male threads. They include a steel locknut. Temperature range is 68° to 248° F. Color is blue. UL listed.

Trade Size	Straight Connectors	Each 1-9	Each 10-Up	90° Elbow Connectors	Each 1-9	Each 10-Up
½″	9082K52	$9.42	$7.85	9082K62	$12.90	$10.90
¾″	9082K53	11.50	9.58	9082K63	16.06	13.56
1″	9082K54	16.34	13.61	9082K64	22.64	19.12
1¼″	9082K55	17.51	14.74	9082K65	29.90	25.25

Liquid-Tight Flexible Nonmetallic Conduit and Fittings

Use this flexible nonmetallic conduit with these fittings to get a liquid-tight seal for damp applications. They resist sunlight and corrosion from water, oil, and many acids. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) thread size of the threaded end.

Conduit

Cuts cleanly with no jagged edges and has a smooth interior that makes wire pulling easy. **To Order:** Please specify length from those listed in the table.

Super flex is a very limber, helical PVC conduit with a tight bend radius—ideal for intricate wire routing. Temperature range is 0° to 158° F. Color is black. UL recognized, except ¼″ trade size.

Super tough is also known as Type B conduit. It is more crush and abrasion resistant than Super Flex. Made of a PVC spiral core surrounded by PVC. To cut, we recommend a tube cutter (8336A on page 2338). Temperature range is 0° to 154° F. Color is gray. UL (Type B) listed. CSA certified.

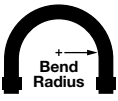

Trade Size	ID	OD	Available Lengths, ft.	Super Flex Bend Radius	Super Flex Per Ft.♦		Super Tough Bend Radius	Super Tough Per Ft.♦	
¼″	0.39″	0.57″	5, 10, 25, 50, 100	1.1″	7609K1	$1.47	—	—	—
⅜″	0.49″	0.7″	5, 10, 25, 50, 100	1.4″	7609K2	1.49	2″	7581K41	$1.00
½″	0.63″	0.83″	5, 10, 25, 50, 100	1.6″	7609K3	1.49	3.3″	7581K42	1.05
¾″	0.83″	1.04″	5, 10, 25, 50, 100	2.1″	7609K4	2.04	4.3″	7581K43	1.30
1″	1.05″	1.3″	5, 10, 25, 50, 100	2.6″	7609K5	3.11	6.5″	7581K44	2.19
1¼″	1.39″	1.64″	5, 10, 25, 50, 100	3.3″	7609K6	3.95	8″	7581K45	3.16
1½″	1.59″	1.88″	2, 5, 10, 25, 50	3.8″	7609K7	5.66	9″	7581K46	4.35
2″	2.03″	2.36″	2, 5, 10, 25, 50	4.7″	7609K8	7.78	11.1″	7581K47	5.63

♦ Prices are approximately 20% lower for the max. continuous length (last length listed).

Fittings

Fittings are UL listed when used with Super Tough (Type B) liquid-tight flexible nonmetallic conduit.

Standard connectors are made of nylon and have a maximum temperature of 194° F. All have NPT male threads, unless noted. They include steel locknuts, are C-UL listed, and insert into conduit and fasten, unless noted. **To Order:** For standard connectors, please specify black or gray, unless noted. ***Multiangle*** style can change from a straight fitting to a 90° angle fitting, or any angle in between. For the ½″ and ¾″ sizes, simply loosen the center nut, swivel fitting to desired angle, and retighten the nut. The 1″ size swivels to the desired angle and holds in place without a nut.

Twist-in connectors are easy to install; they twist directly into conduit. They are made of nylon with NPT male threads and zinc locknuts. Maximum temperature is 194° F. CSA certified. **To Order:** Please specify black or gray. ***Twist-in couplings*** connect two pieces of conduit. They are made of PVC and have a maximum temperature of 176° F. Color is gray. C-UL listed.

Trade Size	Straight Connectors	Each♦	90° Elbow Connectors	Each♦	Multiangle Connectors	Each♦
Standard						
¼″	75145K51■●	$2.46	—	—	—	—
⅜″♠	75145K31	2.42	75145K81	$3.78	—	—
½″	75145K32	2.42	75145K82	3.78	75145K18	$5.35
¾″	75145K33	3.51	75145K83	5.75	75145K19	7.21
1″	75145K34	4.89	75145K84	9.81	75145K21●	17.21
1¼″	75145K35	7.69	75145K85	15.07	—	—
1½″	75145K36	10.60	75145K86	18.43	—	—
2″	75145K37	18.56	75145K87	26.93	—	—
Twist In					***Couplings***	
⅜″♠	9106K41	1.52	9106K51	2.48	—	—
½″	9106K42	1.52	9106K52	2.48	9106K88	1.29
¾″	9106K43	2.21	9106K53	3.71	9106K89	1.80

♦ Prices are approximately 15% lower for 10 or more of the same size.
■ Comes in black only. Thread type is PG-7. ♠ Fits ½″ trade size knockout.
● Locknut is nylon. CSA certified; not C-UL listed.

Standard 90° Elbow Connector

Standard Multiangle Connector

Twist-In Straight Connector

Flexible Metal Conduit and Fittings

Here's a flexible solution for tight spaces where it's difficult to install rigid conduit. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) or NPSM (National Pipe Straight Mechanical) thread size of the threaded ends.

Conduit

Galvanized steel has a heavy zinc coating that makes it a popular choice in corrosive environments. UL listed.

Aluminum is lighter than galvanized steel conduit and has good corrosion resistance. Commonly used to hook up motors and light fixtures. UL listed.

Trade Size	ID	OD	Bend Radius	Available Lengths, ft.	Galvanized Steel	Galvanized Steel Per Ft.♦	Aluminum	Aluminum Per Ft.♦
5/16″	0.31″	0.51″	3½″	10, 25, 50, 100	74115K1	$0.63	73145K1	$0.72
⅜″	0.38″	0.61″	4″	10, 25, 50, 100	74115K2	.66	73145K2	.60
½″	0.63″	0.92″	4″	10, 25, 50, 100	74115K3	.84	73145K3	.84
¾″	0.81″	1.11″	5″	10, 25, 50, 100	74115K4	1.08	73145K4	1.14
1″	1″	1.38″	6″	5, 10, 25, 50	74115K5	1.99	73145K5	2.51
1¼″	1.25″	1.63″	8″	5, 10, 25, 50	74115K6	2.54	73145K6	3.24
1½″	1.5″	1.95″	10″	5, 10, 25	74115K7	4.20	73145K7	3.94
2″	2″	2.45″	12″	5, 10, 25	74115K8	5.25	73145K8	5.17

♦ Prices are approx. 35% lower for the max. continuous length (last length listed).

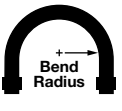

Fittings

Connect flexible metal conduit to enclosures and outlet boxes. UL listed.

Connectors have NPSM male threads, unless noted.

Die cast zinc is for light duty applications and is CSA certified. *Connectors* can also be used with armored cable. ***Malleable iron*** is for heavy duty applications.

Straight and ***90° elbow connectors*** attach to conduit using screws. Locknut included. ***Twist-in connectors*** twist into conduit for quick and easy connection. Locknut included. ***Twist-in couplings*** connect two pieces of conduit.

Trade Size	Straight Connectors Die Cast Zinc	Each♦	Straight Connectors Malleable Iron	Each♦	90° Elbow Connectors Die Cast Zinc	Each♦	90° Elbow Connectors Malleable Iron	Each♦	Twist-In Connectors Die Cast Zinc	Each♦	Twist-In Couplings Die Cast Zinc	Each♦
⅜″♥	7267K26	$1.01	7920K81	$3.53	7267K33	$1.34	7920K71✓	$3.65	7267K51	$0.85	—	—
½″	7267K27	1.26	7920K82	3.65	7267K34	1.80	7920K72✓	5.25	7267K52	.85	8180K11	$0.84
¾″	7267K28	1.96	7920K83	4.40	7267K35	3.36	7920K73	7.83	7267K53	1.44	8180K12	1.73
1″	7267K21	3.48	7920K84✓	9.55	7267K36	6.31	7920K74✓	15.30	7267K54	3.83	8180K13	2.24
1¼″	7267K22	6.11	7920K85✓	13.61	7267K37	8.53	7920K75✓	26.09	7267K55	8.21	8180K14	4.44
1½″	7267K11	8.55	7920K86✓	19.67	7267K15	15.39	7920K76✓	38.27	7267K13	8.47	8180K15	5.64
2″	7267K12	11.10	7920K87✓	28.44	7267K16	19.85	7920K77✓	52.19	7267K14	12.00	8180K16	9.33

♦ Prices are approx. 15% lower for 10 or more of the same size. ♥ Fits ½″ trade size knockout. ✓ Has NPT threads.

Straight Connector

90° Elbow Connector

Twist-In Connector

Twist-In Coupling

Stainless Steel Flexible Metal Conduit and Fittings

Stainless steel construction provides superior corrosion resistance for harsh environments. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPSM (National Pipe Straight Mechanical) thread size of the threaded ends.

Conduit

Made of Type 305 stainless steel. **To Order:** Please specify length: 2 ft., 5 ft., 10 ft., or maximum continuous length of 25 ft.

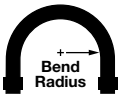

Trade Size	ID	OD	Bend Radius		Per Ft. ♦
3/8″	0.44″	0.61″	1 1/8″	3994K11	$2.50
1/2″	0.64″	0.89″	1 1/2″	3994K12	3.08
3/4″	0.83″	1.11″	2″	3994K13	3.99
1″	1.02″	1.21″	2 1/4″	3994K14	5.84
1 1/4″	1.29″	1.5″	2 3/8″	3994K15	6.60

♦ Prices are approximately 20% lower for the maximum continuous length.

Fittings

Made of Type 316 stainless steel. ***Connectors*** have NPSM male threads and include a locknut.

Trade Size	Straight Connectors	Each	90° Elbow Connectors	Each	Twist-In Connectors	Each	Twist-In Couplings	Each
3/8″ ♠	8533K11	$10.38	8533K31	$14.58	8533K21	$8.88	—	—
1/2″	8533K12	12.16	8533K32	13.33	8533K22	8.22	8533K41	$4.58
3/4″	8533K13	15.06	8533K33	21.88	8533K23	9.82	8533K42	5.06
1″	8533K14	19.96	8533K34	27.36	8533K24	12.00	8533K43	6.65
1 1/4″	8533K15	21.28	8533K35	25.28	8533K25	19.62	—	—

♠ Fits 1/2″ trade size knockout.

Specialty Flexible Metal Conduit Fittings

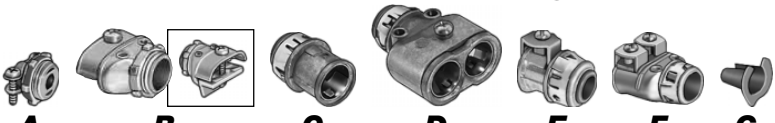

A **B** **C** **D** **E** **F** **G**

Connect flexible metal conduit and armored and metal-clad cable to boxes and enclosures. All are CSA certified. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPSM (National Pipe Straight Mechanical) thread size of the threaded ends.

A&B Straight Connectors*—**To install, insert into knockout, fasten the included locknut, and tighten screw onto conduit. They have NPSM male threads and are made of die cast zinc. UL listed. ***Style B allows you to connect two pieces of conduit to one knockout.

C-F Snap-In Straight Connectors*—**Snap securely into knockouts without locknuts or tools. Made of die cast zinc. UL listed. ***Style C provides the fastest installation time. Just snap conduit into connector. ***Styles D-F*** secure conduit with a screw after snapping in. *Styles D* and *F* allow you to connect two pieces of conduit to one knockout.

***G Protective Bushings*—**Also known as antishort bushings, these insert into conduit ends to protect cables from abrasion. Made of red thermoplastic.

Trade Size		Each 1-9	Each 10-Up
Straight Connectors			
A 3/8″ ♠	8180K21	$1.25	$1.07
B 3/8″ ♠	8180K22	2.56	2.18
Snap-In Straight Connectors			
C 3/8″ ♠	7969K21	1.92	1.63
D 3/8″ ♠	7969K31	4.46	3.82
E 3/8″ ♠	8180K31	1.08	.90
E 1/2″	8180K32	1.42	1.18
E 3/4″	8180K33	3.09	2.59
F 3/8″ ♠	8180K34	2.28	1.93

♠ Fits 1/2″ trade size knockout.

Trade Size	Pkg. Qty.		Per Pkg.
Protective Bushings			
G 5/16″	100	8216K41	$8.89
G 3/8″	100	8216K42	9.46
G 7/16″	50	8216K43	8.93
G 1/2″	50	8216K44	13.58
G 3/4″	50	8216K45	15.24

Ultra-Flex Flexible Metal Conduit

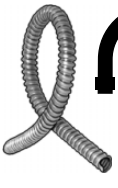
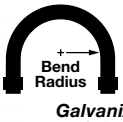

Metal conduit doesn't get more flexible than this. Bends easily around sharp corners. *Note:* Fittings are not available for this conduit.

***Galvanized Steel*—To Order:** Please specify length: 5 ft., 10 ft., 15 ft., or max. cont. length of 25 ft.

***Type 304 Stainless Steel*—**Offers superior corrosion resistance. Max. cont. length is 25 ft.

ID	OD	Galvanized Steel Bend Radius		Per Ft. 1-24	Per Ft. 25-Up	Type 304 Stainless Steel Bend Radius		Per Ft. 1-24	Per Ft. 25-Up
5/32″	1/4″	3/4″	54885K11	$0.57	$0.45	3/4″	54915K41	$1.95	$1.51
3/16″	9/32″	3/4″	54885K12	.77	.61	3/4″	54915K42	1.96	1.53
7/32″	5/16″	7/8″	54885K13	.83	.66	3/4″	54915K43	2.00	1.55
1/4″	11/32″	1″	54885K14	.93	.74	7/8″	54915K44	2.03	1.57
5/16″	13/32″	1 1/8″	54885K16	1.03	.82	15/16″	54915K46	2.13	1.65
3/8″	1/2″	1 1/4″	54885K18	1.10	.87	15/16″	54915K48	2.38	1.85
1/2″	5/8″	1 1/2″	54885K21	1.33	1.05	1 3/8″	54915K51	2.81	2.18
3/4″	31/32″	2″	54885K25	2.07	1.63	1 7/8″	54915K55	3.69	2.87

Liquid-Tight Flexible Metal Conduit and Fittings

Used together, conduit and fittings seal out liquids and most vapors. Installs easily even in tight areas. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) thread size of the threaded end.

Conduit

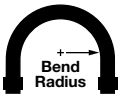

Conduit is covered with a flexible jacket that resists sunlight. Jacket is PVC, except extreme high/low temperature standard flex, which has a thermoplastic rubber jacket. **To Order:** Please specify length: 5 ft., 10 ft., 20 ft., 25 ft., or any length up to the maximum continuous length listed in the table.

Standard flex (not UL listed) is an all-purpose galvanized steel conduit. Temperature range is –4° to +140° F. Color is gray.

Standard flex (UL listed) is a great all-purpose zinc-plated steel conduit that may be used underground. All except 1 1/2″ and 2″ sizes have a built-in copper ground. Temperature range is –4° to +140° F. CSA certified. **To Order:** Please specify blue or gray, unless noted (blue is typically used for data lines).

Trade Size	ID	OD	Max. Cont. Lg., ft.	Standard Flex (Not UL Listed) Bend Radius		Per Ft. ♦	Standard Flex (UL Listed) Bend Radius		Per Ft. ♦
3/8″	0.49″	0.7″	100	2″	74525K79	$1.12	3″	7127K66★	$2.05
1/2″	0.63″	0.83″	100	2 1/2″	74525K81	1.24	3 1/2″	7127K2	2.20
3/4″	0.83″	1.04″	100	3″	74525K82	1.63	5″	7127K3	2.81
1″	1.05″	1.3″	100	4″	74525K83	2.43	6″	7127K4	4.16
1 1/4″	1.39″	1.65″	50	4 1/2″	74525K84	3.66	7″	7127K5	6.50
1 1/2″	1.58″	1.88″	50	5 1/2″	74525K85	5.01	5 1/2″	7127K6	6.95
2″	2.03″	2.36″	50	7″	74525K86	6.35	7″	7127K7	8.91

♦ Prices are approximately 25% lower for the maximum continuous length.
★ Available in gray only.

(Continued on following page)

Liquid-Tight Flexible Metal Conduit and Fittings *(Continued from previous page)*

Conduit (Cont.)

To Order: Please specify length: 5 ft., 10 ft., 20 ft., 25 ft., or any length up to the maximum continuous length listed in the table.

Oil-resistant standard flex (UL listed) has an oil-resistant jacket to provide superior resistance to cutting fluids and corrosive materials. All except 1½″ and 2″ sizes have a built-in copper ground. May be used underground. Temperature range is –4° to +140° F. Color is gray. CSA certified.

Ultra flex (not UL listed) bends and twists to fit in the most space-restricted areas. Temperature range is –4° to +140° F. Color is black.

High/low temperature standard flex (UL listed) withstands severe temperatures (–51° to +221° F). All except 1½″ and 2″ sizes have a built-in copper ground. May be used underground. Color is gray.

Extreme high/low temperature standard flex (not UL listed) handles extreme temperatures (–76° to +302° F). Color is black.

Trade Size	ID	OD	Max. Cont. Lg., ft.	Oil-Resistant Standard Flex (UL Listed) Bend Radius		Per Ft.♦	Ultra Flex (Not UL Listed) Bend Radius		Per Ft.♦	High/Low Temp. Standard Flex (UL Listed) Bend Radius		Per Ft.♦	Extreme High/Low Temp. Standard Flex (Not UL Listed) Bend Radius		Per Ft.♦
3/8″	0.49″	0.7″	100	2″	8071K41	$5.03	11/2″	8069K11	$1.55	3″	8068K31	$2.67	2″	8235K51	$4.44
1/2″	0.63″	0.83″	100	3″	8071K42	6.39	2″	8069K12	1.80	3 1/2″	8068K32	3.13	2 1/2″	8235K52	5.15
3/4″	0.83″	1.04″	100	4 1/4″	8071K43	8.55	2 1/2″	8069K13	2.38	5″	8068K33	4.32	3″	8235K53	7.04
1″	1.05″	1.3″	100	5 1/2″	8071K44	12.48	3″	8069K14	3.15	6″	8068K34	6.57	4″	8235K54	10.26
1 1/4″	1.39″	1.65″	50	7″	8071K45	17.11	3 1/2″	8069K15	4.96	7″	8068K35	9.27	4 1/2″	8235K55	15.73
1 1/2″	1.58″	1.88″	50	4 1/2″	8071K46	19.45	4″	8069K16	5.96	5 1/2″	8068K36	9.90	5 1/2″	8235K56	18.86
2″	2.03″	2.36″	50	6″	8071K47	24.93	5″	8069K17	7.41	7″	8068K37	12.69	7″	8235K57	23.58

♦ Prices are approximately 25% lower for the maximum continuous length.

Fittings

Fittings have NPT male threads. UL listed and CSA certified.

Light Duty— Fittings are die cast zinc and include a locknut. ***Heavy Duty—*** Include a locknut. *Straight* fittings are steel. *45°* and *90° elbow* fittings are malleable iron. ***Heavy Duty Corrosion Resistant—*** Made of Type 304 stainless steel for the most demanding environments. ***Heavy Duty with Grounding Lug—*** For external grounding applications. All include a locknut. *Straight* fittings are steel, unless noted. *45°* and *90° elbow* fittings are malleable iron. ***Heavy Duty with Wire-Mesh Grip—*** Provide strain relief and added protection against conduit pullout. All have stainless steel mesh and include a locknut. For cord grip fittings, see pages 839-842. *Straight* fittings are steel. *45°* and *90° elbow* fittings are malleable iron.

Also Available: Heavy duty straight and 90° elbow fittings in 2½″, 3″, and 4″ trade sizes (made of malleable iron). Please ask for 7119K888 and specify straight or 90° and trade size.

Trade Size	Light Duty Each♦	Heavy Duty Each♦	Heavy Duty Corrosion Resistant Each	Heavy Duty with Grounding Lug Each♦	Heavy Duty with Wire-Mesh Grip Mesh Lg.	Each
Straight						
3/8″♠	7119K71 $2.05	7119K11 $2.84	1848T11 $57.67	7951K61 $9.42	6″	75535K31 $29.13
1/2″	7119K72 2.05	7119K12 3.03	1848T12 83.17	7951K62 9.69	5 1/4″	75535K41 29.42
3/4″	7119K73 3.22	7119K13 4.37	1848T13 107.86	7951K63 15.18	6 1/2″	75535K42 38.20
1″	7119K74 4.91	7119K61 7.11	1848T14 135.38	7951K64 17.35	7 3/4″	75535K43 45.45
1 1/4″	7119K75 9.14	7119K91 12.59	1848T15 194.83	7951K65★ 20.87	10 5/8″	75535K51 57.97
1 1/2″	7119K76 12.99	7119K92 19.19	1848T16 230.25	7951K66★ 51.33	11″	75535K54 86.00
2″	7119K77 19.69	7119K93 31.30	1848T17 402.75	7951K67★ 65.40	14″	75535K57 133.50

♦ Prices are approximately 15% lower for 10 or more of the same size. ♠ Fits 1/2″ trade size knockout. ★ Malleable iron.

Trade Size	Heavy Duty Each♦	Heavy Duty Corrosion Resistant Each	Heavy Duty with Grounding Lug Each♦	Heavy Duty with Wire-Mesh Grip Mesh Lg.	Each
45° Elbow					
3/8″♠	7119K15 $6.94	1848T21 $91.89	7951K11 $13.36	6″	75535K33 $33.75
1/2″	7119K16 6.94	1848T22 104.91	7951K12 13.36	5 1/4″	75535K44 35.08
3/4″	7119K17 10.50	1848T23 129.86	7951K13 19.74	6 1/2″	75535K45 47.23
1″	7119K62 16.82	1848T24 176.86	7951K14 35.06	7 3/4″	75535K46 64.84
1 1/4″	7119K97 24.85	1848T25 250.50	7951K15 57.93	10 5/8″	75535K53 84.20
1 1/2″	7119K98 38.94	1848T26 345.30	7951K16 67.53	11″	75535K56 111.18
2″	7119K99 53.92	1848T27 512.38	7951K17 96.01	14″	75535K59 153.23

♦ Prices are approximately 15% lower for 10 or more of the same size. ♠ Fits 1/2″ trade size knockout.

Trade Size	Light Duty Each♦	Heavy Duty Each♦	Heavy Duty Corrosion Resistant Each	Heavy Duty with Grounding Lug Each♦	Heavy Duty with Wire-Mesh Grip Mesh Lg.	Each
90° Elbow						
3/8″♠	7119K81 $4.08	7119K19 $6.52	1848T31 $85.82	7951K81 $11.78	6″	75535K32 $33.75
1/2″	7119K82 4.28	7119K21 6.66	1848T32 99.55	7951K82 10.95	5 1/4″	75535K47 34.37
3/4″	7119K83 6.52	7119K22 10.50	1848T33 122.40	7951K83 11.37	6 1/2″	75535K48 43.92
1″	7119K84 10.60	7119K63 17.42	1848T34 187.45	7951K84 13.40	7 3/4″	75535K49 64.24
1 1/4″	7119K85 19.05	7119K94 30.45	1848T35 278.55	7951K85 43.24	10 5/8″	75535K52 84.10
1 1/2″	7119K86 22.87	7119K95 36.54	1848T36 359.87	7951K86 46.29	11″	75535K55 114.41
2″	7119K87 28.84	7119K96 46.10	1848T37 491.73	7951K87 72.71	14″	75535K58 153.23

♦ Prices are approximately 15% lower for 10 or more of the same size. ♠ Fits 1/2″ trade size knockout.

PVC Conduit, Fittings, and Access Ports

When used together, these easy-to-install conduit and fittings provide a lightweight, corrosion resistant, nonconductive alternative to steel. They're also resistant to sunlight, so they can be used above ground as well as in buried and concrete encasement applications.

Note: Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) thread size of the threaded ends.

PVC cement is required for conduit, untreaded fittings, and access ports (see page 3421).

Conduit

Also known as PVC Schedule 40 conduit. Both ends are unthreaded; one side has an expanded female end for joining with another piece of conduit. Color is gray. UL listed, except 8-ft. lengths, which are cut from UL listed material and can be shipped via small-parcel carrier.

Trade Size	ID	OD	8-ft. Lengths Each	10-ft. Lengths Each ♦
1/2"	0.62"	0.84"	7912K11 $4.50	7912K1 $3.66
3/4"	0.82"	1.05"	7912K12 4.84	7912K2 4.56
1"	1.05"	1.32"	7912K13 6.11	7912K3 6.53
1 1/4"	1.38"	1.66"	7912K14 9.55	7912K4 9.53
1 1/2"	1.61"	1.9"	7912K15 $10.31	7912K5 $11.06
2"	2.07"	2.38"	7912K16 12.56	7912K6 14.12
2 1/2"	2.47"	2.88"	7912K17 20.16	7912K7 22.68
3"	3.07"	3.5"	7912K18 25.76	7912K8 27.52
4"	4.03"	4.5"	7912K19 30.87	7912K9 38.50

♦ Prices are approx. 15% lower for 10 or more of the same size.

Fittings

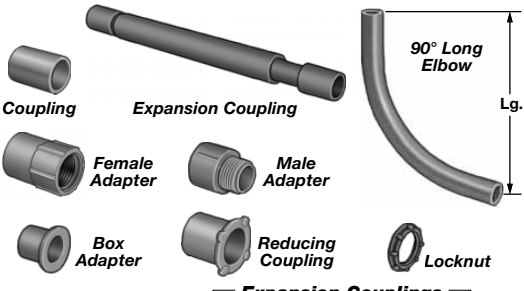

Can be used with PVC Schedule 40 and Schedule 80 conduit. The ends are unthreaded, unless noted. Color is gray. All are UL listed except locknuts, which are UL recognized.

Couplings—Connect two pieces of conduit.

Expansion Couplings—PVC expands and contracts with temperature changes … these couplings consist of two sections to compensate for length changes up to 4" on 7945K51-K55 and up to 8" on 7945K56-K59.

Female and Male Adapters—Have NPT threads on one end to connect fittings, boxes, and metallic systems that have threads.

Box Adapters—Connect conduit to an electrical enclosure (flange installs inside enclosure).

90° Long Elbows—Connect two pieces of conduit at a 90° angle.

Reducing Couplings—Connect two different sized pieces of conduit.

Locknuts—Secure female and male adapters to an enclosure or an outlet box. Work with NPT or NPSM (National Pipe Straight Mechanical) threads.

Trade Size	Couplings Each ♦	Expansion Couplings Unexpanded Lg.	Expansion Couplings Each	Female Adapters Each ♦	Male Adapters Each ♦	Box Adapters Each ♦	90° Long Elbows Lg.	90° Long Elbows Each ♦
1/2"	7945K11 $0.56	7 1/8"	7945K51 $41.91	7945K21 $0.90	7945K31 $0.75	7945K71 $1.77	5 1/2"	7945K41 $2.54
3/4"	7945K12 .70	7 1/4"	7945K52 41.26	7945K22 1.41	7945K32 1.33	7945K72 1.80	6"	7945K42 2.85
1"	7945K13 1.07	7 5/8"	7945K53 43.09	7945K23 1.91	7945K33 1.67	7945K73 1.96	7 5/8"	7945K43 4.46
1 1/4"	7945K14 1.43	7 3/4"	7945K54 43.31	7945K24 2.56	7945K34 2.15	7945K74 2.08	9 1/4"	7945K44 6.42
1 1/2"	7945K15 1.99	8"	7945K55 43.52	7945K25 2.72	7945K35 2.60	7945K75 2.18	10 1/4"	7945K45 8.54
2"	7945K16 2.60	12 1/2"	7945K56 29.34	7945K26 3.70	7945K36 3.73	7945K76 2.31	11 1/2"	7945K46 11.93
2 1/2"	7945K17 5.40	13 3/8"	7945K57 66.03	7945K27 9.71	7945K37 7.50	7945K77 8.75	13 1/2"	7945K47 24.18
3"	7945K18 8.93	13 1/2"	7945K58 84.58	7945K28 12.12	7945K38 10.99	7945K78 9.19	16 1/8"	7945K48 42.73
4"	7945K19 13.78	13 7/8"	7945K59 121.96	7945K29 16.25	7945K39 18.86	7945K79 10.17	19 3/8"	7945K49 73.18

♦ Prices are approximately 15% lower for 10 or more of the same size.

Reducing Couplings

Trade Size	Each ♦	Trade Size	Each ♦	Trade Size	Each ♦
3/4" × 1/2"	7945K61 $1.98	1 1/4" × 1"	7945K65 $6.18	2" × 1 1/2"	7945K69 $7.46
1" × 1/2"	7945K62 4.44	1 1/2" × 1"	7945K66 6.43	2 1/2" × 2"	7945K84 24.99
1" × 3/4"	7945K63 4.70	1 1/2" × 1 1/4"	7945K67 6.20	3" × 2"	7945K85 26.68
1 1/4" × 3/4"	7945K64 6.18	2" × 1 1/4"	7945K68 7.73	4" × 3"	7945K86 33.31

Locknuts

Trade Size	Each ♦
1/2"	7945K81 $0.42
3/4"	7945K82 .52
1"	7945K83 .59

♦ Prices are approximately 15% lower for 10 or more of the same size.

Access Ports

Also known as outlet bodies, these ports provide access to wires inside conduit for pulling, splicing, and maintenance. Use with PVC Schedule 40 and Schedule 80 conduit. Hubs are unthreaded. Furnished with a cover and a gasket. Color is gray. UL listed and CSA certified.

Trade Size	Straights Each	Tees Each	90° Elbows Each
1/2"	7905K11 $8.20	7905K21 $8.20	7905K31 $6.36
3/4"	7905K12 10.04	7905K22 10.07	7905K32 8.16
1"	7905K13 10.47	7905K23 10.47	7905K33 8.98
1 1/4"	7905K14 17.06	7905K24 17.06	7905K34 13.66
1 1/2"	7905K15 22.46	7905K25 22.46	7905K35 16.42
2"	7905K16 31.91	7905K26 31.91	7905K36 29.06

Thin-Wall Steel Conduit (EMT) and Fittings

These general purpose conduit and fittings are UL listed, unless noted. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) or NPSM (National Pipe Straight Mechanical) thread size of the threaded ends.

Conduit

Also known as EMT (electrical metallic tubing), this thin-wall untreaded conduit is made of galvanized steel. Bend it easily using a conduit bender (see pages 2333-2335). Can also be cut with a hacksaw. ***5-ft. lengths*** are cut from UL listed material and can be shipped via small-parcel carrier. **To Order:** For choose-a-color conduit, please specify color: black, blue, red, or white.

Trade Size	ID	OD	5-ft. Lengths Each	10-ft. Lengths Each ♦
Conduit				
1/2"	0.62"	0.71"	7126K11 $3.30	7126K1 $3.31
3/4"	0.82"	0.92"	7126K12 4.80	7126K2 6.53
1"	1.05"	1.16"	7126K13 10.17	7126K3 10.98
1 1/4"	1.38"	1.51"	7126K14 15.65	7126K4 17.22
1 1/2"	1.61"	1.74"	7126K15 15.05	7126K5 21.68
2"	2.07"	2.2"	7126K16 23.40	7126K6 25.61
2 1/2"	2.73"	2.88"	7126K17 35.08	7126K7 52.03
Conduit (Cont.)				
3"	3.36"	3.5"	7126K18 $35.90	7126K8 $64.16
4"	4.33"	4.5"	7126K19 63.50	7126K9 93.63
Choose-a-Color Conduit				
1/2"	0.62"	0.71"	1829T4 3.17	1829T1 3.24
3/4"	0.82"	0.92"	1829T5 6.18	1829T2 6.60
1"	1.05"	1.16"	1829T6 10.50	1829T3 11.36

♦ Prices are approximately 15% lower for 10 or more of the same size.

(Continued on following page)

Thin-Wall Steel Conduit (EMT) and Fittings *(Continued from previous page)*

Straight Fittings

Designed for use with thin-wall steel conduit (EMT).

Die cast zinc are for light duty applications and are CSA certified. ***Raintight die cast zinc*** fittings meet UL raintight standard when used with EMT conduit and have a plastic O-ring that prevents water from entering conduit. ***Steel*** are for heavy duty applications and are C-UL listed, unless noted.

Connectors— Connect conduit to an electrical box. Locknut included. *Die cast zinc* and *raintight die cast zinc* have NPSM threads; *steel* have NPT threads. *Insulated* connectors have a plastic insert that protects wire from abrasion when being pulled.

Couplings— Join two pieces of conduit.

Trade Size	COMPRESSION CONNECTORS Noninsulated Each ♦	COMPRESSION CONNECTORS Insulated Each ♦	SET SCREW CONNECTORS Noninsulated Each ♦	SET SCREW CONNECTORS Insulated Each ♦	COMPRESSION COUPLINGS Each ♦	SET SCREW COUPLINGS Each ♦
Die Cast Zinc						
1/2″	7150K71 $0.98	7150K11 $1.30	7150K74 $0.59	7150K17 $0.99	7150K77 $1.49	7150K81 $0.65
3/4″	7150K72 1.74	7150K12 2.28	7150K75 .98	7150K18 1.53	7150K78 1.91	7150K82 1.04
1″	7150K73 2.86	7150K13 3.54	7150K76 1.88	7150K19 2.74	7150K79 3.16	7150K83 1.87
1 1/4″	7150K87 4.75	7150K14 6.63	7150K91 2.78	7150K21 5.47	7150K94 5.16	7150K84 2.96
1 1/2″	7150K88 6.17	7150K15 8.20	7150K92 3.77	7150K22 6.68	7150K95 7.19	7150K85 4.18
2″	7150K89 9.87	7150K16 12.16	7150K93 5.98	7150K23 8.97	7150K96 9.24	7150K86 5.60
2 1/2″	7150K311 22.65	7150K314 38.52	7150K317 14.63	7150K411 24.28	7150K414 23.93	7150K417 10.01
3″	7150K312 27.63	7150K315 45.21	7150K318 17.67	7150K412 28.25	7150K415 27.68	7150K418 11.43
4″	7150K313 42.57	7150K316 65.91	7150K319 26.54	7150K413 39.70	7150K416 43.88	7150K419 15.26
Raintight Die Cast Zinc						
1/2″	1841T11 2.38	1841T21 2.96	— —	— —	1841T31 2.70	— —
3/4″	1841T12 3.39	1841T22 3.97	— —	— —	1841T32 3.54	— —
1″	1841T13 6.30	1841T23 6.98	— —	— —	1841T33 6.19	— —
1 1/4″	1841T14 10.84	1841T24 12.70	— —	— —	1841T34 11.16	— —
1 1/2″	1841T15 13.49	1841T25 15.45	— —	— —	1841T35 14.49	— —
2″	1841T16 17.83	1841T26 19.57	— —	— —	1841T36 17.56	— —
Steel						
1/2″	7150K31 1.25	7150K24 2.30	7150K34 1.09	7150K61 1.21	7150K37 2.36	7150K41 1.41
3/4″	7150K32 2.81	7150K25 3.13	7150K35 1.98	7150K62 2.10	7150K38 3.51	7150K42 2.30
1″	7150K33 4.15	7150K26 4.47	7150K36 3.07	7150K63 3.25	7150K39 4.63	7150K43 3.19
1 1/4″	7150K51 9.60	7150K27 12.19	7150K44 5.87	7150K64 6.51	7150K54 11.90	7150K47 6.59
1 1/2″	7150K52 13.01	7150K28 15.31	7150K45 8.17	7150K65 8.74	7150K55 16.29	7150K48 11.55
2″	7150K53 16.92	7150K29 21.69	7150K46 11.68	7150K66 12.63	7150K56 22.16	7150K49 15.02
2 1/2″	7150K111 23.93	7150K114 39.91	7150K117■ 13.33	7150K211■ 17.64	7150K214 29.88	7150K217■ 15.92
3″	7150K112 31.78	7150K115 50.31	7150K118■ 15.91	7150K212■ 21.61	7150K215 37.34	7150K218■ 17.04
4″	7150K113 48.91	7150K116 75.68	7150K119■ 24.00	7150K213■ 30.64	7150K216 60.07	7150K219■ 19.67

♦ Prices are approximately 15% lower for 10 or more of the same size. ■ CSA certified, not C-UL listed.

Specialty Fittings

For use with thin-wall steel conduit (EMT). CSA certified, except space-saver connectors.

Space-Saver Connectors— Screw into themselves without the need for a locknut to provide more room inside your box by keeping threads outside your box. Made of zinc-plated steel. C-UL listed.

Set Screw Snap-Tight Connectors— Connect conduit to an outlet box or enclosure without a locknut. As screw tightens, connector secures onto conduit and locks into the knockout. Made of zinc-plated steel.

Set Screw Offset Connectors— Connect conduit to an outlet box or enclosure where an offset is needed. Connectors have NPSM threads and include a locknut. Made of die cast zinc.

90° Set Screw Pulling Elbows— A removable cover allows for easy wire pulling at a 90° angle. Made of die cast zinc.

90° Compression Connectors— Connect conduit to an outlet box or enclosure at a 90° angle. Connectors include locknut and have NPSM threads. Made of die cast zinc.

90° Long Elbows— Connect two pieces of conduit at a 90° bend and avoid bending conduit. Made of galvanized steel.

Press-Fit Protective Bushings— Slide onto conduit ends to protect cables from abrasion when being pulled. Made of polypropylene. Some bushings (as noted) can also be used with medium-wall (IMC) and thick-wall (rigid) metal conduit.

Trade Size	SPACE SAVER Compression Connectors Each ♦	SPACE SAVER Set Screw Connectors Each ♦	Set Screw Snap-Tight Connectors Each ♦	Set Screw Offset Connectors Offset	Set Screw Offset Connectors Each ♦	90° Set Screw Pulling Elbows Each ♦	90° Compression Connectors Each ♦
1/2″	8081K61 $1.52	8081K71 $0.93	8081K51 $1.67	3/8″	8081K41 $1.76	8081K21 $3.08	8081K31 $3.36
3/4″	8081K62 2.11	8081K72 1.49	8081K52 2.70	3/4″	8081K42 3.26	8081K22 4.04	8081K32 4.03
1″	8081K63 3.49	8081K73 2.46	— —	—	— —	8081K23 7.75	8081K33 5.33

♦ Prices are approximately 15% lower for 10 or more of the same size.

90° Long Elbows

Trade Size	Lg.	Each ♦
1/2″	6 1/8″	8081K11 $2.26
3/4″	7 1/8″	8081K12 2.79
1″	9″	8081K13 3.95
1 1/4″	11″	8081K14 5.43
1 1/2″	12 1/2″	8081K15 6.99
2″	14 1/4″	8081K16 10.42
2 1/2″	15 3/4″	8081K17 21.94
3″	19″	8081K18 32.87
4″	22 1/2″	8081K19 51.77

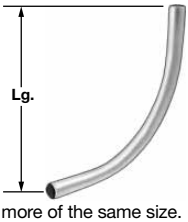

♦ Prices are approximately 15% lower for 10 or more of the same size.

Press-Fit Protective Bushings

Trade Size	Each ♦
1/2″	8096K61 $0.12
3/4″	8096K62 .17
1″	8096K63 .61
1 1/4″	8096K64 1.08
1 1/2″	8096K65 1.46
2″	8096K66 1.96
2 1/2″	8096K67 ★ 3.53
3″	8096K68 ★ 4.24
4″	8096K69 ★ 6.37

♦ Prices are approximately 15% lower for 20 or more of the same size.
★ Can also be used with medium-wall (IMC) and thick-wall (rigid) metal conduit.

Thin-Wall (EMT) Rigid-to-Flexible Metal Conduit Couplings

7984K2 and K3

Just slip on these couplings and tighten the screws to join thin-wall steel conduit (EMT) to flexible metal conduit. Made of die cast zinc. UL listed and CSA certified.

Note: Trade size refers to an industry designation for conduit fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit.

Trade Size: Thin-Wall Conduit (EMT)	Trade Size: Flexible Metal Conduit		Each 1-9	Each 10-Up
1/2"	3/8"	7984K1	$3.28	$2.77
1/2"	1/2"	7984K2	2.37	2.17
3/4"	3/4"	7984K3	3.39	3.10

Medium-Wall (IMC) and Thick-Wall (Rigid) Steel Conduit and Fittings

Stronger walls mean better protection in heavy duty applications. All are UL listed, unless noted.

Note: Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) or NPSM (National Pipe Straight Mechanical) thread size of the threaded ends.

Conduit

This galvanized steel conduit has NPT male threads on both ends and a coupling threaded onto one end. ***5-ft. lengths*** are cut from UL listed material and can be shipped via small-parcel carrier.

Medium Wall— Also known as IMC (intermediate metallic conduit), it's a lightweight substitute for thick-wall conduit with just as much strength. This conduit has a slightly larger ID than thin-wall (EMT) conduit and has a lubricating coating for easier wire pulling.

Thick Wall— Also known as rigid conduit, it's impact and crush resistant.

Trade Size	ID	OD	5-ft. Lengths	Each	10-ft. Lengths	Each ♦
Medium Wall (IMC)						
1/2"	0.68"	0.82"	7385K11	$11.69	7385K71	$12.42
3/4"	0.88"	1.03"	7385K12	13.55	7385K72	13.85
1"	1.12"	1.29"	7385K13	18.20	7385K73	20.94
1 1/4"	1.47"	1.64"	7385K14	20.94	7385K74	28.21
1 1/2"	1.7"	1.88"	7385K15	30.89	7385K75	34.29
2"	2.17"	2.36"	7385K16	31.34	7385K76	44.01

Trade Size	ID	OD	5-ft. Lengths	Each	10-ft. Lengths	Each ♦
Thick Wall (Rigid)						
1/2"	0.63"	0.84"	7307K11	$19.85	7307K21	$21.04
3/4"	0.84"	1.05"	7307K12	19.98	7307K22	21.62
1"	1.06"	1.32"	7307K13	26.28	7307K23	32.84
1 1/4"	1.39"	1.66"	7307K14	34.80	7307K24	50.68
1 1/2"	1.62"	1.9"	7307K15	41.63	7307K25	60.05
2"	2.08"	2.38"	7307K16	42.85	7307K26	66.77

Fittings

Threaded Couplings— Connect two pieces of conduit. Made of galvanized steel and have NPSM threads.

Three-Piece Couplings— The two outer pieces turn independently to connect two pieces of conduit when they can't be turned. Made of zinc-plated steel and malleable iron. Have NPT threads.

Slip-On Couplings— Connect two pieces of conduit in tight spaces when they can't be turned. Made of zinc-plated malleable iron, unless noted. Have NPSM threads. CSA certified.

Compression Couplings— Connect two pieces of unthreaded conduit. Made of zinc-plated steel and malleable iron. CSA certified.

Compression Connectors— Connect conduit to a box or enclosure. Made of zinc-plated steel and malleable iron and have NPSM threads. Locknut included. CSA certified.

Box Adapters— Also known as conduit nipples and chase nipples. Connect threaded conduit to a box or enclosure. Can also be used with a locknut to provide a short raceway between boxes or enclosures. Made of die cast zinc and have NPSM threads. CSA certified.

90° Pulling Elbows— Have a removable cover for wire pulling. Made of die cast zinc and have NPSM threads. CSA certified.

90° Short Elbows— Join conduit in tight spaces where it can't be bent. Made of malleable iron and have NPSM threads. 7513K74-K78 are CSA certified.

90° Long Elbows— Connect two pieces of conduit at a 90° angle. Made of galvanized steel and have NPT threads. CSA certified.

Reducing Bushings— Connect two different sizes of conduit. Made of zinc-plated steel and have NPSM threads.

Reducing Washers— Reduce the knockout size in an outlet box or enclosure (two washers are required per knockout). Made of galvanized steel. Package quantity is 10. CSA certified.

Nipple Extensions— Extend the length of conduit or connect two boxes or enclosures. Made of zinc-plated steel and have NPT threads. CSA certified.

Trade Size	Threaded Couplings Each ♦	Three-Piece Couplings Each ♦	Slip-On Couplings Each ♦	Compression Couplings Each ♦	Compression Connectors Each ♦	Box Adapters Lg.	Box Adapters Each ♦	90° Pulling Elbows Each ♦
1/2"	7755K21 $1.09	7513K41 $4.30	7755K11♣ $3.70	7513K44 $6.77	7513K11 $3.99	11/16"	7513K17 $0.43	7513K51 $9.24
3/4"	7755K22 1.36	7513K42 5.50	7755K12♣ 4.75	7513K45 10.62	7513K12 6.18	3/4"	7513K18 .77	7513K52 10.58
1"	7755K23 1.88	7513K43 9.53	7755K13 9.60	7513K46 18.20	7513K13 9.38	7/8"	7513K19 1.59	7513K53 15.87
1 1/4"	7755K24 2.31	7513K34 19.37	7755K14 12.57	7513K47 22.18	7513K14 15.62	15/16"	7513K21 2.38	7513K54 25.58
1 1/2"	7755K25 2.92	7513K35 21.64	7755K15 15.80	7513K48 28.13	7513K15 22.58	15/16"	7513K22 3.02	——— ———
2"	7755K26 4.08	7513K36 41.78	7755K16 31.57	7513K49 57.92	7513K16 45.13	1 1/16"	7513K23 4.70	——— ———

♣ Made of zinc-plated steel.

Trade Size	90° Short Elbows Each ♦	90° Long Elbows Lg.	90° Long Elbows Each ♦
1/2"	7513K71 $3.83	6 1/8"	7513K31 $5.48
3/4"	7513K72 4.85	7 1/8"	7513K32 6.47
1"	7513K78 29.01	9"	7513K33 10.06
1 1/4"	7513K74 42.65	11"	7513K37 15.39
1 1/2"	7513K75 64.94	12 1/2"	7513K38 19.41
2"	7513K76 61.44	14 1/4"	7513K39 27.77

Trade Size	Reducing Bushings Each ♦	Reducing Washers Per Pkg. ♦
3/4" × 1/2"	7514K31 $1.05	7513K371 $1.86
1" × 1/2"	7514K32 1.70	7513K372 2.29
1" × 3/4"	7514K33 1.88	7513K373 2.29
1 1/4" × 1/2"	7514K34 4.49	7513K374 3.30
1 1/4" × 3/4"	7514K35 4.63	7513K375 3.30
1 1/4" × 1"	7514K36 4.82	7513K376 3.30
1 1/2" × 1"	7514K43 6.71	7513K383 4.83
2" × 1/2"	7514K37 12.89	7513K377 5.38
2" × 3/4"	7514K38 12.89	7513K378 5.38
2" × 1"	7514K39 12.89	7513K379 5.38
2" × 1 1/4"	7514K41 12.89	7513K381 5.38
2" × 1 1/2"	7514K42 12.89	7513K382 5.38

Trade Size	Lg.	Nipple Extensions Each ♦
Fully Threaded		
1/2"	1 1/8"	7513K55 $0.95
3/4"	1 3/8"	7513K58 1.18
1"	1 1/2"	7513K68 2.00
Threaded Ends		
1/2"	3"	7513K56 1.47
1/2"	6"	7513K57 2.07
3/4"	3"	7513K59 1.74
3/4"	6"	7513K67 2.78
1"	3"	7513K69 2.26
1"	6"	7513K77 3.38

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♦ Prices are approximately 15% lower for 10 or more of the same size.

Medium-Wall (IMC) and Thick-Wall (Rigid) Steel Conduit and Fittings

(Continued from previous page)

Hubs—Use to connect conduit to a threadless opening in a box or enclosure. They have an insulated throat to protect wires from abrasion when being pulled. Use in wet or dry locations. Made of die cast zinc and have NPT threads on conduit end and NPSM threads on enclosure end. CSA certified.

Offset Nipples—Use as an offset connector between enclosures. Offset is ¾″. Made of die cast zinc and have NPSM threads. CSA certified.

Threaded Bushings—Connect to the end of conduit or a connector to protect wires from abrasion when being pulled. Made of polypropylene and have NPSM threads. CSA certified.

Grounding Bushings—For grounding conduit. Compatible with copper and aluminum conductors, and insulated to protect wires from abrasion when being pulled. Set screw included. Made of die cast zinc and have NPSM threads.

Trade Size	Hubs Each ♦	Offset Nipples Each ♦	Threaded Bushings Each ■	Grounding Bushings Each ♦
½″	7513K81 $6.24	7513K24 $2.16	7513K211 $0.20	7513K251 $8.68
¾″	7513K82 7.30	7513K25 2.70	7513K212 .27	7513K252 10.76
1″	7513K83 10.21	7513K26 3.29	7513K213 .49	7513K253 12.71
1¼″	7513K84 11.80	7513K27 4.94	7513K214 .58	7513K254 15.07
1½″	7513K85 14.16	7513K28 6.73	7513K215 .74	7513K255 17.50
2″	7513K86 20.79	7513K29 9.40	7513K216 1.47	7513K256 22.41

♦ Prices are approximately 15% lower for 10 or more of the same size.
■ Prices are approximately 15% lower for 100 or more of the same size.

Stainless Steel Conduit and Fittings

Need to run wires through a corrosive environment? You can do it with this conduit. All are UL listed. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a fitting, match the trade size of the conduit. For threaded fittings, trade size also designates the NPT (National Pipe Tapered) or NPSM (National Pipe Straight Mechanical) thread size of the threaded ends.

Conduit

All conduit is Type 304 stainless steel. ***Thin wall (EMT)***, also known as electrical metallic tubing, does not have threads. ***Thick wall (rigid)*** is impact and crush resistant. It has NPT threads with a coupling threaded onto one end.

Also Available: Thick-wall (rigid) conduit in Type 316 stainless steel. Please ask for 5150K9 and specify trade size and length (5 ft. or 10 ft.).

Thin Wall (EMT)

Thick Wall (Rigid)

Trade Size	ID	OD	THIN WALL (EMT) 5-ft. Lengths Each	THIN WALL (EMT) 10-ft. Lengths Each	ID	OD	THICK WALL (RIGID) 5-ft. Lengths Each	THICK WALL (RIGID) 10-ft. Lengths Each
½″	0.62″	0.71″	1831T11 $43.50	1831T21 $69.60	0.62″	0.84″	5150K11 $69.38	5150K31 $111.00
¾″	0.82″	0.93″	1831T12 56.00	1831T22 89.60	0.82″	1.05″	5150K12 85.75	5150K32 137.20
1″	1.06″	1.17″	1831T13 90.50	1831T23 144.80	1.05″	1.32″	5150K13 112.00	5150K23 179.20

Fittings

All are Type 316 stainless steel. ***Thin-wall (EMT) compression connectors*** connect conduit to a box or enclosure. They have NPT threads on one end. ***Compression couplings*** connect two pieces of unthreaded conduit. They do not have threads.

Thick-wall (rigid) couplings connect two pieces of conduit and have NPSM threads. ***90° long elbows*** connect two pieces of conduit at a 90° angle. They have NPT threads. ***Hubs*** have NPT threads on one end to connect conduit to a threadless opening in a box or enclosure.

Also Available: Thick-wall (rigid) fittings in Type 304 stainless steel. Please ask for 3403K9 and specify trade size and fitting type.

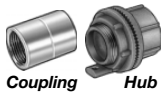
Coupling *Hub*

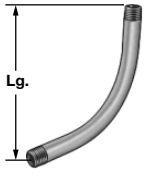

Trade Size	THIN WALL (EMT) Compression Connectors Each	THIN WALL (EMT) Compression Couplings Each	THICK WALL (RIGID) Couplings Each	THICK WALL (RIGID) 90° Long Elbows Lg.	THICK WALL (RIGID) 90° Long Elbows Each	THICK WALL (RIGID) Hubs Each
½″	1843T11 $31.98	1843T21 $48.11	3403K11 $24.67	6½″	3403K21 $25.51	3403K31 $104.59
¾″	1843T12 37.49	1843T22 56.00	3403K12 27.56	7¼″	3403K22 31.51	3403K32 137.44
1″	1843T13 45.80	1843T23 68.76	3403K13 42.00	8⅜″	3403K23 47.76	3403K33 169.59

Metal Conduit Access Ports

Also known as outlet bodies, these ports provide access to wires inside conduit for pulling, splicing, and maintenance. All include a cover and neoprene gasket. Ports provide easy connection to medium-wall (IMC) and thick-wall (rigid) metal conduit. Also compatible with thin-wall steel conduit (EMT) when used with a compression connector, unless noted (see 7150K on page 827). UL listed.

Note: Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting an access port, match the trade size of the conduit. Trade size also designates the NPT (National Pipe Tapered) or NPSM (National Pipe Straight Mechanical) thread size of the threaded hubs of the ports.

Die cast aluminum ports are corrosion resistant and have NPSM threads.

Die cast aluminum ports with set screw allow you to connect thin-wall steel conduit (EMT) without using a compression connector. They have NPT threads and are CSA certified. UL listed rain-tight for thick-wall (rigid) conduit; concrete-tight for thin-wall conduit (EMT).

Zinc-plated cast iron ports offer durability and corrosion resistance. They have NPT threads and are CSA certified.

Stainless steel ports are Type 316 for the best corrosion protection. They have NPT threads.

Die Cast Aluminum 90° Elbow

Die Cast Aluminum with Set Screw Straight

Zinc-Plated Cast Iron Tee

Stainless Steel 90° Elbow

Trade Size	DIE CAST ALUMINUM Straights Each	DIE CAST ALUMINUM Tees Each	DIE CAST ALUMINUM 90° Elbows Each	DIE CAST ALUMINUM WITH SET SCREW Straights Each	DIE CAST ALUMINUM WITH SET SCREW Tees Each	DIE CAST ALUMINUM WITH SET SCREW 90° Elbows Each
½″	7153K11 $5.08	7153K81 $6.19	7154K71 $5.05	9128K31 $6.66	9128K51 $8.15	9128K41 $6.66
¾″	7153K12 6.76	7153K82 7.68	7154K72 6.80	9128K32 8.10	9128K52 9.74	9128K42 7.86
1″	7153K13 9.67	7153K83 11.66	7154K73 9.70	9128K33 12.42	9128K53 13.84	9128K43 12.12
1¼″	7153K14 19.88	7153K84 22.89	7154K74 19.98	9128K34 21.39	9128K54 24.37	9128K44 21.46
1½″	7153K15 20.39	7153K85 23.63	7154K75 20.50	9128K35 23.00	9128K55 27.31	9128K45 23.00
2″	7153K16 29.87	7153K86 32.28	7154K76 31.74	9128K36 40.47	9128K56 46.79	9128K46 40.39

Trade Size	ZINC-PLATED CAST IRON Straights Each	ZINC-PLATED CAST IRON Tees Each	ZINC-PLATED CAST IRON 90° Elbows Each	STAINLESS STEEL Straights Each	STAINLESS STEEL Tees Each	STAINLESS STEEL 90° Elbows Each
½″	9190K71 $13.19	9190K81 $13.90	9190K91 $11.70	8140K71 $141.28	8140K81 $150.84	8140K91 $137.03
¾″	9190K72 15.50	9190K82 15.41	9190K92 13.39	8140K72 145.80	8140K82 166.77	8140K92 143.40
1″	9190K73 23.51	9190K83 24.36	9190K93 18.52	8140K73 162.52	8140K83 189.08	8140K93 157.21
1¼″	9190K74 33.49	9190K84 33.83	9190K94 26.94	8140K76 231.25	8140K86 265.18	8140K96 231.25
1½″	9190K75 40.42	9190K85 40.78	9190K95 34.44	8140K74 231.25	8140K84 298.74	8140K94 263.32
2″	9190K76 61.53	9190K86 60.85	9190K96 56.51	8140K75 295.71	8140K88 363.29	8140K95 330.36

Metal Conduit Fitting Locknuts

Standard

Sealing

Secure threaded conduit fittings to a knockout. Compatible with NPT (National Pipe Tapered) and NPSM (National Pipe Straight Mechanical) threads, these locknuts are made of zinc-plated steel. UL listed and CSA certified.

Note: Trade size is an industry designation for conduit and fittings and is not an actual measurement. When selecting a locknut, match the trade size of the fitting.

Sealing locknuts have a PVC molded sealer for moisture protection.

Trade Size	Standard Pkg. Qty.	Standard	Standard Per Pkg. ♦	Sealing Pkg. Qty.	Sealing	Sealing Per Pkg. ♦
1/2″	10	7513K241	$2.43	2	7513K311	$1.98
3/4″	10	7513K242	2.71	2	7513K312	2.52
1″	10	7513K243	3.59	2	7513K313	3.39
1 1/4″	10	7513K244	4.52	2	7513K314	4.25
1 1/2″	10	7513K245	5.12	2	7513K315	4.81
2″	10	7513K246	6.76	2	7513K316	6.72

♦ Prices are approx. 15% lower for 10 or more pkgs. of the same size.

Multiconductor Building Cable Connectors

Screw Connector

Snap-In Connector

Locking Snap-In Connector

Use to connect multiconductor jacketed building cable (also known as Romex cable) to enclosures and outlet boxes. UL listed and CSA certified. *Note:* Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a connector, match the fitting trade size that corresponds to the knockout trade size of your box or enclosure. Then, make sure your cable diameter will fit in the connector. For screw connectors, trade size also designates the NPSM (National Pipe Straight Mechanical) thread size of the threaded ends.

Screw Connectors— Secure connector into a knockout with the included locknut. Then, insert cable through connector and tighten the two screws. Made of die cast zinc.

Snap-In Connectors— Just push the connector into a knockout and insert cable. Made of PVC.

Locking Snap-In Connectors— Push into a knockout, insert cable, and secure the wedge in the connector with pliers—the wedge clamps onto cable for a strong grip. Made of PVC.

Trade Size	Cable Dia. Range		Each ♦
Screw Connectors			
1/2″	0.18″-0.64″	7798K41	$0.98
3/4″	0.30″-0.83″	7798K42	1.15
1″	0.33″-1.04″	7798K43	1.88
1 1/4″	0.36″-1.06″	7798K44	3.93
1 1/2″	0.63″-1.60″	7798K45	4.50
2″	0.86″-2.06″	7798K46	6.33

♦ Prices are approximately 15% lower for 20 or more of the same size.

Trade Size	Cable Dia. Range		Each ♦
Snap-In Connectors			
1/2″	0.16″-0.98″	7963K21	$0.24
3/4″	0.16″-0.98″	7963K22	.49
Locking Snap-In Connectors			
1/2″	0.16″-0.49″	7963K31	.30
1/2″	0.16″-1.34″	7963K32	.53
3/4″	0.51″-1.96″	7963K33	.80
1″	0.58″-0.96″	7963K34	1.04
1 1/4″	0.58″-1.80″	7963K35	1.62

Steel Outlet/Switch Boxes with Knockouts and Covers

Boxes and covers are galvanized steel. Boxes have multiple knockouts to connect fittings. Attach covers using screws.

Note: Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. For example, a 1/2″ trade size fitting will fit into a 1/2″ trade size knockout. A 1/2″ trade size knockout is actually 7/8″ dia.; 3/4″ is 1 3/32″ dia.; 1″ is 1 3/8″ dia.

Note: The capacity shown for the boxes (cu. in.) refers to the total volume of space inside the box, and varies depending on the depth of the box. Use extension rings to increase depth.

Square Boxes—4″×4″

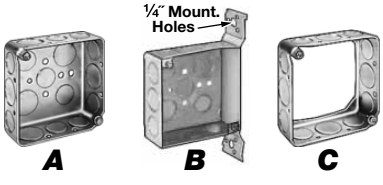

- Screws included
- UL listed

	Dp.	Cap.	No. of Knockouts (Trade Size)		Each
A ... Box	1 1/2″	21 cu. in.	17 (1/2″)	71695K12	$1.91
A ... Box	1 1/2″	21 cu. in.	11 (1/2″); 6 (3/4″)	71695K41	1.98
A ... Box	2 1/8″	30.3 cu. in.	11 (1/2″); 6 (combo 1/2″ & 3/4″)	71695K13	2.87
A ... Box	2 1/8″	30.3 cu. in.	3 (1/2″); 2 (3/4″); 8 (1″)	71695K14	4.25
B ... Box with Bracket	1 1/2″	21 cu. in.	9 (1/2″); 5 (combo 1/2″ & 3/4″)	71695K15	2.54
C ... Extension Ring	1 1/2″	22 1/2 cu. in.	8 (1/2″); 4 (3/4″)	71695K42	3.52

Square Covers—4″×4″

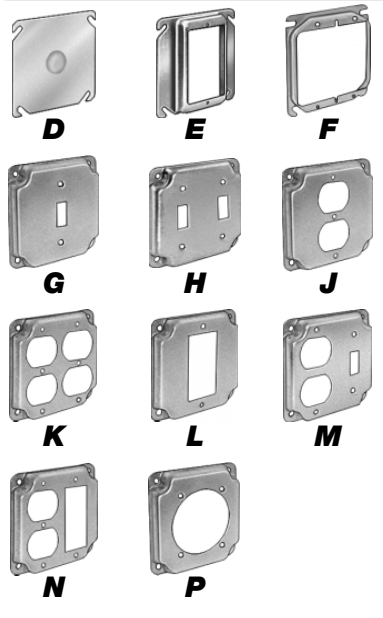

- Screws included, unless noted
- UL listed and CSA certified

	Dp.		Each
D ... Flat Blank	—	71695K43★	$0.93
D ... Flat Blank with One 1/2″ Trade Size Knockout	—	71695K71★	.91
E ... Single Device (1 Gang)	1/2″	71695K72★	1.15
E ... Single Device (1 Gang)	5/8″	71695K74★	1.45
F ... Two Device (2 Gang)	1/2″	71695K73★	1.56
F ... Two Device (2 Gang)	5/8″	71695K75★	1.78
G ... Toggle Switch	1/2″	71695K44	1.98
H ... Two Toggle Switches	1/2″	71695K47	1.98
J ... Duplex Receptacle	1/2″	71695K45	1.98
K ... Two Duplex Receptacles	1/2″	71695K48	2.31
L ... GFCI Receptacle	1/2″	71695K76	2.47
M ... Toggle Switch/Duplex Receptacle Combination	1/2″	71695K46	2.63
N ... Duplex/GFCI Receptacle Combination	1/2″	71695K77	2.54
P ... For 1.41″ Dia. 15- to 20-amp Circular Receptacle	1/2″	71695K65	2.17
P ... For 1.59″ Dia. 20-amp Receptacle	1/2″	71695K67	4.25
P ... For 1.72″ Dia. 30-amp Locking Receptacle	1/2″	71695K66	2.97
P ... For 2.14″ Dia. 30- to 50-amp Receptacle	1/2″	71695K68	4.25
P ... For 2.63″ Dia. 30- to 60-amp Receptacle	1/2″	71695K69	3.10

★ Screws not included.

(Continued on following page)

Steel Outlet/Switch Boxes with Knockouts and Covers *(Continued from previous page)*

Square Box—4 11/16″ × 4 11/16″

- Screws included
- UL listed

	Dp.	Cap.	No. of Knockouts (Trade Size)		Each
1 ... Box	2 1/8″	42 cu. in.	3 (1/2″); 6 (3/4″); 4 (1″)	71695K16	$5.14

1

Square Covers—4 11/16″ × 4 11/16″

- UL listed and CSA certified

	Dp.		Each
2 ... Flat Blank with One 1/2″ Trade Size Knockout	—	71695K17	$1.98
3 ... Single Device (1 Gang)	1/2″	71695K61	3.03
3 ... Single Device (1 Gang)	5/8″	71695K62	4.92
4 ... Two Device (2 Gang)	1/2″	71695K63	3.03
4 ... Two Device (2 Gang)	5/8″	71695K64	6.30

2 3 4

Octagonal Boxes—4″ × 4″

- Screws included
- UL listed

Adjustable hanger bar allows easy positioning of octagonal box between joists. It adjusts from 14 1/4″ to 22 1/2″.

	Dp.	Cap.	No. of Knockouts (Trade Size)		Each
5 ... Box	1 1/2″	15 1/2 cu. in.	9 (1/2″)	71695K51	$1.69
5 ... Box	1 1/2″	15 1/2 cu. in.	5 (1/2″); 4 (3/4″)	71695K54	1.94
5 ... Box	2 1/8″	21 1/2 cu. in.	9 (1/2″)	71695K11	3.06
6 ... Extension Ring	1 1/2″	15 1/2 cu. in.	4 (1/2″)	71695K55■	3.17
7 ... Adjustable Hanger Bar				71695K91	3.02

■ Also CSA certified.

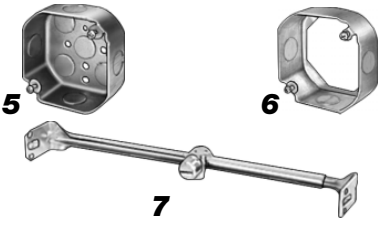
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Octagonal Covers—4″ × 4″

- UL listed and CSA certified

		Each
8 ... Flat Blank	71695K52	$0.88
8 ... Flat Blank with One 1/2″ Trade Size Knockout	71695K56	.75
9 ... Flat Duplex Receptacle	71695K53	1.75

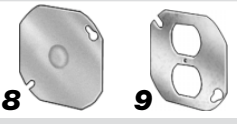
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Rectangular (Handy) Boxes—2 1/8″ × 4″

- Screws not included
- UL listed

	Dp.	Cap.	No. of Knockouts (Trade Size)		Each
10 .. Box	1 7/8″	13 cu. in.	10 (1/2″)	71695K21	$1.89
10 .. Box	2 1/8″	16 1/2 cu. in.	11 (1/2″)	71695K26	2.42
11 .. Extension Ring	1 1/2″	11 1/2 cu. in.	8 (1/2″)	71695K25	2.41

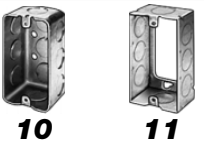
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Rectangular (Handy) Covers—2 5/16″ × 4 3/16″

- Screws included
- UL listed and CSA certified

		Each
12 .. Blank	71695K27	$0.66
12 .. Blank with One 1/2″ Trade Size Knockout	71695K22	.99
13 .. Toggle Switch	71695K24	.72
14 .. Duplex Receptacle	71695K23	.71

12 13 14

In-Wall Rectangular (Switch) Boxes—2″ × 3″

- UL listed

Boxes have mounting ears that allow easy installation in wall cut-outs. ***Box with wall-grip bracket*** is ideal for retrofit work in existing walls—just tighten the two screws on each side to grip the box to the wall.

	Dp.	Cap.	No. of Knockouts (Trade Size)		Each
15 .. Box	1 1/2″	7 1/2 cu. in.	3 (1/2″)	71695K81	$3.19
15 .. Box	2″	10 cu. in.	8 (1/2″)	71695K31	3.76
15 .. Box	2 1/2″	12 1/2 cu. in.	8 (1/2″)	71695K82	2.84
15 .. Box	3 1/2″	18 cu. in.	9 (1/2″)	71695K84	3.32
16 .. Box w/Wall-Grip Bracket	2 1/2″	12 1/2 cu. in.	4 (1/2″)	71695K83	5.82

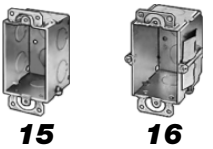
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Outlet Boxes with Receptacles

You'll get an outlet box, a receptacle installed in a cover, and a time-saving plug-in connector with wire leads, so all you have to do is make your connections and screw on the cover (mounting screws included).

Overall size is 4″ Ht. × 4″ Wd. × 1 1/2″ Dp. and 21 cu. in. Boxes are galvanized steel with eleven 1/2″ and six 3/4″ trade size knockouts. Wire leads are 6″ long 12/3 AWG THHN single-conductor wire. Receptacles are brown. For more information about NEMA straight-blade receptacles, see page 787.

	Rating Amps	Rating VAC		Each
NEMA 5-15				
With Duplex Plug-In Receptacle	15	125	1826T1	$22.16
With Two Duplex Plug-In Receptacles	15	125	1826T3	38.82
NEMA 5-20				
With Duplex Plug-In Receptacle	20	125	1826T2	22.42
With Two Duplex Plug-In Receptacles	20	125	1826T4	39.34
Replacement Receptacles and Plug-In Connector				
NEMA 5-15 Duplex Plug-In Receptacle			1826T11	10.24
NEMA 5-20 Duplex Plug-In Receptacle			1826T12	10.44
Plug-In Connector			1826T13	2.04

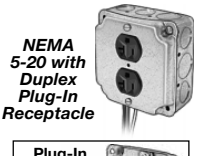
NEMA 5-20 with Duplex Plug-In Receptacle

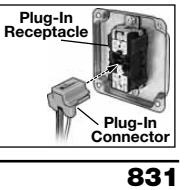

Wall Plates

All include mounting screws. For replacement screws, see 99050A on page 3069. UL listed and CSA certified.

Standard Wall Plates

Toggle Switch Plate (1 Gang)

Duplex Receptacle Plate (1 Gang)

GFCI Receptacle Plate (3 Gang)

Blank Plate (1 Gang)

One Toggle Switch and One Duplex Receptacle Combination Plate (2 Gang)

Nylon plates are self extinguishing, mar resistant, and have a matte finish. **To Order:** Please specify brown, ivory, or white. Ground fault circuit interrupter (GFCI) plates also come in gray. ***Aluminum*** plates have a satin finish and are lacquered for corrosion resistance.

Stainless steel plates provide excellent corrosion resistance and have a brushed finish.

Ground fault circuit interrupter (GFCI) receptacle plates are also known as Decora plates.

For Use With	Nylon Wd. × Ht.		Nylon Each ♦	Aluminum Wd. × Ht.		Aluminum Each ♦	Stainless Steel Wd. × Ht.		Stainless Steel Each ♦
Toggle Switch Plates									
One Toggle Switch (1 Gang)	2 15/16″	× 4 11/16″	7526K21	2 3/4″	× 4 1/2″	7533K41	$3.87	2 3/4″ × 4 1/2″	7533K42	$2.44
Two Toggle Switches (2 Gang)	4 3/4″	× 4 11/16″	7526K22	4 9/16″	× 4 1/2″	7533K43	7.47	4 9/16″ × 4 1/2″	7533K44	6.21
Three Toggle Switches (3 Gang)	6 9/16″	× 4 11/16″	7526K11	6 3/8″	× 4 1/2″	7533K45	12.61	6 3/8″ × 4 1/2″	7533K46	7.35
Duplex Receptacle Plates									
One Duplex Receptacle (1 Gang)	2 15/16″	× 4 11/16″	7526K23	2 3/4″	× 4 1/2″	7533K51	3.93	2 3/4″ × 4 1/2″	7533K52	2.44
Two Duplex Receptacles (2 Gang)	4 3/4″	× 4 11/16″	7526K24	4 9/16″	× 4 1/2″	7533K53	7.97	4 9/16″ × 4 1/2″	7533K54	6.79
Ground Fault Circuit Interrupter (GFCI) Receptacle Plates									
One GFCI Receptacle (1 Gang)	2 15/16″	× 4 11/16″	7526K25	2 3/4″	× 4 1/2″	7533K81	4.27	2 3/4″ × 4 1/2″	7533K82	2.44
Two GFCI Receptacles (2 Gang)	4 3/4″	× 4 11/16″	7526K26	4 9/16″	× 4 1/2″	7533K83	8.21	4 9/16″ × 4 1/2″	7533K84	7.12
Three GFCI Receptacles (3 Gang)	—	—	—	—	—	—	—	6 3/8″ × 4 1/2″	7533K94	9.82
Blank Plates									
Single Device (1 Gang)	2 15/16″	× 4 11/16″	7526K27	2 3/4″	× 4 1/2″	7533K85	2.62	2 3/4″ × 4 1/2″	7533K86	3.58
Two Device (2 Gang)	4 3/4″	× 4 11/16″	7526K28	4 9/16″	× 4 1/2″	7533K89	5.58	4 9/16″ × 4 1/2″	7533K91	7.50
Combination Switch/Receptacle Plates									
One Toggle Switch and One Duplex Receptacle (2 Gang)	4 3/4″	× 4 11/16″	7526K13	1.13	—	—	—	4 9/16″ × 4 1/2″	7533K15	6.08
One Toggle Switch and One GFCI Receptacle (2 Gang)	4 3/4″	× 4 11/16″	7526K14	1.28	4 9/16″ × 4 1/2″	7533K18	6.98	4 9/16″ × 4 1/2″	7533K17	6.13

Sectional Wall Plates—Smooth-finish white nylon

End Section for Toggle Switch

Blank Center Section

Simply snap end and center sections together to create a customized 2 gang or wider wall plate.

For Use With	End Section Wd. × Ht.	End Section Each ♦	Center Section Wd. × Ht.	Center Section Each ♦
One Toggle Switch	2 15/32″ × 4 29/32″	8032K11 $3.42	1 13/16″ × 4 29/32″	8032K21 $3.28
One Duplex Receptacle	2 15/32″ × 4 29/32″	8032K12 3.42	1 13/16″ × 4 29/32″	8032K22 2.89
One GFCI Receptacle	2 15/32″ × 4 29/32″	8032K13 3.28	1 13/16″ × 4 29/32″	8032K23 3.36
Blank	2 15/32″ × 4 29/32″	8032K14 3.42	1 13/16″ × 4 29/32″	8032K24 3.28

Circular Receptacle Wall Plates—Brushed-finish stainless steel

1 Gang

2 Gang

For Use With	Hole Dia.	Wd. × Ht.	Each ♦
One 15-amp Turn-Lock or 20-amp Straight-Blade Device (1 Gang)	1 13/32″	2 3/4″ × 4 1/2″	8033K59 $2.19
One 20- or 30-amp Turn-Lock Device (1 Gang)	1 19/32″	2 3/4″ × 4 1/2″	8033K61 4.65
One 30- or 50-amp Straight-Blade Device (1 Gang)	2 5/32″	2 3/4″ × 4 1/2″	8033K65 4.32
One 30- or 50-amp Straight-Blade Device (2 Gang)	2 5/32″	4 9/16″ × 4 1/2″	8033K71 8.76
One 60-amp Straight-Blade Device (2 Gang)	2 15/32″	4 9/16″ × 4 1/2″	8033K31 6.70

Outlet Boxes with Hubs and Covers

Aluminum Single-Device (1 Gang) Box with One Hub

PVC Two-Device (2 Gang) Box with Two Hubs

Aluminum Single-Device (1 Gang) Box with Three Hubs

Hubs allow secure connections to your conduit without using fittings. UL listed. *Note:* Trade size refers to an industry designation for conduit and is not an actual measurement. When selecting a box, match the trade size of the conduit.

Single-device (1 gang) boxes hold one switch, GFCI, or duplex receptacle; ***two-device (2 gang)*** boxes hold two.

PVC boxes are gray and have unthreaded hubs for attaching PVC Schedule 40 rigid conduit with PVC cement (see page 3421). All have four 0.20″ dia. mounting holes. *Single-device boxes* are 2 7/8″ Ht. × 5 11/16″ Wd. × 2 5/16″ Dp. (19 cu. in.). *Two-device boxes* are 4 5/8″ Ht. × 4 5/8″ Wd. × 2″ Dp. (32 cu. in.). ***Polycarbonate covers*** for PVC boxes are gray. They include mounting screws and are CSA certified. Receptacle covers have a hinged lid, unless noted. *Single-device covers* are 3 3/16″ Ht. × 4 3/4″ Wd., unless noted. *Two-device covers* are 4 11/16″ Ht. × 4 11/16″ Wd.

Aluminum boxes have NPT female threaded hubs. They don't have mounting holes, unless noted. All are 2 7/8″ Ht. × 4 5/8″ Wd. × 2″ Dp. (18 cu. in.). ***Aluminum covers*** include mounting screws. 7169K53 and K52 are 2 1/2″ Ht. × 4 5/8″ Wd.; K49 is 2 13/16″ Ht. × 4 9/16″ Wd.

Polycarbonate (1 Gang) Duplex Receptacle Horizontal Cover

Polycarbonate (1 Gang) GFCI Receptacle Vertical Cover

Polycarbonate (2 Gang) Toggle Switch Cover

Aluminum (1 Gang) Blank Cover

Aluminum (1 Gang) Duplex Receptacle Vertical Cover

Aluminum (1 Gang) Toggle Switch Cover

Hub Trade Size	PVC Single Device (1 Gang)	Each	PVC Two Device (2 Gang)	Each	Aluminum Single Device (1 Gang)	Each
Boxes with One Hub						
1/2″	7954K11	$15.03	7954K21	$18.06	7169K34♣	$16.74
3/4″	7954K12	15.80	7954K22	18.06	7169K35♣	17.87
1″	7954K13	17.71	7954K23	18.06	7169K36	19.00
Boxes with Two Hubs						
1/2″	7954K14	15.80	7954K24	20.59	7169K31	17.17
3/4″	7954K15	17.28	7954K25	18.80	7169K32	20.92
1″	7954K16	17.79	7954K26	20.59	7169K33	25.13
Boxes with Three Hubs						
1/2″	—	—	—	—	7169K37	23.94
3/4″	—	—	—	—	7169K38	29.70
Covers	***Polycarbonate***				***Aluminum***	
Blank	7954K31♥★	7.31	7954K41♥	8.39	7169K53	4.22
Duplex Receptacle—Vert.	7954K32	22.89	7954K42	27.02	7169K52	4.22
Duplex Receptacle—Horiz.	7954K33	12.52	—	—	—	—
GFCI Receptacle—Vert.	7954K34	17.27	—	—	—	—
GFCI Receptacle—Horiz.	7954K35	18.96	—	—	—	—
Toggle Switch	7954K36♥★	13.86	7954K46♥	27.55	7169K49	9.11

♣ Has two 5/16″ dia. mounting holes. ♥ Not a hinged cover. ★ 3″ Ht. × 4 13/16″ Wd.

♦ Prices are approximately 15% lower for 10 or more of a single item.

Weatherproof Boxes and Covers

Rain and snow won't hurt these corrosion-resistant boxes, covers, and extension rings. Also ideal for use indoors in wet conditions, they have a gray powder coating. UL listed and CSA certified.

Note: Trade size refers to an industry designation for conduit and fittings and is not an actual measurement. When selecting a box, match the trade size of the conduit.

Boxes

Single Device (1 Gang)

Two Device (2 Gang)

Round

Boxes are aluminum and have NPSM (National Pipe Straight Mechanical) threaded hubs in the back and sides for secure connection to conduit and fittings. They come with closure plugs for unused hubs, a grounding screw, and attachable mounting lugs. Boxes may be mounted horizontally and vertically.

Single-device (1 gang) boxes hold one toggle switch, GFCI, duplex receptacle, or other electrical device; ***two-device (2 gang)*** boxes hold two.

No. of Hubs	Hub Trade Size	O'all Size, Ht.×Wd.×Dp.		Each
Single Device (1 Gang)— *18.3 cu. in.*				
3	1/2"	2 13/16" × 4 9/16" × 2"	7219K22	$4.17
3	1/2"	2 13/16" × 4 9/16" × 2 5/8"	7219K81★	12.89
3	3/4"	2 13/16" × 4 9/16" × 2"	7219K23	5.08
4	1/2"	2 13/16" × 4 9/16" × 2"	7219K2	4.85
4	3/4"	2 13/16" × 4 9/16" × 2"	7219K24	5.94
5	1/2"	2 13/16" × 4 9/16" × 2"	7219K11	6.11
5	3/4"	2 13/16" × 4 9/16" × 2"	7219K12	6.74
Two Device (2 Gang)— *30.5 cu. in.*				
3	1/2"	4 5/8" × 4 9/16" × 2"	7219K25	10.33
3	3/4"	4 5/8" × 4 9/16" × 2"	7219K26	11.11
4	1/2"	4 5/8" × 4 9/16" × 2"	7219K27	13.09
4	3/4"	4 5/8" × 4 9/16" × 2"	7219K28	13.17
5	1/2"	4 5/8" × 4 9/16" × 2"	7219K21	10.78
5	3/4"	4 5/8" × 4 9/16" × 2"	7219K29	14.09
Round— *16.5 cu. in.*				
5	1/2"	4 5/16" Dia. × 1 9/16" Dp.	7219K7	6.50
5	3/4"	4 5/16" Dia. × 1 9/16" Dp.	7219K71	8.58

★ 23.8 cu. in.

Covers and Extension Rings

Single-Device (1 Gang) Blank

Single-Device (1 Gang) Duplex Receptacle (Horizontal)

Two-Device (2 Gang) GFCI Receptacle (Vertical)

Two-Device (2 Gang) Toggle Switch (Vert./Horiz.)

Round w/One 1/2" Trade Size Hole

Covers are made of zinc, unless noted. They come with installation hardware and gasket. ***Extension rings*** are aluminum and provide additional depth to increase the volume of a box. Mounting hardware included. *Extension ring for round boxes* has four 1/2" trade size holes.

		Each
Covers		
Single Device (1 Gang)— *2 13/16" Ht. × 4 9/16" Wd.*		
Blank	7219K5■	$1.23
Duplex Receptacle (Vertical)	7219K61	4.06
Duplex Receptacle (Horizontal)	7219K4▲	3.37
GFCI Receptacle (Vertical)	7219K62	6.78
GFCI Receptacle (Horizontal)	7219K3	5.95
Toggle Switch (Vertical/Horizontal)	7219K63	5.08
With Three 1/2" Trade Size Holes (Vert./Horiz.)	7219K6	3.04
Two Device (2 Gang)— *4 9/16" Ht. × 4 9/16" Wd.*		
Blank	7219K67■	2.72
Two Duplex Receptacles (Vertical)	7219K41	10.70
Two GFCI Receptacles (Vertical)	7219K31	12.87
Duplex/GFCI Receptacle (Vertical)	7219K64	15.74
Toggle Switch/Duplex Receptacle (Vertical)	7219K51	21.40
Two Toggle Switches (Vertical/Horizontal)	7219K66	11.89
Toggle Switch/GFCI Receptacle (Vertical)	7219K65	16.08
Round— *4 1/2" Dia.*		
With One 1/2" Trade Size Hole (Vert./Horiz.)	7219K13	2.89
With Three 1/2" Trade Size Holes (Vert./Horiz.)	7219K8	3.21
Extension Rings		
For Single-Device (1 Gang) Boxes (2 13/16" Ht. × 4 9/16" Wd. × 1" Dp.)	7219K15	5.64
For Round Boxes (4 5/16" Dia. × 1 9/16" Dp.)	7219K16	9.32

■ Made of steel. ▲ Size is 2 3/4" Ht. × 4 1/2" Wd.

Weatherproof While-in-Use Covers

Polycarbonate Two-Device (2 Gang) Duplex Receptacle and GFCI Receptacle

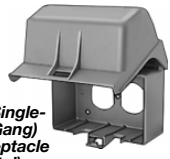
Aluminum Single-Device (1 Gang) Duplex Receptacle (Horizontal)

Protect outlets from the elements, even while in use. Covers completely shield the outlet and plug when closed. They're corrosion resistant and can withstand rain and snow; also ideal for use in wet locations indoors. All come with sealing gaskets and zinc-plated steel mounting hardware, and have a locking hasp for OSHA lockout/tagout requirements. Comply with NEC requirements for plugs in wet locations and NEMA 3R rated for falling liquid. UL listed.

Polycarbonate covers are translucent. They include adapter plates for configurations listed in the table, plus adapter plates for circular receptacles. *Two-device* cover also includes adapter plates for 16 additional configurations.

Aluminum covers are suitable for use in heavy duty or severe environments. They resist cracking and breaking and include adapter plates for configurations listed in the table. CSA certified. *One-device* covers also include an adapter plate for circular receptacles. *Two-device* cover includes adapter plates for 6 additional configurations including circular receptacles.

		Each
Polycarbonate		
Single Device (1 Gang)— *5 3/16" Ht. × 3 3/8" Wd. × 2 3/4" Dp.*		
Toggle Switch, Duplex Receptacle, GFCI Receptacle (Vertical/Horizontal)	70025K64	$15.13
Two Device (2 Gang)— *5 15/16" Ht. × 5 3/4" Wd. × 2 3/4" Dp.*		
Two Toggle Switches, Two Duplex Receptacles, Two GFCI Receptacles, Toggle Switch/GFCI Receptacle, Duplex/GFCI Receptacle (Vertical/Horizontal)	70025K65	20.83
Aluminum		
Single Device (1 Gang)— *3 1/2" Ht. × 4 5/8" Wd. × 3 1/4" Dp.*		
Toggle Switch (Horizontal), Duplex Receptacle (Horizontal), GFCI Receptacle (Horizontal)	6888K13	20.88
Single Device (1 Gang)— *5 3/4" Ht. × 3 1/8" Wd. × 3 1/4" Dp.*		
Toggle Switch (Vertical), Duplex Receptacle (Vertical), GFCI Receptacle (Vertical)	6888K14	20.88
Two Device (2 Gang)— *4 1/2" Ht. × 4 5/8" Wd. × 4 1/4" Dp.*		
Two Duplex Receptacles (Vertical), Two GFCI Receptacles (Vertical), Toggle Switch/Duplex Receptacle (Vertical), Toggle Switch/GFCI Receptacle (Vertical)	6888K21	26.73

Stainless Steel Covers

Perfect for harsh, corrosive applications in rugged environments, these covers are made of Type 302 stainless steel and are gasketed. Mounting screws included. UL listed and CSA certified.

Locking covers include two keys.

Single-Device (1 Gang) Locking Toggle Switch

	Ht. × Wd.		Each
Single Device (1 Gang)			
Blank	2 7/8" × 4 5/8"	7790K66	$5.36
Duplex Receptacle (Vertical)	4 1/2" × 2 3/4"	7790K63	24.51
Duplex Receptacle (Horizontal)	2 3/4" × 4 1/2"	7790K64	24.51
GFCI Receptacle (Vertical)	4 1/2" × 2 3/4"	7790K65	24.51
Toggle Switch (Vertical)	4 1/2" × 2 3/4"	7790K61	30.81
Single Device (1 Gang) Locking			
Duplex Receptacle (Horizontal)	2 3/4" × 4 1/2"	7790K82	72.20
GFCI Receptacle (Vertical)	4 1/2" × 2 3/4"	7790K83	65.90
Toggle Switch (Horizontal)	2 3/4" × 4 1/2"	7790K81	63.76
Two Device (2 Gang)			
Blank	4 1/2" × 4 9/16"	7790K67	4.80
Two Toggle Switches (Vertical)	4 1/2" × 4 9/16"	7790K62	46.17

Floor Outlet Box

Made of stamped steel, this concrete-tight floor box is fully adjustable—external leveling screws allow 1 1/4" adjustment before concrete pour; internal screws allow 0.38" adjustment after pour. Also good for carpeted and tile floors. Box has 1/2" trade size knockouts (six on the sides; three on the bottom) and four 3/4" trade size knockouts on the side. Has a zinc coating. UL listed and CSA certified.

Duplex cover and ***carpet flange*** are brass.

Floor Box

Duplex Cover

Carpet Flange

		Each
Floor Box, 37.3 cu. in. (4 11/16" Lg. × 4 11/16" Wd. × 3 19/64" Dp.)	6372K1	$52.05
Duplex Cover, 3 7/8" Dia.	6372K3	72.65
Carpet Flange, 5 1/4" Dia.	6372K2	62.48

Single-Channel Surface-Mount Indoor Raceway

PVC w/Snap-On Cover

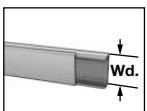

Steel w/ Snap-On Cover

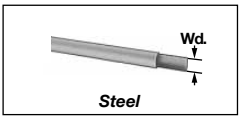

Steel

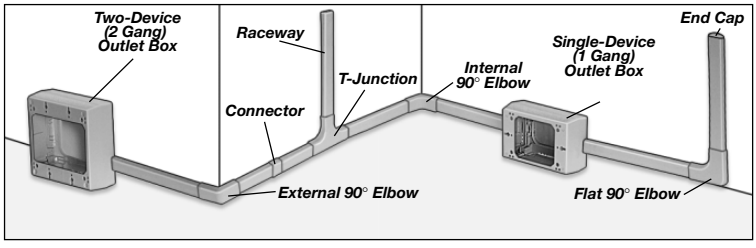

With a low profile and easy installation, this raceway is ideal for running power, data, or communications wiring where you can't get inside the walls. All are compatible with Wiremold raceway of the same size. Color is ivory (can be painted for a custom look). Raceway and components are UL and C-UL listed. ***Wire retention clips*** hold your wires in place along the raceway. ***Outlet boxes*** accept any standard wall plate (see page 832).

PVC raceway resists denting and scratching. Has an adhesive backing for installation in applications less than 50 volts. For applications up to 600 volts, fasten the raceway with screws (not included). Each raceway section consists of a base and a snap-on removable cover and can be cut with a hacksaw or shears.

Steel raceway is a rugged alternative to PVC and is great for small amounts of electrical or datacom wiring. It is 0.040″ thick and has a scratch-resistant finish. Each raceway section consists of a base and cover and can be cut with a hacksaw. Install by fastening a ***wall hanger*** to the wall and just snap the raceway onto the hanger (hanger has a 3/16″ dia. hole—screw not included), except *raceway with snap-on cover*, which provides easier access and has 9/32″ dia. mounting holes (screws not included).

	PVC WITH SNAP-ON COVER						Steel		Steel with Snap-On Cover	
	7/8″ Wd. × 7/16″ Dp.	Each	1 5/16″ Wd. × 7/16″ Dp.	Each	2 1/4″ Wd. × 11/16″ Dp.	Each	3/4″ Wd. × 17/32″ Dp.	Each	1 29/32″ Wd. × 7/8″ Dp.	Each
Raceway (5-ft. Section)	70075K21	$12.37	70075K22	$12.75	70075K23	$19.00	9274K1	$7.95	9320K1	$13.28
Connectors	70075K24	.74	70075K25	.66	70075K26	1.14	9274K11	.69	9320K11	1.52
End Caps	70075K27	1.04	70075K28	1.64	70075K29	1.78	—	—	9320K16	1.06
Flat 90° Elbows	70075K31	2.82	70075K32	2.92	70075K33	3.16	9274K12	2.24	9320K12	8.79
Internal 90° Elbows	70075K34	2.62	70075K35	2.70	70075K36	3.16	9274K13	2.82	9320K13	5.90
External 90° Elbows	70075K37	2.62	70075K38	2.70	70075K39	3.16	9274K14	2.60	9320K14	9.97
T-Junctions	70075K41	3.68	70075K42	3.80	70075K43	3.86	9274K32	5.42	9320K19	12.04
Wire Retention Clips	70075K44	.46	70075K45	.54	70075K46	.82	—	—	9320K15	.66
Wall Hanger	—	—	—	—	—	—	9274K31	.64	—	—
Single-Device (1 Gang) Outlet Boxes	70075K87	8.48	70075K87	8.48	70075K87	8.48	9274K33	7.79	9320K17	10.08
Two-Device (2 Gang) Outlet Boxes	70075K88	13.80	70075K88	13.80	70075K88	13.80	9274K34	14.02	9320K18	21.63

Indoor Steel Raceway (NEMA 1)

Raceway Section without Knockouts

Connector

90° Elbow

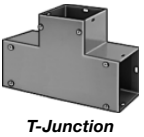

T-Junction

End Flange

End Cap

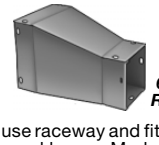

6″ to 4″ Reducer

Also known as wireway and wire trough, use raceway and fittings to protect and route electrical wiring, cables, and hoses. Made of gray 16-ga. steel. UL listed, CSA certified, and meet NEMA 1 standards for indoor use.

Raceway sections have four 1/4″ dia. mounting holes (10-ft. lengths have six) for wall or ceiling mounting. The cover is secured to the body with screws (included). *10-ft. raceway section* has two overlapping covers. **To Order:** Please specify raceway with or without knockouts; those with knockouts have combination 1/2″ and 3/4″ trade size and combination 1″ and 1 1/4″ trade size knockouts.

A ***connector*** is required to join components except the end flange. Each connector has a swing gate for easy access and includes connecting hardware. ***90° elbow*** and ***T-junction*** have removable covers. ***End flange*** creates a secure raceway connection to an enclosure or wall. ***End cap*** terminates a raceway or fitting (connecting hardware included). It has a combination 1 1/4″ and 1 1/2″ trade size knockout.

	No. of Knockouts, Top/Bottom★	4″ Wd. × 4″ Dp.	Each	6″ Wd. × 6″ Dp.	Each
Raceway Sections					
1-ft. Lg.	3/ 3	8130K11	$11.37	8130K12	$22.86
2-ft. Lg.	7/ 7	8130K13	18.05	8130K14	30.91
5-ft. Lg.	19/19	8130K15	39.40	8130K16	59.15
10-ft. Lg.	39/39	8130K17	84.35	8130K18	141.21
Fittings and Accessories					
Connector		8130K19	4.14	8130K22	5.85
90° Elbow		8130K21	31.77	8130K24	35.35
T-Junction		8130K23	35.99	8130K28	41.73
End Flange		8130K27	11.96	8130K32	16.65
End Cap		8130K29	4.01	8130K34	4.68
6″ to 4″ Reducer				8130K36	Each $46.22

★ For raceway with knockouts.

Indoor Stainless Steel Raceway

Raceway Section w/Connector

90° Elbow w/ Connector

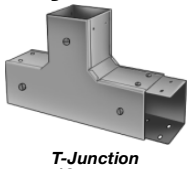

T-Junction w/Connector

End Flange

End Cap

Connector

Wall Hanger

6″ to 4″ Reducer

Ideal for food processing and pharmaceutical environments, raceway and fittings are made of 18-ga. Type 304 stainless steel for great corrosion resistance. All are UL listed and include connecting hardware, except the wall hanger.

Raceway sections have a cover with a 1/4-turn latch that locks it firmly in place. Mount using the ***wall hanger***, which has two 1/4″ dia. mounting holes.

90° elbow with connector and ***T-junction with connector*** have removable covers. ***End flange*** creates a secure raceway connection to an enclosure or wall. ***End cap*** terminates a raceway or fitting.

	4″ Wd. × 4″ Dp.	Each	6″ Wd. × 6″ Dp.	Each
Raceway Sections				
1-ft. Length w/Connector	9148K11	$78.96	9148K21	$112.82
2-ft. Length w/Connector	9148K12	131.60	9148K22	188.02
5-ft. Length w/Connector	9148K13	219.36	9148K23	313.38
10-ft. Length w/Connector	9148K14	302.76	9148K24	432.56
Fittings and Accessories				
90° Elbow w/Connector	9148K16	89.20	9148K26	127.10
T-Junction w/Connector	9148K17	125.20	9148K27	150.90
End Flange	9148K19	36.46	9148K29	39.88
End Cap	9148K18	17.72	9148K28	32.42
Connector	9148K15	24.28	9148K25	35.00
Wall Hanger	9148K4	20.44	9148K5	23.60
6″ to 4″ Reducer			9148K8	Each $54.72

Multichannel Surface-Mount Indoor PVC Raceway

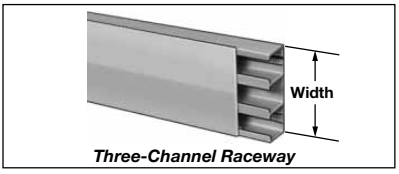

Three-Channel Raceway

Two-Channel Raceway

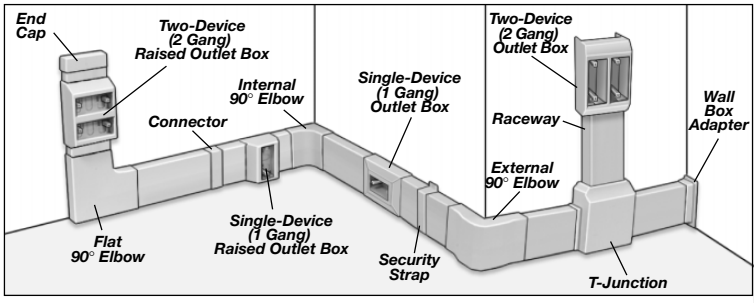

With more than one channel, raceway and fittings let you separate power and data wiring to prevent interference. It's easy to install and is perfect for areas where you can't get inside the walls. Designed for use with Category 5, 5E, and 6 data wires, it also meets the 1¼″ bend radius required for fiber optic cable. Components are made of impact- and corrosion-resistant PVC and are flame retardant. Use in applications up to 600 volts. Color is off-white (can be painted for a custom look). UL listed and CSA certified.

Raceway and Accessories

Three Channel— Often used as a main distribution raceway. Raceway section has a snap-on cover for easy access and is 4.5″ Wd. × 1.63″ Dp. If larger channels are needed, just remove the dividers. It must be securely fastened with screws (not included).

Two Channel— Often used for branch circuits in conjunction with the three-channel raceway. Raceway section has a hinged cover for easy access to wiring and is 2.12″ Wd. × 1.04″ Dp. It has an adhesive backing for easy installation in low-voltage applications (less than 50 volts). For applications up to 600 volts, fasten with screws (not included).

Security straps provide support to keep raceway covers closed. ***Wall box adapter*** allows access to single-device (1 gang) outlet boxes that are already in your wall. ***Outlet boxes*** provide easy access to wiring. ***Raised outlet boxes*** accommodate a variety of receptacles and hold them away from the raceway channels for maximum wiring capacity.

	Three Channel	Each	Two Channel	Each
Raceway (5-ft. Section)	71865K411	$34.73	71865K261	$18.82
Connectors	71865K551	3.52	71865K421	1.18
Security Straps	71865K891	4.60	71865K461	1.54
End Caps	71865K511	5.68	71865K431	2.20
Flat 90° Elbows	71865K221	17.73	71865K311	5.88
Internal 90° Elbows	71865K231	11.76	71865K331	5.88
External 90° Elbows	71865K241	12.38	71865K351	6.18
T-Junctions	71865K561	20.33	71865K371	6.86
Wall Box Adapter	71865K581	7.26	———	———
Single-Device (1 Gang) Outlet Boxes	71865K611	11.58	71865K271	9.40
Two-Device (2 Gang) Outlet Boxes	71865K612	11.84	71865K281	13.45
Single-Device (1 Gang) Raised Outlet Box	71865K621	11.68	———	———
Two-Device (2 Gang) Raised Outlet Box	71865K631	15.24	———	———

Outlet Box Face Plates and Jacks

Outlet box face plates are for three- or two-channel raceway. One is required for single device boxes; two are required for two-device boxes.

Modular communication jacks (RJ-45) snap into modular face plates.

		Each
Outlet Box Face Plates		
Toggle Switch	71865K11	$2.20
Duplex Receptacle	71865K12	2.08
GFCI Receptacle	71865K64	2.20
Two Modular Jacks	71865K14	2.20
Blank	71865K13	2.10
Modular Communication Jacks (RJ-45)		
8-Position Category 5E	71865K841	9.10
8-Position Category 6	71865K842	13.40

Wire Retention Clips for 3-Channel Raceway

Hold your wires in place along the raceway.

71865K725 ..... **Pkg. of 10** $10.20

Outlet Box Dividers for 2-Channel Raceway

Required to separate wires when both power and data wires are used in the outlet box.

		Each
Single-Device (1 Gang) Divider	71865K441	$3.66
Two-Device (2 Gang) Divider	71865K451	8.64

Washdown Indoor/Outdoor Stainless Steel Raceway (NEMA 4X)

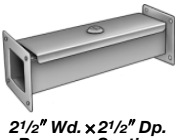
2½″ Wd. × 2½″ Dp. Raceway Section

4″ Wd. × 4″ Dp. Raceway Section

Connector

90° Elbow

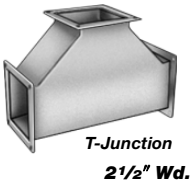
T-Junction

End Cap

Overhead Hanger

Wall Hanger

Constructed from 14-ga. Type 304 stainless steel with oil-resistant gaskets, this raceway is the one to install in environments exposed to washdowns, chemicals, and corrosion. Use to protect and route electrical wiring, cables, and hose. Components are UL listed, CSA certified, and meet NEMA 4X standards for indoor and outdoor protection against corrosion and water projected from a hose.

2½″ Wd. × 2½″ Dp. raceway section has a cover secured by heavy duty hinges on one side and ¼-turn latches on the top to lock it firmly in place. Gaskets are rubber. ***4″ Wd. × 4″ Dp. raceway section*** has a cover secured with heavy duty hinges on one side and screw clamps on the other. Gaskets are polyurethane.

Fittings and Accessories— All include connecting hardware. A *connector* is required to join all components. *End cap* terminates a raceway or fitting. *Overhead* and *wall hangers* can be mounted to the raceway flange in various configurations. *2½″ Wd. × 2½″ Dp. overhead* and *wall hangers* have 25/64″ dia. mounting holes. *4″ Wd. × 4″ Dp. overhead* and *wall hangers* have 9/32″ dia. mounting holes.

	2½″ Wd. × 2½″ Dp.	Each	4″ Wd. × 4″ Dp.	Each
Raceway Sections				
1-ft. Length	8511K51	$263.83	8511K11	$264.77
2-ft. Length	8511K53	327.07	8511K13	338.04
5-ft. Length	8511K55	541.17	8511K15	562.05
10-ft. Length	8511K57	898.57	8511K17	924.64
Fittings and Accessories				
Connector	8511K69	50.57	8511K19	58.64
90° Elbow	8511K61	241.09	8511K21	270.62
T-Junction	8511K63	289.94	8511K23	325.19
End Cap	8511K68	46.35	8511K27	53.31
Overhead Hanger	8511K65	63.22	8511K33	59.43
Wall Hanger	8511K67	40.48	8511K37	38.74

Low-Voltage Rollout Raceway

Keep those low-voltage wires (up to 90 VAC/VDC) out of sight the easy and economical way. This raceway comes flat on a roll, ready to be cut to length and easily folded. It has an adhesive backing and is paintable.

Small channel raceway is good for hiding small-gauge wires. It snaps closed and is made of PVC. Color is white. Meets UL 94V0 for flame retardance. ***Large channel raceway*** is good for hiding multiple cables and cords behind workstations and under desks. One surface has an additional adhesive strip for closing. Made of polypropylene. **To Order:** Please specify black or white.

Wd. × Dp.	Lg., ft.		Each
Small Channel Raceway			
¼″ × ⅛″	50	1767T1	$33.98
⅜″ × ⅜″	50	1767T2	39.87
Large Channel Raceway			
1⅛″ × ½″	10	1767T5	12.75
1⅛″ × ½″	25	1767T6	29.09

Small Channel Raceway

Large Channel Raceway

Fish Tape

Stainless Steel and Nylon

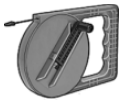

Pancake

Fish tapes make the job of pushing and pulling wire through conduit much easier. Just attach your wire and "fish" it through.

Steel tape is flat, corrosion-resistant plated steel coiled on a tough plastic reel that has a large handle.

Stainless steel tape is flat and will not rust or corrode, ideal for damp conditions. Comes on a plastic reel with a large handle.

Super flex stainless steel tape is flexible enough for pulling through multiple bends, yet it's stiff enough to push through tough runs without backing up. Tape is stranded, round, and surrounded by a hard nylon jacket. Has an impact-resistant plastic reel with a handle.

Nonconductive nylon tape is safer to use around energized equipment. Use for pushing wire only. Tape is round nylon but has a metal tip. Has a heavy duty plastic reel with a handle.

Pancake steel tape is flat and great for fishing short runs under carpet, down walls, and over ceilings. Small enough to fit in a tool case, the reel is plastic and has a handle with a winding knob.

Length, ft.	Tape Width	Tape Thick.		Each
Steel				
65	1/8″	1/16″	7313K21	$42.89
125	1/8″	1/16″	7313K23	60.20
250	1/8″	1/16″	7313K25	83.29
Stainless Steel				
120	1/8″	1/16″	3466K11	82.91
240	1/8″	1/16″	3466K12	112.16
Super Flex Stainless Steel				
50	3/16″ Dia.		7288K22	90.02
100	3/16″ Dia.		7288K33	121.32
Nonconductive Nylon				
50	3/16″ Dia.		7423K11	69.98
100	3/16″ Dia.		7423K21	111.63
Pancake Steel				
25	1/4″	1/32″	7100K11	10.31

Cable Rope Feed Line

Unlike fish tape, this pulling line is lightweight enough to be inserted into your conduit with a blower or vacuum so you can easily guide your pulling rope through. *Note:* Not for directly pulling wire or cable.

1000-ft. roll is made of nylon and has a breaking strength of 85 lbs. Color is white. ***6500-ft. bucket*** has a handle and center hole for easy dispensing. Rope is made of polypropylene and has a breaking strength of 210 lbs. Line is mildew resistant so you can leave it there for future use. Color is white with a blue marking strand.

1000-ft. Roll	5043K3	Each	$22.04
6500-ft. Bucket	5043K2	Each	$45.78

Sure-Clamp Wire and Cable Grips

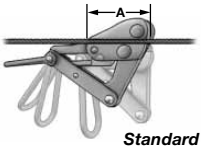

Standard

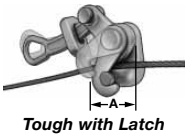

Tough with Latch

Pull wire and cable and maintain tension until the line can be permanently anchored. Grips are made of steel. ***Warning:*** Do not use as an anchor.

Standard grips (often used with bare wire) have a smooth jaw that won't dig into and damage wire. Jaws are spring loaded to provide extra tension.

Tough grips provide a more secure grip for wire, cable, and wire rope in applications where marring can be tolerated. Grips ***with latch*** prevent cable from slipping out of the jaws.

Cable Dia. Range	Jaw Length (A)	Work Load Limit, lbs.		Each
Standard				
0.08″-0.2″	3″	1,500	7285K1★	$87.11
0.218″-0.55″	5″	8,000	7285K9	198.90
0.31″-0.62″	7 1/4″	15,000	7285K7	412.99
0.53″-0.74″	5 1/2″	8,000	7285K2	261.43
Tough				
0.06″-0.25″	1 1/2″	2,500	7285K4	57.53
0.125″-0.5″	2 1/4″	5,000	7285K5	86.14
Tough with Latch				
0.125″-0.5″	2 1/4″	5,000	7285K21	97.16
0.28″-0.75″	3″	8,000	7285K8	116.95
0.5″-1″	3 1/2″	8,000	7285K22	143.24

★ Knurled on one side.

Fish Tape Leaders

Flexible Leader

Leaders make guiding your steel fish tape and pulling wires through conduit bends easier.

Flexible leader handles up to six 10 AWG bare wires. Use with flat fish tape.

Multi-loop leader has multiple staggered eyelet loops to prevent bunching and hang-ups in tight bends. Use with flat and round fish tape.

	Length		Each
Flexible Leader	12″	6611K62	$16.03
Multi-Loop Leader (4 Loops)	10″	6611K63	16.77
Multi-Loop Leader (6 Loops)	11 1/8″	6611K64	19.26

Fish Tape Puller

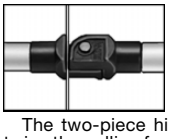

The two-piece hinged design allows you to use both hands for twice the pulling force. It also prevents tape kinking, and is safer than using pliers for pulling tasks. Overall length is 11 3/4″.

4861K66 ..... **Each** $35.62

Wire and Cable Push-Pull Rod

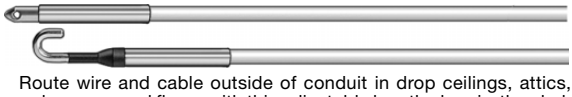

Route wire and cable outside of conduit in drop ceilings, attics, crawl spaces, and floors with this adjustable length glow-in-the-dark rod. It is made of nonconductive fiberglass and consists of three 6-ft. threaded sections and two 3-ft. threaded sections. Includes bullet nose eyelet and hook ends for handling wire and cable.

O'all Lg.	Diameter		Each
24 ft.	1/4″	4078K11	$77.99

Cable-Pulling Grips

Standard Duty Single Weave

Midcable Heavy Duty Double Weave

Use these grips to pull one or more cables through conduit. Galvanized steel wire mesh works like a Chinese finger trap, adjusting its grip to the load. The eye flexes to follow the line of pull. For more than one cable, measure the circumference of the bundle and divide by 3.14 to determine the cable diameter range you need. CSA certified.

Can't get at the end of a cable? Just lace on a ***midcable*** pulling grip using the included lacing wire and start your pull.

Cable Dia. Range	Mesh Length	Work Load Limit, lbs.		Each
Standard Duty Single Weave				
0.25″-0.36″	4 3/4″	340	7283K1	$20.16
0.37″-0.49″	7 3/4″	340	7283K2	24.57
0.50″-0.61″	9 1/2″	340	7283K3	26.73
0.62″-0.74″	10 1/2″	560	7283K4	31.00
0.75″-0.99″	11 3/4″	820	7283K5	35.30
1.00″-1.24″	15 1/4″	820	7283K6	37.41
6-Pc. Single Weave Grip Set (one of each above)			7283K7	165.61
Heavy Duty Double Weave				
0.37″-0.49″	13″	520	7283K8	59.16
0.50″-0.74″	17″	680	7283K9	65.86
0.75″-0.99″	20″	1100	7283K11	73.50
1.00″-1.24″	28″	1620	7283K12	76.86
1.25″-1.49″	32 1/2″	1620	7283K13	79.66
1.50″-1.74″	36″	1620	7283K14	82.36
6-Pc. Double Weave Grip Set (one of each above)			7283K15	418.09
Midcable Heavy Duty Double Weave				
0.75″-0.99″	13″	600	7515K43	66.02
1.00″-1.24″	16″	820	7515K44	69.10
1.25″-1.49″	17″	820	7515K45	72.53
1.50″-1.74″	18″	1100	7515K46	80.07
1.75″-1.99″	19″	1460	7515K47	89.33
2.00″-2.49″	20″	1460	7515K48	97.13
2.50″-2.99″	21″	1460	7515K49	113.00
3.00″-3.49″	22″	1840	7515K51	131.12

Figure 8 Connectors

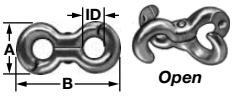

Easy-to-use galvanized malleable iron connectors lock together and stay closed under tension. Ideal for cable stringing and pulling.

Warning: Not for overhead lifting. Not for use as a link for chain or to repair chain.

Thick.	(A)	(B)	ID	Work Load Limit, lbs.		Each
3/16″	13/16″	1 3/4″	1/4″	190	3346T21	$5.58
5/16″	1 11/32″	2 1/8″	15/32″	305	3346T23	9.65
3/8″	1 11/32″	2 17/32″	9/16″	430	3346T24	13.70
1/2″	1 21/32″	3 3/16″	5/8″	925	3346T26	16.02
3/4″	2 1/2″	5 1/4″	1 1/16″	2065	3346T28	32.20

Cable Protection Tape

This vinyl-coated cloth tape has adhesive just on the edges to create a non-sticky channel that keeps cables, cords, and wires in place. It can be repositioned several times without loss of adhesion. Tape is 12.5 mils (0.0125″) thick, hand-tearable, and puncture resistant. Great for use on any clean surface, including carpeting. Temperature range is 35° to 135° F. Roll length is 40 yards.

O'all Width	Channel Width	Black/Yellow	Per Roll	Black	Per Roll
3″	1 3/8″	77065A1	$29.72	77065A4	$29.72
6″	4″	77065A2	59.44	77065A5	59.44

Light Duty Cable Protectors

Protector with Multipurpose Fitting

Flexible and durable PVC cable protectors protect wire, cord, and cable from foot, cart, and other light traffic. They have a tapered profile that lies flat. Just thread your cable through the channel or slit the underside of the protector with a utility knife and insert the cable. Includes tape with adhesive on both sides for easy installation. For indoor and outdoor use. Not load rated.

Multipurpose fitting fits all sizes and serves as a tee, riser, "L," 4-way, or terminal box. Made of PVC.

To Order: For protectors and multipurpose fitting, please specify beige, black, brown, gray, or yellow.

Lg., ft.	Wd.	Channel Wd. × Ht.		Each
5	3″	3/4″ × 1/2″	7350K8	$16.28
10	2 3/4″	1/2″ × 5/16″	7350K9	21.62
25	3″	3/4″ × 1/2″	7350K11	67.34
Multipurpose Fitting			7350K12	11.84

Heavy Duty Cable Protectors

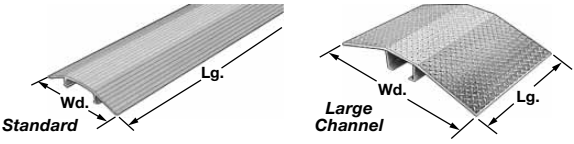

With aluminum construction and a textured surface, these cable protectors are perfect in environments with heavy pedestrian and equipment traffic. Use in factory, warehouse, and office environments, indoors and out.

Standard protectors have serrations for slip resistance. Work load limit is 10,000 lbs.

Large channel protectors easily span large hose, wire, pipe, and cable. They have a diamond tread surface for safe crossing. Work load limit is 2,000 lbs.

Lg., ft.	Wd.	Channel Wd. × Ht.		Each
Standard				
2	7″	2 1/2″ × 3/4″	8085K8	$87.15
3	7″	2 1/2″ × 3/4″	8085K9	110.00
4	7″	2 1/2″ × 3/4″	8085K11	154.85
4	9 1/8″	2 1/2″ × 1 1/4″	8085K1	199.69
6	9 1/8″	2 1/2″ × 1 1/4″	8085K2	298.69
Large Channel				
2	36″	4″ × 4″	2233T71	304.95
2	40″	8″ × 4″	2233T72	346.88
2	44″	12″ × 4″	2233T73	370.83
2	48″	16″ × 4″	2233T74	379.17
4	36″	4″ × 4″	2233T75	620.83
4	40″	8″ × 4″	2233T76	668.75
4	44″	12″ × 4″	2233T77	712.50
4	48″	16″ × 4″	2233T78	740.82

Connectable Cable Protectors

You can make these modular, interlocking protectors as long as needed—simply snap one piece onto another to span sidewalks, roads, and plant floors. Components resist weather and abrasion.

Single Channel

Made of polyurethane with a tread pattern that improves traction.

Medium duty protectors are good for pedestrian and light vehicle traffic. **To Order:** Please specify black or red.

Heavy duty protectors have high work load limits, allowing them to stand up to heavy pedestrian and vehicle traffic. Color is orange.

Drop-over style has an open bottom so it can be dropped right over your cable for fast installation. Lay-in style flexes to allow you to lay your cable into the channel, keeping it off the floor.

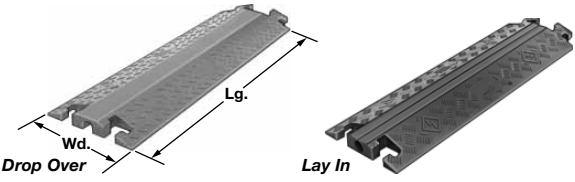

Lg., ft.	Wd.	Channel Wd. × Ht.	Work Load Limit, lbs.		Each
Medium Duty Protectors					
Drop Over					
3	5 1/4″	1 1/2″ × 1/2″	1,000	9384K2	$42.31
3	10 3/4″	4″ × 1″	7,500	9384K1	95.53
3	19 3/4″	7 3/4″ × 2″	5,000	9384K3	299.12
Heavy Duty Protectors					
Drop Over					
3	11 1/2″	1 1/4″ × 1 1/4″	11,700	1686K21	164.23
3	14 1/4″	2 1/4″ × 2 1/4″	11,700	1686K61	203.19
Lay In					
3	11 1/2″	1 1/4″ × 1 1/4″	11,700	1686K22	164.23
3	14 1/4″	2 1/4″ × 2 1/4″	11,700	1686K82	203.19

Multichannel

Multiple channels let you run more cables in these heavy duty protectors. All are polyurethane with a work load limit of 10,000 lbs.

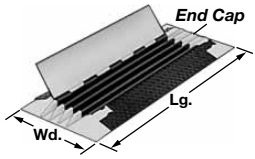

4-Channel Protector with End Caps

Protectors— Consist of a base with a hinged cover that opens for cable access. Color is yellow and black.

End Caps for Protectors— Sold in pairs (one female end cap and one male end cap). Color is yellow.

Also Available: 45° turns to link protectors in almost any configuration. Please ask for 73085K88 and specify number of channels (3, 4, or 5) and turn style (left or right).

No. of Channels	Lg.	Wd.	Channel Wd. × Ht.		Each
Protectors					
3	3′	18 3/4″	2 1/4″ × 2 1/4″	73085K51	$394.39
4	3′	18″	1 1/4″ × 1 3/32″	73085K61	284.11
5	3′	20″	1 1/4″ × 1 3/32″	73085K62	282.14
End Caps for Protectors					Per Pair
3	1′	18 3/4″	2 1/4″ × 2 1/4″	73085K52	$186.44
4	1′	18″	1 1/4″ × 1 3/32″	73085K71	130.51
5	1′	20″	1 1/4″ × 1 3/32″	73085K72	124.62

Wheelchair/Cart Crossover Protector— Has just a 4.8° incline for smooth, ADA-compliant crossing—great for wheelchairs, carts, and forklifts. It includes one center section, two center ramps, four side ramps, and two interconnects. Color is yellow, black, and blue.

Extension for Wheelchair/Cart Crossover Protector— Allows you to extend the length of the protector. It includes one center section and two center ramps. Color is yellow.

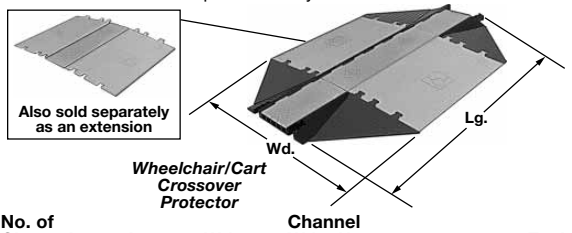

No. of Channels	Lg.	Wd.	Channel Wd. × Ht.		Each
Wheelchair/Cart Crossover Protector					
5	5′11″	53 3/4″	1 1/4″ × 1 3/16″	73085K91	$603.08
Extension for Wheelchair/Cart Crossover Protector					
5	3′	53 3/4″	1 1/4″ × 1 3/16″	73085K93	363.08

PVC Wire Duct

Use for shorter runs of wire and cable, such as those found within electrical enclosures and control panels. A great alternative to cable ties, this PVC duct comes with a cover and meets UL 94V0 for flame retardance. UL recognized, CSA certified, and CE approved, unless noted.

To Order: Please specify length from those listed in the table.

Snap-on Cover

Slotted Duct

Narrow Slotted Duct

Solid Duct

Slotted duct has "fingers" that allow you to direct wires in and out of the duct (just remove them to enlarge the opening size). Has 0.2″ dia. mounting holes. **To Order:** Please specify color: gray or white, unless noted.

Narrow slotted duct is similar to slotted but with smaller slots. Has 0.2″ dia. mounting holes. **To Order:** Please specify color: gray or white.

Solid duct is excellent for continuous runs of wire. Color is gray.

O'all Size, Wd.×Ht.	Slotted: Slot Wd.	Slotted: Each 3′ 3″	Slotted: Each 6′ 6″	Slotted with Adhesive Back: Slot Wd.	Slotted with Adhesive Back: Each 3′ 3″	Slotted with Adhesive Back: Each 6′ 6″	Narrow Slotted: Slot Wd.	Narrow Slotted: Each 3′ 3″	Narrow Slotted: Each 6′ 6″	Solid: Each 3′ 3″	Solid: Each 6′ 6″
1/2″ × 5/8″	0.20″ 7578K11●	$11.88	$18.19	0.20″ 7578K41●	$14.33	$22.04	____	____	____	69865K11★ $11.94	$18.18
1/2″ × 1″	0.20″ 7578K12●	12.46	18.94	0.20″ 7578K42●	14.90	22.80	____	____	____	69865K12★ 12.45	19.09
3/4″ × 3/4″	____	____	____	____	____	____	____	____	____	69865K51■ ____	16.06
1″ × 1″	0.40″ 7578K13■	____	19.64	0.40″ 7578K43■	____	23.64	0.20″ 75835K11	$15.10	$23.06	69865K13★ 15.19	23.46
1″ × 1 1/2″	0.31″ 7578K14	18.25	27.75	0.31″ 7578K44	21.29	33.84	0.16″ 75835K12	17.71	27.75	69865K14★ 18.32	28.18
1″ × 3″	0.31″ 7578K15	20.23	34.29	0.31″ 7578K45	27.12	41.37	0.16″ 75835K13	22.91	34.90	69865K41★ 24.57	38.18
1 1/2″ × 1 1/2″	0.31″ 7578K16	19.12	29.15	0.31″ 7578K46	23.08	35.48	0.16″ 75835K14	19.81	31.87	69865K42★ 20.84	31.64
1 1/2″ × 2 1/4″	0.31″ 7578K17	20.91	31.72	0.31″ 7578K47	25.21	38.70	0.16″ 75835K15	21.11	33.39	69865K43★ 21.94	34.91
1 1/2″ × 3″	0.31″ 7578K18	24.63	37.50	0.31″ 7578K48	29.69	45.51	0.16″ 75835K16	24.63	37.50	69865K44★ 26.16	42.18
2 1/4″ × 2 1/4″	0.31″ 7578K19	20.38	30.88	0.31″ 7578K49	24.58	37.62	0.16″ 75835K17	20.38	30.88	69865K45★ 21.21	36.55
2 1/4″ × 3″	0.31″ 7578K21	25.83	39.17	0.31″ 7578K61	31.10	47.62	0.16″ 75835K18	25.92	39.30	69865K71★ 25.29	44.55
3″ × 2 1/4″	0.31″ 7578K91	27.61	44.00	0.31″ 7578K62	32.87	53.82	0.16″ 75835K19	27.77	43.88	69865K72★ 26.00	46.00
3″ × 3″	0.31″ 7578K92	30.78	46.97	0.31″ 7578K63	37.06	56.94	0.16″ 75835K21	29.59	46.98	69865K73★ 29.86	53.82
3″ × 4″	0.31″ 7578K93	38.37	58.42	0.31″ 7578K64	44.82	68.80	0.16″ 75835K22	36.80	58.30	69865K74★ 35.06	61.09
4″ × 3″	0.31″ 7578K94	35.68	59.04	0.31″ 7578K65	40.52	66.09	0.16″ 75835K23	33.97	56.55	69865K75★ 32.06	57.09
4″ × 4″	0.31″ 7578K95	37.48	61.80	0.31″ 7578K66	45.17	74.98	0.16″ 75835K24	37.48	61.80	69865K76★ 39.03	68.73

● Available in gray only. ★ Not CSA certified. ■ Length is 6 ft. Not CE approved.

Hinged Cover

Slotted Duct

Solid Duct

Save time when you need frequent access to your wires. The hinged construction also prevents cover loss and secures the sidewalls, making it sturdier than duct with a snap-on cover. Color is gray.

Slotted duct has "fingers" that allow you to direct wires in and out of the duct (just remove them to enlarge the opening size). Has 0.2″ dia. mounting holes. ***Solid*** duct is excellent for continuous runs of wire.

O'all Size, Wd.×Ht.	Slotted: Slot Wd.	Slotted: Each 3 ft.	Slotted: Each 6 ft.	Solid: Each 3 ft.	Solid: Each 6 ft.
1 3/4″ × 2″	0.31″ 9401K1	$34.00	$52.35	1376K1 $32.76	$50.44
1 3/4″ × 3 1/16″	0.31″ 9401K2	40.74	62.70	1376K2 39.53	60.85
2 3/16″ × 2″	0.31″ 9401K3	34.96	53.80	1376K3 31.64	50.67
2 3/16″ × 3 1/16″	0.31″ 9401K4	43.16	66.41	1376K4 41.48	64.30
2 3/16″ × 4 1/8″	0.31″ 9401K5	48.51	77.65	1376K5 46.56	75.55
3 1/4″ × 3 1/16″	0.31″ 9401K6	50.83	81.38	1376K6 48.79	79.24
3 1/4″ × 4 1/8″	0.31″ 9401K7	57.81	96.40	1376K7 56.69	94.53
4 1/4″ × 4 1/8″	0.31″ 9401K8	63.80	106.35	1376K8 62.78	104.70

Flexible Polypropylene Wire Duct

If you're tight on space or have a labyrinth of wires, get the duct flexible enough for your needs. The overlapping slotted "fingers" form a cover and allow you to direct wires in and out, so there's no actual cover to remove for access. Duct has an adhesive backing, plus 10 slots for screw mounting. Made of gray polypropylene. Sold in 19 3/4″ lengths.

O'all Size, Wd.×Ht.	Mtg. Hole Dia.		Each
1/2″ × 1/2″	0.16″	69775K83	$6.20
1/2″ × 3/4″	0.18″	69775K11	7.43
1″ × 1 3/8″	0.17″	69775K12	10.34
1 3/8″ × 1 3/4″	0.25″	69775K13	13.54

Cable-Support Grips

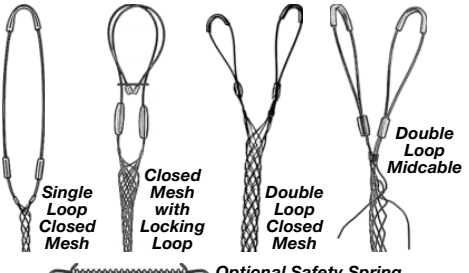

Grips relieve tension and absorb vibration from vertical, straight runs of cable, rod, and tubing. CSA certified, except optional safety springs.

Single-loop grips are galvanized steel and made for smaller-diameter cable. *Closed-mesh* grips can be supported by a hook. *Closed-mesh grips with locking loop* wrap around a beam or pipe and tighten by the weight of your cable or by manual adjustment. ***Optional safety springs (for single-loop grips)*** relieve tension from sudden strains (and reduce work load limit).

Double-loop grips are tinned bronze. When the loops are equally supported, the load is balanced. Slip *closed-mesh* grips over the end of a cable when accessible. Use *midcable* grips when the end of a cable is not accessible.

Just wrap the mesh around a continuous length of cable and lace it closed with the included lacing wire.

Also Available: Type 302/304 stainless steel double-loop grips. Please ask for 70095K888 and specify closed mesh or midcable grip and cable dia. range.

For Cable Dia.	Work Load Limit, lbs.	Mesh Lg.	Closed Mesh: O'all Lg.	Closed Mesh: Each	Closed Mesh w/Locking Loop: O'all Lg.	Closed Mesh w/Locking Loop: Each
Single Loop						
0.22″-0.32″	110	4″	11 1/2″	69675K23 $10.56	14″	69675K33 $14.48
0.30″-0.43″	110	5″	12 3/4″	69675K24 11.34	15″	69675K34 14.85
0.40″-0.56″	110	5 3/4″	13 1/4″	69675K25 12.90	17 3/4″	69675K35 18.20
0.53″-0.73″	110	7 1/4″	15″	69675K46 15.37	20 1/4″	69675K56 19.62
0.70″-0.85″	190	9 1/2″	17″	69675K27 17.83	23 1/2″	69675K37 24.13
0.82″-1.00″	190	9 1/2″	17″	69675K28 18.11	23 1/2″	69675K38 23.45
0.96″-1.25″	190	12″	19 1/2″	69675K29 19.23	27″	69675K39 25.04
Double Loop					***Midcable***	
0.50″-0.61″	77	10″	17 1/2″	70095K12 21.91	18″	70095K41 28.18
0.62″-0.74″	115	10″	18 1/4″	70095K13 24.08	18″	70095K42 34.93
0.75″-0.99″	132	12″	20 1/4″	70095K14 26.84	22″	70095K43 37.82
1.00″-1.24″	192	14 1/2″	22 1/2″	70095K15 31.14	22″	70095K44 40.27
1.25″-1.49″	192	13″	21 3/4″	70095K16 32.39	21″	70095K45 40.39
1.50″-1.74″	192	18″	25 1/2″	70095K17 37.02	26″	70095K46 44.11
1.75″-1.99″	315	18″	25 1/4″	70095K18 49.77	26 1/2″	70095K47 55.52
2.00″-2.49″	336	19″	27″	70095K19 56.19	28″	70095K48 70.25
2.50″-2.99″	336	20″	30 1/4″	70095K21 67.94	29″	70095K49 83.23
3.00″-3.49″	528	24″	37″	70095K22 82.96	36″	70095K51 105.37

Optional Safety Springs (For Single-Loop Grips)

40-lb. Work Load Limit (7 1/2″ Overall Lg.)	69675K31	Each $8.61
80-lb. Work Load Limit (8 1/4″ Overall Lg.)	69675K32	Each $12.45

Cord Grips

As you tighten these fittings, they compress to grip your cord, preventing pull out. All include an outer locknut, a nylon inner ring and a neoprene bushing except ***standard straights***, which do not include a locknut. Temperature range is –30° to +225°F. All are UL listed and CSA certified. Choose from aluminum, zinc-plated steel, and nylon cord grips. **To Order:** Please specify material.

Steel 90° elbows have zinc-plated malleable iron bodies and zinc-plated steel outer locknuts. ***Nylon*** grips are gray. ***Liquid-tight*** cord grips also have a zinc-plated steel locknut and a metal-clad neoprene O-ring for the threaded end to seal panel connections. Rated IP66 and NEMA 4X and 13 for washdowns, corrosion, oil, and coolant resistance.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Also Available: Additional standard cord grips. Please ask for 7529K888 and specify straight or 90°, trade size, cord diameter range, and material.

Also Available: Locknut/washer kits for standard fittings. Please ask for 7466K88 and specify NPT trade size.

Straight Standard Aluminum

Straight Standard Steel

Straight Standard Nylon

Straight Liquid-Tight Aluminum

90° Elbow Standard Steel

90° Elbow Liquid-Tight Nylon

Trade Size, NPT	Thread OD	For Cord Dia.	STANDARD Each♦ Aluminum	Steel	Nylon	LIQUID TIGHT Each♦ Aluminum	Steel	Nylon
Straights								
1/4″	0.54″	0.13″-0.19″	7529K12 $7.45	—	$8.49	—	—	—
3/8″	0.68″	0.19″-0.25″	7529K15 7.44	—	8.54	—	—	—
3/8″	0.68″	0.25″-0.31″	7529K1 7.44	$7.64	8.65	—	—	—
3/8″	0.68″	0.31″-0.38″	7529K2 7.45	—	8.69	—	—	—
3/8″	0.68″	0.38″-0.44″	7529K3 7.45	7.16	8.74	—	—	—
1/2″	0.84″	0.13″-0.19″	7529K16 6.90	7.83	7.67	8302K11 $12.50	$13.75	$13.56
1/2″	0.84″	0.19″-0.25″	7529K17 6.90	7.82	7.67	8302K12 12.50	13.75	13.56
1/2″	0.84″	0.25″-0.38″	7529K4 7.02	7.83	7.67	8302K13 12.53	13.75	13.56
1/2″	0.84″	0.38″-0.50″	7529K5 7.02	7.83	7.59	8302K14 12.53	13.75	13.57
1/2″	0.84″	0.50″-0.63″	7529K18▲ 6.90	7.85	7.67	8302K15▲ 12.50	13.89	13.55
3/4″	1.05″	0.25″-0.38″	7529K6 7.56	8.82	—	8302K16 14.22	16.44	—
3/4″	1.05″	0.38″-0.50″	7529K7 7.56	8.83	8.00	8302K17 14.22	16.44	14.67
3/4″	1.05″	0.50″-0.63″	7529K8 7.56	9.17	8.00	8302K18 14.22	16.44	14.67
3/4″	1.05″	0.63″-0.75″	7529K9 9.14	13.81	8.14	8302K19 15.56	20.56	14.04
3/4″	1.05″	0.75″-0.88″	7529K19▲ 9.35	14.04	8.20	8302K21▲ 15.20	20.56	14.67
1″	1.32″	0.50″-0.63″	7529K11 9.71	13.70	11.20	8302K22 17.34	20.56	18.33
1″	1.32″	0.63″-0.75″	7529K71 9.71	14.67	11.20	8302K23 17.34	21.50	18.33
90° Elbows								
3/8″	0.68″	0.25″-0.31″	7466K311 12.20	—	—	—	—	—
3/8″	0.68″	0.31″-0.38″	7466K322 12.20	—	—	—	—	—
3/8″	0.68″	0.38″-0.44″	7466K331 12.20	—	—	—	—	—
1/2″	0.84″	0.19″-0.25″	7466K8 12.20	13.80	11.31	8317K2 18.67	19.30	16.54
1/2″	0.84″	0.25″-0.38″	7466K1 12.20	13.80	11.31	8317K3 18.67	20.46	16.54
1/2″	0.84″	0.38″-0.50″	7466K2 12.20	13.80	11.31	8317K4 18.67	20.46	16.54
1/2″	0.84″	0.50″-0.63″	7466K9▲ 12.20	13.18	11.31	8317K5▲ 18.67	21.10	16.54
3/4″	1.05″	0.38″-0.50″	7466K3 14.70	17.21	16.00	8317K6 21.78	24.84	23.44
3/4″	1.05″	0.50″-0.63″	7466K4 14.70	17.21	16.00	8317K7 21.78	24.84	23.44
3/4″	1.05″	0.63″-0.75″	7466K5 14.70	17.21	16.00	8317K8 21.78	24.84	23.44
3/4″	1.05″	0.75″-0.88″	7466K11 14.58	17.21	16.00	8317K9 21.87	26.22	23.44
1″	1.32″	0.50″-0.63″	7466K611 23.20	—	—	8317K11 33.00	—	—

♦ Prices are approximately 10% lower for 10 or more of the same item. ▲ Cord may have to be stripped to pass through grip.

Nylon Liquid-Tight Cord Grips (NEMA 6)

Prevent soggy circuits with these black nylon fittings. The Buna-N rubber bushing and O-ring provide liquid-tight entry for cable, wire, and tubing. Fittings include nylon locknuts, unless noted. Temperature range is –40° to +212°F. Rated NEMA 4X for corrosion protection and NEMA 6 and IP68 for temporary submersion. UL listed (except for 1/4″ and 3/8″ sizes, which are UL recognized), CSA certified, and CE approved. ***Flex*** fittings prevent cable kinking.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Straight Standard

90° Elbow Flex

Trade Size, NPT	Thread OD	For Cord Dia.	Standard Each♦	Flex Each♦
Straights				
PG-7	0.49″	0.08″-0.20″	69915K46♠ $2.43	69915K48♠ $2.73
PG-7	0.49″	0.11″-0.26″	69915K47♠ 2.43	69915K49♠ 2.73
3/8″	0.68″	0.08″-0.24″	69915K52 2.82	69915K62 3.24
3/8″	0.68″	0.16″-0.31″	69915K51 2.82	69915K61 3.24
1/2″	0.84″	0.20″-0.35″	69915K54 3.24	69915K64 3.73
1/2″	0.84″	0.24″-0.47″	69915K53 3.24	69915K63 3.73
1/2″	0.84″	0.39″-0.56″	69915K57 3.46	69915K67 3.97
3/4″	1.05″	0.35″-0.63″	69915K56 4.43	69915K66 6.36
3/4″	1.05″	0.51″-0.71″	69915K55 4.43	69915K65 6.36
1″	1.32″	0.51″-0.79″	69915K72 7.57	—
1″	1.32″	0.71″-0.98″	69915K71 7.57	—
Straights (Cont.)				
1 1/4″	1.66″	0.51″-0.79″	69915K74 $9.17	—
1 1/4″	1.66″	0.71″-0.98″	69915K73 9.17	—
1 1/2″	1.90″	0.79″-1.02″	69915K77★ 22.05	—
1 1/2″	1.90″	0.87″-1.26″	69915K75★ 22.05	—
90° Elbows				
3/8″	0.66″	0.08″-0.24″	7008K71 9.76	7008K81 $10.67
3/8″	0.66″	0.16″-0.31″	7008K72 9.76	7008K82 10.67
1/2″	0.82″	0.20″-0.35″	7008K73 11.60	7008K83 13.48
1/2″	0.82″	0.24″-0.47″	7008K74 11.55	7008K84 13.48
3/4″	1.03″	0.35″-0.63″	7008K75 19.07	7008K85 20.49
3/4″	1.03″	0.51″-0.71″	7008K76 19.07	7008K86 20.49

♦ Prices are approximately 15% lower for 10 or more of the same item. ♠ Fits 1/4″ NPT threads. ★ Locknuts are zinc-plated steel.

Nylon Liquid-Tight Cord Grips with Mesh

Nylon construction, a nitrile/PVC bushing, and a neoprene O-ring provide a liquid-tight seal and corrosion resistance. All include a zinc-plated steel locknut. The mesh is nylon and prevents cable kinking. Temperature range is –40° to +221°F. Color is gray. UL listed and CSA certified.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Trade Size, NPT	For Cord Dia.	Mesh Lg.	Straights Each	90° Elbows Each
1/2″	0.38″-0.44″	5 1/2″	8083K14 $45.60	8083K36 $62.98
1/2″	0.44″-0.50″	5 1/2″	8083K15 45.60	8083K37 62.98
3/4″	0.44″-0.56″	5 1/2″	8083K19 49.22	8083K42 77.56
3/4″	0.50″-0.63″	5 3/4″	8083K21 49.22	8083K43 77.56
3/4″	0.63″-0.75″	9″	8083K23 49.22	8083K45 79.08
1″	0.75″-0.88″	8″	8083K29 64.78	8083K52 83.88
1″	0.88″-1.00″	7 1/8″	8083K32 64.78	8083K54 83.88

Straight

90°

Nickel-Plated Brass Liquid-Tight Cord Grips

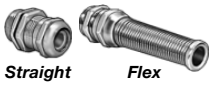
Straight Flex

Use these nickel-plated brass fittings in up to 300 feet of water, underground, and in other locations where protection from corrosion is a must. Fittings have a Buna-N seal and O-rings for a liquid-tight connection and include a nickel-plated brass locknut. Temperature range is –40° to + 212° F. Rated IP68 for protection from water submersion. UL listed, unless noted. CSA certified and CE approved.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

EMI-proof cord grips are for use with cables that have braided shields to protect wires from electromagnetic interference (EMI). ***Flex*** cord grips have a dome nut with a spring extension to provide additional strain relief and to prevent the cable from kinking.

Trade Size, NPT	For Cord Dia.	Standard	Each ♦	EMI Proof	Each ♦	Flex	Each ♦
1/4″	0.08″–0.20″	6907K8●	$5.64	—	—	6907K21●	$20.18
1/4″	0.11″–0.26″	6907K9●	5.58	—	—	6907K22●	20.18
3/8″	0.08″–0.24″	6907K11●	8.00	7802K21●	$21.09	6907K23●	23.76
3/8″	0.16″–0.31″	6907K12●	8.18	7802K22●	21.09	6907K24●	23.76
1/2″	0.20″–0.35″	6907K13	10.30	7802K23	27.88	6907K25	30.30
1/2″	0.24″–0.47″	6907K14	10.30	7802K24	27.70	6907K26	30.30
3/4″	0.35″–0.63″	6907K15	17.73	7802K25	32.30	6907K27	45.94
3/4″	0.51″–0.71″	6907K16	17.73	7802K26	32.09	6907K28	45.94
1″	0.51″–0.79″	6907K17	50.70	—	—	—	—
1″	0.71″–0.98″	6907K18	50.70	—	—	—	—

♦ Prices are approximately 15% lower for 10 or more of the same item.
● UL recognized; not UL listed.

PG- and Metric-Thread Liquid-Tight Cord Grips

Polyamide

Nickel-Plated Brass

Offered with PG (European standard) or metric male threads, these liquid-tight fittings have neoprene bushings and Buna-N O-rings. All are CE approved.

Polyamide cord grips are flame retardant, self extinguishing, and resistant to salt water, oil, and grease. They are gray and include a polyamide locknut. Temperature range is –4° to +176° F. UL listed, unless noted. CSA certified.

Nickel-plated brass cord grips are IP68 rated for protection from water submersion. They include a nickel-plated brass locknut. Temperature range is –22° to +212° F. Cord grips with *metric threads* are UL and C-UL listed.

Thread Size	Thread OD	For Cord Dia.	Polyamide	Each ♦	Nickel-Plated Brass	Each ♦
PG Threads						
PG-7	0.49″	0.10″–0.26″	7310K11●	$2.96	9448K11	$7.11
PG-9	0.60″	0.14″–0.32″	7310K12●	3.11	9448K12	8.22
PG-11	0.73″	0.12″–0.28″	7310K13●	3.30	9448K13	9.87
PG-13	0.80″	0.24″–0.47″	7310K23♣	3.47	9448K23	11.00
PG-16	0.89″	0.35″–0.55″	7310K14	3.77	9448K14	12.03
PG-21	1.12″	0.51″–0.71″	7310K15	5.02	9448K15	13.00
PG-29	1.46″	0.63″–0.98″	7310K16●	8.48	9448K16	23.87
PG-36	1.85″	0.95″–1.26″	7310K17	26.59	9448K17	38.69
Metric Threads						
M12×1.5	0.47″	0.14″–0.28″	7310K31●	3.19	9448K31	7.80
M16×1.5	0.63″	0.18″–0.39″	7310K32●	3.76	9448K32	10.36
M20×1.5	0.79″	0.28″–0.51″	7310K33	4.99	9448K33	11.82
M25×1.5	0.98″	0.35″–0.67″	7310K34	6.98	9448K34	18.16
M32×1.5	1.26″	0.43″–0.83″	7310K35	9.55	9448K35	22.86

♦ Prices are approximately 15% lower for 10 or more of the same item.
● UL recognized; not UL listed. ♣ Thread size is PG-13.5

PG- and Metric-Thread Stainless Steel Liquid-Tight Cord Grips

Get the threads you need on a liquid-tight fitting that has the corrosion resistance of Type 303 stainless steel. Choose from PG (European standard) or metric male threads. All have Buna-N bushings and O-rings and include a nickel-plated brass locknut. Temperature range is –40° to +212° F. IP68 rated for protection from water submersion. UL listed, unless noted. CSA certified and CE approved.

Thread Size	Thread OD	For Cord Dia.		Each
PG Threads				
PG-7	0.49″	0.08″–0.20″	7680K12●	$29.24
PG-7	0.49″	0.11″–0.26″	7680K11●	29.24
PG-9	0.60″	0.16″–0.31″	7680K13●	29.78
PG-11	0.73″	0.20″–0.39″	7680K14●	37.10
PG-13	0.80″	0.24″–0.47″	7680K15	39.18
PG-16	0.89″	0.27″–0.47″	7680K17	39.70
PG-16	0.89″	0.39″–0.55″	7680K16	39.70
PG-21	1.11″	0.51″–0.71″	7680K18	59.38
PG-29	1.46″	0.51″–0.79″	7680K19	78.80
Metric Threads				
M12×1.5	0.47″	0.08″–0.20″	7680K22●	29.30
M12×1.5	0.47″	0.12″–0.26″	7680K21●	29.30
M16×1.5	0.63″	0.12″–0.28″	7680K24●	34.44
M16×1.5	0.63″	0.20″–0.39″	7680K23●	34.44
M20×1.5	0.79″	0.27″–0.47″	7680K26	37.04
M20×1.5	0.79″	0.39″–0.55″	7680K25	37.04
M25×1.5	0.98″	0.35″–0.63″	7680K28	55.56
M25×1.5	0.98″	0.51″–0.71″	7680K27	55.16
M32×1.5	1.26″	0.67″–0.98″	7680K29	73.08

● UL recognized; not UL listed.

Aluminum Liquid-Tight Cord Grips with Stainless Steel Mesh

Straight 90° Elbow

Bring on your toughest cord bending and tugging applications. These aluminum fittings have a corrosion-resistant stainless steel mesh to provide additional strain relief by controlling the arc of the cable bend. They also have O-rings made of neoprene clad with zinc-plated steel and include a zinc-plated steel locknut. All meet Class I, Div. 2; Class II, Div. 1 and 2; and Class III, Div. 1 and 2 standards for use in hazardous locations. Temperature range is –30° to +225° F. UL listed and CSA certified.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Trade Size, NPT	For Cord Dia.	Mesh Lg.	Straights	Each ♦	90° Elbows	Each ♦
1/2″	0.25″–0.38″	3 5/8″	6957K43	$55.79	6957K59	$84.83
1/2″	0.38″–0.50″	4 1/8″	6957K45	55.79	6957K61	84.83
3/4″	0.50″–0.63″	4 3/8″	6957K55	60.86	6957K62	99.49
3/4″	0.63″–0.75″	6″	6957K56	64.23	6957K63	99.49
1″	0.50″–0.63″	4 5/8″	6957K57	78.62	6957K64	106.00
1″	0.63″–0.75″	5 3/4″	6957K58	78.62	6957K65	106.00

♦ Prices are approximately 10% lower for 10 or more of the same item.

Stainless Steel Liquid-Tight Cord Grips

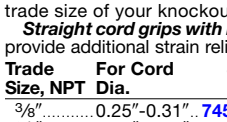
Straight Straight with Mesh

Made of Type 304 stainless steel for use outdoors and in other corrosive environments, these fittings provide a seal against dirt, moisture, coolant, and corrosive fumes. All include a neoprene bushing, Buna-N O-ring, and zinc-plated steel locknut (Type 304 stainless steel locknuts are sold separately). Temperature range is –30° to +240° F. Rated IP67 for temporary water submersion. Cord grips are UL listed.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Straight cord grips with mesh have Type 302 stainless steel mesh to provide additional strain relief by controlling the arc of the cable bend.

Trade Size, NPT	For Cord Dia.	Straights	Each	Straights with Mesh Mesh Lg.		Each
3/8″	0.25″–0.31″	7458K51	$34.44	4 3/4″	7458K45	$57.62
3/8″	0.31″–0.38″	7458K52	34.44	6 3/4″	7458K46	57.62
1/2″	0.13″–0.19″	7458K11	48.44	—	—	—
1/2″	0.19″–0.25″	7458K12	48.44	4 5/8″	7458K32	75.42
1/2″	0.25″–0.31″	7458K13	48.44	5 3/4″	7458K33	75.42
1/2″	0.31″–0.38″	7458K14	48.44	5 3/4″	7458K34	75.42
1/2″	0.38″–0.44″	7458K15	48.44	6 7/8″	7458K35	75.42
1/2″	0.44″–0.50″	7458K16	48.44	6 7/8″	7458K36	75.42
1/2″	0.50″–0.56″	7458K53	48.44	7 1/2″	7458K47	75.42
3/4″	0.50″–0.56″	7458K17	68.38	7 3/8″	7458K37	109.96
3/4″	0.56″–0.69″	7458K18	69.12	9 1/8″	7458K38	109.96
3/4″	0.63″–0.75″	7458K54	69.12	9 1/8″	7458K48	109.96
1″	0.44″–0.56″	7458K19	92.16	7 3/8″	7458K39	146.74
1″	0.56″–0.69″	7458K21	92.16	9 1/8″	7458K41	146.74
1″	0.69″–0.81″	7458K22	92.16	9 7/8″	7458K42	146.74
1″	0.75″–0.88″	7458K55	92.16	9 7/8″	7458K49	146.74
1″	0.81″–0.94″	7458K23	92.16	9 3/4″	7458K43	146.74
1″	0.88″–1.00″	7458K24	92.16	9 3/4″	7458K44	146.74

3/8″ Stainless Steel Locknut	7458K4	Each	$8.15
1/2″ Stainless Steel Locknut	7458K1	Each	$8.30
3/4″ Stainless Steel Locknut	7458K2	Each	$13.00
1″ Stainless Steel Locknut	7458K3	Each	$21.38

Aluminum Dust-Tight Cord Grips with Steel Mesh

Prevent dust and strain from compromising your connections. These dust-tight fittings have steel mesh to control the arc of the cable bend, reducing strain on the cord. Fittings are aluminum and include a zinc-plated steel locknut and thermoplastic bushing. Temperature range is –40° to +221° F. UL listed and CSA certified.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Trade Size, NPT	For Cord Dia.	Mesh Lg.		Each
½″	0.22″-0.32″	4½″	70175K1	$14.06
½″	0.30″-0.43″	4¾″	70175K2	15.60
½″	0.40″-0.54″	6″	70175K3	16.10
¾″	0.52″-0.73″	7½″	70175K4	18.17
1″	0.70″-0.97″	9¼″	70175K5	20.77
1¼″	0.94″-1.25″	11″	70175K6	28.17
1½″	1.20″-1.50″	11¾″	70175K7	47.29
2″	1.40″-1.75″	14″	70175K8	58.37
2½″	1.62″-2.00″	15½″	70175K9	86.28
2½″	2.00″-2.45″	17″	70175K11	96.33

Miniature Liquid-Tight Cord Grips

Tight space around your enclosure? These small cord grips put the "fit" back in "fittings." Designed for small-diameter cords, they're made of nickel-plated brass and include a nickel-plated brass locknut. They have a temperature range of –31° to +302° F and have fluoroelastomer rubber bushings and O-rings, except 8183K7, which has a range of –40° to +212° F and has a Buna-N bushing and O-ring. Rated IP68 for protection from water submersion. CSA certified and CE approved.

Thread Size	Thread OD	For Cord Dia.		Each 1-9	Each 10-Up
M6 ×1	0.25″	0.08″-0.13″	8183K5	$7.39	$6.50
M8 ×1.25	0.33″	0.12″-0.20″	8183K6	8.27	7.49
M10 ×1.5	0.39″	0.16″-0.24″	8183K7	5.67	5.13

Multicord Liquid-Tight Cord Grips

Nylon

Run more than one cord or cable through a single liquid-tight fitting. Fittings have a Buna-N inner grommet with multiple holes for cables, as well as a Buna-N O-ring. Temperature range is –40° to +212° F. Rated IP65 for protection from water projected from a nozzle and NEMA 4X for washdowns and corrosion resistance. UL recognized, CSA certified, and CE approved.

Nylon cord grips are black and include a nylon locknut, unless noted. ***Nickel-plated*** brass cord grips include a nickel-plated brass locknut.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Trade Size, NPT	For No. of Cords	For Cord Dia.	Nylon	Each ♦	Nickel-Plated Brass	Each ♦
⅜″	2	0.06″-0.07″	7807K11	$3.91	7091K13	$12.71
⅜″	2	0.10″-0.12″	7807K31	3.57	7091K12	12.71
⅜″	4	0.05″-0.06″	7807K32	3.57	7091K11	12.71
⅜″	4	0.06″-0.07″	7807K12	3.91	7091K14	12.71
½″	2	0.12″-0.15″	7807K13	4.64	7091K21	14.71
½″	2	0.16″-0.20″	7807K33	4.33	7091K18	14.71
½″	2	0.20″-0.24″	7807K34	4.33	—	—
½″	3	0.06″-0.08″	7807K35	4.33	7091K15	14.71
½″	3	0.10″-0.12″	7807K36	4.33	7091K19	14.71
½″	3	0.13″-0.16″	7807K37	4.33	7091K17	14.71
½″	3	0.18″-0.22″	7807K38	4.33	—	—
½″	4	0.13″-0.16″	7807K39	4.33	—	—
½″	5	0.13″-0.16″	7807K41	4.33	—	—
½″	6	0.10″-0.12″	7807K42	4.33	7091K16	14.71
½″	6	0.13″-0.16″	7807K43	4.33	—	—
¾″	2	0.27″-0.31″	7807K44	6.24	7091K24	19.69
¾″	3	0.16″-0.20″	7807K15	6.39	7091K26	19.69
¾″	3	0.24″-0.28″	7807K45	6.24	7091K23	20.31
¾″	4	0.16″-0.20″	7807K14	6.39	7091K25	19.69
¾″	4	0.20″-0.24″	7807K46	6.24	7091K22	20.31
1″	4	0.31″-0.35″	7807K47	9.20	7091K28	36.98
1″	6	0.22″-0.26″	7807K48	9.20	7091K27	36.98
1¼″	6	0.23″-0.26″	7807K16★	15.00	—	—
1½″	2	0.55″-0.59″	7807K49★	28.88	—	—
1½″	5	0.31″-0.35″	7807K51★	28.88	—	—
1½″	6	0.27″-0.31″	7807K52★	28.88	—	—
1½″	7	0.31″-0.35″	7807K53★	28.88	—	—

♦ Prices are approximately 15% lower for 10 or more of the same item.
★ Comes with a zinc-plated locknut.

High-Temperature Liquid-Tight Cord Grips

If you're running cords in a hot, wet environment, choose one made of chemical-resistant PVDF to withstand temperatures from –31° to +302° F. Fittings include a nickel-plated brass locknut and fluoroelastomer rubber bushing and O-ring. Color is white. They meet IP68 for protection from water submersion. UL listed, unless noted. CSA certified and CE approved.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Trade Size, NPT	For Cord Dia.		Each 1-9	Each 10-Up
⅜″	0.08″-0.24″	7799K82●	$10.22	$8.77
⅜″	0.16″-0.31″	7799K81●	10.22	8.77
½″	0.20″-0.35″	7799K84	15.27	13.10
½″	0.24″-0.47″	7799K83	12.89	11.05
¾″	0.35″-0.63″	7799K86	20.28	17.39
¾″	0.51″-0.71″	7799K85	20.28	17.39

● UL recognized; not UL listed.

Multidiameter Liquid-Tight Cord Grips

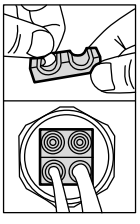

Get the perfect fit for a variety of cord diameters. Each hole in the special EPDM rubber insert has layers that you can peel away to custom fit each cord. The insert is split into upper and lower halves, so you can install your cords even if they already have connectors attached. Maximum panel thickness is 0.16″. Temperature range is –40° to +176° F. All meet IP67 for temporary water submersion and NEMA 4X and 13 for washdowns, corrosion, and oil and coolant protection. UL listed.

Replacement inserts make it easy to change cord sizes and configurations.

Circular

For Four Cords

Save space and simplify installation. To install, just thread the outer housing into a 2.5″-2.52″ diameter knockout, pull your cords through, then add the insert, adapting each hole in the insert to the cords. Fittings accommodate cords in the diameter ranges listed.

Nickel-plated brass fittings include a nickel-plated brass locknut. ***Type 316 stainless steel fittings*** include a Type 316 stainless steel locknut.

For No. of Cords	For Cord Dia.	Thread OD	Thread Size	Fittings	Each	Replacement Inserts	Each
Nickel-Plated Brass							
1	0.37″-1.28″	2.48″	M63×1.5	7702K1	$58.67	7702K4	$15.26
4	0.14″-0.65″	2.48″	M63×1.5	7702K2	58.67	7702K5	16.32
9	0.14″-0.41″	2.48″	M63×1.5	7702K3	58.67	7702K6	34.04
Type 316 Stainless Steel							
1	0.37″-1.28″	2.48″	M63×1.5	6995K1	182.34	7702K4	15.26
4	0.14″-0.65″	2.48″	M63×1.5	6995K2	182.34	7702K5	16.32
9	0.14″-0.41″	2.48″	M63×1.5	6995K3	182.34	7702K6	34.04

Rectangular

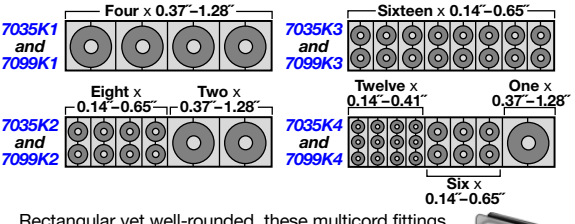

For 10 Cords

Rectangular yet well-rounded, these multicord fittings give you the most versatility. To install, mount the frame into a 7.36″ Lg.×2.80″ Wd. cutout in your panel, pull your cords through, then adapt each hole in the insert to the cords. Overall size is 9.21″ Lg.×3.66″ Wd.×1.65″ Dp. They have an NBR rubber gasket.

For No. of Cords	For Cord Dia.	Fittings	Each	Replacement Inserts	Each
Steel					
4	0.37″-1.28″	7035K1	$115.39	7035K11	$61.06
10	0.14″-1.28″	7035K2	118.62	7035K12	64.46
16	0.14″-0.65″	7035K3	121.20	7035K13	67.86
19	0.14″-1.28″	7035K4	143.50	7035K14	92.46
Type 304 Stainless Steel					
4	0.37″-1.28″	7099K1	298.73	7035K11	61.06
10	0.14″-1.28″	7099K2	301.77	7035K12	64.46
16	0.14″-0.65″	7099K3	304.80	7035K13	67.86
19	0.14″-1.28″	7099K4	326.77	7035K14	92.46

Low Moisture-Absorption Liquid-Tight Cord Grips

Low moisture absorption plus good chemical resistance make these liquid-tight fittings a great choice for outdoor, abusive environments. They are made of black thermoplastic polyester and include a neoprene bushing, zinc-plated steel locknut, and Buna-N O-ring. Temperature range is –30° to +240° F. Rated IP68 for protection from water submersion. UL listed and CSA certified.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPSM (National Pipe Straight Mechanical) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Trade Size, NPSM	For Cord Dia.	Straights	Each	90° Elbows	Each
3/8″	0.13″-0.19″	7489K11	$6.93	—	—
3/8″	0.19″-0.25″	7489K12	6.93	—	—
3/8″	0.25″-0.31″	7489K13	6.93	—	—
3/8″	0.31″-0.38″	7489K14	6.93	—	—
3/8″	0.38″-0.44″	7489K15	6.93	—	—
1/2″	0.13″-0.19″	7489K16	6.93	7489K28	$12.60
1/2″	0.19″-0.25″	7489K17	7.32	7489K29	12.60
1/2″	0.25″-0.31″	7489K18	7.32	7489K31	12.60
1/2″	0.31″-0.38″	7489K19	7.32	7489K32	12.60
1/2″	0.38″-0.44″	7489K21	7.32	7489K33	12.60
1/2″	0.44″-0.50″	7489K22	7.32	7489K34	12.60
1/2″	0.50″-0.56″	7489K23	7.32	7489K35	12.60
1/2″	0.56″-0.63″	7489K24	6.47	7489K36	12.60
3/4″	0.50″-0.56″	7489K43	8.03	7489K53	15.29
3/4″	0.56″-0.69″	7489K26	8.30	7489K38	15.29
3/4″	0.63″-0.75″	7489K44	8.30	7489K41	15.29
3/4″	0.69″-0.81″	7489K27	8.30	7489K39	15.29

Wide Range Heat Shrink-Sealed Liquid-Tight Cord Grips

Adhesive-lined, heat-shrinkable polyolefin on the cable-entry side provides a liquid-tight, fume-tight seal on a wider cord range than other grips. Just apply heat using a heat gun to seal. Shrink temperature is 250° F. Fittings screw into themselves for quick fastening to your enclosure. Made of black plastic. Temperature range is –67° to +194° F.

For No. of Cords	Cord Seal ID After Shrinking	Cord Seal ID Before Shrinking	Mtg. Hole Dia.		Each
Single Cord					
1	0.17″	0.50″	1″	55595K1	$13.60
1	0.25″	0.75″	1″	55595K2	13.66
1	0.50″	1.12″	1 3/8″	55595K3	22.78
Multicord					
2	0.17″	0.60″	1 3/8″	55595K4	50.25
3	0.11″	0.40″	1″	55595K5	50.25
4	0.17″	0.60″	1 3/8″	55595K6	73.11

Snap-In Cord Grips

Quickly relieve cord strain in applications that don't require a moistureproof seal. To install, just snap these black nylon fittings onto your cord and push into your panel. Installation pliers (sold separately) make it easier to insert the cord grip into the panel. Maximum temperature is 221° F. UL recognized and CSA certified.

Flex fittings prevent your cord from kinking and further reduce strain by controlling the arc of the cable bend.

Mtg. Hole Dia.	For Cord Dia.	Max. Panel Thickness	Pkg. Qty.		Per Pkg.
Straight					
3/8″	0.13″-0.19″	0.06″	100	74125K11	$7.43
1/2″	0.22″-0.25″	0.10″	100	74125K71	8.17
1/2″	0.25″-0.29″	0.10″	100	74125K72	8.70
5/8″	0.30″	0.13″	100	74125K73	13.03
5/8″	0.33″-0.36″	0.13″	100	74125K74	13.41
3/4″	0.36″-0.43″	0.13″	50	74125K75	10.44
7/8″	0.37″-0.43″	0.13″	50	74125K76	14.14
Flex					
1/2″	0.22″-0.27″	0.10″	25	74125K81	13.44
1/2″	0.25″-0.29″	0.13″	25	74125K82	11.93
5/8″	0.30″	0.13″	10	74125K83	10.95
5/8″	0.32″-0.36″	0.13″	10	74125K84	11.29
3/4″	0.36″-0.43″	0.13″	10	74125K85	11.50

Installation Pliers 7413K37 Each $60.61

Liquid-Tight Cord Grips for Multiconductor Building Cable

A Buna-N bushing with an oval slot provides liquid-tight entry for both Romex-jacketed cable (NEC Type NM-B) and Romex-jacketed underground feeder cable (NEC Type UF-B). These black nylon fittings resist corrosion and are suitable for direct-burial installations. Both include a Buna-N O-ring and nylon locknut. Temperature range is –40° to +212° F. Rated IP68 for protection from water submersion. UL recognized and CSA certified.

1/2″ NPT size fits NM-B Romex 14/2, 14/3, 12/2, and 12/3 AWG cable, and UF-B Romex 14/2, 12/2, and 10/2 AWG cable.

3/4″ NPT size fits NM-B Romex 12/2, 12/3, and 10/2 AWG cable, and UF-B Romex 14/3 and 12/3 AWG cable.

Note: Trade size is an industry designation for fittings, not an actual measurement. It also designates the NPT (National Pipe Tapered) thread size of the threaded end. When selecting a fitting, match the trade size of your knockout.

Trade Size, NPT	Slot Size		Each 1-9	Each 10-Up
1/2″	0.24″×0.55″	7935K11	$4.21	$3.49
3/4″	0.24″×0.55″	7935K12	5.51	4.57

Metric-to-NPT Thread Adapters

Here's the solution when you want to install an NPT-threaded connector into a metric-threaded hole. Adapters are made of nickel-plated brass with a Buna-N O-ring. Temperature range is –40° to +212° F.

Thread Size Metric Male	Thread Size NPT Female	Metric Thread OD		Each 1-9	Each 10-Up
M16×1.5	1/2″	0.63″	7537K1	$8.46	$7.19
M20×1.5	1/2″	0.79″	7537K2	8.71	7.41
M25×1.5	1/2″	0.98″	7537K3	8.95	7.61
M25×1.5	3/4″	0.98″	7537K4	10.05	8.55
M32×1.5	1″	1.26″	7537K5	20.20	17.18
M32×1.5	1 1/4″	1.26″	7537K6	26.43	22.49

PG-to-NPT Thread Adapters

Adapt an NPT-threaded connector to fit a PG-threaded hole (European standard). Adapters are made of nickel-plated brass with a Buna-N O-ring. Temperature range is –40° to +212° F.

Thread Size PG Male	Thread Size NPT Female	PG Thread OD		Each 1-9	Each 10-Up
PG-9	1/2″	0.60″	7805K77	$16.13	$13.71
PG-11	1/2″	0.73″	7805K71	7.10	6.04
PG-13.5	1/2″	0.80″	7805K72	7.10	6.04
PG-16	1/2″	0.89″	7805K73	7.83	6.67
PG-21	1/2″	1.11″	7805K74	12.61	10.73
PG-21	3/4″	1.11″	7805K75	12.61	10.73
PG-29	1″	1.46″	7805K76	18.73	15.93

NPT-to-PG Thread Adapters

Install a PG-threaded connector (European standard) into an NPT-threaded hole with these adapters. They are made of nickel-plated brass with a Buna-N O-ring. Temperature range is –40° to +212° F.

Thread Size NPT Male	Thread Size PG Female	PG Thread OD		Each 1-9	Each 10-Up
1/4″	PG-7	0.49″	7842K11	$14.49	$13.28
1/2″	PG-9	0.60″	7842K12	10.84	9.21
1/2″	PG-11	0.73″	7842K1	11.14	9.47
1/2″	PG-13	0.80″	7842K2	11.14	9.47
1/2″	PG-21	1.11″	7842K13	16.28	13.83
3/4″	PG-21	1.11″	7842K7	16.74	14.23
1″	PG-29	1.46″	7842K14	27.02	22.97

PG-to-PG Thread Adapters

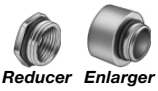

Reduce or enlarge your PG (European standard) threads. Adapters are made of nickel-plated brass with a Buna-N O-ring. Temperature range is –40° to +212° F.

Thread Size PG Male	Thread Size PG Female	PG Male Thread OD		Each 1-9	Each 10-Up
Reducers					
PG-11	PG-9	0.73″	7659K21	$3.10	$2.64
PG-13	PG-9	0.80″	7659K22	3.10	2.64
PG-13	PG-11	0.80″	7659K23	2.88	2.45
PG-21	PG-16	1.11″	7659K24	4.53	3.85
Enlargers					
PG-9	PG-13	0.60″	7659K11	3.12	2.66
PG-11	PG-16	0.73″	7659K12	3.35	2.85
PG-11	PG-21	0.73″	7659K13	7.90	6.72
PG-16	PG-21	0.89″	7659K14	4.95	4.21

About NEMA and IP Enclosure Ratings

NEMA Ratings— NEMA (National Electrical Manufacturers Association) has a standard, NEMA 250-2003, to designate the degree of protection provided by electrical enclosures.

Environments:	NEMA 1	NEMA 3R	NEMA 4	NEMA 4X	NEMA 5	NEMA 6	NEMA 6P	NEMA 7	NEMA 9	NEMA 12	NEMA 13
Indoor use only	✓				✓		✓	✓	✓	✓	
Indoor and outdoor use		✓	✓	✓		✓	✓				
Falling liquids and light splashing		✓	✓	✓		✓	✓			✓	✓
Nonhazardous dust, lint, fibers			✓	✓	✓	✓	✓			✓	✓
Washdowns and splashing water			✓	✓		✓	✓				
Oil and coolant seepage										✓	✓
Oil and coolant spraying and splashing											✓
Corrosive agents				✓			✓				
Occasional temporary submersion						✓	✓				
Occasional prolonged submersion							✓				
Prevention of external hazard from internal explosion								✓			
Prevention of combustible dust ignition									✓		

IP Ratings— The IEC (International Electrotechnical Commission) developed their own IP (Ingress Protection) Standards, IEC 60529, for the degree of protection provided by enclosures. IEC designations consist of the letters "IP" followed by a two-digit number:

First Digit— Protection from entry of solid foreign objects:

1— Protection from solid objects greater than 50 mm dia.
2— Protection from solid objects greater than 12.5 mm dia.
4— Protection from solid objects greater than 1 mm dia.
5— Protection from dust that would interfere with equipment operation
6— Dust tight

Second Digit— Protection from harmful entry of water:

0— No protection
2— Protection from vertically dripping water
4— Protection from splashed water
5— Protection from water projected from a nozzle
6— Protection from heavy seas or power jets of water
7— Protection from temporary submersion
8— Protection from continuous submersion

Indoor Steel Enclosures with Hinged Cover (NEMA 1)

If you need to enclose components indoors where dust and oil aren't an issue, these enclosures have got it covered—complete with steel hinges and a 1/4-turn coin-slot latch. Made of 16-ga. steel, unless noted. UL listed and CSA certified. For outlet and switch boxes, see pages 830-831.

Standard

All have four 1/4″ dia. mounting holes, unless noted. Working depth (area available for component mounting) is approximately 1/2″ less than overall depth. Opening size is approximately 1″ less than overall height and width.

To Order: For choose-a-color enclosures, please specify black, blue, white, or yellow.

Panels are for mounting components inside and are made of steel.

Overall Size, Ht.×Wd.×Dp.	Gray Enclosures	Each	Choose-a-Color Enclosures	Each	Panels Ht.×Wd.		Each
6″× 6″× 4″	7561K22	$38.90	7561K111	$63.98	4 1/4″× 4 1/4″	7561K811	$4.00
8″× 6″× 4″	7561K23	46.86	7561K112	67.80	6 1/4″× 4 1/4″	7561K821	4.70
8″× 6″× 6″	7561K24	52.82	7561K113	73.60	6 1/4″× 4 1/4″	7561K821	4.70
8″× 8″× 4″	7561K26	52.01	7561K114	72.84	6 1/4″× 6 1/4″	7561K89	5.51
8″× 8″× 6″	7561K63	61.03	7561K115	79.16	6 1/4″× 6 1/4″	7561K89	5.51
10″× 8″× 4″	7561K27	52.79	7561K116	77.78	8 1/4″× 6 1/4″	7561K841	6.47
10″× 8″× 6″	7561K28	64.53	7561K117	85.04	8 1/4″× 6 1/4″	7561K841	6.47
10″×10″× 6″	7561K29	71.30	7561K118	91.53	8 1/4″× 8 1/4″	7561K321	7.54
12″×10″× 4″	7561K39	65.45	7561K119	89.07	10 1/4″× 8 1/4″	7561K871	8.77
12″×10″× 6″	7561K36	71.07	7561K121	97.85	10 1/4″× 8 1/4″	7561K871	8.77
12″×12″× 4″	7561K38	68.87	7561K122	95.44	10 1/4″×10 1/4″	7561K861	10.43
12″×12″× 6″	7561K41	84.44	7561K123	105.29	10 1/4″×10 1/4″	7561K861	10.43
14″×12″× 6″	7561K42	84.04	7561K124	112.73	12 1/4″×10 1/4″	7561K881	11.71
14″×12″× 8″	7561K43	93.31	7561K125	123.35	12 1/4″×10 1/4″	7561K881	11.71
16″×12″× 6″	7561K44	98.73	7561K126	120.22	14 1/4″×10 1/4″	7561K912	13.16
16″×12″× 8 5/8″	7561K48★	153.63	7561K127★	184.15	13″ ×10 1/2″	7561K913	12.46
20″×12″× 6″	7561K57	120.78	7561K128	144.69	18 1/4″×10 1/4″	7561K331	16.11
20″×16″× 6 5/8″	7561K49★	172.20	7561K129★	206.48	17″ ×14 1/2″	7561K921	19.87
20″×16″× 8 5/8″	7561K55★	198.83	7561K131★	238.42	17″ ×14 1/2″	7561K921	19.87
20″×20″× 6 5/8″	7561K58★	199.62	7561K132★	239.27	17″ ×18 1/2″	7561K341	26.96
20″×20″× 8 5/8″	7561K59★	218.30	7561K133★	261.80	17″ ×18 1/2″	7561K341	26.96
24″×20″× 6 5/8″	7561K61★	220.65	7561K134★	264.67	21″ ×18 1/2″	7561K931	30.45
24″×20″× 8 5/8″	7561K62★	241.42	7561K135★	289.44	21″ ×18 1/2″	7561K931	30.45
24″×24″× 8 5/8″	7561K64▲	246.45	7561K136▲	295.09	21″ ×22 1/2″	7561K351	57.26
30″×24″× 8 5/8″	7561K69■	274.14	7561K137■	328.73	26″ ×22 1/2″	7561K941	75.84
30″×24″×10 5/8″	7561K76■	296.35	7561K138■	355.52	26″ ×22 1/2″	7561K941	75.84
36″×24″× 8 5/8″	7561K77■	317.26	7561K139■	380.63	32″ ×22 1/2″	7561K951	77.86
36″×30″×12 5/8″	7561K78■	410.07	7561K141■	484.59	32″ ×28 1/2″	7561K961	112.02

★ 14-ga. steel. ▲ 12-ga. steel. ■ 12-ga. steel. Mounting holes are 7/16″ dia.

With Knockouts and Panel

There are knockouts in the top, bottom, and sides of these enclosures, and when you swing open the cover you'll find a perforated panel for mounting components—no special punching or drilling. Enclosures have four 5/16″ dia. mounting holes. They include two keys. Color is gray.

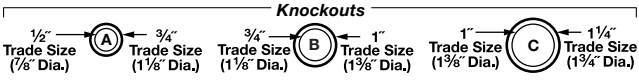

Overall Size, Ht.×Wd.×Dp.	Knockout Style (No.) Each Side	Top and Bottom	Panel Size, Ht.×Wd.		Each
12″×12″×6″	A(2), B(2), C(1)	A(2), B(2), C(1)	10 1/4″×10 1/4″	6958K1	$113.39
16″×12″×6″	A(4), B(2), C(1)	A(2), B(2), C(1)	14 1/4″×10 1/4″	6958K2	133.06
20″×16″×6 5/8″	A(4), B(4), C(1)	A(4), B(2), C(1)	17″ ×14 1/2″	6958K3	206.41
24″×20″×6 5/8″	A(4), B(4), C(1)	A(4), B(4), C(1)	21″ ×18 1/2″	6958K4	211.83

Indoor Steel Enclosures with Lift-Off Cover (NEMA 1)

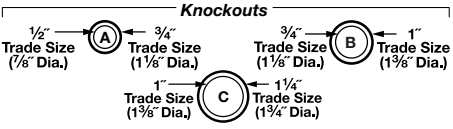

Versatile and economical, these are great for indoor applications that don't require dust- or oil-tight enclosures. No need for special tools to punch holes—knockouts in the top, bottom, and sides save you time. Plus, the quick-access cover comes off without removing the screws—just slide it off the keyhole shaped slots. All are 16-ga. steel, unless noted, and have four ¼″ dia. mounting holes. Color is gray. UL listed and CSA certified. For outlet and switch boxes, see pages 830-831.

Overall Size, Ht.×Wd.×Dp.	Knockout Style (No.) Each Side	Top and Bottom		Each
4″× 4″×4″	A(1), B(1)	A(1), B(1)	75065K22	$8.25
6″× 4″×4″	A(2), B(1)	A(1), B(1)	75065K23	11.59
6″× 6″×3″	A(2), B(1)	A(2), B(1)	75065K21	13.47
6″× 6″×4″	A(2), B(1)	A(2), B(1)	75065K11	11.09
6″× 6″×6″	A(2), B(1)	A(2), B(1)	75065K35	15.07
8″× 6″×4″	A(2), B(2)	A(2), B(1)	75065K12	15.89
8″× 8″×4″	A(2), B(2)	A(2), B(2)	75065K13	17.74
8″× 8″×6″	A(2), B(2)	A(2), B(2)	75065K36	21.16
8″× 8″×8″	A(2), B(2)	A(2), B(2)	75065K37	28.85
10″× 8″×4″	A(2), B(2)	A(2), B(2)	75065K14	21.19
10″×10″×4″	A(2), B(2)	A(2), B(2), C(1)	75065K24	23.25
10″×10″×6″	A(2), B(2), C(1)	A(2), B(2), C(1)	75065K38	29.18
12″× 6″×4″	A(2), B(2), C(1)	A(2), B(1)	75065K15	$22.46
12″× 8″×4″	A(2), B(2), C(1)	A(2), B(2)	75065K16	24.16
12″×10″×4″	A(2), B(2), C(1)	A(2), B(2), C(1)	75065K25	28.47
12″×12″×4″	A(2), B(2), C(1)	A(2), B(2), C(1)	75065K17	29.22
12″×12″×6″	A(2), B(2), C(1)	A(2), B(2), C(1)	75065K39	34.56
12″×12″×8″	A(2), B(2), C(1)	A(2), B(2), C(1)	75065K41	44.98
16″×12″×4″	A(4), B(2), C(1)	A(2), B(2), C(1)	75065K18	45.15
16″×12″×8″	A(4), B(2), C(1)	A(2), B(2), C(1)	75065K42	54.99
18″×12″×4″	A(4), B(4), C(1)	A(2), B(2), C(1)	75065K26	47.21
18″×18″×8″	A(4), B(4), C(1)	A(4), B(4), C(1)	75065K43	73.81
24″×18″×8″	A(4), B(4), C(1)	A(4), B(4), C(1)	75065K44	121.37
24″×24″×8″	A(4), B(4), C(1)	A(4), B(4), C(1)	75065K45●	138.60

● 14-ga. steel.

Oil-Spray-Tight Indoor Steel Enclosures (NEMA 13)

Enclosures are rated NEMA 13 for indoor use to provide protection from dust, dirt, and splashing and spraying oil/coolant. Made of 14-ga. steel with gray powder-coated finish, unless noted. They are also known as JIC (Joint Industrial Council) boxes, unless noted. UL listed.

With Lift-Off Cover

The cover has a nitrile/PVC gasket and is secured with screw clamps on one side; good where frequent access isn't required. Enclosures have four 5/16″ dia. mounting holes. Working depth (area available for component mounting) is approximately ½″ less than overall depth. Opening size is approximately ¾″ less than overall height and width. CSA certified.

Panels are for mounting components inside and are made of steel.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels Ht.×Wd.		Each
4″× 4″×3″	7871K11♣♠	$37.78			
6″× 4″×3″	7871K12♣♠	42.46	4⅞″× 2⅞″	7871K62	$3.84
6″× 6″×4″	7871K13♠	49.50	4⅞″× 4⅞″	7871K63	4.60
8″× 6″×3½″	7871K14	52.54	6¾″× 4⅞″	7871K64	5.30
10″× 8″×4″	7871K15	65.26	8¾″× 6⅞″	7871K65	7.20
12″×10″×5″	7871K16	83.57	10¾″× 8⅞″	7871K66	9.74
14″×12″×6″	7871K17	108.56	12¾″×10⅞″	7871K67	12.74
16″×14″×6″	7871K18	127.78	14¾″×12⅞″	7871K68	16.86

♣ Does not meet JIC requirements. ♠ 16-ga. body and 14-ga. cover.

With Hinged Cover

Standard with Screw Clamps

Standard with Quick-Release Latch

Large with Screw Clamps

A continuous steel hinge on the cover makes these enclosures ideal when you need frequent access. Covers have a neoprene gasket. ***Panels*** are for mounting components inside and are made of steel.

Standard enclosures have a working depth (area available for component mounting) of approximately 0.5″ less than the overall depth. Opening size is approximately 1.2″ less than overall height and width. All have four 5/16″ dia. mounting holes. *Standard with quick-release latch* provide quick, convenient access because there are no screws or clamps to unfasten.

Large enclosures have a rolled lip around three sides of the cover and all sides of the enclosure opening to keep liquids and contaminants out. The cover is removable. Enclosures have a hasp for padlocking (padlock not included; ⅜″ max. shackle dia.) and four 7/16″ dia. mounting holes. Working depth (area available for component mounting) is approximately 2.1″ less than the overall depth. Opening size is approximately 1.8″ less than overall height and width. CSA certified.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels Ht.×Wd.		Each
Standard with Screw Clamps					
4″× 4″× 3″	7605K19♦♣	$39.17			
6″× 4″× 3″	7605K21♦♣	46.37	4⅞″× 2⅞″	7847K21	$3.70
6″× 6″× 4″	7605K23♦♣	51.45	4⅞″× 4⅞″	7847K22	4.43
8″× 6″× 3.5″	7605K22	56.16	6¾″× 4⅞″	7847K23	5.09
8″× 8″× 4″	7605K66	62.61	6¾″× 6⅞″	7605K51	5.96
10″× 8″× 4″	7605K24	68.42	8¾″× 6⅞″	7847K24	6.93
10″× 8″× 6″	7605K41	78.13	8¾″× 6⅞″	7847K24	6.93
10″×10″× 6″	7605K29	88.53	8¾″× 8⅞″	7605K39	8.20
12″× 6″× 4″	7605K28	71.02	10¾″× 4⅞″	7605K59	6.49
12″×10″× 5″	7605K25	88.65	10¾″× 8⅞″	7847K25	9.37
12″×10″× 8″	7605K42	110.33	10¾″× 8⅞″	7847K25	9.37
12″×12″× 6″	7605K49	102.52	10¾″×10⅞″	7605K38	11.02
14″× 8″× 6″	7605K67	96.90	12¾″× 6⅞″	7605K52	9.00
14″×12″× 6″	7605K26	112.02	12¾″×10⅞″	7847K26	12.26
14″×12″× 8″	7605K43	131.11	12¾″×10⅞″	7847K26	12.26
16″×10″× 6″	7605K68	115.57	14¾″× 8⅞″	7605K53	11.97
16″×14″× 6″	7605K27	131.97	14¾″×12⅞″	7847K27	16.22
16″×14″× 8″	7605K44	149.34	14¾″×12⅞″	7847K27	16.22
16″×14″×10″	7605K69	169.49	14¾″×12⅞″	7847K27	16.22
Standard with Quick-Release Latch					
6″× 4″× 3″	7847K11♦♣	49.11	4⅞″× 2⅞″	7847K21	3.70
6″× 6″× 4″	7847K12♦♣	57.25	4⅞″× 4⅞″	7847K22	4.43
Standard with Quick-Release Latch (Cont.)					
8″× 6″× 3.5″	7847K13	$60.71	6¾″× 4⅞″	7847K23	$5.09
10″× 8″× 4″	7847K14	73.37	8¾″× 6⅞″	7847K24	6.93
12″×10″× 5″	7847K15	93.82	10¾″× 8⅞″	7847K25	9.37
14″×12″× 6″	7847K16	118.87	12¾″×10⅞″	7847K26	12.26
16″×14″× 6″	7847K17	139.32	14¾″×12⅞″	7847K27	16.22
Large with Screw Clamps					
16″×12″× 7.2″	75545K71♥	256.98	13″ × 9″	75545K91	24.80
20″×16″× 7.2″	75545K72♥	296.51	17″ ×13″	75545K92	36.26
20″×16″× 9.2″	75545K74♥	312.95	17″ ×13″	75545K92	36.26
24″×20″× 7.2″	75545K73♥	343.26	21″ ×17″	75545K93	56.67
24″×20″× 9.2″	75545K75	363.16	21″ ×17″	75545K93	56.67
24″×20″×11.2″	75545K85	382.98	21″ ×17″	75545K93	56.67
24″×20″×13.2″	75545K86	414.32	21″ ×17″	75545K93	56.67
30″×24″× 9.2″	75545K76	434.98	27″ ×21″	75545K94	79.05
30″×24″×11.2″	75545K78	459.54	27″ ×21″	75545K94	79.05
36″×30″× 9.2″	75545K77	537.70	33″ ×27″	75545K95	126.19
36″×30″×11.2″	75545K79	567.31	33″ ×27″	75545K95	126.19
36″×30″×13.2″	75545K82	596.80	33″ ×27″	75545K95	126.19
42″×30″×11.2″	75545K81	639.01	39″ ×27″	75545K96	144.35
42″×30″×13.2″	75545K83	672.84	39″ ×27″	75545K96	144.35
48″×36″×13.2″	75545K84	793.08	45″ ×33″	75545K97	191.81

♦ 16-ga. steel. ♣ Does not meet JIC requirements. ♥ 16-ga. body and 14-ga. cover. Does not meet JIC requirements.

Rain-Tight Outdoor Steel Enclosures (NEMA 3R)

Much like the roof of your house, the drip-shield top keeps rain out, as well as dirt and light splashing. No gasket required. They have a gray powder-coated finish. UL listed and CSA certified, unless noted.

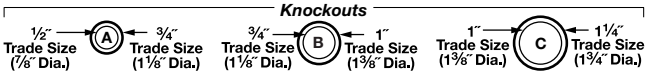

With Lift-Off Cover

Enclosures have knockouts on the bottom for attaching conduit and cord-grip fittings. Unless noted, all can be secured with a padlock (not included; 3/8" max. shackle dia.). They have two screws to hold the cover in place, unless noted. Opening size is 1 1/8" less than overall height and width. All are 16-ga. steel and have four 1/4" dia. mounting holes, unless noted.

Overall Size, Ht. × Wd. × Dp.	Knockout Style (No.)		Each	Overall Size, Ht. × Wd. × Dp.	Knockout Style (No.)		Each
4" × 4" × 4"	A(1)	7649K36★	$20.56	10" × 8" × 4"	A(2), B(1)	7649K53	$32.32
6" × 4" × 4"	A(1)	7649K51★	20.72	10" × 10" × 6"	A(2), B(1), C(2)	7649K39	44.24
6" × 6" × 4"	A(2), B(1)	7649K37	22.38	12" × 10" × 6"	A(2), B(1), C(2)	7649K54	47.82
8" × 6" × 4"	A(2), B(1)	7649K38	24.82	15" × 12" × 6"	A(2), B(2), C(2)	7649K95	62.20
8" × 8" × 4"	A(2), B(1)	7649K52	28.62				

★ Not UL listed and cannot be secured with a padlock. Has one cover screw and two mounting holes.

With Hinged Cover

A continuous steel hinge provides easy access to the inside of these enclosures, where you'll find a removable inner panel for mounting components. They have 5/16" Ht. × 9/16" Wd. mounting slots (those with knockouts have four; those without have six).

Enclosures with knockouts let you attach conduit and cord grip fittings to the bottom. Enclosures have a quick-release padlockable latch (padlock not included; 5/16" max. shackle dia.). Working depth (area available for component mounting) is approximately 1/2" less than the overall depth, opening size is approximately 1 5/8" less than overall height and 1 1/8" less than overall width, and panel height and width are 1 3/4" less than overall height and width. Made of 16-ga. steel.

Enclosures without knockouts have two screws to secure the cover. Hasp accommodates a padlock (padlock not included; 7/16" max. shackle dia.). Working depth is approximately 1" less than the overall depth, opening size is approximately 2 3/4" less than overall height and width, and panel height and width are 3" less than the overall height and width. Made of 14-ga. steel.

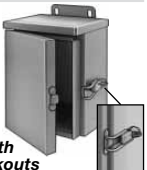

With Knockouts

Without Knockouts

Overall Size, Ht. × Wd. × Dp.	Knockout Style (No.)	*Enclosures*	Each	*Repl. Panels*	Each	Overall Size, Ht. × Wd. × Dp.	*Enclosures*	Each	*Repl. Panels*	Each
With Knockouts						***Without Knockouts***				
8" × 6" × 4"	A(2), B(1)	7649K11	$44.47	7649K41	$4.22	16" × 12" × 6"	7649K13	$120.37	75505K46	$21.98
10" × 8" × 6"	A(2), B(1)	7649K45	60.87	7649K47	5.86	20" × 20" × 8"	7649K14	220.44	7649K44	39.88
12" × 10" × 6"	A(2), B(1)	7649K12	78.49	7649K42	8.00	24" × 24" × 8"	7649K46	299.26	7649K48	57.00

Contemporary Washdown Indoor/Outdoor Steel Enclosures (NEMA 4)

Make your enclosures stand out or blend in, indoors or out. Smooth lines and a choice of colors make these great for high-traffic areas. Rated NEMA 4 and 12 for protection from dust, splashing water, washdowns, and oil/coolant dripping. Made of 16-ga. steel with concealed steel hinges, unless noted. Cover has a polyurethane-foam gasket and a 1/4-turn coin-slot latch. Working depth is 1.2" smaller than overall depth and opening size is approximately 1.6" less than overall height and width, unless noted. Enclosures have four 1/2" dia. mounting holes, unless noted. UL listed and CSA certified.

To Order: For choose-a-color enclosures, please specify black, blue, white, or yellow.

Panels are for mounting components inside and are made of steel.

Optional locking handles replace the 1/4-turn coin-slot latch and include two keys.

Optional Locking Handle

Overall Size, Ht. × Wd. × Dp.	*Gray Enclosures*	Each	*Choose-a-Color Enclosures*	Each	*Panels* Ht. × Wd.		Each
5.9" × 5.9" × 4.7"	7812K11■	$51.14	7309K31■	$78.47	5.2" × 5.2"	7812K51	$6.08
7.9" × 5.9" × 4.7"	7812K12■	62.52	7309K32■	89.64	7.1" × 5.2"	7812K52	7.50
9.8" × 7.9" × 5.9"	7812K13■	76.00	7309K33■	102.73	9.1" × 7.1"	7812K53	9.07
11.8" × 9.8" × 5.9"	7812K14■	86.27	7309K34■	112.62	11.1" × 9.1"	7812K54	10.25
12" × 12" × 6"	7812K21	199.74	7309K35	240.59	10.2" × 10.2"	7812K61	13.32
16" × 12" × 6"	7812K22	214.15	7309K36	256.73	14.2" × 10.2"	7812K62	17.14
16" × 16" × 6"	7812K23	230.50	7309K37	276.41	14.2" × 14.2"	7812K63	33.22
20" × 16" × 8"	7812K24	260.39	7309K38	312.29	18.2" × 14.2"	7812K64	38.28
20" × 20" × 8"	7812K25	281.63	7309K39	337.73	18.2" × 18.2"	7812K65	45.93
24" × 20" × 8"	7812K26	302.43	7309K41	360.58	22.2" × 18.2"	7812K66	58.64
24" × 24" × 8"	7812K27♠	326.67	7309K42♠	386.74	22.2" × 22.2"	7812K67	68.05
30" × 24" × 12"	7812K28♠	402.92	7309K43♠	469.60	28.2" × 22.2"	7812K68	82.19
36" × 30" × 12"	7812K29●	497.28	7309K44●	572.14	34.2" × 28.2"	7812K69	127.09
42" × 36" × 12"	7812K31●	605.35	7309K45●	689.39	40.2" × 34.2"	7812K71	174.99

Optional Locking Handle for Enclosures 11.8" Ht. and Shorter ..... 7812K4 Each $29.75

Optional Locking Handle for Enclosures 12" Ht. and Taller ..... 7812K8 Each $54.56

■ Working depth is 0.5" smaller than overall width, opening size is 0.7" less than overall height and width, and has 1/4" mounting holes. ♠ 16-ga. body and 14-ga. cover. ● 14-ga. steel.

Washdown Indoor/Outdoor Steel Enclosures with Window (NEMA 4)

Lose the X-ray goggles and see inside these enclosures through their polycarbonate window. Use them indoors and out; rated NEMA 4 and 12 for protection against dust, splashing water, washdowns, and oil/coolant dripping. Enclosures are made of gray powder-coated 16-ga. steel, unless noted. They have a urethane-gasketed cover with a 1/4-turn coin-slot latch and concealed stainless steel hinges. Working depth (area available for component mounting) is approximately 1" less than overall depth. Opening size is approximately 1 5/8" less than overall height and width. All have four 1/2" square mounting holes.

Panels are for mounting components inside and are made of steel. *Swing panels* are hinged for easy access to internally mounted equipment. They allow 4" to 6" depth adjustment and secure with included 1/4-turn fasteners.

Overall Size, Ht. × Wd. × Dp.	*Enclosures*	Each	*Standard Panels* Ht. × Wd.		Each	*Swing Panels* Ht. × Wd.		Each
16" × 12" × 6"	75345K21	$297.48	14.2" × 10.2"	75345K31	$13.08	13.8" × 9.8"	75345K41	$114.78
20" × 16" × 6"	75345K22	340.55	18.2" × 14.2"	75345K32	38.92	17.8" × 13.8"	75345K42	127.31
20" × 16" × 8"	75345K24	362.22	18.2" × 14.2"	75345K32	38.92	17.8" × 13.8"	75345K42	127.31
24" × 20" × 6"	75345K23	397.71	22.2" × 18.2"	75345K33	59.64	21.8" × 17.8"	75345K43	142.66
24" × 20" × 8"	75345K25	420.52	22.2" × 18.2"	75345K33	59.64	21.8" × 17.8"	75345K43	142.66
30" × 24" × 8"	75345K26●	503.93	28.2" × 22.2"	75345K34	83.57	27.8" × 21.8"	75345K44	165.64
30" × 24" × 12"	75345K27●	560.66	28.2" × 22.2"	75345K34	83.57	27.8" × 21.8"	75345K44	165.64

● 14-ga. steel.

Washdown Indoor/Outdoor Steel Enclosures with Hinged Cover (NEMA 4)

Standard

Large

Hinged to allow frequent access and rated NEMA 4 and 13 to shut out dust, splashing water, washdowns, and oil/coolant spraying, these enclosures are for use indoors and out. They have a continuous hinge and a gray powder-coated finish. Cover has a neoprene gasket and secures with stainless steel screw clamps on three sides. Made of 14-ga. steel, unless noted. UL listed and CSA certified.

Standard enclosures have a steel hinge. Working depth (area available for component mounting) is approximately 0.5″ less than overall depth and opening size is approximately 1.2″ less than overall height and width. They have four 5/16″ dia. mounting holes.

Large enclosures have a removable cover with a stainless steel hinge. Also known as JIC (Joint Industrial Council) boxes, unless noted. They have a padlockable hasp (padlock not included; 5/16″ max. shackle dia.). Working depth (area available for component mounting) is approximately 0.9″ less than overall depth and opening size is approximately 1.8″ less than overall height and width. Enclosures have four 7/16″ dia. mounting holes.

Panels are for mounting components inside and are made of steel.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels Ht.×Wd.		Each
Standard					
4″× 4″× 3″	7563K31 ♦	$62.99			
6″× 4″× 3″	7563K32 ♦	71.29	4.9″× 2.9″	7847K21	$3.70
6″× 6″× 4″	7563K34 ♦	74.65	4.9″× 4.9″	7847K22	4.43
8″× 6″× 3.5″	7563K36	79.65	6.8″× 4.9″	7847K23	5.09
10″× 8″× 4″	7563K38	98.68	8.8″× 6.9″	7847K24	6.93
10″× 8″× 6″	7563K37	110.42	8.8″× 6.9″	7847K24	6.93
12″×10″× 5″	7563K43	125.31	10.8″× 8.9″	7847K25	9.37
12″×12″× 6″	7563K46	134.31	10.8″×10.9″	7605K38	11.02
14″×12″× 6″	7563K41	160.60	12.8″×10.9″	7847K26	12.26
16″×14″× 6″	7563K45	188.43	14.8″×12.9″	7847K27	16.22
Large					
16″×12″× 7.2″	75705K71 ♥	333.06	13″ × 9″	75545K91	24.80
20″×16″× 7.2″	75705K72 ♥	380.36	17″ ×13″	75545K92	36.26
20″×16″× 9.2″	75705K74 ♥	401.23	17″ ×13″	75545K92	36.26
24″×20″× 7.2″	75705K73 ♥	453.64	21″ ×17″	75545K93	56.67
24″×20″× 9.2″	75705K75 ♥	470.69	21″ ×17″	75545K93	56.67
24″×20″×11.2″	75705K85	496.69	21″ ×17″	75545K93	56.67
24″×20″×13.2″	75705K86	538.68	21″ ×17″	75545K93	56.67
30″×24″× 9.2″	75705K76	558.03	27″ ×21″	75545K94	79.05
30″×24″×11.2″	75705K78	593.93	27″ ×21″	75545K94	79.05
36″×30″× 9.2″	75705K77	697.61	33″ ×27″	75545K95	126.19
36″×30″×11.2″	75705K79	736.15	33″ ×27″	75545K95	126.19
36″×30″×13.2″	75705K82	775.34	33″ ×27″	75545K95	126.19
48″×36″×13.2″	75705K84	931.04	45″ ×33″	75545K97	191.81

♦ 16-ga. steel. ♥ 16-ga. body and 14-ga. cover. Does not meet JIC requirements.

Washdown Indoor/Outdoor Steel Enclosures with Lift-Off Cover (NEMA 4)

For occasional access but 'round-the-clock protection from dust, splashing water, washdowns, and oil/coolant spraying, these NEMA 4 and 13 rated enclosures are your best choice, indoors and out. Also known as JIC (Joint Industrial Council) boxes, they have a gray powder-coated finish and a cover with a urethane gasket that secures with stainless steel screw clamps on all four sides. Made of 14-ga. steel, unless noted. Working depth (area available for component mounting) is approx. 0.5″ less than overall depth and opening size is approx. 0.75″ less than overall height and width. They have four 5/16″ dia. mounting holes. UL listed and CSA certified.

Panels are for mounting components inside and are made of steel.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels Ht.×Wd.		Each
4″× 4″×3″	7865K41 ♠	$49.23			
6″× 4″×3″	7865K42 ♠	55.98	4.9″× 2.9″	7871K62	$3.84
6″× 6″×4″	7865K43 ♠	65.10	4.9″× 4.9″	7871K63	4.60
8″× 6″×3.5″	7865K44	69.04	6.8″× 4.9″	7871K64	5.30
10″× 8″×4″	7865K45	86.12	8.8″× 6.9″	7871K65	7.20
12″×10″×5″	7865K46	110.19	10.8″× 8.9″	7871K66	9.74
14″×12″×6″	7865K47	139.02	12.8″×10.9″	7871K67	12.74
16″×14″×6″	7865K48	163.44	14.8″×12.9″	7871K68	16.86

♠ 16-ga. body and 14-ga. cover.

Washdown Stainless Steel Enclosures (NEMA 4X)

If your components must battle dirt, washdowns, corrosion, or oil/coolant dripping, stainless steel is the weapon of choice—and these enclosures are stainless steel all the way down to their hinges. They're rated NEMA 4X and 12 for use indoors and out and are UL listed.

Panels are for mounting components inside and are made of steel.

With Flat Top

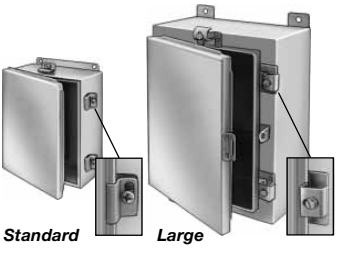

Standard Large

Also known as JIC (Joint Industrial Council) boxes, their cover secures on three sides with screw clamps. CSA certified. ***Standard*** enclosures are made of 16-ga. Type 304 stainless steel and have a neoprene-gasketed cover. Working depth (area available for component mounting) is 1/2″ less than overall depth and opening size is 3/4″ less than overall height and width. They have four 5/16″ dia. mounting holes. ***Large*** enclosures are made of 14-ga. Type 304 stainless steel and have a polyurethane-gasketed cover. Working depth is 1″ less than overall depth and opening size is 2 3/4″ less than overall height and width. They have four 7/16″ dia. mounting holes.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels Ht.×Wd.		Each
Standard					
6″× 6″× 4″	75505K11	$175.65	4 7/8″× 4 7/8″	75505K41	$4.08
10″× 8″× 4″	75505K12	267.40	8 7/8″× 6 7/8″	75505K42	6.54
12″×10″× 6″	75505K13	463.06	10 7/8″× 8 7/8″	75505K43	8.48
14″×12″× 6″	75505K14	439.54	12 7/8″×10 7/8″	75505K44	11.13
16″×14″× 6″	75505K15	522.97	14 7/8″×12 7/8″	75505K45	14.77
Large					
16″×12″× 6″	75505K21	734.85	13″ × 9″	75505K46	21.98
20″×16″× 6″	75505K22	893.45	17″ ×13″	75505K47	32.56
20″×16″×10″	75505K23	967.40	17″ ×13″	75505K47	32.56
24″×20″× 8″	75505K24	924.67	21″ ×17″	75505K48	51.44
30″×24″× 8″	75505K25	1,373.55	27″ ×21″	75505K49	75.87
36″×24″×10″	75505K26	1,640.29	33″ ×21″	75505K52	91.08
48″×36″×12″	75505K27	2,551.27	45″ ×33″	75505K53	171.85

With Sloped Top—NSF Certified

A 20° sloped top and door edge allows washdown solutions to run off, eliminating standing water to meet NSF criteria C-2 certification. They also meet IP66 for protection from power jets of water. Made of 14-ga. Type 304 stainless steel. Cover is removable and has a polyurethane gasket and stainless steel 1/4-turn coin-slot latches. Working depth (area available for component mounting) is 1″ less than overall depth and opening width is approximately 2.8″ less than overall width. Enclosures have four 1/2″ dia. mounting holes. C-UL listed.

Standoff kit includes four standoffs that create space between the enclosure and wall to allow for more thorough washdowns.

Overall Size, Ht.×Wd.×Dp.	Cover Ht.	Enclosures	Each	Panels Ht.×Wd.		Each
19.1″×12″× 9.2″	16.2″	7235K11	$940.77	13″× 9″	75545K91	$24.80
19.2″×16″× 9.2″	16.3″	7235K12	1,045.54	13″×13″	7235K32	30.74
23.2″×16″× 9.2″	20.3″	7235K13	1,157.20	17″×13″	75545K92	36.26
24.8″×20″×13.2″	20.4″	7235K15	1,516.57	17″×17″	7235K34	44.08
27.4″×24″× 9.2″	24.5″	7235K17	1,541.49	21″×21″	7235K36	65.56
34.9″×24″×13.2″	30.5″	7235K21	1,987.78	27″×21″	75545K94	79.05
41″ ×30″×13.2″	36.7″	7235K23	2,532.94	33″×27″	75545K95	126.19
66.6″×36″×17.2″	60.8″	7235K25	4,725.88	57″×33″	7235K42	237.32

Standoff Kit (1″ Length) ..... 7235K1 Each $118.14

For information about NEMA and IP enclosure ratings, see page 843.

Tamper-Resistant Washdown Stainless Steel Enclosures (NEMA 4X)

Keep your indoor and outdoor components away from the wrong hands, as well as from dirt, washdowns, corrosion, oil/coolant dripping, and power jets of water. Key-operated pin locks prevent unauthorized entry. All have one lock (unless noted) and are furnished with one key (all open with the same key). Rated NEMA 4X and 12, as well as IP66. Enclosures are made of 16-ga. Type 304 stainless steel (unless noted) and have a urethane-gasketed removable cover with stainless steel hinges. They have four 1/2″ dia. mounting holes with sealing washers. Working depth (area available for component mounting) is 15/16″ less than overall depth. Opening size is approximately 2 7/16″ less than overall height and width. A steel inner panel is included (panel height and width are approximately 1 13/16″ less than enclosure height and width). UL listed and CSA certified.

Overall Size, Ht. × Wd. × Dp.		Each
12″ × 12″ × 6″	7619K12	$402.14
16″ × 16″ × 6″	7619K13	498.39
16″ × 20″ × 8″	7619K14	581.39
20″ × 16″ × 8″	7619K15	581.39
20″ × 20″ × 8″	7619K16	642.67
24″ × 16″ × 8″	7619K18	634.37
30″ × 30″ × 8″	7619K19▲	1,043.69
Replacement Key	7619K86	Each $13.64

▲ Has two locks. 14-ga. Type 304 stainless steel.

Contemporary Washdown Stainless Steel Enclosures (NEMA 4X)

Smooth lines and Type 304 stainless steel construction provide the perfect combination of beauty and brawn. These enclosures protect contents indoors and out from dirt, washdowns, and corrosion (rated NEMA 4X), as well as power jets of water (rated IP66). Covers have polymide hinges and a 1/4-turn coin-slot latch. All have a urethane gasket and are made of 16-ga. stainless steel, unless noted. They have four 1/4″ dia. mounting holes (unless noted) and four mounting feet with 9/32″ Ht. × 27/32″ Wd. mounting slots. UL listed and CSA certified.

Enclosures up to and including 14″ wide have a working depth (area available for component mounting) of 0.2″ less than overall depth and an opening size of 0.7″ less than overall height and width. Enclosures 16″ and wider have a working depth of 0.3″ less than overall depth and an opening size of approximately 2.5″ less than overall height and width. ***Panels*** are for mounting components inside and are made of steel.

Also Available: Type 316 stainless steel enclosures. Please ask for 6942K888 and specify the part number of the corresponding enclosure from the listing below.

Overall Size, Ht. × Wd. × Dp.	*Enclosures*	Each	*Panels* Ht. × Wd.		Each
6″ × 6″ × 4.2″	6942K12	$165.88	5″ × 5″	6942K102	$4.46
8″ × 6″ × 6.2″	6942K14	197.96	7″ × 5″	6942K103	5.12
10″ × 8″ × 6.2″	6942K16	255.50	9″ × 7″	6942K105	7.00
12″ × 10″ × 8.2″	6942K18	345.46	11″ × 9″	6942K107	9.48
12″ × 12″ × 6.2″	6942K19	348.08	11″ × 11″	6942K109	11.17
14″ × 12″ × 8.2″	6942K22	392.56	13″ × 11″	6942K211	12.46
16″ × 14″ × 6.2″	6942K23	435.60	15″ × 13″	6942K213	24.54
16″ × 16″ × 9.1″	6942K24★	666.69	13″ × 13″	6942K214	30.21
20″ × 20″ × 9.1″	6942K26★	827.10	17″ × 17″	6942K216	43.56

★ 14-ga. stainless steel. Has 7/16″ dia. mounting holes.

Corrosion-Resistant Washdown Aluminum Enclosures (NEMA 4X)

Get good corrosion resistance at a lower cost than stainless steel while protecting contents from dirt and washdowns, indoors and out. These lightweight enclosures have lift-off covers and meet NEMA 4X.

Standard

Also known as JIC (Joint Industrial Council) boxes, these enclosures have a brushed finish. Cover has a polyurethane gasket and stainless steel screw clamps. Working depth (area available for component mounting) is 1/2″ less than the overall depth and opening size is 5/8″ less than overall height and width. They have four 5/16″ dia. mounting holes. UL listed and CSA certified. ***Panels*** are for mounting components inside and are steel.

Overall Size, Ht. × Wd. × Dp.	*Enclosures*	Each	*Panels* Ht. × Wd.		Each
6″ × 6″ × 4″	75775K11	$152.83	4.9″ × 4.9″	7847K22	$4.43
8″ × 6″ × 3.5″	75775K12	149.99	6.8″ × 4.9″	7847K23	5.09
10″ × 8″ × 4″	75775K13	188.54	8.8″ × 6.9″	7847K24	6.93
12″ × 10″ × 5″	75775K14	229.93	10.8″ × 8.9″	7847K25	9.37
14″ × 12″ × 6″	75775K15	278.72	12.8″ × 10.9″	7847K26	12.26
16″ × 14″ × 6″	75775K16	320.20	14.8″ × 12.9″	7847K27	16.22

Contemporary

Smooth and flush, these compact enclosures have a gray powder-coated finish. Cover has a neoprene gasket and is secured by four captive screws. Opening size is approximately 0.5″ less than overall height and width. Enclosures have four 3/16″ dia. mounting holes as well as M4 threaded mounting bosses (unless noted) to attach DIN rail inside. Meet IP65 for protection against water projected from a nozzle. CSA certified.

Overall Size, Ht. × Wd. × Dp.		Each
2.6″ × 2.6″ × 1.6″	75895K21	$27.81
3.2″ × 3.2″ × 2.4″	75895K11	40.72
4″ × 2.6″ × 1.6″	75895K22	33.44
4″ × 4″ × 3.2″	75895K13	61.79
4.8″ × 3.2″ × 2.4″	75895K24	53.30
4.8″ × 4.8″ × 4″	75895K15■	94.07
6″ × 2.6″ × 1.6″	75895K23	44.00

Overall Size, Ht. × Wd. × Dp.		Each
6″ × 4″ × 3.2″	75895K14	$75.54
6.4″ × 3.2″ × 2.4″	75895K12	60.68
6.4″ × 6.4″ × 4″	75895K16■	123.42
8″ × 8″ × 4.8″	75895K26■	276.33
9.6″ × 4.8″ × 4″	75895K25■	119.11
9.6″ × 9.6″ × 4.8″	75895K17■	275.98

■ Mounting hole dia. is 1/4″. Mounting bosses for DIN rail have M6 threads.

Contemporary Corrosion-Resistant Washdown Fiberglass Enclosures (NEMA 4X)

Streamlined to blend in well in the office or the plant, these gray enclosures are stronger than polycarbonate, but not as strong as stainless steel. They protect contents from dirt, water, corrosion, and oil/coolant dripping both indoors and out (rated NEMA 4X and 12). Enclosures have a polyurethane-gasketed cover. Screws, hinges, and latches are stainless steel. Working depth (area available for component mounting) is approximately 0.7″ less than overall depth. Opening size is approximately 0.5″ less than overall height and width. Enclosures have four 1/4″ dia. mounting holes (or choose the optional flange-style mounting feet, sold separately, to aid installation). UL and C-UL listed. CSA certified.

Lift-Off Cover — Four captive screws hold cover in place. ***Hinged Cover with Padlockable Latch*** — Have a hasp that accommodates 3/8″ max. shackle dia. (padlock not included). ***Hinged Cover with 1/4-Turn Latch*** — Latch is coin-slot style. ***Hinged Cover with Window*** — Have two captive screws for closing. Window is acrylic.

Panels are for mounting components inside and are aluminum.

Lift-Off Cover

Hinged Cover with Padlockable Latch

Hinged Cover with 1/4-Turn Latch

Hinged Cover with Window

Overall Size, Ht. × Wd. × Dp.	*ENCLOSURES* *Lift-Off Cover*	Each	*Hinged Cover with Padlockable Latch*	Each	*Hinged Cover with 1/4-Turn Latch*	Each	*Hinged Cover with Window*	Each	*PANELS* Ht. × Wd.		Each
7.2″ × 7.2″ × 5.1″	74995K61	$93.87	74995K71	$116.75	74995K81	$139.92	74995K91	$141.44	4.9″ × 4.9″	6917K12	$8.41
9.2″ × 7.2″ × 5.1″	74995K62	95.12	74995K72	116.85	74995K82	140.02	74995K92	152.94	6.9″ × 4.9″	6917K13	9.46
11.2″ × 9.2″ × 6.1″	74995K63	105.37	74995K73	122.72	74995K83	147.12	74995K93	166.30	8.9″ × 6.9″	6917K14	12.83
13.2″ × 11.2″ × 6.6″	74995K64	113.55	74995K74	137.16	74995K84	164.42	74995K94	203.98	10.9″ × 8.8″	6917K15	13.91
15.2″ × 13.2″ × 7.1″	74995K65	126.26	74995K75	137.02	74995K85	174.79	74995K95	226.93	12.9″ × 10.9″	6917K16	16.63

Mounting Feet (Set of 4) ..... 74995K99 Per Set $19.90

For information about NEMA and IP enclosure ratings, see page 843.

Corrosion-Resistant Washdown Fiberglass Enclosures (NEMA 4X)

Not as strong as stainless steel, yet stronger than polycarbonate, these fiberglass enclosures protect contents from dirt, water, and corrosion both indoors and out. ***Panels*** are for mounting components inside.

Without Window

You'll have plenty of room for mounting larger instruments and controls, plus you'll get protection from oil/coolant dripping (rated NEMA 4X and 12). The cover has a polyurethane gasket, stainless steel hinges and twist latches, and a padlock hasp (padlock not included; 1/4″ max. shackle dia.). Enclosures have four 1/2″ dia. mounting holes with flange-style mounting feet. Working depth (area available for component mounting) is approx. 1.6″ less than overall depth. Opening height is approx. 6″ less than overall height and width is approx. 5″ less than overall width. Color is gray. UL and C-UL listed.

Panels are aluminum.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels Ht.×Wd.		Each
22.8″×16.9″× 7.8″	76515K51	$339.85	17″×13″	76515K61	$41.80
22.8″×16.9″× 9.8″	76515K52	384.36	17″×13″	76515K61	41.80
22.8″×16.9″×11.8″	76515K53	425.66	17″×13″	76515K61	41.80
27″ ×13.7″×12″	76515K54	505.56	21″× 9″	76515K62	40.25
27″ ×21.2″× 9.9″	76515K55	455.27	21″×17″	76515K63	82.06
27″ ×25.2″×11.9″	76515K71	531.84	21″×21″	76515K65	99.74
33.4″×26.3″× 8.8″	76515K56	502.42	27″×21″	76515K64	128.93
33.4″×26.3″×12″	76515K72	493.19	27″×21″	76515K64	128.93
39.3″×32.5″×12.1″	76515K73	638.49	33″×27″	76515K66	201.25
39.3″×32.5″×14.1″	76515K74	966.53	33″×27″	76515K66	201.25
51.3″×36.6″×13.9″	76515K75	1,518.43	45″×33″	76515K67	291.68
51.3″×36.6″×17.9″	76515K76	1,591.59	45″×33″	76515K67	291.68

With Window

Standard w/ Twist Latch

Standard w/Padlockable Latch

Large with Optional Mounting Feet

A window in the cover makes it easy to check equipment and take meter readings without sacrificing protection from oil/coolant spraying (rated NEMA 4X and 13), unless noted. The cover has a polyurethane foam gasket and the window is polycarbonate, unless noted.

Standard enclosures have stainless steel hinges and four 5/16″ dia. flanged mounting holes. Working depth (area available for component mounting) is approx. 0.8″ less than overall depth. Opening size is approx. 1.3″ less than overall height and width. Color is gray. UL listed and CSA certified (unless noted). Choose from enclosures with a smooth-closing twist latch or a latch for padlocking (padlock not included; 3/8″ max. shackle dia.). *Panels* are aluminum. **To Order:** For enclosures, please specify twist or padlockable latch.

Large enclosures provide extra space for components. Cover has zinc-plated steel hinges and a 1/4-turn slotted latch. Working depth (area available for component mounting) is approximately 1″ less than overall depth. Opening size is approximately 2″ less than overall height and width. Color is beige. Enclosures have four 1/4″ dia. mounting holes (or choose the optional flange-style mounting feet, sold separately, to aid installation). UL and C-UL listed. *Panels* are steel.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels Ht.×Wd.		Each
Standard					
7.3″× 7.3″×5″	6919K2	$121.74	4.9″× 4.9″	6919K42	$6.47
7.5″× 5.4″×4.7″	6919K1★	114.87	4.9″× 2.9″	6917K11	8.16
9.3″× 7.3″×5″	6919K3	126.08	6.8″× 4.9″	6919K43	7.76
11.3″× 9.3″×5.4″	6919K4	144.42	8.8″× 6.9″	6919K44	11.47
13.3″×11.3″×5.6″	6919K5	170.00	10.8″× 8.9″	6919K45	14.18
15.3″×13.3″×6.7″	6919K6	226.50	12.8″×10.9″	6919K46	16.92
17.3″×15.3″×6.7″	6919K7	248.63	14.8″×12.9″	6919K47	20.61
19.3″×17.3″×9.6″	6919K8	305.26	16.8″×14.9″	6919K48	24.68
Large					
20.3″×16.3″× 9.1″	2258K51	$483.45	17.7″×13.8″	2258K61	$68.00
24.2″×16.3″× 9.1″	2258K52	544.31	21.7″×13.8″	2258K62	81.00
28.9″×21.1″×10.6″	2258K53	787.51	26″ ×17.7″	2258K63	134.76
32.9″×25″ ×11.8″	2258K54	939.57	29.5″×21.7″	2258K64	163.61
40.8″×32.9″×11.8″	2258K55	1,304.39	37.4″×29.5″	2258K65	286.14

Mtg. Feet for Large Enclosures (Set of 4) 2258K88 **Per Set** $38.20

★ Rated NEMA 12 for protection from oil/coolant dripping. Has an acrylic window. UL and C-UL listed.

Corrosion-Resistant Washdown Polycarbonate Enclosures (NEMA 4X)

Impact and corrosion resistant, these polycarbonate enclosures resist chipping and cracking. They're used as insulated electrical junction boxes, terminal wiring boxes, instrument housings, and electrical control boxes. They have internal studs for mounting DIN rail. All have a gray body. UL listed. ***Panels*** are for mounting components inside and are made of steel.

With Lift-Off Cover

Style 1 w/ Opaque Cover

Style 2 w/ Transparent Cover

Style 3 w/ Opaque Cover

Enclosures have a polyurethane gasket, four 3/16″ dia. mounting holes, and corrosion-resistant polyamide cover screws, unless noted. Back panel is steel. Working depth (area available for component mounting) is approximately 0.5″ less than overall depth. Opening size is approximately 0.5″ less than overall height and width.

To Order: Please specify opaque gray or transparent cover, unless noted.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels Ht.×Wd.		Each
Style 1					
2″ ×2″ ×1.6″	69945K91■▲	$16.70	1″ ×1.7″	69945K94	$2.50
2″ ×2.6″×1.8″	69945K92■	19.60	1″ ×2.2″	69945K95	2.92
3.1″×3.2″×2.6″	69945K93■	30.18	2.2″×2.7″	69945K96	3.17
3.1″×3.2″×3.7″	69945K1■	31.35	2.2″×2.7″	69945K96	3.17
3.8″×2.5″×1.6″	69945K2■	22.42	—	—	—
3.9″×3.9″×1.4″	69945K3	17.89	3.1″×2.5″	69945K114	2.95
3.9″×3.9″×3″	69945K4	19.75	3.1″×2.5″	69945K114	2.95
5.1″×3.1″×1.4″	69945K5●	19.44	3.8″×1.8″	69945K21	2.62
5.1″×3.1″×3″	69945K107●	21.21	3.8″×1.8″	69945K21	2.62
5.1″×5.1″×1.4″	69945K6●	23.23	3.8″×3.8″	69945K22	3.25
5.1″×5.1″×3″	69945K108●	25.89	3.8″×3.8″	69945K22	3.25
6.7″×3.1″×3.3″	69945K87	37.75	5.5″×2.1″	69945K111	4.55
7.1″×5.1″×1.4″	69945K7●	28.00	5.8″×3.8″	69945K23	3.85
7.1″×5.1″×3″	69945K8●	29.02	5.8″×3.8″	69945K23	3.85
7.1″×7.1″×2.4″	69945K9●	36.58	5.8″×5.8″	69945K24	4.55
9.1″×3.1″×3.3″	69945K119	42.73	7.8″×2.1″	69945K112	6.77
9.1″×5.5″×3.7″	69945K89	54.30	7.2″×3.7″	69945K113	12.18
9.1″×5.5″×4.9″	69945K59	59.16	7.2″×3.7″	69945K113	12.18
Style 2					
5.1″× 3.1″×4.9″	69945K126●	$22.35	3.8″× 1.8″	69945K21	$2.62
5.1″× 5.1″×4.9″	69945K127●	26.79	3.8″× 3.8″	69945K22	3.25
7.1″× 5.1″×3.9″	69945K109●	30.93	5.8″× 3.8″	69945K23	3.85
7.1″× 5.1″×5.9″	69945K128●	34.14	5.8″× 3.8″	69945K23	3.85
7.1″× 7.1″×3.9″	69945K115●	38.88	5.8″× 5.8″	69945K24	4.55
7.1″× 7.1″×5.9″	69945K129●	45.28	5.8″× 5.8″	69945K24	4.55
Style 3					
7.4″× 7.4″×5.1″	69945K116	60.14	5.8″× 5.8″	69945K53	4.97
7.4″× 7.4″×7.1″	69945K131	67.49	5.8″× 5.8″	69945K53	4.97
10.9″× 7.4″×5.1″	69945K121	76.14	9.3″× 5.8″	69945K54	7.62
10.9″× 7.4″×7.1″	69945K132	80.18	9.3″× 5.8″	69945K54	7.62
10.9″×10.9″×5.1″	69945K122	87.60	9.3″× 9.3″	69945K56	11.30
10.9″×10.9″×7.1″	69945K133	93.28	9.3″× 9.3″	69945K56	11.30
14.9″× 7.4″×5.1″	69945K123	85.00	13.3″× 5.8″	69945K55	9.78
14.9″× 7.4″×7.1″	69945K134	95.60	13.3″× 5.8″	69945K55	9.78
14.9″×10.9″×5.1″	69945K124	101.37	13.3″× 9.3″	69945K57	14.40
14.9″×10.9″×7.1″	69945K135	108.28	13.3″× 9.3″	69945K57	14.40
22″ ×10.9″×5.1″	69945K125	135.93	20.3″× 9.3″	69945K58	32.22
22″ ×14.9″×7.1″	69945K136	184.05	20.3″×13.3″	69945K98	38.38

■ Has stainless steel cover screws. ▲ Offered with opaque gray cover only. ● Gasket is TPE.

(Continued on following page)

Corrosion-Resistant Washdown Polycarbonate Enclosures (NEMA 4X)

(Continued from previous page)

With Lift-Off Cover and Knockouts

Knockouts allow for fast and easy connections into these enclosures. Cover has polyamide screws and a thermoplastic elastomer (TPE) gasket. Working depth (area available for component mounting) is approximately 0.5″ less than overall depth. Opening size is approximately 0.5″ less than overall height and width. They have four 3/16″ dia. mounting holes. C-UL listed. **To Order:** Please specify opaque gray or transparent cover.

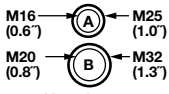

Knockouts

Style 4 w/ Transparent Cover

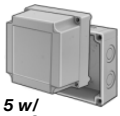

Style 5 w/ Opaque Cover

Overall Size, Ht.×Wd.×Dp.	Knockout Style (No.) Each Side	Knockout Style (No.) Top & Bottom	Enclosures	Each	Panels Ht.×Wd.	Panels	Each
Style 4							
3.9″×3.9″×2.4″	B(2)	—	7360K58 ♦	$20.23	3.1″×2.5″	69945K114	$2.95
3.9″×3.9″×3″	B(2)	—	7360K59 ♦	20.46	3.1″×2.5″	69945K114	2.95
5.1″×3.1″×3″	B(2)	A(1)	7360K61	21.98	3.8″×1.8″	69945K21	2.62
5.1″×5.1″×3″	B(2)	A(2)	7360K63	26.42	3.8″×3.8″	69945K22	3.25
7.1″×5.1″×3″	A(3)	B(2)	7360K65	30.84	5.8″×3.8″	69945K23	3.85
Style 5							
5.1″×3.1″×4.9″	B(2)	A(1)	7360K62	22.84	3.8″×1.8″	69945K21	2.62
5.1″×5.1″×4.9″	B(2)	A(2)	7360K64	27.68	3.8″×3.8″	69945K22	3.25
7.1″×5.1″×4.9″	A(3)	B(2)	7360K66	32.79	5.8″×3.8″	69945K23	3.85
7.1″×7.1″×3.9″	B(3)	A(3)	7360K67	40.28	5.8″×5.8″	69945K24	4.55
7.1″×7.1″×5.9″	B(3)	A(3)	7360K68	46.91	5.8″×5.8″	69945K24	4.55
10″ ×7.1″×3.9″	A(3), B(2)	B(3)	7360K69	69.30	8.8″×5.8″	7360K55	6.15
10″ ×7.1″×5.9″	A(3), B(2)	B(3)	7360K91	72.56	8.8″×5.8″	7360K55	6.15

♦ Does not include M32 knockouts.

With Hinged Cover

Offered with a padlockable latch (padlock not included; 3/8″ max. shackle dia.) or a 1/4-turn key lock (includes one key), these enclosures are rated NEMA 13 for protection from oil/coolant spraying. All have a polycarbonate hinge and EPDM cover gasket. Working depth (area available for component mounting) is approximately 0.5″ less than overall depth. Opening size is approximately 0.5″ less than overall height and width. They have four mounting holes with M6 threads.

To Order: Please specify opaque gray or transparent cover.

Overall Size, Ht.×Wd.×Dp.	Enclosures: With Latch	Each	Enclosures: With Key Lock	Each	Panels Ht.×Wd.	Panels	Each
11.8″× 7.9″×7.1″	7335K21	$96.28	7335K31	$115.20	10.6″× 6.6″	7335K41	$9.35
11.8″×11.8″×7.1″	7335K22	113.45	7335K32	132.18	10.6″×10.6″	7335K42	11.43
15.7″×11.8″×7.1″	7335K23	144.46	7335K33	157.54	14.5″×10.6″	7335K43	15.35
19.7″×15.7″×7.9″	7335K24	215.09	7335K34	276.08	18.5″×14.5″	7335K44	21.85
23.6″×15.7″×8.7″	7335K25	310.32	7335K35	371.32	22.4″×14.5″	7335K45	28.72

With Latch and Transparent Cover

With Key Lock and Opaque Cover

See-Thru Corrosion-Resistant Washdown Polycarbonate Enclosures (NEMA 4X)

Get a quick inspection of all sides of your installed components with these transparent blue polycarbonate enclosures. They are rated NEMA 4X and 13 for protection from dirt, water, corrosion, and oil/coolant spraying, as well as IP65 for protection from water projected from a nozzle. They also meet UL 94V2 for flame retardance. Enclosures have a lift-off cover with stainless steel screws and a silicone gasket. Opening size is approximately 0.3″ less than overall height and width. They have four 3/16″ dia. mounting holes. UL listed.

Overall Size, Ht.×Wd.×Dp.		Each
4.5″×3.5″×2.2″	7092K11	$15.21
6.7″×4.8″×2.2″	7092K12	22.19
6.7″×4.8″×3.2″	7092K14	25.94
7.9″×4.7″×3″	7092K15	25.31
8.7″×5.8″×2.2″	7092K13	29.27
9.5″×6.3″×3.5″	7092K16	35.52
11.8″×9.1″×3.4″	7092K17	82.29

Corrosion-Resistant Washdown PVC Enclosures (NEMA 4X)

Protect indoor and outdoor contents from dirt, washdowns, and corrosion—even UV radiation. Also rated NEMA 13 for protection from oil/coolant spraying. All have a PVC-gasketed lift-off cover that's secured by four captive brass screws. Enclosures also include mounting feet, which are removable except on 8261K21 and K24. Color is gray. UL listed, C-UL listed, and CSA certified.

The 4″ and 5″ high enclosures have two 1/4″ dia. mounting holes. Opening size is approximately 0.4″ less than overall height and width.

The 6.9″ high and larger enclosures have four 1/4″ dia. mounting holes. Opening size is approximately 1″ less than overall height and width.

Overall Size, Ht.×Wd.×Dp.		Each
4″ × 4″ ×2.4″	8261K21	$14.73
4″ × 4″ ×4.5″	8261K22	24.46
4″ × 4″ ×6.6″	8261K23	27.75
5″ × 5″ ×2.3″	8261K24	28.92
6.9″× 6.9″×4.6″	8261K25	29.99
6.9″× 6.9″×6.6″	8261K26	34.95
9″ × 9″ ×4.6″	8261K27	56.22
9.2″× 9.2″×7.7″	8261K28	78.14
12.9″×12.9″×4.7″	8261K29	88.76
12.9″×12.9″×6.6″	8261K31	91.05

Corrosion-Resistant Washdown ABS Enclosures (Not NEMA Rated)

Protect your indoor components from corrosion and washdowns the economical way. Cover lifts off and has a polyurethane gasket and four polyamide screws. Enclosures have internal bosses for mounting DIN rail. Working depth (area available for component mounting) is approximately 0.5″ less than overall depth. Color is gray. ***Panels*** are for mounting components inside and are made of steel.

Style A have an opening size of approximately 0.8″ less than overall height and width. They have four 3/16″ dia. mounting holes. ***Style B*** have an opening size of approximately 1″ less than overall height and width. They have four 1/4″ dia. mounting holes.

	Overall Size, Ht.×Wd.	Shallow Enclosures Dp.	Shallow Enclosures	Each	Deep Enclosures Dp.	Deep Enclosures	Each	Panels Ht.×Wd.	Panels	Each
A	4.3″× 3.1″	2.6″	7301K11	$11.95	3.3″	7301K31	$13.46	3.1″×2.1″	7301K71	$2.88
A	5.5″× 3.1″	2.6″	7301K12	13.21	3.3″	7301K32	15.28	4.3″×2.1″	7301K72	3.58
A	6.7″× 3.1″	2.6″	7301K13	14.63	3.3″	7301K33	16.86	5.5″×2.1″	69945K111	4.55
A	6.7″× 5.5″	—	—	—	3.7″	7301K34	21.75	4.9″×3.7″	7301K74	9.35
A	9.1″× 3.1″	2.6″	7301K16	16.75	3.3″	7301K36	18.95	7.8″×2.1″	69945K112	6.77
A	9.1″× 5.5″	—	—	—	3.7″	7301K37	26.28	7.2″×3.7″	69945K113	12.18
B	7.5″× 7.5″	5.1″	7301K15	43.84	7.1″	7301K35	56.60	5.8″×5.8″	69945K53	4.97
B	11″ × 7.5″	5.1″	7301K18	52.79	7.1″	7301K38	61.81	9.3″×5.8″	69945K54	7.62
B	11″ ×11″	5.1″	7301K19	70.46	7.1″	7301K39	81.35	9.3″×9.3″	69945K56	11.30
B	15″ × 7.5″	5.1″	7301K21	67.37	7.1″	7301K41	77.82	13.3″×5.8″	69945K55	9.78
B	15″ ×11″	5.1″	7301K22	85.19	7.1″	7301K42	98.42	13.3″×9.3″	69945K57	14.40

A

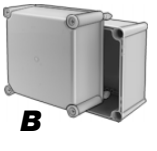

B

For information about NEMA and IP enclosure ratings, see page 843.

Submersible Indoor/Outdoor Enclosures (NEMA 6 and 6P)

Tested to withstand periodic submersion in water, these enclosures are ready for your wet environment. NEMA 6P enclosures are also rated NEMA 4X for corrosion resistance.

Contemporary Corrosion-Resistant Fiberglass (NEMA 6P/12)

With Screw Cover

With Padlockable Latch

With Twist Latch

With a choice of colors, you can make these fiberglass enclosures stand out or blend in. They're also rated NEMA 12 for protection from oil/coolant dripping. All have polyurethane-gasketed covers with stainless steel hinges. Working depth (area available for component mounting) is approximately 0.8″ less than the overall depth. Opening size is approximately 2″ less than overall height and width. They have four 5/16″ dia. flanged mounting holes. UL and C-UL listed. CSA certified.

To Order: For choose-a-color enclosures, please specify black, blue, red, white, or yellow.

Enclosures with screw cover have two stainless steel captive screws for closing. ***Enclosures with padlockable latch*** have a stainless steel hasp for padlocking (padlock not included; 3/8″ max. shackle dia.). ***Enclosures with twist latch*** have a stainless steel quick-closing latch.

Panels are for mounting components inside and are made of aluminum.

Overall Size, Ht.×Wd.×Dp.	Enclosures with Screw Cover: Each, Gray	Enclosures with Screw Cover: Each, Choose-a-Color	Enclosures with Padlockable Latch: Each, Gray	Enclosures with Padlockable Latch: Each, Choose-a-Color	Gray Enclosures w/Twist Latch: Each	Panels: Ht.×Wd.	Panels: Each
7.5″× 5.4″×4.8″	7583K1 $47.88	$54.96	7740K11 $71.31	$81.85	6917K31 $71.31	4.9″× 2.9″	6917K11 $8.16
7.5″× 7.5″×4.8″	7583K2 54.95	63.02	7740K12 74.06	84.95	6917K32 74.02	4.9″× 4.9″	6917K12 8.41
9.6″× 7.5″×4.8″	7583K3 56.73	65.11	7740K13 74.98	86.05	6917K33 74.98	6.9″× 4.9″	6917K13 9.46
9.6″× 9.5″×5.1″	7583K11 60.11	70.33	7740K19 72.80	84.36	6917K51 72.80	6.9″× 6.9″	6917K21 11.65
11.6″× 9.4″×4.3″	7583K4 66.49	76.37	7740K14 75.86	87.04	6917K34 75.86	8.9″× 6.9″	6917K14 12.83
13.6″×11.4″×5.2″	7583K5 77.98	89.48	7740K15 87.49	99.74	6917K35 87.49	10.9″× 8.8″	6917K15 13.91
13.6″×13.5″×6.6″	7583K9 88.14	98.71	7740K21 99.74	122.71	6917K52 99.74	10.9″×10.9″	6917K22 15.47
15.5″×13.5″×6.3″	7583K6 90.33	103.71	7740K16 117.70	135.14	6917K36 117.70	12.9″×10.9″	6917K16 16.63
17.5″×15.5″×6.2″	7583K7 103.82	119.15	7740K17 128.00	146.88	6917K37 128.00	14.9″×12.9″	6917K17 21.50
19.6″×17.6″×8.8″	7583K8 137.55	157.85	7740K18 166.33	190.92	6917K38 166.33	16.9″×14.9″	6917K18 27.50

Corrosion-Resistant Fiberglass w/Raised Cover (NEMA 6P/12)

With Twist Latch

Similar to the fiberglass enclosures above but with a raised cover for additional depth. They are also rated NEMA 12 for protection from oil/coolant dripping. All have polyurethane-gasketed covers with stainless steel hinges. Working depth (area available for component mounting) is approximately 0.8″ less than overall depth. Opening size is approximately 2″ less than overall height and width. They have four 5/16″ dia. flanged mounting holes. Color is gray. UL and C-UL listed. CSA certified.

To Order: Please specify latch type: stainless steel padlockable latch (padlock not included; 3/8″ max. shackle dia.) or quick-closing twist latch.

Panels are for mounting components inside and are aluminum.

Overall Size, Ht.×Wd.×Dp.	Enclosures: Each	Panels: Ht.×Wd.	Panels: Each
7.5″× 5.5″× 6.2″	6918K51 $74.50	4.9″× 2.9″	6917K11 $8.16
7.5″× 7.5″× 6.2″	6918K52 77.27	4.9″× 4.9″	6917K12 8.41
9.6″× 7.5″× 6.2″	6918K53 78.31	6.9″× 4.9″	6917K13 9.46
9.6″× 9.4″× 6.3″	6918K11 78.81	6.9″× 6.9″	6917K21 11.65
11.6″× 9.4″× 6.6″	6918K54 79.23	8.9″× 6.9″	6917K14 12.83
13.6″×11.4″× 6.6″	6918K55 91.34	10.9″× 8.8″	6917K15 13.91
13.6″×13.4″× 7.7″	6918K12 107.08	10.9″×10.9″	6917K22 15.47
15.5″×13.4″× 7.7″	6918K56 118.77	12.9″×10.9″	6917K16 16.63
17.5″×15.4″× 7.7″	6918K57 129.13	14.9″×12.9″	6917K17 21.50
19.6″×17.5″×10.6″	6918K58 167.85	16.9″×14.9″	6917K18 27.50

Corrosion-Resistant Thermoplastic (NEMA 6P)

Made of rugged corrosion-resistant thermoplastic that can be used for direct burial. Cover is lift-off style and has a foam gasket; it attaches with stainless steel screws. Opening size is approximately 0.4″ less than overall height and width. Enclosures have four 3/16″ dia. mounting holes. Color is gray. UL listed.

Overall Size, Ht.×Wd.×Dp.	Each	Overall Size, Ht.×Wd.×Dp.	Each
4″×4″×2.2″	7896K1 $22.55	4″×4″×6.2″	7896K4 $42.89
4″×4″×4.2″	7896K2 37.20	6″×6″×4.2″	7896K3 42.51

Narrow-Width Corrosion-Resistant Fiberglass (NEMA 6P/12)

Ideal for housing switches, push-buttons, and pilot lights. Also rated NEMA 12 for protection from oil/coolant dripping. Cover is lift-off with a polyurethane gasket and stainless steel screws. Opening size is approximately 0.6″ less than overall height and width. Enclosures are fiberglass and have four 3/8″ dia. mounting holes. Color is gray. UL and C-UL listed. CSA certified.

Overall Size, Ht.×Wd.×Dp.	Each	Overall Size, Ht.×Wd.×Dp.	Each
3.7″×3.6″×2.9″	2266K11 $31.48	9.4″×3.6″×3.1″	2266K16 $41.16
6″ ×3.6″×3.1″	2266K12 31.93	11.1″×3.8″×3.9″	2266K17 43.55
6.6″×3.8″×3.9″	2266K13 31.12	13.8″×3.6″×3.1″	2266K18 46.48
8.4″×3.6″×3.1″	2266K14 34.86	17.4″×3.6″×3.1″	2266K19 67.68
8.9″×3.8″×3.9″	2266K15 34.38		

Steel (NEMA 6/13)

With Flat Cover

Compact design is great for use as a junction box, instrument box, or wiring box. They're also rated NEMA 13 for protection from oil/coolant spraying. Enclosures have a flanged lift-off neoprene-gasketed cover with screws that thread outside the gasket line to prevent leakage. All are made of 16-ga. steel with smooth corners and no welds. Opening size is approximately 0.6″ less than overall height and width, unless noted. They have four 3/16″×1/4″ slotted mounting holes. Color is gray. UL listed and CSA certified.

Enclosures with ***raised cover*** offer additional depth.

Overall Size, Ht.×Wd.	Flat Cover: Dp.	Flat Cover: Each	Raised Cover: Dp.	Raised Cover: Each
4″ ×4.5″	3″	7645K78 $39.13	5″	7645K81 $48.88
5.1″×2.4″	2.2″	7645K71♣ 18.54	—	—
5.5″×4.4″	2.9″	7645K72♣ 31.31	—	—
5.6″×3.3″	2.9″	7645K77♣ 24.08	—	—
6.3″×4.5″	3″	7645K73 44.73	5″	7645K74 56.09
8.5″×4.5″	3″	7645K75 49.74	5″	7645K76 63.20
10.8″×4.5″	3″	7645K79 55.74	5″	7645K82 70.65

♣ Opening size is approximately 1″ less than overall height and 0.5″ less than overall width.

Hazardous-Location Aluminum Enclosures (NEMA 7/9)

Engineered to handle indoor and outdoor hazardous locations, these enclosures meet NEMA 7 (Class I, Group B, C, D), and 9 (Class II, Group E, F, G). Also rated NEMA 4 for washdowns. Cover lifts off and includes aluminum screws. Working depth (area available for component mounting) is 6″, unless noted. Opening size is approximately 4.8″ less than overall height and width and wall thickness is 1/2″, except 16.4″ high enclosures, which have an opening size of 5″ less than overall height and width and a wall thickness of 3/4″. All have four 1/2″ Lg.×9/16″ Wd. mounting slots, unless noted. UL listed and CSA certified.

Panels are for mounting components inside and are made of aluminum.

Overall Size, Ht.×Wd.×Dp.	Enclosures: Each	Panels: Ht.×Wd.	Panels: Each
10.3″×10.3″× 6.1″	7624K21★ $580.67	5″ × 5″	7624K31 $55.29
12.3″×12.3″× 8.1″	7624K22 955.86	7″ × 7″	7624K32 72.25
14.3″×12.3″× 8.3″	7624K23 1,134.99	9″ × 7″	7624K33 91.31
16.4″×16.4″× 8.7″	7624K24▲ 1,613.10	10.5″×10.5″	7624K34 104.21
16.4″×16.4″×10.7″	7624K25▲■ 1,657.81	10.5″×10.5″	7624K34 104.21

★ Working depth is 4.3″. ▲ Has 8 mounting slots. ■ Working depth is 8″.

Submersible Polycarbonate Enclosures with Versa-Mount System (NEMA 6P)

For easy and flexible component installation, just mount DIN rails to the internal mounting bosses in these enclosures. The mounting bosses accept No. 10 self-tapping screws. Enclosures also let you adjust the mounting depth with the optional back panel adjustment mounting pads, sold separately below.

Enclosures resist dirt, washdowns, corrosion, oil/coolant spraying, and even periodic submersion in water (rated NEMA 4X, 6P, and 13). They're made of impact-resistant polycarbonate that withstands chipping under tough conditions, indoors and out. Cover has polycarbonate hinges, a neoprene gasket, and four captive screws. Enclosures include four mounting brackets with hardware. Working depth (area available for component mounting) is 1″ less than overall depth. Opening size is approximately 0.5″ less than overall height and 1.5″ less than overall width. All have four 3/16″ dia. mounting holes. Color is gray. UL and C-UL listed.

Panels are for mounting components inside and are made of aluminum. ***35 mm DIN rail*** is cut to size for mounting components inside and includes mounting screws.

Back panel adjustment mounting pads lets you adjust the depth of your back panel to fit the depth of the components you are using (adjusts to nearly the entire depth of the enclosure). You'll get four mounting pads that slide on the T-shaped rails and are held in place by a set screw. Pads have threaded brass inserts for attaching to the panel. Mounting hardware included. Add the ***quick-release latch*** for easy opening and closing. Reduces the NEMA rating to 4X, making it great for washdown environments but not submersion. Made of stainless steel. Mounting hardware included.

Also Available: Pole-mount adapter. Please ask for 5376K9 and specify enclosure part number and pole diameter (2″, 3″, or 4″).

With Clear Cover

With Opaque Gray Cover

Overall Size, Ht. × Wd. × Dp.	Enclosures with Clear Cover	Each	Enclosures with Opaque Gray Cover	Each	Panels Ht. × Wd.		Each	35 mm DIN Rail	Each
6.5″ × 7.4″ × 5.2″	5376K112	$80.00	5376K111	$71.11	4.9″ × 4.9″	5376K21	$11.20	5376K81	$16.00
8.4″ × 7.4″ × 5.2″	5376K122	91.56	5376K121	78.22	6.8″ × 4.9″	5376K22	12.75	5376K81	16.00
8.4″ × 9.3″ × 5.2″	5376K132	99.58	5376K131	89.78	6.8″ × 6.8″	5376K23	14.88	5376K82	19.42
10.5″ × 8.5″ × 3.5″	5376K162	105.78	5376K161	94.22	8.8″ × 6.9″	5376K27	14.93	5376K82	19.42
10.5″ × 9.3″ × 5.2″	5376K172	112.89	5376K171	99.56	8.8″ × 6.9″	5376K29	14.69	5376K82	19.42
10.5″ × 9.3″ × 7.3″	5376K142	119.11	5376K141	104.89	8.8″ × 6.9″	5376K29	14.69	5376K82	19.42
12.5″ × 11.5″ × 5.2″	5376K182	128.00	5376K181	112.00	10.8″ × 8.9″	5376K25	18.44	5376K83	21.11
12.5″ × 11.5″ × 7.3″	5376K152	141.33	5376K151	122.67	10.8″ × 8.9″	5376K25	18.44	5376K83	21.11
14.6″ × 13.5″ × 7.3″	5376K192	169.78	5376K191	157.33	12.8″ × 10.9″	5376K26	20.80	5376K84	26.87
19.0″ × 17.8″ × 11.5″	5376K312	248.00	5376K311	224.89	16.8″ × 14.9″	5376K28	32.00	5376K86	35.56

Back Panel Adjustment Mounting Pads	5376K31	Each	$18.18
Quick-Release Latch	5376K4	Each	$22.22

EMI/RFI Shielded Steel Enclosures

Protect equipment from electromagnetic interference (EMI) and radio frequency interference (RFI). Enclosures are rated NEMA 13 for indoor use to provide protection from dust, dirt, and oil/coolant spraying. Also known as JIC (Joint Industrial Council) boxes, they have a cover with a continuous steel hinge and a neoprene gasket covered with a plated steel mesh. Enclosures secure on three sides with screw clamps. Working depth (area available for component mounting) is approximately 1/2″ less than the overall depth. Opening size is approximately 5/8″ less than overall height and width. Made of 14-ga. steel, unless noted. Enclosures have four 5/16″ dia. mounting holes. All have a gray zinc plated finish. UL listed and CSA certified.

Panels are for mounting components inside and are made of steel.

Overall Size, Ht. × Wd. × Dp.	Enclosures	Each	Panels Ht. × Wd.		Each
6″ × 4″ × 3″	7816K21 ♦	$217.43	4 7/8″ × 2 7/8″	7847K21	$3.70
6″ × 6″ × 4″	7816K22 ♦	253.47	4 7/8″ × 4 7/8″	7847K22	4.43
8″ × 6″ × 3 1/2″	7816K23	268.47	6 3/4″ × 4 7/8″	7847K23	5.09
10″ × 8″ × 4″	7816K24	333.78	8 3/4″ × 6 7/8″	7847K24	6.93
12″ × 10″ × 5″	7816K25	425.87	10 3/4″ × 8 7/8″	7847K25	9.37
14″ × 12″ × 6″	7816K26	536.93	12 3/4″ × 10 7/8″	7847K26	12.26
16″ × 14″ × 6″	7816K27	632.48	14 3/4″ × 12 7/8″	7847K27	16.22

♦ 16-ga. steel.

Create-a-Box Custom Aluminum Enclosures

Choose an enclosure body from the sizes listed and two matching end panels to make your own dust-tight or water-tight enclosure. Enclosure bodies are aluminum and can be cut along (C) dimension (drilling and tapping new holes on one end is required for water-tight bodies). Integral guide rails make these enclosures great for printed circuit boards.

End panels require four mounting screws for securing to the enclosure body. *Dust-tight* panels are aluminum and provide IP40 dust-tight protection. Panels for 2.6″ Ht. enclosures require M3 × 6 mm self-tapping flat head screws. Panels for 3.8″ Ht. and 6.3″ Ht. enclosures require M4 × 16 mm flat head screws. Mounting screws are not included. *Water-tight* panels are die cast aluminum. They include four mounting screws and a neoprene gasket to provide IP65 protection against water projected from a nozzle.

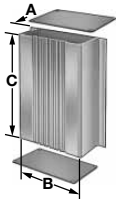

Overall Size, (A) × (B) × (C)	Opening Size, Ht. × Wd.	Enclosure Bodies	Each	End Panels★ Dust Tight	Each	Water Tight	Each
2.7″ × 4.1″ × 6″	2.6″ × 3.8″	3686K11 ♥	$17.10	3686K15	$7.32	———	———
2.7″ × 4.1″ × 12″	2.6″ × 3.8″	3686K12 ♥	28.76	3686K15	7.32	———	———
2.7″ × 4.1″ × 39.3″	2.6″ × 3.8″	3686K14 ♥	69.89	3686K15	7.32	———	———
4.1″ × 6.4″ × 6″	3.8″ × 6.2″	3686K31	45.49	3686K35	28.06	3686K36	$49.74
4.1″ × 6.4″ × 12″	3.8″ × 6.2″	3686K32	72.44	3686K35	28.06	3686K36	49.74
4.1″ × 6.4″ × 18″	3.8″ × 6.2″	3686K33	99.37	3686K35	28.06	3686K36	49.74
6.5″ × 7.7″ × 12″	6.3″ × 7.5″	3686K42	113.94	3686K45	29.96	3686K46	71.79
6.5″ × 7.7″ × 18″	6.3″ × 7.5″	3686K43	161.62	3686K45	29.96	3686K46	71.79

★ Two required. ♥ Has 1/2″ side flanges.

Extra-Large Floor-Mount Steel Enclosures

These 12-ga. steel enclosures have heavy duty lifting eyes, a neoprene gasket, a steel continuous hinge, and a welded-on 12″ high floor stand. Working depth is approximately 1″ less than overall depth. Color is gray. UL listed and CSA certified.

Oil-tight indoor (NEMA 12) enclosures have a key-locking handle and two keys.

Washdown indoor/outdoor (NEMA 4) enclosures have stainless steel clamps on each door to ensure a water-tight seal and a hasp for padlocking (padlock not included; 5/16″ max. shackle dia.).

Panels are for mounting components inside and are made of steel.

Oil-Tight Indoor

Overall Size, Ht. × Wd. × Dp.	Enclosures	Each	Panels Ht. × Wd.		Each
Oil-Tight Indoor (NEMA 12)					
60 1/16″ × 48 1/16″ × 10 1/16″	70105K31	$1,597.74	56″ × 44″	70105K42	$295.72
72 1/16″ × 60 1/16″ × 12 1/16″	70105K34	2,124.20	68″ × 56″	70105K44	434.29
Washdown Indoor/Outdoor (NEMA 4)					
62 1/16″ × 48 1/16″ × 10 1/16″	70105K36	2,171.43	56″ × 44″	70105K42	295.72
74 1/16″ × 72 1/16″ × 24 1/16″	70105K41	3,643.26	68″ × 68″	70105K45	518.24

Steel Wiring Trough Enclosures

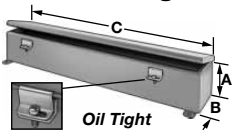

Oil Tight

Rain Tight

Built to house runs of control and power cable, these enclosures have a gray powder-coated finish. All have four 1/4″ dia. mounting holes. UL listed and CSA certified.

Oil-tight indoor (NEMA 12) enclosures are made of 14-ga. steel and protect from oil/coolant dripping. They're also rated IP55 for protection from water projected from a nozzle. Cover has a neoprene gasket and steel hinges and secures with screw clamps. ***Rain-tight indoor/outdoor (NEMA 3R)*** enclosures are made of 16-ga. galvanized steel, unless noted. Cover lifts off and has steel screws.

(A)×(B)×(C)		Each
Oil Tight (NEMA 12)		
2 1/2″×2 1/2″×12″	7743K41	$87.37
2 1/2″×2 1/2″×24″	7743K42	99.74
2 1/2″×2 1/2″×36″	7743K43	114.55
4″×4″×12″	7743K44	101.31
4″×4″×24″	7743K45	127.72
4″×4″×36″	7743K46	153.56
6″×6″×12″	7743K47	120.24
Oil Tight (NEMA 12) (Cont.)		
6″×6″×24″	7743K48	$159.13
6″×6″×36″	7743K49	198.40
8″×8″×12″	7743K51	144.99
8″×8″×24″	7743K52	192.71
8″×8″×36″	7743K53	244.96
Rain Tight (NEMA 3R)		
4″×4″×24″	75215K21	69.20
Rain Tight (NEMA 3R) (Cont.)		
4″×4″×36″	75215K22	$89.99
4″×4″×48″	75215K23	110.46
6″×6″×24″	75215K24	94.15
6″×6″×36″	75215K25	125.23
6″×6″×48″	75215K26	155.61
8″×8″×24″	75215K27●	126.25
8″×8″×48″	75215K28●	211.06

● 14-ga. galvanized steel.

Slant-Top Steel Enclosures

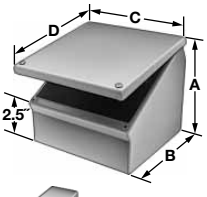

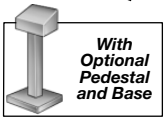

With Optional Pedestal and Base

Mount these enclosures on either of two sides, creating a 30° or 60° slanted surface. Install on the floor using the optional pedestal and base, or directly onto a desktop or wall. Rated NEMA 12 for protection from oil/coolant dripping and IP65 for water projected from a nozzle. Made of 14-ga. steel with a gray powder-coated finish. They have a neoprene-gasketed screw-down cover with a continuous steel hinge. UL listed and CSA certified.

Optional ***pedestal*** is 14-ga. steel with mounting flanges, mounting hardware, and gasketed access plate. Optional ***pedestal base*** is 7-ga. steel with leveling screws and four 5/16″ dia. holes for bolting to the floor.

(A)	(B)	(C)	(D)		Each
7.1″	7.4″	8.3″	8.3″	70015K11	$119.68
7.1″	7.4″	12.3″	8.3″	70015K12	145.46
7.1″	7.4″	16.3″	8.3″	70015K18	154.24
9.1″	10.9″	12.3″	12.3″	70015K13	165.33
9.1″	10.9″	16.3″	12.3″	70015K14	176.12
9.1″	10.9″	24.3″	12.3″	70015K19	233.85
11.1″	14.4″	20.3″	16.3″	70015K21	244.33
Pedestal (35″ Ht.×4″ Wd.×4″ Dp.)				70015K15	231.60
Pedestal Base (18″ Lg.×18″ Wd.×1″ Ht.)				70015K17	156.58

Push-Button Slant-Top Enclosures

Two Holes (2×1)

10 Holes (5×2)

With Optional Pedestal and Base

Just like the Slant-Top Steel Enclosures on this page, mount these console-style steel enclosures at a 30° or 60° angle, plus they have holes for push-buttons, switches, and indicating lights. Install on the floor using the optional pedestal and base, or directly onto a desktop or wall. Rated NEMA 13 for indoor protection from oil/coolant spray when used with NEMA 13 rated switches. Cover lifts off and has a neoprene gasket and captive screws. Enclosures are 14-ga. steel with a gray powder-coated finish and have four 3/16″×1/4″ slotted mounting holes. UL listed and CSA certified.

Optional ***pedestal*** is 14-ga. steel with mounting flanges, mounting hardware, and gasketed access plate. Optional ***pedestal base*** is 7-ga. steel with leveling screws and four 5/16″ dia. holes for bolting to the floor.

Holes No.	Holes Col.×Row	(A)	(B)	(C)	(D)	22 mm (0.89″) Dia. Holes	Each	30 mm (1.20″) Dia. Holes	Each
1	1×1	4.8″	4.5″	3.5″	3.5″	9203K11	$76.27	7756K21	$74.07
2	2×1	4.8″	4.5″	5.7″	3.5″	9203K12	88.83	7756K22	87.55
3	3×1	4.8″	4.5″	8″	3.5″	9203K13	101.45	7756K23	99.20
4	4×1	4.8″	4.5″	10.2″	3.5″	9203K14	113.86	7756K24	110.26
4	2×2	6.8″	7.8″	6.5″	7.3″	9203K15	128.05	7756K25	132.08
6	3×2	6.8″	7.8″	8.7″	7.3″	9203K16	147.97	7756K26	140.89
8	4×2	6.8″	7.8″	11″	7.3″	9203K17	167.89	7756K27	172.81
9	3×3	7.9″	9.7″	8.7″	9.5″	9203K18	175.33	7756K28	180.52
10	5×2	6.8″	7.8″	13.2″	7.3″	9203K19	186.04	7756K29	191.77
12	6×2	6.8″	7.8″	15.5″	7.3″	9203K21	203.23	7756K31	209.44
Pedestal (35″ Ht.×4″ Wd.×4″ Dp.)						70015K15	Each $231.60		
Pedestal Base (18″ Lg.×18″ Wd.×1″ Ht.)						70015K17	Each $156.58		

Push-Button Enclosures

Steel Six Holes (2×3)

Fiberglass Three Holes (1×3)

Holes are already cut for easy switch installation. The cover lifts off and has captive screws, unless noted. NEMA ratings apply when used with equivalently rated switches.

Oil-tight steel enclosures (NEMA 13) provide protection indoors from dust, light splashing, and oil spray. Made of 14-ga. steel with a gray powder-coated finish, unless noted. Units with *22 mm (0.89″) dia. holes* have nitrile/PVC-gasketed covers and are UL listed and CSA certified. Units with *30 mm (1.20″) dia. holes* have polyurethane-gasketed covers and are UL and C-UL listed. ***Corrosion-resistant stainless steel enclosures (NEMA 4X)*** are rated for washdowns and corrosion, indoors and out. Made of Type 304 stainless steel. 14-ga., unless noted. Cover has a neoprene gasket. UL listed and CSA certified. ***Corrosion-resistant fiberglass enclosures (NEMA 4X/6P/12)*** protect from washdowns, corrosion, oil/coolant dripping, and periodic submersion in water, indoors and out. Made of fiberglass-reinforced polyester. Cover has a polyurethane gasket. Color is gray. UL and C-UL listed.

Holes No.	Holes Col.×Row	Overall Size, Ht.×Wd.×Dp.	Mtg. Hole Dia.		Each
Oil-Tight Steel Enclosures (NEMA 13)					
22 mm (0.89″) Dia. Holes					
1	1×1	4.3″×3.1″×3.5″	1/4″	7724K51★	$48.87
2	1×2	6.1″×3.1″×3.5″	1/4″	7724K52	54.28
3	1×3	8″×3.1″×3.5″	1/4″	7724K53	60.91
4	1×4	9.9″×3.1″×3.5″	1/4″	7724K54	67.63
6	2×3	9.5″×5.3″×4.3″	1/4″	7724K55▲	85.69
30 mm (1.20″) Dia. Holes					
1	1×1	4.6″×3.5″×3″	5/16″	75045K91	44.15
2	1×2	6.9″×3.5″×3″	5/16″	75045K92	50.37
3	1×3	9.1″×3.5″×3″	5/16″	75045K93	56.98
4	1×4	11.4″×3.5″×3″	5/16″	75045K97	64.12
4	2×2	8.4″×6.5″×3.3″	5/16″	75045K94	70.58
6	2×3	10.6″×6.5″×3.3″	5/16″	75045K95	78.75
9	3×3	10.6″×8.8″×3.3″	5/16″	75045K96	101.14
Corrosion-Resistant Stainless Steel Enclosures (NEMA 4X)					
22 mm (0.89″) Dia. Holes					
1	1×1	4.5″×3.5″×2.8″	1/4″	5639K11♦	143.73
2	1×2	6.8″×3.5″×2.8″	1/4″	5639K12♦	170.02
3	1×3	9″×3.5″×2.8″	1/4″	5639K13	196.59
4	1×4	11.3″×3.5″×2.8″	1/4″	5639K14	222.38
30 mm (1.20″) Dia. Holes					
1	1×1	4.5″×3.5″×2.8″	1/4″	75725K11♦	129.72
2	1×2	6.8″×3.5″×2.8″	1/4″	75725K12♦	153.04
3	1×3	9″×3.5″×2.8″	1/4″	75725K13	176.78
4	1×4	11.3″×3.5″×2.8″	1/4″	75725K14	205.84
6	2×3	10.5″×6.5″×3″	1/4″	75725K15▲	271.13
9	3×3	10.5″×8.7″×3″	1/4″	75725K16▲	321.99
Corrosion-Resistant Fiberglass Enclosures (NEMA 4X/6P/12)					
22 mm (0.89″) Dia. Holes					
1	1×1	6.6″×3.8″×3.9″	7/32″	7758K21	44.14
2	1×2	6.6″×3.8″×3.9″	7/32″	7758K22	45.27
3	1×3	6.6″×3.8″×3.9″	7/32″	7758K23	49.25
4	1×4	8.9″×3.8″×3.9″	7/32″	7758K24	51.18
5	1×5	11.1″×3.8″×3.9″	7/32″	7758K28	58.10
30 mm (1.20″) Dia. Holes					
1	1×1	6.6″×3.8″×3.9″	7/32″	6916K31	44.14
2	1×2	6.6″×3.8″×3.9″	7/32″	6916K32	45.27
3	1×3	8.9″×3.8″×3.9″	7/32″	6916K33	49.25
4	1×4	11.1″×3.8″×3.9″	7/32″	6916K34	51.18
4	2×2	7.5″×7.5″×4.8″	7/32″	6916K35	61.73
5	1×5	13.8″×3.6″×3.1″	7/32″	6916K38	58.10
6	2×3	9.6″×7.5″×4.7″	7/32″	6916K36	68.49
9	3×3	11.6″×9.4″×4.3″	7/32″	6916K37	86.78

★ 16-ga. steel. ▲ Has a hinged cover. ♦ Cover is 16 ga.

For information about NEMA and IP enclosure ratings, see page 843.

Oil/Water-Tight Hole Plugs (NEMA 4/13)

An oil-resistant gasket provides a tight seal for unused push-button holes or knockouts to protect against dust, dirt, oil, and water. Use on walls up to 0.31″ thick. All are rated NEMA 13 for protection from oil/coolant spray. UL recognized and CSA certified.

Galvanized steel plugs are 16-ga. with a gray powder-coated finish and neoprene gasket. They're suitable for washdown-rated (NEMA 4) enclosures. ***Type 304 stainless steel*** plugs are 16-ga. with an EPDM gasket. Suitable for corrosion-resistant (NEMA 4X) enclosures.

Hole/Knockout Trade Size	Hole/Knockout Dia.	Head Dia.	Galvanized Steel	Each	Type 304 Stainless Steel	Each
For Push-Button Holes						
22 mm	7/8″	1 1/4″	7845K51	$6.67	7845K61	$15.29
30 mm	1 1/4″	1 3/4″	7845K52	9.08	7845K62	19.51
For Knockouts and Conduit Openings						
1/2″	7/8″	1 3/8″	7845K53	6.04	7845K63	15.29
3/4″	1 1/16″	1 9/16″	7845K54	7.62	7845K64	18.82
1″	1 3/8″	1 7/8″	7845K55	10.48	7845K65	25.26
1 1/4″	1 11/16″	2 3/16″	7845K56	11.64	7845K66	28.96
1 1/2″	2″	2 1/2″	7845K57	13.31	7845K67	32.60
2″	2 1/2″	3″	7845K58	14.65	7845K68	36.13

Steel Hole Plugs

Seal unused knockouts and holes. These 16-ga. zinc-plated galvanized steel plugs are indented for easy self-centering on walls up to 1/8″ thick. One screw (included) holds them in place. UL listed.

Hole/Knockout Trade Size	Hole/Knockout Dia.	Head Dia.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1/2″	7/8″	1 3/16″	100	71995K81	$0.82	$0.62
3/4″	1 1/16″	1 3/8″	50	71995K82	1.04	.81
1″	1 5/16″	1 5/8″	25	71995K83	1.45	1.15
1 1/4″	1 5/8″	2 1/16″	25	71995K89	1.96	1.47
1 1/2″	2″	2 7/16″	10	71995K84	3.14	2.35
2″	2 3/8″	2 15/16″	10	71995K85	3.84	2.88
2 1/2″	2 7/8″	3 3/4″	10	71995K86	4.58	3.43
3″	3 1/2″	4 1/2″	10	71995K87	5.64	4.23
4″	4 7/16″	5 1/2″	10	71995K88	8.17	6.12

Threaded Hole Plugs

Plug threaded holes in electrical panels and boxes. ***NPT*** plugs are aluminum. UL listed and CSA certified. ***PG*** and ***metric*** plugs are nickel-plated brass.

NPT

PG and Metric

Thread Size	Head Dia.		Each 1-9	Each 10-Up
NPT				
1/2″	3/4″	7280K11	$2.24	$1.80
3/4″	1″	7280K12	2.50	2.01
1″	1 1/4″	7280K13	3.38	2.72
1 1/4″	1 1/2″	7280K14	4.06	3.26
1 1/2″	1 3/4″	7280K15	4.83	3.88
2″	2 1/4″	7280K16	8.70	6.99
PG				
PG-7	0.55″	7381K11	1.17	.94
PG-9	0.66″	7381K12	1.28	1.03
PG-11	0.78″	7381K13	1.65	1.33
PG-16	0.94″	7381K14	2.10	1.69
PG-21	1.17″	7381K15	3.82	3.07
PG-29	1.52″	7381K16	6.70	5.39
Metric				
M12×1.5	0.55″	7381K21	2.26	1.81
M16×1.5	0.70″	7381K22	2.42	1.95
M20×1.5	0.86″	7381K23	2.50	2.01
M25×1.5	1.10″	7381K34	5.99	4.81

Corrosion-Resistant Fiberglass Hole Plugs (4X/6P)

For your outdoor enclosures and boxes, as well as those in washdown and corrosive environments, use these fiberglass plugs to seal knockouts and holes. They meet IP68 for protection against continuous submersion and provide superior corrosion and UV resistance. A reducer bushing lets you use the plug in various trade sizes while an EPDM gasket protects against dust and submersion. Use on walls up to 1/4″ thick. Color is gray. UL recognized.

Trade Size	Hole/Knockout Dia.	Head Dia.		Each
—	0.5″-0.56″, 0.63″-0.69″, 0.75″-0.81″	1.00″	9357K11	$5.63
1/2″	0.88″	1.20″	9357K15	5.60
1/2″, 3/4″	0.88″-1″, 1.06″-1.12″, 1.22″-1.28″	1.50″	9357K12	6.48
1″, 1 1/4″	1.38″-1.5″, 1.69″-1.75″	2.00″	9357K13	11.28
1 1/2″, 2″	2″-2.12″, 2.5″-2.56″	2.75″	9357K14	14.34
3″	3.62″	4.00″	9357K16	21.93
4″	4.62″	5.00″	9357K17	36.50

Snap-In Steel Hole Plugs

Just snap these in to cover knockouts and holes in electrical panels and boxes, faucets, tubing ends, and metal furniture (up to 1/8″ thick). Made of steel.

Hole/Knockout Trade Size	Hole/Knockout Dia.	Head Dia.	Pkg. Qty.		Per Pkg.
1/2″	7/8″	1 1/16″	25	8087K12	$6.92
3/4″	1 1/8″	1 1/4″	25	8087K14	7.68
1″	1 3/8″	1 1/2″	25	8087K16	8.95
1 1/4″	1 3/4″	1 13/16″	25	8087K18	10.48
1 1/2″	2″	2 3/16″	25	8087K25	12.58
2″	2 1/2″	2 11/16″	10	8087K27	6.03

Enclosure Vents

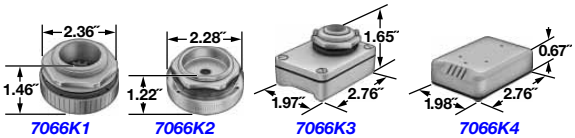

7066K1 ***7066K2*** ***7066K3*** ***7066K4***

Sometimes damage doesn't come from the outside ... make your enclosure a safe environment for your components. Vents are gray. All except 7066K2 are rated NEMA 4X for washdowns and corrosion and are UL recognized.

Breather vents allow sealed enclosures to breathe, thereby preventing pressure from building up or dropping inside. They thread into themselves, so there's no need for mounting hardware. *Circular* vents are rated IP66 for protection from power jets of water. Use on panels up to 1/2″ thick. Gasket is NBR rubber. CE approved. *Rectangular* vent is for use on panels up to 1/4″ thick. Gasket is EPDM.

Drain vent mounts to the outside of your enclosure to prevent unwanted moisture from building up inside. To install, drill ventilation holes and mounting holes into enclosure. Gasket is EPDM and mounting screws are included.

Style	Material	Panel Cutout Dia.	Depth In Enclosure		Each
Breather Vents					
Circular	ABS Plastic	1.6″	0.6″	7066K1	$17.70
Circular	Type 316 Stain. Steel	1.6″	0.35″	7066K2	177.42
Rectangular	Plastic	0.875″	0.54″	7066K3	42.57
Drain Vent					
Rectangular	Plastic	—	—	7066K4	35.34

Underground Enclosures

Get easy access to underground services such as electric, water, and telephone. Lighter than all-concrete enclosures, these are made of polymer concrete reinforced with fiberglass. For use in sidewalk and ground/grass applications, enclosures withstand freeze/thaw conditions and occasional vehicular traffic (see load rating below). All are impact and corrosion resistant and nonconductive. The bottom is open to allow for water drainage. You can stack multiple enclosures in deep holes with only one cover (sold separately). Color is gray. UL listed.

Covers include two bolts for attaching to enclosure.

Cover hook makes it easier to lift cover; it's 7″ long and made of electroplated steel.

Overall Size, Lg.×Wd.×Ht.	Inside Size, Lg.×Wd.×Ht.	Load Rating, lbs.	Enclosures	Each	Covers	Each
14 3/4″×14 3/4″×12 3/4″	12″ ×12″ ×12″	8000	7941K21	$105.48	7941K51	$70.32
20 1/2″×13 1/2″×12″	17 1/2″×10 1/2″×11 1/4″	8000	7941K22	127.72	7941K52	70.20
27 1/4″×16 1/4″×12″	24″ ×13″ ×11 1/4″	5000	7941K23	160.45	7941K53	82.20
33 1/8″×20 1/8″×12″	29 7/8″×16 7/8″×11 1/4″	5000	7941K24	198.74	7941K54	96.05

Cover Hook ..... 7941K85 Each $24.23

Enclosure with Optional Cover

Bottom View

For information about NEMA and IP enclosure ratings, see page 843.

Compact ABS Electronics Enclosures

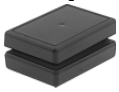

1.5″ Deep Enclosure

Small and compact, these indoor enclosures are ideal for electronic applications such as industrial control, computer interface, test equipment, sensors, and security. All are made of lightweight, impact-resistant ABS plastic and have a lift-off cover. Steel screws to secure the cover are included. Color is black.

Overall Size, Ht.×Wd.×Dp.		Each	Overall Size, Ht.×Wd.×Dp.		Each
2.1″×1.4″×0.6″	7593K21	$2.66	5.6″×3.3″×1.5″	7593K28	$6.63
2.3″×1.6″×0.8″	7593K22	2.66	5.6″×3.3″×2.5″	7593K29	7.54
2.4″×1.9″×0.9″	7593K23	2.66	6.9″×4.9″×1.5″	7593K31	9.66
3.6″×2.3″×1″	7593K24	3.80	6.9″×4.9″×2.5″	7593K32	11.14
3.6″×2.3″×1.5″	7593K25	4.43	9.5″×6.3″×1.5″	7593K33	14.54
4.4″×3.3″×1.5″	7593K26	5.63	9.5″×6.3″×2.5″	7593K34	15.17
4.4″×3.3″×2.5″	7593K27	6.37			

ABS Electronics Enclosures with Battery Holder and Protective Boot

Enclosure with Optional Protective Boot

Want to enclose electronic instruments that require a power source? These black ABS plastic enclosures have holders for one 9-volt battery (battery not included). Cover lifts off and is secured with included zinc-plated steel screws.

Optional ***protective boots*** are TPE with a built-in stand to protect the enclosure from damage and allow it to stand upright; great if you're using it as an instrument holder. **To Order:** For protective boots, please specify color: black, light blue, dark blue, orange, red, or yellow.

Enclosures: Overall Size, Ht.×Wd.×Dp.		Each	Protective Boots: Overall Size, Ht.×Wd.×Dp.		Each
3.8″×2.4″×1″	7156K1	$5.60	4.5″×2.9″×1.3″	7156K11	$7.24
4.6″×2.8″×1″	7156K2	6.28	5.6″×3.3″×1.4″	7156K21	7.68
4.9″×2.8″×0.9″	7156K3	6.51	5.6″×3″ ×1.2″	7156K31	8.55
5.7″×3.6″×1.3″	7156K4	6.93	6.9″×4.2″×1.7″	7156K41	13.08
7.5″×4″ ×1.3″	7156K5	8.59	8.9″×4.6″×1.7″	7156K51	13.94

Hand-Held Enclosures

9215K11 and K12

9215K13, K14, and K15

Unique impact- and water-resistant hand-held enclosures are used in many control applications such as mobile control, wireless communication, hand-held lasers, and remote switch controls. Enclosures meet IP65 for protection against water projected from a nozzle. Housing is yellow and made of glass-filled polyamide. The removable front panel is black polyester and has a neoprene gasket. They include wall-mount brackets, mounting screws, and a cord-grip fitting with M20 threads for strain relief (accepts 0.24″ to 0.47″ dia. cord).

Overall Size, Ht.×Wd.×Dp.	Front Panel Size, Ht.×Wd.		Each
7.5″×2.8″×3.7″	2.4″×2.4″	9215K11	$54.17
7.9″×4.5″×3.7″	2.5″×3.9″	9215K12	57.88
8.1″×3.4″×3.4″	3″ ×3″	9215K13	55.86
8.9″×6.3″×3.4″	3.8″×6″	9215K14	60.88
9.3″×3.4″×3.4″	4.2″×3″	9215K15	58.62

Steel Electronics Cabinets

Perfect for housing modem racks, fax and file servers, and other data and networking equipment, these cabinets have vertical rails spaced 19″ apart with holes to accommodate standard 19″ wide components. Cabinets have a lockable rear door, a lockable front door with clear glass window, a roof cable access panel, removable locking sidewalls, and an open base for cable exit as well as ventilation. They have two sets of depth adjustable mounting rails and four leveling feet for uneven floors. Overall capacity is 882 lbs. All are made of steel. Color is light gray.

Shelves can be mounted at any level using the included mounting hardware. Size is 16″ Wd.×20″ Dp. Capacity is 110 lbs.

Telescopic slide makes a shelf fully extendable.

Overall Size, Ht.×Wd.×Dp.	Cabinets	Each	Shelves	Each
47¼″×31½″×31½″	46365T23	$1,301.85	46365T52	$275.94
78¾″×23⅝″×31½″	46365T21	1,340.89	46365T51	277.60
Telescopic Slide	46365T77	Each $137.61		

Dual-Access Easy-View ABS Instrumentation Enclosures (NEMA 12)

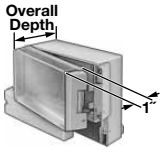

These wall-mount indoor enclosures have a cover on the lower chamber for fast access to wiring connections, without having to disturb instrumentation that you install in the upper section (such as an automated boiler control, flowmeter, or irrigation system meter). Enclosures are rated NEMA 12 for protection from oil/coolant dripping and IP65 for protection from water projected from a nozzle.

The upper section has a clear polycarbonate cover that makes it easy to view instrumentation. Cover size is the same as the panel size shown in the table. Housing and hinge are ABS plastic. Enclosures have a push-button latch for easy access and a neoprene-gasketed cover. All are gray and have three 3/16″ mounting holes.

The lower chamber has one PG-9 (9/16″ dia.) and one PG-13.5 (13/16″ dia.) knockout on the bottom and multiple PG-11 (3/4″ dia.) knockouts on the bottom and back, except 9230K16, which has one PG-11 (3/4″ dia.) and one PG-16 (7/8″ dia.) knockout on the bottom and multiple PG-13.5 (13/16″ dia.) knockouts on the bottom and back.

Panels are for mounting instrumentation inside the front of the enclosure and are made of aluminum.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Panels: Ht.×Wd.		Each
6.3″× 6.5″×3.7″	9230K11	$49.28	3.9″× 6.3″	9230K31	$11.76
7.3″× 8.4″×4.1″	9230K13	54.76	4.7″× 8.1″	9230K33	11.88
8.5″×10.1″×5.2″	9230K14	79.85	5.9″× 9.9″	9230K34	13.92
12.6″×14.3″×5.9″	9230K16	104.17	8.8″×13.9″	9230K36	38.10

19″ Wide Steel Electronics Racks

Floor Mount *Wall Mount*

Also known as relay racks, these racks provide easy access to your data communication components. Use where your equipment doesn't need to be enclosed. Racks have rails spaced 19″ apart for mounting standard 19″ wide components. Rails are 11-ga. steel with 10-32 threads (rack screws are included). Racks have a black finish.

Floor-mount racks have an overall capacity of 1600 lbs. *Utility shelf for floor-mount racks* has a vented pattern for air circulation. Capacity is 60 lbs.; size is 5¼″ Ht.×17¾″ Dp. *Optional support base for floor-mount racks* adds stability when heavy equipment is installed in racks.

Wall-mount rack is 18″ deep and has a swinging-gate design so you can access the rear of the rack. Hook-and-loop cable hoops are included for mounting components. Overall capacity is 100 lbs.

Overall Ht.	Usable Mtg. Ht.		Each
Floor-Mount Racks			
72″	66½″	18505T15	$272.18
84″	78¾″	18505T17	288.67
Utility Shelf for Floor-Mount Racks		18505T26	90.96
Optional Support Base for Floor-Mount Racks		18505T28	131.56
Wall-Mount Rack			
24½″	21″	18505T31	349.18

Steel Electronics Enclosures

Rails to accept standard 19″ wide components and racks are on both the front and back of these 16-ga. steel enclosures. Overall capacity is 800 lbs. They include handles, rubber feet, and 10-32 clip nuts for mounting components. 10-32 screws included. Color is light gray.

Optional aluminum ***solid rear panels*** allow access for repairs and maintenance. Optional aluminum ***front panels*** let you cover up the front area where no components are present. All panels are 1/8″ thick.

Overall Size, Ht.×Wd.×Dp.	Enclosures	Each	Solid Rear Panels	Each
16″ ×21″×24½″	7648K61	$338.71	7648K68	$47.42
19½″×21″×24½″	7648K62	361.68	7648K69	58.02
30″ ×21″×24½″	7648K63	388.85	7648K71	95.77

Ht.×Wd.	Solid Front Panels	Each	Vented Front Panels	Each
5¼″×19″	7648K64	$21.97	7648K66	$20.87
10½″×19″	7648K65	35.15	7648K67	34.74

About Choosing an Electrical Switch

An electrical switch is used to turn power to a device on and off. This occurs when the switch closes or opens a set of contacts within an electrical circuit. The contacts act like a bridge that closes to allow electricity to pass through the circuit.

Switch Style— Choose the style that's right for your application. The following pages include push-button, toggle, rocker, foot switch, limit switch, and relay styles, among others.

Industry Designation— A standard naming convention that describes the contact for each switch.

Number of Poles: Determine the number of circuits you'll need to switch. Each circuit requires at least one set of contacts or "poles." The number of poles on a switch is indicated by the first two letters of the contact type (SP for single pole, DP for double pole, etc.).

A *single throw (ST)* switch is designed to be either open (off) or closed (on) before switching. A switch designed to be open is called normally open (NO), while a switch designed to be closed is normally closed (NC).

A *double throw (DT)* switch can be wired to be normally open or normally closed, offering greater flexibility. Another advantage of a double throw switch is that it can shift power between devices.

For example, in the diagrams at right, **SPST-NO** shows a single circuit that controls one device (a light bulb) and requires a single pole switch. **SPDT** shows a single pole double throw switch used to switch power between two lights. **DPST-NO** shows two circuits that power two light bulbs and require a double pole switch.

Switch Action— Decide if you want the switch to stay on only while you press it, such as your car horn (momentary), or if you want the switch to stay on when released, as with most light switches (maintained). Momentary switches "spring back" and maintained switches "stay switched."

Amp or Load Rating— You need to know how much electrical current will flow through the switch at the voltage of your circuit. You can compute this current if you know the amount of power required by the device you want to control.

For example, you have a 60 watt bulb powered by a 120 volt AC power supply. Use the formula **Current (amps) = Power (watts) ÷ Voltage (volts)** to calculate that the light bulb will draw 0.5 amps of current. You must select a switch with an amp rating higher than 0.5 amps at 120 volts AC. Remember, the required amp rating may change when there is a change in voltage.

Control Voltage— Some switches are activated by pressing a button (physical force), while other switches, such as relays, are activated by applying a voltage (electrical force). Relays need a control voltage (also known as an input or coil voltage) to operate. If your switch requires electrical activation, make sure your system can supply the appropriate voltage. If you need to use multiple relays, you may also want to look at power consumption (the amps or volt-amps drawn by the coil of the relay) to ensure your system can supply the required amount.

Industry Designation (● = Terminal)	No. of Circuits	Before Switching, Circuit Is	No. of Terminals
SPST-NO—Single Pole Single Throw, Normally Open	1	Off	2
SPST-NC—Single Pole Single Throw, Normally Closed	1	On	2
SPDT—Single Pole Double Throw, Can Be Wired Normally Open or Normally Closed	1	1 Off or 1 On	3
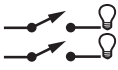 **DPST-NO—**Double Pole Single Throw, Normally Open	2	2 Off	4
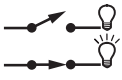 **DPST-NO/NC—**Double Pole Single Throw, 1 Normally Open and 1 Normally Closed	2	1 Off and 1 On	4
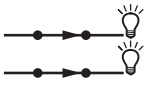 **DPST-NC—**Double Pole Single Throw, Normally Closed	2	2 On	4
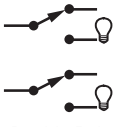 **DPDT—**Double Pole Double Throw, Can Be Wired Normally Open or Normally Closed	2	2 Off or 2 On	6

30 mm Panel Cutout Metal Push-Button Switches

Their durable construction withstands abuse in demanding environments. Body is metal; button is plastic. Switches mount in a 30 mm (1 3/16″) dia. panel cutout and have screw terminal connections. Depth behind panel is 1 3/4″. Rated 6 amps @ 120 volts AC and 5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. UL listed and CSA certified. For replacement contacts and accessories, see 65575K on page 857.

Washdown switches are rated NEMA 4 and 13 for splashing water and oil/coolant spraying.

Corrosion-resistant washdown switches are oil- and watertight as well as rated NEMA 4X for protection from corrosion.

To Order: Please specify button color where necessary.

Flush

Projecting

Mushroom

No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Available Colors	Washdown		Corrosion-Resistant Washdown	
Flush (1″ Dia.)									
1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green, Red	75759K2	$31.98	75759K41	$34.60
1	On	Springs Back (Momentary)	2	SPST-NC	Black, Green, Red	75759K8	34.60	75759K42	34.60
2	1 Off, 1 On	Springs Back (Momentary)	4	DPST-NO/NC	Black, Green, Red	75759K5	46.22	75759K43	46.98
Projecting (1″ Dia.)									
1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green, Red	75759K3	33.89	75759K44	34.60
1	On	Springs Back (Momentary)	2	SPST-NC	Red	75759K34	33.89	75759K45	34.60
2	1 Off, 1 On	Springs Back (Momentary)	4	DPST-NO/NC	Black, Green, Red	75759K6	46.22	75759K46	46.98
Mushroom (1 5/8″ Dia.)									
2	1 Off, 1 On	Springs Back (Momentary)	4	DPST-NO/NC	Red	75759K51	69.78	75759K47	71.51
2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	Red	75759K53	92.23	75759K48	87.73
Mushroom (2 1/2″ Dia.)									
1	Off	Springs Back (Momentary)	2	SPST-NO	Red	75759K13	54.18	75759K49	67.38
1	On	Springs Back (Momentary)	2	SPST-NC	Red	75759K17	56.62	75759K52	67.38

For information about choosing an electrical switch, see page 855.

30 mm Panel Cutout Premium Metal Switches

Sealed to keep out dirt and other contaminants, these switches have a long operating life. Body is metal; button is plastic (except key switches, which are all metal). Switches mount in a 30 mm (1 3/16″) dia. panel cutout and have screw terminal connections. Depth behind panel is 1 13/16″. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. They're oil- and watertight, meeting NEMA 4, NEMA 13, and IP66. UL listed, CSA certified, and CE marked.

Two-position lever and ***key*** switches prevent the switch from being caught between two positions. Key switches are opened with the same key (keyed alike) and include two keys; turn left to remove. ***Three-position*** switches are off in the center position. ***Illuminated lever*** switches have an input voltage of 120 AC.

To Order: Please specify color where necessary: black, green (Grn), red, or yellow (Yel). For illuminated push-button switches, also specify input voltage: 24 AC/DC, 120 AC, or 240 AC/DC.

Switch labels are black plastic with white letters, unless stated otherwise. **To Order:** Please specify message: Blank (black), Blank (red), Open, Close, Up, Down, Forward, Reverse, On, Off (red with black letters), Off-On, Hand-Off-Auto, Jog, Reset, Run, Start, Start-Stop, Stop (red with black letters), or Emergency Stop (red with black letters).

Push-Button

Flush

Projecting

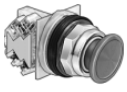

Mushroom

Illuminated Push-Button

Projecting with Guard

Lever

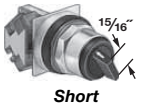

Short

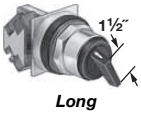

Long

Key

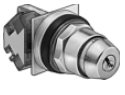

Switch Label

No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Available Colors		
Push-Button							
Flush (1″ Dia.)							
1	Off	Springs Back (Momentary)	2	SPST-NO	Multicolor■	9235K17	$38.98
1	On	Springs Back (Momentary)	2	SPST-NC	Multicolor■	9235K18	38.98
2	1 Off, 1 On	Springs Back (Momentary)	4	DPST-NO/NC	Multicolor■	9235K19	52.76
Projecting (1″ Dia.)							
1	Off	Springs Back (Momentary)	2	SPST-NO	Multicolor■	9235K27	38.98
1	On	Springs Back (Momentary)	2	SPST-NC	Multicolor■	9235K28	38.98
2	1 Off, 1 On	Springs Back (Momentary)	4	DPST-NO/NC	Multicolor■	9235K29	52.76
Mushroom (1 3/8″ Dia.)							
2	1 Off, 1 On	Springs Back (Momentary)	4	DPST-NO/NC	Black, Grn, Red, Yel	9235K31	81.09
Mushroom (2 1/4″ Dia.)							
1	Off	Springs Back (Momentary)	2	SPST-NO	Red	9235K33	66.43
1	On	Springs Back (Momentary)	2	SPST-NC	Red	9235K34	66.43
Illuminated Push-Button							
Projecting (1″ Dia.)							
1	Off	Springs Back (Momentary)	4	SPST-NO	Grn, Red, Yel	9235K61	95.77
1	On	Springs Back (Momentary)	4	SPST-NC	Grn, Red, Yel	9235K62	95.77
2	1 Off, 1 On	Springs Back (Momentary)	6	DPST-NO/NC	Grn, Red, Yel	9235K63	108.48
Projecting with Guard (1″ Dia.)							
1	Off	Springs Back (Momentary)	4	SPST-NO	Grn, Red, Yel	9235K64	104.56
1	On	Springs Back (Momentary)	4	SPST-NC	Grn, Red, Yel	9235K65	104.56
2	1 Off, 1 On	Springs Back (Momentary)	6	DPST-NO/NC	Grn, Red, Yel	9235K66	114.88
Lever							
Short Two Position (1 3/8″ Dia.)							
1	Off	Stays Switched (Maintained)	2	SPST-NO	Black	9235K41	48.39
2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	Black	9235K42	62.54
Short Three Position (1 3/8″ Dia.)							
2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	Black	9235K5	62.54
4	2 Off, 2 On	Stays Switched (Maintained)	8	4PST-2NO/2NC	Black	9235K6	89.91
Long Two Position (1 3/8″ Dia.)							
1	Off	Stays Switched (Maintained)	2	SPST-NO	Black	9235K43	48.26
2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	Black	9235K44	62.54
Illuminated Lever							
Short Two Position (1 3/8″ Dia.)							
1	Off	Stays Switched (Maintained)	4	SPST-NO	Grn, Red, Yel	9235K74	196.03
2	1 Off, 1 On	Stays Switched (Maintained)	6	DPST-NO/NC	Grn, Red, Yel	9235K76	187.64
Long Two Position (1 3/8″ Dia.)							
1	Off	Stays Switched (Maintained)	4	SPST-NO	Grn, Red, Yel	9235K75	167.75
2	1 Off, 1 On	Stays Switched (Maintained)	6	DPST-NO/NC	Grn, Red, Yel	9235K77	189.55
Key							
Two Position (1 1/16″ Dia.)							
1	Off	Stays Switched (Maintained)	2	SPST-NO	Aluminum	9235K51	104.56
2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	Aluminum	9235K52	114.88
Replacement Contacts							
1	Off	—	2	SPST-NO	—	9235K97	13.96
1	On	—	2	SPST-NC	—	9235K98	13.96
2	1 Off, 1 On	—	4	DPST-NO/NC	—	9235K99	27.82
Accessory							
Switch Label						9235K57	4.51

■ Includes seven caps: black, blue, green, orange, red, white, and yellow.

Palm-Button Switches

With Optional Ring Guard

Designed for machine actuation and other heavy duty applications, these rugged switches are easy to operate, even while wearing gloves. They have spring back (momentary) switch action and screw terminal connections. Rated 6 amps @ 120 volts AC and 2.2 amps @ 120 volts DC with a maximum voltage of 600 AC and 250 DC. Body is metal. Mushroom button is plastic; flat button is metal. Depth behind panel is 1 1/16″. Switches have a 4 5/16″×2 13/16″ plate for mounting on single-device outlet boxes (see 7169K on page 832). They meet NEMA 13 and IP65 for oil and water resistance. UL listed, CSA certified, and CE marked.

Optional ring guards surround the switch to protect the actuator and reduce the chance of accidental actuation.

	Dia.	No. of Circuits	Before Switching, Circuit Is	No. of Terminals	Industry Designation	Button Color	*Switches*		*Optional Ring Guards*	
Mushroom	2 1/4″	2	1 Off, 1 On	4	DPST-NO/NC	Black	6560K71	$143.71	6560K83	$63.37
Mushroom	2 1/4″	2	1 Off, 1 On	4	DPST-NO/NC	Green	6560K73	143.71	6560K83	63.37
Mushroom	2 1/4″	2	1 Off, 1 On	4	DPST-NO/NC	Red	6560K72	143.71	6560K83	63.37
Flat	2 1/4″	2	1 Off, 1 On	4	DPST-NO/NC	Chrome	6560K74	169.90	6560K82	63.37

For information about choosing an electrical switch, see page 855.

30 mm Panel Cutout Metal Switch Components

Build the right switch for your environment with an ***actuator*** and a ***contact*** (each sold separately). They mount in a 30 mm (1 3/16″) dia. panel cutout. Rated 6 amps @ 120 volts AC and 5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. UL listed and CSA certified.

Actuators

All have a threaded locknut for panel mounting. **To Order:** Please specify button color where necessary. ***Washdown*** actuators are rated NEMA 4 and 13 for splashing water and oil/coolant spraying. *Key* actuators open with the same key (keyed alike) and include two keys. ***Corrosion-resistant washdown*** actuators are oil- and watertight as well as rated NEMA 4X for protection from corrosion.

Flush Push-Button

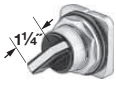

Short Lever

Projecting Push-Button

Long Lever

Mushroom Push-Button

Key

Dia.	Switch Action	Available Colors		
Washdown				
Push-Button				
Flush 1″	Springs Back (Momentary)	Black, Green, Red, Yellow	**65575K1**	$21.60
Projecting 1″	Springs Back (Momentary)	Black, Green, Red, Yellow	**65575K2**	21.60
Mushroom 1 5/8″	Springs Back (Momentary)	Black, Green, Red, Yellow	**65575K3**	45.71
Mushroom 1 5/8″	Stays Switched (Maintained)	Black, Green, Red	**65575K5**	61.14
Mushroom 2 1/2″	Springs Back (Momentary)	Black, Green, Red, Yellow	**65575K4**	54.11
Lever				
Short Two Position 1″	Stays Switched (Maintained)	Black	**65575K15**	29.96
Short Three Position 1″	Stays Switched (Maintained)	Black	**65575K16**	29.96
Long Two Position 1″	Stays Switched (Maintained)	Black	**65575K17**	29.96
Long Three Position 1″	Stays Switched (Maintained)	Black	**65575K18**	29.96
Key				
Two Position 1″	Springs Back (Momentary)	Chrome	**65575K25**	94.33
Two Position 1″	Stays Switched (Maintained)	Chrome	**65575K27**	78.56
Three Position 1″	Springs Back (Momentary)	Chrome	**65575K29**	94.33
Three Position 1″	Stays Switched (Maintained)	Chrome	**65575K28**	78.56
Corrosion-Resistant Washdown				
Push-Button				
Flush 1″	Springs Back (Momentary)	Black, Green, Red	**65575K54**	21.60
Projecting 1″	Springs Back (Momentary)	Black, Green, Red	**65575K55**	21.60
Mushroom 1 5/8″	Springs Back (Momentary)	Black, Red	**65575K56**	45.71
Mushroom 1 5/8″	Stays Switched (Maintained)	Black, Red	**65575K57**	62.98

Contacts

All have screw terminals. Depth behind panel is 1 3/4″.

No. of Circuits	Before Switching, Circuit Is	No. of Terminals	Industry Designation		
1	Off	2	SPST-NO	**65575K35**	$12.20
1	On	2	SPST-NC	**65575K36**	12.02
2	1 Off, 1 On	4	DPST-NO/NC	**65575K37**	24.07

Accessories

Switch labels are brushed aluminum with black letters, unless stated otherwise. **To Order:** Please specify message: Blank, Open, Close, Up, Down, Forward, Reverse, On, Off, Off-On, On-Off-Auto, Hand-Off-Auto, Man. Auto, Jog, Reset, Run, Start, Start-Stop, Stop (red letters), or Emergency Stop (red letters).

Custom switch labels have a two-line maximum and are brushed aluminum with black letters. **To Order:** Please specify up to 14 characters for the first line and 10 characters for the second line.

Switch Label	**65575K46**	$2.65
Custom Switch Label	**65575K96**	10.49
Replacement Key for Key Actuators	**65575K95**	5.67
Push-Button Guard (for Washdown Flush and Projecting Actuators)	**65575K45**	8.07

Push-Button Guard

30 mm Panel Cutout Plastic Switches

Mount these corrosion-resistant switches in a 30 mm (1 3/16″) dia. panel cutout. They have screw terminal connections. Depth behind panel is 1 13/16″. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. Switches are oil- and watertight, meeting NEMA 4X, 13, and IP65. UL listed, CSA certified, and CE marked.

To Order: Please specify color where necessary: black (Blk), green (Grn), red, or yellow (Yel). For illuminated push-button switches, also specify input voltage: 24 AC or 120 AC.

Flush Push-Button

Projecting Push-Button

Mushroom Push-Button

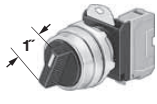

Lever

	Dia.	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Available Colors		
Push-Button									
Flush	1 7/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	Blk, Grn	**7403K19**	$17.48
Flush	1 7/16″	1	On	Springs Back (Momentary)	2	SPST-NC	Blk, Red	**7403K53**	17.48
Projecting	1 7/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	Blk, Grn	**7403K27**	18.26
Projecting	1 7/16″	1	Off	Stays Switched (Maintained)	2	SPST-NO	Blk, Grn	**7403K28**	35.54
Projecting	1 7/16″	1	On	Springs Back (Momentary)	2	SPST-NC	Blk, Red	**7403K29**	18.26
Projecting	1 7/16″	1	On	Stays Switched (Maintained)	2	SPST-NC	Blk, Red	**7403K31**	35.54
Mushroom	1 9/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	Blk, Grn, Red	**7403K32**	23.45
Mushroom	1 9/16″	1	On	Springs Back (Momentary)	2	SPST-NC	Blk, Grn, Red	**7403K33**	23.45
Mushroom	2 3/4″	1	Off	Springs Back (Momentary)	2	SPST-NO	Red	**7403K41**	33.82
Mushroom	2 3/4″	1	On	Springs Back (Momentary)	2	SPST-NC	Red	**7403K42**	33.82
Mushroom (Turn-to-Reset)	1 9/16″	1	Off	Stays Switched (Maintained)	2	SPST-NO	Red	**7403K43**	33.24
Mushroom (Turn-to-Reset)	1 9/16″	1	On	Stays Switched (Maintained)	2	SPST-NC	Red	**7403K46**	33.24
Illuminated Push-Button									
Flush	1 7/16″	1	Off	Springs Back (Momentary)	4	SPST-NO	Grn, Yel	**7403K47**	39.00
Projecting	1 7/16″	1	Off	Springs Back (Momentary)	4	SPST-NO	Grn, Yel	**7403K48**	40.54
Projecting	1 7/16″	1	Off	Stays Switched (Maintained)	4	SPST-NO	Grn, Yel	**7403K49**	51.88
Mushroom	1 9/16″	1	On	Springs Back (Momentary)	4	SPST-NC	Red	**7403K51**	42.65
Lever									
Two-Position	1 7/16″	1	Off	Stays Switched (Maintained)	2	SPST-NO	Blk	**7403K52**	25.37
Replacement Contacts									
—	—	1	Off	—	2	SPST-NO	—	**7557K1**	6.38
—	—	1	On	—	2	SPST-NC	—	**7557K2**	6.38
Guard for Mushroom 1 9/16″ Dia. Switches								**7403K97**	6.15

For information about choosing an electrical switch, see page 855.

30 mm Panel Cutout Flush-Mount Plastic Push-Button Switches

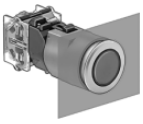

Shown Installed

Easy to clean and hard to damage, these switches mount flush in a 30 mm (1 3/16″) dia. panel cutout and have screw terminal connections. Depth behind panel is 3 1/16″. Rated 6 amps @ 230 volts AC and 10 amps @ 24 volts DC with a maximum voltage of 500 AC and 110 DC. Switches are oil- and watertight, meeting NEMA 4, 13, and IP65. UL listed and CSA certified. To illuminate your switch, add an incandescent bulb (sold separately).

To Order: Please specify button color.

Dia.	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Available Colors		
Switches								
1 3/8″	2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	Blue, Green, Red, Yellow	6971K1	$44.42
1 3/8″	2	1 Off, 1 On	Springs Back (Momentary)	4	DPST-NO/NC	Blue, Green, Red, Yellow	6971K3	43.14
Replacement Contacts (DPST-NO/NC)							6971K8	10.43
Bulbs								
12 volts AC/DC, 1.2 Watt							6971K91	2.25
24 volts AC/DC, 1.2 Watt							6971K92	2.25
110 volts AC/DC, 2.4 Watt							6971K93	5.40

30 mm Panel Cutout Multifunction Metal Push-Button Switches

8230K23

8230K25

8230K26

8230K24

8230K21

8230K22

Perform multiple switching functions while saving panel space. Switches have a 1 1/2″ square face with plastic buttons and a metal body. They mount in a 30 mm (1 3/16″) dia. panel cutout and have screw terminal connections. Depth behind panel is 4″, except 8230K24 is 2 1/4″. Rated 6 amps @ 120 volts AC and 5.7 amps @ 24 volts DC with a maximum voltage of 600 AC and 250 DC. Switches resist corrosion and are oil- and watertight, meeting NEMA 4X and 13. UL listed and CSA certified.

Multifunction with Indicating Light—Motor Run is illuminated in red. **To Order:** Please specify input voltage: 24 AC or 120 DC.

No. of Buttons	Switch Label	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Button Color		
Multifunction									
2	Start/Stop	2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	Green/Red	8230K23	$140.44
3	Hand/Auto/Off	2	2 Off	Stays Switched (Maintained)	4	(2)SPST-NO	Blk/Blk/Red	8230K25	108.60
3	Run/Jog/Off	2	2 Off	Stays Switched (Maintained)■	4	(2)SPST-NO	Blk/Blk/Red	8230K26	108.60
Multifunction with Indicating Light									
2	Start/Motor Run/Stop	2	1 Off, 1 On	Springs Back (Momentary)	6	DPST-NO/NC	Green/Red	8230K24	188.96
Single Function									
1	Start	1	Off	Springs Back (Momentary)	2	SPST-NO	Black	8230K21	54.60
1	Stop	1	On	Springs Back (Momentary)	2	SPST-NC	Red	8230K22	54.60
Replacement Contacts									
—	—	1	Off	—	2	SPST-NO	—	8230K61	16.10
—	—	1	On	—	2	SPST-NC	—	8230K62	16.10

■ Jog button springs back (momentary).

Heavy Duty Metal Emergency Stop Switches

Panel Mount

Panel Mount with Lockout

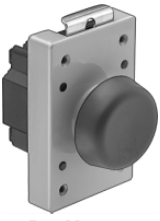

Box Mount with Lockout

Push the button to immediately break the circuit and cut off electrical power. All switches have a red plastic mushroom-style button, metal body, and screw terminal connections. UL listed and CSA certified.

Panel Mount and ***Illuminated Panel Mount***—Switches mount in a 30 mm (1 3/16″) dia. panel cutout. Pull to reset. Depth behind panel is 1 13/16″. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. They're oil- and watertight, meeting NEMA 4, NEMA 13, and IP66.

To Order: For illuminated switch, please specify input voltage: 24 AC/DC or 120 AC/DC.

Panel Mount with Lockout and ***Box Mount with Lockout***—Switches latch when you depress the button and can be locked in that position using a lockout or padlock with a 5/16″ shackle dia. (not included). Rated 6 amps @ 120 volts AC and 2.2 amps @ 125 volts DC. They meet NEMA 13 and IP65 for oil and water resistance.

Panel-mount switch mounts in a 30 mm (1 3/16″) dia. panel cutout. Pull to reset. Depth behind panel is 1 7/8″. Maximum voltage is 600 AC and 150 DC.

Box-mount switch has a 4 5/16″×2 13/16″ faceplate that mounts on a single-device outlet box (see 7169K on page 832). Push to reset. Maximum voltage is 600 AC and 250 DC.

Dia.	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation		
Panel Mount							
1 5/8″	1	On	Stays Switched (Maintained)	2	SPST-NC	9235K2	$98.70
1 5/8″	2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	9235K32	112.01
1 5/8″	2	2 On	Stays Switched (Maintained)	4	DPST-2NC	9235K3	112.01
Replacement SPST-NC Contact						9235K98	13.96
Replacement DPST-NO/NC Contacts						9235K99	27.82
Illuminated Panel Mount							
1 5/8″	2	1 Off, 1 On	Stays Switched (Maintained)	6	DPST-NO/NC	9235K49	145.82
Replacement DPST-NO/NC Contacts						9235K99	27.82
Panel Mount with Lockout							
2″	2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	66185K71	151.74
Replacement DPST-NO/NC Contacts						66185K85	39.27
Box Mount with Lockout							
2 1/4″	2	1 Off, 1 On	Stays Switched (Maintained)	4	DPST-NO/NC	66185K61	199.86

For information about choosing an electrical switch, see page 855.

22 mm Panel Cutout Metal Switches

Made of metal for long life, these include everything you need to assemble a complete switch. They mount in a 22 mm (7/8″) dia. panel cutout and have screw terminal connections. Depth behind panel is 1 13/16″. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC. Switches are oil- and watertight, meeting NEMA 4, 13, and IP66. UL listed, CSA certified, and CE marked. For replacement contacts, see 9209K accessories on this page.

To Order: Please specify color where necessary. For illuminated switches, also specify input voltage: 24 AC/DC or 120 AC.

Flush Push-Button

Projecting Push-Button

Mushroom Push-Button

Lever

	Dia.	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Available Colors		
Push-Button									
Flush	1 3/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green	8382K21	$21.25
Flush	1 3/16″	1	Off	Stays Switched (Maintained)	2	SPST-NO	Black, Green	8382K23	21.25
Flush	1 3/16″	1	On	Springs Back (Momentary)	2	SPST-NC	Black, Red	8382K22	21.25
Flush	1 3/16″	1	On	Stays Switched (Maintained)	2	SPST-NC	Black, Red	8382K24	24.28
Projecting	1 3/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green	8382K31	21.92
Projecting	1 3/16″	1	On	Springs Back (Momentary)	2	SPST-NC	Black, Red	8382K32	21.92
Mushroom	1 9/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green	8382K41	29.03
Mushroom	1 9/16″	1	On	Springs Back (Momentary)	2	SPST-NC	Black, Red	8382K42	29.03
Illuminated Push-Button									
Flush	1 3/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	Green, Red, Yellow	8382K54	47.00
Flush	1 3/16″	1	On	Springs Back (Momentary)	2	SPST-NC	Green, Red, Yellow	8382K51	47.00
Lever									
Short Two Position	1 3/16″	1	Off	Stays Switched (Maintained)	2	SPST-NO	Black	8382K66	20.50
Short Two Position	1 3/16″	1	On	Stays Switched (Maintained)	2	SPST-NC	Black	8382K63	20.50

22 mm Panel Cutout Metal Switch Components

Select an ***actuator*** and a ***contact block kit*** (each sold separately) to custom-build a metal switch. They mount in a 22 mm (7/8″) dia. panel cutout and are oil- and watertight, meeting NEMA 4, 13, and IP66. UL listed, CSA certified, and CE marked.

Actuators

Illuminated push-button actuators require a contact block kit with bulbholder. ***Key*** actuators open with the same key (keyed alike) and include two keys. Turn key to the left to remove except 9209K61, which turns to the right.

To Order: Please specify color where necessary.

Flush Push-Button

Short Lever

Projecting Push-Button

Long Lever

Mushroom Push-Button

Key

	Dia.	Available Colors	Springs Back (Momentary)		Stays Switched (Maintained)	
Push-Button						
Flush	1 3/16″	Black, Green, Red, White, Yellow	9209K11	$7.93	9209K21	$10.56
Projecting	1 3/16″	Black, Green, Red, White, Yellow	9209K12	7.93	—	—
Mushroom	1 9/16″	Black, Green, Red, Yellow	9209K13	15.81	—	—
Mushroom	2 3/8″	Black, Green, Red, Yellow	9209K14	19.78	—	—
Illuminated Push-Button						
Flush	1 3/16″	Green, Red, Yellow	9209K31	13.19	9209K41	15.81
Projecting	1 3/16″	Green, Red, Yellow	9209K32	10.56	—	—
Mushroom	1 9/16″	Green, Red, Yellow	9209K33	19.78	—	—
Lever						
Short Two Position	1 3/16″	Black	9209K511	13.17	9209K551	13.17
Short Three Position	1 3/16″	Black	9209K531	13.17	9209K571	13.17
Long Two Position	1 3/16″	Black	9209K521	15.81	9209K561	13.17
Long Three Position	1 3/16″	Black	9209K541	15.81	9209K581	13.17
Key						
Two Position	1 3/16″	Black	9209K61	39.28	9209K63	36.63
Three Position	1 3/16″	Black	9209K62♣	39.28	9209K64	36.63

♣ Springs back from right only.

Contact Block Kits

All kits consist of a contact mounting latch and one or more single-pole contacts. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC. They have screw terminal connections. Depth behind panel is 1 13/16″.

Kits with bulbholder are used with illuminated push-button actuators. **To Order:** Please specify input voltage: 24 AC/DC, 120 AC, or 240 AC and bulb color: green, red, or yellow.

Kit

Kit with Bulbholder

			KITS				KITS WITH BULBHOLDER		
No. of Circuits	Before Switching, Circuit Is	Industry Designation	No. of Terminals	For Push-Button Actuators		For Lever and Key Actuators		No. of Terminals	For Illuminated Actuators	
1	Off	SPST-NO	2	9209K138	$12.24	9209K127	$15.13	4	9209K22	$34.41
1	On	SPST-NC	2	9209K128	15.13	9209K128	15.13	4	9209K25	34.80
2	1 Off, 1 On	DPST-NO/NC	4	9209K139	20.09	9209K129	24.96	6	9209K28	42.67
2	2 Off	DPST-2 NO	4	9209K146	20.09	9209K136	24.96	6	9209K35	42.67
2	2 On	DPST-2 NC	4	9209K137	24.96	9209K137	24.96	6	9209K38	42.67

Accessories

Contacts are rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC.

Bulbholder and ***LED bulbs*** provide more ways to customize your switch. **To Order:** Please specify bulb color: green, red, or yellow.

No. of Circuits	Before Switching, Circuit Is	No. of Terminals	Industry Designation	For Push-Button Actuators		For Lever and Key Actuators	
Contacts							
1	Off	2	SPST-NO	9209K147	$7.83	9209K117	$9.44
1	On	2	SPST-NC	9209K116	9.44	9209K116	9.44
Bulbholder and LED Bulbs							
Bulbholder						9209K26	$22.43
6-volt AC Bulb						7557K94	9.10
24-volt AC/DC Bulb						7557K95	9.10
120-volt AC Bulb						7557K96	9.10

For information about choosing an electrical switch, see page 855.

22 mm Panel Cutout Plastic Switch Components

Contact Block | Contact Retaining Clip | Locking Ring (Included with Actuator) | Panel Cutout | Switch Label | Actuator

Select an ***actuator*** and a ***contact block kit*** (each sold separately) to build a custom corrosion-resistant switch. They mount in a 22 mm (7/8″) dia. panel cutout and are oil- and watertight, meeting NEMA 4X, NEMA 13, and IP66 (unless stated otherwise).

Actuators

Push-Button: Flush; Flush with Transparent Boot; Projecting; Mushroom; Triangular Mushroom; Twin Start-Stop

Lever: Short; Long

Key

All have a plastic button and body. UL recognized. *Key-to-reset* actuators include two keys.
Illuminated actuators require a contact block kit with LED bulbholder.
Push-button actuators with transparent boot are rated IP67 for temporary water submersion.
Key actuators open with the same key (keyed alike) and come with two keys. Two-position actuator key is removable in the left position. Three-position actuator key is removable in the center position.
To Order: Please specify color where necessary: black, green, red, white (Wh), or yellow (Yel).

	Dia.	Available Colors	Springs Back (Momentary)		Stays Switched (Maintained)	
Push-Button						
Flush	1 3/16″	Black, Green, Red, Wh, Yel	7544K3	$6.15	7544K64	$13.66
Flush with Transparent Boot	1 1/4″	Green, Red, Wh, Yel	7544K98	13.43	—	—
Projecting	1 3/16″	Black, Green, Red, Wh, Yel	7544K6	6.15	7544K65	13.66
Mushroom	1 1/4″	Black, Green, Red, Yel	7544K7	13.66	—	—
Mushroom	2 3/4″	Red	7544K61	25.49	—	—
Mushroom (Turn-to-Reset)	1 1/4″	Black, Green, Red, Yel	—	—	7544K66	17.99
Triangular Mushroom (Turn-to-Reset)	1 5/8″	Black, Green, Red, Yel	—	—	7544K97	17.99
Triangular Mushroom (Key-to-Reset)	1 5/8″	Red	—	—	7544K96	42.80
Twin Start-Stop	2 1/8″ × 1 3/16″	Green/Red	7544K62	18.21	—	—
Illuminated Push-Button						
Flush	1 3/16″	Green, Red, Wh, Yel	7544K1	10.92	7544K69	15.94
Flush with Transparent Boot	1 1/4″	Green, Red, Wh, Yel	7544K87	18.21	—	—
Projecting	1 3/16″	Green, Red, Wh, Yel	7544K4	10.92	7544K71	15.94
Mushroom	1 1/4″	Green, Red, Yel	7544K5	10.92	—	—
Mushroom (Turn-to-Reset)	1 1/4″	Green, Red, Yel	—	—	7544K72	19.57
Twin Start-Stop	2 1/8″ × 1 3/16″	Green/Red	7544K73	20.03	—	—
Lever						
Short Two Position	1 3/16″	Black, Red	7556K32	11.84	7556K31	11.84
Short Three Position	1 3/16″	Black, Red	7556K42	11.84	7556K41	11.84
Long Two Position	1 3/16″	Black, Red	7556K52	11.84	7556K51	11.84
Long Three Position	1 3/16″	Black, Red	7556K62	11.84	7556K61	11.84
Key						
Two Position	1 3/16″	Black	7556K72	37.34	7556K71	37.34
Three Position	1 3/16″	Black	7556K83	37.34	—	—
Three Position	1 3/16″	Black	7556K82♣	37.34	7556K81	37.34

♣ Springs back from right only.

Contact Block Kits

Kit

Kit with LED Bulbholder

All kits include a contact retaining clip and one or more single-pole contacts. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. Contacts have protected screw terminals. Depth behind panel is 1 11/16″. UL listed, CSA certified, and CE marked.
Kits with LED bulbholder are used with illuminated actuators and include a bulb. **To Order:** Please specify input voltage: 24 AC/DC, 120 AC, or 240 AC and bulb color: green, red, white, or yellow.

No. of Circuits	Before Switching, Circuit Is	Industry Designation	Kits: No. of Terminals			Kits with LED Bulbholder: No. of Terminals		
1	Off	SPST-NO	2	7557K41	$8.20	4	7557K11	$29.14
1	On	SPST-NC	2	7557K42	8.20	4	7557K13	30.96
2	1 Off, 1 On	DPST-NO/NC	4	7557K43	14.57	6	7557K15	35.52
2	2 Off	DPST-2NO	4	7557K44	14.57	6	7557K17	37.34
2	2 On	DPST-2NC	4	7557K45	14.57	6	7557K19	35.52
4	2 Off, 2 On	4PST-2NO/2NC	8	7557K46▲	29.14	10	7557K25♥	48.26

▲ Requires 2″ depth behind panel. ♥ Requires 2 9/16″ depth behind panel.

Accessories

Contacts are rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. They have screw terminal connections. UL listed, CSA certified, and CE marked.
To Order: For LED bulbholder, please specify bulb color: green, red, white, or yellow.

No. of Circuits	Before Switching, Circuit Is	No. of Terminals	Industry Designation		
Contacts					
1	Off	2	SPST-NO	7557K1	$6.38
1	On	2	SPST-NC	7557K2	6.38
Contact Retaining Clip				7557K7	2.03
LED Bulbholders					
24 volts AC/DC				7557K74	20.95
120 volts AC				7557K75	20.95
240 volts AC				7557K76	22.77

(Continued on following page)

For information about choosing an electrical switch, see page 855.

22 mm Panel Cutout Plastic Switch Components *(Continued from previous page)*

Accessories (Cont.)

Padlockable cover prevents unauthorized use.

Switch labels are black plastic. *Black* and *red inserts* are engraved with your choice of message (letters are white). **To Order:** Please specify message: Blank, Open, Close, Up, Down, Forward, Reverse, On, Off, Off-On, Hand-Off-Auto, Jog, Reset, Run, Start, Stop, Stop-Start, or Emergency Stop. *Transparent inserts* let you write or print message on a 3/8″×1″ card.

Also Available: Custom labels. Please ask for 7550K97 and specify color (black or red) and message. They have a maximum of two lines, 13 characters per line.

Mounting tool makes it easy to install a 22 mm or 30 mm switch in a crowded panel.

Padlockable Cover

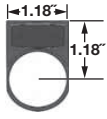

Switch Label

Mounting Tool

Padlockable Cover for Flush Push-Button Actuators (5/16″ shackle dia.)	7550K3	$16.62
Switch Label with Black Insert	7550K74	3.65
Switch Label with Red Insert	7550K76	3.65
Switch Label with Transparent Insert	7550K79	2.74
Mounting Tool	7550K95	8.08
Replacement Keys for Key Actuators (Set of 2)	7556K91	9.10

22 mm Panel Cutout Plastic Switches

Made of corrosion-resistant plastic, these complete switches include everything you need. They mount in a 22 mm (7/8″) dia. panel cutout and have screw terminal connections. Depth behind panel is 1 11/16″. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. Switches are oil- and watertight, meeting NEMA 4X, 13, and IP66. UL listed, CSA certified, and CE marked. ***Three-position*** switches are off in the center position.

For accessories, see 22 mm Panel Cutout Plastic Switch Components on this page.

To Order: Please specify color where necessary: black, green, red, white (Wh), or yellow (Yel). For illuminated switches, also specify input voltage: 24 AC/DC or 120 AC.

No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Available Colors		
Push-Button							
Flush (13/16″ Dia.)							
1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green, Red, Wh, Yel	6749K25	$14.34
1	Off	Stays Switched (Maintained)	2	SPST-NO	Black, Green, Red	6749K27	21.86
1	On	Springs Back (Momentary)	2	SPST-NC	Black, Green, Red, Wh, Yel	6749K29	14.34
1	On	Stays Switched (Maintained)	2	SPST-NC	Black, Green, Red	6749K32	21.86
Flush with Transparent Boot (1 1/4″ Dia.)							
1	Off	Springs Back (Momentary)	2	SPST-NO	Green	6749K34	21.63
1	On	Springs Back (Momentary)	2	SPST-NC	Red	6749K35	21.63
Projecting (13/16″ Dia.)							
1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green, Red	6749K39	14.34
1	Off	Stays Switched (Maintained)	2	SPST-NO	Black, Green, Red	6749K49	21.86
1	On	Springs Back (Momentary)	2	SPST-NC	Black, Green, Red	6749K83	14.34
1	On	Stays Switched (Maintained)	2	SPST-NC	Black, Green, Red	6749K84	21.86
Mushroom (1 1/4″ Dia.)							
1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green, Yel	6749K87	21.86
1	On	Springs Back (Momentary)	2	SPST-NC	Black, Red	6749K88	21.86
Mushroom (19/16″ Dia.)							
1	Off	Springs Back (Momentary)	2	SPST-NO	Black, Green	6749K89	21.86
1	On	Springs Back (Momentary)	2	SPST-NC	Black, Red	6749K91	21.86
1	On	Stays Switched (Maintained)	2	SPST-NC	Red	6749K92●	26.41
1	On	Stays Switched (Maintained)	2	SPST-NC	Red	6749K93▲	26.18
Twin Start-Stop (2 1/8″ Lg. × 13/16″ Wd.)							
2	1 Off, 1 On	Springs Back (Momentary)	4	DPST-NO/NC	Green/Red	6749K4	32.78
Illuminated Push-Button							
Flush (13/16″ Dia.)							
1	Off	Springs Back (Momentary)	4	SPST-NO	Green, Red, Wh, Yel	6749K36	40.07
1	Off	Stays Switched (Maintained)	4	SPST-NO	Green, Red, Wh, Yel	6749K37	45.07
Projecting (13/16″ Dia.)							
1	On	Springs Back (Momentary)	4	SPST-NC	Green, Red, Wh, Yel	6749K85	40.07
1	On	Stays Switched (Maintained)	4	SPST-NC	Green, Red, Wh, Yel	6749K86	45.07
Mushroom (19/16″ Dia.)							
1	On	Stays Switched (Maintained)	4	SPST-NC	Green, Red, Yel	6749K94●	48.94
1	On	Stays Switched (Maintained)	4	SPST-NC	Green, Red, Yel	6749K95▲	48.71
Lever							
Short Two Position (13/16″ Dia.)							
1	Off	Stays Switched (Maintained)	2	SPST-NO	Black	6749K96	20.03
1	On	Stays Switched (Maintained)	2	SPST-NC	Black, Red	6749K97	20.03
Short Three Position (13/16″ Dia.)							
2	Off	Stays Switched (Maintained)	4	DPST-NO	Black	6749K1	26.41
Long Two Position (13/16″ Dia.)							
1	Off	Stays Switched (Maintained)	2	SPST-NO	Black	6749K98	20.03
1	On	Stays Switched (Maintained)	2	SPST-NC	Black, Red	6749K99	20.03
Long Three Position (13/16″ Dia.)							
2	Off	Stays Switched (Maintained)	4	DPST-NO	Black	6749K2	26.41
Key							
Two Position (13/16″ Dia.)							
1	Off	Stays Switched (Maintained)	2	SPST-NO	Black	6749K3	44.62
Replacement Contacts							
1	Off	—	2	SPST-NO	—	7557K1	6.38
1	On	—	2	SPST-NC	—	7557K2	6.38

●Pull to reset. ▲Turn to reset.

Push-Button

Flush

Flush with Transparent Boot

Projecting

Mushroom

Twin Start-Stop

Lever

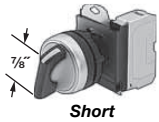

Short

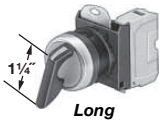

Long

Key

For information about choosing an electrical switch, see page 855.

22 mm Panel Cutout Compact Switches

Flush

Projecting

Projecting with Boot

Mushroom

Mushroom with Guard

The integral contact block in these one-piece plastic switches extends just 1″ behind your panel, saving valuable space. They are NEMA 4X rated for washdowns and corrosion resistance and have an internal PTFE-coated seal to keep dirt and moisture away from the contacts. Switches mount in a 22 mm (7/8″) dia. panel cutout and have screw terminal connections. You can add up to three contacts (sold separately) to control a maximum of eight circuits. Rated 6 amps @ 120 volts AC and 5 amps @ 24 volts DC with a maximum voltage of 600 AC and 250 DC. UL and C-UL listed, CSA certified, and CE marked. *Note:* When installing, ensure the panel gaskets are behind the panel.

To Order: Please specify color: black, green, red, or yellow.

	Dia.	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Plastic Bezel		Metal Bezel	
Switches										
Flush	9/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	5374T21	$15.31	5374T11	$17.35
Flush	9/16″	1	On	Springs Back (Momentary)	2	SPST-NC	5374T22	15.31	5374T12	17.35
Projecting	9/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	5374T23	15.31	5374T13	17.35
Projecting	9/16″	1	On	Springs Back (Momentary)	2	SPST-NC	5374T24	15.31	5374T14	17.35
Projecting with Boot	3/4″	1	Off	Springs Back (Momentary)	2	SPST-NO	5374T33	23.69	—	—
Projecting with Boot	3/4″	1	On	Springs Back (Momentary)	2	SPST-NC	5374T34	23.69	—	—
Mushroom	13/16″	1	Off	Springs Back (Momentary)	2	SPST-NO	5374T25	20.41	5374T15	22.45
Mushroom	15/16″	1	On	Stays Switched (Maintained)	2	SPST-NC	5374T26	32.65	5374T16	34.69
Mushroom with Guard	13/16″	1	On	Springs Back (Momentary)	2	SPST-NC	5374T37	24.69	—	—
Additional Contacts										
—	—	2	1 Off, 1 On	—	4	DPST-NO/NC	5374T51	12.24	5374T51	12.24
—	—	2	2 Off	—	4	DPST-2NO	5374T52	12.24	5374T52	12.24

22 mm Panel Cutout Emergency Stop Switches

Plastic Pull-to-Reset

Plastic Key-to-Reset

Plastic Turn-to-Reset

High-Vibration Turn-to-Reset

Metal Pull-to-Reset

Pull-to-Reset with Lockout

Metal Turn-to-Reset

Immediately cut power with a single push. These switches meet EN 418 for compliance with European machine directives for emergency stop applications. All stay switched (maintained) and have a red plastic button and screw terminal connections. They mount in a 22 mm (7/8″) dia. panel cutout. Depth behind panel is 1 13/16″. UL listed and CSA certified.

Plastic— Switches are oil- and watertight and corrosion resistant, meeting NEMA 4X, 12, and 13. CE marked.

Standard switches are rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. They also meet IP66. Key-to-reset switches open with the same key (keyed alike) and include two keys.

High-vibration switches have a single-piece construction that prevents the contact from separating from the actuator in high-vibration applications. Rated 3 amps @ 220 volts AC and 1.1 amps @ 110 volts DC with a maximum voltage of 600 AC. They also meet IP65. Illuminated switches have a 24-volt LED bulb.

Metal— Switches are rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC. They're oil-tight, meeting NEMA 13. NEMA 4 and IP65 rated for washdowns, except pull-to-reset with lockout is IP65 rated only. **To Order:** For illuminated switches, please specify input voltage: 24 AC/DC or 120 AC.

Also Available: Emergency stop switch labels. Please ask for 6741K7 and specify switch part number. Labels are yellow plastic.

Also Available: Replacement contacts. Please ask for 6741K8 and specify switch part number.

Dia.	No. of Circuits	Before Switching, Circuit Is	No. of Terminals	Industry Designation		
Plastic						
Standard Pull-to-Reset						
1 1/4″	1	On	2	SPST-NC	6741K41	$31.87
1 1/4″	2	2 On	4	DPST-2NC	6741K42	38.25
1 9/16″	1	On	2	SPST-NC	6741K43	31.87
1 9/16″	2	2 On	4	DPST-2NC	6741K44	38.25
Standard Key-to-Reset						
1 1/4″	1	On	2	SPST-NC	6741K47	53.73
1 1/4″	2	2 On	4	DPST-2NC	6741K48	60.09
1 9/16″	1	On	2	SPST-NC	6741K49	53.73
1 9/16″	2	2 On	4	DPST-2NC	6741K51	60.09
Standard Turn-to-Reset						
1 9/16″	1	On	2	SPST-NC	6741K45	37.34
1 9/16″	2	2 On	4	DPST-2NC	6741K46	43.70
High-Vibration Turn-to-Reset						
1 9/16″	2	1 Off, 1 On	4	DPST-NO/NC	7480T12	27.34
1 9/16″	2	2 On	4	DPST-2NC	7480T11	27.34
Illuminated High-Vibration Turn-to-Reset						
1 9/16″	2	1 Off, 1 On	6	DPST-NO/NC	7480T14★	40.50
1 9/16″	2	2 On	6	DPST-2NC	7480T13★	40.50
Metal						
Standard Pull-to-Reset						
1 9/16″	1	On	2	SPST-NC	8382K45	33.77
Illuminated Pull-to-Reset						
1 9/16″	2	2 On	4	DPST-2NC	6741K61■	81.80
Pull-to-Reset with Lockout						
1 9/16″	2	1 Off, 1 On	4	DPST-NO/NC	6741K67★	155.21
Turn-to-Reset						
1 9/16″	1	On	2	SPST-NC	8382K44	33.77

★Depth behind panel is 2 1/2″. ■Depth behind panel is 2 11/16″.

22 mm Panel Cutout Plastic Knob Selector Switches

Set switches to either spring back (momentary) or stay switched (maintained). They mount in a 22 mm (7/8″) dia. panel cutout and have a 13/16″ dia. selector knob and screw terminal connections. Depth behind panel is 2 13/16″ except 6299T12 is 1 3/4″. Rated 6 amps @ 120 volts AC and 3 amps @ 24 volts DC with a maximum voltage of 500 AC and 250 DC. NEMA 4X and IP66 rated for washdowns and corrosion resistance. UL listed, CSA certified, and CE marked.

Also Available: Replacement contacts. Please ask for 6299T88 and specify normally open or normally closed.

	No. of Circuits	Switch Position: Left	Center	Right	No. of Terminals	Industry Designation		
Two Position	2	—	2 Off	2 On	4	DPST-2NO	6299T11	$54.60
Two Position	2	—	Off, On	On/Off	4	DPST-NO/NC	6299T12	56.70
Three Position	3	2 On/1 Off	3 Off	2 Off/1 On	6	3PST-3NO	6299T13	68.60
Three Position	3	1 On/2 Off	3 Off	1 Off/2 On	6	3PST-2NO/1NC	6299T14	68.60
Switch Label (Blank)							6299T17	1.19

For information about choosing an electrical switch, see page 855.

16 mm Panel Cutout Plastic Switches

Mount these corrosion-resistant switches in a 16 mm (5/8″) dia. panel cutout. For removal tools and mounting wrench, see 16 mm Panel Cutout Plastic Switch Components on this page.

Push-Button and ***Illuminated Push-Button***—Switches don't project from panel, protecting them from damage. They have solder terminal connections. Depth behind panel is 1 3/16″. Rated 0.1 amps @ 42 volts AC and DC. *Illuminated* switches have a 2.2-volt DC LED bulb.

Emergency Stop Push-Button, Lever, and ***Key***—Switches are oil- and watertight, meeting NEMA 4, 13, and IP65. Depth behind panel is 1 11/16″. Rated 2.5 amps @ 125 volts AC and 6 amps @ 24 volts DC with a maximum voltage of 250 AC. UL recognized, CSA certified, and CE marked. Three-position switches are off in the center position.

Emergency stop push-button switches meet EN 418 directive for emergency stop applications. They have screw terminal connections.

Lever switches have 0.11″ quick-disconnect/solder terminal connections. To illuminate, add an incandescent bulb up to 60 volts AC (sold separately). **To Order:** For bulb, please specify voltage: 6.3, 14, 28, 48, or 60 AC.

Key switches open with the same key (two included). They have 0.11″ quick-disconnect/solder-terminal connections.

To Order: Please specify button color.

Push-Button

Emergency Stop Push-Button

Lever

Key

	Dia.	No. of Circuits	Before Switching, Circuit Is	No. of Terminals	Industry Designation	Available Colors	Springs Back (Momentary)		Stays Switched (Maintained)	
Push-Button										
Flush	3/4″	1	Off	4	SPST-NO	Black, Grn, Red, Yel	6886K2	$17.51	6886K1	$18.51
Illuminated Push-Button										
Flush	3/4″	1	Off	4	SPST-NO	Grn, Red, Yel	6886K6	19.36	6886K5	20.36
Emergency Stop Push-Button										
Mushroom (Turn-to-Reset)	1 1/16″	1	On	2	SPST-NC	Red	—	—	65645K61	72.81
Mushroom (Key-to-Reset)	1 1/16″	1	On	2	SPST-NC	Red	—	—	65645K62	92.69
Lever										
Two Position	11/16″	1	Off	4	SPST-NO	Blk, Grn, Red, Wh, Yel	65645K31	23.44	65645K32	23.44
Two Position	11/16″	2	2 Off	6	DPST-NO	Blk, Grn, Red, Wh, Yel	—	—	65645K33	26.31
Three Position	11/16″	2	2 Off	6	DPST-NO	Blk, Grn, Red, Wh, Yel	65645K34	28.85	65645K35	28.85
Incandescent Bulb for All Lever Switches									65645K71	2.42
Key										
Two Position	11/16″	1	Off	4	SPST-NO	Black	65645K41	38.95	65645K42	38.95
Two Position	11/16″	2	2 Off	6	DPST-NO	Black	—	—	65645K43	41.81
Three Position	11/16″	2	2 Off	6	DPST-NO	Black	65645K44	46.77	65645K45	46.77
Replacement Key for All Key Switches									65645K86	6.49

16 mm Panel Cutout Plastic Switch Components

Custom build a plastic switch by selecting an actuator and contact block (each sold separately). They mount in a 16 mm (5/8″) dia. panel cutout and are oil- and watertight, meeting NEMA 4 and 13 and IP65. Rated 2.5 amps @ 125 volts AC and 6 amps @ 24 volts DC with a maximum voltage of 250 AC. UL recognized, CSA certified, and CE marked.

Push-Button Actuators

Square

Rectangular

Round

Actuators can be permanently converted to stay switched (maintained) from springs back (momentary) action. To illuminate, add an incandescent bulb up to 60 volts AC (sold separately).

To Order: Please specify button color: black, green, red, white, or yellow.

Small Square (11/16″ × 11/16″)	65645K13	$15.98
Large Square (15/16″ × 15/16″)	65645K11	16.21
Rectangular (15/16″ × 11/16″)	65645K12	15.98
Round (11/16″ Dia.)	65645K14	15.98

Contact Blocks

Connections are 0.11″ quick-disconnect/solder terminals. Depth behind panel is 1 5/8″.

No. of Circuits	Before Switching, Circuit Is	No. of Terminals	Industry Designation		
1	Off	4	SPST-NO	65645K15	$9.38
2	2 Off	6	DPST-NO	65645K16	12.25
2	1 Off, 1 On	6	DPST-NO/NC	65645K18	12.25
3	3 Off	8	3PST-NO	65645K17	15.02

Accessories

To Order: For incandescent bulb, please specify voltage: 6.3, 14, 28, 48, or 60 AC.

Incandescent Bulb	65645K71	$2.42
Bulb Removal Tool	65645K52	2.38
Lens Removal Tool	65645K51	5.30
Contact Block Removal Tool	65645K54	7.19
Mounting Wrench	65645K53	5.08

Finger-Touch Switches

An infrared light beam senses the lightest finger contact to switch a circuit on or off. These switches do not require any pressure to operate, easing stress caused by repetitive motion. They stay switched only when touched (momentary), mount in a 30 mm (1 3/16″) dia. panel cutout, and have LEDs that indicate "power on" and "output activated." Housing is sealed, impact-resistant black plastic and has a guard to prevent accidental activation. Overall size is 1 7/16″ Ht. × 2 3/8″ Wd. × 1 11/16″ Dp. Meet NEMA 4X, NEMA 13, and IP66 for use in wet and corrosive environments. UL listed, CSA certified, and CE marked. Rated 7 amps @ 120 volts AC except 72025K94, which has a 150-mA NPN transistor output and is typically used with a programmable logic controller (PLC).

Switches with ***5-pole male connector*** allow you to quickly change out and repair. They have a single-keyway male receptacle with external threads to accept 0.55″ face dia. female plugs with internal threads.

With 6-ft. Cable

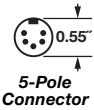

5-Pole Connector

No. of Circuits	Before Switching, Circuit Is	Industry Designation	Operating Voltage AC	Operating Voltage DC		
With 6-ft. Cable						
1	Off or On	SPDT	120	—	72025K91	$119.19
1	Off or On	SPDT	20-30	20-30	72025K93	119.19
—	—	NPN	—	10-30	72025K94	119.19
With 5-Pole Male Connector						
1	Off or On	SPDT	120	—	72025K92	119.19
5-Pole Female Connector with 12-ft. Cable					69355K66	47.36
Replacement Guard					72025K71	17.17

For information about choosing an electrical switch, see page 855.

Two-Hand Safety Switch System

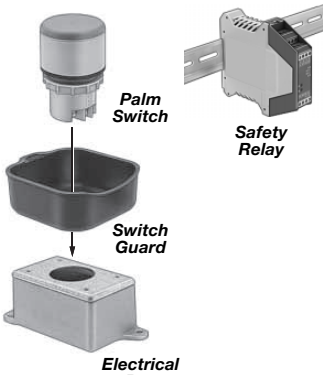

Simultaneous two-hand touch operation promotes safety when starting machinery. For a complete system, you'll need a safety relay, two palm switches, and two electrical boxes (sold separately).

Palm switch meets OSHA requirements and ANSI standards for machine operator safety. It's plastic with a 2⅜″ dia. gray flat-head button. Depth behind panel is 1¾″. Rated 1 amp @ 250 volts AC and 90 volts DC. It switches two circuits, one from off to on and one from on to off (DPST-NO/NC). Contacts stay switched only when switch is touched (momentary). Operates on 120 volts AC. IP64 rated for protection from splashing water. UL listed and CSA certified.

Safety relay controls the two palm switches. It sends an output when both switches are activated within 0.5 seconds of each other. Self-monitoring circuitry offers double protection—if any part of the system fails, the entire system shuts down until repaired. It switches two circuits from off to on or on to off (DPDT) and is rated 4 amps @ 230 volts AC and 2 amps @ 24 volts DC. It has screw terminal connections, mounts on a 35 mm DIN rail, and operates on 115 volts AC. Overall size is 4½″ Ht.×⅞″ Wd.×3⅞″ Dp. UL listed and CE marked.

Switch guard protects against damage and accidental actuation. You'll need one per switch.

Electrical boxes have a drilled hole for the palm switch and two 5⁄16″ dia. mounting holes (hardware included).

Palm Switch	65945K11	$391.69
Safety Relay	65945K21	309.52
Switch Guard	65945K31	73.71
Electrical Box with One ¾″ Conduit Hub	65945K33	60.45
Electrical Box with Two ¾″ Conduit Hubs	65945K34	63.64

Flush-Mount Stainless Steel Push-Button Switches

Mount flush to your panel for protection against damage. Switches are stainless steel and have 0.11″ quick-disconnect terminals. Depth behind panel is 1 5⁄16″. IP67 rated for temporary water submersion. Rated 5 amps @ 125 volts AC and 24 volts DC with a maximum voltage of 250 AC and DC.

Panel Cutout	Dia.	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation		
16 mm (5⁄8″)	¾″	1	Off or On	Springs Back (Momentary)	3	SPDT	6023T12	$15.38
19 mm (¾″)	⅞″	1	Off or On	Springs Back (Momentary)	3	SPDT	6023T13	16.06
22 mm (⅞″)	1″	1	Off or On	Springs Back (Momentary)	3	SPDT	6023T14	18.01

Compact Harsh Environment Push-Button Switches

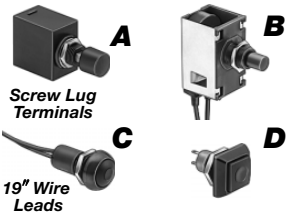

Sealed for protection from moisture and debris, these switches also take up less space in your panel than 16 mm switches.

Style A are IP67 rated for temporary water submersion. Rated 6 amps @ 125 volts AC and 6 amps @ 30 volts DC with a maximum voltage of 600 AC and 30 DC. Button and body are black plastic.

Style B have a stainless steel and plastic housing that protects the internal mechanism. IP68 rated for continuous submersion, so they're good for marine applications. Rated 5 amps @ 120 volts AC and 28 volts DC. Button is black plastic.

Styles C and ***D*** are IP67 rated for temporary water submersion. Rated 0.5 amps @ 48 volts AC and 0.2 amps @ 50 volts DC with a maximum voltage of 250 AC and 50 DC. Button and body are plastic; bezel is metal. 6915K23 is illuminated with a red LED. **To Order:** Please specify button color: black or red.

	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Connections	Button Size	Dp. Behind Panel		
12 mm (15⁄32″) Dia. Panel Cutout										
A	1	Off or On	Springs Back (Momentary)	3	SPDT	Solder Lug	½″ Dia.	15⁄16″	8259K42	$24.00
A	1	Off or On	Stays Switched (Maintained)	3	SPDT	Solder Lug	½″ Dia.	15⁄16″	8259K41	23.06
A	1	Off or On	Springs Back (Momentary)	3	SPDT	Screw Lug	½″ Dia.	17⁄16″	8259K44	25.18
A	1	Off or On	Stays Switched (Maintained)	3	SPDT	Screw Lug	½″ Dia.	17⁄16″	8259K43	24.24
B	1	Off	Springs Back (Momentary)	–	SPST-NO	24″ Wire Leads	5⁄16″ Dia.	15⁄16″	8185K11	32.70
B	1	On	Springs Back (Momentary)	–	SPST-NC	24″ Wire Leads	5⁄16″ Dia.	15⁄16″	8185K12	35.45
B	1	Off or On	Springs Back (Momentary)	–	SPDT	24″ Wire Leads	5⁄16″ Dia.	15⁄16″	8185K13	40.67
14 mm (17⁄32″) Dia. Panel Cutout										
C	1	Off	Springs Back (Momentary)	2	SPST-NO	19″ Wire Leads	11⁄16″ Dia.	1″	6915K24	14.62
C	1	Off	Springs Back (Momentary)	2	SPST-NO	Solder Lug	11⁄16″ Dia.	11⁄16″	6915K22	11.87
C	1	Off	Springs Back (Momentary)	2	SPST-NO	Solder Lug	11⁄16″ Dia.	11⁄16″	6915K23	14.10
D	1	Off	Springs Back (Momentary)	2	SPST-NO	Solder Lug	11⁄16″ Sq.	11⁄16″	6915K21	11.87

Miniature Metal Push-Button Switches

The smallest panel cutout switches we offer. They have solder terminal connections and include panel mounting hardware. Buttons are black plastic except 7400K72, which is white plastic. Maximum voltage is 120 AC and 28 DC.

	No. of Circuits	Before Switching, Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 120V AC/ 28V DC	Button Dia.	Dp. Behind Panel		
4 mm (5⁄32″) Dia. Panel Cutout										
E	1	Off	Springs Back (Momentary)	2	SPST-NO	½	⅛″	½″	7397K11	$6.23
E	1	On	Springs Back (Momentary)	2	SPST-NC	¼	⅛″	½″	7397K13	7.08
6 mm (1⁄4″) Dia. Panel Cutout										
F	1	Off	Springs Back (Momentary)	2	SPST-NO	1	5⁄32″	9⁄16″	7397K21	5.58
F	1	On	Springs Back (Momentary)	2	SPST-NC	1	5⁄32″	5⁄8″	7397K23	5.28
F	1	Off	Springs Back (Momentary)	2	SPST-NO	3	5⁄32″	5⁄8″	7397K25	5.53
G	1	Off or On	Springs Back (Momentary)	3	SPDT	6	3⁄8″	5⁄8″	7400K41	6.81
G	1	Off or On	Stays Switched (Maintained)	3	SPDT	6	3⁄8″	5⁄8″	7400K61	6.81
H	2	Off or On	Springs Back (Momentary)	6	DPDT	1	⅛″	5⁄8″	7400K72	13.67

For information about choosing an electrical switch, see page 855.

Low-Voltage Metal Push-Button Switches

Operate doorbells, buzzers, and other low-voltage circuits. Switches spring back (momentary), switch one circuit from off to on (SPST-NO), and have two screw terminals. Button is plastic. 69755K67 is UL recognized.

Styles A-C are panel mount. *Style A* snaps into a panel; *Styles B* and *C* have a hex nut. ***Styles D-F*** are surface mount. *Styles D* and *F* include mounting hardware; *Style E* has a 1/2″ trade size NPT threaded female hub and two 1/4″ dia. mounting lugs.

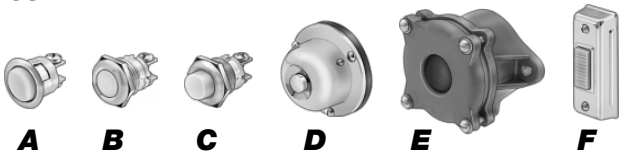

A **B** **C** **D** **E** **F**

	Panel Cutout Dia.	Amp Rating AC	Amp Rating DC	Max. Voltage AC	Max. Voltage DC	Overall Size	Dp. Behind Panel	Button Color		
A	16 mm (5/8″)	3 @ 30V	3 @ 30V	30V	30V	3/4″ Dia.	13/16″	White	69755K31	$5.03
A	19 mm (3/4″)	4 @ 24V	1 @ 24V	48V	48V	1″ Dia.	19/16″	Black	69755K64★	27.96
B	16 mm (5/8″)	10 @ 24V	2 @ 24V	48V	48V	3/4″ Dia.	7/8″	White	69755K62	12.10
C	16 mm (5/8″)	10 @ 24V	2 @ 24V	48V	48V	3/4″ Dia.	15/16″	White	69755K63	12.10
C	22 mm (7/8″)	5 @ 125V	—	250V	—	7/8″ Dia.	19/16″	Black	69755K67	36.40
D	—	4 @ 24V	2 @ 24V	48V	48V	2 13/32″ Dia. × 1 3/8″ Ht.	—	Gold	69755K66■	60.72
E	—	20 @ 24V	10 @ 24V	125V	125V	2 15/16″ Dia. × 2 3/16″ Ht.	—	Black	69755K68▲	77.44
F	—	3 @ 16V	3 @ 16V	16V	—	2 3/4″ Lg. × 1″ Wd. × 3/4″ Ht.	—	White	69755K71	9.77

★ Has one input terminal and three output terminals. ■ Body and button are brass. ▲ Button is rubber.

Touch-Sensor Flush-Mount Switches

Whether you create a single switch or a large panel of switches, it's easy to build your own finger-touch sensor switch. The adhesive front of the switch mounts behind a piece of plastic or glass, which you can customize with labels or graphics. Switches are momentary, switch one circuit from off to on, and have solder connections. Operate on 5 volts DC and have a 1 mA output rating.

Illuminated switches have a green LED.

For plastic mounting, choose a material with a maximum thickness of 0.078″ (5/64″). If you need plastic sheets, see 8574K on page 3565 and 85815K on page 3568.

For glass mounting, choose a material with a maximum thickness of 0.157″ (5/32″). If you need glass sheets, see 8476K on page 3622.

Note: Maximum thickness includes anything applied to the plastic or glass.

One Switch (Front)

(Back)

No. of Switches	Size	Nonilluminated		Illuminated	
For Plastic Mounting					
One	1 13/32″ × 1 13/32″	2792K11	$26.65	2792K15	$28.21
Two	2 13/16″ × 1 13/32″	2792K21	33.90	2792K25	34.31
Four	5 5/8″ × 1 13/32″	2792K31	51.83	2792K35	52.37
For Glass Mounting					
One	1 13/32″ × 1 13/32″	2792K13	26.65	2792K17	28.21
Two	2 13/16″ × 1 13/32″	2792K23	33.90	2792K27	34.31
Four	5 5/8″ × 1 13/32″	2792K33	51.83	2792K37	52.37

22 mm Panel Cutout Indicating Lights

Metal Bezel

Plastic

A great replacement for incandescent lights, these long-lasting LEDs mount in a 22 mm (7/8″) dia. panel cutout and have screw terminal connections. UL listed, CSA certified, and CE marked.

Metal Bezel— Provide durability for longer life. Depth behind panel is 1″. Oil- and watertight rated NEMA 4 and 13.

Plastic— Depth behind panel is 1 3/4″. Resist corrosion and are oil- and watertight, meeting NEMA 4X and 13.

To Order: Please specify color: blue, clear (plastic only) green, red, white, or yellow.

Voltage	Lens Dia.	Indicating Lights		Replacement Bulbs	
Metal Bezel with LED Bulb					
6V AC/DC	1 1/16″	5453T11	$44.97	5453T15	$14.53
12V AC/DC	1 1/16″	5453T12	44.97	5453T16	14.53
24V AC/DC	1 1/16″	5453T13	44.97	5453T17	14.53
120V AC/DC	1 1/16″	5453T14	44.97	5453T18	14.53
Plastic with LED Bulb					
12-24V AC/DC	1 3/16″	7380K3	17.76	7557K95	9.10
120V AC	1 3/16″	7380K4	17.76	7557K96	9.10
240V AC	1 3/16″	7380K5	17.76	7557K97	14.57

30 mm Panel Cutout Indicating Lights

Metal

Plastic

Mount in a 30 mm (1 3/16″) dia. panel cutout. Lights have screw terminal connections. UL listed.

Metal indicating lights have a durable construction for long-term operation. Lens dia. is 1 1/16″. Depth behind panel is 2 3/16″. NEMA 4 and 13 rated to be oil- and watertight. CSA certified.

Plastic indicating light resists corrosion. Lens dia. is 1 5/8″. Depth behind panel is 2 1/16″. Meets NEMA 4X for washdown environments. C-UL listed. *Note:* When bulb burns out, the entire light must be replaced.

To Order: For indicating lights, replacement LED bulbs, and replacement lenses, please specify color: green, red, or yellow.

Input Voltage	Bulb Voltage	Indicating Lights	Each	Repl. Bulbs Pkg. Qty.		Pkg.
Metal with Incandescent Bulb						
12V AC/DC	12V AC	1759K16	$63.64	10	1759K26	$4.29
24V AC/DC	24V AC	1759K6	63.64	10	1505K98	9.36
120V AC/DC	120V AC	1759K7	63.64	1	1628K26	1.29
120V AC	6V AC	1759K11	77.80	10	1505K81	5.98
240V AC	6V AC	1759K12	77.80	10	1505K81	5.98
480V AC	6V AC	1759K13	77.80	10	1505K81	5.98
Replacement Lens				1759K31	Each	$5.14
Metal with LED Bulb						
24V AC/DC	24V AC	1759K4	102.14	1	1759K36	59.60
120V AC	120V AC	1759K5	102.14	1	1759K37	59.60
240V AC	240V AC	1759K3	102.14	1	1759K38	59.60
Replacement Lens				1759K1	Each	$9.47
Plastic with LED Bulb						
20-240V AC/DC	130V AC	8247K4	70.40	—	—	—

22 mm and 30 mm Panel Cutout Plastic Indicating Light Components

Lens Cap

LED Bulbholder

Label

Select a lens cap and LED bulbholder (each sold separately) to build a custom indicating light. All components are made of plastic. Assembled lights resist corrosion and are oil- and watertight, meeting NEMA 4X, 12, and 13, and IP65. CSA certified and CE marked.

Lens caps are UL recognized for use with LED bulbholders. **To Order:** Please specify cap color: blue, clear (30 mm light only), green, red, white (22 mm light only), or yellow.

LED bulbholders have screw terminal connections and include a clip for attaching a lens cap. UL listed. **To Order:** Please specify bulb color: blue, green, red, white, or yellow.

Optional ***labels*** make it easy to identify function. Message is printed in white. **To Order:** Please specify message: Blank, Open, Close, Up, Down, Forward, Reverse, On, Off, Off-On, Hand-Off-Auto, Jog, Reset, Run, Start, Stop, Stop-Start, or Emergency Stop.

Panel Cutout Dia.	Lens Dia.	Dp. Behind Panel		
Lens Caps				
22 mm (7/8″)	1 3/16″	1 11/16″	7545K7	$5.47
30 mm (1 3/16″)	1 7/16″	1 13/16″	6591K2	6.92
LED Bulbholders				
24 volt AC/DC			7545K316	22.77
120 volt AC			7545K317	22.77
240 volt AC			7545K318	22.77
Label for 22 mm Lens Cap			7550K74	3.65
Label for 30 mm Lens Cap			6591K51	5.86

16 mm Panel Cutout Plastic Indicating Lights

Incandescent Round

Incandescent Square

LED

Mount these compact indicating lights in a 16 mm (5/8″) dia. panel cutout.

Incandescent lights are NEMA 4, 13, and IP65 rated to be oil- and watertight. They have 0.11″ quick-disconnect/solder terminals. Depth behind panel is 1 9/16″. UL recognized, CSA certified, and CE marked. Lights require a 28-volt miniature bulb (sold separately).

LED light resists corrosion and is oil- and watertight, meeting NEMA 4X, 13, and IP65. It has screw terminal connections. Depth behind panel is 2 1/8″. UL and C-UL listed and CE marked. *Note:* When bulb burns out, the entire light must be replaced.

To Order: Please specify lens color: blue (LED only), green, red, white, or yellow.

	Voltage	Lens Size		
Incandescent				
Round	28V AC/DC	3/4″ Dia.	59305K24	$11.51
Square	28V AC/DC	11/16″ Sq.	59305K23	11.51
Square	28V AC/DC	15/16″ Sq.	59305K21	11.75
Rectangular	28V AC/DC	11/16″ × 15/16″	59305K22	11.51
28-volt Bulb			65645K713	2.42
LED				
Conical	20-240V AC/DC	3/4″ Dia.	5339T3	78.85

Panel Mount Indicating Lights

Specially designed for small-scale applications such as control panels, alarm devices, and computer equipment.

Incandescent

Lights have solder lug connections and a dome-shaped lens except 7642K31 is conical shaped. They're metal except 7642K71 is plastic. UL listed and CSA certified. Bulb sold separately. ***Watertight*** light has a neoprene O-ring seal for harsh environments.

To Order: Please specify color.

Panel Cutout	Max. AC Voltage	Max. Watts	Accepts Bulb Style	Lens Dia.	Dp. Behind Panel	Available Colors	***Lights***		***Bulbs***	
Standard										
8 mm (5/16″)	30	1	T1	1/4″	9/16″	Green, Red, White, Yellow	7642K31	$17.50	7642K81	$3.48
12 mm (1/2″)	30	2	T1 3/4	7/16″	3/4″	Green, Red, White, Yellow	7642K32	13.37	7642K14	.88
18 mm (11/16″)	130	3	T3 1/4	5/8″	1 11/16″	Green, Red, White, Yellow	7642K71	10.32	7642K82	6.96
Watertight										
12 mm (1/2″)	30	2	T1 3/4	9/16″	3/4″	Green, Red, White, Yellow	7642K41	16.19	7642K14	.88

LED

Standard with Quick-Disconnects

Standard with Wire Leads

Watertight Dome

Watertight Conical

Sunlight Visible and Waterproof

LED lights offer years of bulb life. They're made of plastic. CE marked. *Note:* When bulb burns out, the entire light must be replaced.

Standard lights are UL recognized and CSA certified. Lights with quick-disconnects have a chrome bezel. Lights with wire leads have a stainless steel bezel.

Watertight lights resist corrosion and meet NEMA 4X and 13. UL and C-UL listed.

Sunlight visible and waterproof lights can be used outdoors and still be seen. They have a chrome bezel. Rated IP67 for washdown applications. UL recognized and CSA certified.

To Order: Please specify color.

Panel Cutout	Voltage	Lens Dia.	Lens Shape	Connections	Dp. Behind Panel	Available Colors		
Standard								
8 mm (5/16″)	12V DC	3/16″	Dome	0.187″ Quick-Disconnect	1 1/2″	Blue, Green, Red, Yellow	2779K11	$5.72
8 mm (5/16″)	24V DC	3/16″	Dome	0.187″ Quick-Disconnect	1 1/2″	Blue, Green, Red, Yellow	2779K1	5.72
8 mm (5/16″)	12V AC/DC	5/16″	Dome	4″ Wire Leads	15/16″	Green, Red, Yellow	2779K5	4.02
8 mm (5/16″)	24V AC/DC	5/16″	Dome	4″ Wire Leads	15/16″	Green, Red, Yellow	2779K6	4.02
14 mm (9/16″)	130V AC	3/8″	Dome	0.187″ Quick-Disconnect	1 7/16″	Blue, Green, Red, White, Yellow	2779K15	12.84
14 mm (9/16″)	240V AC	3/8″	Dome	0.187″ Quick-Disconnect	1 7/16″	Green, Red, Yellow	2779K4	12.84
14 mm (9/16″)	12V DC	3/8″	Dome	0.187″ Quick-Disconnect	1 15/16″	Green, Red, Yellow	2779K14	9.18
14 mm (9/16″)	24V DC	3/8″	Dome	0.187″ Quick-Disconnect	1 15/16″	Green, Red, Yellow	2779K3	9.18
Watertight								
13 mm (1/2″)	6V AC/DC	3/4″	Dome	Screw Terminal	1 5/8″	Amber, Blue, Green, Red, White	5339T11	13.83
13 mm (1/2″)	6V AC/DC	3/4″	Conical	Screw Terminal	1 5/8″	Amber, Blue, Green, Red, White	5339T21	13.83
13 mm (1/2″)	12V AC/DC	3/4″	Dome	Screw Terminal	1 5/8″	Amber, Blue, Green, Red, White	5339T12	13.83
13 mm (1/2″)	12V AC/DC	3/4″	Conical	Screw Terminal	1 5/8″	Amber, Blue, Green, Red, White	5339T22	13.83
13 mm (1/2″)	24V AC/DC	3/4″	Dome	Screw Terminal	1 5/8″	Amber, Blue, Green, Red, White	5339T13	13.83
13 mm (1/2″)	24V AC/DC	3/4″	Conical	Screw Terminal	1 5/8″	Amber, Blue, Green, Red, White	5339T23	13.83
13 mm (1/2″)	120V AC/DC	3/4″	Dome	Screw Terminal	1 5/8″	Amber, Blue, Green, Red, White	5339T14	13.83
13 mm (1/2″)	120V AC/DC	3/4″	Conical	Screw Terminal	1 5/8″	Amber, Blue, Green, Red, White	5339T24	13.83
Sunlight Visible and Waterproof								
8 mm (5/16″)	12V AC/DC	3/16″	Dome	0.187″ Quick-Disconnect	1 1/2″	Blue, Green, White	2779K12	14.52
8 mm (5/16″)	12V AC/DC	3/16″	Dome	0.187″ Quick-Disconnect	1 1/2″	Red, Yellow	2779K13	9.62
8 mm (5/16″)	24V AC/DC	3/16″	Dome	0.187″ Quick-Disconnect	1 1/2″	Blue, Green, White	2779K2	14.52
8 mm (5/16″)	24V AC/DC	3/16″	Dome	0.187″ Quick-Disconnect	1 1/2″	Red, Yellow	2779K7	9.62
12″ Push-On Wire Leads for Quick-Disconnect Connections								
Black							2779K802	2.76
Red							2779K801	2.76

Neon

Flat without Bezel

Conical with Bezel

Neon lights last longer than incandescent but not as long as LED. They're plastic and have 10″ wire leads. ***10 mm*** lights include a retaining clip; ***13 mm*** lights have a chrome bezel for snap-in mount. UL recognized and CSA certified.

Note: When bulb burns out, the entire light must be replaced.

Panel Cutout	AC Voltage	*Lens* Dia.	*Lens* Shape	*Lens* Color	Dp. Behind Panel		
10 mm (3/8″)	125	7/16″	Flat	Red	1 9/16″	1514K7	$4.52
10 mm (3/8″)	125	7/16″	Conical	Red	1 3/8″	1514K9	4.52
13 mm (1/2″)	125	7/16″	Flat	Red	1 1/2″	1514K8	5.17
13 mm (1/2″)	125	7/16″	Conical	Red	1 5/16″	1514K6	5.17

For information about choosing an electrical switch, see page 855.

Enclosure-Mounted Switches

Housed in a steel enclosure, these switches have contacts rated 3 amps @ 120 volts AC with a maximum voltage of 600 AC. Buttons switch one circuit and spring back (SPDT momentary) and have two screw terminal connections. Enclosure has 1/2″ and 3/4″ trade size conduit knockouts. NEMA 1 rated for indoor use. UL listed and CSA certified.

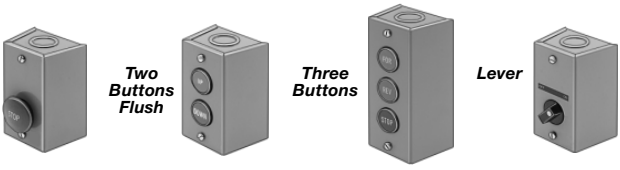

Before Switching, Circuit Is		Industry Designation	Button Color	Switch Label		
Single Button—4 1/8″ Ht. × 2 11/16″ Wd. × 2 3/16″ Dp.						
Flush	Off or On	NO or NC	Green	Start	6748K31	$47.08
Flush	Off or On	NO or NC	Red	Stop	6748K32	47.08
Mushroom	Off or On	NO or NC	Red	Stop	6748K33	55.68
Two Buttons—4 1/8″ Ht. × 2 11/16″ Wd. × 2 3/16″ Dp.						
Flush	1 Off/1 On	1 NO/1 NC	Green/Red	Start-Stop	6748K36★	47.08
1 Flush/1 Mushroom	1 Off/1 On	1 NO/1 NC	Green/Red	Start-Stop	6748K37★	61.45
Flush	1 Off/1 Off	1 NO/1 NO	Green/Red	Up-Down	6748K38	47.03
Three Buttons—5 11/16″ Ht. × 2 11/16″ Wd. × 2 11/16″ Dp.						
Flush	1 Off, 1 On/1 On, 1 Off/1 Off or On	1 NO, 1 NC/1 NC, 1 NO/NO or NC	Grn/Or/Red	For.-Rev.-Stop	6748K39	94.11
Flush	1 Off, 1 On/1 On, 1 Off/1 Off or On	1 NO, 1 NC/1 NC, 1 NO/NO or NC	Grn/Or/Red	Up-Down-Stop	6748K41	94.11
Flush	1 Off, 1 On/1 On, 1 Off/1 Off or On	1 NO, 1 NC/1 NC, 1 NO/NO or NC	Grn/Or/Red	Open-Close-Stop	6748K42	94.11
Lever—4 1/8″ Ht. × 2 11/16″ Wd. × 2 3/16″ Dp.						
Two Position	Off	2 NO	Black	Off-On	6748K34★■	47.08
Three Position	Off	2 NO	Black	Hand-Off-Auto	6748K35★■	47.08

★Switches one circuit (SPST). ■Stays switched (maintained).

Corrosion-Resistant Washdown Enclosure-Mounted Switches

Whether you select one of our styles or design your own, you'll get a switch that's ready to install and meets NEMA 4X for washdown and corrosion protection. Buttons switch one circuit (SPST) and have two screw terminal connections. Enclosure has 1/2″ trade size conduit knockouts except 7546K32-K45 has PG-13.5 knockouts. UL listed, CSA certified, and CE marked.

Switches with plastic enclosure also meet NEMA 13 for oil protection. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC except 7546K32-K45, which are rated 6 amps @ 120 volts AC and 5 amps @ 24 volts DC with a maximum voltage of 600 AC and 250 DC.

Switches with aluminum enclosure are rated 10 amps @ 120 volts AC and 4 amps @ 24 volts DC with a max. voltage of 600 AC and DC.

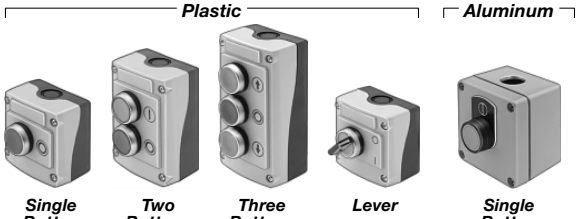

Before Switching, Circuit Is	Switch Action	Industry Designation	Button Color	Switch Label		
With Plastic Enclosure						
Single Button—2 7/8″ Ht. × 2 7/8″ Wd. × 1 7/8″ Dp.						
Flush	Off	Springs Back (Momentary)	NO	Green	7546K21	$25.25
Flush	On	Springs Back (Momentary)	NC	Red	7546K22	25.25
Mushroom	On	Springs Back (Momentary)	NC	Red	7546K23	31.33
Two Buttons—4 3/16″ Ht. × 2 7/8″ Wd. × 1 7/8″ Dp.						
Flush	1 Off/1 On	Springs Back (Momentary)	1 NO/1 NC	Green/Red	7546K27	40.18
Flush	1 Off/1 On	Springs Back (Momentary)	1 NO/1 NC	Green/Red	7546K28✔	61.72
Flush	1 Off/1 Off	Springs Back (Momentary)	1 NO/1 NO	Black/Black	Forward-Reverse 7546K32♣	39.49
Three Buttons—5 3/8″ Ht. × 2 11/16″ Wd. × 2 1/8″ Dp.						
Flush	1 Off/1 On/1 Off	Springs Back (Momentary)	1 NO/1 NC/1 NO	Grn/Red/Grn	7546K29▲	54.37
Flush	1 Off/1 On/1 Off	Springs Back (Momentary)	1 NO/1 NC/1 NO	Blk/Red/Blk	Open-Stop-Close 7546K43	77.76
Flush	1 Off/1 On/1 Off	Springs Back (Momentary)	1 NO/1 NC/1 NO	Blk/Red/Blk	Forward-Stop-Reverse 7546K44	77.76
Flush	1 Off/1 On/1 Off	Springs Back (Momentary)	1 NO/1 NC/1 NO	Blk/Red/Blk	Up-Stop-Down 7546K45	77.76
Lever—2 7/8″ Ht. × 2 7/8″ Wd. × 1 7/8″ Dp.						
Two Position Off		Stays Switched (Maintained)	NO	Black	6837K11	32.40
Replacement Contact Blocks						
Switches One Circuit from Off to On (NO)—For 6837K11 and 7546K21-K29					7546K34	4.88
Switches One Circuit from Off to On (NO)—For 7546K32 and K43-K45					7546K14	10.40
Switches One Circuit from On to Off (NC)—For 7546K21-K29					7546K35	4.88
Switches One Circuit from On to Off (NC)—For 7546K32 and K43-K45					7546K15	10.25
With Aluminum Enclosure						
Single Button—2 15/16″ Ht. × 3 1/8″ Wd. × 2 1/4″ Dp.						
Flush	Off	Springs Back (Momentary)	NO	Green	6156K41	81.69
Flush	On	Springs Back (Momentary)	NC	Red	6156K42	81.69
Two Buttons—4 7/8″ Ht. × 3 1/8″ Wd. × 2 1/4″ Dp.						
Flush	1 Off/1 On	Springs Back (Momentary)	1 NO/1 NC	Green/Red	6156K45	114.15
Three Buttons—6 7/8″ Ht. × 3 1/8″ Wd. × 2 1/4″ Dp.						
Flush	1 Off/1 On/1 Off	Springs Back (Momentary)	1 NO/1 NC/1 NO	Grn/Red/Grn	6156K46	141.75
Replacement Contact Blocks						
Switches One Circuit from Off to On (NO)—For All Aluminum Switches					6156K21	6.94
Switches One Circuit from On to Off (NC)—For All Aluminum Switches					6156K22	6.94

✔Has a red indicating light. Size is 5 1/2″ Ht. × 2 7/8″ Wd. × 1 7/8″ Dp. ♣Size is 4 3/16″ Ht. × 2 11/16″ Wd. × 2 1/8″ Dp.
▲ Size is 5 1/2″ Ht. × 2 7/8″ Wd. × 1 7/8″ Dp.

Design Your Own Enclosure-Mounted Switch

Customize your own switch with plastic enclosure. All meet NEMA 4X for corrosion and washdown protection.
To Order: Please ask for 7546K888 and select from the options listed below. Indicate selections for each button from top to bottom.

- Panel Cutout: 22 or 30 mm
- No. of Buttons: 1, 2, or 3
- Button Style: flush, projecting, mushroom, lever, or key
- Contact Block: 1 Circuit Off to On (SPST-NO), 1 Circuit On to Off (SPST-NC), 1 Circuit Off to On or On to Off (SPDT), or 2 Circuits Off to On or On to Off (DPST)
- Switch Action: Springs Back (Momentary) or Stays Switched (Maintained)
- Button Color: black, green, red, or yellow
- Switch Label: Forward, Reverse, Up, Down, Open, Close, Auto, Stop, or Emergency Stop

Enclosure-Mounted Electrical Switches

For information about choosing an electrical switch, see page 855.

Emergency Stop Corrosion-Resistant Washdown Enclosure-Mounted Switches

Plastic Enclosure Pull-to-Reset

Plastic Enclosure Pull-to-Reset with Indicator

Aluminum Enclosure Turn-to-Reset

Mounted in an enclosure with a yellow cover, these switches conform to EN418 for machine safety. They have a 1 9/16″ dia. red mushroom button except switches with indicator, which have a 2 1/8″ dia. button. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. UL listed, CSA certified, and CE marked.

With Plastic Enclosure— All have 1/2″ trade size conduit knockouts. Meet NEMA 4X and 13 and IP66 for washdown, oil, and corrosion protection. *Key-to-reset* switches stay locked out until switch is reset with a key. They include two keys. Switches *with indicator* alert you from the front and sides when the switch has been actuated.

With Aluminum Enclosure— All have 0.89″ (PG-16) knockouts. Meet NEMA 4 and 13 and IP66 for washdown and oil protection.

Replacement contact blocks switch one circuit from on to off (SPST-NC).

	Before Switching, Circuit Is	Industry Designation	Switch Action	No. of Terminals		
With Plastic Enclosure— *2 7/8″ Ht. × 2 7/8″ Wd. × 1 7/8″ Dp.*						
Pull-to-Reset	On	NC	Stays Switched (Maintained)	2	6785K21	$39.44
Pull-to-Reset	2 On	2 NC	Stays Switched (Maintained)	4	6785K22	44.60
Turn-to-Reset	On	NC	Stays Switched (Maintained)	2	6785K23	43.86
Turn-to-Reset	2 On	2 NC	Stays Switched (Maintained)	4	6785K24	49.03
Key-to-Reset	On	NC	Stays Switched (Maintained)	2	6785K25	56.04
Key-to-Reset	2 On	2 NC	Stays Switched (Maintained)	4	6785K26	59.95
Pull-to-Reset with Indicator	On	NC	Stays Switched (Maintained)	2	6785K27	52.06
Pull-to-Reset with Indicator	2 On	2 NC	Stays Switched (Maintained)	4	6785K28	57.13
Replacement Contact Block for Plastic Enclosure Switches					7546K35	4.88
With Aluminum Enclosure— *3 5/16″ Ht. × 3 3/8″ Wd. × 3 3/16″ Dp.*						
Pull-to-Reset	On	NC	Stays Switched (Maintained)	2	6785K33	138.89
Pull-to-Reset	2 On	2 NC	Stays Switched (Maintained)	4	6785K34	142.59
Turn-to-Reset	On	NC	Stays Switched (Maintained)	2	6785K31	138.89
Turn-to-Reset	2 On	2 NC	Stays Switched (Maintained)	4	6785K32	142.59
Replacement Contact Block for Aluminum Enclosure Switches					6785K81	10.63

Stainless Steel Corrosion-Resistant Washdown Enclosure-Mounted Switches

Two Button, One Flush/ One Projecting

Protected by a tough stainless steel enclosure that stands up to abuse, these switches meet NEMA 4X for washdown and corrosion resistance. Rated 6 amps @ 120 volts AC and 5 amps @ 24 volts DC with a maximum voltage of 600 AC and DC. Buttons have screw terminal connections and each switches two circuits: one from off to on and one from on to off (DPST-NO/NC). Start buttons are black (except 6758K35 is green); stop buttons are red. Enclosure has 7/32″ dia. mounting holes. UL listed and CSA certified.

	Before Switching, Circuit Is	Industry Designation	Switch Action	Switch Label		
Single Button— *4 1/2″ Ht. × 3 1/2″ Wd. × 2 7/8″ Dp.*						
Flush	1 Off, 1 On	1 NO, 1 NC	Springs Back (Momentary)	Start	6758K31	$184.48
Mushroom	1 Off, 1 On	1 NO, 1 NC	Springs Back (Momentary)	Stop	6758K32	206.30
Two Buttons— *6 3/4″ Ht. × 3 1/2″ Wd. × 2 7/8″ Dp.*						
One Flush/One Projecting	2 Off, 2 On	2 NO, 2 NC	Springs Back (Momentary)	Start-Stop	6758K34	234.52
One Flush/One Mushroom	2 Off, 2 On	2 NO, 2 NC	Springs Back (Momentary)	Start-Stop	6758K35	256.58

Hazardous-Location Enclosure-Mounted Switches

Two Button

Enclosed in corrosion-resistant cast aluminum alloy, these switches meet NEMA 7 and 9 for use in hazardous locations Class 1, Groups C and D; Class 2, Groups E, F, and G; and Class 3. Rated 6 amps @ 120 volts AC and 5 amps @ 24 volts DC with a maximum voltage of 600 volts AC and DC. Buttons have screw terminal connections and each switches two circuits: one from off to on and one from on to off (DPST-NO/NC). Start buttons are black; stop buttons are red. 6883K53 has a black lever with white insert. Enclosure has 3/4″ trade size knockouts and 3/8″ dia. mounting holes. UL listed and CSA certified.

	Before Switching, Circuit Is	Industry Designation	Switch Action	Switch Label		
Single Button— *6″ Ht. × 4 5/16″ Wd. × 4 7/8″ Dp.*						
Flush	1 Off, 1 On	1 NO, 1 NC	Springs Back (Momentary)	Start	6883K51	$277.24
Mushroom	1 Off, 1 On	1 NO, 1 NC	Springs Back (Momentary)	Stop	6883K52	302.00
Three-Position Lever	1 Off, 1 On	1 NO, 1 NC	Stays Switched (Maintained)	Hand-Off-Auto	6883K53	329.78
Two Buttons— *8 1/4″ Ht. × 4 5/16″ Wd. × 4 7/8″ Dp.*						
One Flush/One Mushroom	2 Off, 2 On	2 NO, 2 NC	Springs Back (Momentary)	Start-Stop	6883K55	449.04

Enclosure Disconnect Switches

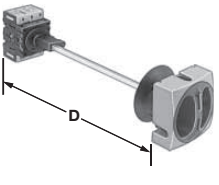

Make sure your enclosure can't be opened unless it's safe—turn the switch to disconnect power before you open the door. Also known as door interlock disconnect switches, they are lockable in the off position using a padlock with a 5/16″ dia. shackle (not included). All switch three circuits (3PST) and have screw terminal connections. They're also 35 mm DIN-rail mountable. Switches have an 11 13/16″ long metal shaft that you can cut to fit your application and 3/16″ dia. mounting holes. Mount in a 7/8″ dia. panel cutout. Switch is yellow and red plastic. UL and C-UL listed and CE marked.

Auxiliary contact block can be used to power an indicating light; send a signal to a PLC, relay, or small motor; or to connect to another device. It switches one circuit from off to on (SPST-NO) and one circuit from on to off (SPST-NC). Rated 10 amps @ 600 volts AC.

Amp Rating @ 600V AC	Single Phase hp @ 120V AC	Single Phase hp @ 240V AC	Three Phase hp @ 120V AC	Three Phase hp @ 240V AC	Ht.	Wd.	Mounting Depth (D)●		
25	0.75	1.5	1.5	3	3″	1 11/16″	4 7/8″-15 3/4″	7277K51	$57.16
32	1	2	2	5	3″	1 11/16″	4 7/8″-15 3/4″	7277K52	61.08
50	1.5	3	3	7.5	3 3/8″	2 1/8″	5 5/16″-16 1/8″	7277K53	70.29
63	3	5	5	10	3 3/8″	2 1/8″	5 5/16″-16 1/8″	7277K54	80.98
80	3	10	7.5	20	3 11/16″	2 13/16″	5 11/16″-16 1/2″	7277K55	98.28
100	5	10	10	25	3 11/16″	2 13/16″	5 11/16″-16 1/2″	7277K56	127.77
Auxiliary Contact Block								7277K11	10.83
35 mm DIN Rail (7.5 mm Ht. × 1 Meter Lg.)								8961K15	4.96

● Distance from the panel door to the DIN rail within the enclosure.

For information about choosing an electrical switch, see page 855.

Disconnect Switches

These high-amp switches stay switched (maintained). They switch three circuits (3PST) and have six screw terminal connections except DC-rated padlockable switches, which switch two circuits (DPST) and have four screw terminal connections. Maximum voltage for AC-rated switches is 600. Maximum voltage for DC-rated 20- to 50-amp switches is 800; 63-amp switch is 650. UL listed and C-UL listed, CSA certified, and CE marked except 6759K73 is CSA certified and CE marked only.

Panel Mount—*Padlockable* and *nonpadlockable* switches are plastic and require a 3/8″ dia. panel cutout. They can also mount on a 35 mm DIN rail. *Harsh-environment padlockable* switches are stainless steel and require a 7/8″ dia. panel cutout. They're IP69K rated for high-pressure and high-temperature washdowns.

Enclosed—*Padlockable, DC-rated padlockable,* and *nonpadlockable* switches are plastic. *Padlockable* and *nonpadlockable* switches have 1.2″ (PG-21) knockouts. *Harsh-environment padlockable* switches are stainless steel and IP66 rated for washdown protection.

Padlockable switches have a dial selector knob and lock in the off position. Lock out using a padlock with a maximum shackle dia. of 5/16″ (not included). ***Nonpadlockable*** switches have a lever selector knob.

To Order: Please specify color: yellow with red knob or gray (except enclosed harsh-environment and DC-rated switches come in yellow with red knob only). Use yellow with red knob for a main disconnect switch. Gray is for other disconnect applications.

Also Available: Additional power poles, neutral poles, and terminal blocks. Please ask for 6759K88 and specify switch part number and accessory type.

Padlockable Panel Mount

Harsh Environment Panel Mount

DC Rated

Amp Rating	Single Phase hp @ 120V AC	Single Phase hp @ 240V AC	Three Phase hp @ 240V AC	Panel Mount Ht.	Panel Mount Wd.	Panel Mount Dp. Behind Panel			Enclosed Ht.	Enclosed Wd.	Enclosed Dp.		
Padlockable													
25 @ 600V AC	0.75	1.5	3	3″	2 15/16″	2″	6759K21	$39.34	5 7/8″	3 7/8″	3 13/16″	6759K34♠	$60.83
32 @ 600V AC	1	2	5	3″	2 15/16″	2″	6759K22	43.24	5 7/8″	3 7/8″	3 13/16″	6759K35♠	64.74
50 @ 600V AC	1.5	3	7.5	3 5/16″	3 1/2″	2 3/8″	6759K23	52.45	8 11/16″	5 7/8″	3 7/8″	6759K36	98.93
63 @ 600V AC	3	5	10	3 5/16″	3 1/2″	2 3/8″	6759K24	68.31	8 11/16″	5 7/8″	3 7/8″	6759K37	114.15
80 @ 600V AC	3	10	20	3 11/16″	4 9/16″	2 11/16″	6759K25	83.18	8 11/16″	5 7/8″	3 7/8″	6759K38	197.11
100 @ 600V AC	5	10	25	3 11/16″	4 9/16″	2 11/16″	6759K26	113.27	8 11/16″	5 7/8″	3 7/8″	6759K39	226.60
Harsh Environment Padlockable													
20 @ 600V AC	0.33	1	2	—	—	—	—	—	7 7/8″	5 15/16″	4 11/16″	6759K6	287.12
30 @ 600V AC	1	1.5	5	—	—	—	—	—	7 7/8″	5 15/16″	4 11/16″	6759K61	291.50
40 @ 600V AC	1.5	3	7.5	4 5/16″	4 5/16″	3 3/8″	6759K51	246.21	7 7/8″	5 15/16″	4 11/16″	6759K62	296.97
60 @ 600V AC	3	7.5	15	4 5/16″	4 5/16″	3 3/8″	6759K52	264.31	7 7/8″	5 15/16″	4 11/16″	6759K63	299.81
80 @ 600V AC	3	10	20	—	—	—	—	—	7 7/8″	5 15/16″	4 11/16″	6759K64	309.18
DC-Rated Padlockable													
20 @ 800V DC	—	—	—	—	—	—	—	—	9 13/16″	6 5/16″	4 3/4″	6759K72	114.59
32 @ 800V DC	—	—	—	—	—	—	—	—	11″	7 1/2″	5 1/8″	6759K73	196.21
50 @ 800V DC	—	—	—	—	—	—	—	—	12 5/8″	8 11/16″	7 1/16″	6759K74	302.81
63 @ 650V DC	—	—	—	—	—	—	—	—	12 5/8″	8 7/8″	7 1/16″	6759K71	294.69
Nonpadlockable													
25 @ 600V AC	0.75	1.5	3	3″	2 15/16″	2″	6759K27	42.08	5 7/8″	4 5/16″	3″	6759K41♠	63.57
32 @ 600V AC	1	2	5	3″	2 15/16″	2″	6759K28	45.99	5 7/8″	4 5/16″	3″	6759K42♠	67.47
50 @ 600V AC	1.5	3	7.5	3 5/16″	3 1/2″	2 3/8″	6759K29	55.87	8 11/16″	5 7/8″	3 7/8″	6759K43	102.21
63 @ 600V AC	3	5	10	3 5/16″	3 1/2″	2 3/8″	6759K31	68.80	8 11/16″	5 7/8″	3 7/8″	6759K44	117.41
80 @ 600V AC	3	10	20	3 11/16″	4 9/16″	2 11/16″	6759K32	86.34	8 11/16″	5 7/8″	3 7/8″	6759K45	199.74
100 @ 600V AC	5	10	25	3 11/16″	4 9/16″	2 11/16″	6759K33	116.44	8 11/16″	5 7/8″	3 7/8″	6759K46	229.69
"Main Switch" Adhesive-Backed Label (0.79″ Ht. × 3.15″ Wd.)												6759K65	6.00

♠ Has 0.87″ (PG-16) knockouts and is rated IP66 for washdown protection.

Compact Disconnect Switches

Just because your electrical load is large doesn't mean your switch needs to be. These switches are a smaller, cam-style alternative to other disconnect switches. Disconnect power to electrical panels, motors, and appliances with high amp ratings. Switches can be used in single- and three-phase applications with a maximum voltage of 600 AC and 24 DC. They stay switched (maintained) and switch three circuits (3PST). All have ground connections, eight screw terminal connections, and a red lever knob. They are marked as "Main Switch" and have a safety lockout that can be secured using a padlock with a maximum shackle dia. of 5/16″ (not included). When locked, the knob can't be turned to the on position. Enclosure is corrosion-resistant gray plastic. IP65 rated for oil and water resistance. UL recognized and CSA certified.

Panel-mount switches require a 3/8″ dia. panel cutout. ***Enclosed 12-*** to ***25-amp*** switches have four 0.87″ (PG-16) knockouts; ***50-*** and ***63-amp*** switches have six 1.14″ (PG-21) and four 1.5″ (PG-29) knockouts.

Panel Mount

Enclosed

Amp Rating @ 600V AC	Amp Rating @ 24V DC	Single Phase hp @ 120V AC	Three Phase hp @ 120V AC	Three Phase hp @ 240V AC	Panel Mount Ht.	Panel Mount Wd.	Panel Mount Dp. Behind Panel			Enclosed Ht.	Enclosed Wd.	Enclosed Dp.		
12	16	0.5	1	3	1 11/16″	1 5/8″	1 13/16″	65915K11	$49.84	4 11/16″	3 13/16″	4 1/2″	65915K21	$86.25
16	20	1	2	5	1 7/8″	2″	1 13/16″	65915K12	60.58	4 11/16″	3 13/16″	4 1/2″	65915K22	96.32
20	25	1.5	3	5	1 7/8″	2″	1 13/16″	65915K13	65.50	4 11/16″	3 13/16″	4 1/2″	65915K23	99.74
25	32	2	3	7.5	2 3/8″	2 1/8″	2″	65915K14	86.35	4 11/16″	3 13/16″	4 1/2″	65915K24	114.23
50	50	3	7.5	15	3 3/16″	3 3/16″	3 3/16″	65915K15	129.17	5 5/16″	6 11/16″	5 11/16″	65915K25	198.74
63	80	5	10	20	3 3/16″	3 3/16″	3 3/16″	65915K16	143.85	5 5/16″	6 11/16″	5 11/16″	65915K26	213.17

Joystick Switch Components

Assemble a complete switch with an actuator and at least one contact block (sold separately) to operate up to eight circuits. Actuators fit in a 22 mm (7/8″) dia. panel cutout and include a mounting clip that accepts two contact blocks. Depth behind panel is 2 5/8″. Made of black rubber. NEMA 4X and 13 and IP66 rated for water, oil, and corrosion resistance. UL listed, CSA certified, and CE marked.

Two-position actuators move up and down and require one to four contact blocks. ***Four-position actuators*** move up, down, left, and right and are off in the center position. Require two to four contact blocks.

Contact block switches two circuits: one from off to on and one from on to off (DPST-NO/NC). It has screw terminal connections. Rated 6 amps @ 120 volts AC and 2.5 amps @ 24 volts DC with a maximum voltage of 600 AC and 300 DC.

Optional mounting clip connects up to four contact blocks.

Switch Action		
Two-Position Actuators		
Stays Switched (Maintained)	71025K51	$66.67
Springs Back (Momentary)	71025K52	66.67
Four-Position Actuators		
Stays Switched (Maintained)	71025K53	72.89
Springs Back (Momentary)	71025K54	72.89
Contact Block (DPST-NO/NC)	71025K55	18.17
Optional Mounting Clip	71025K45	13.63

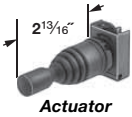

Actuator

Contact Block

For information about choosing an electrical switch, see page 855.

Heavy Duty Steel Disconnect Switches

240V AC/ 250V DC Indoor

600V AC/DC Indoor

Also known safety switches, these have spring-driven, quick-make/quick-break action to eliminate arcing and prolong switch life. All stay switched (maintained) and have wire lug connections.

Switches have two separate lockouts that prevent door access and lock the handle—secure with padlocks (not included). An interlock feature prevents opening the cover when the switch is on or from turning on the switch when the cover is open. Knockout sizes range from 1/2″ to 3″ trade size. UL listed.

Note: Fusible hp ratings are based on time-delay fuses installed.

Rain-tight outdoor enclosures are rated NEMA 3R for falling liquid and light splashing.

240V AC/250V DC Maximum Voltage Switches

Enclosure has a 3/4″ slot and 1/4″ dia. mounting holes on the back panel. Lockouts accept a padlock with a 5/16″ dia. shackle.

Fusible switches are designed with fuse holders inside the enclosure so there's no need for additional wiring for circuit protection. *Note:* If Class RK1, Class RK5, or Class T fuses are used, a rejection clip kit is required. Ask for 7524K888 and specify the McMaster-Carr switch part number and the fuse class. *DPST* switches use two fuses; *3PST* switches use three fuses (see pages 916-918).

Nonfusible switches are used where overload protection is not needed.

No. of Circuits	Industry Designation	Amp Rating @ 240V AC	Single Phase hp @ 240V AC	Three Phase hp @ 240V AC	Ht.	Wd.	Dp.	For Fuse Class	Indoor		Rain-Tight Outdoor	
Fusible												
2	DPST, 3-Wire	30	3	—	8 1/8″	5 1/2″	3 1/8″	RK1, RK5, K5, H	7524K21	$43.79	7524K24	$69.87
2	DPST, 3-Wire	60	10	—	14 3/8″	6 5/8″	5 1/8″	RK1, RK5, K5, H	7524K22	76.48	7524K25	120.97
2	DPST, 3-Wire	100	15	—	21 7/8″	9 5/8″	5 1/8″	RK1, RK5, K5, T, H	7524K23	158.94	7524K26	178.48
3	3PST, 4-Wire	30	3	7 1/2	8 1/8″	7 3/16″	3 1/8″	RK1, RK5, K5, H	7524K11	69.91	7524K14	108.82
3	3PST, 4-Wire	60	10	15	14 3/8″	6 5/8″	5 1/8″	RK1, RK5, K5, H	7524K12	120.97	7524K15	164.60
3	3PST, 4-Wire	100	15	30	21 7/8″	9 5/8″	5 1/8″	RK1, RK5, K5, T, H	7524K13	210.54	7524K16	304.21
Nonfusible												
3	3PST, 3-Wire	30	—	7 1/2	8 1/8″	7 3/16″	3 1/8″	—	7524K31	57.57	7524K34	114.91
3	3PST, 3-Wire	60	—	15	11 1/8″	6 5/8″	5 1/8″	—	7524K32	76.34	7524K35	170.19
3	3PST, 3-Wire	100	—	30	21 7/8″	9 5/8″	5 1/8″	—	7524K33	178.40	7524K36	318.97

600V AC/600V DC Maximum Voltage Switches

Use with heavy duty motor loads. Handle is red on one side and black on the other. Enclosure has 5/16″ dia. mounting holes on the back panel. Lockouts accept a padlock with a 3/8″ dia. shackle. Switches meet Fed. Spec. WS-865c.

Fusible switches use three fuses (see pages 916-918). *Note:* If Class RK1 or Class RK5 fuses are used, a rejection clip kit is required. Ask for 7499K888 and specify the McMaster Carr switch part number and the fuse class.

Nonfusible switches are used where overload protection is not needed.

No. of Circuits	Industry Designation	Amp Rating @ 600 VAC	Single Phase hp @ 600V AC	Three Phase hp @ 600 VAC	Ht.	Wd.	Dp.	For Fuse Class	Indoor		Rain-Tight Outdoor	
Fusible												
3	3PST, 3-Wire	30	—	20	14 7/8″	6 5/8″	4 7/8″	RK1, RK5, J, H	7499K51	$266.02	7499K61	$450.79
3	3PST, 3-Wire	60	—	50	17 1/2″	9″	6 3/8″	RK1, RK5, J, H	7499K52	321.20	7499K62	529.05
3	3PST, 4-Wire	30	—	20	14 7/8″	6 5/8″	4 7/8″	RK1, RK5, J, H	7499K53	310.60	7499K63	494.42
3	3PST, 4-Wire	60	—	50	17 1/2″	9″	6 3/8″	RK1, RK5, J, H	7499K54	357.48	7499K64	568.93
3	3PST, 4-Wire	100	—	75	21 5/16″	8 1/2″	6 3/8″	RK1, RK5, J, H	7499K55	643.90	7499K65	871.46
3	3PST, 4-Wire	200	—	150	29 5/16″	17 5/16″	8 1/2″	RK1, RK5, J, H	7499K56	941.67	7499K66	1,207.86
Nonfusible												
3	3PST, 3-Wire	30	10	30	14 7/8″	6 5/8″	4 7/8″	—	7499K71	140.57	7499K81	244.59
3	3PST, 3-Wire	60	30	60	17 1/2″	9″	6 3/8″	—	7499K72	245.63	7499K82	439.52

Pendant Switches with Cable

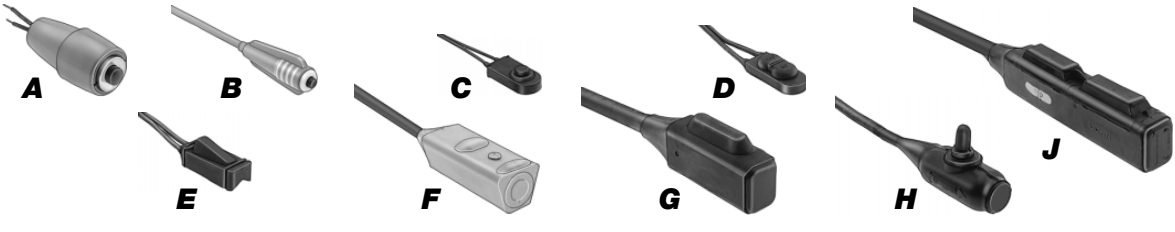

Already wired, these switches are ready to operate your mobile machinery. Switches spring back (momentary) except Style D, which stays switched (maintained).

(A&B) Switches are gray.

(C-J) Sealed switches withstand dirt, water, and corrosion. Color is black except Style F, which is yellow. *Styles C-E* are IP68 rated for continuous submersion in water. *Styles G-J* are IP66 and NEMA 4 rated for washdown protection. *Styles H* and *J* are labeled "Up/Down."

Pendant Type	No. of Circuits	Before Switching, Circuit Is	Industry Designation	Amp Rating @ 120V AC/ 24V DC	Max. Voltage, AC/DC	Lg.	Wd.	Ht.	Cable Lg.	Cable AWG		
Switches												
A Push-Button	1	Off	1 NO	6/10	250/250	3 3/8″	1 5/8″ Dia.	—	2″ leads	—	69755K69	$50.49
B Push-Button	1	Off	1 NO	0.4/0.5	120/48	2 13/16″	3/4″ Dia.	—	6 ft.	18/2	6944K62	26.35
Sealed Switches												
C Push-Button	1	Off	1 NO	5/5	120/28	1 5/8″	13/16″	1/2″	1 1/2 ft.	18/2	6944K11	17.98
D Push-Button (On/Off)	1	Off	1 NO	5/15	120/28	1 7/8″	13/16″	5/16″	1 1/2 ft.	16/2	6944K12	68.06
E Push-Button (Lever)	1	Off	1 NO	5/15	120/28	2 1/8″	13/16″	5/8″	1 1/2 ft.	16/2	6944K13	48.77
F Push-Button	1	Off	1 NO	20/5	480/250	4 1/2″	1 1/2″	1 5/16″	18 ft.	16/2	6944K44	94.68
G Push-Button	2	1 Off, 1 On	1 NO, 1 NC	5/—	250/—	3 5/8″	1 3/16″	1 15/16″	12 ft.	16/4	6944K42	381.87
H Toggle (w/Center Off)	2	1 Off/1 Off	1 NO/1 NO	10/—	250/—	3″	1 3/8″	2 3/16″	6 1/2 ft.	16/3	6944K25	144.85
J Two Push-Button	2	1 Off/1 Off	1 NO/1 NO	15/—	250/—	6 5/8″	1 3/16″	1 15/16″	18 ft.	14/3	6944K43	319.35

For information about choosing an electrical switch, see page 855.

Pendant Switches

Operate hoists, trolleys, cranes, and bridges with these handheld, multiple-button switches. All have push-buttons that spring back (momentary) and screw terminal connections. They can be wired to prevent operating two buttons simultaneously. Housing is yellow. CSA certified.

Two-speed switches have staged contacts. Push button halfway to close first contact (for slow speed) and all the way to close second contact (for high speed).

Corrosion-resistant washdown switches are polycarbonate and NEMA 4X and 12 rated for washdown, corrosion, and oil resistance. UL listed except 7161K18.

Also Available: Corrosion-resistant washdown pendant switches in other configurations. Please ask for 7161K999 and tell us what you are looking for.

Impact-tough switches are made of durable rubber.

Corrosion-Resistant Washdown

Impact Tough

No. of Buttons	Per Button: No. of Circuits	Per Button: Before Switching, Circuit Is	Per Button: No. of Terminals	Per Button: Industry Designation	Amp Rating @ 120V AC	Max. Voltage, AC/DC	Cord Dia. Range	Lg.	Wd.	Ht.		
Corrosion-Resistant Washdown Switches												
Single Speed												
2	1	Off	2	1 NO	5	250/120	0.30″-0.77″	4½″	3⅛″	2″	**7161K11**	$99.74
4	1	Off	2	1 NO	5	250/120	0.30″-0.77″	7⅛″	3⅛″	2″	**7161K13**	159.77
6	1	Off	2	1 NO	5	250/120	0.30″-0.77″	10 5/16″	3 3/16″	2″	**7161K14**	235.43
Single Speed (One of the buttons is green "on" and one is red "off")												
4	1	Off	2	1 NO▲	5	250/120	0.30″-0.77″	7⅛″	3⅛″	2″	**7161K15**	203.32
6	1	Off	2	1 NO▲	5	250/120	0.30″-0.77″	10 5/16″	3 3/16″	2″	**7161K16**	238.90
8	1	Off	2	1 NO▲	5	250/120	0.30″-0.77″	12 11/16″	3 3/16″	2″	**7161K17**	341.02
Single Speed (One of the buttons is an emergency stop button)												
3	1	Off	2	1 NO●	5	250/120	0.30″-0.77″	7⅛″	3⅛″	2″	**7161K18**	231.21
Two Speed												
2	2	Off	4	2 NO	5	250/120	0.30″-0.77″	4½″	3⅛″	2″	**7161K36**	120.44
4	2	Off	4	2 NO	5	250/120	0.30″-0.77″	7⅛″	3⅛″	2″	**7161K37**	222.98
6	2	Off	4	2 NO	5	250/120	0.30″-0.77″	10 5/16″	3 3/16″	2″	**7161K38**	325.65
Impact-Tough Switches												
Single Speed												
2	2	Off or On	4	1 NO, 1 NC	20	250/250	0.50″-0.69″	5⅞″	3″	2 11/16″	**7161K51**	229.08
3	2	Off or On	4	1 NO, 1 NC	20	250/250	0.50″-0.75″	7½″	3″	2 11/16″	**7161K62**	331.37
4	2	Off or On	4	1 NO, 1 NC	20	250/250	0.50″-0.75″	9⅛″	3″	2 11/16″	**7161K63**	429.33
6	2	Off or On	4	1 NO, 1 NC	20	250/250	0.56″-0.81″	12 5/16″	3″	2 11/16″	**7161K64**	619.61
Replacement Contact Blocks												
For Corrosion-Resistant Washdown Switches (Replaces Contacts for Two Buttons)												
For Single-Speed Switches											**7161K31**	39.01
For Two-Speed Switches											**7161K32**	71.56
For Impact-Tough Switches (Replaces Contact for One Button)												
For Single-Speed Switches											**7161K6**	47.83

▲Red button is 1 NC. ●Emergency stop button is 1 NC.

Easy-Grip Pendant Switches

The slim shape of these pendant switches fits comfortably in your hand. They have a mechanical interlock that prevents operating both buttons simultaneously (except 7987K32, which must be wired for this feature). Buttons spring back (momentary) and have screw terminal connections. Enclosure is yellow plastic. NEMA 4X rated for washdown and corrosion protection except 7987K31, which is NEMA 4 rated for washdowns. 7987K32 is also NEMA 6 rated for temporary submersion in water. UL listed except 7987K32. CSA certified except 7987K31 is C-UL listed.

Two-speed switch has staged contacts. Push halfway to close first contact (for slow speed) and all the way to close the second contact (for high speed).

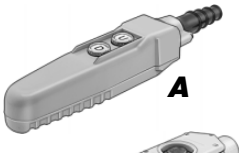

A

B

C

D

No. of Buttons	Per Button: No. of Circuits	Per Button: Before Switching, Circuit Is	Per Button: No. of Terminals	Per Button: Industry Designation	Amp Rating @ 120V AC/ 24V DC	Max. Voltage, AC/DC	Cord Dia. Range	Lg.	Wd.	Ht.		
Single Speed												
A 2	1	Off	2	1 NO	5/—	250/—	0.32″-0.63″	11″	2⅛″	1⅝″	**7987K31**	$64.96
B 2	1	Off	2	1 NO	6/0.5	600/600	0.35″-0.51″	10⅞″	2″	2⅜″	**7987K28**	87.62
B 2	1	1 Off/1 On	2	1 NO/1 NC	6/0.5	600/600	0.35″-0.51″	10⅞″	2″	2⅜″	**7987K29**	109.54
C 2	2	Off or On	4	1 NO or 1 NC	10/7	250/ 28	0.31″-0.63″	5⅝″	1⅞″	1⅞″	**7987K32**	82.32
Two Speed												
D 2	1	2 Off	3	2 NO	3/—	120/—	0.38″-0.63″	9⅛″	1⅛″	2⅜″	**7999K14**	114.76

Wireless Pendant Switch Systems

Control power from a distance without being tethered by a cord. Systems include one transmitter and one receiver. Buttons switch one circuit (SPST-NO), spring back (momentary), and are single speed. Transmitters run on two AA batteries (included); receivers have a 6-ft. cable with spade terminals. They operate on one of 38 channels, so you can use up to 38 systems in the same area. Rated 10 amps @ 250 volts AC and 24 volts DC. Housing is orange nylon. IP65 rated for washdowns.

Two-button transmitter operates up to 150 ft. away. ***Four-*** and ***six-button*** transmitters operate up to 250 feet away and have a turn-to-reset stop button and a start/on dial.

To Order: Please specify voltage: 110/220 volts AC or 12/24 volts AC and DC. For a replacement transmitter, specify the serial number. *Note:* If adding to an existing system in your facility, please advise which channels are currently in use so a different channel can be provided.

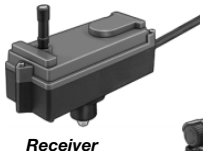

Receiver

Transmitter

No. of Buttons	No. of Circuits	Before Switching, Circuit Is	Receiver: Lg.	Receiver: Wd.	Receiver: Ht.	Transmitter: Lg.	Transmitter: Wd.	Transmitter: Ht.	Complete Systems		Replacement Transmitters	
2	2	Off	4″	3½″	2⅞″	5 3/16″	1 13/16″	1″	**7985K1**	$393.30	**7985K4**	$188.81
4	4	Off	7⅜″	7⅛″	3⅜″	6 3/16″	2⅜″	2″	**7985K2**	410.40	**7985K5**	207.81
6	6	Off	7⅜″	7⅛″	3⅜″	6 3/16″	2⅜″	2″	**7985K3**	416.10	**7985K6**	231.56

For information about choosing an electrical switch, see page 855.

Variable Output Switches

Also known as potentiometers, variable output switches fine-tune electrical current, giving you control over speed, volume, or light intensity. Select a switch and a dial (except digital switches, which include a dial or buttons) to adjust electrical current easily and accurately. For additional dials, see 3148K on page 2221.

Switches have a plastic housing and three solder lug connections except on/off control switch, which is metal with five solder terminals.

Economy switch offers good resolution at an economical price.

Standard switches have a finer resolution than economy style.

Compact switch saves valuable panel space.

High-resolution switch offers the finest resolution, plus it's built to withstand demanding environments.

Digital switches have a three-position digital display and snap into your panel. *Optional cover for digital switch with buttons* is clear rubber.

Long-life switch is metal and has ball bearings for smoother rotation. Service life is twice that of the other switches.

On/off control switch shuts off power to your device when turned all the way to the left. It switches one circuit from off to on (SPST-NO). On/off control is rated 1.5 amps @ 12 volts DC.

To Order: Please specify maximum resistance.

Dials have an unthreaded hole with set screw. *Styles J* and *K* have a locking feature that holds the dial setting. The more marks per turn, the more precise.

Switches

	No. of Turns	Watt Rating	Panel Cutout	Dp. Behind Panel	O'all Dia.	Shaft Dia.	Shaft Lg.	Available Max. Resistance, Ohms		
A...Economy	10	2 @ 450V AC	7/16″ Dia.	3/4″	7/8″	1/4″	1/2″	1K, 5K, 10K	7436K31	$11.39
A...Standard	5	1.5 @ 273V AC	7/16″ Dia.	3/4″	7/8″	1/4″	1/2″	1K, 5K, 10K	7436K34	19.89
A...Standard	10	2 @ 447V AC	7/16″ Dia.	3/4″	7/8″	1/4″	1/2″	1K, 5K, 10K	7436K32	32.14
A...Washdown	10	2 @ 325V AC	7/16″ Dia.	1″	7/8″	1/4″	1/2″	1K, 5K, 10K	7436K42	41.76
B...Compact	1	1 @ 300V AC	7/16″ Dia.	7/16″	7/8″	1/4″	1/2″	1K, 5K, 10K	7436K37	13.60
C..High Resolution	10	5 @ 1,000V AC	7/16″ Dia.	1 3/4″	1 13/16″	1/4″	1/2″	1K, 5K, 10K	7436K33	114.16
D..Digital with Buttons	—	2 @ 500V AC	13/16″ Ht. x 17/16″ Wd.	1 3/8″	—	—	—	1K, 5K, 10K	7436K36	40.46
E...Digital with Dial	10	1.5 @ 385V AC	1″ Dia.	5/8″	1 1/4″	—	—	1K, 5K, 10K	7436K43	190.56
F...Long Life	1	2 @ 350V AC	7/16″ Dia.	5/8″	2″	1/4″	3/8″	1K, 5K, 10K	7436K44	281.22
G..On/Off Control	1	0.125 @ 350V AC	3/16″ Dia.	1/4″	7/16″	1/8″	5/16″	5K, 10K, 20K, 25K	3980T1	9.60
Optional Cover for Digital Switch with Buttons									7436K51	39.00

Dials

	Fits Shaft Dia.	Marks per Turn	Dial Dia.	Dial Ht.		
H.. Analog	1/8″	—	1/2″	1″	5856T2	$4.76
J.. Analog	1/8″	50	7/8″	7/8″	3980T2	20.18
J.. Analog	1/4″	50	7/8″	15/16″	7436K39	10.91
J.. Analog	1/4″	100	1 13/16″	1″	7436K38	$22.28
K.. Digital	1/4″	500	1 1/8″	1 1/4″	7436K41	21.72

Heavy Duty Variable Output Switches

22 mm

30 mm

NEMA-rated for tough environments, these switches let you adjust speed, volume, or light intensity. Also known as potentiometers, they have a single-turn dial and screw terminal connections. Maximum voltage is 500 AC and DC. UL listed and CSA certified.

22 mm dia. panel cutout switch is NEMA 4X rated to protect against washdowns and corrosion. Depth behind panel is 2 1/4″. Housing is polyester; dial is 1 1/8″ dia. black plastic with a white face.

30 mm dia. panel cutout switch is rated NEMA 13 for protection against oil and coolant spray. Depth behind panel is 1 3/4″. Housing is metal; dial is 1 1/4″ dia. black plastic.

To Order: Please specify maximum resistance.

Panel Cutout Dia.	Watt Rating	Available Max. Resistance, Ohms		
22 mm (7/8″)	2 @ 120V AC/24V DC	1K, 2.5K, 5K, 10K	7506T1	$52.54
30 mm (1 3/16″)	2 @ 120V AC/24V DC	50, 250, 500, 1K , 2.5K, 5K, 10K, 15K, 25K, 100K, 500K, 2M, 5M	6787K51	142.18

Rotary Selector Switches

13/32″ with Screw Terminals

13/32″ with Solder Lugs

1/4″

Control multiple devices with one switch. Each position closes a set of contacts in each circuit, so you can select between multiple devices on one or more circuits. Contacts stay switched (maintained).

13/32″ dia. panel cutout switches are plastic and have a 1/4″ shaft dia. Knobs not included; see page 2221.

1/4″ dia. panel cutout switches are nickel-plated brass and have a 1/8″ shaft dia. They include a black plastic knob.

No. of Circuits	Industry Designation	No. of Positions	No. of Terminals	Amp Rating AC	Amp Rating DC	Dp. Behind Panel	O'all Dia.	Shaft Lg.	Connections		
13/32″ Dia. Panel Cutout											
1	Single Pole	11	12	6 @ 125/250V	—	1″	1 3/4″	5/8″	Screw Terminal	6550K43	$35.08
1	Single Pole	11	12	30 @ 125/250V	—	1 13/16″	3″	9/16″	Screw Terminal	6588K51	39.05
1	Single Pole	12	13	2.5 @ 125V	0.35 @ 125V	13/16″	1″	1 1/2″	Solder Lug	65865K31	8.20
2	Double Pole	6	14	2.5 @ 125V	0.35 @ 125V	13/16″	1″	1 1/2″	Solder Lug	65865K32	8.82
2	Double Pole	11	24	6 @ 125/250V	—	1 1/2″	1 3/4″	5/8″	Screw Terminal	6550K44	47.75
3	3 Pole	4	15	2.5 @ 125V	0.35 @ 125V	13/16″	1″	1 1/2″	Solder Lug	65865K33	8.56
3	3 Pole	11	36	6 @ 125/250V	—	1 15/16″	1 3/4″	5/8″	Screw Terminal	6550K45	60.76
4	4 Pole	3	16	2.5 @ 125V	0.35 @ 125V	13/16″	1″	1 1/2″	Solder Lug	65865K34	9.52
5	5 Pole	11	60	6 @ 125/250V	—	2 13/16″	1 3/4″	5/8″	Screw Terminal	6550K47	126.61
1/4″ Dia. Panel Cutout											
1	Single Pole	6	7	3 @ 125V	2 @ 30V	1″	9/16″	13/16″	Solder Pin	6548K23	13.31
1	Single Pole	8	9	2 @ 125V	1 @ 30V	1 1/16″	9/16″	13/16″	Solder Pin	6548K21	13.98
2	Double Pole	4	10	2 @ 125V	1 @ 30V	1 1/16″	9/16″	13/16″	Solder Pin	6548K22	14.75

For information about choosing an electrical switch, see page 855.

Key Switches

Ensure security and prevent accidental actuation. Key switches have a threaded body and stay switched (maintained). Include two keys and a hex nut for tightening the switch to a panel.

Standard—Made of die cast zinc. 65635K14 and K13 have a stainless steel face. Switches with *6″ wire leads, quick-disconnects,* and *solder lugs* are rated 4 amps @ 125 volts AC and 24 volts DC. UL recognized and CSA certified. Switches with *screw terminals* are rated 6 amps @ 120 volts AC. UL recognized and CSA certified. Switches with *10″ wire leads* are rated 7 amps @ 28 volts AC and DC.

High Security—Switches have a round key that is difficult to duplicate. Rated 7 amps @ 28 volts AC and DC. Made of die cast zinc.

High Amp—Use in high-current applications such as motor and pump loads. Rated 20 amps and 1.5 hp @ 120 volts AC. Made of plastic and steel. UL recognized.

Also Available: Replacement keys. Please ask for 7188K888 and specify the McMaster-Carr part number of your switch.

Standard

High Security

High Amp

When Switch Is Center Circuit Is	When Switch Is Right Circuit Is	Key Removal Positions	No. of Terminals	Industry Designation	Panel Cutout Dia.	Cylinder Lg.	Connections	Includes Key No.		
Switch One Circuit										
Standard—*Two Position*										
Off	On	Center	2	SPST-NO	15/32″	1 1/16″	6″ Wire Leads	0029	65635K14	$27.33
Off	On	Center	2	SPST-NO	15/32″	1 1/16″	0.11″ Quick-Disc.	0029	65635K13	24.67
Off	On	Center	2	SPST-NO	3/4″	3/4″	Screw Terminal	2335	7188K32	11.79
Off	On	Center	2	SPST-NO	3/4″	1″	Screw Terminal	H2166	7188K34★	12.96
Off	On	Center, Right	2	SPST-NO	3/4″	3/4″	Screw Terminal	H2158	7188K33	11.79
Off	On	Center, Right	2	SPST-NO	3/4″	1 1/8″	10″ Wire Leads	211	7188K22	15.81
Off	On	Center, Right	2	SPST-NO	3/4″	1 1/8″	10″ Wire Leads	Random	7188K21	15.81
Off	On	Center, Right	2	SPST-NO	3/4″	1 1/8″	10″ Wire Leads	Random■	7188K23	17.00
Off or On	On or Off	Center	3	SPDT	3/4″	13/16″	Solder Lug	A126A	7278K12	13.29
Off or On	On or Off	Center, Right	3	SPDT	3/4″	13/16″	Solder Lug	A127A	7278K13	13.29
Standard—*Three Position (Switch is On in Left Position)*										
Off	On	Left, Center, Right	4	(2)SPST-NO	3/4″	13/16″	Solder Lug	A133A	7278K19	13.29
Off	On	Center	4	(2)SPST-NO	3/4″	13/16″	Solder Lug	A132A	7278K18	13.29
High Security—*Two Position*										
Off	On	Center, Right	2	SPST-NO	3/4″	1 3/8″	10″ Wire Leads	V6202	7188K26	32.10
Off	On	Center, Right	2	SPST-NO	3/4″	1 3/8″	10″ Wire Leads	Random	7188K25	27.44
Off	On	Center, Right	2	SPST-NO	3/4″	1 3/8″	10″ Wire Leads	Random▲	7188K27	33.87
Switch Two Circuits										
Standard—*Two Position*										
Off or On	On or Off	Center	6	DPDT	3/4″	13/16″	Solder Lug	A128A	7278K14	13.29
Off or On	On or Off	Center, Right	6	DPDT	3/4″	13/16″	Solder Lug	A129A	7278K15	13.29
Standard—*Three Position (Switch is Off or On in Left Position)*										
Off	On or Off	Center	8	DPDT	3/4″	13/16″	Solder Lug	A131A	7278K17	13.29
High Amp—*Two Position*										
Off	On	Center	4	DPST-NO	15/32″	—	0.25″ Quick-Disc.	13-8173	5049T1♣	42.87

★ Springs back (momentary). ■ Can also be operated by a master key. Please ask for 7188K14.
▲ Can also be operated by a master key. Please ask for 7188K18. ♣ Includes one key; depth behind panel is 1 1/16″.

Washdown Key Switches

With a stainless steel face, dust shutter, and rubber O-ring, these NEMA 4-rated key switches are ready for washdown environments. Switches have a threaded zinc body, stay switched (maintained), and mount in a 3/4″ dia. panel cutout. They include two keys and mounting hardware. UL recognized and CSA certified.

One-circuit switches are rated 4 amps @ 125 volts AC and 28 volts DC.
Two-circuit switches are rated 10 amps @ 300 volts AC and 24 volts DC.

Solder Lug

Screw Terminal

No. of Circuits	When Switch Is Center Circuit Is	When Switch Is Right Circuit Is	Key Removal Positions	No. of Terminals	Industry Designation	Cylinder Lg.	Connections	Includes Key No.		
1	Off or On	On or Off	Center, Right	3	SPDT	1 1/16″	Solder Lug	400R	7182K11	$19.06
1	Off or On	On or Off	Center, Right	3	SPDT	1 1/16″	Solder Lug	Random	7182K12	19.06
2	1 Off, 1 On	1 On, 1 Off	Center, Right	4	DPST-NO/NC	1 15/16″	Screw Terminal	400R	7182K13	39.12
2	1 Off, 1 On	1 On, 1 Off	Center, Right	4	DPST-NO/NC	1 15/16″	Screw Terminal	Random	7182K14	39.12

Sealed Touch Pad Switches

Where push-buttons or toggles won't work, try a low-profile touch pad switch. The sealed design provides water resistance; switches also resist mild acids, bases, and alcohols (but not suitable for continuous contact). Often used for machine start/stop and door opening applications, they switch one circuit from off to on (SPST-NO) and spring back (momentary). Rated 1 amp @ 28 volts AC and DC. Switches have wire leads and a black PVC housing. UL recognized. ***Optional mounting frames*** are metal and secure your switch to a wall or benchtop. Holes are 1/8″ dia. (fasteners not included).

With Optional Mounting Frame

	Lg.	Wd.	Thick.	Actuation Force	Switch		Optional Mounting Frame Lg.	Optional Mounting Frame Wd.		
Rectangular	1″	3/4″	3/16″	2.5 lbs.	7692K4	$16.70	1 11/16″	1 7/16″	7692K8	$2.05
Round	1 1/2″ Dia.	—	1/4″	2.5 lbs.	7692K3	16.70	2 3/16″ Dia.	—	7692K7	2.05

DIN-Rail Mount Toggle Switches

Conveniently built into a terminal block, these switches mount on a 35 mm DIN rail. They have screw terminal connections and can be mounted side-by-side. UL recognized and CE marked.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary. Parentheses in the industry designation indicate momentary switch action.

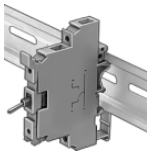

No. of Circuits	When Switch Is Left Circuit Is	When Switch Is Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 120V AC/ 28V DC	Toggle Ht.		
Two Position									
1	Off or On	On or Off	Stays Switched	4	SPDT ON-ON	3	0.51″	7218K24	$32.06
1	Off or On	On or Off	Springs Back	4	SPDT (ON)-ON	3	0.51″	7218K25	42.13
Three Position—*Switch is Off in Center Position*									
1	Off or On	On or Off	Stays Switched	4	SPDT ON-OFF-ON	3	0.51″	7218K26	34.15

For information about choosing an electrical switch, see page 855.

Toggle Switches

With Screw Terminals

With Quick-Disconnects

With Solder Lugs

Controlling a circuit is as easy as flipping a switch. Switches have a 15/32″-32 bushing and hex nut for mounting in a 1/2″ dia. panel cutout. Maximum voltage is 250 AC and 28 DC. UL recognized and CSA certified.

Optional "Off/On" toggle switch labels and switch boots are sold on page 876. See 70205K4 boot for toggles that switch one or two circuits and 70205K75 boot for toggles that switch three or four circuits.

Two-position illuminated flat toggle switch has a 14-volt incandescent bulb.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary. Parentheses in the industry designation indicate momentary switch action.

To Order: Please specify connections: screw terminal, 1/4″ quick-disconnect, or solder lug. For illuminated flat toggle switch, also specify green or red.

No. of Circuits	When Switch Is Left	When Switch Is Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 125V AC	Amp Rating @ 28V DC	Toggle Ht.		
Two Position										
1	Off	On	Stays Switched	2	SPST OFF-ON	6	6	0.56″	7343K184	$5.19
1	Off	On	Stays Switched	2	SPST OFF-ON	15	15	0.56″	7343K711	5.34
1	Off	On	Springs Back	2	SPST OFF-(ON)	10	10	0.56″	7343K763★	8.26
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	6	6	0.56″	7343K243★	5.61
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	15	15	0.56″	7343K751	5.69
1	Off or On	On or Off	Springs Back	3	SPDT ON-(ON)	10	10	0.56″	7343K29★	11.38
2	Off	On	Stays Switched	4	DPST OFF-ON	6	6	0.56″	7343K253★	8.00
2	Off	On	Stays Switched	4	DPST OFF-ON	15	15	0.56″	7343K771	8.11
2	Off	On	Springs Back	4	DPST OFF-(ON)	15	15	0.56″	7343K57♦	11.91
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	6	6	0.56″	7343K273★	9.13
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	15	15	0.56″	7343K821	9.25
2	Off or On	On or Off	Springs Back	6	DPDT ON-(ON)	15	15	0.56″	7343K58★	14.11
3	Off	On	Stays Switched	6	3PST OFF-ON	15	15	0.69″	7343K841	13.45
3	Off or On	On or Off	Stays Switched	9	3PDT ON-ON	15	15	0.69″	7343K861	17.02
4	Off	On	Stays Switched	8	4PST OFF-ON	15	15	0.69″	7343K871■	17.65
4	Off or On	On or Off	Stays Switched	12	4PDT ON-ON	15	15	0.69″	7343K891■	22.05
Two Position Illuminated Flat Toggle										
1	Off	On	Stays Switched	2	SPST OFF-ON	15	15	0.65″	7343K93♣	22.44
Three Position—Switch is Off in Center Position										
1	Off or On	On or Off	Stays Switched	3	SPDT ON-OFF-ON	6	6	0.56″	7343K193★	5.44
1	Off or On	On or Off	Stays Switched	3	SPDT ON-OFF-ON	15	15	0.56″	7343K731	5.55
1	Off or On	On or Off	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	10	10	0.56″	7343K783★	8.28
1	Off or On	On or Off	Springs Back Right to Center	3	SPDT ON-OFF-(ON)	10	10	0.56″	7343K28★	11.38
2	Off or On	On or Off	Stays Switched	6	DPDT ON-OFF-ON	6	6	0.56″	7343K263★	9.13
2	Off or On	On or Off	Stays Switched	6	DPDT ON-OFF-ON	15	15	0.56″	7343K791	9.25
2	Off or On	On or Off	Springs Back to Center	6	DPDT (ON)-OFF-(ON)	15	15	0.56″	7343K923★	18.81
3	Off or On	On or Off	Stays Switched	9	3PDT ON-OFF-ON	15	15	0.69″	7343K851	18.77
4	Off or On	On or Off	Stays Switched	12	4PDT ON-OFF-ON	15	15	0.69″	7343K881■	22.05

★ Not offered with solder lug connections. ♦ Screw terminal connections only. ■ Not offered with quick-disconnect connections.
♣ Quick-disconnect connections only.

Miniature Toggle Switches

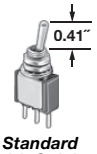

Standard with Quick-Disconnects

Standard with Solder Lugs

Mil. Spec.

Half the size of most toggle switches, you can fit more of them in your panel. UL recognized. For "Off/On" toggle switch labels, see page 876.

Standard switches include a 1/4″-40 bushing and hex nuts for mounting in a 1/4″ dia. panel cutout. Maximum voltage is 250 AC and 30 DC. CSA certified. For optional switch boot, see 70205K3 on page 876. **To Order:** Please specify connections: 1/16″ quick-disconnect or solder lug.

Mil. Spec. switches meet MIL-S-83731 to withstand splashing, dirt, and high vibration. They have a water-resistant silicone seal and solder lug connections. Mount in a 1/2″ dia. panel cutout using the included 15/32″-32 bushing and hex nuts. Maximum voltage is 125 AC and 30 DC. For optional switch boot, see 70205K4 on page 876.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary. Parentheses in the industry designation indicate momentary switch action.

No. of Circuits	When Switch Is Left	When Switch Is Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 125V AC	Amp Rating @ 30V DC		
Standard									
Two Position									
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	6	4	7347K75	$5.55
1	Off or On	On or Off	Springs Back	3	SPDT ON-(ON)	6	4	7347K76	6.13
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	6	4	7347K82	7.14
2	Off or On	On or Off	Springs Back	6	DPDT ON-(ON)	6	4	7347K83	7.50
3	Off or On	On or Off	Stays Switched	9	3PDT ON-ON	6	4	7347K96■	11.47
4	Off or On	On or Off	Stays Switched	12	4PDT ON-ON	6	4	7347K99■	13.13
Three Position—Switch is Off in Center Position									
1	Off or On	On or Off	Stays Switched	3	SPDT ON-OFF-ON	6	4	7347K73	5.74
1	Off or On	On or Off	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	6	4	7347K74	5.55
2	Off or On	On or Off	Stays Switched	6	DPDT ON-OFF-ON	6	4	7347K79	7.19
2	Off or On	On or Off	Springs Back to Center	6	DPDT (ON)-OFF-(ON)	6	4	7347K81	7.50
Mil. Spec.									
Two Position									
1	Off	On	Stays Switched	2	SPST OFF-ON	5	5	7535K51	31.07
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	5	5	7535K52	33.79
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	5	5	7535K55	38.54
Three Position—Switch is Off in Center Position									
1	Off or On	On or Off	Stays Switched	3	SPDT ON-OFF-ON	5	5	7535K53	30.72
1	Off or On	On or Off	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	5	5	7535K54	37.33
2	Off or On	On or Off	Springs Back to Center	6	DPDT (ON)-OFF-(ON)	5	5	7535K57	37.86

■ Not offered with quick-disconnect connections.

For information about choosing an electrical switch, see page 855.

Harsh Environment Toggle Switches

Sealed to hold up in demanding environments, these switches come with a hex nut for mounting in a 1/2″ dia. panel cutout. For "Off-On" toggle switch labels, see page 876.

Washdown switches meet IP67. They have a Buna-N rubber seal that covers the opening in the panel and an M12 mounting bushing. Maximum voltage is 250 AC and 30 DC. For optional switch boot, see 70205K26 on page 876.

Oil-tight and ***Mil. Spec. washdown switches*** have a silicone rubber seal around the toggle and a 15/32″-32 mounting bushing. UL recognized, CSA certified, and CE marked. For optional switch boot, see 70205K75 on page 876 (not for use with flat toggles). *Oil-tight washdown switches* are IP68 and NEMA 4 and 13 rated for washdown and oil spray protection. Maximum voltage is 277 AC and 28 DC. Flat toggles are high-visibility yellow. *Mil. Spec. washdown switches* meet MIL-S-3950. Maximum voltage is 125 AC and 28 DC.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary. Parentheses in the industry designation indicate momentary switch action.

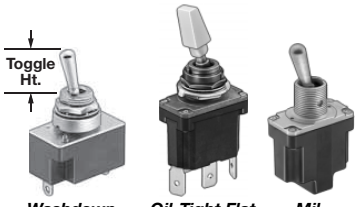

Washdown with Solder Lugs — *Oil-Tight Flat Toggle w/ Quick-Disconnects* — *Mil. Spec.*

No. of Circuits	When Switch Is: Left Circuit Is	When Switch Is: Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 125V AC	Amp Rating @ 28V DC	Toggle Ht.		
Washdown Switches—To Order. *Please specify connections: 1/4″ quick-disconnect or solder lug.*										
Two Position										
1	Off	On	Stays Switched	2	SPST OFF-ON	15	20	0.69″	7172K21	$11.04
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	15	20	0.69″	7172K22	11.96
1	Off or On	On or Off	Springs Back	3	SPDT ON-(ON)	15	20	0.69″	7172K24	11.44
2	Off	On	Stays Switched	4	DPST OFF-ON	15	15	0.69″	7172K27	14.04
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	20	20	0.69″	7172K28	15.60
2	Off or On	On or Off	Springs Back	6	DPDT ON-(ON)	15	20	0.69″	7172K31	15.69
Three Position—*Switch is Off in Center Position*										
1	Off or On	On or Off	Stays Switched	3	SPDT ON-OFF-ON	15	20	0.69″	7172K23	12.60
1	Off or On	On or Off	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	15	20	0.69″	7172K25	12.07
1	Off or On	On or Off	Springs Back Right to Center	3	SPDT ON-OFF-(ON)	15	20	0.69″	7172K26	12.07
2	Off or On	On or Off	Stays Switched	6	DPDT ON-OFF-ON	20	20	0.69″	7172K29	15.60
2	Off or On	On or Off	Springs Back to Center	6	DPDT (ON)-OFF-(ON)	15	20	0.69″	7172K32	16.29
2	Off or On	On or Off	Springs Back Right to Center	6	DPDT ON-OFF-(ON)	15	20	0.69″	7172K33	16.29
Oil-Tight Washdown Switches—To Order. *Please specify connections: screw terminal, 1/4″ quick-disconnect, or solder lug.*										
Two Position										
1	Off	On	Stays Switched	2	SPST OFF-ON	15	12	0.68″	8002K71	15.05
1	Off	On	Springs Back	2	SPST OFF-(ON)	10	10	0.68″	8002K11★	15.65
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	15	12	0.68″	8002K75	15.66
1	Off or On	On or Off	Springs Back	3	SPDT ON-(ON)	10	10	0.68″	8002K192◆	15.65
2	Off	On	Stays Switched	4	DPST OFF-ON	15	15	0.68″	8002K77	24.60
2	Off	On	Springs Back	4	DPST OFF-(ON)	10	10	0.68″	8002K21★	25.77
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	15	15	0.68″	8002K82	26.36
2	Off or On	On or Off	Springs Back	6	DPDT ON-(ON)	10	10	0.68″	8002K28★	25.79
4	Off	On	Stays Switched	8	4PST OFF-ON	15	12	0.68″	8002K292◆	48.94
4	Off or On	On or Off	Stays Switched	12	4PDT ON-ON	15	12	0.68″	8002K38★	44.85
Two Position Flat Toggle										
1	Off	On	Stays Switched	2	SPST OFF-ON	15	12	0.88″	8002K41♣	31.72
1	Off	On	Springs Back	2	SPST OFF-(ON)	10	10	0.88″	8002K59♣	27.08
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	15	12	0.88″	8002K49♣	28.40
2	Off	On	Springs Back	4	DPST OFF-(ON)	10	10	0.88″	8002K48♣	37.97
Three Position—*Switch is Off in Center Position*										
1	Off or On	On or Off	Stays Switched	3	SPDT ON-OFF-ON	15	12	0.68″	8002K18★	15.65
1	Off or On	On or Off	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	10	10	0.68″	8002K91	15.65
2	Off or On	On or Off	Stays Switched	6	DPDT ON-OFF-ON	15	15	0.68″	8002K79	24.60
2	Off or On	On or Off	Springs Back to Center	6	DPDT (ON)-OFF-(ON)	10	10	0.68″	8002K98	24.60
4	Off or On	On or Off	Stays Switched	12	4PDT ON-OFF-ON	15	12	0.68″	8002K31★	44.82
Three Position Flat Toggle—*Switch is Off in Center Position*										
1	Off or On	On or Off	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	15	10	0.88″	8002K84♣	25.70
2	Off or On	On or Off	Stays Switched	6	DPDT ON-OFF-ON	15	15	0.88″	8002K51♣	33.59
2	Off or On	On or Off	Springs Back to Center	6	DPDT (ON)-OFF-(ON)	10	10	0.88″	8002K58♣	34.24
Mil. Spec. Washdown Switches—*Screw Terminal Connections*										
Two Position										
1	Off	On	Stays Switched	2	SPST OFF-ON	10	15	0.68″	8002K114	26.75
1	On	On	Stays Switched	3	SPDT ON-ON	10	15	0.68″	8002K115	26.75
2	Off	On	Stays Switched	4	DPST OFF-ON	15	15	0.68″	8002K118	35.75
Three Position—*Switch is Off in Center Position*										
1	On	On	Stays Switched	3	SPDT ON-OFF-ON	10	15	0.68″	8002K113	26.75
1	On	On	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	7	10	0.68″	8002K116	26.75
2	On	On	Stays Switched	6	DPDT ON-OFF-ON	15	15	0.68″	8002K117	36.48
2	On	On	Springs Back to Center	6	DPDT (ON)-OFF-(ON)	8	10	0.68″	8002K119	35.75

★Not offered with solder lug connections. ◆Screw terminal connections only. ♣1/4″ quick-disconnect connections only.

Pull-to-Unlock Toggle Switches

Prevent accidental movement—these toggles must be pulled up before they can switch a circuit. Rated IP68 and NEMA 4 and 13 for washdown and oil spray protection, they have a completely sealed switching chamber. Switches have a silicone seal, screw terminal connections, and a 15/32″-32 bushing for mounting in a 1/2″ dia. panel cutout. Maximum voltage is 277 AC and 28 DC. UL recognized, CSA certified, and CE marked. For optional switch seal, see 70205K38 on page 876.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary. Parentheses in the industry designation indicate momentary switch action.

No. of Circuits	When Switch Is: Left Circuit Is	When Switch Is: Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 125V AC	Amp Rating @ 28V DC		
Two Position									
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	15	12	7337K97	$30.94
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	15	15	7337K98	40.59
Three Position—*Switch is Off in Center Position*									
1	Off or On	On or Off	Stays Switched	3	SPDT ON-OFF-ON	15	12	7337K95	34.28
1	Off or On	On or Off	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	10	10	7337K96	30.94

For information about choosing an electrical switch, see page 855.

High-Amp Toggle Switches

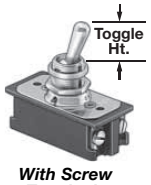

With Screw Terminals

With Quick-Disconnects

With Solder Lugs

Built to handle large electrical loads. Switches include an M12 metric bushing and hex nut for mounting in a ½″ dia. panel cutout. Maximum voltage is 250 AC and 30 DC. Switches with screw terminals rated 16 and 20 amps @ 125 volts AC are UL recognized and CSA certified; switches with screw terminals rated 30 and 50 amps @ 125 volts AC are UL recognized except 8001K32

Note: Switches that stay switched are also known as maintained.

Optional "Off/On" toggle switch labels and switch boots and seals are sold separately on this page. See 70205K5 seal for 8001K51-K54 and K85; see 70205K26 boot for switches with ¼″ quick-disconnect connections and solder lug connections.

No. of Circuits	When Switch Is Left	Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 125V AC	30V DC	Toggle Ht.		
Two Position										
With Screw Terminal Connections										
1	Off	On	Stays Switched	2	SPST OFF-ON	16	8	0.69″	**8001K51**♣	$11.00
1	Off	On	Stays Switched	2	SPST OFF-ON	20	10	0.69″	**8001K52**♣	15.00
2	Off	On	Stays Switched	4	DPST OFF-ON	16	8	0.69″	**8001K53**♣	10.54
2	Off	On	Stays Switched	4	DPST OFF-ON	20	10	0.69″	**8001K54**♣	15.77
2	Off	On	Stays Switched	4	DPST OFF-ON	20▲	20	0.81″	**8001K85**♣	31.29
2	Off	On	Stays Switched	4	DPST OFF-ON	30	30	0.87″	**8001K11**	26.35
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	30	30	0.87″	**8001K12**	27.33
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	50	50	1.16″	**8001K32**	67.20
3	Off	On	Stays Switched	6	3PST OFF-ON	30	30	0.87″	**8001K31**	38.60
3	Off or On	On or Off	Stays Switched	9	3PDT ON-ON	30	30	0.87″	**8001K14**	49.19
With ¼″ Quick-Disconnect Connections										
3	Off	On	Stays Switched	6	3PST OFF-ON	25	20	0.69″	**8001K39**	14.19
3	Off or On	On or Off	Stays Switched	9	3PDT ON-ON	25	20	0.69″	**8001K41**	14.47
4	Off	On	Stays Switched	8	4PST OFF-ON	25	20	0.69″	**8001K24**	16.44
4	Off or On	On or Off	Stays Switched	12	4PDT ON-ON	25	20	0.69″	**8001K26**	16.92
With Solder Lug Connections										
3	Off	On	Stays Switched	6	3PST OFF-ON	25	20	0.69″	**8001K33**	12.59
4	Off or On	On or Off	Stays Switched	12	4PDT ON-ON	25	20	0.69″	**8001K37**	15.55
Three Position— *Switch is Off in Center Position*										
With Screw Terminal Connections										
2	Off or On	On or Off	Stays Switched	6	DPDT ON-OFF-ON	30	30	0.87″	**8001K13**	27.65
3	Off or On	On or Off	Stays Switched	9	3PDT ON-OFF-ON	30	30	0.87″	**8001K15**	49.25
With ¼″ Quick-Disconnect Connections										
3	Off or On	On or Off	Stays Switched	9	3PDT ON-OFF-ON	25	20	0.69″	**8001K42**	15.60
4	Off or On	On or Off	Stays Switched	12	4PDT ON-OFF-ON	25	20	0.69″	**8001K28**	18.01
With Solder Lug Connections										
3	Off or On	On or Off	Stays Switched	9	3PDT ON-OFF-ON	25	20	0.69″	**8001K35**	13.89
4	Off or On	On or Off	Stays Switched	12	4PDT ON-OFF-ON	25	20	0.69″	**8001K38**	16.68

♣ Has a 15⁄32″-32 mounting bushing. Maximum voltage is 250 AC/DC. ▲ Also rated 20 amps @ 250V AC.

Toggle Switch Guards and Labels

Guard

Vertical Label

Horizontal Label

Use these accessories with toggle switches that have a 15⁄32″-32 or M12 threaded bushing and mount in a ½″ dia. panel cutout.

Guard protects your two-position switch (0.69″ maximum toggle height) from accidental activation. Cover is spring loaded and stays open until you close it, returning your switch to the off position.

Labels indicate whether your switch is in the on or off position. Made of steel.

Guard	**1143T1**	$18.10
Vertical Labels (Pkg. of 5)	**9423T11**	5.96
Horizontal Labels (Pkg. of 5)	**9423T12**	5.96

Switch Boots and Seals

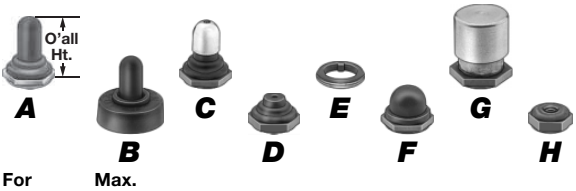

Protect your toggle, push-button, and rotary switches from moisture and dust by replacing your panel mounting nuts with switch boots and seals. All are high-strength silicone and include a nut. UL and C-UL recognized.

(B) Quick-install toggle boot fits over the existing mounting bushing, so you don't have to remove the switch from the panel to install.

(C) Armored toggle boot has a nickel-plated brass cap.

(G) Armored push-button boot has a stainless steel housing.

To Order: Please specify color where necessary.

For Bushing Size	Max. Toggle Dia.	O'all Ht.	Available Colors		
(A) Toggle Boots					
¼″-40	0.06″	0.50″	Black, Gray, Red, White	**70205K2**	$5.56
¼″-40	0.06″	0.59″	Black, Gray, Red, White	**70205K3**	5.56
15⁄32″-32	0.22″	0.94″	Black, Gray, Red, White	**70205K4**	4.12
15⁄32″-32	0.22″	1.09″	Black, Gray	**70205K75**	5.28
15⁄32″-32	0.30″	1.11″	Black, Gray	**70205K29**	7.53
½″-32	0.22″	0.84″	Black, Gray	**70205K77**	4.81
M12	0.23″	0.86″	Black	**70205K26**	5.09
(B) Quick-Install Toggle Boots					
15⁄32″-32	0.25″	0.98″	Black, Gray, Red	**70205K28**	6.78
(C) Armored Toggle Boots					
15⁄32″-32	0.22″	0.88″	Gray	**70205K8**	8.47
(D) Toggle Seals					
¼″-40	0.19″	0.25″	Black, Gray, Red, White	**70205K6**	5.56
15⁄32″-32	0.21″	0.85″	Gray	**70205K38**	12.53
15⁄32″-32	0.24″	0.44″	Black, Gray, Red, White	**70205K5**	4.80
(E) Panel Seals for Toggles					
15⁄32″-32	0.47″	0.12″	Gray	**70205K37**	$4.72
(F) Push-Button Boots					
¼″-40	0.19″	0.31″	Black, Gray	**70205K74**	5.56
¼″-40	0.19″	0.43″	Black, Gray, Red, White	**70205K7**	5.08
⅜″-27	0.30″	0.65″	Black, Clear	**70205K32**	4.88
⅜″-32	0.30″	0.65″	Black, Clear	**70205K33**	4.88
15⁄32″-32	0.42″	0.55″	Black, Gray	**70205K73**	4.80
15⁄32″-32	0.42″	0.72″	Black, Clear, Gray	**70205K34**	4.65
½″-32	0.42″	0.55″	Black, Gray	**70205K36**	4.80
⅝″-24	0.52″	0.61″	Black, Gray	**70205K35**	4.80
(G) Armored Push-Button Boots					
15⁄32″-32	0.42″	0.98″	Gray	**70205K11**	16.95
(H) ¼″ Rotary Shaft Seals					
⅜″-32	——	0.22″	Black, Gray	**70205K81**	4.37

For information about choosing an electrical switch, see page 855.

Rocker Switches

For a lower profile and smoother look than toggle switches, snap these rocker switches into your panel. Maximum voltage is 250 AC except illuminated miniature are 125 AC and illuminated high-amp switches are 110 AC. Miniature and illuminated miniature switches have 3/16″ quick-disconnects; standard and illuminated standard switches have 1/4″ quick-disconnects; and all others have solder lugs. Two-position switches are UL recognized and CSA certified, unless noted. Three-position switches are UL and C-UL recognized.

Illuminated switches include a bulb. *Illuminated standard* switches stay lit regardless of switch position. *Illuminated high-amp* switch has a red square on one side of the rocker. *Three-position illuminated* switches stay lit regardless of switch position. Bulb is 28 volts and replaceable.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary. Parentheses in the industry designation indicate momentary switch action.

Miniature

Slim Line

Standard

Illuminated Standard

Illuminated High-Amp

Three-Position Illuminated

No. of Circuits	When Switch Is Left Circuit Is	When Switch Is Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 125V AC	Amp Rating @ 28V DC	Panel Cutout Lg.	Panel Cutout Wd.		
Two-Position Switches											
Miniature—*Rocker is black.*											
1	Off	On	Stays Switched	2	SPST OFF-ON	10	–	3/4″	1/2″	7395K28	$4.97
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	10	–	3/4″	1/2″	7395K29	4.97
2	Off	On	Stays Switched	4	DPST OFF-ON	10	–	3/4″	1/2″	7395K33 ♠	7.12
2	Off	On	Stays Switched	4	DPST OFF-ON	10	–	3/4″	7/8″	7395K31	6.97
Illuminated Miniature— **To Order:** *Please specify amber, green, or red.*											
2	Off	On	Stays Switched	4	DPST OFF-ON	6	–	3/4″	1/2″	7395K51	5.17
Slim Line—*Rocker is black.*											
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	6	4	3/4″	9/32″	7395K35	3.65
Standard—*Rocker is black.*											
1	Off	On	Stays Switched	2	SPST OFF-ON	15	–	1 1/8″	9/16″	7395K11	4.62
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	15	–	1 1/8″	9/16″	7395K12	4.97
2	Off	On	Stays Switched	4	DPST OFF-ON	15	–	1 1/8″	1″	7395K13	6.38
2	Off or On	On or Off	Stays Switched	6	DPDT ON-ON	15	–	1 1/8″	1″	7395K14	6.70
Illuminated Standard— **To Order:** *Please specify green or red.*											
1	Off	On	Stays Switched	3	SPST OFF-ON	15	–	1 1/8″	13/32″	7395K45	4.62
2	Off	On	Stays Switched	4	DPST OFF-ON	15	–	1 1/8″	7/8″	7395K46	7.02
Illuminated High-Amp—*Rocker is white.*											
2	Off	On	Stays Switched	4	DPST OFF-ON	20★	–	1 1/8″	9/16″	7395K252 ■	13.75
Three-Position Switches—*Switch is Off in Center Position*											
Illuminated—*Rocker is white.*											
2	Off or On	On or Off	Stays Switched	8	DPDT ON-OFF-ON	5	3	3/4″	3/4″	7393K15	17.80
2	Off or On	On or Off	Springs Back to Center	8	DPDT (ON)-OFF-(ON)	5	3	3/4″	3/4″	7393K16	19.11
Switch Boots											
For 3/4″ Lg. × 1/2″ Wd. Panel Cutout Switches										7395K91	2.46
For 1 1/8″ Lg. × 13/32″ Wd. Panel Cutout Switches										7395K93	2.74
For 1 1/8″ Lg. × 9/16″ Wd. Panel Cutout Switches										7395K92	2.74

♠ 0.110″ quick-disconnect connections. ★ Amp rating is @ 110V AC. ■ Includes mounting screws. Not UL recognized or CSA certified.

Heavy Duty Rocker Switches

A durable steel housing holds up in tough environments. These rocker switches have solder lug connections and stainless steel retaining clips for mounting in a 1 1/4″ Lg. × 3/4″ Wd. panel cutout. Rated 10 amps @ 125 volts AC and 6 amps @ 30 volts DC. Maximum voltage is 250 AC and 30 DC. UL and C-UL recognized.

Illuminated rocker switches are lit on each side by a separate replaceable 28-volt bulb (included) and stay lit regardless of switch position. One side of the rocker has a green lens; the other has a red lens.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary. Parentheses in the industry designation indicate momentary switch action.

White Rocker

Illuminated Rocker

No. of Circuits	When Switch Is Left Circuit Is	When Switch Is Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	White Rocker		Illuminated Rocker	
Two Position									
2	Off or On	On or Off	Stays Switched	10	DPDT ON-ON	7246K16	$15.55	7246K11	$20.70
2	Off or On	On or Off	Springs Back	10	DPDT ON-(ON)	7246K18	17.10	7246K13	22.58
Three Position—*Switch is Off in Center Position*									
2	Off or On	On or Off	Stays Switched	10	DPDT ON-OFF-ON	7246K17	16.70	7246K12	21.85
2	Off or On	On or Off	Springs Back to Center	10	DPDT (ON)-OFF-(ON)	7246K19	17.60	7246K14	22.75
2	Off or On	On or Off	Springs Back Right to Center	10	DPDT ON-OFF-(ON)	7246K21	17.60	7246K15	22.75

Washdown Rocker Switches

Get the dust and washdown protection you need. Switches with wire leads are rated IP67. The front side of switches with screw terminals and 1/4″ quick-disconnects is rated IP67. All are black and snap in a 1 11/32″ Lg. × 11/16″ Wd. panel cutout. Rated 15 amps @ 125 volts AC and 30 volts DC. Maximum voltage is 250 AC and 30 DC. UL and C-UL recognized.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary. Parentheses in the industry designation indicate momentary switch action.

With Screw Terminals

No. of Circuits	When Switch Is Left Circuit Is	When Switch Is Right Circuit Is	Switch Action	No. of Terminals	Industry Designation	With Wire Leads		With Screw Terminals		With Quick-Disconnects	
Two Position											
1	Off	On	Stays Switched	2	SPST OFF-ON	6797T11	$22.09	6797T21	$12.88	6797T31	$12.05
1	Off or On	On or Off	Stays Switched	3	SPDT ON-ON	6797T12	22.71	6797T22	13.50	6797T32	12.67
1	Off or On	On or Off	Springs Back	3	SPDT ON-(ON)	6797T14	24.72	6797T24	15.52	6797T34	14.69
Three Position—*Switch is Off in Center Position*											
1	Off or On	On or Off	Stays Switched	3	SPDT ON-OFF-ON	6797T13	23.38	6797T23	14.17	6797T33	13.34
1	Off or On	On or Off	Springs Back to Center	3	SPDT (ON)-OFF-(ON)	6797T15	26.64	6797T25	17.43	6797T35	16.60
1	Off or On	On or Off	Springs Back Right to Center	3	SPDT ON-OFF-(ON)	6797T16	26.64	6797T26	17.43	6797T36	16.60

For information about choosing an electrical switch, see page 855.

High-Amp Rocker Switches

Designed for high currents, these switches mount in a 1 7/16″ Lg. × 15/16″ Wd. panel cutout (mounting hardware included) and have screw terminal connections. Rocker is white. UL recognized.

AC-rated switches are rated 30 amps @ 125 volts AC. Maximum voltage is 250 AC.
DC-rated switches are rated 30 amps @ 30 volts DC. Maximum voltage is 125 DC.
Note: Switches that stay switched are also known as maintained.

No. of Circuits	When Switch Is Left	When Switch Is Right	Circuit Is	Switch Action	No. of Terminals	Industry Designation	AC Rated		DC Rated	
Two Position										
2	Off	On		Stays Switched	4	DPST OFF-ON	7165K23	$25.66	7165K29	$31.66
2	Off or On	On or Off		Stays Switched	6	DPDT ON-ON	7165K24	26.64	7165K31	32.43
Three Position—Switch is Off in Center Position										
2	Off or On	On or Off		Stays Switched	6	DPDT ON-OFF-ON	7165K25	27.14	7165K32	33.47

High-Starting Amp Rocker Switches

Horizontal Label

Vertical Label

Built to handle starting currents up to 10 times greater than their amp rating, these rockers are also known as high-inrush current switches. They are used with amplifiers, power supplies, and other high-starting amp devices. Switches snap into a 1 3/16″ Lg. × 1 3/16″ Wd. panel cutout and have solder lug connections. Rated 16 amps @ 125 volts AC and 5 amps @ 30 volts DC. Maximum voltage is 250 AC and 72 DC. UL recognized and CSA certified.

To Order: Please specify rocker color: black or red.
Note: Switches that stay switched are also known as maintained.

No. of Circuits	When Switch Is Left	When Switch Is Right	Circuit Is	Switch Action	No. of Terminals	Industry Designation	Blank		Horizontal Label		Vertical Label	
1	Off	On		Stays Switched	2	SPST OFF-ON	7194K28	$8.17	7194K33	$8.55	7194K34	$8.55
1	Off or On	On or Off		Stays Switched	3	SPDT ON-ON	7194K29	9.72	—	—	—	—
2	Off	On		Stays Switched	4	DPST OFF-ON	7194K31	11.29	7194K35	11.64	7194K36	11.64
2	Off or On	On or Off		Stays Switched	6	DPDT ON-ON	7194K32	14.05	—	—	—	—

Push-Pull Switches

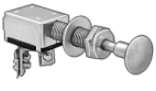

Push-pull operation lets you easily see the position of these DC switches. Made of brass, they're good for marine environments and mount in a 3/8″ dia. hole (hardware included). Maximum voltage is 24 DC. 8795T13 has a plastic-covered body for extra protection from moisture and dirt.

Three Position—Pull to the middle position to close one contact or all the way to close two contacts.
Note: Switches that stay switched are also known as maintained.

No. of Circuits	When Switch Is In	When Switch Is Out	Circuit Is	Switch Action	No. of Terminals	Industry Designation	Amp Rating @ 12V DC	Knob Dia.	Dp. Behind Panel	Connections		
Two Position												
1	Off	On		Stays Switched	2	SPST OFF-ON	10	7/8″	2″	8″ Wire Leads	8795T13	$15.85
1	Off	On		Stays Switched	3	SPST OFF-ON	10	3/4″	2 1/8″	Screw Terminal	8795T12	21.46
1	Off or On	On or Off		Stays Switched	3	SPDT ON-ON	10	7/8″	2 1/8″	Screw Terminal	8795T14	15.64
Three Position—One Contact is Closed (On) in the Middle Position												
1	Off	On		Stays Switched	3	SPDT OFF-ON-ON	10	3/4″	2 7/8″	Screw Terminal	8795T11	27.00

Light-Sensing Light Controls

Standard with Plastic Housing

Flush Mount

Conserve electricity with photoelectric controls that turn lights on after dark and off at daybreak. Typically used outdoors, they work with any bulb type within the specified watt rating, unless stated otherwise. All switch one circuit (single pole).

Standard controls are weatherproof and have a 1/2″ NPT male conduit fitting and 6″ wire leads. 7078K13 is ETL and C-ETL listed and CSA certified. 7078K17 is CSA certified only. 7078K15 is UL listed and CSA certified.

Swivel-head controls swivel 160° for a better sensing position. They have a weatherproof plastic housing, 1/2″ NPT male conduit fitting, and 6″ wire leads. 7677K46 is UL listed and CSA certified.

Flush-mount controls have a weather-resistant plastic housing and 6″ wire leads. A built-in delay prevents false switching due to light flashes. UL listed and CSA certified. 7000K21 mounts through an 11/16″ hole in a post or light fixture. 7000K19 mounts through a 3/8″ hole in a post or light fixture. 7000K22 mounts to an outlet box and includes a gasketed aluminum wall plate.

Socket-mount controls screw in between the bulb and socket of any medium-base incandescent or halogen fixture. They have a weather-resistant plastic housing and are designed for incandescent and halogen lighting only. ETL and C-ETL listed and CSA certified. Choose *standard-bulb* type for small enclosed fixtures and *PAR-bulb* type for floodlights.

Twist-lock controls make replacement easy. They require a twist-lock base and bracket (sold separately). Housing is plastic. Control *with timer* can be set to turn lights off for a desired period during the night to save energy.

Twist-lock base and bracket has 14″ wire leads, a square top mounting hole with a 5/16″ wide hanger notch, and a 3/8″ dia. bottom mounting hole (screws not included). Base is weather-resistant plastic and bracket is aluminum.

Socket Mount for Standard Bulb

Twist Lock

Twist-Lock Base and Bracket

	AC Voltage	Watt Rating	Ht.	Wd.	Dp.		
Standard with Plastic Housing	120	1,800	2″	1 1/2″	1″	7078K13	$9.09
Standard with Plastic Housing	208-277	1,800	2″	1 1/2″	1″	7078K17	10.19
Standard with Aluminum Housing	120/208-277	2,000	3 3/4″	2″	1 1/2″	7078K15	18.13
Swivel Head	120	1,000	3 1/2″	1 1/4″	1 1/4″	7677K46	9.72
Swivel Head	208-277	2,000	3 1/2″	1 1/4″	1 1/4″	7677K48	12.56
Flush Mount	120	2,000	2″	1″	1 1/2″	7000K21	10.32
Flush Mount	208-277	1,200	2″	1 1/8″	1 5/8″	7000K19	12.42
Flush Mount with Wall Plate	120	2,000	2″	1″	1 1/2″	7000K22	11.78
Socket Mount for Standard Bulb	120	75	2 1/8″	1 1/2″ Dia.	—	7204K12	8.14
Socket Mount for PAR Bulb	120	100	3 3/4″	2 13/16″ Dia.	—	7204K11	13.72
Twist Lock	105-285	1,800	2 3/16″	3 1/16″ Dia.	—	7027K31	11.20
Twist Lock with Timer	105-305	1,000	2″	3 1/8″ Dia.	—	7027K33	37.71
Twist-Lock Base and Bracket						7027K32	9.50

For information about choosing an electrical switch, see page 855.

Light Switches

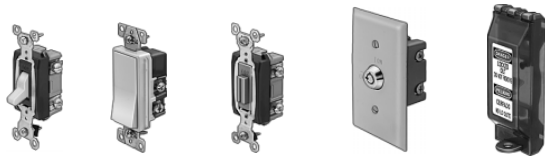

Toggle | Rocker | Key Actuated | High Security Key Actuated | Switch Lockout

Durable for use throughout your facility, these specification-grade switches work with incandescent, halogen, fluorescent, and high-intensity discharge lighting. You can also use them with AC motor loads up to 80% of the amp rating. They stay switched (maintained) and have screw terminal connections. Switches can be back- or side-wired and fit standard single-device (single-gang) wall boxes and plates. Wall plates are not included (except with high-security key-actuated switches); sold separately on pages 832 and 915. UL listed and CSA certified.

Key-actuated switches include a key that is removable in the on and off positions. The same key is provided for all switches.

High-security key-actuated switches include a hard-to-duplicate round key that's removable in the on and off positions.

Switch lockout mounts on a switch to secure it in an on or off position. Use with a 9/32″ shackle dia. padlock (not included).

To Order: Please specify color where necessary: white, ivory, brown, clear, gray, or stainless steel.

No. of Circuits	No. of Terminals	Amp Rating @ 120/ 277V AC	Available Colors		
Toggle					
1 (Single Pole)	2	15	Wh, Ivory, Brn	7030K32	$9.08
1 (Single Pole)	2	20	Wh, Ivory, Brn	7030K35	15.06
1 (Single Pole)	2	30	Ivory, Brn	7030K38	28.42
2 (Double Pole)	4	15	Wh, Ivory, Brn	7030K33	18.24
2 (Double Pole)	4	20	Wh, Ivory, Brn	7030K36	18.15
2 (Double Pole)	4	30	Wh, Ivory, Brn	7030K39	31.89
3-Way	3	15	Wh, Ivory, Brn	7030K34	10.36
3-Way	3	20	Wh, Ivory, Brn	7030K37	16.57
3-Way	3	30	Ivory, Brn	7030K43	34.16
4-Way	4	20	Wh, Ivory, Brn	7030K51	37.62
Illuminated Toggle—Glow When Off					
1 (Single Pole)	2	15	Ivory	7030K27	21.08
1 (Single Pole)	2	20	Ivory	7030K29	31.21
Illuminated Toggle—Glow When On					
1 (Single Pole)	2	15♠	Clear	7030K54	24.42
1 (Single Pole)	2	20♠	Clear	7030K57	31.97
Rocker					
1 (Single Pole)	2	15	Wh, Ivory	7030K45	8.94
1 (Single Pole)	2	20	Wh, Ivory	7030K52	11.95
3-Way	3	15	Wh, Ivory	7030K46	13.00
3-Way	3	20	Wh, Ivory	7030K53	13.18
Key Actuated					
1 (Single Pole)	2	15	Gray	7030K64	17.12
1 (Single Pole)	2	20	Gray	7030K67	21.95
3-Way	3	20	Gray	7030K69	23.89
Replacement Key				7030K99	2.70
High Security Key Actuated					
1 (Single Pole)	3	20	Stain. Steel	7977T25	62.64
Replacement Key				7977T99	3.57
Switch Lockout for Toggle and Rocker Switches				12135A72	8.40

♠ Not rated @ 277V AC.

Wireless Light Switches

Turn fluorescent fixtures on and off with a wireless signal. To set up, surface mount a switch and install a control relay in the fixture. No batteries or secondary power source is necessary. CE marked.

Switches transmit a 315 MHz wireless signal up to 150 ft.

Control relays have 16″ wire leads. UL and C-UL listed. *SPST* relays switch one circuit on. Rated 5 amps @ 120/277 volts AC. *SPDT* relays switch one circuit on or off. Rated 20 amps @ 277 volts AC.

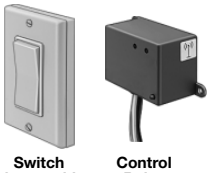

Switch shown with Wall Plate | Control Relay

No. of Circuits	Color	Switch		Wall Plate	
1 (Single Pole)	White	1171T11	$101.58	1171T21	$1.13
1 (Single Pole)	Almond	1171T12	101.58	1171T22	1.13
Control Relays					
SPST—120 AC Control Voltage				1171T42	$131.25
SPST—277 AC Control Voltage				1171T41	134.00
SPDT—120 AC Control Voltage				1171T43	174.60
SPDT—277 AC Control Voltage				1171T44	174.60

Light Dimmers

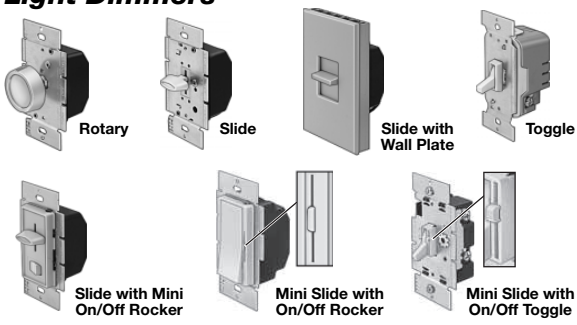

Rotary | Slide | Slide with Wall Plate | Toggle | Slide with Mini On/Off Rocker | Mini Slide with On/Off Rocker | Mini Slide with On/Off Toggle

Save energy by setting your lights at the appropriate brightness. These dimmers fit single-device (single-gang) wall boxes and plates. Wall plates are not included (unless stated otherwise); sold separately on pages 832 and 915. They have wire leads except toggle and mini slide switches have screw terminals. UL listed.

Rotary—*600-watt* dimmer pushes on and off. *1,000-, 1,500-,* and *2,000-watt* dimmers switch off when turned all the way to the left.

7083K55 and K56 can be used for three-way applications.

To Order: Please specify color where necessary.

No. of Circuits	No. of Terminals	Watt Rating @ 120V AC	Available Colors		
For Incandescent Bulbs					
Rotary					
1 (Single Pole)	2	600	White, Ivory	7083K23	$6.55
1 (Single Pole)	2	1,000	Brushed Gold	7083K16	39.31
1 (Single Pole)	2	1,500	Brushed Gold	7083K17	69.95
1 (Single Pole)	2	2,000	Brushed Gold	7083K18	104.74
Slide					
1 (Single Pole)	2	600	White, Ivory	7083K15	14.25
Slide with Wall Plate					
1 (Single Pole)	3	600	White	7083K51	31.82
1 (Single Pole)	3	1,000	White	7083K52	76.36
1 (Single Pole)	3	1,500	White	7083K53	133.33
1 (Single Pole)	3	2,000	White	7083K54	178.95
Toggle					
1 (Single Pole)	2	600	White, Ivory	7233K11	16.33
Slide with Mini On/Off Rocker					
1 (Single Pole)	2	600	White, Ivory	7083K35	21.11
1 (Single Pole)	2	1,000	White, Ivory	7083K36	71.48
Mini Slide with On/Off Rocker					
1 (Single Pole)	2	600	White, Ivory	7233K21	32.29
1 (Single Pole)	2	1,000	White, Ivory	7233K22	89.20
For Incandescent and Dimmable Compact Fluorescent Bulbs					
Slide with Mini On/Off Rocker					
1 (Single Pole)	4	600	White	7083K55	27.82
Mini Slide with On/Off Toggle					
1 (Single Pole)	4	600	White	7083K56	23.64

Motion-Sensing Light Switches

When personnel enter an area, infrared sensors detect their presence and turn on the lights. Switches have a 5-minute to 30-minute user-selectable time delay to turn lights off. A manual override lets you switch lights off when area is occupied. Switches fit in a single-device (single-gang) wall box and are for incandescent and fluorescent lights. They have wire leads and include a wall plate. Incandescent watt rating is 800 @ 120 volts AC. Fluorescent watt rating is 1,200 @ 277 volts AC. UL and C-UL listed.

One Circuit—Switch one circuit from off to on (SPST-NO). **Two Circuit**—Switch two circuits from off to on (2 SPST-NO).

One Circuit

No. of Circuits	Amp Rating @ 120/277V AC	White		Ivory	
1 (Single Pole)	6.6/4.3	7704K34	$69.42	7704K33	$69.42
2 (Double Pole)	6.6/4.3	7704K64	93.82	7704K63	93.82

Slide Switches

Screw mount these compact nylon slide switches into a 1/2″ Lg.×1/4″ Wd. panel cutout. They switch two circuits from off to on and on to off (DPDT), stay switched (maintained), and have six terminals. Rated 6 amps @ 125 volts AC and 1 amp @ 125 volts DC. Mounting holes are 5/32″ dia. and 1 1/8″ center to center (screws not included). UL recognized and CSA certified.

Connections		
Solder Lugs	66065K23	$4.80
6″ Wire Leads	66065K27	6.01

For information about choosing an electrical switch, see page 855.

Motion-Sensing Light Controls

Ceiling Mount

Wall/Ceiling Mount

Fixture Mount

Fixture Mount for Wet Locations

Also called occupancy sensors, these controls turn your lights on when movement is detected and off when an area is unoccupied. They have a white plastic housing and wire leads except 7477K32 and K36 have screw terminal connections. Use indoors with fluorescent or incandescent lights. Fixture-mount controls for wet locations can also be used outdoors. UL and C-UL listed except 7477K53 and K54 are ETL and C-ETL listed.

Ultrasonic sensors respond to movement and don't require a direct view of the occupants. *Infrared sensors* detect moving heat sources and require a direct view of the occupants. *Ultrasonic/infrared sensors* minimize false activation.

Ceiling- and **fixture-mount** controls are ready to operate your 120-volt lighting circuit. Incandescent watt rating is 800 @ 120 volts AC. Fluorescent watt rating is 1,200 watts @ 277 volts AC except 7477K52 is rated 1,800 watts @ 277 volts AC. *Ceiling-mount* controls fit a 4″ outlet box. *Fixture-mount* controls have a 1/2″ NPT male connection. Improve the position of your control with a *mounting extension*, which threads onto your fixture.

Wall/ceiling mount control operates at low voltage and requires a power controller to switch a 120- or 277-volt AC lighting circuit. Mounting bracket and screws are included. *Power controller* has a relay that can switch a maximum 20 amp load.

Voltage	Sensor Type	No. of Circuits	Coverage, Sq. Ft.	Max. Mount Ht.	Ht.	Wd.	Dp.		
Ceiling Mount									
120/277 AC	Ultrasonic	1 (Single Pole)	2,000	10 ft.	1 1/2″	4 1/2″ Dia.	—	7477K32	$160.36
120/277 AC	Infrared	1 (Single Pole)	1,500	12 ft.	1 7/8″	4″ Dia.	—	7477K52	125.22
120/277 AC	Ultrasonic/Infrared	1 (Single Pole)	1,000	10 ft.	1 1/2″	4 1/2″ Dia.	—	7477K36	166.91
Guard for 120/277V AC Ceiling-Mount Controls								7477K62	44.56
Washdown (NEMA 4X) Enclosure for 7477K52								7477K61	96.80
Wall/Ceiling Mount									
24 DC	Ultrasonic/Infrared	1 (Single Pole)	2,000	10 ft.	4 3/8″	3 3/8″	2″	7477K45	189.82
Power Controller								7477K51	48.00
Fixture Mount									
120/277 AC	Infrared	1 (Single Pole)	155	45 ft.	2″	3 5/8″	4 7/16″	7477K53	75.00
120/277 AC	Infrared	2 (Double Pole)	155	45 ft.	2″	3 5/8″	4 7/16″	7477K54	90.68
Mounting Extension								7477K65	9.09
Fixture Mount for Wet Locations									
120/277 AC	Infrared	1 (Single Pole)	500	40 ft.	2 3/8″	3 11/16″ Dia.	—	7477K34	87.27
120/277 AC	Infrared	1 (Single Pole)	1,200	20 ft.	2 1/4″	3 11/16″ Dia.	—	7477K33	87.27

Cable-Pull Emergency Stop Switches

One Direction

One Direction with LED

Two Direction

One-Direction Accessory Kit

Pull the cable to immediately break the circuit and cut off electrical power. All stay switched (maintained) and have screw terminal connections and a manual reset. Rated NEMA 4 for washdowns and NEMA 12 for oil protection. Enclosures are aluminum, unless stated otherwise. Mounting hardware not included.

One-direction switches have a 1/2″ NPT female threaded conduit entry and four 1/4″ dia. mounting holes. CSA certified and CE marked.

One-direction switch with LED indicator illuminates when switch has been pulled. It has a 1/2″ NPT threaded conduit entry and four 1/4″ dia. mounting holes. Enclosure is die cast zinc and a tension indicator helps you set the correct cable tension. UL listed, CSA certified, and CE marked.

Two-direction switch has a 3/4″ NPT female threaded conduit entry and two 5/16″ dia. mounting holes. When used with the tension springs in the cable accessory kit (sold separately), contacts open to stop machinery if the cable breaks. UL listed and CE marked.

Accessory kits simplify installation of a new cable-pull switch. Kits for *one-direction* switches include cable (in max. lengths shown below), tension screws, clamps, and thimbles. Kit for *one-direction switch with LED indicator* includes a J-hook turnbuckle, thimbles, clamps, and cable supports (eyebolts with hardware). For cable, see 8912T36 on page 1409. Kit for *two-direction* switch includes the same items as the one-direction kits plus eyebolts (instead of thimbles) and tension springs.

Max. Cable Lg. per Direction	No. of Circuits	Industry Designation	Amp Rating @ 120V AC	Max. AC Voltage	Actuation Force	Ht.	Wd.	Dp.	Switch		Accessory Kit	
One Direction												
15 ft.	1	SPDT	10	500	18 lbs.	6 3/8″	1 9/16″	1 5/8″	65975K51	$198.74	65975K81	$159.47
30 ft.	1	SPDT	10	380	27 lbs.	6 1/8″	3 1/4″	2 5/8″	65975K62	332.96	65975K82	227.00
75 ft.	2	DPDT	10	380	45 lbs.	7 3/4″	3 1/4″	2 5/8″	65975K63	436.81	65975K83	330.51
One Direction with LED Indicator												
250 ft.	1	SPDT	6	300	40 lbs.	10 7/8″	3 7/8″	2 5/8″	65975K75	229.65	65975K77	91.44
Two Direction												
165 ft.	2	(2)SPST	16	240	5 lbs.	4 13/16″	3 3/16″	7 1/2″	65975K74	441.18	65975K94	284.27

Cable-Pull Stop Switches

Turn off production lines and material handling systems. This switch mounts in any position and has a manual reset for added safety. It switches one circuit from on to off (SPST-NC) and stays switched after released (maintained). Rated 6 amps @ 120 volts AC, 3 amps @ 240 volts AC, and 0.55 amps @ 125 volts DC. Maximum voltage is 600 AC and DC. Enclosure is aluminum with a 1/2″ NPT female threaded conduit entry, screw terminal connections, and two mounting holes (fasteners included). Overall size is 6 1/2″ Ht.×5″ Wd.×3 1/4″ Dp. Meets NEMA 1 for indoor use. UL listed, CSA certified, and CE marked.

Note: Cable (not included) should be supported with eyebolts every 5 ft.

Max. Cable Length	No. of Circuits	Actuation Force		
75 ft.	1	2 to 6 lbs.	7186K53	$192.88

Overhead Rope-Pull Switches

Keep your switch out of the way. Pull the hanging rope in any direction to actuate. Switches two circuits, one from off to on and one from on to off (DPST-NO/NC). It springs back after released (momentary).

Rated 6 amps @ 120 volts AC, 3 amps @ 240 volts AC, and 0.55 amps @ 125 volts DC. Maximum voltage is 600 AC and 600 DC. Enclosure is aluminum with a 1/2″ NPT female threaded conduit entry and screw terminal connections. Overall size is 5 1/2″ Ht.×5 1/4″ Wd.×3 1/8″ Dp. Meets NEMA 4 for washdowns. UL listed, CSA certified, and CE marked.

Included Rope Lg.	No. of Circuits	Actuation Force		
15 ft.	2	5 lbs.	8488K61	$197.93

For information about electrical switches, see page 855.

About Motor Switches and Starters

Motor switches provide manual on/off control of a motor circuit. They can also be used in other circuits, including lighting and electric heat circuits. There is no overload protection.

Motor starters provide on/off control of a motor circuit with the additional benefit of overload protection. This protection monitors the current flowing to a motor and opens the circuit if the current exceeds the full-load amp rating. The full-load amp rating is the current the motor is expected to continuously draw under normal conditions. This rating is often found on the motor's faceplate.

ⓘ If the full-load amp rating is not shown on your motor's faceplate, you can estimate the amp rating (given the motor's hp and voltage) using a chart. Go to mcmaster.com and search for **7603KAC**.

Manual Motor Switches

Silver contacts dissipate heat and extend switch life. All stay switched (maintained) and have screw terminal connections. UL listed and CSA certified.

Indoor enclosure is nylon and rated NEMA 1.

Rain-tight enclosure is aluminum and rated NEMA 3R.

Washdown enclosure is polyester and rated NEMA 4X. It can also be used as a motor disconnect switch.

Hazardous-location enclosure is aluminum and rated NEMA 7 and 9.

Open

Indoor Enclosure

Rain-Tight Enclosure

Washdown Enclosure

Hazardous Location Enclosure

	Amps @ 600V AC	AC Motor hp Rating @ 240V	Ht.	Wd.	Dp.		
Switch Two Circuits (DPST-NO)—For Single-Phase Motors							
Open	30	3	3.7″	1.8″	1.8″	7657K33	$30.13
Open	60	5	3.8″	1.7″	1.7″	7657K35	124.72
Indoor Enclosure	30	3	3.9″	2.8″	2.8″	7657K31	34.60
Indoor Enclosure	60	5	4.3″	4.7″	3.9″	7657K36	152.12
Rain-Tight Enclosure	30	3	5.8″	4.5″	3.3″	7657K34	56.71
Haz. Loc. Enclosure	30	3	5.9″	2.3″	4.3″	7657K32	189.60
Switch Three Circuits (3PST-NO)—For Three-Phase Motors							
Open	30	7.5	3.7″	1.8″	1.8″	7657K23	63.82
Open	60	10	3.8″	1.7″	1.7″	7657K25	152.67
Indoor Enclosure	30	7.5	3.9″	2.8″	2.8″	7657K21	67.36
Indoor Enclosure	60	10	4.3″	4.7″	3.9″	7657K26	178.61
Rain-Tight Enclosure	30	7.5	5.8″	4.5″	3.3″	7657K24	96.43
Washdown Enclosure	30	7.5	7.6″	11.5″	4.1″	7657K61	254.90
Haz. Loc. Enclosure	30	7.5	5.9″	2.3″	4.3″	7657K22	247.46

Manual Reversing Motor Switches

Also known as drum switches, these motor switches have three positions: forward, off, and reverse. All have screw terminal connections. UL listed and CSA certified.

Indoor steel and **plastic enclosures** are rated NEMA 1.

Watertight enclosure is rated NEMA 4.

Indoor Steel Enclosure

Watertight Steel Enclosure

	AC Motor hp Rating: Single Phase 115V	Three Phase 230V	Three Phase 440V	Switch Action	Ht.	Wd.	Dp.		
Indoor Steel Enclosure									
	1½	—	—	Stays Switched (Maintained)	4.5″	2.4″	4.5″	7065K21	$40.37
	1½	2	1	Springs Back (Momentary)	4.5″	2.4″	4.5″	7065K22	51.62
	1½	2	1	Stays Switched (Maintained)	4.5″	2.4″	4.5″	7065K23	48.64
	1½	3	3	Stays Switched (Maintained)	4.8″	3.2″	3.6″	7826K24★	241.53
	2	5	7½	Stays Switched (Maintained)	4.8″	3.2″	3.6″	7826K25★	261.02
	2	5	7½	Stays Switched (Maintained)	5.4″	3.5″	5.8″	7065K25	97.21
Indoor Plastic Enclosure									
	1½	2	2	Stays Switched (Maintained)	5.3″	2.5″	2.8″	7826K22	158.05
Watertight Steel Enclosure									
	1½	2	2	Stays Switched (Maintained)	5.2″	4.6″	3.8″	7826K42	314.06
	2	5	7½	Stays Switched (Maintained)	7.6″	5.1″	4.3″	7826K45★	413.56

★ Contacts can be converted to spring back (momentary).

Manual Motor Starters

Compact size makes these starters ideal when multiple motor circuits are housed in one panel. Built to IEC standards, they have three poles, screw clamp connections, and an adjustable overload relay that allows you to set the exact overload amperage you need. Mount on a standard 35 mm DIN rail (see page 915) or in an *enclosure*, which you don't have to open to control the starter. Rated 25 amps @ 600 volts AC. UL listed, CSA certified, and CE marked.

Note: Ensure the full-load amp rating of your motor falls within the starter's adjustable overload amp range.

Enclosure with external lever has four PG-16 threaded holes for conduit.

Auxiliary contacts allow you to add a signal, alarm, or other device. They have one normally open and one normally closed contact. Rated 1 amp @ 400 volts AC.

Starter

Enclosure

Enclosure with Lever

Overload Amp Range	AC Motor hp Rating: Single Phase 120V	Single Phase 240V	Three Phase 240V	Three Phase 480V	Ht.	Wd.	Dp.		
Starters									
1-1.6	—	1/10	—	3/4	3.5″	2.1″	3″	6559K61	$92.17
1.6-2.5	—	1/6	1/2	1	3.5″	2.1″	3″	6559K62	92.17
2.5-4	1/8	1/3	1	2	3.5″	2.1″	3″	6559K63	92.17
4-6.3	1/4	1/2	1½	3	3.5″	2.1″	3″	6559K64	92.17
6.3-9	1/3	1	2½	5	3.5″	2.1″	3″	6559K65	107.76
9-12.5	1/2	2	3	7½	3.5″	2.1″	3″	6559K66	107.76
12.5-16	1	2½	5	10	3.5″	2.1″	3″	6559K67	107.76
16-20	1½	3	5	10	3.5″	2.1″	3″	6559K68	113.66
20-25	2	3	7½	15	3.5″	2.1″	3″	6559K69	120.09
Accessories									
Enclosure (7.1″ Ht. × 4.9″ Wd. × 4.5″ Dp.)								6559K53	20.28
Enclosure with Lever (5.9″ Ht. × 3.7″ Wd. × 5.2″ Dp.)								6559K52	36.88
Auxiliary Contacts								6559K45	20.00
PG-16 to ½″ NPT Thread Adapter								9543K13	7.83

For information about electrical switches, see page 855. For information about motor switches and starters, see page 881.

ⓘ If the full-load amp rating is not shown on your motor's faceplate, you can estimate the amp rating (given the motor's hp and voltage) using a chart. Go to mcmaster.com and search for **7603KAC**.

Motor Starters

Open Standard

Open Reversing

Enclosed Standard

Built to IEC standards, these motor starters fit tighter spaces than the heavy duty starters on the next page. They activate via an electrical signal (control voltage) and can be operated remotely. An adjustable overload relay allows you to set the exact overload amperage you need. It trips in less than 10 seconds (Class 10 trip time) and has a manual reset and one normally open (NO) and one normally closed (NC) auxiliary contact. **Additional auxiliary contacts** for adding a signal, alarm, or other device are sold separately.

Open starters can be mounted on 35 mm DIN rail (see page 915 for rail).

Enclosed starters have a watertight plastic enclosure that's rated NEMA 4X for corrosion resistance. They have an overload reset on the cover.

Reversing starters are for use with reversible motors.

Note: Ensure the full-load amp rating of your motor falls within the starter's adjustable overload amp range. Match control voltage to your control circuit; motor voltage may be different.

To Order: Please specify control voltage: 24 AC, 24 DC, 120 AC, 200/240 AC, or 480 AC.

Motor Starters

Overload Amp Range	AC Motor hp Rating: Single Phase 115V	Single Phase 230V	Three Phase 230V	Three Phase 480V	Open Starter Ht.	Open Starter Wd.	Open Starter Dp.			Enclosed Starter Ht.	Enclosed Starter Wd.	Enclosed Starter Dp.		
Miniature														
1.1-1.6	—	—	—	½-¾	4.2″	1.8″	2.4″	7603K13	$123.18	8.7″	5.9″	5.9″	7603K31	$180.28
1.8-2.5	—	—	½	1	4.2″	1.8″	2.4″	7603K14	123.18	8.7″	5.9″	5.9″	7603K32	180.28
2.3-3.2	—	¼	¾	1½	4.2″	1.8″	2.4″	7603K15	123.18	8.7″	5.9″	5.9″	7603K33	180.28
3.5-4.8	⅙	⅓	1	3	4.2″	1.8″	2.4″	7603K16	123.18	8.7″	5.9″	5.9″	7603K34	180.28
5.5-7.5	⅓	¾	2	—	4.2″	1.8″	2.4″	7603K17	123.18	8.7″	5.9″	5.9″	7603K35	180.28
Standard														
1.1-1.6	—	—	—	½-¾	4.3″	1.8″	3.2″	7603K18	173.89	8.7″	5.9″	5.9″	7603K37	228.74
1.8-2.5	—	—	½	1	4.3″	1.8″	3.2″	7603K19	173.89	8.7″	5.9″	5.9″	7603K39	228.74
2.3-3.2	—	¼	¾	1½	4.3″	1.8″	3.2″	7603K21	173.89	8.7″	5.9″	5.9″	7603K41	228.74
3.5-4.8	⅙	⅓	1	3	4.3″	1.8″	3.2″	7603K22	173.89	8.7″	5.9″	5.9″	7603K42	228.74
5.5-7.5	⅓	¾	2	—	4.3″	1.8″	3.2″	7603K23	173.89	8.7″	5.9″	5.9″	7603K43	228.74
9.0-12.5	½	2	3	7½	4.3″	1.8″	3.2″	7603K24	208.37	8.7″	5.9″	5.9″	7603K44	264.54
11.3-16.0	1	2	5	10	4.3″	1.8″	3.2″	7603K26	208.37	8.7″	5.9″	5.9″	7603K46	264.54
17.5-21.5	1½	3	—	15	4.9″	2.2″	3.6″	7603K27	289.74	8.7″	5.9″	5.9″	7603K47	342.48
24.5-30.0	—	5	10	20	4.9″	2.2″	3.6″	7603K28	337.82	8.7″	5.9″	5.9″	7603K48	434.68
24.5-36.0	3	5	10	25	5.9″	2.7″	3.9″	7603K29	377.26	8.7″	5.9″	5.9″	7603K49	441.79
35.0-47.0	—	7½	15	30	5.9″	2.7″	3.9″	7603K11	377.26	8.7″	5.9″	5.9″	7603K12	441.79
45.0-60.0	5	10	20	40	6.7″	3.7″	4.9″	7603K3	523.38	11.8″	8.7″	5.9″	7603K93	674.09
58.0-75.0	—	—	25	50	6.7″	3.7″	4.9″	7603K94	597.74	11.8″	8.7″	5.9″	7603K96	762.02
Standard with Wide Overload Range														
1.0-5.0	¼	1	2	3	5.6″	1.8″	4.4″	7603K95	168.00	7.9″	6.3″	4.7″	7603K286	268.80
4.0-20.0	1	2	3	10	5.6″	1.8″	4.4″	7603K97	196.22	7.9″	6.3″	4.7″	7603K287	275.10
9.0-45.0	3	5	10	20	6.3″	1.8″	4.4″	7603K98	295.68	9.5″	6.3″	6.3″	7603K288	388.50
20.0-100.0	5	15	25	50	7.2″	2.2″	4.4″	7603K99	472.22	11.0″	6.3″	7.9″	7603K289	512.40
Reversing														
1.1-1.6	—	—	⅓	¾	4.3″	4.0″	3.2″	7636K21	314.14	11.8″	8.7″	5.9″	7636K31	398.14
1.8-2.5	—	—	½	1	4.3″	4.0″	3.2″	7636K22	314.14	11.8″	8.7″	5.9″	7636K32	398.14
2.3-3.2	—	—	¾	1½	4.3″	4.0″	3.2″	7636K23	314.14	11.8″	8.7″	5.9″	7636K33	398.14
3.5-4.8	—	—	1	3	4.3″	4.0″	3.2″	7636K24	314.14	11.8″	8.7″	5.9″	7636K34	398.14
5.5-7.5	—	—	2	—	4.3″	4.0″	3.2″	7636K25	314.14	11.8″	8.7″	5.9″	7636K35	398.14
9.0-12.5	—	—	3	7½	4.3″	4.0″	3.2″	7636K26	361.24	11.8″	8.7″	5.9″	7636K36	442.19
11.3-16.0	—	—	5	10	4.3″	4.0″	3.2″	7636K28	412.29	11.8″	8.7″	5.9″	7636K38	503.56
17.5-21.5	—	—	—	15	4.9″	4.7″	3.6″	7636K29	492.01	11.8″	8.7″	5.9″	7636K39	591.76
Reversing with Wide Overload Range														
1.0-5.0	¼	1	2	3	7.5″	4.3″	4.4″	7636K61	376.32	7.9″	6.3″	4.7″	7636K248	410.67
4.0-20.0	1	2	3	10	7.5″	4.3″	4.4″	7636K71	396.00	7.9″	6.3″	4.7″	7636K249	429.33
9.0-45.0	3	5	10	20	5.8″	3.6″	4.4″	7636K81	638.40	—	—	—	—	—
20.0-100.0	5	15	25	50	6.7″	3.5″	4.4″	7636K91	1,108.80	—	—	—	—	—

Additional Auxiliary Contacts—Rated 10 amps @ 600V AC

	For Miniature Starters		For Standard and Reversing Starters		For Starters with Wide Overload Range	
Two Normally Open (NO)	7603K6	$16.67	7603K8	$30.35	7603K296	$21.02
One Normally Open (NO) and One Normally Closed (NC)	7603K7	16.67	7603K9	30.35	7603K297	21.02

Manual Motor Starter Components

Build your own starter by combining a switch and a thermal overload element.

Flush Plate

Indoor Enclosure

Switches

Switches have screw terminal connections and are for use with single-phase motors rated 1 hp @ 115/230 volts AC. Flush plate and indoor (NEMA 1) enclosure are steel; water/oil-tight enclosure is die cast zinc and rated NEMA 4 and 12 for outdoor use.

Switches **with pilot light** indicate when the starter is on.

Two-circuit switches can also be used on DC motors up to ¾ hp.

	Ht.	Wd.	Dp.	Without Pilot Light: Switches One Circuit		Without Pilot Light: Switches Two Circuits		With Pilot Light: Switches One Circuit		With Pilot Light: Switches Two Circuits	
Flush Plate	4.5″	2.8″	1.4″	7254K21	$45.09	7254K31	$52.80	7254K25	$68.33	7254K35	$77.38
Indoor Enclosure	4.3″	2.4″	2.8″	7254K23	48.26	7254K33	57.34	7254K27	72.83	7254K37	81.03
Water/Oil-Tight Enclosure	5.8″	3.2″	3.7″	7254K24	171.14	7254K34	234.88	7254K28	178.47	7254K38	243.07

Thermal Overload Elements

To Order: Please specify the full-load amp rating of your motor.

Available Amp Range			Available Amp Range			Available Amp Range		
0.157-0.321	7254K61	$13.89	1.3-2.15	7254K64	$13.89	4.33-8.98	7254K66	$13.89
0.322-0.65	7254K62	13.89	2.16-4.32	7254K65	13.89	8.99-16	7254K67	13.89
0.66-1.25	7254K63	13.89						

For information about electrical switches, see page 855. For information about motor switches and starters, see page 881.

If the full-load amp rating is not shown on your motor's faceplate, you can estimate the amp rating (given the motor's hp and voltage) using a chart. Go to mcmaster.com and search for **7603KAC**.

Heavy Duty Motor Starters

A NEMA-size contactor and solid state overload relay extend motor life and reduce energy costs in demanding applications. Motor starters have encapsulated coils that protect against moisture, heat, dirt, and mechanical and thermal stress. They are three phase, activate via an electrical signal (control voltage), and can be operated remotely. The adjustable overload relay allows you to set the exact overload amperage you need. The relay also provides phase-loss protection and has a tripping accuracy of ±1%. All have screw terminal or screw clamp connections and come with a normally open (NO) auxiliary contact for additional signaling capability.

NEMA contact sizes 0-1 are universal mount, which fit Cutler-Hammer, GE, and Square D installations. A mounting adapter (sold separately) is required to fit Allen-Bradley and Westinghouse installations.

Enclosed starters are rated NEMA 1 for indoor use.

Note: Ensure the full-load amp rating of your motor falls within the starter's adjustable overload amp range. Match control voltage to your control circuit; your motor voltage may be different.

To Order: Please specify control voltage: 24 AC, 110/240 AC, 208 AC, or 220/480 AC.

Open

Enclosed

NEMA Contact Size	Overload Amp Range	AC Motor hp Rating 200V	230V	460V	575V	Open Starter Ht.	Wd.	Dp.			Enclosed Starter Ht.	Wd.	Dp.		
0	0.25-1	1/6	1/6	1/3	1/2	7.4″	5.8″	3.8″	7463K32	$329.16	11.0″	6.4″	5.0″	7463K34	$346.65
0	0.75-3.4	1/2	3/4	1 1/2	2	7.4″	5.8″	3.8″	7463K33	329.16	11.0″	6.4″	5.0″	7463K35	346.58
0	3-12	2	2	5	5	7.4″	5.8″	3.8″	7463K12	329.05	11.0″	6.4″	5.0″	7463K42	345.80
0	5.5-22	3	3	—	—	7.4″	5.8″	3.8″	7463K13	329.16	11.0″	6.4″	5.0″	7463K43	345.82
1	3-12	2	2	5	5	7.4″	5.8″	3.8″	7463K15	371.58	11.0″	6.4″	5.0″	7463K45	389.58
1	5.5-22	3	3	10	10	7.4″	5.8″	3.8″	7463K16	371.58	11.0″	6.4″	5.0″	7463K46	389.58
1	10-40	7 1/2	7 1/2	—	—	7.4″	5.8″	3.8″	7463K17	371.58	11.0″	6.4″	5.0″	7463K47	389.53
2	13-52	10	15	25	25	8.1″	5.8″	3.8″	7463K22	609.51	13.5″	8.0″	6.4″	7463K52	731.49
Replacement Coil														7463K71	$64.05
Mounting Adapter for NEMA Contact Sizes 0-1 (for Allen-Bradley and Westinghouse Installations)														7463K95	13.66

Heavy Duty Manual Motor Starter Components

Combine these switches and thermal overload elements to build heavy duty three-phase starters for high-amp-rated motors. Also known as NEMA starters, they have screw terminal connections. UL listed.

Indoor enclosure is rated NEMA 1. **Oil-tight enclosure** is rated NEMA 12. Both are made of steel.

Thermal Overload Element—**To Order:** Please specify the full-load amp rating of your motor from 0.36 to 26.8 amps.

Open

Indoor Enclosure

	NEMA Contact Size	AC Motor hp Rating 115V	230V	460V	Ht.	Wd.	Dp.		
Open	M0	2	3	5	5.8″	3.2″	4.6″	7595K61	$199.12
Open	M1	3	7 1/2	10	5.8″	3.2″	4.6″	7595K23	228.04
Indoor Enclosure	M0	2	3	5	7.6″	4.7″	5″	7595K62	218.75
Indoor Enclosure	M1	3	7 1/2	10	7.6″	4.7″	5″	7595K26	247.91
Oil-Tight Enclosure	M0	2	3	5	9.4″	5.1″	5″	7595K64	291.86
Oil-Tight Enclosure	M1	3	7 1/2	10	9.4″	5.1″	5″	7595K33	321.09
Thermal Overload Element (Three Required)								7595K2	15.65

Heavy Duty Overload Relays

Upgrade starters that use thermal overload protection with these solid state overload protection relays. They don't use heater elements, so enclosure ventilation and cooling is not required. Relays have a full-load amp adjustment dial to accommodate circuits with different full-load amp ratings. They also provide phase-loss protection. All are adjustable to trip in 5, 10, 20, or 30 seconds (Class 5, 10, 20, and 30 overload protection).

Relays have one normally open (NO) and one normally closed (NC) built-in auxiliary contact and screw terminal connections. UL listed and CSA certified.

Overload Amp Range	Ht.	Wd.	Dp.		
For Single-Phase Motors					
3-12	2.2″	3.5″	3.2″	7730K53	$99.74
5.5-22	2.2″	3.5″	3.2″	7730K54	99.74
For Three-Phase Motors					
0.75-3.4	3.2″	3.5″	3.2″	7730K62	109.45
3-12	2.2″	3.5″	3.1″	7730K63	109.45
5.5-22	2.2″	3.5″	3.1″	7730K64	109.45
10-40	2.2″	3.5″	3.1″	7730K65	109.45
13-52	2.2″	4.5″	4.0″	7730K66	143.89
25-100	2.2″	4.5″	4.0″	7730K67	185.24

Energy-Saving Motor Starters

Reduce the starting current to your motor, saving electricity and extending motor life. These soft starters gradually start and stop your three-phase, 208- to 600-volt AC motors. Acceleration time adjusts from 1 to 20 seconds; deceleration time adjusts from 0 to 20 seconds. Starters accept a control voltage of 24 DC and are primarily used on motors where the torque varies, such as pumps, compressors, and conveyors. Enclosure is plastic and can be surface or DIN-rail mounted except 7112T48 is surface mount only. See page 915 for DIN rail. Starters include a remote indicator contact for adding a signal, alarm, or other device (sold separately). UL and C-UL listed and CE marked.

Thermal Overload Element—**To Order:** Please specify the full-load amp rating of your motor from 0.1 to 32 amps.

AC Motor hp Rating 240V	480V	Amps	Ht.	Wd.	Dp.		
3/4	2	3	4.7″	1.8″	4.5″	7112T5	$133.33
2	5	9	5.5″	1.8″	4.5″	7112T42	182.76
5	10	15	5.5″	1.8″	4.5″	7112T44	213.79
10	20	28	6.3″	1.8″	5.0″	7112T46	282.76
20	40	59	8.7″	2.8″	7.1″	7112T48	486.15
Thermal Overload Element (One Required)						7112T8	96.75

Low-Voltage DC Motor Speed Controls

Control the speed of low-voltage, permanent-magnet DC motors. These accept DC input voltage and supply a variable DC voltage output. Adjust the speed and current limit of the motor as well as set a minimum and maximum speed with the included variable switch (potentiometer) or with an external input signal (not included). Controls have an open design, overload protection, and screw terminal connections. C-UL listed.

For hp	DC Voltage Output	Input	Amps	Ht.	Wd.	Dp.		
1/6, 1/3	12/24	12/24	16	6.9″	4.4″	2.2″	7729K13	$323.76
3/4, 1	12/24	12/24	60	7.8″	6.9″	3.3″	7729K11	394.78

For information about electrical switches, see page 855. For information about motor switches and starters, see page 881.

ⓘ If the full-load amp rating is not shown on your motor's faceplate, you can estimate the amp rating (given the motor's hp and voltage) using a chart. Go to mcmaster.com and search for **7603KAC**.

Programmable Three-Phase AC Motor Speed Controls

DIN-Rail Mount

Indoor Enclosure

Washdown Enclosure

Vary the speed of three-phase, 230- or 480-volt AC motors with these easy-to-program speed controls. All have built-in thermal overload protection, forward/reverse control, and adjustable acceleration/deceleration times. They accept a 4- to 20-mA or 0- to 10-volt DC signal to control speed, or you can wire a variable switch (potentiometer) for remote manual control. UL and C-UL listed and CE marked.

DIN-Rail Mount—Can be installed inside a control panel or surface mounted. Enclosure is plastic. Output frequency is 0 to 320 Hz.

Indoor and **Washdown Enclosures—**Made of steel. Output frequency is 0 to 120 Hz. Indoor is rated NEMA 1; washdown is rated NEMA 4.

For hp	AC Voltage Output	AC Voltage Input	Amps	Ht.	Wd.	Dp.		
DIN-Rail Mount—Single-Phase Input								
1/2	230	100-120	2.4	7.7″	3.5″	4.0″	7786K51	$255.78
3/4	230	200-240	2.8	6.2″	2.6″	3.9″	7786K54	326.34
1	230	100-120	3.7	7.7″	3.5″	4.0″	7786K52	313.10
1 1/2	230	100-120	4.8	10.3″	3.9″	4.3″	7786K53	396.90
2	230	200-240	7	7.7″	3.5″	4.0″	7786K55	469.22
3	230	200-240	9.6	10.3″	3.9″	4.3″	7786K56	548.60
DIN-Rail Mount—Three-Phase Input								
3/4	230	200-240	2.8	6.2″	2.6″	3.9″	7786K57	317.52
1	230	200-240	3.7	7.7″	3.5″	4.0″	7786K58	403.94
1	460	380-480	2.4	6.2″	2.6″	3.9″	7786K62	389.84
2	230	200-240	7	7.7″	3.5″	4.0″	7786K59	482.44
3	230	200-240	11	10.3″	3.9″	4.3″	7786K61	533.60
3	460	380-480	5.6	7.7″	3.5″	4.0″	7786K63	641.20
5	460	380-480	9	10.3″	3.9″	4.3″	7786K64	754.10
7 1/2	460	380-480	12	10.3″	3.9″	4.3″	7786K65	1,143.94
Indoor Enclosure—Single-Phase Input								
1	230	115/230	4	7.5″	6.1″	4.2″	7786K42	636.54
1 1/2	230	115/230	5.2	7.5″	6.1″	4.2″	7786K43	688.54
2	230	200-230	6.8	7.5″	6.1″	5.1″	7786K44	714.59
3	230	200-230	9.6	7.5″	6.1″	5.1″	7786K45	775.06
Indoor Enclosure—Three-Phase Input								
1	200-240	200-240	4	7.5″	4.7″	4.3″	7786K12	580.95
1	400-480	400-480	2	7.5″	4.7″	3.6″	7786K17	681.37
2	200-240	200-240	6.8	7.5″	6.1″	5.1″	7786K14	643.71
3	200-240	200-240	9.6	7.5″	6.1″	5.1″	7786K15	745.92
5	200-240	200-240	15.2	7.9″	7.9″	5.9″	7786K16	957.68
5	400-480	400-480	7.6	7.5″	6.1″	5.1″	7786K18	1,093.63
Washdown Enclosure—Three-Phase Input								
1	200-240	200-240	4	7.9″	6.1″	4.4″	7786K32	782.83
2	200-240	200-240	6.8	7.9″	7.9″	4.9″	7786K33	860.53
2	400-480	400-480	3.4	7.9″	7.9″	4.9″	7786K36	990.68
3	400-480	400-480	4.8	7.9″	7.9″	4.9″	7786K37	1,076.15

Three-Phase AC Motor Speed Controls

A compact alternative to programmable controls, these take a single-phase input and allow you to manually control the speed of a three-phase motor. Controls have an open aluminum chassis design for mounting inside your machine or control cabinet. Use in packaging machines, conveyors, and vacuum equipment. Controls also have forward and reverse capabilities as well as a variable switch (potentiometer) for remote speed adjustment. Internal adjustments let you control the maximum speed, acceleration/deceleration times, run and jog speed modes, and torque boost. Output frequency range is 0 to 120 Hz. UL and C-UL listed.

Input kit allows controls to accept an input of 0 to 5 volts DC, 0 to 10 volts DC, or 4 to 20 mA. It mounts on the bottom of the controls.

For hp	AC Voltage Output	AC Voltage Input	Ht.	Wd.	Dp.		
1/15-1/2	230	115/230	3.0″	4.3″	3.7″	6488K21	$318.79
1/15-1	230	115/230	4.0″	6.0″	4.4″	6488K22	396.86
Input Kit						6488K31	80.17

AC to DC Motor Speed Controls

Open

Indoor Enclosure

Washdown Enclosure

Supply a single-phase AC voltage and you'll get a variable DC voltage to control the speed of a 90- or 180-volt DC permanent-magnet motor. Controls have an on/off switch, knob for DC output adjustment (except open control has a variable switch), and screw terminal connections. UL and C-UL listed. *Reversing* controls allow you to reverse the motor's shaft rotation.

Indoor enclosure is steel and rated NEMA 1.

Washdown enclosure is plastic and rated NEMA 4X.

Heat sinks are required for open and indoor enclosure controls when an output greater than 5 amps is needed.

Ratings for all AC to DC Motor Speed Controls

For hp	DC Output Voltage	AC Input Voltage	Amps
1/8-1	0-90	115	10
1/4-2	0-180	230	10

	Ht.	Wd.	Dp.		
Open					
Nonreversing	3.5″	4.3″	1.3″	7793K12	$143.14
Heat Sink for Open Control				7793K65	47.93
Indoor Enclosure					
Nonreversing	8.0″	6.2″	2.9″	7793K51	259.80
Reversing	8.0″	6.2″	2.9″	7793K52	348.68
Heat Sink for Indoor-Enclosure Control				7793K55	66.41
Washdown Enclosure					
Nonreversing	7.5″	5.6″	3.8″	7793K63	347.29
Reversing	7.5″	5.6″	3.8″	7793K64	471.02

Three-Phase AC Voltage-Monitoring Controls

Plug-In

DIN-Rail Mount

Surface Mount

Protect three-phase motors from phase loss and reversal, voltage imbalance, and over/under voltage. Also known as voltage-monitoring relays, these controls monitor your system and cut power to your motor when a fault occurs. All switch one circuit on or off (SPDT) and are rated 10 amps @ 240 volts AC.

Plug-in control has eight pins and a trip-delay range of 0.25 to 30 seconds to prevent nuisance tripping. Voltage imbalance adjusts from 2% to 10%. UL recognized and CSA certified.

DIN-rail mount controls have a trip-delay range of 1 to 30 seconds to prevent nuisance tripping. Voltage imbalance adjusts from 2% to 10%. They have screw terminals and can also be surface mounted. Rated 1/3 hp @ 240 volts AC. UL and C-UL listed.

Surface-mount controls have a memory function to store the last 10 fault conditions, allowing you to diagnose voltage problems. They have a trip-delay range of 0.25 to 30 seconds. Switch between automatic restart and delayed automatic restart (adjusts from 0.25 to 64 seconds after tripping). They have screw terminals. UL listed and CSA certified.

Socket is DIN-rail or surface mountable. It has two 5/32″ dia. mounting holes (hardware not included).

Mount Type	For Three-Phase AC Voltage		
Plug-In	200-480	6973K73	$112.19
DIN Rail	200-480	6969K52	151.98
Surface	240	7632K72	293.54
Surface	480	7632K74	293.54
Socket for Plug-In Control (1″ Ht. × 1.6″ Wd. × 2″ Dp.)		7122K26	4.65

For information about electrical switches, see pg. 855. For information about IP and NEMA ratings, see pg. 843.

Air-Actuated Switches and Components

Keep your live electrical circuit away from yourself and your work area. Choose a complete switch or build your own with switch components (you'll need a switching mechanism and an actuator).

Complete Switches— Include 10 feet of tubing. ***Hand-operated*** switches are rated 20 amps @ 125/250 VAC. They have three 0.187″ quick-disconnect connections and are UL recognized. ***Foot-operated*** switches allow you to plug your device directly into the switch controller. The controller has a standard NEMA 5-15 three-prong receptacle on one side and a standard NEMA 5-15 three-prong plug that plugs into a 115 VAC wall outlet on the other. Rated 15 amps @ 120 VAC. UL listed and CSA certified. Switches *with guard* prevent accidental switch actuation. The guard is plastic and measures 6″ Lg. × 6½″ Wd. × 4 11/16″ Ht.

Switch Components— You'll need a switching mechanism and an actuator (sold separately). ***Switching mechanisms*** are rated 21 amps @ 250 VAC and have ¼″ quick-disconnect connections. ***Actuators*** have 6½ feet of tubing.

Note: Switches that stay switched are also known as maintained; switches that spring back are also known as momentary.

Hand-Operated Switch

Foot-Operated Switch with Guard

SPDT Switching Mechanism

Surface-Mount Disc Actuator

Metal Foot Switch Actuator

No. of Circuits Switched	Switch Action	Lg. × Wd. × Ht.		
Complete Switches				
Hand Operated				
1 (SPDT)	Springs Back	2 3/16″ × 2 1/8″ × 1 3/16″	7695K11	$38.50
1 (SPDT)	Stays Switched	2 3/16″ × 2 1/8″ × 1 3/16″	7695K12	40.80
Foot Operated				
1 (SPST)	Springs Back	3¾″ Dia. × 1½″ Ht.	8152K11	29.82
1 (SPST)	Stays Switched	3¾″ Dia. × 1½″ Ht.	8152K12	29.82
Foot Operated with Guard				
1 (SPST)	Springs Back	3¾″ Dia. × 1½″ Ht.	8152K21	38.36
1 (SPST)	Stays Switched	3¾″ Dia. × 1½″ Ht.	8152K22	38.36

No. of Circuits Switched	Switch Action	Lg. × Wd. × Ht.		
Switch Components				
Switching Mechanisms				
1 (SPDT)	Springs Back	1⅞″ × 1″ × 1¾″	6573K82	$14.71
1 (SPDT)	Stays Switched	1⅞″ × 1″ × 1¾″	6573K81	14.71
2 (DPDT)	Springs Back	3″ × 1″ × 2″	6573K84	20.23
2 (DPDT)	Stays Switched	3″ × 1″ × 2″	6573K83	20.23
Actuators				
Plastic Surface-Mount Disc Actuator		2⅝″ Dia. × 1″ Ht.	7467K53	10.90
Plastic Foot Switch Actuator		5⅝″ × 4⅛″ × 1¾″	7467K52	32.90
Metal Foot Switch Actuator		6″ × 3¾″ × 1⅞″	7467K51	66.29

Light Duty Foot Switches

Ideal for intermittent use, these economical switches have a nonskid rubber base.

Switches— Switches with three-prong adapters simplify connections from plug-in equipment to power source. ***Single pedal plastic*** switch is lighter and more corrosion resistant than steel. UL recognized. **To Order:** Please specify color: blue, gray, or yellow. ***Single pedal steel front hinge*** switches pivot at the front of the switch, providing an ergonomic design to reduce user fatigue. UL and C-UL listed. ***Single pedal steel back hinge switches—*** 7376K1 is UL listed, CSA certified, and CE approved. 7376K2 is UL recognized, CSA certified, and CE approved. 7376K3 is UL and C-UL listed. ***Twin pedal steel back hinge*** switch has a divider bar to keep both switches from being operated by the same foot. Has mounting holes for size 8-32 screws. UL listed, CSA certified, and CE approved. ***Single pedal stainless steel*** switches have a watertight internal switch. They meet NEMA 6P for water submersion and resistance to corrosives. *Front hinge* switches pivot at the front of the switch for an ergonomic design. Meet IP67. UL and C-UL listed. *Back hinge* switches meet IP68. UL recognized. ***Single pedal die cast zinc interlocked*** switches have a pedal that works like a teeter-totter, preventing both circuits from activating at the same time. UL recognized.

Optional Guards— All are steel except 9518T21 and 6603K75, which are stainless steel.

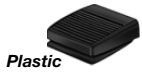
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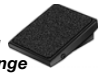
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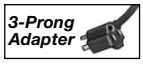
3-Prong Adapter

Steel Back Hinge w/Guard

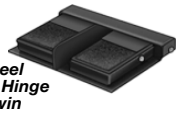
Steel Back Hinge Twin

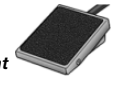
Stainless Steel Front Hinge

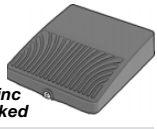
Die Cast Zinc Interlocked

Switches

No. of Circuits Switched	Before Switching, Circuit Is	Switch Action	Industry Designation	Amp Rating @ 125 VAC	250 VAC	28 VDC	Connections	Lg. × Wd. × Ht.		
Single Pedal Plastic										
1	Off or On	Springs Back (Momentary)	SPDT	15	15	3	(3) 0.187″ Quick-Disconnects	4″ × 3 7/16″ × 1⅛″	7516K21	$14.88
Single Pedal Steel Front Hinge										
1	Off	Springs Back (Momentary)	SPDT-NO	10	—	—	6-ft. Cord w/3-Prong Adapter	3⅝″ × 2¾″ × 1½″	7717K13	25.04
1	Off	Stays Switched (Maintained)	SPDT-NO	10	—	—	6-ft. Cord w/3-Prong Adapter	3⅝″ × 2¾″ × 1½″	7717K23	28.68
1	Off	Springs Back (Momentary)	SPDT-NO	10	10	0.1●	6-ft. Cord w/3 Leads	3⅝″ × 2¾″ × 1½″	7717K12	21.21
1	Off	Stays Switched (Maintained)	SPDT-NO	10	10	0.1●	6-ft. Cord w/3 Leads	3⅝″ × 2¾″ × 1½″	7717K22	27.82
1	Off or On	Springs Back (Momentary)	SPDT	15	15	0.1●	(3) 0.187″ Quick-Disconnects	3⅝″ × 2¾″ × 1½″	7717K14	14.25
1	Off or On	Stays Switched (Maintained)	SPDT	15	15	0.1●	(3) 0.187″ Quick-Disconnects	3⅝″ × 2¾″ × 1½″	7717K24	15.57
Single Pedal Steel Back Hinge										
1	Off	Springs Back (Momentary)	SPDT-NO	10	—	—	6-ft. Cord w/3-Prong Adapter	3½″ × 2⅝″ × ⅞″	7376K1	24.47
1	Off or On	Springs Back (Momentary)	SPDT	15	15	3	(3) 0.187″ Quick-Disconnects	3½″ × 2⅝″ × ⅞″	7376K2	14.16
1	Off or On	Stays Switched (Maintained)	SPDT	15	15	3	(3) 0.187″ Quick-Disconnects	3⅝″ × 2¾″ × 1⅛″	7376K3	28.17
Twin Pedal Steel Back Hinge										
2	Off	Springs Back (Momentary)	SPDT-NO	13	13	3	8-ft. Cord w/3 Leads	3½″ × 6⅛″ × 1½″	7376K5	78.11
Single Pedal Stainless Steel Front Hinge										
1	Off	Springs Back (Momentary)	SPST-NO	3	—	5	8-ft. Cord w/3-Prong Adapter	3⅝″ × 2¾″ × 1½″	9518T13	65.44
1	Off	Springs Back (Momentary)	SPST-NO	3	3	5	8-ft. Cord w/3 Leads	3⅝″ × 2¾″ × 1½″	9518T12	62.08
1	Off or On	Springs Back (Momentary)	SPDT	3	3	5	(3) 0.187″ Quick-Disconnects	3⅝″ × 2¾″ × 1½″	9518T11	42.83
Single Pedal Stainless Steel Back Hinge										
1	Off	Springs Back (Momentary)	SPST-NO	3	—	—	8-ft. Cord w/3-Prong Adapter	3½″ × 2⅝″ × ⅞″	6603K71	91.75
1	Off	Springs Back (Momentary)	SPST-NO	3	3	—	8-ft. Cord w/3 Leads	3½″ × 2⅝″ × ⅞″	6603K72	78.54
1	Off	Springs Back (Momentary)	SPST-NO	3	3	—	(2) Leads w/Wire Nuts	3½″ × 2⅝″ × ⅞″	6603K73	72.24
Single Pedal Die Cast Zinc Interlocked										
2	Off or On	Springs Back (Momentary)	SPDT	10	10	3	(6) 0.187″ Quick-Disconnects	4¾″ × 4¼″ × 1⅝″	7668K4	43.25
2	Off or On	Springs Back (Momentary)	DPDT	10	10	3	(12) 0.187″ Quick-Disconnects	4¾″ × 4¼″ × 1⅝″	7668K5	60.32

● Amp rating @ 125 VDC.

Optional Guards

	Lg. × Wd. × Ht.		
Guard for Single Pedal Plastic, Steel Back Hinge, and Die Cast Zinc Interlocked Switches	6″ × 6″ × 4½″	7024K5	$27.95
Guard for Single Pedal Steel Front Hinge Switches	5¾″ × 6″ × 4¾″	7717K31	24.00
Guard for Twin Pedal Steel Back Hinge Switch	6″ × 11″ × 4½″	7024K17	41.97
Guard for Single Pedal Stainless Steel Front Hinge Switches	5¾″ × 6″ × 4¾″	9518T21	75.48
Guard for Single Pedal Stainless Steel Back Hinge Switches	6″ × 6″ × 4½″	6603K75	164.04

Medium Duty Foot Switches

Standard

Twin with Optional Guard

Wide Pedal

Harsh Environment

3-Prong Adapter

More durable than light duty foot switches, these switches are cast iron and have a nonskid base pad. They also have an adjustable strain-relief connector. Mounting hardware not included. Maximum voltage is 250 VAC/28 VDC, unless noted. All are UL listed and CSA certified, except 7024K3, K4, and K42, which are UL recognized.

Single pedal standard switches have two 0.22″ mounting holes. 7614K32 has a three-prong adapter to simplify connections from plug-in equipment to power source. Maximum voltage for 7614K32 is 125 VAC.

Twin pedal switch has a divider bar that prevents both switches from being actuated by the same foot. Has four 0.22″ mounting holes.

Single wide pedal switches are great for bulky footwear, providing a 7″ wide "target" for your foot. They have two 0.22″ mounting holes.

Single pedal harsh environment switches are rated IP68 and NEMA 4X, 6P, and 13 for washdown, corrosion, and oil resistance. Max. voltage is 277 VAC/24 VDC. They have three 3/16″ mounting holes.

Optional guards (for single pedal standard and twin pedal switches) prevent accidental switch actuation. Made of steel.

No. of Circuits Switched	Before Switching, Circuit Is	Switch Action	Industry Designation	Amp Rating @ 125 VAC	250 VAC	28 VDC	Connections	Lg.×Wd.×Ht.		
Switches										
Single Pedal Standard										
1	Off	Springs Back (Momentary)	SPST-NO	15	—	—	8-ft. Cord w/3-Prong Adapter	4½″× 3½″×1 25/32″	7614K32	$57.66
1	Off or On	Springs Back (Momentary)	SPDT	20	20	3	(3) Screw Terminals	4½″× 3½″×1 25/32″	7024K11	35.27
1	Off or On	Stays Switched (Maintained)	SPDT	20	10	3	(3) Leads	4½″× 3½″×1 25/32″	7024K14	53.16
2	Off or On	Springs Back (Momentary)	DPDT	15	10	3	(6) 0.187″ Quick-Disconnects	4½″× 3½″×1 25/32″	7024K3	56.24
2	Off or On	Stays Switched (Maintained)	DPDT	10	10	3	(6) Solder Lug	4½″× 3½″×1 25/32″	7024K4	88.11
Twin Pedal										
2	Off or On	Springs Back (Momentary)	2 SPDT	20	20	2.5	(6) Screw Terminals	4½″× 8⅜″×1⅞″	7024K16	97.05
Single Wide Pedal										
1	Off or On	Springs Back (Momentary)	SPDT	20	20	3	(3) Screw Terminals	5½″× 7″ ×1 25/32″	7024K41	66.20
1	Off or On	Stays Switched (Maintained)	SPDT	20	10	3	(3) Leads	5½″× 7″ ×1 25/32″	7024K44	81.80
2	Off or On	Springs Back (Momentary)	DPDT	15	10	3	(6) 0.187″ Quick-Disconnects	5½″× 7″ ×1 25/32″	7024K42	75.20
Single Pedal Harsh Environment										
1	Off or On	Springs Back (Momentary)	SPDT	13	13	5★	6-ft. Cord w/3 Leads	3¾″× 5¾″×1¾″	8793T12	82.90
1	Off or On	Springs Back (Momentary)	SPDT	20	20	5★	(3) 0.187″ Quick-Disconnects	3¾″× 5¾″×1¾″	8793T11	66.62
Optional Guards										
Guard for Single Pedal Standard Switches								6″ × 6″ ×4½″	7024K5	27.95
Guard for Twin Pedal Switch								6″ ×11″ ×4½″	7024K17	41.97

★ Amp rating @ 24 VDC.

Mil. Spec. Foot Switches

Without Bracket

Usually found in military vehicles, these tough switches are perfect for your plant. They are great for rugged DC voltage applications and meet MIL-S-13625 for shock and vibration protection. The green die cast zinc housing protects against salt and water. They switch one circuit from "off" to "on" (SPST-NO) and spring back (momentary). Both have two screw terminals. Rated 150 amps @ 28 VDC. Size is 3¾″ Ht.×2¾″ Wd.×2¾″ Dp. Switch ***with floor-mount bracket*** has two 1/4″-20 threaded mounting holes (hardware not included).

Without Floor-Mount Bracket	6801T11	$199.74
With Floor-Mount Bracket	6801T13	221.64

High-Pressure Air-Actuated Switch

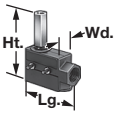

Also known as an air-to-electric switch, this switch converts an air signal to an electrical signal. Requires 8-100 psi of air pressure to actuate. Air connection is 1/8″ NPT female; electrical connection is 1/2″ trade size NPSM (National Pipe Straight Mechanical) female conduit. Rated 15 amps @ 230 VAC. Has two 5/32″ dia. mounting holes (mounting hardware not included) and three solder-terminal connections. UL listed and CSA certified.

No. of Circuits Switched	Switch Action	Lg.×Wd.×Ht.		
1 (SPDT)	Springs Back (Momentary)	3.1″×1″×3.63″	49145K51	$108.47

Low-Profile Ribbon Switches

Great for detecting people or objects to control lights and alarms. Compact 3/16″ Ht.×3/4″ Wd. ribbon switches can be actuated with pressure anywhere along their entire length. They switch one circuit from "off" to "on" (SPST-NO) and spring back (momentary). All are rated 1 amp @ 28 VAC/VDC. Made of PVC. CE approved.

Ribbon with Molded Leads

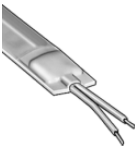

Ready to use, they have sealed ends with two 18″ 18 AWG wire leads.

Lg.	Yellow Actuation Force		Gray Actuation Force	
3 ft.	12 oz.	7379K23	40 oz.	7379K13
6 ft.	12 oz.	7379K26	40 oz.	7379K16
9 ft.	12 oz.	7379K29	40 oz.	7379K19

3 ft.	7379K23	$47.29	7379K13	$47.29
6 ft.	7379K26	75.87	7379K16	75.87
9 ft.	7379K29	104.46	7379K19	102.50

Cut-to-Length Roll

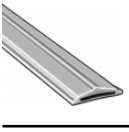

Just cut to desired length and select a termination kit (required, sold separately at right).

Lg.	Yellow Actuation Force		Gray Actuation Force	
50 ft.	12 oz.	7379K2	40 oz.	7379K1

50 ft.	7379K2	$510.78	7379K1	$510.78

Accessories for Cut-to-Length Roll

Live End

Dead End

"T" Connector

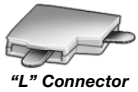
"L" Connector

Termination Kit

Termination kits include one live-end and one dead-end connector. Live end has two 18″ 18 AWG wire leads. Use *vinyl adhesive* (sold separately below) to seal ends. Optional "*T*" and "*L*" *connectors* allow you to connect two lengths to form rectangular patterns. They are made of PVC.

	Yellow		Gray	
Termination Kit	7379K4	$15.60	7379K3	$15.60
"T" Connector	7379K11	10.49	7379K8	10.49
"L" Connector	7379K12	10.49	7379K9	10.49
Vinyl Adhesive (1-oz. tube)	7504A11	$5.73		

Optional Mounting Channels

Made of extruded aluminum. Size is 7/8″ Wd.×1/4″ Ht. with 5/32″ mounting holes 7″ apart.

3-ft. Mounting Channel	7379K5	$13.89
6-ft. Mounting Channel	7379K6	25.56

For information about electrical switches, see pg. 855. For information about NEMA and IP ratings, see pg. 843.

Heavy Duty Foot Switches

Heavy duty construction handles just about anything a tough industrial environment can dish out—plus they meet NEMA 4 and 13 for washdown and oil resistance. All can be mounted to the floor or to your machinery (hardware not included). Switches have a ¾″-14 NPT female threaded conduit entry and screw-terminal connections, unless noted. Housing is cast iron, unless noted. UL listed.

Standard switches have three 0.31″ mounting holes. Guards are cast aluminum. CSA certified. Switches ***with oversized guard*** provide additional opening height to accommodate even the bulkiest safety shoes and foot guards. Switches with two stages allow you to actuate one piece of equipment at two speeds. Push the pedal halfway to actuate the first stage (slow speed) or all the way to actuate the second stage (high speed). ***Single-pedal push-to-unlock*** switches have a safety lever inside to prevent accidental actuation. You must push the lever forward with your toes before you can depress the foot pedal.

Harsh environment switches also meet IP68 and NEMA 6P for protection against water submersion and corrosive agents. They have four 0.28″ mounting holes and guards are steel on switches with guards, unless noted.

Single-pedal switches have a cast aluminum housing and a ½″-14 NPT female threaded conduit entry. CSA certified. ***Twin-pedal*** switches have a divider bar to prevent both switches from being actuated at the same time. Housing is cast aluminum. CSA certified. ***Low-profile*** switches are just 1½″ tall, so they fit in very tight spaces. Housing is polished aluminum. Maximum voltage is 250 VAC. *Twin switches* have a divider bar to prevent both switches from being actuated at the same time. ***Single-pedal positive break*** switches have snap-action normally closed contacts that instantly open to switch the circuit from "on" to "off." They mechanically disengage even if contacts weld or the spring breaks. Enclosure has PG-16 female threaded conduit entry and three 0.31″ mounting holes. (See page 842 for a PG-to-½″ NPT thread adapter.) Switch includes a cast aluminum guard. CE approved.

Standard Single Pedal with Guard

Standard Single Pedal with Oversized Guard

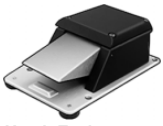
Harsh Environment Single Pedal

Harsh Environment Twin Pedal with Guard

Harsh Environment Single Pedal Low Profile

Harsh Environment Twin Pedal Low Profile

No. of Circuits Switched	Before Switching, Circuit Is	No. of Stages	Switch Action	Industry Designation	Amp Rating @ 125 VAC	250 VAC	28 VDC	Connections	Lg. × Wd. × Ht.			
Standard Switches												
Single Pedal with Guard												
1	Off or On	1	Springs Back (Momentary)	SPDT	20	20	3	(3) Screw Terminals	9″	× 5⅞″	×4⅜″	**7372K11** $106.13
1	Off or On	1	Stays Switched (Maintained)	SPDT	20	20	3	(3) Screw Terminals	9″	× 5⅞″	×4⅜″	**7372K14** 159.95
1	Off or On	2	Springs Back (Momentary)	SPDT	20	20	3	(6) Screw Terminals	9″	× 5⅞″	×4⅜″	**7372K51** 178.41
1	Off or On	2	Stays Switched (Maintained)	SPDT	20	20	3	(6) Screw Terminals	9″	× 5⅞″	×4⅜″	**7372K52** 197.27
2	Off or On	1	Springs Back (Momentary)	DPDT	20	20	3	(6) Screw Terminals	9″	× 5⅞″	×4⅜″	**7372K12** 126.47
2	Off or On	1	Stays Switched (Maintained)	DPDT	20	20	3	(6) Screw Terminals	9″	× 5⅞″	×4⅜″	**7372K15** 178.98
Single Pedal with Oversized Guard												
1	Off or On	1	Springs Back (Momentary)	SPDT	20	20	3	(3) Screw Terminals	9⅛″	× 6″	×5¾″	**7372K31** 132.19
1	Off or On	1	Stays Switched (Maintained)	SPDT	20	20	3	(3) Screw Terminals	9⅛″	× 6″	×5¾″	**7372K32** 188.10
1	Off or On	2	Springs Back (Momentary)	SPDT	20	20	3	(6) Screw Terminals	9⅛″	× 6″	×5¾″	**7372K71** 199.78
1	Off or On	2	Stays Switched (Maintained)	SPDT	20	20	3	(6) Screw Terminals	9⅛″	× 6″	×5¾″	**7372K72** 235.55
2	Off or On	1	Springs Back (Momentary)	DPDT	20	20	3	(6) Screw Terminals	9⅛″	× 6″	×5¾″	**7372K34** 157.53
2	Off or On	1	Stays Switched (Maintained)	DPDT	20	20	3	(6) Screw Terminals	9⅛″	× 6″	×5¾″	**7372K35** 210.10
Single Pedal Push-to-Unlock with Guard												
1	Off or On	1	Springs Back (Momentary)	SPDT	20	20	3	(3) Screw Terminals	9″	× 5⅞″	×4⅜″	**7344K11** 171.98
1	Off or On	2	Springs Back (Momentary)	SPDT	20	20	3	(6) Screw Terminals	9″	× 5⅞″	×4⅜″	**7344K51** 203.69
2	Off or On	1	Springs Back (Momentary)	DPDT	20	20	3	(6) Screw Terminals	9″	× 5⅞″	×4⅜″	**7344K12** 186.78
Single Pedal Push-to-Unlock with Oversized Guard												
1	Off or On	1	Springs Back (Momentary)	SPDT	20	20	3	(3) Screw Terminals	9⅛″	× 6″	×6″	**7344K31** 201.21
1	Off or On	2	Springs Back (Momentary)	SPDT	20	20	3	(6) Screw Terminals	9⅛″	× 6″	×6″	**7344K71** 232.71
2	Off or On	1	Springs Back (Momentary)	DPDT	20	20	3	(6) Screw Terminals	9⅛″	× 6″	×6″	**7344K32** 216.00
Harsh Environment Switches												
Single Pedal												
1	Off or On	—	Springs Back (Momentary)	SPDT	16	16	—	(3) Quick Disconnects	4¼″	× 7″	×2½″	**7670K81** 80.81
2	Off or On	—	Springs Back (Momentary)	DPDT	16	16	—	(6) Quick Disconnects	4¼″	× 7″	×2½″	**7670K82** 104.50
Single Pedal with Guard												
1	Off or On	—	Springs Back (Momentary)	SPDT	16	16	—	(3) Quick Disconnects	6″	× 7″	×4½″	**7670K83** 104.03
2	Off or On	—	Springs Back (Momentary)	DPDT	16	16	—	(6) Quick Disconnects	6″	× 7″	×4½″	**7670K84** 129.73
Twin Pedal												
2	Off or On	—	Springs Back (Momentary)	2 SPDT	16	16	—	(6) Quick Disconnects	7⅜″	× 7″	×2½″	**7670K85** 98.51
4	Off or On	—	Springs Back (Momentary)	2 DPDT	16	16	—	(12) Quick Disconnects	7⅜″	× 7″	×2½″	**7670K86** 171.47
Twin Pedal with Guard												
2	Off or On	—	Springs Back (Momentary)	2 SPDT	16	16	—	(6) Quick Disconnects	11″	× 7″	×4½″	**7670K87** 129.83
4	Off or On	—	Springs Back (Momentary)	2 DPDT	16	16	—	(12) Quick Disconnects	11″	× 7″	×4½″	**7670K88** 197.52
Single Pedal Low Profile												
1	Off	—	Springs Back (Momentary)	SPDT✓	18	18	—	8-ft. Cord w/3 Leads	4¾″	× 7¼″	×1½″	**8225K51** 96.92
Optional Steel Guard for Single Pedal Low Profile									5¾″	×11″	×4¾″	**8225K53** 37.62
Twin Pedal Low Profile												
2	Off	—	Springs Back (Momentary)	2 SPDT✓	15	15	—	8-ft. Cord w/3 Leads	4¾″	× 7¼″	×1½″	**8225K52** 112.48
Optional Steel Guard for Twin Pedal Low Profile									5¾″	×11″	×4¾″	**8225K53** 37.62
Single Pedal Positive Break with Guard												
1	Off or On	—	Springs Back (Momentary)	SPDT	6	3	2.5★	(4) Screw Terminals	9″	× 5⅞″	×4¾″	**7509K11** 168.60
2	Off or On	—	Springs Back (Momentary)	DPDT	6	3	2.5★	(8) Screw Terminals	9″	× 5⅞″	×4¾″	**7509K12** 190.48
Single Pedal Positive Break with Oversized Guard												
1	Off or On	—	Springs Back (Momentary)	SPDT	6	3	2.5★	(4) Screw Terminals	9⅛″	× 6⅛″	×6″	**7509K13** 208.14
2	Off or On	—	Springs Back (Momentary)	DPDT	6	3	2.5★	(8) Screw Terminals	9⅛″	× 6⅛″	×6″	**7509K14** 229.83

✓ Switch wired normally open. ★ Amp rating @ 24 VDC.

Heavy Duty Variable-Output Foot Switches

Install these switches to vary the speed of larger motors with variable-speed motor drives. Also called potentiometers, they adjust resistance to vary output current. You can wire them to either increase or decrease the speed when you press down. They have an auxiliary contact that switches one circuit from "off" to "on" or "on" to "off" (SPDT) and springs back (momentary). The auxiliary contact is rated 15 amps @ 125/250 VAC. Max. voltage is 250 VAC/500 VDC. Both switches have three solder-lug connections, an additional three 0.187″ quick-disconnect connections for the auxiliary contact, and a ¾″-14 NPT female conduit entry. They have three 5/16″ mounting holes (hardware not included). Base is cast iron and guard is cast aluminum. Meets NEMA 4 and 13 for washdown and oil resistance. UL recognized. **To Order:** Please specify maximum resistance.

Without Guard

	Watt Rating	Lg. × Wd. × Ht.	Available Max. Resistance, Ohms		
Without Guard	2 watts @ 500 VDC	8⅜″ × 4 1/16″ × 3 5/32″	100, 250, 500, 1K, 2.5K, 5K, 10K, 15K, 1M, 5M	**6817K11**	$304.52
With Guard	2 watts @ 500 VDC	9⅛″ × 5⅞″ × 5 1/32″	100, 250, 500, 1K, 2.5K, 5K, 10K, 15K, 1M, 5M	**6817K31**	348.78

For information about electrical switches, see pg. 855. For information about IP and NEMA ratings, see pg. 843.

Switch Mats

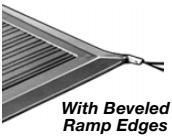

With Beveled Ramp Edges

These switches let you walk all over them. Ideal for opening doors and other hands-free tasks (not intended for use as an emergency stop or safety control switch). As little as 10 to 15 lbs. of pressure actuates an internal switch that switches one circuit from "off" to "on" (SPST-NO) and springs back (momentary). They are made of durable molded vinyl to resist most harsh industrial liquids. Mats are 3/8″ thick and come with a 6-ft. molded cord with two 18 AWG wire leads (10-ft. cord on mats with aluminum ramp edges). Rated 4 amps @ 24 VAC/VDC. Max. capacity is 3,000 psi. Mats ***with beveled ramp edges*** are brown. Mats ***with aluminum ramp edges*** are black and can be secured to the floor. The ramp edges snap on to the mat.

Control box lets you control one or more 120 VAC devices (drawing up to 15 amps) from a switch mat. Box has two standard three-prong outlets: one normally on, the other off. Box has 6-ft. cord with three-prong plug that plugs into a 120 VAC outlet. Size is 5″ Ht.×4″ Wd.×3″ Dp.

O'all Size			O'all Size		
With Beveled Ramp Edges			***With Aluminum Ramp Edges***		
10″×17″	7351K3	$106.42	27½″×27½″	7351K52	$384.00
14″×23″	7351K1	129.06	27½″×35″	7351K53	452.73
18″×30″	7351K2	175.47	27½″×43″	7351K54	498.55
30″×30″	7351K51	291.27	27½″×57″	7351K56	628.36
			35½″×43″	7351K55	621.82

Control Box 7351K41 $211.64

Mighty-Thin Switch Mats

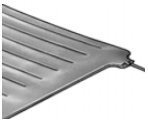

Extra-thin (3/32″ thick) mats work great under carpeting or anywhere you want the mat to be hidden. They switch one circuit from "off" to "on" (SPST-NO) and spring back (momentary). All are rated 1 amp @ 24 VAC/VDC. Made of green PVC.

Mats are UL listed. The 25-ft. long ***cut-to-length roll*** can be cut to your requirements (roll width cannot be cut).

O'all Size	Actuation Force	Wire Leads		
Mats				
6″×23″	5 lbs.	(2) 22 AWG, 18″ Lg.	7676K1	$40.31
17″×23″	5 lbs.	(2) 22 AWG, 72″ Lg.	7676K2	83.27
23″×35″	5 lbs.	(2) 18 AWG, 72″ Lg.	7676K8	162.60
30″×32″	5 lbs.	(2) 22 AWG, 72″ Lg.	7676K9	206.96
Cut-to-Length Roll				
30″×25 ft.	5 lbs.	None♠	7676K3	560.95

♠ Has two bare wires for soldering or crimping a connector.

Mini Switch Mats

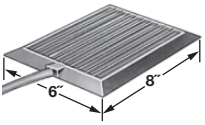

Ideal for actuating machinery, doors, and alarms with the touch of a foot, these pliable molded vinyl mats have an overall size of just 6″×8″ and are 3/8″ thick. They have a corrugated surface, switch one circuit from "off" to "on" (SPST-NO), and spring back (momentary). Both have a 15-ft. cord with two 18 AWG wire leads. Rated 4 amps @ 24 VAC/VDC. Max. capacity is 3,000 psi. Color is black.

	Actuation Force		
Standard	10-15 lbs.	7374K31	$75.85
Water Resistant	10-15 lbs.	7374K42	81.23

Safety Bumper Switches

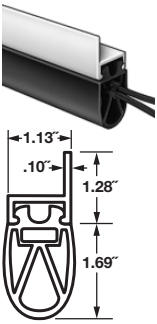

Prevent power-operated doors from closing on a person or an object. Use these switches with switch mat controllers for a four-wire system that will turn machinery off if the switch is actuated or if a fault is detected (see 7666K91-K94 on this page for switch mat controllers).

The switch bumper is made of black Santoprene, a thermoplastic elastomer with excellent weather and chemical resistance. Aluminum channel (included) mounts directly to the edge of your door using 1/8″ dia. screws (included). All meet IP67 for temporary submersion. Lengths cannot be cut.

They switch one circuit from "off" to "on" (SPST-NO) and spring back (momentary). Include two 72″ long cords and each cord has two 20 AWG wire leads. Rated 1 amp @ 28 VAC/VDC. CE approved.

Lg.	Actuation Force			Lg.	Actuation Force		
2 ft.	10 lbs.	7703K41	$209.02	6 ft.	10 lbs.	7703K44	$319.78
3 ft.	10 lbs.	7703K42	238.82	8 ft.	10 lbs.	7703K45	372.54
4 ft.	10 lbs.	7703K47	261.27	10 ft.	10 lbs.	7703K46	430.50
5 ft.	10 lbs.	7703K43	287.39	12 ft.	10 lbs.	7703K48	480.33

Safety Switch Mat System

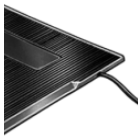

Guard your machinery and protect your personnel. Select a switch mat and a switch mat controller (sold separately below) for a four-wire system that will turn machinery off if someone steps on the mat or if a fault is detected. All meet ANSI/RIA 15.06-1999 and conform to OSHA safety requirements.

Switch Mats— Made of PVC and have a beveled edge. All switch one circuit from "off" to "on" (SPST-NO) and spring back (momentary). They include a 6-ft. molded cable with four 18 AWG wire leads. IP65 and NEMA 4 rated for washdowns. Rated 1 amp @ 24 VAC/VDC. ***Standard mats*** are for occasional foot traffic and require an actuation force of 22 lbs. Mats are 1/2″ thick with a maximum weight capacity of 1,100 psi. Choose black or yellow. ***High-abuse mats*** can withstand repeated impact from heavy and sharp objects (such as dropped tools or sheet metal) and require an actuation force of 20 lbs. Mats are 5/8″ thick and have a maximum capacity of 1,500 psi. Color is black.

Switch Mat Controllers— Have an output rating of 4 amps @ 240 VAC. UL and C-UL listed, CE approved. ***Manual-reset*** controllers prevent accidental restarts, requiring the use of a separate reset switch to turn your machinery back on (sold separately on pages 855-864). The reset switch must switch one circuit from "off" to "on" (SPST-NO) and spring back (momentary). The controllers switch two circuits from "on" to "off" (DPST-NC) and spring back (momentary). ***Auto-reset*** controllers reset when the operator steps off the mat. Great for applications where the mat will be frequently actuated. They switch two circuits from "off" to "on" or "on" to "off" (DPDT) and spring back (momentary).

Optional Trim Kits— Consist of an extruded aluminum frame that firmly secures the switch mat to the floor with screws (not included) and provides a smooth transition from floor to mat.

Switch Mats

O'all Size	Standard Black		Standard Yellow		High-Abuse Black	
24″×36″	7666K21	$334.45	7666K31	$394.61	7666K41	$553.86
24″×48″	7666K27	436.16	7666K32	497.74	7666K47	805.61
24″×60″	7666K22	517.89	7666K33	625.79	7666K42	902.72
24″×72″	7666K23	618.58	7666K34	745.52	7666K43	1,065.13
30″×48″	7666K24	517.89	7666K35	625.79	7666K44	897.74
36″×48″	7666K25	618.58	7666K36	745.52	7666K45	1,066.91
36″×60″	7666K28	692.32	7666K37	938.68	7666K48	1,445.59
36″×72″	7666K26	935.09	7666K38	1,106.29	7666K46	1,574.60
48″×72″	7666K29	1,233.60	7666K39	1,477.41	7666K49	2,368.10

Switch Mat Controllers

Manual Reset Surface Mount

Voltage	Mounting		
Manual Reset			
24 VDC	35 mm DIN Rail	7666K92	$453.16
24 VDC	Surface	7666K94	484.47
110/240 VAC	35 mm DIN Rail	7666K91	453.16
110/240 VAC	Surface	7666K93	484.47
Auto Reset			
24 VDC	35 mm DIN Rail	7666K96	484.47
110/240 VAC	35 mm DIN Rail	7666K95	484.47
35 mm DIN Rail (1 m Lg.×7.5 mm Ht.)		8961K15	4.96

Optional Trim Kits

O'all Size			O'all Size		
24″×36″	7666K81	$87.98	36″×48″	7666K85	$113.46
24″×48″	7666K87	101.25	36″×60″	7666K88	126.92
24″×60″	7666K82	113.46	36″×72″	7666K86	140.38
24″×72″	7666K83	126.92	48″×72″	7666K89	151.92
30″×48″	7666K84	106.73			

Bumper Switches

Switch with Mounting Channel

Often used to signal when a door closes or an item reaches the end of a conveyor, these switches are sensitive along their entire length. They are made of heavy duty flexible urethane and are completely sealed and insulated for excellent weather resistance. Lengths cannot be cut. Use alone or with the optional aluminum mounting channel for surface mounting to walls or conveyors (mounting hardware included).

Switches are 1″ wide with a 1/2″ radius half-round shape. All have a 2-ft. cord with two 18 AWG wire leads. Switch one circuit from "off" to "on" (SPST-NO) and spring back (momentary). Amp rating is 4 amps @ 24 VAC/VDC.

To Order: For switches, please specify color: black, red, or yellow.

Length	Actuation Force	Switches		Optional Mounting Channel	
1 ft.	3-5 lbs.	7571K21	$45.60	7571K911	$7.50
2 ft.	3-5 lbs.	7571K22	63.60	7571K912	15.00
3 ft.	3-5 lbs.	7571K23	80.40	7571K913	22.50
4 ft.	3-5 lbs.	7571K24	99.74	7571K914	30.00
5 ft.	3-5 lbs.	7571K25	120.00	7571K915	37.50
6 ft.	3-5 lbs.	7571K26	140.40	7571K916	45.00

Snap-Acting Switches

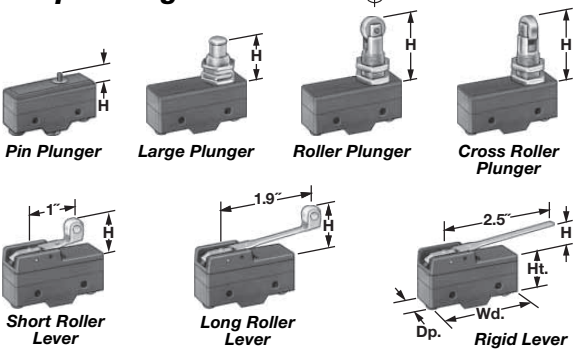

Pin Plunger — *Large Plunger* — *Roller Plunger* — *Cross Roller Plunger* — *Short Roller Lever* — *Long Roller Lever* — *Rigid Lever*

Rapid "snap" closing action minimizes arcing to extend switch life and prevent "hang-up" between the on and off positions. Switches spring back (momentary) and have a 0.95″ Ht.×1.94″ Wd.×0.69″ Dp. plastic housing. They have two 0.17″ diameter mounting holes (except 7090K, which have 0.14″ diameter mounting holes) spaced 1″ apart, center to center (hardware not included). UL recognized and CSA certified.

One-circuit switches have three terminals. Switches *with screw terminals* are rated 15 amps and ¼ hp @ 250 VAC. Maximum voltage is 480 VAC/250 VDC. Switches *with solder terminals* are rated 15 amps @ 250 VAC. Maximum voltage is 250 VAC/VDC.

Two-circuit switches have six screw terminals and are rated 10 amps and ¼ hp @ 250 VAC. Maximum voltage is 480 VAC/250 VDC.

	Actuation Force	Actuator Height (H)		
One Circuit—From "Off" to "On" or "On" to "Off" (SPDT)				
With Screw Terminals				
Pin Plunger	9.0 oz.	0.05″	**7090K36**	$7.50
Large Plunger	9.0 oz.	0.9″	**7090K39** ♦	10.60
Roller Plunger	9.0 oz.	1.4″	**7090K11** ♦	16.15
Cross Roller Plunger	9.0 oz.	1.4″	**7090K12** ♦	16.15
Short Roller Lever	6.0 oz.	0.75″	**7090K41**	10.51
Long Roller Lever	3.5 oz.	1.0″	**7090K38**	10.35
Rigid Lever	2.5 oz.	0.2″	**7090K37**	8.46
With Solder Terminals				
Pin Plunger	12.3 oz.	0.06″	**7783K11**	7.78
Large Plunger	12.3 oz.	0.9″	**7783K15** ♦	13.04
Roller Plunger	12.3 oz.	1.3″	**7783K16** ♦	15.25
Cross Roller Plunger	12.3 oz.	1.3″	**7783K17** ♦	15.25
Short Roller Lever	5.6 oz.	0.6″	**7783K13**	9.74
Long Roller Lever	5.6 oz.	0.6″	**7783K14**	10.34
Rigid Lever	2.5 oz.	0.2″	**7783K12**	8.51
Two Circuits—From "Off" to "On" or "On" to "Off" (DPDT)				
With Screw Terminals				
Pin Plunger	20.1 oz.	0.04″	**7765K1**	37.21
Short Roller Lever	15.2 oz.	0.58″	**7765K3**●	36.08
Long Roller Lever	7.5 oz.	0.68″	**7765K4**	37.58
Rigid Lever	6.0 oz.	0.29″	**7765K2**	38.75

♦ Can be panel mounted in a ½″ dia. cutout. ● Lever length is 1.2″.

High-Temperature Snap-Acting Switches

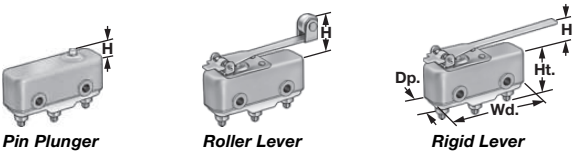

Pin Plunger — *Roller Lever* — *Rigid Lever*

Other snap-acting switches just can't take the heat. Thanks to a ceramic housing, cobalt-alloy springs, and special alloy contacts, these switches operate at temperatures up to 752° F without breaking a sweat. Great for industrial ovens, rolling mills, semiconductor processing equipment, and other high-temperature applications.

All switch one circuit from "off" to "on" or "on" to "off" (SPDT) and have three 3.5 mm stud terminals with nuts. They spring back (momentary). Rated 1 amp @ 125 VAC/24 VDC. Maximum voltage is 250 VAC/125 VDC.

Size is 1.18″ Ht.×1.94″ Wd.×0.69″ Dp. They have two 0.14″ dia. mounting holes spaced 1″ apart, center to center (hardware not included).

	Actuation Force	Actuator Height (H)		
Pin Plunger	17.6 oz.	0.1″	**7467T11**	$187.42
Roller Lever	4.6 oz.	0.61″	**7467T13**	278.42
Rigid Lever	3.5 oz.	0.19″	**7467T12**	269.26

High-Current Snap-Acting Switches

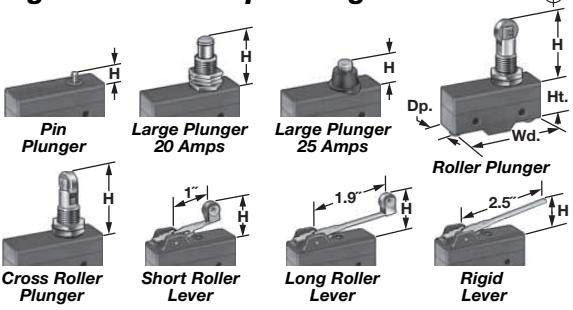

Pin Plunger — *Large Plunger 20 Amps* — *Large Plunger 25 Amps* — *Roller Plunger* — *Cross Roller Plunger* — *Short Roller Lever* — *Long Roller Lever* — *Rigid Lever*

These switches handle heavier electrical loads, such as those required by motors. All switch one circuit from "off" to "on" or "on" to "off" (SPDT) and spring back (momentary). They have three screw-terminal connections. All are plastic. Size is 0.95″ Ht.×1.94″ Wd.×0.69″ Dp. UL recognized and CSA certified.

20-amp switches have a 480 VAC/250 VDC maximum voltage. They have two 0.14″ dia. mounting holes spaced 1″ apart, center to center (hardware not included). ***25-amp*** switches have a 480 VAC maximum voltage. They have two 0.17″ dia. mounting holes spaced 1″ apart, center to center (hardware not included).

	Actuation Force	Actuator Height (H)		
20 amps, 2 hp @ 250 VAC				
Pin Plunger	14.0 oz.	0.06″	**7090K46**	$8.70
Large Plunger	14.0 oz.	0.9″	**7090K49** ♦	14.62
Roller Plunger	7.0 oz.	1.4″	**7090K21** ♦	21.07
Cross Roller Plunger	7.0 oz.	1.4″	**7090K22** ♦	26.52
Short Roller Lever	6.0 oz.	0.75″	**7090K51**	11.27
Long Roller Lever	3.5 oz.	1.0″	**7090K48**	10.91
Rigid Lever	2.5 oz.	0.17″	**7090K47**	10.04
25 amps, 1 hp @ 125 VAC and 2 hp @ 250 VAC				
Pin Plunger	14.0 oz.	0.1″	**7539K1**	12.39
Large Plunger	14.0 oz.	0.44″	**7539K2**	18.40
Short Roller Lever	6.0 oz.	0.59″	**7539K4**	21.95
Long Roller Lever	3.5 oz.	0.6″	**7539K5**	21.95
Rigid Lever	2.5 oz.	0.17″	**7539K3**	18.79

♦ Can be panel mounted in a ½″ dia. cutout.

Miniature Snap-Acting Switches

The slightest touch actuates these small, low-force operation switches. All switch one circuit from "off" to "on" or "on" to "off" (SPDT) and have three terminals, unless noted. They spring back (momentary). Max. voltage is 250 VAC/VDC, unless noted.

All are plastic and 0.63″ Ht.×1.1″ Wd.×0.4″ Dp. They have two 0.13″ dia. mounting holes spaced 0.87″ apart center to center (hardware not included), and are UL recognized and CSA certified.

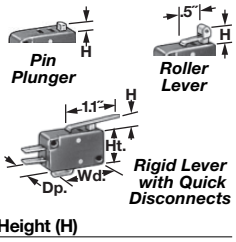

Pin Plunger — *Roller Lever* — *Rigid Lever with Quick Disconnects*

	Actuation Force	Actuator Height (H)		
0.1 amps @ 125 VAC, 0.187″ Wd. Quick-Disconnect Terminals				
Pin Plunger	2.7 oz.	0.1″	**7779K19**♣	$5.39
Roller Lever	2.6 oz.	0.29″	**7779K22**■	7.65
Rigid Lever	1.2 oz.	0.08″	**7779K23**■	7.03
5 amps @ 250 VAC, 0.187″ Wd. Quick-Disconnect Terminals				
Pin Plunger	0.9 oz.	0.1″	**7779K41**	3.73
Roller Lever	1.8 oz.	0.3″	**7779K42**	4.10
Rigid Lever	1.1 oz.	0.08″	**7779K43**	4.00
10 amps, ½ hp @ 250 VAC, 0.187″ Wd. Quick-Disconnect Terminals				
Pin Plunger	3.5 oz.	0.1″	**7779K51**	3.09
Roller Lever	4.2 oz.	0.3″	**7779K52**	3.81
Rigid Lever	2.1 oz.	0.1″	**7779K53**	3.03
10 amps, ½ hp @ 250 VAC, Screw Terminals				
Pin Plunger	3.5 oz.	0.1″	**7779K11**	4.93
Roller Lever	4.2 oz.	0.3″	**7779K14**	5.71
Rigid Lever	2.1 oz.	0.1″	**7779K13**	4.45
15 amps, ½ hp @ 250 VAC, 0.187″ Wd. Quick-Disconnect Terminals				
Pin Plunger	7.1 oz.	0.1″	**7779K61**	3.14
Roller Lever	8.5 oz.	0.3″	**7779K62**	3.51
Rigid Lever	4.4 oz.	0.1″	**7779K63**	2.93
15 amps, ½ hp @ 250 VAC, Screw Terminals				
Pin Plunger	7.1 oz.	0.1″	**7779K12**	4.93
Roller Lever	8.5 oz.	0.3″	**7779K15**	5.91
25 amps, 2 hp @ 250 VAC, 0.25″ Wd. Quick-Disconnect Terminals				
Pin Plunger	7.9 oz.	0.1″	**7510T11**♠▲	4.75
Rigid Lever	4.3 oz.	0.22″	**7510T12**♠	5.09

♣ Max. voltage is 125 VAC. ■ Max. voltage is 125 VAC/30 VDC.
♠ Max. voltage is 277 VAC. ▲ Switches one circuit from "off" to "on" (SPST-NO); has two terminals.

For information about electrical switches, see page 855. For information about IP ratings, see page 843.

Subminiature Snap-Acting Switches

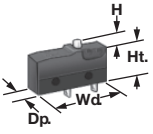

Standard Pin Plunger

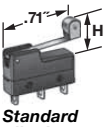

Standard Roller Lever

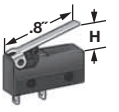

Standard Rigid Lever

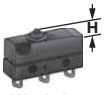

Washdown Pin Plunger

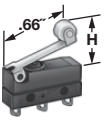

Washdown Roller Lever

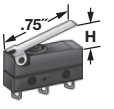

Washdown Rigid Lever

Similar to the miniature switches on page 889, these switches are even smaller for use in very tight spaces. Their rapid "snap" closing action minimizes arcing to prevent welded contacts. All switches spring back (momentary), are rated 10 amps @ 250 VAC, and have two solder lug terminals, unless noted. Housing is plastic and size is 0.36″ Ht.×0.79″ Wd.×0.26″ Dp. Switches have two 0.09″ dia. mounting holes spaced 0.37″ center to center (hardware not included). UL recognized.

Washdown switches meet IP67 for temporary water submersion. They are also rated 1/4 hp @ 125 VAC.

	Actuation Force	Actuator Height (H)		
Standard				
One Circuit From "Off" to "On" (SPST-NO)				
Pin Plunger	9.7 oz.	0.07″	7658K17	$2.88
Roller Lever	3.9 oz.	0.36″	7658K12	3.18
Rigid Lever	3.5 oz.	0.16″	7658K11	2.89
One Circuit From "On" to "Off" (SPST-NC)				
Pin Plunger	9.7 oz.	0.07″	7658K18	3.24
Roller Lever	3.9 oz.	0.36″	7658K14	3.18
Rigid Lever	3.5 oz.	0.16″	7658K13	2.88
One Circuit From "Off" to "On" or "On" to "Off" (SPDT)				
Pin Plunger	9.7 oz.	0.07″	7658K19★	2.70
Roller Lever	3.9 oz.	0.36″	7658K16★	2.97
Rigid Lever	3.5 oz.	0.16″	7658K15★	2.94
Washdown				
One Circuit From "Off" to "On" or "On" to "Off" (SPDT)				
Pin Plunger	12.2 oz.	0.07″	8085T11★	6.07
Roller Lever	5.8 oz.	0.36″	8085T12★	7.51
Rigid Lever	5.4 oz.	0.16″	8085T13★	7.03

★ Has three terminals.

Mil. Spec. Subminiature Snap-Acting Switches

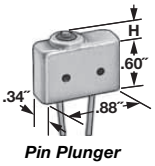

Pin Plunger

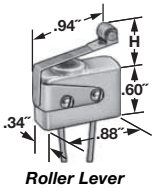

Roller Lever

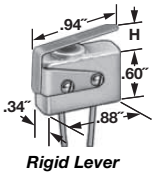

Rigid Lever

Sealed and encapsulated in a corrosion-resistant aluminum body, these switches withstand exposure to dirt and moisture and meet MIL-S-8805 for water tightness. They have a stainless steel plunger surrounded by a silicone rubber seal and two epoxy-sealed 1-ft. long 20 AWG wire leads, unless noted.

All spring back (momentary) and are rated 5 amps @ 125/250 VAC. Maximum voltage is 250 VAC/28 VDC. They have two 0.09″ dia. mounting holes spaced 0.38″ center to center (hardware not included).

	Actuation Force	Actuator Height (H)		
One Circuit From "Off" to "On" (SPST-NO)				
Pin Plunger	5 oz.	0.06″	7517K31	$56.92
Roller Lever	12 oz.	0.38″	7517K34	60.25
Rigid Lever	12 oz.	0.18″	7517K37	53.83
One Circuit From "On" to "Off" (SPST-NC)				
Pin Plunger	5 oz.	0.06″	7517K32	58.06
Roller Lever	12 oz.	0.38″	7517K35	61.25
Rigid Lever	12 oz.	0.18″	7517K38	54.80
One Circuit From "Off" to "On" or "On" to "Off" (SPDT)				
Pin Plunger	5 oz.	0.06″	7517K33▲	59.19
Roller Lever	12 oz.	0.38″	7517K36▲	63.23
Rigid Lever	12 oz.	0.18″	7517K39▲	56.72

▲ Has three wire leads.

Precision Subminiature Snap-Acting Switches

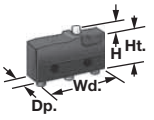

Pin Plunger

Roller Lever

Rigid Lever

If you need precise on/off control, here are the switches to use. They only need a minute amount of motion to activate and are small enough to be used in tight spaces. Switches have a rapid "snap" closing action that minimizes arcing, preventing welded contacts. They switch one circuit from "off" to "on" or "on" to "off" (SPDT) and spring back (momentary).

All are rated 5 amps @ 250 VAC and have three solder lug terminals. Maximum voltage is 250 VAC/30 VDC. Housing is plastic and is 0.36″ Ht.×0.78″ Wd.×0.25″ Dp. They have two 0.09″ dia. mounting holes spaced 0.38″ center to center (hardware not included). UL recognized, CSA certified, and CE approved.

	Actuation Force	Actuator Ht. (H)		
Pin Plunger	3.0 oz.	0.07″	7193K1	$5.13
Roller Lever	1.4 oz.	0.30″	7193K2	6.96
Rigid Lever	1.4 oz.	0.08″	7193K3	6.34

Corrosion-Resistant Snap-Acting Switches

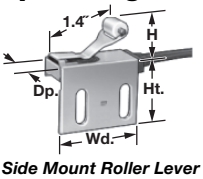

Side Mount Roller Lever

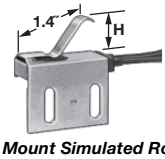

Side Mount Simulated Roller

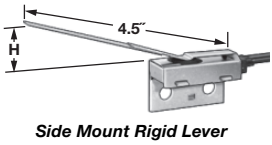

Side Mount Rigid Lever

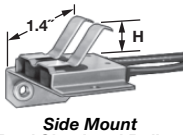

Side Mount Dual Simulated Rollers

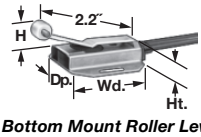

Bottom Mount Roller Lever

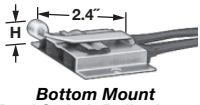

Bottom Mount Dual Switch Roller Lever

Ideal for applications involving water, oil, sand, dirt, vibration, and even shock, these switches have a corrosion-resistant 300-series stainless steel switch bracket and are encased in rubber. They are IP68 rated for water submersion. All spring back (momentary) and are rated 5 amps @ 120 VAC. Maximum voltage is 240 VAC/28 VDC.

Side-mount switches switch one circuit from "off" to "on" or "on" to "off" (SPDT) and have three 24″ long 18 AWG wire leads, unless noted. *Roller lever* and *simulated roller* switches are 1.42″ Ht.×1.75″ Wd.×0.99″ Dp. and have two 0.22″ wide mounting slots spaced 1″ center to center (hardware not included). *Rigid lever* switch is 1.13″ Ht.×1.75″ Wd.×0.86″ Dp. and has two 0.27″ dia. mounting holes spaced 1″ center to center (hardware not included). It has three 24″ 16 AWG wire leads. Switch with *dual simulated rollers* has two SPDT switches, two actuators, and six 24″ 18 AWG leads. It is 1.26″ Ht.×1.75″ Wd.×2.56″ Dp. Includes two 1/4″-20 mounting nuts spaced 1″ center to center.

Bottom-mount switches mount on a flat surface. *Roller lever* switches one circuit from "off" to "on" or "on" to "off" (SPDT) and has three 24″ long 16 AWG wire leads. It is 0.34″ Ht.×1.75″ Wd.×1.75″ Dp. and has two 0.2″ wide mounting slots spaced 1.34″ center to center (hardware not included). *Dual switch roller lever* actuates two SPDT switches simultaneously, giving you the equivalent of a DPDT switch. It has six 24″ long 18 AWG wire leads. Size is 0.34″ Ht.×1.75″ Wd.×2.5″ Dp. It has two 0.22″ dia. mounting holes spaced 2.16″ center to center (hardware not included).

	Actuation Force	Actuator Height (H)		
Side Mount				
Roller Lever	12.3 oz.	0.81″	7287K12	$45.75
Simulated Roller	12.3 oz.	0.81″	7287K13	42.08
Rigid Lever	12.3 oz.	1.04″	7287K11	56.40
Dual Simulated Rollers	12.3 oz.	0.81″	7287K14	92.88
Bottom Mount				
Roller Lever	12.3 oz.	0.61″	7303K11	58.95
Dual Switch Roller Lever	12.3 oz.	0.53″	7303K12	102.24

For information about electrical switches, see pg. 855. For information about NEMA and IP ratings, see pg. 843.

Miniature Corrosion-Resistant Snap-Acting Switches

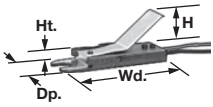

The small size and single mounting slot give you the versatility you need. Switches withstand water, salt spray, humidity, dirt, dust, sand, and oil.

Both switch one circuit and spring back (momentary). They're rated 100 mA @ 120 VAC/12 VDC and have two 24″ long 18 AWG wire leads. The lever is Type 17-7 PH stainless steel and mounting slot is Type 302 stainless steel. Housing is plastic and is 0.27″ Ht.×2.47″ Wd.×0.63″ Dp. Switches have a ¼″ dia. mounting hole (hardware not included).

Before Switching, Circuit Is	Industry Designation	Actuation Force	Actuator Height (H)		
Off	SPST-NO	6.4 oz.	0.65″	7389K12	$34.55
On	SPST-NC	6.4 oz.	0.65″	7389K11	34.55

Enclosed Snap-Acting Switches

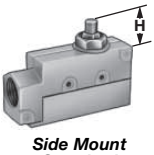

Side Mount Standard Pin Plunger

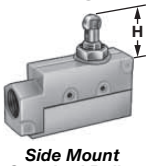

Side Mount Standard Roller Plunger

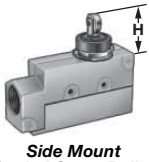

Side Mount Sealed Cross Roller Plunger

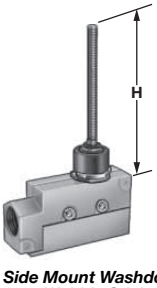

Side Mount Washdown Wobble Stick

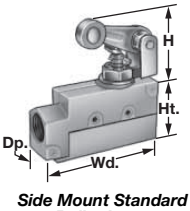

Side Mount Standard Roller Lever

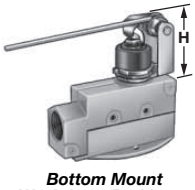

Bottom Mount Washdown Rod Lever

A rugged die cast zinc housing withstands physical abuse. These switches switch one circuit from "off" to "on" or "on" to "off" (SPDT) and spring back (momentary). Rated 15 amps and ¼ hp @ 250 VAC. All have three internal screw terminal connections. Maximum voltage is 480 VAC/250 VDC. Housing is 1.75″ Ht.×3.04″ Wd.×1″ Dp. and has ½″ NPT female conduit entry. UL recognized and CSA certified.

Side-Mount Switches—Have two 0.14″ dia. mounting holes. They are spaced 1″ apart, center to center (hardware included).

Bottom-Mount Switches—Have two 0.17″ dia. mounting holes spaced 1.63″ apart, center to center (hardware not included).

Washdown switches are more durable than the standard switches and are NEMA 4 rated for washdowns.

	Actuation Force	Actuator Height (H)		
Side-Mount Switches				
Standard Switches				
Pin Plunger	9.0 oz.	0.8″	7778K13	$45.00
Roller Plunger	9.0 oz.	1.2″	7778K14	50.36
Cross Roller Plunger	9.0 oz.	1.2″	7778K15	50.36
Roller Lever	10.0 oz.	1.8″	7778K16	54.64
Rod Lever	2.0 oz.	1.8″	7778K17	52.50
Washdown Switches				
Pin Plunger	9.0 oz.	1.8″	7778K66	48.21
Roller Plunger	9.0 oz.	1.6″	7778K68	64.29
Cross Roller Plunger	9.0 oz.	1.6″	7778K12	66.43
Wobble Stick	7.0 oz.	5.1″	7778K67	63.21
Roller Lever	10.0 oz.	2.3″	7778K69	62.14
Rod Lever	3.0 oz.	1.8″	7778K11	73.93
Bottom-Mount Switches				
Standard Switches				
Roller Plunger	9.0 oz.	1.2″	7778K19	55.66
Cross Roller Plunger	9.0 oz.	1.2″	7778K21	51.43
Roller Lever	10.0 oz.	1.8″	7778K22	57.63
Washdown Switches				
Pin Plunger	9.0 oz.	1.1″	7778K24	47.80
Wobble Stick	7.0 oz.	5.1″	7778K27	75.62
Roller Lever	10.0 oz.	2.3″	7778K25	61.87
Rod Lever	3.0 oz.	1.8″	7778K26	87.42

Limit Switches

Standard Roller Plunger

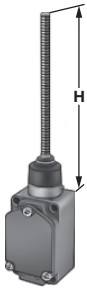

Standard Wobble Stick

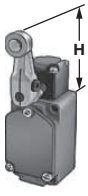

Standard Roller Lever

Standard Adjustable Rod

Mini Pin Plunger

Mini Roller Lever with Actuator Rotated 90°

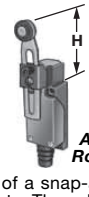

Mini Adjustable Roller Lever

Get the same rapid "snap" closing action of a snap-acting switch but with an actuator designed for larger objects. These limit switches switch one circuit from "off" to "on" or "on" to "off" (SPDT) and spring back (momentary). UL listed.

Standard switches are rated 10 amps @ 300 VAC. Maximum voltage is 300 VAC. Housing is rugged die cast aluminum and rated IP67 for temporary water immersion. All have four internal screw terminal connections. Switches have a ½″ NPT female conduit entry and four 0.20″ dia. mounting holes (hardware not included). 7076K14, K18, and K24 can be rotated 180° (in 90° increments) for additional mounting options.

Miniature switches are great for tight spaces. Rated 5 amps @ 250 VAC. Maximum voltage is 250 VAC/125 VDC. Housing is gasketed die cast zinc with a plastic cover and rated IP64 for protection against splashing water. They have five internal screw terminal connections. Switches have a 0.25″ dia. opening with a cord grip fitting for wiring, and come with mounting hardware. 7988K1-K3 can be rotated 360° (in 90° increments) for additional mounting options.

	Actuation Force	Actuator Height (H)		
Standard—*2.7″ Ht.×1.6″ Wd.×1.6″ Dp.*				
Pin Plunger	95.2 oz.	1.2″	7076K27	$39.84
Roller Plunger	95.2 oz.	1.5″	7076K26	43.79
Wobble Stick	5.2 oz.	5.3″	7076K25	41.06
Roller Lever	31.5 oz.	2.3″	7076K14	49.19
Adjustable Roller Lever	31.5 oz.	1.4″-3.9″	7076K18	49.19
Adjustable Rod	9.1 oz.	1.4″-5.9″	7076K24	49.19
Miniature—*2.5″ Ht.×1.1″ Wd.×1″ Dp.*				
Pin Plunger	32.0 oz.	0.9″	7988K6	27.74
Roller Plunger	32.0 oz.	1.3″	7988K5	27.74
Wobble Stick	3.2 oz.	3.8″	7988K4	27.74
Roller Lever	21.1 oz.	1.9″	7988K1	27.74
Adjustable Roller Lever	12.0 oz.	1.9″-3.5″	7988K2	26.93
Adjustable Rod	7.2 oz.	1.5″-5.0″	7988K3	27.74

Hazardous-Location Limit Switches

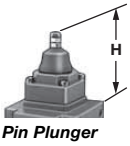

Pin Plunger

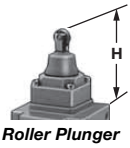

Roller Plunger

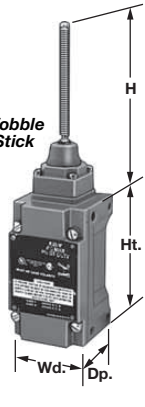

Wobble Stick

Ideal for harsh applications in hazardous locations, these switches meet NEMA 7, Div. 1, Class 1, Groups B, C, D; and NEMA 9, Div. 1, Class 2, Groups E, F, G. They switch one circuit from "off" to "on" or "on" to "off" (SPDT) and spring back (momentary). Rated 10 amps @ 600 VAC. Maximum voltage is 600 VAC/250 VDC. All have five internal screw terminal connections. Housing is made of die cast aluminum and is 4″ Ht.×2.25″ Wd.×2.25″ Dp. Switches have a ½″ NPT female conduit entry and four 0.27″ dia. holes for mounting (hardware not included). UL listed and CSA certified.

Pin plunger has an adjustable actuator height.

	Actuation Force	Actuator Height (H)		
Pin Plunger	64.0 oz.	1.8″-2.1″	7794K12	$487.95
Roller Plunger	64.0 oz.	2.0″	7794K11	513.33
Wobble Stick	15.0 in.-oz.	5.4″	7794K13	467.49

For information about electrical switches, see pg. 855. For information about NEMA and IP ratings, see pg. 843.

Low-Profile Washdown Limit Switches

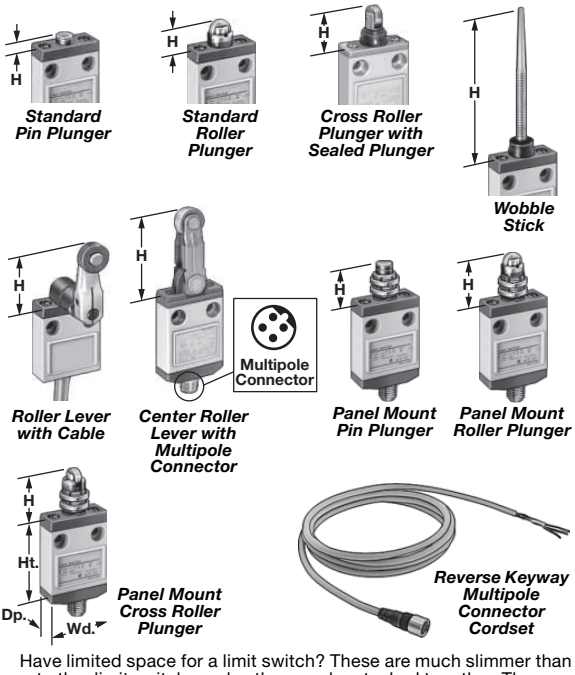

Have limited space for a limit switch? These are much slimmer than most other limit switches, plus they can be stacked together. They are IP67 and NEMA 4 and 13 rated for washdown and oil protection. All switch one circuit from "off" to "on" or "on" to "off" (SPDT) and spring back (momentary). Housing is die cast aluminum. Switches have two countersunk 0.20″ dia. mounting holes spaced 0.98″ apart, center to center (hardware not included). UL recognized and CSA certified.

Switches with sealed plunger protect the plunger from water and dirt.

Switches with cable are rated 5 amps @ 250 VAC. Maximum voltage is 250 VAC/250 VDC. They have a 9.8-ft., 18/4 AWG oil-resistant (SJTO) cable.

Switches with multipole connector are rated 1 amp @ 125 VAC. They have a 4-pin 0.3″ face dia. male plug with external threads, also known as a microconnector. Compatible with the *reverse keyway multipole connector cordset*, which lets you easily connect and disconnect the cordset from the switch. Cordset has a female plug on one end and four 18 AWG wire leads on the other. Has a PVC jacket. Sold separately. *Panel-mount* switches have M14 threads that allow you to mount through a 0.57″ dia. panel cutout.

	Actuation Force	Housing Ht.	Wd.	Dp.	(H)♠		
Switches with Cable							
Standard							
Pin Plunger	42.3 oz.	1.9″	1.6″	0.6″	0.2″	**7628K73**	$86.54
Roller Plunger	42.3 oz.	2.0″	1.6″	0.6″	0.6″	**7628K74**	86.54
Cross Roller Plunger	42.3 oz.	2.0″	1.6″	0.6″	0.6″	**7628K75**	86.54
Wobble Stick	5.3 oz.	2.0″	1.6″	0.6″	3.6″	**7628K76**	86.54
Roller Lever	20.5 oz.	2.0″	1.6″	0.6″	2.0″	**7628K77**	105.00
With Sealed Plunger							
Pin Plunger	63.5 oz.	1.9″	1.6″	0.6″	0.6″	**7317K11**	91.20
Roller Plunger	63.5 oz.	1.9″	1.6″	0.6″	1.0″	**7317K12**	91.20
Cross Roller Plunger	63.5 oz.	1.9″	1.6″	0.6″	1.0″	**7317K13**	91.20
Switches with Multipole Connector							
Standard							
Pin Plunger	42.3 oz.	2.3″	1.6″	0.6″	0.2″	**7628K41**	88.80
Roller Plunger	42.3 oz.	2.4″	1.6″	0.6″	0.6″	**7628K42**	90.00
Cross Roller Plunger	42.3 oz.	2.4″	1.6″	0.6″	0.6″	**7628K43**	90.00
Wobble Stick	5.3 oz.	2.3″	1.6″	0.6″	3.6″	**7628K44**	115.20
Roller Lever	20.5 oz.	2.4″	1.6″	0.6″	2.0″	**7628K45**	108.00
Center Roller Lever	24.0 oz.	2.3″	1.6″	0.6″	2.0″	**7628K46**	111.60
Reverse Keyway Multipole Connector Cordset, 6.5 ft.						**7628K99**	39.31
Panel Mount							
Pin Plunger	42.3 oz.	2.3″	1.6″	0.6″	0.8″	**7306K11**	104.40
Roller Plunger	42.3 oz.	2.3″	1.6″	0.6″	1.0″	**7306K12**	110.40
Cross Roller Plunger	42.3 oz.	2.3″	1.6″	0.6″	1.0″	**7306K13**	110.40
Reverse Keyway Multipole Connector Cordset, 6.5 ft.						**7628K99**	39.31
With Sealed Plunger							
Pin Plunger	63.5 oz.	2.2″	1.6″	0.6″	0.6″	**7317K31**	92.40
Roller Plunger	63.5 oz.	2.2″	1.6″	0.6″	1.0″	**7317K32**	92.40
Cross Roller Plunger	63.5 oz.	2.2″	1.6″	0.6″	1.0″	**7317K33**	92.40
Reverse Keyway Multipole Connector Cordset, 6.5 ft.						**7628K99**	39.31

♠ Actuator height.

Corrosion-Resistant Washdown Limit Switches

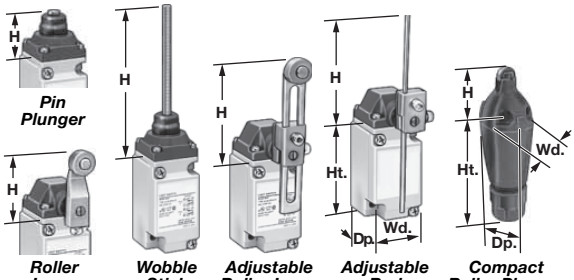

Built to withstand heavy use in wet environments, these switches are protected against temporary water submersion, oil, and corrosion. All spring back (momentary).

Standard switches meet IP67 and NEMA 4X, 6P, and 13. Housing is fully gasketed, rugged die cast zinc. Conduit entry is 1/2″ NPT female. They have two 0.20″ dia. front mounting holes (hardware not included). Maximum voltage is 600 VAC. UL listed and CSA certified. Switches that switch *one circuit from "off" to "on" or "on" to "off" (SPDT)* are rated 10 amps @ 240 VAC. They are 3″ Ht.×1.62″ Wd.×1.75″ Dp. and have four internal screw-terminal connections. Switches that switch *two circuits from "off" to "on" or "on" to "off" (DPDT)* are rated 5 amps @ 240 VAC. They are 3.5″ Ht.×1.9″ Wd.×1.8″ Dp. and have eight internal screw-terminal connections.

Compact switches are great for tight spaces. They have insulation piercing wire connections that stay put in high-vibration applications. Just strip the outer jacket of your cord and feed four wire leads into the twist-on connector for a secure connection. Switches are made of thermoplastic and are IP67 and NEMA 13 rated. Rated 6 amps @ 120 VAC, 3 amps @ 240 VAC, and 2.9 amps @ 24 VDC. Maximum voltage is 300 VAC/300 VDC. They are 3.2″ Ht.×1.2″ Wd.×1.2″ Dp. and have two 0.79″ dia. mounting holes (hardware not included).

	Actuation Force	Actuator Height (H)		
Standard Switches				
One Circuit From "Off" to "On" or "On" to "Off" (SPDT)				
Pin Plunger	64.0 oz.	1.4″	**65785K11**	$123.83
Wobble Stick	10.0 oz.	5.1″	**65785K12**	116.18
Roller Lever	64.0 in.-oz.	2.2″	**65785K13**	119.26
Adjustable Roller Lever	64.0 in.-oz.	2.25″-4.3″	**65785K14**	127.02
Adjustable Rod	64.0 in.-oz.	1.45″-5.32″	**65785K15**	125.74
Two Circuits From "Off" to "On" or "On" to "Off" (DPDT)				
Pin Plunger	64.0 oz.	1.4″	**65785K72**	137.87
Wobble Stick	10.0 oz.	5.1″	**65785K77**	158.88
Roller Lever	64.0 in.-oz.	2.2″	**65785K74**	162.75
Adjustable Roller Lever	64.0 in.-oz.	2.25″-4.3″	**65785K81**	159.38
Adjustable Rod	64.0 in.-oz.	1.45″-5.32″	**65785K76**	155.31
Compact Switches				
One Circuit From "Off" to "On" or "On" to "Off" (SPDT)				
Pin Plunger	57.6 oz.	0.8″	**8132T11**	21.85
Roller Plunger	57.6 oz.	1.0″	**8132T12**	21.85
Cross Roller Plunger	57.6 oz.	0.9″	**8132T13**	21.85

Corrosion-Resistant Washdown Limit Switches with Cable

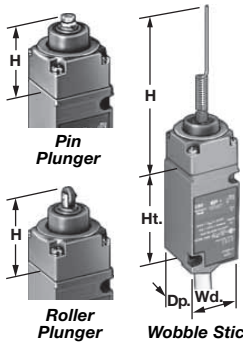

These switches are easy to connect because they're already wired. They have an 8-ft., 16/5 AWG oil- and water-resistant (SOOW) cable. All meet NEMA 4X, 6P, 13, and IP67 for temporary water submersion, oil, and corrosion.

They switch one circuit from "off" to "on" or "on" to "off" (SPDT) and spring back (momentary). Rated 10 amps @ 600 VAC. Max. voltage is 600 VAC/250 VDC. Housing is die cast zinc and is 3.13″ Ht.×1.54″ Wd.×1.58″ Dp. They have two 0.20″ dia. front mounting holes (hardware not included). UL listed and CSA certified.

	Actuation Force	Actuator Height (H)		
Pin Plunger	64.0 oz.	2.1″	**7926K12**	$185.52
Roller Plunger	64.0 oz.	1.9″	**7926K11**	190.58
Wobble Stick	32.0 in.-oz.	13.6″	**7926K32**	184.92

For information about electrical switches, see pg. 855. For information about NEMA and IP ratings, see pg. 843.

Type 316 Stainless Steel Washdown Limit Switches

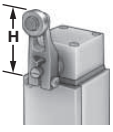

Roller Lever

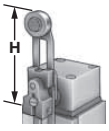

Adjustable Roller Lever

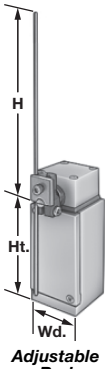

Adjustable Rod

Stainless steel construction and fluorocarbon seals give these switches superior corrosion resistance. They're NEMA 4X, 6P, and 13 rated for temporary water submersion, oil, and corrosion protection. Switches withstand temperatures up to 250°F and pressurized steam cleaning.

All switches spring back (momentary) and are rated 10 amps @ 600 VAC. Maximum voltage is 600 VAC/240 VDC. Housing is 3.69″ Ht.×1.87″ Wd.×1.78″ Dp. and has two 0.20″ dia. mounting holes (hardware not included). They have a ¾″ NPT female conduit connection. UL listed and CSA certified.

One-circuit switches have five internal screw terminal connections.

Two-circuit switches have nine internal screw terminal connections.

	Actuation Force	Actuator Height (H)		
One Circuit From "Off" to "On" or "On" to "Off" (SPDT)				
Roller Lever	63.7 in.-oz.	2.0″	**7187K55**	$571.39
Adjustable Roller Lever	63.7 in.-oz.	2.0″-4.0″	**7187K56**	581.67
Adjustable Rod	63.7 in.-oz.	6.0″-13.5″	**7187K57**	581.67
Two Circuits From "Off" to "On" or "On" to "Off" (DPDT)				
Roller Lever	63.7 in.-oz.	2.0″	**7187K65**	613.36
Adjustable Roller Lever	63.7 in.-oz.	2.0″-4.0″	**7187K66**	623.64
Adjustable Rod	63.7 in.-oz.	6.0″-13.5″	**7187K67**	623.64

Manual Reset Safety Limit Switches

Pin Plunger

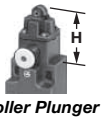

Roller Plunger

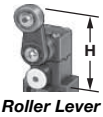

Roller Lever

Adjustable Roller Lever

Prevent equipment from automatically restarting—these limit switches must be manually reset each time they're actuated, making them ideal for conveyors and elevators. Positive-force contacts interrupt the circuit when triggered, even if a spring fails or the contacts stick. Reset by pulling on the reset knob. They switch two circuits, one from "off" to "on" and one with positive force from "on" to "off" (DPST-NO/NC). Contacts stay switched (maintained) until they are manually reset. Switches are rated 10 amps @ 240 VAC with a maximum voltage of 300 VAC.

Housing is plastic, 2.5″ Ht.×1.2″ Wd.×1.2″ Dp., with two 0.17″ dia. mounting holes (hardware not included). All have four internal screw terminal connections, a ½″ NPT female conduit entry for wiring, and meet IP67 for temporary water submersion. UL listed and CSA certified.

	Actuation Force	Actuator Height (H)		
Pin Plunger	38.8 oz.	1.10″	**7336K51**	$36.37
Roller Plunger	38.8 oz.	1.50″	**7336K52**	36.37
Roller Lever	22.9 oz.	2.35″	**7336K53**	36.37
Adjustable Roller Lever	19.7 oz.	2.12″-3.89″	**7336K54**	36.37

Safety Limit Switches

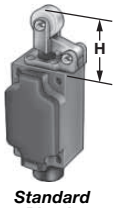

Standard Plastic Center Roller Lever

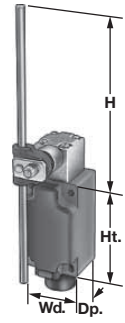

Standard Plastic Adjustable Rod

Compact Plastic Pin Plunger

Compact Plastic Roller Plunger

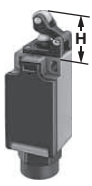

Compact Plastic Center Roller Lever

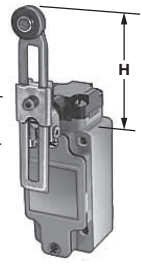

Standard Die Cast Zinc Adjustable Roller Lever

A set of positive-force contacts in these switches opens the circuit when triggered—even if a spring fails or the contacts stick. All switch one circuit from "off" to "on" or "on" to "off" (SPDT) and spring back (momentary). Actuators can be rotated 360° (in 90° increments) for additional mounting options. Switches have a ½″ NPT female conduit adapter. Mounting hardware not included. CSA certified and CE approved. *Standard switches* have four 0.21″ dia. mounting holes. *Compact switches* have two 0.17″ dia. mounting holes.

Plastic housing switches are rated 10 amps @ 240 VAC and maximum voltage is 240 VAC. They meet IP65 and NEMA 4 for washdowns and have four internal screw terminal connections, unless noted. All are CSA-US certified except 65745K18, which is UL listed.

Die cast zinc housing switches have five internal screw-terminal connections. *Standard* switches are rated 10 amps @ 600 VAC and maximum voltage is 600 VAC/250 VDC. They meet IP67 and NEMA 4 and 13 for washdowns and oil protection. *Compact* switches are rated 10 amps @ 300 VAC and maximum voltage is 300 VAC/250 VDC. They meet IP66 and NEMA 4 and 13 for washdown and oil protection. All are UL listed.

	Actuation Force	Actuator Height (H)		
Plastic Housing				
Standard—2.9″ Ht.×1.6″ Wd.×1.6″ Dp.				
Pin Plunger	32.4 oz.	1.2″	**65745K41**	$61.73
Roller Plunger	32.4 oz.	1.7″	**65745K42**	76.37
Center Roller Lever	32.4 oz.	1.5″	**65745K43**	85.90
Adjustable Rod	21.3 in.-oz.	0.5″-8.0″	**65745K44**	89.28
Compact—2.4″ Ht.×1.2″ Wd.×1.2″ Dp.				
Pin Plunger	27.0 oz.	0.5″	**65745K51**	52.18
Roller Plunger	27.0 oz.	1.2″	**65745K52**	61.73
Center Roller Lever	21.6 oz.	1.1″	**65745K53**	61.73
Adjustable Rod	17.0 in.-oz.	0.9″-6.1″	**65745K18**●	42.34
Die Cast Zinc Housing				
Standard—3.3″ Ht.×1.6″ Wd.×1.7″ Dp.				
Pin Plunger	57.9 oz.	1.5″	**6352K54**	75.70
Roller Plunger	57.9 oz.	2.0″	**6352K55**	80.92
Roller Lever	46.4 in.-oz.	2.6″	**6352K56**	82.09
Adjustable Roller Lever	46.4 in.-oz.	1.5″-3.6″	**6352K57**	86.04
Compact—2.4″ Ht.×1.2″ Wd.×1.2″ Dp.				
Pin Plunger	57.9 oz.	0.8″	**6352K41**	45.61
Roller Plunger	57.9 oz.	1.2″	**6352K42**	51.91
Roller Lever	17.0 in.-oz.	1.8″	**6352K43**	42.52
Adjustable Roller Lever	17.0 in.-oz.	1.3″-3.1″	**6352K44**	48.08

● Rated 10 amps @ 600 VAC; maximum voltage is 600 VAC/250 VDC. Meets NEMA 13 and IP66 for resistance to oil and water. Has five internal screw terminal connections.

Ultra-Precision Pin Plunger Limit Switches

All it takes is a tiny 1-micron (0.00004″) push to actuate these sensitive switches. They're great for tasks requiring a high degree of accuracy, such as determining manufacturing tolerances and detecting minute expansions and contractions. Switches spring back (momentary) and are threaded on both ends (unless noted). Housing is nickel-plated brass with an activating pin. All include hardware for panel mounting. UL listed. Switches with a *standard* housing have a zirconium-oxide activating pin. Switches with a *washdown* housing meet IP67 for temporary water submersion and have a ruby activating pin.

Electromechanical output switches switch one circuit from "on" to "off" (SPST-NC) and are rated 50 mA @ 24 VAC and 2 mA @ 15 VDC. Both have two 2.6-ft. wire leads.

Solid state output switches have an NPN output (see page 896 for information on NPN) that requires a 5-36 VDC power supply. They have a 50 mA output rating. Have three 2.6-ft. wire leads.

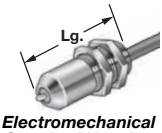

Electromechanical Standard Housing

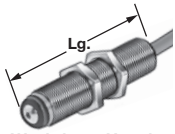

Washdown Housing

Housing	Actuation Force	Thread	Lg.		
Electromechanical Output					
Standard	1.8 oz.	M8×0.5 mm	21.5 mm	**6551K52**♣	$166.53
Washdown	2.7 oz.	M8×0.5 mm	25 mm	**6551K53**	273.31
Solid State Output					
Standard	2.7 oz.	M8×0.5 mm	29.5 mm	**6551K55**	233.90
Washdown	2.7 oz.	M8×0.5 mm	34 mm	**6551K56**	326.69

♣ Unthreaded switch end. Cable end has M8 thread.

For information about electrical switches, see pg. 855. For information about NEMA and IP ratings, see pg. 843.

Sealed Ball Plunger Limit Switches

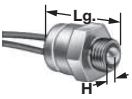

Switches are completely sealed for use in the toughest applications and are impervious to oil, sand, mud, and ice. Plus, they have 9/16″-18 threads for mounting to a panel. They switch one circuit (SPST), spring back (momentary), and are rated 5 amps @ 28 VDC. Both include two 24″ long 16 AWG wire leads. Ball actuator is Type 440 stainless steel and housing is zinc-plated steel. 7282K11 is 1.3″ long and 7282K12 is 1.26″ long.

Before Switching, Circuit Is	Actuation Force	Actuator Height (H)		
Off (NO)	47.6 oz.	0.10″	7282K11	$68.34
On (NC)	47.6 oz.	0.10″	7282K12	70.24

Tilt Switches

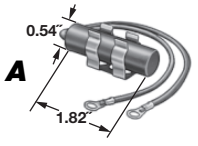

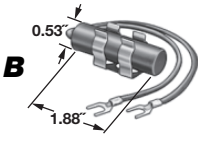

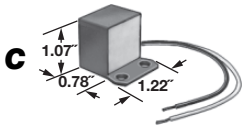

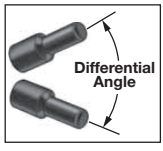

Excellent as position indicators, machine limit switches, pump level controls, and manual motor controls, these switches actuate when tilted to a certain angle. They combine the reliability of electromechanical technology and the long life of solid-state technology. All switch one circuit from "off" to "on" (SPST-NO). Mounting screws are not included.

Switches are designed for horizontal mounting and are activated when tilted below the horizontal to the "make angle." They're deactivated when tilted above the horizontal to the "break angle." The differential angle, which is the total angle from make to break, is shown in the table below.

Style A has a polypropylene housing and two 7″ long 18 AWG neoprene-insulated wire leads with ring terminals that have #8 (0.17″ dia.) holes. Includes a mounting clip with three 0.19″ dia. mounting holes.

Style B has an ABS plastic housing and two 7″ long 18 AWG neoprene-insulated wire leads with spade terminals for #8 (0.17″ wide) studs. Includes a mounting clip with three 0.19″ dia. mounting holes.

Style C has an ABS plastic housing and two 8″ long 18 AWG cross-linked polyethylene wire leads with ends stripped ready for connection. The switch also has two 1/4″ dia. mounting holes.

	Amp Rating	Max. Voltage	Differential Angle		
A	0.1 amps @ 120 VAC/0.25 amps @ 24 VDC	120 VAC/60 VDC	15°	3108K1	$22.22
B	2.5 amps @ 120 VAC	220 VAC	15°	3108K2	28.78
C	10 amps @ 12 VDC	18 VDC	30°	3108K3	25.56

About Access Safety Switches (Interlock Switches)

Access safety switches, also known as interlock switches, prevent a machine from operating if an access panel or door is open, thereby protecting personnel from injury and the machine from damage. They're typically installed on access panels and doors. These switches are electrically connected to machine control circuitry to ensure that a machine will operate only when the access panel or door is closed.

All of the contacts that switch from "on" to "off" (normally closed or NC) in access safety switches are positive-force contacts. They mechanically disengage when a switch is actuated, even if the contacts become welded shut or a spring breaks. This feature provides additional safety for the equipment operator.

Key-Actuated Access Safety Switches

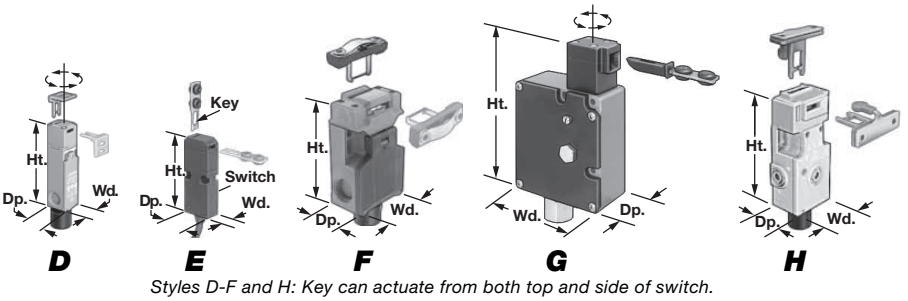

Styles D-F and H: Key can actuate from both top and side of switch.

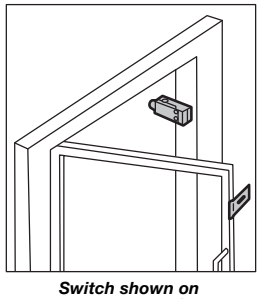

Switch shown on access panel

These tamper-resistant switches ensure that a machine cannot operate when the guard door is open. Each switch comes with one key-like device that must be inserted into the switch before the machine can operate. The switch is usually mounted to the door frame, and the key is mounted to the door. When the door is opened, the key is removed from the switch causing the machine to shut down. Ideal for sliding doors and access panels. All contacts that switch from "on" to "off" (normally closed or NC) are positive-force contacts. All are rated for temporary water submersion except 65665K13, which is rated for washdowns. Switches have a 1/2″ NPT female conduit entry with screw terminals, unless noted.

Standard switches are made of thermoplastic. UL listed, CSA certified, and CE approved.

Switches with electric lock are for machines that take time to stop after they are turned off, delaying access to hazardous areas until conditions are safe. They function as standard key-actuated access safety switches, but with the added benefit of a locking mechanism that holds the key in place with 225 lbs. of force. The key is held until the switch receives a signal from your time delay relay, motion sensor, or position sensor (not included) that the machine's motion has stopped. Rated for temporary water submersion. All have a thermoplastic housing and are UL and C-UL listed and CE approved except 7787K11, which has a die cast aluminum housing and is UL listed, CSA certified, and CE approved.

Emergency override key works with *Style H*, allowing the user to bypass the electric lock feature.

No. of Circuits Switched	Before Switching, Circuit Is	Industry Designation	Amp Rating @ 120 VAC/ 24 VDC	Max. VAC/ VDC	Input Voltage	Ht.×Wd.×Dp.	Mount. Hole Dia.★	Environmental Rating		
Standard Switches										
D 2	1 Off/1 On	DPST-1 NO/1 NC	5/2	500/250	—	3″ ×1″ ×1.1″	0.16″	IP67, NEMA 6	65665K32	$71.30
E 2	1 Off/1 On	DPST-1 NO/1 NC	6/4	600/250	—	3.2″×0.6″×1.2″	0.17″	IP67, NEMA 4	65665K12▲	86.76
F 2	1 Off/1 On	DPST-1 NO/1 NC	10/2	500/ 24	—	3.6″×2.1″×1.3″	0.23″	IP65, NEMA 4	65665K13	74.84
F 3	1 Off/2 On	3PST-1 NO/2 NC	6/1	600/250	—	3.5″×2.1″×1.2″	0.22″	IP67	65665K15	104.88
Switches with Electric Lock										
G 2	1 Off/1 On	DPST-1 NO/1 NC	10/2	250/ 24	120 VAC	5.6″×1.8″×3.5″	0.20″	IP67, NEMA 4	7787K11	557.56
H 3	1 Off/2 On	3PST-1 NO/2 NC	5/2	500/250	24 VAC/VDC	4.7″×2.3″×1.4″	0.20″	IP67, NEMA 6	7787K61	350.41
H 3	1 Off/2 On	3PST-1 NO/2 NC	5/2	500/250	110 VAC	4.7″×2.3″×1.4″	0.20″	IP67, NEMA 6	7787K62	350.41
H 3	1 Off/2 On	3PST-1 NO/2 NC	5/2	500/250	220 VAC	4.7″×2.3″×1.4″	0.20″	IP67, NEMA 6	7787K63	350.41
Emergency Override Key (for Style H)									7787K81	14.26

★ Fasteners not included. ▲ Has a 3.2-ft. 20/4 AWG cable connection.

For information about electrical switches, see pg. 855. For information about NEMA and IP ratings, see pg. 843.

Rotating Arm-Actuated Access Safety Switch

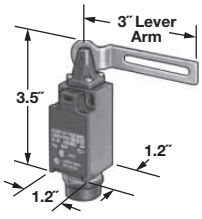

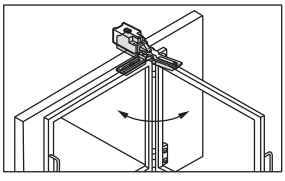

Worried about replacing missing or damaged access safety switch keys? The rotating arm built into this switch mounts on top of a door to turn power off when the door is open. Switches two circuits, one from "off" to "on" and one from "on" to "off" (DPST-NO/NC). Switch springs back (momentary) and is rated 4 amps @ 230 VAC. The contacts that switch from "on" to "off" (normally closed or NC) are positive force. When the lever arm is 90° to the right as shown in the above left photo, the power is on and the machine can operate. When the switch rotates 4.5° counterclockwise, the NC contacts open and shut off the power. Door mounting slot is 1.7″ Lg. × 0.2″ Wd.

Switch has 0.16″ dia. mounting holes (hardware not included), four screw terminal connections, and an M20 threaded cable entry hole (see pages 839-842 for cord grips). Switch housing is made of thermoplastic. Meets IP67 for temporary water submersion. UL listed, CSA certified, and CE approved.

7785K45 ..... $81.96

Hinge-Actuated Access Safety Switch

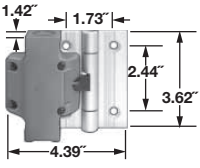

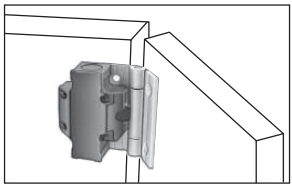

If the space around your door is too tight for other access safety switches, just replace one of the hinges with this switch. Bolt the hinge into the existing mounting holes of your fixture and replace your other hinge with the included unswitched hinge.

Switches three circuits, one from "off" to "on" and two from "on" to "off" (3PST-1NO/2NC). Switch springs back (momentary) and is rated 2 amps @ 250 VAC. The contacts that switch from "on" to "off" (normally closed or NC) are positive force. When the switch rotates at least 4° the normally closed contacts open and shut off the power. Switch housing is thermoplastic, hinges are aluminum. Has M20 threaded female conduit entry (see pages 839-842 for cord grips) and six screw terminals. Meets IP65 for protection from water projected from a nozzle.

7777K48 ..... $146.67

Magnetically Actuated Switches

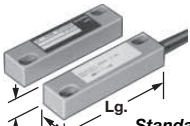

Standard AC-Rated Rectangular Switch

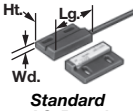

Standard AC-Rated Mini Rectangular Switch

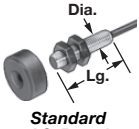

Standard AC-Rated Cylindrical Switch

Standard AC-Rated Mini Cylindrical Switch

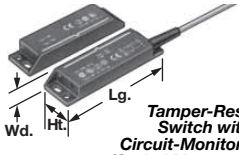

Tamper-Resistant Switch without Circuit-Monitoring Relay (Coded Magnet and Switch Sold Separately Below)

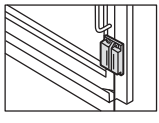

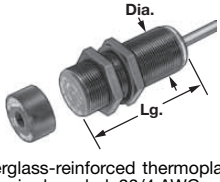

Tamper-Resistant Switch with Circuit-Monitoring Relay (Coded Magnet and Switch Sold Separately Below)

Since they have no moving parts to wear out, these switches provide long-term, trouble-free service. Each switch has two components, an enclosed reed switch and a permanent magnet. When the magnet comes within the sensing distance of the switch, the switch actuates. When the magnet moves away, the switch resets. The magnetic switch is normally mounted on a stationary unit such as a door frame while the magnet is mounted on a movable part such as a door. Switches with a threaded cylinder include two hex nuts for mounting.

Standard switches are designed for use in proximity-sensing applications such as detecting when a door or window is open. They are not for use on safety-guard doors found on machinery. Mounting hardware not included, unless noted. *AC rated switches* are rated NEMA 4X for washdown and corrosion resistance. Housings are nylon, except for 65985K73 which is stainless steel. They come with 3 ft. of 34/2 AWG cable (unless noted). *DC rated switches* have thermoplastic polyester housings. They come with two 6″, 24 AWG wire leads except 65985K12 and K14, which have three. UL recognized.

Tamper-resistant switches are similar to the magnetically actuated switches above, but with tamper-resistant, coded magnets to prevent bypassing with a simple magnet or improperly coded magnet. Each switch assembly consists of two components—a coded enclosed reed switch and a coded magnet, each sold separately below. Switches and magnets have a fiberglass-reinforced thermoplastic housing. All switches come with 3 ft. of wired, sealed, 23/4 AWG cable and meet IP67 for temporary water submersion. UL listed, CSA certified, and CE approved.

Switches *without circuit-monitoring relay* are compact for space-restricted areas. The coded magnet includes hardware.

Note: In safety applications (such as machine guarding) these switches must be used with a safety circuit-monitoring controller (see 7773K on page 914).

Switch *with circuit-monitoring relay* eliminates the need for extra components and wiring. When the machine guard is closed, the matched magnetic field aligns with the switch and the switch closes. At the same time, the safety relay is constantly checking for faults in safety circuits, components, and wiring. Relay operates on 24 VDC.

	Amp Rating	Max. Voltage	Sensing Distance	Lg. × Wd. × Ht.	Mounting Information		
Standard Switches							
AC Rated—*Switch One Circuit From "Off" to "On" (SPST-NO)*							
Rectangular	830 mA @ 120 VAC	250 VAC	0.8″	3.16″ × 0.59″ × 0.79″	0.17″ Dia. Slots	**65985K75**●	$91.66
Mini Rectangular	80 mA @ 120 VAC	250 VAC	0.4″	1.13″ × 0.25″ × 0.71″	0.13″ Dia. Slots	**65985K72**	75.67
Cylindrical	80 mA @ 120 VAC	250 VAC	0.6″	1.26″ Lg. × 0.31″ Dia.	M8 × 1 Threaded Cylinder	**65985K73**	70.22
Mini Cylindrical	80 mA @ 120 VAC	250 VAC	0.1″	1.12″ Lg. × 0.24″ Dia.	—	**65985K71**	66.56
DC Rated—*Switch One Circuit From "Off" to "On" (SPST-NO)*							
Mini Rectangular	1.7 amps @ 24 VDC	400 VDC	0.28″	1.13″ × 0.25″ × 0.75″	0.13″ Dia. Slots	**65985K11**	12.14
Cylindrical	1.7 amps @ 24 VDC	400 VDC	0.25″	1.5″ Lg. × 0.31″ Dia.	5/16″-24 Threaded Cylinder	**65985K13**	13.47
Mini Cylindrical	0.4 amps @ 24 VDC	170 VDC	0.19″	0.43″ Lg. × 0.18″ Dia.	—	**65985K15**	11.38
DC Rated—*Switch One Circuit From "Off" to "On" or "On" to "Off" (SPDT)*							
Mini Rectangular	0.8 amps @ 24 VDC	150 VDC	0.25″	1.13″ × 0.25″ × 0.75″	0.13″ Dia. Slots	**65985K12**	20.28
Cylindrical	0.8 amps @ 24 VDC	150 VDC	0.13″	1.5″ Lg. × 0.31″ Dia.	5/16″-24 Threaded Cylinder	**65985K14**	20.27
Tamper-Resistant Switches							
Without Circuit-Monitoring Relay—*Switches Two Circuits, One From "Off" to "On" and One From "On" to "Off" (DPST-NO/NC)*							
Rectangular	0.5 amps @ 120 VAC/VDC	120 VAC	0.2″	3.5″ × 0.5″ × 1″	0.2″ Dia. Slots	**7202K12**	86.09
Coded Magnet for 7202K12						**7202K21**	22.06
Without Circuit-Monitoring Relay—*Switches Three Circuits, One From "Off" to "On" and Two From "On" to "Off" (3PST-1NO/2NC)*							
Rectangular	10 mA @ 24 VDC	24 VDC	0.2″	3.5″ × 0.5″ × 1″	0.2″ Dia. Slots	**7202K11**	89.77
Coded Magnet for 7202K11						**7202K21**	22.06
With Circuit-Monitoring Relay—*Switches One Circuit From "On" to "Off" (SPST-NC)*							
Cylindrical	6.3 amps @ 120 VAC	250 VAC	0.2″	3.1″ Lg. × 1.2″ Dia.	M30 × 1.5 Threaded Cylinder	**7225K11**	204.05
Coded Magnet for 7225K11						**7225K12**	17.84

● Comes with 3 ft. of 24/2 AWG cable.

About Proximity Switches

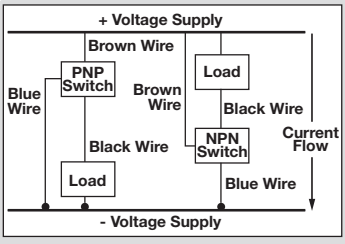

Proximity switches, or sensors, provide noncontact object detection at very close ranges (typically under 15 mm, or 0.6″).

Metallic-object proximity switches (also known as inductive switches) detect metallic objects. They're highly resistant to dirt, humidity, oil, and dust, and have epoxy-encapsulated (potted) circuitry to protect against shock, vibration, and contamination. The ***sensing distance*** listed for these switches is for mild steel. For other materials, multiply the sensing distance by the correction factor—*Type 400 stainless steel:* 1.15; *aluminum foil:* 0.90; *Type 300 stainless steel:* 0.70; *aluminum:* 0.35; *copper:* 0.30.

Universal-object proximity switches (also known as capacitive switches) detect metallic and nonmetallic objects including liquids and powders. They can also "see through" nonmetallic tank walls.

Proximity switches have solid state, low current outputs. DC switches have a transistor that is classified as NPN or PNP. NPN switches, often called sinking switches, must be connected so that the current flows from the positive voltage supply through the load to the switch (current "sinks" through the load to the sensor). PNP switches, often called sourcing switches, must be connected so that the current flows from the positive voltage supply through the switch to the load (sensor is "source" of current to the load).

Flush mount switches (also known as shielded switches) can be mounted in metal that is even with the sensor surface.

Non-flush-mount switches (also known as unshielded switches) require the area around the sensing surface to be metal free.

3-Wire DC Metallic-Object Proximity Switches

Don't see the proximity switch you need? Just tell us what you're looking for and we'll get it for you.

3-Wire DC Metallic-Object Proximity Switches

Flush-Mount Switch with Cable

Male Plug Configurations

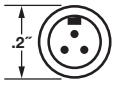

All that mate with 7138K14

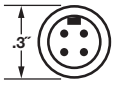

All that mate with 6897K26 and K36

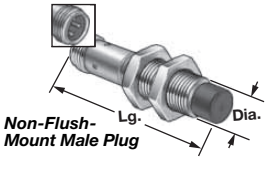

Non-Flush-Mount Male Plug

Detect metallic objects without coming into contact with them. Also known as inductive proximity switches, these switches have short-circuit, overload, and reverse-polarity protection. They operate on 15-34 VDC, have a 150 mA output rating, and have a temperature range of –13° to +185° F, unless noted. Meet IP67 requirements for washdown. UL listed and CE approved.

Switches with cable include a 6½-ft., 3-wire cable with stripped wire leads.

Switches with male plug allow you to quickly connect and disconnect for changeout and repair.

Matching female plugs with cable mate with male plug switches. They include 12 ft. of 3-wire cable. For more information about female plugs with cable, see page 774 for 7138K and page 775 for 6897K.

Plated-brass switches resist corrosion. *Stainless steel switches* are made of Type 303 stainless steel for superior corrosion, impact, and abrasion resistance.

Sensing Distance, mm	Housing Material	Output	Flush Mount	With Cable: Dia. × Lg., mm			With Male Plug: Dia. × Lg., mm			Matching Female Plug with Cable	
Normally Open											
1.5	Stainless Steel	NPN	Yes	8 × 35	7674K911	$66.57	8 × 45	73635K6	$67.96	7138K14	$17.54
1.5	Stainless Steel	PNP	Yes	8 × 35	7674K912	67.96	8 × 45	73635K61	67.96	7138K14	17.54
2	Plated Brass	NPN	Yes	12 × 35	7674K72	54.64	—	—	—	—	—
2	Plated Brass	PNP	Yes	12 × 35	7674K73	54.63	—	—	—	—	—
2	Stainless Steel	NPN	Yes	12 × 50	7674K815▲	94.30	12 × 60	73635K41▲	98.23	6897K26	27.10
2	Stainless Steel	PNP	Yes	12 × 50	7674K816▲	94.30	12 × 60	73635K21▲	98.23	6897K26	27.10
2.5	Stainless Steel	NPN	No	8 × 35	7674K913	67.96	8 × 45	73635K66	67.96	7138K14	17.54
2.5	Stainless Steel	PNP	No	8 × 35	7674K914	67.96	8 × 45	73635K67	67.96	7138K14	17.54
4	Plated Brass	NPN	Yes	—	—	—	12 × 45	73635K64▲	58.70	6897K36	32.56
4	Plated Brass	PNP	Yes	—	—	—	12 × 45	73635K65▲	58.70	6897K36	32.56
4	Plated Brass	NPN	No	12 × 35	7674K21	54.64	12 × 60	73635K68▲	51.51	6897K36	32.56
4	Plated Brass	PNP	No	12 × 35	7674K22	54.64	12 × 60	73635K69▲	51.51	6897K36	32.56
5	Plated Brass	NPN	Yes	18 × 35	7674K75	61.30	18 × 63.5	7674K85▲	52.90	6897K36	32.56
5	Plated Brass	PNP	Yes	18 × 35	7674K76	61.30	18 × 63.5	7674K86▲	52.90	6897K36	32.56
5	Stainless Steel	NPN	Yes	18 × 50	7674K819▲	99.48	18 × 63.5	73635K42▲	103.62	6897K36	32.56
5	Stainless Steel	PNP	Yes	18 × 50	7674K831▲	99.48	18 × 63.5	73635K22▲	103.62	6897K36	32.56
8	Plated Brass	NPN	No	18 × 35	7674K23	61.30	18 × 63.5	7674K24▲	52.90	6897K36	32.56
8	Plated Brass	PNP	No	18 × 35	7674K25	61.30	18 × 63.5	7674K26▲	52.90	6897K36	32.56
10	Plated Brass	NPN	Yes	30 × 35	7674K77	66.63	30 × 48.5	7674K87▲★	66.70	6897K26	27.10
10	Plated Brass	PNP	Yes	30 × 35	7674K78	66.63	30 × 48.5	7674K88▲	66.70	6897K36	32.56
10	Stainless Steel	NPN	Yes	30 × 50	7674K834▲	121.90	30 × 63.5	73635K43▲	125.29	6897K36	32.56
10	Stainless Steel	PNP	Yes	30 × 50	7674K835▲	121.90	30 × 63.5	73635K23▲	125.29	6897K36	32.56
12	Plated Brass	NPN	No	18 × 51	7674K832▲	80.19	18 × 63.5	73635K765▲	80.19	6897K36	32.56
12	Plated Brass	PNP	No	18 × 51	7674K833▲	80.19	18 × 63.5	73635K775▲	80.19	6897K36	32.56
15	Plated Brass	NPN	No	30 × 35	7674K27	66.63	30 × 63.5	7674K28▲	66.70	6897K36	32.56
15	Plated Brass	PNP	No	30 × 35	7674K31	66.63	30 × 63.5	7674K32▲	66.70	6897K36	32.56
Normally Closed											
1.5	Stainless Steel	NPN	Yes	8 × 35	7674K936	76.89	8 × 45	73635K78	72.08	7138K14	17.54
1.5	Stainless Steel	PNP	Yes	8 × 35	7674K937	76.89	8 × 45	73635K79	72.08	7138K14	17.54
2	Plated Brass	NPN	Yes	12 × 35	7674K33	61.81	12 × 60	73635K8▲	55.10	6897K36	32.56
2	Plated Brass	PNP	Yes	12 × 35	7674K35	61.81	12 × 60	73635K81▲	55.10	6897K36	32.56
2.5	Stainless Steel	NPN	No	8 × 35	7674K938	76.89	8 × 45	73635K82	72.08	7138K14	17.54
2.5	Stainless Steel	PNP	No	8 × 35	7674K393▲	62.62	8 × 45	73635K83	72.08	7138K14	17.54
4	Plated Brass	NPN	No	12 × 35	7674K37	61.81	12 × 60	73635K84▲	69.48	6897K36	32.56
4	Plated Brass	PNP	No	12 × 35	7674K38	61.81	12 × 60	73635K85▲	55.10	6897K36	32.56
5	Plated Brass	NPN	Yes	18 × 35	7674K41	69.35	18 × 63.5	7674K42▲	65.81	6897K36	32.56
5	Plated Brass	PNP	Yes	18 × 35	7674K43	69.35	18 × 63.5	7674K44▲	65.81	6897K36	32.56

▲ Operate on 10-30 VDC, have a 200 mA output rating, and have a temp. range of –13° to +158° F. ★ Switch has three poles.

Don't see the proximity switch you need? Just tell us what you're looking for and we'll get it for you.

Flat Body 3-Wire DC Metallic-Object Proximity Switches

With a space-saving, flat-body design, these switches easily mount to a base or rail. Switches detect metallic objects without coming into contact with them and have reverse polarity protection and normally open (NO) contacts. Choose from non-flush-mount switches with an ABS plastic body and flush-mount switches with a rugged, die cast aluminum body. All come with a 6½-ft. cable with wire leads and two mounting holes (7364K21 and K22 also include a mounting bracket for stability). They operate on 10-30 VDC, have a temperature range of –13° to +158° F, and meet IP67 requirements for washdown.

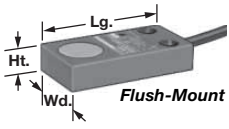

Flush-Mount

Sensing Distance, mm	Housing Material	Output	Flush Mount	Output Rating	Lg. × Wd. × Ht., mm	Mounting Hole Dia., mm		
3	Plastic	NPN	No	100 mA	27 × 10 × 6	3	7364K21	$73.08
3	Plastic	PNP	No	100 mA	27 × 10 × 6	3	7364K22	73.08
5	Aluminum	NPN	Yes	200 mA	50 × 25 × 10	4.5	7364K11	80.48
5	Aluminum	PNP	Yes	200 mA	50 × 25 × 10	4.5	7364K12	80.48
5	Plastic	NPN	No	50 mA	30.5 × 18 × 10	3.5	7364K23	62.46
5	Plastic	PNP	No	50 mA	30.5 × 18 × 10	3.5	7364K24	62.46
20	Plastic	NPN	No	100 mA	53 × 40 × 23	5.5	7364K25	102.38

2-Wire AC Metallic-Object Proximity Switches

These two-wire AC switches detect metallic objects without coming into contact with them. All have an LED power indicator and are offered with normally open (NO) or normally closed (NC) contacts. Meet IP67 requirements for washdown and temporary submersion. CE approved.

Switches with cable accept 20-265 VAC and 20-320 VDC input. They have a 6½ ft., 2-wire cable with wire leads. Temperature range is –13° to +185° F. UL listed.

Switches with male plug allow you to quickly connect and disconnect for replacement and repair. They accept 20-250 VAC input. Switches with stainless steel housing also operate on 20-320 VDC. Temp. range is –13° to +158° F. CSA certified to UL Standard 508. **Also Available:** Matching female plug with cable that mates with the male plug switches to supply power. It also includes 12 ft. of 3-wire cable (one wire is unused). Please ask for 6897K86 for plated brass housing and 6897K26 for stainless steel housing. For more information about female plugs with cable, see 6897K on page 775.

Plated-brass switches are nickel plated for corrosion resistance.

Stainless steel switches have superior corrosion, impact, and abrasion resistance.

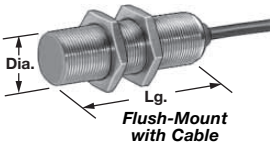

Flush-Mount with Cable

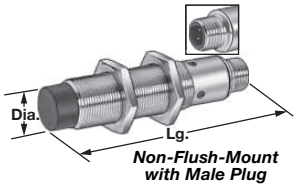

Non-Flush-Mount with Male Plug

Plated Brass Plug Configuration

Stainless Steel Plug Configuration

Sensing Distance, mm	Flush Mount	With Cable: Output Rating	With Cable: Dia. × Lg., mm		With Male Plug: Output Rating	With Male Plug: Dia. × Lg., mm		
Normally Open—*Housing material is plated brass.*								
2	Yes	200 mA	12 × 56	7486K85 $82.27	400 mA	12 × 68	73635K51	$60.06
4	No	200 mA	12 × 62	7486K95 82.27	400 mA	12 × 68	73635K52	66.07
5	Yes	300 mA	18 × 54	7486K86 83.72	400 mA	18 × 76	73635K75	62.61
8	No	300 mA	18 × 54	7486K96 83.72	400 mA	18 × 76	73635K86	60.06
10	Yes	300 mA	30 × 54	7486K15 89.49	400 mA	30 × 76	73635K87	109.78
15	No	300 mA	30 × 54	7486K16 89.49	400 mA	30 × 76	73635K88	72.93
Normally Open—*Housing material is Type 303 stainless steel.*								
2	Yes	200 mA	12 × 56	7486K31 84.96	200 mA	12 × 65	73635K14	86.77
4	No	200 mA	12 × 62	7486K32 93.82	200 mA	12 × 71	73635K15	96.98
5	Yes	300 mA	18 × 54	7486K33 89.49	300 mA	18 × 69	73635K16	95.52
8	No	300 mA	18 × 54	7486K54 106.49	300 mA	18 × 69	73635K17	104.27
10	Yes	300 mA	30 × 54	7486K35 118.36	300 mA	30 × 69	73635K18	119.27
15	No	300 mA	30 × 54	7486K36 109.70	300 mA	30 × 69	73635K19	122.50
Normally Closed—*Housing material is plated brass.*								
2	Yes	200 mA	12 × 56	7486K87 86.60	400 mA	12 × 68	73635K55	60.06
4	No	200 mA	12 × 62	7486K97 86.60	400 mA	12 × 68	73635K56	66.07
5	Yes	300 mA	18 × 54	7486K88 83.72	400 mA	18 × 76	73635K98	60.06
8	No	300 mA	18 × 54	7486K98 83.72	400 mA	18 × 76	73635K99	60.06
10	Yes	300 mA	30 × 54	7486K47 92.38	400 mA	30 × 76	73635K38	109.78
15	No	300 mA	30 × 54	7486K48 89.49	400 mA	30 × 76	73635K39	109.78

Universal-Object Proximity Switches

Also known as capacitive proximity switches, these non-flush-mount switches detect both metallic and nonmetallic objects. They have a plastic housing that meets IP66 requirements for washdown and a 6½-ft. cable with wire leads. The LED indicator illuminates when target is detected. Temperature range is –13° to +158° F, except for 15 mm sensing distance switches, which have a temperature range of 14° to 131° F.

To Order: Please specify normally open or normally closed switches. Normally open switches switch "on" when an object is detected; normally closed switches switch "on" when no object is present.

Sensing Distance, mm	Output Rating	Dia. × Lg., mm		
2-Wire AC—*Operating Voltage is 90-250 VAC*				
4	200 mA	12 × 80	7675K1	$161.38
8	200 mA	18 × 80	7675K2	151.03
15	200 mA	30 × 80	7675K3	161.38
3-Wire DC—*Operating Voltage is 10-30 VDC*				
4	NPN	12 × 80	7675K4	124.14
4	PNP	12 × 80	7675K5	124.14
8	NPN	18 × 80	7675K6	122.72
8	PNP	18 × 80	7675K7	122.72
15	NPN	30 × 80	7675K8	129.31
15	PNP	30 × 80	7675K9	129.31

Proximity Switch Accessories

Clamp-Style Mounting Brackets—Mount any cylindrical switch. Brackets are two-piece construction and made of corrosion-resistant plastic.

Fits Switch Dia., mm	Lg. × Wd. × Ht., mm		
8	37 × 30 × 27	55205K14	$13.41
12	37 × 30 × 27	55205K11	12.73
18	42 × 30 × 33	55205K12	12.73
30	59 × 30 × 42	55205K13	14.13

Universal Angle-Style Mounting Bracket—Adjustable bracket mounts 5 mm to 30 mm dia. switches. It includes adapters to ensure a tight, customized fit every time. Made of nylon with zinc-plated steel rod. Overall dimensions are 54 mm Lg. × 25 mm Wd. × 67 mm Ht.

55205K61 ..... $32.16

Right-Angle Mounting Brackets—Slotted 0.22″ dia. (unless noted) mounting holes allow side-to-side, in-and-out, up-and-down, and 15° swivel adjustments for your threaded switches. Mounting hardware not included.

Fits Switch Dia., mm	Lg. × Wd. × Ht., mm	Zinc-Plated Steel		Type 304 Stainless Steel	
8	32 × 29 × 25	55205K27	$8.98	55205K28	$12.76
12	38 × 35 × 38	55205K21	7.29	55205K24	10.50
18	45 × 35 × 51	55205K22	7.71	55205K25	9.93
30	57 × 45 × 64	55205K23★	8.57	55205K26★	12.50

★ Has slotted 0.28″ dia. mounting holes.

Proximity Switch Tester—Verify circuit integrity of DC proximity switches with this portable tester. You'll hear a distinct beep when the sensor output is conducting. Tester has two LED indicator lights; red indicates PNP and green indicates NPN. Three spring-loaded terminals make connection a snap. Powered by two 9-volt batteries (included). CE approved.

6555K33 ..... $97.50

About Light Beam Sensing Switches

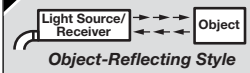

Object-Reflecting Style

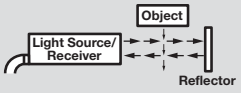

Reflector Style

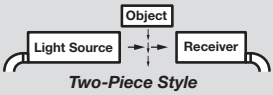

Two-Piece Style

Also known as photoelectric switches, these switches detect the presence or absence of an object made of any material by using a light beam. They have a longer sensing distance than proximity switches.

Switches operate in one of two different modes. ***On when object present*** generates an output when a target object is present (similar to a normally open switch). ***On when object absent*** generates an output when the target object is absent (similar to a normally closed switch).

Response time is the amount of time it takes to generate an output when an object's presence or absence is detected.

Object-Reflecting Switches— Light source and receiver are in the same housing. Switches detect the target object when the light beam reflects off of the target object back into the receiver. They have the shortest sensing distance of the light beam sensing switches, and may be adversely affected by the color or surface of the target object.

Reflector Switches— Light source and receiver are in the same housing, but switches utilize a reflector. Switches detect the target object when it passes between the switch and the reflector, interrupting the beam. They have a longer sensing distance than object-reflecting switches.

Two-Piece Switches— Light source and receiver are in separate housings that must be lined up facing each other. The switch detects the target object as it breaks the light beam between the light source and receiver. These have the longest sensing distance of the light beam sensing switches.

Light Beam Sensing Switches

With Cable

These switches have a signal strength indicator and water tight plastic housing rated for outdoor use (NEMA 4). They're threaded and have a built-in output signal amplifier. Temperature range is –13° to +131°F. UL recognized, CSA certified, and CE approved. *Reflector* switches include the reflector.

DC Input—On When Object Present or Absent (Selectable)

Operate on 10-30 VDC, have a 100 mA output rating, and have short-circuit protection. Response time is 2.5 milliseconds for object-reflecting switches and 1 millisecond for reflector switches. Size is 18 mm dia.×65 mm Lg. Choose from switches with 6½ ft. of 4-wire cable or switches with a 4-pin, single keyway male plug. **To Order:** Please specify NPN or PNP output (see about proximity switches on page 896).

Switch Style	Sensing Distance	With Cable		With Male Plug	
Object Reflecting	4″	65845K1	$93.30	65845K3	$99.64
Reflector	13.1 ft.	65845K7	88.93	65845K8	93.30
Female Plug with Cable for 65845K3 and K8		6897K36	$32.56		

AC Input—With Cable

Operate on 24-240 VAC and have a 200 mA output rating. Response time is 30 milliseconds. Size is 18 mm Dia.×90 mm Lg. Switches come with 6½ ft. of 3-wire cable.

Switch Style	Sensing Distance	On When Object Present		On When Object Absent	
Object Reflecting	4″	65845K46	$107.14	65845K47	$107.14
Reflector	6.5 ft.	65845K66	110.89	65845K67	110.89
Two Piece	10 ft.	65845K56	161.79	65845K57	161.79

Accessories

Optional Mounting Bracket	65845K11	$5.70
Repl. Reflector for 65845K7 and K8	65845K41	20.40
Repl. Reflector for 65845K66 and K67	7363K31	15.83

Flat-Body Light Beam Sensing Switches

A small, flat-body design allows these switches to fit into tight spaces. They can be set to either on when object present or on when object absent. Switches have an 18 mm dia. threaded face for mounting and 3 mm dia. mounting holes spaced 24 mm apart. Housing is reinforced plastic. Output rating is 100 mA; temperature range is –4° to +158°F. They're water and oil tight for outdoor use (NEMA 4X and 13). Meet IP67 requirements for washdown. UL recognized, CSA certified, and CE approved.

DC Input Switches—Have NPN and PNP outlets. Response time is 1 millisecond. *Switches with cable* are 2.10″ Lg.×0.48″ Wd.×1.21″ Ht. and have 6½ ft. of 4-wire cable. *Switches with male plug* are 2.83″ Lg.×0.48″ Wd.×1.21″ Ht. and have a 4-pin single keyway.

AC Input Switches—Response time is 8 milliseconds for object-reflecting, 4 milliseconds for reflector, and 2 milliseconds on/1 millisecond off for two-piece switches. *Switches with cable* are 2.60″ Lg.×0.48″ Wd.×1.21″ Ht. and have 6½ ft. of 2-wire cable. *Switches with male plug* are 3.33″ Lg.×0.48″ Wd.×1.21″ Ht. and have a 3-pin double keyway.

Switch Style	Sensing Distance	With Cable		With Male Plug	
***DC Input—**24-30 VDC*					
Object Reflecting	15″	9539T7	$95.16	9539T11	$95.16
Reflector♠	10 ft.	9539T8	104.12	9539T12	104.12
Two Piece	100 ft.	9539T9	142.18	9539T14	142.18
***AC Input—**24-240 VAC*					
Object Reflecting	15″	9539T1	117.55	9539T4	117.55
Reflector♠	10 ft.	9539T2	123.15	9539T5	123.15
Two Piece	100 ft.	9539T3	167.93	9539T6	167.93
Reflector (3.3″ Dia.)				9539T15	$4.48
DC Female Plug with 12-ft. Cable				6897K36	32.56
AC Female Plug with 12-ft. Cable				6897K86	24.33

♠ Requires a reflector (sold separately) for proper operation.

Light Beam Sensing Switches with Relay Output

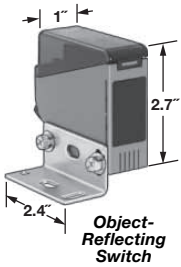

Object-Reflecting Switch

With a built-in relay output, you can switch AC loads up to 3 amps at 250 VAC. Output can be set to either on when object present or on when object absent. All operate on 24-240 VAC/VDC with a response time of 10 milliseconds. Switches come with a mounting bracket, hardware, and screw-terminal connections. Housing is ABS plastic. Temperature range is –13° to +131°F. Meet IP66 requirements for periodic washdown. CE approved.

Reflector switches include the reflector.

Time delay models have delay-on, delay-off, and single-shot timing functions (see page 911 for definitions). They're adjustable from 0.1 to 5 seconds.

Switch Style	Sensing Distance	Standard		Time Delay	
Object Reflecting	3.3 ft.	9231K11	$97.34	9231K21	$118.66
Reflector	23 ft.	9231K12	99.72	9231K22	121.04
Two Piece	65.6 ft.	9231K13	118.62	9231K23	144.74
Replacement Reflector (1.59″ Lg.×2.36″ Ht.)				9231K31	$10.73

Fiber-Optic Light Beam Sensing Switches

AC/DC Amplifier

Object-Reflecting Cable

Two-Piece Cable

Perfect for reaching tight areas, these fiber-optic switches can detect objects where other switches can't. A complete switch requires an amplifier and fiber-optic cable (each sold separately below). Temperature range is –13° to +131°F. Mounting brackets included.

AC/DC Amplifiers—Can be set to either on when object present or on when object absent. They have an SPDT 3-amp relay output and a red LED beam to provide easy alignment. Operate on 24-240 VAC/12-240 VDC with a response time of 15 milliseconds. Housing is ABS plastic. Size is 2.96″ Lg.×1″ Wd.×2.95″ Ht. Conduit opening is ½″ NPT female. They are water and oil tight for outdoor use (NEMA 4 and 12). Meet IP66 requirements for periodic washdown. UL listed.

Time delay model lets you delay the on signal (on-delay) or off signal (off-delay) from 0.1 to 5 seconds.

Fiber-Optic Cables—Have a polymethylmethacrylate (PMMA) core with a polyethylene jacket and are 6.6 ft. long.

AC/DC Amplifiers

Standard	65935K51	$219.84
Time Delay	65935K52	256.51

Fiber-Optic Cables

For Switch Style	Sensing Distance	Min. Detectable Object Size		
Object Reflecting	2″	0.015 mm dia.	65935K92	$67.50
Two Piece	4.8″	1 mm dia.	65935K91	65.36

For information about electrical switches, see page 855. For information about NEMA and IP ratings, see page 843.

Light Beam Safety Barrier System

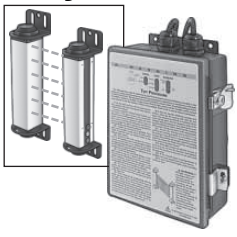

Use these "light curtain" safety barriers to shut down potentially hazardous machinery. Breaking the light curtain immediately cuts power to machinery (use only on machinery that can consistently and immediately stop anywhere in its cycle; do not use on a full-revolution clutched press or machine). You can program the system to allow one or more beams to be broken without shutting off your machine—ideal where you need tooling and feed stock to pass through the sensing field.

System includes a transmitter, receiver, 33-ft. transmitter cable, 33-ft. receiver cable, and an electronics enclosure which houses the power supply and relay outputs. It has user-selectable input power (24 VDC or 100-230 VAC) and screw-terminal connections. The system meets or exceeds machine guard requirements set by OSHA and ANSI. Meets IP65 and NEMA 4 and 12 for washdown and oil protection. CSA certified.

The electronics enclosure is metal (mounting hardware included) and the transmitter and receiver have a polyurethane powder-painted aluminum enclosure. The transmitter and receiver are 1½″ Wd.×1 31/32″ Dp.; height is listed below. Enclosure size is 11 3/16″ Ht.×7 7/16″ Wd.×2¾″ Dp. Minimum object detection height (vertical distance between beams) is 0.78″. Maximum distance between transmitter and receiver is 65 feet.

Coverage Ht.	O'all Ht.		
11.2″	16.6″	7774K22	$1,823.71
12.8″	18.1″	7774K23	1,913.79
15.9″	21.3″	7774K24	2,095.79
20.6″	26″	7774K25	2,367.86
23.8″	29.1″	7774K26	2,549.86
28.5″	33.9″	7774K27	2,800.57
33.2″	38.6″	7774K28	3,070.79
36.3″	41.7″	7774K31	3,204.23
41.1″	46.4″	7774K32	$3,470.63
44.2″	59.4″	7774K33	3,647.32
48.9″	54.3″	7774K34	3,881.69
52.1″	57.5″	7774K35	4,056.55
56.8″	62.2″	7774K36	4,320.21
59.9″	65.3″	7774K37	4,495.99
64.6″	70″	7774K38	4,758.73

Single Light Beam Safety Barrier System

Transmitter and Receiver Set

A single beam of light acts as a perimeter guard to shut down potentially hazardous machinery. Breaking the light beam immediately cuts power to machinery (use only on machinery that can consistently and immediately stop anywhere in its cycle; do not use on a full-revolution clutched press or machine). For a complete system, order the transmitter and receiver set, transmitter cable, and receiver cable (cables sold separately below).

Transmitter and receiver set includes one transmitter and one receiver. Both have indicator LEDs to provide status and diagnostic information. Operates on 24 VDC. Maximum distance between transmitter and receiver is 229 feet. Each has six 9/32″ dia. mounting holes (fasteners not included). Meets or exceeds machine guard requirements set by OSHA and ANSI. Also meets IP67 for temporary water submersion.

	Ht.×Wd.×Dp.		
Transmitter and Receiver Set	9.1″×2.2″×1.8″	7231K31	$763.55
Transmitter Cable, 33 ft. Lg.		7231K41	64.35
Receiver Cable, 33 ft. Lg.		7231K42	64.35

Harsh Environment Cycle Timer-Actuated Switch

Now you can set how long you want your timer to run and how long before it starts over—even in harsh environments. Set one knob to select the timer range (15 seconds to 24 hours) and the other to select the percentage of that time your device will remain on. Switch offers a hold setting for manual on or off. Both dials have 32 increments.

Switches one circuit from "off" to "on" or "on" to "off" (SPDT). Green and red LEDs indicate when the circuit is on or off. Rated 20 amps @ 120/240 VAC when switching from "off" to "on," 10 amps @ 120/240 VAC when switching from "on" to "off." Input voltage is 120/240 VAC. NEMA 4X rated for washdown and corrosion protection. Has screw-terminal connections.

The enclosure has four 7/32″ dia. holes for mounting to a box and includes ½″ and ¾″ knockouts. Size is 4 13/16″ Ht.×4 13/16″ Wd.×3⅞″ Dp. UL listed and CSA certified.

2827T1 ..... $144.93

Plug-In Countdown Timer-Actuated Switches

Just plug your electrical device into the switch's three-prong receptacle and set the spring-wound dial to turn off your device after an interval.

Both switch one circuit from "off" to "on" when actuated (SPST-NO). Rated 10 amps @ 125 VAC. Include 6-ft. cord with a standard NEMA 5-15 three-prong plug. Input voltage is 125 VAC. Mechanical life is 6,000 cycles. Size is 3¼″ Ht.×3″ Wd.×2¾″ Dp. UL listed and CSA certified.

Timer Range	Min. On/Off Time		
0 to 30 minutes	1 minute	8386T13	$76.09
0 to 60 minutes	1 minute	8386T14	76.09

Plug-In Countdown Timer-Actuated Switches with Buzzer

Now you'll be able to hear when your time is up—switches have a buzzer alarm with volume control that sounds when the timer stops. They have two rocker switch-operated standard NEMA 5-15 three-prong outlets on the side. If the rocker switch is in the left position, both outlets turn off when the timer stops; if the rocker is in the right position, the top outlet turns off and the bottom outlet turns on when the timer stops, unless noted. All have a 6½″ dia. face that is easy to read at a glance.

Each outlet is rated 5 amps, ⅓ hp @ 120 VAC. Sits on a table top with rubber base pads or mounts on a wall with two ⅜″ holes on the back panel (hardware not included). All have a 6-ft. cord with a standard NEMA 5-15 three-prong plug. Input voltage is 125 VAC. Size is 7½″ Ht.×7½″ Wd.×2½″ Dp. UL listed and CSA certified.

Glow-in-the-dark model has a phosphorescent dial and hands.

Timer Range	Min. On/Off Time		
Standard			
0 to 15 minutes	¼ second	1302T12	$191.67
0 to 60 minutes	1 second	1302T22	183.33
0 to 15 hours	15 second	1302T32	193.75
0 to 60 hours	1 minute	1302T42	191.67
Glow-in-the-Dark			
0 to 60 minutes	1 second	1302T62★	194.20

★ If the rocker is in the left position, both outlets turn on when the timer stops. If the rocker is in the right position, the top outlet stays off, the bottom outlet stays on, and the buzzer sounds when the timer stops.

Countdown Timer-Actuated Switches

Dial Reset

Mount these switches to your panel to control hard-wired devices. They switch one circuit from "off" to "on" or "on" to "off" (SPDT) and require a ⅜″ Dia.×⅛″ Thick. (max.) hole for mounting. Rated 15 amps @ 125/250 VAC. Mechanical life is 1,000,000 cycles. All have ¼″ quick-disconnect connections. Input power connections are two 8″ 20 AWG wire leads. Input voltage is 120 VAC. UL recognized and CSA certified.

Dial-reset switches are set each time by a hand dial. Size is 3 1/16″ Dia.×2 9/16″ Dp. ***Push-button reset*** switches are great if you use the same interval repeatedly. They retain the last setting of the hand dial, so all you have to do is push a button to start the timer over at the same interval. Size is 3 1/16″ Dia.×3 1/16″ Dp.

Timer Range	Dial Increments	*Dial Reset*		*Push-Button Reset*	
0 to 30 minutes	1 minute	7366K61	$132.18	7366K71	$147.58
0 to 60 minutes	5 minutes	7366K62	132.18	7366K72	147.58
0 to 12 hours	30 minutes	7366K63	132.18	7366K73	147.58
0 to 24 hours	2 hours	7366K64	132.18	7366K74	147.58
0 to 60 hours	1 hour	7366K65	132.18	7366K75	147.58

Power-Saving Countdown Timer-Actuated Switch

You won't need any electricity to operate this switch. Simply push and release the button to activate. Switches one circuit from "off" to "on" or "on" to "off" (SPDT) after an adjustable 2-60 second time delay. Rated 10 amps @ 240 VAC. Has solder-lug connections.

Size is 1 7/16″ Ht.×1″ Wd.×1½″ Dp. Mount in a 15/32″ dia. panel cutout with mounting keyway. Depth behind panel is 1 1/16″. Maximum panel thickness is 3/16″. UL recognized and CSA certified.

8008K33 ..... $117.20

For information about electrical switches, see page 855.

Multi-Circuit Cycle Timer-Actuated Switches

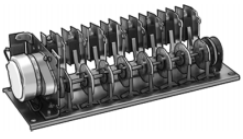

Eight Circuits

Program precise sequencing of multiple devices with these switches, also known as interval timers. Select a switch with the number of circuits you need to switch. **To Order:** Please specify the timing cycle you require (the timing cycle will repeat continuously): 10 seconds, 20 seconds, 30 seconds, 60 seconds, 2 minutes, 10 minutes, 30 minutes, 1 hour, or 3 hours.

The "on" and "off" time of each individual switch is adjustable from 2% to 98% of the timing cycle. All have 6″ wire leads for input connections. They are SPDT and rated 15 amps @ 250 VAC. Input voltage is 120 VAC. They have four 0.17″ dia. mounting holes (mounting hardware not included). UL listed and CSA certified.

No. of Circuits	Ht.	Wd.	Dp.		
2	2 13/16″	4 5/16″	3 1/2″	9364T1	$204.25
3	2 13/16″	5 1/4″	3 1/2″	9364T2	225.82
4	2 13/16″	6 3/16″	3 1/2″	9364T3	262.61
5	2 13/16″	7 1/8″	3 1/2″	9364T4	284.18
8	2 13/16″	9 15/16″	3 1/2″	9364T5	398.36

Plug-In Clock-Actuated Switches

Dial Outlet Mount

Dial Outdoor Surface Mount

Digital Outlet Mount with 5-15 Plug

Digital Outdoor Surface/Ground Stake Mount w/Ground Stake

Digital Outlet Mount with Two-Prong Plug

Digital Table Top

NEMA Plug

5-15

Simply plug the switch into an outlet and your appliance into the switch, then set an on/off schedule. All have a manual on/off override. ETL listed, except 7185K25 and 7001K53, which are CSA certified. *Outlet-mount* switches plug directly into wall.

Dial switches repeat the same schedule every day of the week.

Outdoor surface-mount switch has a weather-resistant plastic case and a 22″ cord. Mount at least 4 1/2 feet above ground level (has a 1/4″ mounting hole, hardware not included).

Digital switches offer precise electronic programming and more flexibility.

7001K53 can perform a different schedule for every day of the week and retain your program settings when the power goes out. Use the random on/off time function to make your space seem occupied. It has a battery backup (batteries included). 7001K26 is a 24-hour timer (batteries included). *Table-top* switch has a built-in battery backup and a 6-ft. cord. *Outdoor surface/ground stake mount* has weatherproof cover and a 24″ cord.

No. of Outlets	Plug/Outlet NEMA Style	Input Voltage	Amp Rating	Max. On/Off Cycles	Min. On/ Off Time	No. of Trippers	Tripper Style	Ht.	Wd.	Dp.		Each
Dial												
Outlet Mount												
2	5-15	120 VAC	15	48 per Day	15 Minutes	—	—	3″	3″	1 3/4″	7993K42★	$14.73
Table Top												
2	Two-Prong	120 VAC	15	48 per Day	15 Minutes	—	—	3″	3″	1 3/4″	7993K73★	17.58
Outdoor Surface Mount												
1	5-15	120 VAC	15	12 per Day	30 Minutes	2 Pairs	Removable	5″	5 1/2″	3 3/4″	7185K25	43.56
Additional trippers for 7185K25 timer											7993K71	Pair $0.95
Digital												
Outlet Mount												
1	5-15	120 VAC	15	24 per Day	1 Minute	—	—	3 1/4″	3 7/8″	1 7/8″	7001K53	20.76
2	Two-Prong	120 VAC	15	1 per Day	1 Minute	—	—	3 3/4″	3″	1 3/4″	7001K26★	32.20
Table Top												
1	Two-Prong	120 VAC	10	2 per Day	1 Minute	—	—	4″	3″	1 3/4″	7001K44	35.00
Outdoor Surface/Ground Stake Mount												
7	5-15	120 VAC	15	1 per Day	1 Minute	—	—	8 1/2″	3 3/4″	5″	7001K54●	53.38

★ Has one timed and one untimed outlet. ● Has six timed and one untimed outlet.

Digital Clock-Actuated Switches

Panel Mount

Program a specific, digitally accurate schedule for every day of the week. Switches have seven-day and 24-hour programming functions and a manual override. They also retain your program settings when the power goes out. All switches have a three-year memory backup.

Minimum on/off time is one minute. Switch one circuit from "off" to "on" or "on" to "off" (SPDT). Rated 16 amps @ 277 VAC. UL and C-UL recognized.

Panel mount switches have 1/4″ quick-disconnects. Size is 2.81″ Ht. × 2.81″ Wd. × 1.46″ Dp. Panel cutout size is 2.63″ square. ***Surface/DIN-rail mount*** switches have screw terminals and three 3/16″ × 5/32″ wide elliptical holes for surface mounting (hardware not included). Size is 4.25″ Ht. × 2.93″ Wd. × 2.16″ Dp. DIN rail sold separately.

Input Voltage	Max. On/Off Cycles	Panel Mount		Surface/ DIN-Rail Mount	
24 VAC	20 per Day	71075K9	$94.98	71075K16	$94.98
24 VAC	50 per Day	71075K13	115.37	71075K19	115.37
120 VAC	20 per Day	71075K11	92.06	71075K17	92.06
120 VAC	50 per Day	71075K14	112.63	71075K21	112.63
240 VAC	20 per Day	71075K12	91.25	71075K18	94.98
240 VAC	50 per Day	71075K15	115.37	71075K22	115.37
35 mm DIN Rail (1 m Lg.)				8961K15	$4.96

Two-Circuit Digital Clock-Actuated Switches

24 Hour/7 Day

Control two different devices, each with its own on/off program. Switches have an LCD display, built-in battery backup, and manual override. They switch two circuits independently from "off" to "on" (2 SPST-NO). Minimum on/off time is one minute. Input voltage is 100-240 VAC. Both have screw-terminal connections and are UL recognized and CSA certified.

24-hour/7-day switch can set two 24-hour on/off schedules, each for a different circuit. Program each circuit to apply its schedule to any combination of days during the week. It mounts on a 35 mm DIN rail and includes hardware for a 3.62″ square panel cutout or surface mounting. ***7-day*** switch offers more flexibility, allowing each day of the week its own unique 24-hour schedule. Works just like the Digital Clock-Actuated Switches on this page, but it can control two independent circuits. Mounts in a 2.68″ square panel cutout.

	Amp Rating @ 250 VAC	Max. On/Off Cycles Per Day	Ht.	Wd.	Dp.		
24 Hour/7 Day	10	8	3.78″	3.78″	2.22″	70395K71	$250.00
7 Day	15	12	2.83″	2.83″	2.17″	70395K81	248.28
35 mm DIN Rail (1 m Lg.)						8961K15	4.96

For information about electrical switches, see page 855. For information about NEMA ratings, see page 843.

Dial Clock-Actuated Switches

Program specific time intervals with easy-to-set captive trippers. All switch one circuit from "off" to "on" or "on" to "off" (SPDT). Rated 21 amps @ 250 VAC. Input voltage is 120 VAC. UL recognized and CSA certified.

Panel-mount switches have 1/4″ quick-disconnect connections and mount in a 2.63″ square cutout. Size is 2.83″ Ht.×2.83″ Wd.×1.36″ Dp. ***Surface/35 mm DIN-rail mount*** switches have screw terminal connections and are 4″ Ht.×2.83″ Wd.×2.06″ Dp. Have three 1/8″ Wd. elliptical mounting holes (hardware not included).

Timing Range	Max. On/ Off Cycles	Min. On/ Off Time	Panel Mount		Surface/DIN-Rail Mount	
Without Battery Backup						
24 Hour	48 per Day	15 Min.	7797K11	$45.27	7797K13	$45.27
7 Day	6 per Day	2 Hours	7797K12	66.51	7797K14	66.51
With Built-In 7-Day Battery Backup						
24 Hour	48 per Day	15 Min.	7797K15	116.57	7797K17	116.57
7 Day	6 per Day	2 Hours	7797K16	124.29	7797K18	124.29
35 mm DIN Rail (1 m Lg.×7.5 mm Ht.)					8961K15	$4.96

Surface/ DIN-Rail Mount

Dial Clock-Actuated Switches with Enclosure

Protective enclosures prolong the life of your timer switches. They come with removable or captive trippers for programming specific time intervals. All have 3/16″ dia. mounting holes (hardware not included) and 1/2″ and 3/4″ trade size knockouts, unless noted. All have screw-terminal connections. CSA certified to UL standard 917, unless noted.

Indoor switches have a NEMA 1 enclosure. Size is 7 3/4″ Ht.×5″ Wd.×3″ Dp., unless noted.

Indoor/outdoor switches have a NEMA 3R enclosure. Size is 9 3/8″ Ht.×5 1/2″ Wd.×3 5/8″ Dp., unless noted.

24-hour switches repeat the same on/off schedule daily. ***24-hour switches with day skipper*** are the same as 24-hour models plus they can skip operation for 1 to 3 days (includes three skip screws). ***7-day*** switches allow a different program for each day of the week.

Indoor

No. of Circuits Switched	Before Switching, Circuit Is	Industry Designation	Tripper Style	No. of Trippers	Input Voltage, VAC	Amp Rating @ 240 VAC	Max. On/ Off Cycles	Min. On/ Off Time	Indoor Switches	Each	Indoor/Outdoor Switches	Each
Switches without Battery Backup												
24-Hour												
1	Off	SPST	Removable	2	125	40	12 per Day	1 Hour	7037K11	$64.11	7037K81	$111.36
1	Off or On	SPDT	Captive	96	120	20	48 per Day	15 Min.	7037K18▲	162.60	7037K78♣	251.77
2	Off	DPST	Removable	2	125	40	12 per Day	1 Hour	7037K13	74.60	7037K83	118.13
2	Off	DPST	Removable	2	208-277	40	12 per Day	1 Hour	7037K14	79.30	7037K84	122.96
2	Off or On	DPDT	Captive	96	120, 208-277	40	48 per Day	15 Min.	—	—	7037K15♠	60.16
Additional Trippers for Switches with Removable Trippers (1 On/1 Off)											7037K32 Set	$2.40
24-Hour with Day Skipper												
1	Off	SPST	Removable	2	125	40	10 per Day	1 Hour	7037K17●	97.51	—	—
1	Off or On	SPDT	Captive	96	125	20	48 per Day	15 Min.	7037K12	146.58	7037K72	206.59
2	Off	DPST	Removable	2	125	40	10 per Day	1 Hour	7037K19●	112.81	7037K89●	166.63
2	Off	DPST	Removable	2	208-277	40	10 per Day	1 Hour	7037K21●	107.10	7037K91●	187.37
Additional Trippers for Switches with Removable Trippers (1 On/1 Off)											7037K42 Set	$2.40
Replacement Day Skip Screws (3/Set)											7037K52 Set	$2.61
7-Day												
1	Off or On	SPDT	Captive	84	125	20	6 per Day	2 Hours	79915K56	139.49	—	—
1	Off or On	SPDT	Captive	84	208-277	20	6 per Day	2 Hours	79915K57	155.33	—	—
2	Off or On	DPDT	Captive	96	120, 208-277	40	48 per Day	2 Hours	—	—	79915K59♠	94.67
4	Off	4PST	Removable	14	125	40	3 per Day	3 1/2 Hours	79915K66♦	151.95	79915K68♦	197.86
4	Off	4PST	Removable	14	208-277	40	3 per Day	3 1/2 Hours	79915K67♦	170.60	—	—
Additional Trippers for Switches with Removable Trippers (7 On/7 Off)											79915K71 Set	$16.00
Switches with Built-In Battery Backup												
24-Hour												
2	Off or On	DPDT	Captive	96	120, 208-277	40	48 per Day	15 Min.	—	—	7037K16♠	90.53
7-Day												
2	Off or On	DPDT	Captive	96	120, 208-277	40	48 per Day	2 Hours	—	—	79915K61♠	122.04

▲ UL listed and CSA certified. ♣ UL listed and CSA certified. Size is 8 1/4″ Ht.×5 1/4″ Wd.×4 5/8″ Dp.
♠ Has 3/8″ dia. mounting holes and 3/4″ and 1″ trade size knockouts. UL listed; not CSA certified. Size is 8 7/8″ Ht.×6 5/8″ Wd.×3″ Dp.
● CSA certified to UL standard 916. ♦ Size is 12 1/2″ Ht.×8 1/4″ Wd.×4″ Dp.

Digital Clock-Actuated Switches with Enclosure

With smaller timing increments and a digital readout, you'll get precision and versatility that comparably priced dial clock-actuated switches can't offer. All have a minimum on/off time of 1 minute and have permanent schedule retention, except 7459K89, which has a built-in battery backup, and 70915K77 and K81, which have a supercapacitor. Enclosures are lockable. They have 1/2″ and 3/4″ trade size knockouts and screw-terminal connections. All have #8 screw holes for mounting except 70915K77 and K81, which have #10 screw holes (hardware not included). UL listed, unless noted. Models that ***spring back (momentary)*** let you activate equipment such as bells and signals for just a few seconds at a time, or they can be set to stay switched (maintained).

24-hour indoor/outdoor switches repeat the same on/off schedule every day. Enclosures measure 8 5/16″ Ht.×5 1/16″ Wd.×3 1/16″ Dp. ***7-day switches with day skipper*** can skip on/off operation on selected days. Enclosures measure 8 5/16″ Ht.×5 1/16″ Wd.×3 1/16″ Dp., except 7459K89, which measures 7 3/4″ Ht.×5″ Wd.×3″ Dp. *7-day switches* let you implement up to seven individual 24-hour programs. 7459K89 can program each circuit independently.

365-day indoor/outdoor switches can program up to 99 holidays for any length of time. They automatically compensate for leap year and daylight savings time. Can also be used for 7-day programming. Enclosures are 8 5/8″ Ht.×5 11/16″ Wd.×3 5/8″ Dp.

24 Hour

7 Day

365 Day

No. of Circuits Switched	Before Switching, Circuit Is	Industry Designation	Switch Action	Input Voltage, VAC	Amp Rating @ 240 VAC	Max. On/Off Cycles		
24-Hour Indoor/Outdoor Switches— *Polycarbonate Plastic Enclosure (NEMA 3R)*								
1	Off	SPST	Stays Switched (Maintained)	120-277	40	20 per Day	7459K65	$89.80
2	Off	DPST	Stays Switched (Maintained)	120-277	40	20 per Day	7459K67	101.79
7-Day Indoor Switches with Day Skipper— *Steel Enclosure (NEMA 1)*								
1	Off	SPST	Stays Switched (Maintained)	120-277	40	20 per Day	7459K84	134.70
1	Off or On	SPDT	Stays Switched (Maintained)	120-277	30	20 per Day	7459K92	136.53
2	Off	2 SPST	Springs Back (Momentary)	120, 208-277	30	28 per Day	7459K89♥	212.11
7-Day Indoor/Outdoor Switches with Day Skipper— *Polycarbonate Plastic Enclosure (NEMA 3R)*								
1	Off or On	SPDT	Stays Switched (Maintained)	120-277	30	20 per Day	7459K91	104.24
2	Off	DPST	Stays Switched (Maintained)	120-277	40	20 per Day	7459K86	112.56
365-Day Indoor/Outdoor Switches— *Steel Enclosure (NEMA 3R)*								
1	Off or On	SPDT	Springs Back (Momentary)	120-277	30	4,000 per Year	70915K77♥	339.66
2	Off or On	2 SPDT	Springs Back (Momentary)	120-277	30	4,000 per Year	70915K81♥	410.81

♥ Not UL listed; CSA certified to UL standard 916.

About High-Amp Relays (Contactors)

High-amp relays, also known as contactors, switch high currents without direct physical contact from personnel. Instead, they use an electrical signal or control voltage to switch high-amp circuits such as lighting and motor circuits. They are typically rated for applications up to 50 hp. The full load amp rating of a high-amp relay is the maximum amount of current it can switch for a motor. The resistive load amp rating is the maximum amount of current it can switch for other electrical loads, such as heaters.

High-Amp Relays

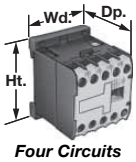

Four Circuits

Control electric motors even in the most compact operating systems. Also known as IEC contactors, these small relays are built to IEC dimensional standards. Snap them onto a 35 mm DIN rail or mount them to a surface. They have at least four 11/64″ wide mounting slots (hardware not included). Mechanical life is 20 million cycles, longer than that of intermittent-use high-amp relays. All have power terminal protection to prevent dangerous contact with energized parts; connections are accessible from the front for side-by-side mounting. Relays spring back (momentary) when power is removed. Auxiliary contact blocks can be used as a signaling device to energize a light or horn or to control another relay. UL and C-UL listed.

Relays with ***VAC control voltage*** have a power consumption of 6.5 VA, unless noted. **To Order:** Please specify control voltage: 24 VAC, 120 VAC, or 240 VAC. Relays with ***24 VDC control voltage*** have a power consumption of 5.4 watts.

Resistive Load Amp Rating @ 600 VAC	MAXIMUM hp RATINGS Single Phase 120 VAC	Single Phase 240 VAC	Three Phase 240 VAC	Three Phase 480 VAC	Three Phase 600 VAC	VAC Control Voltage Ht.	Wd.	Dp.			24 VDC Control Voltage Ht.	Wd.	Dp.		
Relays															
Switch Three Circuits "On" (3PST-NO) with One Auxiliary Contact to Switch One Circuit "On" (1 NO)															
20	0.5	1.5	3	5	5	2.28″	1.73″	2.24″	70255K61■	$40.00	2.28″	1.73″	2.24″	70255K17	$60.71
28	1	2	5	7.5	10	3.18″	1.77″	3.17″	70255K32	50.87	3.18″	1.77″	3.88″	70255K42	110.77
32	1	3	5	10	15	3.18″	1.77″	3.17″	70255K33	61.90	3.18″	1.77″	3.88″	70255K43	135.13
32	2	3	7.5	15	15	3.18″	1.77″	3.17″	70255K34	101.25	3.18″	1.77″	3.88″	70255K44	158.48
Switch Three Circuits "On" (3PST-NO) with One Auxiliary Contact to Switch One Circuit "Off" (1 NC)															
20	0.5	1.5	3	5	5	2.28″	1.73″	2.24″	70255K62■	40.00	2.28″	1.73″	2.24″	70255K18	60.71
28	1	2	5	7.5	10	3.18″	1.77″	3.17″	70255K35	50.87	3.18″	1.77″	3.88″	70255K45	110.77
32	1	3	5	10	15	3.18″	1.77″	3.17″	70255K36	61.90	3.18″	1.77″	3.88″	70255K46	135.13
32	2	3	7.5	15	15	3.18″	1.77″	3.17″	70255K37	101.25	3.18″	1.77″	3.88″	70255K47	158.48
Switch Four Circuits "On" (4PST-NO)															
25	0.75	2	3	5	7.5	3.18″	1.77″	3.17″	70255K65	53.94	3.18″	1.77″	3.88″	70255K28	116.94
28	1	2	5	7.5	10	3.18″	1.77″	3.17″	70255K39	69.65	3.18″	1.77″	3.88″	70255K49★	159.29
45	2	5	7.5	15	20	3.54″	2.40″	3.54″	70255K41	118.60	3.54″	2.40″	4.23″	70255K66	191.21

Accessories

Auxiliary Contact for 20-amp Relays to Switch Two Circuits, One "On" and One "Off" (1 NO/1 NC)	70255K13	$14.68
Auxiliary Contact for 25-45 amp Relays to Switch Two Circuits, One "On" and One "Off" (1 NO/1 NC)	70255K14	13.81
35 mm DIN Rail (1 m Lg.)	8961K15	4.96

■ Power consumption is 3.0 VA.
★ Resistive load @ 600 VAC is 32 amps. Single phase @ 240 VAC is 3 hp. Three phase @ 480 VAC is 10 hp. Three phase @ 600 VAC is 15 hp.

Intermittent-Use High-Amp Relays

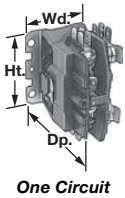

One Circuit

Also called definite-purpose contactors, these relays meet UL508 standards for applications such as air conditioning, refrigeration, and heating. They are compact, giving you more wiring room in small panels. All spring back (momentary) when power is removed. Mechanical life is 500,000 cycles. All have 3-4 mounting slots (hardware not included). Relays have screw-terminal connections and 1/4″ quick-disconnect terminals, except 6564K89, which does not have quick-disconnect terminals. All connections are accessible from the front for side-by-side mounting. Indoor (NEMA 1) enclosures are sold separately below. UL recognized, CSA certified, and CE approved.

To Order: Please specify control voltage: 24 VAC, 120 VAC, or 208/240 VAC.

Also Available: Auxiliary contacts (unless noted). Order 6564K99 and specify the McMaster-Carr part number of your relay and whether you want to switch one circuit "on" or "off" (1 NO or 1 NC).

Two Circuits

Three Circuits

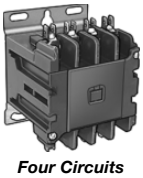

Four Circuits

Full Load Amp Rating @ 600 VAC	Resistive Load Amp Rating @ 600 VAC	Power Consumption	Three Phase Max. hp Ratings 230 VAC	460 VAC	575 VAC	Ht.	Wd.	Dp.		
Switch One Circuit "On" (SPST-NO)										
25	30	6 VA	3▲	—	—	3.19″	1.97″	2.32″	6564K85♣	$28.11
30	40	6 VA	5▲	—	—	3.19″	1.97″	2.32″	6564K72♣	36.34
40	50	6 VA	7.5▲	—	—	3.19″	1.97″	2.32″	6564K86♣	38.90
Switch Two Circuits "On" (DPST-NO)										
15	20	5.8-7 VA	2▲	—	—	3.75″	2.40″	3.35″	6564K91	31.36
20	30	6.5 VA	3▲	—	—	3.19″	1.97″	2.32″	6564K73♣	33.36
25	35	6.5 VA	3▲	—	—	3.19″	1.97″	2.32″	6564K74♣	42.64
30	40	6.5 VA	5▲	—	—	3.19″	1.97″	2.32″	6564K75♣	33.70
40	50	6.5 VA	7.5▲	—	—	3.19″	1.97″	2.32″	6564K76♣	58.86
50	65	7.6-10 VA	10▲	—	—	3.75″	2.40″	3.35″	6564K77●	92.73
60	75	36.5-50.4 VA	10▲	—	—	3.75″	2.63″	3.97″	6564K78●	112.87
75	90	36.5-50.4 VA	15▲	—	—	3.75″	2.63″	3.97″	6564K87●	135.60
90	120	19 VA	20▲	—	—	5.12″	3.39″	4.76″	6564K79●	225.00
Switch Three Circuits "On" (3PST-NO)										
15	20	5.8-7 VA	3	5	5	3.75″	2.40″	3.35″	6564K92	41.77
25	35	5.8-7 VA	7.5	10	10	3.75″	2.40″	3.35″	6564K93	52.09
30	40	5.8-7 VA	10	15	15	3.75″	2.40″	3.35″	6564K94	51.19
40	50	5.8-7 VA	10	20	20	3.75″	2.40″	3.35″	6564K95●	59.71
50	65	7.6-10 VA	15	30	30	3.75″	2.40″	3.35″	6564K96●	98.00
60	75	36.5-50.4 VA	20	40	40	3.75″	2.63″	3.97″	6564K97●	124.23
75	90	36.5-50.4 VA	20	50	50	3.75″	2.63″	3.97″	6564K88●	145.23
90	120	19 VA	30	50	50	5.12″	3.39″	4.76″	6564K98●	247.49
120	140	49.8 VA	—	—	—	7.17″	4.08″	5.94″	6564K89●	459.38
Switch Four Circuits "On" (4PST-NO)										
25	35	36.5-50.4 VA	7.5	10	10	3.75″	2.68″	3.38″	6564K1	70.25
30	40	36.5-50.4 VA	10	15	15	3.75″	2.68″	3.38″	6564K2	72.22
40	50	36.5-50.4 VA	10	20	20	3.75″	2.68″	3.38″	6564K3●	80.91

Indoor (NEMA 1) Enclosure for 6564K77, K91-K96	6564K887	49.49
Indoor (NEMA 1) Enclosure for 6564K78, K97, K1-K3	6564K889	103.42

▲ Single phase hp rating. ♣ Auxiliary contacts not available. ● Has box lug connections.

For information about electrical switches, see page 855. For information about high-amp relays, see page 902.

DIN-Rail Mount Intermittent-Use High-Amp Relays

Mount these relays to a 35 mm DIN rail for easy installation. Also known as definite purpose contactors, they have power terminal protection to prevent dangerous contact with energized parts and at least four 11/64″ wide mounting slots for surface mounting (hardware not included). All have a maximum voltage of 600 VAC and spring back (momentary) when power is removed. Mechanical life is 20 million cycles. UL and C-UL listed. 9114T32-T34 and T42-T44 have an auxiliary contact to switch one circuit from "off" to "on" (SPST-NO).

Relays with ***VAC control voltage*** come in a choice of control voltages. All have a power consumption of 6.5 VA. **To Order:** Please specify control voltage: 24 VAC, 120 VAC, or 230 VAC.

Relays with ***24 VDC control voltage*** have a power consumption of 5.4 watts.

Optional enclosures are plastic and IP65 rated for water projected from a nozzle. CSA certified.

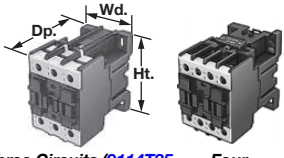

Three Circuits (9114T35, T36, T45, and T46) *Four Circuits*

Full Load Amp Rating @ 600 VAC	Resistive Load Amp Rating @ 600 VAC	MAXIMUM hp RATINGS Single Phase 120 VAC	Single Phase 240 VAC	Three Phase 240 VAC	Three Phase 480 VAC	VAC Control Voltage Ht.	Wd.	Dp.			24 VDC Control Voltage Ht.	Wd.	Dp.		
Relays															
Switch Three Circuits "On" (3PST-NO)															
20	30	1.5	3	5	10	3.18″	1.77″	3.17″	9114T32	$35.54	3.18″	1.77″	3.88″	9114T42	$74.93
25	30	2	3	5	10	3.18″	1.77″	3.17″	9114T33	43.20	3.18″	1.77″	3.88″	9114T43	86.15
30	32	2	5	7.5	15	3.18″	1.77″	3.17″	9114T34	54.27	3.18″	1.77″	3.88″	9114T44	102.17
40	50	3	7.5	10	30	3.54″	1.77″	3.54″	9114T35	80.27	3.54″	1.77″	4.23″	9114T45	142.51
50	55	3	10	15	30	3.54″	1.77″	3.54″	9114T36	114.39	3.54″	1.77″	4.23″	9114T46	165.51
Switch Four Circuits "On" (4PST-NO)															
20	30	1.5	3	5	10	3.18″	1.77″	3.17″	9114T37	40.78	3.18″	1.77″	3.17″	9114T53	80.48
25	30	2	3	5	10	3.18″	1.77″	3.17″	9114T38	52.88	—	—	—	—	—
30	32	2	5	7.5	15	3.18″	1.77″	3.17″	9114T39	63.68	—	—	—	—	—
40	50	3	7.5	10	30	3.54″	2.40″	3.54″	9114T41	90.51	—	—	—	—	—

Accessories

Auxiliary Contact Block to Switch Two Circuits, One from "Off" to "On" and One from "On" to "Off" (DPST-1NO/1NC)	9114T31	$10.44
Optional Enclosure for VAC 20-30 Full Load Amp Relays (6.11″ Ht.×7.95″ Wd.×3.46″ Dp.)	9114T51	28.05
Optional Enclosure for VAC 40-50 Full Load Amp Relays (6.65″ Ht.×9.21″ Wd.×4.33″ Dp.)	9114T52	74.17
35 mm DIN Rail (1 m Lg.)	8961K15	4.96

DIN-Rail Mount Long-Life High-Amp Relays

No moving parts means longer, quieter operation. Also known as contactors, these relays use solid-state technology to handle high current. They mount to a 35 mm DIN rail for easy installation and have mounting holes for surface mounting (hardware not included). Rated for continuous operating duty. Relays have a max. voltage of 600 VAC and spring back (momentary) when power is removed. All have screw-terminal connections, an integrated heatsink, and an LED indicator. They do not switch DC loads.

One-circuit relays are UL and C-UL listed and CE approved.

Two- and ***three-circuit*** relays are UL and C-UL recognized and CE approved.

One Circuit

Three Circuits

Control Voltage	Power Consumption	Full Load Amp Rating @ 600 VAC	MAXIMUM hp RATINGS Single Phase 115 VAC	Single Phase 230 VAC	Three Phase 230 VAC	Three Phase 460 VAC	Ht.	Wd.	Dp.		
Switch One Circuit "On" (SPST-NO)— *Four 4.3 mm dia. mounting holes.*											
20-275 VAC/24-190 VDC	22 mA	30	0.75	2	—	—	4.17″	0.89″	5.36″	6323T32	$77.59
20-275 VAC/24-190 VDC	22 mA	40	1	3	—	—	4.17″	1.40″	5.36″	6323T34	91.34
20-275 VAC/24-190 VDC	22 mA	60	1.5	3	—	—	4.17″	2.72″	5.36″	6323T36	123.76
4-32 VDC	13 mA	30	0.75	2	—	—	4.17″	0.89″	5.36″	6323T31	77.59
4-32 VDC	13 mA	40	1	3	—	—	4.17″	1.40″	5.36″	6323T33	89.38
4-32 VDC	13 mA	60	1.5	3	—	—	4.17″	2.72″	5.36″	6323T35	121.79
Switch Two Circuits "On" (2PST-NO)— *Two 5 mm dia. mounting holes.*											
4-32 VDC	15 mA	30	—	—	—	—	4.04″	1.77″	4.06″	6323T17	212.44
4-32 VDC	15 mA	45	—	—	—	—	4.04″	3.54″	4.06″	6323T18	271.22
Switch Three Circuits "On" (3PST-NO)— *Four 5 mm dia. mounting holes.*											
24-275 VAC/24-190 VDC	15 mA	25	—	—	3	7.5	4.04″	3.54″	4.06″	6323T21	232.03
5-32 VDC	24 mA	25	—	—	3	7.5	4.04″	3.54″	4.06″	6323T19	207.28
35 mm DIN Rail (1 m Lg.)										8961K15	4.96

DC Voltage High-Amp Relays

Use on DC-powered equipment such as forklifts and floor scrubbers. Also known as solenoids and contactors, these relays accept a DC control voltage and switch a DC load. Rated for continuous operating duty for cycles that run longer than 30 seconds. All spring back (momentary) when power is removed and have an isolated coil (except 7995K15 and K23) for less arcing. They have 5/16″-24 threaded stud post terminals. Mechanical life is 100,000 cycles, except for 7995K11-K17, which have a mechanical life of 250,000 cycles.

Note: To find a replacement unit, match the amp rating and number of terminals on the old unit.

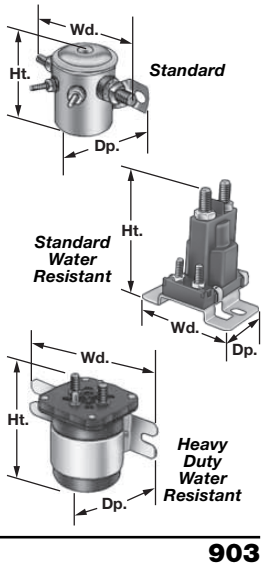

Control Voltage	Power Consumption	No. of Circuits Switched	Before Switching, Circuit Is	Industry Designation	Full Load Amp Rating @ VDC	No. of Terminals	Ht.	Wd.	Dp.		
Standard— *Two 0.281″ Wd.×0.4″ Lg. mounting slots. UL recognized.*											
12 VDC	9 VA	1	Off	SPST-NO	80 @ 12	4	2.47″	3.48″	2.40″	7995K11	$19.54
12 VDC	10 VA	1	Off or On	SPDT	80 @ 12	6	3.31″	3.48″	2.40″	7995K16	45.70
24 VDC	9 VA	1	Off	SPST-NO	50 @ 24	3	2.47″	3.48″	2.40″	7995K15	19.61
24 VDC	9 VA	1	Off	SPST-NO	50 @ 24	4	2.47″	3.48″	2.40″	7995K12	19.00
24 VDC	10 VA	1	Off or On	SPDT	50 @ 24	6	3.31″	3.48″	2.40″	7995K17	45.61
Standard Water Resistant— *Two 0.281″ Wd.×0.4″ Lg. mounting slots.*											
12 VDC	8.1 VA	1	Off	SPST-NO	100 @ 12	4	3.25″	2.88″	2.13″	7995K41	22.80
24 VDC	8.1 VA	1	Off	SPST-NO	100 @ 24	4	3.25″	2.88″	2.13″	7995K42	22.80
36 VDC	8.1 VA	1	Off	SPST-NO	100 @ 36	4	3.25″	2.88″	2.13″	7995K43	22.80
Heavy Duty— *Two 0.281″ Wd.×0.5″ Lg. mounting slots.*											
12 VDC	12 VA	1	Off	SPST-NO	100 @ 12	3	3.56″	3.13″	2.19″	7995K23	32.59
12 VDC	12 VA	1	Off	SPST-NO	100 @ 12	4	3.56″	3.13″	2.19″	7995K21	32.59
24 VDC	12 VA	1	Off	SPST-NO	100 @ 24	4	3.56″	3.13″	2.19″	7995K25	32.59
36 VDC	12 VA	1	Off	SPST-NO	100 @ 36	4	3.56″	3.13″	2.19″	7995K22	32.59
36 VDC	12 VA	1	Off or On	SPDT	100 @ 36	6	4.69″	3.13″	2.19″	7995K24	50.57
Heavy Duty Water Resistant— *Two 0.281″ Wd.×0.6″ Lg. mounting slots.*											
12 VDC	8 VA	1	Off	SPST-NO	200 @ 12	4	3.69″	3.30″	2.90″	7995K31	48.16
12 VDC	12 VA	1	Off or On	SPDT	200 @ 12	6	4.61″	3.30″	2.90″	7995K32	67.57
24 VDC	12 VA	1	Off or On	SPDT	200 @ 24	6	4.61″	3.30″	2.90″	7995K33	67.57

Long-Life High-Amp Relays

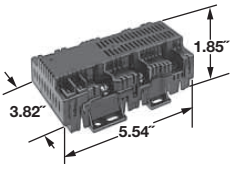

With no moving parts, these relays will last longer than other types. Their unique combination of hybrid solid state and electromechanical switching allows you to rapidly switch up to 35 amps for millions of cycles. Originally designed for food service applications, they can be used in certain applications where mercury relays have been used in the past.

Relays are for use with resistive loads and cannot be used with motor loads. All spring back (momentary) when control voltage is removed. *Note:* Relays cannot be used with an RC snubber on the control signal input or relay output because leakage current through the snubber circuit can turn the relay on, even when the command signal is off.

These relays do not require a heat sink like most solid-state relays. They have six 1/4″ dia. mounting holes for surface mounting (mounting hardware not included) and an LED indicating light that shows if the relay is open or closed. Control terminals have 1/4″ quick-disconnect connections and the load terminals have screw terminal connections. UL and C-UL recognized. CE approved.

Control Voltage	Power Consumption	Amp Rating		
Switch One Circuit "On" (SPST-NO)				
24 VAC/3-24 VDC	0.36 VA	35 amps @ 120 VAC	**8670K1**	$49.43
24 VAC/3-24 VDC	0.72 VA	35 amps @ 240 VAC	**8670K3**	49.43
110-240 VAC	0.36 VA	35 amps @ 120 VAC	**8670K2**	49.43
110-240 VAC	0.72 VA	35 amps @ 240 VAC	**8670K4**	49.43
Switch Two Circuits "On" (DPST-NO)				
24 VAC/3-24 VDC	0.72 VA	35 amps @ 240 VAC	**8670K5**	87.45
110-240 VAC	0.72 VA	35 amps @ 240 VAC	**8670K6**	87.45
Switch Three Circuits "On" (3PST-NO)				
24 VAC/3-24 VDC	0.72 VA	35 amps @ 240 VAC	**8670K7**	125.47
110-240 VAC	0.72 VA	35 amps @ 240 VAC	**8670K8**	125.47

About Medium-Amp Relays (Power Relays)

Medium-amp relays, also known as power relays, switch medium currents without direct physical contact from personnel. Like high-amp relays but smaller, they use an electrical signal or control voltage to switch medium-amp circuits such as lighting and motor circuits. They are typically rated for applications up to 3 hp.

Medium-Amp Relays

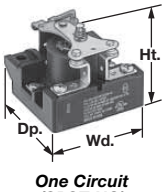

One Circuit (SPST-NO)

Two Circuits (DPDT)

Four Circuits (4PDT)

Optional Dust Cover for One- and Two-Circuit Relays

Optional Dust Cover for Four-Circuit Relays

Compared to the high-amp relays on this page, these relays, also known as power relays, are smaller and can still handle lighting and motor loads. Relays have screw-terminal connections and can be surface mounted. All spring back (momentary) when power is removed. UL and C-UL listed.

One- and ***two-circuit*** relays have molded plastic bases with two 3/16″ dia. mounting holes (hardware not included). Mechanical life is 1 million cycles. All are 2.2″ Ht.×2.5″ Wd.×2.5″ Dp., except DPDT relays are 2.38″ Ht.×2.5″ Wd.×3.32″ Dp. *Optional dust cover* is aluminum with two 1″ trade size knockout holes. Size is 3″ Ht.×5″ Wd.×4″ Dp.

Four-circuit relays have three 7/32″ dia. mounting holes (hardware included). Maximum voltage is 277 VAC and mechanical life is 10 million cycles. All are 2.7″ Ht.×2.7″ Wd.×3.4″ Dp. *Optional dust cover* is steel with four 3/4″ trade size knockout holes. Size is 3.81″ Ht.×3.81″ Wd.×5.31″ Dp.

Control Voltage	Power Consumption	Amp Rating @ 120 VAC	Amp Rating @ 28 VDC	Max. hp @ 120 VAC	Max. hp @ 240 VAC		
Switch One Circuit "On" (SPST-NO)							
24 VAC	396 mA	30	30	1.5	1.5	**7384K12**	$16.16
120 VAC	79 mA	30	30	1.5	1.5	**7384K11**	16.16
240 VAC	40 mA	30	30	1.5	1.5	**7384K15**	27.27
12 VDC	167 mA	30	30	1.5	1.5	**7384K13**	21.41
24 VDC	83 mA	30	30	1.5	1.5	**7384K16**	21.41
Switch One Circuit "On" or "Off" (SPDT)							
24 VAC	396 mA	30	30	1.5	1.5	**7384K58**	20.07
120 VAC	79 mA	30	30	1.5	1.5	**7384K21**	20.15
240 VAC	40 mA	30	30	1.5	1.5	**7384K56**	34.63
12 VDC	167 mA	30	30	1.5	1.5	**7384K52**	19.53
24 VDC	83 mA	30	30	1.5	1.5	**7384K53**	19.53
Switch Two Circuits "On" (DPST-NO)							
24 VAC	396 mA	30	30	1.5	1.5	**7384K14**	21.73
120 VAC	79 mA	30	30	1.5	1.5	**7384K31**	21.73
240 VAC	40 mA	30	30	1.5	1.5	**7384K51**	22.03
12 VDC	167 mA	30	30	1.5	1.5	**7384K32**	20.97
24 VDC	83 mA	30	30	1.5	1.5	**7384K34**	20.97

♣ Amp rating is @ 24 VDC.

Control Voltage	Power Consumption	Amp Rating @ 120 VAC	Amp Rating @ 28 VDC	Max. hp @ 120 VAC	Max. hp @ 240 VAC		
Switch Two Circuits "On" or "Off" (DPDT)							
24 VAC	396 mA	30	30	1.5	1.5	**7384K55**	$27.00
120 VAC	79 mA	30	30	1.5	1.5	**7384K41**	27.10
240 VAC	40 mA	30	30	1.5	1.5	**7384K42**	27.42
12 VDC	167 mA	30	30	1.5	1.5	**7384K43**	26.34
24 VDC	83 mA	30	30	1.5	1.5	**7384K44**	26.34
Switch Four Circuits "On" or "Off" (4PDT)							
12 VAC	1,166 mA	35	20♣	1	1.5	**2830T11**	164.07
24 VAC	583 mA	35	20♣	1	1.5	**2830T12**	138.31
120 VAC	116 mA	35	20♣	1	1.5	**2830T13**	110.64
12 VDC	366 mA	35	20♣	1	1.5	**2830T14**	138.31
24 VDC	183 mA	35	20♣	1	1.5	**2830T15**	138.31
Optional Dust Covers							
For One- and Two-Circuit Relays						**7384K45**	18.96
For Four-Circuit Relays						**2830T16**	47.46

For information about electrical switches, see page 855. For information about medium-amp relays, see page 904.

Enclosed Medium-Amp Relays

Increase reliability by protecting contacts from dust and grime. Also known as power relays. All spring back (momentary) when power is removed. They are surface mountable with two 0.18″ dia. mounting holes (hardware not included), unless noted.

Standard relays have a built-in mounting flange and quick-disconnect terminals on top for easy installation, unless noted. All have a contact test button and are rated 1.5 hp @ 120 VAC and 3 hp @ 240/265/277 VAC, except *two-circuit relays* which are rated 1 hp @ 120 VAC and 2 hp @ 240/265/277 VAC. UL recognized, CSA certified, and CE approved. *One-* and *two-circuit relays* have 0.25″ wide terminals. Mechanical life is 5 million cycles. *Four-circuit relays* offer more flexibility for three-phase controlling and are also suitable for single-phase motors. Rated @ 24 VDC for the amp ratings given in the table. They have screw terminal connections and a mechanical life of 1 million cycles.

Easy-mount relay has an indoor (NEMA 1) enclosure with 16″ wire leads in a ½″ trade size conduit connection. Rated 1 hp @ 120 VAC. They are also rated @ 24 VDC for the amp ratings given in the table. It has an LED indicating light and two 0.20″ dia. mounting holes (hardware included). Mechanical life is 10 million cycles. UL and C-UL listed.

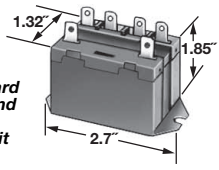

Standard One and Two Circuit

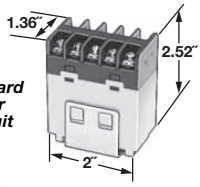

Standard Four Circuit

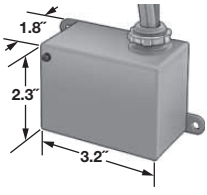

Easy Mount

Control Voltage	Power Consumption	Amp Rating @ 220 VAC		
Standard Relays				
Switch One Circuit "On" (SPST-NO)				
24 VAC	71 mA	30	**7678K51**	$15.31
120 VAC	20 mA	30	**7678K52**	15.31
240 VAC	10 mA	30	**7678K53**	15.45
Switch Two Circuits "On" (DPST-NO)				
24 VAC	71 mA	25	**7678K61**	15.87
120 VAC	20 mA	25	**7678K62**	15.87
240 VAC	10 mA	25	**7678K63**	15.88
12 VDC	158 mA	25	**7678K41**	17.14
24 VDC	79 mA	25	**7678K42**	17.14
Switch Four Circuits, Two "On" and Two "Off" (4PST-2NO/2NC)				
120 VAC	22 mA	25 (NO)/8 (NC)	**7105K15**	44.65
240 VAC	11 mA	25 (NO)/8 (NC)	**7105K16**	44.23
24 VDC	83 mA	25 (NO)/8 (NC)	**7105K19**	46.42

✓ Power consumption is 125 mA @ 24 VAC, 50 mA @ 24 VDC.

Control Voltage	Power Consumption	Amp Rating @ 220 VAC		
Standard Relays (Cont.)				
Switch Four Circuits, Three "On" and One "Off" (4PST-3NO/1NC)				
120 VAC	22 mA	25 (NO)/8 (NC)	**7105K13**	$44.65
24 VDC	83 mA	25 (NO)/8 (NC)	**7105K18**	46.43
Switch Four Circuits "On" (4PST-NO)				
120 VAC	22 mA	25	**7105K11**	44.65
240 VAC	11 mA	25	**7105K12**	44.23
24 VDC	83 mA	25	**7105K17**	44.32
Easy-Mount Relay				
Switch Two Circuits, One "On" and One "Off" (DPST-NO/NC)				
24 VAC	125/50 mA✓	30/25	**4771T1**	53.36

Long-Life Medium-Amp Relays

No moving parts means a quieter and longer-lasting relay (also known as solid state relays). A built-in safeguard protects against high inrush current. All have screw-terminal connections and spring back (momentary) when power is removed. Mounting hardware not included.

35 mm DIN Rail (1 m Lg.) **8961K15** $4.96

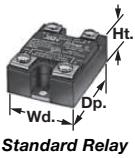

Standard Relay

Touchsafe Relay

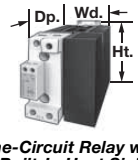

One-Circuit Relay with Built-In Heat Sink

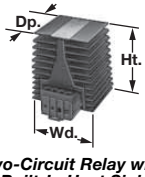

Two-Circuit Relay with Built-In Heat Sink

Relays and Optional Heat Sinks

Standard relays have two 0.19″ dia. mounting holes. Size is 1″ Ht.×1.75″ Wd.×2.25″ Dp. UL recognized and CSA certified.

Touchsafe relays have a cover to prevent contact with live terminals. They are 1.13″ Ht.×1.76″ Wd.×2.29″ Dp. and have two 0.21″ dia. mounting holes, except 75- and 90-amp relays, which are 1.10″ Ht.×1.69″ Wd.×2.28″ Dp. and have two 0.18″ dia. mounting holes. UL recognized, CSA certified, and CE approved.

Heat sinks disperse heat to increase the amp rating of standard and touchsafe relays. DIN-rail mountable (DIN-rail sold separately). Apply a thin layer of ***heat sink silicone compound*** (sold separately) between the heat sink and the relay before mounting.

Control Voltage	Amp Rating with/without Optional Heat Sink		
Standard Relays			
Switch One Circuit "On" (SPST-NO)			
70-140 VAC	25/ 7.5 @ 300 VAC	**7456K13**	$59.35
3-30 VAC/VDC	25/ 7.5 @ 300 VAC	**7456K14**	56.62
Switch One Circuit "Off" (SPST-NC)			
70-140 VAC	25/ 7.5 @ 300 VAC	**7456K15**	61.45
3-30 VAC/VDC	25/ 7.5 @ 300 VAC	**7456K16**	61.69
Touchsafe Relays			
Switch One Circuit "On" (SPST-NO)			
100-240 VAC	75/ 7 @ 240 VAC	**7456K66**	85.11
100-240 VAC	90/ 7 @ 240 VAC	**7456K67**	101.86
20-280 VAC/22-48 VDC	25/10 @ 230 VAC	**7456K62**	48.32
20-280 VAC/22-48 VDC	50/10 @ 230 VAC	**7456K64**	55.39
3-32 VDC	25/10 @ 230 VAC	**7456K61**	47.14
3-32 VDC	50/10 @ 230 VAC	**7456K63**	54.21
5-24 VDC	75/ 7 @ 240 VAC	**7456K65**	85.11
5-24 VDC	90/ 7 @ 240 VAC	**7456K68**	101.86
Optional Heat Sinks			
For 25-amp Relays (2.63″ Ht.×4.75″ Wd.×5.63″ Dp.)		**7456K29**	76.25
For 50-amp Relays (1.77″ Ht.×2.95″ Wd.×3.23″ Dp.)		**7456K33**	46.22
For 75- and 90-amp Relays (4.33″ Ht.×5.25″ Wd.×6.77″ Dp.)		**7456K69**	317.04
Heat Sink Silicone Compound (8 oz.)		**10405K79**	40.04

Relays with Built-In Heat Sink

A heat sink is mounted in the front for optimal convection cooling. DIN-rail mountable (DIN rail sold separately).

One-circuit relays are UL and C-UL listed. *30-amp relays* are 4.2″ Ht.×0.9″ Wd.×5.4″ Dp. *60-amp relays* are 4.2″ Ht.×2.7″ Wd.×5.4″ Dp.

Two-circuit relays are UL recognized and CSA certified. *30-amp relays* are 4.7″ Ht.×4.3″ Wd.×1.77″ Dp. *50-amp relays* are 4.7″ Ht.×4.3″ Wd.×3.5″ Dp.

Control Voltage	Amp Rating		
Switch One Circuit "On" (SPST-NO)			
20-275 VAC/ 24-190 VDC	30 A @ 230 VAC	**7456K78**	$90.85
20-275 VAC/ 24-190 VDC	60 A @ 230 VAC	**7456K79**	111.65
3-32 VDC	30 A @ 230 VAC	**7456K74**	81.97
3-32 VDC	60 A @ 230 VAC	**7456K75**	108.24
Switch Two Circuits "On" (DPST-NO)			
24-265 VAC/VDC	30 @ 230 VAC	**7456K45**	186.21
24-265 VAC/VDC	30 @ 480 VAC	**7456K47**	194.46
24-265 VAC/VDC	50 @ 230 VAC	**7456K46**	212.20
24-265 VAC/VDC	50 @ 480 VAC	**7456K48**	220.39
5-32 VDC	30 @ 230 VAC	**7456K43**	181.50
5-32 VDC	30 @ 480 VAC	**7456K51**	189.75
5-32 VDC	50 @ 230 VAC	**7456K44**	209.76
5-32 VDC	50 @ 480 VAC	**7456K49**	218.04

For information about electrical switches, see page 855.

About Relays

Relays switch circuits without direct physical contact from personnel. Typically used in control applications, they allow remote switching of electrical loads. They use an electrical signal or control voltage to switch circuits.

Don't see the relay you need? Just tell us what you're looking for and we'll get it for you.

Circular-Pin Relays

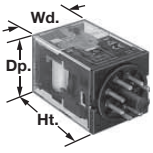

8-Pin Relay

11-Pin Relay

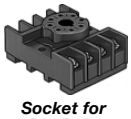

Socket for 8-Pin Relays

Socket for 11-Pin Relays

Easy to install and maintain, these relays plug right into a socket (sold separately). Also known as ice cube relays, they have clear plastic dust covers, unless noted. All spring back (momentary) when power is removed.

Standard Relays

Relays with LED indicate when they are energized. UL recognized and CSA certified. ***One-circuit relays*** are 2.28″ Ht. × 1.38″ Wd. × 1.38″ Dp. Mechanical life is 100,000 cycles. ***Two-circuit*** and ***three-circuit relays*** have a lockable test button. They are 2.07″ Ht. × 1.36″ Wd. × 1.36″ Dp. Mechanical life is 5 million cycles.

Control Voltage	Power Consumption	Amp Rating @ 250 VAC		
Switch One Circuit "On" or "Off"—SPDT (8 Pin)				
12 VAC	235 mA	10■	**7170K51**	$19.01
24 VAC	175 mA	10■	**7170K2**	18.92
120 VAC	28 mA	10■	**7170K3**	19.46
240 VAC	13 mA	10■	**7170K4**	20.71
12 VDC	115 mA	10■	**7170K52**	18.04
24 VDC	52 mA	10■	**7170K1**	18.13
120 VDC	14 mA	10■	**7170K53**	20.26
Switch Two Circuits "On" or "Off"—DPDT (8 Pin)				
12 VAC	193 mA	10	**7170K42**	12.74
24 VAC	96 mA	10	**7170K19**	12.74
24 VAC	96 mA	10	**7170K31**♦	15.34
120 VAC	19 mA	10	**7170K13**	13.85
120 VAC	19 mA	10	**7170K21**♦	16.45
240 VAC	9 mA	10	**7170K15**	15.09
12 VDC	112 mA	10	**7170K41**	13.54
24 VDC	55 mA	10	**7170K11**	13.54
24 VDC	55 mA	10	**7170K43**♦	16.32
Switch Three Circuits "On" or "Off"—3PDT (11 Pin)				
24 VAC	96 mA	10	**7170K22**	15.48
120 VAC	19 mA	10	**7170K14**	15.93
120 VAC	19 mA	10	**7170K25**♦	17.96
240 VAC	9 mA	10	**7170K16**	17.51
12 VDC	112 mA	10	**7170K44**	16.93
24 VDC	55 mA	10	**7170K12**	16.93

■ Amp rating @ 240 VAC. ♦ With LED indicator.

Premium Relays

Get your motor running with a relay tough enough for motors and pumps. Rated ½ hp @ 240 VAC and ⅓ hp @ 120 VAC. All are 1.92″ Ht. × 1.38″ Wd. × 1.47″ Dp. Mechanical life is 10 million cycles. UL recognized and CSA certified.

Two-circuit and ***three-circuit relays*** have an indicator light to signal when they are energized, except 7580T44.

Control Voltage	Power Consumption	Amp Rating @ 240 VAC/28 VDC		
Switch One Circuit "On" or "Off"—SPDT (8 Pin)				
24 VAC	84 mA	10	**7580T2**	$25.62
120 VAC	18 mA	10	**7580T3**	25.62
12 VDC	100 mA	10	**7580T52**	26.12
24 VDC	51 mA	10	**7580T1**	26.12
110 VDC	12 mA	10	**7580T53**	28.75
Switch Two Circuits "On" or "Off"—DPDT (8 Pin)				
12 VAC	168 mA	10	**7580T42**	19.28
24 VAC	84 mA	10	**7580T31**	19.28
120 VAC	18 mA	10	**7580T21**	20.57
240 VAC	9 mA	10	**7580T15**	21.91
12 VDC	100 mA	10	**7580T41**	19.29
24 VDC	51 mA	10	**7580T43**	19.29
Switch Three Circuits "On" or "Off"—3PDT (11 Pin)				
24 VAC	84 mA	10	**7580T22**	40.16
120 VAC	18 mA	10	**7580T25**	22.54
240 VAC	9 mA	10	**7580T16**	23.86
12 VDC	100 mA	10	**7580T44**	20.94
24 VDC	51 mA	10	**7580T12**	21.58

Long-Life Relays

They'll outlast other relays because they're solid-state. Use for high-speed switching at low current levels. Both switch one circuit "on" (SPST-NO) and have eight pins. Size is 2.1″ Ht. × 1.4″ Wd. × 1.4″ Dp. Dust cover is black.

Control Voltage	Amp Rating		
5-24 VDC	5 @ 100-240 VAC	**9250K1**	$93.31
5-24 VDC	3 @ 5-110 VDC	**9250K2**	93.31

Accessories

Sockets are DIN-rail or surface mountable. They have two 0.165″ dia. mounting holes (hardware not included). See page 910 for more socket information.

Socket for 8-Pin Relays	**7122K19**	$4.07
Socket for 11-Pin Relays	**7122K21**	6.89
35 mm DIN Rail (1 m Lg.)	**8961K15**	4.96

Spade-Terminal Relays

5-Pin Relay

8-Pin Relay

11-Pin Relay

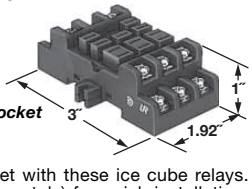

Socket

Connection versatility is what you get with these ice cube relays. Just plug them into a socket (sold separately) for quick installation, use standard 0.187″ quick-disconnect terminals, or solder wires directly to terminals. All spring back (momentary) when power is removed. Mechanical life is 100,000 cycles. Size is 1.87″ Ht. × 1.5″ Wd. × 1.37″ Dp. UL recognized and CSA certified.

One-circuit and ***two-circuit relays*** are rated ¾ hp @ 120 VAC and ½ hp @ 240 VAC. ***Three-circuit relays*** are rated ½ hp @ 120 VAC/240 VAC.

Socket (sold separately) is DIN-rail or surface mountable (has two 0.16″ dia. mounting holes, hardware not included).

Control Voltage	Power Consumption	Amp Rating @ 240 VAC		
Switch One Circuit "On" or "Off"—SPDT (5 Pin)				
12 VAC	225 mA	10	**7266K31**	$13.30
24 VAC	170 mA	10	**7266K58**	13.20
120 VAC	28 mA	10	**7266K61**	13.80
240 VAC	12 mA	10	**7266K62**	15.20
12 VDC	115 mA	10	**7266K41**	12.20
24 VDC	52 mA	10	**7266K51**	12.30
120 VDC	14 mA	10	**7266K42**	14.50
Switch Two Circuits "On" or "Off"—DPDT (8 Pin)				
12 VAC	225 mA	10	**7266K32**	15.90
24 VAC	170 mA	10	**7266K63**	15.40
120 VAC	28 mA	10	**7266K54**	16.20
240 VAC	12 mA	10	**7266K56**	17.60
12 VDC	115 mA	10	**7266K43**	14.60
24 VDC	52 mA	10	**7266K52**	14.70
120 VDC	14 mA	10	**7266K44**	16.90
Switch Three Circuits "On" or "Off"—3PDT (11 Pin)				
12 VAC	225 mA	6.6	**7266K33**	18.60
24 VAC	170 mA	6.6	**7266K59**	18.50
120 VAC	28 mA	6.6	**7266K55**	19.00
240 VAC	12 mA	6.6	**7266K57**	20.40
12 VDC	115 mA	6.6	**7266K45**	17.40
24 VDC	52 mA	6.6	**7266K53**	17.50
120 VDC	14 mA	6.6	**7266K46**	19.80

Socket for All Relays Above	**7266K17**	10.50
35 mm DIN Rail *(1 m Lg.)*	**8961K15**	4.96

For information about electrical switches, see page 855. For information about relays, see page 906.

Don't see the relay you need? Just tell us what you're looking for and we'll get it for you.

Compact Spade-Terminal Relays

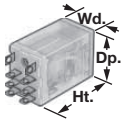

8-Terminal Relay (15 and 16 Amp)

11-Terminal Relay

14-Terminal Relay (15 Amp)

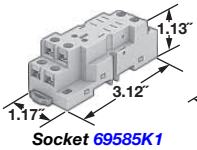

Socket 69585K1

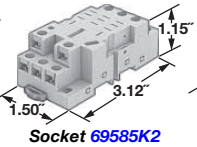

Socket 69585K2

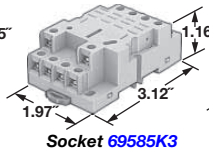

Socket 69585K3

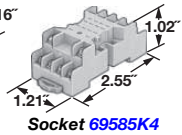

Socket 69585K4

Get connection versatility in a small package. Terminals can plug into a socket (sold separately) for quick installation, connect to 0.187″ quick-disconnect terminals (unless noted), or be soldered. A push button and indicator let you test the circuit without energizing the relay. An LED tells you when they are energized; a write-on label simplifies identification. All spring back (momentary) when power is removed. Mechanical life is 10 million cycles. Maximum voltage is 277 VAC/220 VDC. Relays and sockets are UL recognized, CSA certified, and CE approved. Relays are UL listed when used with the suggested sockets.

Relays are 1.54″ Ht.×0.83″ Wd.×1.10″ Dp., except 11-terminal relays are 1.54″ Ht.×1.21″ Wd.×1.10″ Dp. and 15-amp 14-terminal relays are 1.54″ Ht.×1.60″ Wd.×1.10″ Dp.

Sockets have screw-terminal connections and are DIN-rail or surface mountable (have two 0.38″ dia. mounting holes, hardware not included).

Control Voltage	Power Consumption	Amp Rating @ 120 VAC/ 28 VDC	Relays		Sockets	
Switch One Circuit "On" or "Off"—SPDT (8 Terminals)						
24 VAC	50 mA	16/16	69585K37	$10.20	69585K1	$6.73
120 VAC	10 mA	16/16	69585K38	10.20	69585K1	6.73
240 VAC	5 mA	16/16	69585K39	10.20	69585K1	6.73
24 VDC	38 mA	16/16	69585K49	10.20	69585K1	6.73
Switch Two Circuits "On" or "Off"—DPDT (8 Terminals)						
24 VAC	50 mA	10/ 8	69585K84★	8.90	69585K4	6.08
24 VAC	50 mA	15/12	69585K57	10.59	69585K1	6.73
120 VAC	10 mA	10/ 8	69585K85★	8.90	69585K4	6.08
120 VAC	10 mA	15/12	69585K58	10.59	69585K1	6.73
240 VAC	5 mA	10/ 8	69585K86★	8.90	69585K4	6.08
240 VAC	5 mA	15/12	69585K59	10.59	69585K1	6.73
12 VDC	75 mA	10/ 8	69585K87★	8.90	69585K4	6.08
12 VDC	75 mA	15/12	69585K66	10.59	69585K1	6.73
24 VDC	38 mA	10/ 8	69585K88★	8.90	69585K4	6.08
24 VDC	38 mA	15/12	69585K67	10.59	69585K1	6.73
Switch Three Circuits "On" or "Off"—3PDT (11 Terminals)						
24 VAC	91 mA	15/15	69585K68	$16.45	69585K2	$8.55
120 VAC	18 mA	15/15	69585K69	16.45	69585K2	8.55
240 VAC	9 mA	15/15	69585K71	16.45	69585K2	8.55
12 VDC	116 mA	15/15	69585K72	16.45	69585K2	8.55
24 VDC	58 mA	15/15	69585K73	16.45	69585K2	8.55
Switch Four Circuits "On" or "Off"—4PDT (14 Terminals)						
24 VAC	50 mA	10/ 8	69585K89★	11.25	69585K4	6.08
24 VAC	108 mA	15/15	69585K74	15.58	69585K3	10.35
120 VAC	10 mA	10/ 8	69585K91★	11.25	69585K4	6.08
120 VAC	22 mA	15/15	69585K79	15.58	69585K3	10.35
240 VAC	5 mA	10/ 8	69585K92★	11.25	69585K4	6.08
240 VAC	11 mA	15/15	69585K95	15.58	69585K3	10.35
12 VDC	75 mA	10/ 8	69585K93★	11.25	69585K4	6.08
12 VDC	125 mA	15/15	69585K55	15.58	69585K3	10.35
24 VDC	38 mA	10/ 8	69585K94★	11.25	69585K4	6.08
24 VDC	63 mA	15/15	69585K96	15.58	69585K3	10.35

35 mm DIN Rail *(1 m Lg.)* 8961K15 $4.96

★ Connects to a 0.110″ quick-disconnect terminal.

Slim Spade-Terminal Relays

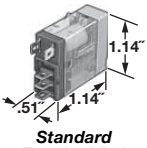

Standard 5-Terminal Relay

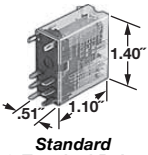

Standard 8-Terminal Relay

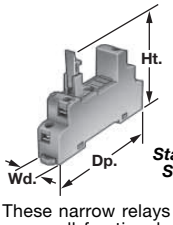

Standard Socket

Save valuable space on your DIN rail. These narrow relays are for low-current switching applications such as small fractional motors, safety circuits, and pilot lights. Just plug into a socket (sold separately below) for quick installation. All spring back (momentary) when power is removed. UL recognized and CSA certified.

Standard relays have a mechanical life of 10 million cycles for VAC operation, 20 million for VDC. *One-circuit relays* are rated 0.33 hp @ 125 VAC. *Two-circuit relays* are rated 0.16 hp @ 120 VAC. ***Long-life relay*** is silent and long-lasting because it's solid state (has no moving parts). Use for high-speed switching at low current levels.

Sockets are DIN-rail mountable. *Standard* sockets are surface mountable (have one 0.14″ dia. mounting hole, hardware not included). They have screw-terminal connections. Size is 2.4″ Ht.×0.63″ Wd.×3.57″ Dp. *Sure-connect* sockets have screwless spring-clamp terminals to withstand temperature changes and vibration. Size is 2.5″ Ht.×1.06″ Wd.×3.56″ Dp. **To Order:** Please specify standard or sure-connect.

Control Voltage	Power Consumption	Amp Rating @ 120 VAC/ 28 VDC	Relays		Sockets	
Standard Relays						
Switch One Circuit "On" or "Off"—SPDT (5 Terminals)						
120 VAC	8 mA	10	7098K12	$11.61	7098K17	$6.15
240 VAC	4 mA	10	7098K13	19.26	7098K17	6.15
24 VDC	22 mA	10	7098K11	7.11	7098K17	6.15
Switch Two Circuits "On" or "Off"—DPDT (8 Terminals)						
120 VAC	8 mA	5	7098K15	12.71	7098K18	9.96
240 VAC	4 mA	5	7098K16	20.59	7098K18	9.96
24 VDC	22 mA	5	7098K14	9.12	7098K18	9.96
Long-Life Relays						
Switch One Circuit "On"—SPST (4 Terminals)						
5-24 VDC	———	2▲	9938K53	23.16	7098K17	6.15

35 mm DIN Rail *(1 m Lg.)* 8961K15 $4.96

▲ Amp rating @ 75-264 VAC.

Flange-Mount Spade-Terminal Relays

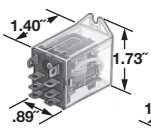

Standard 8-Terminal Relay

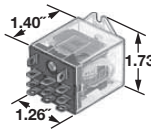

Standard 11-Terminal Relay

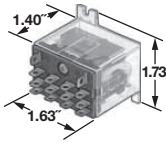

Standard 14-Terminal Relay

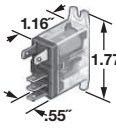

Slim Relay

Mount these flanged relays to a flat surface. They have two 0.14″ wide mounting slots. All spring back (momentary) when power is removed. UL recognized and CSA certified.

Standard relays can plug into a socket (sold separately). Rated 10 amps @ 110 VAC, except 70315K31, which is rated 15 amps @ 110 VAC. *One-circuit* and *two-circuit relays* are rated 0.50 hp @ 120 VAC. *Three-circuit* and *four-circuit relays* are rated 0.50 hp @ 240 VAC. Mechanical life is 50 million cycles. ***Slim relays*** save space and have 0.187″ quick-disconnect terminals. Rated 10 amps @ 250 VAC/30 VDC and 0.33 hp @ 125 VAC. Mechanical life is 10 million cycles for VAC operation and 20 million cycles for VDC operation.

To Order: Please specify control voltage (power consumption): 24 VAC (46 mA) or 120 VAC (9 mA), unless noted.

Sockets have screw-terminal connections and are DIN-rail or surface mountable (have two mounting holes, hardware not included). See page 910 for more socket information.

No. of Circuits Switched	No. of Terminals	Industry Designation	Relays		Sockets	
Standard Relays						
1	8	SPDT	70315K31	$10.46	7122K22	$6.68
2	8	DPDT	70315K32	10.56	7122K22	6.68
3	11	3PDT	70315K33	15.86	7122K23	8.23
4	14	4PDT	70315K34	18.45	7122K24	8.76
Slim Relays						
1	5	SPDT	7098K54	9.36	———	———
1	5	SPDT	7098K53♠	7.21	———	———

35 mm DIN Rail *(1 m Lg.)* 8961K15 $4.96

♠ Control voltage is 24 VDC. Power consumption is 22 mA.

For information about electrical switches, see page 855. For information about relays, see page 906.

Don't see the relay you need? Just tell us what you're looking for and we'll get it for you.

Long-Life Spade-Terminal Relays

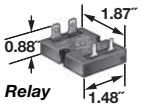

Relay

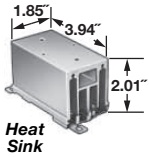

Heat Sink

Solid-state relays have no moving parts, so they last longer. Use for high-speed switching at low current levels. Both spring back (momentary) when power is removed.

Relays have two 0.110″ quick-disconnect terminals on the input side; two 0.250″ quick-disconnect terminals on the output side. Both switch one circuit "on" (SPST-NO). They have two 0.138″ dia. mounting holes (hardware not included). UL recognized and CSA certified.

To Order: Please specify control voltage: 5 VDC, 12 VDC, or 24 VDC.

Heat sink is for high-current applications. DIN-rail or surface mountable (has two 0.17″ dia. mounting holes).

Amp Rating @ 100-240 VAC: With Heat Sink	Without Heat Sink		
5	5	8192K21	$18.19
10	5	8192K22	20.00
Heat Sink		8192K31	17.57
35 mm DIN Rail (1 m Lg.)		8961K15	4.96

Ultra-Thin Relays

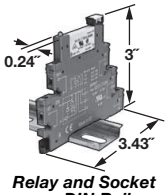

Relay and Socket on DIN Rail

Ideal for PLC control systems, these plug-in relays, also known as output modules, take up very little space. They switch one circuit "on" or "off" (SPDT) and are rated 6 amps @ 250 VAC. Max. voltage is 400 VAC. All spring back (momentary) when power is removed. All have an LED indicator and screw-terminal connections. They are 35 mm DIN-rail mountable. Mechanical life is 10 million cycles. UL and C-UL recognized and CE approved.

Control Voltage, VAC/VDC	Power Consumption	Relay and Socket Combinations		Replacement Relay	
24	12 mA	8262T11	$15.23	8262T21	$5.42
125	5 mA	8262T12	18.35	8262T22	8.73
240	4 mA	8262T13	18.35	8262T22	8.73
35 mm DIN Rail (1 m Lg.)				8961K15	$4.96

Ultra-Thin Long-Life Relays

Relay on DIN Rail

Also known as output modules, these compact relays are solid state, so they have no moving parts. They have a replaceable 3-amp fuse to protect your equipment. Both switch one circuit "on" (SPST-NO) and have four screw terminals. They spring back (momentary) when power is removed. Both are DIN-rail mountable and have an LED indicator. UL recognized, CSA certified, and CE approved.

Control Voltage	Amp Rating		
4-28 VDC	3 @ 12-280 VAC	8299K11	$28.90
4-28 VDC	3 @ 5- 60 VDC	8299K12	27.90
Replacement 3-Amp Fuse		8299K21	.89
35 mm DIN Rail (1 m Lg.)		8961K15	4.96

Ultra-Thin Signal Conditioning Long-Life Relays

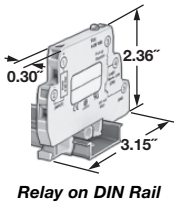

Relay on DIN Rail

Prevent power surges from traveling to PLCs and microprocessors. Also called input modules, these solid-state relays convert electrical signals into logic-level signals. They have a narrow, compact design and switch one circuit "on." They function by negative logic (there is no output voltage if a control voltage is present). An output voltage is generated when the control voltage is removed. Relays have an LED indicator and four screw-terminal connections. They fit on a standard 35 mm DIN rail. UL recognized, CSA certified, and CE approved.

Control Voltage	Output Voltage	Amp Rating @ 280 VAC/28 VDC		
90-280 VAC	4-28 VDC	100 mA	7356K21	$27.39
4- 28 VDC	4-28 VDC	100 mA	7356K22	26.45
35 mm DIN Rail (1 m Lg.)			8961K15	4.96

Relays That Stay Switched

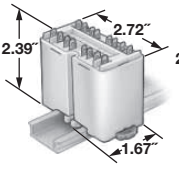

DIN-Rail Mount On DIN Rail

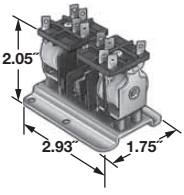

Surface Mount

If your relay has to stay switched for a long time, you can save energy with these relays because they don't require a constant control voltage to stay switched. Also known as latching relays, a momentary signal to one coil transfers and sets the latch; a momentary signal to the other coil releases it. For intermittent use only.

DIN-rail mount relays are enclosed and mount on a 35 mm DIN rail for quick installation. They also have 0.16″ wide mounting slots for surface mounting. All have 0.187″ quick-disconnect terminals. Rated 0.33 hp @ 120 VAC and 0.50 hp @ 208-600 VAC. Mechanical life is 10 million cycles. UL recognized. **To Order:** Please specify control voltage: VAC or VDC.

Surface-mount relays are rated 0.25 hp @ 120 VAC and 0.33 hp @ 240 VAC. Mechanical life is 50,000 cycles. Relays have three 0.16″ dia. holes for mounting (hardware not included). UL recognized and CSA certified. **To Order:** Please specify control voltage, unless noted: VAC or VDC; and connection type: solder lugs or 0.187″ quick-disconnect terminals.

Control Voltage	AC Power Consumption	DC Power Consumption	Amp Rating @ 240 VAC		
DIN-Rail Mount Relays					
Switch Two Circuits "On" or "Off" (DPDT)					
12 V	208 mA	208 mA	15	1358T71	$27.46
24 V	104 mA	104 mA	15	1358T72	27.46
120 V	21 mA	21 mA	15	1358T73	27.46
Switch Four Circuits "On" or "Off" (4PDT)					
12 V	208 mA	208 mA	15	1358T74	29.35
24 V	104 mA	104 mA	15	1358T75	29.35
120 V	21 mA	21 mA	15	1358T761●	29.35
Switch Six Circuits "On" or "Off" (6PDT)					
12 V	208 mA	208 mA	15	1358T77	33.68
24 V	104 mA	104 mA	15	1358T78	33.68
120 V	21 mA	21 mA	15	1358T791●	33.68
35 mm DIN Rail (1 m Lg.)				8961K15	4.96
Surface-Mount Relays					
Switch Two Circuits "On" or "Off" (DPDT)					
12 V	330 mA	240 mA	10	7217K21	36.92
24 V	240 mA	86 mA	10	7217K22	35.61
120 V	70 mA	25 mA	10	7217K23	37.71
240 V	37 mA	———	10	7217K314●	38.93
Switch Four Circuits "On" or "Off" (4PDT)					
12 V	330 mA	240 mA	10	7217K25	42.68
24 V	240 mA	86 mA	10	7217K26	42.22
120 V	70 mA	25 mA	10	7217K27	42.84
240 V	37 mA	———	10	7217K318●	43.99
Switch Six Circuits "On" or "Off" (6PDT)					
12 V	330 mA	240 mA	6	7217K29	48.61
24 V	240 mA	86 mA	6	7217K3	47.81
120 V	70 mA	25 mA	6	7217K31	48.10
240 V	37 mA	———	6	7217K323●	49.74

●Not available with a VDC control voltage.

DIN-Rail Mount Screw-Terminal Relays

Built to IEC dimensional standards, these relays have touchsafe screw-terminal connections and are DIN-rail or surface mountable (have four 0.17″ dia. mounting holes, hardware not included). 7230K87 and K88 have interlocked opposing contacts that will not simultaneously close, making them ideal for safety applications. All spring back (momentary) when power is removed. Mechanical life is 20 million cycles. UL and C-UL listed. **To Order:** Please specify control voltage (power consumption): 24 VAC (125 mA), 120 VAC (25 mA), or 240 VAC (12.5 mA).

Use the ***auxiliary contact block*** as a signaling device to energize a light or horn or to control another relay. It switches two circuits, one "on" and one "off" (DPST-NO/NC).

No. of Circuits Switched	Before Switching, Circuit Is	Industry Designation	Amp Rating @ 600 VAC		
4	2 Off, 2 On	4PST-2NO/2NC	10	7230K87	$43.32
4	3 Off, 1 On	4PST-3NO/1NC	10	7230K88	43.32
4	4 Off	4PST-NO	10	7230K89	43.32
Auxiliary Contact Block (DPST-NO/NC)				70255K13	14.68
35 mm DIN Rail (1 m Lg.)				8961K15	4.96

For information about electrical switches, see page 855. For information about relays, see page 906.

Don't see the relay you need? Just tell us what you're looking for and we'll get it for you.

Hazardous-Location Relays

These relays are hermetically sealed to meet UL Class 1, Division 2 for use in hazardous locations. They have a maximum voltage of 240 VAC and plug into sockets (sold separately below). All relays spring back (momentary) when power is removed. They are UL and C-UL recognized and CSA certified.

Relays that ***switch two*** and ***three circuits*** are 2.05″ Ht. × 1.34″ Wd. × 1.52″ Dp. Mechanical life is 5 million cycles.

Relays that ***switch four circuits*** are 1.28″ Ht. × 0.91″ Wd. × 1.15″ Dp. Mechanical life is 10 million cycles.

Sockets are DIN-rail and surface mountable. See page 910 for more socket information.

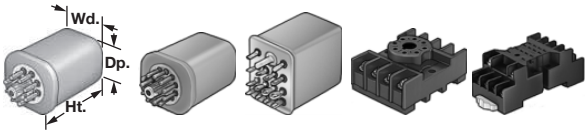

8 Circular-Pin Relay — *11 Circular-Pin Relay* — *14 Spade Terminal Relay* — *Socket for 8 Circular-Pin Relays* — *Socket for 14-Terminal Relays*

Control Voltage	Power Consumption	Amp Rating @ 120 VAC	Amp Rating @ 24 VDC	Max. hp @ 120 VAC		
Switch Two Circuits "On" or "Off"—DPDT (8 Circular Pin)						
24 VAC	83 mA	12	12	1/3	**7125T31**	$78.42
120 VAC	16 mA	12	12	1/3	**7125T32**	78.42
12 VDC	100 mA	12	12	1/3	**7125T33**	78.42
24 VDC	50 mA	12	12	1/3	**7125T34**	78.42
Switch Three Circuits "On" or "Off"—3PDT (11 Circular Pin)						
24 VAC	83 mA	12	12	1/3	**7125T22**	91.11
120 VAC	16 mA	12	12	1/3	**7125T23**	91.11
12 VDC	100 mA	12	12	1/3	**7125T24**	91.11
24 VDC	50 mA	12	12	1/3	**7125T25**	91.11

Control Voltage	Power Consumption	Amp Rating @ 120 VAC	Amp Rating @ 24 VDC	Max. hp @ 120 VAC		
Switch Four Circuits "On" or "Off"—4PDT (14 Spade Terminal)						
24 VAC	104 mA	3	3	—	**7130T15**	$57.76
120 VAC	21 mA	3	3	—	**7130T12**	57.76
120 VAC	21 mA	5	5	—	**7130T18**	64.00
12 VDC	167 mA	3	3	—	**7130T16**	57.76
12 VDC	167 mA	5	5	—	**7130T21**	64.00
24 VDC	83 mA	3	3	—	**7130T11**	57.76
24 VDC	83 mA	5	5	—	**7130T23**	64.00
Socket for Circular 8-Pin Relays					**7122K19**	4.07
Socket for Circular 11-Pin Relays					**7122K21**	6.89
Socket for 14-Terminal Relays					**7122K25**	9.14
35 mm DIN Rail (1 m Lg.)					**8961K15**	4.96

High DC Inrush Current Relays

Also called automotive relays, these relays can handle a high-inrush current of up to 120 amps, unless noted. Mechanical life is rated at 10 million cycles, unless noted. Relays without a mounting tab hole diameter listed in the table do not have a mounting tab.

Four-pin relays have two 0.250″ wide and two 0.375″ wide quick-disconnect terminals; ***five-pin*** relays have 0.25″ wide quick-disconnect terminals. Sockets are sold separately below. ***Standard relays*** are for dry environments. Use ***weatherproof relays*** in wet or damp locations.

Printed circuit board sockets have 0.34″ long pins except 8228K11, which has 0.23″ long pins. 8228K41 is 0.50″ Ht. × 0.95″ Wd. × 1.04″ Dp. and K11 is 0.57″ Ht. × 0.95″ Wd. × 1.04″ Dp.

Wiring harness sockets include terminals to attach wire, except 8228K44, which has 12″ wire leads. 8228K43 is 1.25″ Ht. × 0.97″ Wd. × 1.15″ Dp., K42 is 1.0″ Ht. × 0.95″ Wd. × 1.04″ Dp., and K44 is 1.25″ Ht. × 1.37″ Wd. × 1.63″ Dp.

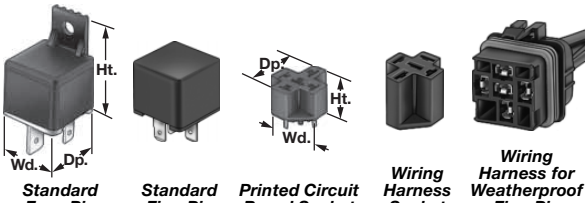

Standard Four-Pin Relay — *Standard Five-Pin Relay* — *Printed Circuit Board Socket (Five Pin)* — *Wiring Harness Socket (Five Pin)* — *Wiring Harness for Weatherproof Five-Pin Relay*

Control Voltage	Power Consumption	Amp Rating @ Control Voltage	Mounting Tab Hole Dia.	Relays Ht. × Wd. × Dp.			Printed Circuit Board Sockets		Wiring Harness Sockets	
Standard Four Pin										
Switch One Circuit from "Off" to "On" (SPST-NO)										
12 VDC	160 mA	70	0.22″	1.59″ × 1.02″ × 1.02″	**9672K36**	$14.76	—	—	**8228K43**	$5.53
24 VDC	77 mA	50	0.24″	2.15″ × 1.34″ × 1.26″	**9672K37**	36.14	—	—	**8228K43**	5.53
Standard Five Pin										
Switch One Circuit from "Off" to "On" (SPST-NO)										
12 VDC	141 mA	40	0.22″	1.58″ × 1.03″ × 1.03″	**9672K29**★	11.68	**8228K41**	$6.01	**8228K42**	4.07
24 VDC	77 mA	20	—	0.95″ × 1.08″ × 1.08″	**9672K33**	12.22	**8228K41**	6.01	**8228K42**	4.07
Switch One Circuit from "Off" to "On" or "On" to "Off" (SPDT)										
12 VDC	158 mA	35 (NO)/20 (NC)	—	0.99″ × 1.1″ × 1.1″	**9672K31**▲	8.22	**8228K11**	1.86	—	—
12 VDC	158 mA	35 (NO)/20 (NC)	0.27″	1.61″ × 1.1″ × 1.1″	**9672K32**▲	8.88	**8228K11**	1.86	—	—
24 VDC	85 mA	20 (NO)/10 (NC)	—	0.95″ × 1.08″ × 1.08″	**9672K81**	11.21	**8228K41**	6.01	**8228K42**	4.07
24 VDC	85 mA	20 (NO)/10 (NC)	0.22″	1.59″ × 1.08″ × 1.08″	**9672K82**	10.79	**8228K41**	6.01	**8228K42**	4.07
Weatherproof Five Pin										
Switch One Circuit from "Off" to "On" or "On" to "Off" (SPDT)										
12 VDC	158 mA	35 (NO)/20 (NC)	—	1.81″ × 1.4″ × 1.87″	**9672K43**▲	8.30	—	—	—	—
12 VDC	158 mA	35 (NO)/20 (NC)	0.25″	2.63″ × 1.4″ × 1.87″	**9672K44**▲	9.26	—	—	—	—
24 VDC	85 mA	20 (NO)/10 (NC)	0.24″	2.65″ × 1.42″ × 1.70″	**9672K35**	13.13	—	—	**8228K44**	33.34

★ Can handle a high-inrush current of 150 amps. ▲ Can handle a high-inrush current of 150 amps and has a mechanical life of 1 million cycles.

Harsh Environment Relays

Water washdowns, dirt, and corrosion won't affect these NEMA 4X rated enclosed relays. These relays don't even require a socket; instead, they have 16″ long wire leads through a ½″ trade size conduit connection. All have an LED indicating light and two 0.15″ dia. mounting holes for surface mounting (hardware included). Size is 1.7″ Ht. × 2.8″ Wd. × 1.5″ Dp. They spring back (momentary) when power is removed. Mechanical life is 10 million cycles. UL and C-UL listed.

4766T15 has a dry contact closure. It requires a 120-277 VAC circuit to operate and actuates when it receives a low-current signal from your thermostat or other device.

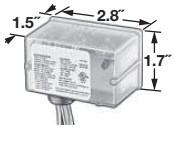

Control Voltage	Power Consumption	Amp Rating	Max. hp Rating	Max. Voltage		
Switch One Circuit "On" or "Off" (SPDT)						
10-30 VAC/VDC, 120 VAC	25 mA @ 120 VAC, 16 mA @ 24 VDC	10 @ 120 VAC	0.33 hp for NO @ 120 VAC	277 VAC	**4766T11**	$28.54
10-30 VAC/VDC, 208-277 VAC	39 mA @ 208-277 VAC, 18 mA @ 24 VDC	10 @ 120 VAC	0.33 hp for NO @ 120 VAC	277 VAC	**4766T12**	31.02
120-277 VAC	50 mA @ 240 VAC	10 @ 250 VAC	0.50 hp @ 125 VAC	250 VAC	**4766T15**	33.54
Switch Two Circuits "On" or "Off" (DPDT)						
24 VAC/VDC, 120 VAC	28 mA @ 120 VAC, 22 mA @ 24 VDC	10 @ 277 VAC	0.50 hp for NO @ 120 VAC	277 VAC	**4766T13**	42.22
24 VAC/VDC, 208-277 VAC	36 mA @ 208-277 VAC, 24 mA @ 24 VDC	10 @ 277 VAC	0.12 hp for NC @ 120 VAC	277 VAC	**4766T14**	44.80

For information about electrical switches, see page 855. For information about relays, see page 906.

Don't see the relay you need? Just tell us what you're looking for and we'll get it for you.

Relay Sockets

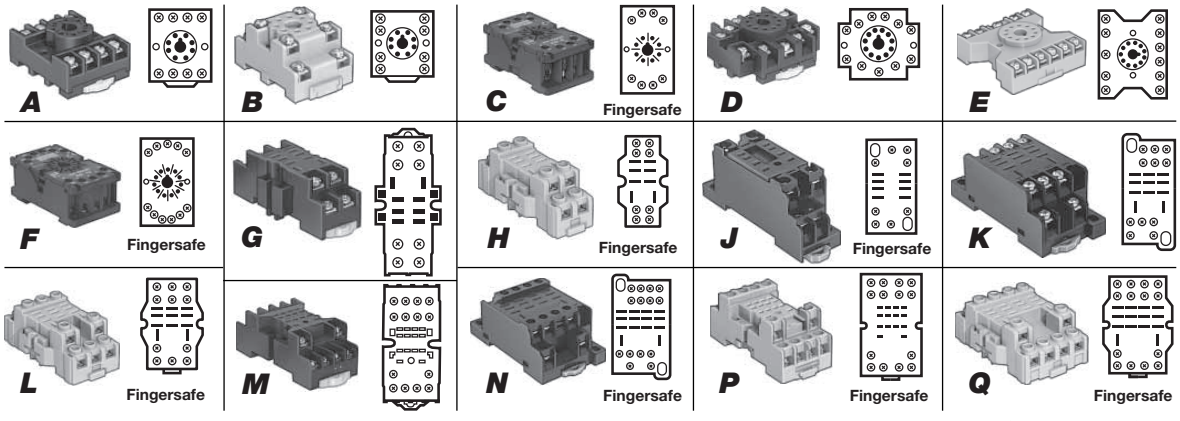

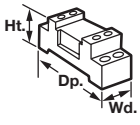

Relays plug into these sockets for fast connection and replacement. They mount to a 35 mm DIN rail (sold separately) and have two mounting holes for surface mounting. Mounting hardware is not included. All have screw-terminal connections. UL recognized, CSA certified, and CE approved, except 7122K23, which is not CE approved.

Fingersafe models have recessed screw-terminal connections to prevent contact with live circuits.

Hold-Down Clips— Ideal for applications subject to vibration.

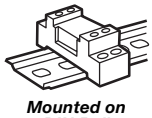

Mounted on DIN Rail

	No. of Pins	Amp Rating	Ht. × Wd. × Dp.	Mounting Hole Dia.	Sockets	Each	Hold-Down Clips Pkg. Qty.		Pkg.
For Circular-Pin Plug-In Relays									
A	8	10 @ 600 VAC	0.97″ × 1.58″ × 2.01″	0.165″	7122K19	$4.07	—	—	—
B	8	10 @ 300 VAC	1.12″ × 1.42″ × 2.17″	0.165″	7122K17	5.00	1	7122K68	$0.35
C	8	10 @ 300 VAC	1.06″ × 1.50″ × 2.56″	0.126″	7122K11	4.28	1	7122K62	.55
D	11	10 @ 300 VAC	0.97″ × 2.33″ × 2.04″	0.165″	7122K21	6.89	—	—	—
E	11	10 @ 300 VAC	0.87″ × 2.32″ × 2.40″	0.165″	7122K18	7.62	1	7122K65	.67
F	11	10 @ 300 VAC	1.06″ × 1.50″ × 2.56″	0.126″	7122K12	7.50	1	7122K62	.55
For Spade-Terminal Relays									
G	8	10 @ 300 VAC	1.02″ × 1.20″ × 2.62″	0.17″	7122K22	6.68	1	7122K61	.29
H	8	10 @ 300 VAC	1.16″ × 1.18″ × 2.78″	0.165″	7122K13	6.06	1	7122K66	.45
J	8	7 @ 250 VAC	1.22″ × 0.91″ × 2.99″	0.165″	7122K32	7.05	2	7122K69	.57
K	11	10 @ 240 VAC	1.18″ × 1.46″ × 3.09″	0.18″	7122K23	8.23	2	7122K69	.57
L	11	10 @ 300 VAC	1.16″ × 1.57″ × 2.78″	0.165″	7122K14	9.11	1	7122K67	.67
M	14	10 @ 300 VAC	1.00″ × 1.19″ × 2.50″	0.17″	7122K25	9.14	1	7122K61	.29
N	14	10 @ 240 VAC	1.18″ × 1.79″ × 3.09″	0.18″	7122K24	8.76	2	7122K69	.57
P	14	7 @ 300 VAC	1.14″ × 1.16″ × 2.60″	0.126″	7122K16	10.07	1	7122K63	.42
Q	14	10 @ 300 VAC	1.16″ × 1.97″ × 2.78″	0.165″	7122K15	11.89	1	7122K88	.67
35 mm DIN Rail *(1 m Lg.)*					8961K15	Each	$4.96		

Sequenced Relays That Stay Switched

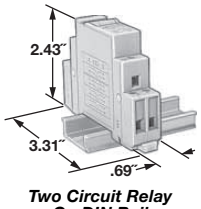

Two Circuit Relay On DIN Rail

Controlling motors, pumps, and lighting often requires this type of relay, also known as a latching or step relay. They switch circuits differently each time they receive a control voltage signal and stay switched after the control voltage is removed. All have a test button, a mechanical indicator, and touchsafe screw terminals. DIN-rail mountable. Rated 16 amps @ 120 VAC/24 VDC and 0.50 hp @ 120 VAC. Power consumption is 6.5 VA for VAC and 5 watts for VDC. Max. voltage is 277 VAC and mechanical life is 300,000 cycles. UL recognized and CE approved.

To Order: Please specify control voltage: 24 VAC, 120 VAC, 240 VAC, 12 VDC, or 24 VDC.

When Relay Receives: 1st Signal	2nd Signal	3rd Signal	4th Signal	Circuit Is...		
Switch One Circuit						
Off	On	—	—	6784T11	$20.74	
Switch Two Circuits						
2 Off	2 On	—	—	6784T12	24.65	
1 Off, 1 On	1 On, 1 Off	—	—	6784T13	24.65	
2 Off	1 On, 1 Off	2 On	—	6784T14	24.65	
2 Off	2 On	1 Off, 1 On	1 On, 1 Off	6784T15	24.65	
2 Off	1 On, 1 Off	2 Off	1 Off, 1 On	6784T16	24.65	
35 mm DIN Rail *(1 m Lg.)*				8961K15	4.96	

PC Board-Mount Relays

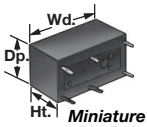

Miniature 6-Pin Relay

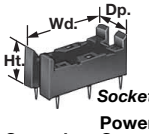

Socket

Solder these relays to a printed circuit board to switch small fractional motors, safety circuits, and pilot lights. All spring back (momentary) when power is removed. UL recognized; CSA certified.

Standard relays have a max. voltage of 380 VAC/125 VDC and a mechanical life of 10 million cycles for VAC, 20 million cycles for VDC. All have 0.16″ long pins. Size is 1.00″ Ht. × 1.14″ Wd. × 0.51″ Dp.

Miniature relays are just 0.49″ Ht. × 0.79″ Wd. × 0.43″ Dp. Mechanical life is 50 million cycles. They can also plug into sockets (sold separately below). Relays and sockets have 0.14″ long pins.

Socket 8418K41 is 0.40″ Ht. × 0.91″ Wd. × 0.39″ Dp.; K42 is 0.43″ Ht. × 0.94″ Wd. × 0.39″ Dp.

Control Voltage	Power Consumption	Amp Rating @ 250 VAC/30 VDC	Relays		Sockets	
Standard Relays						
Switch One Circuit "On" or "Off"—SPDT (5 Pin)						
12 VDC	44 mA	10	7098K31	$6.56	—	—
24 VDC	22 mA	10	7098K32	6.56	—	—
Switch Two Circuits "On" or "Off"—DPDT (8 Pin)						
12 VDC	44 mA	5	7098K33	7.51	—	—
24 VDC	22 mA	5	7098K34	7.51	—	—
Miniature Relays						
Switch One Circuit "On"—SPST-NO (4 Pin)						
12 VDC	17 mA	5	8418K21	7.97	8418K41	$2.87
12 VDC	17 mA	8	8418K25	9.56	8418K41	2.87
24 VDC	8 mA	5	8418K22	8.22	8418K41	2.87
24 VDC	8 mA	8	8418K26	9.90	8418K41	2.87
Switch Two Circuits "On"—DPST-NO (6 Pin)						
12 VDC	25 mA	5	8418K23	9.76	8418K42	3.72
24 VDC	13 mA	5	8418K24	10.24	8418K42	3.72
Optional Extractor Tool (For Miniature Relays)			8418K71	$19.75		

For information about electrical switches, see page 855.

About Relays with Timing Function

Timing relays, or time-delay relays, have contacts that open or close based on a time delay once power (control voltage) is applied or removed. For simplicity, examples are based on a time delay of one minute.

Reset Time— The amount of time it takes for a relay to return to its initial state once power is disconnected.

Initiation Time— The minimum amount of time between switch actuation and relay output for switch-on initiated interval (single-shot) and switch-off initiated interval (delay-on-break) relays.

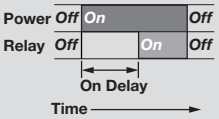

On-Delay— Also known as delay-on-make, you set how long it takes for a relay to turn "on" once power is applied.

Example: When you plug in a lamp the light automatically turns on in one minute.

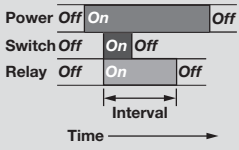

Switch-On Initiated Interval— Also known as single-shot, you set how long it takes for a relay to turn "off" once the switch is turned on.

Example: First plug in a lamp. Then switch the light on. The light automatically will turn off in one minute, regardless of what you do to the switch.

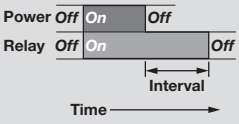

Off-Delay— Also known as power-off delay, you set how long it takes for a relay to turn "off" once power is disconnected.

Example: When you unplug a lamp, the light automatically stays on for one minute.

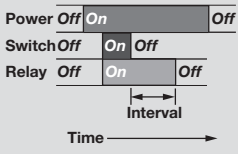

Switch-Off Initiated Interval— Also known as delay-on-break, you set how long it takes for a relay to turn "off" once the switch is turned off.

Example: First plug in a lamp. Then switch the light on. When you switch the light off, the light will automatically turn off in one minute.

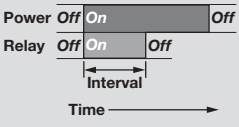

Interval— You set how long a relay stays "on" once power is applied.

Example: When you plug in a lamp the light automatically turns on, stays on for one minute, then automatically turns off.

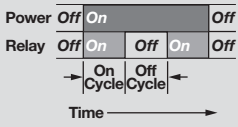

Repeat Cycle— You set the length of the "on" cycle and the length of the "off" cycle. This cycle is repeated until power is disconnected.

Example: When you plug in a lamp the light automatically turns on for one minute, then automatically turns off for one minute. This continues until you unplug the lamp.

Relays with Single-Function Timing

Adjust the time delay of these relays within the given timing range. All have a single knob for adjustment except *repeat-cycle relays*, which have two knobs for separate adjustment of "on" and "off" times.

They switch two circuits "on" or "off" (DPDT) except *switch-on initiated interval (single-shot) relays*, which switch one circuit "on" or "off" (SPDT). All are rated 10 amps @ 240 VAC and 100 mA @ 12 VDC. Relays are 8-pin circular pin style, unless noted. Mechanical life is 10 million cycles. Size is 2.9″ Ht. × 1.7″ Wd. × 2.4″ Dp. UL recognized and CSA certified.

Switch-on initiated interval (single-shot) and ***switch-off initiated interval (delay-on-break) relays*** have an initiation time of 20 mS.

Sockets (sold separately) are DIN-rail and surface-mountable (have two 0.165″ dia. mounting holes). See page 910 for more socket information.

Relay (One Knob)

Repeat-Cycle Relay (Two Knobs)

Socket for 8-Pin Relays

Socket for 11-Pin Relays

Control Voltage (VAC/VDC)	Power Consumption	Timing Range, sec.		
On-Delay (Delay-On-Make)— *Reset time is 100 mS*				
120	25 mA	0.05-1	**7268K21**	$48.16
120	25 mA	0.1-10	**7268K23**	48.16
120	25 mA	0.3-30	**7268K24**	48.16
120	25 mA	0.6-60	**7268K25**	48.16
120	25 mA	1.8-180	**7268K26**	48.16
120	25 mA	3-300	**7268K51**	48.16
120	25 mA	6-600	**7268K52**	48.16
120	25 mA	36-3,600	**7268K54**	48.16
12	250 mA	0.1-10	**7268K11**	48.16
12	250 mA	0.6-60	**7268K12**	48.16
24	125 mA	0.1-10	**7268K32**	48.16
24	125 mA	0.6-60	**7268K34**	48.16
Interval— *Reset time is 100 mS*				
120	25 mA	0.05-5	**7630K31**	53.92
120	25 mA	0.6-60	**7630K32**	53.92
120	25 mA	6-600	**7630K33**	53.92
120	25 mA	36-3,600	**7630K34**	53.92

Control Voltage (VAC/VDC)	Power Consumption	Timing Range, sec.		
Switch-On Initiated Interval (Single-Shot)— *Reset time is 40 mS*				
120	25 mA	0.1-10	**7630K41**	$51.71
120	25 mA	0.6-60	**7630K42**	51.71
Switch-Off Initiated Interval (Delay-On-Break)— *Reset time is 40 mS*				
120	25 mA	0.05-5	**7268K42★**	58.89
120	25 mA	0.1-10	**7268K43★**	55.30
120	25 mA	0.3-30	**7268K44★**	55.30
120	25 mA	0.6-60	**7268K45★**	55.30
120	25 mA	1.2-120	**7268K4★**	55.30
120	25 mA	1.8-180	**7268K46★**	55.30
120	25 mA	3-300	**7268K61★**	55.30
120	25 mA	6-600	**7268K62★**	55.30
120	25 mA	36-3,600	**7268K64★**	55.30
24	125 mA	0.1-10	**7268K72★**	55.30
24	125 mA	0.6-60	**7268K74★**	55.30
24	125 mA	36-3,600	**7268K77★**	55.30

★ Has 11 circular pins.

Control Voltage (VAC/VDC)	Power Consumption	Timing Range, sec.		
Repeat Cycle— *Reset time is 100 mS*				
120	25 mA	0.05-5	**7630K11**	$69.44
120	25 mA	0.1-10	**7630K12**	69.44
120	25 mA	0.6-60	**7630K14**	69.44
120	25 mA	1.8-180	**7630K16**	69.44
120	25 mA	3-300	**7630K17**	69.44
120	25 mA	6-600	**7630K18**	69.44
120	25 mA	18-1,800	**7630K23**	69.44
12	250 mA	1.8-180	**7630K19**	69.44
24	125 mA	0.1-10	**7630K81**	69.44
24	125 mA	0.6-60	**7630K83**	69.44
24	125 mA	1.8-180	**7630K85**	69.44
Sockets				
Socket for 8-Pin Relays			**7122K19**	4.07
Socket for 11-Pin Relays			**7122K21**	6.89
35 mm DIN Rail				
1 m Lg.			**8961K15**	4.96

HVAC Motor Starting Relays

Also known as potential relays, these relays control the start capacitor in single phase air conditioning and refrigeration motor circuits. Relays have six quick-disconnect adapters and they run on 50/60 Hz. All have a removable bracket and 5/32″ dia. mounting holes for surface mounting. Mechanical life is 200,000 cycles. Size is 2 1/32″ Ht. × 1 13/16″ Wd. × 1 13/16″ Dp. UL recognized and CSA certified.

Note: Hold voltage is the rated coil voltage of the motor at peak efficiency. Pickup voltage is the initial voltage that actuates the relay and starts the motor. Dropout voltage is the voltage at which the motor exceeds the optimum speed and the relay disengages.

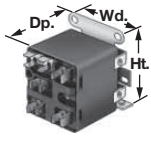

Hold Voltage	Pickup Voltage	Dropout Voltage		
170 VAC	139-153 VAC	30- 55 VAC	**6773T21**	$17.22
253 VAC	285-305 VAC	35- 77 VAC	**6773T22**	17.22
332 VAC	168-182 VAC	55- 90 VAC	**6773T23**	17.22
332 VAC	180-193 VAC	40-105 VAC	**6773T24**	17.22
395 VAC	215-225 VAC	60-120 VAC	**6773T25**	17.22
395 VAC	260-275 VAC	60-120 VAC	**6773T26**	17.22
420 VAC	212-232 VAC	60-121 VAC	**6773T27**	17.22
420 VAC	295-315 VAC	75-125 VAC	**6773T28**	17.22
502 VAC	325-345 VAC	75-135 VAC	**6773T29**	17.22

For information about electrical switches, see page 855. For information about timing functions, see page 911.

Timing Adapters and Sockets for Relays

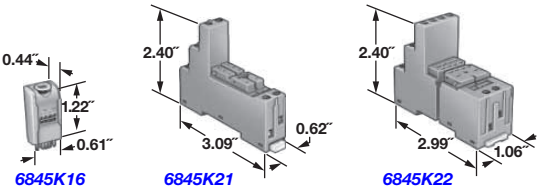

6845K16 6845K21 6845K22

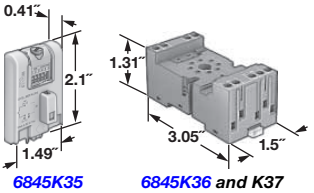

6845K35 6845K36 and K37

Turn ordinary relays into timing relays with these timing adapters. Just mount the adapter and the appropriate electromechanical relay to a socket (see table) and you've got all the functions of a more expensive timing relay. Reset time is 50 mS. UL and C-UL recognized and CE approved. Adapters must be used with sockets sold separately below.

Dual-function adapter has on-delay (delay-on-make) and interval functions. ***Multifunction adapter*** has on-delay (delay-on-make), interval, repeat cycle, switch-off initiated interval (delay-on-break), and switch-on initiated interval (single shot) functions. ***Sockets*** mount on a 35 mm DIN rail or can be surface mounted. They have two 0.13″ dia. mounting holes except 6845K21, which has one 0.13″ dia. mounting hole. All have screw-terminal connections. Rated 10 amps @ 250 VAC.

Control Voltage	Power Consumption	Timing Range		
Dual-Function Adapter				
12-24 VAC/VDC	0.15 W	50 mS-100 hrs.	6845K16	$26.23
Multifunction Adapter				
12-240 VAC/VDC	1.2 W	50 mS-100 hrs.	6845K35	48.60
Sockets for 6845K16 (For Use With):				
8-Pin PC Board Mount Relays			6845K21	5.18
14-Pin 4-Circuit Mini Spade Terminal Relays			6845K22	4.96
Sockets for 6845K35 (For Use With):				
8-Pin 2-Circuit Circular-Pin Relays			6845K36	5.43
11-Pin Circular-Pin Relays			6845K37	6.28
35 mm DIN Rail *(1 m Lg.)*			8961K15	4.96

Relays with Wide Time Range Timing Function

On-Delay (Delay-On-Make) Relay

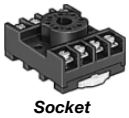

Socket

More precise than knobs, DIP switches make it easy to adjust wide timing ranges for more versatility. All have eight circular pins. Rated 10 amps @ 240 VAC. 7096K23, K24, K22, and K21 are also rated 10 amps @ 28 VDC and 0.33 hp @ 240 VAC. Mechanical life is 10 million cycles. Size is 3.2″ Ht.×1.8″ Wd.×2.4″ Dp., unless noted. UL recognized and CSA certified, unless noted.

On-delay (delay-on-make) relays switch two circuits "on" or "off" (DPDT). **To Order:** Please specify control voltage (power consumption): 24 VAC (83 mA), 120 VAC (17 mA), 240 VAC (8 mA), 12 VDC (167 mA), or 24 VDC (83 mA).

Interval and ***repeat cycle relays*** switch two circuits "on" or "off" (DPDT). ***Switch-on initiated interval (single-shot)*** and ***switch-off initiated interval (delay-on-break) relays*** switch one circuit "on" or "off" (SPDT). They have an initiation time of 60 mS. **To Order:** For interval, repeat-cycle, switch-on initiated interval (single-shot), and switch-off initiated interval (delay-on-break) relays, specify control voltage (power consumption): 24 VAC (135 mA), 120 VAC (27 mA), 240 VAC (14 mA), 12 VDC (271 mA), or 24 VDC (135 mA).

Sockets (sold separately) are DIN-rail or surface-mountable (have two 0.165″ dia. mounting holes). See page 910 for more information.

	Timing Range	Reset Time		
Relays				
On-Delay	0.05 sec.-999 min.	150 mS	7096K1★	$66.55
Interval	1 sec.-1,023 sec.	50 mS	7096K23	69.38
Repeat Cycle	1 sec.-1,023 sec.	150 mS	7096K24	79.82
Switch-On Initiated Interval	1 sec.-1,023 sec.	50 mS	7096K22	60.96
Switch-Off Initiated Interval	1 sec.-1,023 sec.	50 mS	7096K21	70.60
Socket for All Above Relays			7122K19	4.07
35 mm DIN Rail *(1 m Lg.)*			8961K15	4.96

★ Has a three-digit push-button switch. Size is 3.7″ Ht.×1.75″ Wd.×2.4″ Dp. UL and C-UL recognized; not CSA certified.

Long-Life Relays with Timing Function

1- and 20-Amp On-Delay (Delay-On-Make) Relay

8-Amp On-Delay (Delay-On-Make) Relay

It's time to upgrade to a reliable relay. These solid-state relays have a built-in variable switch (potentiometer) to adjust time within the timing range, unless noted. All relays switch one circuit "on" (SPST-NO) except 77055K62 and K63, which switch one circuit "on" or "off" (SPDT). Mechanical life is 100 million cycles except 8-amp on-delay (delay-on-make) relays, which have a mechanical life of 10 million cycles. All have ¼″ quick-disconnect terminals and can be surface mounted (hardware not included).

1-amp and ***8-amp relays*** have one 0.17″ dia. mounting hole. Size is 2″ Ht.×2″ Wd.×0.88″ Dp. UL and C-UL recognized. **To Order:** Please specify timing range: 0.05-1 sec., 0.25-5 sec., 0.5-10 sec., 3-60 sec., 15-300 sec., or 30 sec.-10 min., unless noted.

20-amp relays have one 0.25″ dia. mounting hole. Size is 2″ Ht.×2″ Wd.×1.08″ Dp. UL recognized and CSA certified. **To Order:** Please specify timing range: 0.1-10 sec., 1-100 sec., 10-1,000 sec., 0.1-10 min., 1-100 min., or 10-1,000 min.

Control Voltage	Power Consumption	Amp Rating @ 120 VAC	Reset Time, mS		
On-Delay (Delay-On-Make)					
24 VAC/VDC	10 mA	1	125	77055K75	$29.84
24 VAC	15 mA	20	150	77055K11	79.98
24-240 VAC/VDC	10 mA	1	125	77055K74♥	64.06
120 VAC/VDC	4 mA	1	125	77055K61	25.71
120 VAC	29 mA	8■	250	77055K62	35.78
120 VAC	15 mA	20	150	77055K12	79.98
12 VAC/VDC	21 mA	1	125	77055K73	29.84
12 VDC	292 mA	8■	250	77055K63♣	38.12
Interval					
24 VAC	15 mA	20	150	77055K17	79.98
120 VAC	25 mA	1	150	7457K65●	35.41
120 VAC	15 mA	20	150	77055K18	79.98
Switch-On Initiated Interval (Single Shot)					
24 VAC	15 mA	20	150	77055K15	82.49
120 VAC	36 mA	1	300	7457K64	33.61
120 VAC	15 mA	20	150	77055K16	82.49
12 VDC	217 mA	1	200	7457K51●▲	30.00
Switch-Off Initiated Interval (Delay-On-Break)					
24 VAC	15 mA	20	150	77055K13	82.49
120 VAC	36 mA	1	500	7457K63	31.34
120 VAC	15 mA	20	150	77055K14	82.49
12 VDC	217 mA	1	200	7457K52●▲	31.31
Repeat Cycle					
24 VAC	15 mA	20	150	77055K19	79.98
120 VAC	36 mA	1	500	7457K66♠	42.46
120 VAC	15 mA	20	150	77055K21	79.98
Potentiometer				77055K91	20.67

♥ Timing range is 1-1,023 sec. ■ Amp rating @ 250 VAC.
♣ **To Order:** Please specify timing range: 3-60 sec. or 15-300 sec.
● Requires one variable switch (potentiometer), sold separately.
▲ **To Order:** Please specify timing range: 0.25-5 sec., 0.5-10 sec., or 3-60 sec.
♠ Requires two variable switches (potentiometers), sold separately.

DIN-Rail Mount Long-Life Relays with Timing Function

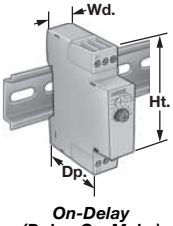

On-Delay (Delay-On-Make) Relay on DIN Rail

Searching for something that mounts quickly, lasts long, and stays silent? Choose one of these relays—both are DIN-rail mountable and have solid-state outputs. Use the adjustment screw to select the timing range: 0.1-1 sec., 1-10 sec., 6-60 sec., 1-10 min., 6-60 min., 1-10 hr., or 10-100 hr. The knob allows you to adjust within the selected timing range.

Relays switch one circuit (SPST). Rated 0.5 amps @ 250 VAC. Reset time is 350 mS. Power consumption is 7 mA and mechanical life is 100 million cycles. Both have screw-terminal connections and a green LED indicator light. Size is 3.19″ Ht.×0.69″ Wd.×2.72″ Dp. UL and C-UL listed, CSA certified, and CE approved.

	Control Voltage		
Relays			
On-Delay (Delay-On-Make)	24-240 VAC/VDC	7801K51	$53.12
Interval	24-240 VAC	7801K52	42.50
35 mm DIN Rail *(1 m Lg.)*		8961K15	4.96

For information about electrical switches, see page 855. For information about timing functions, see page 911.

Panel-Mount Relays with Timing Function

Panel mount these relays for a finished look. All have an indicating light. Reset time is 100 mS, unless noted.

Compact and ***standard relays*** switch two circuits "on" or "off" (DPDT) and are rated 5 amps @ 250 VAC, except 69695K51, which is rated 5 amps @ 240 VAC. They plug into a socket and fit into a square panel cutout when used with the optional mounting brackets (socket and brackets sold separately). Mechanical life is 10 million cycles, unless noted. CE approved. *Compact relays* fit into a 1.30″×1.30″ cutout and are 1.4″ Ht.×1.4″ Wd.×3.2″ Dp. *Standard relays* fit into a 1.77″×1.77″ (1/16 DIN) cutout and are 1.9″ Ht.×1.9″ Wd.×3.7″ Dp., unless noted. *Multifunction relay* has on-delay (delay-on-make), repeat cycle, interval, and switch-on initiated interval (single-shot) functions. ***Large display relays*** have on-delay (delay-on-make) and interval functions, as well as everything you need to mount in a 3.2″ dia. panel cutout. All have a movable pointer that shows status at a glance. They switch one circuit "on" or "off" (SPDT) and are rated 10 amps @ 120 VAC. Mechanical life is 5 million cycles.

Socket is DIN-rail or surface mountable (has two 0.165″ dia. mounting holes, hardware not included). See page 910 for more socket information.

	Control Voltage, VAC	Power Consumption	Timing Range		
Compact Relays— *8-Pin Circular Pin*					
On-Delay	100-120	25 mA	0.5 sec.-5 sec.	69695K81	$61.01
On-Delay	100-120	25 mA	1 sec.-10 sec.	69695K82	61.01
On-Delay	100-120	25 mA	6 sec.-60 sec.	69695K83	61.01
On-Delay	100-120	25 mA	1 min.-10 min.	69695K84	61.01
On-Delay	100-120	25 mA	6 min.-60 min.	69695K85	61.01
Standard Relays— *8-Pin Circular Pin*					
Multifunction	100-240	5 mA	0.05 sec.-300 hrs.	69695K51■	76.84
Repeat Cycle	100-240	100 mA	1.2 sec.-300 hrs.	69695K72■	97.36
Off-Delay	100-120	2 mA	0.05 sec.-12 sec.	69695K74♦	93.46
Off-Delay	100-120	2 mA	3 sec.-12 min.	69695K73♦	93.46
Large Display Relays— *14 Screw Terminals*					
Multifunction	120	128 mA	0 sec.-60 sec.	70185K91	339.94
Multifunction	120	128 mA	0 sec.-240 sec.	70185K92	339.94
Multifunction	120	128 mA	0 min.-30 min.	70185K93	339.94
Multifunction	120	128 mA	0 min.-60 min.	70185K94	339.94
Accessories					
Socket for Compact and Standard Relays				7122K19	4.07
Panel-Mount Bracket for Compact Relays				69695K95	6.94
Panel-Mount Bracket for Standard Relays				6963K22	9.26
35 mm DIN Rail (1 m Lg.)				8961K15	4.96

■ Mechanical life is 20 million cycles; 3.3″ Dp.
♦ Reset time is 50 mS.

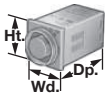

Compact Relay

Standard Relay

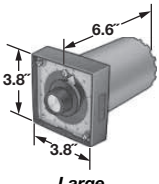

Large Display Relay

Relays with Multiple Timing Functions

Handy relays switch between on-delay (delay-on-make), interval, repeat cycle, switch-off initiated interval (delay-on-break), and switch-on initiated interval (single-shot) functions. They have two rotary switches: one selects the timing range, the other selects the operating mode. All are 11-pin circular-pin style and plug into a socket (sold separately). They switch two circuits "on" or "off" (DPDT). Rated 10 amps @ 240 VAC. Reset time is 150 mS. Mechanical life is 10 million cycles. UL and C-UL recognized.

Plug-in relay has five timing ranges.

To Order: Please specify control voltage (power consumption): 24 VAC (83 mA), 120 VAC (17 mA), 240 VAC (8 mA), 12 VDC (166 mA), or 24 VDC (83 mA).

Plug-in/panel-mount relay has six timing ranges. Control voltage is 24-240 VAC. Power consumption is 51 mA. Fits a standard 1.77″×1.77″ (1/16 DIN) panel cutout when used with the panel-mount bracket (sold separately, hardware included).

Socket (sold separately) is DIN-rail or surface mountable (has two 0.165″ dia. mounting holes, hardware not included). See page 910 for more socket information.

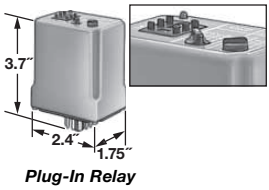

Plug-In Relay

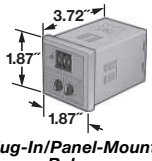

Plug-In/Panel-Mount Relay

	Total Timing Range		
Plug-In Relay	0.05 sec.-999 min.	6964K2	$76.62
Plug-In/Panel-Mount Relay	0.05 sec.-999 hrs.	6964K3	129.66
Panel-Mount Bracket for Plug-In/Panel-Mount Relay		6963K22	9.26
Socket for Both Relays		7122K21	6.89
35 mm DIN Rail (1 m Lg.)		8961K15	4.96

Long-Life Relays with Multiple Timing Functions

Versatile and long-lasting, these relays have solid-state outputs. Rated 3 amps @ 250 VAC. Mechanical life is 10 million cycles. UL recognized and CSA certified.

Miniature plug-in relay is small enough for tight spaces. You'll get an adjustable timing range between 0.1 seconds and 10 minutes and three operating modes: on-delay (delay-on-make), interval, and repeat cycle. Switches four circuits "on" or "off" (4PDT) and has 14 1/4″ quick-disconnect terminals. Reset time is 100 mS. **To Order:** Please specify control voltage (power consumption): 100-120 VAC (117 mA), 200-230 VAC (7 mA), or 24 VDC (38 mA).

Plug-in/panel-mount relay lets you switch between seven timing ranges and eight timing functions: on-delay (delay-on-make), interval, repeat cycle, two types of switch-off initiated interval (delay-on-break), switch-on initiated interval (single-shot), and two types of signal on/off delay. An LCD bar graph displays the time remaining.

Relay is 11-pin circular-pin style. Switches one circuit "on" or "off" (SPDT). Control voltage is 24-240 VAC/12-240 VDC. Power consumption is 167 mA and reset time is 500 mS. Fits a standard 1.77″×1.77″ (1/16 DIN) panel cutout when used with the mounting bracket (sold separately, hardware included).

Miniature Plug-In Relay

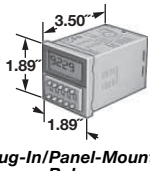

Plug-In/Panel-Mount Relay

Sockets (sold separately below) are DIN-rail and surface mountable (have two 0.165″ mounting holes, hardware not included). See page 910 for more socket information.

Miniature Plug-In Relay	7339K7	$60.00
Plug-In/Panel-Mount Relay	6963K14	144.13
Socket for Miniature Plug-In Relay	7122K25	9.14
Socket for Plug-In/Panel-Mount Relay	7122K21	6.89
Panel-Mount Bracket for Plug-In/Panel-Mount Relay	6963K22	9.26
35 mm DIN Rail (1 m Lg.)	8961K15	4.96

DIN-Rail Mount Long-Life Relays with Multiple Timing Functions

A slim profile and mounting adapters let you DIN-rail or surface mount in crowded enclosures (hardware included). Relays switch between on-delay (delay-on-make), interval, repeat cycle, switch-off initiated interval (delay-on-break), and switch-on initiated interval (single-shot) functions.

All have a solid-state output rated 0.7 amps @ 240 VAC. They switch one circuit (SPST). Reset time is 300 mS. Power consumption is 5 mA and mechanical life is 100 million cycles. Size is 3″ Ht.×0.7″ Wd.×2.4″ Dp. UL recognized, CSA certified, and CE approved.

When in switch-on initiated interval (single-shot) and switch-off initiated interval (delay-on-break) operating modes, relays have an initiation time of 32 mS.

Knob-adjustable relays' timing range is 0.1 second to 100 minutes.

DIP-switch adjustable relays are more precise than knobs, with six switches to adjust the time delay. Plus, it's easier to set multiple relays to the same timing range. Timing range is 0.1 second to 63 minutes.

To Order: Please specify control voltage: 24-240 VAC or 9-110 VDC.

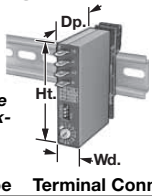

Knob Adjustable Relay with Quick-Disconnect

DIP Switch Adjustable Relay with Terminal Block

Adjustment Type	Terminal Connection Type		
Knob	1/4″ Quick-Disconnect	7399K11	$54.55
Knob	Terminal Block	7399K12	64.14
DIP Switch	1/4″ Quick-Disconnect	7399K13	54.55
DIP Switch	Terminal Block	7399K14	64.14
35 mm DIN Rail (1 m Lg.)		8961K15	4.96

For information about electrical switches, see page 855. For information about timing functions, see page 911.

Medium-Amp Relays with Timing Function

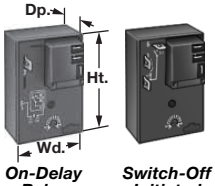

On-Delay Relay *Switch-Off Initiated Interval Relay*

Ready for circuits with compressors, blowers, and heaters, these relays are rated 30 amps @ 120 VAC, 20 amps @ 28 VDC, and 1 hp @ 120 VAC. Also known as power relays, they can be mounted to a 35 mm DIN rail with an adapter (sold separately below). They have a knob that allows you to adjust within the timing range. All switch one circuit "on" or "off" (SPDT). Reset time is 150 mS and mechanical life is one million cycles. They have 1/4″ quick-disconnect terminals and one 0.19″ dia. hole for surface mounting (hardware not included). Size is 3.02″ Ht.×2.02″ Wd.×1.00″ Dp. UL recognized and CSA certified. For information about medium-amp relays, see page 904.

To Order: Please specify control voltage (power consumption): 24 VAC (167 mA), 120 VAC (33 mA), or 24 VDC (83 mA); and timing range: 0.1-10 sec., 1-100 sec., 10-1,000 sec., 6 sec.-10 min., or 1-100 min., unless noted.

Relays		
On-Delay (Delay-On-Make)	**2809T11**	$54.33
Interval	**2809T21**	54.33
Switch-On Initiated Interval (Single-Shot)	**2809T31**★	54.33
Switch-Off Initiated Interval (Delay-On-Break)	**2809T41**	54.33
Repeat Cycle	**2809T51**	54.33
Accessories		
DIN-Rail Adapter	**2809T7**	3.52
35 mm DIN Rail (1 m Lg.)	**8961K15**	4.96

★24 VAC (167 mA) control voltage is not available in 1-100 min. timing range.

Mini Programmable Logic Controllers

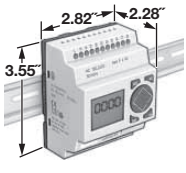

A mix between a PLC and a relay with timing function, these "smart" relays have built-in logic, timer, counter, control, and real-time clock functions. They even feature eight individually programmable time switches, each with four of their own on/off functions, so you can program up to seven days ahead. Simple to operate, they require no additional hardware or programming software. Plus, they are DIN-rail mountable and their small size frees up valuable panel space.

Select from 16 timing ranges between 0.01 sec.-100 hours and six operating modes: two types of on-delay (delay-on-make), two types of switch-off initiated interval (delay-on-break), switch-on initiated interval (single shot), and repeat cycle. Units feature an LCD screen, soft-touch buttons, and 64-hour memory backup.

Both have solid-state output rated 10 amps @ 240 VAC and 8 amps @ 24 VDC. Mechanical life is 10 million cycles. They have fingersafe screw-terminal connections. UL listed, CSA certified, and CE approved.

24-VDC relay can receive and evaluate analog signals from temperature and pressure sensors on two of the eight inputs.

Control Voltage	Power Consumption	No. of Signal Inputs	No. of Relay Outputs		
100/240 VAC	40/20 mA	8	4	**7244K8**	$226.35
24 VDC	80 mA	8	4	**7244K9**	226.35
35 mm DIN Rail (1 m Lg.)				**8961K15**	4.96

Programmable Logic Controllers

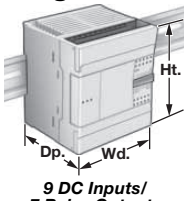

9 DC Inputs/ 7 Relay Outputs

Use these programmable logic controllers (PLCs) in place of relays and to handle simple automation jobs at a low cost. A PLC works by looking at its inputs (such as photoelectric and proximity sensors) and, depending on their state, turning its outputs on or off.

Windows-based software eliminates the need for a hand-held programmer. You'll need a PC running Windows 95 or better with a CD-ROM drive and an RS-232 serial port. Serial interface cable included. The controller's 24 VDC inputs and relay outputs are rated 2 amps @ 240 VAC/30 VDC. Dual processing speeds allow fast scan times. They can process 1,000 steps of basic instructions in 1.65 mS and complete end processing in 0.64 mS. They include a switch simulator for testing before installation.

Controllers include a built-in power supply for DC sensors and EEPROM backup memory that retains the program and data during power outages. 6561K1 has 15KB of memory; K2 has 27KB. Both have plastic housings and screw-terminal connections. Basic programming instructions are included. Controllers are DIN-rail or panel mountable. Both have two 0.169″ dia. mounting holes (hardware not included) and operate on 100-240 VAC. UL and C-UL listed and CE approved.

	Ht.	Wd.	Dp.		
9 DC Inputs/ 7 Relay Outputs	3.72″	3.15″	2.76″	**6561K1**	$437.47
14 DC Inputs/10 Relay Outputs	3.72″	3.74″	2.76″	**6561K2**	553.83
35 mm DIN Rail (1 m Lg.)				**8961K15**	4.96

Shared Run-Time Relays

Also known as alternating relays, these relays automatically alternate between two devices such as two pumps or heaters, decreasing and evening out the wear and tear of each device. They can also be wired to run both devices simultaneously when necessary, while otherwise alternating between the two devices as normal. All have a switch to cancel the alternating mode and select one device, useful when maintenance must be done to the other device. All are 8-pin, circular-pin style.

Relays switch two circuits "on" or "off" (DPDT) and are rated 10 amps @ 120/240 VAC. UL recognized and CSA certified.

Socket has screw-terminal connections and is DIN-rail or surface mountable (has two 0.165″ dia. mounting holes, hardware not included). See page 910 for more socket information.

Control Voltage		
24 VAC	**7136K11**	$67.09
120 VAC	**7136K12**	67.09
230 VAC	**7136K13**	67.09
Socket for All Above Relays	**7122K19**	4.07
35 mm DIN Rail (1 m Lg.)	**8961K15**	4.96

Easy-Program Logic Controllers

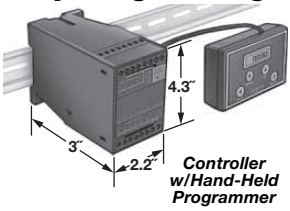

Controller w/Hand-Held Programmer

Need to program a PLC but don't know how? Not a problem for this user-friendly PLC—it'll lead you through step-by-step with plain-English text screens as you program and execute up to six simultaneous programs. With a 32KB memory capacity and EEPROM backup memory, this PLC retains all programming during power outages. Use to program automation jobs and as a replacement for relays, timing relays, and time switches.

Controllers have six 12-14 VDC inputs and four relay outputs (10 I/O) rated 5 amps @ 115 VAC. Processing speed is 1,000 lines/1 second. They include a 2-ft. power cord with a standard two-prong plug or you can hardwire directly to a 115 VAC supply. Both are DIN-rail or panel mountable (have two 0.138″ dia. mounting holes, hardware not included). Both have screw-terminal connections. Run on 115 VAC.

Controller with hand-held programmer includes a 1-ft. long connection cable.

Controller with PC software includes a serial interface cable and software. You'll need a PC running Windows 95 or better with a CD-ROM drive and an RS-232 serial port.

Remote timer panel monitors and adjusts up to eight timers while the controller is operating. It is NEMA 12 rated for oil protection and can be mounted on a machine (hardware included). Includes a 30″ long cable.

Expansion module lets you expand the PLC to 20 I/Os.

Controller With Hand-Held Programmer	**6884K2**	$330.91
Controller With PC Software	**6884K4**	307.27
Remote Timer Panel	**6884K7**	159.55
Expansion Module (6 Input/4 Output)	**6884K3**	171.36
35 mm DIN Rail (1 m Lg.)	**8961K15**	4.96

Safety Circuit-Monitoring Controllers

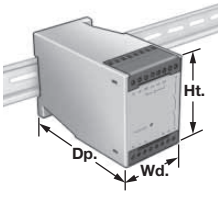

Used with access safety, emergency-stop, and coded magnetically actuated switches (such as 7202K on page 895), these controllers, also known as safety relays, shut down a machine if a fault is detected in safety circuits. LED status lights indicate mode of failure for fast diagnostics. Use one relay per safety input device.

Relays check for welded emergency-stop or interlock switch contacts; open circuits, short circuits, or ground faults in the safety circuitry; welded contacts in the relay itself; faults in the relay's monitoring circuits; and inadequate voltage to relay. They accept 10-30 VDC input signals.

Safety output contacts are rated 6 amps @ 250 VAC, except for 7773K61, which is rated 4 amps @ 250 VAC. Auxiliary semiconductor outputs provide 100 mA for signaling purposes. All have fingersafe screw-terminal connections and mount on a 35 mm DIN rail (sold separately below). UL listed, CSA certified, and CE approved.

Control Voltage	No. of Outputs Safety	Auxiliary	Ht.	Wd.	Dp.		
24-230 VAC/VDC	1	2	3.9″	1.8″	4.8″	**7773K61**	$261.60
24 VDC	1	2	3.9″	0.9″	4.8″	**7773K46**	208.25
24 VDC	2	2	3.9″	0.9″	4.8″	**7773K56**	257.12
24-230 VAC/VDC	3	2	3.9″	1.8″	4.8″	**7773K65**	347.18
35 mm DIN Rail (1 m Lg.)						**8961K15**	4.96

Countdown Timer Switches

Rotary Knob with Wall Plate

Rotary Knob without Wall Plate

High Amp Rotary Knob

Push-Button

Programmable Push-Button

These manually set switches save energy by automatically turning off fluorescent or incandescent lights and other electrical equipment after a set time. Switches with an override feature let you bypass the automatic shutoff for extended use of your equipment. All have screw-terminal connections (except 73415K32, which has wire leads) and are UL listed and CSA certified.

Rotary knob switches mount in a single-device (single-gang) switch box. Rated 20 amps @ 125 VAC; 10 amps @ 250 VAC. Switches *with wall plate* have a silver plastic wall plate and ivory knob. Switches *without wall plate* fit a standard GFCI or rocker switch wall plate (not included, see page 832). **To Order:** Please specify knob color: white or ivory.

High-amp rotary knob switches can also control 240 VAC air conditioners, heaters, and ventilating equipment. Switches mount in a two-device (two-gang) switch box. Rated 28 amps @ 240 VAC; 1 hp @ 120/240 VAC. Each has an aluminum satin-finish wall plate with black knob.

Push-button switch mounts in a single-device (single-gang) switch box. It has four preset times of 5, 10, 15 and 30 minutes. Includes an off button and three switch covers in white, ivory, and light almond. Rated 20 amps @ 120 VAC. Fits a standard GFCI or rocker switch wall plate (not included, see page 832).

Programmable push-button switch eliminates the need to reset a dial with every use. You can program lights to turn off automatically after intervals of five minutes to 12 hours. An LCD counts down until shut-off and offers an optional visual or audible shut-off warning. Mounts in a single-device (single-gang) switch box. Switch is white and includes a white wall plate. Switches one circuit (single pole). Rated 6.6 amps @ 120 VAC, 4.3 amps @ 277 VAC, and 1/6 hp @ 125 VAC.

Timing Range (minimum set time)	With Override		Without Override	
Rotary Knob Switches				
Single Circuit (Single Pole) with Wall Plate				
0-5 min. (1 min.)	7014K1	$24.99	7014K6	$21.41
0-30 min. (4 min.)	7014K4	23.46	7014K7	26.98
0-60 min. (10 min.)	7014K2	20.76	7014K8	26.98
0-6 hrs. (60 min.)	7014K5	32.80	7014K9	24.84
0-12 hrs. (120 min.)	7014K3	27.48	7014K11	32.80
Single Circuit (Single Pole) without Wall Plate				
0-5 min. (40 sec.)	—	—	7014K45	24.10
0-30 min. (1 min.)	7014K41	24.10	7014K46	24.10
0-60 min. (10 min.)	7014K42	24.10	7014K47	24.10
0-6 hrs. (60 min.)	7014K43	31.24	7014K48	31.24
0-12 hrs. (120 min.)	7014K44	31.24	7014K49	31.32
High-Amp Rotary Knob Switches				
Single Circuit (Single Pole) with Wall Plate				
0-1 hrs. (1 min.)	7672K53	84.50	7672K51	80.60
0-12 hrs. (15 min.)	7672K54	103.58	7672K52	99.74
Two Circuit (Double Pole) with Wall Plate				
0-1 hrs. (1 min.)	7672K57	87.81	7672K55	80.18
0-12 hrs. (15 min.)	7672K58	99.21	7672K56	103.77
Push-Button Switch				
Single Circuit (Single Pole) without Wall Plate				
5, 10, 15, 30 minutes (fixed)	—	—	73415K32	39.91
Programmable Push-Button Switch				
0-12 hrs. (5 min.)	6550T11	63.80	—	—

Programmable Timer Switches

Wall mount these timer switches to turn lights on and off at programmed times. They replace any light switch that fits in a single-device (single-gang) wall box. Both switch one circuit (single pole) and operate fluorescent and incandescent lights, as well as other electrical equipment. Come with 6″ wire leads. Color is white.

Dial switch has 24-hour programming. Includes an easy-to-set slide switch with nonremovable trippers and wall plate. Rated 20 amps @ 120 VAC. UL and C-UL listed. ***Digital*** switch has to-the-minute programming that can be set for each day of the week. Unit has an LCD and a memory backup battery. Rated 15 amps @ 120 VAC. UL listed and CSA certified.

Dial

Digital

	On/Off Cycles	Minimum On/Off Time		
Dial	24	30 min.	7367K4	$48.62
Digital	40	1 min.	7367K61	55.69

Contemporary Wall Plates

Update the look of your wall switches and dimmers. These two-piece plates have a snap-on cover that hides screws. Plates for rocker switches also fit GFCI receptacles. For more wall plates, see page 832. **To Order:** Please specify color: ivory or white.

For Use With	Ht. × Wd.		
One Toggle or Rotary Switch (1 Gang)	4 9/16″ × 2 7/8″	6343T13	$4.90
One Rocker Switch (1 Gang)	4 11/16″ × 2 15/16″	6343T11	4.80
Two Rocker Switches (2 Gang)	4 11/16″ × 4 3/4″	6343T12	9.61

One Rocker Switch

DIN Rails

Use these rails to mount terminal blocks, power supplies, relays, etc. on walls and in enclosures. All conform to EN 60715 (aluminum alloy rail also conforms to EN 50022).

DIN 1 Rail

DIN 2 & 3 Rail

DIN Rails

Wd.	Ht.	Mounting Slot Dia.	Mounting Slot Center-to-Center	1-Meter Lg.		2-Meter Lg.	
Zinc-Plated Steel							
DIN 1	32 mm (1.26″)	15 mm (0.59″)	6.3 mm (0.25″)	0.98″	8961K11	$8.38	8961K12	$13.54
DIN 2	15 mm (0.59″)	5.5 mm (0.20″)	4.2 mm (0.17″)	0.78″	8961K13	4.74	8961K14	9.25
DIN 3	35 mm (1.38″)	7.5 mm (0.30″)	6.3 mm (0.25″)	0.98″	8961K15	4.96	8961K16	8.50
Aluminum Alloy with Built-In Support Bracket							
DIN 3	35 mm (1.38″)	7.5 mm (0.30″)	5.5 mm (0.21″)	2.95″	8961K31	16.62	—	—
Heavy Duty Zinc-Plated Steel							
DIN 3	35 mm (1.38″)	15 mm (0.59″)	6.3 mm (0.25″)	0.98″	8961K18	8.84	8961K19	14.23
Type 304 Stainless Steel							
DIN 3	35 mm (1.38″)	7.5 mm (0.30″)	—	—	8961K42	24.09	8961K43	37.79

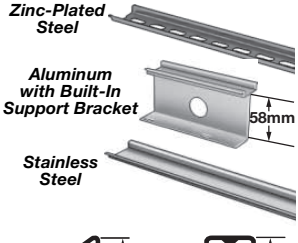

Accessories

DIN rail support brackets are used for bulky items where you may need extra mounting space behind the DIN rail. Made of zinc-plated steel. An M6 screw is included to mount DIN rail.

Ht.	Wd.	Lg.		
Angled Brackets				
50 mm (2″)	80 mm (3.2″)	25 mm (1″)	8961K22	$2.37
Straight Brackets				
25 mm (1″)	80 mm (3.2″)	20 mm (0.79″)	8961K23	2.91
50 mm (2″)	80 mm (3.2″)	20 mm (0.79″)	8961K24	3.23
70 mm (2.75″)	80 mm (3.2″)	20 mm (0.79″)	8961K25	4.09
90 mm (3.5″)	80 mm (3.2″)	20 mm (0.79″)	8961K26	4.23

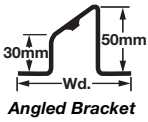

Angled Bracket

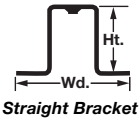

Straight Bracket

Mounting clips conveniently snap onto DIN 1 and DIN 3 rails to adapt your non-DIN-rail mountable equipment. Made of chromium-plated steel.

	Screw Dia.	Lg.	Wd.	Ht.		
Mounting Clips						
For DIN 1	M4	25 mm (1″)	11 mm (0.43″)	10 mm (0.39″)	8961K27	$1.71
For DIN 3	M4	37.3 mm (1.45″)	14 mm (0.55″)	12.5 mm (0.49″)	8961K28	1.71
For DIN 3	M5	37.3 mm (1.45″)	14 mm (0.55″)	12.5 mm (0.49″)	8961K29	1.71

About Fuses

How to Read Your Fuse Label

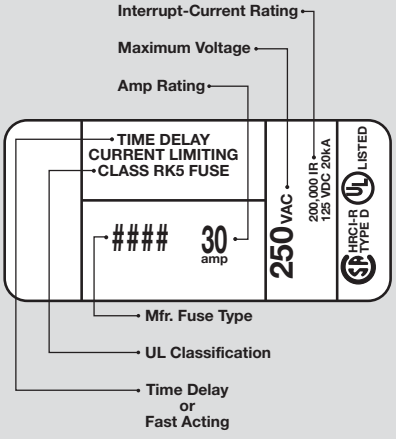

Fuses interrupt overload and short-circuit currents. Overload currents typically are up to 10 times larger than the fuse's available amp rating and occur when your equipment draws more current than it needs. Short circuits are greater than 10 times the fuse's amp rating and occur when the current finds a "shortcut" outside its normal path.

Time-delay fuses delay opening on low-level overloads until the overload has been sustained for a specific amount of time. This prevents the fuse from blowing when exposed to harmless temporary overload currents such as motor start-ups and switching surges. Some time-delay fuses are also known as dual-element fuses.

Fast-acting fuses do not have a time-delay opening. Use them when temporary overload currents are not present. Suitable for resistive loads that don't surge, such as heating and lighting.

Amp rating is the maximum current that a fuse carries under normal conditions.

Interrupt-current rating is the maximum current that a fuse can safely stop in the event of a short circuit.

UL Class	VAC	Fuse Type Cross Reference: Bussmann	Ferraz Shawmut	Littelfuse	MCM Part No.	See Pg.
UL Class Fuses						
RK1	250	LPN-RK	A2D-R	LLN-RK	**74445K**	916
RK1	600	LPS-RK	A6D-R	LLS-RK	**74445K**	916
RK1	600	KTS-R	A6K-R	KLS-R	**6616K**	916
RK5	250	FRN-R	TR-R	FLN-R	**7049K**	917
RK5	250	FRN-R-ID	TR-R-ID	FLN-R-ID	**7487K**	917
RK5	600	FRS-R	TRS-R	FLS-R	**7049K**	917
RK5	600	FRS-R-ID	TRS-R-ID	IDSR	**7487K**	917
J	600	LPJ-SP	AJT	JTD	**70325K**	917
J	600	LPJ-SPI	AJT	JTD-ID	**5054T**	917
J	600	JKS	A4J	JLS	**6985K**	917
L	600	KRP-C	A4BQ	KLPC	**4241K**	917
K5	250/600	NON/NOS	OT/OTS	NLN/NLS	**7072K**	917
T	300/600	JJN/JJS	A3T/A6T	JLLN/JLLS	**70455K**	918
H	250/600	REN/RES	RF/RFS	RLN/RLS	**7073K**	918
Semiconductor Fuses						
—	150/250	FWA/FWX	A15QS/A30QS	L15S/L25S	**74475K**	920
—	500/700	FWH/FWP	A50QS/A70QS	L50S/L70S	**74475K**	920
Midget Fuses						
CC	600	FNQ-R	ATQ-R	KLD-R	**7714K**	920
CC	600	LP-CC	ATD-R	CCMR	**72035K**	920
CC	600	KTK-R	ATM-R	KLK-R	**74495K**	920
G	600/480	SC	AG	SLC	**74485K**	920
—	250	BAF	OTM	BLF	**7059K**	920
—	250	FNM	TRM	FLM	**7706K**	920
—	500	FNQ	ATQ	FLQ	**7713K**	920
—	600	KTK	ATM	KLK	**74505K**	920
—	600	BBS	SBS	BLS	**6036T**	920
—	600	DCM	ATM	KLKD	**4397K**	920
Glass-Tube and Ceramic-Tube Fuses						
—	250/125/32	AGC/AGX	GGC/GGX	312	**7085K**	922
—	250/32	MDL	GDL	313	**7085K**	922
—	250/125	C520/C519	SMG/STG	225/229	**3686T**	922
—	250/125	GBB/ABC	GAB	322/314	**71385K**	922
—	250	MDA	GSA	326	**71385K**	922
—	250/125	GDB/GMA	GSB/GGM	217/235	**6978K**	922
—	250	GDC	GDG	218	**6978K**	922
—	250	GDA/S505	GSD/GSF	216/215	**6986K**	922
—	500	—	—	477	**6986K**	922
—	450/500	—	—	505	**71385K**	922
Low-Voltage Fuses						
—	125	ANN	CNN	CNN	**70635K**	923
—	125 VAC/DC	ACK	ACK	CCK	**4142K**	923
—	125 VAC/DC	AFX	ALS	—	**4142K**	923
—	32 VDC	—	—	MIDI/MEG	**9180K**	924
—	32 VAC/DC	ATM	AF2	MINI/297	**7460K**	924
—	32 VAC/DC	ATC	AF	ATO/257	**7460K**	924
—	32 VAC/DC	MAX	AF3	MAXI/299	**7460K**	924

UL Class Fuses

Don't see the fuse you need? Just tell us what you're looking for and we'll get it for you.

UL Class RK1 Fuses

Time Delay (1/2 to 60 Amp)

Time Delay (100 to 600 Amp)

Fast Acting (1 to 60 Amp)

Fast Acting (80 to 100 Amp)

A rejection-style design safeguards against replacement errors. These fuses can only be replaced with 200,000 amp and higher interrupt-current rated fuses. UL listed and CSA certified. For fuse blocks, see 7688K on page 919.

To Order: Please specify amp rating where necessary.

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Time-Delay Fuses					
Fuse Types: LPN-RK, A2D-R, LLN-RK					
1/2, 1, 1 1/4, 2	250/125	9/16"	2"	**74445K1**	$9.55
2 1/2, 3, 5, 6	250/125	9/16"	2"	**74445K2**	9.54
10, 15, 20, 30	250/125	9/16"	2"	**74445K3**	8.14
40, 50, 60	250/125	13/16"	3"	**74445K63**	14.97
100	250/250	13/16"	5 7/8"	**74445K64**	33.63
125, 200	250/250	1 11/16"	7 1/8"	**74445K15**	73.95
400	250/250	2 3/8"	8 5/8"	**74445K66**	133.17
600	250/250	2 7/8"	10 3/8"	**74445K67**	210.73
Fuse Types: LPS-RK, A6D-R, LLS-RK					
1/2, 1, 1 1/4, 2, 2 1/2	600/300	13/16"	5"	**74445K4**	20.17
3, 5, 10	600/300	13/16"	5"	**74445K5**	18.73
15, 20, 30	600/300	13/16"	5"	**74445K6**	16.90

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Time-Delay Fuses— Also known as dual-element fuses. AC interrupt-current rating is 300,000 amps; DC interrupt-current rating is 100,000 amps.

Fast-Acting Fuses— AC interrupt-current rating is 200,000 amps; DC interrupt-current rating is 20,000 amps.

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Time-Delay Fuses					
Fuse Types: LPS-RK, A6D-R, LLS-RK (Cont.)					
35, 40, 50, 60	600/300	1 1/16"	5 1/2"	**74445K73**	$30.00
100	600/300	1 3/16"	7 7/8"	**74445K74**	63.88
125, 200	600/300	1 11/16"	9 5/8"	**74445K35**	126.78
400	600/300	2 3/8"	11 5/8"	**74445K76**	248.92
600	600/300	2 7/8"	13 3/8"	**74445K77**	334.42
Fast-Acting Fuses					
Fuse Types: KTS-R, A6K-R, KLS-R					
1, 2, 3, 4, 5, 6, 8, 10	600/250	13/16"	5"	**6616K11**	26.35
12, 15, 20, 25, 30	600/250	13/16"	5"	**6616K21**	26.35
40, 50, 60	600/300	1 1/16"	5 1/2"	**6616K33**	53.00
80, 90, 100	600/300	1 5/16"	7 7/8"	**6616K34**	105.90

For information about fuses, see page 916.

Don't see the fuse you need? Just tell us what you're looking for and we'll get it for you.

UL Class RK5 Time-Delay Fuses

1/4 to 60 Amp

70 to 600 Amp

8 to 60 Amp with Blown-Fuse Indicator

70 to 400 Amp with Blown-Fuse Indicator

Also known as dual-element fuses, these fuses have a rejection-style design that safeguards against replacement errors. They can only be replaced with 200,000 amp and higher interrupt-current rated fuses. AC interrupt-current rating is 200,000 amps; DC interrupt-current rating is 20,000 amps for DC-rated fuses. UL listed and CSA certified. For fuse blocks, see 7688K on page 919.

To Order: Please specify amp rating where necessary.

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Fuses					
Fuse Types: FRN-R, TR-R, FLN-R					
1/2, 6/10, 1, 1 1/4	250/125	9/16"	2"	7049K1	$6.85
1 6/10, 2, 2 1/2	250/125	9/16"	2"	7049K4	6.58
3, 3 2/10, 4, 4 1/2, 5	250/125	9/16"	2"	7049K5	6.10
6, 7, 8, 10, 12	250/125	9/16"	2"	7049K6	6.10
15, 20, 25, 30	250/125	9/16"	2"	7049K193	4.74
35, 40, 45, 50, 60	250/125	13/16"	3"	7049K195	9.61
70, 80, 90, 100	250/___	11/16"	5 7/8"	7049K261	21.46
125, 150, 200	250/125	19/16"	7 1/8"	7049K461	47.40
300, 400	250/250	2 3/8"	8 5/8"	7049K219	87.14
600	250/250	2 7/8"	10 3/8"	7049K241	140.60
Fuse Types: FRS-R, TRS-R, FLS-R					
1/4, 1/2, 1, 1 1/4, 1 6/10	600/300	13/16"	5"	7049K7	13.74
2, 2 1/2, 3, 3 2/10, 4, 5	600/300	13/16"	5"	7049K8	12.73
6, 6 1/4, 7, 8, 10, 12	600/300	13/16"	5"	7049K9	12.73
15, 17 1/2, 20, 25, 30	600/300	13/16"	5"	7049K281	10.52
35, 40, 45, 50, 60	600/300	11/16"	5 1/2"	7049K291	19.50
70, 80, 90, 100	600/300	1 11/32"	7 7/8"	7049K311	40.13
125, 150, 175, 200	600/300	1 27/32"	9 5/8"	7049K471	81.40
300, 400	600/300	2 19/32"	11 5/8"	7049K33	178.06
500, 600	600/300	3 1/8"	13 3/8"	7049K54	244.44
Fuses with Blown-Fuse Indicator					
Fuse Types: FRN-R-ID, TR-R-ID, FLN-R-ID					
8, 10	250/160	9/16"	2"	7487K75	6.50
15, 20, 25, 30	250/160	9/16"	2"	7487K76	5.20
35, 40, 45, 50, 60	250/250	13/16"	3"	7487K77	9.49
70, 80, 90, 100	250/250	11/16"	5 7/8"	7487K78	16.02
125, 150, 200	250/250	19/16"	7 1/8"	7487K79	35.18
Fuse Types: FRS-R-ID, TRS-R-ID, IDSR					
1, 2, 2 1/2	600/600	13/16"	5"	7487K1	10.65
3, 4, 5, 6, 7, 8, 10, 12	600/600	13/16"	5"	7487K2	12.61
15, 17 1/2, 20, 25, 30	600/600	13/16"	5"	7487K3	8.82
35, 40, 45, 50, 60	600/300	11/16"	5 1/2"	7487K4	15.11
70, 80, 90, 100	600/600	15/16"	7 7/8"	7487K5	39.42
150, 200	600/600	1 13/16"	9 5/8"	7487K6	76.92
300, 400	600/600	2 9/16"	11 5/8"	7487K7	148.13

♦ Prices are 10% lower when you buy in quantities of 10 or more.

UL Class J Fuses

Time Delay (1 to 60 Amp)

Time Delay (70 to 400 Amp)

Time Delay with Blown-Fuse Indicator (8 to 60 Amp)

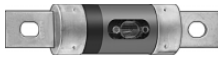

Time Delay with Blown-Fuse Indicator (70 to 200 Amp)

Fast Acting (1 to 60 Amp)

Fast Acting (80 to 400 Amp)

More compact than UL Class RK1 fuses, these fuses are a good choice for tight spaces. UL listed and CSA certified. For fuse blocks, see 7688K and 7721K on page 919.

To Order: Please specify amp rating where necessary.

Time-Delay Fuses— Also known as dual-element fuses. AC interrupt-current rating is 300,000 amps; DC interrupt-current rating is 100,000 amps.

Time-Delay Fuses with Blown-Fuse Indicator— A dot on the side turns red when the fuse blows. AC interrupt-current rating is 200,000 amps; DC interrupt-current rating is 100,000 amps.

Fast-Acting Fuses— AC interrupt-current rating is 200,000 amps; DC interrupt-current rating is 10,000 amps for 15- to 60-amp fuses.

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Time-Delay Fuses					
Fuse Types: LPJ-SP, AJT, JTD					
1, 1 1/4, 2, 2 1/2, 2 8/10	600/300	13/16"	2 1/4"	70325K1	$18.40
3, 4, 5, 6, 7, 8, 10	600/300	13/16"	2 1/4"	70325K2	18.40
12, 15, 20, 25, 30	600/300	13/16"	2 1/4"	70325K3	18.40
35, 40, 45, 50, 60	600/300	1 1/16"	2 3/8"	70325K41	29.26
70, 80, 90, 100	600/300	1 1/8"	4 5/8"	70325K51	64.86
125, 150, 175, 200	600/300	1 5/8"	5 3/4"	70325K81	127.89
250, 400	600/300	2 1/8"	7 1/8"	70325K21	254.29
Time-Delay Fuses with Blown-Fuse Indicator					
Fuse Types: LPJ-SPI, AJT, JTD-ID					
8, 9, 10, 12, 15	600/500	13/16"	2 1/4"	5054T5	16.06
17 1/2, 20, 25, 30	600/500	13/16"	2 1/4"	5054T6	16.06
35, 40, 45, 50, 60	600/500	1 1/16"	2 3/8"	5054T2	27.11
70, 80, 90, 100	600/500	1 1/16"	4 5/8"	5054T3	53.93
125, 150, 175, 200	600/500	1 5/8"	5 3/4"	5054T4	98.47
Fast-Acting Fuses					
Fuse Types: JKS, A4J, JLS					
1, 3, 4, 5	600/___	13/16"	2 1/4"	6985K1	32.07
6, 10	600/___	13/16"	2 1/4"	6985K3	21.99
15, 20, 25, 30	600/200	13/16"	2 1/4"	6985K2	21.98
40, 50, 60	600/175	1 1/16"	2 3/8"	6985K72	37.94
80, 100	600/___	1 1/8"	4 5/8"	6985K73	49.13
200	600/___	1 5/8"	5 3/4"	6985K74	96.28
400	600/___	2 1/8"	7 1/8"	6985K75	213.71

♦ Prices are 10% lower when you buy in quantities of 10 or more.

UL Class K5 Fuses

Use these fuses in circuits without temporary surges and where there is little potential for short-circuit currents. AC interrupt-current rating is 50,000 amps; DC interrupt-current rating is 20,000 amps. UL listed and CSA certified. For fuse blocks, see 7688K on page 919.

To Order: Please specify amp rating where necessary.

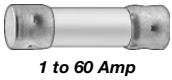

1 to 60 Amp

70 to 200 Amp

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Fuse Types: NON, OT, NLN					
1, 3, 5, 6, 10	250/250	9/16"	2"	7072K1	$2.12
15, 20, 30	250/250	9/16"	2"	7072K2	1.85
35, 40, 50, 60	250/250	13/16"	3"	7072K92	3.10
70, 80, 100	250/250	1 1/16"	5 7/8"	7072K13	13.05
200	250/250	19/16"	7 1/8"	7072K112	31.75
Fuse Types: NOS, OTS, NLS					
3, 5, 10, 15, 20, 30	600/300	13/16"	5"	7072K81	$9.33
35, 40, 50, 60	600/300	1 1/16"	5 1/2"	7072K82	15.09
100	600/300	1 5/16"	7 7/8"	7072K124	35.00
200	600/300	1 13/16"	9 5/8"	7072K125	61.30

♦ Prices are 10% lower when you buy in quantities of 10 or more.

UL Class L Time-Delay Fuses

The choice for high-amp power applications. AC interrupt-current rating is 300,000 amps; DC interrupt-current rating is 100,000 amps. UL listed, CSA certified, and CE approved.

Amps	VAC/VDC	Dia.	O'all Lg.		
Fuse Types: KRP-C, A4BQ, KLPC					
601	600/300	2 1/2"	8 5/8"	4241K11	$440.10
801	600/300	2 1/2"	10 3/4"	4241K12	419.69
1,000	600/300	2 1/2"	10 3/4"	4241K13	419.69
1,200	600/300	2 1/2"	10 3/4"	4241K14	419.69

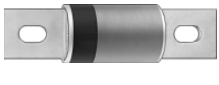

Don't see the fuse you need? Just tell us what you're looking for and we'll get it for you.

UL Class CF Touch-Safe Fuses and DIN-Rail Mount Fuse Blocks

Fuse

Fuse Block

An enclosed design with recessed plug-in blades prevents accidental contact with electrical circuits. Meet IEC European standards and UL Class CF (cube fuse) requirements. UL listed and CSA certified.

Fuses—A safer alternative for new installations. These time-delay fuses (also known as dual element) have a blown-fuse indicator except for the 1- and 3-amp fuses. AC interrupt-current rating is 300,000 amps; DC interrupt-current rating is 100,000 amps.

To Order: Please specify amp rating.

Fuse Blocks—Mount directly on 35 mm DIN rail (see 8961K on page 915). You can gang them together to create double- and triple-pole configurations.

Fuses

Available Amps	VAC/VDC	Lg.	Wd.	Ht.		
1, 3, 6, 10, 15	600/300	1.88″	0.75″	1.00″	8078K5	$38.04
17½, 20, 25, 30	600/300	1.88″	0.75″	1.00″	8078K6	38.04
35, 40, 45, 50, 60	600/300	2.13″	1.00″	1.13″	8078K2	60.29
70, 80, 90, 100	600/300	3.01″	1.00″	1.26″	8078K3	117.33

Fuse Blocks

For Amp Range	VAC/VDC	Lg.	Wd.	Ht.		
1 to 30	600/300	2.30″	0.76″	1.36″	8078K31	$14.81
35 to 60	600/300	2.60″	1.03″	1.60″	8078K32	20.95
70 to 100	600/300	2.91″	1.05″	2.01″	8078K41	26.19

UL Class H Replaceable-Element Fuses

5 to 60 Amp

100 to 200 Amp

When theses fuses blow, you can replace the element and use them again. Interrupt-current rating is 10,000 amps. UL listed. For fuse blocks, see 7688K on page 919.

		Fuses			Replacement Elements		
Amps	Dia.	O'all Lg.		Each	Pkg. Qty.		Pkg.
250 VAC—*Fuse Types: REN, RF, RLN*							
5	9/16″	2″	7073K128	$14.12	2	7073K328	$10.73
10	9/16″	2″	7073K117	11.70	2	7073K317	9.73
15	9/16″	2″	7073K118	11.98	4	7073K318	7.00
20	9/16″	2″	7073K119	12.50	4	7073K319	6.30
30	9/16″	2″	7073K122	9.06	4	7073K322	5.71
40	13/16″	3″	7073K124	26.33	2	7073K324	6.77
50	13/16″	3″	7073K126	26.33	2	7073K326	6.77
60	13/16″	3″	7073K127	18.75	2	7073K327	6.12
100	1 1/16″	5 7/8″	7073K132	41.40	2	7073K332	10.73
200	1 9/16″	7 1/8″	7073K137	106.53	2	7073K337	21.48
600 VAC—*Fuse Types: RES, RFS, RLS*							
10	13/16″	5″	7073K217	34.00	2	7073K417	16.15
15	13/16″	5″	7073K218	27.40	4	7073K418	11.54
20	13/16″	5″	7073K219	27.45	4	7073K419	11.54
30	13/16″	5″	7073K222	22.37	4	7073K422	11.54
50	1 1/16″	5 1/2″	7073K226	50.31	2	7073K426	13.36
60	1 1/16″	5 1/2″	7073K227	34.94	2	7073K427	10.73
100	1 5/16″	7 7/8″	7073K232	85.12	2	7073K432	19.03
200	1 13/16″	9 5/8″	7073K237	161.31	2	7073K437	29.63

UL Class T Fast-Acting Fuses

3 to 60 Amp

70 to 400 Amp

Smaller than UL Class J fuses. AC interrupt-current rating is 200,000 amps; DC interrupt-current rating is 20,000 amps for 300 VAC/160 VDC fuses. UL listed, CSA certified, and CE approved. For fuse blocks, see 7688K on page 919.

To Order: Please specify amp rating where necessary.

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Fuse Types: JJN, A3T, JLLN					
3, 10	300/___	7/16″	7/8″	70455K8	$20.13
15, 20, 30	300/160	7/16″	7/8″	70455K1	20.13
35, 40, 50	300/160	9/16″	7/8″	70455K2	17.22
60	300/160	9/16″	7/8″	70455K723	14.93
80, 100	300/160	3/4″	2 3/16″	70455K69	22.65
150, 200	300/160	7/8″	2 7/16″	70455K79	31.28
300	300/160	1″	2 3/4″	70455K78	99.21
400	300/160	1″	2 3/4″	70455K75	58.08
Fuse Types: JJS, A6T, JLLS					
3, 10, 15, 20	600/___	9/16″	1 1/2″	70455K4	14.68
25, 30	600/___	9/16″	1 1/2″	70455K5	12.55
35, 40, 45, 50	600/___	13/16″	1 9/16″	70455K6	25.88
60	600/___	13/16″	1 9/16″	70455K823	18.31
70, 80, 90, 100	600/___	3/4″	2 15/16″	70455K86	39.24
125, 200	600/___	7/8″	3 1/4″	70455K89	56.88
400	600/___	1″	3 5/8″	70455K85	137.80

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Fuse Reducers

Installing one of these reducers allows you to use small, low-amp fuses in blocks designed to hold large, high-amp fuses. All have two components and fit most panels or switches.

Reducers ***for UL Class RK fuses*** are UL listed and CSA certified.

Amp Range Reduction From	To	250 VAC		600 VAC	
For UL Class RK Fuses					
35 to 60	0 to 30	74455K31	$12.96	74455K35	$13.37
65 to 100	35 to 60	74455K33	18.09	74455K37	30.24
65 to 100	0 to 30	74455K32	28.89	74455K33	18.09
110 to 200	35 to 60	74455K34	63.36	74455K38	100.98
For UL Class J Fuses					
35 to 60	0 to 30	___	___	74455K25	17.26
65 to 100	35 to 60	___	___	74455K27	23.03

Fuse Pullers

Fuse Puller

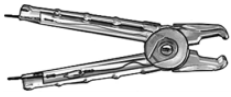

Fuse Puller with Voltage Detector

Fuse pullers have notched handles for a nonslip grip.

Fuse puller with voltage detector has test probes and a light that indicates 100 to 600 VAC/VDC.

Fuse Dia.	For Fuse Sizes 250 VAC	600 VAC	Lg.		
Fuse Pullers					
9/32″-1/2″	Midget	___	5″	7074K17	$6.63
1/2″-1″	0-100 amps	0-100 amps	7 1/2″	7074K1	12.50
3/4″-2 1/2″	31-600 amps	31-400 amps	11 3/4″	7074K3	25.62
Fuse Puller with Voltage Detector					
9/16″-1″	0-100 amps	0-60 amps	7 3/4″	7290K1	31.45

Fuse Clamps

Shown in Use

A turn of the knob clamps a fuse into its clip, eliminating poor connections that can cause excessive heat and blown fuses. All clamps have a phenolic knob and zinc-plated steel jaws.

For Fuse Sizes 250 VAC	600 VAC	Jaw Opening		
For Fuses with Round Ends				
30 amps	___	3/8″-9/16″	7433K11	$19.58
60 amps	30 amps	1/2″-15/16″	7433K12	22.27
___	60 amps	1″-1 5/16″	7433K16	17.84
For Fuses with Blade Ends				
100 amps	100 amps	0″-3/4″	7433K13	17.84
200 amps	200 amps	0″-1″	7433K14	19.73
400 amps	400 amps	0″-7/8″	7433K17	33.59
600 amps	600 amps	0″-1 1/8″	7433K15	39.76

Don't see the fuse block you need? Just tell us what you're looking for and we'll get it for you.

UL Class Fuse Blocks

Blocks have box-lug terminals. UL listed, CSA certified, and CE approved.

Single Pole

Double Pole

Triple Pole

For UL Class	VAC	For Amp Range	Single Pole		Double Pole		Triple Pole	
Fuse Types: FRN-R, TR-R, FLN-R, LPN-RK, A2D-R, LLN-RK								
RK1 and RK5	250	1/10 to 30	7688K41	$15.00	7688K42	$24.89	7688K43	$28.78
RK1 and RK5	250	31 to 60	7688K44	18.09	7688K45	33.75	7688K46	44.61
RK1 and RK5	250	61 to 100	7688K47	45.82	7688K48	76.97	7688K49	101.50
RK1 and RK5	250	101 to 200	7688K411	61.32	—	—	7688K412	196.09
Fuse Types: FRS-R, TRS-R, FLS-R, IDSR, LPS-RK, A6D-R, LLS-RK, KTS-R, A6K-R, KLS-R								
RK1 and RK5	600	1/10 to 30	7688K54	16.66	7688K55	28.29	7688K56	47.82
RK1 and RK5	600	31 to 60	7688K57	26.02	7688K58	43.75	7688K59	55.20
RK1 and RK5	600	61 to 100	7688K61	51.21	7688K62	81.90	7688K63	94.90
RK1 and RK5	600	101 to 200	7688K511	65.06	—	—	7688K512	175.86
Fuse Types: LPJ-SP, AJT, JTD, JKS, A4J, JLS								
J	600	1/2 to 30	7688K67	16.54	7688K68	37.69	7688K69	45.92
J	600	31 to 60	7688K71	19.10	7688K72	37.91	7688K73	49.74
J	600	61 to 100	7688K66	38.60	—	—	7688K76	79.87
J	600	101 to 200	7688K74	97.41	—	—	7688K75	213.64
Fuse Types: JJN, A3T, JLLN								
T	300	1/2 to 30	—	—	7688K941	32.65	7688K942	46.52
T	300	31 to 60	—	—	7688K943	23.95	7688K944	32.84
T	300	61 to 100	7688K945	39.31	7688K946	76.27	7688K947	112.33
Fuse Types: JJS, A6T, JLLS								
T	600	1/2 to 30	7688K81	16.33	7688K82	32.50	7688K83	34.35
T	600	31 to 60	7688K84	17.52	7688K85	35.24	7688K86	35.64
T	600	61 to 100	7688K816	34.15	7688K817	67.07	7688K818	82.13
Fuse Types: NON, OT, NLN, REN, RF, RLN								
H and K5	250	1/10 to 30	7688K11	9.42	7688K21	17.05	7688K31	30.36
H and K5	250	31 to 60	7688K12	15.61	7688K22	23.78	7688K32	33.84
H and K5	250	61 to 100	7688K13	41.93	7688K23	69.93	7688K33	88.57
Fuse Types: NOS, OTS, NLS, RES, RFS, RLS								
H and K5	600	1/10 to 30	7688K16	18.50	7688K26	29.18	7688K36	40.18
H and K5	600	31 to 60	7688K17	20.57	7688K27	31.03	7688K37	39.01
H and K5	600	61 to 100	7688K18	42.93	7688K28	80.71	7688K38	86.62

UL Class Fuse Block Safety Covers

Prevent accidental shocks with these snap-on safety covers. They fit most popular fuses and fuse blocks and have slotted openings for testing with probes. CSA certified and CE approved. UL listed except the covers for Class CC fuses, which have UL recognized components.

Covers with indicator light illuminate yellow when fuse is blown.

For Amp Range	Lg.	Wd.	Ht.	Covers		Covers with Indicator Light	
For UL Class RK and H 250 VAC Fuses							
0 to 30	3.8″	0.75″	1.7″	6977K11	$6.40	6977K14	$8.81
35 to 60	5″	1″	1.9″	6977K12	6.62	6977K15	8.28
65 to 100	8.2″	1.3″	2.2″	6977K13	8.16	6977K16	9.73
For UL Class RK and H 600 VAC Fuses							
0 to 30	7″	1.3″	2.1″	6977K21	6.62	6977K24	8.41
35 to 60	8.2″	1.3″	2.2″	6977K22	7.84	6977K25	9.73
65 to 100	10.4″	1.5″	2.3″	6977K27★	12.26	6977K28★	14.96

★Not compatible with fuse types KTS-R, A6K-R, KLS-R.

For Amp Range	Lg.	Wd.	Ht.	Covers		Covers with Indicator Light	
For UL Class T 600 VAC Fuses							
0 to 30	3.8″	0.75″	1.7″	6977K11	$6.40	6977K14	$8.81
35 to 60	5″	1″	1.9″	6977K12	6.62	—	—
For UL Class J 600 VAC Fuses							
0 to 30	5″	1″	1.9″	6977K12	6.62	6977K15	8.28
35 to 60	5″	1.2″	2.1″	6977K32	6.38	6977K35	8.28
65 to 100	7″	1.3″	2.3″	6977K33	7.25	6977K36	9.37
For UL Class CC 600 VAC Fuses							
0 to 30	3.8″	0.75″	1.7″	6977K41	6.07	6977K42	7.91

Versa-Mount UL Class Fuse Blocks

Mount directly on 35 mm DIN rail or surface mount using the universal hole pattern, which matches most popular fuse blocks. Blocks have box-lug terminals. UL listed and CSA certified. For DIN rail, see 8961K on page 915.

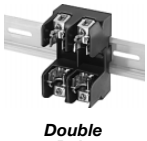

Double Pole

For UL Class	VAC/VDC	For Amp Range	Single Pole		Double Pole		Triple Pole	
Fuse Types: FRN-R, TR-R, FLN-R, LPN-RK, A2D-R, LLN-RK								
RK1 and RK5	250/250	1 to 30	4294K11	$14.89	4294K12	$24.48	4294K13	$29.64
RK1 and RK5	250/250	31 to 60	4294K14	19.29	4294K15	32.43	4294K16	43.08
Fuse Types: FRS-R, TRS-R, FLS-R, IDSR, LPS-RK, A6D-R, LLS-RK, KTS-R, A6K-R, KLS-R								
RK1 and RK5	600/600	1 to 30	4294K21	16.65	4294K22	29.06	4294K23	45.58
RK1 and RK5	600/600	31 to 60	4294K24	27.11	4294K25	41.77	4294K26	52.59
Fuse Types: LPJ-SP, AJT, JTD, JKS, A4J, JLS								
J	600/600	1 to 30	4294K31	16.86	4294K32	37.35	4294K33	47.38
J	600/600	31 to 60	4294K34	19.47	4294K35	36.97	4294K36	49.97

UL Class J Touch-Safe DIN-Rail Mount Fuse Blocks

Designed for use with UL Class J fuses, these blocks prevent accidental contact with live parts. Mount blocks directly on 35 mm DIN rail (see 8961K on page 915). All blocks are rated for 600 VAC and have screw terminals. UL listed and CSA certified.

1 Pole

No. of Poles	For Amp Range	Lg.	Wd.	Ht.	Fuse Blocks		Fuse Blocks with Blown-Fuse Indicator	
Fuse Types: LPJ, AJT, JTD, JKS, A4J, JLS								
1	1 to 30	3.15″	1.28″	4.49″	7721K15	$14.47	7721K16	$16.67
1	31 to 60	3.50″	1.57″	4.80″	7721K17	16.67	7721K18	23.43
2	1 to 30	3.15″	2.56″	4.49″	7721K23	41.35	7721K24	48.30
2	31 to 60	3.50″	3.14″	4.80″	7721K29	47.45	7721K31	53.85
3	1 to 30	3.15″	3.84″	4.49″	7721K25	62.76	7721K26	72.28
3	31 to 60	3.50″	4.71″	4.80″	7721K32	71.15	7721K33	80.56

For information about fuses, see page 916.

Don't see the fuse you need? Just tell us what you're looking for and we'll get it for you.

Semiconductor Very Fast-Acting Fuses

A

B

With a quicker response time than standard fast-acting fuses, these fuses provide superior circuit protection for sensitive solid-state devices. Interrupt-current rating is 200,000 amps except for 150 VAC fuses, which have a 100,000 amp rating. UL recognized and CE approved.

To Order: Please specify amp rating where necessary.

Available Amps	VAC	Dia.	O'all Lg.		
Fuse Types: FWA, A15QS, L15S					
A... 10, 15	150	7/16″	1 1/2″	74475K1	$10.28
B... 100, 150, 200, 250	150	1 1/8″	2 11/16″	74475K8	43.62
B... 300, 400	150	1 1/8″	2 11/16″	74475K9	43.62
Fuse Types: FWX, A30QS, L25S					
A... 10, 20, 30	250	9/16″	2″	74475K21	16.25
B... 35, 40, 50, 60	250	13/16″	3 3/16″	74475K22	47.73
B... 80, 100, 200	250	1 1/4″	3 1/8″	74475K23	63.66
B... 300, 400, 600	250	1 1/2″	3 13/16″	74475K24	84.64
Fuse Types: FWH, A50QS, L50S					
A... 10, 20, 30	500	9/16″	2″	74475K31	26.26
B... 40, 50, 60	500	13/16″	3 3/16″	74475K32	37.01
B... 80, 100	500	15/16″	3 5/8″	74475K34	46.11
B... 125, 200	500	1 3/16″	3 5/8″	74475K57	68.83
B... 300, 400	500	1 1/2″	4 5/16″	74475K35	94.46
B... 600	500	2″	4 5/16″	74475K353	135.81
Fuse Types: FWP, A70QS, L70S					
A... 20, 25, 30, 32	700	9/16″	2″	74475K4	23.32
A... 40, 50	700	9/16″	2″	74475K7	41.27
B... 150	700	1 1/2″	5 1/16″	74475K44	98.56
B... 400	700	2″	5 1/16″	74475K45	161.18

1,000 VDC Fast-Acting Fuses and Fuse Blocks

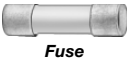

Fuse

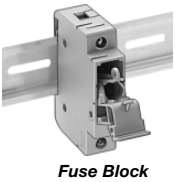

Fuse Block

Developed for the solar industry, these fuses and fuse blocks handle the requirements of high-voltage DC applications. Meet IEC European standards.

Fuses withstand the cycling conditions and environment associated with outdoor installations. Interrupt current rating is 10,000 amps. UL listed.

To Order: Please specify amp rating.

Fuse blocks are touch-safe style and mount on 35 mm DIN rail (see 8961K on page 915). UL recognized.

Available Amps	Dia.	O'all Lg.		
Fuse Types: PV and DCT				
1, 2, 3, 4, 5, 6, 8, 10, 12, 15	13/32″	1 1/2″	4504K1	$24.88
Fuse Block			4504K7	24.17
Fuse Block with Blown-Fuse Indicator			4504K9	30.83

UL Class G Midget Fuses

Protect your power distribution branch circuits with these fuses. AC interrupt-current rating is 100,000 amps; DC interrupt-current rating is 10,000 amps. UL listed and CSA certified. For fuse blocks, see 7716K on page 921.

To Order: Please specify amp rating where necessary.

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Time-Delay Fuses					
Fuse Types: SC, AG, SLC					
10, 15	600/170	13/32″	1 5/16″	74485K2	$4.62
20	600/170	13/32″	1 13/32″	74485K888	4.62
25, 30	480/300	13/32″	1 5/8″	74485K3	8.65
35, 40, 45, 50, 60	480/300	13/32″	2 1/4″	74485K4	9.90
Fast-Acting Fuses					
Fuse Types: SC, AG, SLC					
1, 2, 3, 5, 6	600/170	13/32″	1 5/16″	74485K1	4.62

♦ Prices are 10% lower when you buy in quantities of 10 or more.

UL Class CC Midget Fuses

Replacement errors aren't a concern for these fuses, which are used in power distribution branch circuits. They have a rejection-style design that ensures they can only be replaced with 200,000 amp and higher interrupt-current rated fuses. UL listed. For fuse blocks, see 7716K, 6113T, and 7055K on page 921.

To Order: Please specify amp rating.

Time-Delay Fuses for Motors— AC interrupt-current rating is 200,000 amps; DC interrupt-current rating is 100,000 amps for 1/4- to 10-amp fuses and 20,000 amps for 12- to 60-amp fuses.

Time-Delay Fuses for Transformers— AC interrupt-current rating is 200,000 amps; 12-amp and higher fuses have a DC interrupt-current rating of 20,000 amps.

Fast-Acting Fuses— AC interrupt-current rating is 200,000 amps.

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Time-Delay Fuses for Motors					
Fuse Types: LP-CC, ATD-R, CCMR					
1/4, 1/2, 8/10, 1, 1 1/2	600/300	13/32″	1 1/2″	72035K1	$12.98
2, 2 1/2, 3, 4, 5	600/300	13/32″	1 1/2″	72035K2	12.98
6, 7, 8, 9, 10	600/300	13/32″	1 1/2″	72035K3	12.98
12, 15, 20, 25, 30	600/500	13/32″	1 1/2″	72035K4	12.72
35, 40, 45, 50, 60	600/250	27/32″	1 7/8″	72035K7	24.32
Time-Delay Fuses for Transformers					
Fuse Types: FNQ-R, ATQ-R, KLD-R					
1/4, 3/10, 4/10, 1/2, 6/10	600/___	13/32″	1 1/2″	7714K1	9.85
3/4, 8/10, 1, 1 1/4, 1 3/10	600/___	13/32″	1 1/2″	7714K2	9.85
1 1/2, 1 6/10, 1 8/10, 2, 2 1/2	600/___	13/32″	1 1/2″	7714K3	9.85
3, 3 2/10, 3 1/2, 4, 4 1/2, 5, 6	600/___	13/32″	1 1/2″	7714K4	9.85
6 1/4, 7, 7 1/2, 8, 9, 10	600/___	13/32″	1 1/2″	7714K5	9.85
12, 15, 20, 25, 30	600/300	13/32″	1 1/2″	7714K6	9.85
Fast-Acting Fuses					
Fuse Types: KTK-R, ATM-R, KLK-R					
1/4, 1/2, 1, 1 1/2, 2, 2 1/2	600/___	13/32″	1 1/2″	74495K5	12.61
3, 4, 5, 6, 7, 8	600/___	13/32″	1 1/2″	74495K6	12.61
10, 12, 15, 20, 25, 30	600/___	13/32″	1 1/2″	74495K7	12.61

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Midget Fuses

While these fuses provide additional equipment protection, they're not designed for power distribution branch circuits. UL listed and CSA certified. For fuse blocks, see 7722K, 7716K, and 7055K on page 921.

To Order: Please specify amp rating.

Time-Delay Fuses— AC interrupt-current rating is 10,000 amps.

Fast-Acting Fuses— AC interrupt-current rating is 10,000 amps for 250 VAC fuses (except 12 amp is 750 amps) and 100,000 amps for 600 VAC fuses. DC interrupt-current rating is 10,000 amps for DC-rated fuses.

Available Amps	VAC/VDC	Dia.	O'all Lg.		Each ♦
Time-Delay Fuses					
Fuse Types: FNM, TRM, FLM					
1/4, 1/2, 6/10, 8/10, 1	250/___	13/32″	1 1/2″	7706K1	$3.54
1 1/4, 1 6/10, 1 8/10, 2, 2 1/4, 2 1/2	250/___	13/32″	1 1/2″	7706K2	3.54
3, 3 2/10, 4, 4 1/2, 5	250/___	13/32″	1 1/2″	7706K3	3.54
6, 6 1/4, 7, 8, 10	250/___	13/32″	1 1/2″	7706K4	3.54
12, 15, 20, 25, 30	250/___	13/32″	1 1/2″	7706K5	3.54
Fuse Types: FNQ, ATQ, FLQ					
1/4, 1/2, 6/10, 8/10, 1	500/___	13/32″	1 1/2″	7713K1	9.44
1 1/2, 2, 2 1/2, 3, 3 2/10	500/___	13/32″	1 1/2″	7713K2	9.76
4, 5, 6 1/4, 7, 8	500/___	13/32″	1 1/2″	7713K3	9.76
10, 12, 15, 20, 25, 30	500/___	13/32″	1 1/2″	7713K4	9.76
Fast-Acting Fuses					
Fuse Types: BAF, OTM, BLF					
1, 2, 3, 4, 5	250/___	13/32″	1 1/2″	7059K1	2.67
6, 8, 10, 12, 15	250/___	13/32″	1 1/2″	7059K2	2.38
20, 25, 30	250/___	13/32″	1 1/2″	7059K46	2.38
Fuse Types: KTK, ATM, KLK					
1/2, 6/10, 1, 1 1/4, 1 1/2, 2, 3, 4, 5	600/___	13/32″	1 1/2″	74505K1	11.71
6, 7, 8, 10, 12, 15, 20, 25, 30	600/___	13/32″	1 1/2″	74505K2	11.71
Fuse Types: BBS, SBS, BLS					
1, 2, 3, 4, 5	600/___	13/32″	1 3/8″	6036T2	4.22
6, 15	600/___	13/32″	1 3/8″	6036T3	6.62
Fuse Types: DCM, ATM, KLKD					
3/10, 3/4, 1, 2, 3	600/600	13/32″	1 1/2″	4397K1	12.92
5, 6, 8, 9, 10	600/600	13/32″	1 1/2″	4397K2	12.92
12, 15, 20, 25, 30	600/600	13/32″	1 1/2″	4397K3	12.92

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Don't see the fuse or fuse block you need? Just tell us what you're looking for and we'll get it for you.

Midget Fuse Blocks

Blocks ***for 1/10-*** to ***30-amp*** fuses have 0.25″ quick-disconnect terminals (rated to 20 amps); all others have box lugs. Blocks ***for UL Class CC*** and ***35- to 60-amp*** fuses are UL listed; all others are UL recognized. All are CSA certified.

DIN-rail adapter allows you to mount 1/10- to 30-amp midget fuse blocks directly on 35 mm DIN rail (see 8961K on page 915). Single- and double-pole blocks use one adapter; triple-pole blocks require two adapters.

Single Pole

Double Pole

For UL Class	VAC	For Amp Range	Single Pole		Double Pole		Triple Pole	
Fuse Types: FNQ-R, ATQ-R, KLD-R, LP-CC, ATD-R, CCMR, KTK-R, ATM-R, KLK-R								
CC	600	1/10 to 30	7716K51	$9.56	7716K52	$14.43	7716K53	$18.92
Fuse Types: SC, AG, SLC								
G	480	25 to 30	7716K67	22.57	7716K68	46.33	7716K69	61.85
G	480	35 to 60	7716K71	30.02	7716K72	60.67	7716K73	76.25
G	600	1 to 15	7716K61	22.57	7716K62	46.33	7716K63	61.85
G	600	20	7716K64	22.56	7716K65	46.46	7716K66	61.86
Fuse Types: FNM, TRM, FLM, FNQ, ATQ, FLQ, BAF, OTM, BLF, KTK, ATM, KLK, BBS, SBS, BLS, KTQ								
—	600	1/10 to 30	7716K74	5.47	7716K75	9.34	7716K76	11.98
DIN-Rail Adapter for 1/10- to 30-amp Fuse Blocks							7716K81	$2.49

DIN-Rail Mount Midget Fuse Blocks

An enclosed touch-safe design prevents accidental contact with electrical circuits. These fuse blocks mount on 35 mm DIN rail (see 8961K on page 915). Use with switchboard panels, small motors, and transformers. Rated 30 amps and 600 VAC/600 VDC. CSA certified.

Blocks ***for UL Class CC fuses*** are UL listed. Blocks ***for Non-UL Class*** fuses are UL recognized.

1 Pole

3 Pole

For UL Class	No. of Poles	Lg.	Wd.	Ht.	Fuse Blocks		Fuse Blocks w/ Blown-Fuse Indicator	
Fuse Types: FNQ-R, ATQ-R, KLD-R, LP-CC, ATD-R, CCMR, KTK-R, ATM-R, KLK-R								
CC	1	2.3″	0.7″	3.1″	6113T11	$10.69	6113T14	$15.76
CC	2	2.3″	1.4″	3.1″	6113T12	21.93	6113T15	32.66
CC	3	2.3″	2.1″	3.1″	6113T13	29.97	6113T16	54.21
Fuse Types: FNM, TRM, FLM, FNQ, ATQ, FLQ, BAF, OTM, BLF, KTK, ATM, KLK								
—	1	2.3″	0.7″	3.1″	7722K21	8.90	7722K22	14.47
—	2	2.3″	1.4″	3.1″	7722K23	18.11	7722K24	29.62
—	3	2.3″	2.1″	3.1″	7722K25	29.81	7722K26	45.51

Fuses for Multimeters

Fuses are fast acting and UL recognized.

44/100-amp fuse has an AC/DC interrupt-current rating of 10,000 amps. ***11-*** and ***15-amp*** fuses have an AC/DC interrupt-current rating of 20,000 amps.

Amps	VAC/VDC	Dia.	O'all Lg.		
Fuse Types: DMM-B, FSM, FLU					
44/100	1,000/1,000	13/32″	1 3/8″	4398K1	$7.83
11	1,000/1,000	13/32″	1 1/2″	4398K2	7.83
15	1,000/1,000	13/32″	1 1/2″	4398K3	9.51

European "Milk Bottle" Fuses

Also known as diazed type, these Type D fuses are rated 500 VAC.

gL-gG Fuses— Meet IEC European standards and have a blown-fuse indicator. Interrupt-current rating is 75,000 amps.

gL Fuses— Comply with DIN standards. Interrupt-current rating is 100,000 amps.

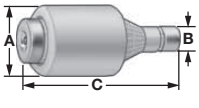

Amps	mm (A)	(B)	(C)	gL-gG Fuses Each ♦		gL Fuses Each ♦	
2	21.5	6	50	6981K81	$4.59	6981K31	$8.75
4	21.5	6	50	6981K82	4.59	6981K32	8.75
6	21.5	6	50	6981K83	4.59	6981K33	7.76
10	21.5	8	50	6981K84	4.59	6981K34	8.00
16	21.5	10	50	6981K85	4.59	6981K35	8.00
20	21.5	12	50	6981K86	4.59	6981K36	8.00
25	21.5	14	50	6981K87	4.59	6981K37	7.76
35	27	16	50	6981K91	8.33	6981K41	13.50
50	27	18	50	6981K92	8.33	6981K42	13.28
63	27	20	50	6981K93	8.33	6981K43	13.50

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Inline Midget Fuse Holders

Crimp on for quick wire connection. Made of plastic. Rated 30 amps and 600 VAC.

Holder ***for UL Class CC*** fuses is UL listed. Holder ***for Non-UL Class*** fuses is UL recognized.

Optional cover provides a waterproof seal. Made of neoprene. Overall size with fuse is 1″ Dia.×8″ Lg.

For UL Class			
Fuse Types: FNQ-R, ATQ-R, KLD-R, LP-CC, ATD-R, CCMR, KTK-R, ATM-R, KLK-R			
CC	4234K2	$18.86	
Fuse Types: FNM, TRM, FLM, FNQ, ATQ, FLQ, BAF, OTM, BLF, KTK, ATM, KLK			
—	4234K1	19.11	
Optional Cover	4234K3	2.74	

Panel-Mount Midget Fuse Holders

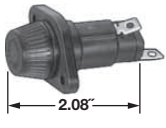

Straight Terminal

Right-Angle Terminal

Mounting Dimensions

A 0.25″ quick-disconnect/solder terminal allows easy mounting in panels up to 3/4″ thick. Holders are made of plastic. Rated 30 amps and 600 VAC. UL recognized and CSA certified.

For UL Class	Terminal Style	Standard		Watertight	
Fuse Types: FNQ-R, ATQ-R, KLD-R, LP-CC, ATD-R, CCMR, KTK-R, ATM-R, KLK-R					
CC	Straight	7055K26	$8.43	7055K27	$9.19
CC	Right Angle	7055K29	9.18	7055K28	10.62
Fuse Types: FNM, TRM, FLM, FNQ, ATQ, FLQ, BAF, OTM, BLF, KTK, ATM, KLK					
—	Straight	7055K16	4.70	7055K17	5.54
—	Right Angle	7055K19	5.11	7055K18	6.41

European Fuses

All have a 10 mm×38 mm ceramic body and meet Type gL-gG, IEC European standards. Interrupt-current rating is 120,000 amps. CE approved. **To Order:** Please specify amp rating where necessary.

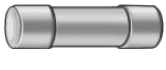

Available Amps	VAC		1-9	10-Up
1, 2, 4, 6, 8, 10, 12, 16, 20, 25	500	5988T1	$8.57	$7.72
32	400	5988T3	8.50	7.65

Glass-Tube and Ceramic-Tube Fuse Kits

Kits come in a plastic case.

140-fuse kit includes 3AB and 3AG fuses (1/4 to 30 amps) in fast-acting and time-delay styles, plus fuse holders and fuse clips.

270-fuse kit includes 3AB, 3AG, and 5 mm×20 mm fuses (1/8 to 30 amps) in fast-acting and time-delay styles, fuse clips, fuse holders, and a fuse block.

140-Fuse Kit	7719K8	$330.23
270-Fuse Kit	7719K9	578.24

140-Fuse Kit

For information about fuses, see page 916.

Don't see the fuse you need? Just tell us what you're looking for and we'll get it for you.

0.18" and 1/4" Dia. Glass-Tube Fuses

Fast Acting

Time Delay

The right size for electronic circuits. For fuse blocks and fuse holders, see 7687K, 7087K, and 7696K on page 923.

2AG fuses are 0.18" Dia.×0.57" Lg. UL listed and CSA certified except 3686T3 and T6. 3686T6 is UL recognized. *Fast-acting* 1/8- to 3 1/2-amp fuses have an interrupt-current rating of 10,000 amps @ 125 VAC; 4- to 10-amp fuses have an interrupt-current rating of 500 amps @ 125 VAC. *Time-delay* 1/4- to 3 1/2-amp fuses have an interrupt-current rating of 10,000 amps @ 125 VAC; 4- to 7-amp fuses have an interrupt-current rating of 400 amps @ 125 VAC.

3AG fuses are 1/4" Dia.×1 1/4" Lg. *Fast-acting* fuses are UL listed except for 35-amp fuse. 1/16- to 10-amp fuses have an interrupt-current rating of 10,000 amps @ 125 VAC; 12- to 35-amp fuses have an interrupt-current rating of 300 amps @ 32 VAC. *Time-delay* 1/10- to 8-amp fuses are UL listed and have an interrupt-current rating of 10,000 amps @ 125 VAC; 10- to 30-amp fuses are UL recognized and have an interrupt-current rating of 300 amps @ 32 VAC.

8AG fuses are 1/4" Dia.×1" Lg. 1- to 5-amp fuses are UL listed and CSA certified; 6- and 8-amp fuses are UL recognized. Interrupt-current rating is 10,000 amps @125 VAC for 1- to 3-amp fuses and 1,000 amps @ 125 VAC for 4- to 8-amp fuses.

To Order: Please specify amp rating where necessary.

Fuse	Available Amps	VAC	Pkg. Qty.		Pkg. ♦
Fast-Acting Fuses					
Fuse Types: C520, SMG, 225					
2AG	1/8, 1/4, 3/8	250	5	3686T1	$12.16
2AG	1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 3 1/2	250	5	3686T2	4.73
2AG	4, 5, 6, 7, 8, 10	125	5	3686T3	4.73
Fuse Types: AGC, GGC, 312					
3AG	1/16, 1/10, 1/8	250	5	7085K71	6.72
3AG	1/4, 3/10, 3/8	250	5	7085K73	6.93
3AG	1/2, 3/4	250	5	7085K74	3.41
3AG	1, 1 1/4, 1 1/2, 2, 2 1/2, 3	250	5	7085K75	2.26
3AG	4, 5, 6, 7	250	5	7085K77	3.26
3AG	8, 10	250	5	7085K78	3.26
3AG	12, 15, 20, 25, 30, 35	32	5	7085K79	2.27
Fuse Types: AGX, GGX					
8AG	1, 2, 3	250	5	7085K82	4.81
8AG	4, 5, 6, 8	125	5	7085K83	4.81
Time-Delay Fuses					
Fuse Types: C519, STG, 229					
2AG	1/4, 3/8, 1/2, 6/10, 3/4, 1	250	5	3686T7	6.35
2AG	1 1/4, 1 1/2, 2, 2 1/2, 3, 3 1/2	250	5	3686T8	6.35
2AG	4, 5, 6, 7	125	5	3686T6	6.35
Fuse Types: MDL, GDL, 313					
3AG	1/10, 1/8, 2/10	250	5	7085K91	8.69
3AG	1/4, 1/2, 3/4, 1	250	5	7085K92	7.38
3AG	1 1/2, 2, 2 1/2, 3, 3 2/10	250	5	7085K1	7.38
3AG	4, 5, 6 1/4, 7, 8	250	5	7085K2	7.38
3AG	10	32	5	7085K15	7.38
3AG	15, 20, 25, 30	32	5	7085K4	7.38

♦ Prices are 10% lower when you buy 10 or more packages.

5 mm Dia. Ceramic-Tube Fuses

These fuses are 20 mm long. Interrupt-current rating is 1,500 amps except time-delay fuse type 477 has an AC interrupt rating of 100 amps and a DC interrupt rating of 400 amps. UL recognized and meet IEC European standards. For fuse blocks and fuse holders, see 7687K, 7087K, and 7696K on page 923.

To Order: Please specify amp rating where necessary.

Available Amps	VAC/VDC	Pkg. Qty.		Pkg. ♦
Fast-Acting Fuses				
Fuse Types: GDA, GSD, 216				
1/8, 1/4, 1/2, 5/8, 8/10, 1	250/___	5	6986K1	$8.27
1 1/4, 1 6/10, 2, 2 1/2, 3.15	250/___	5	6986K2	8.27
4, 5, 6 3/10, 10, 12 1/2	250/___	5	6986K3	8.27
Time-Delay Fuses				
Fuse Types: S505, GSF, 215				
1/4, 1/2, 8/10, 1, 1 1/4	250/___	5	6986K4	8.27
2, 2 1/2, 4, 5, 8, 10	250/___	5	6986K5	8.27
Fuse Type: 477				
1/2, 8/10, 1, 2, 3.15	500/400	5	6986K7	8.65
4, 5, 6 3/10, 8, 10, 12	500/400	5	6986K8	8.65
16	500/400	5	6986K815	8.65

♦ Prices are 10% lower when you buy 10 or more packages.

5 mm Dia. Glass-Tube Fuses

Fast Acting

Time Delay

These fuses are 20 mm long. For fuse blocks and fuse holders, see 7687K, 7087K, and 7696K on page 923.

Fast-Acting Fuses—*250 VAC* fuses are CSA certified except for 16-amp fuse. Interrupt-current rating is 35 amps @ 250 VAC. 1/10- to 10-amp fuses are UL recognized except 6978K4 is UL listed. *125 VAC* 3.15- to 6-amp fuses are UL listed and CSA certified. Interrupt-current rating is 10,000 amps @ 125 VAC. 7- to 15-amp fuses are UL recognized. Interrupt-current rating is 150 amps @ 125 VAC.

Time-Delay Fuses—UL recognized, CSA certified, and meet IEC European standards. Interrupt-current rating is 35 amps @ 250 VAC.

To Order: Please specify amp rating.

Available Amps	VAC	Pkg. Qty.		Pkg. ♦
Fast-Acting Fuses				
Fuse Types: GDB, GSB, 217				
1/10, 1/8, 2/10, 1/4	250	5	6978K1	$5.66
1/2, 8/10, 1, 1 1/4, 1 6/10, 2, 2 1/2	250	5	6978K2	5.66
3.15, 4, 5, 6 3/10, 8, 10, 16	250	5	6978K3	7.40
Fuse Types: GMA, GGM, 235				
1/2, 1, 1 1/2, 2, 3	250	5	6978K4	5.55
3.15, 4, 5, 6, 7, 8, 10, 15	125	5	6978K5	4.32
Time-Delay Fuses				
Fuse Types: GDC, GDG, 218				
1/10, 1/8, 2/10, 1/4	250	5	6978K6	5.66
1/2, 8/10, 1, 1 1/4, 1 6/10	250	5	6978K7	5.66
2, 2 1/2, 4, 5, 6 3/10, 8	250	5	6978K8	5.66

♦ Prices are 10% lower when you buy 10 or more packages.

1/4" Dia. Ceramic-Tube Fuses

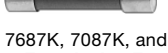

Designed for high-current electronic circuits such as microwave ovens. These 3AB fuses are 1 1/4" long. For fuse blocks and fuse holders, see 7687K, 7087K, and 7696K on page 923.

Fast-Acting Fuses—*Fuse types ABC, GAB,* and *314* up to 15 amps are UL listed and have an interrupt-current rating of 10,000 amps @ 125 VAC/VDC; 20- to 30-amp fuses are UL recognized and have an interrupt-current rating of 1,000 amps @ 125 VAC and 400 amps @ 125 VDC.

Fuse type 505 are UL and C-UL recognized and CE approved. 10- and 12-amp fuses have an interrupt-current rating of 20,000 amps. 16- to 30-amp fuses have an AC interrupt-current rating of 30,000 amps and a DC interrupt-current rating of 20,000 amps.

Very Fast-Acting Fuses—UL recognized, CSA certified, and CE approved. Interrupt-current rating is 10,000 amps @ 125 VAC/VDC for 1- to 15-amp fuses and 200 amps @ 125 VAC/VDC for 20- and 25-amp fuses.

Time-Delay Fuses—CSA certified and CE approved. 1/4- to 20-amp fuses are UL listed; 25- and 30-amp fuses are UL recognized. Interrupt-current rating for all is 10,000 amps @ 125 VAC; 20- to 30-amp fuses also have an interrupt-current rating of 10,000 amps @ 125 VDC.

To Order: Please specify amp rating.

Available Amps	VAC/VDC	Pkg. Qty.		Pkg. ♦
Fast-Acting Fuses				
Fuse Types: ABC, GAB, 314				
1/4, 1/2, 3/4, 1, 1 1/2	250/125	5	71385K8	$6.14
2, 2 1/2, 3, 4, 5, 6	250/125	5	71385K9	6.03
7, 8, 10, 12, 15	250/125	5	71385K11	6.03
20	250/125	5	71385K41	8.30
25, 30	250/125	5	71385K4	8.30
Fuse Type: 505				
10, 12	450/___	5	71385K71	13.22
16, 20, 25, 30	500/500	5	71385K81	13.22
				Each♣
Very Fast-Acting Fuses				
Fuse Types: GBB, 322				
1, 2, 3, 4, 5, 6, 8	250/125	—	71385K62	$9.81
10, 12, 15, 20, 25	250/125	—	71385K63	8.41
Time-Delay Fuses				
Fuse Types: MDA, GSA, 326				
1/4, 3/8, 1/2, 3/4	250/___	—	71385K1	2.59
1, 1 1/2, 2, 2 1/2	250/___	—	71385K5	2.59
3, 4, 5, 6, 7, 8, 10	250/___	—	71385K6	2.27
12, 15	250/___	—	71385K7	2.27
20, 25, 30	250/125	—	71385K12	2.46

♦ Prices are 10% lower when you buy 10 or more packages.
♣ Prices are 10% lower when you buy 10 or more.

For information about fuses, see page 916.

Don't see the fuse or fuse block you need? Just tell us what you're looking for and we'll get it for you.

Fuse Blocks for Glass-Tube and Ceramic-Tube Fuses

Spring clips hold your 3AB and 3AG (1/4″ Dia.×1 1/4″ Lg.) fuses securely while allowing quick changes. Blocks are rated 300 VAC. UL recognized.

10-fuse blocks easily snap apart into separate units.

For No. of Fuses	Terminal Angle	Amps		
0.187″ Quick-Disconnect Terminals				
1	45°	20	7687K11	$1.00
2	45°	20	7687K12	1.92
10	40°	20	7687K2	17.11
10	Straight	20	7687K1	17.65
0.250″ Quick-Disconnect Terminals				
1	45°	30	7687K13	1.62
2	45°	30	7687K14	2.77
10	40°	20	7687K4	18.48
10	Straight	20	7687K3	17.11
Screw Connection Terminals				
10	—	30	7687K5	40.98

Inline Fuse Holders for Glass-Tube and Ceramic-Tube Fuses

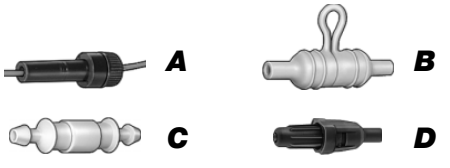

Add fuse protection to a single wire.

Holders for 3AB and 3AG Fuses— Use with 1/4″ Dia.×1 1/4″ Lg. fuses. *Wire-lead* holder has 9″ leads for connecting to terminals and includes a 20-amp fuse. Made of plastic. *Crimp-on* holder is made of waterproof rubber.

Holders for 3AB, 3AG, and 8AG Fuses— Use with 1/4″ Dia.×1 1/4″ Lg. and 1/4″ Dia.×1″ Lg. fuses. Made of plastic.

Holders for 5 mm Dia.×20 mm Lg. Fuses— Made of plastic. *Wire-lead* holder has 4″ leads for connecting to terminals.

	Connection	Amps	VAC/VDC	Lg.	Ht.		
For 3AB and 3AG Fuses							
A	Wire Lead	20	32/—	2.19″	0.69″	7696K33	$4.88
B	Crimp-On	30	32/—	3.00″	0.75″	7696K31	11.41
For 3AB, 3AG, and 8AG Fuses							
C	Crimp-On	30	32/—	2.42″	0.53″	7696K32	3.32
For 5 mm Dia.×20 mm Lg. Fuses							
A	Wire Lead	6.3	32/32	1.89″	0.63″	7696K1	2.37
D	Crimp-On	6.3	32/32	1.89″	0.63″	7696K2	2.42

Panel-Mount Fuse Holders for Glass-Tube and Ceramic-Tube Fuses

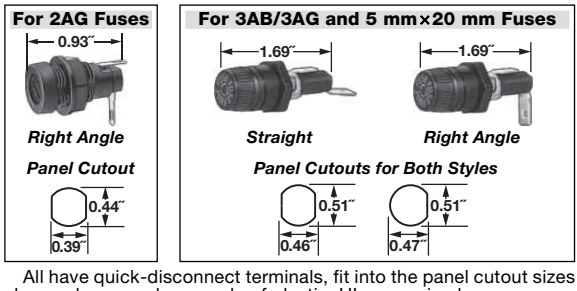

All have quick-disconnect terminals, fit into the panel cutout sizes shown above, and are made of plastic. UL recognized.

Holder for 2AG fuses has a screwdriver slot knob. Rated 10 amps and 300 VAC. Maximum panel thickness is 1/4″.

Holders for 3AB/3AG (1/4″ Dia.×1 1/4″ Lg.) and ***5 mm Dia.×20 mm Lg. fuses*** have a knob that unlocks with a twist. Holders for 3AB/3AG fuses are rated 20 amps and 250 VAC; holders for 5 mm×20 mm fuses are rated 16 amps and 250 VAC. Maximum panel thickness is 1/8″.

Terminal Size	***Straight Terminals***		***Right-Angle Terminals***	
For 2AG Fuses				
0.110″	—	—	7087K36	$5.83
For 3AB/3AG Fuses				
0.187″	7087K14	$4.75	7087K12	4.75
0.250″	7087K15	5.35	7087K13	5.35
For 5 mm×20 mm Fuses				
0.187″	7087K41	4.72	7087K42	4.72
0.250″	7087K43	5.30	7087K44	5.30

Inline Fuses and Fuse Holder

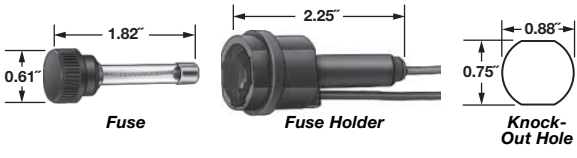

Commonly used for inline protection of fluorescent light fixtures. You'll need both a fuse and fuse holder.

Fuses— Have a built-in cap that securely connects to the fuse holder. Interrupt-current rating is 10,000 amps. UL listed and CSA certified. *LGR fast-acting* fuses protect lighting fixtures. *LMF time-delay* fuses handle high inrush (inducting) loads from ballast transformers in lighting systems.

To Order: Please specify amp rating.

LHR Fuse Holder— For use with LGR and LMF fuses. Rated 10 amps and 300 VAC. It includes two 7″ wire leads. UL recognized.

Fuse Type	Available Amps	VAC		
LGR Fast Acting	1, 1 1/2, 2, 3, 4, 5, 10	300	73405K3	$2.65
LMF Time Delay	1/2, 1, 1 6/10, 2, 3 2/10	300	73405K5	7.19
LHR Fuse Holder			73405K11	2.63
Optional Panel-Mount Clip for Fuse Holder			73405K12	.93

Lift Truck Fuses

You'll find these fuses on battery-operated lift trucks and other low-voltage equipment.

Fast-acting and ***time-delay fuses*** have an AC/DC interrupt-current rating of 10,000 amps. They're 1 1/8″ dia. except 60-amp fuse is 7/8″ dia. UL recognized.

Very fast-acting fuses have an AC interrupt-current rating of 2,500 amps and a DC interrupt-current rating of 2,700 amps. They're 7/8″ wide and have a blown-fuse indicator. UL recognized up to 400 amps.

To Order: Please specify amp rating where necessary.

Fuse block has stud terminal connections.

Available Amps	VAC/VDC	O'all Lg.		
Fast-Acting Fuses				
Fuse Types: AFX, ALS				
200, 400, 500	125/125	4 3/4″	4142K2	$26.45
Very Fast-Acting Fuses				
Fuse Types: ANN, CNN				
35, 40, 50, 60, 80	125/80	3 3/16″	70635K21	36.25
90, 100, 125, 150, 175, 200	125/80	3 3/16″	70635K1	28.93
225, 250, 300	125/80	3 3/16″	70635K3	33.43
325, 350, 400, 500, 600	125/80	3 3/16″	70635K41	52.40
Fuse Block for Very Fast-Acting Fuses			70635K51	22.26
Time-Delay Fuses				
Fuse Types: ACK, CCK				
60	125/125	3 3/4″	4142K35	20.02
80	125/125	4 1/2″	4142K11	26.39
140, 175, 200	125/125	4 3/4″	4142K1	26.40
250	125/125	4 3/4″	4142K48	37.99

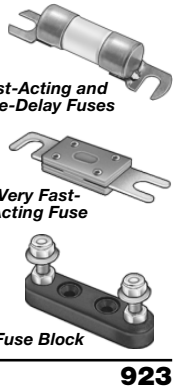

For information about fuses, see page 916.

Don't see the fuse you need? Just tell us what you're looking for and we'll get it for you.

Blade-Style Low-Voltage Fuses

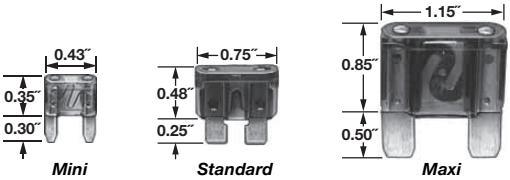

Mini *Standard* *Maxi*

Easy to install, these fuses are the industry standard for low-voltage automotive and other electronic applications. UL listed except for fuses with blown-fuse indicator. For fuse blocks and holders, see 9553T on page 953 and 8110K, 5183T, and 8945T on this page.

To Order: Please specify amp rating.

Fast-acting fuses with blown-fuse indicator illuminate when it's time to replace them.

Size	Available Amps	VAC/VDC	Pkg. Qty.		Pkg.
Fast-Acting Fuses					
Fuse Types: ATM, AF2, 297					
Mini	2, 3, 4, 5, 7½, 10	32/32	5	7460K1	$3.18
Mini	15, 20, 25, 30	32/32	5	7460K2	3.18
Fuse Types: ATC, AF, ATO, 257					
Standard	1, 2, 3, 4, 5, 7½, 10	32/32	5	7460K3	3.28
Standard	15, 20, 25, 30, 40	32/32	5	7460K4	3.28
Fast-Acting Fuses with Blown-Fuse Indicator					
Fuse Types: ATM, AF2, 297					
Mini	3, 5, 7½, 10	—/12	2	8183T5	3.00
Mini	15, 20, 25, 30	—/12	2	8183T6	3.00
Fuse Types: ATC, AF, ATO, 257					
Standard	3, 5, 7½, 10	—/12	2	8183T7	3.12
Standard	15, 20, 25, 30	—/12	2	8183T8	3.12
Time-Delay Fuses					
Fuse Types: MAX, AF3, 299					
Maxi	20, 30, 40, 50, 60, 80	32/32	1	7460K51	3.12

40-fuse kit includes 40 standard fuses and a fuse puller/tester.

180-fuse kit contains an assortment of 135 mini, standard, and maxi blade-style fuses; 45 fast-acting, glass-tube fuses; and three different fuse puller/testers. Furnished in a plastic box.

40-Fuse Kit	7460K89	Each	$25.91
180-Fuse Kit	7460K88	Each	$92.33

Inline Blade-Style Fuse Holders

For Standard Fuse

Close the cap on these fuse holders for protection in harsh environments. All are made of plastic. Holders for *mini* and *standard* fuses have two 4″ leads. Holder for *maxi* fuse has two 6″ leads.

Holders with blown-fuse indicator have a light that illuminates when it's time to replace. Both include a fuse.

For Size	Amp Range	VDC	Wire Size, AWG		
Holders					
Fuse Types: ATM, AF2, 297					
Mini	2 to 20	32	14	8110K1	$3.16
Mini	25 to 30	32	12	8110K2	3.36
Fuse Types: ATC, AF, ATO, 257					
Standard	1 to 20	32	16	8110K3	3.21
Standard	25 to 30	32	12	8110K4	3.68
Fuse Types: MAX, AF3, 299					
Maxi	20 to 60	32	6	8110K5	14.40
Holders with Blown-Fuse Indicator					
Fuse Types: ATM, AF2, 297					
Mini	2.5 to 30	12	12	8110K6	3.75
Fuse Types: ATC, AF, ATO, 257					
Standard	2.5 to 30	12	12	8110K7	3.95

Blade-Style Low-Voltage DC Circuit Breakers

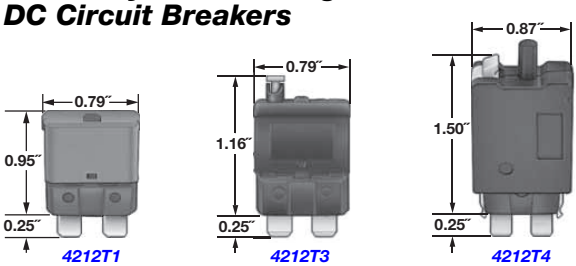

4212T1 *4212T3* *4212T4*

Never worry about blown fuses again—replace your type ATC, AF, ATO, and 257 blade-style fuses with these circuit breakers. They protect against overload and short circuits in low-voltage automotive and other electronic applications. Interrupt-current rating is 2,000 amps. Temperature range is –40° to +185° F. Meet SAE standards.

To Order: Please specify amp rating.

Available Amps	VDC		
With Automatic Reset			
6, 8, 10, 15, 20, 25, 30	12	4212T1	$23.18
With Push-to-Reset Button			
6, 8, 10, 15, 20, 25, 30	32	4212T3	23.18
Vibration-Resistant with Push-to-Reset Button			
3, 4, 5, 6, 7½, 8, 10, 15, 20, 25	28	4212T4	18.56

Blade-Style AC/DC Circuit Breakers and DIN-Rail Mount Holder

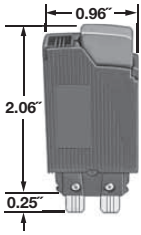

In addition to replacing type ATC, AF, ATO, and 257 blade-style fuses, this circuit breaker can also be used in AC applications. Compact size allows DIN-rail mounting. It protects against overload and short circuits in low-voltage automotive and other electronic applications. Push the button to reset. Max. voltage is 250 VAC/72 VDC. DC and AC interrupt-current rating is 2,000 amps. Temp. range is –4° to +140° F. UL recognized, CSA certified, and IP40 rated. Meet UL 1077 for branch protection. **To Order:** Please specify amp rating.

DIN-rail mount holder has screw clamp connections.

Available Amps		
¼, ½, 1, 1½, 2, 2½, 3, 4, 5, 6, 8, 10	6493T1	$25.84
DIN-Rail Mount Holder	6493T3	22.34

Blade-Style Fuse Blocks

For Standard Fuses

For Maxi Fuse

An insulating cover prevents contact with live circuits. Blocks have screw terminal connections. Rated 32 VDC.

For Standard Fuses— Maximum 30 amps per fuse; maximum 100 amps per block. Mounting holes are 3/32″ dia.

For Maxi Fuse— 30 to 80 amps. Mounting holes are 3/16″ dia.

For Size	For No. of Fuses	Lg.	Wd.	Ht.		
Fuse Types: ATC, AF, ATO, 257						
Standard	6	3.3″	1.5″	4.9″	5183T11	$44.06
Standard	12	3.3″	1.5″	6.5″	5183T12	55.11
Fuse Types: MAX, AF3, 299						
Maxi	1	2.0″	1.4″	2.9″	8945T1	26.04

Time-Delay Low-Voltage Fuses and Fuse Blocks

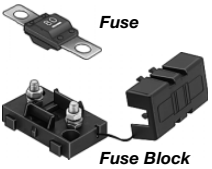

Fuse *Fuse Block*

An alternative to blade-style fuses, these fuses are designed for low-voltage automotive and other electronic applications. Interrupt-current rating is 1,000 amps for 50- and 80-amp fuses and 2,000 amps for 40-amp and 100- to 250-amp fuses.

To Order: Please specify amp rating.

Fuse blocks have stud terminal connections and include a protective cover.

Available Amps	VDC	O'all Lg.	Wd.		Each ♦
Fuse Types: MIDI, MEG					
40, 50, 80	32	1.61″	0.47″	9180K8	$5.44
100, 125, 150, 175	32	2.70″	0.75″	9180K1	6.50
200, 225, 250	32	2.70″	0.75″	9180K2	6.50
Fuse Block for 40- to 80-Amp Fuses				9180K6	11.35
Fuse Block for 100- to 250-Amp Fuses				9180K7	4.50

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Load-Center Circuit Breakers

Cutler-Hammer

Siemens

Square D Equivalent

Fit these breakers in Cutler-Hammer, Siemens, and Square D breaker boxes. All have screw clamp connections. Rated 120/240 VAC, 60 Hz. Interrupt-current rating is 10,000 amps. Meet UL 489 requirements for branch circuit protection.

Cutler-Hammer CH Series—Plug into Cutler-Hammer CH series breaker boxes.

Siemens QP Series—Plug into Siemens EQ series breaker boxes.

Square D QO Series Equivalent—Plug into Square D QO series breaker boxes (see 6790K on this page).

To Order: Please specify amp rating where necessary.

No. of Poles	Available Amps	Wd.		
Cutler-Hammer CH Series				
1	15, 20, 30	¾″	**5259T7**	$8.76
2	15, 20, 30, 40, 50, 60	1½″	**5259T8**	20.57
2	70	1½″	**5259T9**	54.74
Siemens QP Series				
1	15, 20, 30	1″	**5259T4**	6.50
2	15, 20, 30, 40, 50, 60	2″	**5259T5**	15.00
2	70	2″	**5259T6**	42.86
Square D QO Series Equivalent				
1	15, 20	¾″	**5259T1**	9.37
1	30	¾″	**5259T2**	9.37
2	15, 20, 30, 40, 50, 60	1½″	**5259T3**	21.62

Plug-Base Fuses and Breakers

Fuses

Rated 125 VAC. UL listed.

Type TL is a time-delay fuse for normal motor applications.

Type T is a time-delay fuse that has more delay than normal. It's commonly used in motor applications when the motor is cycled on/off frequently.

Type S is a time-delay fuse with a non-interchangeable body, which prevents the wrong size fuse from being used.

Type W is a fast-acting fuse for general purpose circuit protection. It quickly opens when short-circuited or when an overload occurs.

Type TL

Type S

Fuse Type	Edison Base	Pkg. Qty.	*15 Amps*	*20 Amps*	*30 Amps*	Pkg.
TL	Yes	4	**7070K52**	**7070K53**	**7070K54**	$6.69
T	Yes	4	**7070K58**	**7070K59**	**7070K61**	13.76
S	No	4	**7070K55**	**7070K56**	**7070K57**	16.35
W	Yes	4	**7070K62**	**7070K63**	**7070K64**	5.05

Breakers

Replace any Edison-base fuse with these resettable circuit breakers. They have a push-to-reset button and are rated 125 VAC. UL listed.

Amps		Each
10	**7075K1**	$11.41
15	**7075K2**	11.41
20	**7075K3**	11.63

Current Limiters

Also known as thermistors, these devices are used to protect power supplies, motor drives, and battery chargers from large inrush currents when the equipment is turned on.

Resistance @ 25° C, ohms	Max. Inrush Amps	Max. Energy, joules	Dia.		
0.5	30	150	1.18″	**8000K4**	$6.83
1	20	65	0.79″	**8000K1**	5.03
1	36	160	1.18″	**8000K5**	6.83
1	40	800	1.38″	**8000K9**	12.08
2	25	300	1.18″	**8000K6**	6.83
5	12	100	0.79″	**8000K2**	5.03
5	20	300	1.18″	**8000K7**	9.38
5	25	600	1.38″	**8000K11**	12.08
10	8	90	0.79″	**8000K3**	5.03
10	15	250	1.22″	**8000K8**	9.38

Square D Circuit Breakers

QO

QOB

Homeline Tandem

Use these breakers with Square D breaker boxes. All have screw clamp connections. Rated 120/240 VAC except 3-pole breaker is rated 240 VAC. Operate at 60 Hz. Interrupt-current rating is 10,000 amps. Meet UL 489 requirements for branch circuit protection. 6782K11 and 69225K2 15- to 20-amp breakers are UL listed as SWD (switching duty) for 120 VAC fluorescent lighting.

QO and ***QOB Series***—QO series plug into Square D QO series breaker boxes (see 6790K on this page). QOB series bolt onto lighting and appliance panel boards.

Homeline Series—Snap into Square D Homeline series breaker boxes (see 6914K on this page). *1-pole tandem* can only be used with the 6914K33 box.

To Order: Please specify amp rating where necessary.

No. of Poles	Available Amps	Wd.		
QO Series				
1	15, 20	¾″	**6782K11**	$11.11
1	30	¾″	**6782K12**	11.11
2	15, 20, 30, 40, 50, 60	1½″	**6782K21**	25.70
2	70	1½″	**6782K22**	52.60
QOB Series				
1	15, 20, 30	¾″	**6782K5**	29.30
2	15, 20, 30	1½″	**6782K6**	65.54
3	15, 20, 30	2¼″	**6782K7**	215.77
Homeline Series				
1	15, 20, 30	1″	**69225K2**	7.49
1 Tandem	20	1″	**69225K84**	14.93
2	20, 30, 40	2″	**69225K4**	17.25

Square D Circuit Breaker Boxes

Also known as load centers, these boxes are single-phase, 3-wire, and can be mounted for top or bottom feed conduit connections. UL listed.

QO Series Main Box

Main circuit breaker boxes have a main circuit breaker switch and main service knockouts in the corners. Enclosures have a hinged door and can be flush or surface mounted. Rated NEMA 1 for indoor use.

Secondary circuit breaker boxes are used as add-on boxes that connect to a main box. They do not have a main circuit breaker switch. Enclosures can be surface mounted, have a screw-on cover, and are rated NEMA 1 for indoor use except 6790K69 has a hinged cover and is rated NEMA 3R for outdoor use.

QO Series—Use with QO series circuit breakers (see 6782K and 5259T on this page). All have a one-piece tin-plated copper bus. Rated 120/240 VAC, 60 Hz. *Main* boxes have an interrupt-current rating of 22,000 amps; *secondary* boxes have an interrupt-current rating of 10,000 amps except 6790K59 is rated 65,000 amps when used with 65,000-amp interrupt-current rated circuit breakers.

Homeline Series—Use with Homeline series circuit breakers (see 69225K on this page). It has a one-piece plated aluminum bus. Interrupt-current rating is 10,000 amps. Rated 120/240 VAC, 50/60 Hz.

Amps	Spaces	Ht.	Wd.	Dp.		
QO Series Main Circuit Breaker Boxes						
100	12	14⅞″	14¼″	3¾″	**6790K51**	$140.86
100	20	17⅞″	14¼″	3¾″	**6790K53**	185.53
QO Series Secondary Circuit Breaker Boxes						
70	2	9¼″	4⅞″	3¼″	**6790K57**	34.28
100	6	12⅝″	8⅞″	4¼″	**6790K69**	63.65
125	12	17⅞″	14¼″	3¾″	**6790K59**	69.73
Homeline Series Secondary Circuit Breaker Boxes						
100	6	12⅝″	8⅞″	3⅞″	**6914K33**	29.80

Space-Saver Branch Circuit Breakers

The smallest UL 489-rated breakers you can get, these provide branch circuit protection when space is at a premium. They have 0.25″ quick-disconnect terminals, push-to-reset button, and a ⅜″-27 bushing with hex nut for mounting in a 0.38″ dia. panel cutout. Depth behind panel is 1.43″. Rated 120 VAC, 50/60 Hz. Interrupt-current rating is 5,000 amps. Temperature range is 32° to 140° F. UL listed and CSA certified.

No. of Poles	Amps		
1	15	**3851K11**	$13.62
1	20	**3851K12**	13.62

DIN-Rail Mount Circuit Breakers

1 Pole

Mount directly on 35 mm DIN rail. All are thermal magnetic, which means they use the heat generated in overcurrent situations to trip the breaker and have a time-delay feature to prevent tripping on harmless temporary overload currents. Breakers have screw clamp connections and operate at 50/60 Hz. CSA certified. *1-pole breakers* are rated 277 VAC. *2-* and *3-pole breakers* are rated 480Y/277 VAC.

Branch Circuit Breakers— Meet UL 489 requirements for branch circuit protection. Interrupt-current rating is 10,000 amps.

Equipment Circuit Breakers— Meet UL 1077 requirements for supplemental circuit protection. Use downstream of a branch circuit breaker. Interrupt-current rating is 5,000 amps. CE approved.

Standard inrush current breakers are good for most small transformers and pilot device applications. Temperature range is –40° to +167° F.

High inrush current breakers handle motor and larger transformer applications. Temperature range is 23° to 104° F. Meet IEC standards.

To Order: Please specify amp rating.

No. of Poles	Available Amps	Ht.	Wd.	Dp.		
Branch Circuit Breakers						
Standard Inrush Current						
1	5, 10, 15, 20, 30	4.13″	0.70″	2.95″	**5789T7**	$21.66
2	5, 10, 15, 20, 30	4.13″	1.40″	2.95″	**5789T8**	43.30
3	5, 10, 15, 20, 30	4.13″	2.10″	2.95″	**5789T9**	63.62
High Inrush Current						
1	2, 3, 5, 10, 15, 20	4.13″	0.70″	2.58″	**5789T4**	21.65
2	2, 3, 5, 10, 15, 20	4.13″	1.39″	2.58″	**5789T5**	43.30
3	2, 3, 5, 10, 15, 20	4.13″	2.09″	2.58″	**5789T6**	63.62
Equipment Circuit Breakers						
Standard Inrush Current						
1	1, 2, 3, 4, 5, 10, 15, 20, 30	3.15″	0.69″	3.01″	**7026K6**	15.75
2	5, 10, 15, 20	3.15″	1.38″	3.01″	**7026K7**	34.65
3	5, 10, 15, 20, 30, 40, 50	3.15″	2.07″	3.01″	**7026K8**	54.50
High Inrush Current						
1	2, 3, 5, 10, 15, 20	3.15″	0.69″	2.58″	**7026K3**	15.75
2	2, 3, 5, 10, 15, 20	3.15″	1.38″	2.58″	**7026K4**	34.65
3	2, 3, 5, 10, 15, 20	3.15″	2.07″	2.58″	**7026K5**	54.50

Alarm— Includes two sets of auxiliary contacts, one of which signals an audible alarm when the breaker is tripped. Rated 2 amps @ 250 VAC/0.5 amps @ 110 VDC.

7026K25 ..... $26.23

Low-Voltage DC Circuit Breakers

Push-Pull Style

Lever Style

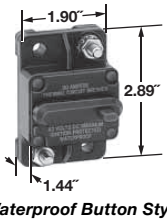

Waterproof Button Style

Designed to withstand the harshest environments, these single-pole circuit breakers have a rugged construction that resists vibration and corrosion. All are thermal, which means they use the heat generated in overcurrent situations to trip the breaker. Use in low-voltage vehicle and electronic applications. All have screw terminal connections.

Push-pull style breakers have a push-and-pull button that can be used as an on/off switch. They have a M12×1 mm bushing with hex nut for mounting in a 0.49″ dia. panel cutout. Depth behind panel is 2.48″. Rated 28 VDC. Interrupt-current rating is 6,000 amps. Temperature range is –67° to +167° F. UL recognized.

Lever style and ***waterproof button style*** breakers are a good choice for marine environments and other areas exposed to moisture. CE approved. *Lever style* can also be used as an on/off switch and have 3/16″ dia. mounting holes (screws not included). IP66 rated for protection from power jets of water. Temp. range is –40° to +185° F. Rated 48 VDC. Interrupt-current rating is 5,000 amps. *Waterproof button style* are IP67 rated for protection against water submersion and have 1/4″ dia. mounting holes (screws not included). Temp. range is –25° to +180° F. Rated 42 VDC. Interrupt-current rating is 3,000 amps.

To Order: Please specify amp rating.

Available Amps		
Push-Pull Style		
30, 35, 40, 45, 50, 55, 60, 70, 80, 90	**6608T1**	$57.82
Lever Style		
30, 40, 50, 60, 70, 80, 100, 120, 135, 150	**4514K2**	58.74
Waterproof Button Style		
30, 40, 50, 60, 70, 80, 90, 100, 120, 135, 150	**4514K1**	58.95

High-Temperature Circuit Breakers

Screw Terminals

Quick-Disconnect Terminals

Unlike thermal magnetic breakers, these magnetic breakers are unaffected by ambient temperature changes. They trip when the magnetic field in the coil increases from current overload. Because heat won't affect operation, they're perfect for protecting equipment in areas where ambient heat is a factor. Temperature range is –40° to +185° F. All have 6-32 threaded holes on the front. Operate at 50/60 Hz. UL recognized.

With Screw Terminals— Rated 250 VAC. Interrupt-current rating is 3,000 amps. 72015K3 is also rated for 80 VDC. *1-pole* breakers mount in a 1.45″ Ht.×0.76″ Wd. panel cutout. *2-pole* breaker mounts in a 1.45″ Ht.×1.53″ Wd. panel cutout.

With Quick-Disconnect Terminals— Great for tight spaces, all have 0.25″ quick-disconnect terminals. Rated 277 VAC/80 VDC. AC interrupt-current rating is 5,000 amps. DC interrupt-current rating is 7,500 amps. Mount in 0.63″ dia. panel cutout, one cutout for each pole.

To Order: Please specify amp rating.

No. of Poles	Available Amps	Ht.	Wd.	Dp.		
Screw Terminals						
1	10, 15, 20, 30, 50	2.50″	0.75″	2.25″	**72015K1**	$20.08
1	15, 20, 30, 40, 50	2.50″	0.75″	2.25″	**72015K3**	20.08
2	15, 20	2.50″	1.50″	2.25″	**72015K4**	40.64
Quick-Disconnect Terminals						
1	5, 10, 15, 20, 30	2.00″	0.75″	1.64″	**72015K11**	27.50
2	5, 10	2.00″	1.50″	1.64″	**72015K5**	71.15

Panel-Mount Circuit Breakers

Rocker Style

Push-Button Style

Toggle Style

In addition to providing supplemental protection for your equipment, these circuit breakers can also be used as on/off switches. All are thermal, which means they use the heat generated in overcurrent situations to trip the breaker. Good for applications with high inrush currents such as motor start-ups and switching surges. All have 0.25″ quick-disconnect terminals. Operate at 50/60 Hz.

Rocker and ***Push-Button Style—*** Mount in a 1.77″ Lg.×0.85″ Wd. panel cutout. Rated 240 VAC or 60 VDC. Interrupt-current rating is 1,000 amps. Temperature range is 14° to 131° F. UL recognized and CSA certified. Meet UL 1077.

Rocker style breakers have a black on/off button. Depth behind panel is 1.89″. The optional *clear plastic cover* provides IP54 protection against limited dust and splashed water.

Push-button style breakers have a green "on" button and a red "off" button. Depth behind panel is 2.32″. The optional *clear plastic cover* provides IP65 protection against dust and low-pressure water and requires a 2.07″ Lg.×1.08″ Wd. panel cutout.

Toggle Style— Have a 1/4″-40 bushing with hex nut for mounting in a 1/4″ dia. panel cutout. Depth behind panel is 2.42″. Rated 250 VAC or 75 VDC. AC interrupt-current rating is 200 amps for 1/20-amp breaker; 1,000 amps for 2/10- to 6-amp breakers; and 2,000 amps for 8- and 10-amp breakers. DC interrupt-current rating is 1,000 amps. Temperature range is –22° to +140° F. UL recognized.

To Order: Please specify amp rating.

No. of Poles	Available Amps		
Rocker Style			
1	5, 10, 15, 20	**3931T1**	$18.27
2	5, 10, 15, 20	**3931T2**	23.87
Clear Plastic Cover for Rocker Style Breaker		**3931T6**	2.36
Push-Button Style			
1	5, 10, 15, 20	**3931T4**	23.89
2	5, 10, 15, 20	**3931T5**	32.52
Clear Plastic Cover for Push-Button Style Breaker		**3931T7**	.90
Toggle Style			
1	1/20, 2/10, 4/10, 1/2, 6/10, 8/10, 1, 1 1/2, 2, 2 1/2, 3, 4, 5, 6, 8, 10	**7588T1**	54.36

For information about AWG, see page 800. For information about cord types, see page 808.

GFCI Receptacles

Made of impact-resistant plastic, these receptacles provide ground fault protection and reliable performance in industrial environments. They protect all outlets on the same circuit downline from the installed location and have test and manual reset buttons.

Box Mount—All install in a standard outlet box, can be wired from the back or side, and include a wall plate. UL listed. *Tamper/weather-resistant* receptacles comply with NEC standards to limit access to energized internal components and NEC weather resistance requirements for use in wet or damp locations. CSA certified. *Hospital-grade* receptacles meet UL 498 for hospital grade requirements and have an indicator light.

To Order: Please specify color: brown, ivory, or white.

DIN-Rail Mount—Install on 35 mm DIN rail. Color is black. UL recognized.

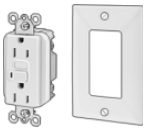

Box Mount

DIN-Rail Mount

NEMA 5-15 NEMA 5-20

NEMA Style	Rating VAC	Rating Amps		
Box Mount				
5-15	125	15	7160K73	$15.04
5-20	125	20	7160K74	16.93
Tamper/Weather-Resistant Box Mount				
5-15	125	15	7160K21	15.38
5-20	125	20	7160K22	17.31
Hospital-Grade Box Mount				
5-15	125	15	7160K75	26.18
5-20	125	20	7160K76	28.16
Tamper/Weather-Resistant Hospital-Grade Box Mount				
5-15	125	15	7160K31	28.70
5-20	125	20	7160K32	30.56
DIN-Rail Mount				
5-15	120	15	7656T11	87.93

Outlet to GFCI Outlet Converters

Convert standard three-prong wall outlets into GFCI-protected outlets. All are polycarbonate and have NEMA 5-15 outlets. UL listed.

Converters ***with one outlet*** have a manual reset that prevents unexpected start-up.

Converter ***with five outlets*** has an automatic reset.

With One Outlet

With Five Outlets

NEMA 5-15

	Rating VAC	Rating Amps	Color		
With One Outlet	120	15	White	6975K63	$19.48
With One Outlet	120	15	Yellow	6975K632	20.33
With Five Outlets	125	15	White	6975K73	23.30

Portable GFCI Outlet Boxes

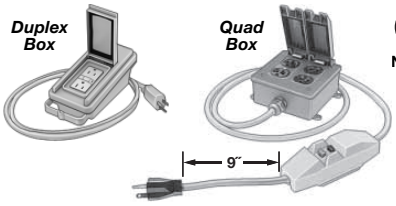

NEMA 5-15 NEMA 5-20 NEMA L5-20

Get GFCI protection wherever permanent GFCI outlets are unavailable. Boxes have an impact-resistant plastic housing with cover, and test and manual reset buttons. Cord color is yellow. UL listed.

Quad box with NEMA 5-20 turn-lock plug has GFCI receptacles, including one NEMA L5-20 turn-lock outlet and two NEMA 5-20 straight-blade outlets.

NEMA Style	Rating VAC	Rating Amps	AWG	Cord Type	Cord Lg., ft.		
Duplex Boxes							
5-15	120	15	12/3	SJTW	6	7683K85	$62.62
5-15	120	15	14/3	SJEOW	25	7683K86	76.05
5-15	120	15	14/3	SJEOW	50	7683K88	100.83
Quad Boxes							
5-15	120	15	12/3	SJTW	6	7048K31	97.80
5-20	120	20	12/3	SJTW	6	7048K32	147.33
Quad Box with 90° Plug							
5-15	120	15	12/3	SJTW	6	7048K35	90.87
Quad Box with NEMA L5-20 Turn-Lock Plug							
5-20	125	20	12/3	SJTW	6	7048K33	170.37

GFCI Extension Cords

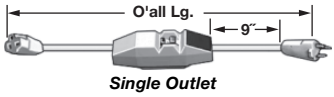

Single Outlet

Triple Outlet

NEMA 5-15 NEMA 5-20 NEMA 6-20 NEMA L5-15 NEMA L5-20 NEMA L5-30 NEMA L6-30

For immediate GFCI protection, plug your equipment into one of these type SJTW cords. They have a manual reset button to prevent unexpected start-up and are for indoor and outdoor use. Housing is polycarbonate. Color is yellow. UL listed and CSA certified.

Single-outlet cords have an inline GFCI.

Triple-outlet cords have a 90° GFCI plug.

NEMA Style	Rating VAC	Rating Amps	AWG	O'all Lg., ft.		
Single Outlet						
5-15	120	15	12/3	1	7348K67★	$36.16
5-15	120	15	12/3	6	7348K68★	44.72
5-15	120	15	14/3	2	7348K49	42.49
5-15	120	15	14/3	6	7348K51	49.40
5-15	120	15	14/3	25	7348K52	62.81
5-20	120	20	12/3	2	7348K53	52.72
5-20	120	20	12/3	6	7348K55	69.88
5-20	120	20	12/3	25	7348K57	96.84
6-20	240	20	12/3	2	7348K54	79.98
6-20	240	20	12/3	6	7348K56	86.28
6-20	240	20	12/3	25	7348K58	110.13
L5-15	120	15	14/3	2	7348K43	58.56
L5-20	120	20	12/3	2	7348K44	76.15
L5-30	120	30	10/3	2	7348K41	145.53
L6-30	240	30	10/3	3	7348K42	161.19
L6-30	240	30	10/3	6	7348K65	178.33
L6-30	240	30	10/3	25	7348K66	202.45
Single Outlet with Power-Indicating Light						
5-15	120	15	14/3	2	7348K48	45.95
Triple Outlet						
5-15	120	15	12/3	2	73495K11	42.96
5-15	120	15	12/3	2	73495K16●	37.36
5-15	120	15	12/3	6	73495K12	44.80
5-15	120	15	12/3	25	73495K13	59.06
5-15	120	15	12/3	50	73495K14	88.28
5-15	120	15	12/3	99	73495K15	147.16
Triple Outlet with Power-Indicating Light						
5-15	120	15	12/3	2	73495K17	44.48

★90° GFCI plug. ●Inline GFCI.

Cord to GFCI Cord Converters

Hardwire these converters to any 0.30″ to 0.44″ dia. cord to create a GFCI electrical cord. UL listed and CSA certified.

90° GFCI plug has a NEMA 5-15 plug.

Inline GFCIs require hardwiring to both ends of your cord.

7228K11, *K12,* and *K13* have a manual reset that prevents unexpected start-up. Housing is yellow polycarbonate.

7228K14 has an automatic reset for applications where power needs to be restored immediately after the fault clears, such as vending and refrigeration applications. Housing is black polycarbonate.

90° GFCI

Inline GFCI

NEMA 5-15

	Rating VAC	Rating Amps		
90° GFCI Plug	120	15	7228K11	$34.47
Inline GFCI	120	20	7228K12	45.95
Automatic Reset Inline GFCI	120	15	7228K14	48.41
Dual-Voltage Inline GFCI	120/240	20	7228K13	63.77

Surface-Mount GFCIs

Mount and hardwire to your equipment for ground fault protection. These GFCIs have a power-on indicator light, test and reset buttons, and 3/16″ dia. mounting holes (screws not included). They will trip if a ground fault is detected; press the button to reset. In case of a power outage, reset is automatic. Housing is black polycarbonate. UL recognized and CSA certified.

Rating VAC	Rating Amps	Ht.	Wd.	Dp.		
120	20	3.3″	2.4″	2.0″	72155K73	$61.14
240	20	3.3″	2.4″	2.0″	72155K74	62.76

For information about outlet strips, see pages 795-797.

Surge Suppressor Outlet Strips

Plastic Housing

Plastic Housing with Coaxial Jacks

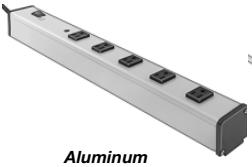

Aluminum Housing

EMI Limiting

Bench Mount

Protect multiple devices from power surges with one outlet strip. All have a 14/3 AWG cord, three-prong NEMA 5-15 plug and outlets, on/off switch, and 15-amp circuit breaker, unless noted. Phone jacks are RJ-11. Rated @ 120 VAC and UL listed except Bench-Mount strips are rated @ 125 VAC and are ETL and C-ETL listed.

Plastic Housing with Coaxial Jacks— 7693K86 has four coaxial jacks. 7693K86 has two coaxial jacks as well as LED status indicators. An audible alarm alerts you if strip is damaged and needs replacement.

EMI-Limiting with Aluminum Housing— Have an isolated ground connection to protect computers and other equipment from electromagnetic interference.

Hospital Grade with Steel Housing— Meets UL 498 requirements for plug holding strength.

Bench-Mount with Plastic Housing— Secure to your bench or desktop with included clamp for easy access to outlets. You can also mount them in a 1½″ to 3″ dia. hole anywhere along a bench top and drop the power cord through the hole.

Outlets	No. of Phone Jacks	Outlets, Ctr.-to-Ctr.	Cord Lg., ft.	Lg.		
Plastic Housing						
7	0	1″	7	10¼″	**7181K61**	$24.77
8	0	2¼″	6	13⅞″	**7693K81**	20.42
8	2	2¼″	6	13⅞″	**7693K83**	24.66
Plastic Housing with Coaxial Jacks						
8	2	2¼″	6	13⅞″	**7693K85**	49.74
8	3	1½″ (5), 2¼″ (3)	8	9½″	**7693K86**	49.20
Steel and Plastic Housing						
6	0	1½″	6	12½″	**7693K93**	26.24
6	2	1½″ (4), 1¾″ (2)	15	12¼″	**7693K94**	43.06
Aluminum Housing						
5	0	3″	6	24″	**7181K45**	110.71
10	0	4″	15	48″	**7693K96**♦	119.15
11	0	6″	15	70″	**7693K97**♦	131.17
EMI-Limiting with Aluminum Housing						
2	0	1½″	6	5″	**7330K21**★	48.80
4	0	1½″	6	6″	**7330K22**★	65.60
6	0	1½″	6	6″	**7330K53**★	78.72
6	2	1½″	6	7″	**7330K63**★	93.83
8	0	1½″	12	9″	**7330K64**★	90.67
Hospital Grade with Steel Housing						
6	0	1½″	15	13¾″	**7181K65**	77.92
Bench-Mount with Plastic Housing						
4	0	1½″	12	6½″	**7693K72**♦	64.42
Bench-Mount with Plastic Housing and Two USB Ports						
3	0	1½″	12	6½″	**7693K71**♦	78.22

♦ Does not have an on/off switch. ★ Has a 12-amp circuit breaker.

Outlet to Surge Suppressor Converters

1 Outlet

Plug directly into any outlet to convert it to a surge suppressor. Converters have a three-prong NEMA 5-15 plug and outlets. 6966K32 and K3 are ETL and C-ETL listed. 6966K41 and K51 are UL listed.

One-outlet and ***six-outlet*** converters have a plastic housing.

Two-outlet converters have a metal housing.

No. of Outlets	Rating VAC	Rating Amps	Ht.	Wd.	Dp.	Color		
1	125	15	3¼″	2¼″	1¼″	White	**6966K32**	$11.28
2	120	15	4″	2½″	2½″	Black	**6966K3**	37.72
2	120	15	4″	2½″	2½″	Gray	**6966K41**	34.36
6	120	15	4¾″	4⅜″	17/16″	Gray	**6966K51**	22.56

Surge Suppressor Receptacles

NEMA 5-15

NEMA 5-20

DIN-Rail Mount

Prevent damage to electronic equipment and meet UL 498 hospital-grade requirements for plug holding strength. These duplex receptacles have an LED status indicator.

The ***box mount*** receptacles can be back or side wired and are UL listed. For GFCI wall plates, see page 832. ***EMI-limiting*** receptacles have an isolated ground connection to protect computers and other equipment from electromagnetic interference.

DIN-rail mount receptacle mounts to a 35 mm DIN rail. Housing is black. UL recognized.

NEMA Style	Rating VAC	Rating Amps	Outlet Color		
Box Mount					
5-15	125	15	Ivory	**7647K71**	$48.47
5-20	125	20	Ivory	**7647K5**	57.85
EMI-Limiting Box Mount					
5-15	125	15	Orange	**7647K8**	80.17
5-20	125	20	Orange	**7647K9**	70.85
DIN-Rail Mount					
5-15	125	15	Blue	**4472T11**	84.20

Rack-Mount Surge Suppressor Outlet Strips

6 Outlet

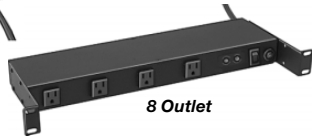

8 Outlet

Mount these strips on 19″ wide electronics racks to protect equipment from power surges. All have a 14/3 AWG cord, three-prong NEMA 5-15 plug and outlets, on/off switch, and 15-amp circuit breaker. Housing is black steel. Strips have rear outlets except 7705K23 has four outlets on the front and four on the back. Rated @ 120 VAC.

6-outlet strips are UL recognized. ***8-*** and ***10-outlet*** strips are UL listed.

No. of Outlets	Outlets, Ctr.-to-Ctr.	Cord Lg., ft.	Ht.	Wd.	Dp.		
6	1½″	6	1¾″	19″	2¾″	**7705K42**	$92.22
6	1½″	15	1¾″	19″	2¾″	**7705K44**	116.12
8	3 3/16″	10	1¾″	19″	4½″	**7705K23**	135.40
10	1½″	10	1¾″	19″	3¾″	**7705K22**	98.38

DIN-Rail Mount Surge Suppressors

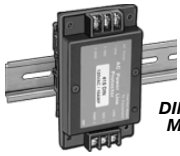

DIN-Rail Mount

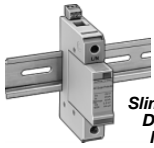

Slim Design DIN-Rail Mount

Snap these suppressors onto a 35 mm DIN rail for quick installation. They have three screw terminal input/output connections and a plastic housing. UL recognized, CSA certified, and CE approved.

DIN-rail mount have an LED status indicator. Install in series. You can also surface mount them using the 3/16″ dia. holes. Temperature range is –40° to +158° F.

Slim design DIN-rail mount has a mechanical red fault indicator and remote alarm contacts. It does not have a maximum amp rating because it installs in parallel. Temperature range is –58° to +185° F.

VAC	Max. Amps	Ht.	Wd.	Dp.		
DIN-Rail Mount						
120	15	4.95″	2.85″	1.25″	**7021K13**	$164.55
120	23	4.95″	2.85″	1.25″	**7021K14**	217.27
240	23	4.95″	2.85″	1.25″	**7021K15**	226.36
Slim Design DIN-Rail Mount						
150	—	3.54″	0.71″	2.64″	**4498T21**	119.00

Static Control Straps for Personnel

Dissipate static charges from personnel to protect sensitive electronic equipment from damage.

Wrist Straps

With Straight Cord

With Heavy Duty Hand Clamp

Wrist straps have a cord with a snap at one end and a banana plug at the other and include an alligator clip adapter.

Wrist strap with mat includes an easy-to-carry 24″×24″ conductive green and black vinyl work mat. Cord has a 1-megohm resistor in the snap end.

Disposable wrist strap is good for temporary grounding. It adjusts up to 12″ and has an adhesive back.

	Cord Lg.	Wrist Straps		Repl. Straps	
Wrist Straps					
Straight Cord	4 ft.	72555K52	$12.65	72555K68	$6.47
Straight Cord	6 ft.	72555K53	13.86	72555K68	6.47
Straight Cord	10 ft.	72555K54	18.80	72555K68	6.47
Coiled Cord	6 ft.	72555K55	10.53	72555K71	4.79
Coiled Cord	12 ft.	72555K69	13.30	72555K71	4.79
Wrist Strap with Heavy Duty Hand Clamp					
Coiled Cord	12 ft.	72555K62	40.08	72555K71	4.79
Wrist Strap with Mat					
Coiled Cord	6 ft.	72555K61	67.12	72555K68	6.47
Disposable Wrist Strap					
Straight Cord	4 ft.	72555K75	2.06	—	—

Foot Straps

Reusable Shoe Strap

Disposable Heel Strap

Attach to the footwear of personnel walking on a conductive floor.

Reusable shoe strap has an adjustable hook-and-loop strap to fit most shoes.

72555K65 ..... **Each** $9.70

Disposable heel straps have an adhesive back for temporary use in static-control areas. Package quantity is 10.

72555K63 ..... **Pkg.** $9.70

Accessories

Four-Receptacle Ground Station

Wrist Strap Tester

Extra ground cord is straight, 15 ft. long, and has a snap at one end and a ring terminal at the other. Minimum resistance is 1 megohm.

72555K58 ..... $14.40

Four-receptacle ground station has a straight, 10-ft. long cord and four banana receptacles to ground four operators to the same workstation.

72555K66 ..... $16.04

Wrist-strap tester ensures wrist strap is functioning properly before personnel start working. Plug your strap into tester and press the button—one of the three lights will indicate whether the strap is pass, fail low, or fail high. Tester is 3.6″ Ht.×2.6″ Wd.×1″ Dp. and operates on one 9-volt battery (included).

72555K72 ..... $101.25

Static Control Work Surface Mats

Prevent damage to sensitive electronic equipment by controlling static electricity on work surfaces. Mats transfer the static charges from the top of your surface to the ground. They include a grounding snap, grounding cord, and wrist strap (except 40-ft. long mat, which does not include wrist strap). Surface resistivity measures the resistance between two points on the surface of the mat, as well as the resistance to the ground, and should fall between 10^6 and 10^9 ohms/sq. for proper static control.

Vinyl Mats

Mats are single layer and have an easy-to-clean surface.

40-ft. long mat has six heel straps with quick-release buckles and six 15-ft. long grounding cords for use as a floor mat. For wrist straps, see 72555K on this page.

Lg.	Wd.	Thick.	Surface Resistivity		
Blue					
30″	20″	1/16″	10^9 ohms/sq.	6980T16	$48.57
36″	24″	1/16″	10^9 ohms/sq.	6980T17	57.14
48″	24″	1/16″	10^9 ohms/sq.	6980T6	64.24
48″	30″	1/16″	10^9 ohms/sq.	6980T18	65.88
60″	30″	1/16″	10^9 ohms/sq.	6980T19	83.06
72″	30″	1/16″	10^9 ohms/sq.	6980T21	90.10
40 ft.	24″	1/16″	10^9 ohms/sq.	6980T8	430.61
Gray					
30″	20″	1/16″	10^9 ohms/sq.	6980T31	48.57
36″	24″	1/16″	10^9 ohms/sq.	6980T32	57.14
48″	30″	1/16″	10^9 ohms/sq.	6980T33	65.88
60″	30″	1/16″	10^9 ohms/sq.	6980T34	83.06
72″	30″	1/16″	10^9 ohms/sq.	6980T35	90.10

Rubber Mats

These two-layer, reversible mats are highly resistant to abrasion, solder, flux, and heat and won't produce toxic fumes when temporarily exposed to high temperatures. *Grounding cord kit* accepts two wrist straps and includes a 15-ft. long cord with 0.39″ stud.

Lg.	Wd.	Thick.	Surface Resistivity		
Blue					
36″	24″	1/16″	10^6 ohms/sq.	4446T72	$86.73
48″	24″	1/16″	10^6 ohms/sq.	4446T74	97.83
Gray					
36″	24″	1/16″	10^6 ohms/sq.	4446T71	86.73
48″	24″	1/16″	10^6 ohms/sq.	4446T73	97.83
Grounding Cord Kit				4446T752	26.50

Grounding and Shielding Foam

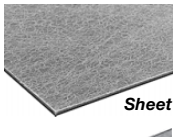

Sheet

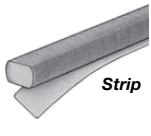

Strip

Flexible and compressible, this foam conducts a current between surfaces to complete a grounding path. It also shields electromagnetic interference (EMI) to protect sensitive electronic equipment. Use to ground printed circuit boards or as an EMI gasket. All have a foam core covered in electrically conductive material. Maximum temperature is 158° F.

Sheets can be used to ground larger electronic components or cut to fit your application. Meet UL 94HF1 for flame resistance.

Strips have an adhesive back. *10″ long* strips meet UL 94HB for flame resistance.

Lg.	Wd.	Thick.		
Sheets				
12″	6″	0.06″	6021T11	$25.14
12″	6″	0.08″	6021T12	26.35
12″	6″	0.12″	6021T13	28.37
Strips				
10″	1″	0.05″	6180T11	8.93
10″	2″	0.11″	6180T12	12.48
10″	2″	0.26″	6180T13	16.46
12″	0.19″	0.13″	6180T16	13.54
12″	0.25″	0.14″	6180T15	14.24
96″	0.19″	0.13″	6180T19	36.94
96″	0.2″	0.04″	6180T17	35.70
96″	0.25″	0.14″	6180T18	35.67

EMI-Reducing Grounding Ribbons

Low resistance at radio frequencies gives this ribbon better electromagnetic interference (EMI) reduction capability than other types of grounding ribbon and braid. It's made of flexible copper, laminated on both sides with polyester film to avoid shorting problems, and has tinned ends with a 3/16″ dia. hole for termination. Good for circuit board applications and tight spaces. Meet UL 94V0 for flame resistance. UL recognized.

Lg.	Wd.	Thick.		
3″	0.50″	0.013″	5841T11	$10.68
6″	0.50″	0.013″	5841T12	11.59
9″	0.50″	0.013″	5841T13	11.89

Grounding Braid and Ribbon

A more flexible alternative to grounding wire, this braid and ribbon provide low electrical resistance equivalent to the wire size listed below.

Grounding Braid and Ribbon

Braid

Insulated Braid

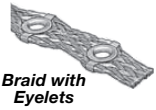
Braid with Eyelets

Ribbon

Ribbon with Holes

Braid—A flat, tin-plated copper conductor that offers better flexibility than ribbon. *Insulated braid* has green PVC insulation. *Braid with eyelets* have a 1/4″ dia. eyelet every 3″.

Ribbon—Made of tin-plated solid copper with a rolled edge, it's used for bonding cable. *Ribbon with holes* has alternating 3/16″ dia. and 1/4″ dia. holes spaced 1/4″ apart.

	Equivalent Wire Size, AWG	Wd.	Thick.	Available Lengths, ft.		Per Ft.
Braid	14	3/16″	0.04″	5, 10, 25, 50, 100	69925K67	$0.90
Braid	12	1/4″	0.04″	5, 10, 25, 50, 100	69925K66	1.10
Braid	10	7/16″	0.04″	5, 10, 25, 50, 100	69925K65	1.32
Braid	6	1/2″	1/16″	5, 10, 25, 50, 100	6949K62	2.48
Braid	4	7/8″	1/16″	2, 5, 10, 25	69925K41	2.73
Braid	1	1″	1/8″	2, 5, 10, 25	69925K42	4.80
Braid	2/0	1 1/8″	9/32″	2, 5, 10, 25	69925K43	7.95
Insulated Braid	6	3/4″	3/16″	2, 5, 10, 25	69925K46	2.38
Braid with Eyelets	10	1/2″	1/32″	2, 5, 10, 25	69925K22	4.75
Braid with Eyelets	6	1/2″	1/16″	2, 5, 10, 25	6949K63	9.58
Ribbon	—	3/8″	1/16″	2, 5, 10, 25	6949K61	2.45
Ribbon with Holes	—	21/32″	1/16″	2, 5, 10, 25	6949K21	3.90

Grounding Braid with Lugs

Lugs are 3/8″ dia. and made of tin-plated copper. Length is measured center-to-center.

Lg.	Equivalent Wire Size, AWG	Wd.	Thick.		Each
9″	4	7/8″	1/16″	69925K32	$7.70
13″	4	7/8″	1/16″	69925K34	9.16
24″	4	7/8″	1/16″	69925K36	11.44
30″	4	7/8″	1/16″	69925K11	$16.76
36″	4	7/8″	1/16″	69925K12	18.09
48″	4	7/8″	1/16″	69925K13	20.45

High-Flex Grounding Wire

Use this finely stranded, tin-plated copper wire inside control cabinets, tight spaces, and other applications requiring high flexibility.

Grounding Wire

Noninsulated with Eyelets

All are UL listed.

Insulated wire has black PVC insulation; ***insulated wire with eyelets*** has translucent green PVC insulation.

Wire with eyelets has 1/4″ eyelets every 4″ and can be cut to length and mounted without terminating. Good for applications that require ground wire to be looped from ground point to ground point with no breaks.

	Wire Size, AWG	OD	Available Lengths, ft.		Per Ft.
Noninsulated					
Wire	10	0.13″	5, 10, 25, 50, 100	2196K57	$0.81
Wire	6	0.22″	5, 10, 25, 50, 100	2196K51	1.62
Wire w/ Eyelets	6	0.30″	5, 10, 25	2196K53	2.99
Insulated					
Wire	10	0.18″	5, 10, 25, 50, 100	2196K56	1.00
Wire	6	0.27″	5, 10, 25, 50, 100	2196K52	1.98
Wire w/ Eyelets	6	0.30″	5, 10, 25	2196K54	3.26

Grounding Wire with Lugs

Insulated

Lugs are 1/4″ dia. Length is measured center-to-center. #6 AWG wire is UL listed.

Insulated 14 and ***10 AWG wire*** has green PVC insulation; ***6 AWG*** has black PVC insulation.

Wire Size, AWG	OD	Lg.		Each
Noninsulated				
6	0.22″	6″	2196K21	$2.42
6	0.22″	11″	2196K22	2.84
6	0.22″	18″	2196K23	3.56
6	0.22″	24″	2196K24	4.08
6	0.22″	36″	2196K25	5.16
Insulated				
14	0.13″	6″	2196K41	.78
14	0.13″	11″	2196K42	.96
14	0.13″	18″	2196K43	1.08
14	0.13″	24″	2196K44	1.14
14	0.13″	36″	2196K45	1.18
10	0.16″	6″	2196K31	1.70
10	0.16″	11″	2196K32	1.72
10	0.16″	18″	2196K33	2.12
10	0.16″	24″	2196K34	2.20
10	0.16″	36″	2196K35	2.24
6	0.27″	6″	2196K11	2.58
6	0.27″	11″	2196K12	3.20
6	0.27″	18″	2196K13	4.08
6	0.27″	24″	2196K14	4.80
6	0.27″	36″	2196K15	6.38

Grounding Wire

Stranded

Ground your electrical system with this noninsulated wire. Conforms to ASTM B3 and B8, and to Federal Standard QQ-W-343 Class B stranding. **To Order:** Please specify length from those listed.

Wire Size, AWG	OD		Lengths 5-ft.	25-ft.	50-ft.	100-ft.
Stranded Wire						
10	0.12″	7512K73	$5.18	$14.54	$27.62	$52.45
8	0.15″	7512K72	6.38	20.48	38.93	81.70
6	0.18″	7512K64	8.48	31.06	59.01	112.06
4	0.23″	7512K75	11.80	47.58	90.40	171.81
2	0.29″	7512K76	17.20	74.68	141.90	269.64
1/0	0.36″	7512K67	25.28	115.00	218.51	413.80
2/0	0.40″	7512K68	31.08	144.08	273.73	526.73
Solid Wire						
10	0.10″	7512K58	5.04	13.88	26.38	49.74
8	0.13″	7512K57	6.24	19.82	37.66	71.35
6	0.16″	7512K54	8.22	29.74	56.52	107.39
4	0.20″	7512K55	11.52	46.26	87.91	167.01
2	0.26″	7512K56	16.54	71.38	135.60	257.63

Grounding Rods

Threaded Grounding Rod

Coupler

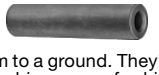
Driving Head

Grounding rods connect an electrical system to a ground. They're made of nickel-plated steel that's heavily plated in copper for high levels of conductivity and good corrosion resistance. *Threaded rods* provide the best connection when joining two rods with a coupler. Rods meet or exceed UL standard 467 and ANSI C33.8.

Couplers are threaded and made of high-strength, corrosion-resistant bronze for permanent, highly conductive connections between two rods. One end is chamfered and the other is tapered for easy driving. ***Driving heads*** are 6″ long and protect rod ends from "mushrooming" when driven into the ground.

Dia.	Lg., ft.		Threaded		Unthreaded	
Grounding Rods						
1/2″	8		7500K13	$16.58	7500K33	$16.58
1/2″	10		7500K14	22.46	7500K34	22.02
5/8″	8		7500K15	19.42	7500K35	17.68
5/8″	10		7500K16	24.00	7500K36	22.84
3/4″	8		7500K17	34.46	7500K37	33.74
3/4″	10		7500K18	37.74	7500K38	36.82
Couplers						
For 1/2″ Rod Dia.					7500K19	14.46
For 5/8″ Rod Dia.					7500K21	7.70
For 3/4″ Rod Dia.					7500K22	19.10
Driving Heads						
For 1/2″ Rod Dia.					7500K43	45.76
For 5/8″ Rod Dia.					7500K44	45.76
For 3/4″ Rod Dia.					7500K45	45.76

Grounding Blocks and Bars

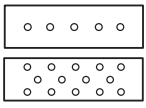

Grounding Block

Grounding Bar

Grounding blocks are commonly used in cabinets and enclosures to connect multiple ground wires. They're made of copper and have 1/4″-20 threaded holes with set screws and 0.164″ dia. mounting holes (screws not included). UL listed.

Grounding bars let you attach multiple ground wires to one location. They're copper and designed for use as a central ground.

6″ long bar has one 1/4″-20 threaded hole, three 10-32 threaded holes, two 9/32″ dia. unthreaded holes, and plastic mounting brackets.

12″ and ***24″ long bars*** have 7/16″ dia. holes, plastic insulators, and stainless steel mounting brackets. UL listed. *Replacement mounting kit for 12″ and 24″ bars* includes stainless steel mounting brackets, hardware, and insulators.

Electronics rack grounding bar fits 19″ wide electronics racks and includes plastic mounting brackets and hardware.

Lg.	Wd.	Thick.	Hole Pattern	No. of Holes		
Grounding Blocks						
2 1/4″	3/8″	1/2″	Linear	3	2450K1	$6.68
3 5/8″	3/8″	1/2″	Linear	6	2450K2	9.02
5″	3/8″	1/2″	Linear	9	2450K3	11.40
6 3/8″	3/8″	1/2″	Linear	12	2450K4	14.44
Grounding Bars						
6″	1″	1/4″	Linear	6	71375K69	26.03
12″	2″	1/4″	Linear	5	71375K71	61.65
12″	4″	1/4″	Matrix	14	71375K73	104.98
24″	2″	1/4″	Linear	11	71375K72	95.98
24″	4″	1/4″	Matrix	32	71375K74	150.93
Repl. Mounting Kit for 12″ and 24″ Grounding Bars					71375K79	24.43
Electronics Rack Grounding Bar						
19 1/4″	1″	1/4″	Linear	8	8084T2	38.13

Grounding Connectors

All are UL listed and CSA certified.

Connectors— Connect one or two grounding wires to steel structures, fence posts, and transformers. They can also tap one or two cables from a bus bar. Made of copper.

Couplers— Join two grounding wires to extend the length of your grounding connection or connect to an existing ground wire. Made of bronze.

Connector

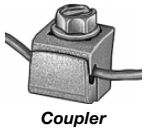
Coupler

For Wire Size AWG Min.	AWG Max.	Screw Size		
Connectors				
12	8	1/4″	7923K11	$12.63
10	6	1/4″	7923K13	15.41
10	4	5/16″	7923K15	16.79
10	2	3/8″	7923K17	26.67
10	1	3/8″	7923K19	28.05
2	2/0	1/2″	7923K21	39.67
Couplers				
12	6	—	8598T13	3.70
8	6	—	8598T12	3.44
8	1/0	—	8598T14	4.97
4	4	—	8598T11	5.19

Grounding Rod Clamps

Connect bare-copper ground wire to grounding rods. Meet UL 467 for direct burial.

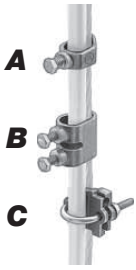

For Rod Dia.	For Wire Size, AWG		
(A) Single-Nut Clamps— *Copper alloy*			
1/2″	10 to 2	7491K73	$2.88
5/8″	8 to 1/0	7491K74	2.95
3/4″	8 to 1/0	7491K77	3.65
1″	8 to 4/0	7491K76	7.38
(B) Dual-Nut Clamps— *Bronze*			
1/2″	4 to 4/0	7491K91	13.05
5/8″	6 to 4/0	7491K92	13.96
3/4″	2 to 250 MCM	7491K63	14.40
(C) U-Bolt Clamp— *Bronze*			
3/8″ to 1″	6 to 500 MCM	7511K46	16.27

Grounding Straps and Clamps

Strap

Pipe Clamp, One Wire

Pipe Clamp, Two Wire

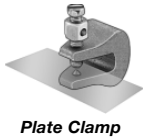
Plate Clamp

All are UL listed.

Straps ground to virtually any size pipe or grounding rod. They include a nut and bolt that accept 14 to 6 AWG ground wire. For best performance, match strap material to pipe material.

Pipe clamps connect ground wire to pipes. *One-wire* clamp is bronze and accepts ground wire up to 2 AWG. *Two-wire* clamps are tinned bronze and accept 6 AWG to 250 MCM ground wire.

Plate clamp connects grounding wire to an existing flat grounding surface, such as the lid of an electric meter box, eliminating the need to drive a new ground rod. Accepts 14 to 6 AWG ground wire.

Straps

Material	Lg.	Fits Actual Pipe OD		
Copper	6″	1/2″ to 1″	6996K64	$3.18
Copper	12″	1/2″ to 3″	6996K65	3.52
Galvanized Steel	9″	1/2″ to 2 1/4″	6996K66	1.30
Galvanized Steel	12″	1/2″ to 3″	6996K67	1.68

Pipe Clamps

	For Pipe Size	Fits Actual Pipe OD		
One Wire	1/2″ to 1″	3/8″ to 1 1/4″	7599K71	$10.33
Two Wire	1″ to 1 1/4″	3/4″ to 1 11/16″	7599K73	25.93
Two Wire	1 1/2″ to 2″	1″ to 2 3/8″	7599K76	27.13
Two Wire	2 1/2″ to 3″	2 1/4″ to 3 1/2″	7599K77	32.67
Two Wire	3 1/2″ to 4″	3 1/4″ to 4 1/2″	7599K79	40.33

Plate Clamp

Material	Max. Plate Thick.		
Bronze	3/8″	7002K16	$17.68

Lightning Protection Equipment

Components provide lightning protection on structures up to 75 ft. tall. UL 96 listed. Mounting hardware not included. For an existing system, choose components that match existing material. For a new system, choose components in the same material.

(D) Lightning wire is noninsulated. Maximum continuous length is 100 ft. *Copper* wire is 16 AWG and 3/8″ dia. *Aluminum* wire is 14 AWG and 7/16″ dia.

(E) Rods are 12″ long with 1/2″ dia. threads to screw into the base.

(F) Rod bases can be mounted horizontally or vertically.

(G) Loop straps fold around the wire.

(H) Bonding plates electrically bond system to a metallic object.

(K) Parallel connectors accept lightning wire and rods.

Antioxidant joint compounds are recommended to resist corrosion.

	For Wire Dia.	Copper Per Ft.		Aluminum Per Ft.	
D Lightning Wire	—	9386T15	$5.22	9386T16	$1.29
			Each		Each
E Rods	—	9386T11	$15.85	9386T12	$4.62
F Rod Bases	—	9386T13	24.88	9386T14	11.80
G Loop Straps	3/8″-7/16″	9386T31	.62	9386T32★	.28
H Bonding Plates	Up to 9/16″	9386T21	19.32	9386T22	8.68
J Copper-to-Aluminum Connector	Up to 1/2″	9386T19	16.14	9386T19	16.14
K Parallel Connectors	Up to 5/8″	9386T17	12.08	9386T18	5.72
L Surface-Mount Wire Holders	Up to 9/16″	9386T41	1.82	9386T42	.72
Antioxidant Joint Compounds (0.5 oz.)		9386T7	1.64	9386T8	1.58

★ Accepts 7/16″ to 1/2″ dia. wire.

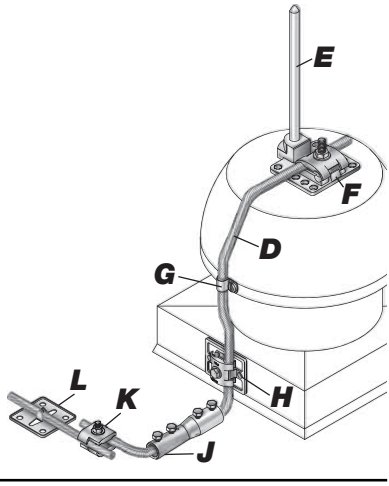

About Bonding and Grounding for Static Control

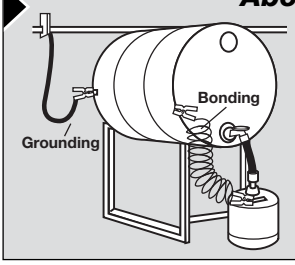

Static electricity can be generated by material processing such as mixing, pouring, pumping, filtering, and agitating. Bonding and grounding equipment and containers can reduce static electricity in your environment and reduce the chance of a static spark igniting flammable vapors. Conductive metal objects such as screens, rims of nonconductive drums, probes, spray nozzles, and high-pressure cleaning equipment can become statically charged.

Bonding systems connect two or more pieces of equipment to keep the same electric potential among them, which prevents static sparking. ***Grounding*** systems electrically connect equipment to ground, which prevents equipment from becoming sufficiently charged to cause a static spark.

When the potential for static electricity problems exists, you should always comply with OSHA requirements as outlined in Section 1910.106 and 1910.107 of the OSHA code. NFPA 77 also provides guidance on static electricity. Flammable liquid dispensing should be performed in accordance with all federal, state, and local laws.

Bonding and Grounding Clamps and Cable

Aluminum Hand Clamp

Hand Clamp with Serrated Jaw

Stainless Steel Hand Clamp

Quick-Release Hand Clamp

C-Clamp

Create a grounding path with these metal clamps and cable to prevent static charge buildup.

Hand Clamps—*Aluminum* clamp has stainless steel points. *Stainless steel* clamp has tungsten carbide points.

Hand Clamp with Serrated Jaw—Has a flat steel-plated jaw to prevent damage to unpainted surfaces, posts, or thin materials.

Quick-Release Hand Clamps—Jaw opens if the cable is pulled. They have stainless steel points and are used to ground vehicles.

C-Clamps—*Bronze* clamp has bronze points. *Galvanized steel* clamps have stainless steel points.

Insulated Coiled Cable—1/8″ dia. galvanized steel with an orange vinyl coating.

Material	Jaw Opening	Accepts Cable Dia.		
Hand Clamps				
Aluminum	1 1/8″	Up to 1/8″	**70345K73**	$14.68
Stainless Steel	1 1/2″	Up to 1/4″	**70345K77**	171.00
Hand Clamp with Serrated Jaw				
Aluminum	1″	Up to 1/8″	**70345K81**	20.14
Quick-Release Hand Clamps				
Aluminum	1 1/4″	Up to 1/4″	**70345K74**	53.80
Bronze	1 1/4″	Up to 3/8″	**70345K75**	67.32
C-Clamps				
Bronze	1 1/2″	Up to 1/4″	**70345K66**	53.80
Galvanized Steel	3/4″	Up to 1/4″	**70345K65**	13.28
Galvanized Steel	2 1/2″	Up to 1/4″	**70345K67**	14.38
Insulated Coiled Cable				
5-ft. Length			**70345K11**	9.07
10-ft. Length			**70345K12**	18.09
15-ft. Length			**70345K13**	27.28
20-ft. Length			**70345K14**	39.00

Bonding and Grounding Cable with Connectors

Cable with Two Connectors

Coiled Cable with Two Connectors

Alligator Clip

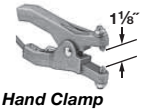

Hand Clamp

Terminal

C-Clamp

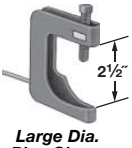

Large Dia. Pipe Clamp

Small Dia. Pipe Clamp

Quick-Release Hand Clamp

Choose the cable and connector configuration to suit your bonding or grounding requirements.

Cable with three connectors consists of a straight line of cable with a clamp at either end and one in the middle.

Cable is galvanized steel. *Bare* and *insulated cable* are 1/8″ dia. *Insulated cable* has a clear vinyl coating. *Insulated coiled cable* has an orange vinyl coating. *Heavy duty insulated coiled cable* is 3/16″ dia.

Alligator clips are copper. *Hand clamps* are aluminum. *Terminals* are tin-plated copper (except 7610K65-K68 and 6997K55 are galvanized steel). *C-clamps* are galvanized steel. *Large diameter pipe clamps* are plated steel. *Small diameter pipe clamps* are bronze. *Quick-release hand clamp* is aluminum and opens when the cable is pulled.

Also Available: Additional cable lengths for Cable with Two Connectors. For bare and insulated cable, ask for 6955K52; for insulated coiled cable, ask for 6955K53. Specify connector types and length.

Cable with Two Connectors

Connector Type	Cable Lg.		
Bare Cable			
Alligator Clip on Both Ends	3 ft.	**6955K3**	$16.71
Hand Clamp on Both Ends	3 ft.	**6955K9**	39.29
Terminal on Both Ends	3 ft.	**6955K4**	8.46
C-Clamp and Alligator Clip	3 ft.	**6955K2**	23.49
Hand Clamp and C-Clamp	3 ft.	**6955K8**	34.78
Insulated Cable			
Hand Clamp on Both Ends	3 ft.	**6955K12**	40.54
Terminal on Both Ends	3 ft.	**6955K6**	11.06
C-Clamp and Alligator Clip	3 ft.	**6955K5**	24.73
Hand Clamp and C-Clamp	3 ft.	**6955K13**	36.02
Large Diameter Pipe Clamp and C-Clamp	3 ft.	**6955K7**	44.90
Insulated Coiled Cable			
Hand Clamp on Both Ends	10 ft. extended	**7610K71**	44.45
Hand Clamp on Both Ends	20 ft. extended	**7610K21**	49.74
Hand Clamp on Both Ends	30 ft. extended	**7610K22**	55.50
Hand Clamp and Terminal	5 ft. extended	**7610K66**	30.56
Hand Clamp and Terminal	10 ft. extended	**7610K67**	31.66
Hand Clamp and Terminal	20 ft. extended	**7610K68**	38.03
Hand Clamp and Terminal	30 ft. extended	**7610K65**	44.41
Hand Clamp and Small Diameter Pipe Clamp	10 ft. extended	**7610K69**	41.97
Hand Clamp and Small Diameter Pipe Clamp	20 ft. extended	**7610K81**	41.97
Hand Clamp and C-Clamp	10 ft. extended	**7610K72▲**	46.59
Heavy Duty Insulated Coiled Cable			
Quick-Release Hand Clamp and Terminal	20 ft. extended	**6997K55**	77.80

▲C-clamp jaw opening is 3/4″.

(Continued on following page)

Bonding and Grounding Cable with Connectors *(Continued from previous page)*

Cable with Three Connectors

C-Clamp

Alligator Clip

Terminal

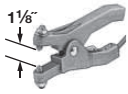

Hand Clamp

Connector Type	Cable Lg.			
Bare Cable				
C-Clamp, Alligator Clip, and Alligator Clip	3 ft., 3 ft.	6955K24	$35.61
Terminal, Alligator Clip, and Alligator Clip	3 ft., 3 ft.	6955K25	24.71
Insulated Coiled Cable			
C-Clamp, Hand Clamp, and Hand Clamp	10 ft. extended, 10 ft. extended	6955K23	68.68
Terminal, Hand Clamp, and Alligator Clip	5 ft. extended, 10 ft. extended	6955K22	43.76
Terminal, Hand Clamp, and Hand Clamp	10 ft. extended, 10 ft. extended	6955K21	57.78

Coiled Cable with Three Connectors

Bonding and Grounding Reels

Steel Reel with Hand Clamp

Stainless Steel Reel with Hand Clamp

Quick-Release Hand Clamp

Alligator Clip

Conveniently ground equipment with these clamps and cables stored on spring-rewind reels. A locking ratchet holds the cable at any length and releases instantly with a light tug. The spring return automatically retrieves cable and a stop keeps the cable end within reach. Cable is 3/32″ dia. except stainless steel reels have 3/16″ dia. cable.

Alligator clips are zinc-plated steel and hand clamps are aluminum. *Quick-release hand clamp* opens when the cable is pulled.

Constant-tension steel reels allow you to override the ratchet to keep constant tension on the cable. *Y-style cable* consists of two 20-ft. cables that extend from a single 30-ft. cable connected to the reel.

Cable Lg., ft.	Jaw Opening	O'all Ht.	Reel Base Lg.	Reel Base Wd.		
Steel Reels						
With Hand Clamp and Galvanized Steel Cable						
20	1/2″	6 1/4″	5 3/4″	2″	7223K15	$181.79
50	1/2″	6 1/4″	5 3/4″	2″	7223K12	265.22
With Quick-Release Hand Clamp and Galvanized Steel Cable						
50	1 1/4″	8 3/4″	8 11/16″	2 1/4″	7223K13	329.27
With Alligator Clip and Insulated Galvanized Steel Cable						
20	1 1/4″	6 1/4″	5 3/4″	2″	7223K14	140.04
50	1 1/4″	8 3/4″	8 11/16″	2 1/4″	7223K11	223.94
With Alligator Clip and Insulated Stainless Steel Cable						
35	1″	12″	6″	2 1/2″	73465K11	230.21
50	1″	12″	6″	2 1/2″	73465K13	257.29
Constant-Tension Steel Reels						
With Alligator Clip and Steel Cable						
25	1 1/4″	6 1/4″	5 3/4″	2″	7346K12	175.94
50	1 1/4″	8 3/4″	8 11/16″	2 1/4″	7346K15	229.69
With Two Alligator Clips and Y-Style Steel Cable						
50	1 1/4″	8 3/4″	8 11/16″	2 1/4″	7346K18	302.10
Stainless Steel Reels						
With Hand Clamp and Insulated Stainless Steel Cable						
50	1/2″	17″	11 1/2″	4″	7677T11	564.85
100	1/2″	17″	11 1/2″	4″	7677T12	664.46

EMI/RFI Insulating Cable Clamps

Snap these ferrite-shielded clamps around routing cable to suppress electromagnetic and radio frequency interference. An economical alternative to shielded cable, they're used with computers and computer equipment or anywhere EMI and RFI are a problem.

Round

Square

Max. Cable Dia.	Impedance @ 100 MHz		
Round Clamp			
0.28″	100 Ohms	70055K71	$8.94
0.53″	62 Ohms	70055K72	10.05
Square Clamp			
0.23″	200 Ohms	70055K75	10.21
0.25″	220 Ohms	70055K77	8.79
0.35″	200 Ohms	70055K76	10.57
0.50″	230 Ohms	70055K78	16.83

Static Control Cord, Tinsel, and Brushes

Remove static from moving materials on conveyors, printing rolls, and chutes. Mount up to 1/4″ from surface.

Cord

With Magnets

Stretchable and easy to replace, cord is 1/8″ dia. and made of acrylic fibers bonded with copper sulfide. Cut to length and use magnets (sold separately) to mount. Magnet has a center hole for easy threading.

Lg., ft.		
5	2805K1	$16.66
32 1/2	2805K2	59.80
Magnet	5685K31	1.89

Tinsel

More conductive than cord, tinsel has a core of thee solid copper wires twisted together. Overall diameter is 1″. *Attachment kit* includes 20 lugs and springs to mount up to 10 pieces of tinsel.

With Attachment Kit

Lg., ft.		
6	63085T46	$4.52
72	63085T47	20.38
Attachment Kit	63085T48	59.93

Tinsel Bars

Choose these bars for more permanent installations. They're made of rigid anodized aluminum with a replaceable copper-tinsel insert that's 3″ shorter than overall length.

O'all Lg., ft.	Bar with Tinsel		Replacement Tinsel Insert	
1	9755T11	$31.19	9755T21	$3.65
1 1/2	9755T12	35.64	9755T22	5.12
2	9755T14	40.10	9755T24	8.24
2 1/2	9755T13	44.56	9755T23	8.06
3	9755T15	49.00	9755T25	11.92
4	9755T16	57.40	9755T26	15.59
5	9755T17	66.84	9755T27	19.28
6	9755T18	75.60	9755T28	22.38
8	9755T19	93.80	9755T29	29.55

Brushes

Made of fiber bonded to an aluminum frame, these brushes won't scratch surfaces so you can mount them close to or even touching moving material.

Carbon fiber is for general static control; ***stainless steel fiber*** is for use near electronic components.

O'all Lg., ft.	Carbon Fiber Bristle Ht.			Stainless Steel Fiber Bristle Ht.		
1/2	—	—	—	3/8″	98415T61	$5.60
1	3/4″	98415T11	$16.25	1/2″	98415T62	10.40
2	3/4″	98415T64	20.38	1/2″	98415T63	20.88
3	3/4″	98415T65	30.55	3/4″	98415T21	50.88
4	3/4″	98415T66	40.75	3/4″	98415T22	64.38
5	3/4″	98415T12	61.13	3/4″	98415T23	80.45

About AC to AC Voltage Transformers

Transformers— An AC to AC transformer typically converts alternating current (AC) from one voltage to another. It can be designed to "step up" (boost or increase) voltage or "step down" (buck or decrease) voltage. Transformers consist of two or more coils. When voltage is sent to the primary coil, it magnetizes the coil's core, inducing a voltage in the secondary coil.

Sensitive Equipment Transformers— Also known as isolating transformers, their primary and secondary coils are electrically isolated from each other. The transformer protects sensitive equipment from any input voltage spikes. They are typically larger and more expensive than transformers with connected primary and secondary coils.

High-Inrush Transformers— Also known as control transformers, these are designed for applications with high-inrush loads temporarily exceeding the VA (volt-amps) power output, such as starting and stopping motors. They have electrically isolated primary and secondary coils like sensitive equipment transformers.

Selecting the Right Transformer

1. Determine your input (line) and output (load) voltages and choose a transformer with matching input and output voltages.

2. Determine the power required by the equipment you're running. It's usually listed in kVA (kilovolt-amps) or VA (volt-amps) on the equipment's nameplate.

Choose a transformer with a power output that is equal to or greater than your equipment's power requirements.

For single-phase equipment, use this formula to find VA:

VA = Volts × Amps

For three-phase equipment, use this formula to find VA:

VA = Volts × Amps × 1.73

Sensitive Equipment AC to AC Transformers

Single Phase

Three Phase

Protect your sensitive equipment from input voltage spikes. The cores and coils are sealed to eliminate corrosion and insulation damage. Enclosure is rated UL-3R for indoor and outdoor use except 7131K19-K24 are rated NEMA 3R. Also known as isolating transformers, they have copper wire lead connections except 7131K43-K45, which have a bus bar. Wall mountable except for 7131K42-K45, which are floor mount. Operate on 60 Hz. UL listed and CSA certified except 7131K19-K24 are UL and C-UL listed.

Single-phase constant voltage transformers are used when you need to isolate the input and output voltages without changing their values.

Voltage (VAC) Input	Voltage (VAC) Output	Power Output, VA	Ht.	Wd.	Dp.		
Single Phase							
240/480	120/240	750	11.3″	5.3″	6.5″	7131K19	$127.25
240/480	120/240	1,000	11.3″	5.3″	6.5″	7131K21	154.88
240/480	120/240	1,500	13.3″	6.3″	7.8″	7131K22	202.05
240/480	120/240	3,000	13.3″	6.3″	7.8″	7131K23	323.00
240/480	120/240	5,000	15″	10.2″	10.6″	7131K24	438.45
240/480	120/240	7,500	15.2″	13.5″	10.8″	7131K25	575.75
240/480	120/240	10,000	15.2″	13.5″	10.8″	7131K26	675.50
240/480	120/240	15,000	16.9″	14.1″	11.6″	7131K27	844.11
240/480	120/240	25,000	18.4″	16.1″	13.3″	7131K28	1,114.10
Three Phase							
480	208y/120	3,000	10.4″	12.4″	7.5″	7131K38	636.80
480	208y/120	6,000	11.8″	14.2″	8.8″	7131K39	810.50
480	208y/120	9,000	14″	17.8″	11.5″	7131K41	1,001.00
480	208y/120	15,000	18.9″	20.3″	9″	7131K42	1,368.42
480	208y/120	30,000	25.5″	24.4″	19.4″	7131K43	1,352.05
480	208y/120	45,000	25.5″	24.4″	19.4″	7131K44	1,611.09
480	208y/120	75,000	29.4″	28.2″	22.4″	7131K45	2,284.65
Single Phase Constant Voltage							
120/240	120/240	1,000	10.5″	5.5″	5.1″	6989K21	229.33
120/240	120/240	2,000	13″	5.5″	5.1″	6989K23	333.06
120/240	120/240	3,000	11.5″	10.3″	7.1″	6989K24	423.63
120/240	120/240	5,000	14.4″	10.3″	7.1″	6989K25	616.47

Sensitive Equipment AC to AC Transformers with Plug and Outlet

NEMA 5-15

NEMA 6-15

Easily connect and disconnect devices that need 115 VAC power that's free of voltage spikes. They're also known as isolating transformers. Operate on 50/60 Hz.

With NEMA 5-15 Plug and NEMA 5-15 Outlet— Also known as constant voltage transformers, use when you need to isolate the input and output voltages without changing their values.

Voltage (VAC) Input	Voltage (VAC) Output	Power Output, VA	Ht.	Wd.	Dp.		
With NEMA 5-15 Plug and NEMA 5-15 Outlet							
115	115	150	3.9″	3.1″	4.2″	70245K71	$106.22
115	115	250	4.7″	3.8″	4.4″	70245K72	153.87
115	115	500	4.7″	3.8″	6″	70245K73	178.40
115	115	1,000	5.4″	4.4″	8.1″	70245K74	331.71
With NEMA 6-15 Plug and NEMA 5-15 Outlet							
230	115	100	3.5″	2.8″	3.6″	70245K81	115.55
230	115	250	4.7″	3.8″	4.4″	70245K83	126.51
230	115	500	4.7″	3.8″	6″	70245K84	178.05
230	115	1,000	5.4″	4.4″	8.1″	70245K85	343.19

Power-Conditioning Sensitive Equipment AC to AC Transformers

Get protection against three-millisecond power dips and spikes and electromagnetic interference. These transformers also isolate output and input voltage (output regulation is ±3% with input voltage fluctuations from +10% to –20%). They're also known as isolating transformers. All have screw terminal connections, are wall or floor mountable, and operate on 60 Hz. UL listed and CSA certified.

Voltage (VAC) Input	Voltage (VAC) Output	Power Output, VA	Ht.	Wd.	Dp.		
120/208/240/480	120/208/240	140	4.4″	6″	8.5″	7425K33	$425.00
120/208/240/480	120/208/240	250	4.4″	6″	9.7″	7425K34	557.69
120/208/240/480	120/208/240	500	6.5″	6.3″	12.3″	7425K35	828.85
120/208/240/480	120/208/240	750	6.5″	6.3″	13.3″	7425K36	1,051.92
120/208/240/480	120/208/240	1,000	6.5″	6.3″	14.2″	7425K37	1,257.69
120/208/240/480	120/208/240	1,500	9.9″	9.4″	17.6″	7425K39	1,697.74
120/208/240/480	120/208/240	3,000	9.9″	9.4″	19.9″	7425K42	2,903.77

Step-Down AC to AC Transformers

Even if you only have a 240 VAC connection, these transformers can power 120 VAC or 240 VAC devices. They're also known as auto transformers. The coils and cores are sealed to eliminate corrosion and insulation damage; enclosure is rated UL-3R for indoor and outdoor use. All have copper wire lead connections, are wall mountable, and operate on 60 Hz. UL listed and CSA certified.

Voltage (VAC) Input	Voltage (VAC) Output	Power Output, VA	Ht.	Wd.	Dp.		
240	120/240	1,000	9.1″	4.4″	4.2″	7029K43	$205.88
240	120/240	1,500	9.7″	4.5″	4.5″	7029K44	262.29
240	120/240	2,000	10.5″	5.5″	5.1″	7029K45	288.66
240	120/240	3,000	11.6″	5.5″	5.1″	7029K46	346.42
240	120/240	5,000	13″	5.5″	5.1″	7029K47	581.97

For information about AC to AC transformers, see page 934.

For single-phase equipment, use this formula to find power output: **VA = Volts × Amps**
For three-phase equipment, use this formula to find power output: **VA = Volts × Amps × 1.73**

Step-Down AC to AC Transformers with Outlet

Powering a 115 VAC device on a 240 VAC system is as easy as plugging it in with these step-down transformers. Also known as auto transformers, they have a NEMA 5-15 three-prong outlet to connect appliances such as air conditioners, power tools, portable or machine tool lighting, fans, and grinders. The coils and cores are sealed to eliminate corrosion and insulation damage. They're wall mountable, operate on 50/60 Hz, and come with a 6-ft. cord (plug not included) for input connection.

Voltage (VAC) Input	Output	Power Output, VA	Ht.	Wd.	Dp.		
200/220/240	115	200	9.2″	3.9″	3.7″	6980K3	$236.27
200/220/240	115	500	9.7″	4.8″	4.5″	6980K6	312.29
200/220/240	115	1,000	9.7″	4.8″	4.5″	6980K7	353.90
200/220/240	115	2,000	11.5″	7.8″	7.1″	6980K8	806.74

Step-Up/Step-Down AC to AC Transformers

Improve the efficiency of your equipment and lower operating costs. Wire these step-up/step-down (boost/buck) transformers to step your input voltage up or down by as much as 20% to match the voltage your equipment needs. All have stranded copper lead wires for input/output connections and operate on 60 Hz. Mount them to a wall or floor.

In addition to the VAC input and output, these transformers are labeled with an ***isolation transformer power output***, which is the rating before you wire the transformer to step up or step down power. Transformers become nonisolating transformers (also known as auto transformers) when they are wired to step up or step down the voltage.

To Order: Choose an input/output voltage combination that comes closest to matching your application, then read down that column until you reach the power output (in VA) of the equipment you want to operate. You probably won't find the exact value you need; choose the next highest rating. *Note:* Three-phase applications require two transformers.

Single Phase—Labeled as 120/240 VAC Input and 12/24 VAC Output

	STEP UP (BOOST)					STEP DOWN (BUCK)					Isolation Transformer Power Output		
Input Voltage / Output Voltage	100 / 120	110 / 120	189 / 208	208 / 230	220 / 242	125 / 113	132 / 120	230 / 208	245 / 222	252 / 240			Each
Power Output (in VA) at Output Voltage	250	500	430	480	500	520	540	470	500	1,020	50 VA	70525K71	$69.48
	500	1,010	870	960	1,010	1,040	1,080	950	1,000	2,040	100 VA	70525K72	82.90
	750	1,510	1,300	1,430	1,510	1,560	1,620	1,420	1,500	3,000	150 VA	70525K73	93.87
	1,250	2,500	2,160	2,390	2,520	2,600	2,750	2,370	2,500	5,100	250 VA	70525K74	109.72
	2,500	5,000	4,330	4,790	5,040	5,200	5,400	4,470	5,000	10,200	500 VA	70525K75	136.53
	3,750	7,560	6,500	7,190	7,560	7,800	8,150	7,100	7,500	15,300	750 VA	70525K76	179.20
	5,000	10,000	8,660	9,580	10,000	10,400	10,800	9,500	10,000	20,400	1,000 VA	70525K77	210.90

Three Phase (two required)—Labeled as 120/240 VAC Input and 16/32 VAC Output

	STEP UP (BOOST)			STEP DOWN (BUCK)					Isolation Transformer Power Output		
Input Voltage / Output Voltage	195 / 208	208 / 240	225 / 240	240 / 208	245 / 230	256 / 240	265 / 234	272 / 240			Each
Power Output (in VA) at Output Voltage	5,630	3,170	6,500	2,810	6,630	6,930	3,590	3,680	250 VA	70525K81	$114.60
	11,260	6,330	12,990	5,630	13,260	13,860	7,170	7,360	500 VA	70525K82	142.63
	16,890	9,500	19,490	8,440	19,890	20,780	10,760	11,040	750 VA	70525K83	187.73
	22,520	12,670	25,980	11,260	26,520	27,710	14,340	14,720	1,000 VA	70525K84	221.95

For more information about selecting the proper transformer and wiring it for your needs, go to mcmaster.com and search for **70525KAC**.

High-Inrush AC to AC Transformers

Also known as control transformers, these transformers handle momentary high-inrush currents associated with contactors, solenoids, and relays, as well as protect your sensitive equipment. They meet NEMA standards for voltage regulation and have screw terminal input/output connections. Operate on 50/60 Hz. UL listed and CSA certified.

Transformers with top-mounted fuse block have a built-in input and output fuse block to save panel space. They install quickly with little wiring. UL class CC midget (13/32″ dia.) fuses required for fused operation.

Transformer

Transformer with Top-Mounted Fuse Block

Voltage (VAC) Input	Output	Power Output, VA	Ht.	Wd.	Dp.		
Transformers							
120/240	12/24	50	2.7″	3″	3″	6988K61	$46.45
120/240	12/24	75	2.7″	3″	3.9″	6988K62	51.04
120/240	12/24	100	2.7″	3″	3.6″	6988K63	57.58
120/240	12/24	150	3.4″	3.8″	3.6″	6988K64	74.85
120/240	12/24	250	3.8″	4.5″	4.1″	6988K65	99.33
120/240	12/24	350	3.8″	4.5″	5.1″	6988K66	115.29
120/240	12/24	500	4.5″	5.3″	5.6″	6988K67	144.62
120/240	12/24	750	4.5″	5.3″	6.4″	6988K68	196.18
240/480	120	50	2.6″	3″	3.1″	6988K31	52.13
240/480	120	100	2.9″	3.4″	3.3″	6988K32	69.74
240/480	120	150	3.2″	3.8″	3.6″	6988K33	74.47
240/480	120	250	3.2″	3.8″	5.3″	6988K34	106.66
240/480	120	350	3.8″	4.5″	5.1″	6988K35	125.43
240/480	120	500	3.8″	4.5″	5.5″	6988K36	156.31
240/480	120	750	4.5″	5.3″	5.6″	6988K37	216.01
240/480	120	1,000	4.5″	5.3″	6.3″	6988K38	261.62
240/480	120	1,500	6.2″	7.1″	5.9″	6988K39	367.31

Voltage (VAC) Input	Output	Power Output, VA	Ht.	Wd.	Dp.		
Transformers (Cont.)							
240/480	120	2,000	5.7″	6.8″	9.3″	6988K74	$362.67
240/480/600	120/100	50	2.7″	3″	3.1″	6988K11	59.82
240/480/600	120/100	100	2.7″	3″	4.1″	6988K12	74.07
240/480/600	120/100	150	3.4″	3.8″	4″	6988K13	96.20
240/480/600	120/100	250	3.8″	4.5″	4.6″	6988K14	127.62
240/480/600	120/100	350	4.2″	4.7″	5″	6988K15	163.05
240/480/600	120/100	500	4.5″	5.3″	5.6″	6988K16	179.47
Transformers with Top-Mounted Fuse Block							
240/480	120	50	4″	3″	3.1″	6988K51	74.36
240/480	120	100	4.2″	3.4″	3.3″	6988K52	90.59
240/480	120	150	4.5″	3.8″	3.6″	6988K53	95.98
240/480	120	250	4.5″	3.8″	5.3″	6988K54	126.92
240/480	120	350	5.1″	4.5″	5.1″	6988K55	146.20
240/480	120	500	5.1″	4.5″	5.5″	6988K56	187.98
240/480	120	750	5.8″	5.3″	5.6″	6988K57	253.00
240/480	120	1,000	5.8″	5.3″	6.3″	6988K58	298.78

For information about AC to AC transformers, see page 934.

For single-phase equipment, use this formula to find power output: **VA = Volts × Amps**
For three-phase equipment, use this formula to find power output: **VA = Volts × Amps × 1.73**

Harsh Environment High-Inrush AC to AC Transformers

Single Voltage Output

Multiple Voltage Output

Touch-Safe Multiple Voltage Output

Dust, dirt, oil, and moisture won't damage these high-inrush transformers because they have epoxy-encapsulated coils. Also known as control transformers, all have screw terminal input/output connections and four mounting slots. Operate on 50/60 Hz. UL and C-UL listed.

Single voltage output transformers have an output fuse block. All transformers with ***multiple voltage output*** can simultaneously power multiple devices that require different output voltages.

Multiple voltage output transformers have input and output fuse blocks. UL class CC midget (13/32″ dia.) fuses are required for fused operation.

Touch-safe multiple voltage output transformers have plastic covers over the screw terminals to prevent accidental contact with live electrical connections. CE marked.

Voltage (VAC) Input	Voltage (VAC) Output	Power Output, VA	Ht.	Wd.	Dp.		
Single Voltage Output							
120/240	12	50	3.1″	3″	3.8″	**7034K61**	$52.73
120/240	12	75	3.1″	3″	4″	**7034K62**	58.18
120/240	12	100	3.5″	3.4″	4″	**7034K63**	65.45
120/240	12	150	3.8″	3.8″	4″	**7034K64**	89.09
120/240	24	50	2.8″	3″	2.7″	**7034K71**	46.45
120/240	24	75	2.8″	3″	3.2″	**7034K72**	51.04
120/240	24	100	3.1″	3.4″	3.3″	**7034K73**	57.58
120/240	24	150	3.4″	3.8″	3.9″	**7034K74**	74.85
120/240	24	250	3.8″	4.5″	4.1″	**7034K75**	99.33
120/240	24	500	4.7″	5.3″	5.5″	**7034K78**	144.62
240/480	12	50	3.1″	3″	3.8″	**7034K65**	52.73
240/480	12	150	3.8″	3.8″	4″	**7034K68**	89.09
240/480	120	50	2.8″	3″	2.7″	**7034K51**	44.24
240/480	120	75	2.8″	3″	3.2″	**7034K52**	48.55
240/480	120	100	3.1″	3.4″	3.3″	**7034K53**	54.84
240/480	120	150	3.4″	3.8″	3.9″	**7034K54**	71.20
240/480	120	250	3.8″	4.5″	4.1″	**7034K55**	92.35
240/480	120	500	4.7″	5.3″	5.5″	**7034K58**	137.67
Multiple Voltage Output							
230/460	24/115	50	3.9″	3″	3.5″	**6718T71**	65.52
230/460	24/115	75	4.2″	3.4″	3.6″	**6718T72**	72.41
230/460	24/115	100	4.2″	3.8″	3.6″	**6718T73**	77.59
230/460	24/115	150	4.7″	3.8″	4″	**6718T74**	93.10
230/460	24/115	200	5.3″	4.5″	4.4″	**6718T75**	108.62
230/460	24/115	250	4.1″	4.5″	4.4″	**6718T76**	122.41
230/460	24/115	300	5.9″	5.3″	5.2″	**6718T77**	137.93
230/460	24/115	350	5.9″	5.3″	5.2″	**6718T78**	139.66
230/460	24/115	500	6″	5.3″	5.7″	**6718T79**	167.24
Touch-Safe Multiple Voltage Output							
230/460/575	24/115/230	250	4″	4.5″	4.8″	**6718T51**	246.55
230/460/575	24/115/230	300	4″	4.5″	5.3″	**6718T52**	262.07
230/460/575	24/115/230	350	4.5″	5.3″	5.4″	**6718T53**	282.76
230/460/575	24/115/230	500	4.5″	5.3″	6.6″	**6718T54**	320.69
230/460/575	24/115/230	750	6″	6.4″	7.4″	**6718T55**	437.93
230/460/575	24/115/230	1,000	6.3″	6.8″	7.8″	**6718T56**	489.66

Touch-Safe High-Inrush AC to AC Transformers

Recessed screw terminals prevent accidental contact with live electrical connections and the electrically isolated coils withstand high-inrush currents. Also known as control transformers, they operate on 50/60 Hz and are UL and C-UL listed and CE marked, unless noted.

Voltage (VAC) Input	Voltage (VAC) Output	Power Output, VA	Ht.	Wd.	Dp.		
120/240	24	50	2.8″	3″	2.7″	**7038K21**	$46.45
120/240	24	75	2.8″	3.4″	3.2″	**7038K22**	51.04
120/240	24	100	3.1″	3.8″	3.3″	**7038K23**	57.58
120/240	24	150	3.4″	4.5″	3.9″	**7038K24**	74.85
120/240	24	250	4″	4.5″	4.1″	**7038K25**	99.33
120/240	24	500	4.7″	5.3″	5.5″	**7038K27**	144.62
120/240	24	1,000	6″	6.8″	4.8″	**7038K29**♣	249.70
240/480	120	50	2.8″	3″	3.4″	**7038K31**	44.24
240/480	120	75	2.8″	3.3″	3.4″	**7038K32**	48.55
240/480	120	100	3.1″	3.8″	3.4″	**7038K33**	54.84
240/480	120	250	4″	4.5″	4.1″	**7038K35**	94.51
240/480	120	350	4″	5.3″	5″	**7038K37**	109.80
240/480	120	500	4.7″	5.3″	6″	**7038K38**	137.67
240/480	120	750	4.7″	5.3″	6.8″	**7038K39**	186.76
240/480	120	1,000	6″	6.8″	4.8″	**7038K41**♣	221.64
240/480	120	1,500	6″	6.8″	6″	**7038K42**♣	282.00
240/480	120	2,000	6″	6.8″	6.5″	**7038K43**♣	354.23

♣ Not C-UL listed. CSA certified.

DIN-Rail Mount High-Inrush AC to AC Transformers

Get the same performance and protection as our other high-inrush transformers with the convenience of mounting on a 35 mm DIN rail. All have screw terminal input/output connections and operate on 50/60 Hz. UL and C-UL recognized and CE marked.

Voltage (VAC) Input	Voltage (VAC) Output	Power Output, VA	Ht.	Wd.	Dp.		
230	24	63	3.5″	3.4″	3.9″	**7962K61**	$96.84
230	24	100	4″	3.4″	3.9″	**7962K62**	112.34
230	24	160	4.1″	3.9″	4.2″	**7962K63**	141.41
230	24	250	4.7″	3.9″	4.2″	**7962K64**	203.34
230/460	115	63	3.5″	3.4″	3.9″	**7962K71**	164.60
230/460	115	100	4″	3.4″	3.9″	**7962K72**	184.00
230/460	115	160	4.1″	3.9″	4.2″	**7962K73**	203.38
230/460	115	250	4.7″	3.9″	4.2″	**7962K74**	222.76
230/460	115	315	4.7″	4.2″	4.4″	**7962K75**	280.88
230/460	115	400	4.5″	4.8″	4.8″	**7962K76**	262.12
230/460	115	500	5.3″	4.8″	4.8″	**7962K77**	280.82

Multimount High-Inrush AC to AC Transformers

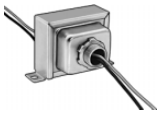

Mount these high-inrush transformers using the built-in flanges with mounting holes, 1/2″ trade size NPSM (straight threads) male conduit hub, or included 4″×4″ plate. Also known as control transformers, they are often used in heating, ventilation, and air conditioning control circuits. Input and output electrical connections are 8″ wire leads. Operate on 50/60 Hz. UL recognized.

Voltage (VAC) Input	Voltage (VAC) Output	Power Output, VA	Ht.	Wd.	Dp.		
120	24	40	2.4″	2.5″	2.5″	**7708K74**	$13.68
120/208/240	24/12/2.5	48	2.4″	2.5″	2.5″	**7708K76**	17.19
208/240	24	40	2.4″	2.5″	2.5″	**7708K75**	16.46

International-Voltage Transformers

Run an American appliance in Europe or a European appliance in the United States by stepping 220 VAC down to 110 VAC or 110 VAC up to 220 VAC. These transformers continuously operate at the rated power output. They have a NEMA 5-15 three-prong plug and outlet and a European two-prong plug adapter and outlet. Operate on 50/60 Hz.

Power Output, VA	Ht.	Wd.	Dp.		
300	3″	4″	6″	**70285K71**	$71.18
500	3.8″	4″	6.5″	**70285K72**	87.55
1,000	5″	6″	9″	**70285K73**	136.64
2,000	6″	7.5″	9.3″	**70285K74**	226.64

For single-phase equipment, use this formula to find power output: **VA = Volts × Amps**
For three-phase equipment, use this formula to find power output: **VA = Volts × Amps × 1.73**

Intermittent-Use International-Voltage Transformers and Plug Adapters

Convert 240 VAC electricity to power 120 VAC devices or 120 VAC electricity to power 240 VAC foreign devices such as radios and battery chargers. These transformers do not convert frequency.

6968K33 and *K35* have a European two-prong plug and a NEMA 1-15 two-prong outlet. Operate on 50 Hz. 6968K36 has a NEMA 1-15 two-prong plug and a European two-prong outlet. Operate on 60 Hz.

Transformer Kit

Transformer kit has a higher power voltage transformer with a 25/1,875 watt selector switch. It's a solid state transformer and not for use with appliances that have electronic circuitry. Kit also includes the plug adapter assortment and a carrying case.

Plug adapter assortment is for use with devices that already have a transformer that can accept foreign voltages. Includes five adapters that allow you to use NEMA 1-15 two-prong plugs with foreign outlets.

	Watts		
240 to 120 VAC Transformer	50	6968K33	$17.42
120 to 240 VAC Transformer	50	6968K36	17.42
240 to 120 VAC Transformer Kit	25/1,875	6968K35	41.62
Plug Adapter Assortment		6968K34	12.85

Plug-In AC to DC and AC to AC Transformers

Power low-voltage devices from an outlet. Also known as AC adapters, these transformers have a NEMA 1-15 two-prong plug, except 5600K19 and K18, which have a NEMA 5-15 three-prong plug. Operate on 60 Hz. UL listed.

120 VAC Input to DC Output

Quickly connect to your device. Transformers have a 5-ft. cord with 2.1 mm ID/5.5 mm OD connector and are a great solution for replacing lost or broken transformers.

Choose a ***center-positive*** or ***center-negative*** output connector. Look for the illustrations below on the transformer you're replacing to determine whether it's center positive or center negative.

Voltage Output	Power Output	Center Positive (− ◯ +)		Center Negative (+ ◯ −)	
With Cord					
4.5 VDC	1,000 mA	70235K21	$9.87	70235K17	$9.87
5 VDC	1,000 mA	70235K22	9.87	70235K18	9.87
6 VDC	1,000 mA	70235K89	9.87	70235K63	9.87
9 VDC	660 mA	70235K92	10.54	70235K65	10.54
9 VDC	1,300 mA	70235K86	15.62	70235K36	15.62
12 VDC	500 mA	70235K95	10.48	70235K68	10.48
12 VDC	1,000 mA	70235K96	16.56	70235K69	16.56
12 VDC	2,000 mA	70235K23	19.35	70235K19	19.35
15 VDC	1,600 mA	70235K98	19.35	70235K72	19.35
24 VDC	250 mA	70235K81	10.50	70235K82	10.50
24 VDC	1,000 mA	70235K99	19.35	70235K85	19.35

120 VAC Input to AC Output

With Cord—Quickly connect to your device. They have a 5-ft. cord with 2.1 mm ID/5.5 mm OD connector and are a great solution for replacing lost or broken transformers.

With Screw Terminals—Hardwire to devices such as alarms and sensors. *40 VA* transformers have an LED status-indicating light and auto reset.

With Cord

20 VA with Screw Terminals

Voltage Output	Power Output		
With Cord			
6 VAC	1,000 mA	70235K11	$8.84
9 VAC	500 mA	70235K74	9.00
9 VAC	1,000 mA	70235K12	10.12
12 VAC	500 mA	70235K76	9.74
12 VAC	1,000 mA	70235K14	12.42
16 VAC	250 mA	70235K15	11.96
24 VAC	500 mA	70235K16	12.72
With Screw Terminals			
12 VAC	20 VA	5600K31	8.25
16 VAC	20 VA	5600K32	8.25
16 VAC	40 VA	5600K19	11.67
24 VAC	20 VA	5600K33	8.25
24 VAC	40 VA	5600K18	11.67

Variable Voltage Output Transformers

Bench Top

Panel Mount

NEMA 5-15 NEMA 5-20 NEMA 6-15

Turn the dial to adjust the voltage you need within a given range. Also known as variacs, these transformers are often used in laboratories to vary power, heat, speed, or force. Operate on 50/60 Hz and are CSA certified, unless noted.

Bench Top—Have a ventilated steel case, power-on indicator, and 6-ft. power cord. Include a fuse.

Panel Mount—For permanent installation. They have screw terminal input/output connections except 6994K31-K34 and K41, which have 1/4″ quick-disconnect terminals.

Voltage (VAC) Input	Output	Power Output, VA	Max. Amps	Ht.	Wd.	Dp.		
Bench Top with NEMA 5-15 Plug and Outlet								
120	0-120	1,440	12	7″	4.6″	5.5″	6994K24●	$432.97
120	0-132	330	2.5	5.3″	6.1″	4.1″	6994K11●	326.53
120	0-140	700	5	5.3″	6.1″	4.1″	6994K14★	351.33
120	0-140	1,400	10	7″	4.6″	5.5″	6994K17	373.03
120	0-140	2,100	15	9.4″	6.2″	6″	6994K21	685.10
Bench Top with NEMA 5-20 Plug and Outlet								
120	0-140	3,080	22	10.9″	8″	6.3″	6994K23★	978.57
Bench Top with NEMA 6-15 Plug and Outlet								
240	0-240	1,200	5	7″	4.6″	5.5″	6994K19●	512.53
240	0-280	980	3.5	7″	4.6″	5.5″	6994K18★	446.40
240	0-280	2,660	9.5	9.4″	6.2″	6″	6994K22★	685.10
Panel Mount								
120	0-120	210	1.75	3.3″	2.9″	1.9″	6994K31	114.38
120	0-120	300	2.5	3.3″	2.9″	2.1″	6994K32	119.72
120	0-120	360	3	3.3″	2.9″	2.4″	6994K33	169.97
120	0-120	600	5	4.4″	3.8″	3″	6994K34	204.17
120	0-120	1,200	10	5.6″	4.4″	4.2″	6994K35	249.07
120	0-120	1,440	12	5.6″	4.4″	4.2″	6994K39●	271.77
120	0-120	1,800	15	6.8″	6.1″	4.3″	6994K37	455.70
120	0-120	3,000	25	8.3″	7.6″	4.4″	6994K44	647.00
240	0-240	190	0.8	3.3″	2.9″	2.1″	6994K41★	197.37
240	0-240	1,200	5	5.6″	4.4″	4.2″	6994K36●	331.70
240	0-240	2,280	9.5	6.8″	6.1″	4.6″	6994K38	455.70
240	0-280	980	3.5	5.6″	4.4″	4.2″	6994K42	325.50

●60 Hz only. ★Not CSA certified.

AC to DC Transformers

Convert AC input voltage to a constant DC output voltage. These transformers, also known as DC power supplies, have screw terminal input/output connections. UL listed and CE approved.

Single-phase power input transformers have an input voltage of 100-240 VAC and include a mounting bracket. CSA certified.

Three-phase power input transformers have a three-phase input voltage of 360-550 VAC. C-UL listed. 8242K31 mounts to a 35 mm DIN rail. 8242K33 and *K35* are screw mount.

Single Phase

DC Output Volts	Amps	Watts	Ht.	Wd.	Dp.		
Single-Phase Power Input							
5	3	15	3.6″	1.6″	3.5″	7010K31	$63.86
5	7	35	3.6″	1.6″	3.5″	7010K32	73.04
5	10	50	3.6″	1.6″	3.9″	7010K33	83.48
5	20	100	3.6″	2″	5.9″	7010K34	95.79
12	1.3	15	3.6″	1.6″	3.5″	7010K35	63.86
12	3	35	3.6″	1.6″	3.5″	7010K36	73.04
12	4.2	50	3.6″	1.6″	3.9″	7010K37	83.48
12	8.5	100	3.6″	2″	5.9″	7010K38	95.79
15	1	15	3.6″	1.6″	3.5″	7010K41	63.86
24	0.65	15	3.6″	1.6″	3.5″	7010K44	63.86
24	1.5	35	3.6″	1.6″	3.5″	7010K45	73.04
24	2.1	50	3.6″	1.6″	3.9″	7010K46	83.48
24	4.5	100	3.6″	2″	5.9″	7010K47	95.79
24	5	120	4.5″	2.1″	5.9″	7010K71	269.38
24	10	240	5″	2.7″	8″	7010K72	355.48
24	20	480	8.2″	3.3″	9.2″	7010K73	473.90
Three-Phase Power Input							
24	10	240	5″	2.7″	7″	8242K31	337.06
24	20	480	8.2″	3.3″	8.9″	8242K33	398.74
24	40	960	9.5″	4.2″	10.6″	8242K35	646.20

DIN-Rail Mount AC to DC and DC to DC Transformers

Also known as DC power supplies, these transformers conveniently install on a 35 mm DIN rail. An overload protection feature decreases output voltage and automatically resets when the output current returns to the rated range. All have a green LED output indicating light and screw terminal input/output connections.

AC Input— Operate on 50/60 Hz. UL and C-UL listed and CE marked except 7009K11, which is UL listed and CSA certified.

Single phase have an input voltage of 100 to 240 VAC, unless noted. *Three phase* have an input voltage of 340 to 575 VAC, unless noted.

DC Input— Input voltage is 12 to 24 VDC. UL recognized and CSA certified.

DC Output Volts	Amps	Watts	Ht.	Wd.	Dp.		
AC Input to DC Output— *Single-Phase Power Input*							
5	2	10	3.3″	0.9″	3.8″	**7009K31**	$82.76
5	5	25	3″	1.8″	3.6″	**7009K21**	110.67
12	1.2	15	3.3″	0.9″	3.8″	**7009K32**	82.76
12	2.5	30	3.3″	0.9″	3.8″	**7009K33**	108.62
12	4.17	50	3.5″	1.3″	4″	**7009K83**	83.24
12	6	72	4.9″	1.3″	4″	**7009K92**	151.50
12	8	96	4.9″	1.6″	4.5″	**7009K93**	212.88
12	15	180	4.9″	2.4″	4.5″	**7009K94**	279.15
15	3.4	50	3″	1.8″	3.6″	**7009K19**	136.81
24	0.65	15	3.3″	0.9″	3.8″	**7009K34**	82.76
24	1.3	30	3.3″	0.9″	3.8″	**7009K35**	108.62
24	2.1	50	3″	1.8″	3.6″	**7009K16**	112.09
24	2.5	60	3.7″	1.6″	4.3″	**7009K36**	139.66
24	3.4	80	4.9″	1.3″	4″	**7009K95**	151.50
24	3.8	92	3″	2.9″	3.8″	**7009K17★**	146.83
24	4.2	100	3″	2.9″	3.8″	**7009K18★**	146.83
24	5	120	4.5″	2″	4.8″	**7009K81**	220.48
24	10	240	4.5″	3.9″	4.9″	**7009K82**	341.38
24	20	480	4.9″	3.4″	5″	**7009K11**	593.44
48	1.05	50	3″	1.8″	3.6″	**7009K22**	124.74
48	1.25	60	4.9″	2″	4.1″	**7009K91**	144.84
48	5	240	4.9″	3.3″	4.6″	**7009K12★**	356.68
AC Input to DC Output— *Three-Phase Power Input*							
24	0.5	120	4.9″	2.9″	4.6″	**7009K96**	270.80
24	10	240	4.9″	3.5″	4.6″	**7009K13**	390.03
24	20	480	4.9″	2.6″	4.7″	**7009K14■**	526.49
24	40	960	4.9″	7.1″	4.9″	**7009K15■**	786.51
DC Input to DC Output— *Single-Phase Power Input*							
5	0.6	3	3″	1.5″	2.6″	**8139K21**	74.48
5	1.5	7.5	3″	1.5″	2.6″	**8139K22**	83.79
12	0.25	3	3″	1.5″	2.6″	**8139K23**	74.48
12	0.6	7.5	3″	1.5″	2.6″	**8139K24**	83.79
24	0.3	7.5	3″	1.5″	2.6″	**8139K28**	83.79

★ Input voltage automatically selects from 115/230 VAC.
■ Input voltage is 320 to 540 VAC.

Current-Limiting AC to Adjustable DC Transformers

Single Output Digital Display

Single Output Analog Display

Prevent damage to devices that try to draw too much power. Also known as DC power supplies, these transformers allow you to adjust and limit the DC output current and voltage. All have an on/off switch and 5-ft. cord with NEMA 5-15 three-prong plug. Output connections are binding posts for banana plugs. Operate on 115/230 VAC, 50/60 Hz.

Single Output— 7686K26 has selectable ranges of 0 to 36 VDC and 0 to 18 VDC.

Dual Output— Has two 0 to 30 VDC outputs and can be connected in series or parallel.

Wattage varies depending on your DC output voltage and amperage. To determine the power output required, use the following formula: Watts = Volts × Amps.

DC Output Volts	Amps	Ht.	Wd.	Dp.		
Single Output— *Digital Display*						
0-18	5	5.5″	6.5″	10.4″	**7686K25**	$232.75
0-20	25	5.8″	19″	12.8″	**7686K41**	686.15
0-30	3	5.5″	6.5″	10.4″	**7686K24**	221.67
0-30	6	5.5″	12.1″	10.5″	**7686K27**	307.77
Single Output— *Analog Display*						
0-30	2	4.3″	8″	8.3″	**7686K21**	159.92
0-30	12	5.8″	19″	13.5″	**7686K28**	504.23
0-36	3.5/7	5.5″	12.1″	10.5″	**7686K26**	298.74
Dual Output— *Analog Display*						
0-30/0-30	3/3	5.5″	12.1″	10.5″	**7686K29**	305.46

AC to Adjustable DC Transformers

0-16 VDC

0-160 VDC

Adjust and monitor the power output of these transformers, also known as DC power supplies.

0 to 16-volt transformer has an analog voltmeter and ammeter for continuous monitoring of output voltage and current. Output connections are binding posts for banana plugs. It has an on/off switch and an 8-ft. cord with NEMA 5-15 three-prong plug. Operates on 117 VAC, 60 Hz.

0 to 160-volt transformer has an on/off switch, cooling fan, 10″ input cord with NEMA 5-15 three-prong plug, and 10″ output cord with NEMA 5-15 outlet. Operates on 120 VAC, 60 Hz.

Wattage varies depending on your DC output voltage. To determine the power output required, use the following formula: Watts = Volts × Amps.

DC Output Volts	Amps	Ht.	Wd.	Dp.		
0-16	5	10.8″	4.8″	6.5″	**6972K11**	$518.75
0-160	10	13″	13.8″	8″	**6974K11**	1,540.00

DC to AC Voltage Transformers

Compact

General Purpose (with Cigarette Lighter Plug)

For Motor Loads (with Screw Terminals)

For Sensitive Electronic Loads

Use a DC battery to power devices that run on AC voltage. Also known as inverters or converters, these transformers provide overload protection and an output frequency of 60 Hz. All have a three-prong AC outlet.

Compact— Has a cigarette lighter plug input, input short circuit protection, low battery shutdown, and a USB charging port.

General Purpose— Good for portable computers and battery chargers. 6987K22 and *K35* have a cigarette lighter plug input. K22 also includes a battery cable with clips. 6987K29, *K42*, and *K23* have screw terminal input connections.

For Motor Loads— Provide AC power to devices that temporarily draw high output, such as motors. Transformers are designed to withstand starting surges up to twice the power output rating and they maintain a 60 Hz frequency, ±1 Hz (except 6987K91 is ±0.3 Hz). 76815K85 has a cigarette lighter plug input; 6987K91 has screw terminal input connections.

For Sensitive Electronic Loads— Produce AC output that most closely resembles clean, stable AC-generated power at 60 Hz. Transformers prevent damage from overloads, short circuits, and overheating. Input connections: 70555K11 has a cigarette lighter plug; *K13-K14* have 5/16″ stud terminals; and *K17* has wire leads.

Voltage Input VDC	Output VAC	Power Output Watts	Amps	No. of Outlets	Ht.	Wd.	Dp.		
Compact									
10-15	110	150	1.4	1	1.8″	2.8″	5″	**4858T11**	$32.89
General Purpose									
10-15	110	400	3.6	2	2″	4″	6.5″	**6987K22**	57.02
12	120	150	1.3	1	1.8″	3.8″	5.8″	**6987K35**	41.23
12	120	700	5.8	3	2.8″	5″	8.2″	**6987K29**	121.05
12	120	1,000	8.3	4	4.3″	6″	13″	**6987K42**	271.79
12	120	1,800	15	4	4″	6″	15″	**6987K23**	405.26
For Motor Loads									
11-15	115	320	2.8	2	2″	4.1″	6.1″	**76815K85**	65.48
12	120	1,250	10.4	2	7″	8.8″	9″	**6987K91**	378.95
For Sensitive Electronic Loads									
12	120	125	1.1	1	2.2″	4.9″	7.9″	**70555K11**	260.00
12	120	600	5.1	2	3.6″	7.7″	12.1″	**70555K13**	721.54
12	120	1,100	9.5	2	3.6″	7.7″	15″	**70555K14**	863.08
24	120	125	1.1	1	2.2″	4.9″	7.9″	**70555K17**	284.62

Single-Phase to Three-Phase Voltage Transformers

Also known as phase converters, these transformers generate three-phase 220 VAC output power from a single-phase 220 VAC input. Operate on 50/60 Hz.

(A) Light Load— Also known as static converters, they are often used for drill presses, mills, and grinders and are a low-cost alternative to our high-efficiency transformers. They are designed to allow your motor to run at up to 70% of its normal power. All come with a terminal block for connections and are wall mountable.

Note: Select a transformer so the power output of your largest motor falls within the output range. When using multiple motors, start the largest motor first, then start smaller motors individually.

(B) High-Efficiency Light Load— Also known as rotary converters, these allow motors to run at 100% of their normal power. They include leads for hardwiring and are floor mountable.

Note: Select a transformer with a power output that exceeds but comes closest to the power requirement of your largest motor. When using multiple motors, start the largest motor first. Then start smaller motors individually until their total hp requirement is no more than twice the power output of the transformer.

(C) High-Efficiency Medium-to-Heavy Load— Similar to Style B, but they allow the total hp requirement of your motors to be three times the power output of the transformer. Used in gear head lathes and flywheel and hydraulic applications. All have leads for hardwiring and are floor mountable.

Power Output, hp	Lg.	Wd.	Ht.		
(A) Light Load					
0.25-0.5	6.5″	3″	7″	**7331K21**	$136.86
0.5-1	6.5″	3″	7″	**7331K22**	148.24
1-3	6.5″	3″	7″	**7331K24**	159.67
3-5	6.5″	3″	7″	**7331K25**	182.48
5-7.5	6.5″	3″	7″	**7331K26**	222.41
7.5-10	6.5″	3″	7″	**7331K27**	245.22
(B) High-Efficiency Light Load					
1	12″	10″	13″	**7331K11**	528.35
3	13″	11″	13″	**7331K13**	660.25
5	13″	11″	13″	**7331K14**	765.82
7.5	14″	12″	18″	**7331K15**	970.81
10	14″	12″	18″	**7331K16**	1,130.06
(C) High-Efficiency Medium-to-Heavy Load					
1	14″	19″	14″	**7331K31**	801.43
3	14″	19″	14″	**7331K32**	871.20
5	14″	19″	14″	**7331K33**	1,096.99
7.5	14″	19″	14″	**7331K34**	1,422.23
10	17″	21″	14″	**7331K35**	1,780.54

Uninterruptible Power Supplies

NEMA 5-15

NEMA 5-20

Protect sensitive and critical electronic equipment with uninterruptible power supplies (UPS). They provide the same protection as Backup Power Supplies but without any power loss when switching to battery power during an outage. These units handle input voltages from 65 to 138 VAC and provide constant output of 120 VAC (±2%). They also protect against frequency variation and waveform distortion.

Power supplies include a DB9 (serial) port and cable to save data and safely shut down an unattended computer during outages. They have six NEMA outlets. (70485K23 also has a L5-20 outlet.) Use on a desktop or mount in a 19″ wide electronics rack. Meet UL 1778. Choose a power output that is equal to or greater than the power your equipment requires.

Power Output, Volt-Amps/ Watts/Amps	Run Time, minutes Half Load	Full Load	Ht.	Wd.	Dp.		
With NEMA 5-15 Plug and Outlets							
1,000/ 800/ 8.3	14	4.5	3.5″	17.5″	13.5″	**70485K21**	$749.80
1,500/1,200/12.5	14	5	3.5″	17.5″	19″	**70485K22**	920.00
With NEMA 5-20 Plug and Outlets							
2,200/1,600/18.3	14	4.5	3.5″	17.5″	19″	**70485K23**	1,303.81

Backup Power Supplies

Low Profile

With Power Conditioning

Be ready for brownouts that could damage your equipment and blackouts that shut you down. These products transfer power to a built-in battery with only a momentary power loss during the transfer. They also protect against line noise and power surges. Power supplies include a USB port and cable (except 7530K21) to save data and safely shut down an unattended computer during outage. They have six NEMA 5-15 outlets and a cord with NEMA 5-15 three-prong plug, unless noted. Choose a power output equal to or greater than the power your equipment requires. You can determine your volt-amps requirement by multiplying the amp draw of your equipment by 120 VAC.

Standard— All of the outlets in 7530K36 and K37 have surge suppression; three have battery backup. 7530K36 and K37 also have an RJ-45 phone jack.

Low Profile— All of the outlets in these compact units have surge protection. Three of the outlets in 7530K42 have battery backup as well as four of the outlets in 7530K43 and six of the outlets in K44. All units have an RJ-11 phone jack.

With Power Conditioning— During power dips and surges, these units raise or lower power to keep it at a normal level. There is no battery transfer time during a power dip. All of the outlets in 70475K11 and K12 have surge suppression; three have battery backup. 70475K11 has an RJ-11 phone jack. 70475K17 and K12 have an RJ-45 phone jack.

Power Output, Volt-Amps/ Watts/Amps	Run Time, min. Half Load	Full Load	Ht.	Wd.	Dp.		
Standard							
300/180/ 2.5	17	5	8.5″	4.2″	5.5″	**7530K21**♦	$107.33
500/280/ 4.2	15	4	8.5″	5.2″	7″	**7530K36**	161.00
700/425/ 5.8	11	3	10.8″	5.2″	7.5″	**7530K37**	164.07
1,400/940/11.7	24	8	12.8″	7.5″	9″	**7530K26**	544.33
Low Profile							
350/180/ 2.9	11	3	3″	8″	6.4″	**7530K42**	65.17
550/300/ 4.6	10	3.5	3.1″	10.8″	5.7″	**7530K43**●	85.10
750/450/ 6.3	11	2.5	3.1″	12.2″	6.9″	**7530K44**♠	122.67
With Power Conditioning							
300/180/ 2.5	27	10.5	8.5″	5.2″	7″	**70475K17**♦	184.00
550/300/ 4.6	15	4	8.5″	5″	6.5″	**70475K11**	141.65
750/450/ 6.3	11	3	10.8″	5.2″	7.5″	**70475K12**	173.78
1,050/705/ 8.8	23	7	11.5″	6.8″	7.2″	**70475K19**	408.89
1,400/940/11.7	24	8	12.8″	7.5″	9.2″	**70475K14**	591.19

♦ Has three outlets. ● Has eight outlets. ♠ Has 12 outlets.

Power Conditioners

General Purpose

Premium

Regulate power dips and surges to protect sensitive equipment. Power conditioners take AC power input and provide a constant output power level. They have NEMA 5-15 outlets and a cord with NEMA 5-15 three-prong plug. Choose a power output that is equal to or greater than the power your equipment requires. You can determine your volt-amp requirement by multiplying the amp draw of your equipment by 120 VAC.

General purpose and ***rack-mount*** units handle input voltages from 89 to 147 VAC and provide a constant output voltage of 120 VAC (±9%).

General purpose units have a 6-ft. cord. UL and C-UL listed, except 7596K56. ***Rack-mount*** unit fits in 19″ wide electronics racks. Cord is 12 ft. long.

Premium units handle input voltages from 96 to 132 VAC and provide a constant output voltage of 120 VAC (±5%). They also provide greater electromagnetic interference and line noise suppression. Cord is 6 ft. long. UL listed and CSA certified.

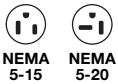
NEMA 5-15

NEMA 5-20

Power Output, Volt-Amps/ Watts/Amps	No. of Outlets	Ht.	Wd.	Dp.		
General Purpose						
600/ 600/ 5	6	5.5″	4.8″	4.8″	**7596K54**	$117.09
1,200/1,200/10	4	7.3″	6″	7″	**7596K57**	162.25
1,800/1,500/15	6	6.8″	5.8″	6.8″	**7596K53**	240.87
2,400/2,400/20	6★	6.8″	5.8″	6.8″	**7596K56**	326.18
Rack Mount						
2,400/2,400/20	14	5.3″	19″	5″	**7596K77**	404.80
Premium						
210/ 150/ 1.7	4	5.5″	6.8″	9.5″	**7596K81**	390.00
420/ 300/ 3.5	4	5.5″	6.8″	9.5″	**7596K82**	488.33
650/ 450/ 5.4	6	6.5″	8.5″	11.3″	**7596K83**	625.00
850/ 600/ 7	6	6.5″	8.5″	11.3″	**7596K84**	721.67

★ Has four NEMA 5-15 and two NEMA 5-20 outlets.

About Electrical Testing

Here are factors to consider when selecting a testing meter:

Single Function or Multifunction: Choose a multimeter if you need to test or measure multiple electrical properties.

Multimeters or Clamp-On Multimeters: Multimeters require the circuit to be cut for measuring current. Clamp-on multimeters clamp around a single insulated conductor, making them safer and more convenient for frequent measurements.

Average Sensing or True RMS (Root Mean Square): Average sensing meters accurately measure AC voltage and current that follow a sine wave. True RMS meters accurately measure AC voltage and current regardless of the sine wave shape. This is important because many electronic devices, including computers and adjustable-speed drives, draw current in short pulses that can distort the shape of the wave.

DC Accuracy: Many multimeters measure AC/DC voltage and current, resistance, capacitance, and frequency, each of which is rated for accuracy. For multimeters, we list basic DC voltage accuracy because it is the truest measure of accuracy.

IEC 61010 Safety Categories: The International Electrotechnical Commission (IEC) defines categories for rating the safety of electrical testing instruments. The higher the category (CAT), the closer the equipment being tested can be to the utility power source. A meter can have multiple category ratings. Our catalog lists the highest category rating. See safety category descriptions below:

Safety Category	Voltage Category	Transient Overvoltage Protection Capability	Where to Use	Applications
CAT IV	600V	8,000V	Three-phase at utility connection, any outdoor conductors.	Outdoor overhead and underground cable runs, electricity meters, primary breakers, and fuses.
	1,000V	12,000V		
CAT III	300V	4,000V	Distribution circuits, including single-phase commercial lighting.	Switchgear and three-phase motors; transformers and distribution panels; bus, feeder, and short branch circuits.
	600V	6,000V		
	1,000V	8,000V		
CAT II	300V	2,500V	Single-phase receptacle-connected loads.	Appliances, portable tools, and most 120V or 240V equipment inside a building; outlet receptacles and long branch circuits.
	600V	4,000V		

Fluke Digital Multimeters

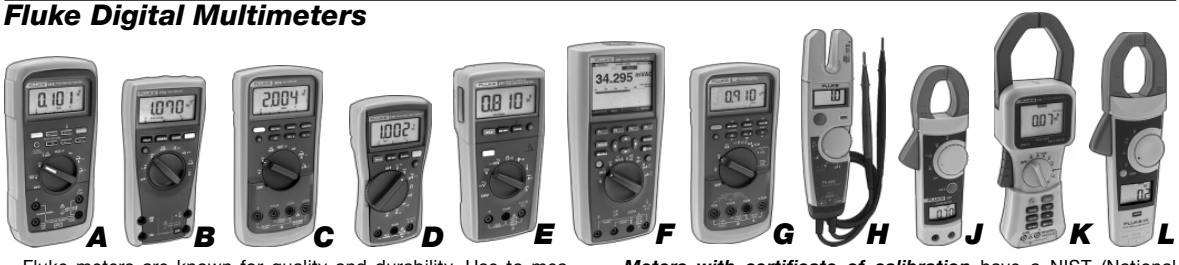

Fluke meters are known for quality and durability. Use to measure AC/DC voltage, AC/DC current (unless stated otherwise), and resistance. Meters are autoranging and have an audible signal to indicate continuity. All have data hold and an easy-to-read back-lit LCD, unless noted. Include test leads and batteries.

Meters with certificate of calibration have a NIST (National Institute of Standards and Technology) certificate.

True RMS multimeters give the most accurate AC measurements.

For detailed specifications, go to mcmaster.com and search for **7093KAC**.

Multimeters, Styles A-G

Meters have a min./max. mode and perform diode testing. They can measure capacitance, unless stated otherwise. UL listed and CSA certified, except for Style A and Style E meters, which are CSA certified to U.S. and Canadian standards. All are CE approved.

87-5/E2 kits include a Fluke 87-5 meter, test clips, leads, magnetic meter hanger, and temperature probe. Packed in a carrying case.

117/322 kits include a Fluke 117 meter, Fluke 322 400-amp clamp-on meter, test leads, and a carrying case.

Fluke No.	Style	Features	Safety Cat.	DC Accuracy	Frequency	Meters Each	Meters w/ Certificate of Calibration Each
Average Sensing Multimeters							
27-2	A	Waterproof (IP67) meter that withstands vibration, shock, and extreme temps.	IV, 600V	0.5%	Yes	**7093K1**.....$441.95	**7093K111** ...$547.15
77-4	B	Meter for basic troubleshooting.	IV, 600V	0.3%	Yes	**7093K82**.....$269.95	**7093K84**.....$340.93
83-5	C	Higher accuracy for troubleshooting machines and power distribution.	IV, 600V	0.1%	Yes	**7093K53**.....$389.95	**7093K531** ...$493.89
True RMS Multimeters							
28-2	A	Waterproof (IP67) meter that withstands vibration, shock, and extreme temps.	IV, 600V	0.5%	Yes	**7093K2**.....$451.95	**7093K211** ...$557.15
87-5	C	High accuracy and filter for troubleshooting motor drives and controls.	IV, 600V	0.05%	Yes	**7093K75**.....$399.95	**7093K551** ...$505.15
87-5/E2 Kit	C	Includes temp. probe, magnetic hanger, and test clips.	IV, 600V	0.05%	Yes	**7093K86**.....$451.95	**7093K651** ...$557.15
114	D	For electrical troubleshooting. Does not measure current or capacitance.	III, 600V	0.5%	No	**7093K753** ..$140.95	**7093K754** ...$206.86
115	D	Meter for basic troubleshooting.	III, 600V	0.5%	Yes	**7093K755** ..$167.95	**7093K756** ...$233.86
116	D	Measures microamps for HVAC troubleshooting, includes temp. probe.	III, 600V	0.5%	Yes	**7093K751** ..$194.95	**7093K752** ...$260.86
117	D	Noncontact AC voltage detector.	III, 600V	0.5%	Yes	**7093K761** ..$205.95	**7093K762** ...$271.86
117/322 Kit	D	Includes Fluke 322 clamp-on meter.	III, 600V	0.5%	Yes	**7093K763** ..$327.72	**7093K764** ...$418.67
175	B	Accurate meter. LCD not back-lit.	IV, 600V	0.15%	Yes	**7093K19**.....$259.95	**7093K191** ...$330.93
177	B	Higher accuracy for troubleshooting machines and power distribution.	IV, 600V	0.09%	Yes	**7093K22**.....$269.95	**7093K222** ...$340.93
179	B	Same as Fluke 177 meter, plus temp. probe.	IV, 600V	0.09%	Yes	**7093K23**.....$280.95	**7093K231** ...$351.93

(Continued on following page)

Fluke Digital Multimeters *(Continued from previous page)*

Multimeters, Styles A-G (Cont.)

179/1AC kits include a Fluke 179 meter, test probes, test clips, test leads, an AC voltage detector, a magnetic meter hanger, and a carrying case. ***179/IMSK kits*** include a Fluke 179 meter, Fluke 322 400-amp clamp-on meter, test clips, test leads, and a temperature probe.

Fluke No.	Style	Features	Safety Cat.	DC Accuracy	Frequency	Meters Each	Meters w/ Certificate of Calibration Each
True RMS Multimeters (Cont.)							
179/1AC Kit	***B***	Includes Fluke 1AC-II AC voltage detector, magnetic hanger, and case.	IV, 600V	0.09%	Yes	7093K35 $317.80	7093K52 $388.35
179/IMSK Kit	***B***	Includes Fluke 322 clamp-on meter.	IV, 600V	0.09%	Yes	7093K6 $332.95	7093K611 $467.31
233	***E***	Removable wireless display for viewing up to 15 ft. from meter.	IV, 600V	0.25%	Yes	7093K7 $311.95	7093K711 $361.38
287	***F***	Data logging.	IV, 600V	0.025%	Yes	7093K77 $493.95	7093K78 $599.15
289	***F***	Data logging plus filter for trouble-shooting motor drives and controls.	IV, 600V	0.025%	Yes	7093K79 $576.95	7093K83 $688.49
787	***G***	Dual display for process control. Does not measure capacitance.	III, 1000V	0.05%	Yes	7093K89 $750.95	7093K61 $925.87
789	***G***	Dual display for process control. Has 24V loop supply and 4-20 mA DC output. Does not measure capacitance.	IV, 600V	0.1%	Yes	7093K3 $859.95	7093K311 $1,010.79

Accessories for Multimeters, Styles A-G

Temperature probe has a temperature range of –40° to +500° F. ***Thermocouple module*** has a temperature range of –58° to +1832° F. ***Pressure/vacuum module*** measures pressure from 0.5 to 500 psig and vacuum from 0 to 29.9″ Hg.

	Fluke No.		Each
Test Lead Set for All Meters	TL-220	7093K27	$62.95
Soft Case for 170 Series, 27-2, 28-2, 77-4, 83-5, 87-5, 233, 787, 789	C25	7093K91	32.95
Soft Case with Handle for 110 and 170 Series, 77-4, 233	C35	7093K55	19.95
Soft Case (for two testers) for 110 and 170 Series, 27-2, 28-2, 77-4, 233, 287, 289	C116	7093K87	32.95
Hard Case for 110 and 170 Series, 77-4, 83-5, 87-5, 233, 787, 789	C101	7093K58	50.95
Waterproof Hard Case for 110 and 170 Series, 77-4, 233	CXT170	7093K65	163.95
Waterproof Hard Case for 27-2, 28-2, 287, 289	CXT280	7093K73	163.95
Waterproof Hard Case for 83-5, 87-5, 787, 789	CXT80	7093K74	163.95
Leather Case for 110 and 170 Series, 233	C510	7093K11	$56.95
Tool Bag for All Meters	C550	7093K12	81.95
Hanging Kit for All Meters	TPAK	7093K95	35.95
Temperature Probe for 28-2, 87-5, 116, 179, 233, 287, 289	80BK-A	7093K13	34.95
Thermocouple Module for 27-2, 77-4, 83-5, 114, 115, 117, 175, 177, 787, 789	80TK	7093K51	116.95
Pressure/Vacuum Module for All Meters	PV-350	7093K67	385.95
Software with USB Cable for 287, 289, 789	FVF-SC2	7093K14	202.95
Repl. Fuses for All Meters—0.44 Amps	DMM-B-44/100	4398K1	7.83
Repl. Fuses for All Meters—11 Amps	DMM-B-11A	4398K2	7.83

Open-Jaw and Clamp-On Multimeters, Styles H-L

No more fumbling with leads; measure current by surrounding a single insulated conductor with the jaws of these meters. They have a back-lit LCD except Styles H and J, which are not backlit. UL listed and CSA certified, except for Style L meters, which are CSA certified to U.S. and Canadian standards. All are CE approved.

Meters ***with peak hold*** are useful for troubleshooting because they store your highest current measurement. ***Average sensing clamp-on*** and ***True RMS clamp-on multimeters*** come with a carrying case.

Fluke No.	Style	Features	Jaw Opening	Safety Cat.	DC Accuracy	Frequency	Peak Hold	Each
Open-Jaw Multimeters								
T5-600	***H***	Measures AC current up to 100 amps and voltage up to 600V.	0.5″	III, 600V	1%	No	No	7053K31 $104.95
T5-1000	***H***	Measures AC current up to 100 amps and voltage up to 1000V.	0.5″	III, 1000V	1%	No	No	7053K32 $142.95
Average Sensing Clamp-On Multimeters								
322	***J***	Measures AC current up to 400 amps.	1″	III, 600V	1%	No	No	75085K12 $115.95
True RMS Clamp-On Multimeters								
355	***K***	Highest safety category, measures AC and DC current up to 2000 amps.	2.3″	IV, 600V	1%	Yes	Yes	75085K11 $752.95
373	***L***	Measures AC current up to 600 amps.	1.3″	III, 600V	1%	No	No	75085K41 $189.95
374	***L***	Measures AC and DC current up to 600 amps.	1.3″	IV, 600V	1%	No	Yes	75085K42 $269.95
376	***L***	Measures AC and DC current up to 1000 amps and includes probe for AC current up to 2500 amps.	1.3″	IV, 600V	1%	Yes	Yes	75085K43 $384.95

Accessories for Open-Jaw and Clamp-On Multimeters, Styles H-L

	Fluke No.		Each
Repl. Test Leads for Clamp-On Meters	TL-75	75085K98	$25.95
Fabric Holster for Open-Jaw Meters	H5	7053K14	$44.95
Leather Case for Open-Jaw Meters	C520A	7053K15	18.95

Fluke Scopemeter

Analyze voltage with this combination dual-channel 20 MHz oscilloscope and True RMS recording multimeter. It's useful when installing machinery and instrumentation as well as control and power systems. Meter is autoranging and can trace problems from nanoseconds up to 16 days, making it easier to troubleshoot intermittent faults. It has an easy-to-read digital back-lit LCD. AC/DC voltage: 600. DC voltage accuracy: ±0.5%. Max. resistance: 30 MΩ. Max. frequency: 20 MHz. Max. capacitance: 500 µF.

Includes a rechargeable battery pack for up to seven hours of use, an AC adapter/charger, shielded test leads, alligator and hook clips, and a shielded BNC adapter. UL listed; CSA certified; and CAT III, 600V safety rated.

Accessory kit includes an RS-232 adapter/cable for connecting to a printer or PC, software for analyzing and storing measurements, and a hard case.

	Fluke No.		Each
Scopemeter	123	6587K11	$1,406.95
Accessory Kit	SCC120E	6587K21	350.95
Repl. Test Leads	STL-120	6587K32	120.00
Nylon Case	C789	71915K72	107.95

Pro-Value Digital Multimeters

7613K5 7420K43 5189T11 7420K54 7508K61 7508K12

A good budget-conscious choice, these high-quality meters measure AC/DC voltage, AC/DC current (unless stated otherwise), resistance, and capacitance (unless noted). An audible signal indicates continuity. Meters are autoranging and have data hold and an easy-to-read back-lit LCD, unless noted. For current-sensing clamp-on test leads, see page 946.

True RMS multimeters give the most accurate AC measurements.

For detailed specifications, go to mcmaster.com and search for **7420KAC**.

Multimeters

In addition to the features described above, these meters perform diode testing. Furnished with test leads and batteries. UL listed, except for 7420K52, 7574K41, and 6394K11. 7420K42 is also C-UL listed. 7420K52 and 7574K41 are CSA certified to U.S. and Canadian standards. All are CE approved.

Meters ***with min./max. mode*** store minimum and maximum measured values that aid in troubleshooting.

Features	Safety Cat.	DC Accuracy	Frequency	Min./ Max. Mode	Multimeters	Each	Repl. Test Leads	Each
Average Sensing Multimeters								
Meter for basic troubleshooting.	II, 600V	0.8%	No	No	7613K5●♦	$54.28	—	—
Noncontact AC voltage detector.	III, 300V	1%	No	Yes	7420K51●■	48.46	7420K55	$11.95
Higher accuracy and noncontact AC voltage detector.	III, 600V	0.5%	No	No	7420K52●	62.04	7420K55	11.95
Noncontact AC voltage detector and temp. probe.	III, 600V	0.5%	Yes	No	7420K47★	56.98	—	—
Measures up to 1000 VAC, waterproof (IP67).	IV, 600V	0.5%	Yes	No	7420K42	111.35	6394K91	15.58
Highly accurate, waterproof (IP67).	IV, 600V	0.09%	Yes	Yes	7420K43▲	147.52	6394K91	15.58
Highest safety rating, waterproof (IP67), measures up to 1500 VDC.	IV, 1000V	0.1%	No	No	7574K41●■	209.95	7574K51	17.95
True RMS Multimeters								
Inexpensive True RMS meter with temp. probe.	III, 600V	0.3%	No	No	7420K32■▲	72.55	6394K91	15.58
Higher accuracy and more functions, includes temp. probe.	III, 600V	0.3%	Yes	No	7420K33	83.81	6394K91	15.58
Measures frequency up to 40 MHz, includes temp. probe.	III, 600V	0.5%	Yes	Yes	7420K53	116.37	7420K56	12.95
Built-in infrared temperature sensor.	III, 600V	0.3%	Yes	No	5189T11	145.15	7420K55	11.95
Logic test capability for electronic circuit testing.	III, 600V	0.1%	Yes	Yes	7420K92	145.47	7420K57	16.95
Waterproof (IP67), includes temp. probe.	IV, 600V	0.5%	Yes	No	7420K17	128.19	—	—
High accuracy, includes temperature probe.	IV, 600V	0.25%	Yes	Yes	7420K54	174.58	7420K56	12.95
Higher accuracy, measures up to 1000 VAC, includes temp. probe.	IV, 600V	0.08%	Yes	Yes	7420K31	193.53	6394K91	15.58
Highest accuracy, waterproof (IP67), includes temp. probe.	IV, 600V	0.06%	Yes	Yes	7420K18	209.24	—	—
Data logging stores 10,000 values, includes temp. probe.	IV, 600V	0.06%	Yes	Yes	6394K11	265.71	6394K91	15.58

● Does not measure capacitance. LCD not back-lit. ♦ Does not have data hold. ■ Not autoranging.
★ LCD not back-lit. ▲ Does not measure capacitance.

Clamp-On Multimeters

Measure current without using leads or interrupting the circuit—just clamp the meter around a single insulated conductor. Meters come with test leads, batteries, and a carrying case. UL and C-UL listed, except 7508K13, which is ETL and C-ETL listed. All are CE approved.

Meters ***with peak hold*** are useful for troubleshooting because they store the highest current measurement. ***Average sensing multimeters*** measure VAC current. ***True RMS multimeters*** measure both VAC and VDC current.

Features	Jaw Opening	Safety Cat.	DC Accuracy	Frequency	Peak Hold	Clamp-On Multimeters	Each	Repl. Test Leads	Each
Average Sensing Multimeters									
Dual display shows voltage and current, includes temp. probe.	1.1″	III, 600V	1%	Yes	Yes	7508K14★	$94.02	7508K67	$18.36
Automatically selects voltage, current, or resistance.	1.1″	III, 600V	1%	Yes	No	7508K61▲	104.43	7508K69	17.46
Built-in infrared temp. sensor, large clamp size.	1.7″	III, 600V	1.5%	Yes	Yes	7508K11	132.34	7508K66	9.58
True RMS Multimeters									
Highest accuracy.	1.4″	III, 600V	0.7%	Yes	Yes	7508K64▲	185.84	7508K68	31.72
Includes temperature probe.	1.5″	III, 600V	1.5%	Yes	No	7508K13	159.98	7508K66	9.58
Built-in infrared temp. sensor, large clamp size.	1.7″	III, 600V	1.5%	Yes	Yes	7508K12	194.10	7508K66	9.58
Highest safety rating, largest clamp.	2″	IV, 600V	0.7%	Yes	Yes	7508K65▲	249.65	7508K68	31.72

★ LCD not back-lit. ▲ Does not measure capacitance.

Pocket Digital Multimeters

7613K1

Pop these average sensing meters into your pocket for go-anywhere convenience. An audible signal indicates continuity. All are autoranging and have an easy-to-read LCD. 7613K81 and K9 meters perform diode testing. 7613K81 has data hold. 7613K1 and K9 have a built-in noncontact voltage detector. Furnished with test leads, a battery, and a carrying case. 7613K1 and K9 are UL listed and CSA certified. All are CE approved.

Safety Cat.	AC/DC Voltage	DC Accuracy	Current, mA AC	Current, mA DC	Max. Resistance	Max. Frequency	Max. Capacitance	Ht. × Wd. × Dp.		Each
II, 600V	500	1.3%	400	400	40 MΩ	10 MHz	100 µF	4¼″ × 2¼″ × ½″	7613K81	$39.97
III, 300V	450	0.5%	—	—	6 MΩ	—	100 µF	4½″ × 2⅛″ × ⅜″	7613K1	41.01
III, 300V	600	0.5%	2	2	6 MΩ	30 kHz	2000 µF	4½″ × 2⅛″ × ⅜″	7613K9	59.04

For information about electrical testing, see page 940.

Pro-Value Analog Multimeters

See your readings on a bold, easy-to-read three-color analog scale. Meters provide overload protection and work well for most everyday voltage, current, and resistance testing. Furnished with test leads and batteries. CE approved.

7097K31 is UL and C-UL listed and CAT II, 500V safety rated. 7097K32 performs battery and transistor tests.

7097K31 7097K32

AC/DC Voltage	DC Accuracy	Sensitivity, kΩ/V AC	Sensitivity, kΩ/V DC	DC Current	Max. Resistance	Meters	Each	Repl. Test Leads	Each
500	4%	2	2	250 mA	1 MΩ	7097K31	$16.99	7508K66	$9.58
1200	3%	9	20	12 A	20 MΩ	7097K32	43.71	7097K29	29.75

Heavy Duty Analog Multimeters

Rugged and reliable, these analog multimeters set the standard for all others. DC accuracy: 2% of full scale. DC current: 10 A. All meters include test leads with screw-on alligator clips and batteries. ***Meters with overload protection*** have a resettable overload circuit protection relay.

Standard— Have a three-color scale. Padded, soft carrying cases are sold separately. *Black* meters have a phenolic housing. *Yellow* meters have an ABS plastic housing and an audible signal to indicate continuity.

Safety Rated— Have an ABS plastic housing and a two-color scale. Furnished with a padded, soft carrying case. EN 61010-1, Cat. III, 600V safety rated. ETL and C-ETL listed.

7250K11

7250K12

AC/DC Voltage	Sensitivity, kΩ/V AC	Sensitivity, kΩ/V DC	Max. Resistance	Color	Meters	Each	Meters with Overload Protection	Each	Repl. Test Leads	Each
Standard										
1000	5	20	20 MΩ	Black	7250K11	$238.62	7250K15	$314.62	7250K21	$22.28
1000	5	20	20 MΩ	Yellow	7250K13	275.42	7250K16	343.96	7250K25	22.28
Safety Rated										
600	5	20	200 MΩ	Black	7250K12	371.06	7250K14	415.12	7250K22	28.69

Black Carrying Case for 7250K11 and K15 ..... 7250K7 **Each** $72.38

Yellow Carrying Case for 7250K13 and K16 ..... 7250K4 **Each** $64.29

Clamp-On Analog Multimeter

Just clamp this analog meter around a single insulated conductor to measure current without interrupting the circuit. Meter also measures AC/DC voltage and resistance. It has data hold and an easy-to-read two-color scale. Furnished with test leads. Meter requires one AA battery (sold separately). ETL and C-ETL listed.

Jaw opening is 1½″. AC current: 600 A. AC voltage: 600. DC voltage: 60. Max. resistance: 1 kΩ. Operating frequency: 60 Hz. Accuracy: ±5%.

Multimeter ..... 7615K57 **Each** $85.37

AA Batteries (4/Pkg.) ..... 71455K53 **Per Pkg.** $2.94

Electronic-Component Multimeters

Standard

Perform a full-range of capacitance, resistance, and diode testing on your electronic components. An audible signal indicates continuity. Meters have a digital LCD and come with test leads and a battery. CE approved.

Standard— Has a zero adjustment for both capacitance and low ohms range. Capacitance (7 ranges): 200 pF-20 mF. Resistance (7 ranges): 20 Ω-20 MΩ.

Deluxe— Also measures inductance and NPN/PNP transistor gain; great for checking inductors, transistors, and microwave diodes. Capacitance (8 ranges): 200 pF-2000 µF. Resistance (7 ranges): 20 Ω-20 MΩ. Inductance (7 ranges): 200 µH-200 H.

	Meters	Each	Repl. Test Leads	Each
Standard	7620K37	$89.81	7420K57	$16.95
Deluxe	7620K38	195.91	7420K55	11.95

Digital Oscilloscope

Analyze waveforms with this dual-channel 25 MHz oscilloscope. It has 20 automatic voltage and time measurements, a TFT color LCD, and a 6-ft. cord with three-prong plug.

Sample rate: 500 MSa/s. Rise time: <14 ns. Vertical sensitivity: 2 mV-5 V/div. Voltage range: Up to 400 VAC/VDC. DC accuracy: 3%. Operating voltage range: 100-240 VAC.

Comes with a 10:1 two-piece probe set, a USB cable, and PC software (compatible with Windows 98, NT, 2000, XP, and 32-bit Vista). CE approved and CAT II, 300V safety rated.

6584K1 ..... **Each** $479.81

Voltage and Current Loggers

A&B C D

Troubleshoot intermittent problems, monitor equipment run cycles, and verify power conditions with these easy-to-use, single-phase data loggers. When connected to a PC, they can be used as a real-time sensor with logging capability.

Styles A-D handle up to 240,000 readings. Sampling interval is 125 mS to 24 hours. *Styles A* and *C* loggers are True RMS, which means they have more memory for higher-accuracy applications with large amounts of data. All are furnished with batteries, a USB cord, and software compatible with Windows 2000, XP, and Vista. CE approved (unless noted). *Styles C* and *D* have a current accuracy of 0.5% and require a clamp-on probe (sold separately). *Styles A-C* include leads with alligator clips. ***Clamp-on probe for Styles C and D*** has a jaw opening of 0.8″. Current ranges: 0.1-24 A with 1% accuracy and 0.5-240 A with 3% accuracy. UL and C-UL listed; CE approved; and CAT IV, 300V safety rated.

Style E takes up to 10,750 readings. It can store up to 21,500 readings if measuring only current or only voltage. Sampling interval: 1 second to 18 hours. Current: 0-300 A. Current accuracy: 5%. Logger has a USB port and includes a clamp-on probe with 1.1″ jaw opening, leads with alligator clips, and a carrying case. Requires a 9V battery and software (each sold separately). Software is compatible with Windows 95 and later.

E

	Measures	Safety Cat.	Voltage AC	Voltage DC	Voltage Accuracy	Ht. × Wd. × Dp.		Each
A	AC Voltage	IV, 300V	600	—	0.5%	5″ × 2¾″ × 1¼″	6395K26	$359.00
B	DC Voltage	IV, 300V	—	850	0.5%	5″ × 2¾″ × 1¼″	6395K36★	359.00
C	Current and AC Voltage	IV, 300V	600	—	0.5%	5⅜″ × 2¾″ × 1¼″	6395K27	389.00
D	Current	III, 50V	—	—	—	5⅜″ × 2¾″ × 1¼″	6395K25	349.00
E	Current and AC Voltage	Not Rated	500	—	1 volt	3″ × 2½″ × 1⅛″	6395K71	169.43

Accessories

Clamp-On Probe for Styles C and D ..... 6395K1 ..... 179.00

Required Software for Style E ..... 3440K54 ..... 56.72

9-volt Battery ..... 71455K56 ..... 2.75

★ Not CE approved.

For information about electrical testing, see page 940.

AC Power Meters and Loggers

Monitor, measure, and project energy costs of your device with True RMS digital measurements of voltage, current, and watts. Voltage range: 100-250 AC. Voltage accuracy: 1.5%.

All operate on 120 VAC, 60 Hz and include a 6-ft. cord with three-prong plug. Just plug your device into the meter to take measurements. Meters have an LCD and a receptacle rated 15 amps @ 120 VAC. Size is 7″ Ht.×4″ Wd.×2″ Dp. UL listed, C-UL listed, and CSA certified (unless noted).

With Data Logger— Meter stores 30,000 readings. Includes a USB cable and software for downloading data to PCs running Windows 98, XP, or Vista.

With Data Logger and Switching Relay— Has a switching relay to turn power on and off to minimize costs. Controls loads based on factors such as time of day, peak usage, and cumulative usage. Meter stores 120,000 readings. You can remotely monitor the meter via an Internet connection. Has an RJ-45 Ethernet jack and a USB port. Furnished with software for downloading data to PCs running Windows 98, XP, or Vista.

		Each
Standard	7382K11	$108.33
With Data Logger	7382K12	149.92
With Data Logger and Switching Relay	7382K13★	246.52

★ Not C-UL listed.

Power Monitor and Analyzer

Monitor

Analyzer

Monitor and track voltage, current, power, and harmonics in single-phase applications. You'll get True RMS measurements of inrush current; min., max., and average volts and amps; crest factor; peak value; and temperature in °F and °C. The monitor and the analyzer also measure watts, VARs, VA, power factor, and displacement power factor. Use the included software to download data to your PC.

Voltage range: 0-660 VAC/VDC. Current range: 2-240 A. Size is 8⅜″ Ht.×4⅜″ Wd.×2½″ Dp. Furnished with current probe, test leads with alligator clips, batteries, charger, PC software (compatible with Windows 2000, XP, and Vista), a USB cable, and a carrying case. CE approved and CAT III, 600V safety rated.

Monitor has a back-lit digital display and stores nine sets of readings. ***Analyzer*** has a color LCD and graphically displays data for analysis without a PC. Stores 2096 events and displays K-factor. Sampling interval is 1 second to 2 hours.

		Each
Monitor	4808K1	$1,093.38
Analyzer	4808K2	1,868.31

Clamp-On Amp Meters

Quickly measure current on single-conductor wires and cables without interrupting your circuit. These average sensing meters have a jaw that opens 1¼″ to measure conductors up to 1″ in diameter. Meters have an easy-to-read digital LCD. 8264T12 is autoranging. Both come with batteries and a carrying case. CE approved and CAT III, 300V safety rated.

Current Accuracy	Current Ranges, Amps	Operating Frequency		Each
2-3%	0-20, 0-200 AC	40 Hz-1 kHz	8264T11	$93.56
1-4%	0-40, 0-300 AC/DC	20 Hz-1 kHz	8264T12	256.67

Fluke Vibrating Voltage Tester

Tester indicates nine levels of AC and DC voltage with three types of signals for extra safety—light, sound, and vibration. Tester also measures resistance, checks continuity, and has a back-lit digital LCD. Detects live voltage even if batteries are depleted. Max. resistance: 10 kΩ. Includes test leads and batteries. UL listed; CSA certified; CE approved; and CAT IV, 600V safety rated.

	Fluke No.	Voltage Range, VAC/VDC		Each
Tester	T+Pro	12-600	7053K16	$80.95
Fabric Holster	H3	—	7053K17	27.95
Leather Case	C520A	—	7053K15	44.95

Multiwire Clamp-On Amp Meter

Forget about splitting and stripping cables. This meter lets you quickly measure current on one-, two-, or three-conductor cables without interrupting your circuit. Meter is autoranging and has an easy-to-read, back-lit digital LCD with low-battery indicator. Maximum jaw opening: 0.51″. Maximum frequency: 400 Hz.

For single-conductor wires and cables, current accuracy is 1.5% and AC current range is 0.1-200 amps. For two- and three-conductor cables, current accuracy is 5% and AC current range is 0.1-100 amps.

Furnished with a battery and carrying case. CE approved and CAT III, 600V safety rated.

7826T12 ..... **Each** $323.17

Vibrating Voltage Testers

In addition to illuminating an indicator light, these testers vibrate to signal the presence of voltage. They also approximate the value of that voltage on an LED scale. Both testers include two 36″ long, oil-resistant test leads with spring-loaded safety shields on the tips. UL listed; CSA certified; and CAT III, 600V safety rated.

Voltage tester does not require batteries. ***Voltage/continuity tester*** has a light to indicate continuity and comes with batteries.

	Voltage Range, VAC/VDC		Each
Voltage Tester	100-600	7258K23	$41.65
Voltage/Continuity Tester	5-600	7258K24	62.46
Nylon Carrying Case		7258K34	23.54
Replacement Test Leads		7258K35	22.17

Voltage Detectors

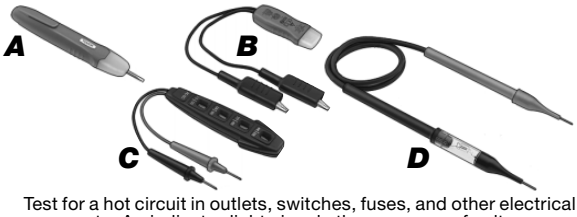

Test for a hot circuit in outlets, switches, fuses, and other electrical components. An indicator light signals the presence of voltage.

Style A has a slotted screwdriver and checks continuity. Furnished with batteries. ETL and C-ETL listed.

Styles B-D do not require batteries. Style B is ETL and C-ETL listed; CE approved; and CAT I, 50V safety rated.

	Voltage Range	Lead Lg.		Each
Screwdriver Style				
A	12-250 VAC/VDC	—	6982K21	$11.28
Twin-Lead Style				
B	5-50 VAC/VDC	5½″	6982K51	4.70
C	120-480 VAC/160-600 VDC	12″	6982K71	9.04
D	80-600 VAC/VDC	24″	7260K11	24.91

Noncontact High-Voltage Detector

Since this detector senses electrostatic fields, there's no need to make contact with conductors to check for live wires or for breaks in insulated wires and heating elements. Detector has an audible signal to indicate the presence of voltage. Use for checking fuse panels, breaker panels, power outlets, and switches. Furnished with a battery.

The detector has a two-position switch for selecting a 30-1500 VAC or 1500-122,000 VAC range. Use this detector with the optional *hot stick* to extend its reach. Made of PVC, hot stick is 48″ long and collapsible.

		Each
Detector	7440K29	$190.31
Hot Stick	7440K32	125.24

For information about electrical testing, see page 940.

Continuity Detectors

Search out breaks and shorts in electrical circuits. *Note:* Turn off the power to your circuit before using these detectors.

(A) Pen Style— A light in the handle illuminates to indicate continuity. Comes with one 36″ test lead with insulated alligator clip and batteries. UL and C-UL listed. CE approved.

(B) Screwdriver Style— Has an extra-long pointed tip to get into hard-to-reach areas. A light in the handle illuminates to indicate continuity. Comes with one 36″ test lead with insulated alligator clip. Battery required (sold separately).

(C) Audible-Signal Style— A clear, audible signal that can be heard over background noise indicates continuity. Comes with two 48″ test leads with alligator clips. Battery required (sold separately).

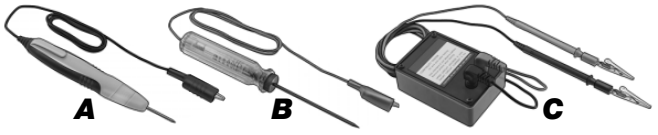

	Style	Batteries Required	Detectors	Each	Batteries	Each
A	Pen	Two AAA	**7256K11**	$14.23	**65605T71**	$0.79
B	Screwdriver	One AAA	**6984K71**	13.87	**65605T71**	.79
C	Audible Signal	One 9V	**7411K38**	44.93	**71455K56**	2.75

Pen-Style Multimeter and Detectors

Small enough to carry in your pocket, these pen-style testing devices are a convenient way to troubleshoot circuits. Batteries are included, unless stated otherwise.

(D) Multimeter— This average sensing meter is autoranging, has a built-in noncontact voltage detector, and performs a diode test. An audible signal indicates continuity. Meter also has data hold and a digital LCD. DC accuracy: 0.7%. Max. resistance: 20 MΩ. Includes test leads with alligator clips. CE approved and CAT III, 600V safety rated.

(E-H) Voltage Detectors— To check for a hot circuit, place the pen tip on or near the source you want to test (Style G requires direct contact). Audible alert and indicator light signal the presence of voltage. ***Styles E*** and ***F*** are UL and C-UL listed; CE approved; and CAT IV, 1000V safety rated. ***Style G*** does not require batteries and is UL listed. ***Style H*** are UL listed; CSA certified; CE approved; and CAT IV, 600V safety rated.

(J) AC Current Detector— There is no need for direct contact, so you can detect AC current through shielded wires, conduit, and metal circuit breaker and junction boxes. Detector has a sensitivity adjustment. Audible alert and indicator light signal the presence of current. UL listed; CE approved; and CAT III, 600V safety rated.

(K) Ground Fault Detector— Touch the tip of this detector to an outlet or to the metal case of any tool, machine, or appliance with a three-prong plug. A red light indicates a bad ground. Detector requires two AAA batteries (sold separately).

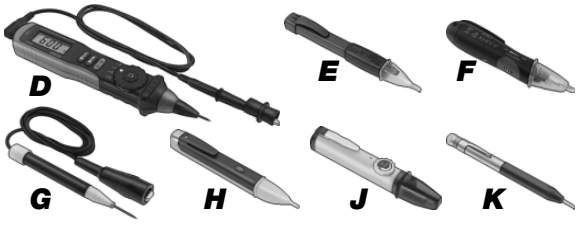

		Range		Each
D	Multimeter	600 VAC/VDC	**7573K1**	$44.98
E	Voltage Detector	50-1000 VAC	**69595K93**	17.56
F	Voltage Detector	5-1000 VAC	**69595K92**	22.12
G	Voltage Detector	6-50 VDC	**69595K94**	19.50
H	Fluke 1AC-II Voltage Detector	90-1000 VAC	**7053K51**	26.95
H	Fluke 1LAC-II Voltage Detector	20-90 VAC	**7053K52**	26.95
J	AC Current Detector	200 mA-1000 A	**8338T11**	32.97
K	Ground Fault Detector	220 VAC/VDC	**7476K11**	19.46
	AAA Battery		**65605T71**	.79

Insulation Testers

All of these battery-powered meters apply voltage to measure the insulation resistance of items like motors. Furnished with test leads.

Pro-Value LED— Displays resistance readings on a numeric LED readout, indicating Good, Caution, or Bad. Resistance accuracy: 1%. Requires two C batteries (sold separately) and comes with a carrying case. CE approved.

Pro-Value Analog— Measures voltage and has a three-color scale. Resistance accuracy: 5% of indicated value. Comes with batteries and a carrying case. CE approved and CAT III, 1000V safety rated.

Pro-Value Digital— Measures voltage and has an LCD and an analog bar graph. Samples data 2.5 times per second and 10 times per second for bar graph. Resistance accuracy: 3% to 5% depending on range. Comes with batteries and a carrying case. CE approved and CAT III, 600V safety rated.

Megger— Measure voltage and have an LCD. Housing is weatherproof and meets IP54 requirements for splashing water protection. Testers sample data every half second and have a NIST (National Institute of Standards and Technology) certificate. 65765K11 requires eight AA batteries (sold separately) and is CAT III, 600V safety rated. 65765K13 has an alarm and 3% resistance accuracy. It requires five AA batteries (sold separately), comes with a carrying case, and is CAT IV, 600V safety rated.

	Resistance Capacity	Testing Voltage	Voltage Range	Ht. × Wd. × Dp.		Each
Pro-Value						
LED	1000 MΩ	500 VAC	———	6⅜″ × 3⅜″ × 1¾″	**7592K23**	$111.67
Analog	100/200/400 MΩ	250/500/1000 VDC	0-600 VAC	7⅞″ × 3⅝″ × 2″	**7443K19**	196.54
Digital	4000 MΩ	250/500/1000 VDC	0-600 VAC/VDC	7¾″ × 4 7/16″ × 2½″	**7005K43**	272.90
Megger						
MIT310 Digital/Analog	999 MΩ	250/500/1000 VDC	0-600 VAC/VDC	5¾″ × 8″ × 3¼″	**65765K11**	520.13
MIT410 Digital/Analog	100 GΩ	50/100/250/500/1000 VDC	0-600 VAC/VDC	8¾″ × 3⅝″ × 2″	**65765K13**	673.78

C Battery **65605T73** **Each** $1.50 AA Batteries (4/Pkg.) **71455K53** **Per Pkg.** $2.94

Hand-Crank Insulation Testers

You supply the power—just turn the crank on these testers to measure resistance and voltage without using batteries. All have an analog display and include test leads with clips and probes.

Weatherproof— Has an ABS plastic housing, aluminum lid, and a fold-down handle. Resistance accuracy: 2% of full scale. Tester is autoranging and includes a carrying strap. CE approved and CAT II, 600V safety rated.

Megger MJ159— Has an ABS plastic housing and a fold-down handle. Resistance accuracy: 1.25% of full scale. Comes with a carrying case and is CAT II, 300V safety rated.

	Resistance Capacity, MΩ	Testing Voltage, VDC	Voltage Range, VAC	Ht. × Wd. × Dp.		Each
Weatherproof	500/500/5000	250/500/1000	0-600	5 5/16″ × 4⅜″ × 4¾″	**6576K11**	$694.17
Megger MJ159	2000	100/250/500/1000	0-600	5⅛″ × 7″ × 5″	**7229K11**	1,083.75

For information about electrical testing, see page 940.

Hand Tool Insulation Tester

Before you use new or repaired tools, plug them into this tester to check for proper insulation and ground wire continuity. Also known as a hi-pot tester, it applies high voltage (adjustable from 0-2500 VAC) to monitor current through ground and to test dielectric strength for compliance with UL and CSA standards.

Operates on 120 VAC, 60 Hz and has a standard three-prong receptacle. Tester detects leaks from 1-10 mA and has a 6-ft. high-voltage probe for testing individual components. Accuracy: 3%. Size is 7″ Ht. × 12″ Wd. × 10½″ Dp. Tester has a NIST (National Institute of Standards and Technology) certificate and meets UL 120K requirements for hand tool testing.

6991K42 ..... **Each** $1,153.68

Phase-Sequence Indicators

Standard *Deluxe*

Since incorrect motor rotation can damage your motors, generators, and other machinery, it's important to check the phase sequence on your three-phase electrical systems to make sure your equipment is properly connected. These indicators show phase sequence and open phases. Furnished with three test leads with insulated alligator clips and a carrying pouch. CE approved.

Standard— Detector displays the phase sequence on a rotating disc with a color dot. Size is 4¼″ Ht. × 3″ Wd. × 1⅝″ Dp. Does not require batteries.

Deluxe— Because it works on frequencies up to 400 Hz, this detector is good for aviation and military applications. It also indicates rotation of motor before connecting to a live circuit. Size is 5⅛″ Ht. × 2¾″ Wd. × 1¼″ Dp. Comes with a battery. CAT III, 600V safety rated.

	Voltage Range, VAC	Operating Frequency	Lead Lg.		Each
Standard	110-600	50 Hz/60 Hz	59″	**7264K4**	$93.58
Deluxe	40-600	2-400 Hz	49″	**7264K1**	139.96

Receptacle Testers

Receptacle Tester

Receptacle and Tool Ground Continuity Tester

Plug these testers into standard 120 VAC grounded receptacles.

Receptacle Tester— Has a three-prong plug. ETL and C-ETL listed.

GFCI Receptacle Tester— Tests GFCI (ground fault circuit interrupter) as well as standard receptacles. Has a three-prong plug. ETL and C-ETL listed.

Receptacle and Tool Ground Continuity Tester— Has a shock-resistant, safety-yellow rubber housing and a sheathed probe for checking a tool's ground continuity when plugged into a duplex receptacle. Has a two-prong plug.

		Each
Receptacle Tester	**7018K15**	$9.76
GFCI Receptacle Tester	**7018K16**	11.50
Receptacle and Tool Ground Continuity Tester	**7018K14**	74.48

Circuit Breaker Identifiers

120 VAC *90-600 VAC*

Easily locate the circuit breaker controlling a specific load. These identifiers consist of a transmitter and a battery-operated receiver.

120 VAC Identifier— Move the probe over a breaker, and this identifier provides an audible as well as visual indication at eye level. It has a receiver with a magnetic back for attaching to panels and a built-in tester for standard and GFCI receptacles. Battery is included. UL and C-UL listed. *Optional adapter kit for 120 VAC identifier* allows you to identify circuits for light bulb sockets and light switches.

90-600 VAC Identifier— Has a transmitter that plugs into a receptacle (a red LED lights to indicate a live circuit). You can then scan the breakers with the receiver (it beeps and flashes a red LED to show the correct breaker). Requires a 9-volt battery (sold separately).

		Each
120 VAC Identifier	**70195K41**	$58.68
90-600 VAC Identifier	**70195K53**	96.13
Optional Adapter Kit for 120 VAC Identifier	**70195K42**	15.42
9-Volt Battery	**71455K56**	2.75

Circuit Tracers

65815K66

No need to power down—these portable systems work on energized circuits, allowing you to trace wires in walls and locate short circuits, open circuits, and circuit breakers. They also trace de-energized circuits and identify wires in a bundle. CE approved.

0-300 VAC/DC System— This system can trace coaxial cable. Includes a transmitter, receiver, pigtail connectors, batteries, and a soft carrying case. Receiver range is 1-3 ft. from cable being traced.

9-600 VAC/DC System— Detects live lines buried to depths of up to 13 feet. This system also traces wire in conduit and more than a mile of open wire. Includes a load-signal generator, receiver, pigtail connectors, battery, and plastic carrying case. Also has a clamp-on current transducer that allows identification of equipment on a circuit.

Voltage Range for Energized Circuits	Traces Ground Faults	Traces Buried Lines		Each
0-300 VAC/VDC	No	No	**65815K63**	$406.20
9-600 VAC/VDC	Yes	Yes	**65815K66**	972.14

Line Splitter

Use your clamp-on test leads to measure AC current on two- or three-conductor power cords up to 15 A without separating the conductors. Just plug your device into the splitter and plug the splitter into an outlet. UL and C-UL listed and CAT II, 600V safety rated.

7575K83 ..... **Each** $15.47

Current-Sensing Clamp-On Test Leads

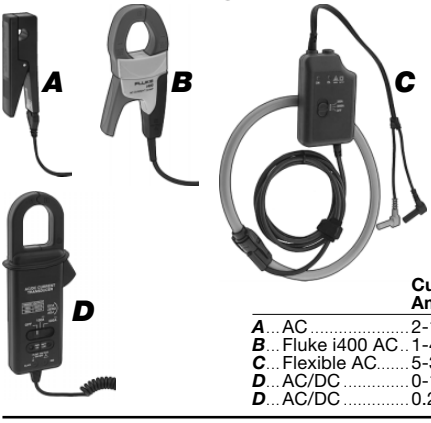

Plug these test leads into your multimeter, recorder, or data logger and you can read current without interrupting the circuit. All have a right-angle sheathed banana plug.

(A&B) Test Leads— Multiply the reading shown on your meter by 1000 to determine actual current. Output signal is 1 mA/A. These leads do not require batteries. *Style B* is UL listed; CSA certified; CE approved; and CAT IV, 600V safety rated.

(C) Flexible AC Test Leads— Have a flexible sensor to fit into tight spots. Output signal is 10 mV/A for the 5-300 A range; 1 mV/A for the 50-3000 A range. Batteries are included. CE approved and CAT III, 1000V safety rated.

(D) AC/DC Test Leads— Come with batteries and are CE approved.
65775K79 output signal is 1 mV/A for the 0-200 A and 0-1000 A ranges.
65775K81 output signal is 10 mV/A for the 0.2-40 A AC and 0.4-60 A DC ranges; 1 mV/A for the 0.5-400 A AC and 0.5-600 A DC ranges. CAT III, 600V safety rated.

		Current Range, Amps	Operating Frequency	Accuracy	Jaw Opening	Lead Lg.		Each
A	AC	2-150 AC	45 Hz-1000 Hz	4.5%	0.5″	60″	**7575K67**	$154.58
B	Fluke i400 AC	1-400 AC	5 Hz-20 kHz	2%	1.3″	59″	**7575K66**	132.95
C	Flexible AC	5-3000 AC	40 Hz-5 kHz	1%	7.6″	78″	**7575K81**	271.25
D	AC/DC	0-1000 AC/0-1000 DC	0 Hz-10 kHz	1%	1.2″	59″	**65775K79**	169.52
D	AC/DC	0.2-400 AC/0.4-600 DC	0 Hz-10 kHz	2.5%	1.2″	60″	**65775K81**	359.26

Alligator Clips

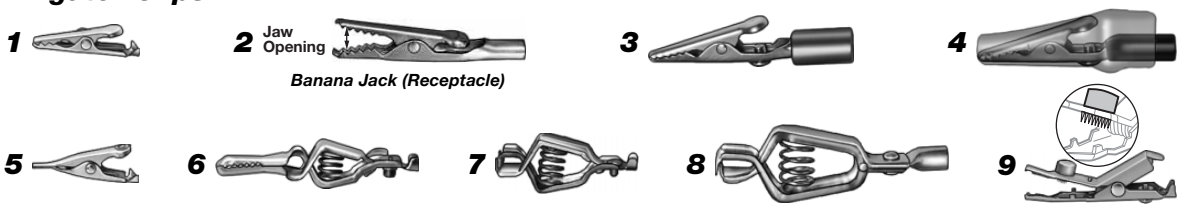

The clips and insulator sleeves that are sold per package are packaged in quantities of 10. Insulator sleeves are vinyl.

	Connection Style	O'all Lg.	Jaw Opening	Clip Material	Current Rating	CLIPS	Pkg.	INSULATOR SLEEVES Red	Black	Pkg.
	Alligator Clips									
1	Crimp Connection	13/32″	3/16″	Steel	5 A	7236K28	$3.20	7236K381	7236K382	$2.60
1	Crimp Connection	13/32″	3/16″	Copper	5 A	7236K29	4.40	7236K381	7236K382	2.60
1	Crimp Connection	111/16″	5/16″	Steel	5 A	7236K55	5.20	7236K551	7236K552	3.60
1	Crimp Connection	111/16″	5/16″	Copper	10 A	7236K56	7.20	7236K551	7236K552	3.60
2	Banana Jack (Receptacle)	1 1/4″	3/16″	Steel	5 A	7236K52	3.20	7236K521	7236K522	2.80
2	Banana Jack (Receptacle)	131/32″	5/16″	Steel	10 A	7236K24●	4.60	7236K261	7236K262	2.80
2	Banana Jack (Receptacle)	131/32″	5/16″	Copper	10 A	7236K31●	7.40	7236K261	7236K262	2.80
2	Banana Jack (Receptacle)	131/32″	5/16″	Steel	10 A	7236K85♥	3.60	7236K261	7236K262	2.80
2	Banana Jack (Receptacle)	131/32″	5/16″	Copper	10 A	7236K54♥	6.80	7236K261	7236K262	2.80
2	Banana Jack (Receptacle)	131/32″	5/16″	Stain. Steel	10 A	7236K62♥	8.40	7236K261	7236K262	2.80
2	Threaded Receptacle for 6-32 Male Threads	1 1/2″	3/16″	Steel	5 A	7236K53	5.60	7236K521	7236K522	2.80
2	Threaded Receptacle for 8-32 Male Threads	2 1/8″	5/16″	Steel	10 A	7236K86	6.40	7236K261	7236K262	2.80
3	Red Insulated Banana Jack (Receptacle)	211/32″	5/16″	Steel	10 A	7236K251	6.80	____	____	____
3	Red Insulated Banana Jack (Receptacle)	211/32″	5/16″	Copper	10 A	7236K32	9.60	____	____	____
3	Black Insulated Banana Jack (Receptacle)	211/32″	5/16″	Steel	10 A	7236K252	6.80	____	____	____
3	Black Insulated Banana Jack (Receptacle)	211/32″	5/16″	Copper	10 A	7236K37	9.60	____	____	____
	Sheathed Alligator Clips									
4	Red Insulated Banana Jack (Receptacle)	2 1/4″	1/4″	Steel	10 A	7236K33	9.60	____	____	____
4	Black Insulated Banana Jack (Receptacle)	2 1/4″	1/4″	Steel	10 A	7236K36	9.60	____	____	____
	Toothless Alligator Clips									
5	Crimp Connection	13/32″	3/16″	Steel	5 A	7236K27	5.40	7236K411	7236K412	2.60
5	Crimp Connection	13/32″	3/16″	Copper	5 A	7236K51	6.40	7236K411	7236K412	2.60
	Long-Nose Alligator Clips									
6	Crimp Connection	2 1/8″	5/16″	Steel	5 A	7236K87	5.80	7236K721	7236K722	4.00
6	Crimp Connection	2 1/8″	5/16″	Copper	10 A	7236K57	10.80	7236K721	7236K722	4.00
	Heavy Duty Clips									
7	Crimp Connection	117/32″	5/16″	Steel	5 A	7236K41	5.20	7236K161	7236K162	2.80
7	Crimp Connection	117/32″	5/16″	Copper	10 A	7236K58	8.20	7236K161	7236K162	2.80
7	Crimp Connection	2″	1/2″	Steel	10 A	7236K12	6.80	7236K171	7236K172	5.60
7	Crimp Connection	2″	1/2″	Copper	20 A	7236K59	9.20	7236K171	7236K172	5.60
7	Crimp Connection	27/16″	5/8″	Steel	20 A	7236K13	7.40	7236K181	7236K182	6.20
7	Crimp Connection	27/16″	5/8″	Copper	40 A	7236K61	11.80	7236K181	7236K182	6.20
7	Crimp Connection	227/32″	3/4″	Steel	25 A	7236K14	11.20	7236K191	7236K192	9.20
							Each			Pkg.
7	Crimp Connection	3″	3/4″	Steel	40 A	7236K84	$1.02	7236K191	7236K192	$9.20
7	Crimp Connection	3″	3/4″	Copper	75 A	7236K63	2.36	7236K191	7236K192	9.20
7	Crimp Connection	47/64″	1 1/16″	Steel	50 A	7236K15	2.10	7236K211	7236K212	12.00
8	Lug Connection	47/64″	1 1/16″	Copper	100 A	7236K64	5.70	7236K211	7236K212	12.00
	Insulation-Piercing Alligator Clips									
9	Crimp Connection	25/8″	1″	Copper	____	6133T13	6.12	6133T151	6133T152	9.00

● Also has screw terminal connections. ♥ Also has crimp connection.

Test Lead Sets

Furnished with a set of two 48″ cords, one red and one black. IEC 61010, CAT III rated.
Model C also comes furnished with a set of black and red alligator test clips that are IEC 61010, CAT II, 300V, 10A rated.

	Handle	Handle Tip Material	Voltage Rating	Current Rating	Set
A	with Notched Tip; Right-Angle Sheathed Banana Plug	Nickel-Plated Brass	1,000 VAC	10 A	6929K29 $15.74
B	with Notched Tip; Right-Angle Sheathed Banana Jack	Stainless Steel	1,000 VAC	20 A	6929K28 20.82
C	with Needle Tip; Threaded, Right-Angle Sheathed Banana Jack	Stainless Steel	1,000 VAC	20 A	6929K55 38.93
D	with Needle Tip; Banana Plug with Retractable Sheath	Stainless Steel	1,000 VAC	20 A	6929K93 22.84
E	with Heavy Duty Tip; Stackable Sheathed Banana Plug	Stainless Steel	1,000 VAC	20 A	6929K73 13.97
F	with Heavy Duty Tip; Right-Angle Sheathed Banana Plug	Stainless Steel	1,000 VAC	20 A	6929K82 14.46

Oscilloscope Test Lead Kits

Use these durable test leads with any DC to 100 MHz oscilloscope. All include a 60″ cable that's rated to 600 VDC maximum input, a probe head, a spring hook, a BNC adapter, an IC tip, an insulating tip, a 6″ ground lead, and a trimmer tool (unless noted).

Max. Bandwidth, MHz	Attenuation Ratio	*Input Impedance* Resistance	Capacitance, picofarads (pF)		
25	×1	1 MΩ	60	7598K54▲	$32.50
100	×10	10 MΩ	10	7598K55	39.38
10/100	×1/×10	1/10 MΩ	75/11	7598K56■	43.75
15/60	×1/×10	1/10 MΩ	65/11	7598K57■	36.25
100	×100	10 MΩ	5	7598K58♣	51.88

▲ Trimmer tool not included. ■ Switch selectable. ♣ 80″ cable.

Modular Test Leads

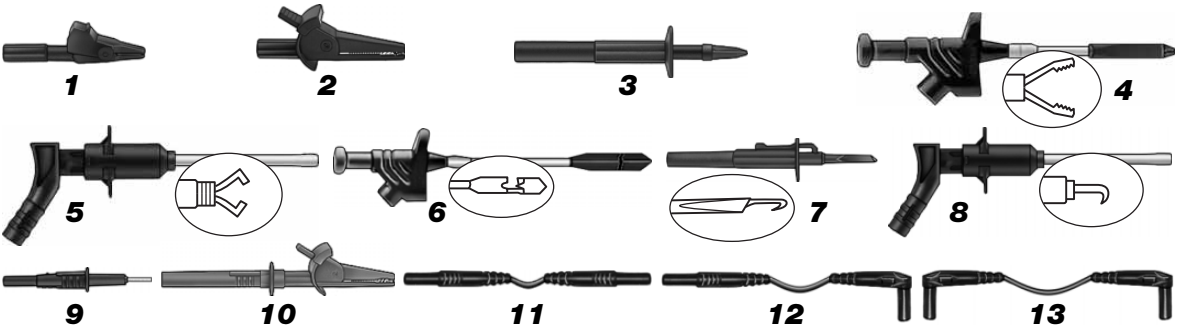

Mix and match handles with cords to get the test lead configuration you need. All handles and cords are IEC 61010, CAT III rated.

Test Lead Handles

All accept a sheathed banana plug. Furnished in a set of two handles, one red and one black.

	Handle with	O'all Lg.	Voltage Rating	Current Rating		Set
1	Sheathed Alligator Clip	3¼″	150 V	10 A	6571K82♣	$9.37
2	Large Sheathed Alligator Clip	3½″	1,000 V	30 A	6571K63	11.53
3	Pointed Banana Plug	4½″	1,000 V	30 A	6571K61	10.05
4	Retractable Gripper	6½″	1,000 V	10 A	6571K65	28.27
5	Retractable Pincer	6⅜″	1,000 V	10 A	6571K67	26.14
6	Retractable Insulation Piercer	6½″	1,000 V	5 A	6571K68	42.03
7	Small Retractable Hook	4¾″	1,000 V	30 A	6571K76	9.60
8	Large Retractable Hook	6½″	1,000 V	10 A	6571K66	20.00
9	Socket Test Adapter	3½″	1,000 V	30 A	6571K71	11.82
10	Fused Alligator Clip	7″	1,000 V	500 mA	6571K72	44.20

♣ Also rated IEC 61010, CAT II, 300V.

Test Lead Cords

Furnished in a set of two 48″ cords, one red and one black. Cords are rated 1,000 V, 20 A.

	End Connections		Set
11	Sheathed Banana Plug on Each End	6571K51	$13.99
12	Sheathed Banana Plug; Right-Angle Sheathed Banana Plug	6571K52	12.52
13	Right-Angle Sheathed Banana Plug on Each End	6571K53	13.99

Test Lead Kits

Furnished in a nylon pouch, unless noted.

Contents		
Handle Sets: 1, 3, 5; Cord Set: 12	6571K42	$69.62
Handle Sets: 2, 3, 5, 6; Cord Set: 12	6571K44	95.14
Handle Sets: 2, 3, 4, 5, 8; Cord Set: 12	6571K45●	115.67
Handle Sets: 2, 3, 7, 9; Cord Sets: 11, 13	6571K77	86.67

● Furnished in a PVC pouch.

Test Lead Adapters

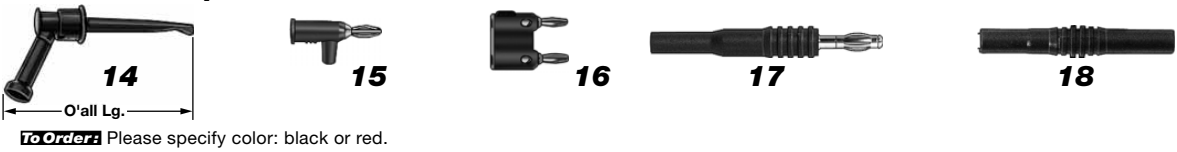

To Order: Please specify color: black or red.

		O'all Lg.	Voltage Rating: Hand Held	Voltage Rating: Hands Free	Current Rating		
14	Retractable Hook to Banana Jack (Receptacle)	2.54″	33 VAC/70 VDC	300 VAC	5 A	6933K81	$7.04
14	Retractable Hook to Pin-Tip Jack (Receptacle)	2.54″	33 VAC/70 VDC	300 VAC	5 A	6933K47	8.85
15	Stackable Banana Plug to Wire Input for Up to 0.12″ Dia. Wire	1.55″	33 VAC/70 VDC	5,000 VAC	15 A	6933K53	2.12
16	Double Banana Plug to Wire Input for Up to 0.22″ Dia. Wire	1.55″	33 VAC/70 VDC	5,000 VAC	15 A	6933K82	3.59
17	Banana Plug to Sheathed Banana Jack (Receptacle)	2.63″	1,000 VAC	1,000 VAC	10 A	6933K86★	4.08
18	Sheathed Banana Jack (Receptacle) on Both Ends	2.50″	1,000 VAC	1,000 VAC	10 A	6933K87★	4.46

★ IEC 61010, CAT III, 1,000 V rated.

Panel-Mount Connection Posts

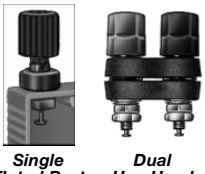

Single Fluted Post (Installed) — *Dual Hex-Head Post*

Also known as binding posts, these posts mount through panels to provide a connection point for wires with various terminations (banana plugs, spade terminals, and ring terminals) as well as for bare stranded wires. All posts are insulated with polycarbonate to prevent contact with panels, unless noted.

Hex-head posts have to be tightened with a wrench. ***Fluted posts*** can be tightened with your fingers.

To Order: Where applicable, please specify color: black or red.

Panel Cutout, Dia.	Max. Panel Thick.	Amp Rating	Color		1-9	10-Up
Single Hex-Head Gold-Plated Brass Post						
½″	7/32″	30	Black or Red	6937K6	$5.13	$4.36
Single Fluted Gold-Plated Brass Post						
⅜″	13/64″	15	Black or Red	6937K7	7.74	6.56
Single Watertight Nickel-Plated Brass Post						
5/16″	⅛″	15	Black or Red	6937K8♦	20.29	17.23
Single High-Amp Nickel-Plated Brass Post						
7/16″	7/64″	60	Black or Red	6937K9	14.61	12.44
Dual Hex-Head Tin-Plated Brass Post						
½″▲	3/32″	30	1 Black; 1 Red	6937K71	8.19	6.96
Dual Fluted Tin-Plated Brass Post						
⅜″▲	9/32″	15	1 Black; 1 Red	6937K72	10.00	8.50

♦ Insulated with rubber. ▲ Two holes on ¾″ centers.

Panel-Mount Banana Jacks/Receptacles

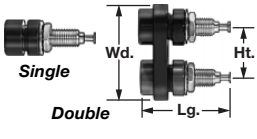

Designed for use as a connection point for wires with banana plug terminations, these jacks/receptacles can be mounted in 0.063″ to 0.375″ thick panels. They're tin-plated brass and are insulated with polycarbonate to prevent contact with panels. Voltage rating is 30 VAC/60 VDC hand held and 2,500 VDC hands free for 7124K41; 33 VAC/70 VDC hand held and 2,500 VAC hands free for 7124K42. Current rating is 15 A.

To Order: Please specify color: black or red.

	Panel Cutout, Dia.	Overall Size	Pkg. Qty.		Pkg.
Single	0.35″	0.50″ Dia. × 1.22″ Lg.	10	7124K41	$17.75
Double	0.375″▲	1.22″ Lg. × 1.38″ Wd. × 0.75″ Ht.	1	7124K42	4.03

▲ Two holes on ¾″ centers.

Test Lead Holders

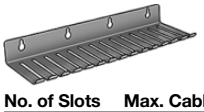

Organize and store your test leads and patch cords with these wall-mount holders. They're steel with a baked-enamel finish. Overall size is 11″ Lg. × 3½″ Wd.

No. of Slots	Max. Cable Thickness	Color		
14	0.21″	Orange	6938K67	$11.56
10	0.32″	Black	6938K68	12.60
9	0.45″	Blue	6938K69	15.05

Patch Cords

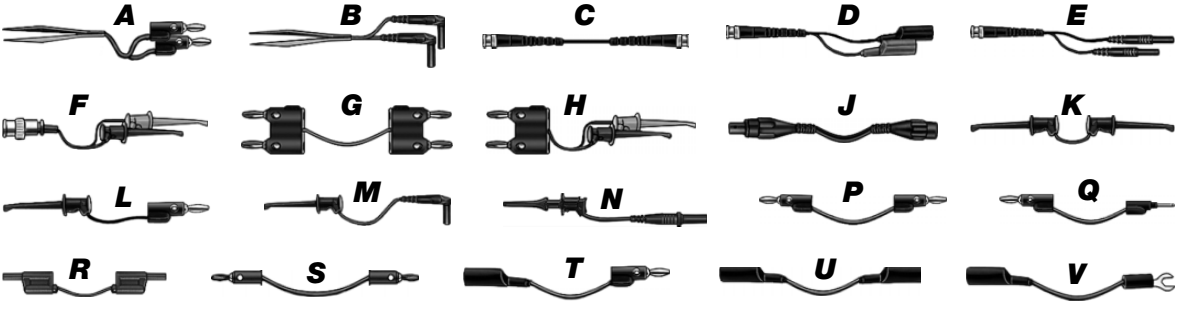

To Order: Where applicable, please specify cord length from those available below.

	End Connections	Available Cord Lengths	Voltage Rating: Hand Held	Voltage Rating: Hands Free	Current Rating		
Black Cord							
A	Tweezer; Two Stackable Banana Plugs■	48″	30 VAC/70 VDC	30 VAC/70 VDC	3 A	6927K27	$34.32
B	Tweezer; Two Right-Angle Sheathed Banana Plugs■	48″	30 VAC/70 VDC	30 VAC/70 VDC	3 A	6927K28	33.15
C	BNC Male Plug on Each End	36″, 48″, 60″	33 VAC/70 VDC	500 VAC	10 A	6936K61	19.04
D	BNC Male Plug; Two Alligator Clips with Insulator Sleeves■	36″, 60″	33 VAC/70 VDC	150 VAC	—	6936K62	25.45
E	BNC Male Plug; Two Sheathed Retractable Banana Plugs■	36″, 60″	33 VAC/70 VDC	500 VAC	—	6936K63	27.97
F	BNC Male Plug; Two Retractable Hooks■	18″, 24″, 36″	33 VAC/70 VDC	300 VAC	—	6934K73	26.70
G	Stackable Double Banana Plug on Each End	24″, 36″, 48″, 60″	33 VAC/70 VDC	1,400 VAC	—	6927K95	21.63
H	Stackable Double Banana Plug; Two Retractable Hooks	24″, 36″, 48″, 60″	33 VAC/70 VDC	300 VAC	5 A	6927K96	21.02
J	Sheathed BNC Male Plug; Sheathed BNC Female Plug	12″, 24″, 36″	500 VAC	500 VAC	6 A	6936K28	35.40
Black or Red Cord—To Order: Please specify cord color: black or red.							
K	Retractable Hook on Each End	12″, 24″, 36″, 48″, 60″	33 VAC/70 VDC	300 VAC	5 A	6934K71	5.32
L	Retractable Hook; Stackable Banana Plug	12″, 24″, 36″, 48″, 60″	33 VAC/70 VDC	300 VAC	5 A	6934K72	6.98
L	Retractable Hook; Stackable Banana Plug	48″♦	33 VAC/70 VDC	300 VAC	5 A	6927K45	18.09
M	Retractable Hook; Right-Angle Sheathed Banana Plug	48″	30 VAC	30 VAC	5 A	6927K37	10.36
N	Retractable Hook; Sheathed Banana Plug	48″	300 VAC	300 VAC	5 A	6927K38★	10.81
P	Stackable Banana Plug on Each End	12″, 24″, 36″, 48″, 60″, 72″	33 VAC/70 VDC	5,000 VDC	15 A	6927K41	5.44
P	Stackable Banana Plug on Each End	48″♦	33 VAC/70 VDC	270 VDC	5 A	6927K47	18.34
Q	Stackable Banana Plug; Stackable Pin Tip	12″, 24″, 36″, 48″	33 VAC/70 VDC	3,000 VDC	5 A	6927K46	8.72
R	Stackable Sheathed Banana Plug on Each End	48″	1,000 VAC	1,000 VAC	10 A	6927K51●	15.99
S	Cross-Stackable Banana Plug	12″, 24″, 36″	33 VAC/70 VDC	5,000 VDC	15 A	6927K98	8.40
T	Alligator Clip with Insulator Sleeve; Stackable Banana Plug	12″, 24″, 36″, 48″, 60″	33 VAC/70 VDC	150 VAC	5 A	6927K42	6.79
U	Alligator Clip with Insulator Sleeve on Each End	12″, 24″, 36″, 48″, 60″	33 VAC/70 VDC	150 VAC	5 A	6927K43	6.19
V	Alligator Clip with Insulator Sleeve; Spade Connector	12″♥, 36″	33 VAC/70 VDC	150 VAC	5 A	6927K44	10.26

■ One red, one black. ♦ Coiled cord; length listed is extended length. ★ IEC 61010, CAT II rated. ● IEC 61010, CAT III rated. ♥ Cord is red.

Spring Test Probes

Eliminate the need for hand-held test probes. These spring-loaded probes permanently attach to testing fixtures for repetitive testing of electrical circuits and PC boards. A complete spring test probe consists of a probe and socket (each sold separately). All are sold in package quantities of 5.

Probes— Can be replaced without removing sockets. Working stroke is 0.17″; maximum stroke is 0.25″. *90° cup probes* are for testing leads, terminals, and pins. *30° spear probes* are for testing flat surfaces. *Waffle probes* have a universal tip for testing flat surfaces as well as leads, terminals, and pins.

Sockets— Crimp or solder sockets to the wires leading into the testing system, then mount in your testing fixture. Finally, fit probes into the sockets. A 22-26 AWG crimper (not included) is recommended for the crimp tip style.

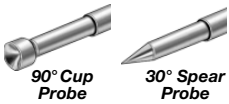

90° Cup Probe *30° Spear Probe*

Waffle Probes

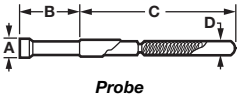

Probe

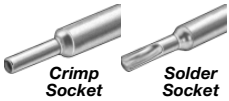

Crimp Socket *Solder Socket*

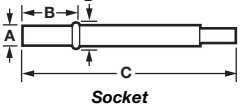

Socket

Tip Style	Amps	(A)	(B)	(C)	(D)	Spring Force: Initial	Spring Force: Maximum		Pkg.
Probes									
0.125″ Minimum Distance Between Probe Centers									
90° Cup	5	0.10″	0.34″	0.97″	0.08″	2.9 oz.	7.0 oz.	5949T21	$9.15
90° Cup	30	0.10″	0.34″	0.97″	0.08″	2.9 oz.	7.0 oz.	5949T24	14.00
30° Spear	5	0.07″	0.34″	0.97″	0.08″	2.9 oz.	7.0 oz.	5949T22	9.15
Waffle	5	0.10″	0.34″	0.97″	0.08″	2.9 oz.	7.0 oz.	5949T23	9.15
Waffle	30	0.10″	0.34″	0.97″	0.08″	2.9 oz.	7.0 oz.	5949T25	14.00
0.156″ Minimum Distance Between Probe Centers									
90° Cup	5	0.16″	0.36″	0.97″	0.09″	2.8 oz.	7.0 oz.	5949T31	11.95
90° Cup	35	0.16″	0.36″	0.97″	0.09″	4.0 oz.	10.0 oz.	5949T34	18.44
30° Spear	5	0.08″	0.36″	0.97″	0.09″	2.8 oz.	7.0 oz.	5949T32	11.95
Waffle	5	0.16″	0.36″	0.97″	0.09″	2.8 oz.	7.0 oz.	5949T33	11.95
Waffle	35	0.16″	0.36″	0.97″	0.09″	4.0 oz.	10.0 oz.	5949T35	18.44
0.187″ Minimum Distance Between Probe Centers									
90° Cup	5	0.16″	0.35″	1.07″	0.13″	2.8 oz.	16.4 oz.	5949T41	15.67
90° Cup	45	0.16″	0.35″	1.07″	0.13″	7.2 oz.	18.7 oz.	5949T44	19.33
30° Spear	5	0.11″	0.35″	1.07″	0.13″	2.8 oz.	16.4 oz.	5949T42	15.67
Waffle	5	0.16″	0.35″	1.07″	0.13″	2.8 oz.	16.4 oz.	5949T43	15.67
Waffle	45	0.16″	0.35″	1.07″	0.13″	7.2 oz.	18.7 oz.	5949T45	19.33
Sockets									
For 0.125″ Probes— *Mount in a 0.095″ mounting hole.*									
Crimp or Solder	5	0.09″	0.30″	1.22″	0.10″	—	—	5949T26▲	4.39
Solder	30	0.09″	0.30″	1.22″	0.10″	—	—	5949T51	9.88
For 0.156″ Probes— *Mount in a 0.109″ mounting hole.*									
Crimp or Solder	5	0.11″	0.30″	1.22″	0.11″	—	—	5949T36▲	3.78
Solder	35	0.11″	0.30″	1.22″	0.11″	—	—	5949T52	10.73
For 0.187″ Probes— *Mount in a 0.142″ mounting hole.*									
Crimp or Solder	5	0.14″	0.30″	1.30″	0.14″	—	—	5949T46▲	8.29
Solder	45	0.14″	0.30″	1.30″	0.14″	—	—	5949T53	13.05

▲ **To Order:** Please specify crimp or solder socket.

BNC Adapters

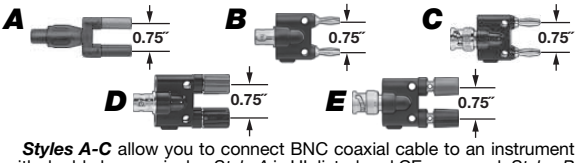

Styles A-C allow you to connect BNC coaxial cable to an instrument with double banana jacks. *Style A* is UL listed and CE approved. *Styles B* and *C* can be horizontally or vertically stacked. ***Styles D*** and ***E*** can convert a BNC test instrument to one with double binding posts with banana jacks. Binding posts can be horizontally or vertically stacked.

Style		Voltage Rating, VAC/VDC Hands Free	Hand Held		
Sheathed BNC to Double Banana Plug					
A	Female	600	600/600	**6704K15**	$20.98
BNC to Stackable Double Banana Plug					
B	Female	500	33/70	**6704K11**	7.36
C	Male	500	33/70	**6704K12**	10.62
BNC to Stackable Double Binding Post					
D	Female	500	33/70	**6704K13**	11.56
E	Male	500	33/70	**6704K14**	13.68

Analog Panel Meters

Wide-View AC Ammeter

Standard DC Ammeter

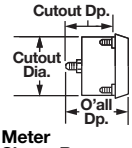

These square meters require a round cutout (see table below for dimensions). They have a phenolic case, black pointer, four mounting studs with 4-40 threads, and screw terminals for electrical connection. All have an accuracy of ±2%. UL recognized.

AC voltmeters and ***ammeters*** have a frequency range of 25 to 125 Hz. Calibrated at 60 Hz.

AC voltmeters, DC voltmeters, and ***DC ammeters*** can be mounted on steel panels without being affected by electromagnetic interference (EMI).

Standard case have a glass window.

Wide-view case gives you a better view of readings. Window is clear acrylic.

Meter Size	Actual Dimensions, Wd.×Ht.	Cutout Dia.	Cutout Dp.	O'all Dp.
Standard Case				
1½″ sq.	1.75″×1.75″	1.51″	1.43″	1.81″
2½″ sq.	2.38″×2.34″	2.22″	2.01″	2.52″
3½″ sq.	3.00″×3.00″	2.83″	2.04″	2.55″
Wide-View Case				
1½″ sq.	1.75″×1.76″	1.55″	1.41″	1.82″
2½″ sq.	2.47″×2.47″	2.22″	1.85″	2.33″
3½″ sq.	3.25″×3.25″	2.79″	1.92″	2.54″

Meter Size	Range	Ohms	Standard Case		Wide-View Case	
AC Voltmeters						
2½″	0-150 VAC	25,000	**7107K311**	$79.69	**7107K113**	$79.69
2½″	0-300 VAC	50,000	**7107K312**	79.69	**7107K512**	79.69
3½″	0- 50 VAC	3,333	**7107K314**	82.46	**7107K513**	82.46
3½″	0-150 VAC	25,000	**7107K315**	85.38	**7107K117**	85.38
3½″	0-300 VAC	50,000	**7107K316**	85.38	**7107K118**	85.38
AC Ammeters						
2½″	0- 50 A	0.001	**7107K221**	76.13	**7107K123**	76.13
2½″	0-100 A	0.008	**7107K222**★	130.33	**7107K124**★	130.33
3½″	0- 3 A	0.028	**7107K962**	77.91	**7107K511**	77.91
3½″	0- 5 A	0.008	**7107K972**	77.91	**7107K49**	77.91
3½″	0- 10 A	0.004	**7107K612**	77.91	**7107K51**	77.91
3½″	0- 15 A	0.0025	**7107K982**	77.91	**7107K52**	77.91
3½″	0- 50 A	0.001	**7107K622**	80.35	**7107K53**	80.35
3½″	0-100 A	0.008	**7107K119**★	135.04	**7107K7**★	135.04
DC Voltmeters						
1½″	0- 10 VDC	1,000	**7107K71**	84.07	**7107K319**	84.07
1½″	0- 15 VDC	1,000	**7107K12**	84.07	**7107K321**	84.07
1½″	0- 30 VDC	1,000	**7107K13**	84.07	**7107K322**	84.07
1½″	0-100 VDC	1,000	**7107K73**	84.07	**7107K323**	84.07
3½″	0- 10 VDC	1,000	**7107K72**	85.06	**7107K18**	85.06
3½″	0- 15 VDC	1,000	**7107K31**	85.06	**7107K21**	85.06
3½″	0- 30 VDC	1,000	**7107K32**	85.06	**7107K23**	85.06
3½″	0-100 VDC	1,000	**7107K324**	85.06	**7107K25**	85.06
3½″	0-150 VDC	1,000	**7107K33**	85.06	**7107K27**	85.06
DC Ammeters						
1½″	0- 25 mA	4	**7107K83**	81.00	**7107K514**	81.00
1½″	0- 5 A	0.01	**7107K75**	81.00	**7107K515**	81.00
3½″	0- 25 mA	4	**7107K84**	84.07	**7107K516**	84.07
3½″	0- 50 mA	2	**7107K86**	84.07	**7107K517**	84.07
3½″	0- 5 A	0.01	**7107K76**	84.07	**7107K318**	84.07
3½″	0- 10 A	0.005	**7107K37**	84.07	**7107K35**	84.07
3½″	0- 30 A	0.0017	**7107K77**	84.07	**7107K36**	84.07
3½″	0- 50 A	0.001	**7107K38**	84.07	**7107K39**	84.07
3½″	0-100 A	10	**7107K8**■	152.02	**7107K15**■	152.02

★ Includes a 100:5 amp current transformer.
■ Includes a 100 amp shunt.

Digital Panel Meters

Standard LED Meter

All feature automatic zero, a connection strip with screw terminals, and display hold and test. Operating temperature range is 32° to 131°F, unless noted. DC meters also display polarity.

Standard LED meters fit a 1/8 DIN (3.62″×1.77″) panel cutout. They have a 3½ digit LED display that's 0.56″ high and operate on 120 VAC, 50/60 Hz.

Miniature LCD meters fit a 3/64 DIN (2.68″×0.88″) panel cutout. They have a 3½ digit LCD display that's 0.5″ high and operate on 85-250 VAC, 40-440 Hz. CE certified.

Measuring Range	Standard LED Meters		Miniature LCD Meters	
AC Voltmeters—*Accuracy is ±(0.1% of reading ±5 counts), unless noted*				
0-199.9 VAC	**7681K51**	$164.39	**8339T8**♠	$147.00
0-600 VAC	**7681K53**▲	177.19	———	———
AC Ammeters—*Accuracy is ±(0.1% of reading +5 counts), unless noted*				
0-5 A	**7681K81**	164.39	**8339T1**♠	147.00
DC Voltmeters—*Accuracy is ±(0.1% of reading +1 count)*				
0-199.9 mVDC	**7681K59**	123.09	**8339T4**	105.70
0-1.999 VDC	**7681K61**	123.09	**8339T9**	105.70
0-19.99 VDC	**7681K62**	123.09	**8339T5**	105.70
0-199.9 VDC	**7681K63**	123.09	**8339T6**	105.70
DC Ammeters—*Accuracy is ±(0.1% of reading +5 counts), unless noted*				
0-1.999 mA	**7681K77**	123.09	**8339T11**♥	105.70
0-19.99 mA	**7681K78**	123.09	**8339T12**♥	105.70
0-199.9 mA	**7681K79**	123.09	**8339T13**♥	105.70
0-1.999 A	**7681K82**	123.09	**8339T3**♥	105.70
Frequency Meters—*Accuracy is ±(0.2% of reading ±0.2 Hz), unless noted*				
20-199.9 Hz	**7681K83**	123.09	**8339T7**●	105.70

♠ Accuracy is ±(0.5% of reading +5 counts).
▲ Temp. range is 32° to 122°F. Accuracy is ±(0.2% of reading ±1 count).
♥ Accuracy is ±(0.1% of reading +1 count).
● Accuracy is ±(0.2% of reading ±2 Hz).

Modular Digital Panel Meters

Display Module

Power Supply Module

Input Module

No need to buy a complete unit if your power or input requirements change—modules are interchangeable so you can build or modify your own meter in a few minutes. A basic meter requires a display, a power supply, and an input module (units can only use one input module at a time). When assembled, a complete meter is 1/8 DIN and 1.9″ Ht.×3.8″ Wd.×4.1″ Dp.

Display modules have a NEMA 4, IP67 water-tight housing when panel mounted. They feature min./max. recording, password protection, and data hold. *Resistance/temperature input module* accepts Types J, K, S, T, and E thermocouples.

Build a controller by adding an ***optional output module***. Units assembled as controllers have a programmable setpoint, hysteresis, time delay, and relay status.

	Max. Input			
Display Module				
Multi-Color LED	———		**8533T61**	$196.54
Power Supply Modules				
18-60 VAC/VDC	———		**8533T81**	95.94
90-260 VAC/VDC	———		**8533T64**	64.27
Input Modules				
AC/DC Voltage, AC/DC Amperage	500V/5A		**8533T27**	148.10
Resistance/Temperature	20 kΩ		**8533T68**	180.70
Output Modules (Optional)				
Analog	———		**8533T72**	138.79
1 Relay, SPDT, 8A @ 250 VAC	———		**8533T73**	49.37
2 Relays, 2SPDT, 8A @ 250 VAC	———		**8533T74**	76.38

Test Lead Cords

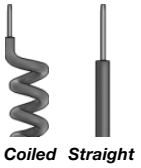

Coiled ***Straight***

All of these cords have single-conductor, stranded tinned-copper wire.

Coiled—Cords stretch to 5-ft. long; recoil to 12″ long. They have a neoprene jacket. Rated 4 A at 1,000 VAC.

Straight—Cords come in 50-ft. long spools. They have a PVC jacket. Rated 5,000 VAC. UL recognized.

Style	AWG	Red Color		Black Color	
Coiled	20	**7058K22**	$15.80	**7058K24**	$15.86
Straight	18	**7058K34**	21.36	**7058K32**	21.36

Remote Digital Displays for Transducers

- Accuracy Range: ±0.03% of span
- 6-digit, dual line red LED for displays from –99,999 to +999,999
- Electrical Connections: Removable screw terminal block
- Operating Temperature Range: –40° to 149° F

These digital displays have a built-in, 24-VDC supply that powers your transducer. They are switch-selectable for input signals of 0-20 mA, 4-20 mA, 1-5 VDC, 0-5 VDC, and 0-10 VDC and have nonvolatile memory (no battery needed). Displays have a 1/8 DIN, high-impact plastic enclosure and NEMA 4X front panel with gasket as well as a lockout feature that prevents tampering. A 1.772″×3.622″ panel cutout is required.

Digital display ***with alarm board*** comes furnished with screw terminal connections and two SPDT (single pole, double throw) relays that are rated 3 amps at 150/250 VAC.

Power Supply	*Standard*		*With Alarm Board*	
85-265 VAC	38445K21	$427.14	38445K22	$537.50

DIN-Rail Mount Voltage Transducers

Take an AC input voltage and transform it into a DC output signal with these transducers. They mount easily to DIN rail and have true RMS sensing capability for more accurate readings. Ideal for use with panel meters, data acquisition devices, and automation systems. They run on 24 VDC and have a plastic housing. Size is 2.99″ Ht.×1.42″ Wd.×3.27″ Dp., unless noted. UL and C-UL recognized.

To Order: Please specify AC voltage input range: 0-150, 0-250, or 0-500 volts.

No. of Wires/ Phase	*0-5 VDC Output*		*4-20 mA Output*	
Single/Single	6853T21★	$197.87	6853T22★	$218.68
Three/Three	6853T23	345.02	6853T24	390.52
Four/Three	6853T25	499.90	6853T26	557.16

★ Height is 2.20″.

Current Transformers, Transducers, and Relays

Current Transformers

Designed for current measurements, these transformers step down high current to give a 0-5 amp output that can be used as input for panel meters and data acquisition devices. UL recognized.

Current Ratio		
1 1/8″ Max. Wire Diameter		
50:5	65795K79	$20.39
80:5	65795K81	20.39
100:5	65795K82	20.39
150:5	65795K84	20.39
200:5	65795K85	20.39
300:5	65795K87	20.39

Current Ratio		
2 1/2″ Max. Wire Diameter		
500:5	65795K91	$49.74
750:5	65795K92	49.83
1,000:5	65795K93	75.02
1,200:5	65795K94	75.02
1,500:5	65795K95	75.02

Current Transducers

Step down high current just like transformers, but also give you a conditioned output signal that can be used as input for panel meters, data acquisition devices, and automation systems. Transducers have two 0.19″ dia. mounting holes and an ABS plastic housing that meets UL94-V0 for flammability. UL listed, C-UL listed, and CE approved.

Loop-powered models require a 24 VDC power supply.

Use ***feed-through*** models for new installations. Feed wire through the opening. Maximum wire opening is 0.74″ dia.

Wraparound models eliminate the need to disconnect the current-carrying conductor, so they're ideal for retrofit applications. Housing is hinged to allow you to go around your wire. Maximum wire opening is 0.85″.

Feed Through

Wraparound

AC Current Input Range, amps	*Self-Powered 0-5 VDC Output*		*Self-Powered 0-10 VDC Output*		*Loop-Powered 4-20 mA Output*	
***Feed Through—**2.18″ Ht.×3.50″ Wd.×0.93″ Dp.*						
0-2, 0-5	—	—	—	—	6583K41	$153.06
0-10, 0-20, 0-50	6583K22	$99.74	6583K32	$99.74	6583K42	142.86
0-100, 0-150, 0-200	6583K23	99.74	6583K33	99.74	6583K43	142.86
***Wraparound—**2.25″ Ht.×3.53″ Wd.×1.19″ Dp.*						
0-2, 0-5	—	—	—	—	6583K44	183.67
0-10, 0-20, 0-50	6583K25	132.65	6583K35	132.65	6583K45	173.47
0-100, 0-150, 0-200	6583K26	132.65	6583K36	132.65	6583K46	173.47

DIN-Rail Mount Current Transducers

Easy to mount on DIN rail, these transducers have true RMS sensing capability for more accurate readings. They run on 24 VDC and are made of plastic. Size is 2.99″ Ht.×1.42″ Wd. ×3.27″ Dp. UL recognized.

To Order: Please specify AC current input range. For single-wire units, please specify 0-10, 0-20, 0-50, or 0-100 amps. For two- and three-wire units, please specify 0-10 or 0-20 amps.

No. of Wires	Max. Hole Dia.	*0-5 VDC Output*		*4-20 mA Output*	
Single	0.79″	6733T11	$197.87	6733T12	$218.90
Two	0.26″	6733T13	345.02	6733T14	390.52
Three	0.26″	6733T15	499.90	6733T16	557.16

Single Wire

Current Relays

Sense electrical current and provide relay output when current exceeds a set point. Great for monitoring AC current overloads on motors and open heater elements. Relays have variable trip range and delay-on timer that's adjustable from 0.5 to 6 seconds. Trip range listed is for one wire pass through wire opening. To determine actual range, divide the listed trip range by the number of wire passes. Output contacts are SPDT and rated 10 amp resistive @ 240 VAC (for a definition of SPDT, see page 855). Relays require 120 VAC power and accept a maximum wire diameter of 1/2″. UL recognized.

Trip Range		
0.1-1 A	65795K69	$122.12
1-10 A	65795K71	75.81
3-30 A	65795K72	75.81
6-60 A	65795K73	75.81
10-100 A	65795K74	75.81

Electric Current Indicating Rings

Monitor AC current flow by running current-carrying wire through these rings.

Ring with red LED will light when current is present.

Rings with wire leads attach to remote LED (sold separately below) for monitoring current from distances up to 200 ft.

Ring with LED and Optional Mounting Bracket

	Max. Wire Dia.	Wire Lead Lg.	Indicating Range		
Rings					
With Red LED	0.29″	—	2-100 A	6570K5	$11.96
With Wire Leads	0.29″	12″	2-100 A	6570K6	9.73
With Wire Leads	0.55″	24″	2.5-100 A	6570K9	32.43
Accessories					
Remote LED for Rings with Wire Leads—Red				6570K7	6.20
Optional Mounting Bracket for 6570K5				6570K8	2.18
Optional Mounting Bracket for 6570K9				6570K11	3.47

Current Loop Checker and Calibrator

By providing a precise output current, these instruments allow you to check or calibrate your process indicators and meters. They include a connector cable with spade lugs and 9-volt battery.

Fixed-Output Checker— Select from three current outputs of 4, 12, and 20 mA to check circuits with a resistance up to 240 ohms. This pocket-size checker has LED indicators and push buttons to select between outputs. Accurate to 0.01 mA. Includes low-battery indicator and carrying case. Size is 2 3/8″×3 1/2″×1″.

7057K49 ..... $106.76

Fixed-Output Checker

Variable-Output Calibrator— Select any output between 0-24 mA for calibrating circuits with a resistance up to 1,000 ohms. Output can also be displayed from –25 to +125%. In addition, calibrator provides 24 VDC power to measure loop currents from 0-24 mA. Has a four-digit LCD display. Accuracy is ±0.075%. Includes an AC adapter and carrying case. Size is 3.8″×4.7″×1.8″.

7057K69 ..... $264.39

Variable-Output Calibrator

Contact Replacement Kits

General Electric Kit

Replace worn NEMA contacts with these high-quality NEMA replacement kits. They fit many of the most commonly used magnetic starters and contactors.

NEMA Contact Size	No. of Poles	Mfr. Part No.		Kit
Allen-Bradley: Series K				
00	2	Z-21101	**8064K11**	$21.12
00	3	Z-21102	**8064K12**	29.74
00	4	Z-21103	**8064K13**	35.34
0	1	Z-34037	**8064K14**	35.78
1	1	Z-34038	**8064K15**	43.10
2	1	Z-34039	**8064K16**	61.64
3	1	Z-34040	**8064K17**	134.05
4	1	Z-34041	**8064K18**	218.10
Allen-Bradley: Series 500				
0	1	40410-331-51	**8064K21**	27.16
1	1	40410-331-52	**8064K22**	31.47
2	1	40420-322-51	**8064K23**	43.97
3	1	40430-300-51	**8064K24**	99.74
4	1	40440-300-51	**8064K25**	178.45
5	1	42450-805-01	**8064K26**	274.14

NEMA Contact Size	No. of Poles	Mfr. Part No.		Kit
Cutler-Hammer: Series A1				
1	3	6-23-2	**8064K28**	$81.47
1	4	6-23-3	**8064K29**	124.14
2	3	6-24-2	**8064K33**	135.78
3	3	6-25-2	**8064K35**	352.59
4	3	6-26-2	**8064K37**	396.12
5	3	6-27-2	**8064K39**	462.93
Cutler-Hammer: Series B1				
2	3	6-34-2	**8064K42**	146.98
3	3	6-35-2	**8064K46**	235.34
4	3	6-36-2	**8064K48**	318.10
Furnas: Innova/45 Series				
1	1	75DF14	**8064K59**	37.07
1¾	1	75EF14	**8064K61**	43.53
2	1	75FF14	**8064K62**	64.22
2½	1	75GF14	**8064K63**	76.72
3	1	75HF14	**8064K64**	86.21
3½	1	75IF14	**8064K65**	106.47

NEMA Contact Size	No. of Poles	Mfr. Part No.		Kit
Square D: Class 9998				
1-1P	3	SL-3	**8064K81**	$102.59
2	3	SL-4	**8064K83**	154.31
3	3	SL-7	**8064K86**	234.05
4	3	SL-9	**8064K88**	450.86
General Electric: 100, 200 and 300 Series				
0	4	546A300G002	**8064K66**	101.50
1	4	546A301G002	**8064K67**	119.50
2	3	546A780G002	**8064K68**	159.50
3	3	55153677G002	**8064K69**	342.50
4	3	55153678G002	**8064K71**	422.50
Westinghouse: A200, N and NF Series				
00	4	373B331G18	**8064K92**	93.53
0	4	373B331G04	**8064K93**	105.17
1	3	1605212	**8064K95**	208.62
1	4	373B331G09	**8064K96**	106.03
2	3	373B331G12	**8064K98**	113.36
3	3	626B187G13	**8064K104**	227.59
4	3	626B187G17	**8064K108**	278.88
5	1	477B477G05	**8064K111**	159.91
5	3	1620146	**8064K113**	410.34

Contact Cleaning Spatula

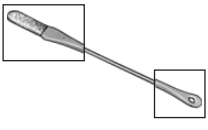

With a minimal amount of pressure, the diamond particle blade on this spatula cleans contacts while removing very little metal. The diamond blade has a coarse grit, 7/8″ Lg.×1/4″ Wd. face. Handle is nylon with a 5 5/8″ long shaft.

6304T11 ..... $42.46

Commutator Chalk Stones

Also known as brush seating stones, these soft, loosely bound, white grain stones scour without removing or scratching copper. Ideal for seating carbon brushes and cleaning commutators, slip rings, and other electrical contacts.

Stone Size, Wd.×Lg.×Thick.	Grade		
1/2″×4 3/4″× 1/4″	Medium	**7502K11**	$4.06
1/2″×4 3/4″× 3/8″	Medium	**7502K12**	5.55
1/2″×4 3/4″× 1/2″	Medium	**7502K13**	7.36
5/8″×4 3/4″× 1/2″	Medium	**7502K15**	8.26
3/4″×4 3/4″× 1/2″	Medium	**7502K14**	7.73
1 1/8″×4 3/4″× 5/8″	Medium	**7502K16**	9.86
1″ ×4 3/4″×1″	Soft	**7502K17**	11.80
2″ ×4 3/4″×1″	Soft	**7502K18**	17.98

Commutator Resurfacers

Also known as commutator stones, these resurfacers clear away streaks, grooves, and irregular workings from the surfaces of commutators as well as copper or brass slip rings on medium to large motors.

To Order: Please specify grade: Extra-coarse (36 grit), coarse (46 grit), medium (90 grit), finish (120 grit), or polish (220 grit).

Fixed Handle— Also known as a tramway handle, it's permanently mounted at a 45° angle for a positive grip in awkward positions.

Adjustable Handle— Insert into the knob-grip at one of two 45° angles or in the vertical position.

Stone Size, Thick.×Wd.×Lg.	Fixed Handle Lg.			Adjustable Handle Lg.		
2″×1 1/2″×2″	10″	**7286K51**	$39.60	8 7/8″	**7286K53**	$39.60
2″×2″ ×2″	10″	**7286K52**	52.80	8 7/8″	**7286K54**	52.80

Commutator Cleaning Kit

Everything you need to clean small commutators and seat carbon brushes is found in this kit. Kit contains a flexible stone handle, two coarse stones, two medium stones, two finish stones, two extra finish stones, and four seating stones. Handle is 9″ long and easily secures to stones. All stones are 1″ Ht.×3/4″ Wd.×5/16″ Thick.

5951T11 ..... $37.95

Electrical Insulating Varnish

Penetrates worn insulation, then dries to form an abrasion- and wear-resistant insulating layer. This aerosol spray varnish won't deplete the ozone layer, but is flammable and may not be suitable for all plastics; test before use. All are Class F insulators (withstand temperatures up to 310° F). Full case quantity is 12.

Clear leaves a transparent film, so components can be inspected. Great for coating circuit boards. *Red* works well for identification, such as a coating for wiring. *Green* is designed for harsh environments and is oil resistant.

	Net Wt.	Dielectric Strength, volts		Each Partial Case	Each Full Case
Clear	15.25 oz.	2,300	**7437K21**	$5.93	$4.88
Red	15.25 oz.	2,600	**7437K19**	6.49	5.32
Green	15.25 oz.	2,890	**7437K22**	7.98	6.61

Ultrasonic Sensors

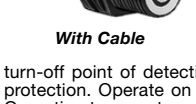

With Cable

High-frequency sound waves can detect objects of all sizes, shapes, colors, and materials—even in dusty and dirty environments. These threaded sensors also measure the distance to a target. You can specify a particular range of detection anywhere within the sensing distance—just set the turn-on and turn-off point of detection. All have short-circuit and reverse-polarity protection. Operate on 20-30 VDC. Size is 30 mm Dia.×100 mm Lg. Operating temperature range is 32° to 140° F.

Digital-output sensors have two solid state relays, one that switches from "off" to "on" (normally open) and one that switches from "on" to "off" (normally closed). They are rated at 50 mA @ 130 VAC, 100 mA @ 130 VDC. Sensors *with cable* have six ft. of five-wire cable; sensors *with male plug* are five pin with dual keyway.

4″-40″ sensing digital models have a response time of 30 milliseconds. *8″-80″ sensing* models have a response time of 50 milliseconds.

Analog-output sensors have one 0-10 VDC voltage output and one 4-20 mA current output. They have zero span controls for precise adjustments. An LED strength indicator shows the accuracy of the target alignment. Sensors *with cable* have six ft. of four-wire cable; sensors *with male plug* are four pin with single keyway.

4″-40″ sensing analog models have 16 millisecond response time. *8″-80″ sensing* models have 35 millisecond response time.

Sensors with ***plastic*** housing are suitable for most applications. Sensors with Type 303 ***stainless steel*** housing are ideal where corrosive liquids are present.

Sensing Distance	Material	With Cable		With Male Plug	
Digital Output					
4″-40″	Plastic	**6565K31**	$376.67	**6565K33**	$398.74
8″-80″	Plastic	**6565K42**	448.89	**6565K43**	472.22
8″-80″	Stainless Steel	**6565K71**	618.89	**6565K72**	654.44
Analog Output					
4″-40″	Plastic	**6565K61**	376.67	**6565K63**	398.74
8″-80″	Plastic	**6565K62**	448.89	**6565K64**	472.22
8″-80″	Stainless Steel	**6565K82**	618.89	**6565K83**	654.44

Female Plug w/12 ft. Cable for Digital Sensors	**6897K96**	$38.84
Female Plug w/12 ft. Cable for Analog Sensors	**6897K36**	31.92

AC Motor-Start and Motor-Run Capacitors

Capacitors store electrical energy to maximize the life and performance of your motor.

AC Motor Start—Work with small, single-phase AC motors to increase starting torque and allow for rapid on and off motor cycling. For use on fans, burners, pumps, compressors, and refrigerators that have a high starting torque. Operating frequency is 50/60 Hz. Capacitance tolerance is ±10% and temperature range is –40° to +149° F. These capacitors are housed in moisture- and oil-resistant plastic and have 1/4″ male quick-disconnect terminals. Meet Electrical Industries Association (EIA) Type II specifications. UL recognized; CSA certified.

AC Motor Run—Designed for continuous duty use at 60 Hz on AC motors. These capacitors provide an even magnetic field, which reduces energy consumption and improves motor performance for motor-run applications and AC power supplies. Capacitance tolerance is ±6% and temperature range is –40° to +158° F. They have 1/4″ male quick-disconnect terminals. UL and C-UL recognized.

Motor-Start Capacitor with Optional Mounting Strap

Motor-Run Capacitor with Optional Mounting Strap

AC Motor-Start Capacitors

μF★ Rating	Case Size, Ht. × Dia.		
110-125 VAC Capacitors			
53-64	2¾″ × 1⁷⁄₁₆″	7245K105	$5.26
88-227	2¾″ × 1⁷⁄₁₆″	7245K111●	3.94
216-389	2¾″ × 1⁷⁄₁₆″	7245K112●	4.91
340-552	3⅜″ × 1⁷⁄₁₆″	7245K114●	5.45
540-648	3⅜″ × 1¹³⁄₁₆″	7245K54	6.00
590-708	3⅜″ × 1¹³⁄₁₆″	7245K56	6.95
708-850	3⅜″ × 1¹³⁄₁₆″	7245K57	8.86
815-978	4⅜″ × 2¹⁄₁₆″	7245K32	12.22
1,000-1,200	4⅜″ × 2¹⁄₁₆″	7245K33	12.38
220-250 VAC Capacitors			
30-36	2¾″ × 1⁷⁄₁₆″	7245K311	6.49
53-64	2¾″ × 1⁷⁄₁₆″	7245K34	4.93
72-86	3⅜″ × 1¹³⁄₁₆″	7245K35	7.62
130-156	3⅜″ × 1¹³⁄₁₆″	7245K39	7.40
189-227	3⅜″ × 2¹⁄₁₆″	7245K41	12.05
270-324	4⅜″ × 2¹⁄₁₆″	7245K45	12.46

★ μF = Microfarad

● **To Order:** Please specify exact μF rating required.

AC Motor-Run Capacitors

μF★ Rating	Case Size, Ht. × Wd. × Dp.		
370 VAC Capacitors			
2	1½″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K21	$6.11
3	1½″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K22	6.21
4	1½″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K23	6.31
5	1½″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K24	5.79
6	2⅜″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K25	7.51
7.5	2⅜″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K26	6.57
10	2⅝″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K27	7.32
12.5	3″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K28	8.29
15	3″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K29	9.28
20	3″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K32	11.01
25	3″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K33	11.89
30	3″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K34	12.54
370 VAC Capacitors (Cont.)			
35	3¾″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K35	$14.22
40	3¾″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K36	14.86
45	3¾″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K37	15.32
50	3¾″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K38	18.22
440 VAC Capacitors			
7.5	2⅝″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K39	7.85
10	3¾″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K41	9.21
15	3¾″ × 2³⁄₁₆″ × 1⁵⁄₁₆″	7602K43	10.03
20	3¾″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K45	14.14
25	3¾″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K46	14.78
30	3¾″ × 2¹⁵⁄₁₆″ × 1¹⁵⁄₁₆″	7602K47	15.32
40	3¾″ × 3¹¹⁄₁₆″ × 2″	7602K59	20.71
45	3¾″ × 3¹¹⁄₁₆″ × 2″	7602K51	24.25

★ μF = Microfarad

Accessories

To Order: Please specify capacitor part number.

End Cap for AC Motor-Start Capacitors	7245K92	$1.79
Mounting Strap for AC Motor-Start Capacitors	7622K82	1.48
Mounting Strap for AC Motor-Run Capacitors	7622K83	1.55

Carbon Brushes

Minimize downtime by having these brushes on hand for replacement jobs. They replace worn brushes in small industrial, appliance, and portable electric tool motors. Package quantity is 2.

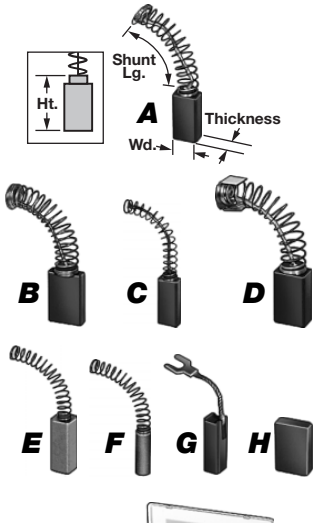

Individual Brushes

Brush Size Thick.	Wd.	Ht.	Shunt Lg.		Pkg.
Brushes with Spring and Shunt					
A 0.218″	0.281″	11⁄16″	7⁄8″	65705K64	$14.38
A 7⁄32″	9⁄32″	3⁄4″	1¼″	65705K23	14.65
A 0.245″	3⁄8″	15⁄16″	1⅜″	65705K26	15.23
A 0.246″	0.309″	3⁄4″	1⅜″	65705K27	14.27
A 1⁄4″	1⁄4″	3⁄4″	1¼″	65705K28	14.54
A 1⁄4″	5⁄16″	3⁄4″	1⅜″	65705K29	14.27
A 1⁄4″	3⁄8″	11⁄16″	1¼″	65705K31	14.71
A 1⁄4″	3⁄8″	5⁄8″	1⅜″	65705K32	15.00
A 1⁄4″	3⁄8″	13⁄16″	1⁷⁄₁₆″	65705K33	15.52
A 0.308″ Dia.		13⁄16″	1¼″	65705K39	15.75
B 3⁄16″	1⁄2″	7⁄8″	1¼″	65705K22	14.71
B 1⁄4″	3⁄8″	1⅛″	1¼″	65705K34	16.54
B 1⁄4″	7⁄16″	3⁄4″	1⅛″	65705K35	14.79
B 1⁄4″	1⁄2″	3⁄4″	1⁷⁄₁₆″	65705K36	15.75
B 1⁄4″	1⁄2″	13⁄16″	1⁷⁄₁₆″	65705K37	16.23
C 0.185″	0.305″	13⁄16″	1⅜″	65705K21	12.88
D 15⁄64″	11⁄32″	1″	2⅛″	65705K25	15.75
D 15⁄64″	7⁄16″	1⅛″	2¼″	65705K24	18.19
D 5⁄16″	15⁄32″	7⁄8″	1⅜″	65705K38	17.52

Brush Size Thick.	Wd.	Ht.	Shunt Lg.		Pkg.
Brushes with Spring (No Shunt)					
E 3⁄16″	3⁄16″	9⁄16″	1″■	65705K41	$7.88
E 3⁄16″	3⁄16″	1″	1⅛″■	65705K42	7.13
E 3⁄16″	1⁄4″	1⁄2″	1⅛″■	65705K43	6.46
E 1⁄4″	1⁄4″	3⁄4″	1⅜″■	65705K44	7.35
E 1⁄4″	5⁄16″	3⁄4″	19⁄16″■	65705K45	7.35
F 3⁄16″ Dia.		1⁄2″	1″■	65705K46	6.58
F 7⁄32″ Dia.		3⁄4″	1⅜″■	65705K47	6.46
F 1⁄4″ Dia.		1″	1⅜″■	65705K48	6.46
Brushes with Shunt and Terminal					
G 3⁄16″	3⁄16″	1⁄2″	1″	65705K49	8.12
G 1⁄4″	1⁄4″	13⁄16″	1″	65705K51	8.29
G 1⁄4″	5⁄8″	1″	2½″	65705K52	12.08
G 1⁄4″	3⁄4″	1″	2″	65705K53	12.88
Brushes without Spring and Shunt					
H 0.245″	0.368″	3⁄4″	—	65705K54	5.04
H 1⁄4″	1⁄2″	3⁄4″	—	65705K55	5.04

■ Spring length.

Brush Assortments

Assortments include brushes, springs, and shunts. Packed in a compartmented plastic box with a lid chart.

Total Brushes	No. of Sizes	Brush Styles	Brush Size Ranges Thick.	Width	Height	Shunt Lg. Range		
16	4	A	7⁄32″-1⁄4″	1⁄4″-3⁄8″	3⁄4″-13⁄16″	1¼″-1⁷⁄₁₆″	65705K61	$95.62
18	6	A, B, E	3⁄16″-1⁄4″	1⁄4″-1⁄2″	1⁄2″-13⁄16″	1¼″-1⁷⁄₁₆″	65705K62	83.19
42	18	A, B, C, D, E, F, G	0.185″-5⁄16″	3⁄16″-3⁄4″	1⁄2″-1″	1″-2½″	7299K14	175.96
160	16	A, B, D, E	3⁄16″-0.308″	3⁄16″-7⁄16″	1⁄2″-1⅛″	1¼″-2¼″	7299K13	313.79

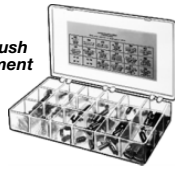

160-Brush Assortment

Quick-n-Secure DIN-Rail Mount Fuse Blocks

Blocks mount on 35 mm DIN rail and have spring wire clamps for quick, secure connections, even in high-vibration applications. Choose from standard blocks and blocks with a neon/LED indicator light that identifies a blown fuse. Made of gray nylon. Temperature range is –31° to +221° F. UL recognized. CSA certified. For screw-clamp block-style terminal fuse blocks, see page 754.

Blocks for 1/4″ Dia. × 1 1/4″ Lg. and ***5 mm Dia. × 20 mm Lg. fuses*** accept 28-12 AWG wire. ***Blocks for blade-style fuses*** accept 24-10 AWG wire.

End sections provide insulation and protect the open side of the block (one is required per assembly).

Block Wd.	Block Type	Voltage	Amps		
Blocks for 1/4″ Dia. × 1 1/4″ Lg. Fuses—*2.36″ Lg. × 2.36″ Ht.*					
10 mm (0.39″)	Standard	600 VAC	10	9553T3	$11.21
10 mm (0.39″)	Neon Indicator	110/220 VAC/VDC	10	9553T7	19.98
Blocks for 5 mm Dia. × 20 mm Lg. Fuses—*2.36″ Lg. × 2.36″ Ht.*					
8 mm (0.31″)	Standard	600 VAC	10	9553T1	9.48
8 mm (0.31″)	Neon Indicator	110/220 VAC/VDC	10	9553T6	18.45
Blocks for Blade-Style Fuses—*3.35″ Lg. × 1.32″ Ht.*					
8 mm (0.31″)	Standard	600 VDC	30	9553T8	8.97
8 mm (0.31″)	LED Indicator	24 VDC	30	9553T12	21.24

End Section for 1/4″ × 1 1/4″ and 5 mm × 20 mm Fuse Blocks	9553T2	1.00
End Section for Blade-Style Fuse Blocks	9553T9	1.06

9553T1

Dusters

Clear dust, dirt, and other dry contaminants from printed circuit boards and keyboards, as well as electronic and laboratory instruments, contacts, and connectors. These dusters are nonflammable, safe for plastics, and won't deplete the ozone. All contain compressed gas.

Upright duster contains a moisture-free inert gas (HFC-134a) and must be held upright to spray.

Any-angle duster has a moisture-free halogenated hydrocarbon gas and sprays a burst of dry air at any angle, even upside down.

High-pressure precision duster has a reusable valve with a tapered-tip nozzle for precision positioning that screws onto the CO_2 cylinder. The valve also controls the air flow, which can vary from a gentle puff to a high-pressure burst. Cylinder is steel, disposable, and recyclable.

Net Wt.	Air Pressure	Approx. No. of 1 sec. Bursts	Dusters	Each ♠	Replacement CO_2 Cylinders	Each ♠
Upright						
10 oz.	86 psi	—	7437K34	$10.97	—	—
Any Angle						
8 oz.	80 psi	—	7437K35	13.65	—	—
High-Pressure Precision						
2.6 oz.	325 psi	725	8431K13	63.53	8431K22	$15.44

♠ Prices are 15% less if purchased in full case quantities. Full case quantity is 12 for dusters and 24 for replacement CO_2 cylinders.

Freeze Spray

Chill individual electronic components to –60° F to isolate problems on printed circuit boards. Spray is nonflammable and won't deplete the ozone layer. Full case quantity is 12.

Standard spray is safe for plastics.

Antistatic spray is ideal for static-sensitive components and safe for plastics.

	Net Wt.	Dielectric Strength, volts		Each Partial Case	Each Full Case
Standard	10 oz.	26,000	7437K43	$12.37	$10.61
Antistatic	10 oz.	26,000	7437K61	15.73	14.11

Antistatic Spray

Neutralize static electricity in high static areas. Sprays are safe for plastics and leave a clear coating that does not corrode or stain. They won't deplete the ozone layer.

Flammable aerosol spray dries instantly. Temperature range is 0° to 181° F.

Nonflammable nonaerosol spray dries quickly.

	Net Wt.		1-11	12-Up
Flammable Aerosol	11.5 oz.	6038T11	$12.97	$11.04
Nonflammable Nonaerosol	16 oz.	6038T12	20.98	17.92

Electrical Cleaners/Degreasers

Excellent for general purpose electronics and electrical cleaning, these cleaners/degreasers remove dirt, dust, oil, and grease from printed circuit boards, transformers, and office equipment. All are quick drying.

NSF registered are K2 rated for use in food processing environments. *Extra strength* has a more powerful cleaning formula.

Aerosol spray does not contain harmful HCFCs that deplete the ozone layer. These products are compliant under all state VOC rules in effect on October 1, 2009.

	Net Wt.	Safe on Plastics	Dielectric Strength, volts		Each ♦
Flammable Aerosol Spray					
Standard	10 oz.	Yes	24,000	7437K63	$12.11
Nonflammable Aerosol Spray					
Standard	12 oz.	Test	15,000	7437K77	15.55
Standard	12 oz.	Yes	17,000	7437K52	36.45
NSF Registered	17 oz.	Test	37,000	7437K83	13.43
Extra Strength	12 oz.	Test	15,000	7437K84	35.55
Nonflammable Nonaerosol Spray					
NSF Registered	14 oz.	Test	37,000	4214T22	14.97
NSF Registered	1 gallon▲	Test	37,000	4214T23♣	73.09

♦ Prices are 15% less if purchased in full case quantities of 12.
▲ Furnished in a container.
♣ Price is 15% less if purchased in quantities of four.

Electrical Contact Cleaners

Purge oil and grease from electrical contacts in relays, contactors, circuit breakers, fuse blocks, and control panels. These cleaners are quick drying.

NSF registered are K2 rated for use in food processing environments. *Extra strength* has a more powerful cleaning formula.

Aerosol spray can also purge carbon soils. Does not contain harmful HCFCs that deplete the ozone layer. 7437K15 (cleaner with lubricant) leaves a microscopic film that prevents corrosion.

Nonaerosol spray is not pressurized and does not have any special disposal requirements.

	Net Wt.	Safe on Plastics	Dielectric Strength, volts		Each ♦
Flammable Aerosol Spray					
Standard	10 oz.	Yes	44,000	7437K48	$11.43
Extra Strength	13.5 oz.	Yes	62,000	7437K49	11.81
Nonflammable Aerosol Spray					
Standard	4 oz.	Test	28,000	7437K51	13.33
Standard	12 oz.	Yes	31,000	7437K57	36.45
NSF Registered	12 oz.	Test	19,000	7437K81	41.11
Extra Strength w/Lubricant	16 oz.	Test	36,700	7437K15	13.46
Flammable Nonaerosol Spray					
NSF Registered	14 oz.	Test	—	4214T14	12.22

♦ Prices are 15% less if purchased in full case quantities of 12.

Electrical Contact Cleaners and Sealants

Designed to be used together, deoxidizers/improvers and sealants remove oxidation and corrosion from electrical connections and protect against future corrosion. Use on batteries, switches, relays, probes, plugs, sockets, and all contacts and connectors to improve the electrical conductivity of your connection. All are ozone safe and safe for plastics.

Deoxidizers/improvers provide long-lasting protection for all metal surfaces.

Sealants seal and protect electrical contacts and connections on metal surfaces (use after a deoxidizer/improver). Ideal for high humidity, corrosive, and salty environments.

Sealants for gold surfaces improve conductivity, clean electrical connections, and provide lasting protection. Specially formulated for gold surfaces, they penetrate and molecularly bond to base metals.

Net Wt.	Dispenser	Flammable		
Deoxidizers/Improvers				
5 oz.	Aerosol	Yes	8381T11	$14.88
5.75 oz.	Aerosol	No	8381T12	22.29
0.85 oz.	Needle	No	8381T13	28.81
Sealants				
5 oz.	Aerosol	Yes	8381T14	15.48
0.85 oz.	Needle	No	8381T16	31.69
Sealants for Gold Surfaces				
5 oz.	Aerosol	Yes	8381T17	24.00
5.75 oz.	Aerosol	No	8381T18	26.75
0.85 oz.	Needle	No	8381T19	47.38

Electrical Contact Cleaner and Sealant Kit — Includes a total of six containers, one 0.5 oz. mini spray can and one 0.07 oz. squeeze tube of each style: deoxidizer/improver, sealant, and sealant for gold surfaces. Furnished with cloths, brushes, and swabs for application.

8381T21 ..... $34.56

Electrical Connection Corrosion Inhibitors

Prevent corrosion and seizing while reducing the electrical resistance of your connections. These copper compounds seal out moisture, corrosive fluids, and gases. They simultaneously protect, lubricate, and enhance the conductivity of your cable strands, threaded connections, switches, lugs, and other connectors. They're easy to apply with the included brush, and will not run, drip, or harden. Temperature range is –50° to +250° F. UL listed.

1½-oz. Container	2953K11	$6.68
8-oz. Container	2953K12	34.46
16-oz. Container	2953K13	49.93

Motor Cleaners

Clean dirt, grease, and grime from electric motors and generators. Cleaners are nonconductive, nonflammable, and won't deplete the ozone layer.

NSF registered are K2 rated for use in food processing environments. Full case quantity is 12.

	Net Wt.	Dielectric Strength, volts		Each Partial Case	Each Full Case
Standard	20 oz.	30,000	3422K15	$8.04	$6.91
NSF Registered	19 oz.	32,000	3422K17	9.93	8.23

Pneumatics & Hydraulics

Air Compressors	956
Air Flow & Pressure Boosters	958
ASME-Code Pressure Tanks	959
Moisture Separators & Drain Valves	963
Compressed Air Dryers	965
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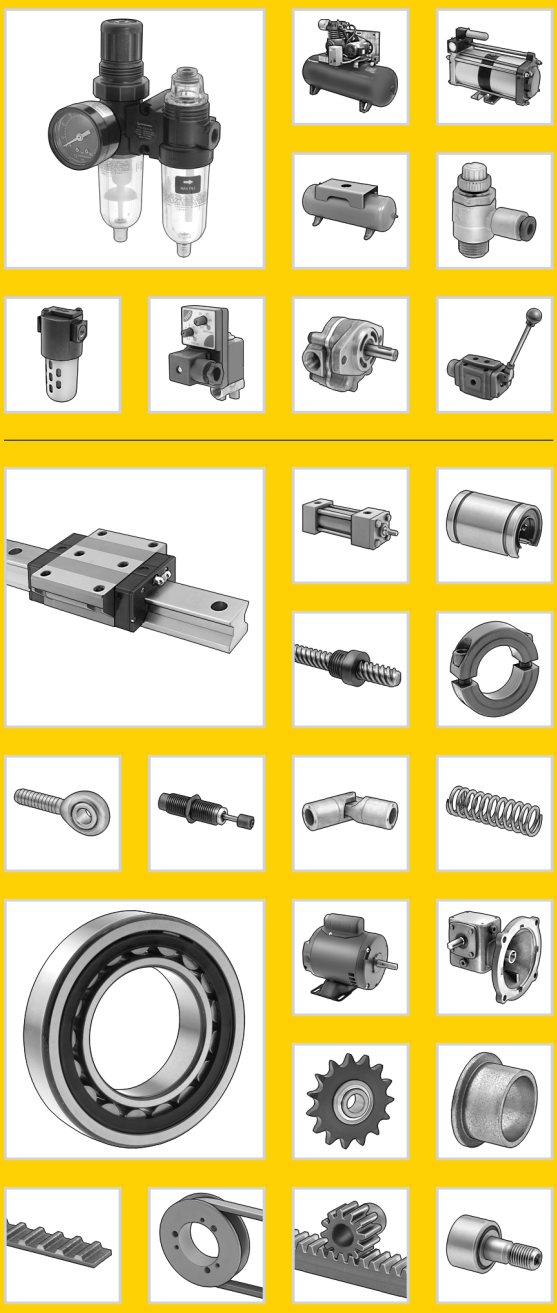

About Air Compressors

Air-Flow and Pressure Requirements— It's important to consider your compressor's air flow in cubic feet per minute (cfm). To determine the air-flow requirements, total the cfm requirements of all the air-powered tools your compressor will be operating simultaneously. Your compressor should also exceed the pressure (psi) requirement of the highest-pressure-rated tool to which it will be supplying power. Add 20%-30% to allow for system variables and future expansion.

Premium Continuous-Duty Air Compressors

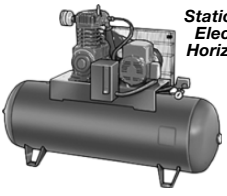

Stationary, Electric, Horizontal

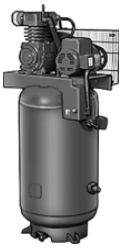

Stationary, Electric, Vertical

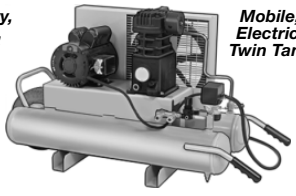

Mobile, Electric, Twin Tank

Built to withstand your most demanding environments, our top-of-the-line compressors have a cast iron crank case that's more durable than the aluminum crank case found on other models. All are rated for continuous operation and have a larger flywheel for exceptional heat dissipation and wear resistance. They work with 30-wt. nondetergent oil and are belt driven with splash lubrication.

Compressors have a manual tank drain. Outlet port is NPT female. UL listed, unless noted.

Stationary Air Compressors

All have a two-stage reciprocating piston design that's essential for systems requiring pressures of 100 psi and greater. They also have a single tank and high-efficiency intercoolers for heat dissipation. A start-stop switch turns motor on at 145 psi (165 psi for gas-engine model) and off at 175 psi. All must be hardwired. Compressors have an ASME-code tank.

Models with electric motor have a magnetic starter that's wired and mounted to the compressor for overload protection. *Single-phase electric motors* operate on 230 VAC, 60 Hz. *Three-phase electric motors* operate on 60 Hz with your choice of voltage. **To Order:** Please specify voltage: 200, 230, or 460 VAC. ***Model with gas engine*** has an electric-start Kohler engine.

Air Flow, cfm @ Max. psi	Max. psi	Tank Cap., gal.	Outlet Size, NPT	Overall Size, Lg.×Wd.×Ht.	dB Rating	hp	With Single-Phase Motor: Full Load Amps @ 230V	Each	With Three-Phase Motor: Full Load Amps @ 200V	@ 230V	@ 460V	Each
Electric Motor—Horizontal												
17.2	175	80	¾″	70″×23″×47″	74	5	28	**4364K1**	$2,149.67	17.5	15.2	7.5	**4364K2**	$2,043.46
22.6	175	80	¾″	70″×23″×47″	80	7½	40	**4364K3**	2,827.83	25.3	22	11	**4364K4**	2,285.65
35	175	120	1″	78″×28″×55″	86	10	50	**4364K5**	3,827.56	32.2	28	14	**4364K7**	3,267.06
Electric Motor—Vertical												
17.2	175	80	¾″	37″×24″×74″	74	5	28	**41905K1**	2,130.76	17.5	15.2	7.5	**41905K2**	1,896.15
22.6	175	80	¾″	37″×24″×74″	80	7½	40	**41905K3**	2,571.79	25.8	22	11	**41905K4**	2,285.65
Gas Engine—Horizontal												
23.4	175	30	½″	42″×21″×40″	—	14	—	—	—	—	—	—	**41865K1**	2,567.43

Mobile Air Compressors

With one semi-pneumatic rubber wheel, you can move these compressors where they're needed. All have a one-stage reciprocating piston design. A start-stop switch turns motor on at 90 psi and off at 135 psi.

Models with electric motor have a single-phase motor and a 6-ft. cord with three-prong plug. ***Model with gas engine*** has a pull-start Honda engine.

Air Flow, cfm @ 135 psi	Max. psi	Motor: hp	Motor: Voltage @ 60 Hz	Motor: Full Load Amps	Tank: Cap., gal.	Tank: Style	Outlet Size, NPT	Overall Size, Lg.×Wd.×Ht.	Wt., lbs.	dB Rating	Each
Electric Motor											
4.9	135	2	115 VAC	15	8	Twin	¼″	43″×18″×25″	175	73.9	**4309K6**	$988.63
10.3	135	3	230 VAC	14.7	8	Twin	¼″	43″×18″×25″	175	78	**4309K7**	1,155.67
Gas Engine											
10.7	135	5½	—	—	8	Twin	¼″	43″×18″×26″	175	—	**4309K8**♦	1,209.73

♦ Not UL listed.

Continuous-Duty Oilless Air Compressors

A

B

C

D

Dispensing 100% oil-free air, these compressors allow clean continuous operation with less maintenance. They're great for oilless air-powered tools and have a handle, which makes it easy to take them where they're needed. Outlet port is NPT female.

Compact Tankless— No tank means this compressor is more compact. It has a single-phase, 60 Hz motor with thermal overload protection. Compressor also has a cast iron body, 50-micron air inlet filter, and a safety relief valve. Must be hardwired.

Pancake and ***Hot Dog Tanks—*** With a tank to store compressed air, these compressors don't have to run all the time and generally produce higher flow rates than tankless models. All have a single-phase, 60 Hz motor; start-stop switch, which turns motor on at 120 psi (unless noted) and off at the maximum psi (see listing below); a steel tank; a manual tank drain; and a 6-ft. cord with three-prong plug.

Air Flow, cfm @ Max. psi	Max. psi	Motor: hp	Motor: Voltage @ 60 Hz.	Motor: Full Load Amps	Tank Cap., gal.	Outlet Size, NPT	Overall Size, Lg.×Wd.×Ht.	Wt., lbs.	dB Rating	Each
(A) Compact Tankless										
2.4	100	¾	115 VAC/230 VAC	10.6/5.3	—	¼″	15.4″×9.9″×6.5″	44	77	**8280K14**	$902.48
(B) Pancake Tank										
1.7	150	4/5	120 VAC	10	6	¼″	18″×18″×18.5″	34	82	**9965K62**	189.75
(C) Single Hot Dog Tank										
3	200	1⅘	120 VAC	15	4.5	¼″	33.5″×23″×15″	83	78	**9965K61**■	386.81
(D) Twin Hot Dog Tank										
3	150	1⅘	120 VAC	14	4	¼″	22″×21″×20″	72	87	**9965K63**	367.57

■ Motor turns on at 160 psi.

For information about air compressors, see page 956.

Compressed Air Regulating Manifold

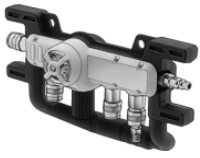

Simultaneously operate up to four tools at two different psi settings with this one manifold and your air compressor. Great for running various types of tools as well as the same tools in different areas of a single job site. Made of zinc and impact-resistant plastic.

Manifold has a 3/8″ inlet fitting with four outlets that accept 1/4″ industrial and ARO quick-disconnect couplings, see page 298. Two outlets operate at the input psi, and the other two outlets are adjustable from 0-150 psi. Furnished with a relieving-style regulator and a pressure gauge, which has an accuracy of ±3%.

Pipe Size Inlet	Pipe Size Outlet	Max. scfm @ 100 psi	Regulating Range, psi	Max. Pressure	Max. Temp.	Overall Size, Lg. × Wd. × Ht.		Each
3/8″	1/4″	20	0-150	200 psi	120° F	12.5″ × 7″ × 4.5″	1527T67	$68.74

Ultra-Miniature Low-Flow Air Compressors/Vacuum Generators

You'll get an air compressor and vacuum generator combined in one tiny device. All dispense 100% oil-free air for clean continuous operation with less maintenance. They're powered by a motor that operates on 12 VDC (except for model 4404K12, which operates on 3.5-7 VDC), have a very low flow rate, and need no lubrication. All must be hardwired.

Air Flow, cfm @ Max. psi	Max. psi	Max. Vacuum	Full Load Amps	For Tube ID	Overall Size, Lg. × Wd. × Ht.	dB Rating		Each
0.004	2	10.6″ Hg	37 mA	0.12″	1.59″ × 0.67″ × 1″	45	4404K12	$312.08
0.02	2.9	11.8″ Hg	50 mA	0.16″	1.63″ × 0.89″ × 1.31″	45	4404K14	228.38
0.07	10.15	22″ Hg	440 mA	0.16″	3.06″ × 0.96″ × 2.15″	41	4404K25	288.29
0.16	12	25.1″ Hg	2,300 mA	0.13″	4.85″ × 1.85″ × 3.07″	52	4404K29	431.50

High-Flow Low-Pressure Air Blowers

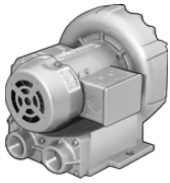

Single-Stage Blower

Also known as regenerative blowers, vortex blowers, side-channel blowers, and ring compressors, these blowers deliver high air flow rates at low pressure. They can operate as either a blower or vacuum pump. All have a high-speed rotating impeller that regenerates or compresses air inflow with each revolution. Great for drying, aeration, air-powered conveying, and spraying.

Blowers dispense 100% oil-free air for clean operation with less maintenance. An internal (unless noted) muffler is included for reduced noise. Blowers have an aluminum housing (except for model 9960K66, which is cast iron). Rated for continuous operation, they are powered by a motor that operates on 60 Hz. They must be hardwired.

Note: You must use clean, filtered air (free of debris) with these blowers. We strongly recommend an air intake filter (see pages 371-372) and a relief valve (see below and pages 486-489) to protect against damage from overheating.

Single-Stage Blowers—*Standard models* have NPT female inlet and outlet ports. Motors are UL recognized, CSA certified, and CE approved.

Low-noise models have tighter internal tolerances and internal impellers designed for higher flow rates and quieter operation. Inlet and outlet ports are NPT female. Motors are UL recognized, CSA certified, and CE approved.

Two-Stage Blowers—These blowers have a high-speed rotating impeller that compresses the air twice (once on each side of the impeller) for high air flow at higher pressures than single-stage blowers. Inlet and outlet ports are NPT female. Motors are CE approved and C-UL recognized.

Air Flow, cfm @ 0 psi	Max. Pressure psi	Max. Pressure in. of H_2O	Max. Vacuum in. of Hg	Max. Vacuum in. of H_2O	hp	Motor Full Load Amps	Inlet/Outlet Size, NPT	Overall Size, Lg. × Wd. × Ht.	dB Rating		Each
Standard Single-Stage Blowers											
115/208-230 VAC, Single-Phase Motor											
27	1.0	28	1.9	26	1/8	2.0/1.1-1.0	1″	8.9″ × 7.8″ × 8.6″	67	9960K51	$437.13
42	1.4	39	2.6	35	1/3	3.8/2.0-1.9	1″	9.9″ × 9″ × 9.3″	66	9960K52	570.79
52	2.1	55	3.7	50	1/2	5.6/3.0-2.8	1 1/4″	11″ × 9.8″ × 10.2″	70	9960K54	610.82
92	1.9	52	3.5	48	1	9.8/5.2-4.9	1 1/2″	12.9″ × 11.3″ × 11.8″	73	9960K57	718.10
127	2.3	65	4.4	60	1 1/2	20.7/11.2-10.4	1 1/2″	15.3″ × 13.3″ × 13.7″	75	9960K58	959.45
160	2.3	65	4.4	60	2 1/2	23.6/12.9-11.8	1 1/2″	16.5″ × 13.6″ × 13.8″	77	9960K61	1,104.45
208-230/460 VAC, Three-Phase Motor											
42	1.4	39	2.6	35	1/3	1.2-1.2/6.0	1″	9.9″ × 9.4″ × 9.3″	66	9960K53	621.44
53	1.5	43	3	40	1/2	2.0-2.0/1.0	1 1/4″	11″ × 9.8″ × 10.2″	70	9960K45	590.03
92	1.9	52	3.5	48	1	3.4-3.2/1.6	1 1/2″	12.9″ × 11.3″ × 11.8″	73	9960K56	736.54
127	2.3	65	4.4	60	1 1/2	5.1-4.9/2.5	1 1/2″	11.4″ × 13.3″ × 13.7″	75	9960K59	939.79
160	2.3	65	4.4	60	2 1/2	6.9-6.9/3.5	1 1/2″	15.3″ × 13.6″ × 13.8″	77	9960K62	944.40
207	3.8	105	6.5	88	5	13.0-12.0/6.0	2″	17.4″ × 15.2″ × 15.4″	79	9960K63	1,514.55
265	4.0	110	6.6	90	5 1/2	19.5-18.2/9.1	2″	20″ × 16.8″ × 18.2″	83	9960K64	1,824.72
420	4.5	125	8	110	10	35.0-29.5/15.0	2 1/2″	22.6″ × 18″ × 20.1″	84	9960K65	2,422.88
795	3.8	105	7	95	18	52.0/26.0	4″	28.5″ × 18″ × 20.2″	80	9960K66●	4,035.90
Low-Noise Single-Stage Blowers											
115/230 VAC, Single-Phase Motor											
57	2.0	56	3.8	52	1/2	6.0/3.0	1 1/4″	10.1″ × 11.2″ × 11.9″	56	1010K21	748.28
103	2.7	76	5.3	72	1 1/2	14.0/7.0	1 1/2″	11.5″ × 11.2″ × 11.9″	64	1010K22	862.07
148	2.6	72	5.3	72	2 1/4	24.0/12.0	2″	13.9″ × 13.3″ × 13.2″	70	1010K23	1,305.00
200-275/380-480 VAC, Three-Phase Motor											
57	2.3	64	4.4	60	1/2	2.6/1.5	1 1/4″	10.1″ × 11.2″ × 11.9″	56	1010K24	717.24
103	2.3	64	4.7	64	1	4.0/2.3	1 1/2″	11.5″ × 11.2″ × 11.9″	64	1010K25	813.79
148	3.0	84	6.5	88	2 1/2	7.6/4.4	2″	13.9″ × 13.3″ × 13.2″	70	1010K26	1,160.34
148	4.2	116	7.6	104	3 1/4	10.3/6.0	2″	13.9″ × 13.3″ × 13.2″	70	1010K27	1,453.45
220	3.3	92	7.4	100	4 1/2	12.6/7.3	2″	17″ × 15.1″ × 15″	73	1010K28	1,665.52
Two-Stage Blowers											
115/208-230 VAC, Single-Phase Motor											
35	3.5	98	7.2	98	3/4	9.8/4.9	3/4″	11.5″ × 9.9″ × 11.4″	64	4393K31	1,128.68
48	5.1	143	7.7	105	1 1/2	13.6/7.3	1 1/4″	14.7″ × 11.5″ × 12.2″	68	4393K43	1,363.20
70	5.0	140	10.3	140	2	24.0/12.0	1 1/2″	17.3″ × 12.6″ × 13.7″	70	4393K45	1,630.60
208-230/460 VAC, Three-Phase Motor											
35	3.5	98	7.2	98	3/4	2.7/1.2	3/4″	11.5″ × 9.9″ × 11.4″	64	4393K32	1,016.16
48	5.1	143	7.7	105	1 1/2	5.0/2.3	1 1/4″	14.7″ × 11.5″ × 12.2″	68	4393K44	1,306.16
70	5.0	140	10.3	140	2	6.3/2.9	1 1/2″	17.3″ × 12.6″ × 13.7″	70	4393K46	1,425.60
98	5.4	151	11.1	151	3	9.0/4.1	1 1/2″	18.1″ × 13.8″ × 14.6″	75	4393K37	1,735.20

2″ NPT Relief Valve for Two-Stage Blowers ..... 4393K41 Each $178.67

● 230/460 VAC, three-phase motor. Muffler is external.

Air Flow Boosters

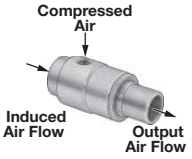

Operation Diagram

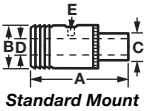

Standard Mount

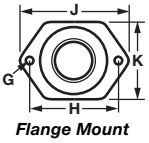

Flange Mount

Anodized Aluminum Booster, Standard Mount

Zinc Alloy Ultra-Flow Booster, Flange Mount

Precision Adjustment Aluminum Booster with Adjustable Output, Standard Mount

Convert your low-flow, high-pressure shop air into high-flow, lower-pressure air. When your shop air enters the booster inlet connection, it induces a large volume of air that exits the booster through the outlet connection at a high velocity (see operation diagram at left). All boosters work with clean filtered air and are maintenance free (have no moving parts or electrical connections). Great for drying, conveying, ventilating, aerating, removing smoke and fumes, parts cleaning, and removing chips. Boost ratio is constant. Ports are NPT male, unless noted.

Boosters— All have smooth (not barbed) inlet and outlet connections. Made of anodized aluminum, they have good chemical compatibility.

Ultra-Flow Boosters— These are the highest-flow boosters we offer. They are lightweight, corrosion resistant, and spark resistant. All have smooth (not barbed) inlet and outlet connections.

Flange-mount models have a built-in flange on the outlet air connection for easy mounting.

Boosters with Adjustable Output— You can adjust the air flow output on these boosters.

Precision Adjustment Aluminum—Control the air output with an adjustment ring, which has numbered settings. Inlet connection is smooth (not barbed). Outlet connection is barbed. All boosters are lightweight with good corrosion resistance.

Type 303 Stainless Steel—Adjust the air flow output by rotating the outside barrel of these boosters. Inlet and outlet connections are smooth (not barbed). All boosters have excellent corrosion resistance.

Aluminum—To change the air flow output, just unscrew the threaded locknut and rotate the output tube. Inlet connection is barbed. Outlet connection is smooth (not barbed). All boosters are lightweight with good corrosion resistance.

Flow Boost Ratio	Max. Input Air Flow, cfm @ 80 psi	Max. Output Air Flow, cfm	(A)	(B)	(C)	(D)	Compressed Air Supply Port Size (E)	(G)	(H)	(J)	(K)		Each
Boosters													
Anodized Aluminum—*Standard Mount*													
4:1	6.6	26.4	2.12″	1.33″	0.75″	0.4″	1/8″ NPT	—	—	—	—	**5205K27** ♦	$51.33
4:1	6.6	26.4	2.48″	1.33″	0.75″	0.4″	1/8″ NPT	—	—	—	—	**5205K28** ♦	55.47
4:1	14.7	58.8	2.62″	1.33″	0.5″	0.4″	1/8″ NPT	—	—	—	—	**5205K29** ♦	55.47
Ultra-Flow Boosters													
Aluminum—*Standard Mount*													
17:1	188	2,820	16.73″	7.08″	7.79″	4.92″	3/4″ NPT	—	—	—	—	**5571K22**	653.03
Zinc Alloy—*Flange Mount*													
10:1	4.9	31.85	2.18″	0.98″	0.73″	0.39″	1/8″ NPT	0.2″	1.8″	2.3″	1.3″	**5571K9**	61.14
15:1	12.1	169.4	2.75″	1.5″	1.22″	0.78″	1/4″ NPT	0.27″	2.4″	3″	1.9″	**5571K11**	97.78
16:1	19	285	3.7″	2.95″	2″	1.57″	3/8″ NPT	0.27″	3.6″	4.1″	3.2″	**5571K12**	140.63
17:1	37.4	540	7″	4.92″	4″	2.95″	1/2″ NPT	0.53″	6.9″	8.5″	5.9″	**5571K13**	336.30
Boosters with Adjustable Output													
Precision Adjustment Aluminum—*Standard Mount*													
6:1	5-12	32-62	2.56″	1″	0.75″	0.27″	1/8″ NPT	—	—	—	—	**19075K93**	50.27
8:1	4-11	35-77	2.56″	1.13″	0.75″	0.44″	1/8″ NPT	—	—	—	—	**19075K94**	62.46
12:1	12-24	150-237	2.62″	1.5″	1.13″	0.75″	1/8″ NPT	—	—	—	—	**19075K95**	72.92
15:1	11-26	175-370	3.25″	2″	1.5″	1″	1/4″ NPT	—	—	—	—	**19075K86**	110.00
20:1	16-27	325-500	3.25″	2.5″	2″	1.5″	1/4″ NPT	—	—	—	—	**19075K87**	125.00
22:1	16-38	350-770	4.62″	3″	2.5″	1.9″	1/4″ NPT	—	—	—	—	**19075K88**	223.93
25:1	25-48	645-1,120	5.25″	4″	3.5″	2.9″	3/8″ NPT	—	—	—	—	**19075K89**	304.32
Type 303 Stainless Steel—*Standard Mount*													
5:1	0-8	0-40	2.5″	0.98″	0.79″	0.39″	1/8″ NPT	—	—	—	—	**19195K33**	272.81
12:1	0-15	0-180	2.93″	1.5″	1.18″	0.79″	1/4″ NPT	—	—	—	—	**19195K35** ♦	298.31
19:1	0-21	0-399	3.86″	2.5″	1.97″	1.57″	3/8″ NPT	—	—	—	—	**19195K37** ♦	396.90
Aluminum—*Standard Mount with British Standard Pipe Parallel (BSPP) Ports*													
6:1	0-3	0-18	3.75″	1″	0.53″	0.25″	1/8″ BSPP	—	—	—	—	**4469K11**	102.96
8:1	0-9	0-75	4.5″	1.5″	1″	0.5″	1/4″ BSPP	—	—	—	—	**4469K13**	119.90
12:1	0-9	0-110	4.97″	2″	1.25″	0.75″	1/4″ BSPP	—	—	—	—	**4469K15**	137.70
16:1	0-9	0-145	4.97″	2″	1.5″	1″	1/4″ BSPP	—	—	—	—	**4469K17**	150.00

♦ Port size is NPT female.

Air Pressure Boosters

Compact

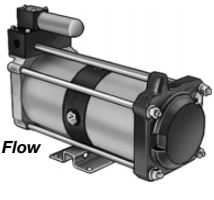
High Flow

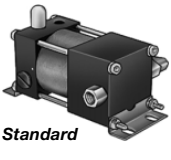
Standard

Boost your shop air pressure by trading air flow for higher pressures (as your air flow rate decreases, your pressure increases). These boosters are driven by your compressed air source, so they do not require electricity. When connected, pressure at the outlet will be increased by the boost ratio of the booster.

All of these boosters have aluminum and stainless steel construction. They offer good corrosion resistance and include an exhaust muffler. Ports are NPT female.

Compact— These boosters allow you to regulate output pressure by turning a knob. To operate, connect your compressed air to the inlet port. Furnished with two gauges.

Standard— Boosters dispense 100% oil-free air for clean operation with less maintenance. To operate, connect your compressed air to the inlet port.

High Flow— Boosters are rated for 50% duty cycle. They dispense 100% oil-free air for clean operation with less maintenance. To operate, connect your compressed air to the boosters' three inlets: the air inlet port (air that will be boosted), the drive air port (to operate booster), and the pilot air port (to control the internal valve).

Boost Ratio	*Air Pressure* Input Range, psi	*Air Pressure* Max. Output, psi	Max. Output Flow, cfm @ 90 psi Input	Air Flow Output to Input Ratio	*Inlet Port Sizes* Air	*Inlet Port Sizes* Drive	*Inlet Port Sizes* Pilot	Air Outlet Port Size	O'all Size, Lg. × Wd. × Ht.		Each
Compact											
1:2	14.5-145	290	1.12	1:2	1/4″	—	—	1/4″	6″ × 2.8″ × 4.3″	**6828K75**	$366.78
1:4	14.5-145	290	0.35	1:4	1/4″	—	—	1/4″	6″ × 2.8″ × 4.3″	**6828K76**	388.03
Standard											
1.7:1	20-150	300	5.5	1:2	1/4″	—	—	1/4″	7.5″ × 5.3″ × 7.5″	**3680K41**	667.50
3.8:1	20-150	600	4	1:4	1/4″	—	—	1/4″	7.5″ × 5.3″ × 7.5″	**3680K44**	667.50
High Flow											
2:1	25-150	300	56	2:1	3/8″	1/2″	1/8″	3/8″	17″ × 8″ × 11″	**9887K11**	2,477.72
5:1	30-870	870	10	5:1	3/8″	1/2″	1/8″	3/8″	24″ × 9″ × 9″	**9887K14**	2,448.86

ASME-Code Horizontal Pressure Tanks

Style 1 without Top Plate

Style 1 with Top Plate

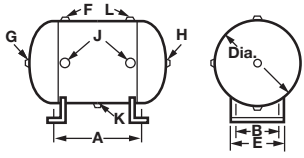

Style 1 Dimensions

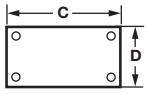

Style 1 Top Plate Dimensions

Style 2 without Top Plate

Style 2 with Top Plate

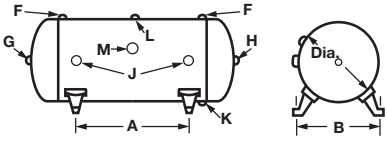

Style 2 Dimensions

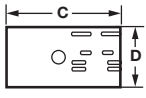

Style 2 Top Plate Dimensions

These rugged tanks meet the American Society of Mechanical Engineers' (ASME) pressure vessel code. They have mounting feet; pressure-rated plugs; and a welded plate that lists ASME approval and maximum pressure, which is 200 psi. Tanks are rated for 29.9″ Hg vacuum, but are not ASME rated for vacuum. They have a temperature range of –20° to +650° F, unless noted. All openings have NPT female threads.

Models with top plate have a plate for mounting other air-system components your setup may require.

Steel— Tanks are made of precision-fabricated steel with steel plugs. Gray powder-coated finish.

Epoxy-Lined Steel— An epoxy lining prevents the internal surface of these tanks from rusting. Use them in areas where air-line contamination is a concern. Plugs are steel. Black powder-coated finish.

Stainless Steel— Temperature range is –20° to +200° F. *Type 304 stainless steel tanks* offer good corrosion resistance. Plugs are Type 304 stainless steel. Gray primer-coated finish. *Type 316 stainless steel tanks* offer excellent corrosion resistance. Plugs are Type 316 stainless steel.

ⓘ For additional information about tanks with top plate, such as top plate mounting dimensions and NEMA motor compatibility, go to mcmaster.com and search for **4377KAC**.

Style 1

Cap., gal.	Tank Dia. x Lg.	O'all Ht.	(A)	(B)	(E)	NPT Female Openings (F)	(G)	(H)	(J)	(K)	(L)	Mounting Hole Size	Steel	Each	Epoxy-Lined Steel	Each	Type 316 Stainless Steel	Each
Without Top Plate																		
1	6″×11″	8″	7″	3½″	5″	¾″	¾″	1″	¾″	½″	½″	7/16″	9888K9	$231.74	9908K19●	$417.04	9934K39	$1,356.00
2	8″×11″	10″	7″	4½″	7″	¾″	¾″	1″	¾″	½″	½″	7/16″	—	—	9908K11●	420.69	9934K31	1,286.00
3	8″×16″	10″	10″	4½″	7″	¾″	¾″	1″	¾″	½″	½″	7/16″	9888K12	256.97	9908K21●	441.47	9934K41	1,320.00
5	10″×16″	12″	10″	6½″	8″	¾″	¾″	1″	¾″	½″	½″	7/16″	9888K13	280.96	9908K12●	550.30	9934K32	1,624.00
7	12″×17″	14″	10″	6½″	8″	¾″	¾″	1″	¾″	½″	½″	7/16″	9888K15	294.70	9908K13●	508.14	9934K33	1,726.00
10	12″×23″	14″	10″	6½″	8″	¾″	¾″	1″	¾″	½″	½″	7/16″	9888K17	295.50	9908K14●	524.54	9934K34	1,872.00
13	14″×23″	16″	15″	8½″	10″	¾″	¾″	1″	1½″	½″	½″	7/16″	9888K19	313.00	9908K15●♣	579.21	9934K35	1,921.15
15	14″×26″	16″	15″	8½″	10″	¾″	¾″	1″	1½″	½″	½″	7/16″	9888K14	317.75	9908K22●	532.40	9934K42	2,319.23
19	16″×25″	18″	16″	10½″	12″	¾″	¾″	2″	1½″	½″	½″	9/16″	9888K21	341.02	9908K16♥	580.71	9934K36	2,315.38
24	16″×31″	18″	16″	10½″	12″	¾″	¾″	2″	1½″	½″	½″	9/16″	9888K23	363.88	9908K17	660.64	9934K37	2,455.36
30	18″×31″	20″	16″	10½″	12″	¾″	¾″	2″	1½″	½″	½″	9/16″	9888K25	445.48	9908K18	754.65	9934K38	3,110.71

● (H) is 1½″. ♣ (J) is ¾″. ♥ (E) is 11″.

Cap., gal.	Tank Dia. x Lg.	O'all Ht.	(A)	(B)	(C)	(D)	NPT Female Openings (G)	(H)	(J)	(K)	Mounting Hole Size	Steel	Each	Epoxy-Lined Steel	Each	Type 304 Stainless Steel	Each
With Top Plate																	
1	6″×11″	9″	7″	3½″	6″	4″	¾″	1″	¾″	½″	7/16″	9888K41	$255.71	9908K31	$304.76	9934K11	$1,246.15
2	8″×11″	11″	7″	4½″	6″	4″	¾″	1″	¾″	½″	7/16″	9888K42	262.02	9908K32	319.33	9934K12	1,317.69
3	8″×16″	11″	10″	4½″	6″	4″	¾″	1″	¾″	½″	7/16″	9888K43	245.83	9908K33	335.50	9934K13	1,363.85
5	10″×16″	13″	10″	6½″	6″	4″	¾″	1″	¾″	½″	7/16″	9888K44	260.29	9908K34	354.98	9934K14	1,537.44
7	12″×17″	15″	10″	6½″	6″	4″	¾″	1″	¾″	½″	7/16″	9888K45	282.54	9908K35	384.66	9934K15	1,712.31
10	12″×23″	15″	10″	6½″	12″	8″	¾″	1″	¾″	½″	7/16″	9888K46	310.87	9908K36	424.56	9934K16	1,770.00
13	14″×23″	17″	15″	8½″	12″	8″	¾″	1″	1½″	½″	7/16″	9888K47	373.23	9908K37	471.67	9934K17	2,086.15
15	14″×26″	17″	15″	8½″	12″	8″	¾″	1″	1½″	½″	7/16″	9888K48	348.00	9908K38	480.30	9934K18	2,178.46
19	16″×25″	19″	16″	10½″	12″	8″	¾″	2″	1½″	½″	9/16″	9888K49	396.96	9908K39	544.44	9934K19	2,439.23
24	16″×31″	19″	16″	10½″	16″	10″	¾″	2″	1½″	½″	9/16″	9888K51	447.00	9908K41	603.58	9934K21	2,531.54
30	18″×31″	21″	16″	10½″	16″	10″	¾″	2″	1½″	½″	9/16″	9888K52	552.96	9908K42	747.60	9934K22	2,723.08

Style 2

Cap., gal.	Tank Dia. x Lg.	O'all Ht.	(A)	(B)	(C)	(D)	NPT Female Openings (F)	(G)	(H)	(J)	(K)	(L)	(M)	Mtg. Hole Size	Steel	Each	Epoxy-Lined Steel	Each	Type 316 Stainless Steel	Each
Without Top Plate																				
10	10″×30″	12″	18″	9¼″	—	—	½″	¾″	¾″	—	¼″	½″	—	7/16″	4377K48	$245.38	9426K18●♣	$464.98	1554K1	$1,293.33
15	12″×33″	14″	20″	11″	—	—	½″	¾″	¾″	—	¼″	½″	—	7/16″	4377K49	284.35	9426K19●	502.71	1554K2	1,917.91
20	14″×33″	17″	18″	14″	—	—	½″	¾″	¾″	1½″	¼″	½″	—	9/16″	4377K51	301.85	9426K21●	571.80	1554K3	2,197.33
30	16″×38″	19″	22″	14¼″	—	—	½″	½″	¾″	1½″	¼″	¾″	¼″	9/16″	4377K52	339.47	9426K22●	618.43	1554K4	3,585.71
60	20″×48″	23″	26″	18½″	—	—	¾″	½″	1″	2″	½″	1″	¼″	9/16″	4377K53	539.45	9426K23●	882.83	1554K5▲★	4,218.57
With Top Plate																				
10	10″×30″	13″	18″	9¼″	16″	9″	½″	¾″	¾″	—	¼″	½″	—	7/16″	4377K18	311.17	9426K8●	536.56	1558K1	1,925.33
15	12″×33″	15″	20″	11″	18″	9″	½″	¾″	¾″	—	¼″	½″	—	7/16″	4377K19	296.86	9426K9●	539.94	—	—
20	14″×33″	18″	18″	14″	20″	9″	½″	½″	½″	1½″	¼″	½″	¼″	9/16″	4377K21	363.17	9426K11●	577.24	1558K3★	3,190.00
30	16″×38″	21″	22″	14¼″	24″	12″	½″	½″	¾″	1½″	¼″	¾″	¼″	9/16″	4377K32	394.82	9426K12●	697.74	1558K4	4,096.00
60	20″×48″	25″	26″	18½″	30″	14″	¾″	½″	1″	2″	½″	1″	¼″	9/16″	4377K33	634.13	9426K13●▲	937.68	1558K5	4,509.33
80	20″×63″	25″	36″	18½″	40″	14″	1″	¾″	1¼″	2″	¾″	1½″	¼″	9/16″	4377K34	739.00	9426K14●▲	1,128.45	1558K6	5,053.33
120	24″×67″	31″	42″	18¼″	44″	16″	1½″	1″	1½″	2″	¾″	1½″	¼″	9/16″	4377K71	956.86	9426K15▲	1,053.48	—	—
200	30″×72″	36″	38″	28″	44″	18″	2″	1″	2″	2″	1″	2″	¼″	¾″	4377K41	1,417.16	9426K16▲	1,866.74	—	—
240	30″×84″	36″	50″	30″	48″	18″	2″	1″	2″	2″	1″	2″	¼″	¾″	4377K61	1,754.67	9426K17▲	2,289.71	—	—

● (H) is 1½″. ▲ (G) is 1½″. ★ Does not have an (M) opening.

High-Pressure ASME-Code Horizontal Pressure Tanks

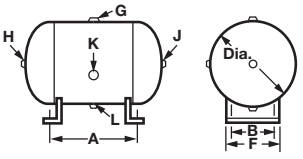

Able to store air at high pressures, these tanks meet the American Society of Mechanical Engineers' (ASME) pressure vessel code. They have mounting feet; hand-tightened pressure-rated plugs; and a welded plate that lists ASME approval and maximum pressure, which is 600 psi. Tanks are rated for 29.9″ Hg vacuum, but are not ASME rated for vacuum. They have a temperature range of –20° to +450° F. All openings have NPT female threads.

All tanks are made of steel with steel plugs. Gray primer finish.

Approx. Cap., gal.	Tank Dia.×Lg.	O'all Ht.	(A)	(B)	(F)	NPT Female Openings (G)	(H)	(J)	(K)	(L)	Mounting Hole Size		Each
2	8″×11″	10″	7″	4½″	7″	¾″	¾″	1″	¾″	½″	7/16″	1481K12	$662.83
5	10″×16″	12″	10″	6½″	8″	¾″	¾″	1″	¾″	½″	7/16″	1481K14	748.03
10	12″×23″	14″	10″	6½″	8″	¾″	¾″	1″	¾″	½″	7/16″	1481K16	930.14
15	14″×26″	16″	15″	8½″	10″	1½″	¾″	1″	1½″	½″	7/16″	1481K18	1,031.60
30	16″×38″	18″	16″	10½″	12″	1½″	¾″	2″	1½″	½″	9/16″	1481K22	1,305.34

ASME-Code Vertical Pressure Tanks

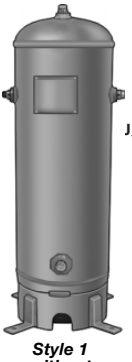

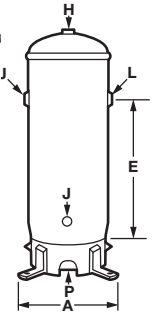

Style 1 without Top Plate

Style 2 with Top Plate

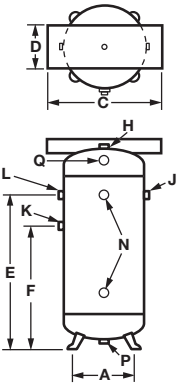

Style 3 without Top Plate

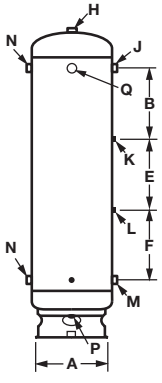

Save floor space with these durable vertical tanks. All meet the American Society of Mechanical Engineers' (ASME) pressure vessel code. They have pressure-rated plugs and a welded plate (unless noted) that lists ASME approval and maximum pressure. Tanks are rated for 29.9″ Hg vacuum (unless noted), but are not ASME rated for vacuum. All openings have NPT female threads. Gray primer finish (unless noted).

Epoxy-Lined Steel— An epoxy lining prevents the internal surface of the tanks from rusting. For use in areas where air-line contamination is a concern.

Standard Tanks

Maximum pressure is 200 psi. Temp. range is –20° to +650° F. All tanks have a gray powder-coated finish except 9554K65, K66, and K67 have a painted black finish.

Styles 1 and 2— Mounting hole size is 9/16″, unless noted. *The 1- to 20-gal. tanks* have a base ring with angle clips. *The 30- to 120-gal. tanks* have mounting feet (unless noted). *Models with top plate* have a plate for mounting other air-system components your setup may require. ***Style 3—*** Tanks have a base ring. Mounting slot size is 9/16″×7/8″.

ⓘ For additional information about tanks with top plate, such as top plate mounting dimensions and NEMA motor compatibility, go to mcmaster.com and search for **4376KAC**.

Cap., gal.	Tank Dia.×Ht.	O'all Ht.	(A)	(B)	(C)	(D)	(E)	(F)	NPT Female Openings (H)	(J)	(K)	(L)	(M)	(N)	(P)	(Q)	Steel	Each	Epoxy-Lined Steel	Each
Style 1 without Top Plate— *The 1- to 20-gal. tanks have zinc-plated steel and cast iron plugs. The 30- to 80-gal. tanks have steel plugs.*																				
1	6″×11″	14″	7½″	—	—	—	5″	—	1″	¾″	—	½″	—	—	¾″	—	1584K1♦	$282.69	—	—
2	8″×11″	14″	7½″	—	—	—	5″	—	1″	¾″	—	½″	—	—	¾″	—	1584K2♦	284.78	—	—
3	8″×16″	19″	7½″	—	—	—	7½″	—	1″	¾″	—	½″	—	—	¾″	—	1584K3♦	303.10	—	—
5	10″×16″	19″	9½″	—	—	—	7¼″	—	1″	¾″	—	½″	—	—	¾″	—	1584K4♦	313.12	—	—
6.9	10″×23″	26″	9½″	—	—	—	10¾″	—	1″	¾″	—	½″	—	—	¾″	—	1584K5♦	312.43	—	—
10	10″×30″	33″	9½″	—	—	—	21¼″	—	¾″	¾″	—	¾″	—	—	½″	—	1584K6♦	322.11	—	—
15	12″×33″	36″	11½″	—	—	—	24″	—	¾″	¾″	—	¾″	—	—	½″	—	1584K7♦	313.28	—	—
20	14″×33″	36″	13½″	—	—	—	23⅝″	—	¾″	1½″	—	¾″	—	—	½″	—	1584K8♦	356.75	—	—
30	16″×38″	39⅞″	18″	—	—	—	30⅜″	24⅜″	¾″	¾″	¾″	¾″	—	1½″	½″	¼″	4376K15	382.57	9554K65■	$606.39
60	20″×48″	50½″	23″	—	—	—	40″	34″	¾″	¾″	¾″	¾″	—	2″	½″	¼″	4376K11	576.40	9554K66	912.98
80	24″×46″	49½″	26″	—	—	—	38⅛″	32⅛″	1¼″	1¼″	1¼″	1¼″	—	2″	½″	¼″	4376K12	651.90	9554K67♥	916.41
Style 2 with Top Plate— *Plugs are cast iron.*																				
30	16″×38″	41⅜″	18″	—	23″	9″	30⅜″	24⅜″	¾″	¾″	¾″	¾″	—	1½″	½″	¼″	4376K21	482.16	9554K61■	707.20
60	20″×48″	52″	23″	—	30″	13″	40″	34″	¾″	¾″	¾″	¾″	—	2″	½″	¼″	4376K22	675.80	9554K62■	995.36
80	24″×46″	51″	26″	—	30″	13″	38⅛″	32⅛″	1¼″	1¼″	1¼″	1¼″	—	2″	½″	¼″	4376K25	728.33	9554K63♥	1,114.06
120	30″×46″	57⅞″	26″	—	39″	15″	41″	35″	2″	2″	2″	2″	—	2″	½″	½″	4376K28●★	1,061.84	9554K64●★	1,749.54
Style 3 without Top Plate— *Plugs are cast iron.*																				
120	24″×67″	75″	21″	13″	—	—	14″	13″	½″	1½″	¼″	½″	2″	2″	1″	2″	4376K18	924.14	9554K68♥	1,273.58
200	30″×72″	80″	26″	15″	—	—	16″	15″	½″	2″	¼″	½″	2″	2″	1″	2″	4376K19	1,316.65	9554K69♥	1,777.57
240	30″×84″	92″	26″	19″	—	—	20″	19″	½″	2″	¼″	½″	2″	2″	1″	2″	4376K31	1,418.56	9554K71♥	1,872.79

♦ Not rated for vacuum. Doesn't have a welded plate. ■ (H) is 1½″. ♥ (H) and (P) are 1½″.
● Has a base ring instead of feet. Mounting hole size is 11/16″. ★ (P) is 1½″.

High-Pressure Tanks

Maximum pressure is 600 psi. Temp. range is –20° to +400° F.

Style 2— Tanks have mounting feet. Mounting hole size is 9/16″. ***Style 3—*** Tanks have a base ring with mounting lugs. Mounting slot size is 9/16″×7/8″.

Cap., gal.	Tank Dia.×Ht.	O'all Ht.	(A)	(B)	(E)	(F)	NPT Female Openings (H)	(J)	(K)	(L)	(M)	(N)	(P)	(Q)	Steel	Each
Style 2 without Top Plate— *Plugs are steel.*																
30	16″×38″	39¾″	18″	—	30¼″	24½″	¾″	¾″	¾″	¾″	—	1½″	½″	¼″	9795K1	$1,253.37
60	20″×48″	50½″	23″	—	40″	34″	¾″	¾″	¾″	¾″	—	2″	½″	¼″	9795K2	1,882.71
80	24″×48″	51¼″	26″	—	39⅞″	33⅞″	1¼″	1¼″	1¼″	1¼″	—	2″	½″	¼″	9795K3	2,548.40
Style 3 without Top Plate— *Plugs are steel.*																
120	24″×69″	77″	20″	13″	14″	13″	½″	1½″	¼″	½″	2″	2″	1″	2″	9795K4	3,710.40
200	30″×72″	80″	29½″	15″	16″	15″	½″	2″	¼″	½″	2″	2″	1″	2″	9795K5	4,386.16
240	30″×84″	92″	29½″	19″	20″	19″	½″	2″	¼″	½″	2″	2″	1″	2″	9795K6	4,959.81

Portable Stainless Steel ASME-Code Pressure Dispensing Tanks

Use air and other gases to pressurize these tanks for storing and dispensing hazardous, corrosive, and high-purity substances. The top has one ¼″ NPT female inlet connection; one ¼″ NPT outlet connection with an internal dip tube for dispensing liquid under pressure (outlet connection is ⅜″ without the dip tube); and two ¼″ NPT female connections for gauges, safety valves, etc. Maximum operating temperature is 300° F. Meet American Society of Mechanical Engineers' (ASME) requirements for unfired pressure vessels. *9″ dia. tanks* also have an EPDM removable gasket on the bottom.

The opening on all tanks has an EPDM pressure seal that can't be removed while unit is pressurized. ***Standard-mouth tanks*** have a 3″ × 4″ opening. ***Wide-mouth tanks*** have a 5″ × 6″ opening for easy filling, cleaning, and inspection.

Type 304 Stainless Steel— Offers good corrosion resistance.

Type 316L Stainless Steel— Offers superior corrosion resistance. Great for semiconductor and washdown areas. *Mirror-finish models* have an extremely smooth finish. With fewer imperfections on the surface, these tanks offer even greater corrosion resistance and are easier to clean.

Also Available: Vacuum closure caps for putting tank under vacuum, fluoroelastomer seals, replacement EPDM pressure seals, and replacement covers. For vacuum caps, fluoroelastomer seals, and replacement covers, ask for 6778K888 for standard-mouth tanks or 41665K888 for wide-mouth tanks, and please specify vacuum caps, fluoroelastomer seals, or replacement covers. For replacement EPDM pressure seals, ask for 4355T86 for standard-mouth tanks or 4355T87 for wide-mouth tanks.

Cap., gal.	O'all Size, Dia. × Ht.	TYPE 304 STAINLESS STEEL Standard Mouth Max. psi @ 100° F		Each	TYPE 304 STAINLESS STEEL Wide Mouth Max. psi @ 100° F		Each	TYPE 316L STAINLESS STEEL Standard Mouth Max. psi @ 100° F		Each	TYPE 316L STAINLESS STEEL Wide Mouth Max. psi @ 100° F		Each
1	9″ × 8½″	190	41705K39	$292.98	140	41665K18	$355.56	185	6778K18	$337.50	130	41665K28	$308.85
2	9″ × 11⅝″	190	41705K41	359.65	140	41665K19	392.66	185	6778K19	382.14	130	41665K29	347.46
3	9″ × 15¼″	190	41705K42	354.39	140	41665K21	333.04	185	6778K21	408.53	130	41665K31	382.16
5	9″ × 22½″	190	41705K43	386.44	140	41665K22	374.37	185	6778K22	471.43	130	41665K32	442.92
7	9″ × 29¾″	190	41705K52	642.11	140	41665K72	724.07	185	6778K51	733.93	130	41665K71	806.81
10	12″ × 25 5/16″	165	41705K45	675.86	129	41665K24	674.57	190	6778K34	837.05	115	41665K44	767.07
16	12″ × 37½″	165	41705K47	843.10	129	41665K26	680.16	190	6778K36	993.04	115	41665K46	1,045.38
25	18″ × 28¼″	—	—	—	130	41665K74	1,808.47	—	—	—	115	41665K73	2,064.41

Cap., gal.	O'all Size, Dia. × Ht.	MIRROR-FINISH TYPE 316L STAINLESS STEEL Standard Mouth Max. psi @ 100° F		Each	Wide Mouth Max. psi @ 100° F		Each
2	9″ × 11⅝″	155	1054T2	$588.46	130	1054T22	$628.85
10	12″ × 25 5/16″	115	1054T6	1,074.07	115	1054T26	1,240.38

Composite Pressure Tanks

Just as reliable as steel tanks, yet these fiberglass/epoxy composite tanks are corrosion resistant and about half the weight. Great for use in areas where weight, moisture, contamination, and chemical resistance are concerns.

Tanks have aluminum-bronze fittings. Maximum pressure is 150 psi. Temperature range is –20° to +150° F. Connections are NPT female. Not rated for vacuum. Color is gray.

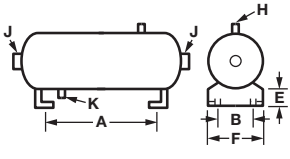

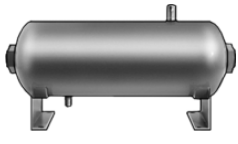

Cap., gal.	Tank Dia. × Lg.	O'all Lg.	O'all Ht.	(A)	(B)	(E)	(F)	NPT Female Openings (H)	(J)	(K)	Mounting Hole Size		Each
2	6¼″ × 16 31/32″	17 31/32″	8⅞″	12¾″	4½″	2⅛″	5½″	¼″	¾″	⅛″	⅜″	9827K5	$548.48
5	9¼″ × 20 29/32″	21⅜″	11⅞″	14¾″	7½″	2⅛″	8½″	¼″	¾″	⅛″	⅜″	9827K6	652.83
7	9¼″ × 28 59/64″	29⅜″	11⅞″	22¾″	7½″	2⅛″	8½″	¼″	¾″	⅛″	⅜″	9827K7	679.30
10	9¼″ × 39 59/64″	40⅜″	11⅞″	33¾″	7½″	2⅛″	8½″	¼″	¾″	⅛″	⅜″	9827K8	714.40

Portable Pressure Tanks

Take these lightweight, easy-to-carry tanks wherever you need them. Bodies are made of steel. Not rated for vacuum.

Vertical tanks are manufactured in accordance with Department of Transportation (D.O.T.) standards. Protective handles guard the valve and pressure gauge. Tanks include a 4-ft. hose with ⅛″ NPT male fitting on one end and an air chuck on the other end. Pressure gauge reads 0-160 psi. Maximum temperature is 180° F.

Horizontal tanks have welded steel legs and a carrying handle. *Mil. spec. model* meets MIL-T-45169E for portable compressed air vessels. Includes 4-ft. hose with ½″ NPT male fitting on one end and an air chuck with safety valve on the other end. Pressure gauge reads 0-200 psi. Not rated for temperature. *ASME-code model* meets ASME pressure vessel code and OSHA standard 1915. Includes a 6-ft. hose with ¼″ NPT male fitting on one end, air chuck on the other end, and ⅜″ hose ferrules on both ends. Pressure gauge reads 0-160 psi. Maximum temperature is 250° F. *ASME-code models with wheels* meet ASME pressure vessel code. They have two openings (¼″ and ½″ NPT female) and a ¼″ NPT female drain. Do not include gauge or hose. Maximum temperature is 450° F.

Pancake tanks are shorter, so they're less likely to tip over. Do not include a gauge or hose. *Standard model* has three NPT female openings (two ¼″ and one ½″). Not rated for temperature. *ASME-code models* meet ASME pressure vessel code. They have three NPT female openings (two ⅛″ and one ¼″). Temperature range is –20° to +450° F.

Vertical

Horizontal with Wheels

Pancake

Cap., gal.	O'all Size	Max. psi		Each
Vertical Tanks				
2.5	9″ Dia. × 17″ Ht.	150	4167K44	$90.73
4.6	12″ Dia. × 19″ Ht.	150	4167K43	98.91
Horizontal Mil. Spec. Tank				
8.5	10″ Dia. × 25″ Lg.	125	1389K71	156.40
Horizontal ASME-Code Tank				
9.1	12″ Dia. × 21¼″ Lg.	150	4319K57	290.28
Horizontal ASME-Code Tanks with Wheels				
7.5	10″ Dia. × 25″ Lg.	125	1814K81	256.64
Horizontal ASME-Code Tanks with Wheels (Cont.)				
11	12″ Dia. × 26″ Lg.	125	1814K82	$267.60
20	14″ Dia. × 33″ Lg.	140	1814K83	319.14
Pancake Standard Tank				
4.5	16″ Dia. × 7½″ Ht.	125	1862K92	118.36
Pancake ASME-Code Tanks				
2	10″ Dia. × 8″ Ht.	200	1792K81	346.15
3	12″ Dia. × 8⅞″ Ht.	200	1792K82	390.38
5.75	16″ Dia. × 11 3/16″ Ht.	200	1792K83	471.15
13	20″ Dia. × 13⅜″ Ht.	200	1792K84	651.92

Expansion Tanks

Use these tanks to accommodate the expansion of heated water and provide a cushion of compressed air in closed water-heating systems. They prevent water loss by eliminating the need to expel hot water from systems during each heating cycle.

All of these tanks can be used vertically as well as horizontally. Openings are NPT female, unless noted.

Miniature Type 304 Stainless Steel Tanks

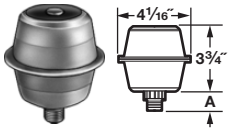

Offering excellent corrosion resistance, these miniature tanks are made of Type 304 stainless steel. A rolling fluoroelastomer rubber diaphragm maintains tank pressure at or near 0 psi, which extends seal life and prevents leakage. Maximum pressure is 15 psi. Maximum operating temperature is 350° F. Opening is NPT male.

Cap., cu. in.	Opening Pipe Size	(A)	Wall Ga.		Each
25	3/8"	7/8"	20	2269K21	$60.27
25	1/2"	1"	20	2269K22	60.27
25	3/4"	1 1/4"	20	2269K23	60.27

Painted-Steel Tanks

8-gal. tank is the only tank with (D) opening.

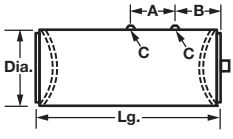

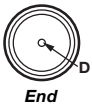

End View

Maximum pressure is 75 psi. Maximum operating temperature is 450° F. Tanks have a matte-gray primer finish.

Cap., gal.	Dia.	Lg.	(A)	(B)	Opening Pipe Size (C)	Opening Pipe Size (D)	Wall Ga.		Each
8	9"	32"	11"	5"	1/2"	3/4"	14	3667K1	$83.37
15	12"	30"	11"	4"	1/2"	—	14	3667K2	92.47
18	12"	36"	14"	4"	1/2"	—	14	3667K3	98.12

Galvanized-Steel Tanks

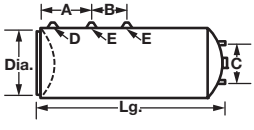

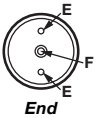

End View

Maximum pressure is 75 psi. Maximum operating temperature is 450° F. Tanks are hot-dipped for maximum corrosion resistance.

Cap., gal.	Dia.	Lg.	(A)	(B)	(C)	Opening Pipe Size (D)	Opening Pipe Size (E)	Opening Pipe Size (F)	Wall Ga.		Each
8	12"	19"	4"	4"	8 13/16"	1 1/4"	1/2"	2"	14	3666K11	$196.39
15	12"	33"	4"	11"	8 13/16"	1 1/4"	1/2"	2"	14	3666K12	241.04
40	14"	63"	4"	26"	8 13/16"	1 1/4"	1/2"	2"	14	3666K16	388.82

ASME Painted-Steel Tanks

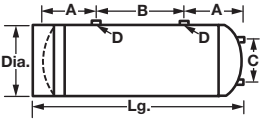

End View

Manufactured in accordance with ASME codes. Maximum pressure is 150 psi. Max. operating temp. is 450° F. Tanks have a gray enamel finish.

Cap., gal.	Dia.	Lg.	(A)	(B)	(C)	Opening Pipe Size (D)	Opening Pipe Size (E)	Wall Ga.		Each
15	12"	34 1/8"	7"	19"	8"	1"	1/2"	13	48075T61	$304.58
30	14"	49 3/8"	8 3/8"	31 1/4"	10"	1"	1/2"	12	48075T63	381.07
40	14"	64 3/8"	8 3/8"	46 1/4"	10"	1"	1/2"	12	48075T64	441.35
80	20"	64 5/16"	10"	42"	16"	1"	1/2"	11	48075T66	560.05

ANSI/NSF-Certified Painted-Steel Tanks

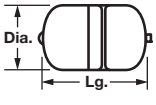

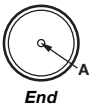

End View

These products are NSF 61 certified for use with drinking (potable) water in all states as of June 1, 2010. They have a butyl rubber diaphragm, which completely separates air and water. Maximum pressure is 150 psi. Maximum operating temperature is 200° F. Opening is NPT male. Tanks have an almond enamel finish.

Cap., gal.	Dia.	Lg.	Opening Pipe Size (A)	Wall Ga.		Each
2.1	8"	11"	3/4"	16	4386T3	$44.51
4.5	10 1/2"	13 1/2"	3/4"	16	4386T6	63.28
8.5	12 1/2"	19 3/16"	3/4"	16	4386T8	164.70

Water-Storage Tanks

Steel ASME Hydropneumatic Storage Tank

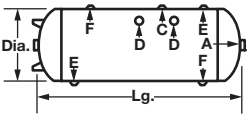

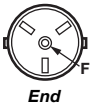

End View

These tanks can be used both vertically and horizontally as hot- and cold-water storage tanks. Openings are NPT female.

Steel ASME Hydropneumatic Storage Tank— You can also use this tank vertically as a hydropneumatic water storage tank. It's 11-ga. galvanized steel. Max. pressure is 125 psi. Max. operating temp. is 160° F.

Galvanized-Steel Water Storage Tanks— These tanks can be used as water heaters when used with a heat source (see our immersion heaters on pages 518-522). All are 14-ga. steel and hot-dipped for corrosion resistance. Max. pressure is 75 psi. Max. operating temp. is 450° F.

Galvanized-Steel Water Storage Tanks

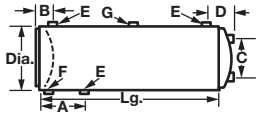

End View

Cap., gal.	Dia.	Lg.	(A)	(B)	(C)	(D)	Opening Pipe Size (E)	Opening Pipe Size (F)	Opening Pipe Size (G)		Each
Steel ASME Hydropneumatic Storage Tank											
220	30"	76 3/4"	2"	—	11 1/4"	1/2"	3"	2"	—	45115T38	$2,561.82
Galvanized-Steel Water Storage Tanks											
15	12"	30"	18"	6"	8"	6"	1"	1 1/4"	1/2"	3669K27	213.76
30	12"	60"	18"	6"	8"	6"	1"	1 1/4"	1/2"	3669K28	313.63
40	14"	60"	18"	6"	8"	6"	1"	1 1/4"	1/2"	3669K29	370.00
82	20"	60"	18"	6"	8"	6"	1"	1 1/4"	1/2"	3669K32	598.15

Safety Shut-Off Air-Operated Control Valves

In the event of an air signal loss, a spring shuts these valves off and prevents air from entering your cylinder. Valves are 2-way/2-position (normally closed), which are most often used for double-acting air cylinders. They have three ports. Valves move into position when compressed air is supplied; once air supply is turned off, valves return to their original position via an internal spring. Operating pressure is 0-150 psi. Minimum control (pilot) port pressure is 45 psi at an operating pressure of 90 PSIG. Not rated for vacuum.

Max. scfm @ 100 psi	Coefficient of Volume	Outlet Port, NPT Male	Control (Pilot) Port, For Tube OD	Inlet Port, For Tube OD		Each	Inlet Port, NPT Female		Each
18.2	0.78	1/8"	5/32"	1/4"	62395K75	$63.71	1/8"	62395K71	$63.71
23.7	1.02	1/4"	5/32"	1/4"	62395K76	61.90	1/4"	62395K72	61.90
38.8	1.67	3/8"	5/32"	3/8"	62395K77	71.29	3/8"	62395K73	71.29

About Air Preparation

High-pressure air isn't all you get when you use a compressor—you also get contaminants such as water, dirt, and oil. Before using compressed air, it should be filtered, properly regulated, and in some cases, lubricated. Correctly prepared air ensures the quality and service life of air-powered tools.

Moisture Removal— The first step toward dry air starts with aftercoolers, moisture separators, and air dryers. Placed after the compressor, these units remove moisture from the compressed air before it enters your system. *Aftercoolers* lower the compressed air temperature, while *moisture separators* dispose of the condensation that occurs during this process. *Air dryers* finish the job by removing remaining moisture through the use of desiccant, refrigerant, or membrane technology.

Filters— Once you've cooled your air and removed the majority of moisture, it's necessary to filter out the remaining dirt particles, oil, vapors, and other damaging elements. Air filters remove solid particles and any remaining water from your system, while oil-removal (coalescing) filters remove oil mist. Some filters also remove odors and bacteria. Filters are installed upstream of regulators and lubricators to protect them from contamination.

Regulators— Regulators lower the pressure of compressed air to increase performance, save energy, and ensure the continuous, safe operation of your air-powered tools. The desired outlet pressure generally is set by turning a knob or screw located on the regulator or by use of a control signal. Relieving-style regulators exhaust excess downstream pressure; nonrelieving regulators do not.

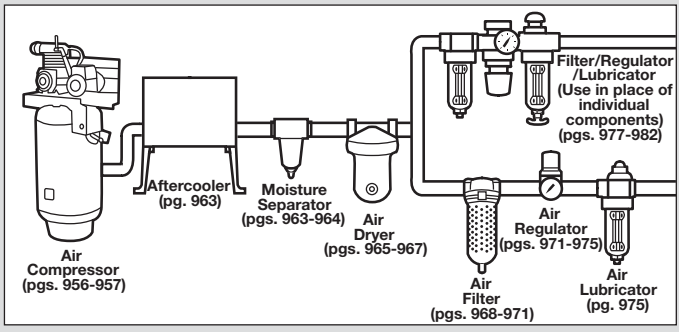

Lubricators— An air lubricator provides point-of-use lubrication. Lubricators introduce oil droplets into the compressed air stream at a controlled rate, which reduces wear and friction in valves and air-powered tools and equipment.

Filter/Regulator/Lubricators— Also known as FRLs, these units combine a filter, regulator, and lubricator into a compact design.

Aftercoolers & Moisture Separators

Inline Water-Cooled Aftercoolers

Connect this aftercooler to your cold-water line to cool hot compressed air coming from your compressor—no electricity needed. All cool air to within 15° F of the inlet water. A cooling water flow rate of 3 gpm per 100 scfm of air flow is required. The cooling action condenses the majority of damaging water. A moisture separator with drain is required to collect condensed water (such as 43775K51-K55, sold separately on this page). A copper tube and brass shell assembly reduces corrosion. Cast iron end caps are removable for easy cleaning. Max. temperature is 250° F. Max. pressure is 250 psi. Inlet and outlet connections are NPT female.

To select the proper aftercooler size, make sure your compressed air system has a lower flow rate (in scfm) than the values listed below.

Max. scfm @ 100 psi	Pipe Size Air	Pipe Size Water	O'all Size, Ht.×Wd.×Dp.		Each
40	1½"	½"	3½"×2⅝"×33⅜"	43865K76	$358.33
80	1½"	½"	3½"×2⅝"×42⅜"	43865K77	410.19
150	1½"	½"	3½"×2⅝"×51⅜"	43865K78	438.89
310	2½"	1"	6¼"×5¼"×50 13/32"	43865K79	851.75

Versa-Mount Fan-Cooled Aftercoolers

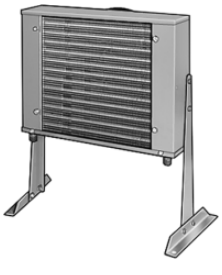

Mount these aftercoolers on the floor, wall, or suspend them from the ceiling. Brackets provided (unless noted).

Aftercoolers use a fan to cool hot air coming from your compressor. The cooling action condenses most of the damaging water from your compressed air system. A moisture separator with drain is required to collect condensed water (such as 43775K51-K55, sold separately on this page). Scfm ratings are based on cooling hot compressed air to within 15° F of the ambient air. Max. temp. is 250° F.

Units have a heat exchanger with aluminum fins and copper tubing. All have a steel housing and a 1/12-hp, single-phase motor that operates at 115 VAC, 60 Hz, except 5171K55 which has a 1/4-hp motor. Motor is UL recognized and CSA certified. Max. air pressure is 250 psi. Inlet and outlet connections are NPT male.

To select the proper aftercooler size, make sure your compressed air system has a lower flow rate (in scfm) than the values listed below.

Max. scfm @ 80-125 psi	Pipe Size	O'all Size, Ht.×Wd.×Dp.		Each
20	½"	22"×20⅜"×9 9/16"	5171K51	$444.12
35	½"	22"×20⅜"×9 9/16"	5171K52	498.47
50	1"	42 3/16"×26⅛"×15½"	5171K53	633.14
100	1½"	42 3/16"×26⅛"×15½"	5171K54	851.37
150	1½"	46½"×43½"×18¾"	5171K55▲	1,166.08

▲ Floor mount only.

Moisture Separators

43775K51-K55

4997K

2499K

43775K16-K22

Great for water separation downstream of your compressor and aftercooler, these units are designed for use in compressed air systems where excessive water condensation is a problem. Internal baffles separate bulk water from your system. Inlet and outlet connections are NPT female (unless noted).

Separators with Internal Automatic Drain— Separators with a *cast zinc housing* have a max. temperature of 150° F. Separators with a *cast aluminum housing* have a max. temperature of 100° F. Inlet connection is NPT female. Outlet connection is NPT male.

Separators with External Automatic Drain— Offer more clog resistance than internal models. Housing is zinc and aluminum (body is zinc; bowl is aluminum). Drain is bronze. Max. temperature is 120° F.

Separators without Drain— Offer high flow rates and plumbing versatility. Housing is cast aluminum. Max. temperature is 176° F.

Optional *automatic drain* is sold separately below.

Max. scfm @ 100 psi	Pipe Size	Max. Pressure	O'all Size, Ht.×Wd.×Dp.		Each
With Internal Automatic Drain— *Cast Zinc Housing*					
25	¼"	200 psi	6 13/32"×3"×2⅜"	43775K51	$79.72
50	⅜"	200 psi	7 11/32"×3 11/32"×3¼"	43775K52	104.82
50	½"	200 psi	7 11/32"×3 11/32"×3¼"	43775K53	115.47
100	¾"	200 psi	10"×4⅝"×4⅝"	43775K54	145.60
120	1"	200 psi	10"×4⅝"×4⅝"	43775K55	148.07
With Internal Automatic Drain— *Cast Aluminum Housing*					
50	¾"	150 psi	9 3/16"×10½"×5"	4997K11	273.96
50	¾"	300 psi	9 3/16"×10½"×5"	4997K41	298.74
100	1"	150 psi	9 3/16"×10½"×5"	4997K21	294.34
100	1"	300 psi	9 3/16"×10½"×5"	4997K51	323.77
300	2"	150 psi	9 3/16"×10½"×5"	4997K31	316.98
300	2"	300 psi	9 3/16"×10½"×5"	4997K61	360.00
With External Automatic Drain— *Zinc and Aluminum Housing*					
360	¾"	250 psi	15 5/16"×4 61/64"×4 61/64"	2499K11	316.17
360	1"	250 psi	15 5/16"×4 61/64"×4 61/64"	2499K12	323.20
400	1¼"	250 psi	16⅜"×5 3/16"×5 3/16"	2499K13	341.22
Without Drain— *Cast Aluminum Housing*					
233	1"	232 psi	10 51/64"×5 3/32"×4 31/64"	43775K16	143.88
742	1½"	232 psi	17"×6 45/64"×6 1/16"	43775K17	159.53
742	2"	232 psi	17"×6 45/64"×6 1/16"	43775K21	298.74
1695	2½"	232 psi	19 63/64"×8 3/32"×8 3/32"	43775K63	770.83
1700	3"	232 psi	19 29/32"×8 3/32"×7 3/64"	43775K22	776.62

Automatic Drain for Separators w/out Drain **9831K18** **Each** $202.29

For information about air preparation, see page 963.

Inline Moisture Separators with Oil-Removal Filter

Ideal for use downstream of your compressor or at the point of use in applications that don't require the use of an aftercooler, these units remove solids and liquids that are 3 microns and larger and oil droplets down to 5 ppm. Filter is blended fiber with a stainless steel core. All have an automatic drain, a liquid level indicator, and a filter service indicator. Body and bowl are aluminum. Max. temperature is 150°F. Max. pressure is 250 psi. Inlet and outlet connections are NPT female.

Max. scfm @ 100 psi	Pipe Size	O'all Size, Ht.×Wd.×Dp.	Separators	Each	Repl. Filter Elements	Each
20	3/8"	8"×4"×4"	7341K31	$190.17	7341K1	$41.45
20	1/2"	8"×4"×4"	7341K32	190.17	7341K1	41.45
35	1/2"	11"×4"×4"	7341K34	210.00	7341K2	51.27
60	1/2"	13"×4"×4"	7341K36	276.21	7341K3	75.27
100	3/4"	15"×5"×5"	7341K37	323.79	7341K4	84.00
100	1"	15"×5"×5"	7341K38	323.79	7341K4	84.00

Moisture Separators with Oil-Removal Filter

Separators remove oil from water using a combination of gravity, oil-absorbing filters, and activated carbon filters—no need for electricity or external power. Oil is collected in a separate container, allowing you to safely dispose of the oil-free (99.9%) water, while a large settlement chamber accumulates dirt particles and can be easily removed for cleaning. Separators also have a tap for sampling water without disconnecting the outlet piping.

Multiple inlet connections allow you to connect several compressed air components, such as moisture drain valves, separators, aftercoolers, dryers, and filters. Body is polyethylene. Max. temperature is 95°F. Max. pressure is 232 psi. Attach hose to inlets and outlets with a hose clamp.

Replacement filter kit includes the prefilter and carbon filter bag necessary for one replacement.

Max. scfm @ 100 psi	Inlet Hose Barb OD (Qty.)	Outlet Hose Barb OD	Overall Size, Ht.×Wd.×Dp.	Water Reservoir Cap., gal.	Oil Reservoir Cap., gal.		Each
106	1/4" (1), 1/2" (1)	1"	32"×14"×17"	16	1.3	2479K11	$629.85
162	1/4" (1), 1/2" (1)	3/4"	32"×14"×18"	20	1.3	2479K12	812.50
225	1/4" (3), 1/2" (1)	1"	47"×26"×20"	33	6.6	2479K33	954.81
450	1/4" (3), 1/2" (1)	1"	47"×26"×26"	49	6.6	2479K34	1,266.35
Replacement Filter Kit						2479K21	166.67

High-Pressure Self-Activating Moisture Drain Valves

High pressures are no problem for these drain valves. They can handle up to 600 psi—with no electricity needed. Back pressure from compressed airflow activates the disc, allowing moisture to escape. Moisture is atomized on discharge to avoid accumulation, eliminating the need for discharge piping. A muffler minimizes noise. To install, connect to your aftercooler, moisture separator, compressed air tank, dryer, or filter. Mount vertically if used outdoors to ensure that unit won't freeze. Body is steel; internal parts are stainless steel. All meet OSHA noise requirements. Max. temperature is 220°F. Inlet and outlet connections are NPT female.

Discharge Cap. @ 100 psi, gpm	Pipe Size	Overall Size, Ht.×Wd.×Dp.		Each
0.4	3/8"	5" ×2 17/32"×2 17/32"	4372K5	$185.74
0.4	1/2"	5 1/2"×2 17/32"×2 17/32"	4372K8	185.74
Replacement Muffler for 4372K5			4372K3	22.33
Replacement Muffler for 4372K8			4372K4	27.57

Compressed-Air-Activated Moisture Drain Valve

Piston-powered valve automatically drains moisture each time your compressor cycles. It is activated by compressed air via a 1/8" NPT female pilot port (no electricity required).

Connect to your aftercooler, moisture separator, compressed air tank, dryer, or filter. Body has a rugged cast aluminum construction. Max. temperature is 150°F. Max. pressure is 200 psi. Inlet and outlet connections are NPT female.

Discharge Cap., gpm	Pipe Size	Overall Size, Ht.×Wd.×Dp.		Each
0.25	1/4"	3 3/4"×2 1/8"×2 1/8"	4919K13	$50.81

Self-Activating Moisture Drain Valves

Also known as drip legs, these low-maintenance drains require no electrical power. They consist of a bowl and a float that automatically opens the drain when bowl begins to fill. Install them at low points in your piping; connect to your aftercooler, moisture separator, compressed air tank, dryer, or filter. Drains on all except Styles C and G can be opened manually and easily serviced without removing them from the air line. Inlet and outlet connections are NPT female, unless noted.

(A&B) Valves with Polycarbonate Bowl—Bowl is transparent to view moisture level. *Style B* has an external drain and can handle oil sludge and large particles. It has a polyethylene bowl guard and bronze drain.

(C) Valve with Nylon Bowl—Resistant to compressor oils and aggressive cleaners. Bowl is transparent for easy viewing of moisture level.

(D) Valve w/Zinc Bowl—Has a sight glass for easy inspection.

(E) Valves w/Aluminum Bowl—Have a compact top-mount design.

(F) Valves with Cast Aluminum Bowl—Have a high-capacity side-mount valve, making them suitable for rugged environments.

(G) Valve with Stainless Steel Bowl—Offers the highest temperature and pressure capacity with excellent corrosion resistance.

	Bowl Material	Discharge Cap., gpm	Pipe Size Inlet	Pipe Size Outlet	Max. Temp.	Max. Pressure	Overall Size, Ht.×Wd.×Dp.		Each
A	Polycarbonate	★	1/2"	1/8"	125°F	150 psi	4 3/4" ×2 5/16" × 2 5/16"	5002K2	$48.48
B	Polycarbonate w/External Drain	5	1/2"	1/4"	120°F	150 psi	7 1/2" ×3 7/8" × 3 3/4"	2406K11	148.73
C	Nylon	1.2	1/2"	♦	122°F	188 psi	6 19/64"×2 23/64" × 2 23/64"	2493K88	111.94
D	Zinc	♥	1/2"	1/8"	175°F	250 psi	6 7/32" ×2 5/16" × 2 5/16"	5002K1	44.62
E	Aluminum	0.7	1/4"	1/8"	175°F	250 psi	3 1/4" ×2 1/2" × 2 1/2"	41645K48	58.29
E	Aluminum	0.7	1/2"	1/8"	175°F	250 psi	3 1/4" ×2 1/2" × 2 1/2"	41645K47	58.29
F	Cast Aluminum	1	1"	1/16"	300°F	300 psi	6 3/4" ×5 1/4" ×10"	4394K62	219.62
F	Cast Aluminum	4.2	1"	1/8"	300°F	150 psi	6 3/4" ×5 1/4" ×10"	4394K61	208.30
G	Stainless Steel	2.2	1/2"	1/2"	500°F	400 psi	7" ×2 5/8" × 2 5/8"	2490K11	288.00

★ Bowl capacity is 3 oz. (discharge capacity not rated). ♦ Outlet has 6 mm OD barb and 10-32 female threads.
♥ Bowl capacity is 5 oz. (discharge capacity not rated).

For information about air preparation, see page 963.

Clog-Resistant Timer-Activated Electric Moisture Drain Valves

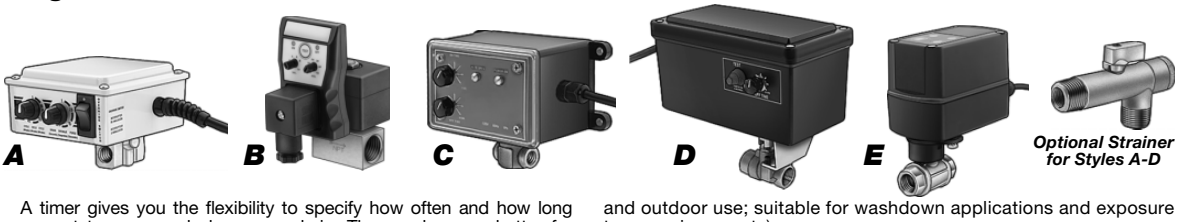

A timer gives you the flexibility to specify how often and how long you want to open and close your drain. These valves are better for compressed air systems with high oil content than self-activating float drain valves because they resist clogging when water, oil, and sediment combine to form sludge. Connect to your aftercooler, moisture separator, compressed air tank, dryer, or filter. Inlet and outlet connections are NPT female. All have a 6-ft. cord with three-prong plug (unless noted).

A-C ***Solenoid Valves—*** All have a brass body. *Style A* has a NEMA 1 timer enclosure (for indoor use only) and includes a brass Y-strainer to trap large debris and sludge before it reaches the valve. *Style B* have an IP65 timer enclosure (for indoor use; suitable for washdown applications). *Style C* have a NEMA 4X timer enclosure (for indoor and outdoor use; suitable for washdown applications and exposure to corrosive agents).

D&E ***Ball Valves—*** More heavy duty than solenoid valves and resist clogging even better. Choose from bronze, Type 316 stainless steel, or nickel-plated brass bodies. *Style D* have a NEMA 4X timer enclosure (for indoor and outdoor use; suitable for washdown applications and exposure to corrosive agents). *Style E* are suitable for indoor use.

Optional strainers prevent debris from clogging valves. They are hand operated so it's easy to disconnect flow to the valve. Body is brass. Internal filter screen is Type 304 stainless steel. Connections are NPT male; inlet is 1/2"; outlet is 1/4" for 4389K37 and 1/2" for K38. Max. pressure is 600 psi.

	Discharge Cap., gpm	Pipe Size	Cycle Interval	Drain Time	Max. Temp.	Max. psi	O'all Size, Ht.×Wd.×Dp.	Voltage	Drain Valves	Each	Optional Strainers	Each
Solenoid Valves— *Brass Body*												
A	2.5	1/4"	1-60 mins.	1-30 secs.	120°F	200	3 1/4" × 3 15/16" × 4 3/16"	115 VAC	9831K13■	$141.95	4389K37	$15.10
B	1.2	1/4"	0.5-45 mins.	0.5-10 secs.	130°F	230	4 7/16" × 1 31/32" × 3 7/16"	24 VDC	9831K31●	172.24	4389K37	15.10
B	1.2	1/2"	0.5-45 mins.	0.5-10 secs.	130°F	230	4 7/16" × 1 31/32" × 3 7/16"	24 VDC	9831K32●	172.24	4389K38	15.10
B	4	1/4"	0.5-45 mins.	0.5-10 secs.	130°F	1200	4 7/16" × 1 31/32" × 3 7/16"	115 VAC	9831K35	208.33	—	—
B	4	1/2"	0.5-45 mins.	0.5-10 secs.	130°F	1200	4 7/16" × 1 31/32" × 3 7/16"	115 VAC	9831K36	250.00	—	—
B	7	1/4"	0.5-45 mins.	0.5-10 secs.	130°F	300	4 1/4" × 1 11/16" × 3 35/64"	115 VAC	9831K14✓	147.19	4389K37	15.10
B	19	1/4"	0.5-45 mins.	0.5-10 secs.	130°F	300	4 7/16" × 1 31/32" × 3 7/16"	115 VAC	9831K17✓	202.29	4389K37	15.10
B	19	1/2"	0.5-45 mins.	0.5-10 secs.	130°F	300	4 7/16" × 1 31/32" × 3 7/16"	115 VAC	9831K18✓	202.29	4389K38	15.10
C	2.9	1/4"	1-50 mins.	1-15 secs.	180°F	275	4 1/8" × 6" × 3 11/16"	120 VAC	9831K12♦	188.00	4389K37	15.10
C	2.9	1/4"	1-50 mins.	1-15 secs.	180°F	275	4 1/8" × 6" × 3 11/16"	240 VAC	9831K22♦	195.06	4389K37	15.10
Ball Valves— *Bronze Body*												
D	1.25	1/2"	1-50 mins.	8 secs.	180°F	600	7" × 7 19/32" × 4"	115 VAC	41545K19♦	260.61	4389K38	15.10
D	2.5	3/4"	1-50 mins.	8 secs.	180°F	600	7 1/2" × 7 19/32" × 4"	115 VAC	41545K22♦	304.72	—	—
D	4.3	1"	1-50 mins.	8 secs.	180°F	600	7 11/16" × 7 19/32" × 4"	115 VAC	41545K23♦	330.78	—	—
Ball Valves— *Type 316 Stainless Steel Body*												
D	1.25	1/2"	1-50 mins.	8 secs.	180°F	2000	7" × 7 19/32" × 4"	115 VAC	41545K27♦	275.08	—	—
D	2.5	3/4"	1-50 mins.	8 secs.	180°F	600	7 1/2" × 7 19/32" × 4"	115 VAC	41545K25♦	384.50	—	—
D	4.3	1"	1-50 mins.	8 secs.	180°F	600	7 11/16" × 7 19/32" × 4"	115 VAC	41545K26♦	421.83	—	—
Ball Valves— *Nickel-Plated Brass Body*												
E	18♣	1/2"	4 mins.-24 hrs.	7.5 secs.-15 mins.	140°F	720	6 19/64" × 6 9/64" × 2 29/32"	115 VAC	41545K29	341.46	—	—
E	18♣	3/4"	4 mins.-24 hrs.	7.5 secs.-15 mins.	140°F	720	6 19/64" × 6 9/64" × 2 29/32"	115 VAC	41545K32	341.18	—	—
E	18♣	1"	4 mins.-24 hrs.	7.5 secs.-15 mins.	140°F	720	6 19/64" × 6 9/64" × 2 29/32"	115 VAC	41545K33	352.19	—	—
Replacement Filter Screen for Optional Strainer											4389K21	Each $2.94

■ Has a manual override switch. ● No cord or plug. ✓ Has a 7-ft. cord with three-prong plug.
♦ Has an 8-ft. cord with three-prong plug, except 9831K22 which has no plug. ♣ Per 15-minute interval.

Ultra-Flow Sensor-Activated Electric Moisture Drain Valves

Designed for very high flow capacities, valves have an internal sensor that detects when liquid is drained from the chamber, then closes the valve before air escapes to save energy. Connect to your aftercooler, moisture separator, compressed air tank, dryer, or filter. To avoid excessive cycling, use in air systems that have an airflow less than the max. scfm listed below. All have a 6-ft. cord with three-prong plug.

F&G Clear sludge formed by water, oil, and sediment and have an alarm with remote contact that you can connect to a signaling device for early warning of problems. Valves have two inlet connections, letting you connect two components at the same time. Body is stainless steel and copper. Operate on 115 VAC, 50/60 Hz.

H Body is polyamide. Operates on 115 VAC, 50 Hz.

	Max. scfm @ 100 psi	Discharge Cap., gpm	Inlet Pipe Size	Outlet Size	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.×Dp.		Each
F	247	0.02	1/2", 1/8"	5/16" ID Hose Barb	140°F	232 psi	4 27/32" × 2 41/64" × 4 7/8"	6773K32	$395.50
G	1059	0.07	1/2", 1/8"	5/16" ID Hose Barb	140°F	232 psi	5 7/16" × 2 41/64" × 4 7/8"	6773K33	461.42
H	3600	2.5	1/2"	1/2" NPT Female	122°F	230 psi	5 1/2" × 4 3/4" × 5 1/4"	6773K18	419.25

Emergency Stop Valves

Also known as Monday-morning valves, these solenoid valves increase pressure slowly (time adjusts from 1 to 20 seconds) to reduce surge damage. The solenoid cuts air to your equipment by evacuating downstream pressure through an exhaust port. Body is made of aluminum. Muffler is included. Maximum temperature is 150°F. Maximum pressure is 150 psi. Size is 7.32" Ht. ×2.7" Wd. Connections are NPT female.

Pipe Size Inlet	Pipe Size Outlet	Max. scfm @ 100 psi	24-VDC Valves	Each	120-VAC Valves	Each
1/4"	3/8"	80	6825K13	$193.80	6825K31	$193.80
3/8"	3/8"	90	6825K14	193.80	6825K32	193.80
1/2"	3/8"	95	6825K11	193.80	6825K21	193.80

Inline Disposable Desiccant Air Dryer

It's the disposable razor of desiccant air dryers—just throw it away when the desiccant changes color. Designed for inline, point-of-use applications, this economical dryer has a transparent polycarbonate bowl for easy viewing. Desiccant material is silica gel and changes from orange to green when replacement is needed. Dries air to a –30°F dew point.

Includes a 40-micron prefilter and can be installed vertically or horizontally. Max. temperature is 130°F. Max. pressure is 125 psi. Inlet connection is NPT female. Outlet connection is NPT male.

Max. scfm	Pipe Size	O'all Size, Ht.×Wd.		Each
15	1/4"	3 3/4" × 1 45/64"	7793T1	$12.72

For information about air preparation, see page 963.

Desiccant Air Dryers

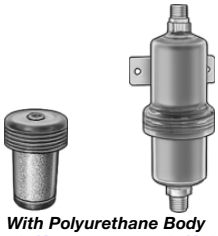

With Polyurethane Body
5164K77 5164K76

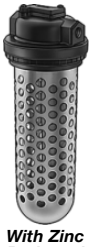

With Zinc Body and Polycarbonate Bowl

With Zinc Body and Aluminum Bowl

With Aluminum Body and Steel Bowl

Nothing fancy here . . . just tried and true removal of moisture from your compressed air system. Dryers come with one desiccant fill and should be installed at the point of use for best performance.

Dryers with Polyurethane Body— Offer excellent resistance to synthetic compressor lubricants, hydrocarbons, solvents, acids, and other chemicals. Dryers remove moisture, oil, and oil vapor. A built-in filter captures particles down to 0.3 microns in size. Bowl is transparent, allowing for easy monitoring of the desiccant. Desiccant is clay and darkens when saturated. Dryers can be mounted vertically and horizontally. Max. temperature is 180° F. Max. pressure is 250 psi.

5164K77 is a disposable one-piece unit. Desiccant cannot be regenerated or replaced. Inlet and outlet connections are NPT female. 5164K76 has a two-piece housing with built-in mounting bracket. Desiccant can be replaced but not regenerated. Inlet and outlet connections are NPT male.

Dryers with Zinc Body— Desiccant is silica gel and changes from blue to pink when replacement or regeneration is needed. To regenerate, heat desiccant for three hours at 350° F. Inlet and outlet connections are NPT female.

Dryers with *polycarbonate bowl* have a transparent bowl that makes it easy to see when desiccant is saturated. Bowl guard is black powder-coated aluminum, unless noted. Max. temperature is 125° F. Max. pressure is 150 psi.

Dryers with *aluminum bowl* have a moisture indicator to monitor desiccant saturation. Max. temperature is 150° F. Max. pressure is 150 psi.

Dryers with Aluminum Body— Have a sight glass indicator to monitor desiccant saturation. Desiccant is silica gel and changes from blue to pink when replacement or regeneration is needed. To regenerate, heat for one hour at 275° F. Max. temperature is 120° F. Max. pressure is 250 psi. Inlet and outlet connections are NPT female.

Max. scfm @ Lowest Dew Point	Bowl Material	Dew Point	Pipe Size	O'all Size, Ht. × Wd.	Dryers	Each	Repl. Desiccant	Each
With Polyurethane Body								
5▲	Polyurethane	●	1/4″	4 1/2″ × 2 7/8″	5164K77	$65.00	—	—
15▲	Polyurethane	●	1/2″	9 1/4″ × 3 1/8″	5164K76	199.37	5164K81	$27.42
With Zinc Body								
5	Polycarbonate	–45° F	1/4″	6 13/32″ × 3″	5163K17♠	49.80	5163K47	12.21
10	Polycarbonate	–45° F	1/4″	12 1/4″ × 4 5/8″	5163K18	110.64	5163K48	42.00
10	Polycarbonate	–45° F	1/2″	12 1/4″ × 4 5/8″	5163K21	112.48	5163K48	42.00
10	Aluminum	–45° F	1/4″	10″ × 4 51/64″	5163K22	141.64	5163K48	42.00
10	Aluminum	–45° F	1/2″	10″ × 4 51/64″	5163K23	147.17	5163K48	42.00
25	Aluminum	–45° F	1/2″	22″ × 4 51/64″	5163K19	229.57	5163K49	102.83
With Aluminum Body								
5	Zinc	–30° F	3/8″	7 1/4″ × 3 3/4″	4370K11	85.54	4370K3■	14.28
15	Steel	–30° F	1/2″	8 7/8″ × 4 7/8″	4370K5	136.99	4370K3	14.28
50	Aluminum	–30° F	3/4″	17 3/4″ × 6 3/4″	4370K13	570.44	4370K4	50.90

▲ Max. scfm @ 100 psi. ● Dryers lower inlet air dew point by 20%. ♠ Bowl guard is aluminum.
■ Requires three replacement desiccant elements.

High-Flow Desiccant Air Dryers

Clear Acrylic Cylinder

Aluminum Cylinder w/Sight Glass

Higher air flow capacities allow these dryers to be used on main compressed air lines servicing multiple end uses. The bottom inlet and top outlet have NPT female connections for inline mounting. Max. temperature is 150° F. Cylinders come filled with desiccant.

Dryers with Clear Acrylic Cylinder— Transparent cylinder allows you to easily see when desiccant changes color and must be replaced or regenerated. Max. pressure is 150 psi.

Dryers with Aluminum Cylinder— Offer increased protection from vapors and liquids that could weaken plastic cylinders. Max. pressure is 250 psi. *Aluminum cylinders with sight glass* let you see when desiccant changes color and must be replaced or regenerated.

Clay desiccant traps water, oil vapor, hydrocarbons, and particulates. Desiccant is grayish-brown and darkens when saturated, letting you know it must be discarded (desiccant cannot be regenerated). Dryers that use clay desiccant lower input air dew point by 20%.

Silica-gel desiccant is extra absorbent and designed only for moisture removal. Dryers that use silica-gel desiccant lower input air dew point by 40%. Desiccant changes color from blue to pink when saturated. To regenerate desiccant, heat at 220° F for two hours.

Max. scfm @ 100 psi	Pipe Size	O'all Size, Ht. × Wd.	Clear Acrylic Cylinder	Each	Aluminum Cylinder	Each	Aluminum Cylinder w/Sight Glass	Each	Repl. Desiccant (2 required)	Each
With Clay Desiccant										
20	1/2″	11 7/8″ × 4 3/8″	4437K12	$502.57	4437K32	$553.00	4437K1	$908.61	4437K51	$22.88
60	1″	19 3/4″ × 6 1/2″	4437K13	955.65	4437K43	1,018.13	4437K2	1,292.70	4437K52	49.31
100	1 1/2″	21 3/4″ × 8″	4437K15	1,326.61	4437K45	1,380.55	4437K3	1,669.28	4437K55	80.50
200	2″	19 1/8″ × 9 1/2″	4437K16	1,714.73	4437K46	1,703.10	4437K4	2,138.64	4437K56	98.60
With Silica-Gel Desiccant										
20	1/2″	11 7/8″ × 4 3/8″	4437K611	555.86	4437K711	586.53	4437K5	923.47	4437K81	30.85
60	1″	19 3/4″ × 6 1/2″	4437K621	967.39	4437K721	1,040.49	4437K6	1,314.36	4437K82	56.87
100	1 1/2″	21 3/4″ × 8″	4437K631	1,400.13	4437K731	1,454.85	4437K7	1,722.51	4437K83	92.59
200	2″	19 1/8″ × 9 1/2″	4437K641	1,731.07	4437K741	1,816.80	4437K8	2,230.96	4437K84	119.41

Desiccant Air Dryers with Oil-Removal Filter

When air first enters the dryer, an oil filter traps larger particles and droplets of oil and water to reduce desiccant contamination. The desiccant then absorbs the oil and water and removes solid particles as small as 0.3 microns. Dryers lower dew point of inlet air by 20% and should be installed at the point of use.

All have a transparent polyurethane bowl that lets you easily see when the desiccant changes color and must be replaced (desiccant cannot be regenerated). Desiccant is made of clay and darkens when saturated. All units come with one desiccant fill and have a manual drain. Body is polyurethane. Max. temperature is 180° F. Max. pressure is 250 psi. Inlet and outlet connections are NPT female.

Max. scfm @ 100 psi	Pipe Size	O'all Size, Ht. × Wd.	Dryers	Each	Repl. Desiccant	Each	Repl. Filter Elements	Each
20	1/2″	10 9/16″ × 4 5/8″	4386K6	$447.27	4386K41	$29.42	4386K11	$48.45
40	1″	9 1/2″ × 6 1/8″	4386K8	736.79	4437K52	49.31	4386K12	58.20
60	1″	14 3/4″ × 6 1/8″	4386K9	881.77	4437K52★	49.31	4386K13	88.21

★ Requires two replacement desiccant elements.

For information about air preparation, see page 963.

Heavy Duty Desiccant Air Dryers

Dryers handle higher flows and higher pressure than standard desiccant dryers. A built-in sight glass monitors desiccant condition. All have a bronze filter element (90 micron on the 15- and 30-scfm models; 40 micron on the 60-scfm models). Silica gel desiccant (sold separately) changes color from blue to pink when saturated. Regenerate desiccant by heating at 350° F. All have a zinc body and aluminum bowl (unless noted). Max. temperature is 180° F. Max. pressure is 300 psi. Inlet and outlet connections are NPT female.

Max. scfm @ -40° F Dew Point	Pipe Size	O'all Size, Ht. × Wd. × Dp.	Dryers	Each	Silica Gel Desiccant No. of Refills		Each
15	1/4"	13.5" × 4.94" × 4.94"	1132K11	$194.29	2	1132K41	$70.22
15	3/8"	13.5" × 4.94" × 4.94"	1132K12	194.29	2	1132K41	70.22
15	1/2"	13.5" × 4.94" × 4.94"	1132K13	194.29	2	1132K41	70.22
15	3/4"	13.5" × 4.94" × 4.94"	1132K14	194.29	2	1132K41	70.22
30	1/2"	23.25" × 4.94" × 4.94"	1132K15	299.14	1	1132K41	70.22
30	3/4"	23.25" × 4.94" × 4.94"	1132K16	299.14	1	1132K41	70.22
30	1"	23.25" × 4.94" × 4.94"	1132K17	299.14	1	1132K41	70.22
60	1/2"	30.25" × 4.94" × 4.94"	1132K18 ♦	446.61	1	1132K52	163.05
60	3/4"	30.25" × 4.94" × 4.94"	1132K19 ♦	446.61	1	1132K52	163.05
60	1"	30.25" × 4.94" × 4.94"	1132K21 ♦	446.61	1	1132K52	163.05

♦ Bowl is steel.

Self-Regenerating Desiccant Air Dryers

Compact, all-in-one design with two internal desiccant towers...one dries your air while the other automatically regenerates to give you an uninterrupted compressed air supply, dried to a dew point of –40° F. Each unit has a high-efficiency 0.01-micron oil-removal prefilter, two combination desiccant and 1-micron particle filter cartridges, an automatic drain, and an electronic display. An audible alarm lets you know when it's time for service. Quick-release top caps make it easy to replace filter cartridges and service the dryer without disconnecting the air connections. Install at the point of use. Housing is aluminum. Max. temp. is 122° F. Max. pressure is 174 psi. Inlet and outlet connections are NPT female. Dryers operate on 115 VAC, 60 Hz, single-phase power. ***Maintenance kits*** include replacement desiccant, automatic drain, and filter elements.

Max. scfm @ –40° F Dew Point	Pipe Size	O'all Size, Ht. × Wd. × Dp.	Dryers	Each	Maintenance Kits	Each
3	3/8"	16.6" × 11.4" × 5.9"	1156K11	$1,437.31	1156K31	$259.09
5	3/8"	19.7" × 11.4" × 5.9"	1156K12	1,505.29	1156K32	273.64
8	3/8"	24.3" × 11.4" × 5.9"	1156K13	1,655.09	1156K33	298.74
10	3/8"	27.2" × 11.4" × 5.9"	1156K14	1,772.26	1156K34	357.27
13	3/8"	33.3" × 11.4" × 5.9"	1156K15	1,884.70	1156K35	374.55
15	3/8"	35.7" × 11.4" × 5.9"	1156K16	1,985.45	1156K36	410.55
20	3/8"	43.2" × 11.4" × 5.9"	1156K17	2,225.89	1156K37	474.55

Refrigerated Air Dryers

Standard

3-in-1 Combination

Dryers cool air with R-134a refrigerant, then expel the moisture through an automatic drain. Designed for mainline use. All include a power-on light and dew point indicator. Inlet and outlet connections are NPT female. Operate on a 115 VAC, 60 Hz, single-phase motor and have a 6-ft. cord with three-prong plug.

Standard— Install after your aftercooler or moisture separator. Max. temp. is 140° F. Max. pressure is 232 psi.

3-in-1 Combination— Eliminate the need for a separate aftercooler, moisture separator, and drain with these dryers, which combine all those functions into a single unit. Max. temperature is 200° F. Max. pressure is 232 psi.

Max. scfm @ Lowest Dew Point	Dew Point	Motor hp	Pipe Size	O'all Size, Ht. × Wd. × Dp.		Each
Standard						
10	38° F	1/5	1/2"	17" × 17.7" × 8.3"	4409K82	$715.89
15	38° F	1/4	1/2"	17" × 17.7" × 8.3"	4409K83	861.33
25	38° F	3/8	1/2"	19.7" × 19.9" × 8.3"	4409K84	1,157.58
35	38° F	1/2	1/2"	19.9" × 19.7" × 8.3"	4409K85	1,375.11
50	38° F	3/4	3/4"	22.3" × 20.5" × 8.9"	4409K86	1,769.89
75	38° F	1	3/4"	22.3" × 20.5" × 8.9"	4409K87	2,194.89
100	38° F	1 1/3	3/4"	22.3" × 20.5" × 8.9"	4409K88	2,428.17
3-in-1 Combination						
15	50° F	1/4	3/8"	32" × 9.8" × 17.7"	13475K41	1,398.38
25	50° F	1/3	1/2"	39" × 11.1" × 23.6"	13475K42	1,469.88
35	50° F	1/2	1/2"	39" × 11.1" × 23.6"	13475K43	1,770.04
50	50° F	3/4	3/4"	47.7" × 13.9" × 27.6"	13475K44	2,222.04
75	50° F	1	3/4"	47.7" × 13.9" × 27.6"	13475K45	2,776.45
100	50° F	1 1/4	3/4"	47.7" × 13.9" × 27.6"	13475K46	3,258.46

Ultra-Clean Membrane Air Dryers

No desiccant, refrigerant, or electricity required and no moving parts to wear out—membrane technology gives you extra-clean, dust-free, instrumentation-quality air. Install at point of use. Units have a compact design and easy connect/disconnect features. Use them with the Wilkerson line of modular compressed air preparation products (see 60115K, page 978). They dry air to a dew point of –40° F. Each dryer includes a 0.01-micron oil removal filter with automatic drain. For optimum life, install a 5-micron particle filter (sold separately below) before the oil-removal filter. Body is zinc. Bowl is aluminum. Max. temperature is 125° F. Max. pressure is 150 psi. Inlet and outlet connections are NPT female.

Max. scfm @ Lowest Dew Point	Pipe Size	O'all Size, Ht. × Wd. × Dp.	Dryers	Each	Replacement Filter	Each
1.4	3/8"	7.6" × 5.6" × 2.9"	7794T1	$881.10	60115K2	$20.86
2.8	3/8"	10.4" × 5.6" × 2.9"	7794T2	1,006.80	60115K2	20.86
5.7	3/8"	11.9" × 5.6" × 2.9"	7794T3	1,158.28	60115K2	20.86
8.5	3/8"	14.7" × 5.6" × 2.9"	7794T4	1,267.14	60115K2	20.86

5-Micron Particle Filter for Dryers ..... 60115K73 **Each** $57.64

For information about air preparation, see page 963.

High-Pressure Miniature Inline Air Filters

Anodized Aluminum

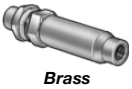

Brass

Compact point-of-use air filters easily handle high pressures, while replacement filter elements make them an economical choice. Connections are NPT female (unless noted).

Anodized Aluminum Body—A bronze element removes particles as small as 40 microns. Max. temperature is 200° F. Max. pressure is 500 psi. 4414K32 and 4414K33 have one NPT male connection and one NPT female connection.

Brass Body—A cotton and stainless steel element removes particles as small as 5 microns. Max. temperature is 180° F. Max. pressure is 250 psi.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Lg.×Wd.	Complete Units	Each	Repl. Filter Elements	Each
Anodized Aluminum Body						
1/8″	21	2 5/16″ × 3/4″	4414K32	$6.26	4414K38	$2.09
1/4″	38	2 5/16″ × 3/4″	4414K33	6.26	4414K38	2.09
1/2″	142	3 1/4″ × 1 1/2″	4414K34	22.13	4414K39	5.47
3/4″	160	3 1/4″ × 1 1/2″	4414K35	22.13	4414K39	5.47
Brass Body						
1/4″	10	4 3/4″ × 1 1/4″	4414K71	31.90	4414K72	9.09

Air Filters

A

B

C

D

E

F

Remove solid particles and water from your compressed air. Inlet and outlet connections are NPT female. Choose *filters with automatic drain* if you have large quantities of water.

A Standard—A polypropylene element removes particles as small as 5 microns (unless noted). All have a service indicator. Filters can be pipe nipple connected or used in Norgren clamp-style modular filter/regulator/lubricators. Body and bowl are aluminum (unless noted).

B Easy View—A clear bowl lets you see what's being filtered. All have a plastic element that removes particles as small as 5 microns. Body is zinc. Bowl is polycarbonate and has a zinc bowl guard, except 4274K91-K94 which do not have a bowl guard.

C Chemical Resistant Easy View—A clear polyurethane bowl offers increased chemical compatibility and won't crack in systems heavy with synthetic compressor oils and cleaning liquids. All have a polypropylene element that removes particles as small as 5 microns. Body is brass.

D Corrosion Resistant Easy View—Have an aluminum body for increased corrosion resistance and a clear polycarbonate bowl that lets you see what's being filtered. All have a polypropylene element that removes particles as small as 20 microns.

E Ultra Corrosion Resistant—Body and bowl are Type 316 stainless steel, making this filter perfect for extremely corrosive environments like those found in the semiconductor, pharmaceutical, marine, chemical, and paper industries. Filter with *1/4″ pipe size* has a polypropylene element that removes particles as small as 20 microns. Filter with *1/2″ pipe size* has a polyethylene element that removes particles as small as 40 microns.

F Lightweight Ultra Fine—Highly efficient all-plastic filter has a submicronic borosilicate glass element that removes particles as small as 1 micron. A clear polyurethane bowl lets you see what's being filtered. Acetal body offers corrosion resistance and increased chemical compatibility.

	Pipe Size	Max. scfm @ 100 psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Filters with Automatic Drain	Each	Filters with Manual Drain	Each	Repl. Filter Elements	Each
A	1/4″	45	175° F	250 psi	6.8″×2.7″	4958K23	$61.20	4958K24●	$42.31	4958K82	$4.24
A	1/4″	47	150° F	150 psi	5.7″×1.9″	4958K78♣	50.26	4958K34●♣	26.92	4958K81	2.65
A	3/8″	58	175° F	250 psi	6.8″×2.7″	4958K25	65.89	4958K26●	41.55	4958K82	4.24
A	3/8″	82	175° F	250 psi	7.4″×3.2″	4958K27	64.79	4958K28●	42.31	4958K95	6.03
A	1/2″	62	175° F	250 psi	6.8″×2.7″	4958K31	66.24	4958K32●	41.55	4958K82	4.24
A	1/2″	110	175° F	250 psi	7.4″×3.2″	4958K41	82.29	4958K42●	65.88	4958K95	6.03
A	3/4″	110	175° F	250 psi	7.4″×3.2″	4958K43	82.29	4958K44●	56.49	4958K95	6.03
A	3/4″	297.5	175° F	250 psi	11.3″×4.8″	4958K47★	151.77	4958K48●★	126.05	4958K97	26.65
A	1″	297.5	175° F	250 psi	11.3″×4.8″	4958K51★	149.49	4958K52●★	122.36	4958K97	26.65
A	1 1/4″	297.5	175° F	250 psi	11.3″×4.8″	4958K53★	166.49	4958K54●★	155.55	4958K97	26.65
A	1 1/2″	297.5	175° F	250 psi	11.3″×4.8″	4958K57★	173.51	4958K58●★	145.93	4958K97	26.65
B	1/8″	23	125° F	150 psi	4.2″×1.7″	4274K91	22.95	4274K93	19.25	4274K81	11.00
B	1/4″	25	125° F	150 psi	4.2″×1.7″	4274K92	22.95	4274K94	19.25	4274K81	11.00
B	1/4″	63	125° F	150 psi	6.5″×3.0″	4274K31●	67.03	4274K21	44.92	4274K52	13.35
B	1/4″	81.3	125° F	150 psi	7.4″×3.3″	4274K15	80.85	4274K16	53.32	4274K53	13.88
B	3/8″	74.1	125° F	150 psi	6.5″×3.0″	4274K32●	67.03	4274K22	44.92	4274K52	13.35
B	3/8″	117.8	125° F	150 psi	7.4″×3.3″	4274K17	82.88	4274K18	60.77	4274K53	13.88
B	1/2″	149.8	125° F	150 psi	7.4″×3.3″	4274K33	82.88	4274K23	60.77	4274K53	13.88
B	3/4″	323	125° F	150 psi	9.8″×4.6″	4274K34●	128.45	4274K24	106.35	4274K54	30.19
B	1″	316	125° F	150 psi	9.8″×4.6″	4274K35●	128.45	4274K25	106.35	4274K54	30.19
C	1/8″	22	120° F	150 psi	4.6″×1.6″	—	—	8287K11	33.77	1399K21	7.82
C	1/4″	22	120° F	150 psi	4.6″×1.6″	—	—	8287K12	33.77	1399K21	7.82
D	1/8″	22	120° F	150 psi	4.2″×1.6″	—	—	2383T46	30.06	6760K15	8.45
D	1/4″	22	120° F	150 psi	4.2″×1.6″	—	—	2383T47	30.06	6760K15	8.45
E	1/4″	22	180° F	300 psi	4.0″×1.6″	—	—	4285K12	207.73	6760K15	8.45
E	1/2″	72	180° F	300 psi	5.6″×2.5″	—	—	4285K14	425.02	4285K24	7.04
F	1/4″	20	125° F	100 psi	5.3″×2.9″	—	—	2990K11	73.40	2990K21	5.47

● Unit is up to 0.6″ taller. ♣ Body and bowl are zinc. ★ Has a sintered bronze filter element.

Disposable Inline Air Filters

9842K11, K31

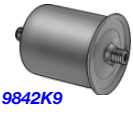

9842K9

Just throw these point-of-use compressed air filters away after you're done with them. Each has an adsorbent activated-carbon element to remove vapors, aerosols, and particles as small as 0.5 micron. Body and bowl are steel. Max. temperature is 200° F. Inlet and outlet connections are NPT male.

Pipe Size	Max. scfm @ 100 psi	Max. Pressure	O'all Size, Lg.×Wd.		Each 1-2	Each 3-Up
1/4″	13.5	200 psi	8 1/8″×3″	9842K11	$69.40	$58.72
1/4″	15.5♦	90 psi	4 3/4″×3″	9842K9	65.27	55.23
1/2″	11.5	250 psi	8 3/8″×3″	9842K31	70.95	60.03

♦ Max. scfm @ 90 psi.

Super Ultra-Fine Submicron Air Filters

9841K91

Not much gets by these filters. Designed for ultra-fine filtration of particles and mists, they remove oil aerosols, smoke, condensed moisture, and contaminants as small as 0.01 micron from compressed air and vacuum lines. Filters have a high wet-strength element that consists of a roll of cellulose wound on a polyethylene core.

Housing is cast aluminum coated with epoxy for corrosion resistance. Max. temperature is 175° F. Max. pressure is 125 psi. Inlet and outlet connections are NPT female. 9841K91 includes a mounting bracket.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Filter Elements	Each
1/4″	60	7″×5″	9841K91	$100.92	9841K93	$9.53
1/2″	110	7″×5″	9841K92	102.88	9841K93	9.53

For information about air preparation, see page 963.

Ultra-Fine Rough-Service Air Filters

A specially designed Type 304 stainless steel element handles extra-rough, dirty compressed air and removes moisture and particles as small as 1 micron. All have an automatic float-style drain and a service indicator that alerts you when filter must be replaced (unless noted). Max. temperature is 125° F. Max. pressure is 150 psi. Inlet and outlet connections are NPT female. Body is zinc; choose from aluminum bowl and polycarbonate bowl with steel bowl guard.

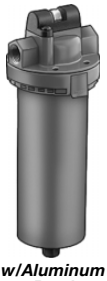

w/Aluminum Bowl

w/Polycarbonate Bowl

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	w/Aluminum Bowl	Each	w/Polycarbonate Bowl	Each	Repl. Filter Elements	Each
1/4"	20	7 1/2"×3"	41745K21	$137.50	98875K72	$148.34	98875K82	$26.51
1/4"	35	11 1/2"×3 3/4"	41745K23	172.35	98875K73	218.45	98875K83	42.88
1/4"	60	11 1/2"×3 3/4"	41745K31	179.98	98875K91	243.94	98875K84	53.25
3/8"	35	11 1/2"×3 3/4"	41745K24	172.35	98875K74	218.45	98875K83	42.88
3/8"	60	11 1/2"×3 3/4"	41745K32	179.98	98875K92	243.94	98875K84	53.25
1/2"	35	11 1/2"×3 3/4"	41745K25	172.35	98875K75	218.45	98875K83	42.88
1/2"	60	11 1/2"×3 3/4"	41745K33	179.98	98875K76	230.13	98875K84	53.25
1/2"	90	19" ×4 1/2"	41745K34	254.50	98875K77▲	296.70	98875K85	116.55
3/4"	90	19" ×4 1/2"	41745K35	254.50	98875K78▲	296.70	98875K85	116.55
1"	150	19" ×4 1/2"	41745K26	286.09	98875K79▲	335.26	98875K86	130.28
1 1/4"	400	30 1/4"×8 1/2"	98875K43★	1,166.88	———	———	98875K61	312.66
1 1/2"	400	30 1/4"×8 1/2"	98875K44★	1,166.88	———	———	98875K61	312.66
2"	700	30 1/4"×8 1/2"	98875K45★	1,272.09	———	———	98875K63	398.96

▲ O'all ht. is 15". ★ Does not have a service indicator.

Class 100 Clean Room Air Filters

Manufactured, cleaned, and packaged in a Class 100 clean room, filters are ideal for the exhaust of your clean-room compressed air equipment. Also ideal in clean rooms where new machinery has been installed that may contain some internal impurities. All have a polyolefin element that removes particles as small as 5 microns. Body is cast aluminum. Bowl is polycarbonate with aluminum bowl guard and a drain guide. Also include a mounting bracket. Max. temperature is 140° F. Max. pressure is 145 psi. Inlet and outlet connections are NPT female.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.		Each
1/4"	980	5.08"×1.57"	7279K5	$40.36
3/8"	980	5.08"×1.57"	7279K6	40.36
1/2"	1652	6.50"×2.76"	7279K7	51.63
3/4"	1652	6.50"×2.76"	7279K8	54.41

Miniature Inline Oil-Removal Air Filters

These tiny and tossable coalescing filters use a borosilicate glass element to remove particles as small as 0.6 micron, 95% of oil mist, and aerosols down to 0.85 ppm. Housing is clear nylon. Max. temperature is 125° F. Max. pressure is 100 psi. Inlet and outlet connections are not threaded; connect using hose or tube.

Filter ***with oil-activated dye element*** turns red when oil is present, making it great for use as a "fuse" to alert you if your main oil-removal filter fails.

Inlet/Outlet OD	Max. scfm @ 100 psi	O'all Size, Dia.×Lg.		Each
Standard				
1/4"	3.5	1"×3.28"	41575K57	$10.20
1/4"	5.3	1"×3.28"	41575K58	10.19
With Oil-Activated Dye Element				
1/4"	3.2	1"×3.28"	41575K59	10.19

Oil-Removal Air Filters

Remove oil mist and aerosols from your compressed air with these coalescing filters. Inlet and outlet connections are NPT female.

A&B Standard—Have a synthetic fiber/polyurethane foam element that removes oils, particles, and aerosols down to 0.01 ppm. Filters can be pipe nipple connected or used in Norgren clamp-style modular filter/regulator/lubricators (unless noted). Body and bowl are aluminum. Have an automatic drain. Max. temperature is 150° F. Max. pressure is 250 psi.

Style B have a service indicator that changes from green to red when the filter element needs to be changed.

C Easy View with Service Indicator—A transparent bowl lets you see what's being filtered, while a service indicator changes from green to red to alert you when the filter element needs to be changed. All have a borosilicate glass element that removes 99.99998% of oil and aerosols and grabs particles as small as 0.01 micron. Body is zinc. Bowl is polycarbonate and has a steel bowl guard. Have an automatic drain. Max. temperature is 125° F. Max. pressure is 150 psi.

D Chemical Resistant Easy View—Similar to Style C, filters have a transparent bowl so you can see what's being filtered. A borosilicate glass element removes 99.97% of oil and aerosols and grabs particles as small as 0.3 micron. Body is brass. Bowl is clear and made of chemical-resistant polyurethane, making it suitable for use in systems with synthetic compressor oils and aggressive cleaning agents. Have a manual drain. Max. temperature is 120° F. Max. pressure is 150 psi.

E Ultra Corrosion Resistant—Type 316 stainless steel body and bowl are ideal for extremely corrosive environments. All meet NACE (National Association of Corrosion Engineers) specifications. A borosilicate glass element removes 99.97% of oil and aerosols and grabs particles as small as 0.3 micron. Have a manual drain. Max. temperature is 180° F. Max. pressure is 300 psi.

A

B

8282K26 and K27

C

D

E

	Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Filter Elements	Each
A	1/4"	36	6.8"×2.7"	9826K31	$83.37	8282K52	$30.60
A	3/8"	75	7.4"×3.2"	9826K61	98.05	8282K72	31.50
A	1/2"	75	7.4"×3.2"	9826K62	99.39	8282K72	31.50
A	1/2"	110	9.4"×3.2"	9826K63	112.68	8282K73	48.26
A	3/4"	110	9.4"×3.2"	9826K64	112.68	8282K73	48.26
A	3/4"	450	11.3"×4.8"	9826K84	189.70	8282K35	89.21
A	1"	450	11.3"×4.8"	9826K85	189.70	8282K35	89.21
B	1/4"	21	8.2"×2.7"	8282K31	93.39	8282K52	30.60
B	3/8"	34	8.7"×3.2"	8282K61	111.93	8282K72	31.50
B	1/2"	34	8.7"×3.2"	8282K62	111.93	8282K72	31.50
B	1/2"	59	10.8"×3.2"	8282K63	126.35	8282K73	48.26
B	3/4"	59	10.8"×3.2"	8282K64	126.35	8282K73	48.26
B	3/4"	90	12.7"×4.8"	8282K56♣	213.43	8282K35	89.21
B	1"	125	12.7"×4.8"	8282K25♣	212.55	8282K35	89.21
B	1 1/2"	255	18.3"×8.2"	8282K26♣	545.55	8282K36	187.27
B	2"	300	18.3"×8.2"	8282K27♣	545.55	8282K36	187.27
C	1/4"	20	7.5"×3.0"	59185K11	120.02	59185K12	37.90
C	3/8"	60	11.5"×3.8"	59185K21	145.87	59185K22	46.69
C	1/2"	60	11.5"×3.8"	59185K31	145.87	59185K22	46.69
C	1/2"	90	15.0"×4.6"	59185K41	207.89	59185K42	82.16
C	3/4"	90	15.0"×4.6"	59185K51	207.89	59185K42	82.16
C	1"	150	15.0"×4.6"	59185K61	213.55	59185K62	90.09
D	1/8"	22	4.7"×1.6"	8395K11	53.99	8395K13	28.98
D	1/4"	22	4.7"×1.6"	8395K12	53.99	8395K13	28.98
E	1/4"	16♦	4.0"×1.6"	4300K11	213.58	4300K21	25.14
E	1/2"	45♦	5.6"×2.4"	4300K13	452.40	4300K23	30.56

♣ Pipe nipple connection only. ♦ Max. scfm @ 90 psi.

For information about air preparation, see page 963.

Particulate Air Filters with High-Capacity Automatic Drain

If you have severe moisture problems, these coalescing filters are the perfect solution. An external automatic drain will discharge up to 300 gallons per hour. Filters remove particles as small as 5 microns. All have a polycarbonate bowl with steel bowl guard, except 4267K23 which has an aluminum bowl. Inlet and outlet connections are NPT female.

Zinc Body—Have a polypropylene element. Max. temperature is 125° F. Max. pressure is 150 psi.

Aluminum Body—Filters with *¾″-1″ pipe sizes* have a polypropylene element. Max. temperature is 125° F. Max. pressure is 150 psi. Filter with *2″ pipe size* has a bronze element. Max. temperature is 175° F. Max. pressure is 200 psi.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Filter Elements	Each
Zinc Body						
¼″	40	14.4″×3.5″	4267K11	$226.83	4267K16	$8.22
½″	130	14.4″×3.5″	4267K13	226.83	4267K16	8.22
Aluminum Body						
¾″	250	16.8″×4.5″	4267K14	273.35	4267K17	12.93
1″	275	16.8″×4.5″	4267K15	273.35	4267K17	12.93
2″	850	19.1″×8″	4267K23	683.21	4267K32	136.35

Particle- and Oil-Removal Air Filters

Get two stages of air filtration—the first stage is a polypropylene element that removes water droplets, oil, and rust particles; the second stage is a cotton and stainless steel coalescing element that captures remaining water droplets, oil, and other particles as small as 5 microns. Both stages have manual drains. Max. temp. is 180° F. Max. pressure is 250 psi (unless noted). Inlet and outlet connections are NPT female.

Complete units include filters, base core, base gasket, four cap gaskets, and a pressure differential gauge to indicate when filter needs to be serviced (unless noted). ***Replacement element kits*** include first- and second-stage elements, base core, one base gasket, and four cap gaskets.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Element Kits	Each
¼″	15	8.25″ × 3″	9994K74■	$96.34	9994K51	$35.70
¼″	50	8.25″ × 4″	9994K75	230.98	9994K57	61.19
⅜″	50	8.25″ × 4″	9994K76	230.98	9994K57	61.19
½″	80	11.75″ × 6″	9994K77	375.54	9994K53	89.53
¾″	80	11.75″ × 6″	9994K78	375.54	9994K53	89.53
1″	150	15″ × 9.5″	9994K79	534.92	9994K54	148.45
1½″	250	20″ ×12.5″	9994K81	747.98	9994K55	242.55
2″	500	27″ ×18″	9994K82▲	1,110.03	9994K56	419.93

■ Pressure differential gauge not included. ▲ Max. pressure is 150 psi.

Ultra-Fine Particle- and Oil-Removal Air Filters

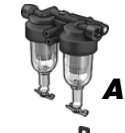

A

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C

Efficiently combine two stages of filtration into one handy unit. Stage one removes larger particles and stage two uses a coalescing filter to remove finer particles of moisture and oil. Inlet and outlet connections are NPT female.

(A) Corrosion Resistant—Stage one removes particles as small as 1 micron and oil droplets down to 0.5 ppm; stage two removes finer particles as small as 0.01 micron and oil droplets down to 0.01 ppm. Filter elements are borosilicate glass. Drain can function constantly or intermittently. Body is lightweight nylon. Bowl is clear polyamide for easy viewing.

(B) High Flow—Stage one removes particles as small as 5 microns; stage two removes oil droplets down to 0.5 micron/0.01 ppm. Filter elements are polyethylene (stage one) and borosilicate cloth (stage two). Drains are automatic, except 8075T1 which has a manual drain. Filters can be pipe nipple connected or used in Wilkerson clamp-style modular filter/regulator/lubricators. Body and bowl are zinc (unless noted).

(C) Heavy Duty—Perfect for extra-rough, dirty environments. Units remove bulk water and contamination as small as 1 micron by passing the air first over a Type 304 stainless steel element and then a cotton/polyester element. A side-by-side configuration lets you service the filters separately. All have an automatic drain on the first-stage filter and a manual drain on the second-stage filter. Body is zinc and bowl is polycarbonate with a steel guard.

	Pipe Size	Max. scfm @ 100 psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Complete Units	Each	REPL. FILTER ELEMENTS First Stage	Each	Second Stage	Each
A	¼″	6	150° F	150 psi	4.75″× 4.5″	2994K11	$109.67	2994K21	$41.44	2994K31	$41.44
B	¼″	10	125° F	150 psi	4.58″× 3.15″	8075T1●	58.93	60115K31	4.38	60115K1	15.78
B	⅜″	34	150° F	150 psi	7.9″ × 5.06″	8075T2	148.11	60115K32	6.56	60115K2	20.86
B	½″	36	150° F	150 psi	7.9″ × 5.06″	8075T3	148.11	60115K32	6.56	60115K2	20.86
B	½″	65	150° F	150 psi	8.9″ × 6.1″	8075T4	182.67	60115K33	7.29	60115K3	22.02
B	¾″	90	150° F	150 psi	8.9″ × 6.1″	8075T5	182.67	60115K33	7.29	60115K3	22.02
C	¼″	50	125° F	150 psi	10.5″ × 7.75″	41715K31	336.56	41715K51	43.96	41715K52	43.96
C	⅜″	50	125° F	150 psi	10.5″ × 7.75″	41715K32	336.56	41715K51	43.96	41715K52	43.96
C	½″	90	125° F	150 psi	10.5″ × 7.75″	41715K34	383.23	41715K53	54.61	41715K54	54.61
C	¾″	120	125° F	150 psi	14.5″ ×10.5″	41715K41	561.74	41715K55	76.58	41715K56	76.58
C	1″	175	125° F	150 psi	14.5″ ×10.5″	41715K42	631.75	41715K57	91.15	41715K58	91.15

● Bowl is polycarbonate.

Ultra-Fine Particle-, Oil-, and Bacteria-Removal Filters

With one compact unit you can remove oil, water, dirt, and bacteria from your compressed air. The first stage removes oil, water, and dirt and has an automatic drain. The second stage removes trace quantities of oil, water, and dirt (as small as 0.01 micron) with 99.99% efficiency; it also has an automatic drain. The third stage removes bacteria to yield extra-clean air. No drain is needed at the third stage. Filter elements are borosilicate glass. All have a service indicator on the first-stage filter and are constructed of FDA-compliant materials. USDA-accepted for use in meat and poultry plants. Body and bowl are aluminum, except 1309K14 which has a steel bowl. Max. temperature is 130° F. Max. pressure is 250 psi. Inlet and outlet connections are NPT female.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Complete Units	Each	REPL. FILTER ELEMENTS First Stage	Each	Second Stage	Each	Third Stage	Each
¼″	25	8.5″×10″	1309K12	$855.23	1309K21	$30.01	1309K22	$30.01	1309K23	$57.55
½″	63	11.3″×10″	1309K13	936.23	1309K31	60.63	1309K32	60.63	1309K33	122.03
¾″	77	13.1″×13.5″	1309K14	1,799.31	1309K41	63.45	1309K42	63.45	1309K43	122.03

Oil Vapor- and Odor-Removal Air Filters

To remove the smallest traces of oil vapor and odor, use these filters as the last step in your air preparation system; install after a 5-micron particle filter and an oil-removing filter. An activated carbon element absorbs oil vapor and its associated odors. Ideal for food processing and packaging, pharmaceuticals, and other industries where very high quality air is critical. Body and bowl are zinc (unless noted). All have a manual drain. Max. temperature is 150° F. Max. pressure is 200 psi. Filters can be pipe nipple connected or used in Wilkerson clamp-style modular filter/regulator/lubricators. Inlet and outlet connections are NPT female.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Filter Elements	Each
¼″	17	4.2″×1.7″	5757K67	$33.60	5757K81	$19.47
⅜″	35	8.1″×3.0″	5757K62	74.89	5757K72	33.57
½″	37	8.1″×3.0″	5757K63	76.29	5757K72	33.57
½″	60	8.2″×3.3″	5757K64	92.00	5757K73	44.14
¾″	140	10.5″×4.6″	5757K65★	237.45	5757K74	86.14
1″	160	10.5″×4.6″	5757K66★	237.45	5757K74	86.14

★ Bowl is aluminum.

For information about air preparation, see page 963.

Ultra-Fine Modular Air Filters

Choose one or more of these modular filters to create your own high-pressure/high-flow filtration system. Connectors (sold separately as a kit below) let you connect and disconnect components for fast installation and maintenance. All filters have an aluminum body and bowl, and a service indicator to alert you when the filter element must be changed, unless noted. Max. temperature is 176° F, unless noted. Max. pressure is 232 psi. Inlet and outlet connections are NPT female.

Particle filters remove particles as small as 1 micron and separate water using a glass microfiber element. Include an automatic drain.

Oil-removal (coalescing) filters have a glass microfiber element to create virtually oil-free air and are rated to 0.01 micron. Include an automatic drain.

Oil vapor-removal filters are ideal for food and drug applications requiring removal of oil vapors and odors. Filters are rated to 0.003 ppm and have an activated carbon element. Max. temperature is 104° F.

Connector kits include two bolts, two nuts, and two O-rings.

Particle Filter

Oil-Removal Filter

Oil Vapor-Removal Filter

Also Available: Replacement filter elements. For particle filter elements, please ask for 6754K4 and specify pipe size. For oil-removal filter elements, please ask for 6754K5 and specify pipe size. For oil vapor-removal filter elements, please ask for 6754K6 and specify pipe size.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd. ✓	Particle Filters	Each	Oil-Removal Filters	Each	Oil Vapor-Removal Filters	Each	Connector Kits	Each	Mounting Brackets	Each
1/4″	24	6 9/16″ × 2 11/32″	6754K111★	$171.91	6754K131★	$171.91	6754K151★	$150.70	6754K73	$49.50	6754K83	$85.80
3/8″	47	8 1/4″ × 3 7/16″	6754K112	321.49	6754K132	321.49	6754K152★	299.16	6754K74	49.50	6754K84	85.80
1/2″	60	8 1/4″ × 3 7/16″	6754K113	316.80	6754K133	316.80	6754K153★	309.21	6754K74	49.50	6754K84	85.80
3/4″	118	12 13/32″ × 5 1/8″	6754K114	427.73	6754K134	427.73	6754K154★	406.40	6754K75	68.20	6754K85	110.00
1″	200	16 11/32″ × 5 1/8″	6754K115	544.00	6754K135	544.00	6754K155★	523.73	6754K75	68.20	6754K85	110.00
1 1/2″	471	28 5/32″ × 5 1/8″	6754K117	710.40	6754K137	710.40	6754K157★	693.82	6754K75	68.20	6754K85	110.00
2″	618	32 13/32″ × 6 15/32″	6754K118	959.13	6754K138	959.13	6754K158★	887.56	—	—	—	—
2 1/2″	1,324	41 7/16″ × 9 7/8″	6754K119	1,522.91	6754K139	1,493.05	6754K159★	1,506.33	—	—	—	—

✓ Dimensions do not include service indicator. ★ Does not have a service indicator.

Miniature Air Regulators

Regulate your output air pressure where space is at a premium with these small regulators. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. All have a 1/8″ NPT gauge port. Inlet and outlet connections are NPT female. *Mounting brackets* include mounting nut.

Zinc body is lightweight and economical. Accuracy is ±3 psi. ***Aluminum body*** is lightweight and corrosion resistant. Accuracy is ±1 psi. ***Brass body*** is compatible with water as well as nontoxic, nonacidic chemicals. Accuracy is ±1 psi. ***Acetal body*** is corrosion resistant and FDA compliant. Accuracy is ±1 psi, unless noted.

To Order: Please specify regulating range from those listed in the table.

Zinc Body w/Gauge

Acetal Body w/o Gauge

Body Material	Pipe Size	Max. scfm @ 100 psi	Available Regulating Ranges, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd. ♣	Regulators	Each	Mounting Brackets	Each
Regulators with Gauge										
Zinc	1/8″	19	1-10, 5-50, 5-100	150° F	300 psi	2.91″×1.63″	9892K11	$26.02	9891K66	$2.79
Zinc	1/4″	22	1-10, 5-50, 5-100	150° F	300 psi	2.91″×1.63″	9892K12	26.02	9891K66	2.79
Aluminum	1/8″	10	0-25, 0-60, 0-125	120° F	300 psi	3.06″×1.56″	6763K81	37.27	6763K21	6.30
Aluminum	1/4″	10	0-25, 0-60, 0-125	120° F	300 psi	3.06″×1.56″	6763K82	37.27	6763K21	6.30
Brass	1/8″	10	0-25, 0-60, 0-125	120° F	300 psi	3.06″×1.56″	6763K11	38.06	6763K21	6.30
Brass	1/4″	10	0-25, 0-60, 0-125	120° F	300 psi	3.06″×1.56″	6763K13	38.06	6763K21	6.30
Regulators without Gauge										
Zinc	1/4″	15	5-50, 5-125, 5-150	150° F	250 psi	2.30″×1.63″	41875K31	11.07	—	—
Acetal	1/4″	26	5-50, 5-125	125° F	150 psi	3.01″×1.63″	41595K21 ♦	18.90	9891K66	2.79
Acetal	1/8″	18	0-25, 0-60, 0-125	125° F	150 psi	3.10″×1.60″	6746K31	25.91	6763K21	6.30
Acetal	1/4″	18	0-25, 0-60, 0-125	125° F	150 psi	3.10″×1.60″	6746K32	25.91	6763K21	6.30

♣ Dimensions do not include gauge. ♦ Accuracy is not rated.

Miniature Air Regulators with Tube Connections

No need for tools—tube fitting connections make it easy to connect and install these regulators. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±3%. Body is acetal. Units do not have gauge ports. Mounting bracket for regulators with barbed connections and with compression tube fittings includes a mounting nut. Regulators with instant tube fittings also include a mounting nut.

w/Barbed Connections

w/Compression Tube Fittings

w/Instant Tube Fittings

For Tube Size	Max. scfm @ 100 psi	Regulating Range, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Regulators	Each	Mounting Brackets	Each
With Barbed Connections									
1/4″ ID	6	5-100	150° F	250 psi	2.95″×1.5″	8727K11	$20.46	9891K66	$2.79
With Compression Tube Fittings									
1/4″ OD	3	5-100	150° F	250 psi	2.95″×2″	8727K12	56.05	9891K66	2.79
With Instant Tube Fittings									
1/4″ OD	17	15-120	140° F	150 psi	2.05″×1.85″	8844K11	31.43	8844K21	3.41
5/16″ OD	23	15-120	140° F	150 psi	2.28″×2.18″	8844K12	32.04	8844K21	3.41

Tamper-Resistant Miniature Air Regulators

A locking ring in the adjustment knob prevents accidental outlet flow changes. Regulators include a gauge and are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Both have an aluminum body and include a mounting nut. Accuracy is not rated. Inlet and outlet connections are NPT female.

Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd. ♣	Regulators	Each	Mounting Brackets	Each
1/8″	45	0-140	140° F	250 psi	3 9/16″×1 9/16″	9172K16	$31.62	9172K24	$11.80
1/4″	59	0-140	140° F	250 psi	3 9/16″×1 9/16″	9172K18	37.21	9172K24	11.80

♣ Dimensions do not include gauge.

For information about air preparation, see page 963.

Nonadjustable Miniature Air Regulators

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If you always need the same outlet pressure and don't want anyone to change the settings, these inherently tamper-resistant regulators are perfect because they come set at one nonadjustable outlet pressure. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. All have gauge ports (gauges not included). Accuracy is ±3 psi. Inlet and outlet connections are NPT female.

(A) OSHA-Compliant Air Service— Set specifically to 30 psi outlet pressure and meet OSHA standard 1-13.1. Regulators are designed for compressed air service. Body is zinc.

(B) Air Service— Regulators are designed for compressed air service. Body is aluminum.

(C) Water and Air Service— Suitable for use with both water and compressed air. Body is brass.

To Order: For Styles B and C, please specify outlet pressure setting in 5 psi increments from the range listed in the table.

	Pipe Size	Gauge Port Size	Max. scfm @ 100 psi	Available Outlet Pressure Settings	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.		Each
A	1/4″	1/8″	15	_____	125°F	250 psi	2.88″×1.65″	8078T1	$22.85
A	3/8″	1/4″	35	_____	125°F	250 psi	3.3″ ×2.12″	8078T2	34.07
A	1/2″	1/4″	60	_____	125°F	250 psi	6.08″×2.81″	8078T3	48.00
B	1/8″	1/8″	12	5-100 psi	175°F	400 psi	2.58″×1.48″	1777K1	26.99
B	1/4″	1/8″	12	5-100 psi	175°F	400 psi	2.58″×1.48″	1777K2	26.99
C	1/8″	1/8″	12	5-100 psi	175°F	400 psi	2.28″×1.48″	9386K1	31.69
C	1/4″	1/8″	12	5-100 psi	175°F	400 psi	2.28″×1.48″	9386K2	31.69

Inline Miniature Air Regulators

Lever Controlled

Tamper Resistant

Designed for installation directly to your air-powered tool. Connections are NPT female inlet and NPT male outlet.

Lever Controlled— Turn the handle and go from full-line pressure to almost complete shutoff. A gauge on top indicates air pressure at all times. Regulators are nonrelieving style; they have no vent ports so they prevent release of downstream pressure. Accuracy is ±3% for the first third of the range, ±5% for the second third, and ±8% for the last third. Body is brass.

Tamper Resistant— A lock prevents unintentional changes or tampering with the setting. To adjust pressure, turn the collar. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±2.5 psi. Body is aluminum, except 41685K11 which is brass. Units do not have gauge ports.

Pipe Size Inlet	Pipe Size Outlet	Max. scfm @ 100 psi	Regulating Range, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Lg.		Each
Lever Controlled								
1/4″	1/4″	5	0-150	250°F	150 psi	2″ ×3.25″	4158K72	$26.60
Tamper Resistant								
1/4″	1/4″	18	50-145	175°F	150 psi	0.88″×3.06″	41685K11	36.56
3/8″	1/4″	18	50-145	175°F	150 psi	1.06″×3.875″	41685K17	41.09
3/8″	3/8″	18	50-145	175°F	150 psi	1.06″×3.875″	41685K18	41.23

Panel-Mount Miniature Air Regulator

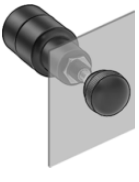

Super-compact regulator has inlet and outlet ports on the bottom, making it ideal for panel-mount applications (panel mount nut included). Regulator is relieving style, which reduces downstream pressure through a vent port when your system is blocked. Body is corrosion-resistant anodized aluminum. Accuracy is ±0.25 psi. Max. temperature is 160°F. Max. pressure is 250 psi. Inlet and outlet connections are NPT female. Gauge port has 10-32 UNF female threads (gauge not included).

To Order: Please specify regulating pressure range (psi): 0-5, 0-15, 0-30, 0-60, or 0-100.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.		Each
1/16″	2.5	3.33″×0.88″	41795K3	$42.43

Nonrelieving Miniature Air Regulators

Nonrelieving means no vent ports, preventing release of downstream pressure. Regulators are also suitable for use with drinkable water. Compact and lightweight, they are made of corrosion-resistant, FDA-compliant acetal.

All have two 1/8″ NPT gauge ports (gauge not included). Accuracy is ±1 psi. Max. temperature is 125°F. Max. pressure is 150 psi. Inlet and outlet connections are NPT female.

To Order: Please specify regulating pressure range (psi): 0-25, 0-60, or 0-125.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.		Each
1/8″	18	3.10″×1.60″	6746K41	$25.17
1/4″	18	3.10″×1.60″	6746K42	25.17

Air Regulators

D

E

F

Adjust air pressure to the level you need with these relieving-style regulators. The relieving feature reduces downstream pressure through a vent port when your system is blocked. Inlet and outlet connections are NPT female.

(D) Without Pressure Gauge— Accuracy is ±3 psi. All have a zinc body and two 1/4″ NPT gauge ports (unless noted).

(E&F) With Pressure Gauge— *High-flow regulators (Style E)* have T-handle adjustment for added leverage—great for gloved- or greasy-hand operation. Accuracy is ±3 psi. All have an aluminum body except 4959K51, which has a zinc body. *Damage-resistant regulators (Style F)* have a built-in gauge so they're more resistant to damage in high-traffic areas. Accuracy is ±3%. All have cast aluminum body except 8812K31, which has a cast zinc body.

To Order: Please specify regulating pressure range from those listed when necessary.

	Pipe Size	Max. scfm @ 100 psi	Available Regulating Ranges, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Regulators	Each	Mounting Brackets	Each
D	1/4″	56	1-30, 1-60, 2-125	125°F	250 psi	3.3″ ×2.12″	41735K11	$19.08	41735K48	$6.05
D	1/4″	70	5-30, 5-60, 5-150	150°F	300 psi	4.19″×1.97″	4956K11●	19.24	4957K61	5.40
D	3/8″	56	1-30, 1-60, 2-125	125°F	250 psi	3.3″ ×2.12″	41735K12	25.06	41735K48	6.05
E	1/4″	94	5-30, 5-60, 5-150	150°F	300 psi	5.34″×1.97″	4959K51	31.44	4957K61	5.40
E	3/8″	149	5-60, 5-150, 10-250	175°F	300 psi	5.58″×2.68″	4959K52	41.70	4957K62	5.98
E	1/2″	225	5-60, 5-150, 10-250	175°F	300 psi	7.64″×3.15″	4959K53	59.82	4910K98	6.19
E	3/4″	225	5-60, 5-150, 10-250	175°F	300 psi	7.64″×3.15″	4959K54	59.82	4910K98	6.19
E	1″	360	5-50, 5-125, 10-250	175°F	300 psi	8.14″×4.25″	4959K55	104.12	4959K97	9.60
E	1 1/4″	360	5-50, 5-125, 10-250	175°F	300 psi	8.14″×4.25″	4959K56	124.54	4959K97	9.60
E	1 1/2″	360	5-50, 5-125, 10-250	175°F	300 psi	8.14″×4.25″	4959K57	124.51	4959K97	9.60
F	1/8″	28	7-125	140°F	145 psi	3.7″ ×2.24″	8812K31	22.68	8812K21	4.42
F	1/4″	52	7-125	140°F	145 psi	3.98″×2.17″	8812K32	29.43	8812K22	4.42
F	3/8″	52	7-125	140°F	145 psi	4.57″×2.32″	8812K33	31.67	8812K23	4.42
F	1/2″	105	7-125	140°F	145 psi	5.04″×2.68″	8812K34	39.29	8812K24	4.42

● One 1/8″ NPT gauge port.

For information about air preparation, see page 963.

Flexi-Range Air Regulators

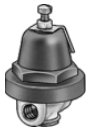

Adjustment springs (included) let you choose from 2 to 30, 10 to 50, 30 to 90, and 100 to 180 psi regulating pressure ranges, while a slotted-head adjusting screw lets you change outlet pressure. Regulators are nonrelieving style; they have no vent ports so they prevent release of downstream pressure. Accuracy is ±5%. Body is forged brass. Inlet and outlet connections are NPT female.

Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Max. Temp.	Max. Pressure	O'all Size, Ht. × Wd.		Each
1/4″	18	2-180	180° F	300 psi	3 7/16″ × 2 1/4″	4771K2	$85.60
3/8″	18	2-180	180° F	300 psi	3 7/16″ × 2 1/4″	4771K3	85.60

Tamper-Resistant Air Regulators

Prevent unauthorized adjustment with these regulators. Regulators are relieving style, which reduces downstream pressure when your system is blocked. Inlet and outlet connections are NPT female.

(A) Quick Response— A balanced valve diaphragm assures rapid response to inlet pressure changes. All have two 1/8″ NPT gauge ports (one gauge is included). They include a knob for pressure adjustment and a tamper-resistant clip. Accuracy is ±1%. Body is aluminum.

(B&C) Key Lock— A built-in lock means outlet pressure settings remain unchanged, giving these regulators an extra level of security. Just set the desired outlet pressure, lock it, and remove the key to prevent further adjustment. Universal lock design lets you lock multiple regulators with one key. All include a key and a gauge.

Style B have an accuracy of ±3%. Body is cast zinc and aluminum. Furnished with a mounting bracket.

Style C have an accuracy of ±3 psi. Body is zinc. Mounting bracket includes a mounting nut.

(D) T-Handle Lock— Simply set the pressure where you want it, then remove the T-handle key to prevent adjustment. A built-in stop inside each regulator prevents internal damage in the event of a system surge. Regulators are made of die cast aluminum and have two 1/4″ NPT gauge ports (gauges are sold separately at right). Accuracy is ±5 psi. **To Order:** Please specify regulating range from those listed.

A

B

C

D

	Pipe Size	Max. scfm @ 100 psi	Available Regulating Ranges, psi	Max. Temp.	Max. Pressure	O'all Size, Ht. × Wd.	Regulators	Each	Mounting Brackets	Each
A	1/4″	86	0-140	140° F	250 psi	4.77″ × 2.21″	4246K41	$52.43	4246K21	$12.04
A	3/8″	179	0-140	140° F	250 psi	5.47″ × 2.76″	4246K42	56.28	4246K22	12.04
A	1/2″	210	0-140	140° F	250 psi	5.47″ × 2.76″	4246K43	57.46	4246K22	12.04
A	3/4″	290	0-140	140° F	250 psi	7.22″ × 3.54″	4246K44	107.18	4246K23	12.04
A	1″	290	0-140	140° F	250 psi	7.22″ × 3.54″	4246K45	107.94	4246K23	12.04
B	1/4″	52♣	7-174	140° F	232 psi	3.78″ × 2.52″	8080T1	139.24	———	———
B	3/4″	123♣	7-174	140° F	232 psi	5.31″ × 3.35″	8080T2	188.51	———	———
B	1″	247♣	7-174	140° F	232 psi	5.83″ × 4.57″	8080T3	270.73	———	———
C	3/8″	60	2-125	125° F	250 psi	6.08″ × 2.81″	8080T4	71.66	8080T11	4.48
C	1/2″	75	2-125	125° F	250 psi	6.08″ × 2.81″	8080T5	71.66	8080T11	4.48
D	1/4″	37	0-50, 0-125	250° F	250 psi	5.5″ × 3″	4328K1	53.27	4328K32	9.04
D	3/8″	37	0-50, 0-125	250° F	250 psi	5.5″ × 3″	4328K2	53.25	4328K32	9.04
D	1/2″	60	0-50, 0-125	250° F	250 psi	7″ × 4″	4328K3	66.53	4328K33	9.41
D	3/4″	120	0-50, 0-125	250° F	250 psi	8.5″ × 5″	4328K4	122.81	4328K34	11.40
D	1″	120	0-50, 0-125	250° F	250 psi	8.5″ × 5″	4328K5	125.18	4328K34	11.40

Gauge for 0-50 psi Style D Regulators ..... 4328K25 Each $12.01
Gauge for 0-125 psi Style D Regulators ..... 4328K24 Each $11.41
♣ Max. scfm @ 145 psi.

Ultra-Corrosion-Resistant Air Regulators

A Type 316 stainless steel body makes these regulators ideal for corrosive environments such as those found in the semiconductor, pharmaceutical, marine, chemical, instrumentation, and paper industries. Regulators meet NACE (National Association of Corrosive Engineers) specification MR 0176-98. All are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±1 psi. 4289K11 has two 1/8″ NPT gauge ports; 4289K13 has two 1/4″ NPT gauge ports. Inlet and outlet connections are NPT female. **To Order:** Please specify regulating pressure range from those listed.

Pipe Size	Max. scfm @ 100 psi	Available Regulating Ranges, psi	Max. Temp.	Max. Pressure	O'all Size, Ht. × Wd.	Regulators	Each	Optional Mounting Nuts	Each
1/4″	10	0-25, 0-60, 0-125	150° F	300 psi	3 1/16″ × 1 9/16″	4289K11	$149.89	4331K52	$13.56
1/2″	100	0-125, 0-250	150° F	300 psi	4 31/32″ × 2 11/32″	4289K13	511.81	4331K54	25.00

Class 100 Clean Room Air Regulators

E

Cleaned and assembled in a Class 100 clean room and double-packed for protection from contamination, regulators are suitable for use in a Class 100 clean room. Ideal for semiconductor, medical, food processing, and other sensitive applications. All regulators include a mounting nut.

(E) With NPT Connections— Suitable for air, nitrogen, carbon dioxide, argon, and water. Regulators are nonrelieving style; they have no vent ports so they prevent release of downstream pressure. Seal is fluororubber. Made of Type 316 stainless steel. Gauge port is 1/4″ NPT (gauge and mounting brackets sold separately below). Accuracy is ±7 psi. Inlet and outlet connections are NPT female.

(F) With BSPT Connections— Regulators are relieving style, allowing reduction of downstream pressure through a vent port when your system is blocked. All have an aluminum body, a brass valve, and NBR rubber seal. Gauge and mounting bracket included. Accuracy is ±3%. Inlet and outlet connections are BSPT female (British Standard Pipe Taper Thread). *Note:* 0.05-0.85 MPa is equal to 7-123 psi. 1 MPa is equal to 145 psi.

F

	Pipe Size	Max. scfm @ 100 psi	Regulating Range	Max. Temp.	Max. Pressure	O'all Size, Ht. × Wd.	Regulators	Each	Mounting Brackets	Each
E	1/8″	15	7-100 psi	140° F	145 psi	3.29″ × 1.57″	4238K41	$199.97	4238K51	$9.42
E	1/4″	15	7-100 psi	140° F	145 psi	3.29″ × 1.57″	4238K42	199.97	4238K51	9.42
E	1/4″	70	7-100 psi	140° F	145 psi	4.11″ × 2.28″	4238K43	311.84	4238K52	15.97
E	3/8″	70	7-100 psi	140° F	145 psi	4.11″ × 2.28″	4238K44	311.84	4238K52	15.97
E	1/2″	70	7-100 psi	140° F	145 psi	4.11″ × 2.28″	4238K45	327.47	4238K52	15.97
F	1/4″	28.4	0.05-0.85 MPa	140° F	1 MPa	3.98″ × 2.17″	6747K11	87.48	———	———
F	3/8″	53	0.05-0.85 MPa	140° F	1 MPa	4.57″ × 2.09″	6747K12	86.74	———	———
F	1/2″	106	0.05-0.85 MPa	140° F	1 MPa	5.04″ × 2.76″	6747K13	105.85	———	———
F	3/4″	177	0.05-0.85 MPa	140° F	1 MPa	5.08″ × 2.76″	6747K14	119.39	———	———

Gauge for Style E Regulators ..... 4238K47 Each $65.04

For information about air preparation, see page 963.

Dial-Set Air Regulators

Easily select your outlet pressure with a transparent pressure-calibrated adjustment dial. The compact design is ideal for applications where a protruding gauge may be a problem. Regulators mount in any position, but dial face may not always be visible. All are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±0.5 psi. Regulators have a zinc body and two 1/4″ NPT gauge ports (gauge not included). Max. temperature is 150° F. Max. pressure is 300 psi. Inlet and outlet connections are NPT female.

To Order: Please specify regulating pressure range from those listed.

Pipe Size	Max. scfm @ 100 psi	Available Regulating Ranges, psi	O'all Size, Ht.×Wd.		Each
1/4″	117	0-40, 0-160	4.1″×3.2″	4963K31	$76.80
3/8″	180	0-40, 0-160	4.1″×3.2″	4963K32	76.80
1/2″	195	0-40, 0-160	4.1″×3.2″	4963K33	76.80
3/4″	220	0-40, 0-160	4.1″×3.2″	4963K34	76.80
Mounting Bracket				4963K41	8.44

Reverse-Flow Air Regulators

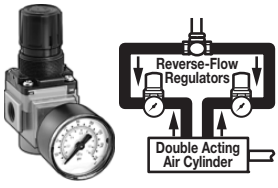

An internal check valve allows for reverse flow, making these regulators suitable for extending and retracting air cylinder applications. All of these regulators are relieving style, except the 10-32 pipe size, which is nonrelieving. Relieving style regulators reduce downstream pressure through a vent port when your system is blocked. Gauge is included. Accuracy is ±3%. Body is aluminum (unless noted). Max. temperature is 140° F. Max. pressure is 145 psi. Inlet and outlet connections are NPT female. Mounting bracket and nut are included.

Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	O'all Size, Ht.×Wd.		Each
10-32	5	7-102	2.28″×0.98″	4964K21 ♦	$29.99
1/8″	28	7-125	3.70″×2.24″	4964K22 ♦	34.14
1/4″	28	7-125	3.70″×2.24″	4964K23 ♦	35.12
3/8″	52	7-125	4.57″×2.32″	4964K24	45.63
1/2″	105	7-125	5.04″×2.68″	4964K25	56.94
3/4″	353	7-125	6.65″×3.43″	4964K26	89.70

♦ Body is zinc.

Flexi-Max Pressure-Limiting Air Regulators

Designed to let you limit the maximum pressure of your system. Just install the regulator, turn on the air, use an adjustable wrench to set the maximum pressure, and install the adjusting knob by snapping it in place. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Each has two 1/4″ NPSI (NPT-compatible) gauge ports (gauge not included). Accuracy is ±5%. Body is aluminum. Inlet and outlet connections are NPT female.

Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Regulators	Each	Mounting Brackets	Each
3/8″	33	29-109	140° F	232 psi	4.5″×2.5″	9336K31	$76.98	9336K21	$3.80
1/2″	63	29-109	140° F	232 psi	4.5″×2.5″	9336K32	76.98	9336K21	3.80

Precision Air Regulators

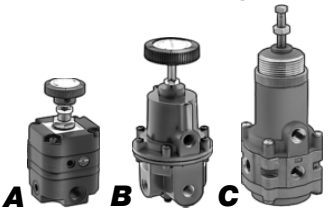

Perfect when you need a higher degree of precision repeatability than standard regulators. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Gauge port is 1/4″ NPT. For maximum effectiveness, use with a Grade 1A or better gauge (not included; see 4088K on page 571). Inlet and outlet connections are NPT female. All regulators include a mounting nut.

To Order: Please specify regulating range from those listed.

(A) Standard— Regulators have a high-relief function that quickly exhausts pressure to protect your components in the event of a system blockage. Accuracy is ±0.1%. Body is zinc.

(B) High Flow— Accuracy is ±0.3%. An aluminum body provides good corrosion resistance.

(C) Corrosion Resistant— Regulators have a Type 316 stainless steel body for superior corrosion resistance and meet NACE (National Association of Corrosion Engineers) material requirement MR-01-75. They also have good chemical resistance and are ideal for petrochemical, food processing, and paper mill applications. Accuracy is ±0.1 psi.

	Pipe Size	Max. scfm @ 100 psi	Available Regulating Ranges, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Regulators	Each	Mounting Brackets	Each
A	1/4″	14	2-25, 2-60, 2-120	150° F	150 psi	4.31″×2.12″	6162K13	$114.19	4246K12	$19.25
A	3/8″	14	2-25, 2-60, 2-120	150° F	150 psi	4.31″×2.12″	6162K15	117.43	4246K12	19.25
B	1/4″	80	0-15, 0-30, 0-60, 0-150	160° F	250 psi	6.06″×3″	1888K1	77.06	1888K5	9.80
B	3/8″	80	0-15, 0-30, 0-60, 0-150	160° F	250 psi	6.06″×3″	1888K2	77.06	1888K5	9.80
B	1/2″	80	0-15, 0-30, 0-60, 0-150	160° F	250 psi	6.06″×3″	1888K3	95.02	1888K5	9.80
C	1/4″	20	0-30, 0-60, 0-100, 2-150	180° F	250 psi	6.9″ ×2.5″	1806K1	434.18	1806K3	26.60
C	3/8″	20	0-30, 0-60, 0-100, 2-150	180° F	250 psi	6.9″ ×2.5″	1806K2	434.18	1806K3	26.60

Precision Electronic Air Regulators

Electronic regulators convert a current or voltage input signal into a proportional pressure output. As you increase your input signal, output pressure increases within the regulating range listed. Use with any sensor or source capable of producing the required input signal, or a programmable logic controller (PLC) for automatic setting adjustments.

Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Mount vertically. Air inlet and outlet connections are NPT female.

(D) Low Flow— Accuracy is ±0.5%. All have a NEMA 4X enclosure suitable for washdown and outdoor applications. Body is aluminum. Gauge port is 1/4″ NPT (gauge not included). Electric connection knockouts are 1/2″ dia. Mounting bracket is included.

(E) High Flow— Accuracy is ±0.8%. An integral LED indicator on top of each unit displays output pressure. Body is aluminum.

(F) High-Precision Easy-Control— Accuracy is ±0.3%. On-board software enables push-button control of 10 functions including outlet pressure, input signal (switchable from VDC to mA), pressure scale (psi or bar), minimum pressure, and maximum pressure (within the unit's stated range). All controls are on the same face for easy access. An IP65 enclosure provides indoor protection against dust and dripping liquids. Body is aluminum.

	Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Input Signal	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.		Each
D	1/4″	12	1- 17	4-20 mA	150° F	100 psi	4.25″×2.6″	4993K6	$269.31
D	1/4″	12	2- 60	4-20 mA	150° F	150 psi	4.25″×2.6″	4993K5	293.80
D	1/4″	12	3- 15	4-20 mA	150° F	100 psi	4.25″×2.6″	4993K1	269.31
D	1/4″	12	3- 27	4-20 mA	150° F	100 psi	4.25″×2.6″	4993K2	269.31
D	1/4″	12	3-120	4-20 mA	150° F	150 psi	4.25″×2.6″	4993K3	321.77
D	1/4″	12	3-120	0-10 VDC	150° F	150 psi	4.25″×2.6″	4993K4	321.77
E	1/4″	90	0-125	0-10 VDC	125° F	150 psi	6.31″×2.35″	47955K21	536.42
E	3/8″	100	0-125	0-10 VDC	125° F	150 psi	6.31″×2.35″	47955K22	536.42
E	1/2″	100	0-125	0-10 VDC	125° F	150 psi	6.31″×2.35″	47955K23	536.42
F	1/4″	32	0- 29	0-10 VDC/4-20 mA	122° F	43 psi	5.55″×2.25″	8083T1	480.52
F	1/4″	32	0-145	0-10 VDC/4-20 mA	122° F	152 psi	5.55″×2.25″	8083T2	480.52

For information about air preparation, see page 963.

Multicontrol Air Regulators

Control multiple regulating pressure ranges from one air supply inlet. Connect your single air supply and set up to eight different outlet pressures (depending on the number of stations you choose). Each station includes a gauge. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Max. temperature is 140° F. Inlet and outlet connections are NPT female.

Compact units are ideal for use in tight spaces. Each unit consists of one manifold base and two, three, four, five, or six regulators. Accuracy is ±1.5%. Made of aluminum. Max. pressure is 120 psi. ***Standard*** units consist of two, four, six, or eight regulators connected modularly. Accuracy is ±3%. Made of zinc. Max. pressure is 232 psi.

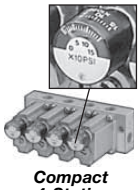

Compact 4-Station

Standard 4-Station

No. of Stations	Regulating Range, psi	1/8″ Inlet and Outlet: Max. scfm @ 100 psi	O'all Size, Ht.×Wd.★	Each	1/4″ Inlet, 1/8″ Outlet: Max. scfm @ 100 psi	O'all Size, Ht.×Wd.★	Each
Compact							
2	7-100	10	1.34″× 2.17″	1924K11 $94.60	21	1.69″× 2.99″	1924K21 $110.43
3	7-100	10	1.34″× 2.91″	1924K12 137.22	21	1.69″× 4.09″	1924K22 160.09
4	7-100	10	1.34″× 3.66″	1924K13 179.84	21	1.69″× 5.20″	1924K23 209.74
5	7-100	10	1.34″× 4.41″	1924K14 222.47	21	1.69″× 6.30″	1924K24 259.40
6	7-100	10	1.34″× 5.16″	1924K15 265.09	21	1.69″× 7.40″	1924K25 309.05
Standard		1/4″ Inlet and Outlet			3/4″ Inlet and Outlet		
2	7-174	56	3.76″× 3.14″	8087T1 $140.74	112	5.35″× 4.34″	8087T5 $164.95
4	7-174	56	3.76″× 6.28″	8087T2 256.05	112	5.35″× 8.68″	8087T6 312.48
6	7-174	56	3.76″× 9.42″	8087T3 376.52	112	5.35″×13.02″	8087T7 460.38
8	7-174	56	3.76″×12.56″	8087T4 513.90	112	5.35″×17.36″	8087T8 653.29

★ Dimensions do not include gauge.

Air-Operated Volume Boosters

Boost a low-flow air control signal up to 50 scfm. The 1:3 and 1:6 ratio models also increase pressure linearly; for example, the 1:3 model would take a low-volume 3 to 15 psi signal and increase it to 9 to 45 psi. All have a high relief function that quickly exhausts up to 15 scfm to protect your components in the event of a system blockage. Body is cast aluminum. Boosters have three air connections: air inlet and outlet connections plus a 1/4″ air control signal connection. All three connections are NPT female. Boosters have two 1/4″ NPT gauge ports (gauge not included).

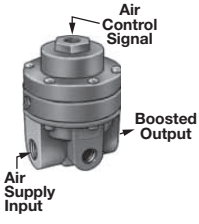

Pipe Size	Ratio	Max. scfm @ 100 psi	Max. Signal Pressure	Max. Input Pressure	Max. Temp.	Accuracy	O'all Size, Ht.×Wd.	Boosters Each	Mounting Brackets Each
1/4″	1:1	50	150 psi	250 psi	200° F	±1.0%	4″×3″	4987K41 $149.60	1888K5 $9.80
1/4″	1:3	50	50 psi	250 psi	200° F	±1.25%	4″×3″	4987K61 149.60	1888K5 9.80
1/4″	1:6	50	25 psi	250 psi	200° F	±2.0%	4″×3″	4987K81 149.60	1888K5 9.80
3/8″	1:1	50	150 psi	250 psi	200° F	±1.0%	4″×3″	4987K42 149.60	1888K5 9.80
3/8″	1:3	50	50 psi	250 psi	200° F	±1.25%	4″×3″	4987K62 149.60	1888K5 9.80
3/8″	1:6	50	25 psi	250 psi	200° F	±2.0%	4″×3″	4987K82 149.60	1888K5 9.80

Inline Air Lubricators

Extend the life of your air-powered tools with these lubricators. They automatically lubricate your air tool each time it's used, ensuring smooth operation. All use nondetergent oil (not included).

(A&B) With Easy-View Plastic Bowl— A transparent bowl lets you know when it's time to refill your oil. *Style A* have an aluminum body. Mount directly to the air inlet of your tool. Inlet connection is NPT female. Outlet connection is NPT male. *Style B* has an aluminum and zinc body. Mount within 6 ft. of your device. Inlet and outlet connections are NPT female.

(C) With View Port— A translucent view port in the aluminum reservoir lets you know when it's time to refill your oil. Mount 5- to 6 ft. down the line from your tool. Body is aluminum. Inlet and outlet connections are NPT female.

(D) Solid Body— Mount directly to the air inlet of your tool. Body is aluminum. Inlet connection is NPT female. Outlet connection is NPT male.

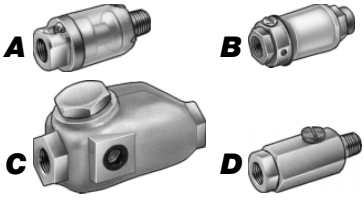

	Pipe Size	Max. scfm @ 100 psi	Oil Cap., oz.	Type of Oil Required	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Each
A	1/4″	16	0.34	5W	♥	175 psi	2 1/2″ ×1 1/8″	1150K81 $17.02
A	1/4″	16	0.68	5W	♥	175 psi	3″ ×1 1/2″	1150K83 35.12
B	1/4″	20	1	10W	180° F	150 psi	2 3/4″ ×1 19/64″	9995K76 40.42
C	1/2″	30	1.4	5W to 10W	150° F	500 psi	4 7/8″ ×2 5/8″	6779K11 41.71
C	3/4″	70	3.7	5W to 10W	150° F	260 psi	6 3/8″ ×3″	6779K12 47.20
C	3/4″	70	11	5W to 10W	150° F	300 psi	7 1/4″ ×3 3/4″	6779K13 57.69
C	1″	150	16	5W to 10W	150° F	250 psi	10″ ×4 3/8″	6779K14 64.54
D	3/8″	32	0.25	ISO Grade 32 Turbine Oil	150° F	200 psi	3 3/16″ ×1 5/16″	9996K23 30.54

♥ Max. temperature is not rated; ambient (surrounding) temperature only.

Air Lubricators

Lubricators release an oil aerosol into the airstream to provide a set amount of internal lubrication to air-operated tools. A self-adjusting flow sensor automatically maintains a constant oil-to-air ratio. Body is aluminum (unless noted). Inlet and outlet connections are NPT female. All use nondetergent oil (not included).

(E) With Aluminum Bowl— All have a sight glass for easy viewing of oil level. Max. temperature is 175° F. Max. pressure is 250 psi.

(F) With Polycarbonate Bowl— Bowl is transparent so you can see oil level. Max. temperature is 125° F. Max. pressure is 150 psi.

	Pipe Size	Max. scfm @ 100 psi	Oil Cap., oz.	Type of Oil Required	O'all Size, Ht.×Wd.	Each
E	3/8″	60	3.5	ISO Grade 10-46	8.02″×2.68″	4962K42 $46.10
E	1/2″	60	3.5	ISO Grade 10-46	8.02″×2.68″	4962K47 46.10
E	1/2″	190	7	ISO Grade 10-46	8.81″×3.15″	4962K33 56.31
E	3/4″	190	7	ISO Grade 10-46	8.81″×3.15″	4962K34 56.31
E	1″	285	32	ISO Grade 10-46	12.43″×4.50″	4962K25 105.92
E	1 1/4″	285	32	ISO Grade 10-46	12.43″×4.50″	4962K26 123.95
F	1/8″	10	2	5W to 10W	4.30″×1.60″	4268K11 31.52
F	1/8″	12	1	10W to 40W	5.80″×1.73″	4268K48 44.57
F	1/4″	10	2	5W to 10W	4.30″×1.60″	4268K13 31.52
F	1/4″	12	1	10W to 40W	5.80″×1.73″	4268K49 44.57
F	1/4″	25	2	5W to 10W	4.30″×1.60″	4268K14 31.52
F	1/4″	57	2.2	ISO Grade 10-46	6.90″×1.98″	4268K31 30.93
F	3/8″	45	5	100-200 SSU	6.66″×3″	4268K15● 42.90
F	1/2″	50	5	100-200 SSU	6.66″×3″	4268K16● 42.90
F	1/2″	100	10	100-200 SSU	7.06″×3.35″	4268K17● 52.62
F	3/4″	170	26	100-200 SSU	10.34″×4.63″	4268K18● 109.88
F	1″	330	26	100-200 SSU	10.34″×4.63″	4268K19● 109.88

● Body is zinc. Includes a metal bowl guard.

For information about air preparation, see page 963.

Space-Saver Stacked Air Filter/Regulators

A&B C D E F

Get a filter and a regulator in one "piggyback" unit the size of a filter alone. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. All include a gauge, except Style F. Inlet and outlet connections are NPT female.

(A&B) Metal Body and Bowl— Have an automatic drain. Filter has a polypropylene element that removes particles as small as 5 microns. Regulator accuracy is ±3 psi.

Style A have a zinc body and bowl. *Style B* have an aluminum body and bowl.

(C&D) Metal Body and Polycarbonate Bowl— A transparent bowl allows you to see what's being filtered. Drain is automatic. Filter has a polypropylene element that removes particles as small as 5 microns. Regulator accuracy is ±3 psi.

Style C have a zinc body. *Style D* have an aluminum body and a steel bowl guard.

(E) Brass Body and Polyurethane Bowl— Offer increased chemical compatibility. A transparent polyurethane bowl won't crack in systems heavy with synthetic compressor oils and allows you to see what's being filtered. Drain is manual. Filter has a polypropylene element and removes particles as small as 5 microns. Regulator accuracy is ±1%.

(F) Stainless Steel Body and Bowl— Ideal for corrosive environments such as those found in the semiconductor, pharmaceutical, marine, chemical, instrumentation, and paper industries, these units are made of Type 316 stainless steel and meet NACE (National Association of Corrosion Engineers) specifications. Drain is manual. Regulator accuracy is ±1%. Filter element is polypropylene. Filter/regulator *with 1/4″ pipe size* removes particles as small as 20 microns. Filter/regulator *with 1/2″ pipe size* removes particles as small as 40 microns.

	Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Filter Elements	Each	Mounting Brackets	Each
A	1/8″	13	5-100	150° F	250 psi	6.29″×1.63″	4910K21	$44.57	41615K21	$3.41	9891K66	$2.79
A	1/4″	14	5-100	150° F	250 psi	6.29″×1.63″	4910K22	44.57	41615K21	3.41	9891K66	2.79
A	1/4″	60	5-150	150° F	150 psi	8.85″×1.97″	4910K81	60.52	4958K81	2.65	4957K63	4.82
A	3/8″	60	5-150	150° F	150 psi	8.85″×1.97″	4910K82	60.50	4958K81	2.65	4957K63	4.82
B	3/8″	85	5-150	175° F	250 psi	12.03″×3.15″	4910K13	95.02	4958K95	6.03	5001K12	10.46
B	1/2″	73	5-150	175° F	250 psi	9.6″ ×2.68″	4910K23	95.02	4958K82	4.24	5001K13	5.57
B	1/2″	140	5-150	175° F	250 psi	12.03″×3.15″	4910K14	95.01	4958K95	6.03	5001K12	10.46
B	3/4″	140	5-150	175° F	250 psi	12.03″×3.15″	4910K15	95.02	4958K95	6.03	5001K12	10.46
C	1/8″	13	5-100	125° F	150 psi	6.29″×1.63″	9891K41	37.03	4958K92	3.14	9891K66	2.79
C	1/4″	14	5-100	125° F	150 psi	6.29″×1.63″	9891K43	37.03	4958K92	3.14	9891K66	2.79
D	1/4″	60	5-150	125° F	150 psi	9.6″ ×2.68″	9891K21	80.44	4958K82	4.24	5001K13	5.57
D	3/8″	75	5-150	125° F	150 psi	9.6″ ×2.68″	9891K22	80.44	4958K82	4.24	5001K13	5.57
D	1/2″	75	5-150	125° F	150 psi	9.6″ ×2.68″	9891K23	80.44	4958K82	4.24	5001K13	5.57
E	1/8″	18	0-125	120° F	150 psi	6.69″×1.56″	1399K11	67.60	1399K21	7.82	6763K21	6.30
E	1/4″	18	0-125	120° F	150 psi	6.69″×1.56″	1399K12	67.60	1399K21	7.82	6763K21	6.30
F	1/4″	12	0-125	150° F	300 psi	6.25″×1.56″	4331K33	277.02	6760K15	8.45	4331K52 ♦	13.66
F	1/2″	72	0-125	150° F	300 psi	8.59″×2.34″	4331K27	708.04	4285K24	7.04	4331K54 ♦	25.00

♦ Mounting nuts.

Space-Saver Stacked Air Filter/Precision Regulator

For precise control in variable conditions, this combination air filter/regulator is the perfect choice. It only takes the space of a filter and is suitable for use in control valves, instrumentation, and other automatic control operations. Has a manual drain and a 1/4″ NPT gauge port (gauge not included). Filter has a cellulose element that removes particles as small as 40 microns. Regulator is relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±0.1-0.2 psi. Max. temperature is 160° F. Max. pressure is 250 psi. Body is cast aluminum and has an epoxy coating for added corrosion resistance. Inlet and outlet connections are NPT female.

To Order: Please specify regulating pressure range (psi): 0-10, 0-30, 0-60, or 0-120.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Complete Unit	Each	Repl. Filter Element	Each	Mounting Bracket	Each
1/4″	20	7.75″×3.13″	4967K11	$52.20	4967K44	$12.98	4967K33	$8.88

Space-Saver Stacked Oil-Removal Air Filter/Regulators

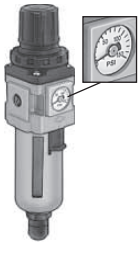

Units combine an oil-removal (coalescing) air filter and a regulator into a space-saving design. Filters have a polyolefin element that removes 99.9% of particles as small as 0.01 micron. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±5%. All include a flush-mounted gauge and an automatic drain. Units have an aluminum body and polycarbonate bowl, except 4989K101 which has a zinc body and also includes a polycarbonate bowl guard. Max. temperature is 140° F. Max. pressure is 150 psi. Inlet and outlet connections are NPT female. ***Replacement filter element kits*** include filter element, valve assembly, and diaphragm assembly.

Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Filter Element Kits	Each	Mounting Brackets	Each
1/8″	18	7-120	7.93″×1.57″	4989K101	$87.16	4989K111	$46.38	4989K211	$5.99
1/4″	71	7-120	10.39″×2.09″	4989K201	107.03	4989K121	47.34	4989K221	5.99
3/8″	142	7-120	12.40″×2.76″	4989K301	123.60	4989K131	58.80	4989K231	5.99
1/2″	166	7-120	12.40″×2.76″	4989K401	120.40	4989K131	58.80	4989K231	5.99

Compact Integrated Air Filter/Regulators

Here's a complete air prep system in one compact unit. Units include a filter with element replacement indicator, float-style automatic drain, regulator with gauge, soft-start valve, shut-off valve with padlock and key, and three 1/4″ supplementary air ports (one is for filtered unregulated air and two are for filtered regulated air). Filter has a high-density polyethylene element that removes particles as small as 5 microns. Regulator is relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±2 psi. The adjustable soft-start valve eases pressure into your system, protecting components from the stress of "hard" starts. All controls and replaceable parts are accessible via the unit's front panel to save mounting space (mounting screws included). Units have an IP65 housing for protection against splashing water. Housing is acetal with an aluminum cover. Inlet and outlet connections are NPT female.

Electric units have an indicator signal switch to let you know whether you're above or below (you select which) your set pressure. All operate on 24 VDC power and have a 15-ft. electrical cable.

Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Standard	Each	Electric	Each	Repl. Filter Elements	Each
3/8″	120	0-120	122° F	145 psi	5.7″×7″	8628T1	$288.40	8628T11	$445.63	8628T21	$7.27
1/2″	145	0-120	122° F	145 psi	5.7″×7.7″	8628T2	292.52	8628T12	424.33	8628T21	7.27

Optional Panel Mounting Bracket ..... 8628T22 Each $18.37

For information about air preparation, see page 963.

Air Filter/Regulator/Lubricators (FRLs)

A&B

C

D&E

F

G

H&J

Just connect the ends to your system—we've already selected matching components and assembled them as one unit, threaded together with pipe nipples. Regulators include a gauge and are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±3 psi or better. Lubricators have a sight glass; 10W nondetergent oil (ISO Grade 32) is recommended. Mounting brackets are sold separately (unless noted) and include hardware. Inlet and outlet connections are NPT female. *Stacked* units combine a filter and regulator into one "piggyback" device, with a lubricator at the side.

(A, K, M) Standard—Filters have a polypropylene element that removes particles as small as 5 microns. Drain is automatic. Body and bowl are zinc.

(B, F, L, N) Lightweight—Filters have a polypropylene (unless noted) element that removes particles as small as 5 microns. Drain is automatic. Body and bowl are aluminum.

(C, G) Easy View—A clear polycarbonate bowl lets you see what's being filtered. Filters have a polyethylene element, except stacked units which have a polypropylene element. All remove particles as small as 5 microns. Drain is automatic. Body is zinc.

(D, H) Lightweight Easy View—A clear polycarbonate bowl lets you see what's being filtered, while an aluminum body makes the unit lightweight. Filters have a polypropylene element that removes particles as small as 20 microns (unless noted). Drain is manual (unless noted).

(E, J) Chemical Resistant—Have increased chemical compatibility. A clear polyurethane bowl lets you see what's being filtered and won't crack in systems heavy with synthetic compressor oils. Filters have a polypropylene element that removes particles as small as 20 microns. Drain is manual. Body is brass.

K&L

M&N

	Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Oil Cap., oz.	Max. Temp.	Max. Pressure	O'all Size, Ht. × Wd.	Complete Units	Each	Repl. Filter Elements	Each	Mounting Brackets	Each
Filter/Regulator/Lubricators													
A	1/4″	49	5-150	2.2	150° F	150 psi	7.44″ × 6.46″	4957K53	$111.70	4958K81	$2.65	4957K61■	$5.40
A	3/8″	49	5-150	2.2	150° F	150 psi	7.44″ × 6.46″	4957K54	117.61	4958K81	2.65	4957K61■	5.40
B	1/2″	60	5-150	3.5	175° F	250 psi	8″ × 9.13″	4957K58	161.17	4958K82	4.24	4957K62■	5.98
B	1/2″	116	5-150	7	175° F	250 psi	8.8″ × 10.52″	4957K87	192.80	4958K95	6.03	4910K98■	6.19
B	3/4″	116	5-150	7	175° F	250 psi	8.8″ × 10.52″	4957K88	196.92	4958K95	6.03	4910K98■	6.19
B	3/4″	168	5-125	32	175° F	250 psi	12.78″ × 14.75″	4957K27♣	365.27	4958K97	26.65	4957K77	33.13
B	1″	168	5-125	32	175° F	250 psi	12.78″ × 14.75″	4957K28♣	342.15	4958K97	26.65	4957K77	33.13
B	1 1/4″	168	5-125	32	175° F	250 psi	12.78″ × 14.75″	4957K29♣	398.60	4958K97	26.65	4957K78	36.93
C	1/4″	45	2-125	2.9	125° F	150 psi	7.93″ × 9.45″	41555K51	161.47	41555K81	7.25	41555K41	4.40
C	3/8″	65	2-125	2.9	125° F	150 psi	7.93″ × 9.45″	41555K52	161.47	41555K81	7.25	41555K41	4.40
C	1/2″	65	2-125	2.9	125° F	150 psi	7.93″ × 9.45″	41555K53	161.47	41555K81	7.25	41555K41	4.40
C	3/4″	95	2-125	6	125° F	150 psi	9.38″ × 10.74″	41555K54	177.86	41555K82	8.01	41555K74	4.40
D	1/8″	10	2-125	1	120° F	150 psi	5.13″ × 5.13″	6760K51	147.29	6760K15	8.45	6763K21	6.30
D	1/4″	10	2-125	1	120° F	150 psi	5.13″ × 5.13″	6760K52	147.29	6760K15	8.45	6763K21	6.30
E	1/8″	12	0-125	1.5	120° F	150 psi	5.13″ × 5.13″	1426K41	110.50	6760K15	8.45	6763K21	6.30
E	1/4″	12	0-125	1.5	120° F	150 psi	5.13″ × 5.13″	1426K42	110.50	6760K15	8.45	6763K21	6.30
Stacked Filter/Regulators with Lubricator													
F	1/4″	60	5-150	3.5	175° F	250 psi	9.93″ × 5.91″	9890K21	157.06	4958K82	4.24	5001K13	5.57
F	3/8″	60	5-150	3.5	175° F	250 psi	9.93″ × 5.91″	9890K62	163.48	4958K82	4.24	5001K13	5.57
F	1/2″	75	5-150	3.5	175° F	250 psi	9.93″ × 5.91″	9890K63	163.48	4958K82	4.24	5001K13	5.57
F	1/2″	160	5-150	7	175° F	250 psi	11.95″ × 6.84″	9890K64	189.78	4958K95	6.03	5001K12	10.46
F	3/4″	160	5-150	7	175° F	250 psi	11.95″ × 6.84″	9890K65	191.30	4958K95	6.03	5001K12	10.46
G	1/8″	10	5-100	1	125° F	150 psi	6.39″ × 3.55″	41615K45●	82.61	41615K21	3.41	—	—
G	1/4″	15	5-100	1	125° F	150 psi	6.39″ × 3.55″	41615K44●	82.61	41615K21	3.41	—	—
G	1/4″	54	5-150	2.2	125° F	150 psi	8.7″ × 4.22″	9890K61	98.80	4958K81	2.65	4957K63	4.82
H	1/8″	12	0-125	1	120° F	150 psi	5.88″ × 3.5″	6760K53	137.76	6760K15	8.45	6763K21	6.30
H	1/4″	12	0-125	1	120° F	150 psi	5.88″ × 3.5″	6760K54	137.76	6760K15	8.45	6763K21	6.30
H	1/2″	60	5-150	3.5	125° F	150 psi	9.93″ × 5.91″	41615K46♦	117.21	4958K82	4.24	7390K2	10.04
H	3/4″	110	5-150	7	125° F	150 psi	11.95″ × 6.84″	41615K47♦	144.12	4958K95	6.03	7390K2	10.04
J	1/8″	12	0-125	1.5	120° F	150 psi	5.88″ × 3.5″	1471K41	104.00	6760K15	8.45	6763K21	6.30
J	1/4″	12	0-125	1.5	120° F	150 psi	5.88″ × 3.5″	1471K42	104.00	6760K15	8.45	6763K21	6.30
Filter/Regulators													
K	1/4″	49	5-150	—	150° F	150 psi	6.82″ × 3.94″	5001K61	70.65	4958K81	2.65	4957K63	4.82
K	3/8″	49	5-150	—	150° F	150 psi	6.82″ × 3.94″	5001K67	73.59	4958K81	2.65	4957K63	4.82
L	1/4″	61	5-150	—	175° F	250 psi	7.34″ × 5.36″	5001K66	104.88	4958K81	2.65	4957K62■	5.98
L	1/2″	61	5-150	—	175° F	250 psi	7.34″ × 5.36″	5001K65	103.03	4958K82	4.24	5001K13	5.57
L	1/2″	116	5-150	—	175° F	250 psi	8.04″ × 6.3″	5001K33	132.48	4958K95	6.03	5001K12	10.46
L	3/4″	116	5-150	—	175° F	250 psi	8.04″ × 6.3″	5001K34	134.33	4958K95	6.03	5001K12	10.46
Filter/Lubricators													
M	1/4″	54	—	2.2	150° F	150 psi	7.44″ × 4.22″	5141K61	80.70	4958K81	2.65	4957K61■	5.40
M	3/8″	54	—	2.2	150° F	150 psi	7.44″ × 4.22″	5141K62	84.21	4958K81	2.65	4957K61■	5.40
N	1/2″	60	—	3.5	175° F	250 psi	8″ × 5.91″	5141K75	118.30	4958K82	4.24	4957K62■	5.98
N	1/2″	110	—	7	175° F	250 psi	8.8″ × 6.84″	5141K37	152.08	4958K95	6.03	4910K98■	6.19
N	3/4″	110	—	7	175° F	250 psi	8.8″ × 6.84″	5141K38	154.23	4958K95	6.03	4910K98■	6.19

■ Requires two mounting brackets. ♣ Filter element is bronze. ● Mounting bracket is attached.
♦ Filter element removes particles as small as 5 microns. Drain is automatic.

For information about air preparation, see page 963.

Modular Air Filter/Regulator/Lubricator (FRL) Complete Units

These modular filter/regulator/lubricators, also known as FRLs, use a joiner clamp between each component for fast installation and speedy maintenance. Simply identify your clamp and locate a compatible unit. It's easy to connect and disconnect components. Inlet and outlet connections are NPT female.

Stacked Units— Combine a filter and regulator into one "piggyback" device, with a lubricator at the side. ***End Block Kits—*** Allow you to take full advantage of the modular design. Each kit includes one end block for the inlet and one for the outlet; blocks thread onto your pipe.

Complete FRLs with Wilkerson Clamps

Wilkerson Clamp

All include joiner clamps and mounting brackets, except 1″ units which connect using built-in bolts instead of joiner clamps. Body is zinc, except 1″ pipe size units which have a cast aluminum body. Max. temp. is 150° F. Max. pressure is 250 psi.

Filters— A polyethylene element removes particles as small as 5 microns. Drain is automatic. All have a sight glass and a zinc bowl, except 1″ pipe size units which have an aluminum bowl.

Regulators— All are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Regulating range is 5-125 psi, except 1″ units which have a 7-125 psi regulating range. Gauge included. Accuracy is ±5%.

Lubricators— Use 10W nondetergent oil. All have a sight glass and a zinc bowl, except 1″ pipe size units which have an aluminum bowl.

Inline

Stacked

Complete FRLs with Norgren Clamps

Norgren Clamp

Unique hinged joiner clamps (included) have no loose parts, so it's even easier to connect and disconnect components. Also include mounting brackets. Body is aluminum and has a black epoxy finish for corrosion resistance. Max. temp. is 125° F. Max. pressure is 150 psi.

Filters— A polypropylene element removes particles as small as 5 microns. Drain is automatic. Bowl is clear polycarbonate and has a steel bowl guard.

Regulators— All are relieving style, reducing downstream pressure through a vent port when your system is blocked. Regulating range is 5-150 psi. Gauge included. Accuracy is ±3 psi.

Lubricators— Use 10W nondetergent oil and have a liquid level indicator. Bowl is clear polycarbonate and has a steel bowl guard (unless noted).

Inline

Stacked

Complete FRLs with Parker Clamps

Parker Clamp

A soft-start lockout valve provides positive shutoff and exhaust capability (max. shackle dia. is 9/32″; padlock not included). Joiner clamps and mounting brackets included. Body is zinc. Max. temp. is 125° F. Max. pressure is 150 psi.

Filters— A polyethylene element removes particles as small as 40 microns. All have a manual drain. Bowl is clear polycarbonate and has a steel bowl guard.

Regulators— All are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Regulating range is 5-125 psi. Gauge included. Accuracy is ±3 psi.

Lubricators— All use petroleum-based 100-200 SSU oil. Bowl is clear polycarbonate and has a steel bowl guard.

Inline

Stacked

Complete FRLs with SMC Clamps

SMC Clamp

All include joiner clamps and mounting brackets. Body is aluminum. Max. temp. is 140° F. Max. pressure is 145 psi.

Filters— A nonwoven fabric element removes particles as small as 5 microns. All have a float-style automatic drain. Bowl is clear polycarbonate and has a steel bowl guard.

Regulators— An embedded gauge prevents accidental damage. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Regulating range is 7-120 psi. Accuracy is ±5%.

Lubricators— All use 10W nondetergent oil. Bowl is clear polycarbonate and has a steel bowl guard.

Inline

Stacked

Pipe Size	Oil Cap., oz.	Inline Complete Units: Max. scfm @ 100 psi	O'all Size, Ht.×Wd.		Each	Stacked Complete Units: Max. scfm @ 100 psi	O'all Size, Ht.×Wd.		Each	End Block Kits	Each	Repl. Filter Elements	Each
Modular FRLs with Wilkerson Clamp													
1/4″	4.0	85	8.66″×7.77″	60115K17	$140.97	80	10″×5.06″	60115K18	$145.04	60115K7	$12.21	60115K32	$6.56
3/8″	4.0	100	8.66″×7.77″	60115K93	140.97	90	10″×5.06″	60115K83	145.04	60115K26	12.21	60115K32	6.56
3/8″	6.1	95	9.92″×9.32″	60115K48	188.60	110	11.44″×6.10″	60115K49	162.64	60115K26	12.21	60115K33	7.29
1/2″	4.0	100	8.66″×7.77″	60115K94	140.97	110	10″×5.06″	60115K84	145.04	60115K27	12.21	60115K32	6.56
1/2″	6.1	110	9.92″×9.32″	60115K95	188.60	125	11.44″×6.10″	60115K85	166.85	60115K27	12.21	60115K33	7.29
3/4″	6.1	110	9.92″×9.32″	60115K96	188.60	140	11.44″×6.10″	60115K86	166.85	60115K28	12.21	60115K33	7.29
1″	18.0	250	15.95″×13.46″	60115K971	354.85	250	15.95″×9.84″	60115K871	403.61	60115K291	30.64	60115K341	25.20
Replacement Wilkerson Joiner Clamp with Mounting Brackets for 1/4″-3/4″ Pipe Size Units										60115K22	Each		$10.07
Modular FRLs with Norgren Clamp													
1/4″	3.5	50	8.02″×9.13″	7390K111	154.97	50	9.95″×5.91″	7390K411	146.10	7390K31	33.15	4958K82	4.24
3/8″	3.5	63	8.02″×9.13″	7390K131	154.97	63	9.95″×5.91″	7390K431	146.10	7390K32	33.15	4958K82	4.24
3/8″	7.0	95	8.81″×10.52″	7390K121■	194.18	95	11.93″×6.84″	7390K421■	170.42	7390K32	33.15	4958K95	6.03
1/2″	3.5	63	8.02″×9.13″	7390K141	154.97	63	9.95″×5.91″	7390K441	146.10	7390K33	33.15	4958K82	4.24
1/2″	7.0	120	8.81″×10.52″	7390K151■	194.18	120	11.93″×6.84″	7390K45■	170.42	7390K33	33.15	4958K95	6.03
3/4″	7.0	120	8.81″×10.52″	7390K161■	194.18	120	11.93″×6.84″	7390K46■	170.42	7390K34	33.15	4958K95	6.03
Replacement Norgren Joiner Clamp with Mounting Brackets										7390K2	Each		$10.04
Modular FRLs with Parker Clamp													
3/8″	2.9	80	7.93″×12.27″	8421T1	229.08	80	8.91″×10.38″	8421T4	204.68	8486T11	18.90	8461T1	8.80
1/2″	6.0	130	9.38″×13.56″	8421T2	283.19	130	9.81″×11.76″	8421T5	241.75	8486T12	19.67	8461T2	9.73
3/4″	6.0	170	9.38″×13.56″	8421T3	283.19	170	9.81″×11.76″	8421T6	241.75	8486T13	19.67	8461T2	9.73
Replacement Parker Joiner Clamp for 3/8″ Pipe Size Units										8486T1	Each		$7.58
Replacement Parker Joiner Clamp for 1/2″ and 3/4″ Pipe Size Units										8486T2	Each		$8.02
Modular FRLs with SMC Clamp													
1/4″	1.8	53	6.02″×6.58″	8492T1	117.86	53	7.91″×4.33″	8492T6	101.59	8550T11	21.58	8540T1	3.81
3/8″	4.5	105	7.36″×8.66″	8492T2	145.56	105	9.41″×5.71″	8492T7	131.96	8550T12	25.40	8540T2	7.21
1/2″	4.5	105	7.36″×8.66″	8492T3	145.56	105	9.41″×5.71″	8492T8	131.96	8550T13	25.40	8540T2	7.21
3/4″	4.5	350	10.39″×11.10″	8492T4	211.19	—	—	—	—	8550T14	37.95	8540T3	10.19
1″	4.5	350	10.39″×11.10″	8492T5	211.19	—	—	—	—	8550T15	37.95	8540T3	10.19
Replacement SMC Joiner Clamp with Mounting Brackets for 1/4″ Pipe Size Units										8550T1	Each		$7.04
Replacement SMC Joiner Clamp with Mounting Brackets for 3/8″ and 1/2″ Pipe Size Units										8550T2	Each		$7.73
Replacement SMC Joiner Clamp with Mounting Brackets for 3/4″ and 1″ Pipe Size Units										8550T3	Each		$10.67

■ Lubricator has an aluminum bowl guard.

For information about air preparation, see page 963.

Modular Air Filter/Regulator/Lubricator (FRL) Replacement Components

Need to replace a component in your modular air filter/regulator/lubricator? Look no further. All replacement components have NPT female inlet and outlet connections. For information on Wilkerson, Norgren, SMC, and Parker clamp modular filter/regulator/lubricators, see page 978.

Stacked Filter/Regulators

Wilkerson Norgren Parker SMC

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Stacked Filter/ Regulators	Each	Joiner Clamps	Each
Modular Stacked Filter/Regulators for Wilkerson Clamp						
1/4"	88	9.66"×2.36"	60115K4	$91.62	60115K22	$10.07
3/8"	117	9.66"×2.36"	60115K43	91.62	60115K22	10.07
3/8"	140	11"×2.9"	60115K58	98.92	60115K22	10.07
1/2"	121	9.66"×2.36"	60115K44	91.62	60115K22	10.07
1/2"	165	11"×2.9"	60115K45	101.78	60115K22	10.07
3/4"	175	11"×2.9"	60115K46	101.78	60115K22	10.07
1"	250	15.95"×3.62"	60115K471	203.43	—	—
Modular Stacked Filter/Regulators for Norgren Clamp						
1/4"	60	9.6"×2.68"	9891K21	80.44	7390K2	10.04
3/8"	75	9.6"×2.68"	9891K22	80.44	7390K2	10.04
3/8"	95	11.33"×3.15"	7390K27	110.96	7390K2	10.04
1/2"	75	9.6"×2.68"	9891K23	80.44	7390K2	10.04
1/2"	120	11.33"×3.15"	7390K57	116.77	7390K2	10.04
3/4"	120	11.33"×3.15"	7390K67	125.49	7390K2	10.04
Modular Stacked Filter/Regulators for Parker Clamp						
3/8"	80	10.43"×2.81"	8452T1	91.00	8486T1	7.58
1/2"	130	11.79"×3.24"	8452T2	105.58	8486T2	8.02
3/4"	170	11.79"×3.24"	8452T3	107.54	8486T2	8.02
Modular Stacked Filter/Regulators for SMC Clamp						
1/4"	53	7.91"×2.09"	8520T1	73.82	8550T1	7.04
3/8"	105	9.41"×2.76"	8520T2	96.42	8550T2	7.73
1/2"	105	9.41"×2.76"	8520T3	96.42	8550T2	7.73

Filters

Wilkerson Norgren Parker SMC

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Filters	Each	Joiner Clamps	Each
Modular Filters for Wilkerson Clamp						
1/4"	85	7"×2.36"	60115K19	$57.64	60115K22	$10.07
3/8"	95	7"×2.36"	60115K73	57.64	60115K22	10.07
3/8"	110	8"×2.9"	60115K59	72.36	60115K22	10.07
1/2"	110	7"×2.36"	60115K74	57.64	60115K22	10.07
1/2"	126	8"×2.9"	60115K75	72.38	60115K22	10.07
3/4"	130	8"×2.9"	60115K76	72.38	60115K22	10.07
1"	280	10.95"×3.62"	60115K771	125.07	—	—
Modular Filters for Norgren Clamp						
1/4"	50	6.8"×2.68"	7390K61	48.18	7390K2	10.04
3/8"	63	6.8"×2.68"	7390K63	48.84	7390K2	10.04
3/8"	95	7.35"×3.15"	7390K62	64.12	7390K2	10.04
1/2"	63	6.8"×2.68"	7390K64	48.84	7390K2	10.04
1/2"	120	7.35"×3.15"	7390K65	64.12	7390K2	10.04
3/4"	120	7.35"×3.15"	7390K66	64.12	7390K2	10.04
Modular Filters for Parker Clamp						
3/8"	100	6.27"×2.81"	8452T7	64.54	8486T1	7.58
1/2"	160	7.7"×3.24"	8452T8	79.70	8486T2	8.02
3/4"	180	7.7"×3.24"	8452T9	79.70	8486T2	8.02
Modular Filters for SMC Clamp						
1/4"	53	5.08"×2.09"	8520T9	53.52	8550T1	7.04
3/8"	53	6.5"×2.76"	8520T11	53.80	8550T2	7.73
1/2"	105	6.5"×2.76"	8520T12	67.62	8550T2	7.73
3/4"	350	9.65"×3.54"	8520T13	92.94	8550T3	10.67
1"	350	9.65"×3.54"	8520T14	92.94	8550T3	10.67

Regulators

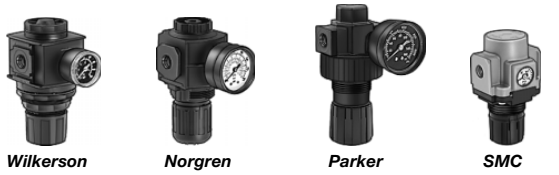

Wilkerson Norgren Parker SMC

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Regulators	Each	Joiner Clamps	Each
Modular Regulators for Wilkerson Clamp						
1/4"	82	5.4"×2.36"	60115K5	$30.43	60115K22	$10.07
3/8"	97	5.4"×2.36"	60115K63	32.04	60115K22	10.07
3/8"	162	5.9"×2.9"	60115K68	52.46	60115K22	10.07
1/2"	97	5.4"×2.36"	60115K64	32.04	60115K22	10.07
1/2"	170	5.9"×2.9"	60115K65	52.46	60115K22	10.07
3/4"	176	5.9"×2.9"	60115K66	52.46	60115K22	10.07
1"	300	8.46"×3.62"	60115K671	92.46	—	—
Modular Regulators for Norgren Clamp						
1/4"	91	5.34"×2.68"	7390K71	39.70	7390K2	10.04
3/8"	144	5.34"×2.68"	7390K73	42.50	7390K2	10.04
3/8"	208	6.67"×3.15"	7390K72	59.44	7390K2	10.04
1/2"	144	5.34"×2.68"	7390K74	42.50	7390K2	10.04
1/2"	220	6.67"×3.15"	7390K75	59.44	7390K2	10.04
3/4"	220	6.67"×3.15"	7390K76	59.44	7390K2	10.04
Modular Regulators for Parker Clamp						
3/8"	80	6.08"×2.81"	8452T4	40.60	8486T1	7.58
1/2"	130	6.4"×3.24"	8452T5	58.62	8486T2	8.02
3/4"	170	6.4"×3.24"	8452T6	58.62	8486T2	8.02
Modular Regulators for SMC Clamp						
1/4"	53	4.57"×2.09"	8520T4	33.40	8550T1	7.04
3/8"	105	5.04"×2.76"	8520T5	40.40	8550T2	7.73
1/2"	105	5.04"×2.76"	8520T6	40.40	8550T2	7.73
3/4"	350	6.65"×3.54"	8520T7	63.34	8550T3	10.67
1"	350	6.65"×3.54"	8520T8	63.34	8550T3	10.67

Lubricators

Wilkerson Norgren Parker SMC

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Lubricators	Each	Joiner Clamps	Each
Modular Lubricators for Wilkerson Clamp						
1/4"	74	8.66"×2.36"	60115K6	$47.02	60115K22	$10.07
3/8"	78	8.66"×2.36"	60115K53	47.02	60115K22	10.07
3/8"	135	9.92"×2.9"	60115K69	53.29	60115K22	10.07
1/2"	90	8.66"×2.36"	60115K54	47.02	60115K22	10.07
1/2"	145	9.92"×2.9"	60115K55	53.29	60115K22	10.07
3/4"	160	9.92"×2.9"	60115K56	53.29	60115K22	10.07
1"	270	11.81"×3.62"	60115K571	103.37	—	—
Modular Lubricators for Norgren Clamp						
1/4"	63	8.02"×2.68"	7390K81	50.83	7390K2	10.04
3/8"	85	8.02"×2.68"	7390K83	50.83	7390K2	10.04
3/8"	95	8.81"×3.15"	7390K82	61.90	7390K2	10.04
1/2"	85	8.02"×2.68"	7390K84	50.83	7390K2	10.04
1/2"	130	8.81"×3.15"	7390K85	61.90	7390K2	10.04
3/4"	130	8.81"×3.15"	7390K86	61.90	7390K2	10.04
Modular Lubricators for Parker Clamp						
3/8"	85	7.82"×2.81"	8452T11	50.32	8486T1	7.58
1/2"	140	9.09"×3.24"	8452T12	61.00	8486T2	8.02
3/4"	140	9.09"×3.24"	8452T13	61.00	8486T2	8.02
Modular Lubricators for SMC Clamp						
1/4"	53	5.59"×2.09"	8520T15	32.38	8550T1	7.04
3/8"	105	6.93"×2.76"	8520T16	39.42	8550T2	7.73
1/2"	105	6.93"×2.76"	8520T17	39.42	8550T2	7.73
3/4"	350	9.84"×3.54"	8520T18	61.60	8550T3	10.67
1"	350	9.84"×3.54"	8520T19	61.60	8550T3	10.67

For information about air preparation, see page 963.

Modular Air Filter/Regulator/Lubricator (FRL) Accessories

For information on Wilkerson, Norgren, SMC, and Parker clamp FRLs, see page 978. Inlet and outlet connections are NPT female.

Oil-Removal Filters

Wilkerson *Norgren*

Parker *SMC*

Also known as coalescing filters. Max. pressure is 150 psi (unless noted).

For Wilkerson Clamp— A borosilicate glass fiber element removes particles as small as 0.7 micron. All have an automatic drain and a sight glass. Body and bowl are zinc (unless noted). Max. temperature is 150° F.

For Norgren Clamp— A synthetic fiber and polyurethane foam element removes particles as small as 0.01 micron. Drain is automatic. Body is aluminum. Bowl is polycarbonate and has a steel bowl guard (unless noted). Max. temperature is 125° F.

For Parker Clamp— A borosilicate and felt glass fiber element removes solid particles as small as 0.3 micron and aerosols as small as 0.75 micron. All have a float-style automatic drain. Body is zinc. Bowl is polycarbonate and has a steel bowl guard. Max. temperature is 125° F.

For SMC Clamp— A plastic element removes particles as small as 0.01 micron and aerosols down to 0.008 ppm. All have a float-style automatic drain. Body is aluminum. Bowl is polycarbonate and has a steel bowl guard. Max. temperature is 140° F.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Filters	Each	Joiner Clamps	Each
Modular Oil-Removal Filters for Wilkerson Clamp						
1/4″	30	7.9″ ×2.36″	60115K8	$82.52	60115K22	$10.07
3/8″	33	7.9″ ×2.36″	60115K13	82.52	60115K22	10.07
3/8″	64	8.9″ ×2.9″	60115K78	98.73	60115K22	10.07
1/2″	35	7.9″ ×2.36″	60115K14	82.52	60115K22	10.07
1/2″	65	8.9″ ×2.9″	60115K15	98.73	60115K22	10.07
3/4″	70	8.9″ ×2.9″	60115K16	98.73	60115K22	10.07
1″	120	11.9″ ×3.62″	60115K161★	207.52	—	—
Modular Oil-Removal Filters for Norgren Clamp						
1/4″	34	8.16″ ×2.68″	7390K91	103.66	7390K2	10.04
3/8″	34	8.16″ ×2.68″	7390K93♥	106.07	7390K2	10.04
3/8″	75	8.71″ ×3.15″	7390K92	135.14	7390K2	10.04
1/2″	34	8.16″ ×2.68″	7390K94♥	106.07	7390K2	10.04
1/2″	75	8.71″ ×3.15″	7390K95	135.14	7390K2	10.04
3/4″	105	10.8″ ×3.15″	7390K96	153.10	7390K2	10.04
Modular Oil-Removal Filters for Parker Clamp						
3/8″	45	7.2″ ×2.81″	8452T14	101.94	8486T1	7.58
1/2″	75	8.63″ ×3.24″	8452T15	128.18	8486T2	8.02
3/4″	75	8.63″ ×3.24″	8452T16	128.18	8486T2	8.02
Modular Oil-Removal Filters for SMC Clamp						
1/4″	53	5.08″ ×2.09″	8520T21♦	76.54	8550T1	7.04
3/8″	105	6.5″ ×2.76″	8520T22♦	89.48	8550T2	7.73
1/2″	105	6.5″ ×2.76″	8520T23♦	89.48	8550T2	7.73

★ Body and bowl are aluminum. Max. pressure is 250 psi.
♥ Does not have a bowl guard. ♦ Max. pressure is 145 psi.

Manifold Regulators

Wilkerson

Norgren

Connect two or more of these regulators with joiner clamps (sold separately) to independently control multiple output pressures from one pressure supply. Buy one regulator for each output pressure you need. Each regulator has at least one regulated port and one unregulated outlet. Body is zinc.

For Wilkerson Clamp— Each regulator has two 1/4″ NPT female regulated ports (one can be used as a gauge port; gauge not included). Accuracy is ±5%. Max. temperature is 150° F. Max. pressure is 300 psi. **To Order:** Please specify regulating pressure range (psi): 0-30, 3-60, 5-125, or 10-250.

For Norgren Clamp— Each regulator has one 1/4″ NPT female regulated port (gauge included). Accuracy is ±3 psi. Max. temperature is 150° F. Max. pressure is 290 psi. **To Order:** Please specify regulating pressure range (psi): 5-60 or 5-150.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Regulators	Each	Joiner Clamps	Each
Modular Manifold Regulators for Wilkerson Clamp						
1/4″	62	5.4″ ×2.36″	4927K31	$36.58	60115K22	$10.07
3/8″	62	5.4″ ×2.36″	4927K32	36.58	60115K22	10.07
1/2″	62	5.4″ ×2.36″	4927K33	36.58	60115K22	10.07
Modular Manifold Regulators for Norgren Clamp						
1/4″	83	4.19″ ×1.97″	4822K1	32.81	7390K1	19.88
3/8″	83	4.19″ ×1.97″	4822K2	33.72	7390K1	19.88

Desiccant Air Dryers

With Polycarbonate Bowl *With Aluminum Bowl*

Eliminate moisture at the point of use to deliver clean, dry air directly to your power tools and machinery. Dryers come filled with silica gel desiccant that produces air with a dew point of 15° F below inlet air dew point. To regenerate, remove and heat at 275° F until desiccant returns to blue. Body is aluminum.

Note: Only compatible with Norgren clamp modular filter/regulator/lubricators.

With Polycarbonate Bowl— A clear bowl lets you view desiccant condition. All have a steel guard. Max. temperature is 125° F. Max. pressure is 150 psi.

With Aluminum Bowl— A moisture indicator lets you know when desiccant needs to be regenerated or replaced. Max. temperature is 175° F. Max. pressure is 250 psi.

Replacement Desiccant— Furnished in a 0.25 lb. bag. Polycarbonate-bowl units require one bag of replacement desiccant; aluminum-bowl units require five bags.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Dryers	Each	Joiner Clamps	Each
With Polycarbonate Bowl						
1/4″	10	7.18″ ×3.15″	4834K35	$95.85	7390K2	$10.04
3/8″	10	7.18″ ×3.15″	4834K31	95.85	7390K2	10.04
1/2″	10	7.18″ ×3.15″	4834K36	95.85	7390K2	10.04
With Aluminum Bowl						
3/8″	20	13.5″ ×4.32″	4834K17	220.00	4834K7	34.81
1/2″	20	13.5″ ×4.32″	4834K13	205.53	4834K7	34.81
Replacement Desiccant			4834K21	Each $13.74		

OSHA-Compliant Lockout Valves

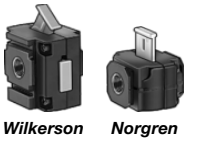

Wilkerson *Norgren*

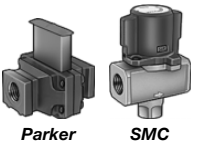

Parker *SMC*

Prevent accidental start-up when servicing equipment. Valves exhaust downstream air when closed, and are lockable in the closed position (max. shackle dia. is 5/16″ unless noted; padlock not included). All comply with OSHA's lockout/tagout regulation (29 CFR 1910).

For Wilkerson Clamp— Have bright orange slide lock mechanisms. Body is zinc. Max. temperature is 150° F. Max. pressure is 150 psi.

For Norgren Clamp— Have yellow slide lock mechanisms. Body is zinc. Max. temperature is 150° F. Max. pressure is 250 psi.

For Parker Clamp— Have red slide lock mechanisms. Body is aluminum. Max. temperature is 125° F. Max. pressure is 250 psi.

For SMC Clamp— Have red locking handle. Body is aluminum. Max. temperature is 140° F. Max. pressure is 145 psi.

Pipe Size	Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Lockout Valves	Each	Joiner Clamps	Each
Modular OSHA-Compliant Lockout Valves for Wilkerson Clamp						
1/4″	110	3.16″ ×3.19″	6148K21	$23.79	60115K22	$10.07
3/8″	185	3.16″ ×3.19″	6148K13	23.79	60115K22	10.07
3/8″	185	3.23″ ×3.41″	6148K22	35.33	60115K22	10.07
1/2″	225	3.16″ ×3.19″	6148K14	23.79	60115K22	10.07
1/2″	225	3.23″ ×3.41″	6148K15	35.33	60115K22	10.07
3/4″	250	3.23″ ×3.41″	6148K16	35.33	60115K22	10.07
Modular OSHA-Compliant Lockout Valves for Norgren Clamp						
1/4″	57	2.32″ ×2.13″	48115K91	24.98	7390K2	10.04
3/8″	116	2.32″ ×2.13″	48115K84	24.98	7390K2	10.04
3/8″	160	2.9″ ×2.74″	48115K11●	32.12	7390K2	10.04
1/2″	113	2.32″ ×2.13″	48115K93	24.98	7390K2	10.04
1/2″	117	2.9″ ×2.74″	48115K85●	32.12	7390K2	10.04
3/4″	113	2.9″ ×2.74″	48115K94●	32.12	7390K2	10.04
Modular OSHA-Compliant Lockout Valves for Parker Clamp						
3/8″	90	3.08″ ×2.67″	8562T11●	24.30	8486T1	7.58
1/2″	250	3.08″ ×2.67″	8562T12●	29.65	8486T2	8.02
Modular OSHA-Compliant Lockout Valves for SMC Clamp						
1/4″	27	3.07″ ×2.09″	8562T1	33.64	8550T1	7.04
3/8″	65	4.21″ ×2.76″	8562T2	45.69	8550T2	7.73
1/2″	94	4.21″ ×2.76″	8562T3	45.69	8550T2	7.73
3/4″	141	5.28″ ×3.54″	8562T4	80.00	8550T3	10.67
1″	215	5.28″ ×3.54″	8562T5	80.00	8550T3	10.67

● Max. shackle dia. is 9/32″ (padlock not included).

(Continued on following page)

For information about air preparation, see page 963.

Modular Air Filter/Regulator/Lubricator (FRL) Accessories *(Continued from previous page)*

Oil Vapor- and Odor-Removal Filters

An activated carbon element removes odor and oil vapor as small as 0.003 micron, exceeding ISO Class 1 requirements for max. oil content. Drain is manual. Body and bowl are zinc. Inlet and outlet connections are NPT female. *Note:* Oil vapor- and odor-removal filters are only compatible with Wilkerson clamp modular FRLs but can be pipe-connected to other clamp units.

Pipe Size	Max. scfm @ 100 psi	Max. Temp.	Max. Pressure	O'all Size, Ht.×Wd.	Filters	Each	Repl. Filter Elements	Each	Joiner Clamps	Each
1/4″	44	150°F	150 psi	8.2″×2.36″	7426K11	$78.62	7426K21	$32.89	60115K22	$10.07
3/8″	48	150°F	150 psi	8.2″×2.36″	7426K12	78.62	7426K21	32.89	60115K22	10.07
1/2″	54	150°F	150 psi	8.2″×2.36″	7426K13	78.62	7426K21	32.89	60115K22	10.07
3/4″	110	150°F	150 psi	9.3″×2.9″	7426K14	96.33	7426K22	41.49	60115K22	10.07

Space-Saver Stacked Air Filter/Regulator/Lubricators (FRLs)

Get a filter, regulator, and lubricator in an easy-to-install unit that takes the space of a filter alone. Filters have a bronze element that removes particles as small as 40 microns. Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±6%. Lubricators use 10-wt. nondetergent oil (ISO Grade 32). All have a semiautomatic drain and include a gauge and built-in mounting brackets. Body and bowl guard are cast aluminum. Bowl is polycarbonate. Max. temperature is 120°F. Max. pressure is 230 psi. Inlet and outlet connections are NPT female.

Regulator service kits include diaphragm assembly, O-rings, valve seat, spring, and stem.

Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Oil Cap., oz.	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Filter Elements	Each	Regulator Service Kits	Each
1/4″	32	7.3-145	2.5	9.45″×2.6″	4908K51	$161.54	4908K76	$29.54	4908K81	$42.50
3/8″	32	7.3-145	2.5	9.45″×2.6″	4908K52	167.56	4908K76	29.54	4908K81	42.50
1/2″	95	7.3-145	5	12.2″ ×3.66″	4908K53	251.96	4908K77	40.17	4908K82	43.32
3/4″	95	7.3-145	5	12.2″ ×3.66″	4908K54	262.81	4908K77	40.17	4908K82	43.32

Miniature Modular Air Filter/Regulator/Lubricators (FRLs)

When space is tight, a miniature design provides an efficient solution. Body is zinc. Max. temperature is 125° (unless noted). Max. pressure is 150 psi (unless noted). Inlet and outlet connections are NPT female.

Filters have a polyethylene element that removes particles as small as 5 microns (unless noted). All have a manual drain, polycarbonate bowl with guard, and a sight glass.

Regulators include a damage-resistant flush-mounted gauge, except 4927K11 and K12. All are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Regulating range is 5-125 psi (unless noted). Accuracy is ±5%.

Lubricators have a sight glass and a polycarbonate bowl with guard. They use 10W nondetergent oil.

Complete Units

All include joiner clamps and mounting brackets.

Stacked Models— Combine a filter and regulator in one "piggyback" device, with a lubricator at the side.

End Block Kits— Allow you to take full advantage of the modular design. Each kit includes two end blocks (one for the inlet and one for the outlet) that thread onto your pipe.

Inline

Stacked

Pipe Size	Max. scfm @ 100 psi	Oil Cap., oz.	O'all Size, Ht.×Wd.	Complete Units	Each	End Block Kits	Each	Repl. Filter Elements	Each
Inline									
1/8″	29	0.6	6″×4.72″	60115K36	$85.55	60115K24	$14.21	60115K31	$4.38
1/4″	44	0.6	6″×4.72″	60115K37	85.55	60115K25	12.82	60115K31	4.38
Stacked									
1/8″	29	0.6	6″×3.15″	60115K38	72.17	60115K24	14.21	60115K31	4.38
1/4″	44	0.6	6″×3.15″	60115K39	72.17	60115K25	12.82	60115K31	4.38

Individual/Replacement Components

Oil-Removal Filter— Also known as a coalescing filter. A borosilicate cloth element removes particles as small as 0.5 micron.

	1/8″ Pipe Size	Each	1/4″ Pipe Size	Each
Stacked Filter/Regulator	60115K41	$40.74	60115K42	$40.74
Filter	60115K71	21.82	60115K72	21.82
Regulator	60115K61	27.90	60115K62	27.90
Lubricator	60115K51	31.03	60115K52	31.03
Oil Removal Filter	—	—	60115K12	39.08
Joiner Clamp	60115K21	5.55	60115K21	5.55

Stacked Filter/ Regulator

Filter

Regulator

Lubricator

Oil-Removal Filter

Joiner Clamp

Accessories

Require joiner clamp (sold separately) to connect.

Oil Vapor- and Odor-Removal Filter— An activated carbon element removes odor and oil vapor as small as 0.003 micron, exceeding ISO Class 1 requirements for maximum oil content.

Manifold Regulators— Connect two or more of these together with joiner clamps (sold separately) to independently control multiple outlet pressures from one pressure supply. Buy one regulator for each output pressure you need. Each regulator has two 1/8″ NPT female regulated ports (one can be used for a gauge; not included) and one unregulated outlet. Pipe size refers to the inlet connection and the unregulated outlet connection (for connecting to another regulator). Max. temperature is 150°F. Max. pressure is 300 psi.

To Order: Please specify regulating pressure range (psi): 0-30, 0-60, or 0-125.

Safety Lockout Valves— Prevent accidental start-up when you're servicing equipment. Valves exhaust downstream pressure air when closed and are lockable in the closed position (max. shackle dia. is 5/16″; padlock not included). All have a bright orange slide lock mechanism. Meet OSHA lockout/tagout regulation 29 CFR 1910. Maximum temperature is 150°F.

Oil Vapor- and Odor-Removal Filter

Manifold Regulator

Safety Lockout Valve

Pipe Size	Oil Vapor- and Odor-Removal Filter: Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Each	Manifold Regulators: Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Each	Safety Lockout Valves: Max. scfm @ 100 psi	O'all Size, Ht.×Wd.	Each
1/8″	—	—	—	27	3.94″×1.58″	4927K11 $24.09	45	2.41″×2.46″	6148K11 $26.31
1/4″	13	4.58″×1.58″	7402K11 $41.57	28	3.94″×1.58″	4927K12 24.09	95	2.41″×2.46″	6148K12 25.19

Replacement Element for Oil Vapor- and Odor-Removal Filter ..... 7402K21 Each $20.45

Joiner Clamp ..... 60115K21 Each $5.55

For information about air preparation, see page 963.

Lightweight Miniature Modular Plastic Air Filter/Regulator/Lubricators (FRLs)

Get all the benefits of an FRL in a lightweight, corrosion-resistant, nonmagnetic unit. All have an aluminum body. Max. temperature is 125° F. Max. pressure is 150 psi. Inlet and outlet connections are NPT female with an aluminum insert.

Filters have a polyethylene element that removes particles as small as 5 microns. All have a manual drain and a polycarbonate bowl with a glass-reinforced nylon bowl guard.

Regulators include a flush-mount gauge. All are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Accuracy is ±8.7%.

Lubricators include a sight glass and have a polycarbonate bowl with a glass-reinforced nylon guard. All use 10W nondetergent oil.

Complete Units

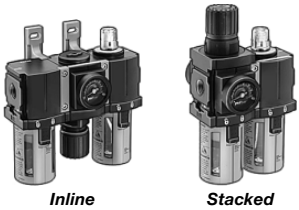

Inline *Stacked*

Stacked Models— Combine a filter and regulator in one "piggyback" device, with a lubricator at the side.

End Block Kits— Allow you to take full advantage of the modular design. Each kit includes two end blocks (one for the inlet and one for the outlet) that thread onto your pipe.

Pipe Size	Max. scfm @ 100 psi	Regulating Range, psi	Oil Cap., oz.	O'all Size, Ht.×Wd.	Complete Units	Each	End Block Kits	Each	Repl. Filter Elements	Each
Inline										
1/8″	34	0-140	0.6	5.25″×4.75″	7465K16	$91.70	7465K21	$29.34	7465K31	$5.53
1/4″	46	0-140	0.6	5.25″×4.75″	7465K17	88.97	7465K22	29.58	7465K31	5.53
Stacked										
1/8″	36	0-140	0.6	6.17″×3.15″	7465K18	86.10	7465K21	29.34	7465K31	5.53
1/4″	44	0-140	0.6	6.17″×3.15″	7465K19	88.88	7465K22	29.58	7465K31	5.53

Individual/Replacement Components

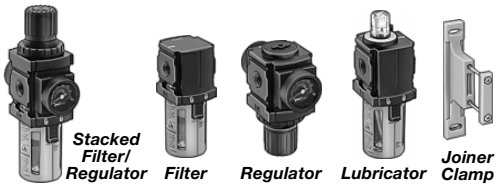

Stacked Filter/ Regulator *Filter* *Regulator* *Lubricator* *Joiner Clamp*

Component	1/8″ Pipe Size	Each	1/4″ Pipe Size	Each
Stacked Filter/Regulator	7465K61	$48.00	7465K66	$48.00
Filter	7465K62	24.38	7465K67	20.72
Regulator	7465K63	28.88	7465K68	28.88
Lubricator	7465K64	36.01	7465K69	29.95
Joiner Clamp	7465K65	5.85	7465K65	5.85

Push-to-Connect Miniature Modular Air Filter/Regulator/Lubricators (FRLs)

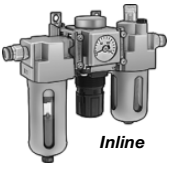

Inline

Stacked

Push-to-connect tube fitting connections make installation a snap. Body is cast zinc, except 1/2″ tube OD sizes which have an aluminum body. All include mounting brackets. Max. temperature is 140° F. Max. pressure is 145 psi.

Filters have a plastic element that removes particles as small as 5 microns. All have a manual drain and a polycarbonate bowl.

Regulators have an embedded gauge to prevent accidental damage (unless noted). All are relieving style, which reduces downstream pressure through a vent port if your system is blocked. Accuracy is ±5%.

Lubricators have a polycarbonate bowl. All use VG32 oil (see 3499K on page 2176).

Stacked Models— Combine a filter and regulator in one "piggyback" device, with a lubricator at the side.

For Tube OD	Max. scfm @ 100 psi	Regulating Range, psi	Oil Cap., oz.	O'all Size, Ht.×Wd.	Complete Units	Each	Repl. Filter Elements	Each
Inline								
1/8″	5	7-100	0.24	3.35″×4.68″	8419T1★	$70.79	6098K6	$2.62
1/4″	28	7-100	0.85	4.84″×6.21″	8419T2	90.58	8540T4	3.23
3/8″	28	7-100	0.85	4.84″×6.21″	8419T3	93.04	8540T4	3.23
1/2″	53	7-100	1.86	6.02″×7.82″	8419T4	124.54	8540T1	3.81
Stacked								
1/4″	28	7-100	0.85	6.3″ ×4.52″	8419T6	80.58	8540T4	3.23
3/8″	28	7-100	0.85	6.3″ ×4.52″	8419T7	83.38	8540T4	3.23
1/2″	53	7-100	1.86	7.91″×5.58″	8419T8	109.75	8540T1	3.81

★ Gauge is not embedded.

Ultra-Compact Modular Air Filter/Regulator/Lubricators (FRLs)

The smallest filter/regulator/lubricator we sell—ideal for laboratory use, instrumentation, and micro machining. Body is cast zinc. Max. temperature is 140° F. Max. pressure is 145 psi.

Filters have a plastic element that removes particles as small as 5 microns. All have a manual drain and a polycarbonate bowl.

Regulators are relieving style, which reduces downstream pressure through a vent port when your system is blocked. Regulating range is 7-100 psi. Gauge is included. Accuracy is ±5%.

Lubricators have a polycarbonate bowl and a sight glass. They use VG32 oil (see 3499K on page 2176).

Complete Units

Inline *Stacked*

All include joiner clamps and mounting brackets.

Stacked Models— Combine a filter and regulator in one "piggyback" device, with a lubricator at the side.

End Block Kits— Allow you to take full advantage of the modular design. Each kit includes two end blocks (one for the inlet and one for the outlet) that thread onto your pipe.

Thread Size	Max. scfm @ 100 psi	Oil Cap., oz.	O'all Size, Ht.×Wd.	Complete Units	Each	End Block Kits	Each	Repl. Filter Elements	Each
Inline									
10-32	5	0.24	3.35″×3.43″	6098K1	$59.20	6098K44	$28.53	6098K6	$2.62
Stacked									
10-32	5	0.24	4.25″×2.2″	6098K22	50.74	6098K44	28.53	6098K6	2.62

Individual/Replacement Components and Pipe Adapter

Stacked Filter/ Regulator *Filter* *Regulator* *Lubricator* *Joiner Clamp*

Pipe Adapter— Allows you to adapt from 10-32 UNF (Unified Fine) threads to 1/8″ NPT female pipe size connection.

		Each
Stacked Filter/Regulator	6098K5	$34.09
Filter	6098K2	13.26
Regulator	6098K3	29.99
Lubricator	6098K4	14.94
Joiner Clamp	6098K7	5.93
		Per Pkg.
Pipe Adapter (5/Pkg.)	5454K69	$10.58

For information about coefficient of volume, see page 986.

Air Flow Control Valves

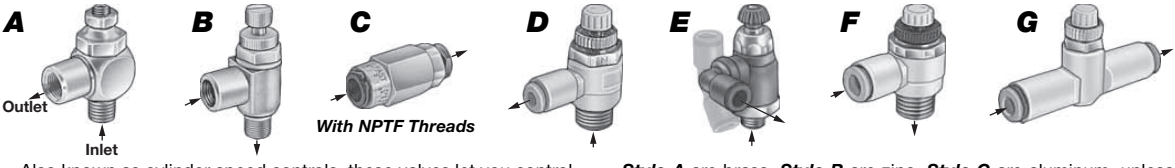

Also known as cylinder speed controls, these valves let you control the extension or retraction speed of your air cylinder. They regulate air flow in the flow-control direction (inlet to outlet) and allow air to free flow in the other direction. Simply use the dial to adjust the air flow rate.

Style A are brass. ***Style B*** are zinc. ***Style C*** are aluminum, unless noted. ***Styles D***, ***F***, and ***G*** are PBT (polybutylene terephthalate) plastic (except for 45045K45-45045K49, which are brass). ***Style E*** are glass-filled nylon and have a swivel tube fitting for mounting flexibility.

Air Flow Control Valves—*Maximum Pressure: 145 psi (unless noted)*

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(A) Male Thread to Female Thread					
1/8″ NPT	1/8″ NPT	0.26	12.34	45045K41■	$18.03
1/4″ NPT	1/4″ NPT	0.75	33.25	45045K42■	19.76
3/8″ NPT	3/8″ NPT	0.84	57.82	45045K43■	24.91
1/2″ NPT	1/2″ NPT	1.64	83.55	45045K44■	34.46
(B) Female Thread to Male Thread					
10-32 UNF	10-32 UNF	0.1	3.52	8346K14	21.90
1/8″ NPT	1/8″ NPT	0.34	12.58	8346K15	28.06
(C) Female Thread to Female Thread					
1/8″ NPTF	1/8″ NPTF	0.8	47	6692K16♦	20.22
1/4″ NPTF	1/4″ NPTF	1.2	66	6692K11♦	24.92
3/8″ NPTF	3/8″ NPTF	2.6	149	6692K12♦	42.63
1/2″ NPTF	1/2″ NPTF	3.1	173	6692K13♦	59.70
(D) Male Thread to Push-to-Connect Tube					
10-32 UNF	For 1/8″ OD	0.08	2.55	62005K211	9.98
10-32 UNF	For 5/32″ OD	0.08	2.55	62005K212	9.96
1/8″ NPT	For 1/8″ OD	0.15	4.79	62005K221	10.07
1/8″ NPT	For 5/32″ OD	0.15	4.79	62005K222	10.52
1/8″ NPT	For 5/32″ OD	0.19	13.05	45045K45■	20.48
1/8″ NPT	For 1/4″ OD	0.19	6.07	62005K224	10.52
1/8″ NPT	For 1/4″ OD	0.28	12.56	45045K46■	20.48
1/8″ NPT	For 5/16″ OD	0.19	6.07	62005K225	10.52
1/4″ NPT	For 5/32″ OD	0.22	7.02	62005K231	18.18
1/4″ NPT	For 1/4″ OD	0.39	12.45	62005K233	15.67
1/4″ NPT	For 1/4″ OD	0.51	25.43	45045K47■	21.87
1/4″ NPT	For 1/4″ OD	0.56	17.88	62005K243	23.54
1/4″ NPT	For 5/16″ OD	0.39	12.45	62005K234	17.93
1/4″ NPT	For 5/16″ OD	0.67	21.39	62005K244	23.54
1/4″ NPT	For 3/8″ OD	0.39	12.45	62005K235	17.55
1/4″ NPT	For 3/8″ OD	0.62	30.52	45045K48■	22.69
1/4″ NPT	For 3/8″ OD	0.78	24.91	62005K245	23.54
3/8″ NPT	For 1/4″ OD	0.56	17.88	62005K251	23.27
3/8″ NPT	For 5/16″ OD	0.67	21.39	62005K252	22.94
3/8″ NPT	For 3/8″ OD	0.78	24.91	62005K253	22.94
3/8″ NPT	For 3/8″ OD	0.78	53.25	45045K49■	28.70
1/2″ NPT	For 3/8″ OD	1.33	42.47	62005K261	27.79
1/2″ NPT	For 1/2″ OD	1.44	45.98	62005K262	28.44

■ Max. pressure is 125 psi. ♦ Max. pressure is 250 psi.

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(E) Male Thread to Swivel Push-to-Connect Tube					
1/8″ NPT	For 1/4″ OD	0.75	21.67	2959T11	$23.62
1/4″ NPT	For 1/4″ OD	0.86	25.67	2959T12	25.62
1/4″ NPT	For 3/8″ OD	3.56	83.22	2959T13	37.82
3/8″ NPT	For 3/8″ OD	4.49	104.93	2959T14	45.44
(F) Push-to-Connect Tube to Male Thread					
For 1/8″ OD	10-32 UNF	0.08	2.55	62005K111	9.98
For 1/8″ OD	1/8″ NPT	0.15	4.79	62005K121	17.95
For 5/32″ OD	10-32 UNF	0.08	2.55	62005K112	9.99
For 5/32″ OD	1/8″ NPT	0.15	4.79	62005K122	17.42
For 5/32″ OD	1/4″ NPT	0.22	7.02	62005K131	18.90
For 3/16″ OD	1/8″ NPT	0.19	6.07	62005K123	17.86
For 3/16″ OD	1/4″ NPT	0.33	10.54	62005K132	18.99
For 1/4″ OD	1/8″ NPT	0.19	6.07	62005K124	17.30
For 1/4″ OD	1/4″ NPT	0.39	12.45	62005K133	15.67
For 1/4″ OD	1/4″ NPT	0.56	17.88	62005K143	24.71
For 1/4″ OD	3/8″ NPT	0.56	17.88	62005K151	24.49
For 5/16″ OD	1/8″ NPT	0.19	6.07	62005K125	17.31
For 5/16″ OD	1/4″ NPT	0.39	12.45	62005K134	18.58
For 5/16″ OD	1/4″ NPT	0.67	21.39	62005K144	24.71
For 5/16″ OD	3/8″ NPT	0.67	21.39	62005K152	24.71
For 3/8″ OD	1/4″ NPT	0.39	12.45	62005K135	18.21
For 3/8″ OD	1/4″ NPT	0.78	24.91	62005K145	24.71
For 3/8″ OD	3/8″ NPT	0.78	24.91	62005K153	24.17
For 3/8″ OD	1/2″ NPT	1.33	42.47	62005K161	29.09
For 1/2″ OD	1/2″ NPT	1.44	45.98	62005K162	29.68
(G) Push-to-Connect Tube to Push-to-Connect Tube					
For 5/32″ OD	For 5/32″ OD	0.11	3.51	62005K311	18.34
For 3/16″ OD	For 3/16″ OD	0.19	6.07	62005K312	18.34
For 3/16″ OD	For 3/16″ OD	0.25	7.98	62005K321	20.08
For 1/4″ OD	For 1/4″ OD	0.19	6.07	62005K313	18.34
For 1/4″ OD	For 1/4″ OD	0.36	11.49	62005K331	27.70
For 1/4″ OD	For 1/4″ OD	0.39	12.45	62005K322	20.08
For 5/16″ OD	For 5/16″ OD	0.39	12.45	62005K323	20.08
For 5/16″ OD	For 5/16″ OD	0.56	17.88	62005K332	27.70
For 3/8″ OD	For 3/8″ OD	0.78	24.91	62005K333	27.70
For 3/8″ OD	For 3/8″ OD	0.89	28.42	62005K341	30.58
For 1/2″ OD	For 1/2″ OD	1.17	37.36	62005K342	30.58

Metric Air Flow Control Valves—*Maximum Pressure: 145 psi (unless noted)*

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(B) Female Thread to Male Thread					
M5	M5	0.1	3.52	6857K24	$30.74
1/8″ BSPP	1/8″ BSPP	0.34	12.58	6857K25	33.04
1/4″ BSPP	1/4″ BSPP	0.61	22.57	6857K26	36.61
(C) Female Thread to Female Thread					
M5	M5	0.1	3.48	6857K17	40.78
1/8″ BSPP	1/8″ BSPP	0.22	8.14	6857K18	39.96
1/4″ BSPP	1/4″ BSPP	0.37	13.69	6857K19	58.28
3/8″ BSPP	3/8″ BSPP	1.00	37	6857K21●	89.39
1/2″ BSPP	1/2″ BSPP	1.62	59.94	6857K22●	105.67
3/4″ BSPP	3/4″ BSPP	3.3	122.1	6857K23▲	299.76
(D) Male Thread to Push-to-Connect Tube					
10-32 UNF	For 4 mm OD	0.08	2.55	62005K511	8.31
10-32 UNF	For 6 mm OD	0.08	2.55	62005K512	8.57
1/8″ BSPT	For 4 mm OD	0.15	4.79	62005K521	11.51
1/8″ BSPT	For 6 mm OD	0.19	6.07	62005K522	10.50
1/8″ BSPT	For 8 mm OD	0.19	6.07	62005K523	11.33
1/4″ BSPT	For 4 mm OD	0.22	7.02	62005K531	12.08
1/4″ BSPT	For 6 mm OD	0.33	10.54	62005K532	12.19
1/4″ BSPT	For 6 mm OD	0.56	17.88	62005K541	15.46
1/4″ BSPT	For 8 mm OD	0.39	12.45	62005K533	12.07
1/4″ BSPT	For 8 mm OD	0.67	21.39	62005K542	15.46
3/8″ BSPT	For 6 mm OD	0.56	17.88	62005K551	15.93
3/8″ BSPT	For 8 mm OD	0.67	21.39	62005K552	15.80
1/2″ BSPT	For 10 mm OD	1.33	42.47	62005K56	17.54

● Made of die cast zinc. ▲ Maximum pressure is 217 psi.

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(E) Male Thread to Swivel Push-to-Connect Tube					
1/8″ BSPT	For 8 mm OD	1.67	39.05	2961T12	$40.45
1/4″ BSPT	For 6 mm OD	0.72	21.28	2961T11	36.98
1/4″ BSPT	For 8 mm OD	1.84	43.19	2961T13	40.45
1/4″ BSPP	For 10 mm OD	3.56	83.22	2961T17	41.29
(F) Push-to-Connect Tube to Male Thread					
For 4 mm OD	M5	0.08	2.55	62005K411	8.31
For 4 mm OD	1/8″ BSPT	0.15	4.79	62005K421	11.51
For 4 mm OD	1/4″ BSPT	0.22	7.02	62005K431	12.05
For 6 mm OD	M5	0.08	2.55	62005K412	8.36
For 6 mm OD	1/8″ BSPT	0.19	6.07	62005K422	11.42
For 6 mm OD	1/4″ BSPT	0.33	10.54	62005K432	11.89
For 6 mm OD	1/4″ BSPT	0.56	17.88	62005K441	15.46
For 6 mm OD	3/8″ BSPT	0.56	17.88	62005K451	15.25
For 8 mm OD	1/8″ BSPT	0.19	6.07	62005K423	11.33
For 8 mm OD	1/4″ BSPT	0.39	12.45	62005K433	12.07
For 8 mm OD	1/4″ BSPT	0.67	21.39	62005K442	15.46
For 8 mm OD	3/8″ BSPT	0.67	21.39	62005K452	15.80
For 10 mm OD	1/2″ BSPT	1.33	42.47	62005K46	17.01
(G) Push-to-Connect Tube to Push-to-Connect Tube					
For 4 mm OD	For 4 mm OD	0.11	3.51	62005K611	19.04
For 6 mm OD	For 6 mm OD	0.19	6.07	62005K612	19.04
For 6 mm OD	For 6 mm OD	0.25	7.98	62005K621	20.84
For 6 mm OD	For 6 mm OD	0.36	11.49	62005K631	28.75
For 8 mm OD	For 8 mm OD	0.39	12.45	62005K622	20.84
For 8 mm OD	For 8 mm OD	0.56	17.88	62005K632	28.75
For 10 mm OD	For 10 mm OD	0.78	24.91	62005K633	28.75

For information about coefficient of volume, see page 986.

Corrosion-Resistant Air Flow Control Valves

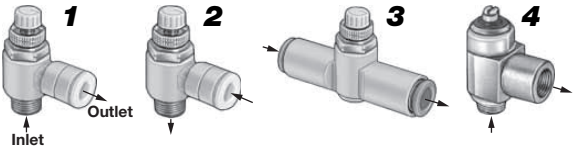

Similar to our Air Flow Control Valves on the previous page, except these valves have stainless steel parts to handle your corrosive environments. Maximum pressure is 145 psi.

(1-3) PBT (polybutylene terephthalate) plastic valves have Type 303 stainless steel internal parts. Use the dial to adjust the air flow rate.

(4) Metric all-stainless-steel valves are made entirely of Type 316 stainless steel. Use the adjustment screw to adjust the air flow rate.

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
PBT Plastic Valves with Stainless Steel Internal Parts					
(1) Male Thread to Push-to-Connect Tube					
1/8″ NPT	For 1/8″ OD	0.15	4.79	9066K11	$23.27
1/8″ NPT	For 1/4″ OD	0.19	6.07	9066K12	23.27
1/4″ NPT	For 1/4″ OD	0.39	12.45	9066K13	28.09
1/4″ NPT	For 3/8″ OD	0.39	12.45	9066K14	32.89
1/2″ NPT	For 3/8″ OD	0.67	21.39	9066K16	60.78
1/2″ NPT	For 1/2″ OD	1.44	45.98	9066K17	60.20
(2) Push-to-Connect Tube to Male Thread					
For 1/4″ OD	1/8″ NPT	0.19	6.07	9066K18	25.28
For 1/4″ OD	1/4″ NPT	0.39	12.45	9066K19	30.10
For 3/8″ OD	1/4″ NPT	0.39	12.45	9066K21	33.49
(3) Push-to-Connect Tube to Push-to-Connect Tube					
For 1/4″ OD	For 1/4″ OD	0.19	6.07	9066K31	20.60
For 3/8″ OD	For 3/8″ OD	0.78	24.91	9066K32	48.00
For 1/2″ OD	For 1/2″ OD	1.17	37.36	9066K33	52.43
Metric All-Stainless-Steel Valves					
(4) Male Thread to Female Thread					
M5	M5	0.17	6.11	9046K11	68.49
1/8″ BSPP	1/8″ BSPP	0.34	12.58	9046K12	68.47
1/4″ BSPP	1/4″ BSPP	0.61	22.57	9046K13	70.55
3/8″ BSPP	3/8″ BSPP	1.45	53.65	9046K14	97.27
1/2″ BSPP	1/2″ BSPP	2.1	77.7	9046K15	116.18

Pressure Indicators

Is air flowing to your component? Once installed, these indicators change color when air flow is present. All have an aluminum alloy body with an acrylic window. Temperature range is 23° to 140° F. Max. frequency is 100 cycles per minute. Operating pressure range is 14.5 to 116 psi.

Port Pipe Size	Indicator Color		Each
1/8″ NPT Female	Green	1249K11	$43.49
1/8″ NPT Female	Orange	1249K12	43.49
1/8″ NPT Female	Red	1249K13	43.49

Precision-Adjust Air Flow Control Valves

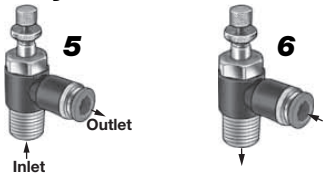

Similar to our Air Flow Control Valves on the previous page, except these valves have a fine-adjustment dial for precise control of air flow and cylinder speed. All are made of PBT (polybutylene terephthalate) plastic, unless noted. Maximum pressure is 145 psi.

Air Flow Control Valves

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(5) Male Thread to Push-to-Connect Tube					
10-32 UNF	For 1/8″ OD	0.03	2.5	4076K29●	$14.23
10-32 UNF	For 5/32″ OD	0.04	3	4076K32●	14.23
10-32 UNF	For 1/4″ OD	0.04	3	4076K21●	16.68
1/8″ NPT	For 5/32″ OD	0.11	7.5	4076K33●	14.23
1/8″ NPT	For 5/32″ OD	0.18	13	4076K27	18.82
1/8″ NPT	For 1/4″ OD	0.18	13	4076K22	20.03
1/4″ NPT	For 5/32″ OD	0.18	13	4076K28	20.03
1/4″ NPT	For 1/4″ OD	0.18	13	4076K23	19.94
1/4″ NPT	For 3/8″ OD	0.27	18.5	4076K25	22.49
3/8″ NPT	For 1/4″ OD	0.27	18.5	4076K24	23.01
3/8″ NPT	For 3/8″ OD	—	65★	4076K26●	25.00
(6) Push-to-Connect Tube to Male Thread					
For 1/4″ OD	1/4″ NPT	0.18	13	4076K34	19.34
For 3/8″ OD	1/4″ NPT	0.27	18.5	4076K35	21.84

● Body is made of reinforced nylon. ★ Rated at 87 psi.

Metric Air Flow Control Valves

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(5) Male Thread to Push-to-Connect Tube					
1/8″ BSPT	For 4 mm OD	0.15	4.79	4057T11	$23.47
1/8″ BSPT	For 6 mm OD	0.19	6.07	4057T12	23.47
1/8″ BSPT	For 8 mm OD	0.19	6.07	4057T13	23.47
1/4″ BSPT	For 4 mm OD	0.22	7.02	4057T14	26.07
1/4″ BSPT	For 6 mm OD	0.33	10.54	4057T15	26.07
1/4″ BSPT	For 8 mm OD	0.39	12.45	4057T16	26.07
1/4″ BSPT	For 10 mm OD	0.39	12.45	4057T17	20.00
(6) Push-to-Connect Tube to Male Thread					
For 4 mm OD	1/8″ BSPT	0.15	4.79	4057T18	23.47
For 4 mm OD	1/4″ BSPT	0.22	7.02	4057T22	26.07
For 6 mm OD	1/8″ BSPT	0.19	6.07	4057T19	23.47
For 6 mm OD	1/4″ BSPT	0.33	10.54	4057T23	26.07
For 8 mm OD	1/8″ BSPT	0.19	6.07	4057T21	23.47
For 8 mm OD	1/4″ BSPT	0.39	12.45	4057T24	26.07
For 10 mm OD	1/4″ BSPT	0.39	12.45	4057T25	26.07

High-Pressure Universal-Fit Air Flow Control Valves

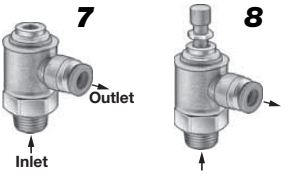

A universal thread on the inlet of these unique brass valves allows connection to NPT, NPTF (Dryseal), BSPP, and BSPT threads. The outlet is a push-to-connect tube fitting. Also known as cylinder speed controls, the valves let you control the extension or retraction speed of your air cylinder. They regulate air flow in the flow-control direction (inlet to outlet) and allow air to free flow in the other direction. Fittings are nickel-plated brass. Maximum pressure is 265 psi.

(7) Screw Adjust— Use a screwdriver to turn the screw to adjust the air flow rate.

(8) Knob Adjust— Simply turn the knob to adjust the air flow rate.

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(7) Screw Adjust; Male Thread to Push-to-Connect Tube					
1/8″	For 1/8″ OD	0.09	5.0	1045K11	$14.96
1/8″	For 5/32″ OD	0.14	7.8	1045K12	14.96
1/8″	For 1/4″ OD	0.22	12.3	1045K13	14.96
1/4″	For 1/4″ OD	0.27	15.1	1045K14	15.44
1/4″	For 5/16″ OD	0.27	15.1	1045K15	16.64
1/4″	For 3/8″ OD	0.27	15.1	1045K17	16.08
3/8″	For 5/16″ OD	0.41	23.0	1045K16	24.05
3/8″	For 3/8″ OD	0.42	23.5	1045K18	26.54
(8) Knob Adjust; Male Thread to Push-to-Connect Tube					
1/8″	For 1/8″ OD	0.09	5.0	2273K31	15.70
1/8″	For 5/32″ OD	0.14	7.8	2273K32	15.70
1/8″	For 1/4″ OD	0.22	12.3	2273K33	15.85
1/4″	For 1/4″ OD	0.27	15.1	2273K34	16.78
1/4″	For 5/16″ OD	0.27	15.1	2273K35	17.19
1/4″	For 3/8″ OD	0.27	15.1	2273K37	19.00
3/8″	For 5/16″ OD	0.41	23.0	2273K36	24.87
3/8″	For 3/8″ OD	0.42	23.5	2273K38	31.28

For information about coefficient of volume, see page 986.

Soft-Start Air Flow Control Valves

By limiting startup air flow, these valves protect your equipment from damage. After the initial startup, the valves gradually raise your system air flow rate to operating levels.

Also known as cylinder speed controls, these aluminum alloy valves let you control the extension or retraction speed of your air cylinder. They regulate air flow in the flow-control direction (inlet to outlet) and allow air to free flow in the other direction. Simply use the dial to adjust the air flow rate. Maximum pressure is 101 psi.

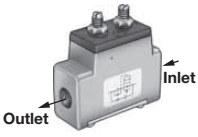

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
Female Thread to Female Thread					
1/8″ NPT	1/8″ NPT	0.54	17.24	61635K11	$39.41
1/4″ NPT	1/4″ NPT	1.22	38.95	61635K12	47.91
3/8″ NPT	3/8″ NPT	1.22	38.95	61635K13	47.91
1/2″ NPT	1/2″ NPT	3.06	97.70	61635K14	105.41
3/4″ NPT	3/4″ NPT	3.06	97.70	61635K15	105.41

Tamper-Resistant Air Flow Control Valves

For security as well as safety, an adjustment tool (sold below) is required to change the air flow rate of these valves. Also known as cylinder speed controls, these PBT (polybutylene terephthalate) plastic valves let you control the extension or retraction speed of your air cylinder. They regulate air flow in the flow-control direction (inlet to outlet) and allow air to free flow in the other direction. Simply use the tool to adjust the air flow rate. Max. pressure is 145 psi.

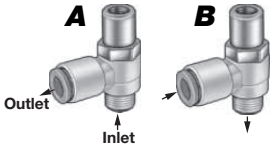

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(A) Male Thread to Push-to-Connect Tube					
1/8″ NPT	For 1/8″ OD	0.15	4.79	8940K11	$14.40
1/8″ NPT	For 3/16″ OD	0.15	4.79	8940K12	13.47
1/8″ NPT	For 1/4″ OD	0.19	6.07	8940K13	13.47
1/4″ NPT	For 3/16″ OD	0.33	10.54	8940K14	14.40
1/4″ NPT	For 1/4″ OD	0.39	12.45	8940K15	14.40
1/4″ NPT	For 3/8″ OD	0.39	12.45	8940K16	17.27
3/8″ NPT	For 1/4″ OD	0.56	17.88	8940K17	18.20
3/8″ NPT	For 3/8″ OD	0.78	24.91	8940K18	19.20
1/2″ NPT	For 3/8″ OD	1.33	42.47	8940K19	21.54
1/2″ NPT	For 1/2″ OD	1.44	45.98	8940K21	22.00
(B) Push-to-Connect Tube to Male Thread					
For 1/8″ OD	1/8″ NPT	0.15	4.79	8940K22	14.40
For 3/16″ OD	1/8″ NPT	0.15	4.79	8940K23	13.47
For 3/16″ OD	1/4″ NPT	0.33	10.54	8940K25	14.40
For 1/4″ OD	1/8″ NPT	0.19	6.07	8940K24	13.47
For 1/4″ OD	1/4″ NPT	0.39	12.45	8940K26	14.40
For 1/4″ OD	3/8″ NPT	0.56	17.88	8940K28	18.20
For 3/8″ OD	1/4″ NPT	0.39	12.45	8940K27	17.27
For 3/8″ OD	3/8″ NPT	0.78	24.91	8940K29	19.20
For 3/8″ OD	1/2″ NPT	1.33	42.47	8940K31	21.54
For 1/2″ OD	1/2″ NPT	1.44	45.98	8940K32	22.00
Adjustment Tool				8940K33	2.60

Bidirectional Air Flow Control Valves

Because they regulate air flow in both directions, these valves allow you to control the extension and retraction speed of your air cylinder. They are also known as cylinder speed controls.

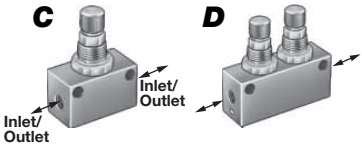

All valves are made of aluminum. Maximum pressure is 145 psi.

(C) Single-control valves have one knob to change the air flow equally in both directions. ***(D) Dual-control valves*** have two knobs to independently change the air flow in each direction.

Inlet	Outlet	Coefficient of Volume	Max. scfm @ 100 psi		Each
(C) Single Control— *Female Thread to Female Thread*					
M5	M5	0.09	3.33	8642K11	$37.37
1/8″ BSPP	1/8″ BSPP	0.19	7.17	8642K12	37.37
1/4″ BSPP	1/4″ BSPP	0.35	12.95	8642K13 ♦	58.18
(D) Dual Control— *Female Thread to Female Thread*					
M5	M5	0.08	2.96	8897K11	50.86
1/8″ BSPP	1/8″ BSPP	0.18	6.84	8897K12	50.86

♦ Body has a hexagon shape.

Quick-Exhaust Air Valves

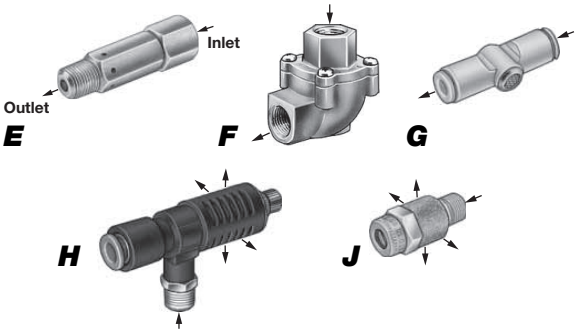

Quickly dump exhaust air to speed up the movement of your air cylinders, air presses, and other equipment.

(E-G) Valves without Flow Control

All of these valves exhaust directly to the atmosphere.

(E) Inline Valve— Made of brass and aluminum. Maximum pressure is 125 psi.

(F) Right-Angle Valves— Have an exhaust port that also allows you to route exhaust air to another place in your air system. Made of aluminum, unless noted. Maximum pressure is 125 psi.

(G) Valves with Muffler— The muffler reduces noise made by the air as it exhausts. Valves are made of PBT (polybutylene terephthalate) plastic. Maximum pressure is 145 psi.

Inlet	Cylinder/ Outlet	Exhaust	Coefficient of Volume	Max. scfm @ 100 psi		Each
(E) Inline Valve— *Female Thread to Male Thread*						
1/8″ NPT	1/8″ NPT	———	0.10	6	6646K31	$17.05
(F) Right-Angle Valves— *Female Threads*						
1/8″ NPT	1/4″ NPT	1/4″ NPT	1	61	6646K33	13.95
1/4″ NPT	1/4″ NPT	1/4″ NPT	2.71	159	6646K32★	18.45
1/4″ NPT	1/4″ NPT	3/8″ NPT	2.33	141	6646K34	14.27
3/8″ NPT	3/8″ NPT	3/8″ NPT	2.98	178	6646K11	15.22
1/2″ NPT	1/2″ NPT	3/4″ NPT	5.45	336	6646K25	22.82
3/4″ NPT	3/4″ NPT	3/4″ NPT	7.84	477	6646K23	24.09
(G) Valves with Muffler— *Push-to-Connect Tube Fittings*						
4 mm■	4 mm■	———	0.14	4.47	6639T11	12.70
6 mm■	6 mm■	———	0.15	4.79	6639T12	12.70

★ Made of die cast zinc.
■ For tube OD.

(H&J) Valves with Flow Control

Similar to the valves above, except these have a dial so you can control the exhaust air flow rate. They also have a muffler to reduce noise made by the air as it exhausts.

Also known as cylinder speed controls, air flow control valves let you control the extension or retraction speed of your air cylinder. Maximum pressure is 145 psi.

Style H— Connect to your cylinder. A tube connection allows air to flow freely through the valve into the cylinder; air coming out of the cylinder is flow-controlled by the dial and is routed through the muffler and exhausted to the atmosphere. Valves are PBT (polybutylene terephthalate) plastic.

Style J— Have one port that connects to the exhaust port of a directional control valve—good when you can't access your cylinder directly. Use a screwdriver to control the exhaust air flow to the atmosphere. Made of aluminum and brass.

Inlet	Tube Connection (For Tube OD)	Coefficient of Volume	Max. scfm @ 100 psi		Each
Style H— *Male Thread to Atmosphere (Flow Control Direction)*					
1/8″ NPT	1/4″	0.44	14.05	62135K11	$25.04
1/8″ NPT	5/16″	0.78	24.91	62135K12	26.73
1/8″ NPT	3/8″	0.78	24.91	62135K13	28.96
1/4″ NPT	1/4″	0.44	14.05	62135K14	25.04
1/4″ NPT	5/16″	0.78	24.91	62135K15	26.73
1/4″ NPT	3/8″	0.78	24.91	62135K16	28.09
1/4″ NPT	3/8″	1.5	47.89	62135K17	30.55
3/8″ NPT	5/16″	0.78	24.91	62135K18	26.73
3/8″ NPT	3/8″	0.78	24.91	62135K19	28.96
3/8″ NPT	3/8″	1.6	51.09	62135K21	30.55
1/2″ NPT	3/8″	1.6	51.09	62135K22	31.04
Style J— *Male Thread to Atmosphere (Flow Control Direction)*					
1/8″ NPT	—	0.52	19.24	9164K11	12.86
1/4″ NPT	—	1	37	9164K12	14.55
3/8″ NPT	—	2	74	9164K13	17.90
1/2″ NPT	—	3.6	133.2	9164K14	22.53

About Directional Control Valves

Two-Pressure-Output (4 Way) Valve Shown Controlling a Double-Acting Cylinder

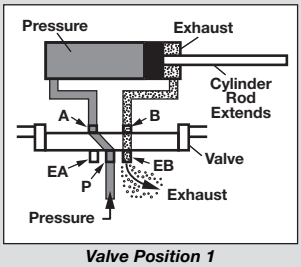

Valve Position 1

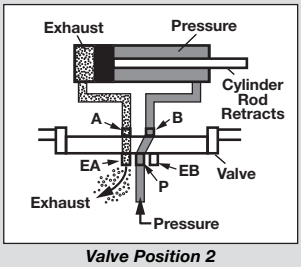

Valve Position 2

National Fluid Power Association (NFPA) Diagram of a Two-Pressure-Output (4 Way) Valve with Five Ports and Two Positions

Single-Pressure-Output (3 Way) Valve Shown Controlling a Single-Acting Spring-Return Cylinder

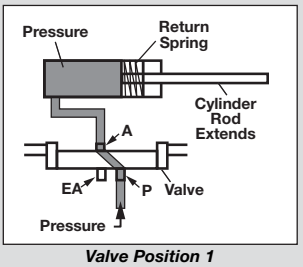

Valve Position 1

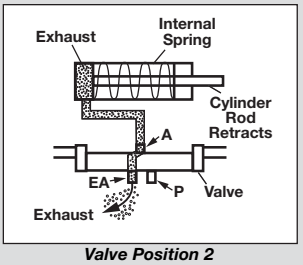

Valve Position 2

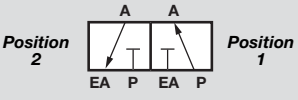

National Fluid Power Association (NFPA) Diagram of a Single-Pressure-Output (3 Way) Valve with Three Ports and Two Positions

Choosing the Right Control Valve— Sending air pressure to the right place at the right time and then exhausting that pressure when it's no longer needed is a control valve's job. Here are two of the most common styles of control valves:

Two-Pressure-Output (4 Way) Valves— With two pressure output ports, you can use these valves to control a double-acting cylinder, which requires pressure to extend and retract the cylinder rod.

Single-Pressure-Output (3 Way) Valves— With a single pressure output port, you can use these valves to control a single-acting cylinder, which requires pressure to extend the cylinder rod while an internal spring retracts the cylinder rod.

To Operate Control Valves— Use pedals, knobs, and levers to manually operate your control valves. Use rollers and electric solenoids to operate control valves in your automated systems. Electric solenoids will allow automation with computers and programmable logic controllers (PLCs).

Air Flow and Coefficient of Volume (Cv)— Coefficient of volume is a measurement that indicates how much air flow a control valve can provide to your cylinder or component. The higher the Cv value, the higher the air flow rate. Looking at valves with the same port size, but different Cv values and not sure which one to choose? Select the one with the higher Cv value because low air flow can slow down your entire system.

National Fluid Power Association (NFPA) Diagrams— Found on most air control valves, these diagrams depict air flow and valve action. They're useful for replacing control valves—match the diagram on your valve to the new valve.

For NFPA flow diagrams of our valves, go to mcmaster.com and search for **62475KAC**.

Hand-Operated Miniature Air Control Valves

A *Female Inlet*

B *Male Inlet*

C *Push-to-Connect Inlet*

D *Male Inlet*

E

F

With the touch of a finger, these tiny valves can control your air power. Their low flow rates and size make them perfect for your small air-powered systems. All valves are panel mountable and have a panel mount opening of 1/2″ dia. (mounting hardware included). Operating pressure range is 0-125 psi. Not vacuum rated, unless noted.

Single-pressure-output (3 way) valves exhaust directly to the atmosphere.

Manual-Return Valves— Once moved into a position, valve stays in that position until you move the operator into the other position.

Spring-Return Valves— A spring returns the valve to its original position once you let go of the operator. *Single-pressure-output (3 way) valves* are normally closed.

A&B Black Anodized Aluminum— *Two-pressure-output (4 way) valves* have ports on the side; *single-pressure-output (3 way) valves* have ports on the bottom and side.

C&D Nickel-Plated Brass— Have ports on the bottom and side.

E&F Type 303 Stainless Steel— These valves offer good corrosion resistance. Ports are on the bottom and side. Vacuum rated to 26″ Hg.

Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Co-efficient of Volume	No. of Ports	Port Pipe Size Inlet	Port Pipe Size Outlet	Valve Operator	Overall Size, Lg. × Wd. × Ht.		Each
Manual Return										
A 2 (4)	2	15.3	0.25	5	10-32 Female	10-32 Female	Toggle	0.75″ × 0.75″ × 2.95″	**62475K53**	$23.25
A 1 (3)	2	14.4	0.24	2	1/8″ NPT Male	10-32 Female	Toggle	0.62″ × 0.62″ × 2.16″	**62475K14**	11.86
A 1 (3)	2	14.4	0.24	2	10-32 Female	10-32 Female	Toggle	0.62″ × 0.62″ × 2.13″	**62475K16**	12.50
C 1 (3)	2	17.8	0.29	2	1/8″ NPT Male	1/8″ NPT Female	Toggle	1.14″ × 0.63″ × 2.38″	**62475K24**	24.07
C 1 (3)	2	17.8	0.29	2	1/8″ NPT Female	1/8″ NPT Female	Toggle	1.14″ × 0.63″ × 2.43″	**62475K26**	23.05
C 1 (3)	2	17.8	0.29	2	1/4″ Push-to-Connect	1/4″ Push-to-Connect	Toggle	1.18″ × 0.63″ × 2.54″	**62475K28**	26.04
E 1 (3)	2	16.2	0.17	3	10-32 Female	10-32 Female	Toggle	0.63″ × 0.63″ × 2.15″	**8399K13**	35.91
Spring Return										
A 2 (4)	2	15.3	0.25	5	10-32 Female	10-32 Female	Toggle	0.75″ × 0.75″ × 2.95″	**62475K52**	23.61
A 1 (3)	2	14.4	0.24	2	1/8″ NPT Male	10-32 Female	Toggle	0.62″ × 0.62″ × 2.16″	**62475K15**	12.22
B 2 (4)	2	15.3	0.25	5	10-32 Female	10-32 Female	Push Button	0.75″ × 0.75″ × 2.53″	**62475K51**	22.90
B 1 (3)	2	14.4	0.24	2	1/8″ NPT Male	10-32 Female	Push Button	0.62″ × 0.62″ × 1.83″	**62475K11**	9.79
B 1 (3)	2	14.4	0.24	2	10-32 Female	10-32 Female	Push Button	0.62″ × 0.62″ × 1.80″	**62475K12**	10.43
B 1 (3)	2	14.4	0.24	2	0.170″ Barbed	10-32 Female	Push Button	0.62″ × 0.62″ × 2.00″	**62475K13**	10.15
C 1 (3)	2	17.8	0.29	2	1/8″ NPT Female	1/8″ NPT Female	Toggle	1.14″ × 0.63″ × 2.43″	**62475K27**	25.60
C 1 (3)	2	17.8	0.29	2	1/4″ Push-to-Connect	1/4″ Push-to-Connect	Toggle	1.18″ × 0.63″ × 2.54″	**62475K29**	27.82
D 1 (3)	2	17.8	0.29	2	1/8″ NPT Male	1/8″ NPT Female	Push Button	1.14″ × 0.63″ × 2.05″	**62475K21**	22.46
D 1 (3)	2	17.8	0.29	2	1/8″ NPT Female	1/8″ NPT Female	Push Button	1.14″ × 0.63″ × 2.10″	**62475K22**	21.38
D 1 (3)	2	17.8	0.29	2	1/4″ Push-to-Connect	1/4″ Push-to-Connect	Push Button	1.18″ × 0.63″ × 2.21″	**62475K23**	25.40
E 1 (3)	2	16.2	0.17	3	10-32 Female	10-32 Female	Toggle	0.63″ × 0.63″ × 2.15″	**8399K12**	36.27
F 1 (3)	2	16.2	0.17	3	10-32 Female	10-32 Female	Push Button	0.63″ × 0.63″ × 1.80″	**8399K11**	36.62

For information about control valves, see page 986.

Hand-Operated Double Push-Button Air Control Valves

Push one button to put these valves into the first position; push the other to put valves into the second position. Not vacuum rated.

A ***Cast-Aluminum Manual-Return Valve—*** Once in position, valve stays in that position until you push the other button. Ports are on the side. Valve has two 7/32″ mounting holes.

B ***High-Impact Polycarbonate Spring-Return Valve—*** A spring returns the valve to its closed position once you release the buttons. Valve has barbed fitting ports inside the housing for 3/16″ ID tubing. It can also be used as a pendant-style valve. CSA certified. Meets UL 94V2 for flame resistance. Meets IP65 for protection from water projected from a nozzle and NEMA 4X for corrosion resistance. Valve exhausts directly to the atmosphere.

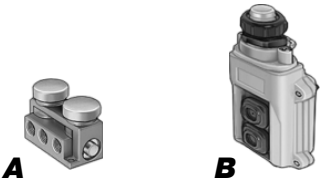

	Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Port Pipe Size	Overall Size, Lg. × Wd. × Ht.		Each
A	2 (4)	2	56	1	40-120	5	1/4″ NPT Female	3.03″ × 1.78″ × 1.91″	**4558K17**	$67.66
B	2 (4)	3	12	0.21	0-125	3	3/16″ Barbed	3.07″ × 2.49″ × 5.17″	**1191K21**	175.00

Hand-Operated Lever Air Control Valves

Simply move the hand lever to control these valves. All are made of aluminum, unless noted. Ports are on the side and are NPT female. Not vacuum rated.

Manual-Return Valves— Once moved into a position, valve stays in that position until you move the lever into another position.

Spring-Return Valves— A spring returns the valve to its original position once you let go of the lever.

C These miniature valves are great for low-flow applications. Valves do not have an exhaust port; air is exhausted directly to the atmosphere.

D Valves have a 0.34″ mounting slot.

E Valves have two mounting holes for extra support. Mounting hole size is M5 for the valves with a 1/8″ port pipe size; M6 for the valves with a 1/4″ port pipe size.

F Made of ABS plastic with an aluminum base. Valves can be removed from their base for easy maintenance. They have two 7/32″ mounting holes.

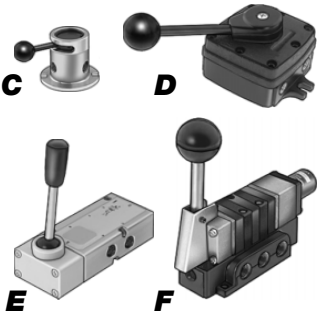

	Pressure Outputs (Ways)	Positions No.	Positions Center	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Port Pipe Size	O'all Size, Lg. × Wd. × Ht.		Each
Manual Return											
C	2 (4)	2	———	7.9	0.14	0-150	3	1/8″	1.92″ Dia. × 1.63″ Ht.	**6650K8**	$57.38
C	1 (3)	2	———	7.9	0.14	0-150	2	1/8″	1.92″ Dia. × 1.63″ Ht.	**6650K7**	47.44
D	2 (4)	3	Closed	60	2.5	0-150	4	1/4″	6.81″ × 4.75″ × 3.81″	**62365K61**	143.76
D	2 (4)	3	Closed	60	2.5	0-250	4	1/4″	6.81″ × 4.75″ × 3.81″	**62365K112**	313.65
D	2 (4)	3	Closed	70	3	0-150	4	3/8″	6.81″ × 4.75″ × 3.81″	**62365K63**	144.06
D	2 (4)	3	Closed	70	3	0-250	4	3/8″	6.81″ × 4.75″ × 3.81″	**62365K122**	226.26
D	2 (4)	3	Closed	145	6.2	0-150	4	1/2″	8.94″ × 5.62″ × 4.44″	**62365K65**	177.54
D	2 (4)	3	Closed	145	6.2	0-250	4	1/2″	8.94″ × 5.62″ × 4.44″	**62365K132**	276.60
D	2 (4)	3	Exhaust	60	2.5	0-150	4	1/4″	6.81″ × 4.75″ × 3.81″	**62365K62**	149.42
D	2 (4)	3	Exhaust	70	3	0-150	4	3/8″	6.81″ × 4.75″ × 3.81″	**62365K64**	157.36
D	2 (4)	3	Exhaust	145	6.2	0-150	4	1/2″	8.94″ × 5.62″ × 4.44″	**62365K66**	202.12
E	2 (4)	2	———	17.5	0.5	0-145	5	1/8″	3.74″ × 1.57″ × 3.7″	**3368K13**	69.39
E	2 (4)	2	———	45.5	1.3	0-145	5	1/4″	4.72″ × 2.05″ × 4.72″	**3368K24**	55.57
E	2 (4)	3	Closed	17.5	0.5	0-145	5	1/8″	3.74″ × 1.57″ × 3.7″	**3368K15**	59.14
E	2 (4)	3	Closed	45.5	1.3	0-145	5	1/4″	4.72″ × 2.05″ × 4.76″	**3368K26**	56.86
E	2 (4)	3	Exhaust	17.5	0.5	0-145	5	1/8″	3.74″ × 1.57″ × 3.7″	**3368K16**	59.14
E	2 (4)	3	Exhaust	35	1	0-145	5	1/4″	4.72″ × 2.05″ × 4.76″	**3368K27**	60.80
E	2 (4)	3	Pressure	17.5	0.5	0-145	5	1/8″	3.74″ × 1.57″ × 3.7″	**3368K17**	59.14
E	2 (4)	3	Pressure	45.5	1.3	0-145	5	1/4″	4.72″ × 2.05″ × 4.76″	**3368K28**	58.29
F	2 (4)	2	———	45	0.75	0-120	5	1/4″	5.88″ × 2″ × 5.63″	**4493K34**	95.42
Spring Return											
E	2 (4)	2	———	17.5	0.5	0-145	5	1/8″	3.74″ × 1.57″ × 3.7″	**3368K14**	69.39
E	2 (4)	2	———	45.5	1.3	0-145	5	1/4″	4.72″ × 2.05″ × 4.72″	**3368K44**	56.70
E	2 (4)	3	Closed	45.5	1.3	0-145	5	1/4″	4.72″ × 2.05″ × 4.76″	**3368K29**	63.48
E	2 (4)	3	Exhaust	35	1	0-145	5	1/4″	4.72″ × 2.05″ × 4.76″	**3368K31**	64.02
E	2 (4)	3	Pressure	45.5	1.3	0-145	5	1/4″	4.72″ × 2.05″ × 4.76″	**3368K32**	75.82
F	2 (4)	2	———	45	0.75	0-120	5	1/4″	5.38″ × 2″ × 5.63″	**4493K24**	99.74
F	2 (4)	3	Closed	45	0.75	0-120	5	1/4″	6.25″ × 2″ × 5.63″	**4493K44**	165.38

Safety Lockout Air Control Valves

To prevent accidental system startups, these valves can be locked in their off position with a padlock (not included, see pages 2932-2943; maximum shackle dia. of 25/64″). A window displays the valve status, so you never have to guess if the system is pressurized. Valves meet OSHA requirement 29 CFR 1910.147 for locking, labeling, and disconnecting air-powered equipment.

All of these valves are made of cast aluminum. They have a rotating knob and are manual return (once moved into a position, valve stays in that position until you rotate the knob into the other position). Ports are on the side and bottom. Ports are NPT female. Not vacuum rated.

Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Port Pipe Size Inlet/Outlet	Port Pipe Size Exhaust	O'all Size, Lg. × Wd. × Ht.		Each
1 (3)	2	55.88	1.75	14.5-145	3	1/4″	3/8″	2.75″ × 2.28″ × 4.21″	**63015K16**	$59.82
1 (3)	2	66.41	2.08	14.5-145	3	3/8″	3/8″	2.75″ × 2.28″ × 4.21″	**63015K17**	59.82
1 (3)	2	95.15	2.98	14.5-145	3	1/2″	3/8″	2.75″ × 2.28″ × 4.21″	**63015K18**	59.82
1 (3)	2	141.76	4.44	14.5-145	3	3/4″	1/2″	3.54″ × 3″ × 5.28″	**63015K19**	102.33
1 (3)	2	216.48	6.78	14.5-145	3	1″	1/2″	3.54″ × 3″ × 5.28″	**63015K22**	102.33

For more information about control valves, see page 986.

Hand-Operated Air Control Valves

Choose from low-flow and high-flow control valves with a variety of different operators.

Manual-Return Valves— Once moved into a position, valve stays in that position until you move the operator into another position.

Spring-Return Valves— A spring returns the valve to its original position once you let go of the operator. *Low-flow single-pressure-output (3 way) valves* can be used normally closed or normally open. *High-flow single-pressure-output (3 way) valves* are normally closed.

Low Flow

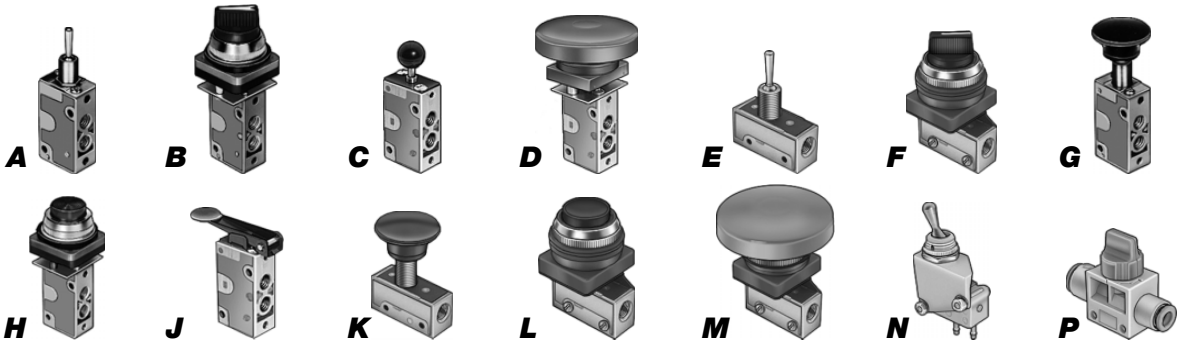

The choice for your low-flow applications. All valves (except styles C and J) are panel mountable and include panel-mounting hardware.

A-M Ports are on the side and are NPT female. *Two-pressure-output (4 way) valves* are cast aluminum with two 0.193″ mounting holes. Not vacuum rated. *Single-pressure-output (3 way) valves* are cast zinc with two 0.156″ mounting holes. Not vacuum rated (except for styles E, F, K, L, and M, which are vacuum rated to 23″ Hg).

N&P All of these metric-ported valves are made of PBT (polybutylene terephthalate) plastic. Not vacuum rated. *Style N* has ports on the bottom and barbed tube connections. It also has two 3.3 mm mounting holes. *Style P* have ports on the side and push-to-connect tube fittings. They also have two 4.2 mm mounting holes.

	Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Port Pipe Size	Valve Operator	Overall Size, Lg.×Wd.×Ht.	Panel Mount Opening		Each
Manual Return												
A	2 (4)	2	14	0.24	25-125	5	1/8″	Toggle	1 1/4″ × 3/4″ × 3 25/32″	15/32″	**61345K73**	$49.04
B	2 (4)	2	14	0.24	25-125	5	1/8″	Two-Position Knob	1 5/8″ × 1 5/8″ × 4 5/16″	1 3/16″	**61345K75**	83.73
C	2 (4)	2	14	0.24	25-125	5	1/8″	Ball Knob	1 1/4″ × 5/8″ × 3 9/32″	—	**61345K53**	45.18
D	2 (4)	2	14	0.24	25-125	5	1/8″	Emergency Stop	2 1/2″ × 2 1/2″ × 4 9/32″	1 3/16″	**61345K55**	110.60
E	1 (3)	2	6	0.11	0-120	3	1/8″	Toggle	1 3/4″ × 11/16″ × 2 5/16″	15/32″	**6464K16**	29.56
F	1 (3)	2	6	0.11	0-120	3	1/8″	Two-Position Knob	1 3/4″ × 1 1/2″ × 3 1/32″	1 3/16″	**6464K17**	58.69
Spring Return												
G	2 (4)	2	14	0.24	25-125	5	1/8″	Palm Button	1 3/8″ × 1 3/8″ × 3 25/32″	15/32″	**61345K76**	49.35
H	2 (4)	2	14	0.24	25-125	5	1/8″	Raised Button	1 5/8″ × 1 5/8″ × 3 13/16″	1 3/16″	**61345K77**	70.27
J	2 (4)	2	14	0.24	25-125	5	1/8″	Fingertip Lever	2 17/32″ × 3/4″ × 2 11/16″	—	**61345K52**	43.00
K	1 (3)	2	6	0.11	0-120	3	1/8″	Palm Button	1 3/4″ × 11/16″ × 2 1/4″	15/32″	**6464K18**	23.35
L	1 (3)	2	6	0.11	0-120	3	1/8″	Raised Button	1 3/4″ × 1 1/2″ × 2 13/32″	1 3/16″	**6464K19**	47.25
M	1 (3)	2	6	0.11	0-120	3	1/8″	Emergency Stop	2 1/2″ × 2 1/2″ × 2 7/8″	1 3/16″	**6464K25**	77.40
Manual Return— *Metric Ports*												
N	1 (3)	2	1.6	0.05	0-115	3	4 mm●	Toggle	1.18″ × 0.43″ × 2.3″	1/2″	**5360T18**	33.71
P	1 (3)	2	5.75	0.18	0-145	3	4 mm●	Two-Position Knob	1.87″ × 0.71″ × 1.61″	21/32″	**5360T12**	20.60
P	1 (3)	2	12.77	0.39	0-145	3	6 mm●	Two-Position Knob	1.91″ × 0.71″ × 1.61″	21/32″	**5360T14**	21.63
P	1 (3)	2	16.92	0.53	0-145	3	8 mm●	Two-Position Knob	2.06″ × 0.71″ × 1.61″	21/32″	**5360T16**	21.91
P	1 (3)	2	28.42	0.89	0-145	3	10 mm●	Two-Position Knob	2.4″ × 0.87″ × 1.81″	21/32″	**5360T21**	22.67
P	1 (3)	2	30.97	0.97	0-145	3	12 mm●	Two-Position Knob	2.48″ × 0.87″ × 1.81″	21/32″	**5360T23**	24.64

● For tube OD.

High Flow

Palm-Button Operator

Lever Operator

To power larger cylinders, these valves offer higher flow rates. All are made of aluminum and have ports on the side. They also have two 0.26″ dia. mounting holes. Ports are NPTF female, unless noted. Vacuum rated to 29″ Hg, unless noted. *Note:* NPTF threads (Dryseal) are compatible with NPT threads.

Valves with palm-button operators are also panel mountable (panel mounting hardware included).

Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Port Pipe Size	Valve Operator	Overall Size, Lg.×Wd.×Ht.	Panel Mount Opening		Each
Manual Return											
2 (4)	2	53	1.6	0-150	5	1/4″	Palm Button	2.16″×1.26″×6.88″	0.81″	**6859K52**	$77.88
2 (4)	2	32.5	0.98	0-145	5	1/4″	Palm Button	1.1″ ×1.85″×6.06″	0.83″	**2700K12**♦	71.36
2 (4)	2	53	1.6	0-150	5	1/4″	Lever	2.16″×1.26″×7.56″	—	**6859K54**	96.67
1 (3)	2	53	1.6	0-150	3	1/4″	Palm Button	2.16″×1.26″×6.34″	0.81″	**6859K32**	74.56
1 (3)	2	32.5	0.98	0-145	3	1/4″	Palm Button	1.1″ ×1.85″×5.18″	0.83″	**2700K14**♦	69.49
1 (3)	2	53	1.6	0-150	3	1/4″	Lever	2.16″×1.26″×6.5″	—	**6859K34**	93.22
Spring Return											
2 (4)	2	53	1.6	0-150	5	1/4″	Palm Button	2.16″×1.26″×6.94″	0.81″	**6859K51**	60.66
2 (4)	2	32.5	0.98	0-145	5	1/4″	Palm Button	1.1″ ×1.85″×5.67″	0.83″	**2700K11**♦	59.73
2 (4)	2	53	1.6	0-150	5	1/4″	Lever	2.16″×1.26″×7.14″	—	**6859K53**	78.92
1 (3)	2	53	1.6	0-150	3	1/4″	Palm Button	2.16″×1.26″×5.88″	0.81″	**6859K31**	57.32
1 (3)	2	32.5	0.98	0-145	3	1/4″	Palm Button	1.1″ ×1.85″×4.8″	0.83″	**2700K13**♦	60.25
1 (3)	2	53	1.6	0-150	3	1/4″	Lever	2.16″×1.26″×6.08″	—	**6859K33**	75.54

♦ Ports are NPT female. Vacuum rated to 26.5″ Hg.

For more information about control valves, see page 986.

Two-Hand Push-Button Safety Air Control Valves

Requiring both hands to operate, these valves protect workers from accidental machinery start-ups. They're great for use on air-powered presses and drills. All are spring-return style (a spring returns the valve to its original position once you release the operator). Ports are on the side. Not rated for vacuum.

Single-pressure-output (3 way) valves are normally closed.

A Nylon—Made of glass-filled nylon. To actuate, valve requires 17 oz. of force.

B Steel—Valves are zinc-plated steel and exhaust directly to the atmosphere. To actuate, 62115K21 and *K23* require 18 oz. of force; 62115K22 and *K24* require 6 oz. of force.

C Steel with Remote Push Buttons—The push buttons (located on the signal valves) are separate, allowing you to position them away from the logic board and your machinery. Valves are aluminum and exhaust directly to the atmosphere. A complete unit consists of two signal valves and one logic unit.

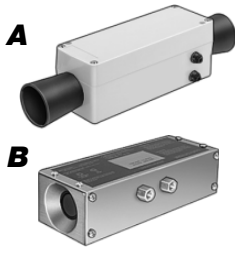

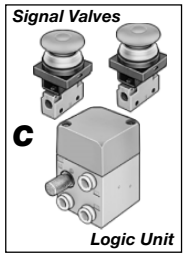

	Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Port Pipe Size	Overall Size, Lg.×Wd.×Ht.		Each
A	1 (3)	2	7	0.3	40-120	2	5/32″ Push-to-Connect	13⅜″×3⅜″×3¼″	62115K33	$587.83
B	1 (3)	2	6	0.11	70-120	2	⅛″ NPT Female	10⅝″×3½″×3³⁄₁₆″	62115K22	468.18
B	1 (3)	2	6	0.11	70-120	2	⅛″ NPT Female	10⅝″×3½″×3³⁄₁₆″	62115K21	426.56
B	2 (4)	2	56	1	70-120	3	¼″ Push-to-Connect	10⅝″×3½″×3³⁄₁₆″	62115K24	541.00
B	2 (4)	2	56	1	70-120	3	¼″ Push-to-Connect	10⅝″×3½″×3³⁄₁₆″	62115K23	478.58
C	1 (3)	2	9.8	0.14	36-150	2	¼″ Push-to-Connect	_____	6282K44♣	369.68

C...Signal Valve Only—⅛″ NPT Female Port Size ..... 6282K11 Each $32.46
C...Logic Unit Only—¼″ Push-to-Connect Port Size ..... 6282K22 Each $279.99
♣ Complete unit, consisting of two signal valves and a logic unit. Signal valve port size is ⅛″ NPT female.

Key-Operated Air Control Valves

Not just anyone can operate these valves. They key lock in position, letting you limit their use to select personnel. Made of aluminum, all are manual return (once moved into a position, valve stays in that position until you lock them into another position). They have ports on the side, two mounting holes, and NPT female ports (unless noted).

Models 8444K34*, K32, K33,* and *K31* include two keys. They are also panel mountable (panel mounting hardware included). *All other valves* include one key.

D Key Operated—Require a key for both positions.

E Button with Key Release—Have a push button that locks and requires a key to be released.

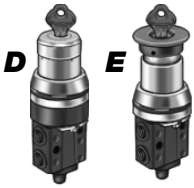

	Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	Vacuum Rating, Hg	No. of Ports	Port Pipe Size	Overall Size, Lg.×Wd.×Ht.	Mount Hole Size	Panel Mount Opening		Each
D	2 (4)	2	4.2	0.12	52.5-120	____	4	⅛″▲	1.42″×1.42″×4.35″	5.5 mm	____	8444K21	$263.65
D	2 (4)	2	11.3	0.34	0 -145	26.5″	5	⅛″	0.83″×1.42″×5.55″	5 mm	1.26″	8444K34	134.95
D	1 (3)	2	4.15	0.13	0 -145	29.52″	3	⅛″	1.54″×1.58″×3.47″	4.6 mm	____	8444K18	42.77
D	1 (3)	2	11.3	0.34	0 -145	26.5″	3	⅛″	0.83″×1.42″×4.66″	5 mm	1.26″	8444K32	156.74
D	1 (3)	2	12.13	0.38	14.5-145	29.52″	3	⅛″	1.54″×1.58″×4.15″	4.5 mm	____	8444K19♥	58.19
D	1 (3)	2	33.53	1.05	0 -145	29.52″	3	¼″	1.54″×1.58″×4.53″	5.5 mm	____	8444K2	51.09
E	2 (4)	2	4.2	0.12	52.5-120	____	4	⅛″▲	1.42″×1.42″×4.19″	5.5 mm	____	8444K22	229.62
E	2 (4)	2	11.3	0.34	0 -145	26.5″	5	⅛″	0.83″×1.42″×5.43″	5 mm	1.26″	8444K33	154.69
E	1 (3)	2	11.3	0.34	0 -145	26.5″	3	⅛″	0.83″×1.42″×4.49″	5 mm	1.26″	8444K31	140.51

▲BSPP (British Standard Pipe Parallel) female threads. ♥ Has four mounting holes.

Foot-Pedal-Operated Air Control Valves

Using your foot to operate these valves leaves hands free to perform other tasks.

Manual-Return Valves—Once moved into a position, valve stays in that position until you press the foot pedal again. ***Spring-Return Valves***—A spring returns the valve to its original position once you release the foot pedal. ***Foot Guards***—Prevent accidental valve operation. Sold separately for Styles G-J; included with Styles K and L.

F&G Ports are on the side and top. They are also NPTF female. Valves have four mounting holes (0.34″ dia. on 6654K21, K11, and K12; 0.41″ dia. on K23 and K13). Vacuum rated to 29″ Hg. *Note:* NPTF threads (Dryseal) are compatible with NPT threads.

Style F—Manual-return valves.

Style G—Spring-return valves.

H-L All are spring-return valves (except for Style K, which is manual return). Ports are on the back. Valves have a nonskid base to prevent sliding. Not vacuum rated.

Style H—Exhaust directly to the atmosphere. Ports are NPT female.

Style J—Each unit has two valves with two foot pedals to control them. A divider between the pedals prevents the two valves from being operated at the same time. They exhaust directly to the atmosphere. Ports are NPT female.

Styles K and *L*— Ports are BSPP (British Standard Pipe Parallel).

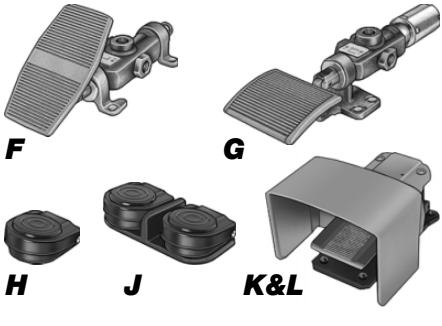

	Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Port Pipe Size	Foot Pedal Material	Overall Size, Lg.×Wd.×Ht.	Valves	Each	Foot Guards	Each
F	2 (4)	2	83	2.4	0-225	4	¼″	Bronze	9.52″×3.2″ ×4.51″	6654K21	$216.36	_____	_____
F	2 (4)	2	185	5.2	0-215	4	½″	Bronze	12.11″×3.2″ ×4.85″	6654K23	328.51	_____	_____
G	2 (4)	2	83	2.4	0-225	4	¼″	Bronze	11.5″ ×3.5″ ×2.72″	6654K11	241.67	6654K91	$186.96
G	2 (4)	2	118	3.2	0-225	4	⅜″	Bronze	12.44″×3.5″ ×2.78″	6654K12	274.16	6654K91	186.96
G	2 (4)	2	185	5.2	0-215	4	½″	Bronze	14.45″×3.5″ ×3.38″	6654K13	375.33	6654K92	186.96
H	2 (4)	2	30	0.53	60-150	3	⅛″	Aluminum	4.5″ ×3.5″ ×1.5″	9781K31	169.21	7024K5	27.95
H	1 (3)	2	30	0.53	60-150	2	⅛″	Aluminum	2.88″×2.5″ ×1.13″	9781K12	61.44	7024K5	27.95
H	1 (3)	2	30	0.53	60-150	2	⅛″	Aluminum	4.5″ ×3.5″ ×1.5″	9781K13	78.64	7024K5	27.95
J	1 (3)	2	30	0.53	60-150	4	⅛″	Aluminum	2.88″×6″ ×1.43″	9781K22	138.89	7024K17	41.97
J	1 (3)	2	30	0.53	60-150	4	⅛″	Aluminum	4.5″ ×8.38″×1.5″	9781K23	177.49	7024K17	41.97
K	2 (4)	2	30	0.8	0-145	5	¼″	Zinc Alloy	8.76″×6.65″×5.51″	3088T2	119.36	_____	_____
L	2 (4)	2	30	0.8	0-145	5	¼″	Zinc Alloy	8.76″×6.65″×5.51″	3088T1	104.86	_____	_____

For more information about control valves, see page 986.

Mechanically Operated Air Control Valves

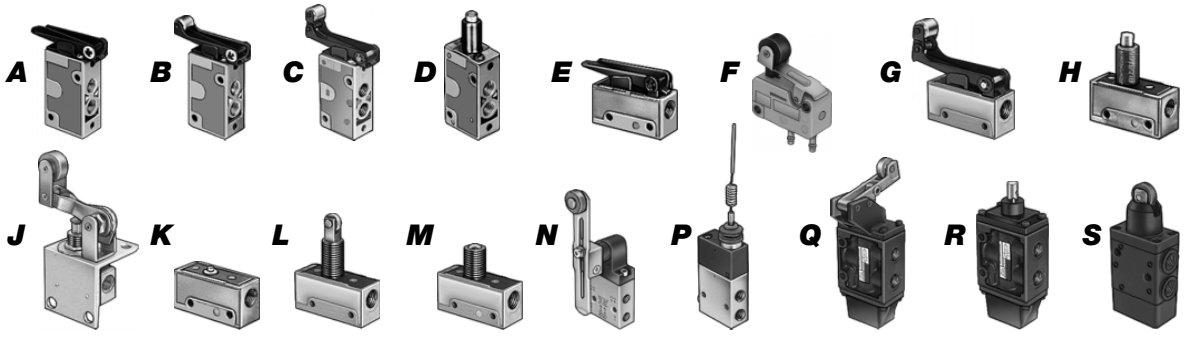

These valves are actuated when an object (such as a box rolling on a conveyor) pushes against the valve operator. All are spring-return style (a spring returns the valve to its original position once the operator is released). Ports are on the side and are NPT female, unless noted.

Single-pressure-output (3 way) valves are normally closed.

Valves with one-direction roller lever are actuated by an object in one direction only.

A-P Low-Flow Valves— Require very low actuation force, making them perfect for small air-powered systems. All have two mounting holes (0.193″ dia. for *A-D*; 5⁄32″ dia. for *E-M*, unless noted; 0.21″ dia. for *N* and *P*). *Styles D, H, L,* and *M* are also panel mountable (hardware included); panel mount size is 15⁄32″ dia.

Styles A-D, N, and ***P*** are aluminum. Not vacuum rated (except for Style N, which is vacuum rated to 28.5″ Hg). ***Styles E-M*** are cast zinc and vacuum rated to 29.9″ Hg, unless noted.

Q-S High-Flow Valves— The choice for applications that require high flow rates and have large forces to actuate the valves. All are made of aluminum and have two 0.26″ dia. mounting holes.

Styles Q and ***R*** have NPTF female inlet and outlet connections. Vacuum rated to 29″ Hg. *Note:* NPTF threads (Dryseal) are compatible with NPT threads.

Style S is vacuum rated to 26.5″ Hg.

Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Co-efficient of Volume	Operating Pressure Range, psi	Actuation Force, lbs.	No. of Ports	Port Pipe Size	Valve Operator	Overall Size, Lg.×Wd.×Ht.		Each
Low Flow											
A 2 (4)	2	14	0.24	25 -125	0.34	5	1⁄8″	Straight Lever	2.09″×0.75″×2.5″	61345K71	$45.18
B 2 (4)	2	14	0.24	25 -125	0.34	5	1⁄8″	Roller Lever	2.16″×0.75″×2.88″	61345K72	47.55
C 2 (4)	2	14	0.24	25 -125	0.34	5	1⁄8″	One-Direction Roller Lever	2.09″×0.75″×3.34″	61345K51	50.81
D 2 (4)	2	14	0.24	25 -125	0.81	5	1⁄8″	Plunger	1.25″×0.75″×3.34″	61345K74	50.96
E 1 (3)	2	6	0.11	0 -120	1.2	3	1⁄8″	Straight Lever	2.19″×0.69″×1.25″	6464K12	18.73
F 1 (3)	2	1.6	0.05	0 -116	1.35	3	2.5 mm★	Roller Lever	1.42″×0.43″×1.25″	1389T13♦	20.00
F 1 (3)	2	1.6	0.05	0 -116	1.35	3	2.5 mm★	One-Direction Roller Lever	1.42″×0.43″×1.61″	1389T14♦	21.32
G 1 (3)	2	6	0.11	0 -120	1	3	1⁄8″	Roller Lever	2.19″×0.69″×1.63″	6464K13	20.97
G 1 (3)	2	6	0.11	0 -120	1	3	1⁄8″	One-Direction Roller Lever	2.19″×0.69″×2.06″	6464K21	25.78
H 1 (3)	2	6	0.11	0 -120	2.5	3	1⁄8″	Plunger	1.75″×0.69″×1.91″	6464K14	26.40
J 1 (3)	2	6	0.11	0 -120	2.8	3	1⁄8″	One-Direction Roller Lever	2.13″×1.75″×4.13″	6464K24	97.22
K 1 (3)	2	6	0.11	0 -120	2.5	3	1⁄8″	Pin Plunger	1.75″×0.69″×1″	6464K11	15.02
L 1 (3)	2	6	0.11	0 -120	2.8	3	1⁄8″	Roller Plunger	1.75″×0.69″×2.19″	6464K22	35.71
M 1 (3)	2	6	0.11	0 -120	2.5	3	1⁄8″	Ball Roller	1.75″×0.69″×1.59″	6464K23	26.73
N 1 (3)	2	4.94	0.12	0 -120	1.57	3	1⁄8″●	Swinging Lever	1.42″×0.71″×6.62″	6464K91	165.91
P 1 (3)	2	4.23	0.12	52.5-120	1.57	3	1⁄8″●	Antenna	1.42″×0.71″×8.67″	6464K92	186.00
High Flow											
Q 2 (4)	2	53	1.6	0 -150	11	5	1⁄4″	Roller Lever	7.13″×2.16″×1.26″	6859K56	87.18
Q 1 (3)	2	53	1.6	0 -150	11	3	1⁄4″	Roller Lever	6.05″×2.16″×1.26″	6859K36	83.98
R 2 (4)	2	53	1.6	0 -150	18	5	1⁄4″	Plunger	8.06″×2.16″×1.26″	6859K55	58.08
R 1 (3)	2	53	1.6	0 -150	18	3	1⁄4″	Plunger	5.03″×2.16″×1.26″	6859K35	54.68
S 2 (4)	2	32.5	0.98	0 -145	15	5	1⁄4″	Roller	1.85″×1.1″ ×4.8″	8277K14	62.88

★ For tube ID (barbed connection). ♦ PBT (polybutylene terephthalate) plastic; 0.129″ dia. mount. holes; ports on the bottom; not vacuum rated.
● Connections are BSPP (British Standard Pipe Parallel).

Air-Operated Air Control Valves

Perfect for hazardous environments where electrical use can be dangerous, these valves allow automation without electricity. Simply apply compressed air to the control (pilot) port to actuate. Valves are aluminum (except for 6124K76 and K79, which are zinc). Vacuum rated to 26″ Hg (except for 6124K32, K35, K42, and K45, which are rated to 10″ Hg).

Single-Air Control Valves— Valve moves into position when compressed air is supplied; once the air supply is turned off, valve returns to original position via an internal spring. *Single-pressure-output (3 way) models* are normally closed.

Two-Air Control Valves— Valve moves into position when compressed air is supplied to first air control (pilot) port and returns to original position when compressed air is supplied to second air control (pilot) port.

Pressure Outputs (Ways)	Posi-tions	Max. scfm @ 100 psi	Co-efficient of Volume	No. of Ports	Port Pipe Size: Inlet/ Outlet	Port Pipe Size: Control (Pilot)	O'all Size, Lg.×Wd.×Ht.	Mount. Hole Dia. (No.)	Single-Air Control: Min. Control (Pilot) Pressure		Single-Air Control: Each	Two-Air Control: Min. Control (Pilot) Pressure		Two-Air Control: Each
Operating Pressure Range: 0-145 psi— *Ports are NPT female.*														
2 (4)	2	43.1	1.3	5	1⁄8″	1⁄8″	4.1″×0.87″×1.38″	0.18″ (3)	36 psi	6124K404	$40.31	22 psi	6124K407	$42.72
2 (4)	2	43.1	1.3	5	1⁄4″	1⁄8″	5.1″×0.98″×1.57″	0.18″ (3)	36 psi	6124K405	44.72	22 psi	6124K408▲	47.50
1 (3)	2	24.9	0.75	3	1⁄8″	1⁄8″	3.5″×0.87″×1.38″	0.18″ (3)	36 psi	6124K403	39.03	22 psi	6124K406	40.66
1 (3)	2	24.9	0.75	3	1⁄4″	1⁄8″	4.3″×0.98″×1.57″	0.18″ (3)	36 psi	6124K401	43.42	22 psi	6124K402♥	47.17
Operating Pressure Range: 0-150 psi— *Inlet/outlet ports are NPTF female, unless noted. Control (pilot) ports are NPT female, unless noted.*														
2 (4)	2	8.6	0.26	5	10-32♣	10-32♣	2.4″×0.7″ ×1″	0.1″ (2)	44 psi	6124K76	40.53	29 psi	6124K79	55.64
2 (4)	2	53.1	1.6	5	3⁄8″	1⁄8″	5.1″×1.3″ ×2.2″	0.26″ (2)	35 psi	6124K35	53.61	15 psi	6124K45✓	62.70
2 (4)	2	165.9	5	5	1⁄2″	1⁄8″	6.6″×1.4″ ×2.44″	0.27″ (2)	40 psi	6124K36	105.76	20 psi	6124K46	110.43
1 (3)	2	53.1	1.6	3	3⁄8″	1⁄8″	5.1″×1.3″ ×2.2″	0.26″ (2)	35 psi	6124K32	49.74	15 psi	6124K42♠	59.20

▲ O'all Lg. is 4.88″. ♥ O'all Lg. is 4.1″. ♣ UNF threads. ✓ O'all Lg. is 6.6″. ♠ O'all Lg. is 5.5″.

For more information about control valves, see page 986.

Solenoid Air Control Valves with Built-In Ports

With ports built directly into the body, these valves are very easy to operate—just add compressed air to the input and apply voltage to the electrical connection. All of these solenoid-operated control valves allow remote-controlled or automated processes with high cycle usage. They have two mounting holes (except for 6124K511-K518, which have three and Style C, which have four). Ports are female.

Valves with DIN connectors (Styles A, B, and D) enclose your electrical connections and provide a secure power hookup.

Single-pressure-output (3 way) valves with 2 ports exhaust directly to the atmosphere.

Single-Solenoid Valves— Valve moves into position when electrical current is supplied; once current is turned off, valve returns to original position via an internal spring. *The single-pressure-output (3 way) models* are normally closed (except for 61245K2 and 4916K7, which are normally open or normally closed).

Double-Solenoid Valves— Valve moves into position when electrical current is supplied to the first solenoid and returns to original position when current is supplied to the second solenoid.

A *Single Solenoid*

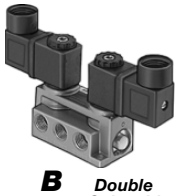

B *Double Solenoid*

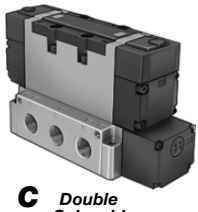

C *Double Solenoid*

D

E

F

A The 10-32 valves are made of zinc; all others are aluminum. Power draw for DC valves: 1 watt for 10-32 valves; 2 watts for 1/8″, 1/4″, and 1/2″ valves; 6 watts for 3/8″ valves. Power draw for AC valves: 1.3 volt-amps for 10-32, 1/8″, and 1/4″ valves; 7 watts for 3/8″ valves; 3.5 watts for 1/2″. All valves have a DIN connector with 0.32″ opening. Not vacuum rated. 10-32 valves are available with the coil pins facing up (to be individually wired) or down (for use with a manifold). **To Order:** For all valves, please specify 12 VDC, 24 VDC, or 110/120 VAC. For 10-32 valves, also specify pins up or down.

B These valves have a faster response time than the Style A valves. They're aluminum and have a DIN connector with 1/2″ opening. Power draw is 6.5 watts for DC valves; 8.5 volt-amps for AC valves. Not vacuum rated. **To Order:** Please specify 12 VDC, 24 VDC, 120 VAC, or 240 VAC.

C These valves handle higher flows and larger pipe sizes than the other styles. Made of aluminum. Power draw is 1.8 watts for DC valves; 2.3 volt-amps for AC valves. All have a 1/2″ conduit terminal for electrical connections. Not vacuum rated. **To Order:** Please specify 24 VDC or 110/120 VAC.

D Also known as direct-acting solenoid valves. Made of aluminum. Power draw is 4 watts for DC valves; 5 volt-amps for AC valves. All have a DIN connector with 0.14″ opening. Vacuum rated to 29.8″ Hg. **To Order:** Please specify 12 VDC, 24 VDC, 110/120 VAC, or 240 VAC.

E Valves have two lead wires for electrical connection. Made of aluminum. Power draw is 7 watts for DC valves; 12 volt-amps for AC valves. Not vacuum rated. **To Order:** Please specify 12 VDC, 24 VDC, 120 VAC, or 240 VAC.

F Lugs offer quick and easy electrical connection. They require the crimp-on spade lug connectors (sold separately) to adapt 26- to 22-ga. wire for hookup. Valves are nickel-plated brass and zinc-plated steel. They draw 0.67 watts of power. Vacuum rated to 28″ Hg. **To Order:** Please specify 6, 12, or 24 VDC.

	Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Port Pipe Size✓	Overall Size, Wd. × Ht.	Mount. Hole Dia.	Single Solenoid O'all Lg.		Single Solenoid Each	Double Solenoid O'all Lg.		Double Solenoid Each
A	2 (4)	2	8.2	0.26	44-150	5	10-32 UNF	0.67″×2.17″	0.1″	4.02″	6124K23	$151.14	5.63″	6124K24	$226.58
A	2 (4)	2	43.1	0.75	29-145	5	1/8″ NPT	0.87″×1.38″	0.18″	5.08″	6124K512	57.84	6.9″	6124K515	78.48
A	2 (4)	2	43.1	1.3	29-145	5	1/4″ NPT	0.98″×1.57″	0.18″	6″	6124K513	63.61	7.8″	6124K516	87.06
A	2 (4)	2	53.1	1.6	35-150	5	3/8″ NPTF	1.3″ ×5.3″	0.26″	7.53″	6124K55	96.03	9.3″	6124K62♥	147.80
A	2 (4)	2	165.9	5	20-150	5	1/2″ NPTF	1.4″ ×2.7″	0.27″	9.46″	6124K56	139.58	12.4″	6124K63	203.39
A	1 (3)	2	24.9	0.75	29-145	3	1/8″ NPT	0.87″×1.38″	0.18″	4.49″	6124K511	55.63	6.3″	6124K514♣	76.26
A	1 (3)	2	24.9	1.3	29-145	3	1/4″ NPT	0.98″×1.57″	0.18″	5.22″	6124K517	61.72	7.1″	6124K518♣	86.81
A	1 (3)	2	53.1	1.7	35-150	3	3/8″ NPTF	1.3″ ×5.3″	0.26″	6.45″	6124K52	92.73	8.2″	6124K58♥	143.11
B	2 (4)	2	56	1	40-120	5	1/4″ NPT	1.8″ ×4.1″	0.22″	4.3″	6196K23	74.55	5.8″	6196K24▲	117.42
C	2 (4)	2	287	9	15-145	5	3/4″ NPT	4.25″×6.44″	0.35″	10″	4701T7	283.90	10.4″	4701T8	320.58
C	2 (4)	2	287	9	15-145	5	1″ NPT	4.25″×6.44″	0.35″	10″	4701T9	283.90	10.4″	4701T6	320.58
D	1 (3)	2	6.3	0.2	0-100	3	10-32 UNF	0.71″×2.28″	0.14″	3.21″	61975K24	54.19	—	—	—
D	1 (3)	2	6.3	0.2	0-100	3	1/8″ NPTF■	0.71″×2.28″	0.14″	3.21″	61975K26	54.19	—	—	—
E	1 (3)	2	1.97	0.035	0-120	2	1/8″ NPT	1.2″ ×2.3″	8-32	1.8″	61245K1	57.96	—	—	—
E	1 (3)	2	1.97	0.035	0-120	3	1/8″ NPT	1.2″ ×2.7″	8-32	1.8″	61245K2	61.09	—	—	—
F	1 (3)	2	0.6	—	0-105	2	10-32 UNF	1.2″ ×1.6″	6-32	0.9″	4916K2	30.42	—	—	—
F	1 (3)	2	0.6	—	0-105	3	10-32 UNF	1.2″ ×1.8″	6-32	0.9″	4916K7	31.13	—	—	—

Crimp-On Spade Lug Connectors for Style F—(10/Pkg.) ..... 4916K81 **Per Pkg.** $3.63

✓ NPTF threads (Dryseal) are compatible with NPT threads. ♥ Operating pressure range is 15-150 psi. ♣ Operating pressure range is 22-145 psi. ▲ Operating pressure range is 10-120 psi. ■ Outlet is 1/8″ NPTF; inlet and exhaust are 10-32 UNF.

Push-to-Connect Manifold-Mount Solenoid Air Control Valves

For greater flexibility, you can mix and match the valve styles and sizes you mount on each manifold sold below. When mounting to a manifold, you can use a single pressure source for multiple valves. Ports have push-to-connect tube fittings. Not vacuum rated.

Valves— Must be mounted to a manifold. All are made of plastic and die cast zinc. They are rated at 24 VDC. Power draw is 0.55 watts for 4 mm valves; 0.40 watts for 6 mm valves.

Single-Solenoid Valves—Valve moves into position when electrical current is supplied; once current is turned off, valve returns to original position via an internal spring.

Double-Solenoid Valves—Valve moves into position when electrical current is supplied to first solenoid and returns to original position when current is supplied to second solenoid. *The 3-position models* also have a spring that returns the valves to center position.

Manifolds— Mount up to four valves in a single unit. Valves mounted to a manifold share a common input pressure source and exhaust connection. These manifolds are made of plastic and have a 35 mm DIN rail. Inlet and outlet connections are for 8 mm OD.

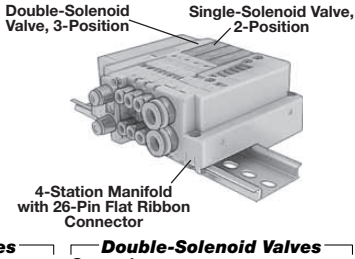

Pressure Outputs (Ways)	Positions No.	Positions Center	Max. scfm @ 100 psi	Coefficient of Volume	No. of Ports	For Tube OD	Single-Solenoid Valves Operating Pressure Range, psi		Single-Solenoid Valves Each	Double-Solenoid Valves Operating Pressure Range, psi		Double-Solenoid Valves Each
2 (4)	2	—	2.55	0.08	4	4 mm	21.75-101.5	6216K11	$63.00	14.5-101.5	6216K12	$82.60
2 (4)	3	Closed	2.55	0.08	4	4 mm	—	—	—	29 -101.5	6216K13	92.40
2 (4)	2	—	3.83	0.12	4	6 mm	21.75-101.5	6216K14	65.80	14.5-101.5	6216K15	85.40
2 (4)	3	Closed	3.83	0.12	4	6 mm	—	—	—	29 -101.5	6216K16	95.20

4-Station Manifold with 26-Pin Flat Ribbon Connector ..... 6216K23 **Each** $148.96

4-Station Manifold with 25-Pin D-Sub Connector ..... 6216K24 **Each** $174.58

For more information about control valves, see page 986.

Low-Flow Manifold-Mount Solenoid Air Control Valves

4-Station Manifold with 4 Valves

The choice for low-flow applications, these thermoplastic valves have push-to-connect tube fittings. When mounting them to a manifold, you can use a single pressure source for multiple valves.

Valves— Must be mounted to a manifold. These single-solenoid valves move into position when electrical current is supplied; once current is turned off, they return to original position via an internal spring. DC power draw is 1.3 watts; AC power draw is 1.5 watts. All have quick-connect electrical connections. **To Order:** Please specify 12 or 24 VDC; 24 or 120 VAC.

Two-pressure-output (4 way) valves are not vacuum rated. *Single-pressure-output (3 way) valves* are normally closed and vacuum rated to 28″ Hg.

Manifolds— Use to mount multiple valves in a single unit. Valves mounted to a manifold share a common input pressure source and exhaust connection. The two-pressure-output (4 way) and single-pressure-output (3 way) valves cannot be mounted to the same manifold. All manifolds have push-to-connect tube fittings. They may be mounted on DIN rail (see 8961K on page 915). **To Order:** Please specify number of stations: 2, 3, 4, or 5.

Pressure Outputs (Ways)	Positions	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	No. of Ports	Valves: For Tube OD		Valves: Each	Manifolds: For Tube OD	Manifolds: For DIN Rail Size		Manifolds: Each
2 (4)	2	45	0.8	30-120	4	1/4″	62095K4	$64.91	3/8″	35 mm	62095K6	$63.35
1 (3)	2	0.6	0.01	0-120	3	5/32″	62095K2	34.99	1/4″	15 mm	62095K5	19.55
1 (3)	2	1.1	0.02	0-120	3	5/32″	62095K1	34.98	1/4″	15 mm	62095K5	19.55
1 (3)	2	1.25♥	0.05	0-30	3	5/32″	62095K55	34.29	1/4″	15 mm	62095K5	19.55

♥ Max. scfm @ 30 psi.

Base/Manifold-Mount Solenoid Air Control Valves

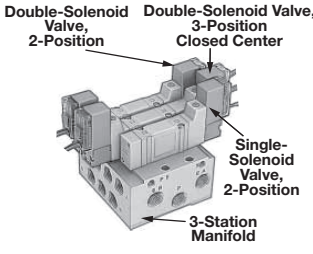

Offering lower power consumption than other valves with similar flow rates, these electrically operated valves mount to a base or manifold so you can use a single pressure source for multiple valves. Same-style valves fit on the same manifold. For example, you can put a 2-position, single-solenoid Style (A) valve and a 3-position, double-solenoid Style (A) valve on the same manifold. Ports are NPT female, unless noted.

Valves— Must be mounted to a single-station base or a manifold.

Single-Solenoid Valves—Valve moves into position when electrical current is supplied; once current is turned off, valve returns to original position via an internal spring.

Double-Solenoid Valves—2-position valves move into position when electrical current is supplied to first solenoid and return to original position when current is supplied to second solenoid. 3-position valves have a spring that returns the valves to center position.

A-C Valves have an aluminum body and electrical connections with wire leads (connect power to each valve individually). Power draw is 0.4 watts for DC valves; 1.7 volt-amps for AC valves. Not vacuum rated. **To Order:** Please specify 24 VDC or 110 VAC.

D Also known as a direct-acting valve, this valve responds to electrical signals faster than other solenoid valves. It has an aluminum body and DIN connector with 0.26″ dia. cable opening. The DIN connector encloses your electrical connections and provides a safe power hookup. Power draw is 4 watts for DC valves; 5 volt-amps for AC valves. Connections are 1/8″ NPTF. Vacuum rated to 29.88″ Hg. **To Order:** Please specify 12 or 24 VDC; 110 or 220 VAC.

E These highly corrosion-resistant valves and manifolds meet IP65 and IP67 for resistance to washdowns and splashing water. Valves have chemical-resistant plastic polymer bodies and are 24 VDC. A single cord with lead wires in the manifold powers all mounted valves. Valves draw 1.5 watts of power. Connections are BSPP (British Standard Pipe Parallel) female. Not vacuum rated.

Single-Station Bases— Use to mount a single valve. Made of aluminum.

Manifolds— Use to mount multiple valves in a single unit. Valves mounted to a manifold share a common input pressure source and exhaust connection. All are aluminum (except Style E, which is anodized aluminum). **To Order:** Please specify number of stations (from 2 to 10), unless noted.

	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	
Single-Solenoid Valves				
A	8	0.24	21-101	62165K83
B	20	0.64	21-101	62165K88
C	35	1	21-101	62165K94
D	7.9	0.25	0-100	61975K55
E	24	0.65	43-87	6620T2
Double-Solenoid Valves				
A	8	0.24	14-101	62165K84
A	6	0.18	29-101	62165K85
A	6	0.18	29-101	62165K86
A	8	0.24	29-101	62165K87
B	20	0.64	14-101	62165K89

	Max. scfm @ 100 psi	Coefficient of Volume	Operating Pressure Range, psi	
Double-Solenoid Valves (Cont.)				
B	15	0.47	29-101	62165K91
B	14	0.44	29-101	62165K92
B	15	0.48	29-101	62165K93
C	35	1	14-101	62165K95
C	23	0.72	29-101	62165K96
C	23	0.71	29-101	62165K97
C	20	0.63	29-101	62165K98
E	24	0.65	43-87	6620T3
E	22	0.6	43-87	6620T4
E	14.8	0.4	43-87	6620T5
E	18.5	0.5	43-87	6620T6

	Pressure Outputs (Ways)	Positions: No.	Positions: Center	No. of Ports	Port Pipe Size	Valves: Single Solenoid	Valves: Single Solenoid Each	Valves: Double Solenoid	Valves: Double Solenoid Each	Single-Station Bases	Single-Station Bases Each	Manifolds: 2, 3, or 4 Stations	Manifolds: 2, 3, or 4 Stations Each	Manifolds: 5 to 10 Stations	Manifolds: 5 to 10 Stations Each
A	2 (4)	2	—	5	1/8″	62165K83	$50.31	62165K84	$72.38	62165K71	$15.58	62165K4	$43.50	62165K5	$67.94
A	2 (4)	3	Closed	5	1/8″	—	—	62165K85	85.19	62165K71	15.58	62165K4	43.50	62165K5	67.94
A	2 (4)	3	Exhaust	5	1/8″	—	—	62165K86	85.19	62165K71	15.58	62165K4	43.50	62165K5	67.94
A	2 (4)	3	Pressure	5	1/8″	—	—	62165K87	85.19	62165K71	15.58	62165K4	43.50	62165K5	67.94
B	2 (4)	2	—	5	1/4″	62165K88	55.92	62165K89	72.85	62165K72	14.10	62165K6	50.40	62165K7	80.71
B	2 (4)	3	Closed	5	1/4″	—	—	62165K91	89.14	62165K72	14.10	62165K6	50.40	62165K7	80.71
B	2 (4)	3	Exhaust	5	1/4″	—	—	62165K92	89.14	62165K72	14.10	62165K6	50.40	62165K7	80.71
B	2 (4)	3	Pressure	5	1/4″	—	—	62165K93	92.04	62165K72	14.10	62165K6	50.40	62165K7	80.71
C	2 (4)	2	—	5	1/4″	62165K94	64.44	62165K95	88.93	62165K73	15.74	62165K8	52.61	62165K9	85.94
C	2 (4)	3	Closed	5	1/4″	—	—	62165K96	102.47	62165K73	15.74	62165K8	52.61	62165K9	85.94
C	2 (4)	3	Exhaust	5	1/4″	—	—	62165K97	102.47	62165K73	15.74	62165K8	52.61	62165K9	85.94
C	2 (4)	3	Pressure	5	1/4″	—	—	62165K98	102.47	62165K73	15.74	62165K8	52.61	62165K9	85.94
D	1 (3)	2	—	3	1/8″	61975K55	51.08	—	—	61975K8	10.08	61975K4	29.95	61975K5	64.62
E	2 (4)	2	—	5	3/8″	6620T2	189.33	6620T3	229.51	—	—	6620T1 ♦	710.14	—	—
E	2 (4)	3	Closed	5	3/8″	—	—	6620T4	237.64	—	—	6620T1 ♦	710.14	—	—
E	2 (4)	3	Exhaust	5	3/8″	—	—	6620T5	237.64	—	—	6620T1 ♦	710.14	—	—
E	2 (4)	3	Pressure	5	3/8″	—	—	6620T6	237.64	—	—	6620T1 ♦	710.14	—	—

♦ Only available with 4 stations.

For more information about control valves, see page 986.

ISO Base/Manifold-Mount Solenoid Air Control Valves

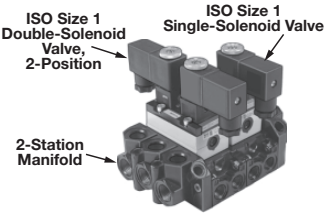

Designed to meet mounting configurations and flow characteristics of the ISO standard. The ISO size Mini valves meet ISO 15407-1; ISO size 1 and 2 valves meet ISO 5599/1. They must be mounted to a single-station base or a manifold. When mounting to a manifold, you can use a single pressure source for multiple valves. Each valve of the same ISO size fits the same manifold. For example, you can put an ISO size 1, 2-position, single-solenoid valve and an ISO size 1, 3-position, double-solenoid valve on the same manifold. ISO size Mini valve is made of aluminum; ISO size 1 and 2 valves are made of polyamide. Ports are NPT female, unless noted. Not vacuum rated.

Valves— Have an Industrial Standard connection with a 15 mm coil for ISO size Mini valve and a 22 mm coil for ISO size 1 and 2 valves. They also have an opening for cable. **To Order:** For valves, please specify 24 VDC or 110 VAC. Note: DC valves draw 2 watts of power for ISO size Mini; 5 watts for ISO sizes 1 and 2. AC valves draw 2 volt-amps of power for ISO size Mini; 8 volt-amps for ISO sizes 1 and 2.

Single-Solenoid Valves— Valve moves into position when electrical current is supplied; once current is turned off, valve returns to original position via an internal spring. Operating pressure range is 45-150 psi (except for 4990K13, which is 29-145 psi).

Double-Solenoid Valves— Valve moves into position when electrical current is supplied to first solenoid and returns to original position when current is supplied to second solenoid. Operating pressure range is 22-145 psi (except for 4990K36 and K38, which is 43.5-145 psi).

Single-Station Bases— Use to mount a single valve. ***Manifolds—*** Mount multiple valves in a single unit. Valves mounted to a manifold share a common input pressure source and exhaust connection. **To Order:** Please specify 2, 3, or 4 stations.

ISO Size	Pressure Outputs (Ways)	Positions No.	Positions Center	Max. scfm @ 100 psi	Co-efficient of Volume	No. of Ports	Port Pipe Size★	VALVES Single Solenoid	Each	VALVES Double Solenoid	Each	SINGLE-STATION BASES	Each	MANIFOLDS	Each
Mini	2 (4)	2	—	15.9	0.45	5	1/8″	4990K13●	$78.66	4990K34●	$101.55	4990K44●	$16.25	4990K63●	$113.13
1	2 (4)	2	—	50.0	1.4	5	1/4″	4990K15	113.24	4990K35	160.02	4990K53	30.16	4990K64	172.86
1	2 (4)	3	Closed	39.0	1.1	5	1/4″	—	—	4990K36	167.59	4990K53	30.16	4990K64	172.86
2	2 (4)	2	—	95.0	2.7	5	3/8″	4990K17	137.60	4990K37	178.12	4990K55	41.18	4990K67	371.91
2	2 (4)	3	Closed	74.0	2.1	5	3/8″	—	—	4990K38	186.72	4990K55	41.18	4990K67	371.91

★ Outlet port. ● Connections are BSPP (British Standard Pipe Parallel) female.

Easy-Connect Manifold-Mount Solenoid Air Control Valves

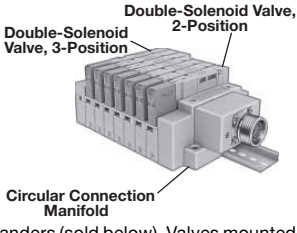

Adding valves couldn't be easier—electrical and plumbing connections are made directly to the manifold, which automatically recognizes the valves as they are connected. When mounting to a manifold, you can use a single pressure source for multiple valves. All valves and manifolds are made of die cast aluminum. Ports have push-to-connect tube fittings. Not vacuum rated.

Valves— Must be mounted to a manifold. Power draw is 0.65 watts. **To Order:** Please specify 12 or 24 VDC for Style A. Style B is 24 VDC.

Single-Solenoid Valves— Valve moves into position when electrical current is supplied; once current is turned off, valve returns to original position via an internal spring. Operating pressure range is 22-101 psi.

Double-Solenoid Valves— Valve moves into position when electrical current is supplied to first solenoid and returns to original position when current is supplied to second solenoid. Operating pressure range is 14-101 psi for 2-position models; 29-101 psi for 3-position models. *The 3-position models* also have a spring that returns the valves to center position.

Manifolds— Mount 2 valves, but can be expanded to mount up to 20 valves when you use the optional expanders (sold below). Valves mounted to a manifold share a common input pressure source and exhaust connection. Manifolds have a 35 mm DIN rail.

	Pressure Outputs (Ways)	Positions No.	Positions Center	Max. scfm @ 100 psi	Coefficient of Volume	No. of Ports	For Tube OD	VALVES Single Solenoid	Each	VALVES Double Solenoid	Each	MANIFOLDS 25-Pin D-Sub Connection	Each	MANIFOLDS 26-Pin Circular Connection♣	Each
A	2 (4)	2	—	14.69	0.46	5	1/4″	6242K15	$77.19	6242K17	$109.44	6242K371	$199.74	6242K373	$305.27
A	2 (4)	3	Closed	14.69	0.46	5	1/4″	—	—	6242K21	121.79	6242K371	199.74	6242K373	305.27
B	2 (4)	2	—	29.06	0.91	5	3/8″	6242K23	97.29	6242K24	126.19	6242K411	243.65	6242K413	350.56
B	2 (4)	3	Closed	29.06	0.91	5	3/8″	—	—	6242K25	147.27	6242K411	243.65	6242K413	350.56

Manifold Extender for Style A—**To Order:** *Please specify for use with single- or double-solenoid valves.* ..... 6242K55 Each $35.44
Manifold Extender for Style B—**To Order:** *Please specify for use with single- or double-solenoid valves.* ..... 6242K56 Each $35.05
26-Pin Circular-Connection Cable—*16.4 feet long.* ..... 6242K505 Each $116.45

♣Manifolds are IP67 rated for temporary water submersion.

High-Flow Solenoid Air Control Valves

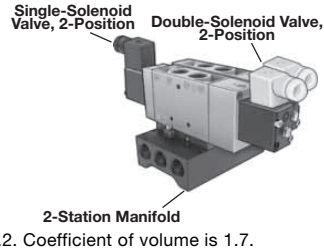

You'll get high flow capacities in a compact design with these electrically operated valves. All mount to a manifold so you can use a single pressure source for multiple valves. Same-style valves fit on the same manifold. For example, you can put a 2-position, single-solenoid Style C valve and a 3-position, double-solenoid Style C valve on the same manifold. Ports are NPTF (Dryseal) female.

Valves— These valves can be mounted to a manifold as well as used by themselves in line. All are die cast aluminum. Operating pressure range is 14.5-150 psi. Power draw is 3.5 watts for DC valves; 4 watts for AC valves. Vacuum rated to 28″ Hg. **To Order:** Please specify 24 VDC or 120 VAC.

Single-Solenoid Valves— Valve moves into position when electrical current is supplied; once current is turned off, valve returns to original position via an internal spring.

Double-Solenoid Valves— Valve moves into position when electrical current is supplied to first solenoid and returns to original position when current is supplied to second solenoid. *The 3-position models* also have a spring that returns the valves to center position.

Style C— Max. scfm @ 100 psi is 56. Coefficient of volume is 1. ***Style D—*** Max. scfm @ 100 psi is 95.2. Coefficient of volume is 1.7.

Manifolds— Use to mount multiple valves in a single unit. Valves mounted to a manifold share a common input pressure source and exhaust connection. All manifolds are die cast aluminum. **To Order:** Please specify number of stations: 2 to 12.

	Pressure Outputs (Ways)	Positions No.	Positions Center	No. of Ports	VALVES Port Pipe Size	VALVES Single Solenoid	Each	VALVES Double Solenoid	Each	MANIFOLDS Port Pipe Size	MANIFOLDS 2 to 4 Stations	Each	MANIFOLDS 5 to 8 Stations	Each	MANIFOLDS 9 to 12 Stations	Each
C	2 (4)	2	—	5	1/8″	6425K11	$103.18	6425K12	$163.17	1/4″	6425K31	$36.67	6425K32	$63.69	6425K33	$95.45
C	2 (4)	2	—	5	1/4″	6425K13	103.18	6425K14	163.17	1/4″	6425K31	36.67	6425K32	63.69	6425K33	95.45
C	2 (4)	3	Exhaust	5	1/8″	—	—	6425K15	194.50	1/4″	6425K31	36.67	6425K32	63.69	6425K33	95.45
C	2 (4)	3	Exhaust	5	1/4″	—	—	6425K16	194.50	1/4″	6425K31	36.67	6425K32	63.69	6425K33	95.45
C	2 (4)	3	Closed	5	1/8″	—	—	6425K17	194.50	1/4″	6425K31	36.67	6425K32	63.69	6425K33	95.45
C	2 (4)	3	Closed	5	1/4″	—	—	6425K18	194.50	1/4″	6425K31	36.67	6425K32	63.69	6425K33	95.45
D	2 (4)	2	—	5	1/4″	6425K21	122.49	6425K22	196.69	3/8″	6425K41	50.79	6425K42	78.73	6425K43	111.74
D	2 (4)	2	—	5	3/8″	6425K23	122.49	6425K24	196.69	3/8″	6425K41	50.79	6425K42	78.73	6425K43	111.74
D	2 (4)	3	Exhaust	5	1/4″	—	—	6425K25	232.66	3/8″	6425K41	50.79	6425K42	78.73	6425K43	111.74
D	2 (4)	3	Exhaust	5	3/8″	—	—	6425K26	232.66	3/8″	6425K41	50.79	6425K42	78.73	6425K43	111.74
D	2 (4)	3	Closed	5	1/4″	—	—	6425K27	232.66	3/8″	6425K41	50.79	6425K42	78.73	6425K43	111.74
D	2 (4)	3	Closed	5	3/8″	—	—	6425K28	232.66	3/8″	6425K41	50.79	6425K42	78.73	6425K43	111.74

Stainless Steel Air Cylinders

When used with compressed air, these air cylinders provide linear force to automate your systems. All are nonrepairable, which means you simply replace them when necessary.

For good corrosion resistance, these cylinders have a Type 304 stainless steel barrel, Type 303 stainless steel rod, aluminum end caps, and a zinc-plated carbon steel mounting nut. All except the 7/16″ bore single-acting cylinders also have a sintered-bronze rod bushing. Cylinders are not switch ready. Force listed is rated at 100 psi. Maximum pressure is 250 psi. Temperature range is 32° to 200° F. Ports are female.

Single-acting cylinders with spring return have one compressed air port to extend in the "push" direction; an internal spring retracts in the "pull" direction.

Double-acting cylinders have two compressed air ports; one to extend in the "push" direction and another to retract in the "pull" direction.

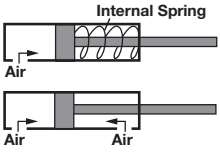

Single-Acting Cylinder with Spring Return (Force in Push Direction)

Double-Acting Cylinder (Force in Push and Pull Direction)

Bore Size	Spring Force, lbs.●	Rod, Thread Size (B)×Lg. (E)	Pin Dia. (D)★	Mounting Thread (G)
5/16″	—	5-40×0.38″	1/8″	3/8″-24
7/16″	1	10-32×0.50″	5/32″	3/8″-24■
9/16″	—	10-32×0.50″	0.157″	7/16″-20
5/8″	1.3	10-32×0.56″	5/32″	3/8″-24■
3/4″	3	1/4″-28×0.50″	1/4″	1/2″-20♠
1 1/16″	3	5/16″-24×0.50″	1/4″	5/8″-18
1 1/4″	4.5	7/16″-20×0.75″	1/4″	3/4″-16
1 1/2″	6	7/16″-20×0.75″	3/8″	3/4″-16
2″	15	1/2″-20×0.88″	3/8″	1 1/4″-12
2 1/2″	—	1/2″-20×0.88″	3/8″	1 3/8″-12

● For single-acting cylinders with spring return only.
★ For pivot-mount cylinders only.
■ 7/16″-20 for double-acting cylinders.
♠ 5/8″-18 for double-acting cylinders.

For additional information about these products, go to mcmaster.com and search for **6498KAC.**

Nose-Mount Cylinders

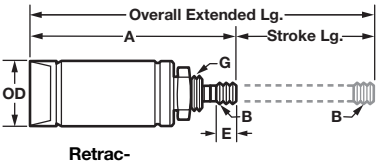

Stroke Lg.	Retracted Lg. (A)	Port Pipe Size		Each
Single Acting with Spring Return				
Bore Size: 7/16″. OD: 0.49″. Force: 12 lbs.				
1/2″	2.75″	10-32 UNF	6498K115	$11.63
3/4″	3.44″	10-32 UNF	6498K196	19.67
1″	3.69″	10-32 UNF	6498K111	13.16
1 1/2″	4.63″	10-32 UNF	6498K116	14.96
2″	5.57″	10-32 UNF	6498K112	15.46
3″	7.45″	10-32 UNF	6498K113	19.35
4″	9.33″	10-32 UNF	6498K114	23.16
5″	11.21″	10-32 UNF	6498K117	27.02
6″	13.09″	10-32 UNF	6498K119	28.58
Bore Size: 5/8″. OD: 0.69″. Force: 28 lbs.				
1/2″	2.87″	10-32 UNF	6498K132	12.75
1″	3.81″	10-32 UNF	6498K135	13.77
2″	5.69″	10-32 UNF	6498K137	15.83
3″	7.56″	10-32 UNF	6498K138	17.89
4″	9.43″	10-32 UNF	6498K139	19.93
Bore Size: 3/4″. OD: 0.81″. Force: 35 lbs.				
1/2″	3.19″	1/8″ NPT	6498K195	18.02
1″	3.69″	1/8″ NPT	6498K141	16.33
1 1/2″	4.88″	1/8″ NPT	6498K1	19.87
2″	5.38″	1/8″ NPT	6498K142	18.73
3″	7.07″	1/8″ NPT	6498K143	20.98
4″	8.76″	1/8″ NPT	6498K144	26.57
5″	10.45″	1/8″ NPT	6498K145	30.15
6″	12.14″	1/8″ NPT	6498K146	32.14
7″	13.83″	1/8″ NPT	6498K721	37.49
8″	15.52″	1/8″ NPT	6498K147	40.42
12″	22.28″	1/8″ NPT	6498K149	52.13
Bore Size: 1 1/16″. OD: 1.12″. Force: 61 lbs.				
1/2″	3.62″	1/8″ NPT	6498K176	19.93
1″	4.12″	1/8″ NPT	6498K171	21.05
1 1/2″	5.18″	1/8″ NPT	6498K177	22.09
2″	5.68″	1/8″ NPT	6498K172	21.32
3″	7.24″	1/8″ NPT	6498K173	24.23
4″	8.80″	1/8″ NPT	6498K174	29.52
5″	10.36″	1/8″ NPT	6498K179	33.92
6″	11.92″	1/8″ NPT	6498K175	35.51
8″	15.04″	1/8″ NPT	6498K732	44.76
12″	21.28″	1/8″ NPT	6498K736	57.64
Bore Size: 1 1/4″. OD: 1.34″. Force: 105 lbs.				
1″	5.22″	1/8″ NPT	6498K951	31.61
2″	7.03″	1/8″ NPT	6498K952	30.84
3″	8.84″	1/8″ NPT	6498K953	34.32
4″	10.65″	1/8″ NPT	6498K954	37.31
Single Acting with Spring Return (Cont.)				
Bore Size: 1 1/2″. OD: 1.56″. Force: 155 lbs.				
1/2″	4.38″	1/8″ NPT	6498K217	$37.15
1″	4.88″	1/8″ NPT	6498K211	34.80
1 1/2″	6.07″	1/8″ NPT	6498K219	40.30
2″	6.57″	1/8″ NPT	6498K212	39.10
3″	8.26″	1/8″ NPT	6498K213	45.01
4″	9.95″	1/8″ NPT	6498K214	52.14
5″	11.64″	1/8″ NPT	6498K215	59.37
6″	13.33″	1/8″ NPT	6498K216	61.60
8″	16.71″	1/8″ NPT	6498K742	76.62
12″	23.47″	1/8″ NPT	6498K746	97.08
Bore Size: 2″. OD: 2.08″. Force: 279 lbs.				
1″	6.29″	1/4″ NPT	6498K249	63.71
2″	8.29″	1/4″ NPT	6498K252	72.58
3″	9.54″	1/4″ NPT	6498K253	79.09
Double Acting				
Bore Size: 5/16″. OD: 0.61″. Force: 6 lbs.				
1/2″	2.52″	10-32 UNF	6498K322	18.45
1″	3.02″	10-32 UNF	6498K323	19.27
2″	4.02″	10-32 UNF	6498K325	20.96
3″	5.02″	10-32 UNF	6498K326	23.53
4″	6.02″	10-32 UNF	6498K327	24.23
Bore Size: 7/16″. OD: 0.74″. Force: 12 lbs.				
1/2″	3.12″	10-32 UNF	6498K125	16.28
1″	3.62″	10-32 UNF	6498K121	16.80
1 1/2″	4.12″	10-32 UNF	6498K133	17.63
2″	4.62″	10-32 UNF	6498K122	18.34
3″	5.62″	10-32 UNF	6498K123	22.77
4″	6.62″	10-32 UNF	6498K124	24.67
5″	7.62″	10-32 UNF	6498K134	27.18
6″	8.62″	10-32 UNF	6498K126	28.49
8″	10.62″	10-32 UNF	6498K131	31.69
12″	14.62″	10-32 UNF	6498K129	42.76
Bore Size: 5/8″. OD: 0.69″. Force: 28 lbs.				
1/2″	3.25″	10-32 UNF	6498K328	16.12
1″	3.75″	10-32 UNF	6498K329	16.90
2″	4.75″	10-32 UNF	6498K358	18.47
3″	5.75″	10-32 UNF	6498K359	20.07
4″	6.75″	10-32 UNF	6498K361	21.62
6″	8.75″	10-32 UNF	6498K363	24.83
Bore Size: 3/4″. OD: 0.86″. Force: 35 lbs.				
1/2″	3.97″	1/8″ NPT	6498K164	20.81
1″	4.47″	1/8″ NPT	6498K151	19.27
1 1/2″	4.97″	1/8″ NPT	6498K163	22.71
2″	5.47″	1/8″ NPT	6498K152	21.00
2 1/2″	5.97″	1/8″ NPT	6498K368	24.63
3″	6.47″	1/8″ NPT	6498K153	22.46
4″	7.47″	1/8″ NPT	6498K154	24.16
5″	8.47″	1/8″ NPT	6498K155	25.83
6″	9.47″	1/8″ NPT	6498K156	26.96
7″	10.47″	1/8″ NPT	6498K157	32.36
8″	11.47″	1/8″ NPT	6498K162	37.96
9″	12.47″	1/8″ NPT	6498K821	38.58
10″	13.47″	1/8″ NPT	6498K159	42.29
12″	15.47″	1/8″ NPT	6498K161	46.20
Double Acting (Cont.)				
Bore Size: 1 1/16″. OD: 1.12″. Force: 61 lbs.				
1/2″	4.24″	1/8″ NPT	6498K194	$26.61
3/4″	4.49″	1/8″ NPT	6498K371	24.39
1″	4.74″	1/8″ NPT	6498K181	22.29
1 1/2″	5.24″	1/8″ NPT	6498K193	25.87
2″	5.74″	1/8″ NPT	6498K182	23.98
3″	6.74″	1/8″ NPT	6498K183	25.48
4″	7.74″	1/8″ NPT	6498K184	27.17
5″	8.74″	1/8″ NPT	6498K185	28.96
6″	9.74″	1/8″ NPT	6498K186	30.44
7″	10.74″	1/8″ NPT	6498K831	39.26
8″	11.74″	1/8″ NPT	6498K187	37.50
9″	12.74″	1/8″ NPT	6498K189	44.45
10″	13.74″	1/8″ NPT	6498K191	45.56
12″	15.74″	1/8″ NPT	6498K192	49.55
14″	18.62″	1/8″ NPT	6498K372	53.75
16″	20.62″	1/8″ NPT	6498K373	57.86
Bore Size: 1 1/4″. OD: 1.34″. Force: 105 lbs.				
1″	5.75″	1/8″ NPT	6498K955	33.02
2″	6.75″	1/8″ NPT	6498K956	35.00
3″	7.75″	1/8″ NPT	6498K957	36.94
4″	8.75″	1/8″ NPT	6498K958	38.84
5″	9.75″	1/8″ NPT	6498K959	40.72
6″	10.75″	1/8″ NPT	6498K961	42.57
8″	12.75″	1/8″ NPT	6498K962	52.58
10″	14.75″	1/8″ NPT	6498K963	57.52
12″	16.75″	1/8″ NPT	6498K964	62.47
Bore Size: 1 1/2″. OD: 1.56″. Force: 155 lbs.				
1/2″	4.94″	1/8″ NPT	6498K235	41.22
1″	5.44″	1/8″ NPT	6498K221	42.56
1 1/2″	5.94″	1/8″ NPT	6498K234	43.98
2″	6.44″	1/8″ NPT	6498K222	41.84
2 1/2″	6.94″	1/8″ NPT	6498K391	46.71
3″	7.44″	1/8″ NPT	6498K223	44.56
4″	8.44″	1/8″ NPT	6498K224	46.86
5″	9.44″	1/8″ NPT	6498K225	49.64
6″	10.44″	1/8″ NPT	6498K226	51.98
7″	11.44″	1/8″ NPT	6498K841	63.74
8″	12.44″	1/8″ NPT	6498K227	66.70
10″	14.44″	1/8″ NPT	6498K231	72.67
12″	16.44″	1/8″ NPT	6498K232	80.23
14″	19.25″	1/8″ NPT	6498K392	84.51
Bore Size: 2″. OD: 2.08″. Force: 279 lbs.				
1″	6.57″	1/4″ NPT	6498K395	62.33
2″	7.57″	1/4″ NPT	6498K397	64.96
3″	8.57″	1/4″ NPT	6498K398	68.13
4″	9.57″	1/4″ NPT	6498K399	70.67
5″	10.57″	1/4″ NPT	6498K411	73.08
6″	11.57″	1/4″ NPT	6498K412	75.88
8″	13.57″	1/4″ NPT	6498K413	77.48
Bore Size: 2 1/2″. OD: 2.62″. Force: 459 lbs.				
1″	6.57″	1/4″ NPT	6498K417	87.49
2″	7.57″	1/4″ NPT	6498K419	90.32
3″	8.57″	1/4″ NPT	6498K421	93.55
4″	9.57″	1/4″ NPT	6498K422	96.27
6″	11.57″	1/4″ NPT	6498K424	99.74

(Continued on following page)

Stainless Steel Air Cylinders *(Continued from previous page)*

Pivot-Mount Cylinders

Stroke Lg.	Retracted Lg. (A)	Port Pipe Size		Each
Single Acting with Spring Return				
Bore Size: 7/16". OD: 0.74". Force: 12 lbs.				
1/2"	3.44"	10-32 UNF	6498K511	$18.03
1"	4.38"	10-32 UNF	6498K512	16.85
2"	6.26"	10-32 UNF	6498K514	20.88
3"	8.14"	10-32 UNF	6498K515	27.05
4"	10.02"	10-32 UNF	6498K516	30.06
6"	13.78"	10-32 UNF	6498K518	32.62
8"	17.54"	10-32 UNF	6498K752	41.05
10"	21.30"	10-32 UNF	6498K754	46.90
12"	25.06"	10-32 UNF	6498K756	52.76
Bore Size: 5/8". OD: 0.69". Force: 28 lbs.				
1/2"	3.56"	10-32 UNF	6498K266▲	17.38
1"	4.50"	10-32 UNF	6498K267▲	18.42
2"	6.37"	10-32 UNF	6498K269▲	20.53
3"	8.25"	10-32 UNF	6498K271▲	22.60
4"	10.12"	10-32 UNF	6498K272▲	24.69
12"	25.11"	10-32 UNF	6498K277▲	44.05
Bore Size: 3/4". OD: 0.86". Force: 35 lbs.				
1/2"	4.25"	1/8" NPT	6498K521	15.95
1"	4.75"	1/8" NPT	6498K522	18.90
1 1/2"	5.94"	1/8" NPT	6498K523	23.82
2"	6.44"	1/8" NPT	6498K524	22.26
3"	8.13"	1/8" NPT	6498K525	24.66
4"	9.82"	1/8" NPT	6498K526	30.62
5"	11.51"	1/8" NPT	6498K527	34.83
6"	13.20"	1/8" NPT	6498K528	36.00
8"	16.58"	1/8" NPT	6498K762	44.71
10"	19.96"	1/8" NPT	6498K764	50.56
12"	23.34"	1/8" NPT	6498K766	56.43
Bore Size: 1 1/16". OD: 1.12". Force: 61 lbs.				
1"	5.00"	1/8" NPT	6498K532	22.14
1 1/2"	6.06"	1/8" NPT	6498K533	25.97
2"	6.56"	1/8" NPT	6498K534	25.05
3"	8.12"	1/8" NPT	6498K535	27.93
4"	9.68"	1/8" NPT	6498K536	33.42
5"	11.24"	1/8" NPT	6498K537	38.00
6"	12.80"	1/8" NPT	6498K538	39.38
8"	15.92"	1/8" NPT	6498K772	52.11
12"	22.16"	1/8" NPT	6498K776	61.80
Bore Size: 1 1/4". OD: 1.34". Force: 105 lbs.				
1"	6.35"	1/8" NPT	6498K965▲	30.42
2"	8.16"	1/8" NPT	6498K966▲	38.59
3"	9.97"	1/8" NPT	6498K967▲	41.73
4"	11.78"	1/8" NPT	6498K968▲	44.85
6"	15.40"	1/8" NPT	6498K969▲	51.16
12"	26.26"	1/8" NPT	6498K971▲	75.09
Bore Size: 1 1/2". OD: 1.56". Force: 155 lbs.				
1"	5.94"	1/8" NPT	6498K542♦	39.56
2"	7.63"	1/8" NPT	6498K544♦	42.50
3"	9.32"	1/8" NPT	6498K545♦	47.21
4"	11.01"	1/8" NPT	6498K546♦	53.97
5"	12.70"	1/8" NPT	6498K547♦	40.43
6"	14.39"	1/8" NPT	6498K548♦	61.57
8"	17.77"	1/8" NPT	6498K782♦	75.45
10"	21.15"	1/8" NPT	6498K784♦	90.24
12"	24.53"	1/8" NPT	6498K786♦	102.43
Bore Size: 2". OD: 2.08". Force: 279 lbs.				
1"	7.66"	1/4" NPT	6498K289▲	86.91
2"	9.66"	1/4" NPT	6498K293▲	92.05
3"	10.91"	1/4" NPT	6498K294▲	97.21
4"	13.85"	1/4" NPT	6498K295▲	102.41

Stroke Lg.	Retracted Lg. (A)	Port Pipe Size		Each
Double Acting				
Bore Size: 5/16". OD: 0.61". Force: 6 lbs.				
1/2"	3.07"	10-32 UNF	6498K945▲	$21.15
1"	3.57"	10-32 UNF	6498K846▲	21.93
2"	4.57"	10-32 UNF	6498K847▲	23.54
3"	5.57"	10-32 UNF	6498K848▲	25.16
4"	6.57"	10-32 UNF	6498K849▲	26.80
Bore Size: 7/16". OD: 0.74". Force: 12 lbs.				
1/2"	3.81"	10-32 UNF	6498K601	19.66
1"	4.31"	10-32 UNF	6498K602	19.20
1 1/2"	4.81"	10-32 UNF	6498K603	21.38
2"	5.31"	10-32 UNF	6498K604	21.83
3"	6.31"	10-32 UNF	6498K605	26.49
4"	7.31"	10-32 UNF	6498K606	28.40
5"	8.31"	10-32 UNF	6498K607	31.34
6"	9.31"	10-32 UNF	6498K608	32.26
12"	15.31"	10-32 UNF	6498K644	42.84
Bore Size: 9/16". OD: 0.62". Force: 22 lbs.				
1/2"	3.75"	10-32 UNF	6498K854▲	22.36
1"	4.25"	10-32 UNF	6498K855▲	23.26
2"	5.25"	10-32 UNF	6498K856▲	25.07
3"	6.25"	10-32 UNF	6498K857▲	26.89
4"	7.25"	10-32 UNF	6498K858▲	28.70
5"	8.25"	10-32 UNF	6498K859▲	36.49
6"	9.25"	10-32 UNF	6498K864▲	38.29
8"	11.25"	10-32 UNF	6498K865▲	41.91
10"	13.25"	10-32 UNF	6498K866▲	45.56
12"	15.25"	10-32 UNF	6498K867▲	49.16
Bore Size: 5/8". OD: 0.69". Force: 28 lbs.				
1/2"	3.94"	10-32 UNF	6498K428▲	19.57
1"	4.44"	10-32 UNF	6498K429▲	20.38
2"	5.44"	10-32 UNF	6498K432▲	21.95
3"	6.44"	10-32 UNF	6498K433▲	23.50
4"	7.44"	10-32 UNF	6498K434▲	25.09
5"	8.44"	10-32 UNF	6498K435▲	26.68
6"	9.44"	10-32 UNF	6498K436▲	28.28
8"	11.44"	10-32 UNF	6498K438▲	33.65
10"	13.44"	10-32 UNF	6498K441▲	37.03
12"	15.44"	10-32 UNF	6498K442▲	40.41
Bore Size: 3/4". OD: 0.86". Force: 35 lbs.				
1/2"	5.03"	1/8" NPT	6498K631	24.64
1"	5.53"	1/8" NPT	6498K632	22.75
1 1/2"	6.03"	1/8" NPT	6498K633	26.49
2"	6.53"	1/8" NPT	6498K634	24.49
2 1/2"	7.03"	1/8" NPT	6498K443	34.86
3"	7.53"	1/8" NPT	6498K635	26.06
4"	8.53"	1/8" NPT	6498K636	27.64
5"	9.53"	1/8" NPT	6498K637	29.31
6"	10.53"	1/8" NPT	6498K638	31.02
7"	11.53"	1/8" NPT	6498K861	39.97
8"	12.53"	1/8" NPT	6498K639	39.76
10"	14.53"	1/8" NPT	6498K641	46.22
12"	16.53"	1/8" NPT	6498K642	50.32
18"	22.53"	1/8" NPT	6498K444	62.67
Bore Size: 1 1/16". OD: 1.12". Force: 61 lbs.				
1/2"	5.12"	1/8" NPT	6498K651	29.18
3/4"	5.37"	1/8" NPT	6498K445	30.17
1"	5.62"	1/8" NPT	6498K652	26.14
1 1/2"	6.12"	1/8" NPT	6498K653	29.97
2"	6.62"	1/8" NPT	6498K654	27.76
3"	7.62"	1/8" NPT	6498K655	29.32
4"	8.62"	1/8" NPT	6498K656	31.07
5"	9.62"	1/8" NPT	6498K657	32.76
6"	10.62"	1/8" NPT	6498K658	34.27

▲ Does not have a pin. ♦ Does not have mounting threads on pivot-mount end.

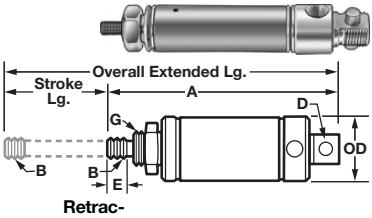

Stroke Lg.	Retracted Lg. (A)	Port Pipe Size		Each
Double Acting (Cont.)				
Bore Size: 1 1/16". (Cont.)				
7"	11.62"	1/8" NPT	6498K871	$43.58
8"	12.62"	1/8" NPT	6498K659	45.62
9"	13.62"	1/8" NPT	6498K872	48.61
10"	14.62"	1/8" NPT	6498K661	49.78
12"	16.62"	1/8" NPT	6498K662	53.90
17"	21.62"	1/8" NPT	6498K447	64.25
22"	26.62"	1/8" NPT	6498K448	74.60
24"	28.62"	1/8" NPT	6498K449	78.70
Bore Size: 1 1/4". OD: 1.34". Force: 105 lbs.				
1"	6.88"	1/8" NPT	6498K972▲	37.50
1 1/2"	7.38"	1/8" NPT	6498K973▲	38.66
2"	7.88"	1/8" NPT	6498K974▲	39.49
3"	8.88"	1/8" NPT	6498K975▲	41.45
4"	9.88"	1/8" NPT	6498K976▲	43.35
5"	10.88"	1/8" NPT	6498K977▲	45.23
6"	11.88"	1/8" NPT	6498K978▲	47.26
8"	13.88"	1/8" NPT	6498K979▲	56.74
10"	15.88"	1/8" NPT	6498K981▲	63.91
12"	17.88"	1/8" NPT	6498K982▲	66.63
Bore Size: 1 1/2". OD: 1.56". Force: 155 lbs.				
1/2"	6.01"	1/8" NPT	6498K671♦	40.20
1"	6.51"	1/8" NPT	6498K672♦	44.20
1 1/2"	7.01"	1/8" NPT	6498K673♦	47.66
2"	7.51"	1/8" NPT	6498K674♦	46.74
3"	8.51"	1/8" NPT	6498K675♦	49.31
4"	9.51"	1/8" NPT	6498K676♦	51.85
5"	10.51"	1/8" NPT	6498K677♦	54.36
6"	11.51"	1/8" NPT	6498K678♦	56.63
7"	12.51"	1/8" NPT	6498K881♦	65.56
8"	13.51"	1/8" NPT	6498K679♦	65.07
9"	14.51"	1/8" NPT	6498K882♦	76.44
10"	15.51"	1/8" NPT	6498K681♦	71.41
12"	17.51"	1/8" NPT	6498K682♦	77.26
14"	19.51"	1/8" NPT	6498K466♦	90.22
16"	21.51"	1/8" NPT	6498K467♦	96.13
24"	29.51"	1/8" NPT	6498K471♦	119.85
28"	33.51"	1/8" NPT	6498K472♦	131.73
Bore Size: 2". OD: 2.08". Force: 279 lbs.				
1"	7.94"	1/4" NPT	6498K474▲	72.30
2"	8.94"	1/4" NPT	6498K476▲	75.42
3"	9.94"	1/4" NPT	6498K477▲	77.75
4"	10.94"	1/4" NPT	6498K478▲	80.05
5"	11.94"	1/4" NPT	6498K479▲	83.08
6"	12.94"	1/4" NPT	6498K481▲	85.33
8"	14.94"	1/4" NPT	6498K482▲	104.44
Bore Size: 2 1/2". OD: 2.62". Force: 459 lbs.				
1"	7.94"	1/4" NPT	6498K486▲	102.04
2"	8.94"	1/4" NPT	6498K488▲	102.50
3"	9.94"	1/4" NPT	6498K489▲	106.45
4"	10.94"	1/4" NPT	6498K491▲	110.35
5"	11.94"	1/4" NPT	6498K492▲	113.61
6"	12.94"	1/4" NPT	6498K493▲	118.21

Attachments—*Zinc-plated steel*

Fits Bore Size	Rod Clevis with Pin: Rod Thread Size		Each	Rod Ends: Rod Thread Size		Each	Foot Brackets for Single-Acting Cylinders	Each	Foot Brackets for Double-Acting Cylinders	Each	Pivot Brackets for Pivot-Mount Cylinders	Each
5/16"	5-40	6498K551	$3.01	—	—	—	6498K571	$2.86	6498K581	$2.20	4952K117	$3.30
7/16"	—	—	—	10-32	6498K592	$6.95	6498K311	2.29	4952K126	3.03	6498K71	3.49
9/16"	10-32	4952K101	3.38	—	—	—	—	—	4952K126	3.03	4952K114	3.74
5/8"	10-32	6498K552	2.98	10-32	6498K592	6.95	6498K572	1.79	6498K582	1.79	6498K562	3.14
3/4"	1/4"-28	6498K42	4.08	1/4"-28	6498K646	7.41	6498K35	2.73	6498K33	4.26	6498K72	3.20
1 1/16"	5/16"-24	6498K43	4.08	5/16"-24	6498K647	7.93	6498K33	4.26	6498K33	4.26	6498K72	3.20
1 1/4"	7/16"-20	6498K44	6.39	—	—	—	6498K34	4.12	6498K34	4.12	6498K563	6.15
1 1/2"	7/16"-20	6498K44	6.39	7/16"-20	6498K648	10.08	6498K34	4.12	6498K34	4.12	6498K73	5.29
2"	1/2"-20	6498K554	7.02	1/2"-20	6498K594	12.50	6498K575	10.40	6498K575	10.40	6498K564	11.80
2 1/2"	1/2"-20	6498K554	7.02	1/2"-20	6498K594	12.50	6498K576	13.81	6498K576	13.81	6498K564	11.80

Switch-Ready Stainless Steel Air Cylinders

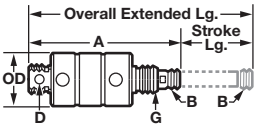

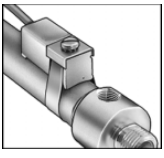

Reed Switch Shown Installed on Cylinder

Switch-ready cylinders make it a cinch to add an optional switch (sold separately below) to actuate relays, solenoids, controllers, and more. All of these cylinders are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They are nonrepairable, which means you simply replace them when necessary.

Cylinders have a Type 304 stainless steel barrel; Type 303 stainless steel rod; oil-impregnated, sintered-bronze rod bushing; and aluminum end caps. They can be nose or pivot mounted. Mounting nut not included. Maximum pressure is 250 psi. Temperature range is –20° to +200° F.

To Order: Please specify stroke length in 1″ increments from the ranges listed.

ⓘ For additional information about these products, go to mcmaster.com and search for **4952KAC**.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Retracted Lg. (A)	Rod, Thread Size×Lg. (B)	OD	Pin Dia. (D)	Mounting Thread (G)
9/16″	22	10-32 UNF	3.5″+ Stroke Length	10-32×0.5″	0.62″	0.157″	7/16″-20
3/4″	36.5	1/8″ NPT	5.18″+ Stroke Length	1/4″-28×0.59″	1.12″	0.22″	5/8″-18
1 1/16″	77.5	1/8″ NPT	5.4″+ Stroke Length	5/16″-24×0.62″	1.12″	0.253″	3/4″-16
1 1/4″	107.6	1/8″ NPT	5.75″+ Stroke Length	3/8″-24×0.75″	1.34″	0.315″	7/8″-14
1 1/2″	157	1/4″ NPT	6.41″+ Stroke Length	7/16″-20×0.88″	1.56″	0.377″	1″-14
1 3/4″	215.6	1/4″ NPT	6.97″+ Stroke Length	1/2″-20×1″	1.84″	0.378″	1 1/8″-12
2″	283.3	1/4″ NPT	7.62″+ Stroke Length	1/2″-20×1″	2.08″	0.439″	1 1/4″-12
2 1/2″	446.4	3/8″ NPT	8.66″+ Stroke Length	5/8″-18×1.25″	2.62″	0.502″	1 3/8″-12

Bore Size	1″-3″ Each	4″-6″ Each	7″-9″ Each	10″-12″ Each	13″-15″ Each	16″-18″ Each
	Stroke Lengths					
9/16″	4952K178 $33.47	4952K186 $38.52	4952K194 $43.51	4952K202 $48.54	—	—
3/4″	4952K209 34.04	4952K217 39.05	4952K225 44.08	4952K233 49.05	4952K241 $59.43	4952K248 $64.49
1 1/16″	4952K256 39.80	4952K264 44.78	4952K272 49.83	4952K279 54.83	4952K287 65.21	4952K295 70.23
1 1/4″	4952K303 49.98	4952K311 56.33	4952K318 62.65	4952K326 69.05	4952K334 80.75	4952K342 87.11
1 1/2″	4952K349 58.59	4952K357 66.31	4952K365 74.04	4952K373 81.78	4952K381 94.84	4952K388 102.56
1 3/4″	4952K396 66.79	4952K404 74.49	4952K412 82.22	4952K419 89.96	4952K427 103.03	4952K435 110.73
2″	4952K443 75.29	4952K451 83.97	4952K458 95.91	4952K466 101.29	4952K474 115.36	4952K482 123.98
2 1/2″	4952K489 105.36	4952K497 105.34	4952K505 113.54	4952K513 122.72	4952K521 137.31	4952K528 146.51

Attachments and Switches—*Zinc-plated steel.*

Fits Bore Size	Rod Clevis with Pin Each	Foot Brackets Each	Pivot Brackets with Pin Each	24 VAC/24 VDC Reed Switches Each	30 VDC Solid State PNP Switches Each	30 VDC Solid State NPN Switches Each
9/16″	4952K101 $3.38	4952K126 $3.03	4952K114 $3.74	4952K655 $79.57	4952K637 $90.48	4952K646 $90.48
3/4″	4952K684 6.45	4952K127 3.33	4952K675 3.74	4952K656 79.57	4952K638 90.48	4952K647 90.48
1 1/16″	4952K685 6.55	4952K667 3.30	4952K676 4.94	4952K657 79.57	4952K639 90.48	4952K648 90.48
1 1/4″	4952K686 6.50	4952K668 4.41	4952K677 6.93	4952K658 79.57	4952K641 90.48	4952K649 90.48
1 1/2″	4952K687 7.63	4952K669 5.71	4952K678 7.07	4952K659 79.57	4952K642 90.48	4952K651 90.48
1 3/4″	4952K688 8.23	4952K671 6.72	4952K679 10.48	4952K661 79.57	4952K643 90.48	4952K652 90.48
2″	4952K689 10.84	4952K672 7.45	4952K681 12.18	4952K662 79.57	4952K644 90.48	4952K653 90.48
2 1/2″	4952K112 12.18	4952K673 7.80	4952K682 11.10	4952K663 79.57	4952K645 90.48	4952K654 90.48

Cushioned and Washdown Stainless Steel Air Cylinders

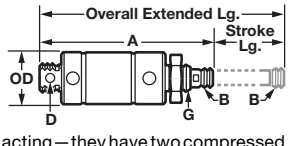

All of these cylinders are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. The cylinders are nonrepairable, which means you simply replace them when necessary. They can be nose or pivot mounted, unless noted. They are not switch ready. Maximum pressure is 250 psi. Temperature range is –20° to +200° F.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Rod, Thread Size×Lg. (B)	OD	Pin Dia. (D)	Mounting Thread (G)
3/4″	39.2	1/8″ NPT	1/4″-28×0.5″	0.86″	0.25″	5/8″-18
1 1/16″	80.9	1/8″ NPT	5/16″-24×0.5″	1.12″	0.25″	5/8″-18
1 1/2″	161.6	1/8″ NPT	7/16″-20×0.75″	1.56″	—	3/4″-16
2″	283.3	1/4″ NPT	1/2″-20×0.88″	2.08″	0.375″	1 1/4″-12
2 1/2″	459.9	1/4″ NPT	1/2″-20×0.88″	2.58″	0.375″	1 3/8″-12
3″	662.3	3/8″ NPT	5/8″-18×1.25″	3.12″	0.5″	1 1/2″-12

ⓘ For additional information about these products, go to mcmaster.com and search for **4952KAC**.

Cylinders with Cushion

To avoid slamming and decrease noise, these cylinders have an air cushion that decelerates the rod in the "pull" direction. They have a Type 304 stainless steel barrel; Type 303 stainless steel rod; oil-impregnated, sintered-bronze rod and pivot bushings; aluminum end caps; and a zinc-plated steel mounting nut (except for 2″, 2 1/2″ and 3″ bore sizes, which do not include a mounting nut). *Note:* The 1 1/2″ bore sizes can not be pivot mounted. **To Order:** Please specify stroke length in 1″ increments from the ranges listed.

Bore Size	Retracted Lg. (A)	1″-3″ Stroke Lengths Each	4″-6″ Stroke Lengths Each	7″-9″ Stroke Lengths Each	10″-12″ Stroke Lengths Each
3/4″	4.53″+ Stroke Length	6475K101 $40.89	6475K105 $45.70	6475K109 $50.52	6475K113 $55.35
1 1/16″	4.62″+ Stroke Length	6475K117 45.44	6475K121 50.26	6475K125 55.07	6475K129 59.89
1 1/2″	5.51″+ Stroke Length	6475K133 66.49	6475K137 73.92	6475K141 81.35	6475K145 88.77
2″	6.94″+ Stroke Length	6475K149 113.82	6475K153 122.15	6475K157 130.47	6475K161 138.80
2 1/2″	6.94″+ Stroke Length	6475K165 130.88	6475K169 139.72	6475K173 145.60	6475K177 157.40
3″	8.37″+ Stroke Length	6475K181 169.25	6475K185 180.18	6475K189 191.08	6475K193 202.01

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Cushioned and Washdown Stainless Steel Air Cylinders *(Continued from previous page)*

Washdown Cylinders

Able to withstand wet as well as chemical environments, these cylinders are fully corrosion resistant. They have a Type 304 stainless steel barrel, Type 303 stainless steel rod and end caps, urethane rod wiper to keep contaminants out of the cylinder, and PTFE rod and pivot bushings. Mounting nut not included. **To Order:** Please specify stroke length in 1/2″ increments from the ranges listed.

Bore Size	Retracted Lg. (A)	1/2″-3″ Stroke Lengths	Each	3 1/2″-6″ Stroke Lengths	Each	6 1/2″-9″ Stroke Lengths	Each	9 1/2″-12″ Stroke Lengths	Each
3/4″	4.53″+ Stroke Length	6239K101	$105.97	6239K108	$111.37	6239K116	$122.71	6239K124	$122.11
1 1/16″	4.62″+ Stroke Length	6239K147	112.58	6239K155	123.98	6239K163	129.33	6239K171	128.73
1 1/2″	5.51″+ Stroke Length	6239K194	121.49	6239K202	135.88	6239K209	138.08	6239K217	152.34
2″	6.94″+ Stroke Length	6239K241	131.19	6239K248	146.72	6239K256	156.13	6239K264	165.57

Attachments for Cushioned and Washdown Stainless Steel Cylinders

The ***3/4″*** to ***2″ bore-size attachments*** are Type 304 stainless steel. The ***2 1/2″*** and ***3″ bore-size attachments*** are zinc-plated steel.

Fits Bore Size	Rod Clevis with Pin	Each	Foot Brackets	Each	Pivot Brackets with Pin	Each	Mounting Nuts	Each
3/4″	6239K291	$25.08	6239K295	$7.10	6239K298	$19.53	6239K287	$2.27
1 1/16″	6239K292	28.42	6239K295	7.10	6239K298	19.53	6239K287	2.27
1 1/2″	6239K293	34.95	6239K296	22.43	6239K299	24.21	6239K288	2.95
2″	6239K294	41.33	6239K297	31.14	6239K301	30.11	6239K289	7.64
2 1/2″	4952K108	5.85	4952K135	11.97	4952K122	12.78	4952K158	4.50
3″	4952K112	12.18	4952K136	11.10	4952K124	12.40	4952K161	4.50

Rod Clevis with Pin

Foot Bracket

Pivot Bracket with Pin

Repairable Air Cylinders

To extend the service life of these cylinders, simply repair them by using the replacement seal kits. All cylinders are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction.

Compact Brass Cylinders

The choice for tight spaces, these compact cylinders are also nonmagnetic. They have a brass barrel and end caps, Type 303 stainless steel rod, and sintered-bronze rod bushing. Cylinders can be nose or pivot mounted (mounting nuts included). They are not switch ready. Maximum pressure is 250 psi. Temperature range is 30° to 230°F. **To Order:** For cylinders, please specify stroke length in 1″ increments from the ranges listed.

Rod clevis is brass with a zinc-plated steel pin. ***Foot brackets*** are zinc-plated steel.

Rod Clevis with Pin

Foot Bracket

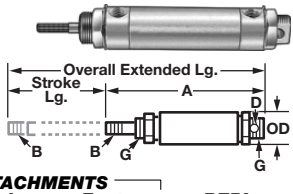

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Retracted Lg. (A)	Rod Thread Size × Lg. (B)	OD	Pin Dia. (D)	Mounting Thread (G)	AIR CYLINDERS 1″-6″ Stroke Lgs.	Each	ATTACHMENTS Rod Clevis with Pin	Each	Foot Brackets	Each	REPL. SEAL KITS	Each
9/16″	15	1/16″ NPT	4.468″ + Stroke Lg.	1/4″-28×5/8″	11/16″	1/4″	1/2″-20	7391K63	$37.90	7391K12	$5.13	7391K13	$2.35	7391K66	$8.46
7/8″	55	1/8″ NPT	4.906″ + Stroke Lg.	1/4″-28×3/4″	1″	1/4″	3/4″-20	7391K64	46.84	7391K12	5.13	7391K14	2.64	7391K65	9.33

Switch-Ready Aluminum Cylinders

Extra-thick walls and a unique piston seal make these switch-ready cylinders extremely durable. All have an anodized aluminum alloy barrel and end caps, chrome-plated steel rod, and sintered-lead bronze rod bushing. Two holes on the barrel and four holes on the face allow mounting. Maximum pressure is 140 psi. Temperature range is 40° to 140°F. **To Order:** Please specify stroke length in 1/2″ increments from the ranges listed.

For additional information about these products, go to mcmaster.com and search for **6471KAC**.

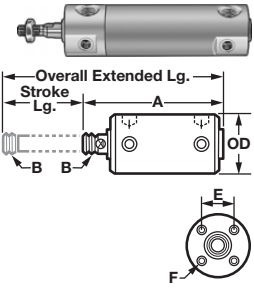

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Retracted Lg. (A)	Rod, Thread Size × Lg. (B)	OD	Mounting Holes Ctr.-to-Ctr. (E)	Mounting Holes (F)
3/4″	41	1/8″ NPT	3.78″+ Stroke Length	1/4″-28 × 0.5″	1.02″	0.55″	8-32
1″	63	1/8″ NPT	3.90″+ Stroke Length	5/16″-24 × 0.5″	1.22″	0.65″	10-32
1 1/4″	107	1/8″ NPT	4.49″+ Stroke Length	7/16″-20 × 0.75″	1.50″	0.79″	10-32
1 1/2″	164	1/8″ NPT	4.77″+ Stroke Length	7/16″-20 × 0.75″	1.85″	1.02″	1/4″-28
2″	255	1/4″ NPT	5.68″+ Stroke Length	1/2″-20 × 0.88″	2.28″	1.26″	5/16″-24
2 1/2″	434	1/4″ NPT	5.68″+ Stroke Length	1/2″-20 × 0.88″	2.83″	1.50″	3/8″-24

Bore Size	1/2″-4 1/2″ Stroke Lengths	Each	5″-8 1/2″ Stroke Lengths	Each	9″-12 1/2″ Stroke Lengths	Each	13″-18 1/2″ Stroke Lengths	Each	19″-24″ Stroke Lengths	Each	Replacement Seal Kits	Each
3/4″	6471K11	$37.54	6471K21	$44.70	6471K31	$48.69	6471K17	$60.11	—	—	6471K87	$7.18
1″	6471K12	42.94	6471K22	49.74	6471K32	53.76	6471K18	63.20	6471K37	$72.42	6471K88	8.05
1 1/4″	6471K13	49.59	6471K23	56.78	6471K33	60.04	6471K19	70.11	6471K38	78.25	6471K89	9.14
1 1/2″	6471K14	62.99	6471K24	70.31	6471K34	77.27	6471K27	91.62	6471K47	102.19	6471K57	9.88
2″	6471K15	82.39	6471K25	94.80	6471K35	99.74	6471K28	119.97	6471K48	132.21	6471K58	10.90
2 1/2″	6471K16	105.58	6471K26	119.47	6471K36	125.14	6471K29	145.43	6471K49	159.52	6471K59	12.66

Attachments and Switches for Switch-Ready Aluminum Cylinders—*Made of chrome-plated steel.*

Fits Bore Size	Rod Clevis with Pin	Each	Foot Mount Sets	Per Set	Front or Rear Flanges	Each	Clevis/Pivot Bracket Assemblies with Pin	Each	Trunnion Brackets with Pins	Each	24 VDC Reed Switches	Each
3/4″	6471K61	$4.96	6471K41	$3.78	6471K51	$4.42	6471K65	$9.16	6471K91	$11.55	6471K501	$21.02
1″	6471K62	5.28	6471K42	3.90	6471K52	4.83	6471K66	12.47	6471K92	13.20	6471K502	21.27
1 1/4″	6471K63	5.92	6471K43	4.24	6471K53	5.47	6471K67	13.06	6471K93	15.09	6471K503	21.45
1 1/2″	6471K63	5.92	6471K44	4.72	6471K54	7.44	6471K68	16.67	6471K94	18.19	6471K504	21.70
2″	6471K64	7.10	6471K45	5.12	6471K55	8.78	6471K69	19.46	6471K95	20.75	6471K505	21.89
2 1/2″	6471K64	7.10	6471K46	9.60	6471K56	13.44	6471K77	32.13	6471K96	28.89	6471K506	22.32

Aluminum Tie Rod Air Cylinders

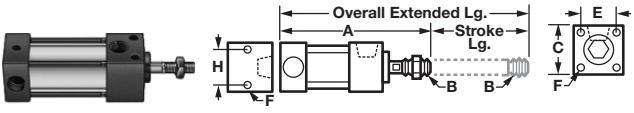

3/4″ and 1 1/8″ Bore Sizes

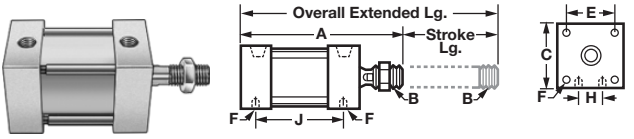

1 1/4″ to 4 1/2″ Bore Sizes

External tie rods, which are made of steel, protect the cylinder barrel while still allowing easy disassembly for repairs. To make repairs, use the replacement seal kits. All of these cylinders are an economical choice for high-force output when the cylinder is working against simple horizontal loads, with no side loading. They are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They are not interchangeable with NFPA-footprint cylinders. Maximum pressure is 250 psi (except for 3/4″ and 1 1/8″ bore sizes, which is 150 psi). Temperature range is 10° to 200° F (except for 3/4″ and 1 1/8″ bore sizes, which is 0° to 180° F). **To Order:** For all cylinders, please specify stroke length in 1/2″ increments from the ranges listed.

Cylinders and ***Cylinders with Cushion***—Have an aluminum barrel, rod bearing, and end caps; chrome-plated steel piston rod. They are not switch ready.

Switch-Ready Cylinders—Have an aluminum barrel. For *3/4″ and 1 1/8″ bore sizes:* rod bearing is bronze, piston rod is Type 303 stainless steel, and end caps are steel. For *all other sizes:* rod bearing and end caps are aluminum; piston rod is chrome-plated steel.

ⓘ For additional information about these products, go to mcmaster.com and search for **6491KAC**.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Rod, Thread Size×Lg. (B)	(C)	(E)	Mounting Holes (F)	(H)	(J)♦
3/4″	39	1/8″ NPT	1/4″-28×5/8″	1″	0.75″	6-32	3/4″	_____
1 1/8″	88	1/8″ NPT	3/8″-24×5/8″	1 1/2″	1.125″	10-32	1 1/8″	_____
1 1/4″	112	1/8″ NPT	3/8″-16×1″	1 13/16″	1.281″	1/4″-28	____	2 1/32″+ Stroke Lg.
1 3/4″	196	1/4″ NPT	3/4″-10×1 1/2″	2 3/8″	1.718″	5/16″-24	25/32″	2 39/64″+ Stroke Lg.
2″	269	1/4″ NPT	3/4″-10×1 1/2″	2 3/8″	1.875″	1/4″-28♠	25/32″	2 39/64″+ Stroke Lg.
2 1/2″	447	3/8″ NPT	3/4″-10×1 1/2″	2 7/8″	2.206″	5/16″-24	1 1/4″	2 39/64″+ Stroke Lg.
3″	662	3/8″ NPT	3/4″-10×1 1/2″	3 3/8″	2.625″	5/16″-24	1 1/4″	2 39/64″+ Stroke Lg.
3 1/2″	884	1/2″ NPT	1″-8×1 5/8″	4 1/8″	3.224″	1/2″-20	1 27/32″	3 7/64″+ Stroke Lg.
4 1/2″	1,512	1/2″ NPT	1″-8×1 5/8″	5 1/8″	4.024″	1/2″-20	2 1/2″	3 7/64″+ Stroke Lg.

♦ For cylinders with cushion, add 1″. ♠ 5/16″-24 for mounting holes on the side of the cylinder.

Bore Size	Retracted Lg. (A)	1″-7 1/2″ Stroke Lengths	Each	8″-14 1/2″ Stroke Lengths	Each	15″-21 1/2″ Stroke Lengths	Each	22″-28 1/2″ Stroke Lengths	Each	29″-36″ Stroke Lengths	Each	Replacement Seal Kits	Each
Cylinders													
1 1/4″	4 17/32″ + Stroke Lg.	6491K34	$79.96	6491K35	$97.94	6491K36	$113.72	6491K134	$133.35	6491K135	$150.60	6491K136	$36.80
1 3/4″	6 3/64″ + Stroke Lg.	6491K52	100.74	6491K54	121.35	6491K55	139.65	6491K152	166.60	6491K154	188.56	6491K155	41.20
2″	6 3/64″ + Stroke Lg.	6491K192	107.88	6491K195	131.45	6491K196	155.07	6491K202	154.71	6491K205	202.28	6491K206	43.34
2 1/2″	6 3/64″ + Stroke Lg.	6491K62	119.31	6491K65	147.31	6491K66	171.52	6491K362	205.24	6491K365	233.76	6491K366	41.78
3″	6 3/64″ + Stroke Lg.	6491K11	154.92	6491K13	187.63	6491K15	215.95	6491K811	256.59	6491K813	290.22	6491K815	47.77
3 1/2″	7 11/64″ + Stroke Lg.	6491K113	175.91	6491K114	215.53	6491K115	249.49	6491K713	296.87	6491K714	336.87	6491K715	60.69
4 1/2″	7 11/64″ + Stroke Lg.	6491K513	235.94	6491K514	284.36	6491K515	325.61	6491K913	383.94	6491K914	432.59	6491K915	66.26
Cylinders with Cushion—*An adjustable air cushion decelerates the rod in the "pull" direction to avoid slamming and decrease noise.*													
1 1/4″	5 17/32″ + Stroke Lg.	6491K37	108.61	6491K38	125.44	6491K39	140.02	6491K137	161.00	6491K138	178.29	6491K139	57.17
1 3/4″	7 3/64″ + Stroke Lg.	6491K57	130.91	6491K58	152.30	6491K59	170.64	6491K157	197.80	6491K158	219.81	6491K159	53.51
2″	7 3/64″ + Stroke Lg.	6491K197	139.05	6491K198	162.65	6491K199	186.28	6491K207	209.71	6491K208	236.71	6491K209	60.64
2 1/2″	7 3/64″ + Stroke Lg.	6491K67	150.19	6491K68	178.23	6491K69	202.53	6491K367	236.51	6491K368	265.00	6491K369	56.14
3″	7 3/64″ + Stroke Lg.	6491K77	185.64	6491K78	218.53	6491K79	246.99	6491K877	287.84	6491K878	326.44	6491K879	62.57
3 1/2″	8 11/64″ + Stroke Lg.	6491K116	215.01	6491K117	254.67	6491K118	288.78	6491K716	337.58	6491K717	376.35	6491K718	62.96
4 1/2″	8 11/64″ + Stroke Lg.	6491K516	275.26	6491K517	323.71	6491K518	365.19	6491K916	423.44	6491K917	472.29	6491K918	81.41
Switch-Ready Cylinders													
3/4″	3 1/4″ + Stroke Lg.	6453K71	93.04	6453K35	103.17	6453K36	117.64	_____	_____	_____	_____	6453K25	14.16
1 1/8″	3 1/4″ + Stroke Lg.	6453K81	99.92	6453K39	115.37	6453K43	134.66	6453K44	153.95	6453K45	173.23	6453K26	16.16
1 1/4″	4 17/32″ + Stroke Lg.	4917K11	99.74	4917K12	137.64	4917K13	174.37	4917K14	210.92	4917K15	247.03	6491K136	36.80
1 3/4″	6 3/64″ + Stroke Lg.	4917K16	118.12	4917K17	139.21	4917K18	160.19	4917K19	181.06	4917K21	201.91	6491K155	41.20
2″	6 3/64″ + Stroke Lg.	4917K22	126.23	4917K23	148.80	4917K24	171.27	4917K25	193.66	4917K26	216.00	6491K206	43.34
2 1/2″	6 3/64″ + Stroke Lg.	4917K27	141.15	4917K28	168.22	4917K29	195.33	4917K31	222.12	4917K32	249.08	6491K366	41.78
3″	6 3/64″ + Stroke Lg.	4917K33	181.43	4917K34	213.93	4917K35	246.09	4917K36	278.27	4917K37	310.21	6491K815	47.77
3 1/2″	7 11/64″ + Stroke Lg.	4917K38	205.92	4917K39	244.34	4917K41	282.54	4917K42	320.62	4917K43	358.58	6491K715	60.69
4 1/2″	7 11/64″ + Stroke Lg.	4917K44	271.24	4917K45	317.59	4917K46	363.86	4917K47	410.00	4917K48	455.84	6491K915	66.26

Attachments and Switches—*Attachments are steel, unless noted.*

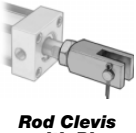
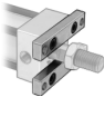

Fits Bore Size	Rod Clevis with Pin	Each	Flange Bar Sets	Each	Front Flanges	Each	Rear Flanges	Each	Clevis Brackets with Pin	Each	Pivot Brackets	Each	Reed Switches■	Each
3/4″	6453K63	$12.15	_____	_____	6453K31	$16.96	6453K41	$21.63	6453K61	$43.47	6453K51	$49.51	6453K23	$51.16
1 1/8″	6453K64	12.15	_____	_____	6453K32	17.47	6453K42	50.74	6453K62	41.71	6453K52	49.49	6453K24	51.13
1 1/4″	6491K61	16.14	6491K17	$21.87	_____	_____	_____	_____	6491K71★	18.51	6491K81★	16.37	4917K692	54.83
1 3/4″	6491K801	20.31	6491K171	28.66	_____	_____	_____	_____	6491K72★	22.12	6491K82★	18.71	4917K692	54.83
2″	6491K63	20.23	6491K172	30.53	_____	_____	_____	_____	6491K177★	22.48	6491K179★	19.43	4917K692	54.83
2 1/2″	6491K63	20.23	6491K173	31.69	_____	_____	_____	_____	6491K73★	24.33	6491K83★	20.84	4917K692	54.83
3″	6491K63	20.23	6491K174	33.88	_____	_____	_____	_____	6491K74★	32.48	_____	_____	4917K692	54.83
3 1/2″	6491K64	29.69	6491K175	35.50	_____	_____	_____	_____	6491K75★	38.88	6491K85★	30.75	4917K692	54.83
4 1/2″	6491K64	29.69	6491K176	54.00	_____	_____	_____	_____	6491K76★	43.01	6491K86★	38.45	4917K692	54.83

■ For switch-ready cylinders only. 10-30 VDC for 6453K23 and K24. 5-240 VAC/DC for 4917K692. ★ Made of aluminum.

Sure-Fit Switch-Ready Tie Rod Air Cylinders

"Sure-fit" means these cylinders have NFPA (National Fluid Power Association) industry-standard mounting footprints, ensuring easy interchangeability. All are switch ready and have external tie rods to protect the cylinder barrel while still allowing easy disassembly for repairs. To make repairs, use the replacement seal kits. Engineered to handle high-force applications, these cylinders are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction.

Maximum pressure is 250 psi. Temperature range is –20° to +200° F.

To Order: For all cylinders, please specify stroke length in 1/2" increments from the ranges listed.

For additional information about these products, go to mcmaster.com and search for **6211KAC**.

Shown with Switch (Sold Separately)

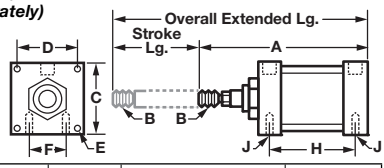

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, NPT Female	Retracted Lg. (A)✓	Rod, Thread Size × Lg. (B)	(C)	(D)	Mounting Holes (E)✓	(F)	(H)	Mounting Holes (J)
1½"	146	¼"♥	5⅜"+ Stroke Lg.	7/16"-20 × ¾"	2"	1 7/16"	¼"-28	⅝"	2¼"+ Stroke Lg.	¼"-20
2"	282	¼"♥	5⅜"+ Stroke Lg.	7/16"-20 × ¾"	2½"	1 27/32"	5/16"-24	⅞"	2¼"+ Stroke Lg.	5/16"-18
2½"	442	¼"♥	5½"+ Stroke Lg.	7/16"-20 × ¾"	3"	2 3/16"	5/16"-24	1¼"	2⅜"+ Stroke Lg.	⅜"-16
3¼"	747	½"▲	7"+ Stroke Lg.★	¾"-16 × 1⅛"	3¾"	2¾"	⅜"-24	1½"	2⅝"+ Stroke Lg.	½"-13
4"	1,131	½"▲	7"+ Stroke Lg.★	¾"-16 × 1⅛"	4½"	3 21/64"	⅜"-24	2 1/16"	2⅝"+ Stroke Lg.	½"-13
6"	2,678	¾"♣	7⅝"+ Stroke Lg.●	1"-14 × 1⅝"	6½"	4⅞"	½"-20	3¼"	3⅛"+ Stroke Lg.	¾"-10

✓ For Aluminum and Extended-Life Aluminum Cylinders; see listing below for Stainless Steel Cylinders. ♥ ⅜" for Stainless Steel Cylinders.
▲ ⅜" for Extended-Life Aluminum Cylinders. ★ 6¾"+ Stroke Lg. for Extended-Life Aluminum Cylinders.
♣ ½" for Extended-Life Aluminum Cylinders. ● 8¼"+ Stroke Lg. for Extended-Life Aluminum Cylinders.

Aluminum Cylinders

Have an aluminum barrel and end caps, chrome-plated steel piston rod, rod bearing with PTFE wear ring, and steel tie rods.

Bore Size	1"-4½" Stroke Lengths	Each	5"-8½" Stroke Lengths	Each	9"-12½" Stroke Lengths	Each	13"-18½" Stroke Lengths	Each	19"-30½" Stroke Lengths	Each	Replacement Seal Kits	Each
1½"	6211K31	$108.11	6211K41	$122.00	6211K81	$139.26	6211K36	$150.43	6211K38	$170.18	6211K15	$16.15
2"	6211K32	124.28	6211K42	139.33	6211K82	161.02	6211K39	169.22	6211K47	191.00	6211K16	16.83
2½"	6211K33	135.26	6211K43	164.61	6211K83	175.18	6211K48	182.44	6211K67	211.14	6211K17	18.47
3¼"	6211K34	191.55	6211K44	216.49	6211K84	245.88	6211K68	254.56	6211K86	289.89	6211K18	19.67
4"	6211K35	221.52	6211K45	248.26	6211K85	272.06	6211K87	284.88	6211K89	321.81	6211K19	22.05
6"	6211K501	491.40	6211K502	541.06	6211K503	590.64	6211K504	640.30	6211K506	749.92	6211K901	93.82

5-240 VAC/VDC Reed Switch for 1½" to 4" Bore Sizes ..... 6211K91 Each $32.43
5-240 VAC/VDC Reed Switch for 6" Bore Size ..... 6211K902 Each $44.39

Extended-Life Aluminum Cylinders with Cushion

Just like the Aluminum Cylinders above, except these have a specially designed rod bearing that's made of graphite-filled cast iron and coated with PTFE to improve cylinder life by 25%. These cylinders also have an air cushion, which decelerates the rod in the "pull" direction to avoid slamming and decrease noise.

Bore Size	2"-7½" Stroke Lengths	Each	8"-14½" Stroke Lengths	Each	15"-21½" Stroke Lengths	Each	22"-28½" Stroke Lengths	Each	29"-36" Stroke Lengths	Each	Replacement Seal Kits	Each
1½"	6258K11	$168.50	6258K12	$191.56	6258K13	$214.50	6258K14	$237.52	6258K16	$263.22	6258K711	$31.35
2"	6258K18	185.31	6258K19	210.05	6258K21	234.72	6258K23	259.38	6258K24	287.21	6258K712	33.00
2½"	6258K26	199.36	6258K27	225.82	6258K29	252.15	6258K31	278.52	6258K32	308.38	6258K713	34.71
3¼"	6258K34	262.32	6258K36	305.02	6258K37	345.31	6258K39	385.59	6258K41	425.92	6258K714	44.94
4"	6258K42	299.56	6258K44	342.60	6258K46	385.57	6258K47	428.58	6258K49	471.52	6258K715	49.23
6"	6258K59	510.55	6258K61	586.38	6258K62	662.24	6258K64	738.11	6258K65	814.03	6258K716	71.18

5-120 VAC/5-110 VDC Reed Switch for 1½" to 2½" Bore Sizes ..... 6258K717 Each $39.38
5-120 VAC/5-110 VDC Reed Switch for 3¼" to 6" Bore Sizes ..... 6258K718 Each $39.38

Stainless Steel Washdown Cylinders with Cushion

Able to withstand wet as well as chemical environments, these cylinders are corrosion resistant. All have a Type 304 stainless steel barrel. Piston is aluminum; piston rod is Type 303 stainless steel with PTFE rod wiper. Rod bearing with PTFE wear ring, end caps, and tie rods are Type 303 stainless steel. These cylinders also have air cushions, which decelerate the rod in the "pull" direction to avoid slamming and decrease noise. No mounting holes (E) as illustrated.

Bore Size	Retracted Lg. (A)	2"-7½" Stroke Lengths	Each	8"-14½" Stroke Lengths	Each	15"-21½" Stroke Lengths	Each	22"-28½" Stroke Lengths	Each	Replacement Seal Kits	Each
1½"	5 13/16"+ Stroke Lg.	6751K11	$540.26	6751K12	$596.23	6751K13	$652.14	6751K14	$708.02	6751K811	$74.93
2"	5 15/16"+ Stroke Lg.	6751K18	597.21	6751K19	671.17	6751K21	745.18	6751K23	819.08	6751K812	77.26
2½"	6 1/16" + Stroke Lg.	6751K26	640.18	6751K27	723.23	6751K29	806.22	6751K31	889.31	6751K813	78.34
3¼"	7⅜" + Stroke Lg.	6751K34	784.60	6751K36	879.87	6751K37	975.14	6751K39	1,070.55	6751K814	84.44
4"	7⅜" + Stroke Lg.	6751K42	898.69	6751K44	1,023.41	6751K46	1,148.12	6751K47	1,272.86	6751K815	86.09
6"	9" + Stroke Lg.	6751K59	1,430.10	6751K61	1,634.44	6751K62	1,839.04	6751K64	2,043.64	6751K817	101.62

120 VAC/110 VDC Reed Switch for 1½" to 2½" Bore Sizes ..... 6258K717 Each $39.38
120 VAC/110 VDC Reed Switch for 3¼" to 6" Bore Sizes ..... 6258K718 Each $39.38

Attachments for Aluminum and Extended-Life Aluminum Cylinders—*Attachments are aluminum, unless noted.*

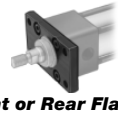

Fits Bore Size	Rod Clevis with Pin	Each	Front or Rear Flanges	Each	Clevis Brackets with Pin	Each	Pivot Brackets	Each
1½"	6211K65♠	$22.56	6211K1	$16.78	6211K55	$18.22	6211K6	$17.09
2"	6211K65♠	22.56	6211K2	16.78	6211K56	21.56	6211K7	19.13
2½"	6211K65♠	22.56	6211K3	22.74	6211K57	23.04	6211K8	23.13
3¼"	6211K66♠	36.87	6211K4♠	33.73	6211K58	32.07	6211K9	34.76
4"	6211K66♠	36.87	6211K5♠	36.94	6211K59	36.66	6211K11	37.93
6"	6211K443♠	82.39	6211K441♠	52.02	6211K442♠	74.69	6211K444♠	110.14

♠ Made of steel.

Nonrotating Sure-Fit Switch-Ready Tie Rod Air Cylinders

Shown with Switch (Sold Separately)

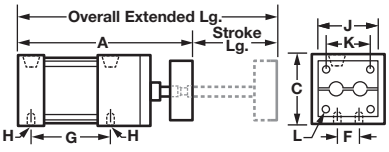

No need for an external guide—two parallel piston rods reduce twisting and turning through the stroke of the cylinder. An excellent choice for high side-load applications.

"Sure-fit" means these cylinders have NFPA (National Fluid Power Association) industry-standard mounting footprints, ensuring easy interchangeability. All are switch ready. External tie rods, which are made of steel, protect the cylinder barrel while still allowing easy disassembly for repairs. To make repairs, use the replacement seal kits. Cylinders are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They also have an air cushion (except for 1⅛″ bore size), which decelerates the rod in the "pull" direction to avoid slamming and decrease noise.

Cylinder barrel and end caps are aluminum. Piston rods are chrome-plated steel with PTFE-coated cast iron rod bearings. Maximum pressure is 250 psi (except for 1⅛″ bore size, which is 150 psi). Temperature range is –20° to +200° F.

To Order: For cylinders, please specify stroke length in 1″ increments from the ranges listed.

Also Available: Heavy duty cylinders with three parallel piston rods for even greater twisting and turning protection. Please ask for 6662K1 for 1½″ bore size; 6662K2 for 2″ bore size; 6662K3 for 2½″ bore size and specify stroke length (2″-36″ in 1″ increments). *Note:* The maximum stroke length for horizontal applications is 10″ for 1½″ bore size, 14″ for 2″ bore size, and 20″ for 2½″ bore size.

ⓘ For additional information about these products, go to mcmaster.com and search for **6648KAC**.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, NPT Female	Retracted Lg. (A)	(C)	(F)	(G)	Mounting Holes (H)	(J)	(K)	Mounting Holes (L)
1⅛″	84	⅛″	3¾″+ Stroke Lg.	1½″	½″	1½″+ Stroke Lg.	10-32	1¼″	¾″	6-32
1½″	155	¼″	5½″+ Stroke Lg.	2″	⅝″	2¼″+ Stroke Lg.	¼″-20	1½″	1⅛″	10-32
2″	253	¼″	5½″+ Stroke Lg.	2½″	⅞″	2¼″+ Stroke Lg.	5/16″-18	2″	1.43″	¼″-28
2½″	430	¼″	5⅞″+ Stroke Lg.	3″	1¼″	2⅜″+ Stroke Lg.	⅜″-16	2½″	1.84″	5/16″-24

Bore Size	1″-4″ Stroke Lengths	Each	5″-8″ Stroke Lengths	Each	9″-12″ Stroke Lengths	Each	Replacement Seal Kits	Each
1⅛″	6648K83	$185.76	6648K84	$223.99	6648K95	$238.52	6648K58	$53.50
1½″	6648K55	273.25	6648K56	328.87	6648K57	346.20	6648K59	40.80
2″	6648K65	299.56	6648K66	369.38	6648K67	407.28	6648K68	48.86
2½″	6648K75	347.70	6648K76	416.71	6648K77	453.80	6648K69	59.87

Attachments and Reed Switch—*Flanges* are steel; *brackets* are cast iron; *base bar sets* are aluminum.

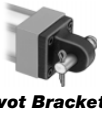

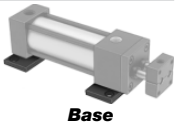

Bore Size	Front Flanges	Each	Rear Flanges	Each	Clevis Brackets with Pin	Each	Pivot Brackets with Pin	Each	Base Bar Sets	Per Set
1⅛″	6648K41	$17.69	6648K21	$17.24	6648K51	$21.83	6648K61	$20.09	6648K31	$11.87
1½″	6648K42	22.87	6648K22	22.24	6648K52	31.37	6648K62	24.39	6648K32	13.43
2″	6648K43	25.58	6648K23	24.89	6648K53	34.52	6648K63	61.38	6648K33	15.38
2½″	6648K44	26.81	6648K24	28.69	6648K54	35.08	6648K64	33.66	6648K34	16.44

5-120 VAC/VDC Reed Switch for 1⅛″ to 2½″ Bore Sizes..... 6648K78 Each $35.33

Extruded-Aluminum Sure-Fit Switch-Ready Tie Rod Air Cylinders

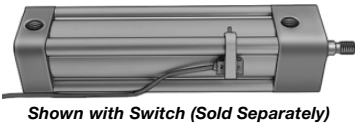

Shown with Switch (Sold Separately)

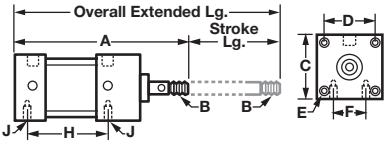

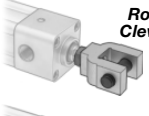

Rod Clevis

Clevis Bracket

Pivot Bracket

The extruded-aluminum body prevents dirt and debris from getting trapped between the tie rods and cylinder body. The integral tie rods protect the cylinder barrel while still allowing easy disassembly for repairs. To make repairs, use the replacement seal kits.

"Sure-fit" means these cylinders have NFPA (National Fluid Power Association) industry-standard mounting footprints, ensuring easy interchangeability. All are switch ready. Cylinders are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They also have an air cushion, which decelerates the rod in the "pull" direction to avoid slamming and decrease noise.

Cylinder barrel and end caps are anodized aluminum. Piston rod is chrome-plated steel and has a corrosion-resistant graphite bearing that can withstand side loads. Maximum pressure is 200 psi. Temperature range is 0° to 160° F. ***Attachments*** are aluminum.

To Order: For cylinders, please specify stroke length in 1″ increments from the ranges listed.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, NPT Female	Retracted Lg. (A)	Rod, Thread Size×Lg. (B)	(C)	(D)	Mounting Holes (E)	(F)	(H)	Mounting Holes (J)
1½″	146	⅜″	5.41″+ Stroke Lg.	½″-20×¾″	2″	1 7/16″	¼″-28	⅝″	2¼″+ Stroke Lg.	¼″-20
2″	283	⅜″	5.41″+ Stroke Lg.	½″-20×¾″	2½″	1 27/32″	5/16″-24	⅞″	2¼″+ Stroke Lg.	5/16″-18
2½″	460	⅜″	5.53″+ Stroke Lg.	½″-20×¾″	3″	2 3/16″	5/16″-24	1¼″	2⅜″+ Stroke Lg.	⅜″-16
3¼″	751	½″	6.75″+ Stroke Lg.	⅞″-14×1.12″	3¾″	2¾″	⅜″-24	1½″	2⅝″+ Stroke Lg.	½″-13

Bore Size	AIR CYLINDERS 1″-4″ Stroke Lengths	Each	5″-8″ Stroke Lengths	Each	9″-12″ Stroke Lengths	Each	ATTACHMENTS Rod Clevis with Pin	Each	Clevis Brackets with Pin	Each	Pivot Brackets	Each	REPLACEMENT SEAL KITS	Each
1½″	6402T11	$154.30	6402T12	$170.60	6402T13	$190.81	6402T51	$22.20	6402T41	$16.78	6402T31	$14.26	6402T71	$66.81
2″	6402T14	172.61	6402T15	190.12	6402T16	215.45	6402T51	22.20	6402T42	17.72	6402T32	14.66	6402T72	61.77
2½″	6402T17	185.27	6402T18	204.85	6402T19	215.59	6402T51	22.20	6402T43	19.26	6402T33	16.78	6402T73	62.55
3¼″	6402T21	251.98	6402T22	267.73	6402T23	315.06	6402T52	42.40	6402T44	43.55	6402T34	38.64	6402T74	86.48

6-24 VDC Solid State NPN Switch For 1½″-2½″ Bore Sizes..... 6402T61 Each $84.68
6-24 VDC Solid State NPN Switch For 3¼″ Bore Size..... 6402T62 Each $84.67

ISO-Metric Extruded-Aluminum Switch-Ready Tie Rod Air Cylinders

Similar to Extruded-Aluminum Air Cylinders on the previous page, except these have ISO (International Standards Organization) mounting footprints for easy interchangeability and meet ISO 6431 and VDMA (German Engineering Federation) 24562 standards. All are switch ready and double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They also have an air cushion, which decelerates the rod in the "pull" direction to avoid slamming and decrease noise. Cylinders are repairable, simply use replacement seal kits.

Cylinder barrel and end caps are cast aluminum; piston rod is Type 400 series stainless steel. Maximum pressure is 145 psi. Temperature range is 14° to 176° F.

Attachments—*Rod clevis* is steel; *brackets* are aluminum.

To Order: For cylinders, please specify stroke length in 25 mm increments from the ranges listed.

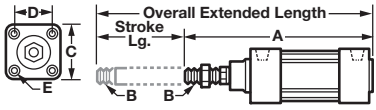

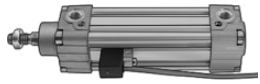

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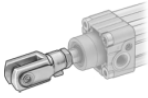

Rod Clevis

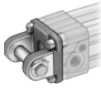

Clevis Bracket

Pivot Bracket

For additional information about these products, go to mcmaster.com and search for **60405KAC**.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, BSPP	Retracted Lg. (A)	Rod, Thread Size—Pitch×Lg. (B)	(C)	(D)	Mounting Holes (E)
32 mm	96	1/8″	146 mm+ Stroke Length	M10—1.25 mm×22 mm	47 mm	32.5 mm	M6
40 mm	147	1/4″	163 mm+ Stroke Length	M12—1.25 mm×24 mm	53 mm	38 mm	M6
63 mm	388	3/8″	194 mm+ Stroke Length	M16—1.5 mm×32 mm	75 mm	56.5 mm	M8

Bore Size	CYLINDERS: 25-150 mm Stroke Lengths	Each	CYLINDERS: 175-300 mm Stroke Lengths	Each	ATTACHMENTS: Rod Clevis with Pin	Each	ATTACHMENTS: Clevis Brackets with Pin	Each	ATTACHMENTS: Pivot Brackets	Each	REPLACEMENT SEAL KITS	Each
32 mm	60405K23	$135.20	60405K24	$151.98	60405K81	$7.42	60405K71	$25.92	60405K91	$22.13	60405K19	$34.56
40 mm	60405K26	146.68	60405K27	158.49	60405K82	9.88	60405K72	29.37	60405K92	22.53	60405K21	51.49
63 mm	60405K36	198.92	60405K37	224.14	60405K84	20.50	60405K74	44.80	60405K94	34.23	60405K22	47.09

12-240 VAC/12-60 VDC Reed Switch..... **60405K31** **Each** $59.01

Pancake Tie Rod Air Cylinders

You'll get the power and stroke of other tie rod cylinders with similar stroke lengths in less than half the space. All of these cylinders are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. Cylinders are repairable, simply use the replacement seal kits. They also have holes for flush bottom mounting. Maximum pressure is 200 psi.

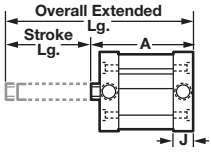

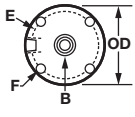

Switch

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Rod, Thread Size (B)	OD	(E)	Mounting Holes (F)	(J)
1/2″, 9/16″	15	10-32	8-32	1.12″	0.88″	0.13″	0.34″
3/4″	36	10-32	10-32	1.50″	1.22″	0.15″	0.34″
1 1/16″	69	1/8″ NPT	5/16″-24	2.00″	1.69″	0.15″	0.50″
1 1/2″	145	1/8″ NPT	3/8″-24	2.62″	2.19″	0.20″	0.50″
2″	266	1/8″ NPT	1/2″-20	3.12″	2.69″	0.20″	0.53″
2 1/2″	447	1/4″ NPT	1/2″-20	3.75″	3.25″	0.26″	0.66″
3″	647	1/4″ NPT	5/8″-18	4.25″	3.78″	0.26″	0.69″

Composite Cylinders

These cylinders have a high-strength, impact-resistant composite barrel that allows minimal heat buildup; aluminum tie rods and end caps; chrome-plated Type 303 stainless steel piston rod; and composite fiber rod bearing. They are not switch ready. Temperature range is –25° to +221° F. **To Order:** For cylinders, please specify stroke length in 1/8″ increments from the ranges listed.

Bore Size	Retracted Lg. (A)	1/8″-1″ Stroke Lengths	Each	1 1/8″-2″ Stroke Lengths	Each	2 1/8″-3″ Stroke Lengths	Each	3 1/8″-4″ Stroke Lengths	Each	Replacement Seal Kits	Each
1/2″	0.69″+ Stroke Length	1691T11	$44.86	1691T21	$46.93	1691T31	$48.99	1691T41	$51.07	1691T61	$3.66
3/4″	0.69″+ Stroke Length	1691T12	46.36	1691T22	48.43	1691T32	50.49	1691T42	52.56	1691T62	5.28
1 1/16″	1.01″+ Stroke Length	1691T13	60.31	1691T23	63.19	1691T33	66.10	1691T43	68.99	1691T63	4.61
1 1/2″	1.01″+ Stroke Length	1691T14	71.88	1691T24	75.59	1691T34	79.30	1691T44	83.01	1691T54	5.00
2″	1.07″+ Stroke Length	1691T15	83.69	1691T25	89.89	1691T35	96.09	1691T45	102.29	1691T55	5.39
2 1/2″	1.32″+ Stroke Length	1691T16	106.26	1691T26	114.55	1691T36	122.83	1691T46	131.10	1691T56	7.22
3″	1.38″+ Stroke Length	1691T17	130.15	1691T27	138.83	1691T37	147.54	1691T47	156.23	1691T57	8.00

Stainless Steel Cylinders

These cylinders have a Type 304 stainless steel barrel for excellent corrosion resistance; anodized aluminum tie rods and end caps; Type 303 stainless steel piston rod; and oil-impregnated bronze rod bearing. Temperature range is –20° to +150° F. **To Order:** For cylinders, please specify stroke length in 1/4″ increments from the ranges listed.

Bore Size	Retracted Lg. (A)	1/4″-1″ Stroke Lengths	Each	1 1/4″-2″ Stroke Lengths	Each	2 1/4″-3″ Stroke Lengths	Each	3 1/4″-4″ Stroke Lengths	Each	Replacement Seal Kits	Each
Stainless Steel—*These cylinders are not switch ready.*											
9/16″	0.69″+ Stroke Length	4208K11	$38.98	4208K12	$41.78	4208K13	$49.99	4208K14	$52.92	4208K301	$6.99
3/4″	0.69″+ Stroke Length	4208K15	40.20	4208K27	43.00	4208K28	51.20	4208K29	53.96	4208K302	7.37
1 1/16″	1.01″+ Stroke Length	4208K31	52.34	4208K32	55.60	4208K33	64.51	4208K34	67.97	4208K303	8.88
1 1/2″	1.01″+ Stroke Length	4208K35	62.25	4208K36	66.81	4208K37	76.74	4208K38	81.27	4208K304	9.51
2″	1.07″+ Stroke Length	4208K39	72.51	4208K41	78.45	4208K42	89.83	4208K43	95.72	4208K305	11.20
2 1/2″	1.32″+ Stroke Length	4208K44	92.10	4208K45	99.40	4208K46	112.17	4208K47	119.44	4208K306	11.20
3″	1.38″+ Stroke Length	4208K48	111.88	4208K49	119.17	4208K51	131.88	4208K52	139.15	4208K307	12.99
Switch-Ready Stainless Steel											
9/16″	1.44″+ Stroke Length	4211K11★	44.75	4211K12	47.55	4211K13	55.72	4211K14	58.50	4208K301	6.99
3/4″	1.44″+ Stroke Length	4211K15★	45.95	4211K27	48.74	4211K28	56.92	4211K29	59.70	4208K302	7.37
1 1/16″	1.76″+ Stroke Length	4211K31★	57.89	4211K32	61.38	4211K33	70.25	4211K34	73.72	4208K303	8.88
1 1/2″	1.76″+ Stroke Length	4211K35★	70.75	4211K36	75.26	4211K37	85.20	4211K38	89.72	4208K304	9.51
2″	1.82″+ Stroke Length	4211K39★	86.60	4211K41	92.53	4211K42	103.88	4211K43	109.76	4208K305	11.20
2 1/2″	2.07″+ Stroke Length	4211K44★	113.13	4211K45	120.41	4211K46	133.14	4211K47	140.42	4208K306	11.20
3″	2.13″+ Stroke Length	4211K48★	137.16	4211K49	144.46	4211K51	157.14	4211K52	164.43	4208K307	12.99

30 VDC Solid State PNP Switch..... **4211K301** **Each** $52.00 30 VDC Solid State NPN Switch..... **4211K302** **Each** $52.00

★ Only one switch can be used with the 1/4″ stroke length.

Nonrotating Pancake Aluminum Tie Rod Air Cylinders

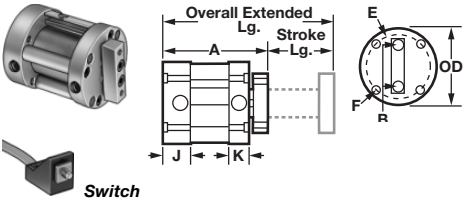

No need for an external guide—two parallel piston rods reduce twisting and turning through the stroke of the cylinder. These compact cylinders provide the power and stroke of other tie rod cylinders with similar stroke lengths in less than half the space. They are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. Cylinders are repairable, simply use the replacement seal kits. They also have holes for flush bottom mounting.

Cylinders have a Type 304 stainless steel barrel for excellent corrosion resistance; anodized aluminum tie rods and end caps; Type 303 stainless steel rod; and oil-impregnated bronze bearing. Maximum pressure is 200 psi. Temperature range is 0° to 150° F. **To Order:** For cylinders, please specify stroke length in 1/4" increments from the ranges listed.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Thread Size × Dp. (B)	OD	(E)	Mounting Holes (F)	(J)	(K)
3/4"	38	10-32	6-32 × 0.38"	1.50"	1.22"	#6	0.47"	0.34"
1 1/16"	78	1/8" NPT	8-32 × 0.38"	2.00"	1.69"	#6	0.69"	0.50"
1 1/2"	154	1/8" NPT	1/4"-20 × 0.50"	2.63"	2.19"	#10	0.69"	0.50"
2"	274	1/8" NPT	5/16"-18 × 0.63"	3.13"	2.69"	#10	0.72"	0.53"

Bore Size	Retracted Lg. (A)	1/4"-1" Stroke Lengths	Each	1 1/4"-2" Stroke Lengths	Each	2 1/4"-3" Stroke Lengths	Each	3 1/4"-4" Stroke Lengths	Each	Replacement Seal Kits	Each
Aluminum— *These cylinders are not switch ready.*											
3/4"	1.39"+ Stroke Length	5144K11	$61.40	5144K12	$64.87	5144K13	$68.33	5144K14	$71.80	5144K302	$10.22
1 1/16"	1.76"+ Stroke Length	5144K15	79.42	5144K27	83.62	5144K28	93.14	5144K29	97.33	5144K303	12.29
1 1/2"	1.88"+ Stroke Length	5144K31	95.75	5144K32	102.02	5144K33	113.69	5144K34	119.93	5144K304	13.85
2"	2.08"+ Stroke Length	5144K35	110.79	5144K36	118.83	5144K37	132.26	5144K38	140.28	5144K305	15.89
Switch-Ready Aluminum											
3/4"	2.02"+ Stroke Length	5036K11★	66.38	5036K12	69.87	5036K13	78.71	5036K14	82.19	5144K302	10.22
1 1/16"	2.39"+ Stroke Length	5036K15★	85.18	5036K27	89.38	5036K28	98.87	5036K29	103.06	5144K303	12.29
1 1/2"	2.51"+ Stroke Length	5036K31★	104.22	5036K32	110.49	5036K33	122.14	5036K34	128.38	5144K304	13.85
2"	2.71"+ Stroke Length	5036K35★	124.84	5036K36	132.87	5036K37	146.30	5036K38	154.29	5144K305	15.89

30 VDC Solid State PNP Switch ..... 4211K301 Each $52.00
30 VDC Solid State NPN Switch ..... 4211K302 Each $52.00

★ Only one switch can be used with the 1/4" stroke length.

Square Pancake Aluminum Tie Rod Air Cylinders

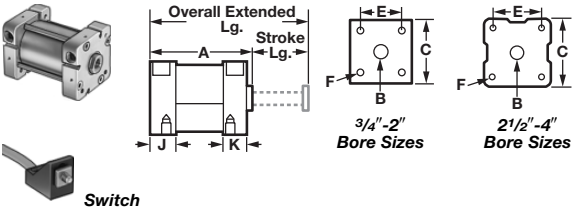

The square shape allows face as well as flush-bottom mounting. It also allows side-by-side mounting with less centerline distance than round cylinders. All of these compact cylinders provide the power and stroke of other tie rod cylinders with similar stroke lengths in less than half the space. They are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. Cylinders are repairable, simply use the replacement seal kits.

Cylinders have a Type 304 stainless steel barrel for excellent corrosion resistance; anodized aluminum end caps; Type 303 stainless steel rod and tie rods; and oil-impregnated bronze bearing. Maximum pressure is 200 psi for 3/4"-2" bore sizes and 150 psi for 2 1/2"-4" bore sizes. Temperature range is 0° to 150° F.

To Order: For cylinders, please specify stroke length in 1/4" increments from the ranges listed.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Rod, Thread Size × Dp. (B)	(C)	(E)	Mounting Holes (F)	(J)	(K)
3/4"	36	10-32	10-32 × 0.46"	1.25"	0.76"	#6-32	0.42"	0.42"
1 1/16"	69	1/8" NPT	5/16"-24 × 0.70"	1.50"	1.00"	#8-32	0.50"	0.58"
1 1/2"	145	1/8" NPT	3/8"-24 × 0.70"	2.00"	1.38"	#10-24	0.50"	0.58"
2"	269	1/8" NPT	1/2"-20 × 0.70"	2.50"	1.76"	1/4"-20	0.63"	0.63"
2 1/2"	446	1/4" NPT	1/2"-20 × 0.70"	3.25"	2.36"	5/16"-18	0.84"	0.84"
3"	646	1/4" NPT	5/8"-18 × 0.73"	3.78"	2.88"	5/16"-18	0.88"	0.88"
4"	1,178	3/8" NPT	3/4"-16 × 0.83"	5.04"	3.62"	7/16"-14	1.00"	1.00"

Bore Size	Retracted Lg. (A)	1/4"-1" Stroke Lengths	Each	1 1/4"-2" Stroke Lengths	Each	2 1/4"-3" Stroke Lengths	Each	3 1/4"-4" Stroke Lengths	Each	Replacement Seal Kits	Each
Aluminum— *These cylinders are not switch ready.*											
3/4"	0.88"+ Stroke Length	6113K11	$46.67	6113K12	$49.45	6113K13	$57.61	6113K14	$60.40	6113K302	$7.09
1 1/16"	1.38"+ Stroke Length	6113K15	55.92	6113K27	59.39	6113K28	68.27	6113K29	71.75	6113K303	8.42
1 1/2"	1.38"+ Stroke Length	6113K31	69.71	6113K32	74.24	6113K33	84.17	6113K34	88.68	6113K304	9.16
2"	1.44"+ Stroke Length	6113K35	81.18	6113K36	87.09	6113K37	98.47	6113K38	105.54	6113K305	10.63
2 1/2"	1.79"+ Stroke Length	6113K39	111.38	6113K41	117.97	6113K42	129.98	6113K43	136.57	6113K306	10.55
3"	1.84"+ Stroke Length	6113K44	129.30	6113K45	136.58	6113K46	149.28	6113K47	156.57	6113K307	12.24
4"	2.13"+ Stroke Length	6113K48	230.62	6113K49	239.33	6113K51	253.32	6113K52	261.99	6113K308	16.16
Switch-Ready Aluminum											
3/4"	1.63"+ Stroke Length	6122K11★	52.41	6122K12	55.21	6122K13	63.35	6122K14	66.13	6113K302	7.09
1 1/16"	1.88"+ Stroke Length	6122K15★	61.66	6122K27	65.15	6122K28	74.02	6122K29	77.47	6113K303	8.42
1 1/2"	2.01"+ Stroke Length	6122K31★	78.11	6122K32	82.64	6122K33	92.56	6122K34	97.07	6113K304	9.16
2"	2.07"+ Stroke Length	6122K35★	95.26	6122K36	101.18	6122K37	112.50	6122K38	118.39	6113K305	10.63
2 1/2"	2.67"+ Stroke Length	6122K39★	131.16	6122K41	137.79	6122K42	149.76	6122K43	151.05	6113K306	10.55
3"	2.72"+ Stroke Length	6122K44★	153.19	6122K45	160.57	6122K46	173.15	6122K47	180.43	6113K307	12.24
4"	3.01"+ Stroke Length	6122K48★	257.03	6122K49	265.73	6122K51	279.71	6122K52	288.38	6113K308	16.16

30 VDC Solid State PNP Switch ..... 4211K301 Each $52.00
30 VDC Solid State NPN Switch ..... 4211K302 Each $52.00

★ Only one switch can be used with the 1/4" stroke length.

Super-Flat Pancake Aluminum Air Cylinders

Just as the name implies, these are the flattest cylinders we offer. All provide the power and stroke of other tie rod cylinders with similar stroke lengths in less than half the space. They are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. Cylinders are repairable, simply use the replacement seal kits. They are not switch ready. Cylinders have an aluminum barrel, chrome-plated steel rod, and oil-impregnated bronze bearing. They also have holes for flush-bottom mounting (two holes for 3/4"-2" bore sizes; four for 2 1/2"-4" bore sizes). Maximum pressure is 150 psi. Temperature range is –40° to +250° F. **To Order:** For cylinders, please specify stroke length in 1/8" increments from the ranges listed.

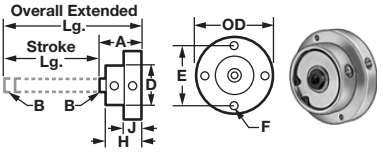

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Retracted Lg. (A)	Rod, Thread Size × Dp. (B)	OD	(D)	(E)	Mounting Holes (F)	(H)	(J)
3/4"	39	10-32	49/64"+ Stroke Lg.	10-32 × 1/4"	1 3/4"	1"	1 13/32"	13/64"	3/4"+ Stroke Lg.	1/2"
1 1/8"	90	10-32	25/32"+ Stroke Lg.	5/16"-24 × 3/8"	2 1/8"	1 3/8"	1 25/32"	13/64"	49/64"+ Stroke Lg.	1/2"
1 1/2"	159	10-32	59/64"+ Stroke Lg.	5/16"-24 × 3/8"	2 1/2"	1 3/4"	2 5/32"	13/64"	57/64"+ Stroke Lg.	1/2"
2"	282	1/8" NPT	1 1/16"+ Stroke Lg.	3/8"-24 × 3/8"	3 1/8"	2 1/4"	2 23/32"	13/64"	1 3/64"+ Stroke Lg.	9/16"
2 1/2"	441	1/8" NPT	1 5/64"+ Stroke Lg.	3/8"-24 × 3/8"	3 3/4"	2 3/4"	3 1/4"	17/64"	1 1/16"+ Stroke Lg.	9/16"
3"	636	1/8" NPT	1 25/64"+ Stroke Lg.	1/2"-20 × 1/2"	4 1/4"	3 1/4"	3 25/32"	17/64"	1 23/64"+ Stroke Lg.	3/4"
4"	1,131	1/8" NPT	1 17/32"+ Stroke Lg.	1/2"-20 × 1/2"	5 1/4"	4 1/4"	4 25/32"	17/64"	1 1/2"+ Stroke Lg.	3/4"

Bore Size	1/8"-1 3/8" Stroke Lgs.	Each	1 1/2"-3" Stroke Lgs.	Each	Repl. Seal Kits	Each
3/4"	6212K51	$55.60	6212K52★	$60.45	6212K72	$4.29
1 1/8"	6212K53	58.56	6212K54	78.62	6212K74	5.16
1 1/2"	6212K55	81.07	6212K56	91.60	6212K76	5.35
2"	6212K61	95.22	6212K62	107.64	6212K82	5.40

★ Maximum stroke length offered is 2".

Bore Size	1/8"-1 3/8" Stroke Lgs.	Each	1 1/2"-3" Stroke Lgs.	Each	Repl. Seal Kits	Each
2 1/2"	6212K63	$118.44	6212K64	$126.95	6212K84	$5.25
3"	6212K65	141.90	6212K66	158.02	6212K86	7.09
4"	6212K67	205.40	6212K68	243.69	6212K88	7.01

Compact Extruded-Aluminum Switch-Ready Air Cylinders

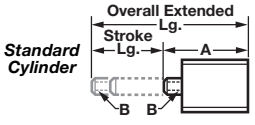

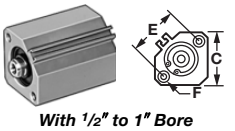

With 1/2" to 1" Bore

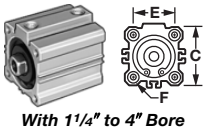

With 1 1/4" to 4" Bore

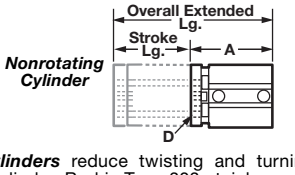

With 1 1/4" to 4" Bore

Perfect for tight spots, these cylinders have an extruded-aluminum body. All are switch ready and double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They are repairable, simply use the replacement seal kits.

Standard cylinders have a Type 304 stainless steel rod for 1/2"-1" bore sizes and a chrome-plated steel rod for 1 1/4"-4" bore sizes. Maximum pressure is 145 psi. Temperature range is 15° to 140° F.

Nonrotating cylinders reduce twisting and turning throughout the stroke of the cylinder. Rod is Type 303 stainless steel. Maximum pressure is 150 psi. Temperature range is –25° to +250° F.

To Order: For cylinders, please specify stroke length in 1/16" increments from the ranges listed.

For additional information about these products, go to mcmaster.com and search for **62245KAC**.

Bore Size	Force @ 100 psi, lbs.	Port Size, Female	Standard Cylinder Rod, Thread × Dp. (B)	(C) Standard Cylinder	(C) Nonrotating Cylinder	Nonrotating Cylinder Mounting Plate Holes, Thread × Dp. (D)	(E)	Mounting Holes (F)
1/2"	13	M5●	8-32 × 0.213"	0.98"	0.98"	6-32 × 0.24"	0.87"	8-32
3/4"	36.5	M5●	10-32 × 0.276"	1.42"	1.42"	8-32 × 0.27"	1.42"	8-32▲
1"	58.5	M5●	1/4"-28 × 0.394"	1.57"	1.57"	8-32 × 0.33"	1.57"	1/4"-20
1 1/4"	93.5	1/8" NPT	5/16"-24 × 0.524"	1.77"	1.75"	10-24 × 0.33"	1.34"	1/4"-20
2"	256	1/4" NPT	1/2"-20 × 0.693"	2.52"	2.51"	5/16"-18 × 0.48"	1.97"	5/16"-18
3 1/4"	703	3/8" NPT	5/8"-18 × 0.957"	3.86"	3.85"	1/2"-13 × 0.55"	3.03"	1/2"-13
4"	1,108	3/8" NPT	3/4"-16 × 1.063"	4.61"	4.54"	1/2"-13 × 0.55"	3.70"	1/2"-13

● 10-32 for nonrotating cylinders. ▲ 1/4"-20 for nonrotating cylinders.

STANDARD CYLINDERS

Bore Size	Retracted Lg. (A)	3/16"-1" Stroke Lengths	Each	1 1/16"-2" Stroke Lengths	Each	2 1/16"-3" Stroke Lengths	Each
1/2"	1.24"+ Stroke Lg.	62245K121	$36.73	62245K122♣	$40.55	____	____
3/4"	1.42"+ Stroke Lg.	62245K221	43.35	62245K222	47.59	____	____
1"	1.48"+ Stroke Lg.	62245K321	47.58	62245K322	52.77	____	____
1 1/4"	1.57"+ Stroke Lg.	62245K721	61.66	62245K722	71.67	62245K723	$84.51
2"	1.91"+ Stroke Lg.	62245K421	96.67	62245K422	109.87	62245K423	128.34
3 1/4"	2.50"+ Stroke Lg.	62245K521	131.40	62245K522	152.25	62245K523	177.84
4"	2.95"+ Stroke Lg.	62245K621	186.24	62245K622	206.34	62245K623	231.11

♣ Maximum stroke length offered is 1 3/16". ■ Maximum stroke length offered is 1 3/4".

NONROTATING CYLINDERS

Retracted Lg. (A)	3/16"-1" Stroke Lengths	Each	1 1/16"-2" Stroke Lengths	Each
1.48"+ Stroke Lg.	6277T11	$90.02	6277T21♣	$97.20
1.69"+ Stroke Lg.	6277T12	109.86	6277T22■	116.94
1.80"+ Stroke Lg.	6277T13	119.22	6277T23	127.14
1.90"+ Stroke Lg.	6277T14	140.34	6277T24	148.20
2.39"+ Stroke Lg.	6277T15	176.28	6277T25	184.86
3.05"+ Stroke Lg.	6277T17	260.04	6277T27	270.54
3.50"+ Stroke Lg.	6277T18	355.98	6277T28	369.30

Attachments and Replacement Seal Kits—*Attachments are steel.*

Fits Bore Size	Front or Rear Flanges	Each	Clevis Brackets	Each	Foot Mounts♠	Each	Replacement Seal Kits	Each
1/2"	62245K77	$5.86	62245K83	$5.19	62245K71	$5.19	62245K911	$6.13
3/4"	62245K78	6.37	62245K84	6.37	62245K72	6.37	62245K912	7.01
1"	62245K79	7.50	62245K85	7.50	62245K73	7.50	62245K913	7.42
1 1/4"	62245K18	8.08	62245K96	8.08	62245K98♦	8.08	62245K914	7.97
2"	62245K8	9.13	62245K86	9.13	62245K74♦	9.13	62245K915	10.55
3 1/4"	62245K81	20.97	62245K87	20.97	62245K75♦	20.97	62245K917	15.87
4"	62245K82	28.18	62245K88	28.18	62245K76♦	28.18	62245K918	20.09

♠ Sold individually; two are required. ♦ For standard cylinders only.

Switches

62245K91

62245K94

		Each
Reed for Standard Cylinders		
100 VAC/5, 12, 24 VDC	62245K91	$17.98
100 VAC/12, 24 VDC with LED	62245K92	22.94
Reed for Nonrotating Cylinders		
5-120 VAC/VDC with LED	6277T71	31.36
Solid State for Standard Cylinders		
24 VDC, 3 Wire NPN	62245K94	48.22
24 VDC, 3 Wire PNP	62245K95	48.22
Solid State for Nonrotating Cylinders		
5-28 VDC, 3 Wire NPN	6277T74	38.93
5-28 VDC, 3 Wire PNP	6277T75	38.93

Subminiature Stainless Steel Air Cylinders

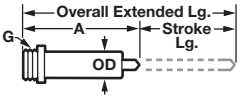

Sized just right for your tightest spaces, these extra-tiny cylinders provide linear force to automate your systems. Both are single acting with a spring return—they have one compressed air port to extend in the "push" direction; an internal spring retracts in the "pull" direction.

Cylinders have a Type 303 stainless steel barrel, piston rod, and end caps; Type 302 stainless steel internal spring. Mounting thread is on the rear of the cylinder for easy installation. Piston rod is unthreaded.

These cylinders are not repairable, which means you simply replace them when necessary. They are not switch ready. Maximum pressure is 150 psi. Temperature range is 30° to 180° F.

For additional information about these products, go to mcmaster.com and search for **7725KAC**.

Bore Size	Stroke Length	Force @ 100 psi, lbs.	Spring Force, lbs.	Port Pipe Size, Female	Retracted Lg. (A)	OD	Mounting Thread (G)		Each
5/32"	1/4"	2	0.31	3-56 UNF	0.87"	0.19"	10-32	7725K1	$14.04
5/32"	1/2"	2	0.31	3-56 UNF	1.31"	0.19"	10-32	7725K2	16.38

Miniature Brass Air Cylinders

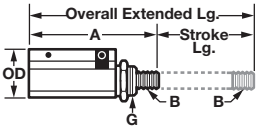

These small, nose-mount cylinders include a jam nut so you can mount them in a minimal amount of space. All are switch ready and double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. Cylinders are repairable, simply use the replacement seal kits.

Cylinders have a nickel-plated brass barrel and jam nuts; Type 304 stainless steel piston rod. Maximum pressure is 100 psi. Temperature range is 40° to 140° F.

To Order: For cylinders, please specify stroke length: 1/4", 3/8", 1/2", 3/4", 1", or 1 1/4" (unless noted).

For additional information about these products, go to mcmaster.com and search for **59155KAC**.

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Retracted Lg. (A)	Rod, Thread Size × Lg. (B)	OD	Mounting Thread × Lg. (G)	*Air Cylinders*	Each	*Repl. Seal Kits*	Each
1/4"	3	10-32	1.82" + Stroke Lg.	5-40 × 0.38"	0.65"	3/8"-24 × 0.31"	59155K11 ♦	$34.61	59155K14	$6.71
3/8"	9	10-32	2.01" + Stroke Lg.	10-32 × 0.50"	0.79"	1/2"-20 × 0.37"	59155K12	38.99	59155K15	7.42
5/8"	23	10-32	2.07" + Stroke Lg.	10-32 × 0.50"	0.97"	9/16"-18 × 0.44"	59155K13	46.62	59155K16	8.26

♦ Not available in 1" and 1 1/4" stroke lengths.

Attachments and Switches—*Attachments are steel.*

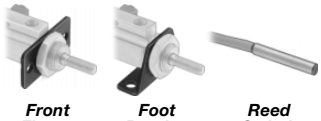

Front Flange *Foot Bracket* *Reed Switch*

Fits Bore Size	*Front Flanges*	Each	*Foot Brackets*	Each
1/4"	59155K21	$1.81	59155K22	$1.81
3/8"	59155K23	1.81	59155K24	1.81
5/8"	59155K25	1.81	59155K26	1.81

110 VAC/5, 12, 24 VDC Reed Switch ..... 59155K31● Each $11.48
110 VAC/24 VDC Reed Switch with LED ..... 59155K32● Each $16.54

● Use one switch for 1/4" stroke lengths; one or two switches for all other stroke lengths.

Easy-Mount Miniature Brass Air Cylinders

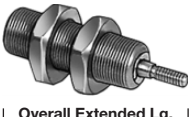

Single Acting with Spring Return

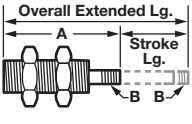

No need for special mounting attachments. Simply drill a hole to accommodate the body thread size, insert cylinder, and secure it in place with jam nuts; or tap a hole to accommodate the body thread size and lock cylinder in place with a jam nut. All cylinders include two jam nuts except 6604K25, which includes one. Great for use in extremely close spaces.

Cylinders have a nickel-plated brass body, Type 303 stainless steel piston rod, bronze rod bushing, and steel jam nuts. They are not repairable, which means you simply replace them when necessary. They are not switch ready. Maximum pressure is 125 psi. Temperature range is 0° to 220° F.

Single-acting cylinders with spring return have one compressed air port to extend in the "push" direction; an internal spring retracts in the "pull" direction. The internal spring is made of steel.

Double-acting cylinders have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. In addition to the 10-32 port in the rear, these cylinders have a 6-32 barbed side port, which accepts 1/16" ID hose. For additional tube fittings, see pages 156-165.

Bore Size	Stroke Length	Port Pipe Size, Female	Retracted Lg. (A)	Rod, Thread Size × Lg. (B)	Body Thread Size	*Single Acting with Spring Return* Force @ 100 psi, lbs.		Each	*Double Acting* Force @ 100 psi, lbs.		Each
1/4"	1/4"	10-32	1.55"	6-32 × 0.37"	3/8"-32	1.13	6604K11	$19.48	4.40	6604K21	$30.50
3/8"	1/2"	10-32	1.99"	8-32 × 0.37"	1/2"-32	1.63	6604K13	28.32	9.90	6604K23	41.52
1/2"	1/2"	10-32	2.05"	1/4"-28 × 0.37"	5/8"-32	3.44	6604K15	33.90	17.64	6604K24	49.98
1/2"	1"	10-32	2.55"	1/4"-28 × 0.37"	5/8"-32	—	—	—	17.64	6604K25	54.30

Short-Stroke Air-Clamping Cylinders

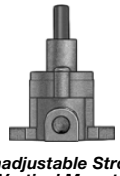

Nonadjustable Stroke Vertical Mount

Adjustable Stroke Vertical Mount

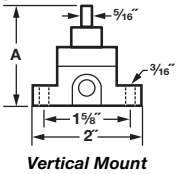

Vertical Mount

Also known as air clamps, these cylinders are great for applying clamping pressure in one direction over short stroke lengths. All are single acting with a spring return—they have one compressed air port to extend in the "push" direction; an internal spring retracts in the "pull" direction. Cylinders are not repairable, which means you simply replace them when necessary. They are not switch ready.

Body is aluminum. Piston rod is steel and unthreaded. Port pipe size is 1/8" NPT female. Maximum pressure is 150 psi. Temperature range is –40° to +250° F.

Cylinders with Adjustable Stroke Length— You can adjust the stroke length within the range listed.

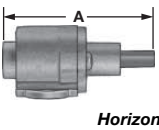

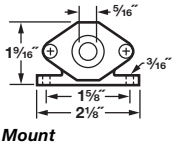

Horizontal Mount

Bore Size	Stroke Length	Force @ 100 psi, lbs.	Spring Force, lbs.	*Vertical Mount* Retracted Length (A)		Each	*Horizontal Mount* Retracted Length (A)		Each
Nonadjustable Stroke Length									
1"	11/16"	68	4	2 3/8"	62185K65	$25.90	2 5/8"	62185K64	$24.94
Adjustable Stroke Length									
1"	0"-1"	62	5	3 13/16"	62185K21	53.51	3 7/8"	62185K11	53.51
1"	1"-2"	61	5	4 11/16"	62185K22	61.73	4 7/8"	62185K12	61.71

Slimline Nonrotating Aluminum Air Cylinders

An innovative oval piston design gives you a nonrotating rod in a space-saving rectangular body. Mounting holes (see dimension F) on the side allow multiple cylinders to be attached side-by-side for incrementally higher force. All cylinders are switch ready and double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They are not repairable, which means you simply replace them when necessary.

Cylinders have an aluminum barrel and end caps. The piston rod is 300 series stainless steel for 1/2" to 1" bore size cylinders; Type 420 stainless steel for 1 1/4" to 2 1/2" bore size cylinders. Maximum pressure is 145 psi. Temperature range is 0° to 176° F. ***Attachments—****Flanges* are aluminum. *Pivot brackets* are steel.

To Order For cylinders, please specify stroke length in 1/2" increments from the ranges listed.

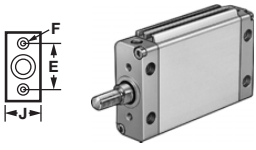

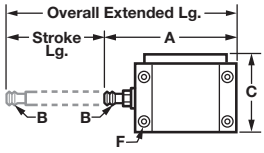

Bore Size	Force @ 100 psi, lbs.	Port Pipe Size, Female	Retracted Lg. (A)	Rod, Thread Size × Lg. (B)	(C)	(E)	Mounting Holes (F)	(J)
1/2"	12.93	10-32	2.7" + Stroke Length	10-32 × 0.6"	1.5"	0.8"	4-48★	0.6"
11/16"	30.95	10-32	2.7" + Stroke Length	5/16"-24 × 0.8"	1.9"	0.7"	8-32	0.6"
1"	62.70	10-32	2.8" + Stroke Length	3/8"-24 × 0.9"	2.2"	1"	10-24	0.8"
1 1/4"	105.44	1/8" NPT	3.1" + Stroke Length	3/8"-24 × 0.9"	2.6"	1.3"	1/4"-20	0.9"
1 5/8"	160.77	1/8" NPT	3.3" + Stroke Length	1/2"-20 × 0.9"	3.2"	1.6"	1/4"-20	1.2"
2"	251.48	1/4" NPT	3.6" + Stroke Length	5/8"-18 × 1.3"	4"	2"	5/16"-18	1.5"
2 1/2"	427.22	1/4" NPT	3.6" + Stroke Length	5/8"-18 × 1.3"	5"	2.4"	3/8"-16	2"

★ The four through mounting holes on the side have 8-32 threading.

Bore Size	AIR CYLINDERS 1"-4 1/2" Stroke Lengths	Each	5"-8 1/2" Stroke Lengths	Each	9"-12 1/2" Stroke Lengths	Each	ATTACHMENTS Front or Rear Flanges	Each	Pivot Brackets	Each
1/2"	6861K11	$151.09	6861K21	$156.66	—	—	6861K41	$23.62	6861K51	$16.30
11/16"	6861K12	149.50	6861K22	156.17	—	—	6861K42	24.63	6861K52	19.80
1"	6861K13	166.01	6861K23	176.62	6861K77	$181.06	6861K43	25.79	6861K53	20.55
1 1/4"	6861K14	178.07	6861K24	187.21	6861K34	195.78	6861K44	27.39	6861K54	21.68
1 5/8"	6861K15	195.79	6861K25	208.70	6861K35	225.63	6861K45	32.78	6861K55	25.10
2"	6861K16	217.17	6861K26	231.74	6861K36	252.84	6861K46	36.71	6861K56	28.62
2 1/2"	6861K17	254.75	6861K27	272.43	6861K37	299.31	6861K47	59.21	6861K57	31.37

12-30 VDC Reed Switch ..... 6861K64 Each $30.40

Flange

Pivot Bracket

Switch

Rod Alignment Couplers

Thread these couplers onto your air- or hydraulic-cylinder rod ends to put an end to misalignment problems. These couplers allow misalignment between your cylinder and the driven component. They reduce rod seal and bearing wear as well as prevent binding and erratic movement. Each has a male and female end.

Type 303 stainless steel offers good corrosion resistance.

Type 316 stainless steel offers excellent corrosion resistance. *Metric models* have a silicone dust cover, which keeps contaminants out to extend service life.

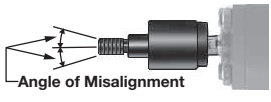

For additional information about these products, go to mcmaster.com and search for **6184KAC**.

Thread, Both Ends	O'all Dia.	O'all Lg.	Pull Force, lbs.		Each
Steel *(Unless Noted)*					
1° of Misalignment					
1/4"-28	7/8"	1 7/8"	4,000	6460T1	$32.41
3/8"-16	7/8"	1 7/8"	5,000	6460T2	32.41
1/2"-13	1 1/4"	2 3/4"	14,000	6460T3	34.49
1"-8	2 1/2"	4 9/16"	64,000	6460T4	92.78
1 3/8"-12	2 1/2"	4 9/16"	64,000	6460T5	104.84
2° of Misalignment					
5/16"-24	7/8"	2"	8,300	6184K41	30.13
3/8"-24	7/8"	2"	8,300	6184K42	30.13
7/16"-20	1 1/4"	2 3/4"	10,000	6184K43	36.07
1/2"-20	1 1/4"	2 3/4"	14,000	6184K44	36.07
5/8"-18	1 1/4"	2 3/4"	19,000	6184K45	38.64
3/4"-10	1 3/4"	3 1/2"	34,000	6184K51	43.69
3/4"-16	1 3/4"	3 1/2"	34,000	6184K46	49.91
7/8"-14	1 3/4"	3 1/2"	39,000	6184K47	49.91
1"-14	2 1/2"	4 7/16"	64,000	6184K48	91.15
1 1/4"-12	2 1/2"	4 7/16"	78,000	6184K49	95.25
5° of Misalignment					
5-40	0.47"	1.2"	110	7334K1■	13.16
6-40	0.47"	1.2"	140	7334K2■	16.45
10-32	0.63"	1.79"	250	7334K3■	19.60
1/4"-28	0.94"	1.88"	760	7334K4	27.72
5/16"-24	0.94"	1.88"	1,200	7334K5	40.60
3/8"-24	1.56"	2.25"	9,700	6418T1	55.22
7/16"-20	1.22"	2.58"	2,600	7334K6	48.79
1/2"-20	1.61"	2.86"	3,500	7334K7	48.79
5/8"-18	2.13"	3.44"	28,600	6418T2	64.54
3/4"-16	1.97"	4.04"	8,500	7334K8	65.03
7/8"-14	2.13"	3.44"	57,800	6418T3	88.01
1"-14	2.75"	4.69"	77,700	6418T4	99.40
1 1/4"-12	3.50"	6"	123,300	6418T5	138.65
1 1/2"-12	4.00"	6.63"	183,000	6418T6	196.19
1 3/4"-12	4.00"	6.63"	233,400	6418T7	196.19
1 7/8"-12	5.00"	8.63"	270,200	6418T8	274.21
2"-12	5.00"	8.63"	309,800	6418T9	274.21
2 1/4"-12	6.75"	9.88"	397,000	6418T11	568.16

■ Made of nickel-plated brass.

Thread, Both Ends	O'all Dia.	O'all Lg.	Pull Force, lbs.		Each
Type 303 Stainless Steel					
2° of Misalignment					
10-32	7/8"	2"	500	6732K11	$45.32
1/4"-28	7/8"	2"	1,100	6732K12	45.32
5/16"-24	7/8"	2"	2,800	6732K13	45.32
3/8"-24	7/8"	2"	2,800	6732K17	45.32
7/16"-20	1 1/4"	2 3/4"	3,400	6732K14	48.92
1/2"-20	1 1/4"	2 3/4"	4,700	6732K15	48.92
5/8"-18	1 1/4"	2 3/4"	5,200	6732K18	48.92
3/4"-10	1 3/4"	3 1/2"	11,500	6732K19	82.55
3/4"-16	1 3/4"	3 1/2"	11,500	6732K16	82.55
7/8"-14	1 3/4"	3 1/2"	11,700	6732K21	82.55
1"-14	2 1/2"	4 7/16"	17,600	6732K22	139.65
1 1/4"-12	2 1/2"	4 7/16"	19,500	6732K23	141.74
Type 316 Stainless Steel					
1° of Misalignment					
1/4"-28	1 1/8"	2 1/4"	1,000	1101K1	58.29
5/16"-24	1 1/8"	2 1/4"	1,800	1101K2	69.55
3/8"-24	1 1/8"	2 1/4"	2,900	1101K3	74.63
7/16"-20	1 1/4"	2 3/4"	4,000	1101K4	91.02
1/2"-20	1 1/4"	2 3/4"	5,500	1101K5	91.02
5/8"-18	1 1/4"	2 3/4"	7,000	1101K6	96.97
3/4"-16	1 3/4"	3 7/16"	10,300	1101K7	119.86
1"-14	2 1/2"	4 9/16"	15,000	1101K8	187.98
Metric Steel					
2° of Misalignment					
10 × 1.25 mm	22 mm	51 mm	5,300	6740K1	42.21
12 × 1.25 mm	32 mm	70 mm	12,000	6740K2	42.21
16 × 1.5 mm	32 mm	70 mm	14,000	6740K3	63.24
20 × 1.5 mm	44 mm	89 mm	29,000	6740K4	63.24
Metric Type 316 Stainless Steel					
5° of Misalignment					
4 × 0.7 mm	14.4 mm	26 mm	17	1101K21	55.00
5 × 0.8 mm	19 mm	34.5 mm	47	1101K22	65.55
8 × 1.25 mm	24.8 mm	43.9 mm	247	1101K23	82.40
10 × 1.25 mm	29 mm	49.5 mm	562	1101K24	88.00
14 × 1.5 mm	38.4 mm	60 mm	1,348	1101K25	102.05
18 × 1.5 mm	49.2 mm	74.5 mm	2,472	1101K26	125.45

Rodless Air Slides

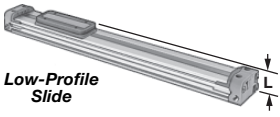

Low-Profile Slide

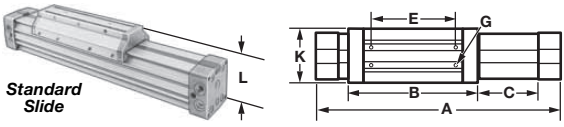

Standard Slide

Get a long stroke length in a much smaller footprint. These slides are similar in function to air cylinders but without a piston rod. Instead, the carriage is connected to an internal piston. All are switch ready and double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. Slides are repairable, simply use the replacement seal kits. **To Order:** For all slides, please specify stroke length in 1″ increments from the ranges listed.

Low-Profile Slides— An oval piston design gives these slides a lower height so they fit right into small spaces. Barrel is anodized aluminum. Carriage cover and end caps are plastic. Maximum pressure is 115 psi. Temperature range is 32° to 140° F.

Standard Slides— Mounting holes slide along the length of the carriage, allowing an adjustable range for (E). These slides also have adjustable cushions to decelerate the slide and absorb noise and vibration. Barrel and carriage are anodized aluminum; end caps are pressure die cast aluminum. Maximum pressure is 145 psi. Temperature range is –22° to +176° F.

Attachments— All are made of aluminum. *End lugs* are for general purpose mounting. *Support brackets* offer intermediate support for long slides and are better for heavier loads.

ⓘ For additional information about standard rodless air slides, go to mcmaster.com and search for **59675KAC**.

Bore Size	Force @ 100 psi, lbs.	Dynamic Load Cap., lbs.	Port Pipe Size, Female	Overall Lg. (A)	(B)	(C)	Min. (E)	Max. (E)	Mounting Holes (G)	(K)	(L)
Low-Profile Slides											
5/8″	31.7	9	10-32 UNF	4.41″+ Stroke Lg.	2.64″	0.59″+ Stroke Lg.	___	1.58″	8-32	1.57″	1.10″
1″	77.3	27	1/8″ NPT	5.98″+ Stroke Lg.	3.74″	0.75″+ Stroke Lg.	___	2.36″	10-32	2.20″	1.46″
Standard Slides											
1″	75	133	1/8″ NPT	7.86″+ Stroke Lg.	5.12″	0.92″+ Stroke Lg.	0.62″	3.68″	M5	2.05″	2.66″
1 1/4″	125	176	1/4″ NPT	9.44″+ Stroke Lg.	6.30″	1.02″+ Stroke Lg.	0.62″	5.11″	M5	2.52″	3.23″
1 1/2″	194	338	1/4″ NPT	11.82″+ Stroke Lg.	8.46″	1.00″+ Stroke Lg.	0.98″	7.23″	M6	3.11″	3.84″
2″	305	450	3/8″ NPT	14.18″+ Stroke Lg.	9.84″	1.58″+ Stroke Lg.	1.22″	8.37″	M8	3.62″	4.61″
2 1/2″	483	720	1/2″ NPT	16.92″+ Stroke Lg.	12.60″	1.18″+ Stroke Lg.	1.22″	10.89″	M8	4.33″	5.39″

Bore Size	1″-12″ Stroke Lengths Each	13″-24″ Stroke Lengths Each	25″-36″ Stroke Lengths Each	37″-48″ Stroke Lengths Each	49″-60″ Stroke Lengths Each	61″-72″ Stroke Lengths Each
Low-Profile Slides						
5/8″	2738T1 $282.41	2738T2 $367.88	2738T3 $430.45	___ ___	___ ___	___ ___
1″	2738T4 413.86	2738T5 497.70	2738T6 581.62	___ ___	___ ___	___ ___
Standard Slides						
1″	59675K11 305.81	59675K21 359.62	59675K31 434.61	59675K41 $471.83	59675K51 $526.65	59675K61 $596.01
1 1/4″	59675K12 430.93	59675K22 540.40	59675K32 657.02	59675K42 712.01	59675K52 812.63	59675K62 917.58
1 1/2″	59675K13 527.12	59675K23 646.34	59675K33 783.82	59675K43 865.06	59675K53 991.20	59675K63 1,064.81
2″	59675K14 731.25	59675K24 827.67	59675K34 1,018.97	59675K44 1,049.51	59675K54 1,208.59	59675K64 1,369.81
2 1/2″	59675K15 888.53	59675K25 1,023.99	59675K35 1,260.89	59675K45 1,297.98	59675K55 1,497.89	59675K65 1,697.19

Replacement Seal Kits, Attachments, and Reed Switches

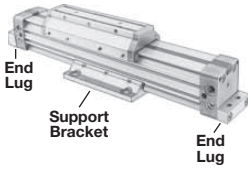

Switch

Fits Bore Size	Repl. Seal Kits Each	End Lugs Per Pair	Support Brackets Per Pair	Reed Switches Each
For Low-Profile Slides—*Reed Switch is 85-115 VAC/5-28 VDC.*				
5/8″	2738T123 $57.45	___ ___	2738T314 $27.58	2738T114 $27.35
1″	2738T456 76.35	___ ___	2738T614 30.18	2738K114 27.35
For Standard Slides—*Reed Switch is 10-240 VAC/10-170 VDC.*				
1″	59675K324★ 55.05	59675K83 $25.54	59675K93 30.11	59675K329 23.55
1 1/4″	59675K325★ 58.54	59675K84 25.69	59675K94 35.81	59675K329 23.55
1 1/2″	59675K326★ 60.42	59675K85 28.47	59675K95 43.50	59675K329 23.55
2″	59675K327★ 66.76	59675K86 33.68	59675K96 52.42	59675K329 23.55
2 1/2″	59675K328★ 77.90	59675K87 39.19	59675K97 64.29	59675K329 23.55

★ For seal and cover strips, please ask for 59675K999 and specify bore size and stroke length.

Guided Rodless Air Slides

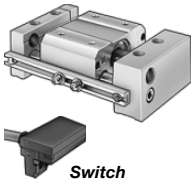

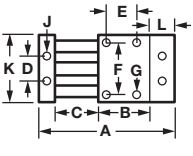

Switch

Similar to the Low-Profile Rodless Air Slides above, except these have an external guide to handle your heavier duty applications. Plus, the piston and carriage are magnetically coupled for low wear. *Note:* The push/pull force is limited by the magnetic holding power.

Slides are switch ready and double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They are repairable, simply use the replacement seal kits. Barrel is Type 303 stainless steel. Carriage and end caps are anodized aluminum. Maximum pressure is 101 psi. Temperature range is 14° to 140° F.

To Order: For slides, please specify stroke length in 1″ increments from the ranges listed.

Also Available: Replacement seal kits. Please ask for 1170K9 and specify slide bore size.

Bore Size	Magnetic Holding Power, lbs.	Dynamic Load Cap., lbs.	Port Pipe Size, Female	Overall Lg. (A)	(B)	(C)	(D)	(E)	(F)	Mounting Holes (G)	Mounting Holes (J)	(K)	(L)
5/8″	33.95	15	10-32 UNF	4.42″+ Stroke Lg.	2.36″	0.12″+ Stroke Lg.	1.13″	1.25″	2.00″	10-32 UNF	0.38″	2.95″	0.49″
1″	89.70	44	1/8″ NPT	5.49″+ Stroke Lg.	2.76″	0.08″+ Stroke Lg.	1.63″	1.50″	2.75″	1/4″-28	0.44″	3.94″	0.65″
1 1/4″	145.50	66	1/8″ NPT	6.36″+ Stroke Lg.	3.35″	0.16″+ Stroke Lg.	2.00″	1.63″	3.00″	5/16″-24	0.55″	4.80″	0.73″
1 1/2″	227.94	110	1/4″ NPT	6.92″+ Stroke Lg.	3.74″	0.19″+ Stroke Lg.	2.50″	2.50″	4.13″	5/16″-24	0.55″	5.71″	0.81″

Bore Size	1″-12″ Stroke Lengths Each	13″-24″ Stroke Lengths Each	25″-36″ Stroke Lengths Each
5/8″	1170K51 $342.25	1170K61 $341.13	___ ___
1″	1170K52 508.13	1170K62 513.72	1170K72 $579.60

Bore Size	1″-12″ Stroke Lengths Each	13″-24″ Stroke Lengths Each	25″-36″ Stroke Lengths Each
1 1/4″	1170K53 $697.11	1170K63 $725.70	1170K73 $825.34
1 1/2″	1170K54 997.74	1170K64 1,043.36	1170K74 1,183.79

24 VDC Reed Switch..... 1170K55 Each $22.75

Air Slides

Combine the convenience of a slide table with a built-in air cylinder. Also known as linear thrusters, these slides are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They are repairable, simply use the replacement seal kits. They are also switch ready.

Carriage and mounting plate are anodized aluminum alloy. Piston rod is steel. Maximum pressure is 150 psi. Temperature range is –20° to +180° F.

To Order: For air slides, please specify stroke length from those listed.

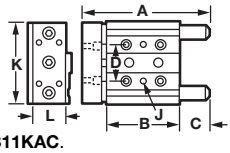

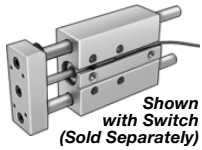

Shown with Switch (Sold Separately)

For additional information about these products, go to mcmaster.com and search for **6311KAC**.

Bore Size	Force @ 100 psi, lbs.	Dynamic Load Cap., lbs.	Port Pipe Size, Female	Overall Lg. (A)	(B)	(C)	(D)	Through Holes (J)	(K)	(L)
3/8″	9	1-2	10-32	2.07″+ (2×Stroke Lg.)	1.181″+ Stroke Lg.	0.447″+ Stroke Lg.	0.625″	0.09″	1.63″	0.61″
1/2″	19	2-6	10-32	2.50″+ (2×Stroke Lg.)	1.378″+ Stroke Lg.	0.558″+ Stroke Lg.	0.875″	0.13″	2.24″	0.83″
3/4″	40	6-12	1/8″ NPT	3.48″+ (2×Stroke Lg.)	1.875″+ Stroke Lg.	0.620″+ Stroke Lg.	1.250″	0.19″	3.00″	1.22″
1 1/4″	107	12-25	1/8″ NPT	4.15″+ (2×Stroke Lg.)	2.126″+ Stroke Lg.	0.827″+ Stroke Lg.	1.688″	0.25″	3.94″	1.73″

Bore Size	1/2″, 1″, or 1 1/2″ Stroke Lengths	Each	1″, 2″, or 3″ Stroke Lengths	Each	Replacement Seal Kits	Each	4.5-30 VDC Reed Switches	Each
3/8″	6311K51	$320.50	—	—	6311K34	$44.70	6311K33	$81.40
1/2″	6311K52	314.92	—	—	6311K35	48.45	6311K33	81.40
3/4″	—	—	6311K53	$334.64	6311K36	49.74	6311K33	81.40
1 1/4″	—	—	6311K54	435.14	6311K37	51.58	6311K33	81.40

Adjustable Air Slides

Fine tune your stroke length—adjustable shaft collars on the guide rods allow you to precisely adjust stroke. Plus, slides have heavy duty construction, making them more durable and capable of handling side loads. All are double acting—they have two compressed air ports: one to extend in the "push" direction and another to retract in the "pull" direction. They are nonrepairable, which means you simply replace them when necessary. They are switch ready. Carriage and tool plate are anodized aluminum. Piston rod is Type 303 stainless steel. Max. pressure is 250 psi. Temp. range is –10° to +165° F. **To Order:** For slides, please specify stroke length in 1″ increments from the ranges listed.

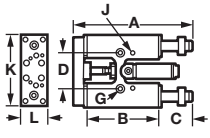

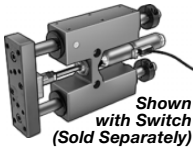

Shown with Switch (Sold Separately)

Bore Size	Force @ 100 psi, lbs.	Dynamic Load Cap., lbs.	Port Pipe Size, Female	Overall Lg. (A)	(B)	(C)	(D)	(G)	Through Holes (J)	(K)	(L)
9/16″	22	3	10-32	4.44″+ Stroke Lg.	3.00″	0.82″+ Stroke Lg.	1.25″	1/4″-28	0.125″	2.81″	0.95″
3/4″	39	14	1/8″ NPT	5.68″+ Stroke Lg.	3.97″	0.97″+ Stroke Lg.	1.50″	5/16″-24	0.188″	4.06″	1.19″
1 1/16″	81	20	1/8″ NPT	6.31″+ Stroke Lg.	4.45″	0.99″+ Stroke Lg.	1.87″	3/8″-24	0.188″	4.44″	1.58″
1 1/2″	161	29	1/8″ NPT	7.16″+ Stroke Lg.	4.95″	1.16″+ Stroke Lg.	2.25″	3/8″-24	0.188″	5.18″	1.93″

Bore Size	1″-4″ Stroke Lengths	Each	5″-8″ Stroke Lengths	Each	9″-12″ Stroke Lengths	Each	5-125 VAC/VDC Reed Switches	Each
9/16″	6350T11	$417.27	6350T12	$442.23	6350T13	$467.20	6350T15	$77.11
3/4″	6350T21	477.12	6350T22	504.02	6350T23	530.84	6350T25	79.62
1 1/16″	6350T31	532.37	6350T32	560.29	6350T33	588.40	6350T35	81.02
1 1/2″	6350T41	642.82	6350T42	680.40	6350T43	680.37	6350T45	81.02

Compact Rotary Air Actuators

Their small size and low torque output make these actuators perfect for turning shafts at a fixed rotation in light duty applications. Actuators have a vane design—air pressure pushes the internal vane, which is connected to and rotates the shaft. The shaft does not have a keyway. Unlike indexing tables, actuators are double-acting—they have two compressed air ports: one to rotate in a clockwise direction and another to rotate in a counterclockwise direction. They are repairable, simply use the replacement seal kits.

Body is aluminum alloy. Port pipe size is 10-32 UNF female, unless noted. Maximum pressure is 100 psi, unless noted. Temperature range is 40° to 140° F.

***Reed Switch Kits*—**Use these kits to make these actuators switch ready. Kits include two 100 VAC/24 VDC reed switches, an external magnet, and a bracket.

To Order: For actuators, please specify 90°, 180°, or 270° shaft rotation.

Also Available: Repl. seal kits. Please ask for 6508K1 and specify actuator OD.

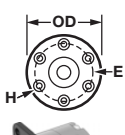

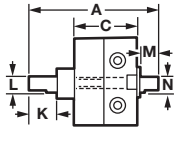

Flange Bracket

Switch Kit

Torque, in.-lbs. at 70 psi	(A)	OD	(C)	(E)	(H)	SHAFT Front Lg. (K)	Front Dia. (L)	Rear Lg. (M)	Rear Dia. (N)	Actuators	Each	Flange Brackets	Each	Reed Switch Kits	Each
1.0	1.45″	1.14″	0.59″	0.95″	5-40	0.43″	5/32″	0.27″	5/32″	6508K11★	$106.38	6508K42	$9.16	6508K51	$71.96
2.7	1.85″	1.34″	0.79″	1.14″	5-40	0.55″	3/16″	0.29″	3/16″	6508K12★	109.45	6508K43	9.16	6508K52	72.59
6.1	2.32″	1.65″	1.14″	1.42″	8-32	0.61″	15/64″	0.33″	15/64″	6508K13	112.65	6508K44	10.82	6508K53	87.21
15.6	2.95″	1.97″	1.57″	1.69″	10-24	0.67″	5/16″	0.43″	5/16″	6508K14●	139.18	6508K45	10.82	6508K54	88.59

★ Port size for 270° shaft rotation is M3. ● Maximum pressure is 140 psi.

Easy-Mount Compact Rotary Air Actuators

Similar to the Compact Rotary Air Actuators above, except these have mounting holes on all four sides for easy top, bottom, and side mounting. Actuators have a rack-and-pinion design for precise positioning and no backlash. Unlike indexing tables, they are double-acting—they have two compressed air ports: one to rotate in a clockwise direction and another to rotate in a counterclockwise direction. Actuators are nonrepairable, which means you simply replace them when necessary. They are switch ready. Body is aluminum. Port pipe size is M3×0.5 female. Maximum pressure is 100 psi. Temperature range is 32° to 140° F. **To Order:** For actuators, please specify 90°, 100°, 180°, or 190° shaft rotation.

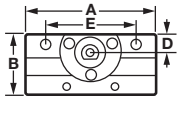

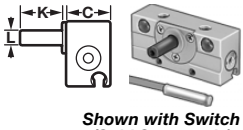

Shown with Switch (Sold Separately)

Torque, in.-lbs. at 100 psi	(A) For 90° & 100° Rotation, mm	(A) For 180° & 190° Rotation, mm	(B), mm	(C), mm	(D), mm	(E), mm	Shaft Lg. (K), mm	Shaft Dia. (L), mm	Actuators	Each	5-12 VDC Solid State NPN Switches	Each
0.5	43	54	19.5	13.5	5.5	30	12.5	5	1183K11	$136.87	1183K31	$40.02
1	48	61	23.5	16.5	7.5	35	13.5	6	1183K12	146.04	1183K31	40.02

Adjustable-Angle Rotary Air Actuators

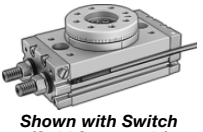

Shown with Switch (Sold Separately)

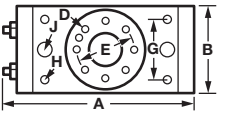

Also known as rotary tables, these actuators adjust from 0° to 190° to rotate clockwise or counterclockwise in small increments. A rotation indicator is included to ensure high accuracy. Actuators have a rack-and-pinion design for precise positioning and no backlash. Mounting holes on the base mean you won't need a shaft coupling. Unlike indexing tables, these actuators are double-acting—they have two compressed air ports: one to rotate in a clockwise direction and another to rotate in a counterclockwise direction. They are repairable, simply use the replacement seal kits. They are also switch ready.

Body is aluminum alloy. Max. pressure is 145 psi. Temperature range is 32° to 140° F.

Also Available: Repl. seal kits. Please ask for 1299K1 and specify actuator part number.

Torque, in.-lbs. @ 70 psi	Port Pipe Size, Female	(A)	(B)	O'all Ht.	Mounting Holes (D)	Bolt Hole Circle (E)	(G)	Mounting Holes (H)	Mounting Holes (J)		Each
7.9	10-32	4.32″	1.97″	1.85″	10-32	1.26″	1.06″	10-32	0.27″	1299K31	$347.30
16.3	10-32	5.59″	2.56″	2.13″	¼″-28	1.69″	1.34″	¼″-28	0.34″	1299K32	393.31
24.2	⅛″ NPT	5.98″	2.76″	2.24″	¼″-28	1.89″	1.46″	¼″-28	0.34″	1299K33	430.21
41.1	⅛″ NPT	7.22″	3.15″	2.60″	5⁄16″-24	2.17″	1.97″	5⁄16″-24	0.41″	1299K34	489.47
60.2	⅛″ NPT	8.04″	3.62″	2.95″	5⁄16″-24	2.64″	2.24″	5⁄16″-24	0.38″	1299K35	514.98
84	⅛″ NPT	8.79″	4.02″	3.39″	7⁄16″-20	3.03″	2.60″	5⁄16″-24	0.38″	1299K36	622.87
175.2	⅛″ NPT	11.03″	4.72″	4.17″	½″-20	3.54″	3.15″	½″-20	0.50″	1299K37	828.27

100 VAC/5, 12, 24 VDC Reed Switch	1299K21	Each	$17.56
100 VAC/24 VDC Reed Switch with LED	1299K22	Each	$21.88

Heavy Duty Rotary Air Actuators

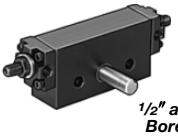

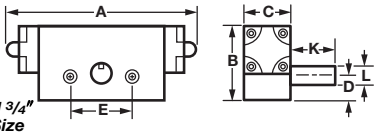

½″ and ¾″ Bore Size

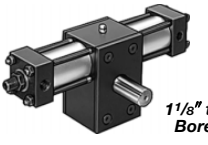

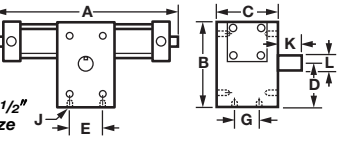

1⅛″ to 2½″ Bore Size

Heavy duty rack-and-pinion gears and a keyed shaft guarantee exceptional torque output, precise positioning, and good durability. Shafts turn at fixed 90°, 180°, 270°, or 360° rotation (unless noted) and have standard ANSI keyways (see page 1174 for keyway dimensions). An adjustment screw allows you to reduce the fixed angle by as much as 30%. Unlike indexing tables, actuators are double-acting—they have two compressed air ports: one to rotate in a clockwise direction and another to rotate in a counterclockwise direction. They are repairable, simply use the repair kits. They are not switch ready.

Body is anodized aluminum. Maximum pressure is 150 psi. Temperature range is –20° to +200° F.

To Order: For actuators, please specify shaft rotation: 90°, 180°, 270°, or 360° (unless noted).

Also Available: Repair kits. Please ask for 60165K1 and specify actuator bore size.

ⓘ For additional information about these products, go to mcmaster.com and search for **60165KAC**.

Bore Size	Torque, in.-lbs. @ 100 psi	Port Pipe Size, Female	(A) For 90° Rotation	(A) For 180° Rotation	(A) For 270° Rotation	(A) For 360° Rotation	(B)	(C)	(D)	(E)	(G)	(J)	Shaft Lg. (K)	Shaft Dia. (L)		Each
½″	4.9	10-32 UNF	4.63″	4.63″	—	—	1.5″	1.0″	0.6″	2.0″	—	—	1.06″	0.375″	60165K26 ♦	$274.52
¾″	16.5	⅛″ NPT	6.51″	6.51″	—	—	2.0″	1.3″	0.7″	2.0″	—	—	1.25″	0.5″	60165K21 ♦	307.04
1⅛″	62	⅛″ NPT	7.95″	9.91″	11.87″	13.83″	3.3″	2.3″	1.7″	1.5″	1.0″	¼″-20	0.88″	0.5″	60165K22	384.92
1½″	155	¼″ NPT	11.27″	14.02″	16.76″	19.51″	4.4″	2.7″	2.2″	1.5″	1.5″	5⁄16″-24	1.75″	0.875″	60165K23	526.56
2″	440	¼″ NPT	14.77″	19.17″	23.57″	27.97″	6.6″	3.7″	3.3″	2.0″	1.5″	½″-20	2.03″	1.125″	60165K24	702.74
2½″	687	¼″ NPT	15.02″	19.42″	23.82″	28.22″	6.6″	3.7″	3.3″	2.0″	1.5″	½″-20	2.03″	1.125″	60165K25	1,151.98

♦ Available with 90° or 180° shaft rotation only.

Air-Powered Grippers

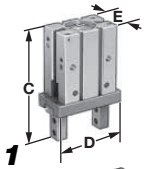

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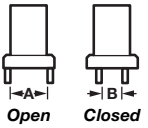

Open *Closed*

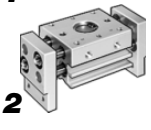

2

3

5791K11

4

Great for pick-and-place as well as component assembly jobs. All have an aluminum body and grasp components when grippers are in the closed position. *Note:* Choose a gripper with a holding force at least ten times your component's weight.

***Single-Acting Grippers with Spring Return*—**Require air in one port for the "closed" position. When air is exhausted, an internal spring returns them to the "open" position. They are normally open.

***Double-Acting Grippers*—**Require air in one port for the "closed" position and air in the second port for the "open" position.

(1) Parallel grippers allow you to grip light loads in narrow spots. Fingers are stainless steel. *Double-acting models* also grasp items in the open position. ***(2) Parallel wide-jaw grippers*** have rugged rack-and-pinion gear construction for extended gripping width with good holding force. Fingers are aluminum. ***(3) Parallel heavy duty grippers*** have a unique double-wedge design for excellent rigidity. Fingers are tool steel. *Double-acting models* also grasp items in the open position. ***(4) Angular grippers*** have an opening angle from +30° to –10°. Fingers are carbon steel.

ⓘ For additional information about these products, go to mcmaster.com and search for **6220KAC**.

Open Width (A)	Closed Width (B)	(C)	(D)	(E)	Port Pipe Size, Female	Wt., lbs.	Single Acting w/Spring Return: Closed Holding Force, lbs. @ 75 psi		Each	Double Acting: Holding Force, lbs. @ 75 psi: Open	Closed		Each
(1) Parallel Grippers*—*Maximum pressure is 102 psi. Temperature Range is 14° to 140° F.													
0.598″	0.441″	2.24″	1.14″	0.65″	M3	0.121	1.59	6220K311	$243.47	2.47	3.82	6220K11	$243.47
0.823″	0.587″	2.65″	1½″	0.93″	M5	0.253	6.06	6220K312	250.41	7.64	10.11	6220K12	250.41
1.035″	0.642″	3.34″	1.97″	1.09″	M5	0.529	7.41	6220K313	343.61	9.44	14.83	6220K13	343.61
(2) Parallel Wide-Jaw Grippers*—*Maximum pressure is 87 psi. Temperature Range is 14° to 140° F.													
3.858″	2.677″	2.28″	5.04″	2.17″	M5	1.29	—	—	—	—	10.79	6743K2	415.92
5.906″	3.937″	3.19″	7.72″	2.99″	M5	3.725	—	—	—	—	29.23	6743K3	569.39
8.661″	5.906″	3.94″	10.71″	3.23″	⅛″ BSPT	6.404	—	—	—	—	57.33	6743K4	753.63
(3) Parallel Heavy Duty Grippers*—*Maximum pressure is 100 psi. Temperature Range is –30° to 180° F.													
0.63″	0.47″	1.437″	1⅛″	1″	10-32	0.18	—	—	—	21.00	26.00	5791K11	441.55
2.5″	2.13″	1.402″	2″	1½″	10-32	0.56	—	—	—	30.00	25.00	5791K13	577.51
(4) Angular Grippers*—*Maximum pressure is 87 psi. Temperature Range is 14° to 140° F.													
30°	–10°	2.06″	0.91″	0.65″	M3	0.086	0.62	6220K51	155.69	—	0.885	6220K41	155.69
30°	–10°	2.46″	1.20″	0.93″	M5	0.203	2.60	6220K52	162.33	—	3.45	6220K42	162.33
30°	–10°	3.10″	1.65″	1.09″	M5	0.403	4.55	6220K53	195.28	—	6.07	6220K43	195.28
30°	–10°	3.62″	2.05″	1.32″	M5	0.697	9.75	6220K54	217.66	—	12.00	6220K44	217.66

About Vacuum Cups

Vacuum cups grip objects by using a pump or vacuum generator to draw air from under the cups to create a vacuum seal between the cups and your object. To release the object, the cups have a shut-off to break the vacuum seal.

Load capacities are determined by vertically lifting an object (horizontally lifting an object for Rubber and Oval Vacuum Cups) from a flat, horizontal position and represent limits under ideal conditions. They are calculated by using the inches of mercury (″ Hg) scale and typically range from 5″ to 29″ Hg. The higher the number, the stronger the hold. Variations in surface texture and altitude as well as the presence of oils or fluids may affect the ratings.

Note: Never exceed load capacities or use for overhead lifting.

Vinyl Vacuum Cups

Great for replacing worn-out cups from most vacuum systems, these cups are for use with your existing fittings. The cups have an unthreaded hole you press onto your fitting or they have an aluminum 3/8″ NPT female threaded insert that acts as a mounting hole and vacuum connection (see listing).

All of these cups are made of high-quality vinyl. They have excellent wear resistance but low oil resistance. Maximum temperature is 120° F. Load capacity is based on a maximum vacuum of 18″ Hg. Color is blue.

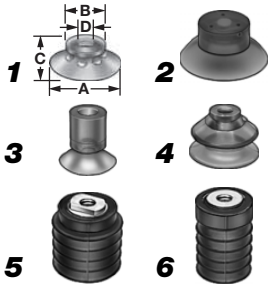

	Cup Dia. (A)	Neck Dia. (B)	O'all Ht. (C)	Mounting Hole (D)	Load Cap., lbs.		Each
1	0.71″	0.56″	0.43″	0.21″	0.88	7275A61	$3.72
1	1.00″	0.56″	0.34″	0.24″	1.74	7275A34	3.92
1	1.25″	0.87″	0.43″	0.31″	2.6	7275A39	4.58
2	1.21″	0.78″	0.75″	0.25″●	2.54	7275A62	3.97
2	1.50″	0.87″	0.81″	0.25″	3.9	7275A44	4.66
2	1.78″	1.26″	0.79″	0.56″	5.5	7275A63	4.76
2	1.93″	1.37″	0.75″	0.56″	6.47	7275A47	4.87
2	2.00″	1.56″	0.65″	0.25″	6.94	7275A49	5.09
2	3.25″	2.23″	1.15″	3/8″ NPT	17.0	7275A57	13.67
2	4.25″	2.75″	1.18″	3/8″ NPT	29.0	7275A58	14.31
3	0.12″	0.11″	0.46″	0.05″	0.01	7275A24	2.93
3	0.19″	0.16″	0.47″	0.06″	0.02	7275A27	3.07
3	0.25″	0.16″	0.48″	0.06″	0.05	7275A28	3.21
3	0.39″	0.20″	0.48″	0.13″	0.08	7275A14	3.30
3	0.75″	0.63″	1.19″	0.38″	1.03	7275A64	5.07
3	1.03″	0.47″	0.69″	0.23″	1.74	7275A36	4.14
3	1.04″	0.67″	1.00″	0.38″	1.74	7275A35	4.50
3	1.25″	0.61″	1.00″	0.41″	2.71	7275A38	4.00
3	1.70″	0.72″	0.72″	0.38″	4.0	7275A59	4.19
3	1.98″	0.73″	1.05″	0.38″	6.81	7275A48	5.45
3	2.47″	1.03″	1.91″	0.62″	10.59	7275A55	6.36
3	3.09″	1.16″	1.31″	0.48″	16.0	7275A56	8.38
4	0.18″	0.12″	0.46″	0.06″	0.01	7275A22	4.56
4	0.25″	0.14″	0.45″	0.06″	0.05	7275A29	3.60
4	0.41″	0.20″	0.55″	0.06″	0.29	7275A65	3.82
4	0.52″	0.31″	0.59″	0.15″	0.4	7275A26	3.54
4	0.75″	0.51″	0.71″	0.26″	1.03	7275A66	3.54
4	1.09″	0.50″	0.80″	0.14″	1.7	7275A23	4.15
4	1.20″	0.55″	0.88″	0.27″	2.5	7275A67	4.22
4	1.38″	0.53″	0.91″	0.28″	3.0	7275A43	4.22
5	2.75″	2.26″	2.84″	3/8″ NPT	11.0	7275A17	16.07
5	3.75″	2.75″	2.00″	3/8″ NPT	21.0	7275A19	19.34
5	4.50″	3.50″	2.50″	3/8″ NPT	35.0	7275A21	17.58
6	2.21″	2.21″	3.46″	3/8″ NPT	7.0	7275A16	17.67
6	3.31″	2.42″	2.75″	3/8″ NPT	16.0	7275A18	18.04

● Has an untreated aluminum insert.

Rubber Vacuum Cups

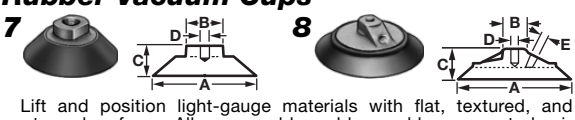

Lift and position light-gauge materials with flat, textured, and contoured surfaces. All cups are blue rubber and have a cast-aluminum female fitting. Maximum temperature is 230° F. Load capacity is based on a maximum vacuum of 24″ Hg.

Style 7 have one through-hole opening (D) for both mounting and vacuum connection. ***Style 8*** have one blind-hole opening (D) for mounting and one through-hole opening (E) for vacuum connection.

	Cup Dia. (A)	Neck Dia. (B)	O'all Ht. (C)	Mounting Hole (D)	Vacuum Conn. (E)	Load Cap., lbs.		Each
7	2.5″	0.98″	1 9/64″	1/4″ NPT	———	15	54995A41	$16.55
7	3.5″	0.98″	1 3/8″	3/8″ NPT	———	30	54995A42	18.85
7	4.5″	1.26″	1 39/64″	3/8″ NPT	———	55	54995A43	21.22
8	5.6″	1.25″	1 7/8″	1/2″-13 UNC	1/4″ NPT	75	54995A61	48.45
8	6.3″	1.25″	2″	1/2″-13 UNC	1/4″ NPT	100	54995A62	67.36
8	7.4″	1.50″	2 3/4″	5/8″-11 UNC	3/8″ NPT	150	54995A63	102.82
8	9.75″	2.75″	2 37/64″	3/4″-10 UNC	3/8″ NPT	250	54995A64	128.86

Soft-Touch High-Strength Vacuum Cups

Offering flexibility as well as strength, these cups consist of two grades of nonmarking polyurethane bonded together. Their soft yellow lip easily adjusts to surface contours, and their harder, blue-green body provides rigidity.

All cups have an aluminum NPSF (National Pipe Straight Fuel; a variation of Dryseal) female fitting. Maximum temperature is 122° F. Load capacity is based on a maximum vacuum of 27″ Hg.

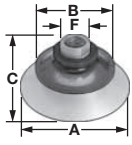

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10

Cup Dia. (A)	Neck Dia. (B)	O'all Ht. (C)	Thread Size (F)	Load Cap., lbs.		Each
(9) 1 1/2 Bellows Style						
3.11″	3″	1.98″	3/8″	45	6049A14	$65.94
3.31″	1 3/8″	1.73″	3/8″	44	6049A15	29.71
(10) 2 1/2 Bellows Style						
1.46″	13/16″	1.37″	1/8″	6	6049A11	27.35
2.09″	1 3/32″	1.89″	1/8″	17	6049A13	31.99
3.05″	1 3/4″	2.41″	1/8″	31	6049A12	44.57

Oval Vacuum Cups

Picking up long, thin objects is made easy with these oval vacuum cups. ***Flexible cups*** are the choice for curved, rough surfaces. ***Rigid cups*** work best with flat, smooth surfaces.

Rubber— Made of wear- and oil-resistant rubber, these cups have three zinc fittings. The center vacuum-line fitting has 3/8″ NPT female threads; two outside mounting fittings have 5/16″ UNC female threads. Max. temp. is 225° F. Load capacity is based on horizontal use and a maximum vacuum of 27″ Hg. Color is black.

Polyurethane— Made of nonmarking polyurethane, these cups provide excellent elasticity and wear resistance. They have an aluminum vacuum-line fitting with 3/8″ NPSF (National Pipe Straight Fuel; a variation of Dryseal) female threads and two 0.118″ dia. outside mounting holes. Max. temp. is 122° F. Load capacity is based on a maximum vacuum of 27″ Hg. Color is red for the flexible cup; green for the rigid cup.

Cup Size, Lg. × Wd. × Ht.	Load Cap., lbs.	*Flexible Cups*	Each	*Rigid Cups*	Each
Rubber					
5 7/16″ × 2 13/32″ × 1 3/16″	117	6174A1	$27.97	6174A2	$27.97
Polyurethane					
3 11/16″ × 1 15/32″ × 7/8″	38	6174A41	20.72	6174A42	20.72

Irregular-Surface Vacuum Cups

The soft foam rubber ring in these cups forms a seal that adjusts to curves and contours for gripping corrugated material, cardboard, packaged food, rimmed cans, bags of seed, and more. Cup body is acetal with a threaded mounting hole. Maximum temperature is 212° F. Load capacity is based on a maximum vacuum of 27″ Hg. Color is black.

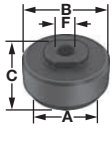

Cup Dia. (A)	Neck Dia. (B)	O'all Ht. (C)	Thread Size (F)	Load Cap., lbs.		Each
2.36″	2.68″	1.85″	1/2″ BSPP	22.5	4482A11	$70.55
3.15″	3.46″	1.89″	1/2″ BSPP	49.5	4482A12	91.70
4.61″	4.92″	1.93″	3/4″ BSPP	134.9	4482A13	132.73

BSPP—British Standard Pipe Parallel.

All-In-One Vacuum Grippers

Avoid the problems associated with a centrally located vacuum pump and remote cups. These compact grippers have a vacuum pump, yellow-green polyurethane cup, and an aluminum housing all in one unit. They connect to any compressed air source and operate at 45 psi. Air consumption is 1 scfm. Overall length is 4.37″. Max. temperature is 122° F. Load capacity is based on a maximum vacuum of 27″ Hg. Mounting fasteners included.

Flat

Cup Dia.	Cup Ht.	Overall Size, Wd. × Ht.	Load Cap., lbs.	*Assemblies*	Each	*Repl. Cups*	Each
1 1/2 Bellows Style							
3.11″	1.53″	3.31″×3.77″	28.8	4560A21	$189.08	4560A64	$49.56
Flat Style							
1.97″	0.93″	1.97″×3.17″	11.2	4560A31	170.03	4560A65	30.50
3.03″	0.57″	3.03″×2.81″	32.4	4560A41	170.81	4560A66	31.87

Vacuum Cup Assemblies

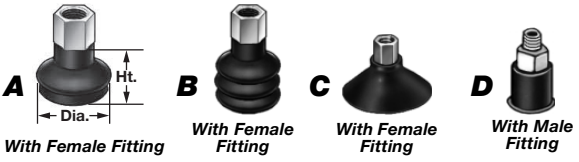

With Female Fitting — *With Female Fitting* — *With Female Fitting* — *With Male Fitting*

Choose from synthetic rubber and silicone cups with male or female fittings, unless noted. Load capacity is based on a maximum vacuum of 24″ Hg (except for 5427A62, 3766A62, and universal-style cups, which are 27″ Hg). For information on load capacities, see page 1009.

Rubber offers good oil and abrasion resistance. Maximum temperature is 230° F. Color is black. ***Silicone*** has a maximum temperature of 600° F and is translucent clear (except for 3766A62 and universal-style cups, which have a maximum temperature of 392° F and are red).

(A&B) Bellows-style cups compensate for variations in level and vertical movement. Good for curved surfaces. The 2½ bellows cups provide more flexibility than the 1½ bellows cups.

(C) Flat-style cups are for flat surfaces where movement is minimal.

(D) Universal-style cups have a compact design that's suitable for flat as well as slightly curved surfaces.

To Order: For all vacuum cup assemblies, please specify male or female fitting (except for 10-32 UNF and universal-style cups, which are male only) and fitting size from those available below.

Also Available: Replacement vacuum cups. Please ask for 5427A88 for rubber vacuum cups or 5427A99 for silicone vacuum cups and specify vacuum cup assembly part number.

Cup Dia.	Cup Ht.	Available Fittings, NPT	Load Cap., lbs.	With Rubber Cups	Each	With Silicone Cups	Each
(A) 1½ Bellows Style							
0.45″	0.63″	10-32 UNF, ⅛″	0.54	5427A819	$6.08	3766A21	$7.00
0.52″	0.62″	10-32 UNF, ⅛″	0.8	5427A818	6.08	3766A18	7.29
0.64″	0.75″	10-32 UNF, ⅛″	1.1	5427A821	6.08	3766A23	7.29
0.71″	0.62″	10-32 UNF, ⅛″	1.7	5427A836	6.42	3766A5	8.17
0.89″	0.77″	10-32 UNF, ⅛″	1.9	5427A822	6.42	3766A25	8.17
0.93″	0.91″	10-32 UNF, ⅛″	2.5	5427A811	7.05	3766A11	8.75
1.32″	1.10″	⅛″, ¼″	4.3	5427A823	10.22	3766A27	12.55
1.67″	1.10″	⅛″, ¼″	7	5427A824	11.52	3766A29	14.31
2.07″	1.34″	⅛″, ¼″	13.3	5427A825	14.46	3766A32	18.15
3.07″	1.85″	⅛″, ¼″, ⅜″, ½″	28	5427A826	27.56	3766A34	41.07
(B) 2½ Bellows Style							
0.22″	0.53″	10-32 UNF, ⅛″	0.15	5427A841	6.79	3766A77	7.26
0.28″	0.56″	10-32 UNF, ⅛″	0.2	5427A812	6.44	3766A12	7.29
0.35″	0.59″	10-32 UNF, ⅛″	0.34	5427A813	6.42	3766A13	7.00
0.59″	0.92″	10-32 UNF, ⅛″	0.7	5427A814	6.73	3766A14	7.29
0.72″	0.90″	10-32 UNF, ⅛″	1.37	5427A815	6.98	3766A15	7.57
0.79″	0.91″	10-32 UNF, ⅛″	1.44	5427A816	7.36	3766A16	7.86
0.98″	1.34″	10-32 UNF, ⅛″	2	5427A817	7.70	3766A17	9.34
1.26″	1.48″	⅛″, ¼″	3.8	5427A827	11.18	3766A36	13.07
1.69″	1.81″	⅛″, ¼″	5.5	5427A828	13.14	3766A38	14.89
2.36″	2.13″	⅛″, ¼″	13	5427A829	15.80	3766A41	19.33
3.46″	3.35″	⅛″, ¼″, ⅜″, ½″	36	5427A831	36.60	3766A43	49.42
(C) Flat Style							
0.40″	0.42″	10-32 UNF, ⅛″	0.6	5427A832	5.15	3766A45	5.53
0.79″	0.45″	10-32 UNF, ⅛″	2.2	5427A834	5.46	3766A47	5.83
0.87″	0.37″	♦	4.27	5427A62	10.43	3766A62	12.08
1.42″	0.79″	⅛″, ¼″	7	5427A835	10.28	3766A49	10.47
2.05″	0.87″	⅛″, ¼″	15.1	5427A837	10.54	3766A58	13.13
2.94″	1.24″	⅛″, ¼″, ⅜″, ½″	36.2	5427A838	22.48	3766A65	31.22
3.74″	1.46″	⅛″, ¼″, ⅜″, ½″	42.3	5427A839	24.67	3766A67	35.35
(D) Universal Style							
0.28″	0.28″	3/16″ UNF	0.56	5427A71	4.38	3766A71	7.16
0.35″	0.28″	3/16″ UNF	0.88	5427A72	4.38	3766A72	7.56
0.43″	0.41″	3/16″ UNF	1.55	5427A73	4.72	3766A73	7.49

♦ Dual thread: ⅛″ BSPP male outside; 3/16″ UNF female inside.

Squeeze-Vac Vacuum Pickup Tools

Simply squeeze and release the finger-size bulb to create a vacuum to lift glass slides, optics, and small parts. After positioning your parts, squeeze the bulb again to release. Sets include a rubber bulb and seven metal tips with static-dissipative (ESD safe) vacuum cups for flat, nonporous surfaces. Furnished in a plastic box.

Buna-N Cups— You'll get five straight tips with 3/32″, ⅛″, ¼″, ⅜″, and ½″ dia. cups as well as two bent tips with ⅛″ and ¼″ dia. cups.

Silicone Cups— You'll get five straight tips with 3/32″, ⅛″, 3/16″, ¼″, and ⅜″ dia. cups as well as two bent tips with ⅛″ and 3/16″ dia. cups.

Cup Material	Max. Temp.	O'all Lg.	Color		Per Set
Buna-N	248° F	4¾″	Black	54195A49	$24.57
Silicone	600° F	2⅞″	Clear	54195A52	51.66

Push-Button Vacuum Pickup Tool

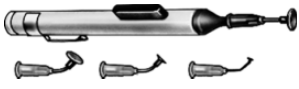

Just press and release the button on this pen-sized tool to create a vacuum to lift a variety of small parts. After positioning your parts, press the button again to release. This tool lifts up to 5 oz. at 5″ Hg using the included ⅜″ dia. cup. Great for laboratory work and small-parts assembly jobs.

Set includes a 5¾″ long tool with brushed anodized aluminum body and four metal tips with silicone vacuum cups for flat, nonporous surfaces. You'll get one straight tip with a ¼″ dia. cup and three bent tips with ⅛″, ¼″, and ⅜″ dia. cups. A storage compartment in the tool holds the tips. Maximum temperature is 480° F. Tool body and cups are blue.

3718A71 ..... **Per Set** $52.15

Replacement Tips with Cups

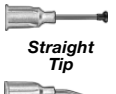

Straight Tip

Bent Tip

For use with flat, nonporous surfaces. Tips are metal.
Buna-N Cups— Maximum temperature is 248° F.
Silicone Cups— Maximum temperature is 480° F.
To Order: Please specify Buna-N or silicone cups.

Cup Dia.	Straight Tips	Each	Bent Tips	Each
⅛″	3718A77	$3.19	3718A72	$3.19
¼″	3718A73	3.19	3718A74	3.19
⅜″	3718A75	3.19	3718A76	3.19

All-In-One Vacuum Pickup System

Pick up and release parts with fingertip control. This continuous-vacuum system is quiet and static dissipative (ESD safe). It will lift up to 8 oz. at 5″ Hg. Just press the button on the probe to release. System includes an aluminum pen-shaped probe, 4 ft. of coiled vacuum hose, and nine metal tips with black Buna-N rubber vacuum cups (four straight tips with ⅛″, ¼″, ⅜″, and ½″ dia. cups; five bent tips with 3/32″, ⅛″, 3/16″, ¼″, and ⅜″ dia. cups). It operates on 110 VAC, 60 Hz. Overall size is 6″ Lg. × 2½″ Wd. × 3″ Ht. Max. temp. for cups is 248° F. For use with flat, nonporous surfaces.

5670A2 ..... **Each** $182.91

9-Piece Replacement Tip with Cup Set— Contains one of each tip with cup listed above.

5670A66 ..... **Per Set** $24.68

Also Available: Replacement probe and tips with vacuum cups. For probe, please ask for 5670A5. For tips with vacuum cup, please ask for 5670A8 and specify straight or bent tip, and cup size.

Accessories for Vacuum Cup Assemblies

Swivel Connectors

Attach to a vacuum cup (not included) for 360° rotation with up to a 45° angle. Connectors have one male end and one female end with the same size NPT threads.

Thread Size	O'all Lg.		Each
¼″	2 23/64″	6176A4	$60.36
⅜″	2 23/64″	6176A6	62.68

Spring Plungers

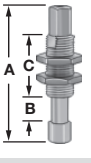

Use with your compressed air source and a vacuum cup (not included) for precise horizontal handling. Plungers have an internal spring and include two mounting washers. Threaded end connectors are M5 female with ⅛″ BSPP male adapters.

Extended Lg. (A)	Stroke Lg. (B)	Mounting Thread Lg. (C)		Each
1 21/32″	9/32″	23/32″	5306A1	$45.68
1 15/16″	3/8″	7/8″	5306A2	45.68
2⅞″	25/32″	1 9/16″	5306A3	55.94
4 11/16″	1 9/16″	2 17/32″	5306A4	55.94

Mini Vacuum Generators

(Shown w/Cup)

Also known as venturi devices, connect your compressed air source to create a vacuum generating system. Vacuum cup is not included. Max. vacuum given is for the generator without a cup attached.

Max. Vacuum	Air Consumption @ Max. Vacuum, scfm	O'all Lg.	Air Connection, BSPP Female	VACUUM CUP CONNECTION ⅛″ BSPP Female	Each	¼″ BSPP Female	Each
26.5″ Hg	0.42	1 3/8″	¼″	5293A4	$29.90	5293A7	$29.90
26.5″ Hg	0.74	1 3/8″	¼″	5293A5	29.90	5293A8	29.90
26.5″ Hg	1.26	1 3/8″	¼″	5293A6	29.90	5293A9	29.90

Hydraulic Pressure Regulators

Use these regulators to throttle down pressure in your hydraulic pressure line. All have a cast iron body and 1/4″ gauge port (gauge not included). Maximum temperature is 150°F. Maximum pressure is 3,000 psi. Ports are NPT female.

Port Pipe Size	Max. Flow, gpm	Regulating Range, psi	O'all Size, Lg. × Wd. × Ht.		Each
3/8″	13.2	100-1,000	6.1″ × 3.2″ × 5.8″	9474T11	$191.21
3/8″	13.2	500-2,000	6.1″ × 3.2″ × 5.8″	9474T12	191.21
3/8″	13.2	1,000-3,000	6.1″ × 3.2″ × 5.8″	9474T13	191.21
3/4″	33	100-1,000	7.1″ × 3.7″ × 5.9″	9474T21	276.19
3/4″	33	500-2,000	7.1″ × 3.7″ × 5.9″	9474T22	276.19
3/4″	33	1,000-3,000	7.1″ × 3.7″ × 5.9″	9474T23	276.19

Hydraulic Flow Control Valves

Just turn the dial to control the flow of hydraulic fluid equally in both directions. Body is cast iron. Maximum pressure is 3,000 psi. Inlet and outlet are NPT female.

Valves with check valve are also known as hydraulic cylinder control valves.

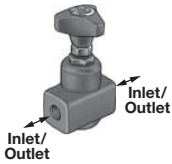

Inlet	Outlet	Max. Flow, gpm	O'all Size, Lg. × Wd. × Ht.		Each
Without Check Valve					
3/8″	3/8″	8	2.76″ × 1.65″ × 5.63″	4431T11	$60.58
3/4″	3/4″	20	3.94″ × 2.44″ × 5.37″	4431T12	118.82
With Check Valve					
3/8″	3/8″	8	2.76″ × 1.65″ × 7.08″	4431T21	78.95
3/4″	3/4″	20	3.94″ × 2.44″ × 8.46″	4431T22	142.11

Color-Set Adjustable Flow Control Valves

Each of the five colored rings on the valve stem represents a different flow rate, making it easy to remember your flow-rate setting. Simply adjust the knob to the different colors to achieve the flow rate you need. Inlet and outlet are NPTF female. *Note:* NPTF threads (Dryseal) are compatible with NPT threads.

Brass Valves— For use in air flow as well as hydraulic flow applications.

Steel Valves— For use in hydraulic flow applications.

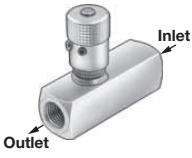

Steel

Inlet	Outlet	Max. Flow, gpm	O'all Size, Lg. × Wd. × Ht.	Brass: Max. Pressure, psi	Brass:	Brass: Each	Steel: Max. Pressure, psi	Steel:	Steel: Each
1/8″	1/8″	3	2″ × 0.75″ × 1.7″	2,000	1042K11	$40.58	5,000	1042K12	$40.58
1/4″	1/4″	5	2.63″ × 0.81″ × 2″	2,000	1042K13	40.58	5,000	1042K14	37.68
3/8″	3/8″	8	2.75″ × 1″ × 2.45″	2,000	1042K15	52.17	5,000	1042K16	43.48
1/2″	1/2″	15	3.44″ × 1.19″ × 3.05″	2,000	1042K17	75.36	5,000	1042K18	60.87
3/4″	3/4″	25	3.88″ × 1.38″ × 3.56″	2,000	1042K19	113.18	3,000	1042K21	85.57
1″	1″	40	5″ × 1.88″ × 5.09″	500	1042K22	421.59	3,000	1042K23	185.50

Hand-Operated Hydraulic Control Valves

Easily control hydraulic power to your cylinder or press with these hand-operated valves. Both valves are two-pressure-output (4 way) valves, which are most often used for double-acting cylinders. They are also spring return (a spring returns the valve to its original position once you let go of the lever). Body is cast iron. Ports are NPT female.

Pressure Outputs (Ways)	Positions: No.	Positions: Center	Max. Flow, gpm	Max. Operating Pressure, psi	No. of Ports	Port Pipe Size	O'all Size, Lg. × Wd. × Ht.		Each
2 (4)	2	———	25	3,000	4	3/8″	6.9″ × 2.9″ × 10″	4393T1	$132.81
2 (4)	3	Closed	25	3,000	4	3/8″	6.9″ × 2.9″ × 10″	4393T2	132.81

Solenoid-Operated Hydraulic Control Valves

These electrically operated valves mount to a base or manifold, so you can use a single hydraulic source for multiple valves. They conform to NFPA D03 or D05 mounting patterns (also known as ISO sizes 3 and 5). Each valve of the same trade size fits the same manifold. For example, you can put a D03, 2-position, single-solenoid valve and a D03, 3-position, double-solenoid valve on the same manifold.

Valves— Must be mounted to a single-station base or manifold. All are two-pressure-output (4 way) valves, which are most often used for double-acting cylinders. They have four ports, which mate with the base or manifold so direct piping is not required. They also have a cast iron body, an IP67 rated conduit terminal, and operate on 120 VAC. Maximum pressure is 4,500 psi. Ports are NPT female.

D03 trade size valves draw 26 watts of power and have a maximum flow of 16.8 gpm; *D05 trade size valves* draw 32 watts of power and have a maximum flow of 32 gpm.

Single-Solenoid Valves— The valves move into position when electrical current is supplied. Once the current is turned off, the valves return to their original position via an internal spring.

Double-Solenoid Valves— Valves move into one position when electrical current is supplied to the first solenoid; move into another position when current is supplied to the second solenoid. When current is turned off, valves return to their center position via an internal spring.

Single-Station Bases— Use to mount a single valve. Made of cast iron. Ports are NPT female.

Manifolds— Use to mount multiple valves in a single unit. Valves mounted to a manifold share a common input pressure source and tank connection. Made of aluminum. Ports are NPTF female. **To Order:** Please specify 2 or 3 stations.

Single-Solenoid Valve

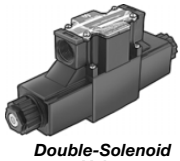

Double-Solenoid Valve

Single-Station Base

Two-Station Manifold

Pressure Outputs (Ways)	Positions: No.	Positions: Center	Valves: Single Solenoid	Valves: Single Solenoid: Each	Valves: Double Solenoid	Valves: Double Solenoid: Each	Single-Station Bases: Port Pipe Size	Single-Station Bases:	Single-Station Bases: Each	Manifolds: Port Pipe Size	Manifolds:	Manifolds: Each
D03 Trade Size												
2 (4)	2	———	49995K501	$129.98	———	———	3/8″	49995K751	$36.59	1/4″, 3/8″, 1/2″	49995K28	$107.91
2 (4)	3	Closed	———	———	49995K101	$156.10	3/8″	49995K751	36.59	1/4″, 3/8″, 1/2″	49995K28	107.91
2 (4)	3	Exhaust	———	———	49995K301	156.10	3/8″	49995K751	36.59	1/4″, 3/8″, 1/2″	49995K28	107.91
D05 Trade Size												
2 (4)	2	———	49995K121	168.29	———	———	1/2″	49995K851	73.17	1/4″, 1/2″, 3/4″	49995K99	176.02
2 (4)	3	Closed	———	———	49995K131	207.95	1/2″	49995K851	73.17	1/4″, 1/2″, 3/4″	49995K99	176.02
2 (4)	3	Exhaust	———	———	49995K132	207.95	1/2″	49995K851	73.17	1/4″, 1/2″, 3/4″	49995K99	176.02

NFPA Large-Footprint Hydraulic Cylinders

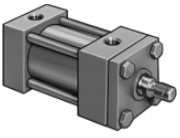

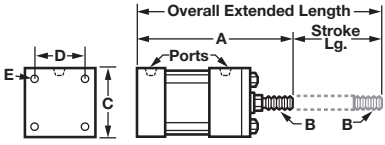

For easy interchangeability, these cylinders comply with large, also known as heavy, NFPA (National Fluid Power Association) and JIC (Joint Industrial Congress) industry standard mounting footprints. They are double acting—they have two hydraulic pressure ports: one to extend in the "push" direction and another to retract in the "pull" direction. All have steel end caps, a heavy-wall steel barrel, and high-strength steel tie rods. Piston rod is case-hardened, chrome-plated carbon steel. Maximum pressure is 2,500 psi. Temperature range is –10° to +165° F.

For additional information about these NFPA large-footprint cylinders, including performance data, schematics, and dimensions, go to mcmaster.com and search for **62205KAC**.

Bore Size	Push Force, lbs. @ 100 psi	Pull Force, lbs. @ 100 psi	Port Size, NPT Female	Retracted Lg. (A)	Rod, Thread Size × Lg. (B)	(C)	(D)	Mounting Holes (E)
1½″	177	146	½″	6⅜″+Stroke Lg.	7/16″-20 × ¾″	2½″	1.63″	⅜″-24
2″	314	235	½″	7⅛″+Stroke Lg.	¾″-16 × 1⅛″	3″	2.05″	½″-20
2½″	491	412	½″	7¼″+Stroke Lg.	¾″-16 × 1⅛″	3½″	2.55″	½″-20
3¼″	830	681	¾″	8¾″+Stroke Lg.	1″-14 × 1⅝″	4½″	3.25″	⅝″-18
4″	1,257	1,016	¾″	9⅝″+Stroke Lg.	1¼″-12 × 2″	5″	3.82″	⅝″-18

Cylinders

Stroke Length	1½″ Bore	Each	2″ Bore	Each	2½″ Bore	Each	3¼″ Bore	Each	4″ Bore	Each
1″	62205K711	$298.74	62205K731	$354.85	62205K751	$403.51	62205K771	$541.50	62205K791	$692.24
2″	62205K712	298.74	62205K732	359.68	62205K752	405.80	62205K772	543.51	62205K792	696.47
3″	62205K713	312.16	62205K733	363.67	62205K753	407.20	62205K773	544.39	62205K793	703.85
4″	62205K714	313.05	62205K734	371.16	62205K754	417.84	62205K774	546.27	62205K794	708.93
5″	62205K715	364.02	62205K735	432.91	62205K755	498.11	62205K775	679.11	62205K795	851.65
6″	62205K716	384.04	62205K736	485.16	62205K756	557.75	62205K776	696.40	62205K796	883.00
7″	62205K717	390.32	62205K737	489.29	62205K757	558.78	62205K777	702.95	62205K797	893.74
8″	62205K718	404.25	62205K738	498.85	62205K758	569.25	62205K778	708.91	62205K798	905.97
9″	62205K719	418.75	62205K739	502.10	62205K759	575.19	62205K779	724.60	62205K799	919.87
10″	62205K721	425.27	62205K741	510.58	62205K761	580.73	62205K781	731.32	62205K801	928.86
11″	62205K722	431.78	62205K742	519.69	62205K762	506.70	62205K782	732.23	62205K802	933.96
12″	62205K723	438.35	62205K743	528.51	62205K763	511.64	62205K783	743.37	62205K803	940.96

Attachments

Made of steel, these attachments are for use with NFPA large-footprint cylinders only.

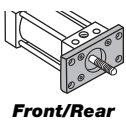
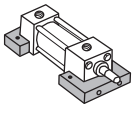
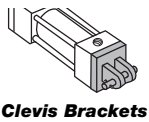
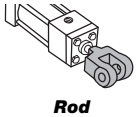

Fits Bore Size	Front/Rear Flanges	Each	Side Lug Sets	Per Set	Clevis Brackets with Pivot Pin	Each	Rod Clevis★	Each	Pivot Brackets★■	Each	Pivot Pins	Each
1½″	62205K16	$29.14	62205K17	$138.39	62205K18	$76.49	62205K19	$12.04	62205K14	$20.07	62205K12	$9.70
2″	62205K26	31.44	62205K27	161.86	62205K28	97.63	62205K29	19.29	62205K24	39.95	62205K22	14.20
2½″	62205K36	45.40	62205K37	177.57	62205K38	103.47	62205K29	19.29	62205K24	39.95	62205K22	14.20
3¼″	62205K46	79.03	62205K47	221.93	62205K48	127.80	62205K39	33.71	62205K34	64.55	62205K32	20.89
4″	62205K56	208.51	62205K57	244.12	62205K58	161.86	62205K49	59.00	62205K44	99.38	62205K42	29.65

★ Pivot pin is not included; order separately. ■ Designed for use with rod clevis; does not mount to cylinder back.

NFPA Medium-Footprint Hydraulic Cylinders

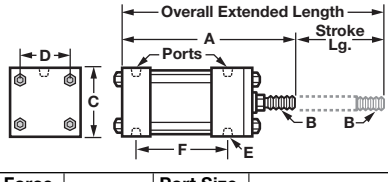

More compact than the large-footprint cylinders above, but still packed with lots of hydraulic power. These cylinders comply with the medium NFPA (National Fluid Power Association) mounting footprint for easy interchangeability. They are double acting—they have two hydraulic pressure ports: one to extend in the "push" direction and another to retract in the "pull" direction. All have steel end caps with NFPA MS4-type tapped mounting holes, a brass barrel, and steel tie rods. Piston rod is chrome-plated steel. Temperature range is 0° to 165° F.

Bore Size	Push Force, lbs. @ 100 psi	Pull Force, lbs. @ 100 psi	Max. Pressure	Port Size, NPT Female	Retracted Lg. (A)	Rod, Thread Size × Lg. (B)	(C)	(D)	Mounting Holes (E)	(F)
1½″	177	146	1,500 psi	⅜″	5⅝″+Stroke Lg.	7/16″-20 × ¾″	2″	1.43″	¼″-20	2¼″+Stroke Lg.
2″	314	283	1,200 psi	⅜″	5 11/16″+Stroke Lg.	7/16″-20 × ¾″	2½″	1.84″	5/16″-18	2¼″+Stroke Lg.

Cylinders

Stroke Length	1½″ Bore	Each	2″ Bore	Each
1″	1351T1	$251.38	1351T11	$283.92
2″	1351T2	251.38	1351T12	283.92
3″	1351T3	251.38	1351T13	283.92
4″	1351T4	251.38	1351T14	283.92
5″	1351T5	269.14	1351T15	320.83
6″	1351T6	269.14	1351T16	320.83
7″	1351T7	269.14	1351T17	320.83
8″	1351T8	269.14	1351T18	320.83
12″	1351T9	298.37	1351T19	357.75

Attachments

Made of steel, these attachments are for use with NFPA medium-footprint cylinders only.

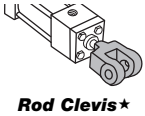

Fits Bore Size	Rod Clevis★	Each	Pivot Bracket★■	Each	Pivot Pin	Each
1½″, 2″	6742K92	$31.96	1351T21	$36.19	6742K94	$7.51

★ Pivot pin is not included; order separately.
■ Designed for use with rod clevis; does not mount to cylinder block.

Miniature Extreme-Force Hydraulic Cylinders

Fabulous force from a small, easy-to-mount threaded-body cylinder. Great for short stroke length applications, these cylinders are single acting—they have one hydraulic pressure port to extend in the "push" direction; an internal spring retracts in the "pull" direction. Cylinder components and accessories are steel. Maximum pressure is 5,000 psi. Temperature range is –40° to +212° F. Port size is 7/16"-20 SAE female, unless noted.

Mounting blocks have two mounting holes, except for 6297K35, which has four. When using a mounting block, a jam nut is required.

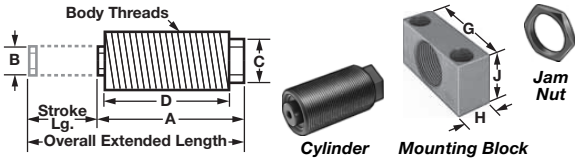

CYLINDERS										ACCESSORIES						
Bore Size	Stroke Length	Push Force, lbs. @ 3,000 psi	Oil Displace., cu. in.	Retracted Lg. (A)	Rod. Dia. (B)	Hex Wd. (C)	(D)	Body Thread Size	Each	(G)	(H)	(J)	Mounting Blocks	Each	Jam Nuts	Each
11/32"	7/32"	279	0.024	1.85"	0.15"	0.44"	1.41"	1/2"-20	6297K11●♦ $107.15	1 1/2"	3/4"	3/4"	6297K31▲	$19.87		
1/2"	5/16"	588	0.061	2.47"	0.22"	0.62"	1.97"	3/4"-16	6297K12● 116.78	1 3/4"	3/4"	1"	6297K32▲	22.50		
3/4"	1/2"	1,326	0.221	2.87"	0.24"	0.75"	2.31"	1"-12	6297K13● 124.00	2 1/4"	1"	1 1/4"	6297K33♣	28.38		
1"	1/2"	2,355	0.393	2.76"	0.64"	1"	2.25"	1 5/16"-16	6297K14 148.56	2 3/4"	1"	1 1/2"	6297K34♠	45.68	6297K45	$15.23
1"	1"	2,355	0.785	3.75"	0.64"	1"	3.25"	1 5/16"-16	6297K15 171.87	2 3/4"	1"	1 1/2"	6297K34♠	45.68	6297K45	15.23
1 1/2"	1/2"	5,301	0.884	3.07"	1"	1.5"	2.57"	1 7/8"-16	6297K16 195.38	3 1/4"	1 1/2"	2 1/2"	6297K35♠	71.93	6297K46	32.44
1 1/2"	1"	5,301	1.767	4.73"	1"	1.5"	4.22"	1 7/8"-16	6297K17 268.17	3 1/4"	1 1/2"	2 1/2"	6297K35♠	71.93	6297K46	32.44
2"	1"	9,423	3.142	4.26"	1.5"	2"	3.76"	2 1/2"-16	6297K18 302.30						6297K47	33.63

● Includes jam nut. ♦ Port size is 5/16"-24 SAE female. ▲ Mounting holes fit 1/4" socket-head cap screws.
♣ Mounting holes fit 5/16" socket-head cap screws. ♠ Mounting holes fit 3/8" socket-head cap screws.

Compact Hydraulic Cylinders

Just because you have a limited amount of space doesn't mean you have to settle for a limited amount of hydraulic power. Pick these cylinders to handle your high-pressure applications that require a compact mounting footprint. They are double acting—they have two hydraulic pressure ports: one to extend in the "push" direction and another to retract in the "pull" direction. All have an aluminum body and chrome-plated steel piston rod. Maximum pressure is 2,320 psi. Temperature range is 14° to 140° F.

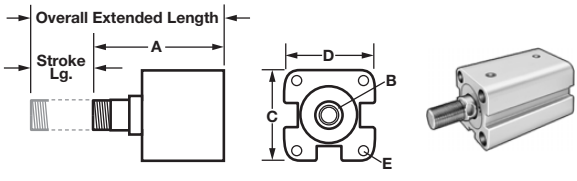

Bore Size	Push Force, lbs. @ 100 psi	Pull Force, lbs. @ 100 psi	Port Size, NPT Female	Retracted Lg. (A)	Rod, Thread Size × Lg. (B)	(C)	(D)	Mounting Holes (E)
1"	79	67	1/8"	2.48"+Stroke Lg.	3/8"-24 × 0.57"	1.99"	1.93"	0.37"
1 1/2"	177	150	1/4"	3.46"+Stroke Lg.	7/16"-20 × 0.86"	2.85"	2.79"	0.55"
2"	314	287	1/4"	3.82"+Stroke Lg.	3/4"-16 × 1.06"	3.29"	3.19"	0.69"
4"	1,257	1,178	3/8"	5.87"+Stroke Lg.	1 1/2"-12 × 1.85"	5.87"	5.75"	1.02"

Stroke Length	1" Bore	Each	1 1/2" Bore	Each	2" Bore	Each	4" Bore	Each
1"	1304K1	$154.84	1304K21	$223.28	1304K41	$274.69	1304K61	$874.16
2"	1304K2	165.41	1304K22	239.27	1304K42	296.11	1304K62	916.70
3"	1304K3	155.51	1304K23	255.26	1304K43	317.53	1304K63	959.24

Low-Pressure Hydraulic Cylinders

These round-body cylinders give you low-pressure hydraulic power and control with a slim profile. They're perfect for mobile hydraulic applications. All of these cylinders are double acting—they have two hydraulic pressure ports: one to extend in the "push" direction and another to retract in the "pull" direction. Body is aluminum. Piston rod is Type 303 stainless steel. Maximum pressure is 507 psi. Ports are 1/8" NPT female. Temperature range is 14° to 140° F.

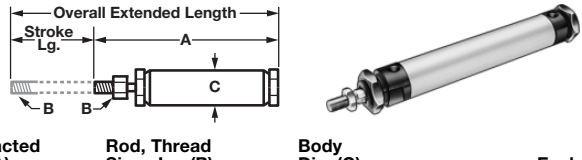

Bore Size	Stroke Length	Push Force, lbs. @ 100 psi	Pull Force, lbs. @ 100 psi	Retracted Lg. (A)	Rod, Thread Size × Lg. (B)	Body Dia. (C)		Each
1"	1"	79	75	6.63"	3/8"-24 × 0.77"	1.26"	1350T21	$104.17
1"	2"	79	75	7.63"	3/8"-24 × 0.77"	1.26"	1350T22	106.38
1"	3"	79	75	8.63"	3/8"-24 × 0.77"	1.26"	1350T23	117.02
1"	4"	79	75	9.63"	3/8"-24 × 0.77"	1.26"	1350T24	127.66
1"	5"	79	75	10.63"	3/8"-24 × 0.77"	1.26"	1350T25	139.58
1"	6"	79	75	11.63"	3/8"-24 × 0.77"	1.26"	1350T26	142.55

Hydraulic Motors

When electric power is not available or not desired for safety reasons, choose these hydraulic motors. They produce rotary power at about the same rpm, but with much greater torque than similar-sized air-powered motors. All have a roller-vane design, which delivers high torque and efficiency. Rotation is reversible. Shaft diameter is 1", shaft length is 1.52", keyway is 1/4" Wd. × 1" Dp., and body is 3.76" dia. Motors have a four-bolt flange for mounting with a 3 1/4" bolt circle and four 3/8"-16 mounting holes. Ports are 1/2"-14 female. Minimum oil viscosity is 50 SSU (Saybolt Seconds Universal). Maximum oil inlet temperature is 200° F. Housing is cast iron.

9 gpm flow @ 1,000 psi Torque, in.-lbs.	rpm	hp	Displacement, cu. in./rev.	Max. psi	O'all Lg.		Each
336	658	3.5	3.0	1,800	7.18"	6299K31	$440.42
715	333	3.8	6.0	1,800	7.55"	6299K34	444.33
984	252	3.9	8.0	1,800	7.80"	6299K35	455.42

9 gpm flow @ 1,000 psi Torque, in.-lbs.	rpm	hp	Displacement, cu. in./rev.	Max. psi	O'all Lg.		Each
1,230	200	3.9	10	1,800	8.05"	6299K36	$462.35
1,510	169	4	11.9	1,800	8.30"	6299K37	510.87
3,040	84	4.1	24	1,200	9.80"	6299K42	620.00

Hydraulic Pumps and Pump-to-Motor Adapters

To create hydraulic energy, combine one of these pumps with a motor (not included). Pump-to-motor mounting adapters are sold below.

Hydraulic Pumps

6296K11

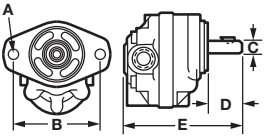

All of these gear pumps have a straight shaft with ANSI keyway (see page 1174 for keyway dimensions). They also have SAE female inlet and outlet threads.

4F17— Housing is cast iron. Rotation is clockwise or counterclockwise. Pumps are 90% efficient. Temp. range is –20° to +300° F.

SAE-AA— Shafts have woodruff keyways (0.125″ Wd. × 0.625″ Dia.). Housing is aluminum. Rotation is clockwise when facing shaft end. Pumps are 93% efficient at up to 200 psi. Temp. range is –40° to +185° F.

SAE-A— Housing is aluminum. Rotation is clockwise when facing shaft end. Pumps are 90% efficient. Temp. range is –20° to +200° F.

SAE-B— Housing is aluminum with cast iron end covers. Rotation is clockwise when facing shaft end. Pumps are 95% efficient. Temp. range is –20° to +200° F.

Trade Size	Flow, gpm @ 1,000 psi, 1,800 rpm	Fixed Displacement, cu. in./rev.	Max. psi	Max. rpm	No. of Bolt Holes	(A)	(B)	(C)	(D)	(E)	Inlet Port	Outlet Port	Key Wd.		Each
4F17	0.46	0.065	3,000	4,000	4	0.34″	2″	1/2″	1.375″	4.66″	9/16″-18	9/16″-18	1/8″	6296K51	$161.63
4F17	0.9	0.129	3,000	4,000	4	0.34″	2″	1/2″	1.375″	4.66″	3/4″-16	3/4″-16	1/8″	6296K52	165.94
4F17	2.72	0.388	3,000	4,000	4	0.34″	2″	1/2″	1.375″	5.16″	7/8″-14	7/8″-14	1/8″	6296K54	194.50
4F17	4.99	0.711	1,800	2,400	4	0.34″	2″	1/2″	1.375″	5.66″	7/8″-14	7/8″-14	1/8″	6296K56	207.92
SAE-AA	0.77	0.114	2,500	4,000	2	0.39″	3.25″	1/2″	1.31″	4.04″	7/8″-14	3/4″-16	1/8″	6296K11	202.58
SAE-AA	1.48	0.21	2,500	4,000	2	0.39″	3.25″	1/2″	1.31″	4.20″	7/8″-14	3/4″-16	1/8″	6296K13	204.25
SAE-AA	2.35	0.329	2,500	4,000	2	0.39″	3.25″	1/2″	1.31″	4.39″	7/8″-14	3/4″-16	1/8″	6296K15	206.42
SAE-AA	3.79	0.522	2,500	4,000	2	0.39″	3.25″	1/2″	1.31″	4.71″	7/8″-14	3/4″-16	1/8″	6296K17	212.95
SAE-AA	4.67	0.641	2,000	3,000	2	0.39″	3.25″	1/2″	1.31″	4.90″	7/8″-14	3/4″-16	1/8″	6296K18	218.52
SAE-A	2.71	0.366	4,000	4,000	2	0.44″	4.19″	3/4″	1.03″	4.87″	7/8″-14	3/4″-16	3/16″	6296K61	194.58
SAE-A	3.61	0.488	4,000	4,000	2	0.44″	4.19″	3/4″	1.03″	4.99″	1 1/16″-12	7/8″-14	3/16″	6296K62	195.48
SAE-A	4.52	0.61	4,000	4,000	2	0.44″	4.19″	3/4″	1.03″	5.1″	1 1/16″-12	7/8″-14	3/16″	6296K63	196.65
SAE-A	7.22	0.976	4,000	3,000	2	0.44″	4.19″	3/4″	1.03″	5.45″	1 1/16″-12	7/8″-14	3/16″	6296K65	217.38
SAE-A	8.58	1.159	4,000	3,000	2	0.44″	4.19″	3/4″	1.03″	5.63″	1 5/16″-12	1 1/16″-12	3/16″	6296K66	218.37
SAE-A	10.39	1.403	3,200	2,800	2	0.44″	4.19″	3/4″	1.03″	5.86″	1 5/16″-12	1 1/16″-12	3/16″	6296K67	219.37
SAE-A	12.19	1.647	2,700	2,400	2	0.44″	4.19″	3/4″	1.03″	6.1″	1 5/16″-12	1 1/16″-12	3/16″	6296K68	220.37
SAE-B	14.88	2.01	4,000	3,000	2	0.56″	5.75″	7/8″	1.236″	7.09″	1 5/8″-12	1 5/16″-12	1/4″	6296K72	346.72
SAE-B	17.17	2.32	4,000	3,000	2	0.56″	5.75″	7/8″	1.236″	7.29″	1 5/8″-12	1 5/16″-12	1/4″	6296K73	355.63
SAE-B	22.58	3.05	2,900	2,700	2	0.56″	5.75″	7/8″	1.236″	7.78″	1 5/8″-12	1 5/16″-12	1/4″	6296K75	384.30

Pump-to-NEMA-C-Face Motor Adapters

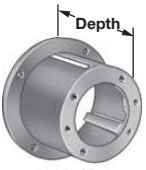

62905K43

Mate NEMA C-face motors to the mounting flange of hydraulic pumps with these adapters. The aluminum housing reduces noise and protects the shaft and coupling connection between the motor and the pump.

For Pumps Trade Size	No. of Bolt Holes	Dp.		Each
For NEMA 56C, 143TC, and 145TC Motors				
4F17	4	4.25″	62905K41	$33.42
SAE-AA	2	4.25″	62905K42	33.42
SAE-A	2 and 4	4.25″	62905K43	36.45
For NEMA 182TC, 184TC, 213TC, 215TC, 254TC, and 256TC Motors				
SAE-A	2	5.00″	62905K44	58.31
SAE-A	2	5.81″	62905K45	64.51

For Pumps Trade Size	No. of Bolt Holes	Dp.		Each
For NEMA 182TC, 184TC, 213TC, 215TC, 254TC, and 256TC Motors (Cont.)				
SAE-A	2	6.81″	62905K47	$66.16
SAE-B	2 and 4	5.81″	62905K51	66.80
SAE-B	2 and 4	6.81″	62905K48	66.16
SAE-C	2 and 4	6.38″	62905K52	138.42
SAE-C	2 and 4	7.38″	62905K53	120.18

All-in-One Hydraulic Power Units

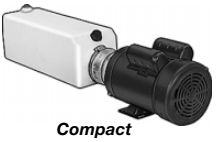

Compact

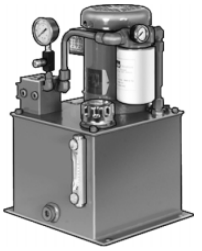

Standard

You'll get a fixed-displacement hydraulic gear pump, AC motor, oil reservoir, breather vent, and connections—all in one unit. Pump housing is aluminum. Motor is totally enclosed fan cooled and has a steel housing. Choose a unit with a reservoir that's about three times your requirement to allow for heat dissipation. All units must be hardwired. Ports are female.

Compact— A plastic reservoir lets you visually check the oil level. Reservoir port is 3/4″ NPT. Outlet pressure port at base is 3/8″ NPT. Base return port is 1/4″ NPT. Pumps are 75% efficient. Maximum temperature is 130° F.

Standard— All include a suction strainer and return filter to protect pump from contamination, a glycerin-filled pressure gauge, and an oil gauge with thermometer. Reservoirs have 1 1/16″-12 SAE outlet and return ports; 3/4″ NPTF (Dryseal) spare return port (except 62915K31 and K32, which have 7/8″-14 SAE outlet and return ports; 3/4″ NPTF [Dryseal] spare return port). Reservoir drain is 1 1/16″-12 SAE with plug. Pumps are 95% efficient. Max. temp. is 160° F.

Flow, gpm @ Max. psi, 1,725 rpm	Max. psi	Reservoir Cap., gal.	Motor hp	Motor rpm	Motor Voltage (Phase)	Full Load Amps●	Overall Size, Lg. × Wd. × Ht.		Each
Compact— *For Horizontal Mounting*									
0.93	2,500	3	2	1,725	115/230 (1)	12	36.1″ × 8.1″ × 8.6″	3973K41	$841.73
1.44	2,500	3	2	1,725	115/230 (1)	12	34.8″ × 8.1″ × 8.6″	3973K42	841.73
Standard— *For Vertical Mounting*									
0.9	1,620	5	1	1,725	208-230/460 (3)	1.7	12.5″ × 15″ × 23″	62915K31	2,386.67
1.3	2,310	5	2	1,725	208-230/460 (3)	3.0	12.5″ × 15″ × 23″	62915K32	2,498.36
2.7	1,750	10	3	1,725	208-230/460 (3)	4.5	18″ × 19″ × 29″	62915K33	2,911.91
3.2	2,330	10	5	1,725	208-230/460 (3)	7.5	18″ × 19″ × 31″	62915K34	3,074.57
6.3	1,800	20	7 1/2	1,725	208-230/460 (3)	11	23″ × 22.5″ × 36″	62915K36	3,018.82
8.1	1,820	30	10	1,725	208-230/460 (3)	19	23″ × 22.5″ × 41″	62915K37	3,886.67
9.4	2,350	30	15	1,725	208-230/460 (3)	21	25″ × 22.5″ × 42″	62915K38	4,141.28

● Amps listed are at 230 VAC for compact units; 460 VAC for standard units.

Air-to-Hydraulic Power Converters

Convert up to 80 psi of compressed air into an equal amount of hydraulic pressure without pumps and accumulators. Power units work with hydraulic oil to feed valves and cylinders as well as replenish reservoirs over long distances. Simply apply air to the air inlet port to force fluid out of the hydraulic outlet port. Base is aluminum, reservoir is plastic, and seals are Buna-N. Max. temp. is 140° F. Inlet and outlet ports are female. See pages 1012-1013 for hydraulic cylinders; page 1011 for hydraulic valves.

Reservoir Cap., cu. in.	Air Inlet Port	Hydraulic Outlet Port	O'all Dia.	O'all Ht.		Each
6.9	1/8″ NPT	1/4″ NPT	2 1/2″	4 1/8″	12815K61	$104.34
14	1/4″ NPT	1/4″ NPT	2 1/2″	6 5/8″	12815K62	69.22
26	1/4″ NPT	1/4″ NPT	2 1/2″	10 5/8″	12815K64	96.22
47	1/4″ NPT	3/8″ NPT	3 1/2″	8 15/16″	12815K67	99.74
67	1/4″ NPT	3/8″ NPT	3 1/2″	11 13/16″	12815K68	133.12
88	1/4″ NPT	3/8″ NPT	3 1/2″	15 5/64″	12815K69	145.89
130	1/4″ NPT	3/8″ NPT	3 1/2″	20 13/16″	12815K72	189.11
171	1/4″ NPT	3/8″ NPT	3 1/2″	27 1/64″	12815K74	243.52

Air-Powered Hydraulic High-Pressure Converters

Create hydraulic pressure with compressed air. To use, manually fill the reservoir with hydraulic oil and apply air to the inlet port to force the hydraulic oil out of the outlet port at higher pressure. Turn off the air and oil will flow back into the converter through the same port. Converters have a transparent acrylic oil reservoir, composite tube, and spring return. Maximum inlet air pressure is 100 psi. Maximum temperature is 180° F. Inlet and outlet ports are female.

Max. Output Volume, cu. in.	Pressure Ratio	Reservoir Cap., cu. in.	Air Inlet Port	Hydraulic Outlet Port	Overall Size, Lg. × Wd. × Ht.		Each
1	33.87:1	10.4	1/4″ NPT	7/16″-20 SAE	4 1/2″ × 4 1/2″ × 10 7/8″	6323K31	$943.17
4	32.41:1	42.0	1/4″ NPT	7/16″-20 SAE	6 1/2″ × 6 1/2″ × 16 3/8″	6323K33	1,293.88
8	30.97:1	96.0	1/4″ NPT	7/16″-20 SAE	8 1/2″ × 8 1/2″ × 18″	6323K35	1,914.63

Hydraulic Reservoirs and Accessories

(A-D) Reservoirs

Store hydraulic fluid in these reservoirs. All have an oil level gauge, breather vent, female drain port with male plug, and a temperature gauge with 0° to 250° F readout.

***Style A*—**Have 11-ga. steel walls and a 7-ga. steel top plate with gasket. 62945K14 and K15 have a 6″ dia. end cleanout cover.

***Style B&C*—**A baffle separates the return side from the inlet side to allow particles to settle before return fluid mixes with inlet fluid. It also prolongs pump life. Baffle and reservoirs are 11-ga. steel, unless noted. *Style B* have two end cleanout covers (6″ dia. on 10- to 40-gal. reservoirs; 12″ dia. on 60- and 100-gal. reservoirs). *Style C* have a 1/4″ thick steel top.

***Style D*—**More corrosion resistant than steel, these have cast aluminum walls and an 11-ga. steel top plate with gasket.

Cap., gal.	Drain Port	Lg. × Wd. × Ht.			Each
(A) Steel Mini Reservoirs with Removable Top					
2	1/2″ NPT	10″	× 10″	× 8″	62945K11 $165.92
3	1/2″ NPT	10″	× 10″	× 12″	62945K12 179.70
5	1/2″ NPT	10″	× 10″	× 16″	62945K13 183.57
8	3/4″ NPT	14 1/4″	× 12″	× 18 1/8″	62945K14 276.31
10	3/4″ NPT	19″	× 14 7/8″	× 14 1/8″	62945K15 289.08
(B) Steel Reservoirs with Baffle and Welded Top					
10	3/4″ NPT	22 1/4″	× 14″	× 12″	62945K31 243.20
20	3/4″ NPT	26 1/4″	× 18″	× 14″	62945K32 292.83
30	3/4″ NPT	38 1/4″	× 18″	× 14″	62945K33 356.65
40	3/4″ NPT	38 1/4″	× 24″	× 14″	62945K34 404.82
60	3/4″ NPT	42 3/8″	× 30″	× 16 5/8″	62945K35★ 530.45
100	3/4″ NPT	50 3/8″	× 30″	× 19″	62945K37★ 705.93
(C) Steel Reservoirs with Baffle and Removable Top					
10	3/4″ NPT	26″	× 16″	× 9 1/2″	62945K41 254.08
20	3/4″ NPT	26″	× 16″	× 15 1/2″	62945K42 287.67
30	3/4″ NPT	26″	× 16″	× 21 1/2″	62945K43 346.76
(D) Aluminum Reservoirs with Removable Top					
3	3/8″ BSPP	13 3/8″	× 9 3/4″	× 8 5/8″	1364K33 230.40
5	1/2″ BSPP	14 1/2″	× 11 3/8″	× 9 5/8″	1364K34 271.30

★ Has a 7-ga. steel top plate.

Motor Base Plate

Made of steel, this plate accepts the following NEMA motor frame sizes: 56C, 143TC, 145TC, 182TC, and 184TC. Size is 9 1/2″ Lg. × 8″ Wd. × 2 1/2″ Ht.

62875K33 ..... **Each** $30.71

Breather Vents

Breather vents provide a filler port for reservoirs while allowing a free flow of fresh air. All have a 40-micron filter.

***NPT Threads*—**Both are nylon.

***Flange Mount*—**Has a chrome-plated steel cap, nylon strainer basket, and rubber gasket. A 2.125″ dia. mounting hole is required. Mounting screws included.

		Each
1/2″ NPT Male	62875K11	$5.83
3/4″ NPT Male	62875K12	5.83
Flange Mount	62875K13	11.51

Pipe Suction Flanges

Seal pipes that pass through the top plate of your reservoir. Each flange has a steel top and bottom plate, internal washer, gasket, and mounting screws.

For Pipe Size	Mounting Hole Dia.		Each
1/2″	4 5/16″	62875K21	$8.85
3/4″	4 5/16″	62875K22	8.10
1 1/4″	4 5/16″	62875K23	9.05
1 1/2″	4 5/16″	62875K24	8.79
2″	4 5/16″	62875K25	9.40

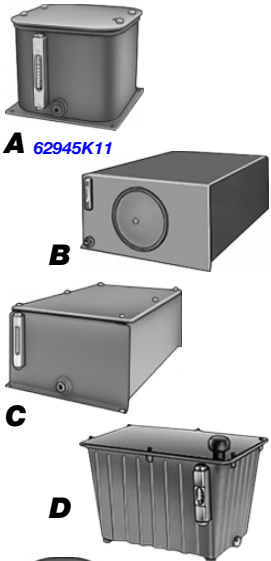

Breather Vent with NPT Threads

Hydraulic Accumulators

Accumulators increase the efficiency of your hydraulic system by supplementing pump flow and pressure, absorbing shock, and compensating for leakage. They also provide auxiliary hydraulic pressure in emergency situations, such as during pump failure. Housing is steel. Ports are SAE female. For safety, accumulators can't be disassembled under pressure.

Charged models include a 2,100-psi charge of nitrogen, except for 1-pint and 1-qt. models, which include a 1,000-psi charge.

***Bladder-Style Accumulators*—**Have a durable Buna-N bladder bag that's easily replaced through the bottom of the unit (replacement bags sold separately). Accumulators must be mounted within 25° of vertical. Seals are Buna-N. Max. pressure is 3,000 psi. Temp. range is –20° to +200° F. Accumulators and replacement bladder bags are interchangeable with Accumulators Inc., Bosch, Greer, Hydac, Oil Air, Parker, and Vickers models that have the same capacity, body dia., and stem size.

***Piston-Style Accumulators*—**Offer very high flow rates and must be mounted vertically. Maximum pressure is 4,000 psi. Temperature range is –20° to +165° F. All have Buna-N O-ring seals.

***Diaphragm-Style Accumulators*—**All are lightweight, welded, and completely sealed. They can be mounted in any orientation, include a Buna-N diaphragm bag, but are not serviceable. Max. pressure is 3,000 psi. Temperature range is 5° to 180° F.

***Charging and Gauging Assembly*—**Use this assembly to increase or decrease the charge of accumulators. It includes a 10-ft. hose with fittings, adapter with gas valve, bleeder valve, gas chuck, and pressure gauge.

***Solenoid-Operated Safety Dump Valve*—**Safely discharge hydraulic fluid from your accumulator when servicing it or in an emergency situation. If the pump stops, valve immediately opens and discharges fluid in the accumulator to the reservoir. Valve operates on 110/120 VAC, 50/60 Hz. It has 3/4″-16 SAE inlet and outlet ports and a standard DIN electrical connector (2-Pole DIN 43650). Meets OSHA requirements 29CFR1910.147.

Capacity	Max. Flow, gpm	Port Size, SAE	O'all Ht.	Body Dia.	Bore Size	Stern Size	***Uncharged Accumulators***	Each	***Charged Accumulators***	Each	***Replacement Bladder Bags***	Each
Bladder-Style Accumulators												
1 pint	40	1 1/16″-12	10.75″	3.4″	—	5/8″	59595K19	$551.96	59595K41	$614.58	59595K39	$234.09
1 qt.	40	1 1/16″-12	11.12″	4.5″	—	5/8″	59595K18	560.19	59595K42	607.69	59595K31	254.71
1 gal.	150	1 5/8″-12	17.00″	6.75″	—	7/8″	59595K12	723.15	59595K43	776.92	59595K32	295.62
2.5 gal.	220	1 7/8″-12	21.38″	9.06″	—	7/8″	59595K13	1,171.30	59595K45	1,230.63	59595K33	336.19
5 gal.	220	1 7/8″-12	33.38″	9.06″	—	7/8″	59595K14	1,486.11	59595K46	1,566.37	59595K34	495.68
10 gal.	220	1 7/8″-12	54.38″	9.06″	—	7/8″	59595K15	2,039.44	59595K47	2,203.85	59595K35	739.42
Piston-Style Accumulators												
1 pint	100	3/4″-16	13.41″	2.38″	2″	—	6716K41	253.92	6716K51	294.08	—	—
1 qt.	100	3/4″-16	21.94″	2.38″	2″	—	6716K42	285.66	6716K52	329.51	—	—
Diaphragm-Style Accumulators												
0.52 qt.	25	3/4″-16	6.85″	4.13″	—	—	9461K21	185.32	—	—	—	—
1.04 qt.	25	3/4″-16	7.9″	5.35″	—	—	9461K23	296.30	—	—	—	—
0.52 gal.	40	1 1/16″-12	9.31″	6.57″	—	—	9461K25	445.02	—	—	—	—
1 gal.	40	1 1/16″-12	13.64″	6.7″	—	—	9461K26	641.78	—	—	—	—

Accessories

Charging and Gauging Assembly	59595K54	**Each**	$388.57
Solenoid-Operated Safety Dump Valve	6729K12	**Each**	$407.88

Bladder-Style Accumulator

Piston-Style Accumulator

Diaphragm-Style Accumulator

Weatherproof Electric Actuators

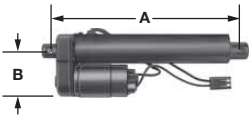

Self-contained and sealed throughout, these actuators provide maximum protection against harsh environments. For consistent, repeatable push/pull motion, just wire them and connect them with a clevis pin at each end (see pages 3352-3355 for 1/4″ dia. solid clevis pins). All of these actuators fit into tight spaces and have an enclosed electric motor with thermal overload protection. They also include two fixed limit switches, which allow you to stop the actuator at either end of the stroke.

Actuators are Acme-screw driven. The housing is corrosion-resistant aluminum/zinc alloy. Rod is steel. Clevis is aluminum. Duty cycle is 10 seconds on; 30 seconds off. Temperature range is –15° to +150° F.

For additional information about these weatherproof electric actuators, including schematics and dimensions, go to mcmaster.com and search for **6509KC**.

Max. Stroke	Speed @ Load, in./min.	Push/Pull Force, lbs.	Retracted Lg. (A)	Base to Clevis Center (B)	Mounting Holes	12 VDC Actuators	Each	24 VDC Actuators	Each
2″	126	25	6.3″	2.2″	1/4″	6509K81	$222.51	6509K84	$222.51
4″	126	25	8.3″	2.2″	1/4″	6509K82	223.27	6509K85	225.68
6″	126	25	10.3″	2.2″	1/4″	6509K83	228.98	6509K86	228.98

Low-Force Plug-and-Go Electric Actuators

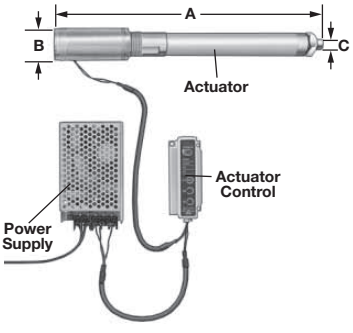

A great substitute for light duty air cylinders, these actuators provide basic push/pull motion without the need for a compressed air supply. They're easy to use because programming and wiring are not necessary. We offer complete actuator systems as well as individual components.

Complete Actuator Systems— You'll get everything you need: an actuator, actuator control, power supply with 6-ft. power cord and two-prong plug, connecting cables, and an additional cable for connection to a PLC if desired. For a description of the contents, please see the individual components below.

Individual Components— To create an actuator system, you will need one of each component listed below:

Actuators are designed for continuous operation and can be nose mounted using the included mounting nut. The housing and rod are made of Type 316 stainless steel. Temperature range is 41° to 104° F. Furnished with a 16-ft. long cable.

24-VDC actuator control provides push-button extend/retract operation. It also has a torque adjustment screw.

100-120 VAC input/24 VDC output power supply has a 6-ft. power cord with two-prong plug.

Actuator control-to-power supply cable measures 16 feet long.

Complete Actuator Systems

Max. Stroke	Speed @ No Load, in./min.	Push/Pull Force, lbs.	Retracted Lg. (A)	(B)	(C)	Cylinder Rod-End Thread Size, Female × Dp.	Nose-Mount Thread Size, Male × Lg. × Dp.		Each
1″	78	18	9.52″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K1	$750.02
1 1/2″	78	18	10.02″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K2	770.00
2″	78	18	10.52″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K3	790.00
4″	78	18	12.52″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K4	797.74
8″	78	18	16.52″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K5	820.00

Individual Components

Max. Stroke	Speed @ No Load, in./min.	Push/Pull Force, lbs.	Retracted Lg. (A)	(B)	(C)	Cylinder Rod-End Thread Size, Female × Dp.	Nose-Mount Thread Size, Male × Lg. × Dp.		Each
Actuators									
1″	78	18	9.52″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K21	$298.74
1 1/2″	78	18	10.02″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K22	310.00
2″	78	18	10.52″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K23	310.00
4″	78	18	12.52″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K24	320.00
8″	78	18	16.52″	1.5″	0.55″	M6 × 1 mm	M20 × 13 mm × 1.5 mm	1396K25	330.00
24-VDC Actuator Control								1396K31	156.23
100-120 VAC Input/24 VDC Output Power Supply								1396K33	269.00
Actuator Control-to-Power Supply Cable								1396K32	97.81

Multi-Position Electric Slide Actuators

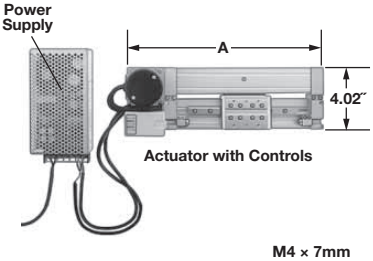

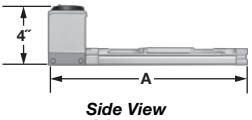

Side View of Actuator

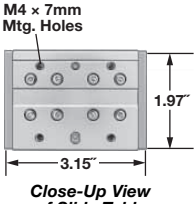

Close-Up View of Slide Table

These rodless actuators have a slide table that you can stop at five different positions along the stroke (one at each end and three that you can determine in between). They offer the speed and control of an electric actuator with the ease of an air cylinder. Everything you need is in one compact unit—a separate control box and switch are not required. Just connect the included power supply and plug these actuators into a 110 VAC outlet and start working. Programming and wiring are not necessary.

Actuators include a 24-VDC motor, a 110-VAC power supply, torque adjustment, push-button directional controls, and a 6-ft. power cord with two-prong plug. The rails are hardened steel and the slide table is aluminum. These actuators are designed for continuous operation. Temperature range is 41° to 104° F. CE approved.

Max. Stroke	Speed Range, in./sec.	Max. Working Load, lbs.	Overall Lg. (A)		Each
2″	3.9 to 39	11	10.66″	1424K11	$1,696.43
4″	3.9 to 39	11	12.66″	1424K12	1,785.71
6″	3.9 to 39	11	14.66″	1424K13	1,830.36
8″	3.9 to 39	11	16.66″	1424K14	1,830.36
10″	3.9 to 39	11	18.66″	1424K15	1,839.29
12″	3.9 to 39	11	20.66″	1424K16	1,875.00
14″	3.9 to 39	11	22.66″	1424K17	1,875.00
16″	3.9 to 39	11	24.66″	1424K18	1,892.86
18″	3.9 to 39	11	26.66″	1424K19	1,892.86
20″	3.9 to 39	11	28.66″	1424K2	1,919.64
22″	3.9 to 39	11	30.66″	1424K22	1,919.64
24″	3.9 to 39	11	32.66″	1424K23	1,928.57

Plug-and-Go Electric Actuators and Controls

With simple plug-and-go set up, no programming or hardwiring are required for reliable push/pull motion. *Note:* A complete unit consists of an actuator, a control box, and a hand switch (each sold separately below).

Actuators— All are Acme-screw driven and operate on 24 VDC. They have an enclosed electric motor with thermal overload protection, ABS motor housing, and aluminum rod. Enclosures are IPX4 rated for protection from splashed water. Duty cycle is 1 minute on; 9 minutes off. Temperature range is 50° to 104° F. Mounting holes are 0.47″ dia.

Control Box— Provides 24 VDC output and operates up to four actuators individually. It accepts 120 VAC, 60 Hz input and includes an 8¼-ft. power cord with two-prong plug.

Hand Switches— Have extend and retract buttons.

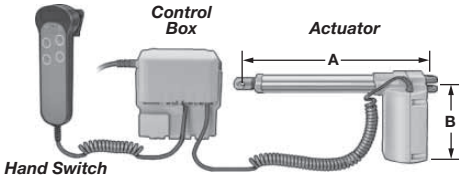

Actuators

Max. Stroke	Speed @ Load, in./min.	Retracted Lg. (A)	(B)		Each
449-lb. Push/Pull Force					
1.97″	21	8.27″	5.47″	2236K1	$233.28
3.94″	21	10.24″	5.47″	2236K2	233.28
5.91″	21	12.20″	5.47″	2236K3	238.58
7.87″	21	14.17″	5.47″	2236K4	238.58
9.84″	21	16.14″	5.47″	2236K5	243.86
11.81″	21	18.11″	5.47″	2236K6	243.86
899-lb. Push/Pull Force					
1.97″	9	8.27″	5.47″	2236K7	$244.14
3.94″	9	10.24″	5.47″	2236K8	244.14
5.91″	9	12.20″	5.47″	2236K9	249.69
7.87″	9	14.17″	5.47″	2236K11	249.69
9.84″	9	16.14″	5.47″	2236K12	255.21
11.81″	9	18.11″	5.47″	2236K13	255.21

Control Box and Hand Switches

		Each
Control Box	2236K14	$187.49
Hand Switch for One Actuator	2236K15	64.04
Hand Switch for Two Actuators	2236K16	64.04
Hand Switch for Three Actuators	2236K17	64.04
Hand Switch for Four Actuators	2236K18	64.04

High-Force Electric Actuators

You'll get basic push/pull motion with less down time. To use, just wire these actuators and connect them with a clevis pin at each end (see pages 3352-3355 for clevis pins). Actuators include an enclosed electric motor with thermal overload protection (unless noted) and brake. Components are sealed in a corrosion-resistant aluminum housing. Temperature range is –20° to +120° F.

Actuators with friction-disc slip clutch can be set to slip at any capacity down to 50 lbs.
Actuators with limit switches are adjustable, allowing you to stop the actuator at any position. They include two switches.
115 VAC actuators have capacitors to smooth out the flow of electricity.

100-lb. Push/Pull Force— Actuators are Acme-screw driven. Duty cycle is 1 minute on; 5 minutes off. Rod is stainless steel.

250-lb. Push/Pull Force— Actuators are Acme-screw driven. Duty cycle is 1 minute on; 3 minutes off. Rod is stainless steel.

500-lb. Push/Pull Force— Actuators are Acme-screw driven. DC duty cycle is 1 minute on; 5 minutes off. AC duty cycle is 500″ per hour. Rod is steel.

1,500-lb. Push/Pull Force— Actuators are machine-screw driven. DC duty cycle is 1 minute on; 5 minutes off. AC duty cycle is 500″ per hour. Rod is steel.

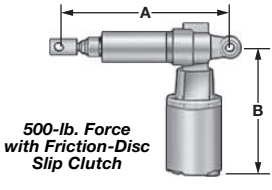

500-lb. Force with Friction-Disc Slip Clutch

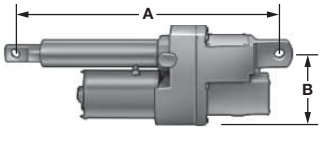

1,500-lb. Force with Limit Switches

ⓘ For additional information about these actuators, including schematics and dimensions, go to mcmaster.com and search for **6530KE** for 100-lb. push/pull force, **6530KD** for 250-lb. push/pull force, **6530KA** for 500-lb. push/pull force, or **6530KC** for 1,500-lb. push/pull force actuators.

Max. Stroke	Speed @ Load, in./min.	Retracted Lg. (A)	(B)	Mount. Holes		Each
12 VDC Actuators with Friction-Disc Slip Clutch						
500-lb. Push/Pull Force						
3″	44	10″	7 11/16″	33/64″	6530K12	$608.86
6″	44	13″	7 11/16″	33/64″	6530K14	620.00
12″	44	19″	7 11/16″	33/64″	6530K16	644.86
18″	44	25″	7 11/16″	33/64″	6530K18	673.89
1,500-lb. Push/Pull Force						
6″	26	20″	5.67″	¾″	6530K32	1,450.36
12″	26	26″	5.67″	¾″	6530K33	1,494.86
18″	26	32″	5.67″	¾″	6530K34	1,539.36
12 VDC Actuators with Limit Switches						
100-lb. Push/Pull Force						
4″	40	8¾″	2.4″	¼″	6530K111●	279.58
8″	40	12¾″	2.4″	¼″	6530K112●	286.21
12″	40	16¾″	2.4″	¼″	6530K113●	296.81
250-lb. Push/Pull Force						
4″	24	9″	3.1″	¼″	6530K116●	367.03
8″	24	13″	3.1″	¼″	6530K117●	373.66
12″	24	17″	3.1″	¼″	6530K118●	380.29
500-lb. Push/Pull Force						
3″	44	11¼″	7 11/16″	33/64″	6530K61	705.40
6″	44	14¼″	7 11/16″	33/64″	6530K62	721.88
12″	44	20¼″	7 11/16″	33/64″	6530K63	736.72
18″	44	26¼″	7 11/16″	33/64″	6530K64	744.96

● Fuse-overload-protected motor.

Max. Stroke	Speed @ Load, in./min.	Retracted Lg. (A)	(B)	Mount. Holes		Each
12 VDC Actuators with Limit Switches (Cont.)						
1,500-lb. Push/Pull Force						
6″	26	20.1″	5.67″	¾″	6530K91	$1,480.03
12″	26	26.1″	5.67″	¾″	6530K92	1,508.04
18″	26	32.1″	5.67″	¾″	6530K93	1,550.90
115 VAC Actuators with Friction-Disc Slip Clutch						
500-lb. Push/Pull Force						
3″	35	10″	8 7/32″	33/64″	6530K22	647.72
6″	35	13″	8 7/32″	33/64″	6530K24	665.85
12″	35	19″	8 7/32″	33/64″	6530K26	679.03
18″	35	25″	8 7/32″	33/64″	6530K28	730.12
115 VAC Actuators with Limit Switches						
500-lb. Push/Pull Force						
3″	35	11¼″	8 3/16″	33/64″	6530K51	769.68
6″	35	14¼″	8 3/16″	33/64″	6530K52	786.16
12″	35	20¼″	8 3/16″	33/64″	6530K53	805.94
18″	35	26¼″	8 3/16″	33/64″	6530K54	837.25
1,500-lb. Push/Pull Force						
6″	50	20.1″	5.67″	¾″	6530K42	1,700.80
12″	50	26.1″	5.67″	¾″	6530K43	1,723.12
18″	50	32.1″	5.67″	¾″	6530K44	1,772.04

Washdown Plug-and-Go Electric Actuators and Controls

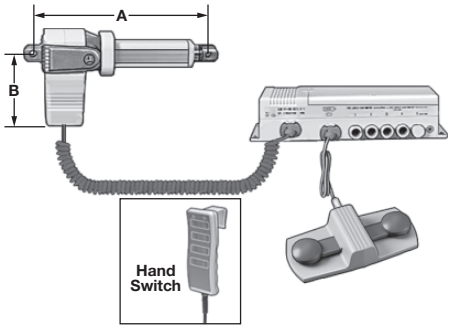

The choice for washdown applications, all components have an ABS housing that is IP66 rated for protection against dust and power jets of water. You'll also get the benefit of simple plug-and-go set up—no programming or hardwiring is required for reliable push/pull motion. *Note:* A complete unit consists of an actuator, a control box, and a hand or foot switch (each sold separately below).

Actuators— Operate on 24 VDC and are driven by a lead screw. All have an ABS motor housing and steel rod. Duty cycle is 1 minute on; 9 minutes off. Temperature range is 32° to 104° F. Mounting holes are 0.47″ dia.

Control Box— Provides 24 VDC output and operates up to four actuators individually. It accepts 120 VAC, 60 Hz input; has integrated overload protection; and includes a 10-ft. power cord with three-prong plug.

Hand Switches— Have extend and retract buttons as well as an LED operation indicator.

Foot Switch— Has extend and retract buttons.

For additional information about these actuators, including schematics and dimensions, go to mcmaster.com and search for **9005KAC**.

Max. Stroke	Speed @ Load, in./min.	Retracted Lg. (A)	(B)		Each
337-lb. Push/Pull Force Actuators					
3″	30	10.8″	5.08″	9005K28	$463.36
6″	30	13.6″	5.08″	9005K29	463.36
12″	30	19.5″	5.08″	9005K31	489.80
18″	30	28.3″	5.08″	9005K32	462.46
674-lb. Push/Pull Force Actuators					
3″	30	11.6″	6″	9005K11	441.70
6″	30	14.4″	6″	9005K12	400.02
12″	30	20.3″	6″	9005K13	489.80
18″	30	28.3″	6″	9005K14	571.90

Max. Stroke	Speed @ Load, in./min.	Retracted Lg. (A)	(B)		Each
1,798-lb. Push/1,348-lb. Pull Force Actuators					
3″	11.8	11.6″	6″	9005K19	$463.36
6″	11.8	14.4″	6″	9005K21	571.92
12″	11.8	20.3″	6″	9005K22	598.34
18″	11.8	28.3″	6″	9005K23	629.88
Control Box, Hand Switches, and Foot Switch					
Control Box				9005K351	250.38
Hand Switch for One Actuator				9005K44	73.38
Hand Switch for Two Actuators				9005K41	73.38
Hand Switch for Three Actuators				9005K42	73.38
Hand Switch for Four Actuators				9005K43	73.38
Foot Switch for One Actuator				9005K422	127.90

Miniature Electromechanical Clutches

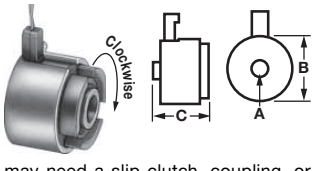

Accelerate loads from zero to full speed in less than three milliseconds. Apply electricity and these clutches rapidly engage; turn off the power, and they instantly disengage. Due to the rapid acceleration and nonslip design of these clutches, some applications may need a slip clutch, coupling, or other shock-absorbing device. These clutches drive in one direction only. Max. rpm is 1,400. They operate on 24 VDC and include wire leads for hardwiring.

Bore (A)	Max. Torque, in.-lbs.	O'all Dia. (B)	Lg. (C)	Wire Lead Lg.	*Clockwise Rotation*	Each	*Counterclockwise Rotation*	Each
1/4″	30	1.30″	1.1″	15″	5156T1	$77.82	5156T11	$77.82
5/16″	30	1.30″	1.1″	15″	5156T2	77.82	5156T12	77.82
3/8″	75	1.75″	1.5″	3″	5156T3	153.20	5156T13	153.20
1/2″	75	1.75″	1.5″	3″	5156T4	153.20	5156T14	153.20

Miniature Slip Clutches

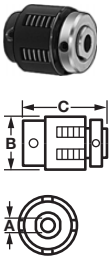

In the event of excess torque, these clutches slip to protect motors and drivetrains and ensure safe operation. They resume driving once the load has been reduced.

Clutches drive and slip in both forward and reverse directions to control the torque between two rotating elements. You can adjust the torque level at which the clutches slip without removing them from your shaft. No lubrication is required.

Bore (A)	*Torque @ 50 rpm, in.-lbs.* Min.	Max.	O'all Dia. (B)	Lg. (C)		Each
1/4″	1	16	1″	1 1/2″	9132K11	$97.68
3/8″	1	16	1″	1 1/2″	9132K13	97.68
3/8″	2	25	1 3/8″	2 1/2″	9132K15	165.99
1/2″	2	25	1 3/8″	2 1/2″	9132K17	165.99
1/2″	4	50	1 5/8″	2 7/16″	9132K19	233.44
1/2″	6	75	2 1/4″	2 7/16″	9132K23	331.73
5/8″	4	50	1 5/8″	2 7/16″	9132K21	233.44
5/8″	6	75	2 1/4″	2 7/16″	9132K25	331.73

Miniature Air-Powered Slip Clutches

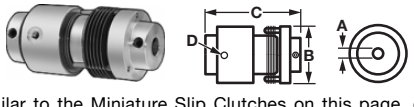

Similar to the Miniature Slip Clutches on this page, except these are air actuated so you can remotely adjust the torque—even during operation. They're an excellent choice for servo mechanisms. The connections are female. No lubrication is required.

Bore (A)	Max. Torque @ 100 psi, in.-lbs.	O'all Dia. (B)	Lg. (C)	Air Inlet Connection (D)		Each
1/4″	20	1 1/4″	2 1/2″	10-32	9133K11	$180.38
3/8″	50	1 1/2″	3 3/8″	10-32	9133K12	306.98
1/2″	100	2″	3 5/8″	10-32	9133K15	321.92
5/8″	300	2 3/4″	3 5/8″	10-32	9133K19	369.25

Quick-Release Shaft Collars

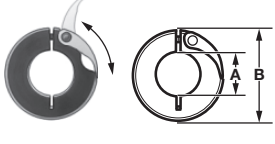

Installing and removing these collars is as easy as pushing down and lifting up a clamp lever. They are one-piece clamp-on style and won't mar your shafts. All are aluminum with a black anodized body and gold anodized clamp lever. Set screw (for positioning) is 300 series stainless steel. **To Order:** Please specify bore size from those available below.

Available Bore Sizes (A)	O'all Dia., mm (B)	Wd., mm	Load Cap., lbs.	Screw Size		Each
3/8″, 1/2″, 5/8″	38	10	80	M3	1511K1	$17.72
3/4″, 1″, 1 1/8″	50	13	150	M4	1511K2	24.38
1 1/4″, 1 3/8″, 1 1/2″	75	15	200	M5	1511K3	35.44

Adjustable Magnetic Clutches

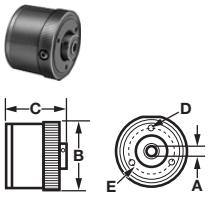

Also known as hysteresis clutches, these magnetic clutches transmit torque through the air—no electricity or air power is needed. Simply use the knurled, easy-to-grip adjustment ring to adjust the torque within the range listed. Then lock the ring with your selected torque in place with the included set screw. All of these clutches have no wearing parts, are highly accurate, and allow repeatable control. They're great for torque overload, torque limiting, and tension control applications. **To Order:** Where applicable, please specify bore size from those available below.

Available Bore Sizes (A)	Torque Adjustment Range, in.-lbs.	Max. rpm @ Full Torque	O'all Dia. (B)	Lg. (C)	Mounting Hole Size (D)	Bolt Circle (E)		Each
1/4″	0.06 to 1.25	900	1.95″	1.65″	M4 × 0.31″	1.26″	7220K3	$204.17
3/8″	0.18 to 5	250	2.76″	2.44″	M4 × 0.39″	1.89″	7220K4	320.83
3/8″, 1/2″, 5/8″	0.5 to 10.6	250	3.31″	2.52″	M5 × 0.39″	2.375″	7220K5	367.50
3/8″, 1/2″, 5/8″, 3/4″, 7/8″, 1″	1 to 25	250	4.68″	3.11″	M5 × 0.47″	3″	7220K6	577.50
3/8″, 1/2″, 5/8″, 3/4″, 7/8″, 1″	1 to 50	250	5.28″	3.11″	M5 × 0.47″	3″	7220K7	630.00

Linear Solenoids

Create linear motion simply and economically. All of these steel solenoids have an open box-frame housing, Class B insulation rated to 266° F, and quick-disconnect wiring lugs (3/16″ on open box-frame models; 1/4″ on high-force open box-frame models, unless noted). AC solenoids operate on 60 Hz. Components are UL recognized.

Open Box Frame—*Intermittent-duty models* have a 25% duty cycle with a maximum "on" time of 1 minute (except 70155K13, which has a maximum "on" time of 50 seconds).

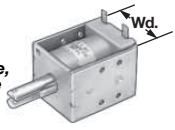

Open Box Frame, Pull Style

ⓘ For additional information, go to mcmaster.com and search for **70155KAC**.

High-Force Open Box Frame—Also known as laminated solenoids, the rod and frame are laminated to efficiently move your loads. *Intermittent-duty models* have a 10% duty cycle with a maximum "on" time of 3 minutes (except 7723K1, which has a maximum "on" time of 2½ minutes).

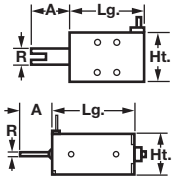

Pull Style

Push Style

ⓘ For additional information, go to mcmaster.com and search for **7723KAC**.

Input Voltage	Max. Stroke Lg.	(A)★	(R)	Rod Dia., (S)	Lg.×Wd.×Ht.	Intermittent Duty Force, oz. @ 1/8″ Stroke		Each	Continuous Duty Force, oz. @ 1/8″ Stroke		Each
Open Box Frame—To Order: *For DC solenoids, please specify 12 or 24 volts.*											
Pull Style											
DC	0.5″	0.6″	0.31″	—	1.1″×1.2″×0.9″	24	**70155K1**	$17.15	12	**70155K2**	$22.15
DC	0.5″	0.6″	0.31″	—	1.8″×1.2″×0.9″	43	**70155K3**	15.19	32	**70155K4**	15.19
DC	1″	1.17″	0.44″	—	2″ ×1.6″×1.4″	128	**70155K5**	26.30	80	**70155K6**	17.80
120 AC	0.5″	0.6″	0.31″	—	1.1″×1.2″×0.9″	18	**70155K72**	24.65	11	**70155K55**	24.65
120 AC	0.85″	0.6″	0.31″	—	1.8″×1.2″×0.9″	20	**70155K47**	19.05	14	**70155K48**	16.57
120 AC	0.85″	1.17″	0.44″	—	2″ ×1.6″×1.4″	45	**70155K41**	33.24	13	**70155K42**	31.97
Push Style											
DC	0.5″	1″	0.093″	—	1.8″×1.2″×0.9″	43	**70155K11**	27.89	32	**70155K12**	27.89
DC	1″	1″	0.125″	—	1.7″×1″ ×0.8″	40	**70155K13**	15.27	17	**70155K14**	15.27
120 AC	0.5″	0.5″	0.093″	—	1.1″×1.2″×0.9″	18	**70155K65**	30.85	11	**70155K66**	30.85
120 AC	0.85″	1″	0.093″	—	1.8″×1.2″×0.9″	20	**70155K61**	31.85	14	**70155K62**	31.85
High-Force Open Box Frame											
Pull Style											
120 AC	1″	0.64″	0.37″	—	1.6″×1.2″×1.4″	112	**7723K1▲**	82.11	68	**7723K2▲**	82.11
120 AC	1″	0.69″	0.49″	—	2.5″×1.8″×2.1″	336	**7723K5**	73.51	155	**7723K6**	73.51
240 AC	1″	0.69″	0.49″	—	2.5″×1.8″×2.1″	336	**7723K7**	73.51	155	**7723K8**	73.51
Push Style											
120 AC	1″	0.82″	0.37″	0.125″	1.6″×1.2″×1.4″	112	**7723K9▲**	86.94	68	**7723K11▲**	86.94
120 AC	1″	1.06″	0.49″	0.187″	2.5″×1.8″×2.1″	336	**7723K12**	88.69	155	**7723K13**	88.69

★ Retracted for pull style; extended for push style. ▲ 3/16″ quick-disconnect wiring lugs.

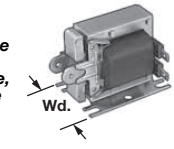

High-Force Open Box Frame, Pull Style

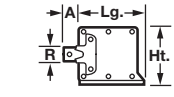

Pull Style

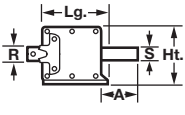

Push Style

Sealed Linear Solenoids

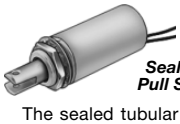

Sealed, Pull Style

Extended-Life Sealed, Pull Style

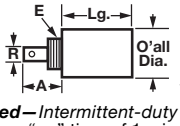

Pull Style

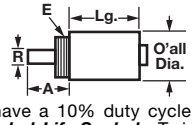

Push Style

The sealed tubular design keeps dirt and contaminants out, making these solenoids great for your tough environments. They are also vibration resistant. All of these solenoids have a steel body, Class B insulation rated to 266° F, threads for easy mounting, and two lead wires. A hex nut and lock washer are included. Components are UL recognized. **To Order:** Please specify 12 or 24 volts.

Sealed—*Intermittent-duty models* have a 10% duty cycle with a maximum "on" time of 1 minute. ***Extended-Life Sealed—*** To increase wear resistance and extend service life, these solenoids have a PTFE-coated rod and an O-ring return cushion to eliminate metal-to-metal contact. *Intermittent-duty models* have a 25% duty cycle with a maximum "on" time of 1 minute, 40 seconds.

Input Voltage	Max. Stroke Lg.	(A)★	Rod Dia., (R)	O'all Dia.	Lg.	Mounting Threads, Male (E)	Intermittent Duty Force, oz. @ 1/8″ Stroke	Power Rating, watts		Each	Continuous Duty Force, oz. @ 1/8″ Stroke	Power Rating, watts		Each
Sealed Pull Style														
DC	0.25″	0.62″	0.203″	0.5″	1″	3/8″-32	4	7.5	**69905K1**	$21.07	1.5	2.5	**69905K2**	$21.07
DC	1″	0.85″	0.250″	0.75″	1.5″	15/32″-32	17	24	**69905K3**	21.33	4	3.5	**69905K4●**	21.33
DC	1″	0.88″	0.500″	1.5″	2.4″	1″-27	130	59	**69905K7**	29.36	60	10	**69905K85**	31.09
DC	1″	0.95″	0.437″	1″	2″	3/4″-24	74	38	**69905K5**	24.17	26	5.5	**69905K6**	24.17
Sealed Push Style														
DC	0.25″	0.75″	0.062″	0.5″	1″	3/8″-32	3	7.5	**69905K73**	24.50	1	2.5	**69905K72**	23.97
DC	0.5″	1.26″	0.109″	1″	2″	3/4″-24	48	38	**69905K45**	28.56	20	5.5	**69905K74**	24.27
DC	1″	1.41″	0.187″	1.5″	1.7″	1″-27	130	41	**69905K77**	32.47	30	7	**69905K46**	32.47
DC	1″	2.04″	0.187″	1.5″	2.4″	1″-27	140	59	**69905K79**	34.54	80	10	**69905K48**	34.54
Extended-Life Sealed Pull Style														
DC	0.25″	0.64″	0.156″	0.44″	1.15″	5/16″-32	2	5.6	**9719K21**	71.95	1.5	2.7	**9719K31**	60.55
DC	0.5″	0.82″	0.313″	0.75″	1.54″	15/32″-32	22	11	**9719K22**	44.27	10	4.3	**9719K32**	41.95
DC	0.75″	1.07″	0.438″	1″	2.04″	3/4″-24	55	20.4	**9719K23**	62.33	28	7.8	**9719K33**	59.58
DC	1″	1.07″	0.500″	1.5″	2.38″	1″-27	140	32.4	**9719K24**	98.78	70	8.4	**9719K34**	87.62

★ Retracted for pull style; extended for push style. ● Maximum stroke length is 3/4″.

Combination Push/Pull Sealed Linear Solenoids

Also known as clapper solenoids, these allow pulling or pushing action with no loss of force in either direction. All have a low-profile tubular design with zinc-plated steel body, threads for easy mounting, Class A insulation rated to 221° F, and two lead wires. Components are UL recognized. *Intermittent-duty models* have a 25% duty cycle with the maximum "on" time listed below. **To Order:** Please specify 12 or 24 volts.

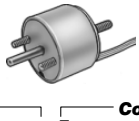

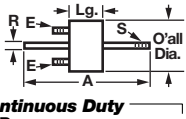

Input Voltage	Max. Stroke Lg.	O'all Lg., (A)	Rod Dia., (R)	Rod Thread, (S)	O'all Dia.	Lg.	Mounting Threads, Male (E)	Intermittent Duty Force, oz. @ 1/8″ Stroke	Power Rating, watts	Max. "On" Time, Seconds		Each	Continuous Duty Force, oz. @ 1/8″ Stroke	Power Rating, watts		Each
DC	0.31″	1.75″	1/8″	6-32	1″	0.66″	4-40	30	16	20	**6873K1**	$32.96	6	4	**6873K2**	$32.96
DC	0.31″	1.50″	5/32″	Unthreaded	1 1/4″	0.50″	4-40	22	18	30	**6873K3**	47.10	5	4.5	**6873K4**	47.10
DC	1″	4.70″	3/8″	3/8″-24	2 5/8″	1.56″	1/4″-20	960	80	90	**6873K5**	93.98	350	20	**6873K6**	93.98

About Electric Motors

AC Motors—The choice for fixed-speed, constant-torque applications.

Voltage Phase—*Single-phase AC motors* are less efficient than three-phase AC motors, but usually cost less and operate on a more commonly available power supply such as 115/208-230 VAC, 60 Hz.

Three-phase AC motors have higher starting torque, higher efficiency, and lower current draw compared to same size single-phase AC motors, but they require a less readily available 208-230/460 VAC, 60 Hz power supply. They usually don't need capacitors, switches, or relays for start-up and are better for heavy duty applications.

DC Motors—Often used where adjustable speed control is required, DC motors have high starting torque and consistent speed/torque over the entire speed range. *DC gearmotors* have lower rpms and higher torque.

Keyways—Motor shafts with keyways have standard ANSI keyways. See page 1174 for keyway dimensions.

Overload Protection—An internal thermostat automatically shuts off the motor when it begins to overheat. *Manual overload protection* has a manual reset button to restart motor. *Automatic overload protection* allows motor to restart itself once it has cooled.

% Full Load Efficiency—How well a three-phase motor converts electrical energy into mechanical energy. For example, a 70% efficient motor drawing 400 watts produces 280 watts of useful energy (400 × 0.70 = 280) and loses 120 watts as heat.

Service Factor—The maximum safe load a motor may be expected to consistently carry. For example, a service factor of 1.35 means that the motor is capable of 35% more hp than its listed rating without damage.

Insulation Class—The maximum temperature a motor can withstand before malfunctioning. It's the sum of the motor temperature and ambient temperature. The later the letter is alphabetically, the higher the temperature rating. Most of our motors are Class A (rated to 221° F), Class B (rated to 266° F), Class F (rated to 311° F), or Class H (rated to 356° F).

Guidelines for Replacing a Motor

When replacing an existing motor, take a look at the specifications on your motor's nameplate and match them to the specifications of our motors. The following are some specifications you must consider:

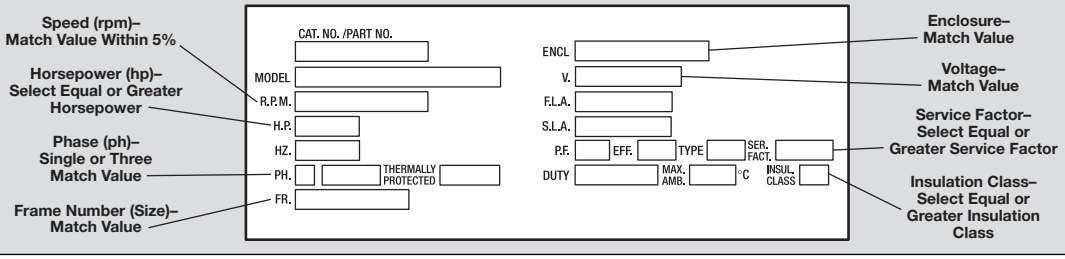

NEMA AC Motors

For technical drawings and 3-D models, go to mcmaster.com.

NEMA 56 Base-Mount AC Motors

Single Phase Open Dripproof (ODP) Enclosure with Rigid Base

Three Phase Totally Enclosed Fan-Cooled (TEFC) Enclosure with Rigid Base

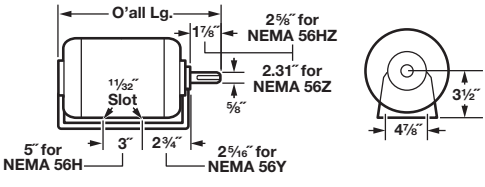

All of these motors have a NEMA 56 footprint with variations as noted. They're rated for continuous duty and have ball bearings (except for 5990K92 and 5990K94, which have sleeve bearings), Class B insulation rated to 266° F (unless noted), and lead wires for electrical connection (except for 5990K14, K17, K21, K92, K31, and K94, which have a terminal board electrical connection). The motors can be used in either clockwise or counterclockwise rotation; instructions are included. Full load amps shown are at the motor's lowest voltage. Housing is steel.

Single-Phase Motors—These motors have a "start" capacitor to boost the starting torque 200-400% of the rated load, unless stated otherwise. They're more efficient than split-phase motors.

Capacitor start/capacitor run motors have a "start" capacitor as well as a "run" capacitor for higher efficiency and lower operating temperatures.

Model 6223K49 is a permanent split-capacitor motor. It has a capacitor in the circuit to store energy and offer a low starting torque that is 30-150% of the rated load. Use it for high-cycle applications such as direct-drive fans and blowers (it must be mounted in the fan's airflow for proper cooling).

Three-Phase Motors—Have higher starting torque, higher efficiency, and lower current draw compared to same size single-phase motors. They usually don't need capacitors, switches, or relays for start-up and are better for heavy duty applications.

Open dripproof (ODP) enclosures are for reasonably dry, clean, well-ventilated, and usually indoor environments. ***Totally enclosed fan-cooled (TEFC) enclosures*** offer greater protection from the environment than ODP models. They have no vent openings and are cooled by an external fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments. ***Totally enclosed nonventilated (TENV) enclosures*** are similar to TEFC, but have lower hp and rely on cooling without a fan. ***Totally enclosed air over (TEAO) enclosures*** are for use within the airflow of a blower or fan they're driving.

Rigid-base motors have a heavy-gauge base that's welded to the housing for maximum support. ***Resilient-base motors*** have rubber isolation rings between the motor mounting hubs and base to dampen vibration and shock.

Single-Phase Motors

hp	rpm	VAC @ 60 Hz	O'all Lg.	Full Load Amps	Service Factor		Each
Open Dripproof (ODP) Enclosure							
Rigid Base with No Overload Protection							
½	1,725	115/208-230	9.99″	8.8	1.25	5990K26	$195.32
½	3,450	115/208-230	9.99″	6.8	1.25	5990K47	143.60
¾	1,725	115/208-230	10.99″	10.8	1.25	5990K49	252.18
¾	3,450	115/208-230	10.49″	9.8	1.25	5990K48	186.63
1	1,725	115/208-230	10.88″	12.8	1.15	5990K52	261.08
1	3,450	115/208-230	10.84″	12.0	1.25	5990K51	243.44
1½	3,450	115/208-230	10.84″	16.4	1.15	5990K53	285.03
Rigid Base with Manual Overload Protection							
1	3,450	115/230	11.38″	13.4	1.15	5990K13♥	243.80
1½	1,725	115/208-230	11.84″	17.2	1.15	5990K54★	394.46
2	3,450	115/230	11.88″	22.0	1.15	5990K27♥	278.75
3	3,450	230	12.38″	15.0	1.15	5990K28♥■	264.94
Rigid Base with Automatic Overload Protection							
¼	1,725	115/208-230	9.24″	5.4	1.35	5990K42	169.21
⅓	1,725	115/208-230	9.24″	6.6	1.35	5990K12	199.20
½	1,725	115/208-230	9.99″	8.8	1.25	5990K15	229.01
¾	1,725	115/208-230	10.99″	10.8	1.25	5990K19	260.29
1	1,725	115/208-230	10.88″	12.8	1.15	5990K23	293.30
Resilient Base with Automatic Overload Protection							
⅓	1,725	115/208-230	11.07″	6.6	1.35	5990K14	203.77
½	1,725	115/230	11.34″	8.6	1.25	5990K17	227.37
¾	1,725	115/208-230	11.07″	11.0	1.25	5990K21	263.27
¾	3,450	115/208-230	11.07″	9.2	1.25	5990K92●	228.35
1	1,725	115/208-230	11.87″	12.6	1.15	5990K31◢	299.14
1	3,450	115/208-230	11.44″	12.0	1.25	5990K94	273.55

♥ NEMA 56Y frame. ★ NEMA 56H frame; capacitor start/capacitor run.
■ Class F insulation rated to 311° F.
● Class A insulation rated to 221° F.
◢ NEMA 56Z frame.

(Continued on following page)

For information about electric motors, see page 1020. For information about motor starters, see page 882.

NEMA 56 Base-Mount AC Motors *(Continued from previous page)*

Single-Phase Motors (Cont.)

hp	rpm	VAC @ 60 Hz	O'all Lg.	Full Load Amps	Service Factor		Each
Totally Enclosed Fan-Cooled (TEFC) Enclosure							
Rigid Base with No Overload Protection							
1/2	3,450	115/208-230	9.94"	7.0	1.15	5990K71	$199.66
3/4	1,140	115/208-230	13.31"	10.6	1.00	5990K74★	423.81
3/4	1,725	115/208-230	11.31"	10.8	1.15	5990K73	267.62
3/4	3,450	115/208-230	11.31"	10.0	1.15	5990K72	214.85
1	1,725	115/208-230	11.81"	14.0	1.15	5990K76	325.47
1	3,450	115/208-230	11.81"	12.0	1.15	5990K75	240.80
1 1/2	1,725	115/208-230	12.81"	17.2	1.00	5990K81★	356.60
1 1/2	3,450	115/208-230	12.31"	17.0	1.00	5990K79	303.67
Rigid Base with Manual Overload Protection							
1	3,450	115/208-230	11.81"	12.0	1.15	5990K101	253.40
2	3,450	115/208-230	13.31"	20.0	1.00	5990K102♠	376.89
Rigid Base with Automatic Overload Protection							
1/2	1,725	115/208-230	10.69"	8.0	1.15	5990K35■	229.56
3/4	1,725	115/208-230	11.31"	10.8	1.15	5990K36	296.85
1	1,725	115/208-230	12.31"	12.8	1.15	5990K99	321.10
Totally Enclosed Nonventilated (TENV) Enclosure							
Rigid Base with No Overload Protection							
1/4	1,725	115/208-230	9.81"	4.6	1.15	5990K55	198.73
Totally Enclosed Air Over (TEAO) Enclosure							
Resilient Base with Automatic Overload Protection							
3/4	1,075	115/230	13.56"	8.0	1.00	6223K49♣	286.80

★ NEMA 56H frame; capacitor start/capacitor run.
♠ NEMA 56H frame; Class F insulation rated to 311° F.
■ Class F insulation rated to 311° F. ♣ NEMA 56HZ frame.

Three-Phase 208-230/460 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	% Full Load Efficiency	Service Factor		Each
Open Dripproof (ODP) Enclosure							
Rigid Base with No Overload Protection							
1/2	1,725	9.99"	1.9	68.0	1.25	6136K53	$208.96
3/4	1,725	10.49"	2.7	75.0	1.25	6136K54	231.24
1	1,725	10.38"	4.2	78.5	1.15	6136K56	246.80
1	3,450	9.84"	3.2	77.0	1.25	6136K55	267.86
Totally Enclosed Fan-Cooled (TEFC) Enclosure							
Rigid Base with No Overload Protection							
1/2	1,140	11.31"	2.4	70.0	1.15	6136K73	361.59
3/4	1,140	11.81"	3.0	75.5	1.15	6136K76	364.30
3/4	1,725	10.81"	2.8	77.0	1.15	6136K75	252.84
1	1,725	11.31"	3.6	77.0	1.15	6136K78	263.67
1	3,450	10.81"	3.2	77.0	1.15	6136K77	280.54
1 1/2	1,725	11.81"	5.0	78.5	1.15	6136K81	284.59
Totally Enclosed Nonventilated (TENV) Enclosure							
Rigid Base with No Overload Protection							
1/4	1,725	9.56"	0.9	78.0	1.15	6136K671	187.86
1/3	1,725	9.56"	1.3	77.0	1.15	6136K691	236.84
1/2	1,725	10.06"	1.8	77.0	1.15	6136K72■	274.64

■ Class F insulation rated to 311° F.

NEMA 56C C-Face-Mount AC Motors

Single-Phase Open Dripproof (ODP) Enclosure

Three-Phase Totally Enclosed Fan-Cooled (TEFC) Enclosure

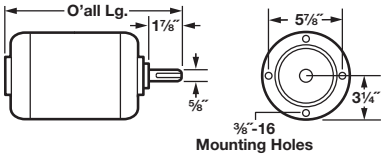

The mounting face has tapped holes and a raised rim so you can mount these motors directly to equipment with a matching configuration. All are rated for continuous duty and have permanently lubricated ball bearings, Class B insulation rated to 266° F (unless noted), and lead wires for electrical connection. The motors can be used in either clockwise or counterclockwise rotation; instructions are included. Full load amps shown are at the motor's lowest voltage. Housing is steel.

Single-Phase Motors— These motors have a "start" capacitor to boost the starting torque 175-300% of the rated load. They're more efficient than split-phase motors. *Capacitor start/capacitor run* motors have a "start" capacitor as well as a "run" capacitor for higher efficiency and lower operating temperatures.

Three-Phase Motors— Have higher starting torque, higher efficiency, and lower current draw compared to same size single-phase motors. They usually don't need capacitors, switches, or relays for start-up and are better for heavy duty applications.

Open dripproof (ODP) enclosures are for reasonably dry, clean, well-ventilated, and usually indoor environments. ***Totally enclosed fan-cooled (TEFC) enclosures*** offer greater protection from the environment than ODP models. They have no vent openings and are cooled by an external fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments. ***Totally enclosed nonventilated (TENV) enclosures*** are similar to TEFC, but have lower hp and rely on cooling without a fan.

Single-Phase 208-230/115 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	Service Factor		Each
Open Dripproof (ODP) Enclosure						
With No Overload Protection						
1/4	1,725	9.24"	5.4	1.35	6135K16	$174.39
1/3	1,725	9.24"	6.6	1.35	6135K42	185.01
1/2	1,725	9.99"	8.8	1.25	6135K44	210.02
1/2	3,450	9.99"	6.8	1.25	6135K43	182.18
3/4	1,725	10.99"	10.8	1.25	6135K46	255.82
1	1,725	10.88"	12.8	1.15	6135K48	317.88
1 1/2	1,725	11.84"	17.2	1.15	6135K51▲	359.32
With Automatic Overload Protection						
1/3	3,450	8.99"	5.6	1.35	6135K41	184.99
Totally Enclosed Fan-Cooled (TEFC) Enclosure						
With No Overload Protection						
1/2	1,725	10.69"	8.0	1.15	6135K7■	227.68
1/2	3,450	9.94"	7.0	1.15	6135K6	199.79
3/4	1,725	11.31"	10.8	1.15	6135K14	264.88
3/4	3,450	11.31"	10.0	1.15	6135K56	231.42
1	1,725	11.81"	12.8	1.15	6135K15	303.36
1	3,450	11.81"	12.0	1.15	6135K57	250.10
1 1/2	1,725	12.81"	17.2	1.00	6135K17▲	390.95
With Manual Overload Protection						
1 1/2	3,450	12.31"	17.0	1.00	6135K58	338.28
2	3,450	13.31"	20.0	1.00	6135K61■	422.05
Totally Enclosed Nonventilated (TENV) Enclosure						
With No Overload Protection						
1/4	1,725	9.80"	4.6	1.15	6135K2	202.48
1/3	1,725	10.30"	5.2	1.15	6135K4■	187.72
1/3	3,450	9.30"	3.8	1.00	6135K3	173.93

▲ Capacitor start/capacitor run. ■ Class F insulation rated to 311° F.

Three-Phase 208-230/460 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	% Full Load Efficiency	Service Factor		Each
Open Dripproof (ODP) Enclosure							
With No Overload Protection							
1/3	1,725	9.49"	1.5	64.3	1.35	6135K73	$171.87
1/3	3,450	9.31"	1.4	68.0	1.35	6135K28	137.28
1/2	1,725	9.99"	1.9	68.0	1.25	6135K75	184.69
1/2	3,450	9.31"	1.8	69.0	1.25	6135K74	172.63
3/4	1,725	10.49"	2.7	75.0	1.25	6135K77	233.83
3/4	3,450	9.81"	2.4	79.0	1.25	6135K49	253.13
1	1,725	10.38"	4.2	78.5	1.15	6135K79	233.83
1	3,450	9.88"	3.2	77.0	1.25	6135K5	236.66
1 1/2	3,450	10.84"	4.2	81.5	1.15	6135K62	271.04
Totally Enclosed Fan-Cooled (TEFC) Enclosure							
With No Overload Protection							
1/4	1,725	9.69"	1.2	58.0	1.15	6135K29	204.27
3/4	1,725	10.81"	2.8	77.0	1.15	6135K33	239.82
3/4	3,450	10.81"	2.4	75.5	1.15	6135K88	236.52
1	1,725	11.31"	3.6	77.0	1.15	6135K34	252.21
1	3,450	10.81"	3.2	77.0	1.15	6135K89	265.78
1 1/2	1,740	11.81"	5.0	78.5	1.15	6135K36	266.98
1 1/2	3,450	11.81"	4.2	81.5	1.15	6135K91	266.95
2	1,725	12.81"	6.2	81.5	1.15	6135K93	338.67
2	3,450	12.31"	5.6	82.5	1.15	6135K92	320.53
Totally Enclosed Nonventilated (TENV) Enclosure							
With No Overload Protection							
1/3	1,725	9.56"	1.3	77.0	1.15	6135K1	192.84
1/3	♥	9.90"	1.1	77.0	1.15	6135K86	181.01
1/2	1,725	10.06"	1.8	77.0	1.15	6135K8	225.97
1/2	3,450	10.40"	1.6	82.5	1.15	6135K87	211.28

♥ 3,450/2,850 rpm.

NEMA 56 Dual Base/C-Face-Mount AC Motors

Single-Phase Totally Enclosed Fan-Cooled (TEFC) Enclosure

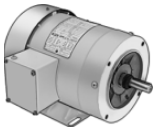

Three-Phase Washdown Enclosure

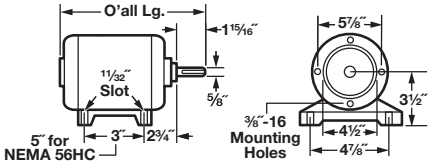

Expand your mounting options—these NEMA 56 footprint motors (with variations as noted) have both rigid base-mount and C-face configurations. All are rated for continuous duty and have ball bearings, Class B insulation rated to 266° F (unless noted), and lead wires for electrical connection. Use motors in either clockwise or counterclockwise rotation; instructions are included. Full load amps shown are at the motor's lowest voltage. Housing is steel.

Single-Phase Motors— These motors have a "start" capacitor to boost the starting torque 175-300% of the rated load. They're more efficient than split-phase motors. ***Three-Phase Motors—*** Have higher starting torque, higher efficiency, and lower current draw compared to same size single-phase motors. They usually don't need capacitors, switches, or relays for start-up and are better for heavy duty applications.

Totally enclosed fan-cooled (TEFC) enclosures offer protection from the environment. They have no vent openings and are cooled by an external fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments. ***Totally enclosed nonventilated (TENV) enclosures*** are similar to TEFC, but have lower hp and rely on cooling without a fan. ***Washdown enclosures*** are for applications that require frequent high-pressure washdowns. They're also great for areas with extreme humidity. Totally enclosed and fan cooled, they keep most water out and release any water that does enter. All have a Type 303 stainless steel shaft and double-sealed, oversized ball bearings to resist moisture and heat.

Single-Phase 115/208-230 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	Service Factor		Each
Totally Enclosed Fan-Cooled (TEFC) Enclosure						
With No Overload Protection						
1/3	1,725	10.44″	6.2	1.15	6135K53	$226.57
1/2	1,725	10.69″	8.0	1.15	6135K47 ♦	268.15
1/2	3,450	9.94″	7.0	1.15	6135K18	216.63
3/4	1,725	11.48″	10.8	1.15	6135K67	320.53
1	1,725	11.98″	12.8	1.15	6135K69	319.35
1	3,450	11.98″	12.0	1.15	6135K68	263.40
1 1/2	3,450	12.48″	17.0	1.00	6135K71	338.32
Washdown Enclosure ♦						
With No Overload Protection						
1/2	1,725	10.87″	8.8	1.15	59845K64	298.74
3/4	1,725	11.62″	10.8	1.15	59845K66	344.42
1	1,725	12.12″	12.8	1.15	59845K68	349.25
1 1/2	1,725	13.37″	19.0	1.15	59845K71 ●	456.47

♦ Class F insulation rated to 311° F. ● NEMA 56HC frame.

Three-Phase 208-230/460 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	% Full Load Efficiency	Service Factor		Each
Totally Enclosed Fan-Cooled (TEFC) Enclosure							
With No Overload Protection							
3/4	1,725	10.48″	2.8	77	1.15	6135K22	$246.20
1	1,725	10.98″	3.6	77	1.15	6135K24	299.41
Totally Enclosed Nonventilated (TENV) Enclosure							
With No Overload Protection							
1/3	1,725	9.56″	1.3	77	1.15	6135K19	204.28
1/2	1,725	10.06″	1.8	77	1.15	6135K21	234.74
Washdown Enclosure ♦							
With No Overload Protection							
1/2	1,725	10.87″	2.0	74	1.15	59845K43	294.76
3/4	1,725	10.87″	2.8	77	1.15	59845K46	339.16
1	1,725	11.37″	3.6	77	1.15	59845K48	348.27
2	1,725	12.62″	6.2	81	1.15	59845K54	418.57

♦ Class F insulation rated to 311° F.

NEMA 48 Base-Mount AC Motors

Single Phase Open Dripproof (ODP) Enclosure with Rigid Base

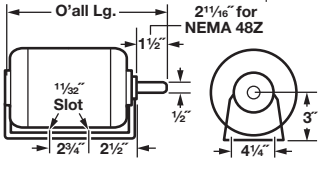

All of these motors have a NEMA 48 footprint with variations as noted. They're rated for continuous duty and have ball bearings (except for 5989K52, 5989K63, and 5990K88, which have sleeve bearings) and lead wires for electrical connection. The motors can be used in either clockwise or counterclockwise rotation; instructions are included. Full load amps shown are at the motor's lowest voltage. Housing is steel.

Single-Phase Motors— These motors have a "start" capacitor to boost the starting torque 200-400% of the rated load, unless stated otherwise. They're more efficient than the split-phase motors and are Class B insulation rated to 266° F (unless noted).

Models 5989K91, 5989K52, and 5989K63 are split-phase motors, which deliver a low-to-moderate starting torque that is 100-175% of the rated load without the use of a capacitor.

Models 6223K42, *K41, K43, K46,* and *K45* are permanent split-capacitor motors, which have a capacitor in the circuit to store energy and offer a low starting torque that is 30-150% of the rated load. Use them for high-cycle applications such as direct-drive fans and blowers (they must be mounted in the fan's airflow for proper cooling). They also have a NEMA 48Z frame.

Three-Phase Motor— Has a higher starting torque, higher efficiency, and lower current draw compared to same size single-phase motors. It usually doesn't need capacitors, switches, or relays for start-up and is better for heavy duty applications. Class F insulation rated to 311° F.

Open dripproof (ODP) enclosures are for reasonably dry, clean, well-ventilated, and usually indoor environments. ***Totally enclosed fan-cooled (TEFC) enclosures*** offer greater protection from the environment than ODP models. They have no vent openings and are cooled by an external fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments. ***Totally enclosed nonventilated (TENV) enclosures*** are similar to TEFC, but have lower hp and rely on cooling without a fan. ***Totally enclosed air over (TEAO) enclosures*** are for use within the airflow of a blower or fan they're driving.

Rigid-base motors have a heavy-gauge base welded to the housing for support. ***Resilient-base motors*** have rubber isolation rings between motor mounting hubs and base to dampen vibration and shock.

Single-Phase Motors

hp	rpm	VAC @ 60 Hz	O'all Lg.	Full Load Amps	Service Factor		Each
Open Dripproof (ODP) Enclosure (Unless Noted)							
Rigid Base with No Overload Protection							
1/4	1,725	115	8.9″	4.6	1.35	5989K91 ♣ ♥	$145.04
1/2	1,725	115/208-230	9.62″	8.8	1.25	5990K16 ★	211.25
1/2	3,450	115/208-230	9.62″	6.8	1.25	5990K46 ★	143.60
Rigid Base with Automatic Overload Protection							
1/4	1,725	115/208-230	8.87″	5.4	1.35	5990K41 ★	147.95
1/3	1,725	115/208-230	8.87″	6.6	1.35	5990K44 ★	169.21
Resilient Base with Automatic Overload Protection—1 5/8″ Shaft Lg.							
1/4	1,725	115	8.9″	4.6	1.35	5989K52 ♠ ♥	134.29
1/4	1,725	115/230	9.33″	4.5	1.35	5990K87 ★	207.16
1/3	1,725	115	8.9″	5.9	1.35	5989K63 ♠	136.76
1/3	1,725	115/230	9.9″	5.6	1.35	5990K88 ★ ♥	181.16
Totally Enclosed Fan-Cooled (TEFC) Enclosure							
Rigid Base with No Overload Protection							
1/3	1,725	115/208-230	9.56″	6.6	1.15	5990K65 ★	199.67
1/2	1,725	115/208-230	10.31″	8.0	1.15	5990K68 ♦	228.38
Totally Enclosed Nonventilated (TENV) Enclosure							
Rigid Base with No Overload Protection							
1/4	1,725	115/208-230	9.43″	4.6	1.15	5990K63 ★	180.20
1/2	3,450	115/208-230	10.43″	5.8	1.00	5990K107 ★	191.91
Totally Enclosed Air Over (TEAO) Enclosure							
Resilient Base with Automatic Overload Protection							
1/4	1,100	115/230	9.78″	4.0	1.00	6223K42 ★	169.40
1/4	1,700	115/230	10.12″	3.4	1.00	6223K41 ★	172.43
1/3	1,725	115/230	10.09″	3.6	1.00	6223K43 ★	202.29
1/2	1,100	115/230	11.05″	6.5	1.00	6223K46 ★	218.00
1/2	1,700	115/230	11.00″	5.5	1.00	6223K45 ★	221.13

♣ 1 5/8″ shaft length. ♥ Open enclosure. ★ Shaft has a flat instead of a standard ANSI keyway. ♠ Also has NEMA 56 mounting holes and an adapter to convert shaft into a 5/8″ dia. keyed shaft.
♦ Class F insulation rated to 311° F.

Three-Phase 208-230/460 VAC @ 60 Hz Motor

hp	rpm	O'all Lg.	Full Load Amps	% Full Load Efficiency	Service Factor		Each
Totally Enclosed Nonventilated (TENV) Enclosure							
Rigid Base with No Overload Protection							
1/3	1,725	9.68″	1.4	78	1.15	6136K68	$215.73

For information about electric motors, see page 1020. For information about motor starters, see page 882.

NEMA 143T/145T and 182T/184T Base-Mount AC Motors

NEMA 143T/145T Single Phase, Open Dripproof (ODP) Enclosure

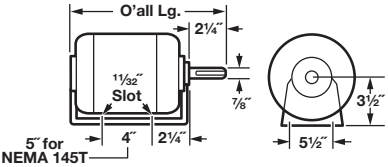

NEMA 182T/184T Three Phase, Totally Enclosed Fan-Cooled (TEFC) Enclosure

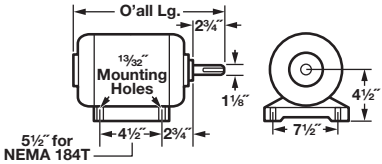

All of these motors are rated for continuous duty and have ball bearings; a rigid, heavy-gauge base that's welded to the housing for maximum support; and lead wires for electrical connection. Motors can be used in either clockwise or counterclockwise rotation; instructions are included. Full load amps shown are at the motor's lowest voltage. Housing is steel.

Single-Phase Motors— These motors have a "start" capacitor to boost the starting torque 200-400% of the rated load. They're more efficient than split-phase motors. *Capacitor start/capacitor run motors* have a "start" capacitor as well as a "run" capacitor for higher efficiency and lower operating temperatures.

Three-Phase Motors— Have higher starting torque, higher efficiency, and lower current draw compared to same size single-phase motors. They usually don't need capacitors, switches, or relays for start-up and are better for heavy duty applications.

Open dripproof (ODP) enclosures are for reasonably dry, clean, well-ventilated, and usually indoor environments. ***Totally enclosed fan-cooled (TEFC) enclosures*** offer greater protection from the environment than ODP models. They have no vent openings and are cooled by an external fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments.

NEMA 143T/145T

Single-phase motors have Class B insulation rated to 266° F. Three-phase motors have Class F insulation rated to 311° F. *Models* 5990K39, 5990K77, 6136K411, and 6136K421 have a NEMA 143T frame. *All others* have a NEMA 145T frame.

Single-Phase 115/208-230 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	Service Factor		Each
Open Dripproof (ODP) Enclosure						
With Manual Overload Protection						
1	1,740	11.13″	12.8	1.15	5990K39	$302.03
1½	1,740	12.28″	17.2	1.15	5990K22▲	333.34
Totally Enclosed Fan-Cooled (TEFC) Enclosure						
With No Overload Protection						
1	1,140	14.25″	13.4	1.00	5990K78▲	392.41
1	1,740	12.75″	12.8	1.15	5990K77	313.43
1½	1,740	13.25″	17.2	1.00	5990K82▲	356.60

▲ Capacitor start/capacitor run.

Three-Phase 208-230/460 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	% Full Load Efficiency	Service Factor		Each
Open Dripproof (ODP) Enclosure							
With Automatic Overload Protection							
1	1,800	12.19″	3.2	85.5	1.25	6136K411	$397.67
1½	1,800	12.69″	4.6	86.5	1.25	6136K412	414.96
2	1,800	13.69″	6.0	86.5	1.25	6136K413	469.49
3	3,600	12.69″	8.0	86.5	1.25	6136K414	462.84
Totally Enclosed Fan-Cooled (TEFC) Enclosure							
With Automatic Overload Protection							
1	1,800	12.93″	3.2	85.5	1.25	6136K421	454.32
1½	1,800	13.43″	4.8	86.5	1.15	6136K422	468.83
2	1,800	14.43″	6.0	86.5	1.25	6136K423	488.11
2	3,600	13.43″	5.2	85.5	1.25	6136K424★	505.40

★ Motor does not have overload protection.

NEMA 182T/184T

Motors have Class F insulation rated to 311° F. *Models* 5990K59, 6136K431, and 6136K442 have a NEMA 182T frame. *All others* have a NEMA 184T frame.

Single-Phase Motors

hp	rpm	VAC @ 60 Hz	O'all Lg.	Full Load Amps	Service Factor		Each
Open Dripproof (ODP) Enclosure							
With No Overload Protection							
3	1,740	115/230	14.19″	33.8	1.15	5990K61	$431.76
5	1,740	208-230	14.69″	21	1.15	5990K62▲	506.97
With Manual Overload Protection							
2	1,740	115/208-230	13.19″	24.5	1.15	5990K59	445.65

▲ Capacitor start/capacitor run.

Three-Phase 208-230/460 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	% Full Load Efficiency	Service Factor		Each
Open Dripproof (ODP) Enclosure							
With Automatic Overload Protection							
3	1,800	13.19″	8.4	89.5	1.25	6136K431	$480.80
5	1,800	14.19″	13.6	89.5	1.25	6136K432	541.98
Totally Enclosed Fan-Cooled (TEFC) Enclosure							
With Automatic Overload Protection							
2	1,200	14.96″	7.4	88.5	1.15	6136K441	793.35
3	1,800	13.96″	8.4	89.5	1.15	6136K442	552.62
5	1,800	14.96″	13.7	89.5	1.15	6136K443	607.14

NEMA 145T C-Face-Mount and Dual Base/C-Face-Mount AC Motors

C-Face Mount

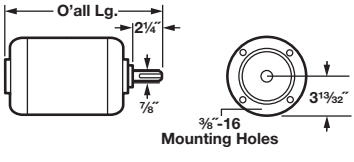

Dual Base/ C-Face Mount

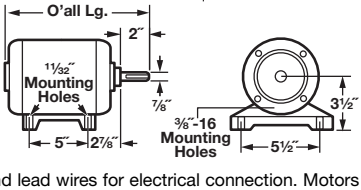

Offering higher starting torque, higher efficiency, and lower current draw compared to same size single-phase motors, these three-phase motors are great for heavy duty applications. Plus, they usually don't need capacitors, switches, or relays for start-up.

All have a totally enclosed fan-cooled (TEFC) enclosure for protection from the environment. They have no vent openings and are cooled by an external fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments. All motors can be used in either clockwise or counterclockwise rotation; instructions are included. They have ball bearings and lead wires for electrical connection. Motors are rated for continuous duty. Full load amps shown are at the motor's lowest voltage. Housing is steel.

C-Face Mount— The mounting face is machined with tapped holes and a raised rim so you can mount these motors directly to equipment with a matching configuration. Motors have Class B insulation rated to 266° F.

Dual Base/C-Face Mount— Expand your mounting options—this motor has both rigid base-mount and C-face configurations. It also has Class F insulation rated to 311° F

Three-Phase 208-230/460 VAC @ 60 Hz Motors with No Overload Protection

	hp	rpm	O'all Lg.	Full Load Amps	% Full Load Efficiency	Service Factor		Each
C-Face Mount	1½	1,800	12.67″	4.5	84.0	1.15	6135K721	$376.03
C-Face Mount	2	1,800	13.42″	6.0	84.0	1.15	6135K722	386.03
Dual Base/C-Face Mount	2	1,800	13.92″	6.0	86.5	1.25	6135K723●	591.85

● Motor has automatic overload protection.

For information about electric motors, see page 1020. For information about motor starters, see page 882.

NEMA 213T and 215T Base-Mount AC Motors

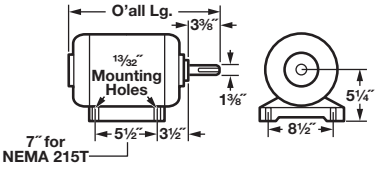

Great for heavy duty applications, these three-phase motors offer higher starting torque, higher efficiency, and lower current draw compared to same-size single-phase motors. Plus, they usually don't need capacitors, switches, or relays for start-up. All have a totally enclosed fan-cooled (TEFC) enclosure for protection from the environment. They have no vent openings and are cooled by an external fan. These airtight motors are suitable for nonhazardous, dirty, damp (but not washdown) environments.

All motors are rated for continuous duty and have ball bearings; a rigid, heavy-gauge base that's welded to the housing for maximum support; Class F insulation rated to 311° F; and lead wires for electrical connection. They can be used in either clockwise or counterclockwise rotation; instructions are included. Full load amps shown are at the motor's lowest voltage. Housing is cast iron.

Three-Phase 208-230/460 VAC @ 60 Hz Motors

hp	rpm	O'all Lg.	Full Load Amps	% Full Load Efficiency	Service Factor		Each
NEMA 213T with No Overload Protection							
7½	1,800	18.19″	20.0	91.7	1.25	6136K511	$795.54
NEMA 215T with No Overload Protection							
10	1,800	19.61″	27.0	91.7	1.25	6136K512	949.01

AC Gearmotors

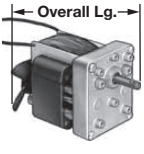

Face Mount

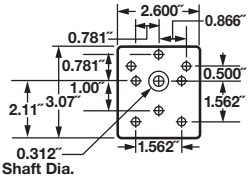

Shaft Dia.

Base Mount

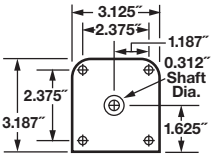

The following are general guidelines for choosing rotations per minute (rpm): For valve operation, use a 1-10 rpm motor. For stirring and mixing applications, use a 20-100 rpm motor. For fan operation, use a motor with an rpm greater than 100.

The simple, shaded-pole design (no start switch or capacitor) of these gearmotors is perfect for your light duty, direct-drive applications. Each gearmotor has a motor and fan matched with a geared speed reducer to lessen speed while increasing torque. Using a gearmotor can eliminate the need for belts, chains, and other speed reducers.

Gearmotors are rated for continuous duty and have an open fan, sleeve bearings, steel gears, Class B insulation rated to 266° F, and lead wires for electrical connection. They also have a clockwise rotation (when facing the shaft end) and are not reversible. Shaft diameter is 0.312″ (0.281″ across flat); shaft length is 1″. Housing is steel. UL listed and CSA certified.

Face-mount motors have eight mounting holes on the face that are tapped for 8-32 screws. ***Base-mount motors*** have four mounting holes on the face that are tapped for 10-32 screws, plus two 0.19″ dia. untapped holes on the base.

SINGLE-PHASE 115 VAC @ 50/60 Hz GEARMOTORS WITH AUTOMATIC OVERLOAD PROTECTION

		Face Mount				Base Mount			
rpm	Full Load Amps	Torque, in.-lbs.	O'all Lg.		Each	Torque, in.-lbs.	O'all Lg.		Each
1	0.4	—	—		—	50	4.40″	6142K51	$52.29
3	0.4	50	4.12″	6142K42	$46.93	50	4.40″	6142K52	53.56
5	0.4	50	4.12″	6142K43	46.93	40	4.40″	6142K53	53.98
10	1.0	40	4.50″	6142K44	53.51	40	4.78″	6142K54	55.88
20	1.0	25	4.50″	6142K45	52.63	20	4.78″	6142K55	55.88
35	1.2	20	4.75″	6142K46	51.62	15	5.03″	6142K56	54.95
50	1.6	15	5.00″	6142K47	56.49	15	5.28″	6142K57	57.44
75	1.6	15	5.00″	6142K48	53.20	10	5.28″	6142K58	57.44
100	1.6	7	5.00″	6142K49	53.20	7	5.28″	6142K59	55.93
125	1.6	6	5.00″	6142K61	53.20	6	5.28″	6142K71	55.93
150	1.6	5	5.00″	6142K62	53.20	5	5.28″	6142K72	55.93
200	1.6	4	5.00″	6142K63	53.20	4	5.28″	6142K73	55.93

Synchronous AC Gearmotors

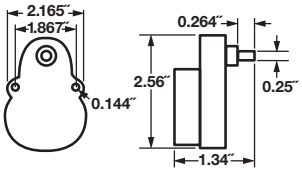

To help eliminate the need for belts, chains, and other speed reducers, these gearmotors are synchronized with line frequency and load fluctuation to provide precise, constant speed for timing and positioning applications. Each gearmotor consists of a motor and a geared speed reducer to lessen speed while increasing torque. Although the motor operates at very low rpms and has low starting torque, it is highly efficient.

Gearmotors are rated for continuous duty and have sleeve bearings, molded plastic gears, Class A insulation rated to 221° F, and lead wires for electrical connection. They also have a clockwise rotation (when facing the shaft end) and are not reversible. Rated rpm values decrease when operating at 50 Hz. Full load amps shown are at the motor's lowest voltage. Housing is zinc-plated steel. UL recognized.

Single-Phase 110-120 VAC @ 50/60 Hz Gearmotors with No Overload Protection

rpm	Torque, in.-lbs.	Full Load Amps	Service Factor		Each	rpm	Torque, in.-lbs.	Full Load Amps	Service Factor		Each
1	6.9	40 mA	1	3867K1	$22.66	7.2	5.2	40 mA	1	3867K14	$22.66
1.5	6.9	40 mA	1	3867K3	22.66	9	3.5	40 mA	1	3867K16	22.66
2.5	6.9	40 mA	1	3867K5	22.66	12	2.6	40 mA	1	3867K18	22.66
3	6.9	40 mA	1	3867K7	22.66	15.3	2.2	40 mA	1	3867K21	22.66
4.8	6.9	40 mA	1	3867K9	22.66	20	1.7	40 mA	1	3867K23	22.66
6	6.0	40 mA	1	3867K12	22.66						

NEMA 34 Face-Mount Brushless DC Motors with Speed Controller

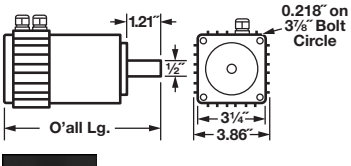

Close-Up View of Controller Knob

An integrated speed controller allows you to plug these motors into any 120-VAC outlet for quick, easy operation. The controller has a knob to adjust the speed, a switch to change the direction of the motor from clockwise to counterclockwise, and an overload reset switch. There's 10 feet of cable between the motor and the controller so you can mount the controller (which fits in a 2⅞″ Ht.×4″ Wd. cutout) in a remote location.

These brushless motors are rated for continuous duty. They last longer and produce less noise and electromagnetic interference than brush-style DC motors. All are IP50 rated, have a maximum temperature of 100° F, and include a 9-ft. power cord with three-prong plug. Housing is aluminum and steel.

hp	rpm Range	Torque, in.-lbs.	O'all Lg.	Full Load Amps		Each
⅕	0-1,740	8.1	7.4″	2	7200K1	$751.25
⅓	0-1,740	13.4	8.4″	4	7200K2	815.09
⅓	0-3,450	6.5	7.4″	4	7200K3	772.14

For information about electric motors, see page 1020. For speed controllers, see pages 883-884.

NEMA 56 Dual Base/C-Face-Mount DC Motors

With both base-mount and C-face configurations, you have two mounting options. All motors have a NEMA 56 footprint (with variations as noted) and are brush style with an internal permanent magnet. Their brush/spring assembly is removable for easy maintenance. Motors are rated for continuous duty and have ball bearings, Class F insulation rated to 311° F (unless noted), and a junction box with lead wires for electrical connection. They can be used in either clockwise or counterclockwise rotation; instructions are included. You can also use a speed controller (not included) to change the motor speed. Torque remains constant over the entire speed range. Housing is aluminum and steel. UL listed and CSA certified.

Low-Voltage Motors— Great for mobile and generator-powered applications, these motors are totally enclosed nonventilated (TENV), unless noted, for protection from the environment. They have no vent openings and rely on cooling without a fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments. For speed controllers, see 7729K on page 883.

High-Voltage Motors— Have a high starting torque to handle heavy loads. All have a totally enclosed fan-cooled (TEFC) enclosure. They're similar to TENV, but are cooled by an external fan. For speed controllers, see 7793K on page 884.

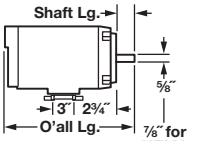

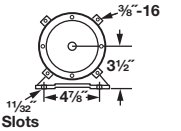

hp	rpm	Torque, in.-lbs.	Shaft Lg.	12 VDC O'all Lg.	12 VDC Full Load Amps		12 VDC Each	24 VDC O'all Lg.	24 VDC Full Load Amps		24 VDC Each
Low Voltage											
1/4	1,800	8.75	1 7/8"	10.44"	21	59835K71	$374.71	—	—	—	—
1/3	1,800	11.7	1 7/8"	11.44"	27	59835K72	413.76	10.94"	13.5	59835K73	$424.59
1/2	1,800	17.5	1 7/8"	12.44"	39	59835K74♣	428.58	11.94"	20	59835K75	439.84
3/4	1,800	26.3	1 7/8"	13.81"	58	59835K76■	508.90	12.81"	29	59835K77■	459.89
1	1,800	35	1 7/8"	13.81"	80	59835K78♣■	548.27	13.81"	39	59835K79♣■	558.16
				90 VDC				**180 VDC**			
High Voltage											
1/4	1,750	9	1 7/8"	10.81"	2.5	6215K33	$349.23	11.31"	1.4	6215K41	$346.88
1/3	1,750	12	1 7/8"	11.31"	3.5	6215K42	398.20	11.31"	1.7	6215K43	390.42
1/2	1,750	18	1 7/8"	11.81"	5	6215K35	401.70	11.81"	2.5	6215K44	401.67
1/2	2,500	12.6	1 7/8"	10.81"	5	6215K62	378.70	—	—	—	—
3/4	1,750	27	1 7/8"	13.81"	7.6	6215K36	523.49	13.81"	3.8	6215K45	514.52
1	1,750	36	1 7/8"	16.31"	10	6215K37	648.26	14.81"	5	6215K46	661.53
1	2,500	25.2	1 7/8"	13.81"	10	6215K56	463.95	—	—	—	—
1 1/2	1,750	54	1 7/8"	—	—	—	—	16.88"	7.6	6215K47♣	734.66
2	2,500	50.4	2"	—	—	—	—	16.88"	8.6	6215K1★	1,074.01

♣ Class H insulation rated to 356° F. ■ Totally enclosed fan-cooled (TEFC). ★ NEMA 56/145TC frame.

NEMA DC Stepper Motors, Drivers, and Controls

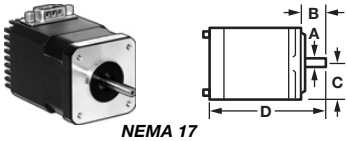

NEMA 17

DC stepper motors make precise shaft positioning and motor speed control possible. Unlike standard motors, stepper motors move in discrete increments to position loads. Operate them in full-step (1.8° per step) or half-step (0.9° per step) mode. In full-step mode, motors can run at up to 10,000 steps per second (maximum rpm is 3,000). All of these face-mount motors are rated for continuous duty and have a brushless design for long life, ball bearings, and lead wires for electrical connection. They can be used in either clockwise or counterclockwise rotation. To reverse rotation, reprogram drivers.

NEMA 8, 11, 14, 23, and ***34 Frame Motors, Drivers,*** and ***Motion Controllers—*** Combine two motors and a motion controller (sold separately) with up to two drivers (sold separately) to create a two-axis motion control system. Motion controller requires a PC or other programming device such as a PLC (programmable logic controller).

Drivers accept DC input voltage and convert it into pulses that drive the stepper motor. All include a heat sink to dissipate heat (except for 6134K61). Drivers can microstep down to 0.23° per step on model 6627T41, 0.9° on model 6134K61, and 0.018° on model 6134K92.

Motion controllers allow independent control of two motors and two drivers. Controller accepts input voltage and converts it into the correct DC voltage to power the driver. Connect your driver directly to the controller. Requires Windows PC software (unless noted) to create your motion-control system (software must be downloaded; PC with internet connection required). An RS-232 cable (sold separately) is also required for connection to your PC.

NEMA 17 Frame Motors with Integrated Driver and Motion Controller— Motors include a driver and motion controller, which accept 12-40 VDC. Requires Windows PC software to create your motion-control system (software must be downloaded; PC with internet connection required). An RS-232 cable (sold separately) is also required for connection to your PC.

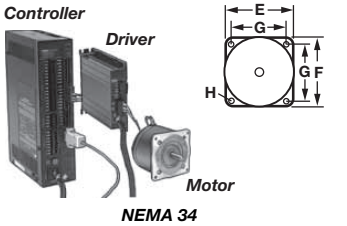

NEMA 34

Motors: Torque, in.-lbs.	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Mounting Holes (H)	Full Load Amps		Each	Drivers: Input Voltage, VDC	Rated Amps		Each
NEMA 8 Frame Motors— *Class B insulation rated to 266° F. Housing is aluminum.*															
0.19	0.157"	0.59"	0.40"	1.89"	0.80"	0.80"	0.63"	M2 × 0.138"	0.6	6627T11	$99.74	12-24	2	6627T41	$116.00
0.25	0.157"	0.59"	0.40"	2.29"	0.80"	0.80"	0.63"	M2 × 0.138"	0.8	6627T12	113.33	12-24	2	6627T41	116.00
NEMA 11 Frame Motors— *Class B insulation rated to 266° F. Housing is aluminum.*															
0.58	0.197"	0.79"	0.56"	2.05"	1.11"	1.11"	0.91"	M2.5 × 0.12"	0.67	6627T21	93.33	12-24	2	6627T41	116.00
0.86	0.197"	0.79"	0.56"	2.56"	1.11"	1.11"	0.91"	M2.5 × 0.12"	0.67	6627T22	99.74	12-24	2	6627T41	116.00
1.04	0.197"	0.79"	0.56"	2.80"	1.11"	1.11"	0.91"	M2.5 × 0.12"	0.67	6627T23	106.67	12-24	2	6627T41	116.00
NEMA 14 Frame Motors— *Class B insulation rated to 266° F. Housing is aluminum.*															
0.47	0.197"	0.60"	0.70"	1.62"	1.39"	1.39"	1.02"	4-40 × 0.14"	0.45	6627T31	86.67	12-24	2	6627T41	116.00
1.25	0.197"	0.60"	0.70"	1.94"	1.39"	1.39"	1.02"	4-40 × 0.14"	0.80	6627T32	93.33	12-24	2	6627T41	116.00
NEMA 23 Frame Motors— *Class A insulation rated to 221° F. Housing is steel. UL recognized.*															
4.69	0.25"	0.81"	1.12"	2.83"	2.24"	2.24"	1.856"	0.205"	1.0	6134K82	269.67	24-40	3.5	6134K61	379.67
4.69	0.25"	0.81"	1.12"	2.83"	2.24"	2.24"	1.856"	0.205"	3.8	6134K83	269.67	24-40	3.5	6134K61	379.67
7.81	0.25"	0.81"	1.12"	3.83"	2.24"	2.24"	1.856"	0.205"	4.7	6134K84	308.06	24-40	3.5	6134K61	379.67
11.88	0.25"	0.81"	1.12"	4.83"	2.24"	2.24"	1.856"	0.205"	4.6	6134K85	572.15	24-40	3.5	6134K61	379.67
NEMA 34 Frame Motors— *Class A insulation rated to 221° F. Housing is steel. UL recognized.*															
11.25	0.375"	1.19"	1.7"	3.72"	3.39"	3.39"	2.74"	0.223"	4.7	6134K86	395.28	24-75	8	6134K92	1,316.02
23.13	0.375"	1.19"	1.7"	4.97"	3.39"	3.39"	2.74"	0.223"	4.6	6134K87	555.36	24-75	8	6134K92	1,316.02
34.38	0.375"	1.19"	1.7"	6.35"	3.39"	3.39"	2.74"	0.223"	5.5	6134K88	696.10	24-75	8	6134K92	1,316.02
34.38	0.375"	1.19"	1.7"	6.35"	3.39"	3.39"	2.74"	0.223"	7.0	6134K89	696.10	24-75	8	6134K92	1,316.02
NEMA 17 Frame Motors with Integrated Driver and Motion Controller— *Class B insulation rated to 266° F. Housing is aluminum.*															
2.40	0.197"	0.94"	0.737"	3.63"	1.67"	1.67"	1.22"	M3 × 0.15"	0.9	6627T1	393.94	—	—	—	—
3.06	0.197"	0.94"	0.737"	3.86"	1.67"	1.67"	1.22"	M3 × 0.15"	1.4	6627T4	431.82	—	—	—	—
5.06	0.197"	0.94"	0.737"	4.18"	1.67"	1.67"	1.22"	M3 × 0.15"	1.05	6627T3	454.55	—	—	—	—

Motion Controller for NEMA 8, 11, and 14 frame motors (12-40 VDC input voltage)	6627T51	Each	$406.67
Motion Controller for NEMA 23 and 34 frame motors (110-240 VAC input voltage)●	6134K11	Each	$2,931.25
RS-232 Cable	6134K12	Each	$91.57

● Windows software included.

Adjustable NEMA Motor-Mount Bases

Mount your motor on one of these bases and you can easily adjust its position—they're great for compensating for belt stretch and wear. To select a base, check your motor's nameplate for the NEMA frame size and match it with a base listed (see page 1020 for a nameplate illustration).

(A) Universal Sliding-Bars Base— Accepts almost any NEMA motor frame as well as non-NEMA motor frames up to 2 hp. Hand wheel moves motor forward and back. The choice for variable-speed pulleys.

(B) Adjusting-Screw Bases— *Models* 62035K21-*K27* have a one-piece, formed motor base and a single adjusting screw.

Models 62035K28-*K32* have a fabricated motor base and two adjusting screws.

(C) Sliding-Plate Base— Hand wheel moves motor forward and back. Works well with variable-speed pulleys.

(D) Spring-Loaded Base— The spring allows automatic belt tensioning. For applications where belt stretch may change during operation.

(E) Tilting-Plate Base— Hand crank pivots motor plate up to 30°.

	For NEMA Frames	Adjustment Range	Overall Size Lg.	Wd.	Ht.		Each
A	★	12″	18⅛″	8″	3¼″	6531K12	$132.86
B	56	3″	10⅝″	6½″	1⅛″	62035K21	19.02
B	143, 143T	3″	10½″	7½″	1⅛″	62035K22	23.87
B	145, 145T	3″	10½″	8½″	1⅛″	62035K23	23.87
B	182, 182T	3″	12¾″	9½″	1½″	62035K24	28.23
B	184, 184T	3″	12¾″	10½″	1½″	62035K25	28.23
B	213, 213T	3½″	15″	11″	1¾″	62035K26	38.28
B	215, 215T	3½″	15″	12½″	1¾″	62035K27	38.28
B	254, 254T	4″	17¾″	15⅛″	2″	62035K28	71.32
B	256, 256T	4″	17¾″	16⅞″	2″	62035K29	71.32
B	284, 284T	4½″	19¾″	16⅞″	2″	62035K31	78.11
B	286, 286T	4½″	19¾″	18⅜″	2″	62035K32	78.11
C	48, 56	5⅞″	13⅛″	6¼″	3″	6104K12	133.38
D	48, 56	2⅛″	9½″	5⅞″	1⅜″	61945K11	117.74
E	48, 56	——	13″	6⅞″	3⁹⁄₁₆″	6104K11	150.74

★ 48, 56, 56H, 66, 143T, 145T, 182, 184, 203, 204, 224, and 225.

Face-Mount DC Motors

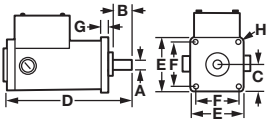

The choice for low voltage, low torque applications, these motors have a square mounting flange and a flat on the shaft to accept set screws for quick equipment connection. The motors are brush style with an internal permanent magnet. Their brush/spring assembly is removable for easy maintenance.

Motors operate on 24 VDC and are rated for continuous duty. They have ball bearings, Class F insulation rated to 311° F, and a junction box with lead wires for electrical connection (except for 59835K61, which just has lead wires). The motors can be used in either clockwise or counterclockwise rotation; instructions are included. To adjust motor speed, use a speed controller (sold separately; see 7729K on page 883). Motors have a totally enclosed nonventilated (TENV) enclosure for protection from the environment. They have no vent openings and rely on cooling without a fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments. Housing is aluminum and steel. UL listed.

hp	rpm	Torque, in.-lbs.	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Mounting Holes (H)	Full Load Amps		Each
1/10	4,200	1.80	5/16″	1.47″	1.23″	6.43″	2.47″	1.73″	0.30″	8-32	4.4	59835K61	$166.98
1/7	4,200	2.56	1/2″	1.43″	1.57″	6.38″	3.16″	2.63″	0.46″	1/4″-20	7.7	59835K62	189.76
1/4	3,500	6.38	1/2″	1.43″	1.57″	8.38″	3.16″	2.63″	0.46″	1/4″-20	13	59835K63	258.49
1/3	3,900	5.88	1/2″	1.43″	1.57″	9.38″	3.16″	2.63″	0.46″	1/4″-20	14	59835K64	267.33

Miniature DC Motors

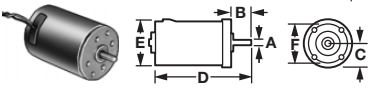

With their small diameter, these motors are sized just right for small machinery. The motors are brush style with an internal permanent magnet. Threaded holes on the face allow mounting to your equipment. Shafts do not have a keyway.

All of these motors are rated for continuous duty and have ball bearings (unless noted), a maximum temperature of 311° F (unless noted), and lead wires for electrical connection (unless noted). They can be used in either clockwise or counterclockwise rotation. To adjust motor speed, lower your input voltage or use a speed controller (sold separately; see 7729K on page 883). Housing is steel with yellow chromate finish.

rpm	Torque, in.-lbs.	(A)	(B)	(C)	(D)	(E)	Bolt Hole Circle (F)	Mounting Holes (Qty.)	12 VDC Full Load Amps		Each	24 VDC Full Load Amps		Each
3,456	1.31	1/4″	1″	1.063″	4.703″	2.125″	1.531″	6-32 (4)	5.02	6331K13■	$94.28	2.51	6331K16■	$140.52
3,702	1.63	1/4″	1″	1.063″	5.078″	2.125″	1.531″	6-32 (4)	——	——	——	3.26	6331K67■	159.55
5,331	0.72	0.197″	0.562″	0.79″	3.915″	1.58″	1″	6-32 (4)	——	——	——	2.1	6331K65	119.47
5,993	0.29	5/32″	0.562″	0.79″	2.765″	1.58″	1″	6-32 (4)	2.06	6331K12	78.37	1.04	6331K15	88.47
6,151	0.38	5/32″	0.562″	0.79″	2.965″	1.58″	1″	6-32 (4)	2.69	6331K62	94.16	1.34	6331K63	95.43
7,780	0.08	3/32″	0.591″	0.433″	2.147″	0.866″	0.669″	M2 (2)	0.74	6331K23■●	92.45	0.37	6331K24■●	93.71
7,847	0.10	5/32″	0.562″	0.588″	2.565″	1.175″	0.875″	2-56 (3)	1.06	6331K11	81.98	0.53	6331K14	83.98
8,260	0.05	3/32″	0.591″	0.433″	1.847″	0.866″	0.669″	M2 (2)	0.53	6331K21■●	89.84	0.26	6331K22■●	91.08
10,158	0.16	5/32″	0.562″	0.588″	2.94″	1.175″	0.875″	2-56 (3)	2.06	6331K59	94.16	1.03	6331K61	95.43

■ Has solder lugs for electrical connection. ● Has sleeve bearings. Maximum temperature is 266° F.

Compact DC Gearmotors

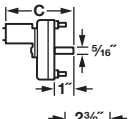

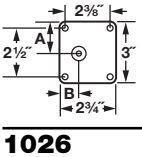

With less than 1/100 hp, these compact gearmotors are great for appliances and valve actuators. Each gearmotor consists of a motor and a geared speed reducer to lessen speed while increasing torque. The motors are brush style with an internal permanent magnet.

All of these face-mount gearmotors are rated for continuous duty and have sleeve bearings, iron and acetal gears, terminal lugs for electrical connection, and four 10-32 threaded mounting studs. They also have a flat on the shaft to accept set screws for easy equipment connection. *Note:* Not rated for temperature.

These gearmotors can be used in either clockwise or counterclockwise rotation. To adjust motor speed, use a speed controller (sold separately; see 7729K on page 883). Housing is die cast zinc.

rpm	Torque, in.-lbs.	(A)	(B)	(C)	Full Load Amps		Each
12 VDC							
0.6	50	1.43″	0.91″	3.45″	0.12	6409K11	$44.96
1.3	50	1.43″	0.91″	3.65″	0.45	6409K12	44.96
4	40	1.43″	0.91″	3.45″	0.68	6409K13	42.03
8	40	1.43″	0.91″	4.17″	0.73	6409K14	42.03
12	40	1.43″	0.91″	3.65″	1.3	6409K15	42.03
16	25	1.43″	0.91″	3.65″	1.4	6409K16	37.42
25	20	1.43″	0.91″	3.65″	1.3	6409K17	37.42
50	10	2.33″	1.38″	3.65″	1.2	6409K18	37.42
24 VDC							
1.2	50	1.43″	0.91″	3.45″	0.14	6409K21	45.76
4	50	1.43″	0.91″	3.45″	0.38	6409K22	42.03
8	34	1.43″	0.91″	3.65″	0.45	6409K23	42.03
12	24	1.43″	0.91″	3.65″	0.42	6409K24	42.03
17	17	1.43″	0.91″	3.65″	0.45	6409K25	37.42
25	50	1.43″	0.91″	4.17″	1.08	6409K26	37.42
47	28	2.33″	1.38″	4.15″	1.08	6409K27	37.42

For information about electric motors, see page 1020. For speed controllers, see pages 883-884.

Miniature DC Gearmotors

Perfect for small spaces, each of these gearmotors consists of a motor and a geared speed reducer to lessen speed while increasing torque. The motors are brush style with an internal permanent magnet.

All of these face-mount gearmotors are rated for continuous duty and have sleeve bearings (unless noted), a gearbox with sintered steel gears, a maximum temperature of 311° F, and lead wires for electrical connection (unless noted). They also have a flat on the shaft to accept set screws for easy equipment connection. The motors can be used in either clockwise or counterclockwise rotation. To adjust motor speed, lower your input voltage or use a speed controller (sold separately; see 7729K on page 883). Housing is steel with yellow chromate finish.

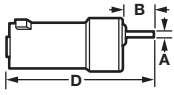

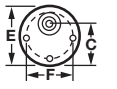

rpm	Torque, in.-lbs.	(A)	(B)	(C)	(D)	(E)	Bolt Hole Circle (F)	Mounting Holes (Qty.)	Full Load Amps		Each
12 VDC											
179	23.38	0.25″	0.75″	1.39″	6.30″	2.125″	1.5″	10-32 (2)	5.74	2709K17 ♦ ♣	$248.71
597	7.75	0.25″	0.75″	1.39″	6.30″	2.125″	1.5″	10-32 (2)	5.91	2709K15 ♦ ♣	243.37
19.1 VDC											
41	6.25	0.187″	0.75″	0.947″	3.72″	1.37″	1.062″	4-40 (3)	0.44	2709K14	103.11
128	2.88	0.187″	0.75″	0.947″	3.72″	1.37″	1.062″	4-40 (3)	0.52	2709K13	102.20
396	1.00	0.187″	0.75″	0.947″	3.72″	1.37″	1.062″	4-40 (3)	0.52	2709K12	101.28
1,227	0.38	0.187″	0.75″	0.947″	3.72″	1.37″	1.062″	4-40 (3)	0.52	2709K11	99.74
24 VDC											
7.4	10.94	0.25″	0.75″	1.329″	4.29″	2″	1.5″	10-32 (2)	0.18	6331K35	106.52
25	10.94	0.25″	0.75″	1.329″	4.29″	2″	1.5″	10-32 (2)	0.34	6331K34	106.48
82	8.50	0.25″	0.75″	1.329″	4.29″	2″	1.5″	10-32 (2)	0.66	6331K33	105.51
179	23.38	0.25″	0.75″	1.39″	6.30″	2.125″	1.5″	10-32 (2)	2.87	2709K18 ♦ ♣	218.15
275	2.81	0.25″	0.75″	1.329″	4.29″	2″	1.5″	10-32 (2)	0.66	6331K32	103.71
597	7.75	0.25″	0.75″	1.39″	6.30″	2.125″	1.5″	10-32 (2)	2.95	2709K16 ♦ ♣	244.54
917	0.94	0.25″	0.75″	1.329″	4.29″	2″	1.5″	10-32 (2)	0.66	6331K31	102.70

♦ Has terminal lugs for electrical connection. ♣ Has ball bearings.

DC Gearmotors

Each gearmotor consists of a motor and a geared speed reducer to lessen speed while increasing torque. The motors are brush style with an internal permanent magnet. They operate on 90 VDC, are rated for continuous duty, and have lead wires for electrical connection. They can be used in either clockwise or counterclockwise rotation; instructions are included. To adjust motor speed for 1/8 to 1/2 hp models, use a speed controller (sold separately; see 7793K on page 884). All have a totally enclosed nonventilated (TENV) enclosure (unless noted) for protection from the environment. They have no vent openings and rely on cooling without a fan. Though not airtight, they're suitable for nonhazardous, dirty, damp (but not washdown) environments. Housing is aluminum. UL listed.

Right-Angle Shaft— For 90° motor-to-output shaft mounting. You can attach the output shaft to either side of the gearbox, allowing for left- or right-hand operation. Gearbox has a hardened steel worm with bronze worm wheel and ball bearings. Shaft has a keyway as well as a flat (to accept set screws) for connection to your equipment. Base mount horizontally. Insulation is Class H rated to 356° F.

Parallel Shaft— For in-line use. The 1/17 and 1/2 hp models as well as 6470K88 have a junction box. All have steel gears and needle bearings. Shaft has a keyway for connection to your equipment. Base or face mount (except for 1/2 hp models, which are for base mounting only). Insulation is Class F rated to 311° F.

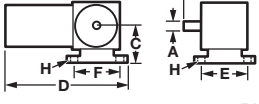

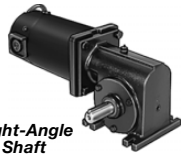

Right-Angle Shaft

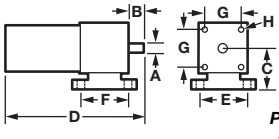

Parallel Shaft

hp	rpm	Torque, in.-lbs.	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Mounting Holes (H)	Full Load Amps		Each
Right-Angle Shaft													
1/17	42	22	0.5″	1.30″	1.30″	8.79″	1.19″	2″	—	1/4″-20	1	59825K31	$334.39
1/17	62	19	0.5″	1.30″	1.30″	8.79″	1.19″	2″	—	1/4″-20	1	59825K32	334.39
1/17	125	16	0.5″	1.30″	1.30″	8.79″	1.19″	2″	—	1/4″-20	1	59825K33	334.39
1/17	250	10	0.5″	1.30″	1.30″	8.79″	1.19″	2″	—	1/4″-20	1	59825K34	334.39
1/17	500	5.2	0.5″	1.30″	1.30″	8.79″	1.19″	2″	—	1/4″-20	1	59825K35	345.92
1/8	42	80	0.625″	1.50″	1.67″	10.64″	3.25″	3″	—	0.3″	1.4	59825K36	470.74
1/8	62	70	0.625″	1.50″	1.67″	10.64″	3.25″	3″	—	0.3″	1.4	59825K37	452.64
1/8	125	45	0.625″	1.50″	1.67″	10.64″	3.25″	3″	—	0.3″	1.4	59825K38	452.64
1/8	250	25	0.625″	1.50″	1.67″	10.64″	3.25″	3″	—	0.3″	1.4	59825K39	452.64
1/8	500	13	0.625″	1.50″	1.67″	10.64″	3.25″	3″	—	0.3″	1.4	59825K49	452.64
1/4	62	135	0.625″	1.50″	1.67″	12.64″	3.25″	3″	—	0.3″	2.3	59825K51	469.27
1/4	83	125	0.625″	1.50″	1.67″	12.64″	3.25″	3″	—	0.3″	2.3	59825K52	469.27
1/4	125	90	0.625″	1.50″	1.67″	12.64″	3.25″	3″	—	0.3″	2.3	59825K53	469.27
1/4	250	50	0.625″	1.50″	1.67″	12.64″	3.25″	3″	—	0.3″	2.3	59825K54	469.27
1/4	500	30	0.625″	1.50″	1.67″	12.64″	3.25″	3″	—	0.3″	2.3	59825K55	469.27
Parallel Shaft													
1/17	30	100	0.5″	1″	3″	8.74″	3.75″	1.88″	2.645″	0.28″	0.8	6470K71	397.50
1/17	60	56	0.5″	1″	3″	8.74″	3.75″	1.88″	2.645″	0.28″	0.8	6470K72	397.50
1/17	100	36	0.5″	1″	3″	8.74″	3.75″	1.88″	2.645″	0.28″	0.8	6470K73	397.50
1/17	150	24	0.5″	1″	3″	8.46″	3.75″	1.88″	2.645″	0.28″	0.8	6470K74	380.20
1/17	300	10	0.5″	1″	3″	8.46″	3.75″	1.88″	2.645″	0.28″	0.8	6470K75	380.20
1/8	31	220	0.625″	1.5″	3.5″	11.54″	4″	1.5″	3.375″	0.29″	1.4	6470K84	411.41
1/8	51	130	0.625″	1.5″	3.5″	11.54″	4″	1.5″	3.375″	0.29″	1.4	6470K88	430.66
1/8	61	113	0.625″	1.5″	3.5″	11.54″	4″	1.5″	3.375″	0.29″	1.3	6470K85	400.69
1/8	94	77	0.625″	1.5″	3.5″	11.54″	4″	1.5″	3.375″	0.29″	1.3	6470K86	400.69
1/8	167	43	0.625″	1.5″	3.5″	11.54″	4″	1.5″	3.375″	0.29″	1.3	6470K87	400.69
1/4	42	280	0.75″	1.625″	4″	13.31″	5″	2.5″	3.625″	1/4″-28	2.3	6470K61	465.42
1/4	62	220	0.75″	1.625″	4″	13.31″	5″	2.5″	3.625″	1/4″-28	2.3	6470K62	465.42
1/4	83	155	0.75″	1.625″	4″	13.31″	5″	2.5″	3.625″	1/4″-28	2.3	6470K63	447.62
1/4	125	100	0.75″	1.625″	4″	13.31″	5″	2.5″	3.625″	1/4″-28	2	6470K64	447.62
1/4	165	70	0.75″	1.625″	4″	13.31″	5″	2.5″	3.625″	1/4″-28	2	6470K65	424.09
1/2	18	1,112	0.75″	1.5″	3″	16.49″	7.12″	2.5″	—	—	5	6470K51■	802.77
1/2	33	822	0.75″	1.5″	3″	16.49″	7.12″	2.5″	—	—	5	6470K52■	802.77
1/2	42	705	0.75″	1.5″	3″	16.49″	7.12″	2.5″	—	—	5	6470K53■	802.76
1/2	60	476	0.75″	1.5″	3″	16.49″	7.12″	2.5″	—	—	5	6470K54■	802.76
1/2	92	320	0.75″	1.5″	3″	16.49″	7.12″	2.5″	—	—	5	6470K55■	776.58

■ Motor has a totally enclosed fan-cooled (TEFC) enclosure, which is similar to TENV, but is cooled by an external fan.

About Air-Powered Motors

Flexible, efficient alternatives to electric motors, air-powered motors convert compressed air into rotary motion. They're also safer to use in some hazardous areas because they don't spark and won't overheat or burn out—even when overloaded. They provide variable speeds and torque values via air control valves, so no costly motor controls are needed.

Unlike most electric motors, air-powered motors can start and stop instantly. For instant rotation reversal, a two-pressure-output (4 way) valve is required but not included (see pages 986-993 for valves). Air-powered motors are great for use with conveyors, hoists, and mixing equipment.

Air-Powered Motors

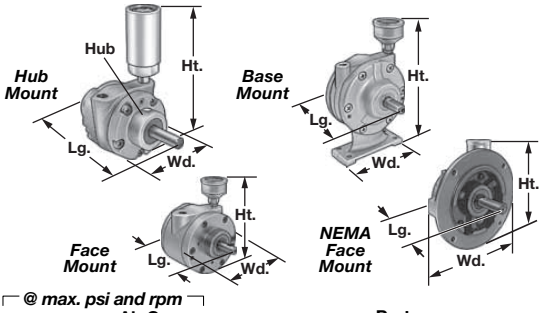

With a rotary-vane design, these air-powered motors have few moving parts so they require little or no maintenance. Motors run cool and have a muffler to reduce noise. Housing is iron and aluminum.

Motors can be mounted in any position. They do not have a keyway, unless noted. ***Hub-mount motors*** let you clamp a collar over the hub to connect your device. ***Base-mount motors*** have mounting holes on their base. ***Face-mount motors*** have threaded holes on their face. ***NEMA 56C*** and ***145TC face-mount motors*** are drop-in replacements for electric motors with the matching NEMA frame. Their mounting hole patterns, mounting dimensions, and shaft dimensions are identical to those of their electric counterparts.

For best performance, use water- and particle-free (down to 5 microns) compressed air (see our compressed air products on pages 976-982).

Standard—Motors require lubricated air. Maximum pressure is 100 psi (except for 59785K92, which is 80 psi).

Lubrication Free—These motors don't require lubrication so they run cleaner and won't contaminate the air. Maximum pressure is 80 psi.

@ max. psi and rpm																
hp	Torque, in.-lbs.	Air Consumption, cfm	Max. rpm	Rotation♣	Ports, NPT Female	Lg.	Wd.	Ht.	Shaft Dia.	Shaft Lg.	Shaft Ht.●	Mount. Holes (Qty.)	Motors	Each	Steel Foot-Mount Brackets	Each
Standard Hub Mount																
0.39	2.9	22	10,000	Reversible	1/8″	4.25″	2.44″	5″	3/8″	1.14″	1.05″	1 1/4″▲	59785K91	$158.02	59785K99	$37.91
0.42	5	27	6,000	Reversible	1/8″	4.66″	2.44″	5″	3/8″	1.14″	1.05″	1 1/4″▲	59785K92	164.00	59785K99	37.91
0.9	19	30	3,000	CW	1/4″	4.94″	4.06″	6.06″	1/2″	1″	1.78″	1 3/4″▲	59785K75	168.60	—	—
0.9	19	30	3,000	CCW	1/4″	4.94″	4.06″	6.06″	1/2″	1.13″	1.78″	1 3/4″▲	59785K74	156.37	—	—
Lubrication-Free Hub Mount—To Order: Please specify clockwise or counterclockwise rotation.																
0.18	2.8	18.5	4,000	Specify	1/8″	4.69″	2.66″	4.78″	3/8″	1.14″	1.05″	1 1/4″▲	62995K51	229.75	59785K99	37.91
0.42	13.5	30	2,000	Specify	1/4″	5.82″	3.94″	6.15″	1/2″	1.12″	2.21″	2 1/4″▲	62995K52	417.76	62995K83	32.30
0.82	25.5	41	2,000	Specify	1/4″	7.02″	3.94″	6.15″	1/2″	1.12″	2.22″	2 1/4″▲	62995K54	482.44	62995K84	107.92
Standard Base Mount																
0.9	19	30	3,000	CW	1/4″	4.94″	4.13″	7.28″	1/2″	1″	3.5″	0.28″ (4)	59785K69	180.35	—	—
0.9	19	30	3,000	CCW	1/4″	4.94″	4.13″	7.28″	1/2″	1″	3.5″	0.28″ (4)	59785K73	178.81	—	—
1.7	34	70	3,000	Reversible	1/4″	5.81″	3.75″	7.32″	1/2″	1.12″	3.5″	0.28″ (4)	59785K77	203.47	—	—
4	82	135	3,000	Reversible	1/2″	7.47″	5″	7.81″	5/8″	1.39″	3.5″	0.34″ (4)	59785K81★	322.40	—	—
5	138	177	2,500	Reversible	1/2″	8.41″	5.5″	8.03″	3/4″	1.53″	3.5″	0.34″ (4)	59785K83★	390.50	—	—
9	298	280	2,000	Reversible	1 1/4″	14.06″	8″	9.34″	1 1/8″	2.56″	4″	0.41″ (4)	59785K85■	1,173.96	—	—
Standard Face Mount																
1.7	34	70	3,000	Reversible	1/4″	5.81″	3.94″	5.94″	1/2″	1.12″	1.72″	1/4″-20 (3)	59785K78	223.18	—	—
Standard NEMA 56C Face Mount																
0.9	19	30	3,000	CCW	1/4″	5.87″	6.5″	7.75″	5/8″	1.94″	3.25″	3/8″-16 (4)	59785K76★	257.55	—	—
1.7	34	70	3,000	Reversible	1/4″	6.69″	6.5″	7.5″	5/8″	1.93″	3.25″	3/8″-16 (4)	59785K79★	261.58	—	—
4	82	135	3,000	Reversible	1/2″	8.29″	6.5″	8.5″	5/8″	1.93″	3.25″	3/8″-16 (4)	59785K82★	351.37	—	—
Lubrication-Free NEMA 56C Face Mount—To Order: Please specify clockwise or counterclockwise rotation.																
0.42	13.5	30	2,000	Specify	1/4″	6.78″	6.5″	7.5″	5/8″	1.94″	2.21″	3/8″-16 (4)	62995K53★	453.33	62995K83	32.30
0.82	25.5	41	2,000	Specify	1/4″	8.01″	6.5″	7.5″	5/8″	1.94″	2.22″	3/8″-16 (4)	62995K55★	543.93	62995K84	107.92
Standard NEMA 145TC Face Mount																
5	138	177	2,500	Reversible	1/2″	9.5″	6.5″	9″	7/8″	2″	3.25″	3/8″-16 (4)	59785K84★	478.82	—	—
9	298	280	2,000	Reversible	1 1/4″	13.65″	8″	9.28″	7/8″	2.13″	4″	7/16″-14 (4)	59785K86★	1,323.23	—	—

♣ When facing the shaft end, CW=Clockwise; CCW=Counterclockwise. ● Distance from center of shaft to base of motor.
▲ Hub mount dia. ★ 3/16″ Wd. × 3/32″ Dp. keyway. ■ 1/4″ Wd. × 1/8″ Dp. keyway.

Air-Powered Gearmotors

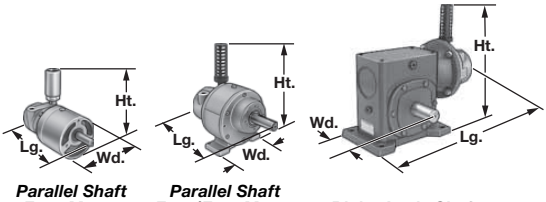

Parallel Shaft Face Mount *Parallel Shaft Face/Foot Mount* *Right-Angle Shaft*

Similar to the Air-Powered Motors on this page, except these have a gearbox to deliver high torque at low speeds. Motors have a rotary-vane design and reversible rotation. Housing is iron. For best performance, use lubricated, water- and particle-free (down to 5 microns) compressed air (see our compressed air products on pages 976-982).

Parallel Shaft—For inline use. All have an exhaust muffler, a top air inlet, and threaded mounting holes on the face for easy installation. These gearmotors can also be foot mounted. The *0.3 and 0.32 hp models* require the foot-mount bracket sold separately below. The *1.25 and 1.26 hp models* have an integral base. All mount horizontally or vertically in the shaft-down position.

Right-Angle Shaft—The output shaft is at a right angle to the motor, which allows more mounting options. Mount horizontally.

@ max. psi and rpm															
hp	Torque, in.-lbs.	Air Consumption, cfm	Max. rpm	Mount Style	Ports, NPT Female	Mounting Holes (Qty.)	Lg.	Wd.	Ht.	Shaft Dia.	Shaft Lg.	Shaft Ht.●	Keyway, Wd.×Dp.		Each
Parallel Shaft—*Maximum pressure for 0.3 hp model is 90 psi; for 0.32 hp model is 60 psi; for 1.25 and 1.26 hp models is 80 psi.*															
0.3	60	19	350	Face	1/8″	10-32 (3)	6.88″	2.93″	5″	1/2″	1.38″	2″	—	59795K79	$492.40
0.32	49	21	400	Face	1/8″	10-32 (3)	7.31″	2.93″	5″	1/2″	1.38″	2″	—	59795K84	516.95
1.25	400	60	200	Face/Foot	1/4″	1/4″-20 (4)/0.34″ (4)♥	11.56″	6.13″	8.63″	1″	2.63″	4.09″	1/4″×1/8″	59795K83	1,100.96
1.26	260	57.5	300	Face/Foot	1/4″	1/4″-20 (4)/0.34″ (4)♥	11.56″	6.13″	8.63″	1″	2.63″	3.56″	1/4″×1/8″	59795K82	978.65
Bracket Required for Foot-Mounting 0.3 and 0.32 hp Gearmotors—*Has four 0.28″ mounting slots.*														59795K88	35.37
Right-Angle Shaft—*Maximum pressure is 100 psi.*															
0.85	1,000	72	50	Base	1/4″	3/8″-16 (4)	14.06″	8.88″	11″	1 1/4″	2.50″	3.69″	1/4″×1/8″	4574K13	1,021.62
0.9	800	72	75	Base	1/4″	3/8″-16 (4)	14.06″	8.88″	11″	1 1/4″	2.50″	3.69″	1/4″×1/8″	4574K12	1,021.62
1.1	490	72	150	Base	1/4″	3/8″-16 (4)	14.06″	8.88″	11″	1 1/4″	2.50″	3.69″	1/4″×1/8″	4574K11	1,021.62
3.5	700	135	300	Base	1/2″	3/8″-16 (4)	15.63″	8.88″	11.56″	1 1/4″	2.50″	3.69″	1/4″×1/8″	4574K14	1,131.66

● Distance from center of shaft to base of motor. ♥ 1/4″-20 for face mount. 0.34″ for foot mount.

For information about air-powered motors, see page 1028.

Slimline Nose-Mount Air-Powered Gearmotors

A slim nose-mount design is paired with the low-maintenance advantages of a rotary-vane motor and the power of an integral gearbox for high torque at low speeds. Maximum air pressure is 90 psi. Port size is 1/4″ NPT female. Mount gearmotors in any position. Housing is steel. For best performance, use lubricated, water- and particle-free (down to 5 microns) compressed air (see our compressed air products on pages 976-982).

Flanged Nose— These motors have higher torque at lower speeds than comparable threaded-nose motors. The nose has a built-in flange with two 0.33″ dia. holes for mounting (fasteners not included).

Threaded Nose— Have a left-hand threaded nose for easy connection directly to a machine or to a steel mounting bracket (sold separately below). All come with an exhaust muffler and have a side air inlet.

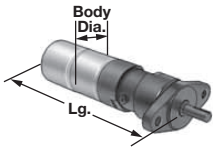

Flanged Nose

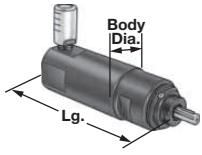

Threaded Nose

Flange-Mount Bracket

Foot-Mount Bracket

@ 90 psi and max. rpm							Shaft					Flange-Mount Brackets		Foot-Mount Brackets	
hp	Torque, in.-lbs.	Air Consumption, cfm	Max. rpm	Lg.	Body Dia.	Nose Thread Size	Dia.	Lg.	Keyway, Wd.×Dp.	Gearmotors	Each		Each		Each
Flanged Nose—*Reversible Rotation*															
0.31	198	17.5	140	7.87″	1.76″	—	3/8″	1″	1/8″ × 1/16″	4185K12	$1,516.00	—	—	—	—
0.31	330	17.5	84	7.87″	1.76″	—	3/8″	1″	1/8″ × 1/16″	4185K13	1,528.01	—	—	—	—
0.31	396	17.5	42	7.87″	1.76″	—	3/8″	1″	1/8″ × 1/16″	4185K15	1,554.00	—	—	—	—
0.34	141.6	18	225	7.11″	1.76″	—	3/8″	1″	1/8″ × 1/16″	4185K11	1,189.01	—	—	—	—
Threaded Nose—*Counterclockwise Rotation (when facing the shaft end)*															
0.3	20.4	12	1,750	5.10″	1.47″	1″-20	3/8″	0.59″	3/32″ × 3/64″	5970K48	1,138.09	5970K94	$50.60	5970K91	$92.73
0.3	135.6	12	250	6.16″	1.47″	1″-20	3/8″	0.59″	3/32″ × 3/64″	5970K24	1,040.77	5970K94	50.60	5970K91	92.73
0.5	6	18	10,000	5.59″	1.87″	1″-20	3/8″	0.59″	3/32″ × 3/64″	5970K51	1,140.49	5970K94	50.60	5970K91	92.73
0.5	42	18	1,500	5.59″	1.87″	1″-20	3/8″	0.59″	3/32″ × 3/64″	5970K52	1,140.49	5970K94	50.60	5970K91	92.73
0.5	283.2	18	225	6.97″	1.87″	1″-20	3/8″	0.59″	3/32″ × 3/64″	5970K33	1,272.51	5970K94	50.60	5970K91	92.73
Threaded Nose—*Reversible Rotation*															
0.3	24	21	1,750	6.34″	1.87″	1″-20	3/8″	0.59″	3/32″ × 3/64″	5970K34	1,282.67	5970K94	50.60	5970K91	92.73
0.3	78	21	500	7.03″	1.87″	1″-20	3/8″	0.59″	3/32″ × 3/64″	5970K49	1,282.67	5970K94	50.60	5970K91	92.73
0.3	259.2	21	150	7.72″	1.87″	1″-20	3/8″	0.59″	3/32″ × 3/64″	5970K35	1,437.36	5970K94	50.60	5970K91	92.73
0.6	52.8	25	1,250	7.00″	2.12″	1 21/32″-20	1/2″	1.42″	1/8″ × 1/16″	5970K45	1,584.29	5970K95	51.34	5970K92	94.55

Stainless Steel Nose-Mount Air-Powered Gearmotors

These metric motors have a smooth stainless steel surface that won't collect dirt and other contaminants—great for food-processing and corrosive-chemical applications. Motors have a rotary-vane design and double fluoroelastomer seals at the shaft to prevent liquids and other contaminants from entering the motor. Rotation is reversible. Unlike face-mount motors, these require either a foot-mount or flange-mount stainless steel mounting bracket (sold separately below). Mount in any position. Maximum air pressure is 90 psi. For best performance, use lubricated, water- and particle-free (down to 5 microns) compressed air (see our compressed air products on pages 976-982).

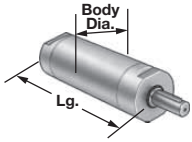

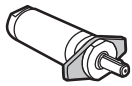

Flange-Mount Bracket

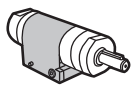

Foot-Mount Bracket

@ 90 psi and max. rpm				Ports, BSPP		Body	Shaft				
hp	Torque, in.-lbs.	Air Consumption, cfm	Max. rpm	Female	Lg., mm	Dia., mm	Dia., mm	Lg., mm	Keyway, Wd.×Dp. (mm)		Each
0.21	2.16	10.6	6,500	1/8″	115	36	10	24.5	3×1.2	3909K11	$1,003.85
0.21	9.72	10.6	1,390	1/8″	115	36	10	24.5	3×1.2	3909K12	1,003.85
0.21	13.2	10.6	1,050	1/8″	115	36	10	24.5	3×1.2	3909K13	1,003.85
0.21	21.6	10.6	650	1/8″	115	36	10	24.5	3×1.2	3909K14	1,003.85
0.21	43.2	10.6	310	1/8″	146.2	36	10	24.5	3×1.2	3909K15	1,142.31
0.21	56.4	10.6	240	1/8″	146.2	36	10	24.5	3×1.2	3909K16	1,142.31
0.21	97.2	10.6	140	1/8″	146.2	36	10	24.5	3×1.2	3909K17	1,142.31
Flange-Mount Bracket										3909K91	115.38
Foot-Mount Bracket										3909K92	109.62

Miniature Air-Powered Gearmotors and Motors with Push-to-Connect Fittings

Our tiny, precision rotary-vane motors are small in size, but not power. Rotation is reversible. Motors mount with the included flange or you can remove the flange and mount directly using the 5/8″-32 left-hand threads on the motor's nose. Mount in any position. Air inlet ports have push-to-connect tube fittings for use with 1/4″ OD tubing. Shafts do not have a keyway. Housing is aluminum and stainless steel. Use with lubricated, water- and particle-free (down to 5 microns) compressed air as well as nitrogen and inert gases up to 160 psi (see our compressed air products on pages 976-982).

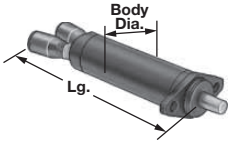

@ 90 psi and max. rpm			Max.		Body	Shaft			
hp	Torque, in.-lbs.	Air Consumption, cfm	rpm	Lg.	Dia.	Dia.	Lg.		Each
Gearmotors—*All have internal gear sets for higher torque with lower rpm.*									
0.001	75	4.8	7	6.97″	3/4″	1/4″	0.437″	59815K892	$1,115.00
0.003	67.5	4.8	25	6.34″	3/4″	1/4″	0.437″	59815K882	981.67
0.012	62.5	4.8	100	5.72″	3/4″	1/4″	0.437″	59815K872	965.00
0.013	33.8	4.8	200	5.09″	3/4″	1/4″	0.437″	59815K862	831.67
0.016	20	4.8	400	5.09″	3/4″	1/4″	0.437″	59815K852	748.33
0.019	6.25	4.8	1,575	4.47″	3/4″	1/4″	0.437″	59815K842	665.00
0.069	1.375	4.8	6,300	3.84″	3/4″	1/4″	0.437″	59815K832	548.33
Motors—*Both are direct drive.*									
0.056	0.175	4.8	40,000	3.84″	3/4″	1/4″	0.437″	59815K812	498.33
0.082	0.406	4.8	25,000	3.84″	3/4″	1/4″	0.437″	59815K822	531.67

High-Torque Face-Mount Air-Powered Gearmotors

Does your application involve heavy starting loads and frequent starts and stops? The piston design of these motors provides high torque evenly in either direction (rotation is reversible). All motors are enclosed so they're great for use in dusty and corrosive areas. Large shaft bearings withstand overhung weight on the shaft with no external support. Grease fittings permit lubrication. Motors have a face-mount flange with three 1/2″-13 threaded mounting holes. Mount horizontally. Maximum air pressure is 125 psi. Housing is steel and aluminum. For best performance use clean, lubricated air (see our compressed air products on pages 976-982).

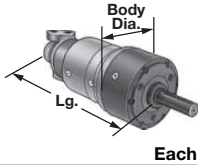

@ 90 psi and max. rpm				Ports, NPT		Body	Shaft				
hp	Torque, in.-lbs.	Air Consumption, cfm	Max. rpm	Female	Lg.	Dia.	Dia.	Lg.	Keyway, Wd.×Dp.		Each
0.6	1,284	21	44	3/8″	11.53″	4.75″	7/8″	2.74″	3/16″ × 3/32″	60175K11	$3,317.14
0.9	2,784	40	46	3/8″	12.46″	4.75″	7/8″	2.74″	3/16″ × 3/32″	60175K12	4,057.50
2.7	1,320	83	225	1/2″	14.13″	6.0″	1 1/8″	3.37″	3/16″ × 3/32″	60175K17	4,821.43
2.7	7,656	83	38	1/2″	17.25″	6.0″	1 3/8″	3.38″	5/16″ × 3/32″	60175K18	5,584.29

Maintenance-Free Right-Angle Gear Boxes and Speed Reducers

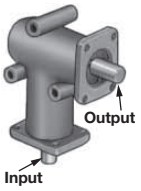

Style 1

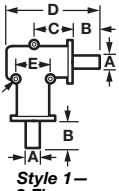

Style 1— 2 Flange, 1 Output

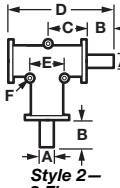

Style 2— 3 Flange, 1 Output

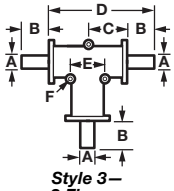

Style 3— 3 Flange, 2 Output

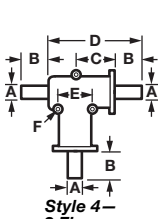

Style 4— 2 Flange, 2 Output

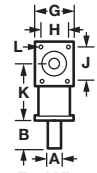

End View (All Styles)

Transmit rotary motion without time-consuming maintenance. All have hardened steel gears, sealed ball bearings that require no lubrication, and a cast aluminum housing for good heat dissipation. Install in any position with the flanged ends and integral three-bolt mount. Input shaft operates clockwise or counterclockwise; output shaft spins in the opposite direction. Both shafts have standard ANSI keyways (unless noted; see page 1174 for keyway dimensions). Max. input speed is 3,000 rpm. Meet MIL-I-45208A for inspection system requirements.

Style	Max. Input hp♣	Output Torque, in.-lbs.♣	Overhung Load Cap., lbs.★	Shaft Dia. (A)	(B)	(C)	(D)	(E)	Bolt Hole Dia. (F)	(G)	(H)	(J)	(K)	Flange Hole Dia. (L)		Each
Gear Boxes—*Transmit speed and torque at a 1:1 ratio. Input and output shafts are Type 416 stainless steel.*																
1	0.34	12	25	0.38″	0.59″	1.39″	2.85″	1.31″	0.20″	1.25″	0.88″	1.19″	2.17″	0.18″	**6456K11**▲	$162.73
2	1.21	43	50	0.63″	1.5″	2.13″	5.75″	1.87″	0.27″	2″	1.37″	1.87″	3.25″	0.27″	**6456K15**	227.27
2	5.14	185	100	0.75″	2″	3″	8″	3″	0.34″	3″	2.25″	3″	5″	0.34″	**6456K19**	408.64
3	0.34	12	25	0.38″	0.59″	1.39″	3.36″	1.31″	0.21″	1.25″	0.88″	1.19″	2.17″	0.18″	**6456K23**▲	193.64
3	1.21	43	50	0.63″	1.5″	2.13″	5.75″	1.87″	0.27″	2″	1.37″	1.87″	3.25″	0.27″	**6456K17**	239.55
3	5.14	185	100	0.75″	2″	3″	8″	3″	0.34″	3″	2.25″	3″	5″	0.34″	**6456K22**	391.69
Gear-Box Speed Reducers—*Reduce speed to increase torque at a 2:1 ratio. Input shaft is cadmium-plated carbon steel. Output shaft is Type 416 stainless steel.*																
1	0.11	8	25	0.38″	0.59″	1.39″	2.85″	1.31″	0.20″	1.25″	0.88″	1.19″	2.17″	0.18″	**6456K12**▲	188.18
1	0.32	23	50	0.63″	1.5″	2.13″	5″	1.87″	0.27″	2″	1.37″	1.87″	3.25″	0.27″	**6456K16**	237.73
4	0.32	23	50	0.63″	1.5″	2.13″	5″	1.87″	0.27″	2″	1.37″	1.87″	3.25″	0.27″	**6456K18**●	240.91

♣ At 1,750 input rpm. ★ Force applied perpendicular to the center of the output shaft. ▲ No keyway. ● (B) on nonflanged end is 1.375″ long.

Right-Angle Speed Reducers

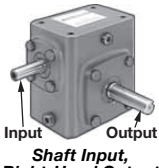

Shaft Input, Right-Hand Output

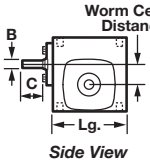

Side View

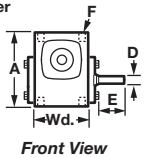

Front View

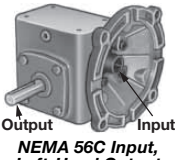

NEMA 56C Input, Left-Hand Output

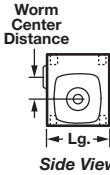

Side View

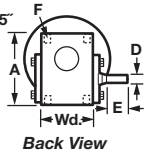

Back View

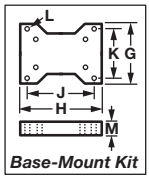

Base-Mount Kit

Looking for a smooth, quiet way to reduce your motor's input speed while increasing torque? Choose these reducers, which have a forged-bronze worm gear with a hardened-steel input worm and shaft. They're suitable for replacing Boston Gear and many Grove and Ohio units.

Reducers have a cast iron housing with four mounting holes on the top and bottom for installation flexibility. Input shafts operate clockwise or counterclockwise. All shafts have standard ANSI keyways (see pg. 1174 for keyway dimensions). Max. input speed is 4,500 rpm for models with 1″ and 1.33″ worm center distances; 3,600 rpm for all others. Lubricant is required (sold separately; please ask for 5887K1). ***Shaft Input—*** Connect to motor shafts with couplings (not included; see pages 1174-1185). ***NEMA 56C Input—*** Connect to motors with a NEMA 56C frame.

To Order: For all reducers, please specify left- or right-hand output shaft (refers to output shaft side when you're facing the input shaft).

Worm Center Distance	Max. Input hp	Output Torque, in.-lbs.	Overhung Load Cap., lbs.★	Lg.	Wd.	Ht. (A)	*Input Shaft*■ Dia. (B)	Lg. (C)	*Output Shaft* Dia. (D)	Lg. (E)	Mtg. Hole Dia. (F)	***Shaft Input***	Each	***NEMA 56C Input***	Each
5:1 Ratio—*350 Output rpm @ 1,750 input rpm*															
1″	0.69	113	150	3.25″	2.5″	3.63″	0.375″	0.81″	0.5″	1.19″	¼″-20	**5887K11**	$298.58	**5887K51**	$298.26
1.33″	1.39	235	200	4.25″	2.88″	4.64″	0.5″	1.31″	0.625″	2″	5/16″-18	**5887K12**	340.83	**5887K52**	355.44
1.75″	2.55	432	500	5.5″	3.69″	5.75″	0.625″	1.56″	0.875″	1.78″	5/16″-18	**5887K13**	423.21	**5887K53**	439.94
10:1 Ratio—*175 Output rpm @ 1,750 input rpm*															
1″	0.44	138	150	3.25″	2.5″	3.63″	0.375″	0.81″	0.5″	1.19″	¼″-20	**5887K17**	298.58	**5887K57**	303.79
1.33″	0.86	281	200	4.25″	2.88″	4.64″	0.5″	1.31″	0.625″	2″	5/16″-18	**5887K18**	340.83	**5887K58**	355.44
1.75″	1.61	536	500	5.5″	3.69″	5.75″	0.625″	1.56″	0.875″	1.78″	5/16″-18	**5887K19**	423.21	**5887K59**	439.94
20:1 Ratio—*87.5 Output rpm @ 1,750 input rpm*															
1″	0.27	149	150	3.25″	2.5″	3.63″	0.375″	0.81″	0.5″	1.19″	¼″-20	**5887K24**	298.58	**5887K64**	303.79
1.33″	0.52	308	200	4.25″	2.88″	4.64″	0.5″	1.31″	0.625″	2″	5/16″-18	**5887K25**	340.83	**5887K65**	355.44
1.75″	0.97	590	500	5.5″	3.69″	5.75″	0.625″	1.56″	0.875″	1.78″	5/16″-18	**5887K26**	423.21	**5887K66**	439.94
2.06″	1.4	892	700	6″	3.81″	6.38″	0.625″	1.56″	1″	2.09″	3/8″-16	**5887K27**	511.51	**5887K67**	522.58
30:1 Ratio—*58.3 Output rpm @ 1,750 input rpm*															
1.33″	0.39	311	200	4.25″	2.88″	4.64″	0.5″	1.31″	0.625″	2″	5/16″-18	**5887K32**	340.83	**5887K72**	355.44
1.75″	0.65	573	500	5.5″	3.69″	5.75″	0.625″	1.56″	0.875″	1.78″	5/16″-18	**5887K33**	423.21	**5887K73**	439.94
2.06″	0.99	871	700	6″	3.81″	6.38″	0.625″	1.56″	1″	2.09″	3/8″-16	**5887K34**	511.51	**5887K74**	522.58
40:1 Ratio—*43.8 Output rpm @ 1,750 input rpm*															
1.33″	0.31	307	200	4.25″	2.88″	4.64″	0.5″	1.31″	0.625″	2″	5/16″-18	**5887K38**	340.83	**5887K78**	355.44
1.75″	0.57	609	500	5.5″	3.69″	5.75″	0.625″	1.56″	0.875″	1.78″	5/16″-18	**5887K39**	423.21	**5887K79**	439.94
2.06″	0.81	876	700	6″	3.81″	6.38″	0.625″	1.56″	1″	2.09″	3/8″-16	**5887K41**	563.70	**5887K81**	522.58
2.38″	1.08	1,206	900	6.38″	4.06″	6.94″	0.75″	2″	1.125″	2.37″	3/8″-16	**5887K42**	521.68	**5887K82**	583.04
60:1 Ratio—*29.2 Output rpm @ 1,750 input rpm*															
1.33″	0.22	271	200	4.25″	2.88″	4.64″	0.5″	1.31″	0.625″	2″	5/16″-18	**5887K45**	340.83	**5887K85**	355.44
1.75″	0.35	527	500	5.5″	3.69″	5.75″	0.625″	1.56″	0.875″	1.78″	5/16″-18	**5887K46**	423.21	**5887K86**	439.94
2.06″	0.55	826	700	6″	3.81″	6.38″	0.625″	1.56″	1″	2.09″	3/8″-16	**5887K47**	511.51	**5887K87**	522.58
2.38″	0.73	1,128	900	6.38″	4.06″	6.94″	0.75″	2″	1.125″	2.38″	3/8″-16	**5887K48**	521.68	**5887K88**	583.04
2.62″	0.89	1,385	1,000	7.38″	4.44″	8″	0.75″	2″	1.125″	2.63″	3/8″-16	**5887K49**	653.80	**5887K89**	762.02

★ Force applied perpendicular to the center of the output shaft. ■ Shaft-input models only.

Optional Base-Mount Kits—*Include a cast iron mounting plate and four bolts for mounting a speed reducer to your machinery.*

For Worm Center Distance	(G)	(H)	(J)	(K)	Hole Dia. (L)	Thick. (M)		Each
1″	3.69″	4.63″	3.75″	2.88″	0.34″	0.44″	**5887K91**	$9.39
1.33″	4.19″	5.38″	4.38″	3.31″	0.34″	0.53″	**5887K92**	11.69
1.75″	5.69″	7″	5.75″	4.5″	0.41″	0.69″	**5887K93**	15.89
2.06″	5.94″	7.75″	6.38″	4.69″	0.47″	0.72″	**5887K94**	$17.83
2.38″	6.19″	8.5″	7.06″	4.88″	0.47″	0.75″	**5887K95**	19.27
2.62″	6.66″	9.63″	8″	5.25″	0.53″	0.75″	**5887K96**	42.15

Switchable-Output Right-Angle Speed Reducers

For maximum mounting flexibility, these speed reducers have a hollow output on both the left- and right-hand sides for mounting onto your motor shaft. They also operate clockwise or counterclockwise and can be mounted in any position.

All of these reducers have a bronze worm gear, steel worm and input shafts, and sealed ball bearings that require no lubrication. They have an aluminum housing that is polyester epoxy painted inside and out for corrosion resistance with integral heat sinks for cool operation. All reducers accept NEMA 56C motors. Maximum input speed is 4,000 rpm.

Optional Plug-In Shafts—These shafts plug into either side of the speed reducers to let you choose left- or right-hand shaft output. They have standard ANSI keyways.

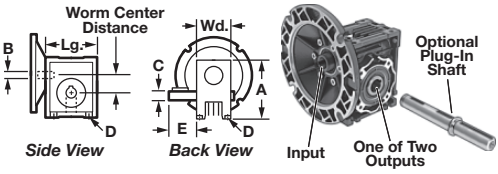

Worm Center Distance	Max. Input hp	Output Torque, in.-lbs.	Lg.	Wd.	Ht. (A)	Input Hole Dia. (B)	Output Hole Dia. (C)	Mount. Hole Dia. (D)	Speed Reducers	Each	Optional Plug-In Shafts Dia.	× Lg. (E)		Each
10:1 Ratio—*175 Output rpm @ 1,750 input rpm*														
1.58″	1.16	354	3.94″	2.8″	4.78″	0.625″	0.75″	0.26″	6771K11	$275.80	0.75″	× 1.97″	6771K51	$37.22
1.97″	2.06	637	4.72″	3.35″	5.67″	0.625″	1″	0.34″	6771K12	359.37	1″	× 1.97″	6771K52	44.14
20:1 Ratio—*88 Output rpm @ 1,750 input rpm*														
1.58″	0.61	345	3.94″	2.8″	4.78″	0.625″	0.75″	0.26″	6771K13	275.80	0.75″	× 1.97″	6771K51	37.22
1.97″	1.14	646	4.72″	3.35″	5.67″	0.625″	1″	0.34″	6771K14	359.37	1″	× 1.97″	6771K52	44.14
2.48″	2.05	1,194	5.67″	4.06″	6.85″	0.625″	1.125″	0.33″	6771K15	567.65	1.125″	× 2.36″	6771K53	48.76
30:1 Ratio—*58 Output rpm @ 1,750 input rpm*														
1.58″	0.53	398	3.94″	2.8″	4.78″	0.625″	0.75″	0.26″	6771K16	274.43	0.75″	× 1.97″	6771K51	37.22
1.97″	0.96	743	4.72″	3.35″	5.67″	0.625″	1″	0.34″	6771K17	339.09	1″	× 1.97″	6771K52	44.14
40:1 Ratio—*44 Output rpm @ 1,750 input rpm*														
1.97″	0.7	672	4.72″	3.35″	5.67″	0.625″	1″	0.34″	6771K21	359.37	1″	× 1.97″	6771K52	44.14
60:1 Ratio—*29 Output rpm @ 1,750 input rpm*														
1.58″	0.25	319	3.94″	2.8″	4.78″	0.625″	0.75″	0.26″	6771K23	275.80	0.75″	× 1.97″	6771K51	37.22
1.97″	0.47	602	4.72″	3.35″	5.67″	0.625″	1″	0.34″	6771K24	339.09	1″	× 1.97″	6771K52	44.14
2.95″	1.26	1,770	6.77″	4.41″	8.07″	0.625″	1.25″	0.45″	6771K26	680.96	1.25″	× 2.76″	6771K54	60.80

High-Efficiency Speed Reducers

Designed with spur gears, these speed reducers transfer torque more efficiently than speed reducers with worm gears. They also boast a compact parallel shaft design. All have a die cast aluminum housing, a steel shaft with a 0.33″ dia. through hole, and hardened steel gear teeth. Input shaft operates clockwise or counterclockwise; input and output shafts turn in opposite directions. All reducers accept NEMA 56C motors. Maximum input speed is 1,750 rpm.

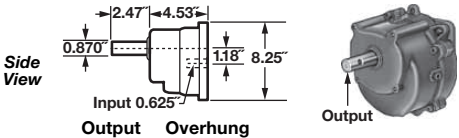

Ratio	Max. Input hp	Output rpm♣	Output Torque, in.-lbs.	Overhung Load Cap., lbs.★		Each	Ratio	Max. Input hp	Output rpm♣	Output Torque, in.-lbs.	Overhung Load Cap., lbs.★		Each
3.2:1	1.48	539	167	256	6481K73	$237.64	5.6:1	1.48	310	290	246	6481K75	$237.64
3.9:1	1.48	441	204	253	6481K74	237.64	7.6:1	1.07	226	285	237	6481K76	237.64
4.8:1	1.48	358	255	249	6481K72	237.64	11.1:1	0.75	156	290	242	6481K77	237.64

♣ At 1,725 input rpm. ★ Force applied perpendicular to the center of the output shaft.

High-Precision Motion-Control Speed Reducers

With more tooth contact and a greater face width than spur gears, the helical planetary-gear design of these reducers provides smooth tooth engagement and little backlash for precise, quiet operation. Great for motion-control applications, they're suitable for use with stepper and servo motors. All can be mounted in any position. Input shaft operates clockwise or counterclockwise; input and output shafts turn in the same direction. Housing and output shaft are Type 416 stainless steel, gears are steel, and motor mounting plate is aluminum. NEMA 23 models have D-shaped output shafts and a max. input speed of 6,000 rpm. NEMA 34 models have standard ANSI keyways on the output shafts and a max. input speed of 5,300 rpm. **To Order:** Please specify ratio from those available below.

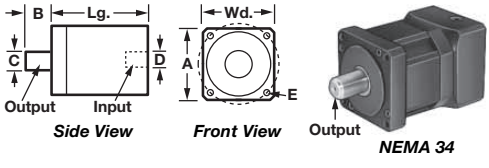

For Motor Input	Available Ratios	Output Torque, in.-lbs.	Overhung Load Cap., lbs.★	Lg.	Wd.	Ht. (A)	Shaft Lg. (B)	Shaft Dia. Output (C)	Shaft Dia. Input (D)	Mtg. Hole Dia. (E)		Each
NEMA 23	3:1, 5:1, 10:1	160■	379	3.42″	2.44″	2.44″	1″	0.375″	0.25″	0.195″	64815K1	$671.01
NEMA 23	20:1, 50:1	250	379	4.79″	2.44″	2.44″	1″	0.375″	0.25″	0.195″	64815K2	995.28
NEMA 34	3:1, 5:1, 10:1	400▲	615	3.94″	3.54″	3.54″	1.25″	0.5″	0.50″	0.217″	64815K3	917.09
NEMA 34	20:1, 50:1	650	615	5.65″	3.54″	3.54″	1.25″	0.5″	0.50″	0.217″	64815K4	1,203.69

★ Force applied perpendicular to the center of the output shaft. ■ 190 in.-lbs. for 10:1 ratio. ▲ 500 in.-lbs. for 10:1 ratio.

Variable-Speed Clutch Drives

Quickly and easily adjust your output speed from a full stop to 1/4 of your input rpm while maintaining constant torque. Use the lever arm to adjust the speed—a locking mechanism accurately holds the speed you set. Maximum input speed is 1,800 rpm (maximum 400 rpm output).

Drives have a cast aluminum housing and mount in any position. They're lubricated and sealed for maintenance-free operation. Output shaft has standard ANSI keyways. **To Order:** Please specify clockwise or counter-clockwise output shaft rotation. *Note:* Rotation is read facing output shaft.

NEMA 56C motor mount adapters permit easy installation on your NEMA 56C motor. They include bolts and a NEMA 56C compatible coupling.

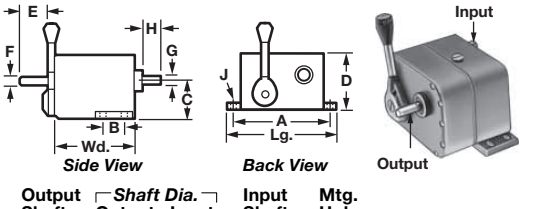

Max. Input hp	Torque Rating, in.-lbs.	Overhung Load Cap., lbs.★	Lg.	Wd.	Mtg. Hole Ctr.-to-Ctr. (A)	(B)	(C)	Ht. (D)	Output Shaft Lg. (E)	Shaft Dia. Output (F)	Shaft Dia. Input (G)	Input Shaft Lg. (H)	Mtg. Hole Dia. (J)		Each
1/4-1/3	12	20	6.37″	2.84″	5.5″	1″	2.25″	3.5″	1.3″	0.375″	0.375″	1″	0.28″	5985K51	$313.19
1/4-1/3	25	20	6.37″	3.98″	5.5″	1″	2.25″	3.5″	1.3″	0.375″	0.375″	1″	0.28″	5985K52	436.69
1/2	60	40	8.5″	4.7″	7.5″	1.87″	3″	4.5″	2″	0.625″	0.5″	1.5″	0.4″	5985K53	644.92
3/4	100	50	10.25″	6.81″	9.25″	2″	3.5″	5.5″	3″	0.75″	0.625″	2″	0.41″	5985K54	1,161.89

NEMA 56C Motor Mount Adapter for 5985K53 ..... 5985K81 Each $236.52
NEMA 56C Motor Mount Adapter for 5985K54 ..... 5985K82 Each $269.35
★ Force applied perpendicular to the center of the output shaft.

About Roller Chain

Roller chain consists of links held together with riveted pins. Chain size is determined by the pitch, which is the distance between the pin centers. The chain size/ANSI No. is stamped on the side of the chain. Use roller chain with sprockets that have the same ANSI No. (For sprockets, see pages 1040-1046.)

To get the correct length of chain, use a chain breaker (see page 1039) to break the chain and a connecting link to join the two ends. You can also order chain with the exact number of links you need (see Ready-to-Use Custom-Length ANSI Roller Chain on page 1035).

Double-Pitch Roller Chain— Has half as many rollers as standard roller chain, making it lighter and more economical.

Extra Chain Links

Connecting Link

ANSI 25-60

ANSI 80-160

Use a connecting link to join two ends of a length of chain. The link's side plate is easy to remove for assembly. Use the roller chain spring-clip remover on page 1039 to remove the spring-clip from the ANSI 25-60 roller chain.

Adding Link

Also known as roller links, use adding links to increase the length of your chain. *Note*: A connecting link is required to join the ends of the chain.

Add-and-Connect Link

ANSI 25, ISO 04B, and ISO 05B

ANSI 35-160

Also known as offset links, add-and-connect links are a combination of connecting and adding links. They allow you to increase the length of your chain and join the ends.

ANSI Roller Chain

Single Strand

Double Strand

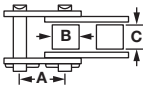

Made of steel, our durable, riveted roller chain is the workhorse of drive chain.

To Order: Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft. (unless noted). The 1-ft. through 10-ft. lengths and 20-ft. lengths include one connecting link, 50-ft. lengths include five connecting links, and 100-ft. lengths include 10 connecting links.

Heavy Chain— This chain has thicker side plates, which provide a higher load capacity than standard chain.

ANSI No.	Pitch (A)	Roller Dia. (B)	Roller Wd. (C)	Working Load, lbs.	ROLLER CHAIN Per Ft.	EXTRA CHAIN LINKS Connecting Each	Adding Each	Add-and-Connect Each
Standard Chain								
Single Strand								
25	1/4"	0.130"	1/8"	114	6261K171 $3.73	6261K108 $0.96	6261K106 $0.57	6261K105★ $1.91
35	3/8"	0.200"	3/16"	269	6261K172 3.14	6261K191 .77	6261K241 .65	6261K261 1.71
40	1/2"	0.312"	5/16"	437	6261K173 3.53	6261K193 .82	6261K243 .69	6261K263 1.91
41	1/2"	0.306"	1/4"	314	6261K174 3.06	6261K192 .83	6261K242 .60	6261K262 1.89
50	5/8"	0.400"	3/8"	734	6261K175 4.69	6261K194 1.04	6261K244 .98	6261K264 2.28
60	3/4"	0.469"	1/2"	1,036	6261K176 6.05	6261K195 1.33	6261K245 1.39	6261K265 3.13
80	1"	0.625"	5/8"	1,733	6261K177 11.75	6261K196 2.48	6261K246 2.52	6261K266 5.04
100	1 1/4"	0.750"	3/4"	2,727	6261K178 20.43	6261K181 3.70	6261K211 4.06	6261K271 8.49
120	1 1/2"	0.875"	1"	3,904	6261K179● 29.86	6261K182 5.82	6261K212 6.86	6261K272 13.09
140	1 3/4"	1.000"	1"	5,295	6261K185● 36.52	6261K183 8.01	6261K213 10.44	6261K273 17.97
160	2"	1.125"	1 1/4"	6,966	6261K186● 44.54	6261K184 11.22	6261K214 14.74	6261K274 24.91
Double Strand								
35-2	3/8"	0.200"	3/16"	810	6261K711 8.97	6261K221 1.99	6261K103 1.43	6261K841 4.34
40-2	1/2"	0.312"	5/16"	1,370	6261K712 9.61	6261K223 2.08	6261K104 1.63	6261K842 4.53
50-2	5/8"	0.400"	3/8"	2,380	6261K713 12.53	6261K224 2.23	6261K109 2.34	6261K843 5.45
60-2	3/4"	0.469"	1/2"	3,315	6261K714 16.91	6261K225 3.10	6261K116 3.23	6261K844 7.67
80-2	1"	0.625"	5/8"	5,610	6261K715● 27.19	6261K226 4.69	6261K117 5.80	6261K845 11.98
100-2	1 1/4"	0.750"	3/4"	8,600	6261K91● 44.53	6261K922 8.93	6261K118 8.56	6261K923 20.89
120-2	1 1/2"	0.875"	1"	11,560	6261K81● 61.76	6261K706 12.62	—	6261K92 27.60
140-2	1 3/4"	1.000"	1"	15,300	6261K82●▲ 77.37	6261K707 17.16	—	6261K709 36.93
160-2	2"	1.125"	1 1/4"	20,230	6261K83●▲ 98.84	6261K708 23.56	—	6261K94 51.11
Heavy Chain								
Single Strand								
35H	3/8"	0.200"	3/16"	555	7265K2● 8.92	7265K224 2.00	7265K226 .62	—
40H	1/2"	0.312"	5/16"	937	7265K3● 9.86	7265K324 2.14	7265K326 .84	—
50H	5/8"	0.400"	3/8"	1,400	7265K4● 10.54	7265K424 2.11	7265K426 1.87	7265K425 4.57
60H	3/4"	0.469"	1/2"	2,000	7265K5● 8.81	7265K524 1.97	7265K526 1.74	7265K525 4.20
80H	1"	0.625"	5/8"	3,400	7265K6● 15.10	7265K624 2.94	7265K626 2.94	7265K625 6.57
100H	1 1/4"	0.750"	3/4"	5,200	7265K7● 25.21	7265K724 5.43	7265K726 6.12	7265K725 11.30
120H	1 1/2"	0.875"	1"	7,000	7265K8● 36.26	7265K824 8.37	7265K826 9.16	7265K825 17.42
140H	1 3/4"	1.000"	1"	9,200	7265K9● 43.74	7265K924 13.31	7265K926 14.01	7265K925 27.90
160H	2"	1.125"	1 1/4"	12,300	7265K11●▲ 56.38	7265K927 17.09	—	7265K928 35.27
Double Strand								
50H-2	5/8"	0.400"	3/8"	2,400	5871K3 24.27	5871K13 3.25	—	5871K33 11.83
60H-2	3/4"	0.469"	1/2"	3,400	5871K4 23.90	5871K14 3.83	—	5871K34 8.13
80H-2	1"	0.625"	5/8"	5,800	5871K5● 48.54	5871K15 6.33	—	5871K35 20.24

★ Link is double-pitch. ● Not available in 100-ft. lengths. ▲ Not available in 50-ft. lengths.

Warning! ***Do not use the chain on this page for lifting applications or for moving people.***

For information about roller chain, see page 1032.

Stainless Steel Corrosion-Resistant ANSI Roller Chain

The choice for outdoor, marine, and most chemical environments.

To Order: Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft. where listed below. The 1-ft. through 10-ft. and 20-ft. lengths include one connecting link, 50-ft. lengths include five connecting links, and 100-ft. lengths include 10 connecting links.

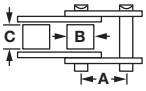

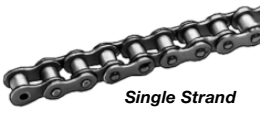
Single Strand

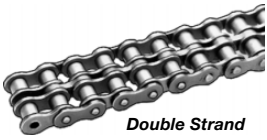
Double Strand

ANSI No.	Pitch (A)	Roller Dia. (B)	Roller Wd. (C)	Working Load, lbs.	ROLLER CHAIN Available Lengths, ft.		Per Ft.	EXTRA CHAIN LINKS Connecting	Each	Adding	Each	Add-and-Connect	Each
Type 304 Stainless Steel— *For good corrosion resistance.*													
Single Strand													
25-SS	1/4"	0.130"	1/8"	22	1-10, 20, 50, 100	6264K1	$23.49	6264K2	$3.91	—	—	6264K3★	$7.19
35-SS	3/8"	0.200"	3/16"	60	1-10, 20, 50, 100	6264K84	16.77	6264K51	2.76	6264K61	$2.15	6264K71	5.85
40-SS	1/2"	0.312"	5/16"	99	1-10, 20, 50, 100	6264K85	20.47	6264K52	2.96	6264K62	2.47	6264K72	6.67
41-SS	1/2"	0.306"	1/4"	76	1-10, 20, 50, 100	6264K11	25.83	6264K122	5.18	—	—	6264K123	9.23
50-SS	5/8"	0.400"	3/8"	154	1-10, 20, 50, 100	6264K86	26.37	6264K53	3.76	6264K63	3.74	6264K73	7.64
60-SS	3/4"	0.469"	1/2"	231	1-10, 20, 50	6264K87	35.94	6264K54	4.58	6264K64	5.37	6264K74	10.50
80-SS	1"	0.625"	5/8"	396	1-10	6264K88	60.92	6264K55	7.24	6264K65	8.12	6264K75	20.07
100-SS	1 1/4"	0.750"	3/4"	583	1-10, 20, 50	6264K89	123.90	6264K56	16.40	—	—	6264K76	37.20
120-SS	1 1/2"	0.875"	1"	869	1-10, 20, 50	6264K91	296.50	6264K57	21.25	—	—	6264K77	44.43
Double Strand													
40-2SS	1/2"	0.312"	5/16"	198	1-10	2327K1	45.80	2327K11	7.36	—	—	2327K12	15.56
50-2SS	5/8"	0.400"	3/8"	308	1-10	2327K2	57.83	2327K21	9.25	—	—	2327K22	18.97
60-2SS	3/4"	0.469"	1/2"	462	1-10	2327K3	82.58	2327K31	12.42	—	—	2327K32	26.39
80-2SS	1"	0.625"	5/8"	792	1-10	2327K4	137.15	2327K41	19.83	—	—	2327K42	43.89
100-2SS	1 1/4"	0.750"	3/4"	1,166	1-10	2327K5	264.12	2327K51	40.56	—	—	2327K52	68.25
Type 316 Stainless Steel— *For excellent corrosion resistance.*													
Single Strand													
40-SS	1/2"	0.312"	5/16"	99	1-10, 20, 50, 100	5960K1	60.34	5960K11	8.27	—	—	5960K21	14.52
50-SS	5/8"	0.400"	3/8"	154	1-10, 20, 50, 100	5960K2	68.17	5960K12	8.57	—	—	5960K22	20.21
60-SS	3/4"	0.469"	1/2"	231	1-10, 20, 50, 100	5960K3	84.76	5960K13	12.97	—	—	5960K23	26.54
80-SS	1"	0.625"	5/8"	396	1-10, 20	5960K4	248.09	5960K14	32.76	—	—	5960K24	78.71

★ Link is double pitch.

Corrosion-Resistant ANSI Roller Chain

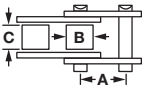

Treated Steel, Single Strand

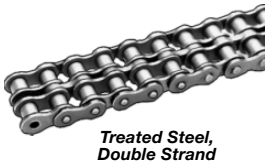
Treated Steel, Double Strand

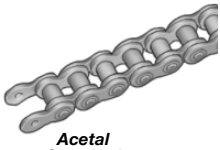
Acetal Standard

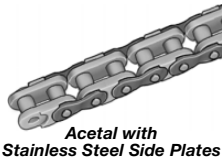
Acetal with Stainless Steel Side Plates

Choose from treated steel and acetal chain for your wet and corrosive environments. **To Order:** Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft. where listed below. The 1-ft. through 10-ft. and 20-ft. lengths include one connecting link, 50-ft. lengths include five connecting links, and 100-ft. lengths include 10 connecting links (unless otherwise stated).

Treated Steel— Specially treated for washdown and outdoor applications, this carbon steel chain offers high strength in addition to corrosion resistance.

Acetal— Great for sound-sensitive and sanitary environments, this chain is light, quiet, and resistant to chemicals and corrosion.

Standard chain is perfect for pharmaceutical and food processing applications. It's dimensionally interchangeable with metal ANSI chain and has links that snap together, eliminating the need for connecting links. FDA and USDA compliant.

Chain with stainless steel side plates has self-lubricating acetal links with Type 304 stainless steel bearing pins and side plates to provide higher working loads than standard acetal chain.

ANSI No.	Pitch (A)	Roller Dia. (B)	Roller Wd. (C)	Working Load, lbs.	ROLLER CHAIN Available Lengths, ft.		Per Ft.	EXTRA CHAIN LINKS Connecting	Each	Add-and-Connect	Each
Treated Steel											
Single Strand											
35	3/8"	0.200"	3/16"	560	1-10, 20, 50, 100	7210K1	$6.15	7210K125	$1.50	7210K126	$2.67
40	1/2"	0.312"	5/16"	940	1-10, 20, 50, 100	7210K2	7.75	7210K225	1.74	7210K226	3.10
50	5/8"	0.400"	3/8"	1,620	1-10, 20, 50, 100	7210K3	10.91	7210K325	2.02	7210K326	3.64
60	3/4"	0.469"	1/2"	2,470	1-10, 20, 50, 100	7210K4	15.52	7210K425	2.79	7210K426	5.57
80	1"	0.625"	5/8"	4,140	1-10, 20, 50, 100	7210K5	27.33	7210K525	4.45	7210K526	9.19
100	1 1/4"	0.750"	3/4"	6,360	1-10, 20, 50, 100	7210K6	43.23	7210K625	8.14	7210K626	17.14
120	1 1/2"	0.875"	1"	8,540	1-10, 20, 50	7210K7	48.91	7210K725	11.84	7210K726	24.52
Double Strand											
40-2	1/2"	0.312"	5/16"	1,370	1-10, 20, 50, 100	2331K1	18.30	2331K11	3.80	2331K12	7.68
50-2	5/8"	0.400"	3/8"	2,380	1-10, 20, 50, 100	2331K2	26.43	2331K13	4.47	2331K14	8.57
60-2	3/4"	0.469"	1/2"	3,315	1-10, 20, 50, 100	2331K3	35.99	2331K15	6.00	2331K16	12.39
80-2	1"	0.625"	5/8"	5,610	1-10, 20, 50, 100	2331K4	64.38	2331K17	9.68	2331K18	21.17
Acetal											
Standard Single Strand											
25	1/4"	0.130"	1/8"	8	1-10, 20, 50	6846K2	12.07	—	—	—	—
35	3/8"	0.200"	3/16"	17	1-10, 20, 50	6846K4	10.25	—	—	—	—
40	1/2"	0.312"	5/16"	22	1-10, 20, 50	6846K6	11.10	—	—	—	—
Single Strand with Stainless Steel Side Plates											
25	1/4"	0.130"	1/8"	18	1-10	6228K11	20.12	6228K21	2.38	—	—
35	3/8"	0.200"	3/16"	40	1-10	6228K12	20.52	6228K22	3.84	—	—
40	1/2"	0.312"	5/16"	99	1-10	6228K13	23.33	6228K23	4.24	—	—
50	5/8"	0.400"	3/8"	154	1-10	6228K14	29.16	6228K24	4.94	—	—
60	3/4"	0.469"	1/2"	198	1-10	6228K15	39.87	6228K25	6.28	—	—

Warning! ***Do not use the chain on this page for lifting applications or for moving people.***

For information about roller chain, see page 1032.

Lubrication-Free ANSI Roller Chain

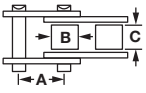

Since no lubrication is required, this single-strand chain eliminates problems with oil contamination while reducing maintenance time and costs. *Note:* Standard ANSI chain can be replaced with lubrication-free chain that has the same ANSI number. Although the roller width (C) is slightly narrower, standard ANSI sprockets can still be used.

To Order: Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft. (unless noted). The 1-ft. through 10-ft. lengths include one connecting link, 20-ft. lengths include two connecting links, 50-ft. lengths include five connecting links, and 100-ft. lengths include 10 connecting links.

Carbon Steel— This chain has oil-impregnated bushings and coated pins for internal lubrication.

Ultra-Premium Carbon Steel— Designed to last up to three times longer than standard ANSI chain, this chain has chrome-plated pins that are hardened to Rockwell 70C. These exceptionally hard pins not only provide strength and wear resistance for extended chain life, but also eliminate the need for lubrication.

Nickel-Plated Carbon Steel— Just like the carbon steel chain above but with better corrosion resistance. Good for use in mildly corrosive environments.

Sealed Carbon Steel— A rubber O-ring seals the lubricating grease in between the bushings and pins while keeping dirt and moisture out to extend the life of the chain.

ANSI No.	Pitch (A)	Roller Dia. (B)	Roller Wd. (C)	Working Load, lbs.	Roller Chain	Per Ft.	Extra Chain Links: Connecting	Each	Extra Chain Links: Add-and-Connect	Each
Carbon Steel										
40	1/2″	5/16″	0.297″	816	7311K2	$20.35	7311K225	$2.57	7311K226	$5.54
50	5/8″	13/32″	0.365″	1,430	7311K3	24.33	7311K325	3.10	7311K326	7.35
60	3/4″	15/32″	0.483″	1,980	7311K4	32.14	7311K425	4.33	7311K426	9.98
80	1″	5/8″	0.609″	3,310	7311K5●	49.90	7311K525	6.67	7311K526	15.28
Ultra-Premium Carbon Steel										
40	1/2″	0.313″	0.313″	820	5976K1●	20.24	5976K11	2.73	5976K21	9.04
50	5/8″	0.400″	0.376″	1,435	5976K2●	21.64	5976K12	4.31	5976K22	10.01
60	3/4″	0.469″	0.500″	2,000	5976K3●	23.80	5976K13	6.15	5976K23	13.12
80	1″	5/8″	0.627″	3,300	5976K4●	28.15	5976K14	8.92	5976K24	20.02
100	1 1/4″	3/4″	0.755″	5,085	5976K5●	54.84	5976K15	14.49	5976K25	30.15
120	1 1/2″	7/8″	1.000″	6,850	5976K6●	70.64	5976K16	42.71	5976K26	19.36
Nickel-Plated Carbon Steel										
40	1/2″	5/16″	0.297″	683	2336K1	28.31	2336K11	4.35	2336K12	9.32
50	5/8″	13/32″	0.365″	1,210	2336K2	33.78	2336K13	5.20	2336K14	12.34
60	3/4″	15/32″	0.483″	1,630	2336K3	44.52	2336K15	7.29	2336K16	16.78
80	1″	5/8″	0.609″	2,870	2336K4●	69.18	2336K17	11.20	2336K18	25.66
Sealed Carbon Steel										
40	1/2″	0.312″	0.312″	836	60125K11	26.11	60125K612	4.22	60125K914	13.11
50	5/8″	0.400″	0.375″	1,540	60125K21	26.98	60125K622	5.57	60125K915	15.02
60	3/4″	0.469″	0.500″	2,090	60125K31	40.15	60125K911	6.57	60125K633	19.72
80	1″	5/8″	0.625″	3,300	60125K41●	68.68	60125K912	10.06	60125K916	29.45
100	1 1/4″	3/4″	0.750″	5,060	60125K71★	124.38	60125K913	25.22	60125K917	49.74

● Not available in 100-ft. lengths. ★ Not available in 50-ft. or 100-ft. lengths.

Hollow-Pin ANSI Chain

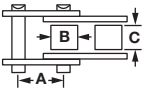

Hollow pin bushings allow you to insert cross rods and attachments into this chain without disassembling it—excellent for customizing your chain system. All of this chain is single strand.

To Order: Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft. (unless noted). Lengths through 10 ft. include one connecting link, 20-ft. lengths include two connecting links, 50-ft. lengths include five connecting links, and 100-ft. lengths include 10 connecting links.

Type 304 Stainless Steel— Offers good corrosion resistance.

ANSI No.	Pitch (A)	Bushing Dia. (B)	Bushing Wd. (C)	Pin Hole Dia.	Working Load, lbs.	Hollow-Pin Chain	Per Ft.	Extra Chain Links: Connecting	Each	Extra Chain Links: Add-and-Connect	Each
Steel											
40	1/2″	0.312″	0.312″	0.157″	397	7272K3	$13.97	7272K325	$3.09	7272K326	$6.17
50	5/8″	0.400″	0.375″	0.202″	705	7272K4	16.31	7272K425	4.17	7272K426	7.84
60	3/4″	0.469″	0.500″	0.236″	948	7272K5	18.43	7272K525	6.54	7272K526	10.71
80	1″	0.625″	0.625″	0.316″	1,720	7272K6	40.66	7272K625	12.65	7272K626	16.94
Type 304 Stainless Steel											
40	1/2″	0.312″	0.312″	0.157″	99	2326K1	53.08	2326K11	6.88	2326K12	13.96
50	5/8″	0.400″	0.375″	0.202″	154	2326K2	59.59	2326K13	8.90	2326K14	20.13
60	3/4″	0.469″	0.500″	0.236″	231	2326K3	65.08	2326K15	11.67	2326K16	26.22
80	1″	0.625″	0.625″	0.316″	397	2326K4●	181.13	2326K17	31.59	2326K18	65.65

● Not available in 100-ft. lengths.

Flexible ANSI Roller Chain

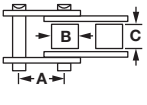

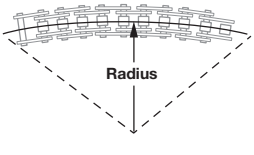

The perfect solution when sprockets can't be exactly aligned, this chain has extra clearance between chain parts so it can curve side-to-side. Chain is made of carbon steel and is single strand.

To Order: Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20 and 50 ft. The 1-ft. through 10-ft. lengths and 20-ft. lengths include one connecting link; 50-ft. lengths include five connecting links.

ANSI No.	Min. Curve Radius	Pitch (A)	Roller Dia. (B)	Roller Wd. (C)	Working Load, lbs.	Roller Chain	Per Ft.	Connecting Links	Each
35	10″	3/8″	0.200″	0.188″	210	7274K1	$18.46	7274K125	$1.49
40	13.78″	1/2″	0.312″	0.312″	400	7274K2	13.31	7274K225	1.40
50	15.748″	5/8″	0.400″	0.375″	700	7274K3	15.67	7274K325	1.52
60	19.685″	3/4″	0.469″	0.500″	950	7274K4	18.36	7274K425	2.23
80	23.622″	1″	0.625″	0.625″	1,700	7274K5	26.39	7274K525	3.40

Warning! ***Do not use the chain on this page for lifting applications or for moving people.***

For information about roller chain, see page 1032.

Low-Temperature ANSI Roller Chain

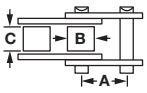

Just how low can it go? Unlike standard steel roller chain, which can become brittle below +14°F, this chain can handle temperatures down to –40°F. Chain is made of specially designed alloy steel and is single strand. *Note:* When lubricating this chain, use oil that is suitable for your temperature range.

To Order: Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft. The 1-ft. through 10-ft. lengths and 20-ft. lengths include one connecting link, 50-ft. lengths include five connecting links, and 100-ft. lengths include 10 connecting links.

ANSI No.	Pitch (A)	Roller Dia. (B)	Roller Wd. (C)	Working Load, lbs.	ROLLER CHAIN	Per Ft.	EXTRA CHAIN LINKS Connecting	Each	Add-and-Connect	Each
40	1/2″	0.312″	5/16″	484	6043K1	$13.17	6043K11	$3.34	6043K21	$6.83
50	5/8″	0.400″	3/8″	880	6043K2	17.25	6043K12	4.05	6043K22	7.83
60	3/4″	0.469″	1/2″	1,210	6043K3	23.14	6043K13	4.85	6043K23	10.39
80	1″	0.625″	5/8″	1,914	6043K4	43.58	6043K14	9.76	6043K24	23.67

Ready-to-Use Custom-Length ANSI Roller Chain

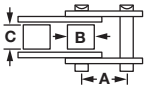

No need to cut and connect chain yourself—we'll do it for you. All of this chain is made of carbon steel and is single strand.

To Order: Please specify the number of links per chain (see the ***Counting the links you need*** box) and the quantity of finished chains desired. The number of links to order equals the links per chain multiplied by the quantity of chains. For example, if you need two finished chains with 50 links each, you would need to order a total of 100 links.

Choose ***chain with connecting links***, which allows you to break and remove the chain if needed, or ***fully riveted chain***, which is continuous and stronger.

ANSI No.	Links Per Ft.	Pitch (A)	Roller Dia. (B)	Roller Wd. (C)	With Connecting Links Working Load, lbs.	Each Link	Fully Riveted Working Load, lbs.	Each Link
25	48	1/4″	0.130″	1/8″	114	1170T51 $0.24	172	1170T114 $0.24
35	32	3/8″	0.200″	3/16″	269	1170T52 .30	404	1170T72 .30
40	24	1/2″	0.312″	5/16″	437	1170T53 .45	655	1170T73 .45
41	24	1/2″	0.306″	1/4″	314	1170T54 .38	472	1170T905 .38
50	19	5/8″	0.400″	3/8″	734	1170T55 .75	1,101	1170T75 .75
60	16	3/4″	0.469″	1/2″	1,036	1170T56 1.09	1,554	1170T76 1.09
80	12	1″	0.625″	5/8″	1,733	1170T57 1.66	2,600	1170T77 1.66
100	10	1 1/4″	0.750″	3/4″	2,727	1170T58 3.50	4,091	1170T78 3.50
120	8	1 1/2″	0.875″	1″	3,904	1170T59 6.16	5,856	1170T79 6.16
140	7	1 3/4″	1.000″	1″	5,295	1170T61 8.62	7,943	1170T81 8.62
160	6	2″	1.125″	1 1/4″	6,966	1170T62 12.24	10,499	1170T82 12.24

Counting the links you need

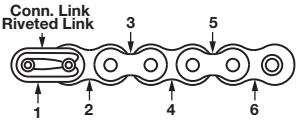

Start at either end of the chain and count every link until you reach the other end. The number of links will be an even number, such as 2, 4, 6, etc.

Double-Pitch ANSI Roller Chain

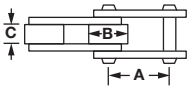

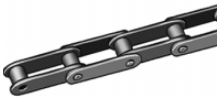

With half as many rollers as standard roller chain, this double-pitch chain is lighter and more economical. It's the perfect choice for applications with slow to moderate speeds. All of this chain is single strand and can be used with standard sprockets.

To Order: Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft. The 1-ft. through 10-ft. lengths and 20-ft. lengths include one connecting link, 50-ft. lengths include five connecting links, and 100-ft. lengths include 10 connecting links.

Heavy Chain— This chain has thicker side plates, which provide a higher load capacity than standard chain. ***300 Series Stainless Steel—*** Offers good corrosion resistance.

ANSI No.	Pitch (A)	Roller Dia. (B)	Roller Wd. (C)	Working Load, lbs.	ROLLER CHAIN	Per Ft.	EXTRA CHAIN LINKS Connecting	Each	Adding	Each	Add-and-Connect	Each
Standard Chain												
Steel												
C2040	1″	0.312″	5/16″	600	60815K21	$3.43	60815K212	$1.25	60815K214	$1.11	60815K213	$2.72
C2050	1 1/4″	0.400″	3/8″	1,000	60815K22	4.27	60815K222	1.47	60815K224	1.53	60815K223	3.17
300 Series Stainless Steel												
C2040	1″	0.312″	5/16″	99	2335K1	17.00	2335K11	4.58	2335K12	3.72	2335K13	9.86
C2050	1 1/4″	0.400″	3/8″	154	2335K2	22.38	2335K21	5.72	2335K22	5.47	2335K23	12.28
Heavy Chain												
Steel												
C2060H	1 1/2″	0.469″	1/2″	1,400	60815K23	6.35	60815K232	2.08	60815K234	2.50	60815K233	4.64
C2080H	2″	0.625″	5/8″	2,400	60815K24	11.43	60815K242	4.36	60815K244	4.69	60815K243	8.89
300 Series Stainless Steel												
C2060H	1 1/2″	0.469″	1/2″	231	2335K3	33.70	2335K31	8.53	2335K32	7.81	2335K33	18.47
C2080H	2″	0.625″	5/8″	396	2335K4	68.57	2335K41	15.28	2335K42	20.39	2335K43	32.89

ANSI Roller Chain Wear-Indicating Gauges

Forget the guesswork—quickly and accurately check the wear (stretch) of your ANSI roller chain. *Note*: You need to know the ANSI size of your chain.

Style 1— To check chain wear, simply place the start arrow on a chain link and look where the end arrow lines up. Gauge is made of laminated cardboard.

Style 2— These gauges couldn't be any easier to use. Just insert them between any two roller links and look where they stop. If the gauges go in past your known ANSI size, your chain is worn out. Gauges are made of precision-ground tool steel.

1

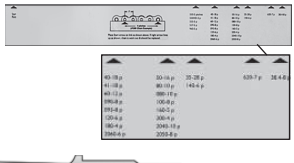

2

	For ANSI Chain Nos.	Lg. × Wd.		Each
1	35-2060	13 3/8″ × 1 7/8″	2370K1	$1.69
2	35- 100	8 3/4″ × 5/8″	2370K2	199.74
2	80- 240	18″ × 1 1/2″	2370K3	250.38

Warning! ***Do not use the chain on this page for lifting applications or for moving people.***

For information about roller chain, see page 1032.

Single-Strand ANSI Roller Chain Link Assortments

Made of steel, the components are individually bagged and furnished in a compartmented plastic case with convenient carrying handle. A reference guide is included. Style and quantity of each link are listed below.

83-Piece ANSI Assortment

Link Style	#35	#40	#41	#50	#60
Connecting	7	7	7	5	6
Add-and-Connect	5	5	5	5	6
Adding	5	5	5	4	6

6171K54 ..... Each $190.33

160-Piece ANSI Assortment

Link Style	#35	#40	#41	#50	#60	#80
Connecting	20	20	20	10	10	5
Add-and-Connect	10	10	10	10	5	5
Adding	5	5	5	5	5	—

6171K53 ..... Each $386.53

ANSI Roller Chain Attachments

Connecting Links

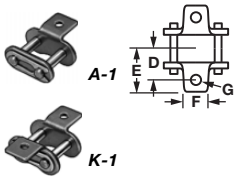

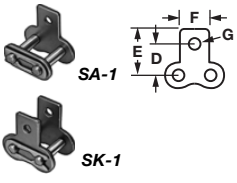

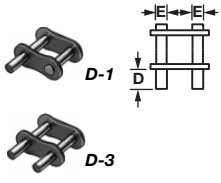

Adding Links

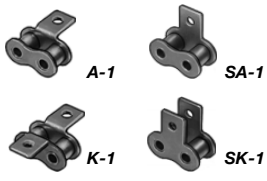

Add these attachments to your ANSI drive chain for conveying, timing, and aligning applications. Move materials directly on the attachments or design your own jigs to install on the attachments.

A-1, K-1, SA-1, and ***SK-1 attachments*** have a hole for mounting parts and hanging hooks. ***D-1*** and ***D-3 attachments*** have pin extensions that are great for tripping switches.

Connecting Links— Join two ends of a length of chain. All include a spring clip, except for *ANSI No. 80 single-pitch connecting links* and all *double-pitch connecting links*, which include a cotter pin.

Adding Links— Increase the length of your chain. *Note:* A standard connecting link (see page 1032) or a single-pitch connecting link (sold below) is required to join the ends of the chain.

Single-Pitch Connecting Links

For ANSI Chain	(D)	(E)	(F)	(G)	Steel A-1	Each	Steel K-1	Each	Corrosion-Resistant Steel A-1	Each	Corrosion-Resistant Steel K-1	Each
					A-1		**K-1**		**A-1**		**K-1**	
35	0.375″	0.562″	0.312″	0.134″	7321K1	$1.91	7321K3	$2.54	2452K19	$3.06	2452K39	$4.09
40	0.5″	0.679″	0.375″	0.142″	7321K5	2.00	7321K7	2.83	2452K11	2.71	2452K31	3.06
50	0.625″	0.917″	0.5″	0.205″	7321K11	2.66	7321K13	3.46	2452K12	3.31	2452K32	3.74
60	0.75″	1.106″	0.625″	0.205″	7321K15	3.40	7321K17	4.46	2452K13	4.51	2452K33	5.37
80	1″	1.413″	0.75″	0.268″	7321K21	4.97	7321K23	6.51	2452K14	7.29	2452K34	9.03
					SA-1		**SK-1**		**SA-1**		**SK-1**	
35	0.375″	0.578″	0.312″	0.134″	7321K31	1.91	7321K33	2.54	2452K29	3.06	2452K49	4.09
40	0.5″	0.734″	0.375″	0.142″	7321K35	2.00	7321K37	2.83	2452K21	2.71	2452K41	3.06
50	0.625″	0.906″	0.5″	0.205″	7321K39	2.66	7321K42	3.46	2452K22	3.31	2452K42	3.74
60	0.72″	1.062″	0.625″	0.205″	7321K44	3.40	7321K46	4.46	2452K23	4.51	2452K43	5.37
80	0.968″	1.359″	0.75″	0.268″	7321K48	4.97	7321K51	6.51	2452K24	7.29	2452K44	9.03
					D-1		**D-3**		**D-1**		**D-3**	
40	0.375″	0.156″	—	—	7321K63	3.23	7321K64	3.51	2452K91	3.40	2452K95	4.69
50	0.468″	0.2″	—	—	7321K65	3.51	7321K66	3.91	2452K92	4.03	2452K96	5.69
60	0.562″	0.234″	—	—	7321K67	5.37	7321K68	5.94	2452K93	5.26	2452K97	7.14
80	0.75″	0.312″	—	—	7321K69	6.54	7321K71	7.23	—	—	—	—

Double-Pitch Connecting Links

For ANSI Chain	(D)	(E)	(F)	(G)	Steel A-1	Each	Steel K-1	Each	(D)	(E)	(F)	(G)	Steel SA-1	Each	Steel SK-1	Each
C2040	0.5″	0.75″	0.75″	0.141″	2453K11	$3.06	2453K31	$3.60	0.437″	0.781″	0.75″	0.203″	2453K15	$3.06	2453K35	$3.60
C2050	0.625″	0.953″	0.937″	0.203″	2453K12	3.83	2453K32	4.83	0.562″	0.968″	0.937″	0.266″	2453K16	3.83	2453K36	4.83
C2060H	0.843″	1.234″	1.125″	0.203″	2453K13	4.57	2453K33	5.94	0.687″	1.203″	1.125″	0.344″	2453K17	4.57	2453K37	5.94
C2080H	1.093″	1.593″	1.5″	0.266″	2453K14	8.40	2453K34	11.23	0.875″	1.593″	1.5″	0.406″	2453K18	8.40	2453K38	11.23

Single-Pitch Adding Links

For ANSI Chain	(D)	(E)	(F)	(G)	Steel A-1	Each	Steel K-1	Each	(D)	(E)	(F)	(G)	Steel SA-1	Each	Steel SK-1	Each
35	0.375″	0.562″	0.312″	0.134″	7321K2	$1.43	7321K4	$2.00	0.375″	0.578″	0.312″	0.134″	7321K32	$1.43	7321K34	$2.00
40	0.5″	0.679″	0.375″	0.142″	7321K6	1.31	7321K8	1.77	0.5″	0.734″	0.375″	0.142″	7321K36	1.31	7321K38	1.77
50	0.625″	0.917″	0.5″	0.205″	7321K12	2.34	7321K14	2.97	0.625″	0.906″	0.5″	0.205″	7321K41	2.34	7321K43	2.97
60	0.75″	1.106″	0.625″	0.205″	7321K16	2.57	7321K18	4.26	0.72″	1.062″	0.625″	0.205″	7321K45	2.57	7321K47	4.26
80	1″	1.413″	0.75″	0.268″	7321K22	5.46	7321K24	7.49	0.968″	1.359″	0.75″	0.268″	7321K49	5.46	7321K52	7.49

Miniature Chain

Acetal and Nylatron

Stainless Steel

This single-strand chain fits small machines that ANSI-sized chain can't. Use it with our miniature sprockets (see 64205K and 6789K on page 1042). **To Order:** Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft.

Acetal and ***Nylatron—*** Both styles are self-lubricating, quiet, lightweight, nonconductive, and nonmagnetic. They have links that snap together, which eliminates the need for connecting links.

300 Series Stainless Steel— This corrosion-resistant chain is rollerless. The 1-ft. through 10-ft. lengths and 20-ft. lengths include one connecting link, 50-ft. lengths include 20 connecting links, and 100-ft. lengths include 40 connecting links.

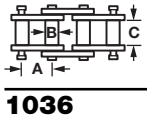

Material	Pitch (A)	Bushing Dia. (B)	Bushing Wd. (C)	Working Load	Chain	Per Ft.	Connecting Links	Each
Acetal	0.1227″	0.06″	0.062″	2 lbs.	64225K72	$12.12	—	—
Nylatron	0.1475″	0.089″	0.072″	6.5 oz.	6865K3	33.85	—	—
300 Series Stainless Steel	0.1475″	0.09″	0.072″	20 lbs.	7142K1	40.96	7142K2	$3.68

For information about roller chain, see page 1032.

British Standard Metric Roller Chain

Excellent for use with low-power and instrument drives, this British standard chain conforms to ISO 606B and is compatible with BS 228 (British standard) and DIN 8187 (German standard). **To Order:** Please specify length. We offer lengths in 1-ft. increments up to 10 ft. as well as lengths of 20, 50, and 100 ft. The 1-ft. through 10-ft. lengths and 20-ft. lengths include one connecting link, 50-ft. lengths include five connecting links, and 100-ft. lengths include 10 connecting links.

18-8 Stainless Steel— Offers good corrosion resistance.

Alloy Steel, Double Strand

18-8 Stainless Steel, Single Strand

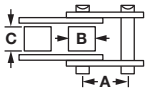

ISO No.	Pitch (A)	Roller Dia., mm (B)	Roller Wd., mm (C)	Working Load, lbs.	ROLLER CHAIN	Per Ft.	EXTRA CHAIN LINKS Connecting	Each	Add-and-Connect	Each
Alloy Steel										
Single Strand										
04B	6.00 mm/0.236″	4.00	2.80	130	6027K71	$7.04	6027K33	$1.33	6027K42★	$3.46
05B	8.00 mm/0.315″	5.00	3.00	180	6027K91	7.41	6027K34	1.57	6027K43★	2.92
06B	9.53 mm/0.375″	6.35	5.72	397	6027K73	5.85	6027K63	1.07	6027K65	2.31
081	12.70 mm/0.500″	7.77	3.18	375	6027K74	3.89	6027K36	1.21	6027K45	2.49
08B	12.70 mm/0.500″	8.51	7.75	704	6027K75	5.54	6027K64	1.21	6027K66	2.55
10B	15.88 mm/0.625″	10.16	9.65	1,099	6027K76	7.13	6027K37	1.28	6027K46	2.86
12B	19.05 mm/0.750″	12.07	11.68	1,584	6027K77	9.72	6027K38	1.99	6027K47	4.19
16B	25.40 mm/1.000″	15.88	17.02	2,827	6027K78	16.54	6027K39	3.44	6027K48	7.17
Double Strand										
06B-2	9.53 mm/0.375″	6.35	5.72	660	6027K11	12.72	6027K1	2.44	6027K5	5.76
08B-2	12.70 mm/0.500″	8.51	7.75	1,150	6027K12	12.43	6027K2	2.97	6027K6	6.43
10B-2	15.88 mm/0.625″	10.16	9.65	1,870	6027K13	16.15	6027K3	3.42	6027K7	7.10
12B-2	19.05 mm/0.750″	12.07	11.68	2,650	6027K31	21.69	6027K4	4.98	6027K8	10.67
18-8 Stainless Steel										
Single Strand										
05B-SS	8.00 mm/0.315″	5.00	3.00	26	60295K81	52.60	60295K62	3.89	60295K72★	7.79
06B-SS	9.53 mm/0.375″	6.35	5.72	60	60295K82	24.47	60295K63	2.79	60295K73	6.13
08B-SS	12.70 mm/0.500″	8.51	7.75	110	60295K83	28.21	60295K64	3.30	60295K74	5.85
10B-SS	15.88 mm/0.625″	10.16	9.65	150	60295K84	34.12	60295K65	3.74	60295K75	7.87
12B-SS	19.05 mm/0.750″	12.07	11.68	200	60295K85	47.14	60295K66	5.62	60295K76	11.74
16B-SS	25.40 mm/1.000″	15.88	17.02	460	60295K86	76.23	60295K67	10.49	60295K77	22.04

★ Link is double pitch.

Steel Leaf Chain

Also known as counterbalance chain, this strong, flexible leaf chain offers greater tensile strength than roller chain. Use it as a counterweight chain for machine tools, elevator doors, forklift masts, and other similar lifting and balancing applications. It's also good for low-speed pulling. The chain is made of heat-treated steel plates that are interlaced and held together by rivet pins. It is single strand and driven over flat pulleys, not sprockets. Meets ASME B29.8M for leaf chain. **To Order:** Please specify length. We offer lengths in 1-ft. increments from 3 ft. up to 20 ft.

Caution: When servicing worn leaf chain, replace the entire chain. Do not splice chains together. Do not mix old and new chain.

Clevis End Connectors— For fastening the end of the chain to a clevis.

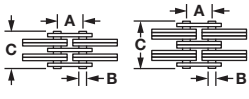

3×4 Lacing *4×6 Lacing*

Clevis End Connector

ANSI No.	Pitch (A)	Pin Dia. (B)	O'all Wd. (C)	Lacing	Breaking Point, lbs.	Leaf Chain Per Ft.	Clevis End Connectors Each
BL434	½″	0.200″	0.677″	3×4	7,900	2333K1 $13.22	2333K11 $1.26
BL534	⅝″	0.234″	0.791″	3×4	13,200	2333K2 14.67	2333K12 1.90
BL634	¾″	0.312″	1.041″	3×4	21,500	2333K3 17.96	2333K13 3.34
BL646	¾″	0.312″	1.437″	4×6	28,500	2333K4 22.70	2333K14 5.12
BL834	1″	0.375″	1.281″	3×4	34,800	2333K5 32.26	2333K15 7.38
BL846	1″	0.375″	1.772″	4×6	46,200	2333K6 44.04	2333K16 9.75

Roller Chain Holders

Need an extra hand? These holders work like a third hand to help you insert and fasten connecting links.

(A) Compact, ***(B) Knob***, and ***(C) T-Handle Styles—*** Simply hook the jaws into each end of your chain and tighten until chain ends are close enough to insert your new link. All are made of steel.

(D) Cable Style— This holder allows you to keep your chain on the sprocket when adding or removing links. Just insert the hooks that are on each end of the cable onto the rollers beyond the links you want to change. Then tighten with the included box wrench. When the work is done, pull the lever to release the cable and remove the tool. Minimum roller width is ⅝″. Tool is made of steel with a wire rope cable and hardened steel hooks.

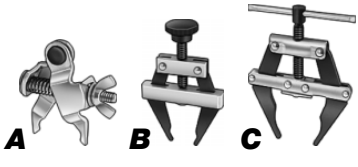

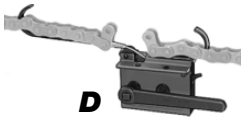

	Style	For ANSI Chain Nos.	Pitch	Max. Spread	Lg. × Wd.		Each
A	Compact	35- 60	⅜″- ¾″	1⅝″	2½″ × 2½″	7320K5	$11.82
B	Knob	35- 60	⅜″- ¾″	2″	4″ × 2¾″	6052K14	26.81
C	T-Handle	40- 80	½″-1″	3½″	6¾″ × 4¼″	6052K18	47.92
C	T-Handle	80-240	1″ -3″	5″	8″ × 5½″	6052K16	53.56
D	Cable	80-240	1″ -3″	42″	5″ × 3″	7323K4	88.40

Ring-Style Self-Adjusting Roller Chain Tensioners

Reduce chain wear and quiet chain clatter by placing one of these simple rings between two strands of chain—no aligning, adjusting, or lubricating necessary. Made of strong, flexible plastic. Maximum operating temperature is 158° F. Tension force not rated.

Tension Ring in Use

For ANSI Chain No.	Max. Speed, ft./min.	No. of Teeth in Drive Sprocket	Pitch Dia.		Each	For ANSI Chain No.	Max. Speed, ft./min.	No. of Teeth in Drive Sprocket	Pitch Dia.		Each
35	1,024	15 to 25	3.539″	5896K1	$47.67	60	1,063	15 to 19	6.102″	5896K6	$65.51
40	1,476	15 to 19	4.154″	5896K2	44.47	60	1,220	19 to 25	7.173″	5896K7	75.49
50	1,501	15 to 19	5.055″	5896K4	54.22	80	1,122	17 to 19	8.150″	5896K8	81.13

Warning! ***Do not use the chain on this page for lifting applications or for moving people.***

Floating-Style Self-Adjusting Roller Chain Tensioners

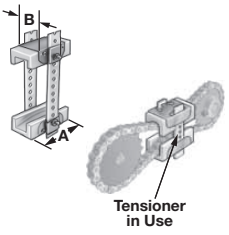

Easy to install, these tensioners get the job done without mounting them to a structure. Each has saddle blocks that ride on your chain between the drive sprocket and driven sprocket and are joined by adjustable straps that take up the slack. They require no lubrication, idler sprockets, or bearings. All are UHMW polyethylene (FDA and USDA compliant for food contact) with a stainless steel housing and zinc-plated steel screws and lock nuts. Max. operating temp. is 200° F. Tension force not rated.

For ANSI Chain No.	Saddle Lg. (A)	Overall Wd. Pin-to-Pin (B)		Each
25	2½″	1 3/32″	5973K1	$37.45
35	2½″	1 3/32″	5973K2	39.79
40, 41, 52, 25-2	3″	2 11/16″	5973K3	51.49
50, 35-2	3½″	2⅞″	5973K4	60.85
60, 40-2, 35-3	4″	3⅛″	5973K5	56.67
80, 50-2, 35-4	4½″	3¾″	5973K6	95.95
100, 60-2, 40-3, 76	5″	4 1/16″	5973K7	127.60
120, 80-2, 50-3, 40-4	5½″	4 13/16″	5973K8	143.85
140	5½″	4 13/16″	5973K9	226.00
160, 50-4, 40-5	6½″	5¼″	5973K11	303.60

Adjustable and Spring-Loaded Belt and Roller Chain Tensioners

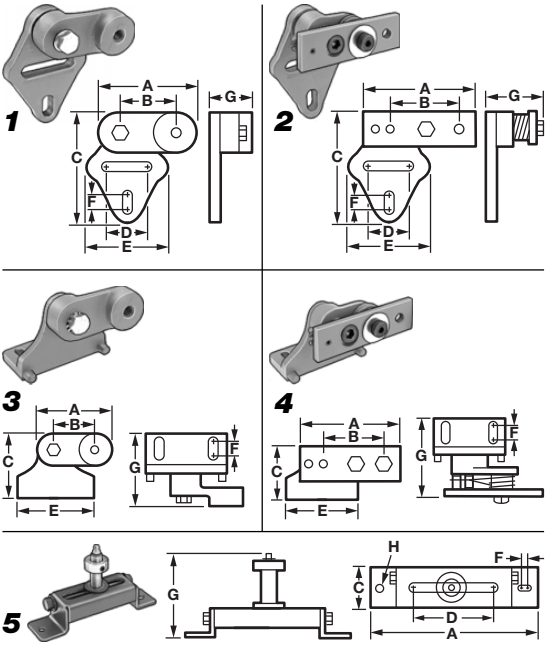

Our drive tensioners take up slack and keep continuous tension on your single-strand chain and belts. Use them with idler sprockets (see 6663K on page 1040) or pulleys (see 6234K on page 1059, 59475K on page 1050, and 6235K on page 1051). Styles 2 and 4 have a tension force of 45 lbs.; others aren't rated. All have mounting slots and fasteners, except Style 5, which has a hole and slot but doesn't include fasteners.

Manually Adjustable Tensioners (1, 3, and 5)—*Styles 1* and *3* have a 360° arm rotation. Tension is applied by adjusting tensioner bolts and slots. *Style 5* adjusts with an adjustment screw and applies tension in a straight line.

Spring-Loaded Automatic Tensioners (2 and 4)—Both styles have a spring-loaded pivot arm, which applies continuous force on your chain or belt. They also have a secondary pivot arm with external springs and swing 180° in either direction.

For Idler Bore	(A)	(B)	(C)	(D)	(E)	(F)	Proj. (G)	(H)		Each
(1) Vertical-Mount Manually Adjustable Tensioners										
⅜″	2½″	1 5/16″	3¼″	1″	2″	½″	1⅜″	—	60225K11	$58.44
½″	3 13/16″	2⅛″	5″	1⅞″	3½″	⅝″	2″	—	60225K12	62.54
⅝″	3 13/16″	2⅛″	5″	1⅞″	3½″	⅝″	2″	—	60225K13	63.36
(2) Vertical-Mount Spring-Loaded Automatic Tensioners										
½″	5″	2⅝″	5″	1⅞″	3½″	⅝″	2⅞″	—	60225K21	90.22
⅝″	5″	2⅝″	5″	1⅞″	3½″	⅝″	2⅞″	—	60225K22	93.50
(3) Horizontal-Mount Manually Adjustable Tensioners										
⅜″	2¼″	1⅜″	2 5/16″	—	2¼″	¼″	2″	—	60225K14	58.44
½″	3 13/16″	2¼″	3¼″	—	4″	½″	3⅜″	—	60225K15	62.54
⅝″	3 13/16″	2¼″	3¼″	—	4″	½″	3⅜″	—	60225K16	63.36
(4) Horizontal-Mount Spring-Loaded Automatic Tensioners										
½″	5″	2⅝″	3¼″	—	4″	½″	4″	—	60225K23	96.37
⅝″	5″	2⅝″	3¼″	—	4″	½″	4″	—	60225K24	99.65
(5) Vertical/Horizontal-Mount Manually Adjustable Tensioners										
½″	5⅞″	—	1½″	2½″	—	⅜″	3⅛″	9/32″	6265K5	52.91
⅞″	9″	—	2″	4½″	—	½″	4 15/16″	11/32″	6265K1	79.44
1⅛″	13″	—	3″	6″	—	¾″	5 15/16″	9/16″	6265K2	119.44

Automatic-Spring Roller Chain Tensioners

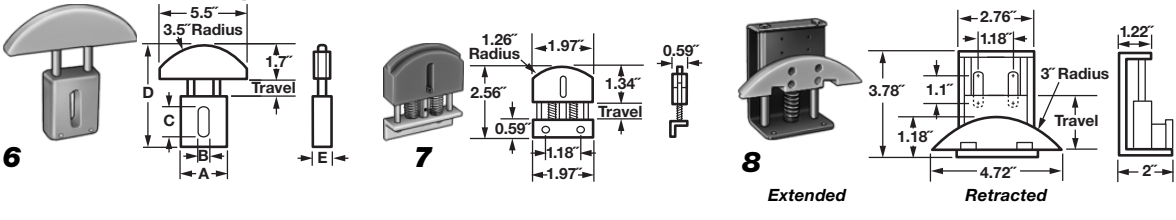

Built-in springs put constant tension on single-strand roller chain. They absorb and buffer momentary overloads, reduce vibration, and improve drive performance. Maximum operating temperature is 180° F for standard tensioners; 140° F for low-profile tensioners. All can be mounted vertically or horizontally.

(6) Standard Tensioners

All have reciprocating steel shafts that are attached to a self-lubricating UHMW polyethylene arc for smooth, quiet operation. Case is die cast aluminum; bearings are sintered bronze. They mount and adjust with a single bolt (not included; use a ⅜″ bolt for 6233K33 and K34, a 7/16″ bolt for K35 and K36, and a ½″ bolt for K37 and K38).

For ANSI Chain No.	Tension, lbs.	Travel	(A)	(B)	(C)	(D)	Proj. (E)		Each
35	15- 40	0.85″	2.31″	0.42″	1.80″	5.52″	0.98″	6233K33	$74.51
40	15- 40	0.85″	2.31″	0.42″	1.80″	5.52″	0.98″	6233K34	74.51
50	20- 60	1.25″	2.95″	0.49″	2.36″	6.51″	1.18″	6233K35	99.56
60	20- 60	1.25″	2.95″	0.49″	2.36″	6.51″	1.18″	6233K36	99.56
80	45-100	1.65″	3.54″	0.57″	2.95″	7.60″	1.38″	6233K37	137.83
100	45-100	1.65″	3.54″	0.57″	2.95″	7.60″	1.38″	6233K38	137.83

(7-8) Low-Profile Tensioners

Perfect for tight spaces. All have a UHMW polyethylene arc and use two M6 screws (not included) for mounting. *Steel case* is treated with zinc phosphate for corrosion protection. *Type 304 stainless steel case* provides extra corrosion resistance.

Style 8 have elongated mounting holes, which allow adjustment.

For ANSI Chain No.	Travel	***2.8-4 lbs. Tension***	Each	***12-19 lbs. Tension***	Each
(7) Steel Case					
35	0.6″	7332K9	$51.49	7332K11	$51.49
		7-12 lbs. Tension		***13-29 lbs. Tension***	
(8) Steel Case					
25-35	1.6″	7332K1	$101.68	7332K5	$101.68
40	1.6″	7332K2	101.68	7332K6	101.68
50	1.6″	7332K3	101.68	7332K7	101.68
60	1.6″	7332K4	101.68	7332K8	101.68
(8) Type 304 Stainless Steel Case					
25-35	1.6″	7332K21	168.49	7332K25	168.49
40	1.6″	7332K22	168.49	7332K26	168.49
50	1.6″	7332K23	168.49	7332K27	168.49
60	1.6″	7332K24	168.49	7332K28	168.49

UHMW Roller Chain Guides

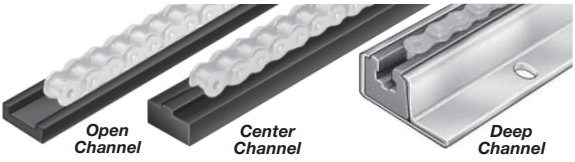

Minimize friction, reduce noise, and prolong the life of your roller chain with these chain guides. Made of UHMW polyethylene, they can be easily cut to the exact length you need. Maximum operating temperature is 180° F, unless otherwise stated. Color is black, unless otherwise stated. **To Order:** Please specify length. We offer lengths in 1-ft. increments up to 8 feet.

(2-4) Center Channel— Align more precisely than open-channel style.

(5-6) Deep Channel— A corrosion-resistant metal frame allows these guides to expand and contract for easy mounting and replacement.

Style 6 have a flanged frame with mounting holes for extra stability. Holes are every 12″, starting 6″ from the end. Mounting fasteners not included; use 5/16″ bolts. Maximum operating temperature is 176° F.

(1) Open Channel

For ANSI Chain No.	(A)	(B)	(C)	(D)		Per Ft.
40/2040	7/8″	3/16″	1 1/4″	5/16″	93095K1	$5.42
50/2050	1″	7/32″	1 1/4″	3/8″	93095K2	5.42
60/2060	1 1/4″	3/16″	1 1/2″	3/8″	93095K3	5.74
80/2080	1 9/16″	1/4″	2″	1/2″	93095K4	8.44

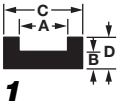

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(2-4) Center Channel

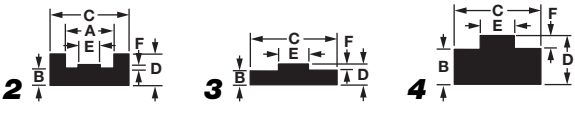

For ANSI Chain No.	(A)	(B)	(C)	(D)	(E)	(F)		Per Ft.
2 40/2040	11/16″	11/64″	1″	5/16″	1/4″	5/64″	93095K5	$6.14
2 50/2050	13/16″	3/16″	1 1/4″	3/8″	5/16″	3/32″	93095K6	6.12
2 60/2060	1 1/8″	9/32″	1 1/2″	1/2″	7/16″	7/64″	93095K7	6.62
2 80/2080	1 7/16″	1/4″	2″	1/2″	9/16″	1/8″	93095K8	9.56
3 40/2040	—	15/64″	1″	5/16″	1/4″	5/64″	93095K9	6.42
3 50/2050	—	7/32″	1 1/4″	5/16″	5/16″	3/32″	93095K46	6.42
3 60/2060	—	3/16″	1 1/4″	5/16″	7/16″	7/64″	93095K16	7.08
3 80/2080	—	1/4″	1 1/2″	3/8″	9/16″	1/8″	93095K17	9.70
4 40/2040	—	0.49″	0.79″	0.59″	0.29″	0.10″	93095K18	14.18
4 50/2050	—	0.47″	0.79″	0.59″	0.35″	0.12″	93095K19	12.32
4 60/2060	—	0.44″	1.10″	0.59″	0.46″	0.15″	93095K21	13.12
4 80/2080	—	0.53″	1.34″	0.71″	0.60″	0.18″	93095K22	15.80

(5-6) Deep Channel

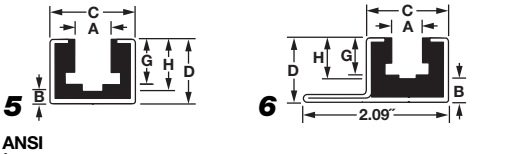

For ANSI Chain No.	(A)	(B)	(C)	(D)	(G)	(H)		Per Ft.
Black with Type 304 Stainless Steel Frame								
5 40/2040	0.33″	0.39″	1.18″	0.94″	0.45″	0.55″	93095K45	$35.72
5 50/2050	0.42″	0.29″	1.18″	0.94″	0.55″	0.65″	93095K24	35.72
5 60/2060	0.49″	0.31″	1.18″	1.13″	0.70″	0.82″	93095K25	49.18
5 80/2080	0.65″	0.39″	1.77″	1.58″	0.89″	1.19″	93095K26	49.18
Green with Galvanized Steel Flanged Frame								
6 35	0.21″	0.62″	1.22″	0.98″	0.31″	0.37″	93095K27	33.18
6 40/2040	0.33″	0.46″	1.22″	0.98″	0.46″	0.53″	93095K28	33.18
6 50/2050	0.42″	0.35″	1.22″	0.98″	0.57″	0.64″	93095K29	33.18
6 60/2060	0.49″	0.17″	1.22″	0.98″	0.73″	0.81″	93095K35	33.18
Green with Type 304 Stainless Steel Flanged Frame								
6 35	0.21″	0.62″	1.22″	0.98″	0.31″	0.37″	93095K36	57.35
6 40/2040	0.33″	0.46″	1.22″	0.98″	0.46″	0.53″	93095K37	57.35
6 50/2050	0.42″	0.35″	1.22″	0.98″	0.57″	0.64″	93095K38	57.35
6 60/2060	0.49″	0.17″	1.22″	0.98″	0.73″	0.81″	93095K39	57.35

Roller Chain Spring-Clip Remover

Removing spring clips on connecting links doesn't have to be a pesky chore. Give this handy tool a simple twist and the clips will easily detach. Tool is made of steel.

2372K1 ..... Each $3.08

Roller Chain Breakers

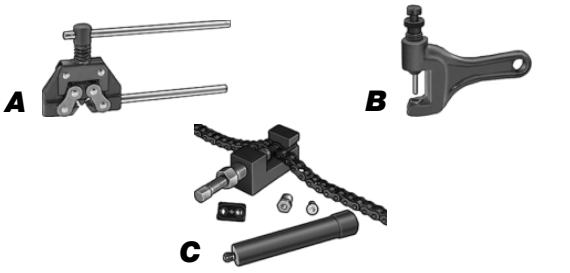

For use on single-strand roller chain, unless noted.

(A) Easy-Turn Style— No extra wrench is required—just turn the handle and the punch point lowers to drive out the pin. Breakers have forged-steel jaws, except for 6051K17, which has cold-rolled steel jaws. All parts are hardened for long life. *Note:* These breakers can also be used on multistrand roller chain.

(B) Wrench-Drive Style— Turn the knurled clamping knob by hand and tighten the hex-head screw with a wrench (not included), and the long, hardened-steel punch pushes the pin out. A clamping sleeve ensures perfect alignment with the pin. Breakers are made of steel.

(C) Breaker/Riveter Style— Use this one tool to break ANSI No. 50 and No. 60 chain as well as rivet No. 50 chain. Bolt it to a workbench (using two 3/8″-24 bolts, not included), support it in a vise, or use it by hand (with included removable handle). A rivet set, rivet anvil, and press plate are included. All parts are heat-treated steel for strength and durability.

For ANSI Chain Nos.	Pitch	Breakers	Each	Replacement Points	Each
(A) Easy-Turn Style					
25- 60	1/4″- 3/4″	6051K15	$27.23	6051K22	$2.48
60-100	3/4″-1 1/4″	6051K16	47.03	6051K23	2.97
120-160	1 1/2″-2″	6051K17	208.64	6051K24	6.42
(B) Wrench-Drive Style					
35- 50	3/8″- 5/8″	6669K11	27.81	6669K21	4.93
50- 80	5/8″-1″	6669K12	37.25	6669K22	6.02
(C) Breaker/Riveter Style					
50- 60	5/8″- 3/4″	8186K11	159.86	8186K21	10.79

Steel Guards for Chains and Belts

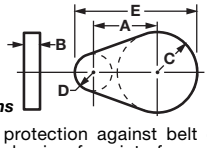

Guard Dimensions

All of these 14-ga. steel guards offer protection against belt or chain fly-off, and also protect the drive mechanism from interference. They're primed with one coat of primer and are ready for final paint or enamel coating. To mount, punch screw holes or weld.

Ctr. to Ctr. (A)	Dp. (B)♣	(C)★	(D)★	Lg. (E)		Each
10 1/2″	2 3/4″	5 1/2″	3 1/2″	19 1/2″	6248K34	$122.00
14 1/2″	3 7/8″	8 1/2″	4 5/16″	27 5/16″	6248K35	158.00
15″	4 1/4″	9 3/8″	5 1/2″	29 7/8″	6248K36	162.50
20 1/2″	4 1/4″	9 3/8″	4 3/4″	34 5/8″	6248K37	175.00
23 1/2″	5″	11 1/2″	5″	40″	6248K38	220.00
27 1/2″	5″	11 1/2″	6″	45″	6248K39	230.00
31 1/2″	5 3/4″	13 3/4″	7 5/8″	52 7/8″	6248K41	282.00

♣ Should be at least width of largest sprocket plus 1″.
★ Center of sprocket to edge of guard (including clearance).

Custom Guards

Similar to the guards above, but custom sizes.

To Order: Step 1: Choose the correct part number you need by determining your ordering size, which is found by adding the center-to-center distance of your sprockets (A) to the OD of your larger sprocket (F). Step 2: Please specify the actual center-to-center distance of your sprockets (A), large sprocket OD (F), small sprocket OD (G), clearance between sprocket and side of guard (H)—standard clearance is 2″, and guard depth—largest sprocket width (J) plus 1″.

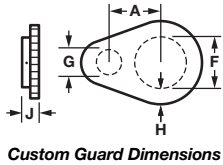

Custom Guard Dimensions

Ordering Size—Dimension (A) + Dimension (F)		Each
Up to 18.50″	6248K11	$143.50
18.51″ to 24.50″	6248K13	162.50
24.51″ to 30.50″	6248K14	168.00
30.51″ to 36.50″	6248K19	209.50
36.51″ to 42.50″	6248K21	250.00
42.51″ to 48.50″	6248K22	265.50
48.51″ to 54.50″	6248K23	315.50

Plastic Guards for Chains and Belts

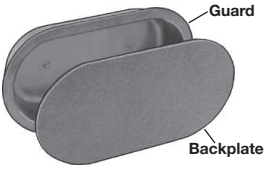

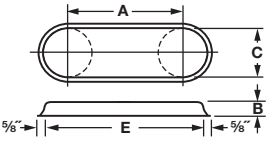

Made of ABS plastic, these protective guards won't rust, can be sterilized, and are great for absorbing impact from chain and belt drives. They're also easy to machine, so drilling holes for venting and mounting is not a problem. All guards have a backplate and a flange to accommodate mounting holes up to 1/4" dia. (we recommend using Forstner bits, which are found on page 2463, to drill the holes). Maximum operating temperature is 200° F. Color is black.

Ctr. to Ctr. (A)	Dp. (B)	(C)	Lg. (E)		
6"	2 1/2"	5 5/8"	11 5/8"	7352K13	$84.00
8 1/8"	3 1/2"	6 3/4"	14 7/8"	7352K15	114.50
9"	2 1/2"	5 3/4"	14 3/4"	7352K24	114.50
11 1/4"	3 1/2"	6 3/4"	18"	7352K16	110.18
12"	2"	5 5/8"	17 1/2"	7352K22	94.51
14"	2 1/2"	5 3/4"	19 3/4"	7352K14	94.51
17 3/8"	3 1/2"	6 3/4"	24 1/8"	7352K17	146.93
20"	2"	5 5/8"	25 1/2"	7352K11	114.50
20 3/8"	3 1/2"	6 3/4"	27 1/8"	7352K18	152.69
23 1/8"	2"	5 3/4"	28 3/4"	7352K12	126.00
25 1/2"	3 1/2"	6 3/4"	32 1/8"	7352K19	171.77
27 1/2"	2"	5 7/8"	33 1/4"	7352K23	128.82
29 1/2"	3 1/2"	6 3/4"	36 1/8"	7352K21	229.02
33"	3 1/2"	7"	40 1/8"	7352K25	229.02

About Sprockets

In order for sprockets and chain to properly mesh, you must select a sprocket that matches your specific ANSI chain number and pitch. *Pitch* is the distance from one tooth valley to the next; this is where the centers of chain pins mesh with the sprocket.

For ANSI chain, see pages 1032-1035. For standard ANSI keyway information, see page 1174.

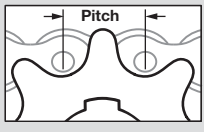

Idler Sprockets for ANSI Roller Chain

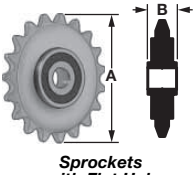

Sprockets with Flat Hub

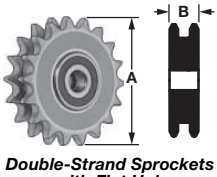

Double-Strand Sprockets with Flat Hub

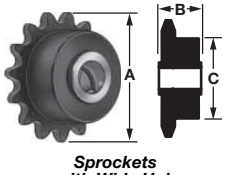

Sprockets with Wide Hub

These idler sprockets spin freely on built-in bearings to guide and control slack in your chain.

Nylon and ***UHMW polyethylene sprockets*** are self-lubricating and quiet, as well as corrosion, abrasion, and impact resistant.

Steel sprockets with hardened teeth offer increased wear resistance to extend sprocket life.

Double-strand sprockets are for use with double-strand roller chain.

For ANSI Chain	Pitch	No. of Teeth	Bore Dia.	OD (A)	Wd. (B)	Hub Dia. (C)		
With Flat Hub								
Nylon Sprockets with Steel Ball Bearings								
40	1/2"	17	5/8"	3"	0.67"	—	8255K11	$14.71
40	1/2"	17	3/4"	3"	0.67"	—	8255K31	14.71
50	5/8"	15	5/8"	3.25"	0.67"	—	8255K12	15.34
50	5/8"	15	3/4"	3.25"	0.67"	—	8255K32	15.34
60	3/4"	13	5/8"	3.5"	0.67"	—	8255K13	16.60
60	3/4"	13	3/4"	3.5"	0.67"	—	8255K33	16.60
80	1"	12	5/8"	4.4"	0.67"	—	8255K14	19.23
80	1"	12	3/4"	4.4"	0.67"	—	8255K34	19.23
UHMW Polyethylene Sprockets with Steel Ball Bearings								
40	1/2"	17	1/2"	2.98"	0.72"	—	6663K101	81.69
40	1/2"	18	0.635"	3.14"	0.72"	—	6663K102	81.69
50	5/8"	18	0.635"	3.92"	0.72"	—	6663K104	88.32
60	3/4"	15	1/2"	3.98"	0.72"	—	6663K106	89.59
60	3/4"	16	0.635"	4.22"	0.72"	—	6663K107	92.20
80	1"	12	3/4"	4.33"	0.96"	—	6663K109	78.79
Steel Sprockets with Steel Ball Bearings								
25	1/4"	20	3/8"	1.72"	5/16"	—	6663K11	22.69
35	3/8"	19	3/8"	2.47"	3/8"	—	6663K21	23.43
35	3/8"	19	1/2"	2.47"	3/8"	—	6663K22	23.43
40	1/2"	18	1/2"	3.14"	7/16"	—	6663K41	26.39
40	1/2"	18	5/8"	3.14"	7/16"	—	6663K42	26.39
41	1/2"	18	1/2"	3.14"	7/16"	—	6663K31	26.39
41	1/2"	18	5/8"	3.14"	7/16"	—	6663K32	26.39
50	5/8"	17	1/2"	3.72"	7/16"	—	6663K51	27.13
50	5/8"	17	5/8"	3.72"	7/16"	—	6663K52	27.13
60	3/4"	15	1/2"	3.98"	7/16"	—	6663K61	26.28
60	3/4"	15	5/8"	3.98"	7/16"	—	6663K62	26.28
80	1"	12	3/4"	4.33"	39/64"	—	6663K63	43.41
Steel Sprockets with Hardened Teeth and Bronze Bearings								
35	3/8"	20	0.506"	2.59"	0.98"	—	6663K12	22.00
40/41	1/2"	15	0.506"	2.65"	0.98"	—	6663K13	23.02
50	5/8"	15	0.506"	3.32"	0.98"	—	6663K14	29.62
60	3/4"	14	0.506"	3.74"	0.98"	—	6663K15	30.36
Steel Sprockets with Hardened Teeth and Steel Ball Bearings								
35	3/8"	19	1/2"	2.47"	0.72"	—	6663K1	21.55
35	3/8"	20	0.640"	2.59"	0.72"	—	6663K23	21.95
40	1/2"	17	0.640"	2.98"	0.72"	—	6663K43	22.98
40	1/2"	25	0.638"	4.26"	0.72"	—	6663K201	25.96
40	1/2"	35	0.638"	5.86"	0.72"	—	6663K202	28.84
40	1/2"	48	0.638"	7.93"	0.72"	—	6663K203	33.45
41	1/2"	18	1/2"	3.14"	0.72"	—	6663K2	22.68
41	1/2"	18	5/8"	3.14"	0.72"	—	6663K3	22.68

For ANSI Chain	Pitch	No. of Teeth	Bore Dia.	OD (A)	Wd. (B)	Hub Dia. (C)		
With Flat Hub (Cont.)								
Steel Sprockets w/ Hardened Teeth and Steel Ball Bearings (Cont.)								
50	5/8"	15	0.640"	3.32"	0.72"	—	6663K44	$25.76
50	5/8"	25	3/4"	5.32"	0.61"	—	6663K204	27.19
50	5/8"	39	3/4"	8.12"	0.61"	—	6663K205	66.23
60	3/4"	12	0.638"	3.25"	0.72"	—	6663K206	25.88
60	3/4"	13	0.640"	3.49"	0.72"	—	6663K53	27.79
80	1"	12	3/4"	4.33"	0.575"	—	6663K4	37.30
Double-Strand Steel Sprockets with Steel Ball Bearings								
35-2	3/8"	19	1/2"	2.47"	0.561"	—	6260K1	63.44
35-2	3/8"	19	5/8"	2.47"	0.561"	—	6260K2	63.44
40-2	1/2"	18	1/2"	3.14"	0.841"	—	6260K3	83.36
40-2	1/2"	18	5/8"	3.14"	0.841"	—	6260K4	83.36
50-2	5/8"	17	1/2"	3.72"	1.045"	—	6260K5	108.73
50-2	5/8"	17	5/8"	3.72"	1.045"	—	6260K6	108.73
60-2	3/4"	15	1/2"	3.98"	1.345"	—	6260K7	126.83
60-2	3/4"	15	5/8"	3.98"	1.345"	—	6260K8	126.83
80-2	1"	12	3/4"	4.33"	1.71"	—	6260K9	154.04
With Wide Hub								
Steel Sprockets with Hardened Teeth and Bronze Bearings								
35	3/8"	15	1/2"	1.99"	15/16"	1 23/64"	6663K81	21.32
35	3/8"	21	7/8"	2.71"	1 1/16"	2"	6663K82	27.92
40	1/2"	13	1/2"	2.33"	15/16"	1 9/16"	6663K85	29.56
40	1/2"	19	7/8"	3.29"	1 1/16"	2 1/2"	6663K86	38.51
50	5/8"	13	1/2"	2.91"	15/16"	1 7/8"	6663K87	31.99
50	5/8"	17	7/8"	3.72"	1 1/16"	2 5/8"	6663K88	43.29
60	3/4"	15	7/8"	3.98"	1 1/16"	2 5/8"	6663K89	54.49
60	3/4"	17	1 1/8"	4.46"	1 9/16"	3 1/4"	6663K91	73.37
80	1"	15	1 1/8"	5.3"	1 9/16"	3 1/2"	6663K92	90.28
Steel Sprockets with Hardened Teeth and Steel Needle Bearings								
25	1/4"	19	1/2"	1.65"	3/4"	1 7/32"	6663K71	70.77
35	3/8"	13	1/2"	1.75"	3/4"	1 3/16"	6663K72	79.85
35	3/8"	19	1"	2.47"	1"	1 27/32"	6663K73	79.85
40	1/2"	19	1"	3.29"	1"	2 1/2"	6663K75	93.24
41	1/2"	19	1"	3.29"	1"	2 1/2"	6663K74	93.24
50	5/8"	17	1"	3.72"	1"	2 1/4"	6663K76	104.86
60	3/4"	17	1"	4.46"	1 1/4"	3"	6663K77	121.87
80	1"	13	1"	4.66"	1 1/4"	2 5/8"	6663K78	146.30
100	1 1/4"	11	1 1/2"	5.01"	1.88"	3 9/16"	6663K207	113.36
120	1 1/2"	11	1 1/2"	6.01"	2.13"	3 9/16"	6663K208	167.75
140	1 3/4"	11	1 1/2"	7.01"	2 1/4"	4 1/4"	6663K209	232.93
160	2"	9	1 1/2"	6.7"	2 1/4"	3 5/8"	6663K211	241.42

For information about sprockets, see page 1040. For ANSI chain, see pages 1032-1035.

Machinable-Bore Sprockets for ANSI Roller Chain

Need an uncommon bore size? These sprockets are furnished at the minimum bore size listed below but are machinable up to the maximum bore size. Keyways and set screws are not included. Use with ANSI single-strand chain.

For the sprocket OD, width, and hub diameter for these sprockets, go to mcmaster.com and search for **60425KAC** for nylon sprockets, **6793KAC** for steel sprockets, or **6799KAC** for stainless steel sprockets.

Nylon

No. of Teeth	For ANSI #25 Chain (1/4" Pitch) Bore Size Min.	Max.			For ANSI #35 Chain (3/8" Pitch) Bore Size Min.	Max.			For ANSI #40 Chain (1/2" Pitch) Bore Size Min.	Max.			For ANSI #50 Chain (5/8" Pitch) Bore Size Min.	Max.		
Nylon—*Lightweight, corrosion resistant, quieter, and easier to machine than steel sprockets.*																
9	—	—	—	—	1/4"	3/8"	60425K173	$10.29	1/2"	1/2"	60425K164	$12.05	1/2"	5/8"	60425K82	$17.20
10	1/4"	1/4"	60425K13	$11.34	3/8"	7/16"	60425K172	10.66	1/2"	1/2"	60425K163	12.71	1/2"	3/4"	60425K83	18.05
11	1/4"	5/16"	60425K14	11.55	3/8"	1/2"	60425K171	10.84	1/2"	1/2"	60425K61	13.55	1/2"	7/8"	60425K84	19.68
12	1/4"	3/8"	60425K187	12.11	1/2"	9/16"	60425K169	11.34	1/2"	5/8"	60425K62	14.82	1/2"	1"	60425K85	20.66
13	1/4"	7/16"	60425K186	12.47	1/4"	1/2"	60425K39	12.03	1/2"	5/8"	60425K63	16.13	1/2"	7/8"	60425K86	21.11
14	5/16"	1/2"	60425K185	12.56	1/2"	3/4"	60425K168	11.63	1/2"	3/4"	60425K64	16.29	1/2"	1"	60425K87	21.39
15	5/16"	1/2"	60425K184	12.92	1/2"	13/16"	60425K167	12.74	1/2"	7/8"	60425K65	16.88	1/2"	1 1/4"	60425K88	22.14
16	5/16"	1/2"	60425K183	13.08	1/2"	15/16"	60425K43	12.85	1/2"	15/16"	60425K162	18.53	1/2"	1 1/4"	60425K89	23.86
17	5/16"	1/2"	60425K182	13.22	1/2"	7/8"	60425K44	13.15	1/2"	1"	60425K67	17.17	1/2"	1 3/8"	60425K91	25.67
18	3/8"	1/2"	60425K181	13.36	1/2"	11/16"	60425K45	13.82	1/2"	1 1/8"	60425K68	20.36	1/2"	1 1/2"	60425K92	28.00
24	3/8"	13/16"	60425K175	16.32	1/2"	13/16"	60425K52	20.77	1/2"	1 1/2"	60425K161	35.58	1/2"	1 5/8"	60425K98	44.71
25	1/2"	1"	60425K29	16.42	1/2"	1"	60425K53	22.34	1/2"	1 1/2"	60425K76	35.64	1/2"	1 5/8"	60425K99	49.42
30	1/2"	1"	60425K174	20.06	1/2"	1 7/16"	60425K54	24.39	1/2"	1 1/2"	60425K77	42.22	1/2"	1 3/4"	60425K105	55.05
35	1/2"	1"	60425K32	24.05	1/2"	1 7/16"	60425K55	29.53	1/2"	1 1/2"	60425K78	45.64	1/2"	1 3/4"	60425K106	60.92
40	1/2"	1"	60425K33	29.20	1/2"	1 3/4"	60425K166	31.76	1"	1 3/4"	60425K79	53.61	—	—	—	—
45	1/2"	1"	60425K34	30.10	1/2"	1 3/4"	60425K165	34.11	1"	1 3/4"	60425K81	54.77	—	—	—	—
Steel																
9	1/4"	1/4"	6793K1	4.56	3/8"	3/8"	6793K116	8.77	1/2"	9/16"	6793K208	9.96	5/8"	3/4"	6793K209	14.89
10	1/4"	1/4"	6793K2	4.68	3/8"	9/16"	6793K117	9.37	1/2"	3/4"	6793K141	11.17	5/8"	7/8"	6793K164	16.33
11	1/4"	5/16"	6793K3	4.78	3/8"	9/16"	6793K118	9.60	1/2"	7/8"	6793K142	12.25	5/8"	1"	6793K165	17.41
12	1/4"	3/8"	6793K4	5.02	1/2"	9/16"	6793K119	10.08	1/2"	1"	6793K143	13.08	5/8"	1 1/4"	6793K166	18.13
13	1/4"	7/16"	6793K5	5.20	1/2"	11/16"	6793K121	10.44	1/2"	1 1/16"	6793K144	13.33	5/8"	1 5/16"	6793K167	18.97
14	1/4"	9/16"	6793K6	5.29	1/2"	7/8"	6793K122	10.93	1/2"	1 1/8"	6793K145	13.33	5/8"	1 7/16"	6793K168	19.81
15	1/4"	9/16"	6793K7	5.41	1/2"	7/8"	6793K123	11.17	1/2"	1 1/4"	6793K146	13.33	5/8"	1 1/2"	6793K169	20.53
16	1/4"	9/16"	6793K8	5.54	1/2"	15/16"	6793K124	11.77	5/8"	1 3/8"	6793K147	13.93	5/8"	1 3/4"	6793K171	22.09
17	1/4"	5/8"	6793K9	5.63	1/2"	1 1/16"	6793K125	11.77	5/8"	1 7/16"	6793K148	16.33	5/8"	1 7/8"	6793K172	23.77
18	1/4"	3/4"	6793K11	5.85	1/2"	1 3/16"	6793K126	12.25	5/8"	1 1/2"	6793K149	17.41	5/8"	1 7/8"	6793K173	25.94
19	1/4"	13/16"	6793K12	5.88	1/2"	1 1/4"	6793K127	12.61	5/8"	1 3/4"	6793K151	19.81	5/8"	2"	6793K174	27.49
20	1/4"	7/8"	6793K13	6.02	1/2"	1 5/16"	6793K128	13.93	5/8"	1 7/8"	6793K152	22.69	3/4"	2"	6793K175	30.74
21	1/4"	7/8"	6793K14	6.37	1/2"	1 3/8"	6793K129	14.89	5/8"	1 7/8"	6793K153	25.09	3/4"	2"	6793K176	33.38
22	1/4"	15/16"	6793K15	6.39	1/2"	1 3/8"	6793K131	16.57	5/8"	1 7/8"	6793K154	27.49	3/4"	2"	6793K177	35.78
23	1/4"	1"	6793K16	6.63	1/2"	1 3/8"	6793K132	17.89	5/8"	2"	6793K155	30.25	3/4"	2"	6793K178	38.18
24	3/8"	1"	6793K17	7.00	1/2"	1 3/8"	6793K133	18.97	5/8"	2 1/4"	6793K156	31.82	3/4"	2"	6793K179	40.34
25	3/8"	1"	6793K18	7.10	1/2"	1 3/8"	6793K134	20.29	5/8"	2 1/4"	6793K157	33.38	3/4"	2"	6793K181	43.58
30	3/8"	1"	6793K19	8.59	1/2"	1 3/8"	6793K135	22.93	5/8"	2 1/4"	6793K158	39.50	3/4"	2 1/4"	6793K182	48.39
35	—	—	—	—	5/8"	1 1/2"	6793K136	26.17	5/8"	2 1/4"	6793K159	42.26	3/4"	2 1/4"	6793K183	53.19
40	1/2"	1 3/8"	6793K21	11.98	5/8"	1 1/2"	6793K137	28.58	3/4"	2 3/8"	6793K161	46.82	3/4"	2 1/4"	6793K184	58.23
45	1/2"	1 3/8"	6793K22	13.12	5/8"	1 1/2"	6793K138	31.46	3/4"	2 3/8"	6793K162	48.39	3/4"	2 1/2"	6793K185	62.19
60	1/2"	1 3/8"	6793K23	17.49	3/4"	1 1/2"	6793K139	45.15	3/4"	2 3/8"	6793K163	57.99	1"	2 1/2"	6793K186	81.16
Stainless Steel—*Made from Types 303 and 304 stainless steel for good corrosion resistance.*																
10	1/4"	1/4"	6799K2	8.70	3/8"	9/16"	6799K112	50.25	1/2"	3/4"	6799K135	61.12	5/8"	7/8"	6799K158	87.37
12	1/4"	3/8"	6799K4	9.80	1/2"	5/8"	6799K114	51.54	1/2"	15/16"	6799K137	69.84	5/8"	1 1/4"	6799K161	98.35
13	1/4"	7/16"	6799K5	10.00	1/2"	3/4"	6799K115	53.64	1/2"	1 1/16"	6799K138	72.10	5/8"	1 5/16"	6799K162	102.86
14	1/4"	9/16"	6799K6	10.20	1/2"	7/8"	6799K116	55.60	1/2"	1 1/8"	6799K139	74.86	5/8"	1 7/16"	6799K163	108.09
15	1/4"	9/16"	6799K7	10.57	1/2"	7/8"	6799K117	57.53	1/2"	1 1/4"	6799K141	78.04	5/8"	1 1/2"	6799K164	111.37
16	1/4"	9/16"	6799K8	11.00	1/2"	15/16"	6799K118	59.74	5/8"	1 3/8"	6799K142	81.22	5/8"	1 3/4"	6799K165	119.99
18	1/4"	3/4"	6799K11	13.17	1/2"	13/16"	6799K121	65.43	5/8"	1 1/2"	6799K144	93.53	5/8"	1 7/8"	6799K167	140.29
20	1/4"	7/8"	6799K13	15.92	1/2"	15/16"	6799K123	74.86	5/8"	1 7/8"	6799K146	122.35	3/4"	1 3/4"	6799K169	171.47
24	3/8"	1"	6799K14	21.17	1/2"	1 3/8"	6799K127	99.80	5/8"	2 1/4"	6799K151	156.86	3/4"	2"	6799K174	246.96

No. of Teeth	For ANSI #60 Chain (3/4" Pitch) Bore Size Min.	Max.			For ANSI #80 Chain (1" Pitch) Bore Size Min.	Max.			For ANSI #100 Chain (1 1/4" Pitch) Bore Size Min.	Max.			For ANSI #120 Chain (1 1/2" Pitch) Bore Size Min.	Max.		
Steel																
9	3/4"	7/8"	6793K211	$15.10	1"	15/16"	6793K31	$26.51	1"	1 5/8"	6793K44	$48.12	1 3/8"	1 13/16"	6793K57	$79.74
10	3/4"	1 1/8"	6793K212	16.30	1"	1 1/2"	6793K32	28.92	1"	1 7/8"	6793K45	52.79	1 3/8"	2 1/4"	6793K58	87.40
11	3/4"	15/16"	6793K213	17.28	1"	1 5/8"	6793K33	31.85	1"	2 1/4"	6793K46	61.33	1 3/8"	2 3/8"	6793K59	96.63
12	3/4"	1 3/8"	6793K187	18.48	1"	1 7/8"	6793K34	34.26	1"	2 1/4"	6793K47	66.22	1 3/8"	2 3/4"	6793K61	109.38
13	3/4"	1 1/2"	6793K188	20.13	1"	2"	6793K35	31.43	1"	2 3/8"	6793K48	71.24	1 3/8"	3"	6793K62	122.45
14	3/4"	1 3/4"	6793K189	21.66	1"	2 1/4"	6793K36	39.16	1 1/4"	2 3/4"	6793K49	76.80	1 3/8"	3 1/4"	6793K63	134.91
15	3/4"	1 7/8"	6793K191	25.05	1"	2 1/2"	6793K37	41.59	1 1/4"	3"	6793K51	86.29	1 1/4"	3 1/4"	6793K64	156.80
16	3/4"	2"	6793K192	28.22	1"	2 3/4"	6793K38	46.81	1 5/16"	3"	6793K52	95.81	1 1/4"	3 1/2"	6793K65	161.88
17	3/4"	2 1/4"	6793K193	29.65	1"	2 3/4"	6793K39	53.14	1 5/16"	3"	6793K53	105.51	1 1/4"	3 1/2"	6793K66	173.16
18	3/4"	2 3/8"	6793K194	31.61	1"	2 3/4"	6793K41	59.47	1 5/16"	3"	6793K54	98.69	1 1/4"	3 1/2"	6793K67	183.02
19	3/4"	2 3/8"	6793K195	35.99	1"	2 3/4"	6793K42	68.40	1 5/16"	3"	6793K55	103.00	1 1/4"	3 1/2"	6793K68	192.41
20	3/4"	2 5/8"	6793K196	38.50	1"	2 3/4"	6793K43	73.10	1 5/16"	3"	6793K56	109.10	1 1/4"	3 1/2"	6793K69	199.74
Stainless Steel—*Made from Types 303 and 304 stainless steel for good corrosion resistance.*																
12	3/4"	1 3/8"	6799K182	95.41	1"	1 7/8"	6799K21	185.19	1"	2 1/4"	6799K31	306.47	—	—	—	—
13	3/4"	1 1/2"	6799K183	102.85	1"	2"	6799K22	203.73	1"	2 3/8"	6799K32	349.53	—	—	—	—
14	3/4"	1 3/4"	6799K184	112.25	1"	2 1/4"	6799K23	240.75	1 1/4"	2 3/4"	6799K33	390.27	—	—	—	—
15	3/4"	1 7/8"	6799K185	136.34	1"	2 1/2"	6799K24	276.85	1 1/4"	3"	6799K34	444.27	—	—	—	—
16	3/4"	2"	6799K186	147.68	1"	2 3/4"	6799K25	295.98	1 5/16"	3"	6799K35	506.54	—	—	—	—
17	3/4"	2 1/4"	6799K187	163.32	1"	2 3/4"	6799K26	338.90	1 5/16"	3"	6799K36	557.20	—	—	—	—
18	3/4"	2 3/8"	6799K188	177.91	1"	2 3/4"	6799K27	377.03	1 5/16"	3"	6799K37	607.85	—	—	—	—
20	3/4"	2 5/8"	6799K191	188.33	1"	2 3/4"	6799K29	441.71	1 5/16"	3"	6799K39	653.13	—	—	—	—

For information about sprockets, see page 1040. For ANSI chain, see pages 1032-1035.

Steel Finished-Bore Sprockets for ANSI #25-#41 Roller Chain

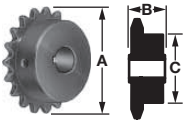

With their wide hubs and finished bores, these sprockets are ready to mount to a shaft. All are made of steel, have standard ANSI keyways (except for 1/4″, 3/8″, and 1/2″ bore sizes, which do not have keyways), and include two set screws. For use with ANSI single-strand chain.

To Order: Please specify bore size (where necessary) from the available bore range listed below. Available bore sizes are: 1/4″, 3/8″, 1/2″, 5/8″, 3/4″, 7/8″, 1″, 1 1/8″, 1 3/16″, 1 1/4″, 1 3/8″, 1 7/16″, and 1 1/2″.

Sprockets with hardened teeth offer increased wear resistance for longer sprocket service life.

Also Available: Miniature finished-bore sprockets for 0.1227″ and 0.1475″ pitch miniature chain. For 0.1227″ pitch sprockets, which are made of acetal, please ask for 64205K888 and specify number of teeth. For 0.1475″ pitch sprockets, which are made of Type 303 stainless steel, please ask for 6789K888 and specify number of teeth.

FOR ANSI #25 CHAIN (1/4″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)	Standard Teeth		Hardened Teeth	
9	1/4″	0.84″	1/2″	7/16″	2737T1	$5.61		
10	1/4″	0.92″	1/2″	1/2″	2737T2	5.72		
11	1/4″	1″	1/2″	9/16″	2737T3	5.82		
12	1/4″- 3/8″	1.08″	1/2″	5/8″	2737T4	6.06		
13	1/4″- 3/8″	1.17″	1/2″	23/32″	2737T5	6.18		
14	1/4″- 1/2″	1.25″	1/2″	13/16″	2737T6	6.41		
15	1/4″- 1/2″	1.33″	1/2″	57/64″	2737T7	6.46		
16	1/4″- 1/2″	1.41″	1/2″	31/32″	2737T8	6.52		
17	1/4″- 5/8″	1.49″	1/2″	1 1/32″	2737T9	6.63		
18	1/4″- 3/4″	1.57″	1/2″	1 1/8″	2737T11	6.82		
19	1/4″- 3/4″	1.65″	1/2″	1 7/32″	2737T12	6.87		
20	1/4″- 7/8″	1.73″	5/8″	1 9/32″	2737T13	7.13		
21	1/4″- 7/8″	1.81″	5/8″	1 3/8″	2737T14	7.28		
22	1/4″- 7/8″	1.89″	5/8″	1 7/16″	2737T15	7.57		
23	1/4″-1″	1.97″	5/8″	1 1/2″	2737T16	7.80		
24	3/8″-1″	2.05″	5/8″	1 1/2″	2737T17	8.13		
25	3/8″-1″	2.13″	5/8″	1 1/2″	2737T18	8.24		
26	3/8″-1″	2.21″	5/8″	1 1/2″	2737T19	8.48		
28	3/8″-1″	2.37″	5/8″	1 1/2″	2737T21	9.09		
30	3/8″-1″	2.53″	5/8″	1 1/2″	2737T22	9.57		
32	3/8″-1″	2.69″	5/8″	1 1/2″	2737T23	10.28		
36	3/8″-1″	3.01″	3/4″	1 1/2″	2737T26	11.35		
40	1/2″-1 3/8″	3.33″	3/4″	2″	2737T28	12.92		
45	1/2″-1 3/8″	3.73″	3/4″	2″	2737T31	13.90		
48	1/2″-1 3/8″	3.96″	3/4″	2″	2737T32	15.20		
54	1/2″-1 3/8″	4.44″	3/4″	2″	2737T33	16.67		
60	1/2″-1 3/8″	4.92″	3/4″	2″	2737T34	18.37		
70	1/2″-1 3/8″	5.72″	3/4″	2″	2737T35	21.37		
72	1/2″-1 3/8″	5.88″	3/4″	2″	2737T36	22.51		

FOR ANSI #35 CHAIN (3/8″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)	Standard Teeth		Hardened Teeth	
9	3/8″	1.26″	3/4″	21/32″	6280K311	$8.92	2500T11	$11.45
10	3/8″- 5/8″	1.38″	3/4″	31/32″	6280K112	9.11	2500T12	12.13
11	3/8″- 3/4″	1.5″	3/4″	1 1/16″	6280K113	9.46	2500T13	12.80
12	1/2″- 3/4″	1.63″	3/4″	1 7/32″	6280K114	9.75	2500T14	13.29
13	1/2″- 3/4″	1.75″	3/4″	1 1/4″	6280K115	10.13	2500T15	13.97
14	1/2″- 3/4″	1.87″	3/4″	1 1/4″	6280K116	10.13	2500T16	14.32
15	1/2″-1″	1.99″	3/4″	1 11/32″	6280K117	10.30	2500T17	14.83
16	1/2″-1″	2.11″	3/4″	1 15/32″	6280K118	10.95	2500T18	15.75
17	1/2″-1″	2.23″	3/4″	1 19/32″	6280K119	11.32	2500T19	16.43
18	1/2″-1″	2.35″	3/4″	1 23/32″	6280K121	11.98	2500T21	17.27
19	1/2″-1″	2.47″	3/4″	1 27/32″	6280K122	13.47	2500T22	18.98
20	1/2″-1″	2.59″	3/4″	1 15/16″	6280K123	15.05	2500T23	20.85
21	1/2″-1″	2.71″	7/8″	2″	6280K124	16.72	2500T24	22.63
22	1/2″-1″	2.83″	7/8″	2″	6280K125	18.21	2500T25	24.32
23	1/2″-1″	2.95″	7/8″	2″	6280K126	19.41	2500T26	25.67
24	1/2″-1″	3.07″	7/8″	2″	6280K127	20.64	2500T27	27.45
25	1/2″-1″	3.19″	7/8″	2″	6236K22	20.79	2500T28	29.14
26	5/8″-1 1/4″	3.31″	7/8″	2″	6236K1	23.40	2500T29	31.34
28	5/8″-1 1/4″	3.55″	7/8″	2″	6236K2	26.68	2500T31	33.89
30	5/8″-1 1/4″	3.79″	7/8″	2″	6236K23	25.83	2500T32	35.67
32	5/8″-1 1/4″	4.03″	7/8″	2″	6236K3	29.83		
35	5/8″-1 1/4″	4.39″	1″	2 1/4″	6236K69	27.95		
36	5/8″-1 1/4″	4.51″	1″	2 1/4″	6236K4	33.81		
40	5/8″-1 1/4″	4.99″	1″	2 1/4″	6236K25	32.48		
45	5/8″-1 1/4″	5.59″	1″	2 1/4″	6236K26	34.59		
48	5/8″-1 1/4″	5.95″	1″	2 1/4″	6236K6	38.44		
54	5/8″-1 1/2″	6.66″	1″	2 1/4″	2737T52	31.39		
60	5/8″-1 1/4″	7.38″	1″	2 1/4″	6236K27	46.06		
72	3/4″-1 1/2″	8.81″	1″	2 1/4″	2737T54	37.07		

FOR ANSI #40 CHAIN (1/2″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)	Standard Teeth		Hardened Teeth	
9	1/2″- 5/8″	1.67″	7/8″	1 1/16″	6280K189	$9.96	2500T41	$13.39
10	1/2″- 3/4″	1.84″	7/8″	1 1/4″	6280K191	10.40	2500T42	14.17
11	1/2″- 7/8″	2″	7/8″	1 3/8″	6280K192	10.77	2500T43	14.92
12	1/2″-1″	2.17″	7/8″	1 9/16″	6280K193	11.79	2500T44	16.53
13	1/2″-1″	2.33″	7/8″	1 9/16″	6280K194	12.36	2500T45	17.20
14	1/2″-1 1/8″	2.49″	7/8″	1 11/16″	6280K195	13.00	2500T46	18.20
15	1/2″-1 1/4″	2.65″	7/8″	1 11/16″	6280K196	14.02	2500T47	19.57
16	5/8″-1 1/4″	2.81″	7/8″	2″	6280K197	14.87	2500T48	20.67
17	5/8″-1 1/4″	2.97″	1″	2 1/8″	6280K198	15.72	2500T49	21.87
18	5/8″-1 1/2″	3.14″	1″	2 5/16″	6280K199	16.52	2500T51	22.97
19	5/8″-1 1/2″	3.30″	1″	2 1/2″	6280K211	18.38	2500T52	25.09
20	5/8″-1 1/2″	3.46″	1″	2 5/8″	6280K212	21.08	2500T53	27.97
21	5/8″-1 1/2″	3.62″	1″	2 3/4″	6280K213	22.96	2500T54	30.59
22	5/8″-1 1/2″	3.78″	1″	2 7/8″	6280K214	25.17	2500T55	32.95
23	5/8″-1 1/2″	3.94″	1″	3″	6280K215	27.87	2500T56	35.84
24	5/8″-1 1/2″	4.10″	1″	3″	6280K216	29.92	2500T57	38.14
25	5/8″-1 1/2″	4.26″	1″	3 1/4″	6236K32	30.57	2500T58	41.27
26	5/8″-1 1/2″	4.42″	1″	3 1/4″	6236K7	34.55	2500T59	43.47
28	5/8″-1 1/2″	4.74″	1″	3 1/4″	6236K8	39.46	2500T61	48.73
30	5/8″-1 1/2″	5.06″	1″	3 1/4″	6236K33	40.60	2500T62	52.97
32	5/8″-1 1/2″	5.38″	1″	3 1/4″	6236K9	43.87		
34	5/8″-1 1/2″	5.70″	1″	3 1/4″	6236K11	45.50		
35	5/8″-1 1/2″	5.86″	1″	3 1/4″	6236K34	43.32		
36	5/8″-1 1/2″	6.02″	1″	3 1/4″	6236K12	46.71		
38	5/8″-1 1/2″	6.33″	1″	3 1/4″	6236K13	48.31		
40	5/8″-1 1/2″	6.65″	1 1/8″	3 1/2″	6236K35	46.82		
42	3/4″-1 1/2″	6.97″	1 1/8″	3 1/2″	6236K14	50.71		
44	3/4″-1 1/2″	7.29″	1 1/8″	3 1/2″	2737T81	34.07		
45	5/8″-1 1/2″	7.45″	1 1/8″	3 1/2″	6236K36	48.56		
46	3/4″-1 1/2″	7.61″	1 1/8″	3 1/2″	2737T82	35.28		
48	3/4″-1 1/2″	7.93″	1 1/8″	3 1/2″	6236K15	53.32		
50	3/4″-1 1/2″	8.25″	1 1/8″	3 1/2″	2737T83	37.07		
52	3/4″-1 1/2″	8.57″	1 1/8″	3 1/2″	2737T84	42.20		
54	3/4″-1 1/2″	8.89″	1 1/8″	3 1/2″	2737T55	42.96		
60	5/8″-1 1/2″	9.84″	1 1/8″	3 1/2″	6236K37	56.34		
70	3/4″-1 1/2″	11.43″	1 1/4″	4″	2737T56	62.67		
72	3/4″-1 1/2″	11.75″	1 1/4″	4″	2737T57	66.50		
80	3/4″-1 1/2″	13.03″	1 1/4″	4″	2737T58	74.65		
96	1″- 1 1/2″	15.57″	1 1/4″	4″	2737T85	116.58		

FOR ANSI #41 CHAIN (1/2″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)	Standard Teeth	
6	3/8″	1.17″	7/8″	21/32″	2737T91	$7.00
7	3/8″	1.34″	7/8″	3/4″	2737T92	7.13
8	1/2″	1.51″	7/8″	63/64″	2737T93	7.23
9	1/2″- 5/8″	1.67″	7/8″	1 1/8″	6280K142	9.46
10	1/2″- 3/4″	1.84″	7/8″	1 1/4″	6280K143	9.96
11	1/2″- 7/8″	2″	7/8″	1 7/16″	6280K144	10.30
12	1/2″- 7/8″	2.17″	7/8″	1 9/16″	6280K145	10.95
13	1/2″-1″	2.33″	7/8″	1 9/16″	6280K146	11.32
14	1/2″-1 1/8″	2.49″	7/8″	1 3/4″	6280K147	11.98
15	1/2″-1 3/16″	2.65″	7/8″	1 29/32″	6280K148	13.00
16	5/8″-1 1/4″	2.81″	7/8″	2 1/16″	6280K149	13.85
17	5/8″-1 1/4″	2.97″	1″	2 15/64″	6280K151	14.87
18	5/8″-1 1/2″	3.14″	1″	2 3/8″	6280K152	15.90
19	5/8″-1 1/2″	3.30″	1″	2 15/32″	6280K153	17.36
20	5/8″-1 1/2″	3.46″	1″	2 3/4″	6280K154	19.41
21	5/8″-1 1/2″	3.62″	1″	2 7/8″	6280K155	21.44
22	5/8″-1 1/2″	3.78″	1″	3″	6280K156	23.48
23	5/8″-1 1/2″	3.94″	1″	3 3/16″	6280K157	25.82
24	5/8″-1 1/2″	4.10″	1″	3 1/4″	6280K158	28.31
25	5/8″-1 1/2″	4.26″	1″	3 1/4″	6236K28	28.81
26	5/8″-1″	4.42″	1″	3 1/4″	2737T61	20.52
27	5/8″-1″	4.58″	1″	3 1/4″	2737T94	22.35
28	5/8″-1″	4.74″	1″	3 1/4″	2737T62	23.54
30	5/8″-1 1/2″	5.06″	1″	3 1/4″	6236K29	34.55
32	5/8″-1″	5.38″	1″	3 1/4″	2737T63	27.04
35	5/8″-1 1/2″	5.86″	1″	3 1/4″	6236K31	41.40
36	5/8″-1″	6.02″	1″	3 1/4″	2737T64	29.17
40	3/4″-1 1/2″	6.65″	1″	3 1/4″	2737T65	31.40
42	3/4″-1 1/2″	6.97″	1 1/16″	3 1/4″	2737T66	32.29
45	3/4″-1 1/2″	7.45″	1 1/16″	3 1/2″	2737T67	33.47
48	3/4″-1 1/2″	7.93″	1 1/16″	3 1/2″	2737T68	39.84
54	3/4″-1 1/2″	8.89″	1 1/16″	3 1/2″	2737T69	42.27
60	3/4″-1 1/2″	9.84″	1 1/16″	3 1/2″	2737T71	40.15
70	3/4″-1 1/2″	11.43″	1 1/16″	4″	2737T72	52.04
72	3/4″-1 1/2″	11.75″	1 3/16″	4″	2737T73	54.31
80	3/4″-1 1/2″	13.03″	1 3/16″	4″	2737T74	66.64
84	3/4″-1 1/2″	13.66″	1 3/16″	4″	2737T95	83.00
96	1″- 1 1/2″	15.57″	1 3/16″	4″	2737T96	104.82
112	1″- 1 1/2″	18.12″	1 3/16″	4″	2737T97	133.16

For information about sprockets, see page 1040. For ANSI chain, see pages 1032-1035.

Steel Finished-Bore Sprockets for ANSI #50-#100 Roller Chain

With their wide hubs and finished bores, these sprockets are ready to mount to a shaft. All are made of steel, have standard ANSI keyways, and include two set screws. For use with ANSI single-strand chain.

To Order: Please specify bore size (where necessary) from the available bore range listed below. Available bore sizes are: 5/8″, 3/4″, 7/8″, 1″, 1 1/8″, 1 3/16″, 1 1/4″, 1 3/8″, 1 7/16″, 1 1/2″, 1 5/8″, 1 3/4″, 1 15/16″, 2″, 2 3/16″, 2 7/16″, and 2 15/16″.

Sprockets with hardened teeth offer increased wear resistance for longer sprocket service life.

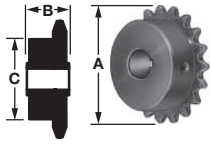

FOR ANSI #50 CHAIN (5/8″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)	Standard Teeth		Hardened Teeth	
9	5/8″- 3/4″	2.09″	1″	1 3/8″	6280K247	$13.68	2500T63	$20.01
10	5/8″-1″	2.30″	1″	1 9/16″	6280K248	14.70	2500T64	21.63
11	5/8″-1″	2.50″	1″	1 3/4″	6280K249	15.31	2500T65	22.66
12	5/8″-1 1/4″	2.71″	1″	1 63/64″	6280K251	15.90	2500T66	24.27
13	5/8″-1 1/4″	2.91″	1″	1 7/8″	6280K252	16.52	2500T67	24.94
14	5/8″-1 1/4″	3.11″	1″	2 1/8″	6280K253	17.53	2500T68	26.44
15	5/8″-1 1/2″	3.32″	1″	2 3/8″	6280K254	18.38	2500T69	27.77
16	5/8″-1 5/8″	3.52″	1″	2 1/2″	6280K255	19.41	2500T71	29.35
17	5/8″-1 5/8″	3.72″	1″	2 11/16″	6280K256	21.75	2500T72	32.10
18	5/8″-1 5/8″	3.92″	1″	2 7/8″	6280K257	24.15	2500T73	35.13
19	5/8″-1 5/8″	4.12″	1″	3″	6280K258	26.85	2500T74	38.72
20	5/8″-1 5/8″	4.32″	1″	3″	6280K259	29.15	2500T75	41.55
21	3/4″-1 1/2″	4.52″	1″	3″	6280K261	35.10	2500T76	48.06
22	3/4″-1 1/2″	4.72″	1″	3″	6280K262	38.00	2500T77	48.06
23	3/4″-1 1/2″	4.92″	1″	3″	6280K263	40.97	2500T78	57.40
24	3/4″-1 1/2″	5.12″	1 1/4″	3″	6280K264	44.65	2500T79	59.67
25	3/4″-1 1/2″	5.32″	1 1/4″	3″	6236K42	44.29	—	—
26	3/4″-1 1/2″	5.52″	1 1/4″	3″	6236K16	45.76	—	—
28	3/4″-1 1/2″	5.92″	1 1/4″	3″	6236K17	50.41	—	—
30	3/4″-1 1/2″	6.32″	1 1/4″	3 1/4″	6236K43	48.56	—	—
32	3/4″-1 15/16″	6.72″	1 1/4″	3 1/4″	6236K18	53.23	—	—
34	3/4″-1 15/16″	7.12″	1 1/4″	3 1/4″	6236K19	54.98	—	—
35	3/4″-1 15/16″	7.32″	1 1/4″	3 1/4″	6236K44	52.51	—	—
36	3/4″-1 15/16″	7.52″	1 1/4″	3 1/4″	6236K21	57.29	—	—
38	3/4″-1 15/16″	7.92″	1 1/4″	3 1/4″	2741T1	52.72	—	—
40	3/4″-1 15/16″	8.32″	1 1/4″	3 1/4″	6236K45	56.76	—	—
42	3/4″-1 15/16″	8.72″	1 1/4″	3 1/4″	6236K24	61.86	—	—
45	3/4″-1 15/16″	9.31″	1 1/4″	3 3/4″	6236K46	60.09	—	—
48	1″ -1 15/16″	9.91″	1 1/4″	3 3/4″	6236K38	66.31	—	—
54	1″ -1 15/16″	11.11″	1 1/4″	3 3/4″	2741T2	65.48	—	—
60	3/4″-1 15/16″	12.30″	1 1/4″	3 3/4″	6236K47	65.12	—	—
70	1″ -1 15/16″	14.29″	1 3/4″	3 3/4″	2741T3	95.50	—	—
72	1″ -1 15/16″	14.69″	1 3/4″	3 3/4″	2741T4	99.57	—	—

★ Available bore range is 1″-1 15/16″.

FOR ANSI #60 CHAIN (3/4″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)	Standard Teeth		Hardened Teeth	
9	5/8″-1″	2.51″	1 1/4″	1 9/16″	6280K101	$14.70	2500T81	$23.33
10	5/8″-1 1/4″	2.76″	1 1/4″	1 15/16″	6280K102	15.31	2500T82	24.73
11	3/4″-1 1/4″	3″	1 1/4″	2 1/16″	6280K103	16.52	2500T83	26.71
12	3/4″-1 7/16″	3.25″	1 1/4″	2 3/8″	6280K104	18.38	2500T84	29.35
13	3/4″-1 1/2″	3.49″	1 1/4″	2 11/32″	6280K105	20.64	2500T85	32.20
14	3/4″-1 5/8″	3.74″	1 1/4″	2 9/16″	6280K106	24.15	2500T86	36.74
15	3/4″-1 3/4″	3.98″	1 1/4″	2 7/8″	6280K107	27.87	2500T87	41.27
16	3/4″-1 15/16″	4.22″	1 1/4″	3 1/16″	6280K108	31.03	2500T88	45.31
17	3/4″-1 15/16″	4.46″	1 1/4″	3 1/4″	6280K109★	34.28	2500T89	49.74
18	3/4″-1 15/16″	4.70″	1 1/4″	3 1/2″	6280K201★	37.83	2500T91	54.48
19	3/4″-1 15/16″	4.95″	1 1/4″	3 1/2″	6280K202★	39.46	2500T92	55.90
20	1″ -1 15/16″	5.19″	1 1/4″	3 7/8″	6280K203	41.34	2500T93	59.49
21	1″ -1 15/16″	5.43″	1 1/4″	4″	6280K204	47.11	—	—
22	1″ -1 15/16″	5.67″	1 1/4″	4″	6280K205	50.41	—	—
23	1″ -1 15/16″	5.91″	1 1/4″	4″	6280K206	51.62	—	—
24	1″ -1 15/16″	6.15″	1 1/4″	4″	6280K207	55.19	—	—
25	1″ -1 15/16″	6.39″	1 1/4″	4″	6236K52	55.17	—	—
26	1″ -1 15/16″	6.63″	1 1/4″	4″	6236K39	59.70	—	—
28	1″ -1 15/16″	7.11″	1 1/4″	4″	6236K41	66.42	—	—
30	1″ -1 15/16″	7.59″	1 1/4″	4″	6236K53	62.02	—	—
32	1″ -1 15/16″	8.07″	1 1/4″	4″	6236K48	67.16	—	—
34	1″ -1 15/16″	8.54″	1 1/4″	4″	6236K49	68.71	—	—
35	1″ -1 15/16″	8.78″	1 1/4″	4″	6236K54	65.32	—	—
36	1″ -2 7/16″	9.02″	1 1/4″	4″	6236K51	71.23	—	—
38	1″ -2 7/16″	9.50″	1 1/4″	4 1/4″	6236K57	74.74	—	—
40	1″ -2 7/16″	9.98″	1 1/4″	4 1/4″	6236K55	73.63	—	—
42	1″ -2 7/16″	10.46″	1 1/4″	4 1/4″	6236K61	82.39	—	—
45	1″ -2 7/16″	11.18″	1 1/4″	4 1/4″	6236K56	83.16	—	—
48	1″ -2 7/16″	11.89″	1 1/4″	4 1/4″	6236K62	95.30	—	—
54	1″ -2 7/16″	13.33″	1 3/4″	4 1/4″	2741T11	89.81	—	—
60	1 1/4″-2 7/16″	14.76″	1 3/4″	4 1/4″	6236K58	97.12	—	—
70	1 3/8″-2 7/16″	17.15″	1 3/4″	4 1/4″	2741T12	140.15	—	—
72	1 3/8″-2 7/16″	17.63″	2″	4 1/4″	2741T13	146.98	—	—

FOR ANSI #80 CHAIN (1″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)	Standard Teeth		Hardened Teeth	
9	1″-1 1/4″	3.35″	1 5/8″	2 1/4″	6280K208	$24.80	2500T94	$36.26
10	1″-1 1/4″	3.68″	1 5/8″	2 9/16″	6280K209	27.32	2500T95	39.65
11	1″-1 5/8″	4.01″	1 5/8″	2 13/16″	6280K131	30.44	2500T96	43.89
12	1″-1 3/4″	4.33″	1 5/8″	3 1/8″	6280K132	34.28	2500T97	48.63
13	1″-1 15/16″	4.66″	1 1/2″	3″	6280K133	37.83	2500T98	53.16
14	1″-1 15/16″	4.98″	1 1/2″	3 1/4″	6280K134	41.60	2500T33	58.64
15	1″-2 3/16″	5.30″	1 1/2″	3 13/16″	6280K135	44.38	2500T34	62.32
16	1″-2 3/16″	5.63″	1 1/2″	4″	6280K136	48.39	2500T35	67.04
17	1″-2 7/16″	5.95″	1 1/2″	4″	6280K217	57.97	2500T36	74.12
18	1″-2 7/16″	6.27″	1 1/2″	4 1/4″	6280K218	61.86	2500T37	84.22
19	1″-2 7/16″	6.59″	1 1/2″	4 1/4″	6280K219	65.87	2500T38	87.81
20	1″-2 7/16″	6.91″	1 1/2″	4 1/4″	6280K221	69.83	2500T39	96.50

FOR ANSI #100 CHAIN (1 1/4″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)	Standard Teeth	
9	1″ -1 7/16″	4.18″	1 7/8″	2 13/16″	2741T21	$68.38
10	1″ -1 7/16″	4.60″	1 7/8″	3 1/4″	2741T22	74.34
11	1″ -2 3/16″	5.01″	1 7/8″	3 9/16″	2741T23	83.64
12	1″ -2 3/16″	5.42″	1 7/8″	4″	2741T24	89.81
13	1″ -2 3/16″	5.82″	1 5/8″	3 7/8″	2741T25	96.07
14	1 1/4″ -2 3/16″	6.23″	1 5/8″	4 3/16″	2741T26	100.90
15	1 1/4″ -2 3/16″	6.63″	1 3/4″	4 1/2″	2741T27	109.14
16	1 7/16″-2 15/16″	7.03″	1 3/4″	4 1/2″	2741T28	117.41
17	1 7/16″-2 15/16″	7.44″	1 3/4″	4 1/2″	2741T29	125.83
18	1 7/16″-2 15/16″	7.84″	1 3/4″	4 1/2″	2741T31	129.44
19	1 7/16″-2 15/16″	8.24″	2″	4 1/2″	2741T32	133.61
20	1 7/16″-2 15/16″	8.64″	2″	4 1/2″	2741T33	139.50

Stainless Steel Finished-Bore Sprockets for ANSI Roller Chain

Made of Types 303 and 304 stainless steel, these corrosion-resistant sprockets have wide hubs and finished bores, which means they are ready to mount to a shaft. They also have standard ANSI keyways and include two set screws. For use with ANSI single-strand chain.

To Order: Please specify bore size (where necessary) from the available bore range listed below. Available bore sizes are: 3/8″, 1/2″, 5/8″, 3/4″, 7/8″, 1″, 1 1/8″, 1 3/16″, 1 1/4″.

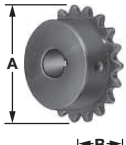

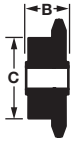

FOR ANSI #35 CHAIN (3/8″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)		
9	3/8″	1.26″	3/4″	27/32″	2345K111	$51.67
10	3/8″-1/2″	1.38″	3/4″	31/32″	2345K12	54.22
11	3/8″-5/8″	1.50″	3/4″	1 1/16″	2345K13	57.93
12	3/8″-3/4″	1.63″	3/4″	1 7/32″	2345K14	58.64
13	3/8″-3/4″	1.75″	3/4″	1 1/4″	2345K15	62.55
14	1/2″-3/4″	1.87″	3/4″	1 1/4″	2345K16	63.26
15	1/2″-7/8″	1.99″	3/4″	1 15/32″	2345K17	68.58
16	1/2″-7/8″	2.11″	3/4″	1 19/32″	2345K18	81.32
17	1/2″-7/8″	2.23″	3/4″	1 23/32″	2345K19	84.56
18	1/2″-7/8″	2.35″	3/4″	1 27/32″	2345K21	85.97
19	1/2″-7/8″	2.47″	3/4″	1 15/16″	2345K22	86.91
20	1/2″-7/8″	2.59″	3/4″	2″	2345K23	95.01

FOR ANSI #40 CHAIN (1/2″ PITCH)

No. of Teeth	Available Bore Range	OD (A)	Wd. (B)	Hub Dia. (C)		
9	1/2″- 5/8″	1.67″	7/8″	1 1/16″	2345K33	$64.07
10	1/2″- 3/4″	1.84″	7/8″	1 1/4″	2345K34	68.23
11	1/2″- 7/8″	2.00″	7/8″	1 3/8″	2345K35	75.20
12	1/2″-1″	2.17″	7/8″	1 9/16″	2345K36	76.12
13	1/2″-1″	2.33″	7/8″	1 9/16″	2345K37	82.61
14	5/8″-1″	2.49″	7/8″	1 11/16″	2345K38	96.07
15	5/8″-1 1/4″	2.65″	7/8″	1 13/16″	2345K39	99.74
16	5/8″-1 1/4″	2.81″	7/8″	2″	2345K41	105.31
17	5/8″-1 1/4″	2.98″	1″	2 1/8″	2345K42	108.44
18	3/4″-1 1/4″	3.14″	1″	2 5/16″	2345K43	115.85
19	3/4″-1 1/4″	3.30″	1″	2 1/2″	2345K44	127.45
20	3/4″-1 1/4″	3.46″	1″	2 5/8″	2345K45	141.34

Machinable-Bore Double-Strand Sprockets for ANSI Roller Chain

Pair these sprockets with ANSI double-strand chain. All are furnished at the minimum bore size listed below but are machinable up to the maximum bore size. They're made of steel and have hardened teeth for longer sprocket service life.

For the sprocket OD, width, and hub diameter for these sprockets, go to mcmaster.com and search for **2784KAC**.

No. of Teeth	For #35-2 Chain (3/8" Pitch) Bore Size Min.	Max.			For #40-2 Chain (1/2" Pitch) Bore Size Min.	Max.			For #50-2 Chain (5/8" Pitch) Bore Size Min.	Max.			For #60-2 Chain (3/4" Pitch) Bore Size Min.	Max.		
11	—	—	—	—	1/2"	3/4"	2784K16	$44.15	5/8"	15/16"	2784K33	$63.11	1"	1 1/4"	2784K49	$58.96
12	1/2"	9/16"	2784K1	28.55	1/2"	15/16"	2784K17	44.40	5/8"	1 1/8"	2784K34	63.36	1"	1 7/16"	2784K51	61.30
13	1/2"	11/16"	2784K2	28.55	1/2"	1"	2784K18	44.93	5/8"	1 5/16"	2784K35	65.03	1"	1 1/2"	2784K52	66.41
14	1/2"	7/8"	2784K3	28.98	1/2"	1 1/8"	2784K19	45.85	5/8"	1 3/8"	2784K36	66.41	1"	1 3/4"	2784K53	69.90
15	1/2"	15/16"	2784K4	29.48	1/2"	1 1/4"	2784K21	45.85	3/4"	1 1/2"	2784K37	66.41	1"	1 7/8"	2784K54	72.77
16	1/2"	15/16"	2784K5	29.73	5/8"	1 3/8"	2784K22	46.10	3/4"	1 3/4"	2784K38	68.12	1"	2"	2784K55	77.92
17	1/2"	1 1/16"	2784K6	32.04	5/8"	1 7/16"	2784K23	47.52	3/4"	1 7/8"	2784K39	69.90	1"	2 1/4"	2784K56	82.15
18	1/2"	1 3/16"	2784K7	33.74	5/8"	1 1/2"	2784K24	49.74	3/4"	1 15/16"	2784K41	71.60	1"	2 3/8"	2784K57	85.63
19	1/2"	1 5/16"	2784K8	35.55	5/8"	1 3/4"	2784K25	52.67	1"	2 1/8"	2784K42	72.77	1"	2 1/2"	2784K58	90.53
20	3/4"	1 5/16"	2784K9	37.86	5/8"	1 7/8"	2784K26	56.15	1"	2 1/4"	2784K43	75.58	1"	2 1/2"	2784K59	96.82

Machinable-Bore Flat Sprockets for ANSI Roller Chain

Also known as A-plate sprockets, these flat sprockets don't have a protruding hub so they're perfect for confined spaces. All are furnished at the minimum bore size listed below but are machinable up to the maximum bore size. Made of steel. Use with ANSI single-strand chain.

Quick-Grip Screw-Clamp Bushings (see page 1046) and Weld-On Sprocket Hubs (see page 1047) can be used with these sprockets.

For the sprocket OD and width for these sprockets, go to mcmaster.com and search for **2299KAC**.

No. of Teeth	For #35 Chain (3/8" Pitch) Bore Size Min.	Max.			For #40 Chain (1/2" Pitch) Bore Size Min.	Max.			For #50 Chain (5/8" Pitch) Bore Size Min.	Max.			For #60 Chain (3/4" Pitch) Bore Size Min.	Max.		
12	—	—	—	—	1/2"	0.612"	2299K18	$17.38	5/8"	1.015"	2299K39	$20.66	3/4"	1.429"	2299K63	$23.50
13	—	—	—	—	1/2"	0.761"	2299K19	17.69	5/8"	1.193"	2299K41	20.66	3/4"	1.642"	2299K64	24.07
14	—	—	—	—	1/2"	0.934"	2299K21	18.35	5/8"	1.409"	2299K42	20.66	3/4"	1.902"	2299K65	25.05
15	1/2"	1 1/2"	2299K304	$7.97	5/8"	1.079"	2299K22	18.66	5/8"	1.590"	2299K43	21.24	3/4"	2.119"	2299K66	26.07
16	1/2"	1 1/2"	2299K305	8.24	5/8"	1.250"	2299K23	18.66	5/8"	1.804"	2299K44	21.50	3/4"	2.380"	2299K67	26.95
17	1/2"	1 3/4"	2299K306	8.36	5/8"	1.397"	2299K24	19.37	5/8"	1.987"	2299K45	22.26	3/4"	2.595"	2299K68	27.93
18	1/2"	1 3/4"	2299K307	8.61	5/8"	1.567"	2299K25	19.37	5/8"	2.159"	2299K46	22.52	3/4"	2.850"	2299K69	28.77
19	1/2"	2"	2299K308	8.64	5/8"	1.715"	2299K26	19.68	5/8"	2.384"	2299K47	23.05	3/4"	3.072"	2299K71	29.79
20	1/2"	2"	2299K309	8.76	5/8"	1.883"	2299K27	20.22	3/4"	2.595"	2299K48	23.50	3/4"	3.325"	2299K72	30.77
21	1/2"	2"	2299K311	8.94	5/8"	2.033"	2299K28	20.66	3/4"	2.782"	2299K49	24.07	3/4"	3.549"	2299K73	31.65
22	1/2"	2 1/2"	2299K312	9.00	5/8"	2.201"	2299K29	21.24	3/4"	2.992"	2299K51	25.05	3/4"	3.801"	2299K74	32.59
23	1/2"	2 1/2"	2299K313	9.15	5/8"	2.351"	2299K31	21.50	3/4"	3.179"	2299K52	26.07	3/4"	4.026"	2299K75	33.60
24	1/2"	2 1/2"	2299K314	9.30	5/8"	2.518"	2299K32	23.60	23/32"	3.388"	2299K53	26.20	23/32"	4.277"	2299K76	34.62
25	1/2"	2 3/4"	2299K315	9.45	5/8"	2.669"	2299K33	22.52	23/32"	3.577"	2299K54	26.95	23/32"	4.503"	2299K77	35.47
30	1/2"	3"	2299K316	10.15	19/32"	3.471"	2299K34	25.05	23/32"	4.579"	2299K55	31.03	23/32"	5.706"	2299K78	41.19
35	5/8"	3 1/2"	2299K317	10.76	19/32"	4.260"	2299K35	27.22	23/32"	5.565"	2299K56	35.91	15/16"	6.889"	2299K79	48.19
40	5/8"	4"	2299K318	15.30	23/32"	5.061"	2299K36	30.77	23/32"	6.566"	2299K57	39.59	15/16"	8.091"	2299K81	54.57
45	5/8"	4 1/2"	2299K319	19.55	23/32"	5.851"	2299K37	33.92	23/32"	7.554"	2299K58	44.42	15/16"	9.276"	2299K82	62.11
60	3/4"	6"	2299K321	32.58	23/32"	8.241"	2299K38	45.31	15/16"	10.542"	2299K59	62.11	1 1/4"	12.861"	2299K83	99.74

No. of Teeth	For #80 Chain (1" Pitch) Bore Size Min.	Max.			For #100 Chain (1 1/4" Pitch) Bore Size Min.	Max.			For #120 Chain (1 1/2" Pitch) Bore Size Min.	Max.		
9	15/16"	1.254"	2299K84	$26.47	1"	1.349"	2299K1	$36.71	1 1/4"	1.944"	2299K111	$72.94
10	15/16"	1.611"	2299K85	27.09	1"	1.795"	2299K2	39.50	1 1/4"	2.479"	2299K112	76.10
11	15/16"	1.888"	2299K86	28.24	1 1/4"	2.139"	2299K3	39.99	1 1/4"	2.892"	2299K113	82.06
12	15/16"	2.239"	2299K87	29.22	1 1/4"	2.580"	2299K4	39.99	1 1/4"	3.421"	2299K114	91.88
13	15/16"	2.523"	2299K88	31.65	1 1/4"	2.935"	2299K5	39.99	1 1/4"	3.847"	2299K115	97.21
14	15/16"	2.869"	2299K89	32.32	1 1/4"	3.368"	2299K6	40.90	1 1/4"	4.366"	2299K116	102.93
15	15/16"	3.158"	2299K91	33.60	1 1/4"	3.729"	2299K7	42.32	1 1/4"	4.800"	2299K117	110.11
16	15/16"	3.501"	2299K92	35.73	1 1/4"	4.158"	2299K8	45.33	1 1/4"	5.314"	2299K118	114.78
17	15/16"	3.794"	2299K93	37.77	1 1/4"	4.524"	2299K9	49.33	1 1/4"	5.754"	2299K119	121.99
18	15/16"	4.134"	2299K94	39.90	1 1/4"	4.949"	2299K11	52.38	1 1/4"	6.264"	2299K121	129.17
19	15/16"	4.430"	2299K95	41.90	1 1/4"	5.319"	2299K12	56.94	1 1/4"	6.707"	2299K122	136.31
20	15/16"	4.767"	2299K96	44.02	1 1/4"	5.740"	2299K13	61.15	1 1/4"	7.213"	2299K123	143.49

Machinable-Bore Sprockets for British Standard Metric Roller Chain

For use with ISO single-strand chain, you can machine these sprockets to fit your exact needs. All are furnished at the minimum bore size listed below but are machinable up to the maximum bore size. Made of steel.

Also Available: Sprockets for ISO 04B and 05B roller chain. Please ask for 2302K88 for 04B sprockets; 2302K89 for 05B sprockets. Also specify number of teeth: 12 to 30.

No. of Teeth	For ISO 06B Chain (9.53 mm Pitch) Bore Size, mm Min.	Max.			For ISO 08B Chain (12.7 mm Pitch) Bore Size, mm Min.	Max.			For ISO 06B Chain (9.53 mm Pitch) Bore Size, mm Min.	Max.			For ISO 08B Chain (12.7 mm Pitch) Bore Size, mm Min.	Max.		
12	8	16	2302K1	$13.14	10	22	2302K17	$17.07	19	10	28	2302K8	$16.42	12	40	2302K25	$25.77
14	10	16	2302K3	14.23	10	28	2302K19	17.36	20	10	30	2302K9	18.10	12	42	2302K26	28.97
15	10	20	2302K4	14.52	10	30	2302K21	17.36	21	12	30	2302K11	19.34	12	45	2302K27	32.06
16	10	22	2302K5	15.31	12	32	2302K22	18.10	22	12	32	2302K12	21.61	12	48	2302K28	35.12
17	10	25	2302K6	15.31	12	35	2302K23	21.24	25	12	35	2302K15	26.41	14	53	2302K32	42.65
18	10	25	2302K7	15.95	12	38	2302K24	22.62	30	12	38	2302K16	29.26	16	53	2302K33	50.47

Quick-Disconnect (QD) Bushing-Bore Sprockets for ANSI Roller Chain

These easy-to-install bushing-bore sprockets give you the flexibility to use the same sprocket with different shaft diameters. Simply choose compatible QD bushings (sold separately on this page) with the bore sizes you need. All of these sprockets are made of steel. Use with ANSI single-strand chain.

For the sprocket OD, width, and hub diameter for these sprockets, go to mcmaster.com and search for **62375KAC**.

No. of Teeth	For #35 Chain (3/8" Pitch) Bushing Style			For #40 Chain (1/2" Pitch) Bushing Style			For #50 Chain (5/8" Pitch) Bushing Style			For #60 Chain (3/4" Pitch) Bushing Style		
12	—	—	—	—	—	—	JA	62375K127	$23.28	—	—	—
14	—	—	—	—	—	—	JA	62375K128	27.26	SH	62375K141	$33.62
15	—	—	—	JA	62375K51	$19.25	JA	62375K71	27.18	SH	62375K91	33.71
16	—	—	—	JA	62375K52	20.14	JA	62375K72	27.90	SH	62375K92	39.40
17	—	—	—	JA	62375K53	21.98	SH	62375K73	29.42	SDS	62375K93	40.72
18	—	—	—	JA	62375K54	23.53	SH	62375K74	31.76	SDS	62375K94	45.11
19	JA	62375K11	$19.02	JA	62375K55	25.17	SH	62375K75	33.50	SDS	62375K95	47.35
20	JA	62375K12	19.94	SH	62375K56	27.18	SDS	62375K76	34.22	SDS	62375K96	48.65
21	JA	62375K13	20.86	SH	62375K57	29.42	SDS	62375K77	41.03	SDS	62375K97	49.74
22	JA	62375K14	22.21	SH	62375K58	33.10	SDS	62375K78	42.35	SDS	62375K98	53.65
23	JA	62375K15	26.67	SH	62375K59	35.34	SDS	62375K79	44.60	SDS	62375K99	55.69
24	JA	62375K16	27.18	SH	62375K61	37.18	SDS	62375K81	46.64	SDS	62375K101	59.54
25	JA	62375K17	28.50	SH	62375K62	39.40	SDS	62375K82	48.65	SDS	62375K102	62.50
26	—	—	—	SH	62375K4	43.66	SDS	62375K129	55.62	SK	62375K142	67.82
28	JA	62375K1	33.52	SH	62375K5	46.03	SDS	62375K131	61.88	SK	62375K143	69.00
30	JA	62375K18	31.46	SH	62375K63	44.91	SDS	62375K83	61.38	SK	62375K103	65.69
32	—	—	—	SH	62375K6	52.48	SDS	62375K132	66.93	SK	62375K144	77.19
36	SH	62375K2	36.60	SDS	62375K7	54.43	SDS	62375K134	70.74	SK	62375K145	79.87
40	SH	62375K19	34.63	SDS	62375K64	56.61	SDS	62375K84	71.58	SK	62375K104	77.27
45	SH	62375K21	36.46	SDS	62375K65	58.85	SDS	62375K85	75.66	SF	62375K105	81.55
48	SH	62375K3	41.32	SDS	62375K8	64.99	SDS	62375K135	83.97	SF	62375K146	103.48
60	SH	62375K22	57.33	SDS	62375K66	67.50	SK	62375K86	86.75	SF	62375K106	130.74

Quick-Disconnect (QD) Bushings

Use these easy-to-install and remove bushings with quick-disconnect (QD) bushing-bore sprockets (sold separately on this page) and pulleys (see page 1057). Each bushing includes cap screws. As the screws are tightened, the bushing grips the shaft and pulls it into the sprocket or pulley. All bushings are made of steel or ductile iron.

Idler Style—Turn your sprocket into an idler with these convenient bushings. Idler sprockets spin freely to guide and control slack in your chain.

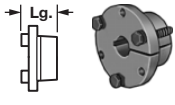

For schematics, additional dimensions, and keyway dimensions for these bushings, go to mcmaster.com and search for **6086KAC**.

Standard Style

To Order: Please specify bore size from those available below. Depending on the bore size you choose, you'll get the corresponding keyway listed below. Bushings with standard ANSI and ISO keyways do not include a key. Bushings with shallow keyways include a key.

Bushing Style	Lg.	Cap Screw Torque, in.-lbs.	Inch Sizes — Available Bore Sizes: Standard ANSI Keyway	Shallow Keyway	No Keyway			Metric Sizes — Available Bore Sizes (mm) with Standard ISO Keyway		
JA	1 1/16"	60	1/2"-1"	1 1/16"-1 3/16"	1 1/4"	6086K11	$11.32	—	—	—
H	1 1/4"	95	1/2"-1 1/4"	1 3/8"-1 1/2"	—	6086K19	13.60	—	—	—
SH	1 5/16"	108	1/2"-1 3/8"	1 7/16"-1 5/8"	1 11/16"	6086K12	15.48	24, 25, 28, 30, 32, 35	2344K1	$17.98
SDS	1 3/8"	108	1/2"-1 11/16"	1 3/4"-1 15/16"	2"	6086K13	18.01	24, 25, 28, 30, 32, 35, 38, 40, 42	2344K2	20.90
SD	1 13/16"	108	1/2"-1 11/16"	1 3/4"-1 15/16"	2"	6086K14	21.63	24, 25, 28, 30, 32, 35, 38, 40, 42	2344K3	25.14
SK	1 15/16"	180	1/2"-2 1/8"	2 3/16"-2 1/2"	2 5/8"	6086K15	27.85	24, 25, 28, 30, 32, 35, 38, 40	2344K4	32.40
SF	2 1/16"	360	1/2"-2 1/4"	2 3/8"-2 15/16"	—	6086K16	34.30	—	—	—

Idler Style

Bushing Style	Lg.	Cap Screw Torque, in.-lbs.	Bore Size		
SH	1 5/16"	108	1"	7410K11	$28.00
SDS	1 1/4"	108	1"	7410K12	30.94
SD	1 13/16"	108	1"	7410K13	37.72
SK	1 15/16"	180	1"	7410K14	$43.72
SF	2 1/16"	360	1 1/2"	7410K15	55.26

Heavy Duty Screw-Clamp Bushings

Count on these high-capacity, carbon steel bushings to handle high torque and thrust loads. When you tighten the included cap screws, the inner sleeve contracts onto the shaft while the outer sleeve expands to hold your component. Match the bushing ID to your shaft diameter; match the bushing OD to the bore of your sprocket, pulley, or gear.

Flanged bushings have a self-centering hub design that makes it easy to center the bushing in your sprocket, gear, or pulley.

Nonflanged bushings offer higher torque ratings.

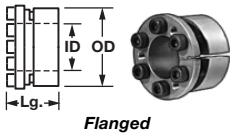

Flanged

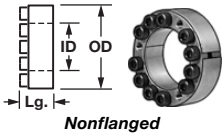

Nonflanged

Flanged

ID	OD	Lg.	Max. Torque, in.-lbs.		
3/8"	15/16"	0.807"	264	1058K11	$47.31
1/2"	1 1/16"	0.807"	468	1058K12	47.31
5/8"	1 3/16"	0.965"	888	1058K13	47.31
3/4"	1 5/16"	0.965"	1,068	1058K14	52.04
1"	1 11/16"	1.181"	3,096	1058K15	52.04
1 1/4"	2"	1.299"	4,824	1058K16	53.88
1 3/8"	2 1/8"	1.299"	5,316	1058K17	53.88
1 7/16"	2 5/16"	1.496"	6,276	1058K18	56.34
1 1/2"	2 3/8"	1.496"	8,184	1058K19	56.34

Nonflanged

ID	OD	Lg.	Max. Torque, in.-lbs.		
3/4"	1.850"	1.024"	2,256	2328K11	$49.72
1"	1.969"	1.024"	3,816	2328K12	49.72
1 3/16"	2.159"	1.055"	4,512	2328K13	49.72
1 1/4"	2.362"	1.024"	5,988	2328K14	51.32
1 3/8"	2.365"	1.009"	6,600	2328K15	51.32
1 7/16"	2.559"	1.024"	7,644	2328K16	53.64
1 1/2"	2.559"	1.024"	7,896	2328K17	53.64
1 3/4"	2.953"	1.260"	13,968	2328K18	63.37
1 15/16"	3.150"	1.260"	15,444	2328K19	65.05

Quick-Grip Screw-Clamp Bushings

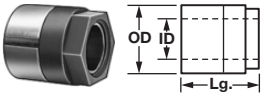

Tighten the collar nut to torque up these bushings in just seconds—they have no keys, cap screws, or other components to slow you down. In addition to being quick and easy to install and remove, these bushings accommodate shafts that are slightly out of round. As you tighten the collar nut, the inner sleeve contracts onto the shaft while the outer sleeve expands to hold your component. Match the bushing ID to your shaft diameter; match the bushing OD to the bore of your sprocket, pulley, or gear.

Steel

Inch Sizes

ID	OD	Lg.	Max. Torque, in.-lbs.		
3/16"	5/8"	3/4"	100	5926K11	$41.13
1/4"	5/8"	3/4"	150	5926K12	41.13
5/16"	3/4"	7/8"	200	5926K13	43.47
3/8"	3/4"	7/8"	250	5926K14	43.47
7/16"	7/8"	1"	300	5926K15	47.38
1/2"	7/8"	1"	350	5926K16	47.38
9/16"	1"	1 1/8"	400	5926K17	48.93
5/8"	1"	1 1/8"	450	5926K18	48.93
5/8"	1 1/2"	1 1/2"	1,750	5926K42	66.56
3/4"	1 1/4"	1 3/8"	1,500	5926K41	46.85
3/4"	1 1/2"	1 1/2"	2,500	5926K2	69.52
7/8"	1 3/4"	1 7/8"	2,800	5926K22	$74.95
1"	1 3/4"	1 7/8"	3,500	5926K24	74.95
1 1/8"	2"	2 1/4"	4,600	5926K25	96.80
1 3/16"	2"	2 1/4"	5,200	5926K45	102.98
1 1/4"	2"	2 1/4"	6,000	5926K26	96.80
1 3/8"	2 3/8"	2 3/4"	6,400	5926K27	119.37
1 7/16"	2 3/8"	2 3/4"	6,700	5926K47	127.00
1 1/2"	2 3/8"	2 3/4"	7,000	5926K28	119.37
1 3/4"	2 5/8"	3 1/8"	10,000	5926K3	148.48
2"	2 7/8"	3 9/16"	14,000	5926K32	177.31

Metric Sizes

ID, mm	OD, mm	Lg., mm	Max. Torque, in.-lbs.		
5	16	19.1	106	2298K1	$20.25
8	19	22.2	203	2298K4	42.52
10	22.5	25.7	265	2298K6	46.35
11	22.5	25.7	300	2298K7	46.35
12	22.5	25.7	345	2298K8	46.35
14	25.5	28.6	389	2298K9	47.86
15	25.5	28.6	398	2298K11	47.86
16	25.5	28.6	442	2298K12	47.86
20	45	47.6	2,566	2298K19	81.48
25	45	47.6	3,451	2298K23	81.48
30	51	57.2	5,133	2298K25	105.22

Type 303 Stainless Steel—*Offers good corrosion resistance for washdown and other harsh environments.*

ID	OD	Lg.	Max. Torque, in.-lbs.		
1/4"	5/8"	3/4"	45	2308K12	$53.59
3/8"	3/4"	7/8"	75	2308K14	56.66
1/2"	7/8"	1"	105	2308K16	61.66
5/8"	1"	1 1/8"	135	2308K18	63.70
5/8"	1 1/2"	1 1/2"	525	2308K21	$90.61
3/4"	1 1/2"	1 1/2"	750	2308K23	90.61
1"	1 3/4"	1 7/8"	1,050	2308K27	108.49
1 1/4"	2"	2 1/4"	1,800	2308K32	140.12

Taper-Lock Bushing-Bore Sprockets for ANSI Roller Chain

Similar to the quick-disconnect (QD) bushing-bore sprockets on the previous page, except bushings mount flush inside these taper-lock sprockets for added clearance. They give you the flexibility to use the same sprocket with different shaft diameters. Simply choose compatible taper-lock bushings (sold separately on this page) with the bore sizes you need. All are made of steel. Use with ANSI single-strand chain.

ⓘ For the sprocket OD, width, and hub diameter for these sprockets, go to mcmaster.com and search for **2590KAC**.

No. of Teeth	For #35 Chain (3/8" Pitch) Bushing Size No.			For #40 Chain (1/2" Pitch) Bushing Size No.			For #50 Chain (5/8" Pitch) Bushing Size No.			For #60 Chain (3/4" Pitch) Bushing Size No.		
14	—	—	—	—	—	—	1008	2590K53	$36.81	1210	2590K78	$45.72
15	—	—	—	1008	2590K29	$29.88	1210	2590K54	37.96	1610	2590K79	48.61
16	—	—	—	1008	2590K31	30.42	1610	2590K55	40.06	1610	2590K81	49.98
17	—	—	—	1210	2590K32	33.31	1610	2590K56	42.98	1610	2590K82	52.36
18	—	—	—	1210	2590K33	34.68	1610	2590K57	45.07	1610	2590K83	59.18
19	1008	2590K11	$32.77	1210	2590K34	36.81	1610	2590K58	46.51	1610	2590K84	61.81
20	1008	2590K12	34.17	1610	2590K35	40.06	1610	2590K59	49.98	2012	2590K85	64.81
21	1008	2590K13	35.04	1610	2590K36	42.98	1610	2590K61	56.91	2012	2590K86	65.57
22	1210	2590K14	36.12	1610	2590K37	46.51	1610	2590K62	59.18	2012	2590K87	69.61
23	1210	2590K15	37.06	1610	2590K38	48.61	2012	2590K63	62.54	2012	2590K88	71.99
24	1210	2590K16	37.82	1610	2590K39	50.66	2012	2590K64	64.81	2012	2590K89	76.00
25	1210	2590K17	38.58	1610	2590K41	52.36	2012	2590K65	67.73	2012	2590K91	79.53
30	1610	2590K21	41.21	1610	2590K44	59.18	2012	2590K68	71.20	2012	2590K95	88.70
32	1610	2590K22	43.84	1610	2590K45	60.80	2012	2590K69	73.11	2012	2590K96	91.58
36	1610	2590K24	48.25	1610	2590K47	63.44	2012	2590K72	77.37	2012	2590K98	96.96
40	1610	2590K25	50.27	1610	2590K48	68.20	2012	2590K73	82.56	2012	2590K101	101.15
45	1610	2590K26	53.26	1610	2590K49	70.22	2012	2590K74	86.57	2012	2590K102	116.95
48	1610	2590K27	54.53	1610	2590K51	73.11	2012	2590K75	90.32	2012	2590K103	123.63
60	1610	2590K28	69.00	1610	2590K52	80.40	2012	2590K76	108.29	2517	2590K104	153.51

Taper-Lock Bushings

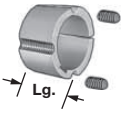

Easy to install and remove, these bushings fit flush into taper-lock bushing-bore sprockets (sold separately on this page). To install, align the bushing and tighten the two included set screws to the recommended torque. The bushing contracts and wedges inward, gripping the shaft and bore of the component. Bushings have an 8° taper and are made of steel.

Idler Style—Turn your sprocket into an idler with these convenient bushings. Idler sprockets spin freely to guide and control slack in your chain.

Standard Style

To Order: Please specify bore size from those available below. Depending on the bore size you choose, you'll get the corresponding keyway listed below. Bushings with standard ANSI keyways do not include a key. Bushings with shallow keyways include a key.

Bushing Size No.	Bore Range	Available Bore Sizes: Standard ANSI Keyway	Available Bore Sizes: Shallow Keyway	Lg.	Set Screw Torque, in.-lbs.		
1008	1/2"-1"	1/2"- 7/8"	1"	7/8"	55	57095K11	$13.35
1108	1/2"-1 1/8"	1/2"-1"	1 1/8"	7/8"	55	57095K12	13.84
1210	1/2"-1 1/4"	1/2"-1 1/4"	—	1"	175	57095K13	14.77
1215	1/2"-1 1/4"	1/2"-1 1/4"	—	1 1/2"	175	57095K14	16.17
1310	1/2"-1 7/16"	1/2"-1 3/8"	1 7/16"	1"	175	57095K15	17.48
1610	1/2"-1 11/16"	1/2"-1 1/2"	1 5/8"-1 11/16"	1"	175	57095K16	17.92
1615	1/2"-1 11/16"	1/2"-1 1/2"	1 5/8"-1 11/16"	1 1/2"	175	57095K17	18.67
2012	1/2"-2 1/8"	1/2"- 7/8", 1 5/8"-1 7/8"	1"-1 1/4", 1 15/16"-2 1/8"	1 1/4"	280	57095K18	24.24
2517	1/2"-2 11/16"	1/2"-2 1/4"	2 3/8"-2 11/16"	1 3/4"	430	57095K21	29.80

Idler Style

Bushing Size No.	Bore Size	Lg.	Set Screw Torque, in.-lbs.		
1610	1"	1"	175	7414K11	$25.04
1615	1"	1 1/2"	175	7414K12	28.78
2012	1"	1 1/4"	280	7414K13	$32.72
2517	1 1/2"	1 3/4"	430	7414K14	49.74

Light Duty Reducer Bushings

Reduce the bore size of finished bore products such as sprockets, pulleys, and gears. Bushings have a 21/64″ clearance hole so a set screw can secure your part to the shaft and hold the bushing in place. For low-torque applications. Length is 1 1/8″.

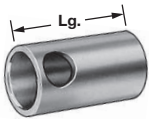

ID	OD		
1/4″	1/2″	6420K12	$9.17
5/16″	1/2″	6420K13	9.17
3/8″	1/2″	6420K14	9.17
7/16″	1/2″	6420K15	9.17
1/2″	5/8″	6420K17	9.17
1/2″	3/4″	6420K18	$9.17
5/8″	3/4″	6420K19	9.17
5/8″	1″	6420K23	11.63
3/4″	1″	6420K24	11.63
7/8″	1″	6420K25	11.63

Self-Adjusting Spring Keyless Bushings

Slotted-tooth design adjusts for a tight fit against housing bores. Made of spring steel, these bushings resist wear and shock and have chamfered ends for easy installation. All handle oscillating or slow rotational motion up to 14 feet per minute. They work well as a high pressure pivot on hardened shafts and bolts.

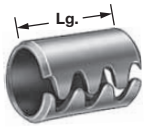

ID	OD	Lg.		
3/4″	1″	3/4″	58365K11	$6.31
3/4″	1″	1″	58365K12	6.68
3/4″	1″	1 1/2″	58365K13	8.73
1″	1 1/4″	1″	58365K14	7.46
1″	1 1/4″	1 1/2″	58365K15	9.80
1″	1 1/4″	2″	58365K16	12.48
1 1/4″	1 1/2″	1″	58365K17	$9.40
1 1/4″	1 1/2″	1 1/2″	58365K18	12.94
1 1/4″	1 1/2″	2″	58365K19	14.34
1 1/2″	1 3/4″	1 1/2″	58365K21	14.19
2″	2 1/4″	2 1/2″	58365K28	23.68

Weld-On Sprocket Hubs

Weld these steel hubs to gears, sprockets, or pulleys to create quick-disconnect (QD) or taper-lock sprockets. All of these hubs come drilled, tapped, and taper bored for QD bushings (not included; see page 1045) or taper-lock bushings (not included; see page 1046).

A

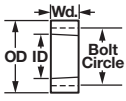

(A) For Quick-Disconnect (QD) Bushings

Uses Bushing	OD	ID	Wd.	Bolt Circle Dia.		
JA	2 1/4″	1.375″	9/16″	1 21/32″	5961K1	$32.23
SH	3″	1.871″	13/16″	2 1/4″	5961K2	56.13
SDS	3 1/2″	2.188″	3/4″	2 11/16″	5961K3	74.84
SK	4 3/8″	2.813″	1 1/4″	3 5/16″	5961K4	99.79
SF	5″	3.125″	1 1/4″	3 7/8″	5961K5	155.94

B

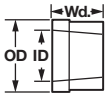

(B) For Taper-Lock Bushings

Uses Bushing	OD	ID	Wd.	Max. Bore of Bushing		
1215	2 7/8″	1 7/8″	1 1/2″	1 1/4″	5961K11	$73.04
1610	3″	2 1/4″	1″	1 5/8″	5961K12	60.86
1615	3 1/4″	2 1/4″	1 1/2″	1 5/8″	5961K13	78.74
2012	3 9/16″	2 3/4″	1 1/4″	2″	5961K14	66.56
2517	4 1/4″	3 3/8″	1 3/4″	2 1/2″	5961K15	123.36

Steel Acme Clamp-On Collars

Easily thread these steel collars to your desired location, then lock in place with the included clamp screw. All are standard travel (single start) and have right-hand threads. Use them with Standard-Travel Precision Acme Threaded Rods (page 1107) and General Purpose Acme Rods (pages 3181-3182). Speed ratio is 1:1.

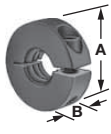

Acme Size	OD (A)	Wd. (B)	Clamp Screw Size		
3/8″-12	1.13″	0.5″	8-32	6698K11	$13.13
7/16″-12	1.13″	0.5″	8-32	6698K12	15.18
1/2″-10	1.31″	0.5″	10-32	6698K13	14.90
5/8″-8	1.63″	0.5″	1/4″-28	6698K14	15.10
3/4″-6	2″	0.63″	5/16″-24	6698K15	17.18
7/8″-6	2.13″	0.63″	5/16″-24	6698K16	18.70
1″-5	2.25″	0.63″	5/16″-24	6698K17	$12.51
1 1/8″-5	2.38″	0.75″	5/16″-24	6698K18	20.76
1 1/4″-5	2.5″	0.75″	5/16″-24	6698K19	20.78
1 1/2″-4	2.75″	0.75″	5/16″-24	6698K22	28.26
2″-4	3.5″	1″	3/8″-24	6698K24	44.23
2 1/2″-3	4″	1″	3/8″-24	6698K26	63.08

Noncontact Magnetic Set Screw Shaft Couplings

Transmit torque through air. The two halves (sold separately) of these disc couplings contain strong opposing rare earth magnets. The magnetic force transfers torque from one half to the other through air gaps; there's no contact between parts. Their flat design means no slipping and allows for angular misalignment up to 3° and parallel misalignment up to 1/4″. Couplings are made of 400 series stainless steel; magnets are nickel plated. **To Order:** Please specify bore size from those listed in the table below. Halves are sold separately. Order two of the same OD to form a complete coupling.

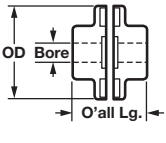

Available Bore Sizes	O'all Lg.	OD	Screw Size	Max. rpm	Max. Torque, in.-lbs.		
3/16″, 1/4″, 5/16″	1 3/8″	1 23/32″	8-32	26,000	4	9199T1	$46.20
1/4″, 5/16″, 3/8″, 1/2″	1 3/8″	1 31/32″	10-32	23,000	6	9199T2	53.90
3/8″, 1/2″, 5/8″, 3/4″	1 11/16″	2 23/64″	10-32	19,000	9	9199T3	61.60
1/2″, 5/8″, 3/4″, 7/8″	2 3/16″	2 7/8″	10-32	15,500	15	9199T4	97.02

Friction Torque Limiters and Sprockets

Protect your machinery from torque overload by installing your sprocket or pulley as a center member in these limiters. When overloaded, the center member slips on the limiters' internal friction disc. When the overload stops, the limiters automatically reset. Simply use the adjustment nut to change the spring force to set the torque at which the limiters will slip.

All limiters have an integral, high-grade steel hub and pressure plate; 1/8″ thick friction discs that separate the center member from the hub and pressure plate; a standard ANSI keyway (unless noted; see page 1174 for keyway dimensions); and a set screw. ***Double-spring limiters*** provide a higher maximum torque.

Optional Roller Chain Sprockets—These sprockets are designed to work as center members for the torque limiters described above. They have a hubless plate design and are ground for proper torque release and re-engagement. The limiters have needle bearings for mounting these sprockets (unless noted). *Note:* Sprockets are not interchangeable—they only fit limiters shown on the same line in the listing below.

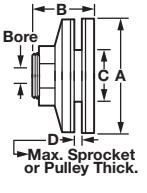

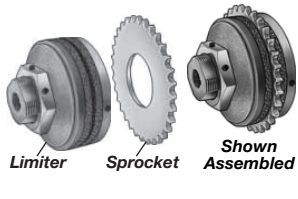

To Order: For limiters, please specify bore size from the available range below. Available bore sizes are 1/4″, 5/16″, 3/8″, 1/2″, 5/8″, 3/4″, 7/8″, 1″, 1 1/8″, 1 3/16″, 1 1/4″, 1 3/8″, 1 7/16″, 1 1/2″, and 1 5/8″. **To Order:** For sprockets, please specify applicable ANSI chain size: #25, #35, #40, #41, #50, #60, #80, or #100. **Also Available:** Replacement friction discs. Please ask for 6525K1 and specify limiter OD.

Limiter OD (A)	Lg. (B)	(C)	Available Bore Range	Single-Spring Limiters: Max. Torque, ft.-lbs.	(D)			Double-Spring Limiters: Max. Torque, ft.-lbs.	(D)			Optional Roller Chain Sprockets: For ANSI Chain			
1 5/16″	1 3/8″	13/16″	1/4″- 3/8″	6	11/32″	6524K17	$49.74	12	5/16″	6524K33	$60.60	#25-	#50	6525K27	$26.26
2 1/4″	2″	1 1/4″	3/8″- 3/4″	35	1/2″	6524K11■	74.84	50	5/32″	6524K41■	89.11	#35-	#50	6525K11	25.79
2 1/2″	1 3/4″	1 3/8″	1/2″- 7/8″	60	11/32″	6524K12	63.97	95	11/32″	6524K42	76.55	#35-	#50	6525K12◆	27.05
3 3/8″	2 1/8″	1 7/8″	1/2″-1″	100	1/2″	6524K13	114.06	175	7/16″	6524K43	131.89	#35-	#50	6525K13	38.90
3 1/2″	2 3/16″	1 43/64″	3/4″-1″	120	1/2″	6524K14	91.92	190	1/2″	6524K44	112.25	#35-	#60	6525K14◆	30.32
4 1/2″	2 7/8″	2 1/4″	3/4″-1 3/8″	190	7/8″	6524K32●	149.68	285	13/16″	6524K38●	174.64	#35-	#100	6525K32	51.66
5″	2 7/8″	2 25/32″	1″ -1 5/8″	250	5/8″	6524K15	110.28	400	5/8″	6524K45	127.60	#40-	#80	6525K15◆	47.06

■ 3/4″ bore keyway is 3/16″ × 3/64″. ◆ Includes a bushing for mounting sprocket to limiter. ● 7/8″ and 1 3/16″ bore sizes not available.

About Belting, Belts, and Pulleys

Belt drives are a quiet, economical, lube-free, and easy-to-maintain way to transmit power between shafts.

Belting is sold by the foot. You can join the ends of belting to form custom-length belts.

Belts come with the ends joined and are ready to install.

Drive pulleys transmit power to belts in your drive. ***Idler pulleys*** are free wheeling and maintain tension in your belt drive. ***Plain-bore pulleys*** have bores that you can machine to fit your needs. They do not have set screws or keyways. ***Finished-bore pulleys*** fit directly on a shaft and have set screws and/or standard ANSI keyways (for ANSI keyway dimensions, see page 1174). ***Bushing-bore pulleys*** accept QD (quick-disconnect) bushings (see page 1045) and screw-clamp bushings (see pages 1045 and 1046). They generally handle higher horsepower than finished-bore pulleys.

How to Measure Belt Outer Circle (OC)

To determine the correct belt outer circle (OC) for your application, wrap a string around the two pulleys that you want to use with a belt. Then, measure the length of the string. Finally, order a belt that is 10% shorter than the length of the string to allow for belt stretch.

Urethane Round Belting

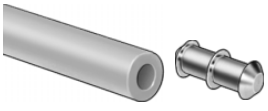

Quick-Connect Hollow-Core Belting and Belting Connector

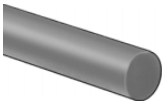

Solid-Core and Polyester-Reinforced Solid-Core Belting

This chemical-resistant belting is designed for drives in conveyors and light duty power transmission applications. Join the ends to create any belt length you need. Multiple lengths can be used to replace conventional flat belts. All belting is FDA compliant, except for the metric sizes.

To Order: Please specify length in 1-ft. increments up to a maximum length of 100 ft. (except for 6567K56, which has a maximum length of 200 ft.).

Quick-Connect Hollow-Core Belting and Belting Connectors— Easily make belts without special tools—just cut belting to desired length and join the ends with connectors (sold separately).

Solid-Core Belting— To join ends, use a welding kit (see 62065K41 on page 1065). *Metric belting* has a rough surface. It also provides good water resistance, so it's perfect for washdown applications. *Polyester-reinforced belting* is stronger than regular solid-core belting.

Quick-Connect Hollow-Core Belting

	Yellow			*Clear*		
OD	Min. Pulley Dia.		Per Ft.	Min. Pulley Dia.		Per Ft.
3/16"	1 1/2"	6567K56	$0.68	2"	6567K1	$0.69
1/4"	2"	6567K57	1.22	2 1/2"	6567K2	1.29
5/16"	2 1/2"	6567K58	1.63	3"	6567K3	1.64
3/8"	3"	6567K59	2.51	3 1/2"	6567K4	2.39
7/16"	3 1/2"	6567K61	3.85	—	—	—
1/2"	4"	6567K62	4.79	4 1/2"	6567K5	4.52
9/16"	4 1/2"	6567K63	5.66	—	—	—
5/8"	5"	6567K64	8.06	5 1/2"	6567K6	6.20

Quick-Connect Hollow-Core Belting Connectors

		Aluminum		*Plastic*	
For Belt OD	Pkg. Qty.		Pkg.		Pkg.
3/16"	25	6567K26	$4.90	—	—
1/4"	25	6567K22	5.51	6567K65	$6.26
5/16"	25	6567K23	7.35	—	—
3/8", 7/16"	20	6567K24	5.33	6567K66	6.71
1/2"	20	6567K25	8.39	6567K67	9.58
9/16"	20	6567K27	12.25	—	—
5/8"	20	6567K28	14.09	—	—

Solid-Core Belting

		Orange		*Clear*	
OD	Min. Pulley Dia.		Per Ft.		Per Ft.
Inch					
3/32"	3/4"	—	—	59725K801	$0.51
1/8"	1"	59725K702	$0.56	59725K802	.56
3/16"	1 1/2"	59725K703	.80	59725K803	.80
1/4"	2"	59725K704	.98	59725K804	.98
5/16"	2 1/2"	59725K705	1.51	59725K805	1.51
3/8"	3"	59725K706	2.09	59725K806	2.09
1/2"	4"	59725K707	3.49	59725K807	3.49
Metric				*Green*	Per Ft.
2 mm	3/4"	—	—	8112K31	$0.69
4 mm	1 7/16"	—	—	8112K32	.70
6 mm	2 1/8"	—	—	8112K33	1.14
8 mm	2 13/16"	—	—	8112K34	1.96

Polyester-Reinforced Solid-Core Belting

OD	Min. Pulley Dia.	*Green*	Per Ft.
1/8"	2 1/2"	2126T1	$4.79
3/16"	3"	2126T2	5.30
1/4"	3 1/2"	2126T3	5.34
5/16"	4"	2126T4	5.97

High-Performance Rubber Round Belting

Fluoroelastomer and EPDM

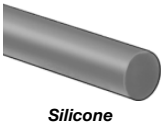

Silicone

When common urethane belting just won't do, look to this high-performance rubber belting. Join the ends to create any belt length you need. Multiple strands can be used to replace conventional flat belts.

To Order: Please specify length in 1-ft. increments.

Fluoroelastomer— The choice for areas with high temperatures (–15° to +400° F) and where oil is used. This belting is also resistant to gasoline, synthetic lubricants, ozone, and UV light. Color is black. To join ends, use adhesive 7569A22 or A24 on page 3411.

Silicone— Extreme temperatures (–65° to +450° F) are no problem for this belting. It also resists detergents, ozone, salt water, and UV light. Color is red/orange. To join ends, use adhesive 74945A69 on page 3417.

EPDM— Great for use in outdoor environments, this belting handles temperatures from –65° to +212° F. It also resists detergents, ozone, salt and fresh water, and UV light. Color is black. To join ends, use adhesive 7569A22 or A24 on page 3411.

		Fluoroelastomer		*Silicone*		*EPDM*	
OD	Min. Pulley Dia.		Per Ft.		Per Ft.		Per Ft.
3/16"	1 1/2"	6401A1	$6.76	6402A21	$5.94	6403A55	$5.64

Adjustable-Length Round Belting

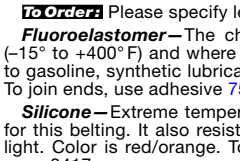

Install or replace belts in just seconds without taking your drive components apart. Simply use this belting, which allows you to add or remove links with a quick twist of the wrist.

Belting is made of urethane elastomer that's reinforced with polyester fabric. You can use it to replace urethane, rubber, and leather round belts. Color is red.

To Order: Please specify length up to a maximum length of 25 ft.

Dia.		Per Ft.	Dia.		Per Ft.
5/16"	2243K11	$10.57	9/16"	2243K14	$13.54
3/8"	2243K12	9.41	3/4"	2243K15	15.29
1/2"	2243K13	10.99			

Coil Spring Round Belting

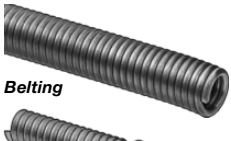

Belting

Connector

Need to be extra flexible? Choose this easy-to-install coil spring belting. Just cut belting to desired length, thread a connector (sold separately) into each end, and then hook the ends together to create a flexible belt.

Belting— Furnished in 10-ft. lengths.

Connectors— For the carbon steel connectors, package quantity is five.

	CARBON STEEL				*TYPE 302 STAINLESS STEEL*			
	Belting		*Connectors*		*Belting*		*Connectors*	
OD		Each		Pkg.		Each		Each
3/16"	6178K21	$10.09	6178K31	$9.86	6178K41	$43.21	6178K51	$3.27
1/4"	6178K22	14.43	6178K32	9.86	6178K42	48.29	6178K52	3.27
5/16"	6178K23	16.86	6178K33	9.86	6178K43	53.83	6178K53	3.27
3/8"	6178K24	18.27	6178K34	9.86	6178K44	60.21	6178K54	3.27
1/2"	6178K26	20.88	6178K36	9.86	6178K46	99.74	6178K56	3.27

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

Leather Round Belting

Made of strong, oak-tanned leather, this belting has some elasticity to prevent excessive permanent stretch. Just cut belting to desired length and join the ends with connectors (made of steel; sold separately) to make a belt. **To Order:** Please specify length: 5, 10, 20, 25, 50, or 100 feet.

***Joining Tool*—**This multipurpose steel tool makes it easy to cut belting, punch holes for connectors, and crimp connectors onto the ends of belting.

Dia.	Belting Per Ft. 1-99	100-Up	Connectors Each	
1/8″	6170K11	$0.84	$0.71	1848K31 $0.88
3/16″	6170K12	1.03	.89	1848K32 .46
1/4″	6170K13	1.35	1.15	1848K32 .46
9/32″	6170K14	1.62	1.35	1848K33 .48
5/16″	6170K15	1.85	1.59	1848K33 .48
3/8″	6170K16	2.49	2.17	1848K34 .48
Joining Tool				1848K1 $70.34

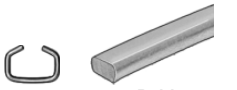
Connector Belting

Joining Tool

U-Joint Round Belting Connectors

Join round, solid belting that is made of urethane, rubber, or leather without punching holes or using laces. To install, trim belting ends to a point and "screw" them into the connectors. All are made of steel.

For Belt Dia.		Each	For Belt Dia.		Each
3/16″	6180K12	$17.60	3/8″	6180K16	$18.72
1/4″	6180K14	17.60	7/16″	6180K17	21.00
5/16″	6180K15	18.08			

O-Ring Round Belts

The ends of these O-ring style belts are already welded together, so they're ready for use.

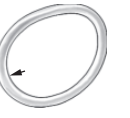

Urethane Belts

FDA compliant. Color is clear. **To Order:** Please specify outer circle (OC) in 1/4″ increments from the available outer circle ranges listed.

Dia.	4″-12″ Outer Circle	Each	12 1/4″-24″ Outer Circle	Each	24 1/4″-36″ Outer Circle	Each	36 1/4″-48″ Outer Circle	Each	48 1/4″-60″ Outer Circle	Each
1/16″	3044K501	$3.50	3044K601	$3.12	3044K701	$4.95	3044K801	$6.04	3044K901	$7.00
3/32″	3044K502	3.99	3044K602	3.46	3044K702	4.03	3044K802	4.90	3044K902	5.87
1/8″	3044K503	3.93	3044K603	3.57	3044K703	4.34	3044K803	5.38	3044K903	6.50
5/32″	3044K504★	4.80	3044K604	3.97	3044K704	4.94	3044K804	6.26	3044K904	7.62
3/16″	3044K505★	5.38	3044K605	4.81	3044K705	6.09	3044K805	7.85	3044K905	9.64
1/4″	3044K506★	9.61	3044K606	6.47	3044K706	8.66	3044K806	11.31	3044K906	13.94
5/16″	3044K507●	18.84	3044K607	11.43	3044K707	13.18	3044K807	17.28	3044K907	21.28
3/8″	3044K508■	31.41	3044K608	17.33	3044K708	19.18	3044K808	25.18	3044K908	31.02
1/2″	3044K509♣	68.23	3044K609	57.17	3044K709	35.50	3044K809	46.51	3044K909	57.08

★ 5 3/4″ min. outer circle. ● 7″ min. outer circle. ■ 8 1/2″ min. outer circle. ♣ 11″ min. outer circle.

High-Performance Urethane Belts

Choose these high-performance urethane belts for greater flexibility as well as better chemical and abrasion resistance than common urethane belts. They are FDA and USDA compliant. **To Order:** Please specify outer circle (OC) in 1″ increments up to a maximum of 1,200″.

Dia.	Min. Pulley Dia.	Orange	Per Inch	Clear	Per Inch
3/32″	3/4″	9462T11	$0.24	9462T31	$0.24
1/8″	1″	9462T12	.29	9462T32	.29
3/16″	1 1/2″	9462T13	.36	9462T33	.36
1/4″	2″	9462T14	.40	9462T34	.40
5/16″	2 1/2″	9462T15	$0.53	9462T35	$0.53
3/8″	3″	9462T16	1.18	9462T36	1.18
1/2″	4″	9462T17	1.71	9462T37	1.71

Neoprene Rubber Belts

These belts are more flexible than urethane belts. Color is black.

Dia.		Each
5″ Outer Circle		
1/16″	8060K1	$0.62
5 1/2″ Outer Circle		
1/8″	8060K106	.71
7 1/2″ Outer Circle		
1/16″	8060K4	1.11
7 3/4″ Outer Circle		
1/8″	8060K108	.76
9 1/4″ Outer Circle		
1/16″	8060K6	1.02
9 1/2″ Outer Circle		
1/8″	8060K112	.84
10 3/4″ Outer Circle		
1/16″	8060K8	1.30
11″ Outer Circle		
1/8″	8060K114	$0.96
12 3/4″ Outer Circle		
1/8″	8060K116	1.09
13″ Outer Circle		
1/16″	8060K12	1.68
14 1/2″ Outer Circle		
1/16″	8060K13	2.47
1/8″	8060K15	1.71
15″ Outer Circle		
1/8″	8060K16	2.49
16″ Outer Circle		
1/8″	8060K17	2.73
1/4″	8060K199	2.49
16 1/2″ Outer Circle		
1/16″	8060K14	$2.80
1/8″	8060K18	2.91
1/4″	8060K35	3.89
17 1/2″ Outer Circle		
1/8″	8060K19	2.51
1/4″	8060K201	2.58
18 1/2″ Outer Circle		
1/8″	8060K21	2.73
1/4″	8060K202	2.71
19″ Outer Circle		
1/8″	8060K22	3.18
1/4″	8060K203	2.78
20″ Outer Circle		
1/8″	8060K23	3.24
1/4″	8060K204	2.80
20 1/2″ Outer Circle		
1/8″	8060K118	$2.58
1/4″	8060K205	2.89
21 1/2″ Outer Circle		
1/8″	8060K24	3.38
1/4″	8060K206	2.96
23″ Outer Circle		
1/8″	8060K25	3.91
1/4″	8060K38	6.45
24 1/2″ Outer Circle		
1/8″	8060K26	4.34
1/4″	8060K209	3.64
26″ Outer Circle		
1/8″	8060K27	4.61
1/4″	8060K39	7.46
28 1/2″ Outer Circle		
1/8″	8060K124	$3.93
1/4″	8060K41	7.82
30″ Outer Circle		
1/8″	8060K125	4.13
1/4″	8060K42	7.96
31 1/2″ Outer Circle		
1/8″	8060K126	4.38
1/4″	8060K43	8.08
33″ Outer Circle		
1/4″	8060K213	4.27
35″ Outer Circle		
1/4″	8060K44	10.89

High-Performance Fluoroelastomer, Silicone, and EPDM Rubber Belts—Meet ASTM D200/SAE J200.

All have a belt dia. of 3/16″ and a minimum pulley dia. of 1 1/2″.

***Fluoroelastomer*—**The choice for areas with high temperatures (–15° to +400° F) and where oil is used. These belts also resist gasoline, synthetic lubricants, ozone, and UV light. Color is black.

***Silicone*—**Extreme temperatures (–65° to +450° F) are no problem for these belts. They also resist detergents, ozone, salt water, and UV light. Color is red/orange.

***EPDM*—**Great for use in outdoor environments, these belts handle temperatures from –65° to +212° F. They also resist detergents, ozone, salt and fresh water, and UV light. Color is black.

Outer Circle	Fluoroelastomer	Each	Silicone	Each	EPDM	Each
9″	6404A12	$5.85	6405A42	$5.64	6406A42	$5.04
9 1/2″	6404A13	5.94	6405A43	5.82	6406A43	5.14
10″	6404A14	6.04	6405A44	5.96	6406A44	5.26
10 1/2″	6404A16	6.19	6405A46	6.25	6406A46	5.58
10 3/4″	6404A17	6.25	6405A47	6.31	6406A47	5.68
11″	6404A18	6.27	6405A48	6.33	6406A48	5.76
12″	6404A21	6.39	6405A51	6.39	6406A51	6.00
12 1/4″	6404A22	6.42	6405A52	6.44	6406A52	6.08
12 1/2″	6404A23	6.44	6405A53	6.47	6406A53	6.10
12 3/4″	6404A24	$6.46	6405A54	$6.49	6406A54	$6.12
13″	6404A25	6.50	6405A55	6.52	6406A55	6.14
13 1/4″	6404A26	6.60	6405A56	6.58	6406A56	6.64
13 1/2″	6404A27	6.65	6405A57	6.62	6406A57	6.18
13 3/4″	6404A28	6.69	6405A58	6.68	6406A58	6.22
14″	6404A29	6.71	6405A59	6.72	6406A59	6.28
14 1/2″	6404A31	6.79	6405A61	6.76	6406A61	6.36
15″	6404A32	6.90	6405A62	6.82	6406A62	6.40
19″	6404A34	7.42	6405A64	7.16	6406A64	6.60

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

Easy-Hook Twisted Urethane Round Belts

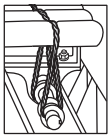

Installer Kit

Dia.	Color	5¼"-13¼" Outer Circle		13½"-22¼" Outer Circle	
3/16"	Clear	9285K63	$4.04	9285K64	$5.28
3/16"	Black	9285K65	4.34	9285K66	5.74
Repl. Stainless Steel S-Hook		9285K61	$2.20		
Optional Plastic C-Hook		9285K62	.97		

Furnished with a stainless steel S-hook already assembled onto one end, these twisted belts are quick and easy to install without dismantling your drive shafts. There's no need for adhesives or welding—simply install belts and hook the ends together with the included S-hook or, if you prefer plastic, the optional C-hook that's sold separately.

To Order: Please specify outer circle (OC) in ¼" increments from the available outer circle ranges listed.

***Installer Kit*—**Includes a stainless steel installer tool, plunger-activated claw for threading bolt, and grappler tool for pulling belt loop over hook. Works with steel and plastic belt hooks.

1966K1 ..... $57.61

Round-Belt Pulleys

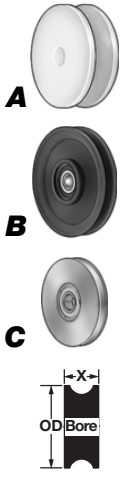

***(A) UHMW-Polyethylene Plain-Bore Drive Pulleys*—**Made of ultra-high molecular weight polyethylene. USDA and FDA compliant. Great in harsh, wet, and sanitary environments.

***(B) Nylon Bushing-Bore Idler Pulleys*—**These free-wheeling pulleys are made of glass-reinforced nylon for high strength and abrasion resistance. They have a sintered-iron bushing bore, chrome-alloy steel precision bearings, and synthetic rubber seals.

***(C) Brass Plain-Bore Miniature Idler Pulleys*—**Perfect for use in tight spaces. Made of heavy duty nonsparking brass, pulleys have a plain bore with precision ABEC-3 rated, double-shielded stainless steel ball bearings.

(A) UHMW-Polyethylene Plain-Bore Drive Pulleys

For Belt Dia.	OD	Pitch Dia.	Bore Size	(X)		
1/8"	1.5"	1.5"	1/4"	3/8"	6284K11	$15.35
1/4"	1.5"	1.5"	1/4"	1/2"	6284K51	9.83
1/4"	2.0"	2.0"	1/4"	1/2"	6284K52	11.81
1/4"	2.5"	2.5"	1/4"	1/2"	6284K53	14.19
1/4"	3.0"	3.0"	1/2"	1/2"	6284K54	17.06
1/4"	4.0"	4.0"	1/2"	1/2"	6284K56	24.10
3/8"	2.0"	2.0"	1/4"	5/8"	6284K61	10.98
3/8"	3.0"	3.0"	1/4"	5/8"	6284K63	15.59
3/8"	6.0"	6.0"	1/2"	5/8"	6284K69	38.53
1/2"	3.0"	3.0"	1/4"	3/4"	6284K81	13.31
1/2"	4.0"	4.0"	1/2"	3/4"	6284K83	23.02
1/2"	5.0"	5.0"	1/2"	3/4"	6284K85	31.11
1/2"	6.0"	6.0"	1/2"	3/4"	6284K87	41.43
1/2"	10.0"	10.0"	1/2"	3/4"	6284K94	86.59
3/4"	5.0"	5.0"	1/2"	1¼"	6284K21	40.26

(B) Nylon Bushing-Bore Idler Pulleys

For Belt Dia.	OD	(X)	3/8" Bore		1/2" Bore	
1/4"	4.5"	0.86"	59475K53	$11.08	59475K63	$11.08
1/4"	6.0"	0.80"	59475K56	14.00	59475K66	14.00
3/8"	3.1"	0.61"	59475K51	9.90	59475K61	9.90
3/8"	3.5"	0.76"	59475K52	10.46	59475K62	10.46
3/8"	5.5"	0.56"	59475K55	14.00	59475K65	14.00
11/16"	4.8"	1.06"	59475K54	11.63	59475K64	11.63

(C) Brass Plain-Bore Miniature Idler Pulleys

OD	(X)			OD	(X)		
For 3/32" Belt Dia.—1/8" Bore				*For 1/8" Belt Dia. (Cont.)*			
0.75"	0.141"	6447K1	$20.93	1.50"	0.188"	6447K6	$21.81
1.00"	0.141"	6447K2	21.48	1.50"	0.196"	6447K7	21.81
1.00"	0.157"	6447K3	21.33	2.00"	0.196"	6447K8	25.26
1.50"	0.157"	6447K4	21.80	*For 3/16" Belt Dia.—3/8" Bore*			
For 1/8" Belt Dia.—1/4" Bore				2.00"	0.281"	6447K9	25.55
1.00"	0.188"	6447K5	21.48	2.50"	0.281"	6447K11	26.35

Urethane Flat Belting

Use this belting with small-diameter crowned pulleys in motion and conveying systems as well as for light- to medium-torque power transmission applications. This tough, flexible urethane belting is FDA compliant and has a high resistance to abrasion, oil, and many chemicals. Color is orange. To join ends, use a welding kit (see 62065K41 on page 1065).

To Order: Please specify length up to 100 ft.

Wd.	Thick.	Min. Pulley Dia.		Per Ft.
3/8"	0.055"	3/8"	6075K11	$1.14
1/2"	0.062"	1/2"	6075K12	1.53
5/8"	0.125"	1"	6075K13	2.24
3/4"	0.078"	5/8"	6075K14	2.00
1"	0.090"	3/4"	6075K15	2.68
1¼"	0.090"	3/4"	6075K16	3.08
1½"	0.090"	3/4"	6075K17	3.94
1¾"	0.062"	1/2"	6075K18	3.47
2"	0.062"	1/2"	6075K19	4.03

SBR Rubber Flat Belting

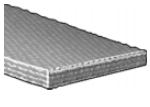

Made of SBR rubber, this belting is suitable for light- to medium-torque power transmission applications. It has a tan SBR friction cover on each side to reduce gouging and cotton/polyester layers in the middle. Width tolerance is ±1/8". To join ends, use Alligator Belt Lacing (see 6118K on page 1065).

To Order: Please specify length.

Wd.	3-Ply 0.141" Thick.; 2½" Min. Pulley Dia.	Per Ft.	4-Ply 0.187" Thick.; 3" Min. Pulley Dia.	Per Ft.	5-Ply 0.213" Thick.; 3½" Min. Pulley Dia.	Per Ft.
1¼"	5753K425	$0.90	5753K446	$1.18	5753K465	$1.58
1½"	5753K424	.98	5753K445	1.25	5753K464	1.66
2"	5753K411	1.30	5753K431	1.64	5753K451	2.21
2½"	5753K426	1.64	5753K447	2.05	5753K466	2.76
3"	5753K412	1.94	5753K432	2.62	5753K452	3.31
4"	5753K413	2.58	5753K433	3.28	5753K453	4.43
6"	5753K414	3.87	5753K434	4.92	5753K454	6.64

Flat Belts

High-Performance Urethane

These high-performance belts offer greater flexibility as well as better chemical and abrasion resistance than common urethane belts. FDA and USDA compliant. Color is orange. **To Order:** Please specify outer circle (OC) in 1" increments up to a maximum of 1,200".

Wd.	Thick.	Min. Pulley Dia.		Per Inch
3/8"	0.055"	3/8"	9485T11	$0.47
1/2"	0.062"	1/2"	9485T12	.56
5/8"	0.125"	1"	9485T13	.78
3/4"	0.078"	5/8"	9485T14	.93
1"	0.090"	3/4"	9485T15	1.02
1¼"	0.090"	3/4"	9485T16	1.11
1½"	0.090"	3/4"	9485T17	1.18
1¾"	0.062"	1/2"	9485T18	1.42
2"	0.062"	1/2"	9485T19	1.53

Antistatic Nitrile-Coated Nylon

If you need to limit static electricity discharge, then these are the belts to choose. All are made of NBR-coated nylon fabric. The fabric is coated on both sides so you can drive pulleys on the inside as well as the outside of these belts. For use with crowned or flat-belt pulleys. Color is green and black.

***7"-60" Outer Circle*—To Order:** Please specify outer circle (OC) in 1" increments from 7" to 60".

***7½"-4,140" Outer Circle*—To Order:** Please specify outer circle (OC) in ¼" increments from 7½" to 4,140".

Wd.	Thick.	Min. Pulley Dia.	7"-60" Outer Circle	Per Inch	7½"-4,140" Outer Circle	Per Inch
3/16"	0.031"	19/32"	6082K52	$0.52	6082K61	$0.52
1/4"	0.031"	19/32"	6082K51	.52	6082K62	.52
1/2"	0.031"	19/32"	6082K33	.52	6082K64	.52
3/4"	0.031"	19/32"	6082K35	.52	6082K65	.52
1"	0.031"	19/32"	6082K12	.64	6082K66	.64
2½"	0.031"	19/32"	6082K18	1.12	6082K71	1.12

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

Leather Flat Belting

Leather is a classic drive-belt material, which offers a good gripping surface and superior oil resistance. To join ends, use Alligator Belt Lacing (see 6118K on page 1065). **To Order:** Please specify length.

***Leather*—**This durable, oak-tanned leather belting provides flexibility and strength. It also has waterproof cement between the layers to ensure adhesion for long service life. Quick-Install Clipper Conveyor Belt Lacing (see page 1256) can also be used to join the ends.

Side-stock belting is for use on lighter duty drives. *Center-stock belting* is cut from the strongest leather and is for use on heavy duty drives.

***Leather with Nylon Core*—**Made of chrome-tanned leather with a nylon core, this belting is stronger than plain leather belting and can handle higher speeds. A skiving process can also be used to join the ends.

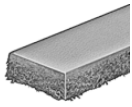

1-Ply Leather

Leather with Nylon Core

Leather

Wd.	SIDE-STOCK BELTING 1 Ply 5/32" Thick; 3" Min. Pulley Dia.	Per Ft.	SIDE-STOCK BELTING 2 Ply 19/64" Thick; 8" Min. Pulley Dia.	Per Ft.	CENTER-STOCK BELTING 1 Ply 5/32" Thick; 3" Min. Pulley Dia.	Per Ft.	CENTER-STOCK BELTING 1 Ply 3/16" Thick; 5" Min. Pulley Dia.	Per Ft.	CENTER-STOCK BELTING 2 Ply 7/32" Thick; 5" Min. Pulley Dia.	Per Ft.	CENTER-STOCK BELTING 2 Ply 17/64" Thick; 6" Min. Pulley Dia.	Per Ft.	CENTER-STOCK BELTING 2 Ply 11/32" Thick; 12" Min. Pulley Dia.	Per Ft.
1/2"	—	—	—	—	6076K51	$3.04	6076K11	$3.36	6081K38	$6.50	6080K37	$6.30	6081K47	$7.38
3/4"	—	—	—	—	6076K52	4.45	6076K12	5.10	6081K39	7.67	6080K38	9.52	6081K48	10.99
1"	6078K11	$5.77	6078K23	$13.30	6076K41	6.94	6076K13	6.80	6081K11	8.86	6080K11	12.77	6081K26	16.28
1 1/4"	6078K12	7.12	6078K24	16.59	6076K42	7.38	6076K14	8.56	6081K12	10.02	6080K12	15.88	6081K27	18.70
1 1/2"	6078K13	8.75	6078K25	19.89	6076K43	8.85	6076K15	10.16	6081K13	11.18	6080K13	19.04	6081K28	22.47
2"	6078K14	11.52	6078K26	26.43	6076K56	11.86	6076K16	12.96	6081K14	13.14	6080K14	24.61	6081K29	29.95
2 1/4"	6078K15	11.92	6078K27	29.95	—	—	—	—	—	—	—	—	—	—
2 1/2"	6078K16	14.48	6078K28	33.17	6076K57	14.79	6076K17	15.49	6081K15	15.89	6080K16	31.70	6081K31	37.55
2 3/4"	6078K17	15.96	6078K29	36.55	—	—	—	—	—	—	—	—	—	—
3"	6078K18	17.40	6078K31	39.81	6076K58	17.85	6076K18	20.00	6081K16	18.19	6080K17	37.98	6081K32	46.08
4"	6078K19	23.21	6078K32	46.09	6076K59	23.74	6076K19	26.96	6081K17	22.90	6080K19	45.21	6081K33	52.31
6"	6078K22	34.77	6078K34	78.38	6076K62	35.58	6076K22	40.26	6081K19	32.21	6080K22	66.32	6081K35	77.00

Leather with Nylon Core—0.185" Thick.; 3" Minimum Pulley Dia.

Wd.		Per Ft.	Wd.		Per Ft.	Wd.		Per Ft.	Wd.		Per Ft.	Wd.		Per Ft.
1/2"	6355K31	$3.35	1"	6355K33	$6.62	1 1/2"	6355K35	$9.95	2 1/2"	6355K37	$16.65	3 1/2"	6355K39	$23.15
3/4"	6355K32	4.98	1 1/4"	6355K34	8.27	2"	6355K36	13.23	3"	6355K38	19.90	4"	6355K41	26.53

Flat-Belt Pulleys

Laminated-Fiber Flat-Belt Pulleys

Also known as paper-plant pulleys, these pulleys are made of laminated fiber, which minimizes belt slippage to increase belt life. All have a finished bore with standard ANSI keyway and set screw (see page 1174 for ANSI keyway dimensions).

To Order: Please specify bore size from the available sizes listed.

For Belt Wd.	OD	(X)	Available Bore Sizes		
1"	2"	1 1/2"	1/2", 5/8", 3/4"	6231K11	$69.67
1 1/2"	2"	2"	1/2", 5/8", 3/4"	6231K12	69.67
2 1/2"	2"	3"	1/2", 5/8", 3/4"	6231K13	78.55
3"	2 1/2"	3 1/2"	3/4", 7/8", 1"	6231K15	86.41
3"	3"	3 1/2"	3/4", 7/8", 1"	6231K2	101.17
3"	3 1/2"	3 1/2"	3/4", 7/8", 1", 1 1/4", 1 1/2"	6231K22	117.21
3 1/2"	2"	3 3/4"	1/2", 5/8", 3/4"	6231K14	78.55
4"	2 1/2"	4 1/2"	3/4", 7/8", 1"	6231K16	104.14
4"	4"	4 1/2"	3/4", 7/8", 1", 1 1/4", 1 1/2"	6231K28	142.12

Nylon and Cast Iron Flat-Belt Idler Pulleys

All are free-wheeling for excellent belt tensioning.

***Nylon*—**These pulleys are glass-reinforced nylon for high strength and abrasion resistance. They have a sintered-iron bushing bore, chrome-alloy steel precision bearings, and synthetic rubber seals. A molded-in crown centers your flat belt and prevents rubbing against the flanges.

Nylon

Cast Iron

For Belt Wd.	OD	(X)	3/8" Bore Size		1/2" Bore Size	
3/4"	3.5"	1.09"	6235K64	$11.99	6235K74	$11.99
7/8"	2.35"	1.15"	6235K61	10.78	6235K71	10.78
1"	2.75"	1.22"	6235K68	11.40	6235K78	11.40
1"	3"	1.31"	6235K63	11.63	6235K73	11.63
1"	3.5"	1.22"	6235K65	11.99	6235K75	11.99
1"	4.5"	1.39"	6235K66	13.31	6235K76	13.31
1"	5.5"	1.31"	6235K67	13.96	6235K77	14.39
1 1/4"	3.38"	1.68"	6235K69	11.40	6235K79	11.40
1 3/8"	2.07"	1.54"	6235K62	10.53	6235K72	10.97

***Cast Iron*—**These rugged pulleys are made of durable cast iron with steel needle bearings.

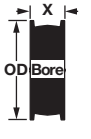

For Belt Wd.	OD	(X)	Bore Size		
7/16"	1 3/8"	5/8"	1/2"	1355K1	$17.80
9/16"	1 3/4"	13/16"	1/2"	1355K2	29.80
11/16"	2 1/2"	7/8"	1"	1355K3	38.83
1 1/16"	4 1/2"	1 7/16"	1"	1355K4	61.35
2 1/16"	4 1/2"	2 7/16"	1"	1355K5	70.13
3 1/16"	4 1/2"	3 7/16"	1"	1355K6	79.42

Adjustable-Length V-Belting

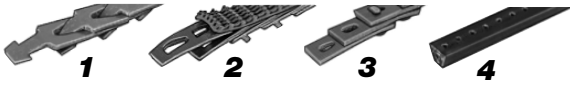

Easily add or remove sections. Perfect for making replacement V-belts. **To Order:** Please specify length.

***(1) Twist Lock*—**Simply twist to couple or uncouple this belting. Made of a polyurethane elastomer reinforced with multiple plies of polyester fabric, it transmits the same horsepower as standard V-belts with less vibration. Color is red.

***(2) Grip-Top Twist Lock*—**Just like the twist lock belting above but with a strong, textured PVC top layer for a good gripping surface.

***(3) Adjust-a-Link*—**Connect belting links with the included plated-steel rivets using the installation tool (sold separately below). Links are made of polyester/polyurethane. Color is orange.

***(4) Perforated*—**This heavy, solid-core synthetic rubber belting is fabric reinforced and has equally spaced holes to accommodate connectors (made of steel; sold separately below). Color is black.

Belt Type	Top Wd.	Thick.	Approx. links/ft.		Per Ft.
(1) Twist Lock					
3L	3/8"	13/32"	19	6173K36	$7.09
4L, A	1/2"	7/16"	16	6173K37	7.20
5L, B	5/8"	19/32"	13	6173K38	8.03
C	7/8"	3/4"	9.5	6173K39	16.04
D	1 1/4"	1 1/4"	8	6173K41	26.81
(2) Grip-Top Twist Lock					
A	1/2"	9/16"	13	6173K11	24.67
B	5/8"	23/32"	13	6173K12	27.62
C	7/8"	7/8"	9	6173K13	43.29
(3) Adjust-a-Link					
3L, O	3/8"	1/2"	14	6198K63	13.59
4L, A	1/2"	19/32"	14	6198K65	13.84
5L, B	21/32"	21/32"	12	6198K66	16.08
C	7/8"	3/4"	9	6198K67	24.34

Installation Tool for Adjust-a-Link ..... 6198K85 **Each** $16.88

Belt Type	Wd.	Thick.	*Belting* Per Ft.		*Connectors (10/Pkg.)* Pkg.
(4) Perforated					
O	3/8"	7/32"	6176K61 $3.00	6176K15	$12.02
A	1/2"	11/32"	6176K71 3.34	6176K16	12.02
B	21/32"	7/16"	6176K81 4.47	6176K17	16.00
C	7/8"	9/16"	6176K91 6.82	6176K29	17.57

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

Urethane V-Belting

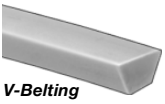

V-Belting

V-Belting with Wing Top

This FDA-compliant solid-urethane belting is highly flexible, yet it maintains tension without the need for springs or idlers. It's extremely durable, quiet running, and grips well. It's also highly resistant to marking, vibration, abrasion, dirt, oil, and chemicals. Great for light to medium duty torque power transmission and conveying. To join ends, use a welding kit (see page 1065). **To Order:** Please specify length.

***V-Belting*—** The *orange belting* is more flexible than the *clear belting.*

***V-Belting with Profile Top*—** Specially shaped tops grip and/or carry objects. Color is orange.

V-Belting

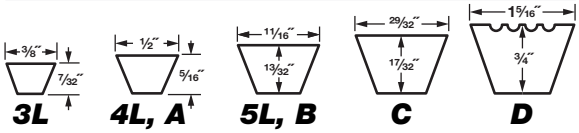

Belt Type	Orange Min. Pulley Dia.		Orange Per Ft.	Clear Min. Pulley Dia.		Clear Per Ft.
3L	1 3/4″	59735K11	$1.67	2 3/16″	59735K21	$1.70
4L, A	2 1/2″	59735K12	2.47	3 1/8″	59735K22	2.48
5L, B	3 1/4″	59735K13	3.95	4 1/8″	59735K23	4.20
C	4 1/2″	59735K14	7.02	5 3/8″	59735K24	6.95
D	7″	59735K15	14.52	8 1/2″	59735K25	16.70
Twin 3L	2 1/8″	59735K16	3.66	—	—	—
Twin A	2 1/2″	59735K17	5.34	—	—	—

V-Belting with Profile Top

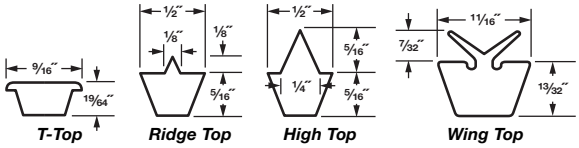

Belt Type and Profile Top	Min. Pulley Dia.		Per Ft.
3L; T-Top	2 3/8″	7886K21	$2.45
4L, A; Ridge Top	2 1/2″	7886K22	2.84
4L, A; High Top	5″	7886K23	3.71
5L, B; Wing Top	3 1/4″	1371K11	5.00

Banded B-Section V-Belts

4 Bands

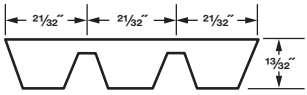

3 Bands

Banded belts have multiple B-section V-belts (from 2 to 5) that are permanently joined to not only deliver consistent drive but also withstand shock loads better than individual belts. Made of rubber with polyester reinforcing cords, all offer oil and friction resistance. The top width is 21/32″ per band. Color is black.

To Order: Please specify number of bands: 2, 3, 4, or 5.

Trade Size	Outer Circle		Per Band	Trade Size	Outer Circle		Per Band
B35	38″	7888K11	$12.82	B83	86″	7888K48	$27.13
B42	45″	7888K13	16.15	B85	88″	7888K49	27.88
B46	49″	7888K15	17.52	B87	90″	7888K5	28.15
B48	51″	7888K16	18.05	B90	93″	7888K52	29.24
B50	53″	7888K17	18.58	B93	96″	7888K53	30.59
B51	54″	7888K18	18.84	B95	98″	7888K54	31.30
B55	58″	7888K22	19.54	B96	99″	7888K55	31.29
B58	61″	7888K25	20.93	B97	100″	7888K56	31.64
B60	63″	7888K27	21.24	B99	102″	7888K57	32.43
B62	65″	7888K29	21.74	B100	103″	7888K58	32.32
B64	67″	7888K31	21.28	B103	106″	7888K59	32.99
B67	70″	7888K34	22.21	B105	108″	7888K6	34.00
B70	73″	7888K36	22.91	B108	111″	7888K61	34.87
B71	74″	7888K37	23.33	B112	115″	7888K62	36.36
B72	75″	7888K38	23.35	B120	123″	7888K63	38.39
B73	76″	7888K39	23.64	B124	127″	7888K64	39.71
B74	77″	7888K4	24.23	B128	131″	7888K65	41.07
B75	78″	7888K41	24.48	B133	136″	7888K66	43.07
B78	81″	7888K43	25.51	B136	139″	7888K67	43.88
B79	82″	7888K44	25.57	B144	147″	7888K68	46.45
B80	83″	7888K45	25.93	B148	151″	7888K69	49.98
B81	84″	7888K46	26.25	B150	153″	7888K7	47.94
B82	85″	7888K47	27.31	B158	161″	7888K71	51.01

Urethane V-Belts

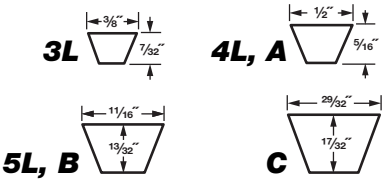

Just like the Urethane V-Belting sold separately on this page, except the ends of these belts are already welded together, so they're ready for use. Color is orange.

To Order: Please specify outer circle (OC) in 1″ increments.

Belt Type	Min. Pulley Dia.		Per Inch
3L	1 3/4″	59735K31	$0.56
4L, A	2 1/2″	59735K32	.85
5L, B	3 1/4″	59735K33	1.31
C	4 1/2″	59735K34	2.40

4L, A, 5L, and B V-Belt Pulleys

3.15″ to 6.45″ OD

6.75″ to 18.75″ OD

Specifically designed for light-capacity, fractional-horsepower, Type A (4L and A) and Type B (5L and B) V-belts, these pulleys have a quick-disconnect (QD) bore for easy installation and removal. Use them with Style-H Quick-Disconnect (QD) Bushings (not included; sold separately below). All pulleys are made of cast iron.

OD	Pitch Dia. for Type A V-Belt	Pitch Dia. for Type B V-Belt	(Y)		
3.15″	2.4″	2.8″	1 3/4″	6407A11	$31.58
3.35″	2.6″	3.0″	1 3/4″	6407A12	33.57
3.55″	2.8″	3.2″	1 3/4″	6407A13	33.62
3.75″	3.0″	3.4″	1 1/4″	6407A14	33.86
3.95″	3.2″	3.6″	1 1/4″	6407A15	33.92
4.25″	3.5″	3.9″	1 1/4″	6407A16	34.65
4.45″	3.7″	4.1″	1 1/4″	6407A17	35.46
4.75″	4.0″	4.4″	1 1/4″	6407A18	36.27
4.95″	4.2″	4.6″	1 1/4″	6407A19	37.01
5.25″	4.5″	4.9″	1 1/4″	6407A21	37.74
5.45″	4.7″	5.1″	1 1/4″	6407A22	38.48
5.75″	5.0″	5.4″	1 1/4″	6407A23	38.93
5.95″	5.2″	5.6″	1 1/4″	6407A24	41.06
6.25″	5.5″	5.9″	1 1/4″	6407A25	43.78
6.45″	5.7″	6.1″	1 5/16″	6407A26	45.03
6.75″	6.0″	6.4″	1 3/8″	6407A27	46.59
6.95″	6.2″	6.6″	1 3/8″	6407A28	$48.78
7.25″	6.5″	6.9″	1 3/8″	6407A29	50.76
7.75″	7.0″	7.4″	1 3/8″	6407A31	52.33
8.25″	7.5″	7.9″	1 3/8″	6407A32	58.05
8.75″	8.0″	8.4″	1 3/8″	6407A33	61.80
9.25″	8.5″	8.9″	1 3/8″	6407A34	66.45
9.75″	9.0″	9.4″	1 3/8″	6407A35	69.02
10.25″	9.5″	9.9″	1 3/8″	6407A36	70.35
10.75″	10.0″	10.4″	1 3/8″	6407A37	75.86
11.25″	10.5″	10.9″	1 3/8″	6407A38	78.30
11.75″	11.0″	11.4″	1 3/8″	6407A39	83.96
12.75″	12.0″	12.4″	1 3/8″	6407A41	91.91
13.75″	13.0″	13.4″	1 3/8″	6407A42	104.19
14.75″	14.0″	14.4″	1 3/8″	6407A43	113.17
15.75″	15.0″	15.4″	1 3/8″	6407A44	121.77
18.75″	18.0″	18.4″	1 3/8″	6407A45	166.59

Style-H Quick-Disconnect (QD) Bushing 6086K19 $13.60

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

2L, 3L, 4L, and 5L V-Belts

Look to these V-belts to handle your light duty applications, particularly those using fractional-horsepower (less than 1 hp) motors. All are made of molded rubber with polyester reinforcing cords. Color is black.

Trade Size	Outer Circle		
2L V-Belts			
2L100	10″	**7881K11**	$4.97
2L110	11″	**7881K12**	4.97
2L120	12″	**7881K13**	4.97
2L130	13″	**7881K14**	4.97
2L140	14″	**7881K15**	4.97
2L150	15″	**7881K16**	4.97
2L160	16″	**7881K17**	4.97
2L170	17″	**7881K18**	4.97
2L180	18″	**7881K19**	4.97
2L190	19″	**7881K21**	4.97
2L200	20″	**7881K22**	4.97
2L210	21″	**7881K23**	4.97
2L230	23″	**7881K24**	4.97
2L240	24″	**7881K25**	4.97
2L250	25″	**7881K26**	4.97
2L260	26″	**7881K27**	5.08
2L270	27″	**7881K28**	5.17
2L280	28″	**7881K29**	5.22
2L290	29″	**7881K31**	5.34
2L310	31″	**7881K32**	5.47
2L340	34″	**7881K33**	5.70
2L350	35″	**7881K34**	5.89
2L360	36″	**7881K35**	5.94
2L380	38″	**7881K36**	6.19
3L V-Belts			
3L110	11″	**6190K11**	5.11
3L120	12″	**6190K12**	5.11
3L130	13″	**6190K13**	5.11
3L140	14″	**6190K14**	5.11
3L150	15″	**6190K15**	5.11
3L160	16″	**6190K16**	5.11
3L170	17″	**6190K17**	5.11
3L180	18″	**6190K18**	5.11
3L190	19″	**6190K19**	5.11
3L200	20″	**6190K21**	5.11
3L210	21″	**6190K22**	5.11
3L220	22″	**6190K23**	5.11
3L230	23″	**6190K24**	5.11
3L240	24″	**6190K25**	5.11
3L245	24½″	**6190K26**	5.64
3L250	25″	**6190K27**	5.11
3L255	25½″	**6190K28**	5.19
3L260	26″	**6190K29**	5.21
3L265	26½″	**6190K33**	5.22
3L270	27″	**6190K31**	5.22
3L275	27½″	**6190K39**	5.20
3L280	28″	**6190K32**	5.20
3L285	28½″	**6190K42**	5.22
3L290	29″	**6190K34**	5.22
3L293	29 5/16″	**6190K49**	5.20
3L300	30″	**6190K36**	5.27
3L310	31″	**6190K37**	5.59
3L320	32″	**6190K38**	5.70
3L330	33″	**6190K41**	5.81
3L340	34″	**6190K43**	5.88
3L345	34½″	**6190K44**	5.97
3L350	35″	**6190K45**	6.02
3L360	36″	**6190K47**	6.08
3L370	37″	**6190K48**	6.18
3L380	38″	**6190K51**	6.35
3L390	39″	**6190K52**	6.52
3L400	40″	**6190K53**	6.56
3L410	41″	**6190K54**	6.76
3L415	41½″	**6190K55**	6.83
3L420	42″	**6190K56**	6.86
3L430	43″	**6190K57**	6.91
3L440	44″	**6190K58**	6.98
3L450	45″	**6190K59**	7.14
3L460	46″	**6190K61**	7.19
3L470	47″	**6190K62**	7.34

Trade Size	Outer Circle		
3L V-Belts (Cont.)			
3L480	48″	**6190K63**	$7.42
3L490	49″	**6190K64**	7.52
3L500	50″	**6190K66**	7.64
3L510	51″	**6190K67**	7.67
3L520	52″	**6190K68**	7.75
3L530	53″	**6190K69**	7.97
3L540	54″	**6190K71**	8.06
3L550	55″	**6190K89**	7.67
3L560	56″	**6190K73**	8.13
3L570	57″	**6190K74**	8.33
3L580	58″	**6190K75**	8.38
3L590	59″	**6190K77**	8.41
3L600	60″	**6190K78**	8.48
3L610	61″	**6190K79**	8.56
3L620	62″	**6190K81**	8.69
3L630	63″	**6190K82**	8.79
3L640	64″	**6190K91**	8.43
3L650	65″	**6190K83**	9.03
3L660	66″	**6190K84**	9.11
3L670	67″	**6190K85**	9.17
3L675	67½″	**6190K86**	9.31
3L680	68″	**6190K87**	9.35
3L690	69″	**6190K88**	9.37
3L700	70″	**6190K92**	9.09
3L710	71″	**6190K93**	13.62
3L730	73″	**6190K94**	14.10
3L740	74″	**6190K95**	14.40
4L V-Belts			
4L150	15″	**6191K41**	4.95
4L160	16″	**6191K52**	4.95
4L170	17″	**6191K59**	4.95
4L180	18″	**6191K12**	4.95
4L188	18¾″	**6191K65**	4.95
4L190	19″	**6191K96**	4.11
4L200	20″	**6191K13**	4.95
4L210	21″	**6191K97**	4.11
4L215	21½″	**6191K68**	4.95
4L220	22″	**6191K14**	4.95
4L230	23″	**6191K15**	4.95
4L235	23½″	**6191K73**	4.95
4L240	24″	**6191K16**	4.95
4L250	25″	**6191K17**	4.95
4L255	25½″	**6191K72**	4.93
4L260	26″	**6191K18**	5.01
4L270	27″	**6191K19**	5.09
4L275	27½″	**6191K75**	5.13
4L280	28″	**6191K21**	5.15
4L285	28½″	**6191K22**	5.19
4L290	29″	**6191K23**	5.24
4L295	29½″	**6191K78**	5.36
4L300	30″	**6191K24**	5.38
4L310	31″	**6191K25**	5.43
4L318	31¾″	**6191K79**	5.49
4L320	32″	**6191K98**	4.09
4L328	32¾″	**6191K81**	5.54
4L330	33″	**6191K26**	5.55
4L333	33¼″	**6191K82**	5.67
4L338	33¾″	**6191K83**	5.68
4L340	34″	**6191K27**	5.70
4L346	34½″	**6191K85**	5.69
4L350	35″	**6191K28**	5.75
4L360	36″	**6191K29**	5.91
4L370	37″	**6191K31**	5.75
4L380	38″	**6191K32**	5.86
4L390	39″	**6191K33**	6.03
4L400	40″	**6191K34**	6.12
4L405	40½″	**6191K86**	6.23
4L410	41″	**6191K99**	5.39
4L420	42″	**6191K35**	6.35

Trade Size	Outer Circle		
4L V-Belts (Cont.)			
4L430	43″	**6191K36**	$6.47
4L440	44″	**6191K37**	6.60
4L450	45″	**6191K38**	6.68
4L460	46″	**6191K39**	6.80
4L470	47″	**6191K101**	5.93
4L475	47½″	**6191K87**	6.91
4L480	48″	**6191K42**	6.95
4L490	49″	**6191K43**	7.00
4L500	50″	**6191K44**	7.06
4L510	51″	**6191K102**	6.16
4L520	52″	**6191K45**	7.22
4L530	53″	**6191K46**	7.28
4L540	54″	**6191K47**	7.39
4L550	55″	**6191K103**	6.40
4L560	56″	**6191K48**	7.55
4L570	57″	**6191K49**	7.66
4L580	58″	**6191K51**	7.70
4L590	59″	**6191K92**	7.76
4L600	60″	**6191K53**	7.97
4L610	61″	**6191K88**	8.04
4L620	62″	**6191K54**	8.06
4L630	63″	**6191K89**	8.17
4L640	64″	**6191K55**	8.27
4L650	65″	**6191K56**	8.35
4L660	66″	**6191K91**	8.43
4L670	67″	**6191K58**	8.52
4L680	68″	**6191K104**	7.47
4L690	69″	**6191K93**	8.79
4L700	70″	**6191K61**	8.80
4L710	71″	**6191K94**	9.10
4L720	72″	**6191K62**	9.20
4L730	73″	**6191K1**	9.34
4L740	74″	**6191K2**	9.43
4L750	75″	**6191K64**	9.40
4L760	76″	**6191K3**	9.45
4L770	77″	**6191K4**	9.58
4L780	78″	**6191K66**	9.76
4L790	79″	**6191K67**	9.90
4L800	80″	**6191K5**	10.02
4L810	81″	**6191K6**	10.25
4L820	82″	**6191K69**	10.34
4L830	83″	**6191K7**	10.53
4L840	84″	**6191K71**	10.64
4L850	85″	**6191K8**	10.80
4L860	86″	**6191K9**	10.94
4L870	87″	**6191K105**	11.18
4L880	88″	**6191K74**	11.28
4L890	89″	**6191K106**	11.33
4L900	90″	**6191K107**	11.46
4L910	91″	**6191K95**	11.72
4L920	92″	**6191K76**	11.91
4L930	93″	**6191K108**	11.99
4L940	94″	**6191K77**	12.21
4L950	95″	**6191K111**	12.34
4L960	96″	**6191K112**	12.50
4L970	97″	**6191K113**	12.63
4L980	98″	**6191K114**	12.76
4L990	99″	**6191K115**	12.83
4L1000	100″	**6191K84**	12.93
5L V-Belts			
5L230	23″	**6192K15**	6.84
5L240	24″	**6192K19**	6.93
5L250	25″	**6192K32**	7.03
5L260	26″	**6192K48**	7.32
5L265	26½″	**6192K51**	7.55
5L270	27″	**6192K52**	7.60
5L280	28″	**6192K13**	7.35
5L290	29″	**6192K41**	6.95
5L300	30″	**6192K14**	7.68
5L310	31″	**6192K42**	7.84

Trade Size	Outer Circle		
5L V-Belts (Cont.)			
5L320	32″	**6192K16**	$7.42
5L330	33″	**6192K43**	7.60
5L340	34″	**6192K17**	7.78
5L350	35″	**6192K18**	7.87
5L355	35½″	**6192K53**	8.05
5L360	36″	**6192K44**	8.26
5L370	37″	**6192K45**	8.36
5L380	38″	**6192K21**	8.54
5L390	39″	**6192K54**	9.03
5L400	40″	**6192K22**	9.13
5L410	41″	**6192K55**	9.41
5L420	42″	**6192K23**	9.64
5L430	43″	**6192K46**	9.82
5L440	44″	**6192K24**	10.05
5L450	45″	**6192K47**	10.26
5L460	46″	**6192K25**	10.46
5L470	47″	**6192K56**	10.67
5L480	48″	**6192K26**	10.92
5L490	49″	**6192K57**	11.70
5L500	50″	**6192K27**	11.89
5L510	51″	**6192K58**	12.08
5L520	52″	**6192K28**	12.27
5L530	53″	**6192K59**	12.46
5L540	54″	**6192K29**	12.65
5L550	55″	**6192K61**	12.76
5L560	56″	**6192K31**	12.84
5L570	57″	**6192K62**	12.97
5L580	58″	**6192K49**	13.08
5L590	59″	**6192K63**	13.16
5L600	60″	**6192K33**	13.24
5L610	61″	**6192K64**	13.32
5L620	62″	**6192K34**	13.41
5L630	63″	**6192K65**	13.51
5L640	64″	**6192K35**	13.70
5L650	65″	**6192K66**	13.86
5L660	66″	**6192K36**	14.05
5L670	67″	**6192K67**	14.22
5L680	68″	**6192K37**	14.43
5L690	69″	**6192K68**	14.59
5L700	70″	**6192K38**	14.73
5L710	71″	**6192K69**	14.86
5L720	72″	**6192K39**	15.05
5L730	73″	**6192K71**	15.27
5L740	74″	**6192K72**	15.43
5L750	75″	**6192K73**	15.65
5L760	76″	**6192K74**	15.81
5L770	77″	**6192K75**	16.03
5L780	78″	**6192K76**	16.22
5L790	79″	**6192K77**	16.46
5L800	80″	**6192K78**	16.68
5L810	81″	**6192K79**	16.89
5L820	82″	**6192K81**	17.11
5L830	83″	**6192K82**	17.35
5L840	84″	**6192K83**	17.54
5L850	85″	**6192K84**	18.05
5L860	86″	**6192K85**	18.16
5L870	87″	**6192K86**	18.32
5L880	88″	**6192K87**	18.49
5L890	89″	**6192K88**	18.65
5L900	90″	**6192K89**	18.86
5L910	91″	**6192K91**	19.03
5L920	92″	**6192K92**	19.19
5L930	93″	**6192K93**	19.38
5L940	94″	**6192K94**	19.68
5L950	95″	**6192K95**	19.95
5L960	96″	**6192K96**	20.27
5L970	97″	**6192K97**	20.51
5L980	98″	**6192K98**	20.73
5L990	99″	**6192K99**	20.95
5L1000	100″	**6192K7**	21.16

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

A-, B-, and C-Section V-Belts

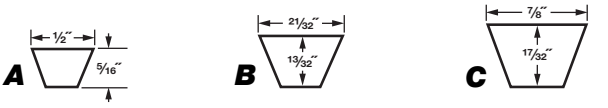

An industry standard, these classical V-belts are made of rubber with polyester reinforcing cords. Color is black.

Trade Size	Outer Circle		
A-Section V-Belts			
A18	20″	6186K224	$6.33
A19	21″	6186K225	6.92
A20	22″	6186K226	6.92
A21	23″	6186K118	6.92
A22	24″	6186K119	6.92
A23	25″	6186K121	6.92
A24	26″	6186K122	7.43
A25	27″	6186K123	7.54
A26	28″	6186K124	7.65
A27	29″	6186K125	7.76
A28	30″	6186K126	7.89
A29	31″	6186K127	8.00
A30	32″	6186K128	8.14
A31	33″	6186K129	8.24
A32	34″	6186K131	8.41
A33	35″	6186K232	8.54
A34	36″	6186K133	8.70
A35	37″	6186K134	8.84
A36	38″	6186K135	9.00
A37	39″	6186K136	9.24
A38	40″	6186K137	9.41
A39	41″	6186K138	9.59
A40	42″	6186K139	9.70
A41	43″	6186K141	9.92
A42	44″	6186K142	10.11
A43	45″	6186K143	10.30
A44	46″	6186K144	10.43
A45	47″	6186K145	10.54
A46	48″	6186K146	10.59
A47	49″	6186K147	10.70
A48	50″	6186K148	10.84
A49	51″	6186K149	10.95
A50	52″	6186K151	11.05
A51	53″	6186K152	11.19
A52	54″	6186K153	11.30
A53	55″	6186K227	11.41
A54	56″	6186K155	11.59
A55	57″	6186K156	11.73
A56	58″	6186K157	11.84
A57	59″	6186K158	11.92
A58	60″	6186K228	12.11
A59	61″	6186K161	12.22
A60	62″	6186K162	12.38
A61	63″	6186K163	12.54
A62	64″	6186K164	12.65
A63	65″	6186K165	12.84
A64	66″	6186K166	12.97
A65	67″	6186K167	13.08
A66	68″	6186K168	13.24
A67	69″	6186K169	13.41
A68	70″	6186K171	13.54
A69	71″	6186K172	13.84
A70	72″	6186K173	14.14
A71	73″	6186K174	14.24
A72	74″	6186K175	14.32
A73	75″	6186K176	14.43
A74	76″	6186K177	14.54
A75	77″	6186K178	14.70
A76	78″	6186K179	14.95
A77	79″	6186K181	15.19
A78	80″	6186K182	15.43
A79	81″	6186K183	15.65
A80	82″	6186K184	13.67
A81	83″	6186K185	16.14
A82	84″	6186K186	16.35
A83	85″	6186K187	16.57
A84	86″	6186K188	16.84
A85	87″	6186K189	17.08
A86	88″	6186K191	17.30
A87	89″	6186K192	17.54
A88	90″	6186K193	17.78
A89	91″	6186K194	18.03

Trade Size	Outer Circle		
A-Section V-Belts (Cont.)			
A90	92″	6186K195	$18.24
A91	93″	6186K196	18.46
A92	94″	6186K197	18.68
A93	95″	6186K198	18.84
A94	96″	6186K199	19.03
A95	97″	6186K201	19.24
A96	98″	6186K202	19.43
A97	99″	6186K203	19.57
A98	100″	6186K204	19.84
A100	102″	6186K212	20.24
A103	105″	6186K222	20.84
A105	107″	6186K205	21.19
A110	112″	6186K213	22.84
A112	114″	6186K206	23.51
A115	117″	6186K214	20.84
A120	122″	6186K207	21.77
A124	126″	6186K215	26.19
A128	130″	6186K208	27.08
A133	135″	6186K216	28.19
A136	138″	6186K209	24.81
A144	146″	6186K211	26.30
A158	160″	6186K217	33.54
A173	175″	6186K218	36.81
A180	182″	6186K219	38.32
B-Section V-Belts			
B24	27″	6187K255	6.71
B25	28″	6187K256	8.68
B26	29″	6187K257	8.34
B27	30″	6187K258	9.41
B28	31″	6187K117	9.08
B29	32″	6187K118	9.54
B30	33″	6187K119	9.68
B31	34″	6187K121	9.77
B32	35″	6187K122	9.86
B33	36″	6187K123	10.00
B34	37″	6187K124	10.21
B35	38″	6187K125	10.49
B36	39″	6187K126	10.74
B37	40″	6187K127	10.91
B38	41″	6187K128	11.52
B39	42″	6187K129	11.83
B40	43″	6187K131	12.01
B41	44″	6187K132	12.29
B42	45″	6187K133	12.52
B43	46″	6187K134	12.82
B44	47″	6187K135	13.06
B45	48″	6187K136	13.33
B46	49″	6187K137	13.53
B47	50″	6187K138	13.78
B48	51″	6187K139	14.03
B49	52″	6187K141	14.21
B50	53″	6187K142	14.44
B51	54″	6187K143	14.64
B52	55″	6187K144	14.79
B53	56″	6187K145	14.91
B54	57″	6187K146	15.06
B55	58″	6187K147	15.15
B56	59″	6187K148	15.28
B57	60″	6187K149	15.37
B58	61″	6187K151	15.45
B59	62″	6187K152	15.54
B60	63″	6187K153	15.69
B61	64″	6187K154	15.91
B62	65″	6187K155	16.10
B63	66″	6187K156	16.29
B64	67″	6187K157	16.49
B65	68″	6187K158	16.72
B66	69″	6187K159	16.91
B67	70″	6187K161	17.09
B68	71″	6187K162	17.25
B69	72″	6187K163	17.47

Trade Size	Outer Circle		
B-Section V-Belts (Cont.)			
B70	73″	6187K164	$17.70
B71	74″	6187K165	17.94
B72	75″	6187K166	18.15
B73	76″	6187K167	18.33
B74	77″	6187K168	18.60
B75	78″	6187K169	18.83
B76	79″	6187K171	19.06
B77	80″	6187K172	19.34
B78	81″	6187K173	19.56
B79	82″	6187K174	19.88
B80	83″	6187K175	20.12
B81	84″	6187K176	20.39
B82	85″	6187K177	20.87
B83	86″	6187K178	21.07
B84	87″	6187K179	21.26
B85	88″	6187K181	21.40
B86	89″	6187K182	21.65
B87	90″	6187K183	21.84
B88	91″	6187K184	22.03
B89	92″	6187K185	22.28
B90	93″	6187K186	22.47
B91	94″	6187K187	22.81
B92	95″	6187K188	23.14
B93	96″	6187K189	23.47
B94	97″	6187K191	23.78
B95	98″	6187K192	24.13
B96	99″	6187K193	24.31
B97	100″	6187K194	24.57
B98	101″	6187K195	24.93
B99	102″	6187K201	25.12
B100	103″	6187K202	25.25
B101	104″	6187K203	25.40
B102	105″	6187K204	25.49
B103	106″	6187K196	25.61
B104	107″	6187K205	25.91
B105	108″	6187K197	26.12
B106	109″	6187K206	26.74
B108	111″	6187K198	27.07
B110	113″	6187K207	27.59
B112	115″	6187K211	28.25
B114	117″	6187K208	28.48
B115	118″	6187K254	28.68
B116	119″	6187K209	28.83
B118	121″	6187K231	29.26
B120	123″	6187K212	29.77
B122	125″	6187K232	30.40
B124	127″	6187K213	30.83
B126	129″	6187K233	31.72
B128	131″	6187K214	31.85
B130	133″	6187K234	33.24
B131	134″	6187K259	34.71
B133	136″	6187K215	33.45
B136	139″	6187K216	34.07
B138	141″	6187K235	35.81
B140	143″	6187K236	35.93
B142	145″	6187K237	36.01
B144	147″	6187K217	36.07
B146	149″	6187K238	38.28
B148	151″	6187K239	38.51
B150	153″	6187K241	38.69
B152	155″	6187K261	38.33
B154	157″	6187K242	38.96
B158	161″	6187K218	39.20
B162	165″	6187K219	40.75
B166	169″	6187K243	42.48
B173	176″	6187K221	42.85
B180	183″	6187K222	44.96
B188	191″	6187K244	47.97
B190	193″	6187K245	48.25
B195	198″	6187K223	48.58
B205	208″	6187K246	51.30

Trade Size	Outer Circle		
B-Section V-Belts (Cont.)			
B210	213″	6187K224	$52.27
B225	226″	6187K247	57.63
B240	241″	6187K226	59.06
B255	256″	6187K248	69.08
B270	271″	6187K249	73.34
B285	286″	6187K251	77.39
B300	301″	6187K252	81.37
C-Section V-Belts			
C48	52″	65275K71	21.44
C50	54″	65275K72	21.52
C51	55″	65275K11	21.94
C53	57″	65275K73	23.14
C54	58″	65275K74	23.37
C55	59″	65275K12	23.64
C60	64″	65275K13	25.76
C62	66″	65275K14	26.60
C63	67″	65275K76	27.47
C64	68″	65275K15	27.89
C65	69″	65275K77	27.85
C67	71″	65275K78	28.87
C68	72″	65275K16	29.02
C70	74″	65275K79	29.99
C71	75″	65275K17	30.22
C72	76″	65275K18	30.61
C75	79″	65275K19	31.88
C78	82″	65275K21	33.30
C79	83″	65275K22	33.89
C80	84″	65275K81	34.51
C81	85″	65275K23	34.72
C83	87″	65275K82	35.49
C85	89″	65275K24	35.70
C87	91″	65275K83	37.88
C90	94″	65275K25	38.54
C95	99″	65275K86	40.52
C96	100″	65275K26	40.93
C97	101″	65275K27	41.33
C98	102″	65275K28	41.93
C100	104″	65275K29	42.64
C101	105″	65275K31	43.03
C105	109″	65275K32	44.74
C109	113″	65275K33	46.21
C111	115″	65275K34	47.23
C112	116″	65275K35	47.58
C115	119″	65275K36	48.85
C118	122″	65275K37	49.74
C120	124″	65275K38	50.91
C124	128″	65275K39	52.53
C128	132″	65275K41	54.25
C136	140″	65275K42	57.32
C140	144″	65275K43	58.86
C144	148″	65275K44	60.93
C150	154″	65275K45	63.16
C158	162″	65275K46	66.62
C162	166″	65275K47	68.08
C173	177″	65275K48	72.88
C177	181″	65275K49	75.71
C180	184″	65275K51	76.17
C190	194″	65275K52	80.23
C195	199″	65275K53	82.36
C210	214″	65275K54	89.01
C225	227″	65275K55	94.38
C240	242″	65275K56	99.98
C255	257″	65275K57	107.00
C270	272″	65275K58	112.83
C285	287″	65275K59	119.06
C300	302″	65275K61	125.20
C315	317″	65275K62	131.79
C330	332″	65275K63	137.63
C345	347″	65275K64	144.30
C360	362″	65275K65	149.91
C390	392″	65275K66	162.77
C420	422″	65275K67	175.63

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

Matched V-Belts and Superflex V-Belts

Made of molded rubber with polyester reinforcing cords, all of these belts are oil and heat resistant. Color is black.

Matched V-Belts—Use these high-precision belts for drives that require multiple V-belts with highly precise outer circle (OC) lengths. All are matched—the outer circle of a particular trade size will vary no more than ±0.060″ for 26″ to 36″ OC, ±0.070″ for 37″ to 87″ OC, and ±0.080″ for 88″ to 93″ OC. ***Superflex V-Belts***—With four times the side-to-side flexibility of standard V-belts, these belts handle the twisting and turning that is common in curved roller conveyor applications.

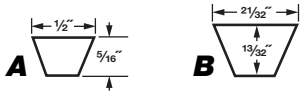

Trade Size	Outer Circle		
Matched V-Belts			
A-Section V-Belts			
A24	26″	7821T11	$10.28
A25	27″	7821T12	10.42
A26	28″	7821T13	10.55
A27	29″	7821T14	10.69
A28	30″	7821T15	10.90
A30	32″	7821T16	11.18
A31	33″	7821T17	11.37
A32	34″	7821T18	11.58
A33	35″	7821T19	11.76
A34	36″	7821T21	12.02
A35	37″	7821T22	12.19
A36	38″	7821T23	12.38

Trade Size	Outer Circle		
Matched V-Belts (Cont.)			
B-Section V-Belts			
B50	53″	7899K51	$17.88
B52	55″	7899K52	18.36
B55	58″	7899K53	18.80
B60	63″	7899K54	19.43
B63	66″	7899K11	20.22
B64	67″	7899K12	20.48
B65	68″	7899K13	20.74
B66	69″	7899K14	20.98
B67	70″	7899K15	21.19
B68	71″	7899K16	21.40
B69	72″	7899K17	21.65
B70	73″	7899K18	21.97
B71	74″	7899K19	22.24
B72	75″	7899K21	22.50

Trade Size	Outer Circle		
Matched V-Belts (Cont.)			
B-Section V-Belts (Cont.)			
B73	76″	7899K22	$22.76
B74	77″	7899K23	23.07
B75	78″	7899K24	23.33
B76	79″	7899K25	23.67
B77	80″	7899K26	24.00
B78	81″	7899K27	24.31
B79	82″	7899K28	24.64
B80	83″	7899K29	24.95
B81	84″	7899K31	25.30
B82	85″	7899K32	25.90
B83	86″	7899K33	26.14
B84	87″	7899K34	26.37
B85	88″	7899K35	26.55
B86	89″	7899K36	26.86

Trade Size	Outer Circle		
Matched V-Belts (Cont.)			
B-Section V-Belts (Cont.)			
B87	90″	7899K37	$27.09
B88	91″	7899K38	27.36
B89	92″	7899K39	27.63
B90	93″	7899K41	27.86
Superflex V-Belts			
B-Section V-Belts			
B112	115″	2897K34	32.39
B136	139″	2897K13	37.08
B144	147″	2897K14	39.23
B158	161″	2897K15	43.87
B162	165″	2897K16	44.35
B180	183″	2897K18	48.89
B190	193″	2897K36	45.50
B195	198″	2897K19	52.90

Cogged V-Belts

The cogged design (molded-in notches) provides excellent flexibility, which makes these belts perfect for use on small diameter pulleys. Made of EPDM with polyester reinforcing cords, all of these belts are oil and heat resistant. Color is black.

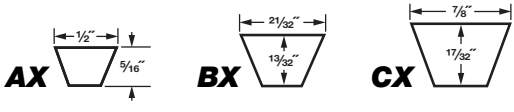

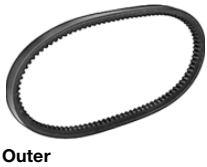

Trade Size	Outer Circle		
AX-Section V-Belts			
AX21	23″	6054K152	$7.71
AX22	24″	6054K101	7.74
AX23	25″	6054K102	8.09
AX24	26″	6054K103	8.27
AX25	27″	6054K153	8.46
AX26	28″	6054K118	8.68
AX27	29″	6054K104	8.84
AX28	30″	6054K105	8.98
AX29	31″	6054K106	9.12
AX30	32″	6054K154	9.23
AX31	33″	6054K119	9.32
AX32	34″	6054K107	9.49
AX33	35″	6054K121	9.65
AX34	36″	6054K122	9.89
AX35	37″	6054K123	9.97
AX36	38″	6054K124	10.16
AX37	39″	6054K125	10.67
AX38	40″	6054K126	10.76
AX39	41″	6054K108	10.91
AX40	42″	6054K109	11.10
AX41	43″	6054K111	11.33
AX42	44″	6054K127	11.44
AX43	45″	6054K128	11.68
AX44	46″	6054K112	11.80
AX45	47″	6054K113	11.91
AX46	48″	6054K129	11.97
AX47	49″	6054K114	12.11
AX48	50″	6054K131	12.28
AX49	51″	6054K115	12.42
AX50	52″	6054K116	12.47
AX51	53″	6054K132	12.66
AX52	54″	6054K161	12.78
AX53	55″	6054K133	12.95
AX54	56″	6054K134	13.15
AX55	57″	6054K135	13.26
AX56	58″	6054K136	13.38
AX57	59″	6054K162	13.51
AX58	60″	6054K163	13.68
AX59	61″	6054K164	13.93
AX60	62″	6054K137	13.98
AX61	63″	6054K165	14.24
AX62	64″	6054K138	14.36
AX63	65″	6054K166	14.56
AX64	66″	6054K139	14.65
AX65	67″	6054K167	14.89
AX66	68″	6054K141	14.96

Trade Size	Outer Circle		
AX-Section V-Belts (Cont.)			
AX67	69″	6054K168	$15.20
AX68	70″	6054K142	15.33
AX69	71″	6054K169	15.66
AX70	72″	6054K143	15.95
AX71	73″	6054K144	16.13
AX72	74″	6054K171	16.33
AX73	75″	6054K172	16.41
AX74	76″	6054K173	16.53
AX75	77″	6054K145	16.65
AX76	78″	6054K174	17.09
AX77	79″	6054K175	17.34
AX78	80″	6054K146	17.41
AX79	81″	6054K176	17.69
AX80	82″	6054K147	18.01
AX81	83″	6054K177	18.19
AX82	84″	6054K178	18.43
AX83	85″	6054K155	18.85
AX85	87″	6054K148	19.30
AX87	89″	6054K181	19.79
AX88	90″	6054K182	19.97
AX90	92″	6054K183	20.60
AX91	93″	6054K184	20.96
AX92	94″	6054K185	21.07
AX93	95″	6054K186	21.34
AX94	96″	6054K158	21.64
AX96	98″	6054K151	21.98
AX98	100″	6054K188	22.42
AX103	105″	6054K189	23.53
AX105	107″	6054K191	23.99
AX110	112″	6054K192	25.86
AX112	114″	6054K193	26.60
AX120	122″	6054K194	28.63
BX-Section V-Belts			
BX24	27″	6057K119	10.95
BX25	28″	6057K177	11.17
BX26	29″	6057K178	11.37
BX27	30″	6057K179	11.57
BX28	31″	6057K111	12.02
BX29	32″	6057K199	13.08
BX30	33″	6057K208	13.24
BX31	34″	6057K112	13.37
BX32	35″	6057K113	13.46
BX33	36″	6057K224	13.63
BX34	37″	6057K114	13.82
BX35	38″	6057K121	14.22

Trade Size	Outer Circle		
BX-Section V-Belts (Cont.)			
BX36	39″	6057K115	$14.69
BX37	40″	6057K116	15.33
BX38	41″	6057K122	15.65
BX39	42″	6057K225	15.98
BX40	43″	6057K117	16.37
BX41	44″	6057K118	16.72
BX42	45″	6057K123	17.05
BX43	46″	6057K181	17.51
BX44	47″	6057K182	17.96
BX45	48″	6057K183	18.30
BX46	49″	6057K124	18.52
BX47	50″	6057K184	18.63
BX48	51″	6057K125	19.08
BX49	52″	6057K185	19.47
BX50	53″	6057K126	19.63
BX51	54″	6057K127	19.93
BX52	55″	6057K128	20.12
BX53	56″	6057K129	20.26
BX54	57″	6057K131	20.54
BX55	58″	6057K132	20.63
BX56	59″	6057K133	20.77
BX57	60″	6057K186	20.85
BX58	61″	6057K187	21.07
BX59	62″	6057K134	21.23
BX60	63″	6057K135	21.37
BX61	64″	6057K136	21.66
BX62	65″	6057K137	21.91
BX63	66″	6057K138	22.20
BX64	67″	6057K139	22.47
BX65	68″	6057K141	22.77
BX66	69″	6057K142	23.05
BX67	70″	6057K143	23.27
BX68	71″	6057K144	23.49
BX69	72″	6057K188	23.84
BX70	73″	6057K145	24.09
BX71	74″	6057K146	24.42
BX72	75″	6057K189	24.78
BX73	76″	6057K191	25.16
BX74	77″	6057K192	25.45
BX75	78″	6057K147	25.62
BX76	79″	6057K193	25.97
BX77	80″	6057K148	26.35
BX78	81″	6057K149	26.68
BX79	82″	6057K151	27.06
BX80	83″	6057K152	27.39
BX81	84″	6057K153	27.80

Trade Size	Outer Circle		
BX-Section V-Belts (Cont.)			
BX82	85″	6057K154	$28.43
BX83	86″	6057K155	28.68
BX84	87″	6057K194	29.03
BX85	88″	6057K156	29.16
BX86	89″	6057K195	29.68
BX87	90″	6057K196	29.86
BX88	91″	6057K197	30.22
BX89	92″	6057K198	30.43
BX90	93″	6057K157	30.59
BX91	94″	6057K201	30.95
BX92	95″	6057K202	31.27
BX93	96″	6057K158	32.03
BX94	97″	6057K203	32.41
BX95	98″	6057K159	32.74
BX96	99″	6057K161	33.08
BX97	100″	6057K162	33.46
BX99	102″	6057K163	33.94
BX100	103″	6057K164	34.17
BX103	106″	6057K165	34.85
BX105	108″	6057K166	35.59
BX106	109″	6057K227	36.29
BX108	111″	6057K204	36.91
BX110	113″	6057K228	37.33
BX112	115″	6057K167	38.42
BX116	119″	6057K169	39.19
BX120	123″	6057K171	40.54
BX124	127″	6057K172	42.00
BX128	131″	6057K207	43.43
BX133	136″	6057K174	45.50
BX136	139″	6057K175	46.39
BX140	143″	6057K209	47.79
BX144	147″	6057K176	49.12
BX150	153″	6057K211	51.73
BX173	176″	6057K214	58.34
CX-Section V-Belts			
CX51	55″	65415K61	30.09
CX68	72″	65415K63	39.88
CX75	79″	65415K64	43.84
CX85	89″	65415K66	47.87
CX90	94″	65415K67	51.65
CX96	100″	65415K68	54.86
CX105	109″	65415K69	58.59
CX112	116″	65415K72	62.28
CX120	124″	65415K74	65.10
CX144	148″	65415K77	77.87

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

V-Belts for Variable-Speed Pulleys

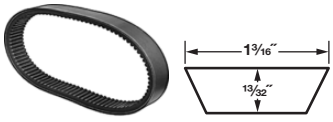

Specially designed to ride up and down the V-groove of variable-speed pulleys, these belts allow precise speed control and a wide range of speed ratios. Use them with variable-speed drives that require 1922V-Type belts. All are neoprene rubber with polyester reinforcing cords. Color is black.

Trade Size	Outer Circle		
1922V256	26.2"	7885K11	$53.43
1922V277	28.4"	7885K12	54.02
1922V298	30.4"	7885K13	55.41
1922V302	30.8"	7885K14	56.10
1922V321	32.7"	7885K15	57.90
1922V338	34.4"	7885K17	59.39
1922V363	36.9"	7885K18	60.80
1922V386	39.2"	7885K19	63.45
1922V403	40.9"	7885K22	64.65
1922V417	42.3"	7885K23	64.88
1922V426	43.2"	7885K24	65.35
1922V443	44.9"	7885K25	66.22
1922V454	46"	7885K26	67.04
1922V484	49"	7885K28	68.96
1922V544	55"	7885K31	71.65
1922V604	61"	7885K32	74.51

Metric V-Belts

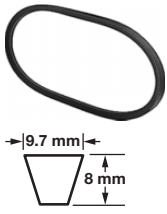

Our metric V-belts replace SPZ-Type belts. Made of extruded rubber with polyester reinforcing cords, all of these belts are oil and heat resistant. Color is black.

Trade Size	Outer Circle, mm		
SPZ612	612	61875K12	$6.14
SPZ762	762	61875K13	6.57
SPZ850	850	61875K14	7.12
SPZ900	900	61875K15	7.76
SPZ925	925	61875K16	7.76
SPZ950	950	61875K17	7.76
SPZ1000	1,000	61875K19	8.41
SPZ1060	1,060	61875K21	8.41
SPZ1120	1,120	61875K22	8.62
SPZ1180	1,180	61875K23	8.62
SPZ1250	1,250	61875K25	8.95

V-Belt Pulleys

All come furnished with a set screw. **To Order:** Please specify bore size from those available below.

Cast Iron—For Type A (4L, A, and AX) and Type B (5L, B, and BX) V-belts. Pulleys have standard ANSI keyways (except for ½" bore sizes, which have no keyways). See page 1174 for ANSI keyway dimensions. ***Nylon***—Have a glass-reinforced nylon body with aluminum hub (except for the 1" OD pulley, which is all nylon). ***Die Cast Zinc***—Pulleys for 4L and 5L V-belts with ⅝" to 1" bore sizes have standard ANSI keyways. See page 1174 for ANSI keyway dimensions.

2.00"-4.45" OD Cast Iron

4.75"-13.95" OD Cast Iron

Nylon

Die Cast Zinc

Cast Iron

OD	Pitch Dia. for Type A V-Belt	Pitch Dia. for Type B V-Belt	(X)	(Y)	Available Bore Sizes		
2.00"	—	1.7"	⅞"	1⅜"	½", ⅝", ¾"	6204K11	$8.86
2.35"	—	2.4"	13/16"	1¼"	½", ⅝", ¾", ⅞", 1"	6204K12	11.79
2.50"	1.7"	2.1"	⅞"	1½"	½", ⅝", ¾", ⅞", 1"	6204K13	10.16
2.55"	1.8"	2.2"	13/16"	1¼"	½", ⅝", ¾"	6204K14	11.29
2.85"	2.1"	2.5"	13/16"	1¼"	½", ⅝", ¾", ⅞", 1⅛"	6204K51	13.34
2.95"	2.2"	2.6"	13/16"	1¼"	½", ⅝", ¾", ⅞"	6204K15	13.41
3.15"	2.4"	2.8"	13/16"	1¼"	½", ⅝", ¾", ⅞"	6204K16	13.78
3.35"	2.6"	3.0"	13/16"	1¼"	½", ⅝", ¾", ⅞"	6204K17	14.96
3.55"	2.8"	3.2"	⅞"	15/16"	½", ⅝", ¾", ⅞", 1", 1⅛"	6204K18	18.37
3.75"	3.0"	3.4"	⅞"	15/16"	½", ⅝", ¾", ⅞", 1", 1⅛"	6204K19	20.04
3.95"	3.2"	3.6"	⅞"	15/16"	½", ⅝", ¾", ⅞", 1", 1⅛"	6204K21	20.90
4.15"	3.4"	3.8"	⅞"	1½"	½", ⅝", ¾", ⅞", 1", 1⅛"	6204K22	17.69
4.25"	3.5"	3.9"	⅞"	15/16"	½", ⅝", ¾", ⅞", 1", 1⅛"	6204K23	21.38
4.45"	3.7"	4.1"	⅞"	15/16"	½", ⅝", ¾", ⅞", 1", 1⅛"	6204K24	23.09
4.75"	4.0"	4.4"	⅞"	15/16"	½", ⅝", ¾", ⅞", 15/16", 1", 1⅛"	6204K25	23.45
4.95"	4.2"	4.6"	⅞"	15/16"	½", ⅝", ¾", ⅞", 1", 1⅛"	6204K26	23.51
5.15"	4.4"	4.8"	⅞"	1⅝"	½", ⅝", ¾", ⅞", 1", 1⅛"	6204K27	20.70
5.25"	4.5"	4.9"	⅞"	15/16"	½", ⅝", ¾", ⅞", 1", 1⅛", 13/16"	6204K28	24.89
5.45"	4.7"	5.1"	⅞"	15/16"	⅝", ¾", ⅞", 15/16", 1", 1⅛"	6204K29	25.97
5.75"	5.0"	5.4"	⅞"	15/16"	½", ⅝", ¾", ⅞", 1", 1⅛", 13/16"	6204K31	26.65
5.95"	5.2"	5.6"	⅞"	15/16"	½", ⅝", ¾", ⅞", 15/16", 1", 1⅛", 13/16"	6204K32	26.87
6.15"	5.4"	5.8"	⅞"	1⅝"	½", ⅝", ¾", ⅞", 1", 1⅛", 13/16"	6204K33	24.98
6.45"	5.7"	6.1"	⅞"	15/16"	⅝", ¾", 1", 1⅛"	6204K35	30.34
6.75"	6.0"	6.4"	⅞"	117/32"	⅝", ¾", 15/16", 1", 1⅛", 13/16", 17/16"	6204K36	39.03
6.95"	6.2"	6.6"	⅞"	117/32"	¾", 1", 1⅛", 1⅜"	6204K37	41.47
7.45"	6.7"	7.1"	⅞"	117/32"	¾", 1", 1⅛", 1⅜", 17/16"	6204K52	37.85
7.75"	7.0"	7.4"	⅞"	117/32"	⅝", ¾", ⅞", 1", 1⅛", 13/16", 1¼", 1⅜", 17/16"	6204K39	43.26
8.75"	8.0"	8.4"	⅞"	117/32"	¾", ⅞", 15/16", 1", 1⅛", 13/16", 1⅜", 17/16"	6204K41	49.74
9.25"	8.5"	8.9"	⅞"	117/32"	¾", 1", 1⅛", 1⅜", 17/16"	6204K53	47.57
9.75"	9.0"	9.4"	⅞"	117/32"	¾", ⅞", 1", 1⅛", 13/16", 1¼", 1⅜", 17/16"	6204K42	55.42
10.25"	9.5"	9.9"	⅞"	117/32"	1", 1⅜", 17/16"	6204K54	53.84
10.75"	10.0"	10.4"	⅞"	117/32"	¾", 1", 1⅛", 13/16", 1⅜", 17/16"	6204K55	56.54
11.75"	11.0"	11.4"	⅞"	117/32"	¾", 1", 13/16", 1⅜", 17/16"	6204K56	60.37
12.75"	12.0"	12.4"	⅞"	117/32"	¾", 1", 1⅛", 13/16", 17/16"	6204K44	76.08
13.95"	13.2"	13.6"	⅞"	1¾"	¾", 1", 1⅛", 13/16", 17/16"	6204K57	72.75

Nylon and Die Cast Zinc—All have a solid design, unless noted.

OD	Pitch Dia.	(X)	(Y)	Available Bore Sizes		
Nylon Pulleys for 2L V-Belts						
1"	0.9"	21/64"	11/16"	5/16"	3060K11	$9.30
1½"	1.4"	27/64"	⅞"	5/16"	3060K12	9.63
2"	1.9"	27/64"	⅞"	¼"	3060K14	9.96
3"	2.9"	27/64"	⅞"	5/16"	3060K17	16.16
5"	4.9"	27/64"	⅞"	½"	3060K19	18.14
6"	5.9"	27/64"	⅞"	¼"	3060K21	19.20
Die Cast Zinc Pulleys for 3L V-Belts						
1"	29/32"	½"	⅞"	5/16", ⅜"	6245K112	4.58
2"	129/32"	½"	1"	¼", 5/16", ⅜", ½", ⅝"	6245K114	5.88
2½"	213/32"	½"	1"	⅜", ½", ⅝"	6245K115	7.28
3"	229/32"	½"	1"	⅜", ½", ⅝"	6245K116	7.50
3½"	313/32"	½"	1"	⅜", ½", ⅝"	6245K117	10.43
4"	329/32"	½"	1"	⅜", ½", ⅝"	6245K118	10.60
Die Cast Zinc Pulleys for 4L, A, and AX-Section V-Belts						
1½"	1¼"	⅝"	1⅛"	⅜", ½"	6245K6	3.79
1¾"	1½"	⅝"	15/32"	⅜", ½", ⅝", ¾"	6245K61	3.87
2"	1¾"	9/16"	111/16"	⅜", ½", ⅝", ¾"	6245K62	3.92
2¼"	2"	⅝"	13/16"	⅜", ½", ⅝", ¾"	6245K63	4.59
Die Cast Zinc Pulleys for 4L, A, and AX-Section V-Belts (Cont.)						
2½"	2¼"	⅝"	13/16"	⅜", ½", ⅝", ¾"	6245K64	$5.38
2¾"	2½"	¾"	1¼"	⅜", ½", ⅝", ¾"	6245K65	5.66
3"	2¾"	⅝"	13/16"	½", ⅝", ¾"	6245K66	5.81
3¼"	3"	⅝"	13/16"	½", ⅝", ¾"	6245K67	7.35
3½"	3¼"	¾"	1¼"	½", ⅝", ¾"	6245K68	7.59
4"	3¾"	¾"	1¼"	½", ⅝", ¾"	6245K69	8.10
4½"	4¼"	¾"	1¼"	½", ⅝", ¾"	6245K71	9.58
5"	4¾"	¾"	1¼"	½", ⅝", ¾", 1"	6245K72♣	10.52
5½"	5¼"	⅝"	1½"	½", ⅝", ¾", 1"	6245K93●	11.75
6"	5¾"	¾"	1⅜"	½", ⅝", ¾", 1"	6245K73●	11.96
7"	6¾"	½"	1½"	½", ⅝", ¾", 1"	6245K74●	13.90
8"	7¾"	¾"	1⅜"	½", ⅝", ¾", 1"	6245K75●	14.92
9"	8¾"	¾"	15/16"	½", ⅝", ¾", 1"	6245K94●	23.96
10"	9¾"	¾"	15/16"	½", ⅝", ¾", 1"	6245K95●	27.57
Die Cast Zinc Pulleys for 5L, B, and BX-Section V-Belts						
2"	1½"	13/16"	15/16"	½", ⅝"	6245K81	7.12
2½"	2"	¾"	1¼"	½", ⅝", ¾"	6245K83	8.60

♣ 1" bore size has spoked design. ● All sizes have spoked design.

McMASTER-CARR®

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

Variable-Pitch and Constant-Tension Finished-Bore V-Belt Pulleys

All of these pulleys include set screws and have standard ANSI keyways (except for 1/2″ bore sizes, which have no keyways). See page 1174 for ANSI keyway dimensions. Pulleys are made of cast iron. **To Order:** Please specify bore size from those available below.

Variable Pitch

You can adjust the pitch of these pulleys to improve the surface contact with your V-belts for more efficient driving and longer life. Adjustments are easy—simply move the sides of the pulleys together and apart on the threaded hub.

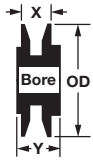

	PITCH DIAMETER FOR											
	3L V-Belts		A and AX V-Belts		B and BX V-Belts		(X)					
OD	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	(Y)	Available Bore Sizes		
3.15″	1.7″	2.5″	1.9″	2.9″	2.4″	3.2″	21/32″	1″	17/8″	1/2″, 5/8″, 3/4″, 7/8″	6205K51	$30.24
3.75″	2.3″	3.1″	2.4″	3.4″	2.7″	3.7″	21/32″	11/32″	17/8″	1/2″, 5/8″, 3/4″, 7/8″	6205K52	29.39
3.75″	2.7″	3.5″	2.9″	3.9″	3.0″	4.0″	11/16″	11/16″	13/4″	1″	6205K125	28.26
4.15″	2.7″	3.5″	2.8″	3.8″	3.1″	4.1″	21/32″	11/32″	17/8″	1/2″, 5/8″, 3/4″	6205K53	33.04
4.15″	2.7″	3.5″	2.8″	3.8″	3.1″	4.1″	3/4″	11/16″	25/32″	7/8″, 1″, 11/8″	6205K54	48.26
4.75″	3.3″	4.1″	3.4″	4.4″	3.7″	4.7″	11/16″	11/16″	115/16″	1/2″, 5/8″, 3/4″	6205K55	38.95
4.75″	3.3″	4.1″	3.4″	4.4″	3.7″	4.7″	3/4″	11/8″	25/32″	7/8″, 1″, 11/8″	6205K56	62.60
5.35″	3.9″	4.7″	4.0″	5.0″	4.3″	5.3″	3/4″	11/8″	25/32″	7/8″, 1″, 11/8″	6205K57	84.29
6.50″	—	—	4.7″	5.7″	4.8″	6.0″	7/8″	11/4″	27/32″	3/4″, 7/8″, 11/8″	6205K58	99.74

Constant Tension

A built-in spring automatically maintains constant belt tension. Pulleys accommodate Type A (4L, A, and AX) and Type B (5L, B, and BX) V-belts, unless noted. Made of cast iron with a nylon bushing.

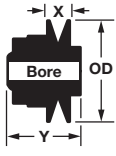

OD	Min. Pitch Dia.	Max. Pitch Dia.	(X)	(Y)	Available Bore Sizes		
3 1/4″	1.91″	3.15″	11/16″	23/8″	1/2″, 5/8″, 3/4″	6568K1	$67.03
4″	1.95″	3.90″	11/16″	27/16″	1/2″, 5/8″, 3/4″	6568K2	92.23
5″	2.37″	4.84″	15/16″	35/8″	5/8″, 3/4″, 7/8″, 1″	6568K3	132.90
6″	2.67″	5.84″	15/16″	37/8″	5/8″, 3/4″, 7/8″, 1″	6568K4●	184.45

● For use with Type B V-belts only.

Step-Cone V-Belt Pulleys

With multiple steps on each pulley, you can change your speed by moving your belt to a different step. Use these pulleys with Type A (4L and A) V-belts on fractional-horsepower (less than 1 hp) motors. They include set screws and have standard ANSI keyways (except for 1/2″ bore sizes, which have no keyways). See page 1174 for ANSI keyway dimensions. Pulleys are made of die cast zinc. **To Order:** Please specify bore size: 1/2″, 5/8″, or 3/4″.

3 Step (5/8″ and 3/4″ Bore Sizes)

	OD				Pitch Dia.						
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4	(X)		
3-Step Pulleys											
	1 3/4″	2 1/4″	2 3/4″	—	1 1/2″	2″	2 1/2″	—	1 3/4″	6213K71	$12.35
	2″	3″	4″	—	1 3/4″	2 3/4″	3 3/4″	—	1 7/8″	6213K73	17.55
	3″	3 1/2″	4″	—	2 3/4″	3 1/4″	3 3/4″	—	1 3/4″	6213K74	24.33
4-Step Pulleys											
	1 3/4″	2 1/4″	2 3/4″	3 1/4″	1 1/2″	2″	2 1/2″	3″	2 5/16″	6213K75	17.29
	2″	2 1/2″	3 1/2″	4″	1 3/4″	2 1/4″	3 1/4″	3 3/4″	2 1/2″	6213K76	17.94
	3″	3 1/2″	4″	4 1/2″	2 3/4″	3 1/4″	3 3/4″	4 1/4″	2 5/16″	6213K78	26.63

QD Bushing-Bore V-Belt Pulleys

For fast installation and removal, use these pulleys with quick-disconnect (QD) bushings (sold separately, see page 1045).

Pulleys are solid, except for those marked with a ♦, which have a spoked design. All are made of cast iron.

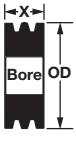

Single Groove

Two Groove, Spoked Design

Three Groove

Single-, Two-, and Three-Groove Pulleys for Type A (4L, A, and AX) and Type B (5L, B, and BX) V-Belts

	Pitch Dia. for		Single-Groove Pulleys				Two-Groove Pulleys				Three-Groove Pulleys			
OD	Type A V-Belt	Type B V-Belt	(X)	Bushing Style			(X)	Bushing Style			(X)	Bushing Style		
3.75″	3.0″	3.4″	7/8″	SH	6209K201	$18.56	1 3/4″	SH	6209K111	$27.13	2 1/2″	SH	6209K137	$31.42
3.95″	3.2″	3.6″	7/8″	SH	6209K202	19.27	1 3/4″	SH	6209K112	28.57	2 1/2″	SH	6209K138	32.85
4.15″	3.4″	3.8″	7/8″	SH	6209K203	19.99	1 3/4″	SH	6209K113	29.99	2 1/2″	SH	6209K139	33.06
4.55″	3.8″	4.2″	7/8″	SH	6209K205	21.42	1 3/4″	SH	6209K115	31.69	2 1/2″	SH	6209K142	35.82
4.75″	4.0″	4.4″	7/8″	SH	6209K206	22.12	1 3/4″	SH	6209K116	33.06	2 1/2″	SH	6209K143	37.20
4.95″	4.2″	4.6″	7/8″	SDS	6209K207	22.84	1 3/4″	SDS	6209K117	34.44	2 1/2″	SD	6209K144	38.57
5.15″	4.4″	4.8″	7/8″	SDS	6209K208	23.56	1 3/4″	SDS	6209K118	29.81	2 1/2″	SD	6209K145	39.96
5.35″	4.6″	5.0″	7/8″	SDS	6209K209	24.28	1 3/4″	SDS	6209K119	40.44	2 1/2″	SD	6209K146	41.33
5.75″	5.0″	5.4″	7/8″	SDS	6209K212	25.69	1 3/4″	SDS	6209K122	39.96	2 1/2″	SD	6209K148	44.09
6.15″	5.4″	5.8″	7/8″	SDS	6209K214	27.13	1 3/4″	SDS	6209K124	42.71	2 1/2″	SD	6209K151	46.85
6.35″	5.6″	6.0″	7/8″	SDS	6209K215	28.57	1 3/4″	SDS	6209K125	44.09	2 1/2″	SD	6209K152	48.23
6.55″	5.8″	6.2″	7/8″	SDS	6209K216	29.99	1 3/4″	SDS	6209K126	45.47	2 1/2″	SD	6209K153	49.59
6.75″	6.0″	6.4″	7/8″	SDS	6209K217	31.42	1 3/4″	SDS	6209K127	46.85	2 1/2″	SD	6209K154	52.36
7.15″	6.4″	6.8″	7/8″	SDS	6209K219	35.70	1 3/4″	SDS	6209K129	48.23	2 1/2″	SD	6209K156	55.11
7.75″	6.8″	7.4″	1″	SDS	6209K222♦	39.98	1 3/4″	SK	6209K131	50.29	2 1/2″	SK	6209K157	57.87
8.35″	7.6″	8.0″	1″	SDS	6209K223♦	41.42	1 3/4″	SK	6209K134	50.96	2 1/2″	SK	6209K161	60.61
8.95″	8.2″	8.6″	1″	SDS	6209K224♦	44.26	1 3/4″	SK	6209K132♦	52.36	2 1/2″	SK	6209K158♦	66.14
9.75″	9.0″	9.4″	1″	SDS	6209K225♦	45.70	1 3/4″	SK	6209K133♦	53.74	2 1/2″	SK	6209K159♦	71.65
11.35″	10.6″	11.0″	1″	SDS	6209K226♦	54.25	1 3/4″	SK	6209K135♦	63.37	2 1/2″	SK	6209K162♦	85.41

Single-Groove Pulleys for C- and CX-Section V-Belts

OD	Pitch Dia.	(X)	Bushing Style			OD	Pitch Dia.	(X)	Bushing Style		
9.9″	9.9″	1 3/8″	SF	1366K6	$163.39	10.9″	10.9″	1 3/8″	SF	1366K8	$182.60

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

UHMW Plain-Bore V-Belt Pulleys

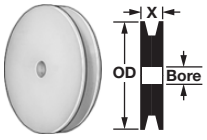

Great for harsh, wet, and sanitary environments, these ultra-high molecular weight (UHMW) polyethylene pulleys are USDA approved and FDA compliant. They resist abrasion, corrosion, and chemicals, plus the nonstick surface resists buildup and does not need lubrication.

OD	Pitch Dia.	(X)	Bore Size		
For 4L, A, and AX V-Belts					
1.75″	1.50″	3/4″	1/4″	6274K11	$6.17
2.05″	1.80″	3/4″	1/4″	6274K12	7.87
2.25″	2.00″	3/4″	1/4″	6274K14	6.01
2.55″	2.30″	3/4″	1/4″	6274K16	9.95
3.05″	2.80″	3/4″	1/4″	6274K21	12.54
4.05″	3.80″	3/4″	1/2″	6274K26	20.73
4.45″	4.20″	3/4″	1/2″	6274K28	16.25
5.05″	4.80″	3/4″	1/2″	6274K32	30.73
5.45″	5.20″	3/4″	1/2″	6274K34	23.17
6.05″	5.80″	3/4″	1/2″	6274K37	40.38

OD	Pitch Dia.	(X)	Bore Size		
For 4L, A, and AX V-Belts (Cont.)					
7.25″	7.00″	3/4″	1/2″	6274K42	$49.32
8.45″	8.20″	3/4″	1/2″	6274K43	64.00
For 5L, B, and BX V-Belts					
3.75″	3.40″	1″	1/2″	6274K51	21.06
4.15″	3.80″	1″	1/2″	6274K53	29.19
4.75″	4.40″	1″	1/2″	6274K55	32.65
5.15″	4.80″	1″	1/2″	6274K57	38.99
5.75″	5.40″	1″	1/2″	6274K59	44.61
6.15″	5.80″	1″	1/2″	6274K61	69.03

High-Capacity Narrow Wedge V-Belts and Pulleys

V-Belts

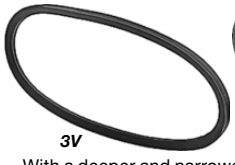
3V

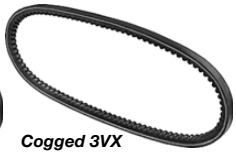
Cogged 3VX

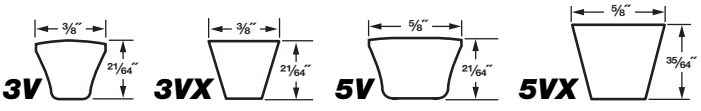

With a deeper and narrower profile than standard V-belts, these belts offer higher horsepower capacity within the same amount of drive space. They ride deeper in the pulleys, resulting in more surface contact. Color is black.

3V and ***5V Belts—***Made of rubber with polyester cords.

Cogged 3VX and ***5VX Belts—***The cogged design (molded-in notches) provides the flexibility and heat dissipation needed for small-diameter pulleys. Belts are made of EPDM with polyester cords, unless noted.

Trade Size	Outer Circle		
3V-Section Belts			
3V250	25″	6230K11	$10.09
3V265	26.5″	6230K12	10.36
3V280	28″	6230K13	10.60
3V300	30″	6230K14	10.86
3V315	31.5″	6230K15	11.39
3V335	33.5″	6230K16	11.64
3V355	35.5″	6230K17	12.16
3V375	37.5″	6230K18	12.43
3V400	40″	6230K19	13.20
3V425	42.5″	6230K21	13.70
3V450	45″	6230K22	14.25
3V475	47.5″	6230K23	14.75
3V500	50″	6230K24	15.00
3V530	53″	6230K25	15.53
3V560	56″	6230K26	16.05
3V600	60″	6230K27	16.79
3V630	63″	6230K28	17.31
3V670	67″	6230K29	18.11
3V710	71″	6230K31	19.14
3V750	75″	6230K32	20.18
3V800	80″	6230K33	21.50
3V850	85″	6230K34	23.02
3V900	90″	6230K35	24.82
3V950	95″	6230K36	26.13
3V1000	100″	6230K37	27.69
3V1060	106″	6230K38	29.26
3V1120	112″	6230K39	31.82
3V1180	118″	6230K41	33.88
3V1250	125″	6230K42	36.23
3V1320	132″	6230K43	38.30
3V1400	140″	6230K44	40.61
Cogged 3VX-Section Belts			
3VX250	25″	65355K11	10.03
3VX265	26.5″	65355K12	10.29
3VX280	28″	65355K13	10.50
3VX300	30″	65355K14	10.77
3VX315	31.5″	65355K15	11.30
3VX335	33.5″	65355K16	11.55

Trade Size	Outer Circle		
Cogged 3VX-Section Belts (Cont.)			
3VX355	35.5″	65355K17	$12.05
3VX375	37.5″	65355K18	12.33
3VX400	40″	65355K19	13.08
3VX425	42.5″	65355K21	13.64
3VX450	45″	65355K22	14.14
3VX475	47.5″	65355K23	14.60
3VX500	50″	65355K24	14.87
3VX530	53″	65355K25	15.40
3VX560	56″	65355K26	15.92
3VX600	60″	65355K27	16.66
3VX630	63″	65355K28	17.19
3VX670	67″	65355K29	17.98
3VX710	71″	65355K31	19.03
3VX750	75″	65355K32	20.00
3VX800	80″	65355K33	21.32
3VX850	85″	65355K34	22.88
3VX900	90″	65355K35	24.64
3VX950	95″	65355K36	25.90
3VX1000	100″	65355K37	27.45
3VX1060	106″	65355K38	29.02
3VX1120	112″	65355K39	31.59
3VX1180	118″	65355K41	33.60
3VX1250	125″	65355K42★	39.34
3VX1320	132″	65355K43★	41.60
3VX1400	140″	65355K44★	44.13
3VX1500	150″	65355K45★	47.24
5V-Section Belts			
5V500	50″	65285K21	35.83
5V560	56″	65285K22	39.02
5V600	60″	65285K68	43.62
5V630	63″	65285K23	44.27
5V670	67″	65285K24	47.21
5V710	71″	65285K25	49.74
5V750	75″	65285K26	53.02
5V800	80″	65285K27	56.47
5V850	85″	65285K28	60.87
5V900	90″	65285K29	63.16
5V950	95″	65285K31	67.89

Trade Size	Outer Circle		
5V-Section Belts (Cont.)			
5V1000	100″	65285K32	$68.24
5V1060	106″	65285K33	76.05
5V1120	112″	65285K34	80.34
5V1180	118″	65285K35	84.73
5V1250	125″	65285K36	90.00
5V1320	132″	65285K37	94.96
5V1400	140″	65285K38	99.74
5V1500	150″	65285K39	107.72
5V1600	160″	65285K41	115.01
5V1700	170″	65285K42	122.33
5V1800	180″	65285K43	129.91
5V1900	190″	65285K44	137.50
5V2000	200″	65285K45	146.46
5V2120	212″	65285K46	154.05
5V2240	224″	65285K47	163.07
5V2360	236″	65285K48	171.20
5V2500	250″	65285K49	181.43
5V2650	265″	65285K51	192.79
5V2800	280″	65285K52	203.25
5V3000	300″	65285K53	217.55
5V3150	315″	65285K54	228.32
5V3350	335″	65285K55	242.90
5V3550	355″	65285K56	257.48
Cogged 5VX-Section Belts			
5VX450	45″	65355K511	28.39
5VX470	47″	65355K512	29.70
5VX490	49″	65355K513	30.96
5VX500	50″	65355K514	31.59
5VX510	51″	65355K515	31.62
5VX530	53″	65355K516	32.88
5VX540	54″	65355K517	33.48
5VX550	55″	65355K518	34.08
5VX560	56″	65355K519	34.41
5VX570	57″	65355K521	35.02
5VX580	58″	65355K522	35.66
5VX590	59″	65355K523	36.21
5VX600	60″	65355K524	37.21
5VX610	61″	65355K525	37.85
5VX630	63″	65355K526	38.97

Trade Size	Outer Circle		
Cogged 5VX-Section Belts (Cont.)			
5VX650	65″	65355K527	$40.32
5VX660	66″	65355K528	40.95
5VX670	67″	65355K529	41.61
5VX680	68″	65355K531	42.14
5VX690	69″	65355K532	42.87
5VX710	71″	65355K533	44.13
5VX730	73″	65355K534	45.48
5VX740	74″	65355K535	46.08
5VX750	75″	65355K536	46.67
5VX780	78″	65355K537	48.59
5VX800	80″	65355K538	49.80
5VX810	81″	65355K539	50.41
5VX830	83″	65355K541	51.68
5VX840	84″	65355K542	52.30
5VX850	85″	65355K543	53.65
5VX860	86″	65355K544	54.24
5VX880	88″	65355K545	55.57
5VX900	90″	65355K546	55.65
5VX930	93″	65355K547	58.57
5VX950	95″	65355K548	59.84
5VX960	96″	65355K549	60.46
5VX1000	100″	65355K551	63.10
5VX1030	103″	65355K552	65.07
5VX1060	106″	65355K553	66.98
5VX1080	108″	65355K554	68.27
5VX1120	112″	65355K555	70.85
5VX1150	115″	65355K556	72.75
5VX1180	118″	65355K557	74.71
5VX1230	123″	65355K558	77.81
5VX1250	125″	65355K559	79.31
5VX1320	132″	65355K561	83.68
5VX1400	140″	65355K562	88.31
5VX1500	150″	65355K563	94.94
5VX1600	160″	65355K564	101.40
5VX1700	170″	65355K565	107.78
5VX1800	180″	65355K566	114.50
5VX1900	190″	65355K567	121.19
5VX2000	200″	65355K568	127.76

★ Made of rubber with polyester cords.

Pulleys

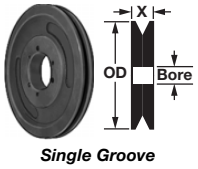

Single Groove

Use these narrow pulleys with the V-belts above. All are made of cast iron with a bushing bore. For fast installation and removal, use quick-disconnect (QD) or screw-clamp bushings (see pages 1045 and 1046).

OD	(X)	Bore	Bushing Style		
Single-Groove 3V and 3VX Pulleys					
3.35″	11/16″	1.38″	JA	9615K11	$26.60
3.65″	11/16″	1.87″	SH	9615K12	27.82
4.12″	11/16″	1.87″	SH	9615K13	29.03
5.00″	11/16″	1.87″	SH	9615K14	34.28
Two-Groove 3V and 3VX Pulleys					
3.35″	13/32″	1.87″	SH	9615K17	35.47
3.65″	13/32″	1.87″	SH	9615K18	36.68

OD	(X)	Bore	Bushing Style		
Two-Groove 3V and 3VX Pulleys (Cont.)					
4.12″	13/32″	1.87″	SH	9615K19	$40.32
5.00″	13/32″	1.87″	SH	9615K21	52.41
Two-Groove 5V and 5VX Pulleys					
7.10″	111/16″	2.81″	SK	9615K51	120.95
7.50″	111/16″	2.81″	SK	9615K52	122.94
8.00″	111/16″	2.81″	SK	9615K53	124.96
9.00″	111/16″	2.81″	SK	9615K54	137.05

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

Nylon V-Belt Idler Pulleys

These free-wheeling pulleys are perfect for high-speed idler and tensioner applications. All are made of glass-reinforced nylon for high strength and corrosion resistance. They have chrome-alloy steel bearings with a synthetic rubber seal.

For V-Belt Type	OD	(X)	3/8″ Bore		1/2″ Bore	
4L, A, AX	3.00″	0.70″	6234K43	$9.51	6234K53	$9.51
4L, A, AX	4.00″	0.70″	6234K45	10.06	6234K55	10.06
5L, B, BX	3.10″	0.78″	6234K44	9.52	6234K54	9.52
5L, B, BX	4.00″	0.86″	6234K46	10.07	6234K56	10.07
5L, B, BX	5.04″	0.80″	6234K47	11.17	6234K57	11.17

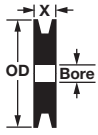

Ultra-Flex J-Section V-Belts and Pulleys

With their thin profile and ribbed surface (0.14″ Thick.×0.092″ Wd. ribs), you'll get extreme flexibility as well as the gripping power of multiple V-belts in one belt. These belts also provide more surface contact with pulleys for a greater power capacity than standard V-belts—they can handle speed ratios up to 40:1. All are made of neoprene with polyester reinforcing cords. Color is black.

Pulleys—For use with belts (or multiple belts) that have the same or fewer number of ribs to pulley grooves. Made of cast iron, pulleys are solid. For fast installation and removal, use quick-disconnect (QD) or screw-clamp bushings (see pages 1045 and 1046).

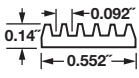

Belt with 6 Ribs

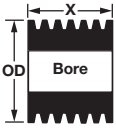

6-Groove Pulley

J-Section V-Belts

Outer Circle	4 Ribs—0.368″ O'all Wd. Trade Size			6 Ribs—0.552″ O'all Wd. Trade Size			8 Ribs—0.736″ O'all Wd. Trade Size			10 Ribs—0.920″ O'all Wd. Trade Size		
18.5″	180J4	9003K41	$9.14	180J6	9003K72	$13.74	180J8	9003K85	$18.31	180J10	9003K101	$22.85
19.5″	190J4	9003K42	9.14	190J6	9003K73	13.74	190J8	9003K86	18.31	190J10	9003K102	22.57
20.5″	200J4	9003K43	9.14	200J6	9003K11	13.73	200J8	9003K87	18.31	200J10	9003K103	22.85
22.5″	220J4	9003K44	9.14	220J6	9003K12	13.73	220J8	9003K28	18.31	220J10	9003K104	22.85
24.5″	240J4	9003K45	9.14	240J6	9003K13	13.73	240J8	9003K88	18.31	240J10	9003K105	22.85
26.5″	260J4	9003K46	9.29	260J6	9003K14	14.27	260J8	9003K89	19.03	260J10	9003K106	23.19
28.5″	280J4	9003K47	9.53	280J6	9003K15	14.27	280J8	9003K91	19.03	280J10	9003K107	23.79
30.5″	300J4	9003K48	9.62	300J6	9003K16	14.40	300J8	9003K29	19.22	300J10	9003K108	24.02
32.5″	320J4	9003K49	9.95	320J6	9003K17	14.90	320J8	9003K92	19.88	320J10	9003K109	24.83
34.5″	340J4	9003K51	10.07	340J6	9003K18	15.14	340J8	9003K93	19.48	340J10	9003K111	25.22
36.5″	360J4	9003K52	10.07	360J6	9003K19	15.14	360J8	9003K94	20.16	360J10	9003K33	25.22
38.5″	380J4	9003K53	10.16	380J6	9003K21	15.29	380J8	9003K95	20.35	380J10	9003K112	25.10
39.5″	390J4	9003K54	10.05	390J6	9003K74	14.79	390J8	9003K96	19.72	390J10	9003K113	25.72
40.5″	400J4	9003K55	10.15	400J6	9003K75	15.59	400J8	9003K97	20.79	400J10	9003K114	25.99
41.5″	410J4	9003K56	10.21	410J6	9003K22	15.60	410J8	9003K98	20.48	410J10	9003K115	25.57
42.5″	420J4	9003K57	10.59	420J6	9003K76	15.88	420J8	9003K99	20.21	420J10	9003K116	26.50
43.5″	430J4	9003K58	10.65	430J6	9003K23	15.97	430J8	9003K31	21.31	430J10	9003K34	26.62
44.5″	440J4	9003K59	10.50	440J6	9003K77	15.72	440J8	9003K39	20.55	440J10	9003K117	25.70
46.5″	460J4	9003K61	10.88	460J6	9003K24	16.31	460J8	9003K32	21.77	460J10	9003K35	27.17
48.5″	480J4	9003K62	10.98	480J6	9003K25	16.45	480J8	9003K1	21.90	480J10	9003K118	27.46
49.5″	490J4	9003K63	10.97	490J6	9003K26	16.46	490J8	9003K2	21.93	490J10	9003K119	27.45
52.5″	520J4	9003K64	11.68	520J6	9003K27	17.55	520J8	9003K3	23.40	520J10	9003K121	29.22
55.5″	550J4	9003K65	12.05	550J6	9003K78	18.02	550J8	9003K4	24.02	550J10	9003K122	30.05
58.5″	580J4	9003K66	12.39	580J6	9003K79	18.95	580J8	9003K5	25.26	580J10	9003K123	31.60
61.5″	610J4	9003K67	13.09	610J6	9003K81	19.29	610J8	9003K6	26.16	610J10	9003K124	32.76
65.5″	650J4	9003K68	13.53	650J6	9003K82	20.28	650J8	9003K7	27.05	650J10	9003K36	33.81
73.5″	730J4	9003K69	15.19	730J6	9003K83	22.76	730J8	9003K8	30.33	730J10	9003K37	37.95
78.5″	780J4	9003K71	15.13	780J6	9003K84	22.64	780J8	9003K9	30.20	780J10	9003K38	37.75

Pulleys for J-Section V-Belts

OD	Pitch Dia.	6 Groove Bore	(X)	Bushing Style			10 Groove Bore	(X)	Bushing Style			16 Groove Bore	(X)	Bushing Style		
2.5″	2.53″	1.38″	11/16″	JA	1405K11	$42.67	1.38″	1 3/32″	JA	1405K31	$55.32	1.38″	1 21/32″	JA	1405K51	$83.44
3″	3.03″	1.38″	11/16″	JA	1405K12	47.00	1.38″	1 3/32″	JA	1405K32	66.89	1.87″	1 21/32″	SH	1405K52	91.30
4.5″	4.53″	1.87″	11/16″	SH	1405K13	56.77	1.87″	1 3/32″	SH	1405K33	78.83	1.87″	1 21/32″	SH	1405K53	103.05
6″	6.03″	1.87″	11/16″	SH	1405K14	76.29	1.87″	1 3/32″	SH	1405K34	101.24	1.87″	1 21/32″	SH	1405K54	129.80
8″	8.03″	1.87″	11/16″	SH	1405K15	112.08	1.87″	1 3/32″	SH	1405K35	157.64	2.81″	1 21/32″	SK	1405K55	206.81

MXL, XL, L, H, and AT10 Series Belting and End Plates

A trapezoidal-tooth profile makes this belting perfect for rack-and-pinion, gear-type linear motion applications. For pulleys, see pages 1062 and 1063. **To Order:** For belting, please specify length.

Urethane Belting—This nonmarking belting runs cleaner than neoprene belting. It has Kevlar reinforcing cords, except for the AT10 trade size, which has steel cords. Color is white. ***Neoprene Belting***—Runs quieter than urethane belting. It has fiberglass reinforcing cords. Color is black. ***End Plates***—For mounting one or both ends of belting to a flat surface. Made of aluminum with four 6.5 mm dia. mounting holes (fasteners not included).

Trade Size	Pitch	Wd.	Urethane Belting	Per Ft.	Neoprene Belting	Per Ft.	End Plates Lg.×Wd.		Each
MXL	0.080″	1/4″	____	____	7959K21	$1.97	____	____	____
MXL	0.080″	3/8″	____	____	7959K22	2.71	____	____	____
MXL	0.080″	1/2″	____	____	7959K23	3.96	____	____	____
XL	0.200″	1/4″	____	____	7959K24	2.01	4.72″×1.97″	2553K95	$54.56
XL	0.200″	3/8″	1840K1	$2.43	7959K25	2.71	4.72″×1.97″	2553K95	54.56
XL	0.200″	1/2″	1840K2	2.98	____	____	4.72″×1.97″	2553K95	54.56
L	3/8″	1/2″	1840K3	3.51	7959K26	4.26	6.30″×1.97″	2553K91	61.19
L	3/8″	3/4″	1840K4	5.34	7959K27	5.76	6.30″×1.97″	2553K91	61.19
L	3/8″	1″	____	____	7959K28	8.62	6.30″×1.97″	2553K91	61.19
H	1/2″	3/4″	1840K5	5.60	7959K29	6.76	6.30″×1.97″	2553K92	61.19
H	1/2″	1″	1840K6	7.00	7959K3	8.89	6.30″×1.97″	2553K92	61.19
H	1/2″	1 1/2″	____	____	7959K31	13.21	6.30″×2.36″	2553K93	63.80
H	1/2″	2″	____	____	7959K32	17.62	6.30″×2.95″	2553K94	67.81
AT10	10 mm	25 mm	2553K4	17.27	____	____	6.30″×1.97″	2553K82	61.19

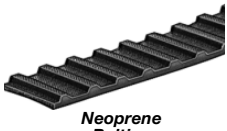

Neoprene Belting

End Plate

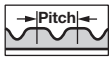

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

MXL, XL, L, and H Series Timing Belts

Belts

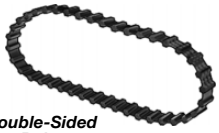

Double-Sided Belts

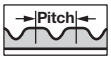

These trapezoidal-tooth belts mate with grooves in timing-belt pulleys. For use in a fully synchronized drive system. Color is black, unless otherwise indicated.

Urethane—These nonmarking belts run cleaner and are more chemical resistant than neoprene. ***Neoprene***—Run quieter than urethane. ***High-Temp. Silicone***—Withstand corrosion, chemicals, and temperatures up to 400° F. ***Double-Sided Neoprene***—Have teeth on both sides of the belt so you can snake them around several pulleys in a multiple-pulley system.

MXL (Miniature Extra Light) Belts—0.080″ Pitch

Trade Size	Outer Circle	No. of Teeth	1/8″ Wide		3/16″ Wide		1/4″ Wide	
Urethane—*Reinforcing cords are Kevlar.*								
35MXL	2.8″	35	1679K161	$1.54	1679K162	$2.33	1679K163	$3.09
40MXL	3.2″	40	1679K164	1.56	1679K165	2.35	1679K166	3.11
45MXL	3.6″	45	1679K167	1.59	1679K168	2.37	1679K169	3.13
50MXL	4.0″	50	1679K61	1.19	1679K62	1.79	1679K63	2.41
60MXL	4.8″	60	1679K64	1.21	1679K65	1.81	1679K66	2.43
65MXL	5.2″	65	1679K67	1.21	1679K68	1.81	1679K69	2.43
71MXL	5.6″	70	1679K71	1.21	1679K72	1.81	1679K73	2.43
75MXL	6.0″	75	1679K74	1.24	1679K75	1.83	1679K76	2.45
80MXL	6.4″	80	1679K77	1.24	1679K78	1.83	1679K79	2.45
85MXL	6.8″	85	1679K81	1.26	1679K82	1.87	1679K83	2.49
90MXL	7.2″	90	1679K84	1.26	1679K85	1.87	1679K86	2.49
95MXL	7.6″	95	1679K171	1.28	1679K172	1.91	1679K173	2.55
100MXL	8.0″	100	1679K87	1.28	1679K88	1.91	1679K89	2.55
103MXL	8.2″	103	1679K91	1.28	1679K92	1.91	1679K93	2.55
110MXL	8.8″	110	1679K94	1.28	1679K95	1.91	1679K96	2.55
112MXL	9.0″	112	1679K97	1.30	1679K98	1.94	1679K99	2.57
114MXL	9.1″	114	1679K611	1.30	1679K612	1.94	1679K613	2.55
120MXL	9.6″	120	1679K614	1.30	1679K615	1.94	1679K616	2.57
125MXL	10.0″	125	1679K617	1.30	1679K618	1.94	1679K619	2.57
130MXL	10.4″	130	1679K621	1.32	1679K622	1.96	1679K623	2.59
135MXL	10.8″	135	1679K624	1.34	1679K625	1.98	1679K626	2.61
140MXL	11.2″	140	1679K627	1.34	1679K628	1.98	1679K629	2.61
144MXL	11.5″	144	1679K631	1.34	1679K632	1.98	1679K633	2.61
150MXL	12.0″	150	1679K634	1.34	1679K635	1.98	1679K636	2.61
155MXL	12.4″	155	1679K637	1.34	1679K638	1.98	1679K639	2.61
160MXL	12.8″	160	1679K641	1.36	1679K642	2.00	1679K643	2.72
165MXL	13.2″	165	1679K644	1.36	1679K645	2.00	1679K646	2.72
170MXL	13.6″	170	1679K647	1.38	1679K648	2.08	1679K649	2.78
180MXL	14.4″	180	1679K651	1.38	1679K652	2.08	1679K653	2.78
190MXL	15.2″	190	1679K654	1.44	1679K655	2.16	1679K656	2.88
215MXL	17.2″	215	1679K657	1.44	1679K658	2.16	1679K659	2.88
220MXL	17.6″	220	1679K661	2.24	1679K662	3.36	1679K663	4.49
225MXL	18.0″	225	1679K664	2.24	1679K665	3.36	1679K666	4.49
235MXL	18.8″	235	1679K174	2.57	1679K175	3.89	1679K176	5.21

Trade Size	Outer Circle	No. of Teeth	1/8″ Wide		3/16″ Wide		1/4″ Wide	
Urethane (Cont.)—*Reinforcing cords are Kevlar.*								
240MXL	19.2″	240	1679K667	$2.61	1679K668	$3.93	1679K669	$5.25
265MXL	21.2″	265	1679K177	2.68	1679K178	4.04	1679K179	5.41
280MXL	22.4″	280	1679K671	2.72	1679K672	4.08	1679K673	5.46
320MXL	25.6″	320	1679K674	2.78	1679K675	4.16	1679K676	5.56
380MXL	30.4″	380	1679K677	2.96	1679K678	4.40	1679K679	5.84
482MXL	38.5″	482	1679K681	2.96	1679K682	4.40	1679K683	5.84
962MXL	77.0″	962	1679K684	4.85	1679K685	7.22	1679K686	9.61
Neoprene—*Reinforcing cords are fiberglass.*								
36MXL	3.6″	45	7887K11	2.09	7887K40	2.64	7887K70	3.39
40MXL	4.0″	50	7887K12	2.17	7887K41	2.66	7887K71	3.45
44MXL	4.4″	55	7887K13	2.17	7887K42	2.67	7887K72	3.46
48MXL	4.8″	60	7887K14	2.17	7887K43	2.66	7887K73	3.45
56MXL	5.6″	70	7887K15	2.26	7887K44	2.72	7887K74	3.66
64MXL	6.4″	80	7887K16	2.28	7887K45	2.80	7887K75	3.74
68MXL	6.8″	85	7887K17	2.28	7887K46	2.80	7887K76	3.74
72MXL	7.2″	90	7887K18	2.29	7887K47	2.91	7887K77	3.83
76MXL	7.6″	95	7887K19	2.29	7887K48	2.91	7887K78	3.83
80MXL	8.0″	100	7887K20	2.40	7887K49	3.00	7887K79	3.92
88MXL	8.8″	110	7887K21	2.40	7887K50	3.00	7887K80	3.92
96MXL	9.6″	120	7887K22	2.42	7887K51	3.03	7887K81	4.00
104MXL	10.4″	130	7887K23	2.48	7887K52	3.13	7887K82	4.23
112MXL	11.2″	140	7887K24	2.48	7887K53	3.17	7887K83	4.32
120MXL	12.0″	150	7887K25	2.58	7887K54	3.28	7887K84	4.38
132MXL	13.2″	165	7887K26	2.65	7887K55	3.32	7887K85	4.48
140MXL	14.0″	175	7887K27	2.68	7887K56	3.39	7887K86	4.70
152MXL	15.2″	190	7887K28	2.80	7887K57	3.54	7887K87	4.74
160MXL	16.0″	200	7887K29	2.86	7887K58	3.66	7887K88	4.83
168MXL	16.8″	210	7887K30	3.10	7887K59	3.66	7887K89	4.83
180MXL	18.0″	225	7887K31	2.96	7887K60	3.68	7887K90	5.00
200MXL	20.0″	250	7887K32	3.03	7887K61	3.86	7887K91	5.26
208MXL	20.8″	260	7887K33	3.03	7887K62	3.86	7887K92	5.26
236MXL	23.6″	295	7887K34	3.24	7887K63	4.17	7887K93	5.77
240MXL	24.0″	300	7887K35	3.28	7887K64	4.29	7887K94	5.80
320MXL	32.0″	400	7887K36	3.63	7887K65	4.87	7887K95	6.63

XL (Extra Light) Belts—0.200″ Pitch

Trade Size	Outer Circle	No. of Teeth	1/4″ Wide		5/16″ Wide		3/8″ Wide	
Urethane—*Reinforcing cords are Kevlar.*								
60XL	6.0″	30	1679K11	$2.50	1679K12	$3.13	1679K13	$3.76
70XL	7.0″	35	1679K111	2.54	1679K112	3.17	1679K113	3.80
80XL	8.0″	40	1679K14	2.54	1679K15	3.17	1679K16	3.82
90XL	9.0″	45	1679K17	2.78	1679K18	3.21	1679K19	3.88
96XL	9.6″	48	1679K114	2.60	1679K115	3.25	1679K116	3.89
100XL	10.0″	50	1679K117	2.63	1679K118	3.28	1679K119	3.93
110XL	11.0″	55	1679K21	2.62	1679K22	3.25	1679K23	3.91
120XL	12.0″	60	1679K24	2.65	1679K25	3.32	1679K26	3.97
130XL	13.0″	65	1679K121	2.71	1679K122	3.38	1679K123	4.09
140XL	14.0″	70	1679K124	2.75	1679K125	3.44	1679K126	4.12
150XL	15.0″	75	1679K127	2.79	1679K128	3.49	1679K129	4.20
160XL	16.0″	80	1679K27	2.81	1679K28	3.49	1679K29	4.20
176XL	17.6″	88	1679K131	4.85	1679K132	6.05	1679K133	7.27
180XL	18.0″	90	1679K31	4.87	1679K32	6.07	1679K33	7.29
190XL	19.0″	95	1679K34	5.06	1679K35	6.32	1679K36	7.58
200XL	20.0″	100	1679K37	5.15	1679K38	6.41	1679K39	7.67
210XL	21.0″	105	1679K134	5.21	1679K135	6.51	1679K136	7.83
220XL	22.0″	110	1679K41	5.25	1679K42	6.55	1679K43	7.87
240XL	24.0″	120	1679K137	5.31	1679K138	6.64	1679K139	7.98
250XL	25.0″	125	1679K44	5.35	1679K45	6.68	1679K46	8.02
270XL	27.0″	135	1679K141	6.11	1679K142	7.73	1679K143	9.35
300XL	30.0″	150	1679K47	6.49	1679K48	8.11	1679K49	9.74
330XL	33.0″	165	1679K144	6.40	1679K145	8.13	1679K146	9.79
360XL	36.0″	180	1679K51	6.64	1679K52	8.26	1679K53	9.90
400XL	40.0″	200	1679K147	7.86	1679K148	9.83	1679K149	11.77
460XL	46.0″	230	1679K54	6.77	1679K55	8.36	1679K56	10.02
480XL	48.0″	240	1679K57	6.87	1679K58	8.55	1679K59	10.25
Neoprene—*Reinforcing cords are fiberglass.*								
50XL	5.0″	25	6484K501	2.90	—	—	6484K421	3.82
60XL	6.0″	30	6484K116	2.95	—	—	6484K216	3.69
70XL	7.0″	35	6484K117	3.01	—	—	6484K217	3.99
80XL	8.0″	40	6484K118	3.10	—	—	6484K218	4.09
90XL	9.0″	45	6484K119	3.16	—	—	6484K219	4.25
100XL	10.0″	50	6484K12	3.30	—	—	6484K22	4.41

Trade Size	Outer Circle	No. of Teeth	1/4″ Wide		3/8″ Wide	
Neoprene (Cont.)—*Reinforcing cords are fiberglass.*						
110XL	11.0″	55	6484K121	$3.36	6484K221	$4.53
120XL	12.0″	60	6484K122	3.45	6484K222	4.56
130XL	13.0″	65	6484K123	3.52	6484K223	4.74
140XL	14.0″	70	6484K124	3.66	6484K224	4.90
150XL	15.0″	75	6484K125	3.71	6484K225	5.02
160XL	16.0″	80	6484K126	3.79	6484K226	5.19
170XL	17.0″	85	6484K127	3.86	6484K227	5.30
180XL	18.0″	90	6484K128	3.94	6484K228	5.49
190XL	19.0″	95	6484K129	4.14	6484K229	5.54
200XL	20.0″	100	6484K13	4.17	6484K23	5.63
210XL	21.0″	105	6484K131	4.25	6484K231	5.80
220XL	22.0″	110	6484K132	4.34	6484K232	5.90
230XL	23.0″	115	6484K133	4.46	6484K233	5.98
240XL	24.0″	120	6484K134	4.53	6484K234	6.17
250XL	25.0″	125	6484K135	4.56	6484K235	6.29
260XL	26.0″	130	6484K136	4.68	6484K236	6.41
280XL	28.0″	140	6484K502	4.99	6484K237	6.88
290XL	29.0″	145	6484K503	5.04	6484K238	6.96
300XL	30.0″	150	6484K504	5.18	6484K239	7.13
310XL	31.0″	155	6484K505	5.28	6484K241	7.25
330XL	33.0″	165	6484K506	5.44	6484K242	7.22
340XL	34.0″	170	6484K507	5.54	6484K243	7.28
350XL	35.0″	175	6484K508	5.62	6484K441	7.76
370XL	37.0″	185	6484K509	5.84	6484K442	8.05
380XL	38.0″	190	6484K511	5.88	6484K443	8.18
390XL	39.0″	195	6484K512	5.98	6484K444	8.32
400XL	40.0″	200	6484K513	6.07	6484K445	8.45
420XL	42.0″	210	6484K514	6.27	6484K446	8.70
450XL	45.0″	225	6484K515	6.54	6484K447	9.06
480XL	48.0″	240	6484K517	6.83	6484K449	9.45
500XL	50.0″	250	6484K518	6.96	6484K451	9.75
570XL	57.0″	285	6484K519	8.00	6484K452	11.11
630XL	63.0″	315	6484K521	8.78	6484K453	12.26
770XL	77.0″	385	6484K522	10.79	6484K454	14.99

(Continued on following page)

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

MXL, XL, L, and H Series Timing Belts *(Continued from previous page)*

XL (Extra Light) Belts—0.200″ Pitch (Cont.)

Trade Size	Outer Circle (OC)	No. of Teeth	1/4″ Wide		3/8″ Wide		1/2″ Wide	
High-Temp. Silicone—*Reinforcing cords are Kevlar. Color is off-white.*								
90XL	9.0″	45	51514T111	$7.80	51514T311	$11.70	51514T511	$15.60
100XL	10.0″	50	51514T112	8.02	51514T312	12.04	51514T512	16.04
110XL	11.0″	55	51514T113	8.40	51514T313	12.60	51514T513	16.80
120XL	12.0″	60	51514T114	8.62	51514T314	12.94	51514T514	17.24
130XL	13.0″	65	51514T115	9.00	51514T315	13.50	51514T515	18.00
140XL	14.0″	70	51514T116	11.84	51514T316	17.80	51514T516	23.70
150XL	15.0″	75	51514T117	12.14	51514T317	18.22	51514T517	24.30
160XL	16.0″	80	51514T118	12.44	51514T318	18.66	51514T518	24.88
168XL	16.8″	84	51514T119	12.74	51514T319	19.12	51514T519	25.50
180XL	18.0″	90	51514T121	13.04	51514T321	19.56	51514T521	26.10
190XL	19.0″	95	51514T122	13.34	51514T322	20.00	51514T522	26.70
210XL	21.0″	105	51514T123	13.64	51514T323	20.46	51514T523	27.30
240XL	24.0″	120	51514T124	13.86	51514T324	20.80	51514T524	27.74
280XL	28.0″	140	51514T125	14.26	51514T325	21.36	51514T525	28.50

Trade Size	Outer Circle (OC)	No. of Teeth	1/4″ Wide		3/8″ Wide	
Double-Sided Neoprene—*Reinforcing cords are fiberglass. Tooth surfaces are nylon.*						
140XL	14″	70	—	—	7891K31	$13.20
150XL	15″	75	—	—	7891K32	13.58
160XL	16″	80	7891K13	$10.31	7891K33	14.02
170XL	17″	85	7891K14	10.53	7891K34	14.24
180XL	18″	90	—	—	7891K35	14.67
190XL	19″	95	—	—	7891K36	14.98
200XL	20″	100	7891K17	11.29	7891K37	15.31
220XL	22″	110	—	—	7891K39	16.07
230XL	23″	115	—	—	7891K4	16.29
240XL	24″	120	—	—	7891K41	16.73
250XL	25″	125	—	—	7891K42	17.81
260XL	26″	130	—	—	7891K43	21.18
270XL	27″	135	—	—	7891K44	19.14
280XL	28″	140	—	—	7891K45	18.13
290XL	29″	145	—	—	7891K46	18.44
300XL	30″	150	—	—	7891K47	18.78
330XL	33″	165	—	—	7891K49	19.89
340XL	34″	170	—	—	7891K5	20.09

L (Light) Belts—3/8″ Pitch

Trade Size	(OC)	No. of Teeth	1/2″ Wide		3/4″ Wide		1″ Wide	
Urethane—*Reinforcing cords are Kevlar.*								
150L	15.0″	40	1679K261	$10.31	1679K262	$15.54	1679K263	$20.62
187L	18.8″	50	1679K264	10.40	1679K265	15.75	1679K266	20.81
202L	20.2″	54	1679K267	12.79	1679K268	19.21	1679K269	25.58
217L	21.8″	58	1679K271	13.06	1679K272	19.55	1679K273	26.08
300L	30.0″	80	1679K274	13.17	1679K275	19.76	1679K276	26.35
420L	42.0″	112	1679K277	18.82	1679K278	28.22	1679K279	37.61
Neoprene—*Reinforcing cords are fiberglass.*								
124L	12.4″	33	6484K144	7.66	6484K244	10.90	6484K344	14.03
135L	13.5″	36	6484K111	8.18	6484K211	11.61	6484K371	14.93
150L	15.0″	40	6484K145	8.50	6484K245	12.10	6484K345	15.57
165L	16.5″	44	6484K112	9.11	6484K212	12.88	6484K372	16.62
187L	18.7″	50	6484K146	9.24	6484K246	13.37	6484K346	17.27
195L	19.5″	52	6484K113	9.81	6484K213	14.10	6484K373	18.29
210L	21.0″	56	6484K147	10.02	6484K247	14.55	6484K347	18.84
225L	22.5″	60	6484K148	10.36	6484K248	14.88	6484K348	19.38
240L	24.0″	64	6484K149	10.83	6484K249	15.74	6484K349	20.22
255L	25.5″	68	6484K15	11.12	6484K25	16.11	6484K35	21.04
270L	27.0″	72	6484K151	11.58	6484K251	16.88	6484K351	22.05
285L	28.5″	76	6484K152	11.85	6484K252	17.39	6484K352	22.63
300L	30.0″	80	6484K153	12.39	6484K253	18.34	6484K353	23.70
315L	31.5″	84	6484K114	12.97	6484K214	19.07	6484K374	24.94
322L	32.2″	86	6484K154	12.93	6484K254	19.64	6484K354	24.81
345L	34.5″	92	6484K155	13.47	6484K255	19.74	6484K355	25.84
367L	36.7″	98	6484K156	13.91	6484K256	20.19	6484K356	26.99
390L	39.0″	104	6484K157	14.67	6484K257	20.14	6484K357	28.54
420L	42.0″	112	6484K158	15.46	6484K258	22.96	6484K358	30.22
450L	45.0″	120	6484K159	16.27	6484K259	24.17	6484K359	31.73
480L	48.0″	128	6484K16	17.08	6484K26	25.42	6484K36	33.07
510L	51.0″	136	6484K161	17.62	6484K261	26.20	6484K361	34.57
540L	54.0″	144	6484K162	18.66	6484K262	27.79	6484K362	36.65
600L	60.0″	160	6484K163	20.22	6484K263	30.23	6484K363	39.90
817L	81.7″	218	6484K166	26.16	6484K266	39.36	6484K366	49.85
900L	90.0″	240	6484K167	28.79	6484K267	41.63	6484K367	55.14

Trade Size	(OC)	No. of Teeth	3/4″ Wide		1″ Wide	
High-Temp. Silicone—*Reinforcing cords are Kevlar. Color is off-white.*						
165L	16.5″	44	51514T411	$49.48	51514T611	$49.48
187L	18.7″	50	51514T412	40.00	51514T612	50.98
345L	34.5″	92	51514T413	77.96	51514T613	94.48
390L	39.0″	104	51514T414	74.00	51514T614	99.00
405L	40.5″	108	51514T415	76.92	51514T615	103.48
420L	42.0″	112	51514T416	127.64	51514T616	168.00

Trade Size	(OC)	No. of Teeth	1/2″ Wide		3/4″ Wide		1″ Wide	
Double-Sided Neoprene—*Reinforcing cords are fiberglass. Tooth surfaces are nylon.*								
150L	15.00″	40	7891K51	$23.02	—	—	—	—
187L	18.75″	50	7891K53	25.09	7891K76	$36.16	—	—
210L	21.00″	56	7891K55	27.24	—	—	—	—
225L	22.50″	60	7891K56	28.04	7891K79	40.51	—	—
240L	24.00″	64	7891K57	29.44	7891K8	42.69	—	—
255L	25.50″	68	7891K58	30.09	7891K81	43.78	—	—
270L	27.00″	72	7891K59	31.49	—	—	—	—
285L	28.50″	76	7891K6	32.27	7891K83	47.13	—	—
300L	30.00″	80	7891K61	33.67	7891K84	49.20	—	—
322L	32.25″	86	7891K62	35.07	7891K85	51.49	—	—
345L	34.50″	92	7891K63	36.49	7891K86	53.76	7891K114	$70.24
367L	36.75″	98	7891K64	37.80	—	—	—	—
390L	39.00″	104	7891K65	39.98	7891K88	59.09	7891K116	77.49
420L	42.00″	112	7891K66	42.04	7891K89	62.36	7891K117	81.96
450L	45.00″	120	7891K67	44.20	—	—	7891K118	86.31
480L	48.00″	128	7891K68	46.40	7891K91	68.98	7891K119	90.76
510L	51.00″	136	7891K69	47.80	7891K92	71.13	7891K121	93.73
540L	54.00″	144	7891K7	49.96	7891K93	75.49	7891K122	99.56
600L	60.00″	160	7891K71	54.82	7891K94	82.11	—	—
660L	66.00″	176	7891K72	59.09	7891K95	88.62	7891K124	117.16
817L	81.75″	218	7891K73	69.42	—	—	7891K125	138.36

H (Heavy) Belts—1/2″ Pitch

Trade Size	(OC)	No. of Teeth	3/4″ Wide		1″ Wide		1 1/2″ Wide	
Neoprene—*Reinforcing cords are fiberglass.*								
210H	21″	42	6484K11	$15.47	6484K401	$19.69	6484K531	$28.46
220H	22″	44	6484K101	15.88	6484K402	20.27	6484K532	29.30
230H	23″	46	6484K102	16.33	6484K403	20.86	6484K533	30.17
240H	24″	48	6484K14	16.59	6484K171	21.04	6484K271	30.34
270H	27″	54	6484K103	17.88	6484K172	22.62	6484K272	32.87
300H	30″	60	6484K104	19.13	6484K173	24.30	6484K273	35.33
320H	32″	64	6484K17	20.14	6484K404	25.93	6484K534	37.75
330H	33″	66	6484K105	20.44	6484K174	25.92	6484K274	37.87
340H	34″	68	6484K19	21.02	6484K405	27.05	6484K535	39.46
360H	36″	72	6484K201	21.70	6484K175	27.66	6484K275	40.31
370H	37″	74	6484K202	22.29	6484K407	28.78	6484K537	40.13
390H	39″	78	6484K24	22.96	6484K176	29.27	6484K276	40.96
400H	40″	80	6484K203	23.61	6484K408	30.45	6484K538	42.57
420H	42″	84	6484K27	24.25	6484K177	30.98	6484K277	43.32
450H	45″	90	6484K205	25.55	6484K178	32.58	6484K278	45.67
480H	48″	96	6484K29	26.80	6484K179	34.27	6484K279	48.88
510H	51″	102	6484K32	27.67	6484K18	35.41	6484K28	49.68
540H	54″	108	6484K33	28.40	6484K181	37.61	6484K281	52.84

Trade Size	(OC)	No. of Teeth	3/4″ Wide		1″ Wide		1 1/2″ Wide	
Neoprene (Cont.)—*Reinforcing cords are fiberglass.*								
560H	56″	112	6484K34	$30.19	6484K412	$39.49	6484K542	$55.52
570H	57″	114	6484K305	30.19	6484K182	38.71	6484K282	54.41
600H	60″	120	6484K37	31.91	6484K183	40.90	6484K283	57.60
630H	63″	126	6484K38	32.78	6484K184	40.21	6484K284	59.14
660H	66″	132	6484K41	34.44	6484K185	42.31	6484K285	62.31
700H	70″	140	6484K42	36.16	6484K186	44.41	6484K286	65.51
750H	75″	150	6484K44	37.88	6484K416	47.50	6484K546	70.07
800H	80″	160	6484K46	40.37	6484K418	50.73	6484K548	75.23

Trade Size	(OC)	No. of Teeth	1″ Wide		1 1/2″ Wide	
High-Temp. Silicone—*Reinforcing cords are Kevlar. Color is off-white.*						
165H	16.5″	33	51514T811	$52.50	51514T911	$78.76
175H	17.5″	35	51514T812	53.10	51514T912	79.66
210H	21.0″	42	51514T813	54.00	51514T913	80.98
225H	22.5″	45	51514T814	54.10	51514T914	81.16
390H	39.0″	78	51514T815	97.48	51514T915	146.22
420H	42.0″	84	51514T816	99.74	51514T916	150.72

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

MXL and XL Series Timing-Belt Pulleys with Set-Screw Bore

MXL

XL
With Flange

XL
Without Flange

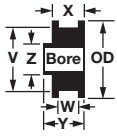

These small, lightweight pulleys fit your MXL and XL series timing belts. All are flanged (unless noted) and have a finished bore with set screw(s).

Pulleys for MXL (Miniature Extra Light) Series Timing Belts— All are made of anodized aluminum.

Pulleys for XL (Extra Light) Series Timing Belts— *Acetal pulleys* are lighter and more corrosion resistant than the steel pulleys.

Pulleys for MXL (Miniature Extra Light) Series Timing Belts—0.080″ Pitch

OD	No. of Teeth	Bore Size	Pitch Dia. (V)	(Z)	Fit 1/8″ Belt Wd. (W)	(X)	(Y)			Fit 1/4″ Belt Wd. (W)	(X)	(Y)		
0.425″	10	1/8″	0.255″	0.425″	0.16″	0.201″	0.438″	1375K11	$8.82	0.29″	0.330″	0.563″	1375K29	$9.05
0.450″	11	1/8″	0.280″	0.450″	0.16″	0.201″	0.438″	1375K12	8.90	0.29″	0.330″	0.563″	1375K31	9.19
0.480″	12	1/8″	0.306″	0.480″	0.16″	0.201″	0.438″	1375K13	9.10	0.29″	0.330″	0.563″	1375K32	9.37
0.530″	14	1/8″	0.357″	0.530″	0.16″	0.201″	0.438″	1375K14	9.40	0.29″	0.330″	0.563″	1375K33	9.65
0.555″	15	3/16″	0.382″	0.555″	0.16″	0.201″	0.438″	1375K15	9.51	0.29″	0.330″	0.563″	1375K34	9.74
0.580″	16	3/16″	0.407″	0.580″	0.16″	0.201″	0.438″	1375K16	9.62	0.29″	0.330″	0.563″	1375K35	9.87
0.635″	18	3/16″	0.458″	0.312″	0.16″	0.260″	0.484″	1375K17	8.90	0.29″	0.389″	0.625″	1375K36	9.11
0.685″	20	1/4″	0.509″	0.685″	0.16″	0.208″	0.438″	1375K21	10.14	0.29″	0.337″	0.563″	1375K39	10.45
0.710″	21	1/4″	0.535″	0.710″	0.16″	0.208″	0.438″	1375K23	10.33	0.29″	0.337″	0.563″	1375K42	10.68
0.740″	22	1/4″	0.560″	0.740″	0.16″	0.208″	0.438″	1375K25	10.78	0.29″	0.337″	0.563″	1375K44	10.78
0.790″	24	1/4″	0.611″	0.442″	0.16″	0.260″	0.516″	1375K26	9.68	0.29″	0.389″	0.688″	1375K45	9.95
0.895″	28	1/4″	0.713″	0.494″	0.16″	0.260″	0.516″	1375K27	10.11	0.29″	0.389″	0.688″	1375K47	10.45
0.945″	30	1/4″	0.764″	0.546″	0.16″	0.260″	0.516″	1375K28	10.36	0.29″	0.389″	0.688″	1375K48	10.70
1.105″	36	1/4″	0.917″	0.676″	0.16″	0.260″	0.516″	1375K49	10.70	0.29″	0.389″	0.688″	1375K54	11.55
1.210″	40	1/4″	1.019″	0.754″	0.16″	0.276″	0.531″	1375K51	11.90	0.29″	0.405″	0.719″	1375K55	13.05
1.260″	42	1/4″	1.070″	0.806″	0.16″	0.276″	0.531″	1375K52	12.28	0.29″	0.405″	0.719″	1375K56	12.65
1.730″	60	1/4″	1.528″	1.222″	0.16″	0.276″	0.531″	1375K53	15.11	0.29″	0.405″	0.719″	1375K57	15.58

Pulleys for XL (Extra Light) Series Timing Belts—0.200″ Pitch; Fit 1/4″ and 3/8″ Belt Wd.

OD	No. of Teeth	Bore Size	Pitch Dia. (V)	(W)	(X)	(Y)	(Z)		
Acetal with Aluminum Hub									
0.87″	10	3/16″	0.637″	1/2″	5/8″	7/8″	1/2″	57105K11	$7.40
0.94″	11	3/16″	0.700″	1/2″	5/8″	7/8″	1/2″	57105K12	7.43
1.00″	12	3/16″	0.764″	1/2″	5/8″	7/8″	1/2″	57105K13	7.48
1.13″	14	1/4″	0.891″	1/2″	5/8″	7/8″	3/4″	57105K14	7.51
1.19″	15	1/4″	0.955″	1/2″	5/8″	7/8″	3/4″	57105K15	7.56
1.25″	16	1/4″	1.019″	1/2″	5/8″	7/8″	3/4″	57105K16	7.61
1.38″	18	1/4″	1.146″	1/2″	5/8″	7/8″	3/4″	57105K17	7.93
1.50″	20	1/4″	1.273″	1/2″	5/8″	7/8″	7/8″	57105K18	7.99
1.57″	21	1/4″	1.337″	1/2″	5/8″	7/8″	7/8″	57105K19	7.99
1.63″	22	1/4″	1.401″	1/2″	5/8″	7/8″	7/8″	57105K21	8.07
1.75″	24	5/16″	1.528″	1/2″	5/8″	7/8″	7/8″	57105K22	8.20
1.88″	26	5/16″	1.655″	1/2″	5/8″	7/8″	7/8″	57105K23	8.64
2.00″	28	5/16″	1.783″	1/2″	5/8″	7/8″	7/8″	57105K24	8.75
2.13″	30	5/16″	1.910″	1/2″	5/8″	7/8″	7/8″	57105K25	8.88
2.25″	32	5/16″	2.037″	1/2″	5/8″	7/8″	7/8″	57105K26	8.91
2.53″	36	5/16″	2.292″	1/2″	5/8″	7/8″	7/8″	57105K27	9.12
2.75″	40	5/16″	2.546″	1/2″	5/8″	7/8″	7/8″	57105K28	10.40
2.91″	42	5/16″	2.674″	1/2″	5/8″	7/8″	7/8″	57105K29	10.50
3.03″	44	5/16″	2.801″	1/2″	5/8″	7/8″	7/8″	57105K31	10.61
3.28″	48	5/16″	3.056″	1/2″	5/8″	7/8″	7/8″	57105K32	10.88
3.80″	60	5/16″	3.820″	1/2″	5/8″	7/8″	7/8″	57105K33 ♦	17.15

OD	No. of Teeth	Bore Size	Pitch Dia. (V)	(W)	(X)	(Y)	(Z)		
Steel									
0.929″	10	3/16″	0.637″	0.422″	9/16″	25/32″	7/16″	6495K711	$10.13
0.929″	11	3/16″	0.700″	0.422″	9/16″	25/32″	7/16″	6495K712	11.13
0.993″	12	3/16″	0.764″	0.422″	9/16″	25/32″	1/2″	6495K713	11.54
1.120″	14	1/4″	0.891″	0.422″	9/16″	25/32″	9/16″	6495K714	13.59
1.184″	15	1/4″	0.955″	0.422″	9/16″	25/32″	5/8″	6495K715	14.07
1.248″	16	1/4″	1.019″	0.422″	9/16″	25/32″	11/16″	6495K716	14.91
1.375″	18	1/4″	1.146″	0.422″	9/16″	25/32″	13/16″	6495K717	16.64
1.502″	20	1/4″	1.273″	0.422″	9/16″	7/8″	15/16″	6495K718	17.72
1.566″	21	1/4″	1.337″	0.422″	9/16″	7/8″	15/16″	6495K719	18.67
1.630″	22	1/4″	1.401″	0.422″	9/16″	7/8″	1″	6495K721	19.42
1.756″	24	1/4″	1.528″	0.422″	9/16″	7/8″	1 1/16″	6495K722	21.46
2.011″	28	1/4″	1.783″	0.422″	9/16″	7/8″	1 3/16″	6495K723	24.65
2.017″	32	5/16″	2.037″	9/16″	9/16″	1″	1 1/2″	6495K725 ♦	26.62
2.138″	30	5/16″	1.910″	0.422″	9/16″	7/8″	1 3/8″	6495K724	26.24
2.272″	36	5/16″	2.292″	9/16″	9/16″	1″	1 1/2″	6495K726 ♦	27.08
2.526″	40	5/16″	2.546″	9/16″	9/16″	1″	1 1/2″	6495K727 ♦	28.94
2.654″	42	5/16″	2.674″	9/16″	9/16″	1″	1 1/2″	6495K728 ♦	29.69
2.781″	44	5/16″	2.801″	9/16″	9/16″	1″	1 1/2″	6495K729 ♦	27.96
3.036″	48	5/16″	3.056″	9/16″	9/16″	1″	1 1/2″	6495K731 ♦	30.32
3.800″	60	3/8″	3.820″	9/16″	9/16″	1″	1 1/2″	6495K732 ♦	36.66
4.564″	72	3/8″	4.584″	9/16″	9/16″	1″	1 1/2″	6495K733 ♦	45.29

♦ Not flanged.

L and H Series Timing-Belt Pulleys

With Set-Screw Bore

With Press-Fit Bore

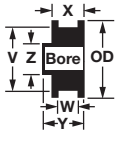

Made of steel, all of these pulleys are flanged and have a plain bore. ***Pulleys with set-screw bore*** come furnished with a set screw.

OD	No. of Teeth	Bore Size	Pitch Dia. (V)	(W)	(X)	(Y)	(Z)		
Pulleys for L (Light) Series Timing Belts—3/8″ Pitch; Fit 1/2″ Belt Wd.									
With Set-Screw Bore									
1.438″	10	3/8″	1.194″	9/16″	3/4″	1 1/8″	13/16″	6495K23	$16.65
1.672″	12	3/8″	1.432″	9/16″	3/4″	1 1/4″	1 1/16″	6495K24	18.34
1.922″	14	3/8″	1.671″	9/16″	3/4″	1 1/4″	1 1/8″	6495K14	21.15
2.156″	16	1/2″	1.910″	9/16″	3/4″	1 3/8″	1 7/16″	6495K15	23.40
With Press-Fit Bore									
2.391″	18	1/2″	2.149″	9/16″	3/4″	1 3/8″	1 5/8″	6495K16	24.68
2.625″	20	1/2″	2.387″	9/16″	3/4″	1 3/8″	1 11/16″	6495K17	29.62
2.875″	22	1/2″	2.626″	9/16″	3/4″	1 1/2″	2″	6495K18	31.43
3.109″	24	1/2″	2.865″	9/16″	3/4″	1 1/2″	2 1/4″	6495K19	32.53
Pulleys for H (Heavy) Series Timing Belts—1/2″ Pitch; Fit 3/4″ and 1″ Belt Wd.									
With Press-Fit Bore									
2.484″	14	5/8″	2.228″	1 1/16″	1 5/16″	1 15/16″	1 1/2″	6495K43	38.35
2.797″	16	5/8″	2.546″	1 1/16″	1 5/16″	2″	2″	6495K44	43.32
3.109″	18	5/8″	2.865″	1 1/16″	1 5/16″	2″	2 1/4″	6495K45	45.53
3.438″	20	5/8″	3.183″	1 1/16″	1 5/16″	2 3/16″	2 1/2″	6495K46	53.95
4.016″	24	3/4″	3.820″	1 1/16″	1 5/16″	2 5/16″	3 1/8″	6495K47	63.12
4.703″	28	3/4″	4.456″	1 1/16″	1 5/16″	2 7/16″	3 5/8″	6495K48	86.28

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

L and H Series Timing-Belt Pulleys for use with QD Bushings

For fast installation and removal, use these pulleys with quick-disconnect (QD) bushings (sold separately, see page 1045). All of the pulleys are made of machined steel (unless noted). They are flanged (unless noted) and have a quick-disconnect bushing bore.

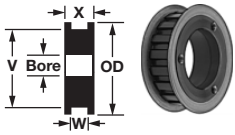

Pulleys for L (Light) Timing Belts—3/8″ Pitch

OD	No. of Teeth	Bushing Style	Bushing Bore	Pitch Dia. (V)	Fit 1/2″ Belt Wd. (W)	Fit 1/2″ Belt Wd. (X)			Fit 3/4″ Belt Wd. (W)	Fit 3/4″ Belt Wd. (X)			Fit 1″ Belt Wd. (W)	Fit 1″ Belt Wd. (X)		
2.39″	18	JA	1.375″	2.149″	9/16″	3/4″	6495K211	$31.26	13/16″	1″	6495K311	$32.92	1 1/16″	1 1/4″	6495K411	$35.82
2.63″	20	JA	1.375″	2.387″	9/16″	3/4″	6495K212	32.10	13/16″	1″	6495K312	34.20	1 1/16″	1 1/4″	6495K412	37.47
2.88″	22	JA	1.375″	2.626″	9/16″	3/4″	6495K213	33.73	13/16″	1″	6495K313	37.05	1 1/16″	1 1/4″	6495K413	39.94
3.11″	24	SH	1.871″	2.865″	9/16″	3/4″	6495K214	31.72	13/16″	1″	6495K314	35.01	1 1/16″	1 1/4″	6495K414	37.85
3.34″	26	SH	1.871″	3.104″	9/16″	3/4″	6495K215	32.92	13/16″	1″	6495K315	37.47	1 1/16″	1 1/4″	6495K415	40.72
3.58″	28	SH	1.871″	3.342″	9/16″	3/4″	6495K216	35.82	13/16″	1″	6495K316	40.66	1 1/16″	1 1/4″	6495K416	42.80
3.83″	30	SDS	2.187″	3.581″	9/16″	3/4″	6495K217	36.20	13/16″	1″	6495K317	42.80	1 1/16″	1 1/4″	6495K417	46.49
4.06″	32	SDS	2.187″	3.820″	9/16″	3/4″	6495K218	39.48	13/16″	1″	6495K318	45.68	1 1/16″	1 1/4″	6495K418	49.74
4.53″	36	SDS	2.187″	4.297″	9/16″	3/4″	6495K219	68.65	13/16″	1″	6495K319	73.47	1 1/16″	1 1/4″	6495K419	73.40
5.02″	40	SDS	2.187″	4.775″	9/16″	3/4″	6495K22	72.42	13/16″	1″	6495K32	73.67	1 1/16″	1 1/4″	6495K42	74.05
6.02″	48	SDS	2.187″	5.730″	9/16″	3/4″	6495K221★	87.21	13/16″	1″	6495K321★	89.29	1 1/16″	1 1/4″	6495K421★	92.97
7.13″	60	SD	2.187″	7.162″	3/4″	3/4″	6495K222★◆	87.62	1″	1″	6495K322★◆	92.19	1 1/4″	1 1/4″	6495K422★◆	93.58

★ Made of cast iron. ◆ Not flanged.

Pulleys for H (Heavy) Timing Belts—1/2″ Pitch

OD	No. of Teeth	Bushing Style	Bushing Bore	Pitch Dia. (V)	Fit 3/4″ and 1″ Belt Wd. (W)	Fit 3/4″ and 1″ Belt Wd. (X)			Fit 1 1/2″ Belt Wd. (W)	Fit 1 1/2″ Belt Wd. (X)		
2.48″	14	JA	1.375″	2.228″	1 1/16″	1 5/16″	6495K511	$32.88	1 9/16″	1 13/16″	6495K611	$43.49
2.80″	16	JA	1.375″	2.546″	1 1/16″	1 5/16″	6495K512	37.71	1 9/16″	1 13/16″	6495K612	47.62
3.11″	18	SH	1.871″	2.865″	1 1/16″	1 5/16″	6495K513	35.85	1 9/16″	1 13/16″	6495K613	49.25
3.44″	20	SH	1.871″	3.183″	1 1/16″	1 5/16″	6495K514	44.42	1 9/16″	1 13/16″	6495K614	55.28
3.75″	22	SDS	2.187″	3.501″	1 1/16″	1 5/16″	6495K515	49.25	1 9/16″	1 13/16″	6495K615●	61.60
4.02″	24	SDS	2.187″	3.820″	1 1/16″	1 5/16″	6495K516	54.63	1 9/16″	1 13/16″	6495K616●♣	66.54
4.39″	26	SDS	2.187″	4.138″	1 1/16″	1 5/16″	6495K517	62.41	1 9/16″	1 13/16″	6495K617●♠	73.93
4.70″	28	SDS	2.187″	4.456″	1 1/16″	1 5/16″	6495K518	66.54	1 9/16″	1 13/16″	6495K618●	77.97
5.02″	30	SD	2.187″	4.775″	1 1/16″	1 5/16″	6495K519★	71.95	1 9/16″	1 13/16″	6495K619★	83.72
5.33″	32	SK	2.812″	5.093″	1 1/16″	1 5/16″	6495K52★	77.19	1 9/16″	1 13/16″	6495K62★	90.32
5.95″	36	SK	2.812″	5.730″	1 1/16″	1 5/16″	6495K521★	90.18	1 9/16″	1 13/16″	6495K621★	103.75
6.58″	40	SK	2.812″	6.366″	1 1/16″	1 5/16″	6495K522★	101.05	1 9/16″	1 13/16″	6495K622★	112.60
8.02″	48	SK	2.812″	7.639″	1 1/16″	1 5/16″	6495K523★	118.76	1 9/16″	1 13/16″	6495K623★	132.56
9.50″	60	SF	3.125″	9.549″	1 5/16″	1 5/16″	6495K524★◆	123.18	1 13/16″	1 13/16″	6495K624★◆	133.47
19.05″	120	SF	3.125″	19.099″	1 5/16″	1 5/16″	6495K525★◆	254.18	1 13/16″	1 13/16″	6495K625★◆	272.39

● Bushing is SD style. ♣ OD is 4.06″. ♠ OD is 4.78″. ★ Made of cast iron. ◆ Not flanged.

Poly Chain Timing Belts and Pulleys

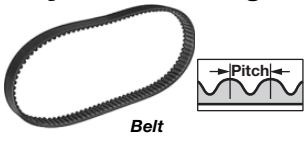

Belt

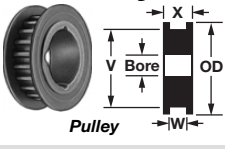

Pulley

Timing Belts—8 mm Pitch

Strong enough to replace metal chain, these urethane belts are coated with nylon and have carbon fiber cords for exceptional flex as well as fatigue and impact strength. They also run quieter than metal chain. All have a modified curve-tooth profile, which allows you to use narrow pulleys for high load-carrying capacity at low speeds. Color is black.

Trade Size	Outer Circle, mm	No. of Teeth	12 mm Wd.		21 mm Wd.	
640-8M	640	80	7904K109	$29.15	7904K137	$51.82
720-8M	720	90	7904K11	32.41	7904K138	55.09
800-8M	800	100	7904K111	35.64	7904K139	64.79
896-8M	896	112	7904K112	38.88	7904K14	68.02
1000-8M	1,000	125	7904K113	42.11	7904K141	74.53
1120-8M	1,120	140	7904K114	45.41	7904K142	77.77
1280-8M	1,280	160	7904K116	49.57	7904K144	83.66
1440-8M	1,440	180	7904K117	52.19	7904K145	89.02
1600-8M	1,600	200	7904K118	55.26	7904K146	95.15

Pulleys—8 mm Pitch

Use these pulleys with taper-lock bushings (sold separately, see page 1046) for easy installation and removal. They're narrow with small bores for more compact drives. Made of sintered steel, unless noted.

OD	No. of Teeth	Bushing Size No.	Pitch Dia., mm (V)	(W)	(X)		
Fit 12 mm Belt Wd.							
2.6″	22	1008	56	0.6″	0.9″	7970K11▲	$80.54
4.0″	36	1610	92	0.7″	1.0″	7970K12	80.50
4.9″	45	2012	115	0.6″	0.9″	7970K13	104.00
Fit 21 mm Belt Wd.							
2.6″	22	1008	56	0.9″	1.2″	7970K15▲	99.74
4.0″	36	1610	92	0.9″	1.2″	7970K16	99.74
4.9″	45	2012	115	1.0″	1.3″	7970K17	127.50

▲ Made of ductile iron.

Tire-Track Timing Belts and Pulleys

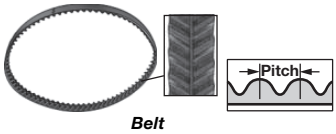

Belt

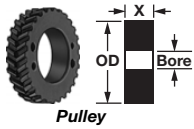

Pulley

Here's a quiet belt-and-pulley system for your high-torque, high-precision operations. The tire-track tooth profile of these belts provides optimum surface-area contact with the pulley (sold separately) for very low noise and superb grip. The unique design also makes the belts self-tracking, so there's no need for flanges on the pulleys.

Timing Belts—8 mm Pitch

All are made of rubber and have Kevlar cords for resistance to flex fatigue, elongation, and shock loads.

Outer Circle, mm	No. of Teeth	16 mm Wd. (Yellow) Trade Size			32 mm Wd. (White) Trade Size		
640	80	Y-640	7947K11	$37.08	W-640	7947K25	$73.55
720	90	Y-720	7947K12	40.28	W-720	7947K26	79.01
800	100	Y-800	7947K13	45.80	W-800	7947K27	84.43
896	112	Y-896	7947K14	49.04	W-896	7947K28	92.62
1,000	125	Y-1000	7947K15	53.43	W-1000	7947K29	103.49
1,280	160	Y-1280	7947K18	64.24	W-1280	7947K32	119.88

Pulleys—8 mm Pitch

Unless otherwise indicated, use these pulleys with quick-disconnect (QD) bushings (sold separately, see page 1045). All are ductile iron.

OD	No. of Teeth	Bushing Style	Bushing Bore	Pitch Dia., mm	(X)		
Fit 16 mm Belt Wd.							
1.75″	18	—	1/2″-7/8″■	46	1 1/16″	7955K11	$129.56
2.75″	28	H	1.625″	71	1 1/4″	7955K12	123.67
3.56″	36	SH	1.871″	92	1 5/16″	7955K13	129.56
Fit 32 mm Belt Wd.							
2.45″	25	—	1/2″-1 3/8″■	64	1 15/16″	7955K16	160.02
3.96″	40	SH	1.871″	102	1 5/16″	7955K17	196.00
4.76″	48	SDS	2.187″	122	1 3/8″	7955K19	224.53

■ Not for use with QD bushings. Machinable to range listed.

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

HTD (High Torque Drive) Timing Belts and Pulleys

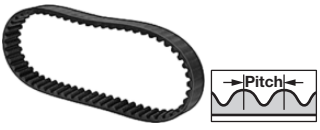

Belt

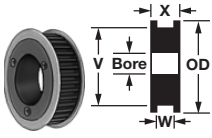

Pulley

The curved-tooth profile allows good surface area contact between these belts and pulleys, giving you high torque capacity, a strong grip, and quiet operation. All are interchangeable with HTD (high torque drive) and Power Grip GT belts and pulleys. The *5 mm pitch belts* and *pulleys* are also interchangeable with HPPD (high performance power drive) belts and pulleys.

Belts— All are black. *5 mm pitch belts* are synthetic rubber with Kevlar cords. *8 mm pitch belts* are neoprene rubber with fiberglass cords.

Pulleys— Unless otherwise indicated, use these pulleys with quick-disconnect (QD) bushings (sold separately, see page 1045). All are steel.

Belts

Trade Size	Outer Circle, mm	No. of Teeth		
5 mm Pitch, 15 mm Wide				
350-5 mm	350	70	7939K11	$17.25
375-5 mm	375	75	7939K12	17.83
400-5 mm	400	80	7939K13	18.45
425-5 mm	425	85	7939K14	19.02
450-5 mm	450	90	7939K15	19.60
475-5 mm	475	95	7939K16	20.22
500-5 mm	500	100	7939K17	20.82
535-5 mm	535	107	7939K18	22.05
565-5 mm	565	113	7939K19	22.46
600-5 mm	600	120	7939K21	23.21
670-5 mm	670	134	7939K23	25.02
740-5 mm	740	148	7939K25	26.77
800-5 mm	800	160	7939K26	27.93
890-5 mm	890	178	7939K28	30.30
1000-5 mm	1,000	200	7939K31	32.74
8 mm Pitch, 20 mm Wide				
480-8 mm	480	60	6486K111	18.87
560-8 mm	560	70	6486K112	20.30
600-8 mm	600	75	6486K113	21.34
640-8 mm	640	80	6486K114	21.95
720-8 mm	720	90	6486K115	23.56
8 mm Pitch, 20 mm Wide (Cont.)				
800-8 mm	800	100	6486K116	$25.74
880-8 mm	880	110	6486K117	27.42
960-8 mm	960	120	6486K118	29.01
1040-8 mm	1,040	130	6486K119	30.61
1120-8 mm	1,120	140	6486K12	32.25
1200-8 mm	1,200	150	6486K121	33.98
1280-8 mm	1,280	160	6486K122	35.63
1760-8 mm	1,760	220	6486K125	45.54
1800-8 mm	1,800	225	6486K126	46.49
2000-8 mm	2,000	250	6486K127	50.92
3600-8 mm	3,600	450	6486K134	87.43
4400-8 mm	4,400	550	6486K135	104.27
8 mm Pitch, 30 mm Wide				
480-8 mm	480	60	6486K211	26.54
560-8 mm	560	70	6486K212	29.01
600-8 mm	600	75	6486K213	30.64
640-8 mm	640	80	6486K214	31.37
720-8 mm	720	90	6486K215	33.72
800-8 mm	800	100	6486K216	37.12
880-8 mm	880	110	6486K217	39.48
960-8 mm	960	120	6486K218	41.83
8 mm Pitch, 30 mm Wide (Cont.)				
1040-8 mm	1,040	130	6486K219	$44.33
1120-8 mm	1,120	140	6486K22	46.68
1200-8 mm	1,200	150	6486K221	49.20
1280-8 mm	1,280	160	6486K222	51.55
1440-8 mm	1,440	180	6486K223	56.40
1600-8 mm	1,600	200	6486K224	61.27
1760-8 mm	1,760	220	6486K225	66.14
2000-8 mm	2,000	250	6486K227	74.08
8 mm Pitch, 50 mm Wide				
720-8 mm	720	90	6486K315	54.49
800-8 mm	800	100	6486K316	59.92
880-8 mm	880	110	6486K317	64.01
960-8 mm	960	120	6486K318	68.13
1040-8 mm	1,040	130	6486K319	72.13
1120-8 mm	1,120	140	6486K32	76.25
1200-8 mm	1,200	150	6486K321	80.38
1280-8 mm	1,280	160	6486K322	84.50
1600-8 mm	1,600	200	6486K324	100.82
1760-8 mm	1,760	220	6486K325	108.93
1800-8 mm	1,800	225	6486K326	111.75
2000-8 mm	2,000	250	6486K327	122.65

Pulleys

OD	No. of Teeth	Bushing Style	Bushing Bore	Pitch Dia. (V)	(W)	(X)		
5 mm Pitch, Fits 15 mm Belt Wd.								
2.16″	32	—	½″-⅞″■	2.005″	0.65″	0.84″	6497K81	$48.08
2.29″	34	—	½″-1″■	2.130″	0.65″	0.84″	6497K82	48.80
2.41″	36	—	½″-1 1/64″■	2.256″	0.65″	0.84″	6497K83	49.97
2.66″	40	JA	1.375″	2.506″	0.65″	0.84″	6497K84	46.15
3.66″	56	SH	1.871″	3.509″	0.65″	0.84″	6497K85	49.97
8 mm Pitch, Fits 20 mm Belt Wd.								
2.56″	22	—	½″-1 3/16″■	2.206″	⅞″	1⅛″	6497K111	44.76
2.95″	26	JA	1.375″	2.607″	⅞″	1⅛″	6497K113	46.39
3.15″	28	H	1.625″	2.807″	⅞″	1⅛″	6497K711	47.23
3.35″	30	H	1.625″	3.008″	⅞″	1⅛″	6497K712	48.89
3.82″	34	SH	1.871″	3.409″	⅞″	1⅛″	6497K117	52.20
4.33″	40	SH	1.871″	4.010″	⅞″	1⅛″	6497K12	58.82
4.76″	44	SDS	2.187″	4.411″	⅞″	1⅛″	6497K121	67.95
5.16″	48	SDS	2.187″	4.812″	⅞″	1⅛″	6497K122	79.54
5.95″	56	SDS	2.187″	5.614″	⅞″	1⅛″	6497K123	87.82
8 mm Pitch, Fits 30 mm Belt Wd.								
2.56″	22	—	½″-1 3/16″■	2.206″	1¼″	1½″	6497K211	$45.57
2.76″	24	—	½″-1¼″■	2.406″	1¼″	1½″	6497K212	46.39
2.95″	26	—	½″-1¼″■	2.607″	1¼″	1½″	6497K213	48.05
3.15″	28	H	1.625″	2.807″	1¼″	1½″	6497K714	51.37
3.35″	30	H	1.625″	3.008″	1¼″	1½″	6497K715	52.20
3.54″	32	H	1.625″	3.208″	1¼″	1½″	6497K716	53.86
3.82″	34	SH	1.871″	3.409″	1¼″	1½″	6497K217	54.68
4.33″	40	SH	1.871″	4.010″	1¼″	1½″	6497K22	67.11
4.76″	44	SDS	2.187″	4.411″	1¼″	1½″	6497K221	74.57
5.16″	48	SDS	2.187″	4.812″	1¼″	1½″	6497K222	81.20
5.95″	56	SDS	2.187″	5.614″	1¼″	1½″	6497K223	85.38
8 mm Pitch, Fits 50 mm Belt Wd.								
3.82″	34	SH	1.871″	3.409″	2⅛″	2⅜″	6497K33	99.66
3.94″	36	SH	1.871″	3.609″	2⅛″	2⅜″	6497K34	101.49
4.33″	40	SH	1.871″	4.010″	2⅛″	2⅜″	6497K35	103.26

■ Not for use with QD bushings. Machinable to range listed.

UHMW Polyethylene Belt Guides

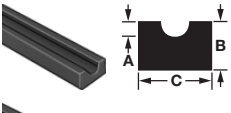

Round-Belt Guide without Channel

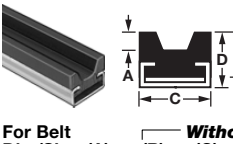
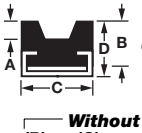

V-Belt Guide with Channel

Why use a belt guide? They keep your belts tracking straight, minimize friction, reduce noise, and prolong belt life. All are UHMW (ultra-high molecular weight) polyethylene. Color is black.

To Order: Please specify length in 1-ft. increments up to a maximum length of 8 feet.

With Channel— These guides include a channel, which makes them easy to install and replace. The channel is made of galvanized steel, unless noted.

For Belt Dia./Size (A)	Without Channel (B)	(C)		Per Ft.	With Channel (B)	(C)	(D)		Per Ft.
For Round Belts									
3/16″	0.13″	0.38″	0.75″	6266K1	$10.20	0.59″	0.79″	0.79″	6266K22	$35.92
1/4″	0.16″	0.38″	0.75″	6266K2	11.23	0.59″	0.79″	0.79″	6266K23	37.56
5/16″	0.19″	0.50″	0.75″	6266K3	12.25	0.59″	0.79″	0.79″	6266K24	40.82
3/8″	0.22″	0.63″	1.00″	6266K4	16.33	0.59″	1.10″	0.83″	6266K25	53.88
1/2″	0.28″	0.75″	1.25″	6266K5	22.48	0.59″	1.10″	0.83″	6266K26●	65.32
9/16″	0.32″	1.00″	1.25″	6266K6	28.57	0.59″	1.10″	0.83″	6266K27	53.88
5/8″	0.35″	1.00″	1.25″	6266K7	31.42	0.71″	1.10″	0.94″	6266K28	57.16
For V-Belts									
3L, O	0.16″	0.38″	0.79″	6267K51	10.20	0.59″	0.79″	0.79″	6267K55	37.56
4L, A	0.20″	0.50″	0.79″	6267K52	12.25	0.59″	0.79″	0.79″	6267K56	40.82
5L, B	0.29″	0.63″	1.10″	6267K53	14.28	0.59″	1.10″	0.83″	6267K57	53.90
C	0.40″	0.75″	1.10″	6267K54	20.40	0.71″	1.10″	0.94″	6267K58	57.16

● The channel is made of stainless steel.

Multipurpose Belt-Tension Testers

A

B

Pocket-sized for your convenience, these testers measure belt tension on timing belts and V-belts.

Style A— Place these testers in the center of your belt with the indicator arm down. Align the sides of the testers parallel to the belt edges. Press slowly on the colored pad until you hear a click; then, remove the testers. Finally, read the tension where the top of the indicator arm intersects the scale.

Style B— To use this tester you must first measure your belt span to determine your belt deflection distance. Then use the tester to apply force to your belt to reach your required deflection. Finally, read the force on the tension scale. Includes O-rings to mark your measurements.

	For Belt Wd.	Tension Range, lbs.		
A	Up to 7/8″	30-150	5913T1	$20.00
A	Up to 2″	100-300	5913T2	20.00
B	_____	0- 35	6160K12	30.46

For information about belting, belts, pulleys, and how to measure belt outer circle (OC), see page 1048.

Pull-Style Belt-Tension Indicators

Check your belt tension with these easy-to-use indicators so you can make adjustments to your belts to lessen vibration, noise, and slippage. Simply depress the handle, insert the hook over your belt, and read the tension on the dial.

For Belt Type	For Belt Wd.	Tension Range, lbs.	Leg Wd.		
V-Belts					
A	1/2″	30-180	3 1/2″	6018K12	$198.29
B	21/32″	60-200	4 1/2″	6018K16	243.27
Timing Belts					
—	1/2″-1″	40-180	3 1/2″	60275K21	385.70

Digital Belt-Tension Indicator

Measure V-belt and timing-belt tension using vibration rather than manual deflection. Just position the indicator above the belt and pluck the belt like a guitar string to create vibration. Then, read the tension on the display.

This highly accurate indicator measures the tension from 0 to 9,990 newtons, 10 to 400 Hz, or 0-2,200 lbs.-force. It operates on four AA batteries (included). Furnished with a tuning fork for calibrating the indicator and a plastic carrying case.

1455T1 ..... $1,286.42

V-Belt Sizer

Quickly determine the size of any belt. This tool measures belt top widths up to 1″ and outer circles up to 100″.

60375K2 ..... $70.63

V-Belt and Pulley Groove Gauges

Measure V-belt cross sections and pulley groove depths to select the correct size belt. You'll get three gauges for belts (covering sizes A-E, 3V, 5V, and 8V belts) and eight gauges for grooves (covering A/B combination grooves). All of the gauges are made of blue plastic and are connected with a ball chain.

1937K33 ..... $11.54

Pocket Parallel-Edge Alignment Laser

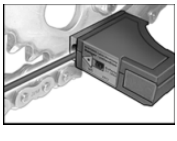

Slip this 2 1/4″ Lg. × 3/4″ Wd. × 1 3/4″ Ht. tool into your pocket so it's always on hand to align belts, pulleys, chain, and sprockets. Economical and simple to use, this laser has a machined aluminum surface that is adjusted parallel to the contact surface for precise alignment. Just press the tool against the side of your pulley or sprocket and project the laser along your belt or chain to the cardboard target (included) to see any misalignment. Laser is integrated Class II and has a 630-680 nm wavelength. Tolerance is 0.5 mm per 1 meter. Operates on two 1.5-volt batteries (included). Packed in a nylon pouch.

3273A1 ..... $91.75

Magnetic Laser Alignment Tool

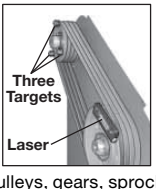

Align pulleys, gears, sprockets, and just about anything ferrous with this aluminum magnetic laser alignment tool. It works with pulleys that have 3″ to 6 ft. diameters and 3″ to 20 ft. spacings. Place the adjustable magnetic targets onto the edge of one pulley and attach the laser line emitter on the edge of the other pulley. The laser light intersects the three targets to visually show any misalignment. Laser is Class II, 635 nm wavelength, accurate to ±0.07°, and 1/16″ wide at 30″ with a 70° spread. Tool includes two belt-tension testers for capacities of 30 to 300 lbs., three adjustable targets, a laser line emitter, and a plastic carrying case with foam inserts. Operates on two AAA batteries (included).

Alignment Tool	2309A46	$924.07
Replacement AAA Battery	65605T71	.79

Heavy Duty Spring-Loaded Tensioners

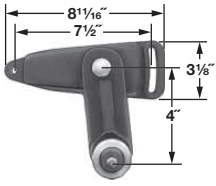

Automatically maintain belt and chain tension with these tensioners. Idler shafts are required and are sold separately below.

Tensioners—Made of steel, tensioners have an internal spring to provide constant tension. For use in all directions with any 1″ bore idler sprocket, such as 6663K73-6663K78 on page 1040 and 1355K3-1355K6 on page 1051. Mounting fasteners are included.

Idler Shafts—Made of hardened and ground steel. Thread size is 3/4″-16 × 7/8″.

Tensioners

Tension Cap., lbs.	Fits Idler Bore Size		
22	1″	1816K1	$101.66
44	1″	1816K2	103.47

Idler Shafts

(A)	(B)	Dia.		
1 1/4″	2 1/8″	1″	1816K3	$13.10
2 1/4″	3 1/8″	1″	1816K4	14.30
3 1/4″	4 1/8″	1″	1816K5	16.52

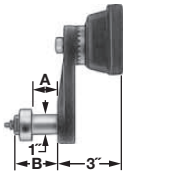

Front and Side View of Tensioner Shown with Idler Shaft

Alligator Belt Lacing Sets

Can be installed with a hammer.

The teeth on the lacing in these sets bite into your belts to easily join flat-belt ends. They provide a tight hold with uniform tension across the width of your belt. Once installed (all you need is a hammer), the joints are flush with the belt surface on both sides, so teeth run smoothly over idlers and won't catch on conveyed products.

Sets include lacing and removable hinge pins, which connect the belt ends. Perfect for flat power transmission belts and other belts up to 12″ wide.

Steel Lacing Sets—For use on most applications.

Type 316 Stainless Steel Lacing Sets—The choice for sanitary applications. They are nonrusting, nonmagnetic, and resist acids and chemicals.

For Belt Thickness	Lg.	Lace No.■	Joints Per Set	*Steel*	Set	*Stainless Steel*	Set
Up to 1/16″	6″	00	6	6118K11	$20.93	6118K31	$40.57
1/16″-3/32″	6″	1A	6	6118K12	18.54	6118K32	40.63
3/32″-9/64″	6″	7	6	6118K13	17.76	6118K33	46.08
1/8″-5/32″	12″	15	4	6118K14	24.74	6118K34	68.97
5/32″-3/16″	12″	20	4	6118K15	28.96	6118K35	91.00
3/16″-7/32″	12″	25D	4	6118K16	28.96	6118K36	97.15
3/16″-7/32″	12″	25G	8	6118K18	57.22	—	—
7/32″-9/32″	12″	27K	4	6118K19	27.90	6118K58	109.25
7/32″-9/32″	12″	27L	8	6118K21	55.19	—	—
9/32″-5/16″	12″	35N	4	6118K23	35.79	6118K41	170.72
5/16″-3/8″	12″	45U	4	6118K24	34.73	6118K42	195.97
3/8″-7/16″	12″	55W	4	6118K25	46.30	6118K43	254.04

■ Lace numbers for stainless steel have an "S" added to the end.

Welding Kit for Urethane Belting

Everything you need to join urethane round, flat, and V-belting (except E-section V-belting) up to 2″ wide. Kit includes a belt cutter, belt clamp, heating tool with rest, flush-cutting pliers, and a plastic carrying case. To join, cut belting ends for a clean surface, insert into belt clamp, apply heating tool to soften belting ends, join belting ends, let cool, then trim flush.

Heating tool operates on 110/120 VAC and reaches a maximum temperature of 475°F. It has a 2 1/8″ wide nonstick-coated blade, a 5 1/2-ft. power cord with three-prong plug, and is UL listed.

Welding Kit	62065K41	$662.18
Replacement Heating Tool	62065K11	107.80
Replacement Heating Tool Blade	62065K16	28.58
Replacement Flash-Cutting Pliers	62065K12	30.78
Replacement Belt Clamp	62065K13	368.25

Nonslip Belt Coatings

Coat your belts to eliminate slippage, reduce vibration, waterproof, and extend belt life. These coatings do not contain rosin, silicone, or CFCs. Offered in a ***4-oz. nonaerosol bottle*** for precise application and a ***10-oz. aerosol can*** that's great for spraying larger areas.

4-oz. Nonaerosol Bottle	6155K29	$11.88
10-oz. Aerosol Can	6155K27	13.00

About Jaw-Style Pullers

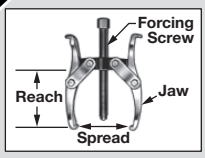

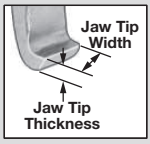

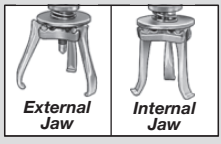

Use a jaw-style puller to remove and install gears, bearings, bushings, wheels, and pulleys. When space allows, select a three-jaw puller for better stability and a more evenly distributed pulling force.

The listed puller capacity should be used as a guide. If you can grip and reach an object, your puller will normally have enough power to pull it. When in doubt, choose the next larger puller size.

Mechanical Pullers

External Jaw Pullers

2-Jaw Style with T-Handle Forcing Screw and Gripping Tips at One End

2-Jaw Style with Hex-Head Forcing Screw and Gripping Tips at Both Ends

3-Jaw Style with Hex-Head Forcing Screw

Combination 2- and 3-Jaw Style with Gripping Tips at Both Ends

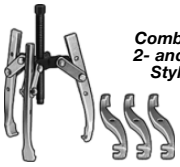

Combination 2- and 3-Jaw Style Set

Made of forged steel for strength and durability, these pullers have a carbon steel hex-head forcing screw (except for models 6340K71 and K72, which have a T-handle forcing screw). The jaws have an extra adjustment hole, unless noted, so you can adjust the spread and reach for an optimum grip. *Pullers with gripping tips at both jaw ends* give you two different jaw tip sizes on one jaw.

Combination 2- and 3-jaw pullers can be used as a two-jaw as well as a three-jaw puller for added versatility.

Spread	Reach	Gripping Tips	Cap., tons	Forcing Screw, Thread Size × Lg.	Jaw Tip Size, Wd. × Thick.		
2-Jaw Style							
3 1/4″	2 1/8″	At One End	1	5/16″-24 × 3 7/8″	1/4″ × 9/64″	6340K71	$42.81
4″	3 1/4″	At Both Ends	2	3/8″-24 × 4 7/8″	1/4″ × 3/16″; 1/2″ × 1/8″	6340K21	37.94
6″	3 1/4″	At Both Ends	5	9/16″-20 × 6 15/16″	3/8″ × 5/16″; 3/4″ × 1/4″	6340K31 ♦	46.43
6″	5 1/2″	At Both Ends	5	9/16″-20 × 6 15/16″	3/8″ × 5/16″; 3/4″ × 1/4″	6340K22	53.89
9″	5″	At Both Ends	7	11/16″-18 × 9″	1″ × 5/16″; 1″ × 11/32″	6340K32 ♦	85.65
9 1/2″	8 3/4″	At One End	7	11/16″-18 × 9″	1″ × 11/32″	6340K23	89.22
12″	11″	At One End	13	13/16″-16 × 12″	1″ × 9/16″	6340K24	157.17
15 1/2″	15 1/4″	At One End	13	13/16″-16 × 12″	1″ × 9/16″	6340K25	166.87
16″	18 3/4″	At One End	17 1/2	1″-14 × 13 1/2″	1 9/32″ × 13/16″	6340K27	295.04
20″	22 1/4″	At One End	25	1 1/4″-12 × 15 15/16″	1 1/2″ × 1 1/16″	6340K79	525.73
3-Jaw Style							
3 1/4″	2 1/8″	At One End	1	5/16″-24 × 3 7/8″	1/4″ × 9/64″	6340K72	55.75
14″	14 1/2″	At One End	17 1/2	1″-14 × 13 1/2″	1 9/32″ × 13/16″	6340K42	391.72
16″	18 3/4″	At One End	17 1/2	1″-14 × 13 1/2″	1 9/32″ × 13/16″	6340K43	454.78
20″	22 1/4″	At One End	25	1 1/4″-12 × 15 15/16″	1 1/2″ × 1 1/16″	6340K84	716.76
Combination 2- and 3-Jaw Style							
4 3/4″	3 1/4″	At Both Ends	2	3/8″-24 × 4 7/8″	1/4″ × 3/16″; 1/2″ × 1/8″	6340K41	53.89
7″	3 1/4″	At Both Ends	5	9/16″-20 × 6 15/16″	3/8″ × 5/16″; 3/4″ × 1/4″	6340K51 ♦	62.44
7″	5 1/2″	At Both Ends	5	9/16″-20 × 6 15/16″	3/8″ × 5/16″; 3/4″ × 1/4″	6340K53	71.37
10 1/2″	5″	At Both Ends	7	11/16″-18 × 9″	1″ × 5/16″; 1″ × 11/32″	6340K52 ♦	111.52
11″	8 3/4″	At One End	7	11/16″-18 × 9″	1″ × 11/32″	6340K54	106.17
12″	11″	At One End	13	13/16″-16 × 12″	1″ × 9/16″	6340K55	264.02
17″	15 1/4″	At One End	13	13/16″-16 × 12″	1″ × 9/16″	6340K56	257.73
Combination 2- and 3-Jaw Style Set—Furnished with six jaws (three of each listed below).							
10 1/2″	5″	At Both Ends	7	11/16″-18 × 9 1/8″	1″ × 5/16″; 1″ × 1/4″		
11″	8 3/4″	At One End	7	11/16″-18 × 9 1/8″	1″ × 11/32″	6293K12	211.94

♦ Jaws do not have an extra adjustment hole.

Replacement Jaws

All are sold individually. For replacement forcing screws, see page 1067.

For Pullers	Reach	Gripping Tips	Cap., tons	Jaw Tip Size, Wd. × Thick.		
6340K21; K41	3 1/4″	At Both Ends	2	1/4″ × 3/16″; 1/2″ × 1/8″	6340K2	$9.27
6340K31; K51	3 1/4″	At Both Ends	5	3/8″ × 5/16″; 3/4″ × 1/4″	6340K3	9.25
6340K22; K53	5 1/2″	At Both Ends	5	3/8″ × 5/16″; 3/4″ × 1/4″	6340K4	10.60
6340K32; K52	5″	At Both Ends	7	1″ × 5/16″; 1″ × 11/32″	6340K5	21.27
6340K23; K54	8 3/4″	At One End	7	1″ × 11/32″	6340K6	18.60

Locking External Jaw Pullers

2-Jaw Style

3-Jaw Style

Designed to eliminate slipping, these pullers have an outside cage design that locks the jaws in place during setup and keeps the jaws aligned when you tighten the forcing screw. Pullers also have a T-handle to open and close the jaws, which have tapered tips for access to tight spots.

The cage assembly is die cut steel with a black powder-coated finish, T-handle is cast iron, jaws are drop-forged steel, and the forcing screw is steel with a hardened tip.

Also Available: Replacement parts. Please ask for 6169K9 and specify forcing screw, pin, jaw head or jaw, puller capacity, and style (two or three jaw).

Spread	Reach	Cap., tons	Forcing Screw, Thread Size × Lg.	Jaw Tip Size, Wd. × Thick.		
2-Jaw Style						
3 1/4″	2 1/4″	1	5/16″-24 × 5 1/2″	0.34″ × 0.1052″	6169K2	$64.55
5″	4″	2	9/16″-16 × 9 11/16″	0.62″ × 0.109″	6169K31	110.83
7″	6″	6	5/8″-14 × 12 3/4″	0.75″ × 0.323″	6169K13	149.18
12″	8″	12	3/4″-14 × 16 1/4″	0.87″ × 0.365″	6169K17	186.89
15″	9 43/64″	14	3/4″-14 × 19 1/4″	1.00″ × 0.371″	6169K15	199.74
18″	12″	25	1 1/8″-14 × 26″	1.25″ × 0.508″	6169K23	438.52
25″	14″	35	1 1/4″-14 × 31 1/2″	1.43″ × 0.53″	6169K25	541.80
3-Jaw Style						
4 1/2″	3″	2	3/8″-24 × 7″	0.42″ × 0.14″	6169K1	84.17
5″	4″	5	9/16″-16 × 9 11/16″	0.62″ × 0.109″	6169K32	127.87
7″	6″	10	5/8″-14 × 12 3/4″	0.75″ × 0.323″	6169K14	168.85
12″	8″	17	3/4″-14 × 16 1/4″	0.87″ × 0.365″	6169K18	213.93
15″	9 43/64″	20	3/4″-14 × 19 1/4″	1.00″ × 0.371″	6169K16	236.89
18″	12″	30	1 1/8″-14 × 26″	1.25″ × 0.508″	6169K24	572.95
25″	14″	40	1 1/4″-14 × 31 1/2″	1.43″ × 0.53″	6169K26	693.44

Sets

External Puller Set— Contains one each of 6169K13, 6169K32, 6169K14, and 6169K16 shown above.

6169K63 ..... **Set** $634.10

Internal/External Puller Set— Contains 6169K32 (shown above), three internal jaws, three additional long jaws, and a 2 1/2-lb. slide hammer. Furnished in a plastic case.

6169K66 ..... **Set** $363.90

Accessories

2 1/2-lb. Slide Hammer— Convert 6169K31, 6169K13, 6169K32, and 6169K14 jaw pullers into slide hammer pullers. Overall length is 23 1/2″.

6169K68 ..... $117.00

For information about jaw-style pullers, see page 1066.

Locking Internal/External Jaw Pullers

One puller does the job of two, conveniently handling both internal and external pulling jobs. To convert from external to internal grip, just loosen the locking screw and reverse the jaws. Pullers are steel with forged alloy steel jaws. The jaws are self-locking to make it easy for one person to position the puller and grip an object. All pullers (except for 3765A52 and A2) have a removable forcing screw tip.

Also Available: Replacement forcing screws and forcing-screw tips. For forcing screws, please ask for 3765A62 and specify thread size and length. For forcing-screw tips, please ask for 3765A1 and specify screw thread size.

Spread Internal	Spread External	Reach	Cap., tons	Forcing Screw, Thread Size × Lg.	Jaw Tip Size, Wd. × Thick.		Each
2-Jaw Style							
7/8"- 3 3/4"	4"	3 1/2"	2	3/8"-16 × 6 1/16"	3/8"	× 3/16"	3765A52 $82.57
1 1/2"- 3 1/2"	4 1/2"	3"	6	5/8"-18 × 6 7/8"	3/4"	× 1/4"	3765A3 115.61
4 3/4"-11 1/2"	13 3/4"	15"	10	3/4"-16 × 18 15/16"	1"	× 3/8"	3765A56 305.90
5" -13"	16"	14 3/8"	20	1"-14 × 19"	1 1/4"	× 9/16"	3765A7 382.99
3-Jaw Style							
3/4"- 8"	★	6"	6	5/8"-18 × 6 7/8"	5/16"	× 7/32"	3765A4 151.67
7/8"- 3 3/4"	4"	3 1/2"	2 1/2	3/8"-16 × 6 1/16"	3/8"	× 3/16"	3765A2 106.11
1 1/2"- 3 1/2"	4 1/2"	3"	7 1/2	5/8"-18 × 6 7/8"	3/4"	× 1/4"	3765A5 142.59
2 1/2"- 7 1/2"	8 1/2"	5 1/2"	12 1/2	3/4"-16 × 9 13/16"	15/16"	× 1/4"	3765A54 244.53
4 3/4"-11 1/2"	13 3/4"	15"	12 1/2	3/4"-16 × 18 15/16"	1"	× 3/8"	3765A6 365.28

★ Not recommended for external pulling.

3-Jaw Style
External

Internal

***2 1/2-ton Capacity Puller Set*—**Includes a 2 1/2-ton capacity three-jaw puller (3765A2), three extra jaws, and a 1 1/16-lb. slide hammer, all packed in a metal box.

3765A43 ..... **Set** $196.73

Accessories

***Slide Hammers*—**Convert your jaw puller into a slide hammer puller. Made of steel.

Hammer Weight, lbs.	O'all Lg.	Threaded End	For Puller Cap.		
1 1/16	12 5/8"	3/8"-16	2 1/2 tons	3765A33	$28.02
2 1/8	18 1/16"	5/8"-18	6 to 7 1/2 tons	3765A34	74.08

***Pulling Plate*—**Need a better gripping surface? Attach this steel plate to the object you want to pull and then place the jaws from your puller around the plate. Overall diameter is 3 5/8". Center hole diameter is 1 1/8". Includes four 1/4"-20 × 3/4" long and four 1/4"-28 × 1" long screws for use with tapped holes.

For Puller Capacity

2 1/2 to 12 1/2 tons ..... 3765A35 .... $12.80

Internal Jaw Puller

Also known as a pilot bearing puller, this puller removes press-fit bearings, oil seals, and bushings from flywheels, generators, and other equipment. It has a set of jaws (1/2"-1 1/2" spread, 3/4" reach, 7/16" Wd. × 3/16" Thick. tip size) and a 1 3/4-lb. slide hammer with a 1/2"-20 threaded end. To use, turn the jam nut to spread the jaws. All components are steel. O'all size is 3" Wd. × 19 1/2" Lg. *Note:* Not rated for capacity.

Narrow-Head Assembly

6354K2 ..... **Each** $104.09

***Universal Set*—**Includes the puller and all of the accessories shown below.

6354K9 ..... **Set** $201.58

Accessories—Made of steel.

Narrow-head assembly is for use on 1/2" to 1 3/8" inside diameters. The ***1 3/4-lb. slide hammer*** has a 1/2"-20 threaded end and is 17" long.

	Spread	Reach	Jaw Tip Size, Wd. × Thick.		Each
Extra Jaws	1/2"-2"	1 3/4"	27/64" × 1/4"	6354K7	$14.60
Extra Jaws	7/8"-2 1/8"	1"	5/8" × 1/2"	6354K6	14.60

Narrow-Head Assembly	6354K3	**Each**	$83.08
1 3/4-lb. Slide Hammer	6354K4	**Each**	$45.39

Hub and Fan-Blade Puller

Simply mount this puller to a hub using the three included set screws or use the removable jaws to pull fan blades, blower wheels, and pulleys. The puller can be used on motor shafts up to 5/8" dia. and hubs up to 1 3/4" dia. It includes four removable jaws to handle three-blade as well as four-blade fans. Jaws have a 5 1/2" spread, 2" reach, and 1/4" Wd. × 1" Lg. tip size. Forcing screw is 1/2"-20 × 9" long. Body is high-strength aluminum alloy. Jaws and forcing screw are hardened steel. *Note:* Not rated for capacity.

59765K81 ..... **Each** $62.00

***Set*—**Includes the puller and all of the accessories shown below. Furnished in a plastic case.

59765K89 ..... **Set** $83.65

Accessories

Hub adapter is for use on hubs up to 2 3/4" dia.
Long jaws have a 7 1/4" spread and 3 1/4" reach.

Hub Adapter	59765K85	**Each**	$18.50
Long Jaws (4/set)	59765K87	**Set**	6.50

Bolt-Grip Flange-Style Puller Set

Specially designed flange-style pullers use cap screws to remove objects with tapped holes. Also known as steering wheel and flywheel pullers, the pullers in this set are the choice for pulling jobs requiring two- or three-bolt patterns. Pullers are made of steel. *Note:* Not rated for capacity.

Set includes one small-hole puller (2 5/8" spread/bolt-circle dia.; 3 1/4" reach; 5" long forcing screw) and one large-hole puller (4 5/8" spread/bolt-circle dia.; 3" reach; 5 5/8" long forcing screw) with hex-head and flange-head cap screws (3 of each: 3/8"-16 × 3 1/2" long, 3/8"-24 × 3" long, 5/16"-18 × 3 1/2" long, and 5/16"-24 × 3 1/2" long).

69805A25 ..... **Set** $84.74

Bolt-Grip Bar-Style Pullers

These bolt-grip pullers use cap screws that pass through the crossbar to remove objects with tapped holes. They're ideal for small jobs such as gears, hubs, and pulleys. Reach is variable, based on the length of the cap screws being used. Both are made of steel. *Note:* Not rated for capacity.

The ***1 1/2"-4 1/4" spread puller*** includes two 3/8"-16 × 3" long cap screws. It can also be used with the bearing separator (6342K1) on page 1068.

The ***2"-7 3/4" spread puller*** does not include cap screws; see pages 3134-3159 for cap screws.

1 1/2"-4 1/4" Spread Puller
Cap Screw

Spread	Forcing Screw, Thread Size × Lg.	Max. Cap Screw Size		
1 1/2"-4 1/4"	5/8"-18 × 13"	3/8" dia.	5926A3	$42.42
2" -7 3/4"	3/4"-16 × 11 5/8"	1/2" dia.	5926A4	73.44

Forcing Screws and Accessories

Make your old puller work like new by replacing worn forcing screws. All are steel and have a hex head. **Also Available:** Forcing-screw adapters and protectors (which can also be used with Push-Pullers on page 1068). Please ask for 3762A11 for threaded adapters and specify forcing screw/push-puller leg thread size. Please ask for 59875K1 for step-plate adapters or 6268K1 for shaft protectors and specify OD.

Thread Size	Lg.		
5/16"-24	3 7/8"	6340K8	$13.37
5/16"-24	5 1/2"	6169K135	18.00
3/8"-24	4 7/8"	6340K9	14.50
3/8"-24	7"	6169K111	24.00
1/2"-20	9"	59765K91	6.00
9/16"-16	9 11/16"	6169K321	42.00
9/16"-20	6 15/16"	6340K11	10.00

Thread Size	Lg.		
5/8"-14	12 3/4"	6169K141	$44.00
5/8"-18	5 1/2"	6317K31	8.95
5/8"-18	13"	6358K18	25.27
11/16"-18	9"	6340K12	25.97
3/4"-14	16 1/4"	6169K171	60.00
3/4"-14	19 1/4"	6169K161	68.00

Thread Size	Lg.		
7/8"-9	8 3/16"	6337K12	$72.88
1"-14	13 25/32"	6340K16	84.96
1 1/8"-14	26"	6169K241	114.00
1 1/4"-12	15 15/16"	6340K17	99.93
1 1/4"-14	31 1/2"	6169K261	150.00
1 1/2"-6	14"	6337K22	207.69

For information about jaw-style pullers, see page 1066.

Bolt-Grip Push-Pullers

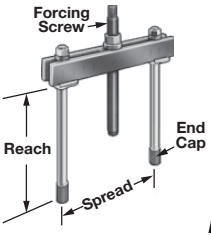

Push-Puller

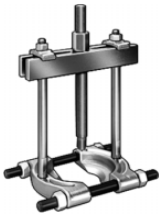

Push-Puller Shown with Bearing Separator Attachment

Select one of these push-pullers to install and remove bearings, pulleys, sprockets, and other press-fit parts. When pulling an object, the object must have tapped holes. When pushing an object, use the included leg end caps to protect the threads on the legs. Push-pullers are steel.

Extra legs let you maintain or change the reach of the push-pullers. Each set consists of two steel legs. *Note:* End caps are not included.

Push-Pullers

Spread	Reach★	End Cap Lg.	Cap., tons	Forcing Screw, Thread Size×Lg.	Leg Thread Size		Each
2⅛″-	7¼″	6¾″	1½″	10	¾″-16×12″	⅝″-18	6347K11 $147.08
3⅛″-11¾″	9½″	2″	17½	1″-14 ×13¼″	⅝″-18	6347K48	249.82
7″ -16¼″	7⅞″	2⅝″	30	1½″-12×17¼″	1″-14	6347K26	498.76

★ Without end caps.

Extra Legs for Push-Pullers

For 10-Ton Model Reach★	Set	For 17½-Ton Model Reach★	Set	For 30-Ton Model Reach★	Set
4¾″	6347K141 $52.52	4½″	6347K151 $64.00	8″	6347K261 $150.18
6¾″	6347K111 60.19	9½″	6347K481 85.33	18″	6347K271 220.22
11¾″	6347K121 60.11	16½″	6347K491 108.62	28″	6347K281 257.09
15¾″	6347K131 59.76	22½″	6347K511 121.83		
		30″	6347K161 174.64		

★ Without end caps.

Attachments for Push-Pullers

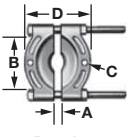

Bearing Separator

V-Belt Pulley

All are made of steel.

Bearing Separators—Have a knifelike edge that gets behind the bearing you're pulling to ensure a better grip. The separator you choose must have a width (B) that is larger than the diameter of the bearing you're pulling. *Note:* These separators can also be used with the two-jaw external pullers listed below and sold on page 1066.

V-Belt Pulleys—Clamp into the V-groove of a pulley for a better grip. The pulley you choose must have a width (B) that is larger than the diameter of the pulley you're pulling.

For Push-Puller Part No.	For Two-Jaw Puller Part No.	Opening Range (A)	Width (B)	Threaded Hole Size (C)	Overall Length■ (D)		Each
Bearing Separators							
_____	6340K71; K21	¼″- 15/16″	1 11/16″	5/16″-18	2.2″	6342K12	$33.90
_____	6340K31; K22	⅛″- 2″	2 7/16″	⅜″-16	2.83″	6342K1	43.41
6347K11	6340K32; K23	½″- 4⅝″	4⅜″	⅝″-18	5.003″	6342K2	84.75
6347K48	6340K32; K25	½″- 5¾″	6″	⅝″-18	6.766″	6342K3	181.65
6347K48	6340K32; K25	½″- 9″	6″	⅝″-18	6.762″	6342K4	187.47
6347K26	_____	¾″-13⅜″	10¼″	1″-14	9.25″	6342K6	773.89
V-Belt Pulleys							
6347K11	_____	1¾″- 5⅞″	6″	⅝″-18	7.129″	6342K7	89.72
6347K48	_____	1⅝″-10″	10 1/16″	⅝″-18	8.175″	6342K8	148.72

■ At minimum opening.

Bearing Separator/V-Belt Pulley Set—Includes one each of the following attachments listed above: 6342K12, K1, K2, K4, and K7. Furnished in a plastic case.

6342K22 ..... **Set** $390.43

Internal/External Bar-Style Pullers

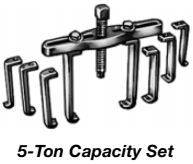

5-Ton Capacity Set

Whether you choose the set or use the individual components to create your own tool, these pullers are great for internal and external gear-pulling jobs. A complete puller consists of a cross-bar with forcing screw and a set of jaws. The crossbar includes two jaw-mounting screws. The jaws slide in slots on the crossbar to adjust the spread. All components are made of forged steel.

5-Ton Capacity Set—Includes one crossbar with forcing screw, two jaw-mounting screws, and one set each of 6337K13, K14, K16, and K15 (shown below).

6337K1 ..... **Set** $564.91

Crossbars with Forcing Screws

Cap., tons	Forcing Screw, Thread Size×Lg.		Each
5	⅞″-9× 8″	6337K11	$152.36
25	1½″-6×14″	6337K21	516.52

Replacement Forcing Screws

Cap., tons	Forcing Screw, Thread Size×Lg.		Each
5	⅞″-9× 8 3/16″	6337K12	$72.88
25	1½″-6×14″	6337K22	207.69

Jaws

Spread	Reach	Cap., Tons	Jaw Tip Size, Wd.×Thick.		Set
3″-12″	5″	5	1½″× ½″	6337K13	$161.15
3″-12″	6″	5	1½″× ½″	6337K14	162.72
3″-12″	6″	5	1½″× ½″	6337K16●	199.04
3″-12″	8″	5	1½″× ½″	6337K15	167.60
4″-18″	6″	25	2″ ×1″	6337K23	386.54
4″-18″	10″	25	2″ ×1″	6337K24	394.12

● Jaws have tapered tips for access to tight spots.

Internal/External Puller Set

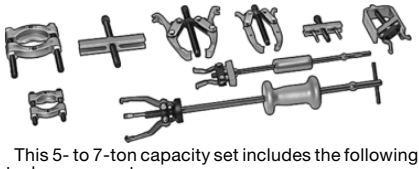

This 5- to 7-ton capacity set includes the following steel components:

External Jaw-Style Pullers
- 2 jaw: 6″ spread; 5½″ reach; 5-ton capacity
- 2 jaw: 9″ spread; 5″ reach; 7-ton capacity
- Combo 2 and 3 jaw: 11″ spread; 8¾″ reach; 7-ton cap.

27″ Long Slide-Hammer Reversible-Jaw Puller
- 3 jaw: 1½″-4¼″ internal spread; 1½″-4½″ external spread; 3¾″ reach; 5-lb. hammer
- Puller head (converts 3-jaw puller to 2-jaw)

20″ Long Slide-Hammer Internal Puller
- 2 jaw: ⅞″-2⅛″ spread; 1″ reach

Bridge-Style Internal Puller
- 2 jaw: ⅞″-2″ spread; 1″ reach

Bar-Style Pullers
- 1½″-4¼″ spread; 5½″ reach (forcing screw lg.)
- 2″-7¾″ spread; 11⅝″ reach (forcing screw lg.)

Bolt-Grip Puller
- 1½″-4⅝″ spread/bolt-circle dia.; ⅜″-24×3″ long screws, ⅜″-16×3″ long screws

Bearing Separator Attachments
- ⅛″-2″ spread; 2 7/16″ width
- ½″-4⅝″ spread; 4⅜″ width

6349K42 ..... **Set** $729.08

Expanding Collet Pullers

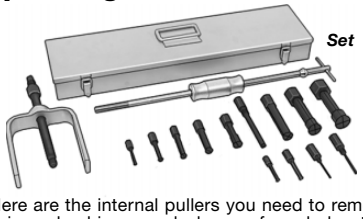

Set

Here are the internal pullers you need to remove bearings, bushings, and sleeves from holes that don't go all the way through (blind holes). Place a collet through the bore of the object being pulled; then use an actuator pin to expand the collet for a tight grip. Apply pulling force with the slide hammer or bridge with forcing screw. Order individual components or choose the complete set. All components are steel. *Note:* Not rated for capacity.

Collets—*Actuator pin is required.*

For Bore Size	Required Pin Dia.		Each
5/16″- ⅜″	⅛″	5991K26	$89.21
⅜″ - 7/16″	⅛″	5991K27	89.21
7/16″- ½″	3/16″	5991K28	89.21
½″ - ⅝″	3/16″	5991K29	89.21
⅝″ - ¾″	3/16″	5991K31	89.21
¾″ - ⅞″	3/16″	5991K32	89.21
⅞″ -1″	3/16″	5991K33	83.64
1″ -1¼″	½″	5991K34	66.91
1¼″ -1½″	½″	5991K35	75.75
1½″ -1¾″	½″	5991K36	72.99

Actuator Pins—*Required for use with collets.*

Pin Dia.		Each
⅛″	5991K42	$28.25
3/16″	5991K43	38.43
½″	5991K44	38.43

Accessories

		Each
2½-lb. Slide Hammer (⅝″-18 threaded end)	6317K1	$43.75
Bridge (6¾″ reach, 6″ Wd.)	5991K17	114.28
Forcing Screw (⅝″-18 and ¾″-16 threads; 12 11/32″ long)	5991K18	29.38
Forcing Screw Nut (¾″-16)	5991K19	7.75

Set

You'll get one of each collet, actuator pin, and accessory listed above. Furnished in a steel case.

5991K21 ..... **Set** $950.32

McMASTER-CARR®

For information about jaw-style pullers, see page 1066.

Internal/External Puller Set with Locking Storage Box

For convenience and security, this puller set is furnished in a rugged, lockable storage box (includes lock and two keys). The storage box measures 25¾″ Ht.×29½″ Wd.×10″ Dp. and made of 20-ga. steel.

Set contains the following components, each made of steel:

External Jaw-Style Pullers
- Combo 2 and 3 jaw: 7″ spread; 3¼″ reach; 5-ton capacity
- Combo 2 and 3 jaw: 10½″ spread; 5″ reach; 7-ton capacity
- Set of three long-reach jaws for 5-ton puller
- Set of three long-reach jaws for 7-ton puller

27″ Long Slide-Hammer Reversible-Jaw Pullers
- 2 jaw: 1¼″-3½″ internal spread; 1″-4½″ external spread; 3⁵⁄₁₆″ reach; 5-lb. sliding hammer
- 3 jaw: 1½″-4¼″ internal spread; 1½″-4½″ external spread; 3⁵⁄₁₆″ reach; 5-lb. sliding hammer

19¼″ Long Slide-Hammer Internal Puller
- 2 jaw: ½″-1½″ spread; ¾″ reach

Bar-Style Pullers
- 1½″-4¼″ spread; 3¾″ reach (forcing screw length)

Bolt-Grip Puller
- 4⅝″ spread/bolt-circle dia.; ⅝″-18×5⅝″ long screws

Bearing Separator Attachments
- ⅛″-2″ spread; 2⁷⁄₁₆″ width
- ½″-4⅝″ spread; 4⅜″ width

69715A44 ..... **Set** $1,112.19

Hydraulic Puller Sets

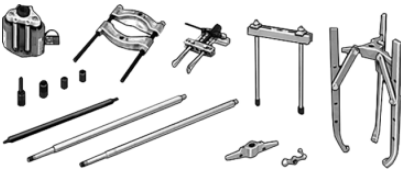

17½-Ton Set

Difficult operations are made easier with hydraulic pulling force. All components are made of steel.

17½-Ton Capacity Puller Set

You'll get a 3-jaw external puller (20″ spread; 11½″ reach), puller head (converts 3-jaw puller to 2-jaw puller), hydraulic cylinder with 2″ piston stroke, push-puller with end caps (5¾″-11¾″ spread; 16½″ reach without end cap and 18½″ with end cap), pair of extra legs (no end caps) for push-puller (22½″ reach), 1″-8 female×⅝″-18 male threaded adapter, ⅝″-18 female×¾″-16 female threaded adapter, bearing separator attachment (½″-9″ spread; 9½″ width), internal jaw attachment (1½″-9″ spread; 4″ reach), two pushing adapters, adjusting screw, and crank handle. Furnished in a wood case.

6315K73 ..... **Set** $2,428.57

Hydraulic Pump Accessory Set

Includes everything you need to connect your hydraulic pump to a puller. Use with your own pump or see pages 1387-1388 for hydraulic pumps. Set contains a pressure gauge with four scales (0-15,000 psi); 6-ft. long hydraulic hose; ¼″ NPT female×¼″ NPT male 45° fitting; ⅜″ NPT female hose coupler; and a tee adapter with ¼″ NPT female, ⅜″ NPT female, and ⅜″ NPT male ports.

6315K79 ..... **Set** $265.87

Internal/External Slide-Hammer Puller

Handle internal and external pulling jobs such as gears, bearings, and oil seals. Order the slide-hammer puller and components individually or choose the complete set. All of the components are steel. *Note:* Not rated for capacity.

Slide-Hammer Reversible-Jaw Puller

You supply the pulling force by sliding the hammer along the rod. Puller is 27″ long and can be assembled with two or three jaws. Internal spread is 1¼″-3½″ for a 2-jaw puller; 1½″-4¼″ for a 3-jaw puller. External spread is 1″-4½″ for a 2-jaw puller; 1½″-4½″ for a 3-jaw puller. This puller has a 2½-lb. slide hammer that can be removed from the rod and used independently.

6317K8 ..... $105.39

Accessories

2-Jaw Puller Bar— Converts a 3-jaw puller to a 2-jaw puller. Has a ⅝″-18 center hole.

6317K5 ..... **Each** $11.53

Crossbar— Pulls objects that have tapped holes. Has a ⅝″-18 center hole for use with ⅜″ dia. cap screws (not incl.). Spread is 1⅞″-5⅝″.

6317K6 ..... **Each** $25.95

		Each
2½-lb. Slide Hammer (⅝″-18 threaded end)	**6317K1**	$43.75
Locking 3-Jaw Puller	**6317K4**	58.58
Oil-Seal Puller Hook (for minimum ¾″ ID)	**6317K7**	10.58
Forcing Screw (⅝″-18×5½″ long)	**6317K31**	8.95

Jaws— For internal and external pulling jobs (except for 6317K14, which are known as pilot bearing jaws and are for internal jobs only).

Internal Spread	External Spread	Reach		Each
1″ -2¾″	_____	2⁵⁄₁₆″	**6317K14**	$3.65
1¼″-3½″	1½″-4½″	3¾″	**6317K11**	5.95
1½″-4¾″	1″ -4½″	4⅛″	**6317K12**	10.95
3¼″-6¼″	1″ -6¼″	6½″	**6317K13**	3.98

Set

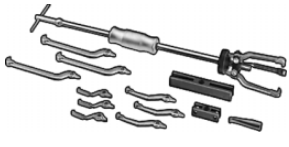

You'll get the slide-hammer puller; crossbar; locking 3-jaw puller; oil-seal puller hook; and jaws 6317K12, K13, and K14 all shown above.

6317K34 ..... **Set** $257.22

Bearing and Seal Driver Sets

Basic Set

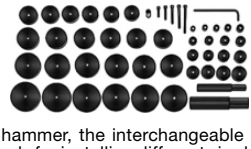

Deluxe Set

When used with a mallet or hammer, the interchangeable handles and discs form custom driving tools for installing different size bearings and seals. The ***deluxe set*** can also be used for installing bushings.

Basic Set— Includes a handle and six discs in 1.565″ OD, 1.75″ OD, 1.965″ OD, 2.325″ OD, 2.47″ OD, and 2.555″ OD sizes. The discs have a tapered side for installing bearings and a flat side for installing seals. The handle and discs are made of aluminum.

57195K81 ..... $40.98

Deluxe Set— Includes two handles and 41 discs ranging from ½″ through 3″ OD in ¹⁄₁₆″ increments. Get even distribution of force by combining the discs—use one small disc as a pilot and a larger disc as a driver. Insert another disc between the pilot and driver to add space. The handle and discs are made of steel. Furnished in a plastic case.

6053K11 ..... $514.05

Stainless Steel Ratchets and Pawl

To prevent reverse motion while allowing forward motion, use one of these ratchets with a pawl (sold separately) on braking systems and rotating equipment.

Ratchets have sloped teeth and press fit onto a shaft. Made of Type 303 stainless steel. ***Pawl*** has a hooked end that fits into the teeth on a ratchet. Made of Type 17-4 PH stainless steel.

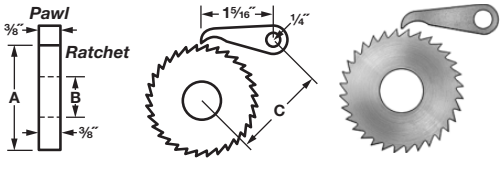

	Pitch	OD (A)	Bore (B)	Ctr.-to-Ctr. (C)		
24-Tooth Ratchet	16	1½″	11⁄16″	1.60″	**6283K24**	$37.11
32-Tooth Ratchet	16	2″	11⁄16″	1.75″	**6283K23**	40.56
48-Tooth Ratchet	16	3″	11⁄16″	2.10″	**6283K22**	55.88
Pawl					**6283K32**	43.86

14 1/2° Pressure Angle Spur Gears

About Gears

To work together, gears must have the same ***pitch*** and ***pressure angle*** (the angle between contact points of meshing teeth). A gear's pitch is its number of teeth divided by its pitch diameter. For example, a gear with 16 teeth and a pitch diameter of 1/2″ will have a pitch of 32. For higher load capacities, choose 20° pressure angle gears over 14 1/2° gears.

Below you will find gauges to measure gear pitch and pressure angle. See page 2264 for additional information.

14 1/2° Pressure Angle Gauge Set	2069A67	$51.95
14 1/2° and 20° Pressure Angle Gauge Set	2069A12	$167.71

Steel Plain-Bore 14 1/2° Pressure Angle Spur Gears and Racks

Gear on Rack

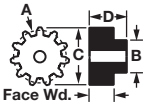

Spur Gears— Have a plain bore furnished in the minimum size listed and are machinable up to the maximum size listed. Made of 1144 steel. ***Gear Racks*** and ***Ready-Mount Gear Racks—*** All are made of C1018 steel.

Note: Choose spur gears and racks with the same pressure angle and pitch. The 14 1/2° and 20° pressure angle spur gears and racks are not compatible.

Spur Gears

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore Size Min.	Bore Size Max.		
32 Pitch— 3/16″ Face Width								
16	0.500″	13/32″	0.56″	1/2″	3/16″	3/8″	6325K89	$14.16
18	0.562″	13/32″	0.63″	1/2″	3/16″	3/8″	6325K94	14.16
20	0.625″	17/32″	0.69″	1/2″	1/4″	7/16″	6325K95	15.50
24	0.750″	21/32″	0.81″	1/2″	5/16″	1/2″	6325K96	19.30
40	1.250″	7/8″	1.31″	9/16″	3/8″	1/2″	6325K97	28.51
24 Pitch— 1/4″ Face Width								
12	0.500″	3/8″	0.58″	9/16″	1/4″	1/4″	6325K31	14.95
15	0.625″	1/2″	0.71″	9/16″	1/4″	1/4″	6325K63	15.57
16	0.666″	35/64″	0.75″	9/16″	5/16″	5/16″	6325K75	15.93
20	0.833″	23/32″	0.92″	9/16″	5/16″	5/16″	6325K87	19.51
21	0.875″	3/4″	0.96″	9/16″	3/8″	3/8″	6325K64	19.96
24	1.000″	7/8″	1.08″	5/8″	3/8″	3/8″	6325K88	22.57
36	1.500″	1 1/8″	1.58″	5/8″	3/8″	5/8″	6325K65	29.68
48	2.000″	1 1/4″	2.08″	5/8″	3/8″	11/16″	6325K66	34.61
72	3.000″	1 3/8″	3.08″	3/4″	1/2″	13/16″	6325K67	51.83
20 Pitch— 3/8″ Face Width								
12	0.600″	15/32″	0.70″	3/4″	5/16″	5/16″	6325K81	11.95
15	0.750″	39/64″	0.85″	3/4″	3/8″	3/8″	6325K68	15.93
16	0.800″	21/32″	0.90″	3/4″	3/8″	3/8″	6325K82	15.31
20	1.000″	55/64″	1.10″	3/4″	3/8″	3/8″	6325K83	19.12
23	1.150″	31/32″	1.25″	3/4″	3/8″	3/8″	6325K69	20.93
24	1.200″	1 1/16″	1.30″	3/4″	3/8″	9/16″	6325K84	19.96
25	1.250″	17/64″	1.35″	3/4″	3/8″	5/8″	6325K71	20.33
32	1.600″	17/16″	1.70″	7/8″	3/8″	7/8″	6325K85	26.88
36	1.800″	1 5/8″	1.90″	7/8″	3/8″	15/16″	6325K72	30.05
48	2.400″	2″	2.50″	7/8″	3/8″	1 1/4″	6325K86	37.58
60	3.000″	2″	3.10″	7/8″	3/8″	1 1/4″	6325K73	43.77
16 Pitch— 1/2″ Face Width								
12	0.750″	9/16″	0.88″	15/16″	3/8″	3/8″	6325K11	15.57
14	0.875″	11/16″	1.00″	15/16″	3/8″	3/8″	6325K12	17.34
16	1.000″	13/16″	1.13″	15/16″	1/2″	1/2″	6325K13	19.51
18	1.125″	15/16″	1.25″	15/16″	1/2″	1/2″	6325K14	20.93
20	1.250″	1 1/16″	1.38″	15/16″	1/2″	9/16″	6325K15	20.33
22	1.375″	1 3/16″	1.50″	15/16″	1/2″	5/8″	6325K74	21.28
24	1.500″	1 5/16″	1.63″	15/16″	1/2″	3/4″	6325K16	22.57
28	1.750″	1 1/2″	1.88″	1″	1/2″	7/8″	6325K76	29.32
30	1.875″	1 5/8″	2.00″	1″	1/2″	15/16″	6325K17	30.94
32	2.000″	1 3/4″	2.13″	1″	1/2″	1″	6325K18	34.61
36	2.250″	2″	2.38″	1″	1/2″	1 1/4″	6325K77	35.54
40	2.500″	2″	2.63″	1″	1/2″	1 1/4″	6325K19	39.78
48	3.000″	2″	3.13″	1″	1/2″	1 1/4″	6325K21	45.97
60	3.750″	2″	3.88″	1″	1/2″	1 1/4″	6325K78	58.43
12 Pitch— 3/4″ Face Width								
12	1.000″	3/4″	1.17″	1 1/4″	1/2″	1/2″	6325K22	19.96
14	1.167″	29/32″	1.33″	1 1/4″	1/2″	1/2″	6325K23	22.57
15	1.250″	1″	1.42″	1 1/4″	5/8″	5/8″	6325K79	25.02
16	1.333″	1 1/16″	1.50″	1 1/4″	5/8″	5/8″	6325K24	25.93
18	1.500″	1 1/4″	1.67″	1 1/4″	5/8″	11/16″	6325K25	27.26
20	1.667″	1 13/32″	1.83″	1 1/4″	5/8″	13/16″	6325K26	29.32
12 Pitch— 3/4″ Face Width (Cont.)								
24	2.000″	1 3/4″	2.17″	1 1/4″	5/8″	1″	6325K27	$37.21
30	2.500″	2 1/4″	2.67″	1 3/8″	5/8″	1 5/16″	6325K28	40.11
32	2.667″	2 1/4″	2.83″	1 3/8″	5/8″	1 5/16″	6325K29	43.77
36	3.000″	2 1/2″	3.17″	1 3/8″	5/8″	1 1/2″	6325K1	45.97
40	3.333″	2 1/2″	3.50″	1 3/8″	5/8″	1 1/2″	6325K2	48.37
42	3.500″	2 1/2″	3.67″	1 3/8″	5/8″	1 1/2″	6325K3	49.74
48	4.000″	2 1/2″	4.17″	1 1/2″	5/8″	1 1/2″	6325K32	64.69
60	5.000″	2 3/4″	5.17″	1 1/2″	3/4″	1 3/4″	6325K4	77.32
10 Pitch— 1″ Face Width								
12	1.200″	15/16″	1.40″	1 5/8″	5/8″	5/8″	6325K33	25.59
14	1.400″	1 1/8″	1.60″	1 5/8″	5/8″	5/8″	6325K34	29.32
15	1.500″	1 7/32″	1.70″	1 5/8″	3/4″	3/4″	6325K5	30.94
16	1.600″	1 5/16″	1.80″	1 5/8″	3/4″	3/4″	6325K35	34.61
18	1.800″	1 17/32″	2.00″	1 5/8″	3/4″	7/8″	6325K36	37.21
20	2.000″	1 23/32″	2.20″	1 5/8″	3/4″	1″	6325K37	40.11
24	2.400″	2 1/8″	2.60″	1 5/8″	3/4″	1 1/4″	6325K38	45.07
25	2.500″	2 7/32″	2.70″	1 5/8″	3/4″	1 1/2″	6325K6	45.07
28	2.800″	2 1/8″	3.00″	1 7/8″	3/4″	1 1/4″	6325K7	49.63
30	3.000″	2 1/8″	3.20″	1 7/8″	3/4″	1 1/4″	6325K39	66.86
35	3.500″	2 1/4″	3.70″	1 7/8″	3/4″	1 5/16″	6325K8	58.43
40	4.000″	2 1/4″	4.20″	1 7/8″	7/8″	1 5/16″	6325K42	83.55
48	4.800″	2 1/2″	5.00″	1 7/8″	7/8″	1 1/2″	6325K43	96.00
60	6.000″	2 1/2″	6.20″	1 7/8″	7/8″	1 1/2″	6325K9	75.12
8 Pitch— 1 1/4″ Face Width								
12	1.500″	1 1/8″	1.75″	2″	3/4″	3/4″	6325K44	38.84
14	1.750″	1 3/8″	2.00″	2″	3/4″	13/16″	6325K45	45.07
16	2.000″	1 5/8″	2.25″	2″	7/8″	15/16″	6325K46	50.57
17	2.125″	1 3/4″	2.38″	2″	7/8″	1″	6325K41	51.29
18	2.250″	1 7/8″	2.50″	2″	7/8″	1 1/8″	6325K47	54.23
20	2.500″	2 1/8″	2.75″	2″	7/8″	1 5/16″	6325K48	60.46
22	2.750″	2 3/8″	3.00″	2″	7/8″	1 5/8″	6325K51	51.29
24	3.000″	2 5/8″	3.25″	2 1/4″	7/8″	1 5/8″	6325K49	91.77
28	3.500″	2 5/8″	3.75″	2 1/4″	7/8″	1 5/8″	6325K53	67.58
32	4.000″	2 7/8″	4.25″	2 1/4″	1″	1 13/16″	6325K52	108.13
36	4.500″	3″	4.75″	2 1/4″	1″	1 7/8″	6325K54	96.00
40	5.000″	3″	5.25″	2 1/4″	1″	1 7/8″	6325K59	116.89
6 Pitch— 1 1/8″ Face Width								
12	2.000″	1 1/2″	2.33″	2 3/8″	1″	1″	6325K55	52.33
14	2.333″	1 13/16″	2.67″	2 3/8″	1″	1 1/16″	6325K56	59.57
15	2.500″	2″	2.83″	2 3/8″	1″	1 1/4″	6325K92	66.86
16	2.666″	2 5/32″	3.00″	2 3/8″	1″	1 5/16″	6325K57	74.38
18	3.000″	2 1/2″	3.33″	2 3/8″	1″	1 1/2″	6325K58	81.61
20	3.333″	2 27/32″	3.67″	2 3/8″	1″	1 3/4″	6325K93	87.37
22	3.666″	3″	4.00″	2 3/8″	1″	1 7/8″	6325K98	99.74
24	4.000″	3″	4.33″	2 1/2″	1 1/8″	1 7/8″	6325K61	117.28
30	5.000″	3 1/8″	5.33″	2 1/2″	1 1/8″	2″	6325K62	151.90
36	6.000″	3 1/4″	6.33″	2 1/2″	1 1/8″	2 1/8″	6325K122	175.32
48	8.000″	4 1/8″	8.33″	2 1/2″	1 1/8″	2 1/2″	6325K123	287.00

Gear Racks—Furnished longer than the length listed to allow room for finishing the ends.

Face Wd.	O'all Ht.	2-ft. Length		4-ft. Length		6-ft. Length	
32 Pitch							
3/16″	3/16″	6295K11	$20.41	6295K242	$36.48	6295K243	$51.03
24 Pitch							
1/4″	1/4″	6295K12	21.17	6295K232	38.55	6295K233	54.03
20 Pitch							
3/8″	3/8″	6295K13	25.31	6295K112	43.48	6295K113	66.17
16 Pitch							
1/2″	1/2″	6295K14	25.39	6295K123	45.23	6295K124	68.24
12 Pitch							
3/4″	1/2″	6295K15	22.26	6295K132	45.48	6295K133	69.60
3/4″	3/4″	6295K16	25.50	6295K142	51.88	6295K143	74.95
10 Pitch							
1″	5/8″	6295K17	$30.74	6295K152	$57.20	6295K153	$83.41
1″	1″	6295K18	37.52	6295K163	64.43	6295K164	94.16
8 Pitch							
1 1/4″	3/4″	6295K19	42.07	6295K172	76.74	6295K173	111.51
1 1/4″	1 1/4″	6295K21	55.81	6295K182	92.84	6295K183	135.90
6 Pitch							
1 1/2″	1″	6295K22	59.83	6295K192	107.37	6295K193	154.65
1 1/2″	1 1/2″	6295K23	62.11	6295K212	119.78	6295K213	175.80

Ready-Mount Gear Racks

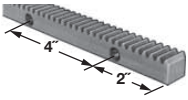

No machining needed; counterbored mounting holes are already in place to save you time. All of these racks are 4 ft. long with 12 mounting holes spaced 4″ apart, starting 2″ in from each end. Mounting screws not included.

Pitch	Face Wd.	O'all Ht.	Screw Size		
24	1/4″	1/4″	#0	5170T1	$55.52
20	3/8″	3/8″	#4	5170T2	61.46
16	1/2″	1/2″	#8	5170T3	69.58
12	3/4″	3/4″	1/4″	5170T4	86.15

For information about gears, see page 1070.

Steel Finished-Bore 14 1/2° Pressure Angle Spur Gears

Furnished ready to use, these steel gears provide a high contact ratio for lower backlash and smoother, quieter operation than 20° pressure angle gears. All include a set screw and have a standard ANSI keyway, unless noted (see page 1174 for keyway dimensions). *Note:* Use with the gear racks on page 1070 (choose gear racks with the same pressure angle and pitch as your gear). The 14 1/2° and 20° pressure angle spur gears and racks are not compatible.

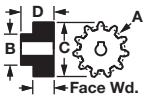

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore Size		
32 Pitch—3/16″ Face Width							
16	0.500″	13/32″	0.56″	1/2″	3/16″	6867K551★	$17.72
18	0.562″	15/32″	0.62″	1/2″	3/16″	6867K552★	17.72
20	0.625″	17/32″	0.68″	1/2″	1/4″	6867K553★	19.49
24	0.750″	21/32″	0.81″	1/2″	5/16″	6867K554★	24.23
40	1.250″	7/8″	1.31″	9/16″	3/8″	6867K555★	38.97
24 Pitch—1/4″ Face Width							
15	0.625″	1/2″	0.70″	9/16″	1/4″	6867K557★	26.00
16	0.667″	35/64″	0.75″	9/16″	5/16″	6867K558★	26.00
20	0.833″	23/32″	0.92″	9/16″	5/16″	6867K19★	44.53
21	0.875″	3/4″	0.96″	9/16″	3/8″	6867K21★	43.46
24	1.000″	7/8″	1.08″	5/8″	3/8″	6867K22	45.93
36	1.500″	1 1/8″	1.58″	5/8″	3/8″	6867K23	53.12
48	2.000″	1 1/4″	2.08″	5/8″	3/8″	6867K24	57.88
72	3.000″	1 3/8″	3.08″	3/4″	1/2″	6867K25	74.42
20 Pitch—3/8″ Face Width							
15	0.750″	39/64″	0.85″	3/4″	3/8″	6867K27★	21.67
16	0.800″	21/32″	0.90″	3/4″	3/8″	6867K28★	22.22
20	1.000″	55/64″	1.10″	3/4″	3/8″	6867K29	41.54
23	1.150″	31/32″	1.25″	3/4″	3/8″	6867K31	43.11
24	1.200″	1 1/16″	1.30″	3/4″	3/8″	6867K32	43.26
25	1.250″	17/64″	1.35″	3/4″	3/8″	6867K33	43.81
32	1.600″	17/16″	1.70″	7/8″	3/8″	6867K34	49.98
36	1.800″	1 5/8″	1.90″	7/8″	3/8″	6867K35	53.50
48	2.400″	2″	2.50″	7/8″	3/8″	6867K36	60.70
60	3.000″	2″	3.10″	7/8″	3/8″	6867K37	66.67
16 Pitch—1/2″ Face Width							
12	0.752″	9/16″	0.88″	15/16″	3/8″	6867K38★	21.12
14	0.875″	11/16″	1.00″	15/16″	3/8″	6867K39★	23.56
16	1.000″	13/16″	1.13″	15/16″	1/2″	6867K41	41.83
18	1.125″	15/16″	1.25″	15/16″	1/2″	6867K42	43.11
20	1.250″	1 1/16″	1.38″	15/16″	1/2″	6867K43	43.81
22	1.375″	1 3/16″	1.50″	15/16″	1/2″	6867K44	44.70
24	1.500″	1 5/16″	1.63″	15/16″	1/2″	6867K45	45.93
28	1.750″	1 1/2″	1.88″	1″	1/2″	6867K46	52.77
30	1.875″	1 5/8″	2.00″	1″	1/2″	6867K47	54.36
32	2.000″	1 3/4″	2.13″	1″	1/2″	6867K48	57.88
36	2.250″	2″	2.38″	1″	1/2″	6867K49	58.42
40	2.500″	2″	2.63″	1″	1/2″	6867K51	62.81

★ Does not have a keyway.

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore Size		
16 Pitch—1/2″ Face Width (Cont.)							
48	3.000″	2″	3.13″	1″	1/2″	6867K52	$68.78
60	3.750″	2″	3.88″	1″	1/2″	6867K53	80.74
12 Pitch—3/4″ Face Width							
12	1.000″	3/4″	1.17″	1 1/4″	1/2″	6867K54★	28.46
14	1.167″	29/32″	1.33″	1 1/4″	1/2″	6867K55	45.93
15	1.250″	1″	1.42″	1 1/4″	5/8″	6867K56	35.60
16	1.333″	1 1/16″	1.50″	1 1/4″	5/8″	6867K57	36.97
18	1.500″	1 1/4″	1.67″	1 1/4″	5/8″	6867K58	38.79
20	1.667″	1 13/32″	1.83″	1 1/4″	5/8″	6867K59	42.53
24	2.000″	1 3/4″	2.17″	1 1/4″	5/8″	6867K61	53.94
30	2.500″	2 1/4″	2.67″	1 3/8″	5/8″	6867K62	63.16
32	2.667″	2 1/4″	2.83″	1 3/8″	5/8″	6867K63	66.67
36	3.000″	2 1/2″	3.17″	1 3/8″	5/8″	6867K64	68.78
40	3.333″	2 1/2″	3.50″	1 3/8″	5/8″	6867K65	71.09
42	3.500″	2 1/2″	3.67″	1 3/8″	5/8″	6867K66	72.66
48	4.000″	2 1/2″	4.17″	1 1/2″	5/8″	6867K67	86.72
60	5.000″	2 3/4″	5.17″	1 1/2″	3/4″	6867K68	98.85
10 Pitch—1″ Face Width							
12	1.200″	15/16″	1.40″	1 5/8″	5/8″	6867K69	36.42
14	1.400″	1 1/8″	1.60″	1 5/8″	5/8″	6867K71	42.53
15	1.500″	1 7/32″	1.70″	1 5/8″	3/4″	6867K72	44.92
16	1.600″	1 5/16″	1.80″	1 5/8″	3/4″	6867K73	50.66
18	1.800″	1 17/32″	2.00″	1 5/8″	3/4″	6867K74	53.94
20	2.000″	1 23/32″	2.20″	1 5/8″	3/4″	6867K75	58.20
24	2.400″	2 1/8″	2.60″	1 5/8″	3/4″	6867K76	65.40
25	2.500″	2 7/32″	2.70″	1 5/8″	3/4″	6867K77	72.30
28	2.800″	2 1/8″	3.00″	1 7/8″	3/4″	6867K78	80.74
30	3.000″	2 1/8″	3.20″	1 7/8″	3/4″	6867K79	88.84
35	3.500″	2 1/4″	3.70″	1 7/8″	3/4″	6867K81	96.73
60	6.000″	2 1/2″	6.20″	1 7/8″	7/8″	6867K84	128.74
8 Pitch—1 1/4″ Face Width							
12	1.500″	1 1/8″	1.75″	2″	3/4″	6867K85	56.34
16	2.000″	1 5/8″	2.25″	2″	7/8″	6867K87	73.36
32	4.000″	2 7/8″	4.25″	2 1/4″	1″	6867K95	128.43
6 Pitch—1 1/2″ Face Width							
12	2.000″	1 1/2″	2.33″	2 3/8″	1″	6867K98	74.87
14	2.333″	1 13/16″	2.67″	2 3/8″	1″	6867K1	81.83
15	2.500″	2″	2.83″	2 3/8″	1″	6867K2	88.84
18	3.000″	2 1/2″	3.33″	2 3/8″	1″	6867K4	103.00

Molded Nylon Plain Bore 14 1/2° Pressure Angle Spur Gears and Racks

Look to these molded nylon spur gears and racks for light duty applications that don't require close tolerances. All gears have a plain bore without set screws or keyways, unless noted. They are also compatible with metal gear racks. *Note:* Choose spur gears and racks with the same pressure angle and pitch. The 14 1/2° and 20° pressure angle spur gears and racks are not compatible.

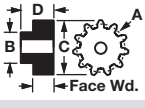

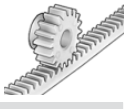

Spur Gears—Color is off-white.

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Face Wd.	Bore Size		
48 Pitch								
12	0.250″	3/16″	0.29″	5/16″	1/8″	3/32″	57655K11	$4.00
14	0.292″	1/4″	0.33″	5/16″	1/8″	3/32″	57655K12	2.92
16	0.333″	1/4″	0.37″	5/16″	1/8″	1/8″	57655K13	2.88
18	0.375″	5/16″	0.41″	5/16″	1/8″	1/8″	57655K14	2.93
20	0.417″	3/8″	0.45″	3/8″	1/8″	1/8″	57655K15	2.82
24	0.500″	3/8″	0.54″	3/8″	1/8″	1/8″	57655K16	3.07
28	0.583″	1/2″	0.62″	3/8″	1/8″	1/8″	57655K17	3.08
32	0.667″	1/2″	0.70″	3/8″	1/8″	1/8″	57655K18	3.16
36	0.750″	5/8″	0.79″	3/8″	1/8″	3/16″	57655K19	3.28
40	0.833″	5/8″	0.87″	3/8″	1/8″	3/16″	57655K21	3.39
42	0.875″	7/16″	0.91″	3/8″	1/8″	1/4″	57655K22	2.69
48	1.000″	5/8″	1.04″	3/8″	1/8″	3/16″	57655K24	3.39
56	1.167″	5/8″	1.20″	3/8″	1/8″	3/16″	57655K25	3.97
60	1.250″	5/8″	1.29″	3/8″	1/8″	1/4″	57655K26	4.14
64	1.333″	5/8″	1.37″	3/8″	1/8″	1/4″	57655K27	4.21
72	1.500″	5/8″	1.54″	3/8″	1/8″	1/4″	57655K28	4.19
80	1.667″	5/8″	1.70″	3/8″	1/8″	1/4″	57655K29	4.34
96	2.000″	1″	2.04″	3/8″	1/8″	1/4″	57655K31	4.19
32 Pitch								
12	0.375″	1/4″	0.44″	3/8″	3/16″	1/8″	57655K32	2.48
14	0.438″	5/16″	0.50″	7/16″	3/16″	1/8″	57655K33	2.77
16	0.500″	3/8″	0.56″	7/16″	3/16″	3/16″	57655K34	3.00
18	0.563″	3/8″	0.63″	7/16″	3/16″	3/16″	57655K35	2.76

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Face Wd.	Bore Size		
32 Pitch (Cont.)								
20	0.625″	1/2″	0.69″	7/16″	3/16″	3/16″	57655K36	$2.67
22	0.688″	9/16″	0.75″	7/16″	3/16″	1/4″	57655K37	3.11
24	0.750″	5/8″	0.81″	7/16″	3/16″	3/16″	57655K38	2.77
28	0.875″	5/8″	0.94″	7/16″	3/16″	3/16″	57655K41	2.84
32	1.000″	5/8″	1.06″	7/16″	3/16″	1/4″	57655K42	2.68
36	1.125″	5/8″	1.19″	7/16″	3/16″	1/4″	57655K43	2.92
40	1.250″	5/8″	1.31″	7/16″	3/16″	1/4″	57655K45	3.50
44	1.375″	5/8″	1.44″	7/16″	3/16″	1/4″	57655K46	3.78
48	1.500″	5/8″	1.56″	7/16″	3/16″	1/4″	57655K47	4.03
52	1.625″	5/8″	1.69″	7/16″	3/16″	1/4″	57655K48	4.39
62	1.938″	5/8″	2.00″	5/8″	1/4″	3/8″	57655K49	6.88
24 Pitch								
12	0.500″	3/8″	0.58″	9/16″	5/16″	1/4″	57655K51	2.69
18	0.750″	1/2″	0.83″	7/16″	1/4″	1/4″	57655K52	3.05
24	1.000″	5/8″	1.08″	5/8″	1/4″	1/4″	57655K53	2.67
84	3.500″	27/32″	3.58″	9/16″	5/16″	3/8″	57655K54	9.90
16 Pitch								
12	0.750″	7/16″	0.88″	1/4″	7/32″	1/4″	57655K55	9.91
20	1.250″	7/8″	1.38″	51/64″	19/64″	1/2″	57655K56	5.21
30	1.875″	1 5/8″	2.00″	1 3/8″	7/8″	63/64″	57655K57	11.45
36	2.250″	3/4″	2.38″	11/16″	5/16″	3/8″	57655K58	7.76
42	2.625″	1 3/8″	2.75″	7/8″	5/8″	13/32″	57655K59♦	12.52

♦ Has a 1/8″ wide keyway.

Gear Racks—Furnished in 1-ft. lengths to permit end-to-end butting without interruption of tooth spacing. Color is off-white.

Pitch	Face Width	O'all Ht.	Lg.		
48	1/8″	1/8″	1 ft.	57655K61	$4.24
32	3/16″	3/16″	1 ft.	57655K62	4.63
24	1/4″	1/4″	1 ft.	57655K63	$5.33
16	5/16″	5/16″	1 ft.	57655K64	7.26

14 1/2° & 20° Pressure Angle Spur Gears

For information about gears, see page 1070.

Machined Nylon Plain Bore 14 1/2° Pressure Angle Spur Gears and Racks

Gear on Rack

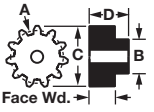

FDA and USDA compliant, these gears and racks are made of oil-filled machined nylon. They are quiet, lightweight, long-lasting, and corrosion resistant. They're also stronger than molded nylon gears and racks.

Spur Gears—Have a plain bore furnished in the minimum size listed and are machinable up to the maximum size listed. ***Gear Racks***—Furnished longer than the length listed to allow room for finishing the ends.

Note: Choose spur gears and racks with the same pressure angle and pitch. The 14 1/2° and 20° pressure angle spur gears and racks are not compatible.

Spur Gears—Color is off-white.

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore Size Min.	Bore Size Max.		
20 Pitch—3/8″ Face Width								
11	0.55″	13/32″	0.65″	3/4″	1/4″	5/16″	60455K12	$14.34
60	3″	2″	3.1″	7/8″	3/8″	1 1/4″	60455K14	21.60
16 Pitch—1/2″ Face Width								
16	1″	13/16″	1.125″	15/16″	1/2″	1/2″	60455K33	21.60
24	1.5″	15/16″	1.625″	15/16″	1/2″	5/8″	60455K36	26.72
32	2″	1 3/4″	2.125″	1″	1/2″	1″	60455K38	41.91
48	3″	2″	3.125″	1″	1/2″	1 1/8″	60455K41	55.31

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore Size Min.	Bore Size Max.		
12 Pitch—3/4″ Face Width								
14	1.167″	29/32″	1.33″	1 1/4″	1/2″	1/2″	60455K43	$26.72
48	4″	2 1/2″	4.17″	1 1/2″	1/2″	1 3/8″	60455K51	77.85
10 Pitch—1″ Face Width								
12	1.2″	15/16″	1.4″	1 5/8″	1/2″	1/2″	60455K52	30.49
20	2″	1 23/32″	2.2″	1 5/8″	3/4″	7/8″	60455K56	48.33

Gear Racks—Color is green.

Pitch	Face Width	O'all Ht.	Length		
20	3/8″	3/8″	4 ft.	60435K58	$118.60
16	1/2″	1/2″	4 ft.	60435K59	98.42
12	3/4″	3/4″	4 ft.	60435K62	$115.03
10	1″	1″	4 ft.	60435K64	145.01

20° Pressure Angle Spur Gears and Racks

Gear on Rack

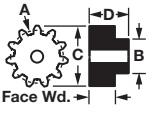

When higher load capacities are required, choose these 20° pressure angle spur gears and racks over 14 1/2° spur gears and racks.

Steel and ***Brass Spur Gears***—Have a plain bore. ***Stainless Steel Spur Gears***—Offer superior corrosion resistance and have a finished bore with a set screw.

Note: Choose spur gears and racks with the same pressure angle and pitch. The 14 1/2° and 20° pressure angle spur gears and racks are not compatible.

Steel Plain Bore Spur Gears

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore		
20 Pitch—1/2″ Face Width							
15	0.75″	0.6″	0.85″	0.94″	3/8″	5172T11	$17.08
20	1″	0.84″	1.1″	0.94″	1/2″	5172T12	18.64
25	1.25″	0.97″	1.35″	0.94″	1/2″	5172T13	19.40
30	1.5″	1.22″	1.6″	0.94″	1/2″	5172T14	21.30
35	1.75″	1.47″	1.85″	1″	1/2″	5172T15	28.28
40	2″	1.72″	2.1″	1″	1/2″	5172T16	29.84
16 Pitch—3/4″ Face Width							
16	1″	0.81″	1.125″	1.25″	1/2″	5172T21	19.14
24	1.5″	1.2″	1.625″	1.25″	5/8″	5172T22	21.29
32	2″	1.7″	2.125″	1.25″	3/4″	5172T23	33.54
48	3″	2″	3.125″	1.37″	5/8″	5172T24	47.00
80	5″	3.88″	5.125″	1.5″	3/4″	5172T25	77.37
12 Pitch—1″ Face Width							
12	1″	0.75″	1.17″	1.62″	1/2″	5172T31	19.14
15	1.25″	0.99″	1.42″	1.62″	5/8″	5172T32	23.93
21	1.75″	1.4″	1.92″	1.62″	3/4″	5172T33	29.84
24	2″	1.65″	2.17″	1.62″	7/8″	5172T34	35.63
36	3″	1.94″	3.17″	1.88″	3/4″	5172T35	50.31
48	4″	2.88″	4.17″	1.88″	7/8″	5172T36	67.36
8 Pitch—1 1/2″ Face Width							
12	1.5″	1.12″	1.75″	2.25″	3/4″	5172T41	37.27
16	2″	1.56″	2.25″	2.38″	7/8″	5172T42	48.75
20	2.5″	2.06″	2.75″	2.38″	1″	5172T43	58.34
24	3″	2.56″	3.25″	2.38″	1″	5172T44	76.07
28	3.5″	3.06″	3.75″	2.38″	7/8″	5172T45	89.14

Type 303 Stainless Steel Finished Bore Spur Gears

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore		
64 Pitch—3/16″ Face Width							
36	0.5625″	1/2″	0.59″	0.437″	1/4″	6832K36	$17.70
48	0.75″	1/2″	0.78″	0.437″	1/4″	6832K37	18.55
48 Pitch—3/16″ Face Width							
30	0.625″	1/2″	0.67″	0.437″	1/4″	6832K43	17.70
36	0.75″	1/2″	0.79″	0.437″	1/4″	6832K44	18.82
48	1″	1/2″	1.04″	0.437″	1/4″	6832K45	20.02
32 Pitch—3/16″ Face Width							
20	0.625″	1/2″	0.6875″	0.437″	1/4″	6832K52	17.70
24	0.75″	1/2″	0.8125″	0.437″	1/4″	6832K53	18.82
32	1″	1/2″	1.0625″	0.437″	1/4″	6832K54	20.02
36	1.125″	1/2″	1.1875″	0.437″	1/4″	6832K55	20.12
48	1.5″	1/2″	1.5625″	0.437″	1/4″	6832K56	22.55
64	2″	1/2″	2.0625″	0.437″	1/4″	6832K57	29.35
72	2.25″	1/2″	2.3125″	0.437″	1/4″	6832K58	32.35
24 Pitch—3/16″ Face Width							
15	0.625″	1/2″	0.71″	0.437″	1/4″	6832K59	14.45
18	0.75″	1/2″	0.83″	0.437″	1/4″	6832K61	18.82
24	1″	1/2″	1.08″	0.437″	1/4″	6832K62	16.70
36	1.5″	1/2″	1.58″	0.437″	1/4″	6832K64	22.55
48	2″	1/2″	2.08″	0.437″	1/4″	6832K65	29.35
60	2.5″	1/2″	2.58″	0.437″	1/4″	6832K66	32.30

Brass Plain Bore Spur Gears

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore		
64 Pitch—1/8″ Face Width							
16	0.25″	3/16″	0.28″	0.315″	1/8″	7880K11	$9.59
24	0.375″	9/32″	0.41″	0.315″	1/8″	7880K13	11.37
28	0.438″	11/32″	0.47″	0.315″	1/8″	7880K14	12.35
48 Pitch—1/8″ Face Width							
12	0.25″	3/16″	0.29″	0.315″	1/8″	7880K17	9.59
15	0.312″	7/32″	0.35″	0.315″	1/8″	7880K18	10.38
18	0.375″	9/32″	0.42″	0.315″	1/8″	7880K19	11.37
24	0.5″	3/8″	0.54″	0.375″	3/16″	7880K21	13.30
36	0.75″	1/2″	0.79″	0.375″	3/16″	7880K23	15.79
48	1″	5/8″	1.04″	0.375″	1/4″	7880K24	24.86
32 Pitch—3/16″ Face Width							
12	0.375″	9/32″	0.44″	0.438″	1/8″	7880K25	11.37
14	0.438″	11/32″	0.5″	0.438″	1/8″	7880K26	12.01
16	0.5″	13/32″	0.56″	0.438″	3/16″	7880K27	12.72
20	0.625″	15/32″	0.69″	0.438″	3/16″	7880K29	14.32
24	0.75″	17/32″	0.81″	0.438″	3/16″	7880K31	16.65
28	0.875″	19/32″	0.94″	0.438″	3/16″	7880K32	17.91
36	1.125″	23/32″	1.19″	0.438″	1/4″	7880K34	22.89
40	1.25″	23/32″	1.31″	0.438″	1/4″	7880K35	24.92
48	1.5″	25/32″	1.56″	0.438″	1/4″	7880K36	29.31
24 Pitch—1/4″ Face Width							
12	0.5″	3/8″	0.58″	0.5″	3/16″	7880K37	18.96
15	0.625″	1/2″	0.71″	0.5″	3/16″	7880K38	18.96
18	0.75″	35/64″	0.83″	0.5″	3/16″	7880K39	21.17
21	0.875″	39/64″	0.96″	0.5″	3/16″	7880K41	20.15
36	1.5″	51/64″	1.58″	0.5″	1/4″	7880K44	32.04
48	2″	59/64″	2.08″	0.56″	5/16″	7880K45	44.88

Steel Gear Racks—Furnished longer than the length listed to allow room for finishing the ends.

Pitch	Face Wd.	O'all Ht.	*2-ft. Length*		*4-ft. Length*		*6-ft. Length*	
20	1/2″	1/2″	5174T1	$19.30	5174T11	$36.18	5174T21	$51.86
16	3/4″	3/4″	5174T2	23.46	5174T12	44.62	5174T22	64.46
12	1″	1″	5174T3	34.52	5174T13	63.14	5174T23	92.28
8	1 1/2″	1 1/2″	5174T4	67.08	5174T14	129.36	5174T24	189.86

Brass Gear Racks

Pitch	Face Width	O'all Ht.	Length		
64	1/8″	0.125″	2 ft.	7854K11	$31.98
48	1/8″	0.125″	2 ft.	7854K12	31.98
32	3/16″	0.188″	2 ft.	7854K13	33.73
24	1/4″	0.25″	2 ft.	7854K15	39.67

Type 416 Stainless Steel Gear Racks

Pitch	Face Width	O'all Ht.	Length		
64	15/64″	0.48″	11″	6832K73	$85.95
48	15/64″	0.48″	18″	6832K74	105.47
32	15/64″	0.48″	18″	6832K75	105.47
24	15/64″	0.48″	18″	6832K76	117.20

For information about gears, see page 1070.

Steel 20° Pressure Angle Spur Gear Rods

Make your own spur gears from our steel gear stock, which has been cold rolled for strength. The teeth are already formed so you can easily machine custom face widths and bore sizes. Rods have a polished finish. Furnished in 1-ft. lengths.

Note: Choose spur gears and racks with the same pressure angle and pitch. The 14½° and 20° pressure angle spur gears and racks are not compatible.

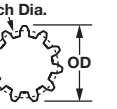

Pitch	No. of Teeth	Pitch Dia.	OD		
32	12	0.375″	0.44″	6847K11	$22.66
32	20	0.625″	0.69″	6847K12	28.56
32	32	1″	1.06″	6847K13	42.76
32	40	1.25″	1.31″	6847K14	54.32
24	12	0.5″	0.58″	6847K15	24.61
24	16	0.667″	0.75″	6847K16	28.93
24	20	0.833″	0.92″	6847K17	34.57
24	24	1″	1.08″	6847K18	41.09
20	12	0.6″	0.7″	6847K19	25.73
20	16	0.8″	0.9″	6847K21	$32.04
20	20	1″	1.1″	6847K22	39.67
16	12	0.75″	0.88″	6847K24	28.70
16	16	1″	1.13″	6847K25	36.31
16	20	1.25″	1.38″	6847K26	44.91
16	24	1.5″	1.63″	6847K27	56.36
12	12	1″	1.17″	6847K28	38.80
12	16	1.333″	1.5″	6847K31	50.70
12	24	2″	2.17″	6847K32	88.33

14½° Pressure Angle Worm Gears and Worms

Designed for use on 90° angle parallel shafts, these worm gears and worms produce a high speed-reduction ratio in a minimal amount of space. Speed-reduction ratio is determined by the number of teeth. For example, a 20-tooth worm gear and its mating worm will give you a 20:1 ratio and will reduce 200 rpm to 10 rpm.

Worm Gears— All are cast iron and have a plain bore. ***Worms—*** Made of steel, these worms have right-hand threads and a standard ANSI keyway (see page 1174 for keyway dimensions).

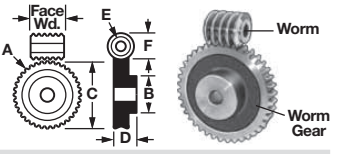

Worm Gears

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Bore		
12 Pitch— *½″ Face Width*							
18	1.5″	1¼″	1.69″	1⅛″	½″	57545K511	$56.90
20	1.67″	1¼″	1.85″	1⅛″	½″	57545K513	58.36
30	2.5″	1¼″	2.69″	1⅛″	½″	57545K515	67.84
40	3.33″	1½″	3.52″	1¼″	⅝″	57545K517	74.13
60	5″	1¾″	5.19″	1¼″	⅝″	57545K522	99.35
10 Pitch— *⅝″ Face Width*							
20	2″	1¼″	2.22″	1⅜″	½″	57545K411	61.56
30	3″	1¾″	3.22″	1⅜″	⅝″	57545K413	77.36
40	4″	1¾″	4.22″	1⅜″	⅝″	57545K415	93.26
50	5″	2″	5.22″	1⅜″	¾″	57545K417	107.53
100	10″	2″	10.22″	1⅜″	¾″	57545K424	178.10
8 Pitch— *¾″ Face Width*							
20	2.5″	1¾″	2.78″	1½″	¾″	57545K311	$71.95
30	3.75″	1¾″	4.03″	1½″	¾″	57545K313	99.35
40	5″	2⅜″	5.28″	1⅝″	1″	57545K315	122.94
6 Pitch— *1″ Face Width*							
20	3.33″	1⅞″	3.71″	1⅞″	¾″	57545K211	107.53
24	4″	1⅞″	4.37″	1⅞″	¾″	57545K213	123.52
30	5″	2¼″	5.37″	1⅞″	⅞″	57545K215	149.90
40	6.67″	2½″	7.04″	1⅞″	1″	57545K217	194.49
72	12″	3″	12.37″	2¼″	1¼″	57545K244	266.34

Worms

Pitch	Pitch Dia. (E)	OD (F)	Face Wd.	Bore		
12	1″	1.17″	1⅛″	½″	57545K527	$27.58
10	1¼″	1.45″	1⅜″	⅝″	57545K427	39.17
8	1½″	1.75″	1¾″	¾″	57545K327	$56.11
6	2″	2.33″	2½″	⅞″	57545K227	76.30

20° Pressure Angle Miter Gears

Miter gears transmit motion and power at a 1:1 ratio between shafts that intersect at right angles. To mesh properly, they must be positioned at right angles and have the same pressure angle, pitch, and number of teeth. ***Molded nylon gears*** are lightweight, quiet, and corrosion resistant. ***Hardened steel spiral gears*** offer quieter operation, higher speeds, and greater torque than the nonspiral gears. *Molded nylon* and *steel miter gears* are sold individually; use two gears together to create a set. *Hardened steel miter gears* are sold in sets of two.

Choose miter gears with a ***plain bore*** or with a ***finished bore***. Gears with a ***finished bore*** are ready to mount and include a set screw and standard ANSI keyway (see page 1174 for keyway dimensions).

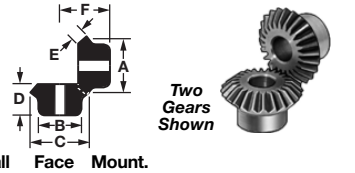

No. of Teeth	Pitch Dia. (A)	Hub Dia. (B)	OD (C)	O'all Lg. (D)	Face Wd. (E)	Mount. Lg. (F)	Bore		Each
Molded Nylon Plain Bore Miter Gears									
48 Pitch									
18	0.375″	21/64″	0.4″	9/32″	0.09″	13/32″	⅛″	7297K11	$2.76
24	0.5″	⅜″	0.53″	⅜″	0.13″	17/32″	3/16″	7297K12	2.76
32 Pitch									
16	0.5″	13/32″	0.55″	11/32″	0.13″	½″	3/16″	7297K13	2.76
24	0.75″	½″	0.8″	13/32″	0.13″	11/16″	3/16″	7297K14	2.85
24 Pitch									
24	1″	⅝″	1.05″	9/16″	0.22″	29/32″	¼″	7297K15	3.16
30	1.25″	⅝″	1.31″	37/64″	0.22″	11/32″	¼″	7297K16	3.17
36	1.5″	11/16″	1.56″	39/64″	0.3″	13/16″	5/16″	7297K17	3.19
16 Pitch									
16	1″	¾″	1.09″	¾″	0.25″	1 1/16″	⅜″	7297K18	3.94
Steel Plain Bore Miter Gears									
16 Pitch									
16	1″	¾″	1.09″	¾″	0.22″	1 1/16″	⅜″	6529K11	18.58
20	1.25″	1″	1.34″	27/32″	0.27″	1¼″	7/16″	6529K13	21.18
24	1.5″	1″	1.59″	⅞″	0.31″	1⅜″	½″	6529K16	24.12
12 Pitch									
15	1.25″	1″	1.37″	55/64″	0.27″	1¼″	⅜″	6529K14	21.83
15	1.25″	1″	1.37″	55/64″	0.27″	1¼″	½″	6529K15	21.83
18	1.5″	1¼″	1.62″	1 1/64″	0.32″	1½″	½″	6529K17	25.56
18	1.5″	1¼″	1.62″	1 1/64″	0.32″	1½″	⅝″	6529K18	25.56
21	1.75″	1⅜″	1.87″	1 3/16″	0.39″	1¾″	½″	6529K19	26.72
21	1.75″	1⅜″	1.87″	1 3/16″	0.39″	1¾″	⅝″	6529K21	26.72
24	2″	1½″	2.12″	1 7/32″	0.43″	1⅞″	½″	6529K22	30.56
30	2.5″	1¾″	2.62″	1 31/64″	0.54″	2 5/16″	⅝″	6529K26	44.78
10 Pitch									
20	2″	1⅝″	2.14″	1 23/64″	0.44″	2″	½″	6529K23	35.32
20	2″	1⅝″	2.14″	1 23/64″	0.44″	2″	⅝″	6529K24	35.32
Steel Plain Bore Miter Gears (Cont.)									
10 Pitch (Cont.)									
20	2″	1⅝″	2.14″	1 23/64″	0.44″	2″	¾″	6529K25	$35.32
25	2.5″	2″	2.64″	1⅝″	0.55″	2 7/16″	¾″	6529K27	49.89
25	2.5″	2″	2.64″	1⅝″	0.55″	2 7/16″	1″	6529K29	49.89
Steel Finished Bore Miter Gears									
16 Pitch									
16	1″	¾″	1.09″	¾″	0.22″	1 1/16″	⅜″	6843K11	36.48
24	1.5″	1″	1.59″	⅞″	0.31″	1⅜″	½″	6843K12	43.00
12 Pitch									
15	1.25″	1″	1.37″	55/64″	0.27″	1¼″	½″	6843K13	33.90
18	1.5″	1¼″	1.62″	1 1/64″	0.32″	1½″	⅝″	6843K14	39.66
21	1.75″	1⅜″	1.87″	1 3/16″	0.39″	1¾″	⅝″	6843K15	40.79
30	2.5″	1¾″	2.62″	1 31/64″	0.54″	2 5/16″	⅝″	6843K16	64.10
10 Pitch									
20	2″	1⅝″	2.14″	1 23/64″	0.44″	2″	½″	6843K17	51.30
20	2″	1⅝″	2.14″	1 23/64″	0.44″	2″	⅝″	6843K18	51.30
20	2″	1⅝″	2.14″	1 23/64″	0.44″	2″	¾″	6843K19	51.30
25	2.5″	2″	2.64″	1⅝″	0.55″	2 7/16″	¾″	6843K21	66.34
25	2.5″	2″	2.64″	1⅝″	0.55″	2 7/16″	1″	6843K22	66.34

									Set
Hardened Steel Finished Bore Spiral Miter Gear Sets— *2 per set*									
18 Pitch									
18	1″	¾″	1.07″	0.74″	0.22″	1 1/16″	⅜″	7655K1	$125.28
12 Pitch									
15	1.25″	1″	1.36″	0.86″	0.3″	1¼″	½″	7655K2	155.36
18	1.5″	1¼″	1.61″	1.02″	0.34″	1½″	⅝″	7655K3	181.82
10 Pitch									
20	2″	1⅝″	2.13″	1.36″	0.47″	2″	¾″	7655K4	221.27

About Shafts

When selecting a shaft, diameter and straightness tolerances are characteristics to consider. Tighter tolerances ensure uniform distribution of loads and improve accuracy and repeatability. The straighter your shafts are, the smoother your system will operate.

Hardened Shafts

The choice for linear motion applications, hardened shafts are used with linear ball bearings and linear sleeve bearings. All of our hardened shafts have micron finishes that are ideal for linear bearings, slides, and other precision applications. A shaft's finish affects frictional resistance and smoothness of travel as well as the efficiency and life of linear bearings. The lower the micron value, the smoother the finish.

Case hardness is a heat-treating process to harden the outside surface (the case) of shafts. Since bearings travel directly on shafts, they cause shafts to wear. Harder shafts provide more wear resistance. The higher the case value, the harder the shaft.

Drive Shafts

Designed for rotary motion applications, drive shafts are often used with gears, sprockets, and other power transmission components. They can also be used with rotary bearings. Many of these shafts have ANSI keyways for a secure hold in higher-torque applications. Most often, these shafts are not hardened, so they're easier to machine than hardened shafts.

Hardened Shafts

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Hardened Shafts

Shafts are case hardened and precision ground for exacting diameter and straightness tolerances. They have a 9 rms micron finish (unless noted) for inch sizes; 12 rms micron finish (unless noted) for metric sizes. Straightness tolerance is 0.002″ per foot for inch sizes; 0.03 mm per 300 mm (unless noted) for metric sizes. Ends are beveled.

For shaft supports, see page 1086.

For information about the minimum hardness depth of shafts, go to mcmaster.com and search for **6061KAC.**

Shaft Dia.	Dia. Tolerance
1/8″-3/16″	–0.0002″ to –0.0005″
1/4″-1 1/4″, 1 3/4″	–0.0005″ to –0.001″
1 1/2″	–0.0006″ to –0.0011″
2″	–0.0006″ to –0.0013″

Shaft Dia.	Dia. Tolerance
3 mm	–0.002 to –0.008 mm
4-6 mm	0.000 to –0.008 mm
8-10 mm	0.000 to –0.009 mm
12, 15, 16 mm	0.000 to –0.011 mm
13 mm	–0.006 to –0.017 mm
20-30 mm	0.000 to –0.013 mm
35-50 mm	0.000 to –0.016 mm

Inch Sizes—Steel

Shafts are 1566 steel; they're stronger than stainless steel shafts but are less corrosion resistant. Case hardness is Rockwell C60.

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		7/8″ Dia.	
3″	6061K411	$3.85	6061K418	$3.93	6061K426	$3.94	6061K434	$4.00	6061K442	$4.06	6061K449	$4.33
4″	6061K412	4.19	6061K419	4.10	6061K427	4.15	6061K435	4.16	6061K443	4.32	6061K451	4.44
5″	6061K413	4.28	6061K421	4.19	6061K428	4.19	6061K436	4.53	6061K444	4.71	6061K452	5.59
6″	6061K11	4.28	6061K12	4.28	6061K13	4.36	6061K111	4.76	6061K14	5.26	6061K331	6.71
7″	6061K414	4.38	6061K422	4.28	6061K429	4.39	6061K437	5.07	6061K445	6.57	6061K453	7.81
8″	6061K101	4.38	6061K102	4.43	6061K103	4.40	6061K104	5.36	6061K105	6.98	6061K106	8.25
9″	6061K21	4.38	6061K22	4.43	6061K23	4.67	6061K121	6.03	6061K24	7.78	6061K332	10.03
10″	6061K107	4.44	6061K108	5.09	6061K109	5.36	6061K112	6.66	6061K113	9.45	6061K114	11.16
12″	6061K31	5.01	6061K32	5.94	6061K33	6.98	6061K131	8.05	6061K34	10.43	6061K333	13.41
14″	6061K415	5.93	6061K423	7.72	6061K431	7.56	6061K438	9.34	6061K446	13.21	6061K454	15.67
15″	6061K315	6.25	6061K325	7.44	6061K335	8.09	6061K122	10.10	6061K345	13.38	6061K334	16.78
16″	6061K416	7.40	6061K424	8.81	6061K432	8.63	6061K439	10.68	6061K447	15.13	6061K455	17.89
18″	6061K41	7.49	6061K42	8.92	6061K43	9.53	6061K141	12.02	6061K44	15.62	6061K336	18.60
20″	6061K417	9.29	6061K425	11.03	6061K433	11.59	6061K441	13.37	6061K448	18.89	6061K456	21.89
24″	6061K51	10.18	6061K52	11.92	6061K53	12.97	6061K151	16.02	6061K54	20.86	6061K337	24.82
30″	6061K81	12.54	6061K82	14.86	6061K79	15.57	6061K123	19.18	6061K545	24.52	6061K338	29.53
36″	6061K61	15.03	6061K62	17.90	6061K63	19.01	6061K161	23.02	6061K64	29.95	6061K339	35.45
42″	6061K91	17.54	6061K92	20.88	6061K636	22.07	6061K124	26.87	6061K646	34.94	6061K341	41.39
48″	6061K71	19.89	6061K72	24.22	6061K73	24.01	6061K171	30.71	6061K74	39.94	6061K342	47.27
60″	6061K324	24.50	6061K326	30.88	6061K83	30.01	6061K181	38.40	6061K84	47.66	6061K343	56.43
72″	6061K327	30.57	6061K328	37.04	6061K93	38.14	6061K191	46.07	6061K94	57.17	6061K344	67.69
84″	6061K211	39.62	6061K212	40.85	6061K213	42.99	6061K214	53.76	6061K215	69.87	6061K346	84.77
96″	6061K312	41.60	6061K313	49.40	6061K314	51.87	6061K316	61.76	6061K317	79.24	6061K347	98.82

	1″ Dia.		1 1/8″ Dia.		1 1/4″ Dia.		1 1/2″ Dia.		1 3/4″ Dia.		2″ Dia.	
3″	6061K601	$4.14	6061K609	$5.51	6061K618	$5.45	6061K627	$6.84	6061K654	$12.39	6061K657	$15.16
4″	6061K602	5.51	6061K611	7.33	6061K619	7.26	6061K628	9.13	6061K637	16.53	6061K658	20.21
5″	6061K603	6.92	6061K612	9.16	6061K621	9.08	6061K629	11.43	6061K638	20.67	6061K647	25.27
6″	6061K604	8.29	6061K613	11.01	6061K622	10.89	6061K631	13.68	6061K639	24.79	6061K648	30.31
7″	6061K605	9.68	6061K614	12.86	6061K623	12.71	6061K632	15.97	6061K641	28.94	6061K649	35.39
8″	6061K606	11.06	6061K615	14.66	6061K624	14.53	6061K633	18.27	6061K642	33.06	6061K651	40.44
9″	6061K607	12.43	6061K616	16.52	6061K625	16.34	6061K634	20.56	6061K643	37.20	6061K652	45.50
10″	6061K608	13.80	6061K617	18.34	6061K626	18.18	6061K635	22.84	6061K644	41.34	6061K653	50.54
12″	6061K35	15.25	6061K351	18.40	6061K36	18.14	6061K37	23.15	6061K221	41.90	6061K38	53.57
18″	6061K45	20.78	6061K353	24.42	6061K46	25.77	6061K47	32.48	6061K222	58.74	6061K48	73.00
24″	6061K55	29.88	6061K354	31.03	6061K56	34.40	6061K57	43.30	6061K223	78.31	6061K58	97.35
30″	6061K25	32.63	6061K355	38.76	6061K16	42.98	6061K17	54.13	6061K224	97.90	6061K18	127.46
36″	6061K65	40.40	6061K356	46.54	6061K66	49.25	6061K67	62.01	6061K225	117.50	6061K68	139.69
42″	6061K656	52.28	6061K357	51.82	6061K26	57.47	6061K27	72.35	6061K226	125.16	6061K28	162.95
48″	6061K75	53.90	6061K358	59.21	6061K76	65.68	6061K77	82.70	6061K227	143.06	6061K78	186.24
60″	6061K85	66.05	6061K359	74.03	6061K86	82.09	6061K87	103.38	6061K228	178.81	6061K88	232.83
72″	6061K95	80.84	6061K361	88.85	6061K96	98.51	6061K97	118.62	6061K229	214.58	6061K98	279.38
84″	6061K216	96.20	6061K362	99.15	6061K217	114.96	6061K218	144.76	6061K219	250.34	6061K311	325.93
96″	6061K318	101.78	6061K363	122.36	6061K319	136.36	6061K321	158.19	6061K322	286.14	6061K323	404.42

(Continued on following page)

For information about shafts, see page 1074.

Hardened Shafts *(Continued from previous page)*

Inch Sizes—Chrome-Plated Steel

Shafts are 1566 steel with a 0.00005″ thick chrome plating that adds some corrosion resistance. Case hardness is Rockwell C60.

Lg.	1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		1″ Dia.		1 1/4″ Dia.		1 1/2″ Dia.	
6″	60345K21	$9.17	60345K11	$11.40	60345K31	$13.88	60345K41	$17.36	60345K61	$23.79	60345K51	$29.00
12″	60345K22	18.31	60345K12	22.78	60345K32	27.70	60345K42	34.73	60345K62	47.66	60345K52	58.01
18″	60345K23	27.47	60345K13	34.17	60345K33	41.57	60345K43	52.10	60345K63	71.48	60345K53	87.01
24″	60345K24	36.66	60345K14	45.55	60345K34	55.49	60345K44	69.49	60345K64	95.27	60345K54	116.02
36″	60345K25	54.96	60345K15	68.32	60345K35	83.14	60345K45	104.20	60345K65	142.92	60345K55	174.02
48″	60345K26	73.32	60345K16	91.13	60345K36	110.88	60345K46	138.93	60345K66	190.56	60345K56	232.01
60″	60345K27	89.20	60345K17	112.23	60345K37	135.26	60345K47	169.46	60345K67	233.39	60345K57	283.91
72″	60345K28	97.57	60345K18	125.67	60345K38	162.34	60345K48	203.35	60345K68	280.06	60345K58	340.71

Inch Sizes—Stainless Steel

These Type 440C stainless steel shafts have good corrosion resistance but are not as strong as steel shafts. Case hardness is Rockwell C50-C55 (unless noted).

Lg.	1/8″ Dia.		3/16″ Dia.		1/4″ Dia.		3/8″ Dia.		1/2″ Dia.	
6″	6253K49■	$49.64	6253K81■	$48.51	6253K11	$9.16	6253K31	$9.23	6253K51	$9.39
12″	6253K59■	112.60	6253K82■	111.13	6253K12	18.30	6253K32	18.44	6253K52	18.76
18″	—	—	—	—	6253K13	27.46	6253K33	27.69	6253K53	28.15
24″	—	—	—	—	6253K14	36.63	6253K34	36.92	6253K21	37.54
36″	—	—	—	—	6253K15	54.93	6253K35	55.38	6253K54	56.32
48″	—	—	—	—	6253K16	73.25	6253K36	73.87	6253K41	75.10
60″	—	—	—	—	6253K17	91.55	6253K18	92.33	6253K19	93.90

	5/8″ Dia.		3/4″ Dia.		1″ Dia.		1 1/4″ Dia.		1 1/2″ Dia.		2″ Dia.	
6″	6253K55	$12.17	6253K61	$13.42	6253K91▲	$34.63	6253K92▲	$53.31	6253K93▲	$62.40	6253K94▲	$137.31
12″	6253K56	24.36	6253K62	26.85	6253K65	37.86	6253K71	58.66	6253K74	68.92	6253K77	151.47
18″	6253K57	36.53	6253K63	40.27	6253K66	56.82	6253K72	88.00	6253K75	103.36	6253K78	227.21
24″	6253K22	48.70	6253K23	53.70	6253K24	75.74	6253K25	117.33	6253K26	137.82	6253K27	302.94
36″	6253K58	73.09	6253K64	80.54	6253K67	113.59	6253K73	175.97	6253K76	206.74	6253K79	454.46
48″	6253K42	97.46	6253K43	107.41	6253K44	151.47	6253K45	234.66	6253K46	275.64	6253K47	605.93
60″	6253K28	121.82	6253K29	134.26	6253K37	189.35	6253K38	293.35	6253K39	344.58	6253K48	740.69

■ Shaft has a 10-16 rms micron finish; Rockwell hardness is C56-C58. ▲Shaft has a 10-16 rms micron finish; Rockwell hardness is C52-C56.

Metric Sizes—Steel

Shafts are 1055 steel (except 3 mm and 13 mm Dia. shafts are 52100 steel and have a straightness tolerance of 0.025 to 0.050 mm per 300 mm). They're stronger than stainless steel shafts but are less corrosion resistant. Case hardness is Rockwell C59-C65.

Lg., mm	3 mm Dia.		4 mm Dia.		5 mm Dia.		6 mm Dia.		8 mm Dia.	
200	6112K31♦	$18.91	6112K34	$6.40	6112K37	$8.44	6112K41	$4.88	6112K44	$5.56
400	6112K11♦	36.00	6112K12	12.33	6112K38	15.92	6112K42	9.98	6112K45	11.33
600	—	—	—	—	6112K13	26.45	6112K14	14.33	6112K46	17.00
800	—	—	—	—	6112K39	33.12	—	—	6112K15	22.65
1,200	—	—	—	—	6112K132	57.81	6112K134	29.95	6112K136	34.05

	10 mm Dia.		12 mm Dia.		13 mm Dia.		15 mm Dia.		16 mm Dia.		20 mm Dia.	
200	6112K101	$5.77	6112K103	$5.86	6112K105♦	$13.96	6112K2	$7.40	6112K107	$7.65	6112K109	$9.40
400	6112K102	11.77	6112K104	12.05	6112K106♦	27.92	6112K4	14.73	6112K108	15.58	6112K111	18.77
500	6112K47	14.07	6112K52	15.02	6112K56♦	32.92	6112K6	18.81	6112K61	20.44	6112K65	24.63
1,000	6112K16	28.16	6112K53	30.05	6112K57♦	77.08	6112K94	37.58	6112K62	40.26	6112K66	49.20
1,200	—	—	6112K17	36.07	6112K18♦	87.06	6112K95	45.12	6112K63	46.79	6112K67	59.02
1,500	—	—	6112K54	45.05	—	—	6112K96	56.37	6112K64	58.49	6112K68	73.78
2,000	—	—	6112K55	60.12	—	—	6112K97	71.87	6112K19	78.00	6112K21	93.79

	24 mm Dia.		25 mm Dia.		30 mm Dia.		35 mm Dia.		40 mm Dia.		50 mm Dia.	
200	6112K51	$30.33	6112K112	$13.56	6112K114	$17.05	6112K116	$23.02	6112K118	$26.53	6112K121	$46.47
500	6112K58	71.57	6112K69	34.02	6112K74	40.67	6112K78	60.39	6112K83	69.54	6112K87	99.88
1,000	6112K59	143.17	6112K71	67.91	6112K75	81.36	6112K79	120.78	6112K84	139.17	6112K88	199.74
1,200	6112K92	171.81	6112K72	81.51	6112K76	97.60	6112K81	144.95	6112K85	167.00	6112K89	239.70
1,500	6112K93	214.74	6112K73	101.95	6112K77	122.04	6112K82	181.17	6112K86	198.98	6112K91	298.74
2,000	6112K98	281.13	6112K22	132.75	6112K23	149.43	6112K24	241.56	6112K25	265.37	6112K26	369.89
2,500	6112K99	364.68	6112K32	178.15	6112K33	223.24	—	—	6112K36	347.95	6112K5	608.95

♦Shaft has a 10-16 rms micron finish.

Metric Sizes—Stainless Steel

These 400 series stainless steel shafts have good corrosion resistance but are not as strong as steel shafts. Case hardness is Rockwell C52-C56.

Lg., mm	6 mm Dia.		8 mm Dia.		10 mm Dia.		12 mm Dia.		15 mm Dia.		16 mm Dia.	
200	6459K1	$12.25	6459K111	$11.78	6459K12	$13.21	6459K23	$10.82	6459K34	$12.82	6459K45	$15.80
400	6459K2	24.55	6459K112	23.60	6459K13	26.45	6459K24	21.57	6459K35	25.62	6459K46	31.62
600	6459K4	36.80	6459K113	35.37	6459K15	39.70	6459K26	32.38	6459K37	38.42	6459K48	47.45
800	6459K5	49.05	6459K114	47.17	6459K16	52.92	6459K27	43.12	6459K38	51.25	6459K49	63.30
1,000	6459K6	61.35	6459K115	58.97	6459K17	66.10	6459K28	53.95	6459K39	64.08	6459K51	79.10
1,200	6459K7	73.88	6459K116	70.78	6459K18	79.33	6459K29	64.70	6459K41	76.85	6459K52	94.88

	20 mm Dia.		25 mm Dia.		30 mm Dia.		40 mm Dia.		50 mm Dia.	
500	6459K58	$44.77	6459K69	$63.33	6459K81	$82.00	6459K92	$125.62	6459K103	$208.95
600	6459K59	53.67	6459K71	75.92	6459K82	93.69	6459K93	146.36	6459K104	228.73
800	6459K61	71.58	6459K72	96.43	6459K83	124.95	6459K94	198.74	6459K105	312.07
1,000	6459K62	89.45	6459K73	120.52	6459K84	156.17	6459K95	234.51	6459K106	390.09
1,200	6459K63	107.30	6459K74	144.64	6459K85	187.40	6459K96	281.36	6459K107	468.09
1,500	6459K64	127.83	6459K75	180.79	6459K86	234.29	6459K97	351.73	6459K108	585.09

For information about shafts, see page 1074.

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Miniature Hardened Shafts

With their small diameters, miniature shafts are suited for miniature linear motion applications. Shafts are made of through-hardened 17-4 PH stainless steel for excellent corrosion resistance and good strength. All have a 10 rms microinch finish. Rockwell hardness is C40. Ends are beveled.

Shaft Dia.	Dia. Tolerance	Straightness Tolerance
1/32″-1/4″	0.0″ to –0.0002″	0.0048″ per foot
5/16″, 3/8″	0.0″ to –0.0002″	0.0072″ per foot
1-4 mm	0.0 to –0.005 mm	3 mm per 300 mm

Lg.	1/32″ Dia.		3/64″ Dia.		1/16″ Dia.		5/64″ Dia.		3/32″ Dia.		1/8″ Dia.	
Inch Sizes												
2″	1162K85	$19.68	1162K89	$15.61	1162K94	$12.71	1162K98	$11.24	1162K103	$10.87	1162K107	$12.96
3″	1162K86	19.91	1162K91	16.74	1162K95	13.85	1162K99	12.17	1162K104	11.62	1162K108	13.85
4″	1162K87	20.98	1162K92	17.83	1162K96	14.77	1162K101	13.34	1162K105	12.67	1162K109	14.77
5″	1162K88	22.07	1162K93	18.80	1162K97	15.90	1162K102	14.39	1162K106	13.85	1162K111	15.19
6″	1162K11	22.43	1162K14	19.38	1162K18	16.25	1162K25	14.86	1162K32	14.05	1162K38	15.43
12″	1162K12	28.03	1162K15	24.94	1162K19	21.86	1162K26	20.47	1162K33	18.80	1162K39	20.19
18″	1162K13	32.82	1162K16	29.70	1162K21	26.61	1162K27	24.95	1162K34	22.43	1162K41	25.23
24″			1162K17	33.86	1162K22	30.84	1162K28	29.40	1162K35	26.61	1162K42	29.40
36″					1162K24	44.81	1162K31	43.42	1162K37	37.82	1162K44	40.63
	5/32″ Dia.		**3/16″ Dia.**		**7/32″ Dia.**		**1/4″ Dia.**		**5/16″ Dia.**		**3/8″ Dia.**	
2″	1162K112	$14.22	1162K116	$12.96	1162K121	$14.01	1162K125	$13.22	1162K129	$14.10	1162K134	$13.93
3″	1162K113	15.57	1162K117	16.41	1162K122	14.85	1162K126	14.06	1162K131	15.19	1162K135	15.31
4″	1162K114	17.29	1162K118	17.20	1162K123	15.69	1162K127	14.69	1162K132	16.20	1162K136	16.53
5″	1162K115	19.05	1162K119	18.00	1162K124	16.61	1162K128	15.36	1162K133	17.03	1162K137	17.75
6″	1162K45	19.61	1162K52	18.22	1162K58	16.82	1162K65	15.43	1162K72	17.06	1162K78	18.22
12″	1162K46	28.03	1162K53	25.23	1162K59	22.43	1162K66	19.61	1162K73	24.07	1162K79	25.23
18″	1162K47	35.02	1162K54	30.84	1162K61	29.40	1162K67	25.23	1162K74	36.43	1162K81	40.63
24″	1162K48	49.04	1162K55	42.05	1162K62	37.82	1162K68	32.26	1162K75	44.81	1162K82	49.04
36″	1162K51	65.86	1162K57	57.45	1162K64	50.45	1162K71	42.05	1162K77	60.25	1162K84	68.66
Metric Sizes												
	1 mm Dia.		**1.5 mm Dia.**		**2 mm Dia.**		**2.5 mm Dia.**		**3 mm Dia.**		**4 mm Dia.**	
300 mm	1174K12	$26.61	1174K15	$22.43	1174K19	$19.38	1174K26	$17.63	1174K33	$21.28	1174K39	$28.04
600 mm			1174K17	31.36	1174K22	28.60	1174K28	25.23	1174K35	31.69	1174K42	49.04
900 mm					1174K24	42.05	1174K31	36.43	1174K37	44.00	1174K44	65.86

Aluminum Shafts

Move loads in corrosive environments. These Alloy 6061 aluminum shafts are strong, lightweight, and nonmagnetic. Surface hardness is Rockwell C70. Ends are beveled.

Anodized Aluminum Shafts— A 0.002″ thick anodized layer resists chipping. All have a 10-16 rms micron finish. Straightness tolerance is 0.004″ per foot.

Ceramic-Coated Aluminum Shafts— A 0.002″ thick ceramic coating keeps weld splatter, molten glass, and paint from sticking to these shafts. All meet MIL-A-8625 and have a maximum 20 rms micron finish. Straightness tolerance is 0.001″ per foot. *Note:* Ceramic-coated aluminum shafts are not intended for use with linear ball bearings.

Shaft Dia.	Dia. Tolerance
Anodized	
1/4″-1 1/4″	–0.0005″ to –0.001″
Ceramic Coated	
1/4″-1″	–0.0004″ to –0.0012″
1 1/2″	–0.0005″ to –0.0013″
2″	–0.0005″ to –0.0015″

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		3/4″ Dia.		7/8″ Dia.		1″ Dia.		1 1/4″ Dia.	
Anodized Aluminum Shafts														
6″	5911K11	$11.50	5911K12	$11.90	5911K13	$12.50	5911K14	$13.36	5911K15	$14.69	5911K16	$15.38	5911K17	$18.40
12″	5911K21	14.12	5911K22	14.95	5911K23	16.40	5911K24	19.57	5911K25	22.74	5911K26	29.05	5911K27	34.24
18″	5911K31	23.00	5911K32	23.86	5911K33	24.60	5911K34	30.79	5911K35	34.10	5911K36	43.57	5911K37	51.33
24″	5911K41	28.19	5911K42	29.90	5911K43	32.79	5911K44	39.10	5911K45	45.43	5911K46	58.10	5911K47	63.87
36″	5911K51	46.00	5911K52	47.74	5911K53	49.19	5911K54	58.67	5911K55	63.62	5911K56	81.33	5911K57	95.80
48″	5911K61	54.55	5911K62	59.81	5911K63	61.18	5911K64	73.00	5911K65	84.80	5911K66	108.40	5911K67	127.73
Ceramic-Coated Aluminum Shafts														
	1/4″ Dia.		**3/8″ Dia.**		**1/2″ Dia.**		**3/4″ Dia.**		**1″ Dia.**		**1 1/2″ Dia.**		**2″ Dia.**	
6″	1031K61	$3.06	1031K71	$3.29	1031K11	$3.60	1031K21	$4.80	1031K31	$7.33	1031K41	$12.27	1031K51	$26.67
9″	1031K62	4.59	1031K72	4.93	1031K12	5.40	1031K22	7.20	1031K32	11.00	1031K42	18.40	1031K52	40.00
12″	1031K63	6.12	1031K73	6.57	1031K13	7.20	1031K23	9.60	1031K33	14.67	1031K43	24.53	1031K53	53.33
15″	1031K64	7.65	1031K74	8.22	1031K14	9.00	1031K24	12.00	1031K34	18.33	1031K44	30.67	1031K54	66.67
18″	1031K65	9.18	1031K75	9.86	1031K15	10.80	1031K25	14.40	1031K35	22.00	1031K45	36.80	1031K55	80.00
24″	1031K66	12.24	1031K76	13.15	1031K16	14.40	1031K26	19.20	1031K36	29.33	1031K46	49.07	1031K56	106.67
36″	1031K67	18.36	1031K77	19.72	1031K17	21.60	1031K27	28.80	1031K37	44.00				
48″	1031K68	24.48	1031K78	26.29	1031K18	28.80	1031K28	38.40	1031K38	58.67				

Hardened Shafts with Machinable Ends

Machining a custom end for mounting is easier because 2″ of each end has been annealed (softened). Shafts are case hardened and precision ground with exacting diameter and straightness tolerances. The nonannealed portion has a 9 rms micron finish. Shafts are 1566 steel for high strength. Case hardness is Rockwell C60. Straightness tolerance is 0.001″ per foot. Ends are beveled.

Note: The annealed (softened) ends are not intended for linear travel.

Shaft Dia.	Dia. Tolerance
1/4″-1″	–0.0005″ to –0.001″
1 1/2″	–0.0006″ to –0.0011″

For information about the minimum hardness depth of shafts, go to mcmaster.com and search for **6061KAC.**

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		3/4″ Dia.		1″ Dia.		1 1/2″ Dia.	
10″	1144K11	$22.15	1144K19	$22.99	1144K28	$23.41	1144K37	$28.40	1144K46	$33.76	1144K55	$48.75
12″	1144K12	23.90	1144K21	24.91	1144K29	25.59	1144K38	31.31	1144K47	37.45	1144K56	55.18
16″	1144K13	27.41	1144K22	28.79	1144K31	30.73	1144K39	37.15	1144K48	44.78	1144K57	68.00
18″	1144K14	29.17	1144K23	30.74	1144K32	32.64	1144K41	41.14	1144K49	48.41	1144K58	74.37
22″	1144K15	33.00	1144K24	35.51	1144K33	36.45	1144K42	46.81	1144K51	55.71	1144K59	82.48
24″	1144K16	34.60	1144K25	37.33	1144K34	38.34	1144K43	49.65	1144K52	59.40	1144K61	88.04
28″	1144K17	37.72	1144K26	40.93	1144K35	43.03	1144K44	55.36	1144K53	66.74	1144K62	99.16
36″	1144K18	44.96	1144K27	48.13	1144K36	51.75	1144K45	66.74	1144K54	81.31	1144K63	121.49

For information about shafts, see page 1074.

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Hardened Shafts with Tapped Ends

To save time and avoid the hassle of machining, the shaft ends come internally tapped. Shafts are case hardened and precision ground with exacting diameter and straightness tolerances. All have a 10-16 rms micron finish. Straightness tolerance is 0.001″ to 0.002″ per foot. Ends are beveled.

Steel Shafts— Made of 52100 steel, these shafts are stronger than stainless steel shafts but are less corrosion resistant. Case hardness is Rockwell C60-C64.

Stainless Steel Shafts— These Type 440C stainless steel shafts have good corrosion resistance but are not as strong as steel shafts. Case hardness is Rockwell C56-C58.

Shaft Dia.	Dia. Tolerance
3/8″	–0.0002″ to –0.0006″
1/2″, 5/8″	–0.0002″ to –0.0007″
3/4″, 1″	–0.0003″ to –0.0008″
1 1/4″	–0.0004″ to –0.0010″

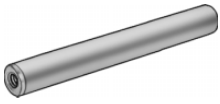

For information about the minimum hardness depth of shafts, go to mcmaster.com and search for **6061KAC.**

Lg.	3/8″ Dia. Tapped End Size: 8-32 x 21/64″ Dp.		1/2″ Dia. Tapped End Size: 1/4″-20 x 1/2″ Dp.		5/8″ Dia. Tapped End Size: 1/4″-20 x 1/2″ Dp.		3/4″ Dia. Tapped End Size: 5/16″-18 x 5/8″ Dp.		1″ Dia. Tapped End Size: 3/8″-16 x 3/4″ Dp.		1 1/4″ Dia. Tapped End Size: 1/2″-13 x 1″ Dp.	
Steel Shafts												
With One Tapped End												
6″	6649K123	$25.40	6649K41	$27.62	6649K51	$28.79	6649K61	$33.56	6649K71	$36.24	6649K81	$45.16
8″	6649K124	26.98	6649K42	29.41	6649K52	30.95	6649K62	36.41	6649K72	40.00	6649K82	49.74
9″	6649K125	27.78	6649K43	30.31	6649K53	32.05	6649K63	37.84	6649K73	41.84	6649K83	52.43
10″	6649K126	28.58	6649K44	31.19	6649K54	33.14	6649K64	39.24	6649K74	43.70	6649K84	54.86
12″	6649K127	30.18	6649K45	32.97	6649K55	35.30	6649K65	42.08	6649K75	47.43	6649K85	59.68
18″	6649K128	34.98	6649K46	38.30	6649K56	41.81	6649K66	50.62	6649K76	58.65	6649K86	74.22
24″	6649K129	39.75	6649K47	43.65	6649K57	48.32	6649K67	59.14	6649K77	69.81	6649K87	88.76
36″	6649K131	49.33	6649K48	54.32	6649K58	61.35	6649K68	76.16	6649K78	92.22	6649K88	117.81
With Two Tapped Ends												
6″	6649K132	38.28	6649K1	43.89	6649K6	44.96	6649K12	52.12	6649K17	54.61	6649K23	65.73
8″	6649K133	39.85	6649K101	43.32	6649K104	44.86	6649K107	53.11	6649K111	56.68	6649K114	69.49
9″	6649K134	40.65	6649K102	44.22	6649K105	45.95	6649K108	54.54	6649K112	58.54	6649K115	71.89
10″	6649K135	41.45	6649K103	45.11	6649K106	47.05	6649K109	55.95	6649K113	60.41	6649K116	74.32
12″	6649K136	43.05	6649K2	49.15	6649K7	51.30	6649K13	60.45	6649K18	65.41	6649K24	79.95
18″	6649K137	47.85	6649K3	54.38	6649K8	57.63	6649K14	68.81	6649K19	76.21	6649K25	94.14
24″	6649K138	52.63	6649K4	59.63	6649K9	63.95	6649K15	77.15	6649K21	87.03	6649K26	108.36
36″	6649K139	62.20	6649K5	70.15	6649K11	76.64	6649K16	93.83	6649K22	108.68	6649K27	136.78
Stainless Steel Shafts												
With One Tapped End												
6″	—	—	1240K51	48.00	1240K57	52.33	1240K64	64.50	1240K71	73.00	1240K77	87.60
9″	—	—	1240K52	55.25	1240K58	61.75	1240K65	74.83	1240K72	87.58	1240K78	108.25
12″	—	—	1240K53	62.50	1240K59	71.17	1240K66	85.17	1240K73	102.17	1240K79	128.85
18″	—	—	1240K54	77.05	1240K61	90.00	1240K67	105.88	1240K74	131.38	1240K81	170.10
24″	—	—	1240K55	91.55	1240K62	108.88	1240K68	126.60	1240K75	163.15	1240K82	211.35
36″	—	—	1240K56	120.62	1240K63	146.57	1240K69	168.00	1240K76	219.00	1240K83	293.85
With Two Tapped Ends												
6″	—	—	1240K11	62.44	1240K16	66.87	1240K22	79.33	1240K27	88.05	1240K33	103.05
9″	—	—	1240K1	68.12	1240K2	74.62	1240K3	87.70	1240K4	99.74	1240K5	121.10
12″	—	—	1240K12	77.33	1240K17	86.21	1240K23	99.74	1240K28	118.00	1240K34	145.36
18″	—	—	1240K13	92.23	1240K18	105.54	1240K24	121.79	1240K29	147.95	1240K35	187.67
24″	—	—	1240K14	107.13	1240K19	124.87	1240K25	143.03	1240K31	177.90	1240K36	229.97
36″	—	—	1240K15	136.92	1240K21	163.54	1240K26	185.51	1240K32	237.79	1240K37	314.59

Hardened Shafts with Threaded Ends

Externally threaded ends have been machined for you—just mount these ready-to-use shafts through a through-hole and secure with a nut. Made of 52100 steel, all are case hardened and precision ground with exacting diameter and straightness tolerances. Shafts have a 10-16 rms micron finish. Case hardness is Rockwell C60-C64. Straightness tolerance is 0.001″ to 0.002″ per foot. Ends are beveled.

Shaft Dia.	Dia. Tolerance
3/8″	–0.0002″ to –0.0006″
1/2″, 5/8″	–0.0002″ to –0.0007″
3/4″, 1″	–0.0003″ to –0.0008″

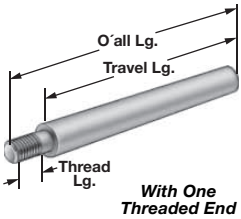

With One Threaded End

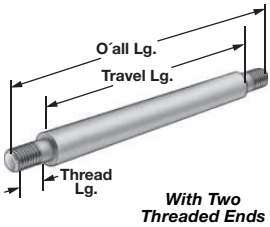

With Two Threaded Ends

For information about the minimum hardness depth of shafts, go to mcmaster.com and search for **6061KAC.**

Shaft Dia.	Thread Size	Thread Lg.	6″ Travel Lg. O'all Lg.			8″ Travel Lg. O'all Lg.			12″ Travel Lg. O'all Lg.			24″ Travel Lg. O'all Lg.		
With One Threaded End														
3/8″	1/4″-20	0.31″	6 1/2″	8350T65	$30.72	8 1/2″	8350T72	$32.09	12 1/2″	8350T81	$34.81	24 1/2″	8350T89	$42.96
1/2″	5/16″-18	0.39″	6 5/8″	8350T66	30.94	8 5/8″	8350T73	32.34	12 5/8″	8350T82	39.53	24 5/8″	8350T91	52.34
5/8″	3/8″-16	0.47″	6 3/4″	8350T67	30.87	8 3/4″	8350T74	36.62	12 3/4″	8350T83	43.72	24 3/4″	8350T92	57.00
3/4″	1/2″-13	0.63″	7″	8350T68	34.13	9″	8350T75	40.74	13″	8350T84	49.60	25″	8350T93	67.46
1″	5/8″-11	0.78″	7 1/4″	8350T69	43.53	9 1/4″	8350T76	46.47	13 1/4″	8350T85	52.34	25 1/4″	8350T94	76.06
With Two Threaded Ends														
3/8″	1/4″-20	0.31″	7″	8350T5	46.83	9″	8350T21	48.19	13″	8350T29	50.91	25″	8350T38	55.52
1/2″	5/16″-18	0.39″	7 1/4″	8350T6	47.17	9 1/4″	8350T22	48.55	13 1/4″	8350T31	54.88	25 1/4″	8350T39	69.40
5/8″	3/8″-16	0.47″	7 1/2″	8350T7	47.19	9 1/2″	8350T23	52.22	13 1/2″	8350T32	61.36	25 1/2″	8350T41	82.20
3/4″	1/2″-13	0.63″	8″	8350T8	47.96	10″	8350T24	56.64	14″	8350T33	67.44	26″	8350T42	93.24
1″	5/8″-11	0.78″	8 1/2″	8350T9	61.20	10 1/2″	8350T25	63.94	14 1/2″	8350T34	69.46	26 1/2″	8350T43	102.50

For information about shafts, see page 1074.

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Tubular Shafts

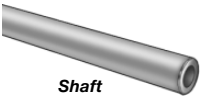

Shaft

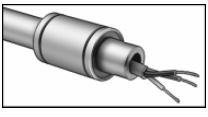

Shaft Shown with Bearing and Wiring (Not Included)

Lighter than solid shafts, tubular shafts reduce your total system weight and allow you to run various media such as electrical wiring, compressed air tubing, coolants, or lubricants through the center. Shafts are precision ground for tight diameter and straightness tolerances. Ends are beveled.

Inch Sizes—*Hardened shafts* are made of 52100 steel with an unfinished interior. All have a 9 rms micron finished OD. Case hardness is Rockwell C58. ID tolerance is ±5%. Straightness tolerance is 0.001″ per foot.

Unhardened shafts are made of 1026 steel with a finished interior. They come with material certification that includes a traceable lot number and physical test report. Shaft OD has a 32 rms micron finish; ID has a 20 rms micron finish. Hardness is Brinell 225. ID tolerance is 0.003″. Straightness tolerance is 0.003″ per foot.

Metric Sizes—Made of 1055 steel, these shafts are hardened with an unfinished interior. All have a 12 rms micron finished OD. Case hardness is Rockwell C59-C65. ID tolerance is ±4%. Straightness tolerance is 0.1 mm per 1,000 mm.

For information about the minimum hardness depth of the hardened shafts, go to mcmaster.com and search for **6061KAC.**

Shaft OD	OD Tolerance
Hardened Shafts	
3/4″, 1″	–0.0005″ to –0.001″
1 1/2″	–0.0006″ to –0.0011″
2″	–0.0006″ to –0.0013″
12-30 mm	0 to –0.021 mm
40 mm	0 to –0.025 mm
Unhardened Shafts	
1 1/4″, 1 1/2″	0″ to –0.0010″
2″	0″ to –0.0020″

Inch Sizes

	Hardened Shafts							Unhardened Shafts					
Lg.	3/4″ OD (0.44″ ID)		1″ OD (0.6″ ID)		1 1/2″ OD (0.89″ ID)		2″ OD (1 1/4″ ID)		1 1/4″ OD (3/4″ ID)		1 1/2″ OD (1″ ID)		2″ OD (1 1/2″ ID)	
12″	6007K35	$37.22	6007K36	$39.64	6007K37	$42.39	6007K38	$97.42	8929T11	$70.63	8929T21	$73.82	8929T31	$105.24
18″	6007K45	55.84	6007K46	59.45	6007K47	63.55	6007K48	146.14	—	—	—	—	—	—
24″	6007K55	74.47	6007K56	79.26	6007K57	84.76	6007K58	194.84	8929T12	123.60	8929T22	127.03	8929T32	206.00
36″	6007K65	106.96	6007K66	113.82	6007K67	121.74	6007K68	274.70	8929T13	176.57	8929T23	180.25	8929T33	286.11
48″	6007K75	142.60	6007K76	151.78	6007K77	162.30	6007K78	352.21	8929T14	229.54	8929T24	233.47	8929T34	361.70
60″	6007K85	178.21	6007K86	189.74	6007K87	202.89	6007K88	440.26	—	—	—	—	—	—

Metric Sizes

	Hardened Shafts											
Lg., mm	12 mm OD (4 mm ID)		16 mm OD (7 mm ID)		20 mm OD (14 mm ID)		25 mm OD (15.6 mm ID)		30 mm OD (18.2 mm ID)		40 mm OD (28.1 mm ID)	
300	5964K11	$33.66	5964K31	$33.66	5964K21	$48.36	5964K22	$57.28	5964K23	$69.26	5964K24	$89.46
500	5964K12	56.10	5964K32	56.10	5964K41	80.62	5964K42	95.48	5964K43	115.46	5964K44	149.08
1,000	5964K13	112.14	5964K33	112.14	5964K51	161.22	5964K52	190.98	5964K53	230.89	5964K54	298.16
1,500	—	—	—	—	5964K71	241.86	5964K72	286.66	5964K73	346.31	5964K74	447.26

Hardened Shafts with Support Rail

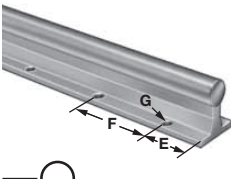

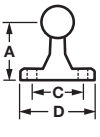

Get shafts and support rails in one easy-to-install unit. Each consists of a Hardened Precision Shaft with Tapped Mounting Holes (6499K or 6526K on page 1079) mounted on an aluminum alloy support rail.

Shafts are case hardened and precision ground for exacting diameter and straightness tolerances. Ends are beveled. *Inch sizes* have a 9 rms micron finish. Straightness tolerance is 0.001″ per foot. *Metric sizes* have a 12 rms micron finish. Straightness tolerance is 0.025 mm per 300 mm.

Use with open-style linear bearings (see pages 1087-1095).

Steel Shafts—Made of steel, these shafts are stronger than stainless steel shafts but are less corrosion resistant. Case hardness is Rockwell C60.

Stainless Steel Shafts—These Type 440C stainless steel shafts have good corrosion resistance but are not as strong as steel shafts. Case hardness is Rockwell C50-C55.

For information about the minimum hardness depth of shafts, go to mcmaster.com and search for **6061KAC.**

Shaft Dia.	Dia. Tolerance
1/2″-1 1/4″	–0.0005″ to –0.001″
1 1/2″	–0.0006″ to –0.0011″
12, 16 mm	0 to –0.011 mm
20, 25, 30 mm	0 to –0.013 mm
40 mm	0 to –0.016 mm

Inch Sizes

Shaft Dia.	(A)	(C)	(D)	(E)	(F)	Dia. (G)	Steel 24″ Length		Steel 48″ Length		Stainless Steel 24″ Length		Stainless Steel 48″ Length	
1/2″	1 1/8″	1″	1 1/2″	2″	4″	0.17″	59585K83	$134.08	59585K53	$262.38	6557K21	$231.98	6557K31	$439.09
5/8″	1 1/8″	1 1/8″	1 5/8″	2″	4″	0.19″	59585K89	161.55	59585K59	323.10	6557K22	233.76	6557K32	458.89
3/4″	1 1/2″	1 1/4″	1 3/4″	3″	6″	0.22″	59585K84	167.12	59585K54	334.24	6557K23	275.88	6557K33	541.51
1″	1 3/4″	1 1/2″	2 1/8″	3″	6″	0.28″	59585K85	217.70	59585K55	435.41	6557K24	326.89	6557K34	618.82
1 1/4″	2 1/8″	1 7/8″	2 1/2″	3″	6″	0.34″	59585K86	263.02	59585K56	517.84	6557K25	417.55	6557K35	764.36
1 1/2″	2 1/2″	2 1/4″	3″	4″	8″	0.34″	59585K87	296.21	59585K57	545.25	6557K26	472.08	6557K36	864.12

Metric Sizes

Shaft Dia., mm	(A), mm	(C), mm	(D), mm	(E), mm	(F), mm	Dia. (G), mm	Steel 600 mm Length		Steel 1,200 mm Length	
12	28	29	43	37.5	75	4.5	59585K71	$192.70	59585K91	$337.16
16	30	33	48	50	100	5.5	59585K11	99.74	59585K12	341.35
20	38	37	56	50	100	6.6	59585K13	193.34	59585K14	351.53
25	42	42	60	60	120	6.6	59585K74	212.19	59585K94	438.16
30	53	51	74	75	150	9	59585K15	217.41	59585K16	449.06
40	60	55	78	100	200	9	59585K76	323.40	59585K96	797.74

For information about shafts, see page 1074.

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Ceramic-Coated Aluminum Shafts with Support Rail

A minimum 0.002″ thick ceramic coating keeps weld splatter, paint, and other contaminants from sticking to the shafts. Made of Alloy 6063-T6 aluminum, these shafts and integral support rail are lightweight, nonmagnetic, and have excellent corrosion resistance. Their one-piece design reduces vibration and assembly time. Ends are beveled.

All of these shafts meet MIL-A-8625 and have a maximum 20 rms micron finish. Rockwell hardness is C70. Straightness tolerance is 0.001″ per foot.

Use with open-style linear sleeve bearings (see pages 1092-1095).

Note: Shafts are not intended for use with linear ball bearings.

Shaft Dia.	Dia. Tolerance
1/2″-1″	–0.0004″ to –0.0012″

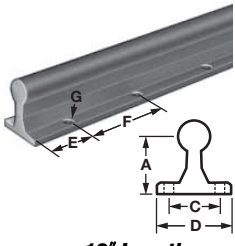

Shaft Dia.	(A)	(C)	(D)	(F)	Dia. (G)	6″ Length (E)			9″ Length (E)			12″ Length (E)		
1/2″	1 1/8″	1″	1 1/2″	4″	0.169″	1″	1049K11	$32.24	2 1/2″	1049K12	$48.36	2″	1049K13	$64.48
3/4″	1 1/2″	1 1/4″	1 3/4″	6″	0.221″	3″	1049K21★	39.65	1 1/2″	1049K22	59.47	3″	1049K23	79.30
1″	1 3/4″	1 1/2″	2 1/8″	6″	0.281″	3″	1049K31★	47.23	1 1/2″	1049K32	70.85	3″	1049K33	90.69
									18″ Length			24″ Length		
1/2″	1 1/8″	1″	1 1/2″	4″	0.169″				1″	1049K14	$96.72	2″	1049K15	$123.81
3/4″	1 1/2″	1 1/4″	1 3/4″	6″	0.221″				3″	1049K24	118.94	3″	1049K25	158.59
1″	1 3/4″	1 1/2″	2 1/8″	6″	0.281″				3″	1049K34	141.70	3″	1049K35	188.94

★ With only one mounting hole on each side, (F) dimension does not apply.

Hardened Shafts with Tapped Mounting Holes

The tapped holes on these shafts match the Support Rails for Hardened Shafts with Tapped Mounting Holes. Shafts are case hardened and precision ground for exacting diameter and straightness tolerances. All have a 9 rms micron finish. Ends are beveled. Straightness tolerance is 0.001″ per foot.

Steel Shafts— Shafts are 1566 steel; they're stronger than stainless steel shafts but are less corrosion resistant. Case hardness is Rockwell C60. Attach shaft to rail from beneath using socket-head cap screws on page 3105.

Stainless Steel Shafts— These Type 440C stainless steel shafts have good corrosion resistance, but are not as strong as steel shafts. Case hardness is Rockwell C50-C55. Attach shaft to rail from beneath using socket-head cap screws on page 3112.

Shaft Dia.	Dia. Tolerance
1/2″-1 1/4″	–0.0005″ to –0.0010″
1 1/2″	–0.0006″ to –0.0011″

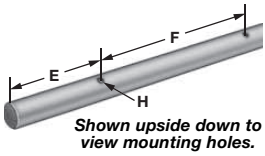

Shown upside down to view mounting holes.

For information about the minimum hardness depth of shafts, go to mcmaster.com and search for **6061KAC.**

Shaft Dia.	(E)	(F)	Tapped Hole (H) Size	Tapped Hole (H) Dp.	24″ Length		48″ Length		72″ Length		96″ Length	
Steel Shafts												
1/2″	2″	4″	6-32	1/4″	6499K53	$64.70	6499K73	$129.47	6499K33	$194.17	6499K43	$258.89
5/8″	2″	4″	8-32	5/16″	6499K59	67.35	6499K79	134.71	6499K39	202.04	6499K49	269.41
3/4″	3″	6″	10-32	3/8″	6499K54	69.31	6499K74	138.63	6499K34	207.97	6499K44	277.33
1″	3″	6″	1/4″-20	1/2″	6499K55	77.18	6499K75	155.70	6499K35	231.61	6499K45	308.84
1 1/4″	3″	6″	5/16″-18	5/8″	6499K56	90.98	6499K76	182.02	6499K36	273.02	6499K46	364.03
1 1/2″	4″	8″	3/8″-16	3/4″	6499K57	102.50	6499K77	205.00	6499K37	307.55	6499K47	410.05
Stainless Steel Shafts												
1/2″	2″	4″	6-32	1/4″	6526K53	87.84	6526K73	168.65	6526K33	252.97	6526K43	324.32
5/8″	2″	4″	8-32	5/16″	6526K59	93.30	6526K79	179.15	6526K39	268.72	6526K49	344.55
3/4″	3″	6″	10-32	3/8″	6526K54	93.93	6526K74	180.32	6526K34	270.50	6526K44	346.80
1″	3″	6″	1/4″-20	1/2″	6526K55	114.57	6526K75	220.00	6526K35	330.01	6526K45	423.10
1 1/4″	3″	6″	5/16″-18	5/8″	6526K56	150.87	6526K76	298.74	6526K36	452.58	6526K46	580.23
1 1/2″	4″	8″	3/8″-16	3/4″	6526K57	170.98	6526K77	341.97	6526K37	493.26	6526K47	643.14

Support Rails for Hardened Shafts with Tapped Mounting Holes

Support rails provide stability over an entire length of shaft, allow unlimited travel lengths, and eliminate bending under moderate to heavy loads. All of these rails are made of lightweight aluminum and are designed for use with open-style linear bearings (see pages 1087-1095). Cut to size or mount end-to-end to make longer lengths. Mounting holes (screws not included) match the Hardened Shafts with Tapped Mounting Holes.

Standard Support Rails— Made of Alloy 6061-T6 aluminum.

Low-Profile Support Rails— Made of Alloy 6063-T6 aluminum.

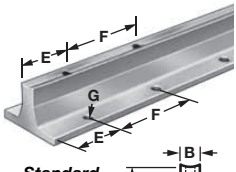

Standard

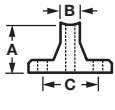

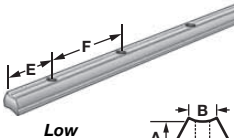

Low Profile

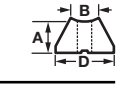

For Shaft Dia.	(A)	(B)	(C)	(D)	(E)	(F)	Dia. (G)	Socket Head Cap Screw Size	Socket Head Cap Screw Lg.	24″ Length		48″ Length	
Standard Support Rails													
1/2″	7/8″	1/4″	1″	1 1/2″	2″	4″	0.17″	6-32	1″	6039K13	$75.21	6039K33	$150.42
5/8″	13/16″	5/16″	1 1/8″	1 5/8″	2″	4″	0.19″	8-32	7/8″	6039K19	87.80	6039K39	175.66
3/4″	1 1/8″	3/8″	1 1/4″	1 3/4″	3″	6″	0.22″	10-32	1 1/4″	6039K14	99.86	6039K34	199.77
1″	1 1/4″	1/2″	1 1/2″	2 1/8″	3″	6″	0.28″	1/4″-20	1 1/2″	6039K15	115.41	6039K35	230.76
1 1/4″	1 1/2″	9/16″	1 7/8″	2 1/2″	3″	6″	0.34″	5/16″-18	1 3/4″	6039K16	140.66	6039K36	281.31
1 1/2″	1 3/4″	11/16″	2 1/4″	3″	4″	8″	0.34″	3/8″-16	2″	6039K17	158.96	6039K37	317.98
Low-Profile Support Rails													
1/2″	0.29″	0.216″	—	0.37″	2″	4″	—	6-32	—	8154T1	56.78	8154T11	101.25
5/8″	0.35″	0.269″	—	0.45″	2″	4″	—	8-32	—	8154T2	67.73	8154T12	121.13
3/4″	0.35″	0.317″	—	0.51″	3″	6″	—	10-32	—	8154T3	76.35	8154T13	102.20
1″	0.45″	0.422″	—	0.69″	3″	6″	—	1/4″-20	—	8154T4	88.97	8154T14	127.43
1 1/4″	0.51″	0.523″	—	0.78″	3″	6″	—	5/16″-18	—	8154T5	107.24	8154T15	164.03
1 1/2″	0.57″	0.623″	—	0.93″	4″	8″	—	3/8″-16	—	8154T6	112.29	8154T16	174.12
2″	0.69″	0.824″	—	1.18″	4″	8″	—	1/2″-13	—	8154T7	140.05	8154T17	229.64

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Drive Shafts

Steel Shafts— Made of 1566 steel, these shafts are stronger than stainless steel shafts but are less corrosion resistant. They are unhardened for easier machining. Rockwell hardness is C25. Ends are beveled.

Coated Steel Shafts— Made of 1045 steel, these coated shafts are stronger than stainless steel shafts but are less corrosion resistant.

Black-oxide coated shafts have a black-oxide coating for more corrosion resistance than uncoated steel shafts. Rockwell hardness is C20-C30.

Chrome-plated shafts have a 0.0001″-0.0005″ thick chrome plating for more corrosion resistance than black-oxide coated shafts. The *1/4″ and 3/8″ dia. shafts* have a surface hardness that is Rockwell C60-C65. The *1/2″ to 2″ dia. shafts* have a surface hardness that is Rockwell C68-C72.

Nitride-coated shafts have a 0.001″ thick nitride coating for more corrosion resistance than black-oxide coated shafts and chrome-plated shafts. Surface hardness is Rockwell C60-C65.

Type 303 Stainless Steel Shafts— Have good corrosion resistance but are not as strong as steel shafts. Rockwell hardness is B83. Ends are beveled.

Type 316 Stainless Steel Shafts— Have excellent corrosion resistance but are not as strong as steel shafts. Rockwell hardness is C20. Ends are beveled. *Note:* Not for use with ball bearings.

Shaft Dia.	Dia. Tolerance	Straightness Tolerance
Steel		
3/8″-1″	0.0″ to –0.003″	0.012″ per ft.
1 1/4″	0.0″ to –0.004″	0.012″ per ft.
10-25 mm	0.0 to –0.0760 mm	0.3048 mm per 305 mm
30 mm	0.0 to –0.1020 mm	0.3048 mm per 305 mm
Coated Steel		
1/4″, 3/8″	0.0″ to –0.001″	0.003″ per ft.
1/2″	0.0″ to –0.001″	3/16″ per 10 ft.
5/8″-1 1/2″	0.0″ to –0.001″	1/8″ per 10 ft.
1 3/4″, 2″	0.0″ to –0.0015″	1/8″ per 10 ft.
Type 303 Stainless Steel		
1/4″	0.0″ to –0.0002″	0.0036″ per ft.
3/8″, 1/2″	0.0″ to –0.0002″	0.0048″ per ft.
5/8″-1 1/4″	0.0″ to –0.0004″	0.0096″ per ft.
Type 316 Stainless Steel		
1/4″-1 1/4″	0.0″ to –0.001″	0.003″ per ft.

Steel Shafts

Lg.	3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		1″ Dia.		1 1/4″ Dia.	
12″	1346K11	$6.50	1346K17	$7.22	1346K24	$8.48	1346K31	$10.70	1346K37	$21.79	1346K44	$36.53
24″	1346K12	13.24	1346K18	14.76	1346K25	17.66	1346K32	22.48	1346K38	40.06	1346K45	51.84
36″	1346K13	19.91	1346K19	22.64	1346K26	27.78	1346K33	35.50	1346K39	52.32	1346K46	67.07
48″	1346K14	22.38	1346K21	25.57	1346K27	33.18	1346K34	43.84	1346K41	64.02	1346K47	87.03
60″	1346K15	25.85	1346K22	30.23	1346K28	39.43	1346K35	48.99	1346K42	76.50	1346K48	106.23
72″	1346K16	29.28	1346K23	35.94	1346K29	45.47	1346K36	55.80	1346K43	87.04	1346K49	122.87
	10 mm Dia.		**12 mm Dia.**		**16 mm Dia.**		**20 mm Dia.**		**25 mm Dia.**		**30 mm Dia.**	
200 mm	1482K11	$6.59	1482K18	$6.91	1482K26	$8.20	1482K34	$9.71	1482K42	$12.11	1482K49	$15.04
400 mm	1482K12	7.36	1482K19	7.98	1482K27	10.20	1482K35	12.88	1482K43	18.07	1482K51	23.98
500 mm	1482K13	13.60	1482K21	14.69	1482K28	17.43	1482K36	21.59	1482K44	27.65	1482K52	36.12
1,000 mm	1482K14	22.90	1482K22	24.54	1482K29	30.10	1482K37	30.86	1482K45	49.38	1482K53	66.95
1,200 mm	1482K15	24.91	1482K23	26.98	1482K31	32.96	1482K38	40.72	1482K46	57.16	1482K54	78.15
1,500 mm	1482K16	26.86	1482K24	31.09	1482K32	37.12	1482K39	46.97	1482K47	69.89	1482K55	92.09
2,000 mm	1482K17	30.63	1482K25	34.38	1482K33	43.68	1482K41	55.52	1482K48	85.66		

Black-Oxide Coated Steel Shafts

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		7/8″ Dia.		1″ Dia.	
12″	1886K1	$4.88	1886K11	$7.60	1886K21	$7.52	1886K31	$9.00	1886K41	$11.26	1886K51	$11.82	1886K61	$14.58
18″	1886K2	7.33	1886K12	11.40	1886K22	11.29	1886K32	13.50	1886K42	16.90	1886K52	17.72	1886K62	21.84
24″	1886K3	9.76	1886K13	15.21	1886K23	15.05	1886K33	17.18	1886K43	21.50	1886K53	23.62	1886K63	27.89
36″	1886K4	13.98	1886K14	21.29	1886K24	21.09	1886K34	25.80	1886K44	32.25	1886K54	35.44	1886K64	39.34
48″	1886K5	18.22	1886K15	30.40	1886K25	26.91	1886K35	34.39	1886K45	42.04	1886K55	47.24	1886K65	52.44
60″	1886K6	24.43	1886K16	38.00	1886K26	35.13	1886K36	42.98	1886K46	52.56	1886K56	59.06	1886K66	65.56

Chrome-Plated Steel Shafts

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		7/8″ Dia.	
12″	5947K11	$6.34	5947K12	$11.23	5947K13	$8.76	5947K14	$10.58	5947K15	$13.33	5947K16	$13.67
18″	5947K23	8.76	5947K24	13.13	5947K25	12.91	5947K26	15.57	5947K27	19.56	5947K28	19.98
24″	5947K35	10.89	5947K36	19.51	5947K37	16.98	5947K38	20.42	5947K39	25.62	5947K41	26.02
36″	5947K47	14.83	5947K48	21.87	5947K49	24.89	5947K51	29.76	5947K52	37.17	5947K53	37.40
48″	5947K59	19.04	5947K61	36.05	5947K62	32.81	5947K63	39.11	5947K64	48.78	5947K65	48.80
	1″ Dia.		**1 1/8″ Dia.**		**1 1/4″ Dia.**		**1 1/2″ Dia.**		**1 3/4″ Dia.**		**2″ Dia.**	
12″	5947K17	$17.87	5947K72	$20.93	5947K18	$23.39	5947K19	$31.19	5947K21	$41.13	5947K22	$52.89
18″	5947K29	26.12	5947K73	30.56	5947K31	34.13	5947K32	45.29	5947K33	59.50	5947K34	76.91
24″	5947K42	34.02	5947K74	39.76	5947K43	44.34	5947K44	58.69	5947K45	77.33	5947K46	99.36
36″	5947K54	48.91	5947K75	56.96	5947K55	63.24	5947K56	83.40	5947K57	109.04	5947K58	141.79
48″	5947K66	63.80	5947K76	74.18	5947K67	82.16	5947K68	108.09	5947K69	142.04	5947K71	182.20

Nitride-Coated Steel Shafts

Lg.	3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		1″ Dia.		1 1/4″ Dia.		1 1/2″ Dia.	
12″	5936K61	$7.36	5936K71	$7.54	5936K81	$9.10	5936K11	$13.88	5936K13	$19.23	5936K14	$30.07	5936K15	$38.24
18″	5936K62	11.04	5936K72	11.30	5936K82	13.64	5936K18	20.35	5936K21	28.07	5936K22	42.78	5936K23	55.71
24″	5936K63	14.70	5936K73	15.08	5936K83	16.14	5936K26	26.62	5936K28	35.66	5936K29	55.73	5936K31	72.39
36″	5936K64	22.06	5936K74	22.62	5936K84	24.20	5936K34	37.59	5936K36	51.17	5936K37	79.98	5936K38	103.39
48″	5936K65	29.42	5936K75	30.16	5936K85	32.26	5936K42	49.24	5936K44	66.71	5936K45	104.22	5936K46	134.46
60″	5936K66	36.78	5936K76	37.70	5936K86	45.48	5936K91	55.84	5936K93	75.64	5936K94	116.36	5936K95	180.00

Type 303 Stainless Steel Shafts

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		1″ Dia.		1 1/4″ Dia.	
12″	1257K66	$7.78	8364T1	$19.00	8364T5	$23.30	8364T9	$38.58	8364T14	$41.94	8364T18	$70.49	8364T23	$90.81
18″	1257K67	11.37	8364T2	25.11	8364T6	31.76	8364T11	55.84	8364T15	62.92	8364T19	105.75	8364T24	130.05
24″	1257K68	14.58	8364T3	30.84	8364T7	39.64	8364T12	73.16	8364T16	83.89	8364T21	140.97	8364T25	179.89
36″	1257K71	23.76	8364T4	43.22	8364T8	53.35	8364T13	106.09	8364T17	125.82	8364T22	211.46	8364T26	245.85
48″	1257K131	30.74	8364T32	67.36	8364T33	94.37	8364T34	151.19	8364T35	179.50	8364T36	302.46	8364T37	494.75
60″	1257K132	42.35	8364T42	92.58	8364T43	131.13	8364T44	207.87	8364T45	246.26	8364T46	472.93	8364T47	687.90

Type 316 Stainless Steel Shafts

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		1″ Dia.		1 1/4″ Dia.	
18″	6493K17	$21.75	6493K1	$25.00	6493K4	$26.40	6493K7	$32.71	6493K11	$37.04	6493K14	$52.81	6493K21	$76.22
36″	6493K18	38.53	6493K2	43.00	6493K5	51.19	6493K8	61.95	6493K12	67.84	6493K15	95.68	6493K22	122.27
60″	6493K19	65.00	6493K3	70.95	6493K6	83.04	6493K9	111.33	6493K13	122.29	6493K16	176.38	6493K23	213.44

For information about shafts, see page 1074.

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Miniature Drive Shafts

Diameters are sized for miniature rotary applications. These shafts also work well with miniature sprockets, pulleys, and gears. Ends are beveled.

Steel Shafts— Made of 12L14 steel, these shafts are stronger than stainless steel shafts but are less corrosion resistant. Hardness is Brinell 167.

Type 303 Stainless Steel Shafts— Have good corrosion resistance but are not as strong as steel shafts. Rockwell hardness is B83.

Type 316 Stainless Steel Shafts— Have excellent corrosion resistance but are not as strong as steel shafts. Rockwell hardness is B83.

Shaft Dia.	Dia. Tolerance	Straightness Tolerance
1/32″-3/32″	0.0″ to –0.0002″	Not Rated
1/8″-1/4″	0.0″ to –0.0002″	0.0036″ per ft.
5/16″, 3/8″	0.0″ to –0.0002″	0.0048″ per ft.
1-2.5 mm	0.0 to –0.005 mm	Not Rated
3-6 mm	0.0 to –0.005 mm	2.4 mm per 300 mm
7-10 mm	0.0 to –0.005 mm	3 mm per 300 mm

Steel Shafts

Lg.	1/32″ Dia.		1/16″ Dia.		1/8″ Dia.		3/16″ Dia.		1/4″ Dia.		5/16″ Dia.	
3″	1327K3	$3.84	1327K83	$2.43	1327K93	$2.63	1327K103	$2.81	1327K113	$3.10	1327K123	$3.77
4″	1327K4	4.51	1327K84	2.99	1327K94	2.99	1327K104	3.33	1327K114	3.53	1327K124	4.57
5″	1327K5	5.13	1327K85	3.72	1327K95	3.72	1327K105	3.90	1327K115	3.90	1327K125	5.52
6″	1327K11	5.57	1327K18	4.44	1327K38	4.33	1327K52	4.44	1327K65	4.28	1327K72	6.50
7″	1327K6	6.66	1327K86	4.80	1327K96	4.67	1327K106	4.62	1327K116	4.67	1327K126	6.94
8″	1327K7	7.74	1327K87	5.19	1327K97	5.08	1327K107	5.03	1327K117	4.80	1327K127	7.22
9″	1327K8	8.85	1327K88	5.57	1327K98	5.52	1327K108	5.24	1327K118	5.37	1327K128	8.13
10″	1327K9	9.49	1327K89	6.04	1327K99	5.91	1327K109	5.47	1327K119	5.91	1327K129	9.16
12″	1327K12	11.07	1327K19	6.66	1327K39	6.50	1327K53	6.14	1327K66	6.94	1327K73	10.94
18″	1327K13	16.62	1327K21	9.98	1327K41	9.26	1327K54	8.88	1327K67	9.70	1327K74	14.96
24″	—	—	1327K22	13.29	1327K42	12.07	1327K55	11.64	1327K68	12.44	1327K75	19.20
36″	—	—	1327K24	19.94	1327K44	17.57	1327K57	16.25	1327K71	18.01	1327K77	29.57

Type 303 Stainless Steel Shafts

Lg.	1/16″ Dia.		1/8″ Dia.		5/32″ Dia.		3/16″ Dia.		1/4″ Dia.		5/16″ Dia.	
3″	1257K3	$2.18	1257K83	$2.93	1257K93	$3.13	1257K103	$3.19	1257K113	$3.70	1257K123	$4.97
4″	1257K4	2.44	1257K84	3.19	1257K94	3.44	1257K104	3.76	1257K114	4.28	1257K124	6.20
5″	1257K5	2.93	1257K85	3.64	1257K95	3.96	1257K105	4.45	1257K115	4.51	1257K125	7.09
6″	1257K18	3.07	1257K38	4.28	1257K45	4.62	1257K52	5.14	1257K65	5.28	1257K72	9.16
7″	1257K6	3.30	1257K86	4.51	1257K96	4.82	1257K106	5.40	1257K116	5.45	1257K126	9.99
8″	1257K7	3.76	1257K87	5.28	1257K97	5.71	1257K107	5.91	1257K117	6.14	1257K127	10.53
9″	1257K8	4.19	1257K88	5.40	1257K98	5.91	1257K108	5.97	1257K118	6.89	1257K128	11.48
10″	1257K9	4.51	1257K89	5.51	1257K99	6.14	1257K109	6.20	1257K119	7.09	1257K129	13.00
12″	1257K19	5.40	1257K39	5.91	1257K46	6.46	1257K53	7.09	1257K66	7.78	1257K73	15.15
18″	1257K21	9.24	1257K41	8.61	1257K47	9.16	1257K54	9.73	1257K67	11.37	1257K74	20.81
24″	1257K22	12.31	1257K42	10.48	1257K48	11.48	1257K55	12.51	1257K68	14.58	1257K75	26.66
30″	1257K23	15.44	1257K43	12.37	1257K49	13.26	1257K56	14.15	1257K69	18.60	1257K76	33.32
36″	1257K24	18.48	1257K44	14.38	1257K51	15.13	1257K57	15.76	1257K71	23.76	1257K77	41.13

Type 316 Stainless Steel Shafts

Lg.	1/32″ Dia.		3/64″ Dia.		1/16″ Dia.		5/64″ Dia.		3/32″ Dia.		1/8″ Dia.	
3″	1263K3	$3.65	1263K93	$4.61	1263K103	$2.98	1263K113	$5.01	1263K123	$5.46	1263K133	$4.11
4″	1263K4	3.94	1263K94	5.01	1263K104	3.23	1263K114	5.44	1263K124	5.94	1263K134	4.46
5″	1263K5	4.54	1263K95	5.75	1263K105	3.76	1263K115	6.28	1263K125	6.83	1263K135	5.16
6″	1263K11	5.31	1263K14	6.81	1263K18	4.39	1263K25	7.42	1263K32	8.13	1263K38	6.02
7″	1263K6	5.61	1263K96	7.06	1263K106	4.61	1263K116	7.73	1263K126	8.41	1263K136	6.34
8″	1263K7	6.57	1263K97	8.33	1263K107	5.39	1263K117	9.09	1263K127	8.76	1263K137	7.42
9″	1263K8	7.13	1263K98	8.87	1263K108	6.00	1263K118	9.53	1263K128	9.12	1263K138	7.58
10″	1263K9	7.83	1263K99	9.53	1263K109	6.46	1263K119	10.85	1263K129	9.81	1263K139	7.69
12″	1263K12	9.14	1263K15	11.25	1263K19	7.63	1263K26	11.62	1263K33	9.73	1263K39	8.35
18″	1263K13	16.28	1263K16	17.76	1263K21	13.22	1263K27	17.76	1263K34	14.35	1263K41	12.13
24″	—	—	1263K17	25.23	1263K22	17.68	1263K28	25.23	1263K35	16.03	1263K42	14.63
30″	—	—	—	—	1263K23	22.05	1263K29	31.09	1263K36	19.27	1263K43	17.35
36″	—	—	—	—	1263K24	26.52	1263K31	36.93	1263K37	22.28	1263K44	20.10

	5/32″ Dia.		3/16″ Dia.		7/32″ Dia.		1/4″ Dia.		5/16″ Dia.		3/8″ Dia.	
3″	1263K143	$4.76	1263K153	$4.46	1263K163	$5.00	1263K173	$5.22	1263K183	$6.99	1263K193	$9.65
4″	1263K144	5.29	1263K154	5.29	1263K164	5.89	1263K174	6.04	1263K184	8.71	1263K194	9.95
5″	1263K145	5.89	1263K155	6.23	1263K165	6.30	1263K175	6.34	1263K185	9.95	1263K195	12.87
6″	1263K45	6.56	1263K52	7.28	1263K58	7.45	1263K65	7.47	1263K72	13.07	1263K78	13.05
7″	1263K146	7.77	1263K156	7.58	1263K166	7.53	1263K176	7.69	1263K186	14.06	1263K196	16.31
8″	1263K147	8.87	1263K157	8.30	1263K167	8.41	1263K177	8.63	1263K187	14.78	1263K197	18.49
9″	1263K148	11.88	1263K158	8.41	1263K168	9.35	1263K178	9.65	1263K188	16.13	1263K198	21.32
10″	1263K149	13.25	1263K159	8.71	1263K169	9.65	1263K179	9.95	1263K189	18.25	1263K199	23.73
12″	1263K46	15.20	1263K53	10.07	1263K59	10.63	1263K66	10.98	1263K73	21.66	1263K79	29.42
18″	1263K47	15.76	1263K54	13.65	1263K61	14.78	1263K67	16.03	1263K74	29.69	1263K81	40.57
24″	1263K48	16.10	1263K55	17.60	1263K62	19.10	1263K68	20.67	1263K75	38.04	1263K82	51.95
30″	1263K49	18.60	1263K56	19.93	1263K63	23.07	1263K69	26.26	1263K76	47.45	1263K83	64.24
36″	1263K51	21.17	1263K57	22.11	1263K64	27.94	1263K71	33.61	1263K77	58.64	1263K84	75.91

	1 mm Dia.		1.5 mm Dia.		2 mm Dia.		2.5 mm Dia.		3 mm Dia.		4 mm Dia.	
200 mm	1265K11	$4.51	1265K14	$6.81	1265K17	$9.74	1265K24	$10.69	1265K31	$12.18	1265K37	$12.18
400 mm	1265K13	13.57	1265K16	15.90	1265K19	17.58	1265K26	18.14	1265K33	22.00	1265K39	22.00
600 mm	—	—	—	—	1265K21	26.93	1265K27	27.73	1265K34	31.96	1265K41	31.96
800 mm	—	—	—	—	1265K22	35.00	1265K28	35.84	1265K35	52.66	1265K42	52.67

	5 mm Dia.		6 mm Dia.		7 mm Dia.		8 mm Dia.		9 mm Dia.		10 mm Dia.	
200 mm	1265K44	$15.25	1265K51	$17.42	1265K57	$19.35	1265K64	$17.42	1265K71	$27.88	1265K77	$33.52
400 mm	1265K46	26.82	1265K53	27.71	1265K59	30.56	1265K66	29.46	1265K73	52.33	1265K79	57.98
600 mm	1265K47	36.48	1265K54	37.38	1265K61	40.45	1265K67	39.74	1265K74	64.97	1265K81	76.23
800 mm	1265K48	57.17	1265K55	58.53	1265K62	60.84	1265K68	58.53	1265K75	87.60	1265K82	101.04

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Fully Keyed Drive Shafts

For a secure hold in higher-torque applications, an ANSI keyway runs the entire length of the shaft (keys not included; see pages 3361-3363). Straightness tolerance is 0.012″ per foot for inch sizes and 0.0305 mm per 300 mm for metric sizes. Ends are beveled.

Steel Shafts— Made of 1045 steel, these shafts are stronger than stainless steel and aluminum shafts but are less corrosion resistant. Rockwell hardness is B95.

Type 304 Stainless Steel Shafts— Have good corrosion resistance but are not as strong as steel shafts. Rockwell hardness is B85.

Type 316 Stainless Steel Shafts— Have excellent corrosion resistance but are not as strong as steel shafts. Rockwell hardness is B85.

Aluminum Shafts— Made of Alloy 2024-T4 aluminum, these shafts are lightweight and have more corrosion resistance than steel shafts. Hardness is Brinell 120.

Shaft Dia.	Dia. Tolerance
Steel	
5/16″-2 1/2″	–0.001″ to –0.0025″
8-50 mm	–0.254 to –0.0635 mm
Types 304 and 316 Stainless Steel	
3/8″-2 7/16″	–0.001″ to –0.0025″
Aluminum	
5/16″-1″	–0.0005″ to –0.0025″

Steel Shafts—Inch Sizes

Lg.	5/16″ Dia. Keyway: 3/32″ Wd. x 3/64″ Dp.	3/8″ Dia. Keyway: 3/32″ Wd. x 3/64″ Dp.	1/2″ Dia. Keyway: 1/8″ Wd. x 1/16″ Dp.	5/8″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.	11/16″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.
3″	1497K1 $7.36	1497K4 $7.58	1497K7 $7.97	1497K106 $8.24	1497K109 $8.52
6″	1497K2 11.52	1497K5 11.91	1497K8 12.73	1497K107 13.27	1497K112 13.82
9″	1497K3 15.67	1497K6 16.21	1497K9 17.42	1497K108 18.27	1497K113 19.15
12″	1497K111 16.33	1497K121 17.67	1497K131 18.60	1497K141 19.67	1497K151 20.61
18″	1497K951 18.79	1497K952 20.45	1497K953 21.70	1497K954 23.87	1497K955 25.65
24″	1497K11 24.50	1497K21 27.33	1497K31 29.37	1497K41 31.50	1497K51 31.94
36″	1497K12 33.00	1497K22 34.52	1497K32 37.19	1497K42 41.45	1497K52 40.91
48″	1497K13 38.59	1497K23 44.35	1497K33 46.72	1497K43 50.62	1497K53 51.82
60″	1497K14 46.56	1497K24 51.72	1497K34 53.09	1497K44 57.79	1497K54 61.03
72″	1497K15 51.03	1497K25 56.76	1497K35 62.06	1497K45 69.70	1497K55 71.47

Lg.	3/4″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.	13/16″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.	7/8″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.	15/16″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.	1″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.
3″	1497K114 $8.76	1497K132 $9.06	1497K135 $9.30	1497K138 $9.58	1497K143 $10.18
6″	1497K115 14.24	1497K133 14.85	1497K136 15.45	1497K139 15.97	1497K144 17.12
9″	1497K116 19.70	1497K134 20.61	1497K137 21.52	1497K142 22.42	1497K145 24.09
12″	1497K161 21.20	1497K171 23.17	1497K181 25.17	1497K191 26.33	1497K281 27.60
18″	1497K956 26.77	1497K957 29.68	1497K958 32.45	1497K959 34.03	1497K961 35.48
24″	1497K61 33.23	1497K71 35.94	1497K81 39.69	1497K91 41.56	1497K101 41.82
36″	1497K62 42.88	1497K72 48.33	1497K82 53.64	1497K92 56.52	1497K102 58.73
48″	1497K63 54.55	1497K73 59.85	1497K83 68.79	1497K93 72.73	1497K103 75.70
60″	1497K64 64.26	1497K74 70.86	1497K84 79.29	1497K94 83.71	1497K104 87.31
72″	1497K65 71.25	1497K75 83.43	1497K85 93.57	1497K95 98.86	1497K105 99.74

Lg.	1 1/8″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.	1 3/16″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.	1 1/4″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.	1 5/16″ Dia. Keyway: 5/16″ Wd. x 5/32″ Dp.	1 3/8″ Dia. Keyway: 5/16″ Wd. x 5/32″ Dp.
3″	1497K146 $10.76	1497K149 $11.67	1497K154 $12.03	1497K157 $12.73	1497K162 $14.09
6″	1497K147 18.33	1497K152 20.00	1497K155 20.79	1497K158 22.12	1497K163 24.85
9″	1497K148 25.76	1497K153 28.48	1497K156 29.58	1497K159 31.67	1497K164 35.76
12″	1497K291 32.73	1497K311 33.68	1497K411 35.17	1497K511 39.40	1497K611 39.39
18″	1497K962 40.30	1497K963 41.36	1497K966 44.24	1497K967 48.79	1497K968 51.14
24″	1497K201 48.43	1497K301 51.32	1497K401 52.43	1497K501 57.64	1497K601 64.31
36″	1497K202 57.69	1497K302 63.72	1497K402 68.82	1497K502 76.28	1497K602 85.51
48″	1497K203 80.00	1497K303 82.69	1497K403 85.00	1497K503 99.49	1497K603 106.59
60″	1497K204 98.46	1497K304 101.67	1497K404 104.75	1497K504 122.69	1497K604 125.35
72″	1497K205 116.67	1497K305 120.51	1497K405 115.47	1497K505 132.33	1497K605 148.95

Lg.	1 7/16″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.	1 1/2″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.	1 5/8″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.	1 3/4″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.	1 15/16″ Dia. Keyway: 1/2″ Wd. x 1/4″ Dp.
3″	1497K165 $14.39	1497K168 $14.70	1497K182 $18.18	1497K185 $18.79	1497K188 $20.15
6″	1497K166 25.45	1497K169 26.21	1497K183 31.52	1497K186 32.73	1497K189 35.61
9″	1497K167 36.52	1497K172 37.73	1497K184 44.85	1497K187 46.52	1497K206 45.41
12″	1497K711 39.40	1497K811 42.81	1497K911 45.71	1497K421 46.35	1497K321 46.00
18″	1497K969 52.43	1497K971 54.00	1497K972 60.14	1497K973 60.00	1497K974 60.64
24″	1497K701 64.19	1497K801 66.08	1497K901 74.36	1497K211 72.79	1497K221 77.91
36″	1497K702 85.75	1497K802 88.12	1497K902 102.50	1497K212 106.05	1497K222 113.49
48″	1497K703 109.27	1497K803 115.75	1497K903 134.88	1497K213 139.42	1497K223 149.65
60″	1497K704 128.84	1497K804 133.02	1497K904 159.30	1497K214 172.79	1497K224 185.58
72″	1497K705 153.26	1497K805 158.37	1497K905 189.77	1497K215 206.05	1497K225 221.28

Lg.	2″ Dia. Keyway: 1/2″ Wd. x 1/4″ Dp.	2 3/16″ Dia. Keyway: 1/2″ Wd. x 1/4″ Dp.	2 1/4″ Dia. Keyway: 1/2″ Wd. x 1/4″ Dp.	2 7/16″ Dia. Keyway: 5/8″ Wd. x 5/16″ Dp.	2 1/2″ Dia. Keyway: 5/8″ Wd. x 5/16″ Dp.
3″	1497K207 $20.76	1497K216 $22.88	1497K219 $23.33	1497K228 $25.45	1497K237 $26.36
6″	1497K208 36.52	1497K217 40.91	1497K226 41.67	1497K229 46.21	1497K238 47.73
9″	1497K209 46.76	1497K218 56.71	1497K227 56.71	1497K236 61.25	1497K239 65.14
12″	1497K331 47.50	1497K341 58.75	1497K351 61.46	1497K361 65.49	1497K371 68.90
18″	1497K975 65.00	1497K976 69.00	1497K977 76.00	1497K978 84.78	1497K979 86.00
24″	1497K231 79.53	1497K241 99.74	1497K251 102.67	1497K261 114.88	1497K271 121.40
36″	1497K232 116.05	1497K242 147.33	1497K252 150.93	1497K262 169.30	1497K272 178.95
48″	1497K233 152.67	1497K243 194.42	1497K253 199.19	1497K263 223.60	1497K273 231.14
60″	1497K234 189.53	1497K244 246.28	1497K254 247.67	1497K264 278.26	1497K274 294.19
72″	1497K235 232.21	1497K245 294.07	1497K255 295.70	1497K265 332.33	1497K275 351.63

(Continued on following page)

For information about shafts, see page 1074.

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Fully Keyed Drive Shafts *(Continued from previous page)*

Steel Shafts—Metric Sizes

Lg., mm	8 mm Dia. Keyway: 2 mm Wd. × 1.2 mm Dp.		10 mm Dia. Keyway: 3 mm Wd. × 1.8 mm Dp.		12 mm Dia. Keyway: 4 mm Wd. × 2.5 mm Dp.		15 mm Dia. Keyway: 5 mm Wd. × 3 mm Dp.	
300	1439K211	$20.27	1439K311	$22.37	1439K411	$24.34	1439K511	$26.05
500	1439K221	28.68	1439K321	32.11	1439K421	33.50	1439K521	34.88
1,000	1439K231	49.74	1439K331	51.07	1439K431	57.02	1439K531	59.55
1,200	1439K241	52.62	1439K341	59.76	1439K441	63.98	1439K541	68.44
1,500	1439K251	61.02	1439K351	69.66	1439K451	78.30	1439K551	82.17
1,800	1439K11	72.17	1439K12	82.39	1439K13	92.61	1439K14	101.52

Lg., mm	20 mm Dia. Keyway: 6 mm Wd. × 3.5 mm Dp.		24 mm Dia. Keyway: 8 mm Wd. × 4 mm Dp.		25 mm Dia. Keyway: 8 mm Wd. × 4 mm Dp.		40 mm Dia. Keyway: 12 mm Wd. × 5 mm Dp.		50 mm Dia. Keyway: 14 mm Wd. × 5.5 mm Dp.	
300	1439K611	$33.16	1439K711	$36.58	1439K811	$36.26	1439K911	$51.02	1439K131	$52.70
500	1439K621	48.00	1439K721	53.50	1439K821	52.98	1439K921	77.72	1439K132	84.50
1,000	1439K631	83.81	1439K731	94.29	1439K831	93.64	1439K931	136.20	1439K133	161.90
1,200	1439K641	94.55	1439K741	104.22	1439K841	105.98	1439K941	162.10	1439K134	193.00
1,500	1439K651	109.04	1439K751	120.62	1439K851	122.86	1439K951	201.30	1439K135	240.00
1,800	1439K15	129.39	1439K16	140.29	1439K17	143.08	1439K18	239.23	1439K19	280.00

Type 304 Stainless Steel Shafts—Inch Sizes

Lg.	3/8" Dia. Keyway: 3/32" Wd. × 3/64" Dp.		1/2" Dia. Keyway: 1/8" Wd. × 1/16" Dp.		5/8" Dia. Keyway: 3/16" Wd. × 3/32" Dp.		3/4" Dia. Keyway: 3/16" Wd. × 3/32" Dp.		1" Dia. Keyway: 1/4" Wd. × 1/8" Dp.		1 3/16" Dia. Keyway: 1/4" Wd. × 1/8" Dp.	
3"	7398K1	$6.74	7398K4	$8.30	7398K7	$10.00	7398K42	$12.72	7398K45	$13.34	—	—
6"	7398K2	10.71	7398K5	13.81	7398K8	17.18	7398K43	22.68	7398K46	23.93	—	—
9"	7398K3	14.68	7398K6	19.40	7398K9	24.41	7398K44	32.53	7398K47	34.53	—	—
12"	7398K48	16.50	7398K22	23.28	7398K23	30.00	7398K24	39.38	7398K25	44.32	7398K102	$40.32
24"	7398K11	30.13	7398K12	42.09	7398K13	56.17	7398K14	76.05	7398K15	86.31	7398K103	78.99
36"	7398K31	42.55	7398K32	62.76	7398K33	83.80	7398K34	114.98	7398K35	127.88	7398K104	111.76
48"	7398K51	56.69	7398K52	83.93	7398K53	112.21	7398K54	152.10	7398K55	171.03	7398K105	149.30
60"	7398K71	73.03	7398K72	102.71	7398K73	134.37	7398K74	180.09	7398K75	199.74	7398K106	193.10
72"	7398K91	85.86	7398K92	124.36	7398K93	159.72	7398K94	214.24	7398K95	239.46	7398K107	241.62

Lg.	1 1/4" Dia. Keyway: 1/4" Wd. × 1/8" Dp.		1 7/16" Dia. Keyway: 3/8" Wd. × 3/16" Dp.		1 1/2" Dia. Keyway: 3/8" Wd. × 3/16" Dp.		2" Dia. Keyway: 1/2" Wd. × 1/4" Dp.		2 3/16" Dia. Keyway: 1/2" Wd. × 1/4" Dp.		2 7/16" Dia. Keyway: 5/8" Wd. × 5/16" Dp.	
3"	7398K62	$14.54	—	—	7398K65	$19.10	7398K68	$27.89	7398K83	$30.02	7398K86	$39.15
6"	7398K63	26.31	—	—	7398K66	35.43	7398K69	51.52	7398K84	56.02	7398K87	74.14
9"	7398K64	38.02	—	—	7398K67	51.65	7398K82	75.16	7398K85	81.78	7398K88	109.14
12"	7398K26	49.74	7398K111	$57.88	7398K27	67.87	7398K28	98.56	7398K29	118.68	7398K49	146.80
24"	7398K16	98.42	7398K112	105.87	7398K17	136.96	7398K18	198.80	7398K19	196.79	7398K21	294.43
36"	7398K36	146.29	7398K113	158.31	7398K37	205.13	7398K38	297.68	7398K39	345.74	7398K41	419.67
48"	7398K56	195.48	7398K114	221.67	7398K57	273.39	7398K58	386.65	7398K59	451.17	7398K61	559.60
60"	7398K76	228.67	7398K115	282.95	7398K77	331.41	7398K78	446.22	7398K79	476.96	7398K81	587.96
72"	7398K96	272.62	7398K116	354.61	7398K97	386.49	7398K98	477.92	7398K99	570.25	7398K101	718.51

Type 316 Stainless Steel Shafts—Inch Sizes

Lg.	3/8" Dia. Keyway: 3/32" Wd. × 3/64" Dp.		1/2" Dia. Keyway: 1/8" Wd. × 1/16" Dp.		5/8" Dia. Keyway: 3/16" Wd. × 3/32" Dp.		3/4" Dia. Keyway: 3/16" Wd. × 3/32" Dp.		1" Dia. Keyway: 1/4" Wd. × 1/8" Dp.		1 3/16" Dia. Keyway: 1/4" Wd. × 1/8" Dp.	
3"	7405K1	$8.92	7405K4	$11.43	7405K7	$13.93	7405K42	$17.54	7405K45	$19.37	—	—
6"	7405K2	14.27	7405K5	19.43	7405K8	24.27	7405K43	31.53	7405K46	35.24	—	—
9"	7405K3	19.55	7405K6	27.30	7405K9	34.71	7405K44	45.51	7405K47	51.00	—	—
12"	7405K48	22.28	7405K22	32.09	7405K23	41.44	7405K24	55.80	7405K25	62.90	7405K121	$73.23
24"	7405K11	34.19	7405K12	56.76	7405K13	75.62	7405K14	104.51	7405K15	125.00	7405K122	143.06
36"	7405K31	52.88	7405K32	84.67	7405K33	113.36	7405K34	160.32	7405K35	172.23	7405K123	202.90
48"	7405K51	70.46	7405K52	113.04	7405K53	146.89	7405K54	208.70	7405K55	234.81	7405K124	270.96
60"	7405K71	101.74	7405K72	156.40	7405K73	204.27	7405K74	273.20	7405K75	305.48	7405K125	350.45
72"	7405K91	119.65	7405K92	181.28	7405K93	237.99	7405K94	325.49	7405K95	326.57	7405K126	438.58

Lg.	1 1/4" Dia. Keyway: 1/4" Wd. × 1/8" Dp.		1 7/16" Dia. Keyway: 3/8" Wd. × 3/16" Dp.		1 1/2" Dia. Keyway: 3/8" Wd. × 3/16" Dp.		2" Dia. Keyway: 1/2" Wd. × 1/4" Dp.		2 3/16" Dia. Keyway: 1/2" Wd. × 1/4" Dp.		2 7/16" Dia. Keyway: 5/8" Wd. × 5/16" Dp.	
3"	7405K62	$21.09	—	—	7405K65	$27.70	7405K68	$37.28	7405K83	$40.99	7405K86	$60.98
6"	7405K63	38.62	—	—	7405K66	51.70	7405K69	69.24	7405K84	76.64	7405K87	116.50
9"	7405K64	56.16	—	—	7405K67	75.68	7405K82	101.18	7405K85	112.32	7405K88	172.18
12"	7405K26	69.83	7405K131	$104.99	7405K27	95.97	7405K28	139.91	7405K29	168.48	7405K49	211.03
24"	7405K16	132.73	7405K132	192.10	7405K17	184.68	7405K18	260.31	7405K19	284.78	7405K21	404.30
36"	7405K36	198.74	7405K133	287.43	7405K37	281.58	7405K38	401.21	7405K39	466.30	7405K41	578.21
48"	7405K56	268.32	7405K134	402.24	7405K57	377.70	7405K58	519.65	7405K59	621.96	7405K61	770.99
60"	7405K76	347.10	7405K135	513.44	7405K77	449.00	7405K78	620.14	7405K79	684.58	7405K81	883.19
72"	7405K96	370.71	7405K136	643.25	7405K97	511.43	7405K98	720.00	7405K99	784.17	7405K101	1,038.33

Aluminum Shafts—Inch Sizes

Lg.	5/16" Dia. Keyway: 3/32" Wd. × 3/64" Dp.		3/8" Dia. Keyway: 3/32" Wd. × 3/64" Dp.		1/2" Dia. Keyway: 1/8" Wd. × 1/16" Dp.		5/8" Dia. Keyway: 3/16" Wd. × 3/32" Dp.		3/4" Dia. Keyway: 3/16" Wd. × 3/32" Dp.		1" Dia. Keyway: 1/4" Wd. × 1/8" Dp.	
6"	1570K21	$10.57	1570K31	$11.94	1570K41	$12.69	1570K51	$14.20	1570K61	$15.44	1570K71	$19.97
12"	1570K22	14.03	1570K32	18.38	1570K42	20.85	1570K52	22.28	1570K62	25.38	1570K72	36.03
24"	1570K23	24.18	1570K33	32.87	1570K43	35.85	1570K53	38.51	1570K63	47.40	1570K73	69.52

Keyed Drive Shafts

For information about shafts, see page 1074.

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Fully Keyed Precision Drive Shafts with Certification

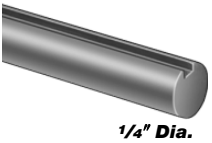

In addition to diameter tolerances that are twice as tight as the Fully Keyed Drive Shafts, these ultra-straight shafts include a traceable lot number and physical test report. An ANSI keyway runs the entire length of the shaft for a secure hold in higher-torque applications (keys not included; see pages 3361-3363).

Shafts are 1045 steel. Hardness is Rockwell C14-C28. Straightness tolerance is 0.003″ per foot. Ends are beveled.

Shaft Dia.	Dia. Tolerance
1/4″-1 1/2″	0″ to –0.001″
2″	0″ to –0.0015″

Lg.	1/4″ Dia. Keyway: 3/32″ Wd. x 3/64″ Dp.		1/2″ Dia. Keyway: 1/8″ Wd. x 1/16″ Dp.		5/8″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.		3/4″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.		7/8″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.		1″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.	
3″	8488T1	$15.62	8488T31	$16.02	8488T51	$16.44	8488T61	$16.72	8488T71	$17.18	8488T81	$17.98
6″	8488T2	19.46	8488T32	20.32	8488T52	21.10	8488T62	21.60	8488T72	22.40	8488T82	23.08
9″	8488T3	23.24	8488T33	24.62	8488T53	25.74	8488T63	26.46	8488T73	27.62	8488T83	28.24
12″	8488T4	27.14	8488T34	29.32	8488T54	30.22	8488T64	31.34	8488T74	32.84	8488T84	33.36
24″	8488T5	42.34	8488T35	46.18	8488T55	48.02	8488T65	50.25	8488T75	53.16	8488T85	53.98
36″	8488T6	59.88	8488T36	65.00	8488T56	68.16	8488T66	71.14	8488T76	75.22	8488T86	76.78
48″	8488T7	75.48	8488T37	82.24	8488T57	86.02	8488T67	90.00	8488T77	95.30	8488T87	97.38

Lg.	1 3/16″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.		1 1/4″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.		1 3/8″ Dia. Keyway: 5/16″ Wd. x 5/32″ Dp.		1 7/16″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.		1 1/2″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.		2″ Dia. Keyway: 1/2″ Wd. x 1/4″ Dp.	
12″	8488T104	$42.19	8488T114	$44.00	8488T124	$50.25	8488T134	$51.00	8488T144	$52.53	8488T194	$53.77
24″	8488T105	63.22	8488T115	65.48	8488T125	80.29	8488T135	80.78	8488T145	83.17	8488T195	98.56
36″	8488T106	83.02	8488T116	85.69	8488T126	106.22	8488T136	107.86	8488T146	110.88	8488T196	145.60
48″	8488T107	105.72	8488T117	104.70	8488T127	132.10	8488T137	134.89	8488T147	141.86	8488T197	187.47

Partially Keyed Drive Shafts

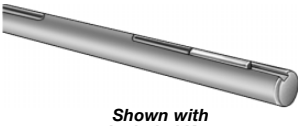

Shown with Included Key

With a 4″ long ANSI keyway on one end and a 14″ long ANSI keyway on the other, keys won't slide out of position during assembly and operation. All include one 2″ long key and one 4″ long key. Ends are beveled.

Steel Shafts—Made of 1117 steel, these shafts are stronger than stainless steel shafts but are less corrosion resistant. Hardness is Brinell 156. Straightness tolerance is 0.01″ per foot.

Stainless Steel Shafts—These Type 303 stainless steel shafts have good corrosion resistance but are not as strong as steel shafts. Hardness is Rockwell B80. Straightness tolerance is 0.003″ per foot.

Shaft Dia.	Dia. Tolerance
Steel	
3/8″-2″	0″ to –0.003″
Stainless Steel	
1/2″-1 7/16″	0″ to –0.001″

Steel Shafts

Lg.	3/8″ Dia. Keyway: 3/32″ Wd. x 3/64″ Dp.		1/2″ Dia. Keyway: 1/8″ Wd. x 1/16″ Dp.		5/8″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.		3/4″ Dia. Keyway: 1/8″ Wd. x 3/32″ Dp.		3/4″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.		7/8″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.	
24″	6117K11	$33.00	6117K31	$36.00	6117K33	$39.00	6117K55	$39.62	6117K12	$39.62	6117K22	$42.90
36″	6117K13	36.00	6117K32	39.14	6117K34	42.14	6117K56	44.90	6117K14	44.90	6117K24	49.57
48″	6117K15	40.81	6117K42	42.31	6117K43	45.31	6117K57	49.74	6117K44	49.74	6117K45	52.50
60″	6117K16	45.76	6117K17	45.76	6117K18	49.19	6117K21	52.98	6117K19	55.50	6117K23	54.11
72″	6117K101	49.50	6117K102	49.50	6117K103	49.74	6117K105	58.14	6117K104	58.14	6117K106	59.00

Lg.	1″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.		1 1/8″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.		1 3/16″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.		1 1/4″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.		1 1/4″ Dia. Keyway: 5/16″ Wd. x 1/8″ Dp.		1 3/8″ Dia. Keyway: 5/16″ Wd. x 5/32″ Dp.	
24″	6117K26	$48.19	6117K58	$55.84	6117K27	$62.50	6117K52	$62.76	6117K35	$62.76	6117K62	$67.30
36″	6117K28	55.69	6117K59	57.27	6117K29	63.00	6117K53	66.00	6117K36	66.00	6117K63	71.59
48″	6117K46	61.64	6117K61	65.86	6117K47	72.86	6117K54	77.90	6117K48	77.90	6117K64	84.70
60″	6117K25	62.23	6117K88	74.98	6117K89	80.70	6117K91	86.68	6117K92	86.68	6117K93	99.66
72″	6117K107	70.11	6117K108	84.98	6117K109	91.82	6117K118	99.02	6117K111	99.02	6117K112	109.61

Lg.	1 7/16″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.		1 1/2″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.		1 5/8″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.		1 3/4″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.		1 15/16″ Dia. Keyway: 1/2″ Wd. x 1/4″ Dp.		2″ Dia. Keyway: 1/2″ Wd. x 1/4″ Dp.	
24″	6117K37	$73.57	6117K39	$75.48	6117K65	$78.05	6117K68	$84.48	6117K72	$88.77	6117K75	$91.64
36″	6117K38	78.00	6117K41	82.02	6117K66	89.82	6117K69	99.84	6117K73	111.13	6117K76	116.72
48″	6117K49	94.57	6117K51	99.74	6117K67	105.87	6117K71	118.61	6117K74	139.48	6117K77	146.93
60″	6117K94	101.98	6117K95	108.89	6117K96	125.83	6117K97	141.76	6117K98	167.83	6117K99	177.15
72″	6117K113	117.57	6117K114	125.89	6117K115	145.78	6117K116	164.91	6117K117	187.98	6117K119	198.71

Stainless Steel Shafts

Lg.	1/2″ Dia. Keyway: 1/8″ Wd. x 1/16″ Dp.		5/8″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.		3/4″ Dia. Keyway: 3/16″ Wd. x 3/32″ Dp.		1″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.		1 1/4″ Dia. Keyway: 1/4″ Wd. x 1/8″ Dp.		1 7/16″ Dia. Keyway: 3/8″ Wd. x 3/16″ Dp.	
24″	8377T6	$41.92	8377T71	$89.07	8377T17	$54.76	8377T28	$68.07	8377T34	$87.47	8377T41	$207.79
36″	8377T7	47.17	8377T72	97.98	8377T18	66.47	8377T29	85.03	8377T35	114.64	8377T42	250.97
48″	8377T8	52.45	8377T73	115.40	8377T19	78.14	8377T31	102.00	8377T36	141.40	8377T43	336.90

Shafts with Retaining Ring Grooves

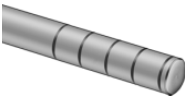

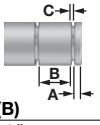

Multiple grooves (four or five on one end; two on the other) allow mounting flexibility, positioning bearings in a fixed spot, and using these shafts as an axle. All are Type 303 stainless steel and have good corrosion resistance. Hardness is Rockwell B83. Straightness tolerance is 0.0008″ per inch. Ends are beveled. For retaining rings (not included), see page 3274.

Shaft Dia.	Dia. Tolerance
1/4″-1″	0″ to –0.0002″

Dia.	(A)	(B)	Groove Wd. (C)	3″ O'all Lg.		6″ O'all Lg.		10″ O'all Lg.		12″ O'all Lg.	
1/4″	1/32″	1/4″	0.029″	2025K1	$4.17	2025K2	$6.03	2025K3	$8.17	2025K4	$8.52
3/8″	1/16″	3/8″	0.039″	2025K5	7.82	2025K6	11.50	2025K7	18.69	2025K8	24.42
1/2″	3/32″	7/16″	0.046″	2025K9	11.05	2025K11	20.40	2025K12	25.00	2025K13	29.58
5/8″	1/8″	1/2″	0.046″	2025K14	13.38	2025K15	27.00	2025K16	45.46	2025K17	54.38
3/4″	1/8″	9/16″	0.056″	2025K18	15.84	2025K19	21.56	2025K21	53.64	2025K22	64.50
1″	1/8″	9/16″	0.056″	2025K23	26.84	2025K24	54.16	2025K25	74.40	2025K26	99.47

For information about shafts, see page 1074.

Don't see the shafts you need? Just tell us what you're looking for and we'll get it for you.

Dual-Diameter Shafts

For mounting and connecting flexibility, each shaft has two different diameters. Choose from shafts that step down on one or both ends. Straightness tolerance is 0.003″ per foot. Ends are beveled.

Steel Shafts— Made of 1045 steel, these shafts are stronger than stainless steel shafts but are less corrosion resistant. Hardness is Brinell 150.

Stainless Steel Shafts— These Type 303 stainless steel shafts have good corrosion resistance but are not as strong as steel shafts. Hardness is Brinell 160.

Shaft Dia. (A)	Dia. Tolerance
1/2″-3/4″	0″ to –0.001″
Shaft Dia. (B)	**Dia. Tolerance**
3/4″-1″	0″ to –0.001″

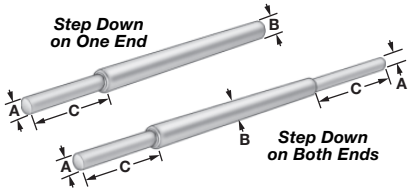

Step Down on One End

Shaft Dia. (A)	Shaft Dia. (B)	Shaft Lg. (C)	6″ Length		9″ Length		12″ Length	
Steel Shafts								
1/2″	3/4″	3″	8641T1	$17.60	8641T2	$18.47	8641T3	$19.64
3/4″	1″	3″	8641T4	19.54	8641T5	21.16	8641T6	22.71
Stainless Steel Shafts								
1/2″	3/4″	3″	8641T21	25.91	8641T22	29.84	8641T23	33.81
3/4″	1″	3″	8641T24	30.51	8641T25	35.96	8641T26	41.41

Step Down on Both Ends

Shaft Dia. (A)	Shaft Dia. (B)	Shaft Lg. (C)	12″ Length		18″ Length		24″ Length	
Steel Shafts								
1/2″	3/4″	3″	8641T51	$76.36	8641T52	$78.64	8641T53	$82.96
1/2″	1″	3″	8641T57	79.36	8641T58	82.64	8641T59	88.96
3/4″	1″	3″	8641T54	72.02	8641T55	75.31	8641T56	81.62

Idler Shafts

Count on our specially designed shafts to hold your bearings in idler applications. All shafts are made of steel. For idler rollers, see pages 1121-1122.

Thread-Mount Shafts— Mount in a tapped hole. A retaining-ring groove with included retaining ring and spacers position your bearing.

Flange-Mount Shafts— For a more secure hold, these shafts include washers and a nut to position your bearing.

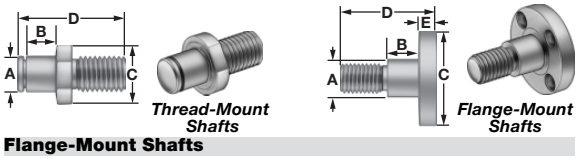

Thread-Mount Shafts

Shaft Dia. (A)	Shaft Lg. (B)	O'all Dia. (C)	O'all Lg. (D)	Thread Size		
1/4″	3/8″	1/2″	1 1/16″	1/4″-20	2435K1	$6.83
3/8″	7/16″	3/4″	1 7/32″	1/4″-20	2435K2	7.79
1/2″	5/8″	1″	1 9/16″	5/16″-18	2435K3	8.83
5/8″	5/8″	1 1/8″	1 19/32″	5/16″-18	2435K4	9.98
3/4″	5/8″	1 1/4″	1 25/32″	3/8″-16	2435K5	11.81
1″	5/8″	1 1/2″	2″	1/2″-13	2435K6	17.17

Flange-Mount Shafts

Shaft Dia. (A)	Shaft Lg. (B)	O'all Dia. (C)	O'all Lg. (D)	Thread Size	Flange Thick. (E)	Bolt Circle Dia.		
1/4″	3/8″	1 1/16″	1″	10-24	9/32″	23/32″	2435K11	$8.95
3/8″	7/16″	1 1/4″	1 3/16″	5/16″-18	9/32″	29/32″	2435K12	11.05
1/2″	5/8″	1 7/16″	1 1/2″	7/16″-14	9/32″	1 3/32″	2435K13	13.07
5/8″	5/8″	1 5/8″	1 21/32″	1/2″-13	5/16″	1 1/4″	2435K14	15.26
3/4″	5/8″	1 7/8″	1 27/32″	5/8″-11	11/32″	1 7/16″	2435K15	21.00
1″	5/8″	2 1/4″	2 1/8″	7/8″-9	13/32″	1 3/4″	2435K16	30.52

D-Profile Shafts

Looking for a secure connection when working with set screws? A D-shaped profile provides a flat surface area, which allows set screws to dig into the shaft. The flat surface width is equal to 50% of the diameter size. Diameter tolerance is 0″ to –0.003″. Straightness tolerance is 0.012″ per foot. Ends are beveled.

Steel Shafts with Solid Ends— Made of 1045 steel, these shafts are stronger than stainless steel shafts but are less corrosion resistant. Rockwell hardness is B90.

Stainless Steel Shafts with Solid Ends— These Type 303 stainless steel shafts have good corrosion resistance but are not as strong as steel shafts. Rockwell hardness is B83.

Steel Shafts with One Tapped End— Just like the steel shafts with solid ends but with an internally tapped end.

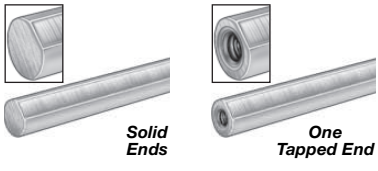

Steel Shafts with Solid Ends

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		1″ Dia.	
6″	8632T132	$6.64	8632T133	$7.00	8632T134	$7.14	8632T135	$7.31	8632T136	$7.50	8632T138	$9.07
12″	8632T139	9.10	8632T1	9.67	8632T7	9.93	8632T14	10.19	8632T21	10.50	8632T34	13.14
24″	8632T141	15.19	8632T2	16.36	8632T8	16.88	8632T15	17.43	8632T22	18.05	8632T35	23.33
36″	8632T142	21.31	8632T3	23.05	8632T9	23.86	8632T16	24.64	8632T23	25.57	8632T36	33.50
48″	8632T143	24.45	8632T4	26.76	8632T11	27.83	8632T17	28.90	8632T24	30.14	8632T37	40.71
	1 1/4″ Dia.		**1 3/8″ Dia.**		**1 1/2″ Dia.**		**1 3/4″ Dia.**		**1 15/16″ Dia.**		**2″ Dia.**	
12″	8632T41	$16.10	8632T47	$19.43	8632T54	$22.76	8632T61	$30.05	8632T67	$32.19	8632T74	$33.33
24″	8632T42	29.24	8632T48	34.67	8632T55	41.36	8632T62	55.33	8632T68	59.62	8632T75	61.90
36″	8632T43	42.36	8632T49	49.93	8632T56	59.98	8632T63	80.62	8632T69	87.07	8632T76	90.48
48″	8632T44	52.52	8632T51	61.02	8632T57	74.40	8632T64	101.14	8632T71	109.74	8632T77	114.29

Stainless Steel Shafts with Solid Ends

Lg.	1/4″ Dia.		3/8″ Dia.		1/2″ Dia.		5/8″ Dia.		3/4″ Dia.		1″ Dia.	
6″	8632T144	$9.02	8632T145	$9.53	8632T146	$10.49	8632T147	$10.96	8632T148	$12.45	8632T149	$17.02
12″	8632T151	13.28	8632T152	14.13	8632T87	17.57	8632T153	16.49	8632T101	21.24	8632T107	29.76
24″	8632T154	23.89	8632T155	25.60	8632T88	32.17	8632T156	30.32	8632T102	39.52	8632T108	56.57
36″	8632T157	34.51	8632T158	37.06	8632T89	46.76	8632T159	44.15	8632T103	57.79	8632T109	83.36
48″	8632T161	42.47	8632T162	45.87	8632T91	58.38	8632T163	55.32	8632T104	73.07	8632T111	107.17

Steel Shafts with One Tapped End

Lg.	1/4″ Dia. Tapped End Size: 5-40 × 3/8″ Dp.		3/8″ Dia. Tapped End Size: 10-32 × 3/8″ Dp.		1/2″ Dia. Tapped End Size: 1/4″-20 × 1/2″ Dp.		5/8″ Dia. Tapped End Size: 1/4″-20 × 1/2″ Dp.		3/4″ Dia. Tapped End Size: 5/16″-18 × 5/8″ Dp.		1″ Dia. Tapped End Size: 3/8″-16 × 3/4″ Dp.	
6″	8017T1	$23.98	8017T2	$17.64	8017T3	$17.78	8017T4	$17.93	8017T5	$18.11	8017T6	$19.58
12″	8017T7	26.27	8017T8	20.13	8017T9	20.38	8017T11	20.62	8017T12	20.91	8017T13	23.38
24″	8017T14	31.96	8017T15	26.38	8017T16	26.87	8017T17	27.38	8017T18	27.96	8017T19	32.89
36″	8017T21	37.67	8017T22	32.62	8017T23	33.38	8017T24	34.11	8017T25	34.98	8017T26	42.38
48″	8017T27	40.60	8017T28	36.09	8017T29	37.09	8017T31	38.09	8017T32	39.24	8017T33	49.11

Shaft Supports

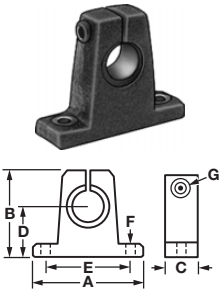

Base Mount, Inch and Metric Sizes

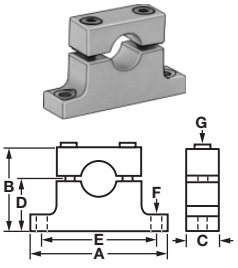

Quick-Access Base Mount

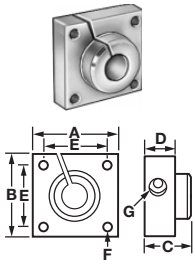

Flange Mount, Inch Sizes

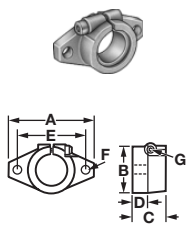

Flange Mount, Metric Sizes

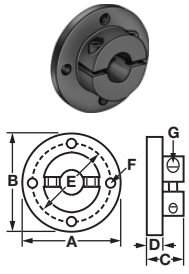

Quick-Access Flange Mount

Brace the ends of your linear shafts when working with light to medium loads where shaft alignment is not critical. For use with closed linear bearings.

Base Mount— Tolerance for (D) dimension is ±0.002″ for inch sizes and ±0.02 mm for metric sizes.

Quick-Access Base Mount— Innovative two-piece design lets you quickly remove the top of the support for access to your shaft. Tolerance for (D) dimension is ±0.003″.

Flange Mount— *Inch sizes* have a four-bolt design. *Metric sizes* have a two-bolt design.

Quick-Access Flange Mount— Innovative two-piece design lets you quickly remove the top of the support for access to your shaft. All have a four-bolt design.

For Shaft Dia.	Overall Lg. (A)	Overall Ht. (B)	Overall Thick. (C)	(D)	(E)	Mount. Hole Dia. (F)	Bolt Size (G)		
Base Mount— *Aluminum*									
1/4″	1 1/2″	1 1/8″	1/2″	11/16″	1 1/8″	1/8″	#6	6068K21	$22.40
3/8″	1 5/8″	1 1/4″	5/8″	3/4″	1 1/4″	1/8″	#6	6068K22	23.21
Base Mount— *Iron*									
1/2″	2″	1 5/8″	5/8″	1″	1 1/2″	3/16″	#8	6068K23	25.00
5/8″	2 1/2″	1 3/4″	1″	11/16″	1 7/8″	3/16″	#10	6068K24	26.26
3/4″	2 3/4″	2 1/8″	3/4″	1 1/4″	2″	3/16″	#10	6068K25	27.55
1″	3 1/4″	2 5/8″	1″	1 1/2″	2 1/2″	1/4″	1/4″	6068K26	30.46
1 1/4″	4″	3″	1 1/8″	1 3/4″	3″	1/4″	5/16″	6068K27	36.02
1 1/2″	4 3/4″	3 1/2″	1 1/4″	2″	3 1/2″	1/4″	5/16″	6068K28	41.43
2″	6″	4 1/2″	1 1/2″	2 1/2″	4 1/2″	3/8″	3/8″	6068K29	55.89
Metric Base Mount— *Aluminum (Dimensions in mm)*									
8	42	33	14	20	32	6	M4	61815K33	19.91
10	42	33	14	20	32	6	M4	61815K32	19.91
12	42	38	14	23	32	6	M4	61815K34	20.98
16	48	44	16	27	38	6	M4	61815K35	21.70
20	60	51	20	31	45	7	M5	61815K36	23.64
25	70	60	24	35	56	7	M6	61815K37	26.28
30	84	70	28	42	64	9	M6	61815K38	29.09
35	98	82	32	50	74	11	M8	61815K39	33.09
40	114	96	36	60	90	11	M8	61815K41	40.32
Quick-Access Base Mount— *Aluminum*									
1/4″	1 5/8″	7/8″	3/8″	1/2″	1 1/4″	1/8″	#6	1865K1	10.93
3/8″	1 3/4″	1″	3/8″	5/8″	1 3/8″	1/8″	#6	1865K2	11.67
1/2″	2″	1 3/16″	1/2″	3/4″	1 5/8″	3/16″	#8	1865K3	16.10
5/8″	2 5/8″	1 7/16″	1/2″	1″	2 1/8″	3/16″	#10	1865K4	17.36
3/4″	2 3/4″	1 9/16″	1/2″	1″	2 1/4″	3/16″	#10	1865K5	18.74
1″	3 3/16″	1 15/16″	3/4″	1 1/4″	2 5/8″	1/4″	1/4″	1865K6	23.40
Quick-Access Base Mount— *Aluminum (Cont.)*									
1 1/4″	3 3/4″	2 5/16″	3/4″	1 1/2″	3 1/8″	1/4″	5/16″	1865K7	$29.21
1 1/2″	4″	2 11/16″	3/4″	1 3/4″	3 3/8″	1/4″	5/16″	1865K8	33.14
2″	5″	3 5/16″	1 1/4″	2 1/8″	4 1/4″	3/8″	3/8″	1865K9	43.69
Flange Mount— *Aluminum*									
1/2″	1 5/8″	1 5/8″	7/8″	1/2″	1 1/4″	1/8″	#8	57745K21	30.53
3/4″	2 3/8″	2 3/8″	1″	5/8″	1 3/4″	3/16″	#10	57745K22	34.04
1″	2 3/4″	2 3/4″	1 1/4″	5/8″	2 1/8″	1/4″	1/4″	57745K23	44.36
1 1/4″	3 1/8″	3 1/8″	1 3/8″	3/4″	2 3/8″	1/4″	1/4″	57745K24	55.00
Metric Flange Mount— *Aluminum (Dimensions in mm)*									
10	43	24	10	5	32	5	M4	62645K41	18.26
12	47	28	13	7	36	5	M4	62645K38	18.26
16	50	31	16	8	40	5	M4	62645K39	19.02
20	60	37	20	8	48	7	M5	62645K42	20.52
25	70	42	25	10	56	7	M5	62645K43	23.57
30	80	50	30	12	64	9	M6	62645K44	25.28
35	92	58	35	14	72	12	M8	62645K45	28.84
40	102	67	40	16	80	12	M10	62645K46	35.09
Quick-Access Flange Mount— *Steel*									
1/4″	1 5/8″	1 5/8″	3/4″	1/4″	1 3/8″	1/8″	6-32	1870K1	35.79
3/8″	1 5/8″	1 5/8″	3/4″	1/4″	1 3/8″	1/8″	6-32	1870K2	35.79
1/2″	2 1/4″	2 1/4″	1″	3/8″	1 3/4″	1/8″	8-32	1870K3	38.93
5/8″	2 5/8″	2 5/8″	1″	3/8″	2 1/8″	3/16″	10-32	1870K4	40.95
3/4″	3″	3″	1″	3/8″	2 3/8″	1/4″	1/4″-28	1870K5	43.21
1″	3 1/4″	3 1/4″	1 5/8″	3/8″	2 3/4″	1/4″	1/4″-28	1870K6	47.10
1 1/4″	3 1/4″	3 1/4″	1 5/8″	3/8″	2 3/4″	1/4″	1/4″-28	1870K7	47.69
1 1/2″	3 3/4″	3 3/4″	1 15/16″	7/16″	3 1/8″	1/4″	1/4″-28	1870K8	58.11
2″	4 3/4″	4 3/4″	2 5/16″	1/2″	4″	5/16″	5/16″-24	1870K9	90.84

Combination Linear/Drive Ball Bearings and Spline Shafts

Standard Bearing

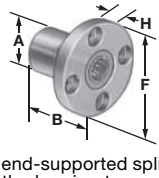

Flanged Bearing

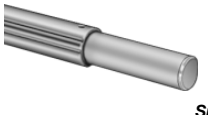

Spline Shaft

Pair a ball bearing with an end-supported spline shaft to transmit rotary torque while allowing the bearing to move linearly along the shaft. Also called ball splines, these ball bearings and spline shafts offer low friction and low backlash. Torque capacity is the maximum rotational load a bearing can withstand without deforming.

All bearings are closed style and can be mounted in any position without affecting load capacity. They also have a fixed-alignment design and are for use where shaft misalignment is unlikely. Shell and balls are steel. Maximum temperature is 176° F. *Note:* Bearings will only fit the spline shaft listed on the same line in the table.

For Shaft Dia., mm	OD (A), mm	O'all Lg. (B), mm	Torque Cap., in.-lbs.	*Standard Bearings*		*Flanged Bearings* Flange Dia. (F), mm	Flange Thick. (H), mm	Bolt Circle Dia. (M), mm	Bolt Size (N)			*Spline Shafts* Diameter mm (A1)	mm (A2)	(P), mm	(Q), mm		
6	14	25	13	61145K31	$64.87	30	5	22	M3	61145K41	$84.29	6	—	—	150	61145K61	$99.63
8	16	25	18	61145K32	68.32	32	5	24	M3	61145K42	85.73	8	—	—	150	61145K62	93.80
10	21	33	38	61145K33	71.43	42	6	32	M4	61145K43	87.91	10	—	—	200	61145K63	93.82
18.2	32	60	734	61145K36	129.43	51	7	40	M4	61145K46	143.79	18.2	15	150	200	61145K86	202.32
23	37	70	1,433	61145K37	151.97	60	9	47	M5	61145K47	176.50	23	20	150	200	61145K87	210.36
28	45	80	2,557	61145K38	181.57	70	10	54	M6	61145K48	199.29	28	25	150	300	61145K88	326.83
37.4	60	100	5,637	61145K39	242.24	90	14	72	M8	61145K49	267.09	37.4	30	150	400	61145K89	429.53

About Linear Bearings

Linear Ball Bearings (pages 1087-1092)— The choice for smooth linear motion in debris-free environments. Compared to linear sleeve bearings, they require less force to operate because they create less friction. They also run at higher speeds. Linear ball bearings are for use on hardened shafts. They usually require lubrication.

Linear Sleeve Bearings (pages 1092-1095)— Select linear sleeve bearings for heavy loads and when working in dirty environments. They consist of a shell lined with Frelon, PTFE, Rulon, or ceramic. They do not require lubrication, except for bearings with ceramic. Use with hardened or unhardened shafts. To check if a given sleeve bearing will handle your load and speed, calculate the PV (pressure × velocity) value for your application. PV and velocity should not exceed the values listed.

$$\text{PV} = \frac{\text{Static Load (lbs.)}}{\text{Bearing Lg. (in.)} \times \text{Shaft Dia. (in.)}} \times \text{Velocity (fpm)}$$

Parallel-Shaft Applications for Linear Sleeve Bearings— For best results in this common setup, use a *fixed-alignment bearing* on one shaft and a *self-aligning bearing*, which accommodates minor shaft misalignment, on the other.

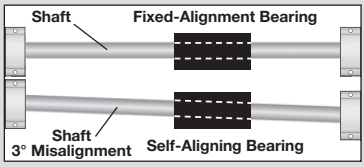

For technical drawings and 3-D models, go to mcmaster.com.

Linear Ball Bearings

For shafts and shaft supports, see pages 1074-1086.

Pillow-Block Linear Ball Bearings

To save time and installation costs, these bearings come mounted in an aluminum pillow block. They have end seals to keep lubricants in and dirt out. Maximum temperature is 176° F. Bearings are replaceable.

For use with hardened shafts made of steel, chrome-plated steel, or stainless steel with a hardness of at least Rockwell C50.

Closed Bearings— Mount in any position without affecting load capacity. Use with end-supported shafts.

Open Bearings— Designed for applications requiring maximum rigidity. Use with shafts with support rail.

Inch bearings are self-aligning and handle up to 1° of shaft misalignment in any direction (unless noted). Shell is acetal; balls are steel. Height tolerance (G) is ±0.0012″, unless noted.

Metric bearings are fixed-alignment style and are for use where shaft misalignment is unlikely. Shell and balls are steel. Height tolerance (G) is ±0.02 mm.

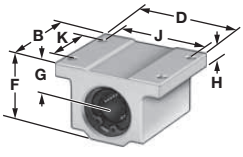

Closed Bearing

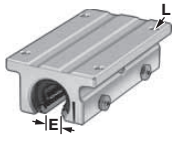

Open Bearing

For Shaft Dia.	Dynamic Load Cap., lbs.	O'all Lg. (B)	O'all Wd. (D)	Wd. (E)	O'all Ht. (F)	Ht. (G)	Flange Thick. (H)	Mounting Holes Center-to-Center (J)	Mounting Holes Center-to-Center (K)	Mounting Holes Dia. (L)		
Closed Bearings												
1/4″	60	1 3/16″	1 5/8″	—	13/16″	7/16″	3/16″	1 5/16″	3/4″	5/32″	**6255K31**	$37.74
1/4″	96	2 1/2″	1 5/8″	—	13/16″	7/16″	3/16″	1 5/16″	2″	5/32″	**9338T42**	89.19
1/4″	120	2 1/2″	1 5/8″	—	13/16″	7/16″	3/16″	1 5/16″	2″	5/32″	**6255K61●■**	99.44
3/8″	95	1 5/16″	1 3/4″	—	15/16″	1/2″	3/16″	1 7/16″	7/8″	5/32″	**6255K32**	39.44
3/8″	150	2 3/4″	1 3/4″	—	15/16″	1/2″	3/16″	1 7/16″	2 1/4″	5/32″	**9338T43**	92.95
3/8″	200	2 3/4″	1 3/4″	—	15/16″	1/2″	3/16″	1 7/16″	2 1/4″	5/32″	**6255K62●■**	103.92
1/2″	230	1 11/16″	2″	—	1 1/4″	11/16″	1/4″	1 11/16″	1″	5/32″	**9338T1**	50.48
1/2″	370	3 1/2″	2″	—	1 1/4″	11/16″	1/4″	1 11/16″	2 1/2″	5/32″	**9338T7**	99.95
5/8″	400	1 15/16″	2 1/2″	—	1 5/8″	7/8″	9/32″	2 1/8″	1 1/8″	3/16″	**9338T2**	55.69
5/8″	640	4″	2 1/2″	—	1 5/8″	7/8″	9/32″	2 1/8″	3″	3/16″	**9338T8**	110.21
3/4″	470	2 1/16″	2 3/4″	—	1 3/4″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**9338T3**	62.52
3/4″	750	4 1/2″	2 3/4″	—	1 3/4″	15/16″	5/16″	2 3/8″	3 1/2″	3/16″	**9338T9**	123.76
1″	850	2 13/16″	3 1/4″	—	2 3/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	7/32″	**9338T4**	87.19
1″	1,360	6″	3 1/4″	—	2 3/16″	1 3/16″	3/8″	2 7/8″	4 1/2″	7/32″	**9338T11**	172.67
1 1/4″	1,230	3 5/8″	4″	—	2 13/16″	1 1/2″	7/16″	3 1/2″	2″	7/32″	**9338T5**	128.24
1 1/4″	1,970	7 1/2″	4″	—	2 13/16″	1 1/2″	7/16″	3 1/2″	5 1/2″	7/32″	**9338T12**	253.88
1 1/2″	1,480	4″	4 3/4″	—	3 1/4″	1 3/4″	1/2″	4 1/8″	2 1/2″	9/32″	**9338T6**	167.55
1 1/2″	2,370	9″	4 3/4″	—	3 1/4″	1 3/4″	1/2″	4 1/8″	6 1/2″	9/32″	**9338T13**	331.71
2″	2,430	5″	6″	—	4 1/16″	2 1/8″	5/8″	5 1/4″	3 1/4″	13/32″	**9338T41**	250.40
2″	3,000	5″	6″	—	4 1/16″	2 1/8″	5/8″	5 1/4″	3 1/4″	13/32″	**6255K39●■**	270.23
Open Bearings												
1/2″	230	1 1/2″	2″	1/4″	1 3/32″	11/16″	1/4″	1 11/16″	1″	5/32″	**9338T14**	60.64
1/2″	370	3 1/2″	2″	1/4″	1 3/32″	11/16″	1/4″	1 11/16″	2 1/2″	5/32″	**9338T21**	120.02
5/8″	400	1 3/4″	2 1/2″	5/16″	1 13/32″	7/8″	9/32″	2 1/8″	1 1/8″	3/16″	**9338T15**	70.38
5/8″	640	4″	2 1/2″	5/16″	1 13/32″	7/8″	9/32″	2 1/8″	3″	3/16″	**9338T22**	139.36
3/4″	470	1 7/8″	2 3/4″	3/8″	1 17/32″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**9338T16**	77.31
3/4″	750	4 1/2″	2 3/4″	3/8″	1 17/32″	15/16″	5/16″	2 3/8″	3 1/2″	3/16″	**9338T23**	153.05
1″	850	2 5/8″	3 1/4″	1/2″	1 31/32″	1 3/16″	3/8″	2 7/8″	1 3/4″	7/32″	**9338T17**	108.17
1″	1,360	6″	3 1/4″	1/2″	1 31/32″	1 3/16″	3/8″	2 7/8″	4 1/2″	7/32″	**9338T24**	214.17
1 1/4″	1,230	3 3/8″	4″	9/16″	2 31/64″	1 1/2″	7/16″	3 1/2″	2″	7/32″	**9338T18**	160.33
1 1/4″	1,970	7 1/2″	4″	9/16″	2 15/32″	1 1/2″	7/16″	3 1/2″	5 1/2″	7/32″	**9338T25**	317.48
1 1/2″	1,480	3 3/4″	4 3/4″	11/16″	2 29/32″	1 3/4″	1/2″	4 1/8″	2 1/2″	9/32″	**9338T19**	199.74
1 1/2″	2,370	9″	4 3/4″	11/16″	2 29/32″	1 3/4″	1/2″	4 1/8″	6 1/2″	9/32″	**9338T26**	396.88
2″	2,430	4 3/4″	6″	15/16″	3 21/32″	2 1/8″	5/8″	5 1/4″	3 1/4″	13/32″	**6255K59**	253.86
Metric Closed Bearings *(Dimensions in mm)*												
8	61	30	34	—	22	11	6	24	18	M4	**9338T51**	43.08
8	96	58	34	—	22	11	6	24	42	M4	**9338T31**	85.75
10	83	35	40	—	26	13	8	28	21	M5	**9338T52**	42.76
10	132	68	40	—	26	13	8	28	46	M5	**9338T32**	85.66
12	114	36	42	—	28	15	8	30.5	26	M5	**9338T53**	42.48
12	182	70	42	—	28	15	8	30.5	50	M5	**9338T33**	86.92
20	198	50	54	—	41	21	11	40	40	M6	**9338T54**	64.02
20	314	96	54	—	41	21	11	40	70	M6	**9338T34**	126.76
25	220	67	76	—	51.5	26	12	54	50	M8	**9338T55**	83.14
30	352	72	78	—	59.5	30	15	58	58	M8	**9338T56**	107.32

● Handles up to 1/2° of shaft misalignment. ■ Height tolerance (G) is ±0.003″.

High-Capacity Pillow-Block Linear Ball Bearings

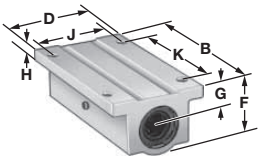

Closed Bearing

Open Bearing

Heavy loads demand high capacities, which is what these bearings provide. The bearings are smooth running, self-aligning, and handle up to ½° of shaft misalignment in any direction. They have end seals to keep lubricants in and dirt out. Pillow block is aluminum, shell is acetal, and balls are steel. Height tolerance (G) is ±0.003″. Maximum temperature is 185° F. Bearings are replaceable.

For use with hardened shafts made of steel, chrome-plated steel, or stainless steel with a hardness of at least Rockwell C50.

Closed Bearings— Mount in any position without affecting load capacity. Use with end-supported shafts.

Open Bearings— Designed for applications requiring maximum rigidity. Use with shafts with support rail.

For Shaft Dia.	Dynamic Load Cap., lbs.	O'all Lg. (B)	O'all Wd. (D)	Wd. (E)	O'all Ht. (F)	Ht. (G)	Flange Thick. (H)	Mounting Holes Center-to-Center (J)	(K)	Dia. (L)		
Closed Bearings												
1/2″	265	1 11/16″	2″	—	1 1/4″	11/16″	1/4″	1 11/16″	1″	5/32″	**6255K11**	$79.50
1/2″	530	3 1/2″	2″	—	1 1/4″	11/16″	1/4″	1 11/16″	2 1/2″	5/32″	**6255K17**	152.22
5/8″	620	1 15/16″	2 1/2″	—	1 5/8″	7/8″	9/32″	2 1/8″	1 1/8″	3/16″	**6255K12**	86.19
5/8″	1,240	4″	2 1/2″	—	1 5/8″	7/8″	9/32″	2 1/8″	3″	3/16″	**6255K18**	165.00
3/4″	1,130	2 1/16″	2 3/4″	—	1 3/4″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**6255K13**	90.69
3/4″	2,260	4 1/2″	2 3/4″	—	1 3/4″	15/16″	5/16″	2 3/8″	3 1/2″	3/16″	**6255K19**	173.80
1″	1,900	2 13/16″	3 1/4″	—	2 3/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	7/32″	**6255K14**	127.35
1″	3,800	6″	3 1/4″	—	2 3/16″	1 3/16″	3/8″	2 7/8″	4 1/2″	7/32″	**6255K21**	232.55
1 1/4″	2,350	3 5/8″	4″	—	2 13/16″	1 1/2″	7/16″	3 1/2″	2″	7/32″	**6255K15**	186.13
1 1/4″	4,700	7 1/2″	4″	—	2 13/16″	1 1/2″	7/16″	3 1/2″	5 1/2″	7/32″	**6255K22**	337.30
1 1/2″	3,880	4″	4 3/4″	—	3 1/4″	1 3/4″	1/2″	4 1/8″	2 1/2″	9/32″	**6255K16**	218.67
1 1/2″	7,760	9″	4 3/4″	—	3 1/4″	1 3/4″	1/2″	4 1/8″	6 1/2″	9/32″	**6255K23**	425.39
Open Bearings												
1/2″	360	1 1/2″	2″	5/16″	1 1/8″	11/16″	1/4″	1 11/16″	1″	5/32″	**6255K24**	92.51
1/2″	720	3 1/2″	2″	5/16″	1 1/8″	11/16″	1/4″	1 11/16″	2 1/2″	5/32″	**6255K41**	173.80
5/8″	620	1 3/4″	2 1/2″	11/32″	1 7/16″	7/8″	9/32″	2 1/8″	1 1/8″	3/16″	**6255K25**	104.58
5/8″	1,240	4″	2 1/2″	11/32″	1 7/16″	7/8″	9/32″	2 1/8″	3″	3/16″	**6255K42**	192.26
3/4″	1,130	1 7/8″	2 3/4″	13/32″	1 9/16″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**6255K26**	109.52
3/4″	2,260	4 1/2″	2 3/4″	13/32″	1 9/16″	15/16″	5/16″	2 3/8″	3 1/2″	3/16″	**6255K43**	201.57
1″	1,900	2 5/8″	3 1/4″	17/32″	2″	1 3/16″	3/8″	2 7/8″	1 3/4″	7/32″	**6255K27**	148.12
1″	3,800	6″	3 1/4″	17/32″	2″	1 3/16″	3/8″	2 7/8″	4 1/2″	7/32″	**6255K44**	275.98
1 1/4″	2,350	3 3/8″	4″	5/8″	2 9/16″	1 1/2″	7/16″	3 1/2″	2″	7/32″	**6255K28**	212.55
1 1/4″	4,700	7 1/2″	4″	5/8″	2 9/16″	1 1/2″	7/16″	3 1/2″	5 1/2″	7/32″	**6255K45**	405.33
1 1/2″	3,880	3 3/4″	4 3/4″	3/4″	2 15/16″	1 3/4″	1/2″	4 1/8″	2 1/2″	9/32″	**6255K29**	257.07
1 1/2″	7,760	9″	4 3/4″	3/4″	2 15/16″	1 3/4″	1/2″	4 1/8″	6 1/2″	9/32″	**6255K46**	497.74

Corrosion-Resistant Pillow-Block Linear Ball Bearings

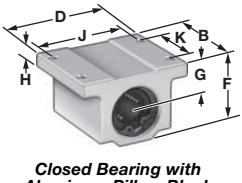

Closed Bearing with Aluminum Pillow Block

Closed Bearing with Plastic Pillow Block

Open Bearing with Aluminum Pillow Block

Outdoor as well as mild chemical environments are no problem for these bearings. All have Type 440C stainless steel balls for corrosion resistance. End seals keep lubricants in and dirt out. Maximum temperature is 176° F.

Closed Bearings— Mount in any position without affecting load capacity. Use with end-supported shafts.

Open Bearings— Designed for applications requiring maximum rigidity. Use with shafts with support rail.

Bearings with aluminum pillow block take on heavier loads than bearings with a plastic pillow block. They have smooth-running, self-aligning bearings that handle up to 1° of shaft misalignment in any direction. The shell is acetal. Height tolerance (G) is ±0.0012″. For use with hardened shafts made of steel, chrome-plated steel, or stainless steel with a hardness of at least Rockwell C60. Bearings are replaceable.

Bearings with plastic pillow block are more corrosion resistant and are lighter in weight than bearings with an aluminum pillow block. They have fixed-alignment bearings and are for applications where shaft misalignment is unlikely. The shell is nickel-plated steel. Height tolerance (G) is ±0.004″. For use with hardened shafts made of steel with a hardness of at least Rockwell C60 or made of stainless steel with a hardness of at least Rockwell C56. Bearings are not replaceable.

For Shaft Dia.	Dynamic Load Cap., lbs.	O'all Lg. (B)	O'all Wd. (D)	Wd. (E)	O'all Ht. (F)	Ht. (G)	Flange Thick. (H)	Mounting Holes Center-to-Center (J)	(K)	Dia. (L)		
Closed Bearings with Aluminum Pillow Block												
1/2″	230	1 11/16″	2″	—	1 1/4″	11/16″	1/4″	1 11/16″	1″	5/32″	**9104T1**	$77.10
5/8″	400	1 15/16″	2 1/2″	—	1 5/8″	7/8″	9/32″	2 1/8″	1 1/8″	3/16″	**9104T2**	85.02
3/4″	470	2 1/16″	2 3/4″	—	1 3/4″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**9104T3**	95.44
1″	850	2 13/16″	3 1/4″	—	2 3/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	7/32″	**9104T4**	133.16
Closed Bearings with Plastic Pillow Block												
1/2″	114	1 19/32″	2″	—	1 1/4″	11/16″	11/32″	1 11/16″	1″	5/32″	**1052K11**	43.37
5/8″	174	1 27/32″	2 1/2″	—	1 5/8″	7/8″	3/8″	2 1/8″	1 1/8″	3/16″	**1052K12**	47.83
3/4″	193	1 31/32″	2 3/4″	—	1 3/4″	15/16″	13/32″	2 3/8″	1 1/4″	3/16″	**1052K13**	53.71
1″	220	2 19/32″	3 1/4″	—	2 3/16″	1 3/16″	15/32″	2 7/8″	1 3/4″	7/32″	**1052K14**	74.91
Open Bearings with Aluminum Pillow Block												
1/2″	230	1 1/2″	2″	1/4″	1 3/32″	11/16″	1/4″	1 11/16″	1″	5/32″	**9104T8**	92.58
5/8″	400	1 3/4″	2 1/2″	5/16″	1 13/32″	7/8″	9/32″	2 1/8″	1 1/8″	3/16″	**9104T9**	107.48
3/4″	470	1 7/8″	2 3/4″	3/8″	1 17/32″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**9104T11**	118.06
1″	850	2 5/8″	3 1/4″	1/2″	1 31/32″	1 3/16″	3/8″	2 7/8″	1 3/4″	7/32″	**9104T12**	165.20

For information about linear bearings, see page 1087. For shafts and shaft supports, see pages 1074-1086.

Adjustable Pillow-Block Linear Ball Bearings

Use the adjustment screw in the pillow block to tighten or loosen the snugness (also known as preload) of the bearing to your shaft. All of these bearings are closed bearings and can be mounted in any position without affecting load capacity. They are self-aligning and handle up to 3° of shaft misalignment in any direction. End seals keep lubricants in and dirt out. Pillow block is cast iron. Shell and balls are steel. Height tolerance (G) is ±0.005″. Maximum temperature is 180° F.

For use with end-supported, hardened shafts made of steel with a hardness of at least Rockwell C60 or made of stainless steel with a hardness of at least Rockwell C53.

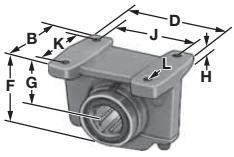

For Shaft Dia.	Dynamic Load Cap., lbs.	O'all Lg. (B)	O'all Wd. (D)	O'all Ht. (F)	Ht. (G)	Flange Thick. (H)	Mounting Holes Center-to-Center (J)	(K)	Dia. (L)		
1/2″	115	1 1/2″	2″	1 5/8″	7/8″	1/4″	1 1/2″	1″	3/16″	6635K31	$117.68
3/4″	194	2″	2 3/4″	2 1/8″	1 1/8″	5/16″	2″	1 3/8″	7/32″	6635K32	129.06
1″	221	2 1/4″	3 1/4″	2 9/16″	1 3/8″	3/8″	2 1/2″	1 1/2″	9/32″	6635K33	162.06
1 1/4″	353	2 3/4″	4″	3 1/4″	1 3/4″	7/16″	3″	1 7/8″	11/32″	6635K34	211.42
1 1/2″	491	3″	4 3/4″	3 3/4″	2″	1/2″	3 1/2″	2″	11/32″	6635K35	246.52
2″	860	3 1/2″	6″	4 3/4″	2 1/2″	5/8″	4 1/2″	2 1/2″	13/32″	6635K36	332.34

Flange-Mount Linear Ball Bearings

The flange-mount design makes these closed bearings a good solution for vertical linear motion applications. All can be mounted in any position without affecting load capacity. They have fixed-alignment bearings and are for use where shaft misalignment is unlikely. End seals keep lubricants in and dirt out. Use with end-supported, hardened steel or stainless steel shafts with a hardness of at least Rockwell C56.

***Steel Bearings*—**Flange, shell, and balls are steel. Maximum temperature is 176° F.

***Stainless Steel Bearings*—**Flange, shell, and balls are Type 440C stainless steel for corrosion resistance. Maximum temperature is 248° F.

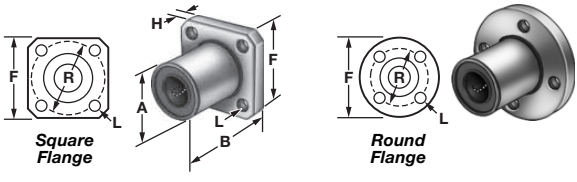

Square Flange *Round Flange*

For Shaft Dia.	Dynamic Load Cap., lbs.	OD (A)	O'all Lg. (B)	Flange Thick. (H)	Hole Dia. (L)	Bolt Circle Dia. (R)	Square Flange O'all Ht. (F)			Round Flange Flange Dia. (F)		
Steel Bearings												
1/4″	46	1/2″	3/4″	1/4″	5/32″	7/8″	1″	6483K61	$27.33	1 1/4″	6483K51	$25.22
1/4″	72	1/2″	1 3/8″	1/4″	5/32″	7/8″	1″	6483K81	58.88	1 1/4″	6483K71	53.83
3/8″	50	5/8″	7/8″	1/4″	3/16″	1 1/16″	1 1/4″	6483K62	28.24	1 1/2″	6483K52	26.04
3/8″	79	5/8″	1 5/8″	1/4″	3/16″	1 1/16″	1 1/4″	6483K82	60.86	1 1/2″	6483K72	55.63
1/2″	114	7/8″	1 1/4″	1/4″	3/16″	1 5/16″	1 3/8″	6483K63	30.67	1 3/4″	6483K53	28.91
1/2″	182	7/8″	2 3/8″	1/4″	3/16″	1 5/16″	1 3/8″	6483K83	67.76	1 3/4″	6483K73	61.89
5/8″	174	1 1/8″	1 1/2″	1/4″	3/16″	1 9/16″	1 1/2″	6483K64	35.83	2″	6483K54	33.00
5/8″	276	1 1/8″	2 13/16″	1/4″	3/16″	1 9/16″	1 1/2″	6483K84	79.38	2″	6483K74	72.50
3/4″	193	1 1/4″	1 5/8″	5/16″	7/32″	1 23/32″	1 11/16″	6483K65	44.65	2 3/16″	6483K55	41.09
3/4″	308	1 1/4″	3 1/8″	5/16″	7/32″	1 23/32″	1 11/16″	6483K85	99.50	2 3/16″	6483K75	90.78
1″	220	1 9/16″	2 1/4″	5/16″	7/32″	2 1/32″	2″	6483K66	65.09	2 1/2″	6483K56	59.67
1″	353	1 9/16″	4 5/16″	5/16″	7/32″	2 1/32″	2″	6483K86	144.18	2 1/2″	6483K76	131.65
1 1/4″	353	2″	2 5/8″	3/8″	9/32″	2 9/16″	2 1/2″	6483K67	90.07	3 1/8″	6483K57	82.39
1 1/4″	562	2″	5″	3/8″	9/32″	2 9/16″	2 1/2″	6483K87	201.88	3 1/8″	6483K77	184.07
1 1/2″	490	2 3/8″	3″	1/2″	11/32″	3 1/16″	3″	6483K68	141.65	3 3/4″	6483K58	129.63
1 1/2″	771	2 3/8″	5 11/16″	1/2″	11/32″	3 1/16″	3″	6483K88	322.42	3 3/4″	6483K78	275.31
2″	859	3″	4″	1/2″	11/32″	3 11/16″	3 1/2″	6483K69	189.78	4 3/8″	6483K59	174.26
2″	1,368	3″	7 3/4″	1/2″	11/32″	3 11/16″	3 1/2″	6483K89	431.12	4 3/8″	6483K79	384.04
Stainless Steel Bearings												
3/8″	50	5/8″	7/8″	1/4″	3/16″	1 1/16″	1 1/4″	5931K75	69.33	1 1/2″	5931K65	59.42
3/8″	79	5/8″	1 5/8″	1/4″	3/16″	1 1/16″	—	—	—	1 1/2″	5931K85	108.89
1/2″	114	7/8″	1 1/4″	1/4″	3/16″	1 5/16″	1 3/8″	5931K76	76.89	1 3/4″	5931K66	65.38
1/2″	182	7/8″	2 3/8″	1/4″	3/16″	1 5/16″	—	—	—	1 3/4″	5931K86	121.02
3/4″	193	1 1/4″	1 5/8″	5/16″	7/32″	1 23/32″	1 11/16″	5931K77	111.25	2 3/16″	5931K67	94.95
3/4″	308	1 1/4″	3 1/8″	5/16″	7/32″	1 23/32″	—	—	—	2 3/16″	5931K87	176.49
1″	220	1 9/16″	2 1/4″	5/16″	7/32″	2 1/32″	2″	5931K78	157.96	2 1/2″	5931K68	134.44
1″	353	1 9/16″	4 5/16″	5/16″	7/32″	2 1/32″	—	—	—	2 1/2″	5931K88	252.05

Aluminum Housings for Linear Bearings

Need to position your linear bearing or mount it to a surface? Just slide your ball or sleeve bearing (not included) into one of these aluminum housings and secure it with the included internal retaining rings. For bearing OD is oversized by 0.0005″.

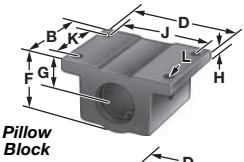

Pillow Block

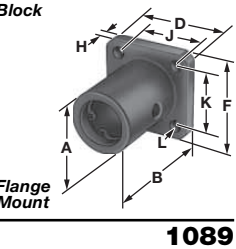

Flange Mount

For Bearing OD	OD (A)	O'all Lg. (B)	O'all Wd. (D)	O'all Ht. (F)	Ht. (G)	Flange Thick. (H)	Mounting Holes Center-to-Center (J)	(K)	Dia. (L)		
Pillow-Block Housings											
1/2″	—	1 3/16″	1 5/8″	13/16″	7/16″	3/16″	1 5/16″	3/4″	5/32″	9804K1	$28.92
5/8″	—	1 5/16″	1 3/4″	15/16″	1/2″	3/16″	1 7/16″	7/8″	5/32″	9804K2	31.33
7/8″	—	1 11/16″	2″	1 1/4″	11/16″	1/4″	1 11/16″	1″	5/32″	9804K3	33.74
1 1/8″	—	1 15/16″	2 1/2″	1 5/8″	7/8″	9/32″	2 1/8″	1 1/8″	3/16″	9804K4	36.15
1 1/4″	—	2 1/16″	2 3/4″	1 3/4″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	9804K5	38.56
Flange-Mount Housings											
5/8″	7/8″	1 5/16″	1 1/4″	1 1/4″	—	3/16″	7/8″	7/8″	5/32″	9734K11	22.56
7/8″	1 1/4″	1 11/16″	1 5/8″	1 5/8″	—	1/4″	1 1/4″	1 1/4″	3/16″	9734K12	25.95
1 1/8″	1 1/2″	1 15/16″	2″	2″	—	1/4″	1 1/2″	1 1/2″	3/16″	9734K13	31.28
1 1/4″	1 3/4″	2 1/16″	2 3/8″	2 3/8″	—	3/8″	1 3/4″	1 3/4″	7/32″	9734K14	33.85

Self-Aligning Linear Ball Bearings

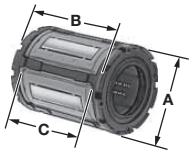

Closed Bearing

Open Bearing

Our basic self-aligning bearings are smooth running and handle up to ½° of shaft misalignment in any direction. Bearings have end seals (unless noted) to keep lubricants in and dirt out. Maximum temperature is 176° F.

To install, slide bearings into a housing (not included) and secure with two external retaining rings (sold individually), except 6489K71 does not accept retaining rings. For use with hardened shafts made of steel, chrome-plated steel, or stainless steel with a hardness of at least Rockwell C60 (except 6489K71, 6489K61, 6489K62, 6630K12, 6630K13, and 6630K49 must be at least Rockwell C50).

Closed Bearings—Mount in any position without affecting load capacity. Use with end-supported shafts.

Open Bearings—Designed for applications requiring maximum rigidity. Use with shafts with support rail.

Standard bearings have an acetal shell and steel balls.
Corrosion-resistant bearings have an acetal shell and Type 440C stainless steel balls.

For Shaft Dia.	Dynamic Load Cap., lbs.	OD (A)	For Housing Bore Min.	For Housing Bore Max.	O'all Lg. (B)	(C)	Closed Bearings		Open Bearings Wd. (E)	Open Bearings		External Retaining Ring	
Standard Bearings													
3/16″	35	3/8″	0.3750″	0.3755″	9/16″	—	6489K71◆	$22.15	—	—	—	—	—
1/4″	39	1/2″	0.5000″	0.5007″	3/4″	0.515″	8974T14	26.12	—	—	—	9968K22	$0.30
1/4″	60	1/2″	0.5000″	0.5005″	3/4″	0.511″	6489K61◆	15.49	—	—	—	9968K22	.30
3/8″	59	5/8″	0.6250″	0.6257″	7/8″	0.703″	8974T15	29.35	—	—	—	9968K23	.34
3/8″	100	5/8″	0.6250″	0.6255″	7/8″	0.699″	6489K62◆	17.63	—	—	—	9968K23	.34
1/2″	260	7/8″	0.8750″	0.8758″	1 1/4″	1.032″	8974T1	24.35	5/16″	8974T7	$32.65	9968K24	.47
5/8″	290	1 1/8″	1.1250″	1.1258″	1 1/2″	1.112″	8974T2	25.40	3/8″	8974T8	33.64	9968K25	.72
3/4″	430	1 1/4″	1.2500″	1.2510″	1 5/8″	1.272″	8974T3	26.52	7/16″	8974T9	34.96	9968K26	.72
1″	810	1 9/16″	1.5625″	1.5635″	2 1/4″	1.886″	8974T4	44.20	9/16″	8974T11	52.72	9968K27	1.03
1 1/4″	1,490	2″	2.0000″	2.0012″	2 5/8″	2.011″	8974T5	64.95	5/8″	8974T12	78.17	9968K28	1.49
1 1/2″	2,090	2 3/8″	2.3750″	2.3762″	3″	2.422″	8974T6	74.70	3/4″	8974T13	90.87	9968K29	2.49
2″	3,500	3″	3.0000″	3.0012″	4″	3.206″	6489K68	150.56	1″	6489K88	187.83	9968K31	12.91
Corrosion-Resistant Bearings													
1/4″	39	1/2″	0.5000″	0.5007″	3/4″	0.515″	6630K11	59.02	—	—	—	9968K22	.30
3/8″	59	5/8″	0.6250″	0.6257″	7/8″	0.703″	9069T15	50.33	—	—	—	9968K23	.34
3/8″	70	5/8″	0.6250″	0.6255″	7/8″	0.699″	6630K12◆	46.32	—	—	—	9968K23	.34
1/2″	185	7/8″	0.8750″	0.8755″	1 1/4″	1.032″	6630K13	60.87	5/16″	6630K49	62.25	9968K24	.47
5/8″	290	1 1/8″	1.1250″	1.1258″	1 1/2″	1.112″	9069T2	40.66	3/8″	9069T8	55.48	9968K25	.72
3/4″	430	1 1/4″	1.2500″	1.2510″	1 5/8″	1.272″	9069T3	42.40	7/16″	9069T9	57.70	9968K26	.72
1″	810	1 9/16″	1.5625″	1.5635″	2 1/4″	1.886″	9069T4	70.68	9/16″	9069T11	86.96	9968K27	1.03
1 1/4″	1,490	2″	2.0000″	2.0012″	2 5/8″	2.011″	9069T5	103.96	—	—	—	9968K28	1.49
1 1/2″	2,090	2 3/8″	2.3750″	2.3762″	3″	2.422″	9069T6	119.94	3/4″	9069T13	149.94	9968K29	2.49
2″	3,500	3″	3.0000″	3.0012″	4″	3.206″	6630K19	210.82	1″	9069T14	263.16	9968K31	12.91

◆No end seals.

High-Capacity Self-Aligning Linear Ball Bearings

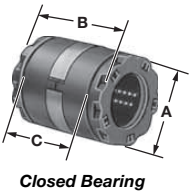

Closed Bearing

Open Bearing

Designed to take on your heavy loads, these self-aligning bearings are smooth running and handle up to ½° of shaft misalignment in any direction. Bearings have end seals (unless noted) to keep lubricants in and dirt out. Maximum temperature is 176° F.

To install, slide bearings into a housing (not included) and secure with two external retaining rings (sold individually). For use with hardened shafts made of steel, chrome-plated steel, or stainless steel with a hardness of at least Rockwell C50.

Closed Bearings—Mount in any position without affecting load capacity. Use with end-supported shafts.

Open Bearings—Designed for applications requiring maximum rigidity. Use with shafts with support rail.

Inch and ***metric sizes*** have an acetal shell and steel balls.
Corrosion-resistant inch sizes have an acetal shell and Type 440C stainless steel balls.

For Shaft Dia.	Dynamic Load Cap., lbs.	OD (A)	For Housing Bore Min.	For Housing Bore Max.	O'all Lg. (B)	(C)	Closed Bearings		Open Bearings Wd. (E)	Open Bearings		External Retaining Ring	
Inch Sizes													
1/2″	265	7/8″	0.8750″	0.8755″	1 1/4″	1.032″	6489K5	$26.50	5/16″	6489K7	$35.54	9968K24	$0.47
5/8″	620	1 1/8″	1.1250″	1.1255″	1 1/2″	1.125″	6489K51	28.39	11/32″	6489K56	37.64	9968K25	.72
3/4″	1,130	1 1/4″	1.2500″	1.2505″	1 5/8″	1.285″	6489K52	28.90	13/32″	6489K57	39.34	9968K26	.72
1″	1,900	1 9/16″	1.5625″	1.5630″	2 1/4″	1.901″	6489K53	52.28	17/32″	6489K58	64.02	9968K27	1.03
1 1/4″	2,350	2″	2.0000″	2.0008″	2 5/8″	2.031″	6489K54	84.81	5/8″	6489K59	109.08	9968K28	1.49
1 1/2″	3,880	2 3/8″	2.3750″	2.3760″	3″	2.442″	6489K55	96.24	3/4″	6489K6	119.18	9968K29	2.49
Corrosion-Resistant Inch Sizes													
1/2″	260	7/8″	0.8750″	0.8758″	1 1/4″	1.032″	9069T1	38.98	5/16″	9069T7	53.86	9968K24	.47
5/8″	434	1 1/8″	1.1250″	1.1255″	1 1/2″	1.125″	6630K21	73.26	11/32″	6630K51	72.67	9968K25	.72
3/4″	791	1 1/4″	1.2500″	1.2505″	1 5/8″	1.285″	6630K22	83.51	13/32″	6630K52	80.41	9968K26	.72
1″	1,330	1 9/16″	1.5625″	1.5630″	2 1/4″	1.901″	6630K23	105.90	17/32″	6630K53	107.13	9968K27	1.03
1 1/4″	1,645	2″	2.0000″	2.0008″	2 5/8″	2.031″	6630K24	195.60	5/8″	6630K54	216.19	9968K28	1.49
1 1/2″	2,716	2 3/8″	2.3750″	2.3760″	3″	2.442″	6630K25	208.82	3/4″	6630K55	234.98	9968K29	2.49
Metric Sizes *(Dimensions in mm)*													
8	70	16	16.000	16.015	25	16.2	6232K31◆	19.72	—	—	—	9968K32	.55
12	204	22	22.000	22.018	32	22.6	6232K32◆	21.74	—	—	—	9968K33	.88
12	238	22	22.000	22.018	32	22.3	—	—	7	6232K37◆	29.13	9968K33	.88
16	495	26	26.000	26.018	36	24.6	6232K33	28.97	9	6232K38	37.66	9968K34	1.20
25	1,506	40	40.000	40.021	58	43.7	6232K34	52.31	12.5	6232K39	65.30	9968K35	2.02
30	1,866	47	47.000	47.021	68	51.7	6232K35	86.54	13.7	6232K4	104.84	9968K36	2.67
40	3,080	62	62.000	62.025	80	60.3	6232K36	98.21	19	6232K41	119.18	9968K37	3.06

◆No end seals.

For information about linear bearings, see page 1087. For shafts and shaft supports, see pages 1074-1086.

Fixed-Alignment Linear Ball Bearings

The popular choice for applications where shaft misalignment is unlikely.

To install, slide bearings into a housing (not included) and secure with two external retaining rings (sold individually). For use with hardened shafts made of steel, chrome-plated steel, or stainless steel with a hardness of at least Rockwell C56 (unless otherwise indicated).

Closed Bearings— Mount in any position without affecting load capacity. Use with end-supported shafts.

Open Bearings— Designed for applications requiring maximum rigidity. Use with shafts with support rail.

Steel bearings have a steel shell and balls. End seals keep lubricants in and dirt out. Maximum temperature is 176° F.

High-temperature steel bearings have a steel shell and balls. They do not have end seals. Maximum temperature is 500° F.

Stainless steel bearings have a Type 440C stainless steel shell and balls for corrosion resistance. End seals keep lubricants in and dirt out. Maximum temperature is 248° F.

High-temperature stainless steel bearings have a Type 440C stainless steel shell and balls for corrosion resistance. They do not have end seals. Maximum temperature is 600° F (load capacity is 60% at maximum temperature). For use with hardened shafts made of Type 440C stainless steel.

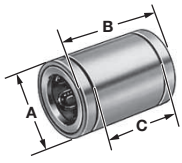

Closed Bearing

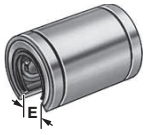

Open Bearing

For Shaft Dia.	OD (A)	For Housing Bore Min.	For Housing Bore Max.	O'all Lg. (B)	(C)	Closed Bearings Dynamic Load Cap., lbs.			Open Bearings Dynamic Load Cap., lbs.	Wd. (E)			External Retaining Ring	
Steel														
1/4″	1/2″	0.5000″	0.5007″	3/4″	0.51″	46	60595K11	$16.49	—	—	—	—	9968K22	$0.30
1/4″	1/2″	0.5000″	0.5007″	1 3/8″	1.02″	72	60595K41	28.42	—	—	—	—	9968K22	.30
3/8″	5/8″	0.6250″	0.6257″	7/8″	0.64″	51	60595K12	20.78	—	—	—	—	9968K23	.34
3/8″	5/8″	0.6250″	0.6257″	1 19/32″	1.27″	79	60595K42	29.12	—	—	—	—	9968K23	.34
1/2″	7/8″	0.8750″	0.8758″	1 1/4″	0.96″	115	60595K73	22.34	115	5/16″	60595K81	$27.24	9968K24	.47
1/2″	7/8″	0.8750″	0.8758″	2 3/8″	1.93″	182	60595K43	31.26	—	—	—	—	9968K24	.47
5/8″	1 1/8″	1.1250″	1.1258″	1 1/2″	1.1″	174	60595K74	24.43	174	3/8″	60595K82	29.88	9968K25	.72
5/8″	1 1/8″	1.1250″	1.1258″	2 13/16″	2.21″	276	60595K44	34.36	—	—	—	—	9968K25	.72
3/4″	1 1/4″	1.2500″	1.2510″	1 5/8″	1.17″	194	60595K75	27.96	194	7/16″	60595K83	34.12	9968K26	.72
3/4″	1 1/4″	1.2500″	1.2510″	3 3/32″	2.33″	308	60595K45	39.20	—	—	—	—	9968K26	.72
1″	1 9/16″	1.5000″	1.5635″	2 1/4″	1.76″	220	60595K76	45.49	220	9/16″	60595K84	54.16	9968K27	1.03
1″	1 9/16″	1.5625″	1.5635″	4 9/32″	3.51″	353	60595K46	63.80	—	—	—	—	9968K27	1.03
1 1/4″	2″	2.0000″	2.0010″	2 5/8″	2.01″	353	60595K77	63.11	353	5/8″	60595K85	77.22	9968K28	1.49
1 1/4″	2″	2.0000″	2.0012″	5″	4.01″	562	60595K47	92.74	—	—	—	—	9968K28	1.49
1 1/2″	2 3/8″	2.3750″	2.3762″	3″	2.41″	490	60595K78	85.32	490	3/4″	60595K86	104.09	9968K29	2.49
1 1/2″	2 3/8″	2.3750″	2.3762″	5 11/16″	4.82″	771	60595K48	126.34	—	—	—	—	9968K29	2.49
2″	3″	3.0000″	3.0012″	4″	3.19″	859	60595K79	138.18	859	1″	60595K87	169.50	9968K31	12.91
High-Temperature Steel														
1/4″	1/2″	0.5000″	0.5005″	3/4″	0.52″	19	6064K51	21.77	—	—	—	—	9968K22	.30
3/8″	5/8″	0.6250″	0.6255″	7/8″	0.64″	37	6064K52	24.55	—	—	—	—	9968K23	.34
1/2″	7/8″	0.8750″	0.8755″	1 1/4″	0.97″	85	6064K53	26.16	60	5/16″	6064K73 ●	35.40	9968K24	.47
5/8″	1 1/8″	1.1250″	1.1255″	1 1/2″	1.11″	150	6064K59	27.94	105	3/8″	6064K79 ●	37.64	9968K25	.72
3/4″	1 1/4″	1.2500″	1.2505″	1 5/8″	1.17″	200	6064K54	28.47	140	7/16″	6064K74 ●	39.88	9968K26	.72
1″	1 9/16″	1.5625″	1.5630″	2 1/4″	1.76″	350	6064K55	52.03	240	9/16″	6064K75 ●	64.67	9968K27	1.03
1 1/4″	2″	2.0000″	2.0010″	2 5/8″	2.01″	520	6064K56	87.69	400	5/8″	6064K76 ●	110.96	9968K28	1.49
1 1/2″	2 3/8″	2.3750″	2.3760″	3″	2.42″	770	6064K57	99.43	600	3/4″	6064K77 ●	126.22	9968K29	2.49
Stainless Steel														
1/4″	1/2″	0.5000″	0.5005″	3/4″	0.51″	46	6262K81	45.09	—	—	—	—	9968K22	.30
3/8″	5/8″	0.6250″	0.6255″	7/8″	0.64″	50	6262K82	46.23	—	—	—	—	9968K23	.34
1/2″	7/8″	0.8750″	0.8755″	1 1/4″	0.96″	114	6262K83	49.64	114	11/32″	6262K93	57.09	9968K24	.47
5/8″	1 1/8″	1.1250″	1.1255″	1 1/2″	1.1″	174	6262K84	54.57	174	3/8″	6262K94	62.74	9968K25	.72
3/4″	1 1/4″	1.2500″	1.2505″	1 5/8″	1.17″	193	6262K85	62.23	193	7/16″	6262K95	71.57	9968K26	.72
1″	1 9/16″	1.5625″	1.5630″	2 1/4″	1.75″	220	6262K86	95.23	220	9/16″	6262K96	109.53	9968K27	1.03
1 1/4″	2″	2.0000″	2.0010″	2 5/8″	2″	353	6262K87	139.57	353	5/8″	6262K97	160.49	9968K28	1.49
1 1/2″	2 3/8″	2.3750″	2.3760″	3″	2.41″	490	6262K88	185.13	490	3/4″	6262K98	212.91	9968K29	2.49
High-Temperature Stainless Steel														
1/8″	5/16″	0.3124″	0.3130″	1/2″	0.354″	7	61495K21	112.83	—	—	—	—	9968K72	5.07
3/16″	3/8″	0.3749″	0.3755″	9/16″	0.417″	9	61495K22	112.83	—	—	—	—	9968K73	2.00
1/4″	1/2″	0.4999″	0.5005″	3/4″	0.499″	19	61495K23	112.83	—	—	—	—	9968K74	2.03

● Housing bore minimum is –0.001″; maximum is +0.003″.

Combination Linear/Rotary Ball Bearings

Innovatively engineered for simultaneous linear and rotary motion, these bearings allow rotary speeds up to 3,600 rpm. All are closed bearings and can be mounted in any position without affecting load capacity. They also have a fixed-alignment design and are for use where shaft misalignment is unlikely. End seals keep lubricants in and dirt out. Shell and balls are steel. Maximum temperature is 200° F.

To install, slide bearings into a housing (not included) and secure with two external retaining rings (sold individually). For use with end-supported, hardened shafts made of steel or chrome-plated steel with a hardness of at least Rockwell C58; stainless steel with a hardness of at least Rockwell C50.

Note: When used for combination linear/rotary motion, the load capacity must not exceed the dynamic load capacity for rotary motion listed.

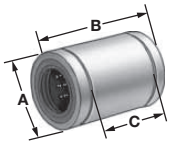

For Shaft Dia.	Dynamic Load Cap., lbs. Linear Motion	Dynamic Load Cap., lbs. Rotary Motion @ 500 rpm	OD (A)	For Housing Bore Min.	For Housing Bore Max.	O'all Lg. (B)	(C)	Bearings		External Retaining Ring	
3/8″	70	29	5/8″	0.6250″	0.6255″	7/8″	9/16″	6485K11	$70.41	9968K23	$0.34
1/2″	185	76	7/8″	0.8750″	0.8755″	1 1/4″	7/8″	6485K12	73.09	9968K24	.47
3/4″	325	133	1 1/4″	1.2500″	1.2505″	1 5/8″	1 1/16″	6485K14	81.18	9968K26	.72
1″	450	185	1 9/16″	1.5625″	1.5630″	2 1/4″	1 5/8″	6485K15	144.30	9968K27	1.03
1 1/2″	935	383	2 3/8″	2.3750″	2.3760″	3″	2 1/4″	6485K17	255.79	9968K29	2.49

Metric Fixed-Alignment Linear Ball Bearings

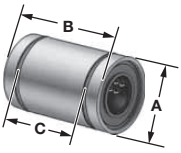

Closed Bearing

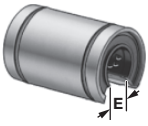

Open Bearing

The metric option for applications where shaft misalignment is unlikely. To install, slide bearings into a housing (not included) and secure with two external retaining rings (sold individually) except for 61205K71, 61205K72, 63255K41, and 63255K42, which do not have retaining ring grooves.

For use with hardened shafts made of steel with a hardness of at least Rockwell C60 or made of stainless steel with a hardness of at least Rockwell C56.

Closed Bearings— Mount in any position without affecting load capacity. Use with end-supported shafts.

Open Bearings— Designed for applications requiring maximum rigidity. Use with shafts with support rail.

Steel bearings have a steel shell and balls. End seals keep lubricants in and dirt out (except for 61205K71 and K72, which do not have end seals). Maximum temperature is 176° F.

High-temperature steel bearings have a steel shell and balls. They do not have end seals. Maximum temperature is 230° F.

Stainless steel bearings have a Type 440C stainless steel shell and balls for corrosion resistance. End seals keep lubricants in and dirt out. Maximum temperature is 248° F.

For Shaft Dia., mm	Dynamic Load Cap., lbs.	OD, mm (A)	For Housing Bore, mm Min.	For Housing Bore, mm Max.	O'all Lg., mm (B)	Lg., mm (C)	Closed Bearings		Open Bearings Wd., mm (E)	Open Bearings		External Retaining Ring	
Steel													
3	15	7	7.000	7.015	10	—	61205K71	$18.02	—	—	—	—	—
4	19	8	8.000	8.015	12	—	61205K72	15.98	—	—	—	—	—
5	37	10	10.000	10.018	15	10.2	61205K73	17.60	—	—	—	9968K51	$0.29
6	46	12	12.000	12.018	19	13.5	61205K74	17.71	—	—	—	9968K52	.29
8	59	16	16.000	16.018	25	16.5	61205K75	18.49	—	—	—	9968K32	.55
10	83	19	19.000	19.021	29	22	61205K76	18.13	6.8	61205K91	$18.99	9968K54	.58
13	114	23	23.000	23.021	32	23	61205K78	20.07	—	—	—	9968K55	.75
16	130	26	26.000	26.021	36	24.9	61205K79	24.67	10	61205K92	30.09	9968K34	1.20
20	193	32	32.000	32.025	45	31.5	61205K81	29.51	10	61205K93	36.00	9968K57	1.11
25	220	40	40.000	40.025	58	44.1	61205K82	40.87	12.5	61205K94	49.87	9968K35	2.02
30	353	47	47.000	47.025	68	52.1	61205K83	53.36	12.5	61205K95	65.11	9968K36	2.67
35	375	52	52.000	52.030	70	49.5	61205K84	66.44	—	—	—	9968K59	2.40
40	486	62	62.000	62.030	80	60.6	61205K85	84.47	16.8	61205K96	103.04	9968K37	3.06
High-Temperature Steel													
3	16	7	7.000	7.015	10	—	63255K41	24.64	—	—	—	—	—
4	19	8	8.000	8.015	12	—	63255K42	21.11	—	—	—	—	—
5	37	10	10.000	10.018	15	10.2	63255K43	18.72	—	—	—	9968K51	.29
6	46	12	12.000	12.018	19	13.5	63255K44	16.62	—	—	—	9968K52	.29
8	61	15	15.000	15.018	24	17.5	63255K45	16.66	—	—	—	9968K53	.29
10	83	19	19.000	19.021	29	22	63255K46	17.04	—	—	—	9968K54	.58
13	114	23	23.000	23.021	32	23	63255K47	18.83	—	—	—	9968K55	.75
16	174	28	28.000	28.021	37	26.5	63255K48	21.57	11	63255K72	26.34	9968K56	.90
20	198	32	32.000	32.025	42	30.5	63255K49	26.36	11	63255K73	32.17	9968K57	1.11
25	220	40	40.000	40.025	59	41	63255K51	37.17	12	63255K74	45.34	9968K35	2.02
30	353	45	45.000	45.025	64	44.5	63255K52	50.36	15	63255K75	61.43	9968K58	1.62
35	375	52	52.000	52.030	70	49.5	63255K53	64.98	—	—	—	9968K59	2.40
40	486	60	60.000	60.030	80	60.5	63255K54	80.34	20	63255K77	98.00	9968K61	1.92
Stainless Steel													
8	59	16	16.000	16.018	25	16.5	6368K81	48.77	—	—	—	9968K32	.55
12	114	22	22.000	22.021	32	22.9	6368K82	55.11	—	—	—	9968K33	.88
16	130	26	26.000	26.021	36	24.9	6368K83	63.17	—	—	—	9968K34	1.20
20	193	32	32.000	32.025	45	31.5	6368K84	75.45	—	—	—	9968K57	1.11
25	220	40	40.000	40.025	58	44.1	6368K85	102.32	—	—	—	9968K35	2.02

Washdown Pillow-Block Linear Sleeve Bearings

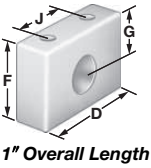

1″ Overall Length

2″ Overall Length

Not many bearings can do the job in wet or washdown environments. These one-piece, closed-style bearings can, and without the need for lubrication since they're made entirely of inherently slippery, corrosion-resistant UHMW. All have a fixed alignment design and are for use in light duty applications where shaft misalignment is unlikely. Maximum PV is 2,000. Temperature range is –200° to +180° F.

For use with any end-supported, polished, hardened steel or stainless steel shafts. USDA and FDA compliant.

For Shaft Dia.	Static Horizontal Load Cap., lbs.	O'all Wd. (D)	O'all Ht. (F)	Ht. (G)	Mounting Holes Center-to-Center (J)	Mounting Holes (K)	Mounting Holes Screw Size (L)		
1″ Overall Length									
3/8″	80	3 1/4″	1 1/4″	9/16″	1 5/8″	—	5/16″-18	4178K11	$30.00
1/2″	80	3 1/4″	1 1/4″	11/16″	1 5/8″	—	5/16″-18	4178K12	30.00
5/8″	80	3 1/4″	1 5/8″	7/8″	1 5/8″	—	5/16″-18	4178K13	36.00
3/4″	80	3 1/4″	1 3/4″	15/16″	1 5/8″	—	5/16″-18	4178K14	38.00
1″	80	3 1/4″	2 3/16″	1 3/16″	1 5/8″	—	5/16″-18	4178K15	40.00
2″ Overall Length									
3/8″	160	3 1/4″	1 1/4″	9/16″	1 5/8″	1″	5/16″-18	4178K1	35.09
1/2″	160	3 1/4″	1 1/4″	11/16″	1 5/8″	1″	5/16″-18	4178K2	36.36
5/8″	160	3 1/4″	1 5/8″	7/8″	1 5/8″	1″	5/16″-18	4178K3	41.82
3/4″	160	3 1/4″	1 3/4″	15/16″	1 5/8″	1″	5/16″-18	4178K4	43.64
1″	160	3 1/4″	2 3/16″	1 3/16″	1 5/8″	1″	5/16″-18	4178K5	49.74

For information about linear bearings, see page 1087. For shafts and shaft supports, see pages 1074-1086.

Self-Lubricating Pillow-Block Linear Sleeve Bearings

Virtually maintenance free, these bearings have slippery liners that don't require added lubrication. They are designed to be dimensionally compatible drop-in replacements for pillow-block linear ball bearings. Maximum PV is 20,000.

Closed bearings are for use with end-supported shafts.

Open bearings are designed for applications requiring maximum rigidity. Use with shafts with support rail.

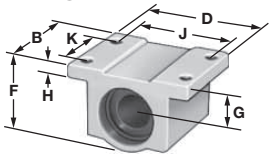

Closed Bearing

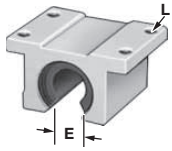

Open Bearing

Fixed Alignment

For use where shaft misalignment is unlikely. Liner is chemical-resistant PTFE with no abrasive fillers. Shell and pillow block are aluminum. Shaft clearance is 0.001″. Temp. range is –400° to +375° F.

For use with shafts that have a hardness of at least Rockwell B25 and an 8-16 rms micron finish.

For Shaft Dia.	Static Horiz. Load Cap., lbs.	O'all Lg. (B)	O'all Wd. (D)	Wd. (E)	O'all Ht. (F)	Ht. (G)	Flange Thick. (H)	Mounting Holes Center-to-Center (J)	(K)	Dia. (L)		
Closed Bearings												
1/4″	939	1 3/16″	1 5/8″	—	13/16″	7/16″	3/16″	1 5/16″	3/4″	1/8″	**8649T1**	$45.65
3/8″	1,643	1 5/16″	1 3/4″	—	15/16″	1/2″	3/16″	1 7/16″	7/8″	1/8″	**8649T2**	47.20
1/2″	3,128	1 11/16″	2″	—	1 1/4″	11/16″	1/4″	1 11/16″	1″	1/8″	**8649T3**	48.90
5/8″	4,691	1 15/16″	2 1/2″	—	1 5/8″	7/8″	1/4″	2 1/8″	1 1/8″	3/16″	**8649T4**	53.79
3/4″	6,100	2 1/16″	2 3/4″	—	1 3/4″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**8649T5**	56.70
1″	11,259	2 13/16″	3 1/4″	—	2 3/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	3/16″	**8649T6**	80.24
1 1/4″	16,417	3 5/8″	4″	—	2 13/16″	1 1/2″	7/16″	3 1/2″	2″	3/16″	**8649T7**	111.65
1 1/2″	22,512	4″	4 3/4″	—	3 1/4″	1 3/4″	1/2″	4 1/8″	2 1/2″	1/4″	**8649T8**	141.17
2″	40,024	5″	6″	—	4 1/16″	2 1/8″	5/8″	5 1/4″	3 1/4″	3/8″	**8649T9**	222.56
Open Bearings												
1/4″	939	1 3/16″	1 5/8″	1/16″	3/4″	7/16″	3/16″	1 5/16″	3/4″	1/8″	**8649T11**	46.93
3/8″	1,643	1 5/16″	1 3/4″	1/8″	7/8″	1/2″	3/16″	1 7/16″	7/8″	1/8″	**8649T12**	56.75
1/2″	3,128	1 11/16″	2″	5/16″	1 1/8″	11/16″	1/4″	1 11/16″	1″	1/8″	**8649T13**	61.16
5/8″	4,691	1 15/16″	2 1/2″	3/8″	1 7/16″	7/8″	1/4″	2 1/8″	1 1/8″	3/16″	**8649T14**	66.38
3/4″	6,100	2 1/16″	2 3/4″	7/16″	1 9/16″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**8649T15**	72.63
1″	11,259	2 13/16″	3 1/4″	9/16″	2″	1 3/16″	3/8″	2 7/8″	1 3/4″	3/16″	**8649T16**	99.73
1 1/4″	16,417	3 5/8″	4″	5/8″	2 1/2″	1 1/2″	7/16″	3 1/2″	2″	3/16″	**8649T17**	140.05
1 1/2″	22,512	4″	4 3/4″	3/4″	2 7/8″	1 3/4″	1/2″	4 1/8″	2 1/2″	1/4″	**8649T18**	168.78
2″	40,024	5″	6″	1″	3 5/8″	2 1/8″	5/8″	5 1/4″	3 1/4″	3/8″	**8649T19**	257.23

Self Aligning

Allow up to 1/2° of shaft misalignment in any direction. Liner is chemical-resistant Frelon (a PTFE-filled composite) for wear resistance and strength. Shell and pillow block are aluminum. Temperature range is –400° to +400° F.

For use with shafts that have a hardness of at least Rockwell C60 and an 8-16 rms micron finish. *Note:* Not for use with bare aluminum, chrome-plated steel, or 300 series stainless steel shafts.

To Order: Please specify tight shaft clearance (0.0005″) or extra shaft clearance (0.0015″).

For Shaft Dia.	Static Horiz. Load Cap., lbs.	O'all Lg. (B)	O'all Wd. (D)	Wd. (E)	O'all Ht. (F)	Ht. (G)	Flange Thick. (H)	Mounting Holes Center-to-Center (J)	(K)	Dia. (L)		
Closed Bearings												
1/4″	600	1 3/16″	1 5/8″	—	13/16″	7/16″	3/16″	1 5/16″	3/4″	1/8″	**6374K114**	$35.92
1/4″	1,200	2 1/2″	1 5/8″	—	13/16″	7/16″	3/16″	1 5/16″	3/4″	1/8″	**6374K211**	71.86
3/8″	1,020	1 5/16″	1 3/4″	—	15/16″	1/2″	3/16″	1 7/16″	7/8″	1/8″	**6374K117**	37.51
3/8″	2,040	2 3/4″	1 3/4″	—	15/16″	1/2″	3/16″	1 7/16″	7/8″	1/8″	**6374K214**	75.04
1/2″	1,950	1 11/16″	2″	—	1 1/4″	11/16″	1/4″	1 11/16″	1″	1/8″	**6374K124**	40.33
1/2″	3,900	3 1/2″	2″	—	1 1/4″	11/16″	1/4″	1 11/16″	1″	1/8″	**6374K217**	80.73
5/8″	2,940	1 15/16″	2 1/2″	—	1 5/8″	7/8″	5/16″	2 1/8″	1 1/8″	3/16″	**6374K127**	45.20
5/8″	5,880	4″	2 1/2″	—	1 5/8″	7/8″	5/16″	2 1/8″	1 1/8″	3/16″	**6374K221**	90.31
3/4″	3,810	2 1/16″	2 3/4″	—	1 3/4″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**6374K131**	47.53
3/4″	7,620	4 1/2″	2 3/4″	—	1 3/4″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**6374K224**	95.14
1″	7,050	2 13/16″	3 1/4″	—	2 3/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	3/16″	**6374K134**	68.31
1″	14,100	6″	3 1/4″	—	2 3/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	3/16″	**6374K227**	131.57
1 1/4″	10,290	3 5/8″	4″	—	2 13/16″	1 1/2″	7/16″	3 1/2″	2″	3/16″	**6374K137**	98.74
1 1/4″	20,580	7 1/2″	4″	—	2 13/16″	1 1/2″	7/16″	3 1/2″	2″	3/16″	**6374K231**	197.47
1 1/2″	14,100	4″	4 3/4″	—	3 1/4″	1 3/4″	1/2″	4 1/8″	2 1/2″	1/4″	**6374K141**	124.62
1 1/2″	28,200	9″	4 3/4″	—	3 1/4″	1 3/4″	1/2″	4 1/8″	2 1/2″	1/4″	**6374K234**	240.18
2″	25,050	5″	6″	—	4 1/16″	2 1/8″	5/8″	5 1/4″	3 1/4″	3/8″	**6374K144**	189.34
2″	50,100	10″	6″	—	4 1/16″	2 1/8″	5/8″	5 1/4″	3 1/4″	3/8″	**6374K237**	340.35
Open Bearings												
1/2″	1,950	1 1/2″	2″	5/16″	1 1/8″	11/16″	1/4″	1 11/16″	1″	1/8″	**6374K311**	47.20
1/2″	3,900	3 1/2″	2″	5/16″	1 1/8″	11/16″	1/4″	1 11/16″	1″	1/8″	**6374K341**	94.43
5/8″	2,940	1 3/4″	2 1/2″	3/8″	1 7/16″	7/8″	5/16″	2 1/8″	1 1/8″	3/16″	**6374K314**	54.61
5/8″	5,880	4″	2 1/2″	3/8″	1 7/16″	7/8″	5/16″	2 1/8″	1 1/8″	3/16″	**6374K344**	104.72
3/4″	3,810	1 7/8″	2 3/4″	7/16″	1 9/16″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**6374K317**	58.57
3/4″	7,620	4 1/2″	2 3/4″	7/16″	1 9/16″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	**6374K347**	112.77
1″	7,050	2 5/8″	3 1/4″	9/16″	1 15/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	3/16″	**6374K321**	82.75
1″	14,100	6″	3 1/4″	9/16″	1 15/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	3/16″	**6374K351**	159.30
1 1/4″	10,290	3 3/8″	4″	5/8″	2 1/2″	1 1/2″	7/16″	3 1/2″	2″	3/16″	**6374K324**	124.04
1 1/4″	20,580	7 1/2″	4″	5/8″	2 1/2″	1 1/2″	7/16″	3 1/2″	2″	3/16″	**6374K354**	230.05
1 1/2″	14,100	3 3/4″	4 3/4″	3/4″	2 7/8″	1 3/4″	1/2″	4 1/8″	2 1/2″	1/4″	**6374K327**	146.45
1 1/2″	28,200	9″	4 3/4″	3/4″	2 7/8″	1 3/4″	1/2″	4 1/8″	2 1/2″	1/4″	**6374K357**	282.27
2″	25,050	4 3/4″	6″	1″	3 5/8″	2 1/8″	5/8″	5 1/4″	3 1/4″	3/8″	**6374K331**	216.69
2″	50,100	10″	6″	1″	3 5/8″	2 1/8″	5/8″	5 1/4″	3 1/4″	3/8″	**6374K361**	401.40

For information about linear bearings, see page 1087. For shafts and shaft supports, see pages 1074-1086.

High-Speed Pillow-Block Linear Sleeve Bearings

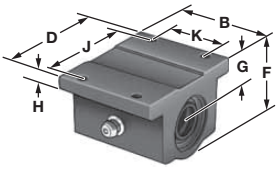

Closed Bearing

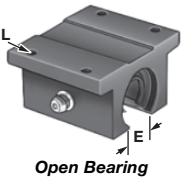

Open Bearing

A 0.002″ thick ceramic coating makes high speeds as well as rapid acceleration and deceleration possible. Bearings are self-aligning and handle up to 2° of shaft misalignment in any direction. All require a thin film of lubrication and are designed to be dimensionally compatible drop-in replacements for pillow-block linear ball bearings. A grease fitting allows easy lubrication. Seals keep contaminants out. Shell and pillow block are aluminum. Shaft clearance is 0.0005″ to 0.0006″. Maximum PV is 40,000. Height tolerance (G) is ±0.003″. Temperature range is –200° to +400° F.

For use with shafts that have a hardness of at least Rockwell C60 and an 8-16 rms micron finish. *Note:* Not for use with ceramic-coated aluminum or 300 series stainless steel shafts.

Closed Bearings— Use with end-supported shafts.

Open Bearings— Designed for applications requiring maximum rigidity. Use with shafts with support rail.

For Shaft Dia.	Static Horiz. Load Cap., lbs.	O'all Lg. (B)	O'all Wd. (D)	O'all Ht. (F)	Ht. (G)	Flange Thick. (H)	Mounting Holes Ctr.-to-Ctr. (J)	Mounting Holes Ctr.-to-Ctr. (K)	Mounting Holes Dia. (L)	Closed Bearings		Open Bearings Wd. (E)	Open Bearings	
1/4″	939	1 3/16″	1 5/8″	13/16″	7/16″	3/16″	1 5/16″	3/4″	1/8″	6674K11	$43.97	1/8″	6674K27	$59.74
3/8″	1,643	1 5/16″	1 3/4″	15/16″	1/2″	3/16″	1 7/16″	7/8″	1/8″	6674K12	52.47	1/8″	6674K28	60.98
1/2″	3,128	1 11/16″	2″	1 1/4″	11/16″	1/4″	1 11/16″	1″	1/8″	6674K13	56.14	5/16″	6674K21	62.04
5/8″	4,691	1 15/16″	2 1/2″	1 5/8″	7/8″	5/16″	2 1/8″	1 1/8″	3/16″	6674K14	58.46	3/8″	6674K22	67.72
3/4″	6,100	2 1/16″	2 3/4″	1 3/4″	15/16″	5/16″	2 3/8″	1 1/4″	3/16″	6674K15	65.18	7/16″	6674K23	75.69
1″	11,259	2 13/16″	3 1/4″	2 3/16″	1 3/16″	3/8″	2 7/8″	1 3/4″	3/16″	6674K16	93.37	9/16″	6674K24	107.22
1 1/4″	16,417	3 5/8″	4″	2 13/16″	1 1/2″	7/16″	3 1/2″	2″	3/16″	6674K17	132.43	5/8″	6674K25	154.43
1 1/2″	22,512	4″	4 3/4″	3 1/4″	1 3/4″	1/2″	4 1/8″	2 1/2″	1/4″	6674K18	166.54	3/4″	6674K26	179.87
2″	40,024	5″	6″	4 1/16″	2 1/8″	5/8″	5 1/4″	3 1/4″	3/8″	6674K19	231.23	1″	6674K29	267.27

Flange-Mount Linear Sleeve Bearings

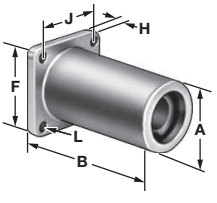

Frelon Lined

Ceramic Coated

The flange-mount design makes these closed-style, self-aligning bearings a good solution for vertical linear motion applications. Shell and flange are aluminum. For use with end-supported shafts that have a hardness of at least Rockwell C35 and an 8-12 rms micron finish. *Note:* Do not use Frelon-lined bearings with bare aluminum or chrome-plated steel shafts.

Frelon-Lined Bearings— These self-lubricating bearings allow up to 1/2° of shaft misalignment. Liner is chemical-resistant Frelon (a PTFE-filled composite) for wear resistance and strength. Maximum PV is 20,000. Temperature range is –400° to +400° F. **To Order:** Please specify tight shaft clearance (0.0005″) or extra shaft clearance (0.0015″).

Ceramic-Coated Bearings— Handle up to 2° of shaft misalignment. All have a 0.002″ thick ceramic coating that makes high speeds as well as rapid acceleration and deceleration possible. A grease fitting allows easy lubrication. Seals keep contaminants out. For optimum performance, these bearings require a thin film of lubrication. Shaft clearance is 0.0005″. Maximum PV is 40,000. Temperature range is –200° to +400° F.

For Shaft Dia.	OD (A)	O'all Ht. (F)	Flange Thick. (H)	Frelon Lined Static Load Cap., lbs.	Frelon Lined O'all Lg. (B)	Frelon Lined Mounting Holes Ctr.-to-Ctr. (J)	Frelon Lined Mounting Holes Dia. (L)	Frelon Lined		Ceramic Coated Static Load Cap., lbs.	Ceramic Coated O'all Lg. (B)	Ceramic Coated Mounting Holes Ctr.-to-Ctr. (J)	Ceramic Coated Mounting Holes Dia. (L)	Ceramic Coated	
3/8″	7/8″	1 1/4″	3/16″	1,020	1.31″	1″	1/8″	64825K14	$52.53	1,643	1 5/16″	7/8″	1/8″	6675K14	$38.18
1/2″	1 1/4″	1 5/8″	1/4″	1,950	1 11/16″	1 1/4″	3/16″	64825K11	59.51	3,128	1 11/16″	1 1/4″	3/16″	6675K11	48.68
1/2″	1 1/4″	1 5/8″	1/4″	3,900	3 3/8″	1 1/4″	3/16″	64825K21	137.78	—	—	—	—	—	—
3/4″	1 3/4″	2 3/8″	3/8″	2,940	2 1/16″	1 3/4″	3/16″	64825K12	68.58	—	—	—	—	—	—
3/4″	1 3/4″	2 3/8″	3/8″	5,880	4 3/16″	1 3/4″	3/16″	64825K22	175.72	—	—	—	—	—	—
1″	2 1/4″	2 3/4″	1/2″	3,810	2 13/16″	2 1/8″	1/4″	64825K13	93.64	6,100	2 1/16″	1 3/4″	3/16″	6675K12	58.88
1″	2 1/4″	2 3/4″	1/2″	7,620	5 5/8″	2 1/8″	1/4″	64825K23	222.20	—	—	—	—	—	—
1 1/4″	2 1/2″	3″	1/2″	—	—	—	—	—	—	11,259	2 13/16″	2 1/8″	1/4″	6675K13	73.90
1 1/4″	2 5/8″	3 7/8″	5/8″	10,830	3 5/8″	3″	3/8″	64825K15	112.20	—	—	—	—	—	—
										16,417	3 5/8″	2 1/4″	1/4″	6675K16	116.66

Self-Aligning Linear Sleeve Bearings

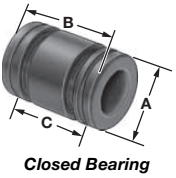

Closed Bearing

Open Bearing

Our basic self-aligning bearings allow up to 2° of shaft misalignment in any direction. Virtually maintenance free, they have a nonabrasive, chemical-resistant PTFE liner that doesn't require added lubrication. All are designed to be dimensionally compatible drop-in replacements for linear ball bearings. Shell is aluminum with a 0.002″ thick ceramic coating for added corrosion resistance. Shaft clearance is 0.001″ for 1/4″ to 1 1/4″ dia.; 0.0015″ for 1 1/2″ and 2″ dia. Maximum PV is 30,000. Temperature range is –400° to +375° F.

To install, slide bearings into a housing (not included) and secure with two external retaining rings (sold individually). For use with shafts that have a hardness of at least Rockwell B25 and an 8-16 rms micron finish.

Closed Bearings— For use with end-supported shafts.

Open Bearings— Designed for applications requiring maximum rigidity. Use with shafts with support rail.

For Shaft Dia.	Static Horiz. Load Cap., lbs.	OD (A)	For Housing Bore Min.	For Housing Bore Max.	O'all Lg. (B)	Lg. (C)	Closed Bearings		Open Bearings Wd. (E)	Open Bearings		External Retaining Ring	
1/4″	939	1/2″	0.5000″	0.5005″	3/4″	0.517″	9533T1	$13.26	1/8″	9533T11	$19.91	9968K22	$0.30
3/8″	1,643	5/8″	0.6250″	0.6255″	7/8″	0.642″	9533T2	14.58	3/16″	9533T12	20.97	9968K23	.34
1/2″	3,128	7/8″	0.8750″	0.8755″	1 1/4″	0.969″	9533T3	15.24	5/16″	9533T13	24.16	9968K24	.47
5/8″	4,691	1 1/8″	1.1250″	1.1255″	1 1/2″	1.116″	9533T4	16.57	3/8″	9533T14	24.51	9968K25	.72
3/4″	6,100	1 1/4″	1.2500″	1.2505″	1 5/8″	1.178″	9533T5	17.23	7/16″	9533T15	26.75	9968K26	.72
1″	11,259	1 9/16″	1.5625″	1.5630″	2 1/4″	1.765″	9533T6	31.82	9/16″	9533T16	45.01	9968K27	1.03
1 1/4″	16,417	2″	2.0000″	2.0010″	2 5/8″	2.055″	9533T7	64.96	5/8″	9533T17	75.18	9968K28	1.49
1 1/2″	22,512	2 3/8″	2.3750″	2.3760″	3″	2.43″	9533T8	78.87	3/4″	9533T18	85.90	9968K29	2.49
2″	40,024	3″	3.0000″	3.0010″	4″	3.21″	9533T9	111.35	1″	9533T19	129.62	9968K31	12.91

For information about linear bearings, see page 1087. For shafts and shaft supports, see pages 1074-1086.

Fixed-Alignment Linear Sleeve Bearings

Select these bearings for applications where shaft misalignment is unlikely. All are designed to be dimensionally compatible drop-in replacements for linear ball bearings. To install, slide bearings into a housing (not included) and secure with two external retaining rings (sold individually).

Closed Bearings— Use with end-supported shafts.
Open Bearings— For applications requiring maximum rigidity. Use with shafts with support rail.

Frelon-lined bearings have a chemical-resistant Frelon liner (a PTFE-filled composite) for wear resistance and strength. Temperature range is –400° to +400° F. For use with shafts that have a hardness of at least Rockwell C35 and an 8-12 rms micron finish. *Note:* Not for use with bare aluminum, chrome-plated steel, or 300 series stainless steel shafts.

Bearings with an aluminum shell have an aluminum shell for good corrosion resistance. Maximum PV is 20,000. Metric sizes have a shaft clearance of 0.0005″. **To Order:** For inch sizes, please specify tight shaft clearance (0.0005″) or extra shaft clearance (0.0015″).

Bearings with a stainless steel shell have a Type 316 stainless steel shell for excellent corrosion resistance. Shaft clearance is 0.0005″. Maximum PV is 10,000.

PTFE-lined bearings have a chemical-resistant PTFE liner with no abrasive fillers. Shell is lightweight, nonmagnetic, electrically insulating fiberglass. Shaft clearance is 0.001″. Maximum PV is 30,000. Temperature range is –400° to +375° F. For use with shafts that have a hardness of at least Rockwell B25 and an 8-16 rms micron finish.

Rulon-lined bearings have a Type 304 stainless steel shell and an FDA- and USDA-compliant Rulon-641 liner for excellent chemical and corrosion resistance. Shaft clearance is 0.001″. Maximum PV is 10,000. Temperature range is –400° to +375° F. For use with shafts that have a hardness of at least Rockwell B25 and an 8-16 rms micron finish.

PTFE composite bearings have internal ridges to move dirt out of the way as they travel on a shaft. They are made entirely of lightweight, corrosion- and chemical-resistant, PTFE composite. Shaft clearance is 0.0013″-0.0036″. Maximum PV is 9,700. Temperature range is –40° to +194° F. For use with shafts that have a hardness of at least Rockwell C50 and a 4-16 rms micron finish.

Ceramic-coated bearings have a 0.002″ thick ceramic coating for high speeds; rapid acceleration and deceleration. They require a thin film of lubrication. Shell is aluminum for good corrosion resistance. Maximum PV is 40,000. Shaft clearance is 0.0005″ for 1/4″ to 5/8″ dia.; 0.0008″ for 3/4″ and 1″ dia. Temperature range is –200° to +400° F. For use with shafts that have a hardness of at least Rockwell C60 and an 8-16 rms micron finish.

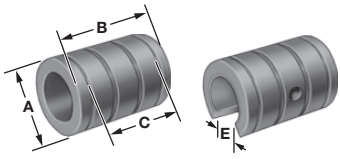

Frelon-Lined Closed Bearing — *Frelon-Lined Open Bearing*

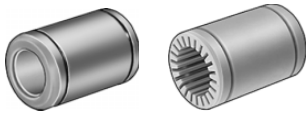

PTFE-Lined, Rulon-Lined Closed Bearing — *PTFE Composite Closed Bearing*

Ceramic-Coated Closed Bearing

For Shaft Dia.	Static Horiz. Load Cap., lbs.	OD (A)	For Housing Bore Min.	For Housing Bore Max.	O'all Lg. (B)	Lg. (C)	Closed Bearings		Open Bearings Wd. (E)			External Retaining Ring	
Frelon Lined— *With Aluminum Shell*													
3/16″	220	3/8″	0.3755″	0.3764″	9/16″	0.435″	5986K65	$12.20	—	—	—	9968K42	$0.29
1/4″	600	1/2″	0.5006″	0.5017″	3/4″	0.519″	5986K66	12.20	3/16″	5986K761	$15.24	9968K22	.30
3/8″	1,020	5/8″	0.6256″	0.6267″	7/8″	0.644″	5986K67	13.52	1/4″	5986K764	16.88	9968K23	.34
1/2″	1,950	7/8″	0.8758″	0.8771″	1 1/4″	0.875″	5986K68	14.10	5/16″	5986K767	19.54	9968K24	.47
5/8″	2,940	1 1/8″	1.1258″	1.1271″	1 1/2″	1.116″	5986K69	15.72	3/8″	5986K771	21.10	9968K25	.72
3/4″	3,810	1 1/4″	1.2510″	1.2525″	1 5/8″	1.178″	5986K71	16.04	7/16″	5986K774	21.76	9968K26	.72
1″	7,050	1 9/16″	1.5635″	1.5650″	2 1/4″	1.765″	5986K72	29.66	9/16″	5986K781	37.62	9968K27	1.03
1 1/4″	10,830	2″	2.0012″	2.0030″	2 5/8″	2.015″	5986K73	49.84	5/8″	5986K784	62.80	9968K28	1.49
1 1/2″	14,100	2 3/8″	2.3762″	2.3780″	3″	2.428″	5986K74	57.16	3/4″	5986K787	71.40	9968K29	2.49
2″	25,050	3″	3.0012″	3.0030″	4″	3.210″	5986K75	99.90	1″	5986K791	124.56	9968K31	12.91
Metric Frelon Lined— *With Aluminum Shell (Dimensions in mm)*													
5	511	12	12.016	12.043	22	14.28	60605K91	15.25	—	—	—	9968K52	.29
8	926	16	16.016	16.043	25	16.28	60605K92	15.95	—	—	—	9968K32	.55
12	1,777	22	22.020	22.053	32	22.64	60605K93	18.48	—	—	—	9968K33	.88
16	2,668	26	26.020	26.053	36	24.64	60605K94	21.52	—	—	—	9968K34	1.20
20	4,168	32	32.025	32.064	45	31.26	60605K95	26.73	—	—	—	9968K57	1.11
25	6,717	40	40.025	40.064	58	43.80	60605K96	38.86	—	—	—	9968K35	2.02
30	9,447	47	47.025	47.064	68	51.80	60605K97	65.29	—	—	—	9968K36	2.67
Frelon Lined— *With Type 316 Stainless Steel Shell*													
1/4″	300	1/2″	0.5006″	0.5017″	3/4″	0.519″	6396K11	22.60	—	—	—	9968K22	.30
3/8″	510	5/8″	0.6256″	0.6267″	7/8″	0.644″	6396K12	24.57	—	—	—	9968K23	.34
1/2″	975	7/8″	0.8758″	0.8771″	1 1/4″	0.971″	6396K13	26.40	—	—	—	9968K24	.47
5/8″	1,470	1 1/8″	1.1258″	1.1271″	1 1/2″	1.116″	6396K14	27.81	—	—	—	9968K25	.72
3/4″	1,905	1 1/4″	1.2510″	1.2525″	1 5/8″	1.178″	6396K15	28.37	—	—	—	9968K26	.72
1″	3,525	1 9/16″	1.5635″	1.5650″	2 1/4″	1.765″	6396K16	51.94	—	—	—	9968K27	1.03
1 1/4″	5,145	2″	2.0012″	2.0030″	2 5/8″	2.015″	6396K17	87.38	—	—	—	9968K28	1.49
1 1/2″	7,050	2 3/8″	2.3762″	2.3780″	3″	2.428″	6396K18	99.49	—	—	—	9968K29	2.49
PTFE Lined— *With Fiberglass Shell*													
1/2″	3,128	7/8″	0.8750″	0.8755″	1 1/4″	0.975″	8356K12	20.60	—	—	—	9968K24	.47
5/8″	4,691	1 1/8″	1.1250″	1.1255″	1 1/2″	1.116″	8356K13	26.78	—	—	—	9968K25	.72
3/4″	6,100	1 1/4″	1.2500″	1.2505″	1 5/8″	1.178″	8356K14	30.90	—	—	—	9968K26	.72
1″	11,259	1 9/16″	1.5625″	1.5630″	2 1/4″	1.765″	8356K15	41.20	—	—	—	9968K27	1.03
Rulon Lined— *With Type 304 Stainless Steel Shell*													
3/8″	328	5/8″	0.6250″	0.6255″	7/8″	0.642″	6676K61	22.73	3/16″	6676K71	29.53	9968K23	.34
1/2″	625	7/8″	0.8750″	0.8755″	1 1/4″	0.969″	6676K62	24.15	5/16″	6676K72	31.39	9968K24	.47
5/8″	938	1 1/8″	1.1250″	1.1255″	1 1/2″	1.116″	6676K63	25.81	3/8″	6676K73	33.55	9968K25	.72
3/4″	1,220	1 1/4″	1.2500″	1.2505″	1 5/8″	1.178″	6676K64	32.20	7/16″	6676K74	41.85	9968K26	.72
1″	2,250	1 9/16″	1.5625″	1.5630″	2 1/4″	1.765″	6676K65	42.38	9/16″	6676K75	55.09	9968K27	1.03
PTFE Composite													
1/2″	555	7/8″	0.8750″	0.8758″	1 1/4″	1.012″	2570K11	6.49	—	—	—	9968K24	.47
5/8″	992	1 1/8″	1.1250″	1.1258″	1 1/2″	1.095″	2570K12	6.71	—	—	—	9968K25	.72
3/4″	1,428	1 1/4″	1.2500″	1.2510″	1 5/8″	1.250″	2570K13	7.31	—	—	—	9968K26	.72
1″	2,062	1 9/16″	1.5625″	1.5630″	2 1/4″	1.864″	2570K4	13.31	—	—	—	9968K27	1.03
Ceramic Coated— *With Aluminum Shell*													
1/4″	939	1/2″	0.5000″	0.5005″	3/4″	0.517″	6673K11	8.82	—	—	—	9968K22	.30
3/8″	1,643	5/8″	0.6250″	0.6255″	7/8″	0.642″	6673K12	9.50	—	—	—	9968K23	.34
1/2″	3,128	7/8″	0.8750″	0.8755″	1 1/4″	0.969″	6673K13	10.98	—	—	—	9968K24	.47
5/8″	4,691	1 1/8″	1.1250″	1.1255″	1 1/2″	1.116″	6673K14	11.27	—	—	—	9968K25	.72
3/4″	6,100	1 1/4″	1.2500″	1.2505″	1 5/8″	1.178″	6673K15	12.75	—	—	—	9968K26	.72
1″	8,125	1 1/4″	1.2500″	1.2505″	1 5/8″	1.178″	6673K35	15.86	—	—	—	9968K26	.72

About Linear-Motion Carriages and Guide Rails

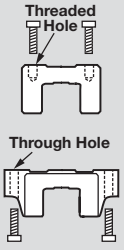

Carriage Mounting Options

We offer a variety of carriages and guide rails to meet your precision automation needs.

Ball-Bearing Carriages (pages 1096-1100)— Our most common carriages have ball bearings to smoothly move your loads at high speeds with low friction. Ball-bearing carriages are some of the highest capacity linear motion products we offer. They're often used in parallel rail configurations.

Sleeve-Bearing Carriages (pages 1100-1101)— An economical alternative to ball-bearing carriages, these products are great for harsh environments because they are less likely to be hindered by dirt and debris. They do, however, require greater force to move because they create more friction than ball-bearing carriages.

Carriage Mounting Options

Threaded-hole carriages allow mounting from the top of your load into the carriage. They generally have a smaller footprint than through-hole carriages. All mounting holes are threaded.

Through-hole carriages have a flanged design with unthreaded or threaded mounting holes through the flange. This design generally allows mounting from the top of your load into the carriage as well as from the bottom of the carriage into your load.

Carriages and guide rails generally provide greater precision and rigidity in a smaller footprint than shafts and pillow-block linear ball bearings starting on page 1087. For lighter loads or less-precise applications, you may wish to consider low-friction slides or track rollers starting on page 1102.

Ball-Bearing Carriages and Guide Rails

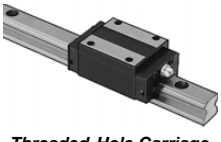

Threaded-Hole Carriage and Guide Rail (Sold Separately)

Through-Hole Carriage and Guide Rail (Sold Separately)

Profile of Guide Rails with Carriage

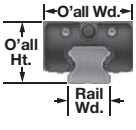

Standard Guide Rail

High-Load Guide Rail

Our most popular carriages and guide rails provide precise, rigid linear motion. Install them in any position without affecting load capacity. Maximum temperature is 176°F.

Threaded-hole carriages allow mounting from the top of your load into the carriage. ***Through-hole carriages*** allow mounting from the top of your load into the carriage as well as from the bottom of the carriage into your load (unless noted).

Standard Carriages— Made of steel with rubber end seals to keep lubricants in and dirt out. All have steel ball bearings and four mounting holes.

High-Load Carriages— Steel cylindrical roller bearings allow high load capacities. An internal retainer separates the roller bearings and keeps them moving uniformly, providing smoother, quieter operation. Carriages are made of steel with an internal tube that delivers oil to the roller bearings. All have six mounting holes.

Guide Rails— Made of hardened and ground steel. **To Order:** For rails, please specify length from the choices listed below, or go to www.mcmaster.com and specify the part number listed to see other available lengths. **Also Available:** Mounting hole plugs for *standard guide rails*. Please ask for 6709K9 and specify your rail's socket head cap screw size.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Carriages									Guide Rails			
Rail Wd., mm	Dynamic Load Cap., lbs.	O'all Ht., mm	O'all Size Wd., mm	O'all Size Lg., mm	Mount. Holes Screw Size/ Dia., mm	Mount. Holes Dp., mm		Each	Available Lengths, mm	Socket Head Cap Screw Size		Per mm
Standard Carriages and Guide Rails												
Threaded-Hole Carriages												
15	1,872	28	34	57	M4	5	6709K12	$118.18	220; 460; 820; 1,600	M4	6709K33	$0.30
20	3,102	30	44	74	M5	6	6709K14	127.27	280; 460; 820; 1,240	M5	6709K43	.37
23	4,473	40	48	83	M6	8	6709K16	152.73	280; 460; 820; 1,240	M6	6709K53	.42
28	6,294	45	60	98	M8	10	6709K18	169.09	280; 440; 1,000; 1,240	M8	6709K63	.43
34	8,385	55	70	109	M8	12	6709K21	183.64	280; 440; 1,000; 1,240	M8	6709K73	.45
45	13,488	70	86	139	M10	17	6709K23	258.18	570; 885; 1,200; 1,620	M12	6709K83	.47
53	19,894	80	100	163	M12	18	6709K25	370.37	780; 1,020; 1,260; 1,500	M14	6709K93	.65
Unthreaded Through-Hole Carriages												
15	1,872	24	47	57	4.5	7	6709K11	118.18	220; 460; 820; 1,600	M4	6709K33	.30
20	3,102	30	63	74	6	10	6709K13	127.27	280; 460; 820; 1,240	M5	6709K43	.37
23	4,473	36	70	83	7	10	6709K15	152.73	280; 460; 820; 1,240	M6	6709K53	.42
28	6,294	42	90	98	9	10	6709K17	169.09	280; 440; 1,000; 1,240	M8	6709K63	.43
34	8,385	48	100	109	9	13	6709K19	183.64	280; 440; 1,000; 1,240	M8	6709K73	.45
45	13,488	60	120	139	11	15	6709K22	258.18	570; 885; 1,200; 1,620	M12	6709K83	.47
53	19,894	70	140	163	14	17	6709K24	370.37	780; 1,020; 1,260; 1,500	M14	6709K93	.65
High-Load Carriages and Guide Rails												
Threaded-Hole Carriages												
15	2,585	24	34	68	M4	5	9215T1	180.27	180; 360; 480; 660	M4	9215T41	.27
20	5,260	30	44	86	M5	6	9215T2	192.15	240; 480; 840; 1,200	M5	9215T42	.33
23	7,216	36	48	98	M6	9	9215T3	203.66	240; 480; 840; 1,200	M6	9215T43	.34
Threaded Through-Hole Carriages												
15	2,585	24	47	68	M5	7	9215T21	189.36	180; 360; 480; 660	M4	9215T41	.27
20	5,260	30	63	86	M6	10	9215T22★	201.78	240; 480; 840; 1,200	M5	9215T42	.33
23	7,216	36	70	98	M8	10	9215T23	214.58	240; 480; 840; 1,200	M6	9215T43	.34

★ Mount from top of load into carriage only.

Replacement Carriages and Guide Rails

Looking to replace an existing carriage or guide rail from THK, Bosch, NSK, or IKO? Just tell us what you need and we'll get it for you.

To Order: Please specify the following: (1) Our part number for the manufacturer listed below; (2) the manufacturer's model number for the carriage or guide rail; and (3) if you are ordering a guide rail, the length of the rail you need.

Manufacturer	
THK	2590T4
Bosch	2687T3
NSK	2690T2
IKO	2692T1

Extended-Life Ball-Bearing Carriages and Guide Rails

Compared to conventional carriages, these will last longer. Carriages are made of steel with rubber end seals to keep lubricants in and dirt out. All have steel ball bearings and four mounting holes. Maximum temperature is 176° F.

Threaded-hole carriages allow mounting from the top of your load into the carriage. ***Through-hole carriages*** allow mounting from the top of your load into the carriage as well as from the bottom of the carriage into your load.

Versa-Mount Carriages— An internal resin cage separates the ball bearings to minimize noise, reduce heat buildup, and eliminate ball collisions to extend the life of the bearings. Versa mount means you can install these carriages in any position without affecting load capacity.

Horizontal-Mount Carriages— A compact design gives these carriages high rigidity and stability, which makes them the choice for horizontal mounting. The orientation of the ball bearings on the guide rails extends the life of the bearings. In addition to rubber end seals, these carriages also have rubber side seals for added protection from contaminants.

Quiet-Ride Horizontal-Mount Carriages— Just like the *Horizontal-Mount Carriages*, but with an internal plastic cage that separates the ball bearings to minimize noise, reduce heat buildup, and eliminate ball collisions to extend the life of the bearings.

Guide Rails— Made of hardened and ground steel. **To Order:** For rails, please specify length from the choices listed below. **Also Available:** Mounting hole plugs. Please ask for 6709K9 and specify your rail's socket head cap screw size.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Threaded-Hole Carriage and Guide Rail (Sold Separately)

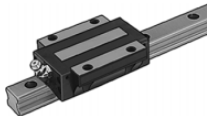

Through-Hole Carriage and Guide Rail (Sold Separately)

Profile of Guide Rails with Carriage

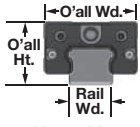

Versa-Mount Guide Rail

Horizontal-Mount Guide Rail

Rail Wd., mm	Dynamic Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	O'all Size Lg., mm	Mount. Holes Screw Size/ Dia., mm	Mount. Holes Dp., mm	Each	Guide Rails: Available Lengths, mm	Socket Head Cap Screw Size	Per mm
Versa-Mount Carriages and Guide Rails										
Threaded-Hole Carriages										
15	3,192	28	34	64	M4	5	6688K11 $123.64	220; 460; 640; 820	M4	6688K33 $0.36
20	5,013	30	44	79	M5	5	6688K12 136.36	280; 460; 820; 1,000	M5	6688K43 .39
23	7,126	40	48	92	M6	8	6688K13 161.82	280; 460; 820; 1,240	M6	6688K53 .44
28	10,071	45	60	106	M8	10	6688K14 181.82	440; 760; 1,000; 1,640	M8	6688K63 .46
34	14,005	55	70	122	M8	12	6688K15 194.55	440; 760; 1,000; 1,640	M8	6688K73 .49
45	18,614	70	86	140	M10	17	6688K16 274.55	570; 885; 1,200; 1,620	M12	6688K83 .55
53	28,775	80	100	171	M12	18	6688K17 389.09	780; 1,020; 1,260; 1,500	M14	6688K93 .71
Threaded Through-Hole Carriages										
15	3,192	24	47	64	M5	8	6688K21 123.64	220; 460; 640; 820	M4	6688K33 .36
20	5,013	30	63	79	M6	10	6688K22 136.36	280; 460; 820; 1,000	M5	6688K43 .39
23	7,126	36	70	92	M8	12	6688K23 161.82	280; 460; 820; 1,240	M6	6688K53 .44
28	10,071	42	90	106	M10	15	6688K24 181.82	440; 760; 1,000; 1,640	M8	6688K63 .46
34	14,005	48	100	122	M10	15	6688K25 194.55	440; 760; 1,000; 1,640	M8	6688K73 .49
45	18,614	60	120	140	M12	18	6688K26 274.55	570; 885; 1,200; 1,620	M12	6688K83 .55
53	28,775	70	140	171	M14	21	6688K27 389.09	780; 1,020; 1,260; 1,500	M14	6688K93 .71
Horizontal-Mount Carriages and Guide Rails										
Threaded-Hole Carriages										
15	2,138	24	34	57	M4	7	6250K18 128.00	220; 460; 820; 1,600	M3	6250K1 .30
20	2,810	28	42	66	M5	8	6250K32 128.00	280; 460; 820; 1,240	M5	6250K2 .32
23	4,564	33	48	83	M6	9	6250K42 128.00	280; 460; 820; 1,600	M6	6250K3 .33
28	6,744	42	60	97	M8	12	6250K52 160.00	440; 600; 1,000; 1,640	M6	6250K4 .35
34	9,375	48	70	111	M8	12	6250K62 162.00	440; 760; 1,000; 1,640	M8	6250K7 .41
45	12,432	60	86	126	M10	15	6250K72 250.00	570; 885; 1,200; 1,620	M10	6250K6 .55
48	20,030	68	100	156	M12	20	6250K82 336.00	780; 1,020; 1,500; 1,980	M12	6250K9 .58
Unthreaded Through-Hole Carriages										
15	2,138	24	52	57	4.5	7	6250K19 140.00	220; 460; 820; 1,600	M3	6250K1 .30
20	2,810	28	59	66	5.5	9	6250K37 144.00	280; 460; 820; 1,240	M5	6250K2 .32
23	4,564	33	73	83	7	10	6250K47 150.00	280; 460; 820; 1,600	M6	6250K3 .33
28	6,744	42	90	97	9	10	6250K57 190.00	440; 600; 1,000; 1,640	M6	6250K4 .35
34	9,375	48	100	111	9	13	6250K67 192.00	440; 760; 1,000; 1,640	M8	6250K7 .41
45	12,432	60	120	126	11	15	6250K77 296.00	570; 885; 1,200; 1,620	M10	6250K6 .55
48	20,030	68	140	156	14	17	6250K87 394.00	780; 1,020; 1,500; 1,980	M12	6250K9 .58
Quiet-Ride Horizontal-Mount Carriages and Guide Rails										
Threaded-Hole Carriages										
15	3,305	24	34	57	M4	7	6713K11 123.64	220; 460; 820; 1,600	M3	6250K1 .30
20	4,406	28	42	67	M5	8	6713K12 123.64	280; 460; 820; 1,240	M5	6250K2 .32
23	7,081	33	48	83	M6	9	6713K13 123.64	280; 460; 820; 1,600	M6	6250K3 .33
28	10,454	42	60	97	M8	12	6713K14 156.36	440; 600; 1,000; 1,640	M6	6250K4 .35
34	14,522	48	70	111	M8	12	6713K15 161.82	440; 760; 1,000; 1,640	M8	6250K7 .41

Guide Rail Covers

Also known as linear way covers, these easy-to-install covers protect your carriages and guide rails from dirt, dust, chips, and other contaminants. Highly resistant to coolants and oils, they're made of 0.01″ thick PVC-coated seamless polyester fabric, bonded to PVC stiffeners. Maximum temperature is 170° F.

To Order: Please specify expanded length in feet (compressed length is 1/13 the expanded length).

Mounting kits include everything you need to mount the cover on both ends of your guide rail via clip-on, compression, hook-and-loop, flange mounting, or double-sided tape.

For Rail Wd., mm	O'all Wd., mm	O'all Ht., mm	Covers Per Ft.	Mounting Kits Each
15	56	30	94365K91 $26.99	94365K11 $28.72
20	61	36	94365K92 29.22	94365K12 28.72
23	67	36	94365K93 33.18	94365K13 28.72
28	72	43	94365K94 36.90	94365K14 29.22
33	73	27	94365K81 39.37	94365K21 29.22
34	76	42	94365K95 37.39	94365K15 28.72
37	80	32	94365K82 44.70	94365K22 31.94
42	84	34	94365K83 52.50	94365K23 29.96
45	88	50	94365K99 46.30	94365K16 31.94
53	108	58	94365K87 56.70	94365K17 34.42
69	108	34	94365K84 54.48	94365K24 31.94
90	132	40	94365K86 84.19	94365K25 33.92

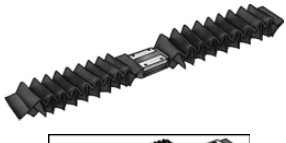

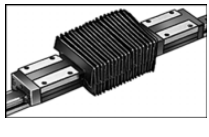

For information about carriages and guide rails, see page 1096.

Maintenance-Free Ball Bearing Carriages and Guide Rails

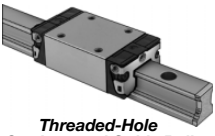

Threaded-Hole Carriage and Guide Rail (Sold Separately)

Through-Hole Carriage and Guide Rail (Sold Separately)

Profile of Guide Rail with Carriage

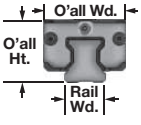

An internal reservoir continuously supplies built-in oil for maintenance-free operation, making these carriages and guide rails great for hard-to-reach places where maintenance would be difficult to perform. They can be mounted in any position.

Threaded-hole carriages allow mounting from the top of your load into the carriage. ***Through-hole carriages*** allow mounting from the top of your load into the carriage as well as from the bottom of the carriage into your load.

Maintenance-Free Carriages and Guide Rails— The carriages and ball bearings are steel; guide rails are hardened and ground steel.

Corrosion-Resistant Maintenance-Free Carriages and Guide Rails— The carriages, ball bearings, and guide rails are 400 series stainless steel.

To Order: For all guide rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Rail Wd., mm	Dynamic Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	Carriages: O'all Size Lg., mm	Carriages: Mount. Holes Screw Size	Carriages: Mount. Holes Dp., mm		Each	Guide Rails: Available Lengths, mm	Guide Rails: Socket Head Cap Screw Size		Per mm
Maintenance-Free Carriages and Guide Rails												
Threaded-Hole Carriages												
15	1,753	24	34	58	M4	6	9184T31	$104.92	160; 280; 460; 820	M4	9184T41	$0.37
20	4,226	30	44	75	M5	7.5	9184T32	108.58	280; 460; 820; 1,000	M5	9184T42	.32
23	5,125	36	48	86	M6	9	9184T33	118.36	280; 460; 820; 1,000	M6	9184T43	.29
28	7,126	42	60	98	M8	12	9184T34	141.54	440; 760; 1,240; 2,040	M8	9184T44	.33
34	9,419	48	70	111	M8	13	9184T35	152.52	440; 760; 1,240; 2,040	M8	9184T45	.35
Threaded Through-Hole Carriages												
15	1,753	24	47	58	M5	5	9184T51	111.02	160; 280; 460; 820	M4	9184T41	.37
20	4,226	30	63	75	M6	8	9184T52	122.00	280; 460; 820; 1,000	M5	9184T42	.32
23	5,125	36	70	86	M8	9	9184T53	126.88	280; 460; 820; 1,000	M6	9184T43	.29
28	7,126	42	90	98	M10	11	9184T54	148.84	440; 760; 1,240; 2,040	M8	9184T44	.33
34	9,419	48	100	111	M10	12	9184T55	161.06	440; 760; 1,240; 2,040	M8	9184T45	.35
Corrosion-Resistant Maintenance-Free Carriages and Guide Rails												
Threaded-Hole Carriages												
15	1,753	24	34	58	M4	6	9184T71	136.62	160; 280; 460; 820	M4	9184T61	.57
20	4,226	30	44	75	M5	7.5	9184T72	159.48	280; 500; 1,000; 1,480	M5	9184T62	.45
23	5,125	36	48	86	M6	9	9184T73	182.22	280; 500; 1,000; 1,480	M6	9184T63	.48
28	7,126	42	60	98	M8	12	9184T74	201.82	500; 760; 1,000; 2,000	M8	9184T64	.44
34	9,419	48	70	111	M8	13	9184T75	217.68	500; 760; 1,000; 2,000	M8	9184T65	.45

Corrosion-Resistant Ball Bearing Carriages and Guide Rails

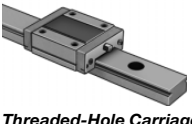

Threaded-Hole Carriage and Guide Rail (Sold Separately)

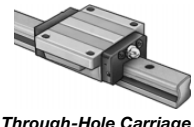

Through-Hole Carriage and Guide Rail (Sold Separately)

Profile of Guide Rails with Carriage

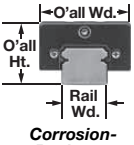

Corrosion-Resistant Guide Rail, 5708K

Corrosion-Resistant Guide Rail, 9070T

Clean-Room Corrosion-Resistant Guide Rail

The stainless steel used to make these carriages and guide rails gives you excellent corrosion resistance. All carriages and guide rails can be mounted in any position. When wall mounted, however, corrosion-resistant threaded-hole carriages provide 84% of the dynamic load capacity listed below. All carriages have four mounting holes.

Threaded-hole carriages allow mounting from the top of your load into the carriage. ***Through-hole carriages*** allow mounting from the top of your load into the carriage as well as from the bottom of the carriage into your load.

Corrosion-Resistant Threaded-Hole Carriages— Made of Type 440C stainless steel and acetal, these carriages have lubricating end seals that are made of oil-impregnated poly-olefin. All have Type 440C stainless steel ball bearings. Maximum temperature is 122° F.

Corrosion-Resistant Unthreaded Through-Hole Carriages— Made of 400 series stainless steel and resin with rubber end seals to keep lubricants in and dirt out. Ball bearings are 400 series stainless steel. Maximum temperature is 176° F.

Clean-Room Corrosion-Resistant Carriages— Suitable for clean room use, these carriages are made entirely of Type 440C and Type 304 stainless steel. End seals and end plates keep lubricants in and dirt out. Maximum temperature is 266° F.

Guide Rails— Made of hardened and ground 400 series stainless steel. **To Order:** For all rails, please specify length from the choices listed below. **Also Available:** Mounting hole plugs. For 5708K rails, please ask for 5708K1 and specify your rail's socket head cap screw size. For 9070T rails, please ask for 6709K9 and specify your rail's socket head cap screw size.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Rail Wd., mm	Dynamic Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	Carriages: O'all Size Lg., mm	Carriages: Mount. Holes Screw Size/ Dia., mm	Carriages: Mount. Holes Dp., mm		Each	Guide Rails: Available Lengths, mm	Guide Rails: Socket Head Cap Screw Size		Per mm
Corrosion-Resistant Carriages and Guide Rails												
Threaded-Hole Carriages												
15	1,877	24	34	66	M4	6	5708K25	$156.36	100; 220; 340; 400	M4	5708K99	$0.22
20	2,630	28	42	76	M5	7	5708K21	172.00	280; 500; 1,000; 1,480	M5	5708K86	.47
23	4,226	33	48	92	M6	9	5708K22	184.00	280; 500; 1,000; 1,480	M6	5708K87	.48
28	6,474	42	60	108	M8	12	5708K23	216.00	500; 760; 1,000; 2,000	M6	5708K88	.54
34	8,992	48	70	121	M8	12	5708K24	264.00	500; 760; 1,000; 2,000	M8	5708K89	.60
Unthreaded Through-Hole Carriages												
15	1,872	24	47	57	4.5	7	9070T21	279.31	160; 280; 460; 640	M4	9070T31	.90
20	3,102	30	63	74	6	10	9070T22	341.38	280; 460; 640; 820	M5	9070T32	.93
23	4,473	36	70	83	7	10	9070T23	382.76	280; 460; 640; 1,000	M6	9070T33	1.11
28	6,294	42	90	98	9	10	9070T24	534.48	280; 440; 760; 1,240	M8	9070T34	1.27
34	8,385	48	100	109	9	13	9070T25	672.41	280; 440; 760; 1,240	M8	9070T35	1.54
Clean-Room Corrosion-Resistant Carriages and Guide Rails												
Threaded-Hole Carriages												
15	1,119	16	32	42	M3	4	6725K5	123.87	160; 240; 560; 680	M3	6725K63	.49
20	1,494	20	40	50	M4	6	6725K6	183.75	240; 480; 660; 840	M5	6725K73	.55

For information about carriages and guide rails, see page 1096.

Extra-Wide Ball Bearing Carriages and Guide Rails

With their added width and low-profile design, these carriages and guide rails have more stability to handle your off-center loads. Install them in any position without affecting load capacity. All of the carriages are made of steel with rubber end seals to keep lubricants in and dirt out. The ball bearings are steel. Maximum temperature is 176° F.

Threaded-hole carriages allow mounting from the top of your load into the carriage. ***Through-hole carriages*** allow mounting from the top of your load into the carriage as well as from the bottom of the carriage into your load.

Standard Carriages— Have six mounting holes, except 6382K21 and 6382K31 have four.

Extended-Life Carriages— Able to last twice as long as conventional carriages, these have an internal resin cage that separates the ball bearings to minimize noise, reduce heat buildup, and eliminate ball collisions to extend the life of the bearings. They have six mounting holes, except 8375K11 has four.

Guide Rails— Made of hardened and ground steel. **To Order:** For all rails, please specify length from the choices listed below. For *standard rails*, you can also go to www.mcmaster.com and specify the part number listed below to see other available lengths. **Also Available:** Mounting hole plugs for all rails. Please ask for 6709K9 and specify your rail's socket head cap screw size.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Standard Threaded-Hole Carriage and Guide Rail (Sold Separately)

Extended-Life Threaded-Hole Carriage and Guide Rail (Sold Separately)

Standard Through-Hole Carriage and Guide Rail (Sold Separately)

Profile of Guide Rails with Carriage

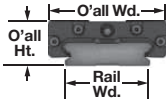

Standard Guide Rail

Extended-Life Guide Rail

Rail Wd., mm	Dynamic Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	Carriages: O'all Size Lg., mm	Carriages: Mount. Holes Screw Size	Carriages: Mount. Holes Dp., mm	Carriages: Each	Guide Rails: Available Lengths, mm	Guide Rails: Socket Head Cap Screw Size	Guide Rails: Per mm
Standard Carriages and Guide Rails										
Threaded-Hole Carriages										
33	969	17	50	51	M4	5	**6382K21** $204.00	110; 190; 310; 550	M4	**6382K11** $0.71
37	1,389	21	54	59	M5	6	**6382K31** 212.00	130; 380; 580; 780	M4	**6382K12** .56
42	2,585	27	62	73	M6	6	**6382K41** 288.00	160; 280; 460; 820	M4	**6382K13** .58
69	6,115	35	100	107	M8	8	**6382K51** 348.00	280; 440; 760; 1,240	M6	**6382K14** .66
Threaded Through-Hole Carriages										
33	969	17	60	51	M4	6	**6382K25** 204.00	110; 190; 310; 550	M4	**6382K11** .71
37	1,389	21	68	59	M5	8	**6382K35** 212.00	130; 380; 580; 780	M4	**6382K12** .56
42	2,585	27	80	73	M6	10	**6382K45** 288.00	160; 280; 460; 820	M4	**6382K13** .58
69	6,115	35	120	107	M8	14	**6382K55** 348.00	280; 440; 760; 1,240	M6	**6382K14** .66
Extended-Life Carriages and Guide Rails										
Threaded-Hole Carriages										
37	1,852	21	54	59	M5	6	**8375K11** 229.41	130; 230; 480; 780	M4	**8375K21** .56
42	3,597	27	62	73	M6	6	**8375K12** 298.74	160; 280; 460; 820	M4	**8375K31** .61
69	7,980	35	100	107	M8	8	**8375K13** 362.75	280; 440; 760; 1,000	M6	**8375K41** .65

Miniature Ball Bearing Carriages and Guide Rails

When space is at a premium, these are the carriages and guide rails to choose. Install them in any position without affecting load capacity. All are made of corrosion-resistant stainless steel. The carriages are threaded-hole carriages, which allow mounting from the top of your load into the carriage.

Standard Carriages— Made of Type 440C stainless steel. Rubber end seals and resin plates keep lubricants in and dirt out. All have stainless steel ball bearings. They also have four mounting holes, except 8438K1 and 9706K1 have two. Maximum temperature is 212° F, except 8438K1 is 176° F.

Clean Room Carriages— Suitable for clean room use, these carriages are made entirely of Types 440C and 304 stainless steel. End seals and plates keep lubricants in and dirt out. Carriages have four mounting holes, except 6725K1 has two. Maximum temperature is 266° F.

Guide Rails— Made of hardened and ground Type 440C stainless steel. **To Order:** For rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Standard Threaded-Hole Carriage and Guide Rail (Sold Separately)

Clean Room Threaded-Hole Carriage and Guide Rail (Sold Separately)

Profile of Guide Rails with Carriage

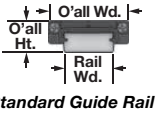

Standard Guide Rail

Clean Room Guide Rail

Rail Wd., mm	Dynamic Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	Carriages: O'all Size Lg., mm	Carriages: Mount. Holes Screw Size	Carriages: Mount. Holes Dp., mm	Carriages: Each	Guide Rails: Available Lengths, mm	Guide Rails: Socket Head Cap Screw Size	Guide Rails: Per mm
Standard Threaded-Hole Carriages and Guide Rails										
5	151	6	12	19	M2	1.5	**8438K1** $64.86	60, 90, 120, 150	M2	**6725K23** $0.35
7	298	8	17	24	M2	2.5	**8438K2** 62.96	60, 90, 120, 180	M2	**6725K33** .38
9	406	10	20	30	M3	3	**8438K3** 75.53	80, 160, 220, 280	M3	**6725K43** .51
10	190	7	17	25	M2.5	1.5	**9706K1** 81.76	60, 120, 160, 280	M2.5	**9706K51** .52
12	748	13	27	34	M3	3.5	**8438K4** 80.55	150, 200, 350, 475	M3	**6725K53** .40
14	397	9	25	32	M3	3	**9706K2** 87.07	90, 150, 240, 300	M3	**9706K52** .55
18	512	12	30	39	M3	3	**9706K3** 97.02	120, 180, 240, 300	M3	**9706K53** .77
24	968	14	40	44	M3	3.5	**9706K4** 111.53	120, 160, 320, 400	M4	**9706K54** .79
Clean Room Threaded-Hole Carriages and Guide Rails										
5	151	6	12	19	M2	1.5	**6725K1** 113.67	60, 90, 120, 150	M2	**6725K23** .35
7	298	8	17	24	M2	2.5	**6725K2** 88.77	60, 90, 120, 180	M2	**6725K33** .38
9	406	10	20	30	M3	3	**6725K3** 108.11	80, 160, 220, 280	M3	**6725K43** .51
12	748	13	27	34	M3	3.5	**6725K4** 106.33	150, 200, 350, 475	M3	**6725K53** .40

For information about carriages and guide rails, see page 1096.

Ultra-Miniature Ball Bearing Carriages with Guide Rails

Small enough to fit on the tip of your finger, these tiny carriages and guide rails are sized for electronic, medical, and other precision applications. They come furnished as a complete unit (a carriage on a guide rail) and can be installed in any position without affecting load capacity. Maximum temperature is 212° F.

All carriages and guide rails are made of Type 440C stainless steel. The ball bearings are Type 440C stainless steel and are not retained, so they will fall out if the carriage is removed from the guide rail. The carriages have two threaded through-holes for mounting.

Mounting Bracket— For use with 8381K27 and 8381K28, which do not have mounting holes on their guide rails. Order a mounting bracket for each end of the rail.

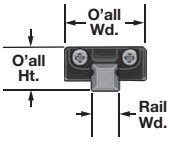

Profile of Guide Rail with Carriage

Rail Wd., mm	Dynamic Load Cap., lbs.	O'all Ht., mm	Carriage O'all Size Wd., mm	Carriage O'all Size Lg., mm	Carriage Mount. Holes Screw Size	Carriage Mount. Holes Dp., mm	Guide Rail Lg., mm	Guide Rail Mounting Screw Size		Each
1	15	2.5	4	6.5	M1	0.9	42	—	8381K27	$93.46
1	15	2.5	4	6.5	M1	0.9	84	—	8381K28	118.40
2	47	3.2	6	12.4	M1.4	1.1	32	M1	8381K29	83.04
2	47	3.2	6	12.4	M1.4	1.1	40	M1	8381K1	87.34
2	47	3.2	6	12.4	M1.4	1.1	56	M1	8381K31	95.78
2	47	3.2	6	12.4	M1.4	1.1	80	M1	8381K2	108.50
3	79	4	8	16	M2	1.3	40	M1.6	8381K39	84.92
3	79	4	8	16	M2	1.3	60	M1.6	8381K3	97.44
3	79	4	8	16	M2	1.3	80	M1.6	8381K41	103.06
3	79	4	8	16	M2	1.3	100	M1.6	8381K4	106.66

Mounting Bracket for 8381K27 and 8381K28 (order one for each end of the guide rail) ..... 8381K9 **Each** $8.03

Sleeve-Bearing Carriages and Guide Rails

Rulon-Lined Carriage and Guide Rail (Sold Separately)

Nylon-Lined Carriage and Guide Rail (Sold Separately)

Frelon-Lined Carriage and Guide Rail (Sold Separately)

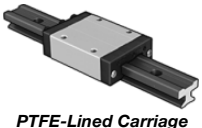

PTFE-Lined Carriage and Guide Rail (Sold Separately)

Profile of Guide Rails with Carriage

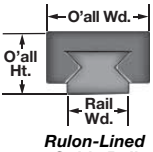

Rulon-Lined Guide Rail

Nylon-Lined Guide Rail

Frelon-Lined Guide Rail

PTFE-Lined Guide Rail

The sleeve bearings in these carriages handle harsh conditions that ball bearings can't, such as dirt, water, impact, and vibration. All of the carriages and guide rails are made of corrosion-resistant materials. They do not require lubrication. Load capacity is diminished when blocks are mounted upside down, vertically, or on their side.

Threaded-hole carriages allow mounting from the top of your load into the carriage. ***Through-hole carriages*** allow mounting from the top of your load into the carriage as well as from the bottom of the carriage into your load.

Rulon-Lined Carriages and Guide Rails— Carriages are ceramic-coated aluminum with an FDA- and USDA-compliant Rulon 641 liner for excellent chemical resistance. They have four threaded through-holes for mounting. Guide rails are ceramic-coated aluminum. Maximum temperature is 375° F.

Nylon-Lined Carriages and Guide Rails— Carriages are anodized aluminum and lined with bronze- and PTFE-impregnated nylon. They have four threaded holes for mounting. Guide rails are anodized aluminum. Maximum temperature is 175° F.

Frelon-Lined Carriages and Guide Rails— Carriages are anodized aluminum with a chemical-resistant Frelon liner (a PTFE-filled composite) for wear resistance and strength. They have four threaded through-holes for mounting. Guide rails are ceramic-coated anodized aluminum. Load capacity is for horizontal mounting only. Maximum temperature is 300° F.

PTFE-Lined Carriages and Guide Rails— Carriages are PTFE-lined anodized aluminum (except for 9867K1, which is die cast zinc) for good abrasion resistance. All have four threaded through-holes for mounting. *Lockable carriages* also have a plastic knob on the side to lock them in place along the rail. Guide rails are anodized aluminum. Maximum temperature is 194° F.

To Order: For all rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Rail Wd.	Static Load Cap., lbs.	O'all Ht.	Carriages O'all Size Wd.	Carriages O'all Size Lg.	Carriages Mount. Holes Screw Size	Carriages Mount. Holes Dp., mm		Each	Guide Rails Available Lengths	Guide Rails Socket Head Cap Screw Size		Per Inch
Inch Sizes												
Rulon-Lined Carriages and Guide Rails												
1/2"	200	9/16"	1"	1 1/4"	M3	8	9728K3	$29.94	7"; 13"; 19"; 25"; 31"	#5	9728K6	$2.61
3/4"	450	3/4"	1 1/4"	1 3/4"	M3	8	9728K4	36.25	7"; 13"; 19"; 25"; 31"	#8	9728K7	2.97
1"	700	7/8"	1 3/4"	2"	M4	10	9728K5	47.28	7"; 13"; 19"; 25"; 31"	#10	9728K8	3.33
Metric Sizes— *Dimensions in mm*												
Nylon-Lined Carriages and Guide Rails												**Per mm**
7	47	8	17	23.5	M2	3	9829K1	18.36	110; 260; 515; 815	M2	9829K11	$0.21
9	89	10	20	30	M2	4	9829K2	19.74	120; 260; 520; 820	M2	9829K12	.20
12	108	13	27	34	M3	6	9829K3	22.47	120; 270; 520; 820	M3	9829K13	.18
Frelon-Lined Carriages and Guide Rails												
7	165	8	17	24	M2	6.2	9880K5	24.00	40; 70; 100; 130	M2	9880K15	.10
9	350	10	20	30	M3	8	9880K1	30.00	55; 95; 155; 275	M2.5	9880K11	.10
12	440	13	27	34	M3	10.7	9880K2	30.00	120; 220; 320; 470	M3	9880K12	.10
15	700	16	32	42	M3	14.1	9880K3	32.00	150; 310; 470; 670	M3	9880K13	.10
20	1,350	25	46	62	M4	12.5	9880K4	49.74	220; 340; 460; 880	M5	9880K14	.10
PTFE-Lined Carriages and Guide Rails												
15	315	16	32	42	M3	11	9867K1	31.13	500; 1,000	M3	9867K11	.07
15	900	24	47	74	M5	16	9867K2	51.11	500; 1,000	M4	9867K12	.08
20	1,665	30	63	87	M6	19.8	9867K3	56.62	500; 1,000	M5	9867K13	.10
23	2,250	36	70	96	M8	24.8	9867K4	66.40	500; 1,000	M6	9867K14	.12
Lockable PTFE-Lined Carriages and Guide Rails												
15	900	24	47	74	M5	16	3249K2	56.25	500; 1,000	M4	9867K12	.08
20	1,665	30	63	87	M6	19.8	3249K3	61.42	500; 1,000	M5	9867K13	.10
23	2,225	36	70	96	M8	24.8	3249K4	70.58	500; 1,000	M6	9867K14	.12

For information about carriages and guide rails, see page 1096.

Low-Profile Sleeve-Bearing Carriages and Guide Rails

Snug mounting heights are no problem for these low-profile, low-maintenance carriages and guide rails. Use them for light to moderate loads, and frequent starting and stopping applications where tight tolerances are not required. Maximum temperature is 194° F.

Carriages— Made of chromated zinc (unless noted) with a PTFE liner for smooth, quiet operation. Their sleeve bearings handle harsh conditions that ball bearings can't, such as dirt, water, impact, and vibration. All are self-lubricating. 6723K9 and 6723K12 have two threaded holes, 6723K11 has two unthreaded through-holes, and 6723K13 has four threaded holes for mounting.

Guide Rails— Made of anodized aluminum. **To Order:** For rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

17, 27, and 40 mm Rail Wd. Carriage and Guide Rail (Sold Separately)

80 mm Rail Wd. Carriage and Guide Rail (Sold Separately)

Rail Wd., mm	Static Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	O'all Size Lg., mm	Mount. Holes Screw Size/ Dia., mm	Mount. Holes Dp., mm		Each	Guide Rails: Available Lengths, mm	Mounting Screw Size		Per mm
17	11	6	10	20	M3	5	6723K9■	$5.36	250; 500; 1,000; 1,500; 2,000	M3	6723K5	$0.05
27	112	10	14	40	4	5	6723K11	6.26	250; 500; 1,000; 1,500; 2,000	M4	6723K2	.06
40	157	10	23	50	M4	8	6723K12	14.17	250; 500; 1,000; 1,500; 2,000	M4	6723K3	.08
80	225	12	57	80	M4	7	6723K13	22.23	250; 500; 1,000; 1,500; 2,000	M4	6723K4	.11

■ Guide block is plastic with brass mounting plate.

Extra-Wide Sleeve-Bearing Carriages and Guide Rails

With their added width and low-profile design, these carriages and guide rails have more stability to handle off-center loads. All are anodized aluminum and can be installed in any position without affecting load capacity. Maximum temperature is 194° F.

Carriages— These self-lubricating carriages have polymer sleeve bearings to handle harsh conditions that ball bearings can't, such as dirt, water, impact, and vibration. All have four threaded holes for mounting.

Guide Rails— **To Order:** For rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

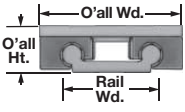

Profile of Guide Rail with Carriage

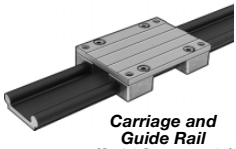

Carriage and Guide Rail (Sold Separately)

Rail Wd., mm	Static Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	O'all Size Lg., mm	Mount. Holes Screw Size	Mount. Holes Dp., mm		Each	Guide Rails: Available Lengths, mm	Socket Head Cap Screw Size		Per mm
40	1,079	24	73	100	M6	24	6109K41	$64.56	500; 1,000; 1,500; 2,000	M6	6109K42	$0.08
74	1,079	24	107	100	M6	24	6109K51	68.80	500; 1,000; 1,500; 2,000	M6	6109K52	.16
74	2,878	44	134	150	M8	44	6109K61	113.08	500; 1,000; 1,500; 2,000	M8	6109K62	.22

Square Sleeve-Bearing Carriages and Guide Rails

No need for parallel shafts—the square design of these carriages and guide rails prevents unwanted rotation of loads. Install them in any position, but keep in mind the capacity listed is for loads directly centered on a carriage on any one of its sides. Maximum temperature is 400° F.

Carriages— Made of anodized aluminum alloy with self-lubricating Frelon-lined bearing plugs on all four sides, which you can adjust to maintain precise alignment. Frelon (a PTFE-filled composite) is chemical resistant and provides wear resistance and strength. The sleeve bearings in these carriages handle harsh conditions that ball bearings can't, such as dirt, water, impact, and vibration. All have threaded through-holes for mounting.

Guide Rails— Made of hollow Type 304 stainless steel with a 0.12″ wall thickness. **To Order:** For rails, please specify length: 2, 3, 4, or 6 ft.

Rail Supports— Made of cast aluminum. *End rail supports* have four 0.25″ dia. through-holes for mounting. *Mid rail supports* also have four through-holes for mounting (0.20″ dia. for 60255K34; 0.25″ dia. for 60255K35).

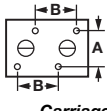

Carriage and Guide Rail (Sold Separately)

End Rail Support

Mid Rail Support

Rail Size, Sq.	Static Load Cap., lbs.	Carriages: Lg.	Mounting Holes: Screw Size	No. per Side	Ctr.-to-Ctr. (A)	Ctr.-to-Ctr. (B)		Each	Guide Rails: Per Ft.	End Rail Supports: Each	Mid Rail Supports: Each
1″	920	2¼″	8-32	4	1⅛″	1⅜″	60255K51	$83.12	60255K41 $30.60	60255K32 $55.70	60255K34 $30.96
1″	920	4″	8-32	8	1⅛″	1⅜″	60255K52	83.12	60255K41 30.60	60255K32 55.70	60255K34 30.96
1½″	1,840	3⅛″	¼″-20	4	1⅝″	1 7/16″	60255K53	137.75	60255K42 49.12	60255K33 77.40	60255K35 37.14
1½″	1,840	6″	¼″-20	8	1⅝″	1 7/16″	60255K54	151.52	60255K42 49.12	60255K33 77.40	60255K35 37.14

Replacement Frelon-Lined Screw-In Bearing Plug ..... 60255K15 Each $14.31

NEMA Motor-Mount Slides

Add your NEMA 17 or 23 motor and you're ready for precise linear motion. These highly rigid slides have a precision lead screw, ball bearing carriage, and shaft coupling already installed. Mount them horizontally and vertically.

Frame and carriage are aluminum. Lead screw is Type 303 stainless steel. Guide rails are hardened steel. Base has M5 Dia. × 5.5 mm Dp. through-holes with a 9 mm Dia. × 5.5 mm Dp. counterbore for mounting. Straightness accuracy is 0.0002″ per inch of travel. Maximum motor input is 2,000 rpm. Maximum temperature is 180° F. **To Order:** Please specify screw lead (the distance a load moves with one revolution of the lead screw): 0.125″, 0.25″, 0.5″, or 1″.

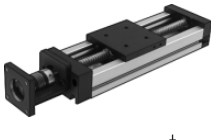

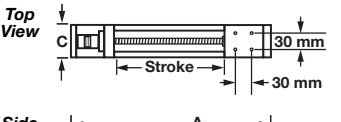

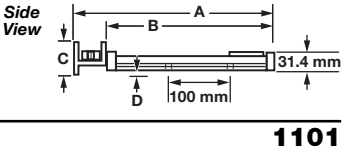

Dynamic Horiz./Vert. Load Cap., lbs.	Stroke, mm	(A) mm	(B) mm	(C) mm	(D) mm		
With Adapter for NEMA 17 Motor Frame							
33/18	100	250	200	40	1	6734K1	$850.94
33/18	200	350	300	40	1	6734K2	924.64
33/18	300	450	400	40	1	6734K3	986.38
With Adapter for NEMA 23 Motor Frame							
33/18	100	256	200	57	8	6734K4	857.37
33/18	200	356	300	57	8	6734K5	932.88
33/18	300	456	400	57	8	6734K6	1,006.45

Low-Friction Slides

Low Profile

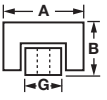

End View

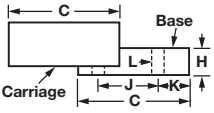

Side View

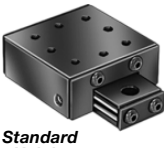

Standard Height

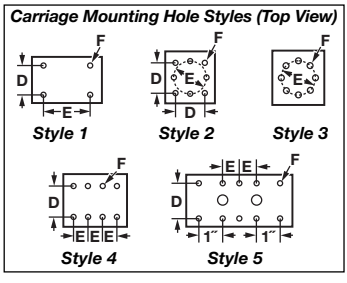

Excellent for short-travel, high-speed applications where low-friction performance is a must. Slides have a lightweight, corrosion-resistant aluminum carriage with threaded holes and a base with counterbored holes for socket head cap screws (unless noted). Carriage and base are the same length; to achieve travel, carriage must move beyond the base. Capacities listed are for horizontal mounting. If side mounted, load capacity is cut in half.

Ball Bearing Style Slides— A row of ball bearings on each side of the base provides high-precision linear motion. Bearings are caged in a retainer, which eliminates ball collisions to extend service life.

Choose *low-profile slides* for limited-space applications. Raceway rods and balls are steel. Straightness accuracy is 0.0005″ per inch of travel. Maximum temperature is 180° F.

Standard-height slides have raceway rods and balls that are made of Type 440C stainless steel. Straightness accuracy is 0.00008″ per inch of travel. Maximum temperature is 150° F.

High-Load Cylindrical-Roller Bearing Style Slides— Compared with similar-sized ball bearing slides, these offer higher load capacities. The cylindrical roller design lets the slides handle forces in any direction, so they're good for sudden loads and overhanging loads. Rollers ride on a pair of rails on each side of the base. Rollers and rails are hardened steel with stainless steel end caps. Straightness accuracy is 0.0001″ per inch of travel. Maximum temperature is 220° F.

Stroke Lg.	Dyn. Load Cap., lbs.	O'all Wd. (A)	O'all Ht. (B)	O'all Lg. (C)	Carriage Mounting Holes Style	Carriage Mounting Holes Ctr.-to-Ctr. (D)	Carriage Mounting Holes (E)	Carriage Mounting Holes Screw Size (F)	Carriage Mounting Holes Dp.	Base Wd. (G)	Base Ht. (H)	Base Mounting Holes Ctr.-to-Ctr. (J)	Base Mounting Holes End-to-Ctr. (K)	Base Mounting Holes Socket Head Cap Screw Size (L)		
Ball Bearing Style Slides																
Low Profile																
0.5″	1.5	0.38″	0.23″	0.75″	1	0.16″	0.38″	2-56	0.088″	0.16″	0.14″	0.38″	0.19″	2-56★	6203K92	$91.00
0.5″	4	0.56″	0.32″	1.06″	1	0.22″	0.63″	2-56	0.107″	0.25″	0.19″	0.75″	0.16″	2-56	6203K87	81.67
0.5″	8	0.75″	0.41″	1.06″	1	0.38″	0.63″	4-40	0.125″	0.38″	0.25″	0.75″	0.16″	4-40	6203K68	88.67
0.75″	15	1.06″	0.53″	1.56″	1	0.44″	1.25″	6-32	0.188″	0.5″	0.31″	1.13″	0.22″	6-32	6203K75	102.67
1″	1.5	0.38″	0.23″	1.25″	1	0.16″	0.88″	2-56	0.088″	0.16″	0.14″	0.88″	0.19″	2-56★	6203K93	94.50
1″	8	0.56″	0.32″	2.06″	1	0.22″	1.63″	2-56	0.107″	0.25″	0.19″	1.38″	0.34″	2-56	6203K88	89.83
1″	10	0.75″	0.41″	2.06″	1	0.38″	1.63″	4-40	0.125″	0.38″	0.25″	1.38″	0.34″	4-40	6203K65	102.67
1.5″	18	1.06″	0.53″	2.56″	1	0.44″	2.25″	6-32	0.188″	0.5″	0.31″	2.13″	0.22″	6-32	6203K76	110.83
2″	12	0.56″	0.32″	3.06″	1	0.22″	2.63″	2-56	0.107″	0.25″	0.19″	2.38″	0.34″	2-56	6203K89	102.67
2″	12	0.75″	0.41″	3.06″	1	0.38″	2.63″	4-40	0.125″	0.38″	0.25″	2.38″	0.34″	4-40	6203K66	109.67
2″	20	1.06″	0.53″	3.56″	1	0.44″	3.25″	6-32	0.188″	0.5″	0.31″	3.13″	0.22″	6-32	6203K77	128.33
3″	14	0.75″	0.41″	4.06″	1	0.38″	3.63″	4-40	0.125″	0.38″	0.25″	3.38″	0.34″	4-40	6203K67	120.17
3″	25	1.06″	0.53″	4.56″	1	0.44″	4″	6-32	0.188″	0.5″	0.31″	3.25″	0.66″	6-32	6203K78	144.67
Standard Height																
1″	25	1.75″	0.75″	1.75″	2	1″	1.12″	6-32	0.250″	0.88″	0.40″	1.12″	0.31″	6-32	6203K41	145.98
1″	62	2.62″	1″	2.62″	3	—	2″	10-32	0.560″	1.48″	0.61″	2″	0.31″	¼″-20	6203K44	194.20
2″	40	1.75″	0.75″	3″	4	1″	0.5″	6-32	0.440″	0.88″	0.40″	2.38″	0.31″	6-32	6203K42	159.38
2″	88	2.62″	1″	4″	5	2″	0.5″	10-32	0.310″	1.48″	0.61″	0.69″	0.31″	¼″-20	6203K45	208.93
3″	55	1.75″	0.75″	4″	4	1″	0.5″	6-32	0.440″	0.88″	0.40″	3.38″	0.31″	6-32	6203K43	178.12
3″	100	2.62″	1″	5″	5	2″	1″	10-32	0.310″	1.48″	0.61″	1.19″	0.31″	¼″-20	6203K46	227.68
4″	123	2.62″	1″	6″	5	2″	0.5″	10-32	0.310″	1.48″	0.61″	1.69″	0.31″	¼″-20	6203K56	257.14
6″	154	2.62″	1″	9″	4	2″	2″	10-32	0.380″	0.94″	0.69″	3.5″	1″	¼″-20	6203K57	359.80
High-Load Cylindrical-Roller Bearing Style Slides																
Low Profile																
0.5″	30	0.56″	0.32″	1.06″	1	0.22″	0.63″	2-56	0.107″	0.25″	0.19″	0.75″	0.16″	2-56	6257K21	145.83
0.5″	48	0.75″	0.41″	1.06″	1	0.38″	0.63″	4-40	0.125″	0.38″	0.25″	0.75″	0.16″	4-40	6257K22	165.67
0.75″	110	1.06″	0.53″	1.56″	1	0.44″	1.25″	6-32	0.188″	0.5″	0.31″	1.13″	0.22″	6-32	6257K16	198.74
1″	78	0.75″	0.41″	2.06″	1	0.38″	1.63″	4-40	0.125″	0.38″	0.25″	1.38″	0.34″	4-40	6257K24	198.74
1.5″	132	1.06″	0.53″	2.56″	1	0.44″	2.25″	6-32	0.188″	0.5″	0.31″	2.13″	0.22″	6-32	6257K25	215.83
2″	94	0.75″	0.41″	3.06″	1	0.38″	2.63″	4-40	0.125″	0.38″	0.25″	2.38″	0.34″	4-40	6257K17	210.41
2″	220	1.06″	0.53″	3.56″	1	0.44″	3.25″	6-32	0.188″	0.5″	0.31″	3.13″	0.22″	6-32	6257K28	249.67
3″	264	1.06″	0.53″	4.56″	1	0.44″	4″	6-32	0.188″	0.5″	0.31″	3.25″	0.66″	6-32	6257K29	282.33

★ Threaded through holes.

High-Capacity Manual-Position Slides

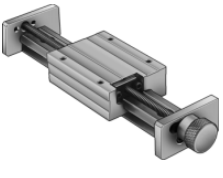

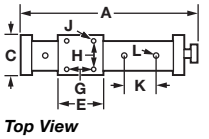

Top View

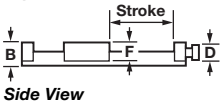

Side View

To handle high loads, these slides have an aluminum carriage lined with Frelon (a PTFE-filled composite). They also have a Type 303 stainless steel precision lead screw, which makes them good for manual-positioning applications. Lead screws are accurate to 0.0006″ per inch of travel. Screw lead (the distance a load moves with one revolution of the screw) is 0.19″. Maximum temperature is 300° F.

All of these slides have self-lubricated sleeve bearings to move smoothly, even in dirty environments. End blocks are aluminum. Carriages have four threaded holes. Depending on length, rails for 499-lb. capacity slides have 4, 8, or 12 counterbored unthreaded holes centered on the rail with an M3 cap screw size. Rails for 800-lb. capacity slides have 3, 5, or 8 counterbored unthreaded holes centered on the rail with an M5 cap screw size. For horizontal mounting.

X-Y plates let you mount a second slide for motion in two directions. They have four counterbored through holes (cap screw size is M3 for 9222T41; M4 for 9222T42).

Static Load Cap., lbs.	Stroke Lg.	O'all Lg. (A)	O'all Ht. (B)	O'all Wd. (C)	Dia. (D)	Carriage Wd. (E)	Carriage Ht. (F)	Carriage Ctr.-to-Ctr. (G)	Carriage Ctr.-to-Ctr. (H)	Carriage Screw Size (J)	Base Mount. Holes Ctr.-to-Ctr. (K)	Base Mount. Holes Dia. (L)	Slides		X-Y Plate	
499	4.35″	7.42″	0.63″	1.81″	0.40″	1.65″	0.55″	0.79″	0.98″	M4	1.58″	0.14″	9222T11	$231.36	9222T41	$39.22
499	10.35″	13.25″	0.63″	1.81″	0.40″	1.65″	0.56″	0.79″	0.98″	M4	1.58″	0.14″	9222T12	282.51	9222T41	39.22
499	16.35″	19.25″	0.63″	1.81″	0.40″	1.65″	0.55″	0.79″	0.98″	M4	1.58″	0.14″	9222T13	333.64	9222T41	39.22
800	3.56″	7.4″	0.98″	1.80″	0.72″	2.44″	0.84″	1.50″	1.50″	M4	2.36″	0.24″	9222T21	251.44	9222T42	39.22
800	9.56″	13.4″	0.98″	1.80″	0.72″	2.44″	0.84″	1.50″	1.50″	M4	2.36″	0.24″	9222T22	302.58	9222T42	39.22
800	15.56″	19.4″	0.98″	1.80″	0.72″	2.44″	0.84″	1.50″	1.50″	M4	2.36″	0.24″	9222T23	353.71	9222T42	39.22

Manual-Position Slides

A precision lead screw allows you to use these slides in a variety of manual-positioning applications for laboratory and production equipment as well as for positioning parts in drilling, fastening, assembly, and gauging jobs. The lead screw is Type 303 stainless steel for 15- and 30-lb. capacity models; nickel-plated steel for 100-lb. capacity models. Screw lead (the distance a load moves with one revolution of the screw) is listed in the table.

All of these slides have Rulon-lined sleeve bearings to move smoothly, even in dirty environments. The carriages and bases are made of aluminum. Carriages have four threaded mounting holes. Bases have two or more countersunk mounting holes for flat head screws. Capacities listed are for horizontal mounting. When mounted vertically, the load capacity is cut in half. Maximum temperature is 180° F.

Precision Slides— Lead screws are accurate to 0.007″ per 10 inches of travel.

Ultra-Precision Slides— Have a micrometer-like position readout (to 0.001″) for measuring travel distance. They also have linear scales with 0.025″ divisions and index pointers. Lead screws are accurate to 0.0015″ per 10 inches of travel.

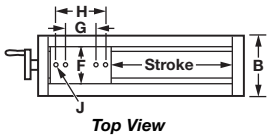

Top View

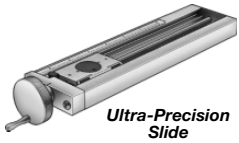
Ultra-Precision Slide

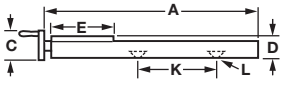

Side View

Horiz. Load Cap., lbs.	Stroke Lg.	Screw Lead	Lg. (A)	O'all Size Wd. (B)	O'all Size Ht. (C)	Ht. (D)	Carriage Lg. (E)	Carriage Wd. (F)	Carriage Ctr.-to-Ctr. (G)	Carriage Ctr.-to-Ctr. (H)	Carriage Screw Size (J)	Base Ctr.-to-Ctr. (K)	Base Screw Size (L)	Precision Slides		Ultra-Precision Slides	
15	1.5″	0.05″	4″	1.5″	0.61″	0.56″	1.5″	0.62″	0.688″	1.188″	6-32	2″	8-32	5236A15	$242.86	5242A14▲	$380.00
15	4.5″	0.05″	7″	1.5″	0.61″	0.56″	1.5″	0.62″	0.688″	1.188″	6-32	3″	8-32	5236A16	269.64	5242A11▲	403.33
15	7.5″	0.05″	10″	1.5″	0.61″	0.56″	1.5″	0.62″	0.688″	1.188″	6-32	3″	8-32	5236A17	298.74	5242A12▲	438.33
15	10.5″	0.05″	13″	1.5″	0.61″	0.56″	1.5″	0.62″	0.688″	1.188″	6-32	3″	8-32	5236A18	328.57	5242A13▲	463.33
30	1.5″	0.05″	5.12″	2.5″	1.75″	0.81″	2.5″	1.25″	1.188″	2.062″	8-32	3″	10-32	5236A22	337.50	5242A19	561.67
30	3.5″	0.05″	7.12″	2.5″	1.75″	0.81″	2.5″	1.25″	1.188″	2.062″	8-32	3″	10-32	5236A23	369.64	5242A21	588.33
30	6.5″	0.05″	10.12″	2.5″	1.75″	0.81″	2.5″	1.25″	1.188″	2.062″	8-32	3″	10-32	5236A24	403.57	5242A22	618.33
100	2″	0.1″	7.13″	4″	1.75″	1.06″	4″	2.35″	2″	3.25″	10-32	3″	¼″-20	5236A27	471.43	5242A31	691.67
100	5″	0.1″	10.13″	4″	1.75″	1.06″	4″	2.35″	2″	3.25″	10-32	3″	¼″-20	5236A29	501.72	5242A32	741.67
100	8″	0.1″	13.13″	4″	1.75″	1.06″	4″	2.35″	2″	3.25″	10-32	3″	¼″-20	5236A31	533.33	5242A33	796.67
100	11″	0.1″	16.13″	4″	1.75″	1.06″	4″	2.35″	2″	3.25″	10-32	3″	¼″-20	5236A32	590.30	5242A34	858.33
100	14″	0.1″	19.13″	4″	1.75″	1.06″	4″	2.35″	2″	3.25″	10-32	3″	¼″-20	5236A33	648.83	5242A35	920.00

▲(C) dimension is 1.75″.

High-Speed Needle-Roller Bearing Carriages and Guide Rails

The needle-roller bearings inside these carriages give you smooth operation at faster speeds than ball bearing and track roller carriages. Rollers are made of steel and are permanently lubricated, saving maintenance time and effort. Install these carriages and guide rails in any position without affecting load capacity. Maximum temperature is 176° F.

Carriages— Made of aluminum with nylon end caps. All have four threaded through-holes for mounting.

Lockable carriages also have a side handle to lock them in place along the rail. Clamping force is 44 lbs. for 9881K22, 56 lbs. for 9881K33, and 78 lbs. for 9881K44.

Guide Rails— Made of anodized aluminum with hardened and ground steel inserts. The rollers ride on the inserts. **To Order:** For rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

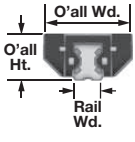

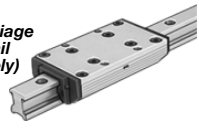
Nonlocking Carriage and Guide Rail (Sold Separately)

Lockable Carriage and Guide Rail (Sold Separately)

Rail Wd., mm	Dyn. Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	O'all Size Lg., mm	Mount. Holes Screw Size	Mount. Holes Dp., mm	Nonlocking	Each	Lockable	Each	Guide Rails: Available Lengths, mm	Socket Head Cap Screw Size		Per mm
12	629	19	37	74	M4	12	9870K1	$136.62	—	—	220; 340; 640; 1,240	M3	9870K11	$0.21
15.5	944	24	47	88	M5	15	9870K2	136.62	9881K22	$214.11	220; 340; 640; 1,240	M4	9870K12	.21
23	2,023	36	70	108	M8	24.5	9870K3	161.98	9881K33	254.66	220; 340; 640; 1,240	M6	9870K13	.24
32	2,810	48	100	145	M10	30.5	9870K4	215.28	9881K44	339.11	220; 340; 640; 1,240	M8	9870K14	.28

Track Roller Carriages and Guide Rails

Suitable for dirty environments, these lightweight, easy-to-install carriages have four external V-groove track rollers that are lubricated and sealed for life. They are also extra wide for greater rigidity and load capacity. Install these carriages and guide rails in any position without affecting load capacity. Maximum temperature is 158° F.

Carriages— Made of aluminum with steel rollers. All have six threaded through-holes for mounting.

Guide Rails— Made of hardened steel. **To Order:** For rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

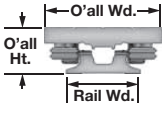

Carriage and Guide Rail (Sold Separately)

Rail Wd., mm	Dynamic Load Cap., lbs.	O'all Ht., mm	Carriages: O'all Size Wd., mm	O'all Size Lg., mm	Mount. Holes Screw Size	Mount. Holes Dp., mm		Each	Guide Rails: Available Lengths, mm	Socket Head Cap Screw Size		Per mm
50	222	32	80	90	M4	0.7	9685K1	$330.39	200; 400; 700; 1,000	M3	9685K11	$0.56
72	551	43	116	127	M6	1	9685K2	377.59	400; 800; 1,150; 1,800	M5	9685K12	.47
102	1,499	57	165	172	M8	1.25	9685K3	473.66	500; 800; 1,100; 2,200	M6	9685K13	.48
140	3,526	69	222	242	M10	1.5	9685K4	608.03	750; 1,100; 1,500; 2,000	M8	9685K14	.60

Miniature Track Roller Carriages and Guide Rails

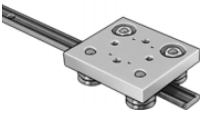

Steel-Wheel Carriage and Guide Rail (Sold Separately)

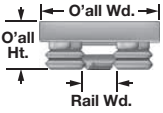

Sized just right for electronic, medical, and packaging applications, these compact carriages and guide rails have V-groove wheels and a double-edged track for smooth, precise movement. Install these carriages and guide rails in any position without affecting load capacity. Maximum temperature is 248° F.

Carriages— Made of anodized aluminum, these carriages come lubricated and have two adjustment screws that allow you to tighten or loosen snugness on the rail. All have four threaded mounting holes. *Steel wheels* allow for a higher load capacity. *Polymer wheels* are lightweight and suitable for corrosive environments.

Guide Rails— Made of carbon steel. ***Rail support spacers*** (sold separately) are required for carriage clearance. **To Order:** For rails, please specify length from the choices listed below.

Rail Wd.	Dynamic Load Cap., lbs.	O'all Ht.	Carriages: O'all Size Wd.	Lg.	Mount. Holes Screw Size	Dp., mm	Each	Guide Rails: Available Lengths	Socket Head Cap Screw Size	Per Inch
Carriage with Steel Wheels										
0.516″	110	0.709″	1.75″	2″	M4	0.7	9374T1 $115.65	6.5″, 12.5″, 18.5″, 24.5″, 30.5″, 36.5″	6-32	9374T4 $2.35
Carriage with Polymer Wheels										
0.516″	14	0.709″	1.75″	2″	M4	0.7	9374T2 90.38	6.5″, 12.5″, 18.5″, 24.5″, 30.5″, 36.5″	6-32	9374T4 2.35

Rail Support Spacers (order one per rail mounting hole) ..... 9374T3 Each $4.13

Side-Mount Track Roller Carriages and Guide Rails

Track Roller Carriage and Guide Rail (Sold Separately)

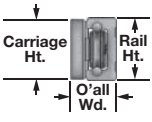

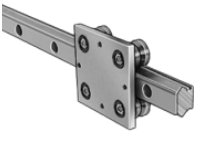

V-Groove Track Roller Carriage and Guide Rail (Sold Separately)

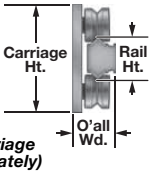

Lightweight and easy-to-install for applications that require side mounting.

Carriages with Steel Track Rollers— These carriages and guide rails have three internal track rollers for fast speeds and quiet operation. Their enclosed track design keeps out large debris, plus they can generally sustain greater loads than standard track-roller systems. Maximum temperature is 180° F.

All of the carriages are aluminum and allow you to adjust how snug the roller fits to the rail. They have two threaded through-holes for mounting. *Metric carriages* also have end caps with oil-impregnated plastic wipes that slide along the rail to sweep away contaminants. All rails are aluminum with hardened and ground steel raceways.

Carriages with Steel V-Groove Track Rollers— These carriages and guide rails have four external V-groove track rollers that create less friction than linear ball bearings. The rollers are lubricated and sealed for life, so they are suitable for dirty environments. Maximum temperature is 176° F.

All carriages are anodized aluminum and have six threaded holes for mounting. The rails are anodized aluminum with hardened steel raceways.

To Order: For all rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Rail Ht.	Dynamic Load Cap., lbs.	O'all Wd.	Carriages: Lg.	Ht.	Mount. Holes Screw Size	Dp.	Each	Guide Rails: Available Lengths	Socket Head Cap Screw Size	Per Inch
Inch Carriages with Steel Track Rollers										
1 21/64″	336	61/64″	3 1/4″	1 1/4″	1/4″-28	0.34″	6738K41 $58.33	12″; 24″; 36″; 72″	10-32	6738K73 $2.29
1 29/32″	847	1 1/8″	4 1/2″	1 1/2″	5/16″-24	0.37″	6738K42 80.00	12″; 24″; 36″; 72″	1/4″-20	6738K72 2.79
Metric Carriages with Steel Track Rollers—Dimensions in mm										Per mm
30	225	28	87	25	M5	12	6738K221 70.00	480; 720; 960; 1,440	M5	6738K74 $0.08
45	598	33	117	38	M8	13	6738K222 88.33	480; 720; 960; 1,440	M6	6738K75 .09
65	1,338	42	162	51	M8	13	6738K223 151.67	480; 720; 960; 1,440	M6	6738K76 .11
Metric Carriages with Steel V-Groove Track Rollers—Dimensions in mm										
18	546	25	70	65	M5	6	71625K15 209.17	1,000; 1,500; 2,000	M5	71625K35 .20
23	557	36	90	80	M8	12	71625K16 241.98	1,000; 1,500; 2,000	M6	71625K36 .21
36	658	54	100	120	M10	19	71625K17 304.57	1,000; 1,500; 2,000	M10	71625K37 .22

Light Duty Side-Mount Carriages and Guide Rails

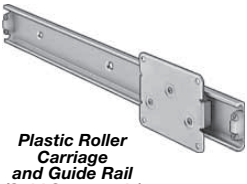

Plastic Roller Carriage and Guide Rail (Sold Separately)

Stainless Steel Ball Bearing Carriage and Guide Rail (Sold Separately)

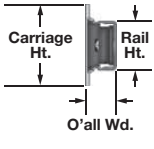

Use these carriages and guide rails for light-load linear motion where tight tolerances aren't required. All are designed for side mounting. Maximum temperature is 176° F.

Carriage with Plastic Rollers— Made of steel with plastic rollers, this carriage offers a low-cost alternative to ball bearing carriages for light duty applications. It has four unthreaded through-holes for mounting. Rails are aluminum.

Carriages with Stainless Steel Ball Bearings— Carriages have two rows of recirculating, Type 440C stainless steel ball bearings. Steel retainers keep balls in when carriages are removed from the rails. Synthetic rubber end seals keep lubricants in and dirt out. All carriages have four threaded through-holes for mounting. Rails are Type 304 stainless steel. Use the optional *connector plates* to mount rails end to end for greater travel.

To Order: For all rails, please specify length from the choices listed below.

Note: Carriages can only be used with guide rails listed on the same line in the table.

Rail Ht., mm	Static Load Cap., lbs.	O'all Wd., mm	Carriages: Lg., mm	Ht., mm	Mount. Holes Screw Size	Dp., mm	Each	Guide Rails: Available Lengths, mm	Screw Size/ Slot Size (Lg. × Wd.)	Per mm	Connector Plates Each
Carriages with Plastic Rollers											
36	18	12	70	60	4.5	1.6	9725K2 $51.06	150; 350; 550; 650	M4	9725K3 $0.17	— —
Carriages with Stainless Steel Ball Bearings											
24.8	132	12	66	42	M4	2.3	6004K13 55.56	320; 640; 880; 1,200	5.3 × 4.6	6004K84 .16	6004K93 $11.11
37.4	197	16.2	100	60	M5	3	6004K14 59.26	300; 500; 1,000; 1,800	5.3 × 4.6	6004K85 .16	6004K94 11.11
50.4	440	17	126	85	M5	3	6004K15 85.19	500; 700; 1,000; 1,500	7 × 6	6004K86 .18	6004K95 12.73

Side-Mount Track Rollers and Guide Rails

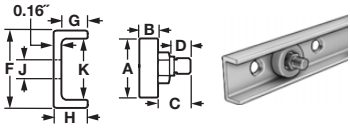

Polymer Roller and Aluminum Rail (Sold Separately)

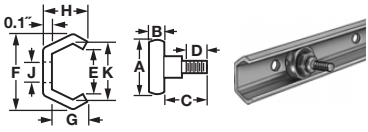

Stainless Steel Roller and Rail (Sold Separately)

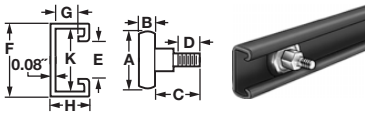

Steel Roller and Rail (Sold Separately)

Just like on your garage door, these stud-mount rollers ride on a rail. They can be loaded for a snug or loose fit in the rail.

Polymer Rollers and Aluminum Rail— These economical rollers are polymer with Type 440C stainless steel shielded ball bearings. Rails are anodized aluminum. Maximum temperature is 158° F. The *6-lb. capacity rollers* have an M6 threaded stud; *12-lb. capacity rollers* have an M8 threaded stud.

Stainless Steel Roller and Rail— Offering excellent corrosion resistance, the roller is Type 440 stainless steel with double-sealed Type 440 stainless steel ball bearings. Roller has an M5 threaded stud. The rail is Type 316 stainless steel and can be cut to size. Maximum temperature is 212° F.

Steel Roller and Rail— This high-capacity roller is steel with double-sealed steel ball bearings. It has a 5/16″-18 threaded stud. The rail is powder-coated steel and can be cut to size. Maximum temperature is 176° F. Mount rail by drilling holes or use the *optional L-angle mounting bracket*, which is 1 9/32″ Lg. × 1 1/2″ Wd. × 0.120″ Thick. To install, weld bracket to back of rail. *Optional end stop* prevents overtravel of rollers but is not designed to support loads.

To Order: For all rails, please specify length from 1 to 8 ft. in 1-ft. increments.

Note: Track rollers can only be used with guide rails listed on the same line in the table.

Dyn. Load Cap., lbs.	Track Rollers (A)	(B)	(C)	(D)		Each	Guide Rails (E)	(F)	(G)	(H)	Mount. Holes Dia. (J)	(K)		Per Ft.	End Stop	Each
Polymer Rollers— *Rail is aluminum*																
6	0.58″	0.25″	0.42″	0.3″	60135K91	$14.80	—	0.79″	0.28″	0.43″	0.326″	0.61″	60135K92	$19.82	—	—
12	0.77″	0.31″	0.46″	0.32″	60135K94	15.19	—	1.02″	0.43″	0.59″	0.385″	0.8″	60135K95	21.60	—	—
Stainless Steel Roller— *Rail is stainless steel*																
89	0.9″	0.28″	0.77″	0.5″	60135K51	36.65	0.82″	1.16″	0.49″	0.59″	0.25″	0.97″	60135K52	34.16	—	—
Steel Roller— *Rail is steel*																
300	1.36″	0.38″	1.06″	0.5″	60135K71	17.47	0.88″	1.63″	0.49″	0.81″	—	1.48″	60135K13	9.86	60135K12	$3.13
L-Angle Mounting Bracket for Steel Rail													60135K31	Each		$15.00

Telescopic Slides

Allowing motion beyond your mounting surface, these slides are great for pick-and-place automated applications, machine tool doors, and telescopic industrial press arms. They function similarly to drawer slides, but they're more rugged and support heavier loads. Use them where tight tolerances are not required.

Slides are hardened zinc-plated steel with threaded through-holes. Ball bearings and rails are hardened steel. The rails accept flat head screws. Load capacities listed are for side mounting. If mounted horizontally or upside down, load capacity is 70% of the capacity listed. Not recommended for vertical mounting. Maximum temperature is 338° F.

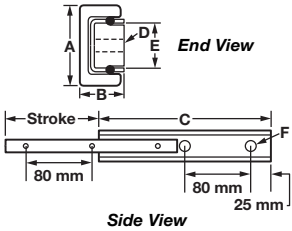

End View

Side View

Stroke Length, mm	Dynamic Load Cap., lbs.	O'all Ht. (A), mm	O'all Wd. (B), mm	Lg. (C), mm	Mounting Holes (D) Screw Size	Dp., mm	No. of Holes	Ht. (E), mm	Mounting Holes (F) Screw Size	No. of Holes		
76	70	22	11	130	M4	6.5	2	11	M4	2	8379K1	$89.19
111	160	22	11	210	M4	6.5	3	11	M4	3	8379K2	99.72
148	434	28	13	290	M5	7.5	4	15	M5	4	8379K5	124.56
196	287	22	11	370	M4	6.5	5	11	M4	5	8379K3	141.75
232	664	28	13	450	M5	7.5	6	15	M5	6	8379K6	156.46
274	444	22	11	530	M4	6.5	7	11	M4	7	8379K4	165.89
313	1,666	43	22	610	M8	13.5	8	23	M8	8	8379K12	266.58
315	896	28	13	610	M5	7.5	8	15	M5	8	8379K7	188.36
398	2,075	43	22	770	M8	13.5	10	23	M8	10	8379K13	326.93
399	1,125	28	13	770	M5	7.5	10	15	M5	10	8379K8	231.36
475	1,424	28	13	930	M5	7.5	12	15	M5	12	8379K9	252.39
483	2,485	43	22	930	M8	13.5	12	23	M8	12	8379K14	357.86
517	1,539	28	13	1,010	M5	7.5	13	15	M5	13	8379K11	273.95
518	2,795	43	22	1,010	M8	13.5	13	23	M8	13	8379K15	388.23
688	3,613	43	22	1,330	M8	13.5	17	23	M8	17	8379K16	510.99
758	4,236	43	22	1,490	M8	13.5	19	23	M8	19	8379K17	541.64

Roller Bearing Slide Sets

Get low-profile, space-saving linear motion with these slide sets. A set includes four rails, two roller bearing cage slides, and eight end stops. Maximum temperature is 176° F.

Rollers are made of steel and are retained in a plastic cage. Rails are made of precision ground and hardened steel and have threaded and counterbored holes for easy mounting with socket head cap screws. Mount in any position without affecting load capacity.

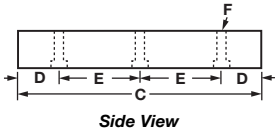

Side View

End View

Stroke Length, mm	Dynamic Load Cap., lbs. (Per Set)	O'all Ht. (A), mm	O'all Wd. (B), mm	Lg. (C), mm	End-to-Ctr. (D), mm	Ctr.-to-Ctr. (E), mm	Mounting Holes (F) Screw Size	No. of Holes		Set
50	292	8	18	75	12.5	25	M4	3	6500K16	$303.64
70	380	8	18	100	12.5	25	M4	4	6500K17	352.73
100	585	8	18	150	12.5	25	M4	6	6500K18	453.33

Linear Bearings for T-Slotted Framing

Here's a versatile solution to guided linear motion applications that don't require high precision. *Note:* For structural hardware and accessories, see pages 1922-1925.

Sleeve-Bearing Carriages— Suitable for washdown applications, these carriages have an anodized aluminum shell that's lined with an extra-tough UHMW (ultra-high molecular weight) polyethylene bearing pad. The pads are self-lubricating and USDA approved. All of these carriages are designed for horizontal mounting. Maximum temperature is 180° F.

High-strength sleeve-bearing carriages have threaded inserts that secure the bearing pad lining to the outer shell. They're the choice for jobs with frequent starting and stopping. They're also good for pick and place, parts transfer, and other high-speed applications.

Track Roller Carriages— Made of aluminum with nylon rollers and permanently lubricated plain bronze bearings. You can use several of these carriages on a rail at once. Mount so wheels are positioned vertically. Two T-nut fasteners and two socket head cap screws are included. Maximum temperature is 150° F.

T-Slotted Guide Rails— Made of anodized aluminum, rails can be easily cut to length and drilled for mounting.

Optional hand brakes mount on the carriages to hold them in place on the rail. *Standard sleeve-bearing carriages* have a mounting hole for the brakes. *High-strength sleeve-bearing carriages* require you to drill a mounting hole for the brake.

Optional end caps mount on the rails to prevent overtravel.

T-nut fasteners (sold separately) let you mount components to the carriages.

Sleeve-Bearing Carriages and Hand Brakes

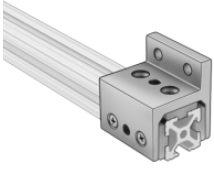

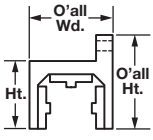

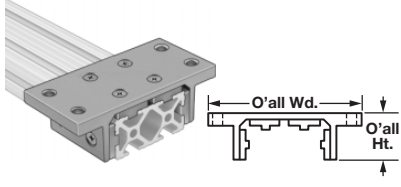

For Guide Rail Wd.	Dynamic Load Cap., lbs.	Side-Mount Carriages O'all Lg.	O'all Wd.	O'all Ht.	Ht.		Each	Base-Mount Carriages O'all Lg.	O'all Wd.	O'all Ht.		Each	Hand Brakes	Each
Standard														
1″	75	1 7/8″	1 5/8″	2″	1 5/16″	60585K18	$43.51	1 7/8″	2 15/16″	1 1/4″	60585K35	$46.16	60585K31	$10.77
1″	150	4″	1 5/8″	2″	1 5/16″	60585K19	55.86	4″	2 15/16″	1 1/4″	60585K36	59.41	60585K31	10.77
1 1/2″	75	2 13/16″	2 1/2″	2 3/4″	2″	60585K33	55.35	2 13/16″	4″	1 7/8″	60585K39	58.00	60585K32	15.50
1 1/2″	150	6″	2 1/2″	2 3/4″	2″	60585K34	71.47	6″	4″	1 7/8″	60585K75	75.02	60585K32	15.50
2″	100	—	—	—	—	—	—	1 7/8″	3 15/16″	1 1/4″	60585K37	63.07	60585K31	10.77
2″	200	—	—	—	—	—	—	4″	3 15/16″	1 1/4″	60585K38	82.57	60585K31	10.77
3″	100	—	—	—	—	—	—	2 13/16″	5 1/2″	1 7/8″	60585K76	65.44	60585K32	15.50
3″	200	—	—	—	—	—	—	6″	5 1/2″	1 7/8″	60585K77	84.94	60585K32	15.50
High Strength														
1 1/2″	75	2 13/16″	2 1/2″	2 3/4″	2″	60585K78	68.09	2 13/16″	4″	1 7/8″	60585K91	70.74	60585K32	15.50
1 1/2″	150	6″	2 1/2″	2 3/4″	2″	60585K79	84.21	6″	4″	1 7/8″	60585K92	87.76	60585K32	15.50
3″	100	—	—	—	—	—	—	2 13/16″	5 1/2″	1 7/8″	60585K93	78.12	60585K32	15.50
3″	200	—	—	—	—	—	—	6″	5 1/2″	1 7/8″	60585K94	97.68	60585K32	15.50

Track Roller Carriages

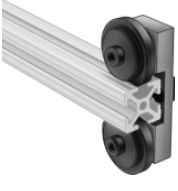

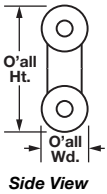

Side View

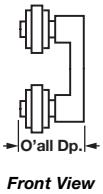

Front View

For Guide Rail Size Wd.	Ht.	Dynamic Load Cap., lbs.	O'all Ht.	O'all Wd.	O'all Dp.		Each
1″	1″	25	3 5/8″	1 1/2″	1 5/16″	9904K1	$56.67
1 1/2″	1 1/2″	25	5 1/8″	2″	1 7/8″	9904K3	64.17
2″	1″	25	4 5/8″	1 1/2″	1 5/16″	9904K2	57.29
3″	1 1/2″	25	6 5/8″	2″	1 7/8″	9904K4	64.79

T-Slotted Guide Rails

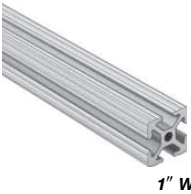

1″ Wd.

2″ Wd.

To Order: Please specify 2-, 4-, 6-, 8-, or 10-ft. length.

Guide Rail Size Wd.	Ht.		Each 2 ft.	4 ft.	6 ft.	8 ft.	10 ft.
1″	1″	47065T101	$8.35	$14.20	$19.79	$26.38	$31.59
1 1/2″	1 1/2″	47065T102	15.04	26.90	39.31	51.36	61.94
2″	1″	47065T107	12.85	22.98	33.95	44.64	52.11
3″	1 1/2″	47065T108	26.10	48.12	67.30	92.08	110.45

End Caps

1″ Wd.

2″ Wd.

For Guide Rail Size Wd.	Ht.		Each
1″	1″	47065T91	$1.20
1 1/2″	1 1/2″	47065T87	1.50
2″	1″	47065T92	1.50
3″	1 1/2″	47065T16	1.80

T-Nut Fasteners

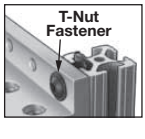

For Guide Rail Wd.		Pkg. of 4
1″	47065T139	$1.85
1 1/2″	47065T97	2.71

About Precision Acme Threaded Rods

Count on precision Acme threaded rods to simply and effectively convert rotary motion into smooth, precise linear motion. Although not as efficient as ball screws, they're more economical and are great for handling jobs with lower speeds and fewer cycles.

Precision Acme threads are broader, stronger, and more square than standard V-shaped threads, which means they're better suited for carrying loads. They have a 2C (self-centering; tight and precise) thread fit and a smooth finish that increases rod life by reducing friction. Lower-precision general purpose Acme threaded rods have a 2G (general) thread fit. The 2C and 2G thread fits are compatible, but when used together you will lose the precision of the 2C thread fit.

Acme Size— Indicates the diameter of the rod and the number of threads per inch. For example, a rod with an Acme size of ½″-8 has a diameter of ½″ with 8 threads per inch.

Travel Distance per Turn— The distance a nut will travel with one revolution of the threaded rod. Accuracy for travel distance per turn is 0.009″ or better per foot.

Standard- and ***Fast-Travel Rods—*** The number of individual threads on a rod determines how fast a nut will travel on the rod. Our ***standard-travel rods*** (also known as single-start rods) are the most common rods and have a single thread that runs the length of the rod. Our ***fast-travel rods*** (also known as multiple-start rods) have multiple threads that run the length of the rod. Standard-travel rods must be used with standard-travel nuts and fast-travel rods must be used with fast-travel nuts.

Speed Ratio— Indicates how fast a nut will travel on the threaded rod. The first number in the speed ratio corresponds to the number of starts for that rod or nut. Compared to standard-travel rods, fast-travel rods provide more travel (speed) for each turn of the rod. For example:

Acme Size and Style of Rod	Speed Ratio	Travel Distance per Turn	Travel Distance per 100 Turns
¾″-8 Standard Travel	1:1	⅛″	12½″
¾″-8 Fast Travel	2:1	¼″	25″
¾″-8 Fast Travel	4:1	½″	50″

Right-Hand and Left-Hand Threads

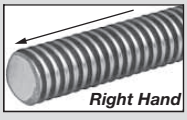

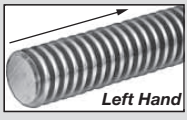

Turn the threaded rods clockwise and your nuts will travel in the direction shown. *Note:* Right-hand threads are the most common threads.

Standard-Travel Precision Acme Threaded Rods

The workhorse of precision Acme threaded rod, these standard-travel (single-start) rods have a 1:1 speed ratio. Accuracy for travel distance per turn is 0.009″ or better per foot. Use with standard-travel nuts that have the same Acme size. For nuts, see the following page.

1018 Carbon Steel— Minimum tensile strength is 64,000 psi. Hardness is 126-180 Brinell. ***Heat-Treated 4140 Alloy Steel—*** Harder than 1018 carbon steel, these rods ensure greater strength and durability. Minimum tensile strength is 125,000 psi. Hardness is 271 Brinell. All have a black-oxide finish. ***Type 304 Stainless Steel—*** The choice for corrosion resistance. Minimum tensile strength is 72,000 psi. Hardness is 150-220 Brinell.

Precision Acme Threaded Rods

To Order: Please specify 3-ft. or 6-ft. lengths (except for Acme size ¼″-16 and ¼″-20 Type 304 Stainless Steel rods, which are only available in 6-ft. lengths).

Acme Size	Travel Dist. per Turn	Right-Hand Threads	Per Ft.	Left-Hand Threads	Per Ft.
1018 Carbon Steel					
¼″-16	1/16″	99030A632	$8.02	99030A832	$8.02
⅜″-8	⅛″	99030A126	9.47	—	—
⅜″-10	1/10″	99030A127	9.47	99030A827	8.50
⅜″-16	1/16″	99030A134	9.47	99030A934	9.37
½″-10	1/10″	99030A805	5.20	99030A905	5.73
⅝″-8	⅛″	99030A809	9.47	99030A909	9.47
⅝″-10	1/10″	99030A428	11.21	99030A928	16.58
¾″-5	⅕″	99030A813	11.06	99030A913	11.06
¾″-6	⅙″	99030A817	10.95	99030A917	10.95
¾″-8	⅛″	99030A275	13.07	99030A875	14.40
¾″-10	1/10″	99030A852	11.06	99030A552	9.67
¾″-16	1/16″	99030A277	18.75	99030A977	20.01
1″-4	¼″	99030A218	15.93	99030A918	15.93
1″-5	⅕″	99030A225	10.70	99030A925	10.70
1″-6	⅙″	99030A829	10.98	99030A929	10.98
1″-8	⅛″	99030A276	18.89	99030A976	20.40
1″-10	1/10″	99030A833	11.30	99030A933	11.30
1¼″-4	¼″	99030A841	13.44	99030A941	13.44
1¼″-5	⅕″	99030A845	13.44	99030A945	13.44
1½″-4	¼″	99030A853	20.13	99030A953	20.13
1½″-10	1/10″	99030A631	45.50	99030A931	45.50
2″-2	½″	99030A608	66.50	99030A908	66.50
2″-4	¼″	99030A857	34.80	99030A657	34.80
2″-5	⅕″	99030A623	61.85	99030A923	61.85
2½″-2	½″	99030A810	92.72	99030A910	92.72
2½″-3	⅓″	99030A614	89.47	99030A914	89.47
2½″-4	¼″	99030A865	61.13	99030A965	61.13
Heat-Treated 4140 Alloy Steel					
⅜″-8	⅛″	98940A261	9.43	98940A263	9.43
⅜″-10	1/10″	98940A271	10.51	98940A273	10.51
⅜″-12	1/12″	98940A281	13.95	98940A283	13.95
⅜″-16	1/16″	98940A291	12.73	98940A293	12.73
½″-10	1/10″	98940A321	11.14	98940A323	11.14
⅝″-5	⅕″	98940A331	13.83	98940A333	13.83
Heat-Treated 4140 Alloy Steel (Cont.)					
⅝″-8	⅛″	98940A341	$18.76	98940A343	$18.76
⅝″-10	1/10″	98940A351	22.15	98940A353	22.15
¾″-5	⅕″	98940A361	23.23	98940A363	23.23
¾″-6	⅙″	98940A371	15.62	98940A373	15.62
¾″-10	1/10″	98940A381	25.36	98940A383	25.36
1″-4	¼″	98940A391	24.81	98940A393	24.81
1″-5	⅕″	98940A441	33.24	98940A443	33.24
1″-6	⅙″	98940A451	36.12	98940A453	36.12
1″-10	1/10″	98940A461	37.29	98940A463	37.29
1¼″-4	¼″	98940A481	29.72	98940A483	29.72
1¼″-5	⅕″	98940A491	29.72	98940A493	29.72
1½″-4	¼″	98940A541	35.46	98940A553	35.46
1½″-5	⅕″	98940A551	46.07	98940A563	46.07
2″-4	¼″	98940A561	67.20	98940A573	67.20
Type 304 Stainless Steel					
¼″-16	1/16″	98980A209	112.86	—	—
¼″-20	1/20″	98980A211	108.73	—	—
⅜″-8	⅛″	98980A520	15.54	98980A220	20.62
⅜″-10	1/10″	98980A535	14.73	98980A831	20.62
⅜″-12	1/12″	98980A545	14.93	98980A247	11.67
⅜″-16	1/16″	98980A526	14.15	98980A326	18.59
½″-10	1/10″	98980A570	12.20	98980A332	24.32
⅝″-8	⅛″	98980A585	16.00	98980A285	21.86
⅝″-10	1/10″	98980A587	20.26	98980A287	23.29
¾″-5	⅕″	98980A590	21.21	98980A290	25.08
¾″-6	⅙″	98980A593	21.49	98980A293	26.26
¾″-10	1/10″	98980A595	23.45	98980A295	27.75
1″-4	¼″	98980A605	34.43	98980A305	41.12
1″-5	⅕″	98980A610	34.40	98980A210	37.50
1″-6	⅙″	98980A309	42.40	98980A815	44.83
1″-10	1/10″	98980A311	47.29	98980A230	47.29
1¼″-5	⅕″	98980A135	64.47	98980A145	64.47
1½″-4	¼″	98980A401	93.69	98980A404	101.44
2″-4	¼″	98980A845	137.83	98980A835	183.31

18″ Long Precision Acme Threaded Rods

All of these rods are made of heat-treated 4140 alloy steel and have right-hand threads.

Acme Size	Travel Distance per Turn		Each
⅜″-12	1/12″	98940A303	$11.94
½″-10	1/10″	98940A305	16.12
⅝″-8	⅛″	98940A306	19.06
¾″-6	⅙″	98940A307	23.33
1″-5	⅕″	98940A308	$35.17
1¼″-5	⅕″	98940A309	44.19
1½″-4	¼″	98940A401	64.38
2″-4	¼″	98940A405	118.29

For information about precision Acme threaded rods, see page 1107.

Standard-Travel Precision Acme Round Nuts and Mounting Flanges

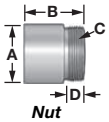

Nut

Mounting Flange

Assembled Nut and Mounting Flange

Use these standard-travel (single-start) nuts and mounting flanges with the Standard-Travel Precision Acme Threaded Rods on the previous page. Use rods that have the same Acme size. Speed ratio is 1:1.

Bronze nuts and ***steel mounting flanges*** are good for most applications. ***Plastic nuts*** and ***Type 303 stainless steel mounting flanges*** offer corrosion resistance.

Bronze Nuts—Hardness is 70-126 Brinell. ***Plastic Nuts***—Made of FDA-compliant polyethylene terephthalate (PET).

Nuts

Acme Size	Travel Distance per Turn	OD (A)	Lg. (B)	External Thread Size (C)	Lg. (D)	BRONZE NUTS Load Cap., lbs.	Right-Hand Threads	Each	Left-Hand Threads	Each	PLASTIC NUTS Load Cap., lbs.	Right-Hand Threads	Each
1/4″-16	1/16″	0.69″	0.63″	0.563″-18	0.38″	300	95072A881	$29.93	95072A882	$29.93	162	95075A210	$23.20
1/4″-20	1/20″	0.69″	0.63″	0.563″-18	0.38″	300	95072A450	20.85	—	—	162	95075A340	29.48
3/8″-8	1/8″	0.69″	0.63″	0.563″-18	0.38″	700	95072A124	24.96	—	—	350	95075A224	26.70
3/8″-10	1/10″	0.69″	0.63″	0.563″-18	0.38″	700	95072A127	24.95	—	—	350	95075A227	26.97
3/8″-12	1/12″	0.69″	0.63″	0.563″-18	0.38″	700	95072A108	27.83	95072A208	27.83	350	95075A104	21.06
3/8″-16	1/16″	0.69″	0.63″	0.563″-18	0.38″	700	95072A129	24.94	—	—	350	95075A229	26.70
1/2″-10	1/10″	1.12″	0.75″	0.937″-16	0.5″	1,250	95072A109	32.92	95072A209	32.92	650	95075A106	22.55
5/8″-5	1/5″	1.12″	1″	0.937″-16	0.5″	1,900	95072A110	41.48	95072A210	41.48	—	—	—
5/8″-8	1/8″	1.12″	1″	0.937″-16	0.5″	1,900	95072A111	35.34	95072A211	35.34	1,000	95075A109	24.40
5/8″-10	1/10″	1.12″	1″	0.937″-16	0.5″	1,900	95072A149	43.44	95072A249	43.44	1,000	95075A249	26.79
3/4″-5	1/5″	1.12″	1.25″	1″-18	0.5″	2,800	95072A112	40.27	95072A212	40.27	1,450	95075A112	27.32
3/4″-6	1/6″	1.12″	1.25″	1″-18	0.5″	2,800	95072A113	37.88	95072A213	37.88	1,450	95075A113	27.61
3/4″-8	1/8″	1.13″	1.25″	1″-18	0.5″	2,800	95072A351	54.63	95072A352	54.63	—	—	—
3/4″-10	1/10″	1.12″	1.25″	1″-18	0.5″	2,800	95072A131	39.13	95072A231	39.13	1,450	95075A114	27.32
3/4″-16	1/16″	1.13″	1.25″	1″-18	0.5″	2,800	95072A371	54.63	95072A372	54.63	—	—	—
1″-4	1/4″	1.5″	1.5″	1.375″-16	0.5″	5,000	95072A132	56.56	95072A232	56.56	2,500	95075A118	33.98
1″-5	1/5″	1.5″	1.5″	1.375″-16	0.5″	5,000	95072A114	60.02	95072A214	60.02	2,500	95075A119	33.98
1″-6	1/6″	1.5″	1.5″	1.375″-16	0.5″	5,000	95072A115	60.02	95072A224	60.02	2,500	95075A120	33.98
1″-8	1/8″	1.5″	1.5″	1.375″-16	0.5″	5,000	95072A361	64.19	95072A362	64.19	—	—	—
1″-10	1/10″	1.5″	1.5″	1.375″-16	0.5″	5,000	95072A116	68.42	95072A216	68.42	2,500	95075A121	43.75
1 1/4″-4	1/4″	2.12″	1.75″	1.976″-18	0.81″	7,800	95072A117	93.32	95072A217	93.32	—	—	—
1 1/4″-5	1/5″	2.12″	1.75″	1.976″-18	0.81″	7,800	95072A118	93.32	95072A218	93.32	3,925	95075A218	66.31
1 1/2″-4	1/4″	2.12″	2.3″	1.976″-18	0.81″	11,250	95072A119	119.76	95072A219	119.76	6,000	95075A219	80.42
1 1/2″-5	1/5″	2.12″	2.3″	1.976″-18	0.81″	11,250	95072A121	119.76	95072A225	119.76	—	—	—
1 1/2″-10	1/10″	2.13″	2.3″	1.967″-18	0.81″	11,250	95072A441	129.75	95072A442	129.75	—	—	—
2″-4	1/4″	2.75″	2.75″	2.548″-18	0.88″	20,000	95072A122	219.28	95072A226	219.28	10,000	95075A222 ♦	94.82
2″-5	1/5″	2.75″	2.75″	2.548″-18	0.88″	20,000	95072A761	241.55	95072A762	241.55	—	—	—
2 1/2″-4	1/4″	3.38″	3.38″	3.137″-12	1.56″	31,250	95072A123	296.45	95072A227	296.45	—	—	—

♦ Lg. (B) is 3.47″.

Mounting Flanges

For Nut External Thread Size (C)	Internal Thread Size	OD (E)	Thick. (F)	Bolt Circle (G)	Mounting Hole Dia.	Steel	Each	Type 303 Stainless Steel	Each
0.563″-18	0.563″-18	1.6″	0.41″	1.13″	0.26″	95082A641	$32.72	1329K11	$40.32
0.937″-16	0.937″-16	2.62″	0.53″	2.09″	0.26″	95082A642	44.78	1329K12	67.48
1″-18	1″-18	2.62″	0.53″	2.09″	0.26″	95082A643	32.58	1329K13	67.48
1.375″-16	1.375″-16	2.76″	0.52″	2.26″	0.26″	95082A644	44.26	1329K14	61.50
1.976″-18	1.976″-18	4.2″	0.83″	3.44″	0.39″	95082A645	54.88	1329K15	87.94
2.548″-18	2.548″-18	4.94″	0.9″	4.06″	0.53″	95082A646	76.80	1329K16	96.11
3.137″-12	3.137″-12	5.38″	1.58″	4.38″	0.65″	95082A647	94.84	—	—

Standard-Travel Machinable Precision Acme Nuts

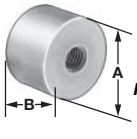

Round Nut

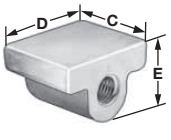

Platform Nut

Use these standard-travel (single-start) machinable nuts with the Standard-Travel Precision Acme Threaded Rods on the previous page. Use rods that have the same Acme size. Speed ratio is 1:1. **To Order:** Please specify right- or left-hand threads (except for 1343K39, 1343K23, 1349K39, and 1349K23 which are right-hand thread only).

Round nuts have a large OD so you can machine them to your own specifications. ***Platform nuts*** have a platform that allows you to drill your own mounting holes for mounting flexibility.

Cast Iron—Hardness is 217-269 Brinell. ***660 and 932 Bronze***—Hardness is 65 Brinell. ***Plastic***—Corrosion resistant. Made of FDA-compliant polyethylene terephthalate (PET).

Acme Size	Travel Distance per Turn	OD (A)	Lg. (B)	ROUND NUTS Cast Iron Load Cap., lbs.		Each	660 Bronze Load Cap., lbs.		Each	Plastic Load Cap., lbs.		Each	PLATFORM NUTS 932 Bronze Lg. (C)	Wd. (D)	Ht. (E)	Load Cap., lbs.		Each
3/8″-8	1/8″	1.35″	3/4″	512	95365A421	$19.49	700	1343K31	$32.41	350	1349K31	$29.38	—	—	—	—	—	—
3/8″-10	1/10″	1.35″	3/4″	530	95365A423	19.49	700	1343K33	32.41	350	1349K33	29.38	—	—	—	—	—	—
3/8″-12	1/12″	1.35″	3/4″	495	95365A428	19.84	700	1343K38	32.41	350	1349K38	29.38	—	—	—	—	—	—
3/8″-16	1/16″	1.35″	3/4″	512	95365A429	20.12	700	1343K39	32.41	350	1349K39	30.06	—	—	—	—	—	—
1/2″-10	1/10″	1.47″	1″	942	95365A424	20.67	1,300	1343K34	36.81	650	1349K34	31.28	1 3/4″	2″	1 1/8″	1,200	1710K29	$144.84
5/8″-5	1/5″	1.86″	1 1/4″	1,350	95365A413	28.92	2,000	1343K23	47.55	1,000	1349K23	40.31	—	—	—	—	—	—
5/8″-8	1/8″	1.86″	1 1/4″	1,424	95365A422	29.00	2,000	1343K32	56.19	1,000	1349K32	40.31	—	—	—	—	—	—
5/8″-10	1/10″	1.86″	1 1/4″	1,473	95365A425	28.92	2,000	1343K35	56.19	1,000	1349K35	40.31	—	—	—	—	—	—
3/4″-5	1/5″	2.24″	1 1/2″	1,944	95365A414	38.12	2,900	1343K24	83.85	1,450	1349K24	67.62	2 1/4″	2 5/8″	1 5/8″	2,800	1710K24	136.95
3/4″-6	1/6″	2.24″	1 1/2″	1,978	95365A418	38.12	2,900	1343K28	83.85	1,450	1349K28	67.62	2 1/4″	2 5/8″	1 5/8″	2,800	1710K27	138.02
3/4″-10	1/10″	2.24″	1 1/2″	2,121	95365A426	40.50	2,900	1343K36	83.85	1,450	1349K36	67.62	2 1/4″	2 5/8″	1 5/8″	2,800	1710K31	139.09
1″-4	1/4″	2.99″	2″	3,393	95365A406	45.80	5,000	1343K16	127.00	2,500	1349K16	104.09	3″	3″	1 15/16″	5,000	1710K21	224.80
1″-5	1/5″	2.99″	2″	3,456	95365A415	39.77	5,000	1343K25	127.00	2,500	1349K25	104.09	3″	3″	1 15/16″	5,000	1710K25	224.80
1″-6	1/6″	2.99″	2″	3,517	95365A419	39.77	5,000	1343K29	127.00	2,500	1349K29	104.09	3″	3″	1 15/16″	5,000	1710K28	224.80
1″-10	1/10″	2.99″	2″	3,770	95365A427	39.77	5,000	1343K37	127.00	2,500	1349K37	104.09	3″	3″	1 15/16″	5,000	1710K32	224.80
1 1/4″-4	1/4″	3.73″	2 1/2″	5,301	95365A407	89.67	7,850	1343K17	194.39	3,925	1349K17	181.16	—	—	—	—	—	—
1 1/4″-5	1/5″	3.73″	2 1/2″	5,400	95365A416	86.18	7,850	1343K26	194.39	3,925	1349K26	181.16	—	—	—	—	—	—
1 1/2″-4	1/4″	4.47″	3″	7,634	95365A408	141.77	12,000	1343K18	281.72	6,000	1349K18	307.62	4 1/2″	3 5/8″	2 9/16″	11,000	1710K23	342.00

For information about precision Acme threaded rods, see page 1107.

Fast-Travel Precision Acme Threaded Rods

Multiple threads run the length of these fast-travel (multiple-start) rods, which means your nut will travel faster with each turn than on standard-travel (single-start) rods. Accuracy for travel distance per turn is 0.009″ or better per foot. Use with fast-travel nuts that have the same Acme size and speed ratio. **To Order:** Please specify 3-ft. or 6-ft. lengths (except for Type 304 stainless steel, which are only available in 6-ft. lengths).

1018 Carbon Steel— Minimum tensile strength is 64,000 psi. Hardness is 126-150 Brinell. ***Heat-Treated 4140 Alloy Steel—*** Harder than 1018 carbon steel, these rods ensure greater strength and durability. Minimum tensile strength is 125,000 psi. Hardness is 271 Brinell. All have a black-oxide finish. ***Type 304 Stainless Steel—*** The choice for corrosion resistance. Minimum tensile strength is 72,000 psi. Hardness is 150-220 Brinell.

Acme Size	Speed Ratio (Starts)	Travel Distance per Turn	Right-Hand Threads	Per Ft.	Left-Hand Threads	Per Ft.
1018 Carbon Steel						
3/8″-5	5:1	1″	99030A103	$11.54	—	—
3/8″-8	2:1	1/4″	99030A104	9.51	—	—
3/8″-8	4:1	1/2″	99030A111	9.51	—	—
3/8″-12	2:1	1/6″	99030A115	6.29	99030A603	$6.29
1/2″-8	2:1	1/4″	99030A116	8.99	—	—
1/2″-8	8:1	1″	99030A119	8.89	—	—
1/2″-10	2:1	1/5″	99030A201	9.57	—	—
1/2″-10	5:1	1/2″	99030A202	10.56	—	—
5/8″-8	2:1	1/4″	99030A203	11.48	99030A604	11.48
3/4″-6	2:1	1/3″	99030A204	9.81	99030A606	9.81
3/4″-8	2:1	1/4″	99030A273	15.11	99030A607	16.59
3/4″-8	4:1	1/2″	99030A206	14.56	—	—
1″-4	2:1	1/2″	99030A207	22.92	99030A801	26.25
1″-6	2:1	1/3″	99030A670	19.96	99030A802	19.96
1″-10	10:1	1″	99030A601	20.53	99030A803	20.53
1 1/2″-4	2:1	1/2″	99030A602	18.69	99030A804	43.64
Heat-Treated 4140 Alloy Steel						
1/4″-12	4:1	1/3″	98940A001	18.35	—	—
3/8″-8	2:1	1/4″	98940A011	11.64	—	—
Heat-Treated 4140 Alloy Steel (Cont.)						
3/8″-8	4:1	1/2″	98940A003	$11.38	—	—
3/8″-10	2:1	1/5″	98940A005	11.11	—	—
3/8″-12	2:1	1/6″	98940A007	11.00	98940A209	$18.33
1/2″-8	2:1	1/4″	98940A009	16.27	—	—
1/2″-10	2:1	1/5″	98940A201	16.00	—	—
1/2″-10	5:1	1/2″	98940A204	14.48	—	—
3/4″-6	2:1	1/3″	98940A206	16.70	98940A301	15.98
1″-10	10:1	1″	98940A208	47.62	98940A302	47.62
Type 304 Stainless Steel						
1/4″-12	4:1	1/3″	98980A310	98.39	—	—
3/8″-8	2:1	1/4″	98980A330	112.36	—	—
3/8″-8	4:1	1/2″	98980A325	106.36	—	—
3/8″-10	2:1	1/5″	98980A340	116.11	—	—
1/2″-8	2:1	1/4″	98980A365	170.82	—	—
1/2″-8	8:1	1″	98980A183	140.14	—	—
1/2″-10	2:1	1/5″	98980A380	147.62	—	—
1/2″-10	5:1	1/2″	98980A375	143.70	—	—
3/4″-8	4:1	1/2″	98980A187	214.84	—	—
1″-4	2:1	1/2″	98980A189	275.43	—	—

Fast-Travel Precision Acme Round Nuts

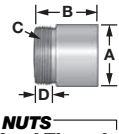

Use these fast-travel (multiple-start) nuts with the Fast-Travel Precision Acme Threaded Rods on this page and the mounting flanges (see 95082A and 1329K) on the previous page. Use rods that have the same Acme size and speed ratio.

Bronze Nuts— Good for most applications. Hardness is 70 to 126 Brinell. ***Plastic Nuts—*** Made of FDA-compliant polyethylene terephthalate (PET).

Acme Size	Speed Ratio (Starts)	Travel Dist. per Turn	OD (A)	Lg. (B)	External Thread Size (C)	Lg. (D)	BRONZE NUTS Load Cap., lbs.	Right-Hand Threads	Each	Left-Hand Threads	Each	PLASTIC NUTS Load Cap., lbs.	Right-Hand Threads	Each
1/4″-12	4:1	1/3″	0.69″	0.63″	0.563″-18	0.38″	300	95072A107	$67.79	—	—	162	95075A207	$23.20
1/4″-16	4:1	1/4″	0.69″	0.63″	0.563″-18	0.38″	300	95072A430	20.85	—	—	—	—	—
3/8″-5	5:1	1″	0.68″	0.63″	0.563″-18	0.38″	—	—	—	—	—	250	95075A101	31.22
3/8″-8	2:1	1/4″	0.69″	0.63″	0.563″-18	0.38″	700	95072A126	24.62	—	—	350	95075A226	26.70
3/8″-8	4:1	1/2″	0.69″	0.63″	0.563″-18	0.38″	700	95072A125	24.73	—	—	350	95075A225	26.70
3/8″-10	2:1	1/5″	0.69″	0.63″	0.563″-18	0.38″	700	95072A128	24.62	—	—	350	95075A228	26.97
3/8″-12	2:1	1/6″	0.69″	0.63″	0.563″-18	0.38″	700	95072A771	32.20	95072A772	$32.20	—	—	—
1/2″-8	2:1	1/4″	1.12″	0.75″	0.937″-16	0.5″	1,250	95072A130	24.63	—	—	650	95075A105	26.70
1/2″-8	8:1	1″	1.12″	0.75″	0.937″-16	0.5″	1,250	95072A420	32.98	—	—	—	—	—
1/2″-10	2:1	1/5″	1.12″	0.75″	0.937″-16	0.5″	1,250	95072A147	32.92	—	—	650	95075A247	22.55
1/2″-10	5:1	1/2″	1.12″	0.75″	0.937″-16	0.5″	1,250	95072A145	32.92	—	—	650	95075A245	22.55
5/8″-8	2:1	1/4″	1.13″	1″	0.937″-16	0.5″	1,900	95072A321	32.17	95072A322	32.17	—	—	—
3/4″-6	2:1	1/3″	1.12″	1.25″	1″-18	0.5″	2,800	95072A601	40.31	95072A602	40.31	—	—	—
3/4″-8	2:1	1/4″	1.13″	1.25″	1″-18	0.5″	2,800	95072A331	54.63	95072A332	54.63	—	—	—
3/4″-8	4:1	1/2″	1.13″	1.25″	1″-18	0.5″	2,800	95072A540	54.63	—	—	1,450	95075A230	59.84
1″-4	2:1	1/2″	1.5″	1.5″	1.375″-16	0.5″	5,000	95072A551	51.42	95072A552	51.42	2,500	95075A260	58.73
1″-6	2:1	1/3″	1.5″	1.5″	1.375″-16	0.5″	5,000	95072A301	54.56	95072A302	54.56	—	—	—
1″-10	10:1	1″	1.5″	1.5″	1.375″-16	0.5″	5,000	95072A511	83.64	95072A512	83.64	—	—	—
1 1/2″-4	2:1	1/2″	2.12″	2.3″	1.976″-18	0.81″	11,250	95072A561	126.04	95072A562	126.04	—	—	—

Fast-Travel Machinable Precision Acme Round Nuts

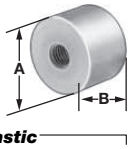

Use these fast-travel (multiple-start) machinable nuts with the Fast-Travel Precision Acme Threaded Rods on this page. All have a large OD so you can machine them to your own specifications. Use rods that have the same Acme size and speed ratio. **To Order:** Please specify right- or left-hand threads, unless noted.

Cast Iron— Hardness is 217 to 269 Brinell. ***660 Bronze—*** Hardness is 65 Brinell. ***Plastic—*** Corrosion resistant. Made of FDA-compliant polyethylene terephthalate (PET).

Acme Size	Speed Ratio (Starts)	Travel Distance per Turn	OD (A)	Lg. (B)	Cast Iron Load Cap., lbs.	Cast Iron Each	660 Bronze Load Cap., lbs.	660 Bronze Each	Plastic Load Cap., lbs.	Plastic Each
1/4″-12	4:1	1/3″	1.35″	0.75″	330	95365A403	325	1343K13	162	1349K13
3/8″-8	2:1	1/4″	1.35″	0.75″	512	95365A404	700	1343K14	350	1349K14
3/8″-8	4:1	1/2″	1.35″	0.75″	512	95365A401	700	1343K11	350	1349K11
3/8″-10	2:1	1/5″	1.35″	0.75″	530	95365A411	700	1343K21	350	1349K21
1/2″-8	2:1	1/4″	1.465″	1.00″	—	95365A405	1,300	1343K15★	650	1349K15★
1/2″-10	2:1	1/5″	1.465″	1.00″	942	95365A412	1,300	1343K22★	650	1349K22★
1/2″-10	5:1	1/2″	1.465″	1.00″	942	95365A402	1,300	1343K12	650	1349K12

Price	
$59.28	
24.25	
28.20	
24.25	
27.68	
27.68	
32.92	
$32.41	
32.41	
32.41	
32.41	
35.61	
36.81	
36.81	
$29.38	
29.38	
29.38	
29.38	
31.28	
31.28	
31.28	

★ Available with right-hand threads only.

Acme Threaded Rod Lubricants

Maximize the life of your threaded rods with these synthetic, corrosion-resistant lubricants. Operating temperature range is –10° to +400°F.

11.25-oz. (net wt.) Aerosol	1353K2	Each	$20.14
14.1-oz. Can	1378K34	Each	$11.21

For information about precision Acme threaded rods, see page 1107.

Miniature Corrosion-Resistant Precision Threaded Rods and Nuts

Threaded Rod

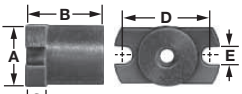

Standard Nut

Perfect for moving small loads in confined spaces, these rods and nuts are corrosion resistant and have right-hand threads. They're similar to, but not compatible with, precision Acme threaded rods and nuts. ***Fast-travel (multiple-start) rods*** have multiple threads that run the length of the rods, which means your nut will travel faster with each turn than on standard-travel (single-start) rods.

Threaded Rods— Made of Type 303 stainless steel, all are 18″ long. Accuracy for travel distance per turn is 0.0006″ per inch. Minimum tensile strength is 90,000 psi. Hardness is 160 Brinell.

Nuts— All are made of polyacetal and are self-lubricating. *Wear-compensating nuts* have an internal O-ring that maintains a tight thread fit even when threads begin to wear.

				NUTS											
									Standard			Wear Compensating			
Thread Size	Speed Ratio (Starts)	Travel Distance per Turn	THREADED RODS Each	(A)	Lg. (B)	Thick. (C)	Ctr.-to-Ctr. (D)	(E)	Load Cap., lbs.	Each		Load Cap., lbs.	Each
Standard Travel (Single Start)													
0.14″-20.8	1:1	1/20.8″	6642K12 $49.58	0.4″	0.5″	0.13″	0.6″	0.12″	25	6642K22	$17.23	5	6642K32 $23.85
0.14″-41.7	1:1	1/41.7″	6642K11 49.58	0.4″	0.5″	0.13″	0.6″	0.12″	25	6642K21	17.23	5	6642K31 23.85
0.216″-20.8	1:1	1/20.8″	6642K14 49.58	0.4″	0.5″	0.13″	0.6″	0.12″	25	6642K24	17.23	5	6642K34 23.85
Fast Travel (Multiple Start)													
0.14″-20.8	2:1	1/10.4″	6642K13 49.58	0.4″	0.5″	0.13″	0.6″	0.12″	25	6642K23	17.23	5	6642K33 23.85
0.164″-21.3	2:1	1/10.7″	6642K15 49.58	0.4″	0.5″	0.13″	0.6″	0.12″	25	6642K25	17.23	5	6642K35 23.85
0.188″-42.7	16:1	1/2.7″	6642K47 49.58	0.4″	0.5″	0.13″	0.6″	0.12″	25	6642K57	17.23	5	6642K67 23.85
0.216″-20.8	4:1	1/5.2″	6642K16 49.58	0.4″	0.5″	0.13″	0.6″	0.12″	25	6642K26	17.23	5	6642K36 23.85

Metric Standard-Travel Precision Threaded Rods and Nuts

Threaded Rod

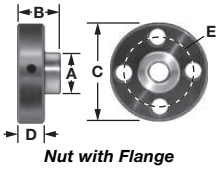

Nut with Flange

Machinable Nut

Made to DIN 103 standards, these rods and nuts (also known as trapezoidal thread form) offer the advantages of precision Acme threaded rods and nuts but in metric sizes. All are standard travel (single start) and have right-hand threads. Speed ratio is 1:1.

Threaded Rods— Made of 1018 carbon steel, these rods are 1,750 mm long. Accuracy for travel distance per turn is ±0.15 mm per 300 mm. Minimum tensile strength is 70,000 psi. Hardness is 150-180 Brinell.

Nuts with Flange— Nuts are bronze; flanges are steel. Nut hardness is 126 Brinell; flange hardness is 150-180 Brinell. Flange mounting holes are 0.266″ dia., unless noted.

Machinable Nuts— Bronze with oversized OD for machining. Hardness is 70 Brinell.

					NUTS											
					Nuts with Flange							Machinable Nuts			
Dia., mm	Threads per cm	Travel Distance per Turn	THREADED RODS Each	Load Cap., lbs.	OD (A)	Lg. (B)	Dia. (C)	Thick. (D)	Bolt Circle (E)	Each		OD (F)	Lg. (G)	Each
10	5	2 mm	7549K1 $58.88	670	0.68″	0.625″	1.6″	0.41″	1.125″	7549K16	$64.66	0.75″	0.75″	7549K32 $26.12
12	3.3	3 mm	7549K2 72.56	1,100	1.125″	0.75″	2.6″	0.53″	2.09″	7549K17	76.46	0.875″	1″	7549K33 29.00
16	3.3	3 mm	7549K4 226.42	2,000	1.125″	1″	2.6″	0.53″	2.09″	7549K19	68.22	1.125″	1.125″	7549K35 31.42
20	2.5	4 mm	7549K6 91.31	3,100	1.125″	1.25″	2.6″	0.53″	2.09″	7549K22	72.51	1.25″	1.5″	7549K37 34.74
24	2	5 mm	7549K7 113.75	4,500	1.5″	1.5″	2.75″	0.52″	2.26″	7549K23	87.44	1.75″	2″	7549K38 46.74
40	1.4	7 mm	7549K12 226.42	12,300	2.125″	2.3″	4.2″	0.832″	3.44″	7549K27 ♦	238.05	2.5″	3″	7549K43 87.56

♦ Flange mount hole diameter is 0.397″.

Ultra-Smooth Corrosion-Resistant Threaded Rods and Nuts

Threaded Rod

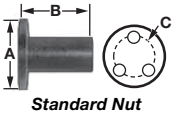

Standard Nut

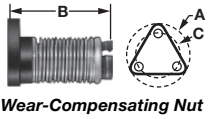

Wear-Compensating Nut

Similar to, but not compatible with, precision Acme threaded rods and nuts, these rods and nuts have smoother and rounder thread edges for increased nut life and ultra-smooth travel. All are corrosion resistant and have right-hand threads. ***Fast-travel (multiple-start) rods*** have multiple threads that run the length of the rods, which means your nut will travel faster with each turn than on standard-travel (single-start) rods.

Threaded Rods— Made of Type 303 stainless steel, these rods are 6 feet long. Accuracy for travel distance per turn is ±0.0006″ per inch. Minimum tensile strength is 90,000 psi. Hardness is 160 Brinell. ***Nuts—*** All are polyacetal and self-lubricating. They have a flange with 0.2″ dia. mounting holes, unless noted. Minimum tensile strength is 9,700 psi. *Wear-compensating nuts* have a spring that maintains a tight fit even when threads begin to wear.

				Standard Nuts						Wear-Compensating Nuts					
Thread Size	Speed Ratio (Starts)	Travel Distance per Turn	Threaded Rods Each	Dia. (A)	Lg. (B)	Bolt Circle (C)	Load Cap., lbs.		Each	Dia. (A)	Lg. (B)	Bolt Circle (C)	Load Cap., lbs.		Each
Standard Travel (Single Start)															
1/4″-20	1:1	1/20″	6350K133 $145.84	1″	1″	0.75″	50	6350K171■	$17.10	1″	1″	0.75″	5	6350K208■	$29.33
3/8″-10	1:1	1/10″	6350K13 157.36	1.1″	1″	0.875″	75	6350K33■	23.71	1.5″	1.9″	1.125″	10	6350K53	35.20
3/8″-20	1:1	1/20″	6350K134 157.36	1.1″	1″	0.875″	75	6350K172■	23.47	1.5″	1.9″	1.125″	10	6350K209	35.03
3/8″-40	1:1	1/40″	6350K137 157.36	1.1″	1″	0.875″	75	6350K175■	23.47	1.5″	1.9″	1.125″	10	6350K213	35.03
1/2″-8	1:1	1/8″	6350K125 189.61	1.5″	1.5″	1.125″	150	6350K163	25.49	1.6″	2″	1.25″	25	6350K201	45.75
1/2″-10	1:1	1/10″	6350K21 189.61	1.5″	1.5″	1.125″	150	6350K41	25.94	1.6″	2″	1.25″	25	6350K61	45.75
1/2″-20	1:1	1/20″	6350K135 189.61	1.5″	1.5″	1.125″	150	6350K173	25.49	1.6″	2″	1.25″	25	6350K211	45.75
5/8″-10	1:1	1/10″	6350K129 269.71	1.5″	1.5″	1.188″	225	6350K167	27.83	1.8″	2″	1.375″	35	6350K205	56.50
3/4″-10	1:1	1/10″	6350K131 382.80	1.8″	2″	1.438″	350	6350K168	37.54	2.4″	2.7″	2″	150	6350K206●	135.10
Fast Travel (Multiple Start)															
1/4″-8	8:1	1″	6350K12 145.84	1″	1″	0.75″	50	6350K32■	17.39	1″	1″	0.75″	5	6350K52■	29.64
1/4″-16	4:1	1/4″	6350K11 145.84	1″	1″	0.75″	50	6350K31■	17.39	1″	1″	0.75″	5	6350K51■	29.33
1/4″-20	2:1	1/10″	6350K128 145.84	1″	1″	0.75″	50	6350K166■	17.10	1″	1″	0.75″	5	6350K204■	29.33
3/8″-5	5:1	1″	6350K16 157.36	1.1″	1″	0.875″	75	6350K36■	23.47	1.5″	1.9″	1.125″	10	6350K56	35.03
3/8″-8	4:1	1/2″	6350K15 157.36	1.1″	1″	0.875″	75	6350K35■	23.71	1.5″	1.9″	1.125″	10	6350K55	35.20
3/8″-10	2:1	1/5″	6350K14 157.36	1.1″	1″	0.875″	75	6350K34■	23.47	1.5″	1.9″	1.125″	10	6350K54	35.03
3/8″-12	3:1	1/4″	6350K113 157.36	1.1″	1″	0.875″	75	6350K151■	23.47	1.5″	1.9″	1.125″	10	6350K188	35.03
1/2″-8	2:1	1/4″	6350K115 189.61	1.5″	1.5″	1.125″	150	6350K153	25.49	1.6″	2″	1.25″	25	6350K191	45.75
1/2″-8	4:1	1/2″	6350K23 189.61	1.5″	1.5″	1.125″	150	6350K43	25.36	1.6″	2″	1.25″	25	6350K63	45.75
1/2″-8	8:1	1″	6350K24 189.61	1.5″	1.5″	1.125″	150	6350K44	25.94	1.6″	2″	1.25″	25	6350K64	45.75
1/2″-10	2:1	1/5″	6350K22 189.61	1.5″	1.5″	1.125″	150	6350K42	25.94	1.6″	2″	1.25″	25	6350K62	45.75
5/8″-6	12:1	2″	6350K102 228.00	1.5″	1.5″	1.188″	225	6350K139	27.83	1.8″	2″	1.375″	35	6350K177	56.50
5/8″-8	4:1	1/2″	6350K107 228.00	1.5″	1.5″	1.188″	225	6350K145	27.83	1.8″	2″	1.375″	35	6350K183	56.50
3/4″-8	2:1	1/4″	6350K25 272.00	1.8″	2″	1.438″	350	6350K45	39.03	2.4″	2.7″	2″	150	6350K65●	140.46

■ 0.14″ dia. mounting holes. ● 0.22″ dia. mounting holes.

About Ball Screws and Ball Nuts

A ball nut contains ball bearings that circulate in the groove of a ball screw to reduce friction between the nut and the screw. Together they provide smooth, precise positioning control over the full length of the ball screw. They also convert rotary motion to linear motion more efficiently than precision Acme threaded rods. *Note:* Ball nuts are furnished with a cardboard tube to keep ball bearings in place. Do not remove the tube until you are ready to install the nuts onto the screws.

Travel Distance per Turn— Also known as screw lead, travel distance per turn is the distance a ball nut moves with one revolution of the ball screw. For proper fit, choose ball nuts with the same diameter and travel distance per turn as the ball screw.

Interior View of a Ball Nut on a Ball Screw

Ball Screws, Ball Nuts, and End Mounting Blocks

Ball Screws and End Mounting Blocks

Ball Screws— All are made of hardened alloy steel. They have right-hand rolled threads. Accuracy for travel distance per turn is ±0.004″ per foot. Rockwell hardness is C56. Temperature range is –65° to +300° F with a high-temperature lubricant. For use with ball nuts that have the same screw diameter and travel distance per turn. **To Order:** Please specify screw length in whole feet up to the maximum length listed.

End Mounting Blocks— Support ball screws (sold separately) to help eliminate wobble. Made of steel, each includes bearings, replaceable seals, a locknut, and a washer. Use one end mounting block for a floating setup or two end mounting blocks for a rigid setup. *Note:* The end of your ball screw must be machined before installing it into an end mounting block.

Ball Screw

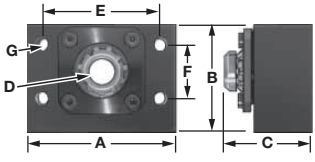

End Mounting Block

Ball Screws					End Mounting Blocks								
Screw Dia.	Travel Distance per Turn	Max. Screw Lg., ft.		Per Ft.	(A)	(B)	(C)	Dia. (D)	Ctr.-to-Ctr. (E)	Ctr.-to-Ctr. (F)	Dia. (G)		Each
3/8″	1/8″	2	5966K24	$30.68									
1/2″	1/2″	2	5966K25	40.79	2 3/4″	2″	1 51/64″	23/64″	2″	1 3/8″	0.281″	60755K12	$280.79
5/8″	13/64″	6	5966K26	18.65	3″	1 7/8″	1 11/16″	15/32″	2 1/4″	1 1/8″	0.281″	60755K13	389.65
3/4″	13/64″	6	5966K13	26.89	3 1/2″	2 1/8″	1 27/32″	19/32″	2 1/2″	1 3/8″	0.281″	60755K14	375.53
3/4″	1/2″	6	5966K22	31.86	3 1/2″	2 1/8″	1 27/32″	19/32″	2 1/2″	1 3/8″	0.281″	60755K14	375.53
1″	1/4″	8	5966K27	40.33	4 1/2″	2 3/4″	2 21/64″	25/32″	3 1/4″	1 3/4″	0.469″	60755K15	451.04
1″	1/2″	8	5966K23	39.31	4 1/2″	2 3/4″	2 21/64″	25/32″	3 1/4″	1 3/4″	0.469″	60755K15	451.04
1″	1″	8	5966K31	40.85	4 1/2″	2 3/4″	2 21/64″	25/32″	3 1/4″	1 3/4″	0.469″	60755K15	451.04
1 1/2″	1/4″	8	5966K28	59.79	6 1/2″	3 5/8″	3″	1 3/16″	4 3/4″	2″	0.656″	60755K16	602.97
1 1/2″	1/2″	8	5966K76	50.35	6 1/2″	3 5/8″	3″	1 3/16″	4 3/4″	2″	0.656″	60755K16	602.97
1 1/2″	1″	8	5966K39	64.94	6″	3 3/8″	2 29/32″	63/64″	4 1/4″	2″	0.656″	60755K17	540.19
2 1/4″	1/2″	8	5966K29	79.29	8 1/2″	5 5/8″	4 5/32″	1 25/32″	6 5/8″	3 5/8″	0.812″	60755K18	1,141.89
2 1/4″	1″	8	5966K33	99.74	8 1/2″	5 5/8″	4 5/32″	1 25/32″	6 5/8″	3 5/8″	0.812″	60755K18	1,141.89

Ball Screws with One Machined End and End Mounting Blocks

Ball Screws with One Machined End— Identical to the ball screws above, except these have one end that has already been machined for you. The machined end fits perfectly into an end mounting block (sold separately) and is ready to connect to your motor. It has a standard Type III journal with drive extension. To adjust the length, the non-machined end can be cut to size.

End Mounting Blocks— For information and illustration, see above.

Ball Screw with One Machined End

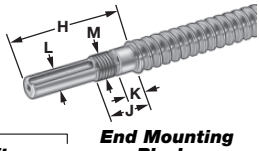

Ball Screws with One Machined End													End Mounting Blocks (Dimensions Above)	
Screw Dia.	Travel Distance per Turn	Overall Machined Lg. (H)	Lg. (J)	Lg. (K)	Dia. (L)	Dia. (M)	Keyway, Wd.×Lg.	2-ft. Lengths	Each	4-ft. Lengths	Each	6-ft. Lengths	Each	Each
5/8″	13/64″	3.292″	1.99″	1.56″	0.406″	0.47″	1/8″ × 1 1/4″	5966K2	$161.31	5966K6	$190.29	5966K21	$219.28	60755K13	$389.65
3/4″	13/64″	3.180″	2.18″	1.71″	0.500″	0.59″	1/8″ × 7/8″	5966K4	196.15	5966K7	259.96	5966K32	323.80	60755K14	375.53
1″	1/4″	4.028″	2.71″	2.18″	0.625″	0.78″	3/16″ × 1 1/4″	5966K5	182.29	5966K8	232.23	5966K41	282.18	60755K15	451.04

Ball Nuts and Ball Nuts with Flange

All of these ball nuts are made of heat-treated alloy steel with a black-oxide finish. The maximum play between the screw and the nut is 0.015″. Rockwell hardness is C56. Temperature range is –65° to +300° F.

For use with ball screws that have the same screw diameter and travel distance per turn. Load capacities are based on using a ball screw and a ball nut together.

Round Ball Nut

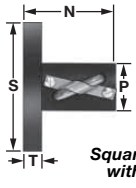

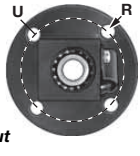

Square Ball Nut with Flange

Ball Nuts							Ball Nuts with Flange						
Screw Dia.	Travel Distance per Turn	Load Cap., lbs.	Lg. (N)	(P)	Thread (Q)	Each	Dia. (R)	Dia. (S)	(T)	Bolt Circle (U)		Each
Round Ball Nuts												
3/8″	1/8″	136	1″	3/4″ Dia.	0.664″-32	5966K14	$93.89	0.177″	1 39/64″	0.270″	1.240″	5966K44	$139.78
3/4″	13/64″	1,900	2 57/64″	1 5/16″ Dia.	1.173″-18	5966K1	64.47	0.281″	2 39/64″	0.530″	2.090″	5966K3	110.13
3/4″	1/2″	3,263	3″	1 5/16″ Dia.	1 1/4″-18	5966K42	216.27	0.281″	2 5/8″	0.530″	2.090″	5966K79	254.26
1″	1/2″	3,890	3 1/8″	1 5/8″ Dia.	1 9/16″-18	5966K43	245.09	0.266″	3 1/4″	0.630″	2.750″	5966K81	276.14
1 1/2″	1/4″	4,198	2 7/8″	2 3/32″ Dia.	1 31/32″-18	5966K18	294.80	0.397″	4 13/64″	0.520″	3.440″	5966K48	371.98
1 1/2″	1/2″	14,513	5 19/32″	2 5/8″ Dia.	2.36″-18	5966K34	401.62	0.531″	4 21/32″	0.780″	3.875″	5966K35	456.29
2 1/4″	1/2″	21,306	6 11/16″	3 3/8″ Dia.	3.137″-12	5966K19	660.66	0.656″	5 3/8″	1.582″	4.375″	5966K49	770.88
2 1/4″	1″	26,538	6 23/32″	3 3/8″ Dia.	3.137″-12	5966K77	991.07	0.656″	5 3/8″	1.582″	4.375″	5966K85	1,053.23
Square Ball Nuts													
1/2″	1/2″	786	1 7/8″	3/4″ × 1″	15/16″-16	5966K15	195.17	0.266″	2 39/64″	0.530″	2.090″	5966K45	254.07
5/8″	13/64″	778	1 23/32″	1″ × 1″	15/16″-16	5966K16	29.90	0.266″	2 39/64″	0.530″	2.090″	5966K46	73.79
1″	1/4″	1,612	2 11/32″	1 1/2″ × 1 1/2″	1 9/16″-18	5966K17	48.46	0.266″	3 1/4″	0.630″	2.750″	5966K47	101.18
1″	1″	2,142	3″	1 1/2″ × 1 1/2″	1 9/16″-18	5966K74	124.94	0.266″	3 1/4″	0.630″	2.750″	5966K82	165.30
1 1/2″	1″	7,560	3 5/8″	2 1/4″ × 2 1/4″	2 1/4″-20	5966K167	322.77	0.531″	4 15/16″	1.020″	4.125″	5966K84	397.40

For information about ball screws and ball nuts, see page 1111.

Corrosion-Resistant Ball Screws and Ball Nuts

Ball Screw

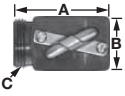

Round Ball Nut

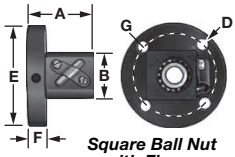

Square Ball Nut with Flange

Suitable for use in harsh environments, all of these ball screws and ball nuts are Type 17-4 PH stainless steel. Rockwell hardness is C38. Temperature range is –30° to +180° F. Use ball screws and ball nuts with the same screw diameter and travel distance per turn. Flange (where applicable) is 300 series stainless steel.

Ball Screws— Have right-hand rolled threads. Accuracy for travel distance per turn is ±0.004″ per foot. They can be used with the steel end mounting blocks, which are sold on page 1111. *Note:* The end of your ball screw must be machined before installing it into an end mounting block.

Ball Nuts— The maximum play between the screw and the nut is 0.007″.

			BALL SCREWS			BALL NUTS										
								Round Ball Nuts			Round Ball Nuts with Flange					
Screw Dia.	Travel Distance per Turn	Load Cap., lbs.	Screw Lg.		Each	Lg. (A)	(B)	Thread (C)		Each	Dia. (D)	Dia. (E)	(F)	Bolt Circle (G)		Each
3/8″	1/8″	25	24″	6641K1	$101.13	1.000″	3/4″	0.664″-32	6641K9	$192.71	0.177″	1 19/32″	0.270″	1.240″	6641K21	$236.95
3/8″	1/8″	25	48″	6641K2	209.28	1.000″	3/4″	0.664″-32	6641K9	192.71	0.177″	1 19/32″	0.270″	1.240″	6641K21	236.95
1/2″	1/2″	140	24″	6641K3	116.91	1.750″	1 1/16″	15/16″-16	6641K32	308.34	0.266″	2 19/32″	0.530″	2.090″	6641K42●	337.48
1/2″	1/2″	140	48″	6641K4	227.48	1.750″	1 1/16″	15/16″-16	6641K32	308.34	0.266″	2 19/32″	0.530″	2.090″	6641K42●	337.48
1/2″	1/2″	140	72″	6641K5	286.91	1.750″	1 1/16″	15/16″-16	6641K32	308.34	0.266″	2 19/32″	0.530″	2.090″	6641K42●	337.48
						Square Ball Nuts					Square Ball Nuts with Flange					
5/8″	13/64″	170	24″	6641K6	140.09	1.710″	1″	15/16″-16	6641K12	165.18	0.266″	2 19/32″	0.530″	2.090″	6641K23★	217.24
5/8″	13/64″	170	48″	6641K7	264.98	1.710″	1″	15/16″-16	6641K12	165.18	0.266″	2 19/32″	0.530″	2.090″	6641K23★	217.24
5/8″	13/64″	170	72″	6641K8	361.66	1.710″	1″	15/16″-16	6641K12	165.18	0.266″	2 19/32″	0.530″	2.090″	6641K23★	217.24

● Lg. (A) is 1.905″. ★ Lg. (A) is 1.740″. (B) is 1.50″.

Metric Ball Screws, Ball Nuts, and End Mounting Blocks

Ball Screw

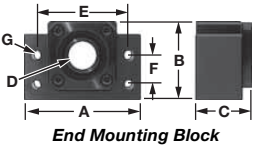

End Mounting Block

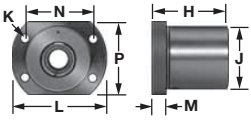

Ball Nut with Flange

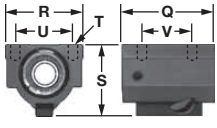

Platform Ball Nut

Ball Screws— All are AISI 1055 alloy steel and have right-hand rolled threads. Accuracy for travel distance per turn is 0.210 mm per 300 mm. Rockwell hardness is C58-C64. Temp. range is 5° to 176° F. For use with ball nuts that have the same screw diameter and travel distance per turn.

End Mounting Blocks— Support ball screws (sold separately) to help eliminate wobble. Made of steel, each includes bearings, seals, and a locknut. Use one end mounting block for a floating setup or two end mounting blocks for a rigid setup. *Note:* The end of your ball screw must be machined before installing it into an end mounting block.

Ball Nuts— All are steel. Maximum play between screw and nut is 0.1 mm. Rockwell hardness is C58-C64. Temp. range is 5° to 176° F. For use with ball screws that have the same screw diameter and travel distance per turn.

		Ball Screws				End Mounting Blocks								
Screw Dia., mm	Travel Distance per Turn, mm	Load Cap., lbs.	Screw Lg., mm		Each	(A), mm	(B), mm	(C), mm	Dia. (D), mm	Ctr.-to-Ctr. (E), mm	Ctr.-to-Ctr. (F), mm	Dia. (G), mm		Each
16	5	1,214	1,000	6624K2	$168.63	60	43	34	12	46	18	5.5	6624K56	$412.15
20	5	1,349	1,000	6624K4	182.35	70	48	38	15	54	18	5.5	6624K57	471.18
20	10	2,383	1,500	6624K8	275.89	70	48	38	15	54	18	5.5	6624K57	471.18
25	5	1,506	1,000	6624K11	243.47	86	64	51	17	68	28	6.6	6624K58	641.85
25	10	7,013	1,500	6624K16	315.00	86	64	51	17	68	28	6.6	6624K58	641.85

Screw Dia., mm	Travel Distance per Turn, mm	(H), mm	Dia. (J), mm	Dia. (K), mm	(L), mm	(M), mm	Ctr.-to-Ctr. (N), mm	(P), mm		Ball Nuts with Flange Each
16	5	40	34	4.5	54	10	38.1	40	6624K41	$230.00
20	5	40	40	4.5	60	10	43.3	46	6624K43	238.00
20	10	61	52	6.6	82	12	58	64	6624K44	275.10
25	5	40	43	5.5	67	10	47.6	50	6624K46	258.00
25	10	98	60	9.0	96	15	67.5	72	6624K48	329.42

Screw Dia., mm	Travel Distance per Turn, mm	(Q), mm	(R), mm	(S), mm	(T), mm	Ctr.-to-Ctr. (U), mm	Ctr.-to-Ctr. (V), mm		Platform Ball Nuts Each
16	5	36	42	32.5	M5 × 8	32	22	6624K27	$266.67
20	5	35	48	39.0	M6 × 10	35	22	6624K29	265.59
20	10	58	48	46.0	M6 × 10	35	35	6624K31	273.82
25	5	35	60	45.0	M8 × 12	40	22	6624K33	286.18
25	10	94	60	55.0	M8 × 12	40	60	6624K35	397.35

Miniature Metric Ball Screws with Ball Nut

Ball Screw w/Included Ball Nut

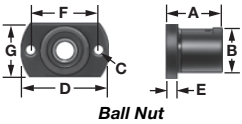

Ball Nut

We've paired a ball screw and a ball nut, which have a small overall size and tiny travel distance per turn to tackle your miniature applications. Accuracy for travel distance per turn is 0.210 mm per 300 mm. Rockwell hardness is C58-C64. Temperature range is 5° to 176° F.

The ball screw is AISI 1055 alloy steel and has right-hand rolled threads. The ball nut is JIS G 4052 steel and has a flange. The maximum play between the screw and the nut is 0.05 mm.

Screw Dia., mm	Travel Distance per Turn, mm	Load Cap., lbs.	Screw Lg., mm	(A), mm	Dia. (B), mm	Dia. (C), mm	(D), mm	(E), mm	Ctr.-to-Ctr. (F), mm	(G), mm		Each
6	1	157	250	21	13	3.4	30	5	21.5	17	6638K1	$222.68
8	2	472	250	28	20	4.5	40	6	30	24	6638K3	224.88
10	2	517	300	28	23	4.5	43	6	33	27	6638K7	276.05
12	2	562	200	30	25	5.5	47	8	36	29	6638K9	277.17
12	2	562	300	30	25	5.5	47	8	36	29	6638K11	293.01

Screw Jacks

Designed to convert rotary motion into linear motion, screw jacks are excellent for lifting, holding, positioning, and leveling loads. They have a worm gear for precise movement. Furnished assembled and threaded, they are ready for installation and motor hookup. Simply attach your motor shaft to the screw jack shaft. The screw jack shaft has a keyway at both ends (for shaft diameter and keyway dimensions, see below).

Mount these jacks vertically or horizontally. ***Upright style*** and ***inverted style*** refer to the mounting flange location in relation to the lift screw.

Travel Distance per Turn— Also known as screw lead, travel distance per turn is the distance a load is moved with one revolution of the lift screw.

Optional Mounting Attachments— Thread directly onto the jacks.

Acme Screw Jacks

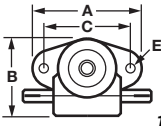

Top View, 1-Ton Jack

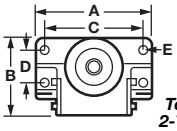

Top View, 2-Ton Jack

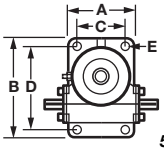

Top View, 5-Ton Jack

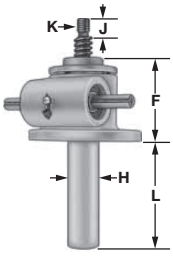

Upright Style

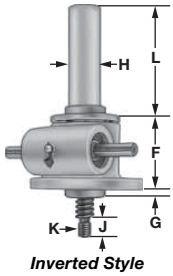

Inverted Style

All jacks have a cold-rolled alloy steel lift screw. Accuracy for travel distance per turn is 0.010″ per foot. Maximum temperature is 250°F.

The ***1-ton jacks*** have sealed ball bearings and an aluminum alloy housing. Gear ratio is 5:1. The ***2-*** and ***5-ton jacks*** have tapered roller bearings and a ductile iron housing. Gear ratio is 6:1.

To Order: Please specify travel length in whole inches up to the maximum length listed. To determine your price, multiply the travel length per inch price by the number of inches you need, then add that to the base price of the jack.

Load Cap., tons	Max. Travel Lg.	Screw Jack Shaft Dia.	Screw Jack Shaft Keyway, Wd.×Dp.×Lg.	(A)	(B)	MOUNT. HOLES Ctr.-to-Ctr. (C)	MOUNT. HOLES Ctr.-to-Ctr. (D)	MOUNT. HOLES Dia. (E)	Upright-Style Flange (F)	Inverted-Style Flange (F)	Bearing Thick. (G)♦	Tube Dia. (H)	Attachment Thread Lg. (J)	Attachment Thread (K)	(L)
1	36″	1/2″	1/8″×1/16″×1″	5″	3 31/32″	4″	—	13/32″	3 5/16″	3 5/16″	1/4″	1 5/16″	3/4″	1/2″-13	Travel Lg. – 1/8″
2	36″	1/2″	1/8″×1/16″×1 3/16″	7″	5″	6″	2″	13/32″	4 1/8″	3 3/4″	5/16″	1 21/32″	1 1/16″	5/8″-18	Travel Lg. – 1/4″
5	72″	3/4″	3/16″×3/32″×1 7/16″	6″	8″	4 1/2″	6 1/2″	1 1/16″	5 1/2″	5″	1/2″	2 3/8″	1 1/2″	1″-14	Travel Lg. – 1/4″

♦ Only for inverted-style jacks.

Load Cap., tons	Lift Screw Dia.	Travel Distance per Turn	Input Torque, in.-lbs. @ Max. rpm	Upright-Style Jack Base Price Each		Inverted-Style Jack Base Price Each		Max. Travel Lg.	Travel Length Per Inch
1	3/4″	1/25″	25.2 @ 500	62255K15	$408.83	62255K16	$408.83	36″	$3.89
2	1″	1/24″	112.0 @ 500	62255K25	518.52	62255K26	518.52	36″	4.64
5	1 1/2″	1/16″	440.0 @ 300	62255K45	676.48	62255K46	676.48	72″	4.98

Compact Screw Jacks

The choice for tight spots. **To Order:** Please specify travel length from those available below.

Compact Acme Screw Jacks— Housing is aluminum. Lift screw is 11L17 steel for 250-lb. jacks; Type 304 stainless steel for 500- and 1,000-lb. jacks. Accuracy for travel distance per turn is 0.010″ per foot. Gear ratio is 5:1. Max. temp. is 250°F.

Jacks with mounting plate have a 2 1/4″ Dia.×5/16″ Thick. plate with four 9/32″ dia. mounting holes (1 1/2″ center-to-center).

Compact Ball Screw Jacks— You'll get higher efficiency, longer duty cycles, and faster lifting speeds with half the power needed for Acme screw jacks. Housing is ductile iron. Lift screw is heat-treated steel. Accuracy for travel distance per turn is 0.044″ per foot. Gear ratio is 6:1. Max. temp. is 120°F.

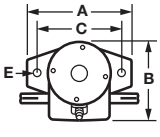

Top View

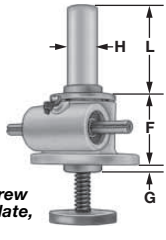

Compact Acme Screw Jack with Mount. Plate, Inverted Style

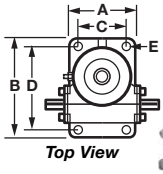

Top View

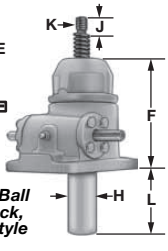

Compact Ball Screw Jack, Upright Style

Load Cap.	Screw Jack Shaft Dia.	Screw Jack Shaft Keyway, Wd.×Dp.×Lg.	(A)	(B)	MOUNT. HOLES Ctr.-to-Ctr. (C)	MOUNT. HOLES Ctr.-to-Ctr. (D)	MOUNT. HOLES Dia. (E)	Upright-Style Flange (F)	Inverted-Style Flange (F)	Bearing Thick. (G)♦	Tube Dia. (H)	Attachment Thread Lg. (J)	Attachment Thread (K)	(L)
Compact Acme Screw Jacks														
250 lbs.	3/8″	1/8″×1/16″×3/4″	4″	2 27/32″	3 1/4″	—	9/32″	2 3/8″	2 5/16″	1/4″	2 7/32″	1 5/8″	1/2″-20	Travel Lg. + 7/16″
500 lbs.	3/8″	1/8″×1/16″×3/4″	4″	2 27/32″	3 1/4″	—	9/32″	2 3/8″	2 5/16″	1/4″	2 7/32″	1 5/8″	1/2″-20	Travel Lg. + 7/16″
1,000 lbs.	3/8″	1/8″×1/16″×3/4″	4″	2 27/32″	3 1/4″	—	9/32″	2 3/8″	2 5/16″	1/4″	7/8″	1″	3/8″-24	Travel Lg. + 3/8″
Compact Ball Screw Jacks														
2 tons	1/2″	1/8″×1/16″×1″	4 1/8″	6 1/4″	3 1/8″	5 1/4″	13/32″	5 5/8″	5 5/8″	—	1 21/32″	1 1/8″	3/4″-16	Travel Lg. + 3/4″

♦ Only for inverted-style jacks.

Load Cap.	Available Travel Lengths	Lift Screw Dia.	Travel Distance per Turn	Input Torque, in.-lbs. @ Max. rpm	WITHOUT MOUNTING PLATE Upright Style Each		WITHOUT MOUNTING PLATE Inverted Style Each		WITH MOUNTING PLATE Upright Style Each		WITH MOUNTING PLATE Inverted Style Each	
Compact Acme Screw Jacks												
250 lbs.	3″, 6″, 9″, 12″	1/2″	1/40″	7 @ 500	5945K71	$244.35	5945K74	$239.76	5945K77	$242.70	5945K81	$241.93
500 lbs.	3″, 6″, 9″, 12″	1/2″	1/20″	17 @ 500	5945K72	293.09	5945K75	285.44	5945K78	298.43	5945K82	285.44
1,000 lbs.	3″, 6″, 9″, 12″	5/8″	1/40″	30 @ 500	5945K73	370.39	5945K76	373.59	5945K79	373.66	5945K83	380.31
Compact Ball Screw Jacks												
2 tons	3″, 6″, 9″, 12″, 18″, 24″	1″	1/24″	50 @ 1,750	1410T42	1,027.94	1410T52	1,063.54	—	—	—	—

Optional Mounting Plate Attachments

For Load Cap.	Dia. (M)	Ctr.-to-Ctr. (N)	Dia. (P)	Plate Thick.		Each
For Acme Screw Jacks						
1 ton	7/16″	2 1/2″	3 1/2″	3/8″	62255K91	$53.29
2 tons	13/32″	3″	4 1/4″	7/16″	62255K92	53.37
5 tons	1 1/16″	3″	4 1/2″	5/8″	62255K93	72.19
For Compact Ball Screw Jacks						
2 tons	13/32″	3″	4 1/4″	7/16″	1410T73	125.35

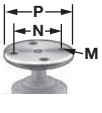

Optional Clevis-End Mounting Attachments

For Load Cap.	(Q)	Dia. (R)	(S)		Each
For Acme Screw Jacks					
1 ton	1/2″	5/16″	1 13/16″	62255K71	$47.11
2 tons	1″	5/8″	2 1/2″	62255K72	48.20
5 tons	1 1/4″	1″	4 1/2″	62255K73	65.89
For Compact Ball Screw Jacks					
2 tons	1″	1/2″	3″	1410T74	99.74

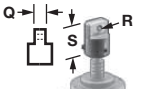

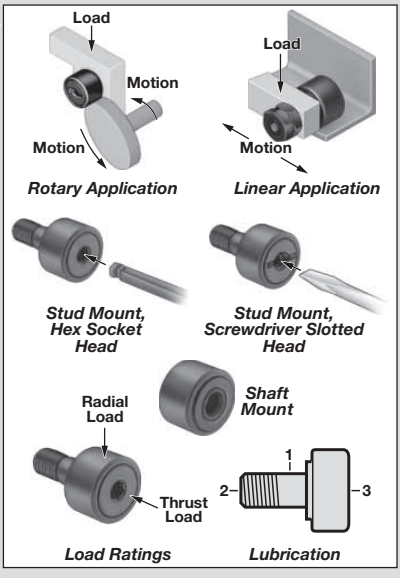

About Track Rollers

Also known as cam followers, track rollers have a thick outer roller that runs directly on a flat surface. A rotary and linear application are shown at left.

Flat Rollers—The choice for perfectly flat surfaces, these rollers offer the best surface-to-surface contact.

Crowned Rollers—Have a slight curve, which is invisible to the naked eye, to stay centered on surfaces that are not perfectly aligned and/or not perfectly flat.

Mounting

Stud-Mount Rollers—Have a built-in threaded stud that can be through-hole mounted or threaded directly into a component. There are two styles of heads: ***hex socket head***, which installs with a hex key and is great for installations requiring greater tightening torque, and ***screwdriver slotted head***, which installs with a flat-blade screwdriver.

Shaft-Mount Rollers—Also known as yoke-style cam followers, these rollers have a bore for mounting onto a shaft or clevis (yoke) end linkage.

Load Ratings

Radial load, also known as rotary load, refers to the force that is applied perpendicular to the roller's outer surface. ***Thrust load***, also known as axial or side load, refers to the force that is applied parallel to the end of the roller. ***Dynamic loads*** refer to loads in motion that may change in direction or degree. ***Static loads*** refer to constant loads that do not change in direction or degree.

Lubrication

Most ***stud-mount rollers*** have a lubrication hole in the (1) side of the stud (access can be difficult once rollers are installed). Others allow lubrication through the (2) end of the stud and (3) head of the roller. Lubrication holes in all three points allow maximum access.

Shaft-mount rollers usually have a lubrication hole or groove in the roller's inner ring.

Long-Life Stud-Mount Track Rollers

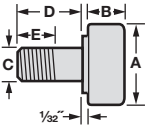

Made to tight tolerances, these precision rollers have heat-treated steel needle bearings and last over twice as long as ordinary stud-mount track rollers. All are steel with a black-oxide finish on the external surfaces. Maximum temperature is 250° F. Mounting nut not included.

Hex socket head rollers are great for blind-hole installations and those requiring greater tightening torque. Lubrication holes are in the end and the side of the stud, unless noted.

Screwdriver slotted head rollers install with a flat-blade screwdriver. Lubrication holes are in the head as well as the end and the side of the stud, unless noted.

Flat rollers are the choice for perfectly flat surfaces. ***Crowned rollers*** stay centered on surfaces that are not perfectly aligned and/or not perfectly flat. ***Sealed rollers*** have end seals to block contaminants.

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	FLAT Unsealed	FLAT Unsealed Each	FLAT Sealed	FLAT Sealed Each	CROWNED Sealed	CROWNED Sealed Each
Hex Socket Head														
1/2"	3/8"	3/16"	5/8"	10-32	1/4"	11,500	790	680	**1460T11**♣	$17.92	**1460T41**♣	$18.16	**3659K11**♣	$25.09
9/16"	3/8"	3/16"	5/8"	10-32	1/4"	10,000	790	680	**1460T12**♣	19.65	**1460T42**♣	22.30	**3659K45**♣	24.26
5/8"	7/16"	1/4"	3/4"	1/4"-28	5/16"	9,200	1,215	955	**1460T13**♣	18.94	**1460T43**♣	18.09	**3659K12**♣	24.23
11/16"	7/16"	1/4"	3/4"	1/4"-28	5/16"	8,300	1,215	955	**1460T14**♣	20.11	**1460T44**♣	22.95	**3659K46**♣	26.37
3/4"	1/2"	3/8"	7/8"	3/8"-24	3/8"	6,400	2,065	1,660	**1460T15**	18.00	**1460T45**	19.80	**3659K13**	21.99
7/8"	1/2"	3/8"	7/8"	3/8"-24	3/8"	5,400	2,065	1,660	**1460T16**	18.74	**1460T46**	19.11	**3659K14**	22.07
1"	5/8"	7/16"	1"	7/16"-20	1/2"	4,800	3,060	2,225	**1460T17**	21.75	**1460T47**	24.07	**3659K15**	25.63
1 1/8"	5/8"	7/16"	1"	7/16"-20	1/2"	3,400	3,060	2,225	**1460T18**	22.58	**1460T48**	24.59	**3659K16**	26.50
1 1/4"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	3,100	4,250	3,930	**1460T19**	26.74	**1460T49**	28.84	**3659K17**	29.89
1 3/8"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	2,800	4,250	3,930	**1460T21**	28.12	**1460T51**	30.12	**3659K18**	31.08
1 1/2"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	2,500	5,640	4,840	**1460T22**	32.98	**1460T52**	35.36	**3659K19**	36.19
1 5/8"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	2,350	5,640	4,840	**1460T23**	33.93	**1460T53**	36.49	**3659K21**	37.25
1 3/4"	1"	3/4"	1 3/4"	3/4"-16	7/8"	2,200	7,920	6,385	**1460T24**	42.40	**1460T54**	43.92	**3659K22**	44.45
1 7/8"	1"	3/4"	1 3/4"	3/4"-16	7/8"	2,000	7,920	6,385	**1460T25**	42.84	**1460T55**	44.37	**3659K23**	44.89
2"	1 1/4"	7/8"	2"	7/8"-14	1"	1,400	10,570	8,090	**1460T26**	54.97	**1460T56**	60.84	**3659K24**	60.60
2 1/4"	1 1/4"	7/8"	2"	7/8"-14	1"	1,300	10,570	8,090	**1460T27**	58.65	**1460T57**	64.00	**3659K25**	63.86
2 1/2"	1 1/2"	1"	2 1/4"	1"-14	1 1/8"	1,100	16,450	11,720	**1460T28**	74.96	**1460T58**	75.96	**3659K26**	81.06
2 3/4"	1 1/2"	1"	2 1/4"	1"-14	1 1/8"	1,050	16,450	11,720	**1460T29**	88.13	**1460T59**	106.85	**3659K27**	111.99
3"	1 3/4"	1 1/4"	2 1/2"	1 1/4"-12	1 1/4"	950	24,910	15,720	**1460T31**	127.52	**1460T61**	149.45	**3659K28**	164.72
3 1/4"	1 3/4"	1 1/4"	2 1/2"	1 1/4"-12	1 1/4"	880	24,910	15,720	**1460T32**	137.45	**1460T62**	164.17	**3659K29**	187.10
Screwdriver Slotted Head														
1/2"	3/8"	3/16"	5/8"	10-32	1/4"	11,500	790	680	**6461K11**●	17.68	**6461K41**●	18.22	**1420T11**●	23.18
9/16"	3/8"	3/16"	5/8"	10-32	1/4"	10,000	790	680	**6461K1**●	17.14	**6461K3**●	19.41	**1420T12**●	24.46
5/8"	7/16"	1/4"	3/4"	1/4"-28	5/16"	9,200	1,215	955	**6461K12**●	17.68	**6461K42**●	18.07	**1420T13**●	23.55
11/16"	7/16"	1/4"	3/4"	1/4"-28	5/16"	8,300	1,215	955	**6461K2**●	19.11	**6461K4**●	19.93	**1420T14**●	25.59
3/4"	1/2"	3/8"	7/8"	3/8"-24	3/8"	6,400	2,065	1,660	**6461K13**	14.49	**6461K43**	16.32	**1420T15**	20.84
7/8"	1/2"	3/8"	7/8"	3/8"-24	3/8"	5,400	2,065	1,660	**6461K14**	15.38	**6461K44**	16.68	**1420T16**	21.19
1"	5/8"	7/16"	1"	7/16"-20	1/2"	4,800	3,060	2,225	**6461K15**	17.85	**6461K45**	20.39	**1420T17**	23.49
1 1/8"	5/8"	7/16"	1"	7/16"-20	1/2"	3,400	3,060	2,225	**6461K16**	17.97	**6461K46**	21.39	**1420T18**	24.48
1 1/4"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	3,100	4,250	3,930	**6461K17**	22.40	**6461K47**	25.46	**1420T19**	27.73
1 3/8"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	2,800	4,250	3,930	**6461K18**	22.61	**6461K48**	26.82	**1420T21**	29.18
1 1/2"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	2,500	5,640	4,840	**6461K19**	25.75	**6461K49**	30.36	**1420T22**	32.41
1 5/8"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	2,350	5,640	4,840	**6461K22**	25.34	**6461K52**	30.94	**1420T23**	33.26
1 3/4"	1"	3/4"	1 3/4"	3/4"-16	7/8"	2,200	7,920	6,385	**6461K23**	33.26	**6461K53**	38.76	**1420T24**	40.97
1 7/8"	1"	3/4"	1 3/4"	3/4"-16	7/8"	2,000	7,920	6,385	**6461K25**	37.14	**6461K55**	40.02	**1420T25**	42.40
2"	1 1/4"	7/8"	2"	7/8"-14	1"	1,400	10,570	8,090	**6461K26**	47.62	**6461K56**	55.38	**1420T26**	60.28
2 1/4"	1 1/4"	7/8"	2"	7/8"-14	1"	1,300	10,570	8,090	**6461K28**	51.13	**6461K58**	58.65	**1420T27**	63.85
2 1/2"	1 1/2"	1"	2 1/4"	1"-14	1 1/8"	1,100	16,450	11,720	**6461K31**	70.55	**6461K61**	73.67	**1420T28**	76.17
2 3/4"	1 1/2"	1"	2 1/4"	1"-14	1 1/8"	1,050	16,450	11,720	**6461K71**	80.91	**6461K76**	98.40	**1420T29**	107.70
3"	1 3/4"	1 1/4"	2 1/2"	1 1/4"-12	1 1/4"	950	24,910	15,720	**6461K72**	120.28	**6461K77**	137.92	**1420T31**	159.24
3 1/4"	1 3/4"	1 1/4"	2 1/2"	1 1/4"-12	1 1/4"	880	24,910	15,720	**6461K73**	129.96	**6461K78**	152.54	**1420T32**	185.35

♣ No lubrication holes. ● Has one lubrication hole, which is in the head.

For information about track rollers, mounting, load ratings, and lubrication, see page 1114.

Long-Life Shaft-Mount Track Rollers

Also known as yoke-style cam followers, these rollers have a bore for mounting onto a shaft or clevis (yoke) end linkage. They have needle bearings and provide roughly twice the life of ordinary shaft-mount rollers. Lubricate rollers through a hole and groove in the inner ring.

All rollers are steel with a black-oxide finish on the external surfaces. Maximum temperature is 250° F.

Flat rollers are the choice for perfectly flat surfaces. ***Crowned rollers*** stay centered on surfaces that are not perfectly aligned and/or not perfectly flat. ***Sealed rollers*** have end seals to block contaminants.

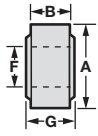

Roller Dia. (A)	Roller Wd. (B)	Bore ID (F)	O'all Wd. (G)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	FLAT Unsealed	FLAT Unsealed Each	FLAT Sealed	FLAT Sealed Each	CROWNED Sealed	CROWNED Sealed Each
3/4"	1/2"	1/4"	9/16"	6,400	4,130	1,660	6831K11	$16.21	6831K41	$18.11	3689K11	$19.18
7/8"	1/2"	1/4"	9/16"	5,400	4,130	1,660	6831K12	17.18	6831K42	18.58	3689K12	18.13
1"	5/8"	5/16"	11/16"	4,800	6,210	2,225	6831K13	19.24	6831K43	22.07	3689K13	20.69
1 1/8"	5/8"	5/16"	11/16"	3,400	6,210	2,225	6831K61	19.38	6831K62	22.13	3689K14	20.91
1 1/4"	3/4"	3/8"	13/16"	3,100	8,500	3,930	6831K14	21.00	6831K44	24.37	3689K15	22.16
1 3/8"	3/4"	3/8"	13/16"	2,800	8,500	3,930	6831K15	22.13	6831K45	25.55	3689K16	22.75
1 1/2"	7/8"	7/16"	15/16"	2,500	11,280	4,840	6831K16	25.55	6831K46	29.55	3689K17	26.13
1 5/8"	7/8"	7/16"	15/16"	2,350	11,280	4,840	6831K63	27.67	6831K64	31.54	3689K18	27.75
1 3/4"	1"	1/2"	1 1/16"	2,200	15,840	6,385	6831K17	34.34	6831K47	37.37	3689K19	32.78
1 7/8"	1"	1/2"	1 1/16"	2,000	15,840	6,385	6831K18	34.91	6831K48	37.89	3689K21	32.95
2"	1 1/4"	5/8"	1 5/16"	1,400	21,140	8,090	6831K19	41.42	6831K49	49.74	3689K22	43.63
2 1/4"	1 1/4"	5/8"	1 5/16"	1,300	21,140	8,090	6831K21	45.49	6831K51	53.61	3689K23	46.80
2 1/2"	1 1/2"	3/4"	1 9/16"	1,100	32,900	11,720	6831K22	66.94	6831K52	70.38	3689K24	69.80
2 3/4"	1 1/2"	3/4"	1 9/16"	1,050	32,900	11,720	6831K23	73.59	6831K53	97.56	3689K25	95.22
3"	1 3/4"	1"	1 13/16"	950	49,820	15,720	6831K24	91.23	6831K54	117.96	3689K26	133.58
3 1/4"	1 3/4"	1"	1 13/16"	880	49,820	15,720	6831K25	111.59	6831K55	134.12	3689K27	149.97

Long-Life Track Rollers with Oversized Stud

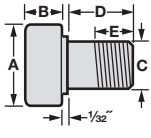

Hex Socket Head

Screwdriver Slotted Head

An oversized stud roughly doubles the static load capacity of these rollers. All have needle bearings and provide twice the life of ordinary stud-mount rollers. They also have at least one lubrication hole in the side of the stud, unless noted.

All rollers are steel with a black-oxide finish on the external surfaces. Maximum temperature is 250° F. Mounting nut not included.

Flat rollers are the choice for perfectly flat surfaces. ***Crowned rollers*** stay centered on surfaces that are not perfectly aligned and/or not perfectly flat. ***Sealed rollers*** have end seals to block contaminants.

To Order: Please specify roller head style: hex socket head or screwdriver slotted head.

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	FLAT Unsealed	FLAT Unsealed Each	FLAT Sealed	FLAT Sealed Each	CROWNED Sealed	CROWNED Sealed Each
1/2"	3/8"	1/4"	5/8"	1/4"-28	1/4"	11,500	1,580	680	1470T1★	$20.23	1470T81★	$21.35	1480T41★	$26.80
5/8"	7/16"	5/16"	3/4"	5/16"-24	5/16"	9,200	2,480	955	1470T2★	20.23	1470T82★	21.54	1480T42★	26.77
3/4"	1/2"	7/16"	7/8"	7/16"-20	3/8"	6,400	4,130	1,660	1470T3	19.17	1470T83	21.31	1480T43	23.77
7/8"	1/2"	7/16"	7/8"	7/16"-20	3/8"	5,400	4,130	1,660	1470T4	19.86	1470T84	21.01	1480T44	24.24
1"	5/8"	5/8"	1"	5/8"-18	1/2"	4,800	6,120	2,225	1470T5	23.39	1470T85	24.62	1480T45	28.00
1 1/4"	3/4"	3/4"	1 1/4"	3/4"-16	5/8"	3,100	8,500	3,930	1470T6	28.35	1470T86	30.18	1480T46	32.48
1 3/8"	3/4"	3/4"	1 1/4"	3/4"-16	5/8"	2,800	8,500	3,930	1470T7	29.71	1470T87	31.14	1480T47	33.92
1 1/2"	7/8"	7/8"	1 1/2"	7/8"-14	3/4"	2,500	11,280	4,840	1470T8	30.09	1470T88	34.78	1480T48	39.31
1 5/8"	7/8"	7/8"	1 1/2"	7/8"-14	3/4"	2,350	11,280	4,840	1470T9	35.57	1470T89	37.64	1480T49	40.35
1 3/4"	1"	1"	1 3/4"	1"-14	7/8"	2,200	15,840	6,385	1470T71	45.19	1470T91	47.16	1480T51	48.37
1 7/8"	1"	1"	1 3/4"	1"-14	7/8"	2,000	15,840	6,385	1470T72	46.10	1470T92	48.09	1480T52	49.60
2"	1 1/4"	1 1/8"	2"	1 1/8"-12	1"	1,400	21,140	8,090	1470T73	58.30	1470T93	61.52	1480T53	68.80
2 1/2"	1 1/2"	1 1/4"	2 1/4"	1 1/4"-12	1 1/8"	1,100	32,900	11,720	1470T74	79.34	1470T94	80.88	1480T54	88.53

★ Hex socket head rollers do not have lubrication holes.

Ultra Corrosion-Resistant Long-Life Track Rollers

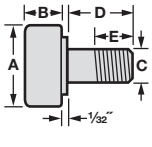

Stud Mount (Hex Socket Head)

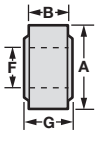

Shaft Mount

Made of Type 440C stainless steel, these track rollers offer excellent corrosion resistance. All have needle bearings and provide roughly twice the life of ordinary track rollers. End seals block contaminants. Maximum temperature is 250° F.

Stud-Mount Rollers— All have a hex socket head. Lubrication holes are in the end and the side of the stud, unless noted. Mounting nut not included.

Shaft-Mount Rollers— Lubricate these rollers through a hole and groove in the inner ring.

Roller Dia. (A)	Roller Wd. (B)	Max. rpm @ No Load	Radial Load Cap., lbs. (Dynamic)	Stud Mount Radial Load Cap., lbs. (Static)	Stud Mount Stud Dia. (C)	Stud Mount Stud Lg. (D)	Stud Mount Thread Size	Stud Mount Thread Lg. (E)	Stud Mount Each	Shaft Mount Radial Load Cap., lbs. (Static)	Shaft Mount Bore ID (F)	Shaft Mount O'all Wd. (G)	Shaft Mount Each
1/2"	3/8"	11,500	680	790	3/16"	5/8"	10-32	1/4"	8043K72♣	$74.19	—	—	—
5/8"	7/16"	9,200	955	1,215	1/4"	3/4"	1/4"-28	5/16"	8043K74♣	73.76	—	—	—
3/4"	1/2"	6,400	1,660	2,065	3/8"	7/8"	3/8"-24	3/8"	8043K75	74.67	4,130	1/4"	9/16"	7796K81	$64.50
7/8"	1/2"	5,400	1,660	2,065	3/8"	7/8"	3/8"-24	3/8"	8043K76	75.59	4,130	1/4"	9/16"	7796K86	66.02
1"	5/8"	4,800	2,225	3,060	7/16"	1"	7/16"-20	1/2"	8043K77	90.63	6,120	5/16"	11/16"	7796K82	78.46
1 1/8"	5/8"	3,400	2,225	3,060	7/16"	1"	7/16"-20	1/2"	8043K78	92.87	6,120	5/16"	11/16"	7796K87	78.79
1 1/4"	3/4"	3,100	3,930	4,250	1/2"	1 1/4"	1/2"-20	5/8"	8043K49	108.64	8,500	3/8"	13/16"	7796K83	86.67
1 3/8"	3/4"	2,800	3,930	4,250	1/2"	1 1/4"	1/2"-20	5/8"	8043K52	113.51	8,500	3/8"	13/16"	7796K88	90.63
1 1/2"	7/8"	2,500	4,840	5,640	5/8"	1 1/2"	5/8"-18	3/4"	8043K51	133.08	11,280	7/16"	15/16"	7796K84	100.96
1 5/8"	7/8"	2,350	4,840	5,640	5/8"	1 1/2"	5/8"-18	3/4"	8043K56	132.04	—	—	—	—
1 3/4"	1"	2,200	6,385	7,920	3/4"	1 3/4"	3/4"-16	7/8"	8043K53	159.18	15,840	1/2"	1 1/16"	7796K85	127.70
1 7/8"	1"	2,000	6,385	7,920	3/4"	1 3/4"	3/4"-16	7/8"	8043K57	161.24	—	—	—	—
2"	1 1/4"	1,400	8,090	10,570	7/8"	2"	7/8"-14	1"	8043K55	208.57	21,140	5/8"	1 5/16"	7796K89	171.16

♣ No lubrication holes.

For information about track rollers, mounting, load ratings, and lubrication, see page 1114.

Easy-Lube Stud-Mount Track Rollers

With Standard Stud

With Oversized Stud

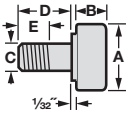

A unique design lets you lubricate these track rollers through their hex socket head when access to the stud is limited. They also have lubrication holes in the side and end of the stud for maximum access.

All of these rollers have needle bearings as well as end seals to block contaminants. They're made of steel. Maximum temperature is 250° F. Mounting nut included.

Flat rollers are the choice for perfectly flat surfaces. ***Crowned rollers*** stay centered on surfaces that are not perfectly aligned and/or not perfectly flat. ***Rollers with oversized stud*** provide added stud strength and higher static load capacities.

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Flat	Flat Each	Crowned	Crowned Each
With Standard Stud												
3/4"	1/2"	3/8"	7/8"	3/8"-24	3/8"	5,000	3,100	1,800	3652K11	$18.44	3652K52	$21.31
7/8"	1/2"	3/8"	7/8"	3/8"-24	3/8"	5,000	3,100	1,800	3652K12	17.87	3652K51	21.50
1"	5/8"	7/16"	1"	7/16"-20	1/2"	4,500	4,800	2,300	3652K21	17.22	3652K49	24.87
1 1/4"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	3,900	6,600	4,200	3652K22	21.50	3652K48	29.04
1 1/2"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	3,100	8,800	5,000	3652K23	26.29	3652K47	35.13
1 3/4"	1"	3/4"	1 3/4"	3/4"-16	7/8"	2,600	12,400	6,400	3652K13	40.93	3652K46	43.14
1 7/8"	1"	3/4"	1 3/4"	3/4"-16	7/8"	2,600	12,400	6,400	3652K14	41.31	3652K45	43.58
2"	1 1/4"	7/8"	2"	7/8"-14	1"	2,200	16,700	9,600	3652K24	45.31	3652K44	61.16
2 1/2"	1 1/2"	1"	2 1/4"	1"-14	1 1/8"	2,000	25,400	12,800	3652K25	59.39	3652K43	78.65
3"	1 3/4"	1 1/4"	2 1/2"	1 1/4"-12	1 1/4"	1,600	40,000	17,000	3652K26	145.06	3652K42	159.84
4"	2 1/4"	1 1/2"	3 1/2"	1 1/2"-12	1 1/2"	1,300	73,100	30,000	3652K27	251.31	3652K41	267.16
With Oversized Stud												
1"	5/8"	5/8"	1"	5/8"-18	1/2"	4,500	6,150	2,300	3307K2	25.24	3307K26	28.22
1 1/4"	3/4"	3/4"	1 1/4"	3/4"-16	5/8"	3,900	8,500	4,000	3307K4	30.34	3307K24	32.80
1 1/2"	7/8"	7/8"	1 1/2"	7/8"-14	3/4"	3,100	11,300	4,900	3307K5	37.40	3307K23	39.52
1 3/4"	1"	1"	1 3/4"	1"-14	7/8"	2,600	15,850	6,400	3307K6	46.54	3307K22	48.68
2"	1 1/4"	1 1/8"	2"	1 1/8"-12	1"	2,200	21,200	9,600	3307K7	64.41	3307K21	69.28

Adjustable-Height Easy-Lube Stud-Mount Track Rollers

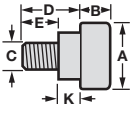

Fine-tune the distance between these rollers and your track by rotating the stud; it moves the roller position up and down up to 0.03" (0.015" on 3/4" and 7/8" dia. rollers). Lubricate these rollers through their hex socket head for easy access. All have needle bearings as well as end seals to block contaminants. Made of steel. Maximum temperature is 250° F. Mounting nut included.

Flat rollers are the choice for perfectly flat surfaces. ***Crowned rollers*** stay centered on surfaces that are not perfectly aligned and/or not perfectly flat.

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	(K)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Flat	Flat Each	Crowned	Crowned Each
3/4"	1/2"	3/8"	7/8"	3/8"-24	3/8"	1/2"	5,000	3,100	1,800	3647K11	$20.63	3647K31	$25.73
7/8"	1/2"	3/8"	7/8"	3/8"-24	3/8"	1/2"	5,000	3,100	1,800	3647K12	23.43	3647K32	26.24
1"	5/8"	7/16"	1"	7/16"-20	1/2"	1/2"	4,500	4,800	2,300	3647K13	23.80	3647K33	29.38
1 1/8"	5/8"	7/16"	1"	7/16"-20	1/2"	1/2"	4,500	4,800	2,300	3647K14	24.13	3647K34	29.78
1 1/4"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	5/8"	3,900	6,600	4,200	3647K15	27.46	3647K35	33.01
1 3/8"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	5/8"	3,900	6,600	4,200	3647K16	28.43	3647K36	33.87
1 1/2"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	3/4"	3,100	8,800	5,000	3647K17	32.28	3647K37	38.26
1 5/8"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	3/4"	3,100	8,800	5,000	3647K18	33.04	3647K38	39.36
1 3/4"	1"	3/4"	1 3/4"	3/4"-16	7/8"	7/8"	2,600	12,400	6,400	3647K19	38.69	3647K39	45.78
1 7/8"	1"	3/4"	1 3/4"	3/4"-16	7/8"	7/8"	2,600	12,400	6,400	3647K21	43.88	3647K41	45.99
2"	1 1/4"	7/8"	2"	7/8"-14	1"	1"	2,200	16,700	9,600	3647K22	51.68	3647K42	62.19
2 1/4"	1 1/4"	7/8"	2"	7/8"-14	1"	1"	2,200	16,700	9,600	3647K23	53.80	3647K43	65.39

Metric Stud-Mount Track Rollers

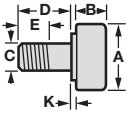

These metric-sized rollers have needle bearings and a hex head. All have one lubrication hole in the head, unless noted. They're made of high-carbon chromium steel. Mounting nut included.

Sealed rollers have seals to block contaminants

Roller Dia. (A), mm	Roller Wd. (B), mm	Stud Dia. (C), mm	Stud Lg. (D), mm	Thread Size	Thread Lg. (E), mm	(K), mm	Max. Temp.	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Unsealed	Unsealed Each	Sealed	Sealed Each
10	7	3	9	M3 ×0.5	5	0.5	212° F	14,000	86	573	6314K11♣	$20.75	6314K14▲♣	$24.63
12	8	4	11	M4 ×0.7	6	0.5	212° F	10,500	187	881	6314K12♣	18.25	6314K15▲♣	21.84
13	9	5	13	M5 ×0.8	7.5	0.5	212° F	8,400	283	1,079	6314K13♣	17.11	6314K16▲♣	20.52
16	11	6	16	M6 ×1	8	0.6	248° F	7,000	438	1,569	6314K21	19.58	6314K41	24.72
19	11	8	20	M8 ×1.25	10	0.6	248° F	5,250	1,038	1,836	6314K22	21.30	6314K42	26.12
22	12	10	23	M10×1.25	12	0.6	248° F	8,400	1,548	1,220	6314K31	24.50	6314K51	29.27
26	12	10	23	M10×1.25	12	0.6	248° F	8,400	1,548	1,220	6314K32	25.06	6314K52	29.50
30	14	12	25	M12×1.5	13	0.6	248° F	3,499	2,967	3,034	6314K25■	26.94	6314K45■	31.36

♣ No lubrication holes. ▲ Max. temp. is 176° F. ■ Lubrication holes in head as well as the end and side of the stud.

Heavy Duty Shaft-Mount Track Rollers

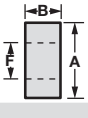

The outer ring is built to handle higher speeds than standard shaft-mount track rollers. Also known as yoke-style cam followers, these rollers have a bore for mounting onto a shaft or clevis (yoke) end linkage. All have an exposed internal cage with a large grease reservoir for lubrication. They're made of steel. Maximum temperature is 250° F.

Sealed rollers have end seals to block contaminants.

Unsealed

Roller Dia. (A)	Roller Wd. (B)	Bore ID (F)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic		Each
1"	0.495"	1/2"	10,900	2,200	1,700	3402K11	$21.08
1 1/2"	0.745"	3/4"	7,200	5,900	4,000	3402K12	25.64
1 3/4"	0.745"	7/8"	6,200	6,500	4,200	3402K13	30.85
2"	0.995"	1"	5,400	11,300	6,200	3402K14	37.17
2 1/4"	0.995"	1 1/4"	4,300	13,900	7,100	3402K15	47.65

Sealed

Roller Dia. (A)	Roller Wd. (B)	Bore ID (F)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic		Each
1"	0.620"	1/2"	7,600	1,300	1,100	3402K21	$29.44
1 1/2"	0.745"	3/4"	5,100	2,700	2,100	3402K22	35.38
1 3/4"	0.745"	7/8"	4,400	3,000	2,200	3402K23	42.57
2"	0.995"	1"	3,800	7,500	4,600	3402K24	51.89
2 1/4"	0.995"	1 1/4"	3,100	8,400	4,500	3402K25	65.94

For information about track rollers, mounting, load ratings, and lubrication, see page 1114.

High-Performance Perma-Lube Track Rollers

With a double row of cylindrical roller bearings, these track rollers provide the highest combination of speed and dynamic radial load ratings of any track rollers we offer. The double row of bearings also compensates for minor misalignment and side loading and extends the roller life. All of these rollers are lubed for life with seals that retain lubricant and block contaminants. They're made of alloy steel. Maximum temperature is 250° F.

Stud-Mount Rollers— All have a hex socket head. Mounting nut included.

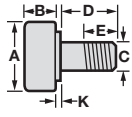

Stud Mount (Hex Socket Head)

Stud Mount

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	(K)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic		Each
1″	5/8″	7/16″	1″	7/16″-20	1/2″	1/32″	9,400	3,200	3,000	3643K8	$33.69
1 1/8″	5/8″	7/16″	1″	7/16″-20	1/2″	1/32″	9,400	3,200	3,000	3643K9	34.51
1 1/4″	3/4″	1/2″	1 1/4″	1/2″-20	5/8″	1/32″	7,500	4,300	4,100	3643K11	41.99
1 3/8″	3/4″	1/2″	1 1/4″	1/2″-20	5/8″	1/32″	7,500	4,300	4,100	3643K12	44.32
1 1/2″	7/8″	5/8″	1 1/2″	5/8″-18	3/4″	1/32″	6,200	7,000	6,200	3643K13	42.97
1 3/4″	1″	3/4″	1 3/4″	3/4″-16	7/8″	1/32″	4,700	10,500	8,200	3643K15	50.77
1 7/8″	1″	3/4″	1 3/4″	3/4″-16	7/8″	1/32″	4,700	10,500	8,200	3643K16	53.08
2″	1 1/4″	7/8″	2″	7/8″-14	1″	1/32″	4,100	17,200	12,400	3643K17	68.46
2 1/2″	1 1/2″	1″	2 1/4″	1″-14	1 1/8″	1/32″	3,700	22,800	16,800	3643K19	83.95

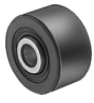

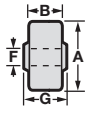

Shaft Mount

Shaft Mount

Roller Dia. (A)	Roller Wd. (B)	Bore ID (F)	O'all Wd. (G)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic		Each
1 1/8″	5/8″	5/16″	0.6925″	9,400	3,200	3,000	3670K1	$27.30
1 1/4″	3/4″	3/8″	13/16″	7,500	4,300	4,100	3670K2	34.11
1 3/8″	3/4″	3/8″	13/16″	7,500	4,300	4,100	3670K3	35.38
1 1/2″	7/8″	7/16″	15/16″	6,200	7,000	6,200	3670K4	35.55
1 3/4″	1″	1/2″	1 1/16″	4,700	10,500	8,200	3670K5	42.11
1 7/8″	1″	1/2″	1 1/16″	4,700	10,500	8,200	3670K6	42.97
2″	1 1/4″	5/8″	1 5/16″	4,100	17,200	12,400	3670K7	54.60
2 1/2″	1 1/2″	3/4″	1 9/16″	3,700	22,800	16,800	3670K8	72.68

Metric Perma-Lube Stud-Mount Track Rollers

Lubed for life, these metric rollers have needle bearings that are packed in a unique solid lubricant. Seals block contaminants. All rollers are made of steel, have a hex socket head, and are crowned to stay centered on surfaces that are not perfectly aligned and/or not perfectly flat. Maximum temperature is 176° F. Mounting nut included.

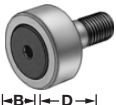

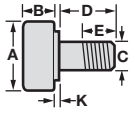

Roller Dia. (A), mm	Roller Wd. (B), mm	Stud Dia. (C), mm	Stud Lg. (D), mm	Thread Size	Thread Lg. (E), mm	(K), mm	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic		Each
16	11	6	16	M6 ×1	8	0.6	1,666	820	822	1592T1	$27.42
19	11	8	20	M8 ×1.25	10	0.6	1,250	1,065	955	1592T2	31.09
22	12	10	23	M10×1.25	12	0.6	1,000	1,548	1,220	1592T3	34.74
26	12	10	23	M10×1.25	12	0.6	1,000	1,548	1,220	1592T4	33.51
30	14	12	25	M12×1.5	13	0.6	833	2,200	1,778	1592T5	37.65
32	14	12	25	M12×1.5	13	0.6	833	2,200	1,778	1592T6	40.98

Thrust-Load-Rated Perma-Lube Track Rollers

In addition to being rated for radial load, these rollers are also rated for thrust load. All are lubed for life with seals that retain lubricant and block contaminants. Maximum temperature is 225° F, unless otherwise stated.

Stud-Mount Rollers— Have a hex socket in the stud end. All have ball bearings, unless noted. Mounting nut included.

Shaft-Mount Rollers— All are alloy steel and have tapered roller bearings.

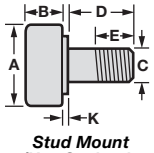

Stud Mount (Hex Socket in Stud End)

Stud Mount

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	(K)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Thrust Load Cap., lbs. Static	Thrust Load Cap., lbs. Dynamic		Each
Steel													
1″	3/4″	7/16″	1″	7/16″-20	1/2″	1/32″	8,000	230	230	140	—	6318K65	$38.56
1 1/8″	3/4″	7/16″	1″	7/16″-20	1/2″	1/32″	8,000	230	230	140	—	6318K66	40.08
1 1/4″	13/16″	1/2″	1 1/4″	1/2″-20	5/8″	1/32″	8,000	600	520	370	—	6318K67	42.75
1 3/8″	13/16″	1/2″	1 1/4″	1/2″-20	5/8″	1/32″	8,000	600	520	370	—	6318K68	44.19
1 1/2″	1 1/8″	5/8″	1 1/2″	5/8″-18	3/4″	1/16″	6,000	1,100	1,050	472	—	6318K69	46.92
1 3/4″	1 1/8″	3/4″	1 3/4″	3/4″-16	7/8″	1/16″	6,000	1,100	1,050	470	—	6318K71	49.60
2″	1 5/8″	7/8″	2″	7/8″-14	1 1/8″	1/16″	6,000	1,620	1,460	910	—	6318K72	53.56
2 1/4″	1 5/8″	7/8″	2″	7/8″-14	1 1/8″	1/16″	6,000	1,620	1,460	910	—	6318K73	60.38
2 1/2″	1 5/8″	1″	2 1/4″	1″-14	1 1/2″	1/16″	4,000	2,270	1,980	1,340	—	6318K74	60.63
3″	1 15/16″	1 1/4″	2 1/2″	1 1/4″-12	1 3/4″	1/16″	1,100	12,270	6,000	12,000	—	6318K75●	79.06
3 1/2″	1 15/16″	1 1/4″	2 3/4″	1 1/4″-12	1 3/4″	1/16″	1,100	12,270	6,000	12,000	—	6318K76●	103.48
4″	1 15/16″	1 1/4″	2 3/4″	1 1/4″-12	1 3/4″	1/16″	1,100	12,270	6,000	12,000	—	6318K77●	120.19
High-Temperature Steel— *Maximum temperature is 325° F.*													
1″	3/4″	7/16″	1″	7/16″-20	1/2″	1/32″	6,000	380	350	240	—	2086K21	76.61
1 1/2″	1 1/8″	5/8″	1 1/2″	5/8″-18	3/4″	1/16″	6,000	1,110	940	470	—	2086K23	95.00
2″	1 5/8″	7/8″	2″	7/8″-14	1 1/8″	1/16″	6,000	1,750	1,330	910	—	2086K24	103.65
2 1/2″	1 5/8″	1″	2 1/4″	1″-14	1 1/2″	1/16″	6,000	1,750	1,330	910	—	2086K25	121.39
Corrosion-Resistant Types 303 and 440C Stainless Steel													
1″	3/4″	7/16″	1″	7/16″-20	1/2″	1/32″	6,000	190	190	240	150	4725K31	114.13
1 1/4″	13/16″	1/2″	1 1/4″	1/2″-20	5/8″	1/32″	6,000	350	350	320	230	4725K32	118.55
1 1/2″	1 1/8″	5/8″	1 1/2″	5/8″-18	3/4″	1/16″	6,000	550	550	690	350	4725K33	130.19
2″	1 5/8″	7/8″	2″	7/8″-14	1 1/8″	1/16″	6,000	1,590	1,330	1,080	740	4725K34	145.43

● Tapered roller bearings.

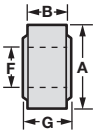

Shaft Mount

Shaft Mount

Roller Dia. (A)	Roller Wd. (B)	Bore ID (F)	O'all Wd. (G)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Thrust Load Cap., lbs. Static	Thrust Load Cap., lbs. Dynamic		Each
2 1/2″	1 1/2″	3/4″	1 9/16″	1,100	7,630	4,570	4,570	4,570	6321K22	$107.96
3″	1 3/4″	1″	1 13/16″	1,100	20,000	6,000	12,000	12,000	6321K31	102.92

For information about track rollers, mounting, load ratings, and lubrication, see page 1114.

Corrosion-Resistant Stud-Mount Track Rollers

Looking for good corrosion resistance without the expense of solid stainless steel? These rollers have Type 440C stainless steel needle bearings and chrome-plated steel exposed surfaces to meet your needs. All have a hex socket head. Lubrication holes are in the side and end of the stud, unless noted. End seals block contaminants. Maximum temperature is 250° F. Mounting nut not included.

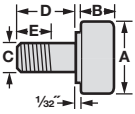

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic		Each
1/2"	3/8"	3/16"	5/8"	10-32	1/4"	5,000	1,085	930	3376K1♣	$27.42
5/8"	7/16"	1/4"	3/4"	1/4"-28	5/16"	4,000	1,215	995	3376K2♣	29.08
3/4"	1/2"	3/8"	7/8"	3/8"-24	3/8"	3,300	2,065	1,660	3376K3	31.26
1"	5/8"	7/16"	1"	7/16"-20	1/2"	2,500	3,060	2,225	3376K4	38.74
1 1/4"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	2,000	4,250	3,930	3376K5	44.60
1 1/2"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	1,650	5,640	4,840	3376K6	54.10
1 3/4"	1"	3/4"	1 3/4"	3/4"-16	7/8"	1,450	7,920	6,385	3376K7	65.02
2"	1 1/4"	7/8"	2"	7/8"-14	1"	1,250	10,570	8,090	3376K8	85.96

♣ No lubrication holes.

Miniature Corrosion-Resistant Stud-Mount Track Rollers

Made of Type 303 stainless steel, these tiny rollers offer excellent corrosion resistance. They are also rated for thrust load. All rollers are lubed for life. They have ball bearings and a screwdriver slotted head. Maximum temperature is 248° F. Mounting nut included.

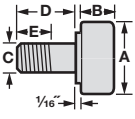

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Static Thrust Load Cap., lbs.		Each
3/16"	13/64"	3/32"	1/4"	2-56	1/8"	96,000	16	50	8	3668K2	$41.71
1/4"	7/64"	1/8"	1/2"	4-40	1/4"	64,000	20	64	21	3668K22	16.91
1/4"	13/64"	3/32"	1/4"	2-56	1/8"	76,000	16	50	13	3668K3	39.02
3/8"	1/8"	3/16"	1/2"	8-32	1/4"	48,000	56	160	56	3668K23	16.06
3/8"	1/4"	1/8"	7/16"	4-40	1/4"	64,000	32	102	21	3668K11	30.84
1/2"	3/16"	1/4"	5/8"	10-32	3/8"	40,000	90	243	89	3668K24	16.97
1/2"	5/16"	3/16"	1/2"	8-32	1/4"	48,000	90	256	56	3668K12	31.07
5/8"	13/64"	1/4"	5/8"	10-32	3/8"	36,000	128	335	123	3668K25	14.36
5/8"	7/16"	1/4"	5/8"	10-32	3/8"	40,000	173	468	89	3668K13	31.33
3/4"	9/32"	1/4"	5/8"	10-32	3/8"	34,000	198	524	155	3668K26	19.44
3/4"	1/2"	1/4"	5/8"	10-32	3/8"	36,000	205	536	123	3668K14	30.89
7/8"	5/8"	1/4"	5/8"	10-32	3/8"	35,000	317	838	155	3668K15	37.42

Quiet-Grip Stud-Mount Track Rollers

Coated with nylon or urethane (see below), these steel rollers operate quietly and provide an excellent grip. End seals block contaminants. Mounting nut not included.

Nylon-Coated Steel— These rollers have an electrically nonconductive roller surface and are more chemical resistant than the urethane-coated rollers. Lubed for life, these rollers have ball bearings and a hex socket in the stud end. Hardness is Rockwell C85. Maximum temperature is 210° F.

Urethane-Coated Steel— Provide better traction and strength than the nylon-coated rollers. They are not, however, rated for speed or load. All have needle bearings and a hex socket head. Lubrication holes are in the side and end of the stud, unless noted. Hardness is Shore 80A. Maximum temperature is 200° F.

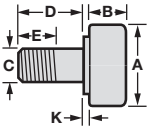

Nylon-Coated Steel (Hex Socket in Stud End)

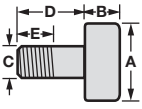

Urethane-Coated Steel (Hex Socket Head)

Nylon-Coated Steel

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	(K)	Static Radial Load Cap., lbs.		Each
1"	3/4"	7/16"	1"	7/16"-20	1/2"	1/32"	30	2320K61	$54.04
1 1/4"	13/16"	1/2"	1 1/4"	1/2"-20	5/8"	1/32"	40	2320K62	55.21
1 1/2"	1 1/8"	5/8"	1 1/2"	5/8"-18	3/4"	1/16"	60	2320K63	56.77
2"	1 5/8"	7/8"	2"	7/8"-14	1 1/8"	1/16"	120	2320K64	58.43
2 1/2"	1 5/8"	1"	2 1/4"	1"-14	1 1/2"	1/16"	130	2320K65	70.98

Urethane-Coated Steel

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)		Each
3/4"	3/8"	3/16"	5/8"	10-32	1/4"	3649K11♣	$32.81
1"	1/2"	3/8"	7/8"	3/8"-24	3/8"	3649K12	34.70
1 1/4"	5/8"	7/16"	1"	7/16"-20	1/2"	3649K13	38.04
1 1/2"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	3649K14	$38.45
1 3/4"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	3649K21	42.73
2"	1"	3/4"	1 3/4"	3/4"-16	7/8"	3649K22	48.39
2 1/4"	1 1/4"	7/8"	2"	7/8"-14	1"	3649K23	64.99

♣ No lubrication holes.

Extreme-Temperature No-Lube Stud-Mount Track Rollers

Commonly used in ovens, furnace doors, and even radioactive environments, these rollers handle temperatures from –452° to +750° F—the widest temperature range of any track roller we offer. They're also maintenance free with no grease to leak and no internal bearings to seize (all have sleeve bearings). Great for low-speed, light radial load applications.

Rollers have a carbon steel roller surface and race, a Graphalloy (graphite impregnated with bronze) bearing, and a screwdriver slotted head. Mounting nut not included.

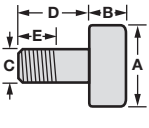

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	Max. rpm @ No Load	Dynamic Load Cap., lbs.		Each
3/4"	1/2"	3/8"	7/8"	3/8"-24	3/8"	100	64	6717K21	$105.62
1"	5/8"	7/16"	1"	7/16"-20	1/2"	100	70	6717K22	117.70
1 1/4"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	100	90	6717K23	144.58
1 1/2"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	100	100	6717K24	170.68
1 3/4"	1"	3/4"	1 3/4"	3/4"-16	7/8"	100	119	6717K25	201.94
2"	1 1/4"	7/8"	2"	7/8"-14	1"	100	141	6717K26	255.96
2 1/2"	1 1/2"	1"	2 1/4"	1"-14	1 1/8"	100	179	6717K27	335.78
3"	1 3/4"	1 1/4"	2 1/2"	1 1/4"-12	1 1/4"	100	202	6717K28	530.52

For information about track rollers, mounting, load ratings, and lubrication, see page 1114.

Quiet No-Lube Stud-Mount Track Rollers

Much quieter than their counterparts with needle and ball bearings, these rollers have sleeve bearings. They're also maintenance free with no grease to leak and no internal balls or rollers to seize. Perfect for low-speed applications with light radial loads.

All of these rollers are dimensionally interchangeable with needle-bearing rollers, such as the Long-Life Stud-Mount Track Rollers on page 1114. Mounting nut included.

***Quiet*—**Rollers have a case-hardened carbon steel roller surface and a sintered-bronze inner sleeve that's impregnated with lubrication so grease won't seep onto components. They also have a hex socket head. Maximum rpm @ no load is 1,200. Maximum temperature is 150° F.

***Ultra-Quiet*—**A fiberglass-reinforced nylon outer roller surface and a slippery smooth PTFE inner sleeve provide the quietest motion of all the rollers we offer. They're corrosion resistant, nonsparking, lightweight, and fully submersible. All have a hex socket in the stud end. The stud is Type 303 stainless steel. Mounting nut is stainless steel as well. Not rated for speed. Maximum temperature is 250° F.

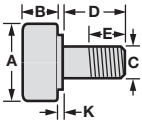

Quiet (Hex Socket Head)

Ultra-Quiet (Hex Socket in Stud End)

Quiet

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	(K)	Dynamic Load Cap., lbs.		Each
1/2"	3/8"	3/16"	5/8"	10-32	1/4"	1/32"	21	6721K1	$13.16
5/8"	7/16"	1/4"	3/4"	1/4"-28	5/16"	1/32"	29	6721K2	13.16
3/4"	1/2"	3/8"	7/8"	3/8"-24	3/8"	1/32"	49	6721K3	11.12
7/8"	1/2"	3/8"	7/8"	3/8"-24	3/8"	1/32"	49	6721K4	11.33
1"	5/8"	7/16"	1"	7/16"-20	1/2"	1/32"	75	6721K5	14.18
1 1/8"	5/8"	7/16"	1"	7/16"-20	1/2"	1/32"	75	6721K6	14.99
1 1/4"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	1/32"	117	6721K7	17.84
1 3/8"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	1/32"	117	6721K8	$18.83
1 1/2"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	1/32"	163	6721K9	21.40
1 5/8"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	1/32"	163	6721K15	21.90
1 3/4"	1"	3/4"	1 3/4"	3/4"-16	7/8"	1/32"	210	6721K11	28.79
2"	1 1/8"	7/8"	2"	7/8"-14	1"	1/32"	295	6721K12	36.32
2 1/4"	1 1/8"	7/8"	2"	7/8"-14	1"	1/32"	295	6721K13	39.03
2 1/2"	1 1/2"	1"	2 1/4"	1"-14	1 1/8"	1/32"	468	6721K14	53.86

Ultra-Quiet

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	(K)	Static Load Cap., lbs.		Each
1/2"	3/8"	3/16"	5/8"	10-32	1/4"	1/32"	110	7803K11	$46.51
9/16"	3/8"	3/16"	5/8"	10-32	1/4"	1/32"	110	7803K12	46.90
5/8"	7/16"	1/4"	3/4"	1/4"-28	5/16"	1/32"	230	7803K13	49.69
11/16"	7/16"	1/4"	3/4"	1/4"-28	5/16"	1/32"	230	7803K14	50.37
3/4"	1/2"	3/8"	7/8"	3/8"-24	3/8"	1/16"	700	7803K15	45.38
7/8"	1/2"	3/8"	7/8"	3/8"-24	3/8"	1/16"	700	7803K16	46.62
1"	5/8"	7/16"	1"	7/16"-20	1/2"	1/16"	870	7803K17	$50.54
1 1/8"	5/8"	7/16"	1"	7/16"-20	1/2"	1/16"	870	7803K18	51.06
1 1/4"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	1/16"	1,100	7803K19	57.12
1 3/8"	3/4"	1/2"	1 1/4"	1/2"-20	5/8"	1/16"	1,100	7803K21	58.37
1 1/2"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	1/16"	1,800	7803K22	65.69
1 5/8"	7/8"	5/8"	1 1/2"	5/8"-18	3/4"	1/16"	1,800	7803K23	66.27

Flange-Guided Track Rollers

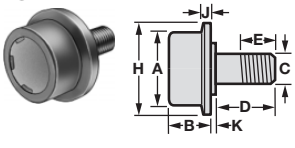

Stud Mount with Single Flange (Hex Socket in Stud End)

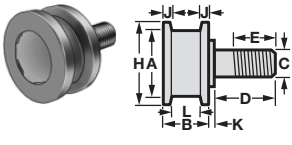

Stud Mount with Double Flange (Hex Socket in Stud End)

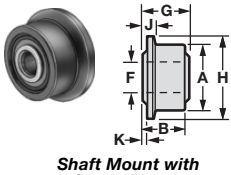

Shaft Mount with Single Flange

Flanges keep rollers on their track and are great for applications that require linear alignment. All of these rollers handle high speeds and are rated for both radial load and thrust load. They're lubed for life with seals that retain lubricant and block contaminants. Maximum temperature is 225° F.

***Stud Mount*—**Have a hex socket in the stud end. They also have ball bearings, unless noted. Mounting nut included. ***Shaft Mount*—**Are steel with tapered roller bearings.

Stud Mount

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	Flange Dia. (H)	Flange Thick. (J)	(K)	Groove Wd. (L)	Max. rpm @ No Load	Static Load Cap., lbs. Radial	Static Load Cap., lbs. Thrust		Each
Steel with Single Flange														
1"	3/4"	7/16"	1"	7/16"-20	1/2"	1 3/8"	7/32"	1/32"	—	8,000	230	140	6318K42	$41.23
1 1/8"	3/4"	7/16"	1"	7/16"-20	1/2"	1 1/2"	7/32"	1/32"	—	8,000	230	140	6318K43	42.63
1 1/4"	13/16"	1/2"	1 1/4"	1/2"-20	5/8"	1 9/16"	7/32"	1/32"	—	8,000	600	370	6318K44	45.52
1 3/8"	13/16"	1/2"	1 1/4"	1/2"-20	5/8"	1 11/16"	7/32"	1/32"	—	8,000	600	370	6318K45	49.49
1 1/2"	1 1/8"	5/8"	1 1/2"	5/8"-18	3/4"	2 3/16"	11/32"	1/16"	—	6,000	1,100	470	6318K46	49.69
1 3/4"	1 1/8"	3/4"	1 3/4"	3/4"-16	7/8"	2 7/16"	11/32"	1/16"	—	6,000	1,100	470	6318K47	55.92
2"	1 5/8"	7/8"	2"	7/8"-14	1 1/8"	2 11/16"	19/32"	1/16"	—	6,000	1,620	910	6318K48	56.44
2 1/4"	1 5/8"	7/8"	2"	7/8"-14	1 1/8"	2 15/16"	19/32"	1/16"	—	6,000	1,620	910	6318K49	62.73
2 1/2"	1 5/8"	1"	2 1/4"	1"-14	1 1/2"	3 3/16"	19/32"	1/16"	—	4,000	2,270	1,340	6318K55	66.25
3"	1 15/16"	1 1/4"	2 1/2"	1 1/4"-12	1 3/4"	3 15/16"	19/32"	1/16"	—	1,100	9,880	12,000	6318K56●	108.79
3 1/2"	1 15/16"	1 1/4"	2 3/4"	1 1/4"-12	1 3/4"	4 7/16"	19/32"	1/16"	—	1,100	9,880	12,000	6318K57●	159.18
Corrosion-Resistant Types 303 and 440C Stainless Steel with Single Flange														
1"	3/4"	7/16"	1"	7/16"-20	1/2"	1 3/8"	7/32"	1/32"	—	6,000	150	150	2091K41	152.80
1 1/4"	13/16"	1/2"	1 1/4"	1/2"-20	5/8"	1 9/16"	7/32"	1/32"	—	6,000	280	230	2091K42	162.24
1 1/2"	1 1/8"	5/8"	1 1/2"	5/8"-18	3/4"	2 3/16"	11/32"	1/16"	—	6,000	440	350	2091K43	165.78
2"	1 5/8"	7/8"	2"	7/8"-14	1 1/8"	2 11/16"	19/32"	1/16"	—	6,000	1,050	740	2091K44	185.87
2 1/2"	1 5/8"	1"	2 1/4"	1"-14	1 1/2"	3 3/16"	19/32"	1/16"	—	6,000	1,050	740	2091K45	225.09
Steel with Double Flange														
1 1/2"	1 1/8"	5/8"	1 1/2"	5/8"-18	3/4"	2 3/16"	9/32"	1/16"	0.558"	6,000	1,100	470	6318K1	77.85
2"	1 5/8"	7/8"	2"	7/8"-14	1 1/8"	2 11/16"	17/32"	1/16"	0.558"	6,000	1,620	910	6318K2	91.91
2 1/2"	1 5/8"	1"	2 1/4"	1"-14	1 1/2"	3 3/16"	17/32"	1/16"	0.562"	4,000	2,268	1,340	6318K3	116.56
3"	1 15/16"	1 1/4"	2 1/2"	1 1/4"-12	1 3/4"	3 15/16"	17/32"	1/16"	0.874"	1,100	12,263	12,000	6318K4●	156.76

● Tapered roller bearings.

Shaft Mount

Roller Dia. (A)	Roller Wd. (B)	Bore ID (F)	O'all Wd. (G)	Flange Dia. (H)	Flange Thick. (J)	(K)	Max. rpm @ No Load	Static Load Cap., lbs. Radial	Static Load Cap., lbs. Thrust		Each
2 1/2"	1 1/2"	3/4"	1 9/16"	3 3/16"	1/2"	1/32"	1,100	7,630	4,570	6321K26	$129.67
3"	1 3/4"	1"	1 13/16"	3 15/16"	19/32"	1/32"	1,100	20,000	12,000	6321K41	131.64

For information about track rollers, mounting, load ratings, and lubrication, see page 1114.

V-Groove-Guided Track Rollers

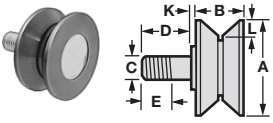

Stud Mount (Hex Socket Stud)

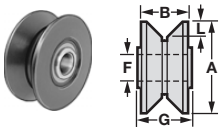

Shaft Mount

The 90° V-groove in these rollers provides accurate positioning and travel on any 90° angle track. Made of hardened steel, all of these rollers are lubed for life with seals that retain lubricant and block contaminants. They are also rated for thrust loads. Maximum temperature is 225° F.

Stud Mount— All have a hex socket stud and ball bearings. Mounting nut included.

Shaft Mount— All have tapered roller bearings.

Stud Mount

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	(K)	V-Groove Dp. (L)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Static Thrust Load Cap., lbs.		Each
1 1/2"	3/4"	7/16"	1"	7/16"-20	1/2"	1/32"	3/16"	8,000	230	230	140	6318K61	$70.17
2"	13/16"	1/2"	1 1/4"	1/2"-20	5/8"	1/32"	5/16"	6,000	600	520	370	6318K62	87.79
2 1/2"	1 1/4"	3/4"	1 3/4"	3/4"-16	7/8"	1/16"	1/2"	6,000	1,100	1,050	680	6318K63	90.87
3 1/2"	1 5/8"	7/8"	2"	7/8"-14	1 1/8"	1/16"	5/8"	4,000	2,270	1,980	1,400	6318K64	97.27

Shaft Mount

Roller Dia. (A)	Roller Wd. (B)	Bore ID (F)	O'all Wd. (G)	V-Groove Dp. (L)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Static Thrust Load Cap., lbs.		Each
3 3/4"	1 1/2"	3/4"	1 9/16"	5/8"	1,100	7,630	4,570	4,570	6321K38	$186.10
4 1/2"	1 3/4"	1"	1 13/16"	3/4"	1,100	20,000	6,000	12,000	6321K39	217.76

Adjustable-Height V-Groove-Guided Stud-Mount Track Rollers

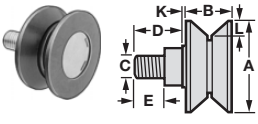

Fine-tune the distance between these rollers and your track by rotating the stud; it moves the roller position up and down up to 1/32". These rollers also have a 90° V-groove, which provides accurate positioning and travel on any 90° angle track.

Made of hardened steel, all of these rollers are lubed for life with seals that retain lubricant and block contaminants. They have a hex socket stud, ball bearings, and are also rated for thrust loads. Maximum temperature is 225° F. Mounting nut included.

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Thread Lg. (E)	(K)	V-Groove Dp. (L)	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Static Thrust Load Cap., lbs.		Each
1 1/2"	45/64"	7/16"	1"	7/16"-20	1/2"	1/32"	3/16"	8,000	230	230	140	2282K51	$77.31
2"	13/16"	1/2"	1 1/4"	1/2"-20	5/8"	1/32"	5/16"	6,000	600	520	370	2282K52	105.71
2 1/2"	1 1/4"	3/4"	1 3/4"	3/4"-16	57/64"	1/16"	1/2"	6,000	1,100	1,050	470	2282K53	108.35
3 1/2"	1 5/8"	7/8"	2"	7/8"-14	1 1/64"	1/16"	5/8"	4,000	2,270	1,980	1,340	2282K54	134.65

Metric Ultra-Precision V-Groove-Guided Stud-Mount Track Rollers

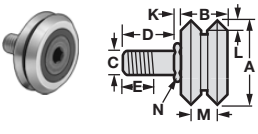

Precision-ground 90° V-groove surfaces provide higher accuracy than other V-groove rollers. These rollers also have a double-row, angular-contact ball bearing design to handle both radial and thrust loads. All rollers are lubed for life with seals that retain lubricant and block contaminants. For use on any 90° angle track.

Standard rollers are for blind-hole mounting applications. Use the hex nut (N) at the stud base for tightening. ***Adjustable-height rollers*** are for through-hole mounting applications. They have an offset stud to allow for adjustment during installation. Use the hex nut (N) at the stud base for adjusting as well as tightening.

Steel Rollers— All are bearing-grade steel with a nylon ball retainer. Maximum temperature is 248° F.

Corrosion-Resistant Stainless Steel— Specially formulated grease plus Types 304 and 440C stainless steel construction make these track rollers clean-room compatible. Maximum temperature is 500° F. Mounting nut included.

Roller Dia. (A), mm	Roller Wd. (B), mm	Stud Dia. (C), mm	Stud Lg. (D), mm	Thread Size	Thread Lg. (E), mm	(K), mm	V-Groove Dp. (L), mm	V-Groove Wd. (M), mm	Hex Nut Size (N), mm	Stud Offset, mm	Max. rpm @ No Load	Radial Load Cap., lbs. Static	Radial Load Cap., lbs. Dynamic	Thrust Load Cap., lbs. Static	Thrust Load Cap., lbs. Dynamic		Each
Steel																	
Standard																	
20	8	8	8	M8×1.25	6	3.4	2	4	12	—	5,300	274	274	57	57	3672K17	$27.45
31	11	10	11	M10×1.5	9	4.1	3	5	14	—	3,400	596	596	141	141	3672K18	33.53
46	16	12	15	M12×1.75	11	5.7	4	8	19	—	2,200	1,326	1,326	382	382	3672K19	37.75
Adjustable Height																	
20	8	6	8	M6×1	6	3.4	2	4	12	0.6	5,300	274	274	57	57	3672K21	27.45
31	11	10	11	M8×1.25	9	4.1	3	5	14	0.8	3,400	596	596	141	141	3672K22	33.53
46	16	11	15	M10×1.5	11	5.7	4	8	19	1.5	2,200	1,326	1,326	382	382	3672K23	37.75
Corrosion-Resistant Stainless Steel																	
Standard																	
20	8	6	15	M6×1	9	2.1	2	4	12	—	5,300	228	228	47	47	3681K22	83.40
31	11	10	25	M10×1.5	15	2.6	3	5	14	—	3,400	494	494	117	117	3681K23	97.62

90° Angle Track-Roller Rails

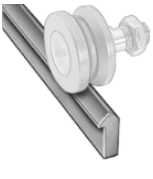

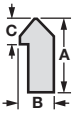

Use these rails with any track rollers that have a 90° V-groove. All are made of steel. **To Order:** Please specify length: 1, 2, 3, 4, 5, or 6 feet.

Hardened Steel— The contact surface has a Rockwell hardness of 58C for improved wear resistance. The bottom can be drilled for mounting.

O'all Ht. (A)	O'all Wd. (B)	(C)	Unhardened Steel	Per Ft.	Hardened Steel	Per Ft.
7/16"	3/16"	1/8"	1582T2	$4.38	1582T1	$8.38
5/8"	1/4"	3/16"	1582T4	7.69	1582T3	11.95
7/8"	11/32"	1/4"	1582T6	15.57	1582T5	20.81
1 1/16"	7/16"	5/16"	1582T8	24.86	1582T7	31.83

Oil-Resistant Neoprene Idler and Drive Rollers

A neoprene rubber surface resists oil, tearing, abrasion, and heat. Durometer is 55A (see pg. 3526 for information). Temp. range is –40° to +170° F. Color is black.

Idler Rollers— Serve as guides and tensioning devices. Their roller surface is bonded to a bronze sleeve bearing that is designed to spin freely on a shaft.

Drive Rollers— Also known as contact wheels and feed rollers, drive rollers mount to a shaft to transmit power. All have an aluminum hub that is tapped for mounting with set screws, sold separately below. Their roller surface is bonded to the hub.

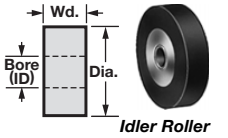

Idler Roller

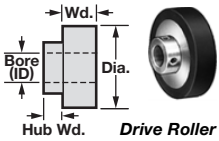

Drive Roller

Idler Rollers

Roller Dia.	Roller Wd.	Bore (ID)		Each
1/2"	1/4"	1/4"	60885K71	$16.02
1/2"	3/8"	1/4"	60885K72	18.14
1/2"	1/2"	1/4"	60885K73	19.24
1/2"	5/8"	1/4"	60885K74	21.36
5/8"	1/4"	1/4"	60885K75	16.02
5/8"	3/8"	1/4"	60885K76	18.14
5/8"	1/2"	1/4"	60885K77	19.24
5/8"	5/8"	1/4"	60885K78	21.36
3/4"	1/4"	1/4"	60885K79	16.02
3/4"	1/2"	1/4"	60885K81	19.24
3/4"	3/4"	1/4"	60885K82	21.36
7/8"	1/4"	7/32"	60885K12	16.02
7/8"	1/4"	1/4"	60885K83	$16.02
7/8"	5/8"	7/32"	60885K14	21.36
7/8"	5/8"	1/4"	60885K84	21.36
7/8"	3/4"	1/4"	60885K85	21.36
1"	1/4"	1/4"	60885K86	16.30
1"	1/2"	1/4"	60885K87	18.46
1"	3/4"	1/4"	60885K88	21.72
1"	1"	1/2"	60885K89	22.18
1 1/4"	1/4"	1/4"	60885K91	16.30
1 1/4"	1/4"	9/32"	60885K16	16.30
1 1/4"	3/4"	1/4"	60885K92	21.72
1 1/4"	3/4"	9/32"	60885K18	21.36
1 1/4"	1"	3/8"	60885K93	$22.18
1 1/4"	1"	1/2"	60885K94	22.18
1 1/2"	1/4"	3/8"	60885K2	16.64
1 1/2"	1/4"	1/2"	60885K95	16.64
1 1/2"	3/4"	3/8"	60885K22	21.08
1 1/2"	3/4"	1/2"	60885K96	21.08
1 1/2"	1"	1/2"	60885K97	22.18
2"	1/4"	1/2"	60885K24	17.08
2"	3/4"	1/2"	60885K26	21.60
2"	1"	1/2"	60885K98	22.74
2"	1"	5/8"	60885K99	22.74

Drive Rollers

Roller Dia.	Roller Wd.	Bore (ID)	Hub Wd.	Set Screw Size (No. Required)		Each
5/8"	3/16"	1/4"	1/4"	8-32 (1)	60885K31	$16.70
5/8"	1/4"	1/4"	1/4"	8-32 (1)	60885K32	17.80
5/8"	3/8"	1/4"	1/4"	8-32 (1)	60885K33	20.04
5/8"	1/2"	1/4"	1/4"	8-32 (1)	60885K34	22.26
3/4"	3/16"	1/4"	1/4"	8-32 (1)	60885K35	16.70
3/4"	1/4"	1/4"	1/4"	8-32 (1)	60885K36	17.80
3/4"	3/8"	1/4"	1/4"	8-32 (1)	60885K37	20.04
3/4"	1/2"	1/4"	1/4"	8-32 (1)	60885K38	22.26
7/8"	3/16"	1/4"	1/4"	8-32 (1)	60885K39	16.70
7/8"	1/4"	1/4"	1/4"	8-32 (1)	60885K41	17.80
7/8"	3/8"	1/4"	1/4"	8-32 (1)	60885K42	20.04
7/8"	1/2"	1/4"	1/4"	8-32 (1)	60885K43	22.26
1"	3/16"	1/4"	1/4"	8-32 (1)	60885K11	16.70
1"	1/4"	1/4"	1/4"	8-32 (1)	60885K44	17.80
1"	3/8"	1/4"	1/4"	8-32 (1)	60885K45	20.04
1"	1/2"	1/4"	1/4"	8-32 (1)	60885K13	22.26
1 1/4"	1/4"	5/16"	5/16"	8-32 (2)	60885K15	16.86
1 1/4"	1/2"	1/4"	5/16"	8-32 (2)	60885K46	19.12
1 1/4"	3/4"	5/16"	5/16"	8-32 (2)	60885K17	22.48
1 1/2"	1/2"	3/8"	3/8"	10-32 (2)	60885K47	19.28
1 1/2"	5/8"	3/8"	3/8"	10-32 (2)	60885K48	20.42
1 1/2"	3/4"	1/2"	3/8"	10-32 (2)	60885K49	$21.54
1 1/2"	1"	1/2"	3/8"	10-32 (2)	60885K51	22.68
1 5/8"	1/4"	3/8"	3/8"	10-32 (2)	60885K19	17.02
1 5/8"	3/4"	3/8"	3/8"	10-32 (2)	60885K21	21.54
1 5/8"	1"	1/2"	3/8"	10-32 (2)	60885K52	22.68
1 3/4"	3/4"	1/2"	3/8"	10-32 (2)	60885K53	21.94
1 3/4"	1"	5/8"	3/8"	10-32 (2)	60885K54	23.10
2"	5/8"	1/2"	3/8"	10-32 (2)	60885K55	20.80
2"	3/4"	1/2"	3/8"	10-32 (2)	60885K56	21.94
2"	1"	5/8"	3/8"	10-32 (2)	60885K57	23.10
2 1/8"	1/4"	1/2"	3/8"	10-32 (2)	60885K23	17.32
2 1/8"	3/4"	1/2"	3/8"	10-32 (2)	60885K25	21.94
2 1/2"	3/4"	5/8"	1/2"	1/4"-28 (2)	60885K58	29.86
2 1/2"	1"	3/4"	1/2"	1/4"-28 (2)	60885K59	31.52
2 1/2"	1 1/2"	3/4"	1/2"	1/4"-28 (2)	60885K61	33.18
2 5/8"	3/8"	5/8"	1/2"	1/4"-28 (2)	60885K27	24.88
2 5/8"	1"	5/8"	1/2"	1/4"-28 (2)	60885K29	31.52
2 3/4"	1"	3/4"	1/2"	1/4"-28 (2)	60885K62	43.16
2 3/4"	1 1/2"	3/4"	1/2"	1/4"-28 (2)	60885K63	44.90
3"	1 1/2"	3/4"	1/2"	1/4"-28 (2)	60885K64	44.90
3"	2"	3/4"	1/2"	1/4"-28 (2)	60885K65	46.52

18-8 Stainless Steel Cup Point Set Screws for Drive Rollers

Size	Pkg. Qty.		Per Pkg.
8-32	10	60885K66	$1.02
10-32	10	60885K67	$1.11
1/4"-28	10	60885K68	$1.34

Precision Urethane Idler and Drive Rollers

Precision construction ensures accurate and consistent dimensions—great when tight tolerances are important. All rollers have a urethane roller surface (roller dia.) that is molded to a tolerance of ±0.003". Bore (ID) tolerance is –0.000" to +0.001". Temperature range is –40° to +180° F. Rollers are color coded by durometer: 55A is blue and 70A is orange (see page 3526 for durometer information). **To Order:** Please specify durometer: 55A or 70A.

Idler Rollers— Serve as guides and tensioning devices. Their roller surface is bonded to an SAE 841 oil-impregnated bronze sleeve bearing that is designed to spin freely on a shaft.

Drive Rollers— Also known as contact wheels and feed rollers, drive rollers mount to a shaft to transmit power. Set screws included. ***Standard-width models*** have an aluminum hub that is tapped for mounting with set screws. ***Slimline models*** have a nonprotruding aluminum hub; the set screw holes are tapped directly through the urethane roller surface to save space.

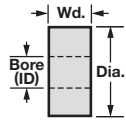

Idler Roller

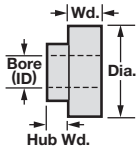

Drive Roller, Standard Width

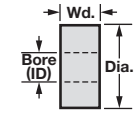

Drive Roller, Slimline

Idler Rollers

Roller Dia.	Roller Wd.	Bore (ID)		Each
3/8"	1/4"	1/8"	2483K61	$14.44
3/8"	3/8"	1/8"	2483K62	22.60
1/2"	1/4"	1/8"	2483K63	13.78
1/2"	1/4"	3/16"	2483K64	14.89
1/2"	1/2"	1/8"	2483K65	25.83
1/2"	1/2"	3/16"	2483K66	21.46
5/8"	1/4"	1/4"	2483K72	16.00
5/8"	5/8"	1/4"	2483K74	24.78
3/4"	3/8"	3/16"	2483K81	17.56
3/4"	3/8"	1/4"	2483K82	19.56
3/4"	1/2"	3/16"	2483K83	24.99
3/4"	1/2"	1/4"	2483K84	25.47
3/4"	3/4"	3/16"	2483K85	24.44
3/4"	3/4"	1/4"	2483K86	20.22
1"	1/2"	1/4"	2483K91	21.33
1"	1/2"	5/16"	2483K92	21.11
1"	3/4"	1/4"	2483K93	33.79
1"	3/4"	5/16"	2483K94	32.78
1"	1"	1/4"	2483K95	37.67
1"	1"	5/16"	2483K96	37.11

Drive Rollers

Roller Dia.	Roller Wd.	Bore (ID)	Standard Width Hub Wd.	Standard Width Each	Slimline	Slimline Each
3/8"	1/4"	1/8"	1/4"	$20.47	2488K33	$24.04
1/2"	1/4"	3/16"	1/4"	20.00	2488K34	22.17
1/2"	1/4"	1/4"	1/4"	20.00	2488K35	22.17
1/2"	1/2"	3/16"	1/4"	21.26	2488K37	22.40
1/2"	1/2"	1/4"	1/4"	21.26	2488K38	22.40
5/8"	1/2"	1/4"	1/4"	23.37	2488K39	23.97
3/4"	3/8"	1/4"	1/4"	23.12	2488K41	24.30
3/4"	1/2"	1/4"	1/4"	23.80	2488K42	24.55
3/4"	3/4"	1/4"	1/4"	26.80	2488K43	26.08
1"	3/16"	1/4"	1/4"	22.34	2488K44■	25.46
1"	1/2"	1/4"	1/4"	24.80	2488K45	27.48
1 1/4"	1/4"	5/16"	5/16"	24.54	2488K46	26.30
1 1/4"	3/4"	5/16"	1/4"	28.26	2488K47	30.02
1 5/8"	1/4"	3/8"	3/8"	33.84	2488K48	34.01
1 5/8"	3/4"	3/8"	3/8"	38.51	2488K49	38.26
2"	1/4"	3/8"	3/8"	42.45	2488K83	38.87
2"	3/4"	3/8"	3/8"	48.06	2488K84	43.11
2 1/2"	3/8"	1/2"	1/2"	45.92	2488K85	40.99
2 1/2"	1"	1/2"	1/2"	57.16	2488K86	47.73

■ Roller width is 1/4".

Extra-Wide Vibration-Resistant Idler and Drive Rollers

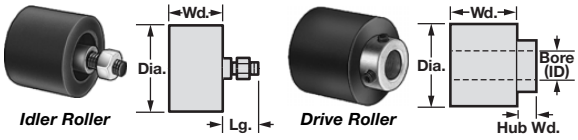

With their large footprint, these rollers minimize vibration. See page 3526 for durometer information. ***Idler Rollers—*** Serve as guides and tensioning devices. All have ball bearings and spin freely on an included stud. The stud, bearings, and nut are steel. ***Drive Rollers—*** Also known as contact wheels and feed rollers, drive rollers mount to a shaft to transmit power. All have a steel hub (unless noted) that is tapped for mounting with the included set screws.

Neoprene— Oil, flame, gasoline, and weather resistant. Temperature range is –40° to +200° F. Color is black. **To Order:** Please specify durometer (unless noted): 20A, 35A, 60A, or 80A.

Urethane— Nonmarring, rugged, and wear resistant, with good chemical resistance. Temperature range is –65° to +200° F. Color coded by durometer: 35A is yellow, 60A is blue-green, and 80A is red. **To Order:** Please specify durometer (unless noted): 35A, 60A, or 80A.

Idler Rollers

Roller Dia.	Roller Wd.	Stud Thread	Stud Lg.	Neoprene	Neoprene Each	Urethane	Urethane Each
1½″	1.25″	5/16″-18	5/8″	22875T4	$14.98	2372T4	$15.12
2″	0.92″	½″-13	1⅛″	22875T5	20.24	2372T5	20.19
2″	1.94″	½″-13	1⅜″	22875T6	19.68	2372T6	20.69
2½″	0.92″	½″-13	1⅛″	22875T7	17.52	2372T7	24.30
2½″	1.94″	½″-13	1⅜″	22875T8	21.88	2372T8	24.84
4″	0.92″	½″-13	1⅛″	22875T9	23.89	2372T9	35.58
4″	1.94″	½″-13	1⅜″	22875T41	21.77	2372T21	37.84
6″	2.00″	½″-13	1⅛″	22875T15●	48.05	—	—

● Available in 60A durometer only.

Drive Rollers

Roller Dia.	Roller Wd.	Bore (ID)	Hub Wd.	Neoprene	Neoprene Each	Urethane	Urethane Each
1½″	1.25″	⅜″	⅜″	2474K61★	$26.80	2475K61★	$29.32
1½″	1.25″	½″	⅜″	2474K62★	26.80	2475K62★	29.32
2″	0.92″	⅝″	½″	2474K63	30.13	2475K63	31.59
2″	0.92″	¾″	½″	2474K64	30.13	2475K64	31.59
2″	0.92″	1″	½″	2474K66	21.04	2475K66	24.48
2″	1.94″	¾″	½″	2474K65	31.19	2475K65	33.12
2″	1.94″	1″	½″	2474K67	25.23	2475K67	24.85
2½″	0.92″	¾″	½″	2474K68	28.99	2475K68	35.68
2½″	0.92″	1″	½″	2474K71	21.82	2475K71	26.79
2½″	1.94″	¾″	½″	2474K69	30.16	2475K69	37.57
2½″	1.94″	1″	½″	2474K72	23.60	2475K72	28.18
4″	0.92″	¾″	½″	2474K73	35.49	2475K73	46.24
4″	0.92″	1″	½″	2474K75	37.25	2475K75	35.27
4″	1.94″	¾″	½″	2474K74	36.23	2475K74	48.88
4″	1.94″	1″	½″	2474K76	23.38	2475K76	37.92
4″	1.94″	1¼″	½″	22875T18●	32.17	2372T51●	37.82
5″	2.00″	1″	½″	22875T19●	39.00	—	—
5½″	2.00″	1 7/16″	½″	22875T21●	36.98	—	—
6½″	4.00″	1″	¾″	22875T22●	90.76	—	—

★ Aluminum hub. ● Available in 60A durometer only.

Slippery UHMW Idler Rollers

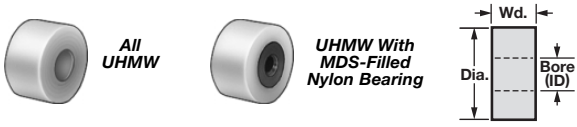

Incredibly slippery UHMW polyethylene allows materials to slide over it, so your processes keep moving even if rollers stop spinning. All rollers serve as guides and tensioning devices. They're corrosion resistant. Durometer is 68D (see page 3526 for durometer information). Temperature range is –22° to +180° F. Color is white.

All-UHMW rollers are for low loads and low speeds and are made entirely of FDA-compliant material. ***UHMW rollers with MDS-filled nylon bearing*** have higher load and speed capabilities.

Roller Dia.	Roller Wd.	Bore (ID)	All UHMW	All UHMW Each	UHMW with MDS-Filled Nylon Bearing	UHMW with MDS-Filled Nylon Bearing Each
⅜″	¼″	⅛″	1568T1	$16.41	—	—
⅜″	⅜″	⅛″	1568T2	16.41	—	—
½″	¼″	⅛″	1568T3	14.10	—	—
½″	½″	3/16″	1568T6	15.88	1568T56	$14.72
⅝″	¼″	¼″	1568T7	15.88	1568T57	29.60
⅝″	⅝″	¼″	1568T8	9.10	1568T58	14.72
¾″	⅜″	¼″	1568T11	9.10	1568T61	18.48
¾″	½″	¼″	1568T12	9.10	1568T62	18.48
¾″	¾″	¼″	1568T13	9.10	1568T63	18.48
1″	½″	¼″	1568T14	10.27	1568T64	18.48
1″	½″	5/16″	1568T15	10.27	1568T65	18.48
1″	¾″	¼″	1568T16	10.60	1568T66	18.48
1″	¾″	5/16″	1568T17	10.60	1568T67	18.48
1″	1″	¼″	1568T18	10.60	1568T68	18.48
1″	1″	5/16″	1568T19	10.60	1568T69	18.48

Slim-Tread Drive Rollers

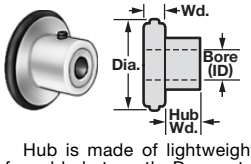

A narrow black Buna-N O-ring tread provides both a sure grip and a delicate touch, making these rollers perfect for light duty tasks such as those involving paper, tape, and card drives. Also known as contact wheels and feed rollers, they mount to your shaft with a set screw (included) to transmit power.

Hub is made of lightweight, white acetal and has a brass insert for added strength. Durometer is 70A (see page 3526 for durometer information). Temperature range is –30° to +250° F.

Roller Dia.	Roller Wd.	Bore (ID)	Hub Wd.	Set Screw Size		Each
⅝″	3/16″	⅛″	½″	4-40	2471K11	$11.17
⅝″	3/16″	3/16″	½″	4-40	2471K12	11.07
⅞″	3/16″	¼″	½″	6-32	2471K15	11.23
1⅛″	3/16″	⅛″	½″	4-40	2471K16	11.22
1⅛″	3/16″	¼″	½″	6-32	2471K18	11.30
1⅝″	3/16″	¼″	½″	6-32	2471K22	12.42
2⅛″	3/16″	¼″	½″	6-32	2471K25	14.01
2⅝″	3/16″	¼″	½″	6-32	2471K26	14.10

Self-Cleaning Idler Rollers

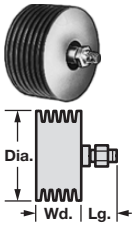

A finned design keeps debris from building up and provides a soft touch to protect delicate surfaces. All of these rollers serve as guides and tensioning devices. They have ball bearings and spin freely on an included stud. The stud, bearings, and nut are steel. **To Order:** Where applicable, please specify durometer: 20A, 35A, or 60A (see page 3526 for durometer information).

Neoprene— Oil, flame, gasoline, and weather resistant. Temperature range is –40° to +200° F. Color is black.

Urethane— Nonmarring, rugged, and wear resistant, with good chemical resistance. Temperature range is –65° to +200° F. Color coded by durometer: 35A is yellow and 60A is blue-green.

Roller Dia.	Roller Wd.	Stud Thread	Stud Lg.	Neoprene Available Durometers	Neoprene	Neoprene Each	Urethane Available Durometers	Urethane	Urethane Each
2″	0.92″	½″-13	1⅛″	20A, 35A, 60A	22875T1	$17.32	35A, 60A	2372T1	$30.50
2″	1.94″	½″-13	1⅜″	20A, 35A, 60A	22875T2	22.82	35A	2372T45	31.52
2½″	1.94″	½″-13	1⅜″	35A	22875T24	20.65	35A, 60A	2372T2	32.02
4″	1.94″	½″-13	1⅜″	35A, 60A	22875T3	28.54	35A, 60A	2372T3	47.28

One-Way Idler/Drive Rollers

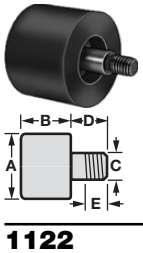

Needle-roller clutch bearings allow these rollers to spin freely like idler rollers in one direction (clockwise when facing roller end), and then perform like a drive roller in the other direction. Hub, bearings, and shaft are steel. See page 3526 for durometer information.

Neoprene— Oil, flame, gasoline, and weather resistant. Temperature range is –40° to +200° F. Color is black.

Urethane— Nonmarring, rugged, and wear resistant, with good chemical resistance. Temperature range is –65° to +200° F. Color coded by durometer: 60A is blue-green, and 80A is red.

Roller Dia. (A)	Roller Wd. (B)	Stud Dia. (C)	Stud Lg. (D)	Thread Size	Lg. (E)	NEOPRENE 60A Durometer	NEOPRENE 60A Each	NEOPRENE 80A Durometer	NEOPRENE 80A Each	URETHANE 60A Durometer	URETHANE 60A Each	URETHANE 80A Durometer	URETHANE 80A Each
1½″	1¼″	5/16″	1 1/16″	5/16″-18	½″	3655K11	$47.66	3655K15	$47.66	3655K21	$49.11	3655K25	$49.11
2″	1 15/16″	½″	1¼″	½″-13	¾″	3655K12	56.00	3655K16	58.38	3655K22	54.79	3655K26	54.79
4″	1 15/16″	½″	1¼″	½″-13	¾″	3655K14	61.30	3655K18	65.21	3655K24	75.51	3655K28	75.51

Self-Cleaning Drive Rollers

Just like the Self-Cleaning Idler Rollers on the previous page, except these are drive rollers that mount to your shaft with two set screws (included) to transmit power. Also known as contact wheels and feed rollers, they have a steel hub. **To Order:** Where applicable, please specify durometer: 35A or 60A (see page 3526 for durometer information).

Neoprene—Oil, flame, gasoline, and weather resistant. Temperature range is –40° to +200° F. Color is black.

Urethane—Nonmarring, rugged, and wear resistant, with good chemical resistance. Temperature range is –65° to +200° F. Color coded by durometer: 35A is yellow and 60A is blue-green.

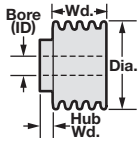

Roller Dia.	Roller Wd.	Bore (ID)	Hub Wd.	Neoprene Avail. Durometers		Neoprene Each	Urethane Avail. Durometers		Urethane Each
4″	1.94″	¾″	½″	35A, 60A	2494K66	$40.42	35A, 60A	2496K66	$58.91
5″	2.00″	1″	½″	35A	22875T31	50.49	—	—	—

Press-Fit Drive Rollers

The simple plain-bore design lets you press-fit these rollers onto a shaft without the need for set screws or keyways. Also known as contact wheels and feed rollers, they're the choice for transmitting power in low-speed, low-torque applications.

The roller surface is neoprene; it resists oil, flame, gasoline, tearing, and abrasion. Hub is aluminum. Durometer is 55A (see page 3526 for durometer information). Temperature range is –40° to +170° F. Color is black.

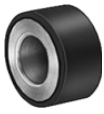

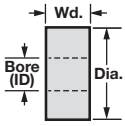

Roller Dia.	Roller Wd.	Bore (ID)		Each	Roller Dia.	Roller Wd.	Bore (ID)		Each	Roller Dia.	Roller Wd.	Bore (ID)		Each
½″	¼″	¼″	2473K11	$17.80	¾″	¾″	¼″	2473K22	$23.73	1¼″	1″	½″	2473K34	$24.64
½″	⅜″	¼″	2473K12	20.16	1″	¼″	¼″	2473K26	18.11	1½″	¼″	½″	2473K35	18.49
½″	½″	¼″	2473K13	21.38	1″	½″	¼″	2473K27	20.51	1½″	¾″	½″	2473K36	23.42
⅝″	¼″	¼″	2473K15	17.80	1″	¾″	¼″	2473K28	23.73	1½″	1″	½″	2473K37	24.64
⅝″	⅜″	¼″	2473K16	20.16	1″	1″	½″	2473K29	24.64	2″	¼″	½″	2473K38	18.98
¾″	¼″	¼″	2473K19	17.80	1¼″	¼″	¼″	2473K31	18.11	2″	½″	½″	2473K39	21.49
¾″	½″	¼″	2473K21	21.38	1¼″	¾″	¼″	2473K32	24.13	2″	1″	½″	2473K41	25.27

Large-Bore Drive Rollers

Press-fit these rollers onto your shaft or build a custom roller by adding your own hub or bushing (for bushings, see our 5926K Quick-Grip Screw-Clamp Bushings on page 1046). Also known as contact wheels and feed rollers, they transmit power. All consist of a neoprene or urethane roller surface bonded to a steel rim. See page 3526 for durometer information.

Neoprene—Oil, flame, gasoline, and weather resistant. Temperature range is –40° to +200° F. Color is black. **To Order:** Please specify durometer: 20A, 35A, 60A, or 80A.

Urethane—Nonmarring, rugged, and wear resistant, with good chemical resistance. Temperature range is –65° to +200° F. Color coded by durometer: 35A is yellow, 60A is blue-green, and 80A is red. **To Order:** Please specify durometer: 35A, 60A, or 80A.

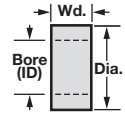

Roller Dia.	Roller Wd.	Bore (ID)	Neoprene	Each	Urethane	Each	Roller Dia.	Roller Wd.	Bore (ID)	Neoprene	Each	Urethane	Each
1½″	1.25″	⅞″	2476K31	$9.37	2477K31	$12.40	2½″	1.94″	1¼″	2476K35	$14.10	2477K35	$21.02
2″	0.92″	1¼″	2476K32	13.54	2477K32	15.75	4″	0.92″	1¼″	2476K36	18.78	2477K36	29.14
2″	1.94″	1¼″	2476K33	13.98	2477K33	16.17	4″	1.94″	1¼″	2476K37	19.13	2477K37	31.96
2½″	0.92″	1¼″	2476K34	14.05	2477K34	20.61							

Sure-Grip Drive Rollers

With teardrop-shaped sidewall holes and a soft surface, these rollers gently grab and maintain contact as the roller is compressed. Perfect for bottling and sheet metal applications. Also known as contact wheels and feed rollers, these rollers mount to a shaft with two set screws (included) to transmit power. Hub is made of steel. See page 3526 for durometer information.

Neoprene—Oil, flame, gasoline, and weather resistant. Temperature range is –40° to +200° F. Color is black.

Nitrile—Nonmarring with good abrasion and oil resistance. Temperature range is –60° to +175° F. Color is off-white.

Urethane—Nonmarring, rugged, and wear resistant, with good chemical resistance. Temperature range is –65° to +200° F. Color is yellow.

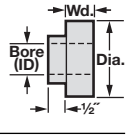

Roller Dia.	Roller Wd.	Bore (ID)	Neoprene 20A Durometer	Each	Neoprene 35A Durometer	Each	Nitrile 20A Durometer	Each	Nitrile 35A Durometer	Each	Urethane 35A Durometer	Each
4″	0.92″	¾″	2497K2	$37.62	2497K12	$37.62	2498K2	$43.12	2498K12	$41.98	1536T21	$58.24
4″	0.92″	1″	2497K3	29.45	2497K13	29.45	2498K3	34.54	2498K13	33.38	1536T22	48.42
4″	1.94″	¾″	2497K5	39.12	2497K15	39.12	2498K5	44.72	2498K15	43.56	1536T23	58.98
4″	1.94″	1″	2497K6	30.61	2497K16	30.61	2498K6	35.68	2498K16	34.54	1536T24	49.94

Heavy Duty Drive Rollers

These sturdy rollers have steel hubs and machined keyways to handle your heavier loads. Also known as contact wheels and feed rollers, they mount to a shaft with two set screws (included) to transmit power. See page 3526 for durometer information.

Nitrile—Nonmarring with good abrasion and oil resistance. Temperature range is –20° to +180° F. Color is black.

Urethane—Nonmarring, rugged, and wear resistant, with good chemical resistance. Temperature range is –20° to +120° F. Color coded by durometer: 85A is red and 95A is maroon.

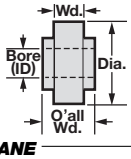

Roller Dia.	Roller Wd.	Bore (ID)	Keyway Wd.×Dp.	O'all Wd.	Nitrile 70A Durometer Dynamic Load Cap., lbs.		Each	Urethane 85A Durometer Dynamic Load Cap., lbs.		Each	Urethane 95A Durometer Dynamic Load Cap., lbs.		Each
3″	2″	½″	⅛″ × 1/16″	3¼″	300	61065K51 ♦	$45.48	—	—	—	—	—	—
3″	2″	¾″	3/16″ × 3/32″	3¼″	300	61065K52 ♦	45.48	300	2478K42 ♦	$49.74	—	—	—
4″	2″	¾″	3/16″ × 3/32″	3¼″	350	61065K54 ♦	49.74	350	2478K41 ♦	59.86	—	—	—
5″	2″	¾″	3/16″ × 3/32″	2 3/16″	400	61065K56	78.08	400	2478K46	84.08	—	—	—
6″	2″	¾″	3/16″ × 3/32″	2 3/16″	425	61065K58	80.04	425	2478K47	80.04	—	—	—
6″	3″	¾″	3/16″ × 3/32″	3¼″	500	61065K46	99.74	—	—	—	1,000	61065K65	$139.22
6″	3″	1″	¼″ × ⅛″	3¼″	500	61065K47	99.74	1,600	2478K32	126.98	1,900	61065K66	115.82
6″	3″	1¼″	¼″ × ⅛″	3¼″	500	61065K48	99.74	—	—	—	1,900	61065K67	115.82
8″	2″	¾″	3/16″ × 3/32″	2 3/16″	500	61065K59	85.40	500	2478K44	91.16	—	—	—
8″	3″	1″	¼″ × ⅛″	3¼″	850	61065K17	117.12	1,600	2478K45	154.56	2,000	61065K68	139.50
8″	3″	1¼″	¼″ × ⅛″	3¼″	850	61065K18	117.12	—	—	—	2,000	61065K69	139.50
10″	3″	1″	¼″ × ⅛″	3¼″	1,000	61065K23	120.30	1,600	2478K43	182.74	—	—	—
10″	3″	1¼″	¼″ × ⅛″	3¼″	1,000	61065K24	120.30	—	—	—	—	—	—

♦ Hub protrudes 1¼″ on one side only.

Corrosion-Resistant Turntables

Square

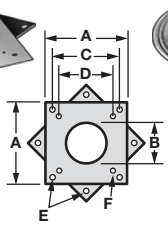

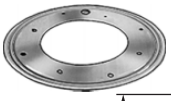

Round

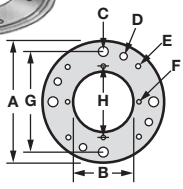

Put a spin on your displays, industrial assemblies, and many other "lazy Susan" applications. All of these corrosion-resistant turntables have stamped plates and contain ball bearings that are housed in a large circular race. They also have a space-saving design that's only 5/16″ high. Mounting fasteners not included. ***Lubricated turntables*** provide smoother, quieter motion.

Aluminum— Lightweight aluminum plates with stainless steel ball bearings.

Galvanized Steel— Galvanized steel plates with steel ball bearings.

Black Finish— Smooth steel plates with a black finish and steel ball bearings.

Yellow Chromate— Zinc-plated steel plates with a yellow-chromate finish and stainless steel ball bearings.

Square Turntables

Load Cap., lbs.	O'all Size (A)	Center Dia. (B)	Top Ctr.-to-Ctr. (C)	Top Ctr.-to-Ctr. (D)	Bottom Ctr.-to-Ctr. (C)	Bottom Ctr.-to-Ctr. (D)	Hole Dia. (E)	Hole Dia. (F)	No. of Holes	Aluminum	Aluminum Each	Galvanized Steel	Galvanized Steel Each	Black Finish	Black Finish Each	Yellow Chromate	Yellow Chromate Each
Unlubricated																	
200	3″	1.31″	2.56″	2.13″	2.56″	—	0.16″	0.094″	12	—	—	6031K16	$1.98	6031K31	$3.27	6031K41	$9.69
300	4″	2.16″	3.19″	2.75″	3.53″	2.93″	0.16″	0.094″	16	6031K2	$14.00	6031K17	2.26	6031K32	5.17	6031K42	11.82
500	6.06″	4.68″	4.77″	—	5.56″	—	0.19″	0.094″	12	6031K3★	23.06	6031K18★	3.47	6031K33★	9.37	6031K43★	19.39
Lubricated																	
500	6.06″	4.68″	4.77″	—	5.56″	—	0.19″	0.094″	12	—	—	1544T1★	5.20	1544T11★	11.07	1544T21★	22.35

★ (E) dimension for bottom plate is 0.27″. Top plate does not have (F) holes.

Round Turntables

Load Cap., lbs.	O'all Dia. (A)	Center Dia. (B)	Top Dia. (C)	Top Dia. (D)	Top Dia. (E)	Top Ctr.-to-Ctr. (G)	Bottom Dia. (F)	Bottom Ctr.-to-Ctr. (H)	No. of Holes	Galvanized Steel	Galvanized Steel Each	Black Finish	Black Finish Each	Yellow Chromate	Yellow Chromate Each
Unlubricated															
750	9.12″	4.5″	0.28″	—	0.13″	6.18″	0.2″	5.18″	16	6031K21	$6.29	6031K34	$15.10	6031K44	$33.69
1,000	12.06″	6.33″	0.28″	0.2″	0.13″	9.47″	0.2″	8.5″	22	6031K19	11.48	6031K35	29.04	6031K45	43.31
Lubricated															
750	9.12″	4.5″	0.28″	—	0.13″	6.18″	0.2″	5.18″	16	1544T2	9.51	1544T12	13.73	1544T22	33.34
1,000	12.06″	6.33″	0.28″	0.2″	0.13″	9.47″	0.2″	8.5″	22	1544T3	13.73	1544T13	28.46	1544T23	42.41

Easy-Position Turntables

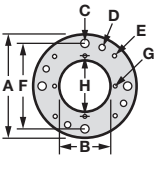

For repeatable positioning capability, turn to these turntables. All are made of galvanized steel and have steel ball bearings that are housed in a large circular race. They also have a space-saving design that's only 5/16″ high. Mounting fasteners not included.

One-Stop Turntables— Have one dead stop, which prevents rotation past the stop.

One-, ***Four-***, and ***Eight-Position Turntables—*** These turntables have detents, which stop or slow the rotation of the turntable at specified intervals. ***One-position turntables*** have one detent at 180°. ***Four-position turntables*** have four detents spaced at 90° intervals. ***Eight-position turntables*** have eight detents spaced at 45° intervals.

Load Cap., lbs.	O'all Dia. (A)	Ctr. Dia. (B)	Top Dia. (C)	Top Dia. (D)	Top Dia. (E)	Ctr.-to-Ctr. (F)	Bottom Dia. (G)	Bottom Ctr.-to-Ctr. (H)	No. of Holes	Each
One-Stop										
750	9″	4.5″	0.28″	—	0.13″	6.18″	0.2″	5.18″	16	1797K3 $8.94
1,000	12″	6.33″	0.28″	0.2″	0.13″	9.47″	0.2″	8.5″	22	1797K4 12.20
One-Position										
750	9″	4.5″	0.28″	—	0.13″	6.18″	0.2″	5.18″	16	1797K1 7.46
1,000	12″	6.33″	0.28″	0.2″	0.13″	9.47″	0.2″	8.5″	22	1797K2 9.88
Four-Position										
750	9″	4.5″	0.28″	—	0.13″	6.18″	0.2″	5.18″	16	1797K21 7.83
1,000	12″	6.33″	0.28″	0.2″	0.13″	9.47″	0.2″	8.5″	22	1797K11 11.92
Eight-Position										
750	9″	4.5″	0.28″	—	0.13″	6.18″	0.2″	5.18″	16	1797K22 8.64
1,000	12″	6.33″	0.28″	0.2″	0.13″	9.47″	0.2″	8.5″	22	1797K12 12.76

Large-Diameter Ring-Style Turntables

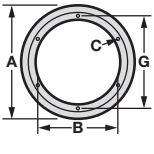

Perfect for adding a revolving feature to bulky equipment. All of these turntables are corrosion resistant and have ball bearings. Weight rests on pads along the outer ring. Mounting fasteners not included.

The 18635A52 *turntable* also has six 5/16″-18 holes (spaced 12.38″ center to center) for fastening to the load surface.

Load Cap., lbs.	Ht.	O'all Dia. (A)	Ctr. Dia. (B)	Inner Ring Mtg. Holes Dia. (C)	Inner Ring Mtg. Holes No. of Holes	Ctr.-to-Ctr. (G)	Each
ABS Plastic							
110	0.51″	11.18″	9.49″	—	♣	—	18635A21 $9.78
220	0.71″	17.4″	14.88″	0.157″	4	15.37″	18635A22 46.64
Aluminum							
175	0.48″	12.8″	10.43″	1/4″-20	6	10.83″	18635A52 31.59
275	0.79″	17.4″	15″	0.18″	6	15.43″	18635A54 64.60
660	0.63″	23.62″	20.5″	0.19″	4	21.18″	8233K14 247.16
990	0.63″	29.5″	26.5″	0.19″	5	27.01″	8233K15 404.33

♣ Five equally spaced spokes with five spacers and one 0.17″ mounting hole at the center of the spokes.

Large-Diameter Solid-Surface Turntables

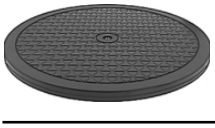

Able to handle up to 220-lb. loads, these turntables have a textured, solid plastic surface to keep whatever you're rotating in place. They also have fully enclosed ball bearings to keep out debris. Made of high-impact plastic. Color is black.

Load Cap., lbs.	Ht.	O'all Dia.	Each
220	11/16″	10″	1443T1 $9.20
220	11/16″	12″	1443T2 15.80
220	3/4″	14″	1443T3 27.60
220	11/16″	16″	1443T4 31.80

Light Duty Plastic Turntables

Nothing fancy, just economical, lightweight plastic turntables with ball bearings. Use glue to keep them in place.

Solid-Surface Turntables— **To Order:** Please specify color: black, clear, or white.

Sloped Solid-Surface Turntable— Has a 9″ diameter top that slopes to a 12″ diameter base. A great choice if the base will be visible. **To Order:** Please specify color: black, clear, or white.

Offset Solid-Surface Turntable— Has a 14″ diameter top and a 9″ diameter base. Color is clear.

Ring-Style Turntables— Color is clear.

Solid Surface

Ring Style

Style	Load Cap., lbs.	Ht.	Top Dia.	Base Dia.	Ring ID		Each
Solid Surface	50	9/16″	3″	3″	—	1413T11	$3.98
Solid Surface	50	9/16″	4.25″	4.25″	—	1413T12	4.67
Solid Surface	50	9/16″	5.5″	5.5″	—	1413T13	8.71
Solid Surface	50	9/16″	9″	9″	—	1413T14	16.26
Sloped Solid Surface	200	9/16″	9″	12″	—	1413T18	18.81
Offset Solid Surface	200	9/16″	14″	9″	—	1413T19	20.78
Ring	50	9/16″	4.25″	—	1.63″	1413T15	3.25
Ring	50	9/16″	5.5″	—	2.75″	1413T16	5.80
Ring	100	9/16″	8.5″	—	5.75″	1413T17	11.10

Heavy Duty Turntables

Use these rugged turntables on welding tables, industrial workstations, material container stands, and as fifth wheels on carts. All have ball bearings that ride in a precision-hardened raceway for smooth rotary motion. To mount turntable plates, weld or bolt them with standard Grade 5 or better hex-head bolts, unless noted. Mounting fasteners not included.

Lockable turntables have slotted grooves that let you lock the turntable into any of four evenly spaced positions using the included spring-loaded pull ring. ***Nonlockable turntables*** have grease fittings, unless noted.

Lockable

Nonlockable

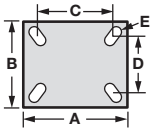

Load Cap., lbs.	Ht.	Lg. (A)	Wd. (B)	MOUNTING HOLES Ctr.-to-Ctr. (C)	MOUNTING HOLES Ctr.-to-Ctr. (D)	Dia. (E)	Lockable	Each	Nonlockable	Each
With Steel Plates and Steel Ball Bearings										
900	1.19″	6.5″	4.5″	5.1″	2.91″	0.56″	—	—	22345T3■	$84.87
1,500	1.56″	6.5″	4.5″	5.1″	2.91″	0.56″	6640K1	$84.57	22345T2	61.43
5,200	1.81″	7.25″	5.25″	5.69″	3.75″	0.56″	6640K2▲	145.01	22345T5	113.78
7,500	2.38″	7″	6″	5.56″	4.5″	0.56″	6640K3	225.60	22345T7	183.52
10,000	2.5″	7.5″	6.25″	6.13″	4.13″	0.56″	6640K4●	288.93	22345T6	240.98
30,000	2.88″	8.5″	8.5″	7″	7″	0.69″	6640K5	399.96	22345T8	366.78
With Stainless Steel Plates and Stainless Steel Ball Bearings										
840	1.56″	6.5″	4.5″	5.1″	2.91″	0.56″	—	—	22345T21	287.59
1,700	1.56″	6.5″	4.5″	5.1″	2.91″	0.56″	—	—	22345T22	498.67

■ No grease fittings. ▲ Use flat head screws for mounting due to limited clearance between plates.
● Has grease fittings.

Permanently Lubricated Industrial Turntables

No additional lubrication is ever needed because these turntables have fully sealed ball bearings. The top plate has a milled-flat level surface—great for welding tables and industrial assemblies. To mount turntable plates, weld or bolt them with standard hex-head bolts. Mounting fasteners not included.

Steel turntables have a steel top plate and bearings. The base is cast iron. *Turntable with open center* has a 1.25″ dia. hole through the center to allow wiring to pass through.

Stainless steel turntables have a stainless steel top plate and base. The bearings are steel.

Lockable turntables have slotted grooves that let you position the turntable into any of four evenly spaced points using the included spring-loaded pull ring. If you want the turntable to spin freely, just pull out the ring and turn the ring 90°.

Lockable with Solid Surface

Nonlockable with Open Center

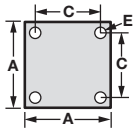

Load Cap., lbs.	Ht.	Lg. (A)	Mounting Holes Ctr.-to-Ctr. (C)	Mounting Holes Size (E)	Lockable	Each	Nonlockable	Each
Steel with Solid Surface								
1,000	1.77″	3.25″	2.5″	1/4″-20	9443T1	$219.84	9443T2	$175.82
2,500	1.92″	3.5″	2.75″	1/4″-20	9443T11	254.80	9443T21	206.76
5,000	2.43″	5″	4″	3/8″-16	9443T12	319.13	9443T22	277.02
10,000	2.72″	6.5″	5.5″	3/8″-16	9443T13	467.89	9443T23	420.24
Steel with Open Center								
10,000	2.72″	6.5″	5.5″	3/8″-16	—	—	9443T51	494.63
Stainless Steel with Solid Surface								
2,500	1.92″	3.5″	2.75″	1/4″-20	9443T31	558.98	9443T41	471.51
5,000	2.43″	5″	4″	3/8″-16	9443T32	518.83	9443T42	475.53

Plain-Bearing and Extreme-Capacity Turntables

Plain-Bearing Turntables— Also known as slewing ring bearings, these self-lubricating bearings are maintenance free. Each has polymer plain bearings housed in aluminum rings to provide excellent vibration damping. Mounting fasteners not included.

Extreme-Capacity Turntables— By far, these have the largest load capacities of any turntables we offer. Each has steel ball bearings housed in hardened steel rings. Mount with SAE Grade 8 hex-head bolts with coarse threads (not included).

Plain Bearing

Extreme Capacity

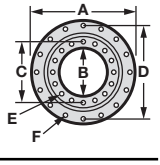

Load Cap., lbs.	Ht.	O'all Dia. (A)	Ctr. Dia. (B)	Bolt Circle, Ctr.-to-Ctr. Inner Ring (C)	Bolt Circle, Ctr.-to-Ctr. Outer Ring (D)	Mounting Holes Inner Ring (E)	Mounting Holes Outer Ring (F)	No. of Holes Inner Ring	No. of Holes Outer Ring		Each
Plain-Bearing Turntables— *Dimensions given in mm.*											
337	29	100	30	42.5	91	M4	4.5	8	8	8700K1	$215.27
674	33	160	60	74	145	M5	5.5	10	20	8700K2	254.84
1,124	34	185	100	112	170	M5	5.5	12	16	8700K3	428.82
2,248	38	300	200	215	285	M6	7	12	16	8700K4	629.16
Extreme-Capacity Turntables											
14,000	0.79″	4.33″	1.97″	2.48″	3.82″	6.6 mm	6.6 mm	8	8	6651K11	856.46
17,000	0.87″	5.32″	2.56″	3.15″	4.72″	9 mm	9 mm	8	8	6651K12	905.23
37,000	1.34″	8.9″	4.8″	5.51″	8.19″	9 mm	9 mm	12	12	6651K13	1,089.54
60,000	1.34″	9.8″	5.63″	6.5″	8.94″	11 mm	11 mm	12	12	6651K14	1,156.15
150,000	1.97″	11.8″	5.7″	6.89″	10.63″	0.56″	0.56″	16	16	6651K1	1,763.71
200,000	1.58″	14.4″	8.3″	9.45″	13.19″	0.56″	0.56″	20	16	6651K3	2,278.86
240,000	1.97″	16.5″	10.4″	11.61″	15.35″	0.56″	0.56″	24	18	6651K4	2,439.00

About Selecting the Right Flanged Sleeve, Sleeve, and Thrust Bearings

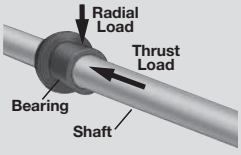

Also known as plain or plane bearings, these bearings allow smooth, low-friction motion between two surfaces. The load is supported through the motion of one solid surface against another.

All of these bearings are designed to handle loads: radial and/or thrust. *Radial load* is the load that is perpendicular to the shaft. *Thrust load*, also known as axial or side load, is the load that is parallel to the shaft. ***Flanged sleeve bearings*** handle both radial and thrust loads. ***Sleeve bearings*** handle radial loads. ***Thrust bearings*** handle thrust loads.

P, V, and ***PV Values—*** In addition to type of load, size, and temperature range, you'll need to know the load (***P***), velocity (***V***), and load at velocity (***PV***) values your bearing must handle. Use the formulas provided to calculate the ***P, V,*** and ***PV*** values for your application. Then compare the ***P, V,*** and ***PV*** values that you have calculated to the ***P max, V max,*** and ***PV max*** values we give for each material. If all of your values are below the maximum values listed, the bearing should work in your application.

$$P = \frac{\text{Bearing Load}}{\text{Shaft Dia.} \times \text{Bearing Lg.}}$$

The bearing load is the load on the bearing surface in pounds per square inch (psi) or Newtons per square millimeter (N/mm^2) for metric.

$$V = \text{Shaft Velocity} \times 0.262 \times \text{Shaft Dia.}$$

The shaft velocity is the velocity of the shaft surface in feet per minute (fpm) or meters per second (m/s) for metric.

$$PV = P \times V$$

Use the PV rating as a final check to ensure a bearing can sustain your combined load and velocity requirements (i.e. load at velocity).

For Example: If Bearing Load is 25 lbs., Shaft Dia. is 1/4″, Bearing Lg. is 1/2″, and Shaft Velocity is 200 rpm
Then: ***P*** = 200 psi, ***V*** = 13.1 fpm, and ***PV*** = 2620.

ⓘ For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC**.

Bronze Flanged Sleeve Bearings

SAE 841— Also called Oilite®, this porous material is impregnated with roughly 19% SAE 30 oil. The oil reduces wear as well as required maintenance. ***Graphite SAE 841—*** This porous material is impregnated with a graphite-based material, which provides low-friction dry lubrication in a wide range of temperatures. ***SAE 863—*** Also called Super Oilite®, this material is similar to SAE 841, but contains more iron for greater strength. *Note:* Color is silver because of the iron. ***Alloy 932—*** Also known as SAE 660, this nonporous, cast material makes hard, strong, and abrasion-resistant bearings with excellent resistance to shock loads (suddenly applied loads) and wear. ***Alloy 954—*** This nonporous, cast material is harder, stronger, and withstands an even wider temperature range than Alloy 932.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	+10° to +220° F	2,000	1,200	50,000
Graphite SAE 841	–30° to +700° F	1,600	1,000	40,000
SAE 863	+10° to +220° F	4,000	225	35,000
Alloy 932	–30° to +450° F	4,000	750	75,000
Alloy 954	–30° to +500° F	4,500	225	125,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	SAE 841	Each	Graphite SAE 841	Each	SAE 863	Each	Alloy 932	Each	Alloy 954	Each
3/16″	5/16″	1/2″	7/16″	1/16″	6338K311	$0.75	9440T63	$0.88	2938T28	$0.44	7815K59	$3.43	2934T31	$7.42
1/4″	3/8″	1/4″	1/2″	1/16″	6338K411	.67	9440T11	.88	2938T1	.45	7815K11	2.88	2934T1	4.23
1/4″	3/8″	3/8″	1/2″	1/16″	6338K412	.68	9440T12	1.08	2938T2	.69	7815K12	3.14	2934T2	5.16
1/4″	3/8″	1/2″	1/2″	1/16″	6338K413	.94	9440T13	1.04	2938T3	.82	7815K13	3.44	2934T3	4.53
1/4″	3/8″	3/4″	1/2″	1/16″	6338K451	1.69	9440T14	2.04	2938T29	.53	7815K14	4.20	2934T32	7.85
5/16″	7/16″	3/8″	9/16″	1/16″	6338K453	.87	9440T15	1.08	2938T5	.80	7815K15	3.15	2934T5	5.09
5/16″	7/16″	1/2″	9/16″	1/16″	6338K452	.97	9440T36	1.16	2938T31	.54	7815K16	3.51	2934T33	7.46
5/16″	7/16″	3/4″	9/16″	1/16″	6338K454	1.06	9440T53	1.40	2938T32	.86	7815K17	4.40	2934T34	8.09
5/16″	9/16″	1/2″	11/16″	1/16″	6338K455	5.09	—	—	2938T33	7.75	7815K25	3.95	2934T35	7.68
5/16″	9/16″	3/4″	11/16″	1/16″	6338K456	5.29	—	—	2938T34	8.06	7815K26	4.82	2934T36	8.11
5/16″	5/8″	3/4″	7/8″	1/8″	6338K457	4.52	—	—	2938T35	6.89	7815K27	5.03	2934T37	8.38
3/8″	1/2″	1/4″	11/16″	1/16″	6338K414	.63	9440T16	1.00	2938T6	.74	7815K18	2.97	2934T6	4.16
3/8″	1/2″	1/2″	5/8″	1/16″	6338K312	.80	—	—	2938T36	.55	7815K61	3.60	2934T38	7.44
3/8″	1/2″	1/2″	11/16″	1/16″	6338K415	.74	9440T17	1.28	2938T7	.69	7815K19	3.57	2934T7	4.83
3/8″	1/2″	3/4″	11/16″	1/16″	6338K416	.97	9440T18	1.80	2938T37	.90	7815K21	4.38	2934T39	8.03
3/8″	5/8″	1/2″	7/8″	1/16″	6338K461	1.02	9440T19	2.28	2938T9	.82	7815K22	4.17	2934T9	7.00
3/8″	5/8″	3/4″	7/8″	1/16″	6338K463	1.38	9440T54	2.48	2938T38	1.47	7815K23	5.18	2934T4	8.45
3/8″	5/8″	1″	7/8″	1/16″	6338K465	1.75	9440T55	3.48	2938T39	1.73	7815K24	6.06	2934T41	8.62
7/16″	9/16″	1/2″	11/16″	1/16″	6338K462	1.12	9440T56	1.36	2938T41	.67	7815K62	3.64	2934T42	7.64
7/16″	9/16″	3/4″	11/16″	1/16″	6338K464	1.40	9440T57	1.64	2938T42	1.45	7815K63	6.46	2934T43	8.03
7/16″	5/8″	3/4″	7/8″	1/8″	—	—	9440T58	2.36	2938T43	1.56	7815K64	4.21	2934T44	8.33
1/2″	5/8″	3/8″	7/8″	1/8″	6338K417	.86	9440T21	1.16	2938T11	.65	7815K28	3.23	2934T11	4.29
1/2″	5/8″	1/2″	7/8″	1/8″	6338K418	.88	9440T22	1.28	2938T12	.67	7815K29	3.47	2934T12	4.71
1/2″	5/8″	3/4″	7/8″	1/8″	6338K419	.93	9440T37	2.00	2938T13	.75	7815K31	4.00	2934T13	5.29
1/2″	5/8″	1″	7/8″	1/8″	6338K421	1.24	9440T38	2.32	2938T14	.94	7815K32	4.74	2934T14	6.07
1/2″	3/4″	1/2″	1″	1/8″	6338K422	1.38	9440T23	1.60	2938T15	1.01	7815K33	3.71	2934T15	4.50
1/2″	3/4″	3/4″	1″	1/8″	6338K423	1.05	9440T24	2.16	2938T16	1.04	7815K34	4.39	2934T16	5.23
1/2″	3/4″	1″	1″	1/8″	6338K424	1.97	9440T25	2.72	2938T17	1.38	7815K35	5.12	2934T17	6.13
5/8″	3/4″	5/8″	1″	1/8″	6338K425	1.11	9440T26	1.64	2938T18	.93	7815K36	3.52	2934T18	4.51
5/8″	3/4″	3/4″	1″	1/8″	6338K426	1.22	9440T39	2.27	2938T44	1.15	7815K37	3.79	2934T45	8.76
5/8″	3/4″	1″	1″	1/8″	6338K471	1.57	9440T41	2.80	2938T45	1.36	7815K38	4.32	2934T46	9.24
5/8″	7/8″	1/2″	1 1/8″	1/8″	6338K427	1.53	9440T42	3.08	2938T46	1.28	7815K39	3.93	2934T47	8.86
5/8″	7/8″	5/8″	1 1/8″	1/8″	6338K473	1.67	9440T59	3.92	2938T47	1.34	7815K41	4.28	2934T48	9.19
5/8″	7/8″	3/4″	1 1/8″	1/8″	6338K428	1.81	9440T43	4.65	2938T48	1.59	7815K42	4.54	2934T49	9.68
5/8″	7/8″	1″	1 1/8″	1/8″	6338K475	2.35	9440T44	5.27	2938T49	1.95	7815K43	5.26	2934T51	10.47
5/8″	7/8″	1 1/4″	1 1/8″	1/8″	6338K477	2.80	9440T64	5.96	2938T51	2.64	7815K65	5.48	2934T52	11.16
5/8″	7/8″	1 1/4″	1 1/4″	1/8″	6338K478	4.71	—	—	2938T52	7.18	7815K44	6.36	2934T53	11.19

(Continued on following page)

For information about flanged sleeve bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC**.

Bronze Flanged Sleeve Bearings *(Continued from previous page)*

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	SAE 841	Each	Graphite SAE 841	Each	SAE 863	Each	Alloy 932	Each	Alloy 954	Each
3/4"	7/8"	1/2"	1 1/8"	1/8"	6338K429	$1.26	9440T27	$1.92	2938T53	$0.77	7815K45	$3.60	2934T19	$5.31
3/4"	7/8"	1/2"	1 1/4"	1/8"	6338K467	3.85	—	—	2938T19	1.59	7815K66	4.98	2934T54	7.89
3/4"	7/8"	3/4"	1 1/8"	1/8"	6338K472	1.64	9440T28	3.32	2938T54	1.11	7815K67	4.49	2934T55	8.95
3/4"	7/8"	3/4"	1 1/4"	1/8"	6338K474	4.27	—	—	2938T21	1.39	7815K46	4.15	2934T21	5.09
3/4"	1"	5/8"	1 1/4"	3/16"	6338K431	2.18	9440T29	3.68	2938T22	1.40	7815K47	4.69	2934T22	5.42
3/4"	1"	3/4"	1 1/4"	3/16"	6338K432	2.17	9440T31	4.12	2938T23	1.45	7815K48	5.19	2934T23	5.96
3/4"	1"	1"	1 1/4"	3/16"	6338K433	2.75	9440T32	4.52	2938T24	1.48	7815K49	5.93	2934T24	6.91
3/4"	1"	1 1/4"	1 1/4"	3/16"	6338K434	3.34	9440T33	5.48	2938T55	2.98	7815K51	6.87	2934T56	10.11
7/8"	1 1/8"	3/4"	1 1/2"	1/8"	6338K479	3.12	9440T45	5.68	2938T56	2.98	7815K52	6.06	2934T57	9.62
7/8"	1 1/8"	1"	1 1/2"	1/8"	6338K435	3.35	9440T46	6.64	2938T57	3.47	7815K53	6.94	2934T58	10.49
7/8"	1 1/8"	1 1/4"	1 1/2"	1/8"	6338K481	4.68	9440T61	7.36	2938T58	4.38	7815K54	7.94	2934T59	12.57
1"	1 1/4"	3/4"	1 1/2"	1/8"	6338K436	2.50	9440T34	4.48	2938T25	1.68	7815K55	5.88	2934T25	6.96
1"	1 1/4"	1"	1 1/2"	1/8"	6338K437	3.61	9440T35	5.20	2938T26	1.83	7815K56	6.74	2934T26	7.80
1"	1 1/4"	1 1/4"	1 1/2"	1/8"	6338K438	4.38	9440T47	7.60	2938T59	4.20	7815K57	7.47	2934T61	10.80
1"	1 1/4"	1 1/2"	1 1/2"	1/8"	6338K439	4.61	9440T48	8.97	2938T27	2.33	7815K58	8.79	2934T27	9.86
1 1/4"	1 1/2"	1"	1 3/4"	3/16"	6338K441	4.81	9440T49	8.08	2938T61	4.97	7815K68	6.18	2934T62	10.78
1 1/4"	1 1/2"	1 1/4"	1 3/4"	3/16"	6338K482	5.72	9440T51	9.71	2938T62	5.41	7815K69	6.78	2934T63	11.57
1 1/4"	1 1/2"	1 1/2"	1 3/4"	3/16"	6338K483	7.20	9440T62	11.12	2938T63	6.78	7815K71	7.31	2934T64	12.43
1 3/8"	1 5/8"	1"	2"	1/8"	6338K314	6.14	—	—	2938T64	4.79	7815K72	6.80	2934T65	12.49
1 1/2"	1 3/4"	1 1/2"	2"	3/16"	6338K442	7.11	9440T52	13.29	2938T65	9.04	7815K73	8.20	2934T66	13.53
1 3/4"	2 1/4"	2 1/2"	3"	1/4"	6338K443	35.20	9440T65	53.32	2938T66	27.22	7815K74	23.19	2934T67	31.20

Bronze Flanged Sleeve Bearings with Certification

All of these bearings come furnished with a certificate of conformity. ***SAE 841—*** Also called Oilite®, this porous material is impregnated with 19% SAE 30 oil. The oil reduces wear as well as required maintenance. ***Alloy 932—*** Also known as SAE 660, this nonporous, cast material makes hard, strong, and abrasion-resistant bearings with excellent resistance to shock loads (suddenly applied loads) and wear.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	+10° to +220° F	2,000	1,200	50,000
Alloy 932	+10° to +450° F	4,000	750	75,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	SAE 841	Each	Alloy 932	Each
1/4"	3/8"	1/4"	1/2"	1/16"	3113K2	$1.35	91786A2	$7.30
1/4"	3/8"	3/8"	1/2"	1/16"	3113K3	1.36	91786A3	7.38
1/4"	3/8"	1/2"	1/2"	1/16"	3113K4	1.56	91786A4	7.48
5/16"	7/16"	3/8"	9/16"	1/16"	3113K6	1.54	91786A6	7.66
3/8"	1/2"	1/4"	11/16"	1/16"	3113K8	1.30	91786A8	7.72
3/8"	1/2"	1/2"	5/8"	1/16"	3113K9	1.40	91786A9	8.19
3/8"	1/2"	3/4"	11/16"	1/16"	3113K11	1.69	91786A11	8.34
3/8"	5/8"	1/2"	7/8"	1/16"	3113K12	1.77	91786A12	8.38
1/2"	5/8"	3/8"	7/8"	1/8"	3113K13	1.51	91786A13	8.55
1/2"	5/8"	1/2"	7/8"	1/8"	3113K14	1.57	91786A14	8.72
1/2"	5/8"	3/4"	7/8"	1/8"	3113K15	$1.64	91786A15	$8.74
1/2"	3/4"	1/2"	1"	1/8"	3113K17	2.26	91786A17	9.44
5/8"	3/4"	5/8"	1"	1/8"	3113K21	1.92	91786A21	9.47
3/4"	7/8"	1/2"	1 1/8"	1/8"	3113K26	1.81	91786A24	9.53
3/4"	1"	1"	1 1/4"	3/16"	3113K31	3.27	91786A28	10.79
3/4"	1"	1 1/4"	1 1/4"	3/16"	3113K32	3.45	91786A29	11.69
1"	1 1/4"	3/4"	1 1/2"	1/8"	3113K35	3.10	91786A33	11.74
1"	1 1/4"	1"	1 1/2"	1/8"	3113K36	3.91	91786A34	12.08
1 1/4"	1 1/2"	1"	1 3/4"	3/16"	3113K39	5.18	91786A37	19.04
1 1/2"	1 3/4"	1 1/2"	2"	3/16"	3113K42	7.79	91786A39	23.35

Food-Grade Oil-Lubricated Bronze Flanged Sleeve Bearings

Impregnated with oil that meets USDA H-1, these self-lubricating bearings are perfect for applications with incidental food contact. ***SAE 841—*** The oil in this porous material reduces wear. ***SAE 863—*** Also called Super Oilite® Non-Tox®, this material is similar to SAE 841 but contains more iron for greater strength. *Note:* Color is silver because of the iron.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	+10° to +220° F	2,000	1,200	50,000
SAE 863	–30° to +420° F	4,000	225	35,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	SAE 841	Each	SAE 863	Each
1/4"	3/8"	1/4"	1/2"	1/16"	3746K2	$0.56	3083K2	$1.11
1/4"	3/8"	3/8"	1/2"	1/16"	3746K3	.72	3083K3	1.21
1/4"	3/8"	1/2"	1/2"	1/16"	3746K4	.80	3083K4	1.28
1/4"	3/8"	3/4"	1/2"	1/16"	3746K5	1.00	3083K5	1.43
5/16"	7/16"	3/8"	9/16"	1/16"	3746K6	.80	3083K6	1.27
3/8"	1/2"	1/4"	11/16"	1/16"	3746K8	.76	3083K8	1.27
3/8"	1/2"	3/4"	11/16"	1/16"	3746K11	1.20	3083K11	2.20
3/8"	5/8"	1/2"	7/8"	1/16"	3746K12	1.60	3083K12	1.91
1/2"	5/8"	3/8"	7/8"	1/8"	3746K13	1.24	3083K13	1.46
1/2"	5/8"	1/2"	7/8"	1/8"	3746K14	1.40	3083K14	1.52
1/2"	5/8"	1"	7/8"	1/8"	3746K16	1.88	3083K16	2.04
1/2"	3/4"	1/2"	1"	1/8"	3746K17	2.00	3083K17	1.91
1/2"	3/4"	1"	1"	1/8"	3746K19	$3.96	3083K19	$2.88
5/8"	3/4"	5/8"	1"	1/8"	3746K21	1.68	3083K21	1.80
5/8"	3/4"	3/4"	1"	1/8"	3746K22	1.84	3083K22	2.73
3/4"	7/8"	1/2"	1 1/8"	1/8"	3746K24	1.68	3083K24	1.95
3/4"	1"	5/8"	1 1/4"	3/16"	3746K26	4.08	3083K26	2.48
3/4"	1"	3/4"	1 1/4"	3/16"	3746K27	4.20	3083K27	2.88
3/4"	1"	1"	1 1/4"	3/16"	3746K28	4.88	3083K28	2.99
3/4"	1"	1 1/4"	1 1/4"	3/16"	3746K29	5.64	3083K29	6.51
1"	1 1/4"	3/4"	1 1/2"	1/8"	3746K31	4.64	3083K31	3.80
1"	1 1/4"	1"	1 1/2"	1/8"	3746K32	5.52	3083K32	4.11
1 1/4"	1 1/2"	1"	1 3/4"	3/16"	3746K34	6.60	3083K34	10.62
1 1/2"	1 3/4"	1 1/2"	2"	3/16"	3746K35	10.88	3083K35	19.03

PTFE/Oil-Lubricated SAE 841 Bronze Flanged Sleeve Bearings

To provide extra-slippery performance, these SAE 841 bearings are impregnated with oil that has slick PTFE particles. The oil acts as a cushion between the bearings and your shafts to add wear and shock resistance. All of these bearings are self-lubricating.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	+10° to +220° F	2,000	1,200	50,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.		Each
1/4"	3/8"	1/4"	1/2"	1/16"	1677K1	$0.56
1/4"	3/8"	3/8"	1/2"	1/16"	1677K2	.72
1/4"	3/8"	1/2"	1/2"	1/16"	1677K3	.80
3/8"	1/2"	1/4"	11/16"	1/16"	1677K4	.76
3/8"	1/2"	1/2"	11/16"	1/16"	1677K5	1.03
3/8"	1/2"	3/4"	11/16"	1/16"	1677K6	1.20
1/2"	5/8"	3/8"	7/8"	1/8"	1677K7	$1.24
1/2"	5/8"	1/2"	7/8"	1/8"	1677K8	1.40
1/2"	5/8"	3/4"	7/8"	1/8"	1677K9	1.60
1/2"	3/4"	1/2"	1"	1/8"	1677K11	2.01
1/2"	3/4"	3/4"	1"	1/8"	1677K12	3.04
5/8"	3/4"	5/8"	1"	1/8"	1677K14	1.68
3/4"	7/8"	1/2"	1 1/8"	1/8"	1677K15	$1.67
3/4"	1"	1"	1 1/4"	3/16"	1677K17	4.88
1"	1 1/4"	3/4"	1 1/2"	1/8"	1677K19	4.64
1"	1 1/4"	1"	1 1/2"	1/8"	1677K21	5.53
1 1/4"	1 1/2"	1"	1 3/4"	3/16"	1677K22	6.60
1 1/2"	1 3/4"	1 1/2"	2"	3/16"	1677K23	10.88

For information about flanged sleeve bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC**.

Ultra-Tough Oil-Lubricated Bronze Flanged Sleeve Bearings

Count on these ultra-tough bronze bearings to handle your heavily loaded applications. Made of copper with a high iron content, all are heat treated to provide excellent strength as well as wear and shock resistance. They're also impregnated with oil, which makes them self-lubricating.

Bearing Material	Temperature Range	P max	V max	PV max
Oil-Lubricated Bronze	+10° to +220° F	8,000	35	75,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.		Each
0.752"	0.879"	1/2"	1 1/8"	1/8"	3731K1	$12.42
0.752"	1.004"	3/4"	1 1/4"	0.19"	3731K6	12.69
0.752"	1.004"	1"	1 1/4"	0.19"	3731K7	13.02
0.752"	1.004"	1 1/4"	1 1/4"	0.19"	3731K9	13.36
0.752"	1.004"	1 1/2"	1 1/4"	0.19"	3731K11	13.53
1.003"	1.254"	3/4"	1 1/2"	1/8"	3731K15	12.99
1.003"	1.254"	1"	1 1/2"	1/8"	3731K16	13.28
1.003"	1.254"	1 1/2"	1 1/2"	1/8"	3731K18	13.85
1.003"	1.379"	1"	1 5/8"	0.19"	3731K21	$17.43
1.254"	1.504"	1"	1 3/4"	0.19"	3731K23	16.84
1.254"	1.504"	1 1/2"	1 3/4"	0.19"	3731K25	17.36
1.254"	1.504"	1 3/4"	1 3/4"	0.19"	3731K26	17.62
1.504"	1.755"	1 1/2"	2"	0.19"	3731K27	17.84
1.629"	2.005"	2"	2 1/4"	0.19"	3731K28	20.48
1.754"	2 1/4"	2 1/2"	3"	1/4"	3731K29	22.62
2.004"	2.255"	2"	2 1/2"	1/8"	3731K31	20.04

Grooved and Graphite-Filled Groove Bronze Flanged Sleeve Bearings

Grooved

Graphite-Filled Groove

Choose a bearing with an unfilled groove or one that's already filled with graphite for lubrication. All are made of Alloy 932 (also known as SAE 660), which is a nonporous cast-bronze material that is hard, strong, and abrasion resistant. It also offers excellent resistance to shock loads (suddenly applied loads) and wear.

Grooved bearings have a groove inside the bearing that retains your lubricant and provides a flow path for easy lubrication. Use high-temperature lubricants for temperatures over 250° F. ***Graphite-filled groove bearings*** have graphite in the grooves, which acts like on-board lubrication without the oily mess.

Bearing Material	Temperature Range	P max	V max	PV max
Alloy 932	+10° to +450° F	4,000	750	75,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	Grooved	Each	Graphite-Filled Groove	Each
1/2"	5/8"	1/2"	7/8"	1/8"	2869T1	$10.61	2962T1	$17.65
1/2"	5/8"	3/4"	7/8"	1/8"	2869T2	11.42	2962T2	18.40
1/2"	5/8"	1"	7/8"	1/8"	2869T3	12.28	2962T3	19.08
1/2"	3/4"	1/2"	1"	1/8"	2869T4	11.24	2962T4	19.10
1/2"	3/4"	3/4"	1"	1/8"	2869T5	11.49	2962T5	19.39
1/2"	3/4"	1"	1"	1/8"	2869T6	16.30	2962T6	19.71
5/8"	3/4"	5/8"	1"	1/8"	2869T7	11.05	2962T7	19.95
3/4"	7/8"	1/2"	1 1/4"	1/8"	2869T8	10.73	2962T8	20.06
3/4"	7/8"	3/4"	1 1/4"	1/8"	2869T9	$10.68	2962T9	$20.09
3/4"	1"	5/8"	1 1/4"	3/16"	2869T11	12.09	2962T11	20.37
3/4"	1"	3/4"	1 1/4"	3/16"	2869T12	12.75	2962T12	20.45
3/4"	1"	1"	1 1/4"	3/16"	2869T13	14.32	2962T13	20.69
3/4"	1"	1 1/4"	1 1/4"	3/16"	2869T14	15.51	2962T14	20.85
1"	1 1/4"	3/4"	1 1/2"	1/8"	2869T15	14.03	2962T15	21.04
1"	1 1/4"	1"	1 1/2"	1/8"	2869T16	15.82	2962T16	21.41
1"	1 1/4"	1 1/2"	1 1/2"	1/8"	2869T17	19.83	2962T17	24.15

Metric Bronze Flanged Sleeve Bearings

SAE 841—Also called Oilite® M-Series®, this porous material is impregnated with 19% SAE 30 oil. The oil reduces wear as well as required maintenance.

Alloy 932—Also known as SAE 660, this nonporous, cast material makes hard, strong, and abrasion-resistant bearings with excellent resistance to shock loads (suddenly applied loads) and wear.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	+10° to +220° F	2,000	1,200	50,000
Alloy 932	−40° to +450° F	4,000	750	75,000

OD, mm	Lg., mm	Flange OD, mm	Flange Thick., mm		Each
SAE 841					
For Shaft Dia.: 12 mm					
15	12	18	1.5	6659K11	$0.70
15	16	18	1.5	6659K12	.75
15	20	18	1.5	6659K13	.91
17	12	22	2.5	6659K14	4.73
17	16	22	2.5	6659K15	3.68
17	20	22	2.5	6659K16	4.14
18	8	24	3	6659K17	1.08
18	12	24	3	6659K18	1.10
18	20	24	3	6659K19	1.18
For Shaft Dia.: 14 mm					
18	14	22	2	6659K21	1.95
18	18	22	2	6659K22	2.37
18	22	22	2	6659K23	2.34
20	14	26	3	6659K24	1.75
20	18	26	3	6659K25	1.76
20	22	26	3	6659K26	1.76
For Shaft Dia.: 15 mm					
19	16	23	2	6659K27	1.65
19	20	23	2	6659K28	1.67
21	16	27	3	6659K29	2.13
21	20	27	3	6659K31	1.81
For Shaft Dia.: 16 mm					
20	16	24	2	6659K32	1.69
20	20	24	2	6659K33	1.71
22	16	28	3	6659K34	1.73
22	20	28	3	6659K35	1.74
For Shaft Dia.: 18 mm					
22	18	26	2	6659K36	1.74
22	22	26	2	6659K37	1.77
24	18	30	3	6659K38	2.92
24	22	30	3	6659K39	3.42
SAE 841 (Cont.)					
For Shaft Dia.: 20 mm					
24	16	28	2	6659K41	$1.82
24	20	28	2	6659K42	1.83
26	16	32	3	6659K43	1.84
26	20	32	3	6659K44	1.86
For Shaft Dia.: 22 mm					
27	18	32	2.5	6659K45	3.71
27	22	32	2.5	6659K46	3.72
28	15	34	3	6659K47	3.77
28	20	34	3	6659K48	3.85
29	22	36	3.5	6659K52	5.79
For Shaft Dia.: 25 mm					
30	20	35	2.5	6659K53	5.10
32	20	39	3.5	6659K54	5.12
Alloy 932					
For Shaft Dia.: 6 mm					
10	10	14	2	5448T1	3.09
For Shaft Dia.: 8 mm					
11	10	14	1.5	5448T2	3.01
12	10	16	2	5448T3	3.44
For Shaft Dia.: 9 mm					
14	10	19	2.5	5448T4	4.06
For Shaft Dia.: 10 mm					
13	10	16	1.5	5448T5	3.38
15	10	21	3	5448T6	4.16
15	20	21	3	5448T7	5.07
For Shaft Dia.: 12 mm					
15	8	18	1.5	5448T8	3.82
15	12	18	1.5	5448T9	4.06
15	20	18	1.5	5448T11	4.41
16	12	23	3	5448T12	4.53
16	20	23	3	5448T13	6.03
Alloy 932 (Cont.)					
For Shaft Dia.: 12 mm (Cont.)					
18	8	24	3	5448T14	$4.34
18	12	24	3	5448T15	4.82
18	20	24	3	5448T16	7.09
For Shaft Dia.: 14 mm					
18	14	22	2	5448T17	4.62
For Shaft Dia.: 15 mm					
19	16	23	2	5448T18	4.85
For Shaft Dia.: 16 mm					
20	16	24	2	5448T19	5.38
22	16	28	3	5448T21	7.34
For Shaft Dia.: 20 mm					
24	16	28	2	5448T22	6.16
24	20	28	2	5448T23	7.28
26	16	32	3	5448T24	8.10
26	20	32	3	5448T25	8.94
For Shaft Dia.: 25 mm					
30	20	39	3.5	5448T26	10.01
32	20	39	3.5	5448T27	12.03
For Shaft Dia.: 30 mm					
38	20	46	4	5448T28	14.16
For Shaft Dia.: 40 mm					
46	20	56	5	5448T29	14.75
50	30	60	5	5448T31	20.85
For Shaft Dia.: 45 mm					
51	32	57	3	5448T32	17.43
For Shaft Dia.: 50 mm					
56	30	62	3	5448T33	17.60
60	40	70	5	5448T34	24.78
For Shaft Dia.: 60 mm					
70	50	80	5	5448T35	31.03

For information about flanged sleeve bearings, sleeve bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC.**

Extra-Strength Metal-Backed Flanged Sleeve Bearings

An aluminum shell adds strength and corrosion resistance to these Frelon bearings. Made of Frelon, which is a PTFE-filled composite that's chemically inert, all of these bearings outperform bronze and plastic bearings in corrosive environments.

Size	Bearing Material	Temperature Range	P max	V max	PV max
Inch	Frelon	–400° to +400° F	3,000	300	20,000
Metric	Frelon	–400° to +400° F	20.68	1.52	0.72

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.		Each
Inch						
1/4"	3/8"	1/2"	1/2"	1/16"	59575K71	$11.79
3/8"	5/8"	1/2"	7/8"	1/8"	59575K72	13.29
1/2"	3/4"	3/4"	1"	1/8"	59575K73	15.06
5/8"	7/8"	3/4"	1"	1/8"	59575K74	17.10
Inch (Cont.)						
3/4"	1"	1"	1 1/4"	1/8"	59575K75	$18.52
1"	1 1/4"	1 1/2"	1 1/2"	1/8"	59575K76	28.71
1 1/4"	1 1/2"	2"	1 3/4"	1/8"	59575K77	40.14
2"	2 1/4"	3"	2 1/2"	1/8"	59575K81	79.67
Metric—Dimensions in millimeters.						
6	10	10	14	2	7751K71	$14.74
8	12	8	16	2	7751K72	15.45
8	12	12	16	2	7751K73	16.04
30	38	30	46	4	7751K81	39.98

Lubricated Bronze Sleeve Bearings

SAE 841— Also called Oilite®, this porous material is impregnated with 19% SAE 30 oil. The oil reduces wear as well as required maintenance. ***Graphite SAE 841—*** This porous material is impregnated with a graphite-based material, which provides low-friction dry lubrication in a wide range of temperatures. ***SAE 863—*** Also called Super Oilite®, this material is similar to SAE 841 but contains more iron for greater strength. *Note:* Color is silver because of the iron.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	+10° to +220° F	2,000	1,200	50,000
Graphite SAE 841	–30° to +700° F	1,600	1,000	40,000
SAE 863	+10° to +220° F	4,000	225	35,000

OD	Lg.	SAE 841	Each	Graphite SAE 841	Each	SAE 863	Each
For Shaft Dia.: 1/8"							
1/4"	1/8"	6391K113	$0.59	9368T95	$0.37	2868T31	$0.43
1/4"	1/4"	6391K111	.68	9368T96	.44	2868T32	.44
1/4"	3/8"	6391K112	.59	9368T97	.50	2868T33	.38
For Shaft Dia.: 3/16"							
1/4"	1/4"	6391K122	.45	9368T98	.37	2868T34	.33
1/4"	3/8"	6391K125	.74	9368T99	.40	2868T35	.55
1/4"	1/2"	6391K124	.82	9368T101	.43	2868T36	.59
1/4"	5/8"	6391K123	.85	9368T102	.50	2868T37	1.27
5/16"	1/4"	6391K114	.66	9368T41	.47	2868T38	.35
5/16"	3/8"	6391K115	.50	9368T42	.56	2868T39	.46
5/16"	1/2"	6391K116	.50	9368T43	.63	2868T41	.47
For Shaft Dia.: 1/4"							
5/16"	1/4"	6391K126	.37	9368T11	.71	2868T42	.33
5/16"	1/2"	6391K127	.69	9368T12	1.14	2868T43	.53
5/16"	3/4"	6391K401	.65	9368T105	.60	2868T44	.64
3/8"	1/4"	6391K131	.67	9368T13	.53	2868T1	.71
3/8"	3/8"	6391K136	.74	9368T14	.63	2868T2	.74
3/8"	1/2"	6391K132	.99	9368T15	.73	2868T3	.82
3/8"	5/8"	6391K133	.84	9368T44	.87	2868T45	.64
3/8"	7/8"	6391K134	1.03	9368T109	1.10	2868T46	.98
3/8"	1"	6391K135	.71	9368T16	1.09	2868T47	.58
1/2"	1/2"	6391K141	.93	9368T112	1.30	2868T48	.85
1/2"	5/8"	6391K402	1.97	—	—	2868T49	1.28
1/2"	3/4"	6391K142	1.49	9368T113	1.57	2868T51	1.26
1/2"	1"	6391K143	2.30	9368T114	1.94	2868T52	1.52
For Shaft Dia.: 5/16"							
3/8"	1/4"	6391K403	.84	9368T45	.40	2868T53	.45
3/8"	3/8"	6391K152	.70	9368T46	.47	2868T54	.62
3/8"	1/2"	6391K153	.74	9368T115	.54	2868T55	.67
3/8"	5/8"	6391K154	.71	9368T116	.60	2868T56	.59
3/8"	3/4"	6391K155	.71	9368T117	.67	2868T57	.62
3/8"	1"	6391K156	1.48	9368T118	.80	2868T58	3.38
7/16"	1/4"	6391K161	.50	9368T119	.56	2868T59	.61
7/16"	3/8"	6391K162	.50	9368T47	.70	2868T61	.62
7/16"	1/2"	6391K163	.60	9368T48	.84	2868T62	.67
7/16"	5/8"	6391K164	.87	9368T49	1.00	2868T63	.68
7/16"	3/4"	6391K165	.95	9368T121	1.10	2868T64	.74
7/16"	1"	6391K166	1.06	9368T122	1.30	2868T65	1.50
1/2"	3/8"	6391K404	1.08	9368T123	1.00	2868T66	.76
1/2"	1/2"	6391K405	1.14	9368T124	1.16	2868T67	.76
1/2"	3/4"	6391K406	2.16	9368T125	1.44	2868T68	.79
1/2"	1"	6391K443	1.89	9368T126	1.70	2868T69	1.49
1/2"	1 1/4"	6391K444	2.07	9368T127	1.93	2868T71	1.96
For Shaft Dia.: 3/8"							
1/2"	1/4"	6391K171	.50	9368T17	.60	2868T4	.53
1/2"	3/8"	6391K172	.71	9368T18	1.01	2868T5	.55
1/2"	1/2"	6391K173	.65	9368T19	1.23	2868T6	.62
1/2"	5/8"	6391K174	.95	9368T51	1.10	2868T72	.59
1/2"	3/4"	6391K176	1.67	9368T21	1.59	2868T7	1.26
1/2"	7/8"	6391K175	1.19	9368T133	1.33	2868T73	1.01
1/2"	1"	6391K178	1.19	9368T22	1.68	2868T74	1.04
1/2"	1 1/4"	6391K179	1.21	9368T135	1.56	2868T75	1.36
9/16"	3/8"	6391K181	.95	9368T136	1.07	2868T76	.85
9/16"	1/2"	6391K182	.97	9368T137	1.23	2868T77	1.01
9/16"	3/4"	6391K183	1.23	9368T138	1.54	2868T78	1.04
For Shaft Dia.: 3/8" (Cont.)							
9/16"	1"	6391K184	$1.60	9368T139	$1.86	2868T79	$1.36
9/16"	1 1/4"	6391K185	1.67	9368T141	2.20	2868T81	1.55
5/8"	1/2"	6391K186	1.44	9368T52	1.50	2868T277	.94
5/8"	5/8"	6391K187	1.62	9368T142	1.73	2868T278	.99
5/8"	3/4"	6391K188	1.40	9368T53	1.93	2868T279	1.10
5/8"	1"	6391K189	1.97	9368T54	2.64	2868T281	1.67
3/4"	1"	6391K511	2.35	9368T55	4.34	2868T87	4.01
For Shaft Dia.: 7/16"							
9/16"	1/2"	6391K117	.93	9368T143	1.04	2868T94	.99
9/16"	5/8"	6391K118	.80	9368T144	1.17	2868T95	1.38
9/16"	1"	6391K119	1.22	9368T145	1.50	2868T96	1.45
9/16"	1 1/4"	6391K407	2.15	9368T146	1.73	2868T97	2.63
5/8"	1/2"	6391K192	1.14	9368T147	1.33	2868T98	1.07
5/8"	3/4"	6391K194	1.47	9368T148	1.67	2868T99	1.24
5/8"	1"	6391K195	1.35	9368T149	2.00	2868T101	1.84
For Shaft Dia.: 1/2"							
5/8"	3/8"	6391K211	.80	9368T23	1.31	2868T8	.62
5/8"	1/2"	6391K212	.73	9368T24	1.35	2868T9	.68
5/8"	9/16"	6391K213	1.54	9368T153	1.20	2868T103	.61
5/8"	5/8"	6391K216	1.12	9368T56	1.23	2868T104	.62
5/8"	3/4"	6391K214	1.02	9368T25	1.49	2868T11	.77
5/8"	7/8"	6391K408	2.42	9368T57	1.47	2868T105	1.12
5/8"	1"	6391K215	1.40	9368T26	1.76	2868T106	1.21
5/8"	1 1/8"	6391K409	1.39	9368T156	1.76	2868T107	1.45
5/8"	1 1/4"	6391K217	2.65	9368T58	1.87	2868T108	1.57
5/8"	1 1/2"	6391K411	1.32	9368T157	2.07	2868T109	2.12
5/8"	3"	6391K1	31.11	—	—	2868T112	41.00
11/16"	1/2"	6391K196	1.18	9368T158	1.43	2868T113	1.24
11/16"	5/8"	6391K197	1.19	9368T159	1.56	2868T114	1.84
11/16"	3/4"	6391K198	1.35	9368T59	1.80	2868T115	1.91
11/16"	1"	6391K199	1.51	9368T161	2.23	2868T116	2.03
11/16"	1 1/8"	6391K201	1.99	9368T162	2.64	2868T117	2.13
3/4"	3/8"	6391K521	1.29	9368T61	1.44	2868T121	.74
3/4"	1/2"	6391K221	1.90	9368T27	2.02	2868T12	.98
3/4"	5/8"	6391K222	2.10	9368T62	1.97	2868T122	.97
3/4"	3/4"	6391K223	2.40	9368T28	2.79	2868T13	1.29
3/4"	1"	6391K225	3.53	9368T29	2.90	2868T14	1.64
3/4"	1 1/8"	6391K412	2.69	9368T166	4.00	2868T123	2.07
3/4"	1 1/4"	6391K226	4.96	9368T63	4.23	2868T124	2.19
3/4"	1 1/2"	6391K413	4.06	9368T167	4.56	2868T125	3.55
3/4"	3"	6391K3	31.35	—	—	2868T127	41.90
1"	1"	6391K414	4.16	9368T168	6.16	2868T131	4.86
1"	3"	6391K4	26.14	—	—	2868T132	36.28
For Shaft Dia.: 9/16"							
3/4"	1/2"	6391K231	1.34	9368T169	1.47	2868T136	2.00
3/4"	3/4"	6391K232	1.64	9368T171	1.90	2868T137	2.18
3/4"	1"	6391K233	1.75	9368T172	2.53	2868T138	2.44
3/4"	1 1/4"	6391K234	2.46	9368T173	3.40	2868T139	2.65
3/4"	1 3/8"	6391K235	2.91	—	—	2868T141	2.88
For Shaft Dia.: 5/8"							
3/4"	1/2"	6391K241	1.07	9368T64	1.23	2868T15	.81
3/4"	5/8"	6391K246	1.08	9368T174	1.40	2868T16	.85
3/4"	3/4"	6391K247	1.08	9368T65	1.50	2868T143	1.13
3/4"	7/8"	6391K242	1.34	9368T175	1.66	2868T144	1.15
3/4"	1"	6391K243	1.89	9368T31	1.37	2868T17	.97

(Continued on following page)

For information about sleeve bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC.**

Lubricated Bronze Sleeve Bearings *(Continued from previous page)*

***SAE 841*—**Also called Oilite®, this porous material is impregnated with 19% SAE 30 oil. The oil reduces wear as well as required maintenance. ***Graphite SAE 841*—**This porous material is impregnated with a graphite-based material, which provides low-friction dry lubrication in a wide range of temperatures. ***SAE 863*—**Also called Super Oilite®, this material is similar to SAE 841, but contains more iron for greater strength. *Note:* Color is silver because of the iron.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	+10° to +220° F	2,000	1,200	50,000
Graphite SAE 841	–30° to +700° F	1,600	1,000	40,000
SAE 863	+10° to +220° F	4,000	225	35,000

OD	Lg.	SAE 841	Each	Graphite SAE 841	Each	SAE 863	Each
For Shaft Dia.: 5/8″ (Cont.)							
3/4″	1 1/8″	6391K244	$1.60	9368T177	$1.97	2868T145	$1.49
3/4″	1 1/4″	6391K245	1.70	9368T66	2.13	2868T146	2.05
3/4″	1 1/2″	6391K415	1.94	9368T67	2.70	2868T147	3.24
3/4″	3″	6391K6	29.91	—	—	2868T149	40.02
13/16″	1/2″	6391K251	1.48	9368T178	1.53	2868T151	1.24
13/16″	3/4″	6391K253	1.67	9368T179	2.00	2868T152	1.58
13/16″	1″	6391K255	2.56	9368T181	2.87	2868T153	2.03
13/16″	3″	6391K7	29.97	—	—	2868T154	40.02
7/8″	5/8″	6391K202	1.67	9368T182	2.40	2868T155	1.65
7/8″	3/4″	6391K203	1.77	9368T68	3.03	2868T156	1.75
7/8″	1″	6391K204	4.66	9368T69	4.20	2868T157	2.06
7/8″	1 1/2″	6391K205	4.88	9368T183	5.17	2868T158	3.81
7/8″	1 3/4″	6391K416	4.76	9368T184	5.80	2868T159	5.21
7/8″	3″	6391K8	29.91	—	—	2868T161	41.46
1″	1/2″	6391K529	2.45	9368T257	2.52	2868T162	3.17
1″	3/4″	6391K417	2.96	9368T185	4.50	2868T163	3.49
1″	2″	6391K445	7.08	9368T186	9.53	2868T165	9.81
1″	3″	6391K9	29.97	—	—	2868T166	41.46
For Shaft Dia.: 3/4″							
7/8″	1/2″	6391K256	1.27	9368T71	1.37	2868T167	1.28
7/8″	5/8″	6391K257	1.12	9368T187	1.50	2868T168	1.29
7/8″	3/4″	6391K258	1.28	9368T72	1.70	2868T169	1.28
7/8″	1″	6391K259	1.67	9368T73	2.03	2868T171	1.84
7/8″	1 1/4″	6391K208	2.61	9368T188	2.67	2868T172	2.51
7/8″	1 1/2″	6391K207	1.82	9368T189	3.36	2868T173	2.66
7/8″	3″	6391K11	29.91	—	—	2868T174	41.46
15/16″	1 1/2″	6391K446	3.75	9368T191	4.57	2868T175	3.17
15/16″	2″	6391K447	5.27	9368T192	5.60	2868T176	6.04
15/16″	3″	6391K12	27.27	—	—	2868T177	38.54
1″	3/8″	6391K261	1.66	—	—	2868T178	1.50
1″	1/2″	6391K262	1.41	9368T74	2.19	2868T179	1.85
1″	5/8″	6391K266	1.98	9368T75	2.90	2868T181	2.53
1″	3/4″	6391K263	1.83	9368T76	3.67	2868T18	1.37
1″	7/8″	6391K264	2.46	9368T193	4.24	2868T182	1.82
1″	1″	6391K265	2.34	9368T32	4.72	2868T19	1.78
1″	1 1/4″	6391K267	3.33	9368T77	5.11	2868T21	2.58
1″	1 1/2″	6391K268	4.22	9368T78	5.81	2868T183	4.14
1″	1 3/4″	6391K448	4.59	9368T195	6.24	2868T184	4.70
1″	2″	6391K269	4.71	9368T33	5.31	2868T185	5.27
1″	3″	6391K13	25.49	—	—	2868T186	37.07
1 1/8″	1 1/2″	6391K449	6.43	9368T197	8.51	2868T187	5.16
1 1/8″	3″	6391K14	30.10	—	—	2868T188	41.60
1 1/4″	1″	6391K418	5.89	9368T198	8.03	2868T189	6.01
1 1/4″	3″	6391K15	28.75	—	—	2868T191	41.60
For Shaft Dia.: 7/8″							
1″	1 1/2″	6391K419	2.68	9368T79	3.99	2868T192	3.09
1″	3″	6391K16	30.40	—	—	2868T193	41.60
1 1/8″	3/4″	6391K271	2.66	9368T199	4.20	2868T194	3.44
1 1/8″	1″	6391K273	3.73	9368T201	4.74	2868T195	4.01
1 1/8″	1 1/4″	6391K275	3.38	9368T202	5.53	2868T196	4.77
1 1/8″	2″	6391K421	7.48	9368T203	8.03	2868T197	7.44
1 1/8″	3″	6391K17	30.11	—	—	2868T198	41.60
For Shaft Dia.: 1″							
1 1/8″	1/2″	6391K422	1.50	—	—	2868T199	1.85
1 1/8″	1″	6391K423	2.00	9368T81	2.80	2868T201	2.02
1 1/8″	4″	6391K18	49.08	—	—	2868T202	64.78
1 1/4″	1/2″	6391K281	1.98	9368T82	3.03	2868T203	2.26
1 1/4″	3/4″	6391K282	4.64	9368T83	4.34	2868T22	2.48
1 1/4″	1″	6391K283	4.96	9368T34	5.17	2868T23	2.61
1 1/4″	1 1/4″	6391K284	4.11	9368T84	5.93	2868T24	2.97
1 1/4″	1 1/2″	6391K285	4.40	9368T85	6.83	2868T204	5.45
1 1/4″	2″	6391K286	9.06	9368T86	8.94	2868T205	7.23
1 1/4″	2 1/4″	6391K424	10.08	9368T205	9.84	2868T206	10.46
1 1/4″	2 1/2″	6391K45	11.32	9368T206	11.14	2868T207	10.04
1 1/4″	2 7/8″	6391K287	11.32	—	—	2868T208	15.95
1 1/4″	3″	6391K288	12.73	9368T207	13.57	2868T209	15.95
1 1/4″	4″	6391K19	49.07	—	—	2868T211	58.89
1 3/8″	1″	6391K451	4.93	9368T208	7.16	2868T212	5.77
1 3/8″	1 1/2″	6391K452	8.36	9368T209	10.37	2868T213	7.37
1 3/8″	4″	6391K21	47.92	—	—	2868T214	67.76
1 1/2″	2″	6391K453	13.30	9368T211	19.23	2868T215	12.39
For Shaft Dia.: 1″ (Cont.)							
1 1/2″	3″	6391K454	$17.82	9368T212	$28.03	2868T216	$23.17
1 1/2″	4″	6391K501	45.14	—	—	2868T217	74.09
For Shaft Dia.: 1 1/8″							
1 3/8″	1″	6391K425	2.71	9368T213	5.53	2868T218	4.77
1 3/8″	1 1/2″	6391K426	4.02	9368T214	7.56	2868T219	7.44
1 3/8″	4″	6391K502	52.75	—	—	2868T221	73.72
For Shaft Dia.: 1 3/16″							
1 1/2″	1″	6391K432	4.29	9368T215	6.77	2868T222	7.76
1 1/2″	1 1/2″	6391K433	5.52	9368T216	9.80	2868T223	9.81
1 1/2″	2″	6391K434	6.89	9368T217	13.53	2868T224	12.29
1 1/2″	2 1/2″	6391K435	14.38	9368T218	16.53	2868T225	21.30
1 1/2″	4″	6391K22	53.04	—	—	2868T226	92.67
For Shaft Dia.: 1 1/4″							
1 1/2″	3/4″	6391K293	2.08	9368T219	4.84	2868T227	3.52
1 1/2″	1″	6391K295	2.73	9368T87	5.91	2868T25	3.07
1 1/2″	1 1/4″	6391K291	3.78	9368T88	6.93	2868T26	3.78
1 1/2″	1 1/2″	6391K292	3.98	9368T89	8.30	2868T27	4.40
1 1/2″	2″	6391K294	5.38	9368T91	10.80	2868T228	9.38
1 1/2″	2 1/2″	6391K296	7.24	9368T221	13.70	2868T229	12.71
1 1/2″	3″	6391K455	14.86	9368T222	16.19	2868T231	76.15
1 1/2″	4″	6391K503	45.14	—	—	2868T232	82.05
For Shaft Dia.: 1 5/16″							
1 5/8″	2 1/2″	6391K456	13.88	9368T223	17.91	2868T233	21.73
1 5/8″	4″	6391K23	51.84	—	—	2868T234	59.96
For Shaft Dia.: 1 3/8″							
1 5/8″	1″	6391K436	2.58	9368T224	6.16	2868T235	4.55
1 5/8″	1 1/2″	6391K437	4.29	9368T225	8.93	2868T236	7.43
1 5/8″	2″	6391K438	8.67	9368T226	12.16	2868T237	15.31
1 5/8″	3″	6391K534	14.76	9368T227	17.60	2868T282	22.14
1 5/8″	4″	6391K24	71.17	—	—	2868T238	72.42
For Shaft Dia.: 1 1/2″							
1 3/4″	1/2″	6391K311	3.40	9368T228	4.30	2868T239	3.66
1 3/4″	1″	6391K315	4.02	9368T92	6.53	2868T241	4.68
1 3/4″	1 1/4″	6391K532	4.07	9368T258	6.13	2868T28	4.74
1 3/4″	1 1/2″	6391K533	5.03	9368T93	9.54	2868T29	4.44
1 3/4″	1 3/4″	6391K316	7.30	9368T94	11.30	2868T242	10.20
1 3/4″	2″	6391K317	8.61	9368T229	13.30	2868T243	11.13
1 3/4″	2 1/2″	6391K458	10.66	9368T231	15.94	2868T244	13.42
1 3/4″	3″	6391K459	14.64	9368T232	18.83	2868T245	15.13
1 3/4″	4″	6391K25	64.09	—	—	2868T246	90.88
1 7/8″	2″	6391K46	10.29	9368T233	19.50	2868T247	17.67
1 7/8″	4″	6391K26	72.52	—	—	2868T248	77.53
2″	2″	6391K461	14.14	9368T234	25.89	2868T249	19.88
2″	2 1/2″	6391K462	16.64	9368T235	33.00	2868T251	22.37
2″	3″	—	—	9368T236	38.80	—	—
2″	4″	6391K504	75.01	—	—	2868T252	80.20
For Shaft Dia.: 1 3/4″							
2″	1″	6391K439	4.38	9368T237	7.56	2868T253	7.96
2″	1 1/2″	6391K441	5.60	9368T238	11.14	2868T254	9.79
2″	2″	6391K442	7.06	9368T239	14.50	2868T255	12.58
2″	3″	6391K464	14.94	9368T241	21.14	2868T256	23.55
2″	4″	6391K27	77.99	—	—	2868T257	83.40
For Shaft Dia.: 2″							
2 1/4″	2″	6391K465	8.12	9368T242	16.77	2868T258	13.43
2 1/4″	2 1/2″	6391K466	10.92	9368T243	20.34	2868T259	18.07
2 1/4″	4″	6391K28	96.44	—	—	2868T261	102.72
2 3/8″	1 1/8″	6391K321	8.52	9368T244	14.27	2868T262	15.03
2 3/8″	1 1/2″	6391K322	10.93	9368T245	19.00	2868T263	19.37
2 3/8″	2″	6391K324	15.39	9368T246	23.99	2868T264	20.24
2 3/8″	3″	6391K467	21.41	9368T247	37.00	2868T265	35.35
2 3/8″	4″	6391K325	38.97	9368T248	49.80	2868T266	133.02
2 1/2″	2″	6391K468	17.62	9368T249	34.00	2868T267	27.65
2 1/2″	2 1/2″	6391K469	18.23	9368T251	41.37	2868T268	28.62
2 1/2″	3″	6391K47	42.36	9368T252	51.03	2868T269	29.66
For Shaft Dia.: 2 1/4″							
2 3/4″	2″	6391K431	24.19	9368T253	37.43	2868T271	35.82
2 3/4″	3″	6391K427	31.75	9368T254	56.13	2868T272	34.07
2 3/4″	4″	6391K29	128.59	—	—	2868T273	132.78
For Shaft Dia.: 2 1/2″							
3″	4″	6391K428	49.17	9368T255	80.33	2868T274	31.32
For Shaft Dia.: 3″							
3 1/2″	4″	6391K471	66.54	9368T256	94.30	2868T276	42.43
4″	6 1/2″	6391K429	226.73	—	—	—	—

For information about sleeve bearings, P max, V max, and PV max, see page 1126.

ⓘ For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC.**

Cast Bronze Sleeve Bearings

Alloy 932— Also known as SAE 660, this nonporous, cast material makes hard, strong, and abrasion-resistant bearings with excellent resistance to shock loads (suddenly applied loads) and wear.

Alloy 954— This nonporous, cast material is harder, stronger, and withstands an even wider temperature range than Alloy 932.

Bearing Material	Temperature Range	P max	V max	PV max
Alloy 932	–350° to +450° F	4,000	750	75,000
Alloy 954	–350° to +500° F	4,500	225	125,000

Alloy 932

OD	Lg.		Each
For Shaft Dia.: 1/8″			
1/4″	1/8″	6381K405	$4.19
1/4″	1/4″	6381K406	4.17
1/4″	3/8″	6381K407	4.21
For Shaft Dia.: 3/16″			
1/4″	1/4″	6381K501	4.25
1/4″	3/8″	6381K502	4.90
1/4″	1/2″	6381K503	5.06
1/4″	5/8″	6381K601	4.75
5/16″	1/4″	6381K602	4.47
5/16″	3/8″	6381K603	4.47
5/16″	1/2″	6381K408	1.48
For Shaft Dia.: 1/4″			
5/16″	1/4″	6381K409	4.33
5/16″	1/2″	6381K41	4.36
5/16″	3/4″	6381K411	4.58
3/8″	1/4″	6381K412	1.12
3/8″	3/8″	6381K413	1.28
3/8″	1/2″	6381K415	1.48
3/8″	5/8″	6381K416	4.81
3/8″	7/8″	6381K417	4.56
3/8″	1″	6381K42	2.03
1/2″	1/2″	6381K421	5.26
1/2″	3/4″	6381K423	5.49
1/2″	1″	6381K424	5.82
For Shaft Dia.: 5/16″			
3/8″	1/4″	6381K425	4.65
3/8″	3/8″	6381K426	4.60
3/8″	1/2″	6381K427	4.78
3/8″	5/8″	6381K428	5.22
3/8″	3/4″	6381K429	5.05
3/8″	1″	6381K43	5.15
7/16″	1/4″	6381K431	4.81
7/16″	3/8″	6381K442	1.27
7/16″	1/2″	6381K443	1.56
7/16″	3/4″	6381K445	1.79
7/16″	1″	6381K446	2.03
1/2″	3/8″	6381K447	4.96
1/2″	1/2″	6381K448	5.12
1/2″	3/4″	6381K101	1.96
1/2″	1″	6381K102	2.26
1/2″	1 1/4″	6381K103	2.62
For Shaft Dia.: 3/8″			
1/2″	1/4″	6381K449	4.65
1/2″	3/8″	6381K45	1.27
1/2″	1/2″	6381K451	1.58
1/2″	5/8″	6381K452	5.24
1/2″	3/4″	6381K453	1.88
1/2″	7/8″	6381K454	5.52
1/2″	1″	6381K455	2.06
1/2″	1 1/4″	6381K456	2.21
9/16″	3/8″	6381K457	4.93
9/16″	1/2″	6381K458	5.48
9/16″	3/4″	6381K459	2.05
9/16″	1″	6381K46	2.29
9/16″	1 1/4″	6381K461	2.68
5/8″	1/2″	6381K462	5.59
5/8″	5/8″	6381K463	5.67
5/8″	3/4″	6381K464	2.19
5/8″	1″	6381K606	2.52
For Shaft Dia.: 7/16″			
9/16″	1/2″	6381K607	5.42
9/16″	5/8″	6381K608	5.59
For Shaft Dia.: 7/16″ (Cont.)			
9/16″	1″	6381K609	$2.29
9/16″	1 1/4″	6381K61	2.64
5/8″	1/2″	6381K611	5.33
5/8″	3/4″	6381K612	5.80
5/8″	1″	6381K465	2.24
For Shaft Dia.: 1/2″			
5/8″	3/8″	6381K466	5.07
5/8″	1/2″	6381K467	1.49
5/8″	9/16″	6381K469	5.53
5/8″	5/8″	6381K468	1.66
5/8″	3/4″	6381K47	1.72
5/8″	7/8″	6381K471	1.85
5/8″	1″	6381K111	2.15
5/8″	1 1/8″	6381K472	6.31
5/8″	1 1/4″	6381K112	2.52
5/8″	1 1/2″	6381K473	2.67
5/8″	3″	6381K1	10.49
11/16″	1/2″	6381K474	5.53
11/16″	5/8″	6381K475	5.42
11/16″	3/4″	6381K476	2.20
11/16″	1″	6381K477	2.60
11/16″	1 1/8″	6381K478	6.84
3/4″	1/2″	6381K479	2.02
3/4″	5/8″	6381K48	6.07
3/4″	3/4″	6381K121	2.44
3/4″	1″	6381K52	2.99
3/4″	1 1/8″	6381K521	7.21
3/4″	1 1/4″	6381K523	3.45
3/4″	1 1/2″	6381K524	3.97
3/4″	3″	6381K3	11.17
1″	1″	6381K525	4.07
1″	3″	6381K4	12.94
For Shaft Dia.: 9/16″			
3/4″	1/2″	6381K526	5.59
3/4″	3/4″	6381K527	6.08
3/4″	1″	6381K528	2.76
3/4″	1 1/4″	6381K131	3.49
3/4″	3″	6381K5	16.70
For Shaft Dia.: 5/8″			
3/4″	1/2″	6381K141	1.97
3/4″	5/8″	6381K53	5.54
3/4″	3/4″	6381K531	2.20
3/4″	7/8″	6381K532	6.32
3/4″	1″	6381K533	2.66
3/4″	1 1/8″	6381K534	2.62
3/4″	1 1/4″	6381K535	3.08
3/4″	1 1/2″	6381K536	3.35
3/4″	3″	6381K6	10.82
13/16″	1/2″	6381K537	5.94
13/16″	3/4″	6381K538	6.49
13/16″	1″	6381K539	3.59
13/16″	3″	6381K7	11.34
7/8″	5/8″	6381K54	6.42
7/8″	3/4″	6381K541	3.22
7/8″	1″	6381K542	3.79
7/8″	1 1/2″	6381K543	6.52
7/8″	1 3/4″	6381K544	6.20
7/8″	3″	6381K8	11.82
1″	3/4″	6381K545	7.53
1″	2″	6381K151	6.70
1″	3″	6381K9	12.86
1 1/8″	1 1/2″	6381K161	7.27
For Shaft Dia.: 3/4″			
7/8″	1/2″	6381K546	$5.39
7/8″	5/8″	6381K547	5.66
7/8″	3/4″	6381K548	2.19
7/8″	1″	6381K171	2.68
7/8″	1 1/4″	6381K55	2.89
7/8″	1 1/2″	6381K549	3.32
7/8″	3″	6381K11	14.84
15/16″	1 1/2″	6381K181	3.79
15/16″	2″	6381K182	5.01
1″	3/8″	6381K551	5.72
1″	1/2″	6381K552	1.74
1″	5/8″	6381K553	6.19
1″	3/4″	6381K191	2.45
1″	7/8″	6381K554	2.63
1″	1″	6381K192	3.13
1″	1 1/4″	6381K193	3.68
1″	1 1/2″	6381K555	3.96
1″	1 3/4″	6381K194	4.55
1″	2″	6381K195	5.59
1″	3″	6381K13	15.88
1 1/8″	1 1/2″	6381K201	6.33
1 1/8″	3″	6381K14	13.77
1 1/4″	1″	6381K556	10.72
1 1/4″	3″	6381K15	32.03
For Shaft Dia.: 7/8″			
1″	1 1/2″	6381K557	3.28
1″	3″	6381K16	10.24
1 1/8″	3/4″	6381K558	2.78
1 1/8″	1″	6381K559	3.25
1 1/8″	1 1/4″	6381K56	3.93
1 1/8″	2″	6381K561	6.44
1 1/8″	3″	6381K17	11.89
For Shaft Dia.: 1″			
1 1/8″	1/2″	6381K562	5.53
1 1/8″	1″	6381K563	2.96
1 1/8″	4″	6381K18	16.42
1 1/4″	1/2″	6381K564	6.28
1 1/4″	3/4″	6381K211	3.05
1 1/4″	1″	6381K212	3.80
1 1/4″	1 1/4″	6381K213	4.59
1 1/4″	1 1/2″	6381K214	5.07
1 1/4″	2″	6381K215	6.38
1 1/4″	2 1/4″	6381K565	6.71
1 1/4″	2 1/2″	6381K216	7.60
1 1/4″	3″	6381K217	9.22
1 1/4″	4″	6381K19	18.80
1 3/8″	1″	6381K221	3.94
1 3/8″	1 1/2″	6381K222	5.45
1 3/8″	4″	6381K21	18.54
1 1/2″	2″	6381K231	13.34
1 1/2″	3″	6381K232	17.97
1 1/2″	4″	6381K233	24.57
1 5/8″	2″	6381K241	16.12
For Shaft Dia.: 1 1/8″			
1 3/8″	1″	6381K567	2.99
1 3/8″	1 1/2″	6381K568	4.53
1 3/8″	4″	6381K251	10.34
For Shaft Dia.: 1 3/16″			
1 1/2″	1″	6381K581	5.73
1 1/2″	1 1/2″	6381K582	6.46
1 1/2″	2″	6381K583	7.21
1 1/2″	2 1/2″	6381K584	8.78
For Shaft Dia.: 1 3/16″ (Cont.)			
1 1/2″	4″	6381K22	$15.32
For Shaft Dia.: 1 1/4″			
1 1/2″	3/4″	6381K569	3.58
1 1/2″	1″	6381K261	3.13
1 1/2″	1 1/4″	6381K57	3.83
1 1/2″	1 1/2″	6381K262	4.33
1 1/2″	2″	6381K263	5.76
1 1/2″	2 1/2″	6381K571	7.44
1 1/2″	3″	6381K264	8.67
1 1/2″	4″	6381K265	11.69
For Shaft Dia.: 1 5/16″			
1 5/8″	2 1/2″	6381K271	9.56
For Shaft Dia.: 1 3/8″			
1 5/8″	1 1/2″	6381K585	5.20
1 5/8″	2″	6381K586	7.21
1 5/8″	3″	6381K281	9.59
1 5/8″	4″	6381K24	14.20
For Shaft Dia.: 1 1/2″			
1 3/4″	1/2″	6381K572	3.16
1 3/4″	1″	6381K291	3.52
1 3/4″	1 3/4″	6381K292	5.93
1 3/4″	2″	6381K573	6.43
1 3/4″	2 1/2″	6381K293	8.30
1 3/4″	3″	6381K294	8.78
1 3/4″	4″	6381K25	14.34
1 7/8″	2″	6381K301	9.23
1 7/8″	4″	6381K26	21.16
2″	2″	6381K311	12.08
2″	2 1/2″	6381K312	15.52
2″	3″	6381K313	18.29
2″	4″	6381K314	25.02
2 1/4″	3″	6381K321	29.02
For Shaft Dia.: 1 3/4″			
2″	1″	6381K587	5.14
2″	1 1/2″	6381K604	5.98
2″	2″	6381K605	6.96
2″	3″	6381K331	11.13
2″	4″	6381K27	17.08
2 1/4″	1 3/4″	6381K341	12.86
For Shaft Dia.: 2″			
2 1/4″	2″	6381K351	8.14
2 1/4″	2 1/2″	6381K352	10.74
2 1/4″	4″	6381K28	21.53
2 3/8″	1 1/8″	6381K574	8.25
2 3/8″	1 1/2″	6381K575	10.99
2 3/8″	2″	6381K576	12.33
2 3/8″	3″	6381K361	17.64
2 3/8″	4″	6381K577	23.71
2 1/2″	2″	6381K371	15.68
2 1/2″	2 1/2″	6381K372	19.68
2 1/2″	3″	6381K373	23.01
2 1/2″	5″	6381K374	39.78
For Shaft Dia.: 2 1/4″			
2 3/4″	2″	6381K58	18.17
2 3/4″	3″	6381K381	26.67
2 3/4″	4″	6381K29	40.55
For Shaft Dia.: 2 1/2″			
3″	4″	6381K578	40.04
3″	5″	6381K391	49.88
For Shaft Dia.: 3″			
3 1/2″	4″	6381K401	50.58
4″	6 1/2″	6381K579	149.38

Alloy 954

OD	Lg.		Each
For Shaft Dia.: 1/4″			
5/16″	1/4″	2867T41	$4.15
5/16″	1/2″	2867T42	4.84
3/8″	1/4″	2867T43	4.87
3/8″	3/8″	2867T44	4.95
3/8″	1/2″	2867T45	5.05
3/8″	1″	2867T46	6.64
For Shaft Dia.: 3/8″			
1/2″	1/4″	2867T47	4.27
1/2″	3/8″	2867T48	4.49
For Shaft Dia.: 3/8″ (Cont.)			
1/2″	1/2″	2867T49	$4.46
1/2″	3/4″	2867T51	5.34
1/2″	1″	2867T52	6.42
For Shaft Dia.: 1/2″			
5/8″	3/8″	2867T53	6.43
5/8″	1/2″	2867T54	6.50
5/8″	3/4″	2867T55	3.41
5/8″	1″	2867T56	3.78
5/8″	1 1/2″	2867T57	4.84
For Shaft Dia.: 1/2″ (Cont.)			
3/4″	1/2″	2867T58	$2.22
3/4″	3/4″	2867T59	3.51
3/4″	1″	2867T61	3.73
For Shaft Dia.: 5/8″			
3/4″	1″	2867T62	3.75
For Shaft Dia.: 3/4″			
1″	3/4″	2867T63	3.76
1″	1″	2867T64	3.80
1″	2″	2867T65	5.01
For Shaft Dia.: 7/8″			
1″	1 1/2″	2867T66	$5.04
For Shaft Dia.: 1″			
1 1/8″	1″	2867T67	3.63
1 1/4″	3/4″	2867T68	4.04
1 1/4″	2″	2867T69	7.04
1 1/4″	3″	2867T71	11.45
For Shaft Dia.: 1 1/8″			
1 3/8″	4″	2867T72	15.94

Sleeve Bearings

For information about sleeve bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC.**

Food-Grade Oil-Lubricated SAE 841 and SAE 863 Bronze Sleeve Bearings

Impregnated with oil that meets USDA H-1, these bearings are perfect for applications with incidental food contact.

SAE 841— Also called Oilite® Non-Tox®, the oil in this porous material reduces wear. ***SAE 863—*** Also called Super Oilite® Non-Tox®, this material is similar to SAE 841 but contains more iron for greater strength. *Note:* Color is silver because of the iron.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	–40° to +350° F	2,000	1,200	50,000
SAE 863	–40° to +350° F	4,000	225	35,000

For Shaft Dia.	OD	Lg.	SAE 841	Each	SAE 863	Each
1/4"	3/8"	1/4"	7095K41	$0.46	6952K61	$0.49
1/4"	3/8"	3/8"	7095K42	.53	6952K62	.50
3/8"	1/2"	3/8"	7095K43	.53	6952K63	.58
3/8"	1/2"	1/2"	7095K44	.54	6952K64	.63
1/2"	5/8"	1/2"	7095K45	$0.58	6952K65	$0.64
1/2"	5/8"	3/4"	7095K46	.73	6952K66	.69
3/4"	1"	1"	7095K47	1.55	6952K67	1.46
1"	1 1/4"	1 1/4"	7095K48	2.47	6952K68	2.07

Ultra-Tough Oil-Lubricated Bronze Sleeve Bearings

Count on these ultra-tough bronze bearings to handle your heavily loaded applications. Made of copper with a high iron content, all are heat treated to provide excellent strength as well as wear and shock resistance. They are also impregnated with oil.

Bearing Material	Temperature Range	P max	V max	PV max
Oil-Lubricated Bronze	+10° to +220° F	8,000	35	75,000

OD	Lg.		Each
For Shaft Dia.: 0.752"			
0.879"	1/2"	3741K1	$10.42
0.879"	5/8"	3741K2	10.54
0.879"	3/4"	3741K3	10.67
0.879"	1"	3741K4	10.95
0.942"	1/2"	3741K5	10.86
1.004"	1/2"	3741K6	11.12
1.004"	3/4"	3741K7	11.51
1.004"	1"	3741K8	11.90
1.004"	1 1/4"	3741K9	12.29
1.004"	1 1/2"	3741K11	12.62
1.004"	2"	3741K12	13.13
1.129"	3/4"	3741K13	12.31
For Shaft Dia.: 0.877"			
1.004"	5/8"	3741K14	$10.86
1.004"	1"	3741K15	11.28
1.129"	1 1/2"	3741K16	12.47
1.254"	1"	3741K17	12.72
For Shaft Dia.: 1.003"			
1.129"	3/4"	3741K18	11.17
1.129"	1 1/2"	3741K19	11.92
1.254"	3/4"	3741K21	11.87
1.254"	1"	3741K22	12.26
1.254"	1 1/4"	3741K23	12.66
1.254"	1 1/2"	3741K24	13.05
1.254"	2 1/2"	3741K26	14.62
For Shaft Dia.: 1.003" (Cont.)			
1.254"	3"	3741K27	$15.55
For Shaft Dia.: 1.128"			
1.254"	1"	3741K29	12.21
1.379"	1"	3741K31	12.54
For Shaft Dia.: 1.254"			
1.504"	1/2"	3741K33	11.75
1.504"	1"	3741K34	12.57
1.504"	2"	3741K35	13.45
1.504"	2 1/2"	3741K36	14.13
For Shaft Dia.: 1.379"			
1.63"	1"	3741K37	12.85
1.63"	1 1/2"	3741K38	13.59
For Shaft Dia.: 1.504"			
1.755"	5/8"	3741K39	$12.36
1.755"	1"	3741K41	13.86
1.755"	1 1/2"	3741K42	14.58
1.755"	2"	3741K43	15.38
2.005"	1 1/2"	3741K44	17.97
For Shaft Dia.: 1.754"			
2.005"	1"	3741K46	13.22
2.005"	2"	3741K47	14.99
For Shaft Dia.: 2.004"			
2.255"	1"	3741K48	15.03
2.255"	2"	3741K49	19.18

PTFE/Oil-Lubricated SAE 841 Bronze Sleeve Bearings

To provide extra-slippery performance, these SAE 841 bearings are impregnated with oil that has slick PTFE particles. The oil acts as a cushion between the bearings and your shafts to add wear and shock resistance.

Bearing Material	Temperature Range	P max	V max	PV max
PTFE/Oil-Lubricated SAE 841 Bronze	+10° to +220° F	2,000	1,200	50,000

For Shaft Dia.	OD	Lg.		Each
3/16"	1/4"	1/4"	1688K1	$0.27
1/4"	5/16"	1/4"	1688K2	.30
1/4"	5/16"	1/2"	1688K3	.37
1/4"	3/8"	1/4"	1688K4	.40
1/4"	3/8"	3/8"	1688K5	.47
1/4"	3/8"	1/2"	1688K6	.56
1/4"	3/8"	1"	1688K7	$0.93
3/8"	1/2"	1/4"	1688K8	.47
3/8"	1/2"	3/8"	1688K9	.60
3/8"	1/2"	1/2"	1688K11	.77
3/8"	1/2"	3/4"	1688K12	.93
3/8"	1/2"	1"	1688K13	1.10
1/2"	5/8"	3/8"	1688K14	$0.77
1/2"	5/8"	1/2"	1688K15	.86
1/2"	5/8"	3/4"	1688K16	1.10
1/2"	5/8"	1"	1688K17	1.24
1/2"	3/4"	1/2"	1688K19	1.37
1/2"	3/4"	3/4"	1688K21	1.86
1/2"	3/4"	1"	1688K22	$2.73
5/8"	3/4"	3/4"	1688K23	1.20
5/8"	3/4"	1"	1688K24	1.47
3/4"	7/8"	1"	1688K25	1.60
3/4"	1"	3/4"	1688K26	2.90
1"	1 1/4"	1 1/2"	1688K27	5.44

Metric Bronze Sleeve Bearings

SAE 841— Also called Oilite® M-Series®, this porous material is impregnated with 19% SAE 30 oil. The oil reduces wear as well as required maintenance. ***Alloy 932—*** Also known as SAE 660, this nonporous, cast material makes hard and strong bearings with excellent resistance to shock loads (suddenly applied loads) and wear.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	+10° to +220° F	2,000	1,200	50,000
Alloy 932	–350° to +450° F	4,000	750	75,000

OD, mm	Lg., mm	SAE 841	Each	Alloy 932	Each
For Shaft Dia.: 12 mm					
15	12	6658K11	$0.96	7811K11	$2.99
15	16	6658K12	1.03	7811K12	3.07
15	20	6658K13	1.10	7811K13	3.55
16	12	6658K14	1.10	7811K14	4.22
16	16	6658K15	1.11	7811K15	5.94
16	20	6658K16	1.14	7811K16	6.12
18	12	6658K17	1.23	7811K17	6.24
18	16	6658K18	1.29	7811K18	6.28
18	20	6658K19	1.38	7811K19	7.08
For Shaft Dia.: 14 mm					
18	14	6658K21	1.39	7811K21	3.41
18	18	6658K22	1.41	7811K22	3.89
18	22	6658K23	1.51	7811K23	3.92
20	14	6658K24	1.51	7811K24	3.98
20	18	6658K25	1.63	7811K25	4.00
20	22	6658K26	1.68	7811K26	4.02
For Shaft Dia.: 15 mm					
19	16	6658K27	$1.70	7811K27	$4.05
19	20	6658K28	1.75	7811K28	4.05
21	16	6658K29	1.78	7811K29	4.06
21	20	6658K31	1.86	7811K31	4.07
For Shaft Dia.: 16 mm					
20	16	6658K32	1.88	7811K32	4.10
20	20	6658K33	1.90	7811K33	4.25
22	16	6658K34	1.94	7811K34	4.28
22	20	6658K35	1.96	7811K35	4.29
For Shaft Dia.: 18 mm					
22	18	6658K36	1.99	7811K36	4.34
22	22	6658K37	2.03	7811K37	4.35
24	18	6658K38	2.04	7811K38	4.37
24	22	6658K39	2.35	7811K39	4.43
25	18	6658K41	2.53	7811K41	4.45
25	22	6658K42	2.41	7811K42	4.45
For Shaft Dia.: 20 mm					
24	16	6658K43	$2.42	7811K43	$4.47
24	20	6658K44	2.43	7811K44	4.53
26	16	6658K45	2.47	7811K45	4.57
26	20	6658K46	2.50	7811K46	4.62
28	16	6658K47	2.58	7811K47	4.67
28	20	6658K48	2.61	7811K48	4.74
For Shaft Dia.: 22 mm					
27	18	6658K49	2.66	7811K49	4.93
27	22	6658K51	3.78	7811K51	4.94
28	18	6658K52	2.82	7811K52	5.01
28	22	6658K53	2.89	7811K53	5.07
29	18	6658K54	2.99	7811K54	5.12
29	22	6658K55	3.04	7811K55	5.16
For Shaft Dia.: 25 mm					
30	20	6658K56	3.10	7811K56	5.18
32	20	6658K57	3.16	7811K57	5.33

For information about sleeve bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC**.

Grooved and Graphite-Filled Bronze Sleeve Bearings

Figure-8 Grooved— A figure-8-shaped groove inside these bearings retains your lubricant and provides a flow path for easy relubrication. Use high-temperature lubricants for temperatures over 250° F.

Graphite Filled— Graphite-filled grooves and plugs act like on-board lubrication without the oily mess. *Graphite-filled grooved bearings* have a figure-8-shaped groove that provides lubrication on the inside of the bearing. *Graphite-filled plugged bearings* are plugged completely through the bearing wall to provide lubrication on both the inside and outside of the bearing.

Alloy 932 and ***Alloy 954—*** Hard, strong, and abrasion resistant, these nonporous cast-bronze materials make bearings with excellent resistance to shock loads (suddenly applied loads) and wear. *Alloy 932* is also known as SAE 660. *Alloy 954* is harder, stronger, and withstands an even wider temperature range than Alloy 932.

Figure-8 Grooved — *Graphite-Filled Grooved* — *Graphite-Filled Plugged*

Bearing Material	Temperature Range	P max	V max	PV max
Alloy 932	–350° to +450° F	3,500	560	56,000
Alloy 954	–350° to +500° F	3,900	169	93,750

Figure-8 Grooved—Alloy 932

OD	Lg.		Each
For Shaft Dia.: 5/16″			
1/2″	3/4″	7965K12	$11.82
1/2″	1″	7965K13	12.20
1/2″	1 1/4″	7965K11	12.24
For Shaft Dia.: 1/2″			
5/8″	1″	7965K14	9.90
5/8″	1 1/4″	7965K15	9.91
3/4″	3/4″	7965K16	10.04
For Shaft Dia.: 5/8″			
3/4″	1/2″	7965K18	8.28
1″	2″	7965K17	11.08
1 1/8″	1 1/2″	7965K19	14.33
For Shaft Dia.: 3/4″			
7/8″	1″	7965K24	9.45
15/16″	1 1/2″	7965K23	10.98
15/16″	2″	7965K22	12.32
1″	3/4″	7965K21	9.08
1″	1″	7965K29	9.53
1″	1 1/4″	7965K28	10.89
1″	1 3/4″	7965K27	11.88
1″	2″	7965K26	12.42
1 1/8″	1 1/2″	7965K25	12.58
For Shaft Dia.: 1″			
1 1/4″	3/4″	7965K35	9.06
1 1/4″	1″	7965K34	10.93
1 1/4″	1 1/4″	7965K33	11.34
1 1/4″	1 1/2″	7965K32	12.44
1 1/4″	2″	7965K31	13.92
1 1/4″	2 1/2″	7965K41	15.52
1 1/4″	3″	7965K39	17.82
1 3/8″	1″	7965K38	12.49
1 3/8″	1 1/2″	7965K37	14.56
1 1/2″	2″	7965K36	19.74
For Shaft Dia.: 1″ (Cont.)			
1 1/2″	3″	7965K44	$26.32
1 1/2″	4″	7965K43	26.55
1 5/8″	2″	7965K42	26.63
For Shaft Dia.: 1 1/4″			
1 1/2″	1″	7965K45	11.88
1 1/2″	1 1/2″	7965K49	12.24
1 1/2″	2″	7965K48	14.83
1 1/2″	3″	7965K47	19.12
1 1/2″	4″	7965K46	23.36
For Shaft Dia.: 1 1/2″			
1 3/4″	1″	7965K54	10.45
1 3/4″	1 3/4″	7965K53	12.88
1 3/4″	2 1/2″	7965K52	17.16
1 3/4″	3″	7965K51	20.05
1 7/8″	2″	7965K59	16.02
2″	2″	7965K58	18.76
2″	2 1/2″	7965K57	21.69
2″	3″	7965K56	23.89
2″	4″	7965K55	29.25
2 1/4″	3″	7965K61	31.03
For Shaft Dia.: 1 3/4″			
2″	3″	7965K63	17.80
2 1/4″	1 3/4″	7965K62	18.56
For Shaft Dia.: 2″			
2 1/4″	2″	7965K65	15.08
2 1/4″	2 1/2″	7965K64	17.35
2 3/8″	3″	7965K71	23.54
2 1/2″	2″	7965K69	26.72
2 1/2″	2 1/2″	7965K68	26.94
2 1/2″	3″	7965K67	27.44
2 1/2″	5″	7965K66	39.76

Figure-8 Grooved—Alloy 954

OD	Lg.		Each
For Shaft Dia.: 1/2″			
5/8″	3/8″	2924T41	$16.82
5/8″	1/2″	2924T42	17.04
5/8″	3/4″	2924T43	19.88
5/8″	1″	2924T44	20.86
5/8″	1 1/2″	2924T45	23.14
3/4″	1/2″	2924T46	17.57
3/4″	3/4″	2924T47	20.75
3/4″	1″	2924T48	22.07
For Shaft Dia.: 5/8″			
3/4″	1″	2924T49	22.61
For Shaft Dia.: 3/4″			
1″	3/4″	2924T51	24.61
1″	1″	2924T52	28.32
1″	1 1/2″	2924T53	33.34
1″	2″	2924T54	40.08
For Shaft Dia.: 7/8″			
1″	1 1/2″	2924T55	28.20
For Shaft Dia.: 1″			
1 1/8″	1″	2924T56	$23.90
1 1/4″	3/4″	2924T57	22.90
1 1/4″	1″	2924T58	24.59
1 1/4″	1 1/2″	2924T59	27.92
1 1/4″	2″	2924T61	32.67
For Shaft Dia.: 1 1/4″			
1 1/2″	1 1/2″	2924T62	30.42
1 1/2″	2″	2924T63	36.70
For Shaft Dia.: 1 1/2″			
1 3/4″	1 1/2″	2924T64	32.42
1 3/4″	2″	2924T65	38.80
For Shaft Dia.: 1 3/4″			
1 7/8″	1 1/2″	2924T66	32.04
1 7/8″	2″	2924T67	38.55
For Shaft Dia.: 2″			
2 1/4″	2″	2924T68	25.98
2 1/4″	2 1/2″	2924T69	37.36

Graphite Filled—Alloy 932

OD	Lg.		Grooved Each		Plugged Each
For Shaft Dia.: 1/4″					
3/8″	1/2″	6405K311	$8.93	6387K51	$16.38
3/8″	3/4″	6405K312	9.03	6387K52	17.89
For Shaft Dia.: 3/8″					
5/8″	3/4″	6405K313	9.42	6387K53	23.87
5/8″	1″	6405K314	9.69	6387K11	14.62
For Shaft Dia.: 1/2″					
5/8″	1″	6405K401	9.70	6387K12	15.97
3/4″	1/2″	6405K315	9.74	6387K54	17.62
3/4″	3/4″	6405K316	9.78	6387K55	19.90
3/4″	1″	6405K317	9.90	6387K56	21.74
3/4″	1 1/2″	6405K402	12.05	6387K14	15.65

Graphite Filled—Alloy 932 (Cont.)

OD	Lg.		Grooved Each		Plugged Each
For Shaft Dia.: 5/8″					
3/4″	1″	6405K403	$12.42	6387K16	$15.08
7/8″	1/2″	6405K318	12.59	6387K57	20.77
7/8″	3/4″	6405K319	12.80	6387K58	20.86
7/8″	1″	6405K321	12.84	6387K59	23.69
7/8″	1 1/4″	6405K404	12.93	6387K18	15.49
For Shaft Dia.: 3/4″					
15/16″	1 1/2″	6405K405	15.50	6387K41	18.19
1″	1/2″	6405K322	8.93	6387K61	19.51
1″	3/4″	6405K323	9.64	6387K62	22.11
1″	1″	6405K324	10.52	6387K63	25.45
1″	1 1/4″	6405K325	11.39	6387K22	15.89
For Shaft Dia.: 7/8″					
1 1/8″	1 1/2″	6405K406	13.61	6387K24	15.17
For Shaft Dia.: 1″					
1 1/4″	3/4″	6405K326	13.62	6387K64	21.34
1 1/4″	1″	6405K327	13.65	6387K65	23.18
1 1/4″	1 1/4″	6405K328	13.76	6387K66	26.37
1 1/4″	1 1/2″	6405K329	14.17	6387K29	17.69
1 1/4″	2″	6405K331	14.72	6387K67	32.22
1 3/8″	2″	6405K407	14.92	6387K31	24.06
For Shaft Dia.: 1 1/4″					
1 1/2″	1″	6405K332	15.02	6387K68	25.70
1 1/2″	1 1/2″	6405K333	15.20	6387K69	31.63
1 1/2″	2″	6405K334	16.24	6387K71	41.36
1 1/2″	2 1/4″	6405K408	21.25	6387K32	22.18
For Shaft Dia.: 1 1/2″					
1 3/4″	1″	6405K335	13.98	6387K72	26.50
1 3/4″	1 3/4″	6405K336	17.67	6387K73	32.62
1 3/4″	2″	6405K337	19.04	6387K74	34.62
1 3/4″	3″	6405K338	26.25	6387K75	42.81
For Shaft Dia.: 2″					
2 1/2″	2″	6405K339	28.56	6387K76	53.78
2 1/2″	2 1/2″	6405K341	28.90	6387K77	64.67
2 1/2″	3″	6405K342	32.10	6387K78	70.48
2 1/2″	4″	6405K343	45.95	6387K79	97.48

Graphite Filled—Alloy 954

OD	Lg.		Grooved Each		Plugged Each
For Shaft Dia.: 1/2″					
5/8″	3/8″	2927T41	29.78	2931T41	24.96
5/8″	1/2″	2927T42	29.95	2931T42	25.04
5/8″	3/4″	2927T43	30.37	2931T43	25.12
5/8″	1″	2927T44	30.75	2931T44	27.99
5/8″	1 1/2″	2927T45	23.85	2931T45	28.60
3/4″	1/2″	2927T46	23.97	2931T46	28.89
3/4″	3/4″	2927T47	24.25	2931T47	28.94
3/4″	1″	2927T48	25.92	2931T48	29.41
3/4″	1 1/2″	—	—	2931T49	33.10
For Shaft Dia.: 3/4″					
1″	3/4″	2927T51	26.10	2931T51	33.20
1″	1″	2927T52	26.20	2931T52	33.31
1″	1 1/2″	2927T53	27.32	2931T53	34.63
1″	2″	2927T54	27.89	2931T54	39.02
For Shaft Dia.: 1″					
1 1/4″	3/4″	2927T55	27.92	2931T55	39.04
1 1/4″	1″	2927T56	28.08	2931T56	39.34
1 1/4″	1 1/4″	—	—	2931T57	40.18
1 1/4″	1 1/2″	2927T58	28.32	2931T58	40.30
1 1/4″	2″	2927T59	28.89	2931T59	45.52
For Shaft Dia.: 1 1/4″					
1 1/2″	1 1/2″	2927T61	29.02	2931T61	48.02
1 1/2″	2″	2927T62	31.03	2931T62	54.22
For Shaft Dia.: 1 1/2″					
1 3/4″	1 1/2″	2927T63	31.14	2931T63	54.58
1 3/4″	1 3/4″	2927T64	31.47	2931T64	54.89
1 3/4″	2″	2927T65	31.71	2931T65	61.25
For Shaft Dia.: 1 3/4″					
2″	1 1/2″	2927T66	31.75	2931T66	61.35
2″	2″	2927T67	33.17	2931T67	62.06
For Shaft Dia.: 2″					
2 1/4″	2″	2927T68	33.73	2931T68	82.20
2 1/4″	2 1/2″	2927T69	35.80	2931T69	83.36

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6391KAC**.

Extreme-Environment No-Lube Sleeve Bearings

Talk about extreme environments, these bearings handle temperatures from –450° to +750° F, even under water. They also conduct current. All are made of solid graphalloy—a mixture of graphite, a dry lubricant that reduces wear, and copper, which adds strength, durability, and heat-dissipating qualities. The graphite eliminates the need for messy oil and makes these bearings great for hard-to-lubricate areas.

Bearing Material	Temperature Range	P max	V max	PV max
Graphalloy	–450° to +750° F	750	75	12,000

For Shaft Dia.	OD	Lg.		Each
1/4″	1/2″	1/4″	7943K22	$19.30
5/16″	9/16″	3/8″	7943K24	20.66
3/8″	5/8″	3/8″	7943K26	21.90
7/16″	11/16″	1/2″	7943K28	23.56
1/2″	7/8″	5/8″	7943K32	28.00
5/8″	1″	7/8″	7943K34	33.96
11/16″	11/16″	1″	7943K36	$36.83
3/4″	1 1/8″	1 1/4″	7943K38	40.31
7/8″	1 1/4″	1 3/8″	7943K52	47.11
15/16″	15/16″	1 3/8″	7943K54	50.85
1″	1 3/8″	1 1/2″	7943K56	55.37
1 1/8″	1 5/8″	1 3/4″	7943K58	70.95
1 1/4″	1 3/4″	1 7/8″	7943K62	$81.75
1 3/8″	1 7/8″	2″	7943K64	90.51
1 7/16″	1 15/16″	2 1/4″	7943K66	99.74
1 1/2″	2″	2 1/4″	7943K68	105.93

Vibration-Damping Bronze Sleeve Bearings

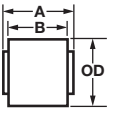

With a flexible layer of neoprene rubber sandwiched between a protective steel shell and an SAE 841 bronze insert, these bearings quiet down equipment by absorbing vibration. The neoprene rubber also allows these bearings to accommodate shaft misalignment and adds resistance to shock loads (suddenly applied loads). The bronze insert, which is impregnated with 20% SAE 30 oil, makes them great for hard-to-lubricate areas.

Material	Temp. Range	P max	V max	PV max
SAE 841	0° to +225° F	2,000	1,200	50,000

For Shaft Dia.	OD	Lg. (A)	Lg. (B)		Each
3/8″	1″	1″	7/8″	6364K31	$9.22
1/2″	1″	1″	7/8″	6364K32	7.77
5/8″	1 1/4″	1 1/4″	1 1/8″	6364K33	11.41
3/4″	1 1/4″	1 1/4″	1 1/8″	6364K34	10.22
1″	1 5/8″	1 1/2″	1 3/8″	6364K36	16.12

Extra-Strength Metal-Backed Sleeve Bearings

A metal shell adds strength to these bearings.

Steel-Backed PTFE-Coated Bronze—These bearings have a steel shell and a bronze lining, which is coated with a thin layer of low-friction PTFE. They resist corrosion and water absorption and are electrically conductive. They also have the highest load capacity of our metal-backed bearings and are well suited for rotary and oscillating motion.

Aluminum-Backed Frelon—These bearings have an aluminum shell and a Frelon lining, which is a PTFE-filled composite that's chemically inert. They outperform bronze and plastic bearings in corrosive environments.

Size	Temperature Range	P Max	V max	PV max
Steel-Backed PTFE-Coated Bronze				
Inch	–328° to +536° F	20,000	1,000	50,000
Metric	–328° to +536° F	250	2	1.8
Aluminum-Backed Frelon				
Inch	–400° to +400° F	3,000	300	20,000
Metric	–400° to +400° F	20.68	1.52	0.72

Steel-Backed PTFE-Coated Bronze

For Shaft Dia.	OD	Lg.		Each
Inch				
1/4″	5/16″	1/4″	60695K1	$2.80
3/8″	15/32″	1/2″	60695K2	3.11
1/2″	19/32″	5/8″	60695K3	3.73
5/8″	23/32″	5/8″	60695K4	4.10
3/4″	7/8″	1″	60695K5	5.19
7/8″	1″	1″	60695K6	6.22
1″	1 1/8″	1″	60695K7	6.42
1 1/4″	1 13/32″	1 1/4″	60695K8	8.12
Inch (Cont.)				
1 1/2″	1 21/32″	1 1/4″	60695K9	$9.54
1 3/4″	1 15/16″	1 1/2″	60695K11	15.29
2″	2 3/16″	2″	60695K12	21.10
Metric				
6 mm	8 mm	10 mm	6679K11	1.88
8 mm	10 mm	10 mm	6679K12	2.27
8 mm	10 mm	12 mm	6679K13	2.42
10 mm	12 mm	12 mm	6679K14	3.00
Metric (Cont.)				
10 mm	12 mm	15 mm	6679K15	$2.73
12 mm	14 mm	15 mm	6679K16	3.15
12 mm	14 mm	20 mm	6679K17	3.38
14 mm	16 mm	12 mm	6679K18	3.35
16 mm	18 mm	20 mm	6679K19	3.35
20 mm	23 mm	20 mm	6679K21	4.10
24 mm	27 mm	15 mm	6679K22	3.73
24 mm	27 mm	25 mm	6679K23	5.60

Aluminum-Backed Frelon

For Shaft Dia.	OD	Lg.		Each
Inch				
1/4″	3/8″	1/2″	59575K51	$8.85
3/8″	5/8″	1/2″	59575K52	9.98
1/2″	3/4″	3/4″	59575K53	11.29
5/8″	7/8″	3/4″	59575K54	12.83
3/4″	1″	1″	59575K55	13.90
1″	1 1/4″	1 1/2″	59575K56	21.52
1 1/4″	1 1/2″	2″	59575K57	30.10
Inch (Cont.)				
1 1/2″	1 3/4″	2″	59575K58	$35.73
1 3/4″	2″	3″	59575K59	50.35
2″	2 1/4″	3″	59575K61	59.78
Metric				
6 mm	10 mm	10 mm	7751K51	9.02
8 mm	12 mm	8 mm	7751K52	9.47
8 mm	12 mm	12 mm	7751K53	9.85
Metric (Cont.)				
10 mm	14 mm	16 mm	7751K54	$11.81
12 mm	16 mm	16 mm	7751K55	13.02
16 mm	20 mm	12 mm	7751K56	14.17
16 mm	20 mm	16 mm	7751K57	14.06
20 mm	25 mm	20 mm	7751K58	17.62
25 mm	30 mm	25 mm	7751K59	20.49
30 mm	35 mm	30 mm	7751K61	29.33

Mil.-Spec. PTFE-Lined Sleeve Bearings

Designed to meet MIL-B-81934 (SAE-AS81934), these maintenance-free bearings are heat-treated 17-4 PH stainless steel with a PTFE fiber liner. The liner also meets MIL-B-81820 (SAE-AS81820).

All of these bearings offer excellent resistance to most chemical solvents. They have inherent damping qualities that reduce noise. Great for use in applications with shock loads (suddenly applied loads) and vibration.

Bearing Material	Temperature Range	P max	V max	PV max
Stainless Steel Sleeve, PTFE Fiber Lined	–65° to +350° F	40,000	200	80,000

For Shaft Dia.	OD	Lg.		Each
3/8″	0.501″	1/4″	5445K1	$33.10
3/8″	0.501″	3/8″	5445K2	36.74
3/8″	0.501″	1/2″	5445K3	40.13
3/8″	0.501″	9/16″	5445K4	41.64
1/2″	0.627″	3/16″	5445K5	32.13
1/2″	0.627″	11/32″	5445K6	36.66
1/2″	0.627″	3/8″	5445K7	37.56
1/2″	0.627″	7/16″	5445K8	39.30
1/2″	0.627″	7/8″	5445K9	$49.89
5/8″	0.814″	5/8″	5445K11	49.74
5/8″	0.814″	1 1/4″	5445K12	68.78
11/16″	0.877″	1″	5445K13	61.79
3/4″	0.939″	3/4″	5445K14	57.83
7/8″	1.065″	11/16″	5445K15	59.80
7/8″	1.065″	1″	5445K16	70.68
7/8″	1.065″	1 5/8″	5445K17	92.10
1″	1.19″	5/8″	5445K18	$78.30
1″	1.19″	3/4″	5445K19	85.42
1″	1.19″	1 1/8″	5445K21	105.70
1 1/8″	1.315″	11/16″	5445K22	74.17
1 1/4″	1.44″	3/4″	5445K23	82.53
1 1/4″	1.44″	1″	5445K24	94.15
1 1/4″	1.44″	1 1/4″	5445K25	105.91
1 1/4″	1.44″	1 1/2″	5445K26	117.69

For information about thrust bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6389KAC.**

Bronze Thrust Bearings

SAE 841— Also called Oilite®, this porous material is impregnated with 19% SAE 30 oil. The oil reduces wear as well as required maintenance. ***Graphite SAE 841—*** This porous material is impregnated with a graphite-based material, which provides low-friction dry lubrication in a wide range of temperatures. ***SAE 863—*** Also called Super Oilite®, this material is similar to SAE 841 but contains more iron for greater strength. *Note:* Color is silver because of the iron. ***Alloy 932—*** Also known as SAE 660, this nonporous, cast material makes hard, strong, and abrasion-resistant bearings with excellent resistance to shock loads (suddenly applied loads) and wear. ***Alloy 954—*** This nonporous, cast material is harder, stronger, and withstands an even wider temperature range than Alloy 932.

Plugged bearings have evenly spaced holes filled with graphite plugs, which act like on-board lubrication without the oily mess.

Solid

Plugged

Bearing Material	Temperature Range	P max	V max	PV max
Solid SAE 841	+10° to +220° F	2,000	1,200	50,000
Solid Graphite SAE 841	–30° to +700° F	1,600	1,000	40,000
Solid SAE 863	+10° to +220° F	4,000	225	35,000
Solid Alloy 932	–350° to +450° F	4,000	750	75,000
Solid Alloy 954	–350° to +500° F	4,500	225	125,000
Plugged Alloy 932	–350° to +450° F	3,500	560	56,000
Plugged Alloy 954	–350° to +500° F	3,900	169	93,750

Solid

For Shaft Dia.	OD	Thick.	SAE 841	Each	Graphite SAE 841	Each	SAE 863	Each	Alloy 932	Each	Alloy 954	Each
1/4"	5/8"	1/16"	5906K531	$0.83	7447K1	$0.53	2879T1	$0.79	7814K11	$2.72	2872T1	$7.42
3/8"	3/4"	1/16"	5906K511	.77	7447K2	.60	2879T2	.67	7814K12	2.83	2872T2	5.07
3/8"	3/4"	1/8"	5906K533	.91	7447K3	.83	2879T3	.94	7814K13	2.97	2872T3	7.56
1/2"	3/4"	1/16"	5906K512	.80	7447K4	.53	2879T19	.64	7814K14	2.66	2872T15	6.11
1/2"	7/8"	3/16"	5906K411	.90	—	—	2879T21	.81	7814K1	6.05	2872T16	6.35
1/2"	1"	1/16"	5906K513	1.07	7447K5	.83	2879T4	1.07	7814K15	2.73	2872T4	4.32
1/2"	1"	3/32"	5906K535	1.07	7447K6	1.03	2879T18	.85	7814K16	2.82	2872T17	6.31
1/2"	1"	1/8"	5906K514	1.08	7447K7	1.30	2879T5	1.05	7814K17	2.98	2872T5	4.48
9/16"	1 1/4"	1/16"	5906K537	.96	7447K8	1.10	2879T37	3.10	7814K2	6.03	2872T18	6.42
9/16"	1 1/4"	1/8"	5906K539	1.49	7447K9	1.70	2879T38	1.57	7814K3	6.11	2872T19	6.61
5/8"	1"	1/16"	5906K515	.87	7447K11	.70	2879T29	.86	7814K21	3.00	2872T21	6.24
5/8"	1"	1/8"	5906K516	.92	7447K12	1.10	2879T6	.96	7814K22	3.10	2872T6	10.47
5/8"	1 3/16"	1/16"	5906K541	1.06	7447K13	1.03	2879T32	1.06	7814K23	3.19	2872T22	6.42
5/8"	1 3/16"	3/32"	5906K543	1.37	7447K14	1.30	2879T34	1.31	7814K24	3.24	2872T23	6.50
5/8"	1 3/16"	1/8"	5906K545	1.70	7447K15	1.50	2879T33	1.62	7814K25	3.28	2872T24	6.59
5/8"	1 1/4"	1/16"	5906K547	1.05	7447K16	1.10	2879T31	.84	7814K26	3.34	2872T25	6.42
3/4"	1 1/4"	1/16"	5906K517	1.08	7447K17	1.03	2879T7	1.18	7814K27	3.39	2872T7	6.10
3/4"	1 1/4"	1/8"	5906K518	1.27	7447K18	1.50	2879T8	1.26	7814K28	3.52	2872T8	5.43
3/4"	1 3/8"	1/8"	5906K519	1.32	7447K19	1.73	2879T27	1.31	7814K29	3.45	2872T26	6.70
3/4"	1 9/16"	3/32"	5906K549	1.57	7447K21	1.84	2879T28	1.54	7814K31	3.98	2872T27	6.89
3/4"	1 3/4"	1/8"	5906K521	1.70	7447K22	3.40	2879T9	1.60	7814K32	4.51	2872T9	7.16
7/8"	1 1/2"	1/16"	5906K551	1.11	7447K23	1.20	2879T35	1.46	7814K33	3.84	2872T28	6.48
7/8"	1 1/2"	1/8"	5906K522	1.48	7447K24	1.87	2879T36	1.45	7814K34	4.24	2872T29	6.72
1"	1 1/2"	1/16"	5906K412	1.41	7447K25	1.20	2879T15	1.23	7814K4	6.03	2872T31	6.39
1"	1 1/2"	1/8"	5906K523	.80	7447K26	1.70	2879T11	1.27	7814K35	4.32	2872T11	4.72
1"	2"	1/8"	5906K524	2.36	7447K27	4.17	2879T12	2.26	7814K36	4.37	2872T12	6.70
1"	2"	3/16"	5906K555	3.45	—	—	2879T16	2.89	—	—	—	—
1"	2 7/8"	1/8"	5906K415	4.17	—	—	2879T17	6.38	7814K5	8.47	2872T32	9.89
1 1/4"	2"	1/16"	5906K553	1.08	7447K28	1.67	2879T23	2.13	7814K37	4.54	—	—
1 1/4"	2"	1/8"	5906K525	1.66	7447K29	3.37	2879T13	2.12	7814K38	4.65	2872T13	8.71
1 1/2"	2 1/2"	1/8"	5906K526	3.18	7447K31	4.73	2879T14	4.21	7814K39	4.71	2872T14	5.86
1 1/2"	3 1/2"	3/16"	5906K527	9.09	7447K32	14.20	2879T22	9.82	7814K6	11.19	2872T33	12.81
1 3/4"	2 7/16"	1/8"	5906K414	2.07	—	—	2879T25	5.42	7814K7	6.89	2872T34	7.50
1 3/4"	2 5/8"	1/8"	5906K413	2.15	7447K33	4.53	2879T24	4.25	7814K8	7.15	2872T35	8.08
2"	3"	1/8"	5906K528	3.04	7447K34	5.50	2879T26	5.73	7814K42	5.08	2872T36	8.40

Plugged

For Shaft Dia.	OD	Thick.	Alloy 932	Each	Alloy 954	Each
1/2"	1"	1/16"	2855T1	$11.15	2860T1	$12.19
1/2"	1"	1/8"	2855T2	11.47	2860T2	12.51
5/8"	1"	1/8"	2855T3	19.32	2860T3	22.21
3/4"	1 1/4"	1/16"	2855T4	14.92	2860T4	16.55
3/4"	1 1/4"	1/8"	2855T5	13.41	2860T5	14.69
3/4"	1 3/4"	1/8"	2855T6	$14.30	2860T6	$15.94
1"	1 1/2"	1/8"	2855T7	11.06	2860T7	12.14
1"	2"	1/8"	2855T8	14.10	2860T8	15.61
1 1/4"	2"	1/8"	2855T9	17.87	2860T9	20.09
1 1/2"	2 1/2"	1/8"	2855T11	15.36	2860T11	16.61

Food-Grade Oil-Lubricated Bronze Thrust Bearings

Impregnated with oil that meets USDA H-1, these bearings are perfect for applications with incidental food contact. ***SAE 841—*** Also called Oilite® Non-Tox®, the oil in this porous material reduces wear. ***SAE 863—*** Also called Super Oilite® Non-Tox®, this material is similar to SAE 841 but contains more iron for greater strength. *Note:* Color is silver because of the iron.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	–40° to +350° F	2,000	1,200	50,000
SAE 863	–40° to +350° F	4,000	225	35,000

For Shaft Dia.	OD	Thick.	SAE 841	Each	SAE 863	Each
1/4"	5/8"	1/16"	5429T7	$1.03	5435T7	$1.07
3/8"	3/4"	1/16"	5429T13	1.07	5435T13	1.13
1/2"	3/4"	1/16"	5429T6	1.10	5435T6	1.13
1/2"	1"	1/16"	5429T4	1.21	5435T4	1.35
5/8"	1"	1/16"	5429T15	1.35	5435T15	1.41
5/8"	1"	1/8"	5429T16	$1.43	5435T16	$1.87
3/4"	1 1/4"	1/16"	5429T9	1.34	5435T9	1.69
3/4"	1 3/4"	1/8"	5429T12	3.51	5435T12	3.46
1"	1 1/2"	1/8"	5429T2	1.94	5435T2	1.76
1"	2"	1/8"	5429T3	3.43	5435T3	3.25

For information about thrust and sleeve bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6389KAC**.

Ultra-Tough Oil-Lubricated Bronze Thrust Bearings

Count on these ultra-tough bronze bearings to handle your heavily loaded applications. Made of copper with a high iron content, all are heat treated to provide excellent strength as well as wear and shock resistance. They are also impregnated with oil.

Bearing Material	Temperature Range	P max	V max	PV max
Oil-Lubricated Bronze	+10° to +220° F	8,000	35	75,000

For Shaft Dia.	OD	Thick.		Each
1/4"	5/8"	1/16"	3750K1	$1.84
3/8"	3/4"	1/16"	3750K2	1.81
3/8"	3/4"	1/8"	3750K3	2.24
1/2"	3/4"	1/16"	3750K4	1.84
1/2"	1"	1/16"	3750K5	2.07
1/2"	1"	3/32"	3750K6	2.42
1/2"	1"	1/8"	3750K7	2.50
9/16"	1 1/4"	1/16"	3750K8	2.45
9/16"	1 1/4"	1/8"	3750K9	$3.20
5/8"	1"	1/16"	3750K11	2.21
5/8"	1"	1/8"	3750K12	2.42
5/8"	1 3/16"	1/16"	3750K13	2.39
5/8"	1 3/16"	3/32"	3750K14	2.68
5/8"	1 3/16"	1/8"	3750K15	2.71
5/8"	1 1/4"	1/16"	3750K16	2.42
3/4"	1 1/4"	1/16"	3750K17	2.39
3/4"	1 1/4"	1/8"	3750K18	$2.68
3/4"	1 3/8"	1/8"	3750K19	3.31
3/4"	1 9/16"	3/32"	3750K21	3.23
3/4"	1 3/4"	1/8"	3750K22	3.90
7/8"	1 1/2"	1/16"	3750K23	2.68
7/8"	1 1/2"	1/8"	3750K24	3.23
1"	1 1/2"	1/16"	3750K25	2.70
1"	1 1/2"	1/8"	3750K26	2.97
1"	2"	1/8"	3750K27	$3.99
1 1/4"	2"	1/16"	3750K28	3.03
1 1/4"	2"	1/8"	3750K29	3.90
1 1/2"	2 1/2"	1/8"	3750K31	4.33
1 1/2"	3 9/16"	9/32"	3750K32	6.44
1 3/4"	2 5/8"	1/8"	3750K33	4.23
2"	3"	1/8"	3750K34	4.60

PTFE/Oil-Lubricated SAE 841 Bronze Thrust Bearings

To provide extra-slippery performance, these SAE 841 bearings are impregnated with oil that has slick PTFE particles. The oil acts as a cushion between the bearings and your shafts to add wear and shock resistance.

Bearing Material	Temperature Range	P max	V max	PV max
PTFE/Oil-Lubricated SAE 841 Bronze	+10° to +220° F	2,000	1,200	50,000

For Shaft Dia.	OD	Thick.		Each
1/4"	5/8"	1/16"	7421K1	$0.40
3/8"	3/4"	1/16"	7421K2	.46
3/8"	3/4"	1/8"	7421K3	.70
1/2"	3/4"	1/16"	7421K4	.40
1/2"	1"	1/16"	7421K5	.70
1/2"	1"	3/32"	7421K6	.83
1/2"	1"	1/8"	7421K7	1.00
9/16"	1 1/4"	1/16"	7421K8	.86
9/16"	1 1/4"	1/8"	7421K9	$1.37
5/8"	1"	1/16"	7421K11	.57
5/8"	1"	1/8"	7421K12	.86
5/8"	1 3/16"	1/16"	7421K13	.83
5/8"	1 3/16"	3/32"	7421K14	1.00
5/8"	1 3/16"	1/8"	7421K15	1.20
5/8"	1 1/4"	1/16"	7421K16	.87
3/4"	1 1/4"	1/16"	7421K17	.83
3/4"	1 1/4"	1/8"	7421K18	$1.20
3/4"	1 3/8"	1/8"	7421K19	1.37
3/4"	1 9/16"	3/32"	7421K21	1.50
3/4"	1 3/4"	1/8"	7421K22	2.77
7/8"	1 1/2"	1/16"	7421K23	.94
7/8"	1 1/2"	1/8"	7421K24	1.54
1"	1 1/2"	1/16"	7421K25	.93
1"	1 1/2"	1/8"	7421K26	1.37
1"	2"	1/8"	7421K27	$3.33
1 1/4"	2"	1/16"	7421K28	1.33
1 1/4"	2"	1/8"	7421K29	2.66
1 1/2"	2 1/2"	1/8"	7421K31	3.79
1 1/2"	3 1/2"	3/16"	7421K32	11.70
1 3/4"	2 5/8"	1/8"	7421K33	3.70
2"	3"	1/8"	7421K34	4.47

Plastic Flanged Sleeve Bearings

***Nylon*—**A reasonably slippery, rigid, and abrasion-resistant material that handles light jobs without the need for lubrication.

***MDS-Filled Nylon*—**The same qualities as nylon combined with wear-resistant molybdenum disulfide (MDS).

***UHMW*—**Ultra-high molecular weight (UHMW) polyethylene is USDA approved and FDA compliant. It withstands wet, corrosive environments.

***Acetal*—**An economical alternative to PTFE, this material is not only strong, but also resistant to chemicals and moisture.

***PTFE*—**Has the lowest coefficient of friction of all our materials, so it's ultra-slippery. It also offers excellent chemical resistance and performs well at extreme temperatures.

Bearing Material	Temperature Range	P max	V max	PV max
Nylon	–20° to +250° F	400	360	3,000
MDS-Filled Nylon	–40° to +176° F	2,901	118	3,400
UHMW	–200° to +180° F	1,000	100	2,000
Acetal	–20° to +180° F	1,000	1,000	2,700
PTFE	–350° to +500° F	500	100	1,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	Nylon Pkg. Qty.	Nylon	Per Pkg.	MDS-Filled Nylon	Each	UHMW	Each	Acetal	Each	PTFE	Each
3/16"	5/16"	1/4"	3/8"	3/64"	1	6389K401	$4.11	6294K432	$1.07	57785K201	$7.16	—	—	—	—
3/16"	5/16"	1/4"	7/16"	1/16"	1	6389K402	3.46	6294K201★	3.59	57785K108	7.19	2705T11	$3.58	2706T11	$3.71
3/16"	5/16"	1/2"	3/8"	3/64"	1	6389K403	4.04	6294K433	1.15	57785K202	7.22	—	—	—	—
3/16"	5/16"	1/2"	7/16"	1/16"	1	6389K404	3.99	6294K202★	3.86	57785K31	7.25	2705T12	3.65	2706T12	3.92
1/4"	3/8"	5/16"	1/2"	1/16"	5	6389K231	2.40	6294K203★	3.63	57785K203	7.28	—	—	—	—
1/4"	3/8"	3/8"	1/2"	1/16"	5	6389K627	2.44	6294K204★	3.82	57785K107	7.31	2705T13	3.60	2706T13	3.83
1/4"	3/8"	3/8"	9/16"	1/16"	1	6389K405	4.06	6294K434●	1.10	57785K204	7.35	—	—	—	—
1/4"	3/8"	1/2"	1/2"	1/16"	5	6389K443	5.08	6294K205★	4.27	57785K205	7.38	—	—	—	—
1/4"	3/8"	1/2"	1/2"	3/32"	1	6389K407	4.02	6294K206★	4.27	57785K21	7.44	2705T14	3.65	2706T14	3.92
1/4"	3/8"	1/2"	9/16"	1/16"	1	6389K406	4.02	6294K435●	1.48	57785K206	7.41	—	—	—	—
5/16"	7/16"	3/8"	9/16"	3/64"	1	6389K408	4.02	6294K436■	1.14	57785K208	7.51	—	—	—	—
5/16"	7/16"	7/16"	9/16"	1/16"	5	6389K232	4.13	6294K207★	4.61	57785K207	7.48	—	—	—	—
5/16"	7/16"	1/2"	9/16"	1/16"	5	6389K626	3.40	6294K437	1.34	57785K106	7.55	2705T15	3.70	2706T15	4.16
5/16"	1/2"	3/8"	11/16"	1/16"	1	6389K409	4.05	6294K208★	4.52	57785K105	7.58	2705T16	3.72	2706T16	4.21
3/8"	1/2"	3/8"	5/8"	1/16"	5	6389K625	2.71	6294K438	1.33	57785K209	7.61	—	—	—	—
3/8"	1/2"	3/8"	5/8"	1/8"	1	6389K411	4.01	6294K209★	3.84	57785K104	7.65	2705T17	3.72	2706T17	4.21
3/8"	1/2"	1/2"	5/8"	1/16"	5	6389K445	4.39	6294K439	1.40	57785K211	7.69	—	—	—	—
3/8"	1/2"	1/2"	5/8"	3/32"	1	6389K412	4.07	6294K211★	3.91	57785K22	7.72	2705T18	3.74	2706T18	4.40
3/8"	1/2"	3/4"	5/8"	1/16"	5	6389K624	3.58	6294K441	1.64	57785K212	7.76	—	—	—	—
3/8"	1/2"	3/4"	5/8"	1/8"	1	6389K413	4.28	6294K212★	4.40	57785K103	7.79	2705T19	3.86	2706T19	4.83
3/8"	5/8"	1/2"	7/8"	1/8"	1	6389K414	5.30	6294K213★	5.12	57785K102	7.83	2705T21	3.86	2706T21	4.83
3/8"	5/8"	3/4"	7/8"	1/8"	1	6389K415	5.82	6294K214★	5.12	57785K33	7.87	2705T22	4.01	2706T22	5.43
7/16"	9/16"	1/2"	11/16"	1/16"	1	6389K416	4.07	6294K442	1.34	57785K213	7.90	—	—	—	—
1/2"	5/8"	1/4"	7/8"	1/16"	1	6389K418	4.15	6294K444	1.36	57785K109	8.02	2705T24	3.72	2706T24	4.28
1/2"	5/8"	3/8"	7/8"	1/16"	1	6389K419	5.01	6294K445	1.34	57785K112	8.06	2705T25	3.79	2706T25	4.52
1/2"	5/8"	1/2"	3/4"	1/16"	5	6389K623	3.62	6294K215★	4.36	57785K214	7.98	—	—	—	—
1/2"	5/8"	1/2"	7/8"	1/16"	1	6389K417	5.14	6294K443	1.12	57785K99	7.98	2705T26	3.86	2706T26	4.88
1/2"	5/8"	5/8"	3/4"	1/16"	5	6389K446	6.01	6294K216★	4.34	57785K215	8.10	—	—	—	—
1/2"	5/8"	5/8"	3/4"	3/32"	1	6389K422	5.22	6294K217★	4.34	57785K23	8.18	2705T27	4.10	2706T27	4.95

★ Temp. range is –40° to +212° F; P max is 300; V max is 60; and PV max is 3,000. ● Flange thick. is 3/64". ■ Flange thick. is 1/16".

(Continued on following page)

For information about sleeve bearings, P max, V max, and PV max, see page 1126.

ⓘ For tolerance information about the bearings on this page, go to mcmaster.com and search for **6389KAC**.

Plastic Flanged Sleeve Bearings *(Continued from previous page)*

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	Pkg. Qty.	Nylon	Per Pkg.	MDS-Filled Nylon	Each	UHMW	Each	Acetal	Each	PTFE	Each
1/2"	5/8"	5/8"	7/8"	1/16"	1	6389K421	$5.46	6294K446	$1.24	57785K216	$8.14	—	—	—	—
1/2"	5/8"	3/4"	3/4"	1/16"	5	6389K622	4.57	6294K218★	4.98	57785K217	8.22	—	—	—	—
1/2"	5/8"	3/4"	7/8"	1/16"	1	6389K423	5.53	6294K447	1.43	57785K97	8.26	2705T28	$4.01	2706T28	$5.43
1/2"	5/8"	1"	3/4"	1/16"	5	6389K447	6.75	6294K219★	4.89	57785K218	8.30	—	—	—	—
1/2"	5/8"	1"	3/4"	3/32"	1	6389K424	6.01	6294K221★	5.21	57785K24	8.34	2705T29	4.27	2706T29	5.55
1/2"	5/8"	1"	7/8"	1/16"	1	6389K425	6.14	6294K448	2.05	57785K219	8.38	—	—	—	—
1/2"	3/4"	7/16"	7/8"	1/16"	5	6389K233	7.13	6294K222★	5.07	57785K221	8.43	—	—	—	—
1/2"	3/4"	1/2"	1"	1/8"	1	6389K426	5.74	6294K223★	4.70	57785K96	8.47	2705T31	4.25	2706T31	5.36
1/2"	3/4"	3/4"	7/8"	1/16"	5	6389K448	7.36	6294K224★	4.98	57785K95	8.51	2705T32	4.15	2706T32	5.12
1/2"	3/4"	1"	7/8"	1/16"	5	6389K449	8.65	6294K225★	5.37	57785K222	8.56	—	—	—	—
1/2"	3/4"	1"	7/8"	1/8"	1	6389K427	6.37	6294K226★	5.30	57785K25	8.60	2705T33	4.46	2706T33	6.12
5/8"	3/4"	3/8"	15/16"	1/16"	5	6389K234	5.78	6294K227★	4.52	57785K223	8.65	—	—	—	—
5/8"	3/4"	3/4"	15/16"	1/16"	5	6389K552	5.90	6294K228★	4.98	57785K224	8.69	—	—	—	—
5/8"	3/4"	3/4"	15/16"	1/8"	1	6389K428	6.08	6294K229★	4.93	57785K26	8.74	2705T34	4.44	2706T34	6.10
5/8"	13/16"	5/8"	1 1/16"	5/32"	1	6389K429	6.55	6294K449	1.86	57785K35	8.78	2705T35	6.17	2706T35	8.49
5/8"	7/8"	3/4"	1 1/16"	1/16"	5	6389K621	4.88	6294K231★	6.28	57785K225	9.02	—	—	—	—
5/8"	7/8"	3/4"	1 1/8"	1/8"	1	6389K431	7.28	6294K232★	6.37	57785K94	9.07	2705T36	6.91	2706T36	10.47
5/8"	7/8"	1"	1"	1/8"	1	6389K432	7.54	6294K233★	6.60	57785K36	9.11	2705T37	4.97	2706T37	7.60
3/4"	7/8"	1 1/4"	1 1/16"	1/16"	5	6389K555	9.36	6294K234★	7.20	57785K226	9.16	—	—	—	—
3/4"	7/8"	1 1/4"	1 1/4"	3/16"	1	6389K433	10.11	6294K235★	8.61	57785K93	9.21	2705T38	7.37	2706T38	13.06
3/4"	1"	3/4"	1 1/4"	5/32"	1	6389K434	7.88	6294K451	2.66	57785K227	9.26	—	—	—	—
3/4"	1"	3/4"	1 1/4"	3/16"	1	6389K435	8.26	6294K236★	6.97	57785K92	9.31	2705T39	6.50	2706T39	9.97
3/4"	1"	1"	1 3/16"	1/16"	5	6389K556	9.27	6294K237★	6.42	57785K228	9.35	—	—	—	—
3/4"	1"	1"	1 3/16"	1/8"	1	6389K436	8.68	6294K238★	6.53	57785K27	9.40	2705T41	7.03	2706T41	11.72
3/4"	1"	1"	1 1/4"	5/32"	1	6389K437	10.13	6294K452	3.06	57785K229	9.45	—	—	—	—
7/8"	1 1/8"	1 1/8"	1 5/16"	1/16"	5	6389K557	11.96	6294K239★	7.60	57785K91	9.51	2705T42	7.99	2706T42	16.14
1"	1 1/4"	1"	1 7/16"	1/16"	5	6389K559	15.66	6294K241★	8.87	57785K231	9.56	—	—	—	—
1"	1 1/4"	1"	1 7/16"	1/8"	1	6389K438	10.52	6294K242★	8.34	57785K28	9.61	2705T43	7.80	2706T43	15.73
1"	1 1/4"	1"	1 1/2"	3/16"	1	6389K439	11.13	6294K453	5.08	57785K232	9.66	—	—	—	—
1"	1 1/4"	1 1/2"	1 1/2"	1/8"	1	6389K441	12.49	6294K243★	10.23	57785K37	10.15	2705T44	9.10	2706T44	20.06
1"	1 1/4"	1 1/2"	1 1/2"	3/16"	1	6389K442	11.82	6294K454	6.43	57785K233	10.21	—	—	—	—
1 1/4"	1 1/2"	1 1/2"	1 3/4"	1/8"	1	6389K451	15.17	6294K244★	13.43	57785K38	10.42	2705T45	10.58	2706T45	23.75
1 1/2"	1 3/4"	2"	2"	1/8"	1	6389K452	20.30	6294K245★	18.87	57785K39	10.47	2705T46	15.02	2706T46	39.03

★ Temp. range is –40° to +212° F; P max is 300; V max is 60; and PV max is 3,000.

High-Performance Plastic Flanged Sleeve Bearings

***Rulon*—**This reinforced PTFE material doesn't absorb water. *Rulon 641* is nontoxic and FDA compliant; excellent for food applications. *Rulon J* offers the lowest coefficient of friction of any reinforced PTFE material and is great for start/stop applications. *Rulon LR* is resistant to most chemicals. ***PEEK*—**Compatibility with a wide range of chemicals and high load capacity make this an economical alternative to Vespel® polyimide in lower speed situations. It's also the choice for high-pressure steam applications. ***Vespel® Polyimide*—**Our highest performing plastic material. It offers excellent chemical resistance.

Bearing Material	Temperature Range	P max	V max	PV max
Rulon 641	–400° to +550° F	1,000	400	10,000
Rulon J	–400° to +550° F	750	400	7,500
Rulon LR	–400° to +550° F	1,000	400	10,000
PEEK	–148° to +480° F	8,500	400	3,500
Vespel® Polyimide	–400° to +550° F	4,900	3,000	300,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	Rulon 641	Each	Rulon J	Each	Rulon LR	Each	PEEK	Each	Vespel® Polyimide	Each
3/16"	1/4"	1/4"	3/8"	1/32"	6371K103	$12.13	6377K101	$11.23	6362K201	$10.98	6627K11♣	$3.26	58315K102	$75.56
3/16"	1/4"	1/2"	3/8"	1/32"	6371K104	18.35	6377K102	17.03	6362K202	16.63	6627K12♣	3.94	—	—
3/16"	5/16"	1/4"	7/16"	1/16"	6371K101	12.20	6377K26	1.90	6362K211	1.37	6627K101	6.62	58315K51	60.44
3/16"	5/16"	1/2"	7/16"	1/16"	6371K102	18.45	6377K25	2.97	6362K212	2.04	6627K102	8.16	58315K101	123.43
1/4"	5/16"	1/4"	1/2"	1/32"	6371K106	12.40	6377K103	11.89	6362K203	11.20	6627K13♣	3.82	58315K104	87.56
1/4"	5/16"	1/2"	1/2"	1/32"	6371K107	18.82	6377K104	18.10	6362K204	17.02	6627K14♣	4.48	58315K105	137.89
1/4"	3/8"	3/8"	1/2"	1/16"	6371K105	15.60	6377K11	4.14	6362K213	2.04	6627K103	9.58	58315K52	68.05
1/4"	3/8"	1/2"	1/2"	1/16"	6371K403	3.62	6377K12	4.96	6362K214	2.47	6627K104	11.01	58315K71	73.48
5/16"	3/8"	1/4"	9/16"	1/32"	6371K108	12.65	6377K105	12.45	6362K205	11.42	6627K15♣	4.05	58315K106	87.56
5/16"	3/8"	1/2"	9/16"	1/32"	6371K109	19.62	6377K106	18.75	6362K206	17.34	6627K16♣	5.68	58315K107	137.89
3/8"	15/32"	1/4"	11/16"	3/64"	6371K114	13.58	6377K111	13.01	6362K301	12.08	6627K17♣	5.68	58315K108	93.24
3/8"	15/32"	1/2"	11/16"	3/64"	6371K115	20.78	6377K112	20.00	6362K302	18.48	6627K18♣	6.00	58315K109	147.61
3/8"	15/32"	3/4"	11/16"	3/64"	6371K116	27.98	6377K113	26.98	6362K303	24.87	6627K19♣	6.90	58315K111	228.43
3/8"	1/2"	3/8"	5/8"	1/16"	6371K111	18.38	6377K107	15.79	6362K207	14.62	6627K105	12.39	58315K54	63.27
3/8"	1/2"	1/2"	5/8"	1/16"	6371K112	19.65	6377K108	19.08	6362K208	15.68	6627K106	17.84	58315K55	78.87
3/8"	1/2"	3/4"	5/8"	1/16"	6371K113	26.44	6377K109	25.70	6362K209	23.68	6627K107	18.77	58315K56	104.42
3/8"	5/8"	1/2"	7/8"	1/8"	6371K413	5.33	6377K13	8.78	6362K215	4.92	6627K108	22.31	58315K112	164.60
3/8"	5/8"	3/4"	7/8"	1/8"	6371K117	30.18	6377K14	11.72	6362K216	6.61	6627K109	27.92	58315K113	256.12
1/2"	19/32"	1/2"	7/8"	3/64"	6371K118	22.35	6377K114	22.30	6362K304	19.72	6627K21♣	6.90	58315K114	164.60
1/2"	19/32"	3/4"	7/8"	3/64"	6371K119	30.18	6377K115	30.20	6362K305	26.57	6627K22♣	8.16	58315K115	256.12
1/2"	19/32"	1"	7/8"	3/64"	6371K121	34.25	6377K116	34.65	6362K306	29.95	6627K23♣	9.57	58315K116	317.14
1/2"	3/4"	1/2"	1"	1/8"	6371K122	23.82	6377K15	9.36	6362K217	5.15	6627K111	33.50	58315K117	230.36
1/2"	3/4"	3/4"	1"	1/8"	6371K123	32.22	6377K16	11.94	6362K218	6.96	6627K112	44.69	58315K118	361.34
1/2"	3/4"	1"	1"	1/8"	6371K426	9.25	6377K17	15.97	6362K219	8.81	6627K113	56.56	58315K119	448.44
5/8"	23/32"	1/2"	15/16"	3/64"	6371K125	23.22	6377K117	21.00	6362K307	20.35	6627K24♣	7.95	58315K123	147.93
5/8"	23/32"	3/4"	15/16"	3/64"	6371K126	31.42	6377K118	28.40	6362K308	27.49	6627K25♣	9.26	58315K124	205.51
5/8"	7/8"	3/4"	1"	1/8"	6371K124	32.22	6377K18	13.03	6362K221	7.21	6627K114	44.23	58315K121	361.34
5/8"	7/8"	1"	1"	1/8"	6371K436	7.67	6377K19	15.92	6362K222	9.02	6627K115	56.56	58315K122	523.02

♣ P max is 21,750; V max is 295; PV max is 37,700.

(Continued on following page)

For information about sleeve bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6389KAC**.

High-Performance Plastic Flanged Sleeve Bearings *(Continued from previous page)*

***Rulon*—**This reinforced PTFE material doesn't absorb water. *Rulon 641* is nontoxic and FDA compliant; excellent for food applications. *Rulon J* offers the lowest coefficient of friction of any reinforced PTFE material and is great for start/stop applications. *Rulon LR* is resistant to most chemicals.

***PEEK*—**Compatibility with a wide range of chemicals and high load capacity make this an economical alternative to Vespel® polyimide in lower speed situations. It's also the choice for high-pressure steam applications.

***Vespel® Polyimide*—**Our highest performing plastic material. It offers excellent chemical resistance.

Bearing Material	Temperature Range	P max	V max	PV max
Rulon 641	–400° to +550° F	1,000	400	10,000
Rulon J	–400° to +550° F	750	400	7,500
Rulon LR	–400° to +550° F	1,000	400	10,000
PEEK	–148° to +480° F	8,500	400	3,500
Vespel® Polyimide	–400° to +550° F	4,900	3,000	300,000

For Shaft Dia.	OD	Lg.	Flange OD	Flange Thick.	Rulon 641	Each	Rulon J	Each	Rulon LR	Each	PEEK	Each	Vespel® Polyimide	Each
3/4"	7/8"	1/2"	1 1/8"	1/16"	6371K127	$25.07	6377K119	$25.73	6362K309	$21.76	6627K27♣	$9.44	58315K125	$230.38
3/4"	7/8"	1"	1 1/8"	1/16"	6371K128	39.15	6377K121	40.89	6362K311	33.72	6627K29♣	13.58	58315K126	523.02
3/4"	1"	3/4"	1 1/4"	3/16"	6371K129	35.56	6377K122	35.03	6362K312	30.66	6627K116	60.86	58315K63	166.03
3/4"	1"	1"	1 1/4"	1/8"	6371K446	13.93	6377K21	26.19	6362K223	14.00	6627K117	78.50	58315K127	701.95
1"	1 1/8"	1/2"	1 3/8"	1/16"	6371K131	28.78	6377K123	29.27	6362K313	24.62	6627K31♣	17.00	58315K128	307.53
1"	1 1/8"	3/4"	1 3/8"	1/16"	6371K132	39.22	6377K124	39.92	6362K314	33.42	6627K32♣	17.94	58315K129	486.31
1"	1 1/8"	1"	1 3/8"	1/16"	6371K133	45.85	6377K125	47.13	6362K315	38.83	6627K33♣	18.38	58315K131	701.95
1"	1 1/4"	1 1/2"	1 1/2"	1/8"	6371K457	23.83	6377K22	49.62	6362K224	26.53	—	—	58315K132	1,725.03
1 1/4"	1 1/2"	2"	1 3/4"	1/8"	6371K468	48.73	6377K23	90.83	6362K225	49.00	—	—	58315K133	1,688.34
1 1/2"	1 3/4"	2"	2"	1/8"	6371K478	57.06	6377K24	99.62	6362K226	55.23	—	—	58315K134	2,394.86

♣ P max is 21,750; V max is 295; PV max is 37,700.

Plastic Sleeve Bearings

***Nylon*—**A reasonably slippery, rigid, and abrasion-resistant material that handles light jobs without the need for lubrication.

***MDS-Filled Nylon*—**The same qualities as nylon combined with wear-resistant molybdenum disulfide (MDS).

***UHMW*—**Ultra-high molecular weight (UHMW) polyethylene is USDA approved and FDA compliant. It withstands wet, corrosive environments.

***Acetal*—**An economical alternative to PTFE, this material is not only strong, but also resistant to chemicals and moisture.

***PTFE*—**Has the lowest coefficient of friction of all our materials, so it's ultra-slippery. It also offers excellent chemical resistance and performs well at extreme temperatures.

Bearing Material	Temperature Range	P max	V max	PV max
Nylon	–20° to +250° F	400	360	3,000
MDS-Filled Nylon	–40° to +176° F	2,901	118	3,400
UHMW	–200° to +180° F	1,000	100	2,000
Acetal	–20° to +180° F	1,000	1,000	2,700
PTFE	–350° to +500° F	500	100	1,000

For Shaft Dia.	OD	Lg.	Nylon Pkg. Qty.	Nylon	Per Pkg.	MDS-Filled Nylon	Each	UHMW	Each	Acetal	Each	PTFE	Each
1/8"	1/4"	1/4"	1	6389K1	$3.59	6294K401	$0.87	57785K86	$7.03	2610T1	$3.31	2639T1	$3.13
1/8"	1/4"	3/8"	1	6389K2	3.62	6294K402	1.06	57785K85	7.06	2610T2	3.33	2639T2	3.09
3/16"	5/16"	1/4"	1	6389K3	4.05	6294K403	1.41	57785K84	7.03	2610T3	3.31	2639T3	3.13
3/16"	5/16"	1/2"	5	6389K353	3.01	6294K404	1.24	57785K41	7.12	2610T4	3.35	2639T4	3.11
1/4"	3/8"	1/4"	5	6389K352	2.60	6294K405	1.34	57785K82	7.16	2610T5	3.33	2639T5	3.11
1/4"	3/8"	3/8"	5	6389K351	2.44	6294K406	1.06	57785K81	7.19	2610T6	3.33	2639T6	3.18
1/4"	3/8"	1/2"	5	6389K113	2.96	6294K407	1.29	57785K11	5.30	2610T7	3.42	2639T7	3.28
5/16"	7/16"	1/2"	1	6389K4	4.00	6294K408	1.38	57785K42	7.22	2610T8	3.19	2639T8	3.40
5/16"	7/16"	5/8"	5	6389K114	3.39	6294K409	1.84	57785K78	7.25	2610T9	3.24	2639T9	3.53
5/16"	1/2"	1/4"	5	6389K111	4.46	6294K2●	3.38	57785K1	7.31	—	—	—	—
5/16"	1/2"	3/8"	1	6389K5	3.91	6294K1●	3.66	57785K77	7.28	2610T11	3.17	2639T11	3.38
3/8"	1/2"	3/8"	5	6389K349	2.71	6294K411	1.27	57785K76	7.35	2610T12	3.17	2639T12	3.32
3/8"	1/2"	1/2"	5	6389K115	2.37	6294K412	1.35	57785K12	6.15	2610T13	3.26	2639T13	3.47
3/8"	1/2"	3/4"	5	6389K354	3.58	6294K413	1.31	57785K88	7.38	2610T14	3.26	2639T14	3.63
3/8"	1/2"	7/8"	5	6389K112	4.69	6294K3●	4.36	57785K2	7.41	—	—	—	—
3/8"	5/8"	3/4"	5	6389K348	4.97	6294K4●	4.36	57785K43	7.44	2610T15	3.62	2639T15	3.92
7/16"	9/16"	1/2"	1	6389K6	3.93	6294K414	1.34	57785K71	7.48	2610T16	3.51	2639T16	3.61
1/2"	5/8"	3/8"	5	6389K355	3.70	6294K415	1.49	57785K89	7.51	2610T17	3.42	2639T17	3.47
1/2"	5/8"	1/2"	5	6389K347	3.70	6294K416	1.32	57785K69	7.55	2610T18	3.56	2639T18	3.61
1/2"	5/8"	5/8"	5	6389K116	3.07	6294K417	1.47	57785K13	7.15	2610T19	3.56	2639T19	3.78
1/2"	5/8"	3/4"	5	6389K346	4.57	6294K418	1.32	57785K67	7.58	2610T21	3.56	2639T21	3.86
1/2"	5/8"	1"	5	6389K117	4.99	6294K419	1.58	57785K14	7.61	2610T22	3.69	2639T22	4.15
1/2"	3/4"	1/2"	5	6389K345	4.29	6294K5●	4.20	57785K66	7.65	2610T23	3.56	2639T23	3.61
1/2"	3/4"	3/4"	5	6389K118	4.04	6294K6●	5.09	57785K87	7.69	2610T24	3.67	2639T24	3.78
1/2"	3/4"	1"	5	6389K119	5.69	6294K7●	5.53	57785K15	7.96	2610T25	3.78	2639T25	4.03
5/8"	3/4"	3/4"	5	6389K222	4.07	6294K8●	4.98	57785K16	7.96	2610T26	3.69	2639T26	3.84
5/8"	13/16"	5/8"	1	6389K7	4.13	6294K421	1.63	57785K44	7.69	2610T27	3.71	2639T27	4.46
5/8"	7/8"	5/8"	1	6389K8	5.19	6294K9●	4.85	57785K3	7.72	2610T28	3.76	2639T28	4.94
5/8"	7/8"	3/4"	5	6389K344	4.86	6294K101●	5.23	57785K63	7.76	2610T29	3.73	2639T29	4.67
5/8"	7/8"	1"	1	6389K9	5.67	6294K102●	5.70	57785K64	7.79	2610T31	3.98	2639T31	5.17
3/4"	7/8"	1 1/4"	5	6389K225	5.61	6294K103●	6.05	57785K65	7.83	2610T32	4.32	2639T32	6.75
3/4"	1"	1/2"	5	6389K343	5.61	6294K422	2.11	57785K61	8.34	2610T33	3.71	2639T33	4.40
3/4"	1"	3/4"	5	6389K342	5.61	6294K423	2.46	57785K59	8.38	2610T34	3.87	2639T34	5.02
3/4"	1"	1"	5	6389K226	4.97	6294K424	2.84	57785K17	9.81	2610T35	4.43	2639T35	5.92
3/4"	1"	1 1/2"	5	6389K341	6.39	6294K425	5.64	57785K58	8.67	2610T36	4.43	2639T36	6.95
7/8"	1 1/8"	1 1/8"	5	6389K227	11.33	6294K104●	7.13	57785K55	8.71	2610T37	7.20	2639T37	10.21
1"	1 1/8"	1"	5	6389K228	12.75	6294K105●	6.74	57785K54	8.75	2610T38	6.68	2639T38	9.38
1"	1 1/4"	3/4"	1	6389K11	8.39	6294K426	2.86	57785K53	9.61	2610T39	6.50	2639T39	9.01
1"	1 1/4"	1"	5	6389K229	13.81	6294K427	3.92	57785K18	8.80	2610T41	6.48	2639T41	10.00
1"	1 1/4"	1 1/2"	5	6389K331	14.74	6294K428	5.74	57785K45	8.84	2610T42	7.67	2639T42	12.91
1 1/4"	1 1/2"	1"	1	6389K12	9.26	6294K429	4.20	57785K52	8.88	2610T43	7.67	2639T43	12.83
1 1/4"	1 1/2"	1 1/2"	1	6389K13	11.38	6294K431	5.25	57785K46	9.33	2610T44	8.75	2639T44	17.08
1 1/4"	1 1/2"	2"	1	6389K14	13.48	6294K106●	13.75	57785K51	10.00	2610T45	9.90	2639T45	20.96
1 1/2"	1 3/4"	2"	1	6389K15	17.46	6294K107●	17.25	57785K47	10.05	2610T46	14.71	2639T46	29.53

● Temp. range is –40° to +212° F; P max is 300; V max is 60; PV max is 3,000.

For information about sleeve bearings, P max, V max, and PV max, see page 1126.

ⓘ For tolerance information about the bearings on this page, go to mcmaster.com and search for **6389KAC**.

High-Performance Plastic Sleeve Bearings

Glass-Filled PTFE— Just like standard PTFE, this PTFE material has a low coefficient of friction and is very chemical resistant. The glass filling increases its load and speed capabilities.

Rulon— This reinforced PTFE material doesn't absorb water. *Rulon 641* is nontoxic and FDA compliant; excellent for food applications. *Rulon J* offers the lowest coefficient of friction of any reinforced PTFE material and is great for start/stop applications. *Rulon LR* is resistant to most chemicals.

PEEK— Compatibility with a wide range of chemicals and high load capacity make this an economical alternative to Vespel® polyimide in lower speed situations. It's also the choice for high-pressure steam applications.

Vespel® Polyimide— Our highest performing plastic material. It offers the chemical resistance of glass-filled PTFE with a wider temperature range.

Bearing Material	Temperature Range	P max	V max	PV max
Glass-Filled PTFE	–350° to +500° F	1,000	400	11,000
Rulon 641	–400° to +550° F	1,000	400	10,000
Rulon J	–400° to +550° F	750	400	7,500
Rulon LR	–400° to +550° F	1,000	400	10,000
PEEK	–148° to +480° F	8,500	400	3,500
Vespel® Polyimide	–400° to +550° F	4,900	3,000	300,000

For Shaft Dia.	OD	Lg.	Glass-Filled PTFE	Each	Rulon 641	Each	Rulon J	Each	Rulon LR	Each	PEEK	Each	Vespel® Polyimide	Each
1/8"	1/4"	1/4"	2803T1	$3.39	6371K1	$7.58	6377K49	$1.87	6362K101	$1.44	6621K1	$5.16	58315K1	$67.16
1/8"	1/4"	3/8"	2803T2	3.43	6371K2	9.18	6377K48	2.20	6362K102	1.66	6621K2	5.55	58315K2	75.25
3/16"	1/4"	1/4"	—	—	6371K3	7.58	6377K1	7.02	6362K1	6.89	6621K72★	3.38	58315K3	67.16
3/16"	1/4"	1/2"	—	—	6371K4	10.55	6377K2	9.78	6362K2	9.55	6621K73★	3.72	58315K4	105.73
3/16"	5/16"	1/4"	2803T3	3.39	6371K5	7.73	6377K47	2.20	6362K111	1.66	6621K3	5.07	58315K11	53.24
3/16"	5/16"	3/8"	2803T4	3.75	6371K6	9.35	6377K46	2.39	6362K112	1.90	6621K4	5.80	58315K44	58.39
3/16"	5/16"	1/2"	2803T5	3.45	6371K7	10.76	6377K45	3.00	6362K113	2.26	6621K5	6.28	58315K43	76.03
1/4"	5/16"	1/4"	—	—	6371K9	7.73	6377K3	7.17	6362K3	6.96	6621K74★	3.33	58315K5	67.16
1/4"	5/16"	1/2"	—	—	6371K11	10.76	6377K4	10.05	6362K4	9.72	6621K75★	4.61	58315K6	105.73
1/4"	3/8"	1/4"	2803T6	3.32	6371K301	2.20	6377K31	2.92	6362K121	1.78	6621K6	6.11	58315K42	53.62
1/4"	3/8"	3/8"	2803T7	3.43	6371K302	2.49	6377K32	3.36	6362K122	2.19	6621K7	7.05	58315K12	58.39
1/4"	3/8"	1/2"	2803T8	3.45	6371K8	10.95	6377K33	4.00	6362K123	2.50	6621K8	8.14	58315K41	76.35
5/16"	3/8"	1/4"	—	—	6371K12	7.80	6377K5	7.30	6362K5	7.03	6621K76★	3.61	58315K7	72.86
5/16"	3/8"	1/2"	—	—	6371K13	10.96	6377K6	10.25	6362K6	9.84	6621K77★	5.39	58315K8	115.15
5/16"	1/2"	3/8"	2803T11	3.65	6371K15	10.78	6377K44	4.14	6362K232	3.67	6621K41	9.03	58315K13	57.98
5/16"	1/2"	1/2"	—	—	6371K16	11.40	6377K27	4.78	6362K233	3.78	6621K42	10.61	58315K9	160.31
3/8"	15/32"	1/2"	—	—	6371K18	11.20	6377K9	10.60	6362K9	10.05	6621K79★	5.33	58315K73	149.65
3/8"	15/32"	3/4"	—	—	6371K19	12.36	6377K71	11.80	6362K11	11.00	6621K81★	6.23	58315K74	196.44
3/8"	1/2"	3/4"	2803T12	4.05	6371K21	12.67	6377K72	12.77	6362K12	11.28	6621K43	13.35	58315K16	88.15
3/8"	9/16"	3/8"	2803T13	3.82	6371K312	4.31	6377K34	5.33	6362K132	3.76	6621K44	9.14	58315K38	58.01
3/8"	9/16"	1/2"	2803T14	3.99	6371K22	11.84	6377K35	6.00	6362K133	3.76	6621K45	10.50	58315K75	144.58
3/8"	9/16"	3/4"	2803T15	4.66	6371K23	13.25	6377K36	6.76	6362K135	4.72	6621K46	13.35	58315K76	210.58
1/2"	19/32"	1/2"	—	—	6371K24	12.25	6377K73	12.30	6362K13	10.85	6621K82★	6.78	58315K77	135.14
1/2"	19/32"	1"	—	—	6371K26	15.42	6377K75	16.05	6362K15	13.45	6621K84★	9.01	58315K79	235.36
1/2"	5/8"	3/8"	2803T16	3.82	6371K27	10.53	6377K76	10.50	6362K16	9.32	6621K47	11.40	58315K17	58.01
1/2"	3/4"	1/2"	2803T18	4.25	6371K323	4.56	6377K37	7.00	6362K143	4.05	6621K49	19.79	58315K34	87.34
1/2"	3/4"	3/4"	2803T19	4.70	6371K29	16.40	6377K38	6.19	6362K145	5.20	6621K51	26.39	58315K45	89.04
1/2"	3/4"	1"	2803T21	5.22	6371K31	18.73	6377K39	10.42	6362K146	5.23	6621K52	31.47	58315K81	283.52
5/8"	7/8"	5/8"	—	—	6371K334	4.94	6377K41	9.09	6362K154	4.50	6621K53	23.03	58315K82	191.74
5/8"	7/8"	3/4"	2803T22	5.78	6371K32	17.60	6377K59	10.17	6362K155	5.12	6621K54	26.32	58315K83	222.78
5/8"	7/8"	1"	2803T23	6.17	6371K336	7.22	6377K61	12.43	6362K156	6.28	6621K55	31.76	58315K84	285.07
3/4"	7/8"	1"	—	—	6371K34	20.25	6377K79	21.82	6362K19	17.16	6621K91★	13.80	58315K86	285.56
3/4"	1"	1/2"	2803T24	5.11	6371K35	16.40	6377K62	9.54	6362K163	4.84	6621K56	29.24	58315K33	97.84
3/4"	1"	3/4"	2803T25	6.00	6371K345	6.76	6377K63	11.84	6362K165	5.90	6621K57	39.63	58315K23	152.18
3/4"	1"	1"	2803T26	7.10	6371K36	22.87	6377K64	14.84	6362K166	7.28	6621K58	49.74	58315K24	152.18
3/4"	1"	1 1/2"	2803T27	8.69	6371K347	12.73	6377K65	22.59	6362K167	11.05	6621K59	71.80	58315K25	247.92
7/8"	1 1/8"	3/4"	2803T28	14.28	6371K37	21.44	6377K43	10.33	6362K175	6.30	6621K61	40.23	58315K87	316.58
7/8"	1 1/8"	1"	2803T29	11.39	6371K38	25.18	6377K42	13.29	6362K176	7.93	6621K62	51.46	58315K88	404.10
1"	1 1/8"	3/4"	—	—	6371K41	21.44	6377K82	23.48	6362K22	17.89	6621K93★	13.56	58315K91	316.05
1"	1 1/8"	1"	2803T31	11.71	6371K42	25.18	6377K83	28.03	6362K23	20.78	6621K94★	15.14	58315K32	152.54
1"	1 1/4"	3/4"	2803T32	11.17	6371K43	24.95	6377K66	21.68	6362K185	10.65	6621K63	57.22	58315K31	152.98
1"	1 1/4"	1"	2803T33	12.36	6371K356	13.83	6377K67	20.02	6362K186	13.03	6621K64	70.48	58315K26	152.98
1"	1 1/4"	1 1/2"	2803T34	16.28	6371K357	20.40	6377K51	37.64	6362K187	17.98	6621K65	107.22	58315K27	326.85
1 1/4"	1 1/2"	3/4"	2803T35	13.95	6371K44	28.40	6377K52	24.39	6362K195	11.67	6621K66	72.80	58315K92	701.95
1 1/4"	1 1/2"	1"	2803T36	16.63	6371K45	34.13	6377K53	24.76	6362K196	14.43	6621K67	92.71	58315K93	903.84
1 1/4"	1 1/2"	1 1/2"	2803T37	22.09	6371K46	45.60	6377K54	43.78	6362K197	21.52	6621K68	132.77	58315K94	1,298.39
1 1/4"	1 1/2"	2"	2803T38	27.13	6371K368	35.27	6377K55	59.03	6362K198	29.00	6621K69	176.50	58315K95	1,422.69
1 1/2"	1 3/4"	2"	2803T39	41.22	6371K378	45.36	6377K58	74.27	6362K231	36.50	6621K71	229.37	58315K96	1,422.69

★ P max is 21,750; V max is 295; PV max is 37,700.

Self-Lubricating Fiberglass Sleeve Bearings

Able to tolerate heavy shock loads and wet, corrosive environments, these lightweight bearings also dampen vibration and minimize damage to your shafts and housings. They have a multilayer epoxy fiberglass shell and PTFE/Nomex composite lining. The lining has a smooth braided-look finish and requires no lubrication. Great for high-load, low-speed applications.

Bearing Material	Temperature Range	P max	V max	PV max
PTFE/Nomex-Lined Fiberglass Composite	–212° to +320° F	20,000	150	34,300

For Shaft Dia.	OD	Lg.		Each
1/2"	5/8"	1/2"	6365K201	$4.50
1/2"	5/8"	1"	6365K321	7.42
1/2"	3/4"	3/4"	6365K212	5.32
1/2"	3/4"	1"	6365K213	7.24
5/8"	7/8"	3/4"	6365K222	5.89
5/8"	7/8"	1"	6365K223	7.14
3/4"	7/8"	3/4"	6365K232	$6.31
3/4"	7/8"	1 1/4"	6365K322	9.98
3/4"	1"	1"	6365K243	7.59
1"	1 1/4"	1"	6365K253	9.33
1"	1 1/4"	1 1/2"	6365K255	11.35
1"	1 1/4"	2"	6365K256	15.40
1 1/4"	1 1/2"	2"	6365K276	$16.41
1 1/4"	1 1/2"	3"	6365K277	19.15
1 1/2"	1 3/4"	2"	6365K286	17.01
2"	2 1/4"	1 1/2"	6365K323	20.96
2"	2 1/4"	3"	6365K324	32.63

For information about sleeve bearings, thrust bearings, P max, V max, and PV max, see page 1126.

For tolerance information about the bearings on this page, go to mcmaster.com and search for **6389KAC**.

Metric Plastic Sleeve Bearings

UHMW—Ultra-high molecular weight (UHMW) polyethylene is USDA approved and FDA compliant. It withstands wet, corrosive environments.
Acetal—An economical alternative to PTFE and Rulon, this material is not only strong, but also resistant to chemicals and moisture.
PTFE—Has the lowest coefficient of friction of all our materials, so it's ultra-slippery. It also offers excellent chemical resistance and performs well at extreme temperatures.
Rulon LR—This reinforced PTFE material doesn't absorb water and resists most chemicals.

Bearing Material	Temperature Range	P max	V max	PV max
UHMW	–200° to +180° F	1,000	100	2,000
Acetal	–20° to +180° F	1,000	1,000	2,700
PTFE	–350° to +500° F	500	100	1,000
Rulon LR	–400° to +550° F	1,000	400	10,000

For Shaft Dia., mm	OD, mm	Lg., mm	UHMW	Each	Acetal	Each	PTFE	Each	Rulon LR	Each
6	12	10	6657K11	$7.28	2640T11	$3.05	2685T11	$3.26	7763K1	$10.96
9	12	14	6657K12	7.35	2640T12	3.13	2685T12	3.36	7763K2	13.18
10	16	16	6657K13	7.41	2640T13	3.30	2685T13	3.65	7763K3	15.12
12	15	12	6657K1	7.48	—	—	—	—	7763K11	5.10
12	16	15	6657K14	7.55	2640T14	3.35	2685T14	3.63	7763K4	15.30
12	16	20	6657K15	7.55	2640T15	3.76	2685T15	3.79	7763K16	9.69
12	18	10	6657K16	7.61	2640T16	3.20	2685T16	3.83	7763K5	12.78
12	18	20	6657K18	7.69	2640T18	3.76	2685T18	4.16	7763K19	8.71
12	18	25	6657K19	7.76	2640T19	3.52	2685T19	4.05	7763K7	18.68
14	20	15	6657K21	7.76	2640T21	3.61	2685T21	5.56	7763K8	16.36
16	22	20	6657K22	7.76	2640T22	3.74	2685T22	5.74	7763K35	9.67
18	24	30	6657K23	7.83	2640T23	4.41	2685T23	7.03	7763K9	22.64
20	26	20	6657K24	7.83	2640T24	6.91	2685T24	10.35	7763K46	12.75
20	26	30	6657K25	7.87	2640T25	7.84	2685T25	11.55	7763K61	27.13
22	27	22	6657K3	7.90	—	—	—	—	7763K51	13.80
25	30	20	6657K4	7.97	—	—	—	—	7763K56	15.65
25	32	20	6657K5	7.97	—	—	—	—	7763K57	16.96
30	40	40	6657K31	8.25	2640T31	12.57	2685T31	31.61	7763K62	71.73

Plastic Thrust Bearings

Nylon—A reasonably slippery, rigid, and abrasion-resistant material that handles light jobs without the need for lubrication.
UHMW—Ultra-high molecular weight (UHMW) polyethylene is FDA compliant. It withstands wet, corrosive environments.
Acetal—An economical alternative to PTFE and Rulon, this material is not only strong, but also resistant to chemicals and moisture.
PTFE—Has the lowest coefficient of friction of all our materials, so it's ultra-slippery. It also offers excellent chemical resistance and performs well at extreme temperatures.
Rulon—This reinforced PTFE material doesn't absorb water. *Rulon 641* is nontoxic and FDA compliant; excellent for food and medical applications. *Rulon J* offers the lowest coefficient of friction of any reinforced PTFE material and is great for start/stop applications. *Rulon LR* is resistant to most chemicals.

Bearing Material	Temperature Range	P max	V max	PV max
Nylon	–20° to +212° F	400	360	3,000
UHMW	–100° to +180° F	1,000	50	2,000
Acetal	–20° to +180° F	1,000	1,000	2,700
PTFE	–350° to +500° F	500	100	1,000
Rulon 641	–400° to +550° F	1,000	400	10,000
Rulon J	–400° to +550° F	750	400	7,500
Rulon LR	–400° to +550° F	1,000	400	10,000

For Shaft Dia.	OD	Thick.	Nylon	Each	UHMW	Each	Acetal	Each	PTFE	Each	Rulon 641	Each	Rulon J	Each	Rulon LR	Each
1/4″	5/8″	1/16″	2797T1	$1.20	2866T11	$1.41	2795T11	$1.07	2796T11	$1.45	7493K11	$2.55	7488K11	$2.57	7532K11	$1.87
3/8″	3/4″	1/16″	2797T2	1.22	2866T12	1.36	2795T12	1.10	2796T12	1.63	7493K12	3.21	7488K12	3.20	7532K12	2.34
1/2″	1″	1/16″	2797T3	1.43	2866T13	1.77	2795T13	1.31	2796T13	2.21	7493K13	4.39	7488K13	4.36	7532K13	3.18
3/4″	1 3/8″	1/8″	2797T4	5.03	2866T14	5.61	2795T14	4.56	2796T14	7.19	7493K14	9.63	7488K14	9.64	7532K14	7.03
1″	2″	1/8″	2797T5	6.58	2866T15	7.12	2795T15	5.54	2796T15	9.45	7493K15	12.75	7488K15	12.70	7532K15	9.25
1 1/2″	3″	1/8″	2797T6	11.57	2866T16	12.65	2795T16	10.48	2796T16	17.89	7493K16	25.36	7488K16	26.78	7532K16	19.51

Nylon Snap-In Thrust Bearings

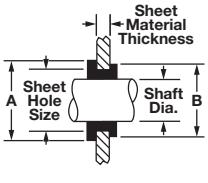

Easily snap these thrust bearings into a variety of thin sheet materials. A gap in the side makes it simple to press them into place and also allows them to expand if they heat up or absorb moisture. The smaller of the two flanges fits into the mounting hole and holds the bearing in place; the larger flange is big enough to handle thrust loads. Made of nylon, all of these bearings require no lubrication and are resistant to many chemicals. ***MDS-filled nylon*** contains wear-resistant molybdenum disulfide (MDS).

Bearing Material	Temperature Range	P max	V max	PV max
Nylon 642 (Inch Sizes)	–40° to +280° F	—	—	16,000
MDS-Filled Nylon (Metric Sizes)	–40° to +176° F	20	0.8	0.12

Nylon 642—Inch Sizes

For Shaft Dia.	Fits Sheet Hole Dia.	(A)	(B)	Flange Thick.	SHEET MATERIAL THICKNESS 0.072″ to 0.135″	Each
1/8″	11/64″	1/4″	3/16″	1/32″	6126K41	$1.52
3/16″	15/64″	5/16″	1/4″	1/32″	6126K42	1.54
1/4″	5/16″	7/16″	11/32″	1/32″	6126K43	1.83
5/16″	3/8″	1/2″	13/32″	1/32″	6126K44	1.83
3/8″	7/16″	9/16″	15/32″	1/32″	6126K45	1.92
7/16″	1/2″	5/8″	17/32″	1/32″	6126K46	1.92
1/2″	9/16″	11/16″	19/32″	1/32″	6126K47	2.03
5/8″	11/16″	7/8″	23/32″	1/32″	6126K48	2.03
3/4″	13/16″	1″	27/32″	1/32″	6126K49	2.12

MDS-Filled Nylon—Metric Sizes

For Shaft Dia., mm	Fits Sheet Hole Dia., mm	(A), mm	(B), mm	Flange Thick., mm	SHEET MATERIAL THICKNESS 1.45 to 2.34 mm	Each	2.87 to 3.13 mm	Each
3	4.2	6	4.8	0.6	7817K51	$1.32	7817K52	$1.32
4	5.2	7	5.9	0.6	7817K53	1.40	7817K54	1.40
5	6.2	8	6.8	0.6	7817K55	1.81	7817K56	1.48
6	7.2	11	7.8	0.6	7817K57	1.58	7817K58	1.58
8	9.6	13	10.4	0.8	7817K59	1.66	7817K61	1.66
9	10.6	14	11.4	0.8	7817K62	1.66	—	—
10	11.6	15	12.4	0.8	7817K63	1.66	7817K64	1.83
12	13.6	17	14.4	0.8	7817K65	1.91	7817K66	1.91

About Rolling-Element Bearings

Rolling-element bearings support loads using balls or rollers. Since they operate with less friction than plain bearings, they're often called antifriction bearings. Load and speed (rpm) values help you compare bearings.

Load is the dynamic rating for the radial (perpendicular to the shaft) load (unless noted) a bearing can withstand for one million revolutions.

Note: Tolerance information about all of our bearings can be found in the CAD drawings.

ABEC (Annular Bearing Engineers Committee) rated bearings meet industry accepted dimensional tolerances for precision. The higher the ABEC number, the more precise the bearing.

For ABEC tolerances, go to mcmaster.com and search for **60355KAC.**

Ball bearings are the choice for higher speeds and light to moderate loads. Since the balls make less contact with the raceways than the rollers in roller bearings, friction is lessened, which makes higher speeds possible.

Roller bearings generally support higher loads than ball bearings because the rollers make greater surface contact with raceways. There are three styles of roller bearings:

1) Spherical— A spherically shaped outer race increases surface contact with rollers, which boosts load capacity and accommodates misalignment. Spherical roller bearings handle high radial loads as well as a combination of radial and thrust loads.

2) Tapered— Cone-shaped rollers handle high radial loads, thrust loads, or both. They tolerate shock loads (suddenly applied loads) and minor shaft misalignment and are suitable for low to high speeds.

3) Needle— Longer and thinner than cylindrical bearings, needle bearings can carry high loads for their small size.

For technical drawings and 3-D models, go to mcmaster.com.

Ball Bearings

Steel Ball Bearings

Open

Flanged Open

Double Shielded

Double Sealed

Flanged Double Sealed

Count on solid performance from these steel ball bearings. Temperature range is –20° to +250° F. Maximum speed is 1200 rpm for open bearings; 2500 rpm for all others (unless noted). These bearings are not ABEC rated.

Open bearings run cool and are easy to lubricate.

Double-shielded bearings have steel shields that block out dirt. They come greased.

Double-sealed bearings have Buna-N seals (unless noted) that block out dirt, preserve lubricants, and reduce noise. They come greased.

Flanged bearings are easy to install; the flange provides a stop for quick positioning.

Open

For Shaft Dia.	OD	Wd.	Dynamic Load Cap., lbs.		Each
3/16″	11/16″	1/4″	287	6383K11	$2.90
1/4″	11/16″	1/4″	255	6383K12	4.86
1/4″	7/8″	1/4″	397	6383K14	4.20
1/4″	1″	5/16″	484	6383K22	4.19
1/4″	1 1/16″	1/4″	484	6383K25	5.16
5/16″	7/8″	1/4″	356	6383K15	4.20
5/16″	1 1/16″	3/8″	484	6383K26	5.39
5/16″	19/32″	5/16″	533	6383K38	6.08
3/8″	7/8″	1/4″	356	6383K16	4.20
3/8″	15/16″	5/16″	371	6383K19	5.13
3/8″	1″	5/16″	484	6383K23	4.20
3/8″	1 1/16″	3/8″	484	6383K27	5.16
3/8″	1 1/8″	3/8″	600	6383K32	6.75
7/16″	7/8″	1/4″	258	6383K17	4.65
7/16″	1 1/16″	3/8″	509	6383K24	4.76
7/16″	1 1/8″	3/8″	600	6383K33	6.75
1/2″	1 1/8″	3/8″	600	6383K34	6.75
1/2″	19/32″	5/16″	533	6383K39	6.08
1/2″	1 3/8″	7/16″	940	6383K41	7.81
1/2″	1 1/2″	7/16″	769	6383K45	5.60
1/2″	1 3/4″	9/16″	1187	6383K53	9.73
5/8″	1 3/8″	7/16″	940	6383K44	7.81
5/8″	1 1/2″	7/16″	769	6383K47	5.93
3/4″	1 5/8″	3/8″	825	6383K49	6.61
3/4″	1 5/8″	1/2″	1300	6383K52	11.60
3/4″	1 3/4″	9/16″	1187	6383K51	9.74
1″	2″	1/2″	1384	6383K57	10.61

Double Shielded and Double Sealed

For Shaft Dia.	OD	Wd.	Dynamic Load Cap., lbs.	Double Shielded	Each	Double Sealed	Each
3/16″	11/16″	1/4″	255	6384K91	$6.29	6384K88 ♦ ♠	$6.84
1/4″	11/16″	1/4″	255	6384K52	6.98	6384K39 ♦ ♠	7.98
5/16″	7/8″	9/32″	325	6384K53	6.98	6384K41 ▲	7.98
5/16″	29/32″	5/16″	350	6384K55	7.81	6384K22	10.34
3/8″	7/8″	9/32″	325	6384K54	6.98	6384K23 ▲	7.98
3/8″	29/32″	5/16″	350	6384K56	7.81	6384K44	9.70
3/8″	1 1/8″	3/8″	600	6384K58	7.98	6384K45	8.99
7/16″	29/32″	5/16″	350	6384K57	7.81	6384K46	9.70
7/16″	1 1/8″	3/8″	600	6384K59	7.98	6384K47	9.06
7/16″	1 3/8″	7/16″	940	6384K62	9.17	6384K48	10.80
1/2″	1 1/8″	3/8″	600	6384K61	7.98	6384K49	9.06
1/2″	1 3/8″	7/16″	940	6384K63	8.81	6384K74	10.44
9/16″	1 3/8″	7/16″	940	6384K64	8.80	6384K75	11.83
5/8″	1 3/8″	7/16″	940	6384K65	8.81	6384K76	10.44
5/8″	1 5/8″	1/2″	1300	6384K66	11.91	6384K77	13.54
5/8″	1 3/4″	1/2″	1300	6384K68	12.16	———	———
3/4″	1 5/8″	1/2″	1300	6384K67	11.91	6384K79	13.54
3/4″	1 3/4″	1/2″	1300	6384K69	12.16	6384K81	13.74
3/4″	2″	9/16″	1480	6384K71	13.98	6384K82	16.44
7/8″	2″	9/16″	1480	6384K72	13.98	6384K83	16.44
1″	2″	9/16″	1480	6384K73	13.98	6384K84	16.44

♦ Width is 5/16″. ♠ Seal is plastic with metal backing.
▲ Width is 11/32″.

Flanged Open

For Shaft Dia.	OD	Wd.	Flange OD	Flange Thick.	Dynamic Load Cap., lbs.		Each
1/4″	11/16″	5/16″	13/16″	3/64″	287	6383K213	$3.02
1/4″	7/8″	5/16″	1″	3/64″	356	6383K214	4.23
5/16″	7/8″	5/16″	1″	3/64″	341	6383K215	4.23
3/8″	11/16″	7/16″	1 3/16″	1/16″	509	6383K227	5.09
3/8″	1 1/8″	1/2″	1 1/4″	1/16″	533	6383K232	5.21
7/16″	11/16″	7/16″	1 3/16″	1/16″	509	6383K224	5.10
1/2″	11/8″	7/16″	1 1/4″	1/16″	310	6383K234 ♣	7.28
1/2″	1 3/8″	1/2″	1 1/2″	1/16″	450	6383K241 ♣	9.67
1/2″	1 1/2″	11/16″	1 5/8″	1/16″	769	6383K245	7.82
1/2″	1 3/4″	5/8″	1 7/8″	1/16″	1187	6383K253	10.09
5/8″	1 3/8″	1/2″	1 1/2″	1/16″	450	6383K244 ♣	9.67
5/8″	1 1/2″	31/64″	1 5/8″	1/16″	769	6383K247	7.84
3/4″	1 3/4″	5/8″	1 7/8″	1/16″	1187	6383K251	9.43
1″	2″	9/16″	2 1/8″	1/16″	820	6383K257 ♣	14.43

♣ Maximum speed is 1000 rpm; load capacity listed @ 100 rpm.

Flanged Double Sealed

For Shaft Dia.	OD	Wd.	Flange OD	Flange Thick.	Dynamic Load Cap., lbs.		Each
1/4″	11/16″	3/8″	13/16″	1/16″	255	6384K342 ■ ♠	$5.99
5/16″	7/8″	13/32″	1″	1/16″	325	6384K343 ■	6.49
3/8″	7/8″	13/32″	1″	1/16″	325	6384K344 ■	6.49
3/8″	29/32″	13/32″	1″	1/16″	350	6384K346 ■	6.95
3/8″	1 1/8″	7/16″	1 1/4″	1/16″	600	6384K348 ■	7.64
1/2″	1 1/8″	7/16″	1 1/4″	1/16″	310	6384K361 ♣ ◤	9.41
1/2″	1 3/8″	1/2″	1 1/2″	1/16″	450	6384K363 ♣ ◤	10.67
5/8″	1 3/8″	1/2″	1 1/2″	1/16″	450	6384K365 ♣ ◤	10.67
3/4″	1 5/8″	9/16″	1 3/4″	1/16″	1300	6384K367 ■	10.26
3/4″	1 3/4″	9/16″	1 7/8″	1/16″	1300	6384K369 ■	10.25
3/4″	2″	5/8″	2 1/8″	1/16″	1480	6384K374 ■	14.13
1″	2″	9/16″	2 1/8″	1/16″	820	6384K373 ♣ ◤	18.34

■ Maximum speed is 3000 rpm.
♠ Seal is plastic with metal backing. ◤ Seals are plastic.
♣ Maximum speed is 1000 rpm; load capacity listed @ 100 rpm.

Stainless Steel Ball Bearings

Made of Type 316 stainless steel, these highly corrosion-resistant bearings are excellent for use in frequent washdown and caustic environments. All are open bearings, which means they run cool and are easy to lubricate. They have a polymer ball cage that withstands temperatures from –40° to +140° F.

Inch

For Shaft Dia.	OD	Wd.	Dynamic Load Cap., lbs.	Max. rpm		Each
1/4"	5/8"	0.196"	78	2352	5908K11	$24.22
1/4"	3/4"	7/32"	78	2352	5908K12	25.26
3/8"	7/8"	7/32"	126	1600	5908K13	26.51
3/8"	7/8"	9/32"	126	1600	5908K14	25.26
3/8"	1 1/8"	3/8"	165	1142	5908K16	31.33
1/2"	1 1/8"	1/4"	165	1142	5908K15	31.27
1/2"	1 3/8"	7/16"	207	1069	5908K17	31.22
5/8"	1 3/8"	7/16"	207	1069	5908K18	31.22
3/4"	1 5/8"	5/16"	234	840	5908K19	39.39
1"	2"	1/2"	276	729	5908K21	57.98

Metric

For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Max. rpm		Each
5	16	5	78	2352	5908K51	$25.23
8	22	7	126	1600	5908K31	25.23
10	26	8	126	1600	5908K52	29.17
10	30	9	165	1142	5908K39	26.88
12	28	8	165	1142	5908K34	29.59
12	32	10	165	1142	5908K41	28.72
15	32	9	165	1142	5908K35	28.72
15	35	11	207	1069	5908K53	31.11
20	42	12	234	840	5908K56	39.23
25	47	12	276	729	5908K58	52.33

Lubrication-Free Acetal Ball Bearings

With no need for lubrication because of the acetal plastic construction, you'll experience less downtime for maintenance. All of these bearings are lighter, quieter, smoother running, and more corrosion resistant than conventional metal bearings. They are open bearings, which means they run cool. Temperature range is –40° to +180° F.

All of the balls are nonmagnetic and provide electrical insulation. ***Stainless steel balls*** offer excellent corrosion resistance. ***Glass balls*** offer even more corrosion resistance than stainless steel balls.

For Shaft Dia.	OD	Wd.	Dynamic Load Cap., lbs.	Max. rpm	*With Stainless Steel Balls*	Each	*With Glass Balls*	Each
3/16"	1/2"	5/32"	17	3167	6455K1	$5.37	6455K7	$6.94
1/4"	5/8"	0.196"	26	2352	6455K2	5.37	6455K8	7.25
1/4"	3/4"	9/32"	26	2352	6455K13	5.33	6455K52	6.88
3/8"	7/8"	7/32"	42	1600	6455K15	6.24	6455K54	7.92
3/8"	7/8"	9/32"	42	1600	6455K3	5.95	6455K9	7.63
3/8"	1 1/8"	3/8"	55	1142	6455K19	5.56	6455K58	8.24
3/8"	1 3/8"	7/16"	69	1069	6455K29	6.12	6455K72	7.95
1/2"	1 1/8"	1/4"	55	1142	6455K23	5.56	6455K64	8.24
1/2"	1 1/8"	3/8"	55	1142	6455K4	6.11	6455K11	7.84
1/2"	1 3/8"	3/8"	69	1069	6455K27	5.72	6455K68	7.95
1/2"	1 3/8"	7/16"	69	1069	6455K31	6.12	6455K74	8.34
5/8"	1 1/8"	5/16"	55	1142	6455K35	5.56	6455K78	8.24
5/8"	1 3/8"	3/8"	69	1069	6455K37	5.48	6455K82	8.34
5/8"	1 3/8"	7/16"	69	1069	6455K39	6.12	6455K84	8.34
3/4"	1 5/8"	5/16"	78	840	6455K5	12.65	6455K12	14.05
3/4"	1 3/4"	15/32"	78	840	6455K41	10.98	6455K86	14.25
1"	1 5/8"	1/2"	78	840	6455K43	5.52	6455K88	5.96
1"	2"	1/2"	92	729	6455K6	14.34	6455K14	15.94

High-Load Steel Ball Bearings

Open

Double Shielded

Double Sealed

Double Sealed with Retaining Ring

Trust these ball bearings to perform well in your most demanding applications. Temperature range is –20° to +250° F.

Open bearings run cool and are easy to lubricate. ***Double-shielded bearings*** have steel shields that block out dirt. They come greased. ***Double-sealed bearings*** have synthetic rubber seals (unless noted) that block out dirt, preserve lubricants, and reduce noise. They come greased.

High-Load/High-Speed Bearings— Are available with a retaining ring, which holds the bearing in the housing.

High Load

For Shaft Dia.	OD	Dynamic Load Cap., lbs.	Max. rpm	*Open* Wd.		Each	*Double Shielded* Wd.		Each	*Double Sealed* Wd.		Each
1/4"	11/16"	511	5000	1/4"	2780T11	$11.21	1/4"	2780T31	$12.59	5/16"	2780T51 ♠	$13.40
5/16"	7/8"	644	5000	9/32"	2780T12	9.45	9/32"	2780T32	9.95	11/32"	2780T52	11.80
5/16"	29/32"	698	5000	5/16"	2780T14	9.47	5/16"	2780T34	9.99	5/16"	2780T54	11.66
3/8"	7/8"	644	5000	9/32"	2780T13	9.45	9/32"	2780T33	9.95	11/32"	2780T53	11.80
3/8"	29/32"	698	5000	5/16"	2780T15	9.45	5/16"	2780T35	9.95	5/16"	2780T55	11.80
3/8"	1 1/8"	1200	5000	3/8"	2780T17	10.05	3/8"	2780T37	10.59	3/8"	2780T57	11.73
7/16"	29/32"	698	5000	5/16"	2780T16	9.45	5/16"	2780T36	9.95	5/16"	2780T56	11.80
1/2"	1 1/8"	1200	5000	3/8"	2780T18	10.05	3/8"	2780T38	10.59	3/8"	2780T58	11.73
1/2"	1 3/8"	1878	5000	7/16"	2780T19	11.14	7/16"	2780T39	11.73	7/16"	2780T59	13.85
5/8"	1 3/8"	1878	5000	7/16"	2780T21	11.14	7/16"	2780T41	11.73	7/16"	2780T61	13.85
5/8"	1 5/8"	2595	5000	1/2"	2780T22	14.88	1/2"	2780T42	15.62	1/2"	2780T62	17.00
5/8"	1 3/4"	2593	5000	1/2"	2780T24	13.99	1/2"	2780T44	15.62	1/2"	2780T64	17.00
3/4"	1 5/8"	2595	5000	1/2"	2780T23	13.99	1/2"	2780T43	15.62	1/2"	2780T63	17.00
3/4"	1 3/4"	2593	5000	1/2"	2780T1	13.99	1/2"	2780T2	15.62	1/2"	2780T3	17.00
3/4"	2"	2967	5000	9/16"	2780T25	16.83	9/16"	2780T45	18.74	9/16"	2780T65	21.04
1"	2"	2967	5000	9/16"	2780T26	16.59	9/16"	2780T46	18.03	9/16"	2780T66	20.26
1 1/8"	2 1/2"	3864	5000	5/8"	2780T27	21.99	5/8"	2780T47	24.60	5/8"	2780T67 ♠	28.53
1 1/4"	2 1/2"	3864	5000	5/8"	2780T28	21.99	5/8"	2780T48	24.60	5/8"	2780T68 ♠	28.53
1 1/4"	2 9/16"	5360	5000	11/16"	2780T29	29.57	11/16"	2780T49	33.13	11/16"	2780T69 ♠	36.80

♠ Seal is plastic with metal backing.

High Load/High Speed

For Shaft Dia.	OD	Wd.	Dynamic Load Cap., lbs.	Max. rpm	*Double Sealed*	Each	*Double Sealed with Retaining Ring*	Each
1/2"	1 3/4"	3/4"	2595	6000	2782T71	$24.47	2782T81	$25.36
5/8"	1 3/4"	3/4"	2595	6000	2782T73	24.47	2782T83	25.36
3/4"	1 3/4"	3/4"	2595	6000	2782T75	24.50	2782T85	25.35
1"	2"	3/4"	2970	6000	2782T77	24.86	2782T87	25.93
1 1/4"	2 9/16"	7/8"	5360	5000	2782T79	38.85	2782T89	39.16

For information about ball bearings, see page 1141.

High-Speed/High-Load Steel Ball Bearings with Shaft Collar Mount

Great for high speeds and high loads, these bearings have an extended inner ring that acts as a built-in shaft collar to save you time and space when mounting. All are double sealed with synthetic rubber seals that block out dirt, preserve lubricants, and reduce noise. They also have a retaining-ring groove. Temperature range is –20° to +250° F. Two set screws for secure mounting are included.

Available with and without a retaining ring, which holds the bearing in the housing.

Bearing No.	For Shaft Dia.	OD	Bearing Wd.	O'all Wd.	Dynamic Load Cap., lbs.	Max. rpm	Double Sealed	Each	Double Sealed with Retaining Ring	Each
7610	5/8″	1 3/4″	5/8″	1.092″	2595	6000	4768K1	$30.16	4768K5	$32.30
7612	3/4″	1 3/4″	5/8″	1.092″	2595	6000	4768K2	31.90	4768K6	30.70
7616	1″	2″	5/8″	1.179″	2970	6000	4768K3	32.30	4768K7	33.56
7620	1 1/4″	2 9/16″	3/4″	1.417″	5360	5000	4768K4	50.63	4768K8	51.91

Extended-Ring Steel Ball Bearings

With an extended inner ring and two knurled-cup set screws, it's easy to securely install these bearings. All are double-sealed with synthetic rubber seals that block out dirt, preserve lubricants, and reduce noise. They also have two holes for adding lubrication. Bearings are 52100 alloy steel with a corrosion-resistant black-oxide finish. Temperature range is –20° to +250° F.

Bearing No.	For Shaft Dia.	OD	Wd.	Dynamic Load Cap., lbs.	Max. rpm		Each
ER10	5/8″	1.85″	17/32″	2860	5000	8090T11	$29.67
ER12	3/4″	1.85″	17/32″	2860	5000	8090T12	32.61
ER16	1″	2.05″	13/8″	3145	5000	8090T13	33.79
ER19	13/16″	2.44″	1 1/2″	4360	5000	8090T14	41.37
ER20	1 1/4″	2.83″	1 11/16″	5755	5000	8090T15	$49.90
ER23	17/16″	2.83″	1 11/16″	5755	5000	8090T16	49.74
ER24	1 1/2″	3.15″	1 15/16″	6535	5000	8090T17	59.40
ER31	1 15/16″	3.54″	2 1/32″	7900	5000	8090T18	76.18

Metric Steel Ball Bearings—ABEC-1

Open

Double Shielded

Double Sealed

Made to meet ABEC-1 dimensional tolerance standards, these quiet-running, electric-motor-quality bearings handle radial (perpendicular to the shaft) loads and small amounts of angular misalignment. Temperature range is –22° to +230° F.

Open bearings run cool and are easy to lubricate. ***Double-shielded bearings*** have steel shields that block out dirt. They come greased. ***Double-sealed bearings*** have Buna-N seals that block out dirt, preserve lubricants, and reduce noise. They come greased.

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Open Max. rpm		Each	Double Shielded Max. rpm		Each	Double Sealed Max. rpm		Each
608	8	22	7	730	36,000	5972K91	$4.06	30,000	5972K501	$4.38	20,000	5972K222	$4.61
627	7	22	7	730	—	—	—	—	—	—	20,000	5972K502	6.15
629	9	26	8	1,020	33,500	5972K93	7.04	28,000	5972K321	4.80	19,000	5972K231	8.88
6000	10	26	8	1,020	34,000	5972K94	6.03	28,000	5972K322	6.45	19,000	5972K81	7.06
6001	12	28	8	1,150	32,000	5972K95	6.75	26,000	5972K323	7.07	18,000	5972K82	7.31
6002	15	32	9	1,250	30,000	5972K358	6.88	24,000	5972K324	7.10	16,000	5972K83	7.70
6003	17	35	10	1,350	28,000	5972K311	7.81	22,000	5972K325	8.14	14,000	5972K84	9.00
6007	35	62	14	3,592	12,000	5972K312	12.03	11,000	5972K365	12.52	7,500	5972K85	14.03
6200	10	30	9	1,350	32,000	5972K101	4.27	26,000	5972K326	4.50	17,000	5972K41	4.88
6201	12	32	10	1,560	30,000	5972K313	5.11	24,000	5972K327	4.80	16,000	5972K42	5.23
6202	15	35	11	1,750	26,000	5972K314	4.87	20,000	5972K328	5.10	14,000	5972K357	5.31
6203	17	40	12	2,140	22,000	5972K104	5.13	18,000	5972K2	4.72	12,000	5972K44	5.79
6204	20	47	14	2,850	18,000	5972K105	6.40	15,000	5972K329	7.50	10,000	5972K45	8.72
6205	25	52	15	3,150	17,000	5972K315	8.22	14,000	5972K341	9.08	9,000	5972K46	9.42
6206	30	62	16	4,350	14,000	5972K316	9.19	11,000	5972K342	11.55	7,500	5972K47	11.84
6207	35	72	17	5,700	12,000	5972K317	12.29	9,500	5972K343	13.04	6,300	5972K48	15.39
6208	40	80	18	6,500	8,300	5972K114	16.08	8,500	5972K344	17.28	5,600	5972K49	21.38
6209	45	85	19	6,950	7,700	5972K115	19.46	8,000	5972K345	21.40	5,300	5972K51	25.71
6210	50	90	20	7,884	7,100	5972K129	23.82	7,100	5972K366	25.63	4,800	5972K52	34.74
6211	55	100	21	9,700	7,500	5972K113	22.82	6,100	5972K367	31.17	4,300	5972K53	38.13
6212	60	110	22	12,000	7,000	5972K3	33.61	6,000	5972K346	40.21	4,000	5972K54	50.69
6301	12	37	12	2,170	23,000	5972K318	7.86	20,000	5972K347	8.00	13,000	5972K86	8.88
6302	15	42	13	2,550	20,000	5972K117	7.44	18,000	5972K348	8.27	12,000	5972K87	8.92
6303	17	47	14	3,000	19,000	5972K118	7.53	16,000	5972K349	8.80	11,000	5972K55	11.33
6304	20	52	15	3,600	15,600	5972K119	9.18	14,000	5972K351	11.13	9,500	5972K56	13.70
6305	25	62	17	5,000	13,200	5972K121	11.22	11,000	5972K352	13.30	7,500	5972K57	14.63
6306	30	72	19	6,500	10,800	5972K319	14.59	9,500	5972K353	22.09	6,300	5972K58	23.09
6307	35	80	21	5,700	7,500	5972K503	16.93	8,500	5972K354	23.74	5,600	5972K59	25.27
6308	40	90	23	9,500	9,000	5972K124	22.11	7,500	5972K355	27.81	5,000	5972K61	33.50
6309	45	100	25	11,800	8,000	5972K125	28.19	6,700	5972K356	37.00	5,900	5972K363	43.44
6310	50	110	27	13,938	7,500	5972K126	33.14	5,300	5972K332	39.01	5,300	5972K364	50.73
6311	55	120	29	16,069	6,700	5972K127	43.40	4,800	5972K361	51.04	3,600	5972K64	49.63
6312	60	130	31	18,000	6,000	5972K128	55.28	4,500	5972K362	66.02	3,400	5972K65	62.38
6800	10	19	5	385	37,000	5972K211	8.04	37,000	5972K153	8.03	37,000	5972K275	7.93
6801	12	21	5	430	33,000	5972K212	9.59	33,000	5972K154	9.52	33,000	5972K276	9.07
6802	15	24	5	466	28,000	5972K213	9.83	28,000	5972K155	9.80	28,000	5972K277	9.53
6803	17	26	5	501	26,000	5972K214	11.40	26,000	5972K156	12.09	26,000	5972K278	11.60
6804	20	32	7	902	21,000	5972K215	14.08	21,000	5972K157	13.68	21,000	5972K279	13.25
6805	25	37	7	967	18,000	5972K216	15.71	18,000	5972K158	14.90	18,000	5972K281	14.98
6806	30	42	7	1,020	15,000	5972K217	18.72	15,000	5972K159	19.13	15,000	5972K282	18.00
6900	10	22	6	605	34,000	5972K241	6.60	34,000	5972K164	6.59	34,000	5972K286	7.35
6901	12	24	6	648	31,000	5972K242	7.61	31,000	5972K165	7.62	31,000	5972K287	8.21
6902	15	28	7	971	26,000	5972K243	9.16	26,000	5972K166	9.13	26,000	5972K288	9.67
6903	17	30	7	1,031	23,000	5972K244	9.27	23,000	5972K167	9.34	23,000	5972K289	9.65
6904	20	37	9	1,434	19,000	5972K245	12.53	19,000	5972K168	12.53	19,000	5972K291	13.20
6905	25	42	9	1,573	16,000	5972K246	13.42	16,000	5972K169	13.31	16,000	5972K292	13.86
6906	30	47	9	1,628	14,000	5972K247	14.56	14,000	5972K171	14.56	14,000	5972K293	22.58
6907	35	55	10	2,450	12,000	5972K248	19.47	12,000	5972K172	19.43	12,000	5972K294	21.29
6908	40	62	12	3,074	11,000	5972K249	25.57	11,000	5972K173	25.69	11,000	5972K295	26.37

Steel Ball Bearings—ABEC-1

Open

Double Shielded

Double Sealed

Made to meet ABEC-1 dimensional tolerance standards in hard-to-find inch sizes, these quiet-running, electric-motor-quality bearings handle radial (perpendicular to the shaft) loads and small amounts of angular misalignment. Temperature range is –40° to +248° F.

Open bearings run cool and are easy to lubricate. ***Double-shielded bearings*** have steel shields that block out dirt. They come greased. ***Double-sealed bearings*** have Buna-N seals that block out dirt, preserve lubricants, and reduce noise. They come greased.

Bearing No.	For Shaft Dia.	OD	Dynamic Load Cap., lbs.	Open Max. rpm	Open Wd.	Open	Open Each	Double Shielded Max. rpm	Double Shielded Wd.	Double Shielded	Double Shielded Each	Double Sealed Max. rpm	Double Sealed Wd.	Double Sealed	Double Sealed Each
R2	1/8″	3/8″	142	59,000	5/32″	60355K501	$5.32	59,000	5/32″	60355K41	$5.60	56,000	5/32″	60355K851	$3.12
R3	3/16″	1/2″	292	50,000	5/32″	60355K502	5.90	50,000	0.196″	60355K42	5.81	43,000	0.196″	60355K861	3.12
R4	1/4″	5/8″	338	44,000	0.196″	60355K503	5.11	44,000	0.196″	60355K43	5.54	26,800	0.196″	60355K701	5.80
R4A	1/4″	3/4″	630	—	—	—	—	40,000	9/32″	60355K44	6.12	24,400	9/32″	60355K702	7.23
R6	3/8″	7/8″	754	33,000	7/32″	60355K504	4.94	33,000	9/32″	60355K45	5.54	20,100	9/32″	60355K703	5.88
R8	1/2″	1 1/8″	1,148	15,600	1/4″	60355K505	5.36	15,600	5/16″	60355K601	6.04	9,500	5/16″	60355K704	7.77
R10	5/8″	1 3/8″	1,350	12,700	9/32″	60355K506	5.70	12,700	11/32″	60355K602	7.33	7,800	11/32″	60355K705	8.03
R12	3/4″	1 5/8″	1,789	11,400	5/16″	60355K507	6.76	11,400	7/16″	60355K603	9.22	6,900	7/16″	60355K706	9.48
R14	7/8″	1 7/8″	2,273	9,300	3/8″	60355K508	8.85	9,300	1/2″	60355K604	10.67	5,700	1/2″	60355K707	11.82
R16	1″	2″	2,408	8,500	3/8″	60355K509	9.56	8,500	1/2″	60355K605	10.53	5,200	1/2″	60355K708	11.88
R18	1 1/8″	2 1/8″	2,150	15,328	3/8″	60355K211	10.80	13,029	1/2″	60355K812	12.50	—	—	—	—
R20	1 1/4″	2 1/4″	2,423	14,653	3/8″	60355K22	11.89	12,455	1/2″	60355K821	12.38	—	—	—	—
R22	1 3/8″	2 1/2″	3,600	6,200	7/16″	60355K511	27.40	6,200	9/16″	60355K606	37.28	—	—	—	—
R24	1 1/2″	2 5/8″	3,761	9,000	7/16″	60355K512	36.12	9,000	9/16″	60355K607	42.68	—	—	—	—

Stainless Steel Ball Bearings—ABEC-1

Open

Double Shielded

Double Sealed

Strength is combined with corrosion resistance in these Type 440 stainless steel bearings. Made to meet ABEC-1 dimensional tolerance standards, all are quiet-running, electric-motor-quality bearings. They can handle radial (perpendicular to the shaft) loads and small amounts of angular misalignment. Temperature range is –40° to +300° F.

Open bearings run cool and are easy to lubricate. ***Double-shielded bearings*** have steel shields that block out dirt. They come greased. ***Double-sealed bearings*** have Buna-N seals (except for 6153K69, which has PTFE) that block out dirt, preserve lubricants, and reduce noise. They come greased.

Inch

Bearing No.	For Shaft Dia.	OD	Dynamic Load Cap., lbs.	Open Max. rpm	Open Wd.	Open	Open Each	Double Shielded Max. rpm	Double Shielded Wd.	Double Shielded	Double Shielded Each	Double Sealed Max. rpm	Double Sealed Wd.	Double Sealed	Double Sealed Each
R2	1/8″	3/8″	142	67,000	5/32″	6138K11	$6.60	56,000	5/32″	6138K52	$5.26	56,000	5/32″	6138K63	$6.61
R3	3/16″	1/2″	292	53,000	5/32″	6138K42	5.59	43,000	0.196″	6138K53	5.59	43,000	0.196″	6138K64	6.92
R4	1/4″	5/8″	332	45,000	0.196″	6138K13	7.34	38,000	0.196″	6138K54	5.76	38,000	0.196″	6138K65	7.05
R6	3/8″	7/8″	749	38,000	7/32″	6138K14	10.99	32,000	9/32″	6138K24	11.05	32,000	9/32″	6138K66	13.27
R8	1/2″	1 1/8″	1,148	32,000	1/4″	6138K15	18.37	27,000	5/16″	6138K25	18.29	27,000	5/16″	6138K67	21.87
R10	5/8″	1 3/8″	1,348	25,000	9/32″	6138K16	27.20	21,000	11/32″	6138K26	27.18	21,000	11/32″	6138K68	28.66
R12	3/4″	1 5/8″	1,627	17,000	5/16″	6138K69	25.57	17,000	7/16″	6138K71	30.97	17,000	7/16″	6138K72	31.53

Metric

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Max. rpm	Open	Open Each	Double Shielded	Double Shielded Each	Double Sealed	Double Sealed Each
608	8	22	7	740	34,000	6153K111	$11.85	6153K51	$12.33	6153K71	$13.54
609	9	24	7	754	32,000	6153K112	12.01	6153K12	12.52	6153K68	13.03
625	5	16	5	388	36,000	6153K113	11.85	6153K15	12.60	6153K69	12.71
627	7	22	7	738	30,000	6153K114	12.73	6153K27	12.72	6153K72	13.64
629	9	26	8	1,025	28,000	6153K115	14.63	6153K53	14.65	6153K73	17.18
698	8	19	6	502	36,000	6153K116	11.08	6153K22	21.15	6153K88	22.27
6200	10	30	9	975	24,000	6153K117	24.74	6153K54	24.73	6153K74	26.22
6201	12	32	10	1,297	22,000	6153K118	31.47	6153K55	31.50	6153K75	32.82
6202	15	35	11	1,459	20,000	6153K119	32.95	6153K56	33.09	6153K76	33.75
6203	17	40	12	1,827	17,000	6153K121	38.21	6153K57	38.17	6153K77	39.29
6204	20	47	14	2,452	15,000	6153K122	39.89	6153K58	41.85	6153K78	42.89
6205	25	52	15	2,675	13,000	6153K123	44.69	6153K59	44.63	6153K79	45.40
6206	30	62	16	3,716	11,000	6153K124	57.05	6153K61	59.78	6153K81	61.34

High-Capacity Steel Ball Bearings—ABEC-1

Open

Double Shielded

Double Sealed

Able to support higher radial (perpendicular to the shaft) loads, these bearings have two rows of balls, which are held at 25° contact angles. They're all made to meet ABEC-1 dimensional tolerance standards. Temperature range is –4° to +250° F, unless otherwise stated.

Open bearings run cool and are easy to lubricate. ***Double-shielded bearings*** have steel shields that block out dirt. They come greased. ***Double-sealed bearings*** have Buna-N seals that block out dirt, preserve lubricants, and reduce noise. They come greased and have a temperature range of –4° to +230° F.

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Max. rpm	Open	Open Each	Double Shielded	Double Shielded Each	Double Sealed	Double Sealed Each
3200	10	30	14.3	1,600	16,000	5885K111	$28.79	5885K131	$29.77	5885K27	$32.04
3201	12	32	15.9	2,100	15,000	5885K112	31.74	5885K132	36.15	5885K46	39.33
3202	15	35	15.9	2,200	14,000	5885K113	31.74	5885K133	36.15	5885K4	39.33
3203	17	40	17.5	2,900	11,000	5885K114	30.81	5885K134	36.16	5885K68	40.04
3204	20	47	20.6	4,300	10,000	5885K115	34.09	5885K135	41.09	5885K72	44.21
3205	25	52	20.6	4,600	9,000	5885K116	40.92	5885K136	47.02	5885K75	50.37
3206	30	62	23.8	5,500	7,100	5885K117	49.14	5885K173	56.42	5885K78	60.53
3207	35	72	27	7,400	5,600	5885K118	60.53	5885K138	69.02	5885K82	74.53
3208	40	80	30.2	9,600	5,000	5885K119	74.07	5885K139	83.84	5885K85	99.77
3210	50	90	30.2	9,600	4,000	5885K121	92.72	5885K141	108.92	5885K88	115.58
3303	17	47	22.2	4,300	9,500	—	—	5885K142	51.23	5885K92	55.28
3304	20	52	22.2	4,300	9,000	5885K123	47.53	5885K143	54.31	5885K95	63.54
3305	25	62	25.4	6,000	7,900	5885K124	52.84	5885K144	60.67	5885K98	72.84

For information about ball bearings, see page 1141.

Precision-Plus Steel Ball Bearings—ABEC-1

While designated as ABEC-1, these bearings are actually made to higher-precision ABEC-3 dimensional tolerance standards. All are quiet-running, electric-motor-quality bearings that can handle radial (perpendicular to the shaft) loads and small amounts of angular misalignment. Temperature range is 0° to +230° F for inch sizes; –40° to +212° F for metric sizes.

Open bearings run cool and are easy to lubricate. ***Double-shielded bearings*** have steel shields that block out dirt. They come greased. ***Double-sealed bearings*** have nitrile seals that block out dirt, preserve lubricants, and reduce noise. They come greased.

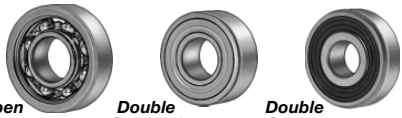

Open — Double Shielded — Double Sealed

Inch

Bearing No.	For Shaft Dia.	OD	Dynamic Load Cap., lbs.	Max. rpm	Open Wd.	Open	Open Each	Double Shielded Wd.	Double Shielded	Double Shielded Each	Double Sealed Wd.	Double Sealed	Double Sealed Each
R2	1/8″	3/8″	70	52,000	5/32″	3760T244	$15.00	5/32″	3760T11	$21.81	—	—	—
R3	3/16″	1/2″	215	40,000	5/32″	3760T201	15.15	0.196″	3760T212	15.52	0.196″	3760T236	$21.73
R4	1/4″	5/8″	332	31,000	0.196″	3760T245	15.20	0.196″	3760T246	16.32	0.196″	3760T247	22.34
R4A	1/4″	3/4″	632	27,000	7/32″	3760T248	43.07	9/32″	3760T249	17.44	9/32″	3760T251	22.34
R6	3/8″	7/8″	746	21,000	7/32″	3760T202	13.53	9/32″	3760T214	17.37	9/32″	3760T237	25.96
R8	1/2″	1 1/8″	1,140	16,000	1/4″	3760T203	37.44	5/16″	3760T215	17.23	5/16″	3760T238	28.15
R10	5/8″	1 3/8″	1,360	13,000	9/32″	3760T4	18.82	11/32″	3760T16	21.11	11/32″	3760T239	27.04
R12	3/4″	1 5/8″	2,100	11,000	5/16″	3760T5	21.96	7/16″	3760T17	24.96	7/16″	3760T241	30.24
R14	7/8″	1 7/8″	2,270	9,600	3/8″	3760T206	28.71	1/2″	3760T218	33.38	1/2″	3760T242	35.48
R16	1″	2″	2,270	9,000	3/8″	3760T207	37.67	1/2″	3760T219	33.34	1/2″	3760T243	37.73
R18	1 1/8″	2 1/8″	2,810	7,900	3/8″	3760T208	28.99	1/2″	3760T221	42.54	—	—	—
R20	1 1/4″	2 1/4″	3,150	7,500	3/8″	3760T252	30.28	1/2″	3760T253	50.40	1/2″	3760T254	59.71

Metric

Bearing No.	For Shaft Dia., mm	OD, mm	Dynamic Load Cap., lbs.	Wd., mm	Double Shielded Max. rpm	Double Shielded	Double Shielded Each	Double Sealed Max. rpm	Double Sealed	Double Sealed Each
626	6	19	530	6	50,000	6661K11	$11.74	24,000	6661K81	$16.76
608	8	22	780	7	48,000	6661K12	7.16	22,000	6661K82	10.19
6000	10	26	1,070	8	40,000	6661K13	14.40	19,000	6661K83	18.96
6001	12	28	1,210	8	38,000	6661K14	14.07	17,000	6661K84	18.78
6002	15	32	1,320	9	32,000	6661K15	13.38	14,000	6661K85	20.18
6003	17	35	1,430	10	28,000	6661K16	15.48	13,000	6661K86	22.50
6004	20	42	2,240	12	24,000	6661K17	24.08	11,000	6661K87	26.23
6005	25	47	2,680	12	20,000	6661K18	19.96	9,500	6661K88	29.69
6006	30	55	3,100	13	17,000	6661K19	25.11	8,000	6661K89	33.82
6200	10	30	1,220	9	34,000	6661K41	9.14	17,000	6661K101	9.94
6201	12	32	1,700	10	32,000	6661K42	9.28	15,000	6661K102	11.10
6202	15	35	1,800	11	28,000	6661K43	11.00	13,000	6661K103	9.42
6203	17	40	2,200	12	24,000	6661K44	8.90	12,000	6661K104	10.08
6204	20	47	3,000	14	20,000	6661K45	12.18	10,000	6661K105	12.58
6205	25	52	3,300	15	18,000	6661K46	15.80	8,500	6661K106	19.00
6206	30	62	4,600	16	15,000	6661K47	17.42	7,500	6661K107	19.80
6207	35	72	6,100	17	13,000	6661K48	24.28	6,300	6661K108	33.10
6208	40	80	7,300	18	11,000	6661K49	37.24	5,600	6661K109	42.80
6209	45	85	7,900	19	11,000	6661K51	48.22	5,000	6661K111	49.74
6210	50	90	8,300	20	10,000	6661K52	53.68	4,800	6661K112	59.28
6300	10	35	1,900	11	32,000	6661K61	14.80	15,000	6661K121	18.22
6301	12	37	2,300	12	28,000	6661K62	12.14	14,000	6661K122	18.32
6302	15	42	2,700	13	24,000	6661K63	12.70	12,000	6661K123	16.31
6303	17	47	3,200	14	22,000	6661K64	16.80	11,000	6661K124	21.14
6304	20	52	3,800	15	19,000	6661K65	18.90	9,500	6661K125	21.66
6305	25	62	5,300	17	16,000	6661K66	22.12	7,500	6661K126	24.44
6306	30	72	6,700	19	13,000	6661K67	36.08	6,300	6661K127	46.80
6307	35	80	7,900	21	12,000	6661K68	42.44	6,000	6661K128	40.98
6308	40	90	9,500	23	11,000	6661K69	55.34	5,000	6661K129	58.44
6309	45	100	12,400	25	9,500	6661K71	80.08	4,500	6661K131	77.84

Self-Aligning High-Capacity Steel Ball Bearings—ABEC-1

A sphere-shaped raceway and two rows of balls give these bearings a high load capacity and the ability to compensate for shaft misalignment. All are made to ABEC-1 dimensional tolerance standards. Temperature range is –40° to +212° F.

Open bearings run cool and are easy to lubricate. ***Double-sealed bearings*** have steel-reinforced Buna-N seals that block out dirt, preserve lubricants, and reduce noise. They come greased.

Open — Double Sealed

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Open Max. Shaft Misalign.	Open Dynamic Load Cap., lbs.	Open Max. rpm	Open	Open Each	Double Sealed Max. Shaft Misalign.	Double Sealed Dynamic Load Cap., lbs.	Double Sealed Max. rpm	Double Sealed	Double Sealed Each
108	8	22	7	3°	596	40,000	6660K11	$33.21	—	—	—	—	—
1204	20	47	14	2.5°	2,850	20,000	6660K22	40.00	—	—	—	—	—
1205	25	52	15	2.5°	3,210	18,000	6660K23	46.51	—	—	—	—	—
2200	10	30	14	2.5°	1,810	34,000	6660K12	56.61	1.5°	1,240	17,000	6660K61	$116.48
2201	12	32	14	2.5°	1,920	30,000	6660K13	57.18	1.5°	1,400	16,000	6660K62	119.48
2202	15	35	14	2.5°	1,960	26,000	6660K14	56.16	1.5°	1,670	14,000	6660K63	122.30
2203	17	40	16	2.5°	2,380	24,000	6660K15	60.55	1.5°	1,990	12,000	6660K64	125.46
2204	20	47	18	2.5°	3,780	20,000	6660K16	61.43	1.5°	2,850	10,000	6660K65	130.20
2205	25	52	18	2.5°	3,780	18,000	6660K17	75.73	1.5°	3,210	9,000	6660K66	145.67
2206	30	62	20	2.5°	5,350	15,000	6660K18	85.84	1.5°	3,510	7,500	6660K67	143.35
2207	35	72	23	2.5°	6,900	12,000	6660K19	96.07	1.5°	4,270	6,300	6660K68	171.42
2208	40	80	23	2.5°	7,170	11,000	6660K21	97.35	1.5°	4,470	5,600	6660K69	201.79
2303	17	47	19	—	—	—	—	—	1.5°	2,850	11,000	6660K72	139.73
2304	20	52	21	3°	4,090	19,000	6660K53	85.35	1.5°	3,210	9,000	6660K73	148.15
2305	25	62	24	3°	5,440	16,000	6660K54	95.80	1.5°	4,270	7,500	6660K74	155.62
2306	30	72	27	3°	7,010	13,000	6660K55	108.80	1.5°	5,060	6,700	6660K75	191.73
2307	35	80	31	3°	8,920	12,000	6660K56	152.90	1.5°	5,960	5,600	6660K76	211.72

Perma-Lube Ball Bearings—ABEC-1

Open

Double Sealed

A solid polymer lubricant fills the space between the balls and the race, virtually eliminating the need for additional lubrication. Because it's solid, the lubricant blocks out water and dust, extending the life of the bearings. All bearings are made to ABEC-1 dimensional tolerance standards. They can handle radial (perpendicular to the shaft) loads and small amounts of angular misalignment. Temperature range is 10° to 200° F for bearings with solid polymer grease; –40° to +210° F for bearings with FDA-grade solid polymer grease.

Open bearings run cool. ***Double-sealed bearings*** have Buna-N seals that block out dirt, preserve lubricants, and reduce noise.

Type 440 Stainless Steel—Offers good corrosion resistance. *Bearings with FDA-grade solid polymer grease* are the choice for food-related applications.

Inch

Bearing No.	For Shaft Dia.	OD	Dynamic Load Cap., lbs.	Max. rpm	Open Wd.	Open	Open Each	Double Sealed Wd.	Double Sealed	Double Sealed Each
Steel with USDA H1 Solid Polymer Grease										
R2	1/8″	3/8″	141	50,000	5/32″	2342K61	$16.31	5/32″	2342K81	$16.58
R3	3/16″	1/2″	292	37,500	5/32″	2342K62	14.36	0.196″	2342K82	15.60
R4	1/4″	5/8″	310	28,570	0.196″	2342K163	15.37	0.196″	2342K183	17.66
R4A	1/4″	3/4″	525	24,000	7/32″	2342K164	11.04	9/32″	2342K184	12.27
R6	3/8″	7/8″	750	19,350	7/32″	2342K165	12.64	9/32″	2342K185	13.03
R8	1/2″	1 1/8″	1,148	15,000	1/4″	2342K166	13.25	5/16″	2342K186	13.49
R10	5/8″	1 3/8″	1,348	12,220	9/32″	2342K167	15.10	11/32″	2342K187	20.66
R12	3/4″	1 5/8″	2,109	10,000	5/16″	2342K168	19.53	7/16″	2342K188	24.60
R14	7/8″	1 7/8″	1,740	8,695	3/8″	2342K169	27.18	1/2″	2342K189	30.87
R16	1″	2″	1,740	8,000	3/8″	2342K171	23.29	1/2″	2342K191	23.40
Type 440 Stainless Steel with USDA H1 Solid Polymer Grease										
R2	1/8″	3/8″	58	50,000	5/32″	4668K1	19.56	5/32″	4668K9	19.98
R3	3/16″	1/2″	118	37,500	5/32″	4668K2	12.86	0.196″	4668K11	17.48
R4	1/4″	5/8″	134	28,571	0.196″	4668K3	10.20	0.196″	4668K12	15.66
R6	3/8″	7/8″	460	19,354	7/32″	4668K5	13.98	9/32″	4668K14	15.40
R8	1/2″	1 1/8″	708	15,000	1/4″	4668K6	21.78	5/16″	4668K15	22.12
R10	5/8″	1 3/8″	832	12,224	9/32″	4668K7	24.64	11/32″	4668K16	25.10
Type 440 Stainless Steel with FDA-Grade Solid Polymer Grease										
R2	1/8″	3/8″	58	67,000	5/32″	4648K1	21.60	5/32″	4648K9	21.98
R3	3/16″	1/2″	118	45,000	5/32″	4648K2	14.12	0.196″	4648K11	19.24
R4	1/4″	5/8″	134	38,000	0.196″	4648K3	11.26	0.196″	4648K12	17.24
R6	3/8″	7/8″	460	32,000	7/32″	4648K5	15.40	9/32″	4648K14	16.90
R8	1/2″	1 1/8″	708	27,000	1/4″	4648K6	23.98	5/16″	4648K15	24.28
R10	5/8″	1 3/8″	832	21,000	9/32″	4648K7	27.10	11/32″	4648K16	27.62

Metric

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Max. rpm	Open	Open Each	Double Sealed	Double Sealed Each
Steel with Solid Polymer Grease									
6000	10	26	8	975	16,665	2349K212	$14.64	2349K412	$14.64
6001	12	28	8	975	15,000	2349K213	16.92	2349K413	17.95
6002	15	32	9	1,067	12,265	2349K214	18.96	2349K414	20.59
6003	17	35	10	1,144	11,535	2349K215	19.49	2349K415	23.29
6004	20	42	12	1,789	9,675	2349K216	18.32	2349K416	21.64
6005	25	47	12	1,922	8,330	2349K217	21.27	2349K417	27.89
6200	10	30	9	975	15,000	2349K218	14.67	2349K418	16.00
6201	12	32	10	1,297	13,635	2349K219	16.05	2349K419	17.64
6202	15	35	11	1,459	12,000	2349K221	14.25	2349K421	14.87
6203	17	40	12	1,827	10,525	2349K222	14.07	2349K422	14.07
6204	20	47	14	2,452	8,955	2349K223	16.93	2349K423	18.47
6205	25	52	15	2,675	7,790	2349K224	18.95	2349K424	23.87
6206	30	62	16	3,716	6,520	2349K225	31.84	2349K425	32.36

Clean-Wearing Steel Ball Bearings—ABEC-1

Open

Double Shielded

An ultra-thin film coating reduces metal particles generated from normal wear, acts as a lubricant, and adds corrosion resistance. Great for clean room as well as semiconductor manufacturing environments. Temperature range is –40° to +248° F.

Open bearings run cool and are lubricated with a solid fluorocarbon polymer film. ***Double-shielded bearings*** have steel shields that block out dirt and are lubricated with Demnum LR200 film.

Inch

Bearing No.	For Shaft Dia.	OD	Open Wd.	Open Dynamic Load Cap., lbs.	Open Max. rpm	Open	Open Each	Double Shielded Wd.	Double Shielded Dynamic Load Cap., lbs.	Double Shielded Max. rpm	Double Shielded	Double Shielded Each
R8	1/2″	1 1/8″	1/4″	34	500	2329K81	$18.04	5/16″	1,148	15,600	2329K91	$18.94
R10	5/8″	1 3/8″	9/32″	41	500	2329K82	21.33	11/32″	1,350	12,700	2329K92	27.79
R12	3/4″	1 5/8″	5/16″	54	500	2329K83	26.79	7/16″	1,789	11,400	2329K93	31.25
R14	7/8″	1 7/8″	3/8″	68	500	2329K84	34.46	1/2″	2,273	9,300	2329K94	40.04
R16	1″	2″	3/8″	72	500	2329K85	35.00	1/2″	2,408	8,500	2329K95	41.27

Metric

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Open Dynamic Load Cap., lbs.	Open Max. rpm	Open	Open Each	Double Shielded Dynamic Load Cap., lbs.	Double Shielded Max. rpm	Double Shielded	Double Shielded Each
6000	10	26	8	30	1,000	2337K801	$17.88	1,023	31,000	2337K551	$18.21
6001	12	28	8	35	830	2337K802	19.02	1,147	27,000	2337K561	19.60
6002	15	32	9	38	660	2337K803	19.96	1,259	23,000	2337K571	20.29
6003	17	35	10	40	580	2337K804	24.96	1,349	21,000	2337K581	25.77
6004	20	42	12	63	500	2337K805	27.28	2,113	17,000	2337K591	32.19
6005	25	47	12	69	400	2337K806	36.08	2,271	15,000	2337K611	41.10
6200	10	30	9	35	860	2337K807	17.73	1,147	24,000	2337K711	17.92
6201	12	32	10	46	770	2337K808	19.02	1,529	22,000	2337K721	19.75
6202	15	35	11	—	—	—	—	1,720	20,000	2337K731	25.98
6203	17	40	12	64	530	2337K809	25.72	2,147	17,000	2337K741	27.35
6204	20	47	14	87	450	2337K811	27.52	2,878	15,000	2337K751	29.40
6205	25	52	15	94	360	2337K812	28.46	3,147	13,000	2337K761	32.40

For information about ball bearings, see page 1141.

Ultra-Thin Multi-Load Steel Ball Bearings—ABEC-1F

A unique internal construction contacts the balls at four points enabling these bearings to resist any combination of radial (perpendicular to the shaft), thrust (parallel to the shaft), and moment (torque-type forces off the radial and thrust planes) loads. Their ultra-thin design is perfect for space-restricted areas. They allow the use of larger-diameter hollow shafts that can hold air and hydraulic lines, electrical wiring, and other components, resulting in neater, more efficient system design.

All of these bearings are open bearings, which means they run cool and are easy to lubricate. They're made to ABEC-1F dimensional tolerance standards. Temperature range is –65° to +250° F. Bearings also meet ABMA standard 26.2.

Note: Maximum rpm listed is for radial, thrust, or combined loads and is based on lubrication with grease.

For Shaft Dia.	OD	Wd.	Dynamic Load Capacity Radial, lbs.	Thrust, lbs.	Moment, in.-lbs.	Max. rpm		Each
2″	2½″	¼″	514	790	434	1500	6656K11	$201.32
2″	2⅝″	5/16″	758	1130	658	1500	6656K19	234.21
2½″	3″	¼″	538	910	601	1200	6656K12	210.53
2½″	3⅛″	5/16″	848	1290	895	1200	6656K21	240.26
3″	3½″	¼″	643	1010	785	833	6656K13	227.89
3″	3⅝″	5/16″	933	1440	1159	1000	6656K22	264.21
3½″	4″	¼″	701	1110	986	714	6656K14	248.16
3½″	4⅛″	5/16″	1014	1590	1450	714	6656K23	276.32
4″	4½″	¼″	756	1210	1205	625	6656K15	273.42
4″	4⅝″	5/16″	1091	1720	1764	625	6656K24	293.68
5″	5½″	¼″	859	1400	1693	500	6656K16	459.76
5″	5⅝″	5/16″	1236	1980	2463	500	6656K25	510.49
6″	6½″	¼″	955	1570	2240	333	6656K17	496.10
6″	6⅝″	5/16″	1371	2220	3247	416	6656K26	529.51
7″	7½″	¼″	1046	1730	2844	285	6656K18	550.00
8″	8⅝″	5/16″	1618	2670	5045	250	6656K27	657.56

High-Precision One-Way Locking Steel Ball Bearings—ABEC-3

Also called ball bearing clutches, these high-precision bearings have internal locking elements (sprags) that lock to transmit torque in one direction while they turn freely in the other direction. Superb for indexing, overrunning, and backstopping applications.

All of these bearings are shielded (unless noted), which means they have shields that block out dirt. They are made to ABEC-3 dimensional tolerance standards and come filled with grease. You can use them as drop-ins for popular-sized ball bearings. Temperature range is –40° to +175° F.

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Torque, ft.-lbs.	Dynamic Load Cap., lbs.	Max. rpm		Each
8	8	22	9	1.8	740	15,000	4752N1●	$89.64
6201	12	32	10	6.9	1,370	10,000	4752N2	99.74
6202	15	35	11	19	1,350	9,400	4752N3	92.73
6203	17	40	12	25	1,650	8,200	4752N4	95.82
6204	20	47	14	48	2,250	6,800	4752N5	97.36
6205	25	52	15	59	2,500	5,600	4752N6	111.27
6206	30	62	16	125	3,400	4,000	4752N7	119.00
6207	35	72	17	207	2,835	3,600	4752N8	128.27
40	40	80	22	240	3,497	3,000	4752N9	162.27

● Bearing has one shielded side and one sealed side.

Dual-Load Angular-Contact Steel Ball Bearings—ABEC Rated

The 40° contact angle of these ball bearings enables them to accept combined radial (perpendicular to the shaft) and thrust (parallel to the shaft) loads. They handle relatively high speeds and have a polyamide ball cage.

Open bearings run cool and are easy to lubricate. They meet high-precision ABEC-3 dimensional tolerance standards. Temperature range is –40° to +250° F. ***Double-sealed bearings*** have rubber seals that block out dirt, preserve lubricants, and reduce noise. They meet ABEC-1 dimensional tolerance standards. Temperature range is –22° to +230° F.

Open

Double Sealed

Open

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Max. rpm		Each
7200	10	30	9	1,580	30,000	6680K11	$28.12
7201	12	32	10	1,710	26,000	6680K12	28.63
7202	15	35	11	1,990	24,000	6680K13	24.40
7203	17	40	12	2,470	22,000	6680K14	25.55
7204	20	47	14	2,990	19,000	6680K15	36.98
7205	25	52	15	3,510	17,000	6680K16	56.89
7206	30	62	16	5,400	14,000	6680K17	66.17
7207	35	72	17	6,970	12,000	6680K18	68.26
7208	40	80	18	8,210	11,000	6680K19	84.11
7209	45	85	19	8,540	10,000	6680K21	82.55
7210	50	90	20	8,990	9,000	6680K22	102.26
7301	12	37	12	2,400	24,000	6680K23	40.24
7302	15	42	13	2,900	20,000	6680K24	41.00
7303	17	47	14	3,600	19,000	6680K25	41.96
7304	20	52	15	4,300	18,000	6680K26	70.04
7305	25	62	17	6,000	15,000	6680K27	74.29
7306	30	72	19	8,000	13,000	6680K28	93.40
7307	35	80	21	9,300	11,000	6680K29	104.89
7308	40	90	23	11,200	10,000	6680K31	119.94
7309	45	100	25	13,700	9,000	6680K32	148.28
7310	50	110	27	16,900	8,000	6680K33	153.60

Double Sealed

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Max. rpm		Each
7200	10	30	9	1,124	15,000	6680K34	$126.10
7201	12	32	10	1,562	14,000	6680K35	99.74
7202	15	35	11	1,798	12,000	6680K36	103.46
7203	17	40	12	2,248	11,000	6680K37	130.36
7204	20	47	14	3,012	9,000	6680K38	114.68
7205	25	52	15	3,282	8,000	6680K39	168.28
7206	30	62	16	4,586	6,300	6680K41	170.14
7207	35	72	17	6,069	5,600	6680K42	189.12
7208	40	80	18	7,193	5,000	6680K43	215.50
7302	15	42	13	2,967	11,000	6680K44	135.16
7303	17	47	14	3,664	9,500	6680K45	151.84
7304	20	52	15	4,271	8,500	6680K46	152.76
7305	25	62	17	5,845	7,000	6680K47	167.18
7306	30	72	19	7,418	6,000	6680K48	238.62
7308	40	90	23	11,240	4,500	6680K49	334.12

Miniature High-Precision Stainless Steel Ball Bearings—ABEC-5

Open

Double Shielded with Extended Inner Ring

Flanged Open

Made to tight tolerances, these bearings meet ABEC-5 dimensional tolerance standards and are sized just right for small spaces. All are quiet-running bearings that can handle radial (perpendicular to the shaft) loads in low-friction applications at low operating torque. They're made of Type 440C stainless steel for high strength and excellent corrosion resistance. All are lubricated. Temperature range is –65° to +250° F.

Open bearings run cool and are easy to lubricate. ***Double-shielded bearings*** have Type 300 series stainless steel shields that block out dirt. *Double-shielded bearings with extended inner ring* let you mate the inner ring with a shaft collar so the collar doesn't touch moving parts.

Flanged bearings are easy to install; the flange provides a stop for quick positioning.

Open and Double Shielded—Inch

For Shaft Dia.	OD	Dynamic Load Cap., lbs.	Max. rpm	OPEN Wd.	OPEN	OPEN Each	DOUBLE SHIELDED Wd.	Without Ring	Without Ring Each	With Extended Inner Ring	With Extended Inner Ring Each
0.04″	1/8″	22	140,000	0.047″	57155K339	$10.97	—	—	—	—	—
0.047″	5/32″	31	120,000	1/16″	57155K341	7.50	3/32″	57155K359	$7.72	57155K11	$8.97
0.055″	3/16″	52	110,000	5/64″	57155K342	6.23	0.109″	57155K361	7.87	57155K12	10.70
5/64″	1/4″	70	80,000	3/32″	57155K343	5.69	9/64″	57155K362	6.71	57155K379	7.97
3/32″	3/16″	31	95,000	1/16″	57155K344	6.72	3/32″	57155K363	7.25	57155K13	10.30
3/32″	5/16″	124	71,000	0.109″	57155K345	7.42	9/64″	57155K364	8.28	57155K381	7.45
1/8″	1/4″	64	80,000	3/32″	57155K346	5.05	0.109″	57155K365	5.12	57155K382	5.54
1/8″	5/16″	124	71,000	0.109″	57155K347	4.37	9/64″	57155K366	4.85	57155K383	6.42
1/8″	3/8″	144	63,000	0.109″	57155K348	5.87	9/64″	57155K367	4.75	57155K14	7.65
1/8″	3/8″	144	67,000	5/32″	57155K349	5.19	5/32″	57155K368	5.22	—	—
1/8″	1/2″	144	63,000	—	—	—	0.172″	57155K369	7.88	—	—
5/32″	5/16″	81	63,000	0.109″	57155K351	4.98	1/8″	57155K371	6.97	57155K15	7.28
3/16″	5/16″	81	63,000	0.109″	57155K352	6.10	1/8″	57155K372	5.23	57155K16	7.35
3/16″	3/8″	160	60,000	1/8″	57155K353	4.06	1/8″	57155K373	5.10	57155K384	6.33
3/16″	1/2″	293	50,000	5/32″	57155K354	4.92	0.196″	57155K374	5.38	57155K385	5.90
1/4″	3/8″	84	56,000	1/8″	57155K355	6.00	1/8″	57155K375	5.28	57155K386	9.25
1/4″	1/2″	243	50,000	1/8″	57155K356	4.98	3/16″	57155K376	5.10	57155K387	5.21
1/4″	5/8″	335	45,000	0.196″	57155K357	5.03	0.196″	57155K377	4.63	57155K388	4.78
5/16″	1/2″	122	48,000	5/32″	57155K358	6.20	5/32″	57155K378	6.43	57155K389	6.38

Double Shielded—Metric

For Shaft Dia., mm	OD, mm	Wd., mm	Dyn. Load Cap., lbs.	Max. rpm		Each
0.6	2	0.8	11	—	2396K1★	$60.00
2	5	2.5	37	100,000	7804K119	5.79
2	6	3	74	90,000	7804K121	6.05
3	6	2.5	46	80,000	7804K124	6.79
3	7	3	70	75,000	7804K125	7.41
3	8	4	125	67,000	7804K126	7.72
3	10	4	141	56,000	7804K128	7.18
4	9	0.79	22	—	2396K2★	21.60
4	10	4	132	56,000	7804K1	6.18
4	11	4	216	53,000	7804K101	6.38
4	12	4	216	53,000	7804K102	6.28
4	13	5	293	48,000	7804K103	6.34
5	8	2.5	68	63,000	7804K104	6.08
5	9	3	97	60,000	7804K105	$7.23
5	10	4	97	60,000	7804K106	6.51
5	11	4	160	53,000	7804K107	6.34
5	13	4	242	50,000	7804K108	5.77
5	14	5	297	48,000	7804K109	7.23
6	10	3	112	53,000	7804K111	6.64
6	12	4	160	50,000	7804K112	7.67
6	13	5	242	48,000	7804K113	5.54
7	14	5	264	45,000	7804K114	7.23
8	12	3.5	123	48,000	7804K115	7.21
8	14	4	182	45,000	7804K116	6.57
8	16	5	282	43,000	7804K117	6.13
9	17	5	299	43,000	7804K118	7.41

★ Open on both ends.

Flanged Open and Double Shielded—Inch

For Shaft Dia.	OD	Flange OD	Dynamic Load Cap., lbs.	Max. rpm	OPEN Wd.	OPEN Flange Thick.	OPEN	OPEN Each	DOUBLE SHIELDED Wd.	Flange Thick.	Without Ring	Without Ring Each	With Extended Inner Ring	With Extended Inner Ring Each
0.047″	5/32″	0.203″	31	120,000	1/16″	0.01″	57155K201	$9.97	3/32″	0.03″	57155K307	$8.44	57155K18	$10.82
5/64″	1/4″	0.296″	70	80,000	3/32″	0.02″	57155K202	7.87	9/64″	0.03″	57155K309	8.42	57155K326	9.45
3/32″	3/16″	0.234″	31	95,000	1/16″	0.02″	57155K203	7.58	3/32″	0.03″	57155K311	7.03	57155K327	8.13
3/32″	5/16″	0.359″	124	71,000	0.109″	0.02″	57155K204	7.31	9/64″	0.03″	57155K312	8.32	57155K328	9.48
1/8″	1/4″	0.296″	64	80,000	3/32″	0.02″	57155K205	5.71	0.109″	0.03″	57155K313	5.67	57155K329	7.80
1/8″	5/16″	0.359″	124	71,000	0.109″	0.02″	57155K206	5.27	9/64″	0.03″	57155K314	6.28	57155K331	7.45
1/8″	3/8″	0.422″	144	63,000	—	—	—	—	9/64″	0.03″	57155K315	7.08	57155K332	7.80
1/8″	3/8″	0.44″	144	67,000	5/32″	0.03″	57155K207	6.33	5/32″	0.03″	57155K316	5.21	—	—
5/32″	5/16″	0.359″	81	63,000	0.109″	0.02″	57155K208	7.41	1/8″	0.04″	57155K317	7.65	57155K2	10.03
3/16″	5/16″	0.359″	81	63,000	0.109″	0.02″	57155K209	5.98	1/8″	0.04″	57155K318	6.35	57155K334	6.93
3/16″	3/8″	0.422″	160	60,000	1/8″	0.02″	57155K301	6.97	1/8″	0.03″	57155K319	4.78	57155K335	7.50
3/16″	1/2″	0.565″	293	50,000	5/32″	0.04″	57155K302	5.00	0.196″	0.04″	57155K321	6.38	—	—
1/4″	3/8″	0.422″	84	56,000	1/8″	0.02″	57155K303	6.38	1/8″	0.04″	57155K322	7.60	57155K336	7.00
1/4″	1/2″	0.547″	243	50,000	1/8″	0.02″	57155K304	5.62	3/16″	0.05″	57155K323	5.70	57155K337	7.00
1/4″	5/8″	0.69″	335	45,000	0.196″	0.04″	57155K305	4.96	0.196″	0.04″	57155K324	5.85	—	—
5/16″	1/2″	0.547″	122	48,000	5/32″	0.03″	57155K306	6.88	5/32″	0.03″	57155K325	6.88	57155K338	8.72

Flanged Double Shielded—Metric

For Shaft Dia., mm	OD, mm	Wd., mm	Flange OD, mm	Flange Thick., mm	Dynamic Load Cap., lbs.	Max. rpm		Each
4	10	4	11.6	0.8	132	56,000	7804K129	$7.46
5	9	3	10.2	0.6	97	60,000	7804K135	7.66
5	10	4	11.6	0.8	97	60,000	7804K136	7.38
5	13	4	15	1	242	50,000	7804K138	8.26
6	10	3	11.2	0.6	112	53,000	7804K141	10.82
6	12	4	13.6	0.8	160	50,000	7804K142	7.49
6	13	5	15	1.1	242	48,000	7804K143	$7.49
8	12	3.5	13.6	0.8	123	48,000	7804K145	7.77
8	14	4	15.6	0.8	182	45,000	7804K146	7.64
8	16	5	18	1.1	282	43,000	7804K147	7.15
9	17	5	19	1.1	299	43,000	7804K148	9.46

For information about ball and roller bearings, see page 1141.

Ultra-Precision Miniature Stainless Steel Ball Bearings—ABEC-7

These tiny ball bearings are made to ABEC-7 dimensional tolerance standards and are the most precise miniature bearings we offer. All are quiet-running bearings. They can handle radial (perpendicular to the shaft) loads and are best suited for low-torque, high-speed applications. All are made of Type 440C stainless steel for high strength and corrosion resistance.

Open bearings run cool and are easy to lubricate. Temperature range is –13° to +248° F. ***Double-shielded bearings*** have steel shields that block out dirt. Temperature range is –65° to +250° F. They come greased.

Flanged bearings are easy to install; the flange provides a stop for quick positioning. They come greased.

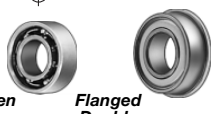

Open *Flanged Double Shielded*

Open and Double Shielded

For Shaft Dia.	OD	Open Wd.	Open Dynamic Load Cap., lbs.	Open Max. rpm		Open Each	Double Shielded Wd.	Double Shielded Dynamic Load Cap., lbs.	Double Shielded Max. rpm		Double Shielded Each
0.04″	1/8″	0.047″	6	100,000	3826T1	$22.07	—	—	—	—	—
0.047″	5/32″	1/16″	14	100,000	3826T2	19.73	3/32″	31	120,000	3759T21	$13.22
0.055″	3/16″	5/64″	24	100,000	3826T3	15.22	0.109″	52	110,000	3759T22	12.62
5/64″	1/4″	3/32″	28	100,000	3826T4	13.82	9/64″	70	80,000	3759T23	13.33
3/32″	3/16″	1/16″	17	100,000	3826T5	13.82	3/32″	31	95,000	3759T24	12.50
3/32″	5/16″	0.109″	60	74,000	3826T6	13.95	9/64″	124	71,000	3759T25	13.09
1/8″	1/4″	3/32″	31	84,000	3826T7	13.82	0.109″	64	80,000	3759T26	10.48
1/8″	5/16″	0.109″	60	74,000	3826T8	13.03	9/64″	124	71,000	3759T27	9.88
1/8″	3/8″	5/32″	70	61,000	3826T9	12.73	9/64″	144	63,000	3759T28	13.24
1/8″	3/8″	—	—	—	—	—	5/32″	144	67,000	3759T29	10.19
1/8″	1/2″	—	—	—	—	—	0.172″	144	63,000	3759T31	13.33
5/32″	5/16″	0.109″	43	68,000	3826T11	15.35	1/8″	81	63,000	3759T32	11.43
3/16″	5/16″	0.109″	34	63,000	3826T12	17.93	1/8″	81	63,000	3759T33	11.67
3/16″	3/8″	1/8″	78	56,000	3826T13	16.15	1/8″	160	60,000	3759T34	9.43
3/16″	1/2″	5/32″	178	45,000	3826T14	15.92	0.196″	293	50,000	3759T35	9.61
1/4″	3/8″	1/8″	38	50,000	3826T15	19.20	1/8″	84	56,000	3759T36	12.02
1/4″	1/2″	1/8″	125	42,000	3826T16	17.05	3/16″	243	50,000	3759T37	9.43
1/4″	5/8″	0.196″	198	36,000	3826T17	19.32	0.196″	335	45,000	3759T38	10.00
5/16″	1/2″	5/32″	96	39,000	3826T18	21.22	5/32″	122	48,000	3759T39	13.09

Flanged Open

For Shaft Dia.	OD	Wd.	Flange OD	Flange Thick.	Dynamic Load Cap., lbs.	Max. rpm		Each
0.047″	5/32″	1/16″	0.203″	0.01″	14	100,000	4259T1	$20.28
0.055″	3/16″	5/64″	0.234″	0.02″	24	100,000	4259T2	18.30
5/64″	1/4″	3/32″	0.296″	0.02″	28	100,000	4259T3	18.37
3/32″	3/16″	1/16″	0.234″	0.02″	17	100,000	4259T4	15.62
3/32″	5/16″	0.109″	0.359″	0.02″	60	74,000	4259T5	18.37
1/8″	1/4″	3/32″	0.296″	0.02″	31	84,000	4259T6	15.62
1/8″	5/16″	0.109″	0.359″	0.02″	60	74,000	4259T7	15.53
1/8″	3/8″	5/32″	0.44″	0.03″	70	61,000	4259T8	15.22
5/32″	5/16″	0.109″	0.359″	0.02″	43	68,000	4259T9	17.05
3/16″	5/16″	0.109″	0.359″	0.02″	34	63,000	4259T11	18.40
3/16″	3/8″	1/8″	0.422″	0.02″	78	56,000	4259T12	17.02
3/16″	1/2″	0.196″	0.565″	0.04″	178	45,000	4259T13	21.15
1/4″	3/8″	1/8″	0.422″	0.02″	38	50,000	4259T14	20.15
1/4″	1/2″	1/8″	0.547″	0.02″	125	42,000	4259T15	18.65
1/4″	5/8″	0.196″	0.69″	0.04″	198	36,000	4259T16	23.48
5/16″	1/2″	5/32″	0.547″	0.03″	96	39,000	4259T17	24.05

Flanged Double Shielded

For Shaft Dia.	OD	Wd.	Flange OD	Flange Thick.	Dynamic Load Cap., lbs.	Max. rpm		Each
0.047″	5/32″	3/32″	0.203″	0.03″	31	120,000	4262T1	$15.36
0.055″	3/16″	0.109″	0.234″	0.03″	52	110,000	4262T2	14.88
5/64″	1/4″	9/64″	0.296″	0.03″	70	80,000	4262T3	14.00
3/32″	3/16″	3/32″	0.234″	0.03″	31	95,000	4262T4	13.21
3/32″	5/16″	9/64″	0.359″	0.03″	124	71,000	4262T5	12.76
1/8″	1/4″	0.109″	0.296″	0.03″	64	80,000	4262T6	13.53
1/8″	5/16″	9/64″	0.359″	0.03″	124	71,000	4262T7	12.05
1/8″	3/8″	5/32″	0.44″	0.03″	144	67,000	4262T9	12.04
5/32″	5/16″	1/8″	0.359″	0.04″	81	63,000	4262T11	11.19
3/16″	5/16″	1/8″	0.359″	0.04″	81	63,000	4262T12	16.08
3/16″	3/8″	1/8″	0.422″	0.03″	160	60,000	4262T13	11.15
3/16″	1/2″	0.196″	0.565″	0.04″	293	50,000	4262T14	11.55
1/4″	3/8″	1/8″	0.422″	0.04″	84	56,000	4262T15	13.81
1/4″	1/2″	3/16″	0.547″	0.05″	243	50,000	4262T16	11.55
1/4″	5/8″	0.196″	0.69″	0.04″	335	45,000	4262T17	11.55
5/16″	1/2″	5/32″	0.547″	0.03″	122	48,000	4262T18	14.76

Ultra-Precision Angular-Contact Steel Ball Bearings—ABEC-7

Also known as machine tool spindle bearings, these 15° contact angle bearings are made to super-tight ABEC-7 dimensional tolerance standards and can handle very high speeds. They are often mounted in pairs (external surfaces are precision finished) for increased load-handling capabilities. All bearings are open bearings, which means they run cool and are easy to lubricate. They have a phenolic ball cage. Maximum temperature is 140° F.

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Max. rpm		Each
7001	12	28	8	1,010	60,000	2385K41	$234.64
7002	15	32	9	1,170	50,000	2385K42	202.23
7003	17	35	10	1,520	48,000	2385K43	209.70
7004	20	42	12	1,960	38,000	2385K44	224.16
7005	25	47	12	2,150	34,000	2385K45	264.48
7006	30	55	13	3,220	28,000	2385K46	$272.75
7007	35	62	14	3,510	22,000	2385K47	322.32
7008	40	68	15	3,780	19,000	2385K48	334.38
7009	45	75	16	6,430	18,000	2385K49	389.32
7010	50	80	16	6,650	17,000	2385K51	399.48

High-Load Steel Spherical Roller Bearings

Two rows of spherically shaped rollers give these bearings dynamic load carrying capabilities up to four times that of comparably sized ball bearings. They handle heavy shock (suddenly applied) loads and moderate thrust (parallel to the shaft) loads. All bearings are open bearings, which means they run cool. They have a hole in the outer ring for easy lubrication. Perfect for metal milling machinery, mining and oil field equipment, pumps, and compressors. Maximum temperature is 390° F.

Bearing No.	For Shaft Dia., mm	OD, mm	Wd., mm	Dynamic Load Cap., lbs.	Max. rpm		Each
22205	25	52	18	8,430	7,100	2721T1	$76.79
22206	30	62	20	11,240	6,000	2721T2	85.55
22207	35	72	23	15,511	5,300	2721T3	88.10
22208	40	80	23	20,345	6,000	2721T4	111.29
22209	45	85	23	21,244	5,300	2721T5	118.83
22211	55	100	25	26,752	4,500	2721T7	140.67
22212	60	110	28	31,922	4,300	2721T8	156.19
22213	65	120	31	39,791	3,800	2721T9	167.33
22214	70	125	31	40,465	3,600	2721T11	$183.48
22215	75	130	31	42,713	3,400	2721T12	198.62
22216	80	140	33	47,659	3,200	2721T13	232.91
22217	85	150	36	56,202	3,000	2721T14	272.07
22218	90	160	40	64,969	2,800	2721T15	311.41
22219	95	170	43	74,186	2,600	2721T16	345.48
22220	100	180	46	82,055	2,400	2721T17	407.50
22222	110	200	53	109,032	2,200	2721T18	518.64

Steel Tapered-Roller Bearings

Inner Ring and Roller Assembly

Outer Ring

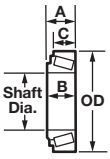

Complete Bearing

Also known as Timken bearings, these tapered-roller bearings handle both radial (perpendicular to the shaft) and thrust (parallel to the shaft) loads, so you can use them virtually anywhere wheels and shafts turn. They have a two-piece design, which offers easy assembly and more accurate adjustments. A complete bearing consists of an inner ring and roller assembly plus an outer ring (sold separately). For best results, replace the outer ring whenever you change the inner ring and roller assembly. All components are made to Class 2 tolerances. Temperature range is –65° to +200° F.

		Inner Ring and Roller Assemblies							Outer Rings			
For Shaft Dia.	OD	Bearing No.	Roller Assembly Wd. (A)	Inner Ring Wd. (B)	Dynamic Load Cap., lbs. Radial	Dynamic Load Cap., lbs. Thrust		Each	Ring No.	Outer Ring Wd. (C)		Each
1/2″	1 3/8″	A4050	7/16″	7/16″	710	550	23915T11	$33.68	A4138	11/32″	23915T71	$13.53
5/8″	1 11/16″	11590	9/16″	9/16″	1010	1220	5709K11	30.00	11520	3/8″	5709K51	12.24
11/16″	1 37/64″	LM11749	35/64″	37/64″	1340	655	5709K12	13.47	LM11710	27/64″	5709K52	6.22
3/4″	1 25/32″	LM11949	39/64″	21/32″	1780	917	5709K13	10.78	LM11910	15/32″	5709K53	5.80
3/4″	1 15/16″	09067	45/64″	3/4″	2310	1050	5709K14	33.33	09195	9/16″	5709K54	11.47
55/64″	1 25/32″	LM12749	39/64″	21/32″	1760	921	5709K15	12.89	LM12710	15/32″	5709K55	5.53
63/64″	1 31/32″	07097	17/32″	9/16″	1570	1080	5709K16	26.43	07196	3/8″	5709K56	9.16
1″	1 31/32″	07100	17/32″	9/16″	1570	1080	5709K17	21.74	07196	3/8″	5709K56	9.16
1″	1 63/64″	L44643	9/16″	37/64″	1620	1040	5709K18	14.23	L44610	27/64″	5709K57	5.98
1″	2 7/16″	15100	3/4″	13/16″	2730	1640	5709K19	26.92	15243	9/16″	5709K58	17.03
1 1/16″	1 63/64″	L44649	9/16″	37/64″	1620	1040	5709K21	14.38	L44610	27/64″	5709K57	5.98
1 1/8″	2 7/16″	15113	3/4″	13/16″	2730	1640	5709K22	26.12	15245	9/16″	5709K59	8.16
1 3/16″	2 7/16″	15118	13/16″	13/16″	2730	1640	5709K23	21.82	15243	9/16″	5709K58	17.03
1 1/4″	2 21/64″	LM67048	5/8″	21/32″	2130	1500	5709K24	13.29	LM67010	15/32″	5709K61	6.42
1 1/4″	2 23/32″	14125A	25/32″	49/64″	2950	1930	5709K25	25.04	14276	5/8″	5709K62	9.91
1 5/16″	2 11/16″	M88048	7/8″	7/8″	3470	3250	5709K26	19.76	M88010	11/16″	5709K63	9.82
1 1/2″	3″	2788	15/16″	1 1/64″	4690	2430	5709K27	29.18	2720	3/4″	5709K64	13.93
1 3/4″	3 17/64″	25580	15/16″	1″	4880	2800	5709K28	27.73	25520	3/4″	5709K65	14.02
2″	3 1/4″	LM104949	27/32″	7/8″	4390	2290	5709K29	22.98	LM104911	21/32″	5709K66	12.49
2″	3 1/2″	368A	13/16″	7/8″	4640	2540	5709K31	34.40	362A	21/32″	5709K67	19.38
2″	4 1/8″	45284	1 3/16″	1 7/32″	8270	4710	5709K32	52.58	45220	15/16″	5709K68	27.94
2 1/4″	3 13/16″	387A	53/64″	55/64″	4910	2980	5709K33	30.00	382A	5/8″	5709K69	17.64
2 3/4″	4 7/16″	29675	1″	1″	5960	4980	5709K35	51.70	29620	3/4″	5709K72	31.83
3″	5″	42687	1 3/16″	1 7/32″	8690	6230	5709K36	80.26	42620	7/8″	5709K73	45.72
3 1/4″	5 1/4″	47686	1 5/16″	1 5/16″	9750	6750	5709K37	65.52	47620	1 1/32″	5709K74	46.82

Corrosion-Resistant Steel Tapered-Roller Bearings

Inner Ring and Roller Assembly Shown with Included Outer Ring

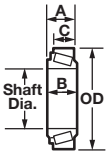

Complete Bearing

Substantially more corrosion resistant than uncoated steel bearings, these bearings have a zinc-alloy coating that guards against corrosion caused by moisture. Also known as Timken bearings, these tapered-roller bearings handle both radial (perpendicular to the shaft) and thrust (parallel to the shaft) loads, so you can use them virtually anywhere wheels and shafts turn. They have a two-piece design, which offers easy assembly and more accurate adjustments. Each bearing consists of an inner ring and roller assembly plus an outer ring (sold as a complete bearing). All components are made to Class 2 tolerances. Temperature range is –65° to +200° F.

Bearing No.	For Shaft Dia.	OD	Roller Assembly Wd. (A)	Inner Ring Wd. (B)	Outer Ring Wd. (C)	Dynamic Load Cap., lbs. Radial	Dynamic Load Cap., lbs. Thrust	Ring No.		Each
LM11949	3/4″	1.781″	0.61″	0.655″	0.475″	1780	917	LM11910	6678K11	$43.84
L44643	1″	1.98″	0.56″	0.58″	0.42″	1620	1040	L44610	6678K12	45.58
L44649	1 1/16″	1.98″	0.56″	0.58″	0.42″	1620	1040	L44610	6678K13	46.98
LM67048	1 1/4″	2.328″	5/8″	0.66″	0.465″	2130	1500	LM67010	6678K14	42.10

Metric Steel Tapered-Roller Bearings

Inner Ring and Roller Assembly Shown with Included Outer Ring

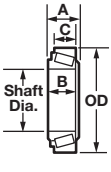

Complete Bearing

These bearings are designed to meet ISO 355 International Metric Standards. Also known as Timken bearings, tapered-roller bearings handle both radial (perpendicular to the shaft) and thrust (parallel to the shaft) loads, so you can use them virtually anywhere wheels and shafts turn. They have a two-piece design, which offers easy assembly and more accurate adjustments. Each bearing consists of an inner ring and roller assembly plus an outer ring (sold as a complete bearing). Temperature range is –65° to +200° F.

Bearing No.	For Shaft Dia., mm	OD, mm	Roller Assembly Wd. (A), mm	Inner Ring Wd. (B), mm	Outer Ring Wd. (C), mm	Dynamic Load Cap., lbs. Radial	Dynamic Load Cap., lbs. Thrust		Each
30302	15	42	14.25	13	11	1400	685	6677K51	$33.01
30203	17	40	13.25	12	11	1150	680	6677K52	28.13
30204M	20	47	15.25	14	12	1790	1060	6677K54	27.41
30304	20	52	16.25	15	13	2080	1070	6677K55	31.07
30205M	25	52	16.25	15	13	1840	1180	6677K57	27.59
32006X	30	55	17	17	13	2120	1560	6677K58	34.75
30206M	30	62	17.25	16	14	2360	1520	6677K59	32.06
32007X	35	62	18	18	14	2570	2000	6677K61	59.36
30207M	35	72	18.25	17	15	3270	2100	6677K62	38.51
32008XM	40	68	19	19	14.5	3000	1940	6677K63	34.38

For information about roller bearings, see page 1141.

Steel Needle-Roller Bearings

Needle rollers provide increased load capacity, and without an inner race, they're extremely thin and economical. Also known as drawn-cup bearings, the shell is drawn out to form a lip that holds the bearing together. A large grease reservoir means they'll need lubrication less often. Use these bearings on hardened and ground shafts. All are slightly oversized for a snug fit; press fit to install. Temperature range is –13° to +250° F for open bearings; –4° to +212° F for sealed bearings.

Open bearings run cool and are easy to lubricate. ***Single-sealed bearings*** have a rubber seal on one side that blocks out dirt and preserves lubricants. ***Double-sealed bearings*** have rubber seals on both sides that block out dirt and preserve lubricants. They come greased.

Single Sealed

For Shaft Dia.	OD	Dyn. Load Cap., lbs.	Open Max. rpm	Open Wd.	Open Each	Single Sealed Max. rpm	Single Sealed Wd.	Single Sealed Each	Double Sealed Max. rpm	Double Sealed Wd.	Double Sealed Each
Inch											
1/4"	7/16"	570	44,000	5/16"	5905K21	—	—	—	27,000	7/16"	5905K131 $11.14
3/8"	9/16"	1,300	29,500	1/2"	5905K22	20,000	9/16"	5905K122 $7.62	20,000	5/8"	5905K132 9.81
1/2"	11/16"	1,550	22,000	1/2"	5905K23	15,000	9/16"	5905K123 7.93	15,000	5/8"	5905K133 10.17
5/8"	13/16"	2,330	17,600	5/8"	5905K25	13,000	11/16"	5905K124 8.34	13,000	3/4"	5905K134 10.78
3/4"	1"	2,210	14,700	1/2"	5905K26	10,000	9/16"	5905K125 8.42	10,000	5/8"	5905K135 10.78
3/4"	1"	2,850	14,700	5/8"	5905K27	10,000	11/16"	5905K126 8.66	10,000	3/4"	5905K136 10.86
1"	1 1/4"	4,050	11,000	3/4"	5905K28	8,000	7/8"	5905K127 10.93	8,000	1"	5905K137 14.00
1 1/4"	1 1/2"	4,750	8,800	3/4"	5905K29	—	—	—	—	—	—
Metric											
8 mm	12 mm	620	28,000	8 mm	5905K73	20,000	10 mm	5905K84 9.59	20,000	12 mm	5905K95 14.45
12 mm	18 mm	1,460	19,000	12 mm	5905K74	14,000	14 mm	5905K85 7.79	14,000	16 mm	5905K96 12.53
14 mm	20 mm	1,600	16,000	12 mm	5905K75	12,000	14 mm	5905K86 10.03	12,000	16 mm	5905K97 12.81
16 mm	22 mm	1,710	15,000	12 mm	5905K76	11,000	14 mm	5905K87 9.57	11,000	16 mm	5905K98 14.07
20 mm	26 mm	2,850	12,000	16 mm	5905K77	8,500	18 mm	5905K88 9.62	8,500	20 mm	5905K99 14.45

High-Precision Steel Needle-Roller Bearings

Made of steel and precision ground, these bearings give you higher load capacity, speed, and accuracy than the Steel Needle-Roller Bearings. They're for use on hardened and ground shafts. If your shaft is not hardened and ground, use these bearings with the optional liners (sold separately). Just insert a liner into the bearing and press fit onto a shaft. All bearings have a lubrication groove and hole, except for 2423K21 and 2423K22.

Open bearings run cool and are easy to lubricate. Temperature range is –4° to +250° F. ***Double-sealed bearings*** have rubber seals that block out dirt and preserve lubricants. Temperature range is –30° to +250° F. ***Optional liners*** are made of hardened and ground steel. *Inch sizes* have a lubrication hole; *metric sizes* do not, except for 2423K48.

Open

Double Sealed

Optional Liner

For Shaft Dia.	OD	Wd.	Dynamic Load Capacity, lbs.	Max. rpm	Bearings	Each	Optional Liners For Shaft Dia.	Optional Liners	Each
Open—*Inch*									
5/8"	1 1/8"	3/4"	3,900	21,000	7929K21	$13.65	3/8"	7929K1	$11.76
3/4"	1 1/4"	3/4"	4,500	17,000	7929K41	14.70	1/2"	7929K2	12.16
7/8"	1 3/8"	3/4"	4,700	15,000	7929K42	15.22	5/8"	7929K3	12.22
1"	1 1/2"	3/4"	5,200	13,000	7929K43	15.36	3/4"	7929K4	14.28
1 1/8"	1 5/8"	1"	7,600	12,000	7929K44	16.71	7/8"	7929K5	11.80
1 1/4"	1 3/4"	1"	7,900	11,000	7929K45	20.45	1"	7929K6	12.64
1 3/8"	1 7/8"	1"	8,400	10,000	7929K46	21.92	1 1/8"	7929K7	15.86
1 1/2"	2 1/16"	1"	8,100	9,000	7929K47	20.37	1 1/4"	7929K8	14.51
1 3/4"	2 5/16"	1"	9,900	7,600	7929K48	24.82	1 1/2"	7929K9	16.99
Open—*Metric*									
8 mm	15 mm	12 mm	890	29,000	2423K21	14.15	5 mm	2423K41	5.47
10 mm	17 mm	12 mm	1,070	27,000	2423K22	15.57	7 mm	2423K42	6.86
12 mm	19 mm	16 mm	2,020	25,000	2423K23	17.41	9 mm	2423K43	8.01
14 mm	22 mm	16 mm	2,270	24,000	2423K24	17.84	10 mm	2423K44	8.13
18 mm	26 mm	16 mm	2,800	21,000	2423K26	19.71	15 mm	2423K46	8.48
25 mm	33 mm	16 mm	3,350	17,000	2423K28	25.34	20 mm	2423K48	9.42
30 mm	40 mm	20 mm	5,100	14,000	2423K29	30.99	25 mm	2423K49	14.07
Double Sealed—*Inch*									
5/8"	1 1/8"	1"	4,320	6,100	8258K21	21.65	3/8"	8258K31	9.97
3/4"	1 1/4"	1"	4,990	5,100	8258K22	21.78	1/2"	8258K32	9.49
7/8"	1 3/8"	1"	5,280	4,400	8258K23	22.80	5/8"	8258K33	9.49
1"	1 1/2"	1"	5,840	3,800	8258K24	23.05	3/4"	8258K34	11.18
1 1/8"	1 5/8"	1 1/4"	8,720	3,400	8258K25	24.92	7/8"	8258K35	11.57
1 1/4"	1 3/4"	1 1/4"	9,020	3,050	8258K26	27.02	1"	8258K36	13.46
1 1/2"	2 1/16"	1 1/4"	10,300	2,550	8258K28	29.45	1 1/4"	8258K38	14.39

One-Way Locking Steel Needle-Roller Bearings

Also known as drawn-cup roller clutches, these bearings roll freely in one direction, but they lock to transmit torque when the rotation of the shaft is reversed. An arrow on the lip indicates the rotational direction that locks the bearings. These bearings do not support radial (perpendicular to the shaft) loads. If radial loads are present, use these bearings with Steel Needle-Roller Bearings. All are for use on hardened and ground shafts. They have a steel shell and a cage to hold the rollers in place.

Inch—*Bearings with plastic ball cage* have a maximum temperature of 200° F. *Bearings with glass-fiber reinforced nylon ball cage* are longer lasting and have a maximum temperature of 250° F. ***Metric—***Temperature range is 14° to 158° F.

Inch

For Shaft Dia.	OD	Wd.	Torque, ft.-lbs.	Max. rpm	Plastic Ball Cage	Each	Reinforced Nylon Ball Cage	Each
1/8"	9/32"	1/4"	0.238	34,000	2489K21	$13.04	—	—
1/4"	7/16"	1/2"	1.492	20,000	2489K22	9.96	2489K28	$12.72
3/8"	5/8"	1/2"	4.017	18,000	2489K23	10.26	2489K29	21.30
1/2"	3/4"	1/2"	6.525	17,000	2489K24	10.40	2489K31	24.80
5/8"	7/8"	5/8"	12.417	14,000	2489K5	11.12	2489K12	27.88
3/4"	1"	5/8"	17.167	12,000	2489K6	12.80	2489K13	31.14
1"	1 5/16"	5/8"	36.583	8,700	2489K7	16.74	2489K14	38.40

Metric—Plastic Ball Cage

For Shaft Dia.	OD	Wd.	Torque, ft.-lbs.	Max. rpm	Each
6 mm	10 mm	12 mm	1.298	23,000	6392K41 $17.17
8 mm	12 mm	12 mm	2.323	17,000	6392K42 16.97
10 mm	14 mm	12 mm	3.909	14,000	6392K43 17.95
12 mm	18 mm	16 mm	8.998	11,000	6392K44 20.00
14 mm	20 mm	16 mm	12.759	9,500	6392K45 19.25
16 mm	22 mm	16 mm	15.12	8,500	6392K46 19.64
18 mm	24 mm	16 mm	17.775	7,500	6392K47 21.45
20 mm	26 mm	16 mm	21.02	7,000	6392K48 23.34
25 mm	32 mm	20 mm	48.679	5,500	6392K49 27.38
30 mm	37 mm	20 mm	66.38	4,500	6392K51 33.36
35 mm	42 mm	20 mm	89.245	3,900	6392K52 38.21

One-Piece Steel Thrust Ball Bearings

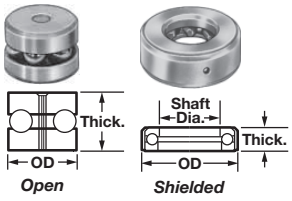

No need to mate cage assemblies and washers—these bearings are fastened together, so they're easy to handle and install. Great for heavy duty thrust (parallel to shaft) loads on pump valves, machine spindles, drilling heads, and rotary and index tables. All bearings are made of hardened steel. Raceways are grooved and machined. Temperature range is –40° to +250° F. *Note:* Dynamic load capacities listed are for thrust loads.

Open—These bearings run cool and are easy to lubricate. They have a unique design, which allows your shaft to sit on top of the bearing rather than being inserted through it. They also have oversized balls that run slower, which reduces friction and extends bearing life. Thick washers with deeply grooved raceways increase load carrying capacity. You can use these open bearings as miniature high-precision turntables that handle both heavy loads and speeds up to 1,500 rpm. Turntables can be bonded to a mounting plate or press-fit into a hole.

Shielded—A steel outer band holds these bearings together and acts as a shield, blocking out dirt and preserving lubricants. The band has an oil hole to facilitate lubrication. Without a ball cage, these bearings hold more balls than standard three-piece thrust bearings.

Open

OD	Thick.	Dynamic Load Cap., lbs.	Max. rpm		Each
3/8"	1/4"	405	1,500	7809K311	$56.80
1/2"	5/16"	700	1,500	7809K32	57.00
5/8"	7/16"	1,185	1,500	7809K33	37.02
11/16"	1/2"	1,345	1,500	7809K341	37.10
3/4"	9/16"	1,735	1,500	7809K351	37.70
13/16"	5/8"	2,155	1,500	7809K411	38.10
7/8"	11/16"	2,155	1,500	7809K421	41.20
15/16"	3/4"	2,625	1,500	7809K43	41.50
1"	3/4"	3,080	1,500	7809K44	42.90
1 1/8"	7/8"	3,670	1,500	7809K45	51.60
1 3/16"	15/16"	4,310	1,500	7809K51	52.20
1 7/16"	1 3/16"	5,715	1,500	7809K52	53.30
1 11/16"	1 1/4"	7,590	1,500	7809K53	62.80

Shielded

For Shaft Dia.	OD	Thick.	Dynamic Load Cap., lbs.	Max. rpm		Each
1/2"	1 7/32"	9/16"	3,850	7,000	60715K11	$16.19
5/8"	1 11/32"	9/16"	4,100	6,000	60715K12	17.16
3/4"	1 15/32"	9/16"	4,250	5,500	60715K13	17.17
7/8"	1 27/32"	5/8"	6,600	4,100	60715K14	19.89
1"	1 31/32"	5/8"	6,700	3,800	60715K15	20.26
1 1/8"	2 3/32"	5/8"	6,900	3,600	60715K16	22.60
1 1/4"	2 11/32"	5/8"	7,200	3,200	60715K27	23.46
1 3/8"	2 15/32"	5/8"	7,300	3,000	60715K28	28.27
1 1/2"	2 19/32"	5/8"	7,700	2,800	60715K29	28.35
1 5/8"	2 31/32"	13/16"	10,300	2,400	60715K31	38.19
1 3/4"	3 3/32"	13/16"	10,600	2,300	60715K32	38.00
1 7/8"	3 7/32"	13/16"	10,800	2,200	60715K33	44.69
2"	3 11/32"	13/16"	10,800	2,100	60715K34	46.67

Steel Thrust Ball Bearings

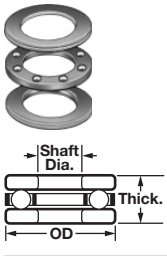

When you don't need high-precision machined bearings, these three-piece bearings are an economical option. Bearings include two washers and a nylon cage with balls. Maximum speed is 2500 rpm. Temperature range is –40° to +225° F. *Note:* Dynamic load capacities listed are for thrust (parallel to the shaft) loads.

Bearings with stainless steel washers are made of Type 410 stainless steel with Type 440C balls—great for corrosive environments.

Inch

For Shaft Dia.	OD	Thick.	Steel: Dyn. Load Cap., lbs.	Steel	Steel: Each	Stainless Steel: Dyn. Load Cap., lbs.	Stainless Steel	Stainless Steel: Each
1/8"	7/16"	0.193"	21	6655K11	$1.88	14	6655K31	$2.41
3/16"	1/2"	0.193"	22	6655K12	1.96	15	6655K32	2.61
1/4"	9/16"	0.193"	23	6655K13	2.06	16	6655K33	2.67
5/16"	5/8"	0.193"	24	6655K14	2.18	16	6655K34	2.75
3/8"	13/16"	0.249"	31	6655K15	2.39	21	6655K35	3.21
7/16"	7/8"	0.249"	33	6655K16	2.51	23	6655K36	3.41
1/2"	15/16"	0.249"	35	6655K17	2.63	24	6655K37	3.66
5/8"	1 1/8"	0.342"	44	6655K18	3.83	31	6655K38	4.96
3/4"	1 1/4"	0.342"	52	6655K19	4.80	36	6655K39	5.83
7/8"	1 3/8"	0.342"	58	6655K21	5.67	41	6655K41	6.87
1"	1 5/8"	0.437"	82	6655K22	7.08	57	6655K42	10.18
1 1/8"	1 3/4"	0.437"	90	6655K23	8.14	63	6655K43	11.67
1 1/4"	1 7/8"	0.437"	97	6655K24	9.10	68	6655K44	13.22
1 1/2"	2 1/8"	0.437"	93	6655K25	10.82	65	6655K45	14.94

Metric

For Shaft Dia., mm	OD, mm	Thick., mm	Steel: Dyn. Load Cap., lbs.	Steel	Steel: Each	Stainless Steel: Dyn. Load Cap., lbs.	Stainless Steel	Stainless Steel: Each
5	12	4.92	22	6655K51	$2.60	15	6655K71	$3.17
6	14	4.92	23	6655K52	2.64	16	6655K72	3.38
7	17	4.92	24	6655K53	2.72	16	6655K73	3.56
8	16	4.92	24	6655K54	2.79	16	6655K74	3.61
10	21	6.35	31	6655K55	3.10	21	6655K75	3.64
12	24	6.35	35	6655K56	3.19	24	6655K76	3.86
16	28	8.74	44	6655K57	3.90	31	6655K77	5.08
19	32	8.74	52	6655K58	4.85	36	6655K78	6.48
25	41	11.11	82	6655K59	6.88	57	6655K79	10.71
28	44	11.11	90	6655K61	7.84	63	6655K81	12.33

High-Performance Steel Thrust Ball Bearings

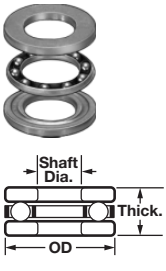

Count on superior performance from these bearings. Each three-piece bearing includes two washers and a ball cage. *Note:* Dynamic load capacities listed are for thrust (parallel to the shaft) loads.

Miniature—These tiny thrust bearings are great for space-restricted, low-friction applications. Washers are chrome-plated steel; ball cage is bronze. Temperature range is –65° to +250° F.

Standard—With grooved raceways and thicker construction, these hardened steel bearings handle greater loads than the miniature bearings above. They have a steel cage, except 6681K11, which has a nylon cage. Temperature range is –40° to +248° F.

Miniature

For Shaft Dia., mm	OD, mm	Thick., mm	Dynamic Load Cap., lbs.	Max. rpm		Each
3	8	3.5	130	12,000	7806K53	$9.86
4	9	4	160	12,000	7806K54	8.66
4	10	4	125	12,000	7806K55	8.66
5	12	4	140	12,000	7806K57	8.66
6	12	4.5	270	11,500	7806K58	8.66
6	14	5	280	11,500	7806K59	8.66
7	17	6	410	11,000	7806K62	9.48
8	16	5	600	10,000	7806K63	8.48
9	17	5	570	9,000	7806K64	8.48
9	20	7	520	8,000	7806K65	8.48

Standard

For Shaft Dia., mm	OD, mm	Thick., mm	Dynamic Load Cap., lbs.	Max. rpm		Each
10	26	12	2,630	11,000	6681K11	$18.83
12	28	12	2,110	9,500	6681K12	20.11
15	31	12	2,320	8,500	6681K13	26.33
18	35	12	3,350	7,500	6681K14	27.26
20	37	12	3,350	7,500	6681K15	27.43
25	45	14	5,010	5,500	6681K16	29.62
35	55	16	6,200	4,400	6681K17	29.64
40	60	16	5,690	4,000	6681K18	31.35
45	68	16	6,500	3,600	6681K19	43.31
50	74	18	8,300	3,200	6681K21	50.76
55	78	18	8,400	3,000	6681K22	56.71

Steel Thrust Needle-Roller Bearings

Because of the large contact area between the rollers and washers, these bearings are great for medium to heavy duty, low-friction jobs. Their compact, low-profile design works well in narrow spaces. A complete bearing consists of one cage assembly and two washers (sold separately). For an even lower profile, you can use cage assemblies without washers on material that is hardened to Rockwell C58-C64 with a surface finish of 16 microns.

All components are made of steel. Temperature range is –40° to +248° F for inch sizes; –4° to +248° F for metric sizes. *Note:* Dynamic load capacities listed are for thrust (parallel to shaft) loads.

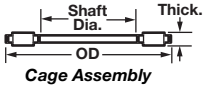

Cage Assembly

Inch

For Shaft Dia.	OD	CAGE ASSEMBLIES Thick.	Dynamic Load Cap., lbs.	Max. rpm		Each	WASHERS 0.032″ Thick	Each	0.126″ Thick	Each
1/2″	15/16″	5/64″	1,920	13,000	5909K31	$2.91	5909K44	$0.98	—	—
5/8″	1 1/8″	5/64″	2,170	11,000	5909K32	2.91	5909K45	1.05	—	—
3/4″	1 1/4″	5/64″	2,410	9,500	5909K33	2.97	5909K46	1.10	5909K59	$2.52
7/8″	1 7/16″	5/64″	2,900	8,000	5909K34	2.97	5909K47	1.10	5909K61	3.13
7/8″	1 11/16″	5/64″	4,400	7,500	5909K35	4.04	5909K48	2.15	5909K62	4.41
1″	1 9/16″	5/64″	3,150	7,500	5909K36	2.97	5909K49	1.10	5909K63	4.66
1 1/8″	1 3/4″	5/64″	3,850	6,500	5909K37	2.97	5909K51	1.47	5909K64	5.39
1 1/4″	1 15/16″	5/64″	4,500	6,000	5909K38	3.02	5909K52	1.47	5909K65	3.81
1 3/8″	2 1/16″	5/64″	4,600	5,500	5909K39	3.81	5909K53	1.47	5909K66	8.93
1 1/2″	2 3/16″	5/64″	4,850	5,000	5909K41	4.03	5909K54	1.81	5909K67	5.58
1 3/4″	2 1/2″	5/64″	5,600	4,400	5909K42	4.28	5909K55	1.98	—	—
2″	2 3/4″	5/64″	5,800	4,000	5909K43	4.56	5909K56	2.31	5909K69	12.13

Metric

For Shaft Dia., mm	OD, mm	CAGE ASSEMBLIES Thick., mm	Dynamic Load Cap., lbs.	Max. rpm		Each	WASHERS Thick., mm		Each	Thick., mm		Each
10	24	2	2,070	17,000	5909K11	$3.48	1	5909K71	$1.18	2.75	5909K83	$8.12
12	26	2	2,230	15,000	5909K12	3.95	1	5909K72	1.23	2.75	5909K84	8.32
15	28	2	2,550	13,000	5909K13	3.82	1	5909K73	1.23	2.75	5909K85	8.32
17	30	2	2,700	12,000	5909K14	3.82	1	5909K74	1.23	2.75	5909K86	9.00
20	35	2	2,950	10,000	5909K15	4.41	1	5909K75	1.23	2.75	5909K87	9.80
25	42	2	3,300	8,500	5909K16	4.41	1	5909K76	1.38	3	5909K88	11.93
30	47	2	3,650	7,500	5909K17	5.06	1	5909K77	1.60	3	5909K89	13.43
35	52	2	4,000	6,500	5909K18	5.55	1	5909K78	1.93	3.5	5909K91	15.03
45	65	3	6,700	5,000	5909K19	9.41	1	5909K79	3.01	4	5909K92	17.38
50	70	3	7,200	4,800	5909K21	10.15	1	5909K81	3.38	4	5909K93	19.88
55	78	3	8,500	4,300	5909K22	12.30	1	5909K82	3.77	5	5909K94	22.21

Food-Grade Stainless Steel Mounted Ball Bearings—ABEC-1

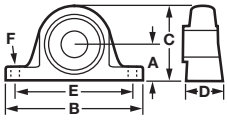

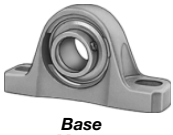

Base Mount

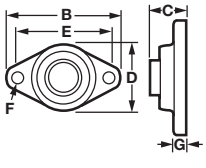

Flange Mount

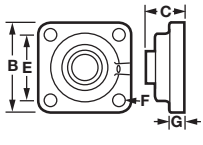

Square-Flange Mount

With their corrosion-resistant stainless steel construction and smooth surfaces that won't trap debris, these are the ultimate bearings for use in food-handling equipment that is frequently washed down. Bases are solid cast 300 series stainless steel. Ball bearings are deep grooved and made of Type 420C stainless steel. They're permanently lubricated with USDA-approved grease and double shielded—so they're virtually maintenance free. Shields block out dirt and are made of Type 304 stainless steel.

All bearings are made to ABEC-1 dimensional tolerance standards. Temperature range is –30° to +160° F. Furnished with two stainless steel set screws to secure the bearing to the shaft.

Base Mount

For Shaft Dia.	Center Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E) Min.	Max.	Bolt Slot (F), Lg. × Wd.		Each
3/4″	1 5/16″	2,430	1,120	5″	2 1/2″	1 1/4″	3 7/16″	4 3/16″	13/16″ × 29/64″	3749T1	$201.78
1″	1 7/16″	2,670	935	5 1/8″	2 3/4″	1 7/16″	3 11/16″	4 5/16″	3/4″ × 29/64″	3749T2	229.20
1 1/4″	1 11/16″	3,660	795	6″	3 15/64″	1 9/16″	4 1/4″	5″	15/16″ × 9/16″	3749T4	279.87
1 1/2″	1 15/16″	5,550	610	6 7/8″	3 29/32″	1 7/8″	4 15/16″	5 3/4″	31/32″ × 9/16″	3749T7	371.95

Flange Mount

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
3/4″	2,430	1,120	4 13/32″	1 9/32″	2 3/8″	3 17/32″	7/16″	7/16″	3756T1	$201.78
1″	2,670	935	4 7/8″	1 7/16″	2 3/4″	3 57/64″	1/2″	17/32″	3756T2	229.20
1 1/4″	3,660	795	5 9/16″	1 21/32″	3 1/8″	4 19/32″	1/2″	17/32″	3756T4	279.87
1 1/2″	5,550	610	6 3/4″	2 3/32″	4″	5 21/32″	9/16″	9/16″	3756T7	371.95

Square-Flange Mount

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	Square Size (B)	O'all Ht. (C)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
3/4″	2,430	1,120	3 3/8″	1 15/32″	2 1/2″	7/16″	7/16″	3756T11	$201.78
1″	2,670	935	3 3/4″	1 17/32″	2 3/4″	29/64″	17/32″	3756T12	229.20
1 1/4″	3,660	795	4 1/4″	1 21/32″	3 1/4″	1/2″	17/32″	3756T14	279.87
1 1/2″	5,550	610	5 1/8″	2 3/32″	4″	9/16″	9/16″	3756T17	371.95

Cast Iron Mounted Steel Ball Bearings—ABEC-1

These rugged cast iron bearings have a convenient grease fitting for easy lubrication through the housing. All are made to ABEC-1 dimensional tolerance standards and have a double-sealed, deep-grooved ball bearing insert. Ball bearing components are steel; they can accommodate 2° of shaft misalignment. Temperature range is –4° to +248° F.

Bearings with set-screw lock include two set screws to secure the bearing to the shaft. ***Bearings with eccentric lock*** have a collar with a low-center shaft opening that wedges against the shaft as it turns—gripping in one direction and releasing in the other. A set screw is included for gripping back-up.

Also Available: Replacement ball bearing inserts. Please ask for 6361K888 and specify the part number of the bearing for which you need an insert.

Base Mount

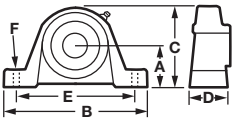

Base Mount

With Set-Screw Lock

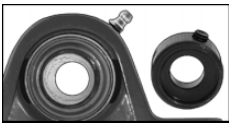

With Eccentric Lock and Collar

For Shaft Dia.	Center Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)		Each
With Set-Screw Lock—Inch										
1/2"	1 3/16"	2,200	6,299	4 59/64"	2 9/32"	1 17/64"	3 5/8"	7/16"	6244K51	$36.77
5/8"	1 3/16"	2,200	5,039	4 59/64"	2 9/32"	1 17/64"	3 5/8"	7/16"	6244K52	36.77
3/4"	1 5/16"	2,900	4,199	5 1/8"	2 17/32"	1 17/64"	3 25/32"	7/16"	6244K53	39.08
7/8"	1 7/16"	3,150	3,600	5 1/2"	2 13/16"	1 29/64"	4 1/8"	15/32"	6244K54	42.20
15/16"	1 7/16"	3,150	3,360	5 1/2"	2 13/16"	1 29/64"	4 1/8"	15/32"	6244K55	42.21
1"	1 7/16"	3,150	3,150	5 1/2"	2 13/16"	1 29/64"	4 1/8"	15/32"	6244K56	42.18
1 1/8"	1 11/16"	4,350	2,800	6 3/16"	3 9/32"	1 43/64"	4 5/8"	19/32"	6244K57	49.82
1 3/16"	1 11/16"	4,350	2,652	6 3/16"	3 9/32"	1 43/64"	4 5/8"	19/32"	6244K58	49.82
1 1/4"	1 7/8"	5,800	2,520	6 49/64"	3 11/16"	1 53/64"	5 1/8"	19/32"	6244K71	53.18
1 1/4"	1 11/16"	4,350	2,520	6 3/16"	3 9/32"	1 43/64"	4 5/8"	19/32"	6244K73	49.82
1 3/8"	1 7/8"	5,800	2,290	6 49/64"	3 11/16"	1 53/64"	5 1/8"	19/32"	6244K72	55.32
1 7/16"	1 7/8"	5,800	2,191	6 49/64"	3 11/16"	1 53/64"	5 1/8"	19/32"	6244K61	53.20
1 1/2"	1 15/16"	7,300	2,100	7 9/64"	3 15/16"	1 31/32"	5 23/64"	19/32"	6244K62	65.06
1 11/16"	2 1/8"	7,400	1,866	7 43/64"	4 7/32"	2 1/32"	5 27/32"	9/16"	6244K63	72.72
1 15/16"	2 1/4"	7,900	1,625	7 31/32"	4 39/64"	2 1/4"	6 13/64"	45/64"	6244K64	72.02
2"	2 1/2"	9,800	1,575	8 55/64"	4 63/64"	2 15/32"	6 59/64"	45/64"	6244K65	109.57
2 3/16"	2 1/2"	9,800	1,440	8 55/64"	4 63/64"	2 15/32"	6 59/64"	45/64"	6244K66	109.54
2 7/16"	2 3/4"	11,800	1,292	9 41/64"	5 33/64"	2 9/16"	7 29/64"	45/64"	6244K67	126.08
With Set-Screw Lock—Metric										
20 mm	33.3 mm	2,900	4,000	130 mm	64 mm	32 mm	97 mm	11.0 mm	57085K51	44.00
25 mm	36.5 mm	3,150	3,200	130 mm	70 mm	36 mm	103 mm	11.0 mm	57085K52	44.82
30 mm	42.9 mm	4,350	2,667	158 mm	82 mm	40 mm	118 mm	14.0 mm	57085K53	49.23
35 mm	47.6 mm	5,800	2,286	163 mm	93 mm	45 mm	126 mm	14.0 mm	57085K54	63.71
40 mm	49.2 mm	7,300	2,000	179 mm	99 mm	48 mm	138 mm	14.0 mm	57085K55	74.00
45 mm	54 mm	7,400	1,778	192 mm	107 mm	48 mm	150 mm	14.0 mm	57085K56	99.74
50 mm	57.2 mm	7,900	1,600	200 mm	115 mm	54 mm	158 mm	18.0 mm	57085K57	86.97
With Eccentric Lock—Inch										
5/8"	1 1/16"	2,150	9,500	5"	2 3/32"	1 1/4"	3 13/16"	29/64"	6361K33	43.12
3/4"	1 1/4"	2,860	8,500	5"	2 1/2"	1 1/4"	3 13/16"	29/64"	6361K34	43.16
7/8"	1 5/16"	3,150	7,000	5 1/8"	2 5/8"	1 7/16"	4 1/64"	29/64"	6361K35	48.82
15/16"	1 5/16"	3,150	7,000	5 1/8"	2 5/8"	1 7/16"	4 1/64"	29/64"	6361K36	48.83
1"	1 5/16"	3,150	7,000	5 1/8"	2 5/8"	1 7/16"	4 1/64"	29/64"	6361K37	39.68
1 1/8"	1 9/16"	4,390	6,300	6"	3 1/8"	1 9/16"	4 5/8"	9/16"	6361K38	58.84
1 3/16"	1 9/16"	4,390	6,300	6"	3 1/8"	1 9/16"	4 5/8"	9/16"	6361K39	58.84
1 1/4"	1 9/16"	4,390	6,300	6"	3 1/8"	1 9/16"	4 5/8"	9/16"	6361K22	58.84
1 1/4"	1 13/16"	5,740	5,300	6 5/16"	3 5/8"	1 25/32"	4 31/32"	9/16"	6361K41	70.70
1 3/8"	1 13/16"	5,740	5,300	6 5/16"	3 5/8"	1 25/32"	4 31/32"	9/16"	6361K42	70.66
1 7/16"	1 13/16"	5,740	5,300	6 5/16"	3 5/8"	1 25/32"	4 31/32"	9/16"	6361K43	70.58
1 1/2"	1 15/16"	6,901	4,300	6 7/8"	3 15/16"	1 7/8"	5 21/64"	9/16"	6361K44	84.13
1 11/16"	2 1/16"	7,470	4,300	7 3/8"	4 3/16"	1 29/32"	5 21/32"	9/16"	6361K45	93.44
1 3/4"	2 1/16"	7,470	4,300	7 3/8"	4 3/16"	1 29/32"	5 21/32"	9/16"	6361K46	93.44
1 15/16"	2 3/16"	7,900	4,000	8"	4 1/2"	2 1/8"	6 3/16"	45/64"	6361K47	99.74
2 3/16"	2 7/16"	9,810	3,600	8 5/8"	5"	2 3/8"	6 3/4"	45/64"	6361K48	127.25

Flange and Square-Flange Mount—With Set-Screw Lock

Flange Mount

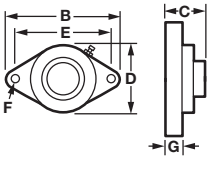

Square-Flange Mount

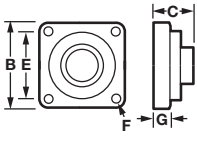

For Shaft Dia.	Dyn. Load Cap., lbs.	Max. rpm	Bolt Hole Size (F)	Flange Mount: O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Thick. (G)		Each	Square-Flange Mount: Square Size (B)	O'all Ht. (C)	Ctr.-to-Ctr. (E)	Thick. (G)		Each
1/2"	2,150	9,500	7/16"	3 7/8"	1 7/32"	2 1/8"	3"	15/32"	5968K71	$33.73	3"	1 13/64"	2 1/8"	25/64"	5967K31	$35.81
5/8"	2,150	9,500	7/16"	3 7/8"	1 7/32"	2 1/8"	3"	15/32"	5968K72	33.73	3"	1 13/64"	2 1/8"	25/64"	5967K81	35.81
3/4"	2,860	8,500	7/16"	4 13/32"	1 15/32"	2 3/8"	3 17/32"	7/16"	5968K73	37.92	3 3/8"	1 15/32"	2 1/2"	7/16"	5967K82	39.84
7/8"	3,150	7,000	1/2"	4 7/8"	1 17/32"	2 3/4"	3 29/32"	15/32"	5968K74	37.10	—	—	—	—	—	—
1"	3,150	7,000	1/2"	4 7/8"	1 17/32"	2 3/4"	3 29/32"	15/32"	5968K75	37.10	3 3/4"	1 33/64"	2 3/4"	15/32"	5967K84	41.97
1 3/16"	4,390	6,300	1/2"	5 9/16"	1 21/32"	3 1/4"	4 19/32"	1/2"	5968K76	48.33	4 1/4"	1 21/32"	3 1/4"	33/64"	5967K85	50.75
1 1/4"	4,390	6,300	1/2"	5 9/16"	1 21/32"	3 1/4"	4 19/32"	1/2"	5968K91	48.33	4 1/4"	1 21/32"	3 1/4"	33/64"	5967K41	50.75
1 1/4"	5,740	5,300	9/16"	6 5/32"	1 53/64"	3 25/32"	5 1/8"	1/2"	5968K77	47.23	4 41/64"	1 53/64"	3 5/8"	33/64"	5967K86	46.53
1 7/16"	5,740	5,300	9/16"	6 5/32"	1 53/64"	3 25/32"	5 1/8"	1/2"	5968K78	51.72	4 41/64"	1 53/64"	3 5/8"	33/64"	5967K87	50.80
1 1/2"	6,910	4,800	9/16"	6 3/4"	2 1/16"	4 1/32"	5 21/32"	9/16"	5968K79	67.24	5 1/8"	2 1/16"	4"	35/64"	5967K88	70.61
1 3/4"	7,470	4,300	5/8"	7 1/32"	2 9/64"	4 3/8"	5 27/32"	9/16"	5968K81	78.87	5 25/64"	2 9/64"	4 1/8"	35/64"	5967K89	82.80
1 15/16"	7,900	4,000	5/8"	7 7/16"	2 23/64"	4 9/16"	6 3/16"	19/32"	5968K84	89.65	5 5/8"	2 23/64"	4 3/8"	19/32"	5967K92	94.13
2"	9,810	3,600	3/4"	8 1/2"	2 7/16"	5"	7 1/4"	13/16"	5968K83	89.94	6 3/8"	2 1/2"	5 1/8"	5/8"	5967K93	99.74

Nickel-Plated Cast Iron Mounted Steel Ball Bearings—ABEC-1

A nickel-plated cast iron housing makes these mounted ball bearings corrosion resistant and extremely durable. The housing also has a grease fitting to simplify lubrication. Great for washdown applications.

All of these bearings are made to ABEC-1 dimensional tolerance standards and accommodate 1.5° of shaft misalignment. Bearing inserts are deep grooved and double sealed to block out dirt and preserve lubricants. Components are steel. Temperature range is –4° to +212° F, except for chevron-flange-mount bearings, which have a temperature range of –40° to +225° F. Furnished with two set screws to secure the bearing to the shaft.

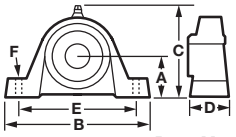

Base Mount

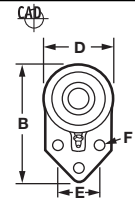

Chevron-Flange Mount

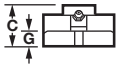

Base Mount

For Shaft Dia.	Center Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Slot Size, Lg. × Wd. (F)		Each
5/8"	1 3/16"	2,877	5,800	5"	2 3/8"	1 1/2"	3 3/4"	23/32" × 1/2"	6494K11	$36.49
3/4"	1 5/16"	2,877	5,800	5"	2 17/32"	1 1/2"	3 3/4"	23/32" × 1/2"	6494K13	34.74
1"	1 7/16"	3,147	5,100	5 1/2"	2 25/32"	1 1/2"	4 1/8"	23/32" × 1/2"	6494K14	39.74
1 1/4"	1 7/8"	5,777	3,700	6 9/16"	3 21/32"	1 7/8"	5"	13/16" × 21/32"	6494K16	61.83
1 1/2"	1 15/16"	6,541	3,300	7 1/4"	3 27/32"	2 1/8"	5 13/32"	13/16" × 21/32"	6494K19	71.49

Chevron-Flange Mount

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
3/4"	2,210	7,500	4 1/4"	1 11/32"	2 1/2"	1 1/2"	13/32"	5/16"	8260K11	$55.42
7/8"	2,430	6,800	4 3/4"	1 29/64"	2 3/4"	1 5/8"	13/32"	3/8"	8260K12	75.78
15/16"	2,430	6,800	4 3/4"	1 29/64"	2 3/4"	1 5/8"	13/32"	3/8"	8260K13	75.78
1"	2,430	6,800	4 3/4"	1 29/64"	2 3/4"	1 5/8"	13/32"	3/8"	8260K14	75.78
1 1/8"	3,380	5,600	5 3/8"	1 5/8"	3 1/4"	1 7/8"	13/32"	3/8"	8260K15	86.15
1 3/16"	3,380	5,600	5 3/8"	1 5/8"	3 1/4"	1 7/8"	13/32"	3/8"	8260K16	85.91
1 1/4"	3,380	5,600	5 3/8"	1 5/8"	3 1/4"	1 7/8"	13/32"	3/8"	8260K17	85.91
1 1/4"	4,470	4,800	6 1/8"	1 59/64"	3 3/4"	2"	17/32"	1/2"	8260K18	90.49
1 3/8"	4,470	4,800	6 1/8"	1 59/64"	3 3/4"	2"	17/32"	1/2"	8260K19	90.49
1 7/16"	4,470	4,800	6 1/8"	1 59/64"	3 3/4"	2"	17/32"	1/2"	8260K21	90.49

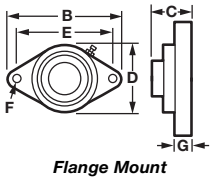

Flange Mount

Flange Mount

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
5/8"	2,877	5,800	3 55/64"	1 5/16"	2 7/32"	3"	25/64"	7/16"	6494K38	$36.49
3/4"	2,877	5,800	4 7/16"	1 5/16"	2 3/8"	3 17/32"	25/64"	7/16"	6494K42	34.74
1"	3,147	5,100	5 1/8"	1 13/32"	2 11/16"	3 57/64"	15/32"	1/2"	6494K43	39.74
1 1/4"	4,383	4,300	5 13/16"	1 19/32"	3 5/32"	4 19/32"	15/32"	1/2"	6494K45	49.20

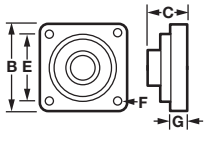

Square-Flange Mount

Square-Flange Mount

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	Square Size (B)	O'all Ht. (C)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
3/4"	2,877	5,800	3 3/8"	1 5/16"	2 33/64"	7/16"	7/16"	6494K32	$34.74
1"	3,147	5,100	3 3/4"	1 13/32"	2 3/4"	29/64"	1/2"	6494K33	39.74
1 1/4"	5,777	3,700	4 19/32"	1 3/4"	3 5/8"	33/64"	19/32"	6494K35	61.83

Permanently Lubricated Cast Iron Mounted Steel Ball Bearings—ABEC Rated

With permanent lubrication, these bearings save maintenance time and are perfect for use in hard-to-reach areas. They come lubricated with USDA-approved H1 lubricant so they are a good choice for food-service applications. Housing is cast iron. Bearing inserts are steel. Furnished with two set screws to secure the bearing to the shaft.

With USDA H1 Solid Polymer-Polyethylene Grease—Made to ABEC-3 dimensional tolerance standards with sealed bearing inserts to block out dirt. USDA H1 lubricant is solid and long-wearing so it won't leak out of the bearing. Temperature range is 5° to 212° F.

With USDA H1 Food-Grade Oil—Made to ABEC-1 dimensional tolerance standards with shielded bearing inserts to block out dirt. USDA H1 oil is permanently sealed into the bearing. The housing has a corrosion-resistant coating. Temperature range is –30° to +250° F.

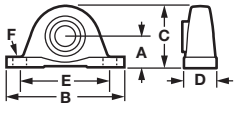

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Slot Size (F), Lg. × Wd.		Each
With USDA H1 Solid Polymer-Polyethylene Grease										
3/4"	1 5/16"	2,890	6,450	5"	2 9/16"	1 1/2"	3 25/32"	7/16" × 25/32"	5057N11	$50.70
1"	1 7/16"	3,150	5,600	5 1/2"	2 25/32"	1 1/2"	4 1/8"	7/16" × 13/16"	5057N1	86.78
1 3/16"	1 11/16"	4,400	4,650	6 1/2"	3 9/32"	1 7/8"	4 5/8"	9/16" × 15/16"	5057N5	90.82
1 1/4"	1 7/8"	5,750	4,000	6 9/16"	3 21/32"	1 7/8"	5 1/8"	9/16" × 15/16"	5057N3	88.32
1 7/16"	1 7/8"	5,750	4,000	6 9/16"	3 21/32"	1 7/8"	5 1/8"	9/16" × 31/32"	5057N7	97.68
1 1/2"	1 15/16"	6,550	3,550	7 1/4"	3 27/32"	2 1/8"	5 3/8"	9/16" × 1 1/32"	5057N2	114.40
1 3/4"	2 1/8"	7,350	3,300	7 15/32"	4 3/16"	2 1/8"	5 7/8"	9/16" × 1 1/8"	5057N6	114.72
1 15/16"	2 1/4"	7,900	3,050	8 1/8"	4 1/2"	2 3/8"	6 7/32"	11/16" × 15/16"	5057N4	146.02
2"	2 1/2"	9,750	2,750	8 5/8"	4 31/32"	2 3/8"	6 15/16"	11/16" × 15/16"	5057N8	197.04
2 7/16"	2 3/4"	11,800	2,450	9 1/2"	5 7/16"	2 3/4"	7 13/32"	23/32" × 1 5/32"	5057N9	248.36
With USDA H1 Food-Grade Oil										
3/4"	1 5/16"	2,860	1,120	5"	2 1/2"	1 1/4"	3 13/16"	13/16" × 29/64"	3730T21	79.91
1"	1 7/16"	3,150	935	5 1/8"	2 3/4"	1 7/16"	4 1/64"	49/64" × 29/64"	3730T22	87.25
1 1/8"	1 11/16"	4,380	795	5 63/64"	3 15/64"	1 37/64"	4 5/8"	59/64" × 35/64"	3730T23	103.98
1 3/16"	1 11/16"	4,380	795	5 63/64"	3 15/64"	1 37/64"	4 5/8"	59/64" × 35/64"	3730T24	103.98
1 1/4"	1 11/16"	4,380	795	5 63/64"	3 15/64"	1 37/64"	4 5/8"	59/64" × 35/64"	3730T25	103.98
1 1/4"	1 7/8"	5,730	685	6 19/64"	3 21/32"	1 49/64"	4 31/32"	53/64" × 35/64"	3730T26	123.87
1 7/16"	1 7/8"	5,730	685	6 19/64"	3 21/32"	1 49/64"	4 31/32"	53/64" × 35/64"	3730T27	123.87
1 1/2"	1 15/16"	6,900	610	6 57/64"	3 29/32"	1 57/64"	5 11/32"	15/16" × 35/64"	3730T28	138.73
1 15/16"	2 1/4"	7,890	470	8"	4 1/2"	2 1/8"	6 3/16"	1 1/16" × 45/64"	3730T29	173.49

For information about ball bearings, see page 1141.

High-Speed Cast Iron Mounted Steel Ball Bearings—ABEC-1

Often called air-handling bearings, these bearings stand up to the ultra-high-speed demands of high-speed blowers and fans. They have the highest speed capability of any mounted ball bearing we offer. All are made to ABEC-1 dimensional tolerance standards. They're double shielded and have low-friction seals to block out dirt and preserve grease. Bearings come greased with air-handling-quality grease. Housing is cast iron; bearing is steel. Temperature range is 0° to +230° F.

Base-mount bearings include two set screws to secure the bearing to the shaft. ***Flange-*** and ***square-flange mount bearings*** lock to the shaft with even-gripping, concentric rings. Simply tighten the three included set screws—a built-in torque indicator tells you when the bearing is perfectly centered.

Base Mount

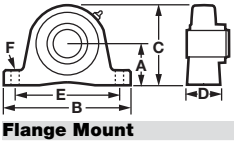

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E) Min.	Ctr.-to-Ctr. (E) Max.	Bolt Slot Size (F), Lg. × Wd.		Each
3/4"	15/16"	2860	8500	5"	2 33/64"	1 1/4"	3 15/32"	4 3/16"	0.81" × 0.45"	2773T1	$48.58
1"	1 7/16"	3150	7000	5 1/8"	2 3/4"	1 13/32"	3 11/16"	4 11/32"	0.77" × 0.45"	2773T2	63.36
1 3/16"	1 11/16"	4390	6300	6"	3 7/32"	1 9/16"	4 1/4"	5"	0.93" × 0.55"	2773T3	68.02
1 1/4"	1 7/8"	5740	5300	6 5/16"	3 21/32"	1 25/32"	4 11/16"	5 1/4"	0.83" × 0.55"	2773T4	95.06
1 3/8"	1 7/8"	5740	5300	6 5/16"	3 21/32"	1 25/32"	4 11/16"	5 1/4"	0.83" × 0.55"	2773T5	95.96
1 7/16"	1 7/8"	5740	5300	6 5/16"	3 21/32"	1 25/32"	4 11/16"	5 1/4"	0.83" × 0.55"	2773T6	80.18
1 1/2"	1 15/16"	6910	4800	6 29/32"	3 29/32"	1 29/32"	4 15/16"	5 3/4"	0.96" × 0.55"	2773T7	124.70
2"	2 1/2"	9810	3600	8 5/8"	5"	2 3/8"	6 3/8"	7 1/8"	1.08" × 0.71"	2773T11	109.86

Flange Mount

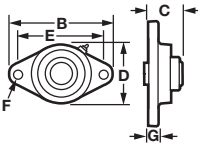

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
1"	3147	7000	4 7/8"	1 7/8"	2 3/4"	3 57/64"	1/2"	15/32"	3710T1	$78.18
1 3/16"	4384	6300	5 9/16"	1 63/64"	3 17/64"	4 19/32"	1/2"	33/64"	3710T2	92.52
1 1/4"	5733	5300	6 9/64"	2 5/64"	3 25/32"	5 1/8"	9/16"	33/64"	3710T3	109.02
1 3/8"	5733	5300	6 9/64"	2 5/64"	3 25/32"	5 1/8"	9/16"	33/64"	3710T4	109.02
1 7/16"	5733	5300	6 9/64"	2 5/64"	3 25/32"	5 1/8"	9/16"	33/64"	3710T5	108.94
1 1/2"	6901	4800	6 3/4"	2 17/64"	4 1/64"	5 21/32"	9/16"	35/64"	3710T6	117.24
1 15/16"	7890	4000	7 7/16"	2 15/32"	4 9/16"	6 3/16"	5/8"	19/32"	3710T8	148.80

Square-Flange Mount

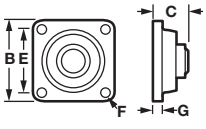

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	Square Size (B)	O'all Ht. (C)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
1"	3147	7000	3 3/4"	1 7/8"	2 3/4"	1/2"	15/32"	3710T11	$78.18
1 3/16"	4384	6300	4 1/4"	1 63/64"	3 1/4"	1/2"	33/64"	3710T12	109.02
1 1/4"	5733	5300	4 41/64"	2 5/64"	3 5/8"	9/16"	33/64"	3710T13	109.02
1 3/8"	5733	5300	4 41/64"	2 5/64"	3 5/8"	9/16"	33/64"	3710T14	142.28
1 7/16"	5733	5300	4 41/64"	2 5/64"	3 5/8"	9/16"	33/64"	3710T15	108.94
1 1/2"	6901	4800	5 1/8"	2 17/64"	4"	9/16"	35/64"	3710T16	117.24
1 15/16"	7890	4000	5 5/8"	2 31/64"	4 3/8"	5/8"	19/32"	3710T18	148.80

High-Temperature Cast Iron Mounted Steel Ball Bearings—ABEC-1

Special high-temperature Dow Corning Molykote 44 grease and silicone seals enable these bearings to operate at temperatures from –40° to +356° F. A grease fitting in the housing makes adding lubrication easy. Made to ABEC-1 dimensional tolerance standards, all of these bearings are deep grooved and self-aligning to accommodate 3° of shaft misalignment. Housing is cast iron; bearing components are steel. Furnished with two set screws to secure the bearing to the shaft.

Also Available: Replacement ball bearing inserts. Please ask for 6667K888 and specify bearing part number.

Base Mount

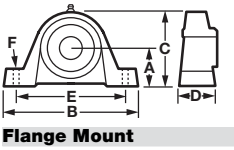

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Slot Size (F), Lg. × Wd.		Each
1/2"	1 3/16"	2870	5800	5"	2 3/8"	1 1/2"	3 3/4"	23/32" × 1/2"	6667K11	$27.65
5/8"	1 3/16"	2870	5800	5"	2 3/8"	1 1/2"	3 3/4"	23/32" × 1/2"	6667K12	27.65
3/4"	1 5/16"	2870	5800	5"	2 17/32"	1 1/2"	3 3/4"	23/32" × 1/2"	6667K13	26.32
1"	1 7/16"	3140	5100	5 1/2"	2 25/32"	1 1/2"	4 1/8"	23/32" × 1/2"	6667K14	30.10
1 1/4"	1 7/8"	5770	3700	6 9/16"	3 21/32"	1 7/8"	5"	13/16" × 21/32"	6667K15	45.70
1 1/2"	1 15/16"	6540	3300	7 1/4"	3 27/32"	2 1/8"	5 13/32"	13/16" × 21/32"	6667K16	52.81
2"	2 1/2"	9750	2500	8 5/8"	4 29/32"	2 3/8"	6 23/32"	7/8" × 25/32"	6667K17	83.58

Flange Mount

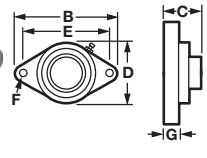

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
1/2"	2870	5800	3 7/8"	1 5/16"	2 3/8"	3"	25/64"	7/16"	6665K21	$27.65
5/8"	2870	5800	3 7/8"	1 5/16"	2 3/8"	3"	25/64"	7/16"	6665K22	27.65
3/4"	2870	5800	4 7/16"	1 5/16"	2 3/8"	3 35/64"	25/64"	7/16"	6665K23	26.32
1"	3140	5100	5 1/8"	1 13/32"	2 11/16"	3 57/64"	29/64"	1/2"	6665K24	30.10
1 1/4"	5770	3700	6 11/32"	1 3/4"	3 17/32"	5 1/8"	33/64"	9/16"	6665K25	45.70
1 1/2"	6540	3300	6 7/8"	2 1/32"	3 15/16"	5 43/64"	33/64"	9/16"	6665K26	52.81
2"	9750	2500	8 13/16"	2 5/16"	5 1/8"	7 1/4"	21/32"	23/32"	6665K27	83.58

Square-Flange Mount

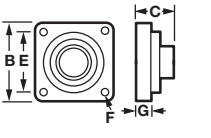

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	Square Size (B)	O'all Ht. (C)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
5/8"	2870	5800	3 3/8"	1 5/16"	2 33/64"	7/16"	7/16"	6664K22	$27.65
3/4"	2870	5800	3 3/8"	1 5/16"	2 33/64"	7/16"	7/16"	6664K23	26.32
1"	3140	5100	3 3/4"	1 13/32"	2 3/4"	29/64"	1/2"	6664K24	30.10
1 1/4"	5770	3700	4 19/32"	1 3/4"	3 5/8"	33/64"	19/32"	6664K25	45.70
1 1/2"	6540	3300	5 1/8"	2 1/32"	4 1/64"	35/64"	19/32"	6664K26	52.81
2"	9750	2500	6 3/8"	2 5/16"	5 1/8"	43/64"	23/32"	6664K27	83.58

Even-Grip Cast Iron Base-Mounted Steel Ball Bearings—ABEC-1

A ring-style collar makes a nearly perfect 360° grip around your shaft for a strong, mar-free hold. The collar centers the shaft, decreasing vibration and providing smooth rotation. All bearings are made to ABEC-1 dimensional tolerance standards. Housing is cast iron and has a grease fitting for easy lubrication. Bearing insert is steel.

Bearings without Torque Indicator—These bearings are double shielded to block out dirt and accommodate 3° of shaft misalignment. Temperature range is –4° to +212° F. Furnished with a hex-head cap screw to secure the bearing to the shaft.

Bearings with Torque Indicator—All are double shielded to block out dirt and accommodate 2° of shaft misalignment. Temperature range is 0° to +230° F. Furnished with three set screws to secure the bearing to the shaft. Simply tighten the three set screws and a built-in torque indicator tells you when the bearing is perfectly centered.

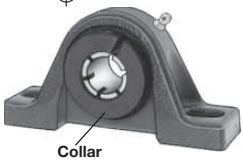

Without Torque Indicator

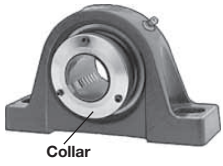

With Torque Indicator

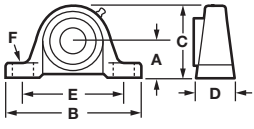

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	*Ctr.-to-Ctr. (E)* Min.	Max.	Bolt Slot Size (F), Lg. × Wd.		Each
Without Torque Indicator											
3/4″	15/16″	2,611	5,800	5″	2 17/32″	1 1/2″	3 17/32″	3 31/32″	23/32″ × 1/2″	2722T1	$32.00
7/8″	1 7/16″	2,801	5,100	5 1/2″	2 25/32″	1 1/2″	3 29/32″	4 11/32″	23/32″ × 1/2″	2722T2	35.49
15/16″	1 7/16″	2,801	5,100	5 1/2″	2 25/32″	1 1/2″	3 29/32″	4 11/32″	23/32″ × 1/2″	2722T3	35.49
1 1/8″	1 11/16″	4,381	4,300	6 1/2″	3 5/16″	1 7/8″	4 19/32″	4 29/32″	13/16″ × 21/32″	2722T5	48.69
1 1/4″	1 11/16″	4,381	4,300	6 1/2″	3 5/16″	1 7/8″	4 19/32″	4 29/32″	13/16″ × 21/32″	2722T7	48.69
1 3/8″	1 7/8″	5,777	3,700	6 9/16″	3 21/32″	1 7/8″	4 27/32″	5 5/32″	13/16″ × 21/32″	2722T9	56.29
1 3/4″	2 1/8″	7,665	3,000	7 15/32″	4 3/16″	2 1/8″	5 19/32″	5 29/32″	13/16″ × 21/32″	2722T14	95.09
2″	2 1/2″	9,752	2,500	8 5/8″	4 29/32″	2 3/8″	6 5/8″	6 13/16″	7/8″ × 25/32″	2722T16	131.43
2 7/16″	2 3/4″	11,779	2,500	9 1/2″	5 7/16″	2 3/4″	7 1/16″	7 7/16″	31/32″ × 25/32″	2722T18	158.06
With Torque Indicator											
1″	1 7/16″	3,150	7,000	5 1/8″	2 3/4″	1 7/16″	3 11/16″	4 5/16″	49/64″ × 29/64″	2722T21	71.07
1 3/16″	1 11/16″	4,350	6,300	6″	3 15/64″	1 9/16″	4 1/4″	5″	59/64″ × 35/64″	2722T22	84.11
1 1/4″	1 7/8″	5,700	5,300	6 5/16″	3 11/16″	1 3/4″	4 11/16″	5 1/4″	53/64″ × 35/64″	2722T23	99.11
1 7/16″	1 7/8″	5,700	5,300	6 5/16″	3 11/16″	1 3/4″	4 11/16″	5 1/4″	53/64″ × 35/64″	2722T24	99.04
1 1/2″	1 15/16″	6,900	4,800	6 7/8″	3 7/8″	1 7/8″	4 15/16″	5 3/4″	31/32″ × 35/64″	2722T25	106.58
1 11/16″	2 1/8″	7,470	4,300	7 3/8″	4 1/4″	1 7/8″	5 5/16″	6″	57/64″ × 35/64″	2722T26	123.71
1 15/16″	2 1/4″	7,900	4,000	8″	4 1/2″	2 1/8″	5 7/8″	6 1/2″	1 1/32″ × 45/64″	2722T27	135.27
2 3/16″	2 1/2″	9,800	3,600	8 5/8″	5″	2 3/8″	6 3/8″	7 1/8″	1 5/64″ × 45/64″	2722T28	167.24

Stamped-Steel Mounted Ball Bearings—ABEC-1

Designed with a thin, compact housing, these bearings are perfect for space constrained, light duty applications. All are made to ABEC-1 dimensional tolerance standards and accommodate 3° of shaft misalignment. Bearing inserts are deep grooved and double sealed to block out dirt and preserve lubricants. Temperature range is –4° to +212° F. Furnished with a set-screw locking collar, which holds the bearing securely to the shaft.

Steel—Housing and all bearing components are steel. ***Stainless Steel***—The choice for corrosion resistance. Housing is Type 304 stainless steel. Balls and insert are Type 440C stainless steel.

Base Mount

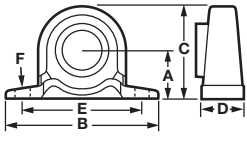

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Slot Size (F), Lg. × Wd.		Each
Steel										
1/2″	7/8″	716	5800	3 3/8″	1 23/32″	31/32″	2 43/64″	1/2″ × 11/32″	5913K61	$10.95
5/8″	7/8″	716	5800	3 3/8″	1 23/32″	31/32″	2 43/64″	1/2″ × 11/32″	5913K62	10.95
3/4″	1″	962	5800	4 1/8″	2″	1″	3″	1/2″ × 13/32″	5913K63	11.78
1″	1 1/8″	1050	5100	4 35/64″	2 7/32″	1 1/4″	3 3/8″	9/16″ × 13/32″	5913K64	12.69
1 3/16″	1 5/16″	1461	4300	4 29/32″	2 5/8″	1 1/4″	3 3/4″	9/16″ × 13/32″	5913K65	15.73
Stainless Steel										
5/8″	7/8″	572	5800	3 5/8″	1 3/4″	1″	2 11/16″	1/2″ × 11/32″	2353K31	56.60
3/4″	1″	816	5800	4 1/8″	2 1/16″	1″	3″	1/2″ × 13/32″	2353K32	57.49
1″	1 1/8″	891	5100	4 1/2″	2 7/32″	1 1/8″	3 3/8″	9/16″ × 13/32″	2353K33	84.07
1 3/16″	1 5/16″	1236	4300	4 7/8″	2 5/8″	1 1/4″	3 3/4″	9/16″ × 13/32″	2353K34	84.04

Flange Mount

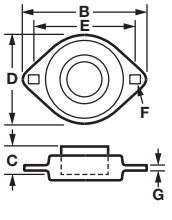

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
Steel										
1/2″	716	5800	3 3/16″	0.866″	2 5/16″	2 1/2″	0.28″	0.16″	5913K71	$11.33
5/8″	716	5800	3 3/16″	0.866″	2 5/16″	2 1/2″	0.28″	0.16″	5913K72	11.33
3/4″	962	5800	3 17/32″	0.984″	2 5/8″	2 13/16″	0.36″	0.16″	5913K73	11.90
1″	1050	5100	3 3/4″	1.063″	2 25/32″	3″	0.36″	0.16″	5913K74	12.77
1 3/16″	1461	4300	4 7/16″	1.181″	3 5/16″	3 9/16″	0.44″	0.2″	5913K75	16.13
Stainless Steel										
5/8″	572	5800	3 3/16″	1.08″	2 5/16″	2 1/2″	0.28″	0.15″	2431K71	56.60
3/4″	816	5800	3 9/16″	1.22″	2 5/8″	2 13/16″	0.34″	0.16″	2431K72	57.48
1″	891	5100	3 3/4″	1.34″	2 51/64″	3″	0.34″	0.16″	2431K73	63.63

Miniature Flange-Mounted Stainless Steel Ball Bearings

You'll get food-grade compatibility and excellent corrosion resistance in a very small bearing that can handle a wide range of temperatures. These lightweight bearings have a PEEK housing that is FDA compliant. Bearing components are Type 440C stainless steel. Temperature range is –148° to +480° F.

Open bearings run cool and are easy to lubricate. ***Shielded bearings*** have shields to block out dirt.

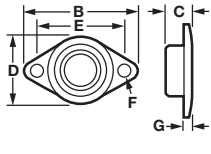

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)	*Open*	Each	*Shielded*	Each
1/8″	311	53,000	1.16″	0.312″	0.625″	0.75″	0.17″	0.09″	4575N6	$9.16	4575N1	$9.46
3/16″	1,301	38,000	1 3/8″	0.368″	0.844″	0.968″	0.17″	0.09″	4575N7	9.26	4575N2	9.56
1/4″	373	36,000	1.343″	0.297″	0.843″	0.937″	0.17″	0.13″	4575N8	9.70	4575N3	10.00
5/16″	542	40,000	1 1/2″	0.344″	0.953″	1.093″	0.17″	0.15″	4575N9	11.44	4575N4	12.20
3/8″	3,332	32,000	2 1/8″	0.484″	1.54″	1.602″	0.196″	0.16″	4575N11	14.90	4575N5	15.20

Steel Flange-Mounted Ball Bearings

Great for flush mounting, these bearings have an extended inner ring and flanged housing. They are double sealed to block out dirt and preserve lubricants. The housing and all bearing components are steel. Maximum temperature is 250° F. Furnished with two set screws to secure the bearing to the shaft.

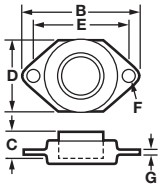

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
3/8"	580	3000	2 1/2"	11/16"	1 1/8"	1 7/8"	5/16"	1/32"	7208K51	$22.23
1/2"	1610	3000	3 3/4"	1"	1 7/8"	2 7/8"	7/16"	1/16"	7208K52	24.17
5/8"	1610	3000	3 3/4"	1"	1 7/8"	2 7/8"	7/16"	1/16"	7208K53	23.52
3/4"	1870	3000	4 1/8"	1 1/8"	2 1/4"	3 1/4"	7/16"	1/16"	7208K54	31.34
1"	1870	3000	4 1/8"	1 1/8"	2 1/4"	3 1/4"	7/16"	1/16"	7208K55	33.18

Food-Grade Polymer Mounted Ball Bearings

An excellent choice for food-processing applications, these bearings come lubricated with USDA- and FDA-compliant grease. A grease fitting in the housing makes adding lubrication a breeze. All of these bearings have a smooth, corrosion-resistant, solid polymer housing with double-sealed bearing inserts to block out dirt. Furnished with two set screws to secure the bearing to the shaft.

With Corrosion-Resistant Steel Bearing Inserts— These inserts have higher load and speed ratings than the stainless steel inserts and accommodate shaft misalignment up to 2°. They're made of coated steel for corrosion resistance and are precision-machined to meet ABEC-1 dimensional tolerance standards. Temperature range is –22° to +160° F. **Also Available:** Protective end covers. Please ask for 6736K888 and specify shaft diameter.

With Stainless Steel Bearing Inserts— These Type 300 series stainless steel inserts are more corrosion resistant than the steel inserts and will accommodate shaft misalignment up to 3°. They're precision-machined, but they are not made to ABEC-1 tolerances. Temperature range is –25° to +250° F. Furnished with protective end covers.

Base Mount

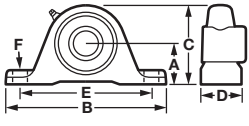

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Slot Size (F), Lg. × Wd.		Each
With Corrosion-Resistant Steel Bearing Inserts										
3/4"	15/16"	2860	1120	4 31/32"	2 1/2"	1 1/4"	4"	21/32" × 29/64"	6668K41	$70.40
1"	1 7/16"	3150	935	5 9/32"	2 25/32"	1 1/4"	4 11/32"	21/32" × 29/64"	6668K42	75.64
1 3/16"	1 11/16"	4380	795	6 1/4"	3 15/64"	1 37/64"	5 3/64"	53/64" × 35/64"	6668K43	87.62
1 1/4"	1 7/8"	5730	685	6 15/32"	3 21/32"	1 49/64"	5 1/4"	53/64" × 35/64"	6668K44	98.92
1 7/16"	1 7/8"	5730	685	6 15/32"	3 21/32"	1 49/64"	5 1/4"	53/64" × 35/64"	6668K45	101.90
1 1/2"	1 15/16"	6900	610	6 57/64"	3 29/32"	1 57/64"	5 5/8"	53/64" × 35/64"	6668K46	112.52
With Stainless Steel Bearing Inserts										
3/4"	15/16"	200★	500	5"	2 9/16"	1 1/2"	3 3/4"	9/16" × 7/16"	6668K31	66.37
1"	1 7/16"	240★	425	5 1/2"	2 13/16"	1 1/2"	4 1/8"	9/16" × 7/16"	6668K32	71.72
1 3/16"	1 11/16"	350★	375	6 7/16"	3 5/16"	1 13/16"	4 11/16"	11/16" × 9/16"	6668K33	85.09
1 1/4"	1 7/8"	475★	300	6 5/8"	3 3/4"	1 7/8"	5"	11/16" × 9/16"	6668K34	99.74
1 7/16"	1 7/8"	475★	300	6 5/8"	3 3/4"	1 7/8"	5"	11/16" × 9/16"	6668K35	99.74

★ Static load capacity, lbs.

Flange Mount

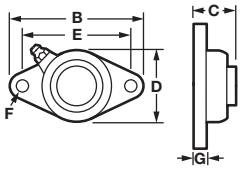

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
With Corrosion-Resistant Steel Bearing Inserts										
3/4"	2860	1120	4 13/32"	1 15/32"	2 3/8"	3 17/32"	29/64"	19/32"	6670K41	$70.40
1"	3150	935	4 7/8"	1 17/32"	2 3/4"	3 29/32"	29/64"	19/32"	6670K42	75.64
1 3/16"	4380	795	5 39/64"	1 21/32"	3 17/64"	4 19/32"	29/64"	19/32"	6670K43	87.62
1 1/4"	5730	685	6 1/8"	1 53/64"	3 25/32"	5 1/8"	35/64"	21/32"	6670K44	101.90
1 7/16"	5730	685	6 1/8"	1 53/64"	3 25/32"	5 1/8"	35/64"	21/32"	6670K45	101.90
1 1/2"	6900	610	6 25/32"	2 1/32"	4 9/16"	5 21/32"	17/32"	9/16"	6670K46	198.70
With Stainless Steel Bearing Inserts										
3/4"	200★	500	4 7/16"	1 5/16"	2 9/16"	3 9/16"	3/8"	9/16"	6670K21	66.37
1"	240★	425	5 3/16"	1 1/2"	2 3/4"	3 15/16"	3/8"	9/16"	6670K22	71.72
1 3/16"	350★	375	5 13/16"	1 9/16"	3 1/8"	4 5/8"	3/8"	9/16"	6670K23	85.09
1 1/4"	475★	300	6 1/2"	1 13/16"	3 9/16"	5 1/8"	1/2"	5/8"	6670K24	99.74
1 7/16"	475★	300	6 1/2"	1 13/16"	3 9/16"	5 1/8"	1/2"	5/8"	6670K25	99.74

★ Static load capacity, lbs.

Square-Flange Mount

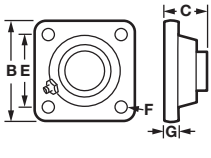

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	Square Size (B)	O'all Ht. (C)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
With Corrosion-Resistant Steel Bearing Inserts									
3/4"	2860	1120	3 3/8"	1 15/32"	2 1/2"	29/64"	19/32"	6671K41	$70.40
1"	3150	935	3 3/4"	1 17/32"	2 3/4"	29/64"	19/32"	6671K42	75.64
1 3/16"	4380	795	4 1/4"	1 21/32"	3 1/4"	29/64"	19/32"	6671K43	87.62
1 1/4"	5730	685	4 5/8"	1 53/64"	3 5/8"	35/64"	21/32"	6671K44	101.90
1 7/16"	5730	685	4 5/8"	1 53/64"	3 5/8"	35/64"	21/32"	6671K45	101.90
1 1/2"	6900	610	5 1/8"	2 9/64"	4"	35/64"	21/32"	6671K46	112.52
With Stainless Steel Bearing Inserts									
3/4"	200★	500	3 3/8"	1 3/8"	2 1/2"	3/8"	9/16"	6671K21	66.37
1"	240★	425	3 3/4"	1 1/2"	2 3/4"	3/8"	9/16"	6671K22	71.72
1 3/16"	350★	375	4 1/4"	1 5/8"	3 1/4"	3/8"	9/16"	6671K23	85.09
1 1/4"	475★	300	4 5/8"	1 7/8"	3 5/8"	1/2"	5/8"	6671K24	99.74
1 7/16"	475★	300	4 5/8"	1 15/16"	3 5/8"	1/2"	5/8"	6671K25	99.74

★ Static load capacity, lbs.

For information about ball bearings, see page 1141.

Maintenance-Free Polyester Mounted Ball Bearings

These lightweight, noncorrosive bearings do not need lubrication and can even be submerged in liquid. Great for use in medical, food, and hygienic applications, they're made of polyester with Type 316 stainless steel balls. All are deep grooved and self-aligning, which means they'll compensate for minor shaft misalignment. They are open bearings, which means they run cool. Temperature range is –40° to +180° F in air. In liquid, the maximum temperature is 120° F (not rated for minimum temperature in liquid). Furnished with a set screw to secure the bearing to the shaft.

These bearings are available with acetal or Type 316 stainless steel raceways. ***Acetal*** is more economical, but ***Type 316 stainless steel*** offers a higher load capacity.

Base Mount

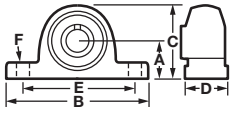

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)		Each
With Acetal Raceway										
1/2"	1 21/64"	78	840	5"	2 9/16"	1 1/2"	3 3/4"	7/16"	6357K41	$41.13
5/8"	1 21/64"	78	840	5"	2 9/16"	1 1/2"	3 3/4"	7/16"	6357K42	41.13
3/4"	1 21/64"	78	840	5"	2 9/16"	1 1/2"	3 3/4"	7/16"	6357K43	41.13
1"	1 13/32"	92	729	5 17/32"	2 51/64"	1 1/2"	4 1/8"	7/16"	6357K44	45.15
With Type 316 Stainless Steel Raceway										
1/2"	1 21/64"	234	840	5"	2 9/16"	1 1/2"	3 3/4"	7/16"	7192K51	102.07
5/8"	1 21/64"	234	840	5"	2 9/16"	1 1/2"	3 3/4"	7/16"	7192K52	103.01
3/4"	1 21/64"	234	840	5"	2 9/16"	1 1/2"	3 3/4"	7/16"	7192K53	103.96
1"	1 13/32"	276	729	5 17/32"	2 51/64"	1 1/2"	4 1/8"	7/16"	7192K54	120.80

Flange Mount

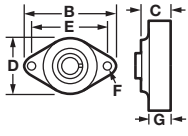

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
With Acetal Raceway										
5/8"	78	840	4 1/2"	1 3/64"	2 33/64"	3 35/64"	7/16"	7/16"	6357K45	$41.13
3/4"	92	729	5 5/32"	1 9/64"	2 3/4"	3 57/64"	7/16"	17/32"	6357K46	45.15
1"	92	729	5 5/32"	1 9/64"	2 3/4"	3 57/64"	7/16"	17/32"	6357K47	45.15
With Type 316 Stainless Steel Raceway										
3/4"	278	729	5 5/32"	1 9/64"	2 3/4"	3 57/64"	7/16"	17/32"	7192K55	119.73
1"	278	729	5 5/32"	1 9/64"	2 3/4"	3 57/64"	7/16"	17/32"	7192K56	120.80

Square-Flange Mount

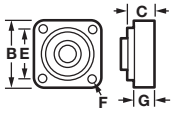

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	Square Size (B)	Ht. (C)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
With Acetal Raceway									
3/4"	92	729	3 3/4"	1 7/64"	2 3/4"	7/16"	35/64"	6357K48	$45.15
1"	92	729	3 3/4"	1 7/64"	2 3/4"	7/16"	35/64"	6357K49	45.15
With Type 316 Stainless Steel Raceway									
3/4"	278	729	3 3/4"	1 7/64"	2 3/4"	7/16"	35/64"	7192K57	120.80
1"	278	729	3 3/4"	1 7/64"	2 3/4"	7/16"	35/64"	7192K58	123.00

Miniature Aluminum Base-Mounted Stainless Steel Ball Bearings—*ABEC-3*

No need to worry about how you are going to mount a miniature ball bearing—we've taken miniature ball bearings and mounted them in precision bearing housings for you. Sized just right for small spaces, these high-precision bearings have an aluminum housing and Type 440C stainless steel ball bearings for excellent corrosion resistance. All are made to tight ABEC-3 dimensional tolerance standards. They come greased and are double shielded to block out dirt. Temperature range is –22° to +248° F.

Bearings with extended inner ring provide improved performance when used with a shaft collar. The shaft collar mates with the inner ring and doesn't touch moving parts.

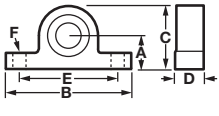

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)		Each
Inch without Extended Inner Ring										
1/8"	3/8"	150	56,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N1	$16.28
3/16"	3/8"	310	43,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N2	15.14
1/4"	3/8"	256	40,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N3	15.14
5/16"	3/8"	128	40,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N4	15.14
3/8"	9/16"	450	32,000	2 1/4"	1 1/8"	0.4"	1 3/4"	5/32"	8600N5	19.86
Inch with Extended Inner Ring										
3/16"	3/8"	310	43,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N6	17.44
1/4"	3/8"	256	40,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N7	17.02
5/16"	3/8"	128	40,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N8	17.56
Metric without Extended Inner Ring										
4 mm	3/8"	225	48,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N9	15.54
5 mm	3/8"	255	43,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N11	15.34
6 mm	3/8"	170	43,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N12	15.34
8 mm	3/8"	128	40,000	1 7/16"	3/4"	0.2"	1 1/8"	1/8"	8600N13	14.92
10 mm	9/16"	400	37,000	2 1/4"	1 1/8"	0.4"	1 3/4"	5/32"	8600N14	24.88

For information about roller bearings, see page 1141.

Self-Aligning Steel Flange-Mounted Needle Roller Bearings

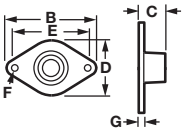

In addition to a self-aligning feature that compensates for 5° of shaft misalignment, these bearings handle extremely high speeds for their small size. They are designed for use on hardened and ground shafts.

All bearings have a steel flange with a black-oxide coating for added corrosion resistance. The bearing cage is plastic; all other components are steel. Bearings are open, which means they run cool and are easy to lubricate. Temperature range is –22° to +212° F.

For Shaft Dia.	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
Inch										
1/4"	360	44,000	2.1"	0.46"	1.19"	1.53"	7/32"	0.06"	**1434K43**	$10.23
5/16"	650	35,500	1.78"	0.64"	1 1/4"	1.22"	7/32"	0.09"	**1434K24**	7.80
3/8"	650	29,500	1.78"	0.64"	1 1/4"	1.22"	7/32"	0.09"	**1434K25**	8.60
1/2"	1,040	22,000	2.34"	0.77"	1.56"	1.78"	7/32"	0.09"	**1434K6**	10.32
Metric										
8 mm	620	23,800	45 mm	16.3 mm	31.8 mm	30.9 mm	5.5 mm	2.3 mm	**1434K33**	9.45
10 mm	990	24,300	45 mm	16.3 mm	31.8 mm	30.9 mm	5.5 mm	2.3 mm	**1434K34**	8.11
12 mm	1,110	20,700	60 mm	19.5 mm	39.6 mm	45.2 mm	5.5 mm	2.3 mm	**1434K15**	10.72

High-Load Even-Grip Cast Iron Base-Mounted Spherical Roller Bearings

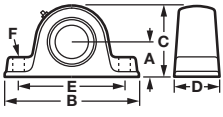

Bring on your heaviest loads—these double-row spherical roller bearings give you the highest load capacities of any mounted bearing we offer. They also have a locking ring, which provides a nearly perfect 360° grip around your shaft. You can mount these bearings in minutes and remove them (even if they're dirty and rusted) with the included Allen wrench. To unmount, just loosen two mounting set screws and tighten two dismounting set screws until you hear and feel a pop.

These bearings minimize vibration. They handle both radial (perpendicular to the shaft) and minimal thrust (parallel to the shaft) loads and are self-aligning—accommodating up to 1.5° of shaft misalignment. They're double sealed to block out dirt and preserve lubricants. Housing is cast iron; bearing insert is steel and comes lubricated. A grease fitting in the housing makes adding lubrication easy. Temperature range is –4° to +200° F.

With SYE Mounting Configuration—Dimensionally interchangeable with Dodge Type E designs. ***With SYR Mounting Configuration***—More compact; interchangeable with Rexnord Linkbelt P-B22400 and SKF collar-mounted roller bearings.

For Shaft Dia.	Ctr. Ht. (A)	Dynamic Load Cap., lbs.	Max. rpm	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Slot Size (F), Lg. × Wd.		Each
With SYE Mounting Configuration										
1 7/16"	1 7/8"	22,900	4,000	7 3/8"	3 7/8"	2 1/8"	6"	3/4" × 5/8"	**2433K11**	$196.73
1 1/2"	2 1/8"	22,900	4,000	7 7/8"	4 1/4"	2 3/8"	6 1/2"	3/4" × 5/8"	**2433K12**	238.88
1 11/16"	2 1/8"	20,200	3,700	7 7/8"	4 1/4"	2 3/8"	6 1/2"	3/4" × 5/8"	**2433K13**	238.88
1 3/4"	2 1/4"	20,200	3,700	8 7/8"	4 1/2"	2 1/2"	7 1/4"	7/8" × 3/4"	**2433K14**	267.00
1 15/16"	2 1/4"	21,700	3,500	8 7/8"	4 1/2"	2 1/2"	7 1/4"	7/8" × 3/4"	**2433K15**	267.00
2"	2 1/4"	21,700	3,500	8 7/8"	4 1/2"	2 1/2"	7 1/4"	7/8" × 3/4"	**2433K16**	267.00
With SYR Mounting Configuration										
1 7/16"	1 7/8"	22,900	4,000	6 7/8"	3 7/8"	2 1/16"	5 5/16"	15/16" × 5/8"	**2433K31**	210.46
1 1/2"	1 7/8"	22,900	4,000	6 7/8"	3 7/8"	2 1/16"	5 5/16"	15/16" × 5/8"	**2433K32**	246.13
1 11/16"	2 1/8"	20,200	3,700	7 3/8"	4 1/4"	2 1/8"	5 13/16"	1" × 5/8"	**2433K33**	251.65
1 3/4"	2 1/8"	20,200	3,700	7 3/8"	4 1/4"	2 1/8"	5 13/16"	1" × 5/8"	**2433K34**	255.50
1 15/16"	2 1/4"	21,700	3,500	8 3/8"	4 9/16"	2 5/16"	6 9/16"	1 1/16" × 3/4"	**2433K35**	286.92
2"	2 1/4"	21,700	3,500	8 3/8"	4 9/16"	2 5/16"	6 9/16"	1 1/16" × 3/4"	**2433K36**	286.92

Self-Lubricating Stamped Steel Base-Mounted Bronze Bearings

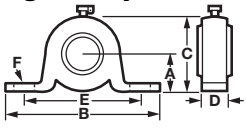

Made of oil-impregnated bronze, these light-duty, low-cost bearings save you time by eliminating the need for routine maintenance. Use them for medium-speed, low-load applications. All include an oil cup (unless noted) for additional lubrication. Housing is stamped steel; bearing insert is SAE 841 bronze (Oilite), which is an alloy of copper, tin, and carbon.

For information about P max, V max, and PV max, see page 1126.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841	–40° to +240° F	2,000	1,200	50,000

For Shaft Dia.	Ctr. Ht. (A)	O'all Lg. (B)	Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Slot Size (F), Lg. × Wd.		Each
3/8"	9/16"	2 5/16"	1 1/8"	7/16"	1 3/4"	17/64" × 5/16"	**3813T1★**	$5.05
1/2"	9/16"	2 5/16"	1 1/8"	7/16"	1 3/4"	17/64" × 5/16"	**3813T2★**	4.30
1/2"	15/16"	4 1/32"	1 13/16"	1 1/8"	2 31/32"	21/64" × 21/32"	**3813T11**	5.49
5/8"	9/16"	2 5/16"	1 1/8"	7/16"	1 3/4"	17/64" × 5/16"	**3813T3★**	3.92
5/8"	15/16"	4 1/32"	1 13/16"	1 1/8"	2 31/32"	21/64" × 21/32"	**3813T12**	4.93
3/4"	15/16"	4 1/32"	1 13/16"	1 1/8"	2 31/32"	21/64" × 21/32"	**3813T13**	5.06
7/8"	15/16"	4 1/32"	1 13/16"	1 1/8"	2 31/32"	21/64" × 21/32"	**3813T14**	6.17
1"	15/16"	4 1/32"	1 13/16"	1 1/8"	2 31/32"	21/64" × 21/32"	**3813T15**	5.28
1 1/8"	1 3/32"	4 5/8"	2 1/8"	1 5/16"	3 21/64"	25/64" × 19/32"	**3813T16**	12.72
1 3/16"	1 3/32"	4 5/8"	2 1/8"	1 5/16"	3 21/64"	25/64" × 19/32"	**3813T17**	8.57
1 1/4"	1 3/32"	4 5/8"	2 1/8"	1 5/16"	3 21/64"	25/64" × 19/32"	**3813T18**	10.33
1 3/8"	1 11/32"	5 7/16"	2 11/16"	1 7/16"	3 7/8"	25/64" × 25/32"	**3813T19**	24.43
1 1/2"	1 11/32"	5 7/16"	2 11/16"	1 7/16"	3 7/8"	25/64" × 25/32"	**3813T21**	20.89

★ Does not include oil cup.

For information about P max, V max, and PV max, see page 1126.

Self-Lubricating Aluminum-Mounted Bronze Bearings

You get to choose which self-lubricating bearing insert you want mounted in a lightweight, corrosion-resistant, sintered aluminum housing. All inserts are self-aligning, accommodating up to 5° of shaft misalignment.

SAE 840 bronze bearing inserts are an alloy of copper, tin, and carbon, impregnated with 25% Mobil DTE Medium oil. The oil acts as a cushion between the shaft and bearing, reducing wear.

PTFE-filled bronze bearing inserts are ultra-slippery and have a much wider temperature range and higher load capacity than the SAE 840 bronze bearing inserts. Use them for high-load, low-speed, and extreme-temperature applications.

Bearing Insert Material	Temp. Range	P max	V max	PV max
SAE 840 Bronze	–20° to +200° F	2,000	1,200	25,000
PTFE-Filled Bronze	–40° to +380° F	8,000	400	50,000

Base Mount

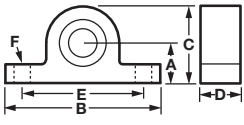

For Shaft Dia.	Ctr. Ht. (A)	O'all Lg. (B)	O'all Ht. (C)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	SAE 840 Bronze Base Wd. (D)		Each	PTFE-Filled Bronze Base Wd. (D)		Each
1/4"	9/16"	2 1/4"	1 1/8"	1 3/4"	9/32"	3/8"	5912K1	$9.83	7/16"	2820T3	$11.77
5/16"	9/16"	2 1/4"	1 1/8"	1 3/4"	9/32"	7/16"	5912K2	10.33	7/16"	2820T4	12.00
3/8"	9/16"	2 1/4"	1 1/8"	1 3/4"	9/32"	7/16"	5912K3	10.38	5/8"	2820T5	12.47
1/2"	9/16"	2 1/4"	1 1/8"	1 3/4"	9/32"	5/8"	5912K4	11.11	—	—	—
1/2"	3/4"	3 1/4"	1 9/16"	2 1/2"	11/32"	25/32"	5912K5	12.28	25/32"	2820T6	17.66
5/8"	3/4"	3 1/4"	1 9/16"	2 1/2"	11/32"	25/32"	5912K6●	13.55	7/8"	2820T7	20.59
3/4"	3/4"	3 1/4"	1 9/16"	2 1/2"	11/32"	7/8"	5912K7	13.94	7/8"	2820T8	21.09
7/8"	1"	4"	1 15/16"	3 1/8"	11/32"	29/32"	5912K8	20.63	—	—	—
1"	1 1/4"	5"	2 9/16"	4"	9/16"	29/32"	5912K9	30.91	29/32"	2820T9	41.79
1 1/4"	1 1/4"	5"	2 9/16"	4"	9/16"	15/16"	5912K11	31.91	—	—	—

● Overall height is 1 15/16".

Flange Mount

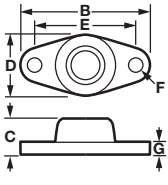

For Shaft Dia.	O'all Lg. (B)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)	SAE 840 Bronze O'all Ht. (C)		Each	PTFE-Filled Bronze O'all Ht. (C)		Each
1/4"	1 5/8"	3/4"	1 1/4"	11/64"	3/16"	3/8"	5912K12	$7.97	—	—	—
1/4"	2 1/4"	1 1/8"	1 3/4"	9/32"	3/16"	—	—	—	7/16"	2820T33	$11.07
5/16"	2 1/4"	1 1/8"	1 3/4"	9/32"	3/16"	7/16"	5912K13	9.46	7/16"	2820T34	13.66
3/8"	2 1/4"	1 1/8"	1 3/4"	9/32"	3/16"	7/16"	5912K14	9.71	5/8"	2820T35	11.89
1/2"	2 1/4"	1 1/8"	1 3/4"	9/32"	3/16"	5/8"	5912K15	10.52	—	—	—
1/2"	3 1/4"	1 5/8"	2 1/2"	13/32"	1/4"	25/32"	5912K16	10.75	25/32"	2820T36	15.19
5/8"	3 1/4"	1 5/8"	2 1/2"	13/32"	1/4"	25/32"	5912K17	12.22	7/8"	2820T37	19.09
3/4"	3 1/4"	1 5/8"	2 1/2"	13/32"	1/4"	7/8"	5912K18	13.78	7/8"	2820T38	19.89
7/8"	4"	1 7/8"	3 1/8"	13/32"	5/16"	29/32"	5912K19	17.54	—	—	—
1"	5"	2 5/8"	4"	9/16"	3/8"	29/32"	5912K32	30.78	29/32"	2820T39	41.79
1 1/4"	5"	2 5/8"	4"	9/16"	3/8"	15/16"	5912K33	32.01	—	—	—

Vibration-Damping Steel Base-Mounted Bronze Bearings

Quiet things down by installing these bearings. All have an insulating layer of flexible neoprene that is sandwiched between a protective high-strength steel shell and a bronze bearing insert, which quiets your equipment by absorbing vibration. To reduce maintenance, the bearing inserts are self-lubricating SAE 841 bronze (Oilite), an alloy of copper, tin, and carbon, impregnated with 20% SAE-30 oil. The oil acts as a cushion between the shaft and bearing, reducing wear and increasing resistance to shock loads (suddenly applied loads). These bearings accommodate up to 3° of shaft misalignment. Housing is steel.

Bearing Material	Temperature Range	P max	V max	PV max
SAE 841 Bronze	0° to 225° F	2,000	1,200	50,000

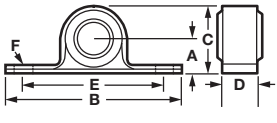

For Shaft Dia.	Center Ht. (A)	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)		Each
1/4"	0.56"	2 3/4"	1 1/8"	29/32"	2"	5/16"	7930K11	$16.63
3/8"	0.56"	2 3/4"	1 1/8"	29/32"	2"	5/16"	7930K12	13.65
1/2"	0.56"	2 3/4"	1 1/8"	29/32"	2"	5/16"	7930K13	12.27
5/8"	0.7"	3 3/4"	1 13/32"	1 1/8"	3"	3/8"	7930K14	16.24
3/4"	0.7"	3 3/4"	1 13/32"	1 1/8"	3"	3/8"	7930K15	14.95
7/8"	15/16"	5"	1 27/32"	1 3/8"	4"	1/2"	7930K16	25.40
1"	15/16"	5"	1 27/32"	1 3/8"	4"	1/2"	7930K17	22.48
1 1/8"	1 1/16"	6"	2 1/8"	1 5/8"	4 9/16"	1/2"	7930K27	29.80
1 1/4"	1 1/16"	6"	2 1/8"	1 5/8"	4 9/16"	1/2"	7930K18	31.42

Nylon Flange-Mounted Sleeve Bearings

Made entirely of nylon, these bearings have a fairly slippery bearing surface, which does not require lubrication when used for light duty applications. In addition to their low cost, all of the bearings are light-weight, rigid, and abrasion resistant. They have a closed back.

Bearing Material	Temperature Range	P max	V max	PV max
Nylon	–25° to +250° F	400	360	3,000

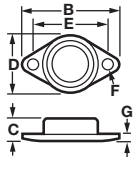

For Shaft Dia.	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
1/8"	0.922"	0.265"	0.562"	0.532"	0.14"	0.156"	2827N1	$3.08
3/16"	0.984"	0.437"	0.562"	0.593"	0.14"	0.156"	2827N2	3.20
1/4"	1.078"	0.472"	0.594"	0.686"	0.14"	0.159"	2827N3	3.32
5/16"	1.318"	0.505"	0.718"	0.828"	0.168"	0.162"	2827N4	3.42
3/8"	1 1/2"	0.577"	0.812"	1"	0.168"	0.171"	2827N5	3.74

Extreme-Environment Cast Iron Mounted Graphalloy Bearings

From deep cold to punishing heat, these bearings stand up to the widest temperature range of any of our mounted bearings. They accommodate 3° of shaft misalignment and can be used in dry, wet (even submerged), and corrosive environments. Housing is cast iron. Bearing inserts consist of solid graphalloy bushings that have been pressed into cast iron insert housings—so they stay slick their entire service life. Graphalloy is a mixture of graphite, a dry lubricant that reduces wear, and copper, which adds strength and durability.

For information about P max, V max, and PV max, see page 1126.

Bearing Material	Temperature Range	P max	V max	PV max
Graphalloy	–400° to +750° F	750	75	12,000

Base Mount

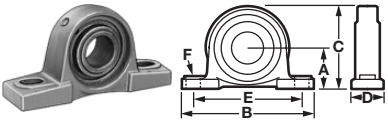

For Shaft Dia.	Center Ht. (A)	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Slot Size (F), Lg. × Wd.		Each
1/2"	15/16"	5"	2 17/32"	1 1/2"	3 3/4"	3/4" × 1/2"	7928K51	$142.57
5/8"	15/16"	5"	2 17/32"	1 1/2"	3 3/4"	3/4" × 1/2"	7928K52	142.57
3/4"	15/16"	5"	2 17/32"	1 1/2"	3 3/4"	3/4" × 1/2"	7928K53	142.57
1"	1 7/16"	5 1/2"	2 25/32"	1 1/2"	4 1/8"	3/4" × 1/2"	7928K63	206.57
1 1/4"	1 11/16"	6 1/2"	3 5/16"	1 7/8"	4 3/4"	13/16" × 21/32"	7928K43	233.67
1 1/2"	1 7/8"	6 9/16"	3 21/32"	1 7/8"	5"	13/16" × 21/32"	7928K34	327.70
2"	2 1/4"	8 1/8"	4 7/16"	2 3/8"	6 1/4"	7/8" × 25/32"	7928K82	393.69

Flange Mount

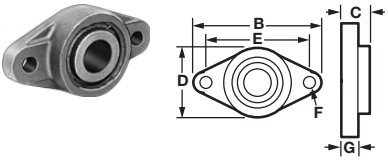

For Shaft Dia.	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
5/8"	4 7/16"	1 3/32"	2 3/8"	3 35/64"	15/32"	7/16"	7928K55	$142.57
3/4"	4 7/16"	1 3/32"	2 3/8"	3 35/64"	15/32"	7/16"	7928K56	142.57
1"	5 1/8"	1 7/32"	2 11/16"	3 57/64"	15/32"	1/2"	7928K65	206.57
1 1/4"	5 13/16"	1 1/2"	3 5/32"	4 39/64"	5/8"	1/2"	7928K45	233.67
1 1/4"	6 11/16"	1 29/64"	3 17/32"	5 1/8"	5/8"	9/16"	7928K35	316.00
1 1/2"	6 7/8"	1 37/64"	3 15/32"	5 43/64"	5/8"	9/16"	7928K73	324.73
2"	7 3/4"	1 11/16"	4 17/32"	6 3/16"	3/4"	19/32"	7928K84	393.69

Square-Flange Mount

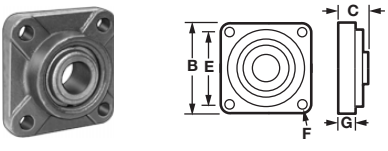

For Shaft Dia.	Square Size (B)	O'all Ht. (C)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
1/2"	3 3/8"	1 3/32"	2 33/64"	15/32"	15/32"	7928K57	$142.57
5/8"	3 3/8"	1 3/32"	2 33/64"	15/32"	15/32"	7928K58	142.57
3/4"	3 3/8"	1 3/32"	2 33/64"	15/32"	15/32"	7928K59	142.57
1"	3 3/4"	1 5/32"	2 3/4"	15/32"	9/16"	7928K67	206.57
1 3/16"	4 1/4"	1 29/64"	3 17/64"	15/32"	9/16"	7928K46	233.67
1 1/4"	4 1/4"	1 29/64"	3 17/64"	15/32"	9/16"	7928K47	233.67
2"	5 5/8"	1 43/64"	4 3/8"	5/8"	23/32"	7928K86	393.69

Cast Iron Base-Mounted Babbitt-Lined Bearings

Solid Bearing

Split Bearing

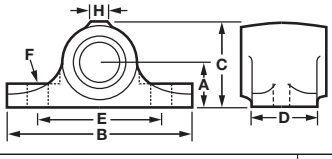

Choose these reliable classics for their high-strength and low-friction qualities. All are lined with corrosion-resistant babbitt (a mixture of lead, antimony, and tin). The housing is cast iron and has a hole with NPT female threads (H) for lubrication. For information about P max, V max, and PV max, see page 1126. ***Split bearings*** have a removable section for easy maintenance.

Bearing Material	Temperature Range	P max	V max	PV max
Babbitt	0° to 130° F	1,200	250	35,000

For Shaft Dia.	Load Cap., lbs. @ 200 rpm	Base Wd. (D)	Bolt Hole Size (F)	Pipe Size (H)	Solid Bearings Ctr. Ht. (A)	Solid Bearings O'all Lg. (B)	Solid Bearings O'all Ht. (C)	Solid Bearings Ctr.-to-Ctr. (E)		Solid Bearings Each	Split Bearings Ctr. Ht. (A)	Split Bearings O'all Lg. (B)	Split Bearings O'all Ht. (C)	Split Bearings Ctr.-to-Ctr. (E)		Split Bearings Each
1/2"	95	1"	1/2"	1/8"	3/4"	3"	1 3/8"	2 1/8"	6359K12	$42.37	3/4"	3 3/4"	1 1/2"	2 7/8"	6359K32	$48.57
5/8"	140	1 1/8"	1/2"	1/8"	13/16"	3 3/4"	1 19/32"	2 5/8"	6359K13	42.37	7/8"	4 1/4"	1 3/4"	3 1/4"	6359K33	48.57
3/4"	170	1 1/8"	1/2"	1/8"	13/16"	3 3/4"	1 19/32"	2 5/8"	6359K14	42.37	7/8"	4 1/4"	1 3/4"	3 1/4"	6359K34	48.57
1"	270	1 3/8"	9/16"	1/8"	1 1/8"	4 5/8"	2 1/32"	3 3/8"	6359K17	42.37	1"	4 3/4"	2 1/16"	3 5/8"	6359K37	53.96
1 3/16"	395	1 5/8"	5/8"	1/8"	1 3/8"	5"	2 15/32"	3 5/8"	6359K18	47.07	1 1/4"	5 1/4"	2 7/16"	4 1/8"	6359K38	63.15
1 1/4"	395	1 5/8"	5/8"	1/8"	1 3/8"	5"	2 15/32"	3 5/8"	6359K19	47.07	1 1/4"	5 1/4"	2 7/16"	4 1/8"	6359K39	63.15
1 7/16"	565	2"	11/16"	1/8"	1 1/2"	5 3/4"	2 13/16"	4"	6359K21	58.56	1 3/8"	6 1/4"	2 11/16"	4 7/8"	6359K41	74.63
1 1/2"	565	2"	11/16"	1/8"	1 1/2"	5 3/4"	2 13/16"	4"	6359K22	58.56	1 3/8"	6 1/4"	2 11/16"	4 7/8"	6359K42	74.63
1 3/4"	755	2 1/4"	3/4"	1/4"	1 13/16"	6 1/2"	3 1/4"	4 3/8"	6359K24	76.93	1 1/2"	6 3/4"	3"	5 1/4"	6359K44	93.00
2"	965	2 1/2"	3/4"	1/4"	1 11/16"	7"	3 1/4"	4 3/4"	6359K26	90.70	1 3/4"	7 1/2"	3 7/16"	6"	6359K46★	113.67
2 1/2"	1430	3"	1"	1/4"	—	—	—	—	—	—	2 1/8"	8 7/8"	4 3/16"	7"	6359K49	174.52

★ Bolt hole size (F) is 13/16".

Metric Extreme Misalignment Base-Mounted Nylon Bearings

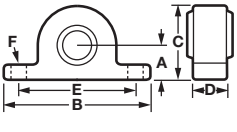

To accommodate extreme cases of shaft misalignment, these bearings have a self-lubricating bearing insert that swivels. The bearing insert is reinforced nylon and the housing is fiber-reinforced plastic. Bearings are 80% lighter than steel and resistant to corrosion, wear, shock, and vibration. Temperature range is –40° to +176° F.

For Shaft Dia., mm	Center Ht. (A), mm	O'all Lg. (B), mm	O'all Ht. (C), mm	Base Wd. (D), mm	Ctr.-to-Ctr. (E), mm	Bolt Slot Size (F), Lg. × Wd., mm	Static Load Cap., lbs.	Max. Misalignment		Each
5	7	34	14	6	27	5 × 3.3	90	30°	6687K31	$3.00
6	10	43	18	7	33	6 × 4.5	90	29°	6687K32	3.67
8	10	47	20	9	35	7 × 4.5	180	25°	6687K33	4.42
10	14	62	26	10.5	49	8 × 5.5	247	25°	6687K34	5.26
12	14	65	28	12	50	9 × 5.5	259	25°	6687K35	6.44
14	18	82	34	13.5	64	11 × 6.6	270	23°	6687K36	8.00
16	18	86	36	15	66	12 × 6.6	405	23°	6687K17	9.56
18	22	93	42	16.5	72	13 × 9	427	23°	6687K38	10.95
20	22	98	44	18	73	14 × 9	562	23°	6687K39	12.33
22	24	108	48	20	81	16 × 9	607	22°	6687K41	13.84
25	27	124	54	22	94	17 × 9	719	22°	6687K22	16.95
30	32	139	64	25	105	20 × 11	843	22°	6687K23	21.23

Food-Grade Base-Mounted Plastic Bearings

With bearing surfaces of USDA- and FDA-compliant UHMW (ultra high molecular weight) polyethylene or FDA-compliant PEEK (polyetheretherketone), these bearings are not only suitable for direct contact with food, but also able to withstand wet, corrosive environments. For information about P max, V max, and PV max, see page 1126.

UHMW Base-Mounted Bearings— All are made of a single UHMW polyethylene block. They have good vibration-damping qualities. ***Stainless Steel Base-Mounted Bearings with UHMW Insert—*** The housing is made of Type 304 stainless steel and the bearing insert is UHMW polyethylene. All bearings accommodate shaft misalignment up to 3°. ***PEEK Flange-Mounted Bearings—*** Made entirely of PEEK, these bearings offer good chemical compatibility with high load capacity. They have a closed back.

Bearing Material	Temperature Range	P max	V max	PV max
UHMW	–200° to +180°F	1,000	100	2,000
PEEK	–148° to +480°F	21,750	295	37,000

UHMW Base-Mounted Bearings

For Shaft Dia.	Center Ht. (A)	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size, Lg.×Wd. (F)		Each
1/2"	1 3/16"	4 3/4"	2 3/16"	1 1/2"	3 3/8"	7/16" × 7/8"	6254K21	$29.90
5/8"	1 3/16"	4 3/4"	2 3/16"	1 1/2"	3 3/8"	7/16" × 7/8"	6254K22	29.90
3/4"	1 5/16"	5 1/4"	2 1/2"	1 1/2"	3 3/4"	7/16" × 15/16"	6254K23	30.38
1"	1 7/16"	5 1/2"	2 3/4"	1 1/2"	4"	7/16" × 15/16"	6254K24	32.02
1 1/4"	1 7/8"	6 1/2"	3 5/8"	1 3/4"	5"	9/16" × 1 1/16"	6254K25	35.77
1 1/2"	2"	7"	4"	1 3/4"	5 3/8"	9/16" × 1 1/16"	6254K26	40.87
1 15/16"	2 1/4"	8"	4 1/2"	2"	6 1/4"	11/16" × 1 3/16"	6254K27	54.04

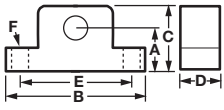

Stainless Steel Base-Mounted Bearings with UHMW Insert

For Shaft Dia.	Center Ht. (A)	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size, Lg×Wd. (F)		Each
1/2"	29/32"	3 15/16"	1 3/4"	1 1/8"	2 7/8"	21/64" × 21/32"	6252K41	$21.88
5/8"	29/32"	3 15/16"	1 3/4"	1 1/8"	2 7/8"	21/64" × 21/32"	6252K42	21.88
3/4"	29/32"	3 15/16"	1 3/4"	1 1/8"	2 7/8"	21/64" × 21/32"	6252K43	21.88
7/8"	29/32"	3 15/16"	1 3/4"	1 1/8"	2 7/8"	21/64" × 21/32"	6252K44	21.88
1"	29/32"	3 15/16"	1 3/4"	1 1/8"	2 7/8"	21/64" × 21/32"	6252K45	21.88
1 1/8"	1 1/16"	4 9/16"	2 1/16"	1 5/16"	3 1/4"	25/64" × 5/8"	6252K46	25.22
1 3/16"	1 1/16"	4 9/16"	2 1/16"	1 5/16"	3 1/4"	25/64" × 5/8"	6252K47	25.22
1 1/4"	1 1/16"	4 9/16"	2 1/16"	1 5/16"	3 1/4"	25/64" × 5/8"	6252K48	25.22
1 1/2"	1 11/32"	5 3/8"	2 11/16"	1 7/16"	3 7/8"	25/64" × 25/32"	6252K49	61.01

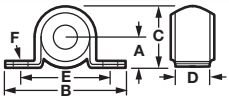

PEEK Flange-Mounted Bearings

For Shaft Dia.	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
1/8"	0.922"	0.265"	0.562"	0.532"	0.14"	0.156"	2943N1	$4.16
3/16"	0.984"	0.437"	0.562"	0.593"	0.14"	0.156"	2943N2	4.46
1/4"	1.078"	0.472"	0.594"	0.686"	0.14"	0.159"	2943N3	4.78
5/16"	1.318"	0.505"	0.718"	0.828"	0.168"	0.162"	2943N4	5.08
3/8"	1 1/2"	0.577"	0.812"	1"	0.168"	0.171"	2943N5	5.32

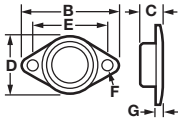

Aluminum Base- and Flange-Mount Bearing Housings

Mate one of these housings with your own bearing to create a custom mounted bearing. To begin, choose a housing ID that matches your bearing OD and simply press the bearing into place. If you don't see an exact match, you can machine the housing ID larger to fit. All housings are made of precision-sintered aluminum.

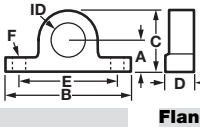

Base Mount

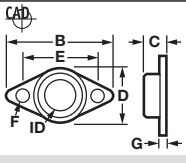

Flange Mount

Base Mount

ID	Ctr Ht. (A)	O'all Lg. (B)	O'all Ht. (C)	Base Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)		Each
3/8"	3/8"	1 7/16"	3/4"	3/8"	1 1/8"	13/64"	2829N1	$5.64
1/2"	9/16"	2 1/4"	1 1/8"	3/8"	1 3/4"	9/32"	2829N2	5.64
0.812"	3/4"	3 1/4"	1 9/16"	5/8"	2 1/2"	11/32"	2829N3	11.28
1 1/4"	1"	4"	1 15/16"	27/32"	3 1/8"	11/32"	2829N4	14.22
1.58"	1 1/4"	5"	2 9/16"	7/8"	4"	9/16"	2829N5	22.78

Flange Mount

ID	O'all Lg. (B)	O'all Ht. (C)	O'all Wd. (D)	Ctr.-to-Ctr. (E)	Bolt Hole Size (F)	Thick. (G)		Each
1/2"	1 5/8"	3/8"	3/4"	1 1/4"	11/64"	3/16"	2848N1	$3.34
5/8"	2 1/4"	7/16"	1 1/8"	1 3/4"	9/32"	3/16"	2848N2	4.18
0.812"	3 1/4"	5/8"	1 5/8"	2 1/2"	13/32"	1/4"	2848N3	7.94
1 1/4"	4"	27/32"	1 7/8"	3 1/8"	13/32"	5/16"	2848N4	10.86
1.58"	5"	29/32"	2 5/8"	4"	9/16"	3/8"	2848N5	18.18

Ball Bearing Shim Rings

Also called tolerance rings, these Type 301 stainless steel rings are for use in your stamped, molded, or worn housings to form a tight hold on your bearings. They operate like a spring, compressing and expanding, creating tension between the bearing and the housing to hold your bearing in place. Rings reduce vibration and compensate for some thermal expansion between the housing and the bearing. They eliminate the need for keys, pins, and adhesives. Rings are 0.008" to 0.020" (0.2032 to 0.508 mm) thick with corrugations from 0.0295" to 0.0492" (0.7493 to 1.2497 mm) high and allow for 0.5° of misalignment.

For Bearing Number	OD	Wd.	Radial Load Cap., lbs.	Bearing Mount Bore Dia.		Each
Inch						
R2	3/8"	0.156"	140	0.43"-0.433"	3547K11	$4.53
R3	1/2"	0.196"	180	0.555"-0.558"	3547K12	4.53
R4	5/8"	0.196"	250	0.68"-0.683"	3547K13	4.53
R6	7/8"	0.25"	580	0.95"-0.953"	3547K14	4.53
R8	1 1/8"	0.25"	720	1.199"-1.203"	3547K15	4.53
Metric— *Dimensions in millimeters.*						
38; 608	21.99	7	550	23.9-23.97	2896K11	4.53
6000	25.99	8	770	27.88-27.96	2896K12	4.53
6200	29.99	8.99	980	31.9-31.97	2896K13	4.53
6201	31.99	9.99	670	33.88-33.98	2896K14	4.53
6202; 6300	35	11	820	36.88-36.98	2896K15	4.53
6203	39.99	11.99	1,000	41.88-41.98	2896K16	3.74
6204; 6303	47	14	1,400	48.86-48.97	2896K17	5.17
6205; 6304	51.99	15	1,600	54.35-54.48	2896K18	5.17
6206; 6305	61.99	15.99	2,000	64.33-64.46	2896K19	7.53
6207	71.99	17	2,900	73.91-73.99	2896K21	10.35
6208	79.99	18	3,250	81.88-81.96	2896K22	11.03
6209	85	18.99	4,300	86.91-86.99	2896K23	15.45

For Bearing Number	OD	Wd.	Radial Load Cap., lbs.	Bearing Mount Bore Dia.		Each
Metric— *Dimensions in millimeters. (Cont.)*						
6210	89.99	19.99	4,550	91.89-91.97	2896K24	$16.64
6211	99.99	21	5,100	102.89-102.97	2896K25	18.94
6212	109.99	21.99	6,525	111.91-111.98	2896K26	21.03
6301	37	11.99	900	38.88-38.98	2896K34	4.89
6302	41.99	12.99	1,200	43.86-43.96	2896K35	4.53
6305W	61.99	22.99	3,600	64.33-64.46	2896K36	10.88
6306	71.99	18.99	3,600	73.91-73.99	2896K37	11.03
6307	79.99	21	4,000	81.88-81.96	2896K38	12.30
6308	89.99	22.99	5,350	91.89-91.97	2896K39	17.53
6309	99.99	25	6,550	101.9-101.98	2896K41	19.29
6310	109.99	27	7,190	111.91-111.98	2896K42	21.03
6311	119.99	28.99	7,950	121.89-121.97	2896K43	21.38
6312	129.99	31	10,500	131.9-131.97	2896K44	22.97
6313	139.99	32.99	12,200	141.9-141.98	2896K45	24.21
6314	149.99	35	13,000	151.89-151.96	2896K46	24.89
6315	159.99	37	13,950	161.89-161.97	2896K47	26.09
6316	169.99	38.99	17,250	171.88-171.95	2896K48	27.04

About Bearing Heaters

Heating your bearings makes them easier to install and reduces damage to your shafts during installation. The heaters work by expanding your bearing's inner race, so you get a snug fit without forcing a tight-fitting bearing onto a shaft. Heaters can also be used on gears, sprockets, pulleys, and bushings. ***Induction bearing heaters*** will not magnetize heated items.

Cone-Mount Bearing Heaters

Automatic (Shown w/Bearing)

For fast, even heat transfer, these heaters boast a cone-shape design. The cone is aluminum and the base is chrome-plated steel, unless noted.

Heaters operate on 120 VAC, 60 Hz and have a heating time of 2 to 30 minutes. Furnished with an on/off switch and an 8-ft. power cord with three-prong plug.

Manual heaters include a temperature-indicating crayon. The crayon mark melts when bearing reaches 250° F with ±25° F accuracy.

Automatic heaters include a thermostat that automatically brings the temperature up to 250° F with ±25° F accuracy.

Bearing ID Range	Watts	Ht. × Wd.		Each
Manual Heaters				
3/8″- 5 3/4″	725	10″ × 10″	6519K11	$323.75
3/4″- 5 3/4″	725	10″ × 10″	6519K17	360.87
Automatic Heaters				
3/4″- 8″	725	10″ × 10″	6519K19	546.52
5 1/2″-18″	1450	14″ × 21″	6519K21●	1,087.25

● Base is aluminum.

Ultra-Portable Miniature Induction Bearing Heater

Shaped like a large flashlight, this 2 1/2″ OD × 15″ Lg. induction-style heater easily fits in your hand to go where you go. It's perfect for use on bearings that are up to 2″ ID and 3″ OD. The heater housing is made of plastic.

Heater operates on 120 VAC, 50/60 Hz and includes three heating coils to handle a variety of heating jobs. It also has a thermal switch for thermal overload protection. Furnished with a 5 1/2-ft. power cord with three-prong plug and a plastic carrying case.

This heater can also be used on stubborn and rusted nuts. It is not rated for temperature. Demagnetization is not necessary after heating.

6083K11 ..... **Each** $516.44

Portable Digital Induction Bearing Heater

Take this completely portable heater anywhere it's needed. It has a heat clamp with a 2″ × 2″ opening to hold bearings that are 2″ wide and smaller with a 0.8″ to 4″ ID. The clamp is iron encased in phenolic plastic.

Heater operates on 110 or 240 VAC, 50/60 Hz and has a temperature range of 32° to 392° F with ±6° F accuracy. It has a time control that lets you vary the heating time from 0 to 60 minutes to prevent overheating. Furnished with a 6.6-ft. power cord (plug not included, see pages 784-789), temperature probe, heat-resistant gloves, and a padded carrying case with shoulder strap. Demagnetization is not necessary after heating.

5208A6 ..... **Each** $2,343.73

Hot-Plate Bearing Heater

An aluminum heating plate uniformly heats the top and bottom of your bearings. It adjusts to fit bearings up to 2″ thick and can heat more than one bearing at a time. The plate is housed in a 5″ Ht. × 16″ Wd. × 10″ Dp. metal case that minimizes heat loss and prevents dirt from entering your bearings.

Heater includes a thermostat that adjusts from 120° to 390° F with ±18° F accuracy. The thermostat has an automatic shut-off in case of thermostat failure. Heater operates on 115 VAC, 50/60 Hz and is rated to 1000 watts. Furnished with a 6.6-ft. power cord (plug not included, see pages 784-789). Demagnetization is not necessary after heating.

6503K45 ..... **Each** $1,199.49

Fast-Heating Digital Induction Bearing Heater

Heat a 60-lb. bearing in just 20 minutes. This fast-heating induction style heater comes with three sizes of steel crossbars (0.5″, 1.1″, and 1.7″ sq.) that hold bearings with a 0.8″ to 11.8″ ID. Maximum bearing weight is 88 lbs.

Heater operates on 110 VAC, 50/60 Hz and has a temperature range of 32° to 482° F with ±3.6° F accuracy. It automatically demagnetizes bearings after heating and includes a temperature probe, 0- to 60-minute time control, circuit breaker with over-current protection, and automatic over-heating protection.

Heater housing is steel and glass-filled polyamide. It measures 8.2″ Ht. × 17.7″ Wd. × 7.6″ Dp. Furnished with a 4.6-ft. power cord with three-prong plug.

7167K11 ..... **Each** $2,787.92

Digital Induction Bearing Heater

To ensure precise heating time and temperature control, this heater includes a microprocessor and keypad control. The digital display shows actual temperature, set temperature, and the time remaining.

This induction-style heater has aluminum crossbars that hold bearings up to 6 1/8″ wide with a 0.79″ and larger ID. Maximum bearing weight is 25 lbs.

Heater operates on 110-120 VAC, 50/60 Hz and has a maximum temperature of 465° F with ±5° F accuracy. It automatically demagnetizes bearings after heating and includes a temperature probe, an automatic and timed shutoff, a temperature hold feature, and thermal overload protection. Heater housing is polyurethane and aluminum. It measures 12 13/16″ Ht. × 12 5/8″ Wd. × 13″ Dp. Furnished with a 9-ft. power cord with three-prong plug.

6666K73 ..... **Each** $4,196.88

Crossbar Induction Bearing Heaters

These induction-style heaters have laminated steel crossbars to handle a wide range of bearing ODs and widths. They heat most bearings in 2 to 20 minutes.

The heaters include two sizes of crossbars. The crossbar size determines the bearing ID that can be accommodated (see listing for sizes). For the fastest heating, use the largest crossbar that fits through your bearing. The maximum heating temperature is 400° F. Temperature-indicating crayons are recommended (not included; see 3261K on page 606).

Heaters have an on/off switch, a grounded outer case, and 6-ft. long three-wire power cord. Model 6174K63 has a three-prong plug; models 6174K64 and K66 do not have a plug and must be hardwired. Heaters can be used for demagnetizing.

Max. Bearing OD	Wd.	Crossbar Sizes (sq.)	Voltage @ 60 Hz	O'all Size, Ht. × Wd.		Each
11″	4 3/8″	3/4″, 2″	110 VAC	9 3/4″ × 11 1/4″	6174K63	$1,310.71
22″	8″	1 1/4″, 3″	220 VAC	17 1/4″ × 17 1/4″	6174K64	2,606.08
22″	12 1/4″	1 1/4″, 3″	440 VAC	17 1/4″ × 21 3/4″	6174K66	2,868.54

Accessories

Heat Thermometer— More accurate than temperature-indicating crayons, this thermometer measures the temperature of heated bearings and gears to ±0.5° F. This digital reader includes a probe, flexible cord, and batteries. Temperature range is –58° to +1999° F.

6174K82 ..... **Each** $270.91

Riser Blocks— Use these blocks to lift bearing heater crossbars to accommodate larger diameter bearings for heaters listed above.

For Heater	Maximum Bearing OD	Block Size, Lg. × Wd. × Ht.		Per Pair
6174K63	14″	2 5/8″ × 2 5/8″ × 2 3/8″	6174K71	$254.01
6174K64 and 6174K66	32″	3 5/8″ × 3 5/8″ × 5″	6174K72	326.00

About Shaft Collars

Shaft collars are useful in machine applications for holding components on shafts. They also serve as mechanical stops and stroke limiters. There are several shaft collar styles to choose from.

Set Screw Style— Just slide these collars onto an unhardened shaft and tighten the set screw to hold the collar in place. Collars are easy to adjust, but their set screws can cause marring. Not effective on hardened shafts.

Clamp-On Styles— Allow greater clamping force than set screw shaft collars, plus they won't mar the shaft. *One-piece clamp-on shaft collars* slide onto the shaft and secure with one screw. They clamp evenly around the shaft, providing excellent holding power. *Two-piece clamp-on shaft collars* are similar to one-piece collars, except they come apart in two halves for easier installation and maintenance. *Two-piece clamp-on shaft collars with keyway* allow easy installation on keyed shafts and prevent collars from slipping on shafts.

Threaded, Square, and Hex Bore Styles— *Threaded bore shaft collars* install on threaded shafts to provide excellent contact with shaft threads for secure locking as well as easy adjustments. Ideal for high thrust loads. As their name implies, *square and hex bore shaft collars* fit either square- or hex-shaped shafts and offer maximum holding power. *Hex bore collars* are particularly good for direct drive applications.

Set Screw

One-Piece Clamp-On

Two-Piece Clamp-On

Square Bore

Set Screw Shaft Collars

Just slide the collar on a shaft and tighten the hex-socket cup-point set screw to secure. Set screw is alloy steel, except for the *Type 303 stainless steel* shaft collars, which have 18-8 stainless steel set screws, and *Type 316 stainless steel* shaft collars, which have Type 316 stainless steel set screws.

Black-Oxide Steel— Made of carbon steel. Black-oxide finish offers some corrosion resistance. ***Zinc-Plated Steel—*** Same clamping force as black-oxide steel but with better corrosion resistance. ***Stainless Steel—*** Choose *Type 303 stainless steel* for excellent corrosion resistance. For superior corrosion and chemical resistance, choose *Type 316 stainless steel*. ***Aluminum—*** Lightweight with good corrosion resistance.

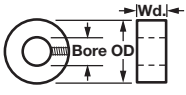

Steel, Stainless Steel, and Aluminum

Bore	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Zinc-Plated Steel	Each	Type 303 Stainless Steel	Each	Type 316 Stainless Steel	Each	Aluminum	Each
1/16"	1/4"	3/16"	2-56	9414T1	$0.82	6432K71	$0.96	6462K71	$4.53	9943K11	$7.56	9946K1	$3.42
3/32"	3/8"	3/16"	6-32	9414T2	.82	6432K72	.96	6462K72	5.04	9943K12	7.56	9946K2	3.04
1/8"	3/8"	1/4"	6-32	9414T3	.61	6432K17	.79	6462K17	3.78	9943K13	6.48	9946K41	1.18
5/32"	7/16"	1/4"	8-32	9414T4	.82	6432K73	.96	6462K73	4.53	9943K14	7.56	9946K3	3.07
3/16"	7/16"	1/4"	8-32	9414T5	.61	6432K19	.79	6462K19	3.45	9943K15	5.40	9946K42	1.18
1/4"	1/2"	5/16"	10-32	9414T6★	.61	6432K12★	.81	6462K12	3.82	9943K16	5.35	9946K11	1.91
5/16"	5/8"	5/16"	10-32	9414T7	.66	6432K13	.84	6462K13	3.88	9943K17	5.81	9946K12	2.31
3/8"	3/4"	3/8"	1/4"-20	9414T8	.70	6432K14	.92	6462K14	4.12	9943K18	6.58	9946K13	2.05
7/16"	7/8"	7/16"	1/4"-20	9414T9	.80	6432K15	1.00	6462K15	4.80	9943K19	7.56	9946K14	2.05
1/2"	1"	7/16"	1/4"-20	9414T11	.84	6432K16	1.07	6462K16	5.04	9943K21	7.65	9946K15	2.22
9/16"	1"	7/16"	1/4"-20	9414T12	.94	6432K22	1.21	6462K22	5.96	9943K22	9.44	9946K16	2.38
5/8"	1 1/8"	1/2"	5/16"-18	9414T13	1.02	6432K18	1.32	6462K18	6.20	9943K23	9.56	9946K17	2.53
11/16"	1 1/4"	9/16"	5/16"-18	9414T14	1.29	6432K24	1.66	6462K24	8.68	9943K24	13.23	9946K18	3.01
3/4"	1 1/4"	9/16"	5/16"-18	9414T15	1.26	6432K21	1.61	6462K21	7.64	9943K25	11.60	9946K19	3.01
13/16"	1 1/4"	9/16"	5/16"-18	9414T16	1.48	6432K26	1.95	6462K26	10.60	9943K26	16.31	9946K4	3.89
7/8"	1 1/2"	9/16"	5/16"-18	9414T17	1.48	6432K23	1.95	6462K23	11.00	9943K27	16.46	9946K22	3.48
15/16"	1 1/2"	9/16"	5/16"-24	9414T18	1.64	6432K35	2.16	6462K35	14.48	9943K28	22.21	9946K23	3.79
1"	1 1/2"	5/8"	5/16"-24	9414T19	1.52	6432K25	2.00	6462K25	11.37	9943K29	20.50	9946K24	3.79
1 1/16"	1 3/4"	5/8"	5/16"-18	9414T21	2.98	6432K37	3.29	6462K37	15.87	9943K31	28.63	9946K25	4.74
1 1/8"	1 3/4"	5/8"	5/16"-18	9414T22	2.83	6432K27	3.05	6462K27	15.56	9943K32	25.00	9946K26	4.75
1 3/16"	2"	11/16"	3/8"-16	9414T23	3.07	6432K28	3.59	6462K28	20.96	9943K33	31.08	9946K27	6.32
1 1/4"	2"	11/16"	3/8"-16	9414T24	3.29	6432K29	3.78	6462K29	19.41	9943K34	33.21	9946K28	6.32
1 5/16"	2 1/8"	11/16"	3/8"-16	9414T25	3.60	6432K31	4.00	6462K31	24.84	9943K35	35.29	9946K29	6.82
1 3/8"	2 1/8"	3/4"	3/8"-16	9414T26	3.90	6432K32	4.05	6462K32	24.48	9943K36	35.29	9946K31	6.81
1 7/16"	2 1/4"	3/4"	3/8"-16	9414T27	4.02	6432K33	4.24	6462K33	26.28	9943K37	38.19	9946K32	7.11
1 1/2"	2 1/4"	3/4"	3/8"-16	9414T28	4.12	6432K34	4.38	6462K34	22.17	9943K38	38.19	9946K33	7.11
1 9/16"	2 1/2"	13/16"	3/8"-16	9414T29	4.47	6432K39	6.94	6462K39	40.09	9943K39	45.66	9946K5	12.11
1 5/8"	2 1/2"	13/16"	3/8"-16	9414T31	4.77	6432K36	5.70	6462K36	36.38	9943K41	46.96	9946K6	12.11
1 11/16"	2 1/2"	13/16"	3/8"-16	9414T32	5.00	6432K41	6.74	6462K41	34.57	9943K42	51.81	9946K7	12.98
1 3/4"	2 5/8"	7/8"	1/2"-13	9414T33	5.25	6432K38	7.51	6462K38	45.31	9943K43	59.92	9946K43	7.80
1 13/16"	2 3/4"	7/8"	1/2"-13	9414T34	5.73	6432K44	10.42	6462K44	45.20	9943K44	67.00	9946K8	13.02
1 7/8"	2 3/4"	7/8"	1/2"-13	9414T35	6.19	6432K51	8.89	6462K51	52.40	9943K45	67.00	9946K9	13.56
1 15/16"	3"	7/8"	1/2"-13	9414T36	6.54	6432K42	7.97	6462K42	46.07	9943K46	66.46	9946K44	10.16
2"	3"	7/8"	1/2"-13	9414T37	6.85	6432K43	8.19	6462K43	46.07	9943K47	63.81	9946K45	10.47
2 1/8"	3"	7/8"	1/2"-13	9414T38	7.72	6432K52	10.58	6462K52	58.10	9943K48	82.15	9946K51	15.29
2 3/16"	3 1/4"	15/16"	1/2"-13	9414T39	8.25	6432K53	11.92	6462K53	73.27	9943K49	103.58	9946K52	18.93
2 1/4"	3 1/4"	15/16"	1/2"-13	9414T41	8.58	6432K45	9.33	6462K45	57.70	9943K51	80.96	9946K53	18.80
2 5/16"	3 1/4"	15/16"	1/2"-13	9414T42	8.73	6432K54	12.74	6462K54	77.70	9943K52	110.79	9946K54	18.93
2 3/8"	3 1/4"	15/16"	1/2"-13	9414T43	8.85	6432K55	13.07	6462K55	77.70	9943K53	106.19	9946K55	18.93
2 7/16"	3 1/2"	1"	1/2"-13	9414T44	9.18	6432K46	11.00	6462K46	69.70	9943K54	94.58	9946K56	21.73
2 1/2"	3 1/2"	1"	1/2"-13	9414T45	9.48	6432K47	11.43	6462K47	73.67	9943K55	96.96	9946K46	13.67
2 5/8"	4"	1 1/8"	1/2"-13	9414T46	15.90	6432K56	23.08	6462K56	90.30	9943K56	137.56	9946K57	29.82
2 11/16"	4"	1 1/8"	1/2"-13	9414T47	16.41	6432K57	23.82	6462K57	101.56	9943K57	150.62	9946K58	29.82
2 3/4"	4"	1 1/8"	1/2"-13	9414T48	16.42	6432K58	23.82	6462K58	101.56	9943K58	150.62	9946K59	28.51
2 7/8"	4"	1 1/8"	1/2"-13	9414T49♠	22.43	6432K59	29.97	6462K59	120.89	9943K59	183.40	9946K61	28.51
2 15/16"	4"	1 1/8"	1/2"-13	9414T51♠	22.65	6432K48	24.11	6462K48	121.66	9943K61	176.35	9946K62	30.02
3"	4"	1 1/8"	1/2"-13	9414T52♠	20.02	6432K49	24.11	6462K49	120.89	9943K62	176.35	9946K47	28.49
3 1/2"	4 3/4"	1 1/8"	1/2"-13	9414T53●	24.77	6432K61	38.14	6462K61	154.31	9943K63	335.13	9946K63	31.53
4"	5"	1 1/8"	1/2"-13	9414T54	32.71	6432K62	60.98	6462K62	231.02	9943K64	535.75	9946K64	33.62
4 1/2"	5 1/2"	1 1/4"	1/2"-13	9414T55	40.33	6432K63	60.98	6462K63	231.02	9943K65	535.75	9946K65	36.49
5"	6"	1 1/4"	1/2"-13	9414T56	49.24	6432K64	88.86	6462K64	336.85	9943K66	781.23	9946K66	38.80
6"	7"	1 1/4"	1/2"-13	9414T57	57.11	6432K66	99.74	6462K66	385.03	9943K68	893.02	9946K67	41.89

★ 9/32" Wd. ♠ 4 1/4" OD. ● 4 1/2" OD.

Brass, Nylon, and Sintered Steel Set Screw Shaft Collars

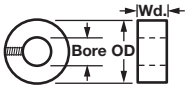

Slide the collar on the shaft and tighten the socket-head cup-point set screw to secure.

Brass— Softer than steel, these Alloy 360 brass collars are spark resistant. Set screw is 18-8 stainless steel. ***Nylon—*** Collars are nylon 101 and are excellent for food and pharmaceutical processing. Set screw is Type 304 stainless steel. Color is white. Max. temp. is 210°F. Collars are USDA, FDA, and 3-A compliant. ***Sintered Steel—*** Made from powdered metal so they are substantially lighter than steel collars. They have a rust-inhibiting coating. Set screw is steel.

Bore	OD	Wd.	Screw Size		Each
Brass					
1/8"	3/8"	1/4"	8-32	6240K11	$6.40
3/16"	7/16"	1/4"	8-32	6240K12	5.18
1/4"	1/2"	5/16"	10-32	6240K13	5.18
5/16"	5/8"	5/16"	10-32	6240K14	5.24
3/8"	3/4"	3/8"	1/4"-20	6240K15	5.24
7/16"	7/8"	7/16"	1/4"-20	6240K16	6.40
1/2"	1"	7/16"	1/4"-20	6240K17	6.58
9/16"	1"	7/16"	1/4"-20	6240K18	7.42
5/8"	1 1/8"	1/2"	5/16"-18	6240K19	7.69
11/16"	1 1/4"	9/16"	5/16"-18	6240K21	10.00
3/4"	1 1/4"	9/16"	5/16"-18	6240K22	10.00
13/16"	1 1/4"	9/16"	5/16"-18	6240K23	11.43
7/8"	1 1/2"	9/16"	5/16"-18	6240K24	14.02
15/16"	1 1/2"	9/16"	5/16"-24	6240K25	14.02
1"	1 1/2"	5/8"	5/16"-24	6240K26	14.02
1 1/16"	1 3/4"	5/8"	5/16"-18	6240K27	22.20
1 1/8"	1 3/4"	5/8"	5/16"-18	6240K28	23.51
1 3/16"	2"	1 1/16"	3/8"-16	6240K29	31.79
Brass (Cont.)					
1 1/4"	2"	1 1/16"	3/8"-16	6240K31	$32.20
1 1/2"	2 1/4"	3/4"	3/8"-16	6240K35	42.54
2"	3"	7/8"	1/2"-13	6240K44	61.49
Nylon					
1/4"	3/4"	7/16"	10-24	60475K66	2.70
5/16"	7/8"	7/16"	10-24	60475K67	2.73
3/8"	7/8"	7/16"	10-24	60475K68	2.75
7/16"	7/8"	7/16"	1/4"-20	60475K71	2.79
1/2"	1"	7/16"	1/4"-20	60475K72	3.55
9/16"	1 1/8"	1/2"	1/4"-20	60475K69	2.93
5/8"	1 1/8"	1/2"	5/16"-18	60475K73	3.77
3/4"	1 1/4"	9/16"	5/16"-18	60475K74	3.90
7/8"	1 1/2"	9/16"	5/16"-18	60475K75	5.21
1"	1 5/8"	5/8"	5/16"-18	60475K76	5.32
1 1/4"	2"	1 1/16"	3/8"-16	60475K78	12.88
1 3/8"	2 1/8"	3/4"	3/8"-16	60475K79	15.57
1 1/2"	2 1/4"	3/4"	3/8"-16	60475K82	15.57
1 5/8"	2 1/2"	13/16"	3/8"-16	60475K83	20.71
Nylon (Cont.)					
1 3/4"	2 3/4"	7/8"	1/2"-13	60475K84	$24.53
1 7/8"	2 3/4"	7/8"	1/2"-20	60475K85	25.68
2"	3"	7/8"	1/2"-13	60475K87	26.29
2 1/4"	3 1/4"	15/16"	1/2"-13	60475K88	44.18
2 1/2"	3 1/2"	1"	1/2"-13	60475K89	49.66
2 3/4"	3 3/4"	1"	1/2"-13	60475K91	59.34
3"	4 1/4"	1 1/8"	1/2"-13	60475K92	62.90
Sintered Steel					
1/8"	3/8"	1/4"	6-32	6166K17	1.14
3/16"	7/16"	1/4"	6-32	6166K18	1.17
3/8"	3/4"	3/8"	10-32	6166K23	1.19
7/16"	7/8"	7/16"	10-32	6166K24	1.24
1/2"	1"	7/16"	10-32	6166K25	1.28
5/8"	1 1/8"	1/2"	1/4"-20	6166K26	1.45
3/4"	1 1/4"	9/16"	1/4"-20	6166K27	1.59
7/8"	1 1/2"	9/16"	1/4"-20	6166K28	1.74
1 1/2"	2 1/4"	3/4"	3/8"-16	6166K37	3.27

Metric Set Screw Shaft Collars

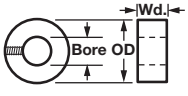

Slide this metric collar on the shaft and tighten the hex-head cup-point set screw.

Black-Oxide Steel— Made of carbon steel. Black-oxide finish offers some corrosion resistance. Set screw is steel. ***Type 303 Stainless Steel—*** Have excellent corrosion resistance. Set screw is 18-8 stainless steel.

Bore, mm	OD, mm	Wd., mm	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each
2	6.4	3.5	M2	57485K61	$1.25	57485K11	$3.90
3	9.5	5	M2	57485K63	1.45	57485K12	3.93
4	9.5	5	M2	57485K64	1.45	57485K21	4.28
5	12.7	6	M3	57485K65	1.45	57485K22	4.28
6	12.7	8	M4	57485K66	1.45	57485K23	4.28
8	15.9	8	M4	57485K67	1.70	57485K24	4.28
10	22.2	10	M5	57485K68	1.78	57485K31	6.05
12	22.2	12	M6	57485K69	2.08	57485K32	6.05
14	25.4	12	M6	57485K71	2.20	57485K33	6.42
15	25.4	12	M6	57485K72	2.20	57485K34	6.42
16	28.6	12	M6	57485K73	2.23	57485K35	7.72
18	31.8	14	M6	57485K74	2.48	57485K36	11.98
20	31.8	14	M6	57485K75	$2.71	57485K37	$11.68
22	38.1	14	M6	57485K76	2.71	57485K38	13.13
24	41.3	14	M8	57485K77	2.92	57485K39	15.36
25	41.3	16	M8	57485K78	3.08	57485K41	15.66
28	47.6	16	M8	57485K79	3.08	57485K42	23.98
30	47.6	16	M8	57485K81	3.48	57485K43	23.98
34	50.8	16	M8	57485K83	3.91	57485K13	23.76
35	57.2	16	M8	57485K84	4.47	57485K26	26.81
36	57.2	16	M8	57485K85	4.47	57485K14	26.40
40	60.3	18	M10	57485K87	6.48	57485K28	30.98
45	73	18	M10	57485K88	8.85	57485K29	54.15
50	79.4	18	M10	57485K89	10.17	57485K52	80.47

Easy-Install Set Screw Shaft Collars

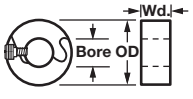

A two-piece interlocking design and easy access with a single set screw lets you install these collars without disassembling other equipment. Each has one hex-head steel set screw (unless noted) and a rugged cast iron construction with zinc plating for corrosion resistance.

Bore	OD	Wd.	Screw Size		Each
1 3/16"	2 3/4"	1"	3/8"-16	6433K13	$12.82
1 1/2"	3"	1"	3/8"-16	6433K17	14.70
1 15/16"	3 3/4"	1 1/4"	1/2"-13	6433K21	28.98
2"	3 3/4"	1 1/4"	1/2"-13	6433K22	28.98
2 3/16"	4 1/4"	1 1/4"	1/2"-13	6433K23	34.93
2 7/16"	4 1/2"	1 1/4"	1/2"-13	6433K24	38.48
3"	5"	1 1/4"	1/2"-13	6433K41	$56.52
3 3/16"	5 1/2"	1 5/8"	1/2"-13	6433K42■	69.80
3 7/16"	5 7/8"	1 5/8"	1/2"-13	6433K27■	79.57
3 15/16"	6 1/2"	1 5/8"	1/2"-13	6433K28■	81.11
4 7/16"	7"	1 5/8"	1/2"-13	6433K33■	86.65
4 15/16"	7 1/2"	1 5/8"	1/2"-13	6433K34■	102.73

■ Two set screws.

Metric One-Piece Clamp-On Shaft Collars

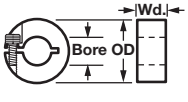

One-piece metric clamp-style collars grip evenly around the entire shaft. They won't mar the shaft and they allow greater clamping force than set screw collars. Tighten the alloy steel socket-head cap screw to secure.

Black-Oxide Steel— Made of grade 1215 steel or equivalent. Black-oxide finish offers some corrosion resistance. ***Aluminum—*** Lightweight with good corrosion resistance.

Bore, mm	Wd., mm	Screw Size	Black-Oxide Steel OD, mm		Each	Aluminum OD, mm		Each
4	9	M3	17.5	57445K21	$3.33	16	9506T1	$3.32
5	9	M3	17.5	57445K22	3.11	16	9506T2	3.20
6	9	M3	19.1	57445K23	3.21	16	9506T3	3.14
8	9	M3	25.4	57445K24	3.16	18	9506T4	3.32
10	9	M3	25.4	57445K25	4.11	24	9506T5	3.80
12	11	M4	28.6	57445K26	4.06	28	9506T6	4.18
16	13	M5	35	57445K71	5.00	34	9506T7	4.86
18	13	M5	38.1	57445K72	5.66	36	9506T8	5.56
20	15	M6	41.3	57445K73	6.05	40	9506T9	6.20
25	15	M6	47.6	57445K74	6.35	45	9506T11	6.66
30	15	M6	54	57445K75	8.55	54	9506T12	10.38
35	15	M6	57.1	57445K76	9.96	57	9506T13	11.66
40	15	M6	60.3	57445K77	10.70	60	9506T14	12.50
45	19	M8	73	57445K78	18.88	73	9506T15	22.78
50	19	M8	79.4	57445K79	22.18	78	9506T16	25.52

For information about shaft collars, see page 1165.

One-Piece Clamp-On Shaft Collars

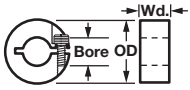

Collars grip evenly around the entire shaft without marring, allowing greater clamping force than set screw collars. Tighten the socket-head cap screw to secure. Cap screws are alloy steel, except for the stainless steel, chrome-plated steel, and plastic shaft collars, which have 18-8 stainless cap screws.

Black-Oxide Steel—Made of grade 1215 steel, unless noted. Black-oxide finish offers some corrosion resistance. ***Zinc-Plated Steel***—Same clamping force as black-oxide steel but with better corrosion resistance. ***Stainless Steel***—Choose *Type 303 stainless steel* for excellent corrosion resistance. For superior corrosion and chemical resistance, choose *Type 316 stainless steel*. ***Aluminum***—Lightweight with good corrosion resistance. ***Chrome-Plated Steel***—Have the strength and corrosion resistance of zinc-plated steel with a bright finish. ***Nylon 6/6*** and ***Delrin® Acetal Resin***—Offer good chemical resistance and are suitable for washdown applications.

Steel, Stainless Steel, and Aluminum

Bore	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Zinc-Plated Steel	Each	Type 303 Stainless Steel	Each	Type 316 Stainless Steel	Each	Aluminum	Each
1/8"	1/2"	1/4"	4-40	6435K11	$3.09	9961K11●	$3.44	6435K31	$6.35	9421T1	$10.71	6157K11	$2.90
3/16"	5/8"	5/16"	4-40	6435K51	1.93	9961K12★	2.92	6435K61	4.12	9421T2	10.94	6157K31	2.21
1/4"	11/16"	5/16"	4-40	6435K12	1.87	9961K13	2.55	6435K32	5.47	9421T3	10.94	6157K12	2.03
5/16"	11/16"	5/16"	4-40	6435K52	1.83	9961K14	2.66	6435K62	4.37	9421T4	10.97	6157K32	2.02
3/8"	7/8"	3/8"	6-32	6435K13	1.99	9961K15	2.86	6435K33	6.00	9421T5	11.77	6157K13	2.17
7/16"	15/16"	3/8"	6-32	6435K53	2.31	9961K16	3.19	6435K63	5.77	9421T6	12.29	6157K33	2.59
1/2"	11/8"	13/32"	8-32	6435K14	1.87	9961K17	3.12	6435K34	7.60	9421T7	12.11	6157K14	2.47
9/16"	15/16"	7/16"	10-32	6435K54	2.57	9961K18	4.02	6435K64	8.72	9421T8	13.69	6157K34	3.05
5/8"	15/16"	7/16"	10-32	6435K15	2.02	9961K19	4.00	6435K35	9.07	9421T9	13.60	6157K15	2.55
11/16"	1 1/2"	1/2"	10-32	6435K71	2.75	9961K21	4.65	6435K28	9.67	9421T11◤	17.20	—	—
3/4"	1 1/2"	1/2"	1/4"-28	6435K16	1.74	9961K22	4.36	6435K36	11.25	9421T12	17.23	6157K16	3.15
13/16"	1 5/8"	1/2"	1/4"-28	6435K29	5.72	9961K23	6.12	6435K42	12.05	9421T13	18.86	6157K19	5.83
7/8"	1 5/8"	1/2"	1/4"-28	6435K17	2.98	9961K24	5.32	6435K37	13.14	9421T14	18.49	6157K17	4.13
15/16"	1 3/4"	1/2"	1/4"-28	6435K72	3.06	9961K25	5.77	6435K44	13.49	9421T15	20.09	6157K36	3.84
1"	1 3/4"	1/2"	1/4"-28	6435K18	3.27	9961K26	5.48	6435K38	13.11	9421T16	19.91	6157K18	3.65
1 1/16"	1 7/8"	1/2"	1/4"-28	6435K46	6.10	9961K27	7.36	6435K48	16.07	9421T17	21.57	6157K22	7.28
1 1/8"	1 7/8"	1/2"	1/4"-28	6435K19	3.60	9961K28	6.23	6435K39	15.53	9421T18	21.57	6157K26	6.91
1 3/16"	2 1/16"	1/2"	1/4"-28	6435K49	5.01	9961K29	7.96	6435K55	16.40	9421T19	23.23	6157K27	8.87
1 1/4"	2 1/16"	1/2"	1/4"-28	6435K21	3.91	9961K31	6.36	6435K41	18.02	9421T21	22.89	6157K21	6.88
1 5/16"	2 1/4"	9/16"	1/4"-28	6435K56	6.97	9961K32	9.04	6435K57	22.44	9421T22■	24.09	6157K28■	8.82
1 3/8"	2 1/4"	9/16"	1/4"-28	6435K22	3.79	9961K33	8.25	6435K58	20.70	9421T23	25.29	6157K29	8.89
1 7/16"	2 1/4"	9/16"	1/4"-28	6435K66	6.97	9961K34	9.12	6435K67	20.70	9421T24	25.29	6157K38	8.86
1 1/2"	2 3/8"	9/16"	1/4"-28	6435K23	5.32	9961K35	8.10	6435K43	20.79	9421T25	25.54	6157K23	6.96
1 9/16"	2 3/8"	9/16"	1/4"-28	6435K59	10.68	9961K36	12.45	6435K65	18.86	9421T26	27.63	6157K37	11.07
1 5/8"	2 5/8"	11/16"	5/16"-24	6435K24	9.16	9961K37	13.25	6435K68	29.64	9421T27▲	41.00	6157K39▲	16.87
1 11/16"	2 3/4"	11/16"	5/16"-24	6435K69	13.49	9961K38	14.39	6435K78	30.25	9421T28	41.00	6157K41	16.88
1 3/4"	2 3/4"	11/16"	5/16"-24	6435K25	9.15	9961K39	13.11	6435K45	30.54	9421T29	41.00	6157K24	12.96
1 13/16"	2 7/8"	11/16"	5/16"-24	6435K79	16.30	9961K41	19.23	6435K81	36.11	9421T31	43.49	6157K42	20.91
1 7/8"	2 7/8"	11/16"	5/16"-24	6435K26	10.45	9961K42	17.14	6435K82	37.14	9421T32♠	43.49	6157K43♠	19.03
1 15/16"	3"	11/16"	5/16"-24	6435K83	14.63	9961K43	18.42	6435K84	37.85	9421T33	43.49	6157K44	19.03
2"	3"	11/16"	5/16"-24	6435K27	10.15	9961K44	14.85	6435K47	38.15	9421T34	43.49	6157K25	13.50
2 1/16"	3 1/4"	3/4"	5/16"-24	6435K85	19.00	9961K45	19.86	6435K86	44.73	9421T35♦	47.40	6157K45♦	25.87
2 1/8"	3 1/4"	3/4"	5/16"-24	6435K87	16.54	9961K46	17.82	6435K88	46.86	9421T36	53.00	6157K46	25.44
2 3/16"	3 1/4"	3/4"	5/16"-24	6435K89	14.35	9961K47	18.76	6435K91	48.20	9421T37	53.00	6157K47	25.99
2 1/4"	3 1/4"	3/4"	5/16"-24	6435K73	11.63	9961K48	18.77	6435K92	49.72	9421T38	53.00	6157K48	24.04
2 5/16"	3 1/2"	3/4"	5/16"-24	6435K94	21.21	9961K49	22.13	6435K93	56.00	9421T39♣	60.09	6157K49♣	29.46
2 3/8"	3 1/2"	3/4"	5/16"-24	6435K95	19.69	9961K51	20.71	6435K96	58.68	9421T41	60.09	6157K51	28.23
2 7/16"	3 1/2"	3/4"	5/16"-24	6435K74	12.46	9961K52	21.17	6435K97	60.00	9421T42	60.09	6157K52	28.17
2 1/2"	3 3/4"	7/8"	3/8"-24	6435K75	21.91	9961K53	30.63	6435K98	65.92	9421T43	75.63	6157K53	36.50
2 9/16"	3 7/8"	7/8"	3/8"-24	6435K212	34.89	9961K54	39.30	6435K213	65.00	9421T44	77.46	6157K54	40.63
2 5/8"	3 7/8"	7/8"	3/8"-24	6435K214	31.89	9961K55	34.69	6435K215	70.61	9421T45	80.69	6157K55	40.63
2 11/16"	4"	7/8"	3/8"-24	6435K216	33.56	9961K56	37.94	6435K217	70.91	9421T46	80.69	6157K56	40.63
2 3/4"	4"	7/8"	3/8"-24	6435K218	33.66	9961K57	36.67	6435K219	72.63	9421T47	80.69	6157K57	40.63
2 13/16"	4 1/4"	7/8"	3/8"-24	6435K223	40.86	9961K58	44.77	6435K224	73.94	9421T48	86.74	6157K58	47.57
2 7/8"	4 1/4"	7/8"	3/8"-24	6435K225	38.92	9961K59	42.48	6435K226	77.51	9421T49	86.74	6157K59	47.57
2 15/16"	4 1/4"	7/8"	3/8"-24	6435K76	28.01	9961K61	39.33	6435K227	79.79	9421T51	86.74	6157K61	47.57
3"	4 1/4"	7/8"	3/8"-24	6435K77	22.66	9961K62	38.76	6435K228	80.29	9421T52	82.06	6157K62	45.20
3 1/2"	4 3/4"	7/8"	3/8"-24	2362K11♥	53.10	—	—	2362K14	90.00	9421T53	187.00	2362K17	55.80
4"	5 1/4"	7/8"	3/8"-24	2362K12♥	53.10	—	—	2362K15	125.00	9421T54	198.09	2362K18	58.18
5"	6 1/4"	7/8"	3/8"-24	2362K13♥	62.77	—	—	2362K16	130.00	9421T55	270.54	2362K19	61.19
6"	7 1/4"	7/8"	3/8"-24	2362K21♥	65.16	—	—	2362K22	134.21	9421T56	342.99	2362K23	59.28

● 11/16" OD; 5/16" Wd. ★ 11/16" OD. ◤ 1/4"-28 screw size. ■ 2 1/8" OD. ▲ 2 3/4" OD. ♠ 3" OD. ♦ 3 1/8" OD. ♣ 3 3/8" OD. ♥ 1018 steel.

Chrome-Plated Steel

Bore	OD	Wd.	Screw Size		Each
1/4"	11/16"	5/16"	4-40	9959K13	$3.66
5/16"	11/16"	5/16"	4-40	9959K14	3.71
3/8"	7/8"	3/8"	6-32	9959K15	3.82
1/2"	1 1/8"	13/32"	8-32	9959K17	4.02
5/8"	15/16"	7/16"	10-32	9959K19	4.72
3/4"	1 1/2"	1/2"	1/4"-28	9959K22	4.48
7/8"	1 5/8"	1/2"	1/4"-28	9959K24	5.13
1"	1 3/4"	1/2"	1/4"-28	9959K26	4.93
1 3/16"	2 1/16"	1/2"	1/4"-28	9959K29	6.02
1 1/4"	2 1/16"	1/2"	1/4"-28	9959K31	5.96
1 3/8"	2 1/4"	9/16"	1/4"-28	9959K33	6.40
1 1/2"	2 3/8"	9/16"	1/4"-28	9959K35	6.82
1 7/8"	3"	11/16"	5/16"-24	9959K42	13.78
2"	3"	11/16"	5/16"-24	9959K44	13.27
2 1/2"	3 3/4"	7/8"	3/8"-24	9959K53	23.24
2 3/4"	4"	7/8"	3/8"-24	9959K57	25.38
3"	4 1/4"	7/8"	3/8"-24	9959K62	26.51

Nylon 6/6 and Delrin® Acetal Resin

Bore	OD	Wd.	Screw Size	Nylon 6/6	Each	Delrin® Acetal Resin	Each
1/4"	13/16"	3/8"	6-32	9410T1	$5.20	9410T31	$5.30
5/16"	13/16"	3/8"	6-32	9410T2	5.29	9410T32	5.38
3/8"	11/16"	1/2"	6-32	9410T3	5.35	9410T33	5.44
1/2"	1 1/4"	9/16"	8-32	9410T4	5.58	9410T34	5.68
5/8"	1 1/2"	5/8"	10-24	9410T5	5.83	9410T35	5.93
3/4"	1 3/4"	5/8"	1/4"-20	9410T6	6.07	9410T36	6.17
7/8"	1 7/8"	3/4"	1/4"-20	9410T7	6.24	9410T37	6.35
1"	2"	3/4"	1/4"-20	9410T8	6.55	9410T38	6.66
1 3/16"	2 1/8"	3/4"	1/4"-20	9410T9	10.12	9410T39	10.29
1 1/4"	2 1/4"	3/4"	1/4"-20	9410T11	10.42	9410T41	10.61
1 3/8"	2 3/8"	3/4"	1/4"-20	9410T12	10.52	9410T42	10.71
1 1/2"	2 1/2"	3/4"	1/4"-20	9410T13	11.08	9410T43	11.27
1 7/8"	3 1/4"	15/16"	5/16"-18	9410T14	13.32	9410T44	13.56
2"	3 1/4"	15/16"	5/16"-18	9410T15	14.21	9410T45	14.47
2 1/2"	4"	1 1/8"	3/8"-16	9410T16	22.76	9410T46	23.16
2 3/4"	4 1/4"	1 1/8"	3/8"-16	9410T17	24.81	9410T47	25.25
3"	4 1/2"	1 1/8"	3/8"-16	9410T18	26.57	9410T48	27.04

Two-Piece Clamp-On Shaft Collars

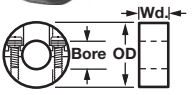

These two-piece clamp-on collars come apart for easy installation and go anywhere on a shaft, even between components. Each has two socket-head cap screws that provide a tight, uniform grip around the entire shaft without marring. ***Black-Oxide Steel***—Made of grade 1215 steel or equivalent. Black-oxide finish offers some corrosion resistance. Cap screws are alloy steel. ***Zinc-Plated Steel***—Same clamping force as black-oxide steel but with better corrosion resistance. Cap screws are zinc-plated alloy steel. ***Stainless Steel***—Choose *Type 303 stainless steel* for excellent corrosion resistance. For superior chemical and corrosion resistance, choose *Type 316 stainless steel*. All cap screws are 18-8 stainless steel. ***Aluminum***—Lightweight with good corrosion resistance. Cap screws are alloy steel. ***Chrome-Plated Steel***—Have the strength and corrosion resistance of zinc-plated steel with a bright finish. Cap screws are 18-8 stainless steel. ***Nylon***—Offer good chemical resistance and are excellent for food processing applications. Set screws are Type 304 stainless steel. Maximum temperature is 210° F. USDA, FDA, and 3-A compliant.

Steel, Stainless Steel, and Aluminum

Bore	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Zinc-Plated Steel	Each	Type 303 Stainless Steel	Each	Type 316 Stainless Steel	Each	Aluminum	Each
1/16"	1/2"	1/4"	4-40	6436K311★	$4.66	—	—	6436K411★	$5.37	—	—	6436K511	$4.31
3/32"	1/2"	1/4"	4-40	6436K312★	4.66	—	—	6436K412★	5.37	—	—	6436K512	4.31
1/8"	1/2"	1/4"	4-40	6436K5	4.63	2380K11★	$6.53	6436K8	5.22	9633T3	$14.57	6436K7	4.50
5/32"	11/16"	5/16"	4-40	6436K313	4.66	—	—	6436K413	5.37	—	—	6436K513▲	4.31
3/16"	5/8"	5/16"	4-40	6436K6	3.90	2380K12★	5.68	6436K9	5.02	9633T5	14.80	6436K11	4.17
1/4"	11/16"	5/16"	4-40	6436K12	3.75	2380K13	4.96	6436K32	6.51	9633T6	12.63	6436K131	4.12
5/16"	11/16"	5/16"	4-40	6436K51	3.31	2380K14	5.26	6436K61	6.84	9633T7	11.04	6436K132	4.22
3/8"	7/8"	3/8"	6-32	6436K13	3.52	2380K15	5.22	6436K33	7.10	9633T8	13.59	6436K133	4.93
7/16"	15/16"	3/8"	6-32	6436K52	3.59	2380K16	5.74	6436K62	7.81	9633T9	14.65	6436K134	4.96
1/2"	1 1/8"	13/32"	8-32	6436K14	3.46	2380K17	5.57	6436K34	8.79	9633T11	16.06	6436K71	3.83
9/16"	15/16"	7/16"	10-32	6436K53	3.96	2380K18	6.85	6436K63	9.67	9633T12	18.20	6436K135	5.72
5/8"	15/16"	7/16"	10-32	6436K15	3.75	2380K19	6.56	6436K35	9.65	9633T13	17.99	6436K136	5.51
11/16"	1 1/2"	1/2"	1/4"-28	6436K28	5.09	2380K21♣	7.97	6436K89	10.19	9633T14	21.44	6436K137	6.35
3/4"	1 1/2"	1/2"	1/4"-28	6436K16	4.30	2380K22	7.57	6436K36	10.62	9633T15	21.24	6436K72	4.56
13/16"	15/8"	1/2"	1/4"-28	6436K29	6.04	2380K23	9.24	6436K91	13.12	9633T16	24.53	6436K138	6.89
7/8"	15/8"	1/2"	1/4"-28	6436K17	4.78	2380K24	8.28	6436K37	12.03	9633T17	23.50	6436K139	6.49
15/16"	1 3/4"	1/2"	1/4"-28	6436K31	6.54	2380K25	10.18	6436K92	14.30	9633T18	27.81	6436K141	7.13
1"	1 3/4"	1/2"	1/4"-28	6436K18	4.09	2380K26	8.24	6436K38	12.02	9633T19	26.56	6436K73	4.85
1 1/16"	1 7/8"	1/2"	1/4"-28	6436K44	6.84	2380K27	11.29	6436K93	16.10	9633T21	34.19	6436K142	8.08
1 1/8"	1 7/8"	1/2"	1/4"-28	6436K19	5.32	2380K28	10.09	6436K39	15.44	9633T22	31.45	6436K143	8.10
1 3/16"	2 1/16"	1/2"	1/4"-28	6436K48	7.00	2380K29	11.65	6436K94	16.99	9633T23	35.71	6436K144	8.77
1 1/4"	2 1/16"	1/2"	1/4"-28	6436K21	5.17	2380K31	9.86	6436K41	16.17	9633T24	35.81	6436K74	5.82
1 5/16"	2 1/8"	9/16"	1/4"-28	6436K49	8.00	2380K32■	13.28	6436K95	20.35	9633T25	47.28	6436K145	9.61
1 3/8"	2 1/4"	9/16"	1/4"-28	6436K22	6.17	2380K33	12.24	6436K42	21.94	9633T26	47.56	6436K146	9.68
1 7/16"	2 1/4"	9/16"	1/4"-28	6436K58	7.89	2380K34	13.06	6436K96	19.96	9633T27	47.56	6436K147	9.66
1 1/2"	2 3/8"	9/16"	1/4"-28	6436K23	6.45	2380K35	11.43	6436K43	22.12	9633T28	46.19	6436K75	8.87
1 9/16"	2 3/8"	9/16"	1/4"-28	6436K59	12.88	2380K36	18.47	6436K97	21.73	9633T29	51.00	6436K148	12.94
1 5/8"	2 3/4"	11/16"	5/16"-24	6436K24	9.91	2380K37●	19.10	6436K98	38.43	9633T31	76.50	6436K149	17.11
1 11/16"	2 3/4"	11/16"	5/16"-24	6436K64	14.28	2380K38	21.03	6436K99	38.62	9633T32	80.00	6436K151	18.81
1 3/4"	2 3/4"	11/16"	5/16"-24	6436K25	10.13	2380K39	18.37	6436K45	32.43	9633T33	80.00	6436K152	18.84
1 13/16"	2 7/8"	11/16"	5/16"-24	6436K65	16.77	2380K41	26.50	6436K101	39.71	9633T34	88.33	6436K153	19.99
1 7/8"	3"	11/16"	5/16"-24	6436K26	11.07	2380K42◤	23.53	6436K102	39.55	9633T35	80.65	6436K154	20.01
1 15/16"	3"	11/16"	5/16"-24	6436K66	15.21	2380K43	25.28	6436K103	45.05	9633T36	80.65	6436K155	20.54
2"	3"	11/16"	5/16"-24	6436K27	11.32	2380K44	20.38	6436K47	38.04	9633T37	84.32	6436K76	17.64
2 1/16"	3 1/8"	3/4"	5/16"-24	6436K67	18.20	2380K45♠	27.23	6436K104	45.71	9633T38	90.14	6436K156	25.64
2 1/8"	3 1/4"	3/4"	5/16"-24	6436K68	16.83	2380K46	25.16	6436K105	53.66	9633T39	100.86	6436K157	25.30
2 3/16"	3 1/4"	3/4"	5/16"-24	6436K69	17.97	2380K47	26.08	6436K106	54.38	9633T41	100.86	6436K158	25.75
2 1/4"	3 1/4"	3/4"	5/16"-24	6436K54	13.52	2380K48	25.65	6436K107	53.62	9633T42	100.86	6436K159	25.30
2 5/16"	3 3/8"	3/4"	5/16"-24	6436K78	21.18	2380K49♥	30.81	6436K108	54.46	9633T43	111.68	6436K174	27.62
2 3/8"	3 1/2"	3/4"	5/16"-24	6436K79	20.29	2380K51	29.19	6436K109	54.07	9633T44	111.68	6436K162	26.60
2 7/16"	3 1/2"	3/4"	5/16"-24	6436K81	21.16	2380K52	29.06	6436K111	54.81	9633T45	111.68	6436K163	26.56
2 1/2"	3 3/4"	7/8"	3/8"-24	6436K55	26.57	2380K53	42.20	6436K112	84.53	9633T46	115.07	6436K164	36.63
2 5/8"	3 7/8"	7/8"	3/8"-24	6436K83	34.84	2380K55	49.56	6436K114	92.20	9633T48	117.21	6436K166	42.33
2 11/16"	4"	7/8"	3/8"-24	6436K84	36.59	2380K56	53.62	6436K115	91.00	9633T49	117.28	6436K167	42.33
2 3/4"	4"	7/8"	3/8"-24	6436K85	36.59	2380K57	52.91	6436K116	92.20	9633T51	117.28	6436K168	42.33
2 7/8"	4 1/4"	7/8"	3/8"-24	6436K87	37.63	2380K59	59.34	6436K118	99.21	9633T53	123.90	6436K171	48.26
2 15/16"	4 1/4"	7/8"	3/8"-24	6436K56	34.15	2380K61	52.05	6436K119	96.15	9633T54	122.84	6436K172	48.26
3"	4 1/4"	7/8"	3/8"-24	6436K57	23.63	2380K62	51.69	6436K121	98.04	9633T55	123.90	6436K173	48.34
3"	4 1/2"	3/4"	3/8"-24	60665K58	31.90	—	—	60665K11	59.30	—	—	60665K21	32.33
3 1/4"	4 1/2"	7/8"	3/8"-24	60665K59	39.04	—	—	60665K12	75.86	—	—	60665K22	41.96
3 1/2"	4 3/4"	7/8"	3/8"-24	60665K61	39.42	—	—	60665K13	79.09	—	—	60665K23	43.89
4"	5 1/4"	7/8"	3/8"-24	60665K62	62.18	—	—	60665K14	119.01	—	—	60665K24	61.76
4 1/2"	5 3/4"	7/8"	3/8"-24	60665K63	98.99	—	—	60665K15	181.48	—	—	60665K25	70.68
5"	6 1/4"	7/8"	3/8"-24	60665K64	113.16	—	—	60665K16	220.10	—	—	60665K26	84.48
5 1/2"	6 3/4"	7/8"	3/8"-24	60665K65	123.84	—	—	60665K17	252.80	—	—	60665K27	95.68
6"	7 1/4"	7/8"	3/8"-24	60665K66	137.97	—	—	60665K18	306.03	—	—	60665K28	107.32

★ 11/16" OD; 5/16" Wd. ▲ 5/8" OD. ♣ 10-32 screw size. ■ 2 1/4" OD. ● 2 5/8" OD. ◤ 2 7/8" OD. ♠ 3 1/4" OD. ♥ 3 1/2" OD.

Chrome-Plated Steel

Bore	OD	Wd.	Screw Size		Each
3/8"	7/8"	3/8"	6-32	3370K15	$5.16
1/2"	1 1/8"	13/32"	8-32	3370K17	5.65
5/8"	1 5/16"	7/16"	10-32	3370K19	6.00
3/4"	1 1/2"	1/2"	1/4"-28	3370K22	5.87
1"	1 3/4"	1/2"	1/4"-28	3370K26	7.71
1 1/8"	1 7/8"	1/2"	1/4"-28	3370K28	8.73
1 1/4"	2 1/16"	1/2"	1/4"-28	3370K31	8.82
1 3/8"	2 1/4"	9/16"	1/4"-28	3370K33	9.24
1 1/2"	2 3/8"	9/16"	1/4"-28	3370K35	9.67
1 3/4"	2 3/4"	11/16"	5/16"-24	3370K39	15.09
2"	3"	11/16"	5/16"-24	3370K44	16.23

Nylon

Bore	OD	Wd.	Screw Size		Each
1/4"	13/16"	3/8"	6-32	60485K61	$10.45
5/16"	13/16"	3/8"	6-32	60485K62	10.43
3/8"	1 1/16"	1/2"	6-32	60485K63	10.87
1/2"	1 1/4"	9/16"	8-32	60485K65	11.14
5/8"	1 1/2"	5/8"	10-24	60485K67	13.44
3/4"	1 3/4"	5/8"	1/4"-20	60485K68	13.44
7/8"	1 7/8"	3/4"	1/4"-20	60485K52	13.70
1"	2"	3/4"	1/4"-20	60485K69	14.79
1 3/16"	2 1/8"	3/4"	1/4"-20	60485K71	15.32
1 1/4"	2 1/4"	3/4"	1/4"-20	60485K72	15.32
1 3/8"	2 3/8"	3/4"	1/4"-20	60485K73	15.61
1 7/16"	2 1/2"	3/4"	1/4"-20	60485K74	$15.61
1 1/2"	2 1/2"	3/4"	1/4"-20	60485K75	15.32
1 5/8"	3"	15/16"	5/16"-18	60485K76	18.90
1 3/4"	3 1/8"	15/16"	5/16"-18	60485K77	31.12
1 7/8"	3 1/4"	15/16"	5/16"-18	60485K78	30.55
1 15/16"	3 1/4"	15/16"	5/16"-18	60485K79	32.16
2"	3 1/4"	15/16"	5/16"-18	60485K81	34.11
2 1/4"	3 5/8"	15/16"	5/16"-18	60485K82	34.11
2 1/2"	4"	1 1/8"	3/8"-16	60485K83	47.11
2 3/4"	4 1/4"	1 1/8"	3/8"-16	60485K84	53.23
3"	4 1/2"	1 1/8"	3/8"-16	60485K85	51.71

For information about shaft collars, see pg. 1165. For information about ANSI keyway dimensions, see pg. 1174.

Metric Two-Piece Clamp-On Shaft Collars

A two-piece metric design makes collars easy to install, especially when it's difficult to access the end of a shaft. They install anywhere on a shaft, even between components. Each has two socket-head cap screws that hold the clamp together and provide a tight, uniform grip around the entire shaft without marring.

Black-Oxide Steel—Made of grade 1215 steel. Black-oxide finish offers some corrosion resistance. Cap screws are alloy steel. ***Type 303 Stainless Steel***—Have excellent corrosion resistance. Cap screws are alloy steel. ***Aluminum***—Lightweight with good corrosion resistance. Cap screws are alloy steel.

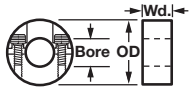

Bore, mm	OD, mm	Wd., mm	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each	Aluminum	Each
4	16	9	M3	6063K11	$6.03	3369K11	$12.26	9520T1	$5.74
5	16	9	M3	6063K12	5.79	3369K12	11.63	9520T2	5.74
6	16	9	M3	6063K13	5.79	3369K13	11.63	9520T3	5.74
8	18	9	M3	6063K14	6.09	3369K14	10.03	9520T4	6.04
10	24	9	M3	6063K15	6.72	3369K15	12.20	9520T5	6.94
11	28	11	M4	6063K31	7.10	3369K16	14.22	9520T6	7.08
12	28	11	M4	6063K16	6.83	3369K17	13.65	9520T7	7.08
14	30	11	M4	6063K32	7.58	3369K18	15.82	9520T8	7.78
15	34	13	M5	6063K33	7.81	3369K19	18.02	9520T9	8.08
16	34	13	M5	6063K17	7.81	3369K21	18.02	9520T11	8.08
18	36	13	M5	6063K18	8.61	3369K22	19.86	9520T12	8.88
20	40	15	M6	6063K19	8.97	3369K23	19.60	9520T13	9.24
24	45	15	M6	6063K34	10.72	3369K24	25.18	9520T14	11.34
25	45	15	M6	6063K21	10.02	3369K25	21.51	9520T15	10.34
30	54	15	M6	6063K22	11.41	3369K26	28.36	9520T16	13.84
35	57	15	M6	6063K23	13.49	3369K27	36.54	9520T17	16.06
40	60	15	M6	6063K24	14.32	3369K28	43.64	9520T18	16.98
45	73	19	M8	6063K25	23.86	3369K29	73.80	9520T19	28.38
50	78	19	M8	6063K26	25.91	3369K31	97.24	9520T21	29.04
60	88	19	M8	6063K35	33.43	3369K32	108.98	—	—

Mounting Flange One-Piece Clamp-On Shaft Collars

Eliminate the need to weld your components to a shaft collar. Mounting holes in these collars make it easy to fasten components such as gears, pulleys, and sprockets. They are one-piece clamp-on style and won't mar shafts. Made of carbon steel with a black-oxide finish, which offers some corrosion resistance.

Face mount have two tapped holes in the collar face with one clamping socket-head cap screw, which is alloy steel.

Flanged collars with standard ANSI keyway have three tapped counterbored holes and three through holes for additional mounting options. The two socket-head cap screws are alloy steel. For keyed shafts, see pages 1082-1084. ***Adapter rings*** have three through holes that mate to the flanged mounting holes. Made of machinable and weldable grade 1018 steel.

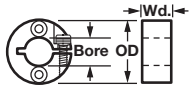

Face Mount

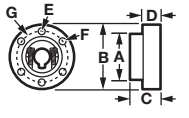

Flanged

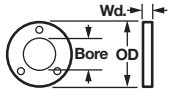

Adapter Ring

Face-Mount Collars

Bore	OD	Wd.	Clamping Screw Size	Tapped Hole Thread Size	Counterbore Cap Screw Size	Distance Between Holes		Each
3/4″	1 1/2″	0.490″	1/4″-28	1/4″-20	#10	1 1/8″	9677T1	$7.43
1″	1 3/4″	0.490″	1/4″-28	1/4″-20	#10	1 3/8″	9677T2	7.98
1 1/8″	1 7/8″	0.490″	1/4″-28	1/4″-20	#10	1 1/2″	9677T3	8.34
1 1/4″	2 1/16″	0.490″	1/4″-28	1/4″-20	#10	1 5/8″	9677T4	8.95
1 3/8″	2 1/4″	0.553″	1/4″-28	1/4″-20	#10	1 13/16″	9677T5	9.69
1 1/2″	2 3/8″	0.553″	1/4″-28	1/4″-20	#10	1 15/16″	9677T6	9.87
1 3/4″	2 3/4″	0.678″	5/16″-24	5/16″-18	1/4″	2 1/4″	9677T7	11.82
2″	3″	0.678″	5/16″-24	5/16″-18	1/4″	2 1/2″	9677T8	12.44
2 1/2″	3 3/4″	0.865″	3/8″-24	5/16″-18	1/4″	3 1/8″	9677T9	15.98
3″	4 1/4″	0.865″	3/8″-24	5/16″-18	1/4″	3 5/8″	9677T11	18.18

Flanged Collars

Bore	Collar OD (A)	Flange OD (B)	O'all Wd. (C)	Flange Thick. (D)	Tapped Hole Screw Size (E)	Through Hole Size (F)	Bolt Circle (G)	Clamping Screw Size		Each
1/2″	1 1/4″	2.230″	3/4″	9/32″	8-32	0.164″	1 7/8″	8-32	9684T1	$28.30
5/8″	1 1/2″	2.605″	13/16″	5/16″	10-24	0.190″	2 1/8″	10-32	9684T2	30.32
3/4″	1 3/4″	2.980″	1″	13/32″	1/4″-20	0.250″	2 1/2″	1/4″-28	9684T3	35.37
1″	2″	3.230″	1″	13/32″	1/4″-20	0.250″	2 3/4″	1/4″-28	9684T4	37.38
1 1/4″	2 1/4″	3.480″	1″	13/32″	1/4″-20	0.250″	3″	1/4″-28	9684T5	43.98
1 1/2″	2 1/2″	3.730″	1″	13/32″	1/4″-20	0.250″	3 1/4″	1/4″-28	9684T6	46.22

Adapter Rings

For Bore Size	OD	Wd.		Each
1/2″	3 1/4″	3/8″	9684T21	$23.66
5/8″	3 5/8″	3/8″	9684T22	24.82
3/4″	4″	3/8″	9684T23	26.07
1″	4 1/4″	3/8″	9684T24	33.45
1 1/4″	4 1/2″	3/8″	9684T25	34.45
1 1/2″	4 3/4″	3/8″	9684T26	35.44

Hexagonal-Bore Clamp-On Shaft Collars

Just what you need for hexagon-shaped shafts. These nonmarring collars have high holding power, a round outside diameter, and recessed screw heads. Simply tighten the socket-head cap screw(s) to secure. These collars can also be modified to act as a mount for other components.

One-piece collars have one cap screw. ***Two-piece collars*** are a good choice when you don't have easy access to the end of the shaft. They have two cap screws.

Black-Oxide Steel—Collars are grade 12L14 and have a black-oxide finish, which offers some corrosion resistance. Cap screws are alloy steel. ***Type 303 Stainless Steel***—Collars are Type 303 stainless steel for excellent corrosion resistance. Cap screws are 18-8 stainless steel.

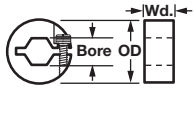

One Piece

Bore	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each
One Piece							
3/8″	1 1/16″	5/16″	6-32	7552K3	$14.93	7547K13	$17.31
7/16″	1 1/4″	3/8″	8-32	7552K4	15.13	7547K14	17.71
1/2″	1 1/4″	3/8″	8-32	7552K5	15.13	7547K15	17.71
5/8″	1 1/2″	13/32″	10-32	7552K6	15.82	7547K16	22.19
3/4″	1 7/8″	1/2″	1/4″-28	7552K7	24.53	7547K17	28.25
7/8″	2″	1/2″	1/4″-28	7552K8	18.50	7547K18	26.34
1″	2 1/8″	1/2″	1/4″-28	7552K9	19.49	7547K19	27.62

Bore	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each
Two Piece							
1/4″	13/16″	1/4″	4-40	7552K11	$16.63	7547K21	$16.72
3/8″	1 1/16″	5/16″	6-32	7552K13	16.40	7547K23	19.14
7/16″	1 1/4″	3/8″	8-32	7552K14	16.39	7547K24	19.74
1/2″	1 1/4″	3/8″	8-32	7552K15	16.61	7547K25	19.74
3/4″	1 7/8″	1/2″	1/4″-28	7552K17	25.81	7547K27	30.31
7/8″	2″	1/2″	1/4″-28	7552K18	19.71	7547K28	28.11
1″	2 1/8″	1/2″	1/4″-28	7552K19	20.56	7547K29	29.67

Hinged One-Piece Clamp-On Shaft Collars

Closed

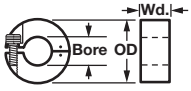

A heat-treated, triple-link hinge connects the collar halves. Just swing the collar open, place it on the shaft, close the collar, and tighten the captive socket-head clamping screw to secure. The "captive" screw won't fall out, so it's great for cramped areas where your hands can't hold it.

Black-Oxide Steel— Made of carbon steel. A black-oxide finish offers some corrosion resistance. Clamping screw is alloy steel. ***Type 303 Stainless Steel—*** Have excellent corrosion resistance. Clamping screw is 18-8 stainless steel.

Bore	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each
3/8"	1 1/16"	5/16"	6-32	57145K71	$9.27	57145K51	$21.66
1/2"	1 1/4"	3/8"	8-32	57145K72	9.72	57145K52	22.75
5/8"	1 1/2"	13/32"	10-32	57145K73	10.16	57145K53	26.26
3/4"	1 3/4"	1/2"	1/4"-28	57145K74	11.07	57145K54	27.43
7/8"	1 7/8"	1/2"	1/4"-28	57145K75	11.65	57145K55	34.99
1"	2"	1/2"	1/4"-28	57145K76	11.92	57145K56	28.99
1 1/8"	2 1/8"	1/2"	1/4"-28	57145K77	11.87	57145K57	32.28
1 1/4"	2 1/4"	1/2"	1/4"-28	57145K79	12.09	57145K58	33.50
1 3/8"	2 3/8"	1/2"	1/4"-28	57145K81	13.70	57145K59	40.36
1 1/2"	2 1/2"	1/2"	1/4"-28	57145K83	13.68	57145K61	35.47
1 5/8"	3"	5/8"	5/16"-24	57145K84	17.23	—	—
1 3/4"	3"	5/8"	5/16"-24	57145K85	16.01	57145K62	54.72
1 15/16"	3 1/4"	5/8"	5/16"-24	57145K86	16.85	—	—
2"	3 1/4"	5/8"	5/16"-24	57145K87	16.75	57145K63	49.74
2 1/4"	3 1/2"	5/8"	5/16"-24	57145K88	19.51	—	—
3"	4 1/2"	3/4"	3/8"-24	57145K91	38.04	57145K64	99.75

Quick-Connect One-Piece Shaft Collars

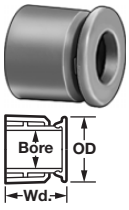

Just slide one collar onto your shaft—it moves in one direction and locks in place automatically. To adjust or remove, pull end ring to release the hold.

Zinc-Plated Steel— Made of carbon steel with a zinc-plated finish for better corrosion resistance. Ball bearings are Type 440C stainless steel; spring is Type 302 stainless steel. ***Type 303 Stainless Steel—*** Offer good corrosion resistance. Ball bearings are Type 440C stainless steel; spring is Type 302 stainless steel. ***ABS Plastic—*** Durable, lightweight, and corrosion resistant. Ball bearings are tungsten carbide; spring is Type 302 stainless steel.

Bore	OD	Wd.	Zinc-Plated Steel	Each	Type 303 Stainless Steel	Each	ABS Plastic	Each
1/4"	0.7"	1"	7747K11	$32.20	6172K11	$42.14	6168K11	$32.56
5/16"	0.7"	1"	7747K13	32.20	6172K13	42.14	6168K13	32.56
3/8"	0.9"	1.8"	7747K15	37.80	6172K15	44.80	6168K15●	28.96
7/16"	0.9"	1.8"	7747K17	37.80	6172K17	44.80	6168K17●	28.96
1/2"	1.1"	1.8"	7747K19	42.00	6172K19	53.20	6168K19●	31.64
9/16"	1.1"	1.8"	7747K21	42.00	6172K21	53.20	6168K21★	33.45
5/8"	1.1"	1.8"	7747K23	42.00	6172K23	53.20	6168K23★	35.24
3/4"	1.2"	1.8"	7747K25	43.40	6172K27	63.00	6168K27★	37.02
7/8"	1.5"	1.8"	7747K27	47.60	6172K29	75.60	6168K29♦	43.08
1"	1.5"	1.8"	7747K29	47.60	6172K31	75.60	6168K31♦	43.08
1 1/4"	2.2"	1.9"	7747K31	53.20	6172K35	84.00	6168K35◤	45.67
1 3/8"	2.2"	1.9"	7747K33	53.20	6172K37	84.00	6168K37◤	45.67
1 1/2"	2.2"	1.9"	7747K35	53.20	6172K41	84.00	6168K41◤	51.19
1 5/8"	2.4"	1.9"	7747K37	63.00	6172K43	126.00	6168K43■	67.03
1 3/4"	2.7"	1.9"	7747K39	63.00	6172K45	126.00	6168K45■	67.03
1 7/8"	2.7"	1.9"	7747K41	63.00	6172K47	126.00	6168K47■	67.03
2"	3"	1.9"	7747K43	63.00	6172K51	126.00	6168K51■	67.03
2 1/2"	3.5"	1.9"	7747K45	147.00	6172K55	335.00	6168K55♣	203.54
3"	3.5"	1.9"	7747K47	168.00	6172K59	335.00	6168K59▲	203.54

● 1.1" OD; 1" Wd. ★ 1.4" OD; 1.4" Wd. ♦ 1.9" OD; 2.0" Wd. ◤ 1.8" Wd. ■ 2.7" OD; 2.1" Wd. ♣ 3.3" OD; 1.6" Wd. ▲ 3.8" OD; 2.0" Wd.

Flush-Face One-Piece Clamp-On Shaft Collars

Machine Face

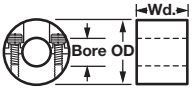

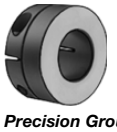

Precision Ground

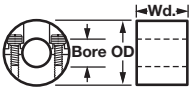

These collars have two sides—one side locks down like a normal one-piece shaft collar; the other side has a flush face with no groove to allow you to match your special setup.

Made of grade 1117 steel with a black-oxide finish, which offers some corrosion resistance. All have two alloy steel socket-head cap screws.

Machinable face allow you to add slots, holes, and grooves to the flush side. ***Precision ground*** have a flush side that's flat (to 0.0005"), which lets you mount the collars on a shaft next to precision bearings, sprockets, and gears.

Bore	OD	Wd.	Screw Size	Machinable-Face Collars	Each	Precision-Ground Face Collars	Each
1/2"	1 1/4"	3/4"	8-32	9966K11	$20.88	9981K11	$26.08
5/8"	1 1/2"	13/16"	10-32	9966K12	21.65	9981K12	27.38
3/4"	1 3/4"	1"	1/4"-28	9966K13	22.98	9981K13	29.50
7/8"	1 7/8"	1"	1/4"-28	9966K14	23.94	9981K14	30.69
1"	2"	1"	1/4"-28	9966K15	25.17	9981K15	32.42
1 1/8"	2 1/8"	1"	1/4"-28	9966K16	27.75	9981K16	35.31
1 1/4"	2 1/4"	1"	1/4"-28	9966K17	27.77	9981K17	35.56
1 3/8"	2 3/8"	1"	1/4"-28	9966K18	28.94	9981K18	37.00
1 1/2"	2 1/2"	1"	1/4"-28	9966K19	30.19	9981K19	38.50
1 3/4"	3"	1 1/4"	5/16"-24	9966K21	31.90	9981K21	43.73
2"	3 1/4"	1 1/4"	5/16"-24	9966K22	33.40	9981K22	46.02

Inch-to-Metric Two-Piece Clamp-On Shaft Collars

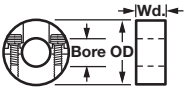

Stuck with an inch-sized shaft and metric equipment? Inch bore sizes with metric OD, width, and screw sizes on these collars solve your problem. A two-piece design makes them easy to install anywhere on a shaft, even between components. Each has two socket-head cap screws that hold the clamp together and provide a tight, uniform grip around the entire shaft without marring.

Black-Oxide Steel— Made of lead-free grade 1215 steel. Black-oxide finish offers some corrosion resistance. Cap screws are alloy steel. ***Type 303 Stainless Steel—*** Have excellent corrosion resistance. Cap screws are stainless steel. ***Black Anodized Aluminum—*** Lightweight, good corrosion resistance. Cap screws are stainless steel. ***Titanium—*** Handle high temperatures. Have excellent strength and corrosion resistance. Cap screws are titanium. ***Acetal—*** Offer good chemical resistance and are suitable for wash-down applications. Cap screws are stainless steel. Color is white. Maximum temperature is 150° F.

Bore	OD, mm	Wd., mm	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each	Black Anodized Aluminum	Each	Titanium	Each	Acetal	Each
1/4"	18	9	M3	9644T1	$4.40	9648T1	$8.18	9638T1	$7.38	—	—	9642T1	$7.22
5/16"	18	9	M3	9644T2	4.40	9648T2	8.18	9638T2	7.38	—	—	9642T2	7.22
3/8"	24	9	M3	9644T3	4.85	9648T3	9.06	9638T3	8.15	9650T1	$111.93	9642T3	8.31
7/16"	28	11	M4	9644T4	5.23	9648T4	10.53	9638T4	8.28	—	—	—	—
1/2"	30	11	M4	9644T5	5.48	9648T5	12.15	9638T5	8.52	9650T2	149.23	9642T4	9.35
5/8"	34	13	M5	9644T6	5.65	9648T6	13.38	9638T6	9.15	9650T3	186.57	9642T5	9.70
3/4"	40	15	M6	9644T7	6.88	9648T7	17.00	9638T7	10.45	9650T4	261.18	9642T6	11.17
7/8"	42	15	M6	9644T8	8.36	9648T8	18.67	9638T8	11.87	—	—	9642T7	12.15
15/16"	45	15	M6	9644T9	8.36	9648T9	18.67	9638T9	11.87	—	—	9642T8	12.20
1"	45	15	M6	9644T11	8.36	9648T11	18.67	9638T11	11.87	9650T5	317.13	9642T9	12.15
1 1/8"	48	15	M6	9644T12	8.83	9648T12	21.28	9638T12	14.32	—	—	—	—
1 1/4"	54	15	M6	9644T13	8.55	9648T13	22.79	9638T13	15.03	—	—	9642T11	16.23
1 3/8"	57	15	M6	9644T14	9.97	9648T14	28.32	9638T14	16.99	—	—	—	—
1 7/16"	60	15	M6	9644T15	10.47	9648T15	35.43	9638T15	17.54	—	—	—	—
1 1/2"	60	15	M6	9644T16	10.47	9648T16	35.43	9638T16	17.54	—	—	—	—
1 3/4"	73	19	M8	9644T17	18.05	9648T17	53.92	9638T17	28.03	—	—	—	—
1 15/16"	78	19	M8	9644T18	20.22	9648T18	71.92	9638T18	29.86	—	—	—	—

For information about shaft collars, see pg. 1165. For information about ANSI keyway dimensions, see pg. 1174.

Two-Piece Clamp-On Shaft Collars with Keyway

An ANSI keyway lets you use these collars with keyed shafts. Their two-piece design makes them easy to install. All have two socket-head cap screws. For keyed shafts, see pages 1082-1084.

Black-Oxide Steel—Made of grade 1215 steel. Black-oxide finish offers some corrosion resistance. Cap screws are alloy steel. ***Type 303 Stainless Steel***—Have excellent corrosion resistance. Cap screws are Type 303 stainless steel. ***Aluminum***—Lightweight with good corrosion resistance. Cap screws are 18-8 stainless steel.

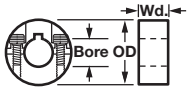

Bore	OD	Wd.	Screw Size	Keyway Wd.	Keyway Dp.	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each	Aluminum	Each
3/8"	7/8"	11/32"	6-32	3/32"	3/64"	3357K11	$11.33	3329K11	$18.44	9740T1	$13.50
1/2"	1 1/8"	13/32"	8-32	1/8"	1/16"	3357K12	12.12	3329K12	20.62	9740T2	13.34
5/8"	1 5/16"	7/16"	10-32	3/16"	3/32"	3357K13	13.88	3329K13	23.75	9740T3	14.42
3/4"	1 1/2"	1/2"	1/4"-28	3/16"	3/32"	3357K14	14.81	3329K14	25.00	9740T4	15.00
1"	1 3/4"	1/2"	1/4"-28	1/4"	1/8"	3357K15	16.12	3329K15	29.15	9740T5	16.36
1 1/4"	2 1/16"	1/2"	1/4"-28	1/4"	1/8"	3357K16	17.75	3329K16	33.77	9740T6	19.82
1 1/2"	2 3/8"	9/16"	1/4"-28	3/8"	3/16"	3357K17	19.96	3329K17	40.96	9740T7	25.58
2"	3"	11/16"	5/16"-24	1/2"	1/4"	3357K18	30.69	3329K18	76.38	9740T8	29.40
2 3/16"	3 1/4"	3/4"	5/16"-24	1/2"	1/4"	3357K19	35.02	3329K19	103.88	9740T9	46.70
2 7/16"	3 1/2"	3/4"	5/16"-24	5/8"	9/32"	3357K21	35.73	3329K21	112.00	9740T11	48.06

Square-Bore Two-Piece Clamp-On Shaft Collars

Position these collars anywhere on a square shaft or rail. All have two socket-head cap screws, which you tighten to secure.

Black-Oxide Steel—Collars are grade 12L14 and have a black-oxide finish, which offers some corrosion resistance. Cap screws are alloy steel. ***Type 303 Stainless Steel***—Collars are Type 303 stainless steel for excellent corrosion resistance. Cap screws are 18-8 stainless steel.

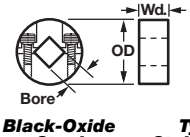

Bore	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each
1/4"	1 1/16"	5/16"	6-32	3325K11	$13.59	3257K11	$17.54
5/16"	1 1/16"	5/16"	6-32	3325K12	13.59	3257K12	17.54
3/8"	1 1/2"	13/32"	10-32	3325K13	12.39	3257K13	18.98
7/16"	1 1/2"	13/32"	10-32	3325K14	12.39	3257K14	18.98
1/2"	1 3/4"	1/2"	1/4"-28	3325K15	13.04	3257K15	19.57
9/16"	1 3/4"	1/2"	1/4"-28	3325K16	13.04	3257K16	19.57
5/8"	2"	1/2"	1/4"-28	3325K17	13.33	3257K17	20.70
3/4"	2 1/8"	1/2"	1/4"-28	3325K18	13.59	3257K18	21.30
7/8"	2 1/4"	1/2"	1/4"-28	3325K19	13.89	3257K19	21.98
1"	2 1/2"	1/2"	1/4"-28	3325K21	$14.11	3257K21	$23.43
1 1/8"	3"	5/8"	5/16"-24	3325K22	21.67	3257K22	38.80
1 1/4"	3"	5/8"	5/16"-24	3325K23	21.67	3257K23	38.80
1 3/8"	3 1/4"	5/8"	5/16"-24	3325K24	25.98	3257K24	41.78
1 1/2"	3 1/2"	5/8"	5/16"-24	3325K25	27.09	3257K25	45.63
1 3/4"	4"	3/4"	3/8"-24	3325K26	45.73	3257K26	69.43
2"	4 1/4"	3/4"	3/8"-24	3325K27	47.00	3257K27	74.37
2 1/2"	5"	3/4"	3/8"-24	3325K28	50.80	3257K28	82.00

Two-Piece Clamp-On Shaft Collars with Wrench Flats

Need to rotate your drive shaft, but don't want to mar or gouge it? Just fasten one of these collars onto your shaft, position a standard wrench (not included) on the wrench flats on the collar, and then rotate the entire shaft/collar assembly.

These two-piece collars mount anywhere on your shaft—great when you don't have easy access to the end of the shaft. All are made of steel and have a black-oxide finish, which offers some corrosion resistance. They also have two alloy-steel socket-head cap screws, which you tighten to secure.

Bore	OD	Wd.	Screw Size	Distance Across Flats	Each
1/2"	1 1/8"	13/32"	8-32	15/16"	9746T1 $5.36
5/8"	1 5/16"	7/16"	10-32	1 1/8"	9746T2 5.80
3/4"	1 1/2"	1/2"	1/4"-28	1 5/16"	9746T3 6.40
1"	1 3/4"	1/2"	1/4"-28	1 9/16"	9746T4 6.97
1 1/8"	1 7/8"	1/2"	1/4"-28	1 11/16"	9746T5 7.45
1 1/4"	2 1/16"	1/2"	1/4"-28	1 7/8"	9746T6 8.18
1 3/8"	2 1/4"	9/16"	1/4"-28	2 1/16"	9746T7 9.09
1 1/2"	2 3/8"	9/16"	1/4"-28	2 3/16"	9746T8 9.31

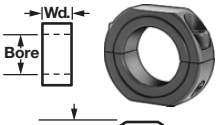

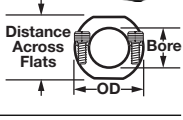

Extra-Grip Clamp-On Shaft Collars

The larger OD and larger socket-head cap screws result in a stronger grip on your shaft. Collars are nonmarring and easy to adjust. Made of grade 12L14 steel with a black-oxide finish, which offers some corrosion resistance. Cap screws are alloy steel.

One piece have one cap screw. ***Two piece*** are a good choice when you don't have easy access to the end of the shaft. They have two cap screws.

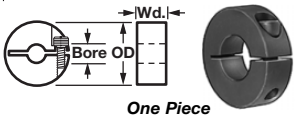

One Piece

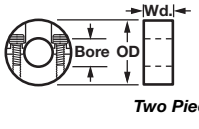

Two Piece

Bore	OD	Wd.	Screw Size	One Piece	Each	Two Piece	Each
1"	2 1/4"	5/8"	5/16"-24	9951K11	$7.47	8386K11	$9.13
1 1/8"	2 3/8"	5/8"	5/16"-24	9951K12	7.53	8386K12	9.49
1 1/4"	2 1/2"	5/8"	5/16"-24	9951K13	7.71	8386K13	9.69
1 3/8"	2 3/4"	5/8"	5/16"-24	9951K14	8.00	8386K14	9.96
1 7/16"	2 3/4"	5/8"	5/16"-24	9951K15	8.42	8386K15	10.40
1 1/2"	2 3/4"	5/8"	5/16"-24	9951K16	8.42	8386K16	10.40
1 3/4"	3 1/4"	3/4"	3/8"-24	9951K18	14.85	8386K18	17.42
1 15/16"	3 1/2"	3/4"	3/8"-24	9951K19	15.40	8386K19	17.96
2"	3 1/2"	3/4"	3/8"-24	9951K21	$15.40	8386K21	$17.96
2 3/16"	3 3/4"	3/4"	3/8"-24	9951K22	21.42	8386K22	22.93
2 1/4"	3 3/4"	3/4"	3/8"-24	9951K23	21.42	8386K23	22.93
2 7/16"	4 1/4"	1"	1/2"-20	9951K24	38.15	8386K24	41.75
2 1/2"	4 1/4"	1"	1/2"-20	9951K25	38.15	8386K25	41.75
3"	4 3/4"	1"	1/2"-20	9951K26	40.95	8386K26	44.80
3 1/4"	5"	1"	1/2"-20	9951K27	44.53	8386K27	48.51
3 1/2"	5 1/4"	1"	1/2"-20	9951K28	47.44	8386K28	51.71

Machinable-Bore Clamp-On Shaft Collars

Machine the bore of these collars to precisely fit your odd-sized shaft. Made of grade 1215 steel or equivalent with a black-oxide finish, which offers some corrosion resistance. Tighten the alloy steel socket-head cap screws to secure.

One piece have one cap screw. ***Two piece*** are a good choice when you don't have easy access to the shaft's end. They have two cap screws.

Bore Min.	Bore Max.	OD	Wd.	Screw Size	One Piece	Each	Two Piece	Each
1/8"	3/4"	1 3/4"	1/2"	1/4"-28	9964K11	$6.33	3374K11	$9.80
1/2"	1"	2 1/4"	1/2"	1/4"-28	9964K12	7.31	3374K12	10.62
5/8"	1 9/16"	2 1/2"	1/2"	1/4"-28	9964K13	15.98	3374K13	17.33
3/4"	2"	3 1/4"	5/8"	5/16"-24	9964K14	20.67	3374K14	22.58
1"	2 5/8"	4 1/4"	3/4"	3/8"-24	9964K15	51.82	3374K15	58.40
1 1/4"	3"	4 1/2"	3/4"	3/8"-24	9964K16	58.67	3374K16	66.80

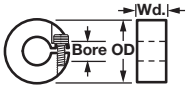

One Piece

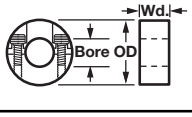

Two Piece

For information about shaft collars, see page 1165.

Threaded Clamp-On Shaft Collars

One Piece

Hinged One Piece

Two Piece

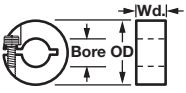

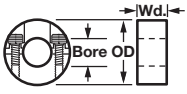

Easy-to-adjust threaded bore design provides excellent contact with shaft threads. Collars have right-hand threads and socket-head cap screws.

One-piece threaded collars have one cap screw for secure locking. ***Hinged one-piece threaded collars*** offer two-piece flexibility in a one-piece collar design.

Two-piece threaded collars fit anywhere on the shaft without removing other equipment. Two cap screws hold the collar together and provide a uniform grip around the entire shaft diameter.

Black-Oxide Steel— Made of grade 12L14 steel or equivalent. Black-oxide finish offers some corrosion resistance. Cap screws are alloy steel. ***Type 303 Stainless Steel—*** Offer excellent corrosion resistance. Cap screws are 18-8 stainless steel.

Bore Thread Size	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each
One-Piece Threaded Collars							
Inch							
10-32	5/8"	5/16"	4-40	6438K13	$2.60	6438K43	$6.08
1/4"-20	11/16"	5/16"	4-40	6438K14	3.07	6438K44	5.75
1/4"-28	11/16"	5/16"	4-40	6438K15	3.15	6438K87■	6.26
5/16"-18	11/16"	5/16"	4-40	6438K16	3.04	6438K46	6.64
5/16"-24	11/16"	5/16"	4-40	6438K17	3.04	6438K96▲	7.11
3/8"-16	7/8"	3/8"	6-32	6438K18	3.09	6438K48	6.44
3/8"-24	7/8"	3/8"	6-32	6438K19	3.28	6438K49	6.85
1/2"-13	1 1/8"	13/32"	8-32	6438K21	3.59	6438K51	8.64
1/2"-20	1 1/8"	13/32"	8-32	6438K22	3.59	6438K52	8.64
5/8"-11	1 5/16"	7/16"	10-32	6438K23	3.81	6438K53	10.54
5/8"-18	1 5/16"	7/16"	10-32	6438K24	3.81	6438K54	10.18
3/4"-10	1 1/2"	1/2"	1/4"-28	6438K25	4.18	6438K55	12.71
3/4"-16	1 1/2"	1/2"	1/4"-28	6438K26	4.18	6438K56	12.38
7/8"-14	1 5/8"	1/2"	1/4"-28	6438K28	4.89	6438K89	18.76
1"-8	1 3/4"	1/2"	1/4"-28	6438K29	6.40	6438K59	17.86
1"-14	1 3/4"	1/2"	1/4"-28	6438K31	6.40	6438K61	16.86
1 1/8"-12	1 7/8"	1/2"	1/4"-28	6438K32	7.22	6438K91	25.00
1 1/4"-7	2 1/16"	1/2"	1/4"-28	6438K33	7.67	6438K92	25.75
1 1/4"-12	2 1/16"	1/2"	1/4"-28	6438K34	7.90	6438K62	21.21
1 1/2"-12	2 3/8"	9/16"	1/4"-28	6438K36	10.88	6438K94	31.87
2"-12	3"	1 1/16"	5/16"-24	6438K37	18.99	6438K95	65.62
Metric							
M6×1	16	9	M3	2305K13	6.39	3014K13	11.61
M8×1.25	18	9	M3	2305K14	6.67	3014K14	12.54
M10×1.5	24	9	M3	2305K15	7.09	3014K15	14.69
M12×1.75	28	11	M4	2305K16	7.48	3014K16	14.98
M16×2	34	13	M5	2305K17	8.22	3014K17	18.83
Hinged One-Piece Threaded Collars							
Inch							
1/2"-13	1 1/4"	3/8"	8-32	9753T1★	12.91	9753T31	28.38
1/2"-20	1 1/4"	3/8"	8-32	9753T2★	12.91	9753T32	28.38
5/8"-11	1 1/2"	13/32"	10-32	9753T3★	13.20	9753T33	30.67
5/8"-18	1 1/2"	13/32"	10-32	9753T4★	13.20	9753T34	30.67
3/4"-10	1 3/4"	1/2"	1/4"-28	9753T5★	13.45	9753T35	32.81
3/4"-16	1 3/4"	1/2"	1/4"-28	9753T6★	13.45	9753T36	32.81
1"-8	2"	1/2"	1/4"-28	9753T7★	17.70	9753T37	43.05
1"-14	2"	1/2"	1/4"-28	9753T8★	17.70	9753T38	43.05
1 1/4"-12	2 1/4"	1/2"	1/4"-28	9753T9★	18.12	9753T39	45.55
1 1/2"-12	2 1/2"	1/2"	1/4"-28	9753T11	21.60	9753T41	58.50
Two-Piece Threaded Collars							
Inch							
10-32	5/8"	9/32"	4-40	60705K23	7.72	60705K43	13.53
1/4"-20	5/8"	9/32"	4-40	60705K24	7.26	60705K44	13.19
1/4"-28	5/8"	9/32"	4-40	60705K25	7.26	60705K45	13.19
5/16"-18	11/16"	9/32"	4-40	60705K26	7.43	60705K46	13.55
3/8"-16	7/8"	11/32"	6-32	60705K28	7.79	60705K48	14.67
3/8"-24	7/8"	11/32"	6-32	60705K29	7.79	60705K49	14.67
7/16"-20	15/16"	11/32"	6-32	60705K32	8.41	60705K52	16.23
1/2"-13	1 1/8"	13/32"	8-32	60705K33	9.67	60705K53	18.22
1/2"-20	1 1/8"	13/32"	8-32	60705K34	9.67	60705K54	18.22
5/8"-11	1 5/16"	7/16"	10-32	60705K35	10.78	60705K55	19.73
3/4"-10	1 1/2"	1/2"	1/4"-28	60705K37	11.62	60705K57	22.38
3/4"-16	1 1/2"	1/2"	1/4"-28	60705K38	11.62	60705K58	23.23
7/8"-14	1 5/8"	1/2"	1/4"-28	60705K61	11.48	60705K71	23.26
1"-8	1 3/4"	1/2"	1/4"-28	60705K62	12.52	60705K72	26.20
1"-12	1 3/4"	1/2"	1/4"-28	60705K63	12.52	60705K73	26.20

■ 5/8" OD; 9/32" Wd. ▲ 9/32" Wd.
★ Plain steel finish; alloy steel cap screws.

Weldable Shaft Collars

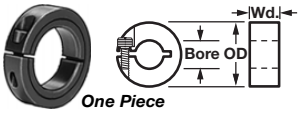

One Piece

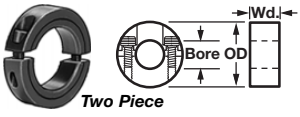

Two Piece

Because these collars are grade 1018 steel, you can permanently weld them to other components.

One-piece slide onto the shaft and secure with one screw, providing excellent holding power.

Two-piece are similar to one-piece collars, except they come apart in two halves for easier maintenance and replacement.

Bore	OD	Wd.	Screw Size	One Piece	Each	Two Piece	Each
1/4"	11/16"	5/16"	4-40	9739T1	$7.36	9739T31	$8.62
3/8"	7/8"	3/8"	6-32	9739T2	7.50	9739T32	8.74
1/2"	1 1/8"	13/32"	8-32	9739T3	7.58	9739T33	8.82
5/8"	1 5/16"	7/16"	10-32	9739T4	7.98	9739T34	9.14
3/4"	1 1/2"	1/2"	1/4"-28	9739T5	8.30	9739T35	9.54
1"	1 3/4"	1/2"	1/4"-28	9739T7	8.88	9739T37	10.14
1 1/4"	2 1/16"	1/2"	1/4"-28	9739T9	13.42	9739T39	14.70
1 1/2"	2 3/8"	9/16"	1/4"-28	9739T11	14.60	9739T41	15.88
1 3/4"	2 3/4"	11/16"	5/16"-24	9739T12	15.86	9739T42	17.16
2"	3"	1 1/16"	5/16"-24	9739T13	17.14	9739T43	18.44

End-Stop Clamp-On Shaft Collars

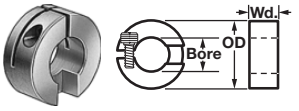

One Piece

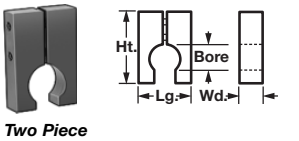

Two Piece

The clamp design creates a secure, even grip. Make sure the end-stop bore you choose has the same shaft OD as your precision shaft and rail assembly. All collars have one socket-head cap screw; tighten to secure. ***Two-piece collars*** mount anywhere on your shaft—great when you don't have easy access to the end of the shaft.

Black-Oxide Steel— Collars have a black-oxide finish, which offers some corrosion resistance. Cap screw is alloy steel. ***Type 303 Stainless Steel—*** Collars and cap screw are Type 303 stainless steel for excellent corrosion resistance.

One Piece

Bore	OD	Wd.	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each
1/2"	1 3/8"	3/4"	8-32	5700K11	$9.77	5375K11	$16.98
5/8"	1 1/2"	3/4"	10-32	5700K12	12.16	5375K12	23.33
3/4"	1 3/4"	7/8"	1/4"-28	5700K13	14.86	5375K13	31.91
1"	2"	7/8"	1/4"-28	5700K14	15.24	5375K14	33.33
1 1/4"	2 1/2"	1"	1/4"-28	5700K15	18.30	5375K15	35.36
1 1/2"	2 3/4"	1"	1/4"-28	5700K16	27.68	5375K16	40.36

Two Piece

Bore	Lg.	Wd.	Ht.	Screw Size	Black-Oxide Steel	Each
1/2"	1 1/4"	5/8"	2"	1/4"-28	9765T1	$23.95
5/8"	1 3/8"	5/8"	2 1/8"	1/4"-28	9765T2	24.09
3/4"	1 1/2"	5/8"	2 1/4"	1/4"-28	9765T3	24.24
1"	1 3/4"	5/8"	2 1/2"	1/4"-28	9765T4	28.50
1 1/4"	2"	5/8"	2 3/4"	1/4"-28	9765T5	28.82
1 1/2"	2 1/4"	5/8"	3"	1/4"-28	9765T6	29.33

Ultra-Grip Shaft Collars

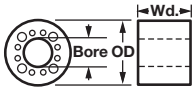

Bring on the big jobs. Collars handle almost three times the thrust load carrying capacity of other heavy duty collars and have superior holding power. Two halves tighten around an embedded ID sleeve, ensuring a firm grip around the entire shaft. Use the included steel socket-head cap screws to tighten. Made of carbon steel with a black-oxide finish, which offers some corrosion resistance.

Bore	OD	Wd.	Screw Size		Each
3/4"	2 1/4"	1 1/2"	M6	9665T1	$64.75
1"	2 3/8"	1 1/2"	M6	9665T2	68.65
1 1/4"	3"	1 1/2"	M6	9665T3	71.65
1 1/2"	3 5/16"	1 1/2"	M6	9665T4	76.12
1 3/4"	4"	1 3/4"	M8	9665T5	82.72
2"	4 1/2"	1 3/4"	M8	9665T6	87.27
2 1/2"	5"	1 3/4"	M8	9665T8	115.27

For information about shaft collars, see page 1165.

Extra-Wide Clamp-On Shaft Collars

A larger width than other shaft collars gives these clamp-on collars greater holding power and a higher thrust load carrying capacity. They have twice the number of socket-head cap screws for a secure hold.

One-piece collars have two socket-head cap screws. ***Two-piece collars*** are a good choice when you don't have easy access to the end of the shaft. They have four cap screws.

Black-Oxide Steel— Made of grade 1215 steel. Black-oxide finish offers some corrosion resistance. Cap screws are alloy steel. ***Type 303 Stainless Steel—*** Have excellent corrosion resistance. Cap screws are stainless steel. ***Aluminum—*** Lightweight with good corrosion resistance. Cap screws are stainless steel.

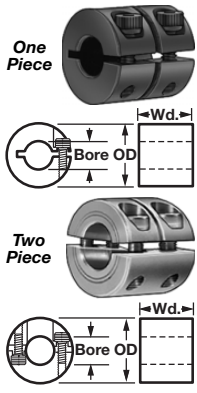

Bore	OD	Wd.	Screw Size	BLACK-OXIDE STEEL One Piece	Each	BLACK-OXIDE STEEL Two Piece	Each	TYPE 303 STAINLESS STEEL One Piece	Each	TYPE 303 STAINLESS STEEL Two Piece	Each	ALUMINUM One Piece	Each
1/8"	5/8"	5/8"	4-40	9947K11	$11.49	8389K11	$23.89	9660T1	$19.06	9660T21	$27.37	9658T1	$11.62
3/16"	5/8"	5/8"	4-40	9947K12	10.94	8389K12	20.17	9660T2	17.64	9660T22	26.00	9658T2	10.24
1/4"	5/8"	5/8"	4-40	9947K13	9.49	8389K13	18.51	9660T3	16.93	9660T23	25.00	9658T3	8.84
5/16"	11/16"	5/8"	4-40	9947K14	9.98	8389K14	18.51	9660T4	18.33	9660T24	26.72	9658T4	10.35
3/8"	7/8"	3/4"	6-32	9947K15	10.30	8389K15	17.98	9660T5	21.78	9660T25	32.71	9658T5	9.85
1/2"	1 1/8"	7/8"	8-32	9947K16	11.58	8389K16	18.51	9660T6	27.55	9660T26	38.17	9658T6	12.00
5/8"	15/16"	15/16"	10-32	9947K17	14.91	8389K17	22.13	9660T7	31.12	9660T27	46.85	—	—
3/4"	1 1/2"	1 1/16"	1/4"-28	9947K18	16.38	8389K18	25.70	9660T8	37.98	9660T28	51.30	—	—
7/8"	1 5/8"	1 1/16"	1/4"-28	9947K19	20.28	8389K19	28.30	9660T9	41.72	9660T29	56.77	—	—
1"	1 3/4"	1 1/16"	1/4"-28	9947K21	20.57	8389K21	27.77	9660T11	46.80	9660T31	62.23	—	—

Adjustable-Width Clamp-On Shaft Collars

Precisely adjust the width of these collars to set the stroke length of a linear sliding guide rod or shaft. Just slide the collar in place, tighten the two socket-head cap screws on one side, rotate the other side until it's in position, and tighten the screws on that side.

Adjustable-width collars have one screw. One knurled side provides easy lateral adjustments of 13/64" to 7/16".

Ultra-precision adjustable-width collars have two screws. Two knurled sides provide micrometer-like movement for lateral adjustments of 3/8" to 3/4". 40-pitch threads provide 0.025" of travel per turn.

Black-Oxide Steel— Made of steel. Black-oxide finish offers some corrosion resistance. Cap screws are alloy steel. ***Type 303 Stainless Steel—*** Offer excellent corrosion resistance. Cap screws are 18-8 stainless steel.

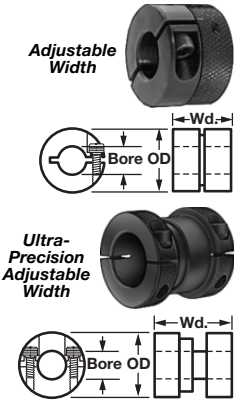

Bore	OD	Min. Wd.	Max. Wd.	Screw Size	Black-Oxide Steel	Each	Type 303 Stainless Steel	Each
Adjustable-Width Collars								
1/4"	5/8"	15/32"	5/8"	4-40	7883K11	$24.70	8103K11	$41.94
3/8"	7/8"	15/32"	5/8"	6-32	7883K12	26.45	8103K12	48.70
1/2"	1 1/8"	3/4"	1 1/16"	8-32	7883K13	29.58	8103K13	50.37
5/8"	15/16"	3/4"	1 1/16"	8-32	7883K14	32.85	8103K14	64.18
3/4"	1 1/2"	7/8"	1 1/4"	10-32	7883K15	34.51	8103K15	65.94
1"	1 3/4"	7/8"	1 1/4"	10-32	7883K16	38.10	8103K16	73.99
1 1/4"	2 1/16"	1"	1 7/16"	1/4"-20	7883K17	47.82	8103K17	92.18
1 3/8"	2 1/4"	1"	1 7/16"	1/4"-20	7883K18	45.84	8103K18	88.74
1 1/2"	2 3/8"	1"	1 7/16"	1/4"-20	7883K19	47.99	8103K19	93.34
Ultra-Precision Adjustable-Width Collars								
3/8"	7/8"	1 1/8"	1 1/2"	6-32	9666T1	26.48	—	—
1/2"	1 1/8"	1 3/16"	1 9/16"	8-32	9666T2	28.44	—	—
5/8"	1 5/16"	1 3/8"	1 7/8"	10-32	9666T3	30.41	—	—
3/4"	1 1/2"	1 1/2"	2"	1/4"-28	9666T4	32.37	—	—
1"	1 3/4"	1 1/2"	2"	1/4"-28	9666T5	36.51	—	—
1 1/4"	2 1/16"	1 5/8"	2 1/4"	1/4"-28	9666T6	40.61	—	—
1 3/8"	2 1/4"	1 5/8"	2 1/4"	1/4"-28	9666T7	44.30	—	—
1 1/2"	2 3/8"	1 3/4"	2 1/2"	1/4"-28	9666T8	48.02	—	—

Bearing Locknut Shaft Collars

In addition to ultra-fine threads, which provide very close engagement on your shaft, these collars have a flexible lining that "hugs" your shaft for superior holding power. They help eliminate the looseness commonly associated with locknuts that use keyways and lockwashers, which are not required with these collars. They also allow precise positioning, increased thread contact, and better squareness of the retaining ring to the bearing face. All of these collars work with SAE, ABEC, and ANSI/ABMA standard products.

Steel— Collars are made of grade 1215 steel. ***Type 303 Stainless Steel—*** Collars are Type 303 stainless steel for excellent corrosion resistance.

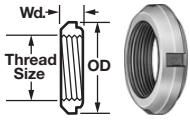

Thread Size	OD	Wd.	Steel	Each	Type 303 Stainless Steel	Each
0.391"-32	3/4"	9/32"	6343K11	$4.30	6343K71	$12.34
0.469"-32	7/8"	3/8"	6343K12	4.65	6343K72	12.66
0.586"-32	1"	3/8"	6343K13	4.95	6343K73	13.23
0.664"-32	1 1/8"	13/32"	6343K14	5.25	6343K74	13.85
0.781"-32	1 3/8"	13/32"	6343K15	5.51	6343K75	14.64
0.969"-32	1 9/16"	15/32"	6343K16	5.85	6343K76	15.47
1.173"-18	1 3/4"	15/32"	6343K17	6.25	6343K77	16.49
1.312"-18	2 1/16"	1/2"	6343K18	7.72	6343K78	24.40
1.376"-18	2 1/16"	1/2"	6343K19	6.82	6343K79	17.85

Thread Size	OD	Wd.	Steel	Each	Type 303 Stainless Steel	Each
1.563"-18	2 1/4"	1/2"	6343K21	$7.45	6343K81	$18.77
1.767"-18	2 17/32"	1/2"	6343K22	8.15	6343K82	20.42
1.967"-18	2 11/16"	9/16"	6343K23	8.92	6343K83	21.33
2.157"-18	2 31/32"	9/16"	6343K24	10.38	6343K84	24.83
2.360"-18	3 5/32"	19/32"	6343K25	12.12	6343K85	26.79
2.548"-18	3 3/8"	5/8"	6343K26	14.13	6343K86	31.11
2.751"-18	3 5/8"	5/8"	6343K27	17.50	6343K87	33.75
2.933"-12	3 7/8"	21/32"	6343K28	24.63	6343K88	86.10

Quick-Release Handles for One-Piece Shaft Collars

If you frequently move collars along shafts, you'll no longer have to search for a wrench to adjust them. Use one of these knurled handles to replace your one-piece collar's socket-head cap screw (just match the screw size). The handle keeps the collar secure on the shaft, then lets you loosen and tighten the collar for quick adjustments.

Ultra-grip handles give you the option of using a wrench on the wrench flat or a cheater bar in the through hole for additional tightening force.

Black-Oxide Steel— Made of grade 12L14 steel. Black-oxide finish offers some corrosion resistance. ***Type 303 Stainless Steel—*** Offer good corrosion resistance.

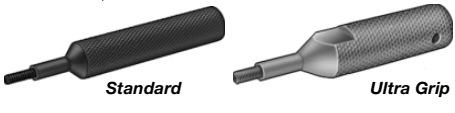

Screw Size	Screw Lg.	O'all Lg.	Handle Dia.	STANDARD Black-Oxide Steel	Each	STANDARD Type 303 Stainless Steel	Each	Wrench Flat Size	Hole Dia.	ULTRA GRIP Black-Oxide Steel	Each	ULTRA GRIP Type 303 Stainless Steel	Each
4-40	3/8"	3 3/8"	1/2"	9976K11	$8.29	9979K11	$12.60	3/8"	3/16"	9976K31	$12.71	9976K41	$22.89
6-32	3/8"	3 3/8"	1/2"	9976K12	8.36	9979K12	12.67	3/8"	3/16"	9976K32	12.71	9976K42	22.89
8-32	1/2"	5 1/8"	1"	9976K13	13.93	9979K13	24.91	3/4"	1/4"	9976K33	23.00	9976K43	35.02
10-32	1/2"	5 1/8"	1"	9976K14	13.96	9979K14	24.98	3/4"	1/4"	9976K34	23.00	9976K44	35.02
1/4"-28	1/2"	5 1/8"	1"	9976K15	14.00	9979K15	24.91	3/4"	1/4"	9976K35	23.00	9976K45	35.02
5/16"-24	1"	5 5/8"	1"	9976K16	14.07	9979K16	25.31	3/4"	1/4"	9976K36	23.00	9976K46	35.02

About Couplings and Keyways

Couplings connect two shafts and transfer motion from one shaft to another. They attach via cap screws, set screws, a combination of keyways and set screws, or bushings. There are two main types of couplings: rigid, which allow no shaft misalignment and flexible, which allow some misalignment. Use the charts below as a guide to select the right coupling for your application. For actual performance ratings, please see the individual coupling presentations.

For applications with shaft misalignment, these are the couplings to choose:

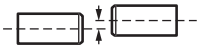 Parallel Shaft Misalignment	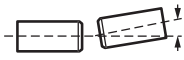 Angular Shaft Misalignment	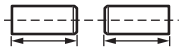 Axial Shaft Misalignment
Couplings Best Suited for Starting, Stopping, and Reversing Motions		
Slotted Disc, Double Loop, Pinhole Disc	Beam, Double Loop	Beam, Double Loop, Pinhole Disc
Couplings Best Suited for Transmitting Torque and Power in Alternating Motions		
Tire, Gear and Sleeve	Tire, Gear and Sleeve	Tire, Multi-Flex

For applications that require high torque capacity, speed, or dampening capacity, these are the couplings to choose:

Torque Capacity	Speed (rpm)	Dampening Capacity
Couplings Best Suited for Starting, Stopping, and Reversing Motions		
Rigid	Bellows, Spider, Servomotor Double Disc	Double Loop, Spider
Couplings Best Suited for Transmitting Torque and Power in Primarily One Direction		
Roller Chain, Gear and Sleeve	Shear, Multi-Flex, Gear and Sleeve	Shear, Tire, Multi-Flex

Torque Capacity— Couplings are rated by the maximum torque they can carry, and sometimes by a limiting or maximum rpm. Maximum torque can be used to determine horsepower (or vice versa) with the formula:

$$hp = \frac{\text{Torque (in.-lbs.)} \times \text{rpm}}{63{,}000}$$

ANSI Keyways— Couplings with keyways give you a more secure hold and are especially good for alternating-motion applications. Keyways follow standard ANSI dimensions listed.

Keyway Dimensions

Coupling Bore	Keyway Wd.×Dp.
ANSI Inch	
5/16″ to 7/16″	3/32″×3/64″
1/2″ to 9/16″	1/8″×1/16″
5/8″ to 7/8″	3/16″×3/32″
15/16″ to 1 1/4″	1/4″×1/8″
1 5/16″ to 1 3/8″	5/16″×5/32″
1 7/16″ to 1 3/4″	3/8″×3/16″
1 13/16″ to 2 1/4″	1/2″×1/4″
2 5/16″ to 2 3/4″	5/8″×5/16″
2 13/16″ to 3 1/4″	3/4″×3/8″
3 5/16″ to 3 3/4″	7/8″×7/16″
3 13/16″ to 4″	1″×1/2″
ISO-DIN Metric (mm)	
10	3×1.4
11, 12	4×1.8
14, 15, 16	5×2.3
19, 20, 22	6×2.8
24, 25, 28, 30	8×3.3
32, 35, 38	10×3.3
42	12×3.3

Set-Screw Shaft Couplings

Without Keyway

For a positive lock on your shaft, simply slide on one of these couplings and tighten the two set screws. ***Couplings with ANSI keyway*** give you a more secure hold and are especially good for alternating-motion applications. They have standard ANSI keyway dimensions.

Aluminum— Couplings are lightweight, corrosion-resistant, Type 6061-T651 or equivalent aluminum. Set screws are alloy steel. ***Steel—*** Couplings are Grade 1215 or equivalent steel. Set screws are alloy steel. ***Type 303 Stainless Steel—*** Couplings and set screws are Type 303 stainless steel for excellent corrosion resistance.

				Aluminum				***Steel***				***Type 303 Stainless Steel***			
Bore	Lg.	OD	Screw Size	Max. rpm	Max. Torque, in.-lbs.		Each	Max. rpm	Max. Torque, in.-lbs.		Each	Max. rpm	Max. Torque, in.-lbs.		Each
With ANSI Keyway															
1/2″	1 1/2″	1″	1/4″-20	—	—		—	3,450	473	6412K41	$10.65	3,450	473	6099K41	$24.39
5/8″	2″	1 1/4″	5/16″-18	—	—		—	3,450	1,186	6412K42	13.09	3,450	1,186	6099K42	35.29
3/4″	2″	1 1/2″	5/16″-18	—	—		—	3,450	1,423	6412K43	14.80	3,450	1,423	6099K43	43.65
7/8″	2″	1 3/4″	5/16″-18	—	—		—	1,740	1,661	6412K44	19.18	1,740	1,661	6099K44	52.35
1″	3″	2″	5/16″-18	—	—		—	1,740	3,786	6412K45	23.98	1,740	3,786	6099K45	80.59
1 1/4″	4″	2 1/4″	3/8″-16	—	—		—	1,740	6,310	6412K47	33.23	1,740	6,310	6099K47	131.54
Without Keyway															
1/4″	3/4″	1/2″	10-32	2,029	41	2424K11	$6.63	3,450	69	6412K11	5.82	3,450	43	6099K21	11.28
5/16″	1″	5/8″	10-32	2,029	51	2424K12	7.49	3,450	86	6412K12	6.56	3,450	54	6099K22	13.04
3/8″	1″	3/4″	1/4″-20	2,029	105	2424K13	8.25	3,450	178	6412K13	5.39	3,450	111	6099K23	13.37
1/2″	1 1/2″	1″	1/4″-20	2,029	140	2424K14	9.18	3,450	238	6412K14	9.02	3,450	149	6099K24	17.08
5/8″	2″	1 1/4″	5/16″-18	2,029	276	2424K15	12.05	3,450	469	6412K15	11.28	3,450	293	6099K25	24.47
3/4″	2″	1 1/2″	5/16″-18	2,029	331	2424K16	13.69	3,450	563	6412K16	12.74	3,450	352	6099K26	30.12
7/8″	2″	1 3/4″	5/16″-18	1,024	386	2424K17	17.65	1,740	656	6412K17	15.00	1,740	410	6099K27	36.07
1″	3″	2″	5/16″-18	1,024	441	2424K18	20.35	1,740	750	6412K18	16.66	1,740	469	6099K28	56.52
1 1/8″	3″	2 1/8″	3/8″-16	1,024	695	2424K19	29.50	1,740	1,181	6412K31	26.19	—	—	—	—
1 1/4″	4″	2 1/4″	3/8″-16	1,024	772	2424K21	36.23	1,740	1,313	6412K32	27.02	—	—	—	—
1 3/8″	4 1/2″	2 1/2″	3/8″-16	1,024	849	2424K22	50.33	1,740	1,444	6412K33	33.78	—	—	—	—
1 1/2″	4 1/2″	2 1/2″	3/8″-16	1,024	926	2424K23	76.53	1,740	1,575	6412K34	45.72	—	—	—	—

Machinable-Bore One-Piece Clamp-On Shaft Couplings

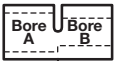

One end (Bore A) has a finished bore; the other (Bore B) can be machined to any size up to the size of Bore A to meet your exact needs. All of these clamp-on couplings offer superior holding power over set-screw couplings, plus they won't damage your shaft. Just slide them onto your shaft and tighten the four socket-head cap screws to secure. Couplings are Grade 12L14 steel. Cap screws are alloy steel.

Note: Not rated for max. rpm.

Bore (A)	Bore (B)	Lg.	OD	Working Torque, in.-lbs.	Screw Size		Each
1/2″	0.235″	1 7/8″	1 1/4″	289	8-32	3084K31	$24.20
5/8″	0.235″	2 1/4″	1 1/2″	490	10-32	3084K32	25.29
3/4″	0.235″	2 5/8″	1 3/4″	1,133	1/4″-28	3084K33	32.53
7/8″	0.235″	2 7/8″	1 7/8″	1,322	1/4″-28	3084K47	33.71
1″	0.360″	3″	2″	1,510	1/4″-28	3084K34	34.49
1 1/8″	0.360″	3 1/4″	2 1/8″	1,699	1/4″-28	3084K48	37.76
1 1/4″	0.360″	3 3/8″	2 1/4″	1,888	1/4″-28	3084K35	38.73
1 3/8″	0.360″	3 5/8″	2 3/8″	2,080	1/4″-28	3084K49	40.04
1 1/2″	0.485″	3 3/4″	2 1/2″	2,266	1/4″-28	3084K36	41.27
1 3/4″	0.485″	4 1/2″	3″	4,221	5/16″-24	3084K51	49.87
2″	0.485″	4 7/8″	3 1/4″	4,825	5/16″-24	3084K52	58.44

For information about couplings and ANSI keyway dimensions, see page 1174.

One-Piece Clamp-On Shaft Couplings

Compared to set-screw couplings, clamp-on couplings provide superior holding power and torque capacity without damaging your shaft. Slide them onto your shaft and tighten the four socket-head cap screws to secure.

Couplings with ANSI keyway give you a more secure hold and are especially good for alternating-motion applications. They have standard ANSI keyway dimensions.

Steel— Couplings are Grade 1215 steel. Cap screws are alloy steel. ***Type 303 Stainless Steel—*** Couplings are Type 303 stainless steel for excellent corrosion resistance. Cap screws are 18-8 stainless steel.

With Keyway

						STEEL				TYPE 303 STAINLESS STEEL			
Bore (A)	Bore (B)	Lg.	OD	Screw Size	Max. rpm	Max. Torque, in.-lbs.	With ANSI Keyway	Each	Without Keyway	Each	Max. Torque, in.-lbs.	With ANSI Keyway	Each	Without Keyway	Each
Inch Bore Sizes															
3/16″	3/16″	7/8″	9/16″	2-56	3,000	200	—	—	61005K1	$19.26	106	—	—	61005K4	$32.79
1/4″	3/16″	1″	5/8″	4-40	3,000	200	—	—	61005K2	20.40	106	—	—	61005K5	34.70
1/4″	1/4″	1″	5/8″	4-40	3,000	200	—	—	61005K311	20.89	106	—	—	61005K411	35.82
1/4″	3/8″	1 3/8″	7/8″	6-32	3,000	450	—	—	61005K511	28.36	240	—	—	61005K633	42.62
5/16″	5/16″	1 3/8″	7/8″	6-32	4,000	450	—	—	61005K3	22.66	240	—	—	61005K6	34.73
3/8″	3/8″	1 3/8″	7/8″	6-32	3,000	450	61005K111	$30.77	61005K322	25.34	240	61005K211	$48.47	61005K422	39.26
3/8″	1/2″	1 3/4″	1 1/8″	8-32	3,000	950	—	—	61005K522	30.09	540	—	—	61005K644	51.57
1/2″	1/2″	1 3/4″	1 1/8″	8-32	3,000	950	61005K122	33.86	61005K331	27.09	540	61005K221	61.12	61005K433	48.12
1/2″	5/8″	2″	1 5/16″	10-32	3,000	1,600	—	—	61005K533	36.21	950	—	—	61005K655	70.47
5/8″	5/8″	2″	1 5/16″	10-32	3,000	1,600	61005K133	41.16	61005K344	33.12	950	61005K233	84.30	61005K441	66.72
5/8″	3/4″	2 1/4″	1 1/2″	1/4″-28	3,000	3,200	—	—	61005K544	41.53	2,000	—	—	61005K661	82.49
3/4″	3/4″	2 1/4″	1 1/2″	1/4″-28	3,000	3,200	61005K144	47.65	61005K355	38.36	2,000	61005K244	99.23	61005K451	78.56
7/8″	7/8″	2 1/2″	1 5/8″	1/4″-28	3,000	3,600	61005K155	54.74	61005K366	45.12	2,300	61005K255	118.72	61005K466	93.58
1″	1/2″	3″	1 3/4″	1/4″-28	3,000	4,000	—	—	61005K551	47.26	2,500	—	—	61005K677	106.85
1″	3/4″	3″	1 3/4″	1/4″-28	3,000	4,000	—	—	61005K561	47.26	2,500	—	—	61005K688	106.85
1″	1″	3″	1 3/4″	1/4″-28	3,000	4,000	61005K166	53.60	61005K377	44.07	2,500	61005K266	130.28	61005K477	102.47
1 1/8″	1 1/8″	3 1/8″	1 7/8″	1/4″-28	3,000	4,400	61005K177	62.88	61005K388	50.77	2,800	61005K277	165.16	61005K488	128.84
1 3/16″	1″	3 1/4″	2 1/16″	1/4″-28	4,000	5,000	—	—	61005K85	76.04	3,200	—	—	61005K91	168.17
1 3/16″	1 3/16″	3 1/4″	2 1/16″	1/4″-28	4,000	5,000	61005K95	74.00	61005K84	60.66	3,200	61005K7	183.36	61005K89	146.17
1 1/4″	1″	3 1/4″	2 1/16″	1/4″-28	3,000	5,000	—	—	61005K577	60.13	3,200	—	—	61005K699	155.89
1 1/4″	1 1/4″	3 1/4″	2 1/16″	1/4″-28	3,000	5,000	61005K188	70.21	61005K399	56.70	3,200	61005K288	192.35	61005K499	150.63
1 3/8″	1 3/8″	3 5/8″	2 1/2″	5/16″-24	3,000	9,600	61005K755	89.65	61005K766	74.81	8,100	61005K771	232.13	61005K788	190.53
1 7/16″	1″	3 7/8″	2 5/8″	5/16″-24	4,000	6,800	—	—	61005K87	99.74	4,000	—	—	61005K93	219.02
1 7/16″	1 7/16″	3 7/8″	2 5/8″	5/16″-24	4,000	6,800	61005K96	101.28	61005K86	85.13	4,000	61005K8	246.13	61005K92	202.96
1 1/2″	1 1/2″	3 7/8″	2 5/8″	5/16″-24	3,000	6,800	61005K611	86.06	61005K588	71.17	4,000	61005K733	236.51	61005K711	194.15
1 3/4″	1 3/4″	4 1/2″	3 1/8″	5/16″-24	3,000	18,000	61005K799	147.81	61005K811	123.85	15,000	61005K822	322.23	61005K833	277.56
1 15/16″	1 15/16″	4 7/8″	3 3/8″	3/8″-24	4,000	13,600	61005K97	202.87	61005K88	169.47	8,200	61005K9	464.49	61005K94	403.43
2″	2″	4 7/8″	3 3/8″	3/8″-24	3,000	13,600	61005K622	175.77	61005K599	147.51	8,200	61005K744	398.16	61005K722	338.44
Metric Bore Sizes															
6 mm	6 mm	30 mm	18 mm	M3	3,000	300	—	—	2469K1	23.57	238	—	—	2469K41	40.10
8 mm	6 mm	35 mm	24 mm	M3	3,000	460	—	—	2469K21	35.91	389	—	—	2469K24	56.57
8 mm	8 mm	35 mm	24 mm	M3	3,000	460	—	—	2469K2	28.68	389	—	—	2469K42	43.92
10 mm	6 mm	45 mm	29 mm	M4	3,000	947	—	—	2469K22	42.86	796	—	—	2469K25	71.50
10 mm	10 mm	45 mm	29 mm	M4	3,000	947	—	—	2469K3	30.57	796	—	—	2469K43	53.82
12 mm	10 mm	45 mm	29 mm	M4	3,000	947	—	—	2469K23	42.86	796	—	—	2469K26	71.50
12 mm	12 mm	45 mm	29 mm	M4	3,000	947	—	—	2469K4	30.57	796	—	—	2469K44	53.82
14 mm	14 mm	50 mm	34 mm	M5	3,000	1,743	—	—	2469K5	37.41	1,460	—	—	2469K45	74.61
15 mm	15 mm	50 mm	34 mm	M5	3,000	1,743	—	—	2469K6	37.41	1,460	—	—	2469K46	74.61
16 mm	16 mm	50 mm	34 mm	M5	3,000	1,743	—	—	2469K7	37.41	1,451	—	—	2469K47	74.61
20 mm	12 mm	65 mm	42 mm	M6	3,000	3,186	—	—	2469K52	54.18	2,655	—	—	2469K56	112.45
20 mm	20 mm	65 mm	42 mm	M6	3,000	3,186	—	—	2469K8	45.84	2,655	—	—	2469K48	96.09
25 mm	20 mm	75 mm	45 mm	M6	3,000	3,451	—	—	2469K53	57.23	2,920	—	—	2469K57	124.16
25 mm	25 mm	75 mm	45 mm	M6	3,000	3,451	—	—	2469K9	47.64	2,920	—	—	2469K49	105.89
30 mm	20 mm	83 mm	53 mm	M6	3,000	4,248	—	—	2469K54	75.48	—	—	—	—	—
30 mm	25 mm	83 mm	53 mm	M6	3,000	4,248	—	—	2469K55	75.48	3,628	—	—	2469K59	177.73
30 mm	30 mm	83 mm	53 mm	M6	3,000	4,248	—	—	2469K11	63.98	3,628	—	—	2469K51	160.73

One-Piece Mounting Flange Clamp-On Shaft Couplings

With a flange, which has three through holes and three tapped holes, you can connect sprockets, pulleys, and other drive components to these couplings. All couplings are steel. They clamp on for superior holding power without damaging your shaft. Tighten the four socket-head cap screws to secure. A keyway with standard ANSI keyway dimensions provides a more secure hold making these couplings especially good for alternating-motion applications.

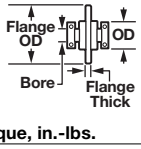

Bore	O'all Lg.	OD	Screw Size	Mounting Flange OD	Mounting Flange Thick.	Mounting Flange Through Holes	Mounting Flange Tapped Holes	Max. rpm	Max. Torque, in.-lbs.		Each
1/2″	1 7/8″	1 1/4″	8-32	2 1/4″	3/16″	0.164″	8-32	8,000	468	1034K1	$53.24
5/8″	2 1/4″	1 1/2″	10-32	2 5/8″	3/16″	0.190″	10-32	7,500	1,044	1034K2	66.48
3/4″	2 5/8″	1 3/4″	1/4″-28	3″	1/4″	1/4″	1/4″-28	7,000	1,476	1034K3	81.92
1″	3″	2″	1/4″-28	3 1/4″	1/4″	1/4″	1/4″-28	5,000	3,000	1034K4	123.50
1 1/4″	3 3/8″	2 1/4″	1/4″-28	3 1/2″	1/4″	1/4″	1/4″-28	5,000	4,200	1034K5	147.12
1 1/2″	3 3/4″	2 1/2″	1/4″-28	3 3/4″	1/4″	1/4″	1/4″-28	5,000	8,448	1034K6	176.20

Light Duty Two-Piece Clamp-On Shaft Couplings

Light in weight and offering good corrosion resistance, these couplings are made of Alloy 6061-T6 aluminum. All have a two-piece design, which means you can mount them anywhere on your shaft without disassembling your machinery. They clamp on for superior holding power without damaging your shaft. Tighten the four socket-head cap screws to secure. **To Order:** Please specify Bore (A) × Bore (B) combination.

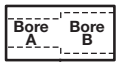

Available Bore (A) × Bore (B) Size Combinations	Max. Torque, in.-lbs.	Lg.	OD	Screw Size	Max. rpm		Each
1/4″ × 1/4″, 1/4″ × 3/8″, 3/8″ × 3/8″	100	2 1/2″	1 7/8″	10-32	3,450		
1/2″ × 1/2″, 1/2″ × 5/8″, 1/2″ × 3/4″, 5/8″ × 5/8″, 5/8″ × 3/4″	150	2 1/2″	1 7/8″	10-32	3,450		
3/4″ × 3/4″, 3/4″ × 7/8″, 3/4″ × 1″, 7/8″ × 7/8″, 7/8″ × 1″	250	2 1/2″	1 7/8″	10-32	3,450		
1″ × 1″, 1 1/8″ × 1 1/8″	500	2 1/2″	1 7/8″	10-32	3,450	6115K1	$18.34

For information about couplings and ANSI keyway dimensions, see page 1174.

Two-Piece Clamp-On Shaft Couplings

With Keyway

Made to come apart in two halves, you can install and remove these couplings anywhere on your shaft without disassembling your machinery. They clamp on for superior holding power without damaging your shaft. Tighten the eight socket-head cap screws to secure.

Couplings with ANSI keyway give you a more secure hold and are especially good for alternating-motion applications. They have standard ANSI keyway dimensions.

Steel— Couplings are Grade 1215 steel. Cap screws are alloy steel. ***Type 303 Stainless Steel—*** Couplings are Type 303 stainless steel for excellent corrosion resistance. Cap screws are 18-8 stainless steel.

						STEEL				TYPE 303 STAINLESS STEEL			
Bore (A)	Bore (B)	Lg.	OD	Screw Size	Max. rpm	Max. Torque, in.-lbs.	With ANSI Keyway	Each	Without Keyway	Each	Max. Torque, in.-lbs.	With ANSI Keyway	Each	Without Keyway	Each
1/4"	1/4"	1"	5/8"	4-40	4,000	200	—	—	60845K31	$33.40	106	—	—	60845K41	$53.60
3/8"	1/4"	1 3/8"	7/8"	6-32	4,000	450	60845K52★	$74.54	60845K51	39.62	240	60845K71★	$104.50	60845K81	56.98
3/8"	3/8"	1 3/8"	7/8"	6-32	4,000	450	60845K11	47.91	60845K32	38.93	240	60845K21	68.28	60845K42	56.98
1/2"	3/8"	1 3/4"	1 1/8"	8-32	4,000	950	60845K53	62.94	60845K54	44.04	540	60845K72	89.46	60845K82	68.40
1/2"	1/2"	1 3/4"	1 1/8"	8-32	4,000	950	60845K12	54.42	60845K33	43.58	540	60845K22	81.19	60845K43	68.98
5/8"	1/2"	2"	1 5/16"	10-32	4,000	1,600	60845K55	81.36	60845K56	50.30	950	60845K73	120.40	60845K83	89.80
5/8"	5/8"	2"	1 5/16"	10-32	4,000	1,600	60845K13	61.30	60845K34	49.74	950	60845K23	109.23	60845K44	91.42
3/4"	5/8"	2 1/4"	1 1/2"	1/4"-28	4,000	3,200	60845K57	85.40	60845K58	52.34	2,000	60845K74	141.16	60845K84	105.96
3/4"	3/4"	2 1/4"	1 1/2"	1/4"-28	4,000	3,200	60845K14	64.21	60845K35	52.33	2,000	60845K24	128.88	60845K45	108.37
7/8"	7/8"	2 1/2"	1 5/8"	1/4"-28	4,000	3,600	60845K15	81.35	60845K36	64.21	2,300	60845K25	154.91	60845K46	130.16
1"	1/2"	3"	1 3/4"	1/4"-28	4,000	4,000	60845K59	93.22	60845K61	60.68	2,500	60845K75	179.98	60845K85	134.62
1"	3/4"	3"	1 3/4"	1/4"-28	4,000	4,000	60845K62	93.22	60845K63	60.68	2,500	60845K76	179.98	60845K86	134.62
1"	1"	3"	1 3/4"	1/4"-28	4,000	4,000	60845K16	79.86	60845K37	61.02	2,500	60845K26	164.65	60845K47	138.35
1 1/8"	1 1/8"	3 1/8"	1 7/8"	1/4"-28	4,000	4,400	60845K17	102.40	60845K38	83.65	2,800	60845K27	213.51	60845K48	184.30
1 1/4"	1"	3 1/4"	2 1/16"	1/4"-28	4,000	5,000	60845K64	122.80	60845K65	89.08	3,200	60845K77	261.68	60845K87	196.20
1 1/4"	1 1/4"	3 1/4"	2 1/16"	1/4"-28	4,000	5,000	60845K18	110.40	60845K39	90.81	3,200	60845K28	240.84	60845K49	202.93
1 3/8"	1 3/8"	3 5/8"	2 1/2"	5/16"-24	4,000	6,400	60845K911	134.64	60845K921	110.28	3,700	60845K931	315.86	60845K941	276.78
1 1/2"	1 1/2"	3 7/8"	2 5/8"	5/16"-24	4,000	6,800	60845K66	108.72	60845K67	89.26	4,000	60845K78	321.84	60845K88	282.00
1 3/4"	1 3/4"	4 1/2"	3 1/8"	5/16"-24	4,000	12,300	60845K951	189.08	60845K961	163.04	7,400	60845K971	434.64	60845K981	388.20
2"	2"	4 7/8"	3 3/8"	3/8"-24	4,000	13,600	60845K68	191.86	60845K69	164.00	8,200	60845K79	442.42	60845K89	428.33

★ Bore (B) does not have a keyway.

Extra-Large Two-Piece Clamp-On Shaft Couplings

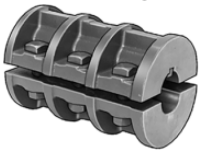

These rugged cast-iron couplings handle high torque and are longer than our other rigid couplings to maintain alignment on long shaft runs. Able to come apart in two halves, you can install and remove them anywhere on your shaft without disassembling your machinery. They clamp on for superior holding power without damaging your shaft. Tighten the six bolts (unless noted) to secure. A keyway with standard ANSI keyway dimensions (unless noted) provides a more secure hold making these coupling especially good for alternating-motion applications. **To Order:** Where applicable, please specify bore size from those listed (bore is same size on each end).

Available Bore Sizes	Lg.	OD	Bolt Size	Max. rpm	Max. Torque, in.-lbs.		Each
1 3/16", 1 1/4"	6 1/4"	4 1/4"	1/2"	5,360	2,000	6417K1●	$186.47
1 3/8", 1 7/16", 1 1/2"	7 1/8"	4 1/2"	1/2"	4,130	3,500	6417K2◆	205.50
1 11/16", 1 3/4"	8 1/4"	5 1/8"	5/8"	3,965	5,500	6417K3	242.33
1 15/16", 2"	8 5/8"	5 1/2"	5/8"	3,635	8,500	6417K4	282.57
2 3/16", 2 1/4"	9 5/16"	5 3/4"	3/4"	3,180	12,000	6417K5	329.03
2 7/16"	9 7/8"	6 1/4"	3/4"	2,965	17,000	6417K16	392.77
2 1/2"	9 7/8"	6 1/4"	3/4"	2,965	17,000	6417K19	451.39
2 11/16", 2 3/4"	10 7/8"	7 1/4"	3/4"	2,830	21,000	6417K6	466.64
2 15/16", 3"	12"	7 1/4"	7/8"	2,545	29,000	6417K7	552.23

● Has four bolts. ◆ Keyway is 3/8" Wd. × 3/16" Dp.

Clamp-On Shaft Adapters

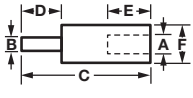

Convert your shaft from one size to another. One side of each adapter has a two-piece coupling connection that clamps on to the end of your shaft; the other provides the converted shaft size as well as extends your shaft. Tighten the four cap screws to secure. All adapters are Grade 12L14 steel and have a black-oxide finish, which offers some corrosion resistance. Cap screws are alloy steel.

Step-up adapters make your shaft larger. ***Step-down adapters*** make your shaft smaller.

Bore (A)	Shaft OD (B)	O'all Lg. (C)	Shaft Lg. (D)	Bore Dp. (E)	Dia. (F)	Screw Size		Each
Step-Up Adapters								
1/2"	3/4"	2 3/4"	1 1/4"	1 1/4"	1 1/4"	8-32	3256K11	$53.13
5/8"	7/8"	3 1/4"	1 1/2"	1 3/8"	1 1/2"	10-32	3256K12	54.91
3/4"	1"	4 1/4"	2"	1 5/8"	1 3/4"	1/4"-28	3256K13	57.67
7/8"	1 1/8"	4 3/8"	2"	1 7/8"	1 7/8"	1/4"-28	3256K14	61.09
1"	1 1/4"	4 3/4"	2 1/4"	2"	2"	1/4"-28	3256K15	66.11
1 1/8"	1 3/8"	4 3/4"	2 3/8"	2"	2 1/8"	1/4"-28	3256K16	71.13
1 1/4"	1 1/2"	5"	2 1/2"	2"	2 1/4"	1/4"-28	3256K17	72.47

Bore (A)	Shaft OD (B)	O'all Lg. (C)	Shaft Lg. (D)	Bore Dp. (E)	Dia. (F)	Screw Size		Each
Step-Down Adapters								
3/4"	1/2"	3 1/2"	1 1/4"	1 5/8"	1 3/4"	8-32	9783T1	$56.00
7/8"	5/8"	3 5/8"	1 1/4"	1 7/8"	1 7/8"	10-32	9783T2	58.40
1"	3/4"	3 5/8"	1 1/4"	2"	2"	1/4"-28	9783T3	60.60
1 1/8"	7/8"	3 7/8"	1 1/2"	2"	2 1/8"	1/4"-28	9783T4	64.07
1 1/4"	1"	4 1/2"	2"	2"	2 1/4"	1/4"-28	9783T5	69.20
1 3/8"	1 1/8"	5"	2"	2 1/4"	2 3/8"	1/4"-28	9783T6	74.31
1 1/2"	1 1/4"	5 3/8"	2 3/8"	2 1/4"	2 1/2"	1/4"-28	9783T7	75.76

High-Torque Keyless Clamp-On Shaft Couplings

One Piece

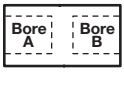

With more cap screws and up to two and a half times the torsional load capacity of most other rigid couplings, these may make keyways unnecessary. They clamp on for superior holding power without damaging your shaft. Tighten the socket-head cap screws (6 on one piece; 12 on two piece) to secure.

Couplings are steel with a black-oxide finish, which offers some corrosion resistance. Cap screws are alloy steel. ***One-piece couplings*** slide on to your shaft. ***Two-piece couplings*** come apart in two halves so you can install and remove them anywhere on your shaft without disassembling your machinery.

Bore (A)	Bore (B)	Lg.	OD	Screw Size	Max. rpm	One Piece Max. Torque, in.-lbs.		Each	Two Piece Max. Torque, in.-lbs.		Each
3/4"	3/4"	3 1/2"	2"	5/16"-24	7,000	2,712	9799T1	$57.83	3,252	9799T11	$83.54
7/8"	7/8"	3 3/4"	2 1/8"	5/16"-24	6,000	3,168	9799T2	60.33	3,792	9799T12	85.23
1"	1"	4"	2 1/4"	5/16"-24	5,000	3,612	9799T3	62.17	4,332	9799T13	86.94
1 1/4"	1 1/4"	4 1/2"	2 1/2"	5/16"-24	5,000	4,512	9799T4	89.81	5,424	9799T14	119.23
1 1/2"	1 1/2"	5"	2 3/4"	5/16"-24	5,000	5,424	9799T5	99.74	6,504	9799T15	131.02
2"	2"	6"	3 1/2"	3/8"-24	3,500	10,956	9799T6	133.79	13,152	9799T16	176.92
2 1/4"	2 1/4"	6 1/2"	3 3/4"	3/8"-24	3,500	12,324	9799T7	141.33	14,796	9799T17	184.44
2 1/2"	2 1/2"	8"	4 1/4"	1/2"-20	3,500	13,692	9799T8	181.92	16,440	9799T18	244.21

For information about couplings and ANSI keyway dimensions, see page 1174.

High-Torque Clamp-On Shaft Couplings

Great for maintaining precise shaft alignment, these couplings have a higher working torque than most other rigid couplings. They clamp on for superior holding power without damaging your shaft. Tighten the socket-head cap screws to secure. A keyway with standard ANSI keyway dimensions provides a more secure hold making these couplings especially good for alternating-motion applications.

All couplings and cap screws are steel. ***One-piece couplings*** slide on to your shaft. They have four cap screws. ***Two-piece couplings*** come apart in two halves so you can install and remove them anywhere on your shaft without disassembling your machinery. They have six cap screws.

One Piece

Bore (A)	Bore (B)	Lg.	OD	Screw Size	Max. rpm	Working Torque, in.-lbs.	*One Piece*	Each	*Two Piece*	Each
1/2″	1/2″	1 7/8″	1 1/4″	8-32	8,000	468	9800T1	$32.58	9800T11	$52.42
5/8″	5/8″	2 1/4″	1 1/2″	10-32	7,500	1,044	9800T2	36.44	9800T12	58.06
3/4″	3/4″	2 5/8″	1 3/4″	1/4″-28	7,000	1,476	9800T3	41.66	9800T13	59.52
1″	1″	3″	2″	1/4″-28	5,000	3,000	9800T4	46.20	9800T14	69.42
1 1/2″	1 1/2″	3 3/4″	2 1/2″	1/4″-28	5,000	8,448	9800T6	74.40	9800T16	109.34

Flexible Spider Shaft Couplings

Consisting of a spider-shaped "cushion" that fits between two coupling hubs, these couplings reduce shock and compensate for minor misalignment. When choosing hubs and spiders, they must be the same size. For example, two size A hubs are designed to work with one size A spider.

Coupling Hubs— These hubs fasten to your shaft with an included set screw. Hubs with 1/2″ and larger bore sizes have ANSI keyways (unless noted) with standard ANSI keyway dimensions for a more secure hold and are especially good for alternating-motion applications. Choose *Type 304 stainless steel hubs* for excellent corrosion resistance. **To Order:** For iron inch bore hubs, please specify bore size in 1/16″ increments from those available below. For all other hubs, please specify bore size from those available below. *Note:* You can use two hubs with different bore sizes in one coupling as long as the hub ODs are the same.

Solid Spiders— To create a complete solid-spider coupling, you must order two coupling hubs and one spider. *Buna-N models* provide good vibration dampening and chemical resistance. Angular misalignment is 1°. Parallel misalignment is 0.015″. Temp. range is –40° to +212° F. *Hytrel models* provide fair vibration dampening and excellent chemical resistance. Angular misalignment is 1/2°. Parallel misalignment is 0.015″. Temp. range is –60° to +250° F. *Urethane models* provide fair vibration dampening, good chemical resistance, and good torque capacity. Angular misalignment is 1°. Parallel misalignment is 0.015″. Temp. range is –30° to +160° F.

Split Spiders— You can easily remove and replace these spiders without tools. To create a complete split-spider coupling, you must order two hubs, one split spider, and one retaining ring to twist-lock the spider in place. All split spiders are made of urethane for fair vibration dampening, good chemical resistance, and good torque capacity. Angular misalignment is 2°. Parallel misalignment is 0.03″ (0.047″ for 2393K37). Temp. range is –30° to +200° F.

Retaining Rings— All are Type 347 stainless steel for excellent corrosion resistance.

With Solid Spider

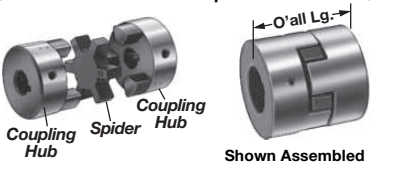

Shown Assembled

With Split Spider

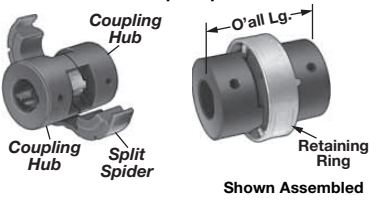

Shown Assembled

Coupling Hubs

Size	Available Bore Sizes	O'all Lg.	Hub OD	Bore Depth	Screw Size		Each
Iron Inch Bore Sizes							
A	1/8″ to 3/8″	13/16″	5/8″	17/64″	6-32	6408K9	$2.80
B	1/4″ to 5/8″	1 23/32″	1 5/64″	5/8″	1/4″-20	6408K11★	2.57
C	1/4″ to 3/4″	1 63/64″	1 23/64″	3/4″	1/4″-20	6408K12	3.98
D	1/4″ to 7/8″	2 1/8″	1 3/4″	53/64″	1/4″-20	6408K13	4.58
E	1/4″ to 1″	2 5/32″	2 7/64″	53/64″	1/4″-20	6408K14	7.03
E	7/16″ to 1 1/8″	2 1/2″	2 7/64″	1″	5/16″-18	6408K15	10.84
F	7/16″ to 1 3/16″	2 27/32″	2 35/64″	1 1/16″	5/16″-18	6408K16	13.68
F	7/16″ to 1 3/8″	3 31/64″	2 35/64″	1 3/8″	5/16″-18	6408K17	20.26
G	5/8″ to 1 5/8″	4 7/32″	3 21/64″	1 11/16″	3/8″-16	6408K18	27.71
H	5/8″ to 1 7/8″	4 1/2″	3 3/4″	1 3/4″	3/8″-16	6408K19	35.45
J	3/4″ to 2 1/8″	4 7/8″	4 1/2″	1 15/16″	1/2″-13	6408K21	65.36
K	3/4″ to 2 5/8″	5 11/32″	5″	2 3/16″	1/2″-13	6408K22	72.97
Type 304 Stainless Steel Inch Bore Sizes							
D	1/4″, 1/2″, 5/8″, 3/4″, 7/8″	2 1/8″	1 3/4″	53/64″	1/4″-20	2306K13	44.88
E	1/2″, 5/8″, 3/4″, 1″, 1 1/8″	2 1/2″	2 7/64″	1″	5/16″-18	2306K14	55.67
F	3/4″, 7/8″, 1″, 1 1/8″, 1 3/8″	3 31/64″	2 35/64″	1 3/8″	5/16″-18	2306K16	65.53
G	1″, 1 1/8″, 1 3/8″, 1 1/2″, 1 5/8″	4 7/32″	3 21/64″	1 11/16″	3/8″-16	2306K18	$118.34
H	1″, 1 1/2″, 1 5/8″, 1 3/4″, 1 7/8″	4 1/2″	3 3/4″	1 3/4″	3/8″-16	2306K19	158.09
Iron Metric Bore Sizes							
B	10, 11, 12 mm	1 23/32″	1 5/64″	5/8″	1/4″-20	6413K11	2.74
C	11, 12, 14, 16, 19 mm	1 63/64″	1 23/64″	3/4″	1/4″-20	6413K12	4.25
D	12, 14, 15, 16, 20, 22 mm	2 1/8″	1 3/4″	53/64″	1/4″-20	6413K13	4.89
E	19, 20, 24 mm	2 5/32″	2 7/64″	53/64″	1/4″-20	6413K14	7.51
E	19, 20, 24, 25, 28 mm	2 1/2″	2 7/64″	1″	5/16″-18	6413K15	11.57
F	22, 24, 28 mm	2 27/32″	2 35/64″	1 1/16″	5/16″-18	6413K16	14.59
F	24, 25, 28, 30 mm	3 31/64″	2 35/64″	1 3/8″	5/16″-18	6413K17	21.60
G	24, 25, 28, 30, 32, 38 mm	4 7/32″	3 21/64″	1 11/16″	3/8″-16	6413K18	29.56
H	38, 42 mm	4 1/2″	3 3/4″	1 3/4″	3/8″-16	6413K19	37.82

★ No keyway for 5/8″ bore size.

Solid Spiders

Size	Spider Thick.	*Buna-N* Max. rpm	Working Torque, in.-lbs.	Each	*Hytrel* Max. rpm	Working Torque, in.-lbs.	Each	*Urethane* Max. rpm	Working Torque, in.-lbs.	Each
A	9/32″	31,000	3	6408K61 $1.28	—	—	—	—	—	—
B	27/64″	18,000	26	6408K84 1.68	18,000	50	6408K91 $5.61	—	—	—
C	27/64″	14,000	43	6408K73 2.36	3,600	114	6408K93 7.91	—	—	—
D	7/16″	11,000	90	6408K74 4.04	3,600	227	6408K94 11.87	3,600	135	2410K11 $6.25
E	7/16″	9,000	144	6408K75 5.23	3,600	401	6408K95 15.82	3,600	291	2410K13 9.00
F	39/64″	7,000	318	6408K77 11.00	3,600	792	6408K96 37.68	3,600	626	2410K15 23.69
G	3/4″	5,000	792	6408K79 12.67	5,000	2,268	6408K97 45.58	5,000	1,188	2410K17 44.99
H	7/8″	5,000	1,240	6408K81 22.00	5,000	3,708	6408K98 54.77	5,000	1,860	2410K19 54.43
J	7/8″	5,000	1,728	6408K82 27.04	5,000	4,680	6408K99 64.58	—	—	—
K	7/8″	4,200	2,340	6408K62 28.75	4,200	6,228	6408K64 82.25	—	—	—

Split Spiders and Retaining Rings

Size	Spider Thick.	*Split Spiders* Max. rpm	Working Torque, in.-lbs.	Each	*Retaining Rings* Ring OD	Ring Wd.	Each
E	7/8″	9,200	335	2393K33 $30.27	2.75″	0.83″	2393K23 $25.28
F	1 3/16″	7,700	560	2393K34 37.90	3.19″	1.21″	2393K24 31.48
G	1 7/16″	5,900	1,090	2393K35 48.65	4″	1.45″	2393K25 42.91
H	1 11/16″	5,200	1,810	2393K36 63.91	4.69″	1.71″	2393K26 72.00
J	1 3/4″	4,300	2,920	2393K37 97.28	5.5″	1.71″	2393K27 79.18

For information about couplings and ANSI keyway dimensions, see page 1174.

SAE-Splined Flexible Spider Shaft Couplings

Shown Assembled

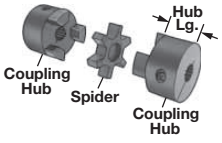

Just like the Flexible Spider Shaft Couplings on the previous page, but with a splined hub, which allows excellent engagement for hydraulic motor and pump applications. To create a complete spider coupling, you must order two coupling hubs (sold below) and one spider (see 6408K and 2410K spiders sold on the previous page). When choosing hubs and spiders, they must be the same size. For example, two size E hubs are designed to work with one size E spider.

Coupling Hubs— Made of cast iron, these hubs clamp on for superior holding power without damaging your shaft. Tighten the socket-head cap screws to secure. **To Order:** Please specify SAE spline size from those available below.

Spiders— See compatible 6408K and 2410K spiders on the previous page.

Spline Dimensions					
SAE Size	Dia. (X)	Dia. (Y)	No. of Teeth	Pitch	Pressure Angle
A	5/8″	0.509″	9	1/2″	30°
B	7/8″	0.754″	13	1/2″	30°
B-B	1″	0.877″	15	1/2″	30°
C	1 1/4″	1.087″	14	1/2″	30°
D	1 3/4″	1.506″	13	1/2″	30°
E	1 3/4″	1.506″	13	1/2″	30°
F	2″	1.753″	15	1/2″	30°

Coupling Hubs

Size	Available SAE Spline Sizes	Hub Lg.	Hub OD	Bore Depth	Screw Size		Each
E	A, B	0.82″	2 7/64″	53/64″	1/4″-20	9843T1	$17.38
E	A, B	1.00″	2 7/64″	1″	1/4″-20	9843T2	20.66
F	A, B, B-B	1.06″	2 17/32″	1 1/16″	5/16″-18	9843T3	23.10
F	A, B, B-B	1.37″	2 17/32″	1 3/8″	5/16″-18	9843T4	27.78
G	A, B, B-B, C	1.69″	3 21/64″	1 11/16″	3/8″-16	9843T5	37.10
H	A, B, B-B, C, D, E	1.75″	3 3/4″	1 3/4″	7/16″-14	9843T6	43.66
J	A, B, B-B, C, D, E, F	2.12″	4 1/2″	1 15/16″	7/16″-14	9843T7	70.20
K	A, B, B-B, C, D, E, F	2.50″	5″	2 3/16″	1/2″-13	9843T8	76.56

Miniature Flexible Spider Shaft Couplings

Shown Assembled

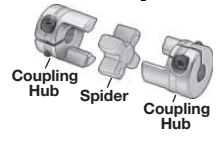

Here's our miniature version of the Flexible Spider Shaft Couplings on the previous page. All allow zero backlash (no play) and are great for precision motion-control applications. For a complete coupling, you need to order two hubs and one spider from the same line in the listing below (for example, two 2401K12 hubs are designed to work with one 2401K81 or one 2401K82 spider).

Coupling Hubs— Made of lightweight, corrosion-resistant aluminum, these hubs clamp on for superior holding power without damaging your shaft. Tighten the socket-head cap screws to secure. **To Order:** Please specify bore size from those available below.

Spiders— *Urethane models* provide fair vibration dampening, good chemical resistance, and good torque capacity. Angular misalignment is 1°. Parallel misalignment is 0.004″-0.006″. Temp. range is –40° to +195° F. *Hytrel models* provide fair vibration dampening and excellent chemical resistance. Angular misalignment is 0.8°. Parallel misalignment is 0.001″-0.002″. Temp. range is –55° to +245° F.

COUPLING HUBS								SPIDERS: Urethane				SPIDERS: Hytrel			
O'all Lg.	Hub OD	Max. rpm	Available Bore Sizes	Bore Depth	Screw Size		Each	Spider Thick.	Working Torque, in.-lbs.		Each	Spider Thick.	Working Torque, in.-lbs.		Each
0.87″	0.55″	27,000	1/8″, 3/16″, 1/4″	0.28″	M2	2401K12	$43.72	0.239″	21.2	2401K81	$3.44	0.235″	42.5	2401K82	$12.97
1.18″	0.79″	19,000	3/16″, 1/4″, 5/16″, 3/8″	0.39″	M2.5	2401K13	32.91	0.314″	53.1	2401K83	4.73	0.313″	106.2	2401K84	10.96
1.34″	0.98″	15,200	3/16″, 1/4″, 5/16″, 3/8″, 7/16″	0.43″	M3	2401K14	51.63	0.395″	88.5	2401K85	18.49	0.397″	212.4	2401K86	17.97
1.38″	1.18″	12,700	3/16″, 1/4″, 3/8″, 1/2″, 5/8″	0.43″	M3	2401K15	35.63	0.399″	132.8	2401K87	7.47	0.391″	283.2	2401K88	13.19

Zero-Backlash Flexible Spider Shaft Couplings

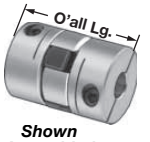

Shown Assembled

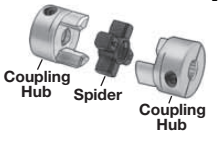

Similar to the Flexible Spider Shaft Couplings on the previous page, except these allow zero backlash (no play). To create a complete spider coupling, you must order two coupling hubs and one spider. When choosing hubs and spiders, they must be the same size. For example, two size 1 hubs are designed to work with one size 1 spider.

Coupling Hubs— All couplings are lightweight and corrosion resistant. They clamp on (unless noted) for superior holding power without damaging your shaft. Tighten the socket-head cap screws to secure. **To Order:** Please specify bore size from those available below.

Spiders— All are made of urethane for fair vibration dampening, good chemical resistance, and good torque capacity. Parallel misalignment is 0.002″-0.006″ for Styles 1-6; 0.003″-0.008″ for Styles 7-10. Temp. range is –10° to +180° F.

Coupling Hubs

Size	Available Bore Sizes	O'all Lg.	Hub OD	Bore Depth	Screw Size		Each
Aluminum							
1	3/16″, 1/4″, 5/16″	1.1″	3/4″	0.385″	2-56	9845T1	$12.30
2	1/4″, 5/16″, 3/8″, 1/2″	1.25″	1″	0.467″	4-40	9845T2	15.90
3	5/16″, 3/8″, 1/2″, 5/8″	1.875″	1 5/16″	0.59″	6-32	9845T3	23.06
4	3/8″, 1/2″, 5/8″, 3/4″	2″	1 5/8″	0.71″	8-32	9845T4	28.96
5	1/2″, 5/8″, 3/4″, 1″	2.4″	2″	0.82″	10-32	9845T5	47.20
6	1/2″, 5/8″, 3/4″, 1″	3.15″	2 1/4″	1.13″	1/4″-28	9845T6	63.36

Size	Available Bore Sizes	O'all Lg.	Hub OD	Bore Depth	Screw Size		Each
***Glass-Fiber-Reinforced Polyamide*■**							
7	1/4″, 3/8″, 1/2″, 5/8″	35 mm	32 mm	12 mm	M3	9939T1	$9.78
8	3/8″, 1/2″, 5/8″, 3/4″	66 mm	42 mm	25 mm	M4	9939T2	11.48
9	5/8″, 3/4″, 1″	78 mm	56 mm	30 mm	M5	9939T3	16.84
10	3/4″, 1″, 1 1/4″, 1 1/2″	90 mm	66.5 mm	35 mm	M6	9939T4	26.18

■ Hubs connect to shaft with a set screw.

Spiders

Size	Spider Thick.	Max. rpm	Red Shore 98A: Working Torque, in.-lbs.	Angular Misalignment		Each	Yellow Shore 92A: Working Torque, in.-lbs.	Angular Misalignment		Each	Blue Shore 85A: Working Torque, in.-lbs.	Angular Misalignment		Each
1	0.300″	8,000	15	0.8°	9845T11	$5.96	9	0.9°	9845T12	$5.96	5	0.9°	9845T13	$8.82
2	0.441″	8,000	75	0.8°	9845T14	6.56	29	0.9°	9845T15	6.56	15	0.9°	9845T16	9.40
3	0.570″	8,000	87	0.8°	9845T17	7.46	35	0.9°	9845T18	7.46	18	0.9°	9845T19	11.14
4	0.666″	8,000	165	0.8°	9845T21	10.38	97	0.9°	9845T22	10.38	—	—	—	—
5	0.760″	8,000	275	0.8°	9845T24	16.70	220	0.9°	9845T25	17.60	—	—	—	—
6	0.890″	8,000	410	0.8°	9845T26	20.26	285	0.9°	9845T27	23.02	—	—	—	—
							Green Shore 64D			Each	Yellow Shore 80A			Each
7	9.5 mm	10,000	110	1°	9939T11	$4.78	141	0.8°	9939T12	$4.78	35	1.2°	9939T13	$4.78
8	12 mm	9,000	150	1°	9939T14	5.32	185	0.8°	9939T15	5.32	53	1.2°	9939T16	5.32
9	14 mm	8,000	531	1°	9939T17	7.78	663	0.8°	9939T18	7.78	177	1.2°	9939T19	7.78
10	15 mm	7,000	1,416	1°	9939T21	10.38	1,593	0.8°	9939T22	10.38	371	1.2°	9939T23	10.38

For information about couplings and ANSI keyway dimensions, see page 1174.

Helical Beam Shaft Couplings

Clamp On

Specially placed beams (cuts) in each of these couplings provide flexibility for parallel, angular, and axial (unless noted) misalignment. The choice for motion-control applications that require precise positioning for frequent starts and stops, they allow zero backlash (no play) and never need lubrication.

Set-screw couplings connect to shafts with four set screws. ***Clamp-on couplings*** connect to shafts via integral shaft collars, which won't damage your shaft. Tighten the two socket-head cap screws to secure.

Aluminum— Couplings are lightweight and corrosion resistant. *Inch-to-inch bore sizes* have a maximum rpm of 10,000. *Metric-to-metric* and *metric-to-inch bore sizes* have a maximum rpm of 6,000. ***Type 303 Stainless Steel—*** Couplings offer excellent corrosion resistance. Maximum rpm is 6,000. ***Acetal—*** Couplings are lightweight and corrosion resistant. Maximum rpm is 5,000. Temp. range is –4° to +140° F.

To Order: Where applicable, please specify bore size (A) and bore size (B) from those available below. *Note:* You can choose any available bore size (A) and any available bore size (B) for a given OD.

Available Bore Sizes (A)	(B)	Lg.	OD	Bore Depth	Screw Size	Peak Torque, in.-lbs.	*Maximum Misalignment* Parallel	Angular	Axial		Each
Inch-to-Inch Bore Sizes											
Anodized Aluminum Set-Screw Couplings											
1/8", 5/32"	1/32", 1/16", 3/32", 1/8", 5/32"	1/2"	3/8"	0.15"	2-56	3	0.005"	2°	0.005"	**9861T11**	$30.63
1/8", 5/32", 3/16"	3/32", 1/8", 3/16"	3/4"	1/2"	0.19"	4-40	5	0.005"	2°	0.005"	**9861T21**	27.68
5/32", 3/16", 1/4"	1/8", 5/32", 3/16", 1/4"	7/8"	5/8"	0.21"	6-32	12	0.010"	3°	0.008"	**9861T31**	29.43
3/16", 1/4", 5/16"	1/16", 3/32", 1/8", 5/32", 3/16", 1/4"	3/4"	3/4"	0.21"	6-32	20	0.006"	3°	0.006"	**9861T41**	29.08
3/16", 1/4", 5/16"	1/8", 5/32", 3/16", 1/4", 5/16"	1"	3/4"	0.25"	8-32	25	0.010"	3°	0.008"	**9861T51**	28.78
1/4", 5/16", 3/8"	5/32", 3/16", 1/4", 5/16", 3/8"	1 1/2"	1"	0.31"	10-24	63	0.015"	5°	0.010"	**9861T71**	31.69
1/4", 3/8"	1/8", 5/32", 3/16", 1/4", 3/8"	1"	1"	0.25"	8-32	42	0.006"	3°	0.006"	**9861T61**	29.98
1/4", 3/8", 7/16", 1/2"	3/16", 1/4", 5/16", 3/8", 7/16", 1/2"	1 1/4"	1 1/4"	0.31"	10-24	84	0.006"	3°	0.006"	**9861T81**	38.67
Anodized Aluminum Clamp-On Couplings											
1/8", 5/32"	3/32", 1/8", 5/32"	1/2"	3/8"	0.15"	0-80	3	0.005"	2°	0.005"	**6208K311**	26.03
1/8", 5/32", 3/16"	3/32", 1/8", 5/32", 3/16"	3/4"	1/2"	0.19"	1-72	5	0.005"	2°	0.005"	**6208K351**	27.33
5/32", 3/16", 1/4"	1/8", 5/32", 3/16", 1/4"	7/8"	5/8"	0.21"	2-56	12	0.010"	3°	0.008"	**6208K371**	29.85
3/16", 1/4", 5/16"	1/16", 3/32", 1/8", 5/32", 3/16", 1/4"	3/4"	3/4"	0.21"	2-56	20	0.006"	3°	0.006"	**6208K411**	29.98
3/16", 1/4", 5/16"	1/8", 5/32", 3/16", 1/4", 5/16"	1"	3/4"	0.25"	4-40	25	0.010"	3°	0.008"	**6208K441**	26.55
1/4", 5/16", 3/8"	1/8", 5/32", 3/16", 1/4", 5/16", 3/8"	1"	1"	0.25"	4-40	42	0.006"	3°	0.006"	**6208K471**	30.45
1/4", 5/16", 3/8"	1/8", 5/32", 3/16", 1/4", 5/16", 3/8"	1 1/2"	1"	0.31"	6-32	63	0.015"	5°	0.010"	**6208K511**	29.73
1/4", 3/8", 7/16", 1/2"	3/16", 1/4", 5/16", 3/8", 7/16", 1/2"	1 1/4"	1 1/4"	0.31"	6-32	84	0.006"	3°	0.006"	**6208K541**	35.06
5/16", 3/8", 7/16", 1/2"	3/16", 1/4", 5/16", 3/8", 7/16", 1/2"	2"	1 1/4"	0.38"	8-32	118	0.015"	5°	0.010"	**6208K571**	38.31
3/8", 7/16", 1/2", 5/8"	1/4", 5/16", 3/8", 7/16", 1/2", 5/8"	2 3/8"	1 1/2"	0.52"	10-24	156	0.015"	5°	0.010"	**6208K611**	55.43
7/16", 1/2", 5/8", 11/16"	5/16", 3/8", 7/16", 1/2", 5/8", 11/16"	2 1/2"	1 5/8"	0.52"	1/4"-20	218	0.015"	5°	0.010"	**6208K641**	59.38
1/2", 5/8", 11/16", 3/4"	3/8", 7/16", 1/2", 5/8", 11/16", 3/4"	2 3/4"	1 3/4"	0.62"	1/4"-20	252	0.015"	5°	0.010"	**6208K671**	62.44
Type 303 Stainless Steel Clamp-On Couplings											
3/16", 1/4"	3/16", 1/4"	1"	5/8"	0.436"	M3	18	0.008"	3°	0.005"	**6259K1**	70.67
3/16", 1/4", 5/16"	3/16", 1/4", 5/16"	1 1/4"	3/4"	0.561"	M3	31	0.008"	3°	0.005"	**6259K6**	71.22
1/4", 5/16", 3/8"	1/4", 5/16", 3/8"	1 1/2"	1"	0.67"	M4	50	0.015"	3°	0.010"	**6259K3**	92.19
5/16", 3/8", 1/2"	5/16", 3/8", 1/2"	1 3/4"	1 1/4"	0.795"	M5	107	0.015"	3°	0.010"	**6259K4**	153.21
3/8", 1/2", 5/8", 3/4"	3/8", 1/2", 5/8", 3/4"	2 1/4"	1 1/2"	1.025"	M5	145	0.030"	3°	0.015"	**6259K5**	186.16
Acetal Clamp-On Couplings											
0.118", 3/16"	0.118", 3/16"	3/4"	1/2"	0.24"	M3	2.1	0.005"	5°	—	**2505K11**	27.19
3/16", 1/4"	1/4"	29/32"	3/4"	0.26"	M4	5.6	0.005"	5°	—	**2505K12**	31.96
1/4", 3/8"	1/4", 3/8"	1 1/4"	1"	0.35"	M5	12.3	0.005"	5°	—	**2505K13**	34.73
1/4", 3/8", 1/2"	1/2"	1 3/4"	1 1/4"	0.47"	M6	22	0.005"	5°	—	**2505K14**	42.17
Metric-to-Metric Bore Sizes											
Aluminum Clamp-On Couplings											
3 mm	3 mm	22 mm	15 mm	11 mm	M2	7.5	0.2 mm	3°	0.12 mm	**2463K1**	34.35
4 mm	4 mm	22 mm	15 mm	11 mm	M2	7.5	0.2 mm	3°	0.12 mm	**2463K2**	34.35
5 mm	5 mm	22 mm	15 mm	11 mm	M2	7	0.2 mm	3°	0.12 mm	**2463K3**	31.47
6 mm	5 mm	28 mm	20 mm	14 mm	M3	10	0.2 mm	3°	0.12 mm	**2463K4**	35.77
6 mm	6 mm	28 mm	20 mm	14 mm	M3	10	0.2 mm	3°	0.12 mm	**2463K5**	35.77
8 mm	6 mm	30 mm	25 mm	15 mm	M3	30	0.38 mm	3°	0.25 mm	**2463K6**	37.88
Type 303 Stainless Steel Clamp-On Couplings											
3, 4, 5 mm	3, 4, 5 mm	22 mm	15 mm	10.3 mm	M2	10	0.2 mm	3°	0.12 mm	**2463K11**	52.50
4, 5, 6 mm	4, 5, 6 mm	28 mm	20 mm	13.1 mm	M3	15	0.2 mm	3°	0.12 mm	**2463K12**	54.25
6, 7, 8, 9, 10 mm	6, 7, 8, 9, 10 mm	30 mm	25 mm	14.1 mm	M3	40	0.38 mm	3°	0.25 mm	**2463K13**	70.00
9, 10, 11, 12 mm	9, 10, 11, 12 mm	38 mm	30 mm	17.8 mm	M4	88	0.38 mm	3°	0.25 mm	**2463K14**	93.63
12, 13, 14, 15, 16 mm	12, 13, 14, 15, 16 mm	57.1 mm	38.1 mm	26 mm	M6	175	0.75 mm	3°	0.38 mm	**2463K15**	149.63
Metric-to-Inch Bore Sizes											
Aluminum Clamp-On Couplings											
5 mm	3/16"	22 mm	15 mm	11 mm	M2	7.2	0.2 mm	3°	0.12 mm	**2464K1**	32.67
6 mm	1/4"	28 mm	20 mm	14 mm	M3	10	0.2 mm	3°	0.12 mm	**2464K2**	35.56
6 mm	1/4"	30 mm	25 mm	15 mm	M3	30	0.38 mm	3°	0.25 mm	**2464K3**	38.62
10 mm	3/8"	30 mm	25 mm	15 mm	M3	27	0.38 mm	3°	0.25 mm	**2464K4**	38.62
10 mm	3/8"	38 mm	30 mm	19 mm	M4	61	0.38 mm	3°	0.25 mm	**2464K5**	55.53
12 mm	1/2"	38 mm	30 mm	19 mm	M4	58	0.38 mm	3°	0.25 mm	**2464K6**	55.53

Servomotor Double-Disc Shaft Couplings

Able to stand up to high twisting forces with fair misalignment capabilities and zero backlash (no play), these are the couplings you need for servomotor applications. They have lightweight 7075 aluminum clamp hubs and Type 304 stainless steel discs for excellent corrosion resistance. Tighten the two socket-head cap screws to secure. **To Order:** Where applicable, please specify bore size (A) and bore size (B) for those available below. *Note:* You can choose any bore size (A) and bore size (B) for a given OD.

Available Bore Sizes (A)	(B)	Lg.	OD	Bore Depth	Screw Size	Max. Torque, in.-lbs.	Max. rpm	*Maximum Misalignment* Parallel	Angular	Axial		Each
1/4"	1/4"	1.02"	0.75"	0.5"	M2.5	7	10,000	0.004"	1°	0.008"	**2764K1**	$58.42
1/4", 3/8"	1/4", 3/8"	1.272"	1.02"	0.6"	M2.5	13	10,000	0.006"	1°	0.013"	**2764K2**	68.98
1/4", 3/8", 1/2"	1/4", 3/8", 1/2"	1.488"	1.34"	0.7"	M3	35	10,000	0.007"	1°	0.016"	**2764K3**	76.53
3/8", 1/2", 5/8"	3/8", 1/2", 5/8"	1.89"	1.54"	0.9"	M4	53	10,000	0.009"	1°	0.020"	**2764K4**	88.22
3/8", 1/2", 5/8"	3/8", 1/2", 5/8"	1.89"	1.73"	0.9"	M4	89	10,000	0.009"	1°	0.024"	**2764K5**	102.23
1/2", 5/8"	1/2", 5/8"	2.354"	2.2"	1.15"	M5	221	10,000	0.011"	1°	0.031"	**2764K6**	150.74
7/8"	7/8"	2.886"	2.68"	1.4"	M6	531	10,000	0.013"	1°	0.035"	**2764K7**	215.26

For information about couplings and ANSI keyway dimensions, see page 1174.

High-Offset Slotted-Disc Shaft Couplings

Set-Screw Coupling Shown Assembled

Clamp-On Coupling Shown Assembled

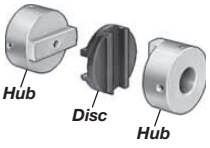

Also known as Oldham couplings, these couplings have a slotted disc that allows hubs to slide independently to compensate for parallel misalignment. They allow zero backlash (no play) and never need lubrication. Maximum rpm is 4,500. For a complete coupling, you need to order two hubs and one disc from the same line in the listing below (for example, 59985K1 hubs are designed to work with either 59985K61 or 59985K91 discs).

Set-screw couplings connect to shafts with two or four alloy steel set screws. ***Clamp-on couplings*** connect to shafts via integral shaft collars, which won't damage your shaft. Tighten the two alloy steel socket-head cap screws to secure.

Hubs— Made of lightweight, corrosion-resistant anodized aluminum, the hubs easily slide out of the disc for quick assembly and disassembly. **To Order:** Please specify bore size from those available below. *Note:* You can use two hubs with different bore sizes in one coupling as long as the hub ODs are the same.

Acetal Discs— Stand up to high twisting forces. Temp. range is –10° to +150° F.

Nylon Discs— Have excellent vibration and shock absorption. Temp. range is –10° to +130° F.

COUPLING HUBS							COUPLING DISCS									
							Max. Misalignment			Acetal Discs			Nylon Discs			
Available Bore Sizes	O'all Lg.	Hub OD	Bore Dp.	Screw Size		Each	Parallel	Angular	Axial	Peak Torque, in.-lbs.		Each	Peak Torque, in.-lbs.		Each
Set-Screw Couplings															
1/8", 3/16", 1/4"	5/8"	1/2"	0.22"	M3	59985K1	$8.36	0.004"	0.5°	0.002"	34	59985K61	$2.23	25	59985K91	$3.00
3/16", 1/4", 5/16", 3/8"	7/8"	3/4"	0.30"	M3	59985K2	10.32	0.008"	0.5°	0.004"	93	59985K62	2.69	85	59985K92	4.24
1/4", 5/16", 3/8", 1/2"	1 1/8"	1"	0.39"	M4	59985K3	12.04	0.008"	0.5°	0.004"	168	59985K63	5.02	140	59985K93	6.11
5/16", 3/8", 1/2", 5/8"	1 7/8"	1 5/16"	0.59"	M4	59985K4	18.12	0.008"	0.5°	0.006"	350	59985K64	7.25	300	59985K94	8.92
3/8", 1/2", 5/8", 3/4"	2"	1 5/8"	0.71"	M5	59985K5	21.44	0.010"	0.5°	0.006"	480	59985K65	9.24	400	59985K95	12.34
Clamp-On Couplings															
3/16", 1/4", 5/16", 3/8"	1"	3/4"	0.38"	M2.5	9889T1	11.45	0.008"	0.5°	0.004"	93	59985K62	2.69	85	59985K92	4.24
1/4", 5/16", 3/8", 1/2"	1 1/4"	1"	0.467"	M3	9889T2	15.75	0.008"	0.5°	0.004"	168	59985K63	5.02	140	59985K93	6.11
5/16", 3/8", 1/2", 5/8"	1 7/8"	1 5/16"	0.59"	M3	9889T3	23.26	0.008"	0.5°	0.006"	350	59985K64	7.25	300	59985K94	8.92
3/8", 1/2", 5/8", 3/4"	2"	1 5/8"	0.71"	M4	9889T4	25.23	0.010"	0.5°	0.006"	480	59985K65	9.24	400	59985K95	12.34

High-Misalignment Pinhole-Disc Shaft Couplings

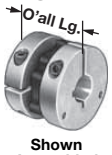

Shown Assembled

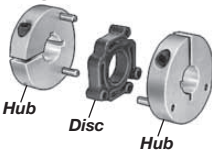

Also known as Schmidt couplings, these couplings handle three times more angular misalignment than the slotted-disc couplings above. Great for use with encoders, they allow zero backlash (no play) and never need lubrication. For a complete coupling, you need to order two hubs and one disc from the same line in the listing below (for example, two 60635K1 hubs are designed to work with one 60635K86 disc).

Hubs— Made of lightweight, corrosion-resistant aluminum, these hubs connect to shafts via integral shaft collars, which won't damage your shaft. Tighten the two socket-head cap screws to secure. Bore sizes smaller than 1/2" do not have keyways; 1/2" and larger have ANSI keyways (unless noted) for a more secure hold. **To Order:** Please specify bore size from those available below. *Note:* You can use two hubs with different bore sizes in one coupling as long as the hub ODs are the same.

Discs— Are made of acetal. Temp. range is –40° to +170° F.

COUPLING HUBS							COUPLING DISCS						
									Max. Misalignment				
Available Bore Sizes	O'all Lg.	Hub OD	Bore Depth	Screw Size		Each	Peak Torque, in.-lbs.	Max. rpm	Parallel	Angular	Axial		Each
1/8", 1/4"	5/8"	47/64"	0.217"	2-56	60635K1	$13.68	4	12,000	0.013"	1.5°	0.010"	60635K86	$10.54
1/8", 1/4", 3/8", 1/2"	1"	63/64"	0.374"	M3	60635K2★	13.68	9	11,000	0.019"	1.5°	0.014"	60635K87	10.54
3/16", 1/4", 3/8", 1/2", 5/8"	1 1/8"	1 15/32"	0.394"	M4	60635K3★	24.62	31	8,000	0.028"	1.5°	0.021"	60635K88	13.48
3/8", 1/2", 5/8", 3/4", 7/8"	1 3/4"	2 3/16"	0.591"	M6	60635K9	32.82	106	6,000	0.041"	1.5°	0.031"	60635K99	23.03
3/8", 1/2", 5/8", 3/4", 7/8", 1"	2 3/16"	2 15/16"	0.709"	M8	60635K5	39.21	250	5,000	0.055"	1.5°	0.042"	60635K75	34.17

★ The 1/2" bore size does not have a keyway.

High-Precision Bellows Shaft Couplings

Bellows-shaped one-piece couplings offer great misalignment capabilities for low-torque, high-precision applications such as instrumentation and motion control. They also allow zero backlash (no play) and never need lubrication.

With their nickel bellows and Type 303 stainless steel hubs, these couplings can be used in mildly corrosive environments. Tighten the four black-oxide steel set screws to secure. *Note:* Not rated for max. rpm.

Bore Size	Lg.	OD	Bore Depth	Screw Size	Peak Torque, in.-lbs.	Maximum Misalignment Parallel	Angular	Axial		Each
0.120"	0.54"	1/4"	0.15"	2-56	0.7	0.007"	7°	0.007"	59925K83	$76.11
3/16"	1.04"	3/8"	0.15"	2-56	0.7	0.066"	17°	0.066"	59925K85	74.41
3/16"	0.57"	3/8"	0.15"	2-56	1.6	0.009"	6°	0.009"	59925K88	65.04
1/4"	1.09"	1/2"	0.17"	4-40	3.1	0.044"	12°	0.044"	59925K89	83.32
1/4"	0.84"	1/2"	0.17"	4-40	4.7	0.018"	9°	0.018"	59925K91	76.46
1/4"	0.72"	1/2"	0.17"	4-40	6.1	0.010"	5°	0.010"	59925K92	69.72
1/4"	1.33"	3/4"	0.17"	4-40	9.9	0.046"	9°	0.046"	59925K93	110.39
1/4"	1.08"	3/4"	0.17"	4-40	13.1	0.026"	7°	0.026"	59925K94	95.20
1/4"	0.85"	3/4"	0.17"	4-40	17.6	0.013"	5°	0.013"	59925K95	93.89
5/16"	1.63"	1"	0.20"	6-32	14.2	0.068"	11°	0.068"	59925K96	138.93
5/16"	1.13"	1"	0.20"	6-32	26.3	0.020"	5°	0.020"	59925K97	121.45

Heavy Duty Bellows Shaft Couplings

If your precision motion-control application requires a high maximum speed, select one of these couplings. They allow zero backlash (no play) and have a weldless construction for durability. They also have clamp-style hubs for superior holding power without damaging your shaft. Tighten the two alloy steel socket-head cap screws to secure.

Couplings have lightweight aluminum hubs and Type 321 stainless steel bellows for corrosion resistance. **To Order:** Where applicable, please specify bore (A) × bore (B) size from those available below.

Available Bore (A) × Bore (B) Size Combinations	Lg.	OD	Bore Depth	Screw Size	Peak Torque, in.-lbs.	Max. rpm	Maximum Misalignment Parallel	Angular	Axial		Each
1/4" × 1/4"	1 5/16"	1"	0.467"	M3	60	10,000	0.004"	1.5°	0.012"	6446K41	$77.69
1/4" × 3/8"	1 9/16"	1 5/16"	0.59"	M3	120	10,000	0.006"	1.5°	0.016"	6446K89	92.06
3/8" × 3/8", 1/2" × 1/4", 1/2" × 3/8", 1/2" × 1/2", 5/8" × 5/8"	2"	1 5/8"	0.71"	M4	250	10,000	0.010"	2°	0.020"	6446K91	104.38

For information about couplings and ANSI keyway dimensions, see page 1174.

Gear and Sleeve Shaft Couplings

Great for applications with axial misalignment, all of these couplings have ANSI keyways for a more secure hold.

(A) Steel hub and steel sleeve models have a rigid gear design, which allows the most efficient transfer of power available in any coupling. Lubrication is required. To install, heat the hubs to expand them slightly and fit them onto the shaft. When they cool, hubs shrink to fit the shaft tightly so no set screw is needed. For a complete coupling, you need to order two hubs, one sleeve, and a seal kit from the same line in the listing below (for example, two 6454K11 hubs are designed to work with one 6454K21 sleeve and one 6454K31 seal kit). Each *seal kit* includes two Buna-N lubrication seals and two steel snap rings.

(B) Steel hub and nylon sleeve models are compact and lightweight, offering much lower momentum than all-steel couplings. Lubrication is not required. Maximum temperature is 180° F. To install, slide them onto the shaft and tighten the two set screws to secure. For a complete coupling, you need to order two hubs and one sleeve from the same line in the listing below (for example, two 6247K21 hubs are designed to work with one 6247K31 sleeve).

To Order: For hubs, please specify bore size in 1/8″ increments from those available below. *Note:* You can use two hubs with different bore sizes in one coupling as long as the hub ODs are the same.

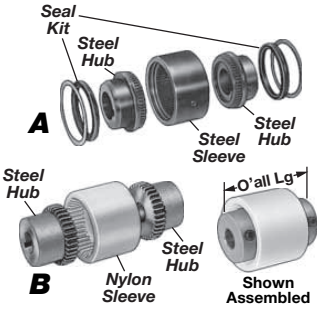

Available Bore Sizes	O'all Lg.	O'all OD	Bore Depth	Screw Size	Peak Torque, in.-lbs.	Max. rpm	Maximum Misalignment Parallel	Angular	Axial	Hubs	Each	Sleeves	Each	Seal Kits	Each
(A) Steel Hub and Steel Sleeve															
3/4″ to 1 1/4″	3 1/8″	3 5/16″	1.50″	—	2,500	6,000	0.005″	1°	0.075″	6454K11	$63.38	6454K21	$61.08	6454K31	$17.62
1 1/4″ to 1 5/8″	3 3/4″	3 3/4″	1.81″	—	7,600	5,000	0.007″	1°	0.10″	6454K13	65.69	6454K23	80.67	6454K33	17.62
1 1/4″ to 2 1/8″	4 1/4″	4 3/4″	2.06″	—	20,200	4,200	0.007″	1°	0.10″	6454K15	80.67	6454K25	103.73	6454K35	22.32
1 7/8″ to 2 3/8″	4 3/4″	5 1/2″	2.25″	—	30,200	3,750	0.010″	1°	0.15″	6454K17	111.72	6454K27	131.40	6454K37	35.25
(B) Steel Hub and Nylon Sleeve															
1/4″ to 5/8″	1.77″	1.57″	0.78″	10-24	173	14,000	0.016″	1°	0.040″	6247K21	11.24	6247K31	6.46	—	—
1/2″ to 3/4″	1.96″	1.90″	0.86″	1/4″-20	277	11,800	0.016″	1°	0.040″	6247K22	12.20	6247K32	7.20	—	—
1/2″ to 7/8″	2.07″	2.05″	0.84″	1/4″-20	347	10,600	0.016″	1°	0.040″	6247K23	13.11	6247K33	7.80	—	—
1/2″ to 1 1/8″	3.17″	2.58″	1.40″	1/4″-20	781	8,500	0.016″	1°	0.040″	6247K24	20.77	6247K34	12.11	—	—
1/2″ to 1 1/4″	3.15″	3.00″	1.40″	5/16″-18	1,041	7,500	0.016″	1°	0.040″	6247K25	27.40	6247K35	15.96	—	—
1/2″ to 1 1/2″	3.15″	3.25″	1.40″	5/16″-18	1,388	6,700	0.016″	1°	0.040″	6247K26	35.22	6247K36	20.40	—	—
5/8″ to 1 5/8″	3.36″	3.63″	1.50″	5/16″-18	1,736	6,000	0.016″	1°	0.040″	6247K27	43.47	6247K37	25.14	—	—
5/8″ to 1 7/8″	3.91″	3.88″	1.80″	3/8″-16	2,430	5,600	0.016″	1°	0.040″	6247K28	51.04	6247K38	29.91	—	—

Ultra-Flex Double-Loop Shaft Couplings

Large amounts of parallel and angular misalignment are no problem for these couplings because they have a flexible, double-loop polyurethane element with zinc-plated steel hubs. All reduce wear as well as vibration and noise. Temperature range is 0° to 180° F. To secure these couplings to your shaft, tighten the two set screws. **To Order:** Please specify bore (A) × bore (B) size from those available below.

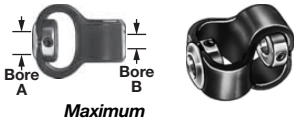

Available Bore (A)×Bore (B) Size Combinations	Lg.	O'all OD	Bore Depth	Screw Size	Peak Torque, in.-lbs.	Max. rpm	Maximum Misalignment Parallel	Angular	Each
3/16″×3/16″, 3/16″×1/4″, 1/4″×1/4″, 1/4″×3/8″, 5/16″×5/16″, 5/16″×3/8″, 3/8″×3/8″	1 1/8″	7/8″	1/4″	6-32	3	3,600	0.0938″	10°	6183K1 $13.51
1/4″×1/4″, 1/4″×3/8″, 5/16″×5/16″, 3/8″×3/8″, 3/8″×1/2″, 1/2″×1/2″	2″	1 11/16″	7/16″	10-24	12	3,600	0.125″	15°	6183K2 15.24
3/8″×3/8″, 3/8″×1/2″, 1/2″×1/2″, 1/2″×5/8″, 5/8″×5/8″	2 1/4″	1 13/16″	9/16″	1/4″-20	28	3,600	0.1875″	15°	6183K3 17.25
1/2″×1/2″, 1/2″×5/8″, 5/8″×5/8″	2 7/16″	2″	5/8″	1/4″-20	40	3,600	0.125″	15°	6183K4 19.16

Vibration-Dampening Torque-Shear Shaft Couplings

To protect power-transmission components from damage, these single-use couplings shear or tear in over-torque conditions such as when a machine jams. All have steel hubs and a flexible neoprene element that not only compensates for misalignment, but also dampens vibration and shock loads.

Couplings have no metal-on-metal contact, reducing noise and eliminating the need for lubrication. Temperature range is –30° to +212° F. To secure these couplings to your shaft, tighten the two set screws. **To Order:** Where necessary, please specify bore (A) × bore (B) size from those available below.

Available Bore (A)×Bore (B) Size Combinations	Lg.	O'all OD	Bore Depth	Screw Size	Working Torque, in.-lbs.	Max. rpm	Maximum Misalignment Parallel	Angular	Each
1/8″×1/8″, 3/16″×3/16″, 1/4″×1/4″	13/16″	9/16″	0.36″	5-40	0.8	10,000	0.0312″	2°	6410K21 $19.39
1/4″×1/4″	1 3/8″	13/16″	0.56″	10-24	2.5	10,000	0.0312″	2°	6410K22 23.77
1/4″×1/4″, 1/4″×5/16″, 1/4″×3/8″, 5/16″×5/16″, 5/16″×3/8″, 3/8″×3/8″	1 3/4″	1″	0.72″	10-24	5	10,000	0.0312″	2°	6410K23 21.72
5/16″×5/16″, 3/8″×3/8″, 3/8″×1/2″, 1/2″×1/2″	2 1/8″	1 1/4″	0.88″	1/4″-20	10	10,000	0.0312″	2°	6410K24 24.25
3/8″×3/8″, 3/8″×1/2″, 3/8″×5/8″, 1/2″×1/2″, 1/2″×5/8″, 5/8″×5/8″	2 1/4″	1 3/8″	0.91″	1/4″-20	13	10,000	0.0312″	2°	6410K25 34.55
1/2″×1/2″, 1/2″×3/4″, 5/8″×5/8″	2 1/2″	1 5/8″	1″	1/4″-20	20	10,000	0.0312″	2°	6410K26 34.91
5/8″×5/8″	2 11/16″	1 13/16″	1.05″	5/16″-18	30	10,000	0.0312″	2°	6410K46 47.68
1/2″×3/4″, 1″×1″	2 7/8″	2″	1.11″	5/16″-18	40	10,000	0.0312″	2°	6410K28 68.03

Vibration-Dampening Flexible-Tire Shaft Couplings

A flexible tire enables these couplings to provide good parallel and angular misalignment capability, dampen vibration and shock, and handle medium amounts of torque. A complete coupling consists of two hubs, one tire, and two quick-disconnect (QD) bushings from the same line in the listing below (for example 6241K11 hubs are designed to work with a 6241K21 tire and two 6086K11 QD bushings).

Hubs are steel and ductile iron. ***Tires*** are natural rubber. Temp. range is –65° to +180° F.

QD bushings are easy to install and remove. For information on QD bushing styles, see page 1045. **To Order:** Please specify bore size from those available below. *Note:* You can use two QD bushings with different bore sizes in one coupling as long as the QD styles are the same.

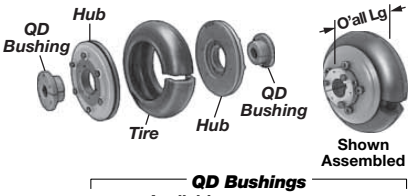

O'all Lg.	O'all OD	Working Torque, in.-lbs.	Max. rpm	Maximum Misalignment Parallel	Angular	Axial	Hubs	Each	Tires	Each	QD Bushings Style	Available Bore Sizes	Each
3 1/4″	5 1/4″	900	4,500	0.125″	4°	0.3125″	6241K11	$40.88	6241K21	$44.88	JA	1/2″ to 1 1/4″	6086K11 $11.32
3 15/16″	6 1/2″	1,800	4,000	0.125″	4°	0.3125″	6241K12	58.03	6241K22	52.42	SH	1/2″ to 1 11/16″	6086K12 15.48
4 3/16″	7 3/8″	2,200	3,600	0.125″	4°	0.3125″	6241K13	71.78	6241K23	69.91	SH	1/2″ to 1 11/16″	6086K12 15.48
4 5/8″	8 5/16″	3,600	3,100	0.125″	4°	0.3125″	6241K14	98.71	6241K24	94.05	SDS	1/2″ to 2″	6086K13 18.01
5 11/16″	9 1/4″	4,350	2,800	0.125″	4°	0.3125″	6241K15	123.88	6241K25	99.74	SK	1/2″ to 2 5/8″	6086K15 27.85

For information about couplings and ANSI keyway dimensions, see page 1174.

Multi-Flex Shaft Couplings

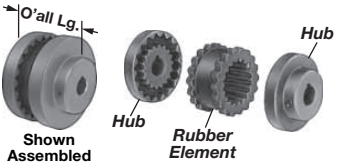

Four-way flexing action means these couplings can take on parallel, angular, and axial misalignment plus dampen vibration and shock. There's no metal-to-metal contact, so there's no need for lubrication. Connect couplings to your shaft via standard ANSI keyways (except where noted) and four set screws. For a complete coupling, you need to order two hubs and one rubber element from the same line in the listing below (for example, 6507K1 hubs are designed to work with the 6507K69 rubber element).

Hubs are sintered steel, unless noted. **To Order:** Please specify bore size in 1/8″ increments from those available below. *Note:* You can use two hubs with different bore sizes in one coupling as long as the hub ODs are the same.

Rubber elements are gear-shaped, one-piece thermoplastic rubber, unless noted. They allow couplings to accommodate high loads while still offering good flexibility and shock absorption. Temperature range is –30° to +275° F.

Available Bore Sizes	O'all Lg.	Hub OD	Bore Depth	Working Torque, in.-lbs.	Max. rpm	Maximum Misalignment Parallel	Angular	Axial	Hubs	Each	Rubber Elements	Each
3/8″ to 7/8″	2″	2 1/16″	13/16″	60	9,200	0.010″	1°	0.125″	6507K1 ♦	$7.87	6507K69	$4.75
1/2″ to 1″	2 3/8″	2 15/32″	7/8″	120	7,600	0.010″	1°	0.125″	6507K2	9.26	6507K71	5.83
1/2″ to 1 1/8″	2 7/8″	3 1/4″	1 1/16″	240	7,600	0.015″	1°	0.125″	6507K3	14.63	6507K72	11.72
5/8″ to 1 3/8″	3 5/16″	4″	1 7/32″	450	6,000	0.015″	1°	0.125″	6507K4	20.47	6507K73	19.50
3/4″ to 1 7/8″	3 15/16″	4 5/8″	1 27/32″	725	5,250	0.020″	1°	0.125″	6507K5●	29.27	6507K74	25.34
7/8″ to 2 3/8″	4 7/16″	5 29/64″	2 3/32″	1,135	4,500	0.020″	1°	0.125″	6507K12	39.01	6507K75	33.18
1″ to 2 7/8″	5 1/16″	6 23/64″	2 13/32″	1,800	3,750	0.025″	1°	0.125″	6507K7●	58.51	6507K76	39.01
1 1/8″ to 3 3/8″	5 11/16″	7 1/2″	2 23/32″	2,875	3,600	0.025″	1°	0.125″	6507K8●	80.80	6507K77	54.62
1 1/4″ to 3 3/8″	7 1/8″	8 5/8″	3 7/16″	4,530	3,600	0.032″	1°	0.125″	6507K9●	129.26	6507K78▲	159.93

♦ 3/8″ bore size does not have a keyway. ● Cast iron. ▲ Two-piece EPDM.

Roller-Chain Shaft Couplings

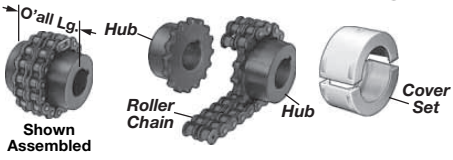

Rugged, time-tested design allows excellent misalignment and torque capacities. All have ANSI keyways for a more secure hold. Lubrication is required. To secure, tighten the single set screw. For a complete coupling, you need to order two hubs and one roller chain from the same line in the listing below (for example, 6407K41 hubs are designed to work with the 6407K51 roller chain). Complete couplings meet ANSI B29.23M-1995.

Hubs are machined steel with hardened teeth (6407K41 has 12 teeth; K42 and K43 have 16 teeth; K44 has 18 teeth). Set screw size is 1/4″-20 for 1/2″ to 1 1/4″ bores; 5/16″-18 for 1 3/8″ bore; 3/8″-16 for 1 7/16″ to 1 3/4″ bores; 1/2″-13 for 1 7/8″ to 2 1/4″ bores; 5/8″-11 for 2 3/8″ bore. **To Order:** Please specify bore size in 1/8″ increments from those available below. *Note:* You can use two hubs with different bore sizes in one coupling as long as the hub ODs are the same.

Roller chains are steel and are also double stranded. Models 6407K51 and K52 are ANSI No. 40-2; K53 is ANSI No. 50-2; K54 is ANSI No. 60-2.

Optional cover sets retain grease lubrication and provide protection from abrasion and corrosion. They're made of safety-orange nylon.

Available Bore Sizes	O'all Lg.	Hub OD	O'all OD	Bore Depth	Working Torque, in.-lbs.	Max. rpm	Max. Misalignment Parallel	Angular	Hubs	Each	Roller Chains	Each	Optional Cover Sets	Each
1/2″ to 3/4″	2.55″	1 27/64″	2.40″	1 1/8″	1,355	5,000	0.012″	2°	6407K41	$15.17	6407K51	$11.75	6407K71	$58.36
5/8″ to 1 1/4″	2.55″	1 63/64″	3.04″	1 1/8″	2,414	5,000	0.012″	2°	6407K42	17.93	6407K52	13.12	6407K72	58.36
3/4″ to 1 5/8″	2.90″	2 33/64″	3.78″	1 1/4″	4,614	4,000	0.012″	2°	6407K43	24.33	6407K53	15.40	6407K73	68.54
1″ to 2 3/8″	3.45″	3 33/64″	5″	1 1/2″	10,903	3,000	0.012″	1.5°	6407K44	38.02	6407K54	26.31	6407K74	94.42

Flexible Torque-Limiting Shaft Couplings

These bidirectional couplings disengage at a predetermined torque, sound an alarm, and then automatically re-engage once the over-torque condition is eliminated. Torque can be adjusted ±10% of the factory setting. Max. rpm is 1,800. No lubrication is required.

Couplings have a steel body, aluminum hubs, and ANSI keyways (except for 6609K11, which has no keyway). To secure them to your shaft, tighten the two set screws. **To Order:** Please specify torque: 25, 50, 75, 100, or 125 in.-lbs.

Bore Size	Dia.	Wd.	Max. Misalignment Parallel	Angular		Each
1/2″	3 1/2″	3″	1/32″	6°	6609K11	$80.00
5/8″	3 1/2″	3″	1/32″	6°	6609K12	83.33
3/4″	3 1/2″	3″	1/32″	6°	6609K13	86.96
7/8″	3 1/2″	3″	1/32″	6°	6609K14	88.89
1″	3 1/2″	3″	1/32″	6°	6609K15	90.91

Rigid Torque-Limiting Shaft Couplings

These couplings allow rigid shaft-to-shaft connections with integral over-torque protection. Adjust the torque setting at which couplings will disengage in infinite increments via a hex nut. They'll automatically re-engage once the over-torque condition is eliminated.

Couplings are carbon steel and have ANSI keyways, unless noted. To secure them to your shaft, tighten the single set screw. *Note:* Not rated for max. rpm. **To Order:** Please specify clutch and coupling bore size from those available below.

Available Clutch-End Bore Sizes	Available Coupling-End Bore Sizes	Lg.	Dia.	Working Torque, in.-lbs.		Each
1/4″, 3/8″	1/4″, 3/4″	2 7/16″	2″	72	6291K1	$178.16
3/8″, 3/4″★	3/8″, 1 1/4″	3″	3 1/2″	420	6291K15	207.11
3/8″, 7/8″	1/2″, 1 1/2″	3″	4″	600	6291K2	247.82
1/2″, 1″	1/2″, 1 3/4″	3 3/8″	4 1/2″	1,200	6291K3	279.60
1/2″, 1″	1/2″, 1 3/4″	3 3/8″	4 1/2″	2,100	6291K35	298.24
3/4″, 1 3/8″	3/4″, 2 1/4″	4 3/8″	6″	2,280	6291K4	381.59

★ 3/4″ bore has a nonstandard 3/64″ keyway.

Coupling and Bearing Guards

Made of rugged safety-orange polyethylene, these OSHA-compliant guards are smooth-edged, electrically nonconductive, and have no mesh for fingers or tools to poke through. All are chemical, corrosion, UV, and impact resistant. They have an OSHA-required enhanced end-cap design and can shield pillow-block bearings from dirt and debris. They meet OSHA standard 29 CFR 1910.219 for rotating machinery. All come unassembled, allowing you to custom fit your application. Type 304 stainless steel hardware included.

Lg.	Wd.	Ht.		Each	Lg.	Wd.	Ht.		Each
4″	4″	6″	6593K31	$45.00	12″	12″	16″	6593K26	$173.00
6″	6″	8″	6593K22	69.00	16″	16″	20″	6593K28	245.00
8″	8″	12″	6593K24	91.00	20″	20″	24″	6593K29	317.10

Military Specification Pin-and-Block U-Joints with Certification

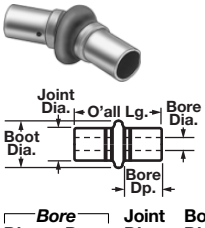

Designed to MIL-DTL-6193D, Class 2, Type B specifications, these high-precision universal joints come with a certificate of lot traceability. All have bored ends and operate at angles up to 30°, at a max. of 1,000 rpm. They're 4140/4142 alloy steel with an 8620 alloy steel pin and block as well as a silicone boot. To connect to a shaft, drill a hole through the joint and shaft and insert a spring pin (not incl., see pgs. 3323-3329).

Bore Dia.	Bore Dp.	Joint Dia.	Boot Dia.	O'all Lg.	Max. Torque, in.-lbs.	Working Torque, in.-lbs.♣		Each
0.25″	0.5″	0.372″	0.71″	2″	200	26	2524K1	$167.11
0.375″	0.625″	0.495″	0.94″	2.312″	600	47	2524K2	130.91
0.5″	0.75″	0.62″	1.13″	2.75″	1,080	76	2524K3	116.02
0.625″	0.875″	0.745″	1.4″	3.187″	1,900	101	2524K4	117.73
0.75″	1″	0.87″	1.6″	3.625″	3,000	136	2524K5	119.87
0.812″	1.125″	0.995″	1.5″	4.062″	4,700	183	2524K6	138.84

♣ 10° angle at 300 rpm.

About U-Joints (Universal Joints)

U-joints connect two spinning shafts that are not aligned.

To choose a U-joint, consider the angle of the shafts, as well as the speed (rpm) and torque the joint will need to transmit. Generally, the more the shafts are offset, the less speed and torque the U-joints will be able to transmit.

Single U-joints compensate for angular offset only. ***Double U-joints*** compensate for angular *and* parallel offset (see diagram).

U-joints are sold without protective lubricant-retaining boots (unless noted). Boots (bellows) are sold on page 3781.

Note: When using two single U-joints, or one double U-joint, the U-joints must be installed at the same angle and the yoke ears must be aligned.

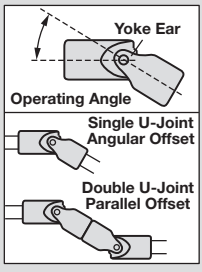

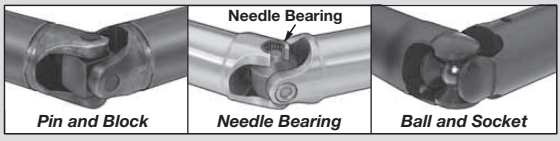

Pin and Block— The simplest design: a block and two pins. They ordinarily provide slower speed but greater torque transmission than needle-bearing units of similar size.

Needle Bearing— Needle bearings reduce side-to-side play (also known as backlash), increasing both precision and rpm capability. These units regularly operate at much higher speeds than the pin-and-block type.

Ball and Socket— Operate smoothly, with no side-to-side play (backlash). Ideal for applications requiring consistent motion and precise control. Generally provide slower speeds than needle-bearing units and lower torque than pin-and-block joints.

Pin-and-Block U-Joints

Simple yet strong, these U-joints are offered with unbored or bored ends. All have boot-retaining grooves (boots are not included) and operate at angles up to 25°, at a maximum of 1,750 rpm.

Unbored ends have a small centered starter hole for easy boring.

To connect U-joints with ***bored ends*** to a shaft, drill a hole through the joint and shaft and insert a spring pin (not included, see pages 3323-3329). *Bored ends with keyway and set screw* have a standard ANSI keyway (see page 1174 for ANSI keyway dimensions). *Bored ends* have no keyway or set screw.

Steel U-joints offer mild corrosion resistance. ***Type 303 stainless steel*** U-joints offer excellent corrosion resistance.

Single Joint with Bored Ends

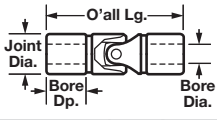

Double Joints with Bored Ends

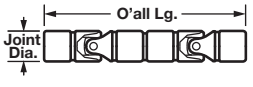

Unbored Ends

Joint Dia.	O'all Lg.	Max. Torque, in.-lbs.	Working Torque (in.-lbs. @ 300 rpm) 3° Angle	10° Angle		Each
Steel Single U-Joints						
1/2"	2"	378	154	51	6443K12	$27.92
5/8"	2 1/4"	540	247	83	6443K42	28.53
3/4"	2 11/16"	768	332	111	6443K13	28.53
Steel Double U-Joints						
1/2"	4"	378	154	51	6443K15	69.30
5/8"	4 1/2"	540	247	83	6443K52	70.31
3/4"	5 3/8"	768	332	111	6443K63	72.35
7/8"	6"	1,176	446	150	6443K64	89.69
1"	6 3/4"	1,560	597	201	6443K55	96.94
1 1/4"	7 1/2"	5,220	984	332	6443K29	129.50
1 1/2"	8 1/2"	7,920	1,425	480	6443K38	154.82

Bored Ends

Bore Dia.	Bore Dp.	Joint Dia.	O'all Lg.	Max. Torque, in.-lbs.	Working Torque (in.-lbs. @ 300 rpm) 3° Angle	10° Angle		Each
Steel Single U-Joints with Keyway and Set Screw								
1/2"	1"	1"	3 3/8"	1,560	597	201	8285K33	$43.74
9/16"	1"	1"	3 3/8"	1,560	597	201	8285K11	46.73
5/8"	1"	1 1/8"	3 1/2"	2,880	785	264	8285K13	53.64
3/4"	1 1/16"	1 1/4"	3 3/4"	5,220	984	332	8285K15	57.62
7/8"	1 3/8"	1 3/4"	5"	10,680	2,007	677	8285K25	95.83
1"	1 3/8"	1 3/4"	5"	10,680	2,007	677	8285K18	101.95
1 3/16"	1 1/2"	2"	5 7/16"	15,600	2,636	889	8285K31	171.03
1 1/2"	2"	2 1/2"	7"	33,120	3,950	1,332	8285K22	245.28
1 13/16"	2 3/4"	3"	9 1/16"	65,400	5,753	1,941	8285K24	359.66

Bored Ends (Cont.)

Bore Dia.	Bore Dp.	Joint Dia.	O'all Lg.	Max. Torque, in.-lbs.	Working Torque (in.-lbs. @ 300 rpm) 3° Angle	10° Angle		Each
Steel Single U-Joints with Bored Ends								
1/4"	5/8"	1/2"	2"	378	154	51	6443K24	$31.03
5/16"	11/16"	5/8"	2 1/4"	540	247	83	6443K46	31.75
3/8"	7/8"	3/4"	2 11/16"	768	332	111	6443K27	31.75
7/16"	7/8"	7/8"	3"	1,176	446	150	6443K28	39.21
1/2"	1"	1"	3 3/8"	1,560	597	201	6443K49	42.83
9/16"	1"	1 1/8"	3 1/2"	2,880	785	264	6443K39	52.52
5/8"	1 1/16"	1 1/4"	3 3/4"	5,220	984	332	6443K62	56.42
3/4"	1 3/16"	1 1/2"	4 1/4"	7,920	1,425	480	6443K65	67.86
7/8"	1 3/8"	1 3/4"	5"	10,680	2,007	677	6443K74	99.83
1"	1 1/2"	2"	5 7/16"	15,600	2,636	889	6443K75	117.19
1 1/4"	2"	2 1/2"	7"	33,120	3,950	1,332	6443K76	240.16
1 1/2"	2 3/4"	3"	9 1/16"	65,400	5,753	1,941	6443K77	352.17
Type 303 Stainless Steel Single U-Joints with Bored Ends								
3/8"	7/8"	3/4"	2 11/16"	512	332	111	6443K51	79.56
1/2"	1"	1"	3 3/8"	1,040	597	201	6443K53	107.06
5/8"	1 1/16"	1 1/4"	3 3/4"	3,480	984	332	6443K78	142.52
3/4"	1 3/16"	1 1/2"	4 1/4"	5,280	1,425	480	6443K79	169.29
1"	1 1/2"	2"	5 7/16"	10,400	2,636	889	6443K82	290.02
Steel Double U-Joints with Bored Ends								
1/4"	5/8"	1/2"	4"	378	154	51	6443K26	76.68
5/16"	11/16"	5/8"	4 1/2"	540	247	83	6443K56	80.30
3/8"	7/8"	3/4"	5 3/8"	768	332	111	6443K83	80.30
1/2"	1"	1"	6 3/4"	1,560	597	201	6443K57	107.80
5/8"	1 1/16"	1 1/4"	7 1/2"	5,220	984	332	6443K85	143.96
3/4"	1 3/16"	1 1/2"	8 1/2"	7,920	1,425	480	6443K94	170.73

Low-Speed Pin-and-Block U-Joints

Die cast zinc U-joints are ideal for hand-powered, low-speed applications.

Joint ends are bored. To connect to a shaft, drill a hole through the joint and shaft and insert a spring pin (not included, see pages 3323-3329).

U-joints operate at angles up to 15° and are not rated for maximum rpm.

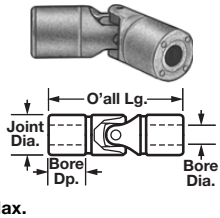

Bore Dia.	Bore Dp.	Joint Dia.	O'all Lg.	Max. Torque, in.-lbs.		Each
1/4"	9/16"	9/16"	2"	150	6445K1	$13.77
5/16"	9/16"	9/16"	2"	125	6445K2	14.19
3/8"	7/8"	13/16"	2 7/8"	75	6445K3	15.00
1/2"	7/8"	13/16"	2 7/8"	75	6445K4	15.46
5/8"	7/8"	1 1/8"	3 1/4"	500	6445K5	17.59
3/4"	7/8"	1 1/8"	3 1/4"	500	6445K6	17.59

Extreme-Angle Pin-and-Block U-Joints

Extra clearance in the yoke allows these U-joints to accommodate angles up to 45°. Heat-treated forged steel yokes and surface-hardened alloy steel pin and block provide durability. A large grease reservoir with lube fitting makes lubrication easy.

Joint ends have a bore. To connect to a shaft, drill a hole through the joint and shaft and insert a spring pin (not included, see pages 3323-3329). Maximum rpm is 1,000. Not rated for torque.

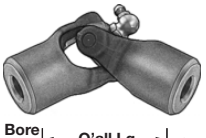

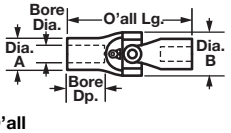

Bore Dia.	Bore Dp.	Dia. (A)	Dia. (B)	O'all Lg.		Each
1/2"	1"	1 1/4"	1 1/2"	4 1/4"	6444K21	$43.42
1/2"	1 3/8"	1 1/2"	2 1/4"	5 5/8"	6444K31	51.98
5/8"	1"	1 1/4"	1 1/2"	4 1/4"	6444K22	48.24
3/4"	1"	1 1/4"	1 1/2"	4 1/4"	6444K16	48.24
3/4"	1 3/8"	1 1/2"	2 1/4"	5 5/8"	6444K32	51.98

For information about U-joints, see page 1183.

Take-Apart Mil. Spec. Pin-and-Block U-Joints

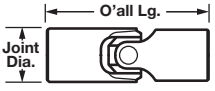

U-joints are simple to take apart so they're more manageable to drill. Ends have a centered starter hole that makes drilling even easier. All (except 2456K15) have a ball-spring oil fitting for lubrication. Max. angle is 35°; max. rpm is 1,500.

Alloy steel joints are 41L40 alloy steel with surface-hardened 86L20 alloy steel pin and block. Yoke ears are hardened for increased strength and durability. Meet MIL-U-20625A, Class A.

Type 303 stainless steel are corrosion and chemical resistant. Yoke ears are not hardened. Meet MIL-U-20625A, Class C.

Joint Dia.	O'all Lg.	Max. Torque, in.-lbs.	Working Torque (in.-lbs. @ 300 rpm) 3° Angle	10° Angle		Each
Alloy Steel						
7/8″	3″	1,800	346	225	2456K15	$46.37
1″	3 3/8″	3,050	587	381	2456K16	44.94
1 1/4″	3 3/4″	5,500	1,058	688	2456K17	56.42
1 1/2″	4 1/4″	9,000	1,730	1,125	2456K18	68.92
1 3/4″	5″	14,000	2,692	1,750	2456K19	92.38
2″	5 7/16″	22,000	4,231	2,750	2456K21	129.35
2 1/2″	7″	32,000	6,154	4,000	2456K22	266.98
Type 303 Stainless Steel						
1″	3 3/8″	1,900	365	238	2457K16	116.34
1 1/4″	3 3/4″	3,600	692	450	2457K17	137.21
1 1/2″	4 1/4″	7,200	1,385	900	2457K18	162.24
2″	5 7/16″	15,500	2,981	1,938	2457K21	291.62

High-Torque Needle-Bearing U-Joints

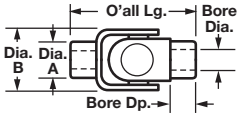

Oversized U-joints handle more torque than any other needle-bearing U-joint we offer. Their lube fittings make lubrication easy. U-joints connect to shafts via set screws (included) and a 1/4″ × 1/8″ keyway (unless noted). Maximum rpm is 2,500.

Standard— Max. breaking torque is 10,000 in.-lbs. Max. angle is 45°. Overall length is 5″.

Heavy Duty— Max. breaking torque is 22,000 in.-lbs. Max. angle is 35°. Overall length is 5 1/2″.

Bore Dia.	Bore Dp.	Dia. (A)	Dia. (B)	Working Torque (in.-lbs. @ 1,000 rpm) 3° Angle	10° Angle		Each
Standard— *Made of forged steel with cast ductile iron yokes.*							
3/4″	1 13/64″	1 5/8″	2.3″	1,260	720	6452K1★	$51.73
7/8″	1 13/64″	1 5/8″	2.3″	1,260	720	6452K3♣	64.56
1″	1 13/64″	1 5/8″	2.3″	1,260	720	6452K5♣	51.73
1 1/8″	1 13/64″	2 1/4″	2.3″	1,260	720	6452K6●	67.60
1 1/4″	1 13/64″	2 1/4″	2.3″	1,260	720	6452K7●	62.82
Heavy Duty— *Made entirely of forged steel.*							
3/4″	1 11/32″	2″	2.69″	2,220	1,260	6472K31★	102.78
7/8″	1 11/32″	2″	2.69″	2,220	1,260	6472K16	76.37
1″	1 11/32″	2″	2.69″	2,220	1,260	6472K21	68.67
1 1/8″	1 11/32″	2″	2.69″	2,220	1,260	6472K23	78.51
1 1/4″	1 11/32″	2 1/4″	2.69″	2,220	1,260	6472K25	79.47
1 1/2″	1 11/32″	2 1/4″	2.69″	2,220	1,260	6472K33▲	74.64

★ Keyway is 3/16″ × 3/32″. ♣ Has an additional 3/16″ × 3/32″ keyway.
● Has an additional 5/16″ × 5/32″ keyway. ▲ Keyway is 3/8″ × 3/16″.

High-Speed Compact Needle-Bearing U-Joints

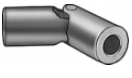

Bored Ends

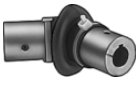

Booted with Keyway

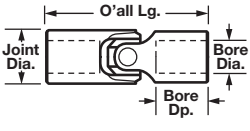

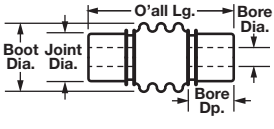

Needle-bearing U-joints are compact, yet capable of transmitting extremely high speeds. Max. angle is 25° (unless noted); max. rpm is 6,000.

Alloy Steel— Have alloy steel hubs and needle bearings. Joints with *bored ends* do not include a boot; *booted* joints are ungreased with a nitrile boot.

Type 303 Stainless Steel— Have Type 303 stainless steel hubs and steel needle bearings. *Booted* joints are greased and have stainless steel boot bands and a silicone boot; components are corrosion resistant and food grade.

To connect a U-joint with ***bored ends*** to a shaft, drill a hole through the joint and shaft and insert a spring pin (not included, see pages 3323-3329). U-joints that are ***booted with keyway*** are ready to install—no machining required. They have a standard ANSI keyway (see page 1174 for dimensions) and come with a set screw.

Bore Dia.	Bore Dp.	Joint Dia.	Boot Dia.■	O'all Lg.	Max. Torque, in.-lbs.	Working Torque (in.-lbs. @ 1,000 rpm) 3° Angle	10° Angle	ALLOY STEEL Plain Bored Ends	Each	ALLOY STEEL Booted with Keyway	Each	TYPE 303 STAINLESS STEEL Plain Bored Ends	Each	TYPE 303 STAINLESS STEEL Booted with Keyway	Each
3/8″	15/16″	3/4″	1 1/4″	2 11/16″	95	28	19	8284K72	$98.04	8284K22	$148.53	2455K72	$108.06	2455K22	$149.11
1/2″	1 3/16″	1″	1 1/2″	3 3/8″	215	114	77	8284K73	136.60	8284K23	174.47	2455K73	122.11	2455K23	178.14
5/8″	1 1/4″	1 1/4″	1 7/8″	3 3/4″	700	277	187	8284K74	138.64	8284K24	177.67	2455K74	148.93	2455K24	196.04
3/4″	1 3/8″	1 1/2″	2 1/4″	4 1/4″	1,780	581	392	8284K75♦	157.42	8284K25♦	186.56	2455K75♦	208.21	2455K25♦	241.21
1″	1 11/16″	2″	2 11/16″	5 1/2″	4,300	1,051	709	8284K76	235.27	8284K26	264.58	2455K76	260.28	2455K26	291.39

■ For booted U-joints only. ♦ Maximum angle is 35°.

Extreme-Angle Ball-and-Socket U-Joints

Steel

Plastic

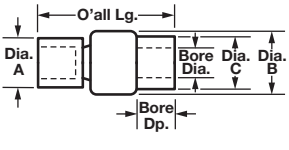

Steel handle speeds under 1,800 rpm. Use the spring pins (included) to connect them to shafts. Maximum angle is 30°.

Plastic operate up to 100 rpm. They have starter holes for spring pins (not included, see pages 3323-3329). Maximum angle is 45°; maximum temperature is 410° F.

Bore Dia.	Bore Dp.	Dia. (A)	Dia. (B)	Dia. (C)	Max. O'all Lg.	Torque, in.-lbs.		Each
Steel								
3/8″	9/16″	9/16″	3/4″	11/16″	2″	635	6441K2	$192.30
5/8″	15/16″	15/16″	1 1/4″	1 5/32″	3 13/32″	2,930	6441K4	118.28
Plastic								
1/8″	0.2″	0.28″	0.28″	0.28″	0.71″	1.68	60625K91	11.81
3/16″	0.3″	0.43″	0.43″	0.43″	1.10″	13	60625K92	16.10
1/4″	0.4″	0.55″	0.55″	0.55″	1.42″	22	60625K93	18.84
7/16″	0.6″	0.75″	0.79″	0.75″	1.97″	43	60625K95	29.31
1/2″	0.7″	0.91″	0.98″	0.91″	2.44″	47	60625K96	38.12

Corrosion-Resistant Miniature Ball-and-Socket U-Joints

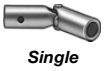

Single

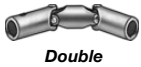

Double

Double Telescoping

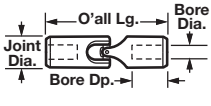

These tiny U-joints are made of Type 303 stainless steel and have Type 440 stainless steel balls with sealed-in lubrication. 60075K77 and *K87* have single tapped holes on each end of the joint for size 6-32 set screws (not included); all others have a bore. To connect bored U-joints, drill a hole through the joint and shaft and insert a spring pin (not included, see pages 3323-3329).

Double-telescoping length can be adjusted from 2 3/4″ to 3″. The center section diameter is 9/16″.

Bore Dia.	Bore Dp.	Joint Dia.	O'all Lg.	Max. Torque, in.-lbs.	Working Torque (in.-lbs. @ 1,500 rpm) 5° Angle	10° Angle		Each
With Single Joint								
3/32″	11/32″	3/16″	1″	1	0.875	0.6875	60075K74	$49.79
1/8″	3/16″	3/16″	1″	1	0.875	0.6875	60075K75	49.79
3/16″	7/16″	9/32″	1 3/8″	4	3.5	2.75	60075K76	49.79
1/4″	1/2″	3/8″	1 3/4″	16	14	11.0	60075K77	49.79
With Double Joint								
1/4″	1/2″	3/8″	2 1/2″	16	14	11.0	60075K87	104.90
With Double Telescoping Joint								
1/4″	3/8″	3/8″	2 3/4″	16	14	11.0	60075K97	193.75

For information about U-joints, see page 1183.

Extreme-Angle Geared U-Joints

A set of meshed gears transmit rotary motion around corners at angles from 3° to 136°. Ideal for most hand-powered, low-speed applications. They have a steel housing and heat-treated steel gears. Gear ratio is 1:1. Joint ends have a bore. To connect to a shaft, drill a hole through the joint and shaft and insert a spring pin (not included, see pages 3323-3329). Max. speed is 600 rpm. Not rated for torque.

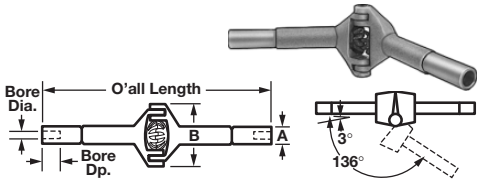

Bore Dia.	Bore Dp.	Dia. (A)	Dia. (B)	O'all Lg.		Each
7/16"	1 1/8"	3/4"	2 3/4"	10 1/4"	6450K1	$115.78
1/2"	1 1/8"	3/4"	2 3/4"	10 1/4"	6450K2	118.36
9/16"	1 1/8"	3/4"	2 3/4"	10 1/4"	6450K3	118.36

Flexible Drive Shafts

Need to transmit rotary motion and the path is nowhere near a straight line? Snake these flexible drive shafts around curves and obstructions and your problem's solved. Rotate manually with a knob (not included) or mechanically at speeds up to 200 rpm.

Steel with Female End Fittings— Both ends have female zinc-plated steel end fittings (unless noted) and a set screw. Shafts are steel and operate in clockwise and counterclockwise directions.

Steel with Panel-Mount and Female Fittings— The drive end has a 7/32" diameter shaft (unless noted) with a flat side (see illustration) fitting on one end for attaching to a manual control knob (not included). It's designed for mounting in a panel—just push the drive end of the shaft through a 3/8" hole and secure with included locknuts on both sides of the panel. The other end is a female zinc-plated end fitting with a set screw. Shafts are steel and operate in clockwise and counterclockwise directions. *Note:* Torque is reduced by roughly 30% when operating counterclockwise.

With Female End Fittings

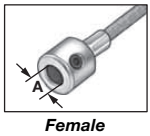

Female

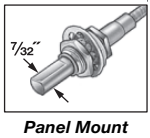

Panel Mount

Type 304 Stainless Steel without End Fittings— Use adhesive to attach. Made of Type 304 stainless steel for superior corrosion resistance. Shafts operate in a clockwise direction.

Type 304 Stainless Steel with Female End Fittings— Both ends have female end fittings and a set screw. Shaft and fittings are made of Type 304 stainless steel for superior corrosion resistance. Shafts operate in a clockwise direction.

O'all Lg.	End Fitting Bore (A)	Shaft OD (B)	Max. Torque, in.-lbs.	Min. Bend Radius		Each
Steel with Female End Fittings						
6"	1/4"	5/32"	30	4"	3787K11	$51.26
6"	1/4"	3/16"	65	5"	3787K12▲	52.33
6"	1/4"	1/4"	110	5"	3787K13	54.84
12"	1/4"	5/32"	30	4"	3787K14	52.61
12"	1/4"	1/4"	110	5"	3787K16	54.16
18"	1/4"	3/16"	65	5"	3787K18▲	52.87
18"	1/4"	1/4"	110	5"	3787K19	56.98
24"	1/4"	5/32"	30	4"	3787K21	53.24
24"	1/4"	3/16"	65	5"	3787K22▲	56.96
24"	1/4"	1/4"	110	5"	3787K23	59.98
36"	1/4"	5/32"	30	4"	3787K24	55.91
36"	1/4"	3/16"	65	5"	3787K25▲	62.91
36"	1/4"	1/4"	110	5"	3787K26	67.47
Steel with Panel-Mount and Female Fittings						
6"	1/4"	0.130"	20	3"	3127K19	50.75
12"	1/4"	0.130"	20	3"	3127K21	52.93
12"	1/4"	0.150"	30	4"	3127K31	88.06

▲ End fittings are nickel-plated bronze.

O'all Lg.	End Fitting Bore (A)	Shaft OD (B)	Max. Torque, in.-lbs.	Min. Bend Radius		Each
Steel with Panel-Mount and Female Fittings (Cont.)						
12"	1/4"	0.187"	6.5	5"	5910K76♠	$56.27
18"	1/4"	0.130"	20	3"	3127K22	54.88
18"	1/4"	0.187"	6.5	5"	5910K78♠	64.23
24"	1/4"	0.130"	20	3"	3127K23	57.38
24"	1/4"	0.187"	6.5	5"	5910K92♠	65.81
36"	1/4"	0.130"	20	3"	3127K24	61.78
36"	1/4"	0.187"	6.5	5"	5910K93♠	75.34
Type 304 Stainless Steel without End Fittings						
6"	—	0.032"	1	3/4"	3135K11	40.38
6"	—	0.040"	1	1"	3135K12	41.14
6"	—	0.068"	6	1"	3135K13	36.70
6"	—	0.095"	8	1 1/4"	3135K14	41.02
12"	—	0.032"	1	3/4"	3135K17	41.18
12"	—	0.095"	8	1 1/4"	3135K21	42.12
Type 304 Stainless Steel with Female End Fittings						
6"	1/4"	0.130"	30	2"	3135K15	60.47
6"	1/4"	0.150"	30	3"	3135K16	62.16
12"	1/4"	0.130"	30	2"	3135K22	63.53
18"	1/4"	0.130"	30	2"	3135K28	70.96

♠ Drive end has a 1/4" diameter shaft.

Heavy Duty Flexible Drive Shafts

With a strong carbon steel core, a protective case, and bearings, these rugged shafts handle the demands of high-torque applications easily.

Flexible enough to maneuver over and around obstructions, they correct misalignment, absorb and isolate vibration, and withstand load changes. Shafts operate in clockwise and counterclockwise directions. *Note:* The counterclockwise direction causes a 30% reduction in maximum torque and max. rpm. Maximum temperature is 225° F.

Shafts with bronze sleeve bearings and female end fittings have carbon steel end fittings (with one set screw, unless noted) at each end.

Shafts with steel ball bearings and female end fittings have carbon steel end fittings (with one set screw, unless noted) at each end.

Shafts with bronze sleeve bearings, panel-mount, and female end fittings are designed for mounting in a panel. Just push the drive end of the shaft through a 3/8" hole and secure with the included locknuts. The drive end has a 1/4" diameter and a flat side for fastening to a manual control knob (not included). The other end has a zinc-plated carbon steel female end fitting with a set screw. They operate at speeds up to 200 rpm. Maximum torque is 6.5 in.-lbs.; minimum bend radius is 5".

Panel Mount Drive Shaft

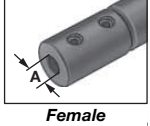

Female

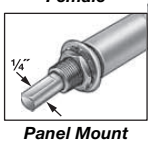

Panel Mount

End Fitting Bore (A)	Shaft OD (B)	Max. Torque, in.-lbs.	Max. rpm	Min. Bend Radius	1-ft. O'all Lg.	Each	2-ft. O'all Lg.	Each	3-ft. O'all Lg.	Each	4-ft. O'all Lg.	Each
With Bronze Sleeve Bearings and Female End Fittings												
1/4"	1/2"	50	6,000	4"	6426K101●	$162.29	6426K102●	$178.35	6426K62●	$189.03	6426K104●	$210.45
1/4"	19/32"	80	5,000	5"	6426K111	186.74	6426K112	202.77	6426K63	218.85	6426K64	234.90
1/2"	27/32"	390	3,600	7"	—	—	6426K122	233.81	6426K66	258.44	6426K67	283.11
With Steel Ball Bearings and Female End Fittings												
1/4"	1/2"	50	25,000	4"	6426K201●	153.92	6426K202●	168.92	6426K203●	183.92	—	—
1/4"	19/32"	80	20,000	5"	6426K211	238.74	6426K212	253.74	6426K83	268.74	6426K84	283.74
1/2"	27/32"	390	15,000	7"	—	—	6426K222	376.62	6426K86	399.66	6426K87	422.70
1/2"	1"	620	10,000	10"	—	—	6426K232	431.11	6426K233	454.15	6426K91	477.19
1/2"	13/16"	950	8,000	12"	—	—	6426K242●	444.07	6426K243●	472.03	6426K94●	499.99

● Has two set screws.

End Fitting Bore (A)	Shaft OD (B)	1-ft. O'all Lg.	Each	2-ft. O'all Lg.	Each	3-ft. O'all Lg.	Each	4-ft. O'all Lg.	Each	5-ft. O'all Lg.	Each	6-ft. O'all Lg.	Each
With Bronze Sleeve Bearings, Panel Mount, and Female End Fittings													
1/4"	25/64"	5910K81	$171.34	5910K61	$191.12	5910K62	$221.82	5910K63	$252.50	5910K64	$283.22	5910K82	$313.94

Push/Pull Control Cables

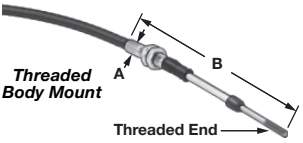

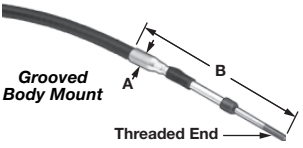

Snake these flexible cables around obstructions and initiate a push/pull motion from a remote location. Use to operate valves, throttle controls, HVAC damper controls, and much more.

Threaded-mount cables, also known as bulkhead (panel) mount cables, have threaded fittings with two hex nuts and two washers (unless noted) at each end for easy mounting through a panel. You can also remove the nuts and mount with U-bolts or strap clamps (sold separately below). *Grooved-mount* cables have threaded fittings on both ends and a grooved body for mounting with U-bolts or strap clamps (sold separately below).

Standard— Have a high-density polyethylene conduit cover and a steel core (unless noted). End fittings are stainless steel; temperature range is –40° to +210° F.

Corrosion Resistant— Have a slick PTFE casing, a polyethylene conduit cover lined with thermoplastic, and a steel core. End fittings are 300 series stainless steel; temperature range is –65° to +310° F.

Low Friction— Have a unique splined steel core that prevents the cable from twisting during operation. It also limits the number of contact points against the liner to provide extra-smooth, high-efficiency movement. Cables have a high-density polyethylene conduit cover lined with a lubricant impregnated lining. End fittings are stainless steel; temperature range is –40° to +210° F.

High-Capacity Push/Pull Levers handle up to 200 lbs. of dynamic push/pull load. They're made of zinc-plated steel and have a phenolic plastic knob.

Threaded Ends	O'all Lg.	Max. Stroke	Dynamic Push/Pull Load, lbs.	Min. Bend Radius	Threaded Mount Dia. (A)	Threaded Mount End Fitting Lg. (B)		Threaded Mount Each	Grooved Mount Dia. (A)	Grooved Mount End Fitting Lg. (B)		Grooved Mount Each
Standard												
10-32 × 7/8″	3 ft.	2″	50/ 50	5″	15/32″	7 5/16″	3125K44●	$33.80	3/8″	6 1/2″	3125K22●	$37.15
10-32 × 7/8″	6 ft.	2″	50/ 50	5″	15/32″	7 5/16″	3125K48●	38.42	3/8″	6 1/2″	3125K26●	40.03
Corrosion Resistant												
10-32 × 7/8″	5 ft.	3″	70/120	2″	29/64″	8 11/16″	1407K57★	47.53	29/64″	7 53/64″	2695K11	42.08
1/4″-28 × 1″	5 ft.	3″	125/230	3″	21/32″	9 5/8″	1407K73★	75.98	21/32″	8 3/4″	2695K26	75.31
Low Friction												
10-32 × 7/8″	4 ft.	3″	40/ 50	4″	1/2″	8 53/64″	1338K11	35.23	3/8″	8″	2691K11	46.49
1/4″-28 × 1″	3 ft.	3″	130/170	5″	19/32″	9 25/64″	3125K89	53.61	1/2″	8 3/8″	3125K67	48.76
1/4″-28 × 1″	4 ft.	3″	130/170	5″	19/32″	9 25/64″	1338K21	57.94	1/2″	8 3/8″	2691K21	51.04
1/4″-28 × 1″	6 ft.	2″	150/170	5″	19/32″	7 57/64″	3125K93	61.64	1/2″	6 7/8″	3125K71	56.57
1/4″-28 × 1″	6 ft.	3″	130/170	5″	19/32″	9 25/64″	1338K22	61.64	1/2″	8 3/8″	2691K22	55.61
1/4″-28 × 1″	6 ft.	4″	110/170	5″	19/32″	10 57/64″	3125K95	61.64	1/2″	9 7/8″	3125K73	56.57
1/4″-28 × 1″	15 ft.	4″	110/170	5″	19/32″	10 57/64″	3125K104	87.59	1/2″	9 7/8″	3125K82	81.78

● Core is stainless steel. ★ Has one washer at each end.

Accessories

Strap Clamp

Quick-Disconnect Ball Joint Linkage

High-Capacity Push/Pull Lever

	For Cables with 10-32 × 7/8″ Threaded Ends	Each	For Cables with 1/4″-28 × 1″ Threaded Ends	Each
Strap Clamp for Standard Grooved-Mount Cables	3125K11	$1.64	3125K12	$2.64
Clevis with Pin	6071K11	6.60	6071K12	4.98
Quick-Disconnect Ball Joint Linkage	2695K88	2.20	6058K32	4.52
Strap Clamp for Corrosion-Resistant and Low-Friction Cables	2695K84	2.62	2695K85	2.66
High-Capacity Push/Pull Levers— For 3″ Maximum Stroke 5 3/8″ Lg. × 15 1/2″ Ht.	—	—	1373K21	43.38

Lever and Knob Control Cable Assemblies

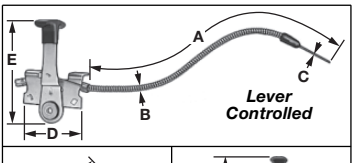

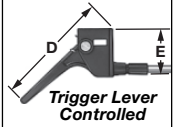

Trigger Lever Controlled

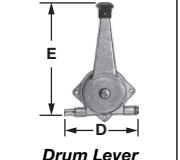

Drum Lever Controlled

Knob Controlled—Nonlocking

Knob Controlled—Turn to Lock

Precision Knob Controlled

Conveniently supplied with a lever or knob to initiate push/pull motion (unless noted) from a remote location.

Lever controlled have a zinc-plated steel lever handle that comes attached to a control cable. The cable has a stainless steel core and conduit cover and can be cut to length. Furnished with two 0.209″ mounting holes. Not temperature rated.

Trigger lever controlled have a nylon spring-return trigger attached to a control cable. The cable has a galvanized steel core with a vinyl conduit cover and can be cut to length. Designed to mount to a 3/4″ to 1″ dia. tube or handlebar with a screw (not included; 0.19″ hole dia.). Max. temp. is 250° F.

Drum lever controlled allow you to adjust the friction and the stops (in 3/16″ increments) along the full stroke length. Lever is die cast zinc alloy and can be side or base mounted (base mounting bracket is included) using four 3/16″ mounting holes. Cable has a Type 304 stainless steel core with a polyethylene conduit cover and can be cut to length. Temp. range is –65° to +160° F. Initiates pull motion only.

Knob controlled have a control cable with a Type 302 stainless steel core and a polyethylene conduit cover that can be cut to length. Control knob is phenolic plastic. All can be panel mounted; see table for mounting thread size. Temp. range is –65° to +225° F. *Nonlocking* provides smooth operation. *Turn to lock* is perfect where severe vibration is a concern. Just pull and turn the handle to its locking position. *Precision* has a vernier knob for fine-tuning throttle positions.

Cable Lg. (A)	Cable OD (B)	Cable Core Dia. (C)	Max. Stroke	Dynamic Push/Pull Load, lbs.	Min. Bend Radius	Lever Lg. (D)	Lever Ht. (E)	Knob Dia. (F)	Knob Mounting Thread Size		Each
Lever Controlled											
7′3″	0.19″	0.054″	1.69″	20/ 20	2″	3.187″	3.44″	—	—	2461K21	$28.82
Trigger Lever Controlled											
10 ft.	0.22″	0.06″	0.61″	100/100	3″	3.79″	1.57″	—	—	3790K11	21.15
Drum Lever Controlled											
5 ft.	0.29″	0.06″	3″	0/ 25	5″	5″	8″	—	—	1608K11	83.72
10 ft.	0.29″	0.06″	3″	0/ 25	5″	5″	8″	—	—	1608K12	87.98
Knob Controlled—Nonlocking											
10′8″	0.31″	0.085″	5″	100/ 20	8″	—	—	2″	1/2″-20	6059K1	30.79
15′8″	0.31″	0.085″	5″	100/ 20	8″	—	—	2″	1/2″-20	6059K7	31.74
Knob Controlled—Turn to Lock											
9 ft.	0.31″	0.085″	3″	100/100	8″	—	—	2 1/2″	5/8″-18	6161K11	49.45
15 ft.	0.31″	0.085″	3″	100/100	8″	—	—	2 1/2″	5/8″-18	6161K12	57.35
25 ft.	0.31″	0.085″	3″	100/100	8″	—	—	2 1/2″	5/8″-18	6161K13	70.55
Precision Knob Controlled—Turn to Lock											
5 ft.	0.31″	0.085″	3″	30/ 30	8″	—	—	2″	3/4″-16	6059K4	37.09

About Rod Ends

Rod ends are connectors that support loads and allow motion control. You'll find them in a multitude of applications: steering, tensioning, and controlling movement at pivot points.

Ball Joint Rod Ends (pages 1187-1195)— Have a housing and a ball that swivels to handle angular misalignment. They're also known as rod-end bearings. *Ball-joint linkages* are ball-joint rod ends with studs attached to simplify mounting.

Solid Rod Ends (pages 1196-1198)— Have no moving parts and are designed to handle heavier static loads. Also known as swing bolts and eyebolts, their one-piece body doesn't allow angular misalignment.

Left- and right-hand rod ends (ball joint or solid style) create connections that adjust for tension.

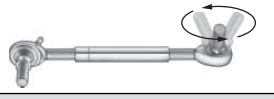

Ball-joint linkages handle misalignment as well as changes in direction.

For technical drawings and 3-D models, go to mcmaster.com.

Ball Joint Rod Ends

Dimensions

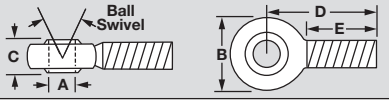

Thread Direction

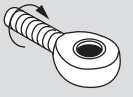

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

Left-hand threaded shank tightens when turned counter-clockwise.

Steel Ball Joint Rod Ends

Our general purpose rod ends will meet your basic connection needs.

Inch sizes have a zinc-plated steel housing and chrome-plated steel ball (unless noted).

Inch sizes with grease fitting are easy to lubricate. Housing is steel. Ball is chrome-plated steel.

Inch sizes with oversized shank have a shank that is one size larger than the ball ID to handle greater stress. Housing is zinc-plated steel. Ball is chrome-plated steel.

Inch sizes with self-lubricating insert have a zinc-plated steel ball that glides on a PTFE-lubricated, carbon-fiber-reinforced plastic insert, which provides wear resistance and doesn't require lubrication. Housing is zinc-plated steel.

Metric sizes have an alloy steel ball. Housing is zinc-plated steel (unless noted).

To Order: Please specify right- or left-hand shank threads.

Male Threaded

Female Threaded with Grease Fitting

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Male-Threaded Shank (D)	Male-Threaded Shank Thread Lg. (E)	Male-Threaded Shank Static Radial Load Cap., lbs.			Female-Threaded Shank (D)	Female-Threaded Shank Thread Lg. (E)	Female-Threaded Shank Static Radial Load Cap., lbs.		
Inch Sizes														
6-32	1/8″	22°	1/2″	1/4″	15/16″	9/16″	700	60645K61	$5.95	13/16″	7/16″	1,510	60645K78	$5.81
8-32	3/16″	30°	7/16″	5/16″	1″	9/16″	Not Rated	60645K98♦▲	7.50	7/8″	3/8″	Not Rated	60645K97♦▲	7.50
10-32	3/16″	20°	5/8″	5/16″	1 1/4″	3/4″	1,558	60645K11	3.53	1 1/16″	1/2″	2,079	60645K31	3.32
1/4″-28	1/4″	27°	3/4″	3/8″	19/16″	1″	2,835	60645K12	3.26	15/16″	11/16″	3,820	60645K32	3.11
5/16″-24	5/16″	22°	7/8″	7/16″	17/8″	1 1/4″	4,517	60645K13	3.37	1 3/8″	11/16″	5,110	60645K33	3.67
3/8″-24	3/8″	22°	1″	1/2″	1 15/16″	1 1/4″	6,323	60645K14	3.78	1 5/8″	13/16″	6,323	60645K34	3.78
7/16″-20	7/16″	21°	1 1/8″	9/16″	2 1/8″	1 3/8″	7,897	60645K15	5.31	1 13/16″	15/16″	7,897	60645K35	5.80
1/2″-20	1/2″	20°	1 5/16″	5/8″	2 7/16″	1 1/2″	10,046	60645K16	6.58	2 1/8″	1 1/16″	10,046	60645K36	6.58
5/8″-18	5/8″	26°	1 1/2″	3/4″	2 5/8″	1 5/8″	11,385	60645K17	9.94	2 1/2″	1 3/8″	11,385	60645K37	9.64
3/4″-16	3/4″	24°	1 3/4″	7/8″	2 7/8″	1 3/4″	15,894	60645K18	12.34	2 7/8″	1 9/16″	15,894	60645K38	12.74
1″-12	1″	17°	2 3/4″	1 3/8″	4 1/8″	2 1/8″	43,541	60645K62	49.79	4 1/8″	2 1/8″	43,541	60645K72	49.79
1″-14	1″	17°	2 3/4″	1 3/8″	4 1/8″	2 1/8″	43,541	60645K63	49.79	4 1/8″	2 1/8″	43,541	60645K73	49.79
1 1/4″-12	1 1/4″	7°	2 3/4″	1 11/16″	4 1/8″	2 1/8″	44,500	60645K65★	98.27	4 1/8″	2 1/8″	44,500	60645K75★	99.15
1 1/2″-12	1 1/2″	6.5°	3 1/2″	1 5/16″	5 3/8″	3″	64,770	60645K66★	155.78	5 3/8″	2 5/8″	64,770	60645K76★	156.79
2″-12	2″	6°	5″	1 3/4″	8″	4 1/2″	153,528	60645K67★	280.10	8″	4″	153,528	60645K77★	291.27
Inch Sizes with Grease Fitting														
3/8″-24	3/8″	22°	1″	1/2″	1 15/16″	1 1/4″	3,507	4444T1	4.93	1 5/8″	13/16″	5,100	4444T21	4.93
7/16″-20	7/16″	21°	1 1/8″	9/16″	2 1/8″	1 3/8″	4,481	4444T2	6.98	1 13/16″	15/16″	6,420	4444T22	6.98
1/2″-20	1/2″	20°	1 5/16″	5/8″	2 7/16″	1 1/2″	5,870	4444T3	7.05	2 1/8″	1 1/16″	9,100	4444T23	6.98
5/8″-18	5/8″	26°	1 1/2″	3/4″	2 5/8″	1 5/8″	6,869	4444T4	8.30	2 1/2″	1 3/8″	9,800	4444T24	8.30
3/4″-16	3/4″	24°	1 3/4″	7/8″	2 7/8″	1 3/4″	9,436	4444T5	10.05	2 7/8″	1 9/16″	14,250	4444T25	10.05
1″-12	1″	17°	2 3/4″	1 3/8″	4 1/8″	2 1/8″	37,010	4444T6	54.25	4 1/8″	2 1/8″	43,541	4444T26	54.25
1″-14	1″	17°	2 3/4″	1 3/8″	4 1/8″	2 1/8″	37,010	4444T7	54.25	4 1/8″	2 1/8″	43,541	4444T27	54.25
Inch Sizes with Oversized Shank														
1/4″-28	3/16″	20°	3/4″	5/16″	19/16″	1″	3,435	60645K81	3.78	1 5/16″	11/16″	4,197	60645K91♦	3.78
5/16″-24	1/4″	27°	7/8″	3/8″	17/8″	1 1/4″	5,534	60645K82	4.46	—	—	—	—	—
3/8″-24	5/16″	22°	1″	7/16″	1 15/16″	1 1/4″	6,853	60645K83	4.59	1 5/8″	13/16″	6,323	60645K92♦	4.86
1/2″-20	3/8″	22°	1 1/8″	1/2″	2 1/8″	1 3/8″	8,278	60645K85	7.28	—	—	—	—	—
3/4″-16	5/8″	26°	1 3/4″	3/4″	2 7/8″	1 3/4″	16,922	60645K89	10.68	—	—	—	—	—
1 1/4″-12	1″	17°	2 3/4″	1 3/8″	4 1/8″	2 1/8″	43,541	60645K64	49.79	4 1/8″	2 1/8″	40,889	60645K74	49.79
Inch Sizes with Self-Lubricating Insert														
10-32	3/16″	13°	5/8″	5/16″	1 1/4″	3/4″	1,174	2458K11	4.97	1 1/16″	1/2″	1,220	2458K31	4.97
1/4″-28	1/4″	16°	3/4″	3/8″	19/16″	1″	2,168	2458K12	5.11	1 5/16″	11/16″	2,500	2458K32	5.11
5/16″-24	5/16″	14°	7/8″	7/16″	17/8″	1 1/4″	2,796	2458K13	5.17	1 3/8″	11/16″	2,753	2458K33	5.17
3/8″-24	3/8″	12°	1″	1/2″	1 15/16″	1 1/4″	4,012	2458K14	5.39	1 5/8″	13/16″	3,950	2458K34	5.39
7/16″-20	7/16″	14°	1 1/8″	9/16″	2 1/8″	1 3/8″	4,244	2458K15	6.42	1 13/16″	15/16″	4,300	2458K35	6.42
1/2″-20	1/2″	12°	1 5/16″	5/8″	2 7/16″	1 1/2″	6,453	2458K16	9.33	2 1/8″	1 1/16″	6,453	2458K36	9.33
5/8″-18	5/8″	16°	1 1/2″	3/4″	2 5/8″	1 5/8″	7,400	2458K17	13.72	2 1/2″	1 3/8″	7,400	2458K37	13.72
3/4″-16	3/4″	14°	1 3/4″	7/8″	2 7/8″	1 3/4″	10,937	2458K18	17.36	2 7/8″	1 9/16″	10,937	2458K38	17.36
Metric Sizes— *Dimensions in mm*														
M3×0.5	3	30°	9.8	6.3	25	14	Not Rated	59935K11♦▲	7.50	22	10	Not Rated	59935K13♦▲	7.50
M4×0.7	4	30°	11	6.9	25	14	Not Rated	59935K12♦▲	7.50	22	10	Not Rated	59935K14♦▲	7.50
M5×0.8	5	14°	16	8	33	20	1,161	59935K41	9.12	27	14	1,593	59935K51	8.96
M6×1	6	23°	19	9	36	22	1,640	59935K42	5.84	30	14	2,674	59935K52	5.92
M8×1.25	8	28°	22	12	42	25	3,055	59935K43	6.61	36	17	3,414	59935K53	6.20
M10×1.5	10	26°	27	14	48	29	4,726	59935K44	8.69	43	21	5,114	59935K54	8.65
M12×1.75	12	27°	30	16	54	33	5,804	59935K45	11.59	50	24	5,804	59935K55	11.61
M16×2	16	33°	38	21	66	40	8,405	59935K47	20.49	64	33	8,405	59935K57	20.49
M20×1.5	20	29°	46	25	78	47	12,836	59935K48	33.04	77	40	12,836	59935K58	34.41

♦ Right-hand shank threads only. ▲ Machined steel housing and ball. ★ Phosphate-plated bearing steel ball.

For information about rod ends, see page 1187.

Dimensions

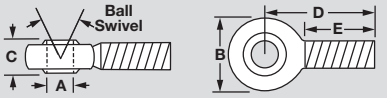

Thread Direction

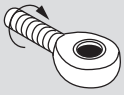

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

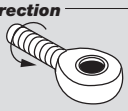

Left-hand threaded shank tightens when turned counter-clockwise.

High-Strength Steel Ball Joint Rod Ends

Choose these rod ends for connections that need to handle heavy loads. ***Rod ends with an oversized shank*** have a shank that is one size larger than the ball ID to handle greater stress.

With PTFE-Lined Steel Insert— A PTFE-lined steel insert allows smooth ball rotation and reduces the need for lubrication. Housing is zinc-plated, chromate-treated alloy steel (except 60745K74 and K75 are plain steel) and ball is chrome-plated bearing steel.

With PTFE/Kevlar Insert— A heat-treated, chrome-plated bearing steel ball glides on a durable, self-lubricating, self-sealing PTFE/Kevlar insert. Housing is heat-treated chrome molybdenum steel.

To Order: Please specify right- or left-hand shank threads.

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Male-Threaded Shank (D)	Male-Threaded Shank Thread Lg. (E)	Male-Threaded Shank Static Radial Load Cap., lbs.			Female-Threaded Shank (D)	Female-Threaded Shank Thread Lg. (E)	Female-Threaded Shank Static Radial Load Cap., lbs.		
Inch Sizes with PTFE-Lined Steel Insert														
10-32	3/16"	13°	5/8"	5/16"	1 1/4"	3/4"	2,855	60745K21	$17.23	1 1/16"	1/2"	3,736	60745K41	$17.23
1/4"-28	1/4"	16°	3/4"	3/8"	1 9/16"	1"	5,262	60745K22	17.33	1 5/16"	11/16"	6,195	60745K42	17.33
5/16"-24	5/16"	14°	7/8"	7/16"	1 7/8"	1 1/4"	7,640	60745K23	17.58	1 3/8"	11/16"	7,640	60745K43	17.58
3/8"-24	3/8"	12°	1"	1/2"	1 15/16"	1 1/4"	9,550	60745K24	19.23	1 5/8"	13/16"	9,550	60745K44	19.23
7/16"-20	7/16"	14°	1 1/8"	9/16"	2 1/8"	1 3/8"	10,290	60745K25	23.02	1 13/16"	15/16"	10,290	60745K45	23.02
1/2"-20	1/2"	12°	1 5/16"	5/8"	2 7/16"	1 1/2"	16,242	60745K26	27.40	2 1/8"	1 1/16"	15,340	60745K46	27.40
5/8"-18	5/8"	16°	1 1/2"	3/4"	2 5/8"	1 5/8"	17,959	60745K27	37.47	2 1/2"	1 3/8"	17,959	60745K47	37.47
3/4"-16	3/4"	14°	1 3/4"	7/8"	2 7/8"	1 3/4"	28,090	60745K28	49.93	2 7/8"	1 9/16"	28,090	60745K48	49.93
7/8"-14	7/8"	12°	2"	7/8"	3 3/8"	1 7/8"	55,690	60745K71	70.00	3 3/8"	1 7/8"	45,051	60745K49	72.92
1"-12	1"	17°	2 15/16"	1 3/8"	4 1/2"	2 1/8"	43,555	60745K74	70.73	4 1/8"	2 1/8"	43,555	60745K75▲	69.80
1"-14	1"	17°	2 15/16"	1 3/8"	4 1/2"	2 1/2"	107,182	60745K72	107.40	4 1/8"	2 1/8"	76,205	60745K73▲	107.40
1 1/4"-12	1"	17°	2 15/16"	1 3/8"	4 1/2"	2 1/2"	107,182	60745K31	105.31	4 1/8"	2 1/8"	76,205	60745K51▲	105.31
Inch Sizes with PTFE/Kevlar Insert														
10-32	3/16"	13°	5/8"	5/16"	1 1/4"	3/4"	2,851	4483T1	10.53	1 1/16"	9/16"	3,733	4483T21	10.53
1/4"-28	1/4"	16°	3/4"	3/8"	1 9/16"	1"	5,260	4483T2	10.62	1 5/16"	3/4"	6,190	4483T22	10.62
5/16"-24	5/16"	14°	7/8"	7/16"	1 7/8"	1 1/4"	7,639	4483T3	10.81	1 3/8"	3/4"	7,639	4483T23	10.81
3/8"-24	3/8"	12°	1"	1/2"	1 15/16"	1 1/4"	9,544	4483T4	12.23	1 5/8"	15/16"	9,544	4483T24	12.23
7/16"-20	7/16"	14°	1 1/8"	9/16"	2 1/8"	1 3/8"	10,285	4483T5	15.06	1 13/16"	1 1/16"	10,285	4483T25	15.06
1/2"-20	1/2"	12°	1 5/16"	5/8"	2 7/16"	1 1/2"	16,238	4483T6	18.34	2 1/8"	1 3/16"	15,336	4483T26	18.34
5/8"-18	5/8"	16°	1 1/2"	3/4"	2 5/8"	1 5/8"	17,955	4483T7	23.98	2 1/2"	1 1/2"	17,955	4483T27	23.98
3/4"-16	3/4"	14°	1 3/4"	7/8"	2 7/8"	1 3/4"	28,081	4483T8	34.81	2 7/8"	1 3/4"	28,081	4483T28	34.81
7/8"-14	7/8"	7°	2"	7/8"	3 3/8"	2"	45,051	4483T9	41.32	—	—	—	—	—
1 1/4"-12	1"	17°	2 3/4"	1 3/8"	4 1/8"	2 1/8"	76,200	4483T11	77.00	4 1/8"	2 1/8"	76,200	4483T29	77.00
Inch Sizes with PTFE/Kevlar Insert and Oversized Shank														
5/16"-24	1/4"	13°	7/8"	3/8"	1 7/8"	1 1/4"	8,452	4475T1	13.37	—	—	—	—	—
3/8"-24	5/16"	12°	1"	7/16"	1 15/16"	1 1/4"	10,382	4475T12	15.13	—	—	—	—	—
7/16"-20	3/8"	10°	1 1/8"	1/2"	2 1/8"	1 3/8"	14,006	4475T13	18.63	—	—	—	—	—
1/2"-20	7/16"	12°	1 5/16"	9/16"	2 7/16"	1 1/2"	18,761	4475T14	22.68	—	—	—	—	—
5/8"-18	1/2"	10°	1 1/2"	5/8"	2 5/8"	1 5/8"	23,542	4475T15	29.66	—	—	—	—	—
3/4"-16	5/8"	13°	1 3/4"	3/4"	2 7/8"	1 3/4"	31,680	4475T16	38.02	—	—	—	—	—
7/8"-14	3/4"	12°	2"	7/8"	3 3/8"	1 7/8"	43,486	4475T17	51.11	—	—	—	—	—
Metric Sizes with PTFE/Kevlar Insert— *Dimensions in mm*														
M8×1.25	8	18°	22	12	42	25	7,444	4483T32	11.34	36	17	9,376	4483T42	11.34
M10×1.5	10	17°	27	14	48	29	11,797	4483T33	12.81	43	21	14,262	4483T43	12.81
M12×1.75	12	17°	30	16	54	33	15,320	4483T34	18.66	50	24	15,320	4483T44	18.66
M16×2.0	16	23°	38	21	66	40	21,966	4483T36	25.60	64	33	21,966	4483T46	25.60

▲ O'all Wd. (B) is 2 3/4".

Stainless Steel Ball Joint Rod Ends

A Type 303 stainless steel housing and Type 440C stainless steel ball provide excellent corrosion resistance while a PTFE liner allows smooth ball rotation and reduces the need for lubrication. ***Rod ends with an oversized shank*** have a shank that is one size larger than the ball ID to handle greater stress.

To Order: Please specify right- or left-hand shank threads.

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Male-Threaded Shank (D)	Male-Threaded Shank Thread Lg. (E)	Male-Threaded Shank Static Radial Load Cap., lbs.			Female-Threaded Shank (D)	Female-Threaded Shank Thread Lg. (E)	Female-Threaded Shank Static Radial Load Cap., lbs.		
With Standard Shank														
10-32	3/16"	20°	5/8"	5/16"	1 1/4"	3/4"	912	59915K21	$9.86	1 1/16"	1/2"	930	59915K41	$9.86
1/4"-28	1/4"	27°	3/4"	3/8"	1 9/16"	1"	1,370	59915K22	10.20	1 5/16"	11/16"	1,380	59915K42	10.20
5/16"-24	5/16"	22°	7/8"	7/16"	1 7/8"	1 1/4"	2,050	59915K23	12.14	1 3/8"	11/16"	2,100	59915K43	12.14
3/8"-24	3/8"	22°	1"	1/2"	1 15/16"	1 1/4"	3,040	59915K24	17.14	1 5/8"	13/16"	3,080	59915K44	17.14
7/16"-20	7/16"	21°	1 1/8"	9/16"	2 1/8"	1 3/8"	3,780	59915K25	22.86	1 13/16"	15/16"	3,790	59915K45	22.86
1/2"-20	1/2"	20°	1 5/16"	5/8"	2 7/16"	1 1/2"	4,700	59915K26	30.06	2 1/8"	1 1/16"	4,720	59915K46	30.06
5/8"-18	5/8"	26°	1 1/2"	3/4"	2 5/8"	1 5/8"	5,860	59915K27	39.81	2 1/2"	1 3/8"	5,870	59915K47	39.81
3/4"-16	3/4"	24°	1 3/4"	7/8"	2 7/8"	1 3/4"	7,512	59915K28	51.68	2 7/8"	1 9/16"	7,520	59915K48	51.68
7/8"-14	7/8"	22°	2"	7/8"	3 3/8"	2"	14,000	59915K29	82.58	3 3/8"	1 7/8"	14,000	59915K49	82.58
With Oversized Shank														
1/4"-28	3/16"	20°	3/4"	5/16"	1 9/16"	1"	1,350	59915K31	11.36	1 5/16"	11/16"	2,600	59915K51	11.36
5/16"-24	1/4"	27°	7/8"	3/8"	1 7/8"	1 1/4"	2,000	59915K32	11.76	1 3/8"	11/16"	3,600	59915K52	11.76
3/8"-24	5/16"	22°	1"	7/16"	1 15/16"	1 1/4"	3,500	59915K33	12.73	1 5/8"	13/16"	4,500	59915K53	12.73
7/16"-20	3/8"	22°	1 1/8"	1/2"	2 1/8"	1 3/8"	5,000	59915K34	15.80	1 13/16"	15/16"	5,000	59915K54	15.80
1/2"-20	7/16"	21°	1 5/16"	9/16"	2 7/16"	1 1/2"	6,500	59915K35	20.09	2 1/8"	1 1/16"	6,500	59915K55	20.09

Dimensions

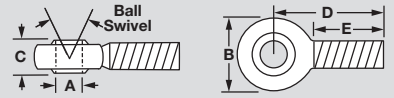

Thread Direction

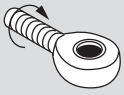

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

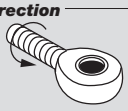

Left-hand threaded shank tightens when turned counter-clockwise.

Metric Stainless Steel Ball Joint Rod Ends

Need excellent corrosion resistance while working with metric components? These rod ends have a Type 303 stainless steel housing and Type 440C stainless steel ball. They also have a PTFE liner that allows smooth ball rotation and reduces the need for lubrication.

To Order: Please specify right- or left-hand shank threads.

Shank Thread Size, mm	Ball ID (A), mm	Max. Ball Swivel	O'all Wd. (B), mm	O'all Thick. (C), mm	Male-Threaded Shank (D), mm	Thread Lg. (E), mm	Static Radial Load Cap., lbs.			Female-Threaded Shank (D), mm	Thread Lg. (E), mm	Static Radial Load Cap., lbs.		
M5×0.8	5	22°	16	8	33	20	911	2988K11	$17.94	27	14	929	2988K31	$17.94
M6×1	6	23°	19	9	36	22	1,369	2988K12	19.28	30	14	1,379	2988K32	19.28
M8×1.25	8	28°	22	12	42	25	2,049	2988K13	22.38	36	17	2,099	2988K33	22.38
M10×1.5	10	26°	27	14	48	29	3,179	2988K14	38.18	43	21	3,441	2988K34	38.18
M12×1.75	12	27°	30	16	54	33	3,905	2988K15	47.71	50	24	3,905	2988K35	47.71
M14×2	14	30°	35	19	60	36	5,327	2988K16	47.71	57	27	5,327	2988K36	47.71
M16×2	16	33°	38	21	66	40	5,656	2988K17	66.24	64	33	5,656	2988K37	66.24

Bronze Insert Ball Joint Rod Ends

An oil-impregnated bronze insert reduces the need for lubrication and provides corrosion resistance. All rod ends have a zinc-plated steel housing and a chrome-plated steel ball.

To Order: Please specify right- or left-hand shank threads.

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Male-Threaded Shank (D)	Thread Lg. (E)	Static Radial Load Cap., lbs.			Female-Threaded Shank (D)	Thread Lg. (E)	Static Radial Load Cap., lbs.		
Inch Sizes														
10-32	3/16"	13°	5/8"	5/16"	1 1/4"	3/4"	1,174	6072K61	$5.42	1 1/16"	1/2"	1,624	6072K144	$5.42
1/4"-28	1/4"	16°	3/4"	3/8"	1 9/16"	1"	2,168	6072K62	5.47	1 5/16"	11/16"	2,545	6072K154	5.42
5/16"-24	5/16"	14°	7/8"	7/16"	1 7/8"	1 1/4"	2,796	6072K63	5.53	1 3/8"	11/16"	3,200	6072K164	5.47
3/8"-24	3/8"	12°	1"	1/2"	1 15/16"	1 1/4"	4,012	6072K64	5.92	1 5/8"	13/16"	3,950	6072K174	5.47
7/16"-20	7/16"	14°	1 1/8"	9/16"	2 1/8"	1 3/8"	4,244	6072K114	7.00	1 13/16"	15/16"	4,300	6072K184	7.00
1/2"-20	1/2"	12°	1 5/16"	5/8"	2 7/16"	1 1/2"	6,700	6072K124	9.71	2 1/8"	1 1/16"	6,700	6072K212	9.03
5/8"-18	5/8"	16°	1 1/2"	3/4"	2 5/8"	1 5/8"	7,400	6072K134	13.11	2 1/2"	1 3/8"	7,400	6072K222	12.79
3/4"-16	3/4"	14°	1 3/4"	7/8"	2 7/8"	1 3/4"	11,550	6072K68	16.92	2 7/8"	1 9/16"	11,550	6072K58	16.58
***Metric Sizes**—Dimensions in mm*														
M8×1.25	8	18°	22	12	42	25	3,007	6072K42	13.55	36	17	4,010	6072K52	13.55
M10×1.5	10	17°	27	14	48	29	20,991	6072K43	15.47	43	21	6,292	6072K53	15.47
M12×1.75	12	17°	30	16	54	33	5,848	6072K44	22.18	50	24	7,798	6072K54	22.18

Ultra-Precision Ball Joint Rod Ends

Made to extremely tight tolerances, these rod ends are for applications that require positioning accuracy, such as accelerator and other types of control linkages. They have a chrome-plated bearing steel ball, which is heat treated for added strength, that glides on a brass insert for smooth operation. Housing is zinc-plated steel (except 8286K111 and K311 are plain steel; 6130K11 and K31 are cadmium-plated steel). All have right-hand shank threads.

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Male-Threaded Shank (D)	Thread Lg. (E)	Static Radial Load Cap., lbs.			Female-Threaded Shank (D)	Thread Lg. (E)	Static Radial Load Cap., lbs.		
6-32	1/8"	16°	15/32"	1/4"	15/16"	1/2"	450	8286K111	$46.24	13/16"	3/8"	1,200	8286K311	$45.80
8-32	1/8"	12°	9/16"	1/4"	1 1/8"	5/8"	650	6130K11	47.33	7/8"	3/8"	1,700	6130K31	45.59
10-32	3/16"	10°	5/8"	5/16"	1 1/4"	3/4"	900	6130K12	14.12	1 1/16"	9/16"	1,850	6130K32	13.63
1/4"-28	1/4"	13°	3/4"	3/8"	1 9/16"	1"	1,700	6130K13	14.12	1 5/16"	3/4"	2,700	6130K33	13.63
5/16"-24	5/16"	11°	7/8"	7/16"	1 7/8"	1 1/4"	2,500	6130K14	15.92	1 3/8"	3/4"	3,350	6130K34	14.10
7/16"-20	7/16"	11°	1 1/8"	9/16"	2 1/8"	1 3/8"	5,000	6130K15	21.84	1 13/16"	1 1/16"	5,350	6130K35	19.10

Aluminum Ball Joint Rod Ends

Lightweight and corrosion resistant, rod ends have an anodized aluminum housing and chrome-plated bearing steel ball. A PTFE-lined steel insert allows smooth ball rotation and reduces the need for lubrication.

To Order: Please specify right- or left-hand shank threads.

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Male-Threaded Shank (D)	Thread Lg. (E)	Static Radial Load Cap., lbs.			Female-Threaded Shank (D)	Thread Lg. (E)	Static Radial Load Cap., lbs.		
10-32	3/16"	13°	5/8"	5/16"	1 1/4"	3/4"	1,360	60685K71	$14.86	1 1/16"	1/2"	1,360	60685K31	$14.86
1/4"-28	1/4"	16°	3/4"	3/8"	1 9/16"	1"	2,465	60685K72	15.00	1 5/16"	11/16"	2,592	60685K32	15.00
5/16"-24	5/16"	14°	7/8"	7/16"	1 7/8"	1 1/4"	2,850	60685K73	15.14	1 3/8"	11/16"	2,890	60685K33	15.14
3/8"-24	3/8"	12°	1"	1/2"	1 15/16"	1 1/4"	4,208	60685K11	14.37	1 5/8"	13/16"	3,952	60685K34	15.54
7/16"-20	7/16"	14°	1 1/8"	9/16"	2 1/8"	1 3/8"	4,534	60685K12	16.25	1 13/16"	15/16"	4,534	60685K35	13.00
1/2"-20	1/2"	12°	1 5/16"	5/8"	2 7/16"	1 1/2"	7,698	60685K13	19.12	2 1/8"	1 1/16"	7,006	60685K36	15.30
5/8"-18	5/8"	16°	1 1/2"	3/4"	2 5/8"	1 5/8"	8,516	60685K14	23.12	2 1/2"	1 3/8"	8,516	60685K37	18.50
3/4"-16	3/4"	14°	1 3/4"	7/8"	2 7/8"	1 3/4"	13,319	60685K15	26.25	2 7/8"	1 9/16"	13,319	60685K38	23.00

For information about rod ends, see page 1187.

Dimensions

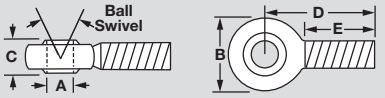

Thread Direction

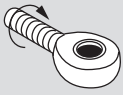

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

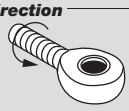

Left-hand threaded shank tightens when turned counter-clockwise.

Corrosion-Resistant Nylon Ball Joint Rod Ends

Made of an impact-resistant nylon composite, these rod ends withstand corrosion as well as fuels, lyes, and weak acids. They are also 80% lighter than steel. A self-lubricating nylon ball ensures low friction and maximum abrasion resistance. Temperature range is −22° to +176° F.

To Order: Please specify right- or left-hand shank threads.

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Male-Threaded Shank (D)	Male-Threaded Shank Thread Lg. (E)	Male-Threaded Shank Static Radial Load Cap., lbs.			Female-Threaded Shank (D)	Female-Threaded Shank Thread Lg. (E)	Female-Threaded Shank Static Radial Load Cap., lbs.		
10-32	3/16"	25°	5/8"	5/16"	1 1/4"	3/4"	15	1064K51	$4.40	1 1/16"	1/2"	67	1064K71	$4.91
1/4"-28	1/4"	25°	3/4"	3/8"	1 9/16"	1"	22	1064K52	4.72	1 5/16"	11/16"	90	1064K72	5.14
5/16"-24	5/16"	25°	7/8"	7/16"	1 7/8"	1 1/4"	33	1064K53	5.65	1 3/8"	11/16"	112	1064K73	5.23
3/8"-24	3/8"	22°	1"	1/2"	1 15/16"	1 1/4"	78	1064K54	6.12	1 5/8"	13/16"	225	1064K74	6.07
7/16"-20	7/16"	22°	1 1/8"	9/16"	2 1/8"	1 3/8"	89	1064K55	7.40	1 13/16"	15/16"	270	1064K75	7.40
1/2"-20	1/2"	22°	1 5/16"	5/8"	2 7/16"	1 1/2"	101	1064K56	8.93	2 1/8"	1 1/16"	337	1064K76	8.93
5/8"-18	5/8"	22°	1 1/2"	3/4"	2 5/8"	1 5/8"	134	1064K57	12.25	2 1/2"	1 3/8"	382	1064K77	12.25
3/4"-16	3/4"	22°	1 3/4"	7/8"	2 7/8"	1 3/4"	224	1064K58	15.60	2 7/8"	1 9/16"	517	1064K78	16.20

Super-Swivel Ball Joint Rod Ends

With at least 55° of ball swivel, these rod ends accommodate greater misalignment than any other rod end we offer. All have a black-oxide coated, alloy steel housing and a chrome-plated bearing steel ball that are heat treated for added strength. A PTFE liner allows smooth ball rotation and reduces the need for lubrication.

To Order: Please specify right- or left-hand shank threads.

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Static Radial Load Cap., lbs.	Male-Threaded Shank (D)	Male-Threaded Shank Thread Lg. (E)			Female-Threaded Shank (D)	Female-Threaded Shank Thread Lg. (E)		
3/8"-24	3/8"	55°	1 1/8"	7/8"	11,050	2 1/8"	1 3/8"	6960T6	$9.92	1 3/4"	15/16"	6960T7	$9.92
1/2"-20	1/2"	65°	1 1/2"	1 1/4"	16,240	2 5/8"	1 5/8"	6960T1	20.36	2 5/16"	1 1/4"	6960T8	20.36
5/8"-18	1/2"	65°	1 3/4"	1 1/4"	24,158	2 7/8"	1 3/4"	6960T2	26.18	—	—	—	—
5/8"-18	5/8"	64°	1 3/4"	1 3/8"	21,219	2 7/8"	1 3/4"	6960T3	27.84	2 11/16"	1 9/16"	6960T9	27.84
3/4"-16	5/8"	64°	2"	1 3/8"	30,290	3 3/8"	2"	6960T4	29.38	—	—	—	—
3/4"-16	3/4"	61°	2"	1 1/2"	29,127	3 3/8"	2"	6960T5	30.36	3 1/16"	1 3/4"	6960T13	30.36

Rod-End Inserts

Attach these adapters to your rod end to move your fastener away from the rod-end body to increase misalignment capabilities.

***High-Misalignment Step-Down Inserts*—** The ID of your rod end is decreased to allow approximately 60° of misalignment. Made of 17-4 PH stainless steel.

***Washer Inserts*—** Also known as retaining safety washers, these inserts protect your rod end and handle some additional misalignment without changing your ball ID. Made of zinc-plated steel.

High-Misalignment Step-Down Inserts

For Rod End Ball ID	Insert ID	Insert OD	Insert O'all Lg.		Pair
1/2"	3/8"	5/8"	5/8"	4723T1	$9.82
5/8"	1/2"	13/16"	7/8"	4723T2	13.80
3/4"	1/2"	1"	7/8"	4723T3	15.76
3/4"	5/8"	1"	7/8"	4723T4	15.76
7/8"	3/4"	1 1/16"	1 1/4"	4723T5	16.64
1"	3/4"	1 1/8"	1 3/8"	4723T6	22.22

Washer Inserts

For Rod End Shank Size	Insert ID	Insert OD	Insert O'all Ht.		Each
1/4"	0.25"	0.7"	0.15"	95034A100	$3.10
5/16"	0.31"	0.83"	0.18"	95034A200	3.33
3/8"	0.37"	0.93"	0.19"	95034A300	3.31
1/2"	0.5"	1.24"	0.24"	95034A500	3.31
5/8"	0.62"	1.42"	0.28"	95034A600	3.38
3/4"	0.75"	1.63"	0.31"	95034A700	3.80

Mil. Spec. Ball Joint Rod Ends

Made to stringent military specifications, these rod ends meet SAE-AS81935 (formerly MIL-B-81935). All have a heat- and chromate-treated, cadmium-plated, alloy steel housing; a heat-treated, Type 440C stainless steel ball; and a self-lubricating, PTFE-lined, heat-treated, Type 17-4 PH stainless steel insert (PTFE lining meets SAE-AS81820).

To Order: Please specify right- or left-hand shank threads (unless noted).

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Static Radial Load Cap., lbs.	Male-Threaded Shank (D)	Male-Threaded Shank Thread Lg. (E)			Female-Threaded Shank (D)	Female-Threaded Shank Thread Lg. (E)		
5/16"-24	3/16"	15°	13/16"	7/16"	2,360	1 9/16"	15/16"	2998K11	$109.05	1 3/8"	3/4"	2998K31	$114.47
5/16"-24	1/4"	15°	13/16"	7/16"	4,860	1 9/16"	15/16"	2998K12	121.59	1 7/16"	3/4"	2998K32	117.83
5/16"-24	5/16"	14°	7/8"	7/16"	7,180	1 7/8"	1 3/16"	2998K13	141.88	—	—	—	—
3/8"-24	3/8"	8°	1"	1/2"	8,550	1 15/16"	1 3/16"	2998K14	162.12	1 13/16"	1"	2998K34	158.11
7/16"-20	7/16"	10°	1 1/8"	9/16"	12,000	2 1/8"	1 1/4"	2998K15	182.41	2"	1 1/8"	2998K351 ♣	170.81
1/2"-20	1/2"	9°	1 5/16"	5/8"	19,500	2 7/16"	1 7/16"	2998K16	209.43	2 1/4"	1 1/4"	2998K36	194.35
5/8"-18	5/8"	12°	1 1/2"	3/4"	21,900	2 5/8"	1 9/16"	2998K17	236.38	2 1/2"	1 3/8"	2998K37	209.50
3/4"-16	3/4"	13°	1 3/4"	7/8"	29,300	2 7/8"	1 11/16"	2998K18	287.09	2 7/8"	1 5/8"	2998K38	305.19
7/8"-14	7/8"	6°	2"	7/8"	34,500	3 3/8"	2"	2998K19	312.25	3 3/8"	1 7/8"	2998K39	299.10
1 1/4"-12	1"	12°	2 3/4"	1 3/8"	80,300	4 1/8"	2 5/16"	2998K21	416.66	4 1/8"	2 1/8"	2998K41	414.40

♣ Available with right-hand thread only.

Dimensions

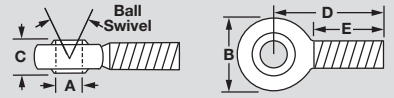

Thread Direction

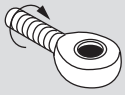

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

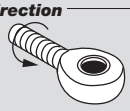

Left-hand threaded shank tightens when turned counter-clockwise.

High-Speed Mil. Spec. Ball Bearing Rod Ends

A double row of precision ball bearings allows high speeds and smooth operation. All rod ends have a heat-treated, cadmium-plated steel housing; heat-treated bearing steel balls that are packed with grease that meets MIL-PRF-81322G; and a heat-treated, cadmium-plated bearing steel insert. They also have PTFE seals to block contaminants.

Male-threaded rod ends meet MS-21151. ***Female-threaded rod ends*** meet MS-21153. All have right-hand shank threads.

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	Static Radial Load Cap., lbs.	Male-Threaded Shank O'all Thick. (C)	(D)	Thread Lg. (E)			Female-Threaded Shank O'all Thick. (C)	(D)	Thread Lg. (E)		
10-32	3/16"	20°	25/32"	1,000	7/16"	1 3/8"	3/4"	2986K11	$133.39	—	—	—	—	—
1/4"-28	3/16"	20°	3/4"	1,000	7/16"	1 9/16"	1"	2986K12	133.39	1/2"	1 3/8"	3/4"	2986K32	$147.63
5/16"-24	3/16"	20°	3/4"	1,000	—	—	—	—	—	7/16"	1 3/8"	3/4"	2986K34	156.67
5/16"-24	1/4"	20°	15/16"	1,720	—	—	—	—	—	9/16"	1 7/16"	3/4"	2986K35	148.36
3/8"-24	1/4"	20°	15/16"	1,720	9/16"	1 7/8"	1 1/8"	2986K17	144.36	—	—	—	—	—
3/8"-24	5/16"	20°	1 1/4"	2,920	7/8"	2 7/16"	1 9/16"	2986K18	210.42	—	—	—	—	—
7/16"-20	5/16"	20°	1 1/4"	2,920	7/8"	2 7/16"	1 9/16"	2986K19	202.11	—	—	—	—	—

Thrust-Rated Ball Joint Rod Ends

Thanks to an innovative body design that keeps the ball from being pushed out, these rod ends are able to take on thrust (side) loads. All have a zinc-plated steel housing; a steel ball; and an injection-molded, self-lubricating polyurethane insert. Temperature range is –40° to +176° F.

To Order: Please specify right- or left-hand shank threads (unless noted).

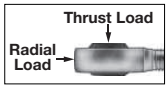

Shank Thread Size	Ball ID (A)	Max. Ball Swivel	O'all Wd. (B)	O'all Thick. (C)	Static Radial Load Cap., lbs.	Thrust Load Cap., lbs.	Male-Threaded Shank (D)	Thread Lg. (E)			Female-Threaded Shank (D)	Thread Lg. (E)		
Inch Sizes														
10-32	3/16"	36°	11/16"	5/16"	1,910	540	—	—	—	—	1 1/8"	9/16"	8405K291♣	$6.84
1/4"-28	1/4"	36°	13/16"	3/8"	2,206	662	1 7/16"	13/16"	8405K11	$11.89	1 3/16"	9/16"	8405K31	11.06
5/16"-24	5/16"	36°	15/16"	1/2"	3,972	1,545	1 11/16"	1"	8405K12	12.50	1 7/16"	11/16"	8405K32	11.90
3/8"-24	3/8"	28°	1 1/8"	9/16"	4,854	1,765	1 7/8"	1 1/8"	8405K131♣	14.00	1 11/16"	13/16"	8405K331♣	12.91
1/2"-20	1/2"	30°	1 1/4"	5/8"	5,934	2,158	2 7/16"	1 7/16"	8405K35	24.50	2"	1"	8405K34	27.00
5/8"-18	5/8"	30°	1 1/2"	3/4"	7,913	2,877	2 5/8"	1 7/16"	8405K37	45.70	2 1/2"	1 5/16"	8405K36	51.42
3/4"-16	3/4"	30°	1 13/16"	7/8"	9,891	3,596	3"	1 3/4"	8405K39	67.50	2 7/8"	1 11/16"	8405K38	70.90
Metric Sizes (DIN 648)—*Dimensions in mm*														
M6×1	6	36°	20	9	2,206	662	36	21	8411K11	13.02	30	14	8411K31	10.86
M8×1.25	8	36°	24	12	3,972	1,545	42	25	8411K12	9.46	36	17	8411K32	12.12
M10×1.5	10	28°	28	14	4,854	1,765	48	28	8411K13	15.11	43	21	8411K33	13.34

♣ Available with right-hand threads.

Tube-End Weld Nuts

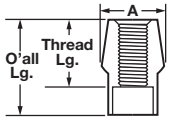

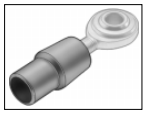

Add threads to the ends of tubes to install rod ends. Also known as tube adapters and weldable threaded tube ends, these nuts weld to both mild steel and alloy steel but cannot be welded to coated metal. Nuts are made from alloy steel.

To Order: Please specify right- or left-hand threads.

For Tube OD (A)	Wall Thick.	Thread Size	Thread Lg.	O'all Lg.		
3/8"	0.058"	10-32	1"	1"	94640A870	$5.64
1/2"	0.058"	1/4"-28	1"	1"	94640A880	5.64
3/4"	0.065"	5/16"-24	7/8"	1 3/8"	94640A510	5.04
3/4"	0.065"	3/8"-24	15/16"	1 3/8"	94640A515	5.04
7/8"	0.058"	7/16"-20	1 1/8"	1 3/8"	94640A555	5.14
7/8"	0.058"	1/2"-20	1 1/4"	1 3/8"	94640A560	5.14
1"	0.058"	1/2"-20	1 1/4"	1 1/2"	94640A620	5.40
1"	0.065"	1/2"-20	1 1/4"	1 1/2"	94640A640	5.40
1"	0.083"	1/2"-20	1 1/4"	1 1/2"	94640A665	5.40
1"	0.095"	1/2"-20	1 1/4"	1 1/2"	94640A685	5.40
1 1/4"	0.095"	5/8"-18	1 1/2"	1 1/2"	94640A750	6.12
1 1/4"	0.095"	3/4"-16	1 1/2"	1 1/2"	94640A755	6.12
1 1/4"	0.12"	5/8"-18	1 9/16"	1 7/8"	94640A760	6.12
1 1/4"	0.12"	3/4"-16	1 7/8"	1 7/8"	94640A765	6.12
1 1/2"	0.12"	3/4"-16	1 7/8"	2"	94640A810	6.12

Seals for Ball Joint Rod Ends

Keep dirt out and lubrication in to extend the life of your rod ends. Seals are nitrile with a stainless steel washer for corrosion resistance. Use them between the head of your rod end and your fastener.

For Rod End Ball ID	OD	O'all Ht.		Pair
Inch Sizes				
3/16"	7/16"	1/16"	4737T1	$6.95
1/4"	1/2"	1/8"	4737T2	5.62
5/16"	11/16"	3/16"	4737T3	5.62
3/8"	13/16"	3/16"	4737T4	5.62
7/16"	7/8"	1/4"	4737T5	5.62
1/2"	1 1/8"	1/4"	4737T6	5.62
5/8"	1 1/4"	1/4"	4737T7	6.38
3/4"	1 3/8"	3/8"	4737T8	7.00
1"	2 1/8"	1/2"	4737T9	7.84
Metric Sizes—*Dimensions in mm*				
5	11	2	4737T11	6.95
6	13	3	4737T12	5.62
8	18	5	4737T13	5.62
10	20	6	4737T14	5.62
12	29	6	4737T15	5.62
14	29	6	4737T16	6.22
16	32	7	4737T17	6.41
18	33	8	4737T18	7.00
20	38	10	4737T19	7.00

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

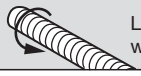

Left-hand threaded shank tightens when turned counterclockwise.

Ball Joint Linkages

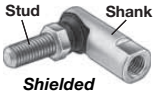

Shielded

Bent Swivel

Quick Disconnect

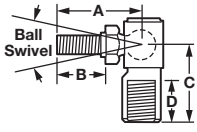

These linkages permit movement and misalignment while allowing adjustment for excess play. Inside each linkage housing you'll find a free-moving ball stud that provides an excellent pivoting connection between light mechanical components and controls. Linkages have a female-threaded shank with right-hand threads (unless noted). They are not load rated.

Steel Linkages— Housing and ball stud are zinc-plated steel.

Stainless Steel Linkages— Housing and ball stud are 300 Series stainless steel for corrosion resistance.

Shielded linkages have a rubber shield that keeps dirt and other contaminants out. ***Bent-swivel linkage*** is lightweight and good for light duty applications. ***Quick-disconnect linkages*** have a retaining sleeve that's easy to disconnect from the ball stud for quick installation.

Stud and Shank Thread Size	Max. Ball Swivel	Lg. (A)	Stud Lg. (B)	Lg. (C)	Thread Dp. (D)		
Inch Sizes							
Steel Shielded Linkages							
10-32	35°	7/8"	7/16"	7/8"	7/16"	6058K21 ■	$2.83
1/4"-28	35°	1"	9/16"	1"	1/2"	6058K22 ■	2.54
5/16"-24	35°	13/16"	11/16"	1 1/8"	9/16"	6058K23 ■	3.93
3/8"-24	35°	1 9/16"	7/8"	1 3/8"	3/4"	6058K24 ■	4.45
1/2"-20	35°	2"	1 1/8"	1 15/16"	1"	6058K27 ■	5.09
7/16"-20	35°	2"	1 1/8"	1 15/16"	1"	6058K26 ■	5.11
Stainless Steel Shielded Linkages							
10-32	35°	7/8"	7/16"	7/8"	7/16"	6058K35	5.42
1/4"-28	35°	1"	9/16"	1"	1/2"	6058K36	5.72
5/16"-24	35°	13/16"	11/16"	1 1/8"	9/16"	6058K37	6.08
3/8"-24	35°	1 9/16"	7/8"	1 3/8"	3/4"	6058K38	6.78
1/2"-20	35°	2"	1 1/8"	1 15/16"	1"	6058K39	10.92
Steel Bent-Swivel Linkages							
1/4"-20	30°	1 3/16"	9/16"	1 1/16"	11/16"	6058K43	4.52
Steel Quick-Disconnect Linkages							
10-32	30°	7/8"	7/16"	7/8"	7/16"	6058K31	4.38
5/16"-24	30°	13/16"	11/16"	1 1/8"	5/8"	6058K44	5.79
1/2"-20	30°	2"	1 1/8"	2"	1"	6058K33	5.60
Stainless Steel Quick-Disconnect Linkages							
10-32	30°	7/8"	7/16"	7/8"	7/16"	6058K71	5.54
1/4"-28	30°	1"	9/16"	1"	9/16"	6058K32	4.52
1/4"-28	30°	1"	9/16"	15/16"	9/16"	6058K72	6.57
5/16"-24	30°	13/16"	11/16"	1 1/8"	5/8"	6058K73	7.32
3/8"-24	30°	1 9/16"	7/8"	1 3/8"	13/16"	6058K34	6.69
3/8"-24	30°	1 9/16"	7/8"	1 3/8"	13/16"	6058K74	13.57
1/2"-20	30°	2"	1 1/8"	2"	1"	6058K75	13.91
Metric Sizes— *Dimensions in mm*							
Steel Shielded Linkages							
M6×1.0	35°	26	14	25	13	6058K81 ■	$4.50
M8×1.25	35°	31	17.5	28.5	14	6058K82 ■	4.98
M10×1.5	35°	40	22	35	19	6058K83 ■	4.81
M12×1.75	35°	51	28.5	49	25	6058K84	5.57
Stainless Steel Shielded Linkages							
M6×1.0	35°	26	14	25	13	6058K85 ■	7.12
M8×1.25	35°	31	17.5	28.5	14	6058K86 ■	7.50
M10×1.5	35°	40	22	35	19	6058K87 ■	12.40
M12×1.75	35°	51	28.5	49	25	6058K88 ■	17.60
Steel Quick-Disconnect Linkages							
M5×0.8	30°	22	11	23	11	6058K61	5.48
M6×1.0	30°	26	14	25	13.5	6058K62	5.50
M8×1.25	30°	31	17.5	28.5	15	6058K63	5.93
M10×1.5	30°	40	22	35	21	6058K64	7.17
M12×1.75	30°	51	28.5	51.5	25	6058K65	9.29
Stainless Steel Quick-Disconnect Linkages							
M5×0.8	30°	22	11	23	11	6058K66	7.24
M6×1.0	30°	26	14	24.5	13.5	6058K67	8.19
M8×1.25	30°	31	17.5	28.5	15	6058K68	8.67

■ **To Order:** Please specify right- or left-hand shank threads.

Inline Ball Joint Linkages

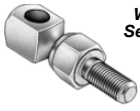

Without Set Screw

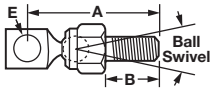

With Set Screw and Nut

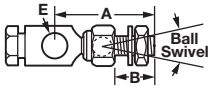

Also known as control swivels, these linkages have a "captured" ball with a free-moving ball stud, which provides an excellent pivoting connection between light mechanical components and controls while constraining excess play. Their inline design makes them the choice for linear push applications along the length of a connecting rod.

In addition to a zinc-plated steel housing and ball stud, these linkages have a vibration-dampening rubber disc. Maximum ball swivel is 30°. Temperature range is –60° to +250°F. All have right-hand threads. They are not load rated.

Linkages with set screw and nut have a self-locking set screw and integral nut with lock washer for added holding strength.

Stud and Shank Thread Size	Lg. (A)	Stud Lg. (B)	Dia. (E)		
Linkages without Set Screw					
1/4"-28	1 5/16"	9/16"	0.257"	6058K13	$4.03
Linkages with Set Screw and Nut					
10-32	1 1/16"	5/16"	0.328"	6154K11	3.89
1/4"-28	1 3/16"	7/16"	0.328"	6154K12	3.94
1/4"-28	1 5/16"	9/16"	0.328"	6154K15	4.42
1/4"-20	1 3/16"	7/16"	0.328"	6154K13	4.42
5/16"-24	1 3/8"	5/8"	0.328"	6154K14	5.56

Heavy Duty Inline Ball Joint Linkages

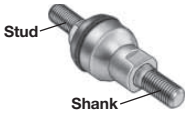

Male-Threaded Shank

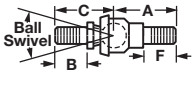

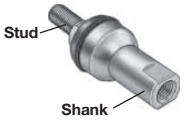

Female-Threaded Shank

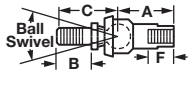

Made to withstand wear, our heavy duty linkages have a polyurethane liner (also known as a boot) that not only keeps out contaminants, but also acts as a cushion to reduce vibration. Use these linkages to compensate for misalignment and to make pivoting connections. The housing and ball stud are made of zinc-plated steel. Maximum ball swivel is 35°. Temperature range is –40° to +176°F. All have right-hand threads. They are not load rated.

Male-Threaded Shank

Stud and Shank Thread Size	Lg. (A)	Stud Lg. (B)	Lg. (C)	Shank Lg. (F)		
Inch						
1/4"-28	1"	1/2"	15/16"	1/2"	8412K41	$6.48
5/16"-24	1 1/4"	11/16"	1 3/16"	11/16"	8412K42	11.08
3/8"-24	1 9/16"	13/16"	1 7/16"	13/16"	8412K43	13.79
Metric— *Dimensions in mm*						
M6×1.0	26.5	12.5	23.5	12.5	8412K11	6.48
M8×1.25	32.5	16.5	29.5	16.5	8412K12	11.08
M10×1.5	39	20	36	20	8412K13	12.98

Female-Threaded Shank

Stud and Shank Thread Size	Lg. (A)	Stud Lg. (B)	Lg. (C)	Shank Lg. (F)		
Inch						
1/4"-28	1"	1/2"	15/16"	7/16"	8412K44	$6.48
5/16"-24	1 3/16"	5/8"	1 3/16"	9/16"	8412K45	11.08
3/8"-24	1 3/8"	13/16"	1 7/16"	5/8"	8412K46	13.79
Metric— *Dimensions in mm*						
M6×1.0	25	12.5	23.5	11.5	8412K14	6.48
M8×1.25	30	16.5	29.5	14	8412K15	13.58
M10×1.5	35	20	36	15.5	8412K16	13.79

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

Left-hand threaded shank tightens when turned counterclockwise.

Heavy Duty Ball Joint Linkages

Able to stand up to frequent use, these linkages offer superior wear resistance. All are ball joint rod ends with the studs attached to simplify mounting. They have a chrome-plated, bearing-steel ball stud that's machined to fit perfectly inside its housing, which is zinc-plated steel. Linkages are great for clutches, throttles, and shift control rods. Periodic lubrication may be required to keep them operating smoothly. Maximum ball swivel is approximately 50°. They are not load rated.

Linkages with grease fitting are easy to lubricate.

To Order: Please specify right- or left-hand shank threads as well as right- or left-hand stud threads.

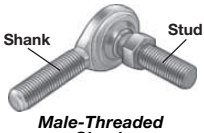

Male-Threaded Shank

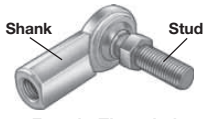

Female-Threaded Shank

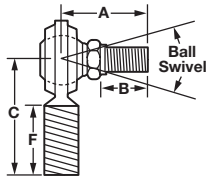

Stud and Shank Thread Size	Lg. (A)	Stud Lg. (B)	Male-Threaded Shank Lg. (C)	Male-Threaded Shank Shank Lg. (F)			Female-Threaded Shank Lg. (C)	Female-Threaded Shank Shank Lg. (F)		
Without Grease Fitting										
10-32	1 1/64"	1/2"	1 1/4"	3/4"	60645K21	$4.91	1 1/16"	1/2"	60645K41	$4.70
1/4"-28	1 1/32"	9/16"	1 9/16"	1"	60645K22	4.76	1 5/16"	11/16"	60645K42	4.55
5/16"-24	1 7/32"	11/16"	1 7/8"	1 1/4"	60645K23	4.87	1 3/8"	11/16"	60645K43	4.66
3/8"-24	1 9/16"	29/32"	1 15/16"	1 1/4"	60645K24	5.73	1 5/8"	13/16"	60645K44	5.49
7/16"-20	1 3/4"	1 1/16"	2 1/8"	1 3/8"	60645K25	7.09	1 13/16"	15/16"	60645K45	6.79
1/2"-20	2"	1 1/8"	2 7/16"	1 1/2"	60645K26	9.04	2 1/8"	1 1/16"	60645K46	8.66
5/8"-18	2 1/2"	1 1/2"	2 5/8"	1 5/8"	60645K27	14.40	2 1/2"	1 3/8"	60645K47	13.79
3/4"-16	3"	1 13/16"	2 7/8"	1 3/4"	60645K28	21.02	2 7/8"	1 9/16"	60645K48	20.13
With Grease Fitting										
1/4"-28	1"	9/16"	—	—	—	—	1 5/16"	11/16"	4444T91	5.09
5/16"-24	1 3/16"	11/16"	—	—	—	—	1 3/8"	11/16"	4444T92	5.32
3/8"-24	1 9/16"	7/8"	1 15/16"	1 1/4"	4444T81	6.20	1 5/8"	13/16"	4444T93	6.20
7/16"-20	1 3/4"	1 1/16"	2 1/8"	1 3/8"	4444T82	7.59	1 13/16"	15/16"	4444T94	7.59
1/2"-20	2"	1 1/8"	2 7/16"	1 1/2"	4444T83	9.59	2 1/8"	1 1/16"	4444T95	9.59
5/8"-18	2 1/2"	1 1/2"	2 5/8"	1 5/8"	4444T84	15.07	2 1/2"	1 3/8"	4444T96	15.07
3/4"-16	3"	1 13/16"	2 7/8"	1 3/4"	4444T85	21.84	2 7/8"	1 9/16"	4444T97	21.84

Lubrication-Free Heavy Duty Ball Joint Linkages

In addition to superior wear resistance, these linkages have an insert that's designed to eliminate the need for lubrication. All are ball joint rod ends with the studs attached to simplify mounting. They have a ball stud that's machined to fit perfectly inside its housing. Linkages are great for clutches, throttles, and shift control rods. Maximum ball swivel is approximately 50°. They are not load rated.

Lubrication-free linkages have an oil-impregnated bronze insert. Housing is zinc-plated steel. Ball stud is chrome-plated steel.

High-performance lubrication-free linkages have a PTFE-lined, heat-treated steel race; a zinc-plated alloy steel housing; and a chrome-plated, bearing-steel ball stud. Temperature range is –65° to +325° F.

To Order: Please specify right- or left-hand shank threads as well as right- or left-hand stud threads.

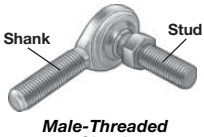

Male-Threaded Shank

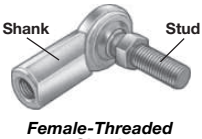

Female-Threaded Shank

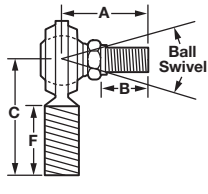

Stud and Shank Thread Size	Lg. (A)	Stud Lg. (B)	Male-Threaded Shank Lg. (C)	Male-Threaded Shank Shank Lg. (F)			Female-Threaded Shank Lg. (C)	Female-Threaded Shank Shank Lg. (F)		
Lubrication Free										
10-32	1 1/64"	1/2"	1 1/4"	3/4"	6072K81	$6.74	1 1/16"	1/2"	6072K71	$6.74
1/4"-28	1 1/32"	9/16"	1 9/16"	1"	6072K82	6.89	1 5/16"	11/16"	6072K72	6.87
5/16"-24	1 7/32"	11/16"	1 7/8"	1 1/4"	6072K83	7.03	1 3/8"	11/16"	6072K73	6.92
3/8"-24	1 9/16"	29/32"	1 15/16"	1 1/4"	6072K84	7.47	1 5/8"	13/16"	6072K74	7.03
7/16"-20	1 3/4"	1 1/16"	2 1/8"	1 3/8"	6072K85	8.84	1 13/16"	15/16"	6072K75	8.82
1/2"-20	2"	1 1/8"	2 7/16"	1 1/2"	6072K86	11.84	2 1/8"	1 1/16"	6072K76	11.16
5/8"-18	2 1/2"	1 1/2"	2 5/8"	1 5/8"	6072K87	16.97	2 1/2"	1 3/8"	6072K77	16.68
3/4"-16	3"	1 13/16"	2 7/8"	1 3/4"	6072K88	24.26	2 7/8"	1 9/16"	6072K78	23.97
High-Performance Lubrication Free										
10-32	1 1/64"	1/2"	1 1/4"	3/4"	60745K61	18.58	1 1/16"	9/16"	60745K81	18.58
1/4"-28	1 1/32"	9/16"	1 9/16"	1"	60745K62	18.72	1 5/16"	3/4"	60745K82	18.72
5/16"-24	1 7/32"	11/16"	1 7/8"	1 1/4"	60745K63	19.09	1 3/8"	3/4"	60745K83	19.09
3/8"-24	1 9/16"	29/32"	1 15/16"	1 1/4"	60745K64	20.81	1 5/8"	15/16"	60745K84	20.81
7/16"-20	1 3/4"	1 1/16"	2 1/8"	1 3/8"	60745K65	24.91	1 13/16"	1 1/16"	60745K85	24.91
1/2"-20	2"	1 1/8"	2 7/16"	1 1/2"	60745K66	29.58	2 1/8"	1 3/16"	60745K86	29.58
5/8"-18	2 1/2"	1 1/2"	2 5/8"	1 5/8"	60745K67	39.63	2 1/2"	1 1/2"	60745K87	39.63
3/4"-16	3"	1 13/16"	2 7/8"	1 3/4"	60745K68	56.21	2 7/8"	1 3/4"	60745K88	56.21

Metric Heavy Duty Ball Joint Linkages

Offering strength and durability, these linkages are ball joint rod ends with studs attached to simplify mounting on your metric components. All have a die cast zinc housing and a right-hand threaded steel ball stud. A synthetic rubber dust cover seals the ball joint (which comes packed with lubricant) to keep dirt out. Maximum ball swivel is 34°. Maximum temperature is 176° F. All linkages have a female-threaded shank.

To Order: Please specify right- or left-hand shank threads.

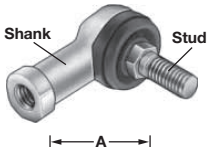

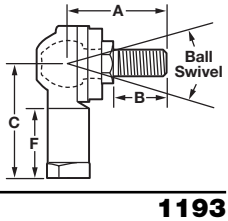

Stud and Shank Thread Size	Lg. (A), mm	Stud Lg. (B), mm	Lg. (C), mm	Shank Lg. (F), mm	Static Radial Load Cap., lbs.		
M5×0.8	25	10	30	16	265	6275K22	$10.32
M6×1	25	10	30	16	375	6275K23	10.49
M8×1.25	31.5	12.5	36	19	985	6275K24	12.09
M10×1.25	37	17	43	23	1,664	6275K25	13.93
M10×1.5	57	23	37	21	1,663	6275K87	14.76
M12×1.75	50	20	50	27	2,226	6275K26	22.30

Right-Hand Threaded Connecting Rods

Add rod ends to one of these connecting rods to build a linkage. All have right-hand threads on both ends and are designed to work with right-hand threaded rod ends. Use them for remote valve operators, throttle controllers, shifting mechanisms, and virtually any push/pull assembly. Thread sizes through 5/16″ are zinc-plated steel; 3/8″ and larger are high-strength aluminum.

Thread Size	Thread Lg.	Rod OD	3″ O'all Lg.		6″ O'all Lg.		9″ O'all Lg.		12″ O'all Lg.		18″ O'all Lg.		24″ O'all Lg.	
Male-Threaded Ends														
10-32	1 3/16″	3/16″	6516K111★	$5.86	6516K11	$7.75	6516K117	$7.11	6516K12	$13.31	—	—	—	—
1/4″-28	1 1/2″	1/4″	6516K112★	6.14	6516K13	8.10	6516K118	7.40	6516K14	13.39	6516K15	$14.23	—	—
5/16″-24	1 5/8″	5/16″	6516K113★	6.39	6516K16	8.40	6516K119	7.69	6516K17	14.11	6516K18	15.22	6516K19	$17.09
3/8″-24	2″	3/8″	6516K114★	5.97	6516K21	7.90	6516K121	7.23	6516K22	10.50	6516K23	11.70	6516K24	11.08
7/16″-20	2″	7/16″	6516K115★	6.40	6516K26	8.20	6516K122	7.49	6516K27	9.41	6516K28	10.75	6516K29	11.96
1/2″-13	2″	1/2″	—	—	6516K89	13.63	—	—	6516K91	15.64	6516K93	17.44	6516K96	24.04
1/2″-20	2″	1/2″	6516K116★	6.83	6516K33	8.70	6516K123	7.91	6516K34	10.58	6516K35	14.22	6516K36	16.24
5/8″-11	3 5/8″	5/8″	—	—	—	—	—	—	6516K92	18.02	6516K94	21.24	6516K97	24.55
5/8″-18	3 5/8″	5/8″	—	—	—	—	—	—	6516K41	14.62	6516K42	17.07	6516K43	20.64
3/4″-10	3 5/8″	3/4″	—	—	—	—	—	—	—	—	6516K95	25.42	6516K98	30.11
3/4″-16	3 5/8″	3/4″	—	—	—	—	—	—	—	—	6516K46	22.07	6516K47	26.37
Female-Threaded Ends														
10-32	3/4″	1/4″	6516K1	7.19	6516K51	9.79	6516K6	9.29	6516K52	15.86	—	—	—	—
1/4″-28	1″	3/8″	6516K2	7.74	6516K53	10.18	6516K7	9.60	6516K54	17.65	6516K55	16.90	—	—
5/16″-24	1 1/4″	7/16″	6516K3	8.14	6516K56	10.48	6516K8	9.86	6516K57	16.50	6516K58	22.09	6516K59	19.41
3/8″-24	1 1/4″	7/16″	6516K4	8.26	6516K61	10.12	6516K9	10.00	6516K62	11.46	6516K63	12.75	6516K64	14.09
7/16″-20	1 3/8″	9/16″	—	—	6516K66	10.50	—	—	6516K67	12.00	6516K68	13.63	6516K69	14.89
1/2″-20	1 1/4″	5/8″	6516K5	8.71	—	—	6516K99	11.14	—	—	—	—	—	—
1/2″-20	1 1/2″	5/8″	—	—	6516K73	11.12	—	—	6516K74	13.42	6516K75	15.18	6516K76	17.52
5/8″-18	1 5/8″	3/4″	—	—	—	—	—	—	6516K79	15.76	6516K81	18.94	6516K82	22.12
3/4″-16	1 3/4″	7/8″	—	—	—	—	—	—	—	—	6516K85	23.04	6516K86	27.51

★ Thread length is 1″.

Easy-Adjust Turnbuckle-Style Threaded Connecting Rods

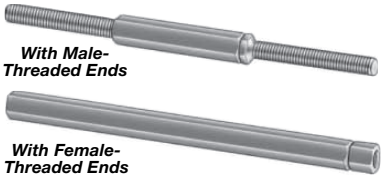

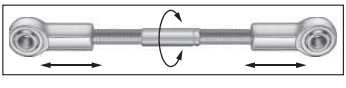

Similar to turnbuckles, these rods have right-hand threads on one end and left-hand threads on the other so you can make a linkage that adjusts for tension. Add right- and left-handed rod ends to build your linkage. All rods are made of high-strength aluminum. They have a hex-shaped body so you can adjust them with a wrench.

Note: The end with the left-handed threads is marked with a groove.

Male-Threaded Ends

Thread Size	Hex Body Wd.	Thread Lg.	4″ O'all Lg.		Thread Lg.	6″ O'all Lg.		12″ O'all Lg.		18″ O'all Lg.		24″ O'all Lg.	
10-32	1/4″	1″	8420K11	$23.41	1 3/16″	8420K61	$21.26	8420K23	$22.73	8420K81	$24.85	8420K41	$30.19
1/4″-28	1/4″	1″	8420K13	23.41	1 1/2″	8420K63	21.44	8420K25■	22.93	8420K83	25.15	8420K43	30.41
5/16″-24	5/16″	1 1/4″	8420K15	25.33	1 5/8″	8420K65	23.07	8420K27	23.37	8420K85	25.81	8420K45	31.77
3/8″-24	3/8″	1 1/4″	8420K17	27.30	2″	8420K67	23.25	8420K29	25.79	8420K87	29.68	8420K47	37.78
1/2″-20	1/2″	1 1/2″	8420K19	25.93	2″	8420K69	23.63	8420K32	26.22	8420K89	30.56	8420K49	40.26
3/4″-16	3/4″	1 3/4″	8420K22	31.37	2″	8420K72	28.44	8420K34	37.33	8420K92	47.26	8420K52	67.26

■ 1 3/16″ thread length.

Female-Threaded Ends

Thread Size	Thread Lg.	Hex Body Wd.	2″ O'all Lg.		3″ O'all Lg.		4″ O'all Lg.		6″ O'all Lg.		12″ O'all Lg.	
1/4″-28	3/4″	3/8″	8419K11	$15.67	8419K22	$16.15	8419K33	$16.48	8419K61	$17.45	8419K71	$23.67
5/16″-24	3/4″	1/2″	8419K12	15.78	8419K23	16.15	8419K34	16.48	8419K62	17.45	8419K72	25.41
3/8″-24	1″	1/2″	8419K13▲	15.78	8419K24	16.15	8419K35	16.48	8419K63	17.45	8419K73	25.41
1/2″-20	1″	5/8″	8419K14▲	15.85	8419K25	16.37	8419K36	16.93	8419K64	18.03	8419K74	26.41
3/4″-16	1″	1″	8419K15▲	20.26	8419K26	21.64	8419K37	23.11	8419K65	26.26	—	—

▲ 3/4″ thread length.

Thrust-Rated Ball Joint Bearings

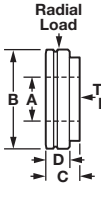

With a unique housing (outer ring) and ball (inner ring) design, these bearings are able to support heavy one-direction thrust loads and combination radial/thrust loads. Use them in tight spots where a rod end shank won't fit, or mount them in a drilled hole or a rod end blank (see page 1198). Also known as spherical bearings, each has a bearing steel housing and ball. They require lubrication and are not rated for maximum ball swivel.

ID (A)	OD (B)	Ball Thick. (C)	Housing Thick. (D)	Static Radial Load Cap., lbs.	Static Thrust Load Cap., lbs.		
1/2″	7/8″	5/16″	3/16″	4,000	5,200	2459K11	$51.01
5/8″	1 1/16″	3/8″	1/4″	6,900	8,700	2459K12	55.99
3/4″	1 1/4″	7/16″	5/16″	10,500	12,600	2459K13	69.91
7/8″	1 7/16″	1/2″	3/8″	14,900	17,600	2459K14	68.48
1″	1 5/8″	5/8″	7/16″	19,600	22,200	2459K15	66.25
1 1/4″	2″	3/4″	9/16″	32,000	35,400	2459K16	54.62
1 3/8″	2 3/16″	7/8″	5/8″	35,900	42,900	2459K17	63.88
1 1/2″	2 7/16″	15/16″	5/8″	44,500	51,900	2459K18	65.54
1 3/4″	2 13/16″	1 1/16″	13/16″	61,600	69,300	2459K19	104.43
2″	3 3/16″	1 1/4″	15/16″	82,500	91,700	2459K21	117.92

Ball Joint Swivel Bearings

Also known as spherical bearings, all of these bearings contain a ball that pivots to accommodate misalignment. Use them in tight spots where a rod end shank won't fit. ***Standard bearings*** require lubrication. ***Lubrication-free bearings*** have a PTFE-lined insert (except bearings with fiber-reinforced plastic housing) and do not require lubrication.

Fiber-Reinforced Plastic Housing— The housing and ball are fiber-reinforced plastic, which is 80% lighter than steel and offers superior corrosion resistance. Temperature range is –22° to +176° F.

Steel Housing with Steel Insert— Have a steel housing and insert with a chrome-plated, bearing steel ball that is heat treated for strength. Temperature range is –65° to +425° F for standard bearings; –65° to +275° F for lubrication-free bearings.

Steel Housing with Bronze Insert— Have a zinc-plated steel housing, nickel-plated steel ball, and oil-impregnated bronze insert to reduce the need for lubrication. Temperature range is –30° to +300° F.

Stainless Steel Housing with Stainless Steel Insert— Offering excellent corrosion resistance, these bearings have a Type 303 stainless steel housing and insert with a Type 440C stainless steel ball that is heat treated for strength. Temperature range is –65° to +425° F for standard bearings; –65° to +275° F for lubrication-free bearings.

Metric Steel Housing with Steel Insert— Have a steel housing and insert with a chrome-plated steel ball. Temperature range is –30° to +300° F.

Fiber-Reinforced Plastic

Standard Steel and Stainless Steel

Lubrication-Free Steel and Stainless Steel

Steel with Bronze Insert

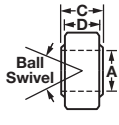

ID (A)	OD (B)	Ball Thick. (C)	Housing Thick. (D)	Standard Bearings: Max. Ball Swivel	Standard Bearings: Static Radial Load Cap., lbs.			Lubrication-Free Bearings: Max. Ball Swivel	Lubrication-Free Bearings: Static Radial Load Cap., lbs.		
Fiber-Reinforced Plastic Housing											
3/16"	9/16"	5/16"	7/32"	—	—		—	34°	225	**1071K11**	$3.87
1/4"	21/32"	3/8"	1/4"	—	—		—	30°	337	**1071K12**	4.13
5/16"	3/4"	7/16"	9/32"	—	—		—	29°	450	**1071K13**	4.36
3/8"	13/16"	1/2"	5/16"	—	—		—	25°	629	**1071K14**	4.71
1/2"	1 1/16"	5/8"	25/64"	—	—		—	25°	955	**1071K16**	6.42
3/4"	1 7/16"	7/8"	19/32"	—	—		—	23°	1,911	**1071K18**	9.91
Steel Housing with Steel Insert											
3/16"	9/16"	9/32"	7/32"	22°	4,875	**63195K61**	$7.19	22°	4,875	**63195K11**	10.58
1/4"	21/32"	11/32"	1/4"	27°	7,425	**63195K63**	7.06	27°	7,425	**63195K12**	9.86
5/16"	3/4"	3/8"	9/32"	24°	9,713	**63195K65**	7.50	24°	9,713	**63195K13**	10.31
3/8"	13/16"	13/32"	5/16"	20°	12,600	**63195K67**	7.56	20°	12,600	**63195K14**	10.36
7/16"	29/32"	7/16"	11/32"	16°	14,180	**63195K69**	10.11	16°	14,180	**63195K15**	12.89
1/2"	1"	1/2"	25/64"	19°	19,875	**63195K71**	7.78	19°	19,875	**63195K16**	10.58
9/16"	1 3/32"	9/16"	7/16"	19°	24,945	**63195K73**	8.25	19°	24,945	**63195K17**	12.28
5/8"	1 3/16"	5/8"	1/2"	17°	31,920	**63195K75**	8.22	17°	31,920	**63195K18**	11.06
3/4"	1 7/16"	3/4"	19/32"	18°	47,880	**63195K77**	12.11	18°	47,880	**63195K19**	14.83
7/8"	1 9/16"	7/8"	45/64"	19°	62,940	**63195K79**	16.31	19°	62,940	**63195K21**	18.92
1"	1 3/4"	1"	51/64"	20°	82,800	**63195K81**	20.50	20°	82,800	**63195K22**	23.08
1"	2"	1"	25/32"	18°	106,230	**63195K41**	61.74	18°	106,230	**63195K51**	70.90
1 1/4"	2 3/8"	1 3/16"	15/16"	17°	151,095	**63195K42**	77.90	17°	151,095	**63195K52**	87.06
1 1/2"	2 3/4"	1 3/8"	1 3/32"	17°	203,925	**63195K43**	92.84	17°	203,925	**63195K53**	102.00
2"	3 1/2"	1 3/4"	1 3/8"	17°	325,590	**63195K45**	139.68	17°	325,590	**63195K55**	148.84
Steel Housing with Bronze Insert											
3/16"	5/8"	9/32"	3/16"	42°	1,520	**4786T1**	23.15	—	—	—	—
1/4"	3/4"	3/8"	9/32"	34°	2,900	**4786T2**	16.27	—	—	—	—
5/16"	7/8"	7/16"	5/16"	34°	3,900	**4786T3**	17.38	—	—	—	—
3/8"	1"	1/2"	3/8"	28°	5,400	**4786T4**	18.54	—	—	—	—
7/16"	1 3/16"	9/16"	7/16"	30°	7,100	**4786T5**	20.63	—	—	—	—
1/2"	1 5/16"	17/32"	1/2"	25°	9,900	**4786T6**	24.23	—	—	—	—
5/8"	1 1/2"	7/8"	11/16"	42°	16,300	**4786T7**	27.54	—	—	—	—
3/4"	1 7/8"	7/8"	11/16"	25°	18,480	**4786T8**	29.77	—	—	—	—
Stainless Steel Housing with Stainless Steel Insert											
1/8"	15/32"	1/4"	3/16"	18°	3,200	**63215K62**	12.45	—	—	—	—
3/16"	9/16"	9/32"	7/32"	22°	4,400	**63215K63**	12.52	20°	3,975	**63215K31**	15.92
1/4"	21/32"	11/32"	1/4"	27°	6,700	**63215K64**	12.65	20°	6,040	**63215K52**	15.62
5/16"	3/4"	3/8"	9/32"	24°	9,200	**63215K65**	13.08	20°	8,750	**63215K53**	16.32
3/8"	13/16"	13/32"	5/16"	20°	12,400	**63215K66**	13.62	18°	10,540	**63215K34**	17.24
7/16"	29/32"	7/16"	11/32"	16°	14,900	**63215K67**	14.75	16°	13,200	**63215K55**	19.03
1/2"	1"	1/2"	25/64"	19°	17,900	**63215K68**	15.77	16°	17,900	**63215K56**	21.09
5/8"	1 3/16"	5/8"	1/2"	17°	32,000	**63215K69**	17.50	16°	30,500	**63215K38**	22.24
3/4"	1 7/16"	3/4"	19/32"	18°	48,000	**63215K71**	20.75	16°	46,400	**63215K39**	28.85
7/8"	1 9/16"	7/8"	45/64"	19°	69,000	**63215K72**	26.67	16°	62,200	**63215K61**	38.00
1"	1 3/4"	1"	51/64"	20°	83,000	**63215K73**	32.37	18°	82,200	**63215K42**	48.61
Metric Steel Housing with Steel Insert *—Dimensions in mm*											
6	18	9	7	25°	7,971	**2995K11**	9.50	25°	7,971	**2995K31**	11.52
8	22	12	9	28°	13,290	**2995K12**	9.68	28°	13,290	**2995K32**	12.22
10	26	14	11	27°	18,601	**2995K13**	9.90	27°	18,601	**2995K33**	12.40
12	30	16	12	26°	25,364	**2995K14**	10.84	26°	25,364	**2995K34**	12.66
14	34	19	14	32°	31,888	**2995K15**	13.18	32°	31,888	**2995K35**	16.94
16	38	21	15	30°	39,868	**2995K16**	22.80	30°	39,868	**2995K36**	22.80

Extended-Life Ball Joint Swivel Bearings

Specially designed lubrication channels and integral polyester seals allow these bearings to last up to three times longer than other ball joint swivel bearings. Also known as spherical bearings, each has a bearing steel housing, insert, and ball that pivots to accommodate misalignment. Seals keep grease in and contaminants out. Bearings come greased, and can be lubricated through a hole in the housing without removing the load. Maximum temperature is 250° F.

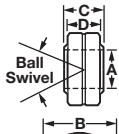

ID (A)	OD (B)	Ball Thick. (C)	Housing Thick. (D)	Max. Ball Swivel	Static Radial Load Cap., lbs.		
3/4"	1 1/4"	21/32"	9/16"	14°	21,200	**2699K11**	$51.05
7/8"	1 7/16"	49/64"	21/32"	14°	28,800	**2699K12**	39.06
1"	1 5/8"	7/8"	3/4"	14°	37,700	**2699K13**	36.47
1 1/4"	2"	1 3/32"	15/16"	14°	58,800	**2699K14**	42.01
1 3/8"	2 3/16"	1 3/16"	1 1/32"	14°	69,800	**2699K15**	56.31
1 1/2"	2 7/16"	1 5/16"	1 1/8"	14°	84,800	**2699K16**	57.37
1 3/4"	2 13/16"	1 17/32"	1 5/16"	14°	115,400	**2699K17**	68.40
2"	3 3/16"	1 3/4"	1 1/2"	14°	150,900	**2699K18**	117.35
2 1/2"	3 15/16"	2 3/16"	1 7/8"	14°	235,500	**2699K19**	143.71
3"	4 3/4"	2 5/8"	2 1/4"	14°	339,500	**2699K21**	246.12

For information about rod ends, see page 1187.

Dimensions

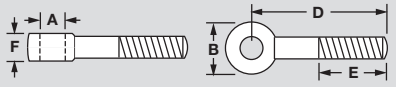

Thread Direction

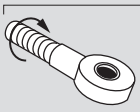

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

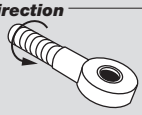

Left-hand threaded shank tightens when turned counter-clockwise.

Partially Threaded Solid Rod Ends

Also known as swing bolts and eyebolts, solid rod ends make connections in applications that don't need to compensate for misalignment.

Male Right-Hand Threaded Shank

Steel—Have a black-oxide finish (except 10-32 shank thread size is plain steel). Tensile strength is 75,000 psi. *Metric sizes* meet DIN 444.

Types 303 and 304 Stainless Steel—Offer good corrosion resistance. Tensile strength is 85,000 psi. *Metric sizes* meet DIN 444.

Type 316 Stainless Steel—Offer excellent corrosion resistance. Tensile strength is 80,000 psi.

Shank Thread Size	ID (A)	OD (B)	Lg. (D)	Thread Lg. (E)	Thick. (F)	Steel		Type 303/304 Stainless Steel		Type 316 Stainless Steel	
Inch Sizes											
10-32	3/16″	1/2″	2″	3/4″	3/16″	6066K74	$14.17	6251K28	$13.90	6097K51	$13.12
10-32	3/16″	1/2″	3″	3/4″	3/16″	6066K75	15.42	6251K29	16.13	6097K52	18.57
1/4″-20	3/16″	1/2″	2″	3/4″	5/16″	6066K31	6.36	6251K3	11.47	6097K12	15.05
1/4″-20	3/16″	1/2″	3″	3/4″	5/16″	6066K12	8.42	6251K31	13.83	6097K13	19.88
1/4″-20	3/16″	1/2″	4″	3/4″	5/16″	6066K13	10.57	—	—	6097K14	20.98
1/4″-20	1/4″	1/2″	2″	3/4″	5/16″	6066K67	5.88	6251K32	14.60	6097K34	14.60
1/4″-20	1/4″	1/2″	3″	3/4″	5/16″	6066K68	6.93	6251K33	13.83	6097K35	19.28
1/4″-20	1/4″	1/2″	4″	3/4″	5/16″	6066K69	8.69	6251K34	14.60	6097K36	20.36
5/16″-18	1/4″	5/8″	3″	1 1/2″	3/8″	6066K33	6.31	6251K35	12.15	6097K15	14.96
5/16″-18	1/4″	5/8″	4″	2″	3/8″	6066K34	7.94	—	—	6097K16	20.32
5/16″-18	5/16″	5/8″	3″	1 1/2″	3/8″	6066K35	6.05	6251K36	11.47	6097K17	14.11
5/16″-18	5/16″	5/8″	4″	2″	3/8″	6066K36	9.32	—	—	6097K18	21.84
3/8″-16	5/16″	3/4″	3″	1 1/2″	7/16″	6066K37	7.83	6251K37	11.71	6097K39	16.52
3/8″-16	3/8″	3/4″	3″	1 1/2″	7/16″	6066K14	6.00	6251K14	12.30	6097K24	16.66
3/8″-16	3/8″	3/4″	3 3/4″	2″	7/16″	6066K41	6.93	6251K38	12.77	6097K41	17.87
3/8″-16	3/8″	3/4″	4″	1 1/2″	7/16″	6066K15	7.79	6251K15	12.80	6097K25	18.02
3/8″-16	3/8″	3/4″	5″	2 1/2″	7/16″	6066K42	7.10	6251K39	13.12	6097K42	17.87
3/8″-16	3/8″	1″	3 3/4″	1 1/2″	9/16″	6066K43	14.01	—	—	—	—
3/8″-16	3/8″	1″	5″	2 1/2″	9/16″	6066K44	14.01	—	—	—	—
1/2″-13	3/8″	1″	3 3/4″	1 1/2″	9/16″	6066K45	9.06	6251K4	18.46	6097K43	27.09
1/2″-13	3/8″	1″	4″	1 1/2″	9/16″	6066K16	9.46	6251K16	19.45	6097K26	28.55
1/2″-13	3/8″	1″	5″	1 1/2″	9/16″	6066K17	9.54	6251K17	19.58	6097K27	28.55
1/2″-13	3/8″	1″	5″	2″	9/16″	6066K46	9.30	6251K41	18.76	6097K44	27.09
1/2″-13	3/8″	1″	6″	1 1/2″	9/16″	6066K18	10.85	6251K18	20.78	6097K28	28.21
1/2″-13	1/2″	1″	4″	1 1/2″	9/16″	6066K71	8.75	—	—	6097K37	27.09
5/8″-11	5/8″	1 1/4″	4 1/2″	2″	11/16″	6066K47	11.83	6251K42	25.05	6097K45	32.04
5/8″-11	5/8″	1 1/4″	5″	1 3/4″	11/16″	6066K19	12.16	6251K19	26.99	6097K29	36.70
5/8″-11	5/8″	1 1/4″	6″	1 3/4″	11/16″	6066K21	11.60	6251K21	28.53	6097K31	36.35
5/8″-11	5/8″	1 1/4″	6″	2 1/2″	11/16″	6066K48	10.83	6251K43	26.74	6097K46	34.51
5/8″-11	5/8″	1 1/4″	7″	1 3/4″	11/16″	6066K22	21.34	6251K22	30.87	—	—
5/8″-11	5/8″	1 1/4″	8″	1 3/4″	11/16″	6066K23	20.74	6251K23	32.48	—	—
3/4″-10	5/8″	1 1/2″	5″	1 3/4″	13/16″	6066K24	16.93	6251K24	32.88	6097K32	55.20
3/4″-10	5/8″	1 1/2″	6″	1 3/4″	13/16″	6066K25	16.53	6251K25	36.49	6097K33	54.70
3/4″-10	5/8″	1 1/2″	7″	1 3/4″	13/16″	6066K26	25.75	6251K26	39.64	—	—
3/4″-10	5/8″	1 1/2″	8″	1 3/4″	13/16″	6066K27	28.73	6251K27	42.21	—	—
3/4″-10	3/4″	1 1/2″	4 1/2″	2″	13/16″	6066K49	16.49	6251K44	31.32	6097K47	48.21
3/4″-10	3/4″	1 1/2″	6″	2 1/2″	13/16″	6066K51	14.34	6251K45	33.57	6097K48	47.77
7/8″-9	3/4″	1 3/4″	6″	2″	15/16″	6066K61	23.66	—	—	6097K49	73.83
7/8″-9	3/4″	1 3/4″	12″	4″	15/16″	6066K62	33.90	—	—	—	—
7/8″-9	7/8″	1 3/4″	6″	2″	15/16″	6066K72	23.66	—	—	6097K38	73.83
1″-8	7/8″	2″	6″	2″	1 1/16″	6066K63	29.97	—	—	—	—
1″-8	7/8″	2″	12″	4″	1 1/16″	6066K64	46.15	—	—	—	—
1″-8	1″	2″	6″	2″	1 1/16″	6066K73	29.97	—	—	—	—
1 1/4″-7	1 1/8″	2 1/2″	6″	2 1/2″	1 5/16″	6066K65	76.25	—	—	—	—
1 1/4″-7	1 1/8″	2 1/2″	12″	4 1/2″	1 5/16″	6066K66	77.19	—	—	—	—
Metric Sizes—*Dimensions in mm*											
M6×1.0	6	14	50	32	7	3799K11	7.19	3799K41	13.60	—	—
M8×1.25	8	18	50	32	9	3799K13	8.02	3799K43	15.20	—	—
M8×1.25	8	18	75	32	9	3799K14	9.17	3799K44	18.40	—	—
M10×1.5	10	20	75	40	12	3799K15	10.21	3799K45	20.20	—	—
M10×1.5	10	20	100	40	12	3799K16	11.92	3799K46	22.76	—	—
M12×1.75	12	25	100	40	14	3799K17	13.73	3799K47	29.90	—	—
M12×1.75	12	25	130	40	14	3799K18	15.56	3799K48	34.42	—	—
M16×2.0	16	32	100	50	17	3799K19	19.42	3799K49	42.88	—	—
M16×2.0	16	32	130	50	17	3799K21	22.60	3799K51	50.58	—	—

Female Right-Hand Threaded Shank

All are steel with a black-oxide finish. Tensile strength is 75,000 psi.

Shank Thread Size	ID (A)	OD (B)	Lg. (D)	Thread Lg. (E)	Thick. (F)		
1/4″-20	3/16″	1/2″	2″	3/4″	9/32″	1581K11	$14.71
1/4″-20	1/4″	1/2″	2″	3/4″	9/32″	1581K21	17.63
3/8″-16	3/8″	3/4″	3″	1″	7/16″	1581K12	19.61
1/2″-13	3/8″	1″	3 3/4″	1″	9/16″	1581K13	23.28
1/2″-13	3/8″	1″	4″	1″	9/16″	1581K14	22.06
1/2″-13	1/2″	1″	3 3/4″	1″	9/16″	1581K22	$23.44
5/8″-11	5/8″	1 1/4″	4 1/2″	1″	11/16″	1581K15	36.76
5/8″-11	5/8″	1 1/4″	5″	1″	11/16″	1581K16	39.22
5/8″-11	5/8″	1 1/4″	6″	1 1/2″	11/16″	1581K17	44.12
3/4″-10	3/4″	1 1/2″	4 1/2″	1″	13/16″	1581K18	49.02

For information about rod ends, see page 1187.

Dimensions

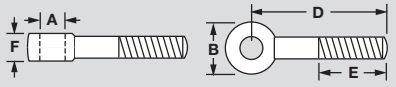

Thread Direction

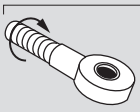

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

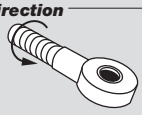

Left-hand threaded shank tightens when turned counter-clockwise.

Fully Threaded Solid Rod Ends

For maximum mounting flexibility, cut the fully threaded shaft to whatever length you need. Also called eyebolts, all of these rod ends have right-hand shank threads.

Steel— Have a black-oxide finish and meet ASTM A521, Class CA (except 10-32 shank thread size). Minimum tensile strength is 60,000 psi.

Alloy Steel— Have a black-oxide finish and meet ASTM A193-B7 (except 10-32 shank thread size). Minimum tensile strength is 125,000 psi.

Stainless Steel— Made of Type 304 stainless steel, these rod ends offer excellent corrosion resistance and meet ASTM A193-B8 (except 10-32 shank thread size). Minimum tensile strength is 75,000 psi.

Shank Thread Size	ID (A)	OD (B)	Lg. (D)	Thread Lg. (E)	Thick. (F)	Steel		Alloy Steel		Stainless Steel	
10-32	3/16″	1/2″	1 1/2″	1″	5/16″	3798K55	$10.00	2440K55	$12.50	2434K54★	$6.84
1/4″-20	1/4″	9/16″	1 1/2″	1 1/8″	1/4″	3798K35	5.89	2440K35	6.95	2434K31	8.64
1/4″-20	1/4″	9/16″	3 1/2″	3 1/8″	1/4″	3798K36	6.06	2440K36	7.13	2434K35■	8.72
1/4″-20	1/4″	9/16″	6″	5 5/8″	1/4″	3798K37	6.33	2440K37	7.42	2434K36	8.93
1/4″-28	1/4″	9/16″	3 1/2″	3 1/8″	1/4″	3798K51	7.87	2440K51	9.27	2434K49	11.35
5/16″-18	5/16″	9/16″	1 1/2″	1 1/16″	5/16″	3798K22	6.11	2440K22	7.16	2434K22	8.77
5/16″-18	5/16″	5/8″	3 1/2″	3 1/16″	5/16″	3798K38	6.25	2440K38	7.31	2434K37	9.21
5/16″-18	5/16″	5/8″	6″	5 9/16″	5/16″	3798K39	6.50	2440K39	7.60	2434K38	9.46
3/8″-16	3/8″	13/16″	1 15/16″	1 7/16″	3/8″	3798K48	6.40	2440K48	7.72	2434K47	9.54
3/8″-16	3/8″	13/16″	3 1/2″	3″	3/8″	3798K23	6.57	2440K23	7.93	2434K23	12.97
3/8″-16	3/8″	13/16″	5″	4 1/2″	3/8″	3798K41	6.72	2440K41	8.16	2434K39	13.10
3/8″-16	3/8″	13/16″	6″	5 1/2″	3/8″	3798K24	6.79	2440K24	8.27	2434K24	14.50
3/8″-24	3/8″	13/16″	3 1/2″	3″	3/8″	3798K52	8.53	2440K52	10.30	2434K51	12.74
1/2″-13	1/2″	1″	2 7/16″	1 13/16″	1/2″	3798K49	7.19	2440K49	8.78	2434K48	18.65
1/2″-13	1/2″	1″	3 1/2″	2 7/8″	1/2″	3798K25	7.36	2440K25	9.01	2434K25	19.13
1/2″-13	1/2″	1″	5″	4 3/16″	1/2″	3798K42	7.68	2440K42	9.45	2434K41	19.84
1/2″-13	1/2″	1″	6″	5 3/8″	1/2″	3798K26	7.82	2440K26	9.63	2434K26	20.14
1/2″-20	1/2″	1″	3 1/2″	2 7/8″	1/2″	3798K53	9.56	2440K53	11.72	2434K52	24.87
5/8″-11	5/8″	1 1/4″	3 1/2″	2 3/4″	5/8″	3798K27	8.51	2440K27	10.56	2434K27	22.05
5/8″-11	5/8″	1 1/4″	5″	4 1/4″	5/8″	3798K43	8.98	2440K43	11.12	2434K42	22.85
5/8″-11	5/8″	1 1/4″	6″	5 1/4″	5/8″	3798K28	9.17	2440K28	11.38	2434K28	23.21
3/4″-10	3/4″	1 1/2″	3 1/2″	2 5/8″	3/4″	3798K29	10.20	2440K29	12.82	2434K29	24.87
3/4″-10	3/4″	1 1/2″	5″	4 1/8″	3/4″	3798K44	10.71	2440K44	13.42	2434K43	25.77
3/4″-10	3/4″	1 1/2″	6″	5 1/8″	3/4″	3798K32	10.94	2440K32	13.67	2434K32	26.17
3/4″-16	3/4″	1 1/2″	6″	5 1/8″	3/4″	3798K54	15.30	2440K54	19.13	2434K53	36.64
7/8″-9	7/8″	1 13/16″	5″	3 13/16″	7/8″	3798K45	13.46	2440K45	17.07	2434K44	40.51
7/8″-9	7/8″	1 13/16″	6″	4 13/16″	7/8″	3798K33	13.66	2440K33	17.33	2434K33	41.12
1″-8	1″	2 1/32″	6″	4 3/4″	1″	3798K34	18.32	2440K34	23.56	2434K34	56.08
1 1/4″-7	1 1/4″	2 5/8″	6″	4 1/4″	1 1/4″	3798K46	39.36	2440K46	43.72	2434K45	96.67
1 1/2″-6	1 1/2″	3 1/16″	6″	4″	1 1/2″	3798K47	76.42	2440K47	84.97	2434K46	173.19

★ Type 303 stainless steel. ■ Thread length is 3″.

Square-Shoulder Solid Rod Ends

Also known as jig latch bolts, these rod ends mount flush to any flat surface. They're commonly used to mount a workpiece flush to a machining table. All have right-hand shank threads.

Steel— These steel rod ends are heat treated for added strength and have a black-oxide finish. Tensile strength is 78,000 psi.

Stainless Steel— Made of Type 303 stainless steel, these rod ends offer excellent corrosion resistance. Tensile strength is 100,000 psi.

Shank Thread Size	ID (A)	OD (B)	Lg. (D)	Thread Lg. (E)	Thick. (F)	Steel		Stainless Steel	
Inch Sizes									
10-32	3/16″	3/8″	1″	9/16″	3/16″	59895K35	$5.88	3796K28	$9.20
10-32	3/16″	3/8″	2″	1″	3/16″	59895K36	7.18	3796K29	11.80
1/4″-20	1/4″	1/2″	1 1/2″	3/4″	5/16″	59895K11	4.93	3796K11	9.43
1/4″-20	1/4″	1/2″	2 1/2″	1 1/4″	5/16″	59895K16	5.93	3796K12	11.17
1/4″-20	1/4″	1/2″	2 5/8″	2 5/16″	1/4″	59895K31	5.64	3796K13	10.19
5/16″-18	5/16″	5/8″	2″	1″	3/8″	59895K15	6.82	3796K14	14.43
5/16″-18	5/16″	5/8″	3″	1 3/8″	3/8″	59895K17	7.07	3796K15	16.91
5/16″-18	5/16″	5/8″	3 3/16″	2 13/16″	5/16″	59895K32	7.98	3796K16	16.46
3/8″-16	3/8″	3/4″	2 1/2″	1 3/8″	1/2″	59895K12	7.80	3796K17	19.89
3/8″-16	3/8″	3/4″	3 1/2″	2″	1/2″	59895K18	8.61	3796K18	22.62
3/8″-16	3/8″	3/4″	3 3/4″	3 5/16″	3/8″	59895K33	9.73	3796K19	20.83
1/2″-13	1/2″	1″	3 1/8″	1 3/4″	5/8″	59895K13	10.07	3796K21	27.62
1/2″-13	1/2″	1″	4 1/8″	2 1/4″	5/8″	59895K19	11.59	3796K22	33.32
1/2″-13	1/2″	1″	4 7/8″	4 5/16″	1/2″	59895K34	10.34	3796K23	34.79
5/8″-11	5/8″	1 1/4″	3 1/2″	1 5/8″	3/4″	59895K14	13.14	3796K24	39.69
5/8″-11	5/8″	1 1/4″	4 3/4″	2 1/2″	3/4″	59895K21	15.18	3796K25	44.36
3/4″-10	3/4″	1 1/2″	4 1/2″	2″	7/8″	59895K22	18.64	3796K26	61.95
3/4″-10	3/4″	1 1/2″	6″	3″	7/8″	59895K23	22.64	3796K27	70.21
Metric Sizes— *Dimensions in mm*									
M6×1.0	6	13	50	37	6	3800K17	6.92	3800K18	9.42
M8×1.25	8	16	50	35	8	3800K19	7.98	3800K21	14.50
M10×1.5	10	19	125	108	10	3800K22	11.10	3800K23	19.78
M12×1.75	12	25	150	131	12	3800K24	11.40	3800K25	24.84
M16×2.0	16	32	150	127	16	3800K26	19.50	3800K27	40.26
M20×2.5	20	38	175	148	20	3800K28	31.50	3800K29	45.50

Dimensions

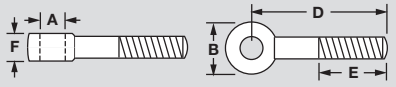

Thread Direction

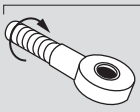

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

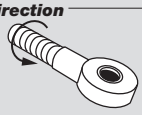

Left-hand threaded shank tightens when turned counter-clockwise.

Left-Hand Threaded Solid Rod Ends

Create linkages and shaft connections in applications that require left-hand threads. Also called swing bolts and eyebolts, these rod ends are made of steel with a black-oxide finish. Tensile strength is 75,000 psi.

Shank Thread Size	ID (A)	OD (B)	Lg. (D)	Thread Lg. (E)	Thick. (F)		
1/4"-20	3/16"	1/2"	2"	3/4"	9/32"	4543T11	$6.93
1/4"-20	3/16"	1/2"	3"	3/4"	9/32"	4543T12	9.06
1/4"-20	1/4"	1/2"	2"	3/4"	9/32"	4543T31	6.65
5/16"-18	1/4"	5/8"	3"	1 1/2"	11/32"	4543T13	6.97
5/16"-18	5/16"	5/8"	3"	1 1/2"	11/32"	4543T14	7.23
3/8"-16	5/16"	3/4"	3"	1 1/2"	7/16"	4543T15	8.42
3/8"-16	3/8"	3/4"	3"	1 1/2"	7/16"	4543T16	8.59
3/8"-16	3/8"	3/4"	3 3/4"	2"	7/16"	4543T17	9.28
3/8"-16	3/8"	3/4"	5"	2 1/2"	7/16"	4543T18	9.42
1/2"-13	3/8"	1"	3 3/4"	1 1/2"	9/16"	4543T19	10.97
1/2"-13	3/8"	1"	4"	1 1/2"	9/16"	4543T21	$11.07
1/2"-13	3/8"	1"	6"	1 1/2"	9/16"	4543T22	10.66
1/2"-13	1/2"	1"	6"	1 1/2"	9/16"	4543T32	10.23
5/8"-11	5/8"	1 1/4"	4 1/2"	2"	11/16"	4543T23	12.94
5/8"-11	5/8"	1 1/4"	5"	1 3/4"	11/16"	4543T24	13.25
5/8"-11	5/8"	1 1/4"	6"	2 1/2"	11/16"	4543T25	12.93
3/4"-10	3/4"	1 1/2"	4 1/2"	2"	13/16"	4543T26	19.35
3/4"-10	5/8"	1 1/2"	5"	1 3/4"	13/16"	4543T27	19.99
3/4"-10	5/8"	1 1/2"	8"	1 3/4"	13/16"	4543T28	31.12
3/4"-10	3/4"	1 1/2"	6"	2 1/2"	13/16"	4543T29	18.52

Solid Rod End Blanks

Cut, tap, bore, or weld these rod ends to your exact requirements. They have an unfinished shank and come with a large, centered starter dimple for drilling (except 6147K92, which does not have a dimple).

Steel—Made of C1035 steel. Tensile strength is 75,000 psi.
Alloy Steel—Made of 4140 alloy steel. Tensile strength is 125,000 psi.
Type 304 Stainless Steel—Offer good corrosion resistance. Tensile strength is 85,000 psi.
Type 316 Stainless Steel—Offer excellent corrosion resistance. Tensile strength is 75,000 psi.

Shank Dia.	OD (B)	Lg. (D)	Thick. (F)		
Steel					
1/4"	1/2"	3"	9/32"	6065K131	$3.30
1/4"	1/2"	5 1/4"	9/32"	6065K121	5.60
5/16"	5/8"	1 9/16"	11/32"	6065K171	3.51
5/16"	5/8"	3"	11/32"	6065K151	3.51
5/16"	5/8"	4 1/16"	11/32"	6065K141	5.96
5/16"	5/8"	6"	11/32"	6065K161	5.96
3/8"	11/16"	2 1/8"	3/8"	6065K241	3.06
3/8"	3/4"	1 1/2"	3/8"	6065K221	3.18
3/8"	3/4"	2 1/2"	3/8"	6065K181	3.18
3/8"	3/4"	3"	7/16"	6065K251	3.87
3/8"	3/4"	3 1/2"	7/16"	6065K212	4.83
3/8"	3/4"	3 7/8"	7/16"	6065K191	4.83
3/8"	3/4"	6"	7/16"	6065K511	4.28
7/16"	7/8"	4 15/16"	1/2"	6065K261	5.84
1/2"	31/32"	12"	9/16"	6065K512	8.99
1/2"	1"	2 9/16"	9/16"	6065K321	5.09
1/2"	1"	2 5/8"	9/16"	6065K311	5.09
1/2"	1"	3 1/2"	9/16"	6065K281	5.09
1/2"	1"	6"	9/16"	6065K271	6.54
5/8"	1 1/4"	3"	11/16"	6065K331	5.83
5/8"	1 1/4"	5 1/8"	11/16"	6065K371	8.30
Steel (Cont.)					
5/8"	1 1/4"	5 1/2"	11/16"	6065K341	$8.30
5/8"	1 1/4"	6 1/2"	11/16"	6065K361	11.54
5/8"	1 1/4"	8"	11/16"	6065K351	11.54
5/8"	1 1/4"	12"	11/16"	6065K513	11.48
3/4"	1 1/2"	3 1/2"	11/16"	6065K514	6.47
3/4"	1 1/2"	4 5/8"	13/16"	6065K391	10.49
3/4"	1 1/2"	4 3/4"	13/16"	6065K411	10.49
3/4"	1 1/2"	5 1/8"	13/16"	6065K421	10.49
3/4"	1 1/2"	12"	13/16"	6065K515	13.76
7/8"	1 13/16"	6"	15/16"	6065K516	11.33
7/8"	1 13/16"	12"	15/16"	6065K517	19.52
1"	2"	4 1/2"	1 1/16"	6065K451	20.07
1"	2 1/32"	6"	1 1/16"	6065K518	16.22
1"	2 1/32"	12"	1 1/16"	6065K519	26.01
1 1/2"	3 3/32"	12"	1 1/2"	6065K522	63.70
Alloy Steel					
3/8"	3/4"	3 1/2"	7/16"	57635K69	3.71
3/8"	3/4"	6"	7/16"	57635K71	4.43
1/2"	31/32"	3 1/2"	9/16"	57635K51	4.44
1/2"	31/32"	6"	9/16"	57635K72	5.51
5/8"	1 1/4"	3 1/2"	11/16"	57635K53	5.61
Alloy Steel (Cont.)					
5/8"	1 1/4"	6"	11/16"	57635K73	$6.93
5/8"	1 1/4"	12"	11/16"	57635K54	13.59
3/4"	1 1/2"	3 1/2"	13/16"	57635K55	7.30
3/4"	1 1/2"	6"	13/16"	57635K74	8.63
3/4"	1 1/2"	12"	13/16"	57635K56	15.61
7/8"	1 13/16"	6"	15/16"	57635K75	11.64
1"	2 1/32"	6"	1 1/16"	57635K76	16.89
1"	2 1/32"	12"	1 1/16"	57635K58	28.60
1 1/4"	2 5/8"	12"	1 5/16"	57635K49	50.70
Type 304 Stainless Steel					
3/8"	3/4"	3"	3/8"	6147K82	7.48
1/2"	1"	6"	1/2"	6147K83	16.85
5/8"	1 1/4"	6"	5/8"	6147K84	19.46
Type 316 Stainless Steel					
3/8"	11/16"	6"	7/16"	6147K92	29.46
3/8"	3/4"	3"	7/16"	6147K12	11.78
1/2"	1"	6"	9/16"	6147K14	27.40
5/8"	1 1/4"	6"	11/16"	6147K16	31.28
3/4"	1 7/16"	12"	13/16"	6147K95	54.65
3/4"	1 1/2"	6"	13/16"	6147K22	39.02

Forged Clevis Rod Ends

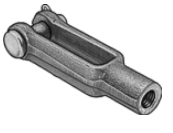

Make durable pivot-point linkages for shafts, rods, and other assemblies. Also called yoke end linkages, these rod ends are forged for added strength and have female right-hand shank threads. Each comes with a clevis pin and a cotter pin.

Steel—Machined to Society of Automotive Engineers (SAE) standards, unless noted.
Zinc-Plated Steel—Have a corrosion-resistant finish.
Stainless Steel—Made of 300 series stainless steel for good corrosion resistance.

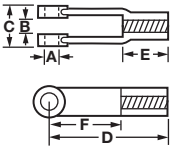

Shank Thread Size	ID (A)	Jaw Wd. (B)	O'all Wd. (C)	Lg. (D)	Thread Lg. (E)	Lg. (F)	Steel		Zinc-Plated Steel		Stainless Steel	
10-32	3/16"	3/16"	7/16"	1 9/16"	9/16"	1"	6071K11	$6.60	1583K11	$8.99		
1/4"-20	1/4"	1/4"	5/8"	2"	3/4"	1 1/4"	6071K41	5.17	1583K22	6.89		
1/4"-28	1/4"	1/4"	5/8"	2"	3/4"	1 1/4"	6071K12	4.98	1583K12	6.77	6071K47	$8.14
5/16"-18	5/16"	5/16"	3/4"	2 1/4"	13/16"	1 7/16"	6071K42	5.17	1583K23	6.89		
5/16"-24	5/16"	5/16"	3/4"	2 1/4"	13/16"	1 7/16"	6071K13	4.98	1583K13	6.77	6071K48	8.92
3/8"-16	3/8"	7/16"	7/8"	2 1/2"	7/8"	1 5/8"	6071K43	7.53	1583K24	10.03		
3/8"-24	3/8"	7/16"	7/8"	2 1/2"	7/8"	1 5/8"	6071K14	7.26	1583K14	9.89	6071K49	12.07
3/8"-24	1/2"	9/16"	1 1/8"	3"	1 1/8"	1 7/8"	6071K16	10.77	1583K15	14.69		
7/16"-20	7/16"	1/2"	1"	2 7/8"	1"	1 7/8"	6071K31★	9.53	1583K51★	9.50		
1/2"-13	1/2"	9/16"	1 1/8"	3"	1 1/8"	1 7/8"	6071K32	10.83	1583K61	10.58		
1/2"-20	1/2"	9/16"	1 1/8"	3"	1 1/8"	1 7/8"	6071K26	10.77	1583K16	14.69	6071K51	44.84
1/2"-20	1/2"	9/16"	1 1/8"	4 3/16"	1 1/16"	3 1/8"	6071K17	11.67	1583K18	16.62		
1/2"-20	1/2"	1 1/8"	1 7/8"	3"	1 1/8"	1 7/8"	6071K19	16.08	1583K17	22.91		
5/8"-11	5/8"	11/16"	1 3/8"	4 15/16"	1 1/4"	3 11/16"	6071K33	16.38	1583K71	21.32		
5/8"-18	5/8"	11/16"	1 3/8"	4 15/16"	1 1/4"	3 11/16"	6071K21	16.77	1583K19	23.92		
3/4"-10	5/8"	11/16"	1 1/2"	4"	1 1/4"	2 3/4"	6071K34	21.70	1583K81	23.53		
3/4"-10	3/4"	13/16"	1 5/8"	6 1/16"	1 1/2"	4 9/16"	6071K35	21.97	1583K91	24.27		
3/4"-16	3/4"	13/16"	1 5/8"	6 1/16"	1 1/2"	4 9/16"	6071K22	29.76	1583K21	42.41		

★ Machined to National Aerospace Standards (NAS).

Forged Steel Clevis Rod End Blanks

Thread or weld the unfinished shank of these rod ends to meet your specific linkage needs. Sometimes called yoke end linkages, they're good for making pivot-point linkages for shafts, rods, and other assemblies. All are made of C1018 steel and are forged for added strength. Each comes with a clevis pin and a cotter pin.

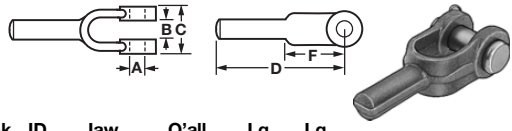

Shank Dia.	ID (A)	Jaw Wd. (B)	O'all Wd. (C)	Lg. (D)	Lg. (F)		
1/4"	1/4"	1/4"	5/8"	1 3/4"	5/8"	6414K27	$22.90
5/16"	5/16"	5/16"	3/4"	2"	3/4"	6414K12	11.16
3/8"	3/8"	7/16"	7/8"	2 1/8"	1 3/16"	6414K13	6.27
3/8"	3/8"	7/16"	7/8"	7"	1 3/16"	6414K21	8.44
7/16"	7/16"	1/2"	1"	2 1/4"	1"	6414K15	9.64
1/2"	1/2"	9/16"	1 1/8"	2 1/2"	1 1/8"	6414K14	9.44
1/2"	1/2"	9/16"	1 1/8"	6 1/2"	1 1/8"	6414K23	$11.57
5/8"	5/8"	11/16"	1 3/8"	2 7/8"	1 7/16"	6414K17	18.54
5/8"	5/8"	11/16"	1 3/8"	4 3/4"	1 7/16"	6414K24	18.00
3/4"	3/4"	13/16"	1 5/8"	3 5/8"	1 11/16"	6414K18	26.11
3/4"	3/4"	13/16"	1 5/8"	8 1/4"	1 11/16"	6414K25	20.74
1"	1"	1 1/16"	2 1/8"	6"	2 1/2"	6414K26	29.40

Corrosion-Resistant Plastic Clevis Rod Ends

In addition to offering superior corrosion resistance, these lightweight, fiber-reinforced plastic rod ends also reduce noise and vibration. Often called yoke end linkages, they're good for making pivot points for shafts, rods, and other assemblies. All have female right-hand threads. Each comes with a clevis pin and a retaining clip.

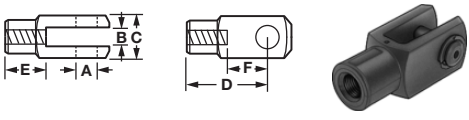

Inch Sizes

Shank Thread Size	ID (A)	Jaw Wd. (B)	O'all Wd. (C)	Lg. (D)	Thread Lg. (E)	Lg. (F)		
10-32	3/16"	3/16"	13/32"	25/32"	5/16"	13/32"	2449K11	$3.25
1/4"-28	1/4"	1/4"	15/32"	15/16"	11/32"	15/32"	2449K12	3.32
5/16"-24	5/16"	5/16"	5/8"	1 1/4"	15/32"	5/8"	2449K13	3.92
3/8"-24	3/8"	13/32"	25/32"	1 9/16"	19/32"	25/32"	2449K14	5.11
7/16"-20	7/16"	15/32"	15/16"	1 29/32"	23/32"	15/16"	2449K15	7.61
1/2"-20	1/2"	9/16"	1 1/16"	2 7/32"	7/8"	1 1/8"	2449K16	8.17

Metric Sizes—Dimensions in mm

Shank Thread Size	ID (A)	Jaw Wd. (B)	O'all Wd. (C)	Lg. (D)	Thread Lg. (E)	Lg. (F)		
M5×0.8	5	6	12	24	9	12	2449K71	$3.20
M6×1.0	6	6	12	24	9	12	2449K72	3.32
M8×1.25	8	8	16	32	12	16	2449K73	3.92
M10×1.5	10	10	20	40	15	20	2449K74	5.11
M12×1.75	12	12	24	48	18	24	2449K75	7.61
M16×2.0	16	16	32	64	24	32	2449K76	10.38
M20×1.5	20	20	40	80	30	40	2449K77	27.77

Easy-Adapt Clevis Rod Ends

Each rod end has a convenient snap-on spring clevis pin that you can insert and remove by hand. Also known as yoke end linkages, they're good for use as pivot points for shafts, rods, and other assemblies. All are zinc-plated steel and have female right-hand threads.

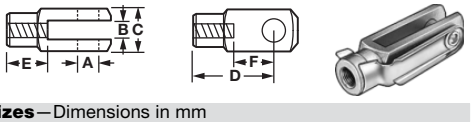

Inch Sizes

Shank Thread Size	ID (A)	Jaw Wd. (B)	O'all Wd. (C)	Lg. (D)	Thread Lg. (E)	Lg. (F)		
10-32	3/16"	3/16"	3/8"	13/16"	13/32"	13/32"	2447K11	$6.72
10-32	3/16"	3/16"	3/8"	1 3/16"	13/32"	25/32"	2447K12	7.07
1/4"-28	1/4"	1/4"	1/2"	15/16"	15/32"	15/32"	2447K13	7.21
1/4"-28	1/4"	1/4"	1/2"	1 13/32"	15/32"	15/16"	2447K14	7.54
5/16"-24	5/16"	5/16"	5/8"	1 1/4"	5/8"	5/8"	2447K15	7.60
5/16"-24	5/16"	5/16"	5/8"	1 7/8"	5/8"	1 1/4"	2447K16	10.90
3/8"-24	3/8"	3/8"	3/4"	1 9/16"	25/32"	25/32"	2447K17	9.68
3/8"-24	3/8"	3/8"	3/4"	2 11/32"	25/32"	1 9/16"	2447K18	11.40
1/2"-20	1/2"	1/2"	1"	2 1/4"	1 1/8"	1 1/8"	2447K19	16.56
1/2"-20	1/2"	1/2"	1"	3 11/32"	1 1/8"	2 7/32"	2447K21	23.66
5/8"-18	5/8"	5/8"	1 1/4"	2 1/2"	1 1/4"	1 1/4"	2447K22	21.86
5/8"-18	5/8"	5/8"	1 1/4"	3 25/32"	1 1/4"	2 17/32"	2447K23	29.06
3/4"-16	3/4"	3/4"	1 9/16"	3 1/8"	1 9/16"	1 9/16"	2447K24★	44.64
1"-12	1"	1"	1 15/16"	3 15/16"	1 31/32"	1 31/32"	2447K25★	53.14

★ Supplied with clevis pin and two safety clips instead of a spring pin.

Metric Sizes—Dimensions in mm

Shank Thread Size	ID (A)	Jaw Wd. (B)	O'all Wd. (C)	Lg. (D)	Thread Lg. (E)	Lg. (F)		
M4×0.7	4	4	8	16	8	8	2448K41	$4.80
M5×0.8	5	5	10	20	10	10	2448K43	6.36
M5×0.8	5	5	10	30	10	20	2448K44	4.39
M6×1.0	6	6	12	24	12	12	2448K45	4.79
M6×1.0	6	6	12	36	12	24	2448K46	4.54
M8×1.25	8	8	16	32	16	16	2448K47	5.36
M8×1.25	8	8	16	48	16	32	2448K48	8.76
M10×1.5	10	10	20	40	20	20	2448K49	6.25
M10×1.5	10	10	20	60	20	40	2448K51	8.59
M12×1.75	12	12	24	48	24	24	2448K52	12.45
M12×1.75	12	12	24	72	24	48	2448K53	13.88
M14×2.0	14	14	27	56	28	28	2448K54	23.05
M16×2.0	16	16	32	64	32	32	2448K56	28.60
M20×2.5	20	20	40	80	40	40	2448K61	39.58

Male Shank Clevis Rod Ends

A male-threaded shank lets you build a linkage with a tapped tube or other female-threaded connection. Great for a wide variety of pivot-point applications, all are made of zinc-plated steel. Clevis pins are not included, see pages 3352-3355.

To Order: Please specify right- or left-hand shank threads.

Right-hand threaded shank tightens when turned clockwise. This is the most common thread.

Left-hand threaded shank tightens when turned counterclockwise.

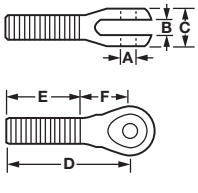

Shank Thread Size	ID (A)	Jaw Wd. (B)	O'all Wd. (C)	Lg. (D)	Thread Lg. (E)	Lg. (F)		
5/16"-24	1/4"	3/16"	5/8"	2 1/4"	1 1/4"	1"	4749T11	$6.05
5/16"-24	5/16"	3/16"	5/8"	2 1/4"	1 1/4"	1"	4749T12	6.19
3/8"-24	5/16"	3/16"	5/8"	2 1/4"	1 1/4"	1"	4749T13	6.50
1/2"-20	5/16"	1/4"	3/4"	2 1/2"	1 1/2"	1"	4749T14	7.15
1/2"-20	3/8"	1/4"	3/4"	2 1/2"	1 1/2"	1"	4749T15	7.94
1/2"-20	7/16"	3/8"	13/16"	3 3/8"	2"	1 3/8"	4749T16	10.14
5/8"-18	3/8"	3/8"	13/16"	3 3/8"	2"	1 3/8"	4749T17	10.14
5/8"-18	7/16"	3/8"	13/16"	3 3/8"	2"	1 3/8"	4749T18	10.14
5/8"-18	1/2"	3/8"	13/16"	3 3/8"	2"	1 3/8"	4749T19	10.14
3/4"-16	3/8"	3/8"	13/16"	3 3/8"	2"	1 3/8"	4749T21	10.14
3/4"-16	1/2"	3/8"	13/16"	3 3/8"	2"	1 3/8"	4749T22	10.14

Incremental Optical Encoders

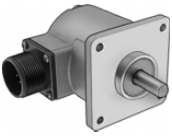

Standard Series

When mounted on rotating shafts of motors, conveyors, and measuring wheels, optical encoders convert shaft rotation into square wave output pulses, which are then digitized to indicate position, velocity, and direction. Encoders have a die cast aluminum housing and cover, LED illumination, MS-style (multipole) connector with mating connector, and NEMA 4 and 13 shaft seals. Two synchronized output channels provide reliable directional information. All have a separate index output, unless noted, which provides one measuring step per revolution. Frequency response is 100 kHz. Temp. range is 32° to 158°F.

Compact series has an etched mylar code disc; Type 303 stainless steel shaft; and an M14, 6-pin connector. Current requirement is 100 mA. Output is open collector transistor or line driver, which are interchangeable. Current source is 100 mA. Current sink is 70 mA for open collector transistor; 100 mA for line driver. Supply voltage is 5-28 VDC. Maximum rpm is 8,000.

Standard series has an etched glass code disc; Type 416 stainless steel shaft; and M18, 10-pin connector. Current requirement is 100 mA. Output is line driver. Current source and sink are 100 mA. Supply voltage is 5-15 VDC. Max. rpm is 12,000.

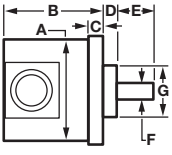

Encoder	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(J)	(K)	(L)
Compact Series	2.06″	1.75″	0.30″	0.12″	0.75″	0.375″	1.25″	2.06″	0.156″	1.52″	1.750″
Standard Series	2.52″	2.50″	0.255″	0.30″	0.88″	0.375″	1.25″	2.63″	0.218″	1.65″	2.064″

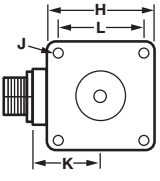

Available Resolutions (Number of Measuring Steps per Revolution)

Compact Series					Standard Series												
1●	24	70	150	360	1	10	30	48	102	150	250	300	480	672	780	1,200	1,600	2,000
2	30	75	192	400	2	13	32	50	120	160	254	320	500	700	800	1,250	1,666	2,048
5	32	80	200	410	3	15	33	51	122	175	255	325	512	720	888	1,270	1,774	2,164
8	40	100	240	500	5	16	34	60	125	180	256	360	576	735	900	1,314	1,800	2,400
10	50	115	250	510	6	20	36	64	127	200	274	377	600	740	912	1,414	1,850	2,500
11	60	120	256	512	7	24	40	88	132	217	283	400	625	750	1,000	1,440	1,855	2,519
12	64	125	300	600	8	25	45	100	148	240	288	462	635	762	1,024	1,500	1,979	2,540

● Does not have index.

Compact Series Encoder—**To Order:** Please specify resolution from listing above. **59515K51** $427.97
Standard Series Encoder—**To Order:** Please specify resolution from listing above. **59515K11** 686.87

Miniature Incremental Optical Encoders

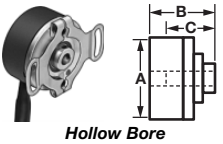

Hollow Bore

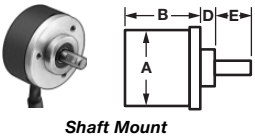

Shaft Mount

Small, easy-to-mount encoders convert mechanical movement into electrical pulses to indicate position, velocity, and direction. All have a black plastic housing, bidirectional rotation, 5-28 VDC input voltage, square wave quadrature output, NPN open collector circuits, and double-shielded ball bearings. Index output provides one measuring step per revolution. Temperature range is –4° to +185°F. Maximum rpm is 8,000. Frequency response is 200 kHz. Current is 65 mA. Sink up to 20 mA current. Furnished with a 36″ long pigtail connection. **To Order:** Please specify resolution (number of measuring steps per revolution): 500; 1,000; 2,000; or 2,500.

Hollow-bore encoders have a built-in flexible mounting bracket—no need for shaft couplings. Two set screws (included) clamp encoder to the rotating shaft. Encoders also have two mounting holes for M3 or 6-32 screws (not included).

Shaft-mount encoder has a Type 303 stainless steel shaft and three tapped M3 x 4.57 mm mounting holes. Fasteners not included.

Style	Bore Size	(A)	(B)	(C)	(D)	(E)		
Hollow	1/4″	1.811″	1″	0.8″	—	—	**9749T1**	$217.08
Hollow	3/8″	1.811″	1″	0.8″	—	—	**9749T2**	217.08
Shaft	1/4″	1.5″	0.76″	—	0.158″	0.5″	**9749T3**	217.08

Cable-Driven Linear-Position Transducers

Compact with Optional Swivel Base

Also known as string pots, these highly accurate transducers measure the relative distance between two points with an extending wire cable. To use, mount the transducer and attach its multistranded wire cable to the movable object. As the object moves, the transducer produces an output voltage that's linearly proportional to the object's movement.

Compact— Small in size and light in weight, these transducers are great for use in tight, dry places. Output signal can be interpreted by a PLC (not included) or the display sold separately below. Transducers have a plastic housing with solder terminal connections and two 5/32″ dia. mounting holes (fasteners not included).

Optional two-axis swivel mounting base allows 360° vertical axis rotation and 245° horizontal axis rotation. Once positioned, you can lock transducer in place on the base using the two included set screws.

Water Resistant— A polycarbonate body with sealed electrical connections and a watertight rubber sheath over the potentiometer make these transducers resistant to water as well as chemicals. All are ready-to-install with an included, easy-to-rotate mounting bracket and 40″ long electrical wire that's already soldered in place. Output signal can be interpreted by a PLC (not included). Transducers have three 1/8″ dia. mounting holes (fasteners not included).

Water Resistant

Max. Stroke Lg.	Max. Input, VAC/DC	Accuracy, % of Full Stroke	Repeatability, % of Full Stroke	Overall Size, Ht.×Wd.		
Compact—*Operating temperature range is –13° to +140°F.*						
10″	25	±0.5	±0.03	3.13″ ×1.8″	**6440K1**	$186.67
25″	25	±0.5	±0.03	3.13″ ×1.8″	**6440K2**	193.10
50″	25	±0.25	±0.03	3.13″ ×1.8″	**6440K3**	198.74
Two-Axis Swivel Base for Compact Models					**6440K4**	82.92
5-Digit Display for Compact Models					**6440K5**	323.51
Water Resistant—*Operating temperature range is 0° to +160°F.*						
4 3/4″	30	±1	±0.05	3.5″ ×1.9″	**6863K1**	198.28
12 1/2″	30	±0.25	±0.05	3.5″ ×1.9″	**6863K2**	198.28
25″	30	±0.25	±0.05	3.5″ ×1.9″	**6863K3**	198.28
50″	30	±0.25	±0.05	3.5″ ×1.9″	**6863K4**	198.28

Slimline Rod-Driven Linear-Position Transducers

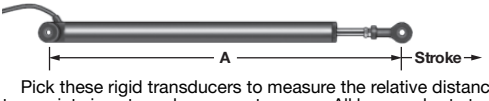

Pick these rigid transducers to measure the relative distance between two points in extremely compact spaces. All have a short stroke and are lightweight for mobile applications. Their cast nylon body and 300 series stainless steel sealed shaft (to IP66 standards) make them great for harsh environments. Accuracy is 0.15% of full stroke. Repeatability is better than 0.01 mm. Operating temperature range is –22° to +194°F. CE approved.

Digital panel indicator (sold separately) has an IP65, 1/8 DIN case.

Note: For IP rating information, see page 843.

Max. Stroke Lg., mm	Max. Input, VDC	Retracted Lg. (A), mm	Body OD, mm	Rod End Bearing ID, mm		
75	67	223.6	19	5.02	**7383K11**	$422.63
100	74	273.6	19	5.02	**7383K12**	437.03
125	74	298.6	19	5.02	**7383K13**	451.43
150	74	323.6	19	5.02	**7383K14**	465.12
200	74	373.6	19	5.02	**7383K15**	493.92
250	74	423.6	19	5.02	**7383K16**	522.72
300	74	498.6	19	5.02	**7383K17**	551.17
350	74	548.6	19	5.02	**7383K18**	579.97
Digital Panel Indicator—*4-Digit Display*					**7383K25**	999.99

Slam-Preventing Dampers with Ball-Joint Fittings

Put an end to annoying slamming—connect these dampers to lids and doors for smooth, controlled opening and/or closing. As the piston rod is compressed, hydraulic fluid is forced through an internal opening, creating consistent speed throughout the stroke length.

All of these dampers are furnished with the most versatile fittings: ball-joint fittings consisting of a ball socket and ball stud that rotates to compensate for misalignment. You can remove the ball-joint fittings and use any other fittings that have the same rod and end thread size as the damper.

Compression dampers provide a controlled rate of compression, ***extension dampers*** provide a controlled rate of extension, and ***dual-direction dampers*** provide control in both directions.

Fixed-Resistance Dampers— Have an epoxy-coated steel body and a chrome-plated steel piston rod. Temperature range is –40° to +176° F.

Adjustable-Resistance Dampers— Let you achieve the exact amount of resistance you need. Just pull the piston rod out to its fully extended position, then turn the rod left or right to increase or decrease the damping for your application. Dampers have a powder-coated steel body and a ceramic-coated steel piston rod. Temperature range is –22° to +176° F.

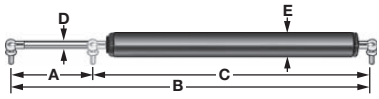

Shown with furnished fittings, which can be removed.

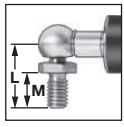

Max. Weight, lbs.	Stroke Lg. (A)	Extend. Lg. (B)	Comp. Lg. (C)	Rod Dia. (D)	Cylinder Dia. (E)	Ball Stud Lg. (L)	Thread Lg. (M)	Ball Stud Thread Size	Ball Dia., mm	Rod and End Thread Size	Compression Dampers		Extension Dampers		Dual-Direction Dampers	
Fixed Resistance																
50	2″	7.89″	5.89″	0.25″	0.59″	1.09″	0.56″	5/16″-18	10	M6	6521K61	$22.35	6521K51	$22.35	—	—
50	3″	10.02″	7.02″	0.25″	0.59″	1.09″	0.56″	5/16″-18	10	M6	6521K62	22.35	6521K52	22.35	—	—
50	4″	12.5″	8.5″	0.25″	0.59″	1.09″	0.56″	5/16″-18	10	M6	6521K81	24.45	6521K71	24.45	—	—
50	5″	15.02″	10.02″	0.25″	0.59″	1.09″	0.56″	5/16″-18	10	M6	6521K82	24.45	6521K72	24.45	—	—
100	4″	12.24″	8.24″	0.32″	0.87″	1.09″	0.56″	5/16″-18	10	M6	6521K63	26.00	6521K53	26.00	—	—
100	5″	14.49″	9.49″	0.32″	0.87″	1.09″	0.56″	5/16″-18	10	M6	6521K64	26.00	6521K54	26.00	—	—
100	6″	17.01″	11.01″	0.32″	0.87″	1.09″	0.56″	5/16″-18	10	M6	6521K65	28.07	6521K55	28.07	—	—
100	7″	19.65″	12.65″	0.32″	0.87″	1.09″	0.56″	5/16″-18	10	M6	6521K83	28.07	6521K73	28.07	—	—
Adjustable Resistance																
180	0.98″	5.28″	4.3″	0.24″	0.61″	0.7″	0.35″	M5	13	M5	9954K51	103.24	9898K51	103.24	9899K51	$103.24
180	1.97″	7.25″	5.28″	0.24″	0.61″	0.7″	0.35″	M5	13	M5	9954K52	104.57	9898K52	104.57	9899K52	104.57
180	2.95″	9.22″	6.27″	0.24″	0.61″	0.7″	0.35″	M5	13	M5	9954K53	105.89	9898K53	105.89	9899K53	105.89
405	1.97″	8.26″	6.29″	0.31″	0.87″	1.16″	0.65″	M8	20	M8	9954K56	118.84	9898K56	118.84	9899K56	118.84
405	3.94″	12.2″	8.26″	0.31″	0.87″	1.16″	0.65″	M8	20	M8	9954K57	120.28	9898K57	120.30	9899K57	120.28
405	5.91″	16.14″	10.23″	0.31″	0.87″	1.16″	0.65″	M8	20	M8	9954K58	121.85	9898K58	121.85	9899K58	121.85
674	3.94″	12.6″	8.66″	0.39″	1.1″	1.16″	0.65″	M8	20	M8	9954K62	130.81	9898K62	130.81	9899K62	130.81
674	5.91″	16.53″	10.62″	0.39″	1.1″	1.16″	0.65″	M8	20	M8	9954K63	133.44	9898K63	133.44	9899K63	133.44
674	7.87″	20.47″	12.6″	0.39″	1.1″	1.16″	0.65″	M8	20	M8	9954K64	136.50	9898K64	136.50	9899K64	136.50
674	9.84″	24.41″	14.57″	0.39″	1.1″	1.16″	0.65″	M8	20	M8	9954K65	139.36	9898K65	139.36	9899K65	139.36
674	11.81″	28.34″	16.53″	0.39″	1.1″	1.16″	0.65″	M8	20	M8	9954K66	142.83	9898K66	142.83	9899K66	142.83
2,248	7.87″	22.24″	14.37″	0.55″	1.57″	1.89″	1.1″	M14	30	M14	9954K76	196.44	9898K76	240.54	9899K76	203.31
2,248	11.81″	30.11″	18.3″	0.55″	1.57″	1.89″	1.1″	M14	30	M14	9954K77	207.81	9898K77	254.98	9899K77	215.07

Miniature Rotary Dampers

Control the speed of your rotary-motion load in both directions. These dampers allow smooth, quiet, mechanical operation of small lids, doors, and access panels. They're often used in electronics applications.

With Shaft— Maximum cycles per minute is 10. All are polycarbonate with an acetal shaft. Temperature range is 32° to 122° F.

With Square-Insert Opening— These dampers have a square-shaped opening that press-fits onto your shaft. Maximum cycles per minute is 12. All are steel with a nylon square-insert opening. Temperature range is 14° to 122° F.

With Shaft

With Square-Insert Opening

Torque Rating, in.-oz.	O'all Wd.	O'all Ht.	Mount. Holes Ctr.-to-Ctr.	Mount. Hole Dia.	Shaft Dia.	Shaft Wd. Across Flats	Shaft Ht.	Square-Insert Opening		
With Shaft										
1.39	0.95″	0.26″	0.75″	0.08″	0.142″	0.098″	0.15″	—	6597K14	$3.66
4.17	1.08″	0.55″	0.83″	0.13″	0.157″	0.138″	0.18″	—	6597K8	10.94
20.83	1.97″	0.75″	1.58″	0.17″	0.197″	0.157″	0.2″	—	6597K19	24.59
With Square-Insert Opening										
283	2.56″	0.39″	2.2″	0.18″	—	—	—	0.31″ × 0.31″	6597K21	20.16
665	3.11″	0.44″	2.68″	0.22″	—	—	—	0.39″ × 0.39″	6597K22	21.31
948	3.5″	0.44″	2.99″	0.26″	—	—	—	0.49″ × 0.49″	6597K23	22.12
1,232	3.74″	0.44″	3.23″	0.26″	—	—	—	0.49″ × 0.49″	6597K24	23.33

Miniature Adjustable-Speed Controls

Also known as feed controls, these miniature devices provide steady resistance and precise speed control. They're often used with an air cylinder to control the advance of saw blades, cutters, and drill bits (see the illustration at right). As the piston rod is compressed, hydraulic fluid is forced through an adjustable internal opening, creating consistent velocity control throughout the stroke. You can adjust the speed and force with a simple turn of a knob. An internal spring returns the piston rod to its extended position.

All of these controls have a threaded body and hex jam nut for mounting. The body and bumper are made of steel with a black-oxide finish. Piston rod is Type 440C stainless steel. Temperature range is 32° to 150° F.

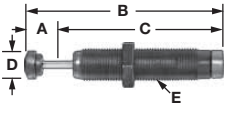

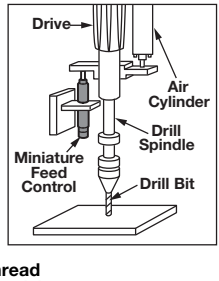

Max. Force, lbs.	Stroke Lg. (A)	Speed @ Force Min.	Speed @ Force Max.	Extend. Lg. (B)	Comp. Lg. (C)	Bumper Dia. (D)	Thread Size (E)		
400	0.75″	1.75″/min. @ 30 lbs.	350″/min. @ 380 lbs.	4.67″	3.92″	0.66″	3/4″-16	3743K11	$80.60
800	1.00″	0.5″/min. @ 40 lbs.	450″/min. @ 800 lbs.	5.62″	4.62″	0.9″	1″-12	3743K12	124.68
800	1.58″	0.5″/min. @ 40 lbs.	450″/min. @ 800 lbs.	7.44″	5.86″	0.9″	1″-12	3743K13	176.44

About Gas Springs

Gas springs are typically used to assist in opening lids, covers, windows, conveyors, and seats—similar to a hatchback opening on a car. If you want to close an object, you will need a close-assist gas spring (see page 1207).

Note: All gas springs contain pressurized nitrogen gas as well as hydraulic fluid that lubricates the seal and provides slam-resistant damping at the end of the stroke. To avoid loss of force, you should store and install gas springs rod-end down.

Choosing the Right Force

Your gas spring must have enough force to lift your object and hold it open, yet not too much force that you can't push it back to its original position. To determine the right amount of force, you'll need to know the weight of the object you're moving. One way to do this is to use a force or tension gauge (see page 1577).

Estimating Force— If you can't weigh your object, use the following chart to help determine its weight so you can estimate the force you'll need:

Material Weight per Square Foot (12″×12″)			
	Steel	**Aluminum**	**Plastic**
1/16″ Thick.	2.65 lbs.	0.83 lbs.	0.17 lbs.
1/8″ Thick.	5.21 lbs.	1.71 lbs.	0.58 lbs.
1/4″ Thick.	10.46 lbs.	3.61 lbs.	1.10 lbs.

Choosing the Right Extended and Compressed Length

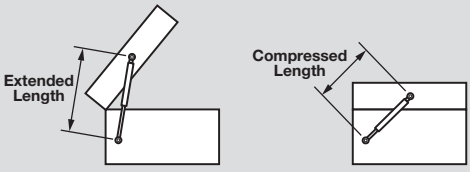

To determine the extended length that's right for your application, open your lid as wide as you need and measure the distance between the two mounting points. For compressed length, close your lid (or lower it to where you need it) and measure the distance between the two mounting points.

A Guide to Choosing the Correct Gas Springs

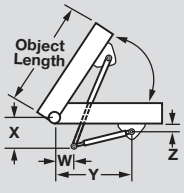

Horizontal-to-Vertical Lift

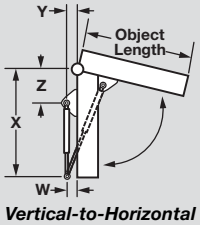

Vertical-to-Horizontal Lift

The examples at left illustrate how the length, weight, and opening direction of your object as well as the mounting position of the springs can affect which gas springs are right for your application. Find an example that is similar to your application and use it as a guide to select your springs. The specifications are based on using two gas springs (one on each side of the object), a 90° opening, and the center of gravity at the middle of the object. *Note:* The recommended force rating is per spring.

For Object Length	For Object Weight	Recommended Gas Spring			Recommended Mounting Position			
		Force Rating	Extend. Length	Comp. Length	(W)	(X)	(Y)	(Z)
Horizontal-to-Vertical Lift								
12″	20 lbs.	40 lbs.	10.71″	6.77″	1″	1″	11.19″	0.89″
12″	40 lbs.	40 lbs.	10.71″	6.77″	1″	1.5″	10.69″	0.89″
18″	60 lbs.	70 lbs.	13.74″	8.27″	1″	2.5″	12.72″	0.89″
18″	100 lbs.	100 lbs.	13.74″	8.27″	1.25″	3″	12.22″	0.89″
30″	40 lbs.	50 lbs.	18.22″	10.35″	2″	3.5″	16.18″	0.89″
Vertical-to-Horizontal Lift								
12″	20 lbs.	40 lbs.	10.71″	6.77″	2.5″	12.22″	0.89″	2″
12″	40 lbs.	50 lbs.	10.71″	6.77″	2.5″	11.77″	0.89″	3″
18″	60 lbs.	100 lbs.	13.74″	8.27″	2.5″	15.09″	0.89″	3″
18″	100 lbs.	130 lbs.	13.74″	8.27″	2.5″	14.66″	0.89″	4″
30″	40 lbs.	70 lbs.	18.22″	10.35″	1.5″	19.32″	0.89″	5.5″

Gas Springs

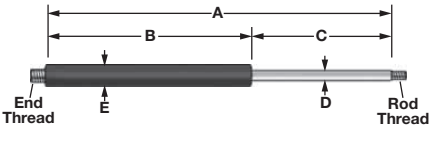

Our most popular gas springs are perfect for handling a variety of open-assist applications. Use them with your choice of fittings (unless noted), mounting studs, and mounting brackets (sold separately; see pages 1203 and 1204)—just be sure to match the rod and end thread sizes. Temperature range is –22° to +176° F, unless noted. **To Order:** Please specify force from those available below. If you don't see the exact force you need, just round up to the closest available force.

Steel— All have a steel cylinder and piston rod. The seal is rubber. ***Type 316 Stainless Steel—*** The choice for corrosion resistance. All have a Type 316 stainless steel cylinder and piston rod. The seal is fluoroelastomer, unless noted.

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Available Force, lbs.	Rod Dia. (D)	Cylinder Dia. (E)	Steel		Type 316 Stainless Steel	
M6 Rod and End Thread Size									
5.51″	3.54″	1.97″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	9416K14	$11.61	4175T1♣	$47.20
5.9″	3.54″	2.36″	15, 20, 30, 40, 50, 60, 70, 80	0.24″	0.59″	9416K11	9.49	4175T2♣	41.40
8.15″	4.61″	3.54″	15, 20, 30, 40, 50, 60, 70, 80	0.24″	0.59″	9416K12	11.32	4175T4♣	44.30
8.35″	5.2″	3.15″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	9416K24	11.86	4175T3♣	49.40
10.71″	6.77″	3.94″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	9416K15	12.48	4175T5	55.88
13.74″	8.23″	5.51″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	—	—	4175T6	59.96
13.74″	8.27″	5.47″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	9416K16	12.47	—	—
15.63″	9.33″	6.3″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	9416K17	13.04	4175T7	62.71
18.19″	10.32″	7.87″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	—	—	4175T8	63.87
18.22″	10.35″	7.87″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	9416K18	14.27	—	—
18.62″	10.35″	8.27″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	9416K19	14.68	4175T9	65.74
22.36″	12.52″	9.84″	15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	0.32″	0.75″	9416K2	17.13	4175T15	68.60
M8 Rod and End Thread Size									
18.18″	10.31″	7.87″	25, 50, 75, 100, 125, 150, 175, 200, 225, 250	0.39″	0.87″	9416K28	16.56	—	—
18.23″	10.36″	7.87″	25, 50, 75, 100, 125, 150, 175, 200, 225, 250	0.39″	0.87″	—	—	4175T21	73.08
26.38″	16.14″	10.24″	25, 50, 75, 100, 125, 150, 175, 200, 225, 250	0.39″	0.87″	9416K21	18.59	4175T23	84.67
28″	15.2″	12.8″	25, 50, 75, 100, 125, 150, 175, 200, 225, 250	0.39″	0.87″	9416K22	19.05	4175T25	89.08
29.33″	15.56″	13.77″	25, 50, 75, 100, 125, 150, 175, 200, 225, 250	0.39″	0.87″	9416K54★	16.97	—	—
33.94″	17.8″	16.14″	25, 50, 75, 100, 125, 150, 175, 200, 225, 250	0.39″	0.87″	9416K23	21.32	4175T27	101.84
M10 Rod and End Thread Size									
18.9″	10.9″	8″	200, 250, 300▲, 350▲, 400▲, 500▲, 550▲	0.55″	1.1″	9416K51♦	68.75	4175T35	116.98
26.77″	14.77″	12″	200, 250, 300▲, 350▲, 400▲, 500▲, 550▲	0.55″	1.1″	9416K52♦	82.08	4175T36	133.96
34.84″	18.84″	16″	200, 250, 300▲, 350▲, 400▲, 500▲, 550▲	0.55″	1.1″	9416K53♦	109.00	4175T37	162.32

♣ Seal is rubber. ★ Temp. range is –10° to +176° F. ▲ Not for use with 13 mm ball-socket fittings. ♦ Temp. range is –5° to +158° F.

Gas-Spring End Fittings and Brackets

Need to mount your gas spring? We offer an array of fittings, mounting studs, and mounting brackets to meet your requirements. You can use the same or two different style fittings on each end of your gas spring. Be sure to match the rod and end thread size of your gas spring to the thread size of the fittings. The fittings will increase your gas spring's extended and compressed lengths, so add the (A) value for each fitting you attach.

Ball-Socket Fittings

Standard Nylon

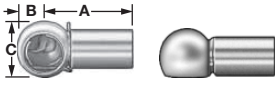

Standard Steel and Stainless Steel

Quick-Release Nylon

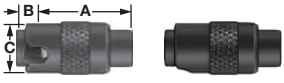

Quick-Release Steel

The most versatile gas-spring fittings, these ball-socket fittings rotate in any direction to compensate for misalignment. They require a ball stud or ball bracket (sold separately below) to mount your gas spring. The ball sockets easily snap right onto the stud/bracket ball—just make sure the sockets and studs/brackets have the same ball size. All sockets have safety clips for secure attachment to studs/brackets except for ***quick-release sockets***, which do not require clips (nylon socket has a snap-on cover to securely hold the ball; steel socket is spring loaded).

Fits Ball Size	Material	(A)	(B)	(C)		
Standard Sockets for M6 Threaded Gas Springs						
10 mm	Glass-Filled Nylon	0.75″	0.37″	0.66″	9416K86	$1.28
10 mm	Black Dichromate Steel	0.75″	0.29″	0.59″	9416K74	1.98
10 mm	Type 304 Stain. Steel	1″	0.28″	0.62″	9424K23	7.90
Standard Sockets for M8 Threaded Gas Springs						
10 mm	Glass-Filled Nylon	0.75″	0.37″	0.69″	9416K76	1.41
10 mm	Zinc-Plated Steel	0.75″	0.29″	0.58″	9416K79	2.96
10 mm	Type 304 Stain. Steel	0.87″	0.28″	0.58″	9424K12	18.12

Fits Ball Size	Material	(A)	(B)	(C)		
Standard Sockets for M8 Threaded Gas Springs (Cont.)						
13 mm	Zinc-Plated Steel	1.18″	0.38″	0.76″	9416K75	$4.12
13 mm	Type 304 Stain. Steel	1.2″	0.35″	0.76″	9424K24	9.24
Standard Sockets for M10 Threaded Gas Springs						
13 mm	Type 304 Stain. Steel	1.18″	0.37″	0.75″	9424K17	44.38
16 mm	Zinc-Plated Steel	1.38″	0.45″	0.94″	9416K45	9.44
Quick-Release Sockets for M6 Threaded Gas Springs						
10 mm	Glass-Filled Nylon	0.71″	0.41″	0.83″	9416K78	1.17
10 mm	Epoxy-Coated Steel	1.25″	0.31″	0.70″	9416K47	4.44

Mounting Ball Studs and Ball Brackets

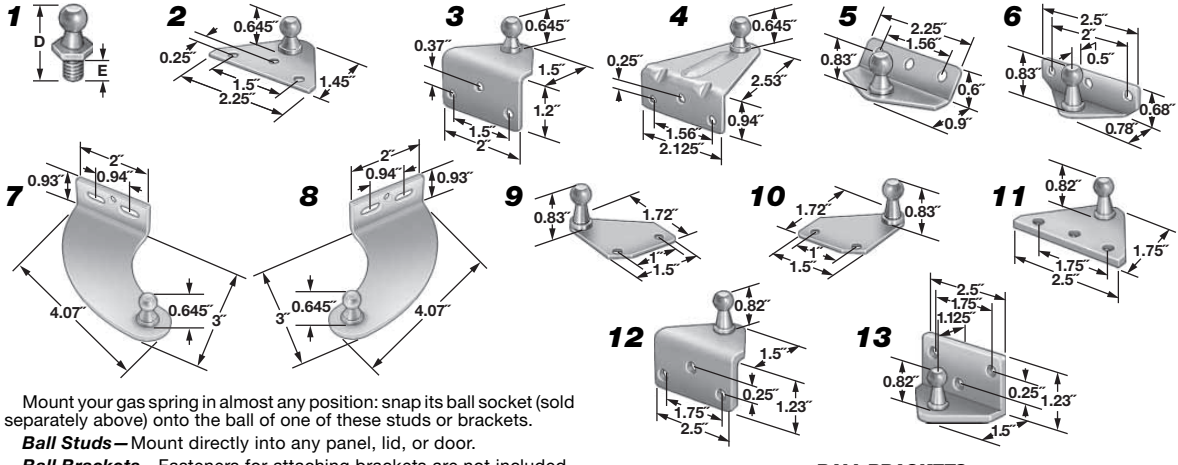

Mount your gas spring in almost any position: snap its ball socket (sold separately above) onto the ball of one of these studs or brackets.

Ball Studs—Mount directly into any panel, lid, or door.

Ball Brackets—Fasteners for attaching brackets are not included. ***Steel*** and ***stainless steel brackets*** have mounting holes for attaching to a lid, wall, or other surface. Brackets with a 10 mm ball have 0.2″ dia. mounting holes; all others have 0.26″ dia. holes.

Aluminum brackets do not have mounting holes and can be welded or drilled to your customized hole pattern. Ball is zinc-plated steel.

BALL STUDS

Material	Thread Size	O'all Lg. (D)	Thread Lg. (E)		
With 10 mm Ball					
1 ... Zinc-Plated Steel	5/16″-18	1.19″	0.55″	9512K73	$1.03
1 ... Zinc-Plated Steel	5/16″-18	1.63″	0.75″	9512K63	1.79
1 ... Type 303 Stainless Steel	5/16″-18	1.41″	0.75″	9512K98	3.34
1 ... Type 316 Stainless Steel	5/16″-18	1.41″	0.75″	9512K88	7.83
With 13 mm Ball					
1 ... Zinc-Plated Steel	5/16″-18	1.38″	0.59″	9512K18	1.19
1 ... Zinc-Plated Steel	5/16″-18	1.79″	1″	9512K19	1.79
1 ... Type 303 Stainless Steel	5/16″-18	1.54″	0.75″	9512K21	4.78
1 ... Type 316 Stainless Steel	5/16″-18	1.54″	0.75″	9512K22	9.88
With 16 mm Ball					
1 ... Zinc-Plated Steel	3/8″-16	1.85″	0.75″	9512K47	9.00
1 ... Type 304 Stainless Steel	M12×1.75	1.68″	0.75″	9512K49	16.38

BALL BRACKETS

Thick.	Zinc-Plated Steel		300 Series Stainless Steel		Aluminum Thick.		
With 10 mm Ball							
2 ... 0.08″	9512K91	$1.00	9512K11	$4.75	0.12″	4536T1	$5.76
3 ... 0.11″	9512K92	1.03	9512K12	5.00	0.12″	4536T2	5.22
4 ... 0.11″	9512K93	1.89	9512K13	7.12	0.12″	4536T3	7.42
5 ... 0.08″	9512K94	2.00	9512K14	27.26	0.07″	4536T4	17.51
6 ... 0.08″	9512K95	1.67	9512K15	6.25	0.06″	4536T5	7.42
7 ... 0.14″	9512K61	4.07	—	—	—	—	—
8 ... 0.14″	9512K62	4.07	—	—	—	—	—
9 ... 0.08″	9512K96	1.78	9512K16	6.25	0.12″	4536T6●	11.09
10 ... 0.08″	9512K97	1.78	9512K17	6.25	0.12″	4536T7●	11.09
With 13 mm Ball							
11 ... 0.25″	5992K31	28.28	5992K14	54.26	—	—	—
12 ... 0.25″	5992K32	36.36	5992K15	66.57	—	—	—
13 ... 0.25″	5992K33	38.38	5992K16	70.37	—	—	—
With 16 mm Ball ■							
11 ... 0.25″	5992K11	40.20	5992K21	59.26	—	—	—
12 ... 0.25″	5992K12	51.72	5992K22	74.54	—	—	—
13 ... 0.25″	5992K13	56.57	5992K23	78.70	—	—	—

● Ball height is 0.645″. ■ Ball height is 0.87″.

Fitting Assortments

M6 Thread Assortment—Has two steel and two nylon ball sockets with retaining clips, two zinc eyelet fittings, and two steel ball studs.

9416K95 ..... $11.04

M8 Thread Assortment—Has two steel and two nylon ball sockets with retaining clips, two zinc eyelet fittings, and four steel ball studs.

9416K96 ..... $14.72

M10 Thread Assortment—Has two steel ball sockets with retaining clips, two aluminum eyelet fittings, and two steel ball studs.

9416K98 ..... $44.00

M6 Thread Assortment

(Continued on following page)

For information about gas springs, see page 1202.

Gas-Spring End Fittings and Brackets *(Continued from previous page)*

Need to mount your gas spring? We offer an array of fittings, mounting studs, and mounting brackets to meet your requirements. You can use the same or two different style fittings on each end of your gas spring. Be sure to match the rod and end thread size of your gas spring to the thread size of the fittings. The fittings will increase your gas spring's extended and compressed lengths, so add the (A) value for each fitting you attach.

Eyelet Fittings and Mounting Brackets

Pair an eyelet fitting and eyelet mounting bracket (each sold separately below) to mount your gas spring, unless noted. ***Eyelet fittings*** with a 0.39″ eyelet dia. require a bolt or pin (not included) to mount a gas spring. Your bolt or pin must be compatible with the 0.39″ eyelet dia. ***Eyelet mounting brackets*** have 0.24″ dia. mounting holes for attaching to a lid, wall, or other surface. Fasteners for attaching brackets are not included.

EYELET FITTINGS

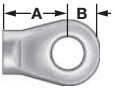

Material	Eyelet Dia.	(A)	(B)	Eyelet Thick.		
For M6 Threaded Gas Springs						
Nylon	0.32″	0.83″	0.44″	0.39″	6465K26	$1.49
Zinc	0.32″	1.1″	0.31″	0.19″	9416K84	1.41
Zinc	0.39″	0.83″	0.39″	0.39″	6465K61	2.50
Type 316 Stain. Steel	0.24″	0.69″	0.2″	0.24″	9424K14	10.00
For M8 Threaded Gas Springs						
Zinc	0.32″	0.83″	0.39″	0.39″	6465K63	2.36
Zinc	0.32″	1.1″	0.31″	0.19″	9416K88	1.55
Zinc	0.39″	0.83″	0.39″	0.39″	6465K27	1.94
Aluminum	0.32″	0.79″	0.32″	0.39″	9428K3	6.42
Type 316 Stain. Steel	0.32″	0.84″	0.28″	0.35″	9424K15	16.50
For M10 Threaded Gas Springs						
Aluminum	0.32″	1.38″	0.39″	0.39″	9416K666	10.12
Type 316 Stain. Steel	0.32″	1.18″	0.32″	0.39″	9424K16	18.00

EYELET MOUNTING BRACKETS

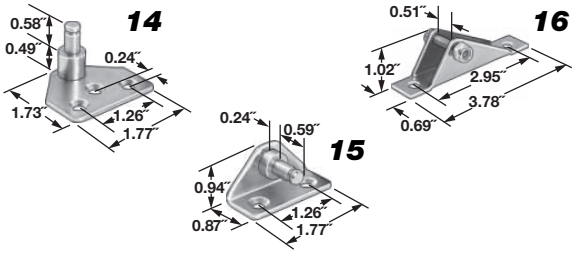

	For Eyelet Dia.	Thick.	*Zinc-Plated Steel*		*Stainless Steel*	
14	0.32″	0.12″	9416K25 ♦	$6.14	4167T11 ★	$23.20
15	0.32″	0.12″	9416K26 ♦	6.14	4167T12 ★	23.20
16	0.24″	0.08″	9416K27	6.31	4167T13	20.47
16	0.32″	0.08″	9416K29	6.94	—	—

♦ Includes end caps. ★ Includes retaining clips.

Clevis Fittings

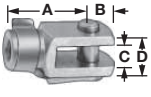

A heavy duty alternative to eyelet fittings, these clevis fittings offer a bidirectional pivot point at the end of your gas spring. Clevis is zinc-plated steel and includes a zinc-plated steel spring pin.

For Gas Spring Thread Size	(A)	(B)	(C)	Pin Dia.	(D)		
M6	0.94″	0.28″	0.24″	0.24″	0.47″	2448K45	$4.79
M8	1.26″	0.39″	0.32″	0.32″	0.63″	2448K47	5.36
M10	1.57″	0.47″	0.39″	0.39″	0.79″	2448K49	6.25

Seal Protectors and Rod Bellows

Seal Protector

Rod Bellows

Protect the most vulnerable parts of your gas spring.

Seal Protectors— Made of rubber.

Rod Bellows— Made of abrasion- and chemical-resistant Goralon rubber. Attach using the included clips.

For Cylinder Dia.	*Seal Protectors*		*Rod Bellows* For Stroke Lg.		
0.59″	—	—	Up to 3.54″	4159T11	$29.68
0.75″	4185T11	$1.64	Up to 8.50″	4159T12	37.45
0.87″	4185T12	2.48	Up to 9.84″	4159T13	40.46
0.87″	—	—	Up to 16.14″	4159T14	49.29

Gas Springs with Ball-Joint Fittings

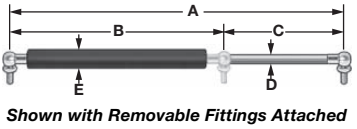

Shown with Removable Fittings Attached

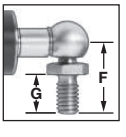

Shown with Fittings Removed

We've coupled our most popular gas springs with the most versatile fittings: ball-joint fittings consisting of a ball socket and ball stud that rotate in any direction to compensate for misalignment. The ball-joint fittings can be easily removed. The ball diameter is 10 mm. All gas springs have a rubber seal. **To Order:** Please specify force from those available below. If you don't see the exact force you need, round up to the closest available force.

Steel— The cylinder, piston rod, ball socket, and stud are all made of steel. Temperature range is –30° to +180° F.

Type 316 Stainless Steel— The choice for corrosion resistance. The cylinder and piston rod are Type 316 stainless steel, the ball socket is nylon, and the stud is 300 series stainless steel. Temperature range is –10° to +180° F.

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Available Force, lbs.	Rod Dia. (D)	Cylinder Dia. (E)	Ball Stud Lg. (F)	Thread Lg. (G)	Ball Stud Thread Size	Rod and End Thread Size		
Steel											
7.01″	5.04″	1.97″	15, 20, 40, 60, 90	0.31″	0.75″	1″	0.55″	5/16″-18	M6	4138T51	$14.47
7.4″	5.04″	2.36″	15, 20, 30, 40, 50, 60, 80	0.24″	0.59″	1″	0.55″	5/16″-18	M6	4138T52	14.47
9.65″	6.1″	3.54″	15, 20, 30, 40, 50, 60, 80	0.24″	0.59″	1″	0.55″	5/16″-18	M6	4138T53	14.47
12.2″	8.27″	3.94″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	1″	0.55″	5/16″-18	M6	4138T54	14.47
15.24″	9.76″	5.47″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	1″	0.55″	5/16″-18	M6	4138T55	14.47
17.13″	10.83″	6.3″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	1″	0.55″	5/16″-18	M6	4138T56	14.47
19.72″	11.85″	7.87″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	1″	0.55″	5/16″-18	M6	4138T57	14.47
20.12″	11.85″	8.27″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	1″	0.55″	5/16″-18	M6	4138T58	14.47
27.87″	17.64″	10.24″	50, 100, 150, 200, 250	0.39″	0.87″	1″	0.55″	5/16″-18	M8	4138T61	20.72
29.49″	16.69″	12.8″	50, 100, 150, 200, 250	0.39″	0.87″	1″	0.55″	5/16″-18	M8	4138T62	20.72
35.43″	19.29″	16.14″	50, 100, 150, 200, 250	0.39″	0.87″	1″	0.55″	5/16″-18	M8	4138T63	20.72
Type 316 Stainless Steel											
7.42″	5.17″	2.25″	10, 20, 30, 45, 55, 70, 80, 90	0.25″	0.63″	1.06″	0.54″	5/16″-18	M6	4155T101	57.41
10″	7″	3″	10, 20, 30, 45, 55, 70, 80, 90	0.25″	0.63″	1.06″	0.54″	5/16″-18	M6	4155T201	60.34
12″	8″	4″	10, 20, 30, 45, 55, 70, 80, 90	0.25″	0.63″	1.06″	0.54″	5/16″-18	M6	4155T301	63.47
15″	9″	6″	10, 20, 30, 40, 50, 60, 70, 80, 90	0.25″	0.63″	1.06″	0.54″	5/16″-18	M6	4155T501	70.92
17″	10″	7″	10, 20, 30, 40, 50, 60, 70, 80, 90	0.25″	0.63″	1.06″	0.54″	5/16″-18	M6	4155T601	75.64
20″	12″	8″	10, 20, 30, 40, 50, 60, 70, 80, 90	0.25″	0.63″	1.06″	0.54″	5/16″-18	M6	4155T701	72.78
23″	13.3″	9.7″	20, 40, 60, 80, 100, 120, 140	0.31″	0.75″	1.06″	0.54″	5/16″-18	M6	4155T801	74.02
26.2″	15″	11.2″	20, 40, 60, 80, 100, 120, 140	0.31″	0.75″	1.06″	0.54″	5/16″-18	M6	4155T901	75.60

For information about gas springs, see page 1202.

Locking Gas Springs with Ball-Joint Fittings

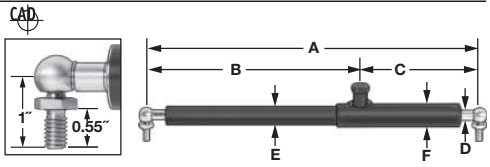

Shown with Removable Fittings Attached

Reduce damage to equipment—an external sleeve and spring-loaded knob automatically lock these springs in their fully extended position. To release, pull the knob. *Note:* When using two gas springs in a locking application, use one locking spring and one nonlocking spring.

All of these gas springs come with the most versatile fittings: ball-joint fittings consisting of a ball socket and ball stud that rotate 360° to compensate for misalignment. The ball-joint fittings can be easily removed. The ball diameter is 10 mm.

The cylinder, piston rod, ball socket, and stud are steel. The seal is rubber. Temperature range is –30° to +180° F. **To Order:** Please specify force from those available below. If you don't see the exact force you need, round up to the closest available force.

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Available Force, lbs.	Rod Dia. (D)	Cylinder Dia. (E)	Sleeve Dia. (F)	Ball Stud Thread Size	Rod and End Thread Size		
12.2″	8.46″	3.74″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	0.85″	5/16″-18	M6	9425K11	$50.62
15.24″	9.96″	5.28″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	0.85″	5/16″-18	M6	9425K12	52.82
17.13″	11.02″	6.1″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	0.85″	5/16″-18	M6	9425K13	55.23
19.72″	12.05″	7.68″	15, 20, 30, 40, 50, 60, 90, 120	0.31″	0.75″	0.85″	5/16″-18	M6	9425K14	57.85

Extended-Service Stainless Steel Gas Springs with Ball-Joint Fittings

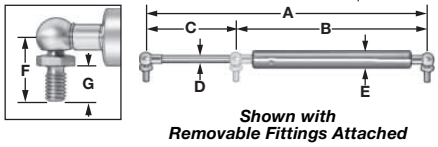

Shown with Removable Fittings Attached

Built tough, these gas springs last longer and endure more cycles than other gas springs. Corrosion resistance from their all-stainless steel construction adds to their durability. Great for food, pharmaceutical, medical, and marine applications.

All of these gas springs come with the most versatile fittings: ball-joint fittings consisting of a ball socket and ball stud that rotate 360° to compensate for misalignment. The ball-joint fittings can be easily removed. The ball diameter is 8 mm for 9517T2 and 9517T3; 13 mm for all others.

The cylinder and piston rod are Type 316L stainless steel. The ball socket and stud are Type 304 stainless steel. The seal is rubber and contains USDA food-grade oil. Temperature range is –5° to +158° F. **To Order:** Please specify force from those available below. If you don't see the exact force you need, round up to the closest available force.

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Available Force, lbs.	Rod Dia. (D)	Cylinder Dia. (E)	Ball Stud Lg. (F)	Thread Lg. (G)	Ball Stud Thread Size	Rod and End Thread Size		
12.13″	8.13″	4″	10, 20, 30, 40, 50, 60, 70, 80, 90	0.24″	0.59″	0.75″	0.37″	M5	M6	9517T2	$111.74
16.07″	10.07″	6″	10, 20, 30, 40, 50, 60, 70, 80, 90	0.24″	0.59″	0.75″	0.37″	M5	M6	9517T3	117.68
20.9″	12.9″	8″	25, 30, 40, 50, 60, 70, 80, 100, 120, 135	0.32″	0.71″	1.16″	0.65″	M8	M8	9517T4	139.44
24.92″	14.92″	10″	25, 30, 40, 50, 60, 70, 80, 100, 120, 135	0.32″	0.71″	1.16″	0.65″	M8	M8	9517T5	148.95
29.09″	17.09″	12″	35, 50, 75, 100, 125, 150, 175, 200, 250	0.39″	0.91″	1.16″	0.65″	M8	M10	9517T6	190.22
37.08″	21.08″	16″	35, 50, 75, 100, 125, 150, 175, 200, 250	0.39″	0.91″	1.16″	0.65″	M8	M10	9517T7	211.50

Extreme-Temperature Gas Springs with Ball-Joint Fittings

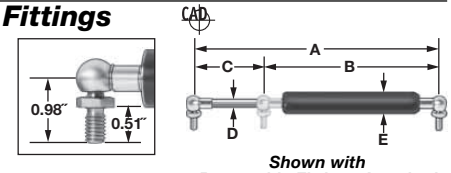

Shown with Removable Fittings Attached

A special composite seal allows these gas springs to tolerate temperatures from –4° to +392° F. All come with the most versatile fittings: ball-joint fittings consisting of a ball socket and ball stud that rotate 360° to compensate for misalignment. The ball-joint fittings can be easily removed. The ball diameter is 10 mm.

The cylinder, piston rod, ball socket, and stud are all made of steel. **To Order:** Please specify force from those available below. If you don't see the exact force you need, round up to the closest available force.

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Available Force, lbs.	Rod Dia. (D)	Cylinder Dia. (E)	Ball Stud Thread Size	Rod and End Thread Size		
11.61″	7.67″	3.94″	15, 20, 30, 40, 60, 70, 80, 90, 120	0.32″	0.75″	M8	M8	9646T61	$63.88
14.76″	9.25″	5.51″	15, 20, 30, 40, 60, 70, 80, 90, 120	0.32″	0.75″	M8	M8	9646T62	67.18
16.34″	10.04″	6.3″	15, 20, 30, 40, 60, 70, 80, 90, 120	0.32″	0.75″	M8	M8	9646T63	67.62
19.49″	11.62″	7.87″	15, 20, 30, 40, 60, 70, 80, 90, 120	0.32″	0.75″	M8	M8	9646T64	69.86
19.88″	11.61″	8.27″	15, 20, 30, 40, 60, 70, 80, 90, 120	0.32″	0.75″	M8	M8	9646T65	70.00

Miniature Gas Springs with Eyelet Fittings

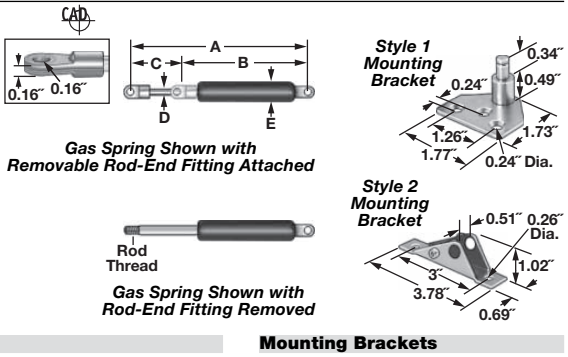

Gas Spring Shown with Removable Rod-End Fitting Attached

Gas Spring Shown with Rod-End Fitting Removed

Their tiny size and low force output make these gas springs the choice for small lids and doors in confined spaces, such as small toolboxes and access panels. All gas springs have a rubber seal and come with an eyelet fitting on each end. The rod-end eyelet fitting is removable and the rod thread size is M4. Temperature range is –5° to +158° F. **To Order:** Please specify force from those available below. If you don't see the exact force you need, round up to the closest available force.

Steel Gas Springs— The cylinder and piston rod are steel. Eyelet fittings are aluminum.

Type 316L Stainless Steel Gas Springs— The cylinder, piston rod, and eyelet fittings are Type 316L stainless steel for corrosion resistance.

Mounting Brackets— To mount your gas spring, use a mounting bracket (sold separately below). They have mounting holes for attaching to a lid, wall, or other surface. Fasteners for attaching brackets are not included. *Style 1* includes a retaining ring.

Gas Springs

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Available Force, lbs.	Rod Dia. (D)	Cylinder Dia. (E)	Steel		Type 316L Stainless Steel	
4.33″	3.33″	1″	5, 10, 15, 20, 25, 30	0.16″	0.47″	9417K1	$37.78	4170T1	$68.10
5.11″	3.61″	1.5″	5, 10, 15, 20, 25, 30	0.16″	0.47″	9417K2	38.00	4170T2	69.00
6.29″	4.29″	2″	5, 10, 15, 20, 25, 30	0.16″	0.47″	9417K3	38.44	4170T3	70.00
7.08″	4.58″	2.5″	5, 10, 15, 20, 25, 30	0.16″	0.47″	9417K4	38.78	4170T4	71.00
8.26″	5.26″	3″	5, 10, 15, 20, 25, 30	0.16″	0.47″	9417K5	39.22	4170T5	72.20
9.05″	5.55″	3.5″	5, 10, 15, 20, 25, 30	0.16″	0.47″	9417K6	39.56	4170T6	73.30

Mounting Brackets

	For Eyelet Dia.	Thick.		
Zinc-Plated Steel				
1	0.16″	0.12″	9417K91	$16.25
2	0.16″	0.08″	9417K92	13.62
Type 316 Stainless Steel				
1	0.16″	0.12″	4170T91	27.54
2	0.16″	0.08″	4170T92	22.58

Reducible-Force Gas Springs with Fittings

Not sure what force you need? A bleed-off valve allows you to release gas to permanently reduce the force. All gas springs come charged to their maximum force.

Note: Release gas in very small increments and then test your application. Once gas is released, the force is permanently reduced.

Steel Gas Springs with Ball-Joint Fittings

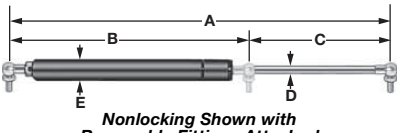

Nonlocking Shown with Removable Fittings Attached

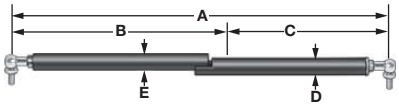

Locking Shown with Removable Fittings Attached

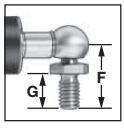

Just use the included hex key to open the hex socket and bleed off the gas—no disassembly required. All of these gas springs come with the most versatile fittings: ball-joint fittings consisting of a ball socket and ball stud that rotate 360° to compensate for misalignment. The ball-joint fittings can be easily removed.

The cylinder and piston rod are made of steel. The seal is rubber.

Temperature range is –40° to +212° F.

Locking Gas Springs— Reduce damage to equipment—an external sleeve automatically locks these springs in their fully extended position. To release, pull the sleeve. *Note:* When using two gas springs in a locking application, use one locking spring and one nonlocking spring.

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Cylinder Dia. (E)	Ball Stud Lg. (F)	Thread Lg. (G)	Ball Stud Thread Size	Ball Dia.	Rod and End Thread Size	Nonlocking Rod Dia. (D)		Locking Sleeve Dia. (D)	
90 lbs. Max. Force												
7.72″	5.36″	2.36″	0.59″	0.96″	0.49″	5/16″-18	10 mm	M6	0.24″	**6465K1**	$44.85	
10.87″	6.93″	3.94″	0.59″	0.96″	0.49″	5/16″-18	10 mm	M6	0.24″	**6465K2**	45.45	
14.8″	8.9″	5.9″	0.59″	0.96″	0.49″	5/16″-18	10 mm	M6	0.24″	**6465K91**	46.12	
18.74″	10.87″	7.87″	0.59″	0.96″	0.49″	5/16″-18	10 mm	M6	0.24″	**6465K92**	46.54	
146 lbs. Max. Force												
11.81″	7.87″	3.94″	0.71″	0.96″	0.49″	5/16″-18	10 mm	M6	0.32″	**6465K3**	48.68	1.38″ **65145K63** $74.95
15.75″	9.84″	5.91″	0.71″	0.96″	0.49″	5/16″-18	10 mm	M6	0.32″	**6465K4**	49.55	0.87″ **65145K64** 76.31
19.68″	11.81″	7.87″	0.71″	0.96″	0.49″	5/16″-18	10 mm	M6	0.32″	**6465K5**	50.34	0.87″ **65145K65** 77.71
23.62″	13.78″	9.84″	0.71″	0.96″	0.49″	5/16″-18	10 mm	M6	0.32″	**6465K21**	52.35	0.87″ **65145K91** 79.58
27.56″	15.75″	11.81″	0.71″	0.96″	0.49″	5/16″-18	10 mm	M6	0.32″	**6465K22**	54.82	0.87″ **65145K92** 83.15
270 lbs. Max. Force												
12.8″	8.86″	3.94″	0.91″	1.16″	0.65″	5/16″-18	13 mm	M8	0.39″	**6465K93**	54.51	1.1″ **65145K83** 76.18
16.73″	10.83″	5.9″	0.91″	1.16″	0.65″	5/16″-18	13 mm	M8	0.39″	**6465K94**	58.87	1.1″ **65145K84** 76.18
19.88″	12.01″	7.87″	0.91″	1.16″	0.65″	5/16″-18	13 mm	M8	0.39″	**6465K23**	54.98	1.1″ **65145K93** 80.22
23.82″	13.98″	9.84″	0.91″	1.16″	0.65″	5/16″-18	13 mm	M8	0.39″	**6465K6**	55.38	1.1″ **65145K66**♦ 80.89
27.76″	15.94″	11.82″	0.91″	1.16″	0.65″	5/16″-18	13 mm	M8	0.39″	**6465K7**	56.24	1.1″ **65145K67**■ 90.80
36.02″	20.28″	15.74″	0.91″	1.16″	0.65″	5/16″-18	13 mm	M8	0.39″	**6465K95**	58.56	1.1″ **65145K85**● 94.35
562 lbs. Max. Force												
13.78″	9.84″	3.94″	1.1″	1.42″	0.79″	M10	16 mm	M10	0.55″	**6465K96**	134.89	
21.65″	13.78″	7.87″	1.1″	1.42″	0.79″	M10	16 mm	M10	0.55″	**6465K97**	138.76	1.38″ **65145K87**★ 206.64
29.53″	17.72″	11.81″	1.1″	1.42″	0.79″	M10	16 mm	M10	0.55″	**6465K24**	142.31	1.38″ **65145K94** 189.61
37.4″	21.65″	15.75″	1.1″	1.42″	0.79″	M10	16 mm	M10	0.55″	**6465K8**	131.55	1.38″ **65145K68** 213.75
45.28″	25.59″	19.69″	1.1″	1.42″	0.79″	M10	16 mm	M10	0.55″	**6465K98**	148.64	1.38″ **65145K88** 228.35

♦ Extend. Lg. (A) is 24.6″; Comp. Lg. (B) is 14.76″. ■ Extend. Lg. (A) is 28.54″; Comp. Lg. (B) is 16.73″.
● Extend. Lg. (A) is 36.42″; Comp. Lg. (B) is 20.67″; Stroke Lg. (C) is 15.75″. ★ Rod and end thread size is M8.

Stainless Steel Gas Springs with Eyelet Fittings

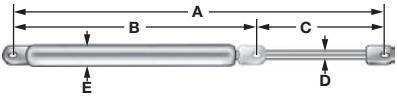

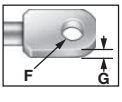

Gas Spring Shown with Removable Fittings Attached

Gas Spring Shown with Rod Protector

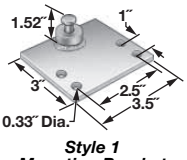

Style 1 Mounting Bracket

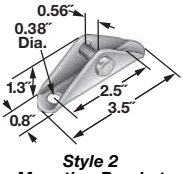

Style 2 Mounting Bracket

The choice for corrosive environments, these gas springs have a Type 316 stainless steel cylinder and piston rod. They also have a rubber seal and come with an eyelet fitting on each end. You can easily remove the eyelet fittings. Temperature range is –40° to +300° F.

All gas springs have a bleed-off valve to release the gas. *Note:* You will have to remove the end fitting to access the bleed-off valve.

Rod Protectors— Slip one of these protectors over the gas-spring rod and under the eyelet fitting to protect the rod from debris and minimize damage to the seal. All are made of Type 316 stainless steel. The ***240-lb. models*** are 1″ dia.; ***500-lb. models*** are 1.25″ dia.

Regulator Kit— Once you release gas from your gas spring, you can't go back. Attaching a kit lets you monitor how much gas you are releasing as you do it. Each kit contains a pressure gauge, manifold, and bronze fittings.

Mounting Brackets— To mount your gas spring, use a mounting bracket. They're made of stainless steel and have mounting holes for attaching to a lid, wall, or other surface. Fasteners for attaching brackets are not included.

GAS SPRINGS, ROD PROTECTORS, AND REGULATOR KITS

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Rod Dia. (D)	Cylinder Dia. (E)	(F)	(G)	Gas Springs		Rod Protectors	
240 lbs. Max. Force Gas Springs—*Rod and End Thread Size: M8.*										
8.25″	6.25″	2″	0.38″	0.88″	0.39″	0.38″	**6626K54**	$88.05	**9419K71**	$24.00
12.25″	8.25″	4″	0.38″	0.88″	0.39″	0.38″	**6626K55**	92.48	**9419K72**	24.80
16.25″	10.25″	6″	0.38″	0.88″	0.39″	0.38″	**6626K56**	94.27	**9419K73**	26.00
20.25″	12.25″	8″	0.38″	0.88″	0.39″	0.38″	**6626K57**	99.64	**9419K74**	27.20
24.25″	14.25″	10″	0.38″	0.88″	0.39″	0.38″	**6626K58**	101.43	**9419K75**	28.14
28.25″	16.25″	12″	0.38″	0.88″	0.39″	0.38″	**6626K59**	106.20	**9419K76**	29.60
32.25″	18.25″	14″	0.38″	0.88″	0.39″	0.38″	**6626K61**	110.20	**9419K77**	31.20
36.25″	20.25″	16″	0.38″	0.88″	0.39″	0.38″	**6626K62**	114.07	**9419K78**	32.00
Regulator Kit for 240-lb. Max. Force Gas Springs Above							**6626K92**	$386.10		
500 lbs. Max. Force Gas Springs—*Rod and End Thread Size: M10.*										
10.5″	8.5″	2″	0.56″	1.17″	0.39″	0.5″	**6626K71**	134.01	**9419K81**	35.06
14.5″	10.5″	4″	0.56″	1.17″	0.39″	0.5″	**6626K72**	144.61	**9419K82**	36.78
18.5″	12.5″	6″	0.56″	1.17″	0.39″	0.5″	**6626K73**	166.76	**9419K83**	38.50
22.5″	14.5″	8″	0.56″	1.17″	0.39″	0.5″	**6626K74**	174.26	**9419K84**	40.22
26.5″	16.5″	10″	0.56″	1.17″	0.39″	0.5″	**6626K75**	169.96	**9419K85**	41.94
30.5″	18.5″	12″	0.56″	1.17″	0.39″	0.5″	**6626K76**	196.47	**9419K86**	43.64
38.5″	22.5″	16″	0.56″	1.17″	0.39″	0.5″	**6626K77**	217.45	**9419K88**	47.08
46.5″	26.5″	20″	0.56″	1.17″	0.39″	0.5″	**6626K78**	196.00	**9419K89**	49.94
54.5″	30.5″	24″	0.56″	1.17″	0.39″	0.5″	**6626K79**	203.83	**9419K91**	52.80
Regulator Kit for 500-lb. Max. Force Gas Springs Above							**6626K93**	$386.10		

Mounting Brackets

	Material	For Eyelet Dia.	Thick.		
1	Type 303 Stainless Steel	0.39″	0.25″	**6626K96**	$30.30
2	Type 304 Stainless Steel	0.39″	0.125″	**6626K95**	11.22

Remote-Release Gas Springs with Ball-Joint Fitting

When you team one of these gas springs with a release control (each sold separately) you can lock the gas spring in place and then release it with a push of a button or lever.

Gas Springs— A valve on the rod end interacts with the release control to operate the gas spring. The cylinder end comes with the most versatile fitting: a ball-joint fitting consisting of a ball socket and ball stud that rotate 360° to compensate for misalignment. The ball-joint fitting can be easily removed.

All gas springs have a steel cylinder and piston rod. Seal is rubber. Temperature range is –22° to +176° F. **To Order:** Please specify force from those available below. If you don't see the exact force you need, round up to the closest available force.

Release Controls— Have an eyelet connector that threads right onto the threads at the rod end of the gas spring. The eyelet hole diameter is 0.32″. To mount the gas spring with a release control, use an eyelet bracket (not included; see page 1204) for the push-button style control; a bolt or pin for the lever-style control.

Push-button style has a hydraulic cable that lets you actuate the gas spring from a distance (see listing). It has a 1.97″ long M16 threaded body for panel mounting.

Lever style has a 5.12″ long lever that attaches to either side of its eyelet connector.

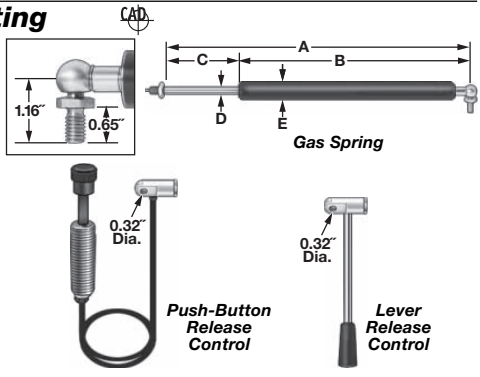

Gas Springs— Ball Stud Thread Size: M8. Rod and End Thread Size: M10.

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Available Force, lbs.	Rod Dia. (D)	Cylinder Dia. (E)		
12.2″	8.26″	3.94″	20, 40, 60, 100	0.39″	0.87″	9833T8	$93.10
15.94″	10.04″	5.9″	20, 40, 60, 100	0.39″	0.87″	9833T1	99.74
19.88″	12.01″	7.87″	20, 40, 60, 100	0.39″	0.87″	9833T2	105.34
23.82″	13.82″	10″	20, 40, 60, 100	0.39″	0.87″	9833T3	120.30
28.15″	16.15″	12″	20, 40, 60, 100	0.39″	0.87″	9833T4	128.74
44.29″	24.29″	20″	20, 40, 60, 100	0.39″	0.87″	9833T6	165.86

Release Controls

Push-Button with 19 11/16″ Lg. Cable	9684K11	$48.33
Push-Button with 29 1/2″ Lg. Cable	9684K12	49.00
Push-Button with 39 3/8″ Lg. Cable	9684K13	49.67
Push-Button with 49 7/32″ Lg. Cable	9684K14	50.88
Push-Button with 59″ Lg. Cable	9684K15	51.86
Lever	3739K1	31.28

Miniature High-Force Gas Springs

Small in size, but not in strength, these gas springs are often used to replace coil springs in metal stamping and die-spring applications. They match the diameter and stroke length of coil die springs, but offer much more force. Compared to other gas springs, they exert high force with short stroke lengths. They can also be mounted with the rod in any position.

All springs have a steel cylinder and piston rod. Seal is polyurethane. A rod scraper protects the seal from debris, prolonging the life of the spring. Temperature range is 32° to 176° F. Color-coded labels help ensure you choose the correct replacement. **To Order:** Please specify force from those available below. If you don't see the exact force you need, round up to the closest available force.

Mounting flanges allow panel mounting. They slide onto a groove in the cylinder body and stay in place with included clips. Mounting fasteners are not included.

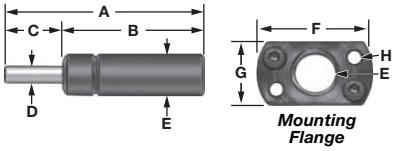

Gas Springs

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Rod Dia. (D)	Cylinder Dia. (E)		
Available Force, lbs.: 40 (Green), 81 (Blue), 121 (Red), 164 (Yellow)						
2.83″	2.24″	0.59″	0.24″	0.47″	6643K72	$54.33
3.62″	2.64″	0.98″	0.24″	0.47″	6643K73	56.88
4.65″	3.15″	1.5″	0.24″	0.47″	6643K74	58.16
5.59″	3.62″	1.97″	0.24″	0.47″	6643K45	59.45
7.95″	4.80″	3.15″	0.24″	0.47″	6643K46	62.04
Available Force, lbs.: 94 (Green), 157 (Blue), 220 (Red), 292 (Yellow)						
2.83″	2.24″	0.59″	0.32″	0.75″	6643K52	56.87
3.62″	2.64″	0.98″	0.32″	0.75″	6643K53	59.45
4.65″	3.15″	1.5″	0.32″	0.75″	6643K54	62.02
7.95″	4.80″	3.15″	0.32″	0.75″	6643K56	72.39

Gas Springs (Cont.)

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Rod Dia. (D)	Cylinder Dia. (E)		
Available Force, lbs.: 173 (Green), 346 (Blue), 519 (Red), 690 (Yellow)						
2.83″	2.24″	0.59″	0.47″	1″	6643K62	$64.04
3.62″	2.64″	0.98″	0.47″	1″	6643K63	64.62
4.65″	3.15″	1.5″	0.47″	1″	6643K64	67.21
8.07″	4.92″	3.15″	0.47″	1″	6643K66	72.38

Mounting Flanges

For Cylinder Dia. (E)	Lg. (F)	Wd. (G)	Thick.	Mount. Hole Dia. (H)		
0.47″	1.34″	0.83″	0.35″	0.26″	6643K81	$23.88
0.75″	1.77″	0.98″	0.28″	0.28″	6643K82	26.25
1″	1.97″	1.18″	0.35″	0.28″	6643K83	28.64

Close-Assist Gas Springs with Ball-Joint Fittings

Also known as tension or traction gas springs, the force on these springs pulls the piston rod inward, operating in the opposite direction of other gas springs. At rest, the spring is compressed; you have to pull to extend it. Great for use on doors and hoods that need to stay shut.

All of these gas springs come with the most versatile fittings: ball-joint fittings consisting of a ball socket and ball stud that rotate in any direction to compensate for misalignment. The ball-joint fittings can be easily removed. The ball diameter is 13 mm.

The cylinder and piston rod are steel. Seal is rubber. Temperature range is –22° to +176° F. **To Order:** Please specify force from those available below. If you don't see the exact force you need, round up to the closest available force.

Compact Gas Springs— Offer shorter compressed and extended lengths without sacrificing stroke length.

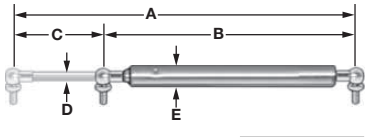

Gas Spring Shown with Removable Fittings Attached

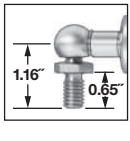

Extend. Lg. (A)	Comp. Lg. (B)	Stroke Lg. (C)	Available Force, lbs.	Rod Dia. (D)	Cylinder Dia. (E)	Ball Stud Thread Size	Rod and End Thread Size		
Standard									
16.91″	12.91″	4″	20, 30, 45, 56, 80, 101	0.32″	0.86″	M8	M8	9499T1	$81.90
28.5″	20.63″	7.87″	20, 30, 45, 56, 80, 101	0.32″	0.86″	M8	M8	9499T2	104.68
Compact									
10.04″	8.07″	1.97″	20, 30, 40, 60, 80, 100, 150, 200, 250	0.39″	1.1″	M8	M10	9502T1	97.58
12.01″	9.06″	2.95″	20, 30, 40, 60, 80, 100, 150, 200, 250	0.39″	1.1″	M8	M10	9502T2	105.72
13.98″	10.04″	3.94″	20, 30, 40, 60, 80, 100, 150, 200, 250	0.39″	1.1″	M8	M10	9502T3	112.56
15.94″	11.02″	4.92″	20, 30, 40, 60, 80, 100, 150, 200, 250	0.39″	1.1″	M8	M10	9502T4	120.70
17.91″	12.01″	5.9″	20, 30, 40, 60, 80, 100, 150, 200, 250	0.39″	1.1″	M8	M10	9502T5	124.68
21.85″	13.98″	7.87″	20, 30, 40, 60, 80, 100, 150, 200, 250	0.39″	1.1″	M8	M10	9502T6	128.34
26.18″	16.14″	10.04″	20, 30, 40, 60, 80, 100, 150, 200, 250	0.39″	1.1″	M8	M10	9502T7	150.68
30.11″	18.11″	12″	20, 30, 40, 60, 80, 100, 150, 200, 250	0.39″	1.1″	M8	M10	9502T8	162.26

About Shock-Absorber Energy Capacity

$$\text{Energy Cap. (in.-lbs.)} = \frac{\text{Weight (lbs.)}}{772} \times \text{Velocity}^2 \text{ (in. per second)}$$

To determine the shock-absorber ***energy capacity*** you need to stop a horizontal moving load, use the formula shown at left. For example, if you have a 250-lb. load that is moving 25 inches per second: $(250/772) \times 25^2 = 202$ in.-lbs. energy capacity.

Note: Choose an absorber with a *greater* energy capacity than you calculated. Factors such as a driving force or an inclined surface will increase the energy capacity you need.

Threaded-Body Shock Absorbers

Filled with hydraulic fluid, shock absorbers dissipate energy to decelerate fast loads and bring their speed down to zero. They're great for automated applications with air cylinders and linear-motion slides. All of these shock absorbers have a one-piece threaded body; a piston rod, which automatically returns to its extended position; and one hex jam nut for mounting. They can also be mounted with mounting blocks (see page 1209).

Self-Adjusting Shock Absorbers

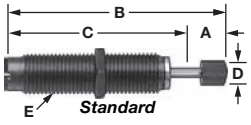

These shock absorbers automatically adjust to varying impact loads and speeds.

Standard— Have a steel body with black-oxide finish and a stainless steel piston rod (unless noted). Temperature range is 32° to 150° F.

Heavy Duty— Rugged construction allows these shock absorbers to stand up to abuse. All have a PTFE-impregnated stainless steel piston rod and silicone hydraulic fluid, which makes them suitable for food-processing applications. Temperature range is –20° to +140° F. *Steel models* have a high-grade steel body with black-oxide finish. *Stainless steel models* have a Type 17-4 PH stainless steel body.

Energy Cap., in.-lbs.	Maximum Cycles per min.	Stroke Lg. (A)	Extend. Lg. (B)	Comp. Lg. (C)	Bumper Dia. (D)	Bumper Material	Inch Thread Size (E)			Metric Thread Size (E)		
Standard												
9	33	0.2″	1.23″	1.02″	0.08″	★	—	—	—	M6×0.5	3692K24	$33.79
11	53	0.2″	1.52″	1.32″	0.19″	Acetal	—	—	—	M8×0.75	3692K11	34.53
11	53	0.2″	1.52″	1.32″	0.19″	Acetal	—	—	—	M8×1	3692K13●	34.53
11	53	0.2″	1.52″	1.32″	0.19″	Acetal	—	—	—	M8×1	3692K14▲	34.53
20	167	0.26″	2.27″	2.01″	0.3″	Steel	3/8″-32	3740K11	$34.71	M10×1	3692K15	34.71
75	56	0.4″	2.76″	2.36″	0.3″	Steel	1/2″-20	3740K12	45.40	M12×1	3692K16	45.40
123	41	0.5″	3.41″	2.91″	0.47″	Nylon	9/16″-18	3740K19	77.65	M14×1	3692K27	78.56
225	22	0.63″	4.5″	3.87″	0.47″	Steel	9/16″-18	3740K15	69.01	M14×1.5	3692K19	66.19
288	23	0.5″	3.81″	3.31″	0.66″	Nylon	3/4″-16	3740K21	82.52	M20×1.5	3692K28	80.84
300	22	0.75″	4.62″	3.87″	0.66″	Steel	3/4″-16	3740K16	70.62	M20×1.5	3692K21	69.18
600	17	1″	5.58″	4.58″	0.9″	Nylon	1″-12	3740K22	110.45	M25×1.5	3692K29	110.45
620	10	0.59″	4.15″	3.56″	0.66″	Steel	3/4″-16	3740K1	155.60	—	—	—
650	15	1″	5.62″	4.62″	0.9″	Steel	1″-12	3740K18	102.93	M25×1.5	3692K23	102.93
975	13	1.58″	7.44″	5.86″	0.9″	Steel	1″-12	3740K3	178.85	—	—	—
1,042	12	1.6″	8.31″	6.71″	0.87″	Urethane	1″-12	6528K11♠	140.93	—	—	—
1,860	5	0.91″	5.51″	4.6″	0.9″	Steel	1″-12	3740K2	188.45	—	—	—
3,472	8	2″	9.57″	7.57″	1.18″	Urethane	—	—	—	M36×1.5	6528K12♠	175.92
Heavy Duty— *Steel*												
100	10	0.25″	2.75″	2.5″	0.25″	Aluminum	9/16″-18	9530K46	74.04	M14×1.5	9530K66	74.04
200	10	0.5″	3.75″	3.25″	0.25″	Aluminum	3/4″-16	9530K47	78.27	M20×1.5	9530K67	78.27
250	26	1″	4.75″	3.75″	0.38″	Aluminum	1″-12	9530K48	125.20	M25×1.5	9530K68	125.20
650	10	1″	4.75″	3.75″	0.38″	Aluminum	1″-12	9530K51	127.65	M25×1.5	9530K71	127.65
2,000	10	1″	5.25″	4.25″	0.5″	Aluminum	1 1/4″-12	9530K52	165.59	M33×1.5	9530K72	165.59
5,000	10	2″	8.25″	6.25″	0.63″	Aluminum	1 3/8″-12	9530K54	187.80	M36×1.5	9530K74	187.80
Heavy Duty— *Stainless Steel*												
100	10	0.25″	2.75″	2.5″	0.25″	17-4 PH SS	9/16″-18	9553K1	133.27	—	—	—
200	10	0.5″	3.75″	3.25″	0.25″	17-4 PH SS	3/4″-16	9553K2	139.33	—	—	—
250	26	1″	4.75″	3.75″	0.38″	17-4 PH SS	1″-12	9553K3	218.08	—	—	—
650	10	1″	4.75″	3.75″	0.38″	17-4 PH SS	1″-12	9553K4	218.08	—	—	—
2,000	10	1″	5.25″	4.25″	0.5″	17-4 PH SS	1 1/4″-12	9553K5	290.77	—	—	—
5,000	10	2″	8.25″	6.25″	0.63″	17-4 PH SS	1 3/8″-12	9553K7	327.12	—	—	—

★ Does not have a bumper. (D) dimension is rod dia. ● For low-load high-speed use. ▲ For high-load low-speed use.
♠ Includes two hex jam nuts. Piston rod is chrome-plated steel.

Adjustable Shock Absorbers

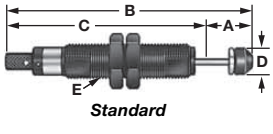

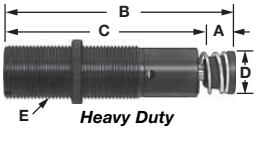

A knob lets you adjust how much deceleration and cushion these shock absorbers will provide. All have a steel body with black-oxide finish and a chrome-plated steel piston rod, unless noted.

Standard— Temperature range is 14° to 176° F. Come with two hex jam nuts.

Heavy Duty— More rugged construction withstands higher impact with shorter stroke lengths. Temperature range is 32° to 150° F.

Energy Cap., in.-lbs.	Maximum Cycles per min.	Stroke Lg. (A)	Extend. Lg. (B)	Comp. Lg. (C)	Bumper Dia. (D)	Bumper Material	Inch Thread Size (E)			Metric Thread Size (E)		
Standard with Four-Position Incremental Adjustment												
87	60	0.6″	4.33″	3.73″	0.47″	Urethane	5/8″-18	6528K21	$175.92	—	—	—
260	30	0.8″	5.08″	4.28″	0.71″	Urethane	7/8″-14	6528K22	169.96	—	—	—
712	15	1″	6.02″	5.02″	0.87″	Urethane	1″-12	6528K23	197.58	—	—	—
Heavy Duty with Variable Adjustment												
35	25	0.4″	3.31″	2.91″	0.3″	Steel	1/2″-20	3742K11♣	65.41	M12×1	3691K11♣	$66.80
200	25	0.5″	3.67″	3.17″	0.47″	Nylon	9/16″-18	3742K12♦	79.57	M14×1.5	3691K12♦	79.57
250	50	0.5″	4.35″	3.85″	0.5″	Urethane	3/4″-16	3742K24■	83.02	—	—	—
300	22	0.75″	4.67″	3.92″	0.66″	Steel	3/4″-16	3742K19♦	74.61	—	—	—
600	17	1″	5.62″	4.62″	0.9″	Steel	1″-12	3742K21♦	118.52	—	—	—
650	50	1″	5.62″	4.62″	0.62″	Urethane	1″-12	3742K25■	125.00	—	—	—
1,500	7	0.91″	5.44″	4.53″	1″	Steel	1 1/4″-12	3742K15	170.31	M33×1.5	3691K15	166.84
3,450	5	0.91″	5.69″	4.78″	1.38″	Steel	1 3/4″-12	3742K16	237.66	M45×1.5	3691K16	232.81
6,900	2	1.91″	7.69″	5.78″	1.38″	Steel	1 3/4″-12	3742K17	249.00	M45×1.5	3691K17	243.92
10,350	2	2.91″	9.69″	6.78″	1.38″	Steel	1 3/4″-12	3742K18	260.45	—	—	—

♣ Piston rod is Type 416 stainless steel. ♦ Piston rod is Type 440 stainless steel. ■ Body is nickel-plated steel.

For information about calculating shock-absorber energy capacity, see page 1208.

Threaded Mounting Blocks and Jam Nuts

Use these mounting blocks to easily mount Threaded-Body Shock Absorbers (sold separately on the previous page) and then secure them in place with the jam nuts, which are sold separately below.

Mounting Blocks—All are made of steel.

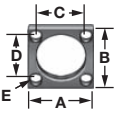

Flange-Mount Block

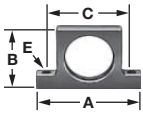

Lug-Mount Block

Jam Nut

Mounting Blocks

(A)	(B)	(C)	(D)	(E)	Thick.	Inch Thread Size			Metric Thread Size		
Flange Mount											
1.5″	1″	1″	—	0.18″	0.47″	3/8″-32	6600K56 ♦	$20.86	M12×1	6600K63 ♦	$22.42
1.5″	1″	1″	—	0.18″	0.56″	1/2″-20	6600K62 ♦	22.42	M10×1	6600K61 ♦ ●	22.42
1.77″	1.1″	1.38″	—	0.18″	0.63″	—	—	—	M14×1.5	6600K11 ♦	20.86
1.81″	1.37″	1.38″	1″	0.22″	0.62″	9/16″-18	6600K1	20.86	—	—	—
1.85″	1.38″	1.38″	1″	0.22″	0.63″	—	—	—	M20×1.5	6600K12	20.86
1.85″	1.38″	1.38″	1″	0.22″	0.63″	—	—	—	M25×1.5	6600K13	21.56
2″	1.5″	1.5″	1.12″	0.22″	0.62″	3/4″-16	6600K3	20.86	—	—	—
2″	1.5″	1.5″	1.12″	0.22″	0.62″	1″-12	6600K5	31.68	—	—	—
3″	2.25″	2.38″	1.6″	0.34″	0.5″	1 3/4″-12	6600K64	24.42	M45×1.5	6600K65 ✓	24.41
Lug Mount											
3″	2″	2.5″	—	0.22″	0.38″	9/16″-18	6600K26	25.61	M14×1.5	6600K41	25.61
3″	2″	2.5″	—	0.22″	0.38″	5/8″-18	6600K31	25.61	M20×1.5	6600K42	25.61
3″	2″	2.5″	—	0.22″	0.38″	3/4″-16	6600K32	25.61	M25×1.5	6600K43	25.61
3″	2″	2.5″	—	0.22″	0.38″	7/8″-14	6600K33	25.61	M33×1.5	6600K44	27.23
3″	2″	2.5″	—	0.22″	0.38″	1″-12	6600K34	25.61	M36×1.5	6600K45	27.23
3″	2″	2.5″	—	0.22″	0.38″	1 1/4″-12	6600K35	27.23	—	—	—
3″	2″	2.5″	—	0.22″	0.38″	1 3/8″-12	6600K36	27.23	—	—	—

♦ Has two mounting holes. ● Thickness is 0.47″.
✓ (C) dimension is 2.36″ and (E) dimension is 0.39″.

Jam Nuts

Inch Thread Size			Metric Thread Size		
Steel					
3/8″-32	6600K73	$2.68	M8×0.75	6600K71	$2.68
1/2″-20	6600K75	2.68	M8×1	6600K72	2.68
9/16″-18	9530K16	4.03	M10×1	6600K74	2.68
3/4″-16	9530K17 ★	4.30	M12×1	6600K76	2.68
1″-12	9530K18 ★	5.09	M14×1	6600K77	4.47
1 1/4″-12	9530K19	9.42	M14×1.5	9530K81	4.03
1 3/8″-12	9530K21	9.42	M20×1.5	9530K82	4.30
1 3/4″-12	6600K78	13.38	M25×1.5	9530K83	5.09
—	—	—	M33×1.5	9530K84	9.42
—	—	—	M36×1.5	9530K85	9.42
—	—	—	M45×1.5	6600K79	13.38
300 Series Stainless Steel					
9/16″-18	6600K86	8.30	—	—	—
3/4″-16	6600K87	9.48	—	—	—
1″-12	6600K88	11.87	—	—	—
1 1/4″-12	6600K89	13.21	—	—	—
1 3/8″-12	6600K91	14.36	—	—	—

★ Made of zinc alloy.

Light-Capacity Adjustable Shock Absorbers

Also known as snubbers, these shock absorbers are perfect for small-load applications as well as applications with frequent cycling. They use a cushion of air instead of hydraulic fluid to reduce velocity and vibration. To adjust for varying loads and speed, simply turn a knob to control the air flow rate. Using air also means you won't have to worry about fluid leaks.

Body is borosilicate glass encased in EPDM rubber, making these shock absorbers corrosion resistant and lightweight. The piston rod automatically returns to its extended position. Temperature range is –67° to +158° F.

Stud Mount—Have a 3/8″-32 mounting stud with a nut under the adjusting knob (the knob is removable). Maximum mounting panel (or bracket) thickness is 0.125″. Piston rod is urethane.

Flange Mount—Have a 1/8″ thick mounting flange with four 0.17″ dia. mounting holes. Piston rod is acetal with a urethane tip.

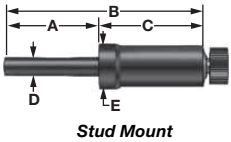

Stud Mount

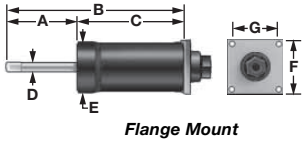

Flange Mount

Energy Cap., in.-lbs.	Max. Cycles per min.	Stroke Lg. (A)	Extend. Lg. (B)	Comp. Lg. (C)	Rod Dia. (D)	Cylinder Dia. (E)	(F)	(G)		
Stud Mount										
3.6	600	1.1″	3.87″	2.77″	0.375″	1.01″	—	—	6430K31	$64.50
9	330	1.3″	3.7″	2.4″	0.375″	1.3″	—	—	6430K32	65.41
Flange Mount										
36	200	2.3″	5.8″	3.5″	0.312″	1.7″	1.75″	1.38″	6430K33	81.82
84	70	2.3″	5.8″	3.5″	0.312″	2.21″	2.13″	1.75″	6430K34	97.66

Precision Adjustable Shock Absorbers

A finely threaded knob allows you to make precise, consistent adjustments for varying loads and speeds. Both of these hydraulic shock absorbers have a built-in flange with four 0.22″ dia. holes for easy mounting. Body is steel with a baked-enamel finish. Piston rod is chrome-plated steel and automatically returns to its extended position. Bumper is urethane. Temperature range is 14° to 176° F.

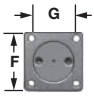

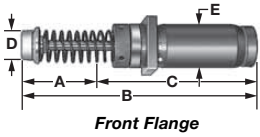

Front Flange

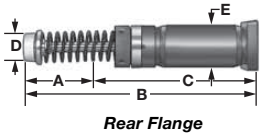

Rear Flange

Energy Cap., in.-lbs.	Max. Cycles per min.	Stroke Lg. (A)	Extend. Lg. (B)	Comp. Lg. (C)	Bumper Dia. (D)	Cylinder Dia. (E)	(F)	(G)	Flange Thick.	Front Flange		Rear Flange	
3,472	8	2″	9.06″	7.06″	1.1″	1.65″	1.97″	1.5″	0.39″	6518K81	$234.72	6518K82	$234.72

Leakproof Adjustable Shock Absorbers

No drips or drops of fluid will leak from these hydraulic shock absorbers. The piston rod is protected by an airtight seal. Since the seal doesn't slide, low wear leads to longer life. All of these shock absorbers adjust for varying loads and speeds. They also have a nickel-plated steel body and silicone fluid, which makes them suitable for food-processing applications. Piston rod is Type 440 stainless steel and automatically returns to its extended position. Temperature range is 40° to 130° F.

Mounting Block—Made of aluminum.

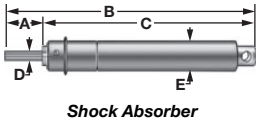

Shock Absorber

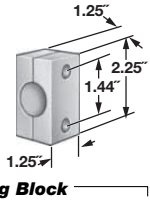

Mounting Block

Energy Cap., in.-lbs.	Max. Cycles per min.	Stroke Lg. (A)	Extend. Lg. (B)	Comp. Lg. (C)	Rod Dia. (D)	Cylinder Dia. (E)	Shock Absorber		Mounting Block Mount. Hole Dia.		
400	23	0.5″	6.33″	5.83″	0.312″	0.937″	4246T11	$215.94	0.39″	4246T51	$17.80
800	12	1″	7.83″	6.83″	0.312″	0.937″	4246T12	225.26	0.39″	4246T51	17.80
1,600	7	2″	10.87″	8.87″	0.312″	0.937″	4246T13	257.20	0.39″	4246T51	17.80

Automotive-Style Shock Absorbers

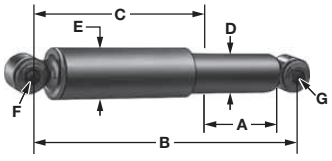

60025K32 and K16

Like the shock absorbers in your car, these isolate vibration caused by sudden impact to one surface so that the vibration transferred to the second surface is minimized. The body is steel with a painted finish. Piston rod is chrome-plated steel. Temperature range is –45° to +190° F.

Models 60025K32 and *K16* are gas charged and automatically return to their extended position.

Model 4432T11 returns to its extended position via an external spring.

Force, lbs. Comp.	Force, lbs. Extend.	Stroke Lg. (A)	Extend. Lg. (B)	Comp. Lg. (C)	Rod Dia. (D)	Cylinder Dia. (E)	Eye Dia. (F)	Eye Dia. (G)		
80	429	5.11″	14.73″	9.62″	1.63″	2″	0.63″	0.5″	60025K32	$28.10
117	537	9.03″	23.26″	14.23″	2.19″	2.5″	0.56″	0.56″	60025K16	33.49
575	555	8.35″	22.45″	14.1″	0.49″	1.63″	0.75″	0.75″	4432T11	64.55

Adjustable Air Springs

Mini Sleeve Style

Sleeve Style

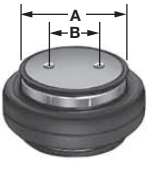

Single-Tire Style

Double-Tire Style

Triple-Tire Style

Inflation Valve (Sold Separately)

In addition to controlling vibration, these high-strength flexible springs are perfect for lifting and/or moving objects. They're easy to install and can be used vertically, horizontally, and at an angle. Maintenance is also a breeze because they don't require lubrication.

Made of neoprene rubber (unless noted), these springs have a sleeve or tire design with corrosion-resistant metal retainers at each end. Inflate them with compressed air for most applications. Maximum pressure is 100 psi. Temperature range is –20° to +135° F (unless noted).

For vibration-control applications, the air pressure in the springs serves as an energy-absorbing medium to provide maximum vibration and shock isolation, load leveling, and height control. The springs work best at frequencies above 400 cycles per minute. Loads and height can be varied by adding or exhausting air.

To pick the right spring for your vibration-control applications, look at the maximum force of the spring when fully extended and fully compressed. The spring needs to carry the whole weight of your load. Maximum OD is also important—the entire spring needs clearance around it.

For lifting/moving applications, the air pressure in the springs exerts the force needed to produce a stroke for lifting, pushing, gripping, compacting, and tensioning. To pick the right spring for your lifting/moving applications, look at the maximum force of the spring when fully extended. The spring needs to carry the whole weight of your load. The usable stroke is the travel the spring provides.

Mini Sleeve Style and ***Sleeve Style Springs—*** Offer superior vibration isolation. Installation may require additional side support.

Mini sleeve style does not require a minimum pressure.

Sleeve style require at least 10 psi of pressure.

Single-, Double-, and ***Triple-Tire Style Springs—*** Provide lower compressed height and do not require a minimum pressure. They need external stops to prevent overcompression.

ⓘ For additional information about these air-powered springs, including mounting dimensions, performance data, and schematics, go to mcmaster.com and search for **9538KAC**.

Usable Stroke	Fully Extended Max. Force, lbs. @ 100 psi	Fully Extended Extend. Ht.	Fully Compressed Max. Force, lbs. @ 100 psi	Fully Compressed Comp. Ht.	Max. OD @ 100 psi	Dia. (A)	Mounting Holes Ctr.-to-Ctr. (B)	Mounting Holes Thread Size × Dp.	Pipe Size, NPTF (Dryseal)	Air-Powered Springs		Inflation Valve	
Mini Sleeve Style													
2.1″	120	3.6″	600	1.5″	3.6″	3.4″	—	5/16″-18 × 7/16″	1/8″	9538K21	$45.88	9538K41	$11.06
Sleeve Style													
4″	560	6.25″	1,250	2.2″	5.6″	5.1″	—	3/8″-16 × 1/2″	1/8″	9538K22	112.68	9538K41	11.06
4.4″	110	8″	360	3.6″	3.3″	2.8″	—	3/4″-16 × 5/8″	1/8″	9538K23	102.94	9538K41	11.06
4.9″	310	7.1″	1,100	2.2″	4.6″	4.1″	—	3/8″-16 × 1/2″	1/8″	9538K24	105.90	9538K41	11.06
5.5″	800	9.5″	950	4″	5.6″	4.1″	—	3/4″-16 × 5/8″	1/8″	9538K28	108.21	9538K41	11.06
6.5″	540	10.5″	850	4″	4.6″	4.1″	—	3/4″-16 × 5/8″	1/8″	9538K25	111.40	9538K41	11.06
6.5″	750	10.5″	1,100	4″	5.6″	5.1″	—	3/4″-16 × 5/8″	1/8″	9538K26	114.00	9538K41	11.06
6.8″	1,200	10.9″	2,000	4.1″	6.8″	6.3″	—	M20-2.5 × 10 mm	1/8″	9538K27	174.00	9538K41	11.06
Single-Tire Style													
2″	560	3.8″	1,500	1.8″	5.7″	3.4″	1.75″	3/8″-16 × 5/8″	1/4″	9539K41	91.74	9538K42	11.06
2″	1,500	5.9″	5,132	3.2″	11″	6.4″	3.5″	3/8″-16 × 5/8″	1/4″	9539K42●	305.43	9538K42	11.06
2.8″	850	4.8″	2,000	2″	6.5″	4.2″	1.75″	3/8″-16 × 5/8″	1/4″	9539K44	98.30	9538K42	11.06
2.9″	1,500	5.9″	5,600	2.3″	11″	6.4″	3.5″	3/8″-16 × 5/8″	1/4″	9539K55●	147.00	9538K42	11.06
3″	520	4.8″	1,600	1.8″	6″	3.4″	1.75″	3/8″-16 × 5/8″	1/4″	9539K43	119.52	9538K42	11.06
3″	3,600	7.2″	9,034	2.6″	13.2″	9″	6.2″	3/8″-16 × 5/8″	1/4″	9539K48●	197.33	9538K42	11.06
3.2″	850	5.2″	2,600	2″	7.7″	4.2″	1.75″	3/8″-16 × 5/8″	1/4″	9539K46	119.52	9538K42	11.06
3.3″	1,100	5.3″	3,600	2″	8.7″	5″	2.75″	3/8″-16 × 5/8″	1/4″	9539K47	102.24	9538K42	11.06
3.4″	750	7.1″	3,000	2″	7″	4.2″	1.75″	3/8″-16 × 5/8″	1/4″	9539K49	153.16	9538K42	11.06
Double-Tire Style													
4.3″	580	7.7″	2,800	2.8″	6.5″	4.2″	1.75″	3/8″-16 × 5/8″	1/4″	9551K51	121.33	9538K42	11.06
5.3″	2,700	11.1″	9,400	3.4″	13″	9″	6.2″	3/8″-16 × 5/8″	1/4″	9551K53●	320.78	9538K42	11.06
5.7″	1,100	10.8″	5,700	3.2″	10.3″	6.4″	3.5″	3/8″-16 × 5/8″	1/4″	9551K52●	163.81	9538K42	11.06
6.6″	1,000	10.1″	5,000	2.9″	8.8″	5″	2.75″	3/8″-16 × 5/8″	1/4″	9551K54	160.43	9538K42	11.06
6.9″	1,500	12.2″	6,000	3.5″	10.3″	6.4″	3.5″	1/2″-13	1/4″	9551K55●★	184.43	9538K42	11.06
8.4″	2,600	14.4″	10,000	4.3″	13.7″	9″	6.2″	3/8″-16 × 5/8″	1/4″	9551K56●	199.58	9538K42	11.06
Triple-Tire Style													
10.2″	4,700	18″	15,000	5″	15.1″	11.3″	6.25″	3/8″-16 × 5/8″	1/4″	9551K57●	409.09	9538K42	11.06

● Made of natural rubber. Temperature range is –56° to +135° F.

★ Spring has threaded mounting studs rather than holes.

About Extension Springs

Holding a hatch door closed, tensioning a cable, and returning an air cylinder to its starting point are a few uses for extension springs. The more you stretch (or extend) the springs, the greater the force the springs will exert to pull the two points back together.

Extension springs are made of steel music wire (for high strength), spring-tempered steel (for heat resistance), or stainless steel (for corrosion resistance). They are available with loop and hook ends.

Minimum Load—The pounds of force it takes to start to extend the spring.

Maximum Load—The pounds of force it takes to fully extend the spring.

Rate—As you stretch an extension spring, it gets harder to pull. The higher the rate, the harder it is to stretch the spring.

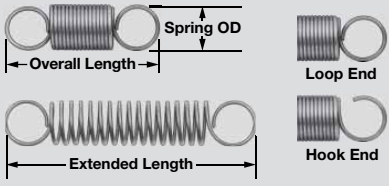

Steel Music Wire Extension Springs

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Unplated with Loop Ends								
0.5″ Overall Length								
0.125″	0.014″	0.754″	0.15	0.76	2.40	12	9654K941	$7.05
0.125″	0.018″	0.616″	0.41	1.52	9.56	12	9654K942	7.05
0.187″	0.016″	0.731″	0.11	0.75	2.77	12	9654K943	7.05
0.187″	0.020″	0.62″	0.28	1.41	9.41	12	9654K944	7.05
0.625″ Overall Length								
0.125″	0.014″	1.014″	0.15	0.76	1.57	12	9654K945	7.05
0.125″	0.018″	0.804″	0.41	1.52	6.21	12	9654K946	7.05
0.187″	0.016″	1.121″	0.11	0.75	1.29	12	9654K947	7.05
0.187″	0.020″	0.888″	0.28	1.41	4.29	12	9654K948	7.05
0.75″ Overall Length								
0.125″	0.014″	1.276″	0.15	0.76	1.16	12	9654K949	7.05
0.125″	0.016″	1.1″	0.26	1.10	2.40	12	9654K951	7.05
0.125″	0.018″	0.991″	0.41	1.52	4.60	12	9654K952	7.05
0.125″	0.020″	0.926″	0.58	2.04	8.28	12	9654K953	7.05
0.125″	0.023″	0.859″	0.98	2.98	18.28	12	9654K954	7.05
0.187″	0.016″	1.512″	0.11	0.75	0.84	12	9654K955	7.05
0.187″	0.018″	1.301″	0.18	1.05	1.58	12	9654K956	7.05
0.187″	0.020″	1.156″	0.28	1.41	2.78	12	9654K957	7.05
0.187″	0.023″	1.017″	0.49	2.08	5.96	12	9654K958	7.05
0.187″	0.025″	0.956″	0.68	2.62	9.43	12	9654K959	7.05
0.875″ Overall Length								
0.125″	0.014″	1.531″	0.15	0.76	0.93	12	9654K961	7.05
0.125″	0.018″	1.179″	0.41	1.52	3.65	12	9654K962	7.05
0.187″	0.016″	1.907″	0.11	0.75	0.62	12	9654K963	7.05
0.187″	0.020″	1.424″	0.28	1.41	2.06	12	9654K964	7.05
1″ Overall Length								
0.125″	0.014″	1.792″	0.15	0.76	0.77	12	9654K965	7.05
0.125″	0.016″	1.528″	0.26	1.10	1.59	12	9654K966	7.05
0.125″	0.018″	1.366″	0.41	1.52	3.03	12	9654K967	7.05
0.125″	0.020″	1.268″	0.58	2.04	5.44	12	9654K968	7.05
0.187″	0.016″	2.28″	0.11	0.75	0.50	12	9654K969	7.05
0.187″	0.020″	1.693″	0.28	1.41	1.63	12	9654K971	7.05
0.187″	0.025″	1.353″	0.68	2.62	5.50	12	9654K972	7.05
0.25″	0.023″	1.789″	0.27	1.58	1.66	12	9654K973	7.05
0.25″	0.028″	1.445″	0.61	2.74	4.79	12	9654K974	7.05
0.25″	0.031″	1.327″	0.91	3.64	8.35	12	9654K975	7.05
1.125″ Overall Length								
0.234″	0.020″	1.655″	0.16	0.53	0.69	12	9654K311	7.52
1.5″ Overall Length								
0.141″	0.016″	2.68″	0.21	0.99	0.66	12	9654K11	7.84
0.156″	0.020″	2.31″	0.40	1.67	1.57	12	9654K14	7.84
0.188″	0.015″	4.39″	0.08	0.63	0.19	12	9654K17	7.84
0.188″	0.016″	3.87″	0.11	0.75	0.27	12	9654K815	8.07
0.188″	0.025″	2.15″	0.68	2.62	3.00	12	9654K818	8.07
0.219″	0.016″	4.85″	0.08	0.65	0.17	12	9654K412	7.83
0.219″	0.020″	3.29″	0.20	1.22	0.57	12	9654K31	7.84
0.219″	0.023″	2.7″	0.36	1.80	1.20	12	9654K416	8.07
0.25″	0.015″	6.28″	0.04	0.47	0.09	12	9654K511	8.07
0.25″	0.020″	3.86″	0.15	1.07	0.39	12	9654K514	8.07
0.25″	0.023″	3.12″	0.27	1.58	0.81	12	9654K517	7.61
0.281″	0.016″	6.72″	0.04	0.51	0.09	12	9654K47	8.07
0.281″	0.025″	3.12″	0.30	1.79	0.92	12	9654K51	8.07
0.313″	0.020″	5.05″	0.08	0.86	0.22	12	9654K614	8.07
0.313″	0.023″	3.99″	0.16	1.28	0.45	12	9654K617	8.07
0.313″	0.025″	3.49″	0.23	1.62	0.70	12	9654K711	8.07
0.344″	0.025″	3.86″	0.18	1.48	0.55	12	9654K716	8.07
0.344″	0.028″	3.2″	0.31	2.03	1.01	12	9654K912	8.07
1.875″ Overall Length								
0.156″	0.020″	2.945″	0.40	1.67	1.19	12	9654K811	8.29
0.188″	0.016″	5.075″	0.11	0.75	0.20	12	9654K816	8.07
0.188″	0.025″	2.745″	0.68	2.62	2.24	12	9654K819	8.07
0.219″	0.020″	4.305″	0.20	1.22	0.42	12	9654K32	8.08
0.219″	0.023″	3.515″	0.36	1.80	0.88	12	9654K417	8.07
0.25″	0.015″	9.045″	0.04	0.47	0.06	12	9654K512	8.07
0.25″	0.020″	3.025″	0.15	1.07	0.80	12	9654K515	8.07
0.25″	0.023″	4.095″	0.27	1.58	0.59	12	9654K518	8.07

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Unplated with Loop Ends								
1.875″ Overall Length (Cont.)								
0.281″	0.016″	9.705″	0.04	0.51	0.06	12	9654K48	$8.07
0.281″	0.025″	4.165″	0.30	1.79	0.65	12	9654K52	8.07
0.313″	0.020″	7.075″	0.08	0.86	0.15	12	9654K615	8.07
0.313″	0.023″	5.485″	0.16	1.28	0.31	12	9654K618	8.07
0.313″	0.025″	4.775″	0.23	1.62	0.48	12	9654K712	8.07
0.344″	0.025″	5.295″	0.18	1.48	0.38	12	9654K717	8.07
0.344″	0.028″	4.405″	0.31	2.03	0.68	12	9654K913	8.07
2.5″ Overall Length								
0.141″	0.016″	4.67″	0.21	0.99	0.36	12	9654K13	7.84
0.156″	0.020″	4.01″	0.40	1.67	0.84	12	9654K812	8.07
0.188″	0.015″	8″	0.08	0.63	0.10	12	9654K814	8.07
0.188″	0.025″	3.74″	0.68	2.62	1.57	12	9654K411	8.08
0.219″	0.023″	4.86″	0.36	1.80	0.61	12	9654K418	8.08
0.25″	0.015″	13.25″	0.04	0.47	0.04	12	9654K513	8.07
0.25″	0.020″	7.34″	0.15	1.07	0.19	12	9654K516	8.07
0.25″	0.023″	5.78″	0.27	1.58	0.40	12	9654K519	8.07
0.281″	0.016″	14.25″	0.04	0.51	0.04	12	9654K49	8.07
0.281″	0.025″	5.89″	0.30	1.79	0.44	12	9654K53	8.07
0.313″	0.020″	10.3″	0.08	0.86	0.10	12	9654K616	8.07
0.313″	0.023″	7.83″	0.16	1.28	0.21	12	9654K619	8.07
0.313″	0.025″	6.84″	0.23	1.62	0.32	12	9654K713	8.07
0.344″	0.025″	7.92″	0.18	1.48	0.24	12	9654K718	8.07
0.344″	0.028″	6.41″	0.31	2.00	0.44	12	9654K69	8.07
3.25″ Overall Length								
0.375″	0.041″	4.25″	1.49	3.25	1.76	6	9654K296	13.10
3.77″ Overall Length								
0.625″	0.113″	5″	24.02	92.42	68.40	1	9654K274	6.34
4″ Overall Length								
0.25″	0.028″	5″	0.50	1.15	0.65	6	1330K22	13.18
4.063″ Overall Length								
0.734″	0.063″	4.783″	1.55	2.75	1.66	6	9654K304	14.13
5″ Overall Length								
0.313″	0.041″	6.58″	1.05	3.91	1.81	6	9654K271	13.86
5.25″ Overall Length								
0.438″	0.062″	6.25″	4.59	10.30	5.71	6	9654K381	13.85
5.39″ Overall Length								
0.375″	0.054″	6.5″	3.65	7.71	4.06	3	9654K383	7.80
5.625″ Overall Length								
0.547″	0.080″	7.625″	4.00	24.00	10.00	6	9654K305	15.03
6.5″ Overall Length								
0.328″	0.035″	7.5″	0.80	1.31	0.51	12	1330K26	14.29
6.531″ Overall Length								
0.438″	0.048″	8.431″	2.11	4.20	1.10	6	1330K31	13.05
6.75″ Overall Length								
0.906″	0.091″	7.75″	5.00	8.14	3.14	1	9654K385	8.49
10″ Overall Length								
0.5″	0.062″	11″	4.79	6.50	1.71	3	9640K221	10.20
0.625″	0.072″	13″	3.40	8.80	1.80	3	9640K351	12.95
11″ Overall Length								
0.125″	0.025″	12.8″	1.38	3.72	1.30	5	9640K89	13.05
0.156″	0.016″	25.4″	0.17	0.89	0.05	5	9640K114	14.86
0.156″	0.020″	18.47″	0.40	1.67	0.17	5	9640K116	13.52
0.25″	0.013″	86″	0.02	0.32	0.00	1	9640K123	3.53
0.25″	0.018″	46″	0.09	0.79	0.02	1	9640K124	3.22
0.375″	0.025″	51.67″	0.14	1.36	0.03	1	9640K139	3.31
0.375″	0.031″	31.9″	0.39	2.48	0.10	1	9640K32	3.11
0.375″	0.037″	24″	0.82	4.07	0.25	1	9640K151	2.83
0.5″	0.031″	53.5″	0.18	1.88	0.04	1	9640K161	3.47
0.5″	0.037″	37.7″	0.42	3.09	0.10	1	9640K172	3.14
0.625″	0.037″	56.2″	0.23	2.49	0.05	1	9640K182	3.42
Unplated with Hook Ends								
1.438″ Overall Length								
0.344″	0.048″	1.818″	2.42	8.54	16.10	12	9654K286	7.33
1.625″ Overall Length								
0.5″	0.080″	2.031″	8.04	26.10	72.25	6	9654K394	11.66
2.656″ Overall Length								
0.75″	0.080″	3.656″	4.00	14.30	10.30	12	9654K303	14.97

(Continued on following page)

For information about extension springs, see page 1211.

Steel Music Wire Extension Springs *(Continued from previous page)*

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Unplated with Hook Ends								
3.875″ Overall Length								
0.688″	0.105″	4.38″	15.00	31.00	32.00	3	9654K323	$8.75
4″ Overall Length								
0.719″	0.105″	5.21″	10.31	44.30	28.09	3	9654K302	8.90
4.5″ Overall Length								
0.484″	0.062″	6.5″	4.28	14.00	4.86	6	9654K298	13.12
5.5″ Overall Length								
0.563″	0.080″	6.5″	7.82	16.82	9.00	3	9654K278	10.53
5.88″ Overall Length								
0.734″	0.062″	8″	1.50	3.32	0.91	1	9654K276	6.72
6″ Overall Length								
0.875″	0.120″	6.91″	17.24	35.00	17.76	3	9654K334	12.54
7.625″ Overall Length								
1.25″	0.207″	8.63″	75.04	162.70	87.66	1	9654K391	8.68
8″ Overall Length								
1.063″	0.135″	9″	17.80	30.00	12.20	1	9654K338	6.88
8.5″ Overall Length								
1″	0.105″	10.5″	8.95	16.75	3.90	3	9654K293	14.95
10″ Overall Length								
0.813″	0.072″	11.98″	4.11	5.60	0.75	3	9640K341	14.81
0.875″	0.092″	13″	5.01	11.46	2.15	1	9640K281	6.72

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Unplated with Hook Ends (Cont.)								
14″ Overall Length								
1.375″	0.177″	15″	12.00	27.00	15.00	1	9640K421	$19.26
16″ Overall Length								
1.563″	0.207″	18.1″	44.99	78.72	16.06	1	9640K55	25.42
Zinc Plated with Loop Ends								
3″ Overall Length								
0.25″	0.028″	5.34″	0.61	2.74	0.91	6	9654K261	8.49
0.313″	0.028″	7″	0.38	2.22	0.46	6	9654K714	8.43
3.25″ Overall Length								
0.25″	0.025″	6.83″	0.39	2.00	0.45	6	9654K611	9.69
4.5″ Overall Length								
0.344″	0.025″	15.33″	0.18	1.48	0.12	6	9654K719	8.31
0.375″	0.028″	14.56″	0.25	1.86	0.16	6	9654K915	8.42
0.375″	0.031″	12.24″	0.39	2.48	0.27	6	9654K257	8.85
0.438″	0.028″	19″	0.16	1.61	0.10	6	9654K918	8.73
5″ Overall Length								
0.219″	0.023″	10.33″	0.36	1.80	0.27	6	9654K419	9.13
0.25″	0.031″	8.1″	0.91	3.64	0.88	6	9654K264	9.23
0.313″	0.031″	10.51″	0.58	2.95	0.43	6	9654K715	10.92
6″ Overall Length								
0.25″	0.028″	11.2″	0.61	2.74	0.41	6	9654K234	11.08

Spring-Tempered Steel Wire Extension Springs

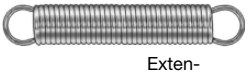

With Loop Ends

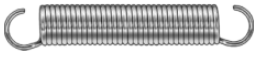

With Hook Ends

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Unplated with Loop Ends								
3.125″ Overall Length								
0.313″	0.047″	4.825″	2.84	14.94	7.11	6	9654K321	$10.47
3.75″ Overall Length								
0.375″	0.041″	8.8″	1.15	8.68	1.49	6	9654K322	10.47
4.125″ Overall Length								
0.563″	0.080″	6.255″	7.41	37.61	14.21	6	9654K324	12.14
5″ Overall Length								
0.5″	0.054″	11.13″	1.95	14.21	2.00	6	9654K325	10.47
0.5″	0.072″	7.82″	6.15	31.37	8.95	6	9654K326	11.30
5.25″ Overall Length								
0.625″	0.080″	9.12″	6.04	34.17	7.27	6	9654K327	12.70
5.375″ Overall Length								
0.688″	0.091″	8.705″	8.35	44.60	10.88	6	9654K331	12.70
5.625″ Overall Length								
0.563″	0.063″	12.125″	2.86	19.50	2.56	6	9654K332	12.14
6.5″ Overall Length								
0.75″	0.091″	11.86″	7.03	41.17	6.37	3	9654K335	6.84
0.75″	0.120″	8.8″	20.80	87.75	29.07	3	9654K336	6.84
7.75″ Overall Length								
0.875″	0.105″	14.27″	9.16	52.94	6.71	3	9654K337	7.33
10″ Overall Length								
1.125″	0.148″	12.28″	23.24	53.78	13.41	1	9640K53	6.88
11″ Overall Length								
0.313″	0.041″	15.2″	1.78	5.18	0.81	1	9640K72	2.71
0.375″	0.047″	15.61″	2.14	6.38	0.92	1	9640K213	2.88
0.438″	0.047″	18.18″	1.58	5.53	0.55	1	9640K62	3.00
0.5″	0.047″	21.22″	1.19	4.87	0.36	1	9640K232	3.00
0.5″	0.054″	17.92″	2.11	7.16	0.73	1	9640K58	3.42
0.5″	0.062″	15.44″	3.65	10.48	1.54	1	9640K242	3.42
0.625″	0.047″	28.94″	0.70	3.93	0.18	1	9640K233	3.43
0.625″	0.072″	16.21″	4.26	12.86	1.65	1	9640K56	4.12
0.75″	0.047″	39.7″	0.43	3.30	0.10	1	9640K22	4.13
0.75″	0.062″	24.68″	1.54	7.15	0.41	1	9640K18	4.38
0.75″	0.080″	17.24″	4.51	14.50	1.60	1	9640K15	4.71
0.75″	0.091″	15.11″	7.54	20.68	3.20	1	9640K13	4.82
1″	0.062″	38.59″	0.73	5.42	0.17	1	9640K243	4.88
1″	0.080″	24.52″	2.38	11.03	0.64	1	9640K14	5.18
1″	0.091″	20.16″	4.15	15.78	1.27	1	9640K12	5.47
1″	0.105″	16.85″	7.52	23.43	2.72	1	9640K11	5.27
12″ Overall Length								
1.25″	0.162″	14.83″	27.07	62.45	12.50	1	9640K52	8.66
1.5″	0.135″	20.71″	8.92	31.92	2.64	1	9640K244	9.12
Zinc Plated with Loop Ends								
1″ Overall Length								
0.188″	0.023″	1.55″	0.51	2.30	3.25	12	9654K101	6.83
0.25″	0.029″	1.5″	0.67	3.28	5.21	12	9654K108	9.00
0.313″	0.029″	1.73″	0.42	2.62	3.02	12	9654K116	9.16
0.313″	0.035″	1.43″	0.96	4.65	8.61	12	9654K346	9.16
1.25″ Overall Length								
0.188″	0.023″	1.99″	0.51	2.33	2.47	12	9654K102	7.19
0.25″	0.029″	2.06″	0.67	3.31	3.27	12	9654K109	9.26

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Zinc Plated with Loop Ends (Cont.)								
1.25″ Overall Length (Cont.)								
0.313″	0.029″	2.4″	0.42	2.62	1.92	12	9654K117	$9.58
0.313″	0.035″	1.94″	0.96	4.61	5.29	12	9654K125	9.58
0.375″	0.035″	2.07″	0.64	3.79	3.83	12	9654K188	11.60
1.5″ Overall Length								
0.188″	0.023″	2.51″	0.51	2.43	1.90	12	9654K103	7.72
0.25″	0.029″	2.54″	0.67	3.37	2.60	12	9654K111	9.26
0.313″	0.029″	3.12″	0.42	2.62	1.36	12	9654K118	10.00
0.313″	0.035″	2.45″	0.96	4.67	3.91	12	9654K126	10.00
0.375″	0.035″	2.85″	0.64	3.76	2.33	12	9654K355	10.00
0.375″	0.048″	2.07″	2.38	9.59	12.62	3	9654K197	2.97
1.75″ Overall Length								
0.188″	0.023″	2.91″	0.51	2.33	1.57	12	9654K104	8.25
0.25″	0.029″	3.08″	0.67	3.35	2.01	12	9654K318	9.16
0.313″	0.029″	3.69″	0.42	2.61	1.13	12	9654K119	10.44
0.313″	0.035″	2.98″	0.96	4.64	3.00	12	9654K127	10.44
0.375″	0.035″	3.44″	0.64	3.80	1.87	12	9654K191	10.44
0.375″	0.048″	2.49″	2.38	9.54	9.69	3	9654K198	3.08
2″ Overall Length								
0.188″	0.023″	3.35″	0.51	2.34	1.36	12	9654K105	8.64
0.25″	0.029″	3.64″	0.67	3.35	1.64	12	9654K113	9.16
0.313″	0.029″	4.49″	0.42	2.61	0.88	12	9654K343	10.92
0.313″	0.035″	3.49″	0.96	4.65	2.47	6	9654K185	5.81
0.375″	0.035″	4.2″	0.64	3.81	1.45	12	9654K357	10.92
0.375″	0.048″	2.89″	2.38	9.53	8.01	3	9654K365	3.25
2.25″ Overall Length								
0.188″	0.023″	3.96″	0.51	2.41	1.11	12	9654K106	9.00
0.25″	0.029″	4.1″	0.67	3.37	1.45	12	9654K114	9.16
0.313″	0.029″	5.16″	0.42	2.62	0.75	12	9654K122	11.44
0.313″	0.035″	3.97″	0.96	4.57	2.15	12	9654K186	10.85
0.375″	0.035″	4.79″	0.64	3.80	1.25	3	9654K193	3.36
0.375″	0.048″	3.4″	2.38	9.53	6.22	3	9654K211	3.36
2.313″ Overall Length								
0.25″	0.035″	5.413″	1.46	4.11	4.28	6	9654K612	8.29
2.5″ Overall Length								
0.188″	0.023″	4.43″	0.51	2.39	0.97	12	9654K107	8.57
0.25″	0.029″	4.63″	0.67	3.36	1.27	12	9654K115	10.28
0.313″	0.029″	5.92″	0.42	2.61	0.64	12	9654K123	11.78
0.313″	0.035″	4.53″	0.96	4.67	1.83	12	9654K187	11.15
0.375″	0.035″	5.52″	0.64	3.81	1.05	3	9654K194	3.25
0.375″	0.048″	3.78″	2.38	9.53	5.58	6	9654K212	6.28
0.438″	0.048″	4.2″	1.62	8.00	3.75	6	9654K215	6.94
2.75″ Overall Length								
0.344″	0.035″	4.54″	0.79	3.06	1.27	6	9654K914	7.80
0.375″	0.035″	6.06″	0.64	3.81	0.96	3	9654K195	3.67
0.375″	0.048″	4.19″	2.38	9.53	4.96	6	9654K213	6.58
0.438″	0.035″	5.88″	0.46	2.43	0.63	6	9654K919	9.72
0.438″	0.048″	4.82″	1.62	8.03	3.10	6	9654K372	7.22
3″ Overall Length								
0.375″	0.035″	6.84″	0.64	3.80	0.82	3	9654K196	3.86
0.375″	0.048″	4.65″	2.38	9.53	4.34	6	9654K369	6.75

(Continued on following page)

For information about extension springs, see page 1211.

Spring-Tempered Steel Wire Extension Springs *(Continued from previous page)*

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Zinc Plated with Loop Ends (Cont.)								
3″ Overall Length (Cont.)								
0.438″	0.048″	5.27″	1.62	8.01	2.81	6	9654K373	$7.56
3.25″ Overall Length								
0.438″	0.048″	5.88″	1.62	8.02	2.43	6	9654K374	8.19
0.563″	0.091″	3.63″	12.73	26.81	36.86	6	9628K8	13.21
3.5″ Overall Length								
0.438″	0.048″	6.39″	1.62	8.02	2.21	6	9654K375	8.28
0.531″	0.091″	3.85″	14.08	28.21	40.31	6	9628K39	13.87
0.75″	0.062″	6.71″	1.54	7.15	1.75	6	9654K227	10.16
0.875″	0.091″	4.89″	5.54	17.90	8.88	6	9654K226	12.93
3.75″ Overall Length								
0.375″	0.041″	5.81″	1.26	4.37	1.51	6	9654K236	9.16
0.438″	0.048″	6.85″	1.62	8.02	2.06	6	9654K376	8.64
4″ Overall Length								
0.125″	0.016″	7.61″	0.26	1.28	0.28	6	9654K423	6.92
0.156″	0.020″	7.21″	0.44	2.03	0.49	6	9654K172	7.32
0.188″	0.023″	7.07″	0.57	2.53	0.64	6	9654K171	7.43
0.25″	0.032″	6.73″	1.06	4.56	1.28	6	9654K207	4.33
0.281″	0.035″	6.9″	1.18	5.29	1.42	6	9654K395	8.25
0.313″	0.041″	5.35″	1.78	5.18	2.51	6	9654K254	9.47
0.328″	0.041″	6.66″	1.64	7.16	2.08	6	9654K165	8.94
0.375″	0.035″	7.62″	0.65	2.82	0.60	6	9654K916	9.25
0.375″	0.048″	8.1″	2.22	12.55	2.93	6	9654K164	9.67
0.438″	0.048″	7.41″	1.62	8.01	1.87	6	9654K94	9.69
0.438″	0.054″	6.34″	3.04	12.00	3.83	6	9654K163	10.33
0.5″	0.063″	6.15″	3.84	15.58	5.46	3	9654K162	5.74
0.563″	0.047″	8.05″	0.91	4.35	0.85	6	9654K239	10.11
0.578″	0.072″	5.99″	5.05	20.10	7.56	3	9654K161	6.29
0.813″	0.120″	4.54″	18.89	40.90	40.55	1	9628K59	2.81
4.5″ Overall Length								
0.375″	0.047″	6.18″	2.14	6.38	2.52	6	9654K917	9.25
0.406″	0.035″	9.68″	0.54	2.61	0.40	6	9654K76	8.65
0.438″	0.041″	8.34″	0.90	3.78	0.75	6	9654K256	9.68
0.469″	0.041″	9.04″	0.77	3.54	0.61	6	9654K921	9.80
0.5″	0.062″	6.11″	3.65	10.48	4.25	6	9654K241	10.89
0.75″	0.062″	9.1″	1.54	7.15	1.22	6	9654K923	12.09
4.75″ Overall Length								
0.688″	0.091″	5.91″	8.87	22.39	11.62	6	9654K242	12.60
5″ Overall Length								
0.313″	0.035″	7.91″	0.96	3.35	0.82	6	9654K84	10.47
0.5″	0.072″	6.1″	6.49	15.79	8.49	6	9654K243	8.80
0.563″	0.072″	6.56″	5.22	14.17	5.75	6	9654K244	11.45
0.688″	0.072″	7.7″	3.51	11.76	3.05	6	9654K245	11.48
5.5″ Overall Length								
0.25″	0.041″	7.5″	2.12	8.32	3.10	3	9654K471	5.89
0.344″	0.048″	8.5″	2.79	11.00	2.73	3	9654K533	7.27
0.438″	0.063″	8″	4.70	18.00	5.29	3	9654K535	8.22
0.688″	0.080″	7.67″	5.36	15.72	4.78	6	9654K922	12.36
6″ Overall Length								
0.125″	0.016″	11.46″	0.26	1.28	0.19	6	9654K442	10.22
0.156″	0.020″	11.13″	0.44	2.03	0.31	6	9654K5	10.22
0.188″	0.023″	10.75″	0.57	2.54	0.42	6	9654K6	10.22
0.25″	0.032″	10.39″	1.06	4.54	0.79	3	9654K9	5.27
0.281″	0.035″	10.65″	1.18	5.29	0.88	6	9654K93	9.90
0.328″	0.041″	10.37″	1.64	7.16	1.26	6	9654K184	10.39
0.375″	0.041″	9.62″	1.26	4.37	0.86	6	9654K232	10.92
0.375″	0.048″	10.05″	2.22	9.42	1.78	6	9654K183	10.65
0.438″	0.054″	9.12″	3.04	11.99	2.50	6	9654K182	11.87
0.438″	0.062″	7.52″	4.69	11.86	4.73	6	9654K231	10.59
0.5″	0.063″	9.59″	3.84	15.58	3.27	3	9654K181	6.82
0.578″	0.072″	9.42″	5.05	20.08	4.40	3	9654K179	7.96
0.875″	0.091″	9.05″	5.54	17.90	4.05	1	9654K247	2.99
6.5″ Overall Length								
0.313″	0.035″	12.5″	0.79	4.60	0.62	3	9654K563	6.08
0.625″	0.080″	8.52″	6.45	17.18	5.31	1	9654K248	2.31
0.75″	0.091″	8.72″	7.54	20.68	5.93	1	9654K249	2.64
7″ Overall Length								
1.063″	0.105″	12.08″	6.63	22.13	3.05	1	9654K925	4.25
7.5″ Overall Length								
1″	0.105″	11.17″	7.52	23.43	4.34	1	9654K252	4.06
1.125″	0.091″	15.2″	3.16	14.10	1.42	1	9654K253	4.53
8″ Overall Length								
0.125″	0.016″	15.39″	0.26	1.28	0.14	3	9654K461	8.17
0.188″	0.023″	14.44″	0.57	2.54	0.31	3	9654K457	8.17
0.203″	0.026″	14.62″	0.65	2.91	0.34	3	9654K456	8.17
0.25″	0.032″	13.92″	1.06	4.56	0.59	3	9654K455	7.39
0.281″	0.035″	14.16″	1.18	5.28	0.67	3	9654K454	7.39
0.328″	0.041″	14.04″	1.64	7.16	0.91	3	9654K453	7.39
0.375″	0.048″	13.68″	2.22	9.38	1.26	3	9654K145	8.29
0.438″	0.054″	13.21″	3.04	11.99	1.72	3	9654K144	8.44
0.5″	0.063″	12.95″	3.84	15.52	2.36	3	9654K449	9.67
0.578″	0.072″	12.9″	5.05	20.08	3.07	3	9654K448	10.81
Zinc Plated with Loop Ends (Cont.)								
8.5″ Overall Length								
0.344″	0.048″	13.375″	2.64	10.88	1.69	3	9654K567	$8.22
0.438″	0.054″	12.06″	2.75	8.12	1.51	3	9654K262	8.48
0.813″	0.062″	22.92″	0.43	6.63	0.43	3	9654K924	9.49
9″ Overall Length								
0.172″	0.029″	12.5″	1.39	5.20	1.10	3	9654K569	5.89
10.5″ Overall Length								
0.359″	0.054″	17.5″	3.75	19.10	2.20	1	9640K145	4.16
Unplated with Hook Ends								
1.75″ Overall Length								
0.75″	0.105″	2.09″	12.80	50.00	108.52	6	1832K21	7.17
2″ Overall Length								
0.75″	0.105″	2.457″	12.80	50.00	81.39	6	1832K23	7.79
2.125″ Overall Length								
0.75″	0.105″	2.639″	12.80	50.00	72.35	6	1832K25	7.49
2.375″ Overall Length								
0.75″	0.105″	3.004″	12.80	50.00	59.19	6	1832K27	7.95
2.625″ Overall Length								
0.75″	0.105″	3.368″	12.80	50.00	50.08	6	1832K29	8.54
2.875″ Overall Length								
0.75″	0.105″	3.79″	12.80	50.00	40.69	6	1832K31	8.08
3″ Overall Length								
0.75″	0.105″	3.972″	12.80	50.00	38.30	6	1832K33	9.46
3.25″ Overall Length								
0.75″	0.105″	4.451″	12.80	50.00	31.00	6	1832K35	10.83
Zinc Plated with Hook Ends								
1.625″ Overall Length								
0.719″	0.106″	1.755″	11.49	31.02	125.69	6	9628K13	7.41
1.719″ Overall Length								
0.5″	0.080″	1.999″	12.84	21.38	72.25	6	9628K11	7.59
1.75″ Overall Length								
0.75″	0.105″	2.04″	12.80	44.30	108.52	6	9628K7★	6.70
1.875″ Overall Length								
0.531″	0.080″	2.085″	8.69	19.92	53.49	6	9628K31	9.93
2″ Overall Length								
0.75″	0.106″	2.18″	6.73	30.39	95.29	6	9628K54	5.73
2.25″ Overall Length								
0.75″	0.106″	2.52″	13.20	18.11	67.09	6	9628K52	6.04
2.438″ Overall Length								
0.75″	0.106″	3.498″	7.24	31.29	60.00	6	9628K56	6.64
2.5″ Overall Length								
0.688″	0.092″	3.5″	8.95	22.25	28.52	6	9628K14	9.97
2.625″ Overall Length								
0.75″	0.106″	3.255″	12.89	29.97	49.20	6	9628K58	6.90
2.75″ Overall Length								
0.688″	0.106″	3.32″	15.46	38.10	53.91	6	9628K12	9.62
2.875″ Overall Length								
0.75″	0.105″	3.305″	13.12	30.58	40.70	6	9628K33	11.08
3″ Overall Length								
0.75″	0.105″	3.822″	12.80	44.30	38.30	6	9628K29★	6.85
3.125″ Overall Length								
0.75″	0.105″	3.605″	13.12	30.58	36.18	6	9628K35	13.78
3.375″ Overall Length								
0.719″	0.121″	3.715″	25.00	49.02	75.91	6	9628K5	10.25
3.438″ Overall Length								
0.75″	0.105″	4.454″	12.80	44.30	31.00	6	9628K41★	8.75
3.75″ Overall Length								
0.75″	0.105″	4.39″	13.12	30.58	27.13	6	9628K42	15.45
3.813″ Overall Length								
0.75″	0.105″	4.975″	12.80	44.30	27.13	6	9628K45★	7.13
4″ Overall Length								
0.641″	0.080″	5.87″	6.29	24.46	9.72	3	9654K159	6.82
0.734″	0.092″	5.74″	8.72	31.18	12.90	3	9654K384	6.82
0.844″	0.106″	5.59″	11.62	40.77	18.34	3	9654K157	7.33
0.969″	0.121″	5.47″	15.14	51.86	25.00	3	9654K156	10.40
6″ Overall Length								
0.641″	0.080″	9.28″	6.29	24.45	5.54	3	9654K427	9.39
0.734″	0.092″	8.98″	8.72	31.09	7.52	3	9654K426	10.81
0.844″	0.106″	8.75″	11.62	40.69	10.57	3	9654K176	11.42
0.969″	0.121″	8.53″	15.14	51.57	14.43	3	9654K424	14.25
7″ Overall Length								
1.375″	0.207″	8.61″	60.00	178.44	73.56	1	9654K476	15.04
8″ Overall Length								
0.641″	0.080″	12.5″	6.29	24.45	4.04	3	9654K447	11.29
0.734″	0.092″	12.39″	8.72	31.38	5.16	3	9654K446	12.91
0.844″	0.106″	11.98″	11.62	40.68	7.31	1	9654K138	5.08
0.969″	0.121″	11.74″	15.14	51.56	9.76	1	9654K443	5.85
8.5″ Overall Length								
1″	0.106″	15.64″	7.73	33.42	3.60	1	9654K723	8.59
8.75″ Overall Length								
1.875″	0.243″	11.54″	64.46	204.00	50.01	1	9654K825	21.87
12″ Overall Length								
1″	0.106″	17″	7.73	20.23	2.50	1	9640K144	11.86

★ Springs are galvanized and meet ASTM A764.

Extension Springs

For information about extension springs, see page 1211.

Type 302 Stainless Steel Extension Springs

With Loop Ends

With Hook Ends

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
With Loop Ends								
1″ Overall Length								
0.187″	0.023″	1.73″	0.51	2.57	2.82	6	94135K1	$6.76
0.25″	0.029″	1.63″	0.67	3.53	4.53	6	94135K2	6.57
0.312″	0.035″	1.53″	0.96	4.91	7.48	6	94135K51	11.97
1.125″ Overall Length								
0.234″	0.020″	1.587″	0.19	0.49	0.65	6	94135K72	10.57
1.25″ Overall Length								
0.187″	0.023″	1.99″	0.51	2.57	2.15	6	94135K54	9.49
0.25″	0.029″	2.26″	0.67	3.53	2.84	6	94135K3	6.92
0.312″	0.029″	2.66″	0.42	2.77	1.67	6	94135K4	6.92
0.312″	0.035″	2.08″	0.96	4.91	4.6	6	94135K5	6.92
0.375″	0.035″	2.26″	0.64	3.99	3.33	1	94135K53	2.69
1.5″ Overall Length								
0.25″	0.029″	2.77″	0.67	3.53	2.26	6	94135K6	6.92
0.312″	0.035″	2.68″	0.96	4.91	3.4	6	94135K55	12.41
0.375″	0.048″	2.2″	2.38	10.07	10.97	3	94135K7	4.59
1.75″ Overall Length								
0.25″	0.029″	3.39″	0.67	3.53	1.75	6	94135K8	7.14
0.312″	0.029″	4.14″	0.42	2.77	0.98	6	94135K9	6.92
0.312″	0.035″	3.27″	0.96	4.91	2.61	6	94135K11	7.30
0.375″	0.035″	3.81″	0.64	3.99	1.63	6	94135K12	8.97
0.375″	0.048″	2.68″	2.38	10.03	8.42	3	94135K13	4.65
2″ Overall Length								
0.375″	0.048″	3.1″	2.38	10.03	6.96	3	94135K14	4.84
2.25″ Overall Length								
0.375″	0.048″	3.69″	2.38	10.03	5.4	3	94135K15	5.03
2.5″ Overall Length								
0.187″	0.023″	4.94″	0.51	2.57	0.84	6	94135K16	7.14
0.312″	0.035″	4.98″	0.96	4.91	1.59	6	94135K17	9.75
0.375″	0.048″	4.09″	2.38	10.03	4.85	3	94135K18	5.25
0.437″	0.048″	4.61″	1.62	8.5	3.26	3	94135K19	5.81
2.75″ Overall Length								
0.375″	0.048″	4.54″	2.38	10.03	4.31	3	94135K21	5.32
0.437″	0.048″	5.3″	1.62	8.5	2.69	6	94135K22	11.68
3″ Overall Length								
0.375″	0.048″	5.05″	2.38	10.03	3.77	3	94135K23	5.97
0.437″	0.048″	5.81″	1.62	8.5	2.44	6	94135K24	12.50
3.25″ Overall Length								
0.437″	0.048″	6.5″	1.62	8.5	2.11	6	94135K25	12.41
3.5″ Overall Length								
0.437″	0.048″	7.07″	1.62	8.5	1.92	6	94135K26	12.94
0.75″	0.062″	6.506″	1.54	6.26	1.57	3	94135K57	13.41
4″ Overall Length								
0.437″	0.048″	8.22″	1.62	8.5	1.63	6	94135K28	13.49
0.5″	0.063″	6.71″	3.84	16.71	4.74	3	94135K29	12.13
0.58″	0.072″	6.52″	5.05	21.62	6.73	3	94135K31	11.79
6″ Overall Length								
0.38″	0.048″	10.05″	2.22	8.19	1.55	1	94135K59	4.95
0.43″	0.054″	9.12″	3.04	10.43	2.14	1	94135K61	5.24
0.5″	0.063″	10.52″	3.84	16.7	2.84	1	94135K36	6.35
0.58″	0.072″	10.34″	5.05	21.64	3.87	1	94135K37	6.76
8″ Overall Length								
0.5″	0.063″	15.23″	3.83	18.67	2.05	1	94135K43	7.84
With Loop Ends (Cont.)								
8″ Overall Length (Cont.)								
0.58″	0.072″	14.22″	5.05	21.64	2.73	1	94135K44	$8.43
11″ Overall Length								
0.125″	0.014″	20.6″	0.15	0.63	0.05	3	3932K42	12.17
0.187″	0.025″	16.81″	0.68	2.25	0.27	3	3932K41	13.98
0.25″	0.031″	17.76″	0.91	3.14	0.33	3	3932K15	14.62
0.375″	0.031″	30.56″	0.39	2.15	0.09	3	3932K16	15.65
0.375″	0.047″	16.9″	2.14	6.86	0.8	1	3932K47	4.68
0.5″	0.047″	26.9″	0.31	5.24	0.31	1	3932K52	5.43
0.5″	0.054″	22.22″	0.63	7.7	0.63	1	3932K53	5.65
0.5″	0.062″	18.4″	1.34	11.26	1.34	1	3932K54	5.48
0.625″	0.062″	21.64″	2.33	9.14	0.64	1	3932K59	9.51
0.625″	0.080″	15.69″	6.45	18.32	2.53	1	3932K31	9.39
0.75″	0.047″	50″	0.43	3.55	0.08	1	3932K55	7.10
0.75″	0.062″	28.06″	1.54	7.68	0.36	1	3932K26	8.32
0.75″	0.080″	18.88″	4.51	15.46	1.39	1	3932K27	8.17
0.75″	0.091″	16.17″	7.54	21.92	2.78	1	3932K28	9.26
1″	0.062″	44.93″	0.73	5.82	0.15	1	3932K62	10.49
1″	0.080″	27.75″	2.38	11.76	0.56	1	3932K33	10.77
1″	0.091″	22.44″	4.15	16.73	1.1	1	3932K34	12.03
1″	0.105″	18.22″	7.52	24.64	2.37	1	3932K35	14.26
With Hook Ends								
3.5″ Overall Length								
0.875″	0.091″	4.742″	5.52	15.57	8.09	1	94135K56	5.53
4″ Overall Length								
0.64″	0.080″	6.38″	6.29	26.4	8.45	3	94135K32	12.76
0.73″	0.092″	6.25″	8.72	33.97	10.99	1	94135K33	5.66
0.84″	0.106″	6.01″	11.62	43.65	15.69	1	94135K34	5.84
0.96″	0.121″	5.85″	15.14	55.32	21.41	1	94135K84	6.57
6″ Overall Length								
0.64″	0.080″	10.17″	6.29	26.38	4.81	1	94135K38	7.14
0.73″	0.092″	9.44″	8.72	33.97	6.47	1	94135K39	8.24
0.84″	0.106″	9.49″	11.62	43.69	9.05	1	94135K87	9.00
0.875″	0.120″	6.935″	8	23.04	16.09	1	94135K78	7.97
0.96″	0.121″	9.19″	15.14	55.23	12.37	1	94135K42	9.51
6.5″ Overall Length								
0.75″	0.091″	11.69″	7.03	35.8	5.54	1	94135K63	11.19
0.75″	0.120″	8.695″	20.8	76.3	25.28	1	94135K62	12.14
7″ Overall Length								
1.063″	0.105″	10.697″	6.65	19.22	3.4	1	94135K64	7.70
8″ Overall Length								
0.641″	0.080″	13.72″	6.29	26.38	3.51	1	94135K45	8.92
0.73″	0.092″	13.62″	8.72	33.94	4.44	1	94135K46	9.89
0.84″	0.106″	13.05″	11.62	43.71	6.25	1	94135K92	10.92
0.96″	0.121″	12.73″	15.14	55.24	8.36	1	94135K93	12.30
1.063″	0.135″	9.877″	11.04	33.04	11.72	1	94135K85	20.16
8.5″ Overall Length								
1″	0.105″	10.166″	8.88	14.61	3.44	1	94135K86	17.24
10″ Overall Length								
1.875″	0.148″	12.047″	23.28	46.78	11.48	1	94135K69	22.19
12″ Overall Length								
1.5″	0.135″	19.724″	8.97	27.74	2.43	1	94135K68	19.38

Extension Spring Anchor Studs

Standard

Swiveling

Attach an extension spring to a stud, and then thread the stud into your part for a secure connection. **Steel studs** have a black-oxide finish for mild rust resistance. **18-8 stainless steel studs** offer excellent corrosion resistance.

Swiveling Studs—Have a head that swivels 360° so the spring stays straight and properly coiled.

Thread Size	Thread Lg.	O'all Lg.	Standard Studs Hole Dia.	Standard Studs Steel		Standard Studs 18-8 Stainless Steel		Swiveling Studs Hole Dia.	Swiveling Studs Steel		Swiveling Studs 18-8 Stainless Steel	
6-32	3/8″	5/8″	0.05″	9634K21	$2.93	95907A440	$5.80	0.08″	97745A550	$8.89	96376A110	$12.27
8-32	5/8″	7/8″	0.07″	9634K22	3.04	95907A460	6.04	0.1″	97745A660	10.49	96376A220	14.59
1/4″-20	7/8″	1 1/4″	0.1″	9634K23	3.22	95907A480	6.42	0.15″	97745A770	11.90	96376A330	16.62
1/4″-28	1″	1 1/4″	0.1″	9634K24	3.46	95907A490	6.76	—	—	—	—	—
3/8″-16	1 1/8″	1 5/8″	0.17″	9634K25	3.60	95907A510	8.26	0.22″	97745A880	12.44	96376A440	18.12
3/8″-24	1 1/4″	1 5/8″	0.17″	9634K26	3.78	95907A520	8.78	—	—	—	—	—

Custom Extension Springs

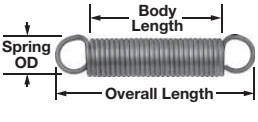

9533K21 Hook

9533K81 Loop

9533K41 Double Loop

9533K71 Side Loop

Whatever the size, we'll get the spring you need. Send us a description, drawing, or sample of the extension spring you require.

To Order: Please specify the following: 1) Part number for the spring end style; if you don't see your end style, use 9533K999. 2) Material: music wire, spring-tempered steel, stainless steel, or other material. 3) Finish: plain, galvanized, zinc plated, or passivated (for stainless steel only). 4) Dimensions: overall length, body length, spring OD, and wire diameter.

For information about extension springs, see page 1211.

Precision Extension Springs with Hook Ends

Springs are manufactured to specific OD, extended length, minimum load, and rate tolerances.

Zinc-Plated Steel Music Wire Springs—Meet ASTM B633 and offer some corrosion resistance.

Black-Oxide Steel Music Wire Springs—Are treated for durability and rust resistance.

Type 302 Stainless Steel Springs—Meet ASTM A313 and offer excellent corrosion resistance.

Also Available: Springs with a certificate of compliance. Please ask for 9432K999 for steel music wire springs or 9433K999 for Type 302 stainless steel springs and specify the spring part number.

Specification	Tolerance
OD: 0.094″ to 0.188″	+0.003″/–0.005″
OD: 0.25″ to 0.5″	±0.008″
OD: 0.625″ to 0.75″	±0.015″
Minimum Load	±15%
Rate, lbs./inch	±10%

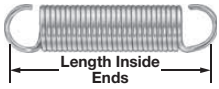

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Zinc-Plated Steel Music Wire								
0.625″ Length Inside Ends								
0.094″	0.012″	1.335″	0.10	1.16	1.50	6	9432K21	$10.85
1″ Length Inside Ends								
0.125″	0.016″	2.18″	0.20	1.96	1.50	6	9432K23	11.08
0.188″	0.022″	2.2″	0.30	3.29	2.50	6	9432K26	6.56
0.25″	0.026″	2.27″	0.40	3.99	2.80	6	9432K28	10.00
0.25″	0.037″	1.55″	1.00	10.68	17.70	6	9432K35	10.00
0.375″	0.041″	1.69″	0.90	9.71	12.70	6	9432K44	10.55
0.375″	0.045″	1.56″	1.20	12.53	20.20	6	9432K54	10.00
1.25″ Length Inside Ends								
0.375″	0.055″	1.82″	2.00	21.82	34.80	6	9432K62	10.00
1.375″ Length Inside Ends								
0.25″	0.026″	3.475″	0.40	3.99	1.70	6	9432K29	11.08
0.5″	0.063″	2.095″	2.00	24.42	31.40	6	9432K75	7.58
1.5″ Length Inside Ends								
0.25″	0.031″	3.04″	0.70	6.54	3.80	6	9432K32	10.00
0.375″	0.031″	4.69″	0.30	4.47	1.30	6	9432K42	11.08
0.375″	0.037″	3.58″	0.70	7.32	3.20	6	9432K43	10.00
1.75″ Length Inside Ends								
0.25″	0.037″	2.95″	1.00	10.66	8.00	6	9432K36	11.08
0.375″	0.041″	3.85″	0.90	9.73	4.20	6	9432K48	11.08
0.5″	0.041″	5.05″	0.50	7.41	2.10	6	9432K65	10.00
2″ Length Inside Ends								
0.125″	0.020″	3.42″	0.40	3.66	2.30	6	9432K24	11.08
0.188″	0.022″	4.97″	0.30	3.28	1.00	6	9432K27	11.08
0.25″	0.026″	5.5″	0.40	3.99	1.00	6	9432K31	10.55
0.625″	0.069″	3.68″	2.00	25.71	14.10	3	9432K118	4.00
0.75″	0.075″	3.56″	2.00	27.26	16.20	3	9432K123	7.34
2.25″ Length Inside Ends								
0.375″	0.055″	3.68″	2.00	21.92	13.90	6	9432K63	10.00
0.5″	0.055″	4.79″	1.30	16.80	6.10	6	9432K71	9.08
2.5″ Length Inside Ends								
0.25″	0.031″	5.47″	0.70	6.54	2.00	6	9432K51	11.08
0.375″	0.041″	6.04″	0.90	9.73	2.50	6	9432K49	10.55
0.5″	0.045″	7.44″	0.70	9.59	1.80	6	9432K69	10.00
0.5″	0.063″	4.6″	2.00	24.45	10.70	6	9432K91	7.58
3″ Length Inside Ends								
0.25″	0.037″	5.37″	1.00	10.70	4.10	6	9432K37	11.08
0.375″	0.045″	6.55″	1.20	12.57	3.20	6	9432K55	10.00
0.625″	0.063″	7.27″	1.50	19.86	4.30	3	9432K119	6.03
0.625″	0.069″	6.32″	2.00	25.64	7.10	3	9432K121	6.03
0.75″	0.075″	6.78″	2.00	27.33	6.70	3	9432K124	7.18
4.5″ Length Inside Ends								
0.375″	0.055″	8.13″	2.00	21.90	5.90	6	9432K64	11.08
0.5″	0.055″	11.23″	1.30	16.80	2.30	6	9432K73	14.36
0.625″	0.069″	10.41″	2.00	25.66	4.00	3	9432K122	9.00
5″ Length Inside Ends								
0.5″	0.063″	10.23″	2.00	24.47	4.30	6	9432K76	14.36
0.75″	0.075″	13.18″	2.00	27.31	3.10	3	9432K125	10.00
Black-Oxide Steel Music Wire								
0.625″ Length Inside Ends								
0.094″	0.012″	1.255″	0.13	1.02	1.44	6	3114T25	10.85
1″ Length Inside Ends								
0.125″	0.016″	2″	0.22	1.74	1.47	6	3114T3	11.89
0.188″	0.022″	2″	0.50	2.88	2.38	6	3114T39	6.56
0.25″	0.026″	2″	0.40	3.41	2.66	6	3114T45	10.00
0.25″	0.037″	1.5″	1.06	9.41	16.89	6	3114T57	10.00
0.375″	0.041″	1.5″	1.00	8.35	12.11	6	3114T66	10.55
0.375″	0.045″	1.5″	0.92	10.99	19.30	6	3114T72	10.00
1.25″ Length Inside Ends								
0.375″	0.055″	1.75″	3.20	19.29	33.45	6	3114T78	10.00
1.375″ Length Inside Ends								
0.25″	0.026″	3.005″	0.40	3.41	1.65	6	3114T46	11.08
0.5″	0.060″	2.005″	3.00	18.63	24.30	6	3114T9	7.58
1.5″ Length Inside Ends								
0.25″	0.031″	3.5″	0.77	5.72	3.61	6	3114T52	10.00
0.375″	0.031″	4″	0.42	3.68	1.21	6	3114T56	11.89
0.375″	0.037″	3.5″	0.59	6.17	3.03	6	3114T61	10.00
1.75″ Length Inside Ends								
0.25″	0.037″	3″	1.36	9.41	7.60	6	3114T58	11.89
0.375″	0.041″	3.5″	0.80	8.35	4.04	6	3114T67	11.89
0.5″	0.041″	4.75″	0.40	6.08	2.10	6	3114T7	10.00

Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Black-Oxide Steel Music Wire (Cont.)								
2″ Length Inside Ends								
0.25″	0.026″	5″	0.46	3.41	0.97	6	3114T47	$10.55
0.625″	0.069″	3.5″	2.80	21.90	13.79	3	3114T99	4.00
0.75″	0.075″	3.5″	2.50	22.87	15.41	3	3114T113	7.50
2.25″ Length Inside Ends								
0.375″	0.055″	3.5″	3.92	19.31	13.38	6	3114T79	10.00
0.5″	0.055″	4.5″	1.27	14.41	5.85	6	3114T82	9.08
2.5″ Length Inside Ends								
0.375″	0.041″	6″	1.19	8.35	2.40	6	3114T68	10.55
0.5″	0.045″	5.5″	0.73	7.99	1.74	6	3114T77	10.00
0.5″	0.063″	4.5″	2.70	21.38	10.24	6	3114T91	7.58
3″ Length Inside Ends								
0.25″	0.037″	5″	1.16	9.41	3.95	6	3114T59	11.89
0.375″	0.045″	6″	1.10	11.00	3.10	6	3114T74	10.00
0.625″	0.063″	6.5″	2.00	16.74	4.18	3	3114T94	6.03
0.625″	0.069″	6″	3.70	21.93	6.77	3	3114T111	6.27
0.75″	0.075″	6″	2.50	22.87	6.16	3	3114T114	8.26
4.5″ Length Inside Ends								
0.625″	0.069″	9″	2.80	21.91	3.79	3	3114T112	9.23
5″ Length Inside Ends								
0.5″	0.063″	9″	3.00	21.36	4.08	6	3114T92	14.36
0.75″	0.075″	11″	2.60	22.85	2.98	3	3114T115	10.64
Type 302 Stainless Steel								
0.625″ Length Inside Ends								
0.094″	0.012″	1.135″	0.09	0.76	1.30	3	9433K24	7.16
1″ Length Inside Ends								
0.125″	0.016″	1.87″	0.17	1.31	1.30	3	9433K29	4.29
0.188″	0.022″	1.89″	0.26	2.19	2.17	3	9433K38	4.77
0.25″	0.026″	1.94″	0.35	2.66	2.43	3	9433K44	4.29
0.25″	0.037″	1.4″	0.87	7.02	15.39	3	9433K56	4.29
0.375″	0.041″	1.51″	0.78	6.47	11.04	3	9433K68	4.29
0.375″	0.045″	1.42″	1.04	8.34	17.57	3	9433K74	4.77
1.25″ Length Inside Ends								
0.375″	0.055″	1.68″	1.74	14.74	30.26	3	9433K36	7.26
1.375″ Length Inside Ends								
0.25″	0.026″	2.925″	0.35	2.66	1.48	3	9433K45	4.77
0.5″	0.063″	1.905″	1.74	16.44	27.30	3	9433K43	5.87
1.5″ Length Inside Ends								
0.25″	0.031″	2.6″	0.61	4.31	3.30	3	9433K28	4.29
0.375″	0.031″	3.88″	0.26	2.95	1.13	3	9433K64	4.77
0.375″	0.037″	3.03″	0.61	4.83	2.78	3	9433K6	4.77
1.75″ Length Inside Ends								
0.25″	0.037″	2.64″	0.87	7.03	6.96	3	9433K57	4.29
0.375″	0.041″	3.3″	0.78	6.46	3.65	3	9433K66	4.29
2″ Length Inside Ends								
0.125″	0.020″	3.04″	0.35	2.43	2.00	3	9433K37	4.77
0.188″	0.022″	4.21″	0.26	2.19	0.87	3	9433K4	4.29
0.25″	0.026″	4.66″	0.35	2.67	0.87	3	9433K46	4.77
0.5″	0.041″	4.22″	0.43	4.92	1.83	3	9433K75	7.00
0.625″	0.069″	3.26″	1.74	17.16	12.26	3	9433K49	9.29
0.75″	0.075″	3.19″	1.74	18.48	14.09	3	9433K54	9.69
2.25″ Length Inside Ends								
0.375″	0.055″	2.7″	1.74	14.79	12.09	3	9433K39	7.26
0.5″	0.055″	4.17″	1.13	11.31	5.30	3	9433K81	6.48
2.5″ Length Inside Ends								
0.25″	0.031″	4.64″	0.61	4.32	1.74	3	9433K31	4.77
0.375″	0.041″	5.11″	0.78	6.46	2.17	3	9433K72	4.29
0.5″	0.045″	6.17″	0.61	6.36	1.57	3	9433K76	6.29
0.5″	0.063″	4.08″	1.74	16.44	9.30	3	9433K47	6.87
3″ Length Inside Ends								
0.25″	0.037″	4.73″	0.87	7.03	3.57	3	9433K33	4.29
0.375″	0.045″	5.62″	1.04	8.33	2.78	3	9433K73	4.29
0.625″	0.063″	6.36″	1.30	13.87	3.74	3	9433K93	9.29
0.625″	0.069″	5.49″	1.74	17.16	6.17	3	9433K99	9.29
0.75″	0.075″	5.87″	1.74	18.48	5.83	3	9433K113	9.90
4.5″ Length Inside Ends								
0.375″	0.055″	7.03″	1.74	14.73	5.13	3	9433K79	7.95
0.5″	0.055″	9.58″	1.13	11.31	2.00	3	9433K82	8.76
0.625″	0.069″	8.94″	1.74	17.17	3.48	3	9433K111	12.39
5″ Length Inside Ends								
0.5″	0.063″	8.94″	1.74	16.44	3.74	3	9433K91	11.50
0.75″	0.075″	11.22″	1.74	18.48	2.70	3	9433K114	9.99

For information about extension springs, see page 1211.

Ultra-Precision Extension Springs with Loop Ends

When extremely tight OD and rate tolerances are critical, these are the springs to choose. All offer outstanding wear resistance, which makes them perfect for applications in motion.

Type 302 Stainless Steel Springs—Offer excellent corrosion resistance.

Also Available: Springs with a certificate of compliance. Please ask for 9044K999 for steel music wire springs or 9065K999 for Type 302 stainless steel springs and specify the spring part number.

Specification	Tolerance
OD: 0.180″	±0.002″
OD: 0.181″ to 0.240″	±0.003″
OD: 0.241″ to 0.500″	±0.004″
Rate, lbs./inch	±5%

			Steel Music Wire					Type 302 Stainless Steel				
Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch		Pkg. of 3	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch		Pkg. of 3
0.5″ Length Inside Ends												
0.180″	0.022″	0.73″	0.20	2.60	10.50	9044K31	$8.18	0.17	2.26	9.12	9065K413	$10.12
0.62″ Length Inside Ends												
0.180″	0.018″	1.255″	0.14	1.55	2.20	9044K11	8.18	0.12	1.35	1.91	9065K11	10.12
0.180″	0.022″	1.015″	0.20	2.60	6.30	9044K33	8.18	0.17	2.26	5.47	9065K33	10.12
0.180″	0.029″	0.825″	0.52	5.82	26.50	9044K53	8.18	0.45	5.06	23.03	9065K53	10.12
0.240″	0.018″	1.285″	0.11	1.18	1.60	9044K176	8.18	0.10	1.03	1.39	9065K176	10.12
0.240″	0.029″	0.875″	0.40	4.50	16.50	9044K111	8.18	0.35	3.91	14.34	9065K111	10.12
0.240″	0.037″	0.775″	0.80	8.70	54.70	9044K139	8.18	0.70	7.56	47.53	9065K415	10.12
0.75″ Length Inside Ends												
0.180″	0.018″	1.66″	0.14	1.55	1.50	9044K104	8.18	0.12	1.35	1.30	9065K13	10.12
0.180″	0.022″	1.31″	0.20	2.60	4.40	9044K128	8.18	0.17	2.26	3.82	9065K35	10.12
0.180″	0.029″	1.03″	0.52	5.82	18.90	9044K55	8.18	0.45	5.06	16.42	9065K55	10.12
0.240″	0.018″	1.96″	0.11	1.18	0.90	9044K178	8.18	0.10	1.03	0.78	9065K178	10.12
0.240″	0.022″	1.53″	0.19	2.07	2.40	9044K194	8.18	0.17	1.80	2.09	9065K194	10.12
0.240″	0.029″	1.17″	0.40	4.50	9.80	9044K113	8.18	0.35	3.91	8.52	9065K113	10.12
0.300″	0.037″	1.01″	0.65	7.20	25.40	9044K171	8.18	0.56	6.26	22.07	9065K171	10.12
0.360″	0.045″	0.87″	0.90	10.20	76.50	9044K243	8.18	0.78	8.86	66.48	9065K243	10.12
0.88″ Length Inside Ends												
0.180″	0.018″	2.075″	0.14	1.55	1.20	9044K15	8.18	0.12	1.35	1.04	9065K15	10.12
0.180″	0.029″	1.235″	0.52	5.82	14.70	9044K57	8.18	0.45	5.06	12.77	9065K57	10.12
0.240″	0.018″	2.675″	0.11	1.18	0.60	9044K81	8.18	0.10	1.03	0.52	9065K81	10.12
0.240″	0.029″	1.465″	0.40	4.50	7.00	9044K115	8.18	0.35	3.91	6.08	9065K115	10.12
1″ Length Inside Ends												
0.180″	0.018″	2.46″	0.14	1.55	1.00	9044K17	8.18	0.12	1.35	0.87	9065K17	10.12
0.180″	0.022″	1.86″	0.20	2.60	2.80	9044K42	8.18	0.17	2.26	2.43	9065K39	10.12
0.180″	0.029″	1.43″	0.52	5.82	12.20	9044K59	8.18	0.45	5.06	10.60	9065K59	10.12
0.240″	0.029″	1.74″	0.40	4.50	5.50	9044K117	8.18	0.35	3.91	4.78	9065K117	10.12
0.360″	0.045″	1.43″	0.90	10.20	21.80	9044K245	8.18	0.78	8.86	18.94	9065K245	10.12
1.12″ Length Inside Ends												
0.180″	0.018″	2.855″	0.14	1.55	0.80	9044K19	8.18	0.12	1.35	0.70	9065K19	10.12
0.240″	0.037″	1.615″	0.80	8.70	16.40	9044K145	8.18	0.70	7.56	14.25	9065K145	10.12
0.300″	0.037″	1.825″	0.65	7.20	9.40	9044K102	10.17	0.56	6.26	8.17	9065K102	12.70
1.25″ Length Inside Ends												
0.240″	0.018″	4.65″	0.11	1.18	0.30	9044K85	8.18	0.10	1.03	0.26	9065K184	10.12
0.300″	0.037″	2.1″	0.65	7.20	7.70	9044K112	10.17	0.56	6.26	6.69	9065K104	12.70
0.360″	0.037″	2.39″	0.50	5.90	4.70	9044K223	8.18	0.43	5.13	4.08	9065K223	10.12
0.360″	0.045″	1.93″	0.90	10.20	13.60	9044K249	8.18	0.78	8.86	11.82	9065K249	10.12
0.360″	0.055″	1.66″	1.60	17.60	38.60	9044K114	10.17	1.39	15.29	33.54	9065K112	12.70
1.37″ Length Inside Ends												
0.300″	0.037″	2.375″	0.65	7.20	6.60	9044K106	10.17	0.56	6.26	5.74	9065K106★	6.33
0.360″	0.055″	1.875″	1.60	17.60	32.10	9044K116	10.17	1.39	15.29	27.89	9065K114★	6.09
1.5″ Length Inside Ends												
0.180″	0.018″	4.06″	0.14	1.55	0.50	9044K25	8.18	0.12	1.35	0.43	9065K25	10.12
0.240″	0.029″	2.89″	0.40	4.50	2.90	9044K125	8.18	0.35	3.91	2.52	9065K125	10.12
0.300″	0.055″	1.9″	1.92	21.31	47.90	9044K203	8.18	1.67	18.52	41.63	9065K203	10.12
0.360″	0.037″	3.06″	0.50	5.90	3.40	9044K227	8.18	0.43	5.13	2.95	9065K227	10.12
0.360″	0.045″	2.47″	0.90	10.20	9.60	9044K253	8.18	0.78	8.86	8.34	9065K253	10.12
0.500″	0.063″	2.17″	1.70	18.80	25.50	9044K365	8.12	1.48	16.34	22.16	9065K365	10.16
1.75″ Length Inside Ends												
0.240″	0.029″	3.47″	0.40	4.50	2.40	9044K127	8.18	0.35	3.91	2.09	9065K127	10.12
0.240″	0.037″	2.63″	0.80	8.70	8.90	9044K153	8.18	0.70	7.56	7.73	9065K256	10.12
0.500″	0.045″	3.79″	0.70	7.50	3.30	9044K319	8.12	0.61	6.52	2.87	9065K319	10.16
0.500″	0.063″	2.66″	1.70	18.80	18.70	9044K367	8.12	1.48	16.34	16.25	9065K367	10.16
2″ Length Inside Ends												
0.300″	0.055″	2.6″	1.92	21.31	32.20	9044K207	8.18	1.67	18.52	27.98	9065K207	10.12
0.360″	0.045″	3.49″	0.90	10.20	6.20	9044K257	8.18	0.78	8.86	5.39	9065K257	10.12
0.500″	0.045″	4.61″	0.70	7.50	2.60	9044K321	8.12	0.61	6.52	2.26	9065K321	10.16
0.500″	0.055″	3.6″	1.20	13.10	7.40	9044K343	8.18	1.04	11.38	6.43	9065K343	10.14
0.500″	0.063″	3.16″	1.70	18.80	14.80	9044K369	8.12	1.48	16.34	12.86	9065K369	10.16
2.25″ Length Inside Ends												
0.300″	0.055″	2.95″	1.92	21.31	27.70	9044K209	8.18	1.67	18.52	24.07	9065K209	10.12
0.360″	0.045″	4″	0.90	10.20	5.30	9044K259	8.18	0.78	8.86	4.61	9065K259	10.12
0.500″	0.063″	3.65″	1.70	18.80	12.20	9044K371	8.14	1.48	16.34	10.60	9065K371	10.12
2.5″ Length Inside Ends												
0.300″	0.055″	3.3″	1.92	21.31	24.30	9044K211	8.18	1.67	18.52	21.12	9065K211	10.12
0.500″	0.055″	4.82″	1.20	13.10	5.10	9044K347	8.18	1.04	11.38	4.43	9065K347	10.14
0.500″	0.063″	4.12″	1.70	18.80	10.40	9044K373	8.14	1.48	16.34	9.04	9065K373	10.12
2.75″ Length Inside Ends												
0.360″	0.045″	5.02″	0.90	10.20	4.10	9044K263	8.18	0.78	8.86	3.56	9065K263	10.12
0.500″	0.063″	4.6″	1.70	18.80	9.20	9044K375	8.14	1.48	16.34	7.99	9065K375	10.12

★ Package quantity is 1.

(Continued on following page)

For information about extension springs, see page 1211.

Ultra-Precision Extension Springs with Loop Ends *(Continued from previous page)*

Spring OD	Wire Dia.	Extended Lg.	Steel Music Wire Load, lbs. Min.	Steel Music Wire Load, lbs. Max.	Steel Music Wire Rate, lbs./inch		Steel Music Wire Pkg. of 3	Type 302 Stainless Steel Load, lbs. Min.	Type 302 Stainless Steel Load, lbs. Max.	Type 302 Stainless Steel Rate, lbs./inch		Type 302 Stainless Steel Pkg. of 3
3″ Length Inside Ends												
0.300″	0.037″	5.94″	0.65	7.20	2.20	9044K193	$8.18	0.56	6.26	1.91	9065K193	$10.12
0.360″	0.045″	5.53″	0.90	10.20	3.60	9044K265	8.18	0.78	8.86	3.13	9065K265	10.12
0.360″	0.055″	4.47″	1.60	17.60	10.80	9044K289	8.14	1.39	15.29	9.39	9065K289	10.11
0.500″	0.063″	5.1″	1.70	18.80	8.10	9044K377	8.14	1.48	16.34	7.04	9065K377	10.12
3.25″ Length Inside Ends												
0.240″	0.037″	5.16″	0.80	8.70	4.20	9044K168	8.18	0.70	7.56	3.65	9065K168	10.12
3.5″ Length Inside Ends												
0.360″	0.037″	8.67″	0.50	5.90	1.00	9044K108	12.83	0.43	5.13	0.87	9065K108	12.70
0.360″	0.055″	5.27″	1.60	17.60	9.00	9044K118	12.83	1.39	15.29	7.82	9065K116★	6.09
0.500″	0.045″	9.64″	0.70	7.50	1.10	9044K136	12.83	0.61	6.52	0.96	9065K12★	6.09
0.500″	0.055″	7.19″	1.20	13.10	3.20	9044K126	12.83	1.04	11.38	2.78	9065K124★	6.09
4″ Length Inside Ends												
0.360″	0.055″	6.1″	1.60	17.60	7.70	9044K12	12.83	1.39	15.29	6.69	9065K118★	6.09
0.500″	0.045″	11.39″	0.70	7.50	0.90	9044K124	12.83	0.61	6.52	0.78	9065K122★	6.09
0.500″	0.055″	8.38″	1.20	13.10	2.70	9044K132	12.83	1.04	11.38	2.35	9065K126★	6.09
0.500″	0.063″	7.07″	1.70	18.80	5.50	9044K381	8.18	1.48	16.34	4.78	9065K381	10.12
4.5″ Length Inside Ends												
0.500″	0.055″	9.56″	1.20	13.10	2.30	9044K134	12.83	1.04	11.38	2.00	9065K128★	6.09
0.500″	0.063″	8.06″	1.70	18.80	4.80	9044K383	8.18	1.48	16.34	4.17	9065K383	10.12
5″ Length Inside Ends												
0.500″	0.055″	11.1″	1.20	13.10	2.00	9044K359	8.16	1.04	11.38	1.74	9065K435	10.14

★ Package quantity is 1.

Cut-to-Length Extension Springs

Keep these long springs on hand so you can cut the right length whenever you need it. All of these springs have straight-cut ends, which allow you to bend the end coils into hook or loop ends. To determine the spring rate, take the rate constant and divide it by the length (in inches) you cut.

Type 302 Stainless Steel Springs—Offer excellent corrosion resistance.

Wire Dia.	Min. Load, lbs.	Rate Constant		
Spring-Tempered Steel—36″ o'all lg.				
0.125″ OD				
0.012″	0.08	0.25	9664K41	$3.33
0.014″	0.15	0.57	9664K42	3.33
0.016″	0.26	1.2	9664K11	4.00
0.018″	0.41	2.2	9664K43	4.00
0.023″	0.98	8.7	9664K12	4.00
0.188″ OD				
0.016″	0.11	0.32	9664K74	3.20
0.018″	0.18	0.58	9664K45	3.20
0.023″	0.49	2.1	9664K13	3.53
0.028″	1.01	6.2	9664K14	3.57
0.25″ OD				
0.018″	0.09	0.22	9664K46	3.02
0.023″	0.27	0.8	9664K47	3.10
0.028″	0.61	2.3	9664K15	3.34
0.035″	1.46	7.6	9664K16	4.15
0.313″ OD				
0.023″	0.16	0.38	9664K48	3.00
0.028″	0.38	1.1	9664K49	3.36
0.035″	0.96	3.6	9664K17	3.43
0.047″	2.88	18	9664K18	3.62
0.375″ OD				
0.028″	0.25	0.59	9664K51	3.46
0.035″	0.65	1.9	9664K19	3.56
0.047″	2.14	9.3	9664K21	3.56
0.063″	5.90	47.01	9664K52	3.94
0.438″ OD				
0.035″	0.46	1.1	9664K22	3.64
0.047″	1.58	5.9	9664K23	3.80
0.5″ OD				
0.047″	1.19	3.5	9664K44	3.44
0.054″	2.11	7.5	9664K54	3.61
0.063″	3.65	17	9664K55	4.07
0.072″	6.49	35	9664K25	4.07
0.080″	9.28	64	9664K56	4.07
0.563″ OD				
0.063″	2.90	11	9664K26	4.05
0.625″ OD				
0.047″	0.70	1.7	9664K59	4.62
0.063″	2.32	8	9664K27	4.62
0.080″	6.45	29	9664K28	4.62
0.092″	10.58	62	9664K61	6.08
0.75″ OD				
0.047″	0.43	0.94	9664K62	4.28
0.105″	13.12	68.03	9664K29	5.31
0.120″	20.88	144.06	9664K66	6.42

Wire Dia.	Min. Load, lbs.	Rate Constant		
Spring-Tempered Steel—36″ o'all lg. (Cont.)				
0.875″ OD				
0.105″	9.82	14	9664K31	$6.70
0.135″	24.79	158.95	9664K68	11.80
1″ OD				
0.092″	4.15	13	9664K32	9.53
0.120″	12.83	53.03	9664K33	13.77
1.125″ OD				
0.105″	5.85	17.01	9664K69	9.70
0.135″	15.59	65.98	9664K34	14.10
1.25″ OD				
0.120″	7.81	25.01	9664K71	14.40
0.148″	18.26	76.97	9664K35	17.03
1.5″ OD				
0.162″	18.22	67.03	9664K36	22.10
Type 302 Stainless Steel—20″ o'all lg.				
0.125″ OD				
0.013″	0.11	0.4	9665K51	6.59
0.015″	0.20	0.8	9665K81	6.18
0.017″	0.33	1.4	9665K12	6.01
0.020″	0.60	3.4	9665K42	5.68
0.023″	0.98	7.6	9665K37	5.82
0.187″ OD				
0.015″	0.08	0.2	9665K53	7.77
0.017″	0.14	0.4	9665K83	7.42
0.020″	0.28	0.8	9665K54	7.11
0.026″	0.79	3.6	9665K15	6.53
0.028″	1.01	5.4	9665K38	6.72
0.25″ OD				
0.015″	0.04	0.08	9665K84	8.07
0.017″	0.07	0.14	9665K16	8.54
0.020″	0.15	0.4	9665K57	8.60
0.023″	0.27	0.6	9665K86	7.59
0.026″	0.45	1.4	9665K85	7.49
0.028″	0.61	2	9665K39	7.69
0.032″	1.03	4	9665K18	7.46
0.035″	1.46	6.59	9665K47	7.59
0.312″ OD				
0.020″	0.08	0.16	9665K19	8.89
0.023″	0.16	0.34	9665K87	8.50
0.026″	0.28	0.6	9665K21	8.23
0.028″	0.38	1	9665K48	8.55
0.032″	0.67	2	9665K22	7.95
0.035″	0.96	3	9665K88	8.55
0.041″	1.78	7.2	9665K23	7.42
0.047″	2.88	15.38	9665K49	8.77

Wire Dia.	Min. Load, lbs.	Rate Constant		
Type 302 Stainless Steel—20″ o'all lg. (Cont.)				
0.375″ OD				
0.032″	0.44	1	9665K24	$8.61
0.035″	0.65	1.6	9665K58	9.45
0.041″	1.25	3.8	9665K25	8.62
0.047″	2.14	8.19	9665K59	9.81
0.054″	3.65	17.42	9665K26	8.79
0.062″	5.90	37.47	9665K61	10.64
0.406″ OD				
0.035″	0.52	1.19	9665K62	10.36
0.437″ OD				
0.035″	0.46	1	9665K89	10.36
0.041″	0.90	2.4	9665K27	9.93
0.047″	1.58	4.79	9665K91	10.87
0.054″	2.75	10.21	9665K28	10.58
0.5″ OD				
0.047″	1.19	3	9665K63	11.91
0.054″	2.11	6.01	9665K69	10.86
0.062″	3.65	13.63	9665K64	13.09
0.072″	6.49	30.98	9665K31	11.67
0.562″ OD				
0.054″	1.65	4.41	9665K46	12.22
0.062″	2.90	9.22	9665K92	14.37
0.072″	5.23	20.58	9665K32	13.12
0.091″	12.76	74.93	9665K33	14.81
0.625″ OD				
0.062″	2.32	6.41	9665K65	15.55
0.072″	4.26	14.39	9665K34	12.71
0.091″	10.58	51.35	9665K35	16.39
0.75″ OD				
0.047″	0.43	0.8	9665K66	16.14
0.072″	2.93	7.79	9665K93	24.32
0.091″	7.54	27.37	9665K36	19.80
0.105″	13.12	59.95	9665K67	30.14
0.120″	20.88	125.7	9665K68	32.27
1″ OD				
0.080″	2.38	5.2	9665K71	32.64
0.091″	4.15	10.39	9665K72	35.00
0.105″	7.52	22.45	9665K73	37.86
0.120″	12.83	46.18	9665K74	41.14
1.125″ OD				
0.105″	5.85	15.24	9665K75	56.68
0.135″	15.59	58.26	9665K76	65.27
1.5″ OD				
0.135″	8.92	22.22	9665K77	82.64
0.162″	18.22	58.55	9665K78	93.09

Extension Springs

For information about extension springs, see page 1211.

Extension Springs with Special Ends

A

B

C

D 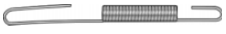

E

F

G

H

O'all Lg.	Body Lg.	Spring OD	Wire Dia.	Extended Lg.	Load, lbs. Min.	Load, lbs. Max.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Unplated Steel Music Wire										
(A) Straight-Cut Ends										
1″	1″	0.188″	0.014″	1.46″	0.07	0.14	0.15	12	1330K57	$6.26
(B) Double Loop Ends										
6.25″	4.938″	0.75″	0.080″	8.25″	4.50	11.10	3.30	1	1330K33	7.40
(C) Swivel Hook Ends										
5.25″	3.125″	0.531″	0.062″	6.25″	3.50	8.50	5.00	1	1330K45	7.61
(D) Elongated Hook Ends										
1.75″	0.705″	0.25″	0.047″	1.99″	4.10	18.30	59.90	6	1330K29	8.23
Galvanized Spring-Tempered Steel										
(D) Elongated Hook Ends										
3.5″	1.75″	0.25″	0.041″	4.04″	2.61	8.35	10.67	6	96605K21	12.23
4″	1″	0.25″	0.035″	4.49″	1.42	5.26	7.87	6	96605K22	12.44
10.25″	3.5″	0.75″	0.091″	12.24″	7.31	25.64	9.19	3	96605K1	8.32
(E) Hook Ends										
2.375″	1.25″	0.281″	0.047″	2.765″	3.44	11.75	21.32	6	96605K23	9.89
2.5″	1.125″	0.313″	0.023″	5.52″	0.15	1.20	0.34	6	96605K44	9.89
3.75″	0.875″	0.563″	0.072″	4.21″	4.13	17.60	29.44	3	96605K26	6.79
5.25″	2.5″	0.5″	0.080″	5.94″	9.51	27.74	26.27	3	96605K27	7.36
5.625″	2.359″	0.719″	0.047″	14.625″	0.48	4.59	0.46	10	9290K45	12.77
8.25″	2″	0.438″	0.063″	10.25″	2.57	12.08	6.04	10	9290K21	12.77
(F) Hook End and Loop End										
1.625″	0.75″	0.25″	0.039″	1.895″	1.95	7.29	19.42	6	96605K31	9.67
2″	1″	0.313″	0.041″	2.54″	1.73	6.43	8.70	6	96605K32	9.81
5″	2.5″	0.563″	0.072″	6.29″	5.08	17.60	9.73	3	96605K34	7.70
5.5″	3″	0.375″	0.062″	6.31″	6.06	17.94	14.62	3	96605K35	7.37
(G) Hook End and Straight End										
8.5″	1.875″	0.75″	0.094″	13.5″	4.50	20.05	17.10	10	9290K22	12.41
17.5″	3.5″	0.75″	0.063″	23″	2.69	14.35	2.61	5	9290K47	9.81
18.5″	2″	0.813″	0.094″	20″	10.62	40.09	26.73	5	9290K24	9.20
Zinc-Plated Spring-Tempered Steel										
(H) Double Loop End and Straight End										
11.5″	1.875″	0.406″	0.031″	15.5″	0.80	7.00	1.60	10	9290K23	7.58

Safety Extension Springs

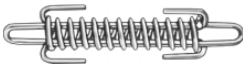

While ordinary extension springs can be overloaded to failure, these springs have drawbars to safeguard against overextending.

Zinc-Plated Spring-Tempered Steel Springs—Offer some corrosion resistance.
Type 302 Stainless Steel Springs—Offer excellent corrosion resistance.

			Zinc-Plated Spring-Tempered Steel					Type 302 Stainless Steel				
O'all Lg.	Spring OD	Wire Dia.	Extended Lg.	Load, lbs.	Rate, lbs./inch			Extended Lg.	Load, lbs.	Rate, lbs./inch		
4″	0.675″	0.048″	6.2″	5.01	2.28	9630K6	$7.50	6.3″	5.24	2.28	9630K52	$13.06
6″	1.100″	0.125″	7.9″	55.10	29.00	9630K4	13.59	8.35″	68.15	29.00	9630K64	17.17
6″	1.162″	0.072″	10″	11.10	2.77	9630K8	11.31	10.1″	11.38	2.77	9630K56	20.19
6″	1.192″	0.092″	9″	12.62	4.21	9630K5	13.62	9.25″	13.67	4.21	9630K58	23.61
7.5″	0.875″	0.105″	9.85″	42.30	18.00	9630K1	10.70	10.25″	49.50	18.00	9630K61	23.02
7.875″	2.100″	0.250″	10.625″	180.65	65.69	9630K7	22.58	11.125″	213.30	65.69	9630K79	38.46
8″	2.100″	0.312″	9.85″	332.72	179.85	9630K9	27.42	10.19″	365.97	167.11	9630K77	46.89
8.5″	1.746″	0.148″	12.5″	54.08	13.52	9630K14	18.80	12.9″	59.60	13.52	9630K65	29.33
8.5″	1.875″	0.250″	10.35″	222.00	109.60	9630K3	23.48	10.5″	240.00	118.68	9630K63	37.56
8.75″	1.375″	0.207″	9.95″	174.00	145.00	9630K2	18.63	10.1″	195.75	145.00	9630K62	37.07
13.75″	1.625″	0.250″	15.4″	247.50	150.00	9630K31	20.17	15.5″	262.50	150.00	9630K71	46.22
13.75″	2.462″	0.312″	17.15″	313.81	92.30	9630K33	34.65	17.45″	316.11	85.44	9630K73	58.14
16″	1.870″	0.135″	21″	38.09	7.62	9630K35	13.35	21″	38.09	7.62	9630K75	25.66

Extra-Stretch Extension Springs

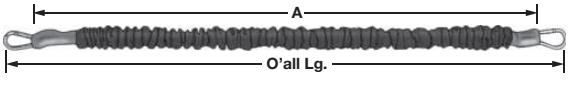

Designed to go the distance, these springs stretch up to three times their original length—much further than traditional extension springs, tie downs, and shock cords. The springs are made of rubber tubing that's encapsulated in a polypropylene fabric sleeve. All have 2″ long, zinc-plated steel hooks with a 5/16″ spring-loaded latch opening at each end. Do not use them to hold overhead loads. Operating temperature range is 30° to 130° F.

Spring Band Lg. (A)	O'all Lg.	Extended Lg.	Rate, lbs./inch		
Low Resistance—26-lb. load with 1″ OD fabric sleeve.					
16″	20″	48″	0.93	8433K21	$19.82
24″	28″	76″	0.54	8433K41	28.02
36″	40″	112″	0.36	8433K2	28.91
48″	52″	148″	0.27	8433K42	32.86
72″	76″	220″	0.18	8433K3	33.94
Medium Resistance—33-lb. load with 1¾″ OD fabric sleeve.					
12″	16″	40″	1.38	8433K25	20.28
24″	28″	76″	0.69	8433K43	29.07
36″	40″	112″	0.46	8433K26	30.66
48″	52″	148″	0.34	8433K44	34.81
72″	76″	220″	0.23	8433K27	36.64

Spring Band Lg. (A)	O'all Lg.	Extended Lg.	Rate, lbs./inch		
High Resistance—47-lb. load with 1¾″ OD fabric sleeve.					
12″	16″	40″	1.96	8433K29	$20.68
24″	28″	76″	0.98	8433K45	28.93
36″	40″	112″	0.65	8433K31	30.09
48″	52″	148″	0.49	8433K46	37.57
72″	76″	220″	0.33	8433K32	39.10
Ultra-High Resistance—77-lb. load with 1¾″ OD fabric sleeve.					
12″	16″	40″	3.21	8433K14	21.22
24″	28″	76″	1.60	8433K47	31.43
36″	40″	112″	1.07	8433K15	32.41
48″	52″	148″	0.80	8433K48	41.40
72″	76″	220″	0.53	8433K16	42.51

For information about extension springs, see page 1211. For information about compression springs, see page 1220.

Spring Assortments

Keep a variety of springs on hand. Extension springs have hook or loop ends; compression springs have open, closed, or closed and ground flat ends.

Assortments in plastic boxes and **steel cabinets** are divided into compartments and most have a chart on the lid that identifies the spring for each compartment.

To Order: For refill springs, please ask for the refill spring part number listed below, and specify the spring number (if provided on the chart located on the inside lid of your container) or the spring length, OD, and wire diameter desired.

No. of Springs	No. of Sizes	Spring Material	Spring Size Range: Length	Spring Size Range: OD	Spring Size Range: Wire Dia.	Container	Assortments		Refill Springs
Extension and Compression Spring Assortments									
92 Springs: 64 Extension 28 Compression	29	Spring-Tempered Steel	1.75″ to 11″	0.188″ to 0.625″	0.028″ to 0.080″	Plastic Box	9645K1	$70.86	9645K25
124 Springs: 112 Extension 12 Compression	40	Zinc-Plated Spring-Tempered Steel	1″ to 12″	0.188″ to 0.732″	0.023″ to 0.092″	Steel Cabinet	9648K1	$186.64	9648K25
200 Springs: 120 Extension 80 Compression	20	Zinc-Plated Music Wire	0.406″ to 3.125″	0.156″ to 0.375″	0.018″ to 0.031″	Plastic Box	9370K11	$42.40	9370K25
216 Springs: 72 Extension 108 Compression 36 Torsion	108	Plated Music Wire	0.125″ to 1.25″	0.057″ to 0.360″	0.006″ to 0.026″	Plastic Box	9436K31	$124.00	9436K25
218 Springs: 164 Extension 54 Compression	79	Zinc-Plated Spring-Tempered Steel	1.25″ to 12″	0.188″ to 0.732″	0.023″ to 0.092″	Steel Cabinet	9648K2	$354.20	9648K25
284 Springs: 124 Extension 160 Compression	63	Zinc-Plated Music Wire and Spring-Tempered Steel	1″ to 6.5″	0.25″ to 0.75″	0.023″ to 0.105″	Plastic Box	9649K16	$333.80	9649K38
805 Springs: 383 Extension 422 Compression	211	Zinc-Plated Music Wire and Spring-Tempered Steel	1″ to 7.5″	0.141″ to 1.25″	0.013″ to 0.162″	Steel Cabinet	9649K1	$1,055.75	9649K38
Extension Spring Assortments									
28	28	Music Wire and Spring-Tempered Steel	11″	0.25″ to 1″	0.013″ to 0.105″	Cardboard Box	9640K42	$81.88	9640K68
88	20	Spring-Tempered Steel	1.75″ to 10.438″	0.188″ to 0.5″	0.028″ to 0.067″	Plastic Box	9639K1	$74.25	9639K25
150	18	Music Wire and Spring-Tempered Steel	1″ to 4″	0.141″ to 0.5″	0.016″ to 0.062″	Plastic Box	9523K14	$82.76	9523K25
120	60	Type 302 Stainless Steel	0.375″ to 5″	0.094″ to 0.75″	0.014″ to 0.069″	Plastic Box	27845K32	$146.24	27845K25
Special-End Extension Springs with Elongated Hooks Assortment (Style E on page 1218)									
72	12	Galvanized Spring-Tempered Steel	1.625″ to 10.25″	0.25″ to 0.75″	0.023″ to 0.091″	Plastic Box	96605K72	$80.01	96605K25
Compression Spring Assortments									
12	6	Music Wire	12″	0.097″ to 0.312″	0.016″ to 0.058″	Plastic Tube	9406K13	$22.44	9406K25
47	47	Music Wire and Spring-Tempered Steel	11″	0.125″ to 1.468″	0.025″ to 0.115″	Cardboard Box	9637K67	$59.66	9637K53
126	42	Plain and Zinc-Plated Music Wire and Spring-Tempered Steel	1″ to 1.75″	0.156″ to 0.375″	0.012″ to 0.041″	Plastic Box	9618K14	$60.14	9618K25
250	125	Type 302 Stainless Steel	0.25″ to 3.5″	0.120″ to 0.720″	0.014″ to 0.096″	Plastic Box	27845K31	$144.78	27845K25

Constant-Force Springs

Typically used as retractors in tape measures and cable reels, these springs are wound into a tight coil to provide uniform force throughout extension and retraction. They can be wrapped around a shaft, spool, or rod; allow for 1½ extra coils on the shaft at full extension to hold the spring in place. All of these springs are made of Type 301 stainless steel. The free end has one hole for attaching a load to the spring. Wound ID, wound OD, and load tolerances are ±10%.

Thickness	Extended Lg.	Wd.	Wound ID	Wound OD	End Hole Dia.	Load, lbs.		
4,000-Cycle Life								
0.004″	15″	0.250″	0.28″	0.40″	0.130″	0.66	9293K42	$5.84
0.005″	17″	0.312″	0.37″	0.50″	0.130″	1.03	9293K44	7.41
0.006″	22″	0.370″	0.51″	0.62″	0.131″	1.12	9293K46	9.67
0.007″	26″	0.500″	0.59″	0.75″	0.131″	1.62	9293K48	9.93
0.008″	30″	0.500″	0.59″	0.82″	0.196″	2.63	9293K52	7.19
0.010″	33″	0.625″	0.73″	0.99″	0.196″	4.12	9293K54	7.56
0.012″	39″	0.750″	0.88″	1.19″	0.196″	5.94	9293K56	7.85
0.014″	43″	1.000″	1.19″	1.50″	0.187″	7.00	9293K58	16.55
0.016″	40″	1.000″	1.20″	1.52″	0.196″	10.60	9293K12	10.83
0.025″	52″	1.500″	1.77″	2.23″	0.265″■	24.80	9293K13	18.58
0.031″	60″	2.000″	2.50″	3.03″	0.265″■	40.90	9293K14	28.38
25,000-Cycle Life								
0.006″	25″	0.500″	0.80″	0.92″	0.196″	0.70	9293K17	5.74
0.008″	33″	0.500″	1.07″	1.23″	0.196″	0.93	9293K18	6.73
0.010″	35″	0.625″	1.36″	1.53″	0.196″	1.46	9293K19	7.48

■ Free end has two side-by-side holes at the tip of the spring.

Thickness	Extended Lg.	Wd.	Wound ID	Wound OD	End Hole Dia.	Load, lbs.		
25,000-Cycle Life (Cont.)								
0.012″	45″	0.750″	1.60″	1.82″	0.196″	2.09	9293K21	$8.35
0.016″	46″	1.000″	1.96″	2.21″	0.196″	4.10	9293K22	11.76
0.020″	55″	1.250″	2.53″	2.82″	0.196″	5.83	9293K23	18.86
0.025″	60″	1.500″	3.35″	3.70″	0.265″■	8.74	9293K24	20.94
0.031″	70″	2.000″	4.35″	4.74″	0.265″■	14.40	9293K25	30.22
50,000-Cycle Life								
0.006″	30″	0.500″	1.12″	1.22″	0.196″	0.44	9293K28	6.16
0.008″	36″	0.500″	1.49″	1.61″	0.196″	0.58	9293K29	6.41
0.010″	40″	0.625″	1.86″	2.00″	0.196″	0.91	9293K31	7.88
0.012″	50″	0.750″	2.24″	2.40″	0.196″	1.31	9293K32	8.85
0.016″	52″	1.000″	2.98″	3.15″	0.196″	2.32	9293K33	10.90
0.020″	62″	1.250″	3.73″	3.94″	0.196″	3.63	9293K34	18.34
0.025″	66″	1.500″	4.66″	4.88″	0.265″■	5.44	9293K35	19.57
0.031″	78″	2.000″	5.77″	6.04″	0.265″■	8.99	9293K36	30.60

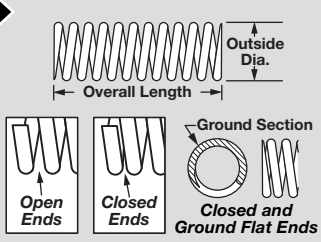

About Compression Springs

When the ends of a compression spring are pushed together, the ends push back to resist the load.

Springs are made of steel music wire (for high strength), spring-tempered steel wire (for heat resistance), or stainless steel (for corrosion resistance). Some steel music wire springs and spring-tempered steel wire springs are plated for increased corrosion resistance.

Compressed Length— The length of a compression spring when the given load is applied.

Deflection @ Load— The distance a spring compresses (from overall length to compressed length) when the given load is applied.

Load— The pounds of force required to compress a spring to its compressed length.

Rate— A change in load per inch (or mm).

Note: The spring ID is equal to the spring OD minus two times the wire diameter.

Steel Compression Springs

Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Music Wire— *Open Ends*								
15/16" Overall Length								
3/16"	0.012"	0.24"	0.70"	0.20	0.29	12	9657K81	$5.02
1 1/4" Overall Length								
9/32"	0.040"	0.64"	0.61"	10.65	17.50	12	9657K83	7.34
10" Overall Length								
11/64"	0.014"	1.98"	8.02"	0.72	0.08	12	9657K79	13.92
1/4"	0.022"	2.45"	7.55"	1.95	0.32	12	9657K82	11.20
Music Wire— *Closed Ends*								
1" Overall Length								
5/32"	0.016"	0.43"	0.57"	1.40	2.45	12	9657K59	6.71
5/32"	0.028"	0.78"	0.22"	6.70	30.09	12	9657K63	6.71
3/16"	0.012"	0.30"	0.70"	0.32	0.46	12	9657K43	6.71
3/16"	0.014"	0.36"	0.64"	0.49	0.76	12	9657K46	6.71
3/16"	0.020"	0.44"	0.56"	1.97	3.53	12	9657K49	6.71
3/16"	0.023"	0.60"	0.40"	3.33	8.29	12	9657K53	6.71
3/16"	0.028"	0.66"	0.34"	5.72	16.91	12	9657K56	6.71
7/32"	0.016"	0.34"	0.66"	0.69	1.04	12	9657K66	6.71
7/32"	0.018"	0.36"	0.64"	1.09	1.71	12	9657K69	6.71
7/32"	0.023"	0.42"	0.58"	2.84	4.93	12	9657K73	6.71
7/32"	0.028"	0.54"	0.46"	4.98	10.73	12	9657K76	6.71
1/4"	0.020"	0.39"	0.61"	1.05	1.72	12	9657K39	6.71
1 1/32" Overall Length								
17/32"	0.105"	0.84"	0.19"	85.84	491.00	6	9657K91	10.55
1 1/4" Overall Length								
15/16"	0.125"	0.72"	0.53"	55.62	120	6	9657K103	14.25
1 3/8" Overall Length								
5/32"	0.016"	0.56"	0.81"	1.40	1.72	12	9657K61	6.71
5/32"	0.028"	1.06"	0.32"	6.70	21.07	12	9657K64	6.71
3/16"	0.012"	0.44"	0.94"	0.31	0.33	12	9657K44	6.71
3/16"	0.014"	0.50"	0.88"	0.49	0.56	12	9657K47	6.71
3/16"	0.020"	0.60"	0.78"	1.92	2.47	12	9657K51	6.71
3/16"	0.023"	0.75"	0.62"	3.33	5.36	12	9657K54	6.71
3/16"	0.028"	0.80"	0.57"	5.72	9.99	12	9657K57	6.71
7/32"	0.016"	0.47"	0.91"	0.69	0.76	12	9657K67	6.71
7/32"	0.018"	0.49"	0.88"	1.04	1.18	12	9657K71	6.71
7/32"	0.023"	0.58"	0.80"	2.88	3.62	12	9657K74	6.71
7/32"	0.028"	0.72"	0.66"	4.98	7.58	12	9657K77	6.71
1/4"	0.020"	0.51"	0.87"	1.09	1.26	12	9657K41	6.71
1 3/4" Overall Length								
5/32"	0.016"	0.77"	0.98"	1.40	1.43	12	9657K62	6.71
5/32"	0.028"	1.34"	0.41"	6.70	16.20	12	9657K65	6.71
3/16"	0.012"	0.51"	1.24"	0.36	0.29	12	9657K45	6.71
3/16"	0.014"	0.61"	1.14"	0.49	0.43	12	9657K48	6.71
3/16"	0.020"	0.71"	1.04"	2.24	2.15	12	9657K52	6.71
3/16"	0.023"	0.84"	0.91"	3.33	3.65	12	9657K55	6.71
3/16"	0.028"	1.10"	0.65"	5.72	8.79	12	9657K58	6.71
7/32"	0.016"	0.60"	1.15"	0.69	0.60	12	9657K68	6.71
7/32"	0.018"	0.69"	1.06"	0.84	0.79	12	9657K72	6.71
7/32"	0.023"	0.74"	1.01"	2.88	2.86	12	9657K75	6.71
7/32"	0.028"	0.94"	0.81"	4.98	6.13	12	9657K78	6.71
1/4"	0.020"	0.67"	1.08"	0.97	0.90	12	9657K42	6.71
1 31/32" Overall Length								
5/16"	0.022"	0.53"	1.44"	0.95	0.66	12	9657K84	8.50
2 9/16" Overall Length								
19/32"	0.040"	0.40"	1.79"	5.65	3.8	12	9657K92	7.34
Music Wire— *Closed and Ground Flat Ends*								
1 1/16" Overall Length								
11/16"	0.149"	0.89"	0.17"	187.66	1,255.00	1	9657K251	9.15
1 3/4" Overall Length								
3/4"	0.125"	1.22"	0.53"	109.78	221.00	3	9657K96	11.22
2" Overall Length								
7/8"	0.120"	1.26"	0.74"	85.62	108.00	6	9657K252	11.45
2 1/32" Overall Length								
15/16"	0.080"	0.64"	1.39"	21.59	15.70	12	9657K101	13.92
2 9/16" Overall Length								
1 1/64"	0.120"	1.20"	1.36"	70.67	55.44	6	9657K253	11.53
2 5/8" Overall Length								
7/16"	0.048"	0.97"	1.66"	11.92	6.60	12	9657K88	12.09
2 27/32" Overall Length								
5/8"	0.080"	1.58"	1.26"	38.33	31.00	12	9657K94	13.92
Music Wire— *Closed and Ground Flat Ends (Cont.)*								
3 1/16" Overall Length								
7/8"	0.092"	1.14"	1.92"	41.20	20.50	6	9657K254	$10.28
4 1/16" Overall Length								
11/16"	0.105"	2.64"	1.42"	73.88	53.70	6	9657K95	14.56
Zinc-Plated Music Wire— *Closed Ends*								
1 1/4" Overall Length								
1/4"	0.023"	0.47"	0.78"	2.24	2.87	12	9657K112	5.60
1 3/8" Overall Length								
9/32"	0.028"	0.57"	0.80"	3.49	4.36	12	9657K108	5.62
5/16"	0.031"	0.58"	0.79"	4.73	5.98	12	9657K35	7.15
1 1/2" Overall Length								
5/16"	0.023"	0.57"	0.93"	1.03	1.11	12	9657K107	5.73
3/8"	0.025"	0.55"	0.95"	1.04	1.09	12	9657K33	7.14
3/8"	0.028"	0.54"	0.96"	1.92	2.01	12	9657K135	5.75
2 1/2" Overall Length								
1/4"	0.028"	1.11"	1.39"	4.00	2.88	12	9657K171	6.11
Zinc-Plated Spring-Tempered Steel— *Closed Ends*								
7/8" Overall Length								
7/8"	0.091"	0.59"	0.28"	25.07	88.94	12	9657K132	5.55
1" Overall Length								
1/4"	0.029"	0.62"	0.38"	3.64	9.58	12	9657K149	5.24
5/16"	0.029"	0.50"	0.50"	2.90	5.80	12	9657K152	5.97
5/16"	0.035"	0.63"	0.37"	5.03	13.59	12	9657K154	6.42
11/32"	0.041"	0.64"	0.36"	6.65	18.43	12	9657K105	5.42
1 1/4" Overall Length								
3/16"	0.023"	0.75"	0.50"	2.55	5.09	12	9657K147	4.76
5/16"	0.041"	0.88"	0.37"	7.26	19.44	12	9657K106	5.48
3/8"	0.035"	0.44"	0.81"	4.23	5.22	12	9657K155	6.58
11/16"	0.091"	0.95"	0.30"	31.34	102.95	12	9657K133	6.96
1 3/8" Overall Length								
9/16"	0.072"	1.01"	0.36"	19.84	54.39	12	9657K134	6.56
1 1/2" Overall Length								
5/16"	0.035"	0.90"	0.60"	4.69	7.81	12	9657K111	5.54
11/32"	0.047"	1.07"	0.43"	9.69	22.54	12	9657K109	5.85
3/8"	0.048"	1.01"	0.49"	9.96	20.33	12	9657K156	8.03
1 5/8" Overall Length								
5/16"	0.041"	1.16"	0.46"	7.26	15.70	12	9657K38	7.78
1 3/4" Overall Length								
3/8"	0.041"	1.08"	0.67"	6.12	9.08	12	9657K36	5.79
13/32"	0.062"	1.38"	0.37"	17.73	47.44	12	9657K113	6.56
1 7/8" Overall Length								
7/16"	0.035"	0.75"	1.13"	3.41	3.02	12	9657K34	7.57
2" Overall Length								
3/16"	0.023"	1.20"	0.80"	2.56	3.20	12	9657K148	6.58
3/16"	0.035"	1.50"	0.50"	7	15.5	6	9657K233	9.21
1/4"	0.041"	1.12"	1.12"	20	20	6	9657K231	9.21
5/16"	0.029"	0.94"	1.06"	2.93	2.76	12	9657K153	7.64
5/16"	0.047"	1.52"	0.48"	10.55	22.17	12	9657K114	6.46
3/8"	0.047"	1.28"	0.72"	8.93	12.42	12	9657K123	6.51
13/32"	0.047"	1.18"	0.82"	8.29	10.11	12	9657K37	6.73
7/16"	0.054"	1.27"	0.73"	11.36	15.54	12	9657K122	6.83
1/2"	0.047"	0.92"	1.08"	6.82	6.29	12	9657K121	6.80
3/4"	0.080"	1.18"	0.82"	15.97	19.58	6	9657K26	5.41
15/16"	0.080"	0.94"	1.06"	16.42	15.54	6	9657K27	5.41
2 1/4" Overall Length								
3/8"	0.062"	1.78"	0.47"	19.02	40.75	12	9657K119	6.54
7/16"	0.041"	1.09"	1.16"	4.11	3.54	12	9657K118	6.54
2 1/2" Overall Length								
1/4"	0.029"	1.54"	0.96"	3.58	3.73	12	9657K151	8.03
1/4"	0.035"	1.65"	0.85"	5.75	6.78	12	9657K172	5.46
5/16"	0.047"	1.42"	1.08"	16	15	6	9657K227	9.21
7/16"	0.048"	1.50"	1.00"	8.66	8.66	12	9657K158	9.52
15/32"	0.054"	1.42"	1.08"	10.66	9.84	12	9657K117	6.53
1/2"	0.062"	1.69"	0.81"	14.68	18.06	12	9657K129	6.52
5/8"	0.080"	1.64"	0.86"	24.06	27.98	12	9657K128	7.39

(Continued on following page)

For information about compression springs, see page 1220.

Steel Compression Springs *(Continued from previous page)*

Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Zinc-Plated Spring-Tempered Steel—*Closed Ends (Cont.)*								
2 3/4" Overall Length								
13/32"	0.047"	1.66"	1.09"	8.29	7.58	12	9657K146	$6.36
1/2"	0.072"	2.01"	0.74"	22.10	29.98	12	9657K116	6.99
5/8"	0.054"	1.14"	1.61"	8.11	5.05	12	9657K127	6.98
3" Overall Length								
5/16"	0.035"	1.26"	1.74"	5	3	6	9657K232	9.21
5/16"	0.041"	1.11"	1.89"	15	8	6	9657K229	9.21
3/8"	0.048"	2.08"	0.92"	9.95	10.82	12	9657K157	7.87
3/8"	0.054"	1.62"	1.38"	22	16	6	9657K225	9.21
7/16"	0.048"	1.72"	1.28"	8.65	6.76	12	9657K159	8.20
1/2"	0.047"	1.37"	1.63"	6.15	3.77	12	9657K115	5.29
1/2"	0.080"	2.37"	0.63"	29.42	46.75	6	9657K173	5.46
9/16"	0.080"	1.68"	1.32"	39	30	6	9657K217	10.56
9/16"	0.080"	2.24"	0.76"	26.46	34.84	6	9657K174	5.59
19/32"	0.054"	1.37"	1.63"	7.49	4.59	12	9657K126	5.80
5/8"	0.080"	2.07"	0.93"	24.06	25.98	12	9657K125	6.27
11/16"	0.047"	1.13"	1.87"	3.56	1.90	12	9657K124	6.29
3 1/2" Overall Length								
3/8"	0.041"	2.50"	1.00"	3	3	6	9657K228	9.77
7/16"	0.047"	2.03"	1.48"	4	3	6	9657K226	9.77
7/16"	0.054"	1.73"	1.77"	13	8	6	9657K224	9.77
7/16"	0.072"	1.94"	1.56"	48	32	6	9657K219	9.77
4" Overall Length								
1/2"	0.054"	1.96"	2.03"	16	6	6	9657K223	9.77
1/2"	0.063"	2.21"	1.79"	16	9	6	9657K222	9.77
5/8"	0.080"	2.24"	1.76"	26	15	6	9657K216	11.88
5/8"	0.105"	2.42"	1.58"	97	65	6	9657K214	11.88
4 1/2" Overall Length								
1/2"	0.072"	2.34"	2.16"	38	18	6	9657K218	10.56
9/16"	0.063"	2.34"	2.16"	11	5	6	9657K221	10.56
5" Overall Length								
3/4"	0.091"	2.36"	2.64"	39	15	6	9657K215	11.88
3/4"	0.105"	2.73"	2.27"	61	28	6	9657K213	12.56
6" Overall Length								
7/8"	0.105"	3.50"	2.50"	35	14	6	9657K212	12.56
7/8"	0.120"	3.76"	2.24"	80	25	6	9657K321	13.69
Zinc-Plated Spring-Tempered Steel—*Closed and Ground Flat Ends*								
1 3/8" Overall Length								
13/16"	0.162"	1.23"	0.14"	127.60	901.30	6	9657K23	14.14
1 5/8" Overall Length								
25/32"	0.120"	1.28"	0.34"	59.29	172.02	6	9657K24	11.89

Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Zinc-Plated Spring-Tempered Steel—*Closed and Ground Flat Ends (Cont.)*								
1 7/8" Overall Length								
13/16"	0.120"	1.46"	0.41"	57.26	138.39	6	9657K25	$11.97
2" Overall Length								
7/8"	0.120"	1.52"	0.48"	53.51	110.82	6	9657K28	12.23
2 1/4" Overall Length								
13/16"	0.105"	1.58"	0.67"	39.81	59.57	6	9657K29	14.48
13/16"	0.120"	1.74"	0.51"	57.26	112.44	6	9657K31	12.39
2 3/8" Overall Length								
5/8"	0.105"	1.99"	0.38"	50.35	130.81	6	9657K11	11.34
2 1/2" Overall Length								
3/4"	0.105"	1.82"	0.68"	42.81	63.22	6	9657K12	11.71
3/4"	0.135"	2.09"	0.41"	84.24	205.27	6	9657K14	14.59
7/8"	0.135"	1.91"	0.59"	73.64	124.03	6	9657K13	12.81
1"	0.120"	1.63"	0.87"	47.34	54.68	6	9657K32	13.52
2 3/4" Overall Length								
5/8"	0.120"	2.32"	0.43"	71.87	165.32	6	9657K15	12.27
7/8"	0.148"	2.28"	0.47"	94.28	199.44	1	9657K16	2.66
29/32"	0.105"	1.80"	0.95"	35.98	37.78	6	9657K17	13.15
3" Overall Length								
9/16"	0.091"	2.40"	0.60"	37.53	62.50	6	9657K175	10.53
7/8"	0.091"	1.65"	1.35"	25.07	18.60	6	9657K18	11.48
7/8"	0.105"	2.03"	0.97"	37.16	38.27	6	9657K19	11.89
1"	0.120"	1.97"	1.03"	47.34	46.04	6	9657K21	12.40
1 1/4"	0.148"	2.07"	0.93"	68.32	73.62	6	9657K22	15.86
3 1/8" Overall Length								
3/4"	0.091"	2.16"	0.97"	28.95	29.95	6	9657K145	7.89
3 1/2" Overall Length								
3/4"	0.091"	2.32"	1.18"	28.95	24.60	6	9657K143	8.10
3/4"	0.135"	2.97"	0.53"	84.24	157.90	6	9657K144	11.65
1"	0.120"	2.31"	1.19"	47.34	39.76	6	9657K142	9.03
1"	0.162"	2.80"	0.70"	106.88	152.95	6	9657K141	12.26
3 3/4" Overall Length								
13/16"	0.135"	2.90"	0.85"	78.66	111.84	6	9657K139	12.05
4" Overall Length								
11/16"	0.105"	3.06"	0.94"	46.26	48.99	6	9657K137	8.80
15/16"	0.148"	3.18"	0.82"	88.70	107.60	6	9657K138	13.32
1 1/4"	0.148"	2.81"	1.19"	68.32	57.26	6	9657K136	14.50
Brass—*Closed and Ground Flat Ends*								
25/32" Overall Length								
3/8"	0.042"	0.38"	0.40"	3.76	7.30	12	9657K86	8.11
Phosphor Bronze—*Closed and Ground Flat Ends*								
31/32" Overall Length								
1/2"	0.072"	0.71"	0.26"	14.30	59.50	6	9657K255	9.47

Jumbo Steel Compression Springs

Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch			
Spring-Tempered Steel—*Closed and Ground Flat Ends*								
2" Overall Length								
1 15/16"	0.148"	0.72"	1.28"	67	51.6		96485K121	$7.06
3" Overall Length								
1 15/16"	0.192"	1.34"	1.66"	137	82.0		96485K131	8.57
1 15/16"	0.250"	1.75"	1.25"	304	234.0		96485K138	13.52
4" Overall Length								
1 15/16"	0.148"	1.12"	2.88"	67	23.7		96485K125	8.57
1 15/16"	0.312"	2.73"	1.27"	597	470.0		96485K384	12.78
1 15/16"	0.375"	3.05"	0.95"	1,162	1,217.0		96485K147	12.61
2 3/16"	0.207"	1.45"	2.55"	176	68.0		96485K154	14.03
2 3/16"	0.250"	1.94"	2.06"	274	134.4		96485K161	10.96
2 3/16"	0.375"	2.91"	1.09"	907	831.0		96485K171	14.02
2 7/16"	0.312"	2.26"	1.74"	470	270.0		96485K178	15.87
2 7/16"	0.375"	2.72"	1.28"	786	617.0		96485K187	17.42
2 7/16"	0.437"	3.06"	0.94"	1,232	1,310.0		96485K194	16.72
5" Overall Length								
2 11/16"	0.312"	2.43"	2.57"	445	175.3		96485K429	18.68
2 11/16"	0.375"	2.95"	2.05"	804	391.5		96485K211	18.62
2 29/32"	0.281"	2.11"	2.89"	260	90.0		96485K225	12.44
2 29/32"	0.375"	2.86"	2.14"	675	312.0		96485K233	18.88
2 29/32"	0.500"	3.63"	1.38"	1,671	1,228.0		96485K239	20.06
3 5/32"	0.375"	2.63"	2.38"	626	264.3		96485K247	18.88
3 5/32"	0.500"	3.50"	1.50"	1,438	959.0		96485K262	25.79
6" Overall Length								
1 15/16"	0.192"	2.33"	3.67"	137	38.2		96485K135	9.02
1 15/16"	0.250"	3.00"	3.00"	304	116.9		96485K141	10.80
3 13/32"	0.375"	2.91"	3.09"	540	177.0		96485K269	18.32
3 13/32"	0.437"	3.44"	2.56"	865	341.0		96485K276	21.44
3 21/32"	0.375"	2.63"	3.38"	550	161.0		96485K291	18.32
3 29/32"	0.393"	2.60"	3.40"	567	171.0		96485K312	20.86
3 29/32"	0.500"	3.50"	2.50"	1,137	455.0		96485K318	26.15
3 29/32"	0.625"	4.22"	1.78"	2,328	1,307.0		96485K331	35.40
4 5/32"	0.406"	2.64"	3.36"	553	164.5		96485K339	22.06

Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch			
Spring-Tempered Steel—*Closed and Ground Flat Ends (Cont.)*								
6" Overall Length (Cont.)								
4 13/32"	0.625"	3.91"	2.09"	2,000	955.0		96485K481	$35.72
4 29/32"	0.500"	2.88"	3.13"	875	280.0		96485K432	26.64
8" Overall Length								
1 15/16"	0.312"	5.23"	2.77"	597	215.0		96485K386	14.21
1 15/16"	0.375"	5.86"	2.14"	1,162	547.0		96485K152	18.29
2 3/16"	0.207"	2.59"	5.41"	176	32.3		96485K156	10.96
2 3/16"	0.250"	3.63"	4.38"	274	61.8		96485K164	12.11
2 3/16"	0.375"	5.57"	2.43"	907	371.8		96485K174	18.88
2 7/16"	0.312"	4.21"	3.79"	470	123.0		96485K182	17.42
2 7/16"	0.375"	5.16"	2.84"	786	276.0		96485K191	18.32
2 7/16"	0.437"	5.86"	2.14"	1,232	575.0		96485K197	19.13
2 11/16"	0.312"	3.67"	4.33"	445	104.3		96485K205	18.62
2 11/16"	0.375"	4.50"	3.50"	804	230.0		96485K214	18.85
2 11/16"	0.468"	5.57"	2.43"	1,548	637.5		96485K222	22.06
2 29/32"	0.281"	3.16"	4.84"	260	53.0		96485K397	14.21
2 29/32"	0.375"	4.31"	3.69"	675	185.0		96485K236	19.26
2 29/32"	0.500"	5.63"	2.38"	1,671	697.0		96485K242	23.31
3 5/32"	0.375"	3.94"	4.06"	626	155.0		96485K249	19.26
10" Overall Length								
2 29/32"	0.281"	3.86"	6.14"	260	42.0		96485K229	18.00
3 5/32"	0.437"	5.68"	4.32"	1,019	237.1		96485K259	25.79
3 5/32"	0.500"	6.63"	3.38"	1,438	426.2		96485K265	26.66
12" Overall Length								
3 13/32"	0.375"	5.44"	6.56"	540	82.0		96485K272	27.83
3 13/32"	0.531"	7.70"	4.30"	1,661	385.0		96485K284	34.33
3 21/32"	0.375"	4.73"	7.27"	550	75.7		96485K293	23.19
3 29/32"	0.393"	4.72"	7.28"	567	79.0		96485K315	24.63
3 29/32"	0.500"	6.50"	5.50"	1,137	207.0		96485K322	30.89
4 5/32"	0.406"	4.77"	7.23"	553	76.0		96485K342	24.02
4 29/32"	0.500"	5.13"	6.88"	875	127.0		96485K436	31.21
4 29/32"	0.625"	6.56"	5.44"	1,764	329.0		96485K455	41.19

Type 302 Stainless Steel Compression Springs

Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch	Pkg. Qty.		Pkg.
Closed Ends								
1″ Overall Length								
5/32″	0.016″	0.41″	0.59″	1.30	2.21	6	1986K1	$5.09
1/4″	0.020″	0.64″	0.36″	0.57	1.57	6	1986K2	5.18
1/4″	0.029″	0.49″	0.51″	4.25	8.33	6	1986K3	5.06
5/16″	0.029″	0.32″	0.68″	3.43	5.04	6	1986K4	5.19
11/32″	0.041″	0.48″	0.52″	8.48	16.30	6	1986K5	5.91
1 1/4″ Overall Length								
3/8″	0.035″	0.86″	0.39″	1.77	4.54	6	1986K6	6.12
11/16″	0.091″	0.80″	0.45″	38.07	84.60	6	1986K7	9.20
1 1/2″ Overall Length								
5/16″	0.023″	0.95″	0.55″	0.55	1.00	6	1986K8	7.42
3/8″	0.025″	0.93″	0.57″	0.58	1.02	6	1986K9	6.60
3/8″	0.028″	0.81″	0.69″	1.26	1.83	6	1986K11	5.71
3/8″	0.048″	0.83″	0.67″	11.85	17.68	6	1986K12	7.00
1 3/4″ Overall Length								
3/8″	0.041″	0.77″	0.98″	8.14	8.31	6	1986K13	7.42
1 7/8″ Overall Length								
7/16″	0.035″	1.185″	0.69″	1.90	2.75	6	1986K14	7.82
Closed Ends (Cont.)								
2″ Overall Length								
3/8″	0.047″	0.97″	1.03″	12.05	11.70	6	1986K15	$7.91
1/2″	0.047″	1.35″	0.65″	3.80	5.85	6	1986K16	6.62
3/4″	0.080″	1.44″	0.56″	12.32	17.02	6	1986K17	10.87
15/16″	0.080″	1.36″	0.64″	8.51	13.30	6	1986K18	11.39
2 1/2″ Overall Length								
1/2″	0.062″	1.33″	1.17″	19.77	16.90	6	1986K19	8.75
1″	0.120″	1.91″	0.59″	28.67	48.60	6	1986K21	14.61
2 21/32″ Overall Length								
5/8″	0.054″	1.77″	0.9″	4.19	4.65	6	1986K22	8.94
3″ Overall Length								
1/2″	0.047″	2.03″	0.97″	3.49	3.60	6	1986K23	10.74
11/16″	0.047″	1.90″	1.1″	1.95	1.77	6	1986K24	11.24
1 1/4″	0.148″	1.75″	1.25″	80.00	64.00	6	1986K25	15.09
3 1/8″ Overall Length								
3/4″	0.091″	1.69″	1.43″	39.33	27.50	6	1986K26	12.30

Custom-Made Compression Springs

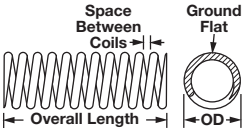

9534K21 Open Ends

9534K41 Closed Ends

9534K31 Open and Ground Flat Ends

9534K51 Closed and Ground Flat Ends

Need a special size? Provide us with a complete description, fax a drawing, or send a sample of the compression spring you need. We'll make the spring to your specifications.

To Order: Please specify the following:

1. Part number for the spring end style shown at left
2. Material: music wire, spring-tempered steel, stainless steel, or other material
3. Finish: plain, galvanized, zinc plated, or passivated (for stainless steel only)
4. Dimensions: overall length, spring OD, wire diameter, and space between coils

Continuous-Length Compression Springs

Springs have open ends and can be cut to the length you need. Great for manufacturing, utility, and maintenance jobs. To determine the length (in inches) to which to cut your spring, take the spring constant and divide it by the number of coils per inch. Then take this value and divide it by your desired spring rate in lbs./inch. To cut springs up to 3/8″ OD, use a hand-held nipper. For larger ODs, use an abrasive cutoff saw.

Spring OD	Wire Dia.	Coils/inch	Spring Constant	Pkg. Qty.		Pkg.
Music Wire—11″ Overall Length						
0.120″	0.025″	21.45	656.1	5	9637K44	$11.88
0.180″	0.025″	16.09	150.5	5	9637K43	11.88
0.210″	0.031″	16.09	231.9	5	9637K42	11.88
0.240″	0.025″	12.00	56.8	5	9637K64	11.88
0.240″	0.028″	11.00	93.2	5	9637K65	11.88
0.240″	0.031″	10.73	145.1	5	9637K41	11.88
0.240″	0.035″	10.00	250.8	5	9637K66	11.88
0.300″	0.028″	12.00	43.6	5	9637K68	11.88
0.300″	0.031″	8.00	68.6	5	9637K39	11.88
Spring-Tempered Steel—11″ Overall Length						
0.300″	0.035″	10.00	115.5	5	9637K69	11.88
0.360″	0.031″	8.00	37.0	5	9637K38	11.88
0.360″	0.035″	10.00	62.7	5	9637K72	11.88
0.360″	0.041″	9.00	124.7	5	9637K73	11.88
0.360″	0.047″	8.00	228.8	5	9637K74	11.88
0.420″	0.035″	7.00	37.7	5	9637K75	11.88
0.420″	0.047″	7.00	135.5	5	9637K76	11.88
0.420″	0.054″	6.00	249.5	5	9637K77	11.88
0.420″	0.062″	8.00	462.9	5	9637K37	11.40
0.480″	0.041″	8.00	48.4	5	9637K81	11.88
0.480″	0.047″	7.50	86.6	5	9637K82	11.88
0.480″	0.054″	7.00	157.9	5	9637K83	11.88
0.480″	0.062″	6.18	291.0	5	9637K36	11.44
0.480″	0.080″	6.18	920.0	5	9637K29	11.20
0.540″	0.062″	5.36	194.7	5	9637K35	11.44
0.600″	0.054″	5.00	75.4	5	9637K84	11.88
0.600″	0.062″	5.36	136.3	5	9637K34	11.40
0.600″	0.072″	6.00	262.7	5	9637K85	11.88
0.600″	0.080″	5.36	418.9	5	9637K28	11.10
0.600″	0.091″	5.36	747.5	5	9637K45	11.54
0.656″	0.062″	5.36	101.5	5	9637K33	11.34
0.720″	0.062″	4.00	74.4	5	9637K32	11.44
0.720″	0.080″	3.55	224.6	5	9637K27	11.24
0.720″	0.091″	4.00	396.0	5	9637K22	11.10
0.720″	0.105″	5.00	751.3	5	9637K16	11.66
0.781″	0.062″	4.00	57.2	5	9637K31	11.40
0.844″	0.080″	3.09	131.9	5	9637K26	11.24
0.968″	0.080″	2.18	84.0	5	9637K25	11.34
0.968″	0.091″	3.55	146.3	5	9637K21	12.22
0.968″	0.105″	4.00	271.9	5	9637K15	12.06
1.093″	0.091″	3.55	97.9	5	9637K19	13.14
1.093″	0.105″	2.45	181.2	5	9637K14	11.68
Spring-Tempered Steel—11″ Overall Length (Cont.)						
1.093″	0.115″	3.55	268.7	5	9637K13	$12.03
1.218″	0.080″	2.18	39.8	5	9637K24	11.20
1.218″	0.091″	2.09	68.8	5	9637K18	11.03
1.218″	0.115″	2.09	187.5	5	9637K12	12.05
1.343″	0.091″	1.91	50.2	5	9637K17	11.00
1.468″	0.115″	1.45	101.4	5	9637K11	11.72
Spring-Tempered Steel—36″ Overall Length						
0.094″	0.013″	35.70	78.5	5	9662K11	13.51
0.125″	0.014″	25.60	40.9	5	9662K12	13.51
0.125″	0.018″	27.00	124.2	5	9662K13	13.51
0.125″	0.023″	27.80	381.0	5	9662K14	13.51
0.187″	0.018″	15.90	31.8	5	9662K15	13.51
0.187″	0.028″	15.90	219.4	5	9662K41	14.31
0.250″	0.023″	12.00	34.8	5	9662K16	14.31
0.250″	0.035″	13.90	216.8	5	9662K17	14.65
0.312″	0.041″	11.00	204.6	5	9662K18	14.65
0.312″	0.048″	11.60	415.3	5	9662K42	14.65
0.375″	0.035″	7.70	54.7	5	9662K19	14.65
0.438″	0.048″	7.70	128.6	5	9662K21	14.65
0.500″	0.048″	6.00	82.8	1	9662K22	4.18
0.500″	0.054″	6.60	137.9	1	9662K23	4.30
0.500″	0.063″	7.20	273.6	1	9662K24	4.30
0.562″	0.048″	7.60	56.2	1	9662K76	4.45
0.562″	0.063″	5.70	182.4	1	9662K43	4.45
0.562″	0.080″	6.40	531.2	1	9662K25	4.45
0.625″	0.062″	4.90	120.0	1	9662K26	4.45
0.625″	0.072″	5.50	228.2	1	9662K27	4.45
0.625″	0.092″	5.70	684.0	1	9662K28	4.21
0.750″	0.080″	4.30	197.8	1	9662K44	4.45
0.750″	0.105″	4.80	657.6	1	9662K29	4.44
0.875″	0.080″	3.30	116.2	1	9662K31	4.73
1.000″	0.092″	3.20	140.5	1	9662K45	4.75
1.000″	0.121″	3.50	458.5	1	9662K32	4.85
1.000″	0.135″	3.70	745.9	1	9662K33	4.88
1.125″	0.106″	2.60	170.3	1	9662K34	4.40
1.188″	0.225″	3.00	4,212.0	1	9662K78	5.30
1.250″	0.121″	2.70	204.1	1	9662K46	5.16
1.250″	0.148″	2.90	522.0	1	9662K35	6.00
1.375″	0.148″	2.90	368.3	1	9662K47	7.44
1.500″	0.162″	2.40	420.0	1	9662K36	7.31
1.750″	0.187″	2.10	453.6	1	9662K48	9.63

(Continued on following page)

For information about compression springs, see page 1220.

Continuous-Length Compression Springs *(Continued from previous page)*

Spring OD	Wire Dia.	Coils/ inch	Spring Constant	Pkg. Qty.		Pkg.
***Galvanized Spring-Tempered Steel—** 12″ Overall Length*						
0.184″	0.023″	14.08	109.3	3	96565K38	$9.00
0.206″	0.026″	10.67	78.1	3	96565K37	9.00
0.229″	0.029″	11.00	114.3	3	96565K36	9.00
0.254″	0.032″	8.17	118.1	3	96565K35	9.00
0.278″	0.035″	9.92	137.9	3	96565K34	9.00
0.328″	0.041″	8.29	164.8	3	96565K33	9.00
0.375″	0.041″	6.00	109.0	3	96565K39	6.82
0.380″	0.048″	7.08	199.1	3	96565K32	9.00
0.432″	0.054″	6.54	221.0	3	96565K31	8.64
0.500″	0.063″	5.08	262.1	3	96565K29	8.64
0.576″	0.072″	4.42	303.5	3	96565K28	8.64
0.640″	0.080″	5.15	340.7	3	96565K27	8.31
0.732″	0.092″	3.90	385.3	3	96565K26	9.33
0.844″	0.106″	3.50	443.7	3	96565K25	10.08
0.964″	0.121″	3.00	499.3	3	96565K24	11.72
***Type 302 Stainless Steel—** 20″ Overall Length*						
0.125″	0.013″	23.80	23.8	1	9663K11	4.05
0.125″	0.015″	25.00	50.0	1	9663K12	4.11
0.125″	0.017″	28.60	80.1	1	9663K51	4.34
0.125″	0.020″	30.30	175.7	1	9663K52	4.44
0.187″	0.015″	14.90	11.9	1	9663K53	4.44
0.187″	0.017″	15.20	21.3	1	9663K13	4.51
0.187″	0.020″	15.20	42.6	1	9663K14	4.54
0.187″	0.026″	19.20	138.2	1	9663K54	4.63
***Type 302 Stainless Steel—** 20″ Overall Length (Cont.)*						
0.250″	0.015″	8.00	4.8	1	9663K55	$4.62
0.250″	0.017″	8.50	8.5	1	9663K15	4.65
0.250″	0.020″	10.20	16.3	1	9663K16	4.73
0.250″	0.026″	12.50	50.0	1	9663K17	4.75
0.250″	0.032″	14.30	125.8	1	9663K18	4.79
0.312″	0.020″	6.70	8.0	1	9663K19	4.81
0.312″	0.026″	8.80	24.6	1	9663K63	4.81
0.312″	0.032″	10.50	58.8	1	9663K21	4.83
0.312″	0.041″	12.50	177.5	1	9663K22	4.86
0.375″	0.032″	7.70	32.3	1	9663K56	4.94
0.375″	0.041″	9.00	95.4	1	9663K23	5.00
0.375″	0.054″	10.50	321.3	1	9663K24	5.12
0.438″	0.041″	7.70	57.0	1	9663K25	5.17
0.438″	0.054″	8.50	187.0	1	9663K26	5.20
0.500″	0.054″	7.00	120.4	1	9663K27	5.25
0.500″	0.072″	7.50	429.0	1	9663K28	5.13
0.562″	0.041″	6.80	24.5	1	9663K57	5.73
0.562″	0.054″	6.00	81.6	1	9663K58	5.85
0.562″	0.072″	7.00	285.6	1	9663K29	7.24
0.562″	0.091″	7.00	820.4	1	9663K31	8.49
0.625″	0.072″	6.00	199.2	1	9663K32	8.67
0.625″	0.091″	6.30	563.2	1	9663K33	9.88
0.750″	0.091″	5.00	300.0	1	9663K34	10.57

Spring Forming Tools

Compression, Extension, and Torsion Spring Winders

Quickly wind your own extension, compression, and torsion springs from 1/8″ to 1 1/4″ IDs in both right- and left-hand coils. Tools handle round, square, and flat wire with a max. 3/16″ dia. They include a pitch gauge to regulate coil spacing and a wire holder to prevent tangling.

Master Kit— Includes spring winder; cam lock tension release for quick wire release and accurate sizing; two handles for large and small mandrels; six 12″ long mandrels in 1/8″, 1/4″, 3/8″, 1/2″, 5/8″, and 3/4″ sizes; wrench; four 1/4-lb. coils of 0.029″, 0.047″, 0.067″, and 0.085″ diameter spring wire; spring end-looping tool; and a multipurpose nipper that cuts wire up to 0.100″ diameter.

9676K1 ..... $411.67

General Purpose Kit— Same as the Master Kit, but it does not include the looping tool and nipper.

9676K4 ..... $289.15

Utility Spring Kit— Includes spring winder, one handle, wrench, and four 12″ long mandrels in 1/8″, 1/4″, 3/8″, and 1/2″ sizes.

9676K2 ..... $226.38

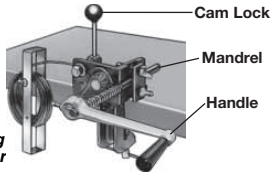

Spring Winder

Spring End-Looping Tool

Spring End-Looping Tool

Easily form perfect loop and hook ends on coiled extension springs with 1/8″ to 1/2″ ODs and up to 0.062″ wire diameter. Tool includes an adjustable stop with wrench as well as small and large forming punches. Overall length is 6 1/2″.

9674K3 ..... $115.69

Manual Spring-Winding Tool

For use with a lathe and mandrel, this 7″ long tool feeds wire up to 3/16″ dia. Wire tension and the distance between turns are adjustable.

9527K11 ..... $81.99

Metric Precision Compression Springs

These precision-manufactured metric springs meet rigorous DIN 2095 specifications. They are made to strict outside diameter (OD) and spring rate tolerances and are stress relieved through heat treating. Tolerance checks are done throughout the manufacturing process with load test verification done at the end of the process. All springs have closed and ground flat ends. ***Music wire springs*** meet DIN 17223, Class C, 1.1200. ***Type 302 stainless steel springs*** meet DIN 17224 per 1.431.

Also Available: Springs with a certificate of compliance. Please ask for 94125K999 and specify spring part number.

OD	OD Tolerance
4.1 mm- 6.3 mm	±0.3 mm
6.4 mm-10.0 mm	±0.35 mm
10.1 mm-16.0 mm	±0.4 mm
Spring Rate Tolerance (N★/mm): ±5%	

O'all Lg., mm	Spring OD, mm	Wire Dia., mm	Com-pressed Lg., mm	Defl. @ Load, mm	Load, N★	Rate, N/mm		Pkg.
***Music Wire—** Sold in packages of 5*								
9.4	5.50	0.50	3.25	5.5	8.04	1.46	94125K422	$10.36
10.5	5.40	0.40	2.6	7.3	4.36	0.60	94125K414	10.36
11.5	6.93	0.63	4.1	6.9	12.45	1.83	94125K521	10.36
13.0	9.00	1.00	5.5	5.7	33.15	5.68	94125K631	10.36
14.0	5.50	0.50	4.25	8.6	8.04	0.93	94125K424	10.36
15.0	9.25	1.25	6.88	7.6	104.93	14.32	94125K612	10.36
15.5	7.10	0.80	6.8	7.8	24.03	3.03	94125K537	10.36
17.0	6.93	0.63	5.36	10.8	12.45	1.17	94125K523	10.36
18.0	12.00	2.00	11	6.8	317.74	46.58	94125K711	10.36
18.5	5.63	0.63	7.25	10.3	15.49	1.55	94125K379	10.36
19.0	9.00	1.00	7.5	8.9	33.15	3.61	94125K633	10.36
20.0	11.25	1.25	6.88	12.3	85.42	7.09	94125K811	12.33
20.0	15.00	2.20	12.1	7.1	256.93	32.46	94125K136	13.28
20.5	5.50	0.50	5.75	12.9	8.04	0.61	94125K426	10.36
22.0	9.25	1.25	9.38	11.5	104.93	8.92	94125K614	10.36
23.0	11.00	2.20	16.5	5.3	337.35	63.55	94125K624	10.36
24.0	5.40	0.40	4.6	17.6	4.36	0.25	94125K412	10.36
24.0	14.10	1.60	8.8	14	135.33	9.76	94125K112	13.28
25.5	6.93	0.63	7.25	16.6	12.45	0.76	94125K525	10.36
28.5	9.00	1.00	10.5	14.2	33.15	2.33	94125K635	10.36
30.0	5.50	0.50	7.75	19.4	8.04	0.41	94125K428	10.36
30.2	15.00	2.20	16.5	12.5	256.93	20.69	94125K138	13.28
***Music Wire—** Sold in packages of 5 (Cont.)*								
33.0	7.10	0.80	12.4	17.9	24.03	1.33	94125K542	$10.36
33.0	9.25	1.25	13.13	18.1	104.93	5.83	94125K616	10.36
36.0	14.10	1.60	12	21.9	135.33	6.23	94125K114	13.28
36.5	6.93	0.63	9.77	24.2	12.45	0.51	94125K529	10.36
39.0	11.00	1.00	10.5	23	27.36	1.2	94125K839	13.28
40.5	9.00	1.00	14.5	20.6	33.15	1.59	94125K636	10.36
41.5	13.75	1.25	9.38	29.9	69.04	2.31	94125K123	13.28
44.5	11.25	1.25	13.13	29.3	85.42	2.92	94125K815	12.33
47.5	9.25	1.25	18.13	26.5	104.93	3.96	94125K618	10.36
48.9	15.00	2.20	25.3	21.5	256.93	11.96	94125K141	13.28
62.5	13.75	1.25	13.13	46	69.04	1.49	94125K125	13.28
***Type 302 Stainless Steel—** Sold in packages of 3*								
9.4	5.50	0.50	3.25	5.5	6.70	1.22	94125K472	8.59
13.0	9.00	1.00	5.5	5.7	27.61	4.73	94125K671	8.58
14.0	5.50	0.50	4.25	8.6	6.70	0.77	94125K474	8.58
19.0	9.00	1.00	7.5	8.9	27.61	3.01	94125K673	8.58
25.5	6.93	0.63	7.25	16.6	10.37	0.63	94125K565	8.58
28.5	9.00	1.00	10.5	14.2	27.61	1.94	94125K675	8.58
47.5	9.25	1.25	18.13	26.5	87.41	3.30	94125K658	8.58
59.0	9.00	1.00	20.5	30.7	27.61	0.90	94125K679	8.58
90.5	13.75	1.25	18.13	67.4	57.51	0.85	94125K177	11.14

★ N=Newtons. 1 Newton=0.2248 lbs.

For information about compression springs, see page 1220.

Precision Compression Springs

These precision-manufactured springs are made to strict outside diameter (OD) and spring rate tolerances. They are stress relieved through heat treatment and are load tested. Springs have closed and ground flat ends. ***Zinc-plated music wire springs*** meet ASTM A228. ***Type 302 stainless steel springs*** meet ASTM A313.

Also Available: Springs with a certificate of compliance. Please ask for 9434K999 and specify spring part number.

OD	Tolerance
0.120″–0.250″	+0.003″/–0.005″
0.251″–0.599″	±0.008″
0.600″–0.720″	±0.015″
Spring Rate Tolerance (lbs./in.): ±8%	

Zinc-Plated Music Wire—*Sold in packages of 5*

O'all Lg.	Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch		Pkg.
1/4″	0.12″	0.016″	0.114″	0.11″	1.93	17.50	9434K12	$4.85
3/8″	0.24″	0.022″	0.111″	0.20″	2.40	12.00	9434K36	4.85
1/2″	0.12″	0.016″	0.205″	0.22″	1.87	8.50	9434K13	4.85
1/2″	0.12″	0.022″	0.309″	0.14″	4.34	31.00	9434K19	4.85
1/2″	0.18″	0.018″	0.132″	0.25″	1.75	7.00	9434K25	4.85
1/2″	0.30″	0.022″	0.106″	0.29″	1.89	6.50	9434K51	4.85
1/2″	0.36″	0.032″	0.145″	0.25″	4.50	18.00	9434K72	4.98
1/2″	0.48″	0.045″	0.192″	0.26″	9.10	35.00	9434K113	5.11
9/16″	0.18″	0.026″	0.274″	0.21″	4.83	23.00	9434K31	4.85
9/16″	0.24″	0.022″	0.144″	0.29″	2.32	8.00	9434K37	4.85
5/8″	0.24″	0.026″	0.203″	0.30″	3.75	12.50	9434K4	4.85
5/8″	0.24″	0.032″	0.273″	0.24″	6.72	28.00	9434K43	4.85
11/16″	0.30″	0.022″	0.128″	0.42″	1.89	4.50	9434K52	4.85
11/16″	0.30″	0.032″	0.241″	0.37″	5.92	16.00	9434K58	4.98
3/4″	0.12″	0.016″	0.305″	0.46″	2.30	5.00	9434K163	4.85
3/4″	0.12″	0.018″	0.351″	0.30″	2.55	8.50	9434K17	4.85
3/4″	0.18″	0.016″	0.177″	0.51″	1.28	2.50	9434K23	4.85
3/4″	0.24″	0.038″	0.39″	0.23″	10.58	46.00	9434K164	4.85
3/4″	0.36″	0.026″	0.138″	0.42″	2.52	6.00	9434K7	4.98
3/4″	0.60″	0.072″	0.397″	0.34″	26.52	78.00	9434K134	7.34
3/4″	0.72″	0.055″	0.221″	0.46″	10.58	23.00	9434K137	7.34
3/4″	0.72″	0.063″	0.284″	0.47″	15.51	33.00	9434K154	7.34
13/16″	0.12″	0.022″	0.51″	0.25″	4.50	18.00	9434K2	4.85
13/16″	0.24″	0.022″	0.199″	0.47″	2.35	5.00	9434K38	4.85
13/16″	0.24″	0.042″	0.505″	0.23″	13.80	60.00	9434K49	4.85
13/16″	0.30″	0.045″	0.417″	0.28″	14.28	51.00	9434K67	4.98
13/16″	0.36″	0.038″	0.201″	0.39″	7.41	19.00	9434K76	4.98
13/16″	0.36″	0.042″	0.306″	0.35″	9.80	28.00	9434K79	4.98
13/16″	0.36″	0.045″	0.339″	0.32″	11.84	37.00	9434K82	5.11
7/8″	0.18″	0.026″	0.391″	0.33″	4.95	15.00	9434K32	6.26
7/8″	0.24″	0.026″	0.287″	0.47″	3.76	8.00	9434K41	6.26
7/8″	0.30″	0.022″	0.166″	0.63″	1.89	3.00	9434K53	4.98
7/8″	0.36″	0.032″	0.209″	0.46″	4.60	10.00	9434K73	4.98
7/8″	0.42″	0.047″	0.33″	0.41″	11.48	28.00	9434K91	5.11
7/8″	0.48″	0.038″	0.21″	0.53″	5.57	10.50	9434K97	5.11
7/8″	0.48″	0.045″	0.271″	0.47″	8.93	19.00	9434K165	5.11
7/8″	0.48″	0.055″	0.373″	0.41″	15.58	38.00	9434K117	6.82
7/8″	0.48″	0.063″	0.457″	0.35″	22.75	65.00	9434K152	5.11
7/8″	0.60″	0.045″	0.226″	0.60″	7.20	12.00	9434K123	4.98
7/8″	0.72″	0.072″	0.361″	0.47″	22.56	48.00	9434K146	5.71
1″	0.18″	0.032″	0.601″	0.42″	12.18	29.00	9434K166	4.85
1″	0.24″	0.032″	0.425″	0.42″	6.72	16.00	9434K44	4.34
1″	0.30″	0.026″	0.229″	0.61″	3.05	5.00	9434K56	6.82
1″	0.30″	0.032″	0.337″	0.54″	5.40	10.00	9434K59	6.82
1 1/8″	0.36″	0.026″	0.19″	0.73″	2.56	3.50	9434K71	4.98
1 1/4″	0.60″	0.072″	0.596″	0.68″	30.60	45.00	9434K135	5.71
1 1/4″	0.72″	0.055″	0.304″	0.72″	10.08	14.00	9434K138	5.71
1 1/4″	0.72″	0.063″	0.441″	0.82″	15.58	19.00	9434K141	5.71
1 1/4″	0.72″	0.072″	0.47″	0.69″	22.77	33.00	9434K147	5.71
1 1/2″	0.24″	0.038″	0.772″	0.51″	10.71	21.00	9434K47	4.85
1 1/2″	0.24″	0.042″	0.905″	0.45″	13.95	31.00	9434K161	4.85
1 1/2″	0.30″	0.038″	0.571″	0.65″	8.78	13.50	9434K62	6.82
1 1/2″	0.30″	0.042″	0.673″	0.57″	11.40	20.00	9434K65	6.82
1 1/2″	0.30″	0.045″	0.743″	0.54″	14.04	26.00	9434K162	4.98
1 1/2″	0.36″	0.032″	0.338″	0.83″	4.57	5.50	9434K74	4.98
1 1/2″	0.36″	0.038″	0.477″	0.82″	7.38	9.00	9434K77	4.98
1 1/2″	0.36″	0.042″	0.527″	0.67″	9.72	14.50	9434K8	5.11
1 1/2″	0.36″	0.045″	0.586″	0.65″	11.70	18.00	9434K83	5.11
1 1/2″	0.42″	0.038″	0.381″	0.91″	6.37	7.00	9434K86	5.11
1 1/2″	0.42″	0.042″	0.442″	0.80″	8.40	10.50	9434K89	5.11
1 1/2″	0.42″	0.055″	0.661″	0.64″	17.92	28.00	9434K95	5.11
1 1/2″	0.48″	0.038″	0.315″	0.93″	5.58	6.00	9434K98	5.11
1 1/2″	0.48″	0.042″	0.379″	0.87″	7.40	8.50	9434K112	5.11
1 1/2″	0.48″	0.045″	0.404″	0.81″	8.91	11.00	9434K115	5.11
1 1/2″	0.48″	0.055″	0.565″	0.72″	15.84	22.00	9434K118	5.11
1 1/2″	0.48″	0.063″	0.694″	0.62″	22.94	37.00	9434K121	5.11
1 1/2″	0.60″	0.045″	0.35″	1.11″	7.22	6.50	9434K124	5.11
1 1/2″	0.60″	0.055″	0.427″	0.85″	12.75	15.00	9434K127	5.71
1 1/2″	0.60″	0.063″	0.552″	0.77″	18.48	24.00	9434K153	5.71
1 3/4″	0.60″	0.067″	0.705″	0.91″	21.84	24.00	9434K133	5.71
2″	0.60″	0.072″	0.939″	1.03″	26.78	26.00	9434K167	5.71
2″	0.72″	0.055″	0.421″	1.26″	10.71	8.50	9434K139	5.71
2″	0.72″	0.063″	0.616″	1.42″	15.62	11.00	9434K142	5.71
2″	0.72″	0.067″	0.606″	1.40″	21.70	15.50	9434K168	5.71
2″	0.72″	0.072″	0.686″	1.13″	22.60	20.00	9434K148	5.71
3 1/2″	0.36″	0.042″	1.22″	1.67″	8.60	5.15	9434K116	5.84

Type 302 Stainless Steel—*Sold in packages of 5*

O'all Lg.	Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch		Pkg.
1/4″	0.12″	0.016″	0.114″	0.11″	1.60	14.58	9435K11	$5.02
3/8″	0.24″	0.022″	0.111″	0.20″	2.00	10.00	9435K35	5.29
1/2″	0.12″	0.016″	0.205″	0.22″	1.56	7.08	9435K12	7.58
1/2″	0.12″	0.022″	0.309″	0.14″	3.62	25.82	9435K18	6.65
1/2″	0.18″	0.018″	0.132″	0.25″	1.46	5.83	9435K24	5.29
1/2″	0.30″	0.022″	0.106″	0.29″	1.57	5.41	9435K5	6.65
1/2″	0.36″	0.032″	0.145″	0.25″	3.75	14.99	9435K74	8.68
1/2″	0.48″	0.045″	0.192″	0.26″	7.58	29.16	9435K115	8.14
9/16″	0.18″	0.026″	0.274″	0.21″	4.02	19.16	9435K3	5.56
9/16″	0.24″	0.022″	0.144″	0.29″	1.93	6.66	9435K36	5.56
5/8″	0.24″	0.026″	0.203″	0.30″	3.12	10.41	9435K39	5.56
5/8″	0.24″	0.032″	0.273″	0.24″	5.60	23.32	9435K42	7.58
11/16″	0.30″	0.022″	0.128″	0.42″	1.57	3.75	9435K51	5.56
11/16″	0.30″	0.032″	0.241″	0.37″	4.93	13.33	9435K6	6.11
3/4″	0.12″	0.016″	0.305″	0.46″	1.92	4.17	9435K13	6.65
3/4″	0.12″	0.018″	0.351″	0.30″	2.12	7.08	9435K16	6.47
3/4″	0.18″	0.016″	0.177″	0.51″	1.06	2.08	9435K22	5.56
3/4″	0.24″	0.038″	0.39″	0.23″	8.81	38.32	9435K45	7.58
3/4″	0.36″	0.026″	0.138″	0.42″	2.10	5.00	9435K72	7.36
3/4″	0.60″	0.072″	0.397″	0.34″	22.09	64.97	9435K136	8.07
3/4″	0.72″	0.055″	0.221″	0.46″	8.81	19.16	9435K139	9.16
3/4″	0.72″	0.063″	0.284″	0.47″	12.92	27.49	9435K142	8.61
13/16″	0.12″	0.022″	0.51″	0.25″	3.75	14.99	9435K19	7.34
13/16″	0.24″	0.022″	0.199″	0.47″	1.96	4.17	9435K37	6.65
13/16″	0.24″	0.042″	0.505″	0.23″	11.50	49.98	9435K48	7.34
13/16″	0.30″	0.045″	0.417″	0.28″	11.90	42.48	9435K69	8.14
13/16″	0.36″	0.038″	0.201″	0.39″	6.17	15.83	9435K78	6.29
13/16″	0.36″	0.042″	0.306″	0.35″	8.16	23.32	9435K81	7.36
13/16″	0.36″	0.045″	0.339″	0.32″	9.86	30.82	9435K84	7.90
7/8″	0.18″	0.026″	0.391″	0.33″	4.12	12.50	9435K31	5.56
7/8″	0.24″	0.026″	0.287″	0.47″	3.13	6.66	9435K4	7.58
7/8″	0.30″	0.022″	0.166″	0.63″	1.57	2.50	9435K52	7.36
7/8″	0.36″	0.032″	0.209″	0.46″	3.83	8.33	9435K75	8.14
7/8″	0.42″	0.047″	0.33″	0.41″	9.56	23.32	9435K93	6.50
7/8″	0.48″	0.038″	0.21″	0.53″	4.64	8.75	9435K99	5.98
7/8″	0.48″	0.045″	0.271″	0.47″	7.44	15.83	9435K116	7.36
7/8″	0.48″	0.055″	0.373″	0.21″	6.65	31.65	9435K119	8.68
7/8″	0.48″	0.063″	0.457″	0.35″	18.95	54.15	9435K122	6.31
7/8″	0.60″	0.045″	0.226″	0.60″	6.00	10.00	9435K125	6.50
7/8″	0.72″	0.072″	0.361″	0.47″	18.79	39.98	9435K148	8.61
1″	0.18″	0.032″	0.601″	0.29″	7.01	24.16	9435K34	6.47
1″	0.24″	0.032″	0.425″	0.42″	5.60	13.33	9435K43	5.02
1″	0.30″	0.026″	0.229″	0.61″	2.54	4.17	9435K58	6.11
1″	0.30″	0.032″	0.337″	0.54″	4.50	8.33	9435K61	6.84
1 1/8″	0.36″	0.026″	0.19″	0.73″	2.13	2.92	9435K73	5.07
1 1/4″	0.60″	0.072″	0.596″	0.68″	25.49	37.49	9435K137	8.61
1 1/4″	0.72″	0.055″	0.304″	0.72″	8.40	11.66	9435K154	8.29
1 1/4″	0.72″	0.063″	0.441″	0.82″	12.98	15.83	9435K143	8.61
1 1/4″	0.72″	0.072″	0.47″	0.69″	18.97	27.49	9435K149	8.84
1 1/2″	0.24″	0.038″	0.772″	0.51″	8.92	17.49	9435K46	5.43
1 1/2″	0.24″	0.042″	0.905″	0.45″	11.62	25.82	9435K163	5.43
1 1/2″	0.30″	0.038″	0.571″	0.65″	7.31	11.25	9435K64	8.14
1 1/2″	0.30″	0.042″	0.673″	0.57″	9.50	16.66	9435K67	8.42
1 1/2″	0.30″	0.045″	0.743″	0.54″	11.70	21.66	9435K164	7.18
1 1/2″	0.36″	0.032″	0.338″	0.83″	3.80	4.58	9435K76	6.29
1 1/2″	0.36″	0.038″	0.477″	0.82″	6.15	7.50	9435K79	6.11
1 1/2″	0.36″	0.042″	0.527″	0.67″	8.09	12.08	9435K82	7.36
1 1/2″	0.36″	0.045″	0.586″	0.65″	9.75	14.99	9435K85	7.36
1 1/2″	0.42″	0.038″	0.381″	0.91″	5.31	5.83	9435K88	7.90
1 1/2″	0.42″	0.042″	0.442″	0.80″	7.00	8.75	9435K91	7.90
1 1/2″	0.42″	0.055″	0.661″	0.64″	14.93	23.32	9435K97	7.18
1 1/2″	0.48″	0.038″	0.315″	0.93″	4.65	5.00	9435K111	6.50
1 1/2″	0.48″	0.042″	0.379″	0.87″	6.16	7.08	9435K114	7.18
1 1/2″	0.48″	0.045″	0.404″	0.81″	7.42	9.16	9435K117	6.29
1 1/2″	0.48″	0.055″	0.565″	0.72″	13.19	18.33	9435K152	6.50
1 1/2″	0.48″	0.063″	0.694″	0.62″	19.11	30.82	9435K123	6.31
1 1/2″	0.60″	0.045″	0.35″	1.11″	6.01	5.41	9435K126	7.36
1 1/2″	0.60″	0.055″	0.427″	0.85″	10.62	12.50	9435K129	6.66
1 1/2″	0.60″	0.063″	0.552″	0.77″	15.39	19.99	9435K132	6.66
1 3/4″	0.60″	0.067″	0.705″	0.91″	18.19	19.99	9435K135	8.29
2″	0.60″	0.072″	0.939″	1.03″	22.31	21.66	9435K138	8.84
2″	0.72″	0.055″	0.421″	1.26″	8.92	7.08	9435K141	8.84
2″	0.72″	0.063″	0.616″	1.42″	13.01	9.16	9435K144	8.61
2″	0.72″	0.067″	0.606″	1.40″	18.08	12.91	9435K147	8.61
2″	0.72″	0.072″	0.686″	1.13″	18.83	16.66	9435K151	7.92
3 1/2″	0.36″	0.042″	1.22″	1.70″	7.62	4.48	9435K118	8.73

For information about compression springs, see page 1220.

Custom-Made Precision Compression Springs

Need a special size? Provide us with a complete description, fax a drawing, or send a sample of the compression spring you need. We'll make the spring to your specifications.
Note: Springs will have the same tolerances as the precision compression springs on the previous page.

To Order: Please specify the following:
1. Part number for the spring end style shown at right
2. Material: music wire or Type 302 stainless steel
3. Dimensions: overall length, spring OD, wire diameter, and space between coils

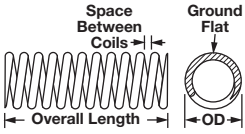

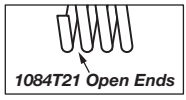
1084T21 Open Ends

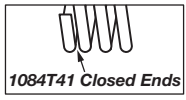
1084T41 Closed Ends

1084T31 Open and Ground Flat Ends

1084T51 Closed and Ground Flat Ends

For technical drawings and 3-D models, go to mcmaster.com.

Die Springs

About Die Springs

Die springs are a special type of compression spring that can withstand high loads with minimum deflection. They are used for die applications, heavy duty press operations, stripper plates, pressure rods, and knockout presses.

Deflection—The distance a spring compresses when a given load is applied. It is commonly expressed as a percentage of overall length.

Load—The force applied to a spring that causes deflection, generally given in pounds.

Rate—A change in the load per each inch of deflection.

A general rule in die spring selection is to use several short springs rather than one long spring to produce the required load with the least amount of deflection.

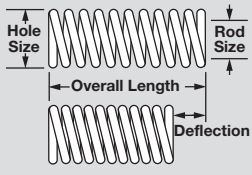

Spring-Tempered Steel Die Springs

Great for die-press applications requiring high load capacity and moderate deflection. Springs have closed and ground flat ends.

Square-wire springs have a square cross section that allows increased compression and high load capacity. They evenly distribute stress to reduce breakage and resist fatigue.

Oval-wire springs have an oval cross section that further increases load capacity.

Square Wire

Fits Hole Size	Fits Rod Size	O'all Lg.	Wire Size	Defl. % @ Load	Load, lbs.	Rate, lbs./inch		1-9	10-Up
7/16"	1/4"	2 1/2"	1/16"	21.0	19.95	38	9620K11	$2.95	$2.34
7/16"	1/4"	3"	1/16"	22.9	19.95	29	9620K12	3.08	2.44
7/16"	1/4"	3 1/2"	1/16"	21.1	19.95	27	9620K13	3.24	2.55
1/2"	1/4"	2 1/2"	3/32"	12.0	52.75	176	9620K17	5.92	4.69
9/16"	3/8"	2 1/2"	1/16"	36.4	15.46	17	9620K14	3.40	2.69
11/16"	1/2"	3"	1/16"	44.7	9.38	7	9620K57	5.21	4.12
11/16"	7/16"	3"	3/32"	21.4	38.49	60	9620K18	6.07	4.82
11/16"	3/8"	3"	1/8"	10.4	86.16	275	9620K22	6.82	5.39
13/16"	9/16"	2 1/2"	3/32"	26.1	32.60	50	9620K21	5.00	3.96
13/16"	1/2"	2 1/2"	1/8"	15.0	73.26	195	9620K24	6.82	5.39
13/16"	1/2"	3"	1/8"	15.3	73.26	160	9620K25	7.32	5.78
15/16"	5/8"	2 1/2"	1/8"	20.4	63.69	125	9620K27	7.35	5.81
15/16"	5/8"	3"	1/8"	19.3	63.69	110	9620K28	7.37	5.82
15/16"	5/8"	3 1/2"	1/8"	18.2	63.69	100	9620K29	7.43	5.86
1 1/16"	3/4"	2 1/2"	1/8"	23.7	56.34	95	9620K31	7.71	6.11
1 1/16"	3/4"	3"	1/8"	24.1	56.34	78	9620K32	7.77	6.16
1 1/16"	3/4"	3 1/2"	1/8"	24.8	56.34	65	9620K33	7.87	6.23
1 1/16"	1 1/16"	2 1/2"	5/32"	18.8	103.50	220	9620K41	12.84	10.16
1 5/16"	7/8"	3"	3/16"	15.1	138.83	306	9620K44	14.74	11.67
1 5/16"	7/8"	4"	3/16"	16.1	138.83	215	9620K46	15.89	12.58
1 7/16"	1 3/16"	3"	1/4"	10.1	289.45	952	9620K53	20.57	16.28

Oval Wire—Load at 15% deflection.

Fits Hole Size	Fits Rod Size	O'all Lg.	Wire Size	Load, lbs.	Rate, lbs./inch		1-9	10-Up
9/16"	1/4"	1"	1/8" × 1/16"	39.0	260	9623K11	$4.39	$3.53
9/16"	1/4"	1 1/2"	1/8" × 1/16"	34.9	155	9623K12	5.10	4.10
9/16"	1/4"	2"	1/8" × 1/16"	36.0	120	9623K13	5.78	4.65
9/16"	1/4"	2 1/2"	1/8" × 1/16"	37.5	100	9623K14	5.78	4.65
3/4"	3/8"	1"	5/32" × 3/32"	80.4	536	9623K21	3.24	2.61
3/4"	3/8"	1 1/2"	5/32" × 3/32"	84.6	376	9623K22	3.49	2.80
3/4"	3/8"	2"	5/32" × 3/32"	79.2	264	9623K23	3.86	3.05
3/4"	3/8"	2 1/2"	5/32" × 3/32"	78.0	208	9623K24	4.28	3.38
3/4"	3/8"	3"	5/32" × 3/32"	79.2	176	9623K25	4.75	3.75
3/4"	3/8"	3 1/2"	5/32" × 3/32"	75.6	144	9623K26	5.41	4.35
3/4"	3/8"	4"	5/32" × 3/32"	76.8	128	9623K27	5.88	4.73
3/4"	3/8"	6"	5/32" × 3/32"	72.0	80	9623K32	9.83	7.90
1"	1/2"	1"	7/32" × 7/64"	120.0	800	9623K33	3.95	3.18
1"	1/2"	1 1/2"	7/32" × 7/64"	126.0	560	9623K34	4.61	3.71
1"	1/2"	2"	7/32" × 7/64"	120.0	400	9623K35	4.98	4.00
1"	1/2"	2 1/2"	7/32" × 7/64"	117.0	312	9623K36	5.88	4.67
1"	1/2"	3"	7/32" × 7/64"	115.2	256	9623K37	6.90	5.55
1"	1/2"	3 1/2"	7/32" × 7/64"	113.4	216	9623K38	7.41	5.96
1"	1/2"	4"	7/32" × 7/64"	110.4	184	9623K39	7.90	6.35

Oval Wire (Cont.)—Load at 15% deflection.

Fits Hole Size	Fits Rod Size	O'all Lg.	Wire Size	Load, lbs.	Rate, lbs./inch		1-9	10-Up
1"	1/2"	5"	7/32" × 7/64"	108.0	144	9623K42	$10.39	$8.35
1"	1/2"	6"	7/32" × 7/64"	108.0	120	9623K43	12.35	9.79
1"	1/2"	8"	7/32" × 7/64"	96.0	80	9623K44	15.20	12.04
1 1/16"	1/2"	1"	1/4" × 1/8"	216.0	1,440	9623K45	8.61	6.92
1 1/16"	1/2"	1 1/2"	1/4" × 1/8"	148.5	660	9623K46	8.93	7.18
1 1/16"	1/2"	2"	1/4" × 1/8"	156.0	520	9623K47	9.56	7.69
1 1/8"	9/16"	1"	1/4" × 9/64"	180.0	1,200	9623K57	7.44	6.08
1 1/8"	9/16"	1 1/2"	1/4" × 9/64"	198.0	880	9623K58	9.78	7.86
1 1/8"	9/16"	2"	1/4" × 9/64"	180.0	600	9623K59	10.85	8.73
1 1/8"	9/16"	3"	1/4" × 9/64"	175.5	390	9623K62	11.98	9.63
1 1/4"	5/8"	1 1/2"	9/32" × 5/32"	252.0	1,120	9624K15	8.96	7.33
1 1/4"	5/8"	2"	9/32" × 5/32"	240.0	800	9624K16	9.89	8.09
1 1/4"	5/8"	2 1/2"	9/32" × 5/32"	231.0	616	9624K17	10.33	8.45
1 1/4"	5/8"	3"	9/32" × 5/32"	234.0	520	9624K18	10.35	8.21
1 1/4"	5/8"	3 1/2"	9/32" × 5/32"	231.0	440	9624K19	11.22	9.18
1 1/4"	5/8"	4"	9/32" × 5/32"	225.6	376	9624K21	12.13	9.93
1 1/4"	5/8"	4 1/2"	9/32" × 5/32"	222.8	330	9624K22	13.07	10.69
1 1/4"	5/8"	5"	9/32" × 5/32"	216.0	288	9624K23	14.82	12.13
1 1/4"	5/8"	6"	9/32" × 5/32"	216.0	240	9624K25	17.04	13.95
1 1/4"	5/8"	7"	9/32" × 5/32"	210.0	200	9624K26	18.58	15.03
1 1/4"	5/8"	10"	9/32" × 5/32"	204.0	136	9624K28	24.64	20.16
1 1/2"	3/4"	2"	5/16" × 3/16"	300.0	1,000	9624K29	11.13	8.81
1 1/2"	3/4"	2 1/2"	5/16" × 3/16"	291.0	776	9624K31	12.04	9.60
1 1/2"	3/4"	3"	5/16" × 3/16"	291.6	648	9624K32	12.36	10.11
1 1/2"	3/4"	3 1/2"	5/16" × 3/16"	285.6	544	9624K33	13.91	11.38
1 1/2"	3/4"	4"	5/16" × 3/16"	283.2	472	9624K34	14.38	11.76
1 1/2"	3/4"	4 1/2"	5/16" × 3/16"	280.8	416	9624K35	16.80	13.75
1 1/2"	3/4"	5"	5/16" × 3/16"	270.0	360	9624K36	18.89	15.05
1 1/2"	3/4"	6"	5/16" × 3/16"	266.4	296	9624K37	21.58	17.65
1 1/2"	3/4"	8"	5/16" × 3/16"	249.6	208	9624K38	27.60	22.58
1 1/2"	3/4"	10"	5/16" × 3/16"	252.0	168	9624K39	43.16	35.31
1 3/4"	7/8"	4"	3/8" × 13/64"	321.6	536	9624K45	19.76	16.16
1 3/4"	7/8"	5"	3/8" × 13/64"	312.0	416	9624K47	24.76	20.25
1 3/4"	7/8"	6"	3/8" × 13/64"	302.4	336	9624K48	27.69	22.65
1 3/4"	7/8"	10"	3/8" × 13/64"	288.0	192	9624K52	49.47	40.47
2"	1"	2 1/2"	7/16" × 7/32"	386.3	1,030	9624K53	18.00	14.73
2"	1"	3"	7/16" × 7/32"	388.8	864	9624K54	20.69	16.93
2"	1"	3 1/2"	7/16" × 7/32"	382.2	728	9624K55	21.82	17.85
2"	1"	4"	7/16" × 7/32"	374.4	624	9624K56	25.22	20.64
2"	1"	5"	7/16" × 7/32"	366.0	488	9624K58	32.36	26.47
2"	1"	6"	7/16" × 7/32"	352.8	392	9624K61	35.98	29.44
2"	1"	10"	7/16" × 7/32"	336.0	224	9624K65	66.56	54.45
2"	1"	12"	7/16" × 7/32"	331.2	184	9624K66	73.76	60.35

For information about die springs, see page 1225.

Chrome-Silicon Steel Die Springs

Choose these springs when you need the top performer in high-stress die and heavy duty compression spring applications. All are shot peened to reduce material stress, giving them more tensile strength and a longer life. Spring ends are closed and ground. Springs follow the Raymond color code.

Fits Hole Size	Fits Rod Size	O'all Lg.	Wire Size	Load, lbs.	Rate, lbs./inch		
Blue Medium Load—*Load at 25% deflection.*							
3/8″	3/16″	1″	0.039″×0.070″	15.0	60	9573K11	$1.49
3/8″	3/16″	1½″	0.039″×0.070″	15.0	40	9573K12	2.18
3/8″	3/16″	2″	0.039″×0.070″	14.0	28	9573K13	2.76
3/8″	3/16″	3″	0.039″×0.070″	15.8	21	9573K14	3.32
1/2″	9/32″	1″	0.052″×0.093″	27.5	110	9573K15	2.02
1/2″	9/32″	1¼″	0.052″×0.093″	25.6	82	9573K16	2.13
1/2″	9/32″	1½″	0.052″×0.093″	25.5	68	9573K17	2.46
1/2″	9/32″	2″	0.052″×0.093″	27.5	55	9573K18	2.92
1/2″	9/32″	3″	0.052″×0.093″	26.3	35	9573K19	3.60
5/8″	11/32″	1½″	0.069″×0.109″	40.5	108	9573K22	2.76
5/8″	11/32″	2″	0.069″×0.109″	44.0	88	9573K24	3.30
5/8″	11/32″	2½″	0.069″×0.109″	37.5	60	9573K25	3.50
5/8″	11/32″	3″	0.069″×0.109″	42.0	56	9573K26	3.93
5/8″	11/32″	3½″	0.069″×0.109″	42.0	48	9573K27	4.28
5/8″	11/32″	4″	0.069″×0.109″	44.0	44	9573K28	4.61
3/4″	3/8″	1½″	0.075″×0.165″	75.0	200	9573K32	3.15
3/4″	3/8″	2″	0.075″×0.165″	72.0	144	9573K34	3.62
3/4″	3/8″	2½″	0.075″×0.165″	75.0	120	9573K35	4.72
3/4″	3/8″	3″	0.075″×0.165″	72.0	96	9573K36	5.18
3/4″	3/8″	3½″	0.075″×0.165″	70.0	80	9573K37	6.81
3/4″	3/8″	4″	0.075″×0.165″	72.0	72	9573K38	7.24
3/4″	3/8″	4½″	0.075″×0.165″	72.0	64	9573K39	7.84
3/4″	3/8″	5″	0.075″×0.165″	75.0	60	9573K41	8.48
3/4″	3/8″	6″	0.075″×0.165″	75.0	50	9573K42	8.71
1″	1/2″	2″	0.100″×0.215″	130.0	260	9573K52	5.16
1″	1/2″	2½″	0.100″×0.215″	125.0	200	9573K53	5.53
1″	1/2″	3″	0.100″×0.215″	123.8	165	9573K54	6.16
1″	1/2″	3½″	0.100″×0.215″	131.3	150	9573K55	6.44
1″	1/2″	4″	0.100″×0.215″	120.0	120	9573K56	6.84
1″	1/2″	4½″	0.100″×0.215″	117.0	104	9573K57	8.01
1″	1/2″	5″	0.100″×0.215″	120.0	96	9573K58	8.54
1″	1/2″	6″	0.100″×0.215″	120.0	80	9573K61	10.50
1¼″	5/8″	2″	0.115″×0.285″	176.0	352	9573K67	7.49
1¼″	5/8″	2½″	0.115″×0.285″	180.0	288	9573K68	8.01
1¼″	5/8″	3″	0.115″×0.285″	180.0	240	9573K69	9.04
1¼″	5/8″	3½″	0.115″×0.285″	175.0	200	9573K71	9.71
1¼″	5/8″	4″	0.115″×0.285″	176.0	176	9573K72	10.58
1¼″	5/8″	4½″	0.115″×0.285″	180.0	160	9573K73	11.73
1¼″	5/8″	5″	0.115″×0.285″	170.0	136	9573K74	12.75
1¼″	5/8″	6″	0.115″×0.285″	180.0	120	9573K76	15.54
1½″	3/4″	2″	0.135″×0.345″	265.0	530	9573K81	8.09
1½″	3/4″	2½″	0.135″×0.345″	281.3	450	9573K82	9.09
1½″	3/4″	3″	0.135″×0.345″	270.0	360	9573K83	10.58
1½″	3/4″	3½″	0.135″×0.345″	262.5	300	9573K84	11.91
1½″	3/4″	4″	0.135″×0.345″	270.0	270	9573K85	13.48
1½″	3/4″	4½″	0.135″×0.345″	258.8	230	9573K86	14.63
1½″	3/4″	5″	0.135″×0.345″	262.5	210	9573K87	16.28
1½″	3/4″	6″	0.135″×0.345″	255.0	170	9573K89	19.24
2″	1″	2½″	0.195″×0.468″	625.0	1,000	9573K91	17.21
2″	1″	3″	0.195″×0.468″	622.5	830	9573K92	24.62
2″	1″	3½″	0.195″×0.468″	567.0	648	9573K93	27.13
2″	1″	4″	0.195″×0.468″	600.0	600	9573K94	29.11
2″	1″	5″	0.195″×0.468″	587.5	470	9573K96	34.97
2″	1″	8″	0.195″×0.468″	570.0	285	9573K99	52.70
Red Medium to Heavy Load—*Load at 20% deflection.*							
3/8″	3/16″	1″	0.046″×0.073″	18.0	90	9584K11	1.56
3/8″	3/16″	2″	0.046″×0.073″	20.0	50	9584K12	2.92
1/2″	9/32″	1½″	0.061″×0.094″	28.5	95	9584K13	2.61
1/2″	9/32″	2″	0.061″×0.094″	30.0	75	9584K14	3.15
5/8″	11/32″	1″	0.081″×0.123″	60.0	300	9584K15	2.61
5/8″	11/32″	1½″	0.081″×0.123″	57.0	190	9584K22	2.45
5/8″	11/32″	2″	0.081″×0.123″	59.2	148	9584K24	3.50
5/8″	11/32″	2½″	0.081″×0.123″	57.5	115	9584K25	3.90
5/8″	11/32″	3″	0.081″×0.123″	60.0	100	9584K26	4.14
3/4″	3/8″	1½″	0.093″×0.156″	96.0	320	9584K32	4.14
3/4″	3/8″	2″	0.093″×0.156″	99.2	248	9584K34	4.79
3/4″	3/8″	2½″	0.093″×0.156″	96.0	192	9584K35	5.13
3/4″	3/8″	3″	0.093″×0.156″	86.4	144	9584K36	5.71
3/4″	3/8″	3½″	0.093″×0.156″	89.6	128	9584K37	5.60
3/4″	3/8″	4″	0.093″×0.156″	96.0	120	9584K38	6.80
1″	1/2″	2″	0.115″×0.218″	160.0	400	9584K52	5.94
1″	1/2″	2½″	0.115″×0.218″	155.0	310	9584K53	6.51
1″	1/2″	3″	0.115″×0.218″	150.0	250	9584K54	6.95
1″	1/2″	3½″	0.115″×0.218″	151.2	216	9584K55	7.61
1″	1/2″	4″	0.115″×0.218″	147.2	184	9584K56	8.29
1″	1/2″	4½″	0.115″×0.218″	153.0	170	9584K57	9.08
1″	1/2″	5″	0.115″×0.218″	144.0	144	9584K58	10.33
1″	1/2″	6″	0.115″×0.218″	144.0	120	9584K61	12.02
1¼″	5/8″	2″	0.156″×0.281″	345.6	864	9584K67	8.05
1¼″	5/8″	2½″	0.156″×0.281″	312.0	624	9584K68	8.61
Red Medium to Heavy Load (Cont.)—*Load at 20% deflection.*							
1¼″	5/8″	3″	0.156″×0.281″	307.2	512	9584K69	$9.74
1¼″	5/8″	3½″	0.156″×0.281″	308.0	440	9584K71	10.46
1¼″	5/8″	4″	0.156″×0.281″	294.4	368	9584K72	11.28
1¼″	5/8″	6″	0.156″×0.281″	300.0	250	9584K76	17.15
1½″	3/4″	2″	0.187″×0.312″	432.0	1,080	9584K81	10.84
1½″	3/4″	2½″	0.187″×0.312″	428.0	856	9584K82	12.25
1½″	3/4″	3″	0.187″×0.312″	374.4	624	9584K83	14.28
1½″	3/4″	3½″	0.187″×0.312″	369.6	528	9584K84	19.90
1½″	3/4″	4″	0.187″×0.312″	384.0	480	9584K85	16.97
1½″	3/4″	5″	0.187″×0.312″	368.0	368	9584K87	20.55
1½″	3/4″	6″	0.187″×0.312″	364.8	304	9584K89	24.41
2″	1″	2½″	0.225″×0.437″	592.0	1,184	9584K91	26.02
2″	1″	3″	0.225″×0.437″	576.0	960	9584K92	21.23
2″	1″	5″	0.225″×0.437″	560.0	560	9584K96	40.11
2″	1″	8″	0.225″×0.437″	563.2	352	9584K99	76.14
Bronze Heavy Load—*Load at 15% deflection.*							
3/8″	3/16″	1″	0.054″×0.072″	16.5	110	9588K11	1.70
3/8″	3/16″	2″	0.054″×0.072″	21.6	72	9588K12	3.13
1/2″	9/32″	1″	0.072″×0.095″	35.4	236	9588K13	2.56
1/2″	9/32″	1½″	0.072″×0.095″	34.9	155	9588K14	2.92
5/8″	11/32″	1½″	0.093″×0.125″	61.2	272	9588K22	3.31
5/8″	11/32″	2″	0.093″×0.125″	62.4	208	9588K24	3.76
5/8″	11/32″	2½″	0.093″×0.125″	63.8	170	9588K25	3.96
5/8″	11/32″	3″	0.093″×0.125″	64.8	144	9588K26	4.41
3/4″	3/8″	1″	0.125″×0.165″	162.0	1,080	9588K16	3.98
3/4″	3/8″	1½″	0.125″×0.165″	147.6	656	9588K32	4.38
3/4″	3/8″	2″	0.125″×0.165″	148.8	496	9588K34	5.08
3/4″	3/8″	2½″	0.125″×0.165″	150.0	400	9588K35	5.60
3/4″	3/8″	3″	0.125″×0.165″	153.0	340	9588K36	6.05
3/4″	3/8″	3½″	0.125″×0.165″	147.0	280	9588K37	6.92
3/4″	3/8″	4″	0.125″×0.165″	150.0	250	9588K38	7.79
3/4″	3/8″	6″	0.125″×0.165″	144.0	160	9588K42	11.57
1″	1/2″	1¼″	0.158″×0.221″	321.0	1,712	9588K73	5.54
1″	1/2″	1½″	0.158″×0.221″	266.4	1,184	9588K18	5.78
1″	1/2″	1¾″	0.158″×0.221″	273.0	1,040	9588K19	6.15
1″	1/2″	2″	0.158″×0.221″	270.0	900	9588K52	6.62
1″	1/2″	2½″	0.158″×0.221″	255.0	680	9588K53	7.55
1″	1/2″	3″	0.158″×0.221″	244.8	544	9588K54	7.80
1″	1/2″	3½″	0.158″×0.221″	239.4	456	9588K55	8.51
1″	1/2″	4″	0.158″×0.221″	240.0	400	9588K56	9.26
1″	1/2″	4½″	0.158″×0.221″	237.6	352	9588K57	10.09
1″	1/2″	5″	0.158″×0.221″	234.0	312	9588K58	11.39
1″	1/2″	6″	0.158″×0.221″	230.4	256	9588K59	17.37
1¼″	5/8″	1½″	0.200″×0.286″	477.0	2,120	9588K21	7.59
1¼″	5/8″	2″	0.200″×0.286″	448.8	1,496	9588K67	8.48
1¼″	5/8″	2½″	0.200″×0.286″	441.0	1,176	9588K68	9.28
1¼″	5/8″	3″	0.200″×0.286″	428.4	952	9588K69	10.28
1¼″	5/8″	4″	0.200″×0.286″	398.4	664	9588K72	12.77
1¼″	5/8″	5″	0.200″×0.286″	397.5	530	9588K74	20.10
1¼″	5/8″	6″	0.200″×0.286″	381.6	424	9588K76	24.62
1½″	3/4″	2″	0.225″×0.337″	571.2	1,904	9588K81	11.60
1½″	3/4″	2½″	0.225″×0.337″	581.3	1,550	9588K82	13.10
1½″	3/4″	3″	0.225″×0.337″	585.0	1,300	9588K83	14.93
1½″	3/4″	3½″	0.225″×0.337″	558.6	1,064	9588K84	16.58
1½″	3/4″	4″	0.225″×0.337″	547.2	912	9588K85	18.59
1½″	3/4″	4½″	0.225″×0.337″	529.2	784	9588K86	27.63
1½″	3/4″	5″	0.225″×0.337″	534.0	712	9588K87	30.32
1½″	3/4″	6″	0.225″×0.337″	525.6	584	9588K89	36.22
2″	1″	2½″	0.280″×0.470″	975.0	2,600	9588K91	21.26
2″	1″	3″	0.280″×0.470″	900.0	2,000	9588K92	23.09
2″	1″	4″	0.280″×0.470″	900.0	1,500	9588K94	28.49
2″	1″	5″	0.280″×0.470″	825.0	1,100	9588K96	32.88
2″	1″	6″	0.280″×0.470″	846.0	940	9588K98	40.48
2″	1″	8″	0.280″×0.470″	876.0	730	9588K99	51.16
Green Extra-Heavy Load—*Load at 15% deflection.*							
3/8″	3/16″	2″	0.059″×0.080″	27.0	90	9595K24	3.09
1/2″	9/32″	2″	0.084″×0.097″	42.0	140	9595K25	3.64
5/8″	11/32″	2″	0.110″×0.126″	87.0	290	9595K27	4.09
3/4″	3/8″	2″	0.135″×0.165″	204.0	680	9595K31	5.88
3/4″	3/8″	3″	0.135″×0.165″	182.3	405	9595K32	6.79
3/4″	3/8″	4″	0.135″×0.165″	180.0	300	9595K33	8.32
1″	1/2″	2″	0.188″×0.225″	348.0	1,160	9595K11	8.34
1″	1/2″	3″	0.188″×0.225″	331.2	736	9595K12	9.15
1¼″	5/8″	2″	0.204″×0.244″	576.0	1,920	9595K14	9.69
1¼″	5/8″	3″	0.204″×0.244″	532.8	1,184	9595K15	12.39
1½″	3/4″	2″	0.278″×0.343″	1,128.0	3,760	9595K17	15.18
1½″	3/4″	3″	0.278″×0.343″	1,040.4	2,312	9595K18	19.31
2″	1″	3″	0.308″×0.450″	1,404.0	3,120	9595K19	30.77
2″	1″	4½″	0.308″×0.450″	1,274.4	1,888	9595K22	39.12

For information about die springs, see page 1225.

Maximum-Load Alloy Steel Die Springs

Use these larger round-wire die springs wherever you need maximum load and stress resistance. Springs are made from alloy steel that's selected for its uniformity and strength. All are tumble-blasted using steel media to reduce material stress, giving them more tensile strength and a longer life. Spring ends are closed and ground.

Fits Hole Size	Fits Rod Size	O'all Lg.	Wire Dia.	Defl. % @ Load	Load, lbs.	Rate, lbs./inch		
2½″	1½″	3″	0.437″	12.9	665	1,715	9622K51	$58.63
2½″	1½″	3½″	0.437″	14.6	724	1,415	9622K52	83.90
2½″	1½″	4″	0.437″	18.3	927	1,265	9622K53	63.79
2½″	1½″	5″	0.437″	19.4	933	960	9622K55	66.51
2½″	1½″	6″	0.437″	21.9	1,051	800	9622K56	70.38
2½″	1½″	8″	0.437″	25.0	1,200	600	9622K57	71.00
2½″	1½″	12″	0.437″	24.7	1,112	375	9622K59	105.51
3″	1 13/16″	4″	0.500″	22.4	1,593	1,775	9622K62	87.56
3″	1 13/16″	15″	0.500″	25.3	1,593	420	9622K67	102.78
4⅛″	2⅝″	3″	0.625″	18.0	1,727	3,200	9622K68	126.89
4⅛″	2⅝″	8″	0.625″	26.9	2,198	1,020	9622K74	107.00
4⅛″	2⅝″	10″	0.625″	27.0	2,198	815	9622K75	148.31
4⅛″	2⅝″	12″	0.625″	27.1	2,198	675	9622K76	153.73

Die-Spring Screw Caps

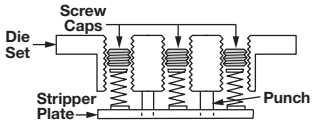

Screw caps provide backing for springs and can also be used to control spring tension. Install by drilling and tapping a hole through your die set. Screw caps are made of case-hardened steel and have a black-oxide finish.

Thread Size	Hex Size	Thickness		
7/16″-20	3/16″	1/4″	96235K3	$2.13
1/2″ -20	1/4″	5/16″	96235K5	2.35
9/16″-18	1/4″	5/16″	96235K7	2.43
5/8″ -18	1/4″	5/16″	96235K9	2.68
3/4″ -16	1/4″	5/16″	96235K11	2.75
7/8″ -14	1/4″	5/16″	96235K13	3.04
1″ -14	1/4″	5/16″	96235K15	3.21
1⅛″ -12	1/4″	5/16″	96235K17	4.05
1¼″ -12	1/4″	5/16″	96235K19	4.37
1⅜″ -12	1/2″	1/2″	96235K21	10.90

Die-Spring Cages

Protect dies from damage caused by spring failure. Cages enclose the spring and retain spring fragments, making it easy to remove them in the event of spring failure. Cages are made of 0.049″ thick cold-rolled steel. Cage length should be as close as possible to the distance traveled by the die.

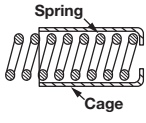

Length	3/4″ ID		1″ ID		1 1/4″ ID		1 1/2″ ID		2″ ID	
1½″	1878K11	$2.91	1878K19	$3.13	1878K33	$3.44	1878K42	$3.60	1878K56	$4.54
2″	1878K12	2.94	1878K22	3.25	1878K34	3.51	1878K43	3.73	1878K57	4.75

Continuous-Length Spring-Tempered Steel Die Springs

At 36″ long, these die springs are able to handle toolmaking requirements for long stock and can also be cut to size. Springs have open ends. To determine the length (in inches) to which to cut your spring, take the spring constant and divide it by the number of coils per inch. Then take this value and divide it by your desired spring rate in lbs./inch. To cut springs, use an abrasive cutoff saw.

Fits Hole Size	Fits Rod Size	Wire Size	Coils/ inch	Spring Constant		
Square Wire						
7/16″	1/4″	1/16″	7.08	752	9621K11	$18.69
1/2″	1/4″	3/32″	5.83	2,963	9621K14	20.38
9/16″	3/8″	1/16″	5.83	296	9621K12	20.09
9/16″	5/16″	3/32″	5.36	1,847	9621K15	20.43
11/16″	1/2″	1/16″	4.94	146	9621K13	20.14
11/16″	7/16″	3/32″	4.61	867	9621K16	23.02
11/16″	3/8″	1/8″	4.61	3,396	9621K18	25.44
13/16″	9/16″	3/32″	4.61	473	9621K17	24.92
13/16″	1/2″	1/8″	4.28	1,791	9621K19	26.76
15/16″	5/8″	1/8″	4.00	1,058	9621K21	27.02
15/16″	1/2″	3/16″	3.56	6,881	9621K27	50.55
1 1/16″	3/4″	1/8″	3.22	677	9621K22	28.54
1 1/16″	5/8″	3/16″	2.94	4,234	9621K28	50.27
Square Wire (Cont.)						
1 3/16″	13/16″	5/32″	2.94	1,224	9621K26	$49.61
1 3/16″	3/4″	3/16″	2.67	2,788	9621K29	50.55
1 5/16″	7/8″	3/16″	2.67	1,932	9621K31	51.06
1 13/16″	1 1/8″	9/32″	1.94	4,075	9621K44	116.92
1 13/16″	1 1/16″	5/16″	1.78	6,629	9621K47	114.95
2 1/16″	1 5/16″	5/16″	1.64	4,083	9621K48	143.93
2 5/16″	1 9/16″	5/16″	1.39	2,692	9621K49	143.71
Round-Edge Rectangular Wire						
3/4″	3/8″	5/32″	5.00	2,267	9625K12	24.30
1″	1/2″	7/32″	4.00	2,388	9625K13	47.25
1½″	3/4″	5/16″	2.60	4,604	9625K17	55.35
2″	1″	7/16″	2.10	4,796	9625K19	88.87

Type 302 Stainless Steel Conical Compression Springs

Cone-shaped springs allow the coils to nest within each other when deflected, providing a nearly constant spring rate and a compressed length that's smaller than a normal compression spring. Springs have closed ends. Sold in packages of 3, unless noted.

Large OD	Small OD	Wire Dia.	Com-pressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch		Pkg.
1/4″ Overall Length								
0.36″	0.125″	0.029″	0.06″	0.13″	3.45	27.58	1692K11	$13.52
0.42″	0.218″	0.029″	0.06″	0.13″	2.04	16.38	1692K13	15.13
0.42″	0.187″	0.032″	0.06″	0.13″	3.19	25.49	1692K14	14.73
0.42″	0.187″	0.035″	0.07″	0.13″	5.09	40.80	1692K15	15.10
0.48″	0.218″	0.038″	0.08″	0.13″	4.75	38.02	1692K16	15.29
3/8″ Overall Length								
0.42″	0.156″	0.029″	0.06″	0.19″	2.50	13.35	1692K12	14.73
0.48″	0.187″	0.035″	0.07″	0.19″	3.92	20.91	1692K17	14.88
0.72″	0.375″	0.049″	0.10″	0.19″	4.84	25.82	1692K18★	8.83
1/2″ Overall Length								
0.60″	0.375″	0.032″	0.06″	0.25″	1.53	6.13	1692K19	15.20
0.72″	0.281″	0.055″	0.11″	0.25″	10.12	40.50	1692K21★	8.83
5/8″ Overall Length								
0.48″	0.187″	0.029″	0.06″	0.31″	2.15	6.88	1692K22	14.51
0.60″	0.375″	0.029″	0.06″	0.31″	1.12	3.57	1692K23	13.83
0.60″	0.343″	0.032″	0.06″	0.31″	1.64	5.25	1692K24★	8.82
0.60″	0.281″	0.035″	0.07″	0.31″	2.41	7.70	1692K25★	8.82
3/4″ Overall Length								
0.60″	0.375″	0.026″	0.05″	0.38″	0.73	1.94	1692K26	$14.55
0.72″	0.281″	0.045″	0.09″	0.38″	4.83	12.87	1692K27★	8.83
0.98″	0.625″	0.049″	0.10″	0.38″	2.93	7.81	1692K28★	9.72
0.98″	0.375″	0.072″	0.14″	0.38″	16.11	42.98	1692K29★	5.54
1″ Overall Length								
0.60″	0.343″	0.026″	0.05″	0.50″	0.84	1.67	1692K31	14.17
0.60″	0.281″	0.029″	0.06″	0.50″	1.39	2.77	1692K32	14.55
0.72″	0.375″	0.035″	0.07″	0.50″	1.80	3.59	1692K33★	8.83
0.85″	0.438″	0.042″	0.08″	0.50″	2.35	4.71	1692K34★	8.66
0.85″	0.281″	0.055″	0.11″	0.50″	8.50	17.01	1692K35★	9.73
1 1/4″ Overall Length								
0.60″	0.312″	0.026″	0.05″	0.63″	1.00	1.61	1692K36	14.95
0.85″	0.375″	0.045″	0.09″	0.63″	3.75	6.00	1692K37★	9.73
1 1/2″ Overall Length								
0.85″	0.343″	0.045″	0.09″	0.75″	4.19	5.59	1692K38★	10.00

★ Sold in packages of 1.

Type 302 Stainless Steel and Music Wire Torsion Springs

CAD

90° Deflection Angle Clockwise (Left-Hand) Wound

90° Deflection Angle Counterclockwise (Right-Hand) Wound

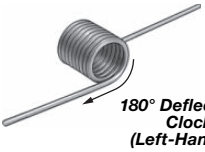

180° Deflection Angle Clockwise (Left-Hand) Wound

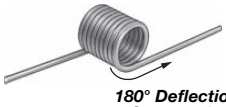

180° Deflection Angle Counterclockwise (Right-Hand) Wound

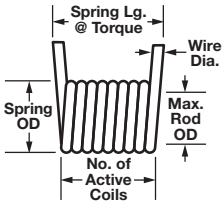

Deflection Angles/Degrees of Rotation

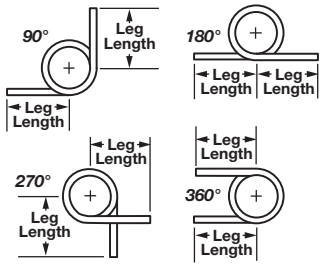

Torsion springs are used to maintain pressure over a short distance in a rotational direction. They're normally supported by a rod, mandrel, or arbor. Torsion springs are commonly found in clothespins, spring clamps, and mousetraps, and typically used in actuators, motors, and spring-return mechanisms.

Squeezing the torsion spring reduces the spring OD, making the spring tighter around the shaft and increasing the body length. The body length is listed as spring length @ torque in the table below. *Note:* Since the spring gets tighter as it is squeezed around the shaft, we have listed a recommended maximum rod OD for each spring. Using a larger rod OD will interfere with the spring motor.

Torsion springs should be used in the direction in which the coils are wound. Choose from four different deflection angles/degrees of rotation for your desired range of motion. These figures represent the angle between the legs of the spring as well as the maximum spring rotation. For example, a spring with a 90° deflection angle/degrees of rotation has a 90° angle between its legs, and it will rotate a maximum of 90°. *Note:* All springs will rotate until their legs are parallel.

To Order: Please specify spring wind direction: clockwise or counterclockwise.

					Type 302 Stainless Steel				Music Wire				
Spring OD	Wire Dia.	Leg Length	Max. Rod OD	Spring Length @ Torque	No. of Active Coils	Torque, in.-lbs.		Each	No. of Active Coils	Torque, in.-lbs.	Pkg. Qty.		Pkg.
90° Deflection Angle/Degrees of Rotation													
0.160″	0.017″	0.500″	0.093″	0.081″	2.25	0.117	9287K11	$4.26	3.25	0.125	6	9271K11	$5.63
0.235″	0.025″	0.750″	0.140″	0.096″	2.25	0.375	9287K13	4.44	3.25	0.402	6	9271K15	5.81
0.281″	0.030″	1.000″	0.172″	0.116″	2.25	0.625	9287K27	4.85	3.25	0.670	6	9271K19	6.00
0.288″	0.032″	1.000″	0.172″	0.152″	2.25	0.820	9287K23	5.08	3.25	0.879	6	9271K24	6.20
0.315″	0.035″	1.250″	0.187″	0.135″	2.25	1.000	9287K34	5.08	3.25	1.071	6	9271K28	6.41
0.309″	0.040″	1.250″	0.187″	0.198″	3.25	1.375	9287K32	4.80	4.25	1.473	6	9271K33	6.89
0.357″	0.045″	1.250″	0.203″	0.259″	3.25	2.000	9287K36	5.50	4.25	2.143	6	9271K37	7.16
0.375″	0.048″	1.250″	0.218″	0.238″	3.25	2.500	9287K38	5.87	4.25	2.679	6	9271K42	7.33
0.408″	0.051″	2.000″	0.234″	0.293″	2.25	2.900	9287K42	6.15	4.25	3.107	6	9271K46	7.62
0.484″	0.054″	2.000″	0.296″	0.310″	2.25	3.275	9287K44	6.70	4.25	3.509	6	9271K51	7.63
0.499″	0.059″	2.000″	0.296″	0.340″	3.25	4.200	9287K46	7.04	4.25	4.500	6	9271K55	7.79
0.560″	0.063″	2.000″	0.343″	0.362″	2.25	5.150	9287K48	7.53	4.25	5.518	6	9271K59	7.81
0.678″	0.078″	2.000″	0.406″	0.450″	3.25	9.750	9287K49	7.64	4.25	10.446	6	9271K64	7.82
0.776″	0.095″	3.000″	0.453″	0.546″	3.25	16.000	9287K51	3.98	3.25	17.140	1	9271K67	2.89
0.848″	0.106″	3.500″	0.500″	0.604″	3.25	20.970	9287K103	5.51	3.25	22.470	1	9271K72	4.00
0.989″	0.125″	4.000″	0.591″	0.844″	4.25	32.000	9287K104	9.32	4.25	34.290	1	9271K76	6.78
1.102″	0.135″	4.000″	0.666″	0.911″	4.25	40.000	9287K105	9.52	4.25	42.860	1	9271K81	6.89
180° Deflection Angle/Degrees of Rotation													
0.109″	0.012″	0.375″	0.067″	0.086″	5.00	0.047	9287K52	4.65	6.00	0.050	6	9271K68	5.63
0.133″	0.014″	0.500″	0.078″	0.105″	5.00	0.070	9287K54	4.74	6.00	0.075	6	9271K73	5.81
0.130″	0.015″	0.500″	0.078″	0.107″	5.00	0.093	9287K56	4.87	6.00	0.100	6	9271K77	6.00
0.183″	0.015″	0.750″	0.109″	0.075″	3.00	0.093	9287K58	4.98	4.00	0.100	6	9271K82	6.20
0.216″	0.018″	0.750″	0.140″	0.109″	4.00	0.140	9287K61	5.11	5.00	0.150	6	9271K86	6.41
0.224″	0.025″	0.750″	0.140″	0.206″	6.00	0.375	9287K63	5.30	7.00	0.402	6	9271K92	6.89
0.249″	0.028″	1.000″	0.140″	0.238″	6.00	0.515	9287K65	4.86	7.00	0.552	6	9271K96	7.16
0.450″	0.035″	1.250″	0.281″	0.212″	4.00	1.000	9287K66	5.69	5.00	1.071	6	9271K14	7.44
0.404″	0.048″	1.250″	0.250″	0.450″	7.00	2.500	9287K68	5.87	8.00	2.679	6	9271K18	7.62
0.526″	0.059″	2.000″	0.328″	0.560″	7.00	4.200	9287K69	6.72	8.00	4.500	6	9271K23	8.00
0.767″	0.063″	2.000″	0.500″	0.475″	5.00	5.150	9287K72	6.18	6.00	5.518	6	9271K27	8.06
0.803″	0.078″	2.000″	0.500″	0.660″	6.00	9.750	9287K73	8.61	7.00	10.446	6	9271K32	8.97
0.982″	0.106″	3.500″	0.609″	0.998″	7.00	21.000	9287K75	5.10	7.00	22.500	1	9271K85	3.67
1.082″	0.125″	4.000″	0.666″	1.438″	9.00	32.000	9287K106	8.25	9.00	34.280	1	9271K89	5.97
1.356″	0.125″	4.000″	0.885″	1.188″	7.00	32.000	9287K107	9.52	7.00	34.290	1	9271K91	6.89
1.189″	0.135″	4.000″	0.735″	1.553″	9.00	40.000	9287K108	9.52	9.00	42.860	1	9271K95	6.89
270° Deflection Angle/Degrees of Rotation													
0.259″	0.017″	0.750″	0.156″	0.123″	4.75	0.117	9287K82	4.65	5.75	0.125	6	9271K36	5.81
0.184″	0.021″	0.750″	0.109″	0.266″	9.75	0.218	9287K85	4.87	10.75	0.234	6	9271K41	6.00
0.187″	0.023″	0.750″	0.109″	0.282″	9.75	0.308	9287K88	5.11	10.75	0.330	6	9271K45	6.20
0.353″	0.038″	1.250″	0.218″	0.465″	9.75	1.190	9287K89	5.28	10.75	1.275	6	9271K49	6.41
0.556″	0.045″	2.000″	0.359″	0.415″	6.75	2.000	9287K92	5.50	7.75	2.143	6	9271K54	6.89
0.826″	0.070″	2.000″	0.531″	0.717″	7.75	7.000	9287K93	8.49	8.75	7.500	6	9271K58	8.58
1.342″	0.106″	3.500″	0.891″	1.076″	7.75	21.000	9287K94	5.51	7.75	22.500	1	9271K4	4.00
1.666″	0.135″	4.000″	1.112″	1.654″	9.75	40.000	9287K101	9.52	9.75	42.860	1	9271K7	6.89
360° Deflection Angle/Degrees of Rotation													
0.271″	0.021″	1.000″	0.187″	0.242″	8.50	0.218	9287K98	4.65	9.50	0.234	6	9271K63	5.81
0.798″	0.063″	2.000″	0.516″	0.820″	11.50	5.150	9287K99	2.99	11.50	5.520	1	9271K5	2.19
1.755″	0.135″	4.000″	1.188″	2.025″	12.50	40.000	9287K102	9.52	12.50	42.860	1	9271K9	6.89

Custom-Made Torsion Springs

Need a special size? Provide us with a complete description, fax a drawing, or send a sample of the torsion spring you need. We'll make the spring to your specifications. For information about torsion spring specifications, please refer to the illustrations at the top of the page.

To Order: Please specify the following:

1. Part number for the deflection angle listed at right
2. Clockwise or counterclockwise wound
3. Material: music wire, stainless steel, or other material
4. Finish: plain or zinc plated
5. Dimensions: spring OD, wire diameter, leg length, and number of active coils

Deflection Angle	
90°	9535K21
180°	9535K31
270°	9535K41
360°	9535K51

About Belleville Disc Springs

These conical springs will hold large loads in small spaces. They're often used under bolt heads to maintain tension and keep the bolt from loosening. Also used to maintain tension on valves and bearings. The springs will return to their specified height repeatedly after constant, intermittent, and cyclic loading.

Use singly, or stack as shown to increase load and deflection. Springs stacked parallel increase the load by the number of springs used. Springs stacked inverted increase the deflection of the spring by the number of springs in the stack while retaining the load of only one across the span of the stack. Springs stacked parallel and inverted increase both load and deflection.

Springs are designed to fit over rods (min. ID) and into holes (max. OD).

Deflection @ Load—Distance the spring compresses when the given load is applied.

Flat Load—Load at which the spring is completely compressed.

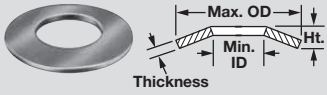

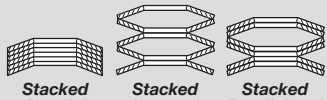

Stacked Parallel *Stacked Inverted* *Stacked Parallel and Inverted*

High-Carbon Steel and Stainless Steel Belleville Disc Springs

High-carbon steel offers higher strength, while ***stainless steel*** has better corrosion resistance and can withstand higher temperatures. Stainless steel springs up to 0.072″ thick conform to AMS 5906, SAE Type 302. Springs 0.073″ and up are Type 17-7 PH stainless steel per AMS 5528.

							Grade 1074 High-Carbon Steel			Stainless Steel		
Min. ID	Max. OD	Thick-ness	Ht.	Defl. @ Load	Load, lbs.	Flat Load, lbs.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.
0.093″	0.187″	0.007″	0.013″	0.003″	6	9.9	12	9712K51	$8.50	12	9713K51	$6.97
0.093″	0.187″	0.010″	0.015″	0.002″	15	27.8	12	9712K52	6.03	12	9713K52	9.53
0.125″	0.250″	0.009″	0.017″	0.004″	11	16.9	12	9712K53	5.35	12	9713K53	7.79
0.125″	0.250″	0.013″	0.020″	0.003″	26	48	12	9712K54	6.03	12	9713K54	5.42
0.125″	0.375″	0.019″	0.028″	0.005″	41	73	12	9712K16	12.92	—	—	—
0.138″	0.281″	0.010″	0.020″	0.005″	15	23	12	9712K11	7.34	—	—	—
0.138″	0.281″	0.013″	0.021″	0.004″	24	43	12	9712K12	6.03	—	—	—
0.138″	0.281″	0.015″	0.023″	0.004″	33	62	12	9712K55	4.39	12	9713K55	5.61
0.156″	0.312″	0.011″	0.022″	0.006″	18	27	12	9712K56	4.73	12	9713K56	5.39
0.156″	0.312″	0.017″	0.025″	0.004″	41	75	12	9712K57	5.11	12	9713K57	6.30
0.164″	0.343″	0.013″	0.024″	0.006″	25	38	12	9712K13	9.63	—	—	—
0.164″	0.343″	0.019″	0.028″	0.005″	55	93	12	9712K14	5.32	12	9713K14	12.24
0.190″	0.375″	0.015″	0.027″	0.006″	34	55	12	9712K58	4.13	12	9713K58	5.21
0.190″	0.375″	0.018″	0.028″	0.005″	46	81	12	9712K15	6.21	—	—	—
0.190″	0.375″	0.020″	0.030″	0.005″	60	110	12	9712K59	3.76	12	9713K59	4.66
0.190″	0.562″	0.019″	0.037″	0.009″	45	67	12	9712K18	13.47	—	—	—
0.190″	0.562″	0.028″	0.042″	0.007″	87	163	12	9712K19	13.63	—	—	—
0.220″	0.437″	0.016″	0.031″	0.008″	40	60	12	9712K17	12.18	12	9713K17	12.24
0.255″	0.500″	0.018″	0.034″	0.008″	45	70	12	9712K61	3.71	12	9713K61	6.29
0.255″	0.500″	0.022″	0.036″	0.007″	65	115	12	9712K62	5.53	12	9713K62	5.36
0.255″	0.500″	0.025″	0.038″	0.007″	95	160	12	9712K63	3.74	12	9713K63	5.70
0.255″	0.500″	0.038″	0.047″	0.004″	190	400	12	9712K64	5.14	12	9713K64	7.84
0.255″	0.637″	0.032″	0.048″	0.008″	118	222	12	9712K21	6.26	—	—	—
0.265″	0.562″	0.042″	0.055″	0.010″	400	567	12	9712K411	5.66	12	9713K411	11.68
0.265″	0.687″	0.052″	0.069″	0.014″	620	884	12	9712K412	14.95	12	9713K412	11.37
0.265″	0.812″	0.061″	0.084″	0.018″	950	1,350	12	9712K413	5.97	12	9713K413	10.61
0.281″	0.875″	0.050″	0.066″	0.013″	310	445	12	9712K414	6.66	6	9713K414	12.45
0.281″	0.875″	0.075″	0.086″	0.009″	720	1,032	12	9712K415	6.66	6	9713K415	12.45
0.317″	0.625″	0.022″	0.042″	0.010″	70	105	12	9712K65	3.92	12	9713K65	8.34
0.317″	0.625″	0.032″	0.048″	0.008″	145	260	12	9712K66	3.97	12	9713K66	6.61
0.317″	0.625″	0.047″	0.059″	0.006″	300	600	12	9712K67	5.37	12	9713K67	11.11
0.317″	0.937″	0.045″	0.067″	0.011″	218	395	12	9712K73	7.76	12	9713K73	15.03
0.328″	0.687″	0.052″	0.068″	0.013″	630	892	12	9712K416	18.61	12	9713K416	11.68
0.328″	0.812″	0.061″	0.081″	0.016″	850	1,214	12	9712K417	5.97	12	9713K417	10.32
0.328″	0.937″	0.070″	0.094″	0.019″	1,130	1,610	12	9712K418	8.32	12	9713K418	15.66
0.344″	1.000″	0.090″	0.102″	0.010″	1,040	1,499	12	9712K419	6.57	12	9713K419	13.53
0.344″	1.125″	0.062″	0.083″	0.017″	470	671	12	9712K421	7.39	6	9713K421	13.68
0.380″	0.750″	0.028″	0.051″	0.012″	110	175	12	9712K68	3.96	12	9713K68	7.62
0.380″	0.750″	0.034″	0.055″	0.011″	166	282	12	9712K69	4.12	12	9713K69	8.39
0.380″	0.750″	0.040″	0.059″	0.010″	235	415	12	9712K71	4.03	12	9713K71	6.00
0.380″	0.750″	0.056″	0.070″	0.007″	430	845	12	9712K72	4.66	12	9713K72	9.05
0.380″	1.125″	0.053″	0.080″	0.014″	299	535	12	9712K79	7.34	12	9713K79	15.06
0.380″	1.125″	0.078″	0.097″	0.009″	597	1,235	12	9712K24	22.97	—	—	—
0.390″	0.812″	0.061″	0.079″	0.014″	810	1,163	12	9712K422	6.66	6	9713K422	12.45
0.390″	0.937″	0.070″	0.092″	0.018″	1,070	1,528	12	9712K423	8.32	12	9713K423	15.66
0.390″	1.250″	0.065″	0.085″	0.016″	420	598	12	9712K424	7.39	6	9713K424	13.68
0.406″	0.875″	0.062″	0.074″	0.010″	476	644	12	9712K425	6.66	6	9713K425	12.45
0.406″	0.875″	0.089″	0.100″	0.009″	1,290	1,871	12	9712K426	6.66	6	9713K426	12.45
0.406″	0.875″	0.109″	0.124″	0.012″	3,230	4,687	12	9712K427	6.66	6	9713K427	12.45
0.406″	1.000″	0.062″	0.092″	0.024″	900	1,262	12	9712K428	6.32	12	9713K428	10.68
0.406″	1.000″	0.105″	0.118″	0.010″	1,830	2,657	12	9712K429	6.57	12	9713K429	11.91
0.406″	1.188″	0.098″	0.119″	0.017″	1,660	2,400	6	9712K431	12.13	6	9713K431	13.68
0.406″	1.188″	0.105″	0.125″	0.016″	1,950	2,812	6	9712K432	12.13	6	9713K432	13.68
0.406″	1.240″	0.072″	0.096″	0.019″	700	994	12	9712K433	7.39	6	9713K433	13.68
0.406″	1.250″	0.074″	0.098″	0.019″	740	1,061	12	9712K434	7.39	6	9713K434	13.68
0.442″	0.875″	0.031″	0.059″	0.014″	135	205	12	9712K22	6.32	12	9713K22	17.82
0.442″	0.875″	0.045″	0.067″	0.011″	270	495	12	9712K23	5.75	6	9713K23	12.03
0.453″	0.937″	0.070″	0.090″	0.016″	1,030	1,471	12	9712K435	8.32	12	9713K435	15.66
0.453″	1.188″	0.089″	0.120″	0.025″	1,890	2,698	6	9712K436	12.13	6	9713K436	13.68
0.460″	0.875″	0.059″	0.083″	0.019″	900	1,272	12	9712K437	6.66	6	9713K437	12.45
0.505″	1.000″	0.035″	0.067″	0.016″	175	260	12	9712K74	4.68	12	9713K74	10.05

(Continued on following page)

For information about Belleville disc springs, see page 1229.

High-Carbon Steel and Stainless Steel Belleville Disc Springs

(Continued from previous page)

High-carbon steel offers higher strength, while ***stainless steel*** has better corrosion resistance and can withstand higher temperatures. Stainless steel springs up to 0.072″ thick conform to AMS 5906, SAE Type 302. Springs 0.073″ and up are Type 17-7 PH stainless steel per AMS 5528.

							Grade 1074 High-Carbon Steel			Stainless Steel		
Min. ID	Max. OD	Thick-ness	Ht.	Defl. @ Load	Load, lbs.	Flat Load, lbs.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.
0.505″	1.000″	0.043″	0.071″	0.014″	250	431	12	9712K75	$6.18	6	9713K75	$6.92
0.505″	1.000″	0.050″	0.075″	0.013″	340	600	12	9712K76	5.24	6	9713K76	9.32
0.505″	1.000″	0.073″	0.091″	0.009″	675	1,335	12	9712K77	6.29	6	9713K77	9.06
0.505″	1.262″	0.060″	0.091″	0.016″	409	731	12	9712K25	16.37	—	—	—
0.505″	1.500″	0.070″	0.104″	0.017″	495	896	12	9712K87	11.29	6	9713K87	15.65
0.531″	1.000″	0.062″	0.085″	0.018″	770	1,090	12	9712K438	6.32	12	9713K438	10.97
0.531″	1.000″	0.089″	0.100″	0.009″	1,070	1,542	12	9712K439	6.97	12	9713K439	11.74
0.531″	1.063″	0.090″	0.106″	0.013″	1,370	1,977	12	9712K44	6.57	6	9713K44	13.68
0.531″	1.063″	0.100″	0.116″	0.013″	1,870	2,712	12	9712K441	6.57	6	9713K441	13.68
0.531″	1.125″	0.062″	0.083″	0.017″	520	736	12	9712K442	7.39	6	9713K442	13.68
0.531″	1.218″	0.074″	0.104″	0.024″	1,040	1,475	12	9712K443	6.34	6	9713K443	13.68
0.531″	1.250″	0.062″	0.092″	0.024″	580	860	12	9712K444	7.39	6	9713K444	13.68
0.531″	1.250″	0.078″	0.103″	0.020″	940	1,429	12	9712K445	7.39	6	9713K445	13.68
0.531″	1.250″	0.090″	0.114″	0.019″	1,390	2,003	12	9712K446	9.63	1	9713K446	4.61
0.531″	1.250″	0.125″	0.143″	0.014″	2,780	4,024	12	9712K447	10.32	1	9713K447	4.61
0.531″	1.375″	0.100″	0.120″	0.016″	1,280	1,846	12	9712K448	11.63	6	9713K448	17.79
0.531″	1.500″	0.095″	0.125″	0.024″	1,370	1,966	12	9712K449	10.97	6	9713K449	19.89
0.567″	1.125″	0.038″	0.073″	0.018″	195	285	12	9712K78	7.26	6	9713K78	11.45
0.567″	1.125″	0.056″	0.084″	0.014″	405	735	12	9712K81	8.24	6	9713K81	12.28
0.593″	1.188″	0.089″	0.115″	0.021″	1,730	2,489	6	9712K451	12.13	6	9713K451	13.68
0.630″	1.250″	0.040″	0.082″	0.021″	230	330	12	9712K82	10.11	6	9713K82	12.55
0.630″	1.250″	0.062″	0.092″	0.015″	475	870	12	9712K83	8.05	6	9713K83	12.82
0.630″	1.250″	0.089″	0.111″	0.011″	980	1,914	12	9712K84	9.16	1	9713K84	5.11
0.630″	1.875″	0.057″	0.115″	0.030″	370	522	6	9712K26	11.39	—	—	—
0.630″	1.875″	0.086″	0.129″	0.022″	730	1,319	6	9712K93	12.24	1	9713K93	13.92
0.630″	1.875″	0.127″	0.158″	0.016″	1,646	3,105	1	9712K28	7.89	—	—	—
0.656″	1.312″	0.098″	0.126″	0.022″	2,050	2,934	12	9712K452	11.63	6	9713K452	17.79
0.656″	1.500″	0.100″	0.140″	0.032″	2,250	3,210	6	9712K453	19.79	6	9713K453	19.89
0.656″	1.625″	0.085″	0.105″	0.016″	570	826	12	9712K454	15.29	1	9713K454	5.97
0.656″	1.750″	0.140″	0.183″	0.034″	4,650	6,686	6	9712K455	11.79	1	9713K455	11.84
0.656″	1.875″	0.057″	0.115″	0.046″	410	525	6	9712K456	12.13	1	9713K456	5.97
0.656″	2.000″	0.150″	0.206″	0.045″	5,630	8,061	1	9712K457	19.50	1	9713K457	11.13
0.687″	2.000″	0.125″	0.161″	0.029″	2,100	3,136	6	9712K458	11.13	1	9713K458	11.13
0.687″	2.375″	0.187″	0.227″	0.032″	5,440	8,147	1	9712K459	29.34	1	9713K459	11.13
0.692″	1.375″	0.044″	0.088″	0.023″	265	375	12	9712K85	10.95	6	9713K98	14.27
0.692″	1.375″	0.067″	0.101″	0.017″	565	1,025	12	9712K462	11.63	6	9713K462	17.79
0.755″	1.500″	0.045″	0.093″	0.024″	283	400	12	9712K86	6.97	6	9713K86	12.82
0.755″	1.500″	0.060″	0.102″	0.021″	455	774	1	9712K27	3.63	1	9713K99	4.16
0.755″	1.500″	0.072″	0.107″	0.018″	665	1,180	12	9712K88	8.82	6	9713K88	18.37
0.755″	1.500″	0.107″	0.134″	0.013″	1,400	2,833	12	9712K89	13.05	1	9713K89	5.79
0.812″	2.250″	0.156″	0.202″	0.037″	4,130	6,206	1	9712K463	27.68	1	9713K463	11.13
0.812″	2.375″	0.156″	0.205″	0.039″	3,930	5,648	1	9712K464	29.34	1	9713K464	11.13
0.812″	3.500″	0.312″	0.346″	0.027″	9,930	14,869	1	9712K465	23.42	—	—	—
0.880″	1.750″	0.057″	0.114″	0.029″	450	650	12	9712K91	12.55	6	9713K91	21.84
0.880″	1.750″	0.085″	0.128″	0.022″	910	1,630	12	9712K92	15.89	1	9713K92	7.32
0.937″	2.750″	0.187″	0.235″	0.038″	4,930	7,246	1	9712K466	31.39	1	9713K466	19.61
1.000″	2.000″	0.065″	0.130″	0.032″	590	860	12	9712K94	13.71	1	9713K94	5.95
1.000″	2.000″	0.084″	0.136″	0.026″	855	1,488	1	9712K29	12.00	—	—	—
1.000″	2.000″	0.097″	0.145″	0.024″	1,180	2,140	12	9712K95	21.03	1	9713K95	10.50
1.000″	2.000″	0.142″	0.177″	0.017″	2,410	4,824	1	9712K31	18.39	—	—	—
1.000″	3.000″	0.135″	0.202″	0.034″	1,720	3,118	1	9712K38	25.18	—	—	—
1.063″	3.500″	0.219″	0.281″	0.050″	6,270	9,362	1	9712K467	15.39	—	—	—
1.063″	4.000″	0.312″	0.372″	0.048″	13,350	19,990	1	9712K468	31.18	—	—	—
1.125″	2.250″	0.073″	0.148″	0.035″	730	1,100	1	9712K33	11.12	—	—	—
1.125″	2.250″	0.159″	0.198″	0.019″	3,005	5,973	1	9712K35	27.68	—	—	—
1.187″	2.437″	0.250″	0.278″	0.022″	9,580	13,921	1	9712K469	5.68	—	—	—
1.250″	2.500″	0.080″	0.160″	0.040″	870	1,260	6	9712K96	20.34	—	—	—
1.250″	2.500″	0.120″	0.180″	0.030″	1,746	3,200	1	9712K97	5.34	1	9713K97	18.50
1.312″	4.000″	0.312″	0.382″	0.056″	15,670	22,670	1	9712K471	36.32	—	—	—
1.312″	4.000″	0.437″	0.477″	0.032″	24,480	35,595	1	9712K472	40.26	—	—	—
1.375″	2.750″	0.087″	0.173″	0.041″	960	1,440	1	9712K36	21.68	—	—	—
1.375″	2.750″	0.132″	0.196″	0.031″	1,950	3,210	1	9712K98	31.16	—	—	—
1.406″	2.750″	0.087″	0.173″	0.069″	1,120	1,440	1	9712K473	11.18	—	—	—
1.406″	2.750″	0.132″	0.196″	0.051″	2,670	3,210	1	9712K474	31.39	—	—	—
1.406″	3.875″	0.250″	0.312″	0.050″	7,710	11,099	1	9712K475	38.95	—	—	—
1.531″	2.750″	0.219″	0.255″	0.029″	7,100	10,138	1	9712K476	10.18	—	—	—
1.531″	3.000″	0.093″	0.189″	0.077″	1,290	1,630	1	9712K477	24.55	—	—	—
1.531″	3.000″	0.143″	0.213″	0.056″	3,120	4,380	1	9712K478	24.34	—	—	—
1.562″	3.250″	0.250″	0.305″	0.044″	10,560	15,273	1	9712K479	24.34	—	—	—
1.687″	4.750″	0.437″	0.497″	0.048″	26,290	38,012	1	9712K481	54.08	—	—	—
1.937″	3.750″	0.281″	0.360″	0.063″	16,890	24,348	1	9712K482	29.61	—	—	—
1.937″	5.000″	0.250″	0.333″	0.066″	6,310	9,003	1	9712K483	43.55	—	—	—
2.000″	4.000″	0.125″	0.250″	0.063″	2,010	2,910	1	9712K42	37.22	—	—	—
2.312″	4.500″	0.250″	0.360″	0.088″	11,620	16,525	1	9712K484	38.29	—	—	—
2.562″	5.000″	0.250″	0.312″	0.050″	5,220	7,532	1	9712K485	44.13	—	—	—
2.562″	5.000″	0.281″	0.387″	0.085″	12,780	18,286	1	9712K486	43.29	—	—	—
2.562″	5.250″	0.394″	0.510″	0.093″	33,800	48,691	1	9712K487	66.26	—	—	—

For information about Belleville disc springs, see page 1229.

Precision Metric Belleville Disc Springs

These springs are made according to the requirements of DIN 2093, which specifies spring dimensions, load rates, and deflections. Springs up to 28.5 mm minimum ID are sold in packages of 12, unless noted. Springs with minimum ID of 30.5 mm and higher are sold individually.

Stainless Steel— Although stainless steel is not listed in DIN specifications, the stainless steel springs are made to DIN requirements.

DIN Group 1— Springs are cold formed.

DIN Group 2— Springs are cold formed and fine blanked; IDs and ODs are machined.

Thickness, mm	Load Tolerance
Type 17-7 PH Stainless Steel	
0.4-2.0	±20%
DIN Groups 1 and 2	
Less than 1.25	+25%, –7.5%
1.25-3.00	+15%, –7.5%
3.01-6.00	+10%, –5.0%

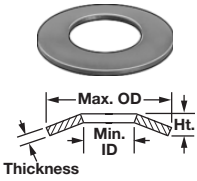

Min. ID, mm	Max. OD, mm	Thick., mm	Ht., mm	Defl. @ Load, mm	Load, N▲	Flat Load, N▲		Pkg.
Type 17-7 PH Stainless Steel								
4.2	8.0	0.4	0.60	0.15	225	288	96475K211	$6.33
5.2	10.0	0.5	0.75	0.19	346	446	96475K215	6.76
6.2	12.5	0.5	0.85	0.32	357	387	96475K216	7.71
6.2	12.5	0.7	1.00	0.20	634	930	96475K221	9.00
6.2	18.0	0.8	1.30	0.38	777	973	96475K238	9.63
8.2	16.0	0.6	1.05	0.41	493	530	96475K331	8.78
8.2	16.0	0.7	1.15	0.34	686	859	96475K233	8.35
8.2	16.0	0.9	1.25	0.25	1,028	1,421	96475K236	8.89
10.2	20.0	0.9	1.45	0.42	1,129	1,418	96475K346	13.63
10.2	20.0	1.0	1.55	0.39	1,455	1,963	96475K247	13.63
12.2	25.0	1.5	2.05	0.36	2,777	4,138	96475K267★	9.09
14.2	27.9	1.0	1.80	0.73	1,334	1,431	96475K273★	8.37
14.2	27.9	1.5	2.15	0.46	2,895	3,979	96475K278★	12.42
16.3	31.5	2.0	2.75	0.46	5,495	8,811	96475K396★	14.90
18.3	35.6	2.0	2.80	0.57	5,221	7,232	96475K322★	14.99
DIN Group 1— *High-Carbon Steel*								
4.2	8.0	0.4	0.60	0.15	209	268	96445K211	2.53
5.2	10.0	0.5	0.75	0.187	325	417	96445K215	2.84
6.2	12.5	0.5	0.85	0.262	293	363	96445K216	3.01
6.2	12.5	0.7	1.00	0.225	659	854	96445K221	3.21
7.2	14.0	0.5	0.90	0.30	279	338	96445K226	3.09
7.2	14.0	0.8	1.10	0.225	796	1,040	96445K227	3.65
8.2	16.0	0.4	0.90	0.375	154	165	96445K231	3.14
8.2	16.0	0.8	1.20	0.287	825	1,059	96445K232	3.87
8.2	16.0	0.9	1.25	0.262	1,013	1,319	96445K236	3.86
8.2	18.0	0.8	1.30	0.375	782	983	96445K238	4.06
8.2	23.0	0.8	1.55	0.562	718	842	96445K257	4.10
9.2	18.0	1.0	1.40	0.30	1,254	1,631	96445K241	4.34
10.2	20.0	0.8	1.35	0.412	748	929	96445K246	3.68
10.2	20.0	1.0	1.55	0.412	1,425	1,815	96445K247	4.63
10.2	20.0	1.1	1.55	0.337	1,521	1,976	96445K251	5.55
10.2	23.0	1.0	1.70	0.525	1,315	1,629	96445K262	5.09
14.2	28.0	1.0	1.80	0.60	1,107	1,342	96445K273	6.40
DIN Group 2— *Grade 6150 Chrome Vanadium Steel*								
10.2	20.0	1.25	1.75	0.365	2,477	3,222	96445K872	$5.36
12.2	25.0	1.5	2.05	0.412	2,926	3,821	96445K267	6.14
14.2	28.0	1.5	2.15	0.487	2,841	3,680	96445K278	7.15
14.3	34.0	1.5	2.55	0.787	2,990	3,704	96445K316	7.82
16.3	31.5	1.25	2.15	0.675	1,913	2,359	96445K284	7.04
16.3	31.5	1.75	2.45	0.525	3,871	5,036	96445K289	7.40
16.3	31.5	2.0	2.75	0.562	6,173	8,054	96445K295	8.74
16.3	40.0	1.5	2.80	0.975	2,749	3,281	96445K327	11.59
18.3	35.5	2.0	2.80	0.60	5,187	6,747	96445K322	11.03
20.4	40.0	1.5	2.65	0.862	2,621	3,201	96445K333★	9.32
20.4	40.0	2.25	3.15	0.675	6,500	8,456	96445K339★	10.71
20.4	40.0	2.5	3.45	0.712	9,390	12,243	96445K345★	11.40
20.4	50.0	2.0	3.50	1.125	4,687	5,745	96445K351★	12.00
20.5	60.0	2.5	4.70	1.65	9,255	11,008	96445K367♦	6.00
25.4	50.0	2.0	3.40	1.05	4,762	5,898	96445K356★	12.18
25.4	50.0	3.0	4.10	0.825	11,976	15,640	96445K359★	12.84
28.5	56.0	3.0	4.30	0.975	11,388	14,752	96445K362♦	6.00 Each
30.5	60.0	3.0	4.70	1.275	13,226	16,792	96445K378	$2.87
31.0	63.0	2.5	4.25	1.312	7,189	8,904	96445K384	3.34
31.0	63.0	3.5	4.90	1.05	15,025	19,545	96445K389	3.55
35.5	70.0	3.0	5.10	1.575	12,287	15,218	96445K411	4.31
36.0	71.0	4.0	5.60	1.20	20,535	26,712	96445K422	5.38
40.5	70.0	4.0	5.7	1.275	24,889	32,274	96445K416	5.00
40.5	70.0	5.0	6.4	1.05	39,410	51,911	96445K873	5.39
41.0	80.0	3.0	5.30	1.725	10,518	12,844	96445K437	4.94
46.0	90.0	5.0	7.00	1.50	31,354	40,786	96445K447	9.00
51.0	100.0	4.0	7.00	2.25	20,674	25,338	96445K551	10.25
51.0	100.0	6.0	8.20	1.65	48,022	62,711	96445K554	15.86
51.0	125.0	6.0	9.40	2.55	44,307	56,254	96445K564	23.21
61.0	125.0	6.0	9.60	2.70	50,722	64,028	96445K567	24.46
71.0	150.0	6.0	10.85	3.637	48,749	58,978	96445K113	38.13
72.0	140.0	5.0	9.00	3.00	27,920	33,843	96445K111	26.60

▲ N=Newtons. 1 Newton=0.2248 lbs. ★ Package quantity is 6. ♦ Package quantity is 1.

Inconel High-Temperature Belleville Disc Springs

Made of Inconel, a high-strength nickel alloy, these springs are corrosion resistant and can withstand temperatures from –400° to +1100° F. Load and flat-load tolerances are ±10%.

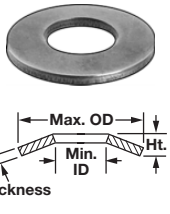

Min. ID	Max. OD	Thick.	Ht.	Defl. @ Load	Load, lbs.	Flat Load, lbs.		
0.317″	0.630″	0.030″	0.044″	0.012″	180	365	97125K31	$3.00
0.322″	0.688″	0.050″	0.063″	0.01″	575	967	97125K33	3.80
0.380″	0.755″	0.040″	0.056″	0.012″	340	580	97125K37	3.86
0.505″	1.005″	0.050″	0.073″	0.019″	525	800	97125K51	6.45
0.630″	1.255″	0.040″	0.074″	0.024″	272	329	97125K65	7.63
0.630″	1.255″	0.050″	0.080″	0.025″	452	592	97125K67	9.06
0.773″	1.500″	0.125″	0.147″	0.019″	3,533	6,200	97125K25	20.66
1.000″	2.005″	0.084″	0.136″	0.034″	1,192	1,921	97125K79	21.22

Stainless Steel Flange Belleville Disc Springs

Designed to fit flange bolt sizes, these springs maintain tension and prevent bolts from loosening in flange applications such as piping, compression joints, and valve and pump connections. They absorb stresses from flange movement caused by mechanical shock and thermal expansion and contraction. This prevents damage to the bolt and joint. Springs are made from 17-7 PH stainless steel.

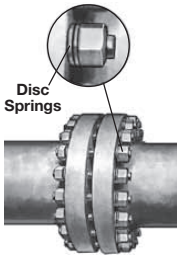

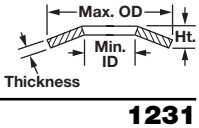

Fits Bolt Size Inch	Fits Bolt Size Metric	Min. ID	Max. OD	Thick.	Ht.	Flat Load, lbs.		
—	8 mm	0.331″	0.591″	0.079″	0.090″	3,822	9294K59	$2.20
3/8″	10 mm	0.390″	0.714″	0.080″	0.086″	1,200	9294K61	1.90
7/16″	—	0.452″	0.820″	0.080″	0.097″	2,800	9294K63	2.94
1/2″	12 mm	0.515″	0.900″	0.089″	0.100″	2,100	9294K11	2.52
—	14 mm	0.567″	0.984″	0.098″	0.116″	4,047	9294K34	2.59
5/8″	16 mm	0.656″	1.145″	0.125″	0.143″	6,000	9294K12	3.70
3/4″	20 mm	0.781″	1.365″	0.131″	0.150″	5,100	9294K13	5.05
7/8″	22 mm	0.906″	1.585″	0.160″	0.180″	7,100	9294K14	8.56
1″	26 mm	1.032″	1.805″	0.168″	0.195″	8,600	9294K15	11.09
1 1/4″	32 mm	1.281″	2.240″	0.190″	0.225″	10,500	9294K17	20.02
1 1/2″	38 mm	1.531″	2.680″	0.250″	0.290″	19,000	9294K19	45.92

Ball Bearing Belleville Disc Springs

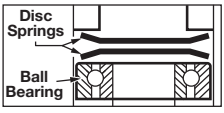

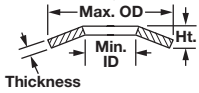

Install these springs against ball bearings to handle axial loads and reduce noise, float, and end play of the bearings. Flat loading is not a factor with these springs because they are only used to apply slight tension against the bearing.

For Inch-Size Ball Bearings—Grade 1075 High-Carbon Steel

For Bearing Trade No.	Min. ID	Max. OD	Thickness	Ht.	Defl. @ Load	Load, lbs.	Pkg. Qty.		Pkg.
R2	0.228″	0.366″	0.0079″	0.0158″	0.0059″	5.7	10	94065K21	$3.20
R3	0.319″	0.492″	0.0098″	0.0196″	0.0074″	8.2	10	94065K26	3.27
R4	0.406″	0.618″	0.0098″	0.0216″	0.0089″	6.5	10	94065K32	3.33
R6	0.539″	0.862″	0.0138″	0.0295″	0.0118″	11.4	10	94065K44	3.82
R8	0.724″	1.110″	0.0158″	0.0433″	0.0207″	23.2	10	94065K54	4.34
R10	1.000″	1.358″	0.0197″	0.0473″	0.0207″	34.6	10	94065K62	6.13

For Metric-Size Ball Bearings

For Bearing Trade No.	Min. ID, mm	Max. OD, mm	Thickness, mm	Ht., mm	Defl. @ Load, mm	Load, N▲	Pkg. Qty.		Pkg.
Grade 1075 High-Carbon Steel									
623/EL3	6.2	9.8	0.20	0.40	0.15	23	10	94065K24	$3.33
624/EL4	7.2	12.8	0.25	0.50	0.19	29	10	94065K28	3.55
625/EL5, 634	8.2	15.8	0.25	0.55	0.23	23	10	94065K34	3.77
607/EL7	10.2	18.8	0.35	0.70	0.26	51	10	94065K41	4.01
608/EL8, 627	12.3	21.8	0.35	0.75	0.30	46	10	94065K42	4.19
609/EL9	14.3	23.7	0.40	0.90	0.38	81	10	94065K46	4.66
6001	17.3	27.7	0.40	1.00	0.45	80	10	94065K52	5.13
6200	17.4	29.7	0.40	1.10	0.53	83	10	94065K56	5.24
6002, 6201	20.4	31.7	0.40	1.10	0.53	81	10	94065K58	5.35
6300	20.4	34.6	0.40	1.10	0.53	61	10	94065K64	6.36
6301	20.4	36.6	0.50	1.30	0.60	110	10	94065K68	6.52
6003, 6202	22.4	34.6	0.50	1.20	0.53	118	10	94065K66	6.90
6203	25.5	39.6	0.50	1.30	0.60	110	10	94065K77	8.47
6004, 6302	25.5	41.6	0.50	1.40	0.68	113	10	94065K79	9.99
6005, 6204, 6303	30.5	46.5	0.60	1.50	0.68	153	10	94065K84	10.95
6205, 6304	35.5	51.5	0.60	1.50	0.68	135	10	94065K85	13.95
6006	40.5	54.5	0.60	1.50	0.68	141	10	94065K87	15.26
6007, 6206, 6305	40.5	61.5	0.70	1.80	0.83	176	2	94065K112	5.43
6306	45.5	71.5	0.70	2.10	1.05	185	2	94065K114	5.96
6008	50.5	67.5	0.70	1.70	0.75	161	2	94065K162	6.51
6207	50.5	71.5	0.70	2.10	1.05	218	2	94065K116	6.51
6010, 6208	55.5	79.5	0.80	2.30	1.13	263	2	94065K124	7.90
6209	60.5	84.5	0.90	2.50	1.20	359	2	94065K128	8.78
6011, 6210	65.5	89.5	0.90	2.50	1.20	335	2	94065K135	9.73
									Each
6013, 6211	70.5	99.0	1.00	2.60	1.20	332	—	94065K142	$6.81
6012	75.5	94.5	1.00	2.20	0.90	325	—	94065K168	5.45
Grade 6150 Chrome-Vanadium Steel									
6014, 6212	75.5	109.0	1.25	2.70	1.09	398	—	94065K149	7.67

▲N=Newtons. 1 Newton=0.2248 lbs.

Wave Disc Springs

Use wave disc springs (also known as wave spring washers) for light thrust loads in small spaces. They're also great for ball bearings because they handle axial loads and reduce noise, float, and end play of the bearings. All springs have three waves, unless noted.

Min. ID	Max. OD	Thick-ness	Ht.	Defl. @ Load	Load, lbs.		Pkg.
Carbon Steel—*Sold in packages of 25*							
0.265″	0.367″	0.0060″	0.030″	0.015″	3.00	9714K24	$11.03
0.350″	0.492″	0.0070″	0.035″	0.015″	4.00	9714K27	11.03
0.397″	0.484″	0.0090″	0.029″	0.009″	4.00	9714K26	11.03
0.440″	0.618″	0.0080″	0.040″	0.015″	4.00	9714K31	11.03
0.459″	0.608″	0.0080″	0.037″	0.012″	4.00	9714K29	11.03
0.531″	0.734″	0.0090″	0.050″	0.020″	5.50	9714K34	11.03
0.588″	0.731″	0.0090″	0.047″	0.017″	4.00	9714K33	11.03
0.650″	0.855″	0.0100″	0.060″	0.030″	5.50	9714K36	11.03
Grade 1074 High-Carbon Steel—*Sold in packages of 25*							
0.719″	0.925″	0.0100″	0.066″	0.033″	7.50	9714K58	11.05
0.780″	1.004″	0.0105″	0.071″	0.036″	8.50	9714K59	11.05
0.839″	1.080″	0.0115″	0.073″	0.037″	10.00	9714K61	12.13
0.856″	1.102″	0.0120″	0.075″	0.038″	11.00	9714K62	12.13
0.901″	1.159″	0.0130″	0.080″	0.040″	12.00	9714K63	12.13
0.961″	1.235″	0.0140″	0.087″	0.044″	15.00	9714K64	12.13
1.051″	1.351″	0.0150″	0.099″	0.050″	18.00	9714K65	12.13
1.201″	1.543″	0.0170″	0.105″	0.053″	21.00	9714K66	13.57
1.201″	1.543″	0.0200″	0.125″	0.063″	31.00	9714K67	14.24
1.239″	1.593″	0.0180″	0.110″	0.055″	24.00	9714K68	14.24
1.261″	1.621″	0.0185″	0.112″	0.056″	25.50	9714K69	14.43
Grade 1074 High-Carbon Steel—*Sold in packages of 2*							
1.404″	1.819″	0.0200″	0.125″	0.063″	30.00	9714K71	3.29

Min. ID	Max. OD	Thick-ness	Ht.	Defl. @ Load	Load, lbs.		Pkg.
Grade 1074 High-Carbon Steel (Cont.)—*Sold in packages of 2*							
1.575″	2.028″	0.0220″	0.140″	0.071″	35.00	9714K72	$3.00
1.658″	2.132″	0.0230″	0.148″	0.075″	38.00	9714K73	3.01
1.872″	2.420″	0.0250″	0.168″	0.086″	45.00	9714K74	3.08
2.057″	2.645″	0.0280″	0.184″	0.094″	57.00	9714K75	6.46
2.200″	2.816″	0.0300″	0.197″	0.100″	65.00	9714K76	8.58
2.420″	3.118″	0.0350″	0.207″	0.103″	88.00	9714K77	12.42
2.603″	3.328″	0.0360″	0.227″	0.115″	90.00	9714K78	13.62
2.740″	3.519″	0.0380″	0.234″	0.118″	100.00	9714K79	14.42
Grade 1074 High-Carbon Steel—*Sold individually*							**Each**
3.047″	3.917″	0.0420″	0.258″	0.130″	120.00	9714K81	$11.34
3.370″	4.300″	0.0450″	0.302″	0.154″	140.00	9714K82	16.84
3.612″	4.627″	0.0470″	0.334″	0.172″	159.00	9714K83	18.94
3.890″	4.997″	0.0500″	0.355″	0.183″	177.00	9714K84	18.04
Type 302 Stainless Steel—*Sold in packages of 25*							**Pkg.**
0.134″	0.183″	0.0035″	0.023″	0.011″	0.37	9714K21 ♦	$10.17
0.194″	0.242″	0.0057″	0.030″	0.015″	0.75	9714K22 ♦	12.13
0.243″	0.305″	0.0066″	0.030″	0.015″	0.75	9714K23 ♦	12.13
0.265″	0.367″	0.0060″	0.030″	0.015″	3.00	9714K25	8.87
0.350″	0.492″	0.0070″	0.035″	0.015″	4.00	9714K28	12.13
0.440″	0.618″	0.0080″	0.040″	0.015″	4.00	9714K32	12.13
0.531″	0.734″	0.0090″	0.050″	0.020″	5.50	9714K35	12.13
0.650″	0.855″	0.0100″	0.060″	0.030″	5.50	9714K37	12.13

♦Has 2 waves.

Curved Disc Springs

Curved disc springs are excellent for light loads in small spaces. Often used to reduce axial end play, they exert relatively light thrust loads. They're designed to fit standard rod and hole sizes. Package quantity is 10, unless noted.

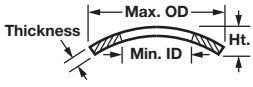

Fits Hole Size	Fits Rod Size	Min. ID	Max. OD	Thick-ness	Ht.	High-Carbon Steel: Defl. @ Load	Load, lbs.		Pkg.	Type 301 Stainless Steel: Defl. @ Load	Load, lbs.		Pkg.
1/4″	#5	0.135″	0.245″	0.0040″	0.049″	0.018″	0.80	9715K22	$7.21	0.026″	1.00	9716K31	$7.50
11/32″	#8	0.174″	0.322″	0.0050″	0.064″	0.024″	1.21	9715K34	7.37	0.034″	1.50	9716K36	7.70
3/8″	#8	0.174″	0.370″	0.0113″	0.039″	0.024″	9.00	9715K37	9.00	0.024″	9.00	9716K72	9.34
11/32″	#10	0.203″	0.322″	0.0050″	0.053″	0.026″	1.12	9715K38	9.00	0.026″	1.12	9716K73	9.65
3/8″	#10	0.200″	0.370″	0.0090″	0.047″	0.015″	3.45	9715K24	7.76	0.028″	4.50	9716K41	9.21
7/16″	#10	0.200″	0.423″	0.0113″	0.047″	0.027″	9.00	9715K43	9.03	0.027″	9.00	9716K42	9.16
7/16″	1/4″	0.269″	0.423″	0.0065″	0.070″	0.025″	1.39	9715K25	7.76	0.037″	1.75	9716K45	9.23
7/16″	1/4″	0.269″	0.423″	0.0082″	0.055″	0.019″	2.50	9715K26	7.76	0.032″	2.50	9716K46	9.26
1/2″	1/4″	0.265″	0.490″	0.0075″	0.091″	0.033″	2.50	9715K27	9.68	0.046″	3.50	9716K62	9.21
1/2″	1/4″	0.265″	0.490″	0.0110″	0.063″	0.034″	7.00	9715K53	9.27	0.034″	7.00	9716K77	9.91
9/16″	1/4″	0.265″	0.551″	0.0145″	0.060″	0.034″	14.00	9715K54	9.32	0.018″	8.66	9716K78	9.50
9/16″	1/4″	0.265″	0.551″	0.0185″	0.052″	0.037″	21.00	9715K55	9.34	0.034″	21.00	9716K47	9.50
1/2″	5/16″	0.331″	0.490″	0.0075″	0.077″	0.028″	1.66	9715K48	9.13	0.041″	2.25	9716K95	8.74
5/8″	5/16″	0.327″	0.612″	0.0130″	0.077″	0.042″	9.00	9715K62	9.11	0.042″	9.00	9716K48	8.74
5/8″	3/8″	0.400″	0.612″	0.0090″	0.098″	0.036″	2.41	9715K29	7.76	0.056″	3.00	9716K51	9.47
5/8″	3/8″	0.400″	0.612″	0.0130″	0.074″	0.043″	6.00	9715K68	9.92	0.024″	4.65	9716K82	10.05
11/16″	3/8″	0.400″	0.672″	0.0100″	0.115″	0.042″	3.52	9715K49	20.66	0.059″	4.50	9716K79	9.50
3/4″	3/8″	0.395″	0.735″	0.0110″	0.129″	0.073″	6.00	9715K72	9.89	0.073″	6.00	9716K52	9.50
3/4″	3/8″	0.395″	0.735″	0.0160″	0.086″	0.050″	12.00	9715K73	9.89	0.050″	12.00	9716K53	9.53
13/16″	1/2″	0.531″	0.795″	0.0113″	0.129″	0.069″	5.00	9715K79	11.76	0.047″	3.43	9716K84	11.55
13/16″	1/2″	0.531″	0.795″	0.0170″	0.098″	0.054″	10.00	9715K81	11.79	0.032″	8.05	9716K85	11.58
1″	1/2″	0.525″	0.980″	0.0140″	0.164″	0.083″	10.00	9715K82	11.79	0.060″	6.91	9716K86	11.89
1″	1/2″	0.525″	0.980″	0.0180″	0.131″	0.073″	15.00	9715K83	11.79	0.045″	11.06	9716K87	11.58
1″	1/2″	0.525″	0.980″	0.0210″	0.110″	0.063″	20.00	9715K84	11.76	0.063″	20.00	9716K88★	8.37
1 1/4″	1/2″	0.525″	1.225″	0.0210″	0.151″	0.085″	25.00	9715K85	11.74	0.052″	18.05	9716K89★	8.38
1″	5/8″	0.663″	0.980″	0.0140″	0.169″	0.092″	7.00	9715K88	11.76	0.062″	5.62	9716K92★	8.89
1″	5/8″	0.663″	0.980″	0.0210″	0.118″	0.067″	14.00	9715K89	11.79	0.039″	11.87	9716K93★	8.89
1 1/8″	3/4″	0.800″	1.103″	0.0160″	0.185″	0.098″	8.00	9715K91	11.76	0.068″	7.00	9716K94★	8.90
1 1/8″	3/4″	0.800″	1.103″	0.0210″	0.138″	0.069″	12.00	9715K92	11.76	0.069″	12.00	9716K96★	8.89

★ Package quantity is 5.

High-Carbon Steel Finger Disc Springs

Finger springs combine the flexibility of disc springs and the axial-load strength of wave springs. They're designed to absorb vibration and reduce noise, end play, and skidding wear on parts rotating at high speed. Made from Grade 1074 high-carbon steel. All have six 0.125″ high "fingers", unless noted. Package quantity is 10.

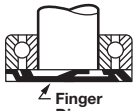

For Bearing Trade No.	Bearing OD	Min. ID	Max. OD	Thick-ness	Defl. @ Load	Load, lbs.		Pkg.
R4, 625, 634	0.630″	0.312″	0.595″	0.010″	0.062″	1	9717K51■	$12.44
626, R4A, 635	0.748″	0.344″	0.728″	0.006″	0.062″	8	9717K52	12.60
608, 627, 636	0.866″	0.453″	0.846″	0.006″	0.062″	7	9717K53	10.42
608, 627, 636	0.866″	0.453″	0.846″	0.008″	0.062″	14	9717K54	9.97
629, 6000	1.024″	0.516″	1.004″	0.006″	0.062″	10	9717K57	10.36
629, 6000	1.024″	0.516″	1.004″	0.007″	0.062″	13	9717K58	10.72
2000, 6903	1.181″	0.688″	1.164″	0.009″	0.062″	14	9717K59	9.64
2000, 6903	1.181″	0.688″	1.164″	0.018″	0.062″	81	9717K62	10.36
6002, 6201	1.260″	0.688″	1.240″	0.008″	0.062″	15	9717K63	10.06
6002, 6201	1.260″	0.688″	1.240″	0.010″	0.062″	23	9717K65	10.36
6202, 6300, 6003	1.378″	0.814″	1.360″	0.011″	0.062″	17	9717K66	9.20
6202, 6300, 6003	1.378″	0.814″	1.360″	0.014″	0.062″	26	9717K67	10.72
6203	1.575″	0.971″	1.555″	0.014″	0.062″	23	9717K68	12.44
6203	1.575″	1.000″	1.555″	0.018″	0.062″	42	9717K69	12.44
6005, 6204, 6303	1.850″	1.189″	1.830″	0.016″	0.062″	26	9717K71	15.68
6205, 6304	2.047″	1.359″	2.022″	0.019″	0.062″	27	9717K72	16.72

■ Has three 0.0937″ high fingers.

Polyurethane Flat Disc Springs

Flat disc springs hold high loads in small spaces, similar to Belleville springs. They are made from polyurethane with a durometer of 95A; tolerance is +3. They're nonmagnetic and resist oxidation, oil, abrasion, and deterioration from exposure to ozone. Load tolerance is ±25%. Deflection range is 0-10% for static applications (not to exceed 10%); 0-20% for dynamic (not to exceed 20%).

When stacked, polyurethane springs must be separated by rigid flat washers (see illustration). The washers must be large enough to cover the entire surface of the disc springs. For washers, see 98017A on page 3220.

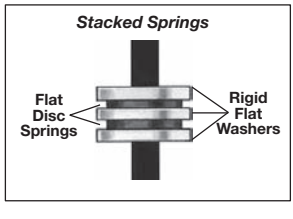

Fits Rod Size	OD	Thick-ness	Defl. @ Load	Load, lbs.	Pkg. Qty.		Pkg.
3/16″	1/2″	0.125″	0.013″	148	6	94045K116	$6.81
1/4″	1/2″	0.250″	0.025″	106	6	94045K122	8.14
5/16″	3/4″	0.125″	0.013″	261	6	94045K142	7.74
3/8″	5/8″	0.250″	0.025″	140	6	94045K161	8.88
1/2″	7/8″	0.250″	0.025″	333	6	94045K212	12.53
1/2″	1 1/16″	0.125″	0.013″	732	6	94045K216	15.41
1/2″	1 3/8″	0.125″	0.013″	1,604	3	94045K226	11.68
5/8″	1 3/16″	0.250″	0.025″	666	3	94045K511	10.23
							Each
3/4″	1 5/16″	0.250″	0.025″	757	—	94045K331	$3.45
3/4″	1 5/8″	0.125″	0.013″	1,143	—	94045K335	4.11
1″	2″	0.250″	0.025″	1,717	—	94045K371	6.12

For information about compression springs, see page 1220.

Type 316 Stainless Steel Compression Springs

O'all Lg.	Spring OD	Wire Dia.	Compressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch		Pkg.
Closed Ends—*Sold in packages of 6*								
1″	5/32″	0.016″	0.41″	0.59″	1.30	2.21	8969T1	$5.98
1″	1/4″	0.020″	0.64″	0.36″	0.57	1.57	8969T2	6.08
1″	1/4″	0.029″	0.49″	0.51″	4.25	8.33	8969T3	5.96
1″	5/16″	0.029″	0.32″	0.68″	3.43	5.04	8969T4	6.08
1″	11/32″	0.041″	0.48″	0.52″	8.48	16.30	8969T5	7.42
1 1/4″	3/8″	0.035″	0.86″	0.39″	1.77	4.54	8969T6	8.61
2″	1/2″	0.047″	1.35″	0.65″	3.80	5.85	8969T16	7.76
2″	3/4″	0.080″	1.44″	0.56″	12.32	17.02	8969T17	10.89
2″	15/16″	0.080″	1.36″	0.64″	8.51	13.30	8969T18	12.04
2 21/32″	5/8″	0.054″	1.77″	0.9″	4.19	4.65	8969T22	10.76

Ultra-Precision Compression Springs

Our ultra-precision compression springs are the ultimate springs for applications that require OD, deflection at load, and spring rate tolerances. They are stress-relieved through heat treatment and have closed and ground flat ends. Type 302 stainless steel springs offer the best corrosion resistance.

Also Available: Springs with a certificate of compliance. Please ask for 9001T999 for steel music wire or 9002T999 for Type 302 stainless steel springs and specify the part number.

OD	Tolerance
0.12″ -0.18″	±0.002″
0.181″-0.24″	±0.003″
0.241″-0.50″	±0.004″
0.501″-0.72″	±0.005″

Deflection @ Load: ±7.5%
Spring Rate Tolerance (lbs./in.): ±5%

O'all Lg.	Spring OD	Wire Dia.	Com-pressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch		Pkg.
Steel Music Wire—*Sold in packages of 3*								
1/4″	0.12″	0.016″	0.109″	0.11″	1.93	17.50	9001T11	$5.03
3/8″	0.24″	0.022″	0.104″	0.20″	2.40	12.00	9001T12	5.03
1/2″	0.12″	0.016″	0.190″	0.22″	1.87	8.50	9001T13	5.03
1/2″	0.12″	0.022″	0.298″	0.14″	4.34	31.00	9001T14	5.03
1/2″	0.18″	0.018″	0.127″	0.25″	1.75	7.00	9001T15	5.03
1/2″	0.30″	0.022″	0.097″	0.29″	1.89	6.50	9001T16	5.03
1/2″	0.36″	0.032″	0.140″	0.25″	4.50	18.00	9001T17	5.03
1/2″	0.48″	0.045″	0.182″	0.26″	9.10	35.00	9001T18	5.03
9/16″	0.24″	0.022″	0.133″	0.29″	2.32	8.00	9001T19	5.03
5/8″	0.24″	0.026″	0.191″	0.30″	3.75	12.50	9001T21	5.03
5/8″	0.24″	0.032″	0.255″	0.24″	6.72	28.00	9001T22	5.03
11/16″	0.30″	0.022″	0.121″	0.42″	1.89	4.50	9001T23	5.03
3/4″	0.18″	0.016″	0.169″	0.51″	1.28	2.50	9001T24	5.03
3/4″	0.36″	0.026″	0.128″	0.42″	2.52	6.00	9001T25	5.03
7/8″	0.48″	0.038″	0.202″	0.53″	5.57	10.50	9001T26	5.03
7/8″	0.48″	0.063″	0.429″	0.35″	22.75	65.00	9001T27	5.03
1″	0.24″	0.032″	0.399″	0.42″	6.72	16.00	9001T28	5.03
1 1/2″	0.60″	0.045″	0.329″	1.11″	7.22	6.50	9001T29	5.23
2″	0.72″	0.055″	0.399″	1.26″	10.71	8.50	9001T31	5.35

O'all Lg.	Spring OD	Wire Dia.	Com-pressed Lg.	Defl. @ Load	Load, lbs.	Rate, lbs./inch		Pkg.
Type 302 Stainless Steel—*Sold in packages of 3*								
1/4″	0.12″	0.016″	0.109″	0.11″	1.60	14.58	9002T11	$6.62
3/8″	0.24″	0.022″	0.106″	0.20″	2.00	10.00	9002T12	6.62
1/2″	0.12″	0.016″	0.190″	0.22″	1.56	7.08	9002T13	6.62
1/2″	0.12″	0.022″	0.309″	0.14″	3.62	25.82	9002T14	6.62
1/2″	0.18″	0.018″	0.131″	0.25″	1.46	5.83	9002T15	6.62
1/2″	0.30″	0.022″	0.099″	0.29″	1.57	5.41	9002T16	6.62
1/2″	0.36″	0.032″	0.143″	0.25″	3.75	14.99	9002T17	6.81
1/2″	0.48″	0.045″	0.186″	0.26″	7.58	29.16	9002T18	6.81
9/16″	0.24″	0.022″	0.137″	0.29″	1.93	6.66	9002T19	6.62
5/8″	0.24″	0.026″	0.198″	0.30″	3.12	10.41	9002T21	6.62
5/8″	0.24″	0.032″	0.264″	0.24″	5.60	23.32	9002T22	6.62
11/16″	0.30″	0.022″	0.124″	0.42″	1.58	3.75	9002T23	6.62
3/4″	0.18″	0.016″	0.175″	0.51″	1.06	2.08	9002T24	6.62
3/4″	0.36″	0.026″	0.132″	0.42″	2.10	5.00	9002T25	6.81
7/8″	0.48″	0.038″	0.207″	0.53″	4.64	8.75	9002T26	6.81
7/8″	0.48″	0.063″	0.442″	0.35″	18.95	54.15	9002T27	6.81
1″	0.24″	0.032″	0.414″	0.42″	5.60	13.33	9002T28	6.62
1 1/2″	0.60″	0.045″	0.339″	1.11″	6.01	5.41	9002T29	7.04
2″	0.72″	0.055″	0.412″	1.26″	8.92	7.08	9002T31	7.46

Elastomeric Die Springs

Don't let their small size fool you—these springs absorb the maximum amount of impact in the minimum amount of space. Made of a polyester-based elastomer that is 10 times more durable than most rubber and 20 times more durable than polyurethane, bumpers resist gasoline, oil, and diesel fuel. Mount with a screw (not included). For indoor and outdoor use. Temperature range is –40° to +120° F. Color is black.

Energy, measured in ″in.-lbs.,″ is calculated in one of two ways. For something that is dropped, energy equals the weight of the item multiplied by the distance it was dropped. For something moving in a horizontal direction, energy equals the mass of the item multiplied by the square of its velocity (0.5 mv^2). *Peak dynamic force* is the load on the bumper at its maximum deflection at its rated energy. *Deflection* is the total travel of the bumper from an uncompressed to compressed state.

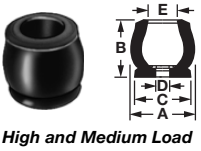

High and Medium Load

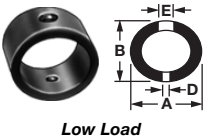

Low Load

Energy Cap., in.-lbs.	Peak Dynamic Force, lbs.	Deflection Dia.	Deflection Ht.	O'all Dia. (A)	O'all Ht. (B)	O'all Lg.	(C)	(D)	(E)		Each
High Load Bumpers—*Durometer is 55D*											
100	700	0.23″	0.36″	0.84″	0.76″	—	0.74″	0.31″	0.40″	9677K11	$7.40
250	1,200	0.32″	0.48″	1.11″	1.01″	—	0.98″	0.31″	0.56″	9677K12	8.14
400	2,000	0.35″	0.55″	1.35″	1.18″	—	1.16″	0.31″	0.66″	9677K13	15.58
700	2,500	0.42″	0.64″	1.55″	1.37″	—	1.35″	0.42″	0.80″	9677K15	18.83
1,100	3,300	0.50″	0.76″	1.83″	1.62″	—	1.61″	0.55″	0.93″	9677K18	22.71
1,400	3,800	0.55″	0.85″	1.96″	1.77″	—	1.71″	0.55″	1.02″	9677K22	26.22
2,000	5,000	0.61″	0.96″	2.25″	2.02″	—	1.97″	0.55″	1.16″	9677K24	30.65
2,500	5,300	0.62″	0.99″	2.43″	2.11″	—	2.08″	0.55″	1.23″	9677K25	32.49
3,000	6,100	0.68″	1.07″	2.54″	2.26″	—	2.23″	0.55″	1.30″	9677K26	35.32
4,000	7,500	0.77″	1.22″	2.81″	2.54″	—	2.46″	0.81″	1.41″	9677K28	44.56
Medium Load Bumpers—*Durometer is 40D*											
50	300	0.29″	0.42″	0.79″	0.82″	—	0.73″	0.31″	0.48″	9732K11	8.74
100	400	0.43″	0.56″	1.02″	1.09″	—	0.98″	0.31″	0.63″	9732K12	9.35
200	600	0.48″	0.64″	1.24″	1.27″	—	1.18″	0.31″	0.77″	9732K13	16.47
300	900	0.53″	0.75″	1.46″	1.48″	—	1.35″	0.31″	0.82″	9732K15	20.49
550	1,300	0.67″	0.89″	1.68″	1.75″	—	1.58″	0.56″	0.98″	9732K18	24.66
700	1,600	0.65″	0.99″	1.88″	1.91″	—	1.73″	0.56″	1.09″	9732K22	28.65
800	1,900	0.72″	1.04″	1.99″	2.03″	—	1.85″	0.56″	1.12″	9732K23	31.02
1,200	2,200	0.79″	1.21″	2.28″	2.33″	—	2.09″	0.55″	1.30″	9732K25	33.87
Low Load Bumpers—*Durometer is 40D*											
10	75	0.39″	0.65″	1.12″	0.97″	0.52″	—	0.22″	0.38″	9724K11	6.09
20	100	0.52″	0.84″	1.44″	1.25″	0.76″	—	0.22″	0.38″	9724K13	6.69
30	150	0.59″	0.99″	1.68″	1.47″	0.78″	—	0.22″	0.38″	9724K15	10.35
50	200	0.73″	1.35″	1.95″	1.72″	1.36″	—	0.22″	0.38″	9724K17	10.73
100	300	0.95″	1.70″	2.48″	2.17″	1.70″	—	0.22″	0.38″	9724K19	12.85
200	475	0.86″	1.57″	2.61″	2.31″	1.82″	—	0.22″	0.38″	9724K23	15.12

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Tie Downs & Cinching Straps	1501
Cable Ties	1515
Clamps & Hangers	1522
U-Bolts	1534
Cable & Hose Carriers	1538
Strut Channel	1546

Shipping

Packaging Supplies	1556
Force Gauges	1577
Scales	1580
Counters	1590

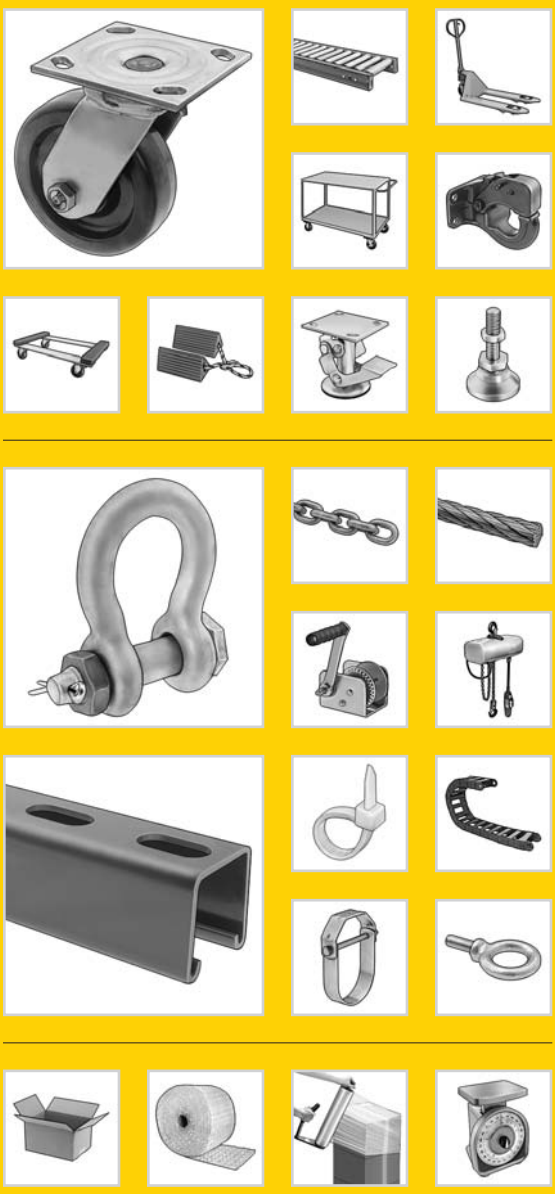

For replacement rollers, see pages 1242-1243.

Roller Conveyors and Stands

Easily move light-to-medium weight flat- and uneven-bottom objects. *Note:* Capacities are based on an evenly distributed load with a stand at each end. Capacities for 10-ft. lengths can be increased to those listed for 5-ft. lengths by adding a center stand. The length of the material you're conveying should be at least three times the roller spacing.

Conveyors

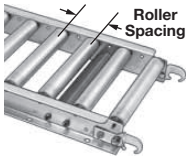

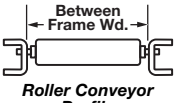

Roller Conveyor Profile

Frames are 2½″ high and have two hooks at one end to connect conveyor sections. Rollers have ¼″ dia. spring-loaded axles and steel ball bearings.

1⅜″ dia. rollers project 3/16″ above the frame. Overall conveyor height is 2 11/16″.

1.9″ dia. rollers project ½″ above the frame. Overall conveyor height is 3″.

Steel conveyors are stronger than aluminum and have a galvanized finish.

Aluminum conveyors are lighter than steel with better corrosion resistance.

Also Available: 90° curves. Please ask for 5825K777 and specify conveyor overall width, roller diameter, and material (steel or aluminum).

O'all Wd.	Between Frame Wd.	5-ft. Lengths: Cap., lbs./ft.	3″ Roller Spacing		1½″ Roller Spacing		10-ft. Lengths: Cap., lbs./ft.	4½″ Roller Spacing		3″ Roller Spacing		1½″ Roller Spacing	
1⅜″ Dia. Rollers—Steel													
12″	10″	200	5825K24	$109.65	5825K81	$171.93	50	5825K19	$160.00	5825K15	$196.84	5825K11	$325.61
15″	13″	200	5825K25	118.25	5825K82	187.54	50	5825K21	167.89	5825K16	209.65	5825K12	347.37
18″	16″	200	5825K26	123.51	5825K83	196.49	50	5825K22	178.25	5825K17	218.95	5825K13	368.07
24″	22″	200	5825K27	135.61	5825K84	223.68	50	5825K23	198.95	5825K18	245.79	5825K14	410.53
1⅜″ Dia. Rollers—Aluminum													
12″	10″	100	58245K81	116.83	58245K61	178.33	30	58245K41	161.67	58245K31	208.33	58245K21	345.00
15″	13″	100	58245K82	121.67	58245K62	191.67	30	58245K42	165.50	58245K32	220.00	58245K22	368.33
18″	16″	100	58245K83	145.17	58245K63	199.67	30	58245K43	184.50	58245K33	234.83	58245K23	392.00
24″	22″	100	58245K87	146.67	58245K64	233.17	30	58245K47	211.67	58245K37	266.50	58245K27	465.00

O'all Wd.	Between Frame Wd.	5-ft. Lengths: Cap., lbs./ft.	4½″ Roller Spacing		3″ Roller Spacing		10-ft. Lengths: Cap., lbs./ft.	6″ Roller Spacing		4½″ Roller Spacing		3″ Roller Spacing	
1.9″ Dia. Rollers—Steel													
12″	10″	200	5675K81	$113.64	5675K17	$133.09	50	5675K31	$154.00	5675K21	$194.91	5675K11	$233.82
15″	13″	200	5675K82	120.18	5675K18	141.82	50	5675K32	158.00	5675K22	208.55	5675K12	256.55
18″	16″	200	5675K83	127.45	5675K19	154.18	50	5675K33	164.55	5675K23	226.36	5675K13	275.09
24″	22″	200	5675K85	143.09	5675K28	173.27	50	5675K35	175.82	5675K25	254.73	5675K15	312.73
26″	24″	200	5675K86	149.18	5675K29	180.09	50	5675K36	199.09	5675K26	267.45	5675K16	330.73

Stands

Bolt-On

Portable

Mobile

Stands are steel with a blue powder-coated finish. *Note:* Stands are compatible only with the conveyors listed above.

Bolt-On— Stands attach to conveyor frames with 5/16″-18 bolts (not included). Mounting plates adjust to allow you to set the conveyor at a decline.

Portable— Conveyor rests on top of the stand.

Mobile— Stands have four swivel casters with brakes. Conveyor rests on top of the stand.

For O'all Wd.	17″ to 23″ Ht.		24″ to 30″ Ht.		31″ to 37″ Ht.		38″ to 44″ Ht.	
Bolt-On								
12″	5833K211	$35.56	5833K311	$39.33	5833K411	$42.11	5833K511	$44.00
15″	5833K212	36.44	5833K312	41.33	5833K412	44.00	5833K512	47.11
18″	5833K213	37.11	5833K313	42.00	5833K413	44.78	5833K513	47.56
24″	5833K215	38.00	5833K315	43.78	5833K415	46.78	5833K515	49.56
26″	5833K216	39.11	5833K316	44.44	5833K416	47.89	5833K516	50.44
	12″ to 18″ Ht.		**18″ to 30″ Ht.**		**24″ to 40″ Ht.**		**30″ to 50″ Ht.**	
Portable								
12″	5882K11	$32.77	5882K16	$36.38	5882K22	$37.45	5882K27	$41.70
15″	5882K12	33.83	5882K17	37.45	5882K23	39.36	5882K28	41.91
18″	5882K13	34.68	5882K18	38.09	5882K24	40.00	5882K29	42.45
24″	5882K15	37.45	5882K21	40.00	5882K26	41.70	5882K32	45.32
Mobile—For 10-ft. conveyor lengths								
12″	_____	_____	5837K21	146.00	5837K24	150.55	5837K27	151.82
15″	_____	_____	5837K31	147.45	5837K37	153.82	5837K33	156.00
18″	_____	_____	5837K22	147.82	5837K25	154.00	5837K28	156.55
24″	_____	_____	5837K23	153.45	5837K26	158.91	5837K29	161.27

Washdown Roller Conveyors and Stands

Suitable for food equipment and washdown applications, conveyors are made of stainless steel and meet USDA standards. *Note:* Capacities are based on an evenly distributed load with a stand at each end. Capacities for 10-ft. lengths can be increased to those listed for 5-ft. lengths by adding a center stand. The length of the material you're conveying should be at least three times the roller spacing.

Conveyors

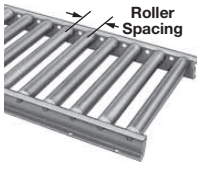

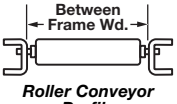

Roller Conveyor Profile

Rollers are 1⅝″ dia. and project 5/16″ above the frame. Roller spacing is 3″. Frames are 2½″ high. Overall conveyor height is 2 13/16″. To join conveyor sections, use a common stand. Rollers have 7/16″ hex spring-loaded axles and plastic-encased stainless steel ball bearings.

Also Available: 90° curves. Please ask for 5811K777 and specify conveyor overall width.

O'all Wd.	Between Frame Wd.	5-ft. Lengths: Cap., lbs./ft.			10-ft. Lengths: Cap., lbs./ft.		
18″	16″	235	5811K32	$543.75	60	5811K22	$1,064.06
24″	22″	235	5811K33	646.88	60	5811K23	1,278.12

Stands

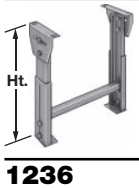

Stands are made of stainless steel and attach to conveyor frames with 5/16″-18 bolts (not included). Mounting plates adjust to allow you to set the conveyor at a decline. *Note:* Stands are compatible only with the conveyors listed above.

For Overall Wd.	17″ to 23″ Ht.		24″ to 30″ Ht.		31″ to 37″ Ht.	
18″	57585K12	$85.34	57585K22	$98.81	57585K32	$112.71
24″	57585K13	88.90	57585K23	102.37	57585K33	115.76

For replacement rollers, see pages 1242-1244.

Heavy Duty Roller Conveyors and Stands

Choose these durable steel conveyors for more demanding shipping and assembly applications. *Note:* Capacities are based on an evenly distributed load with a stand at each end. Capacities for 10-ft. lengths can be increased to those listed for 5-ft. lengths by adding a center stand. The length of the material you're conveying should be at least three times the roller spacing.

Conveyors

Rollers are 1.9″ diameter and project 1/4″ above the frame. Frames are 3 1/2″ high and have coupling plates to connect sections. Overall conveyor height is 3 3/4″. Frames have a green powder-coated finish. Rollers have 7/16″ hex spring-loaded axles and steel ball bearings.

Also Available: 90° curves. Please ask for 5746K888 and specify conveyor overall width.

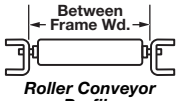

Roller Conveyor Profile

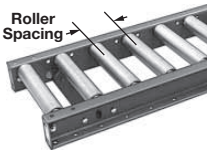

		5-ft. Lengths				10-ft. Lengths					
O'all Wd.	Between Frame Wd.	Cap., lbs./ft.	4 1/2″ Roller Spacing		3″ Roller Spacing		Cap., lbs./ft.	6″ Roller Spacing		4 1/2″ Roller Spacing		3″ Roller Spacing	
13″	10″	620	5746K165	$116.52	5746K164	$148.98	118	5746K163	$199.74	5746K162	$233.03	5746K161	$298.07
16″	13″	620	5746K118	105.92	5746K117	135.45	118	5746K113	182.38	5746K112	211.82	5746K111	270.91
18″	15″	620	5746K142	111.57	5746K141	142.33	118	5746K116	191.18	5746K115	223.29	5746K114	284.67
20″	17″	620	5746K143	117.24	5746K75	149.10	118	5746K71	199.72	5746K45	234.62	5746K41	298.33
24″	21″	620	5746K144	128.72	5746K76	162.72	118	5746K72	217.59	5746K46	257.29	5746K42	325.43
30″	27″	620	5746K145	145.72	5746K77	183.10	118	5746K73	243.90	5746K47	291.43	5746K43	366.33
36″	33″	620	5746K146	162.72	5746K78	203.62	118	5746K74	270.43	5746K48	325.45	5746K44	407.35

Stands

Stands have a green powder-coated finish and bolt to conveyor frames using the included fasteners. Mounting plates adjust to allow you to set the conveyor at a decline. *Note:* Stands are compatible only with the conveyors listed above.

For O'all Wd.	16″ to 21″ Ht.		20″ to 25″ Ht.		24″ to 35″ Ht.		34″ to 45″ Ht.	
13″	5183K65	$44.23	5183K66	$46.09	5183K67	$50.82	5183K68	$58.47
16″	5183K61	44.23	5183K62	46.09	5183K63	50.82	5183K64	58.47
18″	5183K71	44.23	5183K72	46.09	5183K73	50.82	5183K74	58.47
20″	5183K21	44.23	5183K22	46.09	5183K23	50.82	5183K24	58.47
24″	5183K31	44.23	5183K32	46.09	5183K33	50.82	5183K34	58.47
30″	5183K41	44.23	5183K42	46.09	5183K43	50.82	5183K44	58.47
36″	5183K51	44.23	5183K52	46.09	5183K53	50.82	5183K54	58.47

Super Duty Roller Conveyors and Stands

Our strongest roller conveyors are built to handle the heaviest loads. Made of heavy-gauge steel. *Note:* Capacities are based on an evenly distributed load with a stand at each end. Capacities for 10-ft. lengths can be increased to those listed for 5-ft. lengths by adding a center stand. The length of the material you're conveying should be at least three times the roller spacing.

Conveyors

Rollers are 2 1/2″ diameter and project 1/4″ above the frame. Frames are 4″ high and have coupling plates to connect sections. Overall conveyor height is 4 1/4″. Rollers have 11/16″ hex spring-loaded axles and steel ball bearings that are double shielded to keep debris out and to extend bearing life.

Also Available: 90° curves. Please ask for 5747K888 and specify conveyor overall width.

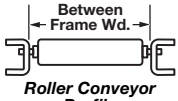

Roller Conveyor Profile

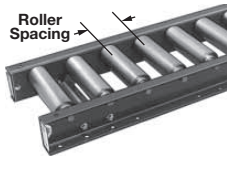

		5-ft. Lengths				10-ft. Lengths					
O'all Wd.	Between Frame Wd.	Cap., lbs./ft.	4 1/2″ Roller Spacing		3″ Roller Spacing		Cap., lbs./ft.	6″ Roller Spacing		4 1/2″ Roller Spacing		3″ Roller Spacing	
12″	9″	800	5747K11	$269.66	5747K101	$342.70	375	5747K46	$395.46	5747K28	$470.76	5747K12	$604.95
18″	15″	800	5747K15	293.61	5747K103	378.58	375	5747K48	432.14	5747K32	519.45	5747K16	675.79
24″	21″	800	5747K21	317.56	5747K105	414.46	375	5747K55	469.12	5747K36	568.14	5747K19	746.63
30″	27″	800	5747K23	350.97	5747K106	464.68	375	5747K56	520.79	5747K38	636.37	5747K22	846.22
52″	49″	800	5747K27	448.29	5747K108	609.31	375	5747K58	669.56	5747K45	833.00	5747K26	1,130.95

Stands

Stands have a blue powder-coated finish and bolt to conveyor frames using the included fasteners. Mounting plates adjust to allow you to set the conveyor at a decline. *Note:* Stands are compatible only with the conveyors listed above.

For O'all Wd.	17″ to 22″ Ht.		23″ to 33″ Ht.		32″ to 46″ Ht.	
12″	5812K51	$66.59	5812K61	$73.92	5812K71	$99.13
18″	5812K53	67.80	5812K63	75.17	5812K73	101.41
24″	5812K55	68.98	5812K65	76.44	5812K75	103.70
30″	5812K56	70.19	5812K66	77.69	5812K76	105.96
52″	5812K59	74.56	5812K69	82.32	5812K79	114.32

Bench-Top Adjustable Roller Conveyors

Designed to rest on your work surface, these conveyors have two sets of axle holes so you can position the conveying surface 1/8″ above the frame or 3/4″ below the frame (position below to use the frame as a guide rail). *Note:* Capacities are based on an evenly distributed load. The length of the material you're conveying should be at least three times the roller spacing.

Rollers are 3/4″ dia. Roller spacing is 1″. Frames are 2 1/2″ high. Overall conveyor height is 2 5/8″. Rollers have 1/4″ dia. spring-loaded axles and steel ball bearings.

Steel conveyors are stronger than aluminum and have a galvanized finish.

Aluminum conveyors are lightweight and corrosion resistant.

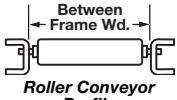

Roller Conveyor Profile

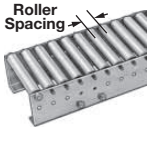

		Steel					Aluminum				
		5-ft. Lengths			10-ft. Lengths		5-ft. Lengths			10-ft. Lengths	
O'all Wd.	Between Frame Wd.	Cap., lbs./ft.			Cap., lbs./ft.		Cap., lbs./ft.			Cap., lbs./ft.	
6″	4 7/8″	120	5677K75	$218.00	35	5677K65	$423.45	100	5677K44	$227.27	25	5677K35	$432.73
12″	10 3/8″	120	5677K76	250.36	35	5677K66	463.45	100	5677K54	272.36	25	5677K36	467.09
15″	13 7/8″	120	5677K77	263.64	35	5677K67	538.00	100	5677K64	287.45	25	5677K37	540.18

Skate Wheel Conveyors & Ball Transfer Plates

For replacement skate wheels, see page 1246.

Lightweight Skate Wheel Conveyors and Stands

Easier to move than roller conveyors, skate wheel conveyors are for light duty loading and unloading of flat-bottom objects. *Note:* Capacities are based on an evenly distributed load with a stand at each end. Capacities for 10-ft. lengths can be increased to those listed for 5-ft. lengths by adding a center stand. The length and width of the material you're conveying should be at least three times the axle spacing.

Conveyors

Wheels are 1.9″ dia. and project 3/8″ above the frame. Frames are 2 1/2″ high and have hooks at one end to connect sections. Overall conveyor height is 2 7/8″. Axles are 1/4″ dia.; axle spacing is 3″. Wheels have steel ball bearings.

Steel frames are stronger than aluminum and have a galvanized finish. *Steel wheels* are durable and have a zinc-plated finish. *Plastic wheels* are nonmarring. Color is black. **To Order:** Please specify steel or plastic wheels.

Aluminum frames are lighter than steel with better corrosion resistance.

Also Available: 90° curves. Please ask for 56755K888 and specify frame material, skate wheel material (for steel conveyors), and conveyor overall width.

		Steel Frames with Steel or Plastic Wheels					Aluminum Frames with Aluminum Wheels				
		5-ft. Lengths			10-ft. Lengths		5-ft. Lengths			10-ft. Lengths	
O'all Wd.	Wheels Per Ft.	Cap., lbs./ft.			Cap., lbs./ft.		Cap., lbs./ft.			Cap., lbs./ft.	
12″	10	175	56755K41	$123.60	35	56755K31	$223.93	130	56755K51	$121.41	16	56755K56	$242.81
15″	10	175	56755K42	136.40	35	56755K32	248.81	130	56755K52	126.91	16	56755K57	253.81
18″	14	175	56755K43	154.91	35	56755K33	279.59	130	56755K53	153.52	16	56755K58	307.05
24″	24	175	56755K44	218.21	35	56755K35	401.32	130	56755K54	217.33	16	56755K61	434.66

Stands

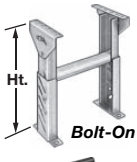

Bolt-On

Portable

Stands are steel. *Note:* Stands are compatible only with the conveyors listed above.

Bolt-On— Stands bolt to conveyor frames using the included fasteners. Mounting plates adjust to allow you to set the conveyor at a decline. Stands have a blue powder-coated finish.

Portable— Conveyor rests on top of the stand. Stands have a galvanized finish.

For Overall Wd.	15″ to 20″ Ht.		19″ to 24″ Ht.		23″ to 28″ Ht.		27″ to 32″ Ht.		31″ to 42″ Ht.	
Bolt-On										
12″	5214K25	$37.53	5214K26	$40.30	5214K27	$43.25	5214K28	$48.68	5214K29	$55.55
15″	5214K31	38.36	5214K32	41.46	5214K33	43.98	5214K34	50.73	5214K35	57.02
18″	5214K71	39.18	5214K72	42.20	5214K73	44.71	5214K74	52.20	5214K75	58.48
24″	5214K82	41.14	5214K83	43.64	5214K84	46.16	5214K85	55.11	5214K86	61.39
			11″ to 17″ Ht.		17″ to 29″ Ht.		23″ to 39″ Ht.		29″ to 51″ Ht.	
Portable										
12″ and 15″			5214K11	$41.51	5214K12	$45.60	5214K13	$48.55	5214K14	$52.84
18″			5214K15	42.75	5214K16	46.89	5214K17	49.74	5214K18	54.18
24″			5214K21	44.11	5214K22	48.21	5214K23	51.18	5214K24	55.52

Flexible Skate Wheel Conveyors

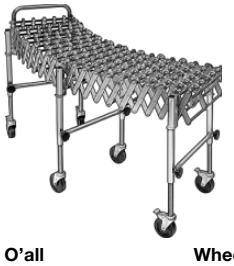

Accordion-style side rails and swivel casters with brakes let you quickly curve, expand, and retract these conveyors. They have 1.9″ dia. skate wheels for flat-bottom objects in assembly lines or packaging and shipping applications. Wheels project 3/8″ above the frame. Conveyors have telescoping legs to adjust the height and brackets to connect sections. *Note:* Capacities are based on an evenly distributed load.

Steel frames are stronger than aluminum and have a zinc-plated finish. Conveyors have a handle that stops boxes at one end. Axles are 5/16″ dia.; axle spacing is 5 1/4″ when the conveyor is fully expanded.

Steel wheels have steel ball bearings for impact resistance.

Nylon wheels resist moisture and corrosion. Wheels are red and have nylon bearings.

Aluminum frames have aluminum side rails and black powder-coated steel legs. Axles are 1/4″ dia.; axle spacing is 5″ when the conveyor is fully expanded. Wheels are made of black polyolefin, which resists moisture and abrasion. Bearings are brass.

O'all Wd.	Wheels Per Axle	O'all Height Range	Cap., lbs./ft.	2′4″ to 8′11″ Lg.		3′3″ to 12′10″ Lg.		6′2″ to 24′8″ Lg.	
Steel Frames with Steel Wheels									
18″	6	28″ to 44″	226	5717K41	$602.50	5717K42	$815.40	5717K43	$1,406.43
24″	8	28″ to 44″	226	5717K44	699.29	5717K45	907.94	5717K46	1,636.90
Steel Frames with Nylon Wheels									
14″	6	28″ to 44″	226	5717K52	535.16	5717K32	699.29	5717K12	1,290.32
18″	6	28″ to 44″	226	5717K53	560.53	5717K33	766.51	5717K13	1,353.17
24″	8	28″ to 44″	226	5717K54	616.35	5717K34	841.59	5717K14	1,597.74
Aluminum Frames with Polyolefin Wheels				2′ to 8′ Lg.		3′ to 12′ Lg.		6′ to 24′ Lg.	
18″	7	28 1/2″ to 41 1/2″	200	5717K55	$680.82	5717K35	$928.51	5717K15	$1,738.51
24″	9	28 1/2″ to 41 1/2″	200	5717K56	730.43	5717K36	1,154.34	5717K16	2,140.05

Multidirectional Miniature Ball Transfer Plates

Also known as ball-bearing parallels, these transfer plates have multidirectional balls that project from the top and bottom to position and move small, heavy items over short distances. Plates are steel with a black-oxide finish and have 3/8″ dia. steel balls. Overall height is 3/8″.

Lg.	Wd.	Cap., lbs.		
6″	2 1/2″	18,000	5764K31	$16.84
12″	2 1/2″	36,000	5764K32	30.38
18″	2 1/2″	54,000	5764K33	46.06

Multidirectional Ball Transfer Plates

Rotate and position material on your floor or bench top. Plates are steel with a blue powder-coated finish and have 1″ dia. steel balls in zinc-plated steel housings. Overall height is 3″.

Note: The length and width of the material you're moving should be at least three times the ball spacing.

Lg.	Wd.	Cap., lbs./Ball	6″ Ball Spacing		4″ Ball Spacing		3″ Ball Spacing	
24″	24″	65	5689K71	$110.68	5689K61	$167.11	5689K51	$237.19
24″	36″	65	5689K72	152.56	5689K62	232.08	5689K52	341.18
24″	48″	65	5689K73	191.39	5689K63	321.00	5689K53	419.71
36″	36″	65	5689K74	225.21	5689K64	343.19	5689K54	464.75
36″	48″	65	5689K75	287.14	5689K65	421.94	5689K55	615.14
48″	48″	65	5689K76	348.54	5689K66	543.33	5689K56	760.68

Replacement Ball Transfer 5689K41 $3.12

For replacement wheels, see page 1246.

Multidirectional Ball Transfer Conveyors and Stands

Use these ball transfer conveyors alone or add them to the Heavy Duty Roller Conveyors on page 1237 to rotate and position material along your conveying line. *Note:* The length and width of the material you're conveying should be at least three times the ball spacing.

Conveyors

Balls project 1/4″ above the frame. Frames are 3 1/2″ high and have coupling plates at each end to connect conveyor sections. Overall conveyor height is 3 3/4″. Frames are steel with a green powder-coated finish and have 1″ dia. steel balls with zinc-plated steel housings.

Overall Wd.	Between Frame Wd.	Cap., lbs./Ball	2-ft. Lengths 4″ Ball Spacing		2-ft. Lengths 3″ Ball Spacing		3-ft. Lengths 4″ Ball Spacing		3-ft. Lengths 3″ Ball Spacing	
16″	13″	65	2271T31	$107.22	2271T1	$177.11	2271T21	$160.88	2271T14	$265.70
18″	15″	65	2271T32	123.77	2271T2	203.57	2271T22	184.92	2271T15	305.28
20″	17″	65	2271T9	139.25	2271T3	230.00	2271T23	208.94	2271T16	345.00
24″	21″	65	2271T33	171.42	2271T4	282.99	2271T24	257.10	2271T17	424.40
30″	27″	65	2271T34	219.46	2271T5	362.38	2271T25	329.20	2271T18	543.51
36″	33″	65	2271T13	256.20	2271T6	441.80	2271T26	401.40	2271T19	662.63

Replacement Ball Transfer 6460K31 $4.00

Plates

Extend your ball transfer conveyor or add multidirectional functionality to your roller conveyor. Plates have 3/8″ Wd. × 5/8″ Ht. mounting slots (fasteners not included) can be mounted to the axle holes of your roller conveyor once rollers are removed. Plates are steel with a green powder-coated finish and have 1″ dia. steel balls with zinc-plated steel housings.

Between Frame Wd.	Cap., lbs./Ball	6″ Lengths 4″ Ball Spacing		6″ Lengths 3″ Ball Spacing	
13″	65	2271T81	$23.08	2271T71	$39.73
15″	65	2271T82	26.90	2271T72	46.02
17″	65	2271T83	30.72	2271T73	52.32
21″	65	2271T84	38.37	2271T74	64.93
27″	65	2271T85	49.77	2271T75	83.83
33″	65	2271T86	58.55	2271T76	102.75

Replacement Ball Transfer 6460K31 $4.00

Stands

Stands bolt to frames using the included hardware. Mounting plates adjust to allow you to set conveyors at a decline; Stands are steel with a green powder-coated finish. *Note:* Stands are compatible only with the conveyors listed above.

For Overall Wd.	16″ to 21″ Ht.		20″ to 25″ Ht.		24″ to 35″ Ht.		34″ to 45″ Ht.	
16″	5183K61	$44.23	5183K62	$46.09	5183K63	$50.82	5183K64	$58.47
18″	5183K71	44.23	5183K72	46.09	5183K73	50.82	5183K74	58.47
20″	5183K21	44.23	5183K22	46.09	5183K23	50.82	5183K24	58.47
24″	5183K31	44.23	5183K32	46.09	5183K33	50.82	5183K34	58.47
30″	5183K41	44.23	5183K42	46.09	5183K43	50.82	5183K44	58.47
36″	5183K51	44.23	5183K52	46.09	5183K53	50.82	5183K54	58.47

Conveyor Rails

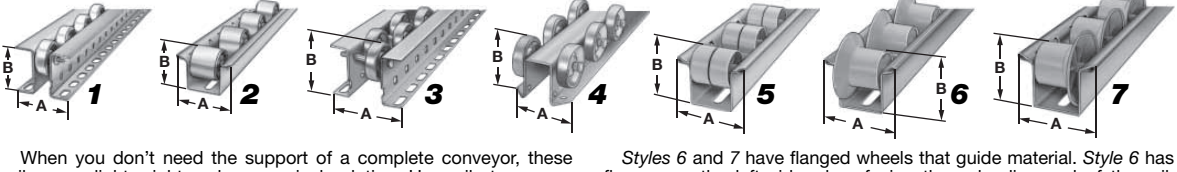

When you don't need the support of a complete conveyor, these rails are a lightweight and economical solution. Use rails to convey packages and pallets in flow racks and in confined spaces.

Frames are galvanized steel. Wheels have steel ball bearings, except ABS plastic wheels, which have a plain bore (no bearings).

Styles 6 and *7* have flanged wheels that guide material. *Style 6* has flanges on the left side when facing the unloading end of the rail. *Style 7* has flanges on the right side when facing the unloading end of the rail.

Wheel Size Dia.	Wheel Size Wd.	Wheel Spacing	Cap., lbs./Wheel	Frame Wd. (A)	O'all Ht. (B)	Mounting Hole Lg.	Mounting Hole Wd.	Mounting Hole Ctr.-to-Ctr.	5-ft. Lengths		10-ft. Lengths	
Durable Steel Wheels—*Finish is zinc plated.*												
1	1 15/16″	9/16″	3″	100	2 7/8″	3″	1″	3/8″	1 1/2″	5880K73	$57.90	5880K71	$107.42
1	2 1/4″	13/16″	3″	300	3″	3 1/8″	1″	3/8″	1 1/2″	5880K41	111.17	5880K422	211.60
2	1 7/8″	1 1/2″	3″	150	3″	2 1/2″	2″	3/8″	3″	5880K152	101.70	5880K53	193.92
3	1 15/16″	9/16″	1 1/2″	100	2 15/16″	3″	1″	3/8″	1 1/2″	5815K61	94.95	5815K41	172.03
4	1 15/16″	5/8″	3″	20	2 3/4″	2 1/2″	1/4″ Dia.	—	2 3/8″	5673K44	108.83	5673K64	190.33
6	1 15/16″	3 3/16″	3″	200	4 27/32″	2 1/2″	2″	3/8″	3″	5880K176	121.20	5880K178	240.47
7	1 15/16″	3 3/16″	3″	200	4 27/32″	2 1/2″	2″	3/8″	3″	5880K175	121.20	5880K177	240.47
Impact-Resistant ABS Plastic Wheels—*Color is white.*												
5	1 5/8″	13/16″	3″	25	3″	2 3/8″	2″	3/8″	3″	5880K122	44.87	5880K23	81.22
5	1 5/8″	13/16″	4 1/2″	25	3″	2 3/8″	2″	3/8″	3″	5880K124	37.48	5880K25	64.28
6	1 5/8″	1 1/8″	3″	30	3″	2 3/8″	2″	3/8″	3″	5880K172	40.98	5880K174	72.95
7	1 5/8″	1 1/8″	3″	30	3″	2 3/8″	2″	3/8″	3″	5880K171	40.98	5880K173	72.95
Nonmarring Nylon Wheels—*Color is black.*												
1	2 7/8″	1 1/4″	3″	330	3 5/8″	3 1/2″	1″	3/8″	1 1/2″	5880K78	95.75	5880K79	168.98

Heavy Duty Conveyor Rails

All-steel construction gives these rails the durability to carry heavy loads. Wheels have double ball bearings for handling high capacities and extending wheel life. Wheel spacing is 25/32″. Frames and wheels have a plain finish. Rails can be drilled for mounting or welded in place.

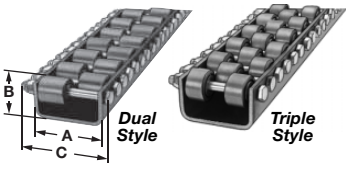

Wheel Size Dia.	Wheel Size Wd.	Cap., lbs./sq. in.	Frame Wd. (A)	O'all Ht. (B)	O'all Wd. (C)	5-ft. Lengths		10-ft. Lengths	
Dual Style									
1 1/8″	1 1/8″	500	3″	1 3/4″	3 3/4″	5161T61	$393.30	5161T62	$985.98
Triple Style									
1 1/4″	27/32″	1,000	3″	2″	3 3/4″	5161T71	612.27	5161T72	1,183.48

Build-Your-Own Corrosion-Resistant Conveyor Rails

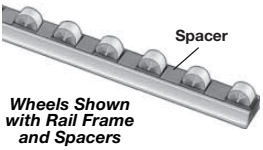

Wheels Shown with Rail Frame and Spacers

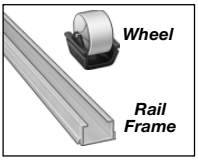

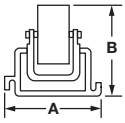

Assemble your own lightweight conveyor rails that are suitable for washdowns. Wheels have a built-in bracket that snaps into the aluminum frame (sold separately). Frames can be cut to your desired length and drilled for mounting. They have interlocking sides so you can connect rails side by side. Minimum wheel spacing is 1⅛″. Use spacers (sold separately) to increase wheel spacing by ⅞″. Multiple spacers can be used.

Wheels are acetal and have a plain bore (no bearings). Wheel diameter is 1″. Color is red for *½″ wide wheels* and white for *9/16″ wide wheels*. Axle is stainless steel for *½″ wide wheels* and nylon for *9/16″ wide wheels*.

	Cap., lbs./Wheel	Frame Wd. (A)	O'all Ht. (B)		Pkg. of 20
Wheels and Spacers					
½″ Wd. Wheels	25	1¼″	1½″	5897K41	$24.00
9/16″ Wd. Wheels	3	1¼″	1½″	5897K21	12.32
Spacers				5897K51	4.22
Rail Frames					
5-ft. Length				5897K75	Each $17.46
10-ft. Length				5897K71	Each $33.80

Multidirectional Conveyor Rails

Ball Transfer Rails

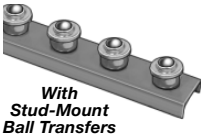

With Stud-Mount Ball Transfers

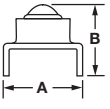

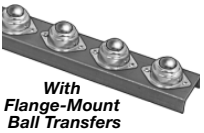

With Flange-Mount Ball Transfers

Ball transfer rails let you rotate material in any direction. Frames are galvanized steel and have 1″ dia. steel balls in zinc-plated steel housings. Weld rails in place.

Stud-mount ball transfers are attached to the rail with a ¼″-20 stud and nut. For replacement ball transfers, see page 1247.

Flange-mount ball transfers are riveted in place.

Ball Spacing	Cap., lbs./Ball	Frame Wd. (A)	O'all Ht. (B)	*5-ft. Lengths*		*10-ft. Lengths*	
With Stud-Mount Ball Transfers							
3″	65	2½″	2½″	5697K71	$67.27	5697K81	$122.36
4″	65	2½″	2½″	5697K72	54.36	5697K82	97.27
With Flange-Mount Ball Transfers							
3″	75	2½″	2 3/16″	5697K11	83.09	5697K31	162.55
4″	75	2½″	2 3/16″	5697K21	65.09	5697K41	132.18
6″	75	2½″	2 3/16″	5697K23	49.74	5697K43	95.64

Low-Profile Ball Transfer Rails

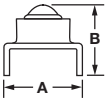

Choose this ball transfer rail when space is limited. A smaller version of the rails shown above, it has ¾″ dia. steel balls that let you rotate material in any direction. Frame is steel with a black powder-coated finish and includes fasteners for mounting. Not rated for capacity.

Ball Spacing	Frame Wd. (A)	O'all Ht. (B)	*18″ Length*	
1½″	2″	1¼″	5895K1	$24.80

Skate Wheel Rails

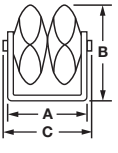

Wheels have miniature rollers that move material across the width as well as the length of the rails. Frames are galvanized steel and have ¼″ dia. holes for mounting (fasteners not included). Wheels are 1.9″ dia. and 1 5/16″ wide. They're made of corrosion-resistant acetal and have a plain bore (no bearings). Color is gray. For replacement wheels, see page 1246.

Wheel Spacing	Cap., lbs./Wheel	Frame Wd. (A)	O'all Ht. (B)	O'all Wd. (C)	*5-ft. Lengths*		*10-ft. Lengths*	
2″	25	1½″	2½″	2 5/32″	57705K71	$389.47	57705K72	$670.18
4″	25	1½″	2½″	2 5/32″	57705K73	219.30	57705K74	426.32

Roller Conveyor Rails with Package Stop

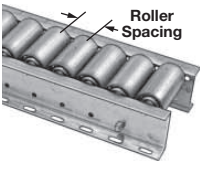

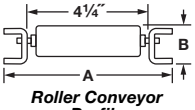

Roller Conveyor Profile

Support heavy loads in pallet flow and conveying applications. The removable package stop prevents material from falling off the rail. Frames and rollers are steel with a galvanized finish. Roller diameter is 1.9″; roller spacing is 2″. Rollers have steel ball bearings. Mounting slots are ⅞″×⅜″ and spaced 2″ center-to-center.

Cap., lbs./Roller	Frame Wd. (A)	O'all Ht. (B)	*5-ft. Length*		*10-ft. Length*	
200	6½″	3½″	5235T52	$141.33	5235T51	$291.67

Heavy Duty Belt Conveyors

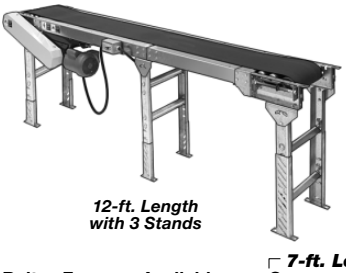

12-ft. Length with 3 Stands

Move heavy boxes and irregularly shaped items in assembly line, sorting, and packing applications. Conveyors have a 3½″ high galvanized steel bed, a black PVC belt, and a ½-hp totally enclosed fan-cooled motor. Conveyors run at 60 fpm and include stands that adjust the overall conveyor height from 34″ to 38″. Frames have coupling plates to connect sections. *Note:* Capacities are based on an evenly distributed load.

120-volt AC conveyors have single-phase motors with an on/off switch and a 10-ft. power cord with a three-prong plug. *230/460-volt AC* conveyors have three-phase motors with connections for hardwiring. **To Order:** Please specify voltage.

Also Available: Conveyors with a ½-hp, 90-volt DC motor and a variable speed range of 7-60 fpm. Please ask for 5816K888 and specify belt width and conveyor length.

Also Available: Replacement belts and other replacement parts. For belts, please ask for 5816K666 and specify belt width and conveyor length. For other replacement parts, please ask for 5816K777 and specify belt width and part desired.

Belt Wd.	Frame Wd.	Available AC Voltage	*7-ft. Length with 2 Stands* Cap., lbs.			*12-ft. Length with 3 Stands* Cap., lbs.		*22-ft. Length with 4 Stands* Cap., lbs.		
12″	17″	120, 230/460	498	5816K41	$1,823.26	487	5816K43	$1,989.54	465	5816K47	$2,318.88
20″	25″	120, 230/460	463	5816K51	1,933.65	445	5816K53	2,193.54	408	5816K57	2,713.33
24″	29″	120, 230/460	445	5816K52	1,989.06	423	5816K54	2,290.97	380	5816K58	2,897.74

Bench-Top Belt Conveyors

A top-mount motor allows these conveyors to sit right on your bench top, so there's no need for brackets or stands. Guide rails extend 1″ above the conveyor's surface to keep parts from falling off the belt. Conveyors have a 4″ high steel bed, a brown neoprene belt, and a 1/4-hp motor. They operate on 120 volts AC and include a 12-ft. power cord with a three-prong plug.

Note: Capacities are based on an evenly distributed load.

Also Available: Replacement belts. Please ask for 5900K888 and specify belt width and conveyor length.

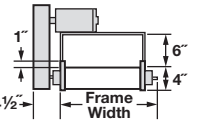

Belt Wd.	Frame Wd.	Cap., lbs.	Speed, fpm	5-ft. Lengths		10-ft. Lengths	
Fixed Speed							
6″	8½″	200	60	5900K52	$1,231.67	5900K62	$1,361.67
12″	14½″	200	60	5900K54	1,280.00	5900K64	1,456.67
Variable Speed							
6″	8½″	200	5-60	5900K781	1,783.33	5900K785	1,906.67
12″	14½″	200	5-60	5900K782	1,830.00	5900K786	1,996.67

Ready-To-Run Mini Belt Conveyors

Run these conveyors right out of the box—plug in and go. Also known as low-profile conveyors. Add surface-mounting brackets (sold separately) for countertop use or two stands (sold separately) for freestanding applications. *Note:* Capacities are based on an evenly distributed load.

Light Duty Aluminum Mini Conveyors

Lightweight and corrosion resistant, conveyors are made of aluminum with a stainless steel bed. T-slotted side rails let you quickly mount items to the conveyor without drilling. T-slot width is 10 mm. Conveyors have a 1⅞″ high bed, an FDA-compliant white urethane belt, and a 1/30-hp motor. They operate on 120 volts AC.

Fixed-speed conveyors have a 7-ft. power cord with a three-prong plug.

Variable-speed conveyors have a 5-ft. power cord with a three-prong plug.

Also Available: Cleated belting. Please ask for 5734K999 and specify belt width, conveyor length, cleat height, and cleat spacing.

Also Available: Replacement belting. Please ask for 5734K91 and specify belt width and conveyor length.

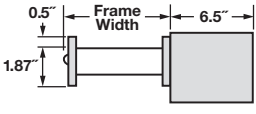

Conveyor Shown with Two Stands and Cross Brace

Belt Wd.	Frame Wd.	3-ft. Lengths		5-ft. Lengths		8-ft. Lengths	
Fixed Speed—To Order: *Please specify speed: 9, 15, 21, or 35 fpm*							
1¾″	2½″	5734K211	$1,133.12	5734K311	$1,312.38	5734K411	$1,681.92
2¾″	3½″	5734K221	1,164.03	5734K321	1,358.46	5734K421	1,764.98
3¾″	4½″	5734K231	1,184.74	5734K331	1,388.94	5734K431	1,824.08
6″	6¾″	5734K241	1,264.09	5734K341	1,489.86	5734K441	1,929.31
8″	8¾″	5734K251	1,320.45	5734K351	1,598.52	5734K451	2,065.95
12″	12¾″	5734K261	1,396.83	5734K361	1,697.74	5734K461	2,211.77
Variable Speed—To Order: *Please specify speed range: 3-15, 6-35, or 10-58 fpm*							
1¾″	2½″	5734K216	1,596.35	5734K316	1,697.74	5734K416	2,122.14
2¾″	3½″	5734K226	1,627.63	5734K326	1,768.74	5734K426	2,197.74
3¾″	4½″	5734K236	1,647.86	5734K336	1,792.31	5734K436	2,263.49
6″	6¾″	5734K246	1,720.11	5734K346	1,876.92	5734K446	2,368.12
8″	8¾″	5734K256	1,785.78	5734K356	1,997.74	5734K456	2,497.74
12″	12¾″	5734K266	1,863.03	5734K366	2,134.97	5734K466	2,549.91

Speed, fpm	Cap., lbs.
Fixed-Speed Conveyors	
9	65
15	40
21	35
35	30
Variable-Speed Conveyors	
3-15	60
6-35	50
10-58	30

Accessories for Light Duty Aluminum Mini Conveyors

Stands mount to conveyors with the included fasteners and have leveling feet to compensate for uneven floors. Base is 14″ wide. Made of aluminum.

Stand Height		
24″ to 36″	5734K521	$262.15
30″ to 48″	5734K522	262.15

Cross braces are recommended for all stands to add stability. Made of aluminum.

For Conveyor Lg.		
3 ft.	5734K531	$75.92
5 ft.	5734K532	75.92
8 ft.	5734K533	75.92

Surface-mounting brackets attach to conveyors with the included fasteners and mount to a surface with 1/4″ fasteners (not included). Made of steel with a black painted finish.

(A)	(B)		
3″	2″	5734K511	$16.69
5″	3″	5734K512	20.15

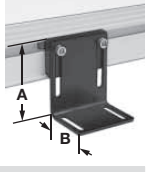

Heavy Duty Steel Mini Conveyors

Steel construction and greater horsepower give these conveyors higher capacities and speeds. Conveyors have a 1⅞″ high bed, aluminum side rails, an FDA-compliant white urethane belt, and a 1/3-hp motor. They operate on 120 volts AC and include an 8-ft. power cord with a three-prong plug. Frame has a tan powder-coated finish.

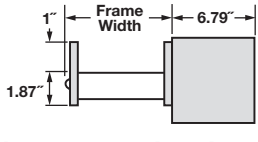

Conveyor Shown with Two Stands and Cross Braces

Belt Wd.	Frame Wd.	Cap., lbs.	3-ft. Lengths		5-ft. Lengths		10-ft. Lengths	
Fixed Speed—To Order: *Please specify speed: 20, 40, 60, or 120 fpm*								
6″	6¼″	135	5861K75	$1,438.46	5861K76	$1,549.35	5861K78	$2,021.17
12″	12¼″	270	5861K83	1,762.77	5861K84	1,935.38	5861K85	2,635.26
Variable Speed—To Order: *Please specify speed range: 10-20, 20-40, 30-60, or 60-120 fpm*								
6″	6¼″	135	5861K86	1,843.32	5861K91	1,954.22	5861K92	2,426.03
12″	12¼″	270	5861K93	2,167.63	5861K94	2,340.25	5861K99	3,040.12

Accessories for Heavy Duty Steel Mini Conveyors

Stands mount to conveyors with the included fasteners and have leveling feet to compensate for uneven floors. Base is 16″ wide. Made of steel with a tan powder-coated finish.

Stand Height		
16″ to 24″	5861K905	$233.29
23″ to 36″	5861K906	248.98
35″ to 48″	5861K907	252.12
47″ to 60″	5861K908	272.00

Cross braces are recommended for all stands to add stability. Made of steel with a tan powder-coated finish.

For Conveyor Lg.		
3 ft.	5861K909	$177.85
5 ft.	5861K911	193.54
10 ft.	5861K912	232.25

Surface-mounting brackets mount conveyors to a work surface. Mounting fasteners included. Made of steel with a zinc-plated finish.

(A)	(B)		
4 13/16″	1¼″	5861K463	$35.00

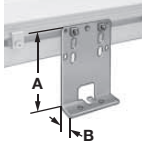

Powered Roller Conveyors

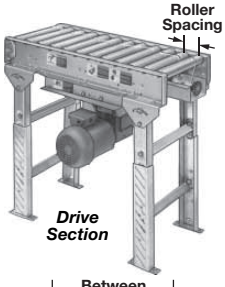

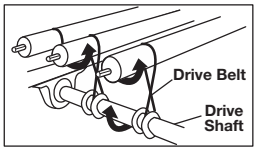

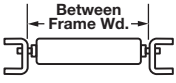

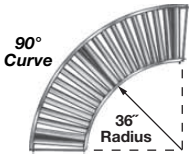

Also known as line-shaft and live-roller conveyors, these are driven by a common drive shaft and urethane belts. Conveyors run at a constant speed of 60 fpm. The drive shaft continues to run even when the accumulation of packages may cause some rollers to stop turning.

Rollers are 1.9″ dia. and have a single groove to accommodate the drive belts. Roller spacing is 3″. Rollers and frames are steel with a galvanized finish, unless otherwise stated. Rollers have steel ball bearings and 7/16″ hex axles. Frames are 5½″ high and have coupling plates to connect sections. Stands bolt to the conveyor frames and adjust the overall conveyor height from 36″ to 48″. For replacement rollers, see page 1244. *Note:* Capacities are based on an evenly distributed load.

Drive sections drive up to 60 ft. of conveyor on either side and can be hardwired for material flow in either direction. They have a ½-hp, three-phase, totally-enclosed fan-cooled motor that operates on 230/460 volts AC.

Extensions connect to drive sections to lengthen the conveyor.

90° curves have tapered rollers that keep packages centered. Rollers are zinc-plated steel.

Also Available: Replacement rollers and stands. Please ask for 5898K777 and specify roller or stand and conveyor part number. For other replacement parts, please ask for 5898K888 and specify part required.

Overall Wd.	Between Frame Wd.	Cap., lbs./ft.	DRIVE SECTION 3-ft. Length with 2 Stands		EXTENSION 5-ft. Length with 1 Stand		EXTENSION 7-ft. Length with 1 Stand		EXTENSION 10-ft. Length with 2 Stands		90° CURVE 36″ Radius with 1 Stand	
16″	13″	60	5898K11	$1,152.84	5898K12	$496.95	5898K13	$673.54	5898K14	$885.39	5898K18	$1,609.31
19″	16″	60	5898K21	1,160.10	5898K22	523.48	5898K23	710.11	5898K24	892.01	5898K28	1,646.17
25″	22″	60	5898K31	1,212.67	5898K32	576.51	5898K33	708.48	5898K34	934.44	5898K38	1,732.87
35″	32″	60	5898K81	1,263.62	5898K82	664.88	5898K83	840.48	5898K84	1,065.66	5898K85	1,979.40

Air-Powered Vacuum Conveyors

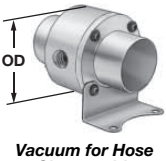

Vacuum for Hose Shown with Mounting Bracket

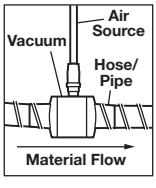

Attach hose, duct hose, or pipe to these vacuums to create a powerful inline conveyor that moves plastic pellets, scrap trim, sawdust, and other bulk solids. A small amount of compressed air at the inlet produces a vacuum at one end and a high-output flow at the other. Vacuums have no moving parts and require minimal maintenance. A complete conveying system requires a vacuum, hose or pipe, filter, regulator (to control flow), and air hose. For filters and regulators, the max. scfm rating at 80 psi should be equal to or greater than the air consumption of the vacuum. See pgs. 269-272 for hose, pgs. 229-237 for duct hose, pg. 48 for pipe, pg. 976 for filters and regulators, and pg. 240 for air hose.

Vacuums for NPT-threaded pipe have male threads on the intake and exhaust ends.

Aluminum vacuums are lightweight and corrosion resistant. ***Steel vacuums*** are more durable than aluminum so they're better for larger, more abrasive objects such as steel shot and glass beads.

Mounting brackets are made of stainless steel. Mounting fasteners not included.

Also Available: Stainless steel vacuums. Please ask for 2379T888 and specify hose/pipe size.

For Hose ID/ Pipe Size	Vacuum ID	Vacuum OD	Vacuum Lg.	Air Inlet, NPT Female	Aluminum Vacuum scfm @ 80 psi			Steel Vacuum scfm @ 80 psi			Mounting Bracket Mtg. Hole Dia.		
For Hose													
3/4″	1/2″	1 7/8″	3 7/8″	1/4″	11	2379T11	$98.31	26	2379T51	$396.84	3/16″	2379T31	$24.22
1″	3/4″	2 1/8″	3 7/8″	1/4″	15	2379T12	117.87	35	2379T52	444.11	3/16″	2379T31	24.22
1 1/4″	1″	2 3/8″	3 7/8″	1/4″	26	2379T13	149.02	49	2379T53	490.13	5/16″	2379T32	28.11
1 1/2″	1 1/4″	2 3/4″	4 3/8″	3/8″	33	2379T14	180.07	55	2379T54	531.18	5/16″	2379T32	28.11
2″	1 3/4″	3 1/4″	4 3/8″	3/8″	45	2379T15	212.15	75	2379T55	720.18	5/16″	2379T33	32.22
2 1/2″	2 1/4″	3 3/4″	4 3/8″	3/8″	59	2379T16	230.52	—	—	—	5/16″	2379T33	32.22
3″	2 3/4″	4 1/4″	5 5/8″	1/2″	69	2379T17	366.18	—	—	—	5/16″	2379T34	39.31
4″	3 3/4″	5 1/4″	5 5/8″	1/2″	95	2379T18	517.03	—	—	—	5/16″	2379T34	39.31
For NPT-Threaded Pipe													
3/4″	1/2″	1 7/8″	3 7/8″	1/4″	11	2379T35	112.84	26	2379T61	493.87	3/16″	2379T31	24.22
1″	3/4″	2 1/8″	4 1/4″	1/4″	15	2379T36	142.25	35	2379T62	592.15	3/16″	2379T31	24.22
1 1/4″	1″	2 3/8″	4 5/8″	1/4″	26	2379T37	181.47	49	2379T63	654.35	5/16″	2379T32	28.11
1 1/2″	1 1/4″	2 3/4″	4 5/8″	3/8″	33	2379T38	218.18	55	2379T64	709.09	5/16″	2379T32	28.11
2″	1 3/4″	3 1/4″	4 5/8″	3/8″	45	2379T39	258.31	75	2379T65	766.31	5/16″	2379T33	32.22

Small Diameter Conveyor Rollers

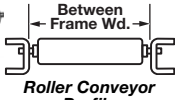

Roller Conveyor Profile

Rollers have spring-loaded axles and steel ball bearings unless otherwise stated.

Galvanized steel rollers are strong and provide some corrosion resistance.

Aluminum rollers are lightweight and corrosion resistant.

PVC rollers are lightweight and nonmarking. Rollers have plastic-encased stainless steel bearings. Temp. range is 30° to 150° F. Color is gray.

Stainless steel rollers provide excellent corrosion resistance for washdown applications. Rollers have plastic-encased stainless steel bearings. Temp. range is 30° to 150° F.

For Between Frame Wd.	Gauge/ Thick.	Cap., lbs.		
3/4″ Roller Dia. — *1/4″ Round Axle*				
Galvanized Steel				
4 7/8″	20	30	2278T11	$8.55
10 3/8″	20	30	2278T15	9.37
13 7/8″	20	30	2278T18	10.03
Aluminum				
4 7/8″	20	20	2278T21	8.71
10 3/8″	20	20	2278T25	9.40
13 7/8″	20	20	2278T28	10.29
Stainless Steel				
4 7/8″	20	20	2278T31	15.03
10 3/8″	20	20	2278T35	19.93
13 7/8″	20	20	2278T38	23.27
0.78″ Roller Dia. — *1/4″ Round Axle*				
PVC				
4″	0.06″	10	2297T11	6.27
8″	0.06″	10	2297T15	6.60
12″	0.06″	10	2297T19	7.16

For Between Frame Wd.	Gauge/ Thick.	Cap., lbs.		
7/8″ Roller Dia. — *1/4″ Round Axle*				
Plain Steel				
4 7/8″	13	45	2287T11	$9.32
10 3/8″	13	45	2287T17	9.83
13 7/8″	13	45	2287T21	11.26
17 7/8″	13	45	2287T25	12.51
1 3/8″ Roller Dia. — *1/4″ Round Axle*				
Galvanized Steel				
10″	18	90	2282T11	6.05
12″	18	74	2282T12	6.66
13″	18	68	2282T13	6.92
16″	18	54	2282T15	7.79
20″	18	41	2282T17	8.22
22″	18	36	2282T19	9.57
24″	18	32	2282T22	10.12
30″	18	23	2282T25	11.89
36″	18	15	2282T28	13.29

For Between Frame Wd.	Gauge/ Thick.	Cap., lbs.		
1 3/8″ Roller Dia. — *1/4″ Round Axle (Cont.)*				
Aluminum				
10″	18	40	2282T31	$6.32
13″	18	40	2282T32	6.68
16″	18	40	2282T35	7.21
18″	18	40	2282T37	7.57
22″	18	40	2282T39	8.29
1 5/8″ Roller Dia. — *7/16″ Hex Axle*				
Stainless Steel				
10″	16	100	2279T11	27.40
12″	16	100	2279T13	31.40
14″	16	100	2279T15	33.80
16″	16	100	2279T17	34.46
18″	16	100	2279T19	38.70
20″	16	100	2279T22	43.44
22″	16	100	2279T24	44.49
28″	16	100	2279T31	48.60

Standard 1.9″ Diameter Conveyor Rollers

Use these rollers to replace any 1.9″ dia. rollers or build a custom conveyor. All rollers have spring-loaded axles.

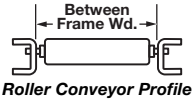

Roller Conveyor Profile

Steel Rollers with 1/4″ Round Axles

Rollers are made of 16-ga. steel with a galvanized finish and have steel ball bearings.

For Between Frame Wd.	Cap., lbs.			For Between Frame Wd.	Cap., lbs.		
6″	125	5890K301	$7.07	16″	125	5890K312	$9.66
10″	125	5890K304	7.93	18″	125	5890K314	10.31
13″	125	5890K306	8.93	22″	125	5890K316	11.09
14″	125	5890K308	9.31	24″	125	5890K318	11.89

Steel Rollers with 7/16″ Hex Axles

General Purpose—Rollers are made of 16-ga. steel with a galvanized finish and have zinc-plated steel ball bearings.

Heavy Duty—These durable rollers are made of 12-ga. steel and have heavy duty zinc-plated steel ball bearings.

Quiet-Roll—Rollers have quiet-running, maintenance-free precision steel ball bearings with a static-control plastic housing. Rollers are made of 16-ga. steel with a galvanized finish. Temp. range is –20° to 165°F.

Quiet-Roll with Tapered Axle—Tapered axles fit securely in worn axle holes. Rollers have quiet-running, maintenance-free precision steel ball bearings with a static-control plastic housing. Rollers are made of 16-ga. steel with a galvanized finish. Temp. range is –4° to 212°F.

Washdown—Stainless steel rollers and axles offer excellent corrosion resistance. Rollers have stainless steel ball bearings in a plastic housing. Temperature range is 10° to 150°F.

For Between Frame Wd.	General Purpose Cap., lbs.			Heavy Duty Cap., lbs.			Quiet-Roll Cap., lbs.			Quiet-Roll with Tapered Axle Cap., lbs.			Washdown Cap., lbs.		
9″	265	2277T11	$7.57	650	2565T41	$29.67	460	2263T1	$17.03	340	5928K11	$21.57	170	2247T1	$45.77
10″	265	2277T12	7.98	625	2565T42	30.51	400	2263T2	17.43	340	5928K12	22.01	170	2247T2	48.17
12″	265	2277T35	8.74	575	2565T43	32.22	330	2263T25	18.34	340	5928K13	22.84	170	2247T4	52.98
13″	265	2277T13	9.12	525	2565T44	33.09	300	2263T3	18.90	340	5928K14	23.24	170	2247T5	55.92
14″	265	2277T41	9.52	450	2565T45	33.96	280	2263T4	19.25	340	5928K15	23.68	170	2247T6	58.28
15″	265	2277T16	9.90	400	2565T48	34.80	260	2263T5	19.65	340	5928K16	24.08	170	2247T7	60.64
16″	265	2277T18	10.29	375	2565T51	35.67	240	2263T6	19.95	340	5928K17	24.49	170	2247T8	63.00
17″	265	2277T19	10.67	350	2565T52	36.51	225	2263T7	20.15	285	5928K29	24.92	170	2247T9	65.36
18″	265	2277T21	11.07	325	2565T53	37.38	210	2263T8	21.31	285	5928K31	25.32	170	2247T11	67.72
19″	265	2277T22	11.45	300	2565T54	38.22	200	2263T9	21.81	285	5928K32	25.76	170	2247T12	70.08
20″	265	2277T56	11.83	290	2565T55	39.09	190	2263T11	22.03	285	5928K33	26.16	170	2247T13	72.44
21″	265	2277T23	12.21	280	2565T56	39.93	180	2263T31	22.88	230	5928K34	26.84	155	2247T14	74.80
22″	265	2277T24	12.62	270	2565T57	40.80	170	2263T12	23.63	230	5928K35	26.97	155	2247T15	77.16
23″	265	2277T25	13.00	250	2565T58	41.64	165	2263T13	23.85	230	5928K36	27.41	155	2247T16	79.52
24″	265	2277T26	13.38	240	2565T59	42.51	155	2263T14	23.93	230	5928K37	27.84	130	2247T37	81.88
25″	265	2277T27	13.76	230	2565T61	43.36	150	2263T15	24.06	175	5928K38	28.24	130	2247T38	84.24
26″	265	2277T28	14.17	220	2565T62	44.22	145	2263T16	24.12	175	5928K39	28.68	130	2247T39	86.60
27″	265	2277T29	14.55	210	2565T63	45.02	135	2263T17	24.48	175	5928K48	29.08	115	2247T41	88.96
28″	265	2277T31	14.93	210	2565T64	45.75	130	2263T18	24.79	175	5928K51	29.49	115	2247T42	91.32
30″	265	2277T32	15.71	190	2565T65	47.56	125	2263T21	25.26	175	5928K52	30.32	105	2247T44	96.04
31″	265	2277T33	16.10	190	2565T66	48.49	120	2263T22	25.36	175	5928K18	30.76	95	2247T45	98.40
32″	265	2277T57	16.48	180	2565T67	49.36	115	2263T26	25.54	175	5928K19	31.16	95	2247T46	99.74
33″	265	2277T34	16.86	170	2565T68	50.29	110	2263T23	25.59	160	5928K21	31.57	95	2247T47	103.12
34″	265	2277T51	17.26	160	2565T69	51.17	110	2263T32	25.86	160	5928K22	31.97	85	2247T48	105.48
35″	265	2277T58	17.62	160	2565T71	52.08	105	2263T33	26.34	160	5928K23	32.41	85	2247T49	107.84
36″	265	2277T59	18.00	155	2565T72	53.00	100	2263T34	26.70	160	5928K24	32.81	85	2247T51	110.20
37″	265	2277T37	18.38	150	2565T73	53.64	100	2263T24	27.07	140	5928K27	33.24	80	2247T52	112.56
39″	265	2277T38	19.17	145	2565T75	55.75	95	2263T27	27.44	140	5928K28	34.08	80	2247T53	117.28

PVC, Polyethylene-Covered, and Polyurethane-Covered Rollers with 7/16″ Hex Axles

Corrosion-Resistant PVC—Choose these nonmarring rollers for light duty applications. Rollers are made of 0.11″ thick PVC and have plastic-encased steel ball bearings. Temp. range is 14° to 176°F. Color is gray.

Nonstick Polyethylene Covered—Rollers are made of 16-ga. steel with a nonremovable cover. Rollers have quiet-running, maintenance-free precision steel ball bearings in a plastic housing. Temperature range is 10° to 150°F. Color is white.

Abrasion-Resistant Polyurethane Covered—The nonremovable polyurethane cover gives these steel rollers extra abrasion resistance. Rollers are made of 16-ga. steel and have quiet-running, maintenance-free precision steel ball bearings in a plastic housing. Temp. range is 10° to 150°F. Color is black.

For Between Frame Wd.	Corrosion-Resistant PVC Cap., lbs.			Nonstick Polyethylene Covered Cap., lbs.			Abrasion-Resistant Polyurethane Covered Cap., lbs.		
9″	40	2255T31	$13.34	150	2210T21	$28.95	150	2446T61	$36.76
10″	40	2255T32	14.27	150	2210T22	30.04	150	2446T62	38.44
12″	40	2255T33	16.06	150	2210T23	32.22	150	2446T63	42.29
13″	40	2255T34	16.96	150	2210T24	33.31	150	2446T64	44.13
14″	40	2255T35	17.87	150	2210T25	34.40	150	2446T65	45.98
15″	40	2255T36	18.75	150	2210T28	35.49	150	2446T68	47.82
16″	40	2255T37	19.65	150	2210T31	36.58	150	2446T71	49.64
17″	40	2255T38	20.58	150	2210T32	37.67	150	2446T72	51.49
18″	35	2255T39	21.48	150	2210T33	38.76	150	2446T73	53.33
21″	25	2255T43	24.17	125	2210T36	42.02	125	2446T76	58.87
22″	25	2255T44	25.10	125	2210T37	43.10	125	2446T77	60.71
24″	20	2255T16	26.88	125	2210T39	45.29	125	2446T79	64.38
30″	10	2255T53	32.30	105	2210T45	51.82	105	2446T85	75.44
39″	—	—	—	65	2210T55	61.62	65	2446T95	92.02

Tapered Rollers for Curved Conveyors

Keep packages on track in curved sections of 1.9″ dia. roller conveyors. Rollers taper from approximately 2½″ diameter on the outside to 1⅝″ on the inside end so packages maintain their orientation through the curve. Rollers are made of 14-ga. steel with a galvanized finish. They have 7/16″ hex spring-loaded axles and steel ball bearings.

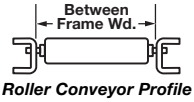

Roller Conveyor Profile

For Between Frame Wd.	Cap., lbs.			For Between Frame Wd.	Cap., lbs.		
15″	250	2245T1	$33.33	21″	250	2245T7	$38.05
16″	250	2245T2	34.25	22″	250	2245T8	38.85
17″	250	2245T3	34.90	24″	250	2245T11	40.42
18″	250	2245T4	35.67	25″	250	2245T12	41.20
19″	250	2245T5	36.48	27″	250	2245T14	42.77
20″	250	2245T6	37.27				

Grooved Rollers for Belt-Driven Conveyors

Single Groove

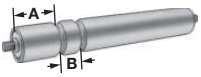

Double Groove

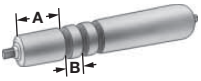

Tapered Triple Groove

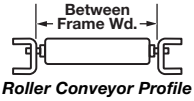

Roller Conveyor Profile

Rollers have grooves to accommodate 3/16″ diameter belts in line-shaft conveyors. (See page 1049 for urethane belts.) All rollers have 7/16″ hex spring-loaded axles and steel ball bearings. Rollers are steel with a galvanized finish.

Single-groove and ***double-groove*** rollers are 1.9″ diameter and made of 16-ga. steel. *Double-groove* rollers can also be used with powered conveyor rollers.

Tapered triple-groove rollers improve package tracking in curved sections of 1.9″ dia. roller conveyors. Rollers taper from approximately 2½″ diameter on the outside to 1⅝″ on the inside end. Rollers are made of 14-ga. steel.

For Between Frame Wd.	Single Groove Cap., lbs.	(A)			Double Groove Cap., lbs.	(A)	(B)			Tapered Triple Groove Cap., lbs.	(A)	(B)		
10″	295	2.7″	2334T51▲	$16.01	225	2.5″	1.3″	2334T81	$12.88	—	—	—	—	—
13″	265	2.7″	2334T62	12.73	225	2.5″	1.3″	2334T72	13.92	290	1.75″	1″	2312T31●	$49.17
15″	265	2.7″	2334T53	13.15	225	2.5″	1.3″	2334T83	14.60	250	2.5″	1″	2312T52	42.67
16″	265	2.7″	2334T63	13.70	225	2.5″	1.3″	2334T73	14.96	250	2.5″	1″	2312T53	43.62
18″	265	2.7″	2334T67	14.26	225	2.5″	1.3″	2334T84	15.64	250	2.5″	1″	2312T55	45.05
21″	265	2.7″	2334T54	15.00	225	2.5″	1.3″	2334T75	15.75	250	2.5″	1″	2312T58	47.42
22″	265	2.7″	2334T64	15.50	225	2.5″	1.3″	2334T76	16.08	250	2.5″	1″	2312T59	48.20
26″	265	2.7″	2334T68	16.67	225	2.5″	1.3″	2334T85	18.44	—	—	—	—	—
27″	265	2.7″	2334T55	16.83	225	2.5″	1.3″	2334T77	17.72	250	2.5″	1″	2312T65	52.12
28″	265	2.7″	2334T66	17.35	225	2.5″	1.3″	2334T78	18.06	250	2.5″	1″	2312T66	52.77
32″	265	2.7″	2334T69	17.00	225	2.5″	1.3″	2334T86	20.52	250	2.5″	1″	2312T67	53.37
33″	265	2.7″	2334T56	18.65	190	2.5″	1.3″	2334T87	20.86	—	—	—	—	—
39″	265	2.7″	2334T57	20.52	110	2.5″	1.3″	2334T88	22.96	—	—	—	—	—

▲Made of 0.15″ thick steel. ●Roller is plain steel.

Powered 1.9″ Diameter Conveyor Rollers

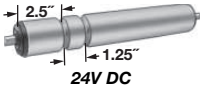

24V DC

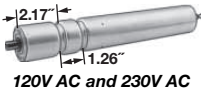

120V AC and 230V AC

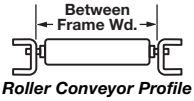

Roller Conveyor Profile

Also known as drive rollers, these rollers connect to other double-groove rollers with 3/16″ diameter belts to power gravity conveyors. (See page 1049 for urethane belts.) All rollers have 7/16″ hex spring-loaded axles and quiet-running precision steel ball bearings that are shielded to keep out dirt and debris.

24-volt DC rollers drive up to nine rollers and have a continuous duty cycle with up to 30 starts and stops per minute. They are made of 16-ga. steel with a galvanized finish. All have a brushless motor and an integrated current-limiting circuit that protects the motor. Temperature range is 32° to 104°F.

120-volt AC and ***230-volt AC*** rollers drive up to five rollers and have a duty cycle of three seconds on, two seconds off. They are made of 1/16″ thick steel with a zinc-plated finish and include a terminal mounting bracket. Temp. range is 14° to 104°F. *120-volt AC* rollers have a single-phase motor. *230-volt AC* rollers have a three-phase motor.

To Order: Please specify voltage and speed.

For Between Frame Wd.	24V DC Cap., lbs.	Available Speeds, fpm			Available in 120V AC and 230V AC Cap., lbs.	Available Speeds, fpm		
13″	70	22-68, 29-88, 45-135	2250T81	$421.25	120	33, 53, 67	2298T71	$501.52
16″	70	22-68, 29-88, 45-135	2250T82	421.25	—	—	—	—
21″	70	22-68, 29-88, 45-135	2250T84	421.25	75	33, 53, 67	2298T74	519.36
22″	70	22-68, 29-88, 45-135	2250T85	421.25	—	—	—	—
27″	70	22-68, 29-88, 45-135	2250T86	421.25	65	33, 53, 67	2298T76	528.50
28″	70	22-68, 29-88, 45-135	2250T87	421.25	—	—	—	—
31″	70	22-68, 29-88, 45-135	2250T88	421.25	55	33, 53, 67	2298T77	537.84

Large Diameter Conveyor Rollers

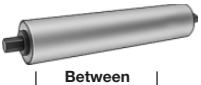

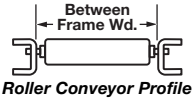

Roller Conveyor Profile

Keep things moving with roller diameters beyond the typical 1.9″.

Aluminum rollers are lightweight and corrosion resistant. They have spring-loaded axles and steel ball bearings.

Steel rollers are stronger than aluminum. They have steel ball bearings and spring-loaded axles, except 3½″ diameter rollers, which include cotter pins to attach axles to the conveyor frame. 2 9/16″ and 3½″ diameter rollers have sealed bearings to keep out dirt and moisture for longer life.

Stainless steel rollers offer excellent corrosion resistance. They have spring-loaded axles and sealed stainless steel ball bearings to keep out dirt and moisture for longer life.

For Between Frame Wd.	Gauge/ Thick.	Cap., lbs.		
2″ Roller Dia.— *1/4″ Round Axle*				
Aluminum				
10″	16	65	2276T71	$8.57
13″	16	65	2276T73	9.72
16″	16	65	2276T75	10.57
18″	16	65	2276T77	11.51
22″	16	65	2276T79	12.34
2″ Roller Dia.— *7/16″ Hex Axle*				
Steel				
10″	12	300	2276T11	9.66
12″	12	300	2276T13	10.34
14″	12	300	2276T15	11.37
16″	12	300	2276T63	12.06
18″	12	300	2276T18	12.83
20″	12	300	2276T21	13.77
22″	12	300	2276T23	14.06
24″	12	300	2276T25	15.20
26″	12	300	2276T27	16.26
28″	12	300	2276T29	16.80
32″	12	300	2276T32	18.40
34″	12	300	2276T34	19.17
36″	12	300	2276T36	19.94
50″	12	300	2276T41	35.34
60″	14	75	2276T51	66.75
2½″ Roller Dia.— *7/16″ Hex Axle*				
Steel				
10″	14	300	2281T11	11.16

For Between Frame Wd.	Gauge/ Thick.	Cap., lbs.		
2½″ Roller Dia.— *7/16″ Hex Axle (Cont.)*				
Steel (Cont.)				
11½″	11	285	2281T41	$22.36
16″	14	300	2281T14	12.78
18″	14	300	2281T16	13.36
22″	14	300	2281T19	15.60
26″	14	300	2281T23	16.27
28″	14	300	2281T25	17.22
30″	14	300	2281T27	18.13
34″	14	300	2281T31	19.76
40″	14	300	2281T35	20.93
Stainless Steel				
9″	14	170	2281T911	71.40
13″	14	170	2281T913	90.62
15″	14	170	2281T914	99.74
17″	14	170	2281T915	109.82
21″	14	170	2281T917	129.02
2½″ Roller Dia.— *11/16″ Hex Axle*				
Steel				
9″	11	645	2281T51	23.48
12″	11	645	2281T53	22.46
13″	11	645	2281T54	23.39
15″	11	645	2281T56	25.17
17″	11	645	2281T58	27.27
19″	11	645	2281T61	28.67
21″	11	645	2281T63	29.25
22″	11	645	2281T64	30.24

For Between Frame Wd.	Gauge/ Thick.	Cap., lbs.		
2½″ Roller Dia.— *11/16″ Hex Axle (Cont.)*				
Steel (Cont.)				
23″	11	640	2281T65	$30.76
24″	11	640	2281T66	31.94
25″	11	640	2281T67	32.87
27″	11	640	2281T69	34.77
30″	11	640	2281T72	35.28
31″	11	640	2281T73	36.31
33″	11	640	2281T75	37.40
36″	11	640	2281T78	39.51
37″	11	640	2281T79	40.87
40″	11	640	2281T82	42.34
49″	11	635	2281T88	54.86
2 9/16″ Roller Dia.— *11/16″ Hex Axle*				
Steel				
39″	7	790	2371T13	68.04
51″	7	555	2371T14	81.19
3½″ Roller Dia.— *11/16″ Hex Axle*				
Steel				
8″	0.21″	1,100	2253T11	49.47
14″	0.21″	1,100	2253T16	60.39
20″	0.21″	1,100	2253T21	71.16
23″	0.21″	1,100	2253T61	81.05
26″	0.21″	1,100	2253T26	82.22
31″	0.21″	1,100	2253T62	93.08
39″	0.21″	1,100	2253T63	107.69
51″	0.21″	1,100	2253T64	132.82

Powered Large Diameter Conveyor Rollers

Add power to your 2½″ diameter roller gravity conveyor or create a custom powered conveyor. Rollers are made of 3/32″ thick steel with a nickel-plated finish. They have 11/16″ hex spring-loaded axles and quiet-running precision steel ball bearings. Rollers can be hardwired to operate in either direction. Duty cycle is 70% for a 40-minute period. Temperature range is 14° to 130° F. *120-volt AC* motors are single phase. *220-volt AC* motors are three phase.

To Order: Please specify voltage and speed.

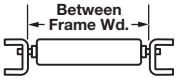

Roller Conveyor Profile

For Between Frame Wd.	Cap., lbs.	Available AC Voltage	Available Speeds, fpm		
15″	365	120, 220	33, 66	58095K31	$470.91
16″	355	120, 220	33, 66	58095K32	473.64
22″	310	120, 220	33, 66	58095K33	490.00
24″	285	120, 220	33, 66	58095K34	495.45
27″	270	120, 220	33, 66	58095K35	$501.82
28″	265	120, 220	33, 66	58095K36	501.82
30″	240	120, 220	33, 66	58095K37	507.27
40″	175	120, 220	33, 66	58095K38	531.82

Rollers for Chain-Driven Conveyors

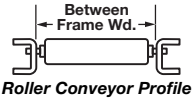

Roller Conveyor Profile

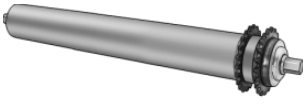

Replace worn rollers on chain-driven conveyors. Rollers are made of steel and have spring-loaded axles. Each roller has two welded sprockets for connecting to ANSI No. 40 roller chain. Sprockets are spaced 1⅛″ center to center; clearance between the end of the roller bearing and the first sprocket is 11/16″. For replacement chain, see page 1032.

Roller Dia.	For Between Frame Wd.	Hex Axle Size	Cap., lbs.	Number of Teeth per Sprocket		
1.9″	31″	7/16″	280	18	5921K11	$49.10
1.9″	43″	7/16″	175	18	5921K14	57.76
2½″	47″	11/16″	630	22	5921K15	82.04
2½″	55″	11/16″	505	22	5921K16	88.98

Quick-Change Bearings for Conveyor Rollers

Bearings thread into the included sleeve for easy replacement. Sleeves press fit into 16-ga. tubing. Use the wrench (sold separately) to install and remove bearings. Bearings are green polypropylene and have precision steel balls. Sleeves are black polypropylene. Hex axle is polyurethane with a steel core. Temp. range is –10° to 140° F.

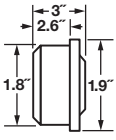

Bearing and Sleeve

	Cap., lbs.		
Bearing and Sleeve for 7/16″ Hex Axle	360	4962T12	$8.43
Bearing with 7/16″ Hex Axle and Sleeve	375	4962T11	18.57
Replacement Bearing for 7/16″ Hex Axle	360	4962T17	7.86
Replacement Bearing with 7/16″ Hex Axle	375	4962T16	15.00
Installation Wrench		4962T13	6.00

Bearings for Conveyor Rollers

Press fit bearings into tubing or pipe to replace worn or damaged bearings or make your own rollers. For galvanized pipe, see pg. 61. For stainless steel pipe, see pgs. 6-7. For PVC pipe, see pgs. 81-83.

Precision ball bearings have quiet, maintenance-free balls that are shielded to keep out contaminants for longer life.

Zinc-Plated Steel—Temperature range is –10° to 225° F. Bearings have steel balls.

Acetal—Temperature range is –40° to 180° F. *Sleeve bearings* ride directly on the axle and have no moving parts to wear out. *Ball bearings with hex axle* have stainless steel balls.

Polypropylene—Temp range is –10° to 140° F. Bearings have stainless steel balls, except *precision ball bearings*, which have steel balls.

Stainless Steel—Temp. range is –10° to 300° F. Bearings have stainless steel balls and offer excellent corrosion resistance.

Nylon—Temp. range is –20° to 210° F. Bearings have steel balls.

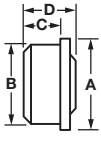

Zinc-Plated Steel and Stainless Steel Ball Bearing

Acetal Sleeve Bearing

Polypropylene Ball Bearing

Nylon Precision Ball Bearing with Hex Axle

Acetal Ball Bearing with Hex Axle

For Tubing

OD (A)	Fits ID (B)	For Tubing Gauge	Cap., lbs.	For Axle	(C)	(D)		
Zinc-Plated Steel Ball Bearings								
1⅝″	1.5″	16	145	7/16″ Hex	0.4″	0.8″	5907K11	$2.94
1.9″	1.7″	12	300	7/16″ Hex	0.4″	0.7″	5907K17	4.40
2½″	2.3″	11	425	11/16″ Hex	0.8″	1.2″	5907K13	8.74
2½″	2.3″	11	425	11/16″ Hex	0.8″	1.2″	5907K15♦	9.94
Acetal Sleeve Bearings—*Color is white.*								
1″	0.9″	18	60	¼″ Dia.	0.4″	0.6″	60565K11	2.89
1″	0.9″	18	125	½″ Dia.	0.4″	0.6″	60565K12	2.89
1¼″	1.1″	16	110	⅜″ Dia.	0.4″	0.6″	60565K14	7.34
1½″	1.4″	16	260	⅝″ Dia.	0.6″	0.9″	60565K15	7.19
1¾″	1.6″	16	240	½″ Dia.	0.7″	1″	60565K18	5.07
2″	1.9″	18	240	½″ Dia.	0.7″	1″	60565K19	5.71
2.2″●	2.1″	—	300	⅝″ Dia.	0.7″	1″	60565K23	11.81
2½″	2.4″	16	360	¾″ Dia.	0.7″	1″	60565K26	12.67
3″	2.8″	11	540	¾″ Dia.	1.1″	1.5″	60565K28	28.33
Polypropylene Ball Bearings—*Color is white.*								
1.8″	1.6″	9	45	7/16″ Hex	0.6″	0.8″	60725K66	6.39
1.8″	1.6″	9	65	7/16″ Hex	0.6″	0.9″	60725K67	8.64
1.9″	1.8″	12	45	7/16″ Hex	1″	1.2″	60725K44	6.71
1.9″	1.8″	12	65	7/16″ Hex	1″	1.2″	60725K65	9.04
2″	1.9″	16	45	7/16″ Hex	0.6″	0.8″	60725K74	7.86
2″	1.9″	16	65	7/16″ Hex	0.6″	0.9″	60725K75	10.10
Polypropylene Precision Ball Bearings—*Color is black.*								
1⅜″	1.3″	18	100	¼″ Dia.	0.5″	1.2″	6161T45	4.88
1.9″	1.8″	16	1,010	7/16″ Hex	0.9″	1.2″	6161T46	6.43
2½″	2.3″	11	750	11/16″ Hex	1″	1.2″	6161T49	10.63
Stainless Steel Ball Bearings								
1⅝″	1.5″	16	145	7/16″ Hex	0.4″	0.8″	5907K12	21.86
2½″	2.3″	11	425	11/16″ Hex	0.8″	1.2″	5907K14	31.77
Nylon Precision Ball Bearings with 7/16″ Hex Axle—*Color is black.*								
1.9″	1.8″	16	640	—	1.8″	2.3″	2273T3	10.62

♦ Bearing is shielded to keep out debris. ● For 2″ size EMT conduit.

For Schedule 40 Pipe

For Pipe Size	OD (A)	Fits ID (B)	Cap., lbs.	For Axle	(C)	(D)		
Zinc-Plated Steel Ball Bearings								
3″	3½″	3″	600	11/16″ Hex	1″	1.3″	5907K16♦	$29.74
Acetal Sleeve Bearings—*Color is white.*								
1″	1.3″	1.1″	110	⅜″ Dia.	0.4″	0.6″	60565K13	4.54
1½″	1.9″	1.6″	240	½″ Dia.	0.7″	1″	60565K17	3.75
2″	2.4″	2.1″	110	⅜″ Dia.	0.7″	1″	60565K21	9.56
2″	2.4″	2.1″	240	½″ Dia.	0.7″	1″	60565K22	5.07
2½″	2.9″	2.5″	240	½″ Dia.	0.7″	1″	60565K27	13.22
Polypropylene Ball Bearings—*Color is white.*								
1″	1.2″	1″	30	5/16″ Hex	0.7″	0.9″	60725K61	6.07
1½″	1.8″	1.6″	45	7/16″ Hex	0.6″	0.8″	60725K43	6.39
1½″	1.8″	1.6″	65	7/16″ Hex	0.6″	0.9″	60725K64	8.64
2″	2.3″	2.1″	60	7/16″ Hex	0.6″	0.8″	60725K46	8.93
2″	2.3″	2.1″	80	7/16″ Hex	0.6″	0.9″	60725K76	11.18
Acetal Ball Bearings with 7/16″ Hex Axle★—*Color is white.*								
1½″	1.9″	1.6″	55	—	1.6″	1.6″	2273T1	10.50
2″	2.4″	2.1″	55	—	1.6″	1.6″	2273T2	11.64

♦ Bearing is shielded to keep out debris.
★ Axle includes a male threaded end for use in 5/16″ dia. axle holes.

For Schedule 80 Pipe

For Pipe Size	OD (A)	Fits ID (B)	Cap., lbs.	For Axle	(C)	(D)		
Acetal Sleeve Bearings—*Color is white.*								
1½″	1.9″	1.5″	240	½″ Dia.	0.7″	1″	60565K16	$7.63
Polypropylene Ball Bearings—*Color is white.*								
1½″	1.6″	1.5″	45	7/16″ Hex	0.6″	0.8″	60725K42	5.97
1½″	1.6″	1.5″	65	7/16″ Hex	0.6″	0.9″	60725K63	8.64

Shaft-Mount Conveyor Rollers

Two Rollers Shown with Shaft

Slip these rollers onto a shaft (not included) for a better grip at high speeds and on lightweight products such as paper. Rollers are made of polyurethane, which is nonmarking and resists abrasion. Temp. range is –40° to 170°F. Color is yellow for 30A durometer, blue for 60A durometer, and red for 90A durometer. A higher durometer means increased hardness, less compression, and less friction.

To Order: Please specify durometer.

For Shaft OD	OD	Wd.	Available Durometers		
1/2″	1″	1/2″	30A, 60A, 90A	60185K911	$3.91
1/2″	1 1/2″	3/4″	30A, 60A, 90A	60185K912	5.91
3/4″	1 1/2″	1/2″	30A, 60A, 90A	60185K916	5.09
3/4″	2 1/4″	1″	30A, 60A, 90A	60185K918	8.45
1″	2″	3/4″	30A, 60A, 90A	60185K919	6.73
1″	3″	1″	30A, 60A, 90A	60185K921	9.25
2″	4″	3/4″	30A, 60A, 90A	60185K924	9.82

Conveyor Roller Brackets

Surface-Mount Bracket

Frame-Repair Bracket

Surface-mount brackets let you create custom conveyors, support stands, or package stops. Brackets are steel with a galvanized finish and have a 13/32″ Wd. × 1″ Lg. mounting slot (fasteners not included). *Note:* Two brackets are required for each roller.

Frame-repair bracket mounts to your conveyor frame to recondition a worn hex axle hole or to convert a round axle hole to a hex axle hole. Bracket is polypropylene and includes fasteners for mounting to your axle and frame.

For Axle Size	(A)		
Surface-Mount Brackets			
1/4″ Round	1 29/32″	4960T11	$6.13
7/16″ Hex	2 13/16″	4960T12	6.50
11/16″ Hex	3″	4960T13	6.88
Frame-Repair Brackets			
7/16″ Hex	1 3/8″	4960T14	8.00

Cut-to-Width Conveyor Roller Covers

Reduce noise, absorb impact and shock, and extend the life of your rollers with these nonmarking covers. ***Polyurethane*** has a high-friction surface for high speeds and inclines. ***PVC*** is for use in corrosive environments. ***Slide-on covers*** are 1/8″ thick. For easier installation, use lubricant and an air nozzle (sold separately). Lubricant is water based and loses its lubrication properties upon drying to ensure covers retain a snug fit. Air nozzles deliver a cushion of air that makes it easier to slide the cover onto a roller. Air inlet is 1/4″ NPT female.

Heat-shrink covers are 0.05″ thick and conform to the shape of your roller when heated. Minimum shrink temperature is 300°F. *White PVC* covers are FDA compliant. *2 1/2″ tapered* cover fits rollers that taper from 2 1/2″ to 1 1/2″ dia.

Slide-On Covers—5-ft. Widths

For Roller Dia.	Orange Polyurethane	Each	Black Polyurethane	Each	Gray PVC	Each
Covers						
1 3/8″	5872K13	$31.42	5872K51	$31.42		
1.9″	5872K15	38.40	5872K53	38.40	5872K61	$41.14
2″	5872K16	40.57	5872K55	40.57		
2 1/2″	5872K18	47.08	5872K57	47.08	5872K62	46.55

Accessories

Lubricant (1-qt. Spray Bottle)	5872K32	Each	$13.38
Air Nozzle for 1 3/8″ Dia. Roller	5872K21	Each	117.74
Air Nozzle for 1.9″ Dia. Roller	5872K22	Each	117.74
Air Nozzle for 2″ Dia. Roller	5872K23	Each	141.94
Air Nozzle for 2 1/2″ Dia. Roller	5872K24	Each	146.66

Heat-Shrink Covers—5-ft. Widths

For Roller Dia.	Orange PVC	Each	Black PVC	Each	White PVC	Each
1 3/8″	5872K33	$22.23	5872K25	$22.23	5872K63	$32.23
1.9″	5872K34	24.03	5872K26	24.03	5872K64	34.83
2″	5872K35	24.03	5872K27	24.03	5872K65	34.83
2 1/2″	5872K36	31.17	5872K28	31.17	5872K66	45.20
2 1/2″ Tapered	5872K37	34.74	5872K29	34.74	5872K67	45.20

Heat-Shrink Covers—Short Widths

For Roller Dia.	For Roller Width	Orange PVC Pkg. of 5	
1.9″	12″	5872K91	$26.43
1.9″	24″	5872K92	52.86

Skate Wheels

Steel wheels are stronger than aluminum and have steel ball bearings. *Heavy duty* wheels have higher capacities and a zinc-plated finish for some corrosion resistance. *Heavy duty wheel with offset hub* has extra clearance on one side of the wheel.

Aluminum wheels are lightweight and corrosion resistant. *1 15/16″ dia.* wheels have aluminum ball bearings. *2″ dia.* wheels have steel ball bearings.

Rubber on steel wheel consists of 1/16″ thick rubber on a steel core with steel ball bearings. Rubber has a durometer of 50D.

Polyurethane on steel wheels consist of 5/32″ thick polyurethane on a steel core and with steel ball bearings. *Orange* polyurethane has a durometer of 75A. *Yellow* polyurethane has a durometer of 85A.

Nylon wheels are nonmarking, corrosion resistant, and quieter than metal. *Style 3* has a nylon hub with an abrasion-resistant acetal wheel and steel ball bearings. *Style 4* has a plain bore (no bearings).

ABS wheels are nonmarking and quieter than metal. They resist corrosion and acids. *Styles 4* and *5* have a plain bore (no bearings). *Style 5* has a 2 3/4″ Dia. × 1/2″ Wd. flange on one side. *Style 6* has acetal roller bearings.

Glass-filled nylon wheel is stronger than nylon and is a good choice for washdowns and harsh environments. Wheel has steel ball bearings.

Polycarbonate wheels have high capacities and good impact resistance. *125-* and *320-lb. cap.* wheels have steel ball bearings. *225-* and *580-lb. cap.* wheels have a plain bore (no bearings).

Multidirectional acetal wheels have rollers that rotate around the wheel core to allow movement of material in any direction. Wheels have a plain bore (no bearings).

Wheel Dia.	Wheel Wd.	Bore Dia.	Cap., lbs.	Hub Lg.	Color		
Steel							
1 1.9″	1 1/2″	5/16″	150	1 3/4″		9960T28	$5.31
1 1 15/16″	9/16″	1/4″	50	13/16″		9960T51	1.34
1 1 15/16″	9/16″	1/4″	150	7/8″		9960T52	2.51
1 1 15/16″	9/16″	1/4″	200	7/8″		9960T27	2.92
1 1 15/16″	9/16″	5/16″	200	7/8″		9960T32	2.49
1 1 15/16″	5/8″	5/16″	100	13/16″		9960T31	2.05
1 2 1/4″	13/16″	5/16″	300	1″		9960T29	4.42
Heavy Duty Steel							
1 1 7/8″	5/8″	1/4″	2,000	13/16″		23745T14	6.40
Heavy Duty Steel with Offset Hub							
1 1 7/8″	5/8″	1/4″	2,000	13/16″		23745T15	6.40
Aluminum							
1 1 15/16″	5/8″	1/4″	50	13/16″		9960T33	2.52
1 2″	5/8″	1/4″	50	13/16″		9960T23	1.46
Rubber on Steel—Temperature range is –40° to 160°F							
2 2 1/16″	3/4″	1/4″	100	13/16″	Black	9960T72	4.04
Polyurethane on Steel—Temperature range is 28° to 90°F							
2 2 1/4″	9/16″	5/16″	80	7/8″	Orange	9960T24	3.83
2 2 1/4″	9/16″	5/16″	80	7/8″	Yellow	9960T26	3.83

Wheel Dia.	Wheel Wd.	Bore Dia.	Cap., lbs.	Hub Lg.	Color		
Nylon—Temperature range is –4° to 212°F							
3 1.9″	5/8″	1/4″	25	15/16″	White/Black	2290T3	$4.54
4 2″	5/8″	1/4″	50	13/16″	Black	9960T4	1.53
ABS—Temperature range is –22° to 150°F							
4 1 5/8″	13/16″	1/4″	25	7/8″	White	9960T21	.85
5 1 5/8″	1 1/8″	1/4″	30	1 5/8″	White	9960T3	1.50
6 1 7/8″	11/16″	1/4″	25	13/16″	Orange/White	2290T31	2.58
Glass-Filled Nylon—Temperature range is –40° to 250°F							
7 2 7/8″	1 1/4″	5/16″	330	1 5/8″	Black	9960T71	2.54
Polycarbonate—Temperature range is 1° to 120°F							
7 1.9″	1 1/4″	11/32″	125	1 5/16″	Black	9960T82	2.57
7 1.9″	1 1/4″	11/32″	225	1 5/32″	Black	9960T81	1.47
7 2 7/8″	1 3/8″	13/32″	320	1 5/8″	Black	9960T84	4.30
7 2 7/8″	1 3/8″	13/32″	580	1 3/8″	Black	9960T83	3.20
Multidirectional Acetal—Temperature range is –40° to 194°F							
8 1.9″	1 5/16″	1/4″	25	1 5/16″	Blue/Gray	2289T41	12.00
8 1.9″	1 5/16″	5/16″	25	1 5/16″	Blue/Gray	2289T42	12.00
8 2″	1 1/2″	5/16″	25	1 1/2″	Gray/Black	2289T1	14.40
8 2 11/32″	2″	5/16″	45	2″	Gray/Black	2289T2	17.43
8 3 5/32″	2 3/8″	5/16″	90	2 3/8″	Gray/Black	2289T3	27.20

About Ball Transfers

Ball transfers provide unlimited change of direction and easy movement of loads. Use transfers with the ball up in diverter tables, conveyor lines, and transfer tables. Several transfers can also be used ball down as casters or at an angle to form stock stands for pipe and tubing.

Steel transfers are durable. ***Nylon*** transfers are nonmarking. ***Stainless steel*** transfers offer the most corrosion resistance.

Stud-Mount Ball Transfers

Transfers can be used ball up, ball down, or at an angle, unless noted. Temperature range for nylon balls and housings is 32° to 212° F.

	Ball Dia.	Ball Material	Housing Material	Cap., lbs.	(A)	(B)	Thread Size	Stud Lg.		
General Purpose										
1	5/8″	Steel	Zinc-Plated Steel	30	13/16″	15/16″	1/4″-20	1/2″	6460K21	$6.67
1	5/8″	Nylon	Zinc-Plated Steel	15	13/16″	15/16″	1/4″-20	1/2″	6460K11	12.30
1	1″	Steel	Zinc-Plated Steel	200	1 1/4″	1 3/8″	5/16″-18	3/4″	6460K12	17.98
1	1″	Nylon	Zinc-Plated Steel	100	1 1/4″	1 3/8″	5/16″-18	3/4″	6460K13	28.30
2	1″	Steel	Black-Oxide Steel	150	1 15/32″	1 7/32″	1/4″-20	13/32″	6460K41	7.25
2	1″	Steel	Black-Oxide Steel	150	1 15/32″	1 7/32″	5/16″-18	3/4″	6460K42	7.75
2	1″	Nylon	Black-Oxide Steel	75	1 7/16″	1 7/32″	5/16″-18	11/16″	6460K43♦	10.45
2	1 1/4″	Steel	Black-Oxide Steel	250	1 3/4″	1 15/32″	3/8″-16	15/16″	6460K61	12.53
3	1″	Nylon	Black Nylon	45	1 3/8″	2 1/16″	5/16″-18	5/8″	6460K27●	6.93
3	1″	Stainless Steel	Gray Nylon	110	1 3/8″	2 1/16″	5/16″-18	5/8″	6460K91●	15.02
4	1″	Steel	Zinc-Plated Steel	75	1 3/8″	1 3/4″	1/4″-20	11/16″	6460K31♦	4.00
4	1″	Steel	Zinc-Plated Steel	75	1 3/8″	1 3/4″	5/16″-18	11/16″	6460K35♦	4.26
4	1″	Nylon	Zinc-Plated Steel	75	1 3/8″	1 3/4″	1/4″-20	11/16″	6460K32●	11.58
4	1″	Nylon	Zinc-Plated Steel	75	1 3/8″	1 3/4″	5/16″-18	11/16″	6460K36●	12.11
4	1″	Nylon	Stainless Steel	75	1 3/8″	1 3/4″	1/4″-20	11/16″	6460K33●	27.57
4	1″	Nylon	Stainless Steel	75	1 3/8″	1 3/4″	5/16″-18	11/16″	6460K81●	29.96
4	1″	Stainless Steel	Zinc-Plated Steel	75	1 3/8″	1 3/4″	5/16″-18	11/16″	6460K37●	14.56
4	1″	Stainless Steel	Stainless Steel	125	1 3/8″	1 3/4″	1/4″-20	11/16″	6460K34●	28.95
4	1″	Stainless Steel	Stainless Steel	125	1 3/8″	1 3/4″	5/16″-18	11/16″	6460K39●	28.52
5	1″	Steel	Black-Oxide Steel	150	1 1/2″	2 7/16″	3/8″-16	11/16″	6460K45	10.33
5	1 1/8″	Steel	Black-Oxide Steel	200	1 21/32″	2 7/16″	3/8″-16	11/16″	6460K46	10.96
5	1 1/4″	Steel	Black-Oxide Steel	250	1 3/4″	2 7/16″	3/8″-16	11/16″	6460K47	11.51
6	1 1/2″	Steel	Zinc-Plated Steel	250	2 5/16″	2 3/16″	3/8″-16	1″	6460K49♦	18.57
6	1 1/2″	Nylon	Zinc-Plated Steel	250	2 5/16″	2 3/16″	3/8″-16	1″	6460K71♦	25.95
6	1 1/2″	Stainless Steel	Stainless Steel	350	2 5/16″	2 3/16″	3/8″-16	1″	6460K44●	52.23
Washdown— *With dual-sealed ball and side vents to expel contaminants.*										
7	1″	Stainless Steel	Black Nylon	525	1 3/4″	2″	M10	1 9/16″	6617K83	128.91
Heavy Duty— *With impact-resistant housing.*										
8	1/2″	Steel	Zinc-Plated Steel	100	7/8″	7/8″	5/16″-24	1″	6460K51	37.25
8	1/2″	Steel	Black-Oxide Steel	75	3/4″	13/16″	5/16″-24	5/8″	6460K48	49.52
8	1″	Steel	Zinc-Plated Steel	500	1 7/8″	1 3/4″	1/2″-20	1″	6460K52	110.05
8	1″	Steel	Black-Oxide Steel	700	2″	2″	1/2″-20	1″	6460K53	153.50
8	1 1/2″	Steel	Black-Oxide Steel	2,200	2 7/8″	2 3/8″	3/4″-16	1 5/8″	6460K54	197.42

♦ Not for use in angled applications. ● Not for use in ball-down or angled applications.

Miniature Stud-Mount Ball Transfers

Move small parts in measuring and automation applications. Mount transfers with the ball up. Ball is stainless steel and housing is aluminum.

Ball Dia.	Cap., lbs.	(A)	(B)	Thread Size	Stud Lg.		
3/16″	20	1/4″	5/16″	M2	3/32″	2440T31	$43.53
1/4″	35	13/32″	1/2″	M3	1/4″	2440T32	57.16
5/16″	55	1/2″	19/32″	M4	5/16″	2440T33	58.68

Pop-Up Ball Transfers and Pads

Ball transfer and pad rise when you supply air and retract into the housing when air supply ceases. Place units in workstations or between conveyor rollers to move or hold material. Housing is galvanized steel with a brass barbed fitting on the bottom for 1/16″ ID tubing. Both operate on 50 psi.

Ball transfer lets you move and divert material without lifting. Ball is steel.

Pad has a polyurethane surface that, when raised, holds a load in place. Temp. range is 32° to 100° F.

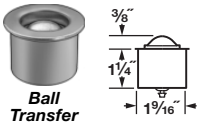

Ball Transfer

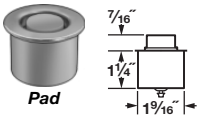

Pad

	Cap., lbs.		
Ball Transfer	15	57855K4	$31.17
Pad	30	57855K8	36.28

Press-Fit Wheels

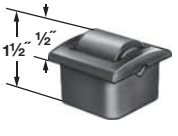

Create a low-profile conveying surface. Wheels have a black nylon housing. Temperature range is –50° to 120° F.

Nylon wheel is black and has an acetal sleeve-style bearing.

Steel wheel is zinc plated and has a precision ball bearing.

Wheel Material	Cap., lbs.	Wheel Dia.	For Hole Size		
Nylon	50	1 3/16″	1 3/4″ Sq.	2303T11	$10.64
Steel	400	1 5/16″	1 3/4″ Sq.	2303T32	17.42

Nonmarring Cushion Ball Transfers

A large-diameter ball handles delicate and polished surfaces. Covers on the bearing and mounting stud keep out dust and debris. Stud is steel with M14 threads and has zinc-plated steel locknuts. Temp. range is –4° to 140° F.

Rubber balls are black. ***Polyurethane*** balls are red.

Ball Dia.	Cap., lbs.	Ht.	*Rubber*		*Polyurethane*	
1 3/8″	30	1 13/16″	2411T111	$16.48	2411T211	$33.37
1 31/32″	40	2 17/32″	2411T121	21.28	2411T221	39.67

For information about ball transfers, see page 1247.

Flange-Mount Ball Transfers

Transfers can be used ball up, ball down, or at an angle, unless noted. Temp. range for nylon and acetal balls and housings is 32° to 195°F.

	Ball Dia.	Ball Material	Housing Material	Cap., lbs.	(A)	Flange Size Lg.	Flange Size Wd.	Bolt Holes Ctr.-to-Ctr.	Bolt Holes Dia.		
General Purpose											
1	1″	Steel	Black Nylon	110	1 3/8″	2 29/32″	2 1/16″	2 3/8″	9/32″	**5674K51**●	$6.53
1	1″	Stainless Steel	Gray Nylon	110	1 3/8″	2 29/32″	2 1/16″	2 3/8″	9/32″	**5674K53**●	16.08
2	1″	Acetal	White Nylon	20	1 5/16″	2 1/2″	1 3/4″	1 3/4″	7/32″	**5674K77**●	10.14
3	1″	Steel	Zinc-Plated Steel	75	1 3/16″	2 3/4″	2″	2 3/16″	7/32″	**5674K1**♦	4.81
3	1″	Steel	Zinc Plated Steel	150	1 3/16″	2 3/4″	2″	2 3/16″	7/32″	**5674K14**♦	4.71
3	1″	Nylon	Zinc-Plated Steel	75	1 3/16″	2 3/4″	2″	2 3/16″	7/32″	**5674K47**♦	13.41
3	1″	Nylon	Stainless Steel	35	1 3/16″	2 3/4″	2″	2 3/16″	7/32″	**5674K28**	28.58
3	1″	Stainless Steel	Zinc-Plated Steel	75	1 3/16″	2 3/4″	2″	2 3/16″	7/32″	**5674K17**♦	16.50
3	1″	Stainless Steel	Stainless Steel	125	1 3/16″	2 3/4″	2″	2 3/16″	7/32″	**5674K13**♦	31.31
4	11/16″	Steel	Black-Oxide Steel	90	1″	2 7/16″	1 11/16″	2″	5/32″	**5674K57**	4.50
4	1″	Steel	Black-Oxide Steel	135	1 9/32″	2 7/16″	1 11/16″	2″	5/32″	**5674K58**	5.31
5	1″	Steel	Black-Oxide Steel	135	1 1/2″	2 7/16″ Dia.	—	2 3/16″	5/32″	**5674K61**	7.28
5	1 1/8″	Steel	Black-Oxide Steel	180	1 21/32″	2 7/16″ Dia.	—	2 3/16″	5/32″	**5674K63**	7.80
5	1 1/4″	Steel	Black-Oxide Steel	225	1 3/4″	2 7/16″ Dia.	—	2 3/16″	5/32″	**5674K64**	8.03
6	1 1/2″	Steel	Zinc-Plated Steel	250	1 13/16″	3″	3″	2 15/32″	9/32″	**5674K2**●	16.16
6	1 1/2″	Nylon	Zinc-Plated Steel	125	1 13/16″	3″	3″	2 7/16″	9/32″	**5674K22**	34.12
6	1 1/2″	Stainless Steel	Zinc-Plated Steel	250	1 13/16″	3″	3″	2 7/16″	9/32″	**5674K16**	45.74
6	1 1/2″	Stainless Steel	Stainless Steel	250	1 13/16″	3″	3″	2 7/16″	9/32″	**5674K24**	65.93
Shock Absorbing—Furnished with a 1/4″ thick neoprene mounting pad.											
6	1 1/2″	Steel	Zinc-Plated Steel	250	2 1/16″	3″	3″	2 7/16″	9/32″	**5674K41**	25.75
6	1 1/2″	Stainless Steel	Stainless Steel	250	2 1/16″	3″	3″	2 7/16″	9/32″	**5674K42**	73.17
Washdown—With dual-sealed ball and side vents to expel contaminants.											
7	1″	Stainless Steel	Black Nylon	525	1 25/32″	3″	3″	2 9/32″	1/4″	**6617K85**	135.58
Heavy Duty—With impact-resistant housing.											
1	1/2″	Steel	Zinc-Plated Steel	100	7/8″	1 7/8″	1 1/4″	1 3/8″	5/32″	**5674K48**	42.05
8	1″	Steel	Zinc-Plated Steel	500	1 5/8″	2 1/4″	2 1/4″	1 3/4″	7/32″	**5674K29**	99.74
8	1″	Steel	Zinc-Plated Steel	830	1 3/4″	3″	3″	2 9/32″	5/16″	**5674K37**	144.32
8	1″	Steel	Black-Oxide Steel	705	1 25/32″	3″	3″	2 9/32″	9/32″	**5674K68**	175.53
8	1 1/2″	Steel	Zinc-Plated Steel	2,400	2 3/8″	3″	3″	2 9/32″	5/16″	**5674K38**	186.14
8	1 1/2″	Steel	Black-Oxide Steel	2,200	2 15/32″	3″	3″	2 9/32″	9/32″	**5674K71**	216.27

●Not for use in ball-down or angled applications. ♦Not for use in angled applications.

Countersunk Flange-Mount Ball Transfers

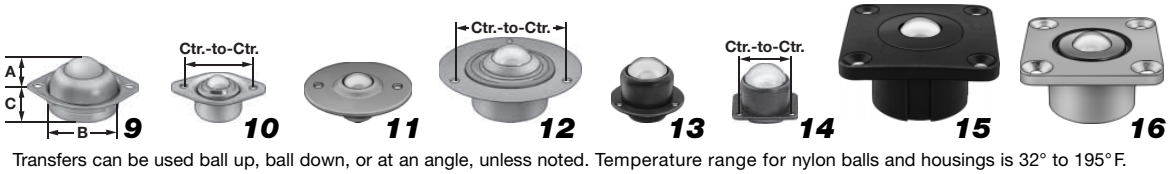

Transfers can be used ball up, ball down, or at an angle, unless noted. Temperature range for nylon balls and housings is 32° to 195°F.

	Ball Dia.	Ball Material	Housing Material	Cap., lbs.	(A)	(B)	(C)	Flange Size Lg.	Flange Size Wd.	Bolt Holes Ctr.-to-Ctr.	Bolt Holes Dia.		
General Purpose													
9	1″	Steel	Zinc-Plated Steel	75	3/4″	1 3/4″	1/2″	2 3/4″	2 1/8″	2 3/16″	7/32″	**2415T33**	$8.42
9	1″	Nylon	Zinc-Plated Steel	35	3/4″	1 3/4″	1/2″	2 3/4″	2 1/8″	2 3/16″	7/32″	**2415T43**	16.43
9	1″	Stainless Steel	Zinc-Plated Steel	75	3/4″	1 3/4″	1/2″	2 3/4″	2 1/8″	2 3/16″	7/32″	**2415T35**	20.53
9	1″	Stainless Steel	Stainless Steel	75	3/4″	1 3/4″	1/2″	2 3/4″	2 1/8″	2 3/16″	7/32″	**2415T36**	38.71
11	5/8″	Steel	Steel	20	3/8″	31/32″	3/8″	1 11/16″ Dia.	—	1 1/4″	1/8″	**2415T13**	4.63
11	3/4″	Steel	Zinc-Plated Steel	20	13/32″	1 3/16″	15/32″	2 13/32″ Dia.	—	1 3/4″	7/32″	**2415T15**▲	7.21
11	3/4″	Stainless Steel	Stainless Steel	20	13/32″	1 3/16″	15/32″	2 13/32″ Dia.	—	1 3/4″	7/32″	**2415T16**▲	20.82
11	1″	Steel	Zinc-Plated Steel	55	9/16″	1 1/2″	5/8″	2 7/8″ Dia.	—	2 3/16″	3/16″	**2415T17**▲	8.34
11	1″	Stainless Steel	Stainless Steel	20	9/16″	1 1/2″	5/8″	2 7/8″ Dia.	—	2 3/16″	3/16″	**2415T18**▲	25.11
13	11/16″	Steel	Black-Oxide Steel	90	3/4″	11/16″	3/16″	1 5/16″ Dia.	—	1 1/8″	1/8″	**2415T24**	4.45
13	1″	Steel	Black-Oxide Steel	135	1 1/16″	31/32″	3/16″	1 23/32″ Dia.	—	1 15/32″	5/32″	**2415T25**	5.03
13	1 1/8″	Steel	Black-Oxide Steel	180	1 7/32″	31/32″	3/16″	1 13/16″ Dia.	—	1 9/16″	5/32″	**2415T27**	6.97
13	1 1/4″	Steel	Black-Oxide Steel	225	1 5/16″	1 1/16″	3/16″	2″ Dia.	—	1 11/16″	5/32″	**2415T31**	7.63
14	11/16″	Steel	Black-Oxide Steel	90	3/4″	11/16″	5/32″	15/16″	1 7/32″	11/16″, 31/32″	1/8″	**2415T21**	4.50
14	1″	Steel	Black-Oxide Steel	135	1 1/16″	31/32″	3/16″	1 3/8″	1 3/4″	1″, 1 3/8″	5/32″	**2415T22**	4.98
14	1 1/8″	Steel	Black-Oxide Steel	180	1 7/32″	31/32″	3/16″	1 3/8″	1 3/4″	1″, 1 3/8″	5/32″	**2415T23**	6.97
Shock Absorbing—With spring-loaded ball; maximum deflection is 1/4″ @ 65lbs. load.													
12	1″	Steel	Zinc-Plated Steel	125	1/2″	1 11/16″	15/16″	3 1/8″ Dia.	—	2 3/8″	3/16″	**2415T11**●	30.39
12	1″	Stainless Steel	Stainless Steel	125	1/2″	1 11/16″	15/16″	3 1/8″ Dia.	—	2 3/8″	3/16″	**2415T48**●	67.55
Washdown—With dual-sealed ball and side vents to expel contaminants.													
15	1″	Stainless Steel	Black Nylon	525	1/2″	2″	1 1/4″	3″	3″	2 9/32″	1/4″	**6617K84**	119.58
Heavy Duty—With impact-resistant housing.													
10	1/2″	Steel	Zinc-Plated Steel	100	5/16″	15/16″	5/8″	1 7/8″	1 1/4″	1 3/8″	5/32″	**2415T81**	41.26
16	1″	Steel	Zinc-Plated Steel	500	15/32″	1 3/4″	15/32″	2 1/4″	2 1/4″	1 3/4″	7/32″	**2415T82**	106.95
16	1″	Steel	Zinc-Plated Steel	830	1/2″	2″	1 1/4″	3″	3″	2 9/32″	5/16″	**2415T79**	140.48
16	1″	Steel	Black-Oxide Steel	350	1/2″	2″	1 1/4″	3″	3″	2 9/32″	9/32″	**2415T52**▲	161.45
16	1 1/2″	Steel	Zinc-Plated Steel	2,400	1″	2 3/8″	1 3/8″	3″	3″	2 9/32″	5/16″	**2415T84**	199.67

▲Capacity is approximately twice as high when used in the ball-up position. ●Not for use in ball-down or angled applications.

For information about ball transfers, see page 1247.

Press-Fit Ball Transfers

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2 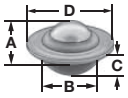

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6 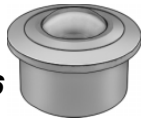

Transfers can be used ball up, ball down, or at an angle, unless noted. Temperature range for Style 1 is 32° to 195° F.

	Ball Dia.	Ball Material	Housing Material	Cap., lbs.	(A)	(B)	(C)	(D)		
General Purpose										
1	1″	Acetal	White Nylon	20	15/16″	1″	3/8″	15/16″	**6421K45**●	$9.57
2	5/8″	Steel	Zinc-Plated Steel	40	3/8″	1″	3/8″	1 3/8″	**6421K41**●	7.03
2	1″	Stainless Steel	Zinc-Plated Steel	125	1/2″	1 1/2″	11/16″	1 27/32″	**6421K42**●	24.05
3	5/8″	Steel	Zinc-Plated Steel	65	3/8″	15/16″	7/16″	1 7/32″	**6421K66**▲	9.65
3	7/8″	Steel	Zinc-Plated Steel	175	3/8″	1 13/32″	25/32″	1 25/32″	**6421K67**▲	13.78
3	1 3/16″	Steel	Zinc-Plated Steel	330	17/32″	1 25/32″	29/32″	2 3/16″	**6421K68**▲	25.90
3	1 3/4″	Steel	Zinc-Plated Steel	670	3/4″	2 7/16″	1 11/32″	2 15/16″	**6421K69**▲	57.62
Shock Absorbing— *With spring-loaded ball; maximum deflection is 1/4″ @ 65 lbs. load.*										
4	1″	Steel	Zinc-Plated Steel	125	13/16″	1 11/16″	5/8″	1 31/32″	**6602K44**●	25.97
4	1″	Stainless Steel	Stainless Steel	125	13/16″	1 11/16″	5/8″	1 31/32″	**6602K47**●	43.33
Heavy Duty— *With impact-resistant housing.*										
5	1/2″	Steel	Zinc-Plated Steel	100	5/32″	7/8″	23/32″	—	**6421K48**	39.20
5	1/2″	Steel	Black-Oxide Steel	35	1/8″	13/16″	5/8″	—	**6421K51**▲	46.72
5	1″	Steel	Zinc-Plated Steel	500	9/32″	1 3/4″	1 11/32″	—	**6421K49**	96.76
5	1″	Steel	Zinc-Plated Steel	700	1/4″	2″	1 1/2″	—	**6421K46**	126.47
5	1″	Steel	Black-Oxide Steel	705	1/4″	2″	1 17/32″	—	**6421K53**	132.26
5	1 1/2″	Steel	Black-Oxide Steel	2,200	1/2″	2 3/8″	1 29/32″	—	**6421K54**	172.09
6	1 3/16″	Steel	Zinc-Plated Steel	310	17/32″	1 25/32″	29/32″	2 5/32″	**6421K81**▲	36.06
6	1 3/4″	Steel	Zinc-Plated Steel	530	3/4″	2 7/16″	1 11/32″	2 15/16″	**6421K82**▲	77.53

●Not for use in ball-down or angled applications. ▲Capacity is approximately twice as high when used in the ball-up position.

Screw Conveyor Components

Add on to your existing screw conveyor or keep it running like new. Components are made of steel unless noted.

Screws are designed for right-hand operation. Screws with a greater edge thickness offer longer service life for abrasive materials.

Trough covers include 10 clamps and a rubber seal.

Discharge spouts can be welded to a cutout in the trough.

Coupling shafts connect two screws together. ***End shafts*** support the end conveyor section. ***Bolts*** connect shafts to the screw.

End-shaft seals prevent material contamination and discharge.

End-shaft bearings support the end of the shaft and help the screw rotate.

Bearing hangers mount inside the trough (bearing sold separately). ***Hardwood*** bearings are oil impregnated and are commonly used in agricultural applications. ***UHMW*** bearings are FDA and USDA compliant and work well with chemicals and wet environments. ***Iron*** bearings are oil impregnated and offer longer life for abrasive materials. ***Bronze*** bearings are oil impregnated and handle temperatures up to 850° F.

Also Available: Stainless steel components. Please ask for 5866K88 and specify screw and shaft diameters and components desired.

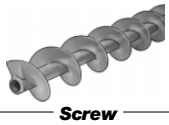
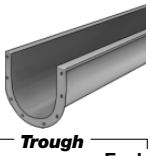

Screw Dia.	Screw Lg.	Screw Edge Thick.	Screw Shaft Dia.	Screw Each	Trough Lg.	Trough Each	Trough Cover Lg.	Trough Cover Each	Extra Cover Clamp Each	Discharge Spout Each
6″	9′10″	1/16″	1 1/2″	**5866K21** $174.03	10′	**5866K45** $189.33	10′	**5866K64** $134.29	**5866K63** $9.62	**5866K81** $58.16
9″	9′10″	3/16″	1 1/2″	**5866K24** 278.85	10′	**5866K46** 298.74	10′	**5866K65** 156.61	**5866K63** 9.62	**5866K82** 67.24
9″	9′10″	3/16″	2″	**5866K25** 322.55	10′	**5866K46** 298.74	10′	**5866K65** 156.61	**5866K63** 9.62	**5866K82** 67.24
12″	11′10″	3/16″	2″	**5866K26** 464.49	12′	**5866K62** 511.61	12′	**5866K67** 191.32	**5866K63** 9.62	**5866K83** 98.05
12″	11′9″	3/16″	2 7/16″	**5866K27** 479.99	12′	**5866K62** 511.61	12′	**5866K67** 191.32	**5866K63** 9.62	**5866K83** 98.05
14″	11′9″	1/8″	2 7/16″	**5866K28** 436.26	12′	**5866K71** 539.56	12′	**5866K68** 227.20	**5866K63** 9.62	**5866K84** 114.30

For Shaft Dia.	Coupling Shaft Each	End Shaft Each	Bolts Pkg. of 4	End-Shaft Seal Each	End-Shaft Bearing Each
1 1/2″	**5866K35** $22.80	**5866K51** $22.65	**5866K37** $9.65	**5866K72** $80.18	**5914K51** $101.63
2″	**5866K36** 40.18	**5866K52** 39.97	**5866K38** 16.55	**5866K73** 90.70	**5914K52** 153.79
2 7/16″	**5866K39** 60.27	**5866K53** 60.27	**5866K42** 18.63	**5866K74** 106.21	**5914K53** 194.98

For Screw Dia.	For Shaft Dia.	Trough End Each	Bearing Hanger Each	BEARING FOR BEARING HANGER: Hardwood Each	UHMW Each	Iron Each	Bronze Each
6″	1 1/2″	**5866K11** $65.67	**5866K31** $57.86	**5914K44** $17.67	**5914K47** $20.44	**5914K71** $32.65	**5914K35** $114.49
9″	1 1/2″	**5866K12** 82.67	**5866K32** 75.87	**5914K44** 17.67	**5914K47** 20.44	**5914K71** 32.65	**5914K35** 114.49
9″	2″	**5866K13** 124.00	**5866K76** 76.45	**5914K45** 21.23	**5914K48** 22.34	**5914K72** 38.05	**5914K37** 153.74
12″	2″	**5866K14** 124.00	**5866K34** 111.54	**5914K45** 21.23	**5914K48** 22.34	**5914K72** 38.05	**5914K37** 153.74
12″	2 7/16″	**5866K15** 124.00	**5866K77** 117.32	**5914K61** 42.56	**5914K63** 30.11	**5914K73** 57.21	— —
14″	2 7/16″	**5866K16** 124.00	**5866K78** 141.00	**5914K61** 42.56	**5914K63** 30.11	**5914K73** 57.21	— —

Conveyor Belting

Food-grade belting is FDA compliant for food handling when used with stainless steel lacing.

Belting ***for slider-bed conveyors*** has a low-friction surface on the bottom that smoothly glides along the bed of the conveyor. Belting ***for roller-bed conveyors*** has a tough cover on the bottom to grip rollers.

Also Available: Belts with lacing installed and "endless" belts (continuous loops without lacing). We can also customize your belt with cleats, pegs, and punched holes. When ordering, please specify the part number of the belting you need and how you want it customized.

Smooth Belting for Flat Conveyors

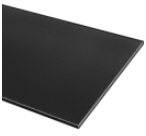

Standard

General purpose PVC resists impact and tears. Belting is one ply with a cover on the top. Maximum temperature is 180° F.

Cut-resistant PVC is two ply for extra strength. Belting has a cover on the top. Maximum temperature is 158° F.

Slip-top nylon is good for accumulation applications where products need to remain in a fixed position while the belt is moving. Belting is four ply with a hard cover on the top. Maximum temperature is 250° F.

Oil-resistant neoprene not only has superior resistance to oils but also resists shrinking. It has a low-friction surface on the top. Maximum temperature is 250° F. *0.06″ thick* is three ply. *0.16″ thick* is five ply.

Food-grade general purpose nitrile, also known as Hycar and Buna-N, is the most popular food-grade belting. It resists animal fats and oils. Belting is two ply with a cover on the top. Max. temp. is 250° F.

Food-grade oil-resistant vinyl-nitrile is nonstaining and resists fats and grease. Impervious to hot water. Belting is two ply with a glossy cover on the top. Maximum temperature is 180° F.

Food-grade abrasion-resistant urethane is more durable than nitrile. It's nonstaining and nonsticking. Belting is two ply with a glossy cover on the top. Maximum temperature is 180° F.

Heavy duty abrasion-resistant SBR (styrene butadiene rubber) is excellent for abrasive and high-impact applications including conveying stone, sand, and glass particles. Belting is two ply with a tough cover on the top. Maximum temperature is 200° F.

	Standard						Food Grade			Heavy Duty	
	General Purpose PVC		Cut-Resistant PVC	Slip-Top Nylon	Oil-Resistant Neoprene		General Purpose Nitrile	Oil-Resistant Vinyl-Nitrile	Abrasion-Resistant Urethane	Abrasion-Resistant SBR	
Thick.	0.14″	0.16″	0.11″	0.12″	0.06″	0.11″	0.09″	0.11″	0.06″	0.27″	0.36″
Use Alligator Lacing No. (Pg. 1251)	7	15	7	7	1	7	7S	7S	1S	Use Bolt-On Lacing (Pg. 1253)	
Use Clipper Lacing No. (Pg. 1252)	1	2	1SP	1SP	36SP	1SP	1XSP	1SP	25	Use Bolt-On Lacing (Pg. 1253)	

To Order: Please specify width and length.

	Thick.	Color	Min. Pulley Dia.	PIW▲		Per Ft. 2″ Wide	4″ Wide	6″ Wide	8″ Wide	10″ Wide	12″ Wide	18″ Wide	24″ Wide
Standard for Slider-Bed Conveyors													
General Purpose PVC	0.14″	Black	3″	120	**6001K2**	$0.81	$1.63	$2.44	$3.25	$4.07	$4.88	$7.32	$9.76
General Purpose PVC	0.16″	Black	3″	150	**6001K4**	.99	1.97	2.96	3.94	4.93	5.91	8.87	11.83
Cut-Resistant PVC	0.11″	Green	1 15/16″	69	**60055K3**	1.66	3.31	4.96	6.62	8.28	9.93	14.90	19.87
Slip-Top Nylon	0.12″	Tan	2″	50	**60535K5**	2.09	4.15	6.23	8.31	10.39	12.46	18.69	24.93
Oil-Resistant Neoprene	0.06″	Brown	1″	33	**5751K301**	1.37	2.73	4.10	5.46	6.83	8.19	12.29	16.39
Oil-Resistant Neoprene	0.11″	Brown	2″	50	**5751K302**	2.27	4.54	6.81	9.08	11.35	13.62	20.43	27.23
Food Grade for Slider-Bed Conveyors													
General Purpose Nitrile	0.09″	White	2″	70	**6073K401**	1.30	2.58	3.88	5.18	6.47	7.76	11.65	15.53
Oil-Resistant Vinyl-Nitrile	0.11″	White	1½″	100	**5999K5**	1.18	2.38	3.56	4.74	5.93	7.12	10.67	14.23
Abrasion-Resistant Urethane	0.06″	White	1″	50	**60335K1**	1.91	3.83	5.74	7.64	9.56	11.47	17.20	22.94
Heavy Duty for Roller-Bed Conveyors													
Abrasion-Resistant SBR	0.27″	Black	10″	150	**6000K1**	—	—	—	—	—	8.91	13.36	17.81
Abrasion-Resistant SBR	0.36″	Black	10″	220	**6000K3**	—	—	—	—	—	9.51	13.65	19.02

▲ Maximum belt tension in pounds per inch of width.

Textured Belting for Incline Conveyors

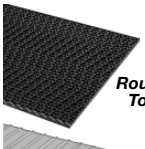

Rough Top

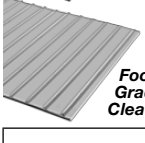

Food Grade Cleated

The surface keeps your material from slipping and rolling when traveling on inclines and declines. Maximum temperature is 250° F, except general purpose PVC belting, which has a maximum temperature of 158° F.

Rough-top belting has a deeply textured surface to grip packages and cartons. *Note:* The top surface of the belt ends should be removed (by skiving or grinding) before installing lacing. Recommended lacing is based on the thickness of the belt after removing the top surface. For Surface Removal Tool, see 6202T48 on page 1253.

General purpose PVC resists impact and tears. Belting is two ply with a cover on the top.

Extra-grip SBR (styrene butadiene rubber) has good impact resistance and an excellent grip. Belting has a cover on the top. *0.25″ thick* belting is two ply. *0.27″ thick* belting is three ply.

Oil-resistant neoprene has a good grip along with superior oil resistance. Belting is three ply with a cover on the top.

Abrasion-resistant nitrile has a hard textured surface that resists punctures and abrasion. Belting is three ply with a cover on the top.

Food-grade cleated has ⅛″ high cleats every inch. Also known as Hycar and Buna-N, it resists animal fats and oils. Belting is three ply with a cover on the top.

	Rough Top					Food Grade Cleated
	General Purpose PVC	Extra-Grip SBR		Oil-Resistant Neoprene	Abrasion-Resistant Nitrile	General Purpose Nitrile
Thick.	0.21″	0.25″	0.27″	0.30″	0.31″	0.25″
Use Alligator Lacing No. (Pg. 1251)	7	7	7	7	15	15S
Use Clipper Lacing No. (Pg. 1252)	UCM36LL	1	2	1	2	2

To Order: Please specify width and length.

	Max. Incline	Thick.	Color	Min. Pulley Dia.	PIW▲		Per Ft. 3″ Wide	4″ Wide	6″ Wide	8″ Wide	10″ Wide	12″ Wide	18″ Wide	24″ Wide
Rough Top for Slider-Bed Conveyors														
General Purpose PVC	20°	0.21″	Green	2½″	46	**5994K4**	$2.19	$2.91	$4.31	$5.82	$7.28	$8.71	$13.07	$17.45
Extra-Grip SBR	25°	0.25″	Black	2″	150	**5994K7**	1.75	2.33	3.49	4.65	5.82	6.99	10.47	13.97
Extra-Grip SBR	25°	0.27″	Tan	3″	200	**5994K8**	3.05	4.06	6.08	8.11	10.14	12.17	18.25	24.34
Oil-Resistant Neoprene	25°	0.30″	Black	3″	225	**5994K1**	3.02	4.02	6.04	8.06	10.08	12.09	18.11	24.18
Abrasion-Resistant Nitrile	25°	0.31″	Blue	2½″	150	**5994K9**	4.81	6.41	9.61	12.81	16.01	19.23	28.84	38.45
Food Grade Cleated for Slider-Bed Conveyors														
General Purpose Nitrile	30°	0.25″	White	2″	150	**5987K1**	—	4.95	7.43	9.92	12.40	14.86	22.31	29.75

▲ Maximum belt tension in pounds per inch of width.

Bolt-On Cleats for Conveyor Belts

Convert any smooth conveyor belt into a belt for inclines. Cut cleats to the length you need with a utility knife.

Abrasion-Resistant EPDM— More durable than nitrile, EPDM also has better resistance to acids and weather. Cleats attach to belts with the included bolts and nuts. Maximum temperature is 300°F.

Food-Grade Oil-Resistant Nitrile— The smooth surface is easy to clean and won't harbor bacteria. Nitrile resists acids, abrasion, and weather. Cleats have integral threaded inserts for a secure connection and attach to belts with the included stainless steel screws and washers. Maximum temperature is 240°F. FDA compliant.

Abrasion-Resistant EPDM

Food-Grade Oil-Resistant Nitrile

Ht.	Lg.	For Max. Belt Thickness	Min. Pulley Dia.	Black		White	
Abrasion-Resistant EPDM							
1¼″	48″	0.43″	3″	5881K14	$41.91	———	———
2″	48″	0.43″	3″	5881K16	56.23	———	———
3″	48″	0.43″	3″	5881K18	63.00	———	———
4″	48″	0.55″	4″	5881K24	93.09	———	———
Food-Grade Oil-Resistant Nitrile							
⅝″	24″	0.31″	2″	6131K21	47.92	6131K71	$52.54
1″	24″	0.31″	2″	6131K22	48.02	6131K72	52.64
1½″	24″	0.31″	2″	6131K23	48.10	6131K73	52.72
2″	24″	0.31″	2″	6131K24	59.41	6131K74	64.89

About Conveyor Belt Lacing

Lacing Style	Belt Thickness	Page
Hammer-On Alligator	Up to 0.31″	1251
Press-On Clipper	Up to 0.39″	1252
Staple-On Alligator	0.0625″ to 0.25″	1253
Bolt-On	0.25″ to 0.625″	1253

Hammer-On Alligator

Press-On Clipper

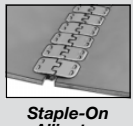

Staple-On Alligator

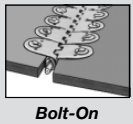

Bolt-On

Lacing creates a strong, reliable connection on belting ends that provides more convenient belt installation than "endless" (continuous-loop) belts.

Hammer-On Alligator— Lacing is low profile and requires no special tools for installation.

Press-On Clipper— A lacer clinches these low-profile hooks onto the belt for reduced installation time and consistent connections.

Staple-On Alligator— Staples secure the lacing plates to the conveyor belt for a strong, impact-resistant connection.

Bolt-On— The heaviest duty style we offer, lacing consists of plates compressed into the belt by bolts and nuts.

Hammer-On Alligator Lacing for Conveyor Belts

Since the only tool you'll need to install this lacing is a hammer, it's perfect for repairs and areas where lacing machines would be difficult to use. The low-profile, one-piece design runs smoothly over idler rollers without catching on conveyed products. Lacing can be cut to size with wire-cutting pliers. Each box includes lacing, connecting pins, and an installation gauge pin with clips.

Type 316 stainless steel lacing provides better corrosion resistance than galvanized steel and is nonmagnetic.

Also Available: Extra connecting pins and installation clips. For connecting pins, please ask for 6110K888 and specify lacing number and length. For clips, please ask for 6110K777 and specify lacing number.

For Belt Thickness	Min. Pulley Dia.	Recommended Lacing
Up to 0.06″	1″	No. 00
0.06″ to 0.09″	1½″	No. 1A, 1S
0.09″ to 0.14″	2″	No. 7, 7S
0.13″ to 0.16″	2½″	No. 15, 15S
0.16″ to 0.19″	3″	No. 20, 20S
0.19″ to 0.22″	4″	No. 25
0.22″ to 0.28″	5″	No. 27
0.28″ to 0.31″	7″	No. 35

End View

Galvanized Steel

Length	No. 00 Lacing	Box of 4	No. 1A Lacing	Box of 4	No. 7 Lacing	Box of 4	No. 15 Lacing	Box of 4
12″	6110K129	$26.24	6110K135	$25.69	6110K155	$24.58	6110K178	$25.69
14″	6110K121	30.58	6110K131	29.94	6110K151	28.68	6110K171	29.94
16″	6110K122	34.96	6110K132	34.24	6110K152	32.78	6110K172	34.24
18″	6110K123	39.32	6110K133	38.50	6110K153	36.85	6110K173	38.50
20″	6110K124	43.70	6110K134	42.80	6110K154	40.96	6110K174	42.80
24″	6110K125	52.46	6110K136	51.36	6110K156	49.74	6110K176	51.36
30″	6110K101	62.23	6110K139	64.18	6110K159	61.46	6110K179	64.18
36″	6110K126	78.65	6110K142	77.01	6110K162	75.07	6110K182	77.01
48″	6110K127	104.88	6110K144	102.68	6110K164	99.74	6110K184	102.68

Length	No. 20 Lacing	Box of 4	No. 25 Lacing	Box of 4	No. 27 Lacing	Box of 4	No. 35 Lacing	Box of 4
12″	6110K217	$30.09	6110K235	$30.09	6110K255	$28.98	6110K274	$37.14
14″	6110K211	35.06	6110K231	35.06	6110K251	33.79	6110K271	43.35
16″	6110K212	40.09	6110K232	40.09	6110K252	38.62	6110K272	49.51
18″	6110K213	45.09	6110K233	45.09	6110K253	43.47	6110K273	55.72
20″	6110K214	49.74	6110K234	49.74	6110K254	48.27	6110K102	58.80
24″	6110K432	60.10	6110K411	62.30	6110K417	57.97	6110K423	74.30
30″	6110K433	75.16	6110K412	77.89	6110K418	72.44	6110K424	92.85
36″	6110K434	90.18	6110K413	93.46	6110K419	86.91	6110K425	111.42
48″	6110K436	120.25	6110K415	120.25	6110K421	115.88	6110K426	148.56

Type 316 Stainless Steel

Length	No. 1S Lacing	Box of 4	No. 7S Lacing	Box of 4	No. 15S Lacing	Box of 4	No. 20S Lacing	Box of 4
12″	6116K106	$51.70	6116K145	$58.67	6116K164	$65.86	6116K184	$89.40
14″	6116K121	60.34	6116K141	68.46	6116K161	76.84	6116K181	104.29
16″	6116K101	65.51	6116K142	78.24	6116K162	87.80	6116K182	119.20
18″	6116K123	77.56	6116K143	88.05	6116K163	98.78	6116K183	134.10
20″	6116K102	81.88	6116K144	97.82	6116K104	104.29	6116K105	141.54
24″	6116K126	103.43	6116K146	117.39	6116K166	131.73	6116K186	178.81
36″	6116K103	147.38	6116K152	176.04	6116K172	197.60	6116K192	268.21

For information about conveyor belt lacing, see page 1251.

Press-On Clipper Lacing for Conveyor Belts

Conveyor Belt Lacing

Standard

Unibar

Regular Point | Extra Short Point (XSP) | Short Point (SP) | Long Point (LP) | Long Leg (LL)

Clipper lacing is a low-profile connection that is installed with a lacer for reduced installation time and consistent connections (lacer sold separately). Lacing consists of hooks in a staggered pattern. Long leg (LL) hooks hold more belt fibers than regular hooks, which prevents the lacing from pulling out once installed.

Note: Two laces are required for each joint.

Stainless steel lacing provides better corrosion resistance than steel. Lacing is magnetic, unless noted.

Standard— Each hook is secured to a cardboard sheet. Use on flat and troughed conveyors.

Unibar— More durable and easier to install than standard lacing, each hook is welded to a metal bar. Use on flat conveyors.

For Belt Thickness	Series No.	Min. Pulley Dia.	Hook Wire Dia.	Lace Length	Laces/ Box	Galvanized Steel	Box	Stainless Steel	Box
Standard— *Connecting pins included, unless noted.*									
Up to 0.063″	25	15/16″	0.025″	6″	48	6123K21	$57.76	6123K31■	$84.31
Up to 0.063″	25	15/16″	0.025″	12″	12	6123K18	54.30	6123K19■	41.87
Up to 0.063″	25LL	2″	0.025″	6″	24	6123K23	38.06	6123K33■	63.82
0.063″ to 0.093″	36SP	2″	0.036″	12″	12	———	———	6123K37■●	73.33
0.063″ to 0.093″	36LLSP	3″	0.036″	12″	12	———	———	6123K38■●	73.33
0.063″ to 0.093″	1XSP	2″	0.040″	6″	24	6123K24	30.77	6123K34	42.11
0.063″ to 0.125″	25LP	15/16″	0.025″	6″	48	6123K22	58.90	6123K32■	86.05
0.093″ to 0.125″	36	2″	0.036″	12″	12	———	———	6123K39■●	73.33
0.093″ to 0.125″	36LL	3″	0.036″	12″	12	———	———	6123K41■●	73.33
0.093″ to 0.125″	1SP	2″	0.040″	6″	24	6123K25	30.77	6123K35	42.11
0.125″ to 0.156″	1	2″	0.040″	6″	24	6123K11	31.30	6123K59	43.85
0.125″ to 0.156″	1	2″	0.040″	12″	12	6123K57	28.32	6123K58	39.58
0.125″ to 0.156″	1LL	3″	0.040″	6″	24	6123K26	37.56	6123K36	51.36
0.125″ to 0.156″	2SP	2″	0.054″	12″	12	6123K67	28.88	6123K42	52.28
0.156″ to 0.187″	2	2″	0.054″	12″	12	6123K12	28.88	6123K51	52.28
0.187″ to 0.219″	3	3″	0.054″	12″	12	6123K13	30.69	6123K52	55.09
0.219″ to 0.250″	4	4″	0.054″	12″	12	6123K14	31.84	6123K53	57.21
0.250″ to 0.281″	4½	4″	0.054″	12″	12	6123K15	33.47	6123K54	61.82
0.281″ to 0.313″	5	5″	0.054″	12″	12	6123K16	37.10	6123K55	71.43
0.313″ to 0.343″	6	6″	0.054″	12″	12	6123K17	42.16	6123K56	80.18
0.343″ to 0.390″	7	7″	0.054″	12″	12	6123K61	44.38	6123K62	85.05
Unibar— *Connecting pins sold separately.*						**Plain Steel**		**Stainless Steel**	
0.063″ to 0.093″	UCM36SP	2″	0.036″	12″	12	———	———	6164K14■	$81.36
0.063″ to 0.093″	UCM36LLSP	3″	0.036″	12″	12	———	———	6164K15■	89.47
0.063″ to 0.125″	UX-1SP	2″	0.040″	12″	12	———	———	6164K18■	57.37
0.063″ to 0.125″	UX-1SP	2″	0.040″	24″	10	———	———	6164K24■	89.91
0.093″ to 0.125″	UCM36	2″	0.036″	12″	12	———	———	6164K16■	81.36
0.093″ to 0.125″	UCM36LL	3″	0.036″	12″	12	———	———	6164K17■	89.47
0.125″ to 0.156″	UX-1	2″	0.040″	12″	12	———	———	6164K19■	57.37
0.125″ to 0.156″	UX-1	2″	0.040″	24″	10	———	———	6164K25■	89.91
0.125″ to 0.156″	U3-1	3½″	0.054″	6″	24	6164K47	$24.03	6164K11	47.52
0.125″ to 0.156″	U3-1	3½″	0.054″	12″	12	6164K48	24.03	6164K12	47.52
0.125″ to 0.156″	U3-1	3½″	0.054″	24″	10	6164K49	38.13	6164K13	79.36
0.156″ to 0.187″	U3-2	3½″	0.054″	6″	24	6164K51	24.29	6164K21	47.52
0.156″ to 0.187″	U3-2	3½″	0.054″	12″	12	6164K52	24.29	6164K22	47.52
0.156″ to 0.187″	U3-2	3½″	0.054″	24″	10	6164K53	38.50	6164K23	79.36
0.187″ to 0.219″	U3	3½″	0.054″	12″	12	6164K55	25.54	6164K32	47.52
0.187″ to 0.219″	U3	3½″	0.054″	24″	10	6164K56	42.05	6164K33	79.36
0.219″ to 0.250″	U4	4″	0.054″	12″	12	6164K57	26.11	6164K59	48.88
0.281″ to 0.313″	U5	5″	0.054″	12″	12	6164K58	30.80	6164K61	59.74

■ Nonmagnetic. ● Connecting pins sold separately.

Connecting Pins

Insert a pin into the lacing and lock it in place by bending the ends at a 90° angle. Pins have a nylon coating. *Stainless steel* is nonmagnetic.

For Lacing Series No. ♦	Pin OD	STEEL 12″ Lengths Pkg. of 12		STEEL Cut-to-Length Max. Continuous Lg., ft.		Per Ft.♥	STAINLESS STEEL 12″ Lengths Pkg. of 12		STAINLESS STEEL Cut-to-Length Max. Continuous Lg., ft.		Per Ft.♥
25, 36, 1, UX-1, UCM36	0.065″	6225K13	$9.65	100	6225K53	$0.70	6225K23	$17.55	100	6225K63	$0.81
2, 3, U3-1, U3-2, U3	0.093″	6225K14	11.23	100	6225K54	.90	6225K24	21.97	100	6225K64	1.05
4, U4	0.109″	6225K15	12.86	100	6225K55	.91	6225K25	22.46	100	6225K65	1.14
4½, 5, U5	0.125″	6225K16	14.43	100	6225K56	1.00	6225K26	23.61	100	6225K66	1.23
6, 7, U6, U7	0.156″	6225K18	19.62	100	6225K58	1.23	6225K28	26.86	100	6225K68	1.44

♦ Works with all leg and point styles for a given series number. ♥ For lengths of 100 ft. or more, price is approximately 10% less.

Lacers

A

B

To lace belts wider than the working width, repeat the operation.

Style A lacers mount in your vise. ***Style B*** lacers are wider for more efficient installation.

Holding strips are required for Style B to load the lacing. **To Order:** Please specify lacing series number.

	For Lacing Series No. ♣	Working Width	O'all Size Ht.	Wd.	Dp.	Lacer	Each	Holding Strip	Each
A	25	7″	2″	7⅝″	3½″	6139K6	$101.25	———	———
A	36	7″	2″	7⅝″	3½″	6139K5	98.64	———	———
A	1	7″	2″	7⅝″	3½″	6139K4	89.68	———	———
A	2 to 7	4″	2″	5″	3½″	6139K2	69.84	———	———
A	2 to 7	7″	2″	7⅝″	3½″	6139K3	101.25	———	———
B	36, 1 to 7	14″	15″	20″	10″	57465K91	1,084.48	57465K9	$81.74
B	36, 1 to 7	24″	15″	30″	10″	6227K24	1,733.43	6227K2	106.29
B	36, 1 to 7	36″	15″	42″	10″	6227K36	1,789.31	6227K3	116.84
B	36, 1 to 7	48″	15″	54″	10″	6227K48	1,844.51	6227K5	122.37
B	36, 1 to 7	60″	15″	66″	10″	6227K61	1,899.71	6227K6	132.94

♣ Works with both Standard and Unibar lacing in all leg and point styles for a given series number.

For information about conveyor belt lacing, see page 1251.

Staple-On Alligator Lacing for Conveyor Belts

Lacing

Not only is this lacing strong and impact resistant, it's easier to install than bolt-on lacing. An installation tool (required; sold separately) guides staples as they are driven into place. Each box contains lacing and nylon-coated connecting pins for four connections.

Stainless steel lacing provides better corrosion resistance than steel and is nonmagnetic.

For Belt Thickness	Min. Pulley Dia.	Recommended Lacing
1/16″ to 1/8″	2″	No. 62
1/8″ to 3/16″	3″	No. 125
3/16″ to 1/4″	4″	No. 187

Lace Length	NO. 62 LACING Steel Box of 4		NO. 62 LACING Stainless Steel Box of 4		NO. 125 LACING Steel Box of 4		NO. 125 LACING Stainless Steel Box of 4		NO. 187 LACING Steel Box of 4		NO. 187 LACING Stainless Steel Box of 4	
10″	—	—	—	—	6016K281	$53.87	6016K287	$97.84	—	—	—	—
12″	6016K211	$60.97	6016K222	$108.34	6016K252	64.61	6016K288	117.42	6016K232	$72.47	6016K244	$159.89
14″	—	—	—	—	6016K282	75.41	6016K289	136.99	—	—	—	—
16″	6016K212	81.29	—	—	6016K283	86.19	6016K291	156.56	6016K233	96.64	6016K245	213.15
18″	6016K213	91.44	6016K223	162.51	6016K254	96.96	6016K292	176.13	6016K234	108.75	6016K246	239.82
20″	6016K214	101.63	—	—	6016K284	107.73	6016K293	195.69	6016K235	120.84	6016K247	266.46
24″	6016K215	121.92	6016K224	216.70	6016K256	129.25	6016K294	234.84	6016K236	144.98	6016K248	319.76
30″	6016K216	152.44	6016K225	270.84	6016K257	161.60	6016K295	293.57	6016K237	181.24	6016K249	399.73
36″	6016K217	182.89	6016K226	325.04	6016K258	193.87	6016K296	352.24	6016K238	217.48	6016K261	479.63
42″	6016K218	217.63	—	—	6016K285	230.72	6016K297	419.45	6016K239	258.71	6016K262	571.25
48″	6016K219	248.10	6016K227	441.20	6016K286	263.03	6016K298	478.14	6016K241	294.91	6016K264	651.20
60″	6016K221	309.06	6016K228	549.49	6016K263	327.66	6016K299	595.56	6016K243	367.39	—	—

Installation Tools and Replacement Parts

Each installation tool includes a staple driver and guide blocks. For belts wider than the tool width listed, repeat the operation.

Also Available: Replacement connecting pins and retaining washers. For pins, please ask for 6016K888 and specify steel or stainless steel pins, 10- or 100-ft. length, and lacing series number. For washers, please ask for 6016K777 and specify lacing series number.

		Each
2″ Wide Installation Tool	6016K271	$95.74
4″ Wide Installation Tool	6016K272	191.48
6″ Wide Installation Tool	6016K274	287.20
12″ Wide Installation Tool	6016K273	574.38
Replacement Staple Driver	6016K824	46.24
Replacement Staple Guide Block	6016K278	17.66

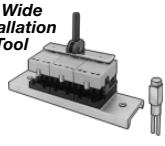

6″ Wide Installation Tool

Bolt-On Lacing for Heavy Duty Conveyor Belts

Commonly used in mining conveyors, this galvanized steel lacing repairs and extends thick, heavy belts. Laces include fasteners and a nylon-coated connecting pin for one connection.

Installation tools are required for proper installation. Punch holes in the belt using the *power punch bit*, then fasten bolts with the *power wrench bit*. *Quick-change adapter* lets you use the power bits with a 1/2″ impact wrench. ***Templates*** serve as guides when punching holes and cutting belt ends.

Also Available: Stainless steel lacing and power wrench bit for stainless steel fasteners. For lacing, please ask for 6143K888 and specify belt width. For power wrench bit, please ask for 6143K94.

For Belt Wd.	For Belt Thick.	Min. Pulley Dia.	Lace		Template	
18″	1/4″ to 5/8″	9″	6143K1	$39.86	6143K21	$41.50
24″	1/4″ to 5/8″	9″	6143K3	51.09	6143K23	41.50
30″	1/4″ to 5/8″	9″	6143K5	65.40	6143K24	51.89
36″	1/4″ to 5/8″	9″	6143K6	79.71	6143K25	62.28
60″	1/4″ to 5/8″	9″	6143K11	136.86	6143K28	103.75

Installation Tools

Power Punch Bit	6143K92	$21.60
Power Wrench Bit	6143K93	32.77
Quick-Change Adapter	6143K95	80.78
Bolt Cutters	6143K91	32.82

End View

Pulleys for Conveyor Belts

Replace worn and damaged pulleys or create new conveyors. Pulleys are steel and have a keyway with two set screws at each end, unless noted. For keyed shafts, see page 1082. Also known as crowned pulleys, 4″ to 8″ diameter pulleys have tapered ends to improve belt tracking.

To Order: Please specify bore size: 1/2″ bore with 1/8″×1/16″ keyway (unless noted), 5/8″ or 3/4″ bore with 3/16″×3/32″ keyway, or 1″ bore with 1/4″×1/8″ keyway.

Also Available: Pulleys with 1/4″ thick rubber coating (lagging). Please ask for 5706K888 and specify pulley diameter (without coating), pulley width, and bore size.

Also Available: Stainless steel pulleys. Please ask for 5706K777 and specify pulley diameter, pulley width, and bore size.

Pulley Width	For Belt Width	2″ Diameter		4″ Diameter		6″ Diameter		8″ Diameter	
6″	4″	5706K11★	$71.31	5706K12	$84.07	5706K41	$116.36	5706K51	$124.80
8″	6″	5706K15★	72.63	5706K16	84.83	5706K42	118.95	5706K52	134.11
10″	8″	5706K19★	74.00	5706K21	85.62	5706K43	121.52	5706K53	140.59
12″	10″	5706K24★	75.42	5706K25	86.38	5706K44	124.12	5706K54	154.07
14″	12″	5706K28★	76.90	5706K29	87.17	5706K45	128.57	5706K55	163.90
16″	14″	5706K33★	78.44	5706K34	87.93	5706K46	133.02	5706K56	173.74
18″	16″	5706K37★	80.04	5706K38★	108.36	5706K47	137.50	5706K57	183.62
20″	18″	5706K13★	81.71	5706K14	90.60	5706K61	141.95	5706K71	193.43
22″	20″	5706K17★	83.45	5706K18	92.93	5706K62	146.38	5706K72	203.26
26″	24″	5706K22★	85.26	5706K23	98.17	5706K63	155.31	5706K73	212.80
32″	30″	5706K26★	87.16	5706K27	105.26	5706K64	168.93	5706K74	252.57
38″	36″	5706K31★	89.14	5706K32	112.43	5706K65	183.60	5706K75	272.17

★ 1/2″ bore size has a single set screw at each end without keyway.

Maintenance Tools for Conveyor Belts

Belt cutting tools are portable so you can safely cut your conveyor belts right on your job site.

Surface removal tool, also known as a skiver, removes the rough top surface of your conveyor belt for secure lacing connections.

	For Max. Belt Wd.	Thick.		
Belt Cutting Tool	14″	3/8″	6141K11	$611.13
Belt Cutting Tool	36″	1/2″	6202T47	1,307.54
Surface Removal Tool			6202T48	18.65

Belt Cutting Tool for 14″ Max. Belt Wd.

Belt Cutting Tool for 36″ Max. Belt Wd.

Surface Removal Tool

Conveyor Belt Tensioners and Bearings

Tensioner and Bearing

Extend or retract your conveyor belt pulley to adjust the tension on the belt. Tensioners mount to the sides of the conveyor and attach to bearings (sold separately) that hold the pulley shaft. *Note:* Two tensioners and two bearings are required.

Tensioners are steel with a gray painted finish and have a cadmium-plated steel adjustment rod and nut. Mounting hole diameter is 9/16″ (fasteners not included).

Bearings are cast iron and have a locking collar with two set screws. Temperature range is –20° to 200° F.

Also Available: Stainless steel tensioners and stainless steel bearings with a plastic housing. For tensioners, please ask for 6029K888 and specify maximum adjustment: 3″, 6″, 9″, or 12″. For bearings, please ask for 6029K777 and specify shaft diameter: 5/8″, 3/4″, 7/8″, or 1″.

Tensioners

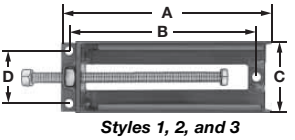

Styles 1, 2, and 3

Style 4

Style	Maximum Adjustment	(A)	(B)	(C)	(D)		
1	1 1/2″	7″	6″	4 1/16″	3 3/16″	6029K41	$78.91
2	3″	8 1/2″	7 1/2″	4 1/16″	3 3/16″	6029K42	93.03
2	6″	11 1/2″	10 1/2″	4 1/16″	3 3/16″	6029K43	101.31
2	9″	14 1/2″	13 1/2″	4 1/16″	3 3/16″	6029K44	116.59
3	6″	12 3/8″	11 3/8″	4 11/16″	3 11/16″	6029K46	113.76
3	9″	15 3/8″	14 3/8″	4 11/16″	3 11/16″	6029K47	127.31
3	12″	18 3/8″	17 3/8″	4 11/16″	3 11/16″	6029K48	139.00
4	6″	14″	12 7/8″	5 1/16″	3 1/16″	6029K51	153.84
4	9″	17″	15 7/8″	5 1/16″	3 1/16″	6029K52	165.38
4	12″	20″	18 7/8″	5 1/16″	3 1/16″	6029K53	187.01
4	18″	26″	24 7/8″	5 1/16″	3 1/16″	6029K54	218.27

Bearings

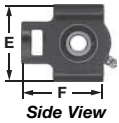

Side View

End View

For Shaft Dia.	Fits Style	Dynamic Load Cap., lbs.	Max., rpm	(E)	(F)	(G)		
1/2″	1, 2	2,610	7,500	3 1/2″	3 11/16″	17/32″	6029K19	$69.28
5/8″	1, 2	2,610	7,500	3 1/2″	3 11/16″	17/32″	6029K21	69.28
3/4″	1, 2	2,610	6,500	3 1/2″	4″	17/32″	6029K22	75.14
15/16″	1, 2	2,800	5,500	3 1/2″	4 3/32″	17/32″	6029K24	75.14
1″	1, 2	2,800	5,500	3 1/2″	4 3/32″	17/32″	6029K25	75.14
1 3/16″	3	4,380	4,500	4″	4 5/8″	17/32″	6029K27	88.08
1 1/4″	3	5,780	4,000	4″	5″	17/32″	6029K28	102.78
1 7/16″	3	5,780	4,000	4″	5″	17/32″	6029K31	102.78
1 1/2″	4	7,340	3,500	4 1/2″	5 19/32″	1 1/16″	6029K32	116.30
1 3/4″	4	7,900	3,000	4 1/2″	5 3/4″	1 1/16″	6029K33	121.47
1 15/16″	4	7,880	3,000	4 1/2″	5 29/32″	1 1/16″	6029K36	136.20

Conveyor Belt Tensioners with Protected Adjusting Screw

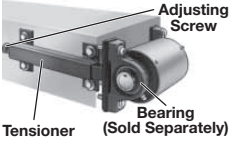

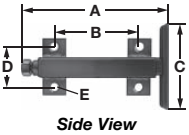

Side View

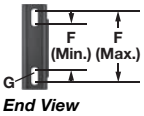

End View

Prevent debris buildup, corrosion, and thread damage—these tensioners have a totally enclosed adjusting screw. Tensioners mount to the sides of the conveyor and attach to base-mount bearings (not included; see pages 1153-1163) that hold the pulley shaft. *Note:* Two tensioners and two bearings are required.

Stainless steel tensioners are for use in washdown and corrosive environments.

Maximum Adjustment	(A)	(B)	(C)	(D)	(E)	(F) Min.	(F) Max.	(G)	Steel		Stainless Steel	
3″	6 7/8″	3 9/16″	5 1/4″	2 5/8″	1/2″	2 15/16″	4 5/16″	3/8″	60085K11	$105.46	60085K31	$186.16
3″	8 1/2″	4 3/8″	7″	3″	1/2″	3 13/16″	5 11/16″	1/2″	60085K14	148.72	60085K34	277.82
6″	10 3/8″	7 1/16″	5 1/4″	2 5/8″	1/2″	2 15/16″	4 5/16″	3/8″	60085K12	116.92	60085K32	222.98
6″	11 1/2″	7 3/8″	7″	3″	1/2″	3 13/16″	5 11/16″	1/2″	60085K15	162.90	60085K35	329.76
9″	14 3/8″	11 1/16″	5 1/4″	2 5/8″	1/2″	2 15/16″	4 5/16″	3/8″	60085K13	126.38	60085K33	262.66
9″	14 1/2″	10 3/8″	7″	3″	1/2″	3 13/16″	5 11/16″	1/2″	60085K16	171.68	60085K36	390.34
12″	19 1/8″	14 1/8″	10″	4″	5/8″	5 9/16″	8 11/16″	5/8″	60085K19	237.22		

Sprocket-Driven Conveyor Belts

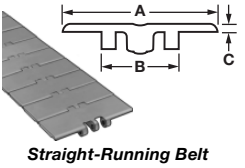

Straight-Running Belt

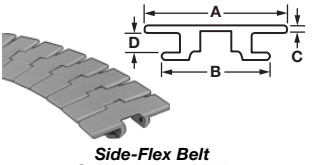

Side-Flex Belt Series 880 and 882

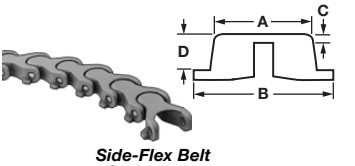

Side-Flex Belt Series 1701

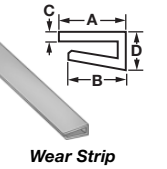

Wear Strip

An excellent choice for food handling, packaging, and bottling, belts consist of links connected by stainless steel pins. Also known as conveyor chain. Links are FDA-compliant brown acetal and temperature range is –40° to 194° F, unless otherwise stated.

Straight-running belts have overlapping links so there are no gaps. *High-temperature* belts are made of stainless steel, which is nonmagnetic and corrosion resistant. Temperature range is –94° to 806° F.

Side-flex belts have tabs on the bottom that keep the belt from lifting off the track when traveling through curved sections of conveyor.

Wear strips attach to conveyor frames up to 1/8″ thick to reduce friction and abrasion on your belt. Made of white UHMW polyethylene.

Also Available: Acetal rivets to attach wear strips to your frame. Please ask for 6369K888 and specify 3/4″, 1″, or 1 1/2″ rivet length.

(A)	(B)	(C)	5-ft. Length		10-ft. Length	
Straight-Running Belts						
Series 820						
3 1/4″	1 5/8″	5/32″	6378K71	$48.33	6378K21	$96.67
4″	1 5/8″	5/32″	6378K72	63.02	6378K22	126.04
4 1/2″	1 5/8″	5/32″	6378K73	65.62	6378K23	131.25
6″	1 5/8″	5/32″	6378K74	88.33	6378K24	176.67
7 1/2″	1 5/8″	5/32″	6378K75	88.69	6378K25	177.38
Series 821						
7 1/2″	3 5/8″	3/16″	6378K64	116.56	6378K61	203.45
10″	3 5/8″	3/16″	6378K65	144.17	6378K62	251.64
12″	3 5/8″	3/16″	6378K66	151.46	6378K63	264.36
High-Temperature Series 815						
3 1/4″	1 21/32″	1/8″	6378K55	143.33	6378K51	250.18
4 1/2″	1 21/32″	1/8″	6378K56	226.41	6378K52	399.27
6″	1 21/32″	1/8″	6378K57	272.56	6378K53	480.55
7 1/2″	1 21/32″	1/8″	6378K58	329.90	6378K54	575.82

(A)	(B)	(C)	(D)	5-ft. Length		10-ft. Length	
Side-Flex Belts							
Series 880—Minimum curve radius is 15 3/4″.							
3 1/4″	2 7/16″	5/32″	15/32″	6378K81	$65.31	6378K31	$114.00
4 1/2″	2 7/16″	5/32″	15/32″	6378K82	72.81	6378K32	127.09
Series 882—Minimum curve radius is 24″.							
4 1/2″	3″	3/16″	11/16″	6378K83	138.44	6378K36	241.64
7 1/2″	3″	3/16″	11/16″	6378K84	152.29	6378K33	265.82
10″	3″	3/16″	11/16″	6378K85	173.02	6378K34	302.00
12″	3″	3/16″	11/16″	6378K86	182.71	6378K35	318.91
Series 1701—Minimum curve radius is 5″.							
2 1/8″	2 5/8″	5/32″	3/4″	6378K94	106.25	6378K93	212.50
Wear Strips							
3/4″	3/4″	1/8″	3/8″	6369K24	11.34		
1″	3/4″	3/16″	7/16″	6369K25	13.45		
1 1/2″	3/4″	3/16″	7/16″	6369K26	14.11		
2″	3/4″	1/8″	3/8″	6369K27	25.01		

Sprockets and Idler Wheels for Sprocket-Driven Conveyor Belts

Drive sprockets and idler wheels keep your belt moving smoothly. For quick installation, sprockets and wheels consist of two halves connected by corrosion-resistant fasteners, unless noted. Made of polyamide. Temp. range is 32° to 194°F.

DRIVE SPROCKETS — IDLER WHEELS

820 and 815 Belt Series

821 Belt Series

880 and 882 Belt Series

1701 Belt Series

820 and 815 Belt Series

880 and 882 Belt Series

For Belt Series	For Shaft Dia.	No. of Teeth	OD	Wd.	Color		
Drive Sprockets							
820	1″	21	5.08″	2.09″	Black	6369K811	$43.62
820	1.25″	21	5.08″	2.09″	Black	6369K812	43.62
820	1″	23	5.59″	2.09″	Black	6369K821	51.49
820	1.25″	23	5.59″	2.09″	Black	6369K822	54.05
820	1″	25	6.06″	2.09″	Black	6369K831	54.43
820	1.25″	25	6.06″	2.09″	Black	6369K832	59.45
821	1.18″	25	6.07″	3.16″	White	6369K44	67.13
815	0.79″	21	5.12″	1.67″	Gray	6369K41	57.73
815	0.79″	23	5.59″	1.67″	White	6369K42	62.44
815	0.79″	25	6.07″	1.67″	Gray	6369K43	67.13
880	1″	12	5.80″	2.30″	Black	6369K861	53.54
880	1.25″	12	5.80″	2.30″	Black	6369K862	53.54
882	1″	12	5.87″	2.30″	Black	6369K891	48.77

For Belt Series	For Shaft Dia.	No. of Teeth	OD	Wd.	Color		
Drive Sprockets (Cont.)							
882	1.25″	12	5.87″	2.30″	Black	6369K892	$48.77
1701	0.79″	8	5.14″	1.67″	Gray	6369K45★	38.36
1701	0.79″	10	6.37″	1.67″	Gray	6369K46★	47.19
Idler Wheels							
820, 815	1″	—	5.10″	2.32″	Black	6369K911★	27.11
820, 815	1″	—	6.08″	2.32″	Black	6369K931★	26.82
820, 815	1.25″	—	5.10″	2.32″	Black	6369K912★	26.32
820, 815	1.25″	—	6.08″	2.32″	Black	6369K932★	26.32
880	1″	12	5.80″	2.30″	Black	6369K961	53.54
880	1.25″	12	5.80″	2.30″	Black	6369K962	53.54
882	1″	12	5.87″	2.30″	Black	6369K991	48.77
882	1.25″	12	5.87″	2.30″	Black	6369K992	45.45

★ One-piece construction.

Overhead Enclosed-Track Conveyor Components

The enclosed track protects trolleys and chain from contamination and damage. Components fit track with an inside width of 2½″.

Track

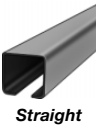
Straight

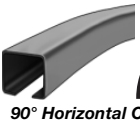

90° Horizontal Curve

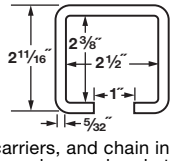

Steel track provides the runway for trolleys, carriers, and chain in manual and powered systems. Install at least one hanger bracket (sold separately) every 5 feet. Track has a blue painted finish.

Straight—10 ft. Length	5927K11	$139.29
90° Horizontal Curve—2 ft. Radius	5927K12	168.75
90° Horizontal Curve—3 ft. Radius	5927K13	192.86
90° Horizontal Curve—4 ft. Radius	5927K14	241.07

Brackets

Brackets are steel and have a ½″ dia. hole in the top for hanging from threaded rod.

Hanger bracket holds track in place with nuts (not included) on threaded rod.

Joint bracket connects two sections of track when tightened with the included bolts.

Hanger Bracket

Joint Bracket

	Ht.		
Hanger Bracket	4½″	5927K19	$18.00
Joint Bracket	4 7/16″	5927K18	112.42

Trolleys for Manual Conveyors

Sturdy cast iron construction and ball bearing wheels provide smooth operation. Wheels and ball bearings are steel. Distance from the bottom of the track to the center of (A) is 1½″.

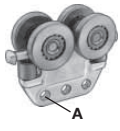

Ht.	Wd.	(A)	Cap., lbs.		
4 9/16″	6″	17/32″	250	5927K42	$56.25

Carriers and Chain for Powered Conveyors

Carrier Shown Open

Carrier Shown Closed

Chain

Carrier attaches loads to the chain with a scissor-like action and pivot as the conveyor makes elevation changes. Maximum incline is 45°. Use where swinging loads are permitted.

Chain is a series of smooth-rolling, alternating vertical and horizontal wheels that carry loads along the track. Steel pins connect the wheels and detach for quick installation and replacement. Vertical wheel axles spaced every 8″ serve as attachment points for carriers. *Note:* Capacity listed is per attachment point.

	Cap., lbs.		
Carrier—4¼″ Ht. × 1″ Wd.	125	5927K27	$3.12
Chain—20 ft. Lg.	125	5927K34	602.68

Overhead I-Beam Conveyor Components

I-beam conveyors are built to handle heavier loads than enclosed-track conveyors and are easy to install and expand.

Track

I-beam track provides the runway for trolleys in manual and powered systems. Made of steel with a gray primer finish. *Note:* Not designed for building structural support.

Track Ht.	Flange Wd.	Track Thick.	Lg., ft.	Weight, lbs./ft.		
3″	2.33″	0.17″	10	5.7	5920K2	$157.95
4″	2.66″	0.19″	10	7.7	5920K3	169.00

Trolleys for Manual Conveyors

Prevent excess wear on your track and trolley—only the wheels of these hand-push trolleys come in contact with the I-beam. Trolleys can be taken apart for installation anywhere along the I-beam. Wheels and ball bearings are steel; brackets are cast iron.

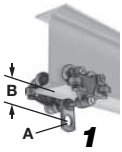

1

2

	For Track Ht.	For Flange Wd.	(A)	(B)	Cap., lbs.		
1	3″-4″	2.33″-2.66″	1 1/16″	2¾″	500	5920K35	$99.00
2	4″-6″	2.66″-3.33″	1½″	4 15/16″	1,500	5920K37	232.73

Trolleys for Powered Conveyors

The two-bolt bottom connection keeps the trolleys from loosening during use. Trolleys are made of forged steel and have steel ball bearings.

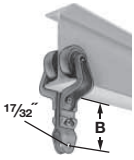

For Track Ht.	For Chain Trade Size	(B)	Cap., lbs.		
3″	X348	5⅝″	200	5920K24	$38.97
4″	X458	6 1/16″	400	5920K25	56.00
4″	X458	6⅞″	400	5920K26	56.00

Chain for Powered Conveyors

You can assemble and disassemble this steel chain without any tools, yet its design makes it virtually impossible to disconnect while in use.

Chain Shown with Trolleys

For Track Ht.	Chain Trade Size	Lg., ft.		
3″	X348	10	5920K21	$147.12
4″	X458	10	5920K22	162.96

Hooks for Powered Conveyors

Hooks allow items to rotate 90° while suspended. They attach to trolleys with a ½″ bolt and nut (not included). Made of malleable iron.

5920K31 ..... $15.00

Easy-Cut Strip Brushes and Holders

Cut these flexible brushes and holders to fit your conveyor. Brushes have fused bristles that won't fall out when the backing is cut. All can be cut to size with scissors.

Brushes

Backing and bristles are black nylon. Maximum temperature is 250°F.
To Order: Please specify length.

O'all Ht.	Bristle Dia.	Available Lengths, ft.		Per Ft.
1″	0.010″	3, 5, 10, 25, 50, 100	7900T1	$2.28
2″	0.010″	3, 5, 10, 25, 50, 100	7900T5	3.34
3″	0.012″	3, 5, 10, 25, 50, 100	7900T2	4.39

Brush Holders

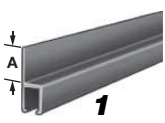

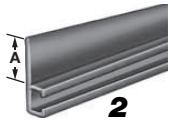

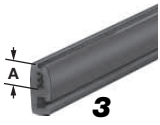

Holders are black plastic. *Styles 1* and *2* can be drilled for mounting. *Style 3* has a top channel that grips onto surfaces up to 3/32″ thick.

(A)		3-ft. Length	Each	5-ft. Length	Each	10-ft. Length	Each
1	1/2″	7900T34	$7.09	7900T35	$11.80	7900T36	$23.62
2	1/2″	7900T41	7.09	7900T42	11.80	7900T43	23.62
3	3/8″	7900T61	7.09	7900T62	11.91	7900T63	23.67

Tight-Seal Strip Brushes

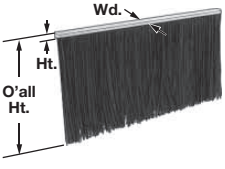

0.006″ Dia. Bristles (Actual Size)

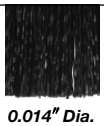

0.014″ Dia. Bristles (Actual Size)

0.045″ Dia. Bristles (Actual Size)

Brushes have dense bristles that can dust, stop, and separate items on a conveyor. They also keep heat, sprayed liquids, and chips contained. Bristles are held in place by a continuous metal backing and a binding wire. Brushes can be cut to size with wire-cutting pliers (see page 2753). The larger the bristle diameter, the stiffer the bristles. For strip brush holders, see page 1257.

General Purpose Nylon Bristles—Bristles are abrasion resistant. Color is black. Maximum temperature is 225°F.

Static-Control Nylon Bristles—Nylon dissipates static to keep it from building up. Color is black. Maximum temperature is 200°F.

Detectable Nylon Bristles—Bristles contain a compound that metal detectors and x-ray equipment can detect. Color is gray. Maximum temperature is 200°F.

Food-Grade Polyester—Made of FDA-compliant polyester, brushes are good for food and beverage conveying. Color is white. Maximum temperature is 200°F.

High-Temperature PTFE Bristles—Choose these brushes for high-temperature and nonstick applications. Color is off-white. Maximum temperature is 500°F.

Ultra-Soft Horsehair Bristles—Excellent for picking up dust and fine powders in finishing and cleaning applications. Color is brown. Maximum temperature is 300°F.

Soft Brass Bristles—Bristles won't scratch other metals. Brass is conductive to prevent static buildup. Maximum temperature is 500°F.

Corrosion-Resistant Stainless Steel Bristles—Use for corrosive and high-temperature environments. Stiffer than brass. Maximum temperature is 800°F.

Steel backing has a galvanized finish. *Stainless steel backing* resists corrosion.

To Order: Please specify length in 1-ft. increments. Maximum continuous length is 8 ft. except for brushes with PTFE bristles, which have a maximum continuous length of 6 ft.

O'all Ht.	Bristle Dia.		Per Ft.
General Purpose Nylon Bristles			
1/8″ Wd. × 1/8″ Ht. Steel Backing			
3/4″	0.006″	74405T1	$3.60
1″	0.008″	74405T2	3.91
2″	0.010″	74405T3	4.29
3″	0.012″	74405T4	4.77
1/8″ Wd. × 1/8″ Ht. SS Backing			
3/4″	0.006″	74715T1	3.94
1″	0.008″	74715T2	4.06
2″	0.010″	74715T3	4.42
3″	0.012″	74715T4	4.91
3/16″ Wd. × 7/32″ Ht. Steel Backing			
1″	0.010″	74405T5	1.99
2″	0.010″	74405T6	2.56
2″	0.014″	74405T7	2.82
3″	0.014″	74405T8	3.36
4″	0.014″	74405T9	4.19
6″	0.014″	74405T11	5.55
3/16″ Wd. × 7/32″ Ht. SS Backing			
1″	0.010″	74715T5	4.50
2″	0.014″	74715T6	5.24
3″	0.014″	74715T7	5.51
4″	0.014″	74715T8	6.56
6″	0.014″	74715T9	7.69
5/16″ Wd. × 5/16″ Ht. Steel Backing			
1″	0.010″	74405T12	2.87
2″	0.014″	74405T13	3.39
2″	0.020″	74405T14	3.79
3″	0.014″	74405T15	3.88
3″	0.020″	74405T16	4.93
3″	0.030″	74405T17	5.63
4″	0.020″	74405T18	5.87
4″	0.030″	74405T19	5.97
6″	0.020″	74405T21	6.74
6″	0.045″	74405T22	10.05
8″	0.045″	74405T23	15.38
10″	0.045″	74405T24	16.26
5/16″ Wd. × 5/16″ Ht. SS Backing			
1″	0.010″	74715T11	5.93
2″	0.014″	74715T12	5.85
2″	0.020″	74715T13	6.86
3″	0.014″	74715T14	6.66
3″	0.020″	74715T15	7.46

O'all Ht.	Bristle Dia.		Per Ft.
General Purpose Nylon Bristles (Cont.)			
5/16″ Wd. × 5/16″ Ht. SS Backing (Cont.)			
3″	0.030″	74715T16	$8.16
4″	0.020″	74715T17	8.78
4″	0.030″	74715T18	9.27
6″	0.020″	74715T19	11.06
6″	0.045″	74715T21	11.48
8″	0.045″	74715T22	15.64
10″	0.045″	74715T23	18.44
7/16″ Wd. × 7/16″ Ht. Steel Backing			
2″	0.014″	74405T25	8.74
3″	0.020″	74405T26	10.83
4″	0.020″	74405T27	13.04
6″	0.045″	74405T28	17.23
8″	0.045″	74405T29	25.62
10″	0.045″	74405T31	26.88
Static-Control Nylon Bristles			
3/16″ Wd. × 7/32″ Ht. Steel Backing			
1″	0.010″	74405T61	11.49
2″	0.010″	74405T62	16.97
3″	0.010″	74405T63	22.51
5/16″ Wd. × 5/16″ Ht. Steel Backing			
1″	0.010″	74405T64	14.00
2″	0.010″	74405T65	21.06
3″	0.010″	74405T66	28.14
Detectable Nylon Bristles			
3/16″ Wd. × 7/32″ Ht. Steel Backing			
1″	0.014″	7443T61	7.09
2″	0.014″	7443T62	11.66
3″	0.024″	7443T63	16.66
5/16″ Wd. × 5/16″ Ht. Steel Backing			
1″	0.014″	7443T64	12.51
2″	0.014″	7443T65	18.06
3″	0.024″	7443T66	23.51
Food-Grade Polyester Bristles			
3/16″ Wd. × 7/32″ Ht. SS Backing			
1″	0.008″	7442T11	5.86
2″	0.012″	7442T12	6.86
3″	0.020″	7442T13	7.89
5/16″ Wd. × 5/16″ Ht. SS Backing			
1″	0.008″	7442T14	7.94
2″	0.012″	7442T15	9.77
3″	0.020″	7442T16	11.60

O'all Ht.	Bristle Dia.		Per Ft.
High-Temperature PTFE Bristles			
5/16″ Wd. × 5/16″ Ht. Steel Backing			
1″	0.035″	7028T1	$45.36
2″	0.035″	7028T2	88.96
3″	0.035″	7028T3	128.12
Ultra-Soft Horsehair Bristles			
3/16″ Wd. × 7/32″ Ht. Steel Backing			
1″	0.008″	8801T1	4.22
2″	0.008″	8801T2	6.35
3″	0.008″	8801T3	8.78
5/16″ Wd. × 5/16″ Ht. Steel Backing			
1″	0.008″	8801T4	5.05
2″	0.008″	8801T5	8.40
3″	0.008″	8801T6	11.74
Soft Brass Bristles			
3/16″ Wd. × 7/32″ Ht. SS Backing			
1″	0.004″	98295T1	22.22
2″	0.006″	98295T2	22.78
3″	0.008″	98295T3	24.92
4″	0.006″	98295T4	29.30
6″	0.008″	98295T5	42.27
5/16″ Wd. × 5/16″ Ht. SS Backing			
1″	0.006″	98295T6	17.32
2″	0.008″	98295T7	23.40
3″	0.010″	98295T8	28.32
4″	0.008″	98295T9	39.78
6″	0.014″	98295T11	49.42
Corrosion-Resistant SS Bristles			
3/16″ Wd. × 7/32″ Ht. SS Backing			
1″	0.004″	63595T1	19.08
2″	0.006″	63595T2	19.59
3″	0.008″	63595T3	20.06
4″	0.006″	63595T4	24.47
6″	0.008″	63595T5	38.55
5/16″ Wd. × 5/16″ Ht. SS Backing			
1″	0.006″	63595T6	23.73
2″	0.010″	63595T7	27.60
3″	0.014″	63595T8	34.97
4″	0.010″	63595T9	42.48
6″	0.014″	63595T11	52.59

Tight-Seal Strip Brush Holders

Slide a strip brush into one of these holders and position it on your conveyor. Use with the Tight-Seal Strip Brushes shown on the previous page. Holders have a channel for one strip brush, except *Style 2*, which holds two brushes. Cut holders to size with a hacksaw. They can be drilled for mounting, except *Style 8,* which has a top channel that grips onto surfaces up to 1/16″ thick.

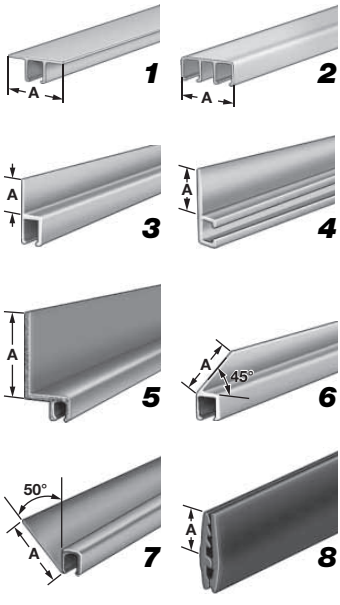

For Backing Wd.	Ht.	(A)		To Order: Please specify length. 1-ft.	2-ft.	3-ft.	4-ft.	5-ft.	6-ft.	7-ft.	8-ft.
Lightweight Aluminum											
1	1/8″	1/8″	3/4″	**8813T43**	$3.67	$4.78	$5.12	$6.59	$6.94	$7.34	$9.16	$10.62
1	3/16″	7/32″	1″	**8813T41**	5.14	6.16	6.67	8.23	8.76	9.25	12.86	14.89
1	5/16″	5/16″	1 1/4″	**8813T42**	5.33	6.37	6.90	8.49	9.56	10.62	12.74	14.87
1	7/16″	7/16″	1 3/4″	**8813T44**	7.83	9.42	10.20	12.54	14.10	15.66	18.80	21.95
2	3/16″	7/32″	15/16″	**8813T45**	5.50	6.60	7.70	8.80	9.90	11.06	13.20	15.40
2	5/16″	5/16″	1 3/16″	**8813T46**	6.17	7.40	8.63	9.87	11.10	12.56	14.80	17.27
3	1/8″	1/8″	5/8″	**8813T54**	3.98	4.78	5.17	5.58	5.97	6.77	8.36	9.56
3	3/16″	7/32″	7/8″	**8813T52**	5.64	7.04	8.18	9.02	9.59	10.15	14.10	16.35
3	5/16″	5/16″	3/4″	**8813T53**	5.41	6.51	8.65	9.74	10.28	12.44	14.06	15.69
3	7/16″	7/16″	1 13/16″	**8813T55**	7.23	9.40	10.84	14.46	16.62	19.50	23.85	25.32
4	1/8″	1/8″	1/2″	**8813T49**	3.98	5.16	5.60	6.38	7.17	7.97	9.97	11.58
4	3/16″	7/32″	5/8″	**8813T47**	5.07	6.41	6.90	7.89	8.87	9.86	12.32	14.29
4	5/16″	5/16″	1 1/16″	**8813T48**	5.64	6.77	7.34	9.59	10.16	11.85	14.11	15.80
4	7/16″	7/16″	7/8″	**8813T51**	7.71	9.26	10.80	14.66	16.99	20.07	23.94	27.79
Flexible Black PVC											
5	3/16″	7/32″	2″	**8813T56**	5.33	6.41	6.96	8.56	10.70	11.76	13.92	15.25
5	5/16″	5/16″	2″	**8813T57**	5.98	7.17	7.78	9.56	11.96	13.15	15.55	16.75
6	3/16″	7/32″	1 13/16″	**8813T58**	5.76	7.48	8.63	9.78	10.94	11.51	14.39	16.12
6	5/16″	5/16″	1 1/8″	**8813T59**	5.47	7.11	8.20	10.39	11.50	12.57	14.21	16.40
7	3/16″	7/32″	1″	**8813T61**	4.24	5.08	5.92	6.77	7.64	8.47	11.02	11.86
7	5/16″	5/16″	1 5/8″	**8813T62**	5.31	6.37	7.45	9.06	10.65	11.71	13.86	15.97
Flexible Black PVC											
8	1/8″	1/8″	9/16″	**8813T63**	3.67	4.76	5.48	7.33	8.43	9.56	10.99	12.46
Corrosion-Resistant Stainless Steel											
3	3/16″	7/32″	1 1/16″	**8813T36**	13.77	16.52	19.27	23.42	26.17	28.92	35.81	38.56
3	5/16″	5/16″	5/8″	**8813T37**	12.09	16.94	19.37	21.79	26.62	32.67	36.31	41.15

Direct-Mount Strip Brushes

Brushes have bristles stapled into a PVC backing. The backing can be drilled for mounting, except *Style 11*, which has a top channel that grips onto surfaces up to 1/16″ thick. Use brushes to clean conveyor belts as well as to contain dust, sprayed liquids, heat, and chips. Bristles are black. The larger the bristle diameter, the stiffer the bristles.

Flexible backing can be cut to size with a utility knife. *Rigid backing* can be cut to size with a hacksaw.

General Purpose Nylon Bristles— Bristles are abrasion resistant. Maximum temperature is 150° F.

Ultra-Soft Horsehair Bristles— Excellent for picking up dust and fine powders in finishing and cleaning applications. Maximum temperature is 300° F.

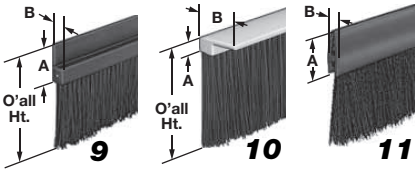

O'all Ht.	(A)	(B)	Bristle Dia.	3-ft. Length		6-ft. Length	
General Purpose Nylon Bristles— *Flexible Black PVC Backing*							
9	2″	1″	5/16″	0.008″	**7372T4**	$34.71	**7372T11**	$66.51
9	3″	1″	5/16″	0.012″	**7372T5**	36.26	**7372T12**	72.51
9	4″	1″	5/16″	0.020″	**7372T6**	37.60	**7372T13**	75.23
10	1 7/16″	7/16″	1″	0.008″	**7372T14**	33.71	**7372T17**	67.43
10	2 7/16″	7/16″	1″	0.012″	**7372T15**	35.20	**7372T18**	70.40
10	3 7/16″	7/16″	1″	0.020″	**7372T16**	36.51	**7372T19**	73.03
11	1 7/8″	7/8″	3/8″	0.008″	**7372T1**	36.00	**7372T7**	71.97
11	2 7/8″	7/8″	3/8″	0.012″	**7372T2**	37.94	**7372T8**	75.86
11	3 7/8″	7/8″	3/8″	0.020″	**7372T3**	39.09	**7372T9**	78.17
General Purpose Nylon Bristles— *Rigid Gray PVC Backing*							
9	3″	2″	9/16″	0.008″	**7410T27**	40.17	**7410T34**	80.34
9	4″	2″	9/16″	0.012″	**7410T28**	45.29	**7410T35**	90.57

O'all Ht.	(A)	(B)	Bristle Dia.	3-ft. Length		6-ft. Length	
General Purpose Nylon Bristles— *Rigid Gray PVC Backing (Cont.)*							
9	5″	2″	9/16″	0.020″	**7410T29**	$47.77	**7410T36**	$95.57
10	1 9/16″	9/16″	2″	0.008″	**7410T31**	40.94	**7410T37**	81.89
10	2 9/16″	9/16″	2″	0.012″	**7410T32**	46.14	**7410T38**	92.31
10	3 9/16″	9/16″	2″	0.020″	**7410T33**	48.69	**7410T39**	97.40
Ultra-Soft Horsehair Bristles— *Rigid Gray PVC Backing*							
9	3″	2″	9/16″	0.008″	**7410T14**	55.63	**7410T21**	111.26
9	4″	2″	9/16″	0.008″	**7410T15**	66.09	**7410T22**	132.17
9	5″	2″	9/16″	0.008″	**7410T16**	76.63	**7410T23**	153.26
10	1 9/16″	9/16″	2″	0.008″	**7410T17**	55.63	**7410T24**	111.26
10	2 9/16″	9/16″	2″	0.008″	**7410T18**	66.09	**7410T25**	132.17
10	3 9/16″	9/16″	2″	0.008″	**7410T19**	76.63	**7410T26**	153.26

Cylindrical Conveyor Brushes

With polypropylene bristles in a tight spiral pattern, these brushes are effective for cleaning conveyor belts and chain. Bristles are black. The larger the bristle diameter, the stiffer the bristles.

Bristles are mounted on a steel tube and include set screws for securing to a 1″ diameter shaft (shaft not included). Maximum temperature is 200° F.

O'all Lg.	Brush Lg.	4″ Brush Dia., 0.006″ Bristle Dia.		6″ Brush Dia., 0.02″ Bristle Dia.		8″ Brush Dia., 0.03″ Bristle Dia.		10″ Brush Dia., 0.035″ Bristle Dia.	
14″	12″	**7437T71**	$116.25	**7437T72**	$183.89	**7437T73**	$206.02	**7437T74**	$234.91
20″	18″	**7437T27**	128.26	**7437T11**	189.05	**7437T16**	216.88	**7437T22**	240.40
22″	20″	**7437T28**	140.43	**7437T12**	214.31	**7437T17**	253.10	**7437T23**	267.12
24″	22″	**7437T29**	153.79	**7437T13**	222.21	**7437T18**	273.20	**7437T24**	288.30
26″	24″	**7437T31**	168.90	**7437T61**	253.26	**7437T64**	297.00	**7437T67**	330.20
34″	32″	**7437T32**	215.74	**7437T14**	294.99	**7437T19**	359.55	**7437T25**	388.63
38″	36″	**7437T33**	251.14	**7437T62**	329.88	**7437T65**	391.50	**7437T68**	424.25
50″	48″	**7437T34**	310.69	**7437T63**	393.39	**7437T66**	481.78	**7437T69**	549.48

Adjustable Conveyor Brushes

Adjust the angle to fit 11″ to 29″ wide conveyors using the mounting kit (sold separately). Use brushes for light cleaning and product positioning. The larger the bristle diameter, the stiffer the bristles. Max. temp. is 225° F.

Mounting kit includes a 1/2″ Dia.×36″ Lg. shaft, mounting brackets, and hardware.

Bristle Dia.	Color	3 1/2″ Brush Dia.		4″ Brush Dia.		6″ Brush Dia.	
0.012″	White	**75505T13**	$45.04	**75505T24**	$51.05	**75505T71**	$75.16
0.018″	White	**75505T11**	45.04	**75505T22**	51.05	**75505T72**	75.16
0.030″	Black	**75505T15**	45.04	**75505T26**	51.05	**75505T73**	75.16
Mounting Kit						**75505T51**	$78.61

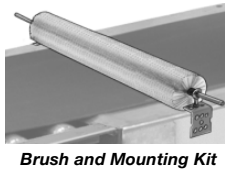

Brush and Mounting Kit

Adjust-a-Rail Conveyor Guide Rails

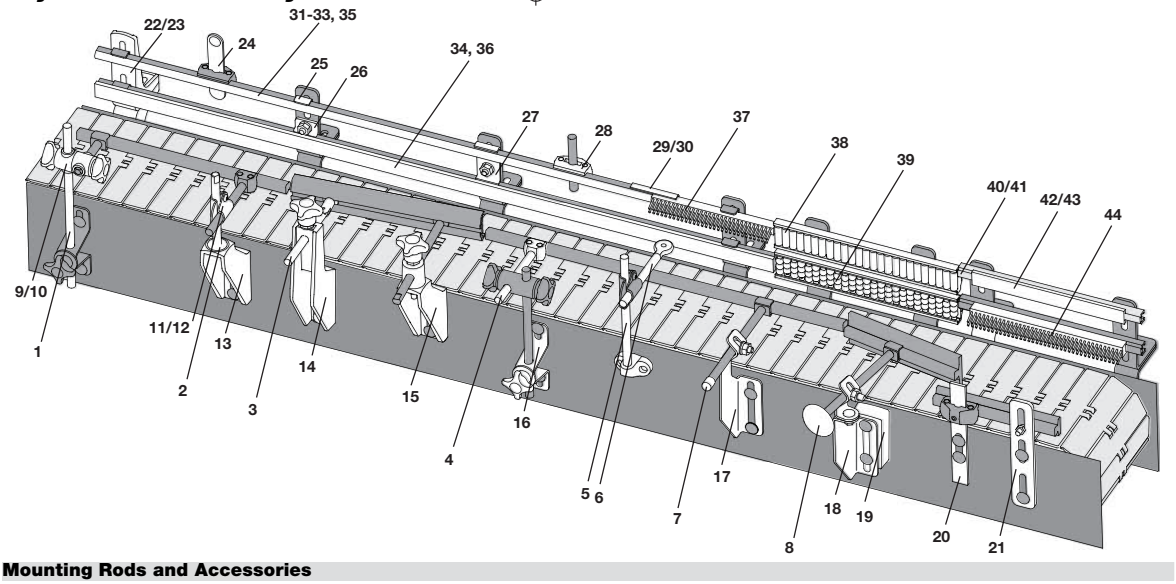

Mounting Rods and Accessories

Use rods with mounting rod brackets, connectors, and clamps to support and position guide rails and accessories. All rods are 1/2″ diameter and made of stainless steel.

(1) Mounting rods have black plastic end caps.

(2&3) Threaded mounting rods accept a 5/16″-18 bolt. *(3) Pivoting threaded mounting rods* make angle-mounting easy.

(4) Mounting rod with clamp includes a plastic clamp with two bolts for a tight grip on your guide rail.

(5) T-style mounting rod includes a plastic bracket for mounting to your conveyor. Mounting holes are 1/4″ dia. (fasteners not included).

(6) Rod with accessory/sensor holder has a plastic holder with a 1/4″ dia. hole for attachments.

(7&8) End caps cover mounting rod ends.

1	6″ Lg. Mounting Rod	**9268K71**	$9.05
1	9″ Lg. Mounting Rod	**9268K72**	11.18
1	12″ Lg. Mounting Rod	**9268K73**	17.64
2	3″ Lg. Threaded Mounting Rod	**9268K74**	14.71
2	5″ Lg. Threaded Mounting Rod	**9268K75**	15.18
2	8″ Lg. Threaded Mounting Rod	**9268K76**	18.78
2	10″ Lg. Threaded Mounting Rod	**9268K77**	21.20
3	5″ Lg. Pivoting Threaded Mounting Rod	**9268K78**	20.51
3	7″ Lg. Pivoting Threaded Mounting Rod	**9268K79**	22.92
4	5″ Lg. Mounting Rod with Clamp	**9268K137**	11.90
5	8″ Lg. T-Style Mounting Rod	**9268K144**	13.79
6	5″ Lg. Rod with Accessory/Sensor Holder	**9268K147**	10.63
7	Red Plastic End Cap	**9268K149**	.49
7	Yellow Plastic End Cap	**9268K148**	.49
8	Black Rubber End Cap	**5896T5**	7.33

Mounting Rod Connectors

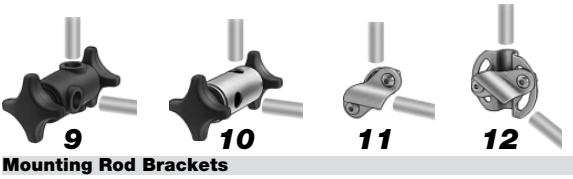

All connectors fit 1/2″ diameter rods.

(9&10) Connectors have plastic knobs for easy adjustment.

(12) Connector rotates for mounting versatility.

9	90° Angle—Plastic	**9268K85**	$18.72
10	90° Angle—Stainless Steel	**9268K23**	43.08
11	90° Angle—Stainless Steel	**9268K146**	9.75
12	Adjustable Angle—Stainless Steel	**9268K145**	14.57

Mounting Rod Brackets

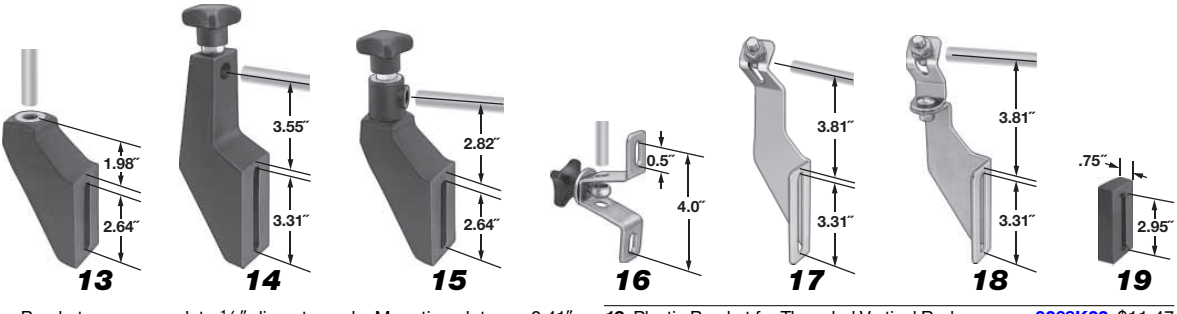

Brackets accommodate 1/2″ diameter rods. Mounting slots are 0.41″ wide (fasteners not included). *Plastic brackets* and *spacer* are black. Brackets *with swivel head* offer added versatility for angled mounting.

(14-16) Brackets have a plastic knob for easy adjustment.

(19) Bracket spacer increases the distance between the bracket and the conveyor frame. Multiple spacers can be used. Spacer is not for use with Style 16.

13	Plastic Bracket for Threaded Vertical Rod	**9268K22**	$11.47
14	Plastic Bracket for Horizontal Rod	**9268K37**	23.37
15	Plastic Bracket w/ Swivel Head for Horizontal Rod	**9268K38**	24.25
16	Stainless Steel Bracket for Vertical Rod	**9268K36**	25.22
17	Stainless Steel Bracket for Horizontal Rod	**9268K26**	26.82
18	Stain. Steel Bracket w/ Swivel Head for Horiz. Rod	**9268K27**	33.74
19	Plastic Bracket Spacer	**9268K39**	5.53

(Continued on following page)

Adjust-a-Rail Conveyor Guide Rails *(Continued from previous page)*

Mounting Bars and Brackets

Mounting bars and brackets support clamps to position guide rails and sensors. Bars and brackets are made of stainless steel, except Style 22, which is black plastic. Mounting fasteners not included, except for Style 20.

(22&23) Mounting brackets are in two pieces that can be offset for extra clearance between the conveyor and the guide rail or sensor.

(24) Bars for sensors mount with *Style 28* clamp to position sensors and reflectors.

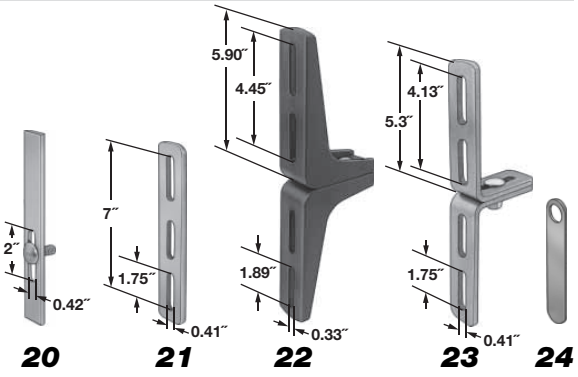

20	4½″ Ht. Mounting Bar	9268K87	$11.53
20	7½″ Ht. Mounting Bar	9268K88	13.21
21	8″ Ht. Mounting Bar	9268K143	16.06
22	11¾″ Ht. Mounting Bracket	9268K32	22.25
23	⅛″ Thick., 10⅝″ Ht. Mounting Bracket	9268K34	23.60
23	3/16″ Thick., 10⅝″ Ht. Mounting Bracket	9268K151	29.29
23	¼″ Thick., 10⅝″ Ht. Mounting Bracket	9268K152	37.51
24	5″ Ht. Bar for 12 mm Sensors	9268K83	14.18
24	5″ Ht. Bar for 18 mm Sensors	9268K84	14.18

Rail Clamps and Connectors

Components are made of stainless steel, unless otherwise stated.

(25-27) Rail clamps are used with threaded mounting rods or mounting brackets to hold guide rails in place. *Styles 25 and 27* include hardware for mounting. *Style 26* has a 5/16″ dia. mounting hole (fasteners not included).

(28) Rail clamp for mounting rods and bars connects a guide rail to a mounting rod, mounting bar, or sensor bar. Made of black plastic.

(29&30) Rail connectors join two guide rails. *Style 29* taps on with a hammer. *Style 30* includes bolts and nuts for a stronger connection.

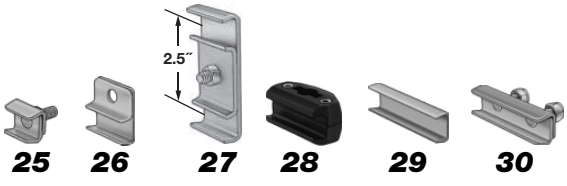

25	Rail Clamp	9268K51	$2.75
26	Offset-Rail Clamp	9268K135	2.19
27	Double-Rail Clamp	9268K55	6.58
28	Rail Clamp for Mounting Rods and Bars	9268K53	$7.33
29	Rail Connector	9268K24	2.56
30	Heavy Duty Rail Connector	9268K136	12.37

Guide Rails, Brushes, and Roller Rails

(31-36) Guide rails have UHMW polyethylene wear strips and are USDA compliant. *Styles 31-34* have stainless steel channels. *Styles 35-36* have a white low-friction wear strip and a stainless steel core.

(37) Flexible brushes have a PVC backing and white nylon bristles.

(38&39) Roller rails keep things moving where items tend to jam. Rails have gray acetal rollers and include 5/16″-18 bolts for mounting. *Style 38* has an aluminum channel. *Style 39* has a PVC channel.

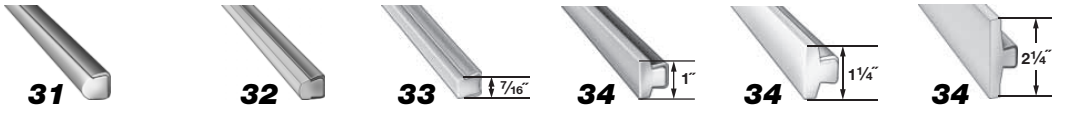

Lg., ft.	31 Round		32 Curved		33 Flat		34 1″ Wide Flat		34 1¼″ Wide Flat		34 2¼″ Wide Flat	
With White Low-Friction Wear Strip												
5	9268K41	$30.85	9268K42	$30.85	9268K44	$30.85	9268K16	$36.81	9268K43	$40.11	9268K128	$48.72
8	9268K103	52.95	9268K105	47.32	9268K109	47.32	9268K101	56.51	9268K107	61.45	9268K129	74.72
10	9268K104	53.40	9268K106	53.40	9268K111	53.40	9268K102	63.83	9268K108	69.62	9268K131	84.68
With Black Static-Control Wear Strip												
5	9268K112	37.26	9268K115	37.26	9268K125	37.26	9268K118	44.76	9268K122	48.93	9268K132	59.52
8	9268K113	56.95	9268K116	56.95	9268K126	56.95	9268K119	68.57	9268K123	75.05	9268K133	90.86
10	9268K114	64.76	9268K117	64.76	9268K127	64.76	9268K121	77.86	9268K124	85.71	9268K134	103.10

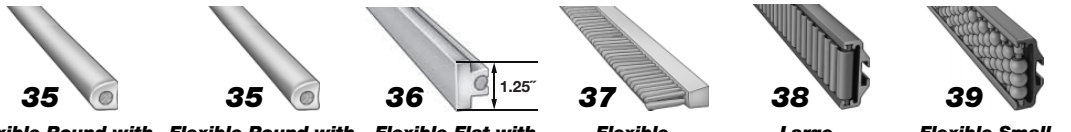

Lg., ft.	35 Flexible Round with 1/4″ Dia. Core		35 Flexible Round with 3/8″ Dia. Core		36 Flexible Flat with 3/8″ Dia. Core		37 Flexible Brush		38 Large Roller Rail		39 Flexible Small Roller Rail	
5	9268K11	$36.00	9268K12	$40.40	9268K13	$45.40	9268K164	$56.92	9268K139	$150.42	9268K171	$154.74
10	9268K31	72.00	9268K33	80.80	9268K35	90.80	9268K166	113.88	—	—	—	—

Build-Your-Own Guide Rail

Choose a channel and a wear strip or brush to create your own rail.

(40&41) Channels are aluminum and attach to mounting bars and brackets with a 5/16″-18 bolt and hex nut (not included).

(42&43) Wear strips are made of FDA-compliant white UHMW polyethylene.

(44) Brushes have a PVC channel and white nylon bristles.

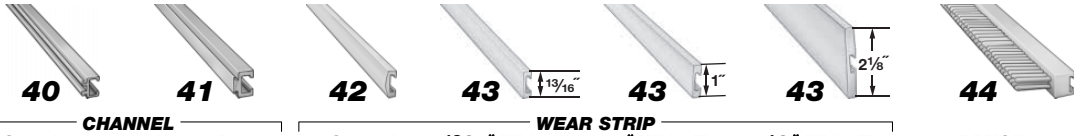

Lg., ft.	CHANNEL Standard		CHANNEL Heavy Duty		WEAR STRIP Curved		WEAR STRIP 13/16″ Wide Flat		WEAR STRIP 1″ Wide Flat		WEAR STRIP 2⅛″ Wide Flat		BRUSH	
5	9269K21	$7.09	9269K42	$11.38	9269K24	$6.76	9269K23	$6.67	9269K25	$8.55	9269K27	$13.60	9269K54	$56.92
8	—	—	9269K421	14.57	9269K41	8.66	9269K46	8.57	9269K35	10.99	9269K37	18.48	9269K55	91.12
10	9269K212	11.25	9269K422	18.22	9269K39	10.71	9269K43	10.71	9269K36	12.50	9269K38	19.65	9269K56	113.88

Material Support Stands

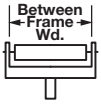

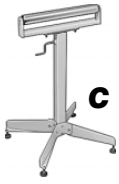

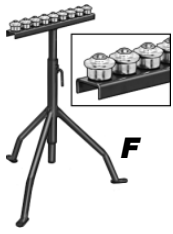

Feed materials into drill presses, band saws, and other equipment with less lifting. Frames are steel.

(A) Stand has folding legs with nonskid rubber end caps. Roller is 2″ dia. and made of zinc-plated steel.

(B) Feet have flanges with a 3/8″ dia. hole for mounting. Roller is 2″ dia. and made of steel.

(C) Four legs with adjustable leveling feet provide stability. Roller is 1.9″ dia. and made of galvanized steel.

(D&E) Stands have multiple 1 3/8″ dia. galvanized steel rollers. Roller spacing is 4″. Legs have adjustable leveling feet. *Style D* is 18″ Lg.×15″ Wd. *Style E* is 66″ Lg.×15″ Wd. and has folding legs.

(F) The top rail is 18″ wide and has 1″ dia. steel ball transfers; ball spacing is 2″. Feet have flanges with a 3/8″ dia. hole for mounting.

	Between Frame Wd.	Cap., lbs.	Height		
A	16 5/8″	250	27 1/2″ to 43 1/2″	**5771K51**	$41.47
B	16″	300	23″ to 39″	**2756T1**	61.07
B	16″	300	28″ to 50″	**2756T2**	63.15
C	16″	500	22″ to 32″	**5750K25**	118.38
C	16″	500	28″ to 45 1/2″	**5750K26**	$118.38
D	13″	500	26 1/2″ to 43 1/2″	**5760K68**	164.21
E	13″	500	26 1/2″ to 43 1/2″	**5760K65**	282.41
F	—	200	28″ to 48″	**5904K4**	69.19

Build-Your-Own Material Support Stands

Tripod Frame

Folding Tripod Frame

V-Style Support

Wheel Support

Roller Support

Optional Sleeve for V Style

Optional Ball Transfers for V Style

Frames

Frames are steel. *Folding tripod* frame stores in less space.

	Cap., lbs.	Height		Each
Tripod	2,000	28″ to 49″	**8732T26**	$72.31
Folding Tripod	2,000	28″ to 49″	**8732T27**	88.20

Supports

V-style support has 4″ Lg.×3″ Wd. arms.

Wheel supports have two 4″ dia. wheels.

Roller support holds both round and flat material. Roller is 2″ dia. and made of steel. Between frame width is 10″.

Optional sleeve and ***ball transfers*** slide onto the arms of the V-style support. Fasteners included.

	Material	For Pipe OD	Cap., lbs.		Each
V-Style Support	Steel	1/8″ to 36″	2,000	**8732T21**	$33.61
Wheel Support	Steel	1 1/4″ to 24″	2,000	**8732T22**	52.50
Wheel Support	Stainless Steel	1 1/4″ to 24″	2,000	**8732T23**	82.65
Roller Support	Steel	1/8″ to 10″	2,000	**8732T24**	116.63
Optional Sleeve for V Style	Stainless Steel	1/8″ to 36″	2,000	**8732T33**	22.50
					Pair
Optional Ball Transfers for V Style	Steel	3/8″ to 12″	1,000	**8732T25**	$88.76
Optional Ball Transfers for V Style	Stainless Steel	3/8″ to 12″	1,000	**8732T34**	124.22

V-Style Material Support Stands

Shown with Optional V Wheels and Casters

Support pipe and bar stock while cutting and welding. Stands and accessories are steel.

(G) Stands have two 1″ dia. ball transfers to feed and rotate material. Ball transfers for 5006T66 adjust to three positions along each arm. Legs have nonskid rubber end caps.

(H) Two 2″ dia. rollers provide smooth material feed. Feet have flanges with 3/8″ dia. holes for mounting.

(J) Each arm is flat and 12″ long. Legs have adjustable leveling feet. *Optional V wheels* mount into the arms to make rotating material easier. Wheels are 4″ dia. *Optional casters* have 8″ dia. rubber-tread wheels with a brake.

	For Pipe OD	Cap., lbs.	Height		
G	Up to 3″	150	24″ to 40″	**5006T65**	$90.26
G	Up to 6″	200	24″ to 40″	**5006T66**	97.24
H	Up to 4″	400	25 3/4″ to 38″	**5006T71**	70.82
J	4″ to 36″	2,500	27″ to 39″	**5006T72**	314.80
Optional V Wheels for Style J (Set of 4)				**5006T73**	81.31
Optional Casters for Style J (Set of 5)				**5006T84**	264.86

Adjustable Pipe Support Stands

Table-Top Stands

Stand sits on your work surface and allows you to position pipe perpendicular or parallel to the frame. Frame is steel with four 4 1/2″ dia. steel wheels and 1 1/2″ dia. axles. Wheels adjust to fit 3″ to 30″ OD pipe. Capacity is 2,500 lbs. Overall size is 17 1/2″ Lg.×6 1/2″ Wd.×6 1/4″ Ht.

2683T15 ..... **Each** $101.40

Build-Your-Own Stands

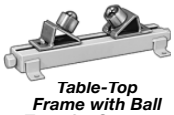
Table-Top Frame with Ball Transfer Supports

Combine a frame and a pair of supports to create a table-top or floor stand. Position the supports along the top of the frame to fit 1/2″ to 36″ OD pipe.

Frames— Made of steel. *Table-top* frame is 22″ Lg.×6″ Wd. and has four flanges with 1/2″ dia. holes for mounting to your work surface.

Supports— *Ball transfers* are 1 1/2″ dia. *Wheels* are 4″ dia. Stainless steel wheels are more corrosion resistant than steel wheels.

Fixed Ht. Frame with Steel Wheel Supports

	Cap., lbs.		Each
Frames			
Table Top	2,000	**2683T24**	$105.80
Fixed 24″ Ht.	2,000	**2683T25**	125.72
Adjust. 29″ to 43″ Ht.	2,000	**2683T26**	203.62
Supports			**Pair**
Steel Ball Transfer	1,000	**2683T23**	$81.53
Steel Wheel	2,000	**2683T21**	59.80
Stainless Steel Wheel	2,000	**2683T22**	94.30

Glass-Filled Nylon Frame Hand Trucks

With a frame made of black glass-filled nylon, these trucks are as strong as steel yet as lightweight as aluminum.

Both trucks have a steel handle and load plate. Stair glides on the back let you easily move your load up and down stairs and over curbs. Trucks roll on 10″ dia. wheels. Shipped assembled.

Pneumatic wheels are quiet and shock absorbing. ***Cushion rubber-tread wheels*** handle heavy loads and provide a cushioned ride.

Cap., lbs.	Load Plate, Wd. × Dp.	Handle Ht.		Each
Pneumatic Wheels				
600	14½″ × 7″	48″	24105T21	$70.43
Cushion Rubber-Tread Wheels				
600	14½″ × 7″	48″	24105T22	70.43

Steel Hand Truck with Wood Handles

Wood handles are more comfortable to hold in hot and cold environments, and they make these trucks quieter and more shock absorbing than all-metal trucks.

Frame is 11-ga. steel with a green powder-coated finish. Truck rolls on 10″ dia. rubber-tread wheels.

Cap., lbs.	Load Plate, Wd. × Dp.	Handle Ht.		Each
1,000	23″ × 6″	57″	2604T24	$443.60

Steel Hand Trucks

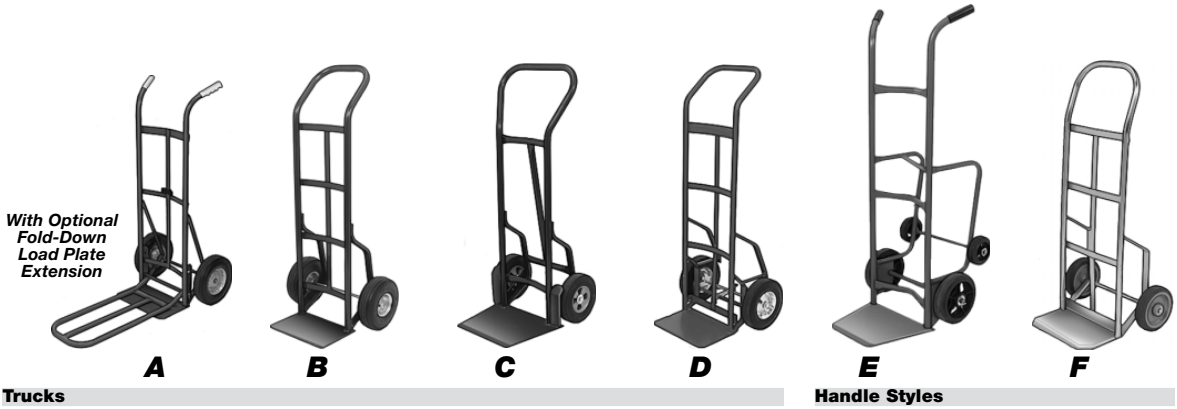

Trucks

All welded-steel construction offers you the most durable hand trucks around.

Cushion rubber-tread wheels will not go flat and provide a cushioned ride. ***Pneumatic wheels*** are quiet and shock absorbing. ***Rubber-tread wheels*** handle heavy loads and roll smoothly over rough surfaces. ***Steel wheels*** are ideal for heavy loads.

Heavy duty trucks are made of heavy gauge steel so they stand up to abuse and demanding applications. ***Trucks with stair glides*** make it easier to move loads up and down stairs and over curbs.

(C) Also known as shovel-nose trucks, these trucks have a tapered load plate.
(D) Reduce your tilting effort by 66%. A spring-loaded pedal allows the axle to shift farther from the load plate during tilting.
(E) Has two rear wheels for increased stability and better mobility. Has a tapered load plate.
(F) Type 304 stainless steel offers superior corrosion resistance in washdown and other harsh environments.

Handle Styles

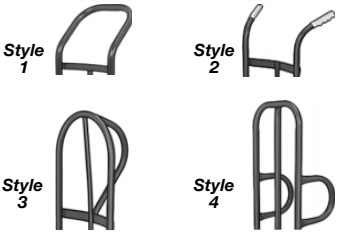

Handle Style	Load Plate, Wd. × Dp.	Handle Ht.	Wheel Dia.	Frame Dia.	Frame Gauge	Cushion Rubber-Tread Wheels Cap., lbs.		Cushion Rubber-Tread Wheels Each	Pneumatic Wheels Cap., lbs.		Pneumatic Wheels Each
Steel—Gray powder-coated finish											
A 3	24″ × 12″	60″	15″	1″	16	—	—	—	1,000	2655T53	$161.60
Steel—Red powder-coated finish											
A 1	14″ × 8″	46½″	8″	1″	16	600	2655T31	$39.69	—	—	—
A 1	14″ × 8″	46½″	10″	1″	16	800	2655T32	66.34	800	2655T38	65.79
A 2	14″ × 8″	45½″	10″	1″	16	800	2655T35	73.45	800	2655T51	81.75
A 3	14″ × 8″	50½″	10″	1″	16	800	2655T5	79.36	800	2655T7	82.02
A 4	14″ × 8″	56″	8″	1″	16	600	2655T22●	89.51	—	—	—
Heavy Duty Steel with Stair Glides—Green powder-coated finish											
B 1	14″ × 8″	50″	10″	1¼″	14	800	2605T7	139.81	800	2605T9	158.33
B 2	14″ × 8″	50″	10″	1¼″	14	800	2605T15	139.81	800	2605T14	158.33
B 3	14″ × 8″	50″	10″	1¼″	14	800	2605T12	139.81	800	2605T11	158.33
C 1	17½″-14″ × 13″	51″	10″	1¼″	14	800	2660T3	170.83	800	2660T4	180.83
Heavy Duty Steel Easy Tilt with Stair Glides—Orange enamel finish											
D 1	14″ × 8″	50″	10″	1″	11	700	26355T21	292.17	600	26355T22	241.98
Heavy Duty Steel with Stair Glides—Orange enamel finish						Rubber-Tread Wheels			Steel Wheels		
C 1	17″-11″ × 14″	50″	8″	1¼″	12	1,000	2594T11	$184.51	1,500	2594T12	$191.86
Heavy Duty Steel with Rear Wheels—Orange enamel finish											
E 2	18″-11½″ × 14″	62″	10″/6″	1¼″	11	1,000	2581T51	302.05	—	—	—
Type 304 Stainless Steel with Stair Glides—Polished finish											
F 1	15″ × 8″	46″	8″	1″	14	500	3993T1	604.11	—	—	—

● Has stair glides.

Optional Fold-Down Load Plate Extension— Extension adds 18″ to the depth of the load plate. Capacity with extension in use is 200 lbs. Compatible with 2655T31, T32, T35, T38, and T51 hand trucks.

2655T81 ..... **Each** $27.58

Warning! Never exceed capacities.

Aluminum Hand Trucks

Straight Frame with Solid Load Plate and Optional Fold-Down Load Plate and Frame Extensions

Curved Frame with Open Load Plate and Optional Stair Glides and Accessory Bag

Trucks

All aluminum construction creates trucks that are much lighter in weight. Shipped assembled.

Curved-frame trucks provide better support when moving drums.

Cushion rubber-tread wheels will not go flat and provide a cushioned ride. ***Pneumatic wheels*** are quiet and shock absorbing.

Handle Styles

Style 1

Style 2

Style 3

			OPEN LOAD PLATE					SOLID LOAD PLATE				
				8″ Dia. Cushion Rubber-Tread Wheels		10″ Dia. Pneumatic Wheels			8″ Dia. Cushion Rubber-Tread Wheels		10″ Dia. Pneumatic Wheels	
Handle Style	Cap., lbs.	Handle Ht.	Load Plate, Wd.×Dp.		Each		Each	Load Plate, Wd.×Dp.		Each		Each
Straight Frame												
1	600	50″	14″×7½″	2611T11	$127.82	2611T43	$140.65	14″×9″	2611T71	$127.83	2611T75	$140.63
1	600	50″	18″×7½″	2611T12	136.13	2611T44	148.95	18″×9″	2611T72	136.14	2611T76	148.95
2	600	48″	14″×7½″	2611T17	134.81	2611T46	147.63	14″×9″	2611T77	134.83	2611T79	147.63
2	600	48″	18″×7½″	2611T24	143.14	2611T47	155.95	18″×9″	2611T32	143.14	2611T81	155.95
3	600	52″	14″×7½″	2611T49	145.25	2611T5	158.06	14″×9″	2611T83	145.26	2611T84	158.06
3	600	52″	18″×7½″	2611T25	153.57	2611T18	166.40	18″×9″	2611T33	153.58	2611T85	166.40
Curved Frame												
2	600	48″	18″×7½″	2611T27	162.60	2611T48	173.92	18″×7½″	2611T34	162.60	2611T82	173.92

Optional Stair Glides— Make moving up and down stairs and over curbs easy. Glides have reversible wear strips for twice the service life.

2611T65 ..... **Per Set** $38.56

Optional Fold-Down Load Plate Extensions— Fold down to increase the depth of the load plate to 30″. Capacity with extension is 300 lbs.

For Straight-Frame Trucks..... 2611T54 **Each** $53.74
For Curved-Frame Trucks..... 2611T53 **Each** $53.74

Optional Frame Extension— Increases handle height to 60″.

2611T62 ..... **Each** $22.44

Optional Accessory Bag— Attaches to the cross braces of the frame to conveniently hold essentials. Bag is 12″ Wd.×18″ Ht.×2″ Dp. Made of black nylon.

2611T37 ..... **Each** $31.72

Light Duty Fold-Up Hand Trucks

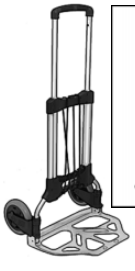

A

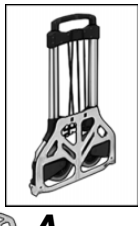

B

9940T52 Shown

Take them anywhere—these trucks fold up for easy transport and space-saving storage. All have a telescoping handle and a shock cord to secure your load. Shipped assembled.

Thermoplastic rubber (TPR) wheels roll over rough surfaces and are nonmarking and chemical resistant. ***Rubber-tread wheels*** are quiet and protect your floors. ***Never-go-flat wheels*** (also known as semi-pneumatic) are quiet and shock absorbing, and you won't have to worry about having a flat.

(A) Truck is made of zinc-plated steel.

(B) Handle and frame are made of steel. Load plate is chrome-plated steel wire. Stair glides on the back let you easily move up and down stairs and over curbs.

9940T52 provides increased stability and better mobility with two fold-down legs that have swivel casters with 3″ dia. solid rubber wheels.

	Cap., lbs.	Load Plate, Wd.×Dp.	Handle Ht. Extended	Handle Ht. Retracted	Wheel Dia.		Each
Thermoplastic Rubber (TPR) Wheels							
A	250	19″ ×12″	42″	29½″	7″	24845T5	$138.97
Rubber-Tread Wheels							
B	150	11¾″× 9½″	41″	18¾″	4″	9940T49	93.94
Never-Go-Flat Rubber Wheels							
B	300	15¾″×12½″	48″	20″	6″	9940T51	190.91
B	300	15¾″×12½″	48″	20″	6″	9940T52	240.00

Hand Trucks with Safety Straps

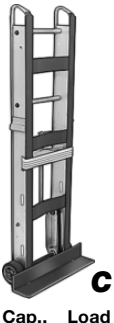

C

D

E

Also known as appliance trucks, these durable hand trucks secure your load with a 2″ wide web strap and a ratchet-style tightener. They also feature padded contact surfaces to protect your load and rotating rubber stair climbers on the back for easy moving up and down stairs and over curbs. Shipped assembled.

(C) Two-wheel aluminum truck is lighter than the steel trucks and has a cotton strap. Frame has a 2″ wide contact surface. The load plate has a red powder-coated finish. Side-mounted hand grips offer better control.

(D) Two-wheel steel truck has a nylon strap and an automatic strap recoil device that stores excess strap. Frame has a red powder-coated finish.

(E) Four-wheel steel trucks offer additional support with two fold-down legs that have swivel casters with 3½″ dia. thermoplastic rubber (TPR) wheels. All have a nylon strap and an automatic strap recoil device that stores excess strap. Frame has a red powder-coated finish.

Cap., lbs.	Load Plate, Wd.×Dp.	Handle Ht.	Wheel Dia.		Each
(C) Aluminum with Rubber-Tread Wheels					
500	24″×4½″	59″	5″	2871T32	$349.12
(D) Steel with Cushion Rubber-Tread Wheels					
800	24″×5″	60″	8″	2598T92	286.15
(E) Steel with Thermoplastic Rubber (TPR) Wheels					
1,200	24″×5″	60″	8″	2654T4	$444.33
1,200	24″×5″	66″	8″	2654T5	454.67
1,200	24″×5″	72″	8″	2654T6	465.00

Warning! **Never exceed capacities.**

Stair-Climbing Battery-Powered Hand Trucks

Let the truck do the work for you—motorized rotating rollers on the back of these trucks make moving heavy items on stairs easier. Rollers are 2″ dia. polyurethane and run on a ½-hp, 50-amp motor powered by a sealed, maintenance-free battery. A circuit breaker and a battery charger with a 5′10″ long cord with three-prong plug are included. A 2″ wide polyester strap with a ratchet-style tightener secures the load and an automatic recoil device stores excess strap. Trucks are made of magnesium and roll on two rubber-tread wheels. Shipped assembled.

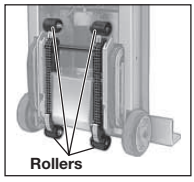

Cap., lbs.	Load Plate, Wd.×Dp.	Handle Ht.	Wheel Dia.		Each
850	24″×4″	66″	6″	2849T1	$2,620.62
850	24″×4″	72″	6″	2849T2	2,655.54

Optional Load Plate Extension—Slips over the load plate to increase size to 28″ Wd.×12″ Dp. Made of steel.

2849T4 ..... **Each** $144.21

Multitask Hand/Platform/Dolly Trucks

A telescoping frame and folding handles let you easily convert from a hand truck to a one- or two-handled platform truck to a dolly in minutes. Trucks are steel with a textured black powder-coated finish. Stair glides let you easily move your load up and down stairs and over curbs.

In the hand truck position, trucks roll on two polyurethane wheels; in the platform truck and dolly positions they roll on the two polyurethane wheels and two swivel casters with thermoplastic rubber (TPR) wheels. Shipped assembled except for wheels and casters, which must be installed (hardware is included).

Cap., lbs.	Platform Size, Lg.×Wd.	Handle Ht.	Wheel Dia.		Each
500	28″ to 42½″×12½″	24″	8″/4″	2838T1	$155.45
500	34″ to 52″ ×13½″	32″	8″/5″	2838T2	186.78

Convertible Hand/Platform Trucks

Trucks

Removable handles let you convert the truck by moving the handle from the hand truck position to the platform truck position. ***Quick convert*** have a lever that releases the platform to fold down when needed and to lock against the frame when not in use. Shipped assembled.

Black Glass-Filled Nylon Frame Truck—Lightweight and an economical alternative to aluminum. The handle is steel with a black powder-coated finish. Stair glides on the back let you easily move your load up and down stairs and over curbs. As a platform truck, it rolls on two pneumatic wheels and two swivel casters with polypropylene wheels.

Steel Trucks—Have a red powder-coated finish. As a platform truck, they roll on two rubber wheels (unless noted) and two swivel casters with polypropylene wheels.

Aluminum Trucks—As a platform truck, they roll on two pneumatic wheels and two swivel casters with thermoplastic rubber (TPR) wheels. One caster has a side wheel brake.

Aluminum Battery-Powered Trucks—The same as the aluminum trucks above but have a drive motor to move heavy loads over long distances as well as up and down inclines. They have a handle-mounted variable speed control with forward and reverse functions. The drive can be disengaged for manual use. Trucks include a battery charger with 5′10″ long cord with three-prong plug.

Steel with Removable Handle

Handle Styles

Style 1

Style 2

Handle Style	Wheel Dia.	As Hand Truck: Cap., lbs.	Load Plate, Wd.×Dp.	Handle Ht.	As Platform Truck: Cap., lbs.	Platform Size, Lg.×Wd.×Ht.	Handle Ht.		Each
Black Glass-Filled Nylon Frame with Removable Handle									
1	10″/5″	600	14½″×7″	49½″	600	37¼″×12″×10½″	37¼″	2621T85	$103.89
Steel with Removable Adjustable Handle									
1	8″/4″	600	14″ ×8″	46″ to 61″	600	36″ ×12″×12″	38¾″	9924T21	85.97
1	10″/5″	800	14″ ×8″	46″ to 61″	800	36″ ×12″×12″	40½″	9924T31 ♦	107.84
Aluminum Quick Convert									
1	10″/5″	600	18″ ×9″	61½″	1,200	51½″×12″×11″	46″	2389T21	356.34
2	10″/5″	600	18″ ×9″	52″	1,200	38¼″×12″×11″	41″	2389T22	330.12
Aluminum Battery-Powered Quick Convert									
1	10″/5″	600	18″ ×7½″	61¾″	1,200	50¾″×12″×10⅝″	45½″	2389T73	2,250.33
2	10″/5″	600	18″ ×7½″	51¾″	1,200	38″ ×12″×10⅝″	40½″	2389T72	2,234.09

♦ Has two pneumatic wheels and two swivel casters with polypropylene wheels.

Dual Battery Pack for 2389T72 ***and T73***—Ideal for high usage applications. Both batteries are enclosed in a case that plugs into the motor and keeps one battery charging while the other is in use.

2389T74 ..... **Each** $374.54

Aluminum Quick Convert

High-Stack Narrow Platform Trucks

Tall handles on each end let you stack higher than other trucks, and a narrow platform allows for maneuvering in tight spaces. The removable handles are steel with a powder-coated finish. Trucks have two rigid rubber-tread wheels in the center of the platform and two swivel casters with polyurethane wheels at each end of the platform. This design allows for tight turns and turning in place. Shipped assembled.

Plastic platform is steel reinforced and has a nonslip surface. Color is gray. ***Steel platform*** has a nonslip diamond pattern on the surface. Platform is gray; handles are orange.

Cap., lbs.	Platform Size, Lg.×Wd.×Ht.	Handle Ht.	Wheel Dia.		Each
Plastic Platform					
1,500	60″×18″×11″	63″	8″/4″	8747T21	$344.92
Steel Platform					
1,850	63″×16″×11″	61″	8″/4″	8747T31	152.31

Warning! **Never exceed capacities.**

Steel Platform Trucks

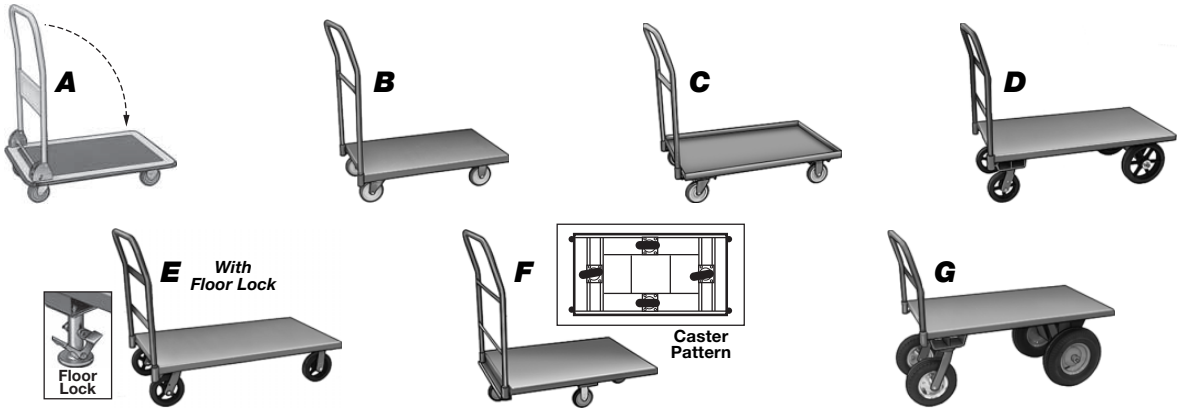

Rugged steel trucks offer a variety of capacities and wheel materials for handling light to heavy duty applications. All roll on two rigid and two swivel casters and are shipped assembled (unless noted). For Stainless Steel Platform Trucks, please see page 1266.

Rubber-tread wheels roll smoothly over rough surfaces. ***Polyurethane wheels*** are smooth rolling and nonmarking. ***Pneumatic wheels*** are quiet and shock absorbing. ***Thermoplastic rubber (TPR) wheels*** roll over rough surfaces and are nonmarking and chemical resistant.

Light Duty Trucks— Have a spring-loaded fold-down handle for convenient storage, protective bumpers, and a nonslip blue vinyl surface on the top of the platform. Trucks have a beige enamel finish.

Medium Duty Trucks— Have a removable handle and a gray powder-coated finish. *Lipped platforms* have a 1½″ high lip that prevents your load from slipping off.

Heavy Duty Trucks— Have a removable handle and are made of heavy gauge steel to withstand demanding applications.

Flush platforms and *flush platforms with floor lock* have a gray powder-coated finish on the platform and a blue powder-coated finish on the handle.

Flush platform quick turns have a gray powder-coated finish. Casters are mounted in a diamond pattern to allow for tighter turns and better maneuverability.

	Platform Size, Lg. × Wd. × Ht.	Platform Gauge	Handle Ht.	Wheel Dia.	Rubber-Tread Wheels Cap., lbs.		Rubber-Tread Wheels Each	Polyurethane Wheels Cap., lbs.		Polyurethane Wheels Each
Light Duty										
Flush Platform with Folding Handle										
A	29″ × 19″ × 5 11/16″	16	33¼″	4″	400	2753T33 ♦	$113.80	—	—	—
A	35″ × 23″ × 7″	16	33″	5″	600	2753T34 ♦	187.75	—	—	—
Medium Duty										
Flush Platform										
B	32″ × 18″ × 9″	14	37″	6″	1,600	9925T39	180.50	1,200	9925T29 ★	$142.50
B	36″ × 24″ × 9″	14	37″	6″	1,600	9925T41	191.58	1,200	9925T31 ★	157.80
B	48″ × 24″ × 9″	14	37″	6″	1,600	9925T42	199.50	1,200	9925T32 ★	165.85
B	60″ × 24″ × 9″	14	37″	6″	1,600	9925T43	214.15	1,200	9925T33 ★	177.12
Lipped Platform										
C	32″ × 18″ × 9″	14	37″	6″	1,600	9925T61	180.50	1,200	9925T65 ★	142.50
C	36″ × 24″ × 9″	14	37″	6″	1,600	9925T62	191.58	1,200	9925T66 ★	155.17
C	48″ × 24″ × 9″	14	37″	6″	1,600	9925T63	199.50	1,200	9925T67 ★	163.08
C	60″ × 24″ × 9″	14	37″	6″	1,600	9925T64	210.58	1,200	9925T68 ★	174.17
Heavy Duty										
Flush Platform										
D	48″ × 24″ × 14″	12	43″	12″/8″	3,000	2539T22	378.42	4,000	2539T42	438.58
D	48″ × 30″ × 14″	12	43″	12″/8″	3,000	2539T24	398.74	4,000	2539T44	460.75
D	60″ × 30″ × 14″	12	43″	12″/8″	3,000	2539T26	421.17	4,000	2539T46	484.50
D	72″ × 36″ × 14″	12	43″	12″/8″	3,000	2539T28	468.67	4,000	2539T48	532.00
E	48″ × 24″ × 11″	12	39″	8″	2,400	2329T21	242.25	3,600	2329T61 ●	264.42
E	48″ × 30″ × 11″	12	39″	8″	2,400	2329T23	262.83	3,600	2329T63 ●	285.00
E	60″ × 30″ × 11″	12	39″	8″	2,400	2329T24	291.33	3,600	2329T64 ●	311.92
E	72″ × 36″ × 11″	12	39″	8″	2,400	2329T25	338.83	3,600	2329T65 ●	357.83
Flush Platform with Floor Lock										
E	48″ × 24″ × 11″	12	39″	8″	2,400	2329T31	280.25	3,600	2329T51	302.42
E	48″ × 30″ × 11″	12	39″	8″	2,400	2329T33	298.74	3,600	2329T52	323.00
E	60″ × 30″ × 11″	12	39″	8″	2,400	2329T34	329.33	3,600	2329T53	349.92
E	72″ × 36″ × 11″	12	39″	8″	2,400	2329T35	376.83	3,600	2329T54	395.83
Flush Platform Quick Turn										
F	36″ × 24″ × 8″	12	38″	5″	—	—	—	1,200	2887T31	207.20
F	48″ × 24″ × 8″	12	38″	5″	—	—	—	1,200	2887T32	222.47
F	60″ × 30″ × 8″	12	38″	5″	—	—	—	1,200	2887T33	287.53
F	72″ × 36″ × 8″	12	38″	5″	—	—	—	1,200	2887T34	353.67
					Pneumatic Wheels					
Medium Duty										
Flush Platform										
E	36″ × 24″ × 12″	14	40″	9″	1,200	2535T51	$253.33	—	—	—
E	48″ × 24″ × 12″	14	40″	9″	1,200	2535T52	261.25	—	—	—
E	48″ × 30″ × 12″	14	40″	9″	1,200	2535T55	277.08	—	—	—
Heavy Duty										
Flush Platform										
E	60″ × 30″ × 12″	12	40″	9″	1,200	2535T54	319.83	—	—	—
E	72″ × 36″ × 12″	12	40″	9″	1,200	2535T56	364.17	—	—	—
G	48″ × 24″ × 21″	12	41″	16″/12″	2,500	2535T12	497.74	—	—	—
G	60″ × 36″ × 21″	12	41″	16″/12″	2,500	2535T16	554.17	—	—	—
G	72″ × 36″ × 21″	12	41″	16″/12″	2,500	2535T17	577.92	—	—	—

♦ Has thermoplastic rubber (TPR) wheels and is shipped unassembled. ★ Platform height is 7½″; wheel dia. is 5″. ● Swivel casters have a face wheel brake.

Warning! Never exceed capacities.

Wood Platform Trucks

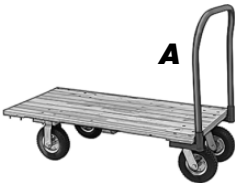

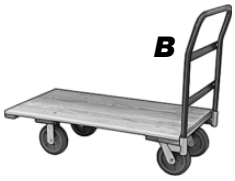

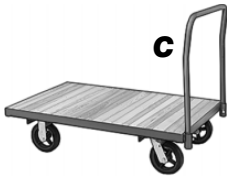

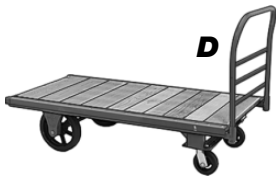

Not only are trucks with a wood platform quieter, they grip your load and absorb impact better than trucks with a steel platform. All have a steel frame and removable handle. Trucks roll on two rigid and two swivel casters.

Rubber-tread wheels roll smoothly over rough surfaces. ***Polyurethane wheels*** are smooth rolling and nonmarking. ***Pneumatic wheels*** are quiet and shock absorbing.

(A) Frame and handle have a green powder-coated finish.

(B) Frame and handle have a gray painted finish. *Trucks with polyurethane wheels* have a side wheel brake on the swivel casters.

(C) A steel edge around the platform and steel reinforcing offer support, stability, and protection. Frame and handle have a blue painted finish.

(D) A steel edge around the platform and steel reinforcing offer support, stability, and protection. Frame and handle have a gray powder-coated finish.

	Cap., lbs.	Platform Size, Lg. × Wd. × Ht.	Handle Ht.	Wheel Dia.		Each
Medium Duty						
With Rubber-Tread Wheels						
A	1,400	30″ × 18″ × 8½″	34⅜″	5″	2873T75	$177.60
A	1,400	42″ × 24″ × 8½″	32″	5″	2873T76	202.95
A	1,400	48″ × 24″ × 8½″	32″	5″	2873T77	211.12
A	1,400	60″ × 30″ × 8½″	32″	5″	2873T78	238.28
A	2,000	48″ × 24″ × 11½″	35″	8″	9730T78	268.63
A	2,000	60″ × 30″ × 11½″	35″	8″	9730T75	273.76
A	2,000	72″ × 36″ × 11½″	35″	8″	9730T76	326.79
B	2,000	48″ × 24″ × 9¾″	38″	6″	2854T31	245.04
B	2,000	48″ × 30″ × 9¾″	38″	6″	2854T33	270.26
B	2,000	60″ × 30″ × 9¾″	38″	6″	2854T34	304.49
With Polyurethane Wheels						
B	2,400	48″ × 24″ × 11¾″	40″	8″	2506T41	278.67
B	2,400	48″ × 30″ × 11¾″	40″	8″	2506T43	297.67
B	2,400	60″ × 30″ × 11¾″	40″	8″	2506T44	334.08
B	2,400	72″ × 36″ × 11¾″	40″	8″	2506T48	398.74

	Cap., lbs.	Platform Size, Lg. × Wd. × Ht.	Handle Ht.	Wheel Dia.		Each
Medium Duty (Cont.)						
With Pneumatic Wheels						
B	1,200	48″ × 24″ × 11½″	35″	8″	9730T81	$272.79
B	1,400	60″ × 30″ × 14″	37½″	10″	9730T85	318.82
B	1,400	72″ × 36″ × 14″	37½″	10″	9730T86	347.03
Heavy Duty with Steel-Edged Platform						
With Rubber-Tread Wheels						
C	1,800	48″ × 24″ × 11¾″	37¾″	8″	8783T53	444.46
C	1,800	48″ × 30″ × 11¾″	37¾″	8″	8783T55	458.00
C	1,800	60″ × 30″ × 11¾″	37¾″	8″	8783T54	489.46
C	1,800	72″ × 36″ × 11¾″	37¾″	8″	8783T56	544.62
D	3,300	48″ × 30″ × 15″	41¾″	12″/8″	2316T32	666.25
D	3,300	60″ × 30″ × 15″	41¾″	12″/8″	2316T33	716.36
D	4,000	48″ × 30″ × 19½″	45½″	16″/8″	2316T62	910.98
D	4,000	60″ × 30″ × 19½″	45½″	16″/8″	2316T63	960.09
D	4,000	72″ × 36″ × 19½″	45½″	16″/8″	2316T65	1,013.99

Aluminum Platform Trucks

Aluminum platform trucks weigh less than many steel and wood platform trucks yet are just as strong. Handle is removable. Trucks roll on two rigid and two swivel casters with thermoplastic rubber (TPR) wheels. All are shipped unassembled.

Diamond-tread platforms grip your load.

Cap., lbs.	Platform Size, Lg. × Wd. × Ht.	Handle Ht.	Wheel Dia.		Each
Smooth Platform					
2,000	42″ × 24″ × 11⅞″	41″	8″	2543T25	$373.12
2,000	48″ × 24″ × 11⅞″	41″	8″	2543T26	389.55
2,000	48″ × 30″ × 11⅞″	41″	8″	2543T27	407.02
2,000	60″ × 30″ × 11⅞″	41″	8″	2543T28	443.30
2,000	72″ × 30″ × 11⅞″	41″	8″	2543T3	471.49
Diamond-Tread Platform					
2,000	42″ × 24″ × 11⅞″	41″	8″	2543T29	405.71
2,000	48″ × 24″ × 11⅞″	41″	8″	2543T31	420.89
2,000	48″ × 30″ × 11⅞″	41″	8″	2543T32	445.94
2,000	60″ × 30″ × 11⅞″	41″	8″	2543T33	511.32

Ergonomic Raised Platform Trucks

Be good to your back—the raised platform on these trucks provides a comfortable work height to reduce the amount of bending over while loading and unloading. Frame and removable handle are made of steel with a powder-coated finish. Trucks roll on two rigid and two swivel casters with rubber-tread wheels.

Swivel casters are available with and without a side wheel brake.

Steel platforms offer better strength and durability compared to wood and plastic. Color is red.

Wood platforms are impact absorbing and quieter than steel. Frame and handle are red.

Plastic platforms are lightweight and resist dents and corrosion. Color is red.

				FIXED-HEIGHT TRUCKS					***ADJUSTABLE-HEIGHT TRUCKS***				
Cap., lbs.	Platform Size, Lg. × Wd.	Handle Ht.	Wheel Dia.	Platform Ht.	***Swivel Casters without Brake***	Each	***Swivel Casters w/ Side Wheel Brake***	Each	Platform Ht.	***Swivel Casters without Brake***	Each	***Swivel Casters w/ Side Wheel Brake***	Each
Steel Platform													
1,200	48″ × 24″	43″	8″	26″	2349T35	$451.28	2349T37	$485.62	26″ to 32″	2349T51	$449.77	2349T53	$484.11
1,200	60″ × 30″	43″	8″	26″	2349T36	502.80	2349T38	537.13	26″ to 32″	2349T52	476.86	2349T54	511.20
Wood Platform													
1,200	48″ × 24″	43″	8″	26″	2349T2	323.85	2349T3	358.18	26″ to 32″	2349T41	381.03	2349T43	415.36
1,200	60″ × 30″	43″	8″	26″	2349T4	366.15	2349T5	398.74	26″ to 32″	2349T42	413.87	2349T44	448.21
Plastic Platform													
1,200	48″ × 24″	43″	8″	26″	2349T31	420.66	2349T33	454.99	26″ to 32″	2349T45	447.12	2349T47	481.46
1,200	60″ × 30″	43″	8″	26″	2349T32	455.35	2349T34	489.69	26″ to 32″	2349T46	482.98	2349T48	517.32

Warning! ***Never exceed capacities.***

Plastic Platform Trucks

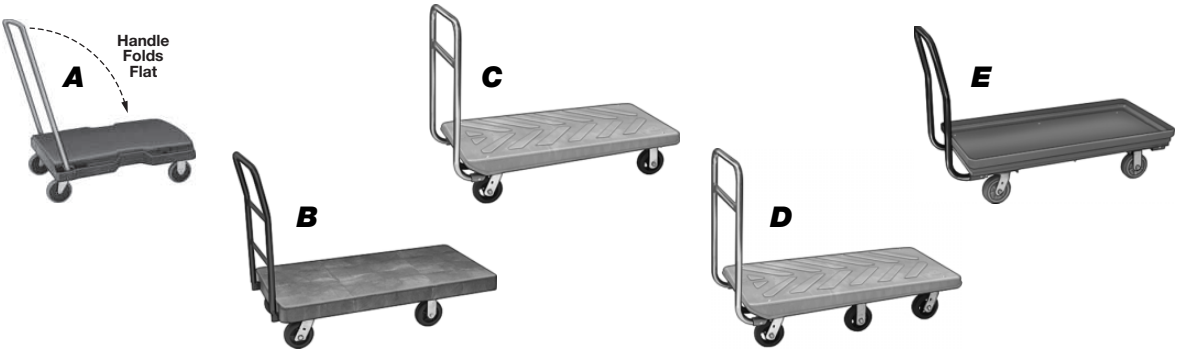

Plastic platforms resist corrosion and dents. Trucks have a removable handle and two rigid and two swivel casters (unless noted). Shipped assembled.

Steel-reinforced platforms offer added strength and durability.

(A) Has a nonremovable three-position handle that folds down flat so truck can be used as a dolly. Platform is black with a nonslip surface; handle is steel with a gray epoxy finish. Casters have thermoplastic rubber (TPR) wheels.

(B) Platform is black with a textured surface; handle is steel with a red powder-coated finish. Wheels are rubber, unless noted.

(C) Platform is gray with a nonslip surface and a protective front bumper; handle is zinc-plated steel. Casters have rubber-tread wheels.

(D) Have the same features as *Style C*, but have four swivel casters and two rigid casters in the center of the platform for easier turning and maneuverability.

(E) Offer a 3″ high lip on the platform that prevents your load from sliding off. The platform is blue and has drainage holes. Handle is steel with a black powder-coated finish and can be used in the handle pockets located at either end of the platform. Casters have thermoplastic rubber (TPR) wheels.

	Cap., lbs.	Platform Size, Lg. × Wd. × Ht.	Handle Ht.	Wheel Dia.		Each
Flush Platform						
A	400	31¾″ × 20⅞″ × 8⅞″	37⅝″	5″	**2890T1**	$153.81
Steel-Reinforced Flush Platform						
B	1,000	36″ × 24″ × 10½″	39⅝″	6″	**9839T31**	410.47
B	1,000	70″ × 40″ × 11½″	37″	6″	**9839T82**	806.83
B	2,000	36″ × 24″ × 10½″	39⅝″	6″	**9839T81★**	430.83
B	2,000	48″ × 24″ × 12½″	41⅝″	8″	**9839T32**	459.03
B	2,000	60″ × 30″ × 12½″	41⅝″	8″	**9839T34**	529.53
B	2,500	48″ × 24″ × 12⅜″	41½″	8″	**9839T83★**	470.00
Steel-Reinforced Flush Platform (Cont.)						
B	2,500	60″ × 30″ × 12⅜″	41½″	8″	**9839T84★**	$542.07
C	2,200	48″ × 24″ × 11″	40″	6″	**87805T31**	348.44
C	2,200	60″ × 30″ × 11″	40″	6″	**87805T32**	408.93
D	2,400	48″ × 24″ × 11″	40″	6″	**87805T41**	387.50
D	2,700	60″ × 30″ × 11″	40″	6″	**87805T42**	444.64
Steel-Reinforced Lipped Platform						
E	1,600	48″ × 24″ × 12″	38″	6″	**87535T11**	388.64
E	1,600	60″ × 30″ × 12″	38″	6″	**87535T12**	430.09

★ Wheels are polyolefin.

Add-On Side and End Panels for 9839T82**—**For better load containment, add these panels to convert platform truck to a box truck. Set includes four side panels and two end panels. All are 15″ high; color is black.

9839T85 ..... **Per Set** $318.15

Stainless Steel Platform Trucks

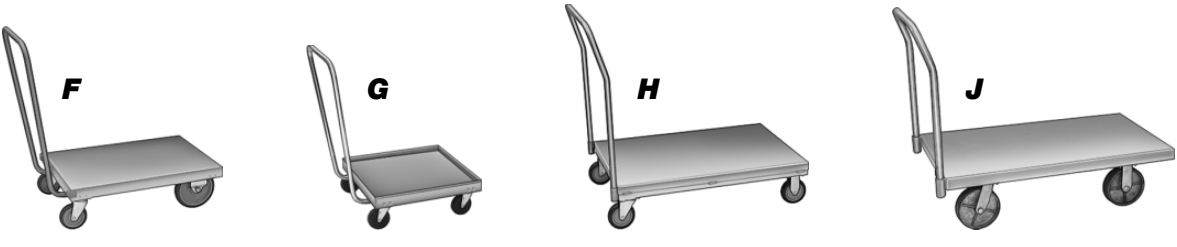

Easy cleaning and superior rust and corrosion resistance—that's what stainless steel platform trucks are all about. Handles are stainless steel (unless noted). Shipped assembled.

(F&G) Have four swivel casters with thermoplastic rubber (TPR) wheels (unless noted). *Lipped platforms* have a 1½″ high lip that prevents your load from sliding off.

(H&J) Have a removable handle and two rigid and two swivel casters with polyurethane wheels.

	Cap., lbs.	Platform Size, Lg. × Wd. × Ht.	Platform Gauge	Handle Ht.	Wheel Dia.		Each
Type 430 Stainless Steel							
Flush Platform							
F	650	30″ × 20″ × 8 5/16″	16	35¼″	8″/5″	**8773T16♦**	$535.85
H	1,200	30″ × 18″ × 8″	16	38″	5″	**2603T55**	311.28
H	1,200	36″ × 18″ × 8″	16	38″	5″	**2603T51**	340.55
H	1,200	36″ × 24″ × 8″	16	38″	5″	**2603T52**	369.28
H	1,200	48″ × 24″ × 8″	16	38″	5″	**2603T53**	396.52
H	1,200	60″ × 30″ × 8″	16	38″	5″	**2603T54**	501.48
Lipped Platform							
G	200	20¾″ × 20¾″ × 6 15/16″	20	32″	4″	**8773T12●**	291.48
G	400	20¾″ × 20¾″ × 8⅜″	18	32″	5″	**8773T14**	427.50
Type 304 Stainless Steel							
Flush Platform							
J	2,000	44″ × 24″ × 11⅝″	14	38 13/16″	8″	**2603T67**	636.47
J	2,000	56″ × 30″ × 11⅝″	14	38 13/16″	8″	**2603T68**	709.85

♦ Has two rigid and two swivel casters. ● Has a chrome-plated steel handle and solid rubber wheels.

Warning! **Never exceed capacities.**

Stake Trucks

Wood Platform

Steel Platform

Stakes at each corner hold your load in place during transport and are easily removed for quick unloading. Shipped assembled.

Rubber-tread wheels roll smoothly over rough surfaces. ***Polyurethane wheels*** handle heavier loads and are nonmarking.

Wood platforms absorb minor impact and reduce noise. They have two rigid wheels and two swivel casters mounted in a diamond pattern for better maneuverability. ***Steel platforms*** are more durable than wood. They have two rigid and two swivel casters with side wheel brakes.

Cap., lbs.	Platform Size, Lg. × Wd. × Ht.	Stake Ht.	Wheel Dia.		Each
Wood Platform with Rubber-Tread Wheels					
2,200	48″ × 24″ × 16¼″	29″	12″/6″	**2864T21**	$652.25
2,200	48″ × 30″ × 16¼″	29″	12″/6″	**2864T22**	665.10
2,200	60″ × 30″ × 16¼″	29″	12″/6″	**2864T23**	694.78
Steel Platform with Rubber-Tread Wheels					
2,400	48″ × 24″ × 11″	30″	8″	**2864T41**	314.91
2,400	48″ × 30″ × 11″	30″	8″	**2864T42**	334.26
2,400	60″ × 30″ × 11″	30″	8″	**2864T43**	360.65
Steel Platform with Polyurethane Wheels					
3,600	48″ × 24″ × 11″	30″	8″	**2864T51**	332.50
3,600	48″ × 30″ × 11″	30″	8″	**2864T52**	351.85
3,600	60″ × 30″ × 11″	30″	8″	**2864T53**	378.24

Motorized Platform Trucks

Move heavy material without the physical stress of pushing and pulling—these trucks have a totally enclosed, maintenance-free drive system that moves up to 1,000 lbs.

The drive system runs on two rechargeable 12-volt batteries and includes an 8-ft. long self-retracting cord with three-prong plug. Battery charges in five to six hours. Trucks run approximately 15 miles/6 hours per charge.

Trucks are steel with a white powder-coated finish. The reinforced platform has a black nonskid surface. The handle-mounted controller has a two-speed switch, dual thumb controls for forward and reverse, a horn, and an emergency stop switch.

Trucks roll on four swivel casters with thermoplastic rubber (TPR) wheels and have two pneumatic drive wheels. Shipped assembled.

Cap., lbs.	Platform Size, Lg. × Wd. × Ht.	Handle Ht.	Wheel Dia.		Each
1,000	45½″ × 25½″ × 11½″	40″	8.8″/5″	**9921T45**	$3,089.13
1,000	52″ × 25½″ × 11½″	40″	8.8″/5″	**9921T46**	3,139.86
1,000	64″ × 25½″ × 11½″	40″	8.8″/5″	**9921T47**	3,190.58
Replacement 12-Volt Battery				**7448K52**	97.48

Polypropylene Carts

A

With Optional 4-gal. Utility Bin

B

With Optional Drawer

C

D

E

Made of strong yet lightweight polypropylene, these carts resist dents and corrosion. Shipped unassembled.

To Order: Please specify color where necessary.

Thermoplastic rubber (TPR) wheels roll over rough surfaces and are nonmarking and chemical resistant. ***Pneumatic wheels*** are quiet and shock absorbing.

Optional drawers mount under the top shelf. They can be locked and include two keys. Mounting hardware is included.

(A) Shelves have a 1″ high lip on three sides and a ¼″ high lip on one side. Frame is aluminum. Carts roll on four swivel casters.

(B) Same as *Style A*, but it has enclosure panels on each end.

(C) Same as *Style A*, but it has enclosure panels on three sides.

(D) Shelves have a 2¾″ high lip on all sides to prevent items from sliding off. Handle has built-in bins. Rounded corners protect walls and furniture from damage. Carts roll on two rigid and two swivel casters.

(E) Top shelf has recessed edge to catch small parts; bottom shelf has a 2½″ high lip on each end. Handle has built-in bins. Rounded corners protect walls and furniture from damage. Carts roll on two rigid and two swivel casters.

	Cart Cap., lbs.	Shelf Size, Lg. × Wd.	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Handle Ht.	Wheel Dia.	Available Colors	Carts	Each	Optional Drawers Cap., lbs.	Dp.		Each
With Two Handles and Lipped Shelves															
Thermoplastic Rubber (TPR) Wheels															
A	200	25″ × 17⅝″	33⅜″	11¾″	3	67	37¾″	4″	Off-White	**2240T54**	$228.43	15	3″	**2240T62**	$91.92
A	300	29¼″ × 20″	33½″	11¾″	3	100	37 13/16″	4″	Off-White	**2240T55**	263.20	15	3″	**2240T63**	68.02
B	300	29¼″ × 20″	33½″	11¾″	3	100	37 13/16″	4″	Off-White	**2240T56**	372.58	15	3″	**2240T63**	68.02
C	300	29¼″ × 20¼″	33½″	11¾″	3	100	37 13/16″	4″	Off-White	**2240T57**	423.85	15	3″	**2240T63**	68.02
With Single Utility Handle and Lipped Shelves															
Thermoplastic Rubber (TPR) Wheels															
D	500	31⅛″ × 17⅛″	32⅞″	20¾″	2	250	38⅞″	5″	Black, Beige	**2602T21**	177.03	—	—	—	—
D	500	36⅜″ × 25¼″	32⅞″	20¾″	2	250	38⅞″	5″	Black, Beige	**2602T24**	201.32	40	4¼″	**2602T42**	91.01
D	750	46⅜″ × 25¼″	33¼″	20¾″	2	375	36¾″	5″	Black, Beige	**2602T83**	350.93	40	4¼″	**2602T42**	91.01
Pneumatic Wheels															
D	500	36⅜″ × 25¼″	37″	20¾″	2	250	43⅛″	8″	Black	**2602T842**	423.00	40	4¼″	**2602T42**	91.01
D	750	46⅜″ × 25¼″	37″	20¾″	2	375	43⅛″	8″	Black	**2602T852**	564.00	40	4¼″	**2602T42**	91.01
With Single Utility Handle and Flush Top Shelf															
Thermoplastic Rubber (TPR) Wheels															
E	500	31″ × 17¼″	32⅛″	20¾″	2	250	38⅛″	5″	Black, Beige	**2602T61**	189.57	—	—	—	—
E	500	36½″ × 25¼″	32⅛″	20¾″	2	250	38⅛″	5″	Black, Beige	**2602T66**	209.93	—	—	—	—

Optional Utility Bins— Snap on to all carts listed above. Made of polypropylene. Color is black.

Size		Each
4-Gal.	**2602T51**	$36.06
8-Gal.	**2602T52**	75.88

Optional Surge-Protected Outlet Strip for Carts with Single Utility Handle— Three-receptacle, three-prong, 15-amp outlet strip with 15-ft. long power cord and three-prong plug.

2602T53 ..... **Each** $51.51

Warning! ***Never exceed capacities.***

NSF-Certified Polyethylene Carts

With Three Shelves

Not only are these carts NSF certified, they have a 7/16″ high lip around the shelves to contain spills and prevent items from sliding off. The frame is chrome-plated steel. Carts roll on four swivel casters with thermoplastic (TPR) rubber wheels. Shipped unassembled. **To Order:** Please specify shelf color: blue or gray.

Carts with three shelves have a middle shelf that adjusts in 1″ increments.

Cart Cap., lbs.	Shelf Size, Lg. × Wd.	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Handle Ht.	Wheel Dia.		Each
400	33¾″ × 21½″	33¼″	23″	2	150	35″	4″	5007T61	$167.88
400	33¾″ × 21½″	33¼″	1″ to 21½″	3	150■	35″	4″	5007T71	205.42
400	39½″ × 27″	33¼″	23″	2	150	35″	4″	5007T65	196.56
400	39½″ × 27″	33¼″	1″ to 21½″	3	150■	35″	4″	5007T75	240.12

■ Never exceed cart capacity.

Polyethylene Cart with Polypropylene Sliding Lid

A sliding lid offers two great functions—a work surface and a locking cover. The lid is made of durable light gray glass-filled polypropylene and slides in either direction to extend your work surface. You also can remove the lid completely and store it on the side of the cart. To secure items stored in the top shelf, the lid can be locked with a padlock (not included) that has a maximum shackle diameter of 3/16″. For padlocks, please see pages 2932-2943.

The cart is made of dark gray high-density polyethylene and has a handle with built-in tool holders at each end. The top shelf has a 3¼″ high lip; bottom shelf has a 3″ high lip. Both shelves have a drain plug. Cart rolls on four swivel casters with solid rubber wheels. Two of the casters have a side wheel brake. Shipped unassembled.

Cart Cap., lbs.	Shelf Size, Lg. × Wd. Top	Shelf Size, Lg. × Wd. Bottom	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Handle Ht.	Wheel Dia.		Each
300	25½″ × 18″	20″ × 17″	39″	24″	2	150	37¾″	4″	2205T1	$239.02

Polypropylene Organizing Carts

A

B

C

Organize your tools and materials and transport them to the job in these dent-resistant carts. All are made of black polypropylene and roll on two rigid and two swivel casters with thermoplastic rubber (TPR) wheels. Shipped unassembled.

(A) Two removable compartmentalized bins at each end and two large red bins that slide out from either side of the cart provide versatile storage. The handle has a built-in bin for small items. Cart also has a holder for storing an extension cord or outlet strip. The bottom shelf has a 2¾″ high lip on the ends to keep items from sliding off. The swivel casters have a side wheel brake to keep the carts stationary.

(B) The same as *Style A*, but has a red locking cabinet for additional secure storage. Two keys are included.

(C) The locking work surface top flips up to reveal a 1½″ deep compartmentalized tray. A red locking drawer mounted under the top offers additional secure storage. Drawer is 4″ deep; capacity is 40 lbs. The two included keys fit both the top and the drawer. Cart also has four hanging hooks and a surge-protected, three-receptacle, three-prong, 15-amp outlet strip with a 10-ft. long power cord and three-prong plug. The bottom shelf has a 4½″ high lip to keep items from sliding off. The handle has a built-in cup holder and small bin. The two swivel casters have a total lock that brakes the wheel and locks the swivel in one operation.

Cart Cap., lbs.	Shelf Size, Lg. × Wd.	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs. Top	Cap. per Shelf, lbs. Bottom	Handle Ht.	Wheel Dia.		Each
(A) Bin Cart										
330	30″ × 19″	33⅜″	13″	2	180	150	34½″	5″	2609T11	$355.23
(B) Bin Cart with Locking Cabinet										
330	30″ × 19″	33⅜″	11″★	2	180	150	34½″	5″	2609T12	484.40
(C) Flip-Top Cart										
500	35¾″ × 24″	31″	14⅛″	2	250	250	38″	5″	2609T31	471.49

★ Inside clearance of cabinet.

Polypropylene Cleaning Carts

D

E

A place for everything—these carts hold your brooms, mops, buckets, cleaning supplies, floor signs, and more. All have three shelves and a front platform ideal for holding a mop bucket. Carts also have grips that accommodate handles up to 1⅛″ diameter and a yellow vinyl bag that has a side zipper and attaches to the handle. Carts roll on two 8″ dia. rigid thermoplastic (TPR) wheels and two swivel casters with 4″ dia. thermoplastic (TPR) wheels. Shipped unassembled.

(D) Top and bottom shelves have a 3″ high lip; middle shelf and front platform have a 1½″ high lip. Cart has six handle grips. Bag capacity is 20.8 gallons. Color is blue (unless noted).

(E) Top shelf has two removable 10-qt. caddies that each hold six spray bottles. Middle shelf has a ¾″ high lip; bottom shelf has a 6¾″ high lip; and the front platform has a 3¾″ high back with a 1¾″ high lip on each side that tapers to ½″ high in front. Cart has five handle grips and a dust pan holder. Bag capacity is 34 gallons. Shelves and front platform are black.

Cart Cap., lbs.	Shelf Size, Lg. × Wd. Top	Shelf Size, Lg. × Wd. Middle	Shelf Size, Lg. × Wd. Bottom	Top Shelf Ht.	Shelf Clearance Top to Middle	Shelf Clearance Middle to Bottom	Cap. per Shelf, lbs. Top	Cap. per Shelf, lbs. Middle	Cap. per Shelf, lbs. Bottom	Front Platform Size, Lg. × Wd.	Cap., lbs.	Handle Ht.		Each
(D) With Polypropylene Shelves and Frame														
235	17¼″ × 13¼″	17¼″ × 11″	15¾″ × 12″	38⅜″	12½″	15″	75	15	15	18″ × 17″	50	38⅜″	7101T73	$193.98
235	17¼″ × 13¼″	17¼″ × 11″	15¾″ × 12″	38⅜″	12½″	15″	75	15	15	18″ × 17″	50	38⅜″	7101T76●	193.98
(E) With Polypropylene Shelves and Aluminum Frame														
250	16¾″ × 14¾″	16¾″ × 14¾″	16¾″ × 14¾″	36½″	10¾″	10¾″	50	50	50	21½″ × 15½″	100	41″	7101T37■	252.62

● Color is black. ■ Never exceed cart capacity.

Warning! Never exceed capacities.

Carts with Electrical Outlet Strip

A
4874T17 Shown

B

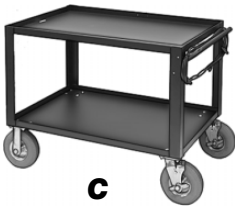

C

D

E
With Rubber Wheels

Don't get stuck without an outlet strip and power cord. Also known as A/V and audio/visual carts, these carts come with a three-receptacle, three-prong, 15-amp outlet strip with a 15-ft. long power cord and three-prong plug. Outlet strips are UL listed and CSA certified. Shelves have a 1/4″ high lip (unless noted). Carts roll on four swivel casters; two with a side wheel brake (unless noted).

Steel carts are heavier and more durable than polyethylene carts. They have a black powder-coated finish and include a nonslip mat on the top shelf. Shipped assembled; just install casters.

Polyethylene carts are lightweight and will not dent or rust. Color is black. Shipped unassembled.

Carts with locking cabinet provide secure storage. They have a recessed handle and include two keys.

(A) *Adjustable-height* carts' top shelf adjusts in 4″ increments.

(B) Interior shelves adjust in 1½″ increments.

(C) Shelves have a 1½″ high lip. Cart rolls on two rigid and two swivel casters. The swivel casters have a side wheel brake.

(D) All shelves have a slip-resistant surface. Top shelf adjusts to heights of 16″, 26″, 34″, and 42″.

Also Available: Carts with shelves in other colors. Please ask for 4731T888 and specify with or without a cabinet, shelf height, and color: blue, gray, orange, red, or yellow.

(E) Top shelf is reinforced with aluminum. *Carts with pneumatic wheels* have a 2¾″ high lip on the middle and bottom shelves and two rigid and two swivel casters with side wheel brakes.

	Cart Cap., lbs.	Shelf Size, Lg.×Wd.	Top Shelf Ht.	Shelf Clearance: Top to Bottom	Shelf Clearance: Top to Middle	Shelf Clearance: Middle to Bottom	No. of Shelves	Cap. per Shelf, lbs.	Shelf ga.	Wheel Dia.	Carts	Each	Carts with Locking Cabinet	Each
Steel Carts														
Fixed Height with Solid Rubber Wheels														
A	200	24″×18″	26″	16¾″		—	2	100	20	4″	4874T13	$179.48	—	—
A	200	24″×18″	34″	—	11½″	12″	3	66	20	4″	4874T14	187.96	—	—
A	200	24″×18″	42″	—	17″	14½″	3	66	20	4″	4874T15	146.35	—	—
B	250	24″×18″	34″	25¼″	9½″ Min.	10¼″ Min.	3	100/50●	20	4″	—	—	5065T33	$356.53
B	250	24″×18″	42″	35½″	8¾″ Min.	9¾″ Min.	4	100/50●	20	4″	—	—	5065T24	398.51
Adjustable Height with Solid Rubber Wheels														
A	200	24″×18″	26″ to 42″	—	16¾″ Max.	16″	3	66	20	4″	4874T16	134.36	4874T17	184.78
Fixed Height with Pneumatic Wheels														
C	600	39¾″×27⅝″	32″	18½″	—		2	300	18	8″	27095T4	523.15	—	—
Polyethylene Carts														
Fixed Height with Solid Rubber Wheels														
D	200	24″×18″	16″	8″	—		2	100	—	4″	4731T51	90.77	—	—
D	200	24″×18″	26″	16½″	—		2	100	—	4″	4731T52	106.15	4731T72	176.92
D	200	24″×18″	34″	—	8½″	16½″	3	66	—	4″	4731T53	121.54	4731T73	193.85
D	200	24″×18″	42″	—	16½″	16½″	3	66	—	4″	4731T54	124.62	4731T74	196.92
E	300	32″×24″	27″	18″	—		2	200/100♦	—	4″	27995T22	221.67	27995T41	281.40
E	300	32″×24″	40″	—	11½″	18″	3	150/75♦	—	4″	27995T33	263.86	27995T42	347.72
E	300	32″×24″	48″	—	19½″	18″	3	150/75♦	—	4″	27995T34	273.33	27995T43	354.91
E	300	32″×24″	54″	—	25½″	18″	3	150/75♦	—	4″	27995T35	280.61	27995T44	360.18
Adjustable Height with Solid Rubber Wheels														
D	200	24″×18″	16″ to 42″	—	16½″ Max.	16½″	3	66	—	4″	4731T55	125.42	4731T75▲	203.08
Fixed Height with Pneumatic Wheels														
E	600	32″×24″	36″	25″	—		2	350/250♦	—	8″	2606T1	381.16	—	—
E	850	32″×24″	41″	—	11″	11″	3	350/250♦	—	8″	2606T2	432.62	—	—

● First capacity listed is for the top and bottom shelves; the second listing is for the adjustable interior shelf.
♦ First capacity listed is for the top shelf; the second listing is for all other shelves. ▲Top shelf height is 26″ to 42″.

Gentle-Ride Instrument Carts with No-Slip Shelves

Have a safe journey—the shelves on these steel carts have a nonslip vinyl surface that keeps your load in place. Two rigid and two swivel casters with pneumatic wheels (unless noted) provide a cushioned ride. Color is gray. Shipped assembled.

(F) Have a protective bumper around the top shelf to protect walls and furniture from damage.

(G) *Lipped shelves* have a 1½″ high lip.

(H) Have a protective bumper around the top shelf, a 5″ deep lockable drawer with two keys, and a six-receptacle, three-prong, 15-amp outlet strip with a 15-ft. long power cord and three-prong plug. The outlet strip is UL listed and has a circuit breaker.

F

G
With Lipped Shelves

H

	Cart Cap., lbs.	Shelf Size, Lg.×Wd.: Top	Shelf Size, Lg.×Wd.: Bottom	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Shelf Thick./ ga.	Handle Ht.	Wheel Dia.	Flush Shelves	Each	Lipped Shelves	Each
F	1,000	36″×22″	30″×20″	34″	19″	2	500	¾″	34″	9″	2619T61	$380.00	—	—
F	1,000	36″×22″	30″×20″	34″	23″	2	500	¾″	34″	5″	2619T59♥	308.33	—	—
G	1,200	36″×24″	36″×24″	33″	19″	2	600	14	37″	9″	23545T61	372.96	23545T71	$372.96
G	1,200	48″×24″	48″×24″	33″	19″	2	600	14	37″	9″	23545T62	409.91	23545T72	409.91
G	1,200	60″×30″	60″×30″	33″	19″	2	600	14	37″	9″	23545T63	531.30	23545T73	531.30
H	1,200	36″×24″	26″×24″	34″	14″	2	600	12	35″	8″	27095T51	695.89	—	—
H	1,200	48″×24″	38″×24″	34″	14″	2	600	12	35″	8″	27095T52	780.52	—	—

♥ Has four swivel casters with polyurethane wheels and side wheel brakes.

Warning! Never exceed capacities.

Light Duty Bolt-Together Steel Carts

A

B

C With Optional Drawer

D

E

F

G

An economical alternative to welded carts for less demanding applications. All shelves are reversible from a lipped shelf that keeps items from sliding off to a flush shelf for a smooth work surface. Color is gray. Shipped unassembled.

Carts with 3″ dia. wheels roll on four swivel casters with polypropylene wheels.

Carts with 5″ dia. wheels roll on two rigid and two swivel casters with polypropylene wheels.

Carts with drawers can be locked with a padlock (not included) that has a maximum shackle diameter of 1/4″. For padlocks, please see pages 2932-2943.

(B) Shelves are enclosed on three sides. The back panel can be removed to allow access from two sides.

(D) Also includes four bin boxes for additional storage. The swivel casters have a side wheel brake.

(G) Cabinet has a lock with two keys.

Optional Drawer for Style C Carts— Carts accommodate one or two drawers. Drawer is mounted under top shelf with lip up.

Drawer is 18″ Lg. × 12″ Wd. × 4″ Dp. Capacity is 75 lbs.

4633T66 ..... **Each** $24.70

Cart Cap., lbs.	Shelf Size, Lg. × Wd.	Top Shelf Ht.	Lip Ht.	Shelf Clearance	No. of Shelves/ Drawers	Cap. per Shelf/ Drawer, lbs.	Drawer Depth	Shelf ga.	Handle Ht.	Wheel Dia.	Carts	Each	Extra Shelves	Each
(A) With Shelves														
320	24″ × 18″	34½″	2¼″	24½″	2	100	—	20	—	3″	**9037T32**	$82.90	—	—
500	36″ × 24″	42″	2″	15½″	3	166	—	20	—	5″	**2466T11**	233.47	**2466T31**	$40.87
500	43″ × 20″	42″	2″	15½″	3	166	—	20	—	5″	**2466T13**	243.89	**2466T32**	38.51
(B) With Shelf Enclosures														
500	36″ × 24″	42″	2″	15½″	3	166	—	20	—	5″	**2466T19**	306.94	**2466T31**	40.87
(C) With Shelves and Push Handle														
500	28″ × 20″	32″	3½″	19½″	2	250	—	20	32″	5″	**4633T3**	90.22	**4633T62**	22.51
500	30″ × 16″	32″	3½″	19½″	2	250	—	20	32″	5″	**4633T2**	88.16	**4633T61**	20.07
500	36″ × 24″	32″	3½″	19½″	2	250	—	20	32″	5″	**4633T1**	104.28	**4633T63**	30.51
800	30″ × 16″	32″	3″	19½″	2	400	—	18	32″	5″	**4633T41**	115.70	**4633T64**	26.24
800	36″ × 24″	32″	3″	19½″	2	400	—	18	32″	5″	**4633T42**	141.24	**4633T65**	39.27
1,000	30″ × 18″	36″	2″	24¾″	2	500	—	16	36″	5″	**4794T41**	128.09	**4794T51**	27.44
1,000	36″ × 24″	36″	2″	24¾″	2	500	—	16	36″	5″	**4794T42**	161.85	**4794T52**	39.35
(D) With Shelves, Tool-Holder Handle, and Drawers														
500	28″ × 16″	34″	2″	8″	3/3	200/75■	1⅝″	20	34″	5″	**4794T43**	227.61	—	—
(E) With Shelves and Drawers														
320	24″ × 18″	34½″	2¼″	14½″	2/2	100/75■	4⅝″	20	—	3″	**9037T52**	160.76	—	—
(F) With Drawers														
320	24″ × 18″	34½″	2¼″	—	1/4	100/75■	4⅝″	20	—	3″	**9037T53**	238.60	—	—
(G) With Drawers and Cabinet														
320	24″ × 18″	34½″	2¼″	—	1/2	100/75■	4⅝″	20	—	3″	**9037T51**	245.32	—	—

■ Never exceed cart capacity.

Welded Steel Carts with Extra-High Lipped Shelves

H

J

K

Don't worry about your material slipping or rolling off—an extra-high lip around the shelves gives these carts versatile carrying capabilities.

Carts roll on two rigid and two swivel casters with nonmarking polyurethane wheels. Color is gray. Shipped assembled.

	Cart Cap., lbs.	Shelf Size, Lg. × Wd.	Top Shelf Ht.	Lip Ht. Top	Lip Ht. Bottom	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.■	Shelf ga.	Handle Ht.	Wheel Dia.		Each
H	1,200	30″ × 18″	35″	3″	3″	22½″	2	1,200	12	35″	5″	**22041T11**	$215.91
H	1,200	36″ × 24″	35″	3″	3″	22½″	2	1,200	12	35″	5″	**22041T12**	251.80
H	3,600	30″ × 18″	36½″	3″	3″	22½″	2	2,000	12	36½″	6″	**22041T41**	269.73
H	3,600	36″ × 24″	36½″	3″	3″	22½″	2	2,000	12	36½″	6″	**22041T42**	309.61
H	3,600	48″ × 24″	36½″	3″	3″	22½″	2	2,000	12	36½″	6″	**22041T43**	344.37
J	1,200	30″ × 18″	35″	6″	6″	16½″	2	1,200	12	35″	5″	**22041T13**	249.72
J	1,200	36″ × 24″	35″	6″	6″	16½″	2	1,200	12	35″	5″	**22041T14**	303.69
J	3,600	36″ × 24″	36½″	6″	6″	16½″	2	2,000	12	36½″	6″	**22041T54**	343.97
J	3,600	48″ × 24″	36½″	6″	6″	16½″	2	2,000	12	36½″	6″	**22041T55**	398.02
K	3,600	30″ × 18″	36½″	12″	1½″	15″	2	2,000	12	36½″	6″	**22041T61**	303.02
K	3,600	36″ × 24″	36½″	12″	1½″	15″	2	2,000	12	36½″	6″	**22041T62**	350.52

■ Never exceed cart capacity.

Warning! ***Never exceed capacities.***

Welded Steel Carts

A

With Two Shelves and Polyurethane Wheels

B

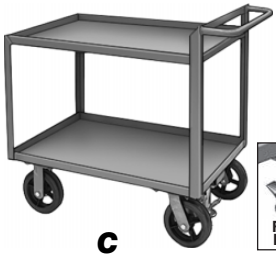

C

With Rubber-Tread Wheels and Floor Lock

D

With Three Shelves

Welded-steel construction offers you the most durable carts around. All shelves are 12-ga. steel. Color is gray. Shipped assembled.

Thermoplastic rubber (TPR) wheels are quiet and protect your floor. ***Polyurethane wheels*** are smooth rolling and nonmarking. ***Rubber-tread wheels*** provide higher capacity and roll smoothly over rough surfaces. ***Phenolic wheels*** are water resistant and an economical choice.

(A) All bottom shelves have a 1½″ high lip. Middle shelf on carts with three shelves is the same (flush or lipped) as the top shelf. Carts roll on two rigid and two swivel casters with a side wheel brake (unless noted).

(B) Have a low top shelf to reduce lifting and a raised offset handle for easier pushing. Bottom shelf has a 1½″ high lip. Carts roll on two rigid and two swivel casters with a side wheel brake.

(C) Have an offset handle for easier pushing and a crossbar to protect your hands when items slide on the top shelf. Carts roll on two rigid and two swivel casters. *Carts with a floor lock* keep cart stationary when loading and unloading.

(D) All shelves are reinforced (unless noted). Carts roll on two rigid and two swivel casters. *Carts with a floor lock* keep cart stationary when loading and unloading.

Medium Duty Carts

Shelf Size, Lg.×Wd.	Top Shelf Ht.	Shelf Clearance	Cap. per Shelf, lbs.■	Handle Ht.	Wheel Dia.	THERMOPLASTIC RUBBER (TPR) WHEELS: Cart Cap., lbs.	Flush Top Shelf	Each	1½″ Lipped Top Shelf	Each	POLYURETHANE WHEELS: Cart Cap., lbs.	Flush Top Shelf	Each	1½″ Lipped Top Shelf	Each
(A) With Two Shelves															
24″×18″	35″	25″	600	35″	5″	800	2204T41	$204.72	2204T45	$204.72	1,200	2204T11	$204.72	2204T15	$204.72
24″×18″	35″	25″	600	35″	5″	800	2204T51♦	215.74	2204T55♦	215.74	1,200	2204T71♦	215.74	2204T81♦	215.74
30″×18″	35″	25″	600	35″	5″	800	2204T42	220.30	2204T46	220.30	1,200	2204T12	220.30	2204T16	220.30
30″×18″	35″	25″	600	35″	5″	800	2204T52♦	231.31	2204T56♦	231.31	1,200	2204T72♦	231.31	2204T82♦	231.31
36″×24″	35″	25″	600	35″	5″	800	2204T43	246.22	2204T47	246.22	1,200	2204T13	246.22	2204T17	246.22
36″×24″	35″	25″	600	35″	5″	800	2204T53♦	257.24	2204T57♦	257.24	1,200	2204T73♦	257.24	2204T83♦	257.24
48″×24″	35″	25″	600	35″	5″	800	2204T44	266.94	2204T48	266.94	1,200	2204T14	266.94	2204T18	266.94
48″×24″	35″	25″	600	35″	5″	800	2204T54♦	277.98	2204T58♦	277.98	1,200	2204T74♦	277.98	2204T84♦	277.98
(A) With Three Shelves															
24″×18″	35″	12″	400	35″	5″	800	2204T31	246.22	2204T34	246.22	1,200	2204T21	246.22	2204T25	246.22
30″×18″	35″	12″	400	35″	5″	800	2204T32	256.57	2204T35	256.57	1,200	2204T22	256.57	2204T26	256.57
36″×24″	35″	12″	400	35″	5″	800	2204T33	290.28	2204T36	290.28	1,200	2204T23	290.28	2204T27	290.28
(B) With Two Easy-Load Shelves															
30″×18″	27″	17″	600	43″	5″	800	23555T41	220.30	23555T46	220.30	1,200	23555T11	220.30	23555T14	220.30
36″×24″	27″	17″	600	43″	5″	800	23555T42	250.85	23555T47	250.85	1,200	23555T12	253.14	23555T15	253.14
48″×24″	27″	17″	600	43″	5″	800	23555T43	277.21	23555T48	277.21	1,200	23555T13	277.21	23555T16	277.21
60″×30″	27″	17″	600	43″	5″	800	23555T44	341.23	23555T49	341.23	1,200	23555T21	341.23	23555T23	341.23
72″×36″	27″	17″	600	43″	5″	800	23555T45	461.48	23555T51	461.48	1,200	23555T22	461.48	23555T24	461.48
						RUBBER-TREAD WHEELS:	Flush Shelves		1½″ Lipped Shelves		POLYURETHANE WHEELS:	Flush Shelves		1½″ Lipped Shelves	
(C) With Two Shelves															
36″×24″	31″	19″	2,000	35″	6″	2,000	2892T411	$314.08	2892T415	$314.08	—	—	—	—	—
36″×24″	32″	19″	2,000	36″	8″	2,400	2892T1	323.56	2892T5	323.56	3,600	2892T51★	$366.15	2892T55★	$366.15
48″×24″	31″	19″	2,000	35″	6″	2,000	2892T412	337.16	2892T416	337.16	—	—	—	—	—
48″×24″	32″	19″	2,000	36″	8″	2,400	2892T2	362.90	2892T6	362.90	3,600	2892T52★	403.75	2892T56★	403.75
48″×30″	31″	19″	2,000	35″	6″	2,000	2892T413	413.04	2892T417	413.04	—	—	—	—	—
60″×30″	31″	19″	1,700	35″	6″	2,000	2892T414	445.31	2892T418	445.31	—	—	—	—	—
60″×30″	32″	19″	1,700	36″	8″	2,400	2892T4	446.50	2892T8	446.50	3,600	2892T54★	490.83	2892T58★	490.83
(C) With Two Shelves and Floor Lock															
36″×24″	32″	19″	2,000	36″	8″	2,400	2892T311	372.40	2892T315	372.40	3,600	2892T61	413.65	2892T65	413.65
48″×24″	32″	19″	2,000	36″	8″	2,400	2892T312	408.50	2892T316	408.50	3,600	2892T62	451.25	2892T66	451.25
60″×30″	32″	19″	1,700	36″	8″	2,400	2892T314	492.10	2892T318	492.10	3,600	2892T64	538.33	2892T68	538.33

■ Never exceed cart capacity. ♦ Has four swivel casters; two with side wheel brake. ★ Swivel casters have side wheel brake.

Extra-Heavy Duty Carts

Shelf Size, Lg.×Wd.	Top Shelf Ht.	Cap. per Shelf, lbs.■	Handle Ht.	PHENOLIC WHEELS: Cart Cap., lbs.	Shelf Clearance	Wheel Dia.	Flush Shelves	Each	1½″ Lipped Shelves	Each	PHENOLIC WHEELS AND FLOOR LOCK: Cart Cap., lbs.	Shelf Clearance	Wheel Dia.	Flush Shelves	Each
(D) With Two Shelves															
36″×24″	36″	2,000	36″	3,600	25″	6″	27015T7★●	$304.72	27015T8★●	$304.72	—	—	—	—	—
36″×24″	36″	2,000	36″	4,000	23½″	8″	2463T9	397.86	—	—	4,000	23½″	8″	2463T29	$476.43
48″×24″	36″	2,000	36″	3,600	25″	6″	27015T1★	345.94	27015T2★	345.94	—	—	—	—	—
48″×24″	36″	2,000	36″	4,000	23½″	8″	2463T11	431.43	—	—	4,000	23½″	8″	2463T31	467.42
48″×34″	36″	2,000	36″	4,000	23½″	8″	2463T14	479.05	—	—	4,000	23½″	8″	2463T34	540.95
60″×24″	36″	2,000	36″	—	—	—	—	—	—	—	4,000	23½″	8″	2463T32	513.57
60″×30″	36″	1,700	36″	3,600	25″	6″	27015T12★	390.36	27015T14★	390.36	—	—	—	—	—
60″×34″	36″	2,000	36″	4,000	23½″	8″	2463T15	489.05	—	—	4,000	23½″	8″	2463T35	552.38
72″×34″	36″	2,000	36″	4,000	23½″	8″	2463T16	559.29	—	—	4,000	23½″	8″	2463T36	620.95
(D) With Three Shelves															
36″×24″	36″	2,000	36″	3,600	12″	6″	27015T3★●	353.11	27015T5★●	353.11	4,000	11″	8″	2463T39♥	529.05
48″×24″	36″	2,000	36″	3,600	12″	6″	27015T4★	405.94	27015T6★	405.94	4,000	11″	8″	2463T41♥	565.48

■ Never exceed cart capacity. ★ Swivel casters have side wheel brake. ● Only bottom shelf is reinforced. ♥ Capacity per shelf is 1,333 lbs.

Warning! Never exceed capacities.

Welded Steel Carts with Writing Surface

Carts have a 21″ Wd.×12″ Lg. writing surface with a convenient storage pocket underneath—great for taking notes and holding paperwork. The bottom shelf has a 1½″ high lip. Carts roll on two rigid and two swivel casters with polyurethane wheels. Swivel casters have a side wheel brake. Color is gray. Shipped assembled.

Carts with flush top shelf provide a smooth work surface. ***Carts with lipped top shelf*** have a 1½″ high lip to keep items from sliding off.

Cart Cap., lbs.	Writing Surface Ht.	Shelf Size, Lg.×Wd.	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.■	Shelf ga.	Handle Ht.	Wheel Dia.	*Flush Top Shelf*	Each	*Lipped Top Shelf*	Each
1,200	39″	36″×24″	35″	25″	2	1,200	12	40″	5″	2689T71	$257.16	2689T81	$257.16
1,200	39″	48″×24″	35″	25″	2	1,200	12	40″	5″	2689T72	283.36	2689T82	283.36

■ Never exceed cart capacity.

Welded Steel Table Carts

Top shelf is flush without a handle for a flat work surface that makes it easier to move large, bulky items on and off these carts. Carts roll on two rigid and two swivel casters with side wheel brakes. Color is gray. Shipped assembled.

Polyurethane wheels are smooth rolling and nonmarking. ***Pneumatic wheels*** are quiet and shock absorbing.

Cart Cap., lbs.	Shelf Size, Lg.×Wd.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Shelf ga.	*Polyurethane Wheels* Top Shelf Ht.	Wheel Dia.		Each	*Pneumatic Wheels* Top Shelf Ht.	Wheel Dia.		Each
1,200	36″×18″	20″	2	600	12	30″	5″	2826T51	$205.35	34″	8″	2826T61●	$327.69
1,200	36″×24″	20″	2	600	12	30″	5″	2826T52	240.35	34″	8″	2826T62	337.04
1,200	48″×24″	20″	2	600	12	30″	5″	2826T53	263.67	34″	8″	2826T63	365.15
1,200	60″×30″	20″	2	600	12	30″	5″	2826T54	320.58	34″	8″	2826T64	430.67
1,200	72″×36″	20″	2	600	12	30″	5″	2826T55	479.29	34″	8″	2826T65	536.00

● Wheels are semi-pneumatic.

NSF-Certified Steel Carts with Adjustable Shelves

Just what you need in food processing, laboratory, and other sanitary environments. Casters have a bumper to protect walls and furniture from damage. Shipped unassembled.

Extra shelves (sold separately) can be added without disassembling the cart.

Wire shelves minimize dust accumulation and maximize air circulation. Shelves adjust in 1″ increments except carts with gray finish, which adjust in 3″ increments. Carts roll on four swivel casters.

Type 304 stainless steel carts offer superior corrosion resistance. *Washdown casters* have a grease fitting, making them ideal for high-pressure washdown applications. *Conductive chrome-plated steel* carts have a braided cable that dissipates static charges. Surface resistivity is less than 10^3 ohms.

Solid shelves are ideal for small items and items with feet that could fall through wire shelves. Shelves are 18 gauge and adjust in 1″ increments. Carts roll on four swivel casters.

Cart Cap., lbs.	Shelf Size, Lg.×Wd.	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Handle Ht.	Wheel Dia.	*Carts*	Each	*Extra Shelves*	Each
Wire Shelves											
(A) Zinc-Plated Steel with Cushion Rubber Wheels											
800	36″×18″	31½″	1″ to 21½″	2	400	39″	5″	2698T61	$208.31	2698T91	$36.81
800	36″×24″	31½″	1″ to 21½″	2	400	39″	5″	2698T62	225.31	2698T92	44.10
800	48″×24″	31½″	1″ to 21½″	2	400	39″	5″	2698T63	244.19	2698T93	53.21
(A) Chrome-Plated Steel with Cushion Rubber Wheels											
800	36″×18″	31½″	1″ to 21½″	2	400	39″	5″	2698T71	215.81	2698T87	39.28
800	36″×24″	31½″	1″ to 21½″	2	400	39″	5″	2698T72	240.79	2698T88	48.02
800	48″×24″	31½″	1″ to 21½″	2	400	39″	5″	2698T73	259.35	2698T89	56.86
(A) Steel with Gray Powder-Coated Finish with PVC Wheels											
1,000	36″×18″	37″	3″ to 22⅝″	2	1,200■	42″	5″	28695T36	207.69	28695T15	57.47
1,000	36″×24″	37″	3″ to 22⅝″	2	1,000■	42″	5″	28695T37	236.44	28695T25	65.71
1,000	48″×24″	37″	3″ to 22⅝″	2	725■	42″	5″	28695T38	252.96	28695T35	76.26
(A) Type 304 Stainless Steel with Polyurethane Wheels											
1,200	36″×18″	31½″	1″ to 21½″	2	600	39″	5″	6578T11	571.41	6578T21	137.98
1,200	36″×24″	31½″	1″ to 21½″	2	600	39″	5″	6578T12	645.50	6578T22	175.81
1,200	48″×24″	31½″	1″ to 21½″	2	600	39″	5″	6578T13	711.66	6578T23	212.58
(A) Type 304 Stainless Steel with Washdown Casters and Polyurethane Wheels											
1,200	36″×18″	31½″	1″ to 21½″	2	600	39″	5″	6578T14	826.46	6578T21	137.98
1,200	36″×24″	31½″	1″ to 21½″	2	600	39″	5″	6578T15	908.88	6578T22	175.81
1,200	48″×24″	31½″	1″ to 21½″	2	600	39″	5″	6578T16	972.07	6578T23	212.58
(B) Conductive Chrome-Plated Steel with Cushion Rubber Wheels											
800	36″×18″	31½″	1″ to 21½″	2	400	39″	5″	8784T71	246.05	8784T61	50.49
800	36″×24″	31½″	1″ to 21½″	2	400	39″	5″	8784T72	271.04	8784T62	76.88
800	48″×24″	31½″	1″ to 21½″	2	400	39″	5″	8784T73	289.60	8784T63	86.07
Solid Shelves											
(C) Galvanized Steel with Cushion Rubber Wheels											
800	36″×18″	31½″	1″ to 21½″	2	400	39″	5″	8378T21	280.00	8378T91	66.32
800	36″×24″	31½″	1″ to 21½″	2	400	39″	5″	8378T22	307.37	8378T92	78.95
800	48″×24″	31½″	1″ to 21½″	2	400	39″	5″	8378T23	328.42	8378T93	89.47

■ Never exceed cart capacity.

Warning! Never exceed capacities.

NSF-Certified Light Duty Welded Steel Carts with Stainless Steel Shelves

Corrosion-resistant Type 430 stainless steel shelves—a great choice for food, pharmaceutical, and laboratory applications. Carts have welded construction. Shipped assembled.

(A&B) Shelves have reinforced edges that are rolled under for easy cleaning. Frame is chrome-plated steel. Carts roll on four swivel casters with rubber wheels.

(C) Shelves have a 1½″ high lip on three sides. The handle and front legs have bumpers to protect walls and furniture from damage. Carts roll on two rigid and two swivel casters with polyurethane wheels.

A **B** **C**

	Cart Cap., lbs.	Shelf Size, Lg.×Wd.	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Shelf ga.	Handle Ht.	Wheel Dia.		Each
A	500	24″×15½″	31″	18¾″	2	250	20	35¾″	4″	**2532T13**	$406.12
A	500	33″×21″	35⅜″	21½″	2	250	20	40⅛″	5″	**2532T15**	487.35
B	500	33″×21″	35⅜″	10¾″	3	165	20	40⅛″	5″	**2532T16**	592.39
C	700	24″×15½″	32¾″	19″	2	350	18	34¼″	8″/5″	**6147T11**	613.77
C	700	27″×18″	33½″	19″	2	350	18	34½″	8″/5″	**6147T1**	610.10
C	700	33″×21″	35⅝″	21″	2	350	18	37⅛″	8″/5″	**6147T3**	710.87

Welded Type 430 Stainless Steel Carts

Type 430 stainless steel gives you corrosion resistance while welded construction provides durability. Carts roll on four swivel casters with rubber wheels (unless noted). Shipped assembled.

(D) The low top shelf reduces lifting for easier loading and unloading. Two swivel casters have a side wheel brake.

(E) Top and middle shelves have a 1″ high lip on three sides. Bottom shelf has a flush top.

(F) Top and middle shelves have a 1″ high lip on three sides; bottom shelf has a flush top. The handle and front legs have a bumper to protect walls and furniture from damage.

(G) The top and middle shelves have a 2″ high lip on three sides and a guardrail on one side. Bottom shelf has a flush top with a guardrail on all sides. The handle and front legs have a bumper.

(H) A drawer adds storage for tools and supplies. Drawer is 4¼″ deep. Top and middle shelves have a 1″ high lip on three sides. Bottom shelf has a flush top.

(J) Has two drawers for storage. Drawers are 4¼″ deep. Top and middle shelves have a 1″ high lip on three sides. Bottom shelf has a flush top with a guardrail on three sides.

D **E** **F**

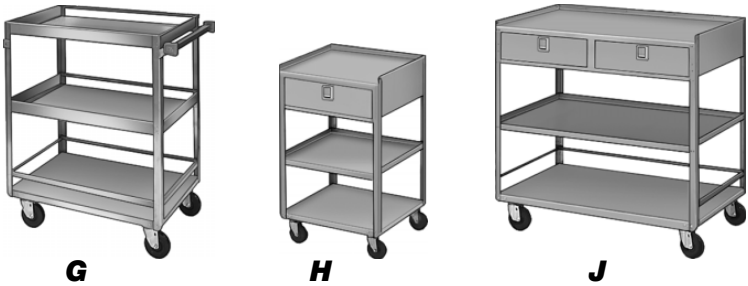

G **H** **J**

	Cart Cap., lbs.	Shelf Size, Lg.×Wd.	Top Shelf Ht.	Shelf Clearance	No. of Shelves/ Drawers	Cap. per Shelf/ Drawer, lbs.	Shelf ga.	Handle Ht.	Wheel Dia.		Each
With Flush Easy-Load Shelves											
D	650	24″ ×20″	21³⁄₁₆″	9½″	2	325	18	—	4″	**9028T12**	$619.16
D	650	24″ ×20″	29³⁄₁₆″	17½″	2	325	18	—	4″	**9028T14**	662.62
D	650	32″ ×24″	21³⁄₁₆″	9½″	2	325	18	—	4″	**9028T22**	836.48
D	650	32″ ×24″	29³⁄₁₆″	17½″	2	325	18	—	4″	**9028T24**	864.26
With Lipped Shelves											
E	300	18¾″ ×16⅝″	30⅛″	10¾″	3	100	22	—	3½″	**2268T21**	226.57
F	300	24″ ×15½″	32⅛″	11¾″	3	100	22	32⅛″	3½″	**2544T6**	194.97
F	300	27″ ×18″	33″	12¼″	3	100	22	33″	3½″	**2544T7**	221.52
F	500	24″ ×15½″	33⅜″	11⅞″	3	165	20	33⅜″	4″	**2544T1**	258.44
F	500	27″ ×18″	33⅜″	11⅞″	3	165	20	33⅜″	4″	**2544T2**	283.70
F	500	35″ ×21″	37¼″	13⅛″	3	165	20	37¼″	5″	**2544T4★**	485.80
G	500	27″ ×18″	33¾″	9″	3	165	20	33¾″	4″	**2544T3**	401.24
H	300	18¾″ ×16¾″	30⅛″	8⅛″	3/1	100/20■	22	—	3½″	**2268T23**	479.60
J	500	36⅜″ ×20⅛″	35″	10″	3/2	165/20■	20	—	4″	**2268T25**	997.74

★ Has polyurethane wheels. ■ Never exceed cart capacity.

Warning! **Never exceed capacities.**

Heavy Duty Welded Type 430 Stainless Steel Carts

A *With Flush Top Shelf*

B *With Lipped Top Shelf*

Handling heavy loads and withstanding corrosion—that's what these carts are all about. All have welded construction. All middle and bottom shelves are lipped, except for 2586T49, T51, and T52, which have a flush middle shelf. Carts roll on two rigid and two swivel casters with nonmarking polyurethane wheels. The swivel casters have a side wheel brake. Shipped assembled.

Flush shelves provide a smooth work surface. ***Lipped shelves*** keep items from sliding off.

	Cart Cap., lbs.	Shelf Size, Lg.×Wd.	Top Shelf Ht.	Lip Ht.	Shelf Clearance	Cap. per Shelf, lbs.	Shelf ga.	Handle Ht.	Wheel Dia.	Flush Top Shelf	Each	Lipped Top Shelf	Each
With Two Shelves													
A	1,200	36″×24″	27″	1½″	17″	600	16	37″	5″	2586T46	$550.29	2586T34	$550.29
A	1,200	48″×24″	27″	1½″	17″	600	16	37″	5″	2586T47	603.67	2586T35	603.67
A	1,200	60″×30″	27″	1½″	17″	600	16	37″	5″	2586T48	753.55	2586T36	753.55
B	1,200	30″×18″	35″	1½″	25″	600	16	35″	5″	2586T43	486.64	2586T31	486.64
B	1,200	30″×18″	35″	3″	22″	600	16	35″	5″	—	—	2586T37	562.60
B	1,200	36″×24″	35″	1½″	25″	600	16	35″	5″	2586T44	550.29	2586T32	550.29
B	1,200	36″×24″	35″	3″	22″	600	16	35″	5″	—	—	2586T38	706.33
B	1,200	48″×24″	35″	1½″	25″	600	16	35″	5″	2586T45	603.67	2586T33	603.67
With Three Shelves													
B	1,200	30″×18″	35″	1½″	12″	400	16	35″	5″	2586T49	570.81	2586T39	570.81
B	1,200	36″×24″	35″	1½″	12″	400	16	35″	5″	2586T51	667.33	2586T41	667.33
B	1,200	48″×24″	35″	1½″	12″	400	16	35″	5″	2586T52	741.22	2586T42	741.22

Welded Type 304 Stainless Steel Table Carts

Flush shelves provide a smooth, corrosion-resistant work surface and make loading and unloading easy. Carts roll on four swivel casters with rubber wheels. All carts have welded construction. Shipped assembled.

Cart Cap., lbs.	Shelf Size, Lg.×Wd. Top	Bottom	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Shelf ga.	Wheel Dia.		Each
300	33⅛″×18⅛″	30¼″×15¼″	35 15/16″	23 5/16″	2	150	18	2″	9029T22	$471.02
300	36⅛″×20⅛″	33¼″×17¼″	35 15/16″	23 5/16″	2	150	18	2″	9029T23	501.47
300	48⅛″×24⅛″	45¼″×21¼″	35 15/16″	23 5/16″	2	150	18	2″	9029T25	575.64

NSF-Certified Aluminum Carts with Polyethylene Tote Boxes

With Three Tote Boxes

Slide the included tote boxes in and out on the rails for easy access to stored materials. When not in use on the cart, the tote boxes nest for compact storage. Carts roll on four swivel casters with polyurethane wheels. Shipped assembled.

Tote boxes are made of gray high-density polyethylene. Material is FDA compliant. Design is USDA approved.

Cart frame and ***rails*** are made of rustproof all-welded aluminum tubing. Material is USDA approved.

No. of Tote Boxes	Cart Cap., lbs.	O'all Size, Lg.×Wd.×Ht.	Tote Box Size, Lg.×Wd.×Ht.	Rail Clearance	Cap. per Tote Box, lbs.	Wheel Dia.		Each
1	150	25″×16″×19½″	25″×16″×8″	10″	100	5″	5076T81	$133.17
2	250	28″×16″×33½″	25″×16″×8″	10″	100	5″	5076T82	204.96
3	350	27″×19″×42″	25″×16″×8″	10″	100	5″	5076T83	240.82
6	400	27″×19″×72″	25″×16″×8″	10″	100■	5″	5076T84	299.11

■ Never exceed cart capacity.

		Each 1-11	Each 12-Up
Extra Tote Box	5076T42	$20.44	$17.62

Aluminum Ladder Carts

C

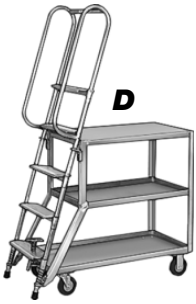

D

No need to lug around a ladder and a cart—these carts do the job of both. A foot pedal on the bottom step activates the built-in floor lock that secures the cart for use as a ladder. Simply step off the ladder to release the floor lock.

All carts have a flush top shelf; middle and bottom shelves have a 1½″ high lip to keep items from sliding off. Shelves are ⅛″ thick.

Rails have nonmarking rubber feet. The steps are 4¾″ Lg.×17″ Wd. Carts roll on two rigid and two swivel casters with nonmarking rubber-tread wheels. Shipped assembled.

(C) Overall height is 50″; top step height is 30″.

(D) Overall height is 71½″; top step height is 50″.

	Cart Cap., lbs.	Shelf Size, Lg.×Wd. Top and Middle	Bottom	Shelf Clearance	Top Shelf Ht.	No. of Shelves	Cap. per Shelf, lbs.■	Wheel Dia.		Each
C	500	31½″×19½″	39½″×19½″	28¾″	38″	2	500	5″	2567T2	$908.52
D	500	31½″×19½″	39½″×19½″	13½″	38″	3	500	5″	2567T3	1,198.74

■ Never exceed cart capacity.

Warning! **Never exceed capacities.**

Steel Wire Basket Carts

Also known as mail carts, these carts have convenient removable baskets. The top basket has removable, adjustable bars to hold letter- and legal-size hanging file folders. Carts have welded construction and a chrome-plated finish. Shipped assembled.

1263T6 rolls on two rigid and two swivel casters with polyurethane wheels. 1263T8 has two rigid never-go-flat rubber (also known as semi-pneumatic) wheels and two swivel casters with polyurethane wheels.

1263T8

Cart Cap., lbs.	Basket Size, Lg. × Wd. × Ht. Top	Bottom	Basket Clearance	No. of Baskets	Cap. per Basket, lbs.	Handle Ht.	Wheel Dia.		Each
250	25″ × 17″ × 11″	25″ × 17″ × 7½″	12½″	2	125	38½″	5″	1263T6	$335.78
250	36″ × 17″ × 11″	36″ × 17″ × 7⅜″	12½″	2	125	38″	10″/5″	1263T8	489.67

		Each
Extra Top Basket for 1263T6	1263T61	$125.59
Extra Top Basket for 1263T8	1263T81	160.06
Extra Bottom Basket for 1263T6	1263T62	$99.18
Extra Bottom Basket for 1263T8	1263T82	118.74

Twin-Side Steel Shelf Carts

Carts are divided into two identical sides so you can efficiently organize two operations on one cart. Shelves are solid and mounted at a slight incline (unless noted) to keep your material from sliding off. Carts have a gray enamel finish. Shipped assembled.

Cart with Solid Divider and Sides— Cart rolls on two rigid and two swivel casters with phenolic wheels.

Carts with Mesh Divider and Sides— Bottom shelf has a 1½″ high lip to keep your load from sliding off. Carts roll on two rigid and two swivel casters with rubber-tread wheels. Casters are mounted in a diamond pattern to allow for tighter turns and better maneuverability.

With Solid Divider and Sides

With Mesh Divider and Sides

Cart Cap., lbs.	Shelf Size, Lg. × Wd.	Top Shelf Ht.	Shelf Clearance	No. of Shelves	Cap. per Shelf, lbs.	Shelf ga.	Cart Ht.	Handle Ht.	Wheel Dia.		Each
With Solid Divider and Sides											
2,000	39″ × 11″	47¾″	8″	5	200	16	56″	36″	5″	22045T21★	$616.33
With Mesh Divider and Sides											
1,600	48″ × 14″	40″	14⅛″	3	300	14	55⅞″	—	6″	22225T21●	657.69
1,600	60″ × 14″	40″	14⅛″	3	300	14	55⅞″	—	6″	22225T22●	712.50

★ Clearance from bottom shelf is 12″. ● Bottom shelf is flat and made of 12 ga. steel.

Three-Sided Mesh-Panel Steel Shelf Carts

Stack 'em high and have easy access to your load. Tall mesh panels on three sides give you good visibility and prevent your load from slipping off. All carts have a solid flush bottom shelf and a gray powder-coated finish. They roll on two rigid and two swivel casters with rubber-tread wheels. Shipped assembled.

Carts with two shelves have a solid top shelf that can be mounted with the 1½″ high lip up or down. Top shelf adjusts in 3½″ increments from 18″ to 48″ high above the bottom shelf using the included mounting clips.

With Two Shelves

Cart Cap., lbs.	Cap., cu ft.	Shelf Size, Lg. × Wd.	No. of Shelves	Cap. per Shelf, lbs.	Shelf ga.	Cart Ht.	Handle Ht.	Wheel Dia.		Each
2,000	24	36″ × 24″	1	2,000	12	57″	37″	8″	2559T1	$417.17
2,000	24	36″ × 24″	2	1,000	12	57″	37″	8″	2559T4	613.63
2,000	32	48″ × 24″	1	2,000	12	57″	37″	8″	2559T2	444.08
2,000	32	48″ × 24″	2	1,000	12	57″	37″	8″	2559T5	654.02
2,000	50	60″ × 30″	1	2,000	12	57″	37″	8″	2559T3	522.13
2,000	50	60″ × 30″	2	1,000	12	57″	37″	8″	2559T6	753.60

Steel Wire Box Trucks

Thanks to the open-wire design of these trucks, you can keep your items visible and maximize air circulation. Trucks have chrome-plated side panels and a solid removable bottom panel with a galvanized finish.

Assemble using the included snap-lock connectors. Trucks roll on four swivel casters with polyurethane wheels. Shipped unassembled.

Cart Cap., lbs.	Cap., cu ft.	Interior Size, Lg. × Wd. × Ht.	Exterior Size, Lg. × Wd. × Ht.	Handle Ht.	Wheel Dia.		Each
500	16	34¼″ × 19½″ × 27″	37″ × 21″ × 36″	36″	5″	2409T18	$406.21
500	22	47¼″ × 19½″ × 27″	50″ × 21″ × 36″	36″	5″	2409T19	448.48

Disposable Hamper and Box Truck Liners

Protect the inside of your hampers and box trucks. Liners are made of clear polyethylene and are tall enough to extend over the top of the hamper or truck for easy removal. Twist ties are included.

Cap., cu. ft.	Lg. × Wd. × Ht.	Thickness, mil	Case Qty.		Per Case
7	30″ × 20″ × 40″	1.25	50	9021T41	$20.67
10	34″ × 22″ × 43″	1.25	50	9021T42	24.89
15	36″ × 26″ × 48″	1.25	50	9021T43	29.24
19	40″ × 28″ × 50″	1.25	50	9021T44	34.54
27	48″ × 32″ × 50″	1.75	25	9021T45	28.56
32	54″ × 34″ × 50″	1.75	25	9021T46	32.11

Warning! ***Never exceed capacities.***

Fabric Hampers

Canvas

It doesn't matter if your load is wet or dry, these hampers can handle it. All have a welded spring-steel frame; the bottom support is wood reinforced with welded flat steel. They also have reinforced wear points, fabric handles, and a storage pocket. Hampers nest together for storage. They roll on two rigid and two swivel casters with rubber wheels. Casters are mounted in a diamond pattern to allow for tighter turns and better maneuverability, and they have debris guards to protect the wheel bearings from contamination. Shipped assembled.

Canvas hampers have riveted seams for added strength. Color is white.

Vinyl-coated nylon hampers resist dirt and grease and have a smooth, snag-free surface.

To Order: Please specify color: blue, gray, red, or yellow.

Spring-loaded shelves raise and lower the load for easier loading and unloading. Fabric-covered springs on each corner of the vinyl-covered steel shelf mount inside the hamper.

Also Available: Replacement hamper liners. Please ask for 2555T41 for canvas and specify hamper part number; or 2631T888 for vinyl-coated nylon and specify hamper part number and color.

Cap., lbs.	Cap., cu. ft.	Interior Size, Lg.×Wd.×Ht.	Exterior Size, Lg.×Wd.×Ht.	Wheel Dia.	HAMPERS Canvas	Each	HAMPERS Vinyl-Coated Nylon	Each	Spring-Loaded Shelves	Each
500	7	31″×20″×21″	31″×21″×26″	3″	2555T22	$174.78	2631T12	$174.78	2555T61	$64.57
500	10	34″×22″×23″	35″×23″×29″	3″	2555T12	197.13	2631T11	197.13	2555T62	66.16
500	15	36″×26″×28″	37″×27″×34″	3″	2555T13	227.82	2631T14	227.82	2555T63	68.61
500	20	40″×28″×30″	41″×29″×37″	3″	2555T14	275.49	2631T26	275.49	2555T64	80.87
500	25	48″×32″×30″	49″×33″×37″	3″	2555T15	324.96	2631T36	324.96	2555T65	88.22
660	30	54″×34″×30″	55″×35″×38″	4″	2555T16	382.13	2631T46	382.13	2555T66	98.02

Elevated Polyethylene Box Trucks

Go easy on your back—these elevated box trucks minimize bending when reaching for loads. The seamless, 1/4″ thick, polyethylene body is strong enough for wet and dry loads. It prevents leaks, resists many chemicals, and can be cleaned with hot water and detergent. The frame is made of tubular steel. Trucks roll on four swivel casters with rubber wheels. Shipped unassembled.

To Order: Please specify color: blue, gray, natural, red, or yellow. *Note:* Red is not recommended for wet materials because color may bleed.

Cap., lbs.	Cap., cu. ft.	Interior Size, Lg.×Wd.×Ht.	Exterior Size, Lg.×Wd.×Ht.	Wheel Dia.		Each
400	5	26″×18″×18 1/4″	30″×22″×29 3/4″	3″	22135T3	$211.03
400	7	30″×20″×20 1/2″	32 1/2″×22″×32 1/4″	3″	22135T4	221.78

Ribbed-Sidewall Polyethylene Box Trucks

Truck with Steel Frame

Ribbed sidewalls add strength while a seamless interior prevents leaks. The body is made of 1/4″ thick polyethylene that resists many chemicals and can be cleaned with hot water and detergent. The tapered shape allows trucks to nest together for space-saving storage. All casters have rubber wheels and debris guards to protect the wheel bearings from contamination. Shipped assembled.

Trucks with steel frame have a reinforced tubular steel frame with a gray powder-coated finish.

To Order: Please specify color: blue, gray, natural, or red. *Note:* Red is not recommended for wet materials because color may bleed.

Frameless sanitary trucks are made of resins that comply with USDA standards. All have encapsulated hardware and a capped drain for easy cleaning and sanitizing. Casters are mounted directly to the body. Color is natural.

Cap., lbs.	Cap., cu. ft.	Interior Size, Lg.×Wd.×Ht.	Exterior Size, Lg.×Wd.	Wheel Dia.	STEEL FRAME O'all Ht.	With Two Rigid and Two Swivel Casters	Each	With Four Swivel Casters	Each	FRAMELESS SANITARY O'all Ht.	With Two Rigid and Two Swivel Casters	Each	With Four Swivel Casters	Each
500	10	33″×21″×23″	36″×24″	3″	27″	2880T11	$248.06	2880T5	$248.06	27 1/2″	27255T11	$263.94	27255T21	$263.94
660	15	35″×25″×28″	39″×28 1/2″	4″	34″	2880T12	296.74	2880T6	296.74	35″	27255T12★	323.11	27255T22★	323.11
760	20	39″×27″×30 1/2″	42″×30″	5″	37″	2880T13	330.72	2880T7	330.72	36 3/4″	27255T13	374.58	27255T23	374.58
760	25	47″×31″×30 1/2″	50″×34″	5″	37″	2880T14	371.88	2880T8	371.88	37 1/2″	27255T14	414.68	27255T24	414.68

★ Capacity is 760 lbs.; wheel diameter is 5″.

Steel-Reinforced Sidewall Polyethylene Box Trucks

Standard with Optional Hinged Lid

Towable

Don't fight the battle of bulging anymore. These trucks can hold higher capacities and keep their shape thanks to tubular steel reinforcement on the exterior of the sidewalls. The seamless, 1/4″ thick, polyethylene body prevents leaks, resists many chemicals, and can be cleaned with hot water and detergent. The tapered shape allows trucks to nest together for space-saving storage. Frame is made of tubular steel with a red powder-coated finish. Body is black. All trucks are USDA compliant for meat and poultry. Shipped assembled.

Standard trucks roll on two rigid and two swivel casters with polypropylene wheels. Casters are mounted in a diamond pattern to allow for tighter turns and better maneuverability.

Towable truck has a hinged tow bar that can be locked in an upright position for nontowing applications. Includes a hitch pin coupler for towing a maximum of three trucks. Truck rolls on two rigid and two swivel casters with polyurethane wheels. Maximum tow speed is 5 mph.

Optional hinged lids cover and conceal your load. They add approximately 8 1/2″ to the exterior height (unless noted). Color is black.

Cap., lbs.	Cap., cu. ft.	Interior Size, Lg.×Wd.×Ht.	Exterior Size, Lg.×Wd.×Ht.	Wheel Dia.	Trucks	Each	Optional Hinged Lids	Each
Standard								
700	8	33″×21 1/2″×23″	38 3/8″×26″×28 1/4″	4″	9718T71	$443.08	9718T81	$156.10
800	12	37 1/2″×23 1/2″×29″	43 1/4″×28″×33 7/8″	4″	9718T72	543.19	9718T82	182.93
1,000	16	39″×27″×32″	44 3/8″×31″×38 1/4″	5″	9718T73	648.86	9718T83	197.49
1,200	20	43 1/2″×29 1/2″×32″	48 1/4″×34 1/8″×37 7/8″	5″	9718T74	763.80	9718T84	208.26
Towable								
1,200	27	53″×29 1/2″×35″	59″×34″×42 7/8″	5″	9718T75	1,205.94	9718T85♣	282.45

♣ Adds approximately 5″ to exterior height.

Warning! Never exceed capacities.

Double-Wall Rim Polyethylene Box Trucks

Give 'em your toughest jobs—these trucks have a double-wall top rim that can take the hardest knocks. The body is made of 3/16″ thick polyethylene that resists many chemicals and can be cleaned with hot water and detergent. The tapered shape allows trucks to nest together for space-saving storage. All have a molded-in handle and a steel frame. Trucks roll on two axle-mounted rubber wheels and two swivel casters with rubber wheels. Shipped assembled.

Cap., lbs.	Cap., cu. ft.	Interior Size, Lg. × Wd. × Ht.	Exterior Size, Lg. × Wd. × Ht.	Wheel Dia.	Blue	Each	Gray	Each
1,000	16	41″ × 27″ × 28″	48″ × 31″ × 34½″	10″/5″	9719T19	$515.87	9719T41	$515.87
1,000	24	53″ × 27½″ × 30″	60″ × 31½″ × 35½″	12″/5″	9719T21	623.79	9719T42	623.79
1,500	39	65″ × 31″ × 33″	72″ × 35½″ × 40″	12″/6″	9719T22	908.98	9719T43	908.98

Heavy Duty Steel Box Trucks

With their heavy gauge welded-steel construction, these trucks can take a beating yet keep on hauling your waste, scrap, and bulk materials. Bottom panel is solid 12-ga. steel. Trucks roll on two rigid and two swivel casters with rubber wheels. All have a gray powder-coated finish. Shipped assembled.

Trucks with solid side panels prevent small items from falling out. Made of 12-ga. steel. ***Trucks with mesh side panels*** maximize air circulation and visibility of contents. Made of 13-ga. steel.

Cap., lbs.	Cap., cu. ft.	Interior Size, Lg. × Wd. × Ht.	Exterior Size, Lg. × Wd. × Ht.	Wheel Dia.	Solid Side Panels	Each	Mesh Side Panels	Each
2,000	10	36″ × 24″ × 20″	41¼″ × 24½″ × 28½″	6″	9991T3	$307.39	9991T7	$275.25
2,000	13	48″ × 24″ × 20″	53¼″ × 24¼″ × 28½″	6″	9991T4	337.38	9991T8	298.76
2,000	20	60″ × 30″ × 20″	65¼″ × 30¼″ × 28½″	6″	9991T6	404.84	9991T9	384.25

Wheelbarrows

Load after load, these heavy duty wheelbarrows keep performing. All have a rugged steel frame and legs. Shipped unassembled.

Pneumatic wheels are quiet and shock absorbing.

Flat-free wheels are solid yet provide a cushioned ride.

(A) Tray is 17-ga. steel and has a rolled rim for extra strength. Handles are steel and have textured hand grips. Color is black.

(B) Tray is lightweight, rust-resistant, seamless gray polyethylene. Handles are wood for a comfortable grip in extreme temperatures.

A

B

Cap., cu. ft.	Overall Size, Lg. × Wd. × Ht.	Wheel Dia.	Pneumatic Wheels	Each	Flat-Free Wheels	Each
(A) Single Wheel						
6	58¾″ × 25½″ × 27″	16″	2323T14	$167.31	2323T24	$170.95
(B) Dual Wheels						
6	58″ × 30″ × 28″	16″	2262T11	287.33	2262T21	298.74

Dump Carts

C

D

E

Save your back—these carts are easier to maneuver than a wheelbarrow. The location of the wheels allows the carts tighter turns and easier dumping. Shipped assembled.

Polyethylene trays are lightweight yet strong, and an economical alternative to steel. ***Steel trays*** have heavy gauge construction to withstand abuse.

(C) Frame is tubular steel with a green powder-coated finish; tray is black. 23115T12 rolls on two puncture-proof never-go-flat rubber (also known as semi-pneumatic) wheels; 23115T11 has two solid plastic wheels.

(D) A release mechanism allows you to completely flip the tray over for easier dumping. Frame is tubular steel with a green powder-coated finish; tray is beige. Carts roll on two flat-free foam wheels.

(E) Tray has a curved bottom and 1½″ wide reinforced rockers. Frame and tray are blue 14-ga. steel. Carts roll on two pneumatic wheels.

Cap., lbs.	Cap., cu. ft.	Overall Size, Lg. × Wd. × Ht.	Wheel Dia.		Each
(C) With Polyethylene Tray					
200	3½	47″ × 27½″ × 24¾″	20″	23115T12	$256.95
300	7½	58″ × 32¾″ × 28¼″	20″	23115T11	294.77
(D) Easy Dump with Polyethylene Tray					
400	6	54″ × 29¾″ × 39½″	13″	23115T51	222.16
550	8	62½″ × 32″ × 43″	15″	23115T52	234.23
(E) With Steel Tray					
1,760	6	58½″ × 29½″ × 33″	27″	2810T31	889.74
1,760	8	59¾″ × 34½″ × 33¼″	27″	2810T33	922.90

Warning! **Never exceed capacities.**

Polyethylene Tilting Dump Trucks

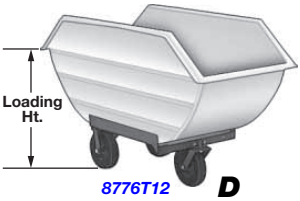

Forklift Pockets

Tough, sturdy, and easy to handle, these trucks are simple to empty—just tilt and dump. All have a seamless polyethylene body that resists many chemicals and can be cleaned with high pressure water or steam.

(A) Trucks have a tubular steel frame and handle (unless noted). Steel side rails (except for 2434T61, T62, and T66) provide added support. All trucks have two axle-mounted wheels and two swivel casters. Color is black. Shipped assembled.

13½- and 27-cu. ft. capacity trucks have hooks below the handle for hanging accessories (unless noted).

(B) Same as *Style A*, but truck is blue with a recycling imprint on the side. Shipped assembled.

(C&D) Sloped ends make loading and dumping these trucks easier. A rounded bottom also adds to the dumping ease. Frame is welded steel. Trucks roll on two rigid and one swivel caster (except for 8776T13, which has two rigid and two swivel casters). Trucks are made of FDA-compliant materials. Color is white. Some assembly is required (hardware included). *Style D* have ribbed walls for added strength.

(E) Trucks can be moved around your facility by a forklift. All have a welded tubular steel frame and handle, 6″ Wd. × 3″ Ht. forklift pockets, two axle-mounted wheels, and two swivel casters. Color is black. Shipped assembled.

28755T41 and *T42* have steel side rails for added support and hooks below the handle for hanging accessories. Fork pocket spacing is 17″ center-to-center. 28755T43 has fork pockets spaced 15″ center-to-center.

(F) Same as *Style A*, but with a ¾″ dia. hitch pin and 24″ long tow bar that allow you to connect and tow a maximum of three trucks using a lift or forklift truck with a trailer (drawbar coupler) hitch. Max. tow speed is 5 mph. Color is black. Shipped assembled.

Note: Don't exceed 2,100 lbs. total cap. for all three trucks.

(G) Made of structural polyethylene, these trucks are more durable than our other polyethylene trucks. They have two axle-mounted wheels and two swivel casters. Made of USDA-accepted and FDA-compliant materials. Color is black. Shipped assembled.

Capacity lbs.	Capacity cu. ft.	Capacity cu. yds.	Overall Size, Lg. × Wd. × Ht.	Loading Ht.	Wheel Dia.	Trucks	Each	Optional Hinged Lids Ht.	Optional Hinged Lids	Each
(A) With Rubber-Tread Wheels (unless noted)										
450	13½	½	56¾″ × 28″ × 38⅝″	38⅝″	10″/4″	2434T61★	$483.02	9″	2434T54	$139.09
850	13½	½	60½″ × 28″ × 38⅝″	38⅝″	10″/3½″	2434T63	716.19	9″	2434T54	139.09
850	27	1	72¼″ × 33½″ × 43¾″	43¾″	12″/5″	2434T62	653.66	8½″	2434T55	186.35
1,200	40½	1½	80½″ × 43″ × 49½″	49½″	12″/4″	2434T65♥	1,664.35	3″	2935T83	441.80
1,250	27	1	72¼″ × 33½″ × 43¾″	43¾″	12″/5″	2434T64	893.72	8½″	2434T55	186.35
1,400	13½	½	60½″ × 28″ × 38⅝″	38⅝″	10″/3½″	2434T67	809.85	9″	2434T54	139.09
1,900	54	2	81¼″ × 46¾″ × 50″	50″	12″/4″	2434T66♥	2,084.16	—	—	—
2,100	27	1	72¼″ × 33½″ × 43¾″	43¾″	12″/5″	2434T68♠	1,029.66	8½″	2434T55	186.35
(B) Recycling with Rubber-Tread Wheels										
850	13½	½	60½″ × 28″ × 38⅝″	38⅝″	10″/3½″	2434T28	711.90	9″	2434T54	139.09
(C) Easy-to-Load/Dump with One Sloped End and Rubber-Tread Wheels										
500	11	0.4	44″ × 27″ × 35″	29½″	8″/8″	8776T11	331.27	—	—	—
(D) Easy-to-Load/Dump with Two Sloped Ends and Rubber-Tread Wheels										
600	22	0.8	65″ × 32″ × 41″	33¼″	10″/10″	8776T12	479.31	—	—	—
1,200	27	1	72″ × 35″ × 41″	33¼″	10″/10″	8776T13	623.08	—	—	—
(E) With Forklift Pockets and Rubber-Tread Wheels (unless noted)										
850	13½	½	60½″ × 28″ × 38⅝″	38⅝″	10″/3½″	28755T41	821.03	9″	2434T54	139.09
1,200	40½	1½	80½″ × 43″ × 49½″	49½″	12″/4″	28755T43▲	1,882.69	3″	2935T83	441.80
1,250	27	1	72¼″ × 33½″ × 43¾″	43¾″	12″/5″	28755T42	1,039.78	8½″	2434T55	186.35
(F) Towable with Polyurethane Wheels										
2,100	27	1	72¼″ × 33½″ × 43¾″	43¾″	16″/6″	2434T57	1,285.68	8½″	2434T55	186.35
(G) Heavy Duty with Rubber-Tread Wheels (unless noted)										
450	13½	½	57⅜″ × 26⅞″ × 33⅞″	33⅞″	10″/4″	9922T4	482.35	9″	9922T8	146.17
600	20¼	¾	64½″ × 30¼″ × 38″	38″	12″/4″	9922T1♦	626.88	8¾″	9922T3	195.69
850	13½	½	57⅜″ × 26⅞″ × 33⅞″	33⅞″	10″/4″	9922T5	598.78	9″	9922T8	146.17
1,000	20¼	¾	64½″ × 30¼″ × 38″	38″	12″/4″	9922T2	743.57	8¾″	9922T3	195.69
1,250	27	1	70¾″ × 33½″ × 42¼″	42¼″	12″/5″	9922T6♠	862.50	9″	9922T9	199.28
2,100	27	1	70¾″ × 33½″ × 42¼″	42¼″	12″/5″	9922T7♠	1,026.63	9″	9922T9	199.28

★ No handle or hooks for hanging accessories. ♥ Wheels are rubber. Casters are phenolic. ♠ Wheels are rubber. Casters are polypropylene.
▲ Wheels are polypropylene. Casters are rubber. ♦ Wheels are polyethylene. Casters are rubber.

Polyethylene Tilt-and-Lock Hoppers

Just pull the handle to release the lock and tilt to empty; tilt back and the hoppers will lock in place. Made of polyethylene, these hoppers are lighter than steel hoppers, plus they won't rust, dent, or pit.

For strength, all hoppers have ribbed side walls and a red steel frame with forklift pockets. They roll on two rigid and two swivel casters with polypropylene wheels. Color is black. Shipped assembled.

Note: Not for use with hand hydraulic pallet trucks.

Capacity lbs.	Capacity cu. ft.	Capacity cu. yds.	Overall Size, Lg. × Wd. × Ht.	Forklift Pockets, Wd. × Ht.	Wheel Dia.		Each
750	13½	½	55″ × 26¼″ × 47⅝″	22⁹⁄₁₆″ × 2¼″	6″	2935T71	$1,631.91
1,000	27	1	71½″ × 31¼″ × 52½″	25½″ × 2¼″	6″	2935T72	1,869.01
1,000	40½	1½	83⅝″ × 42⅞″ × 56¼″	22¾″ × 2½″	6″	2935T45	2,677.18
1,000	54	2	83⅞″ × 46″ × 57⅝″	22⅜″ × 2½″	6″	2935T43	2,830.40
1,000	67½	2½	83½″ × 55″ × 56⅝″	26⅜″ × 2½″	6″	2935T44	3,062.32

Warning! **Never exceed capacities.**

Steel Easy-Empty Hoppers

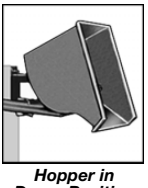

Hopper in Dump Position

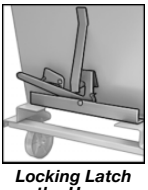

Locking Latch on the Hoppers

Mobile 54-cu. ft. Capacity | *Mobile 27-cu. ft. Capacity* | *13½-cu. ft. Capacity with Optional Hinged Lid* | *6¾-cu. ft. Capacity*

Release the locking latch and these perfectly balanced hoppers dump their load and then automatically return to an upright, locked position. Made of steel with a gray finish, all have a smooth formed edge around the top and lip (where applicable) for superior durability. The interior seams are welded for strength and leak resistance. All have a pallet base with forklift pockets. Shipped assembled.

Mobile Hoppers—Have two rigid and two swivel casters. *Note:* Casters will add 9″ to the overall height of the hopper.

Cast iron wheels combine strength and durability with abrasion and heat resistance.

Polyurethane wheels allow loads to be rolled easily while protecting your floor.

Hoppers

Capacity cu. ft.	Capacity cu. yds.	Overall Size, Lg. × Wd. × Ht.	Lip Ht.	Forklift Pockets, Wd. × Ht.	PALLET-BASE HOPPERS Cap., lbs.		Each	MOBILE HOPPERS Cap., lbs.	Wheel Dia.	Cast Iron Wheels	Each	Polyurethane Wheels	Each
Standard Duty—*Hopper is 11-ga. Steel; Base is 7-ga. Steel*													
13½	½	51½″ × 37½″ × 33½″	3″	26″ × 3″	3,000	3793T41	$617.54	3,000	8″	3793T46	$879.19	3793T51	$984.21
27	1	64″ × 39¼″ × 39″	3″	28″ × 3″	4,000	3793T42	768.08	4,000	8″	3793T47	1,038.25	3793T52	1,134.74
40½	1½	68″ × 57½″ × 38″	3″	28″ × 3″	5,000	3793T43	872.28	5,000	8″	3793T48	1,142.46	3793T53	1,238.95
54	2	64½″ × 57½″ × 45½″	11½″	28″ × 3″	5,000	3793T44	978.42	5,000	8″	3793T49	1,248.60	3793T54	1,345.09
Heavy Duty—*Hopper is 7-ga. Steel; Base is 7-ga. Steel*													
6¾	¼	43½″ × 33½″ × 24″	—	22″ × 3″	4,000	3793T19	559.65	4,000	8″	3793T29	829.83	3793T59	926.32
9	⅓	51½″ × 31½″ × 33½″	3″	20″ × 3″	4,000	3793T11	607.89	4,000	8″	3793T21	878.08	3793T31	974.56
13½	½	51½″ × 37½″ × 33½″	3″	26″ × 3″	4,000	3793T12	665.79	4,000	8″	3793T22	935.97	3793T32	1,032.46
20¼	¾	58½″ × 39½″ × 37¼″	3″	28″ × 3″	5,000	3793T13	842.11	5,000	8″	3793T23	1,017.47	3793T33	1,132.80
27	1	64″ × 39¼″ × 39″	3″	28″ × 3″	6,000	3793T14	887.72	5,000	8″	3793T24	1,157.89	3793T34	1,254.38
40½	1½	68″ × 57½″ × 38″	3″	28″ × 3″	6,000	3793T15	1,065.26	5,000	8″	3793T25	1,330.77	3793T35	1,431.93
54	2	64½″ × 57½″ × 45½″	11½″	28″ × 3″	6,000	3793T16	1,203.85	5,000	8″	3793T26	1,462.85	3793T36	1,574.74
67½	2½	64½″ × 69″ × 45½″	11½″	28″ × 3″	5,000	3793T17♣	1,281.42	5,000	8″	3793T73♣	1,565.09	3793T83♣	1,661.58
Extra-Heavy Duty—*Hopper is 7-ga. Steel; Base is ¼″ Thick Steel*													
9	⅓	51½″ × 31½″ × 33½″	3″	20″ × 3″	5,000	3793T58	675.44	5,000	8″	3793T63	945.62	3793T64	1,042.11
13½	½	51½″ × 37½″ × 33½″	3″	26″ × 3″	5,000	3793T65	733.34	5,000	8″	3793T66	1,003.51	3793T67	1,097.51
20¼	¾	58½″ × 39½″ × 37½″	3″	28″ × 3″	6,000	3793T68	898.16	5,000	8″	3793T69	1,119.09	3793T78	1,221.58
27	1	64″ × 39¼″ × 39″	3″	28″ × 3″	7,000	3793T61	949.48	5,000	8″	3793T71	1,219.65	3793T81	1,302.43
54	2	64½″ × 57½″ × 45½″	11½″	28″ × 3″	7,000	3793T62	1,271.75	5,000	8″	3793T72	1,541.93	3793T82	1,638.42
67½	2½	72″ × 46½″ × 56″	20″	28″ × 3″	7,000	3793T37■	1,358.60	5,000	8″	3793T74■	1,628.77	3793T84■	1,725.26
81	3	71″ × 58″ × 55″	20″	28″ × 3″	6,000	3793T45	1,532.28	5,000	8″	3793T75	1,796.16	3793T85	1,897.74
108	4	71″ × 84″ × 55″	20″	42″ × 3″	6,000	3793T38	1,898.95	5,000	8″	3793T76	2,169.12	3793T99	2,265.62
135	5	71″ × 104″ × 55″	20″	42″ × 3″	6,000	3793T39	2,227.02	5,000	8″	3793T18	2,497.20	3793T27	2,593.68

♣ Use optional lid 3793T94. ■ Use optional lid 3793T98.

Optional Hinged Lids

Lids for 6¾- to 40½-cu. ft. capacity hoppers are two piece. Lids for 54- to 135-cu. ft. capacity hoppers are three piece.
Note: Lids will add approximately 1″ to the overall height of the hopper.

Fits Hopper Cap. cu. ft.	Fits Hopper Cap. cu. yds.	Overall Size, Lg. × Wd.	Gauge		Each
6¾	¼	44¾″ × 35″	11	3793T86	$230.00
9	⅓	53″ × 33″	11	3793T87	286.00
13½	½	53″ × 38¾″	11	3793T88	308.00
20¼	¾	59¾″ × 41″	11	3793T89	340.00
27	1	65″ × 41″	11	3793T91	350.00
40½	1½	66¼″ × 59″	11	3793T92	497.74
54	2	73¼″ × 59″	11	3793T93	$580.00
67½	2½	73¼″ × 71″	11	3793T94	660.00
67½	2½	84½″ × 48″	11	3793T98	530.00
81	3	86½″ × 59″	11	3793T95	594.59
108	4	86½″ × 85½″	11	3793T96	790.00
135	5	86½″ × 105½″	11	3793T97	948.28

Steel Bottom-Empty Hoppers

Fill these hoppers with your bulk material, hoist them to your work location, and then release the bottom trapdoor for quick, complete discharge. All are made of steel and have a hoisting eye. *Note:* Not recommended for fine material such as sand or powder.

The ***400-lb. capacity hopper*** has a handle on each side of the trap door. The ***800-*** and ***1,600-lb. capacity hoppers*** have one handle for the trapdoor and a positive shutoff to stop the discharge flow between loads.

400-lb. Capacity

800-lb. Capacity

Capacity lbs.	Capacity cu. ft.	Capacity cu. yds.	Overall Size, Lg. × Wd. × Ht.	Bottom Opening	Gauge		Each
400	3½	0.13	18″ × 18″ × 24″	9¼″ × 16½″	18	3674T2	$431.72
800	7	0.26	30″ × 30″ × 28″	10″ × 10″	16	3674T1	698.68
1,600	14	0.52	30″ × 30″ × 41″	10″ × 10″	12	3674T5	883.59

Warning! **Never exceed capacities.**

Wood Deck Wagons

Look no further if you need a smooth and gentle ride for transporting fragile loads. Wood decks are quieter and more impact absorbing than steel decks. All wagons have a steel frame and a T-style pull handle. They roll on pneumatic wheels that cushion the load over rough surfaces and obstructions.

(A) A two-piece handle with a cushion grip steers each wheel independently for better stability. The T-end is removable for towing applications. Maximum tow speed is 25 mph. Frame and handle have a black painted finish. Shipped unassembled.

(B) Pivoting front wheels and axle provide "fifth-wheel" steering for tighter turns and easier maneuverability. The welded frame and handle have a blue enamel finish. Shipped assembled.

Cap., lbs.	Deck Size, Lg. × Wd. × Ht.	Deck Thick.	Handle Lg.	Wheel Dia.		Each
(A) With Yellow Pine Deck						
2,000	32″ × 28″ × 14″	1½″	32″	10½″	8354T39	$353.34
2,000	47″ × 28″ × 14″	1½″	32″	10½″	8354T41	376.24
2,000	72″ × 28″ × 14″	1½″	32″	10½″	8354T42	397.36
2,000	96″ × 28″ × 14″	1½″	32″	10½″	8354T43	418.87

Cap., lbs.	Deck Size, Lg. × Wd. × Ht.	Deck Thick.	Handle Lg.	Wheel Dia.		Each
(B) With Oak Deck						
2,500	48″ × 30″ × 20⅛″	1″	36″	16″	2313T42	$917.44
2,500	60″ × 36″ × 20⅛″	1″	36″	16″	2313T44	991.56
2,500	72″ × 36″ × 20⅛″	1″	36″	16″	2313T45	1,016.49
4,500	72″ × 36″ × 20⅛″	1″	36″	16″	2313T65	1,112.10

Steel Deck Wagons

Dependable and durable, these wagons have a lipped deck to keep items from sliding off. Pivoting front wheels and axle provide "fifth-wheel" steering for tighter turns and easier maneuverability. All have a vinyl-gripped handle that stays upright when not being pulled. Color is red. Shipped unassembled.

Never-go-flat rubber wheels are puncture proof. ***Pneumatic wheels*** offer a cushioned ride.

(C) Perforated decks allow drainage and keep debris from accumulating.

(D&E) Solid decks offer maximum durability.

	Cap., lbs.	Deck Size, Lg. × Wd.	Deck Gauge	Lip Ht.	Handle Lg.	Never-Go-Flat Rubber Wheels: Deck Ht.	Wheel Dia.		Each	Pneumatic Wheels: Deck Ht.	Wheel Dia.		Each
With Perforated Deck													
C	1,000	36″ × 24″	12	1½″	32″	11¼″	10″	23135T51	$185.25	11¼″	10″	23135T52	$220.08
With Solid Deck													
D	1,000	36″ × 24″	12	1½″	32″	10¼″	8″	23135T12	191.73	—	—	—	—
D	1,000	36″ × 24″	12	1½″	32″	11¼″	10″	23135T15	202.09	11¼″	10″	23135T16	240.09
E	1,000	36″ × 24″	12	6″	32″	11¼″	10″	23135T44	241.82	11¼″	10″	23135T45	278.09

Heavy Duty Steel Deck Wagons

Flush Deck with 16″ Dia. Pneumatic Wheels

Lipped Deck with Rubber-Tread Wheels

Bring out the big guns—these rugged wagons handle your heaviest loads. Deck is reinforced for strength. Pivoting front wheels and axle provide "fifth wheel" steering for easier maneuverability and tighter turns. All have a vinyl-gripped T-handle that stays upright when not being pulled. Color is gray. Shipped assembled.

Lipped-deck wagons have a 1½″ high lip to prevent loads from slipping off.

Pneumatic wheels offer a cushioned ride over rough surfaces. ***Rubber-tread wheels*** accommodate heavier loads on smooth surfaces.

Also Available: Wagons with a 2½″ ID tow eye at the end of the handle for intermittent towing up to 5 mph. These wagons have 16″ dia. pneumatic wheels. Please ask for 2538T888 and specify flush or lipped deck and deck size. *Note:* Capacity is reduced 25% in towing applications.

Cap., lbs.	Deck Size, Lg. × Wd. × Ht.	Deck Gauge	Handle Lg.	Wheel Dia.	Flush Deck	Each	Lipped Deck	Each
With Pneumatic Wheels								
2,000	40″ × 20″ × 16½″	12	35″	12″	2538T11	$397.27	2538T26	$397.27
2,000	48″ × 24″ × 16½″	12	35″	12″	2538T12	397.27	2538T27	397.27
2,000	48″ × 30″ × 16½″	12	35″	12″	2538T13	418.00	2538T28	418.00
2,000	60″ × 30″ × 16½″	12	35″	12″	2538T14	438.73	2538T29	438.73
3,000	48″ × 30″ × 18½″	12	35″	16″	2538T75	452.55	2538T85	452.55
3,000	60″ × 30″ × 18½″	12	35″	16″	2538T76	473.27	2538T86	473.27
3,000	72″ × 36″ × 18½″	12	35″	16″	2538T77	523.36	2538T87	523.36
With Rubber-Tread Wheels								
3,500	40″ × 20″ × 16½″	12	35″	12″	2538T88	436.80	2538T94	436.80
3,500	48″ × 24″ × 16½″	12	35″	12″	2538T89	440.45	2538T95	440.45
3,500	48″ × 30″ × 16½″	12	35″	12″	2538T91	461.18	2538T96	461.18
3,500	60″ × 30″ × 16½″	12	35″	12″	2538T92	481.91	2538T97	481.91
3,500	72″ × 36″ × 16½″	12	35″	12″	2538T93	532.00	2538T98	532.00

Box Trailer

Move large quantities of loose material around your facility. Made of structural foam, the trailer interior is seamless and smooth. The rear panel slides up for easy dumping and cleaning. Trailer rolls on pneumatic wheels for a cushioned ride over rough surfaces. Max. tow speed is 3 mph. Color is black. Shipped unassembled.

Cap., lbs.	Cap., cu. ft.	Interior Size, Lg. × Wd. × Ht.	Exterior Size, Lg. × Wd. × Ht.	Tow Bar Proj.	Wheel Dia.		Each
1,500	15	49″ × 31¾″ × 16″	54⅛″ × 39½″ × 33¼″	21 13/16″	16″	2896T74	$535.68

Warning! Never exceed capacities.

Steering Trailers

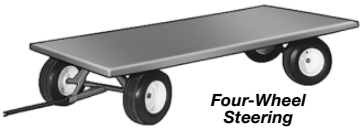

Pull up to five of these welded-steel trailers at the same time using their rear hitch. All roll on pneumatic wheels for a smooth, cushioned ride over rough surfaces. Max. tow speed is 5 mph. Shipped assembled.

Four-wheel steering trailers have pivoting axles connected by a tie rod for accurate tracking when pulling two or more trailers. Color is green.

Fifth-wheel steering trailers have pivoting front wheels and axle for easier maneuverability and tighter turning under heavy loads. Deck is reinforced with 12-ga. square steel channel. Color is gray.

Cap., lbs.	Deck Size, Lg. × Wd. × Ht.	Deck ga.	Tow Bar Proj.	Wheel Dia.		Each
Four-Wheel Steering						
2,000	60″ × 36″ × 19¼″	14	33″	16″	3506T21	$1,444.79
2,000	96″ × 48″ × 19¼″	14	33″	16″	3506T22	1,514.68
Fifth-Wheel Steering						
4,500	72″ × 36″ × 24″	12	36⅛″	16″	2818T41	1,954.62
4,500	96″ × 48″ × 24″	12	36⅛″	16″	2818T51	2,472.43

Drawbar Couplers, Drawbar Eyes, and Tow Hook

All the accessories you'll need to properly connect your trailer for towing. ***Trailer/load weight capacity*** is the total weight being towed. ***Vertical capacity*** (also known as tongue weight) represents the weight of the load on the drawbar eye or hitch ball.

Note: Capacity is reduced 25% in off-road use.

Drawbar Couplers

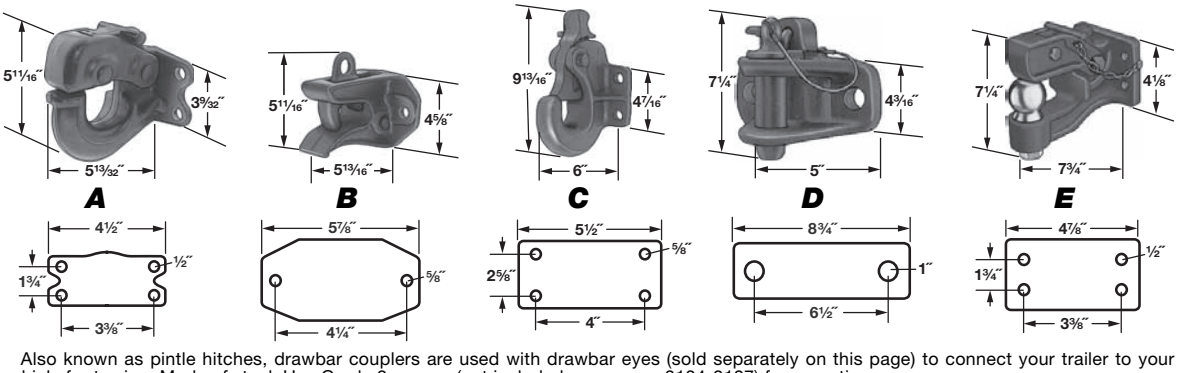

Also known as pintle hitches, drawbar couplers are used with drawbar eyes (sold separately on this page) to connect your trailer to your vehicle for towing. Made of steel. Use Grade 8 screws (not included, see pages 3134-3137) for mounting.

Drawbar eye/ball couplers include a chrome-plated steel ball for use with ball-style hitch connections.

	Trailer/Load Weight Cap., lbs.	Vertical Cap., lbs.	*For Drawbar Eye* Min. Eye ID	Max. Ring Thick.	Ball Dia.	Mounting Screw Size		Each
Drawbar Eye Couplers								
A	10,000	2,000	2″	1⅝″	—	½″	2853T1	$77.76
B	12,000	Not Rated	2″	1″	—	⅝″	2853T6	189.13
C	30,000	4,500	2″	1½″	—	⅝″	2853T4	199.57
D	60,000	Not Rated	2″	1 13/16″	—	1″	2853T8	261.49
Drawbar Eye/Ball Couplers								
E	16,000	3,000	2 1/16″	2″	2″	½″	2288T2	95.73
E	16,000	3,000	2⅜″	1 13/16″	2 5/16″	½″	2288T3	108.59

Drawbar Eyes

Drawbar eyes connect to the drawbar couplers (sold separately on this page) for trailer towing. ***Bolt-on eyes*** are made of forged steel. Use Grade 8 screws (not included, see pages 3134-3137) for mounting. ***Weld-on eyes*** are made of cast steel.

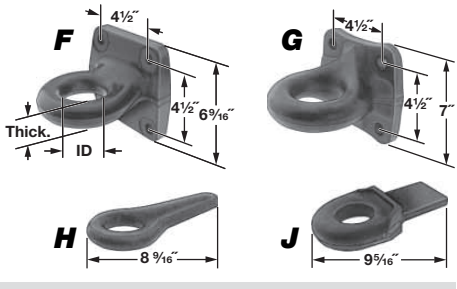

	Trailer/ Load Wt. Cap., lbs.	Vertical Cap., lbs.	*Eye* ID	Ring Thick.	Mounting Screw Size		Each
Bolt On							
F	42,000	7,000	2½″	1¼″	⅝″	12675T83	$86.87
G	60,000	15,000	3″	1⅝″	¾″	12675T84	138.46
Weld On							
H	12,000	1,800	2″	⅞″	—	12675T11	58.77
J	90,000	13,500	2⅜″	1⅝″	—	12675T73	110.52

Tow Hook

Mount this hook to your bumper or trailer for a simple towing connection. Made of forged steel. Use Grade 8 screws (not included, see pages 3134-3137) for mounting.

Trailer/Load Wt. Cap., lbs.	Mounting Plate Thick.	Mounting Screw Size		Each
10,000	1″	½″	2589T9	$10.66

Warning! **Never exceed capacities.**

Hitch Receivers, Inserts, Pins, and Balls

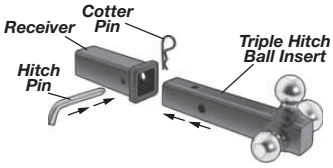

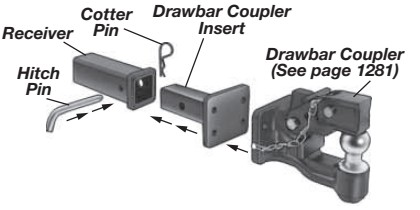

Like the examples shown at left, you can create a hitch that's right for your towing needs. All the components you need for a complete hitch are sold separately.

Trailer/load weight capacity is the total weight being towed.

Vertical capacity (also known as tongue weight) represents the weight of the load on the drawbar eye or hitch ball.

Receivers and Inserts

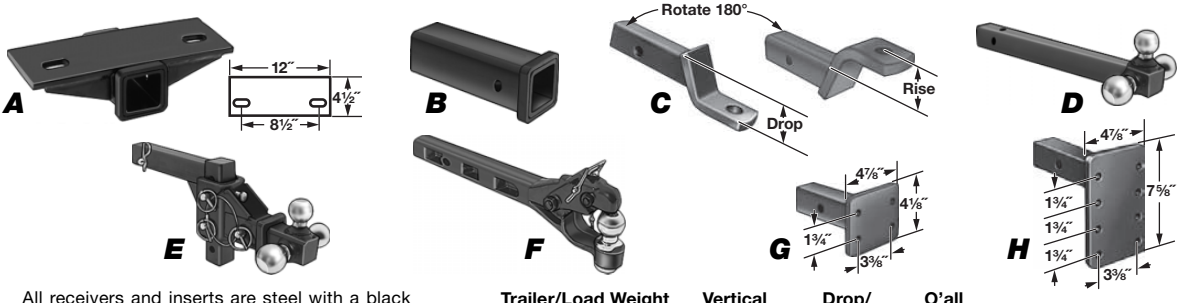

All receivers and inserts are steel with a black powder-coated finish (unless noted).

(A&B) Receivers are standard 2″ square models. *Style A* includes mounting hardware.

(C) Raise or drop the ball to the height that works for your trailer. Accept ball with a 1″-14 thread size.

(D&E) Three hitch sizes in one. Inserts include 1⅞″, 2″, and 2⁵⁄₁₆″ dia. chrome-plated steel balls.

Adjustable insert has a 12″ vertical adjustment in 1¼″ increments.

(F) Get the versatility of mating with a drawbar eye or hitch ball coupler. The 2″ dia. ball is chrome-plated steel. Insert accepts drawbar eye with a 2½″ to 3″ ID and maximum eye ring thickness of 1⁹⁄₁₆″.

(G&H) Allow you to connect your drawbar coupler to a receiver. The coupler mounts to the mounting plate with ½″ dia. Grade 8 screws (not included). Please see page 1281 for couplers and pages 3134-3137 for Grade 8 screws.

	Trailer/Load Weight Cap., lbs.	Vertical Cap., lbs.	Drop/ Rise	O'all Lg.		Each
Bolt-On Receiver						
A	5,000	500	—	12″	**2507T15**	$64.02
Weld-On Receiver						
B	Not Rated	Not Rated	—	8″	**2507T63**	18.32
Reversible Inserts						
C	6,000	600	2″/ ¾″	12″	**2507T21**	16.93
C	6,000	600	4″/2¼″	12¼″	**2507T22**	20.68
Triple Hitch Ball Insert						
D	6,000/7,500/10,000	Not Rated	—	12″	**7765T44**	60.42
Adjustable Triple Hitch Ball Insert						
E	6,000/7,500/10,000	Not Rated	—	20⁷⁄₃₂″	**7765T45**	161.54
Combination Drawbar Insert with Hitch Ball						
F	7,000	2,400	—	15¹¹⁄₃₂″	**2507T41**★	99.16
Drawbar Coupler Inserts						
G	16,000	3,000	—	7″	**2507T31**♦	49.89
H	16,000	3,000	—	8½″	**2507T32**♦	75.98

★ Cap. shown is for hitch ball. Cap. for drawbar eye is 12,000 lbs.
♦ Has a black painted finish.

Hitch Pins

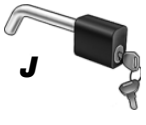

A hitch pin is required to secure the insert in the receiver.

Hitch pin with ½″ dia. fits 1¼″ square receivers. ***Hitch pins with ⁵⁄₈″ dia.*** fit 2″ square receivers. 6685A52 also fits 2½″ square receivers.

	Dia.	Lg.		Each
With Two Keys				
J	½″	7″	**6685A41**	$12.87
J	⁵⁄₈″	7″	**6685A52**	12.53
With Cotter Pin				
K	⁵⁄₈″	5½″	**2507T51**	5.62

Hitch Balls

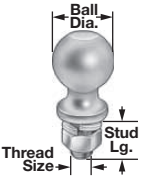

Trailer/Load Weight Cap., lbs.	Ball Dia.	Thread Size	Stud Lg.		Each
Chrome-Plated Steel					
2,000	1⅞″	¾″-16	1½″	**8785T41**	$9.00
3,500	2″	¾″-16	1½″	**8785T42**	9.12
3,500	2″	¾″-16	2⁵⁄₁₆″	**8785T21**	9.67
5,000	2″	1″-14	2⅛″	**8785T5**	11.69
6,000	2⁵⁄₁₆″	1″-14	2⅛″	**8785T22**	17.29
10,000	2⁵⁄₁₆″	1¼″-12	2¼″	**8785T6**	18.60
Type 303 Stainless Steel					
2,000	1⅞″	¾″-16	1¾″	**8785T94**	34.04
8,200	2″	1″-14	1¾″	**8785T82**	39.63
8,200	2⁵⁄₁₆″	1″-14	1¾″	**8785T98**	51.95

Hitch-Ball Trailer Couplers

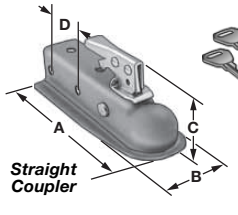

Straight Coupler

Coupler Lock

Bolt or weld these steel couplers to the trailer tongue for easy hook-up to the towing vehicle's hitch ball. All couplers meet Society of Automotive Engineers (SAE) J684 standard classes.

Note: Trailer/load weight capacity is the total weight being towed.

Straight couplers bolt or weld to a single-channel trailer tongue. *Bolt-on* couplers use Grade 8 screws (not included, please see pages 3134-3137) and have a ⁵⁄₁₆″ dia. hole in the latch lever to accommodate the coupler lock (sold separately) or your own padlock.

A-frame couplers weld onto an A-frame (two-channel) trailer tongue set at a 50° angle.

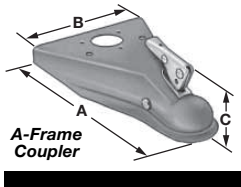

A-Frame Coupler

Trailer/Load Weight Cap., lbs.	Fits Ball Size	For Tongue Wd.	Mounting Screw Dia.	(A)	(B)	(C)	(D)		Each
Straight									
Bolt On									
2,000	1⅞″	2″	⅜″	8¾″	3⁵⁄₈″	3⁵⁄₈″	2¼″	**2743T2**	$13.55
3,500	2″	2″	½″	11″	4″	4⅛″	3¹⁄₁₆″	**2743T6**	20.07
3,500	2″	3″	½″	11″	4″	4⅛″	3¹⁄₁₆″	**2743T5**	20.07
Weld On									
8,500	2⁵⁄₁₆″	3″	—	14″	4½″	6¼″	—	**2743T7**	68.73
A-Frame									
Weld On									
5,000	2″	—	—	13½″	9¾″	4½″	—	**2743T13**	33.87
10,000	2⁵⁄₁₆″	—	—	12¾″	10⁷⁄₈″	4½″	—	**2743T15**	46.67
Coupler Lock with Two Keys for 2743T2, 2743T6, and 2743T5								**2743T8**	9.94

Warning! Never exceed capacities.

Automatic Trailer Couplers

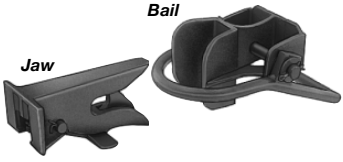

No worries that these weld-on components will uncouple when turning or going over small obstacles. The trailer-mounted jaw has a spring-loaded lever that opens as the vehicle-mounted bail presses against it. Once the bail pushes past the open lever, it closes to secure the bail for towing. To uncouple, just depress the lever. Made of steel with blue finish. Use for towing over level surfaces. Not recommended for highway use.

Note: Trailer/load weight capacity is the total weight being towed.

Trailer/Load Weight Cap., lbs.	O'all Size, Lg.×Wd.×Ht.	Mounting Plate Size, Wd.×Ht.	Coupled Lg.		Each
Jaw					
8,000	11″×6″ ×5¾″	6″ ×3½″	17¾″	9726T61	$139.33
Bail					
8,000	16″×7⅝″×6½″	7⅝″×3½″	17¾″	9726T62	182.00

Easy-Push Trailer Mover

Make your job easier when moving trailers. A long handle with rubber grips provides added leverage while pneumatic wheels allow easy rolling.

Mover is made of steel with a black powder-coated finish and has a removable chrome-plated hitch ball. Shipped unassembled.

Note: Vertical capacity (also known as tongue weight) represents the weight of the load at the hitch ball.

Vertical Cap., lbs.	O'all Wd.	Hitch Ball Dia.	Ground-to-Ball Ht.	Handle Lg.	Wheel Dia.		Each
700	24″	1⅞″	16″	29″	12″	22275T12	$285.02

Battery-Powered Trailer Movers

With these movers, one person can do the work of two or three. Ideal for moving aircraft, assembly lines, trailers, and more. These movers operate on two 12-volt batteries (included) and have a built-in 10-amp battery charger and level meter. Under typical conditions, movers will run approximately eight hours on a full charge.

Movers are equipped with a hydraulic hitch ball lift that raises the ball into the coupling and transfers the weight to the mover for better traction. The hitch ball can be mounted to the lift at a height of 9″ to 15″ and adjusts in 2″ increments. The lift has 7″ of travel. Handle has diamond-patterned grips. Shipped assembled.

Note: Trailer/load weight capacity is the total weight being towed. Vertical capacity (also known as tongue weight) represents the weight of the load at the hitch ball.

Pneumatic wheels are quiet and shock absorbing. ***Flat-free wheels*** are solid yet provide a cushioned ride.

Trailer/Load Weight Cap., lbs.	Vertical Cap., lbs.	Overall Size, Lg.×Wd.×Ht.	Hitch Ball Dia.	hp	Travel Speed, fpm	Wheel Dia.	***Pneumatic Wheels***	Each	***Flat-Free Wheels***	Each
5,000	700	56 11/16″×34½″×41⅜″	2″	½	66	18⅝″	22065T45	$6,780.40	22065T47	$7,037.07
20,000	1,000	64¼″ ×34½″×41⅜″	2″	2	140	18⅝″	22065T46	7,255.60	22065T48	7,512.27

Trailer Safety Chains

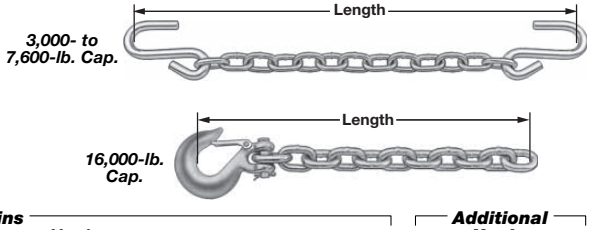

Don't let your trailer get away from you if the hitch fails. Chains and hooks are steel with an electro-galvanized finish. Do not use for lifting applications. Chains must be used in pairs and each chain must meet or exceed your trailer capacity. For example, if you need to haul a 7,600-lb. load, choose two 25475T8 chains, each with a 7,600-lb. trailer/load weight capacity. Chains meet Society of Automotive Engineers (SAE) J684 standards.

Note: Trailer/load weight capacity is the total weight being towed.

3,000- to 7,600-lb. capacity chains have an S-hook at each end.

16,000-lb. capacity chain has a clevis-style hook with a latch at one end.

Trailer/Load Weight Cap., lbs.	***Chains*** Trade Size	Dia.	Lg.	Hook Opening		Each	***Additional Hooks***	Each
3,000	3/16″	7/32″	48″	¾″	25475T2	$7.84	25475T1	$1.50
3,500	5/0	¼″	48″	¾″	25475T4	9.30	25475T3	1.71
5,000	¼″	9/32″	48″	¾″	25475T6	12.44	25475T5	2.01
7,600	8/0	11/32″	48″	¾″	25475T8	15.78	25475T7	3.24
16,000	⅜″	13/32″	35″	15/16″	25475T11	23.37	25475T9	7.32

Trailer Kingpin Locks

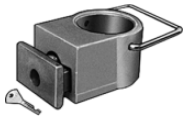

Don't compromise security—cover the entire kingpin of your trailer to prevent theft. Lock is recessed and housed in high-strength cast iron to prevent twisting and prying. The pick-resistant locking mechanism slides in like a drawer. Choose from locks keyed differently (each opens with a different key) and keyed alike (all open with the same key). For optimal security, locks include two keys that may only be duplicated by the manufacturer.

Max. Kingpin Size	Overall Size, Lg.×Wd.×Ht.	***Keyed Differently***	Each	***Keyed Alike***	Each
2½″	6″×4½″×3″	1757A39	$127.27	1757A42	$127.27

Engine, Casting, and Die Stands

The mounting plate on these stands rotates 360° and locks in position. Four arms adjust to hold various castings and come with mounting hardware. Stands have a heavy duty steel frame with cast iron wheels (6671A16 are 3″ OD and A17 are 3½″ OD). They quickly disassemble for transport and storage.

Cap., lbs.	O'all Size, Lg.×Wd.×Ht.		Each
750	31½″×31½″×36¾″	6671A16	$156.14
1,250	33⅜″×33⅞″×42¾″	6671A17	239.45

Ergonomic Steel Hand Trucks

Pivot your load over curbs and single steps with less effort compared to traditional hand trucks. The 5″ dia. front wheels pivot over obstacles without the need to reverse. This hand truck also supports the load in a reclined position, leaving your hands free to open doors. Rear wheels are 8″ dia.; they are foam-filled and puncture-resistant to withstand rough, uneven surfaces. Frame and platform are steel with a yellow powder-coated finish. Shipped assembled, except the wheels must be installed (hardware is included).

Cap., lbs.	Load Plate, Wd.×Dp.	Handle Ht.		Each
600	15⅝″×9″	54″	5351T11	$426.67

Warning! ***Never exceed capacities.***

Cycles

A Cross-Bar Style

Rear Cabinet

C With Rear Perforated Basket

B Step-Through Style

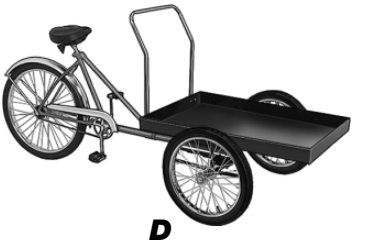

D

Our single-speed classic cycles are made in the USA and have basket, cabinet, or platform storage to fit your transport needs. All frames are made of steel with an orange painted finish (unless noted) and have chrome-plated fenders and padded seats. Shipped partially assembled.

Pneumatic wheels are quiet and shock absorbing. ***Flat-free wheels*** are solid yet provide a cushioned ride.

(A) Wire basket is zinc-plated steel.
(B) Wire basket is chrome-plated steel.
(C) *Perforated basket* is steel with a black enamel finish.
Rear cabinet is steel with a gray enamel finish. The hinged lid can be locked with a padlock (not included) that has a maximum shackle diameter of 1/2″. For padlocks, please see pages 2932-2943.
(D) Front platform is steel with a black enamel finish.

	Cap., lbs.	O'all Lg.	Rear Wd.	Basket/Cabinet/Platform Size, Lg. × Wd. × Dp.	Wheel Dia.	Brake Style Front/Rear	Pneumatic Wheels	Each	Flat-Free Wheels	Each
Cross-Bar Bicycles										
With Front Wire Basket										
A	350	72″	___	21″ × 15″ × 9″	26″	___/Coaster	2701T22	$432.20	2701T71	$497.74
Step-Through Bicycles										
With Front Wire Basket										
A	300	72″	___	21″ × 15″ × 9″	26″	___/Coaster	2701T17	432.20	2701T72	505.17
Step-Through Tricycles										
With Rear Wire Basket										
B	300	68″	29 1/2″	21″ × 15″ × 9″	24″	Caliper/Coaster	2701T18★	748.44	2701T19★	826.56
With Rear Perforated Basket										
C	500	73″	33 3/4″	22″ × 23″ × 11″	26″	Drum/Coaster	2701T31	1,196.55	2701T32	1,282.76
With Rear Cabinet										
C	500	73″	33 3/4″	22″ × 23″ × 12″	26″	Drum/Coaster	2701T33	1,248.28	2701T35	1,334.48
With Front Platform										
D	550	90″	37 1/2″●	38″ × 26″ × 2″	26″	___/Coaster	2701T36	1,051.72	2701T37	1,137.93

★ Has a blue finish. ● Front width.

Also Available: Accessories and parts not listed. Please ask for 2701T888 and specify manufacturer part number.

Accessories

	Mfr. Part No.		Each
Squeeze-Style Bulb Horn	303	2701T134	$17.44
Battery-Powered Mega-Horn	3973	2701T135	33.31
Orange Safety Flag on 6-ft. Pole	3978	2701T142	12.12
Battery-Powered Headlight	3976	2701T144	23.33

Replacement Chain, Inner Tubes, and Pneumatic Tires

	Mfr. Part No.		Each
Chain for Bicycles	4914D	2701T515	$22.78
Chain for Style B Tricycles	4914W	2701T98	22.78
Chain for Style C Tricycles	4914S	2701T83	24.01
Chain for Style D Tricycles	4914C	2701T521	22.78
Connecting Link for Styles A, C, and D	4914A	2701T132	1.56
Connecting Link for Style B	4914M	2701T91	1.67
24″ Inner Tube	4923E	2701T522	7.44
26″ Inner Tube	4923A	2701T511	7.56
24″ Pneumatic Tire	4922E	2701T523	23.56
26″ Pneumatic Tire	4922A	2701T512	25.11

Replacement Parts

	Mfr. Part No.		Each
For All Cycles			
Coaster Brake Kit	SS721	2701T133	$37.56
Crank Hardware/Bearing Set	1265	2701T104	17.00
			Per Pair
Pedals	7217	2701T23	$13.00
For Bicycles			**Each**
Seat	6910V	2701T114	$35.33
Front Wire Basket	7228	2701T136	41.30
For Style B Tricycles			
Seat	6910V	2701T114	35.33
Rear Wire Basket	5927	2701T139	38.74
For Style C Tricycles			
Seat	6910V-5	2701T96	35.56
Rear Perforated Basket	M13970	2701T81	161.82
Rear Cabinet	M17350	2701T82	198.33
For Style D Tricycles			
Seat	6911V	2701T147	41.67
Front Platform	3927STPT	2701T95	208.33

Quilted Protective Pads

Also known as furniture pads, these quilted pads give your furniture and equipment added protection during moving and storage. The quilted pattern prevents bunching, and the double-stitched edging reduces rips and snags. One side of the pad is blue; the other side is dark blue.

Polyester and ***heavy duty polyester*** pads are made of polyester and have blended polyester/wool fill.

Heavy duty cotton/polyester pads are more durable than polyester pads. They are a blend of cotton and polyester and have blended polyester/wool fill.

Approximate Size, Lg. × Wd.	Polyester Fill oz./yd.	Polyester Thick.		Polyester Each	Heavy Duty Polyester Fill oz./yd.	Heavy Duty Polyester Thick.		Heavy Duty Polyester Each	Heavy Duty Cotton/Polyester Fill oz./yd.	Heavy Duty Cotton/Polyester Thick.		Heavy Duty Cotton/Polyester Each
24″ × 24″	32	3/16″	2256T51	$5.84	36	1/4″	2256T63	$7.30	36	1/4″	2256T22	$8.03
36″ × 36″	32	3/16″	2256T58	6.98	36	1/4″	2256T68	8.73	36	1/4″	2256T28	10.18
48″ × 36″	32	3/16″	2256T52	9.31	36	1/4″	2256T64	11.64	36	1/4″	2256T23	13.55
48″ × 48″	32	3/16″	2256T56	10.84	36	1/4″	2256T66	13.55	36	1/4″	2256T26	15.58
72″ × 60″	32	3/16″	2256T53	11.85	36	1/4″	2256T65	14.81	36	1/4″	2256T21	16.38
80″ × 72″	32	3/16″	2256T54	12.58	36	1/4″	2256T61	15.73	36	1/4″	2256T3	21.07
96″ × 80″	32	3/16″	2256T57	16.47	36	1/4″	2256T67	20.58	36	1/4″	2256T27	29.52
120″ × 80″	32	3/16″	2256T55	20.60	36	1/4″	2256T62	25.75	36	1/4″	2256T24	36.90

Warning! Never exceed capacities.

Plastic Equipment-Moving Slides

And away you go—slide equipment and furniture across carpeted and smooth surfaces. Slides have a smooth bottom surface and a ½″ thick foam pad on the top that holds the load in place. Slides are white; foam is black. *Note:* Do not use slides on concrete.

The *11½″ long* slide is for items with legs. Place one slide under each leg. The *48″ long* slide is best for items without legs such as file cabinets and boxes. Slide has holes for a pull strap (sold separately).

Size, Lg.×Wd.		Each 1-3	Each 4-Up
11½″×6¾″	2137T46	$11.84	$9.98
48″ ×6¾″	2137T47	23.68	19.96
Pull Straps for 2137T47 (Set of Two)	2137T48	Per Set	$12.45

Two 2137T47 Slides Shown with Pull Straps

Tilt-and-Lift Dollies

Here's an easy way to move your file cabinets, drums, and crates. Slide the load plate of the dolly under the edge of the load and step down on the other end of the dolly to raise the load.

Two axle-mounted rubber wheels under the load plate balance the load and prevent it from tipping. Two swivel casters with rubber wheels are mounted at the step-down end for easy turning.

Dollies are made of square steel tubing with a vinyl coating for a nonskid, nonmarring contact surface. Shipped assembled.

Cap., lbs.	Overall Size, Lg.×Wd.×Ht.	Wheel Dia.		Each
600	32″×15″×3½″	3″/2½″	2649T14	$124.20
600	32″×18″×3½″	3″/2½″	2649T16	135.00

Lift-and-Roll Dollies

Position these dollies under your load, depress the removable handle to lift the load, and you're ready to roll. A safety latch locks the dollies in the raised position; a handle-activated lock release lowers the load. The platform and handle are square steel tubing with a red vinyl coating for a nonskid, nonmarring contact surface. All other surfaces have a silver powder-coated finish. Dollies roll on four swivel casters with rubber wheels. Shipped assembled.

With Desk Attachment

2761T13 & T15

Cap., lbs.	Deck Size, Lg.×Wd.	Deck Ht. Min.	Deck Ht. Max.	Wheel Dia.		Each
600	26½″ to 38″×16″	11¼″	6¼″	4″	2761T18	$468.37
600	32″×16″	4¾″	10¼″	3″	2761T13	275.51
600	32″×16″	6″	11¼″	4″	2761T15	309.27

Single-Pedestal Desk Attachment—Acts as a pedestal substitute for moving right- and left-hand single-pedestal desks. The support height is adjustable to fit a variety of desk sizes. Capacity is 250 lbs.

2761T17 ..... Each $120.12

Steel Dollies

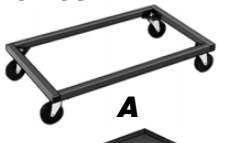

A

B

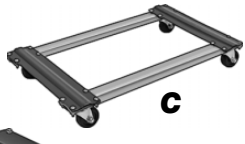

C

D

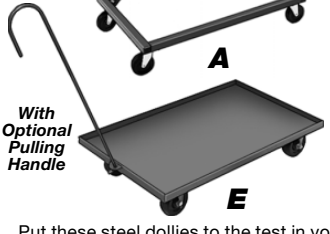

With Optional Pulling Handle

E

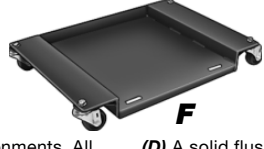

F

G

Put these steel dollies to the test in your toughest environments. All roll on four swivel casters. Shipped assembled.

(A) Has reinforced corners for strength and vinyl end caps to protect walls and furniture from damage. Made of welded square tubing with a green powder-coated finish. Wheels are rubber.

(B) Welded angle iron frame and extra cross braces withstand abuse. Dollies have an eye for attaching a pulling handle (sold separately). Wheels are rubber (unless noted).

(C) The 4″ wide raised ends have a protective coating for a nonskid, nonmarring contact surface. Have bolted construction and a gray powder-coated finish. Wheels are polypropylene.

(D) A solid flush deck lets you easily load and unload. Have an eye for attaching a pulling handle (sold separately). Dollies have a green powder-coated finish. Wheels are rubber (unless noted).

(E) Same as *Style D* except deck has a 1″ high lip to keep your load from sliding off. Wheels are rubber (unless noted).

(F) Has a low-profile front edge for easy loading and a 2¼″ high lip on the other three sides to keep your load from sliding off. Has a green powder-coated finish. Wheels are polyurethane.

(G) The deck height gradually lowers from the ends to create a recessed center to hold the wheels of vehicles, trailers, and machinery. Have a red powder-coated finish. Wheels are polyurethane.

	Cap., lbs.	Overall Size, Lg.×Wd.×Ht.	Center Opening, Lg.×Wd.	Wheel Dia.		Each
Open Deck						
A	400	25″×15″×4¾″	23″ ×13″	3″	8971T4	$49.42
B	1,600	30″×18″×5½″	16⅛″×14″	4″	2843T6	159.78
B	1,600	36″×24″×5½″	22⅛″×20″	4″	2843T7	166.31
B	2,000	30″×18″×5½″	16⅛″×14″	4″	2843T8 ♦	170.44
B	2,000	36″×24″×5½″	22⅛″×20″	4″	2843T9 ♦	176.61
Open Deck with Nonmarring Gripper Ends						
C	1,000	30″×18″×4½″	22¼″×11¼″	3″	8956T6	72.22
C	1,000	36″×24″×4½″	28⅛″×17¼″	3″	8956T8	82.78
Solid Flush Deck						
D	1,600	30″×18″×5⅜″	_____	4″	2730T5	154.98
D	1,600	36″×24″×5⅜″	_____	4″	2730T6	159.90
D	2,000	30″×18″×5⅜″	_____	4″	2730T7 ♦	156.00
D	2,000	36″×24″×5⅜″	_____	4″	2730T8 ♦	178.65
Solid Lipped Deck						
E	1,600	30″×18″×6⅜″	_____	4″	2596T3	$151.69
E	1,600	36″×24″×6⅜″	_____	4″	2596T4	162.80
E	2,000	36″×24″×6⅜″	_____	4″	2596T6 ♦	174.44
Solid Low-Profile Deck						
F	840	30″×22″×4¾″	_____	3″	8781T14★	215.83
Solid Deck with Recessed Center						
G	1,500	16″× 8″×3¼″-1¾″	_____	2″	8920T61	36.25
G	1,500	16″×12″×3¼″-1¾″	_____	2″	8920T62	38.75
G	1,500	16″×16″×3¼″-1¾″	_____	2″	8920T63	42.92
G	2,500	16″× 8″×3½″-2¼″	_____	2½″	8920T64	50.50
G	2,500	16″×12″×3½″-2¼″	_____	2½″	8920T65	63.37
G	2,500	16″×16″×3½″-2¼″	_____	2½″	8920T66	68.32

♦ Wheels are cast iron. ★ Usable deck size is 21″×21¾″; deck height at front is 2½″.

Optional Pulling Handle for Styles B, D, and E—Pull rather than push your dolly. Handle is made of ⅜″ dia. steel and is 36″ long.

2596T7 ..... Each $11.08

Warning! Never exceed capacities.

Movers' Choice Wood Dollies

A

With Raised Rubber-Capped Ends B

C

D

A nonmarring, impact-absorbing, and quiet ride is what these dollies are all about. All dollies roll on four swivel casters with impact- and chemical-resistant polypropylene wheels. Shipped assembled.

Raised carpet-covered ends and ***carpet-covered deck*** provide added protection from damage to the load.

Raised rubber-capped ends also provide added protection from damage, plus they grip the load to keep it from sliding.

Deck Size, Lg. × Wd.	Center Opening, Lg. × Wd.	900-lb. Capacity Deck Ht.	900-lb. Capacity Wheel Dia.		Each	1,200-lb. Capacity Deck Ht.	1,200-lb. Capacity Wheel Dia.		Each	1,400-lb. Capacity Deck Ht.	1,400-lb. Capacity Wheel Dia.		Each
Open Deck													
(A) Flush													
30″ × 18″	22½″ × 11½″	6″	3″	2509T36	$55.45	7″	4″	2509T46	$60.34	8″	5″	2509T91	$73.33
36″ × 24″	28½″ × 16½″	6″	3″	2509T37	63.64	7″	4″	2509T47	68.97	8″	5″	2509T92	81.67
36″ × 36″	28½″ × 28½″	6″	3″	2509T61	70.91	7″	4″	2509T64	77.59	8″	5″	2509T93	88.33
42″ × 42″	34½″ × 34½″	6″	3″	2509T62	89.09	7″	4″	2509T65	94.83	8″	5″	2509T94	105.00
48″ × 42″	41½″ × 34½″	6″	3″	2509T63	96.36	7″	4″	2509T66	101.72	8″	5″	2509T95	110.00
(B) With Raised Ends													
30″ × 18″	22½″ × 11½″	6″	3″	2509T31	53.06	7″	4″	2509T41	59.62	8″	5″	2509T96	72.73
36″ × 24″	28½″ × 16½″	6″	3″	2509T32	62.24	7″	4″	2509T42	67.31	8″	5″	2509T97	80.91
(B) With Raised Carpet-Covered Ends													
30″ × 18″	18″ × 10½″	6½″	3″	2509T33	59.57	7½″	4″	2509T43	66.00	8½″	5″	2509T98	74.55
36″ × 24″	28½″ × 16½″	6½″	3″	2509T34	73.00	7½″	4″	2509T44	77.36	8½″	5″	2509T99	91.82
(B) With Raised Rubber-Capped Ends													
30″ × 18″	24″ × 10¼″	7″	3″	2509T35	60.64	8″	4″	2509T45	68.00	9″	5″	2509T67	75.45
Solid Deck													
(C) Flush													
30″ × 18″	—	6″	3″	2509T38	63.46	7″	4″	2509T48	73.08	8″	5″	2509T68	92.73
36″ × 24″	—	6″	3″	2509T39	73.08	7″	4″	2509T49	81.73	8″	5″	2509T69	93.64
36″ × 36″	—	6″	3″	2509T26	92.31	7″	4″	2509T11	99.74	8″	5″	2509T77	109.09
42″ × 42″	—	6″	3″	2509T27	126.92	7″	4″	2509T12	136.54	8″	5″	2509T78	143.64
48″ × 42″	—	6″	3″	2509T28	136.54	7″	4″	2509T13	146.15	8″	5″	2509T79	152.73
(D) Carpet-Covered Flush													
30″ × 18″	—	6½″	3″	2509T21	69.09	7½″	4″	2509T14	78.18	8½″	5″	2509T85	85.00
36″ × 24″	—	6½″	3″	2509T22	83.64	7½″	4″	2509T15	92.73	8½″	5″	2509T86	99.74
36″ × 36″	—	6½″	3″	2509T23	92.77	7½″	4″	2509T16	103.14	8½″	5″	2509T87	106.90
42″ × 42″	—	6½″	3″	2509T24	141.53	7½″	4″	2509T17	150.61	8½″	5″	2509T88	157.45
48″ × 42″	—	6½″	3″	2509T25	169.09	7½″	4″	2509T18	177.27	8½″	5″	2509T89	181.90

Easy-Stack Wood Dolly

Single Dolly

Five Dollies Stacked

A space-saving design lets you stack and transport up to 35 dollies. As you stack, four knobs on the bottom of each dolly interlock with the holes on the top of the previous dolly. This ensures proper spacing and compact stacking.

The deck is made of 1″ thick plywood and the legs are carpet covered to keep your load from slipping off. Dolly rolls on four swivel casters with rubber wheels. Shipped assembled.

Cap., lbs.	Overall Size, Lg. × Wd. × Ht.	Wheel Dia.		Each
800	24″ × 24″ × 5″	3″	5336T9	$53.88

Aluminum Dollies

E

F

Lightweight yet strong, these dollies are easy to pick up and carry to where you need them. All roll on four swivel casters.

(E) Have riveted construction and a ⅜″ dia. hole in the frame for installing a tow hook, rope, or chain (not included). Casters have polypropylene wheels that must be attached with included fasteners.

(F) Welded-channel construction and a center brace provide the strength you need for heavier loads. Casters have phenolic wheels. Shipped assembled.

Cap., lbs.	Overall Size, Lg. × Wd. × Ht.	Center Opening, Lg. × Wd.	Wheel Dia.		Each
(E) Flush Open Deck					
900	24″ × 18″ × 5¼″	12″ × 6½″	3″	2764T3	$182.25
900	30″ × 21″ × 5¼″	18″ × 9″	3″	2764T4	202.79
(F) Flush Open Deck with Center Support					
2,000	36″ × 21″ × 10″	33½″ × 8⅝″●	5″	2764T1	312.33
2,000	42″ × 24″ × 10″	39½″ × 10⅛″●	5″	2764T2	306.11

● Opening size on each side of the center support.

Polyethylene Dollies

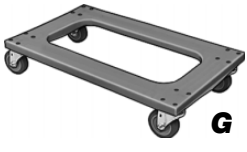
G

H

NSF J

K

Look no further if you need dollies that are lightweight, corrosion resistant, nonmarring, and easy to clean. All roll on four swivel casters (unless noted) with cushion rubber wheels.

(G&H) Both styles are reinforced with steel. Color is red. Shipped assembled. *Style H* has rubber-capped ends that grip the load.

(J) NSF certified. Color is blue. Shipped unassembled.

(K) Have a lip to keep load from sliding off. Color is gray. Shipped assembled. 24385T62 has five swivel casters.

Cap., lbs.	Overall Size, Lg. × Wd. × Ht.	Center Opening, Lg. × Wd.	Wheel Dia.		Each
Open Deck					
(G) Flush					
1,000	30″ × 18″ × 6⅝″	22½″ × 10½″	4″	24385T4	$89.01
(H) With Raised Rubber-Capped Ends					
1,000	30″ × 18″ × 7⅝″	22½″ × 10½″	4″	24385T3	106.04
Solid Deck					
(J) Flush					
330	23½″ × 15¾″ × 4½″	—	3″	24385T51	73.50
330	28″ × 18″ × 6″	—	4″	24385T52	91.67
660	36″ × 24″ × 8″	—	5″	24385T53	146.67
(K) With 1″ High Lip					
300	30″ × 18″ × 5½″	—	4″	24385T61	94.23
300	36″ × 24″ × 5½″	—	4″	24385T62	107.69

Warning! **Never exceed capacities.**

NSF-Certified Aluminum Dolly

Meet your sanitary requirements with our NSF-certified and USDA-approved dolly. Deck is made of 1/8″ thick rustproof aluminum, so it's lightweight yet strong enough for heavy loads. It has a 1 3/4″ high lip on three sides to keep your load from sliding off and open corners for easy drainage. Dolly rolls on two rigid and two swivel casters with polypropylene wheels. Shipped assembled.

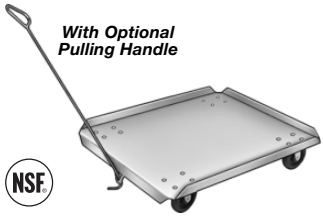

Cap., lbs.	Overall Size, Lg. × Wd. × Ht.	Wheel Dia.		Each
1,200	33″ × 27″ × 8″	5″	1666T7	$196.47

Optional Pulling Handle—Pull rather than push your dolly. Handle is made of 3/8″ dia. steel and is 36″ long.

1666T9 ..... Each $20.60

Adjust-a-Length Aluminum Dolly

Also known as an appliance dolly, this dolly is adjustable in length to handle a variety of moving jobs. Used (and sold) in pairs, each half of the dolly has a 3″ × 3″ support at each end. A nonmarring rubber pad on the top of the supports grips your load. Each half of the dolly rolls on 16 thermoplastic rubber (TPR) wheels (eight wheels mounted under each support). Shipped assembled.

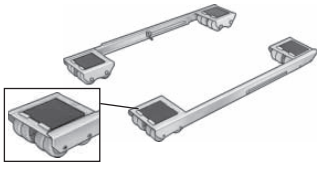

Cap. per Pair, lbs.	Adjustable Lg.	Ht.	Wheel Dia.		Per Pair
2,000	18″ to 28″	1 1/2″	1 1/4″	2402T13	$33.33

Large-Deck Heavy Duty Steel Dollies

Welded steel channel and six axle-mounted wheels provide strength for moving pallets, machinery, large containers, and other heavy equipment. The center wheels are mounted lower than the end wheels for easier pivoting. Dollies have a yellow powder-coated finish. Shipped assembled.

6,000-lb. capacity dolly has steel wheels. ***10,000-lb. capacity*** dolly has cast iron wheels.

Cap., lbs.	Overall Size, Lg. × Wd. × Ht.	Center Opening, Lg. × Wd.	Wheel Dia.		Each
6,000	36″ × 24″ × 6 3/16″	33 3/16″ × 12 1/2″	5″	2735T3	$526.01
10,000	60″ × 36″ × 8 1/2″	56 3/16″ × 21 3/16″	8″	2735T2	574.51

Large-Deck Heavy Duty Aluminum Dollies

Although they weigh less than comparable steel dollies, these welded aluminum channel dollies are just as strong. Plus they're easier to get moving. Dollies roll on axle-mounted phenolic wheels. The center wheels are mounted lower than the end wheels for easier pivoting. The frame has an extra set of axle holes so the center wheels can be mounted at the same height as the end wheels. Shipped assembled.

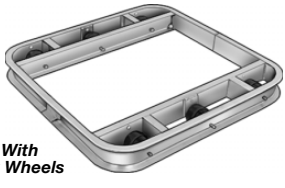

Cap., lbs.	Overall Size, Lg. × Wd. × Ht.	Center Opening, Lg. × Wd.	No. of Wheels	Wheel Dia.		Each
4,000	36″ × 36″ × 4 1/2″	33 1/2″ × 22 1/16″	6	3 1/2″	2584T11	$302.54
4,000	42″ × 42″ × 4 1/2″	39 1/2″ × 28 1/16″	6	3 1/2″	2584T21	329.44
4,000	48″ × 42″ × 4 1/2″	45 1/2″ × 28 1/16″	6	3 1/2″	2584T24	337.02
6,000	36″ × 36″ × 4 1/2″	33 1/2″ × 22 1/16″	8	3 1/2″	2584T12	369.62
6,000	42″ × 42″ × 4 1/2″	39 1/2″ × 28 1/16″	8	3 1/2″	2584T22	392.57
6,000	48″ × 48″ × 4 1/2″	45 1/2″ × 34 1/16″	8	3 1/2″	2584T17	406.11
8,000	48″ × 42″ × 4 1/2″	45 1/2″ × 28 1/16″	10	3 1/2″	2584T26	448.60
8,000	48″ × 48″ × 4 1/2″	45 1/2″ × 34 1/16″	10	3 1/2″	2584T29	459.72

Hydraulic Lift-and-Move Fork Dollies

Your solution for moving large, bulky, and long loads. Dollies are used (and sold) in pairs. Each half has adjustable-width forks that go under the load and a hand-operated hydraulic lift that lifts and lowers the load. Steel cleats on the forks grip the load and a 12′ Lg. × 2″ Wd. web strap with a ratchet buckle attaches to each side of the dollies to stabilize and secure the load. Dollies are welded steel and each rolls on two swivel casters with phenolic wheels (unless noted). Shipped assembled.

Cap. per Pair, lbs.	Size, Lg. × Wd.	Handle Ht.	Fork Ht.	Fork Lg.	Outside Fork Wd.	Max. Lift	Wheel Dia.		Per Pair
2,000	12 1/2″ × 22″	47 1/2″	3/4″	5″	7 1/4″ to 17 1/2″	5 1/8″	5″	2751T21	$1,068.20
4,000	16 1/2″ × 23″	44″	1 1/8″	6″	5″ to 19 1/2″	12″	6″	2751T22	1,377.60
6,000	16 3/4″ × 23″	42 1/2″	1 1/8″	6″	6″ to 19 1/2″	6″	6″	2751T23	1,510.67
10,000	18″ × 24″	45 1/2″	1 1/8″	6″	9 1/4″ to 19 1/2″	6″	8″	2751T25●	1,861.52

● Wheels are cast iron.

Wheeled Levers

Here's the leverage you need when raising a big load. Also known as Johnson bars, pry bars, pry trucks, and mules, these levers are often used in pairs to lift each end of a load so a dolly can be slid underneath. Shipped assembled.

Rubber wheels are quiet and protect your floors. ***Cast iron wheels*** handle heavy loads.

(A) Have a 1 3/4″ thick oak handle and beveled steel load plate with green powder-coated finish.

(B&C) *Style B* has a tubular handle, a wedge-style steel load plate, and a blue painted finish. *Style C* has a tubular handle and a beveled steel load plate with grooves for a better grip on the load. A steel step bar opposite the load plate makes it easier to push the load plate under the load. Lever has a blue powder-coated finish.

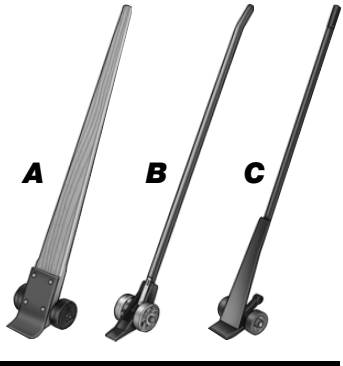

	Handle Lg.	Load Plate, Lg. × Wd.	Wheel Dia.	Rubber Wheels Cap., lbs.		Rubber Wheels Each	Cast Iron Wheels Cap., lbs.		Cast Iron Wheels Each
Wood Handle									
A	5 ft.	3″ × 6″	5″	1,000	2750T5	$130.45	3,500	2750T1	$121.05
A	6 ft.	3″ × 6″	5″	1,000	2750T6	136.55	4,250	2750T4	129.19
A	7 ft.	3″ × 6″	5″	1,000	2750T7	148.83	5,000	2750T3	146.71
Steel Handle									
B	6 ft.	7 3/4″ × 3 1/4″	6″	—	—	—	2,400	2752T16	206.99
C	6 ft.	3 1/2″ × 6″	5″	5,000	2752T17★	126.79	—	—	—

★ Wheels are polyurethane.

Warning! **Never exceed capacities.**

Heavy Duty Low-Profile Dolly

Low to the ground and high in strength—this compact welded-steel dolly has a 1/4″ thick deck with a 1/2″ high lip on two sides for better load retention. It rolls on four axle-mounted heat-treated steel wheels. Shipped assembled.

Cap., lbs.	Overall Size, Lg. × Wd. × Ht.	Wheel Dia.		Each
10,000	11 1/2″ × 8 3/4″ × 2 5/16″	2″	2725T81	$151.20

Compact Swivel-Plate Roller Dollies

Swivel Plate

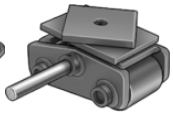

Tilt-and-Swivel Plate

Their small size combined with the swivel plate make these dollies easy to handle and position when moving heavy machinery. The plate is removable so the dollies can be permanently installed on equipment that's moved frequently. Use 1/2″-13 cap screws (not included, please see pages 3141-3143) for installation. Dollies are welded steel and roll on two steel rollers.

Tilt-and-swivel plate dolly has a tilt plate under the swivel plate to compensate for uneven floors. Dolly includes a 5 1/4″ long side bar to ease turning the dolly under load.

Dollies

Cap., lbs.	Plate Size	Overall Size, Lg. × Wd. × Ht.	Roller Dia.		Each
Swivel Plate					
5,000	4″ × 4″	8 1/8″ × 6″ × 4 1/2″	3 1/4″	2736T22	$280.31
Tilt-and-Swivel Plate					
25,000	5″ × 5″	9″ × 6 3/4″ × 5 1/2″★	3 1/4″	2736T24	490.31
30″ Long Steering Handle for 2736T22				2736T25	Each $93.80

★ Width is 12″ with side bar extension.

Dolly Kit

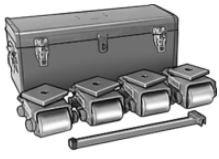

Includes four dollies with a swivel plate, a 16 1/2″ long steering handle, and a steel storage box.

Total Cap., lbs.	Cap. per Dolly, lbs.		Per Kit
20,000	5,000	2736T27	$1,355.82

Grip-Plate Steel Roller Track Dollies

Cushion-Grip Swivel Plate

Cushion-Grip Swivel Plate with Lock

Cushion-Grip Rigid Plate

Diamond-Grip Swivel Plate with Lock

Diamond-Grip Rigid Plate

Small-diameter hardened-steel rollers rotate around a center plate to evenly distribute weight and make moving heavy equipment easier. All have welded construction and a green painted finish.

Cushion-grip dollies have a black neoprene rubber pad on the plate that firmly grips your load without damaging the surface.

Diamond-grip dollies have small teeth on the plate that grip the load.

Swivel plates provide controlled turning as well as straight-line movement. ***Swivel plates with lock*** provide more controlled turns by locking every 45°. ***Rigid plates*** are ideal for straight-line movement.

Dollies

Cap., lbs.	Rollers No.	Rollers Dia.	Cushion-Grip Plate Size	Cushion-Grip Overall Size, Lg. × Wd. × Ht.	Cushion-Grip Each	Diamond-Grip Plate Size	Diamond-Grip Overall Size, Lg. × Wd. × Ht.	Diamond-Grip Each
Swivel Plate								
1,500	14	11/16″	4″ Lg. × 2 1/2″ Wd.	6 1/2″ × 3 5/8″ × 3 5/16″	2763T38 $208.66	—	—	—
4,000	12	15/16″	4″ Lg. × 2 1/2″ Wd.	6 1/2″ × 4 1/8″ × 3 15/16″	2763T39 281.24	—	—	—
Swivel Plate with Lock								
7,500	14	15/16″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5″	2763T41 402.36	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 4 3/4″	2763T85 $376.19
15,000	12	1 3/16″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5 1/4″	2763T42 443.79	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5″	2763T86 413.26
20,000	12	1 3/16″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5 1/4″	2763T45 460.02	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5″	2763T87 441.61
30,000	14	1 3/16″	5 3/4″ Dia.	12 3/4″ × 6 3/8″ × 5 1/8″	2763T43 538.66	5 3/4″ Dia.	12 3/4″ × 6 3/8″ × 4 7/8″	2763T88 505.95
Rigid Plate								
1,500	14	11/16″	4″ Lg. × 2 1/2″ Wd.	6 1/2″ × 3 5/8″ × 3″	2763T58 173.51	—	—	—
4,000	12	15/16″	4″ Lg. × 2 1/2″ Wd.	6 1/2″ × 4 1/8″ × 3 9/16″	2763T59 248.35	—	—	—
7,500	14	15/16″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 4 1/8″	2763T61 357.65	6″ Lg. × 5 5/8″ Wd.	10 1/2″ × 5 5/8″ × 4″	2763T81 344.57
15,000	12	1 3/16″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 4 7/16″	2763T62 401.27	6″ Lg. × 5 5/8″ Wd.	10 1/2″ × 5 5/8″ × 4 1/4″	2763T82 381.64
20,000	12	1 3/16″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 4 7/16″	2763T65 430.71	6″ Lg. × 5 5/8″ Wd.	10 1/2″ × 5 5/8″ × 4 1/4″	2763T83 409.99
30,000	14	1 3/16″	5 3/4″ Dia.	12 3/4″ × 6 3/8″ × 4 1/4″	2763T63 495.04	6 1/4″ Lg. × 6″ Wd.	12 3/4″ × 6 3/8″ × 4 3/32″	2763T84 472.15

36″ Long Steering Handle	2763T71	Each $51.62
48″ Long Steering Handle	2763T72	Each $67.01

Dolly Kits

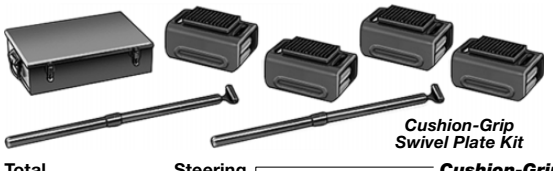

Cushion-Grip Swivel Plate Kit

Include four dollies, two steering handles, and a steel carrying case.

Total Cap., lbs.	Cap. per Dolly, lbs.	Steering Handle Lg.	Cushion-Grip Plate Size	Cushion-Grip Overall Size, Lg. × Wd. × Ht.	Cushion-Grip Each	Diamond-Grip Plate Size	Diamond-Grip Overall Size, Lg. × Wd. × Ht.	Diamond-Grip Each
Swivel Plate								
6,000	1,500	14″	4″ Lg. × 2 1/2″ Wd.	6 1/2″ × 3 5/8″ × 3 5/16″	2757T31 $715.11	—	—	—
16,000	4,000	30″	4″ Lg. × 2 1/2″ Wd.	6 1/2″ × 4 1/8″ × 3 15/16″	2757T32 918.89	—	—	—
Swivel Plate with Lock								
30,000	7,500	48″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5″	2757T33 1,420.10	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 4 3/4″	2757T41 $1,428.87
60,000	15,000	48″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5 1/4″	2757T34 1,590.25	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5″	2757T42 1,557.10
80,000	20,000	48″	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5 1/4″	2757T35 1,683.58	5 3/4″ Dia.	10 1/2″ × 5 3/4″ × 5″	2757T43 1,647.82
120,000	30,000	48″	5 3/4″ Dia.	12 3/4″ × 6 3/8″ × 5 1/8″	2757T36 1,891.20	5 3/4″ Dia.	12 3/4″ × 6 3/8″ × 4 7/8″	2757T44 1,854.56

Warning! ***Never exceed capacities.***

High-Capacity Cleated Roller Dollies

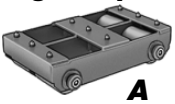
A
12,000-lb. Cap.

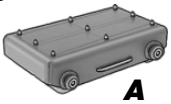
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30,000-lb. Cap.

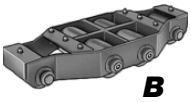
B

C

D

E

Conquer your most demanding moving requirements with these welded-steel dollies. The plate has steel cleats that grip the load and keep it from slipping.

Polyurethane rollers are quieter than steel rollers and protect your floor. ***Rigid plates*** have cleats along their entire length. Ideal for straight-line movement. ***Swivel plates*** are 7″ sq. and provide controlled turning as well as straight-line movement.

Smooth-Surface Dollies— Four rollers provide easy movement over smooth surfaces.

All-Surface Dollies— Four larger center rollers and one smaller roller on each end allow for easy transport over uneven surfaces.

Easy-Turn All-Surface Dollies— Two larger center rollers rotate independently for easy turning and exceptional maneuverability. A single smaller roller on each end allows for easy movement over uneven surfaces.

Cap., lbs.	Overall Size, Lg. × Wd. × Ht.	Roller Dia.	Steel Rollers	Each	Polyurethane Rollers	Each
Smooth-Surface Dollies						
(A) With Rigid Plate						
12,000	15¾″ × 10½″ × 4⅜″	3¼″	9905T11	$448.26	9905T51	$650.58
30,000	15¾″ × 10½″ × 4⅜″	3¼″	9905T12	573.22	9905T52	775.54
All-Surface Dollies						
(B) With Rigid Plate						
40,000	23¾″ × 11″ × 4⅝″	3½″/3¼″	8757T72 ♦	856.00	8757T62	1,153.39
75,000	23¾″ × 11″ × 4⅝″	3½″/3¼″	8757T73	864.56	—	—
(C) With Swivel Plate						
40,000	23¾″ × 11″ × 5¼″	3½″/3¼″	8757T82 ♦	937.44	8757T65	1,235.70
75,000	23¾″ × 11″ × 5¼″	3½″/3¼″	8757T83	948.42	—	—
Easy-Turn All-Surface Dollies						
(D) With Rigid Plate						
8,000	19¼″ × 10½″ × 4½″	3½″/3¼″	9914T11	526.30	9914T31	724.96
20,000	19½″ × 11″ × 4⅝″	3½″/3¼″	9914T17	551.08	9914T32	751.74
30,000	19½″ × 11″ × 4⅝″	3½″/3¼″	9914T18	578.00	—	—
(E) With Swivel Plate						
8,000	19¼″ × 10½″ × 5¼″	3½″/3¼″	9914T13	607.98	9914T34	807.27
20,000	19½″ × 11″ × 5¼″	3½″/3¼″	9914T14	643.93	9914T35	841.98
30,000	19½″ × 11″ × 5¼″	3½″/3¼″	9914T15	667.89	—	—

48″ Long Steering Handle for Dollies with a Swivel Plate ..... 9914T19 Each $188.29

♦ Capacity is 50,000 lbs.

Cushion-Grip Plate Nylon Roller Dollies

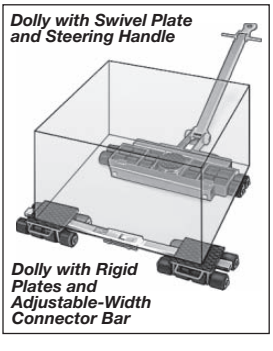

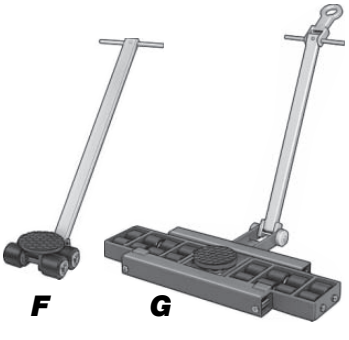
F G

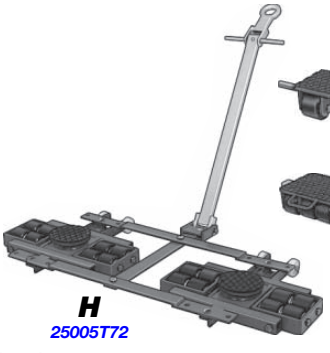
H
25005T72

J

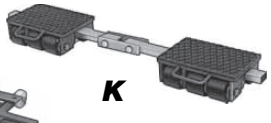
K

Used alone or with each other, these dollies make easy work of moving heavy, bulky loads. Their design lets you move over both smooth and uneven surfaces. A textured rubber pad on the plate grips your load without damaging the surface. All dollies are made of welded steel with a red powder-coated finish and roll on nonmarking nylon wheels.

Swivel plates provide controlled turning as well as straight-line movement. ***Rigid plates*** are ideal for straight-line movement.

(F&G) Have a T-style steering handle. *Style G* also have a 2″ ID ring for towing applications up to 1.9 mph.

(H) The adjustable frame has two contact points and fits a variety of loads. Both have a T-style steering handle; 25005T72 also has a 2″ ID ring for towing applications up to 1.9 mph.

(J&K) Two contact points are connected by an adjustable bar that keeps them parallel. *Style K* dollies have convenient carrying handles.

	Cap., lbs.	Plate Size	Overall Size, Lg. × Wd. × Ht.	Handle Length	Rollers per Dolly No.	Rollers per Dolly Dia.		Each
With Swivel Plate and Steering Handle								
F	4,400	6 11/16″ Dia.	6 11/16″ × 10 5/8″ × 4″	39¾″	4	3″	25005T57	$394.19
F	6,600	6 11/16″ Dia.	6 11/16″ × 10 5/8″ × 4 5/16″	39¾″	4	3 5/16″	25005T51	550.19
G	13,200	6 11/16″ Dia.	20½″ × 24″ × 4 5/16″	42½″	8	3 5/16″	25005T52	1,279.52
G	19,800	6 11/16″ Dia.	23″ × 33⅛″ × 4 5/16″	42½″	12	3 5/16″	25005T53	1,536.75
G	26,400	6 11/16″ Dia.	24 7/16″ × 40 5/8″ × 4 5/16″	42½″	16	3 5/16″	25005T54	1,937.60
G	39,600	6 11/16″ Dia.	24 7/16″ × 40 5/8″ × 4 5/16″	42½″	16	3 5/16″	25005T61	2,784.62
With Swivel Plates, Adjustable-Width Frame, and Steering Handle								
H	13,200	6 11/16″ Dia.	23″ × 21 11/16″ to 45 5/16″ × 4 5/16″	37 13/16″	4	3 5/16″	25005T71	1,316.92
H	26,400	6 11/16″ Dia.	24½″ × 26″ to 39 7/16″ × 4 5/16″	42½″	8	3 5/16″	25005T72	2,815.38
With Rigid Plates and Adjustable-Width Connector Bar								
J	4,400	6″ Lg. × 6″ Wd.	7⅛″ × 11 13/16″ to 39⅜″ × 4″	—	2	3″	25005T56	348.90
J	6,600	6″ Lg. × 6″ Wd.	6 11/16″ × 11 13/16″ to 39⅜″ × 4 5/16″	—	2	3 5/16″	25005T41	454.58
K	13,200	7⅞″ Lg. × 8 11/16″ Wd.	10 13/16″ × 25¼″ to 40 9/16″ × 4 5/16″	—	4	3 5/16″	25005T42	881.94
K	19,800	7⅞″ Lg. × 12 5/8″ Wd.	10 7/16″ × 33″ to 48 7/16″ × 4 5/16″	—	6	3 5/16″	25005T43	1,132.69
K	26,400	7⅞″ Lg. × 16″ Wd.	10 13/16″ × 40″ to 56 5/16″ × 4 5/16″	—	8	3 5/16″	25005T44	1,460.76
K	39,600	7⅞″ Lg. × 16″ Wd.	10 13/16″ × 40″ to 56 5/16″ × 4 5/16″	—	8	3 5/16″	25005T62	1,996.92

Warning! **Never exceed capacities.**

Versatile-Top Steel Roller Track Dolly Kits

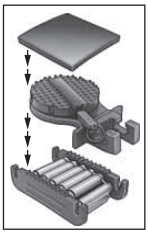

Use these dollies with their rigid top plate for straight-line movement, or add the included diamond-top swivel top plates with lock for controlled turning as well as straight-line movement. The diamond-top swivel top plates have small teeth to grip your load and come with a neoprene rubber pad that can be placed on top to create a nonmarring grip top. The swivel locks every 45° for better control during turns. Dollies are made of welded steel with a green painted finish. Small-diameter, chain-activated, hardened-steel rollers rotate around the center plate to evenly distribute the weight for easier moving.

Each kit contains four dollies, four diamond-top swivel top plates, four neoprene rubber pads, two 48″ long steering handles, and a steel storage case.

Also Available: Individual dollies and diamond-top swivel top plates with lock. Please ask for 2723T888 and specify a dolly or swivel top plate and the capacity.

Total Cap., lbs.	Cap., per Dolly, lbs.	Dolly Size, Lg. × Wd. × Ht.	Swivel Top Plate, Dia.	Ht. with Swivel Top Plate	Rollers per Dolly No.	Rollers per Dolly Dia.		Per Kit
30,000	7,500	8⅝″ × 4 7/16″ × 2¾″	5¾″	4 7/16″	13	15/16″	2723T51	$1,588.57
40,000	10,000	8⅝″ × 5 5/16″ × 2¾″	5¾″	4 7/16″	13	15/16″	2723T52	1,697.19
80,000	20,000	10⅜″ × 5 3/16″ × 3⅜″	5¾″	5 1/16″	14	1 3/16″	2723T53	1,937.45
100,000	25,000	10⅜″ × 5⅝″ × 3⅜″	5¾″	5 1/16″	14	1 3/16″	2723T54	2,032.59

Extra 48″ Steering Handle ..... 2723T15 Each $76.78

Multidirectional Roller Dollies

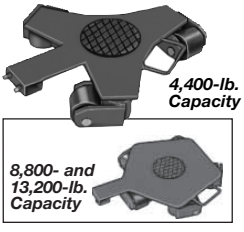

Maneuver machines and heavy loads into confined spaces. The rollers on these dollies swivel independently, allowing movement in any direction. All dollies have a textured rubber pad in the center to grip the load. Dollies are welded steel with a red powder-coated finish, have convenient carrying handles, and roll on nonmarking nylon rollers.

Cap., lbs.	Plate Dia.	Overall Size, Lg. × Wd. × Ht.	Rollers No.	Rollers Dia.		Each
4,400	6¾″	27″ × 20 5/16″ × 4 5/16″	3	3 5/16″	3490T1	$1,177.74
8,800	9 13/16″	29½″ × 22⅛″ × 4 5/16″	5	3 5/16″	3490T2	1,693.55
13,200	9 13/16″	29½″ × 22⅛″ × 4 5/16″	5	3 5/16″	3490T3	1,877.53

Dual Swivel-Plate Dollies

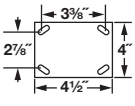

Two plates, one smaller than the other, swivel independently for maneuverability in tight spaces. Ideal for theatrical applications. Ball bearings between the plates allow you to turn and position the load without any caster movement. The smaller plate has four ½″ × ¾″ slots for permanent mounting (fasteners not included). All dollies are made of steel with a black painted finish and roll on three swivel casters.

600-lb. capacity dolly has dual thermoplastic rubber (TPR) wheels.

2,000-lb. capacity dolly has polyurethane wheels.

Cap., lbs.	Overall Size, Dia. × Ht.	Wheel Dia.		Each
600	14″ × 5⅝″	3″	83485T11	$345.83
2,000	18″ × 7¼″	4″	83485T12	454.17

Multidirectional Tripod Dollies

If you need to move machinery and equipment with legs look no further—just place each leg into the recessed center of a dolly and away you go. Dollies have three swivel casters for maximum maneuverability.

Rubber wheels are high impact. ***Cast iron wheels*** combine strength and durability to handle higher capacities than rubber wheels. ***Phenolic wheels*** are lightweight and protect your floors.

(A) Use for large diameter legs. Made of cast iron.

(B) Same as *Style A*, but these have a smaller recessed center.

(C) Moves loads with and without legs. Has a ¼″ high lip on the longest edge for load retention. Made of 12-ga. steel with a vinyl coating for a nonskid, nonmarring contact surface.

Cap., lbs.	Overall Size	O'all Ht.	Center Recess Top Dia.	Center Recess Bottom Dia.	Center Recess Depth	Wheel Type	Wheel Dia.		Each
(A) With Large Recessed Center									
375	11″ Dia.	3″	5″	3 3/16″	2″	Rubber	2″	2744T5	$68.70
450	11″ Dia.	3″	5″	3 3/16″	2″	Cast Iron	2″	2744T4	68.70
630	15″ Dia.	4¼″	6¾″	5¼″	2″	Rubber	3″	2745T11	93.06
750	15″ Dia.	4¼″	6¾″	5¼″	2″	Cast Iron	3″	2745T12	93.06
750	15″ Dia.	4¼″	6¾″	5¼″	2″	Phenolic	3″	2745T13	93.06
(B) With Small Recessed Center									
525	12″ Dia.	4¼″	1¾″	1¼″	1¼″	Rubber	2½″	2745T2	107.87
525	12″ Dia.	4¼″	1¾″	1¼″	1¼″	Cast Iron	2½″	2745T1	107.87
(C) With Small Recessed Center and Lip									
400	19¾″ Lg. × 8″ Wd.	3½″	3″	¾″	1″	Rubber	2½″	9009T4	70.20

Air-Glide Multidirectional Dolly Kits

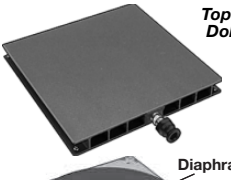

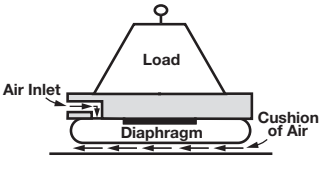

Also known as bearing movers, air casters, and air bearings, these dollies float your load on a cushion of air. As air escapes out of the neoprene air diaphragm located under the aluminum top plate, your load is lifted for easy, frictionless movement in any direction over smooth surfaces. Not only are these dollies ideal for unevenly distributed loads, their low lift height reduces the risk of injury to personnel and damage to your equipment.

Kits include four dollies, a regulator with an on/off control to ensure proper air flow to each dolly, and four 20-ft. long hoses with quick-connect fittings.

Total Cap., lbs.	Cap., per Dolly, lbs.	Overall Size, Lg. × Wd. × Ht.	Lift Ht.	Full Load cfm @ 90 psi	Air Inlet	Kits	Each	Additional Dollies	Each
8,000	2,000	12⅛″ × 12⅛″ × 1 7/8″	¾″	12	½″	8787T72	$4,526.93	8787T92	$628.62
14,000	3,500	15⅛″ × 15⅛″ × 1 7/8″	⅞″	14	½″	8787T73	5,627.73	8787T93	863.49
28,000	7,000	21 3/16″ × 21 3/16″ × 2″	1⅛″	16	¾″	8787T74	7,608.53	8787T94	1,327.30

Warning! **Never exceed capacities.**

Sheet and Panel Cradle Dollies

Make transporting large, long loads such as doors, sheet stock, and partitions a one-person job. Dollies have a carpet-covered, 3/16″ thick steel cradle for a nonmarring contact surface. The cradle adjusts to accommodate a variety of load widths. All roll on two never-go-flat rubber (also known as semi-pneumatic) wheels. Shipped assembled.

Cap., lbs.	Cradle Wd.	Cradle Size, Lg.×Ht.	Wheel Dia.		Each
300	1″ -2½″	4″×5½″	8″	2754T11	$137.27
300	2½″-4½″	4″×5½″	8″	2754T12	137.27
300	4¼″-9½″	4″×5½″	8″	2754T13	146.36

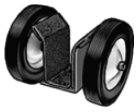

Sheet and Panel Trucks

A

B

C

D

E 2,400-lb. Capacity

F

G With Optional Handle

A-Frame Trucks

Quickly and easily load these trucks from both sides. All have welded steel construction. Shipped assembled.

(A) Trucks have a 1″ high lip along the length of the deck to keep your load from sliding off. They have a 12-ga. steel deck, a gray powder-coated finish, and roll on four swivel casters with phenolic wheels.

(B) Have nonmarring neoprene pads on contact surfaces, blue nylon web tie-down straps with zinc-plated quick-tight cam-style buckles, and welded forklift pockets. Made of 1/4″ thick steel with a hot-dipped galvanized finish for corrosion resistance. Roll on two rigid and two swivel casters with phenolic wheels. Swivel casters have a side wheel brake. All casters have a quick-release pin for easy removal to convert the trucks to storage racks. Overall height is reduced by 11″ without casters.

Cap., lbs.	Deck Size, Lg.×Wd.×Ht.	O'all Ht.	Usable Ht.	Usable Deck per Side	Wheel Dia.		Each
(A) Medium Duty							
2,000	36″×24″× 7¾″	57″	48″	6″	6″	2570T11	$296.40
2,000	48″×24″× 7¾″	57″	48″	6″	6″	2570T12	319.20
2,000	48″×30″× 7¾″	57″	48″	9″	6″	2570T22	347.70
2,000	60″×30″× 7¾″	57″	48″	9″	6″	2570T24	376.20
2,000	72″×36″× 7¾″	57″	48″	12″	6″	2570T34	401.11
(B) Heavy Duty							
4,000	82″×44″×19″	69″	48″	15″	8″	9938T41	1,371.27
4,000	96″×44″×19″	81″	60″	16″	8″	9938T51	1,697.74

Rail Trucks

Trucks have a flush deck for easy loading and unloading from the ends. Their removable rails allow you to configure the truck to suit your load. All roll on two rigid and two swivel casters (unless noted). Shipped unassembled.

(C) Trucks are corrosion resistant and easy to clean. Deck is reinforced with steel and has a gray nonskid surface. The rails are steel with a gray powder-coated finish.

(D) Made of 12-ga. steel. The deck is reinforced and has a red vinyl coating for a nonskid, nonmarring contact surface. Rails have cross-bars for added strength and a silver painted finish.

(E) *1,200-lb. capacity truck* is 12-ga. steel with a gray powder-coated finish. *2,400-lb. capacity trucks* are made of 16-ga. steel with a silver painted finish. The deck and top half of the rails have a red vinyl coating for a nonskid, nonmarring contact surface.

(F) Rails at three different heights offer greater versatility. Trucks have a 12-ga. steel deck and a gray powder-coated finish.

(G) Deck is 12-ga. steel. All trucks have a powder-coated finish. The deck is gray; the rails are blue. The two swivel casters have a face wheel brake.

Cap., lbs.	Deck Size, Lg.×Wd.×Ht.	O'all Ht.	No. of Rails	Rail Ht.	Width Between Rails	Rail Sockets per End	Wheel Type	Wheel Dia.		Each
Solid Polyethylene Deck with Removable Rails										
C 2,000	48″×24″ ×10⅜″	38½″	3	28⅛″	9″	3	Polyurethane	6″	2632T71	$697.30
C 2,000	60″×30″ ×10⅜″	38½″	3	28⅛″	12″	3	Polyurethane	6″	2632T72	743.90
Expanded Steel Deck with Removable Rails										
D 3,200	54″×30″ ×11¾″	38″	2	26¼″	8½″	4	Polypropylene	8″	2225T61	686.29
Open Steel Deck with Removable Rails										
E 1,200	31″×28″ × 8″	35″	3	27″	12″	3	Polyurethane	5″	2225T49 ♦	218.33
E 2,400	36″×27½″× 7½″	33¾″	3	26″	11⅞″	3	Phenolic	5″	2225T51	389.42
E 2,400	36″×27½″× 7½″	52½″	3	45″	11⅞″	3	Phenolic	5″	2225T52	503.65
Solid Steel Deck with Removable Rails										
F 2,000	36″×24″ × 9″	46″	6	12″/24″/36″●	2½″	7	Phenolic	6″	2765T41	405.37
F 2,000	48″×24″ × 9″	46″	6	12″/24″/36″●	2½″	7	Phenolic	6″	2765T42	430.56
F 2,000	60″×30″ × 9″	46″	6	12″/24″/36″●	3½″	7	Phenolic	6″	2765T43	476.37
G 3,600	36″×24″ × 9″	36″	2	27″	6″	4	Polyurethane	6″	2765T44	353.11
G 3,600	48″×24″ × 9″	36″	2	27″	6″	4	Polyurethane	6″	2765T45	374.62
G 3,600	60″×30″ × 9″	36″	2	27″	8″	4	Polyurethane	6″	2765T46	405.91

♦ Has four swivel casters. ● Includes two rails of each height.

Accessories for Style G

Extra Rails		Each
For 2765T44	2765T51	$47.50
For 2765T45	2765T52	53.44
For 2765T46	2765T53	61.35

Opt. 1½″ High Deck Lip		Each
For 2765T44	2765T54	$24.94
For 2765T45	2765T55	27.71
For 2765T46	2765T56	29.69

Opt. Push Handle		Each
For 2765T44 and T45	2765T57	$31.67
For 2765T46	2765T58	31.67

Warning! **Never exceed capacities.**

Bar and Pipe Cradle Trucks

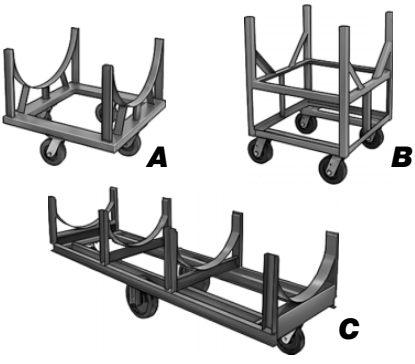

Let gravity keep your long loads centered and balanced—great for pipe, bar stock, and channel. The open design allows easy loading and unloading with forklifts and slings. All have welded steel construction. Color is gray. Shipped assembled.

(A) Quick-turn trucks have casters mounted in a diamond pattern for better maneuverability. 2270T3 rolls on four swivel casters with phenolic wheels. 8780T11 rolls on two rigid and two swivel casters with steel wheels.

(B) Ergo-height truck has a higher cradle height for less bending during loading and unloading. It rolls on four swivel casters with phenolic wheels.

(C) High-capacity truck moves and stores your heaviest loads. It has a swivel caster with a phenolic wheel on each end and two axle-mounted phenolic wheels in the center for better maneuverability and rolling over obstructions.

Cap., lbs.	Overall Size, Lg.×Wd.×Ht.	No. of Cradles	Cradle Size, Ht.×Wd.×Dp.	Wheel Dia.		Each
(A) Quick Turn						
3,000	29″×29″×25″	2	12¾″×26″×13½″	6″	2270T3	$431.11
4,000	60″×28″×27½″	3	12¾″×26″×13½″	8″	8780T11	496.00
(B) Ergo Height						
3,000	24″×24″×34″	2	20″ ×21″×14″	6″	8780T53	373.67
(C) High Capacity						
10,000	96″×28″×29″	4	16″ ×24″×13″	12″/8″	2270T5	704.77

Bar and Pipe Dolly

The combination of an offset handle and a V-shaped cradle lets one person balance and move loads up to 20″ in diameter and 20-ft. long. Dolly is welded steel and consists of a 3/16″ thick cradle and a 36″ long T-style handle with vinyl grips. It rolls on two axle-mounted pneumatic wheels. Color is gray. Shipped assembled.

Cap., lbs.	Cradle Size, Lg.×Wd.	Wheel Dia.		Each
1,000	30″×12″	16″	2727T66	$390.56

Easy-Tote Spool Carriers

Take spools right where you need them. These convenient carriers consist of a steel frame with a black powder-coated finish and a removable galvanized steel spindle. Shipped assembled. Spools not included.

Cap., lbs.	Max. No. of Spools	Max. Spool Dia.	Spindle Size, Dia.×Lg.	Overall Size, Lg.×Wd.×Ht.		Each
50	5	7″	5/8″×23″	24″×8″× 7½″	22315T61	$109.01
70	3	11″	5/8″×23″	24″×8″×11½″	22315T62	114.19

Spool Storage Racks

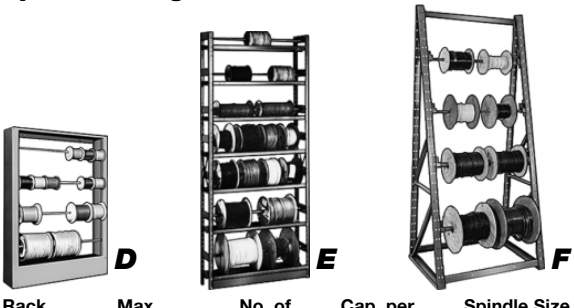

Keep spools of wire, cable, hose, chain, rope, and tubing neat and orderly with these steel racks. Shipped unassembled. Spools not included.

(D) Made of 19-ga. steel with a gray powder-coated finish. Spindles are polished steel. Racks have four 3/8″ dia. mounting holes (fasteners not included).

(E) Consists of a 13-ga. steel frame, galvanized steel spindles, and seven V-shaped shelves for additional support. Frame and shelves have a gray enamel finish. Shelves adjust in 1½″ increments.

(F) Schedule 40 pipe spindles support your heaviest spools. The frame is 7-ga. steel with spindle brackets that adjust in 2″ increments. Frame has a gray enamel finish; spindle brackets have an orange enamel finish. *Note:* These racks should be securely bolted to the floor (fasteners not included). ***Add-on sections*** include all the components needed to attach to a rack and extend the width for additional storage.

Rack Cap., lbs.	Max. Spool Dia.	No. of Spindles	Cap. per Spindle, lbs.	Spindle Size, Dia.×Lg.	Overall Size, Lg.×Wd.×Ht.	***Racks***	Each	***Add-On Sections***	Each
(D) Wall Mount/Bench Top									
120	7″	2	60	5/8″	×25¾″ 26⅛″× 6″×17⅞″	4702T12	$70.94	———	———
240	7″	4	60	5/8″	×25¾″ 26⅛″× 6″×37⅛″	4702T11	103.96	———	———
(E) Floor Rack with Shelves									
1,050	16″	7	100	11/16″	×35¾″ 36″ × 8″×84″	5079T23	537.59	———	———
(F) Bolt to Floor									
8,000	48″	4	2,000	2″	×36″ 44″ ×24″×96″	9335T31	696.17	9335T61	$548.37
8,000	48″	4	2,000	2″	×36″ 44″ ×36″×96″	9335T33	729.32	9335T63	564.95
8,000	48″	4	2,000	2″	×48″ 56″ ×24″×96″	9335T32	750.57	9335T62	597.74
8,000	48″	4	2,000	2″	×48″ 56″ ×36″×96″	9335T34	794.88	9335T64	616.80

Adjustable-Spindle Mobile Spool Rack

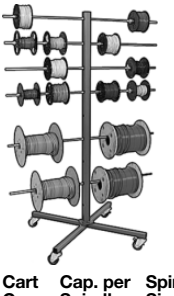

Simply designed to store a lot of spools and make dispensing easy. Six aluminum spindles extend out 22″ from both sides of the frame and adjust in 7″ increments to accommodate spools up to 24″ dia. Spools are secured to the spindles with the included shaft collars. The frame is tubular steel with a gray powder-coated finish. Rack rolls on four swivel casters (two with a side wheel brake) with polyurethane wheels. Shipped unassembled. Spools not included.

Cart Cap., lbs.	Cap. per Spindle, lbs.	Spindle Size, Dia.×Lg.	Overall Size, Lg.×Wd.×Ht.	Wheel Dia.		Each
900	150	¾″×44″	32″×48″×70″	3″	8762T48	$339.23

Spool Cart

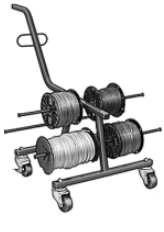

All-in-one convenience—transport, store, and dispense wire from this cart. Three steel spindles extend out 12½″ from both sides of the frame to hold up to twelve 7″ Dia.×5½″ Wd. or six 7″ Dia.×12¼″ Wd. spools. A welded ¾″ dia. washer on the end of the spindles keeps spools in place. A wire guide on the handle allows for controlled dispensing. The frame is red square steel. Cart rolls on four swivel casters (two with a side wheel brake) with solid rubber wheels. Casters must be installed (fasteners included). Spools not included.

Cart Cap., lbs.	Cap. per Spindle, lbs.	Spindle Size, Dia.×Lg.	Overall Size, Lg.×Wd.×Ht.	Wheel Dia.		Each
300	50	½″×26″	26″×16″×16½″	3″	2595T1	$144.12

Warning! ***Never exceed capacities.***

Removable-Rack Spool Hand Truck

Load up this truck and transport all your spools at the same time, or leave the truck where it is and utilize the removable racks to hand carry only the spools you need.

The truck has three 17″ wide racks and two 22″ wide racks. All have a ½″ dia. spindle. The truck also has a built-in tray and two holders for conduit benders up to 1″ dia. It rolls on two never-go-flat rubber (also known as semi-pneumatic) wheels. Made of steel with a red finish. Shipped assembled. Spools not included.

Opt. wire guide slips over the load plate and has ten ½″ dia. holes for controlled wire dispensing. ***Opt. tool box*** has removable dividers and includes mounting hardware. Truck can hold two tool boxes.

Cap., lbs.	Max. Spool Dia.	Overall Size, Lg.×Wd.×Ht.	Wheel Dia.		Each
300	7½″	19″×18″×46″	8″	22395T4	$418.58
Optional Steel Wire Guide—14″ Lg.×14″ Wd.				22395T5	66.29
Optional Steel Tool Box—11″ Lg.×6″ Wd.×5″ Ht.				22395T6	62.87

Roll-On Low-Profile Reel Stands

No need to lift heavy reels—just roll them up the built-in ramp for easy loading. Rollers on the top of the stands allow the reels to spin freely as you wind or dispense rope, wire, hose, and chain. Stands have four mounting holes for permanent installation (fasteners not included). Shipped assembled.

1,200-lb. capacity stand holds reels up to 28″ wide. Made of ¼″ thick structural steel and 12-ga. steel. Color is green.

1,500-lb. capacity stand is designed to be used in pairs to accommodate reels of any width. Made of 7-ga. steel. Color is red and yellow.

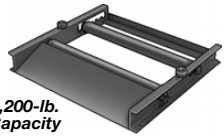

1,200-lb. Capacity

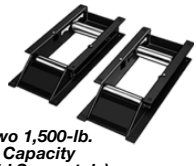

Two 1,500-lb. Capacity (Sold Separately)

Cap. Ea., lbs.	Overall Size, Lg.×Wd.×Ht.	Mounting Hole Dia.		Each
1,200	28 3/16″×31½″×5¼″	⅜″	2742T11	$386.21
1,500	29½″ ×11″ ×4½″	½″	2742T14	359.25

Reel Jacks

Speed up dispensing from your reels. Use a pair of these adjustable-height, heavy duty steel jacks to lift and support each end of a spindle (sold separately). A screw mechanism adjusts the height of the jacks, and rollers on the top of the jacks allow the spindle to spin freely. Color is green.

Cap. Ea., lbs.	Jack Ht. Min.	Jack Ht. Max.	Max. Reel Dia. At Min. Ht.	Max. Reel Dia. At Max. Ht.	Base Size, Lg.×Wd.		Each
2,500	13″	28″	28″	56″	14½″×20″	2985T12	$198.59
2,500	22″	54″	46″	96″	24″ ×23″	2985T13	275.75
Spindle for Reel Jacks—2⅜″ Dia.×62″ Lg.						2985T27	199.74

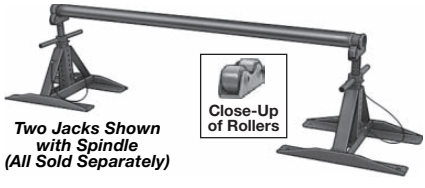

Two Jacks Shown with Spindle (All Sold Separately)

Single-Cylinder Hand Trucks

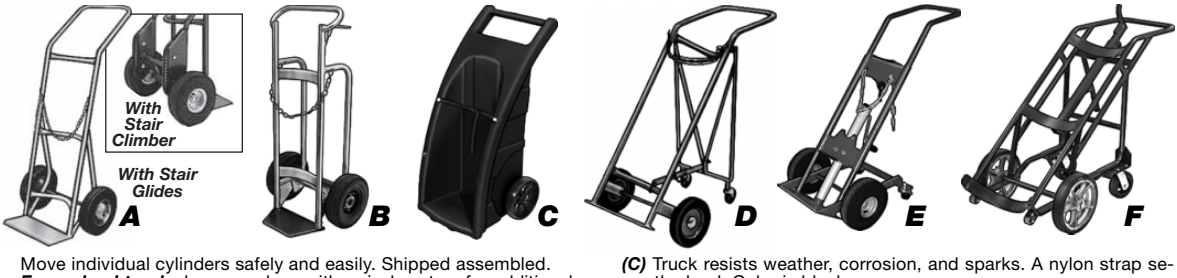

Move individual cylinders safely and easily. Shipped assembled.

Four-wheel trucks have rear legs with swivel casters for additional stability and better mobility. ***Steel*** and ***aluminum trucks*** are welded and have cross braces that support the cylinder when the truck is tilted.

(A) Trucks have a chain to secure the load and a green powder-coated finish. Trucks *with stair glides* ease the load over stairs and curbs. Trucks *with stair climbers* have a rotating nylon belt for moving over stairs and curbs.

(B) Truck is lightweight and spark resistant. It has a chain to secure the load and a dual-wheel hand brake for better load control on stairs, ramps, and inclines.

(C) Truck resists weather, corrosion, and sparks. A nylon strap secures the load. Color is black.

(D) The rear legs fold for compact storage. Trucks have a chain with plastic sleeve to secure the load and a green powder-coated finish. *Conductive wheels* have resistivity less than 250,000 ohms.

(E) A built-in hand jack with a crank handle safely lifts the cylinder up to 11″ for placement. A tightening handle puts tension on the chain to secure the cylinder. Has a red powder-coated finish.

(F) Designed for larger cylinders. A flat hook secures the cylinder. Two 2″ dia. steel rollers on the front of the truck allow you to tilt the truck forward for easier loading. Has a green powder-coated finish.

Max. Cylinder Dia.	Cap., lbs.	Load Plate, Wd.×Dp.	Handle Ht.	Chain/Strap/ Hook Ht.	Wheel Type	Wheel Dia.		Each
Two-Wheel Trucks								
(A) Steel with Stair Glides								
9¼″	500	14″ × 7″	48″	27″	Rubber Tread	10″	8777T23	$128.91
9¼″	500	14″ × 7″	48″	27″	Pneumatic	10″	8777T25	150.71
9¼″	500	14″ × 7″	48″	27″	Never-Go-Flat	14″	8777T27	156.43
(A) Steel with Stair Climber								
9¼″	500	14″ × 7″	48″	27″	Rubber Tread	10″	8777T13	182.14
9¼″	500	14″ × 7″	48″	27″	Pneumatic	10″	8777T14	223.13
(B) Aluminum								
14″	600	14½″× 7″	49″	36″	Pneumatic	12″	6444T72	722.16
(C) Polyethylene								
12″	250	15½″×13″	46″	13″ and 25″	Polypropylene	10″	2230T51	151.43
Four-Wheel Trucks								
(D) Steel with Fold-Up Legs								
10½″	300	14″ × 6″	45½″	32″	Never-Go-Flat/Solid Rubber	8″/3″	2561T13	109.56
(D) Steel with Fold-Up Legs and Conductive Wheels								
10½″	300	14″ × 6″	45½″	32″	Never-Go-Flat/Solid Rubber	8″/3″	2561T12	199.17
(E) Steel Lift Assist								
12″	1,000	13″ ×11″	57″	28″	Pneumatic/Polypropylene	10″/3″	5012T51	494.46
(F) Steel For Large Diameter Cylinders								
20″	950	———	59″	50″ to 60″	Rubber Tread/Rubber Tread	12″/6″	5242T16	716.38

Warning! **Never exceed capacities.**

Double-Cylinder Hand Trucks

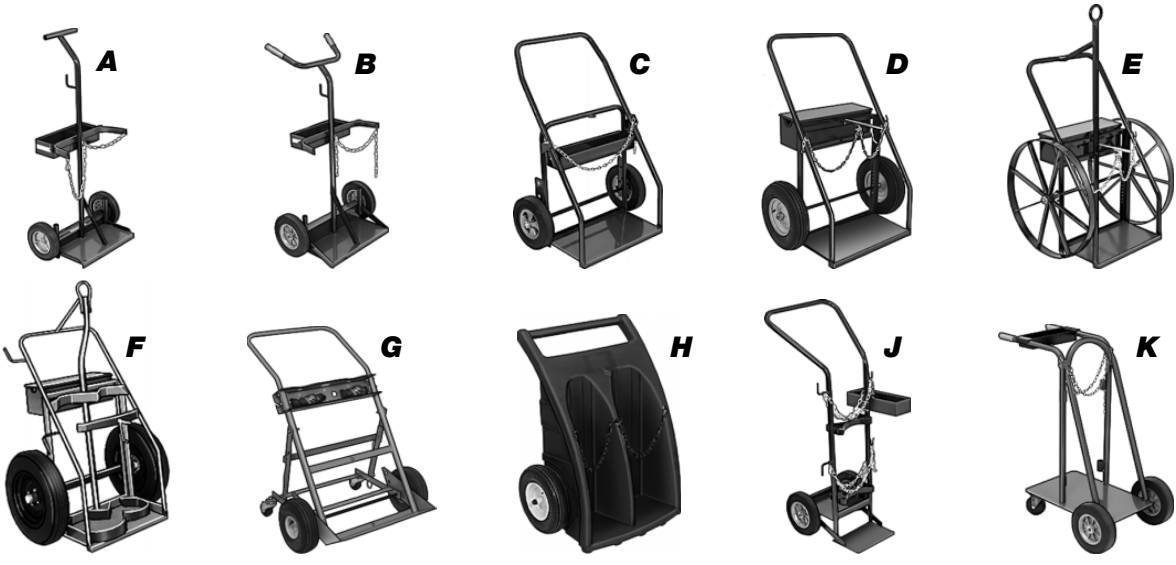

Two cylinders…one trip. Safely and easily transport two cylinders at a time with these trucks. Shipped assembled.

Front-to-back trucks are ideal for narrow aisles and confined spaces. ***Steel trucks*** have welded construction and a green powder-coated finish (unless noted).

(A&B) A lip at the back of the load plate prevents cylinders from sliding off. Trucks include a chain to secure the load, a hose hook, and a tool tray. *Style A* has a 3″ high lip; *Style B* has a 4½″ high lip.

(C) A 1″ high lip at the back of the load plate prevents cylinders from sliding off. Trucks include a tool tray and a chain to secure the load.

(D) A 1″ high lip at the back of the load plate prevents cylinders from sliding off. Truck includes a chain to secure the load and a lockable tool box.

(E) A 1″ high lip at the back of the load plate prevents cylinders from sliding off. Truck includes a chain to secure the load, a 62″ long handle with 3″ ID tow ring, and a lockable tool box. Max. tow speed is 5 mph.

(F) Raised containment rings on the load plate and a steel bar on the frame secure the load. Truck has a 61″ long handle with a 3″ ID ring for lifting or for towing up to 5 mph. The tow bar can be secured in the upright position for lifting.

(G) Rear legs with swivel casters provide added stability and better mobility. Legs fold up for compact storage. Quick-tight straps secure the load. *Optional tool tray* is 19⅞″ Lg.×5″ Wd.×5″ Ht. *Optional locking posts* fit into slots on the frame of the truck and over the collar of 7″ and 10″ cylinders for additional securement.

(H) Truck is lightweight and resists weather, corrosion, and sparks. Color is black. A chain secures the load.

(J) The trucks include two chains to secure each cylinder, two hose hooks, and a tool tray.

(K) The load plate has a 4¼″ floor clearance for easier moving over obstructions. Includes one chain to secure each cylinder and a removable tool tray.

	Max. Cylinder Dia.	Cap., lbs.	Load Plate, Wd.×Dp.	Handle Ht.	Chain/Band/ Strap Ht.	Wheel Type	Wheel Dia.		Each
Side-By-Side Trucks									
Steel									
A	9¼″	300	17″ × 8″	45″	22¾″	Never-Go-Flat	8″	**2521T11**	$75.67
B	10½″	350	20″ × 9″	45½″	22¾″	Rubber Tread	10″	**2521T14**	128.83
C	13½″	450	24″ ×13″	45¾″	27″	Rubber Tread	12″	**2624T3**	202.31
C	13½″	450	24″ ×13″	45¾″	27″	Pneumatic	16″	**2624T5**	254.62
D	13½″	500	24″ ×13″	48½″	24″	Pneumatic	16″	**8351T71**	382.50
E	13½″	500	24″ ×13″	48½″	24″	Steel	30″	**2527T14**	377.50
F	13½″/9¼″	500	24″ ×13″	49½″	24″	Pneumatic	21″	**9930T31**	737.69
G	12″	1,000	20¾″×10″	47″	28″	Pneumatic	10½″/3″	**5543T61** ♦	341.72
Polyethylene									
H	12″	500	13″ ×13″	45 3/16″	27″	Pneumatic	16½″	**2230T21**	335.71
Front-To-Back Trucks									
Steel									
J	12½″/10½″	400	12″ × 8″/11″×11″	49″	19″/34″	Never-Go-Flat	10″	**2560T31**	168.64
J	12½″/10½″	400	12″ × 8″/11″×11″	49″	19″/34″	Rubber Tread	10″	**2560T32**	166.95
K	12″/9″	800	15″ ×23¾″	40″	29″	Rubber Tread	10″/4″	**2625T14**■	221.09
Accessories for Style G									
Optional Tool Tray								**5543T62**	50.77
Optional Locking Posts (Set of Two)								**5543T63**	90.19

♦ Color is gray. ■ Has a green painted finish.

Steel Six-Cylinder and Eight-Cylinder Trucks

Eight-Cylinder Truck

Wheel multiple cylinders at a time right to where you need them. A chain on each side of the truck secures the cylinders during transport. Trucks have welded construction, an orange enamel finish, and roll on two rigid and two swivel casters with phenolic wheels. Shipped assembled.

Six-cylinder truck has a floor lock to keep the truck stationary during loading and unloading.

Eight-cylinder truck has a 10″ deep fold-down ramp for smooth loading and unloading. The two swivel casters have a side wheel brake.

No. of Cylinders	Max. Cylinder Dia.	Cap., lbs.	Load Plate, Wd.×Dp.	Handle Ht.	Chain Ht.	Wheel Dia.		Each
6	9¼″	1,500	46″ ×24″	42″	37″	6″	**2348T1**	$522.16
8	9¼″	1,500	60½″×24″	42″	37″	8″	**2348T2**	714.27

Warning! **Never exceed capacities.**

Pail Dollies

Take the work out of moving heavy pails—wheel them around on a dolly.

(A&B) Have durable welded 10- and 11-ga. steel construction and an orange enamel finish. Dollies roll on four swivel casters with polypropylene wheels. Shipped assembled.

Style A has a cross-brace deck. *Style B* has a solid deck.

(C) Made of chemical-resistant polypropylene and has a cross-brace deck. It rolls on five twin-wheel, friction-grip stem swivel casters with nylon wheels. The wheels are mounted outside of the deck for added stability. Color is beige. Casters must be installed.

A

B

C

Max. Pail Size, gal.	Cap., lbs.	Inside Dia.	O'all Ht.	Deck Ht.	Lip Ht.	Wheel Dia.		Each
Steel								
A ... 5	700	12¼″	6³⁄₁₆″	3⁹⁄₁₆″	2½″	2½″	**9915T11**	$63.04
B ... 5	700	12¼″	6³⁄₁₆″	3⁹⁄₁₆″	2½″	2½″	**9915T12**	77.62
Polypropylene								
C ... 6	75	11″	3¹¹⁄₁₆″	2¹⁵⁄₁₆″	¾″	1½″	**26135T11**	26.56

Solid-Deck Drum Dollies

D

E

F

G

Drums have a solid deck for great overall support and a lip to retain the load and contain spills.

(D) Made of 10- to 12-ga. steel with an orange enamel finish. Roll on four swivel casters with rubber wheels (unless noted). Shipped assembled.

(E) Ideal for harsh environments. Made of 14-ga. Type 304 SS. Roll on four swivel casters with polypropylene wheels. Shipped assembled.

(F) Made of lightweight yet strong ¼″ thick aluminum. Rolls on four swivel casters with polypropylene wheels. Casters must be installed (fasteners included).

(G) Polyethylene will not corrode and is dent and chip resistant. Color is black. Rolls on five swivel casters with polypropylene wheels. Shipped assembled.

Max. Drum Size, gal.	Cap., lbs.	Inside Dia.	O'all Ht.	Deck Ht.	Lip Ht.	Wheel Dia.		Each
(D) Steel								
30	900	19¼″	5½″	4″	2½″	3″	**9915T13**	$74.92
55	900	23¼″	5½″	4″	2½″	3″	**9915T14**	86.50
85	900	29″	5½″	4″	2½″	3″	**9915T15★**	92.96
(E) Type 304 Stainless Steel								
35	920	21″	5⅜″	5″	⅞″	3½″	**2608T61**	285.91
55	920	23½″	5½″	5″	1″	3½″	**2608T62**	298.74
(F) Aluminum								
55	900	24″	5¾″	3¾″	2″	3″	**2608T64**	268.91
(G) Polyethylene								
55	500	23½″	7⅛″	5⅛″	2″	3″	**2421T41**	111.84

★ Wheels are polypropylene.

Cross-Brace Deck Drum Dollies

H

J

K

L

M

Make transporting 30-, 55-, and 85-gal. drums less of a chore. All dollies have welded construction and roll on four swivel casters (unless noted). Shipped assembled.

Casters mounted outside the deck offer increased stability.

(H) A foot-operated tilter locks the drum at a 10° angle for easier emptying. Made of 11-ga. steel with a zinc-plated finish. Shipped assembled.

(J) Made of 10- and 12-ga. steel with a gray powder-coated finish (unless noted). Shipped assembled (unless noted).

(K) Five swivel casters provide maximum stability. Made of 10- and 12-ga. steel and have a gray powder-coated finish. Shipped assembled.

(L) Includes a removable 30″ long T-style handle for pulling. Made of 6-ga. steel with a gray painted finish. Shipped assembled.

(M) *Steel* are 10- and 11-ga. with an orange enamel finish. Shipped assembled.

Type 304 stainless steel have 10-ga. construction and are ideal for harsh environments. Shipped assembled.

Aluminum has lightweight yet strong ¼″ thick construction. Casters must be installed (fasteners included).

Max. Drum Size, gal.	Cap., lbs.	Inside Dia.	O'all Ht.	Deck Ht.	Lip Ht.	Wheel Type	Wheel Dia.		Each
Casters Mounted Outside Deck									
Steel with Drum Tilter									
H ... 55	900	23¼″	5¹¹⁄₁₆″	3¹¹⁄₁₆″	2″	Rubber	3″	**9915T31**	$115.64
H ... 55	1,200	23¼″	5¹¹⁄₁₆″	3¹¹⁄₁₆″	2″	Cast Iron	3″	**9915T32**	132.00
Steel									
J ... 30	1,000	19¼″	5¾″	3⅞″	2½″	Polypropylene	3″	**2412T25**	70.88
J ... 55	900	24″	5¾″	4″	2″	Rubber	3″	**9915T16●**	105.91
J ... 55	1,000	23¼″	6½″	3¾″	2½″	Polypropylene	3″	**2412T26**	77.14
J ... 55	1,400	23¼″	6½″	4″	2½″	Polypropylene	3″	**2412T27**	84.89
K ... 55	1,250	23¼″	6½″	3⅞″	2½″	Polypropylene	3″	**2412T41**	90.74
K ... 55	1,400	23¼″	6½″	3⅞″	2½″	Cast Iron	3″	**2412T42**	102.31
Casters Mounted Under Deck									
Steel with Handle									
L ... 55	1,000	24″	5⅞″	3⅞″	2″	Rubber	3″	**9917T91**	130.77
Steel									
M ... 30	700	19¼″	5¼″	3¾″	2½″	Rubber	2½″	**9915T5**	58.02
M ... 30	900	19¼″	5¼″	3¾″	2½″	Steel	2½″	**9915T6**	80.40
M ... 30	900	19¼″	5½″	4″	2½″	Rubber	3″	**9915T1**	67.35
M ... 30	1,200	19¼″	5½″	4″	2½″	Steel	3″	**9915T3**	85.31
M ... 55	700	23¼″	5¼″	3¾″	2½″	Rubber	2½″	**9915T7**	54.02
M ... 55	900	23¼″	5¼″	3¾″	2½″	Steel	2½″	**9915T8**	88.87
M ... 55	900	23¼″	5½″	4″	2½″	Rubber	3″	**9915T2**	57.60
M ... 55	1,200	23¼″	5½″	4″	2½″	Steel	3″	**9915T4**	83.41
M ... 85	900	29″	5½″	4″	2½″	Polypropylene	3″	**9915T9**	75.24
Type 304 Stainless Steel									
M ... 30	800	19″	6⅛″	4″	2⅛″	Rubber	3″	**2608T12**	158.44
M ... 55	800	24″	6⅛″	4″	2⅛″	Rubber	3″	**2608T14**	175.25
Aluminum									
M ... 55	900	24″	5¾″	3¾″	2″	Polypropylene	3″	**2608T63**	137.82

● Made of 12-ga. steel with an orange painted finish. Casters must be installed (fasteners included).

Optional Center Caster with Polypropylene Wheel for 2412T41 ..... **2412T43** **Each** $8.63
Optional Center Caster with Cast Iron Wheel for 2412T42 ..... **2412T44** **Each** $11.88

Warning! ***Never exceed capacities.***

Octagonal-Frame Drum Dollies

Parallel-Brace Deck

Solid Deck with Optional Sorbent Sock

Go ahead, give them your heavy loads, these dollies can take it. All have welded steel construction and roll on four swivel casters.

Parallel-brace deck offers extra strength and provides good load distribution. Made of 14-ga. steel with a black painted finish. Shipped assembled.

Solid deck is oversized to handle overpack drums. It can accommodate a sorbent sock (sold separately) to soak up spills and leaks. Made of 1/8″ thick steel with a yellow enamel finish. Casters must be installed (fasteners included).

Max. Drum Size, gal.	Cap., lbs.	Inside Wd.	O'all Ht.	Deck Ht.	Lip Ht.	Wheel Type	Wheel Dia.		Each
Parallel-Brace Deck									
55	800	23½″	5″	4″	1″	Polypropylene	3″	8743T2	$61.75
55	1,500	23½″	6″	5″	1″	Rubber	4″	8743T3	103.41
Solid Deck									
85	1,000	30⅝″	5⅝″	3⅞″	1⅞″	Polypropylene	3″	22175T21	127.27

Optional 3″ Dia. × 84″ Lg. Sorbent Sock for 22175T21 ..... **7193T67** **Each** 1-6 $11.32 7-Up $10.11

Cross-Brace Deck All-Shape Drum Dollies

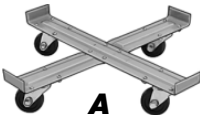

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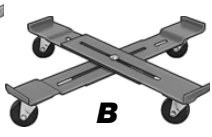

B

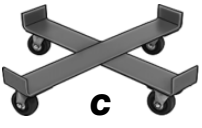

C

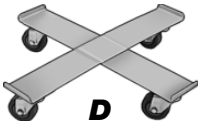

D

Not only do these dollies transport round drums, most are also capable of handling square cartons and crates. Dollies roll on four swivel casters. Shipped assembled.

(A) Made of 13-ga. steel with a gray epoxy finish. Wheels are polypropylene.

(B) Adjust the cross braces to fit your load. Made of 7-ga. steel with an orange enamel finish. Wheels are rubber.

(C) Made of 1/4″ thick steel with a blue painted finish. Wheels are rubber. *Note*: Not recommended for square containers.

(D) Made of 10-ga. Type 304 stainless steel for corrosion resistance. Wheels are rubber.

Max. Drum Size, gal.	Cap., lbs.	Braces Lg.	Braces Wd.	O'all Ht.	Deck Ht.	Lip Ht.	Wheel Dia.		Each
Bolted Deck									
(A) Steel									
55	1,000	24″	3½″	5⅛″	4″	1½″	3″	28005T6	$51.38
(B) Steel with Adjustable Cross Braces									
30	1,000	14¼″-19¼″	4⅛″	5¼″	4¼″	1″	3″	27745T5	96.69
85	1,000	23½″-36½″	4⅛″	5¼″	4¼″	1″	3″	27745T4	111.84
Welded Deck									
(C) Steel									
15	1,000	16″	4″	6″	4″	2″	3″	2713T39	88.54
55	1,000	24½″	4″	6″	4″	2″	3″	2713T21	91.95
(D) Type 304 Stainless Steel									
55	800	24″	4½″	4 13/16″	4 1/16″	¾″	3″	2713T42	136.50

Square-Frame Drum and Crate Dollies

Open Deck

Solid Deck

A removable T-style handle and a square deck make these dollies easier to push, pull, and steer along walls and aisles. Dollies are capable of handling both round drums and square cartons and crates. Both roll on four swivel casters. Shipped assembled.

Open deck is 6-ga. steel with a gray painted finish and phenolic wheels. Handle is 31″ long. *Note:* Do not use with loads less than 23″ dia. or 23″ square.

Solid deck is 11-ga. steel with a blue polyester coating and a drain plug for spills and leaks. Wheels are polypropylene. Handle is 28″ long.

Max. Drum Size, gal.	Cap., lbs.	Inside Lg. × Wd.	O'all Ht.	Deck Ht.	Lip Ht.	Wheel Dia.		Each
Open Deck								
55	1,120	24″ × 24″	7 5/16″	5 5/16″	2″	4″	9917T92	$149.15
Solid Deck								
55	900	23⅝″ × 23⅝″	6″	4″	2″	3″	9917T88	149.93

Open-Front Drum Dolly Truck

A winning combination—an open front on the deck makes loading and unloading easier while a lip on the other three sides keeps the load from sliding off. The dolly truck can handle round drums as well as square crates and cartons. It has a removable tubular steel handle for pushing, pulling, and steering. The handle has a cable and hose holder and a 12″ Lg. × 6″ Wd. × 12″ Dp. steel tool box.

The dolly truck is 12-ga. steel with a gray enamel finish and rolls on two rigid and two swivel casters with phenolic wheels. Shipped assembled.

Max. Drum Size, gal.	Cap., lbs.	Inside Lg. × Wd.	O'all Size, Lg. × Wd. × Ht.	Deck Ht.	Lip Ht.	Wheel Dia.		Each
55	2,000	25″ × 25″	33″ × 25″ × 41″	6½″	2″	5″	2367T51	$192.52

Easy-Load Drum Dolly Trucks

Maximize stability and minimize spills. Dolly trucks have a large, open deck that sits low to the ground to slide under drums for better support and minimal tipping. A T-style tubular steel handle pivots out for pulling, locks upright for pushing, and folds in for storage. All have welded 5/16″ thick steel construction, an orange enamel finish, and roll on two axle-mounted front wheels and one center-mounted rear swivel caster. Shipped assembled.

For Drum Size, gal.	Cap., lbs.	Inside Wd. × Dp.	O'all Size, Wd. × Ht.	Deck Ht.	Lip Ht.	Wheel Type	Wheel Dia.		Each
55	1,000	27″ × 16½″	33″ × 38½″	½″	3½″	Rubber/Polypropylene	6″/3″	2642T51	$132.18
55	1,200	27″ × 16½″	33″ × 38½″	½″	3½″	Polypropylene	6″/3″	2642T52	122.37
55	1,200	27″ × 16½″	33″ × 38½″	½″	3½″	Steel	6″/3″	2642T53	147.07

Warning! **Never exceed capacities.**

Drum Trucks

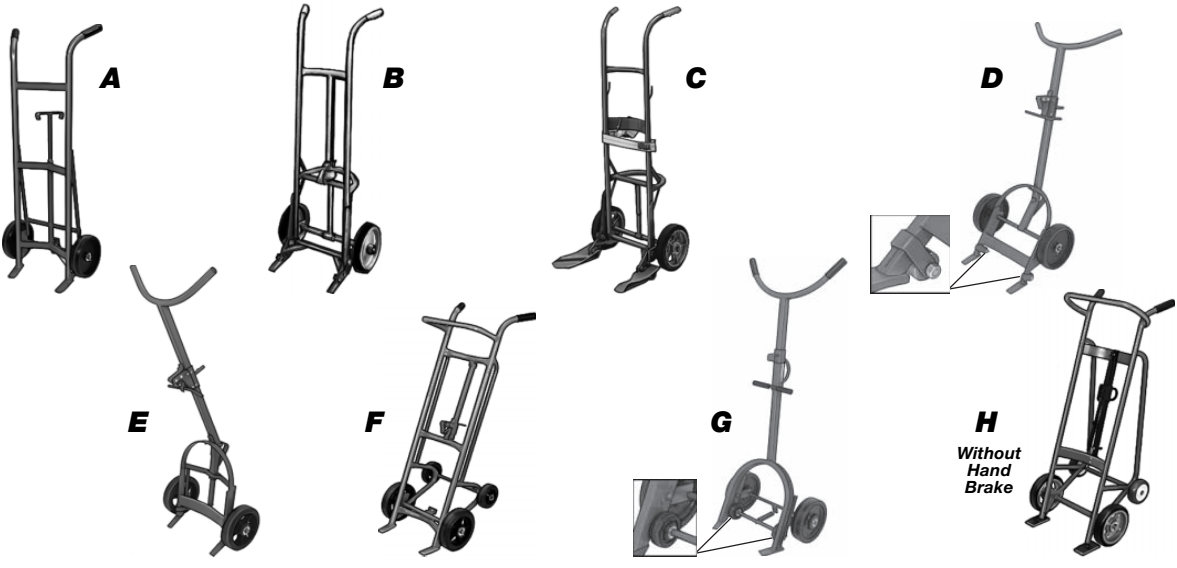

All have welded construction, axle-mounted wheels, and load wedges that slide under the drum for lifting.

Two-wheel trucks are great for transporting drums over short distances. ***Four-wheel trucks*** offer better load support and take the strain off your arms and back. Ideal for heavier loads, traveling longer distances, and loading and unloading drums from pallets.

Steel trucks handle your most demanding application. ***Aluminum*** trucks are lightweight, easy to move, and spark resistant.

(A) Has a kickstand to keep the truck standing, an adjustable rim catch that clamps to the top of the drum to secure it, dual handles with grips, and an orange enamel finish.

(B) Have an upright design that keeps the trucks standing, an adjustable rim catch that clamps to the top of the drum to secure it, and a spring-loaded axle that makes it easier to tilt the trucks backwards and get them rolling. Trucks also have dual handles with grips and an orange enamel finish.

(C) Have an upright design that keeps the trucks standing, a 2″ wide strap with spring-loaded cinching buckle to secure the drum, and a spring-loaded axle that makes it easier to tilt the trucks backwards and get them rolling. The strap is 27″ high when trucks are in the upright position. Trucks also have dual handles with grips and an orange enamel finish.

(D) A curved frame creates a cradle for the drum and keeps the trucks standing. Rollers on the load wedges make it easy to load and unload drums from pallets. Trucks also have an adjustable rim catch that clamps to the top of the drum to secure it, dual handles, and an orange enamel finish.

(E) Have an upright design that keeps the trucks standing, a curved frame to cradle the drum for balanced loading and unloading, an adjustable rim catch that clamps to the top of the drum to secure it, and a spring-loaded axle that makes it easier to tilt the trucks backwards and get them rolling. Trucks also have dual handles and an orange enamel finish.

(F) Trucks are balanced to stay standing and have dual handles with grips as well as a loop handle for better control. They also have an adjustable rim catch that clamps to the top of the drum to secure it and an orange enamel finish.

(G) Have a heavy duty cradle, an upright design that keeps the trucks standing, an adjustable rim catch that clamps to the top of the drum to secure it, and a spring-loaded axle that makes it easier to tilt the trucks backwards and get them rolling. Trucks also have dual handles with grips and a red powder-coated finish.

(H) A spring-loaded rim catch automatically clamps to the top lip of the drum as the drum is tilted, eliminating the need for manual attachment and adjustment. Trucks are balanced to stay standing and have dual handles with grips as well as a loop handle for better control. *Steel trucks* have a green enamel finish.

2850T11 and 2850T13 also have a hand brake for more control on ramps and inclines.

	For Drum Sizes gal.	Ht.	Dia.	Cap., lbs.	For Drum Types	O'all Size, Wd.×Ht.	Wheel Type	Wheel Dia.		Each
Two-Wheel Trucks										
Steel										
A	30, 55	30″	-42″ 18″ -24″	1,000	Steel	25½″×59″	Polypropylene	10″	**2776T91**	$169.13
B	30, 55, 85	20″	-41″ 17″ -23″	1,000	Steel	23¾″×61″	Polypropylene	10″	**2311T13**	324.11
B	30, 55, 85	20″	-41″ 17″ -23″	1,000	Steel	23¾″×61″	Rubber Tread	10″	**2311T14**	345.54
C	30, 55	28½″	-50″ 18″ -24″	1,000	Steel, Fiber, Plastic	23½″×59½″	Rubber Tread	10″	**23615T3**	426.64
C	30, 55, 85	28½″	-50″ 18″ -34″	1,000	Steel, Fiber, Plastic	23½″×59½″	Rubber Tread	10″	**23615T4**	438.77
D	30, 55, 85	25″	-48″ 18″ -34″	1,000	Steel, Fiber	24½″×59″	Polypropylene	10″	**2865T2**	206.64
D	30, 55, 85	25″	-48″ 18″ -34″	1,000	Steel, Fiber	24½″×59″	Rubber Tread	10″	**2865T4**	262.09
D	30, 55, 85	25″	-48″ 18″ -34″	1,000	Steel, Fiber	24½″×59″	Steel	10″	**2865T3**	303.33
E	30, 55, 85	25″	-48″ 18″ -34″	1,000	Steel, Fiber	24½″×59″	Polypropylene	10″	**8755T53**	256.33
E	30, 55, 85	25″	-48″ 18″ -34″	1,000	Steel, Fiber	24½″×59″	Rubber Tread	10″	**8755T51**	302.31
E	30, 55, 85	25″	-48″ 18″ -34″	1,000	Steel, Fiber	24½″×59″	Steel	10″	**8755T52**	335.58
Four-Wheel Trucks										
Steel										
F	30, 55	28″	-40″ 18″ -24″	1,000	Steel, Fiber	24½″×62″	Polypropylene	10″/6″	**2637T2**	263.71
F	30, 55	28″	-40″ 18″ -24″	1,000	Steel, Fiber	24½″×62″	Rubber Tread	10″/6″	**2637T4**	316.77
F	30, 55	28″	-40″ 18″ -24″	1,000	Steel, Fiber	24½″×62″	Steel	10″/6″	**2637T3**	351.94
G	5-85	24½″	-48″ 13″ -27″	1,000	Steel, Fiber, Plastic	24″×61″	Phenolic	10″/4″	**2514T3**	299.12
G	5-85	24½″	-48″ 13″ -27″	1,000	Steel, Fiber, Plastic	25¼″×61″	Thermoplastic Rubber (TPR)	10″/4″	**2514T4**	325.23
H	30, 55	23″	-37″ 19¼″ -23½″	1,000	Steel, Fiber, Plastic	24½″×59″	Rubber Tread/Polyurethane	10″/6″	**2850T15**	591.62
H	30, 55	23″	-37″ 19¼″ -23½″	1,000	Steel, Fiber, Plastic	26″×59″	Pneumatic/Polyurethane	12½″/6″	**2850T16**	577.46
Steel with Hand Brake										
H	30, 55	23″	-37″ 19¼″ -23½″	1,000	Steel, Fiber, Plastic	24½″×59″	Rubber Tread/Polyurethane	10″/6″	**2850T11**	797.23
Aluminum										
H	30, 55	23″	-37″ 18″ -24″	1,000	Steel, Fiber, Plastic	24½″×59″	Rubber Tread/Polyurethane	10″/6″	**2850T17**	635.86
H	30, 55	23″	-37″ 18″ -24″	1,000	Steel, Fiber, Plastic	26″×59″	Pneumatic/Polyurethane	12½″/6″	**2850T18**	666.29
Aluminum with Hand Brake										
H	30, 55	23″	-37″ 18″ -24″	1,000	Steel, Fiber, Plastic	24½″×59″	Rubber Tread/Polyurethane	10″/6″	**2850T13**	849.63

Warning! ***Never exceed capacities.***

Raise-It Drum Trucks

A

B

C

Lift, transport, and place drums without a forklift. A V-style base makes it easy to load and unload drums from pallets and platforms. All trucks are made of steel with an enamel finish.

(A) A U-shaped handle engages a gas spring and ratchet mechanism to lift, hold, and release the drum. The length of the handle provides proper leverage, and the base has built-in counterbalance for stability. Three alloy steel hooks securely hold the drum below the rim. For easy steering, the truck rolls on two front axle-mounted polypropylene wheels and two rear swivel casters with polypropylene wheels. Color is blue. Shipped unassembled.

(B) A hand-operated hydraulic pump lifts and lowers the drum while a claw-style grabber attaches to the rim of the drum for a secure hold. Dual handles provide controlled maneuverability. Truck has two front axle-mounted polypropylene wheels and a rear swivel caster with a phenolic wheel and side wheel brake to keep the truck stationary during lifting and lowering. Color is green. Shipped assembled.

(C) A dual foot-operated hydraulic pump lifts and lowers the drum while a spring-loaded clamp securely grips the rim of the drum. The legs are retractable for easier maneuvering in tight spaces. Truck has two front rigid casters and two rear swivel casters. Wheels are phenolic. A floor lock keeps the truck stationary during lifting and lowering. Color is orange. Shipped assembled.

	For Drum Sizes gal.	Ht.	Dia.	Cap., lbs.	For Drum Types	O'all Size, Wd. × Ht.	Handle Ht.	Max. Lift	Wheel Dia.		Each
A	55	34″ -36″	22″-23½″	800	Steel, Fiber, Plastic	49″ × 47″	21″-74½″	6½″	6″/4″	**22375T61**	$786.48
B	30, 55, 85	26¼″-32¼″	18″-26″	800	Steel	49⅞″ × 61¾″	45⅛″	20½″	6″/8″	**22375T4**	1,763.57
C	30, 55, 85	25½″-40″	18″-26″	1,100★	Steel, Fiber, Plastic	36¼″-41″ × 48¼″-79½″	41⅝″	20″	5″	**22375T5**	2,422.61

★ Capacity shown is with legs extended. Capacity is 650 lbs. with legs retracted.

Drum Trucks/Dispensing Stands

D

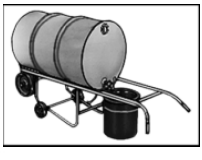
E

F

G

All-in-one convenience—trucks transport, store, and allow dispensing of drums. All have steel construction.

(D) Trucks have a drum saddle with a chain and ratchet-style tightener to secure the drum. Drums can be lifted 5⅛″ to 11″ from the floor. A handle lock prevents unintentional lowering and a tilt lock keeps the drum vertical. Release the tilt lock for mixing. Trucks roll on two front axle-mounted wheels and one rear swivel caster and have a blue enamel finish. Shipped unassembled.

(E) Trucks have a hook-style grabber that attaches to the rim of the drum for a secure hold, welded steel wedges that slide under the drum for easy loading, and dual handles with grips. When in the dispensing position, rollers on the frame allow you to rotate the drum for mixing. Trucks have an orange enamel finish. Shipped assembled.

(F) Truck has a 2″ wide polyester strap with spring-loaded cinching buckle to secure the drum, extra-wide load wedges for easy loading, dual handles with grips, and a kickstand to keep the truck standing. It rolls on two axle-mounted front and two axle-mounted rear wheels and has an orange enamel finish. Shipped assembled.

(G) Corrosion-resistant Type 304 stainless steel construction makes this truck great for harsh environments and washdown applications. Its unique design allows for easy loading and unloading of drums from pallets. Forged steel load wedges slide under the drum for easy loading and a spring-loaded kickstand keeps the truck standing and adds stability during dispensing. Shipped assembled.

	For Drum Sizes gal.	Ht.	Dia.	Cap., lbs.	For Drum Types	Approx. Drum Drain Ht.	O'all Size, Wd. × Ht.	Wheel Type	Wheel Dia.		Each
Steel											
D	55	34″-36″	22½″-24″	800	Steel, Plastic	17″	35¼″ × 66″	Polypropylene	8″/4″	**2646T17**	$623.70
D	55	36″	22½″	800	Steel	17″	35¼″ × 66″	Polypropylene	8″/4″	**2646T15**	567.00
E	55, 85	30″-40″	18″ -26″	1,000	Steel	14″	25″ × 62″	Polypropylene	10″/6″	**2493T13**	229.04
E	55, 85	30″-40″	18″ -26″	1,000	Steel	14″	25″ × 62″	Rubber Tread	10″/6″	**2493T11**	293.60
E	55, 85	30″-40″	18″ -26″	1,000	Steel	14″	25″ × 62″	Steel	10″/6″	**2493T12**	336.71
F	30, 55	34″-38″	17″ -23″	1,000	Steel, Fiber, Plastic	15″	23¾″ × 58″	Rubber Tread	10″/6″	**23615T5**	362.14
Type 304 Stainless Steel											
G	30, 55, 85	31″-41″	14″ -28″	1,000	Steel, Fiber, Plastic	12¾″	19¾″ × 62 11/16″	Polypropylene	8″	**2493T37**	797.74

Spill-Containment Drum Trucks/Dispensing Stands

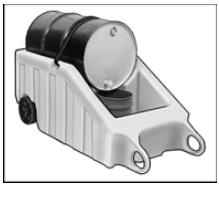

Lightweight yet durable, these corrosion-resistant polyethylene trucks/stands not only transport and dispense your drums, they also contain spills. A U-shaped platform with a recessed step and molded handles makes loading, unloading, and tipping to dispense easier. A 2″ wide nylon strap secures the drum. In the dispensing position, the drum is held at a slight downward angle for better flow. The spill containment reservoir has an 80-gallon capacity and two openings with ¾″ garden hose thread. Trucks/stands roll on two axle-mounted solid wheels and meet EPA 40 CFR 264.175. Shipped assembled.

For Drum Sizes gal.	Ht.	Dia.	Cap., lbs.	For Drum Types	Approx. Drum Drain Ht.	O'all Size, Lg. × Wd. × Ht.	Wheel Type	Wheel Dia.		Each
55	34″	24″	600	Steel, Fiber, Plastic	15″	26½″ × 32½″ × 69″	Polypropylene	10″	**25315T14**	$525.00
55	34″	24″	600	Steel, Fiber, Plastic	15″	26½″ × 34½″ × 69″	Rubber	10″	**25315T24**	576.92

Warning! **Never exceed capacities.**

Drum Dispensing Stands

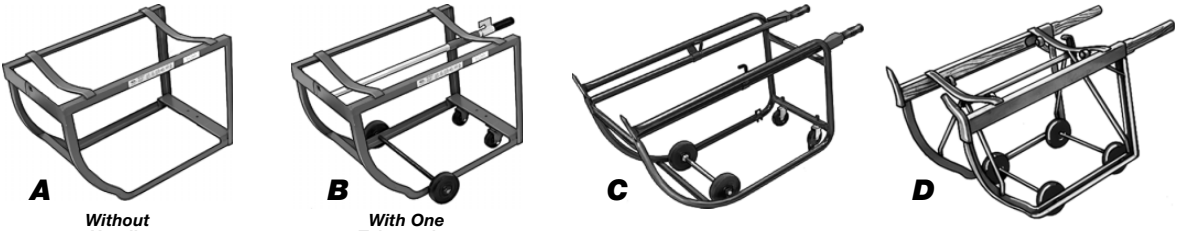

Without Handle — *With One Telescoping Handle*

Also known as drum cradles, these welded steel stands are an economical way to store, mix, and drain your drums. Shipped assembled.

Stationary stands are ideal for permanent storage. ***Mobile stands*** let you move your drums right to where you need them.

(A) The frame has a skid-resistant surface to prevent sliding when loading. A drum rim catch in the base of the frame secures the drum. Stands have an orange enamel finish.

2301T5 also has a telescoping zinc-plated steel handle that increases leverage when tipping to empty the drum.

(B) The frame has a skid-resistant surface to prevent sliding when loading. A drum rim catch in the base of the frame secures the drum. Stands roll on two front axle-mounted wheels and two rear swivel casters (unless noted) for better steering. All have an orange enamel finish.

Stands with handle also have an additional drum rim catch and a telescoping zinc-plated steel handle that increases leverage when tipping to empty the drum.

(C) Dual telescoping steel handles give you extra leverage and control when tipping to empty the drum. A drum rim catch on each handle secures the drum. Stands have a green powder-coated finish and roll on two front axle-mounted wheels and two rear swivel casters for better steering.

(D) Steel load wedges slide under the drum for easy loading and cross braces with rollers let you rotate the drum for draining and mixing in the horizontal position. Dual oak handles give you extra leverage and control when tipping to empty the drum. A drum rim catch on the frame secures the drum. Stands have an orange enamel finish and roll on two front and two rear axle-mounted wheels.

For Drum Sizes gal.	Ht.	Dia.	Cap., lbs.	For Drum Types	Approx. Drum Drain Ht.	O'all Size, Lg.×Wd.×Ht.	Wheel Type	Wheel Dia.		Each
Stationary Stands										
(A) Without Handle										
30, 55	29″ -40″	18″ -24″	1,000	Steel	18¾″	30″ ×18″ ×20¼″	—	—	2301T1	$95.72
(A) With One Telescoping Steel Handle*■										
30, 55	29″ -40″	18″ -24″	1,000	Steel	18¾″	36½″×18″ ×20¼″	—	—	2301T5	120.89
Mobile Stands										
(B) Without Handle										
30, 55	29″ -40″	18″ -24″	1,000	Steel	20¾″	30″ ×22″ ×22½″	Polypropylene	5″/3″	2301T4	126.06
30, 55	29″ -40″	18″ -24″	1,000	Steel	20¾″	30″ ×22″ ×22½″	Polypropylene	5″	2301T9●	140.06
30, 55	29″ -40″	18″ -24″	1,000	Steel	20¾″	30″ ×22″ ×22½″	Rubber/Polypropylene	5″/3″	2301T3	132.72
(B) With One Telescoping Steel Handle*■										
30, 55	29″ -40″	18″ -24″	1,000	Steel	20¼″	36½″×22″ ×22″	Steel	4″/2½″	2301T6	168.64
30, 55	29″ -40″	18″ -24″	1,000	Steel	20¾″	36½″×22″ ×22½″	Polypropylene	5″/3″	2301T8	149.34
30, 55	29″ -40″	18″ -24″	1,000	Steel	20¾″	36½″×22″ ×22½″	Polypropylene	5″	2301T21●	159.55
30, 55	29″ -40″	18″ -24″	1,000	Steel	20¾″	36½″×22″ ×22½″	Rubber	5″/3″	2301T7	158.19
(C) With Dual Telescoping Steel Handles*■										
30, 55	28¾″-34½″	19¼″-23½″	700	Steel, Plastic	18⅞″	43½″×16¼″×23⁷⁄₁₆″	Aluminum/Polyethylene	2½″	2396T95	115.45
30, 55	28¾″-34½″	19¼″-23½″	700	Steel, Plastic	18⅞″	43½″×16¼″×23⁷⁄₁₆″	Rubber	5″/3″	2396T96	130.00
(D) With Dual Telescoping Oak Handles*■										
15, 30, 55	29″ -40″	14″ -24″	1,000	Steel	20″	43½″×18½″×22″	Steel	4″	2710T1	188.92
15, 30, 55	29″ -40″	14″ -24″	1,000	Steel	20½″	43½″×18½″×22½″	Polypropylene	5″	2710T3	185.95
15, 30, 55	29″ -40″	14″ -24″	1,000	Steel	20½″	43½″×18½″×22½″	Rubber	5″	2710T2	196.78

■ Length is with handles in the retracted position. ● Has two rear axle-mounted wheels and is designed for use with horizontal drum cabinets.

Hydraulic Drum Handlers

Look no further if you need a drum handler that makes it easy for one person to lift, move, and dispense a full drum. Handlers have a hydraulic lift that positions the drum at the required height and a manual dispensing control that tilts the drum at the proper angle for emptying. They can also rotate the drums 360° in either direction. A drum saddle with chain and ratchet-style tightener secures the drum and a floor lock keeps the handlers stationary. All are welded steel with a blue enamel finish and roll on two front axle-mounted polyolefin wheels and two rear swivel casters with polyolefin wheels.

Hand-operated handlers have a single-action, lever-operated hydraulic lift. Shipped unassembled.

Electric handler makes lifting the drum faster and easier. Just push the button to lift and release the button to stop lifting. The hydraulic lift is powered by a 1-hp, 115-VAC, 60-Hz, single-phase, totally enclosed fan cooled (TEFC) motor with an 8-ft. long power cord and three-prong plug. Amp draw is 12.8 at full load. Load will not drop in the event of a power failure. Shipped assembled.

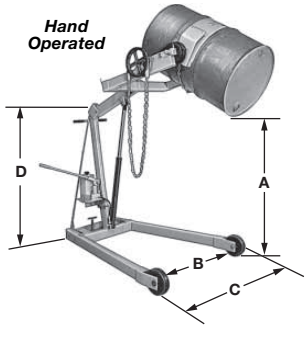

For Drum Sizes gal.	Dia.	Cap., lbs. Full Drum	Half-Full Drum ♦	For Drum Types	Dispense Ht. (A)	(B)	(C)	(D)	Dispense Control	Wheel Dia.		Each
Hand Operated												
55	22½″	800	500	Steel	60″	37″	44″	55″	Crank Handle	8″/4″	3692T12	$1,938.46
55	22½″	800	500	Steel	72″	37″	44″	55″	Pull Chain	8″/4″	3692T13	2,030.00
Electric												
55	22½″	800	500	Steel	72″	37″	44″	55″	Pull Chain	8″/4″	3692T15	2,886.15

Optional 30-Gallon (18½″-19″ Dia.) Drum Adapter ..... 3407T52 **Each** $144.33

♦ In half-full drums contents shift, which reduces capacity.

Warning! ***Never exceed capacities. Never use to lift items over people.***

Electric Hydraulic Drum Dumpers

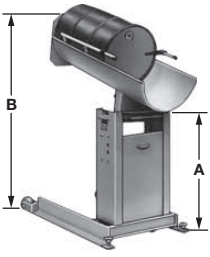

An electric hydraulic lift makes it quicker and easier to lift and empty drums, and a chute controls the flow of the material being dispensed to prevent splashes and spills. A clamp on each side of the chute secures the drum. Dumpers operate on a 3/4-hp, 120-VAC, 60-Hz, single-phase, totally enclosed nonventilated (TENV) motor that has an 8-ft. long power cord and three-prong plug. Amp draw is 12 at full load. All have a handheld pendant switch with an 8-ft. long coil cord and operate only when the push-buttons are engaged. A limit switch turns off the motor when the drum reaches the maximum height. Load will not drop in the event of a power failure.

Dumpers are steel with a blue enamel finish, and roll on two front axle-mounted phenolic wheels and two rear swivel casters with phenolic wheels. A screw-down floor lock keeps dumpers stationary during operation. Shipped assembled.

For Drum Sizes gal.	Ht.	Dia.	Cap., lbs.	For Drum Types	Dispense Ht. (A)	(B)	O'all Size, Lg.×Wd.×Ht.	Wheel Dia.		Each
30, 55	28″-35″	19″-24″	1,000	Steel, Fiber, Plastic	36″	93½″	59½″×36″×60¼″	8″/6″	8911T51	$3,358.08
30, 55	28″-35″	19″-24″	1,000	Steel, Fiber, Plastic	48″	114″	67½″×36″×72¼″	8″/6″	8911T53	3,505.75
30, 55	28″-35″	19″-24″	1,000	Steel, Fiber, Plastic	60″	134½″	76″ ×36″×84¼″	8″/6″	8911T55	3,651.51

Hook-Mount Drum Slings

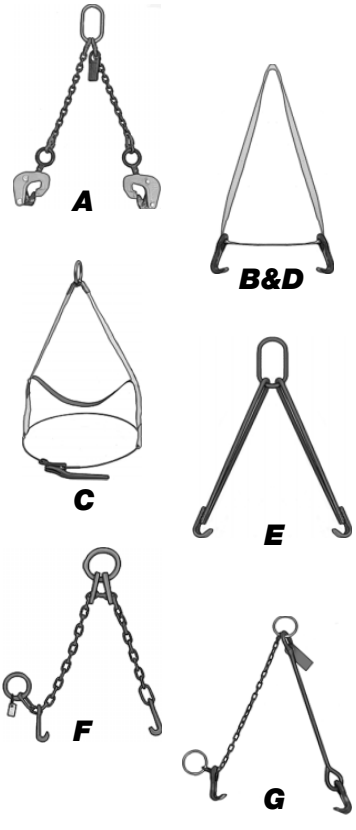

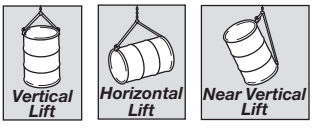

Pair up these slings with overhead lifting equipment for an efficient way to pick, lift, stack, and place steel drums.

Top-grip vertical lift slings grip the top rim of the drum for easy pick-and-place applications. ***Clamp-around vertical lift sling*** hugs the drum just below the first rib. ***Horizontal lift slings*** grab the top and bottom rims of the drum for lifting in a horizontal position. ***Adjustable slings*** lift drums in horizontal and near vertical positions.

(A) Made of 9/32″ alloy steel chain with an oblong lifting link. Spring-loaded cam-style clamps secure drum and keep a grip on the drum even when not under load.

(B) Made of one-ply, 1″ wide, yellow nylon webbing. Two steel hooks attach to the top rim. The hooks grip the drum as the sling is lifted.

(C) Made of one-ply, 2″ wide, yellow nylon webbing with a round steel lifting ring. A 1/4″ dia., 7×19 galvanized steel wire rope that's tightened and locked with a load binder secures the drum.

(D) Made of one-ply, 1″ wide, yellow nylon webbing and two steel hooks. The hooks grip the top and bottom rims of the drum as the sling is lifted.

(E) Have rigid legs with a hook at each end to secure the drum. 3401T7 has 1/2″ dia. steel legs and a steel oblong lifting link that can accommodate a 4″ wide fork. 3401T1 has 5/8″ dia. steel legs and a steel pear-shaped lifting link. 3401T6 is made of spark-resistant components. Legs are 1/2″ dia. Type 304 stainless steel and the hooks are aluminum/bronze alloy. Also has an aluminum/bronze D-shaped lifting link.

(F) Consists of 5/16″ steel chain with a steel hook at each end and two round lifting rings. Use the center ring for horizontal lifts and the other ring for near vertical lifts. Two grab links on the center ring allow you to adjust the length of the sling legs.

(G) Has one flexible 3/16″ Grade 80 alloy steel chain leg with a hook, one rigid 5/8″ dia. steel leg with a hook, and two round lifting rings. Use the center ring for horizontal lifts and the other ring for near vertical lifts.

For Drum Sizes gal.	Max. Ht.	Dia.	Cap., lbs.	For Drum Types	Lifting Link/Ring Opening	Clamp/Hook Opening		Each
Top-Grip Vertical Lift Slings								
A 30, 55	—	Up to 25″	2,200	Steel	5″ Lg.×2½″ Wd.	7/8″ Max.	3389T4	$687.46
B 20, 30, 55	—	Up to 24″	1,000	Steel	—	1 1/8″	8843T49	75.36
Clamp-Around Vertical Lift Sling								
C 55	—	22¾″	1,000	Steel	3″ Dia.	—	8843T51	194.41
Horizontal Lift Slings								
D 20, 30, 55	36″	—	1,000	Steel	—	1 1/8″	8843T52	81.02
E 55	36″	—	1,000	Steel	5″ Lg.×2 5/8″ Wd.	1½″	3401T7	36.60
E 55	35″	—	2,000	Steel	4½″ Lg.×3″ Wd.	1½″	3401T1	181.48
Spark-Resistant Horizontal Lift Sling								
E 55	36″	—	1,000	Steel	3″ Lg.×2¾″ Wd.	¾″	3401T6	143.15
Adjustable Slings								
F 55	38″	—	1,100	Steel	3½″ Dia./2½″ Dia. ♦	13/16″	3615T14	355.00
G 55, 85	41″	—	2,000	Steel	3″ Dia./3″ Dia. ♦	1¼″	3615T21	263.65

♦ First dia. is the center lifting ring; second dia. is the ring for near vertical lifts.

Hook-Mount Top-Grip Drum Lifters

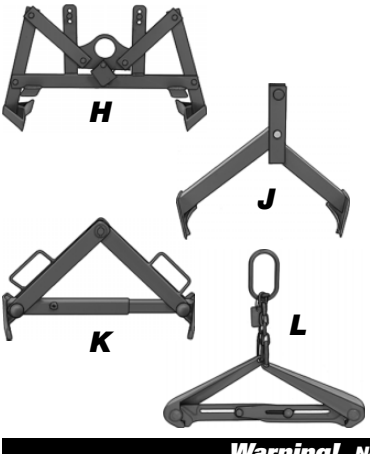

Lift your drums with confidence. Designed for use with overhead lifting equipment on closed-head drums and open-head drums with lids securely in place. Lifters grip as they pick up the drum. All are made of steel.

(H) Grippers grab the drum below the rim with equal pressure on both sides for a secure, even lift. Has a lifting eye and a blue enamel finish.

(J) Its slim profile is great for loading and unloading overpack drums and for use in tight spaces. Gripper pads grab the drum evenly on both sides below the rim and require a manual release. Has a bolt for attaching your lifting device and an orange enamel finish.

(K) Two guide handles give you ultimate drum control. A slim profile is great for loading and unloading steel overpack drums and for use in tight spaces. Gripper pads grab the drum evenly on both sides below the rim. Has a bolt for attaching your lifting device and a blue enamel finish.

(L) High-strength steel jaws put a vise-like grip on drum rims (up to 1″ deep) without damaging them. The gripping action is unaffected by greasy and oily surfaces. Lifters consist of dual-lever clamps connected by alloy steel chain with oblong lifting link. Have a gray finish.

For Drum Sizes gal.	Dia.	Cap., lbs.	For Drum Types	Lifting Eye/Bolt/Link Opening		Each
H 55	22½″	1,000	Steel	3″ Dia.	3695T12	$213.72
J 55, 85	22″ and 28″	1,000	Steel	¾″ Dia.×2″ Lg.	36945T72	139.08
K 30, 55, 85★	18″-26″	1,000	Steel, Fiber, Plastic	¾″ Dia.×1½″ Lg.	36945T73	206.18
L 20, 30, 55	16″-24″	750	Steel	5″ Lg.×2½″ Wd.	3389T1	495.00
L 20, 30, 55	18″-24″	2,000	Steel	4″ Lg.×2½″ Wd.	3389T3	673.00

★ 85 gallon applies to steel drums only.

Warning! ***Never exceed capacities. Never use to lift items over people.***

Hook-Mount Side-Grip Drum Handlers

A

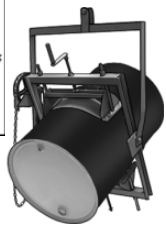
B

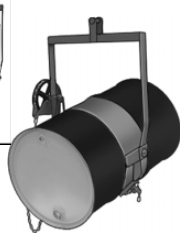
C

D

Here's an easy way for one person to raise, transport, tilt, and drain full drums using the hook of a crane or hoist. The saddle has a chain with ratchet tightener (unless noted) to secure the drum. Once secured, the drum can be rotated 360° in either direction. A lock on each side of the hanger frame keeps the drum vertical or horizontal during transport. Made of steel with a blue enamel finish.

Optional tilt brake holds your drum in place if chain is released. Can be used with all hand-chain dispense handlers except 3666T42.

(A) Handlers require manual tilting.

(B-D) Have a hand-chain operated geared mechanism for tilting. The hand chain has a 6-ft. operating length.

For Drum Sizes gal.	Dia.	Cap., lbs. Full Drum	Half-Full Drum ♦	For Drum Types		Each
Manual Dispense						
A 55	21″ -23″	800	500	Steel, Fiber	**3669T3**	$316.58
A 55	22½″	800	500	Steel	**3669T1**	227.74
A 55	22½″-23″	800	500	Steel, Fiber	**3669T18**	317.72
Hand-Chain Dispense						
B 20, 30, 55	15″ -23″	500	250	Steel, Fiber	**3666T44**●	1,097.42
C 55	22″ -23½″	800	500	Steel, Fiber	**3666T13**	649.47
C 55	22½″	1,500	800	Steel	**3666T16**	819.58
C 55	22½″	2,000	1,000	Steel	**3666T42**	1,582.88
D 55	22″ -23½″	1,500	800	Steel, Plastic	**3666T43**	912.10

Opt. 30-Gal. (18½″-19″ Dia.) Drum Adapter for 3669T18 and 3666T13, T16, and T43 ..... **3407T52** **Each** $144.33

Opt. Tilt Brake ..... **3669T15** **Each** $227.50

♦ In half-full drums contents shift, which reduces capacity.

● Gripping pads with adjustment screws secure the drum.

Fork-Mount Side-Grip Drum Movers

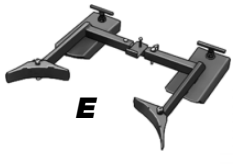
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F

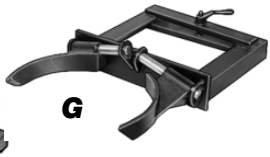
G

H

J

Their gripping arms automatically close and lock around the drum when lifting and release when drum is set down. Locking screws clamp down on the forks to secure the movers to your forklift. All are made of steel and shipped assembled (unless noted).

(E) For proper operation, this mover can only be used with drums with a 3/16″ minimum rim depth. Shipped unassembled.

(H) Gripping arms are rubber lined for a nonslip contact surface.

For Drum Sizes gal.	Dia.	Cap., lbs.	For Drum Types	Fork Pockets Wd. × Ht.	Ctr.-to-Ctr.		Each
Single-Drum Movers							
E 30, 55	18″-22½″	1,000	Plastic	5⅜″ × 1½″	19¾″-23⅝″	**36755T2**	$413.00
F 30, 55	18″, 22″	1,500	Steel	5½″ × 2″	22″	**3421T17**	552.03
F 55	22″	1,500	Steel	5½″ × 2″	22″	**3421T14**	452.42
G 15, 30, 55	13″, 17¼″, 22½″	1,500	Steel	22½″ × 3½″	22½″	**3421T21**	873.28
H 30, 55, 85	18″-28″	1,500	Steel, Plastic	5⅝″ × 1⅝″	21¾″-30″	**3421T22**	597.63
Two-Drum Mover							
J 55	22″	3,000♣	Steel	7″ × 2¼″	25⅝″	**3421T16**	717.59

♣ Capacity is for two drums.

Fork-Mount Top-Grip Drum Movers

No more hassles when moving drums in areas with little or no side clearance. Made of welded steel, movers have locking screws that clamp down on the forks to secure the movers to your forklift. The jaws automatically grip the top of the drum when lifting and release when the drum is set down. Use with closed- and open-head drums.

Optional drum protector is made of 3″ wide flexible PVC and bolts to the base of the mover to cushion and protect the drum from wear (mounting hardware included).

Note: Two-drum mover requires two protectors.

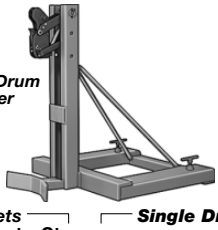
Single-Drum Mover

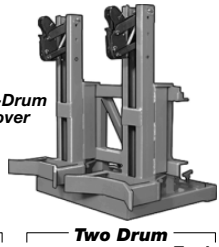
Two-Drum Mover

For Drum Sizes gal.	Dia.	Cap. per Drum, lbs.	For Drum Types	Fork Pockets Wd. × Ht.	Ctr.-to-Ctr.	Single Drum	Each	Two Drum	Each
30-85	18″-26″	1,000	Steel, Fiber, Plastic	7″ × 2¼″	25⅝″	**3399T11**■	$725.08	**3399T12**	$1,092.48
30-85	18″-26″	1,600	Steel, Fiber, Plastic	7″ × 2¼″	20⅜″	**3399T7**	1,649.82	**3399T8**	2,675.03

Optional Drum Protector for 3399T7 and T8 ..... **3399T9** **Each** $75.59

■ Fork pockets are 5½″ Wd. × 2″ Ht. and 22″ center-to-center.

Warning! ***Never exceed capacities. Never use to lift items over people.***

Fork-Mount Pivoting Drum Handlers

Handlers mount to the forks on your forklift for lifting and transport, plus they pivot for manual tilting so dispensing is easier. The band clamps around the drum and is secured with a latch. The fork pockets pivot for manual tilting. Made of steel.

For Drum Sizes gal.	Dia.	Cap., lbs.	For Drum Types	Fork Pockets Wd. × Ht.	Ctr.-to-Ctr.		Each
30	18″-18½″	1,000	Ribbed Steel	5″ × 3″	26″	3419T32	$69.78
55	22″-22½″	1,000	Ribbed Steel	5″ × 3″	30″	3419T21	71.22

Fork-Mount Hand-Chain Dispense Drum Handlers

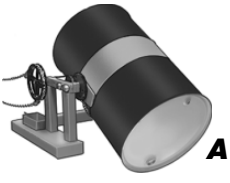

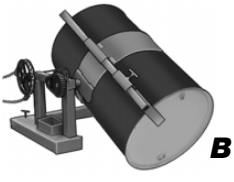

Slide handlers onto the forks on your forklift and raise, tilt, and drain drums without leaving your seat. A geared mechanism operated by a hand chain lets you tilt and drain. Hand chain has a 10-ft. operating length. Handlers also allow 360° rotation in either direction. A chain with ratchet-style tightener secures the drum (unless noted). All are made of steel.

Optional tilt brake holds your drum in place if chain is released. Can be used with all handlers except 3407T21.

	For Drum Sizes gal.	Dia.	Cap., lbs. Full Drum	Half-Full Drum ♦	For Drum Types	Fork Pockets Wd. × Ht.	Ctr.-to-Ctr.		Each
A	55	22″-23½″	800	500	Steel, Fiber	6½″ × 2½″	31″	3407T91	$850.51
A	55	22″-23½″	1,500	800	Steel, Fiber	6½″ × 2½″	31″	3407T16	974.22
A	55	22½″	2,000	1,000	Steel	6½″ × 2½″	31″	3407T21★	2,140.43
B	55	22″-23½″	1,500	800	Steel, Fiber	6½″ × 2½″	31″	3407T19	1,116.49

Optional 30-Gallon (18½″-19″ Dia.) Drum Adapter ..... 3407T52 Each $144.33
Optional Tilt Brake ..... 3669T15 Each $227.50

♦ In half-full drums contents shift, which reduces cap. ★ Has two chains with ratchet-style tighteners.

Fork-Mount Lifting and Towing Adapters

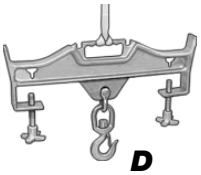

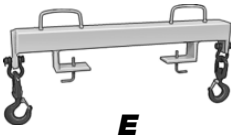

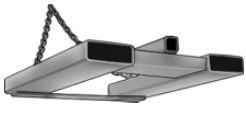

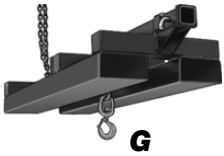

Convert your forklift into lifting or towing equipment. All adapters are made of steel and all lifting hooks have a latch.

(C) Single-fork hook lifting adapters have T-style locking thumb screws and a web strap to secure adapters to one fork and the forklift. 3380T25 has a rigid zinc-plated hook. 3380T26 has a swivel zinc-plated hook.

(D) Dual-fork hook lifting adapters same as *Style C* but have a swivel hook and attach to both forks.

(E) Spreader beam lifting adapters have two hooks to lift loads and L-shaped fork brackets that accommodate forks of any width. Inside height of fork brackets is 2½″. T-style thumb screws secure adapters to forks. Have a yellow enamel finish.

(F) Towing adapter has a drawbar receiver welded between the fork pockets. A chain with a grab hook and a connecting pin secures adapter to the forks. Has a yellow enamel finish. For couplers and inserts, please see pages 1281-1282.

(G) Combination lifting/towing adapter has a hook for vertical lifting and a receiver welded between the fork pockets that accepts a hitch receiver for towing applications. A chain and hook secure adapter to the forks. Has a black enamel finish. Please see page 1282 for inserts.

Cap., lbs. Hook	Receiver	Fork Pockets, Wd. × Ht.	O'all Size, Wd. × Ht.	O'all Lg.	Hook Opening		Each
(C) Single-Fork Hook Lifting Adapters							
4,000	—	6″ × 2¼″	11½″-13½″ × 15″	—	⅞″	3380T25	$88.47
4,000	—	6″ × 2¼″	11½″-13½″ × 15″	—	⅞″	3380T26	92.46
(D) Dual-Fork Hook Lifting Adapters							
4,000	—	6¾″ × 2½″	23″ × 15⅛″	—	⅞″	3380T31	208.47
10,000	—	6¾″ × 3½″	23 1/16″ × 20 3/16″	—	1½″	3380T33	338.44
(E) Spreader Beam Lifting Adapters							
4,000	—	—	33¼″ × 13⅞″	—	1 5/16″	3380T35	425.25
10,000	—	—	42¾″ × 15⅞″	—	1 5/16″	3380T37	592.54
(F) Towing Adapter							
—	6,000	7½″ × 2½″	30″ × 5 9/16″	30″	—	5098T92	676.44
(G) Combination Lifting/Towing Adapter							
4,000	2,000	6¼″ × 2⅞″	20″ × 9″	54″	1″	5098T91	719.76

Fork Extensions

Add length to the forks for extra support of long and large loads. All are 5/16″ thick welded steel with cast steel tips and a yellow powder-coated finish. Steel loops secure them to the forks. OSHA standards require that length of extensions is 150% or less of the supporting fork length. *Note:* Extensions reduce the capacity of your forklift. Please refer to your forklift manufacturer for load capacity reductions.

Lg.	Cap./ Pair, lbs.	FOR FORK SIZE 4½″ Wd. × 2″ Ht.	Per Pair	5½″ Wd. × 2″ Ht.	Per Pair	6½″ Wd. × 2½″ Ht.	Per Pair
4′	4,000	2462T12	$222.42	2462T14	$232.88	2462T16	$268.33
5′3″	4,000	2462T22	239.51	2462T24	256.11	2462T26	297.60
6′	4,000	2462T32	258.99	2462T34	274.10	2462T36	325.72
7′	4,000	2462T42	277.01	2462T44	292.72	2462T46	356.60
8′	4,000	2462T52	296.27	2462T54	331.24	2462T56	391.89

Fork Bumpers

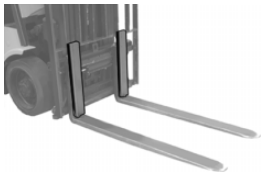

Protect your load from dents without reducing load capacity. These bumpers include black powder-coated steel brackets and red polyurethane inserts. Brackets are adhesive-backed for permanent mounting to fork uprights. Inserts slide into the brackets and provide excellent wear resistance and vibration damping. Simply replace inserts when worn.

Fits Fork Wd.	O'all Size, Wd. × Ht. × Dp.	Bumpers	Per Pair	Repl. Inserts	Per Pair
4″-5″	4″ × 24″ × 1½″	1110T1	$278.67	1110T6	$150.33
6″-8″	6″ × 24″ × 1½″	1110T3	366.67	1110T8	199.98

Warning! ***Never exceed capacities. Never use to lift items over people.***

Forklift Booms

Handle long, cumbersome loads without special equipment. All booms are made of steel with a yellow painted finish, have two forged steel swivel hooks with latch, and are labeled with capacity for each hook position. They secure to the forklift with a chain and grab hook. Fork pockets are 2½″ Ht.×7½″ Wd. × 30″ Dp. (unless noted). *Note:* Capacities are approximate and depend on the type and load capabilities of the forklift used. Check with the manufacturer of your forklift for load capabilities before using.

(A) Horizontal fixed-length boom is 8 ft. long with five hook positions spaced 12″ apart. First position is located 4 ft. from the fork pocket end.

(B) Horizontal telescoping booms adjust from 7 ft. to 12 ft. long in 12″ increments. One hook is mounted at the end of the boom. The other hook has four positions spaced 12″ apart. The first position is located 3 ft. from the fork pocket end.

(C) Vertically adjustable telescoping booms are the same as Style B, plus they have five vertical height adjustments in increments of approximately 15″ with a maximum height of 6′4″.

(D) High-reach telescoping boom is designed for tall loads where more bottom clearance is needed. Length adjusts from 4 ft. to 6 ft. in 12″ increments. Has three hook positions on the adjustable length spaced 12″ apart. The fixed section has three hook positions spaced 6″ apart. The first hook position is 4 ft. from the fork pocket end.

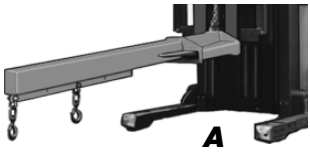

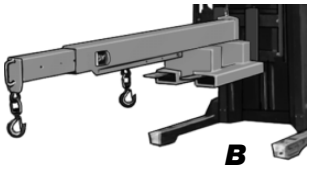

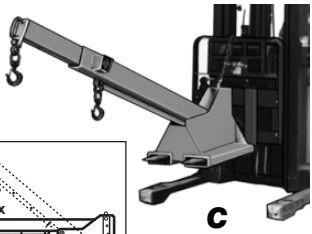

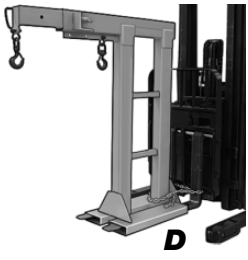

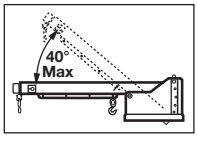

Capacity, lbs. at Hook Position										Fork Pockets,	Hook		
3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.	12 ft.	Ctr.-to-Ctr.	Opening		Each
(A) Horizontal Fixed-Length													
—	4,000	3,500	3,000	2,500	2,000	—	—	—	—	11½″	1 1/16″	**3638T31**★	$776.67
(B) Horizontal Telescoping													
4,000	4,000	4,000	4,000	3,200	2,600	2,200	1,900	1,600	1,500	15″	1 1/16″	**3638T22**	984.01
6,000	6,000	6,000	6,000	5,000	4,200	3,500	3,000	2,700	2,500	15″	1 5/16″	**3638T27**	1,152.71
8,000	8,000	8,000	8,000	7,000	5,700	4,800	4,100	3,600	3,100	15″	1 9/16″	**3638T24**	1,293.55
(C) Vertically Adjustable Telescoping													
4,000	4,000	4,000	4,000	3,200	2,600	2,200	1,900	1,600	1,500	15″	1 1/16″	**3638T25**	1,326.25
6,000	6,000	6,000	6,000	5,000	4,200	3,500	3,000	2,700	2,500	15″	1 5/16″	**3638T32**	1,570.10
8,000	8,000	8,000	8,000	7,000	5,700	4,800	4,100	3,600	3,100	15″	1 9/16″	**3638T33**	1,989.70
(D) High-Reach Telescoping													
—	4,000	3,500	1,800	—	—	—	—	—	—	12½″	1 1/16″	**3638T41**	1,780.37

★ Fork pockets are 2½″ Ht.×5½″ Wd.×24″ Dp.

Pallet Pullers

Position heavily-loaded pallets for easy forklift access. All pullers are made of steel with a powder-coated finish (unless noted). The jaws have gripping teeth. Rated capacity is based on moving pallets over smooth surfaces. *Note:* Do not use pullers for lifting.

(E) Long-arm puller has a 41½″ long T-style handle with grips and two 3″ dia. nylon wheels. A ball knob on the handle operates the low-profile, double-scissor jaws. Color is black.

(F) Single-scissor puller provides a wide jaw opening. A pull chain closes the jaws. Color is black.

(G) Double-scissor puller provides greater gripping force compared to a single-scissor puller. A pull chain closes the jaws. Color is yellow.

(H) Cam-action puller has low-profile jaws for maximum gripping strength. A welded handle allows easy positioning and removal. A pull chain closes the jaws.

Optional pull chain with grab hooks is for use with styles F, G, and H. It connects the puller's chain to a forklift. Pull chain is 20-ft. long.

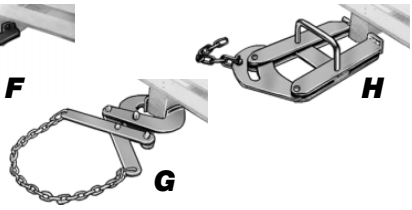

Pulling Cap., lbs.	Jaw Ht.	Jaw Opening	Chain Lg.		Each
(E) Long Arm					
100	1″	5½″	—	**9928T51**	$57.69
(F) Single Scissor					
5,000	2¾″	7″	28″	**9928T19**	77.31
(G) Double Scissor					
5,000	2¾″	3″	28″	**9928T31**	70.19
(H) Cam Action					
5,000	1½″	3″	10″	**9928T32**●	73.71

Optional Pull Chain with Grab Hooks for Styles F, G, and H..... **9928T44** **Each** $52.28

● Has a zinc-chrome finish.

Pallet Truck Replacement Parts

Reduce downtime—we offer the most common replacement parts for the most popular pallet trucks.

Wheel kits include two load wheels and two steer wheels with all necessary bearings, axles, and hardware.

Seal kits include all U-cups, scrapers, seals, washers, and O-rings needed to maintain smooth operation.

Also Available: Other replacement parts. Please ask for 2641T999 and specify truck manufacturer, model number, and part required.

Mfr.	Models	Wheel Kits	Each	Seal Kits	Each
BT	L2000, L2000-U	**2641T51**	$118.97	**2641T65**	$48.00
BT	L2300, L2300-U	**2641T51**	118.97	**2641T65**	48.00
Crown	PTH	**2641T52**	118.97	**2641T66**	37.80
Crown	PTH 50	**2641T53**	$120.21	**2641T67**	$37.80
Jet	PT 2748 A	**2641T41**	120.21	**2641T68**	40.80
Jet	PT 2748 L	**2641T42**	118.97	**2641T68**	40.80
King	KJ 2002	**2641T55**	120.21	**2641T68**	40.80
Lift Rite/Big Joe	L50	**2641T56**	120.21	**2641T69**	42.55
Lift Rite/Big Joe	L55	**2641T57**	120.21	**2641T71**	42.55
Mobile	ECO I-55	**2641T61**	118.97	**2641T73**	38.04
Mobile	ML55	**2641T58**	118.97	**2641T72**	36.23
Mobile	MLX55	**2641T59**	118.97	**2641T72**	36.23
Multiton	TM.M.J.	**2641T62**	120.21	**2641T74**	39.27
Multiton	TM55	**2641T63**	120.21	**2641T75**	58.55
Pallet Mule	AA-5500	**2641T64**	120.21	**2641T76**	36.23

Warning! ***Never exceed capacities. Never use to lift people.***

For more information about pallet compatibility, go to mcmaster.com and search for **4982TAC**.

Pallet Trucks

A

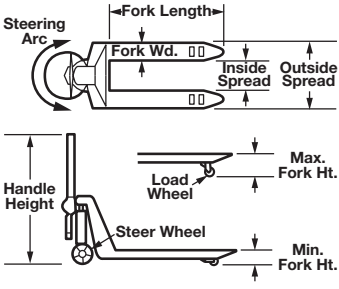

Before selecting a pallet truck, determine the weight of your load as well as the size and style of your pallets. The most commonly used pallets measure 48″ Lg. × 40″ Wd.

For pallets 26″ to 32″ wide, use a pallet truck with an outside fork spread of 20½″.

For pallets 33″ to 40″ wide, use a pallet truck with an outside fork spread of 27″.

For pallets 41″ to 48″ wide, use a pallet truck with an outside fork spread of 33″.

B&C

All trucks have a hydraulic pump, welded-steel frame, and forks with cutouts for the load wheels. The handle has a three-position hand control (raise, lower, and neutral). A relief valve prevents pressure build-up to provide overload protection.

(A-G) Trucks for Two-Side Pallets

Two-side pallets allow fork entry at each width end.

(A) Standard trucks have tapered forks with entry and exit rollers. Steer and load wheels are polyurethane. Trucks have a gray and blue powder-coated finish.

(B) Premium trucks combine a high-performance pump and a reinforced frame for dependability and long service life. All have rounded forks with entry glides and exit rollers. Steer and load wheels are nylon (unless noted). Trucks have a yellow and black powder-coated finish.

(C) Heavy duty truck is for high-capacity applications. It has rounded forks with entry glides and exit rollers. Steer and load wheels are steel. Truck has a yellow and black powder-coated finish.

(D) Low-profile trucks have a lower fork height. All have rounded forks with entry glides and exit rollers. Steer wheels are nylon; load wheels are steel. Trucks have a yellow and black powder-coated finish.

(E) Easy-start truck gets your load moving with minimal effort. As you pump the handle the steer wheels start rotating and accelerate the truck. A hand grip directs the acceleration so the truck starts easily whether you are pushing or pulling. Truck also has precision steering and rounded forks with entry and exit rollers. Steer and load wheels are polyurethane. Truck has a yellow and black powder-coated finish.

(F) Corrosion-resistant truck has a galvanized frame, stainless steel components, and a specially-designed pump that stands up to harsh environments. It has rounded forks with entry glides and exit rollers. Steer and load wheels are nylon.

(G) Type 304 stainless steel truck offers maximum corrosion resistance for the most demanding environments. Truck has rounded forks with entry and exit rollers and a polished finish. Steer and load wheels are nylon.

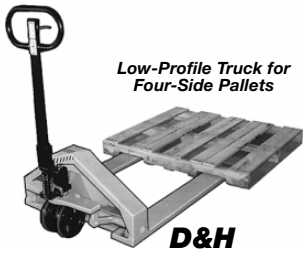

Low-Profile Truck for Four-Side Pallets

D&H

Cap., lbs.	Fork Size, Lg. × Wd.	Fork Spread Outside	Fork Spread Inside	Fork Height Min.	Fork Height Max.	O'all Lg.	Handle Ht.	Steering Arc	Wheel Dia.		Each
(A) Standard Trucks											
5,500	36″ × 6″	20½″	9″	3″	8″	51″	48″	200°	8″/3″	**4982T11**	$541.23
5,500	36″ × 6″	27″	15″	3″	8″	51″	48″	200°	8″/3″	**4982T21**	541.23
5,500	42″ × 6″	20½″	9″	3″	8″	57″	48″	200°	8″/3″	**4982T12**	541.23
5,500	42″ × 6″	27″	15″	3″	8″	57″	48″	200°	8″/3″	**4982T22**	541.23
5,500	48″ × 6″	20½″	9″	3″	8″	63″	48″	200°	8″/3″	**4982T13**	541.23
5,500	48″ × 6″	27″	15″	3″	8″	63″	48″	200°	8″/3″	**4982T23**	541.23
(B) Premium Trucks											
5,500	36″ × 7″	20½″	6½″	3″	7¾″	50⅝″	48″	210°	8″/3″	**9838T76**	563.46
5,500	36″ × 7″	27″	13″	3″	7¾″	50⅝″	48″	210°	8″/3″	**9838T88**	563.46
5,500	42″ × 7″	20½″	6½″	3″	7¾″	56⅝″	48″	210°	8″/3″	**9838T75**	563.46
5,500	42″ × 7″	27″	13″	3″	7¾″	56⅝″	48″	210°	8″/3″	**9838T87**	563.46
5,500	48″ × 7″	20½″	6½″	3″	7¾″	62⅝″	48″	210°	8″/3″	**9838T74**	563.46
5,500	48″ × 7″	27″	13″	3″	7¾″	62⅝″	48″	210°	8″/3″	**9838T85**	563.46
5,500	48″ × 7″	27″	13″	3″	7¾″	62⅝″	48″	210°	8″/3″	**9838T86★**	629.10
(C) Heavy Duty Truck											
8,000	48″ × 7″	27″	13″	3¼″	8″	61⅝″	48″	210°	8″/3″	**2659T37**	1,443.55
(D) Low-Profile Trucks											
5,000	48″ × 6″	20½″	8½″	2″	6¾″	61 9/16″	48″	210°	8″/2″	**2700T61**	724.71
5,000	48″ × 6″	27″	15″	2″	6¾″	61 9/16″	48″	210°	8″/2″	**2700T62**	724.71
(E) Easy-Start Truck											
5,000	48″ × 6⅛″	27″	14¾″	3″	7½″	64½″	48″	180°	6¾″/3″	**2733T28**	1,228.81
(F) Corrosion-Resistant Truck											
5,500	48″ × 7″	27″	13″	3″	7¾″	61⅝″	48″	210°	8″/3″	**2707T55**	1,216.58
(G) Type 304 Stainless Steel Truck											
5,500	48″ × 6½″	27″	14″	2⅞″	7¾″	62″	48″	200°	7″/2⅞″	**27245T4**	2,160.66

★ Steer and load wheels are steel.

E

(H) Truck for Four-Side Pallets

Four-side pallets allow fork entry at each width end as well as each length end.

(H) Low-profile truck has lower fork height. To prevent improper loading, truck has rounded forks with pallet stops that restrict entry to adjoining pallets. It has nylon steer wheels and steel load wheels. Truck has a yellow and black powder-coated finish.

F&G

Cap., lbs.	Fork Size, Lg. × Wd.	Fork Spread Outside	Fork Spread Inside	Fork Height Min.	Fork Height Max.	O'all Lg.	Handle Ht.	Steering Arc	Wheel Dia.		Each
(H) Low-Profile Truck											
5,000	48″ × 6″	33″	21″	1¾″	6½″	61 9/16″	48″	210°	8″/1¾″	**22105T25**	$857.39

Warning! ***Never exceed capacities. Never use to lift people.***

For more information about pallet compatibility, go to mcmaster.com and search for **4982TAC**.

Battery-Powered Pallet Trucks

No more struggling to move a load—these trucks require only minimal effort to start and stop, which makes them more ergonomic and efficient than manual pallet trucks.

A hydraulic pump raises and lowers the rounded forks at the touch of a button while a variable-speed throttle controls forward and reverse speed. An automatic brake stops the truck when the motor stops. Trucks also have a safety button that automatically reverses the direction of travel if the truck comes in contact with the operator.

Trucks include 24 VDC batteries, a charger, and a self-retracting cord with a three-prong plug. Retracted cord length is 30″; extended length is 70″. Operate for eight hours on a full charge when used intermittently. A discharge indicator lets you know when batteries need charging.

All trucks are steel with a yellow and black powder-coated finish. Steer and load wheels are polyurethane.

Note: Not for use on inclines or declines greater than 4°.

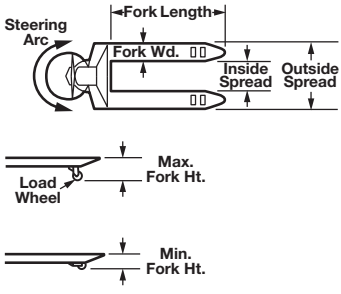

Before selecting a pallet truck, determine the weight of your load as well as the size and style of your pallets. The most commonly used pallets measure 48″ Lg.×40″ Wd.

For pallets 26″ to 32″ wide, use a pallet truck with an outside fork spread of 20″ or 25″. For pallets 33″ to 40″ wide, use a pallet truck with an outside fork spread of 26¾″.

Cap., lbs.	Fork Size, Lg.×Wd.	Fork Spread Outside	Fork Spread Inside	Fork Ht. Min.	Fork Ht. Max.	O'all Lg.	Handle Ht.	Steering Arc	Wheel Dia.	No. of Batteries		Each
3,000	45″×6″	20″	8″	3¼″	7 13/16″	67″	47¾″	180°	9⅞″/2 15/16″	2	2207T11	$3,694.58
3,000	48″×6″	25″	13″	3¼″	7 13/16″	67″	47¾″	180°	9⅞″/2 15/16″	2	2207T12	3,696.04
4,500	48″×6⅞″	20″	6¼″	3⅜″	8″	76″	51 7/16″	180°	9⅞″/3 5/16″	4	2207T21	5,898.09
4,500	48″×6⅞″	26¾″	13″	3⅜″	8″	76″	51 7/16″	180°	9⅞″/3 5/16″	4	2207T22	5,761.89

About Load Center

Load center is measured horizontally from the back of forks or a platform. To help ensure safe and balanced lifting, the center of a balanced load should not be positioned past the load center. Also, the overall length of a balanced load should never be more than twice the load center.

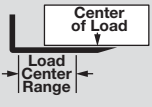

Improperly Balanced Load

Load-Positioning Lift Trucks

The load-moving benefit of a pallet truck combined with the load-positioning capabilities of a lift truck. Trucks are made of steel and have polyurethane steer and load wheels. A relief valve prevents pressure build-up to provide overload protection.

Note: Use with open-bottom pallets only.

Foot-operated trucks have a single-speed hydraulic pump that raises the load 13/16″ per stroke and a lever to control lowering the forks. The steer wheels swivel for better maneuverability; one has a face wheel brake to prevent movement when using the truck as a lift table. Trucks have a black and blue enamel finish.

Hand-operated trucks have a lever on the handle to raise and lower the forks. A two-speed hydraulic pump raises the load ⅜″ per stroke. Trucks are yellow with a black handle. All have a powder-coated finish.

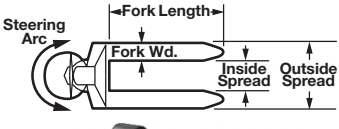

Foot Operated

Hand Operated

Cap., lbs.	Fork Size, Lg.×Wd.	Fork Spread Outside	Fork Spread Inside	Fork Ht. Min.	Fork Ht. Max.	Load Center	O'all Size, Lg.×Ht.	Handle Ht.	Steering Arc	Wheel Dia.	Base Leg Spread Outside	Base Leg Spread Inside		Each
Foot-Operated Trucks														
1,000	42½″×6″	20½″	8½″	3 5/16″	32 13/16″	22″	61 15/16″×42½″	39 13/16″	180°	6″/2¾″	16¼″	9″	9735T37	$1,338.88
1,000	42½″×6″	27″	15″	3 5/16″	32 13/16″	22″	61 15/16″×42½″	39 13/16″	180°	6″/2¾″	23″	15¼″	9735T38	1,405.91
Hand-Operated Trucks														
3,000	48″ ×7″	20½″	6½″	3¼″	31½″	24″	64½″ ×67″	48″	180°	8″/3″	18″	8½″	4980T51	1,442.48
3,000	48″ ×7″	27″	13″	3¼″	31½″	24″	64½″ ×67″	48″	180°	8″/3″	25″	15½″	4980T52	1,442.48

Lift-and-Tilt Lift Truck

Look no further if you need a truck that not only moves your load, but will also lift and tilt your pallets and containers for better load positioning.

This steel truck has two hand-operated levers; one to raise and lower the forks and one to tilt the forks. The dual-position hydraulic pump raises the load 7/16″ per stroke as well as tilts the forks up to 90°. Truck has a yellow and black powder-coated finish. Steer and load wheels are polyurethane.

Note: Use with open-bottom pallets only.

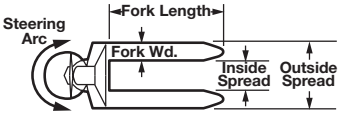

Cap., lbs.	Fork Size, Lg.×Wd.	Fork Spread Outside	Fork Spread Inside	Fork Ht. Horizontal Min.	Fork Ht. Horizontal Max.	Fork Ht. Vertical Min.	Fork Ht. Vertical Max.	Load Center Min.	Load Center Max.	O'all Size, Lg.×Ht.	Handle Ht.	Steering Arc	Wheel Dia.	Base Leg Spread Outside	Base Leg Spread Inside		Each
2,200	31″×6½″	21½″	8½″	3¼″	11″	29″	37″	7½″	15½″	41″×44¼″	44¼″	170°	5″/3″	20¾″	13½″	9516T1	$1,405.02

Warning! ***Never exceed capacities. Never use to lift people.***

ⓘ For information about pallet compatibility, go to mcmaster.com and search for **4982TAC**.

Foot-Operated Lift Trucks

1&4

2

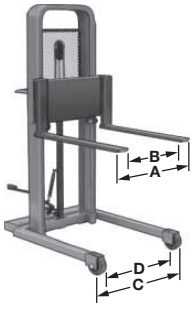

3&5

6

A foot-operated lever and a single-speed hydraulic pump allow you to raise and lower the forks or platform with less effort. Trucks are made of steel and roll on polyurethane wheels (unless noted).

(1&2) Trucks with Adjustable-Width Forks— *Style 1* raises the load ¾″ per stroke. Base has two rear rubber-tread wheels and two front swivel casters. A foot-operated wheel lock on the rear wheels keeps the truck stationary. *Style 2* raises the load 1″ per stroke. Base has two rear swivel casters with a face wheel brake and two front wheels.

(3) Trucks with Adjustable-Width Forks and Straddle Base— Have a greater distance between the base legs for easier access to loads on pallets. They raise the load 1⅛″ per stroke. Base has two rear swivel casters and two front wheels. Wheels are phenolic. A floor lock keeps trucks stationary.

(4&5) Trucks with Platform— *Style 4* is the same as *Style 1*, but has a platform with 6″ high backplate in place of the forks. *Style 5* are the same as *Style 3*, but have a platform with 11¼″ high backplate in place of the forks. Wheels are phenolic.

(6) Truck with Platform and Hand-Truck Base— Picks up, moves, and positions loads like a conventional hand truck. It raises the load ¾″ per stroke. Rolls on two rear rubber-tread wheels and has a tapered platform with 6″ high backplate. A foot-operated wheel lock keeps it stationary.

	Cap., lbs.	Fork Size, Lg.×Wd.	Fork Spread (A)	Fork Spread (B)	Platform Size, Lg.×Wd.	Fork/Platform Height Min.	Fork/Platform Height Max.	Load Ctr.	O'all Size, Lg.×Ht.	Handle Ht.	Wheel Dia.	(C)	(D)		Each
Trucks with Adjustable-Width Forks															
1	750	18″ ×3″	6″	-22″	0″ -16″	—	5¾″	4′6″	9″	2′4¼″ ×5′1½″	5′1½″	8″/3½″	22½″	—	**9815T62** $1,131.97
2	880	25½″×4¼″	8½″-21½″		0″ -13″	—	3½″	4′11″	12½″	3′1″ ×5′10″	3′5¾″	5″/3″	18⅜″	14½″	**2622T81** 696.47
Optional 26″ Lg.×22″ Wd. Platform for 2622T81															**2622T82** 92.72
Trucks with Adjustable-Width Forks and Straddle Base															
3	1,000	30″ ×3″	6½″-26½″		½″-20½″	—	3¼″	4′2″	18″	4′1″ ×5′6″	3′6¼″	5″/4″	32″	26″	**2666T44** 1,666.45
3	1,000	30″ ×3″	6½″-26½″		½″-20½″	—	3¼″	6′4″	18″	4′1″ ×7′8″	3′6¼″	5″/4″	32″	26″	**2666T46** 1,930.00
Trucks with Platform															
4	750	—	—		—	22″×22″	5¾″	4′6″	10″	2′7¼″ ×5′1½″	5′1½″	8″/3½″	22½″	—	**9815T52** 1,047.39
5	1,000	—	—		—	24″×24″	5¼″	4′4″	15″	3′2″ ×5′6″	3′6¼″	5″/4″	21″	15″	**2666T1** 1,493.89
5	1,000	—	—		—	24″×24″	5¼″	5′6″	15″	3′2″ ×6′8″	3′6¼″	5″/4″	21″	15″	**2666T2** 1,705.34
5	1,000	—	—		—	30″×32″	5¼″	5′6″	18″	3′8″ ×6′8″	3′6¼″	5″/4″	30″	24″	**2666T42** 1,998.62
Trucks with Platform and Hand-Truck Base															
6	750	—	—		—	22″×22″	0″	4′6″	10″	2′7⅜″ ×5′1½″	5′1½″	8″	—	—	**2347T14** 974.96

Battery-Powered Lift Trucks

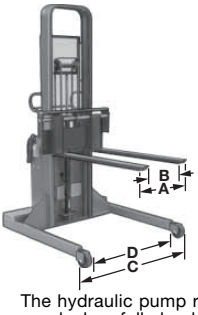

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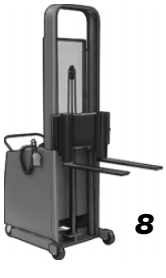

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The hydraulic pump raises and lowers the forks or platform 5″ per second when fully loaded. The pump is powered by a sealed, maintenance-free, rechargeable 12 VDC battery. The built-in charger has an LED charge indicator and a 6-ft. long power cord with three-prong plug. It fully charges the battery in 5-10 hours. The push-button control has a self-retracting cord. Retracted length is 26½″; extended length is 7 ft. Trucks are steel and have phenolic wheels (unless noted). A floor lock keeps the trucks stationary. Meet ASME B56.10.

(7) Trucks with adjustable-width forks and straddle base have a greater distance between the base legs for easier access to loads on pallets. The base has two rear swivel casters with polyurethane wheels and two front polyurethane wheels.

2814T13 also has adjustable-width base legs and a telescoping mast. Overall height with mast fully extended is 12′5″.

(8) Trucks with adjustable-width forks and counterweight base have short legs on the base for closer access to the load. The base has two rear swivel casters and two front wheels. A counterweight set (sold separately) is required.

(9) Trucks with platform have a narrow width to fit in tight spaces. The base has two rear swivel casters and two front wheels.

Cap., lbs.	Fork Size, Lg.×Wd.	Fork Spread (A)	Fork Spread (B)	Platform Size, Lg.×Wd.	Fork/Platform Height Min.	Fork/Platform Height Max.	Load Ctr.	O'all Size, Lg.×Ht.	Handle Ht.	Wheel Dia.	(C)	(D)		Each
(7) Trucks with Adjustable-Width Forks and Straddle Base														
2,000	42″×3″	6″	-29″	0″ -23″	—	1½″	5′4″	24″	4′2″ ×6′11″	4′3¼″	6″/5″	48″	42″	**2814T21** $4,115.28
2,000	42″×3″	7⅜″-31″	1⅜″-25″		—	1½″	12′10″	24″	4′6″ ×7′3½″	3′10″	6″/5″	42″-57″	35″-50″	**2814T13** 5,648.29
(8) Trucks with Adjustable-Width Forks and Counterweight Base														
1,000	25″×3″	6½″-24½″	½″-18½″		—	1″	5′4″	13″	3′1¼″×6′8″	3′2″	5″	26¼″	20¼″	**2813T41** 3,136.58
1,000	25″×3″	6½″-24½″	½″-18½″		—	1″	6′4″	13″	3′1¼″×7′8″	3′2″	5″	26¼″	20¼″	**2813T42** 3,170.40
Counterweight Set for Max. 668-lb. Load Weight (Eight 50-lb. Weights)														**2813T32** 377.74
Counterweight Set for Max. 1,000-lb. Load Weight (Twelve 50-lb. Weights)														**2813T33** 538.33
(9) Trucks with Platform														
1,500	—		—	24″×24″	6″	5′	15″	3′2″	×6′	4′3¾″	5″	21″	15″	**2665T1** 2,654.40
2,000	—		—	24″×27″	6″	5′8″	15″	3′2″	×6′11″	4′3¾″	5″	26″	20″	**2665T12** 2,997.74

Warning! ***Never exceed capacities. Never use to lift people.***

For information about pallet compatibility, go to mcmaster.com and search for **4982TAC**.

Winch-Operated Lift Trucks

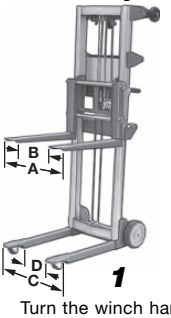

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Turn the winch handle to raise and lower the forks or platform approximately 1″ per handle rotation. A brake keeps the load in place.

(1&2) Trucks with reversible forks allow you to invert the forks and gain additional lifting height. The base has two rear thermoplastic rubber (TPR) wheels and two front dual-wheel swivel casters with rubber-tread wheels. Trucks are steel and aluminum.

Style 2 also have adjustable-width base legs to better straddle pallets and other items for easier access to the load.

(3) Trucks with reversible forks and counterweight base have shorter base legs for closer access to the load. Forks can be inverted for additional lifting height. Base has two rear swivel casters with polyurethane wheels and a side wheel brake and two front polyurethane wheels. Made of steel and aluminum.

(4) Truck with platform has two rear swivel casters with phenolic wheels and two front phenolic wheels. A floor lock keeps the truck stationary and a safety catch holds the platform in place if the winch fails. Made of steel.

(5) Truck with low-profile platform allows you to get your load on the platform with minimal manual lifting. The platform has a 2″ high lip on two sides to keep the load from sliding off. The base has two rear rubber-tread wheels and two front cast iron wheels. Made of steel.

	Cap., lbs.	Fork Size, Lg.×Wd.	Fork Spread (A)	Fork Spread (B)	Platform Size, Lg.×Wd.	Fork/Platform Ht. Min.	Fork/Platform Ht. Max.	Inverted Max.	Load Ctr.	O'all Size, Lg.×Ht.	Handle Ht.	Wheel Dia.	(C)	(D)		Each
Trucks with Reversible Forks																
1	400	22½″×4″	20½″	12½″	—	3½″	8′3″	10′1½″	12″	2′10¾″	×5′7½″	4′6″	8″/2″	24¾″	12⅝″	**9937T22** $1,174.73
1	500	22½″×4″	20½″	12½″	—	3½″	4′1½″	5′11″	12″	2′10¾″	×5′7½″	4′6″	8″/2″	24¾″	12⅝″	**9937T21** 993.60
2	350	22½″×4″	20½″	12½″	—	2″	12′	13′9½″	12″	3′7″	×6′6½″	4′6″	8″/2″	28¼″-43″	21⅜″-36″	**9937T24** 1,329.97
2	400	22½″×4″	20½″	12½″	—	3½″	8′3″	10′1½″	12″	3′7″	×5′7½″	4′6″	8″/2″	28¼″-43″	21⅜″-36″	**9937T32** 1,221.30
2	500	22½″×4″	20½″	12½″	—	3½″	4′1½″	5′11″	12″	3′7″	×5′7½″	4′6″	8″/2″	28¼″-43″	21⅜″-36″	**9937T31** 1,040.17
Trucks with Reversible Forks and Counterweight Base																
3	400	22½″×4″	20½″	12½″	—	3½″	8′3″	10′1½″	12″	2′4½″	×5′7½″	4′6″	5″/4″	43½″	36″	**9937T34** 1,526.63
3	500	22½″×4″	20½″	12½″	—	3½″	4′1½″	5′11″	12″	2′4½″	×5′7½″	4′6″	5″/4″	43½″	36″	**9937T33** 1,345.50
Truck with Platform																
4	750	—	—	—	24″×24″	4½″	4′6″	—	15″	5′11″	×3′1″	3′9″	6″/4″	24″	19″	**2668T1** 1,704.71
Truck with Low-Profile Platform																
5	500	—	—	—	20″×20″	¼″	4′7″	—	10″	2′5 13/16″	×5′6½″	4′8″	6″/2″	30½″	—	**8713T55** 591.39
Optional 23″ Lg.×22″ Wd. Platform for Trucks with Forks																**9937T25** **Each** $261.53

Winch-Operated Mast-Style Lift Trucks

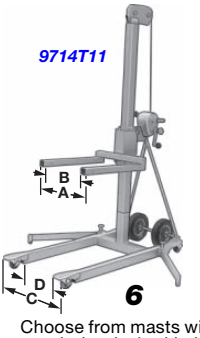

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9

Choose from masts with multiple sections and masts that telescope to reach the desired height. Turn the winch handle to raise and lower the forks. A brake holds the load in place.

(6) Trucks with Sectional Mast and Outriggers— Have a single-speed winch with dual handles to move the load 1⅜″ per handle rotation. Rear folding outriggers with leveling feet and four swivel casters with rubber wheels and a side wheel brake provide added stability. Trucks are steel. UL listed.

9714T11 has two extra mast sections. The base also has two rear never-go-flat (semipneumatic) wheels for easier transport over uneven surfaces. Overall width with outriggers is 6′9″. 9714T12 has three extra mast sections. Base also has front outriggers. Overall width with outriggers is 6 feet.

(7-9) Trucks with Telescoping Mast— Roll through doorways in the upright position. A standard winch moves the load 1⅜″ per handle rotation. The base has four swivel casters with polyurethane wheels. Rear casters have a side wheel brake and swivel lock. Mast is aluminum; base is steel.

Style 8 also has rear outriggers with four swivel casters with polyurethane wheels for added stability. Overall width with outriggers is 6′4½″.

Style 9 also have adjustable-width base legs to better straddle pallets and other items for easier access to the load.

	Cap., lbs.	Fork Size, Lg.×Wd.	Fork Spread (A)	Fork Spread (B)	Fork Height Min.	Fork Height Max.★	Load Ctr.	O'all Size, Lg.×Ht.	Wheel Dia.	(C)	(D)		Each
Trucks with Sectional Mast and Outriggers													
6	500	24″ ×2″	20″	16″	4¼″	5′, 8′, 9′, 12′	12″	5′½″ ×13′10″	10″/3″	29″	21″	**9714T11**	$1,361.23
6	500	24″ ×2″	20″	16″	4¼″	5′, 10′, 14′, 16′, 20′	12″	5′7″ × 6′10″	3″	27″	21″	**9714T12**	1,580.92
Trucks with Telescoping Mast													
7	800	27½″×2½″	11½″-30″	6½″-25″	6″	14′7½″-16′4″	18″	6′2″ × 6′6½″	5″/4″	31½″	23½″	**9734T72**	2,582.68
8	800	27½″×2½″	11½″-30″	6½″-25″	6″	19′6″ -21′2½″	18″	6′10″ × 6′6½″	5″/4″	31½″	23½″	**9734T83**	2,945.87
9	800	27½″×2½″	11½″-30″	6½″-25″	6″	14′7½″-16′4″	18″	6′2″ × 6′6½″	5″/4″	31½″-58″	23½″-50″	**9734T75**	2,928.01
9	1,000	27½″×2½″	11½″-30″	6½″-25″	6″	9′9½″-11′5½″	18″	4′11½″× 6′6½″	5″/4″	31½″-58″	23½″-50″	**9734T74**	2,265.20

★ Based on the number of mast sections used or the amount of telescoping.

Warning! **Never exceed capacities. Never use to lift people.**

Foot-Operated Mobile Lift Tables

A

Move these tables where you need them and raise your work to a comfortable height. All tables have a foot-operated hydraulic pump to get loads to the desired height. They roll on two rigid and two swivel casters (unless noted). All tables are made of welded steel.

(A) Light Duty Lift Tables

Tables have a handle-mounted lever for controlled lowering. Casters have rubber-tread wheels (unless noted). A floor lock keeps the tables stationary (unless noted).

5014T15 has a relief valve that prevents pressure build-up for overload protection. A total lock on one swivel caster brakes the wheel and locks the swivel in one operation.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation per Stroke	Handle Height	Tabletop Gauge	Wheel Dia.		Each
330	27½″ × 17¾″	8⅜″	28¾″	1 5/16″	31 5/16″	14	4″	5014T15★	$675.50
550	31½″ × 19¾″	9½″	31¾″	1 1/16″	36 3/16″	14	4″	2779T42	747.35
770	35¾″ × 23 9/16″	13 9/16″	49¾″	¾″	37¾″	14	5″	2779T45	1,473.80
1,100	35¾″ × 23 9/16″	11¾″	36 9/16″	½″	37¾″	14	5″	2779T43	984.70
1,760	39⅜″ × 23 9/16″	13″	40 3/16″	7/16″	38¾″	14	6″	2779T44●	1,373.88

★ Does not have a floor lock. ● Casters have polyurethane wheels.

B

(B) Medium Duty Lift Tables

A handle-mounted lever provides controlled lowering. Wheels are phenolic. A floor lock keeps the tables stationary. Meet ANSI MH 29.1.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation per Stroke	Handle Height	Tabletop Gauge	Wheel Dia.		Each
600	32″ × 20″	10″	33″	1″	35 7/16″	7	5″	2791T22	$945.00
1,000	36″ × 24″	9¼″	33″	⅝″	35 7/16″	7	5″	2791T23	1,491.62
1,000	48″ × 24″	9¼″	45″	¾″	35 7/16″	7	5″	2791T25	1,658.38
1,000	48″ × 36″	9¼″	45¼″	¾″	35 7/16″	7	5″	2791T28	1,991.91
1,500	48″ × 24″	9¼″	45″	½″	35 7/16″	7	5″	2791T26	1,732.50

C

(C) Easy-Access Lift Tables

For easier access to tight spaces and bench tops, the cantilever top extends beyond the base. A foot-operated lever controls lowering. Casters have phenolic wheels. A floor lock keeps the tables stationary. Meet ANSI MH 29.1.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation per Stroke	Handle Height	Tabletop Gauge	Wheel Dia.		Each
2,000	36″ × 24″	24″	36″	1¼″	39 9/16″	7	5″	24485T21	$1,250.16
2,000	36″ × 24″	30″	48″	1¼″	39 9/16″	7	5″	24485T22	1,437.19
2,000	36″ × 24″	36″	60″	1¼″	39 9/16″	7	5″	24485T23	1,506.09

D *Five Posts*

(D) Post-Style Lift Tables

The posts raise the tables straight up—no pinch points like scissor-style lift tables. A hand-operated valve controls lowering. Wheels are phenolic (unless noted). A floor lock keeps the tables stationary.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation per Stroke	Handle Height	Tabletop Gauge	Wheel Dia.		Each
Single Post									
200	16″ × 16″	28½″	46″	⅜″	—	7	3″	2576T71♣	$358.92
Three Posts									
500	18″ × 18″	30½″	47½″	⅜″	30″	7	4″	2576T72	584.19
1,000	36″ × 18″	30½″	47½″	⅜″	30″	7	4″	2576T73	756.47
Five Posts									
2,000	36″ × 24″	37″	59″	⅜″	36½″	3	6″	2576T74	1,196.28
2,000	48″ × 32″	37″	59″	⅜″	36½″	3	6″	2576T77	1,326.12
6,000	48″ × 32″	37″	59″	⅜″	36½″	3	6″	2576T78	1,388.02

♣ Rolls on four swivel casters with polypropylene wheels.

E

(E) Long-Tabletop Lift Tables

A reinforced, extra-long tabletop gives you a large work area. A foot-operated lever controls lowering. Wheels are cast iron. Two floor locks keep tables stationary.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation per Stroke	Tabletop Gauge	Wheel Dia.		Each
2,000	60″ × 30″	30″	48″	¼″	10	5″	8759T84	$1,680.17
2,000	72″ × 30″	30″	48″	¼″	10	5″	8759T81	1,811.67
2,000	96″ × 30″	30″	48″	¼″	10	5″	8759T82	1,825.83
2,000	120″ × 30″	30″	48″	¼″	10	5″	8759T83	1,957.50

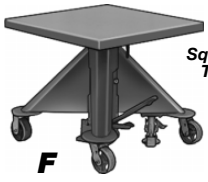

Square Top

F

(F) Turn-and-Lock Lift Tables

The reinforced tabletop rotates 360° and locks in any position at any height. A foot-operated lever controls lowering. A mechanical vent prevents pressure build-up and provides overload protection. Wheels are cast iron. A floor lock keeps the tables stationary.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation per Stroke	Tabletop Gauge	Wheel Dia.		Each
Square Top								
1,000	30″ × 30″	27″	45″	9/16″	3	5″	2777T1	$1,696.62
2,000	30″ × 30″	27″	45″	⅜″	3	5″	2777T2	1,912.73
Round Top								
1,000	30″ Dia.	27″	45″	9/16″	3	5″	2777T34	1,958.44
2,000	30″ Dia.	27″	45″	⅜″	3	5″	2777T35	2,093.46

Warning! ***Never exceed capacities. Never use to lift people.***

Hand-Operated Mobile Lift Tables

Four locking threaded posts and a two-speed crankshaft raise and lower the tabletop for precise positioning. The removable handle can be operated from either side of the table. Two rigid and two swivel casters provide mobility, and a floor lock keeps the tables stationary. Tables are made of welded steel. Meet ANSI MH 29.1.

Polyurethane wheels are smooth rolling and nonmarking. ***Cast-iron wheels*** combine strength and durability with abrasion and heat resistance.

Cap., lbs.	Tabletop Size, Lg.×Wd.	Height Min.	Height Max.	Elevation per Stroke	Tabletop Gauge	Wheel Dia.	With Polyurethane Wheels	Each	With Cast-Iron Wheels	Each
2,000	36″×24″	24″	42″	1/8″/1/4″	7	5″	2847T2	$1,039.03	2847T1	$1,150.23
2,000	36″×30″	24″	42″	1/8″/1/4″	7	5″	2847T6	1,466.87	2847T5	1,584.55

Hand-Operated Mobile Lift-and-Tilt Table

Turn the hand wheels to lift your load and tilt it up to 30° to a more ergonomic angle. A 3″ high lip on the end supports your load when the tabletop is tilted. Rolls on four swivel casters with polyurethane wheels. Two casters have a total lock that brakes the wheel and locks the swivel in one operation to keep the table stationary. Table is welded steel.

Cap., lbs.	Tabletop Size, Lg.×Wd.	Height Min.	Height Max.	Elevation per Stroke	Tabletop Gauge	Wheel Dia.	Each
300	24″×24″	31 1/2″	42″	3/16″	12	3 1/2″	27955T4 $604.64

Battery-Powered Mobile Lift Tables

Simply push a button and the hydraulic pump raises and lowers the load to the desired height. Tables run on a motor powered by a sealed, maintenance-free, rechargeable 12 VDC battery. The built-in charger has a 22″ long power cord with three-prong plug. It fully charges the battery in 6-8 hours. The NEMA 1 (for indoor use) push-button hand control has a self-retracting cord. Tables are welded steel and roll on two rigid and two swivel casters. A floor lock keeps the tables stationary. Meet ANSI MH 29.1.

(A) Scissor Style

Tables have a 5-amp battery charger and phenolic wheels. Cord length is 30″ retracted; 8-ft. extended.

Cap., lbs.	Tabletop Size, Lg.×Wd.	Height Min.	Height Max.	Elevation Speed, in./sec.	Duty Rating, cycles/hr.	Handle Height	Tabletop Gauge	Wheel Dia.	Each
1,000	36″×24″	9 1/4″	33″	2 3/8″	15	35 7/16″	7	5″	2791T41 $2,325.44
1,000	48″×24″	9 1/4″	45″	2 1/2″	15	35 7/16″	7	5″	2791T43 2,436.62
1,500	48″×24″	9 1/4″	45″	1 3/4″	15	35 7/16″	7	5″	2791T44 2,455.15
1,500	48″×36″	9 1/4″	45 1/4″	1 3/4″	15	35 7/16″	7	5″	2791T46 2,770.15

A

(B) Post Style

Tables have a 10-amp battery charger and polyurethane wheels. Cord length is 4-ft. retracted; 10-ft. extended.

Cap., lbs.	Tabletop Size, Lg.×Wd.	Height Min.	Height Max.	Elevation Speed, in./sec.	Duty Rating, cycles/hr.	Handle Height	Tabletop Gauge	Wheel Dia.	Each
Three Posts									
1,000	30″×20″	25″	37″	3/4″	15	24 1/2″	7	5″	2790T43 $1,694.32
1,000	30″×20″	34″	52″	3/4″	15	33 1/2″	7	5″	2790T44 1,776.39
Five Posts									
2,000	36″×24″	25″	37″	3/4″	15	24 1/2″	7	5″	2790T45 1,814.78
2,000	36″×24″	34″	52″	3/4″	15	33 1/2″	7	5″	2790T46 1,838.36

B

Three Posts

Foot-Operated Stationary Lift Tables

Make repetitive lifting and positioning less of a chore. All have a foot-operated lever and hydraulic pump to raise the load and a hand-operated knob for controlled lowering. Made of welded steel with a compact design so they fit in confined spaces. Meet ANSI MH 29.1.

Lift table skirts protect the working parts of the table from dust, dirt, and debris. Made of fabric and include PVC strips for mounting skirt to the outside edge of the tabletop. Color is black and yellow.

Lift Table Skirt

Cap., lbs.	Tabletop Size, Lg.×Wd.	Height Min.	Height Max.	Elevation per Stroke	Tabletop Gauge	Lift Tables	Each	Lift Table Skirts	Each
440	25 1/2″×19 1/2″	5″	21″	9/16″	13	8758T23	$939.07	3740T42	$385.22
550	32″ ×19 1/2″	5″	28″	1/2″	13	8758T24	1,034.17	3740T43	449.08
660	40″ ×20″	9 1/4″	54 1/4″	13/16″	10	8758T27	1,482.77	3740T45	804.22
1,100	40″ ×20″	6″	31 1/2″	1/2″	10	8758T25	1,195.90	3740T44	486.98
1,650	40″ ×20″	6″	31 1/2″	3/8″	10	8758T26	1,332.90	3740T44	486.98

Air-Powered Stationary Lift Tables

A hydraulic pump and an external-mount, air-driven motor that runs on 40 psi does the work for you. Just push the foot-operated control to raise and lower the tabletop. All have a 1/4″ NPT female air connection and include a 6-ft. long hydraulic hose. Made of welded steel with a compact design so they fit in confined spaces. Meet ANSI MH 29.1.

Lift table skirts protect the working parts of the table from dust, dirt, and debris. Made of fabric and include PVC strips for mounting to the outside edge of the tabletop. Color is black and yellow.

Lift Table Skirt

Cap., lbs.	Tabletop Size, Lg.×Wd.	Height Min.	Height Max.	Elevation per Stroke	Tabletop Gauge	Lift Tables	Each	Lift Table Skirts	Each
550	32″×19 1/2″	6″	28″	9/16″	13	8758T44	$1,885.70	3740T43	$449.08
660	40″×20″	9 1/4″	54 1/4″	15/16″	10	8758T47	2,137.58	3740T45	804.22
1,100	40″×20″	6″	31 1/2″	5/8″	10	8758T45	2,035.70	3740T44	486.98

Warning! ***Never exceed capacities. Never use to lift people.***

Electric Stationary Lift Tables

A

Lift Table Skirt

With the push of a button, repetitive lifting and positioning just got easier. Tables have a hydraulic pump and are made of steel. Meet ANSI MH 29.1.

Lift table skirts protect the working parts of the table from dust, dirt, and debris. Made of fabric and include PVC strips for mounting to the outside edge of the tabletop. Color is black and yellow.

(A) Medium Duty Lift Tables

Tables have an external-mount, 115 VAC, 60 Hz, single-phase, 8.8-amp motor with a 2-ft. long power cord and three-prong plug (unless noted). All have a NEMA 1 (for indoor use) push-button hand control with 10-ft. long cord (unless noted).

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation Speed, in./sec.	Duty Rating, cycles/hr.	Tabletop Gauge	Lift Tables	Each	Lift Table Skirts	Each
550	32″ × 19½″	6″	28″	2 7/16″	9	13	8758T34	$1,854.78	3740T43	$449.08
660	40″ × 20″	9¼″	54¼″	3¼″	9	10	8758T37	2,207.67	3740T45	804.22
1,100	25½″ × 18″	8¼″	33¾″	1 13/16″	9	10	8758T38	2,164.08	3740T55	437.54
1,100	40″ × 20″	6″	31½″	2⅛″	9	10	8758T35	2,097.63	3740T44	486.98
1,650	40″ × 20″	6″	31½″	1½″	9	10	8758T36	2,164.08	3740T44	486.98
2,000	48″ × 28″	8¾″	39¼″	1⅜″	10	7	8758T33★	1,893.77	3740T57	773.45
2,000	48″ × 36″	8¾″	39¼″	1⅜″	10	7	8758T39★	2,252.08	———	———

★ Has an internal-mount, 25-amp motor and a NEMA 12 (for indoor use) hand control.

B With Foot Control

(B) Heavy Duty Safety Lift Tables

A sensor around the table base has a cutoff switch for operator safety. Tables have an internal-mount motor with 10-ft. long power cord and three-prong plug. All have a NEMA 1 (for indoor use) control with 10-ft. long cord.

To Order: Please specify hand or foot control. Also specify motor voltage: 115 VAC, 60 Hz (single phase, 14.6 amps, with three-prong plug); 208-230 VAC, 60 Hz (three phase, 4.4 amps, plug not included); or 480 VAC, 60 Hz (three phase, 2.2 amps, plug not included). Please see pages 784-789 for plugs.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation Speed, in./sec.	Duty Rating, cycles/hr.	Tabletop Gauge	Lift Tables	Each	Lift Table Skirts	Each
2,500	48″ × 24″	7½″	43½″	3 9/16″	9	7	2900T21	$2,745.69	3740T58	$622.83
2,500	62½″ × 30″	7½″	55½″	3⅜″	9	7	2900T22	3,564.27	3740T54	1,057.40
5,000	48″ × 24″	7½″	43½″	1¾″	9	3	2900T23	3,304.92	3740T58	622.83
5,000	62½″ × 30″	7½″	55½″	1¾″	9	3	2900T24	3,965.89	3740T54	1,057.40
6,500	48″ × 24″	7½″	43½″	1¼″	9	3	2900T25	3,955.09	3740T58	622.83
6,500	62½″ × 30″	7¾″	55¾″	1⅜″	9	3	2900T26	4,223.45	3740T54	1,057.40

C

(C) Heavy Duty Large-Tabletop Lift Tables

An extra-large tabletop provides plenty of room for your big loads. Tables have an internal-mount, 115 VAC, 60 Hz, single-phase, 8.4-amp motor with a 10-ft. long power cord and three-prong plug. Both have a NEMA 1 (for indoor use) foot control with a 10-ft. long cord.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation Speed, in./sec.	Duty Rating, cycles/hr.	Tabletop Gauge		Each
2,000	96″ × 48″	6½″	42½″	⅞″	12	7	2874T67	$4,064.00
6,000	96″ × 48″	8″	44″	1 1/16″	12	7	2874T68	6,037.33

D 500-lb. Capacity

(D) Compact Lift Tables

The small tabletop fits into confined spaces. All have a 115 VAC, 60 Hz, single-phase, 8.4-amp motor with a 10-ft. long power cord and three-prong plug. They have a NEMA 1 (for indoor use) foot control with a 10-ft. long cord.

500-lb. capacity table has an external-mount motor; ***2,000-lb. capacity*** table has an internal-mount motor.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation Speed, in./sec.	Duty Rating, cycles/hr.	Tabletop Gauge	Lift Tables	Each	Lift Table Skirts	Each
500	25″ × 12″	5″	30″	1⅞″	12	7	2846T11	$2,896.00	3740T41	$445.58
2,000	42″ × 18″	6″	42″	1″	12	7	2846T12	2,997.33	3740T47	650.96

E With Optional Loading Ramp

(E) Low-Profile Lift Tables

A low tabletop height makes loading and unloading from the floor and pallets easier. A toe guard around the base provides safety for the operator. Tables have an external-mount, 115 VAC, 60 Hz, single-phase, 8.8-amp motor with a 2-ft. long power cord and three-prong plug. They have a NEMA 4 (for indoor use only) hand control with a 9-ft. long cord. Include a 6-ft. long hydraulic hose.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation Speed, in./sec.	Duty Rating, cycles/hr.	Tabletop Gauge	Lift Tables	Each	Lift Table Skirts	Each
550	40″ × 23½″	2⅞″	29⅞″	2 11/16″	9	10	2295T42	$2,606.33	3740T46	$518.09
1,100	40″ × 23½″	2⅞″	30″	1 5/16″	9	10	2295T43	3,077.32	3740T46	518.09

Optional 23″ Long Loading Ramp (cannot be used with lift table skirts) ..... 2295T52 Each $337.31

F

(F) Turntable-Top Lift Tables

No more reaching—the turntable top keeps your load close. Tables have an internal-mount, 115 VAC, 60 Hz, single-phase motor with a 10-ft. long power cord and three-prong plug. They have a NEMA 1 (for indoor use) foot control with a 10-ft. long cord.

2,500-lb. cap. have a 14.6-amp motor and a sensor around the base that has a cut-off switch for operator safety. Turntable dia. is 42″. ***3,500-lb. cap.*** has a 17-amp motor. Turntable dia. is 43″.

Cap., lbs.	Tabletop Size, Lg. × Wd.	Height Min.	Height Max.	Elevation Speed, in./sec.	Duty Rating, cycles/hr.	Turntable Thick.	Lift Tables	Each	Lift Table Skirts	Each
2,500	48″ × 24″	8 13/16″	44 13/16″	3 9/16″	9	3/16″	2901T53	$3,567.53	3740T58	$622.83
2,500	62½″ × 30″	9⅛″	57⅛″	3⅜″	9	3/16″	2901T54	4,434.71	3740T54	1,057.40
3,500	48″ × 48″	7⅞″	43⅞″	13/16″	20	3/16″	2901T15	4,896.00	3740T56	740.36

Warning! ***Never exceed capacities. Never use to lift people.***

Air-Lift Tables

Keep it simple—no hydraulics, motors, or pumps to maintain and no electrical connection required. Durable air bags provide consistent and smooth raising and lowering of these tables. Tables are steel and operate on 15 cfm at 80 psi. A relief valve prevents pressure build-up to provide overload protection.

Lift table skirts protect the working parts of the table from dust, dirt, and debris. They are made of fabric. Color is black and yellow.

Lift Table Skirt

With Tabletop and Twin Air Bags

Tables with Tabletop

Tables come ready to operate. They have a pedestal-mount hand control to raise and lower the load. 99295T11 has a single air bag; 99295T13 has twin air bags.

Lift table skirts include PVC strips for mounting to the outside edge of the tabletop.

Cap., lbs.	Tabletop Size, Lg.×Wd.	Height Min.	Height Max.	Tabletop Gauge	Air Inlet, NPT Female	Lift Tables	Each	Lift Table Skirts	Each
2,000	48″×48″	8″	32″	3	¼″	99295T11	$2,749.09	3740T51	$657.96
4,000	48″×48″	8″	32″	3	¼″	99295T13	3,388.64	3740T51	657.96

Tables with Frame Top

First, choose your table, then choose the type of control and top (both sold separately) that best suit your application. All tables have a single air bag.

Controls include a 12-ft. long air hose.

Tabletop is 36″ Lg.×48″ Wd.×¼″ Ht.

Rotating-top platform allows easy access to the load during loading and unloading. Made of steel. Includes a plate and rotating module. Plate measures 36″ Lg.×48″ Ht.×½″ Ht. Diameter of rotating module is 14 11/16″.

Lift table skirts include hook and loop material for mounting to the frame top.

With Frame Top and Pedestal-Mount Hand Control

Cap., lbs.	Frame Top Size, Lg.×Wd.	Height Min.	Height Max.	Frame Top Gauge	Air Inlet, NPT Female	Lift Tables	Each	Lift Table Skirts	Each
1,000	35½″×47″	7″	32″	3	½″	9409T1	$2,297.06	9409T9	$523.68
2,000	35½″×47″	7″	32″	3	½″	9409T2	2,407.35	9409T9	523.68
3,000	35½″×47″	7″	32″	3	½″	9409T3	2,517.65	9409T9	523.68

Controls		Each
Pedestal-Mount Hand Control	9409T5	$264.62
Foot Control	9409T6	378.46

Tops		Each
Tabletop	9409T8	$384.62
Rotating-Top Platform	9409T4	1,332.35

Pallet Stands and Turntables

Pallet stand is made of welded steel and has a 42″ Lg.×40″ Wd. frame top. Height is manually adjustable from lowered height of 10″ up to 20¼″, 30½″, and 35¼″. Capacity is 5,000 lbs.

23835T6 ..... Each $576.97

Pallet Stand

Open-ring turntables are steel and have evenly spaced roller bearings so the ring turns smoothly. They are 2″ Ht.×40″ Dia. Use on floors, work benches, and lift tables as well as the pallet stand listed above.

Cap., lbs.		Each
2,000	8771T42	$351.08
4,000	8771T44	411.05
6,000	8771T46●	465.09

● Do not exceed stand capacity.

Open-Ring Turntable

Pallet stand with open-ring turntable combines the pallet stand (listed above) with the 4,000-lb. capacity open-ring turntable (listed above) for a ready-to-use stand. Height adjusts from lowered height of 12¼″ up to 22½″, 32¾″, and 37½″.

23835T8 ..... Each $987.31

Low-profile turntable is designed for floor use. It has a tapered ramp around the perimeter for easy 360° loading and unloading with pallet and lift trucks. Made of steel. Turntable is ⅞″ Ht.×43⅜″ Dia. Capacity is 4,000 lbs.

2695T2 ..... Each $950.30

Low-Profile Turntable

Spring-Actuated Auto-Leveling Pallet Positioner

Use one, or a combination of the three included springs to automatically maintain a convenient ergonomic working height based on your load. An integral damper provides smooth and gradual raising and lowering without bounce. Positioner is made of steel. The base is 36¼″ Lg.×36⅝″ Wd. and has fork pockets for moving the positioner with a forklift.

Capacity, lbs. Minimum	Capacity, lbs. Maximum	Height Minimum	Height Maximum	Turntable Dia.		Each
400	4,500	9½″	27¾″	43⅝″	2914T11	$1,904.76

Air-Actuated Auto-Leveling Pallet Positioners

Keep your work at a convenient height—a two-ply, reinforced-rubber air-stroke actuator automatically adjusts the height of the turntable. The turntable provides easy pallet rotation to eliminate reaching.

Setup requires a maximum of 60 psi of air, but is not needed for operation. A three-position knob allows capacity adjustments while a relief valve prevents pressure build-up to provide overload protection.

Positioners are made of steel. The base is 49″ Lg.×24 5/16″ Wd. and has fork pockets for moving with a forklift. Inlet is a tank valve and includes a ¼″ NPT female chuck. Meet ANSI MH 29.1.

Capacity, lbs. Minimum	Capacity, lbs. Maximum	Height♦ Minimum	Height♦ Maximum	Turntable Dia.		Each
250	4,000	10½″	30½″	43″	2883T7	$2,412.33

♦ Platform height varies based on load and air pressure.

Warning! ***Never exceed capacities. Never use to lift people.***

About Dock Levelers, Dockboards, and Dock Plates

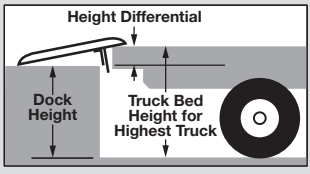

Height Differential— The difference between the height of your loading dock and the height of your truck bed. The larger the height differential, the longer your dockboard or dock plate should be.

Use dock levelers, dockboards, and dock plates to bridge gaps between loading docks and trucks that are loading and unloading cargo. There are three factors to consider when making your selection:

To calculate height differential, subtract the height of your dock from the height of the truck bed (typically 55″ for most semi-trailers and 59″ for refrigerated trailers and container trailers).

Width— Your leveler, dockboard, or dock plate should be 12″ to 18″ wider than your forklift or pallets (whichever is wider). Wider dockboards and dock plates also offer greater maneuverability when placing material inside the trailer.

Capacity— The weight of the load plus the weight of your loading equipment (hand truck, forklift, lift truck, etc.). Load capacities shown are for a single-shift operation. For multiple shifts, choose a board with a capacity 5,000 lbs. higher than your actual expected loads.

Dock Levelers

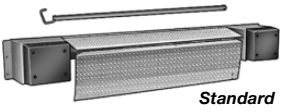
Standard

Permanently attach levelers to bridge the gap between the edge of your dock and the truck you're loading or unloading. For use with a forklift, pallet, or hand truck.

Each leveler has a steel deck plate; a hinged, steel lip plate; and two 13″ Lg. × 12″ Wd. × 4″ Thick. rubber bumpers that are attached to steel bumper blocks. Dual extension springs act as a counterbalance to aid the leveler as it mechanically lifts the lip plate onto the truck bed; the springs return the lip plate to its original position when the truck pulls away. The deck plate and lip plate have a diamond-pattern tread for positive traction.

Weld levelers to a dock face with a min. 8″ wide steel channel embedded into concrete at the dock edge. If the dock edge does not have an 8″ wide steel channel, use the ***optional installation kit*** (sold separately) for bolt-on mounting.

Standard Levelers— An included lifting hook raises the lip plate. Comes with a hanger for storing the lifting hook when not in use.

Levelers with Handle— Pull the self-storing handle back about 50° and then return it to its original vertical position to lift the lip plate. It's so easy, there's no need to bend, push, or lean.

Note: To determine your load, take the gross weight of your equipment, add your typical load weight, and then multiply by two.

Plate Wd.	O'all Wd.	Max. Ht. Differential	Lg.	Load Cap., lbs.	*Standard*	Each	*With Handle*	Each
66″	102″	±5″	27¾″	20,000	8749T21	$780.00	8749T23	$860.00
72″	108″	±5″	27¾″	20,000	8749T22	827.27	8749T24	909.09

Optional Installation Kit (includes ramp plate, 17 anchor bolts, and four angles; color is gray) ..... 8749T53 Each $260.00

Dockboards

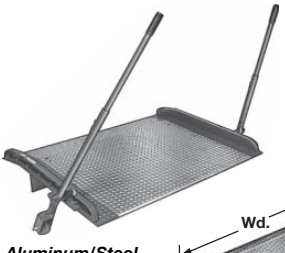
Aluminum/Steel with Wheels

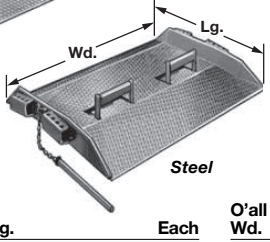

Steel

The best portable choice for handling heavy loads, these dockboards usually require you to use a forklift to move them to your dock. For use when loading and unloading trucks using forklifts, battery-operated hand trucks, and other powered equipment. All have a tread-plate surface for positive traction, plus side curbs to lessen the chance of vehicle runoff.

Aluminum/Steel Dockboards— Have steel curbs bolted to an aluminum tread plate. The curbs are painted high-visibility yellow.

Aluminum/Steel Dockboards with Wheels— Telescoping handles with wheels allow one person to lift and position these dockboards without using a forklift. Retract the handles when the dockboard is in position. All have steel curbs bolted to an aluminum tread plate. The curbs are painted blue.

Steel Dockboards— The heaviest dockboards we offer, these are built to endure high-traffic use. Made of steel with welded-on steel side curbs. Dockboards have steel pins that you drop into any of the eight holes along their edges—this anchors the dockboard in the space between the dock and the truck. All have forklift loops that flip up for easy maneuvering and fold flat when not in use. Color is gray with blue side curbs.

O'all Wd.	Max. Ht. Differential	Lg.		Each
Aluminum/Steel				
10,000-lb. Load Capacity				
60″	±7″	48″	21905T82	$740.96
60″	±10″	60″	21905T83	906.96
60″	±12″	72″	21905T34	1,084.85
15,000-lb. Load Capacity				
60″	±5″	36″	21905T81	633.87
60″	±7″	48″	21905T52	929.85
60″	±10″	60″	21905T74	1,131.37
60″	±12″	72″	21905T75	1,354.91

O'all Wd.	Max. Ht. Differential	Lg.		Each
Aluminum/Steel (Cont.)				
20,000-lb. Load Capacity				
60″	±5″	36″	21905T84	$686.56
Aluminum/Steel with Wheels				
10,000-lb. Load Capacity				
60″	±5″	48″	8178T11	1,047.31
60″	±7″	60″	8178T12	1,219.86
15,000-lb. Load Capacity				
60″	±5″	48″	8178T13	1,249.42
60″	±7″	60″	8178T14	1,453.53

O'all Wd.	Max. Ht. Differential	Lg.		Each
Steel				
15,000-lb. Load Capacity				
60″	±5″	48″	2244T21	$979.44
60″	±7″	60″	2244T22	1,152.84
60″	±8½″	72″	2244T23	1,329.34
72″	±5″	48″	2244T31	1,074.86
72″	±7″	60″	2244T32	1,249.31
72″	±8½″	72″	2244T33	1,424.78
72″	±10″	84″	2244T34	1,601.27

Aluminum Dock Plates

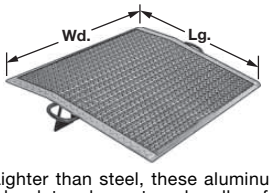

Lighter than steel, these aluminum dock plates have two handles for manual positioning at your dock. Use with hand trucks, pallet trucks, and other walk-on/walk-off loading and unloading equipment. A tread-plate surface provides positive traction.

O'all Wd.	Max. Ht. Differential	Lg.	Load Cap., lbs.		Each
⅜″ Thick					
36″	±4″	30″	3,000	2251T28	$262.38
36″	±5″	36″	2,500	2251T72■	465.45
36″	±7″	48″	1,900	2251T29	379.04
42″	±4″	30″	3,300	2251T33	285.32
48″	±3″	24″	5,200	2251T34	271.22
48″	±4″	30″	4,100	2251T35	328.09
48″	±5″	36″	3,500	2251T36	376.86
48″	±7″	48″	2,600	2251T38	488.82
48″	±9″	60″	1,800	2251T92	597.74
60″	±5″	36″	4,100	2251T43	461.81

■ Edges are high-visibility yellow.

O'all Wd.	Max. Ht. Differential	Lg.	Load Cap., lbs.		Each
⅜″ Thick (Cont.)					
60″	±7″	48″	2,900	2251T47	$597.20
72″	±3″	24″	7,200	2251T77■	564.74
½″ Thick					
48″	±5″	36″	5,300	2251T53	466.02
48″	±7″	48″	3,800	2251T57	612.59
60″	±3″	24″	10,000	2251T58	421.90
60″	±4″	30″	7,800	2251T59	542.08
60″	±5″	36″	6,600	2251T66	621.99
72″	±4″	30″	9,500	2251T67	627.63
72″	±5″	36″	7,800	2251T68	731.73

Wheel-Riser Ramps

In addition to elevating trucks to dock height for easy loading and unloading, these ramps can be used to elevate the front or rear wheels of any vehicle for maintenance jobs. Ramps are made of heavy duty aluminum with a tread-plate surface for positive traction. Load capacity is 15,000 lbs. per ramp.

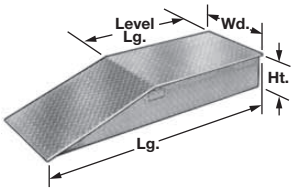

Ht.	Wd.	Level Lg.	O'all Lg.		Each
6″	18″	30″	48″	2179T11	$443.16
6″	24″	30″	48″	2179T15	513.20
8″	18″	30″	54″	2179T12	501.11
12″	24″	36″	72″	2179T18	892.89

Walk Ramps

No dock available? Use these ramps to create a walkway for loading and unloading trucks. They're useful when using a hand truck.

Ramps are aluminum with a nonskid serrated deck and welded side curbs to prevent runoffs. There's a 9″ apron that lays on a truck bed to provide a smooth transition from truck to ramp. Furnished with two handles and two 18″ long security chains to secure ramp to truck.

Note: Not for use with pallet trucks and forklifts.

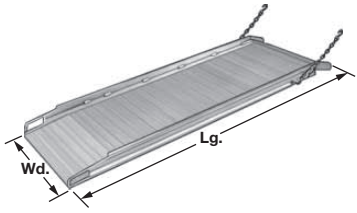

Ht. Range Min.	Max.	Usable Wd.	O'all Wd.	Lg.	Cap., lbs.		Each
6″	25″	26″	28″	7′	1,800	2167T31	$502.64
6″	29″	38″	40″	8′	1,600	2167T46	663.60
6″	38″	38″	40″	10′	1,500	2167T65	796.64
6″	46″	38″	40″	12′	1,400	2167T49	897.74
6″	62″	38″	40″	16′	1,000	2167T51	1,137.85

Low-Height Walk Ramps

Make pushing your hand truck easier; use these ramps to navigate 3″ to 6″ high curbs and door thresholds. Ramps are made of aluminum with a diamond-tread surface for good traction and welded side handles for easier positioning.

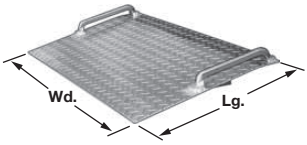

Wd.	Lg.	Load Cap., lbs.		Each
30″	18″	600	2187T32	$114.71
36″	18″	700	2187T33	143.79

Make-A-Ramp Sets

Convert standard 2×8 and 2×12 lumber into all-purpose ramps. Each set contains two steel ramp tops and two rubber feet with a ribbed, nonslip surface. Furnished with assembly hardware.

For Lumber Size		Per Set
2× 8	21765T55	$43.12
2×12	21765T56	64.69

Space-Saving Ramps

You won't need a lot of storage space for these ramps. Use them to move equipment on and off trucks, and then fold or retract them for convenient carrying and storage.

Folding—Ramp is made of welded aluminum. Use alone or in a pair.

Folding with Side Curbs—Has side curbs to lessen the chance of vehicle runoff. Made of extruded aluminum alloy. Furnished in a pair; each component has an antislip surface and two handles for easier carrying.

Telescoping—Has side curbs to lessen the chance of vehicle runoff. Made of extruded aluminum alloy. Furnished in a pair; each component has an antislip surface.

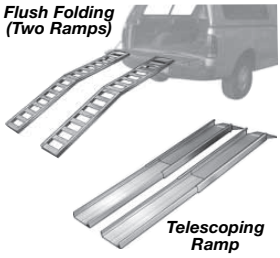

Style	Max. Length	Storage Lg.	Usable Wd.	Cap., lbs.	Ramp Sides		Each
Folding	85″	44″	12″	700 (per ramp)	Flush	2166T35	$183.30
							Per Pair
Folding w/ Side Curbs	120″	65″	7⅞″	550 (per pair)	2″ Curb	21775T121	$371.09
Telescoping	72″	39⅝″	7⅞″	550 (per pair)	2¾″ Curb	21775T111	268.71

Wheel Chocks for Tires Up to 28″ Diameter

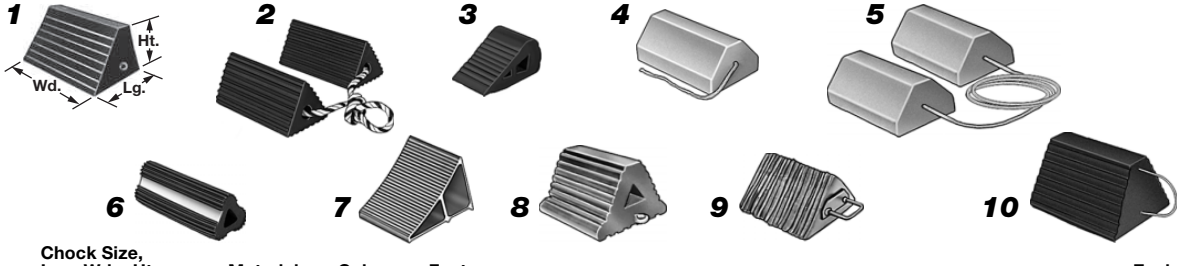

	Chock Size, Lg.×Wd.×Ht.	Material	Color	Features		Each
For Up to 24″ Diameter Tires						
1	8″ × 9″ ×5¾″	Rubber	Orange	Has 1″ ID eyebolt for attaching rope or chain	2232T13	$28.34
For Up to 26″ Diameter Tires						
2	5″ ×10″ ×4⅜″	Rubber	Black	Consists of two chock components that are connected by a 3-ft. long polypropylene rope	22285T63	71.58
For Up to 28″ Diameter Tires						
1	7½″×10″ ×6″	Rubber	Black	Has a ¾″ ID eyebolt for attaching rope or chain	2232T12	15.07
3	6½″× 4″ ×3¼″	Rubber	Black	Has a hollow middle for attaching rope or chain	2267T11	6.77
3	6½″× 6″ ×3¼″	Rubber	Black	Has a hollow middle for attaching rope or chain	2267T12	9.64
3	6½″×12″ ×3¼″	Rubber	Black	Has a hollow middle for attaching rope or chain	2267T13	18.60
4	6″ × 9½″×3⅞″	Plastic	Yellow	Made of recycled plastic; has a 27″ long nylon rope	2188T1	15.00
5	6″ × 9½″×3⅞″	Plastic	Yellow	Made of recycled plastic; consists of two chock components that are connected by a 33″ long nylon rope	2188T2	34.86
6	4″ ×10″ ×4″	Rubber	Black	Has reflective tape on all three sides for nighttime visibility	2175T24	21.22
6	6″ ×12″ ×6″	Rubber	Black	Has reflective tape on all three sides for nighttime visibility	2175T23	35.92
6	6″ ×30″ ×6″	Rubber	Black	Has reflective tape on all three sides for nighttime visibility	2175T22	99.74
7	8¾″× 6″ ×6″	Aluminum	Yellow	Has solid base with cleats for gripping; yellow powder-coated finish	2254T17	63.41
8	8¾″× 9″ ×6″	Rubber	Black	Has a ¾″ ID eyebolt for attaching rope or chain	2259T1	34.14
9	10½″× 9½″×6″	Rubber	Black	Laminated-rubber tire cord is compressed between steel plates	2200T31	28.84
10	7½″×10″ ×6″	Rubber	Black	Has a U-bolt handle for attaching rope or chain	2232T14	15.92

Wheel Chocks for Tires Up to 30″ Diameter and Larger

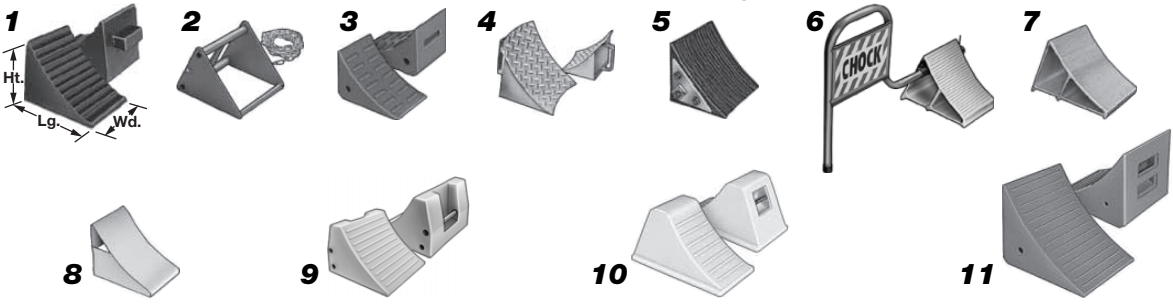

	Chock Size, Lg.×Wd.×Ht.	Material	Color	Features		Each
For Up to 30″ Diameter Tires						
1	10″ × 7″ × 8″	Rubber	Black	Has a 5/8″ dia. hole for attaching rope or chain	**8827T41**	$27.38
2	10½″ × 9¾″ × 7¾″	Steel	Yellow	Has nonslip gripping teeth; furnished with a 10-ft. chain	**2213T21**	51.83
3	11¼″ × 7¾″ × 8″	Polyurethane	Orange	Has a 3/4″ dia. through hole for attaching rope or chain	**2269T14**	32.89
4	8″ × 7½″ × 9″	Steel	Yellow	—	**2257T14**	49.72
5	8″ × 8″ × 8″	Rubber	Black	Has laminated rubber pads compressed between steel plates; anchor plate has a 5/8″ dia. hole for attaching rope or chain	**2200T41**	36.13
6	10¾″ × 7″ × 8″	Aluminum	Yellow	Has a flag (red and white striped with black lettering) to insert and lock on either side of chock	**9399T91**	180.00
7	12″ × 7″ × 8″	Aluminum	—	Has solid base with gripper cleats; hollow middle for attaching rope or chain	**2254T14**	43.78
For Up to 32″ Diameter Tires						
8	10¾″ × 8″ × 9″	Steel	Yellow	Saw-tooth bottom for gripping; 1/2″ dia. hole in back for attaching rope or chain	**2774T1**	35.86
For Up to 40″ Diameter Tires						
9	15″ × 15″ × 11″	Polyurethane	Yellow	Base has antislip rubber pads; has a 1 3/8″ dia. hole for attaching rope or chain	**21835T51**	216.95
For Up to 44″ Diameter Tires						
10	21″ × 11¼″ × 12¼″	Polyurethane	Yellow	Complies with NFPA (National Fire Protection Association) 1901-1904; has two aluminum plates with cleats for gripping	**21745T13**	270.82
For Up to 105″ Diameter Tires						
11	17″ × 14″ × 14″	Polyurethane	Orange	Has a 1¼″ dia. hole for attaching rope or chain	**2269T15**	187.15

Railcar Derailers

Secure the wedge clamp on these derailers to the rail head to protect people, buildings, and other freight cars from uncontrolled car movements. Derailers operate by lifting the railcar's wheel and dropping it clear of the rail. For temporary installation.

All are double-end style for derailment in both directions. They're made of ductile iron and have a safety-yellow enamel finish.

The clamp and the detachable, reflective "DERAIL" flag can be locked in position with a padlock (not included) that has a 3/8″ shackle diameter. Flag is blue with white lettering and is 48″ high.

Note: If you are unsure of your rail size, choose the derailer for 60- to 141-lb./3-ft. rails. It's the most common size range.

For Rail Size, lbs./3 ft.	Length		Each
20- 60	19¾″	**2184T1**	$539.18
60-141	32¾″	**2184T2**	576.97

Wheel Chock Anchoring Set

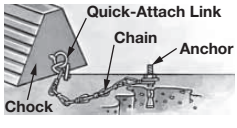

Set includes 15 feet of plated-steel chain, a zinc-plated-steel quick-attach link, a stainless steel wedge anchor, and a zinc-plated-steel drive anchor. Simply thread chain over the quick-attach link and close securely with hammer or vise. Chock not included.

56835T65 ..... **Per Set** $14.02

Railcar Mover

The easiest, most economical way to move railcars short distances. This mover is made of ductile and malleable iron with a hardwood handle and heat-treated steel spurs. The spurs securely grip the rail as you push downward on the handle to create the leverage needed to move the railcar. Contact points adjust to the wheel for full contact over the entire length of the stroke.

Approx. O'all Lg.		Each
66″	**2221T8**	$243.14

Railcar Wheel Chocks and Stops

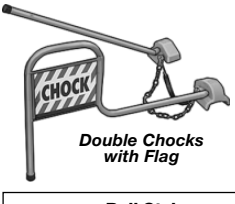

Double Chocks with Flag

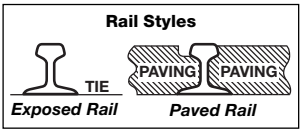

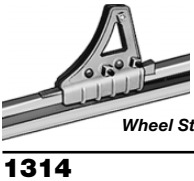

Wheel Stop

Use these chocks and stops on 75- to 140-lb./3-ft. rails. They're for use with railcars that have 28″ to 42″ diameter wheels. All have a painted safety-yellow enamel finish.

Warning: Not for use on railcars with smaller than 28″ or larger than 42″ wheel diameters.

Railcar Wheel Chocks

Chock the wheels on stationary railcars to keep them from moving during loading, unloading, and servicing. Chocks are made of cast steel and install quickly and easily without tools. All meet OSHA regulations 1910.110 (15), 1910.111 (13), and 1910.30 (A) (5).

Chocks ***without flag*** have an angled handle. Chocks ***with flag*** have a flag to indicate that chocks are in use. Flag is red and white with black lettering. Distance between chock and flag is 17″.

Double Chocks— A chain connects two chocks; a rubber strap hooks onto the chain and draws the chocks together.

For Rail Style	Chock Size, Lg.×Ht.	***Without Flag***	Each	***With Flag***	Each
Single Chocks—*Prevent movement in one direction*					
Exposed	7½″ × 2¾″	**2261T11**	$75.62	**2261T1**	$112.50
Paved	7½″ × 2¾″	**2261T12**	72.73	**2261T2**	120.37
Double Chocks—*Prevent forward and backward movement*					
Exposed	5″ × 2″	**2261T16**	122.22	**2261T6**	153.68
Paved	5″ × 2″	**2261T17**	118.52	**2261T7**	144.44

Railcar Wheel Stops

Simply clamp these wheel stops to your rail (no drilling required) to stop moving railcars at track ends and approaches to buildings and doors. Impact speed should not exceed 4-mph switching speed. Made of rugged ductile iron. Stops stand 13½″ above the top of the rail. Furnished in pairs.

2274T14 ..... **Per Pair** $776.67

Floor Locks

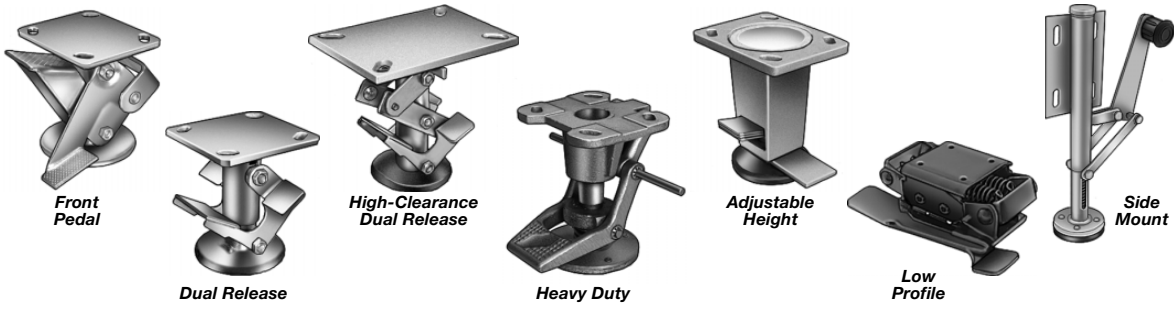

Bolt or weld these floor locks to the underside (unless noted) of carts, trucks, workbenches, and other mobile equipment to stabilize it during loading and unloading and keep it from rolling away. All floor locks have a spring-loaded base with a nonskid floor pad to keep equipment stationary. Mounting hardware not included.

Note: Floor locks are not load rated. They are designed to keep equipment in place, not for lifting it off the floor.

To find the floor lock that suits your needs, match your caster mount height to a floor lock with the same caster mount height. To determine your caster mount height, measure the distance between the floor and the top of the mounting plate (unless noted).

The *extended height* is the maximum height of the lock when the cart is unloaded (no spring compression in the lock). It should always be greater than or equal to your mounting height.

Front Pedal— Step down on the foot pedals in front to extend and retract. As you press the pedal down to extend, the retracting pedal raises into position, and vice-versa. Both pedals are easily accessible without placing your foot underneath the equipment.

Dual Release— Press the center pedal to extend; press either of the two side pedals to retract. A special compression spring requires minimal pressure to operate.

High-Clearance Dual Release— Same as the dual release floor locks above, but these provide 3⅛″ of ground clearance when retracted. This extra clearance allows equipment to move over ramps and obstructions.

Heavy Duty— These locks are well suited for the daily abuse of industrial environments. They have a pedal to extend and bars on either side to retract. A pivoting base accommodates uneven floors.

Adjustable Height— Unlike our other floor locks that are either fully extended or fully retracted, these locks extend at any point along their range of movement. One pedal extends the lock; the other retracts.

Low Profile— With a retracted height of 3⅜″, this floor lock stays out of the way when not in use so equipment moves easily on ramps and over obstructions.

Side Mount— Has a vertical mounting plate for use with equipment that doesn't permit underside mounting. One large foot pedal extends and retracts.

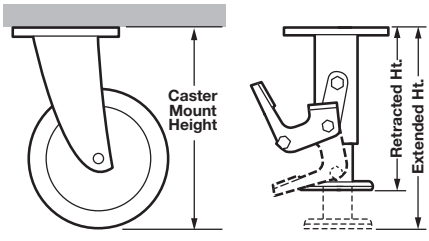

Selecting the Number of Floor Locks

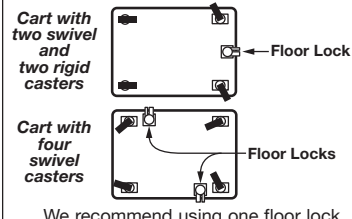

We recommend using one floor lock on carts with two rigid and two swivel casters; two floor locks on carts with four swivel casters.

For Use with Caster Mount Height	Extended Height	Retracted Height	Mounting Plate Size		Mounting Plate Bolt Size	Mounting Plate Hole Pattern		Each
Front Pedal— *Zinc-Plated Steel*								
5¼″ to 5½″	5⅝″	4⅞″	4⅝″	×	3¾″	3/8″	1	**2478T61** $57.02
5⅜″ to 5⅝″	5¾″	5″	4⅝″	×	3¾″	3/8″	1	**2478T65** 58.11
6⅛″ to 6⅜″	6½″	5¾″	4⅝″	×	3¾″	3/8″	1	**2478T62** 59.09
6⅜″ to 6⅝″	6¾″	6″	4⅝″	×	3¾″	3/8″	1	**2478T66** 59.28
6⅞″ to 7⅛″	7¼″	6½″	4⅝″	×	3¾″	3/8″	1	**2478T63** 59.76
7⅜″ to 7⅝″	7¾″	7″	4⅝″	×	3¾″	3/8″	1	**2478T67** 59.57
9⅜″ to 9⅝″	9¾″	9″	4⅝″	×	3¾″	3/8″	1	**2478T64** 61.91
Dual Release— *Zinc-Plated Steel*								
5⅝″	6″	4 15/16″	4½″	×	4″	3/8″	1	**2728T21** 38.47
6½″	6⅞″	5¾″	4½″	×	4″	3/8″	1	**2728T22** 38.47
7¼″	7⅝″	6½″	4½″	×	4″	3/8″	1	**2728T23** 38.47
7⅜″	7¾″	6 11/16″	5½″	×	5″	3/8″	3	**2728T32** 47.33
7½″	7 15/16″	6 13/16″	4½″	×	4″	3/8″	1	**2728T24** 44.38
7½″	7 15/16″	6 13/16″	6¼″	×	4½″	1/2″	2	**2728T29** 50.40
9½″	9⅞″	8 13/16″	4½″	×	4″	3/8″	1	**2728T25** 38.47
9½″	9⅞″	8¾″	5½″	×	5″	3/8″	3	**2728T33** 48.00
10⅛″	10½″	9 7/16″	4½″	×	4″	3/8″	1	**2728T26** 45.38
10⅛″	10½″	9 7/16″	6¼″	×	4½″	1/2″	2	**2728T31** 51.33
10½″	10 11/16″	9 9/16″	7¼″	×	5″	1/2″	4	**2728T28** 55.56
Dual Release— *Type 304 Stainless Steel*								
5⅝″	5⅝″	4½″	4½″	×	4″	3/8″	1	**2338T46** 82.74
6½″	6½″	5⅜″	4½″	×	4″	3/8″	1	**2338T49** 88.93
7½″	7½″	6½″	4½″	×	4″	3/8″	1	**2338T47** 91.31
High-Clearance Dual Release— *Zinc-Plated Steel*								
10⅛″	10½″	7⅜″	4½″	×	4″	3/8″	1	**9958T15** 131.94
10½″	10 11/16″	7½″	7¼″	×	5″	1/2″	4	**9958T14** 132.65
Heavy Duty— *Gray Painted Cast Iron*								
5⅝″ to 5⅞″	5⅞″	4 9/16″	4 13/16″	×	4¼″	3/8″	1	**22845T44** 79.24
7¼″ to 7½″	7⅝″	6″	6½″	×	4¾″	1/2″	2	**22845T45** 88.55
10¼″ to 10⅝″	10¾″	9⅛″	6½″	×	4¾″	1/2″	2	**22845T46** 121.16
Adjustable Height— *Cast Aluminum Alloy*								
6½″ to 7½″	8″	5½″	4¾″	×	3¾″	3/8″	1	**2510T17●** 77.96
8″ to 10½″	11″	7″	4¾″	×	3¾″	3/8″	1	**2510T18●** 81.24
Low Profile— *Black Painted Steel*								
5″ to 6″	7½″	3⅜″	4″	×	4″	3/8″	5	**2675T11** 126.23
Side Mount— *Chrome-Plated Steel*								
11″	11″★	8¾″★	4 7/16″	×	6⅝″	3/8″	6	**27185T11** 59.68

● Do not weld on. ★ Measured from the bottom of the mounting plate.

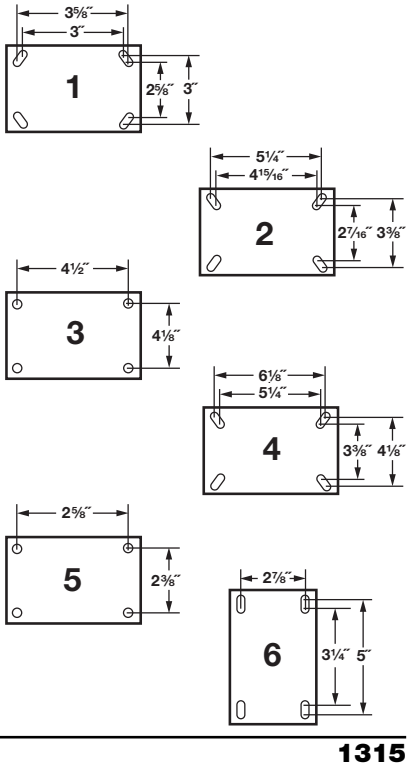

About Wheels

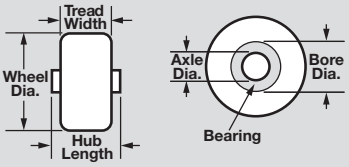

MEASURING GUIDE

Use the measuring guide at left to help you choose the correct size wheel. *Note:* Bore diameter equals the outside diameter of the bearing. Axle diameter equals the inside diameter of the bearing.

WHEEL CONSTRUCTION

Solid wheels have the same material throughout the entire wheel, eliminating the possibility of tread separation.
Tread on core wheels have a soft tread material mated to a hard core. This is the most common construction for caster wheels.
Pneumatic wheels are air-filled rubber tires (with or without tubes) and provide excellent shock absorption and quiet operation.
Never-go-flat wheels are also known as semi-pneumatic. They have a thin pocket of nonpressurized air that provides a cushioned ride and quiet operation without leaks or flats.
Flat-free wheels are solid polyurethane or polyurethane-filled for a quiet, cushioned ride comparable to pneumatic wheels, but will not go flat when punctured.

DUROMETER

The durometer, or hardness, of a wheel affects wheel traction, shock absorption, durability, and ease of rolling. Softer wheels are quiet, have excellent traction and shock absorption, and are easier to roll on rough surfaces. Harder wheels are very durable, have higher capacities, and are easier to roll on smooth surfaces, but can be noisy and damaging to floors. Just as Fahrenheit and Celsius are both scales to measure temperature, there are different scales used to measure hardness of nonmetals.

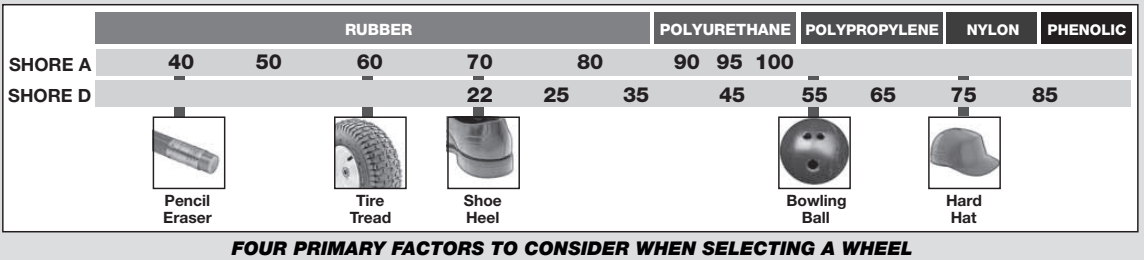

FOUR PRIMARY FACTORS TO CONSIDER WHEN SELECTING A WHEEL

(1) Capacity— To determine the wheel capacity required for an application, divide the total weight of your load by the number of wheels. The capacity of each wheel must be greater than or equal to the result.

(2) Floor Conditions— Different wheel materials perform better on certain flooring surfaces. In general, the harder the wheel (see durometer chart above), the less suitable it is for rough or uneven surfaces. For quieter operation, select wheels with a durometer lower than 85A. This includes some rubber, polyurethane, and pneumatic wheels. For nonmarking wheels, choose glass-filled nylon, phenolic, nylon, neoprene, elastomer, polyurethane, or nonmarking rubber. Use the table below to guide your selection.

Floor Conditions and Recommended Wheel Materials

Floor Conditions	Examples	Recommended Durometer Range	Recommended Wheel Materials
Smooth (No floor protection required)	Concrete, Steel	All	All
Smooth (Floor protection recommended)	Hardwood, Brick, Ceramic Tile, Linoleum, Asphalt	Up to 70D	Polyurethane, Rubber, Pneumatic
Rough or Uneven	Terrazzo, Dirt, Ribbed	Up to 85A	Soft Polyurethane, Rubber, Pneumatic
Carpet	_____	Greater than 95A	Phenolic, Nylon, Glass-Filled Nylon, Elastomer, Hard Rubber, Neoprene Rubber

(3) Operating Environment— Temperature, the presence of debris, and exposure to moisture and chemicals are all factors that impact the performance and life of a wheel. Use the table below to guide your selection.

Operating Environment and Recommended Wheel Materials

Operating Environment	Recommended Wheel Materials
Oil, Grease, Solvents, Mild Acids	Metal, Phenolic, Glass-Filled Nylon, Elastomer, Polyurethane, Neoprene Rubber
Mild Alkalines	Metal, Nylon, Polyurethane
High Temperature (Above +160° F)	Metal, Phenolic, Glass-Filled Nylon, Elastomer
Low Temperature (Below –20° F)	Metal, Phenolic, Glass-Filled Nylon, Elastomer, Polyurethane

(4) Rolling Effort— The force required to start a wheel rolling and keep it rolling is affected by the size of the wheel, the shape of the tread, and the type of bearings in the wheel. Usually, the larger the wheel, the more easily it rolls. Rounded treads start rolling and turn easier than flat treads. Also, maintenance-free precision ball bearings and tapered roller bearings roll easier than standard ball bearings and straight roller bearings. Plain bearings require the most force to start rolling.

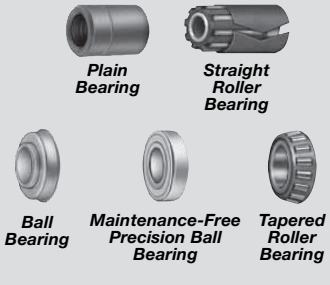

BEARINGS

Plain Bore (No Bearings)— Good for light loads; the wheel bore rides directly on the axle.
Plain Bearings— A metal or plastic sleeve is pressed into the wheel bore and rests directly on the axle. Used in applications where ease of rolling is less critical. *Plastic bearings (Acetal and Celcon)* are corrosion resistant and dependable in a broad range of temperatures and conditions, including brine, steam cleaning, water, and other liquids. *Metal bearings* are made of sintered metal impregnated with oil or graphite. They're maintenance-free and commonly used with small wheels.
Straight Roller Bearings— Hardened steel rollers improve rolling while a smooth outer sleeve prevents wear of the wheel bore.
Ball Bearings— Decrease the effort required to begin rolling.
Maintenance-Free Precision Ball Bearings— The most ergonomic choice, these bearings have the least rolling resistance. Sealed design makes them completely maintenance free.
Tapered Roller Bearings— Withstand both downward and side force, making them the most effective bearings for heavy loads.

About Casters

TYPES OF CASTERS

(1) Premium (Kingpinless)— These casters have a rugged large-diameter swivel raceway designed to eliminate the need for the most vulnerable component of a caster—the kingpin. This design makes them the best-performing, most durable casters available. They stand up to shock loads (impact of a load being dropped) and the most demanding applications. Their heavy gauge steel construction and precision-machined, heat-treated swivel raceway makes them strong, while large-diameter hardened polished steel ball bearings provide smooth swiveling, reduced wear, and extended service life.

(2) One-Piece Forged Steel Mounting Plate with Kingpin— The best of the kingpin-design casters. The top plate and kingpin are machined from a single piece of forged steel resulting in a stronger, more durable caster than those with a bolt and nut or rivet kingpin. These casters feature a precision-machined upper swivel raceway for smooth swiveling and a tapered roller bearing in the lower swivel raceway that withstand shock loads (impact of a load being dropped) and side impact. Both raceways are heat treated for extended service life.

(3) Forged Steel— Strong and durable with a forged steel top plate and frame. A heavy duty bolt and nut connects the welded caster frame to the top plate. The nut allows you to adjust the tension on the swivel raceway to compensate for wear. The upper and lower swivel raceways are precision machined for smooth swiveling and have two rows of ball bearings for better load distribution and extended service life.

(4) Formed Steel Welded Frame— The caster construction with the broadest range of capacities, but with less durability than our premium and forged steel caster constructions. The top plate and frame are made of formed steel. The welded frame is connected to the top plate with either a bolt and nut or a heavy duty rivet kingpin. These casters are an economical choice for applications that are not subject to shock loads (impact of a load being dropped).

(5) One-Piece Formed Steel— The most economical caster construction, but not as durable as other constructions. An ideal choice for less critical applications requiring less movement. The frame and legs are formed from a single piece of steel without welding. The one-piece frame is connected to the formed steel top plate using a rivet.

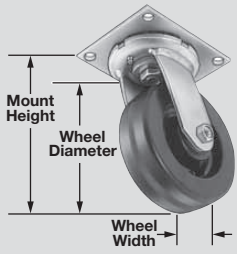

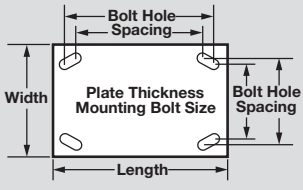

Mounting plate drawings list length, width, bolt hole spacing, plate thickness, and mounting bolt size.

MOUNTING PLATES

For your convenience, our mounting plate drawings list length, width, bolt hole spacing, plate thickness, and mounting bolt size.

BRAKE AND LOCK OPTIONS

Swivel Lock— For straight-line travel, a hand-operated plunger prevents the caster from swiveling. The *four-position lock* will lock every 90°.

Side Wheel Brake— A foot-operated lever connected to the wheel axle compresses the caster frame against the hub to prevent rolling.

Face Wheel Brake— A foot-operated lever engages a pad against the tread of the wheel to prevent rolling. Brakes more securely than a side wheel brake.

Total Lock— With one push, a foot-operated pedal applies a face wheel brake and locks the swivel at any point along the swivel circumference.

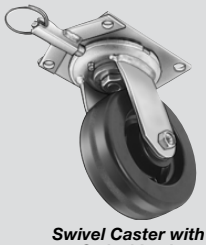

Swivel Caster with Swivel Lock

SWIVEL BEARING TYPE

Large-Diameter Single Ball Bearings— Large-diameter hardened steel balls housed in a large-diameter, precision-machined, hardened raceway create a smooth-operating swivel that withstands the direct weight of a load plus the stress from shock loads (impact of a load being dropped), side impact, and rolling over obstructions. The best choice for the most demanding applications.

Double Tapered Roller Bearings— One set of tapered roller bearings handles outside stress from side impact and rolling over obstructions while the other set handles the stress of the load. Well-suited for heavy loads and continuous use.

Single Ball/Tapered Roller Bearings— Hardened steel balls rotate in a machined raceway for smooth swiveling under load while secondary tapered roller bearings handle the stress of side impact and rolling over obstructions.

Double Ball Bearings— The most common swivel bearing. A large-diameter upper raceway distributes the load while a smaller diameter lower raceway takes care of the swiveling. Raceways are machined in forged casters for a more precise fit; stamped in formed casters for an economical alternative to other dual-bearing swivel designs for less demanding applications.

Single Ball Bearings— A single row of steel balls housed in a formed raceway for light duty applications or for equipment that is not often moved.

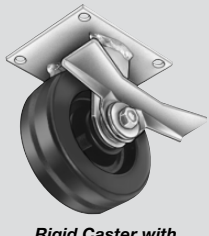

Rigid Caster with Side Wheel Brake

CASTER CAPACITY

Caster capacity listed is for an individual caster. To determine what caster capacity is best for your application you must first determine how many casters are required and how much weight will be placed upon them.

To determine the caster capacity required, divide the maximum weight of your load by the number of casters for your application. Caster capacity must be greater than or equal to the result.

The capacity of the caster must be increased if it will be rolling over rough surfaces or obstructions such as expansion joints, thresholds, and floor plates, or if there is a chance of shock loads (impact of a load being dropped).

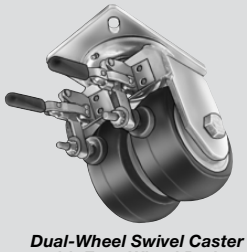

Dual-Wheel Swivel Caster with Face Wheel Brake

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Hercules Casters—3,500 to 20,000 lbs.

Single-Wheel Swivel

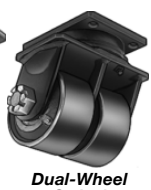

Dual-Wheel Swivel

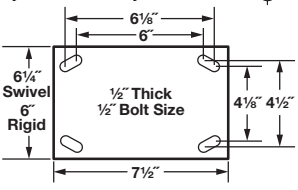

- Premium large-diameter swivel raceway (kingpinless)
- Large-diameter single ball swivel bearings
- ⅜″ leg thickness

The toughest casters we carry. The precision-machined raceway not only withstands shock loads, it also offers smooth swiveling and is sealed to keep out dust and debris. Made of heavy-gauge steel with a blue painted finish. ***Dual-wheel*** casters provide better load distribution and easier turning than single-wheel casters. *Note*: Wheel width shown is for each wheel.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. Please ask for 2465T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Please ask for 2465T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Single Wheel with Tapered Roller Bearings						
Blue Polyurethane on Iron Wheels—*Durometer is 92A*						
8″×4″	10½″	3,500	2465T81	$364.85	2465T82	$291.38
10″×4″	12½″	4,200	2465T83	421.15	2465T84	331.35
Forged Steel Wheels						
6″×3″	8½″	6,000	2465T85	264.05	2465T86	187.67
8″×3″	10½″	5,500	2465T87	278.69	2465T88	204.27
8″×4″	10½″	20,000	2465T89	412.29	2465T91	330.75
10″×3″	12½″	6,000	2465T92	353.24	2465T93	257.09
10″×4″	12½″	20,000	2465T94	468.85	2465T95	379.96
Dual Wheel with Maintenance-Free Precision Ball Bearings						
Black Solid Polyurethane Wheels—*Durometer is 70D*						
6″×3″	8¾″	4,000	2465T29	420.47	2465T39	312.95
8″×3″	10¾″	5,000	2465T22	487.02	2465T32	385.44
Dual Wheel with Tapered Roller Bearings						
Black Phenolic Wheels						
6″×3″	8¾″	4,000	2465T25	449.75	2465T35	239.82
8″×3″	10¾″	5,000	2465T26	453.15	2465T36	262.64
Cast Iron Wheels						
6″×3″	8¾″	6,000	2465T23	497.40	2465T33	247.96
8″×3″	10¾″	5,000	2465T24	506.91	2465T34	297.76
Forged Steel Wheels						
6″×3″	8¾″	12,000	2465T27	587.18	2465T37	395.25
8″×3″	10¾″	11,000	2465T28	606.27	2465T38	418.45

Brute Casters—4,000 to 7,000 lbs.

Swivel

Rigid

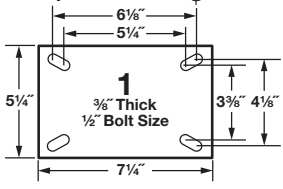

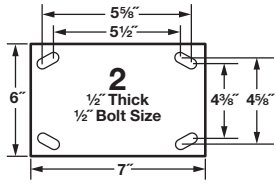

- Premium large-diameter swivel raceway (kingpinless)
- Large-diameter single ball swivel bearings
- ⅜″ leg thickness

The precision-machined raceway on these casters withstands shock loads and provides smooth swiveling. Made of heavy-gauge steel with a blue painted finish.

For casters with the same design, but lower-capacity wheels, see the Ruffian Casters on page 1319 and the Sure-Fire Casters on page 1322.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. Please ask for 23515T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Please ask for 23515T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings—*Mounting Plate 1*						
Cast Iron Wheels						
10″×3″	12½″	4,000	23515T38	$103.31	23515T39	$76.87
Wheel with Tapered Roller Bearings—*Mounting Plate 1*						
Forged Steel Wheels						
6″×2½″	8″	5,000	23515T41	131.82	23515T51	97.05
6″×3″	8″	7,000	23515T16	173.60	23515T17	132.60
8″×3″	10½″	5,500	23515T42	179.04	23515T52	131.87
10″×3″	12½″	6,000	23515T71	205.84	23515T72	177.07
Wheel with Tapered Roller Bearings—*Mounting Plate 2*						
Cast Iron Wheels						
10″×3″	12⅝″	4,000	23515T36	163.35	23515T37	116.95
Forged Steel Wheels						
6″×2½″	8⅛″	5,000	23515T18	142.42	23515T19	100.84
6″×3″	8⅛″	7,000	23515T11	177.38	23515T21	137.98
8″×3″	10⅝″	5,500	23515T61	188.40	23515T63	137.85
10″×3″	12⅝″	6,000	23515T34	209.62	23515T35	180.93

Colossus Casters—5,000 to 20,000 lbs.

Single-Wheel Swivel

Dual-Wheel Swivel

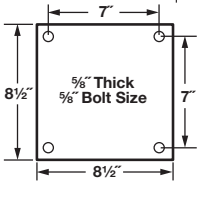

- One-piece forged steel mounting plate with kingpin
- Double tapered roller swivel bearings
- ½″ leg thickness (unless noted)

Equipped with two tapered roller bearings in the swivel, these casters smoothly handle high capacities and shock loads. Made of steel with a zinc-plated finish for corrosion resistance (unless noted). ***Dual-wheel*** casters provide better load distribution and easier turning than single-wheel casters. *Note:* Wheel width shown is for each wheel.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. For single-wheel casters please ask for 2442T888 and specify McMaster-Carr part number and desired option; for dual-wheel casters please ask for 2784T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. For single-wheel casters please ask for 2442T333 and specify McMaster-Carr part number; for dual-wheel casters please ask for 2784T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Single Wheel with Tapered Roller Bearings						
Blue Polyurethane on Forged Steel Wheels ♦■—*Durometer is 95A*						
10″×4″	13″	5,000	2442T64	$534.55	2442T65★	$379.81
12″×4″	15½″	6,000	2442T37	552.18	2442T38★	430.73
Green Polyurethane on Steel Wheels—*Durometer is 95A*						
10″×6″	13″	6,000	2442T86	559.07	2442T87	398.56
Black Solid Cast Nylon Wheels—*Durometer is 80D*						
6″×3″	9″	7,200	2442T53	481.76	2442T54	274.35
8″×3″	11″	7,200	2442T55	552.87	2442T56	331.22
10″×3″	13″	7,200	2442T57	590.22	2442T58	388.07
Brown Phenolic Wheels						
6″×3″	9″	8,000	2442T51	441.76	2442T52	257.29
6″×5″	9″	8,000	2442T12	562.49	2442T22	386.73
Forged Steel Wheels ♦■						
6″×3″	9″	12,000	2442T18	372.68	2442T28★	231.35
8″×3″	11″	6,000	2442T66	405.56	2442T67★	223.82
8″×4″	11″	17,000	2442T29	461.15	2442T33★	274.04
10″×3″	13″	6,500	2442T68	418.55	2442T69★	246.73
10″×4″	13″	18,000	2442T31	457.64	2442T34★	308.94
12″×4″	15½″	20,000	2442T35	782.73	2442T36★	579.09
Dual Wheel with Tapered Roller Bearings						
Green Polyurethane on Iron Wheels—*Durometer is 95A*						
10″×3″	13″	6,000	2784T24	589.31	2784T64	384.53
10″×5″	13″	10,000	2784T25	765.24	2784T65	574.78
12″×4″	15½″	9,600	2784T26	702.31	2784T66	515.55
12″×5″	15½″	12,000	2784T29	831.73	2784T69	606.84

♦ Have a gray painted finish. ■ Leg thickness is ⅜″.
★ Mounting plate is ½″ thick.

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Colossus Junior Casters—5,000 to 10,000 lbs.

- One-piece forged steel mounting plate with kingpin
- Double tapered roller swivel bearings
- 3/8″ leg thickness

Less bulky than other casters with the same capacity, these are ideal in constant-use, heavy-load applications. A precision-machined raceway provides smooth swiveling. Made of steel with a yellow dichromate finish.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. Please ask for 8756T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Please ask for 8756T333 and specify McMaster-Carr part number.

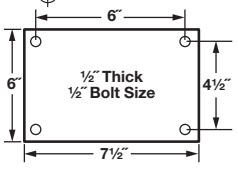

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Tapered Roller Bearings						
Red Polyurethane on Iron Wheels—Durometer is 95A						
10″ × 4″	12½″	5,000	8756T53	$417.60	8756T54	$280.26
12″ × 4″	15½″	5,500	8756T55	422.16	8756T56	298.26
Wheel with Tapered Roller Bearings (Cont.)						
Forged Steel Wheels						
6″ × 3″	8½″	10,000	8756T31	$322.07	8756T21	$215.66
8″ × 3″	10½″	5,500	8756T32	335.95	8756T22	199.74
8″ × 4″	10½″	10,000	8756T34	419.28	8756T24	273.87
10″ × 4″	12½″	10,000	8756T37	423.67	8756T27	330.60

Ruffian Casters—2,000 to 3,500 lbs.

- Premium large-diameter swivel raceway (kingpinless)
- Large-diameter single ball swivel bearings
- 3/8″ leg thickness

Same durable construction as the Brute Casters on the previous page, but with more wheel options for a variety of applications.

A precision-machined raceway provides smooth swivel action. Made of steel with a blue painted finish. For casters of the same construction, but lower-capacity wheels, see Sure-Fire Casters on page 1322.

Also Available: Swivel and rigid casters with face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. Please ask for 2293T888 (Mounting Plate 1) or 5010T888 (Mounting Plate 2) and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Ask for 2293T333 (Mounting Plate 1) or 5010T333 (Mounting Plate 2) and specify McMaster-Carr part number.

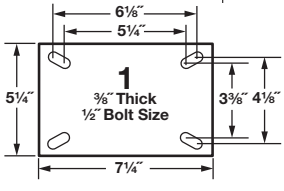

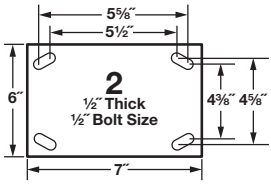

Swivel

Rigid

Wheel Dia. × Wd.	Cap. Ea., lbs.	MOUNTING PLATE 1 Mount Ht.	Swivel		Rigid		MOUNTING PLATE 2 Mount Ht.	Swivel		Rigid	
Wheel with Maintenance-Free Precision Ball Bearings											
Black Solid Polyurethane Wheels—Durometer is 70D											
6″ × 3″	2,000	8″	2293T15	$152.18	2293T25	$112.29	8⅛″	5010T13	$149.71	5010T14	$109.02
8″ × 3″	2,500	10½″	2293T16	191.07	2293T26	139.44	10⅝″	5010T15	197.13	5010T16	143.97
Wheel with Straight Roller Bearings (Unless Noted)											
Blue Polyurethane on Iron Wheels—Durometer is 95A											
6″ × 3″	2,000	8″	2293T71	110.56	2293T81	72.58	8⅛″	5010T11■	160.32	5010T21■	115.86
8″ × 3″	2,500	10½″	2293T72	123.16	2293T82	87.64	10⅝″	5010T44■	165.08	5010T74■	119.33
10″ × 3″	3,000	12½″	2293T73	138.15	2293T83	107.51	12⅝″	5010T12■	183.66	5010T22■	138.52
12″ × 3″	3,400	15½″	2293T74	160.24	2293T84	138.13	15⅝″	5010T23■	248.02	5010T24■	215.02
Black Phenolic Wheels											
6″ × 3″	2,000	8″	2293T55	82.20	2293T65	40.00	8⅛″	5010T425	108.79	5010T415	61.76
8″ × 3″	2,500	10½″	2293T56	87.58	2293T66	49.47	10⅝″	5010T91	112.57	5010T71	64.00
10″ × 3″	2,900	12½″	2293T57	93.47	2293T67	57.58	12⅝″	5010T424	119.92	5010T419	72.48
12″ × 3″	3,500	15½″	2293T58	97.84	2293T68	70.38	15⅝″	5010T25	123.06	5010T26	89.98
Cast Iron Wheels											
6″ × 3″	3,000	8″	2293T31	93.09	2293T41	53.53	8⅛″	5010T461■	134.57	5010T465■	106.83
8″ × 3″	2,500	10½″	2293T32	104.33	2293T42	63.75	10⅝″	5010T31■	135.24	5010T41■	109.22

■ Has tapered roller bearings.

Alliance Casters—1,800 to 4,000 lbs.

- Premium large-diameter swivel raceway (kingpinless)
- Large-diameter single ball swivel bearings
- 5/16″ leg thickness

Like the Ruffian Casters on this page, these casters offer high capacities, but have a smaller mounting plate. Made of steel with a blue painted finish. ***Dual-wheel*** casters provide better load distribution and easier turning than single-wheel casters. *Note*: Wheel width shown is for each wheel.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. For single-wheel casters ask for 22655T888 and specify the McMaster-Carr part number and desired option; for dual-wheel casters ask for 2435T888 and specify the McMaster-Carr part number and desired option.

Also Available: Replacement wheels. For single-wheel casters please ask for 22655T333 and specify McMaster-Carr part number. For dual-wheel casters please ask for 2435T333 and specify McMaster-Carr part number.

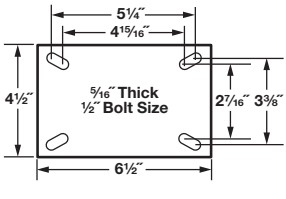

Single-Wheel Swivel

Dual-Wheel Swivel

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Single Wheel with Straight Roller Bearings						
Blue Polyurethane on Iron Wheels—Durometer is 95A						
6″ × 3″	7½″	2,000	22655T54	$106.28	22655T64	$78.20
8″ × 2½″	10⅛″	1,800	22655T52	106.85	22655T62	77.28
10″ × 3″	11½″	3,000	22655T53	133.70	22655T63	105.56
Black Phenolic Wheels						
6″ × 3″	7½″	2,000	22655T36	75.06	22655T46	46.93
8″ × 3″	10⅛″	2,500	22655T37	79.15	22655T47	50.96
10″ × 3″	11½″	2,900	22655T38	86.04	22655T48	57.63
Cast Iron Wheels						
6″ × 2½″	7½″	1,800	22655T75	82.54	22655T85	50.91
Single Wheel with Straight Roller Bearings (Cont.)						
Cast Iron Wheels (Cont.)						
8″ × 3″	10⅛″	2,500	22655T73	$87.07	22655T83	$69.35
10″ × 3″	11½″	4,000	22655T74	109.76	22655T84	81.72
Dual Wheel with Straight Roller Bearings						
Blue Polyurethane on Iron Wheels—Durometer is 95A						
5″ × 2″	7½″	2,100	2435T31	121.33	2435T41	87.94
6″ × 2″	8″	2,460	2435T32	127.30	2435T42	91.94
8″ × 2″	10⅛″	3,000	2435T33	136.48	2435T43	111.11
Black Phenolic Wheels						
5″ × 2″	7½″	2,000	2435T51	97.49	2435T61	63.81
6″ × 2″	8″	2,400	2435T52	102.69	2435T62	69.80
8″ × 2″	10⅛″	2,800	2435T53	107.67	2435T63	75.98
Cast Iron Wheels						
5″ × 2″	7½″	2,000	2435T71	101.50	2435T81	69.76
6″ × 2″	8″	2,400	2435T72	110.85	2435T82	70.76
8″ × 2″	10⅛″	2,800	2435T73	114.91	2435T83	83.00

Stronghart Casters—2,000 to 3,500 lbs.

Single-Wheel Swivel

Dual-Wheel Swivel

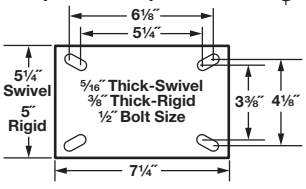

- Forged steel with bolt and nut kingpin
- Double ball swivel bearings
- ⅜″ leg thickness

Forged construction holds up in demanding applications while two rows of ball bearings in the raceway provide better load distribution and extend service life. Made of corrosion-resistant zinc-plated steel.

Dual-wheel casters provide better load distribution and easier turning than single-wheel casters. *Note:* Wheel width shown is for each wheel.

Also Available: Replacement wheels. For single-wheel casters please ask for 2487T333 and specify McMaster-Carr part number; for dual-wheel casters ask for 9943T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Face Wheel Brake		Swivel with Face Wheel Brake and Lock		Rigid		Rigid with Face Wheel Brake	
Single Wheel with Straight Roller Bearings												
Green Polyurethane on Iron Wheels—Durometer is 95A												
6″×3″	8″	2,040	2487T13	$153.59	2487T33	$201.61	2487T132	$221.18	2487T19	$95.71	2487T43	$142.08
8″×3″	10½″	2,520	2487T14	166.41	2487T34	215.43	2487T142	245.98	2487T21	108.37	2487T44	167.37
10″×3″	12½″	3,000	2487T15	188.20	2487T35	236.24	2487T152	271.20	2487T22	132.18	2487T45	178.90
Black Phenolic Wheels												
6″×3″	8″	2,000	2487T56	120.96	2487T89	170.84	2487T562	207.06	2487T61	57.37	2487T94	108.20
8″×3″	10½″	2,500	2487T57	126.49	2487T91	176.31	2487T572	212.59	2487T62	64.43	2487T95	118.71
10″×3″	12½″	2,900	2487T58	135.02	2487T92	184.86	2487T582	224.18	2487T63	71.84	2487T96	125.16
12″×3″	15½″	3,500	2487T59	139.88	2487T93	189.16	2487T592	229.82	2487T64	82.16	2487T97	147.80
Cast Iron Wheels												
4″×3″	6″	2,000	2487T47	145.53	2487T81	190.59	2487T472	233.96	2487T52	72.60	2487T85	117.02
6″×3″	8″	2,800	2487T48	139.46	2487T82	184.59	2487T482	227.90	2487T53	69.83	2487T86	124.65
8″×3″	10½″	2,800	2487T49	135.38	2487T83	183.04	2487T492	216.67	2487T54	77.98	2487T87	124.37
10″×3″	12½″	2,800	2487T51	152.51	2487T84	201.53	2487T512	240.92	2487T55	97.86	2487T88	153.27
Forged Steel Wheels												
6″×2½″	8″	3,500	2487T65	164.86	2487T98	212.86	2487T652	247.80	2487T67	104.55	2487T101	153.53
8″×3″	10½″	3,500	2487T66	193.37	2487T99	241.39	2487T662	280.39	2487T68	134.53	2487T102	186.57
10″×3″	12½″	3,500	2487T11	281.53	2487T18	333.69	2487T25	380.53	2487T17	204.45	2487T26	286.69
Single Wheel with Maintenance-Free Precision Ball Bearings												
Black Solid Cast Nylon Wheels—Durometer is 80D												
6″×3″	8″	3,500	2487T393	241.29	2487T27	252.59	2487T69	281.24	2487T392	138.82	2487T72	181.35
8″×3″	10½″	3,500	2487T29	314.59	2487T32	333.59	2487T73	350.47	2487T31	197.02	2487T74	237.69
10″×3″	12½″	3,500	2487T37	409.04	2487T39	379.08	2487T391	424.49	2487T38	279.86	2487T381	317.69
Single Wheel with Tapered Roller Bearings												
Green Polyurethane on Steel Wheels—Durometer is 95A												
6″×4″	8″	2,990	2487T211	325.37	2487T215	373.39	2487T221	408.31	2487T414	258.22	2487T418	310.20
6″×5″	8″	3,500	2487T212	366.82	2487T216	422.98	2487T222	448.90	2487T411	265.84	2487T415	320.59
8″×4″	10½″	3,500	2487T213	286.86	2487T217	362.18	2487T223	383.90	2487T412	222.02	2487T416	307.14
Dual Wheel with Straight Roller Bearings												
Green Polyurethane on Iron Wheels—Durometer is 95A												
6″×2½″	8″	3,240	9943T62	279.31	9943T621	332.46	9943T622	335.81	9943T64	192.48	9943T641	304.42
8″×2½″	10½″	3,500	9943T12	287.92	9943T121	354.48	9943T122	374.75	9943T32	222.19	9943T321	313.46
Black Phenolic Wheels												
6″×2½″	8″	3,200	9943T61	210.22	9943T611	289.21	9943T612	286.37	9943T63	136.29	9943T631	248.23
8″×2½″	10½″	3,500	9943T14	237.28	9943T141	321.19	9943T142	318.57	9943T34	133.38	9943T341	257.41

Viking Forged Casters—1,600 to 2,000 lbs.

Single-Wheel Swivel

Dual-Wheel Swivel

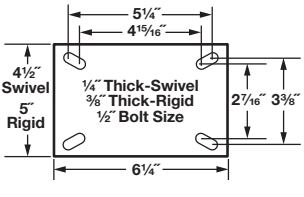

- Forged steel with bolt and nut kingpin
- Double ball swivel bearings
- ⅜″ leg thickness

Same rugged construction as the Stronghart Casters on this page, but with a smaller mounting plate. Two rows of ball bearings in the raceway provide better load distribution and extend service life. Made of corrosion-resistant zinc-plated steel. ***Dual-wheel*** casters provide better load distribution and easier turning than single-wheel casters. *Note:* Wheel width shown is for each wheel.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. For single-wheel casters please ask for 2432T888 and specify McMaster-Carr part number and desired option; for dual-wheel casters please ask for 2787T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. For single-wheel casters please ask for 2432T333 and specify McMaster-Carr part number; for dual-wheel casters please ask for 2787T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Single Wheel with Straight Roller Bearings						
Green Polyurethane on Iron Wheels—Durometer is 95A						
6″×3″	7⅝″	2,000	2432T72	$133.06	2432T71	$98.90
8″×2½″	10⅛″	2,000	2432T63	138.04	2432T67	102.33
Single Wheel with Straight Roller Bearings (Cont.)						
Green Polyurethane on Iron Wheels (Cont.)—Durometer is 95A						
10″×3″	11½″	2,000	2432T64	$169.27	2432T68	$135.02
Black Phenolic Wheels						
6″×3″	7⅝″	2,000	2432T74	97.48	2432T73	61.63
8″×3″	10⅛″	2,000	2432T26	103.02	2432T27	67.04
10″×3″	11½″	2,000	2432T28	111.96	2432T29	75.79
Cast Iron Wheels						
4″×3″	5½″	2,000	2432T31	106.08	2432T33	70.63
6″×2½″	7⅝″	2,000	2432T11	99.74	2432T12	65.85
8″×3″	10⅛″	2,000	2432T13	110.37	2432T14	76.21
10″×3″	11½″	2,000	2432T15	129.65	2432T16	95.58
Single Wheel with Maintenance-Free Precision Ball Bearings						
Tan Polyurethane on Iron Wheels—Durometer is 95A						
6″×3″	7⅝″	2,000	2432T75	230.48	2432T76	178.41
8″×3″	10⅛″	2,000	2432T82	241.75	2432T78	188.71
10″×3″	11½″	2,000	2432T79	276.29	2432T83	227.62
Dual Wheel with Straight Roller Bearings						
Green Polyurethane on Aluminum Wheels—Durometer is 60D						
5″×2″	6½″	2,000	2787T25	159.00	2787T65	117.75
6″×2″	7½″	2,000	2787T26	151.53	2787T66	112.64
8″×2″	10⅛″	2,000	2787T28	175.57	2787T68	136.17
Black Phenolic Wheels						
4″×2″	5½″	1,600	2787T34	140.04	2787T74	77.73
5″×2″	6½″	2,000	2787T35	128.21	2787T75	73.95
6″×2″	7½″	2,000	2787T36	112.54	2787T76	74.56
8″×2″	10⅛″	2,000	2787T38	130.50	2787T77	89.28
Black Glass-Filled Nylon Wheels—Durometer is 85D						
4″×2″	5½″	1,600	2787T41	139.55	2787T42	80.62
5″×2″	6½″	2,000	2787T43	130.34	2787T44	75.21
6″×2″	7½″	2,000	2787T45	116.75	2787T46	74.27
8″×2″	10⅛″	2,000	2787T47	127.45	2787T48	90.81

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Viking Formed Casters—1,600 to 2,000 lbs.

- Formed steel welded frame with bolt and nut kingpin
- Double ball swivel bearings
- 3/8″ leg thickness

With the same mounting plate as the Viking Forged Casters on the previous page, these casters offer a cost-effective solution for less demanding applications. Made of corrosion-resistant zinc-plated steel.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. Please ask for 2771T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Please ask for 2771T333 and specify McMaster-Carr part number.

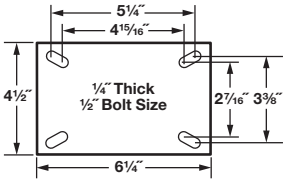

Swivel

Rigid

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Green Polyurethane on Iron Wheels—Durometer is 95A						
6″×2½″	7½″	1,620	2771T23	$99.83	2771T63	$79.23
8″×2½″	10⅛″	1,800	2771T24	115.46	2771T64	96.94
10″×2½″	11½″	2,000	2771T28	133.25	2771T69	112.19
Black Phenolic Wheels						
6″×2½″	7½″	1,600	2771T33	70.79	2771T67	49.94
8″×2½″	10⅛″	1,800	2771T34	72.21	2771T68	51.79
Wheel with Straight Roller Bearings (Cont.)						
Black Phenolic Wheels (Cont.)						
10″×2½″	11½″	1,800	2771T37	$84.40	2771T81	$63.58
Cast Iron Wheels						
5″×2½″	6½″	1,800	2771T12	93.83	2771T52	74.87
6″×2½″	7½″	1,800	2771T13	76.83	2771T53	57.23
8″×2½″	10⅛″	1,800	2771T14	86.94	2771T54	66.33
10″×2½″	11½″	1,800	2771T15	108.40	2771T55	89.13

Husky Casters—2,100 to 2,500 lbs.

- Formed steel welded frame with bolt and nut kingpin
- Double ball swivel bearings
- 3/8″ leg thickness

Wheels with a polypropylene core make these casters lighter than others with the same capacities. Plus, a slightly contoured tread makes them easy to turn. Made of corrosion-resistant zinc-plated steel.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. Ask for 2470T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Please ask for 2470T333 and specify McMaster-Carr part number.

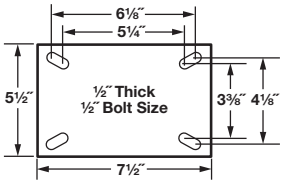

Swivel

Rigid

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Red Polyurethane on Polypropylene Wheels—Durometer is 95A						
6″×3″	8¼″	2,100	2470T41	$174.60	2470T51	$115.86
8″×3″	10¼″	2,400	2470T42	194.96	2470T52	131.42
Wheel with Straight Roller Bearings (Cont.)						
Red Polyurethane on Polypropylene Wheels (Cont.)—Durometer is 95A						
10″×3″	12¼″	2,500	2470T43	$209.24	2470T53	$136.20
12″×3″	14½″	2,500	2470T44	223.22	2470T54	153.30

Ranger Casters—2,500 lbs.

- Formed steel with rivet kingpin
- Double ball swivel bearings
- 1/4″ leg thickness

Economical high-capacity casters for less demanding applications. Made of steel with a corrosion- and chip-resistant gray powder-coated finish.

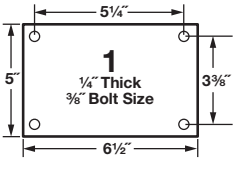

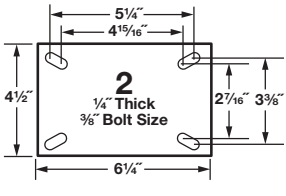

Swivel

Rigid

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel Mtg. Plate		Rigid Mtg. Plate	
Wheel with Straight Roller Bearings						
Ductile Iron Wheels						
5″×2½″	7¼″	2,500	1	8363T21	2	8363T41
6″×2½″	7¾″	2,500	1	8363T22	2	8363T42
8″×2½″	10″	2,500	1	8363T23	2	8363T43

Mtg. Plate		Mtg. Plate	
1	$76.10	2	$68.35
1	81.60	2	76.50
1	103.02	2	97.98

Quiet-Ride Pneumatic-Wheel Casters—2,000 to 2,340 lbs.

- Forged steel with bolt and nut kingpin
- Double ball swivel bearings
- 1/4″ leg thickness

Reduce in-plant noise and cushion your heavy loads. Dual wheels provide better load distribution and easier turning than single-wheel casters. Rubber tires protect sensitive loads when rolling over rough and uneven surfaces. Made of corrosion-resistant zinc-plated steel. *Note:* Wheel width shown is for each wheel.

Also Available: Swivel and rigid casters with face wheel brake, and swivel casters with face wheel brake and four-position swivel lock. Please ask for 23585T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Please ask for 23585T333 and specify McMaster-Carr part number.

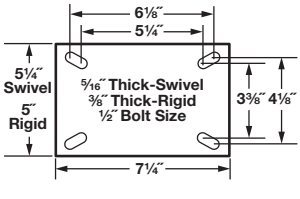

Swivel

Wheel Dia.×Wd.	Tire Stamping	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Dual Wheel with Straight Roller Bearings							
Four-Ply Black Rubber Pneumatic Wheels							
16.2″×4.8″	4.80/9	19⅛″	2,000	23585T31	$448.77	23585T41	$370.65
18.3″×5.7″	5.70/8	21¼″	2,340	23585T11	455.90	23585T21	374.96

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Type 304 Stainless Steel Alliance Casters—2,000 to 2,500 lbs.

Swivel

Rigid

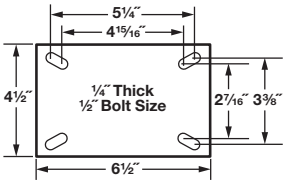

- Premium large-diameter swivel raceway (kingpinless)
- Large-diameter single ball swivel bearings
- ¼″ leg thickness

Stainless steel construction and ball bearings make these casters the choice for harsh environments.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. Please ask for 22705T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Please ask for 22705T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Maintenance-Free Precision Ball Bearings						
Gray Solid Nylon Wheels—Durometer is 75D						
6″×2½″	7½″	2,300	22705T41	$286.37	22705T42	$182.98
8″×2½″	10⅛″	2,400	22705T43	298.88	22705T44	216.11
Black Solid Polyurethane Wheels—Durometer is 70D						
6″×3″	7½″	2,000	22705T11	268.85	22705T21	195.82
8″×3″	10⅛″	2,500	22705T12	355.09	22705T22	261.91

Sure-Fire Casters—680 to 1,600 lbs.

Swivel

Rigid

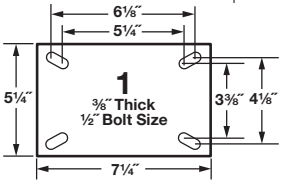

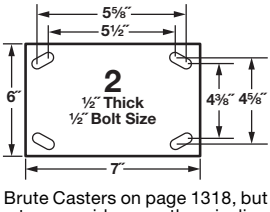

- Premium large-diameter swivel raceway (kingpinless)
- Large-diameter single ball swivel bearings
- ⅜″ leg thickness

Same premium construction as the Brute Casters on page 1318, but with lower-capacity wheels. These casters provide smooth swiveling and long service life. Made of steel with a blue painted finish.

Also Available: Swivel and rigid casters with a face wheel brake, and swivel casters with a face wheel brake and four-position swivel lock. Please ask for 27135T888 and specify McMaster-Carr part number and desired option.

Also Available: Replacement wheels. Please ask for 27135T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings—Mounting Plate 1						
Black Rubber on Iron Wheels—Durometer is 70A						
6″×3″	8″	680	27135T11	$93.98	27135T21	$43.58
8″×3″	10½″	840	27135T12	104.42	27135T22	61.65
10″×3″	12½″	1,000	27135T13	120.96	27135T23	72.36
Black Phenolic Wheels						
6″×2½″	8″	1,600	27135T31	95.80	27135T32	46.47
Wheel with Straight Roller Bearings—Mounting Plate 2						
Black Rubber on Iron Wheels—Durometer is 70A						
6″×3″	8⅛″	680	27135T61	96.76	27135T62	56.48
8″×3″	10⅝″	840	27135T63	106.11	27135T64	67.31
10″×3″	12⅝″	1,000	27135T65	124.75	27135T66	85.87
Black Phenolic Wheels						
6″×2½″	8⅛″	1,600	27135T71	99.51	27135T72	56.96

Optional Four-Position Swivel Lock—Field installable.
27135T51 ..... $5.89

Maintenance-Free Precision-Roll Casters—700 to 2,000 lbs.

Swivel

Rigid

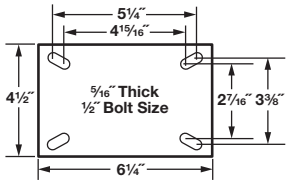

- Premium large-diameter swivel raceway (kingpinless)
- Premium maintenance-free precision single ball swivel bearings
- 5⁄16″ leg thickness

Quiet-rolling, maintenance-free precision ball bearings swivel smoothly and start to roll easily. Casters have reinforced double-welded legs for increased durability. Made of steel with a corrosion-resistant yellow zinc finish.

Also Available: Replacement wheels. Please ask for 9152T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Maintenance-Free Precision Ball Bearings						
Gray Rubber on Aluminum Wheels—Durometer is 65A						
6″×2″	8 5⁄16″	700	9152T41	$118.64	9152T42	$76.27
8″×2″	10¼″	900	9152T43	128.33	9152T44	91.53
Red Polyurethane on Iron Wheels—Durometer is 75A						
6″×2″	8 5⁄16″	1,000	9152T45	148.33	9152T46	110.00
8″×2″	10¼″	1,500	9152T47	168.33	9152T48	133.33
Brown Polyurethane on Iron Wheels—Durometer is 92A						
6″×2″	8 5⁄16″	1,500	9152T51	138.98	9152T52	98.33
8″×2″	10¼″	2,000	9152T53	158.33	9152T54	121.67
Red Nylon Wheels—Durometer is 81D						
6″×2″	8 5⁄16″	2,000	9152T55	111.67	9152T56	71.67
8″×2″	10¼″	2,000	9152T57	125.42	9152T58	85.00

Vulcan Casters—700 to 1,500 lbs.

Swivel

Rigid

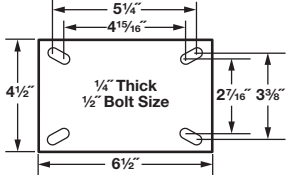

- Premium large-diameter swivel raceway (kingpinless)
- Large-diameter single ball swivel bearings
- ¼″ leg thickness

The premium design offers smooth swiveling and withstands shock loads, rolling over obstructions, and side impact. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 22665T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Blue Polyurethane on Aluminum Wheels—Durometer is 95A						
4″×2″	5⅝″	700	22665T51	$53.71	22665T61	$31.14
5″×2″	6½″	1,050	22665T52	56.29	22665T62	29.86
6″×2″	7½″	1,230	22665T53	62.48	22665T63	33.23
8″×2″	10⅛″	1,500	22665T54	70.89	22665T64	41.23
Black Glass-Filled Nylon Wheels—Durometer is 85D						
4″×2″	5⅝″	800	22665T35	47.71	22665T45	20.36
5″×2″	6½″	1,000	22665T36	49.55	22665T46	22.86
6″×2″	7½″	1,200	22665T37	52.91	22665T47	26.75
Black Phenolic Wheels						
4″×2″	5⅝″	800	22665T31	42.56	22665T41	19.09
5″×2″	6½″	1,000	22665T32	43.61	22665T42	20.14
6″×2″	7½″	1,200	22665T33	47.47	22665T43	20.77
8″×2″	10⅛″	1,400	22665T34	52.54	22665T44	26.62
Cast Iron Wheels						
4″×2″	5⅝″	800	22665T71	43.64	22665T81	19.59
5″×2″	6½″	1,000	22665T72	45.21	22665T82	21.71
6″×2″	7½″	1,200	22665T73	50.30	22665T83	24.34
8″×2″	10⅛″	1,400	22665T74	55.57	22665T84	29.32

Optional Four-Position Swivel Lock—Field installable.
22665T76 ..... $5.89

Optional Face Wheel Brake for Swivel Casters—Field installable. **To Order:** Please specify wheel diameter.
22665T75 ..... $10.78

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Phoenix Casters—700 to 1,500 lbs.

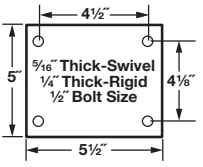

Swivel

Rigid

- Premium large-diameter swivel raceway (kingpinless)
- Single ball swivel bearings
- ¼″ leg thickness

The premium design withstands shock loads and side impact. Casters are made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 30275T333 and specify McMaster-Carr part number.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Red Polyurethane on Aluminum Wheels—Durometer is 55D						
4″ × 2″	5⅝″	700	30275T28	$60.90	30275T33	$32.44
5″ × 2″	6½″	1,000	30275T29	65.64	30275T34	37.46
6″ × 2″	7½″	1,200	30275T31	69.58	30275T35	40.28
8″ × 2″	10⅛″	1,500	30275T32	78.04	30275T36	47.40
Gray Solid Elastomer Wheels—Durometer is 63D						
4″ × 2″	5⅝″	1,000	30275T45	77.90	30275T55	35.26
5″ × 2″	6½″	1,000	30275T46	79.90	30275T56	41.54
6″ × 2″	7½″	1,100	30275T47	80.54	30275T57	48.96
8″ × 2″	10⅛″	1,200	30275T48	116.66	30275T58	67.56
Black Glass-Filled Nylon Wheels—Durometer is 85D						
4″ × 2″	5⅝″	800	30275T41	60.50	30275T51	27.14
5″ × 2″	6½″	1,000	30275T42	61.70	30275T52	27.00
6″ × 2″	7½″	1,200	30275T43	59.92	30275T53	25.20
8″ × 2″	10⅛″	1,400	30275T44	71.96	30275T54	30.22
Black Phenolic Wheels						
4″ × 2″	5⅝″	800	30275T19	45.02	30275T24	20.14
5″ × 2″	6½″	1,000	30275T21	46.42	30275T25	21.52
6″ × 2″	7½″	1,200	30275T22	48.00	30275T26	22.98
8″ × 2″	10⅛″	1,400	30275T23	54.82	30275T27	27.74

Optional Four-Position Swivel Lock—Field installable.

30275T62 ..... $10.59

Optional Face Wheel Brake for Swivel Casters—Field installable. **To Order:** Please specify wheel diameter.

30275T61 ..... $26.80

Gladiator Casters—700 to 1,500 lbs.

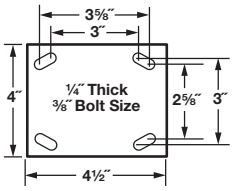

Swivel

Rigid

- Premium large-diameter swivel raceway (kingpinless)
- Double ball swivel bearings
- ¼″ leg thickness

The premium double ball swivel provides easy turning, smooth swiveling, and long service life in the most demanding applications. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 22455T333 and specify McMaster-Carr part number.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Cast Steel Wheels						
3″ × 2″	4½″	700	22455T81	$56.57	22455T82	$26.86
Red Polyurethane on Iron Wheels—Durometer is 95A						
4″ × 2″	5⅝″	700	22455T15	57.41	22455T35	25.83
5″ × 2″	6½″	1,050	22455T16	57.55	22455T36	27.87
6″ × 2″	7½″	1,230	22455T17	61.57	22455T37	30.93
8″ × 2″	9½″	1,500	22455T18	67.31	22455T38	38.24
Black Phenolic Wheels						
3¼″ × 2″	4⅝″	700	22455T28	55.37	22455T49	23.80
4″ × 2″	5⅝″	800	22455T24	50.46	22455T45	19.07
5″ × 2″	6½″	1,000	22455T25	51.85	22455T46	21.11
6″ × 2″	7½″	1,200	22455T26	53.98	22455T47	22.87
8″ × 2″	9½″	1,400	22455T27	61.30	22455T48	29.17
Ductile Iron Wheels						
4″ × 2″	5⅝″	1,500	22455T19	75.19	22455T41	43.89
5″ × 2″	6½″	1,500	22455T21	83.80	22455T42	52.31
6″ × 2″	7½″	1,500	22455T22	82.04	22455T43	50.28
8″ × 2″	9½″	1,500	22455T23	108.33	22455T44	76.39
Wheel with Maintenance-Free Precision Ball Bearings						
Blue Solid Polyurethane Wheels—Durometer is 70D						
4″ × 2″	5⅝″	800	22455T51	74.26	22455T55	42.78
5″ × 2″	6½″	1,000	22455T52	86.02	22455T56	54.35
6″ × 2″	7½″	1,200	22455T53	98.98	22455T57	71.20
8″ × 2″	9½″	1,500	22455T54	144.26	22455T58	116.94

Kingston Casters—750 to 1,500 lbs.

- One-piece forged steel mounting plate with kingpin
- ¼″ leg thick.
- Single ball/tapered roller swivel bearings

Single ball bearings along with tapered roller bearings in the swivel provide smooth swiveling and withstand rolling over obstructions as well as side impact. Casters are steel with a red painted finish. For casters with the same design, but with a smaller mounting plate, see the Kingston Junior Casters on the following page.

Swivel and rigid casters with brake and with phenolic or cast iron wheels are available with a side wheel brake. Swivel casters are also available with a side wheel brake with a four-position swivel lock. **To Order:** Swivel casters with brake option, please specify right or left side brake.

Swivel and rigid casters with brake and with polyurethane on iron wheels are available with a face wheel brake. Swivel casters are also available with a face wheel brake with four-position swivel lock.

Also Available: Replacement wheels. Please ask for 2508T333 and specify the McMaster-Carr part number.

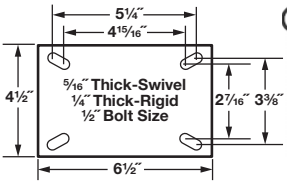

Swivel with Side Wheel Brake and Lock

Rigid with Face Brake

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Brake		Swivel with Brake and Lock		Rigid		Rigid with Brake	
Wheel with Straight Roller Bearings												
Black Phenolic Wheels												
4″ × 2″	5⅝″	800	2508T81	$65.33	2508T16	$80.33	2886T71	$101.83	2508T85	$31.50	2508T29	$44.14
5″ × 2″	6¾″	1,000	2508T82	65.67	2508T17	81.33	2886T72	102.67	2508T86	32.33	2508T72	48.50
6″ × 2″	7¾″	1,200	2508T83	66.83	2508T18	82.00	2886T73	103.83	2508T87	33.17	2508T73	45.17
8″ × 2″	9¾″	1,400	2508T84	87.45	2508T19	85.67	2886T74	107.67	2508T88	35.67	2508T74	49.74
Wheel with Maintenance-Free Precision Ball Bearings												
Red Painted Cast Iron Wheels												
4″ × 2″	5⅝″	1,000	2508T41	73.67	2508T21	89.67	2886T81	110.33	2508T45	38.83	2508T76	57.00
5″ × 2″	6¾″	1,300	2508T42	81.00	2508T22	96.67	2886T82	117.33	2508T46	44.33	2508T77	60.83
6″ × 2″	7¾″	1,400	2508T43	82.41	2508T23	97.85	2886T83	120.69	2508T47	52.83	2508T78	58.33
8″ × 2″	9¾″	1,500	2508T44	97.17	2508T15	111.83	2886T89	132.33	2508T48	63.70	2508T71	76.17
Blue Polyurethane on Iron Wheels—Durometer is 85A												
5″ × 2″	6¾″	840	2508T31	95.17	2508T311	131.67	2886T25	147.67	2508T32	63.33	2508T321	104.71
6″ × 2″	7¾″	960	2508T33	99.67	2508T331	139.00	2886T26	151.17	2508T34	67.00	2508T341	110.50
8″ × 2″	9¾″	1,200	2508T51	111.33	2508T511	150.17	2886T27	160.00	2508T52	79.33	2508T521	121.67
Green Polyurethane on Iron Wheels—Durometer is 95A												
4″ × 2″	5⅝″	750	2508T61	75.50	—	—	—	—	2508T65	39.83	—	—
5″ × 2″	6¾″	1,050	2508T62	81.00	2508T92	118.33	2886T86	130.33	2508T66	47.00	2508T96	88.17
6″ × 2″	7¾″	1,200	2508T63	84.67	2508T93	121.83	2886T87	133.83	2508T67	52.93	2508T97	98.00
8″ × 2″	9¾″	1,500	2508T64	94.50	2508T94	133.33	2886T88	144.17	2508T68	60.31	2508T98	99.74

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Kingston Junior Casters—500 to 2,400 lbs.

Single-Wheel with Straight Roller Bearings Swivel with Right Side Brake

Dual-Wheel Swivel

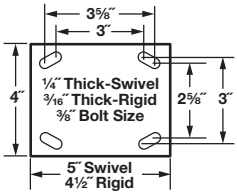

- One-piece forged steel mounting plate with kingpin
- ¼″ leg thickness
- Single ball/tapered roller swivel bearings

Same as the Kingston Casters on the previous page, but with a smaller mounting plate. Bearings in the swivel provide smooth movement, and withstand rolling over obstructions and side impact. Made of steel with a gray painted finish. ***Dual-wheel*** casters provide better load distribution and easier turning than single-wheel casters. *Note:* Wheel width shown is for each wheel.

Swivel casters with brake are available with a right or left side brake (unless noted). Swivel casters with brake and lock are available with a right or left side brake with a four-position swivel lock (unless noted). **To Order:** Please specify right or left side brake.

Rigid casters with brake are available with a side brake (unless noted).

Also Available: Replacement wheels. Please ask for 2431T333 and specify the McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Brake		Swivel w/Brake and Lock		Rigid		Rigid w/Brake	
Single Wheel with Straight Roller Bearings												
Black Phenolic Wheels												
4″×2″	5⅝″	800	2431T51	$61.83	2431T511	$78.00	2431T512	$98.91	2431T55	$29.83	2431T551	$45.33
5″×2″	6½″	1,000	2431T52	63.50	2431T521	78.50	2431T522	99.74	2431T56	32.00	2431T561	46.50
6″×2″	7½″	1,200	2431T53	63.50	2431T531	78.83	2431T532	101.33	2431T57	33.45	2431T571	48.39
8″×2″	9½″	1,400	2431T54	68.00	2431T541	82.82	2431T542	104.33	2431T58	36.33	2431T581	50.88
Single Wheel with Maintenance-Free Precision Ball Bearings												
Red Painted Cast Iron Wheels												
4″×2″	5⅝″	1,000	2431T61	69.08	2431T611	86.89	2431T612	107.67	2431T65	38.95	2431T651	59.46
5″×2″	6½″	1,300	2431T62	73.67	2431T621	82.83	2431T624	101.00	2431T66	41.01	2431T661	58.50
6″×2″	7½″	1,400	2431T63	74.83	2431T631	90.83	2431T632	113.17	2431T67	42.80	2431T671	56.64
8″×2″	9½″	1,500	2431T64	83.17	2431T641	97.50	2431T644	115.81	2431T68	55.00	2431T681	65.30
Green Polyurethane on Iron Wheels—Durometer is 93A												
4″×2″	5⅝″	750	2431T41	73.48	2431T411★	90.67	2431T412★	114.33	2431T45	38.67	2431T451	56.00
5″×2″	6½″	1,050	2431T42	78.00	2431T421♦	118.83	2431T422♦	142.17	2431T46	45.50	2431T461♦	88.17
6″×2″	7½″	1,200	2431T43	79.67	2431T431♦	119.33	2431T432♦	132.67	2431T47	49.32	2431T471♦	91.03
8″×2″	9½″	1,500	2431T44	91.33	2431T441♦	130.17	2431T442♦	142.67	2431T48	59.67	2431T481♦	98.50
Dual Wheel with Maintenance-Free Precision Ball Bearings												
Blue Polyurethane on Aluminum Wheels—Durometer is 95A												
4″×1″	5⅝″	500	2593T41	122.55	—	—	—	—	2593T42	88.00	—	—
6″×1″	7½″	1,100	2593T61	142.00	—	—	—	—	2593T62	107.27	—	—
8″×1″	9½″	2,400	2593T81	151.64	—	—	—	—	2593T82	117.64	—	—

★ Only available with a left side brake. ♦ Only available with a face wheel brake.

Ajax Casters—680 to 1,200 lbs.

Swivel

Rigid

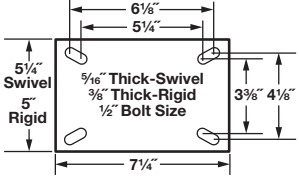

- Forged steel with bolt and nut kingpin
- ⅜″ leg thickness
- Double ball swivel bearings

The heavy duty forged frame on these casters withstands more demanding applications than formed steel casters. Made of corrosion-resistant zinc-plated steel.

Also Available: Swivel and rigid casters with face wheel brake, and swivel casters with face wheel brake and four-position swivel lock. Please ask for 30195T88 and specify McMaster-Carr part number and desired brake option.

Also Available: Replacement wheels. Please ask for 30195T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Rubber on Iron Wheels—Durometer is 78A						
6″×3″	8″	680	30195T51	$140.62	30195T52	$66.52
8″×3″	10½″	840	30195T11	133.90	30195T31	72.36
10″×3″	12½″	1,000	30195T12	145.98	30195T32	86.50

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings (Cont.)						
Green Polyurethane on Aluminum Wheels—Durometer is 95A						
4″×3¼″	6″	1,200	30195T21	$151.80	30195T41	$97.02

Slugger Forged Casters—700 to 1,600 lbs.

Swivel

Rigid

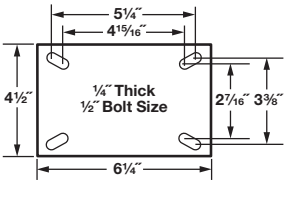

- Forged steel with bolt and nut kingpin
- Double ball swivel bearings
- ¼″ leg thickness

Get durable service in demanding applications with these forged casters. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 2422T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Green Polyurethane on Aluminum Wheels—Durometer is 60D						
4″×2″	5⅝″	700	2422T94	$74.67	2422T71	$37.31
5″×2″	6½″	1,050	2422T91	79.06	2422T72	41.46
6″×2″	7½″	1,230	2422T92	87.78	2422T73	49.74
8″×2″	10⅛″	1,500	2422T93	98.51	2422T75	62.20
Black Phenolic Wheels						
4″×2″	5⅝″	800	2422T51	61.73	2422T32	24.57
5″×2″	6½″	1,000	2422T52	64.24	2422T33	27.78
6″×2″	7½″	1,200	2422T53	70.29	2422T34	30.86
8″×2″	10⅛″	1,400	2422T54	75.41	2422T36	39.37
10″×2½″	11½″	1,600	2422T57	97.55	2422T38	61.90

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings (Cont.)						
Cast Iron Wheels						
4″×2″	5⅝″	700	2422T11	$61.53	2422T17	$28.03
5″×2″	6½″	1,000	2422T12	66.35	2422T18	31.37
6″×2″	7½″	1,400	2422T13	72.39	2422T19	34.04
8″×2″	10⅛″	1,600	2422T14	78.33	2422T22	41.81
Wheel with Maintenance-Free Precision Ball Bearings						
Green Solid Polyurethane Wheels—Durometer is 75D						
4″×2″	5⅝″	1,000	2422T41	91.94	2422T411	49.08
5″×2″	6½″	1,000	2422T42	99.74	2422T421	56.61
6″×2″	7½″	1,000	2422T43	103.00	2422T431	59.86
8″×2″	10⅛″	1,200	2422T44	126.37	2422T441	80.92

Optional Side Wheel Brakes for Wheel with Straight Bearings—Field installable.

For 4″ and 5″ Dia. Wheels..... 2422T98 ... $16.72

For 6″ and 8″ Dia. Wheels..... 2422T99 ... $16.72

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Spartan Forged Casters—700 to 1,500 lbs.

- Forged steel with bolt and nut kingpin
- Double ball swivel bearings
- 1/4″ leg thickness

Same design as the Slugger Forged Casters on the previous page, but with a smaller mounting plate and mounting hole pattern. Casters withstand shock loads and rolling over obstructions. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 2856T333 and specify McMaster-Carr part number.

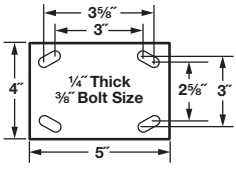

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Face Wheel Brake		Swivel w/Face Wheel Brake and Lock		Rigid		Rigid with Face Wheel Brake	
Wheel with Straight Roller Bearings												
Green Polyurethane on Aluminum Wheels—*Durometer is 60D*												
4″×2″	5 5/8″	700	2856T36	$65.70	2856T65	$99.74	2856T15	$141.48	2856T76	$33.28	2856T111	$79.63
5″×2″	6 1/2″	1,050	2856T37	68.94	2856T66	115.50	2856T16	143.48	2856T77	36.56	2856T112	83.19
6″×2″	7 1/2″	1,230	2856T38	77.09	2856T67	124.09	2856T17	154.00	2856T78	44.46	2856T113	89.91
8″×2″	10 1/8″	1,500	2856T39	87.72	2856T68	136.87	2856T18	170.78	2856T79	54.00	2856T114	107.93
Black Phenolic Wheels												
4″×2″	5 5/8″	800	2856T42	54.31	2856T46	102.63	2856T25	131.91	2856T82	21.76	2856T86	75.07
5″×2″	6 1/2″	1,000	2856T43	55.46	2856T47	102.76	2856T26	133.17	2856T83	22.57	2856T87	75.68
6″×2″	7 1/2″	1,200	2856T44	61.20	2856T48	108.81	2856T27	139.30	2856T84	27.72	2856T88	76.68
8″×2″	10 1/8″	1,400	2856T45	68.09	2856T49	111.89	2856T28	146.67	2856T85	32.81	2856T89	79.13
Cast Iron Wheels												
4″×2″	5 5/8″	700	2856T32	54.22	2856T11	101.98	2856T101	134.57	2856T72	25.28	2856T121	73.72
5″×2″	6 1/2″	1,000	2856T33	56.20	2856T12	102.35	2856T102	136.57	2856T73	27.54	2856T122	76.61
6″×2″	7 1/2″	1,400	2856T34	62.39	2856T13	109.65	2856T103	142.06	2856T74	30.31	2856T123	76.94
8″×2″	10 1/8″	1,500	2856T35	69.98	2856T14	121.94	2856T104	150.57	2856T75	37.09	2856T124	81.83
Forged Steel Wheels												
4″×1 1/2″	5 5/8″	1,400	2856T51	82.78	2856T54	131.56	2856T57	164.48	2856T91	51.52	2856T94	98.30
5″×1 3/4″	6 1/2″	1,500	2856T52	89.24	2856T55	133.48	2856T58	170.20	2856T92	57.28	2856T95	107.81
6″×2″	7 1/2″	1,500	2856T53	95.57	2856T56	118.50	2856T59	176.65	2856T93	63.48	2856T96	108.74
Wheel with Maintenance-Free Precision Ball Bearings												
Green Solid Polyurethane Wheels—*Durometer is 75D*												
4″×2″	5 5/8″	1,000	2856T19	74.65	2856T62	115.52	2856T71	150.19	2856T24	35.43	2856T241	85.41
5″×2″	6 1/2″	1,000	2856T21	78.28	2856T63	118.22	2856T81	153.11	2856T31	39.44	2856T311	89.44
6″×2″	7 1/2″	1,000	2856T22	83.91	2856T64	129.54	2856T97	161.13	2856T41	43.48	2856T411	91.48
8″×2″	10 1/8″	1,200	2856T23	102.43	2856T69	148.22	2856T98	177.80	2856T61	65.93	2856T611	99.61

Slugger Formed Casters—700 to 1,500 lbs.

- Formed steel welded frame with bolt and nut kingpin
- Double ball swivel bearings
- 1/4″ leg thickness

The economical version of the Slugger Forged Casters on the previous page, these casters are ideal for less demanding applications and for moving heavy loads over smooth surfaces. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 2494T333 and specify McMaster-Carr part number.

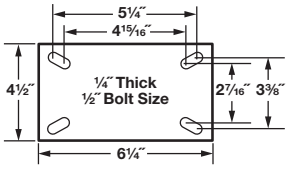

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Green Polyurethane on Aluminum Wheels—*Durometer is 60D*						
4″×2″	5 5/8″	700	2494T81	$51.28	2494T85	$33.81
5″×2″	6 1/2″	1,050	2494T82	55.68	2494T86	37.38
6″×2″	7 1/2″	1,230	2494T83	59.23	2494T87	40.96
8″×2″	10 1/8″	1,500	2494T84	69.26	2494T88	51.94
Black Phenolic Wheels						
4″×2″	5 5/8″	800	2494T24	38.34	2494T42	20.34
5″×2″	6 1/2″	1,000	2494T25	39.89	2494T43	21.60
6″×2″	7 1/2″	1,200	2494T26	40.60	2494T44	23.11
8″×2″	10 1/8″	1,400	2494T27	46.28	2494T45	28.70
Cast Iron Wheels						
4″×2″	5 5/8″	700	2494T11	41.11	2494T28	24.30
5″×2″	6 1/2″	1,000	2494T12	43.53	2494T48	26.89
Wheel with Straight Roller Bearings (Cont.)						
Cast Iron Wheels (Cont.)						
6″×2″	7 1/2″	1,200	2494T13	$46.47	2494T31	$29.91
8″×2″	10 1/8″	1,500	2494T14	54.04	2494T32	38.85

Optional Four-Position Swivel Lock—Field installable.

2703T76 ..... $13.57

Optional Side Wheel Brakes—Field installable.

For Wheels

4″ and 5″ Dia. ..... 2422T98 ..... $16.72

6″ and 8″ Dia. ..... 2422T99 ..... 16.72

Burly Casters—950 to 1,600 lbs.

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- 1/4″ leg thickness

Not only are the wheels on these casters lightweight for easy mobility, they are wider for increased stability.

Also Available: Replacement wheels. Please ask for 2468T333 and specify McMaster-Carr part number.

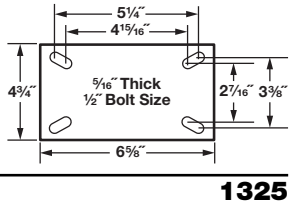

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Face Wheel Brake		Rigid	
Wheel with Straight Roller Bearings								
Gray Polyurethane on Polypropylene Wheels—*Durometer is 85A*								
6″×2 1/2″	7 3/4″	950	2468T21	$88.13	2468T61	$107.20	2468T31	$66.02
8″×2 1/2″	10 1/4″	1,100	2468T22	101.17	2468T62	120.43	2468T32	77.28
10″×2 1/2″	12 1/4″	1,300	2468T23	115.65	2468T63	134.91	2468T33	90.50
Red Polyurethane on Polypropylene Wheels—*Durometer is 95A*								
6″×2 1/2″	7 3/4″	1,200	2468T41	88.13	2468T71	107.20	2468T51	66.02
8″×2 1/2″	10 1/4″	1,400	2468T42	101.17	2468T72	120.43	2468T52	77.28
10″×2 1/2″	12 1/4″	1,600	2468T43	115.65	2468T73	134.91	2468T53	90.50

Spartan Formed Casters—700 to 1,250 lbs. CAD

Swivel

Rigid

Swivel w/Brake and Lock

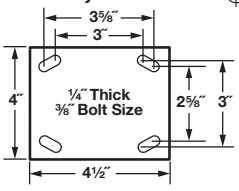

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- ¼″ leg thickness

An economical version of the Spartan Forged Casters on the previous page, but for less demanding applications. Ideal general purpose casters for moving heavy loads over smooth surfaces. Made of corrosion-resistant zinc-plated steel.

Also Available: Swivel and rigid casters with neoprene swivel and wheel bearing seals (unless noted) to prevent contamination and extend service life. Please ask for 2408T444 and specify McMaster-Carr part number.

Also Available: Replacement wheels. Please ask for 2408T555 and specify McMaster-Carr part number.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Face Wheel Brake		Swivel with Face Wheel Brake and Lock		Rigid		Rigid with Face Wheel Brake	
Wheel with Straight Roller Bearings												
Black Polypropylene Wheels—*Durometer is 65D*												
8″ × 2″	9½″	850	2408T16	$29.33	2408T181	$73.37	2408T362	$92.87	2408T23	$21.35	2408T411	$64.47
Green Polyurethane on Aluminum Wheels—*Durometer is 60D*												
4″ × 2″	5⅝″	700	2408T33	35.84	2408T182	80.51	2408T363	99.95	2408T37	27.36	2408T412	71.29
5″ × 1½″	6½″	720	2408T87★	38.05	2408T183	82.89	2408T364	102.53	2408T93★	29.78	2408T413	73.91
5″ × 2″	6½″	1,050	2408T123	38.85	2408T184	83.76	2408T365	103.22	2408T121	30.51	2408T414	75.78
6″ × 2″	7¼″	1,230	2408T127	42.56	2408T185	87.78	2408T366	107.24	2408T126	34.13	2408T415	79.78
8″ × 2″	9½″	1,250	2408T131	51.09	2408T186	96.55	2408T367	116.02	2408T129	42.78	2408T416	87.62
Black Phenolic Wheels												
3¼″ × 2″	4¼″	700	2408T42★	25.62	2408T191	70.05	2408T381	90.00	2408T45★	17.04	2408T431	60.84
4″ × 2″	5⅝″	800	2408T136	24.31	2408T192	68.13	2408T382	88.05	2408T134	15.40	2408T432	59.91
5″ × 2″	6½″	1,000	2408T142	25.40	2408T193	69.27	2408T383	89.22	2408T139	16.55	2408T433	59.96
6″ × 2″	7¼″	1,200	2408T147	26.69	2408T194	70.67	2408T384	90.56	2408T145	17.78	2408T434	61.24
8″ × 2″	9½″	1,250	2408T153	31.07	2408T195	75.33	2408T385	95.25	2408T152	22.40	2408T435	66.18
Cast Iron Wheels												
3¼″ × 2″	4¼″	700	2408T41★	35.24	2408T353	79.87	2408T391	99.31	2408T44★	27.00	2408T451	70.82
4″ × 2″	5⅝″	700	2408T31	24.58	2408T354	67.96	2408T392	87.38	2408T35	17.02	2408T452	59.95
5″ × 2″	6½″	1,000	2408T103	26.42	2408T355	69.93	2408T393	90.00	2408T101	19.09	2408T453	60.78
6″ × 2″	7¼″	1,200	2408T108	28.87	2408T356	72.60	2408T394	92.05	2408T106	21.51	2408T454	64.09
8″ × 2″	9½″	1,250	2408T118	33.96	2408T357	78.20	2408T395	96.82	2408T117	27.82	2408T455	69.13

★ Not available with neoprene seals.

Optional Weld-On Fast-Mount Bracket—Permits easy removal and replacement of casters.

49935T12 ..... $11.92

Trojan Casters—700 to 1,500 lbs. CAD

Swivel

Rigid

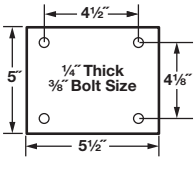

- Formed steel welded frame with bolt and nut kingpin
- Double ball swivel bearings
- ¼″ leg thickness

Identical in design to the Slugger Formed Casters on the previous page, but with a different mounting plate design. Made of corrosion-resistant zinc-plated steel. ***Swivel casters with neoprene seals*** prevent contamination of the swivel bearing to extend service life.

Also Available: Replacement wheels. Please ask for 8745T333 and specify McMaster-Carr part number.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Neoprene Seals		Rigid	
Wheel with Straight Roller Bearings								
Green Polyurethane on Aluminum Wheels—*Durometer is 60D*								
4″ × 2″	5⅝″	700	8745T83	$44.71	8745T86	$51.88	8745T89	$29.71
5″ × 2″	6½″	1,200	8745T25	48.05	8745T65	55.40	8745T45	33.46
6″ × 2″	7⅜″	1,230	8745T26	51.10	8745T66	58.52	8745T46	36.60
8″ × 2″	9½″	1,500	8745T27	59.77	8745T67	67.46	8745T47	45.29
Black Glass-Filled Nylon Wheels—*Durometer is 85D*								
4″ × 2″	5⅝″	800	8745T101	38.20	8745T105	44.29	8745T201	21.40
5″ × 2″	6½″	1,000	8745T102	43.80	8745T106	50.38	8745T202	22.62
6″ × 2″	7⅜″	1,200	8745T103	44.72	8745T107	50.96	8745T203	23.36
8″ × 2″	9½″	1,400	8745T104	46.08	8745T108	51.67	8745T204	28.15
Black Phenolic Wheels								
4″ × 2″	5⅝″	800	8745T84	33.10	8745T87	40.85	8745T91	20.29
5″ × 2″	6½″	1,000	8745T16	34.41	8745T56	41.40	8745T36	19.71
6″ × 2″	7⅜″	1,200	8745T17	34.98	8745T57	42.93	8745T37	22.19
8″ × 2″	9½″	1,400	8745T18	39.90	8745T58	47.18	8745T38	24.87
Cast Iron Wheels								
4″ × 2″	5⅝″	700	8745T85	33.68	8745T88	44.15	8745T92	21.73
5″ × 2″	6½″	1,000	8745T72	35.79	8745T61	47.08	8745T82	24.00
6″ × 2″	7⅜″	1,200	8745T13	37.65	8745T62	49.30	8745T33	27.52
8″ × 2″	9⅜″	1,500	8745T14	42.90	8745T63	63.61	8745T34	33.04
Wheel with Maintenance-Free Precision Ball Bearings								
Green Solid Polyurethane Wheels—*Durometer is 75D*								
4″ × 2″	5⅝″	1,000	8745T12	41.63	8745T41	46.44	8745T23	34.54
5″ × 2″	6½″	1,000	8745T19	45.19	8745T42	49.88	8745T28	38.06
6″ × 2″	7⅜″	1,000	8745T21	51.19	8745T43	54.77	8745T29	44.23
8″ × 2″	9½″	1,000	8745T22	69.10	8745T68	72.19	8745T32	61.33

Optional Four-Position Swivel Lock—Field installable.

8745T95 ..... $19.95

Optional Side Wheel Brakes for Wheel with Straight Roller Bearings—Field installable.

For Wheels

4″ and 5″ Dia. ..... 2422T98 ..... $16.72
6″ and 8″ Dia. ..... 2422T99 ..... 16.72

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Patriot Casters—700 to 1,050 lbs.

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- *Swivel*: 3/16″ leg thickness
- *Rigid*: 1/4″ leg thickness
- NSF certified

Hard solid polyurethane wheels roll easily and eliminate the possibility of tread separation. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 2531T333 and specify McMaster-Carr part number.

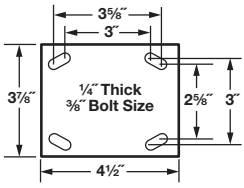

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Acetal Bearings						
Blue Solid Polyurethane Wheels—*Durometer is 55D*						
4″ × 2″	5 5/8″	700	2531T21	$29.44	2531T31	$25.46
5″ × 2″	6 1/2″	900	2531T22	33.27	2531T32	29.27
6″ × 2″	7 1/2″	900	2531T23	38.50	2531T33	33.38
8″ × 2″	9 1/2″	1,050	2531T24	55.54	2531T34	51.77
Wheel with Straight Roller Bearings						
Blue Solid Polyurethane Wheels—*Durometer is 55D*						
4″ × 2″	5 5/8″	700	2531T25	31.00	2531T35	23.75
5″ × 2″	6 1/2″	900	2531T26	35.73	2531T36	27.10
6″ × 2″	7 1/2″	900	2531T27	40.42	2531T37	31.03
8″ × 2″	9 1/2″	1,050	2531T28	58.29	2531T38	45.73

Optional Total Lock—Brakes the wheel with a face wheel brake and locks the swivel all in one operation. All are field installable.

For Wheel			For Wheel		
4″ Dia.	2531T12	$8.27	6″ Dia.	2531T14	$8.27
5″ Dia.	2531T13	8.27	8″ Dia.	2531T15	8.72

Optional Four-Position Swivel Lock—Field installable.

2531T11 ..... $9.65

Optional Swivel Seal Kit—Keeps debris and moisture out of the swivel.

2531T71 ..... $4.22

Falcon Casters—700 to 1,000 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3/16″ leg thickness
- NSF certified

Lightweight polyurethane on polypropylene wheels make these casters easier to move than heavy metal-core wheels. Made of corrosion-resistant zinc-plated steel. ***Gray wheels*** are nonmarking for floor protection. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation.

Also Available: Replacement wheels. Please ask for 2498T333 and specify McMaster-Carr part number.

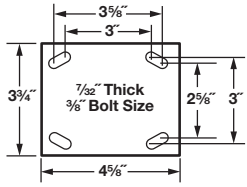

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Total Lock		Rigid	
Wheel with Straight Roller Bearings								
Gray Polyurethane on Polypropylene Wheels—*Durometer is 85A*								
8″ × 2″	9 1/2″	700	2498T47	$49.94	2498T472	$58.39	2498T56	$37.65
Red Polyurethane on Polypropylene Wheels—*Durometer is 95A*								
5″ × 2″	6 1/2″	700	2498T64	38.80	2498T642	49.53	2498T74	28.78
6″ × 2″	7 1/2″	820	2498T65	41.80	2498T652	51.94	2498T75	31.51
8″ × 2″	9 1/2″	1,000	2498T66	49.94	2498T662	58.39	2498T76	37.65

Debris-Guard Casters—800 to 1,000 lbs.

- Formed steel welded frame with bolt and nut kingpin
- Double ball swivel bearings
- 1/4″ leg thickness

Neoprene seals on the swivel and metal debris guards on the wheel keep the bearings free from contaminants for smooth operation and extended service life. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 2523T333 and specify McMaster-Carr part number.

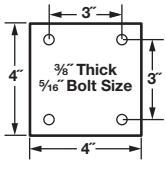

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Brown Polyurethane on Iron Wheels—*Durometer is 90A*						
3″ × 1 7/8″	4 1/2″	800	2523T81	$141.27	2523T83	$113.95
4″ × 1 7/8″	5 1/2″	800	2523T82	144.51	2523T84	84.16
Black Phenolic Wheels						
3″ × 2″	4 1/2″	1,000	2523T74	91.55	2523T75	70.27

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings (Cont.)						
Black Solid Rubber Wheels—*Durometer is 80D*						
3″ × 1 7/8″	4 1/2″	800	2523T34	$99.53	2523T48	$73.33
4″ × 1 7/8″	5 1/2″	800	2523T36	95.69	2523T51	70.89
Cast Iron Wheels						
3″ × 1 7/8″	4 1/2″	1,000	2523T11	108.16	2523T21	75.13
4″ × 1 7/8″	5 1/2″	1,000	2523T14	114.67	2523T24	77.40

Bison Casters—1,000 to 1,500 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3/16″ leg thickness

Rubber wheels provide high load carrying capacity while maintaining good shock absorption. Made of steel with a gray epoxy finish.

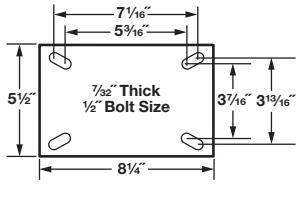

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Rubber on Iron Wheels—*Durometer is 90A*						
8″ × 2″	9 3/4″	1,000	2420T21	$79.00	2420T31	$56.98
8″ × 2 1/2″	9 3/4″	1,300	2420T22	93.38	2420T32	70.87
10″ × 2 1/2″	11 3/4″	1,500	2420T23	128.64	2420T33	94.13

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Mauler Casters—800 to 1,200 lbs.

Swivel

Rigid

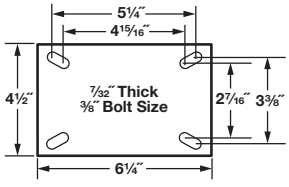

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3⁄16″ leg thickness

An economical choice for less demanding applications. Made of steel with a gray epoxy finish. ***Swivel casters*** have a protective ring around the swivel bearings to keep out contaminants.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Phenolic Wheels						
4″ × 2″	5⅝″	800	22945T41	$26.87	22945T81	$18.95
5″ × 2″	6½″	1,000	22945T42	26.13	22945T82	20.09
6″ × 2″	7¼″	1,200	22945T43	27.62	22945T83	24.27
8″ × 2″	9½″	1,200	22945T48	33.47	22945T88	28.42
Orange Polyurethane on Iron Wheels—*Durometer is 90A*						
5″ × 2″	6½″	900	22945T32	30.42	22945T72	25.44
6″ × 2″	7¼″	1,100	22945T33	32.93	22945T73	27.98
8″ × 2″	9½″	1,200	22945T34	40.22	22945T74	34.93
Cast Iron Wheels						
4″ × 2″	5⅝″	1,000	22945T51	26.95	22945T91	20.58
5″ × 2″	6½″	1,000	22945T52	28.31	22945T92	23.60
6″ × 2″	7¼″	1,200	22945T53	31.15	22945T93	27.47
8″ × 2″	9½″	1,200	22945T58	34.75	22945T98	34.69

Optional Side Wheel Brake—For all swivel casters. Field installable.

22955T36 ..... $10.60

Mauler Junior Casters—800 to 1,200 lbs.

Swivel

Rigid

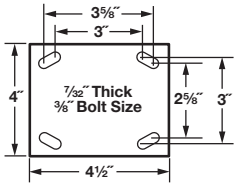

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3⁄16″ leg thickness

Same as the Mauler Casters on this page, but with a smaller mounting plate. Made of steel with a gray epoxy finish. ***Swivel casters*** have a protective ring around the swivel bearings to keep out contaminants.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Phenolic Wheels						
4″ × 2″	5⅝″	800	22955T41	$23.31	22955T81	$17.10
5″ × 2″	6½″	1,000	22955T42	24.71	22955T82	18.94
6″ × 2″	7¼″	1,200	22955T43	26.31	22955T83	21.54
8″ × 2″	9½″	1,200	22955T44	31.15	22955T84	24.77
Orange Polyurethane on Iron Wheels—*Durometer is 90A*						
5″ × 2″	6½″	900	22955T32	29.46	22955T72	23.10
6″ × 2″	7¼″	1,100	22955T33	32.00	22955T73	26.65
8″ × 2″	9½″	1,200	22955T34	38.81	22955T74	33.94
Cast Iron Wheels						
4″ × 2″	5⅝″	1,000	22955T51	24.79	22955T91	19.88
5″ × 2″	6½″	1,000	22955T52	26.87	22955T92	22.56
6″ × 2″	7¼″	1,200	22955T53	29.54	22955T93	25.02
8″ × 2″	9½″	1,200	22955T54	38.25	22955T94	30.69

Optional Side Wheel Brake—For all swivel casters. Field installable.

22955T36 ..... $10.60

Trash Container Casters—1,000 to 1,200 lbs.

Swivel

Rigid

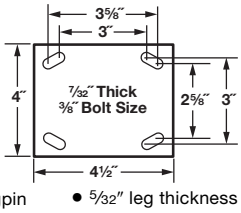

- One-piece formed steel with rivet kingpin
- Single ball swivel bearings
- 5⁄32″ leg thickness

The legs of these casters are more vertical than other casters so they withstand the stress of impact often received in trash container applications. Made of steel with a gray epoxy finish. For the same casters with lower-capacity wheels, see page 1333.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Bore (No Bearings)						
Black Phenolic Wheels						
5″ × 2″	6½″	1,000	26275T11	$17.86	26275T31	$15.41
6″ × 2″	7½″	1,200	26275T12	19.50	26275T32	15.88
Cast Iron Wheels						
5″ × 2″	6½″	1,000	26275T21	21.42	26275T41	17.02
6″ × 2″	7½″	1,200	26275T22	25.46	26275T42	22.28

Optional Side Wheel Brake—For all swivel casters. Field installable.

22955T36 ..... $10.60

Shock-Absorbing Casters—800 to 1,000 lbs.

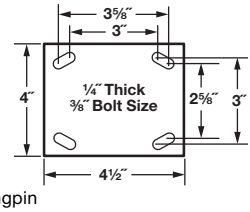

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- ¼″ leg thickness

Dual shock-absorbing, heat-treated springs in these casters allow you to take on bumpy surfaces and obstructions while minimizing shock to the load. All have seals on the swivel and debris guards on the wheel to protect the bearings from contamination and extend service life. Made of corrosion-resistant zinc-plated steel.

Wheel Dia. × Wd.	Mount Ht. No Load	Mount Ht. Max. Load	Cap. Ea., lbs. Min.	Cap. Ea., lbs. Max.	Swivel	
Wheel with Maintenance-Free Precision Ball Bearings						
Gray Solid Elastomer Wheels—*Durometer is 56D*						
4″ × 2″	7½″	6½″	200	900	22645T11	$204.85
5″ × 2″	9″	8″	200	1,000	22645T12	218.06
6″ × 2″	9½″	8½″	200	1,000	22645T13	229.13
8″ × 2″	11½″	10″	200	800	22645T14	307.61

Roll-and-Set Leveling Casters—825 to 1,650 lbs.

With Thumbwheel Adjustment

Leveling Pad Extended

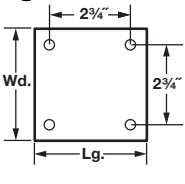

- Premium large-diameter swivel raceway (kingpinless)
- Premium single ball swivel bearings

A leveling pad lifts the wheel of these casters off the ground to hold your mobile equipment in place, plus it can be adjusted to compensate for uneven surfaces. Choose from thumbwheel and metric nut pad adjustment. For a compatible wrench for casters with an adjustment nut, see pages 2770-2771. Caster frame is cast aluminum with a beige powder-coated finish; mounting plate is steel. Mounting hardware is included.

Wheel Dia. × Wd.	Mount Ht. Min.	Mount Ht. Max.	Cap. Ea., lbs.	Mounting Plate, Lg. × Wd. × Thick.	Bolt Size	Adjustment Style	Swivel	
Wheel with Plain Bore (No Bearings)								
Black Solid Nylon Wheels								
2 13⁄16″ × 1 3⁄16″	4¾″	5 3⁄16″	825	3¾″ × 3¾″ × ¼″	M10	Thumbwheel	9008T43	$79.85
2 13⁄16″ × 1 3⁄16″	4¾″	5 3⁄16″	1,100	3¾″ × 3¾″ × ¼″	M10	M16 Metric Nut	9008T45	91.11
Blue Solid Nylon Wheels								
3 13⁄16″ × 2 1⁄16″	5 3⁄16″	5¾″	1,650	4″ × 4″ × 13⁄32″	M12	M20 Metric Nut	9008T47	131.11

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Cushion-Tough Pneumatic-Wheel Casters—1,220 to 1,655 lbs.

- One-piece forged steel mounting plate with kingpin
- Single ball/tapered roller swivel bearings
- 28035T11 *and T21*: 3/8″ leg thickness
- 28035T12 *and T22*: 1/2″ leg thickness

Pneumatic wheels with bolted rims make these the quietest, most shock-absorbing casters around. Ideal for transporting both heavy and fragile loads. Made of steel with a red painted finish.

Also Available: Replacement wheels. Please ask for 28035T333 and specify McMaster-Carr part number.

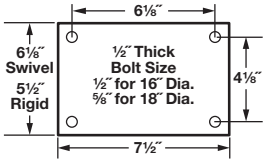

Swivel

Rigid

Wheel Dia. × Wd.	Tire Stamping	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Tapered Roller Bearings							
Six-Ply Black Rubber Pneumatic Wheels							
16″ × 4.8″	4.80/8	18 3/4″	1,220	28035T11	$246.13	28035T21	$190.00
Eight-Ply Black Rubber Pneumatic Wheels							
18″ × 5.7″	5.70/8	21 1/4″	1,655	28035T12	315.81	28035T22	258.55

Quiet-Ride Pneumatic-Wheel Casters—700 to 1,570 lbs.

- Forged steel with bolt and nut kingpin
- Double ball swivel bearings
- 2788T67 *and T68*: 1/4″ leg thickness
- 2788T65 *and T66*: 3/8″ leg thickness
- 2788T36 *and T37*: 3/8″ leg thickness

Dual wheels with bolted rims provide better load distribution and easier turning than single-wheel casters. Made of corrosion-resistant zinc-plated steel. *Note:* Wheel width shown is for each wheel.

Also Available: Replacement wheels. Please ask for 2788T333 and specify McMaster-Carr part number.

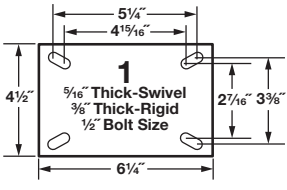

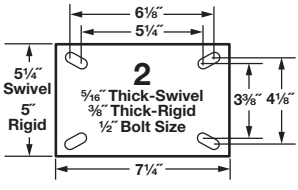

Swivel

Wheel Dia. × Wd.	Tire Stamping	Mount Ht.	Cap. Ea., lbs.	Mounting Plate	Swivel		Rigid	
Dual Wheel with Straight Roller Bearings								
Four-Ply Black Rubber Pneumatic Wheels								
10.4″ × 3.4″	4.10/4	13″	700	1	2788T67	$181.61	2788T68	$136.22
12.4″ × 3.6″	4.10/6	15 1/2″	890	2	2788T65	249.68	2788T66	166.36
14″ × 4.6″	5.30/6	17 3/4″	1,570	2	2788T36	252.44	2788T37	194.92

Premier Type 304 Stainless Steel Casters—700 to 1,500 lbs.

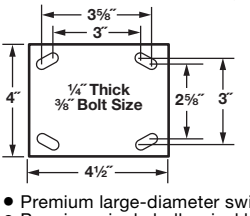

Swivel

Rigid

- Premium large-diameter swivel raceway (kingpinless)
- Premium single ball swivel bearings
- 3/16″ leg thickness

Premium design plus Type 304 stainless steel construction equals the best-performing, most durable, corrosion-resistant casters available.

Also Available: Replacement wheels. Please ask for 23355T333 and specify McMaster-Carr part number.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Maintenance-Free Precision Ball Bearings						
Black Solid Polyurethane Wheels—Durometer is 75D						
4″ × 2″	5 5/8″	700	23355T51	$160.66	23355T61	$58.14
5″ × 2″	6 1/2″	1,000	23355T52	168.07	23355T62	60.50
6″ × 2″	7 1/2″	1,200	23355T53	168.60	23355T63	64.98
8″ × 2″	10 1/8″	1,500	23355T54	198.60	23355T64	111.84

Optional Four-Position Swivel Lock—Field installable.

23355T91 ..... $23.80

Optional Face Wheel Brakes for Swivel Casters—Field installable.

For Wheel			For Wheel		
4″ Dia.	23355T921	$26.00	6″ Dia.	23355T923	$26.00
5″ Dia.	23355T922	26.00	8″ Dia.	23355T924	26.00

Type 303 Stainless Steel Washdown Casters—800 to 1,000 lbs.

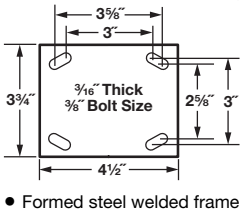

Swivel

Rigid

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings with neoprene seals
- 3/16″ leg thickness
- NSF certified

With no components to rust, these casters are an excellent choice for washdown applications and corrosive environments.

Also Available: Replacement wheels. Please ask for 22595T333 and specify McMaster-Carr part number.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Acetal Bearings						
Red Polyurethane on Polypropylene Wheels—Durometer is 90A						
5″ × 2″	6 1/2″	850	22595T42	$93.47	22595T46	$49.52
6″ × 2″	7 1/2″	900	22595T43	95.89	22595T47	51.74
Wheel with Stainless Steel Straight Roller Bearings						
Red Polyurethane on Polypropylene Wheels—Durometer is 90A						
5″ × 2″	6 1/2″	850	22595T32	98.11	22595T36	58.43
6″ × 2″	7 1/2″	900	22595T33	103.24	22595T37	61.37
8″ × 2″	9 1/2″	950	22595T34	113.98	22595T38	67.61
Black Phenolic Wheels						
4″ × 2″	5 5/8″	800	22595T11	86.67	22595T15	53.84
5″ × 2″	6 1/2″	1,000	22595T12	88.07	22595T16	54.73
6″ × 2″	7 1/2″	1,000	22595T13	91.88	22595T17	57.27
8″ × 2″	9 1/2″	1,000	22595T14	99.74	22595T18	74.80

Optional Side Wheel Brake for Swivel Casters—Field installable.

22595T91 ..... $25.92

Type 316 Stainless Steel Washdown Casters—800 to 1,000 lbs.

Swivel

Rigid

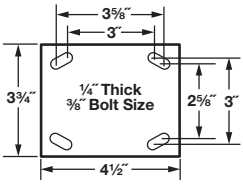

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings with neoprene seals
- 3/16″ leg thickness
- NSF certified

Optimum corrosion resistance compared to Type 303 and Type 304 stainless steel casters. Casters are also nonmagnetic.

Also Available: Replacement wheels. Please ask for 24015T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Acetal Bearings						
Red Polyurethane on Polypropylene Wheels—*Durometer is 95A*						
5″×2″	6½″	850	24015T11	$109.09	24015T27	$77.48
6″×2″	7½″	900	24015T12	116.19	24015T28	80.52
Black Solid Polyurethane Wheels—*Durometer is 65D*						
4″×2″	5⅝″	1,000	24015T14	114.11	24015T31	78.44
5″×2″	6½″	1,000	24015T15	119.30	24015T32	85.50
6″×2″	7½″	1,000	24015T16	130.70	24015T33	86.46
Black Phenolic Wheels						
4″×2″	5⅝″	800	24015T23	98.70	24015T39	64.67
5″×2″	6½″	1,000	24015T24	107.61	24015T41	71.52
6″×2″	7½″	1,000	24015T25	108.69	24015T42	70.69
Wheel with Stainless Steel Straight Roller Bearings						
Black Solid Polyurethane Wheels—*Durometer is 65D*						
4″×2″	5⅝″	1,000	24015T18	198.31	24015T35	149.20
5″×2″	6½″	1,000	24015T19	203.19	24015T36	159.63
6″×2″	7½″	1,000	24015T21	210.09	24015T37	162.91

Optional Side Wheel Brake for Swivel Casters—Field installable.

22595T91 ..... $25.92

Camelot Casters—350 to 680 lbs.

Swivel

Rigid

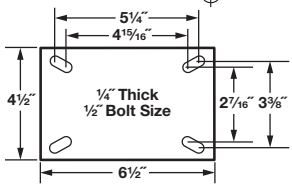

- Premium large-diameter swivel raceway (kingpinless)
- Premium single ball swivel bearings
- ¼″ leg thickness (unless noted)

Same design as the Vulcan Casters on page 1322, but with lower-capacity wheels. The premium design swivel withstands shock loads. Made of steel with a corrosion-resistant zinc-plated finish (unless noted).

Also Available: Replacement wheels. Please ask for 31105T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Rubber on Iron Wheels—*Durometer is 75A*						
4″×2″	5⁹⁄₁₆″	350	31105T11	$43.94	31105T21	$20.31
5″×2″	6½″	400	31105T12	44.65	31105T22	21.24
6″×2″	7⅝″	410	31105T16	46.15	31105T26	22.73
6″×3″	7½″	680	31105T14■	73.36	31105T24■	46.15

■ Has a blue painted finish; mounting plate and leg thickness is 5/16″.

Optional Four-Position Swivel Lock for 2″ Wide Wheels—Field installable.

22665T76 ..... $5.89

Optional Face Wheel Brakes for 2″ Wide Wheels—Field installable.

For Wheels			For Wheels		
4″ Dia.	22665T751	$10.78	6″ Dia.	22665T753	$10.78
5″ Dia.	22665T752	10.78	8″ Dia.	22665T754	10.78

Princeton Casters—300 to 410 lbs.

Swivel

Rigid

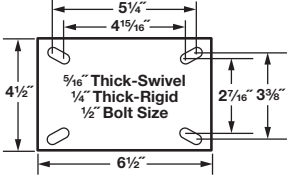

- One-piece forged steel mounting plate with kingpin
- Single ball/tapered roller swivel bearings
- ¼″ leg thickness

Same durable construction and plate size as the Kingston Casters on page 1323, but with lower-capacity wheels. Casters have dual swivel bearings and a double-welded frame to withstand shock loads and rolling over obstructions. Made of steel with a red painted finish.

To Order: Swivel casters with side wheel brake, and side wheel brake and lock. Please specify right or left side brake.

Also Available: Replacement wheels. Please ask for 32215T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Side Wheel Brake		Swivel w/Side Wheel Brake and Lock		Rigid		Rigid with Side Wheel Brake	
Wheel with Straight Roller Bearings												
Black Rubber on Iron Wheels—*Durometer is 70A*												
4″×2″	5⅝″	300	32215T51	$82.07	32215T11	$95.17	32215T31	$117.07	32215T52	$47.24	32215T41	$61.21
5″×2″	6¾″	350	32215T53	85.39	32215T12	96.49	32215T32	118.28	32215T54	52.41	32215T42	66.03
6″×2″	7¾″	410	32215T55	83.36	32215T13	99.82	32215T33	119.30	32215T56	46.38	32215T43	61.68

Cushion-Load Forged Casters—350 to 675 lbs.

Swivel

Rigid

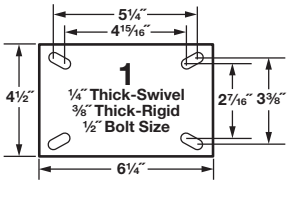

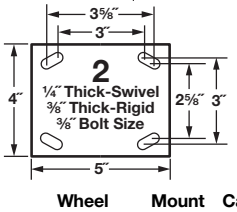

- Forged steel with bolt and nut kingpin
- Double ball swivel bearings
- ¼″ leg thickness

A durable steel frame and a soft rubber wheel give your load a gentle ride. Made of corrosion-resistant zinc-plated steel. ***Gray rubber wheels*** are nonmarking.

Also Available: Replacement wheels. Please ask for 80175T333 and specify McMaster-Carr part number.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings—*Mounting Plate 1*						
Black Rubber on Iron Wheels—*Durometer is 78A*						
4″×2″	5⅝″	350	2885T11	$54.33	2885T21	$25.93
5″×2″	6½″	400	2885T12	57.56	2885T22	27.18
6″×2″	7½″	410	2885T13	62.15	2885T23	28.56
8″×2″	10⅛″	500	2885T15	66.29	2885T25	34.47
Gray Rubber on Polypropylene Wheels—*Durometer is 65A*						
4″×2″	5⅝″	350	2885T31	59.00	2885T41	26.00
5″×2″	6½″	375	2885T32	60.82	2885T42	28.04
6″×2″	7½″	600	2885T33	62.75	2885T43	29.60
8″×2″	10⅛″	675	2885T34	71.49	2885T44	37.95

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings—*Mounting Plate 2*						
Black Rubber on Iron Wheels—*Durometer is 78A*						
4″×2″	5⅝″	350	80175T11	$52.91	80175T15	$27.38
5″×2″	6½″	400	80175T12	53.82	80175T16	26.64
6″×2″	7½″	410	80175T13	58.62	80175T17	28.27
8″×2″	10⅛″	500	80175T14	65.47	80175T18	33.49

Optional Face Wheel Brakes—For all casters, unless noted. Brakes are field installable.

For Wheel			For Wheel		
4″ Dia.	2885T35 ♦	$11.27	6″ Dia.	2885T37	$11.73
5″ Dia.	2885T36 ♦	11.04	8″ Dia.	2885T38	13.89

♦ For swivel casters only.

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Cushion-Load Formed Casters—350 to 675 lbs.

- Formed steel welded frame with bolt and nut kingpin
- Double ball swivel bearings
- 1/4″ leg thickness

An economical choice with the same gentle ride as the Cushion-Load Forged Casters on the previous page. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 80175T333 and specify McMaster-Carr part number.

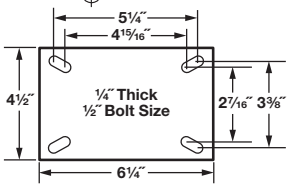

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Rubber on Iron Wheels—Durometer is 78A						
4″ × 2″	5 5/8″	350	2703T11	$35.93	2703T21	$21.57
5″ × 2″	6 1/2″	400	2703T12	36.78	2703T22	22.57
6″ × 2″	7 1/2″	410	2703T13	38.93	2703T23	24.73
8″ × 2″	10 1/8″	500	2703T15	43.33	2703T25	29.27
Gray Rubber on Polypropylene Wheels—Durometer is 65A						
4″ × 2″	5 5/8″	350	2703T41★	42.33	2703T51	22.35
5″ × 2″	6 1/2″	375	2703T42★	44.00	2703T52	23.28
6″ × 2″	7 1/2″	600	2703T61★	43.88	2703T71	24.25
8″ × 2″	9 1/2″	675	2703T62★	45.25	2703T72	28.37

★ Mounting plate is 5/16″ thick.

Optional Four-Position Swivel Lock—Field installable.

For Wheels		
Black Rubber	2703T76	$13.57
Gray Rubber	2703T75	8.34

Optional Side Wheel Brakes for Black Wheels—Field installable.

For Wheels			For Wheels		
4″ and 5″ Dia.	2422T98	$16.72	6″ and 8″ Dia.	2422T99	$16.72

Optional Face Wheel Brakes for Gray Wheels—Field installable.

For Wheels			For Wheels		
4″ Dia.	2703T31	$23.71	6″ Dia.	2703T33	$23.71
5″ Dia.	2703T32	23.71	8″ Dia.	2703T34	23.71

Samson Casters—350 to 675 lbs.

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- 1/4″ leg thickness

Same construction as the Spartan Casters on page 1326, but with lower-capacity wheels. Made of corrosion-resistant zinc-plated steel.

Swivel casters with lock have a four-position swivel lock. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation. ***Casters with sealed straight roller wheel and swivel bearings*** keep dirt and debris from contaminating the bearings for extended service life.

Also Available: Replacement wheels. Ask for 30305T333 and specify McMaster-Carr part number.

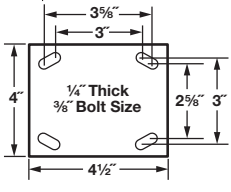

Swivel

Rigid

Swivel with Lock

Swivel with Total Lock

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Lock		Swivel with Total Lock		Rigid	
Wheel with Straight Roller Bearings										
Black Rubber on Iron Wheels—Durometer is 78A										
4″ × 2″	5 5/8″	350	30305T12	$27.12	30305T81	$41.00	30305T811	$40.46	30305T22	$19.60
5″ × 2″	6 1/2″	400	30305T14	28.10	30305T82	41.88	30305T821	41.62	30305T24	20.56
6″ × 2″	7 1/4″	410	30305T15	28.80	30305T83	42.38	30305T831♣	44.06	30305T25	21.98
8″ × 2″	9 1/2″	500	30305T16	33.82	30305T84	49.06	30305T841	51.28	30305T26	29.16
Gray Rubber on Polypropylene Wheels—Durometer is 65A										
4″ × 2″	5 5/8″	350	30305T56	28.96	30305T561	40.59	30305T562	42.74	30305T66	22.50
5″ × 2″	6 1/2″	375	30305T57	29.12	30305T571	41.81	30305T572	43.44	30305T67	22.80
6″ × 2″	7 1/4″	600	30305T58	30.86	30305T581	42.52	30305T582♣	45.06	30305T68	24.20
8″ × 2″	9 1/2″	675	30305T59	35.62	30305T591	46.61	30305T592	53.68	30305T69	30.80
Green Polyurethane on Iron Wheels—Durometer is 95A										
3 1/4″ × 2 3/16″	4 1/4″	540	30305T18	46.42	30305T181	45.33	—	—	30305T28	37.30
Green Polyurethane on Aluminum Wheels—Durometer is 60D										
4″ × 1 1/2″	5 5/8″	600	30305T19	36.86	30305T193	39.37	30305T192	42.96	30305T29	27.70
Black Solid Polypropylene Wheels—Durometer is 65D										
4″ × 2″	5 5/8″	450	30305T32	25.70	30305T85	38.84	30305T851	36.32	30305T42	16.30
5″ × 2″	6 1/2″	550	30305T34	26.32	30305T86	41.29	30305T861	40.39	30305T44	17.00
6″ × 2″	7 1/4″	650	30305T35	27.22	30305T87	41.80	30305T871♣	41.43	30305T45	18.16
Black Phenolic Wheels										
3 1/4″ × 1 1/2″	4 1/4″	600	30305T53	26.48	30305T532	33.87	—	—	30305T63	17.14
4″ × 1 1/2″	5 5/8″	600	30305T54	27.10	30305T541	32.73	30305T542	31.62	30305T64	17.79
5″ × 1 1/2″	6 1/2″	600	30305T55	28.10	30305T551	33.43	30305T552	33.46	30305T65	18.50
Cast Iron Wheels										
3 1/4″ × 1 1/2″	4 1/4″	400	30305T37	33.88	30305T372	35.54	—	—	30305T47	24.75
4″ × 1 1/2″	5 5/8″	600	30305T38	27.46	30305T383	34.23	30305T382	38.28	30305T48	19.76
5″ × 1 1/2″	6 1/2″	600	30305T39	28.82	30305T393	35.53	30305T392	40.04	30305T49	21.06
Wheel with Sealed Straight Roller Bearings and Sealed Swivel Bearings										
Black Rubber on Iron Wheels—Durometer is 78A										
4″ × 2″	5 5/8″	350	30305T71	35.28	30305T711	37.72	30305T712	40.18	30305T91	21.62
5″ × 2″	6 1/2″	400	30305T72	36.24	30305T721	38.57	30305T722	42.06	30305T92	22.50
6″ × 2″	7 1/4″	410	30305T73	36.88	30305T731	40.40	30305T732♣	42.68	30305T93	23.94
8″ × 2″	9 1/2″	500	30305T74	41.72	30305T741	45.49	30305T742	54.10	30305T94	29.42
Black Solid Polypropylene Wheels—Durometer is 65D										
4″ × 2″	5 5/8″	450	30305T75	33.41	30305T753	35.27	30305T752	39.62	30305T95	19.20
5″ × 2″	6 1/2″	550	30305T76	34.64	30305T761	38.15	30305T762	40.44	30305T96	20.32
6″ × 2″	7 1/4″	650	30305T77	35.84	30305T771	38.71	30305T772♣	40.80	30305T97	21.62

♣ Mount height is 7 1/2″.

Optional Side Wheel Brakes—Field installable.

For Wheels		
4″ and 5″ Dia.	2422T98	$16.72
6″ and 8″ Dia.	2422T99	16.72

Optional Face Wheel Brakes for Swivel Casters—Field installable.

For Wheels			For Wheels		
4″ Dia.	30305T981	$9.00	6″ Dia.	30305T983	$9.89
5″ Dia.	30305T982	9.43	8″ Dia.	30305T984	11.23

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Eagle Casters—200 to 675 lbs.

Swivel

Rigid

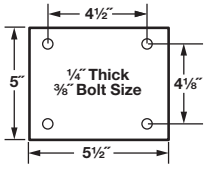

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- ¼″ leg thickness

Same construction and mounting plate as the Trojan Casters on page 1326, but with lower-capacity wheels. Made of corrosion-resistant zinc-plated steel.

Also Available: Replacement wheels. Please ask for 2444T333 and specify McMaster-Carr part number.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Rubber on Iron Wheels—*Durometer is 70A*						
4″ × 2″	5⅝″	350	2444T41	$29.09	2444T45	$24.42
5″ × 2″	6½″	400	2444T42	30.34	2444T46	24.54
6″ × 2″	7⅜″	410	2444T43	34.58	2444T47	26.59
8″ × 2″	9½″	500	2444T44	37.26	2444T48	31.23
Gray Rubber on Polypropylene Wheels—*Durometer is 65A*						
4″ × 2″	5⅝″	350	2444T15	29.50	2444T35	23.08
5″ × 2″	6½″	375	2444T16	30.91	2444T36	25.19
6″ × 2″	7⅜″	600	2444T17	33.50	2444T37	26.67
8″ × 2″	9½″	675	2444T18	36.10	2444T38	30.44

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Ball Bearings						
Black Never-Go-Flat Cushion Rubber-Tire Wheels						
6″ × 2″	7⅜″	200	2444T1	$44.80	2444T5	$34.69
8″ × 2½″	10″	350	2444T2	57.89	2444T6	42.38

Optional Four-Position Swivel Lock—Field installable.

2444T91 ..... $25.98

Optional Side Wheel Brakes for Wheel with Straight Roller Bearings—Field installable.

For Wheels			For Wheels		
4″ and 5″ Dia.	2422T98	$16.72	6″ and 8″ Dia.	2422T99	$16.72

Ezy-Roll Casters—300 to 550 lbs.

Swivel

Rigid

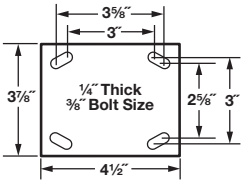

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- 3/16″ leg thickness
- NSF certified

Rubber wheels provide a cushioned ride. Casters are made of corrosion-resistant zinc-plated steel. For casters with the same design, but with higher-capacity wheels, see the Patriot Casters on page 1327.

Gray rubber wheels are nonmarking and have a curved tread that makes them easier to get rolling and swivel.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Rubber on Polypropylene Wheels—*Durometer is 75A*						
6″ × 1½″	7½″	300	2652T51	$28.91	2652T61	$24.78
8″ × 2″	9½″	500	2652T52	35.60	2652T62	31.71

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings (Cont.)						
Gray Rubber on Polypropylene Wheels—*Durometer is 68A*						
4″ × 2″	5⅝″	350	2652T71	$26.36	2652T91	$22.58
5″ × 2″	6½″	450	2652T72	28.49	2652T92	22.84
6″ × 2″	7½″	550	2652T73	29.18	2652T93	23.40

Optional Side Wheel Brake for Swivel Casters—Field installable.

2531T75 ..... $12.75

Glide-Light Casters—350 to 550 lbs.

Swivel

Rigid

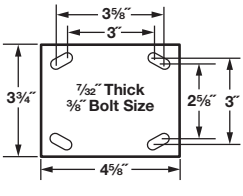

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3/16″ leg thickness
- NSF certified

Lightweight wheels mean less weight to get rolling. All casters are made of corrosion-resistant zinc-plated steel and have nonmarking wheels. For casters with the same design, but with higher-capacity wheels, see the Falcon Casters on page 1327.

Gray rubber wheels are extra soft to cushion your load, plus they have a curved tread so they are easier to get rolling.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Gray Rubber on Aluminum Wheels—*Durometer is 63A*						
6″ × 2″	7½″	350	20115T51	$45.26	20115T71	$40.86
8″ × 2″	9½″	450	20115T52	51.38	20115T72	47.25
Gray Polyurethane on Polypropylene Wheels—*Durometer is 85A*						
4″ × 2″	5⅝″	450	20115T12	36.60	20115T22	26.46
5″ × 2″	6½″	500	20115T14	38.02	20115T24	28.20
6″ × 2″	7½″	550	20115T15	40.96	20115T25	30.88
Red Polyurethane on Polypropylene Wheels—*Durometer is 95A*						
4″ × 2″	5⅝″	500	20115T17	36.60	20115T27	26.46

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Ball Bearings						
Gray Rubber on Aluminum Wheels—*Durometer is 65A*						
6″ × 2″	7½″	350	20115T53	$53.40	20115T73	$44.37
8″ × 2″	9½″	450	20115T54	60.56	20115T74	51.02

Optional Side Wheel Brake for Swivel Casters—Field installable.

2498T13 ..... $5.66

Optional Total Lock—Brakes the wheel with a face wheel brake and locks the swivel in one operation. Field installable.

20115T91 ..... $13.92

Debris-Guard Junior Casters—350 lbs.

Swivel

Rigid

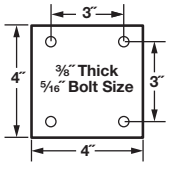

- Formed steel welded frame with bolt and nut kingpin
- Double ball swivel bearings
- ¼″ leg thickness

Neoprene seals on the swivel and debris guards on the wheel keep bearings free from contaminants for longer service life. Same as the Debris-Guard Casters on page 1327, but with lower-capacity wheels. Made of corrosion-resistant zinc-plated steel.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Straight Roller Bearings						
Black Solid Neoprene Wheels—*Durometer is 78A*						
3″ × 1⅞″	4½″	350	97955T11	$97.74	97955T21	$72.89
4″ × 1⅞″	5½″	350	97955T12	99.85	97955T22	74.91

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Food-Service Casters—500 to 750 lbs.

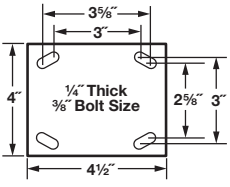

Swivel

Rigid

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- ¼″ leg thickness
- NSF certified

Ideal for food-service applications, these casters are easy to clean in order to reduce waste buildup. Made of corrosion-resistant zinc-plated steel. ***Antimicrobial wheels*** prevent formation and growth of bacteria, mold, and fungus. ***Phenolic wheels*** are BISSC (Baking Industry Sanitation Standards Committee) certified.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Acetal Bearings						
Antimicrobial Polyurethane on Polypropylene Wheels—*Durometer is 60D*						
4″×2″	5⅝″	700	49915T41	$35.68	49915T51	$28.90
5″×2″	6½″	750	49915T42	38.76	49915T52	32.12
Wheel with Straight Roller Bearings						
Black Phenolic Wheels						
4″×1½″	5⅝″	500	49915T11	54.71	49915T21	31.09
5″×1½″	6½″	500	49915T12	55.58	49915T22	31.96
6″×1½″	7⅜″	500	49915T13	59.58	49915T23	35.27

Trash Container Casters—650 to 675 lbs.

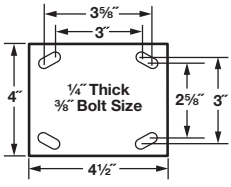

Swivel

Rigid

- One-piece formed steel with rivet kingpin
- Single ball swivel bearings
- 5/32″ leg thickness

A more vertical profile allows these casters to better withstand the impact of being frequently lifted and set back down on the ground. Casters are steel with a gray epoxy-coated finish. For casters with the same design, but with higher-capacity wheels, see the Trash Container Casters on page 1328.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Bore (No Bearings)						
Black Solid Polypropylene Wheels—*Durometer is 72D*						
5″×2″	6½″	650	22795T13	$18.08	22795T33▲	$13.74
6″×2″	7½″	650	22795T14	18.08	22795T34	14.46
Wheel with Plain Acetal Bearings						
Black Rubber on Iron Wheels—*Durometer is 70A*						
5″×2″	6½″	675	22795T11	20.10	22795T31▲	14.78
6″×2″	7½″	675	22795T12	21.64	22795T32	17.98

▲ Mounting plate is 3/16″ thick.

Optional Side Wheel Brake—For all casters. Field installable.

22955T36 ..... $10.60

Redi-Roll Casters—290 to 800 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3/16″ leg thickness

An economical alternative with the same design as the Mauler Casters on page 1328, but with lower-capacity wheels. Made of steel with a gray epoxy-coated finish.

Swivel casters have a protective ring around the swivel to protect the bearings from contaminants.

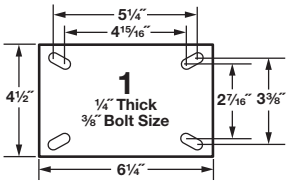

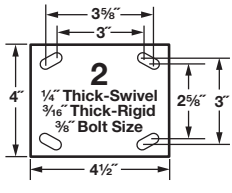

Swivel

Rigid

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	MOUNTING PLATE 1 Swivel		MOUNTING PLATE 1 Rigid		MOUNTING PLATE 2 Swivel		MOUNTING PLATE 2 Rigid	
Wheel with Straight Roller Bearings										
Black Rubber on Iron Wheels—*Durometer is 70A*										
4″×2″	5⅝″	290	44785T11	$23.44	44785T31	$18.82	19505T11	$19.20	19505T21	$15.73
5″×2″	6½″	350	44785T12	24.22	44785T32	23.65	19505T12	21.04	19505T22	17.05
6″×2″	7¼″	410	44785T13	24.53	44785T33	24.75	19505T13	22.27	19505T23	18.82
8″×2″	9½″	500	44785T14	30.78	44785T34★	26.15	19505T14	26.40	19505T24★	21.42
Black Solid Polypropylene Wheels—*Durometer is 70D*										
4″×2″	5⅝″	500	44785T61	21.96	44785T71	19.07	19505T31	20.77	19505T41	15.15
5″×2″	6½″	650	44785T62	23.24	44785T72	20.85	19505T32	21.58	19505T42	16.89
Orange Polyurethane on Iron Wheels—*Durometer is 90A*										
4″×2″	5⅝″	800	44785T51	28.07	44785T52	21.36	19505T15	25.92	19505T25	22.50

★ Leg thickness is ¼″.

Optional Side Wheel Brake—For all swivel casters. Field installable.

22955T36 ..... $10.60

Cushion-Center Casters—440 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- ⅛″ leg thickness

Two layers of white nylon with a layer of red rubber in the middle create nonmarking wheels that provide good shock absorption and quiet operation. Casters are made of corrosion-resistant zinc-plated steel. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation.

Also Available: Replacement wheels. Please ask for 27115T333 and specify McMaster-Carr part number.

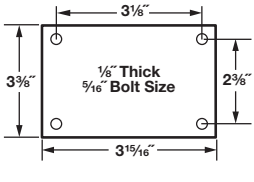

Swivel with Total Lock

Rigid

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Total Lock		Rigid	
Wheel with Maintenance-Free Precision Ball Bearings								
White Nylon Wheels—*Durometer is 69D*								
4″×1⅜″	5⅛″	440	27115T4	$22.05	27115T5	$31.32	27115T6	$21.71
5″×1⅜″	6⅛″	440	27115T1	24.53	27115T2	35.54	27115T3	22.61

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Quiet-Glide Casters—330 to 770 lbs.

Swivel with Total Lock

Rigid

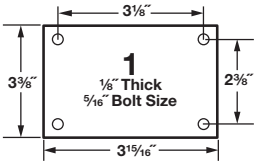

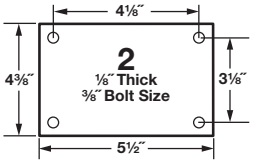

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- *4″ and 5″ Dia. Wheels: 1⁄16″* leg thickness
- *6 5⁄16″ Dia. Wheels: ⅛″* leg thickness

Wheels are nonmarking and provide a quiet ride. Seals on the swivel and debris guards on the wheels protect the bearings from contamination for longer service life. Casters are made of corrosion-resistant zinc-plated steel. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate	Swivel		Swivel with Total Lock		Rigid	
Wheel with Ball Bearings									
Blue Rubber on Nylon Wheels—*Durometer is 75A*									
4″ × 1 3⁄8″	4 15⁄16″	330	1	27075T71	$14.27	27075T72	$23.59	27075T73	$12.37
5″ × 1 3⁄8″	5 15⁄16″	330	1	27075T81	19.83	27075T82	27.37	27075T83	17.60
Wheel with Straight Roller Bearings									
Blue Rubber on Nylon Wheels—*Durometer is 75A*									
6 5⁄16″ × 2″	7 11⁄16″	770	2	27075T74	42.18	27075T75	60.77	27075T76	33.74

Hammin Casters—200 to 300 lbs.

Swivel

Rigid

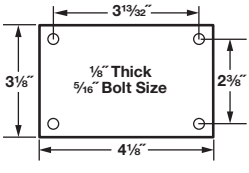

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3⁄32″ leg thickness

Debris guards prevent contamination to keep wheels rolling smoothly. Casters are made of corrosion-resistant zinc-plated steel. ***Black rubber wheels*** offer a cushioned ride. ***Gray rubber wheels*** are nonmarking, impact resistant, and ideal for higher capacities.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Bore (No Bearings)						
Black Solid Rubber Wheels—*Durometer is 75A*						
3 1⁄2″ × 1 5⁄16″	4 3⁄4″	200	2877T21	$26.02	2877T24	$15.36
4″ × 1 1⁄4″	5″	200	2877T31	20.21	2877T35	18.56
5″ × 1 1⁄4″	6 1⁄8″	200	2877T32	22.70	2877T36	21.92
Gray Solid Rubber Wheels—*Durometer is 75D*						
3 1⁄2″ × 1 5⁄16″	4 3⁄4″	275	2877T28	17.26	2877T27	15.36
4″ × 1 1⁄4″	5″	275	2877T33	21.47	2877T37	18.56
5″ × 1 1⁄4″	6 1⁄8″	300	2877T34	22.73	2877T38	21.92

Optional Face Wheel Brakes—For swivel casters. Field installable.

For Wheel		
3 1⁄2″ Dia.	2877T811	$6.36
4″ Dia.	2877T812	6.36
5″ Dia.	2877T813	6.36

Conductive Casters—250 lbs.

Swivel

Rigid

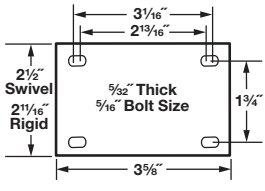

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3⁄32″ leg thickness
- NSF certified

Conductive wheels eliminate static buildup and discharge making these casters ideal for moving sensitive equipment. Casters are made of corrosion-resistant zinc-plated steel. Wheels are nonmarking, have an average electrical resistance of less than 10^5 ohms, and meet Fed. Spec. FF-C-88C.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Ball Bearings						
Gray Conductive Rubber on Polypropylene Wheels—*Durometer is 65A*						
4″ × 1 1⁄4″	5 1⁄8″	250	3238T11	$21.55	3238T12	$18.18
5″ × 1 1⁄4″	6 3⁄16″	250	3238T13	23.22	3238T14	21.02

Optional Total Locks—For swivel casters. Brake the wheel with a face wheel brake and lock the swivel in one operation. Field installable.

For Wheel		
4″ Dia.	3238T211	$5.36
5″ Dia.	3238T212	5.36

Task King Supreme Casters—220 lbs.

Swivel

Rigid

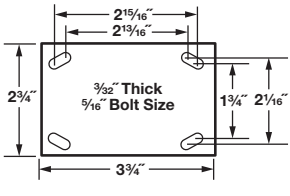

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3⁄32″ leg thick.
- NSF certified

An extra-bright finish gives these casters a highly polished appearance. Plus, seals on the swivel and debris guards on the wheels protect the bearings from contamination for longer service life. Made of corrosion-resistant zinc-plated steel. ***White nylon wheels*** and ***gray rubber wheels*** are nonmarking. ***Black conductive rubber wheels*** have a surface resistance of less than 10^6 ohms to prevent static buildup. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Total Lock		Rigid	
Wheel with Plain Bore (No Bearings)								
White Solid Nylon Wheels—*Durometer is 100A*								
3″ × 1 1⁄4″	4 5⁄8″	220	23055T26	$12.12	23055T46	$27.61	23055T66	$17.32
4″ × 1 3⁄8″	5 3⁄8″	220	23055T27	21.06	23055T47	28.96	23055T67	18.42
5″ × 1 1⁄4″	6 3⁄8″	220	23055T28	25.54	23055T48	33.22	23055T68	21.59
Wheel with Tapered Roller Bearings								
Gray Rubber on Steel Wheels—*Durometer is 80A*								
3″ × 1 1⁄4″	4 5⁄8″	220	23055T21	24.09	23055T41	33.12	23055T61	23.79
4″ × 1 1⁄4″	5 3⁄8″	220	23055T22	27.49	23055T42	36.94	23055T62	25.75
5″ × 1 1⁄4″	6 3⁄8″	220	23055T23	29.67	23055T43	39.14	23055T63	28.14
Black Conductive Rubber on Steel Wheels—*Durometer is 80A*								
3″ × 1 1⁄4″	4 5⁄8″	220	23065T21	26.50	23065T41	35.97	23065T61	21.50
4″ × 1 1⁄4″	5 3⁄8″	220	23065T22	28.69	23065T42	38.18	23065T62	27.97
5″ × 1 1⁄4″	6 3⁄8″	220	23065T23	31.25	23065T43	40.74	23065T63	29.93

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Silent-Roll Casters—220 lbs.

- One-piece molded fiberglass-reinforced nylon with rivet kingpin
- Maintenance-free precision ball swivel bearings
- 3/16″ leg thickness

Maintenance-free precision ball swivel and wheel bearings make these casters the quietest available. Their soft, high-performance rubber wheels are nonmarking and provide a cushioned ride. A debris cap on the swivels and debris guards on the wheels protect the bearings from contamination for longer service life. Frame is corrosion-resistant beige fiberglass-reinforced nylon; mounting plate is steel with a yellow dichromate finish.

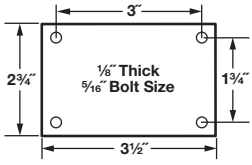

Swivel

Swivel with Lock

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Lock	
Wheel with Maintenance-Free Precision Ball Bearings						
Gray Rubber on Polypropylene Wheels—Durometer is 90A						
4″ × 1¼″	5 23/32″	220	2380T41	$47.58	2380T52	$48.10
5″ × 1¼″	6 9/16″	220	2380T43	47.28	2380T54	50.96

Blackhawk Casters—200 to 350 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3/32″ leg thickness
- NSF certified

A black powder-coated finish on the mounting plate and frame draws less attention to these casters. Made of steel.

Casters with black wheels blend into the background for nearly invisible mobility.

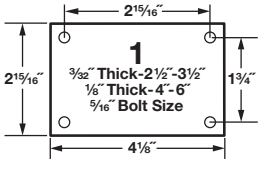

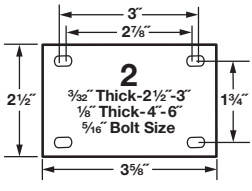

Swivel

Rigid

Wheel Dia. × Wd.	Mt. Ht.	Cap. Ea., lbs.	Mtg. Plate	Swivel		Rigid	
Wheel with Plain Bore (No Bearings)							
Black Solid Polypropylene Wheels—Durometer is 60D							
2½″ × 1⅛″	3 5/16″	200	2	20135T11▲	$10.17	20135T16	$9.60
3″ × 1¼″	3 13/16″	270	2	20135T12▲	10.88	20135T17	8.81
4″ × 1¼″	5″	300	2/1★	20135T14	12.90	20135T19	10.58
5″ × 1¼″	6⅛″	350	2	20135T15	15.83	20135T21	12.04

Wheel Dia. × Wd.	Mt. Ht.	Cap. Ea., lbs.	Mtg. Plate	Swivel		Rigid	
Wheel with Maintenance-Free Precision Ball Bearings							
Gray Rubber on Polypropylene Wheels—Durometer is 70A							
4″ × 1¼″	5″	250	2/1★	20135T31	$16.83	20135T34▲	$14.92
5″ × 1¼″	6⅛″	300	2	20135T32	18.83	20135T35	17.69
6″ × 1⅜″	7 1/16″	325	2/1★	20135T33■	26.77	20135T36■	23.35

★ First number is plate for swivel caster; second is the rigid caster. ▲ Mounting plate is 3⅝″ Lg. × 2 9/16″ Wd. ■ Has sealed bearings.

Creston Casters—200 to 400 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- *Swivel:* 3/32″ leg thickness
- *Rigid:* 3/16″ leg thickness
- NSF certified

General purpose casters are made of corrosion-resistant zinc-plated steel.

Swivel casters also have seals on the swivel to prevent bearing contamination for longer service life.

Swivel casters with wrap-around brake are easier to engage and have a rubber brake pad for better tread grip than a standard face brake.

Neoprene rubber wheels resist oil and mild chemicals, and have debris guards to keep wheel bearings free from contaminants for longer service life.

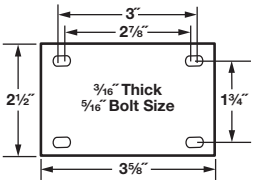

Swivel

Rigid

Swivel with Wrap-Around Brake

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Face Wheel Brake		Swivel with Wrap-Around Face Brake		Rigid	
Wheel with Plain Acetal Bearings										
Black Solid Rubber Wheels with Debris Guards—Durometer is 80D										
2½″ × 1¼″	3¾″	400	9949T64♦	$26.10	—	—	—	—	9949T77♦	$23.98
3″ × 1¼″	4 5/16″	400	9949T66	21.67	9949T96	$24.43	9949T54	$40.39	9949T79	19.06
3½″ × 1¼″	4¾″	400	9949T68	24.20	9949T97	25.73	9949T56	42.88	9949T82	21.62
4″ × 1¼″	5¼″	400	9949T71	26.42	9949T98	28.53	9949T58	43.63	9949T86	22.99
5″ × 1¼″	6¼″	400	9949T73	33.40	9949T99	34.62	9949T61	57.25	9949T88	28.86
6″ × 1¼″	7⅜″	400	9949T75	36.01	—	—	9949T63	62.16	9949T91	33.68
Black Solid Neoprene Rubber Wheels with Debris Guards—Durometer is 78A										
2½″ × 1¼″	3¾″	200	9949T37	23.29	—	—	—	—	9949T51	21.17
3″ × 1¼″	4 5/16″	200	9949T39	24.00	9949T92	26.41	9949T28	42.38	9949T53	21.05
3½″ × 1¼″	4¾″	200	9949T42	24.97	9949T93	28.40	9949T32	42.94	9949T55	22.18
4″ × 1¼″	5¼″	200	9949T44	27.72	9949T94	31.15	9949T34	45.84	9949T57	24.29
5″ × 1¼″	6¼″	200	9949T46	32.26	9949T95	34.78	9949T36	54.62	9949T59	29.24
6″ × 1¼″	7⅜″	200	9949T48	36.65	—	—	9949T38	63.03	9949T62	35.82
Wheel with Ball Bearings										
Red Polyurethane on Polypropylene Wheels—Durometer is 90A										
3″ × 1¼″	4 5/16″	300	9949T13	23.19	9949T17	24.74	9949T21	40.79	9949T27	18.83
4″ × 1¼″	5¼″	400	9949T14	23.78	9949T18	26.53	9949T22	43.66	9949T29	20.98
5″ × 1¼″	6¼″	400	9949T15	32.63	9949T19	29.54	9949T23	50.70	9949T31	25.02
6″ × 1¼″	7⅜″	400	9949T16	34.17	—	—	9949T25	57.64	9949T33	30.81
Black Solid Neoprene Rubber Wheels with Debris Guards—Durometer is 60A										
5½″ × 1⅝″	6⅞″	200	9949T41	38.52	—	—	9949T43	58.95	9949T47	34.89
6″ × 1¼″	7⅜″	200	9949T52	36.65	—	—	9949T65	62.52	9949T67	33.69
8″ × 1 9/16″	9 7/16″	200	9949T24	55.80	—	—	9949T49	85.08	9949T26	46.06

♦ Wheels are urethane.

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Cart-King Casters—200 to 400 lbs.

Swivel

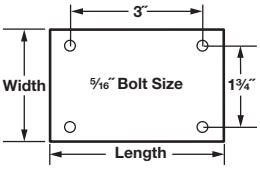

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3/32″ leg thickness (unless noted)

Choose from a variety of casters for general purpose equipment and cart applications. Casters are made of corrosion-resistant zinc-plated steel.

Swivel casters with total lock brake the wheel with a face wheel brake and lock the swivel in one operation.

Single wheel casters are NSF certified (unless noted). ***Dual wheel*** casters provide better load distribution, are easier to turn, and have a higher capacity with smaller diameter wheels. *Note:* Wheel width shown is for each wheel.

SINGLE WHEEL

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate, Lg. × Wd. × Thick.	Swivel		Swivel with Face Wheel Brake		Rigid	
Wheel with Plain Bore (No Bearings)									
Black Solid Rubber Wheels—Durometer is 75A									
3 1/2″ × 5/16″	4 3/4″	200	3 5/8″ × 2 7/8″ × 1/8″	2370T11	$10.94	2370T41 ♦	$12.67	2370T21 ▲	$8.23
4″ × 1 1/4″	5″	200	3 5/8″ × 2 7/8″ × 1/8″	2370T13	13.98	2370T42 ♦	15.12	2370T23 ▲	10.55
5″ × 1 1/4″	6 1/8″	200	3 5/8″ × 2 7/8″ × 1/8″	2370T15	13.00	2370T43 ♦	13.81	2370T25 ▲	11.21
Gray Solid Rubber Wheels—Durometer is 75D									
3 1/2″ × 5/16″	4 3/4″	275	3 5/8″ × 2 7/8″ × 1/8″	2370T12	11.69	2370T44 ♦	13.08	2370T22 ▲	10.46
4″ × 1 1/4″	5″	275	3 5/8″ × 2 7/8″ × 1/8″	2370T14	11.45	2370T45 ♦	13.81	2370T24 ▲	9.25
5″ × 1 1/4″	6 1/8″	300	3 5/8″ × 2 7/8″ × 1/8″	2370T16	13.71	2370T46 ♦	17.75	2370T26 ▲	14.67
Blue Solid Polyurethane Wheels—Durometer is 55D									
3″ × 1 1/4″	3 13/16″	270	3 5/8″ × 2 1/2″ × 1/8″	8789T31	18.13	8789T41 ♦	19.85	8789T34	15.06
4″ × 1 1/4″	5″	400	3 5/8″ × 2 7/8″ × 1/8″	8789T32	24.85	8789T42 ♦	24.56	8789T35 ▲	21.56
5″ × 1 1/4″	6 1/8″	400	3 5/8″ × 2 7/8″ × 1/8″	8789T33	27.50	8789T43 ♦	29.40	8789T36 ▲	28.31

Swivel with Total Lock

				Swivel		Swivel with Total Lock		Rigid	
Wheel with Plain Acetal Bearings									
Black Solid Polypropylene Wheels—Durometer is 65D									
3″ × 1 1/4″	4 1/4″	250	3 5/8″ × 2 1/2″ × 1/8″	2370T17 ♦	$7.18	2370T81 ♦	$14.91	2370T37 ♦	$4.31
4″ × 1 1/4″	5 1/8″	350	3 5/8″ × 2 1/2″ × 1/8″	2370T18 ♦	8.18	2370T82 ♦	12.02	2370T38 ♦	5.25
5″ × 1 1/4″	6 3/16″	350	3 5/8″ × 2 1/2″ × 1/8″	2370T19 ♦	9.31	2370T83 ♦	19.31	2370T39 ♦	6.13
Gray Rubber on Polypropylene Wheels—Durometer is 65A									
3 1/2″ × 1 1/4″	4 11/16″	250	3 5/8″ × 2 1/2″ × 5/32″	2702T21	13.11	2702T81	18.36	2702T41 ♠	9.91
4″ × 1 1/4″	5 1/8″	300	3 5/8″ × 2 1/2″ × 5/32″	2702T22	14.29	2702T82	20.12	2702T42 ♠	11.02
5″ × 1 1/4″	6 3/16″	325	3 5/8″ × 2 1/2″ × 5/32″	2702T23	16.84	2702T83	21.52	2702T43 ♠	12.78
Gray Polyurethane on Polypropylene Wheels—Durometer is 85A									
3 1/2″ × 1 1/8″	4 3/4″	200	3 3/4″ × 2 1/2″ × 1/8″	2502T71	19.05	2502T31	28.59	2502T75 ✓	14.53
4″ × 1 1/8″	5″	200	3 3/4″ × 2 1/2″ × 1/8″	2502T72	21.55	2502T32	30.89	2502T76 ✓	16.81
5″ × 1 1/8″	6 1/8″	200	3 3/4″ × 2 1/2″ × 1/8″	2502T73	23.07	2502T33	32.42	2502T77 ✓	18.34
6″ × 1 1/8″	7 1/16″	275	3 3/4″ × 2 1/2″ × 1/8″	2502T74	24.75	2502T34	34.09	2502T78 ✓	20.25

Dual-Wheel Swivel with Side Wheel Brake

Wheel with Straight Roller Bearings									
Black Phenolic Wheels									
3″ × 1 1/4″	4 1/4″	350	3 5/8″ × 2 1/2″ × 1/8″	2370T51 ♦	13.40	2370T84 ♦	21.73	2370T59 ♦	11.07
4″ × 1 1/4″	5 1/8″	350	3 5/8″ × 2 1/2″ × 1/8″	2370T53 ♦	14.76	2370T85 ♦	23.33	2370T62 ♦	11.63
5″ × 1 1/4″	6 3/16″	350	3 5/8″ × 2 1/2″ × 1/8″	2370T54 ♦	15.87	2370T86 ♦	23.67	2370T63 ♦	12.50
Wheel with Ball Bearings									
Gray Rubber on Polypropylene Wheels—Durometer is 65A									
3 1/2″ × 1 1/4″	4 11/16″	250	3 5/8″ × 2 1/2″ × 5/32″	2702T31	15.56	2702T71	20.20	2702T51 ♠	11.67
4″ × 1 1/4″	5 1/8″	300	3 5/8″ × 2 1/2″ × 5/32″	2702T32	15.78	2702T72	21.70	2702T52 ♠	13.42
5″ × 1 1/4″	6 3/16″	325	3 5/8″ × 2 1/2″ × 5/32″	2702T33	17.44	2702T73	22.10	2702T53 ♠	14.67
Gray Polyurethane on Polypropylene Wheels—Durometer is 85A									
3 1/2″ × 1 1/8″	4 3/4″	200	3 3/4″ × 2 1/2″ × 1/8″	2502T51	19.63	2502T35	29.15	2502T56 ✓	15.06
4″ × 1 1/8″	5″	200	3 3/4″ × 2 1/2″ × 1/8″	2502T52	22.42	2502T36	31.34	2502T57 ✓	17.42
5″ × 1 1/8″	6 1/8″	200	3 3/4″ × 2 1/2″ × 1/8″	2502T53	23.69	2502T37	33.04	2502T58 ✓	18.86
6″ × 1 1/8″	7 1/16″	275	3 3/4″ × 2 1/2″ × 1/8″	2502T54	25.45	2502T38	34.79	2502T59 ✓	20.64
Red Polyurethane on Polypropylene Wheels—Durometer is 95A									
3 1/2″ × 1 1/8″	4 3/4″	240	3 3/4″ × 2 1/2″ × 1/8″	2502T61	19.63	2502T41	29.15	2502T66 ✓	15.06
4″ × 1 1/8″	5″	240	3 3/4″ × 2 1/2″ × 1/8″	2502T62	22.42	2502T42	31.92	2502T67 ✓	17.42
5″ × 1 1/8″	6 1/8″	240	3 3/4″ × 2 1/2″ × 1/8″	2502T63	23.69	2502T43	33.04	2502T68 ✓	18.86
6″ × 1 1/8″	7 1/16″	325	3 3/4″ × 2 1/2″ × 1/8″	2502T64	25.45	2502T44	34.79	2502T69 ✓	20.64

♦ Not NSF certified. ▲ Mounting plate is 4 1/8″ Lg. × 2 15/16″ Wd. ♠ Mounting plate is 2 11/16″ wide.
✓ Mounting plate is 2 3/4″ wide.

DUAL WHEEL

Dual-Wheel Swivel with Thumb-Screw Brake

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate, Lg. × Wd. × Thick.	Swivel		Swivel with Side Wheel Brake		Rigid	
Wheels with Plain Metal Bearings									
Black Solid Rubber Wheels—Durometer is 70A									
3″ × 13/16″	3 13/16″	250	3 3/4″ × 2 1/2″ × 3/32″	9908T18	$12.45	9908T31	$16.15	—	—
Black Solid Rubber Wheels—Durometer is 90A									
2″ × 7/8″	2 7/8″	200	3 3/4″ × 2 1/2″ × 3/32″	9908T12	10.28	9908T32	13.94	—	—
3″ × 13/16″	3 13/16″	250	3 3/4″ × 2 1/2″ × 3/32″	9908T19	12.45	9908T33	16.15	—	—

Dual-Wheel Rigid

				Swivel		Swivel with Thumb-Screw Brake		Rigid	
Wheels with Ball Bearings									
Black Solid Neoprene Rubber Wheels—Durometer is 78A									
2″ × 7/8″	3 1/4″	250	3 5/8″ × 2 1/2″ × 3/16″	2455T31	$23.22	2455T51	$35.96	2455T33 ♣	$18.18
2 1/2″ × 7/8″	3 3/4″	250	3 5/8″ × 2 1/2″ × 3/16″	2455T32	27.85	2455T52	40.17	2455T34 ♣	20.27
Black Solid Rubber Wheels—Durometer is 80D									
2″ × 7/8″	3 1/4″	375	3 5/8″ × 2 1/2″ × 3/16″	2455T23	21.89	2455T53	31.77	2455T27 ♣	18.93
Black Elastomer Wheels—Durometer is 65D									
2 1/2″ × 7/8″	3 3/4″	375	3 5/8″ × 2 1/2″ × 3/16″	2455T24	25.89	2455T54	39.87	2455T28 ♣	21.58

♣ Leg thickness is 3/16″.

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Cart-Smart Casters—200 to 600 lbs.

- One-piece formed steel
- Single ball swivel bearings (unless otherwise stated)
- 3/32″ leg thickness
- NSF certified

A variety of unique mounting plate sizes matches many common carts and dollies. All are made of corrosion-resistant zinc-plated steel. ***Swivel casters with welded center*** have a center weld that connects the frame to the mounting plate, which eliminates the need for a kingpin.

Also Available: Swivel casters with single ball swivel bearings and a side wheel brake. Please ask for 2407T888 and specify McMaster-Carr part number. Casters with a brake are not NSF certified.

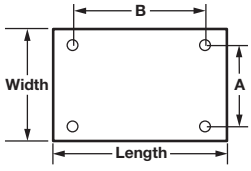

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel with Rivet Kingpin — Mounting Plate Lg. × Wd. × Thick.	(A)	(B)	Bolt Size		Rigid — Mounting Plate Lg. × Wd. × Thick.	(A)	(B)	Bolt Size	
Wheel with Plain Bore (No Bearings)—*NSF Certified*												
Cast Iron Wheels												
2½″ × 1″	3 3/16″	200	3 13/16″ × 2 3/4″ × 3/32″	1 3/4″	3″	5/16″	2407T12 $10.70	4 7/16″ × 2 1/4″ × 3/32″	1 1/16″	3 1/2″	5/16″	2407T25 $9.57
3″ × 1 3/16″	3 13/16″	300	4 1/8″ × 3 1/8″ × 3/32″	2 3/8″	3 7/16″	5/16″	2407T13 11.45	4 15/16″ × 2 1/2″ × 3/32″	1 3/16″	4″	5/16″	2407T26 11.47
4″ × 1 3/8″	5″	450	5 1/8″ × 4″ × 1/8″	3″	4″	3/8″	2407T14 19.73	6 1/4″ × 3 1/8″ × 1/8″	1 3/4″	5″	3/8″	2407T27 21.85
Wheel with Plain Metal Bearings—*NSF Certified*												
Black Solid Polypropylene Wheels—*Durometer is 60D*												
2½″ × 1 1/8″	3 3/16″	200	3 13/16″ × 2 3/4″ × 3/32″	1 3/4″	3″	5/16″	2407T52 5.38	4 7/16″ × 2 1/4″ × 3/32″	1 1/16″	3 1/2″	5/16″	2407T92 4.15
3″ × 1 1/4″	3 13/16″	270	4 1/8″ × 3 1/8″ × 3/32″	2 3/8″	3 7/16″	5/16″	2407T53 6.07	4 15/16″ × 2 1/2″ × 3/32″	1 3/16″	4″	5/16″	2407T93 4.83
4″ × 1 5/16″	5″	350	5 1/8″ × 4″ × 1/8″	3″	4″	3/8″	2407T45 10.82	6 1/4″ × 3 1/8″ × 1/8″	1 3/4″	5″	3/8″	2407T43 9.68
Black Solid Rubber Wheels—*Durometer is 75A*												
4″ × 1 5/16″	5″	225	5 1/8″ × 4″ × 1/8″	3″	4″	3/8″	2407T21 14.22	6 1/4″ × 3 1/8″ × 1/8″	1 3/4″	5″	3/8″	2407T34 9.80
Gray Solid Rubber Wheels—*Durometer is 75D*												
2½″ × 1 1/8″	3 3/16″	200	3 13/16″ × 2 3/4″ × 3/32″	1 3/4″	3″	5/16″	2407T56 5.97	4 7/16″ × 2 1/4″ × 3/32″	1 1/16″	3 1/2″	5/16″	2407T63 4.45
3″ × 1 1/4″	3 13/16″	270	3 1/8″ × 4 1/8″ × 3/32″	2 3/8″	3 7/16″	5/16″	2407T57 7.47	4 15/16″ × 2 1/2″ × 3/32″	1 3/16″	4″	5/16″	2407T64 5.78
4″ × 1 5/16″	5″	350	5 1/8″ × 4″ × 1/8″	3″	4″	3/8″	2407T58 12.72	6 1/4″ × 3 1/8″ × 1/8″	1 3/4″	5″	3/8″	2407T65 15.47
			Swivel with Welded Center (Kingpinless)					**Rigid**				
Wheel with Straight Roller Bearings—*Has double ball swivel bearings.*												
Black Rubber on Iron Wheels—*Durometer is 70A*												
4″ × 1 1/2″	5 1/4″	200	5″ × 4″ × 1/8″	3″	4″	3/8″	2457T62 $21.42	6″ × 3 1/8″ × 3/32″	2″	5″	3/8″	2457T67 $17.49
Cast Iron Wheels												
3″ × 1 1/4″	4″	350	4 1/8″ × 3 1/8″ × 3/32″	2 3/8″	3 7/16″	5/16″	2457T41 15.56	5 1/8″ × 2 1/4″ × 3/32″	1 3/16″	4″	5/16″	2457T46 13.22
4″ × 1 1/2″	5 1/4″	600	5″ × 4″ × 1/8″	3″	4″	3/8″	2457T42 21.53	6″ × 3 1/8″ × 3/32″	2″	5″	3/8″	2457T47 18.92

Super-Temp Casters—200 to 800 lbs.

- One-piece cast iron with rivet kingpin (unless noted)
- Double ball swivel bearings (unless noted)

The highest temperature rating we offer—these casters withstand temperatures up to 1600°F. Made of cast iron. *Note:* For compatibility, match the mount height of swivel and rigid.

Swivel

Rigid

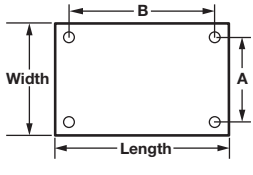

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate Lg. × Wd. × Thick.	(A)	(B)	Bolt Size	Leg Thick.	
Wheel with Plain Bore (No Bearings)								
Swivel Casters								
2″ × 7/8″	2 15/16″	200	3 3/4″ × 2 3/4″ × 5/16″	1 7/8″	2 7/8″	1/4″	5/16″	2425T11 $20.48
2½″ × 1″	3 3/4″	300	4 5/8″ × 3 3/8″ × 3/8″	2 1/4″	3 1/2″	5/16″	5/16″	2425T12 28.45
3″ × 1 1/4″	4 1/4″	225	4 3/16″ × 3 1/4″ × 11/32″	2 3/8″	3 5/16″	5/16″	1/4″	2425T23★ 19.09
3″ × 1 1/4″	4 1/2″	375	5 1/8″ × 3 7/8″ × 7/16″	2 5/8″	3 7/8″	3/8″	5/16″	2425T13 36.73
4″ × 1 1/2″	5 1/4″	300	4 3/4″ × 3 3/4″ × 3/8″	2 11/16″	3 11/16″	3/8″	5/16″	2425T24★ 37.82
4″ × 1 1/2″	5 3/4″	600	5 5/8″ × 4 1/8″ × 7/16″	3″	4 1/2″	3/8″	3/8″	2425T15 ♦ 54.68
6″ × 2″	8 5/16″	800	7″ × 5 1/2″ × 1/2″	4″	5 1/2″	1/2″	3/8″	24075T11 ♦ 107.48
Rigid Casters								
2½″ × 1″	2 15/16″	250	3 5/8″ × 2 3/8″ × 1/4″	1 1/4″	2 3/4″	1/4″	1/4″	2425T32 12.23
3″ × 1 1/4″	3 3/4″	350	4 1/2″ × 2 7/8″ × 5/16″	1 3/8″	3 5/16″	5/16″	5/16″	2425T33 15.13
3½″ × 1 1/2″	4 1/4″	400	5″ × 3 1/8″ × 11/32″	1 11/16″	3 7/8″	3/8″	3/8″	2425T34 29.42
4″ × 1 1/2″	4 1/2″	600	5″ × 3 1/8″ × 11/32″	1 11/16″	3 7/8″	3/8″	3/8″	2425T35 30.45
4″ × 1 1/2″	5 1/4″	600	5″ × 3 1/8″ × 3/8″	1 11/16″	3 7/8″	3/8″	3/8″	2425T36 30.40
4″ × 1 1/2″	5 3/4″	600	5″ × 3 1/8″ × 3/8″	1 11/16″	3 7/8″	3/8″	3/8″	2425T37 32.56
6″ × 2″	8 5/16″	800	7 1/2″ × 4 1/2″ × 1/2″	3″	6″	1/2″	3/8″	24075T21 63.11

★ Has single ball swivel bearings. ♦ Has nut and bolt kingpin.

High-Temperature Casters—250 to 600 lbs.

- One-piece formed steel with rivet kingpin (unless noted)
- Double ball swivel bearings
- *Mounting Plate 1:* 3/32″ leg thick.
- *Mounting Plate 2:* 1/4″ leg thick.

Designed to take the heat and keep rolling. Great for bakery applications, these casters withstand continuous use in temperatures from −20° to +475°F. All are made of corrosion-resistant zinc-plated steel and have nonmarking wheels. ***Black rubber on aluminum wheels*** also provide a cushioned ride and are quiet rolling.

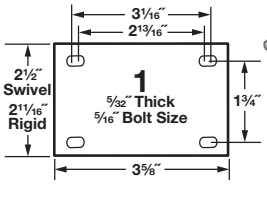

Mounting Plate 1

Swivel

Rigid

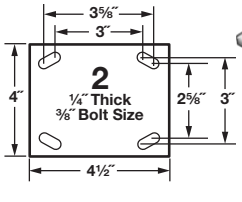

Mounting Plate 2

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mtg. Plate	Swivel		Rigid	
Wheel with Plain PTFE-Coated Steel Bearings							
Black Rubber on Aluminum Wheels—*Durometer is 75A*							
4″ × 1 1/4″	5 1/8″	250	1	19525T21	$90.80	19525T22	$73.20
5″ × 1 1/4″	6 3/16″	250	1	19525T23	90.80	19525T24	70.10
Wheel with Plain Zinc-Plated Steel Bearings							
Brown Glass-Filled Nylon Wheels—*Durometer is 85D*							
3½″ × 1 1/4″	4 11/16″	300	1	19525T12	25.51	19525T16	14.05
4″ × 1 1/4″	5 1/8″	300	1	19525T13	23.53	19525T17	16.38
5″ × 1 1/4″	6 3/16″	325	1	19525T14	29.38	19525T18	18.73
Wheel with Straight Roller Bearings							
Brown Phenolic Wheels							
3 1/4″ × 2″	4 1/4″	500	2	19895T21■	36.24	19895T23■	27.42
4″ × 2″	5 5/8″	600	2	19895T22■	38.58	19895T24■	30.12

■ Formed steel welded frame with rivet kingpin.

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Shock-Absorbing Casters—410 to 500 lbs.

Swivel

Rigid

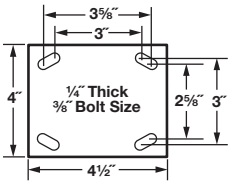

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- ¼″ leg thickness

The spring-loaded design of these casters minimizes shock to your load when taking on bumpy surfaces and obstructions. Made of corrosion-resistant zinc-plated steel. *Note:* The mount height listed is with no load. At full capacity spring compression results in ⅜″ reduction in mount height.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs. Min.	Cap. Ea., lbs. Max.	Swivel		Rigid	
Wheel with Sealed Straight Roller Bearings							
Black Rubber on Aluminum Wheels—Durometer is 75A							
6″ × 2″	8½″	10	410	2447T42	$145.91	2447T62	$131.20
8″ × 2″	10½″	10	500	2447T44	151.75	2447T64	140.53

Quiet-Ride Forged Pneumatic-Wheel Casters—330 to 625 lbs.

Single-Wheel Swivel

Dual-Wheel Swivel

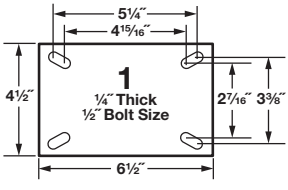

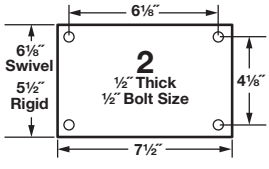

Single-Wheel Casters
- One-piece forged steel mounting plate with kingpin
- Single ball/tapered roller swivel bearings
- ¼″ leg thickness (unless noted)

Dual-Wheel Casters
- Forged steel with bolt and nut kingpin
- Double ball swivel bearings
- ¼″ leg thickness

With their extremely quiet and shock-absorbing pneumatic wheels, transporting heavy, fragile loads is no problem for these casters. ***Single-wheel casters*** are made of steel with a red painted finish. Wheels have bolted rims. ***Dual-wheel casters*** provide better load distribution and easier turning than single-wheel casters. Made of corrosion-resistant zinc-plated steel. Wheels have welded rims. *Note:* Wheel width shown is for each wheel.

Wheel Dia. × Wd.	Tire Stamping	Mount Ht.	Cap. Ea., lbs.	Mounting Plate	Swivel		Rigid	
Single Wheel with Straight Roller Bearings								
Four-Ply Black Rubber Pneumatic Wheels								
8″ × 2.8″	2.80/2.50-4	10⅝″	330	1	53795T11♦	$109.50	53795T15	$71.17
10″ × 3.4″	3.40/3.00-5	12½″	480	1	53795T12♦	123.33	53795T16	80.00
12″ × 4.1″	4.10/3.50-6	15½″	625	2	53795T14♣	159.33	53795T17♣	108.50
Dual Wheel with Straight Roller Bearings								
Four-Ply Black Rubber Pneumatic Wheels								
8″ × 2.8″	2.80/4	11″	590	1	53795T21♠	181.18	53795T22♠▲	151.04

♦ Mounting plate is 5/16″ thick. ♣ Leg thickness is ⅜″. ♠ Mounting plate is 6¼″ long. ▲ Mounting plate is ⅜″ thick.

Quiet-Ride Formed Pneumatic-Wheel Casters—200 to 450 lbs.

Swivel

Rigid

Swivel with Brake

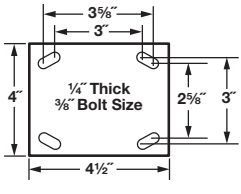

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- ¼″ leg thickness (unless noted)

With lower-capacity wheels and a smaller mounting plate for less demanding applications, these casters are an economical alternative to the Quiet-Ride Forged Pneumatic-Wheel Casters sold on this page. Made of corrosion-resistant zinc-plated steel.

Wheel Dia. × Wd.	Tire Stamping	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Face Wheel Brake		Rigid	
Wheel with Ball Bearings									
Four-Ply Black Rubber Pneumatic Wheels									
8″ × 2.8″	2.80/2.50-4	9 15/16″	310	22925T71	$47.54	22925T74	$57.64	22925T81	$42.22
10″ × 4.1″	4.10/3.50-4	12″	350	22925T72	63.06	—	—	22925T82	56.68
12″ × 4.1″	4.10/3.50-6	15″	450	22925T73	78.44	—	—	22925T83	74.54
Four-Ply Gray Rubber Pneumatic Wheels									
6″ × 2″	—	7½″	200	22925T17★	37.16	—	—	22925T18★	27.70
8″ × 2.8″	2.80/2.50-4	9 15/16″	310	22925T11	50.14	—	—	22925T14	48.94
10″ × 4.1″	4.10/3.50-4	12″	350	22925T12	67.92	—	—	22925T15	62.60

★ Leg thickness is ⅛″. Mounting plate is 4⅝″ long and 3/16″ thick.

Bright-Shine Casters—250 to 300 lbs.

Swivel

Rigid

Swivel with Brake

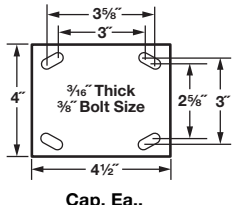

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- ⅛″ leg thickness

Chrome-plated casters have a great-looking, high-luster finish. They also withstand frequent washdowns and resist corrosion in wet environments. Neoprene rubber wheels resist oil and mild chemicals. Debris guards protect the wheel bearings. Made of nickel-chrome-plated steel. ***Swivel casters*** also have seals on the swivels to protect the bearings from contaminants for longer service life.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Face Wheel Brake		Rigid	
Wheel with Ball Bearings								
Black Solid Neoprene Rubber Wheels—Durometer is 62A								
4″ × 1⅜″	5 9/16″	250	28925T52	$80.96	28925T72	$97.65	28925T62	$62.73
5″ × 1⅜″	6⅝″	275	28925T54	85.44	28925T74	102.13	28925T64	66.92
6″ × 1⅜″	7 9/16″	300	28925T55	112.70	28925T75	129.39	28925T65	93.75

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Type 316 Stainless Steel Casters—300 to 400 lbs.

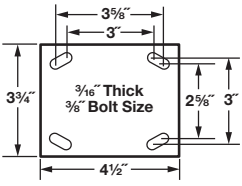

Swivel

Rigid

- Formed steel welded frame with rivet kingpin
- Double ball swivel bearings
- 3/16″ leg thickness

The most corrosion-resistant casters you can buy—ideal for harsh environments and washdown applications. Neoprene seals on the swivels protect the bearings from contaminants for longer service life.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Acetal Bearings						
Gray Rubber on Polypropylene Wheels—Durometer is 80A						
4″×2″	5⅝″	300	23815T1	$107.58	23815T5	$68.98
5″×2″	6½″	350	23815T2	110.17	23815T6	79.81
6″×2″	7½″	400	23815T3	120.83	23815T7	82.02
Wheel with Straight Stainless Steel Roller Bearings						
Gray Rubber on Polypropylene Wheels—Durometer is 80A						
4″×2″	5⅝″	300	23815T11	146.08	23815T15	101.74
5″×2″	6½″	350	23815T12	157.09	23815T16	110.26
6″×2″	7½″	400	23815T13	161.79	23815T17	113.17

Optional Side Wheel Brake for Swivel Casters—Field installable.

22595T91 ..... $25.92

Roll-and-Set Leveling Casters—300 to 600 lbs.

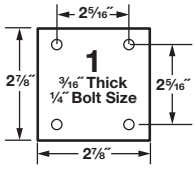

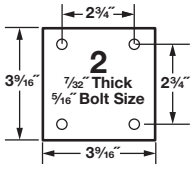

With Thumbwheel Adjustment

With Ratchet Adjustment

Leveling Pad Extended

- Premium large-diameter swivel raceway (kingpinless)
- Double ball swivel bearings

Adjust the polyurethane leveling pad on these casters to lift the wheel off the floor and keep your equipment stationary. When you need mobility, just raise the pad out of the way. Caster frame is aluminum; mounting plate is steel.

Casters with thumbwheel adjustment are leveled by hand or with an adjustable wrench with a jaw opening greater than 13/32″. For wrenches, see pages 2761-2762. ***Casters with ratchet adjustment*** have a retractable telescoping ratchet handle for easy adjustment.

Wheel Dia.×Wd.	Mount Ht. Min.	Mount Ht. Max.	Cap. Ea., lbs.	Adjustment Style	Swivel	
Wheel with Plain Bore (No Bearings)—*Mounting Plate 1*						
Black Solid Nylon Wheels—Durometer is 90D						
2″ ×1″	3 5/16″	3 11/16″	300	Thumbwheel	24125T21	$47.62
2″ ×1″	3 5/16″	3 11/16″	300	Ratchet	24125T41	85.71
Wheel with Plain Bore (No Bearings)—*Mounting Plate 2*						
Black Solid Nylon Wheels—Durometer is 90D						
2½″ ×1 3/16″	4 3/32″	4 11/16″	600	Thumbwheel	24125T22	78.57
2½″ ×1 3/16″	4 3/32″	4 11/16″	600	Ratchet	24125T42	118.37

Type 304 Stainless Steel Casters—220 to 400 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3/32″ leg thickness

Good corrosion resistance at a more economical price than the Type 316 Stainless Steel Casters on this page. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation.

Swivel

Rigid

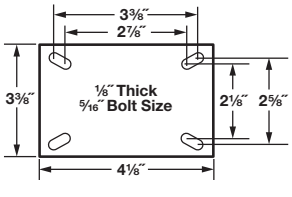

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Total Lock		Rigid	
Wheel with Plain Stainless Steel Bearings								
White Solid Nylon Wheels—Durometer is 80D								
3″×1 3/16″	4 1/16″	220	2833T51	$31.29	2833T511	$46.81	2833T54	$17.41
4″×1 3/8″	5 1/16″	300	2833T52	33.10	2833T521	51.47	2833T55	22.59
5″×1 5/8″	6 1/8″	350	2833T53	41.98	2833T531	56.38	2833T56	28.02
Wheel with Straight Stainless Steel Roller Bearings								
Red Polyurethane on Nylon Wheels—Durometer is 95A								
4″×1 3/16″	5 1/16″	240	2833T61	40.17	2833T611	60.78	2833T63	27.93
5″×1 3/16″	6 1/8″	400	2833T62	47.41	2833T621	65.09	2833T64	36.90

Sani-Roll Type 304 Stainless Steel Casters—200 to 440 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- *Swivel:* 1/8″ leg thickness
- *Rigid:* 3/16″ leg thickness

Similar to the Type 304 Stainless Steel Casters on this page, but with a smaller mounting plate. A debris cap on the swivels protects the bearings from contaminants for longer service life. ***Black neoprene rubber wheels*** also have debris guards on the wheels to keep bearings free from contaminants.

Swivel

Rigid

Swivel with Brake

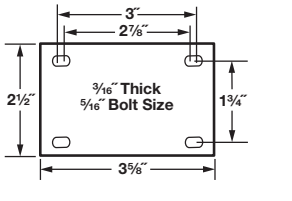

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Side Wheel Brake		Rigid	
Wheel with Plain Acetal Bearings								
Black Solid Neoprene Rubber Wheels—Durometer is 78A								
2½″ ×1 1/4″	3 3/4″	200	8359T11	$44.15	———	———	8359T113	$31.29
3″ ×1 1/4″	4 5/16″	200	8359T12	47.23	8359T121	$54.28	8359T123	31.99
4″ ×1 1/4″	5 1/4″	200	8359T15	51.53	8359T151	55.83	8359T153	42.23
5″ ×1 1/4″	6 1/4″	200	8359T16	53.58	8359T161	61.62	8359T163	44.53
6″ ×1 1/4″	7 3/8″	200	8359T17	63.94	8359T171✓	111.28	8359T173	66.34
Red Polyurethane on Polypropylene Wheels—Durometer is 90A								
3″ ×1 3/8″	4 15/16″	300	8359T41	45.49	8359T411	52.06	8359T413	30.77
4″ ×1 3/8″	5 1/4″	400	8359T43	58.28	8359T431	68.70	8359T433	50.91
5″ ×1 3/8″	6 1/4″	400	8359T44	63.79	8359T441	71.25	8359T443	53.70
Wheel with Plain Stainless Steel Bearings								
Black or White Solid Polypropylene Wheels■—Durometer is 90D								
2½″ ×1 3/8″	3 3/4″	225	8359T18	42.04	———	———	8359T35	27.00
3″ ×1 3/8″	4 15/16″	240	8359T19	46.55	8359T32	54.68	8359T36	29.02
4″ ×1 3/8″	5 1/4″	375	8359T26	48.76	8359T33	58.83	8359T37	41.26
5″ ×1 3/8″	6 1/4″	440	8359T28	51.71	8359T34	61.96	8359T38	43.00

✓ Has a face wheel brake. ■ To Order: Please specify color: black or white.

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Corner-Mount Casters—175 to 580 lbs.

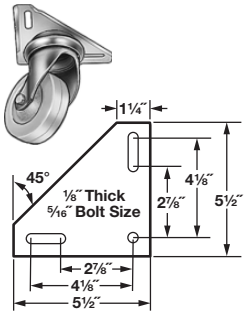

- Premium large-diameter swivel raceway (kingpinless)
- ⅛″ leg thickness
- Single ball swivel bearings

Mount these casters to the outer corners of carts, equipment, and angle iron. The premium swivel raceway provides strong, smooth swiveling. Casters are made of corrosion-resistant zinc-plated steel.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel
Wheel with Plain Bore (No Bearings)			
Black Rubber on Cast Iron Wheels—*Durometer is 85A*			
3″×1¼″	4½″	175	4992T31 $25.11
4″×1⅜″	5½″	300	4992T65 28.76
White Solid Nylon Wheels—*Durometer is 83D*			
3″×1⅜″	4½″	350	4992T62 16.50
4″×1⅜″	5½″	500	4992T66 18.39
5″×1⅜″	6⁷⁄16″	580	4992T71 20.09

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel
Wheel with Straight Roller Bearings			
Yellow Polyurethane on Iron Wheels—*Durometer is 95A*			
3″×1″	4½″	350	4992T41 $40.13
4″×1⅛″	5½″	500	4992T42 44.63
Black Phenolic Wheels			
3″×1½″	4½″	380	4992T63 18.78
4″×1½″	5½″	550	4992T67 19.28
5″×1½″	6⁷⁄16″	580	4992T72 20.52
Cast Iron Wheels			
3″×1⅜″	4½″	410	4992T64 26.87

Low-Profile Turret Casters—264 to 600 lbs.

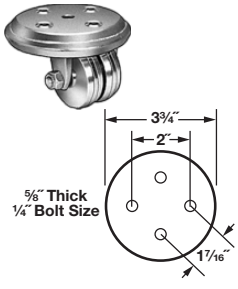

- Premium large-diameter swivel raceway (kingpinless)
- ¼″ leg thickness
- Single ball swivel bearings

Dual wheels plus low mounting height equal casters that are extra stable and easy to turn when moving equipment. Casters have a formed steel mounting plate and a corrosion-resistant zinc-plated cast iron frame. *Note:* Wheel width shown is for each wheel.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel
Dual Wheel with Plain Bore (No Bearings)			
Black Solid Nylon Wheels—*Durometer is 80D*			
1⅜″×9⁄16″	1⅞″	264	9936T64 $22.87
White Solid Nylon Wheels—*Durometer is 83D*			
2″ ×9⁄16″	2½″	350	9936T63 23.76

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel
Dual Wheel with Plain Bore (No Bearings) (Cont.)			
Yellow Polyurethane on Iron Wheels—*Durometer is 95A*			
2″×9⁄16″	2½″	350	9936T61 $39.94
Steel Wheels			
2″×9⁄16″	2½″	600	9936T62 31.87

Cardinal Casters—150 to 315 lbs.

Swivel with Total Lock

Rigid

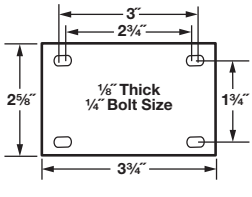

- One-piece formed steel with rivet kingpin
- 3⁄32″ leg thickness
- Double ball swivel bearings
- NSF certified

Our best casters in the lower capacity range. Debris caps on the swivel casters provide longer service life. Casters are made of corrosion-resistant zinc-plated steel.

Swivel casters with total lock brake the wheel with a face wheel brake and lock the swivel in one operation.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel	Swivel with Total Lock	Rigid
Wheel with Sealed Ball Bearings					
Two-Ply Gray Rubber Pneumatic Wheels					
6″×1¼″	7¼″	150	2426T31 $33.15	—	2426T41 $32.58
Gray Rubber on Polypropylene Wheels—*Durometer is 85A*					
3″×1¼″	4¼″	210	2426T55 14.00	2426T65 $21.60	2426T75 10.93
4″×1¼″	5¼″	260	2426T56 14.83	2426T66 22.41	2426T76 11.70
5″×1¼″	6¼″	280	2426T57 15.80	2426T67 23.73	2426T77 12.63
Gray Polyurethane on Polypropylene Wheels—*Durometer is 45D*					
3″×1¼″	4¼″	250	2426T52 13.47	2426T62 21.13	2426T72 10.40
4″×1¼″	5¼″	300	2426T53 14.23	2426T63 21.78	2426T73 11.05
5″×1¼″	6¼″	315	2426T54 15.18	2426T64 23.08	2426T74 12.00

Mighty-Lite Casters—125 to 175 lbs.

Swivel with Side Wheel Brake

Rigid

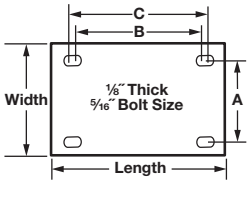

- One-piece formed steel with rivet kingpin
- 3⁄32″ leg thickness (unless noted)
- Double ball swivel bearings

An economical alternative to the Cardinal Casters on this page for lower-capacity applications. Made of corrosion-resistant zinc-plated steel. ***Swivel casters with plain metal wheel bearings*** are available with a side wheel brake. ***Swivel casters with straight roller wheel bearings*** have a ⅛″ leg thickness and are available with a face wheel brake.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate Lg.×Wd.	(A)	(B)	(C)	Swivel	Swivel with Wheel Brake	Rigid
Wheel with Plain Metal Bearings									
Black Solid Rubber Wheels—*Durometer is 26D*									
4″× 15⁄16″	4¾″	125	3¾″×2½″	1¾″	2⅞″	3″	2835T31 $10.20	2835T33 $11.51	2835T35■ $9.40
5″× 15⁄16″	5¾″	135	3¾″×2½″	1¾″	2⅞″	3″	2835T32 12.19	2835T34 13.59	2835T36■ 9.73
Black Solid Rubber Wheels—*Durometer is 78D*									
4″× 15⁄16″	4¾″	150	3¾″×2½″	1¾″	2⅞″	3″	2835T37 10.01	2835T39 11.60	2835T42■ 9.24
5″× 15⁄16″	5¾″	160	3¾″×2½″	1¾″	2⅞″	3″	2835T38 12.14	2835T41 13.64	2835T43■ 9.78
Wheel with Straight Roller Bearings									
Black Solid Rubber Wheels—*Durometer is 85A*									
3″×1¼″	4¼″	125	3⅝″×2½″	1¾″	2 13⁄16″	3 1⁄16″	2835T11◆ 11.68	2835T14◆ 17.00	2835T17 9.72
4″×1¼″	5⅛″	150	3⅝″×2½″	1¾″	2 13⁄16″	3 1⁄16″	2835T12◆ 12.82	2835T15◆ 19.78	2835T18 9.46
5″×1¼″	6 3⁄16″	175	3⅝″×2½″	1¾″	2 13⁄16″	3 1⁄16″	2835T13◆ 14.40	2835T16◆ 21.14	2835T19 12.46
Wheel with Ball Bearings									
Gray Solid Rubber Wheels—*Durometer is 62A*									
4″×1¼″	5″	150	3¾″×2½″	1¾″	2⅞″	3″	2835T51 22.51	—	2835T71■ 18.99
5″×1¼″	6⅛″	170	3¾″×2½″	1¾″	2⅞″	3″	2835T52 25.79	—	2835T54■ 21.19

■ Mounting plate is 3¾″ Lg.×2¾″ Wd. ◆ Mounting plate is 5⁄32″ thick.

For information about wheels, casters, and mounting plates, see pages 1316-1317.

Econo-Lite Casters—110 to 125 lbs.

- One-piece formed steel with rivet kingpin
- Single ball swivel bearings
- 3/32″ leg thickness

These compact casters are good for intermittent use. Made of corrosion-resistant zinc-plated steel.

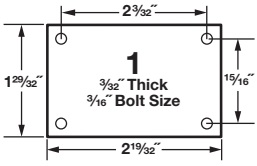

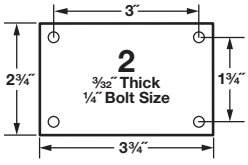

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate	Swivel		Swivel with Side Wheel Brake		Rigid	
Wheel with Plain Bore (No Bearings)									
Black Solid Polypropylene Wheels—Durometer is 90A									
3″ × 1 1/8″	3 9/16″	110	1	2724T41	$6.00	2724T43	$10.11	2724T45	$5.02
4″ × 1 1/8″	4 11/16″	125	2	2724T42	8.84	2724T44	13.11	2724T46	7.51

Cart-Smart Junior Casters—90 to 175 lbs.

- One-piece formed steel with rivet kingpin
- Single ball swivel bearings
- 1/16″ leg thickness (unless noted)

A variety of unique mounting plate sizes matches many common carts and dollies. All are an economical choice for equipment that is not frequently moved. Made of corrosion-resistant zinc-plated steel.

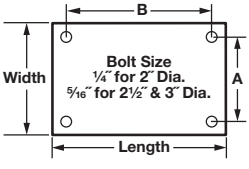

Swivel

Rigid

Swivel with Brake

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate Lg. × Wd. × Thick.	(A)	(B)	Swivel		Swivel w/Side Wheel Brake		Mounting Plate Lg. × Wd. × Thick.	(A)	(B)	Rigid	
Wheel with Plain Bore (No Bearings)														
Black Solid Rubber Wheels—Durometer is 75A														
2″ × 1″	2 1/2″	90	2 9/16″ × 1 7/8″ × 1/16″	15/16″	2 1/8″	78155T11	$2.97	78155T14	$4.10	2 21/32″ × 1 1/2″ × 1/16″	15/16″	2 1/8″	78155T17	$2.23
2 1/2″ × 1 1/8″	3 9/16″	100	3 13/16″ × 2 3/4″ × 3/32″	1 3/4″	3″	78155T12★	6.05	78155T15★	8.40	4 7/16″ × 2 1/4″ × 1/16″	1 1/16″	3 1/2″	78155T19★	3.85
3″ × 1 1/4″	3 13/16″	175	4 1/8″ × 3 1/8″ × 3/32″	2 3/8″	3 7/16″	78155T13★	9.32	78155T16★	10.10	4 15/16″ × 2 1/2″ × 3/32″	1 3/16″	4″	78155T18★	6.00
Gray Solid Rubber Wheels—Durometer is 75D														
2″ × 1″	2 1/2″	150	2 9/16″ × 1 7/8″ × 1/16″	15/16″	2 1/8″	78155T31	2.92	78155T32	4.20	2 21/32″ × 1 1/2″ × 1/16″	15/16″	2 1/8″	78155T33	2.23
Black Solid Polypropylene Wheels—Durometer is 60D														
2″ × 1″	2 1/2″	150	2 9/16″ × 1 7/8″ × 1/16″	15/16″	2 1/8″	78155T41	2.67	78155T42	4.10	2 21/32″ × 1 1/2″ × 1/16″	15/16″	2 1/8″	78155T43	2.70
Cast Iron Wheels														
2″ × 1″	2 1/2″	150	2 9/16″ × 1 7/8″ × 1/16″	15/16″	2 1/8″	78155T51	4.55	78155T52	6.08	2 21/32″ × 1 1/2″ × 1/16″	15/16″	2 1/8″	78155T53	3.90
Wheel with Plain Acetal Bearings														
Red Polyurethane on Polypropylene Wheels—Durometer is 100A														
2″ × 3/4″	2 1/2″	100	2 9/16″ × 1 7/8″ × 1/16″	15/16″	2 1/8″	78155T61	4.47	78155T62	6.00	2 21/32″ × 1 1/2″ × 1/16″	15/16″	2 1/8″	78155T63	3.83

★ Leg thickness is 3/32″.

Compact Mighty-Lite Casters—90 to 150 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- *2″ Dia. Wheels:* 1/16″ leg thickness
- *3″ Dia. Wheels:* 3/32″ leg thickness

Similar to the Cart-Smart Junior Casters on this page, but with double ball swivel bearings for smoother operation. Made of corrosion-resistant zinc-plated steel.

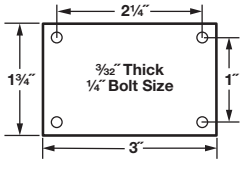

Swivel

Rigid

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Bore (No Bearings)						
Cast Iron Wheels						
2″ × 7/8″	2 3/4″	150	2406T11	$7.18	2406T19	$3.90
3″ × 13/16″	3 13/16″	150	2406T12	11.63	2406T21	9.63
Wheel with Plain Metal Bearings						
Black Solid Rubber Wheels—Durometer is 70A						
2″ × 7/8″	2 3/4″	90	2406T15	6.50	2406T24	3.64
3″ × 13/16″	3 13/16″	100	2406T16	9.16	2406T25	6.96
Black Solid Rubber Wheels—Durometer is 90A						
2″ × 7/8″	2 3/4″	150	2406T28	6.50	2406T33	3.64
3″ × 13/16″	3 13/16″	150	2406T29	9.16	2406T34	6.96

Optional Side Wheel Brakes for Swivel Casters— Field installable.

For Wheels		
All 2″ Dia.	2406T52	$4.06
3″ Dia. Rubber Only	2406T53	4.06

Tight Quarters Casters—75 to 125 lbs.

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 1/16″ leg thickness

Light duty compact casters for use where space is limited. Made of corrosion-resistant zinc-plated steel.

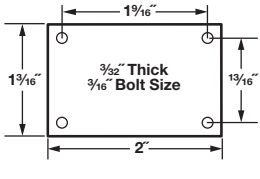

Swivel

Swivel with Brake

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Side Wheel Brake	
Wheel with Plain Nylon Bearings						
Black Solid Rubber Wheels—Durometer is 78A						
2″ × 15/16″	2 5/8″	75	22785T41	$3.43	22785T46	$4.48
2 1/2″ × 15/16″	3 3/32″	90	22785T42	4.69	22785T47	6.00
3″ × 15/16″	3 5/8″	100	22785T43	5.83	22785T48	6.90
Black Solid Rubber Wheels—Durometer is 80D						
2″ × 15/16″	2 5/8″	90	22785T61	3.44	22785T66	4.49
2 1/2″ × 15/16″	3 3/32″	100	22785T62	4.69	22785T67	6.01
3″ × 15/16″	3 5/8″	125	22785T63	5.81	22785T68	6.91

Conductive Casters—75 to 200 lbs.

Swivel

Swivel with Brake

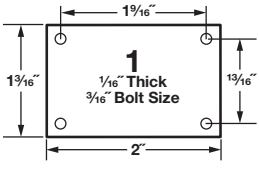

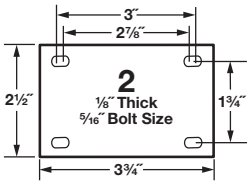

- One-piece formed steel with rivet kingpin
- Double ball swivel bearings
- 3/32″ leg thickness

To eliminate static buildup, the conductive wheels on these casters have an average surface resistance of less than 10^6 ohms. Casters are made of corrosion-resistant zinc-plated steel.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate	Swivel		Swivel with Side Wheel Brake		Rigid	
Wheel with Plain Steel Bearings									
Black Solid Rubber Wheels—Durometer is 80D									
2″ × 15/16″	2 5/8″	75	1	2358T51	$3.91	2358T61	$5.33	—	—
2 1/2″ × 15/16″	3 3/16″	90	1	2358T52	5.35	2358T62	6.63	—	—
3″ × 15/16″	3 5/8″	100	1	2358T53	6.83	2358T63	8.08	—	—
3″ × 1 1/4″	3 3/4″	175	2	2358T21	10.98	2358T26	12.58	2358T32	$9.97
4″ × 15/16″	4 3/4″	125	2	2358T22	12.25	2358T27	13.90	2358T33■	13.03
4″ × 1 1/4″	5 1/16″	200	2	2358T23	15.15	2358T28	16.69	2358T34	14.19
5″ × 15/16″	5 3/4″	135	2	2358T24	16.04	2358T29	17.31	2358T35■	15.17

■ Mounting plate is 3 3/4″ Lg. × 2 3/4″ Wd.

Type 304 Stainless Steel Casters—110 to 165 lbs.

Swivel

Rigid

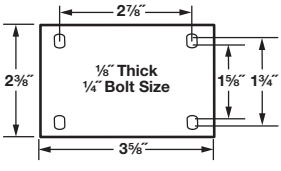

- One-piece formed stainless steel with rivet kingpin
- Double ball swivel bearings
- *Swivel:* 3/32″ leg thickness
- *Rigid:* 1/8″ leg thickness

These casters offer superior corrosion resistance. A debris cap on the swivel protects the bearings from contaminants for longer service life.

Neoprene rubber wheels with plain acetal bearings are great for washdown applications.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Plain Acetal Bearings						
Black Solid Neoprene Rubber Wheels—Durometer is 60A						
3″ × 15/16″	4 1/8″	110	8388T41	$31.17	8388T42	$24.24
4″ × 15/16″	5 1/8″	110	8388T43	37.31	8388T44	27.85
5″ × 15/16″	6 1/8″	110	8388T48	38.75	8388T49	34.03

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Rigid	
Wheel with Ball Bearings						
Black Solid Rubber Wheels—Durometer is 80D						
3″ × 7/8″	4 1/8″	165	8388T51	$29.60	8388T52	$22.64
4″ × 7/8″	5 1/8″	165	8388T53	35.84	8388T54	26.42
5″ × 7/8″	6 1/8″	165	8388T55	39.18	8388T56	30.91

Low-Profile Caster—60 lbs.

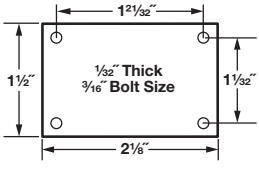

- One-piece formed steel with rivet kingpin
- Single ball swivel bearings
- 1/16″ leg thickness

Originally used on hotel bellmen's carts, this caster has a low mounting height for use on small appliances and light furniture with a flat base. Mounting plate and frame are brass-plated steel.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate, Lg. × Wd.	Swivel	
Wheel with Plain Bore (No Bearings)					
White Solid Polypropylene Wheel—Durometer is 60D					
1 5/8″ × 11/16″	2 1/16″	60	2 1/8″ × 1 1/2″	2390T4	$3.49

Creeper Casters—50 lbs.

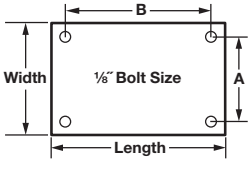

Designed with a special easy-rolling, low-profile slant wheel that is ideal for use on creeper stools. Casters swivel on the wheel axle. ***Caster with nylon wheel*** has a black ABS plastic mounting plate. ***Caster with steel wheel*** is made of corrosion-resistant zinc-plated steel.

Wheel Dia.	Mount Ht.	Cap. Ea., lbs.	Mounting Plate Lg. × Wd.	Thick.	(A)	(B)	Swivel	
Wheel with Plain Bore (No Bearings)								
Black Solid Nylon Wheel—Durometer is 80D								
2 3/4″	2 3/4″	50	2 1/4″ × 1 9/16″	3/16″	1″	1 5/8″	2475T6	$3.27
Steel Wheel								
3″	3″	50	2″ × 1 1/16″	1/16″	7/8″	1 5/16″	2475T7	4.25

Dual-Wheel Leveling Casters—500 to 1,000 lbs.

Leveler Extended

- One-piece formed Type 301 stainless steel with rivet kingpin
- Double ball swivel bearings
- *500-lb. Capacity:* 1/16″ leg thickness; 1/2″-13 leveler thread size
- *1,000-lb. Capacity:* 5/64″ leg thickness; 5/8″-1 leveler thread size

Use the nut to adjust the leveler on these casters and lift the wheel off the floor to keep your equipment stationary. Dual-wheel casters provide better load distribution and easier turning than single-wheel casters. *Note:* Wheel width shown is for each wheel.

Mounting plate 2 lets you mount casters to the outer corners of carts and other equipment.

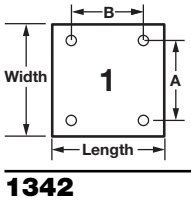

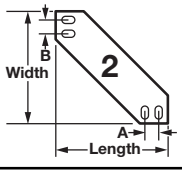

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Mtg. Plate	Mounting Plate Lg. × Wd.	Thick.	Bolt Size	(A)	(B)	Swivel	
Dual Wheel with Maintenance-Free Precision Ball Bearings										
Blue Solid Polyurethane Wheels—Durometer is 75D										
2 1/2″ × 1″	3 3/8″	500	1	3″ × 3″	3/32″	5/16″	2 3/8″	2 3/8″	9854T41	$114.55
3″ × 1 1/4″	4 1/8″	1,000	1	3 7/8″ × 3 7/8″	1/8″	3/8″	3″	3″	9854T42	160.36
2 1/2″ × 1″	3 3/8″	500	2	4 3/8″ × 4 3/8″	3/32″	5/16″	1 1/2″	1 1/2″	9854T43	116.73
3″ × 1 1/4″	4 1/8″	1,000	2	6″ × 6″	1/8″	3/8″	2″	2″	9854T44	163.64

Twin-Wheel Casters—40 to 100 lbs.

Twin-wheel casters provide better load distribution and easier turning than single-wheel casters. All have a steel mounting plate. Meet BIFMA standards (unless noted). ***Swivel casters with wheel brake*** have a foot-operated brake that locks the wheel in place.

To Order: For casters with zinc-alloy hood, please specify hood finish: matte black, antique brass, bright chrome, or satin chrome.

Swivel with Brake and Hood

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	MOUNTING PLATE 1 Swivel		MOUNTING PLATE 1 Swivel with Wheel Brake		MOUNTING PLATE 2 Swivel		MOUNTING PLATE 2 Swivel with Wheel Brake	
Black Nylon Hood										
Black Nylon Wheels—Durometer is 70D										
1 9/16″ × 1 1/2″	2 1/4″	40	24215T48♣	$1.47	24215T51♣	$1.75	24215T44♣	$1.42	24215T46♣	$1.76
2″	1 7/8″ × 2 5/8″	75	24215T74	1.78	24215T85	2.28	24215T72	1.87	24215T83	2.24
2 3/8″ × 2″	3″	100	24215T49	2.07	24215T52	2.54	24215T45	2.05	24215T47	2.55
Zinc-Alloy Hood										
Black Nylon Wheels—Durometer is 70D										
2″ × 1 5/8″	2 11/16″	75	2798T134	6.05	2798T135	7.10	—	—	—	—
2 3/8″ × 2″	3 1/16″	100	2798T137	7.07	—	—	—	—	—	—
Black Polyurethane Wheels—Durometer is 90A										
2″ × 1 5/8″	2 11/16″	75	2798T133	7.36	—	—	—	—	—	—
2 3/8″ × 2″	3 1/16″	100	2798T136	9.14	—	—	—	—	—	—
Black Nylon Frame without Hood										
Black Nylon Wheels—Durometer is 70D										
2 3/8″ × 2 1/16″	2 5/8″	100	22575T25	3.61	22575T55	4.89	22575T23	3.59	22575T53	4.89
Black Polyurethane Wheels—Durometer is 43D										
2 3/8″ × 2 1/16″	2 5/8″	100	22575T33	5.27	22575T63	7.86	22575T32	5.29	22575T62	7.87

♣ Does not meet BIFMA standards.

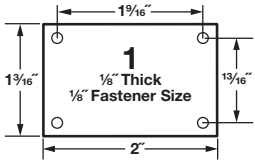

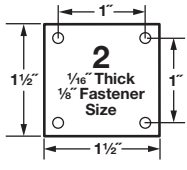

Threaded-Stem Casters

For information about wheels and casters, see pages 1316-1317.

Add-a-Stem Casters—140 to 900 lbs.

- One-piece formed steel
- Double ball swivel bearings
- *With Plain Acetal Wheel Bearings:* 3/32″ leg thickness
- *With Straight Roller Wheel Bearings:* 5/32″ leg thickness

A center hole in these casters allows you to insert any length bolt needed for your application. Casters are made of corrosion-resistant zinc-plated steel. For bolts, please see page 3144.

With Plain Acetal Bearings

With Straight Roller Bearings

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	For Stem Size	Swivel
Gray Thermoplastic Rubber on Polypropylene Wheels with Plain Acetal Bearings—Durometer is 65A				
2 1/2″ × 1 1/4″	3 3/4″	140	1/2″	9795T31 $12.01
3 1/2″ × 1 1/4″	4 9/16″	250	1/2″	9795T32 12.78
4″ × 1 1/4″	5″	300	1/2″	9795T33 13.64
5″ × 1 1/4″	6 1/16″	325	1/2″	9795T34 14.77
Black Solid Polypropylene Wheels with Plain Acetal Bearings—Durometer is 65D				
2 1/2″ × 1 1/4″	3 3/4″	200	1/2″	9795T35 10.00
3″ × 1 1/4″	4″	200	1/2″	9795T36 12.02
3 1/2″ × 1 1/4″	4 9/16″	230	1/2″	9795T37 9.13
4″ × 1 1/4″	5″	275	1/2″	9795T38 10.89
5″ × 1 1/4″	6 1/16″	300	1/2″	9795T39 12.83
Red Polyurethane on Polypropylene Wheels with Plain Acetal Bearings—Durometer is 55D				
2 1/2″ × 1 1/4″	3 3/4″	250	1/2″	9795T41 12.76
3″ × 1 1/4″	4″	200	1/2″	9795T42 12.80

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	For Stem Size	Swivel
Red Polyurethane on Polypropylene Wheels with Plain Acetal Bearings (Cont.)—Durometer is 55D				
3 1/2″ × 1 1/4″	4 9/16″	250	1/2″	9795T43 $13.32
4″ × 1 1/4″	5″	275	1/2″	9795T44 14.00
5″ × 1 1/4″	6 1/16″	300	1/2″	9795T45 17.24
Black Solid Polyurethane Wheels with Straight Roller Bearings—Durometer is 55D				
4″ × 2″	5 5/8″	650	1/2″	9795T51 21.63
5″ × 2″	6 1/2″	800	1/2″	9795T52 23.52
6″ × 2″	7 1/2″	900	1/2″	9795T53 27.12
8″ × 2″	9 1/2″	900	1/2″	9795T54 30.71
Black Solid Polypropylene Wheels with Straight Roller Bearings—Durometer is 68D				
4″ × 2″	5 5/8″	750	1/2″	9795T55 17.67
5″ × 2″	6 1/2″	900	1/2″	9795T56 19.79
6″ × 2″	7 1/2″	900	1/2″	9795T57 21.67
8″ × 2″	9 1/2″	900	1/2″	9795T58 24.17

Premium Threaded-Stem Casters—240 to 300 lbs.

- One-piece formed steel
- Double ball swivel bearings
- 1/8″ leg thickness

For extended service life, all have a heavy-gauge frame and a debris cap on the swivel to protect the bearings from contaminants. ***Type 304 stainless steel*** offers superior corrosion resistance.

Also Available: Casters with a total lock that brakes the wheel with a face wheel brake and locks the swivel in one operation. Please ask for 2437T888 and specify the McMaster-Carr part number.

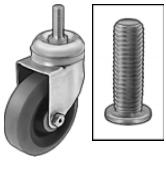

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	ZINC-PLATED STEEL 1/2″-13 × 1 1/2″ Lg. Stem Swivel		ZINC-PLATED STEEL 5/8″-11 × 2″ Lg. Stem Swivel		ZINC-PLATED STEEL 3/4″-10 × 2 1/2″ Lg. Stem Swivel		TYPE 304 SS 1/2″-13 × 1 1/2″ Lg. Stem Swivel	
Black Solid Polypropylene Wheels with Plain Bore (No Bearings)—Durometer is 90D										
3 1/2″ × 1 1/4″	5″	250	2437T21	$18.81	2437T41	$19.48	2437T61	$20.67	2454T37	$53.24
4″ × 1 1/4″	5 5/8″	300	2437T22	19.77	2437T42	20.40	2437T62	21.86	2454T38	53.69
5″ × 1 1/4″	6 5/8″	300	2437T23	19.85	2437T43	20.81	2437T63	22.35	2454T39	54.16
Gray Rubber on Polypropylene Wheels with Plain Acetal Bearings—Durometer is 80A										
3 1/2″ × 1 3/8″	5″	240	2437T11	21.81	2437T31	22.23	2437T51	23.57	2454T31	56.73
4″ × 1 3/8″	5 5/8″	250	2437T12	22.84	2437T32	23.59	2437T52	24.42	2454T32	57.07
5″ × 1 3/8″	6 5/8″	275	2437T13	24.49	2437T33	25.17	2437T53	26.53	2454T33	57.33
Gray Rubber on Polypropylene Wheels with Ball Bearings—Durometer is 80A										
3 1/2″ × 1 3/8″	5″	240	2437T14	26.50	2437T34	26.88	2437T54	27.32	2454T71	58.60
4″ × 1 3/8″	5 5/8″	250	2437T15	25.27	2437T35	26.57	2437T55	26.80	2454T72	60.67
5″ × 1 3/8″	6 5/8″	275	2437T16	26.15	2437T36	26.70	2437T56	27.10	2454T73	60.67
Red Polyurethane on Polypropylene Wheels with Ball Bearings—Durometer is 90A										
3 1/2″ × 1 1/4″	5″	300	2437T17	26.78	2437T37	27.45	2437T57	28.18	2454T74	59.71
4″ × 1 1/4″	5 5/8″	300	2437T18	26.40	2437T38	27.13	2437T58	28.76	2454T75	60.02
5″ × 1 1/4″	6 5/8″	300	2437T19	26.65	2437T39	27.41	2437T59	29.42	2454T76	62.53

For information about wheels and casters, see pages 1316-1317.

Threaded-Stem Casters—70 to 350 lbs.

Swivel

Swivel with Total Lock

- One-piece formed steel
- Double ball swivel bearings
- Plain bore wheel (no bearings), unless noted

A good value in threaded-stem casters. All are made of steel with a corrosion-resistant zinc-plated finish (unless noted).

High-temp black glass-filled nylon wheels withstand temperatures up to 500° F and have a debris cap on the swivel to protect the bearings.

Swivel casters with total lock brake the wheel with a face wheel brake and lock the swivel in one operation.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Side Wheel Brake	
5/16"-18 × 1" Lg. Stem; 1/16" Leg Thickness						
Black Solid Rubber Wheels—*Durometer is 80A*						
2" × 13/16"	2 1/2"	75	2834T61★	$5.64	2834T63★	$6.80
2 1/2" × 13/16"	3"	90	2834T62★	7.35	2834T64★	9.01
Black Solid Rubber Wheels—*Durometer is 80D*						
2 1/2" × 13/16"	3"	100	2834T65★	7.35	———	———
3/8"-16 × 1 1/2" Lg. Stem; 1/16" Leg Thickness						
Black Solid Rubber Wheels—*Durometer is 78A*						
1 5/8" × 3/4"	2 3/16"	70	2834T11	4.54	———	———
2" × 7/8"	2 9/16"	80	2834T12	4.93	2834T26	7.10
2 1/2" × 13/16"	3"	90	2834T19★	7.52	2834T27★	9.56
3" × 13/16"	3 9/16"	100	2834T13	5.35	2834T28	10.02
Black Solid Rubber Wheels—*Durometer is 80D*						
2" × 13/16"	2 1/2"	90	2834T23★	5.64	2834T32★	7.19
2 1/2" × 13/16"	3"	100	2834T24★	7.49	2834T33★	9.01
3" × 13/16"	3 9/16"	125	2834T25	9.00	2834T34	10.65
1/2"-13 × 1 1/2" Lg. Stem; 3/32" Leg Thickness						
Black Solid Rubber Wheels—*Durometer is 80A*						
3" × 1 1/4"	3 9/16"	175	2834T37▲	10.70	2834T43▲	12.73
4" × 1 1/4"	4 3/4"	200	2834T38▲	13.65	2834T44▲	15.10
5" × 1 1/4"	5 13/16"	210	2834T16▲	17.98	2834T45▲	19.56
Black Solid Rubber Wheels—*Durometer is 80D*						
3" × 1 1/4"	3 9/16"	270	2834T39	10.70	2834T46	12.14
4" × 1 1/4"	4 3/4"	280	2834T41	13.61	2834T47	14.97
5" × 1 1/4"	5 13/16"	290	2834T42	18.03	2834T48	19.44
High-Temp Black Glass-Filled Nylon Wheels—*Durometer is 80D*						
4" × 1 3/8"	4 15/16"	300	2039T32■	22.06	———	———
5" × 1 3/8"	6 1/16"	300	2039T33■	24.44	———	———
3/4"-10 × 2 1/2" Lg. Stem; 5/32" Leg Thickness						
Black Solid Rubber Wheels—*Durometer is 90A*						
4" × 1 1/2"	5 3/8"	300	2834T98▲	36.14	2834T75▲	42.54
5" × 1 1/2"	6 3/8"	350	2834T99▲	40.46	2834T76▲	47.12
			Swivel		**Swivel with Total Lock**	
1/2"-13 × 1 1/2" Lg. Stem; 3/32" Leg Thickness						
Gray Rubber on Polypropylene Wheels—*Durometer is 65A*						
3 1/2" × 1 1/4"	4 9/16"	250	2460T51♣	$12.16	2460T54♣	$18.44
4" × 1 1/4"	5"	300	2460T52♣	12.90	2460T55♣	19.27
5" × 1 1/4"	6 1/16"	325	2834T53♣	13.90	2460T56♣	20.52
Red Polyurethane on Polypropylene Wheels—*Durometer is 55D*						
2 1/2" × 1 1/4"	3 3/4"	250	2460T71♣	12.98	———	———
3 1/2" × 1 1/4"	4 9/16"	250	2460T81♣	13.04	2460T84♣	18.95
4" × 1 1/4"	5"	275	2460T82♣	13.23	2460T85♣	19.48
5" × 1 1/4"	6 1/16"	300	2460T83♣	15.29	2460T86♣	22.11

★ Nickel-plated finish. ▲ Wheel has plain metal bearings.
■ Leg thickness is 5/32". ♣ Wheel has ball bearings.

Silent-Glide Premium Threaded-Stem Casters—225 lbs.

- One-piece formed steel
- Sealed double ball swivel bearings
- Sealed single ball wheel bearings
- 3/32" leg thickness

Sealed ball bearings allow these casters to roll quietly. Debris guards on the wheel protect the bearings from contaminants for extended service life. Made of corrosion-resistant zinc-plated steel. Commonly used on shopping carts. Nut and washer are included.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Repl. Wheel	
1/2"-13 × 7/8" Lg. Stem						
Blue Rubber on Polypropylene Wheels—*Durometer is 75A*						
5" × 1 1/4"	5 7/8"	225	23005T41	$10.78	23005T42	$4.93
Blue Polyurethane on Polypropylene Wheels—*Durometer is 55D*						
5" × 1 1/4"	5 7/8"	225	23005T61	11.17	23005T62	9.08

Heavy Duty Threaded-Stem Casters—650 to 900 lbs.

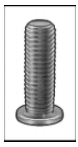

- One-piece formed steel
- Double ball swivel bearings
- Straight roller wheel bearings
- 5/32" leg thickness

Move your heavy loads with these high-capacity casters. Stem is 4" long to work in a variety of applications. All are made of corrosion-resistant zinc-plated steel.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	1/2"-13 × 4" Lg. Stem Swivel		3/4"-10 × 4" Lg. Stem Swivel	
Black Solid Polypropylene Wheels—*Durometer is 68D*						
4" × 2"	5 5/8"	750	9813T71	$24.29	9813T81	$25.75
5" × 2"	6 1/2"	900	9813T72	24.78	9813T82	26.73
6" × 2"	7 1/2"	900	9813T73	26.90	9813T83	28.62
8" × 2"	9 1/2"	900	9813T74	29.40	9813T84	31.12
Black Solid Polyurethane Wheels—*Durometer is 55D*						
4" × 2"	5 5/8"	650	9813T75	26.87	9813T85	28.58
5" × 2"	6 1/2"	800	9813T76	28.75	9813T86	30.46
6" × 2"	7 1/2"	900	9813T77	32.35	9813T87	33.73
8" × 2"	9 1/2"	900	9813T78	35.94	9813T88	37.65

Conductive Threaded-Stem Casters—75 to 210 lbs.

Swivel

Swivel with Brake

- One-piece formed steel
- Double ball swivel bearings
- Plain metal wheel bearings
- 1/16" leg thick. (unless noted)

Conductive wheels reduce static buildup. Surface resistance is less than 10^5 ohms. Made of steel with a corrosion-resistant zinc-plated finish (unless noted). Meet BIFMA standards.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Side Wheel Brake	
3/8"-16 × 1 1/2" Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 80A*						
2" × 15/16"	2 1/2"	75	2368T51★	$4.90	2368T61★	$6.38
2 1/2" × 15/16"	3"	90	2368T52★	6.35	2368T62★	7.73
3" × 15/16"	3 9/16"	100	2368T53	7.63	2368T63	9.11
1/2"-13 × 1 1/2" Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 35D*						
3" × 1 1/4"	3 9/16"	175	2368T54♦	11.72	2368T64♦	13.40
4" × 1 1/4"	4 3/4"	200	2368T56♦	14.98	2368T66♦	15.65
5" × 1 1/4"	5 13/16"	210	2368T58♦	19.90	2368T68♦	23.49

★ Nickel-plated finish. ♦ Leg thickness is 3/32".

Dual-Wheel Threaded-Stem Casters—150 to 250 lbs.

Swivel

- One-piece formed steel
- Double ball swivel bearings
- Plain metal wheel bearings
- 3/32" leg thickness

Dual-wheel casters provide better load distribution and easier turning than single-wheel casters. All are made of corrosion-resistant zinc-plated steel.

Note: Wheel width shown is for each wheel.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Side Wheel Brake	
5/16"-18 × 1 1/2" Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 70A*						
2" × 7/8"	2 3/4"	150	87845T51	$9.72	87845T151	$13.20
Black Solid Rubber Wheels—*Durometer is 90A*						
2" × 7/8"	2 3/4"	200	87845T52	9.72	87845T152	13.20
3/8"-16 × 1 1/2" Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 70A*						
2" × 7/8"	2 3/4"	150	87845T61	9.90	87845T161	13.96
3" × 1"	3 11/16"	200	87845T63	11.38	87845T163	15.12
Black Solid Rubber Wheels—*Durometer is 90A*						
2" × 7/8"	2 3/4"	200	87845T62	9.90	87845T162	13.96
3" × 1"	3 11/16"	250	87845T64	11.38	87845T164	15.12
1/2"-13 × 1 1/2" Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 70A*						
3" × 1"	3 11/16"	200	87845T71	11.38	87845T171	15.12
Black Solid Rubber Wheels—*Durometer is 90A*						
3" × 1"	3 11/16"	250	87845T72	11.38	87845T172	15.12

For information about wheels and casters, see pages 1316-1317.

Low-Profile Threaded-Stem Casters—260 to 500 lbs.

- One-piece formed steel
- Double ball swivel bearings
- 24025T51: Plain bore wheel (no bearings)
- 24025T53: Straight roller wheel bearings
- 3/32″ leg thickness

These low-to-the-ground casters have a wide wheel for extra capacity and stability. All are made of corrosion-resistant zinc-plated steel.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel	
1/2″-13×1 1/2″ Lg. Stem				
Black Solid Polypropylene Wheel—*Durometer is 65D*				
2″×1 13/16″	2 13/16″	260	24025T51	$8.83
1/2″-13×2 1/2″ Lg. Stem				
Black Phenolic Wheel				
3″×1 3/4″	3 3/4″	500	24025T53	16.84

Washdown Metric Threaded-Stem Casters—242 lbs.

- Gray molded reinforced nylon
- Precision double ball swivel bearings
- Precision double ball wheel bearings
- 3/16″ leg thickness

Economical, corrosion-resistant casters are suitable for washdown applications. All have nonmarking wheels with debris guards.

Swivel casters with total lock brake the wheel with a face wheel brake and lock the swivel in one operation.

Swivel with Total Lock

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel	Swivel with Total Lock
M12×28 mm Lg. Stem				
Gray Thermoplastic Rubber on Polypropylene Wheels—*Durometer is 85A*				
5″×1 1/4″	6 5/16″	242	2335T21 $35.47	2335T22 $34.33
M12×68 mm Lg. Stem				
Gray Thermoplastic Rubber on Polypropylene Wheels—*Durometer is 85A*				
5″×1 1/4″	6 5/16″	242	2335T23 33.34	2335T24 35.70

Roll-and-Set Threaded-Stem Casters—60 to 1,100 lbs.

- Double ball swivel bearings
- Plain bore wheels (no bearings)

A leveling pad lifts the wheel of these casters off the ground to hold your mobile equipment in place, plus it can be adjusted to compensate for uneven surfaces. Choose from thumbwheel and nut pad adjustment. For a compatible wrench for caster with an adjustment nut, see pages 2770-2771.

The ***die cast aluminum frame*** has a beige powder-coated finish. The ***Type 304 stainless steel frame*** offers superior corrosion resistance.

With Thumbwheel Adjustment

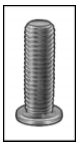

Wheel Dia.×Wd.	Mount Ht. Min.	Mount Ht. Max.	Cap. Ea., lbs.	Adjustment Style	Swivel
Die Cast Aluminum Frame—M8×3/4″ Lg. Stem					
Black Solid Nylon Wheels—*Durometer is 90D*					
1 5/8″ × 3/4″	2 13/16″	3 3/16″	60	Thumbwheel	2445T43 $24.78
Die Cast Aluminum Frame—M12×1 1/4″ Lg. Stem					
Black Solid Nylon Wheels—*Durometer is 90D*					
2″ ×1″	3 5/16″	3 11/16″	300	Thumbwheel	2445T41 35.56
2 1/2″ ×1 3/16″	4 1/8″	4 11/16″	600	Thumbwheel	2445T42 58.67
Die Cast Aluminum Frame—M16×1 1/4″ Lg. Stem					
Black Solid Nylon Wheels—*Durometer is 90D*					
2 13/16″ ×1 3/16″	4 3/4″	5 3/16″	825	Thumbwheel	2445T47 79.94
2 13/16″ ×1 3/16″	4 3/4″	5 1/2″	1,100	M16 Metric Nut	2445T48 91.11
Die Cast Aluminum Frame—3/8″×3/4″ Lg. Stem					
Black Solid Nylon Wheels—*Durometer is 90D*					
1 5/8″ × 3/4″	2 13/16″	3 3/16″	60	Thumbwheel	2445T51 24.78
Die Cast Aluminum Frame—1/2″×1 1/4″ Lg. Stem					
Black Solid Nylon Wheels—*Durometer is 90D*					
2″ ×1″	3 5/16″	3 11/16″	300	Thumbwheel	2445T52 35.56
2 1/2″ ×1 3/16″	4 1/8″	4 11/16″	600	Thumbwheel	2445T53 58.67
Die Cast Aluminum Frame—5/8″×1 1/4″ Lg. Stem					
Black Solid Nylon Wheels—*Durometer is 90D*					
2 13/16″ ×1 3/16″	4 3/4″	5 3/16″	825	Thumbwheel	2445T54 79.94
2 13/16″ ×1 3/16″	4 3/4″	5 1/2″	1,100	5/8″ Nut	2445T55 91.11
Type 304 Stainless Steel Frame—3/8″×3/4″ Lg. Stem					
Black Solid Nylon Wheels—*Durometer is 90D*					
1 3/4″ × 11/16″	3 5/16″	3 11/16″	110	Thumbwheel	2445T56 111.11
Type 304 Stainless Steel Frame—1/2″×1 1/4″ Lg. Stem					
Black Solid Nylon Wheels—*Durometer is 90D*					
2″ × 7/8″	3 5/16″	3 11/16″	550	Thumbwheel	2445T57 137.78
2 1/2″ ×1 1/8″	4 1/8″	4 11/16″	880	Thumbwheel	2445T58 195.55

Twin-Wheel Threaded-Stem Casters—40 to 175 lbs.

Casters with Hood

Choose from black nylon hoods and zinc hoods available in a variety of finishes. Meet BIFMA standards (unless noted). ***Swivel casters with wheel brake*** have a foot-operated brake that locks the wheel in place.

To Order: For casters with zinc hood, please specify finish: matte black, antique brass, bright chrome, or satin chrome.

Swivel with Zinc Hood

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel	Swivel with Wheel Brake
Black Nylon Hood—3/8″-16×3/4″ Lg. Stem				
Black Nylon Wheels—*Durometer is 70D*				
1 9/16″ ×1 1/2″	2″	40	24215T35♠ $1.37	24215T37♠ $1.58
2″ ×1 3/4″	2 3/8″	75	24215T69 1.58	24215T81 1.91
2 3/8″ ×2″	2 3/4″	100	24215T36 1.92	24215T38 2.37
Black Nylon Hood—5/16″-18×1″ Lg. Stem				
Black Nylon Wheels—*Durometer is 70D*				
1 9/16″ ×1 1/2″	2″	40	24215T31♠ 1.28	24215T33♠ 1.61
2″ ×1 3/4″	2 3/8″	75	24215T67 1.60	24215T88 1.90
2 3/8″ ×2″	2 3/4″	100	24215T32 1.90	24215T34 2.35
Zinc Hood—5/16″-18×1″ Lg. Stem				
Black Nylon Wheels—*Durometer is 70D*				
2″ ×1 5/8″	2 1/2″	75	2798T128 5.84	2798T129 8.75

♠ Does not meet BIFMA standards.

Casters without Hood

Swivel

Swivel with Kickstand

Swivel with Total Lock

Meet BIFMA standards (unless noted).

Swivel casters with wheel brake have a foot-operated brake that locks the wheel in place. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation. ***Chrome-plated caster*** has a foot-operated kickstand that raises the wheel to keep your equipment stationary. A red indicator lets you know when the stand is engaged. ***Casters with metric threaded stems*** have a white finish and are NSF certified.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel	Swivel with Wheel Brake
Black Nylon Frame—3/8″-16×1″ Lg. Stem				
Black Nylon Wheels—*Durometer is 70D*				
2 3/8″ ×2 1/16″	2 5/8″	100	22575T21 $3.62	22575T51 $4.92
Black Rubber Wheels—*Durometer is 47D*				
2 3/8″ ×2 1/16″	2 5/8″	100	22575T31 5.27	22575T61 7.83
Black Nylon Frame—5/16″-18×1″ Lg. Stem				
Black Nylon Wheels—*Durometer is 70D*				
2 3/8″ ×2 1/16″	2 5/8″	100	22575T18 3.59	22575T48 4.89
Black Rubber Wheels—*Durometer is 47D*				
2 3/8″ ×2 1/16″	2 5/8″	100	22575T29 5.27	22575T59 7.83
Black Nylon Frame—1/2″-13×1 1/2″ Lg. Stem				
Gray Polyurethane Wheels—*Durometer is 90A*				
4″ ×2 15/16″	4 1/4″	125	2841T24♠ 11.23	— —
Black Nylon Wheels—*Durometer is 75D*				
4″ ×2 15/16″	4 1/4″	125	2841T28♠ 7.97	— —
Chrome-Plated Zinc Frame—3/8″-16×5/8″ Lg. Stem				
Black Nylon Wheels with Kickstand—*Durometer is 75D*				
3″ ×2 3/16″	3″	165	22765T34 24.95	— —

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel	Swivel with Total Lock
Aluminum Frame—M12×20 mm Lg. Stem				
Gray Rubber on Aluminum Wheels—*Durometer is 95A*				
4″ ×2 1/2″	4 3/4″	132	24805T63♠ $49.07	24805T64♠ $78.83
Aluminum Frame—M16×20 mm Lg. Stem				
Gray Rubber on Aluminum Wheels—*Durometer is 95A*				
5″ ×2 13/16″	5 13/16″	175	24805T65♠ 78.65	24805T66♠ 103.56

♠ Does not meet BIFMA standards.

For information about wheels and casters, see pages 1316-1317.

Twin-Wheel Grip-Neck Stem Casters—75 to 100 lbs.

Swivel

Insert the included socket into a 3/8″ Dia. × 1 5/8″ Lg. hole in a wood leg or post to securely hold the stem. Twin-wheel casters provide better load distribution and easier turning than single-wheel casters. Hood is made of die cast zinc. **To Order:** Please specify hood finish: matte black, antique brass, bright chrome, or satin chrome.

Swivel caster with wheel brake has a foot-operated brake that locks the wheel in place.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Wheel Brake	
5/16″ Dia. × 1 1/2″ Lg. Stem						
Black Nylon Wheels—*Durometer is 70D*						
2″ × 1 5/8″	2 3/8″	75	2798T123	$5.88	2798T124	$8.15
2 3/8″ × 2″	2 3/4″	100	2798T126	6.43	—	—
Black Polyurethane Wheels—*Durometer is 90A*						
2″ × 1 5/8″	2 3/8″	75	2798T122	8.10	—	—
2 3/8″ × 2″	2 3/4″	100	2798T125	10.01	—	—

Premium Friction-Grip Stem Casters—240 to 300 lbs.

- One-piece formed steel
- Double ball swivel bearings
- 1/8″ leg thickness

A debris cap on the swivel keeps bearings free from contaminants for extended service life. ***Type 304 stainless steel*** offers superior corrosion resistance.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	ZINC-PLATED STEEL 7/16″ Dia. × 1 1/2″ Lg. Stem Swivel		ZINC-PLATED STEEL 1/2″ Dia. × 1 1/2″ Lg. Stem Swivel		TYPE 304 SS 7/16″ Dia. × 1 1/2″ Lg. Stem Swivel	
Black Solid Polypropylene Wheels with Plain Bore (No Bearings)—*Durometer is 90D*								
3 1/2″ × 1 1/4″	5″	250	2495T21	$19.93	2495T41	$22.92	2424T37	$56.15
4″ × 1 1/4″	5 5/8″	300	2495T22	21.27	2495T42	24.50	2424T38	59.56
5″ × 1 1/4″	6 5/8″	300	2495T23	20.96	2495T43	24.10	2424T39	62.86
Gray Rubber on Polypropylene Wheels with Plain Acetal Bearings—*Durometer is 80A*								
3 1/2″ × 1 3/8″	5″	240	2495T11	23.27	2495T31	26.76	2424T31	62.40
4″ × 1 3/8″	5 5/8″	250	2495T12	24.13	2495T32	27.75	2424T32	62.76
5″ × 1 3/8″	6 5/8″	275	2495T13	24.71	2495T33	28.56	2424T33	67.59
Gray Rubber on Polypropylene Wheels with Ball Bearings—*Durometer is 80A*								
3 1/2″ × 1 3/8″	5″	240	2495T14	26.51	2495T34	29.16	—	—
4″ × 1 3/8″	5 5/8″	250	2495T15	25.76	2495T35	28.38	—	—
5″ × 1 3/8″	6 5/8″	275	2495T16	27.91	2495T36	30.80	—	—
Red Polyurethane on Polypropylene Wheels with Ball Bearings—*Durometer is 90A*								
3 1/2″ × 1 1/4″	5″	300	2495T17	26.62	2495T37	29.28	—	—
4″ × 1 1/4″	5 5/8″	300	2495T18	28.18	2495T38	30.93	—	—
5″ × 1 1/4″	6 5/8″	300	2495T19	28.56	2495T39	30.33	—	—

Friction-Grip Stem Casters—75 to 325 lbs.

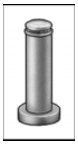

Swivel

- One-piece formed steel
- Double ball swivel bearings
- Plain bore wheel (no bearings), unless noted
- 3/32″ leg thickness (unless noted)

Our best value in friction-grip stem casters. Casters are made of steel with a corrosion-resistant zinc-plated finish (unless noted). Meet BIFMA standards (unless noted). ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation.

Swivel with Brake

Swivel with Total Lock

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Side Wheel Brake	
3/8″ Dia. × 1″ Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 75A*						
2″ × 7/8″	2 1/2″	80	2391T23★▲	$5.38	—	—
7/16″ Dia. × 1″ Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 75A*						
2″ × 15/16″	2 9/16″	75	2391T1★	4.11	—	—
2 1/2″ × 15/16″	3 1/16″	90	2391T2★	6.12	—	—
Black Solid Rubber Wheels—*Durometer is 80D*						
2″ × 15/16″	2 9/16″	90	2391T12★	4.10	—	—
2 1/2″ × 15/16″	3 1/16″	100	2391T3★	6.10	—	—
7/16″ Dia. × 1 3/8″ Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 78A*						
2″ × 15/16″	2 1/2″	75	2369T12▲	2.17	—	—
3″ × 1 1/4″	3 9/16″	175	2369T51	6.51	2369T57	$7.07
4″ × 1 1/4″	4 3/4″	200	2369T52	9.38	2369T58	9.97
5″ × 1 1/4″	5 13/16″	210	2369T53	10.62	2369T59	11.28
Black Solid Rubber Wheels—*Durometer is 80D*						
3″ × 1 1/4″	3 9/16″	270	2369T54	6.86	2369T61	8.08
4″ × 1 1/4″	4 3/4″	280	2369T55	9.63	2369T62	10.51
5″ × 1 1/4″	5 13/16″	290	2369T56	10.83	2369T63	12.07
7/16″ Dia. × 1 7/8″ Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 75A*						
3″ × 15/16″	3 9/16″	100	8805T31▲	3.16	8805T32▲	3.81
			Swivel		**Swivel with Total Lock**	
5/8″ Dia. × 2 3/16″ Lg. Stem						
Gray Rubber on Polypropylene Wheels—*Durometer is 65A*						
3 1/2″ × 1 1/4″	4 9/16″	250	2512T61♥	$14.92	2512T64♥	$21.65
4″ × 1 1/4″	5″	300	2512T62♥	15.65	2512T65♥	22.42
5″ × 1 1/4″	6 1/16″	325	2512T63♥	16.68	2512T66♥	23.50
Red Polyurethane on Polypropylene Wheels—*Durometer is 55D*						
3 1/2″ × 1 1/4″	4 9/16″	250	2512T71♥	15.48	2512T74♥	22.21
4″ × 1 1/4″	5″	275	2512T72♥	16.57	2512T75♥	22.44
5″ × 1 1/4″	6 1/16″	300	2512T73♥	17.73	2512T76♥	24.54

★ Nickel-plated finish. ▲ Leg thickness is 1/16″. ♥ Wheels have ball bearings; do not meet BIFMA standards.

For information about wheels and casters, see pages 1316-1317.

Conductive Friction-Grip Stem Casters—75 to 200 lbs.

- One-piece formed steel
- Double ball swivel bearings
- Plain metal wheel bearings
- 3/32″ leg thickness

Conductive wheels reduce static buildup. Surface resistance is less than 10^6 ohms. Casters are made of steel with a nickel-plated finish (unless noted).

Swivel

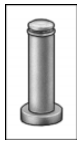

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Side Wheel Brake	
7/16″ Dia. × 1 3/8″ Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 80A*						
2″ × 15/16″	2 1/2″	75	2366T41	$4.82	2366T43	$6.29
2 1/2″ × 15/16″	3 1/16″	90	2366T42	6.17	2366T44	7.67
3″ × 15/16″	3 9/16″	100	2366T51■	7.52	2366T61■	8.79
4″ × 1 1/4″	4 3/4″	200	2366T55■	14.70	2366T65■	15.54

■ Zinc-plated finish.

Dual-Wheel Friction-Grip Stem Casters—150 to 250 lbs.

- One-piece formed steel
- Double ball swivel bearings
- Plain metal wheel bearings
- 3/32″ leg thickness

Dual-wheel casters provide better load distribution and easier turning than single-wheel casters. Casters are made of corrosion-resistant zinc-plated steel.

Note: Wheel width shown is for each wheel.

Swivel with Brake

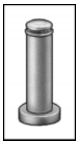

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Side Wheel Brake	
3/8″ Dia. × 1″ Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 70A*						
2″ × 7/8″	2 3/4″	150	87855T51	$9.72	87855T151	$13.20
3″ × 31/32″	3 11/16″	200	87855T52	11.38	87855T152	15.12
Black Solid Rubber Wheels—*Durometer is 90A*						
2″ × 7/8″	2 3/4″	200	87855T53	9.72	87855T153	13.20
3″ × 31/32″	3 11/16″	250	87855T54	11.38	87855T154	15.78
7/16″ Dia. × 1 1/2″ Lg. Stem						
Black Solid Rubber Wheels—*Durometer is 70A*						
2″ × 7/8″	2 3/4″	150	87855T61	9.72	87855T161	13.20
3″ × 31/32″	3 11/16″	200	87855T62	11.38	87855T162	15.12
Black Solid Rubber Wheels—*Durometer is 90A*						
2″ × 7/8″	2 3/4″	200	87855T63	9.72	87855T163	13.20
3″ × 31/32″	3 11/16″	250	87855T64	11.38	87855T164	15.12

Hooded-Ball Friction-Grip Stem Caster—80 lbs.

- One-piece formed steel
- Double ball swivel bearings
- Plain bore wheel (no bearings)
- 1/16″ leg thickness

Good for use on both carpeted and tile surfaces. Caster has a chrome-plated finish.

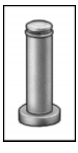

Wheel Dia.	Mount Ht.	Cap. Ea., lbs.	Swivel	
7/16″ Dia. × 1 3/8″ Lg. Stem				
Black Solid Polyolefin Wheel—*Durometer is 70D*				
2″	2 5/8″	80	24055T32	$5.78

Hooded Friction-Grip Stem Casters—110 lbs.

- One-piece formed steel
- Double ball swivel bearings
- Maintenance-free precision ball wheel bearings
- 1/8″ leg thickness

A debris cap on the swivel and debris guards on the wheel protect the bearings from contaminants for extended service life. The neoprene rubber wheels resist oil and mild chemicals.

Swivel with Chrome Finish

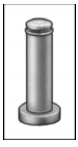

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel with Chrome Finish		Swivel with Black-Zinc Finish	
3/8″ Dia. × 7/8″ Lg. Stem						
Black Solid Neoprene Rubber Wheels—*Durometer is 55A*						
3″ × 15/16″	3 7/8″	110	9909T51	$14.44	9909T52	$16.26
7/16″ Dia. × 1 7/16″ Lg. Stem						
Black Solid Neoprene Rubber Wheels—*Durometer is 55A*						
3″ × 15/16″	3 7/8″	110	9909T53	14.58	9909T54	18.58

Twin-Wheel Friction-Grip Stem Casters—40 to 110 lbs.

Casters with Hood

Choose from black nylon hoods and zinc hoods available in a variety of finishes. Meet BIFMA standards (unless noted).

Swivel casters with wheel brake have a foot-operated brake that locks the wheel in place, except 22775T81, which has an internal brake that causes the caster to roll when weight is applied and brake when weight is removed. ***Designer black nylon hood*** has a recessed stem to create a seamless joint between the top of the caster and the bottom of most swivel chair bases. ***Conductive nylon wheels*** reduce static buildup. Surface resistance is less than 10^4 ohms.

Swivel with Designer Hood

Swivel with Zinc Hood

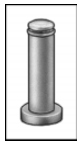

To Order: For casters with zinc hood, please specify finish: matte black, antique brass, bright chrome, or satin chrome.

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Wheel Brake	
Black Nylon Hood—3/8″ Dia. × 1″ Lg. Stem						
Black Nylon Wheels—*Durometer is 70D*						
2″ × 1 3/4″	2 3/8″	75	24215T61	$1.75	24215T82	$2.07
Black Nylon Hood—7/16″ Dia. × 7/8″ Lg. Stem						
Black Nylon Wheels—*Durometer is 70D*						
1 9/16″ × 1 1/2″	2″	40	24215T39 ♦	1.29	24215T42 ♦	1.65
2″ × 1 3/4″	2 3/8″	75	24215T63	1.72	24215T84	2.07
2 3/8″ × 2″	2 3/4″	100	24215T41	2.00	24215T43	2.42
Black Nylon Hood—7/16″ Dia. × 1 7/16″ Lg. Stem						
Black Nylon Wheels—*Durometer is 70D*						
2″ × 1 3/4″	2 3/8″	75	24215T65	1.89	24215T86	2.14
Designer Black Nylon Hood—7/16″ Dia. × 7/8″ Lg. Stem						
Black Nylon Wheels—*Durometer is 70D*						
2 5/32″ × 2″	2 1/4″	75	27935T44	2.26	____	____
Zinc Hood—3/8″ Dia. × 1″ Lg. Stem						
Black Polyurethane Wheels—*Durometer is 90A*						
2″ × 1 5/8″	2 3/8″	75	2798T111	7.86	____	____
2 3/8″ × 2″	2 3/4″	100	2798T114	9.33	____	____
Zinc Hood—7/16″ Dia. × 7/8″ Lg. Stem						
Black Polyurethane Wheels—*Durometer is 90A*						
2″ × 1 5/8″	2 3/8″	75	2798T116	8.71	____	____
2 3/8″ × 2″	2 3/4″	100	2798T119	10.21	____	____
Chrome-Plated Zinc Hood—7/16″ Dia. × 7/8″ Lg. Stem						
Black Conductive Nylon Wheels—*Durometer is 78D*						
2″ × 2″	2 5/32″	110	22775T82	19.93	22775T81	22.02

♦ Does not meet BIFMA standards.

Casters without Hood

Meet BIFMA standards (unless noted).

Swivel casters with wheel brake have a foot-operated brake that locks the wheel in place.

Swivel with Brake

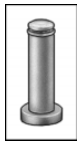

Wheel Dia. × Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Wheel Brake	
Black Nylon Frame—7/16″ Dia. × 7/8″ Lg. Stem						
Black Nylon Wheels—*Durometer is 70D*						
2″ × 1 3/4″	2 1/4″	75	22575T81 ♦	$2.45	22575T82 ♦	$3.08
2 3/8″ × 2 1/16″	2 5/8″	100	22575T14	3.59	22575T44	4.89
Black Rubber Wheels—*Durometer is 47D*						
2 3/8″ × 2 1/16″	2 5/8″	100	22575T27	5.27	22575T57	7.86
Black Nylon Frame—7/16″ Dia. × 1 3/8″ Lg. Stem						
Black Nylon Wheels—*Durometer is 70D*						
2 3/8″ × 2 1/16″	2 5/8″	100	22575T75	3.59	22575T76	4.89
Black Rubber Wheels—*Durometer is 47D*						
2 3/8″ × 2 1/16″	2 5/8″	100	22575T71	5.27	22575T72	7.86

♦ Does not meet BIFMA standards.

For information about wheels and casters, see pages 1316-1317.

Wire Shelving Friction-Grip Stem Casters—250 to 300 lbs.

With Round Stem

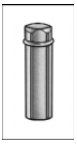

With Square Stem and Brake

- One-piece formed steel
- Double ball swivel bearings
- Plain acetal wheel bearings (unless noted)
- 3/32″ leg thickness
- NSF certified

Make your wire shelving mobile. Casters are compatible with shelving that has 1″ OD 16-ga. tubular legs. All have a debris cap on the swivel to protect the bearings from contaminants for extended life.

Zinc-plated steel casters are available with a 0.865″ Dia.×2 3/16″ Lg. round stem or 0.860″ Wd.×2 3/16″ Lg. square stem. **To Order:** Please specify stem: round or square.

Type 304 stainless steel casters provide superior corrosion resistance. All have a 0.845″ Dia.×2 3/16″ Lg. round stem.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Face Wheel Brake	
Zinc-Plated Steel						
Gray Rubber on Polypropylene Wheels—Durometer is 65A						
4″×1 1/4″	4 15/16″	250	8703T21	$22.32	8703T22	$29.62
5″×1 1/4″	6 1/16″	250	8703T23	24.05	8703T24	32.11
Gray Polyurethane on Polypropylene Wheels—Durometer is 95A						
4″×1 1/4″	4 15/16″	275	8703T84	22.32	8703T85	29.02
5″×1 1/4″	6 1/16″	300	8703T36	24.55	8703T37	31.01
Black Solid Polypropylene Wheels—Durometer is 65D						
4″×1 1/4″	4 15/16″	275	8703T61	19.16	8703T63	23.44
5″×1 1/4″	6 1/16″	300	8703T62	22.49	8703T64	26.46

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Face Wheel Brake	
Type 304 Stainless Steel						
Gray Rubber on Polypropylene Wheels—Durometer is 65A						
4″×1 1/4″	4 15/16″	250	88005T89	$68.74	88005T891	$74.04
5″×1 1/4″	6″	250	88005T101	69.86	88005T102	72.98
Gray Polyurethane on Polypropylene Wheels—Durometer is 95A						
4″×1 1/4″	4 15/16″	300	88005T86	90.65	88005T861	99.09
5″×1 1/4″	6″	300	88005T87	93.48	88005T871	99.44
Black Solid Polypropylene Wheels—Durometer is 65D						
4″×1 1/4″	4 15/16″	300	88005T84 ♦	83.76	88005T841 ♦	97.79
5″×1 1/4″	6″	300	88005T85 ♦	90.20	88005T851 ♦	93.61

♦ Wheel has plain stainless steel bearings.

Expanding-Stem Casters—100 to 220 lbs.

With Disc-Style Stem

With Total Lock and Wedge-Style Stem

- One-piece formed steel
- Double ball swivel bearings
- *Disc Stem:* Plain acetal wheel bearings
- *Wedge Stem:* Maintenance-free precision ball wheel bearings
- 3/32″ leg thickness

Quickly adjust the stem diameter on these casters for a secure fit inside a variety of tubing sizes.

Disc-Style Stems— Have a rubber sleeve that expands as it is compressed between two discs. Made of corrosion-resistant nickel-plated steel. NSF certified.

Wedge-Style Stems— Have metal wedges that expand outward for a more secure fit than disc-style stems. Made of corrosion-resistant zinc-plated steel. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	SWIVEL WITH DISC-STYLE STEMS FOR TUBE ID SIZES 0.720″ to 0.851″		0.852″ to 0.927″		0.928″ to 1.029″		1.360″ to 1.425″		1.426″ to 1.589″	
Swivel Casters												
Gray Rubber on Polypropylene Wheels—Durometer is 65A												
3″×1″	3 5/8″	100	2484T11	$22.22	2484T12	$22.22	2484T13	$22.22	2484T16	$22.22	2484T17	$22.22
4″×1″	4 5/8″	115	2484T21	25.19	2484T22	25.19	2484T23	25.19	2484T26	25.19	2484T27	25.19
5″×1″	5 5/8″	125	2484T31	25.75	2484T32	25.75	2484T33	25.75	2484T36	25.75	2484T37	25.75

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	SWIVEL WITH WEDGE-STYLE STEMS FOR TUBE ID SIZES 0.688″ to 0.750″		0.751″ to 1.00″		1.063″ to 1.125″	
Swivel Casters								
Gray Rubber on Nylon Wheels—Durometer is 80A								
3 1/8″×1″	4 1/4″	130	2320T41	$21.61	2320T51	$21.61	2320T71	$21.61
4″×1 1/4″	5 1/4″	198	2320T42	22.89	2320T52	22.89	2320T72	22.89
5″×1 1/4″	6 1/4″	220	2320T43	25.29	2320T53	25.29	2320T73	25.29
Swivel Casters with Total Lock								
Gray Rubber on Nylon Wheels—Durometer is 80A								
3 1/8″×1″	4 1/4″	130	2320T44	26.10	2320T54	26.10	2320T74	26.10
4″×1 1/4″	5 1/4″	198	2320T45	27.20	2320T55	27.20	2320T75	27.20
5″×1 1/4″	6 1/4″	220	2320T46	29.80	2320T56	29.80	2320T76	29.80

Round-Stem Casters—400 to 900 lbs.

- Formed steel welded frame
- Double ball swivel bearings
- Straight roller wheel bearings
- 1/8″ leg thickness

Ideal for scaffolding, these rugged casters come with a total lock that brakes the wheel with a face brake and locks the swivel in one operation. Stems have two 1/2″ dia. mounting holes. All are steel with a corrosion-resistant zinc-plated finish.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel with Total Lock	
1 1/4″ Dia.×3 7/8″ Lg. Stem				
Black Rubber on Cast Iron Wheels—Durometer is 85A				
5″×2″	6 1/4″	400	2888T51	$25.03
Red Polyurethane on Cast Iron Wheels—Durometer is 90A				
5″×2″	6 1/4″	800	2888T64	31.30
1 3/8″ Dia.×3 7/8″ Lg. Stem				
Black Rubber on Cast Iron Wheels—Durometer is 85A				
6″×2″	7 1/2″	410	2888T52	33.92
8″×2″	9″	500	2888T53	35.32
Red Polyurethane on Cast Iron Wheels—Durometer is 90A				
6″×2″	7 1/2″	900	2888T66	35.98
8″×2″	9″	900	2888T68	37.43

Octagonal-Stem Casters—125 to 145 lbs.

Swivel

- One-piece formed steel
- Double ball swivel bearings
- Plain metal wheel bearings
- 3/32″ leg thickness

The octagonal stem on these casters fits into round and square tubing. It also can be bolted or welded to angle iron. Stems have three mounting holes for securing with 1/4″ bolts or rivets. Casters are made of corrosion-resistant zinc-plated steel.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel w/Side Wheel Brake	
3/4″ Dia.×2 1/16″ Lg. Stem						
Black Solid Rubber Wheels—Durometer is 90A						
3″×1″	3 11/16″	125	22975T74	$12.05	22975T84	$15.67
4″×1″	4 5/8″	135	22975T75	13.25	22975T85	16.65
5″×1″	5 5/8″	145	22975T76	14.98	22975T86	18.75

For information about wheels and casters, see pages 1316-1317.

Square-Stem Casters—250 to 325 lbs.

- One-piece formed steel
- Double ball swivel bearings
- 3/32″ leg thickness
- NSF certified

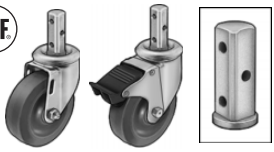

Swivel — Swivel with Total Lock

Square stems fit into square tubing and can be bolted or riveted to angle iron. All have three mounting holes for 1/4″ bolts or rivets. Made of corrosion-resistant zinc-plated steel. ***Swivel casters with total lock*** brake the wheel with a face wheel brake and lock the swivel in one operation.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel		Swivel with Total Lock	
3/4″ Sq.×2 1/16″ Lg. Stem						
Gray Rubber on Polypropylene Wheels with Plain Acetal Bearings—*Durometer is 65A*						
3 1/2″×1 1/4″	4 9/16″	250	23085T22	$18.40	23085T32	$26.77
4″×1 1/4″	5″	300	23085T23	19.98	23085T33	29.52
5″×1 1/4″	6 1/16″	325	23085T24	20.25	23085T34	29.91
Red Polyurethane on Polypropylene Wheels with Plain Acetal Bearings—*Durometer is 55D*						
3 1/2″×1 1/4″	4 9/16″	250	23085T42	18.98	23085T52	27.28
5″×1 1/4″	6 1/16″	300	23085T44	24.01	23085T54	32.48
Gray Rubber on Polypropylene Wheels with Ball Bearings—*Durometer is 65A*						
3 1/2″×1 1/4″	4 9/16″	250	23085T26	21.88	23085T36	30.13
4″×1 1/4″	5″	300	23085T27	22.75	23085T37	30.62
5″×1 1/4″	6 1/16″	325	23085T28	23.13	23085T38	33.13
Red Polyurethane on Polypropylene Wheels with Ball Bearings—*Durometer is 55D*						
3 1/2″×1 1/4″	4 9/16″	250	23085T46	16.23	23085T56	30.78
5″×1 1/4″	6 1/16″	300	23085T48	26.00	23085T58	34.88

Cup-Shoe Round-Stem Caster—75 lbs.

- One-piece molded black nylon
- Single ball swivel bearings
- Plain bore wheel (no bearings)

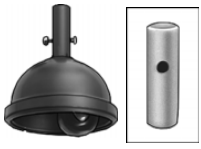

Commonly used on mobile ladders, the housing on this caster protects the wheel and provides extra stability. A minimum load of 16 lbs. causes the spring-loaded wheel to retract and brings the cup in contact with the ground. Stem fits 1″ OD round, 16-ga. tubing and has one mounting hole. Mounting hardware is included.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel	
7/16″ Dia.×2″ Lg. Stem				
Black Solid Rubber Wheel—*Durometer is 90A*				
1 5/8″×5/8″	3 1/2″	75	2361T5	$16.07

Concealed-Mount Caster—100 lbs.

- One-piece formed steel
- Plain bore wheel (no bearings)
- 1/16″ frame thickness

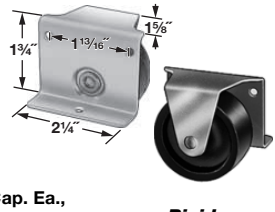

Mount this specially designed caster out of sight for a clean and finished look. Made of corrosion-resistant zinc-plated steel.

Note: Mount height is measured from the bottom of the wheel to the bottom of the mounting lip.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Rigid	
Black Solid Polypropylene Wheel—*Durometer is 93A*				
2″×7/8″	1/2″	100	9994T91	$4.52

Right-Angle Bracket-Mount Casters—75 to 145 lbs.

- One-piece formed steel
- Double ball swivel bearings
- Plain metal wheel bearings
- 3/32″ leg thickness

A 90° angle bracket lets you mount these casters to square legs and angle iron. Brackets have three mounting holes for securing with 1/4″ bolts or rivets. Made of corrosion-resistant zinc-plated steel.

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Swivel	
Black Solid Rubber Wheels—*Durometer is 70A*				
2″×7/8″	2 3/4″	75	2399T1	$14.12
3″×13/16″	3 13/16″	75	2399T2	18.33
4″×31/32″	4 3/4″	110	2399T3	21.00
5″×31/32″	5 3/4″	125	2399T4	23.36
Black Solid Rubber Wheels—*Durometer is 90A*				
2″×7/8″	2 3/4″	100	2399T5	$14.12
3″×13/16″	3 13/16″	100	2399T6	18.33
4″×31/32″	4 3/4″	135	2399T7	21.00
5″×31/32″	5 3/4″	145	2399T8	23.36

Socket-Style Casters—300 lbs.

- One-piece formed steel
- Double ball swivel bearings
- Maintenance-free precision ball wheel bearings
- 1/8″ leg thickness

Slide the socket onto equipment legs, tighten the knurled thumb screw, and you're rolling. Casters have a zinc-plated finish and are compatible with round legs on most commercial equipment.

Swivel with Brake

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Socket ID	Fits Leg OD	Swivel		Swivel with Face Wheel Brake	
Red Polyurethane on Red Polypropylene Wheels—*Durometer is 90A*								
2 1/2″×1 1/4″	2 7/16″	300	1.063″	1″	2248T31	$42.51	2248T32	$59.24
2 1/2″×1 1/4″	2 7/16″	300	1.340″	Up to 1.32″	2248T33	44.58	2248T34	61.31
2 1/2″×1 1/4″	2 7/16″	300	1.520″	Up to 1.5″	2248T35	48.36	2248T36	63.02

Side-Mount Spring-Loaded Casters—75 to 700 lbs.

- One-piece formed steel
- Double ball swivel bearings

Just what you need for smooth opening and closing of gates and doors. For easy and secure installation, these shock-absorbing casters have a side mounting plate. Made of corrosion-resistant zinc-plated steel.

Note: Mount height is measured from the top of the swivel raceway to the floor.

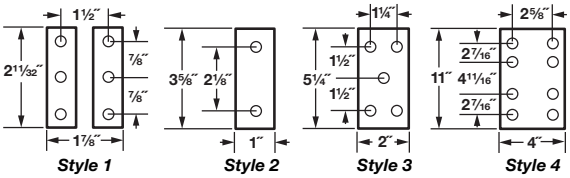

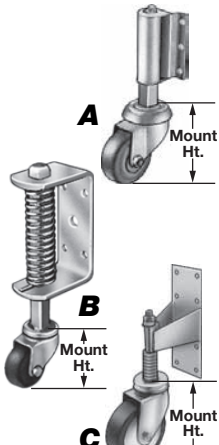

Wheel Dia.×Wd.	Mount Ht.	Cap. Ea., lbs.	Leg Thick.	Mounting Plate Style	Mounting Plate Bolt Size	Mounting Plate Thick.	Max. Compression Force, lbs.	Max. Spring Deflection	Swivel	
(A) Gray Rubber on Nylon Wheel with Single Ball Bearings—*Durometer is 80A*										
2″×25/32″	5 15/16″	88	1/16″	1	3/16″	13/16″	38	7/8″	23045T31	$28.16
(B) Black Solid Rubber Wheel with Plain Bore (No Bearings)—*Durometer is 70A*										
3″×13/16″	3 7/8″	75	3/32″	2	5/16″	3/16″	28	2″	23045T33	34.66
(B) Black Solid Rubber Wheel with Plain Bore (No Bearings)—*Durometer is 90A*										
3″×13/16″	3 7/8″	100	3/32″	2	5/16″	3/16″	28	2″	23045T34	34.66
(B) Black Solid Rubber Wheels with Plain Bore (No Bearings)—*Durometer is 90A*										
2″×7/8″	3″	100	3/32″	3	5/16″, 1/2″	1/4″	100	1 3/4″	87875T73	50.42
3″×13/16″	3 7/8″	125	3/32″	3	5/16″, 1/2″	1/4″	100	1 3/4″	87875T74	52.38
(C) Black Solid Polyurethane Wheels with Straight Roller Bearings—*Durometer is 55D*										
4″×2″	5 5/8″	650	5/32″	4	3/8″	1/4″	180	7/8″	87875T55	172.64
5″×2″	6 1/2″	700	5/32″	4	3/8″	1/4″	180	7/8″	87875T56	174.82
6″×2″	7 3/8″	700	5/32″	4	3/8″	1/4″	180	7/8″	87875T57	178.98
8″×2″	9 1/2″	700	5/32″	4	3/8″	1/4″	180	7/8″	87875T58	183.13

For information about wheels and casters, see pages 1316-1317.

Sockets for Grip-Neck Stem Casters

For Round Tubing

For Square Tubing

For Wood Legs

Sockets securely hold grip-neck stem casters in tubing and legs. ***Sockets for tubing*** press-fit into round and square tubing. Made of nylon. ***Socket for wood legs*** has grippers for a secure hold. Made of zinc-plated steel. *Note:* A 3/8″ Dia.×1 5/8″ Dp. hole is required for installation.

For Tubing

Fits Tubing ID	Accepts Stem Size, Dia.×Lg.	Pkg. Qty.	For Round Tubing	Pkg.	For Square Tubing	Pkg.
3/4″	7/16″×1 15/16″	4	9951T41	$6.25	9951T44	$5.50
7/8″	7/16″×1 15/16″	4	9951T42	4.69	9951T45	5.36
1″	7/16″×1 15/16″	4	9951T43	5.00	9951T46	5.36

For Wood Legs

Accepts Stem Size, Dia.×Lg.	Pkg. Qty.		Pkg.
5/16″×1 9/16″	4	99015T27	$3.62

Sockets for Friction-Grip Stem Casters

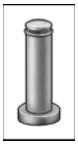

For Round Tubing

For Square Tubing

These polyethylene sockets fit snugly and keep a firm hold on friction-grip stem casters.

Fits Tubing ID	Accepts Stem Size, Dia.×Lg.	Pkg. Qty.	For Round Tubing Pkg.		For Square Tubing Pkg.	
25/32″	7/16″×1 3/8″-2″	4	99065T61	$6.18	—	—
27/32″	7/16″×1 3/8″-2″	4	99065T64	6.52	—	—
7/8″	7/16″×1 3/8″	4	—	—	99065T77	$5.68
7/8″	7/16″×1 3/8″-2″	4	99065T63	6.61	—	—
29/32″	7/16″×1 3/8″	4	99065T72	7.26	—	—
29/32″	7/16″×2″	4	—	—	99065T68	6.66

Bracket-Style Sockets for Friction-Grip Stem Casters

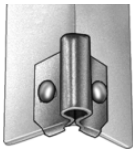

Outside Mount Bolt On

Inside Mount Weld On

Bolt or weld these bracket-style sockets to channel and angle iron legs to hold friction-grip stem casters. All accept stems up to 7/16″ Dia.×1 3/8″ Lg. Each side of the bracket is 1 5/16″ Wd.×1 5/8″ Ht. Made of zinc-plated steel (unless noted).

	Bolt Size	Pkg. Qty.		Pkg.
Outside Mount Bolt On	1/4″	4	99305T63	$13.96
Inside Mount Bolt On	1/4″	4	99305T64	19.76
Inside Mount Weld On	—	4	99305T65★	20.90

★ Made of plain steel.

Wheel Axles

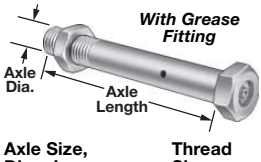

Our most common axle sizes for caster applications. All are made of zinc-plated steel and come with a locknut (unless noted).

Axles with grease fitting allow for easy lubrication.

Axle Size, Dia.×Lg.	Thread Size	Thread Lg.		
Without Grease Fitting				
1/4″ ×1 1/2″	1/4″-20	7/8″	23595T11	$0.48
1/4″ ×1 3/4″	1/4″-20	15/16″	23595T12	.63
5/16″×2 1/4″	5/16″-18	1″	23595T13	.78
3/8″ ×2 3/16″	3/8″-16	3/8″	23595T14	1.51
3/8″ ×2 1/2″	3/8″-16	1″	23595T15	2.04
1/2″ ×3″	1/2″-13	1 1/4″	23595T16	2.18
1/2″ ×3 1/4″	1/2″-20	3/4″	23595T17	2.32
5/8″ ×3 3/4″	5/8″-11	1 5/8″	23595T18●	4.63
3/4″ ×4″	3/4″-10	3/4″	23595T19●	5.86
3/4″ ×4 1/2″	3/4″-10	2″	23595T2●	6.62
3/4″ ×5″	3/4″-10	2″	23595T21●	6.89
1″ ×5″	1″-14	2 1/2″	23595T24	12.56
1″ ×6″	1″-14	2 1/2″	23595T25	26.26
1 1/4″ ×6 3/8″	1 1/4″-12	1 1/2″	23595T22♣	42.15
With Grease Fitting				
5/16″×2 1/4″	5/16″-18	1″	23595T41	1.77
1/2″ ×2 13/16″	1/2″-20	3/4″	23595T42	3.07
1/2″ ×3″	1/2″-13	1 3/8″	23595T43	2.09
1/2″ ×3 3/8″	1/2″-20	7/8″	23595T44	3.12
1/2″ ×4″	1/2″-20	1 1/4″	23595T45	6.03
1/2″ ×4 1/2″	1/2″-13	1 1/4″	23595T46	6.57
3/4″ ×4 1/4″	3/4″-10	1 3/4″	23595T47	11.07
3/4″ ×4 3/4″	3/4″-10	3/4″	23595T48	9.88

● Includes lock washer and nut. ♣ Made of plain steel with a blue painted hex head and has slotted nut with spring pin.

Reducer Bushings for Wheels

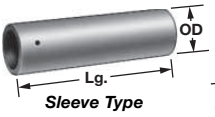

Sleeve Type

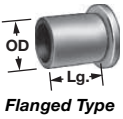

Flanged Type

Also known as spanner bushings, these bushings reduce the inside diameter of a bearing to fit a particular axle size.

Sleeve type reduce wear on the axle, and are used in plain bores and with straight roller bearings only. To select the correct size, measure the wheel hub length and choose a bushing that is the same length or longer. All are hardened steel and have a grease fitting (unless noted).

Flanged type (also known as top hat spanners) are used with ball bearings. Use two bushings per wheel. The length of the bushing should not exceed half of the hub length. Flange thickness is 1/4″ for plain steel bushings; 1/8″ for stainless steel.

Washers for sleeve type (sold separately) are made of steel (unless noted) and are used to expand hub length to match reducer length.

Reducer Bushings

For Axle Dia.	OD	Lg.		
Sleeve Type				
5/16″	1/2″	1 5/16″	23275T23	$1.40
5/16″	1/2″	1 9/16″	23275T24	1.23
3/8″	1/2″	1 9/16″	23275T27	1.20
3/8″	1/2″	1 5/8″	23275T11	1.78
3/8″	1/2″	1 3/4″	23275T28	1.57
1/2″	5/8″	2″	23275T48	1.37
1/2″	5/8″	2 1/4″	23275T49	1.57
Sleeve Type (Cont.)				
1/2″	3/4″	1 7/8″	23275T12	$2.57
1/2″	3/4″	2″	23275T61	1.60
1/2″	3/4″	2 1/4″	23275T62	.89
1/2″	3/4″	2 7/16″	23275T13	2.84
1/2″	3/4″	3″	23275T15	3.38
5/8″	3/4″	2 7/16″	23275T14	3.32
3/4″	7/8″	2 13/16″	23275T66♦	3.57
Sleeve Type (Cont.)				
3/4″	1″	3″	23275T16	$4.84
3/4″	1″	3 1/2″	23275T17	4.89
1″	1 1/4″	3 9/16″	23275T18	13.81
Flanged Type—Plain Steel				
1/2″	17 mm	1″	23275T51	.96
3/4″	30 mm	1 9/16″	23275T52	4.57
Flanged Type—Stainless Steel				
1/2″	17 mm	1 1/8″	23275T53	10.25

♦ Does not have a grease fitting.

Washers for Sleeve-Type Reducer Bushings

For Axle Dia.	ID	OD	Thick.		
3/8″	1/2″	1 1/2″	3/32″	23275T21	$0.68
1/2″	9/16″	15/16″	3/16″	23275T84▲	.40
1/2″	3/4″	1 5/8″	3/32″	23275T22	.51
5/8″	11/16″	1 3/16″	7/32″	23275T85▲	$0.61
3/4″	1″	2 7/16″	3/32″	23275T25	1.11
1″	1 1/4″	2 7/16″	3/32″	23275T95	1.16

▲ Made of nylon.

For information about wheels and casters, see pages 1316-1317.

Wheel Bearings

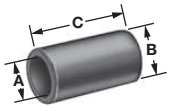

Plain Acetal

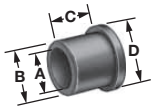

Plain Flanged Acetal

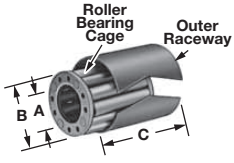

Straight Roller

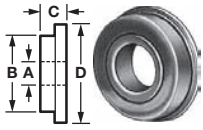

Ball

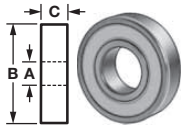

Maintenance-Free Precision Ball

Plain acetal bearings press-fit into the wheel hub and offer excellent chemical and corrosion resistance. Ideal for wet applications. Temperature range is –20° to +160° F. *Flanged bearings* are used in pairs.

Straight roller bearings include a roller bearing cage and an outer raceway for easy installation.

Ball bearings press-fit into the wheel hub. Used in pairs, they roll easily and are ideal for low-speed caster applications.

Maintenance-free precision ball bearings press-fit into the wheel hub. Used in pairs, they significantly reduce the amount of force required to get wheels rolling, plus they require no lubrication.

Retaining washers for straight roller bearings (sold separately) are made of steel (unless noted). They hold the bearings in place and provide protection around the outer raceway. *Sealed retaining washers* provide additional protection by keeping grease inside the bearing and contaminants out.

Note: Do not use any of these wheel bearings in towing applications. Use reducer bushings (sold on page 1350) to reduce axle size.

Note: For tapered roller bearings, alternative plain bearings, and additional bearing sizes not shown below, please see pages 1126-1150.

Bearings

For Axle Dia. (A)	OD (B)	(C)	Flange OD (D)		
Plain Acetal					
1/2"	1 3/16"	2 1/8"	—	25635T2	$2.84
3/4"	1 3/16"	1 5/8"	—	25635T5	2.11
3/4"	1 3/16"	2 1/8"	—	25635T6	2.08
Plain Flanged Acetal					
3/4"	1 3/16"	3/4"	1 1/2"	25635T9	1.11
Straight Roller					
1/2"	15/16"	1 1/8"	—	25015T23	4.65
1/2"	15/16"	1 1/4"	—	25015T24	4.97
1/2"	1 1/16"	1 1/8"	—	25015T11	4.75
5/8"	1 3/16"	1 3/8"	—	25015T12	4.53
5/8"	1 3/16"	1 3/4"	—	25015T25	4.83
5/8"	1 3/16"	1 7/8"	—	25015T14	5.02
5/8"	1 3/16"	2"	—	25015T26	4.85
3/4"	1 3/16"	1 1/4"	—	25015T13	5.81
3/4"	1 3/16"	1 3/4"	—	25015T27	4.60
3/4"	1 3/16"	1 7/8"	—	25015T15	5.81
3/4"	1 3/16"	2"	—	25015T33	3.15
3/4"	1 3/16"	2 1/2"	—	25015T17	6.42
7/8"	1 7/16"	2"	—	25015T37	6.28
7/8"	1 9/16"	2 1/4"	—	25015T38	9.30

For Axle Dia. (A)	OD (B)	(C)	Flange OD (D)		
Straight Roller (Cont.)					
1"	1 7/16"	2"	—	25015T39	$6.77
1"	1 7/16"	2 1/2"	—	25015T42	7.35
1"	1 9/16"	2 1/4"	—	25015T43	12.10
1"	1 15/16"	2 1/2"	—	25015T18	11.80
1"	1 15/16"	3"	—	25015T21	12.82
1"	1 15/16"	4"	—	25015T44	27.24
1 1/8"	1 15/16"	3"	—	25015T46	18.73
1 1/4"	1 15/16"	2 1/2"	—	25015T47	9.50
1 1/4"	1 15/16"	3"	—	25015T22	17.68
1 1/4"	2 7/16"	3"	—	25015T73	25.07
Ball					
5/16"	1 1/8"	5/8"	1 1/4"	23775T2★	3.49
3/8"	1 1/8"	7/16"	1 1/4"	23775T4	7.67
1/2"	1 3/16"	7/8"	1 5/16"	23775T5♥	10.98
5/8"	1 3/8"	7/16"	1 1/2"	23775T6	4.80
3/4"	1 3/8"	7/16"	1 1/2"	23775T7	4.85
Maintenance-Free Precision Ball					
17 mm	40 mm	12 mm	—	5972K44■	5.79
30 mm	62 mm	16 mm	—	5972K47♠	11.84
Maintenance-Free Stainless Steel Precision Ball					
17 mm	40 mm	12 mm	—	2536T47	10.29

★ Bore projection adds 1/4" to "C" dimension. ♥ Bore projection adds 5/16" to "C" dimension. ■ Bearing is trade #6203. ♠ Bearing is trade #6206.

Retaining Washers for Straight Roller Bearings

For Axle Dia. (A)	OD (B)	Thick.	Plain		Sealed	
1/2"	15/16"	3/16"	25015T61✓	$0.36	—	—
1/2"	1 1/16"	1/8"	25015T31	.49	—	—
5/8"	1 3/16"	1/8"	—	—	25015T52	$2.23
5/8"	1 3/16"	7/32"	25015T62✓	.58	—	—
3/4"	1 3/16"	3/32"	25015T32	.26	—	—
3/4"	1 3/16"	7/32"	25015T63✓	.57	—	—
7/8"	1 7/16"	1/8"	25015T64	.88	—	—

For Axle Dia. (A)	OD (B)	Thick.	Plain		Sealed	
7/8"	1 9/16"	1/4"	25015T65	$1.00	—	—
1"	1 15/16"	3/32"	25015T35	.97	—	—
1"	1 15/16"	1/8"	25015T71	1.95	25015T58	$2.74
1 1/4"	1 15/16"	3/32"	25015T36	.80	—	—
1 1/4"	1 15/16"	1/8"	—	—	25015T59	3.51
1 1/4"	2 7/16"	1/8"	25015T78	3.60	25015T79	2.50

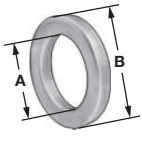

✓ Made of nylon.

Flanged-Wheel Track Casters—500 to 4,200 lbs.

- Forged steel
- 3/8" leg thickness (unless noted)

Ideal for use on mill and freight trucks and vehicles that run on rails and other square structural tubing. Caster frame has a gray painted finish (unless noted); wheels have a red painted finish (unless noted). Temperature range is –30° to +350° F. For flanged track wheels, please see page 1341.

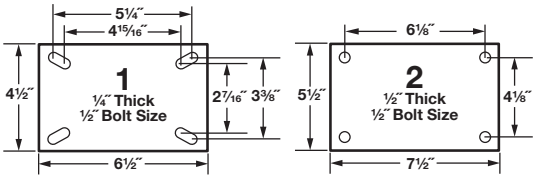

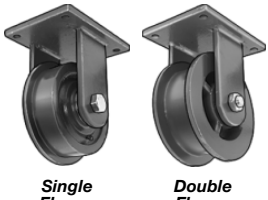

Single Flange *Double Flange*

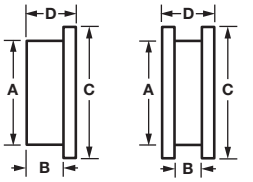

Wheel Size, Dia. (A) × Wd. (B)	Flange Dia. (C)	O'all Wd. (D)	Mount Ht.	Cap. Ea., lbs.	Mtg. Plate	Rigid	
Single-Flange Cast Iron Wheels with Straight Roller Bearings							
3 1/2" × 1 7/16"	4 1/8"	1 7/8"	5 3/8"	500	1	8786T11♣	$59.30
4 15/16" × 1 7/16"	5 11/16"	2 1/8"	6 1/8"	1,000	1	8786T12♣	69.30
5" × 2 1/16"	6"	2 11/16"	8"	4,200	2	8786T13♦	156.67
6 1/8" × 1 11/16"	7"	2 3/32"	8 1/16"	2,000	2	8786T14	105.26
7 7/8" × 1 3/4"	8 5/8"	2 7/32"	8 15/16"	2,500	2	8786T15	137.19
8" × 2 1/4"	9 1/2"	3"	10 1/4"	3,000	2	8786T16	145.09
Double-Flange Cast Iron Wheels with Straight Roller Bearings							
5" × 1 11/16"	6"	3"	8"	4,200	2	8786T22♦	185.09
6" × 2 1/8"	7 5/16"	3"	8 1/2"	2,500	2	8786T23	154.04

♣ Leg thickness is 1/4"; frame has a red painted finish.

♦ Wheel is forged steel with a gray painted finish; frame has a red painted finish.

For information about wheels and casters, see pages 1316-1317.

V-Groove Wheel Track Casters—300 to 8,350 lbs.

A

Rigid

B

Rigid

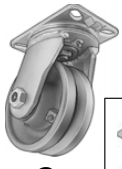

C

Rigid

D&E

Rigid

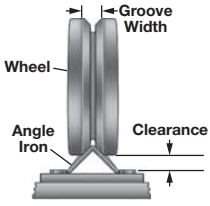

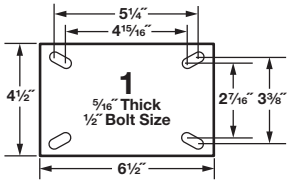

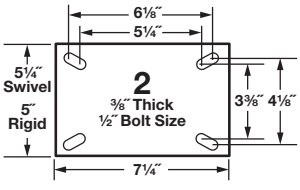

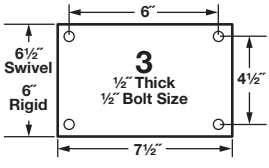

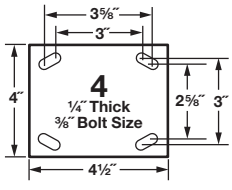

Get controlled movement in any environment—the wheels on these casters have a 90° V-groove for use on an angle-iron track and a flat tread for use on the floor.

For 1¼″×1¼″ and 1½″×1½″ angle-iron track, use casters with 2″ wide wheels. For 2″×2″ track, use 2½″ and wider wheels.

If setting up a system, see 9017K on page 3658 for angle track.

(A) Premium (Kingpinless) Casters— The best-performing and most durable casters around. Forged steel construction and a large swivel raceway eliminate the need for a kingpin. All have large-diameter single ball swivel bearings.

Casters with cast iron wheels have a blue painted finish. Wheels are black except 8″×2½″, which are red. Temperature range is –30° to +275° F. *Casters with high-temperature iron wheels* have a zinc-plated finish. Temperature range is –200° to +400° F.

(B) Casters with One-Piece Forged Steel Mounting Plate with Kingpin— The mounting plate and kingpin are machined from a single piece of forged steel for a stronger, more durable caster than those with a bolt and nut or rivet kingpin. Casters have double tapered roller swivel bearings, making them well suited for heavy loads in rugged applications. All have a zinc-plated finish. Temperature range is –40° to +200° F.

(C) Forged Steel Casters— A bolt and nut kingpin connects the forged steel welded frame to the forged steel mounting plate. The nut lets you tighten the tension of the swivel raceway to adjust for wear. Casters have double ball swivel bearings and a zinc-plated finish. Temperature range is –40° to +200° F.

(D) Formed Steel Welded Frame Casters— The formed steel mounting plate is connected to the frame with a rivet kingpin. Casters have double ball swivel bearings and a zinc-plated finish.

Casters with cast iron wheels have a temperature range of –40° to +200° F.

Casters with green polyurethane wheels have a temperature range of –40° to +180° F.

(E) Formed Type 304 Stainless Steel Welded Frame Casters— These casters are ideal in corrosive and wet environments.

Casters with Type 303 stainless steel wheels can be used in high-temperature environments and can be steam cleaned. All have double stainless steel swivel ball bearings. Temperature range is –20° to +350° F.

Casters with green polyurethane wheels have the mounting plate connected to the frame with a stainless steel rivet and have double ball swivel bearings. Temperature range is –40° to +160° F.

Wheel Size, Dia.×Wd.	Groove Width	Mount Height	Mounting Plate	Cap. Ea., lbs.	Clearance 1¼″ Track	Clearance 1½″ Track	Clearance 2″ Track	Swivel		Rigid	
(A) Premium (Kingpinless)											
Cast Iron Wheels with Straight Roller Bearings											
4″×2″	⅞″	5⅝″	1	800	⅝″	¾″	—	8741T51	$97.32	8741T61	$52.32
6″×2″	⅞″	7½″	1	1,000	⅝″	¾″	—	8741T52	109.06	8741T62	56.38
6″×2½″	⅞″	7½″	1	2,500	—	—	1⅛″	8741T53	129.38	8741T63	74.28
8″×2½″	⅞″	10⅛″	1	3,000	—	—	1⅛″	8741T54	134.16	8741T64	86.82
High-Temperature Iron Wheels with Straight Roller Bearings											
6″×2½″	⅞″	8″	2	3,500	—	—	1⅛″	9927T81	109.29	9927T85	74.46
6″×3″	⅞″	8″	2	5,400	—	—	1⅛″	9927T82	117.14	9927T86	87.23
8″×3″	⅞″	10½″	2	5,400	—	—	1⅛″	9927T83	139.42	9927T87	101.48
10″×3″	1⅜″	12½″	2	5,400	—	—	⅞″	9927T84	173.08	9927T88	144.19
(B) One-Piece Forged Steel Mounting Plate with Kingpin											
Forged Steel Wheels with Straight Roller Bearings											
6″×3″	1⅜″	8½″	3	6,000	—	—	17⁄32″	2453T21	346.65	2453T24	216.88
8″×4″	1¾″	10½″	3	8,350	—	—	17⁄32″	2453T22	409.42	2453T25	286.84
(C) Forged Steel											
Cast Iron Wheels with Straight Roller Bearings											
6″×2½″	⅞″	7⅝″	1	2,000	—	—	17⁄32″	2453T15★	118.48	2453T5♣	81.23
8″×2½″	⅞″	10⅛″	1	2,000	—	—	17⁄32″	2453T16★	140.71	2453T6♣	94.98
8″×3″	⅞″	10½″	2	2,500	—	—	17⁄32″	2453T17●	155.98	2453T7●	102.91
10″×3″	1⅜″	12½″	2	3,000	—	—	17⁄32″	2453T18●	192.88	2453T8●	129.27
(D) Formed Steel Welded Frame											
Cast Iron Wheels with Straight Roller Bearings											
4″×2″	⅞″	5⅝″	4	800	7⁄16″	⅝″	—	2453T11	34.81	2453T1	25.72
5″×2″	⅞″	6½″	4	800	7⁄16″	⅝″	—	2453T13	43.87	2453T3	34.29
6″×2″	⅞″	7¼″	4	1,000	7⁄16″	⅝″	—	2453T42	51.69	2453T41	42.05
Green Polyurethane Wheels with Straight Roller Bearings—Durometer is 60D											
4″×2″	⅞″	5⅝″	4	300	7⁄16″	⅝″	—	8382T41	46.12	8382T31	36.38
5″×2″	⅞″	6½″	4	300	7⁄16″	⅝″	—	8382T42	53.08	8382T32	44.12
(E) Formed Type 304 Stainless Steel Welded Frame											
Type 303 Stainless Steel Wheels with Maintenance-Free Precision Ball Bearings											
4″×2″	⅞″	6″	4	850	7⁄16″	⅝″	—	23325T21	259.45	23325T22	217.64
5″×2″	⅞″	6½″	4	800	7⁄16″	⅝″	—	23325T31	310.36	23325T32	266.73
Green Polyurethane Wheels with Plain Acetal Bearings—Durometer is 60D											
4″×2″	⅞″	5⅝″	4	300	7⁄16″	⅝″	—	8348T44	92.07	8348T31	70.84
5″×2″	⅞″	6½″	4	300	7⁄16″	⅝″	—	8348T45	99.74	8348T32	78.40

★ Mounting plate is 6¼″ Lg.×4½″ Wd.×¼″ thick. ♣ Mounting plate is 6¼″ Lg.×5″ Wd.×¼″ thick. ● Mounting plate is 5⁄16″ thick.

For information about wheels, see page 1316.

Flanged Track Wheels

Rugged wheels are great for moving equipment on rails and overhead tracks. All are made of steel with a corrosion-resistant black powder-coated finish. They are precision machined to tight tolerances for a correct fit and have a solid center and a grease fitting (unless noted). Temperature range is –13° to +250° F.

Also Available: Wheels with plain bore (no bearings) and a keyway. Please ask for 2353T888 for single flanged or 22495T888 for double flanged and specify (from the table) wheel diameter, wheel width, flange diameter, overall width, axle diameter, hub length, load capacity, material, with or without keyway, and with or without set screws. All of these wheels have a red painted finish.

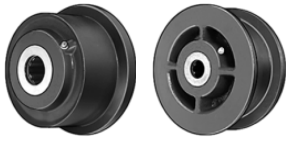

Single Flanged — Double Flanged

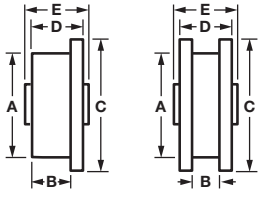

Wheel Size, Dia. (A) × Wd. (B)	Flange Dia. (C)	O'all Wd. (D)	For Axle Dia.■	Hub Lg. (E)	Cap. Ea., lbs.		
Single-Flanged Wheels with Straight Roller Bearings							
3¼″ × 1″	4″	1⅜″	½″, ¾″	2³⁄₁₆″	1,250	2353T25♥	$44.84
3½″ × 1⁷⁄₁₆″	4⅛″	1⅞″	1″	2¼″	1,600	2353T26♥	48.90
4½″ × 1⁹⁄₁₆″	5½″	2⅜″	1″	2½″	2,200	2353T28	78.98
4¹⁵⁄₁₆″ × 1⁷⁄₁₆″	5¹¹⁄₁₆″	2⅛″	¾″	2¼″	1,550	2353T27	73.50
5″ × 2¹⁄₁₆″	6″	2¹¹⁄₁₆″	1¼″	3¼″	5,000	2353T29	131.11
6⅛″ × 1¹¹⁄₁₆″	7″	2³⁄₃₂″	1″	2¾″	2,400	2353T31	120.00
6⅛″ × 1¹¹⁄₁₆″	7″	2³⁄₃₂″	1¼″	2¾″	2,700	2353T32	122.10
7⅞″ × 1¾″	8⅝″	2⁷⁄₃₂″	1¼″	2½″	2,800	2353T33	160.67
8″ × 2¼″	9¼″	3″	1″	3¼″	3,000	2353T34	150.18
8″ × 2¼″	9¼″	3″	1¼″	3¼″	3,200	2353T35	147.60
Double-Flanged Wheels with Straight Roller Bearings							
5″ × 1¹¹⁄₁₆″	6″	3″	1″, 1¼″	3¼″	5,000	22495T51	155.38
6″ × 2⅛″	7⁵⁄₁₆″	3″	1″	3¼″	2,800	22495T52	153.37
6″ × 2⅛″	7⁵⁄₁₆″	3″	1¼″	3¼″	3,200	22495T53	153.69

■ Wheels with two axle diameters include a reducer bushing. First dia. is with bushing; second is without.
♥ Does not have a grease fitting.

V-Groove Wheels

The V-groove, face, and tread of these wheels are machined for controlled movement and easy gliding along V-groove angle-iron track. They also can be used directly on the floor. All have a 90° V-groove and a solid center (unless noted).

Polyurethane wheels roll quietly and are easy on the track. ***Cast iron wheels*** offer high capacities at an economical price. ***High-strength iron wheels*** (also known as ductile iron) handle higher capacities and temperatures. ***Forged steel wheels*** offer superior capacity for large loads. ***Black phenolic wheels*** are economical. ***Type 303 stainless steel wheels*** are maintenance free and ideal in wet and corrosive environments.

For 1¼″ × 1¼″ and 1½″ × 1½″ angle-iron track, use up to 2″ wide wheels. For 2″ × 2″ track, use 2½″ and wider wheels. If setting up a system, see 9017K on page 3658 for angle track.

Solid Center

Spoked Center

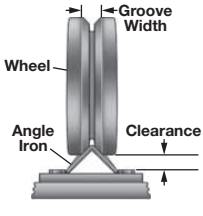

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Groove Width	Cap. Ea., lbs.	Clearance 1¼″ Track	Clearance 1½″ Track	Clearance 2″ Track		
Wheels with Plain Acetal Bearings									
Green Polyurethane— *Durometer is 60D; temperature range is –40° to +160° F*									
4″ × 2″	½″, ¾″	2³⁄₁₆″	⅞″	300	⁷⁄₁₆″	⅝″	—	22835T41	$21.77
5″ × 2″	½″, ¾″	2³⁄₁₆″	⅞″	300	⁷⁄₁₆″	⅝″	—	22835T42	27.82
Wheels with Straight Roller Bearings									
Cast Iron— *Temperature range is –30° to +450° F (unless noted)*									
3″ × 1⅜″	¾″	1¾″	¹³⁄₁₆″	450	⁷⁄₁₆″	⅝″	—	2310T7▲	19.91
4″ × 1½″	½″	1¹¹⁄₁₆″	⅞″	800	⅝″	¹³⁄₁₆″	—	2310T51♦	12.08
4″ × 2″	½″, ¾″	2³⁄₁₆″	⅞″	800	⁷⁄₁₆″	⅝″	—	2310T12	15.78
4″ × 2″	⅝″	2³⁄₁₆″	⅞″	800	⁷⁄₁₆″	⅝″	—	2310T11	15.45
5″ × 2″	½″, ¾″	2³⁄₁₆″	⅞″	800	⁷⁄₁₆″	⅝″	—	2310T14♠	22.78
5″ × 2″	⅝″	2³⁄₁₆″	⅞″	800	⁷⁄₁₆″	⅝″	—	2310T13♠	22.74
6″ × 2″	⅝″	2³⁄₁₆″	⅞″	1,200	⅝″	¹³⁄₁₆″	—	2310T15♦♠	18.68
6″ × 2″	¾″	2³⁄₁₆″	⅞″	1,200	⅝″	¹³⁄₁₆″	—	2310T16♦♠	18.52
6″ × 2½″	1″, 1¼″	3¼″	⅞″	2,500	—	—	1″	2310T93	44.98
6″ × 2¾″	1″, 1¼″	3¼″	⅞″	2,500	—	—	³¹⁄₃₂″	2310T48♦	62.88
8″ × 2½″	1″, 1¼″	3¼″	⅞″	2,500	—	—	1″	2310T94♠	62.00
8″ × 2¾″	1″, 1¼″	3¼″	1⅜″	2,500	—	—	²⁵⁄₃₂″	2310T49♦♠	73.27
8″ × 3″	1″, 1¼″	3¼″	⅞″	2,500	—	—	¾″	2310T95♠	64.00
10″ × 3″	1″, 1¼″	3¼″	1⅜″	3,000	—	—	¾″	2310T96♠	98.44
High-Strength Iron— *Temperature range is –30° to +600° F*									
4″ × 2″	½″, ¾″	2³⁄₁₆″	⅞″	1,200	⅝″	¹³⁄₁₆″	—	23405T32	24.83
4″ × 2″	⅝″	2³⁄₁₆″	⅞″	1,200	⅝″	¹³⁄₁₆″	—	23405T21	26.48
6″ × 2½″	¾″, 1″	2¾″	⅞″	3,500	—	—	1⁵⁄₃₂″	23405T33	58.09
8″ × 2½″	¾″, 1″	2¾″	⅞″	3,500	—	—	1⁵⁄₃₂″	23405T34	90.33
Forged Steel— *Temperature range is –40° to +200° F*									
6″ × 3″	1″, 1¼″	3¼″	1⅜″	6,000	—	—	¹⁷⁄₃₂″	23345T17	165.87
8″ × 4″	1¼″, 1½″	4¼″	1¾″	8,350	—	—	¹⁷⁄₃₂″	23345T19	241.38
10″ × 3″	1″, 1¼″	3¼″	1⅜″	5,000	—	—	¹⁷⁄₃₂″	23345T31	203.58
Black Phenolic— *Temperature range is 0° to +300° F*									
4″ × 1½″	¾″	1⅝″	⅞″	380	⅝″	⅝″	—	22425T1	22.00
6″ × 2″	¾″	2³⁄₁₆″	⅞″	750	⅝″	⅝″	—	22425T2	28.40
6″ × 2½″	1″	3¼″	1¼″	1,120	—	—	¹³⁄₁₆″	22425T3	48.00
Green Polyurethane— *Durometer is 60D; temperature range is –40° to +200° F*									
4″ × 2″	½″, ¾″	2³⁄₁₆″	⅞″	300	⁷⁄₁₆″	⅝″	—	22835T51	23.77
5″ × 2″	½″, ¾″	2³⁄₁₆″	⅞″	300	⁷⁄₁₆″	⅝″	—	22835T52	30.80
6″ × 2″	½″, ¾″	2³⁄₁₆″	⅞″	300	⁷⁄₁₆″	⅝″	—	22835T53	39.11
Wheels with Maintenance-Free Precision Ball Bearings									
Type 303 Stainless Steel— *Temperature range is –20° to +350° F*									
4″ × 1⅜″	½″	1⅝″	⅝″	600	¹⁹⁄₃₂″	¾″	—	23365T37	157.31
4″ × 2″	½″	2½″	⅞″	850	¹⁵⁄₃₂″	⅝″	—	23365T41	162.88
5″ × 2″	½″	2½″	⅞″	950	¹⁵⁄₃₂″	⅝″	—	23365T38	228.27
6″ × 2″	½″	2½″	⅞″	1,200	¹⁵⁄₃₂″	⅝″	—	23365T39	270.58

■ Wheels with two axle diameters include a reducer bushing. First dia. is with bushing; second is without.
▲ Wheel has a 92° V-groove; temperature range is +5° to +180° F. ♦ Temperature range is –30° to +600° F.
♠ Has a spoked center.

For information about wheels, see page 1316.

High-Capacity Forged Steel Wheels

Forged from carbon steel for strength, these wheels are nearly unbreakable under heavy shock loads and are tougher than cast iron wheels. Although they can be used on rough surfaces, they perform best on smooth surfaces.

Wheels have machined treads and faces with rounded edges that minimize floor wear and ensure easy turning under heavy loads. All have a grease fitting. Temperature range is –40° to +280° F.

Wheels with Straight Roller Bearings— Hub length is 1/4″ longer at smaller axle diameter, except 2307T22.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
With Straight Roller Bearings					
4″ × 1 1/2″	5/8″	2 3/16″	1,400	2307T22	$40.00
4″ × 1 1/2″	1/2″, 3/4″	2 3/16″	1,400	2307T71	38.15
5″ × 1 3/4″	1/2″, 3/4″	2 3/16″	1,500	2307T72	44.25
6″ × 2″	1/2″, 3/4″	2 3/16″	1,500	2307T73	54.71
6″ × 2 1/2″	1″, 1 1/4″	3 1/4″	4,000	2307T74	66.38
6″ × 3″	1″, 1 1/4″	3 1/4″	6,000	2307T37	101.19
8″ × 2 1/2″	1″, 1 1/4″	3 1/4″	4,000	2307T75	95.51
8″ × 3″	1″, 1 1/4″	3 1/4″	4,500	2307T76	89.40
10″ × 3″	1″, 1 1/4″	3 1/4″	5,000	2307T77	141.25
With Tapered Roller Bearings					
6″ × 3″	1″, 1 1/4″	3 1/2″	10,000	2307T81	126.45
8″ × 3″	1″, 1 1/4″	3 1/2″	10,000	2307T38	170.75
8″ × 4″	1 1/4″, 1 1/2″	4 1/2″	20,000	2307T82	211.64
10″ × 3″	1″, 1 1/4″	3 1/2″	6,500	2307T39	157.56
10″ × 4″	1 1/4″, 1 1/2″	4 1/2″	20,000	2307T83	246.71

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.

Floor-Saving Premium Polyurethane-Tread Wheels

- Premium translucent polyurethane on cast iron core
- Durometer is 70D
- Temperature range is –30° to +180° F

With higher capacities and better durability than other polyurethane wheels, these wheels are an alternative to metal wheels. They handle heavy loads while protecting your floors. Maintenance-free precision ball bearings reduce the amount of force required to get wheels rolling and extend service life.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
With Maintenance-Free Precision Ball Bearings					
4″ × 2″	1/2″	2 7/16″	975	2503T11	$46.42
5″ × 2″	1/2″	2 7/16″	1,375	2503T12	52.52
6″ × 2″	1/2″	2 7/16″	1,625	2503T13	58.32
6″ × 2 1/2″	3/4″	3″	2,125	2503T14	73.37
6″ × 3″	3/4″	3 1/2″	2,860	2503T15	81.88
8″ × 2″	1/2″	2 7/16″	2,050	2503T16	69.00
8″ × 2 1/2″	3/4″	3″	2,550	2503T17	83.20
8″ × 3″	3/4″	3 1/2″	3,250	2503T18	93.62
10″ × 2 1/2″	3/4″	3″	3,250	2503T19	98.74
10″ × 3″	3/4″	3 1/2″	3,900	2503T21	107.52
12″ × 3″	3/4″	3 1/2″	4,550	2503T22	131.22

Stainless Steel Wheels

There's no better choice for corrosive and high temperature environments. Type 303 stainless steel construction (unless noted) and sealed maintenance-free precision ball bearings make these wheels ideal for use in washdown applications and food processing areas. Wheels can be steam cleaned as well as sterilized with steam (are autoclavable). Temperature range is –20° to +350° F.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
With Maintenance-Free Precision Ball Bearings					
4″ × 1 3/8″	1/2″	1 5/8″	600	2330T51	$134.00
4″ × 2″	1/2″	2 1/2″	850	2330T52	142.80
5″ × 2″	1/2″	2 1/2″	950	2330T53	192.60
6″ × 2″	1/2″	2 1/2″	1,200	2330T54	258.24
8″ × 2″	1/2″	2 1/2″	1,500	2330T55♣	425.10

♣ Type 304 stainless steel.

High-Strength Iron Wheels

Made from high-strength iron, also known as ductile iron, these wheels are stronger than cast iron wheels. They perform best on smooth surfaces but also can withstand intermittent use on rough surfaces.

Wheels have fully machined treads and faces to evenly distribute loads for maximum floor protection. All have a grease fitting. Temperature range is –30° to +350° F.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
With Straight Roller Bearings					
5 1/4″ × 2″	1/2″, 3/4″	2 1/4″	1,200	2308T61	$36.24
5 1/4″ × 2″	1″	2 1/4″	1,200	2308T72	34.67
6″ × 2″	1/2″, 3/4″	2 1/4″	1,700	2308T62	40.53
6″ × 2″	1″	2 1/4″	1,700	2308T74	37.44
6″ × 2 1/2″	3/4″, 1″	2 3/4″	2,500	2308T63	57.60
8″ × 2 1/2″	3/4″, 1″	2 3/4″	2,900	2308T64	73.38
8″ × 3″	3/4″, 1″	3 1/4″	3,200	2308T65	78.62
8″ × 3″	1 1/4″	3 1/4″	3,200	2308T79	73.60
10″ × 2 1/2″	3/4″, 1″	2 3/4″	3,000	2308T66	81.96
10″ × 3″	1″, 1 1/4″	3 1/4″	3,500	2308T51	86.94
12″ × 2 1/2″	1″	2 3/4″	3,300	2308T85	103.42
12″ × 3″	1″, 1 1/4″	3 1/4″	3,800	2308T52	110.07

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.

Cast Iron Wheels

Solid Center

Spoked Center

Cast iron wheels (also known as gray iron or semi-steel wheels) combine strength and durability with abrasion and heat resistance. Wheels have machined treads that perform best on smooth surfaces. All have a solid center (unless noted). Temperature range is 0° to 180° F.

Wheels with Straight Roller Bearings— 5″ diameter and larger wheels have a grease fitting.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.♠	Cap. Ea., lbs.		
With Plain Bore (No Bearings)					
2″ × 15/16″	1/4″	1 1/16″	300	2305T11●	$3.76
2 1/2″ × 1″	5/16″	1 3/8″	250	2305T3●	4.58
2 1/2″ × 1″	3/8″	1 1/2″	400	2305T8●	4.80
3″ × 1 1/4″	3/8″, 1/2″	1 1/2″	450	2305T5	9.22
4″ × 1 1/4″	1/2″	1 1/2″	550	2305T9	11.43
4″ × 1 1/2″	1/2″	1 5/8″	650	2305T7	12.74
With Straight Roller Bearings					
3 1/4″ × 1 1/2″	1/2″, 3/4″	1 7/8″, 1 5/8″	400	2305T97	15.23
3 1/4″ × 1 1/2″	5/8″	1 5/8″	400	2305T52	14.52
3 1/4″ × 2″	1/2″, 3/4″	2 3/16″	700	2305T92	15.46
4″ × 1 1/2″	1/2″, 3/4″	1 7/8″, 1 5/8″	600	2305T93	14.48
4″ × 1 1/2″	5/8″	1 5/8″	600	2305T14	13.37
4″ × 2″	1/2″, 3/4″	2 7/16″	1,000	2305T13	15.77
4″ × 2″	5/8″	2 7/16″	1,000	2305T15	15.07
5″ × 1 1/2″	1/2″, 3/4″	1 7/8″, 1 5/8″	600	2305T28	15.36
5″ × 1 1/2″	5/8″	1 5/8″	600	2305T21	14.77
5″ × 1 7/8″	1/2″, 3/4″	2 3/16″	1,000	2305T96	24.38
5″ × 1 7/8″	5/8″	2 3/16″	1,000	2305T24	23.44
5″ × 2″	7/8″	2 1/4″	1,500	2305T26	29.58
5″ × 2″	1″	2 1/4″	1,300	2305T27	36.15
5″ × 2 1/2″	1″	3 1/4″	2,000	2305T57	46.54
6″ × 1 1/2″	1/2″, 3/4″	1 5/8″	800	2305T29	29.20
6″ × 1 1/2″	5/8″	1 5/8″	800	2305T32	26.92
6″ × 1 7/8″	5/8″	2 3/16″	1,300	2305T38	28.58
6″ × 2″	1/2″, 3/4″	2 3/16″	1,300	2305T42	27.60
6″ × 2 1/2″	1″	2 3/4″	2,500	2305T51	44.66
8″ × 2″	1/2″, 3/4″	2 3/16″	1,500	2305T68	31.46
8″ × 2″	5/8″	2 1/4″	1,500	2305T66	32.54
8″ × 2 1/2″	1″, 1 1/4″	3 1/4″	2,800	2305T59	53.98
8″ × 3″	1″, 1 1/4″	3 1/4″	3,500	2305T16	61.42
10″ × 3″	1″, 1 1/4″	3 1/4″	3,500	2305T79	96.48
16″ × 3″	1″, 1 1/4″	3 1/4″	3,000	2305T89●	175.58

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.

♠ Wheels with two hub lengths include a reducer bushing. First length is with bushing; second is without. ● Has a spoked center.

For information about wheels, see page 1316.

High-Capacity Nylon Wheels

- Solid black nylon
- Durometer is 80D
- Temperature range is –15° to +185° F

Comparable to forged steel in strength yet these nylon wheels are much lighter in weight. The machined tread resists sliding and will not harm your floors. Plus they resist corrosion and most chemicals. Maintenance-free precision ball bearings reduce the amount of force required to get wheels rolling and extend service life.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
With Maintenance-Free Precision Ball Bearings					
4″ × 2″	1/2″	2 7/16″	2,160	2309T51	$48.83
5″ × 2″	1/2″	2 7/16″	2,160	2309T52	54.30
6″ × 2″	1/2″	2 7/16″	2,160	2309T53	79.23
6″ × 2 1/2″	3/4″	3″	7,200	2309T54	105.86
6″ × 3″	3/4″	3 1/2″	7,200	2309T55	130.02
8″ × 2″	1/2″	2 7/16″	2,160	2309T56	125.14
8″ × 2 1/2″	3/4″	3″	7,200	2309T57	182.47
8″ × 3″	3/4″	3 1/2″	7,200	2309T58	190.70
10″ × 2 1/2″	3/4″	3″	7,200	2309T59	263.05
10″ × 3″	3/4″	3 1/2″	7,200	2309T61	268.72

Glass-Filled Nylon Wheels

- Solid black glass-filled nylon
- Durometer is 85D
- *Glass Filled*: Temperature range is –40° to +250° F (unless noted)
- *High-Temperature Glass Filled*: Temperature range is –20° to +425° F

Ideal for food processing areas, these wheels last up to four times longer than phenolic wheels and are moisture and chemical resistant.

Maintenance-free precision ball bearings reduce the amount of force required to get wheels rolling.

High-temperature glass-filled wheels withstand high heat.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
Glass Filled					
With Straight Roller Bearings					
4″ × 2″	1/2″, 3/4″	2 3/16″	800	2419T31★	$8.82
5″ × 2″	1/2″, 3/4″	2 3/16″	1,000	2419T32★	10.76
6″ × 2″	1/2″, 3/4″	2 3/16″	1,200	2419T33★	10.42
8″ × 2″	1/2″, 3/4″	2 3/16″	1,400	2419T34★	12.89
With Maintenance-Free Precision Ball Bearings					
4″ × 2″	1/2″	2 3/16″	800	2419T61	14.29
5″ × 2″	1/2″	2 3/16″	1,000	2419T62	14.76
6″ × 2″	1/2″	2 3/16″	1,200	2419T63	16.25
8″ × 2″	1/2″	2 3/16″	1,400	2419T64	20.73
High-Temperature Glass Filled					
With Plain Bore (No Bearings)					
3″ × 1 3/8″	3/8″, 1/2″	1 1/2″	325	2419T35	4.80
4″ × 1 3/8″	3/8″, 1/2″	1 1/2″	700	2419T36	5.93
With Straight Roller Bearings					
4″ × 2″	1/2″, 3/4″	2 3/16″	800	2419T53	22.40
5″ × 2″	1/2″, 3/4″	2 3/16″	1,000	2419T54	32.05
6″ × 2″	1/2″, 3/4″	2 3/16″	1,200	2419T55	39.79
8″ × 2″	1/2″, 3/4″	2 3/16″	1,400	2419T56	55.49

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.

★ Temperature range is –40° to +350° F.

Phenolic Wheels

Easy to roll and resistant to water, grease, animal fats, and most acids, these lightweight wheels perform well in harsh environments.

Black wheels have a temperature range of –65° to +250° F.

Brown heat-resistant wheels are used in bakeries and production lines that pass through heating elements. Temperature range is –65° to +475° F.

Brown impact-resistant wheels offer 35% greater impact resistance than black wheels. They're also more resistant to chipping and fraying and provide better shock absorption. Temperature range is –50° to +250° F.

Black

Brown Impact Resistant

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
Black Wheels					
With Plain Bore (No Bearings)					
3″ × 1 1/4″	1/2″	1 3/8″	400	2315T61	$2.81
3 1/2″ × 1 1/4″	1/2″	1 3/8″	400	2315T64	2.86
4″ × 1 1/4″	1/2″	1 3/8″	400	2315T62	3.19
5″ × 1 1/4″	1/2″	1 3/8″	400	2315T63	3.83
With Straight Roller Bearings					
3″ × 1 1/4″	1/2″	1 3/8″	400	2315T525	5.53
3 1/4″ × 1 1/2″	1/2″, 3/4″	1 7/8″	600	2315T51	8.36
3 1/4″ × 1 1/2″	5/8″, 3/4″	1 7/8″	600	2315T511	7.96
3 1/4″ × 2″	1/2″, 3/4″	2 7/16″	700	2315T514	9.51
4″ × 1 1/4″	1/2″	1 3/8″	400	2315T527	6.07
4″ × 1 1/2″	1/2″, 3/4″	1 7/8″	600	2315T515	8.04
4″ × 1 1/2″	5/8″, 3/4″	1 7/8″	600	2315T522	8.33
4″ × 2″	1/2″, 3/4″	2 7/16″	800	2315T518	9.94
4″ × 2″	5/8″, 3/4″	2 7/16″	800	2315T517	10.65
5″ × 1 1/4″	1/2″	1 3/8″	400	2315T528	7.50
5″ × 1 1/2″	1/2″, 3/4″	1 7/8″	650	2315T519	10.38
5″ × 1 1/2″	5/8″, 3/4″	1 7/8″	650	2315T524	10.80
5″ × 2″	1/2″, 3/4″	2 7/16″	1,000	2315T144	10.48
5″ × 2″	5/8″, 3/4″	2 7/16″	1,000	2315T143	11.12
6″ × 2″	1/2″, 3/4″	2 7/16″	1,200	2315T381	12.32
6″ × 2″	5/8″, 3/4″	2 7/16″	1,200	2315T379	12.80
6″ × 2 1/2″	1″	3″	1,600	2315T155	26.39
6″ × 3″	1″	3 1/2″	2,000	2315T157	31.74
8″ × 2″	1/2″, 3/4″	2 7/16″	1,400	2315T164	19.80
8″ × 2″	5/8″, 3/4″	2 7/16″	1,400	2315T163	19.80
8″ × 2 1/2″	1″	3″	1,800	2315T188	28.48
8″ × 3″	1″	3 1/2″	2,500	2315T177	37.51
10″ × 2 1/2″	3/4″, 1″	2 3/4″	2,500	2315T481	39.25
10″ × 3″	1″	3 1/2″	2,900	2315T185	47.89
10″ × 3″	1 1/4″	3 1/2″	2,900	2315T186	49.74
12″ × 3″	1″	3 1/2″	3,500	2315T178	50.92
12″ × 3″	1 1/4″	3 1/2″	3,500	2315T541	51.60
Brown Heat-Resistant Wheels					
With Plain Bore (No Bearings)					
4″ × 1 1/2″	1/2″, 3/4″	1 5/8″	600	2653T11	16.80
4″ × 2″	1/2″, 3/4″	2 3/16″	800	2653T12	27.51
5″ × 1 1/2″	1/2″, 3/4″	1 5/8″	600	2653T13	30.31
5″ × 2″	1/2″, 3/4″	2 3/16″	1,000	2653T14	34.16
6″ × 2″	1/2″, 3/4″	2 3/16″	1,200	2653T15	51.69
8″ × 2″	1/2″, 3/4″	2 3/16″	1,400	2653T16	83.37
Brown Impact-Resistant Wheels					
With Straight Roller Bearings					
4″ × 2″	1/2″, 3/4″	2 3/16″	800	4994T71	26.38
5″ × 2″	1/2″, 3/4″	2 3/16″	1,000	4994T72	33.42
6″ × 2″	1/2″, 3/4″	2 3/16″	1,500	4994T33	38.51
6″ × 3″	1″	3 1/4″	2,000	4994T74	62.70
8″ × 2″	1/2″, 3/4″	2 3/16″	1,400	4994T75	71.84
8″ × 3″	1″	3 1/4″	2,500	4994T76	94.16
10″ × 3″	1″	3 1/4″	3,600	4994T37	116.40
12″ × 3″	1″	3 1/4″	4,400	4994T38	138.60

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.

Nylon Wheels

- Solid white nylon
- Durometer is 85D
- Temperature range is –4° to +176° F

Ideal for use in food and chemical processing plants and where sanitary conditions are required. These wheels resist salt, animal fats, and detergent solutions. They are also corrosion resistant, quiet, and nonmarking.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
With Plain Bore (No Bearings)					
2 1/2″ × 1″	25/64″	1 3/16″	260	9955T16	$2.59
3″ × 1″	25/64″	1 3/16″	350	9955T21	3.47
3″ × 1 3/8″	15/32″	1 3/4″	350	9955T23	5.03
4″ × 1 3/8″	15/32″	1 3/4″	495	9955T29	7.09
5″ × 1 3/8″	15/32″	1 3/4″	595	9955T34	7.86
6″ × 1 3/4″	25/32″	2 3/8″	1,100	9955T44	15.59
8″ × 2″	25/32″	2 3/8″	1,100	9955T45	23.62

For information about wheels, see page 1316.

Polypropylene Wheels

- Solid black polypropylene
- Durometer is 70D
- Temperature range is –20° to +180° F

The economical choice for lightweight, easy rolling, and nonmarking wheels. Wheels resist water, oil, solvents, and many chemicals.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.♠	Cap. Ea., lbs.		
With Plain Bore (No Bearings)					
2″ × 13/16″	5/16″	15/16″	100	2781T71	$0.90
3″ × 13/16″	1/4″	15/16″	150	2781T72	1.43
3″ × 1 1/4″	3/8″	1 9/16″	250	2781T51	1.67
3″ × 1 1/4″	1/2″	1 9/16″	250	2781T52	1.92
4″ × 1″	5/16″	1 1/8″	135	2781T91	2.15
4″ × 1 1/4″	3/8″	1 9/16″	275	2781T53	2.31
4″ × 1 1/4″	1/2″	1 9/16″	275	2781T54	2.31
4″ × 2″	3/4″	2 5/16″	550	2781T15	4.15
5″ × 1″	5/16″	1 1/8″	145	2781T92	2.52
5″ × 1 1/4″	3/8″	1 9/16″	290	2781T35	2.70
5″ × 1 1/4″	1/2″	1 9/16″	290	2781T36	2.83
5″ × 2″	3/4″	2 5/16″	700	2781T17	5.33
6″ × 2″	3/4″	2 1/4″	700	2781T57	5.86
8″ × 2″	3/4″	2 3/16″	1,000	2781T19	10.77
With Straight Roller Bearings					
4″ × 1 1/2″	1/2″, 3/4″	1 7/8″, 1 5/8″	375	2781T58	6.97
4″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	550	2781T24	8.13
5″ × 1 1/2″	1/2″, 3/4″	1 7/8″, 1 5/8″	450	2781T59	8.13
5″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	700	2781T44	10.47
5″ × 2″	5/8″	2 3/16″	700	2781T43	10.13
6″ × 1 1/2″	1/2″, 3/4″	1 7/8″, 1 5/8″	500	2781T41	10.67
6″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	800	2781T46	10.98
6″ × 2″	5/8″	2 3/16″	800	2781T45	10.77
8″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	1,000	2781T48	13.40
8″ × 2″	5/8″	2 3/16″	1,000	2781T47	13.20

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.
♠ Wheels with two hub lengths include a reducer bushing. First length is with bushing; second is without.

Polyurethane Wheels

- Solid blue polyurethane
- Durometer is 80D
- Temperature range is –40° to +230° F

Great for applications requiring sanitary conditions, these chemical- and oil-resistant wheels withstand extreme temperature changes and can be steam cleaned.

Maintenance-free precision ball bearings extend service life and reduce the amount of force required to get wheels rolling. Ideal in tow line and continuous-use applications.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.♠	Cap. Ea., lbs.		
With Plain Bore (No Bearings)					
3″ × 1 1/4″	3/8″, 1/2″	1 11/16″, 1 9/16″	300	2472T18	$19.77
3″ × 1 1/4″	3/4″	1 9/16″	300	2472T21	19.28
4″ × 1 1/4″	3/8″, 1/2″	1 11/16″, 1 9/16″	500	2472T22	22.76
5″ × 1 1/4″	3/8″, 1/2″	1 11/16″, 1 9/16″	700	2472T27	28.88
5″ × 1 1/4″	3/4″	1 9/16″	700	2472T29	27.53
With Plain Acetal Bearings					
4″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	700	2472T79	27.77
5″ × 2″	3/4″	2 3/16″	1,000	2472T83	32.56
6″ × 2″	3/4″	2 3/16″	1,200	2472T85	39.35
8″ × 2″	3/4″	2 3/16″	1,500	2472T87	49.74
With Straight Roller Bearings					
4″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	700	2472T95	28.71
5″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	1,000	2472T96	34.96
6″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	1,200	2472T97	41.48
8″ × 2″	1/2″, 3/4″	2 7/16″, 2 3/16″	1,500	2472T98	47.99
With Maintenance-Free Precision Ball Bearings					
3″ × 2″	1/2″	2 5/16″	900	2472T55	29.69
4″ × 1 1/4″	3/8″	1 9/16″	600	2472T56	32.00
4″ × 2″	1/2″, 3/4″	2 7/16″, 2 5/16″	950	2472T59	34.11
5″ × 1 1/4″	3/8″	1 9/16″	700	2472T58	34.49
5″ × 2″	1/2″, 3/4″	2 7/16″, 2 5/16″	1,000	2472T65	36.31
6″ × 2″	1/2″, 3/4″	2 7/16″, 2 5/16″	1,100	2472T66	43.50
8″ × 2″	1/2″, 3/4″	2 7/16″, 2 5/16″	1,200	2472T68	61.93

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.
♠ Wheels with two hub lengths include a reducer bushing. First length is with bushing; second is without.

Lightweight Polyurethane-Tread Wheels

- Gray or red polyurethane on polypropylene core
- Durometer is 85A or 95A
- Temperature range is –20° to +220° F

A lightweight core coupled with a nonmarking rounded tread allows for easy rolling and swiveling. The tread is also thicker than other polyurethane wheels. Ideal for wet conditions, wheels won't absorb water and resist most acids and many chemicals.

Plain acetal bearings won't rust, making them a good choice for washdown applications. ***Wheels with straight roller bearings*** have a grease fitting for easy maintenance, unless noted.

Wheels with 85A durometer have a gray tread and provide a cushioned ride. ***Wheels with 95A durometer*** have a red tread and are abrasion resistant. Ideal for heavier loads.

To Order: Please specify durometer: 85A or 95A.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs. 85A (Gray)	95A (Red)		
With Plain Acetal Bearings						
3″ × 15/16″	5/16″	1″	125	145	2497T121	$3.89
4″ × 15/16″	5/16″	1″	135	155	2497T122	6.11
4″ × 1 1/2″	1/2″	1 3/4″	300	400	2497T123	16.71
4″ × 2″	3/4″	2 1/4″	500	600	2497T124	18.93
5″ × 15/16″	5/16″	1 1/8″	145	165	2497T125	9.02
With Straight Roller Bearings						
4″ × 1 1/2″	1/2″	1 3/4″	300	400	2497T126★	16.63
4″ × 2″	3/4″	2 1/4″	500	600	2497T127★	18.75
5″ × 1 1/2″	5/8″	1 15/16″	350	500	2497T128	18.26
5″ × 2″	1/2″, 3/4″	2 1/4″	600	700	2497T129	20.54
6″ × 1 1/2″	5/8″	1 15/16″	420	560	2497T131	23.36
6″ × 2″	1/2″, 3/4″	2 1/4″	600	820	2497T132	24.52
6″ × 3″	1″, 1 1/4″	3 1/4″	1,200	2,250	2497T133	58.75
8″ × 2″	1/2″, 3/4″	2 1/4″	800	1,000	2497T134	30.77
8″ × 3″	1″	3 1/4″	1,360	2,250	2497T135	68.07
10″ × 2 1/2″	3/4″, 1″	2 3/4″	1,300	1,580	2497T136	61.57
10″ × 3″	1″	3 1/4″	1,700	2,250	2497T137	87.80
12″ × 3″	1″	3 1/4″	1,900	2,250	2497T138	99.74

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.
★ Does not have a grease fitting.

Cut-to-Width Polyurethane Wheels

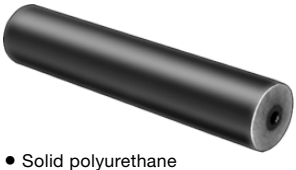

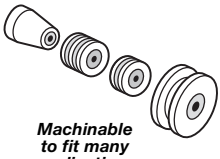

Machinable to fit many applications

- Solid polyurethane
- Durometer is 30A, 50A, 70A, or 90A
- Temperature range is –40° to +180° F

Make your own wheels. Use a band saw to cut these 20″ long blanks to desired length and trim to fit. Easily drilled and machined, you can use them as caster, V-groove, and flanged wheels, as well as for drive and conveyor idler rollers and pulleys. They resist abrasion, water, oil, and mild solvents, plus are nonmarking, exceptionally quiet, shock absorbing, and long lasting. *Note:* Do not cut with a circular saw.

Wheels with 30A durometer have an orange tread and are extra soft with gripping properties ideal for fragile loads.

Wheels with 50A durometer have a yellow tread and are comparable to soft rubber but are more resilient.

Wheels with 70A durometer have a blue tread and increased firmness but still provide a cushioned ride.

Wheels with 90A durometer have a red tread and are harder for more demanding applications.

To Order: Please specify durometer: 30A, 50A, 70A, or 90A.

Dia.	For Axle Dia.		
With Plain Bore (No Bearings)			
1 1/2″	3/8″	2292T31	$124.79
1 1/2″	1/2″	2292T32	118.26
2″	3/8″	2292T34	162.28
2″	1/2″	2292T45	154.11
2″	5/8″	2292T46	154.66
2″	3/4″	2292T47	146.22
2 1/2″	1/2″	2292T49	222.81
2 1/2″	3/4″	2292T52	208.65
3″	1/2″	2292T54	239.20
3″	5/8″	2292T55	229.66
3″	3/4″	2292T56	218.30
4″	1/2″	2292T63	322.98
4″	3/4″	2292T65	307.86
5″	1″	2292T72	438.19

For information about wheels, see page 1316.

Premium Polyurethane-Tread Wheels

- Premium red or purple polyurethane on cast iron core
- Durometer is 84A or 93A
- Temperature range is –20° to +175° F

These premium polyurethane-tread wheels last longer and roll more easily than other polyurethane-tread wheels. Maintenance-free precision ball bearings extend service life and reduce the amount of force required to get wheels rolling.

Wheels with 84A durometer are softer for a more cushioned ride and won't collect debris.

Wheels with 93A durometer are extra durable for a much longer life than standard polyurethane wheels.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
With Maintenance-Free Precision Ball Bearings and Red Tread— *Durometer is 84A*					
4″ × 2″	1/2″	2 7/16″	600	2211T21	$51.24
5″ × 2″	1/2″	2 7/16″	840	2211T12	55.56
6″ × 2″	1/2″	2 7/16″	960	2211T13	60.18
6″ × 3″	3/4″	3 1/2″	1,640	2211T15	84.38
8″ × 2″	1/2″	2 7/16″	1,240	2211T14	65.29
8″ × 3″	3/4″	3 1/2″	2,000	2211T26	99.74

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
With Maintenance-Free Precision Ball Bearings and Purple Tread— *Durometer is 93A*					
4″ × 2″	1/2″	2 1/4″	1,200	2147T31	$62.94
5″ × 2″	1/2″	2 1/4″	1,125	2147T32	57.64
6″ × 2″	1/2″	2 1/4″	1,400	2147T33	75.74
6″ × 3″	3/4″, 1″	3 1/4″	2,100	2147T44	107.56
8″ × 2″	1/2″	2 1/4″	2,000	2147T35	87.16
8″ × 3″	3/4″, 1″	3 1/4″	2,800	2147T36	150.44
10″ × 3″	3/4″, 1″	3 1/4″	3,500	2147T37	180.28
12″ × 3″	3/4″, 1″	3 1/4″	4,000	2147T48	253.06

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.

Polyurethane-Tread Wheels

- Blue or red polyurethane on cast iron core
- Durometer is 95A
- Temperature range is –20° to +175° F

Impact Absorbing

Smooth rolling and strong, these wheels have higher capacities than rubber wheels. They resist abrasion, chipping, splitting, most chemicals, oil, and solvents. Plus, they roll quietly and are nonmarking.

Wheels with tapered roller bearings can handle heavy loads. Recommended for towing applications.

Impact-absorbing wheels have an angled web-and-spoke design. They deflect when rolling over obstacles and then spring back into place to reduce impact and vibration.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
With Straight Roller Bearings and Blue Tread					
3″ × 1 1/4″	1/2″	1 1/2″	290	2351T97	$13.62
3 1/2″ × 1 1/4″	1/2″	1 1/2″	320	2351T98	15.36
4″ × 1 1/4″	1/2″	1 1/2″	350	2351T99	19.06
4″ × 1 1/2″	1/2″, 3/4″	1 5/8″	675	2351T91	22.32
4″ × 1 1/2″	5/8″	1 5/8″	675	2351T1	21.80
4″ × 2″	1/2″, 3/4″	2 3/16″	750	2351T79	25.83
4″ × 2″	5/8″	2 3/16″	750	2351T12	24.94
5″ × 1 1/2″	1/2″, 3/4″	1 7/8″	700	2351T93	24.65
5″ × 1 1/2″	5/8″	1 5/8″	700	2351T73	24.36
5″ × 2″	1/2″, 3/4″	2 3/16″	1,050	2351T21	27.49
5″ × 2″	5/8″	2 3/16″	1,000	2351T22	28.29
6″ × 1 1/2″	1/2″, 3/4″	1 7/8″	825	2351T95	32.53
6″ × 1 1/2″	5/8″	1 5/8″	825	2351T17	32.51
6″ × 2″	1/2″, 3/4″	2 3/16″	1,200	2351T71	36.76
6″ × 2″	5/8″	2 3/16″	1,200	2351T72	37.10
6″ × 2 1/2″	3/4″, 1″	2 3/4″	1,600	2351T34	47.66
6″ × 3″	3/4″, 1″	3 1/4″	2,050	2351T32	49.74
6″ × 3″	1″, 1 1/4″	3 1/4″	2,050	2351T45	54.64
8″ × 2″	1/2″, 3/4″	2 3/16″	1,550	2351T23	38.79
8″ × 2″	5/8″	2 3/16″	1,550	2351T41	39.21
8″ × 2″	7/8″	2 3/16″	1,260	2351T42	47.43
8″ × 2″	1″	2 3/16″	1,500	2351T36	47.43

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
With Straight Roller Bearings and Blue Tread (Cont.)					
8″ × 2 1/2″	3/4″, 1″	3″	2,050	2351T81	$69.20
8″ × 3″	3/4″, 1″	3 1/4″	2,500	2351T53	75.75
8″ × 3″	1″, 1 1/4″	3 1/4″	2,500	2351T46	77.09
10″ × 2 1/2″	3/4″, 1″	3″	2,500	2351T37	90.68
10″ × 2 1/2″	1″, 1 1/4″	3″	2,500	2351T39	98.14
10″ × 3″	3/4″, 1″	3 1/4″	3,000	2351T54	88.16
10″ × 3″	1″, 1 1/4″	3 1/4″	3,000	2351T48	87.93
12″ × 2 1/2″	3/4″, 1″	3″	2,700	2351T85	110.68
12″ × 3″	3/4″, 1″	3 1/4″	3,500	2351T18	131.85
12″ × 3″	1″, 1 1/4″	3 1/4″	3,500	2351T61	136.13
With Tapered Roller Bearings and Dark Red Tread					
8″ × 2″	3/4″	2 7/16″	1,500	2505T81	75.23
8″ × 3″	3/4″, 1″	3 1/2″	3,100	2505T91	108.32
8″ × 4″	1″, 1 1/4″	4 1/2″	3,800	2505T92	138.67
10″ × 3″	3/4″, 1″	3 1/2″	3,700	2505T85	130.22
10″ × 3″	1″, 1 1/4″	3 1/2″	3,700	2505T93	155.09
10″ × 4″	1″, 1 1/4″	4 1/2″	5,000	2505T94	182.73
Impact-Absorbing with Tapered Roller Bearings and Red Tread					
6″ × 2″	1/2″, 3/4″	2 7/16″	1,000	5002T63	99.74
8″ × 2″	3/4″	2 7/16″	1,200	5002T64	112.96
8″ × 3″	3/4″	3 1/2″	1,600	5002T42	135.91
10″ × 3″	3/4″	3 1/2″	2,000	5002T43	170.04

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.

Lightweight Aluminum-Core Polyurethane-Tread Wheels

- Polyurethane on aluminum core
- *Single Wheels*: Tread is red
- *Dual Wheels*: Tread is blue
- *Single Wheels*: Durometer is 55D
- *Dual Wheels*: Durometer is 95A
- Temperature range is –30° to +180° F

Single Wheel

Dual Wheel

All the benefits of a polyurethane tread plus a lightweight aluminum core.

Dual wheels rotate in opposite directions when you turn for better maneuverability than single wheels. Using narrow wheels, this unique design results in wheels with hub lengths comparable to single wheels with the same diameter. Maintenance-free precision ball bearings extend service life and reduce the amount of force required to get wheels rolling.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
Single Wheels					
With Straight Roller Bearings					
4″ × 2″	1/2″, 3/4″	2 7/16″	700	2438T41	$20.12
5″ × 2″	1/2″, 3/4″	2 7/16″	850	2438T42	21.10
6″ × 2″	1/2″, 3/4″	2 7/16″	900	2438T43	24.29
8″ × 2″	1/2″, 3/4″	2 7/16″	1,350	2438T44	32.24
10″ × 2 1/2″	3/4″, 1″	3″	1,900	2438T45	85.33
12″ × 3″	3/4″, 1″	3 1/2″	2,500	2438T46	139.43

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
Dual Wheels					
With Maintenance-Free Precision Ball Bearings					
4″ × 2″	1/2″	2 1/2″	900	2235T61	$55.27
6″ × 2″	1/2″	2 1/2″	1,900	2235T62	68.80
8″ × 2″	1/2″	2 1/2″	3,000	2235T63	77.31

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.

Polyurethane-Tread Wheels

For information about wheels, see page 1316.

Easy-Turn Polyurethane-Tread Wheels

Single Wheel *Dual Wheel*

- Polyurethane on aluminum core
- *Single Wheels*: Tread is red
- *Dual Wheels*: Tread is blue
- Durometer is 95A
- Temp. range is –30° to +180° F

A rounded tread allows these wheels to roll and swivel on carpets more easily than flat-tread wheels. Wheels are chemical and oil resistant.

Maintenance-free precision ball bearings extend service life and reduce the amount of force required to get wheels rolling. ***Dual wheels*** rotate in opposite directions when you turn for better maneuverability than single wheels. Using narrow wheels, this design results in wheels with hub lengths comparable to single wheels with the same diameter.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
Single Wheels					
With Ball Bearings					
4″ × 1½″	⅜″	1¾″	400	**2286T51**	$42.09
5″ × 1½″	⅜″	1¾″	525	**2286T55**	45.66
10″ × 1⅝″	⅝″	2½″	1,200	**2286T72**	86.14
10″ × 1⅝″	¾″	2½″	1,200	**2286T73**	86.14
With Maintenance-Free Precision Ball Bearings					
4″ × 1½″	½″	1¾″	400	**2286T52**	48.00
5″ × 1½″	½″	1¾″	525	**2286T56**	51.59
6″ × 1 15/16″	½″	2¼″	950	**2286T63**	65.58
8″ × 1⅝″	½″	2″	1,000	**2286T66**	73.94
8″ × 1⅝″	⅝″	2″	1,000	**2286T67**	73.94
8″ × 1 15/16″	⅝″	2¼″	1,300	**2286T69**	91.39
8″ × 1 15/16″	¾″	2¼″	1,300	**2286T71**	91.39
Dual Wheels					
With Maintenance-Free Precision Ball Bearings					
4″ × 2″	½″	2½″	500	**2235T64**	55.27
6″ × 2″	½″	2½″	1,100	**2235T65**	68.80
8″ × 2″	½″	2½″	2,400	**2235T66**	77.31

Quick-Turn Polyurethane-Tread Wheels

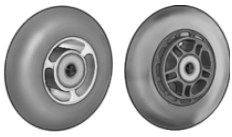

Aluminum Core *Glass-Filled Urethane Core*

- Orange polyurethane on aluminum core
- Blue polyurethane on glass-filled urethane core
- Durometer is 74A, 75A, or 84A
- Temp. range is –50° to +150° F

Similar to scooter wheels, these wheels have a rounded tread for easier turning and swiveling than flat-tread wheels.

Tread is resistant to oil, grease, some solvents, and mild acids. Maintenance-free precision ball bearings extend service life and reduce the amount of force required to get wheels rolling.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
Aluminum Core					
With Maintenance-Free Precision Ball Bearings—Durometer is 74A					
2⅞″ × 1″	5/16″	1″	200	**8823T31**	$20.58
3″ × 1″	5/16″	1″	230	**8823T32**	21.42
3 3/16″ × 1″	5/16″	1″	260	**8823T33**	22.23
With Maintenance-Free Precision Ball Bearings—Durometer is 84A					
3 15/16″ × 1″	5/16″	1″	325	**8823T34**	23.07
4⅜″ × 1″	5/16″	1″	375	**8823T35**	23.91
Glass-Filled Urethane Core					
With Maintenance-Free Precision Ball Bearings—Durometer is 75A					
2⅜″ × 1″	5/16″	1″	200	**8946T61**★	11.38
2 11/16″ × 1″	5/16″	1″	240	**8946T62**★	12.22
2⅞″ × 1″	5/16″	1″	230	**8946T63**	13.04
3″ × 1″	5/16″	1″	250	**8946T64**	13.87
3 3/16″ × 1″	5/16″	1″	275	**8946T65**	14.71
3 15/16″ × 1″	5/16″	1″	340	**8946T66**	15.56
4⅜″ × 1″	5/16″	1″	375	**8946T67**	16.40

★ Has a solid core.

Polyurethane-Tread Pallet and Lift Truck Wheels

3″ Dia. BT Truck Wheel with Bearings

3 1/4″ Dia. × 3 1/4″ Wd. Crown Truck Wheel Only

8″ Dia. Multiton Truck Wheel Only

8″ Dia. Rol-Lift Truck Wheel with Bearings

- Polyurethane on steel core
- Durometer is 90A
- Temperature range is –20° to +140° F

These wheels are made for specific pallet and lift trucks. While the wheel sizes may appear similar to other truck models, each wheel is specially machined to fit specific bearings. All resist abrasion, oil, and grease. ***Wheels with bearings*** have maintenance-free precision ball bearings that extend service life and reduce the amount of force required to get wheels rolling.

Note: Before ordering, refer to the owner's manual of your pallet or lift truck to determine the manufacturer's part number. Then find that number listed in the table.

Also Available: Replacement bearings as well as other manufacturers' wheels or sizes not shown. For replacement bearings, please ask for 2670T222 and specify the McMaster-Carr part number for the wheel only. For wheels not shown, please ask for 2670T999 and specify the manufacturer's name and part number and the wheel size.

Wheel Size, Dia. × Wd.	Manufacturers' Part Numbers	***Wheels Only***		***Wheels with Bearings*** For Axle Dia.		
BT Trucks						
3″ × 3¾″	15881, 126728, 131688, 167609	—	—	0.669″	**2670T166**	$39.51
3⅜″ × 3 15/16″	10100, 10265, 33010, 47153, 47963	**2670T14**	$40.40	0.787″	**2670T111**♣	39.40
7″ × 2 9/32″	47146, 47974, 102664, 102665	**2670T61**	94.62	0.787″	**2670T113**♦	77.89
Crown Trucks						
3″ × 3⅞″	44506, 44507, 44725	**2670T45**	22.11	0.787″	**2670T58**	31.00
3¼″ × 3¼″	77084, 82740	**2670T65**	38.35	0.984″	**2670T117**	32.80
3¼″ × 3⅞″	40076, 82283-1, 82284, 82285, 83879	**2670T75**	25.85	0.787″	**2670T137**	35.04
3¼″ × 4½″	83968, 83970	**2670T67**	36.25	1.18″	**2670T119**	45.44
3¼″ × 6½″	100462, 100611	**2670T167**	46.50	0.984″	**2670T168**	53.21
4″ × 2½″	83179	**2670T68**	32.83	0.984″	**2670T121**	33.62
7″ × 2″	44495, 44496, 44497, 44498	**2670T46**	44.33	0.787″	**2670T59**	55.22
8″ × 2″	41269, 41275, 41276, 41277	**2670T176**	40.84	0.787″	**2670T177**	52.84
Hyster Trucks						
3¼″ × 3¼″	350561, 354575	**2670T81**	30.96	0.984″	**2670T123**	33.00
4″ × 2⅞″	1032195, 1195959, 1196530	**2670T94**	23.49	0.984″	**2670T142**	34.33
5″ × 2⅞″	365649, 1196604, 3005984	**2670T95**	38.91	0.984″	**2670T143**	49.76
6″ × 3″	252275, 1033557, 1151016, 1195247	**2670T56**	68.01	0.984″	**2670T131**	62.44
Lift-Rite Trucks						
3″ × 3⅞″	10210, 312734	**2670T146**	19.89	0.787″	**2670T147**	26.11
8″ × 2″	10236B	**2670T148**	39.98	0.984″	**2670T149**	47.11
Multiton Trucks						
3¼″ × 3⅞″	325P, 90304	**2670T75**	25.85	0.787″	**2670T137**	35.04
8″ × 2″	800P, 90100, 90423	**2670T176**	40.84	0.787″	**2670T177**	52.84
Prime Mover Trucks						
3¼″ × 5″	23041-00	**2670T72**	35.83	0.984″	**2670T138**	38.29
3¼″ × 6″	B27626-01, B27636-01	**2670T73**	41.55	0.984″	**2670T139**	39.73
Raymond Trucks						
3¼″ × 5 15/16″	632-069, 633-069	**2670T83**	39.87	0.984″	**2670T141**▲	49.47
4″ × 2⅞″	632-030, 632-031, 633-031	**2670T94**	23.49	0.984″	**2670T142**	34.33
5″ × 2⅞″	632-043, 640-070, 928-603	**2670T95**	38.91	0.984″	**2670T143**	49.76
Rol-Lift Trucks						
3¼″ × 3 11/16″	RL31, T42A	**2670T77**	28.12	0.750″	**2670T135**♥	36.68
8″ × 2″	3-91002, RL32, T23A	**2670T79**	41.84	0.750″	**2670T136**	60.42
Yale Trucks						
3¼″ × 4½″	650546, 0652696-00, 0655092-00	**2670T151**	40.49	0.669″	**2670T152**	34.40
3⅜″ × 2¾″	1213591, 5013380, 6057853	**2670T43**	30.21	0.984″	**2670T133**	30.53

♣ Wheel size is 3¼″ Dia. × 3⅞″ Wd. ♦ Width is 2⅜″. ▲ Width is 6″. ♥ Width is 3⅞″.

For information about wheels, see page 1316.

Rubber Wheels

Rubber Wheels—For general-purpose use. Temperature range is –40° to +120° F.

Conductive Rubber Wheels—Prevent static buildup. They have a surface resistance of less than 10^6 ohms. Temperature range is –40° to +180° F. Meet Fed. Spec. FF-C-77/FF-C-86.

Neoprene Rubber Wheels—Resistant to oil, chemicals, solvents, and acid. They are more resilient and deteriorate more slowly than natural rubber. Wheels have debris guards (unless noted) to protect the bearings from contamination for longer service life. Temperature range is –20° to +180° F.

Cushion tread wheels provide quiet mobility and floor protection. ***Hard tread wheels*** have higher capacities and roll more easily than cushion-tread wheels.

Rubber

Neoprene Rubber

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
Rubber with Plain Nylon Bearings					
Black Cushion Tread—*Durometer is 75A*					
1⅝″ × ¾″	7/32″	¾″	70	2337T1	$1.48
2″ × ⅞″	¼″	15/16″	80	2337T2	2.25
2½″ × 15/16″	¼″	15/16″	90	2337T45	1.47
2½″ × 1⅛″	5/16″	1⅜″	100	2337T32	1.76
3″ × 15/16″	¼″	15/16″	100	2337T41	1.90
3″ × 1¼″	⅜″	1½″	175	2337T33	2.51
3½″ × 15/16″	⅜″	1 9/16″	200	2337T34	3.06
4″ × 15/16″	5/16″	1 3/16″	125	2337T42	2.79
4″ × 1¼″	⅜″	1½″	200	2337T35	3.53
4″ × 1⅝″	7/16″	1 15/16″	240	2337T37	4.34
5″ × 15/16″	5/16″	1 3/16″	135	2337T43	3.72
5″ × 1¼″	⅜″	1½″	210	2337T38	5.38
5″ × 1½″	⅝″	1 15/16″	300	2337T39	6.79
Black Hard Tread—*Durometer is 75D*					
2″ × 15/16″	¼″	15/16″	90	2337T18	1.27
2½″ × 15/16″	¼″	15/16″	100	2337T46	2.11
3″ × 15/16″	¼″	15/16″	125	2337T21	2.29
3″ × 1¼″	⅜″	1½″	270	2337T13	2.53
4″ × 15/16″	5/16″	1 3/16″	150	2337T23	3.06
4″ × 1¼″	⅜″	1½″	280	2337T24	4.37
5″ × 15/16″	5/16″	1 3/16″	160	2337T25	4.13
5″ × 1¼″	⅜″	1½″	290	2337T26	6.20
Gray Hard Tread—*Durometer is 75D*					
2½″ × 1⅛″	5/16″	1⅜″	200	2337T12	2.52
3½″ × 15/16″	⅜″	1 9/16″	275	2337T22	4.02
4″ × 1⅝″	7/16″	1 15/16″	420	2337T17	6.35
5″ × 1½″	⅝″	1 15/16″	450	2337T19	9.30
Conductive Rubber with Plain Metal Bearings					
Black Cushion Tread—*Durometer is 78A*					
2″ × 15/16″	¼″	15/16″	75	2328T71	2.61
2½″ × 15/16″	¼″	15/16″	90	2328T75	3.27
3″ × 15/16″	¼″	15/16″	100	2328T72	3.47
3″ × 1¼″	⅜″	1½″	175	2328T79	5.82

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
Conductive Rubber with Plain Metal Bearings					
Black Cushion Tread—*Durometer is 78A (Cont.)*					
4″ × 15/16″	5/16″	1 3/16″	125	2328T73	$7.13
4″ × 1¼″	⅜″	1½″	200	2328T77	10.36
5″ × 15/16″	5/16″	1 3/16″	135	2328T74	9.81
5″ × 1¼″	⅜″	1½″	210	2328T78	11.79
Neoprene Rubber with Plain Acetal Bearings					
Black Cushion Tread—*Durometer is 78A*					
2½″ × 1¼″	⅜″, ½″	1½″	200	8369T62	12.18
3½″ × 1¼″	⅜″, ½″	1½″	200	8369T66	13.18
Black Hard Tread—*Durometer is 90A*					
2½″ × 1¼″	⅜″, ½″	1½″	250	8369T63	12.97
3½″ × 1¼″	⅜″, ½″	1½″	250	8369T67	13.81
Neoprene Rubber with Ball Bearings					
Black Cushion Tread—*Durometer is 78A*					
2″ × ⅞″	⅜″	1″	110	8369T14▲	7.14
2½″ × ⅞″	⅜″	1″	110	8369T16▲	7.39
2½″ × 1¼″	⅜″	1½″	200	8369T18	10.90
3″ × ⅞″	5/16″	1⅛″	125	8369T21	8.73
3″ × 1¼″	⅜″	1½″	200	8369T23	14.59
3½″ × 1¼″	⅜″	1½″	200	8369T57	15.19
4″ × ⅞″	5/16″	1⅛″	125	8369T2	12.48
4″ × 1¼″	⅜″	1½″	200	8369T4	16.91
5″ × 1¼″	⅜″	1½″	200	8369T6	21.27
Black Hard Tread—*Durometer is 90A*					
2″ × ⅞″	⅜″	1″	120	8369T15▲	7.70
2½″ × ⅞″	⅜″	1″	120	8369T17▲	7.62
2½″ × 1¼″	⅜″	1½″	250	8369T19	10.68
3″ × ⅞″	5/16″	1⅛″	135	8369T22	9.01
3″ × 1¼″	⅜″	1½″	250	8369T24	15.26
3½″ × 1¼″	⅜″	1½″	250	8369T58	17.10
4″ × ⅞″	5/16″	1⅛″	135	8369T3	12.81
4″ × 1¼″	⅜″	1½″	250	8369T5	17.31
5″ × 1¼″	⅜″	1½″	250	8369T7	22.09

■ Wheels with two axle diameters include a reducer bushing. First dia. is with bushing; second is without.
▲ Does not have debris guards.

Performance Rubber-Tread Wheels

- Gray (unless noted) thermoplastic rubber (TPR) on polypropylene core
- Durometer is 65A
- Temperature range is –45° to +120° F

Roll over debris—even metal shavings and chips—without these wheels breaking apart. They are nonmarking and resist chemicals, water, and steam. The soft tread provides a more cushioned ride yet is easier to roll than other rubber-tread wheels.

⅞″ to 1¼″ Wide Wheels

1½″ to 3″ Wide Wheels

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.♠	Cap. Ea., lbs.		
With Plain Acetal Bearings					
1⅝″ × ⅞″	5/16″	11/32″	60	2829T27	$2.38
2″ × ⅞″	5/16″	11/32″	75	2829T421	2.38
2½″ × 1¼″	⅜″, ½″	1½″, 17/16″	140	2829T67	5.70
3″ × ⅞″	5/16″, 7/16″	17/64″, 11/32″	125	2829T52	4.40
3″ × 1½″	½″, ¾″	27/16″, 1⅝″	250	2829T11	11.54
3½″ × 1¼″	⅜″, ½″	1½″, 17/16″	250	2829T54	6.40
4″ × ⅞″	5/16″, 7/16″	17/64″, 11/32″	135	2829T68	7.20
4″ × 1¼″	⅜″, ½″	1½″, 17/16″	300	2829T56	8.10
4″ × 1½″	½″, ¾″	27/16″, 1⅝″	325	2829T12	11.50
4″ × 2″	½″, ¾″	27/16″, 2 3/16″	350	2829T58	12.62
5″ × ⅞″	5/16″, 7/16″	1⅛″, 11/32″	145	2829T59	7.20
5″ × 1¼″	⅜″, ½″	1½″, 17/16″	325	2829T61	9.90
5″ × 1½″	½″, ¾″	27/16″, 1⅝″	350	2829T13	14.40
5″ × 2″	½″, ¾″	27/16″, 2 3/16″	375	2829T63	16.04
6″ × 1½″	½″, ¾″	27/16″, 1⅝″	375	2829T14	16.10
6″ × 2″	½″, ¾″	27/16″, 2 3/16″	600	2829T422	17.32
8″ × 1½″	½″, ¾″	27/16″, 1⅝″	500	2829T423	24.70
8″ × 2″	½″, ¾″	27/16″, 2 3/16″	675	2829T424	20.50
With Straight Roller Bearings					
3″ × 1½″	⅜″, ¾″	1⅞″, 1⅝″	250	2829T16	12.58
3″ × 1½″	½″, ¾″	27/16″, 1⅝″	250	2829T17	13.02

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.♠	Cap. Ea., lbs.		
With Straight Roller Bearings (Cont.)					
4″ × 1½″	⅜″, ¾″	1⅞″, 1⅝″	325	2829T18	$13.18
4″ × 1½″	½″, ¾″	27/16″, 1⅝″	325	2829T19	12.20
4″ × 2″	½″, ¾″	27/16″, 2 3/16″	350	2829T85	14.34
5″ × 1½″	⅜″, ¾″	1⅞″, 1⅝″	350	2829T21	15.26
5″ × 1½″	½″, ¾″	27/16″, 1⅝″	350	2829T22	15.00
5″ × 2″	½″, ¾″	27/16″, 2 3/16″	375	2829T88	17.88
6″ × 1½″	⅜″, ¾″	1⅞″, 1⅝″	375	2829T23	17.76
6″ × 1½″	½″, ¾″	27/16″, 1⅝″	375	2829T24	17.70
6″ × 2″	½″, ¾″	27/16″, 2 3/16″	600	2829T42	19.60
8″ × 1½″	½″, ¾″	27/16″, 1⅝″	500	2829T25	25.56
8″ × 2″	½″, ¾″	27/16″, 2 3/16″	675	2829T43	21.10
10″ × 2½″	¾″, 1″	3½″, 3¼″	1,000	2829T98★	56.86
12″ × 3″	¾″, 1″	3½″, 3¼″	1,700	2829T99★	68.14
With Ball Bearings					
2½″ × 1¼″	⅜″	1½″	140	2829T15	6.40
3½″ × 1¼″	⅜″	1½″	250	2829T72	8.50
4″ × 1¼″	⅜″	1½″	300	2829T73	10.30
5″ × 1¼″	⅜″	1½″	325	2829T74	12.30

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.
♠ Wheels with two hub lengths include a reducer bushing. First length is with bushing; second is without. ★ Tread is black.

For information about wheels, see page 1316.

Easy-Roll Rubber-Tread Wheels

3½″ to 6″ Dia.

- Blue rubber on nylon core
- Durometer is 70A
- Temperature range is –40° to +200° F

Resilient rubber tread rebounds quickly, so you can roll and turn easily on most surfaces. The maintenance-free precision ball bearings require minimal effort to get these wheels rolling.

8″ to 10″ Dia.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
3½″ × 1¼″	⅜″	1⅝″	225	2439T41	$7.23
4″ × 1¼″	⅜″	1⅝″	250	2439T42	12.44
4″ × 2″	½″	2 7/16″	400	2439T61	10.38
5″ × 1¼″	⅜″	1⅝″	250	2439T43	14.80
5″ × 2″	½″	2 7/16″	500	2439T62	12.61
6″ × 1¼″	⅜″	1⅝″	300	2439T44	13.96
6″ × 2″	½″	2 7/16″	600	2439T63	16.80
8″ × 2″	⅝″	2″	600	2439T65	23.86
8″ × 2″	½″	2 7/16″	700	2439T64	22.86
10″ × 2″	⅝″	2½″	800	2439T66	27.43

Super-Soft Rubber-Tread Wheels

- Gray thermoplastic rubber (TPR) on polypropylene core
- Durometer is 40A
- Temperature range is –40° to +180° F

Extra-soft thermoplastic rubber provides superior cushioning and a quieter ride than other rubber wheels. Tread is nonmarking. Great for light duty applications.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.♠	Cap. Ea., lbs.		
With Plain Bore (No Bearings)					
3″ × 1″	5/16″	1 3/16″	100	2243T21	$4.62
4″ × 1″	5/16″	1 3/16″	110	2243T22	5.45
5″ × 1″	5/16″	1 3/16″	120	2243T23	6.25
With Straight Roller Bearings					
4″ × 2″	½″, ¾″	2½″, 2 3/16″	225	2243T41	15.00
5″ × 2″	½″, ¾″	2½″, 2 3/16″	250	2243T42	20.00
6″ × 2″	½″, ¾″	2½″, 2 3/16″	275	2243T43	23.57
8″ × 2″	½″, ¾″	2½″, 2 3/16″	325	2243T44	24.62
With Ball Bearings					
2½″ × 1⅜″	⅜″, ½″	1⅝″, 1 9/16″	125	2243T31	7.62
5″ × 1¼″	⅜″, ½″	1⅝″, 1 9/16″	160	2243T32	8.60

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.
♠ Wheels with two hub lengths include a reducer bushing. First length is with bushing; second is without.

Rubber-Tread Wheels

Spoked Center

Solid Center

- Black rubber on cast iron core
- *Standard Wheels*: Durometer is 82A (unless noted)
- *High-Capacity Wheels*: Durometer is 90A
- Temperature range is –40° to +180° F

Thanks to the rubber tread on these wheels, you get smooth rolling on rough surfaces. ***High-capacity wheels*** support more weight, resist heat buildup, and are abrasion resistant.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
Standard Wheels with Straight Roller Bearings					
Spoked Center					
4″ × 2″	½″, ¾″	2 7/16″	350	2319T14★	$15.00
4″ × 2″	⅝″	2 3/16″	350	2319T15★	9.00
5″ × 1½″	½″, ¾″	1⅝″	350	2319T77	11.45
5″ × 1½″	⅝″	1⅝″	350	2319T97	10.91
5″ × 2″	½″, ¾″	2 7/16″	400	2319T42★	18.67
5″ × 2″	⅝″	2 3/16″	400	2319T91★	10.94
6″ × 1½″	½″, ¾″	1⅝″	440	2319T27	18.30
6″ × 1½″	⅝″	1⅝″	440	2319T28	14.61
6″ × 2″	½″, ¾″	2 7/16″	400	2319T92★	19.86
6″ × 2″	⅝″	2 3/16″	410	2319T32★	10.98
8″ × 2″	½″, ¾″	2 7/16″	450	2319T96★	24.73
8″ × 2″	⅝″	2 3/16″	500	2319T95★	15.84
8″ × 2″	⅞″	2¼″	500	2319T62★	24.77
16″ × 3″	1″	3¼″	1,500	2319T81	140.57
16″ × 5″	2″	5¼″	2,570	2319T83	217.67
Solid Center					
3¼″ × 1½″	¾″	1⅝″	140	2319T94	13.70
4″ × 1½″	½″, ¾″	1⅝″	250	2319T11	11.54
4″ × 1½″	⅝″	1⅝″	250	2319T12	8.91
6″ × 3″	1″	3¼″	750	2319T43	35.05
7″ × 2½″	1″	2¾″	800	2319T51	45.04
8″ × 2″	1″	2 3/16″	600	2319T63	28.76
8″ × 2½″	⅝″, ⅞″	2¾″	670	2319T64	45.73
8″ × 2½″	¾″	2¾″	850	2319T65	53.26
8″ × 2½″	1″, 1¼″	3¼″	850	2319T29	47.72
8″ × 3″	1″, 1¼″	3¼″	900	2319T321	62.92
10″ × 2½″	¾″	2¾″	950	2319T98	55.98
10″ × 2½″	⅞″	2¾″	950	2319T88	56.00
10″ × 2½″	1⅛″	2¾″	790	2319T252★	47.82
10″ × 2½″	1″, 1¼″	2¾″	790	2319T331	56.08
10″ × 3″	1″, 1¼″	3¼″	1,000	2319T341	61.73

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
Standard Wheels with Straight Roller Bearings (Cont.)					
Solid Center (Cont.)					
12″ × 2½″	⅞″, 1″	2¾″	900	2319T44	$99.74
12″ × 2½″	1″, 1¼″	2¾″	900	2319T54	78.59
12″ × 3″	1″, 1¼″	3¼″	1,200	2319T61	73.31
12″ × 4″	1¼″	4¼″	1,600	2319T55	107.60
14″ × 2½″	1″	2¾″	1,100	2319T7	101.51
14″ × 2½″	1¼″	2¾″	1,100	2319T71	101.51
High-Capacity Wheels with Straight Roller Bearings					
Spoked Center					
5″ × 1½″	½″, ⅝″	1⅝″	560	8368T13	18.51
5″ × 2″	½″, ⅝″	2 3/16″	700	8368T56	22.83
5″ × 2″	½″, ¾″	2 3/16″	700	8368T18	22.83
6″ × 2″	½″, ⅝″	2 3/16″	820	8368T57	25.41
6″ × 2″	½″, ¾″	2 3/16″	820	8368T25	25.41
8″ × 2″	½″, ¾″	2 3/16″	1,000	8368T32	25.23
8″ × 2″	⅝″	2 3/16″	1,000	8368T31	25.68
8″ × 2″	⅞″	2 3/16″	1,000	8368T33	25.84
Solid Center					
3¼″ × 1½″	½″, ¾″	1⅝″	340	8368T11	17.87
4″ × 1½″	½″, ¾″	1⅝″	400	8368T12	15.38
7″ × 1⅝″	⅝″	2″	760	8368T27	33.47
7″ × 1⅝″	¾″	2″	760	8368T28	33.47
8″ × 2″	1″	2 3/16″	1,000	8368T34	28.52
8″ × 2½″	⅞″	2¾″	1,300	8368T35	55.95
8″ × 2½″	1″	2¾″	1,300	8368T36	59.42
10″ × 2½″	⅞″	2¾″	1,500	8368T37	65.47
10″ × 2½″	1″	2¾″	1,500	8368T38	65.47
10″ × 3″	1″	3¼″	1,800	8368T41	74.00
12″ × 2½″	1″	2¾″	1,700	8368T43	85.55
12″ × 2½″	1¼″	2¾″	1,700	8368T45	89.97
16″ × 3″	1¼″	3″	2,500	8368T48	174.56

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without. ★ Durometer is 96A.

For information about wheels, see page 1316.

Lightweight Aluminum-Core Rubber-Tread Wheels

Thin Tread

Standard Tread

These economical wheels have a black tread and a lightweight aluminum core that handles high capacities and is corrosion resistant. All have a solid core (unless noted).

Wheels with thin rubber tread deflect less and require less effort to roll than standard-tread wheels. Durometer is 70A (unless noted). Temperature range is –20° to +160° F.

Wheels with standard rubber tread provide a cushioned ride on any surface. Durometer is 70A. Temperature range is –20° to +160° F.

Maintenance-free precision ball bearings eliminate axle wear and provide smoother rolling than straight roller bearings. They also extend service life and reduce the amount of force required to get wheels rolling.

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.	Cap. Ea., lbs.		
Thin Rubber Tread					
With Straight Roller Bearings					
4″ × 2″	1/2″, 3/4″	2 3/16″	400	**22865T11**	$34.70
5″ × 1 1/2″	1/2″, 3/4″	1 3/4″	270	**2354T51**	27.50
5″ × 1 1/2″	5/8″	1 3/4″	270	**2354T52**	24.58
6″ × 1 1/2″	1/2″, 3/4″	1 3/4″	325	**2354T53**	29.33
6″ × 1 1/2″	5/8″	1 3/4″	325	**2354T54**	26.42
6″ × 2″	1/2″, 3/4″	2 3/16″	550	**2354T34**	34.69
6″ × 2″	5/8″	2 3/16″	460	**2354T55**	30.12
8″ × 2″	1/2″, 3/4″	2 3/16″	600	**2354T18**	43.39
8″ × 2″	5/8″, 3/4″	2 1/4″	565	**2354T56**	46.07
10″ × 2 1/2″	7/8″	2 3/4″	850	**2354T57**	55.50
10″ × 2 1/2″	1″	2 3/4″	850	**2354T58**	55.50
12″ × 2 1/2″	1″	2 3/4″	950	**2354T59**	77.86
12″ × 2 1/2″	1 1/4″	2 3/4″	950	**2354T61**	80.81
With Maintenance-Free Precision Ball Bearings					
8″ × 2″	1/2″	2 1/4″	700	**2322T93**♦	61.88
8″ × 2″	3/4″	2 1/4″	700	**2322T92**♦	61.88
8″ × 2″	1″	2 1/4″	700	**2322T94**♦	61.88
Standard Rubber Tread					
With Straight Roller Bearings					
6″ × 2″	7/8″	2 1/4″	410	**22865T14**	42.94
6″ × 2″	1″	2 1/4″	410	**22865T15**	42.94
7″ × 2″	5/8″	2 3/16″	455	**22865T16**	40.41
7″ × 2″	3/4″	2 3/16″	455	**22865T17**	40.37
8″ × 1 5/8″	5/8″	2 1/4″	350	**22865T18**	66.46
8″ × 1 5/8″	3/4″	2 1/4″	350	**22865T19**	66.46
9″ × 2″	5/8″	2 3/16″	570	**22865T24**	51.83
9″ × 2″	1″	2 3/16″	570	**22865T26**	49.23
10″ × 2″	5/8″	2 1/4″	730	**22865T27**♣	69.38
10″ × 2″	3/4″	2 1/4″	730	**22865T28**♣	69.38
10″ × 2″	1″	2 1/4″	730	**22865T31**♣	69.38
12″ × 2″	7/8″	2 1/4″	720	**22865T32**♣	96.03
12″ × 2″	1″	2 1/4″	720	**22865T33**♣	96.03
14″ × 3″	1″	3 1/4″	1,280	**22865T36**♣	166.72
14″ × 3″	1 1/4″	3 1/4″	1,280	**22865T37**♣	168.29
With Maintenance-Free Precision Ball Bearings					
3″ × 1 1/4″	1/2″	1 1/2″	150	**2322T31**	30.92
3 1/2″ × 1 1/4″	1/2″	1 1/2″	200	**2322T32**	32.19
5″ × 1 1/2″	1/2″	1 3/4″	270	**2322T1**	36.28
5″ × 1 1/2″	5/8″	1 3/4″	270	**2322T12**	36.28
5″ × 1 1/2″	3/4″	1 3/4″	270	**2322T13**	36.28
6″ × 1 1/2″	1/2″	1 3/4″	325	**2322T2**	38.58
6″ × 1 1/2″	5/8″	1 3/4″	325	**2322T15**	38.58
6″ × 1 1/2″	3/4″	1 3/4″	325	**2322T16**	38.58
6″ × 2″	1/2″	2 1/4″	460	**2322T24**	43.21
6″ × 2″	3/4″	2 1/4″	460	**2322T19**	43.21
8″ × 1 5/8″	1/2″	2″	450	**2322T39**	46.67
8″ × 1 5/8″	5/8″	2″	450	**2322T41**	46.67
8″ × 1 5/8″	3/4″	2″	450	**2322T42**	46.67
8″ × 2 1/2″	1″	2 3/4″	700	**2322T44**	78.98
10″ × 2 1/2″	5/8″	2 3/4″	850	**2322T55**	89.52
10″ × 2 1/2″	3/4″	2 3/4″	850	**2322T56**	89.52
10″ × 2 1/2″	1″	2 3/4″	850	**2322T61**	89.52
12″ × 2 1/2″	3/4″	2 3/4″	950	**2322T57**	112.51

■ Wheels with two axle diameters include a reducer bushing. First diameter is with bushing; second is without.
♦ Durometer is 63A.
♣ Has a spoked core.

Neoprene Rubber-Tread Wheels

- Black neoprene rubber on aluminum core
- Durometer is 70A
- Temperature range is –70° to +160° F

Neoprene tread resists oil, solvents, and acids. It's also more resilient and deteriorates more slowly than natural rubber. All wheels have a solid lightweight aluminum core (unless noted).

Wheel Size, Dia. × Wd.	For Axle Dia.■	Hub Lg.♠	Cap. Ea., lbs.		
With Straight Roller Bearings					
4″ × 1 1/2″	1/2″, 3/4″	1 15/16″, 1 3/4″	200	**4996T11**	$35.88
5″ × 1 1/2″	1/2″, 3/4″	1 15/16″, 1 3/4″	240	**4996T13**	39.11
6″ × 1 1/2″	1/2″, 3/4″	1 15/16″, 1 3/4″	280	**4996T15**	40.00
6″ × 1 1/2″	5/8″	1 3/4″	280	**4996T16**	36.53
6″ × 2″	1/2″, 3/4″	2 1/2″, 2 1/4″	410	**4996T17**	48.68
6″ × 2″	1″	2 1/4″	410	**4996T19**	47.92
8″ × 2″	5/8″	2 1/4″	500	**4996T22**	62.52
8″ × 2″	1/2″, 3/4″	2 1/2″, 2 1/4″	500	**4996T21**	66.02
8″ × 2″	1″	2 1/4″	500	**4996T23**	63.30
10″ × 2 1/2″	1″	2 3/4″	790	**4996T26**♣	91.69

■ Wheels with two axle dia. include a reducer bushing. First dia. is with bushing; second is without. ♠ Wheels with two hub lengths include a reducer bushing. First length is with bushing; second is without. ♣ Has a spoked core.

Cushion Rubber-Tread Wheels

Polypropylene Core

Aluminum Core

Along with offering high capacities and providing a cushioned ride, these solid black ribbed rubber-tread wheels never go flat.

Wheels with polypropylene core have a mounted tread and are dent and rust resistant. Durometer is 80A. Temp. range is –22° to +158° F. ***Wheels with aluminum core*** have a mold-on tread for increased durability. Durometer is 60A. Temp. range is –40° to +120° F.

Centered hubs are used on wheels mounted between two forks. ***Offset hubs*** are for mounting wheels to one side of an axle to provide clearance between the wheel and the equipment it is mounted to.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
Polypropylene Core					
With Centered Hub and Ball Bearings					
8″ × 2 1/4″	5/8″	2 1/2″	450	**2839T64**	$14.82
8″ × 2 1/4″	3/4″	2 1/2″	450	**2839T65**	14.82
10″ × 2 1/2″	5/8″	3 1/4″	550	**2839T55**	21.28
10″ × 2 1/2″	3/4″	3 1/4″	550	**2839T56**	21.28
12″ × 3″	3/4″	3 1/4″	850	**2839T57**	26.47
With Offset Hub and Ball Bearings					
8″ × 2 1/4″	5/8″	2 1/4″	450	**2839T66**	14.85
8″ × 2 1/4″	3/4″	2 1/4″	450	**2839T67**	14.85
10″ × 2 1/2″	5/8″	2 1/4″	550	**2839T54**	21.30
10″ × 2 1/2″	3/4″	2 1/4″	550	**2839T62**	21.30
Aluminum Core					
With Centered Hub and Straight Roller Bearings					
6″ × 2″	5/8″	2 1/4″	300	**2481T24**	33.64
6″ × 2″	3/4″	2 1/4″	300	**2481T14**	33.64
8″ × 2 1/2″	5/8″	2 1/4″	500	**2481T25**	49.09
8″ × 2 1/2″	3/4″	2 1/4″	500	**2481T15**	49.09
10″ × 2 3/4″	5/8″	2 3/4″	700	**2481T26**	64.91
10″ × 2 3/4″	3/4″	2 3/4″	700	**2481T16**	64.91
12″ × 2 3/4″	1″	3 1/4″	800	**2481T27**	125.09
12″ × 2 3/4″	1 1/4″	3 1/4″	800	**2481T28**	125.09
16″ × 4″	1″	4 1/4″	1,200	**2481T49**	246.00
16″ × 4″	1 1/4″	4 1/4″	1,200	**2481T51**	255.27

Shock-Absorbing Rubber-Tread Wheels

- Gray rubber on aluminum core
- Durometer is 62A
- Temperature range is –15° to +160° F

Also known as balloon tires, these wheels are an excellent choice for absorbing impact and reducing noise. The rubber tread is nonmarking.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
With Ball Bearings					
6″ × 2″	1/2″	2 1/4″	350	**9957T12**	$37.80
6″ × 2″	5/8″	2 1/4″	350	**9957T17**	37.80
6″ × 2″	3/4″	2 1/4″	350	**9957T11**	34.44
8″ × 2″	5/8″	2 1/4″	450	**9957T13**	47.98
8″ × 2″	3/4″	2 1/4″	450	**9957T14**	44.40
10″ × 2″	5/8″	2 1/4″	550	**9957T15**	65.73
10″ × 2″	3/4″	2 1/4″	550	**9957T16**	65.73

For information about wheels, see page 1316.

Never-Go-Flat Cushion Rubber-Tired Wheels

Smooth Rim

Lug-Type Rim

Get quality and value for light to medium duty applications. Also known as semi-pneumatic, wheels consist of a hollow-core rubber tire mounted on a steel rim. For flat-free operation, the hollow core of "dead air" (unless noted) does not require inflation and the black ribbed-rubber tread (unless noted) withstands nails, glass, and other sharp objects. The rim is made of two formed steel discs welded together. Temp. range is 20° to 120° F.

Smooth rims are perfect for lighter duty applications. ***Lug-type rims*** are formed with a series of bubble-like indentations around the outer rim, which line up with lugs in the tire. This locks the tire in place and prevents it from slipping on the rim. Ideal for medium duty applications where the wheel will be subjected to heavier loads.

Centered hubs are used on wheels mounted between two forks. ***Offset hubs*** are for mounting wheels to one side of an axle to provide clearance between the wheel and the equipment it is mounted to.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
Smooth Rims					
With Centered Hub and Ball Bearings					
6″ × 1½″	½″	1½″	55	**2331T11**	$5.42
8″ × 1¾″	½″	2″	60	**2331T15**	8.21
8″ × 1¾″	⅝″	2″	110	**2331T12**	10.23
10″ × 1¾″	½″	2″	80	**2331T23**	10.20
10″ × 1¾″	⅝″	2″	80	**2331T24**	11.02
12″ × 1¾″	½″	1⅞″	90	**2331T18**	14.48
14″ × 1¾″	⅝″	2⅛″	150	**8352T34**	19.20
14″ × 1¾″	¾″	2⅛″	150	**8352T35**	19.86
With Offset Hub and Ball Bearings					
6″ × 1½″	½″	1⅜″	55	**2331T51**♠	5.64
7″ × 1½″	½″	1⅜″	55	**2331T13**♠	6.93
8″ × 1¾″	½″	1⅜″	60	**2331T53**♠	6.98
Lug-Type Rims					
With Centered Hub and Ball Bearings					
6″ × 2″	⅝″	2¼″	225	**8352T38**♥	16.66
6″ × 2″	¾″	2¼″	225	**8352T39**♥	16.63
8″ × 2½″	⅝″	2¼″	150	**8352T16**	17.98
8″ × 2½″	¾″	2¼″	150	**8352T17**	17.98
10″ × 2¾″	⅝″	2¼″	200	**8352T24**	19.44
10″ × 2¾″	¾″	2¼″	200	**8352T26**	19.44
10″ × 2¾″	⅝″	3″	200	**8352T32**	19.44
10″ × 2¾″	¾″	3″	200	**8352T33**	19.60

♠ Wheel has a diamond tread. ♥ Wheel is solid.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.		
Lug-Type Rims					
With Centered Hub and Ball Bearings (Cont.)					
12″ × 3″	⅝″	3″	185	**8352T27**	$27.86
12″ × 3″	¾″	3″	185	**8352T28**	28.01
With Centered Hub and Straight Roller Bearings					
6″ × 1⅞″	⅝″	2¼″	225	**2336T51**♥	24.91
6″ × 1⅞″	¾″	2¼″	225	**2336T52**♥	24.04
8″ × 2½″	⅝″	2½″	350	**2336T13**	32.23
8″ × 2½″	¾″	2½″	350	**2336T14**	32.79
10″ × 2¾″	⅝″	3¼″	250	**2336T35**	25.35
10″ × 2¾″	¾″	3¼″	250	**2336T36**	26.81
10″ × 2¾″	1″	3¼″	250	**2336T37**	27.77
12″ × 3″	⅝″	3″	350	**2336T19**	38.48
12″ × 3″	¾″	3″	350	**2336T21**	39.81
12″ × 3″	1″	3″	350	**2336T22**	41.23
16″ × 4″	⅝″	6″	625	**2336T32**♥	113.58
16″ × 4″	¾″	6″	625	**2336T34**♥	113.58
16″ × 4″	1″	6″	625	**2336T41**♥	113.58
With Offset Hub and Ball Bearings					
8″ × 2½″	⅝″	2¼″	150	**8352T23**	18.02
8″ × 2½″	¾″	2¼″	150	**8352T29**	18.31
10″ × 2¾″	⅝″	2¼″	150	**8352T25**	18.98
10″ × 2¾″	¾″	2¼″	200	**8352T31**	21.00

Spoked Wheels

1

2-4

5

Tread A

Tread B

Tread C

(1&2) Never-Go-Flat Rubber-Tired Wheels— Also known as semi-pneumatic, these wheels have a thin pocket of nonpressurized air that does not require inflation. The black rubber tire resists punctures.

(3) Pneumatic Wheels— Have a single-ply black rubber tire with a rubber inner tube.

(4) Flat-Free Polyurethane-Filled Wheels— Comparable to the pneumatic wheels above but filled with polyurethane foam so they won't go flat. Have a black rubber tire with a rubber inner tube.

(5) Steel Wheels— Have all welded steel construction.

Wheel Size, Dia. × Wd.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.	Tread Style		
Never-Go-Flat Rubber-Tired Wheels						
(1) With Ball Bearings and Polypropylene Spokes and Rim						
14″ × 1¾″	½″	2 7/16″	75	A	**29635T31**	$14.66
16″ × 1¾″	½″	2 7/16″	75	A	**29635T32**	18.64
20″ × 1¾″	⅝″	2 7/16″	150	B	**29635T33**	42.77
(2) With Ball Bearings and Zinc-Plated Steel Spokes and Rim						
16″ × 1¾″	½″	2 11/16″	150	A	**2893T71**	40.65
20″ × 1¾″	⅝″	3 5/16″	150	A	**2893T72**	46.77
Pneumatic Wheels						
(3) With Ball Bearings and Zinc-Plated Steel Spokes and Rim						
20″ × 2⅛″	¾″	3 5/16″	150	C	**2875T85**	60.25
26″ × 2⅛″	¾″	4⅜″	150	C	**2875T84**	70.15
Flat-Free Polyurethane-Filled Wheels						
(4) With Ball Bearings and Zinc-Plated Steel Spokes and Rim						
20″ × 2⅛″	¾″	3 5/16″	150	C	**22585T48**	130.98
26″ × 2⅛″	¾″	4⅜″	150	C	**22585T49**	152.04
Steel Wheels						
(5) With Ball Bearings						
18″ × 2″	¾″	2¾″	200	—	**2525T11**	73.75
24″ × 2″	¾″	2¾″	200	—	**2525T12**	93.75

Inner Tubes, Sealants, Valve Caps, and Patch Kit for Pneumatic Tires

Inner Tubes

Angled Stem

Parallel Stem

Straight Stem

To find the correct size, match the tire stamping on the sidewall.

Tire Stamping	Rim Dia.	*Angled Stem*		*Parallel Stem*		*Straight Stem*	
2.80/2.50-4	4″	**4991T29**	$5.97	**4991T31**	$5.97	—	—
4.10/3.50-4	4″	**4991T32**	6.28	—	—	**4991T33**	$6.28
4.10/3.50-5	5″	**4991T34**	7.14	—	—	**4991T35**	7.14
4.10/3.50-6	6″	**4991T36**	7.12	—	—	**4991T37**	7.12
4.80/4.00-8	8″	—	—	—	—	**4991T38**	8.76
5.30/4.50-6	6″	**4991T39**	8.27	—	—	—	—
5.70/5.00-8	8″	—	—	—	—	**4991T45**	13.68
9.00/3.50-4	4″	**4991T24**	7.33	—	—	—	—

Prevent-A-Flat Sealant

Install this sealant in your tire *before* a puncture occurs. Sealant will seal a puncture up to ⅛″ dia. in tires with an inner tube and up to ¼″ in tubeless tires. Temperature range is –30° to +220° F.

	For Tires with Inner Tube		*For Tubeless Tires*	
8 oz.	**4995T4**	$9.19	**4995T1**	$9.35
16 oz.	**4995T5**	12.50	**4995T2**	14.60
32 oz.	—	—	**4995T3**	22.35

Inner Tubes with Prevent-A-Flat Sealant Installed

Replace damaged inner tubes with ones that have Prevent-A-Flat sealant already installed. To find the correct size, match the tire stamping on the sidewall.

Tire Stamping	Rim Dia.	Stem Type		
4.00/3.50-4	4″	Angled	**4991T72**	$21.60
4.10/3.50-6	6″	Angled	**4991T76**	23.97
4.80/4.00-8	8″	Straight	**4991T78**	25.60

Valve Stem Caps

Caps are made of chrome-plated brass and have a hexagon head for easy turning. Package quantity is four.

4991T94 ..... **Pkg.** $3.80

Inner Tube Patch Kit

Kit includes six 1″ × 1″ adhesive-backed patches that expand and contract with the tube, sandpaper for preparing the area around the puncture, and a carrying case.

4991T93 ..... $3.43

For information about wheels, see page 1316.

Pneumatic Wheels and Tires

Complete Wheel with Two-Piece Rim

Complete Wheel with One-Piece Rim

Complete Wheel with Two-Piece Rim for Casters

Tire Only

A

B

C

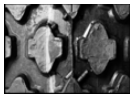

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E

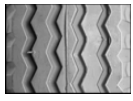

F

Pneumatic wheels are among the quietest, most shock-absorbing wheels available, making them ideal for use with fragile loads. They consist of an air-filled rubber tire mounted on a steel rim. Wheels with a wider tire (5″, 6.5″, and 8.5″) also protect grass and sod while providing good traction.

Choose from *complete wheels* (a tire mounted on a rim with bearings) and *tires only*. All tires are four-ply rubber (unless noted). Choose from black and nonmarking gray.

Wheels with two-piece rims are bolted together for easier tire and inner tube replacement. Please see page 1362 for inner tubes.

Wheels with one-piece rims are welded and tubeless (unless noted).

Centered hubs are used on wheels mounted between two forks.

Offset hubs are for mounting wheels to one side of an axle to provide clearance between the wheel and the equipment it is mounted to.

Approx. Wheel Size, Dia.×Wd.	Tire Stamping	Rim Dia.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.	BLACK TIRE Tread Style	BLACK TIRE Complete Wheel		BLACK TIRE Tire Only		NONMARKING GRAY TIRE Tread Style	NONMARKING GRAY TIRE Complete Wheel		NONMARKING GRAY TIRE Tire Only	
Wheels with Two-Piece Rims															
With Centered Hub and Straight Roller Bearings															
8.9″×2.8″	2.80/2.50-4	4″	¾″	3½″	295	F	4997T72	$43.45	4991T41	$11.04	F	23315T62	$47.36	4991T61	$14.70
8.9″×2.8″	2.80/2.50-4	4″	1″	3½″	295	F	4997T73	43.79	4991T41	11.04	F	23315T63	47.70	4991T61	14.70
9.0″×3.7″	9/3.50-4	4″	⅝″	4″	230	C	4997T84	47.76	4991T14	18.11	E	23315T64	43.74	4991T22	17.70
9.0″×3.7″	9/3.50-4	4″	¾″	4″	230	C	4997T53	47.81	4991T14	18.11	E	23315T65	43.36	4991T22	17.70
10.4″×3.9″	4.10/3.50-4	4″	¾″	3½″	350	A	4997T24	44.48	4991T15	13.78	A	23315T67	48.13	4991T62	19.40
10.4″×3.9″	4.10/3.50-4	4″	1″	3½″	350	A	4997T25	44.48	4991T15	13.78	A	23315T68	48.21	4991T62	19.40
12.8″×4.2″	4.10/3.50-6	6″	1″	4″	440	A	4997T28	58.99	4991T16	17.00	A	23315T72	69.54	4991T21	29.82
14.0″×4.6″	5.30/4.50-6	6″	1″	4″	635	A	4997T29	65.40	4991T58	28.84	—	—	—	—	—
With Centered Hub and Ball Bearings															
8.9″×2.8″	2.80/2.50-4	4″	⅝″	3″	295	F	4997T54	39.34	4991T41	11.04	F	23315T11	44.92	4991T61	14.70
8.9″×2.8″	2.80/2.50-4	4″	¾″	3″	295	F	4997T55	39.34	4991T41	11.04	F	23315T12	44.92	4991T61	14.70
8.9″×2.8″	2.80/2.50-4	4″	½″	3½″	295	F	4997T61	37.39	4991T41	11.04	F	23315T51	44.92	4991T61	14.70
8.9″×2.8″	2.80/2.50-4	4″	⅝″	3½″	295	F	4997T62	37.33	4991T41	11.04	F	23315T52	44.92	4991T61	14.70
10.4″×3.9″	4.10/3.50-4	4″	½″	3½″	350	A	4997T13	42.11	4991T15	13.78	A	23315T53	44.88	4991T62	19.40
10.4″×3.9″	4.10/3.50-4	4″	⅝″	3½″	350	A	4997T14	42.03	4991T15	13.78	A	23315T54	49.93	4991T62	19.40
11.6″×3.9″	4.10/3.50-5	5″	⅝″	3″	380	A	4997T51	46.60	4991T12	14.63	D	23315T55	52.86	4991T19	24.98
11.6″×3.9″	4.10/3.50-5	5″	¾″	3″	380	A	4997T52	47.38	4991T12	14.63	D	23315T56	53.67	4991T19	24.98
12.8″×4.2″	4.10/3.50-6	6″	⅝″	4″	440	A	4997T15	58.25	4991T16	17.00	A	23315T57	62.59	4991T21	29.82
12.8″×4.2″	4.10/3.50-6	6″	¾″	4″	440	A	4997T16	58.17	4991T16	17.00	A	23315T58	63.50	4991T21	29.82
14.0″×4.6″	5.30/4.50-6	6″	⅝″	4″	635	A	4997T17	61.90	4991T58	28.84	—	—	—	—	—
14.0″×4.6″	5.30/4.50-6	6″	¾″	4″	635	A	4997T18	61.86	4991T58	28.84	—	—	—	—	—
With Offset Hub and Ball Bearings															
8.9″×2.8″	2.80/2.50-4	4″	⅝″	2¼″	295	F	4997T56	39.34	4991T41	11.04	F	23315T15	45.07	4991T61	14.70
8.9″×2.8″	2.80/2.50-4	4″	¾″	2¼″	295	F	4997T57	39.34	4991T41	11.04	F	23315T16	45.05	4991T61	14.70
Wheels with One-Piece Rims															
With Centered Hub and Straight Roller Bearings															
16.1″×4.7″	4.80-8	8″	1¼″	4″	745	A	8353T85	62.34	4991T46	28.41	—	—	—	—	—
18.0″×8.5″	18/850×8	8″	¾″	3¼″	515	E	2223T5★	86.57	4991T17★	39.00	—	—	—	—	—
18.0″×8.5″	18/850×8	8″	1″	3¼″	515	E	2223T6★	86.86	4991T17★	39.00	—	—	—	—	—
18.0″×5.9″	5.70-8	8″	1¼″	4″	910	A	8353T88	85.62	4991T48	52.50	—	—	—	—	—
With Centered Hub and Ball Bearings															
8.9″×2.8″	2.80/2.50-4	4″	⅝″	3″	295	F	8353T17♦	30.69	4991T41	11.04	F	23315T73♦	40.45	4991T61	14.70
10.4″×3.9″	4.10/3.50-4	4″	⅝″	3″	350	A	8353T44	29.62	4991T15	13.78	A	23315T74♦	42.85	4991T62	19.40
10.4″×3.9″	4.10/3.50-4	4″	¾″	3″	350	A	8353T45	31.82	4991T15	13.78	A	23315T75♦	42.83	4991T62	19.40
12.8″×4.2″	4.10/3.50-6	6″	⅝″	3″	440	A	8353T46	41.30	4991T16	17.00	A	23315T76♦	53.01	4991T21	29.82
12.8″×4.2″	4.10/3.50-6	6″	¾″	3″	440	A	8353T47	38.98	4991T16	17.00	A	23315T77♦	55.04	4991T21	29.82
13.0″×5″	13/500×6	6″	⅝″	3″	295	E	2223T1★	41.34	4991T18★	19.96	—	—	—	—	—
13.0″×5″	13/500×6	6″	¾″	3″	295	E	2223T2★	40.70	4991T18★	19.96	—	—	—	—	—
15.7″×3.9″	4.80/4.00-8	8″	⅝″	4″	435	B	8353T57★	41.70	4991T55★	14.95	—	—	—	—	—
15.7″×3.9″	4.80/4.00-8	8″	¾″	4″	435	B	8353T58★	37.21	4991T55★	14.95	—	—	—	—	—
15.9″×3.9″	4.80/4.00-8	8″	½″	6″	670	B	8353T64	42.74	4991T56	16.47	—	—	—	—	—
15.9″×3.9″	4.80/4.00-8	8″	⅝″	6″	670	B	8353T65	42.67	4991T56	16.47	—	—	—	—	—
15.9″×3.9″	4.80/4.00-8	8″	¾″	6″	670	B	8353T66	42.29	4991T56	16.47	—	—	—	—	—
15.9″×3.9″	4.80/4.00-8	8″	⅝″	7½″	670	B	8353T67	46.31	4991T56	16.47	—	—	—	—	—
15.9″×3.9″	4.80/4.00-8	8″	¾″	7½″	670	B	8353T68	46.70	4991T56	16.47	—	—	—	—	—
16.0″×6.5″	16/650×8	8″	⅝″	3″	415	E	2223T3★	60.81	4991T25★	33.13	—	—	—	—	—
16.0″×6.5″	16/650×8	8″	¾″	3″	415	E	2223T4★	55.91	4991T25★	33.13	—	—	—	—	—
With Offset Hub and Ball Bearings															
10.4″×3.9″	4.10/3.50-4	4″	⅝″	2¼″	350	A	8353T51	33.76	4991T15	13.78	A	23315T78♦	45.06	4991T62	19.40
10.4″×3.9″	4.10/3.50-4	4″	¾″	2¼″	350	A	8353T52	33.85	4991T15	13.78	A	23315T79♦	45.06	4991T62	19.40
Wheels with Two-Piece Rims for Casters															
With Centered Hub and Ball Bearings															
6.0″×2″	—	4⅛″	½″	2 7/16″	200	F	2717T41	21.18	—	—	E	2717T51●	19.27	—	—
8.0″×2.5″	—	4″	½″	3 7/32″	300	F	2717T42	27.55	—	—	F	2717T52▲	37.83	—	—
10.0″×3.5″	—	4″	½″	4 1/32″	350	F	2717T43	48.54	—	—	F	2717T53■	30.83	—	—
12.0″×3.5″	—	6″	½″	4 13/32″	450	F	2717T44	57.74	—	—	F	2717T54	60.72	—	—

★ Has two-ply tire. ♦ Has inner tube. ● Has 4″ rim dia.; 2 3/16″ hub lg.; and is for ¾″ axle dia. ▲ Hub lg. is 3¼″. ■ Hub lg. is 4″.

For information about wheels, see page 1316.

Trailer Wheels

Rim with Four Mounting Holes

Rim with Five Mounting Holes

Replace your worn or damaged trailer wheels—these wheels have a stiffer sidewall for reduced trailer sway during towing. All are made of black rubber. Rims are made of steel and are available with four or five mounting holes. All wheels are approved for highway use.

Approximate Wheel Size, Dia.×Wd.	Tire Stamping	Rim Dia.	Ply/Load Range	Cap., lbs. @ psi	Rim with Four Mounting Holes		Rim with Five Mounting Holes	
16.5″×4.8″	480/8	8″	4/B	590 @ 60	2181T31	$32.41	2181T32	$32.41
18.5″×5.7″	570/8	8″	4/B	715 @ 50	2181T33	49.22	2181T34	44.59
20.5″×4.8″	480/12	12″	4/B	780 @ 60	2181T35	60.68	2181T36	60.68
21.5″×5.3″	530/12	12″	5/C	1,045 @ 80	2181T37	78.63	2181T38	78.63
26.5″×8.0″	ST205/75D14	14″	5/C	1,760 @ 50	—	—	2181T39	115.66
26.5″×8.0″	ST205/75D15	15″	5/C	1,820 @ 50	—	—	2181T41	117.12

Flat-Free Polyurethane-Filled Wheels

A

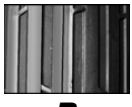

B

Filled with liquid polyurethane that solidifies to a resilient rubber-like core, these wheels give you the cushioned ride of a pneumatic wheel but will never go flat. Wheels have one-piece steel rims and black two-ply rubber tires (unless noted).

Centered hubs are used on wheels mounted between two forks. ***Offset hubs*** are for mounting wheels to one side of an axle to provide clearance between the wheel and the equipment it is mounted to.

Wheel Size, Dia.×Wd.	Tire Stamping	Rim Dia.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.	Tread Style		
With Centered Hub and Ball Bearings								
9.0″×2.6″	2.80/2.50-4	4″	5/8″	3″	295	A	22615T31★	$42.35
10.4″×3.4″	4.10/3.50-4	4″	5/8″	3″	260	A	22615T62	52.91
10.4″×3.4″	4.10/3.50-4	4″	3/4″	3″	260	A	22615T63	52.91
15.7″×4.0″	4.80/4.00-8	8″	5/8″	6″	435	B	22615T35	102.26
15.7″×4.0″	4.80/4.00-8	8″	3/4″	6″	435	B	22615T36	102.81
With Offset Hub and Ball Bearings								
10.4″×3.4″	4.10/3.50-4	4″	5/8″	2 1/4″	260	A	22615T34	54.89

★ Has a four-ply tire.

Flat-Free Lightweight Polyurethane Wheels

A

B

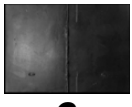

C

Get the cushioned ride of a pneumatic wheel with the flat-free benefits of a foam-filled wheel. All are made of nonmarking black closed-cell polyurethane, have a steel rim, and are recyclable.

Centered hubs are used on wheels mounted between two forks. ***Offset hubs*** are for mounting wheels to one side of an axle to provide clearance between the wheel and the equipment it is mounted to.

Wheel Size, Dia.×Wd.	Tire Stamping	Rim Dia.	For Axle Dia.	Hub Lg.	Cap. Ea., lbs.	Tread Style		
With Centered Hub and Ball Bearings								
8.5″×4″	9/3.50-4	4″	5/8″	4″	250	C	22245T31	$37.05
8.8″×2.7″	2.80/2.50-4	4″	5/8″	3″	270	A	22245T11	33.95
9.8″×3.3″	4.10/3.50-4	4″	5/8″	3 1/4″	300	A	22245T12	42.35
9.8″×3.3″	4.10/3.50-4	4″	3/4″	3 1/4″	300	A	22245T13	42.35
10.5″×4″	11/4.00-5	5″	3/4″	5″	330	C	22245T32	60.38
12.8″×6″	13/6.5-6	6″	3/4″	3″	305	C	22245T33	84.75
15.0″×3″	4.80/4.00-10	10″	5/8″	6″	500	B	22245T34	59.95
15.0″×3.4″	4.80/4.00-8	8″	3/4″	3″	1,000	B	22245T16	74.12
15.0″×3.4″	4.80/4.00-8	8″	5/8″	6″	1,000	B	22245T18	74.12
15.0″×3.4″	4.80/4.00-8	8″	3/4″	6″	1,000	B	22245T19	74.12
With Offset Hub and Ball Bearings								
8.8″×2.7″	2.80/2.50-4	4″	5/8″	2 1/4″	270	A	22245T38	33.95
9.8″×3.3″	4.10/3.50-4	4″	5/8″	2 1/4″	300	B	22245T39	42.35
9.8″×3.3″	4.10/3.50-4	4″	5/8″	2 1/4″	300	A	22245T17	42.35

Press-Fit Glides

Round

Square Rocker

Rectangular

Square Angled

These easy-to-install glides slip right inside tubing. All are made of black polyethylene.

Square rocker glides accommodate any degree of leg angle.

Angled glides are for chairs with slanted tubular legs.

OD	Fits Tubing Wall Thickness	Angle	Pkg. Qty.		Pkg.
Round					
3/4″	20 to 14 ga. (0.035″ to 0.083″)	—	50	2436T61	$8.32
7/8″	20 to 14 ga. (0.035″ to 0.083″)	—	50	2436T62	8.60
1″	20 to 14 ga. (0.035″ to 0.083″)	—	50	2436T63	9.34
Square					
3/4″	20 to 14 ga. (0.035″ to 0.083″)	—	50	2436T64	8.32
7/8″	20 to 14 ga. (0.035″ to 0.083″)	—	50	2436T65	8.60
1″	20 to 14 ga. (0.035″ to 0.083″)	—	50	2436T66	8.98
Square Rocker					
3/4″	18 ga. (0.049″)	—	25	2436T67	5.07
3/4″	16 ga. (0.065″)	—	25	2436T68	4.22
Rectangular					
1″×2″	16 ga. (0.065″)	—	25	2436T69	6.85
Round Angled					
3/4″	16 ga. (0.065″)	15°	50	27455T11	13.11
Square Angled					
3/4″	18 to 16 ga. (0.049″ to 0.065″)	5°	25	27455T21	10.07
3/4″	18 to 16 ga. (0.049″ to 0.065″)	25°	25	27455T22	10.07
7/8″	18 to 16 ga. (0.049″ to 0.065″)	5°	25	27455T23	10.80
7/8″	18 to 16 ga. (0.049″ to 0.065″)	25°	25	27455T24	11.41
1″	20 to 16 ga. (0.035″ to 0.065″)	15°	25	27455T25	10.16

Floor and Carpet Protectors

Vinyl Square

Plastic

Plastic with Spikes

Adhesive-Backed Vinyl

Place under furniture and equipment to protect floors and floor coverings.

Shape	Size Inside	Size Outside	Color	Pkg. Qty.		Pkg.
Vinyl						
Round	1 1/2″	1 7/8″	Brown	4	2516T41	$2.23
Round	1 11/16″	2 1/8″	Brown	4	2516T42	2.86
Square	2 1/16″	2 1/2″	Brown	4	2516T44	3.23
Plastic						
Round	1 1/2″	1 7/8″	Clear	4	2516T45	3.17
Round	1 7/8″	2 3/8″	Clear	4	2516T46	3.46
Plastic with Spikes						
Round	1 1/2″	1 7/8″	Clear	4	2516T47	4.53

Shape	Dia.	Ht.	Color	Pkg. Qty.		Pkg.
Adhesive-Backed Vinyl						
Round	3/4″	3/16″	Black	50	2387T41	$4.04
Round	1″	3/16″	Black	50	2387T42	6.20
Round	1 3/4″	3/16″	Black	24	2387T45	8.98

Furniture Glides

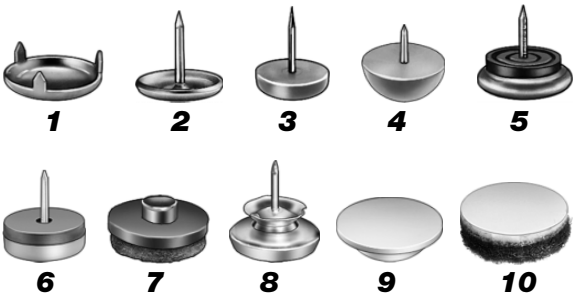

Use on furniture with wood legs.

(5&6) Have a cushion to reduce noise and vibration.

(7) Have a steel rivet that goes into the grain to hold the glide and prevent the leg from splitting.

(8) Has a 14° swiveling radius to compensate for uneven floors.

(9&10) Have adhesive backing that sticks firmly without the use of additional fasteners.

Base Dia.	Base Ht.	Nail Lg.	Nail Dia.	Pkg. Qty.		Pkg.
(1) Nail-On Three-Prong Zinc-Plated Steel Base						
3/4″	3/16″	1/4″	1/8″	50	2513T11	$4.40
7/8″	1/4″	7/32″	1/8″	50	2513T12	5.41
1 1/8″	7/32″	7/32″	1/8″	50	2513T13	11.69
(2) Nail-On Zinc-Plated Steel Base						
3/4″	1/8″	5/8″	3/32″	50	2513T14	5.32
(3) Nail-On Flat Beige Plastic Base						
5/8″	1/4″	19/32″	1/16″	50	2513T15	4.88
3/4″	7/32″	3/4″	1/16″	50	2513T16	5.00
7/8″	7/32″	3/4″	1/16″	50	2513T17	5.50
(4) Nail-On Rounded Beige Plastic Base						
1/2″	3/16″	11/16″	1/16″	50	2513T18	7.50
3/4″	3/16″	11/16″	1/16″	50	2513T21	9.71
(5) Nail-On w/Black Plastic Cushion and Nickel-Plated Steel Base						
7/8″	13/32″	11/16″	3/32″	25	2513T1	8.14
1 1/16″	13/32″	11/16″	3/32″	25	2513T2	11.66
(6) Nail-On with Black Vinyl Cushion and White Nylon Base						
3/4″	7/16″	3/4″	3/32″	50	2513T48	13.78
1 1/8″	7/16″	3/4″	3/32″	25	2513T52	9.06
(7) Nail-On Rivet with Brown Plastic and Gray Felt Base						
7/8″	3/16″	3/32″	1/4″	25	2513T22	8.57
1″	3/16″	3/32″	1/4″	25	2513T23	12.23
1 1/2″	3/16″	3/32″	1/4″	10	2513T24	5.66
(8) Swivel Nail-On Brass-Plated Steel with White Nylon Base						
13/16″	1/4″	11/16″	3/32″	4	2513T53	2.66
(9) Adhesive-Backed Rounded White Plastic Base						
3/4″	3/16″	—	—	50	2819T65	6.70
1″	3/16″	—	—	50	2819T66	10.70
(10) Adhesive-Backed Brown Felt Base						
3/4″	1/4″	—	—	50	2819T71	7.28
1″	1/4″	—	—	50	2819T72	9.30
1 1/4″	1/4″	—	—	50	2819T73	13.60

Rubber Chair, Cane, and Crutch Tips

Place these tips on chairs, canes, or crutches to protect the ends during use.

(11) **To Order:** Please specify color: black or white, unless noted.

(12) **To Order:** Please specify color: gray or white.

	For Leg OD	O'all Ht.	Pkg. Qty.		Pkg.
11	1/4″	13/16″	10	2517T41♦	$12.50
11	3/8″	1 1/8″	10	2517T42♦	12.99
11	1/2″	13/16″	25	2517T71	5.50
11	5/8″	19/32″	25	2517T72	5.98
11	3/4″	1 3/8″	25	2517T73	7.57
11	7/8″	1 1/2″	25	2517T74	9.94
11	1″	19/16″	25	2517T75	11.69
11	1 1/8″	11 1/16″	25	2517T76	11.85
11	1 1/4″	1 13/16″	25	2517T77	12.14
12	1/2″	1 1/16″	25	2517T81	7.50
12	5/8″	1 1/16″	25	2517T82	7.97
12	3/4″	17/32″	25	2517T83	8.98
12	7/8″	15/16″	25	2517T84	11.07
12	1″	1 1/2″	25	2517T85	11.67
12	1 1/8″	1 1/2″	25	2517T86	12.32
12	1 1/4″	1 5/8″	25	2517T87	12.40

♦ Available in black only.

Easy-Slide Glides

PTFE glides are best for use on carpet and ceramic tile. ***Acetal*** glides have a high-density foam cushion that continually adjusts the glide for surface irregularities. They work well on hard surfaces and carpet.

(16) Reusable glides slip under furniture for temporary installation. No screws or adhesives needed. All have a large diameter for moving large pieces of furniture and equipment and are treated with an additive for easier movement.

Style	Base Dia.	Base Ht.	Material	Color	Pkg. Qty.		Pkg.
Screw Mount							
13	3/4″	3/16″	PTFE	Blue	8	23225T12	$8.90
13	1 1/8″	1/4″	PTFE	Blue	8	23225T13	9.80
14	1″	1/2″	Acetal	Brown	4	23755T61	5.57
14	1″	1/2″	Acetal	Gray	4	23755T62	5.57
14	1 3/8″	5/8″	Acetal	Brown	4	23755T64	5.57
14	1 3/8″	5/8″	Acetal	Gray	4	23755T65	5.57
14	1 3/8″	5/8″	Acetal	White	4	23755T63	5.57
Adhesive Backed							
15	1 1/4″	9/16″	Acetal	Black	4	23755T3	5.14
15	1 1/4″	9/16″	Acetal	White	4	23755T4	5.14
15	1 1/2″	11/16″	Acetal	Black	4	23755T5	5.71
15	1 1/2″	11/16″	Acetal	White	4	23755T6	5.71
15	1 7/8″	1/4″	PTFE	Blue	4	23225T14	9.80
Reusable							
16	2 3/4″	5/16″	Rubber/PTFE	Blue	4	23225T15	14.85
16	2 3/4″	3/8″	Polyethylene	Black	1	2551T36	1.14
16	5″	3/8″	Polyethylene	Black	1	2551T37	3.21

Slip-On Furniture Glides

Slip over furniture leg ends.

(17) Plastic glides have a hard plastic base and a smooth inside for easy installation. All are nonskid for use on floors and carpet.

(18) Vinyl grip-top glides adapt to a variety of leg diameters and shapes. Grippers on the top keep glides secure. *Polyethylene base* protects carpet yet allows easy movement. *Felt base* protects hard floor surfaces.

(19) Rubber glide with felt base is for stackable chairs and chairs with swivel feet. Base protects hardwood floors.

For Leg/Foot OD	O'all Ht.	Pkg. Qty.		Pkg.
(17) Gray Plastic				
1/2″	1 1/8″	25	2427T81	$4.85
5/8″	1 1/4″	25	2427T82	5.71
3/4″	1 1/4″	25	2427T83	6.23
7/8″	1 3/8″	25	2427T84	6.49
1″	1 1/2″	25	2427T85	8.25
(18) Gray Vinyl Grip Top w/White Polyethylene Base				
3/4″ to 1 1/8″	1 1/2″	4	2427T61	5.55
(18) Gray Vinyl Grip Top with Brown Felt Base				
3/4″ to 1 1/8″	1 1/2″	4	2427T62	5.45
(19) Gray Rubber with Brown Felt Base				
15/16″ to 1″	3/4″	4	2427T71	4.75

Swivel Tubing Glides

Glides fit on the bottom of chair, table, and appliance legs to compensate for angled legs and uneven surfaces.

(20&21) Fit over the tubing.

(22-24) Press-fit into 18 to 16 ga. (0.049″ to 0.065″ wall thickness) tubing.

Fits Tubing OD	Base Dia.	For Tubing		Pkg.
(20) Nickel-Plated Steel Base				
5/8″	1 1/4″	Round	2450T61	$1.03
(21) White Nylon Base				
3/4″	1 1/4″	Round	2450T62	1.44
(22) Plastic-Cushioned Nickel-Plated Steel Base				
7/8″	1 1/8″	Round	2450T65	1.34
(23) Plastic-Cushioned Stainless Steel Base				
5/8″	1 1/16″	Round	2501T71	2.43
3/4″	1 1/16″	Round	2501T72	2.43
3/4″	1 1/16″	Square	2501T73	2.43
7/8″	1 1/16″	Square	2501T74	2.43
1″	1 1/16″	Round	2501T75	2.43
1″	1 1/16″	Square	2501T76	2.43
(24) Nonskid Black Plastic Base				
5/8″	1 1/8″	Round	2501T81	2.43
3/4″	1 1/8″	Round	2501T82	2.43
1″	1 1/8″	Round	2501T86	2.43
1″	1 1/8″	Square	2501T87	2.43

About Leveling Mounts

In addition to leveling the supports or legs of equipment, leveling mounts position equipment above the floor for easier cleaning and inspection. Mounts that swivel compensate for uneven floors.

Vibration-damping leveling mounts also isolate vibration, shock, and noise transmitted from machines. Performance is measured by deflection (the distance the mount moves when subjected to force). Generally the higher the deflection rating, the greater the vibration, shock, and noise isolation.

Before selecting a mount, consider how your machine weight is distributed. If the weight is evenly distributed, use the following formula:

$$\text{Capacity per Mount} = \frac{\text{Total Machine Weight}}{\text{No. of Mounting Points}}$$

If the weight is unevenly distributed, select the capacity for each mount based on where the weight is concentrated.

Leveling Mounts

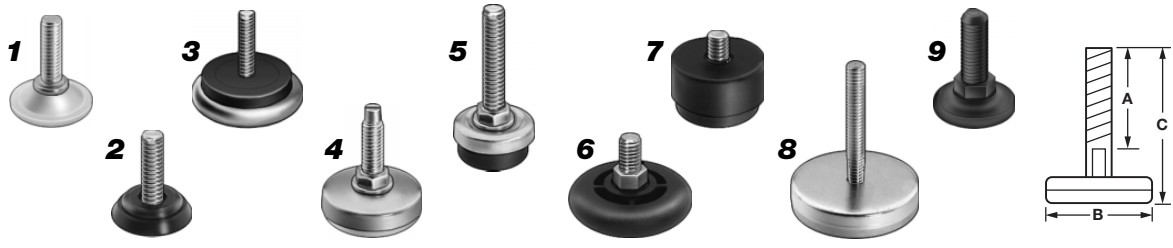

(1) Light Duty—Stud is zinc-plated steel; base is white plastic. Not rated for temperature.

(2) High Temperature—Stud is zinc-plated steel; base is black plastic.

(3) Cushion Rest—The black plastic pad on top of the stainless steel base cushions equipment and furniture. Stud is zinc-plated steel. 2515T16 has a propeller nut, which provides a thread for non-threaded wood applications.

(4) Easy Adjust—A hex nut at the base of the stud and a slotted stud top allow easy height adjustment. Stud is zinc-plated steel. Base is nickel-plated steel on top with a white plastic bottom except high temperature have a gray bottom.

(5) Easy Adjust with Cushioned Bottom—Stud is zinc-plated steel and has a hex nut for height adjustment. Base is zinc-plated steel on top with a black plastic cushioned bottom.

(6) Low Profile Easy Adjust—Use when there is little room between the machine base and floor. Stud is steel and has a hex nut for height adjustment. Base is black plastic.

(7) Self Adjusting—Have a hydraulic shock absorber that automatically adjusts up to 5/16″ to compensate for uneven floors. Stud is zinc-plated steel. Base is black plastic.

(8) High Capacity—Choose from zinc-plated steel and stainless steel stud. Base is same as stud material on top with a white, non-marring plastic bottom.

(9) Oil-Resistant Plastic—Made entirely of black plastic, these mounts will not mar your mounting surface.

Inch

Thread Size	Lg. (A)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)	Pkg. Qty.		Pkg.
(1) Light Duty							
1/4″-20	1/2″	—	1 1/8″	7/8″	4	23015T81	$1.12
1/4″-20	1″	—	1 1/8″	1 3/8″	4	23015T82	1.26
5/16″-18	1″	—	1 1/8″	1 7/16″	4	23015T85	1.25
(2) High Temperature *(–30° to 350°F)*							
1/4″-20	1/2″	50	1 1/8″	15/16″	4	2284T51	2.74
1/4″-20	1″	50	1 1/8″	1 3/8″	4	2284T52	3.00
5/16″-18	1″	50	1 1/8″	1 3/8″	4	2284T54	3.14
5/16″-18	1 1/2″	50	1 1/8″	1 7/8″	4	2284T55	3.26
(3) Cushion Rest *(–20° to 170°F)*							
8-32	3/8″	50	1 1/8″	1 3/16″	4	2515T12	4.33
1/4″-20	7/8″	100	1 9/16″	1 3/8″	4	2515T16	7.58
1/4″-20	7/8″	125	1 1/4″	1 3/8″	4	2515T15	5.22
3/8″-16	1 5/8″	300	1 9/16″	1 15/16″	4	2515T17	7.05
(4) Easy Adjust *(–45° to 180°F)*							
1/4″-20	1″	50	1 3/4″	1 3/4″	4	23015T67	4.57
5/16″-18	1″	50	1 3/8″	1 3/4″	4	23015T61	4.14
5/16″-18	1″	50	1 3/4″	1 5/8″	4	23015T32	4.09
5/16″-18	1 1/2″	50	1 3/8″	2 1/4″	4	23015T62	4.29
5/16″-18	2″	50	1 3/8″	2 3/4″	4	23015T63	4.52
3/8″-16	1″	50	1 3/8″	1 9/16″	4	23015T64	4.49
3/8″-16	1 1/2″	50	1 3/8″	2 1/4″	4	23015T65	4.66
3/8″-16	1 1/2″	50	1 3/4″	2 1/8″	4	23015T34	4.97
3/8″-16	3 1/2″	50	1 3/8″	4 1/4″	4	23015T66	5.19
(4) High Temperature Easy Adjust *(–30° to 350°F)*							
1/4″-20	1″	50	1 3/8″	1 9/16″	4	23015T31	3.51
3/8″-16	1 1/2″	50	1 3/4″	2 1/4″	4	23015T33	5.23
(5) Easy Adjust with Cushioned Bottom *(–20° to 170°F)*							
5/16″-18	3/4″	150	1 1/8″	1 1/2″	4	2515T18	7.05
5/16″-18	1 1/2″	150	1 1/8″	2 1/4″	4	2515T21	7.85
3/8″-16	3″	150	1 1/8″	3 3/4″	4	2515T19	8.72
1/2″-13	3″	200	1 9/16″	4 1/16″	4	2515T22	10.93
(6) Low Profile Easy Adjust *(32° to 113°F)*							Each
3/8″-16	5/8″	110	2″	1 7/16″	—	21015T21	$3.29
(7) Self Adjusting *(32° to 125°F)*							
1/4″-20	3/8″	100	1 1/2″	1 1/8″	—	9995T91	4.93
5/16″-18	3/8″	100	1 1/2″	1 1/8″	—	9995T92	5.53
3/8″-16	3/8″	100	1 1/2″	1 1/8″	—	9995T93	6.36
(8) High Capacity with Zinc-Plated Steel Stud *(–20° to 170°F)*							
10-24	1 1/2″	250	1 3/16″	2 1/4″	—	62805K31	1.20
1/4″-20	1 1/2″	250	1 3/16″	2 1/4″	—	62805K32	1.23
5/16″-18	1 1/2″	250	1 3/16″	2 1/4″	—	62805K33	1.25

Thread Size	Lg. (A)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)		Each
(8) High Capacity with Zinc-Plated Steel Stud *(Cont.)*						
5/16″-18	2″	250	2″	3″	62805K34	$2.08
3/8″-16	2″	250	2″	3″	62805K35	2.12
3/8″-16	2″	250	2 3/8″	3″	62805K36	2.17
3/8″-16	4″	250	2 3/8″	5″	62805K37	2.62
1/2″-13	2″	250	2 3/8″	3″	62805K38	2.28
1/2″-13	2″	500	2 3/4″	3 1/16″	62805K41	3.68
1/2″-13	4″	250	2 3/8″	5″	62805K39	2.74
1/2″-13	4″	500	2 3/4″	5 1/16″	62805K42	4.16
1/2″-13	4″	500	3 3/16″	5 1/8″	62805K45	7.53
1/2″-13	6″	500	3 3/16″	7 1/8″	62805K46	8.29
5/8″-11	2″	500	2 3/4″	3 1/16″	62805K43	4.16
5/8″-11	4″	500	2 3/4″	5 1/16″	62805K44	4.63
5/8″-11	4″	500	3 3/16″	5 1/8″	62805K47	8.29
5/8″-11	6″	500	3 3/16″	7 1/8″	62805K48	9.13
3/4″-10	2″	500	2 3/4″	3 1/16″	62805K71	6.88
3/4″-10	4″	500	2 3/4″	5 1/16″	62805K72	7.80
3/4″-10	4″	500	3 3/16″	5 1/8″	62805K73	9.55
3/4″-10	6″	500	3 3/16″	7 1/8″	62805K74	10.65
(8) High Capacity with Stainless Steel Stud *(–20° to 170°F)*						
10-24	1 1/2″	250	1 3/16″	2 1/4″	1942K71	4.58
1/4″-20	1 1/2″	250	1 3/16″	2 1/4″	1942K72	4.94
5/16″-18	1 1/2″	250	1 3/16″	2 1/4″	1942K73	5.77
5/16″-18	2″	250	2″	3″	1942K41	6.03
3/8″-16	2″	250	2″	3″	1942K74	7.40
3/8″-16	2″	250	2 3/8″	3″	1942K42	8.13
3/8″-16	4″	250	2 3/8″	5″	1942K43	8.98
1/2″-13	2″	250	2 3/8″	3″	1942K75	9.49
1/2″-13	2″	500	2 3/4″	3″	1942K45	11.93
1/2″-13	4″	250	2 3/8″	5″	1942K44	9.13
1/2″-13	4″	500	2 3/4″	5″	1942K46	12.35
1/2″-13	4″	500	3 3/16″	5″	1942K48	16.55
1/2″-13	6″	500	3 3/16″	7″	1942K49	15.48
5/8″-11	2″	500	2 3/4″	3″	1942K47	13.78
5/8″-11	4″	500	2 3/4″	5 1/16″	1942K76	15.69
5/8″-11	4″	500	3 3/16″	5″	1942K51	15.80
5/8″-11	6″	500	3 3/16″	7 1/8″	1942K77	18.03
3/4″-10	2″	500	2 3/4″	3 1/16″	1942K52	17.63
3/4″-10	4″	500	2 3/4″	5 1/16″	1942K53	20.78
3/4″-10	4″	500	3 3/16″	5 1/8″	1942K54	21.90
3/4″-10	6″	500	3 3/16″	7 1/8″	1942K55	25.45

(Continued on following page)

For information about leveling mounts, see page 1366.

Leveling Mounts *(Continued from previous page)*

Metric

Size	Thread Lg., mm (A)	Cap. per Mount, lbs.	Base Dia., mm (B)	O'all Ht., mm (C)		Each
***(8) High Capacity with Zinc-Plated Steel Stud** (–20° to 170°F)*						
M6	38	250	30	57	62805K49	$2.19
M8	38	250	30	57	62805K51	1.11
M8	38	250	52	64	62805K52	2.89
M10	51	250	52	76	62805K53	3.25
M10	51	250	61	76	62805K54	3.56
M10	102	250	61	127	62805K55	3.86
M12	51	250	61	76	62805K56	4.16
M12	51	500	71	78	62805K58	6.09
M12	102	250	61	127	62805K57	4.72
M12	102	500	71	129	62805K59	6.44
M12	102	500	81	130	62805K63	9.32
M12	152	500	81	181	62805K64	10.22
M16	51	500	71	78	62805K61	6.94
M16	102	500	71	129	62805K62	8.00
M16	102	500	81	130	62805K65	10.82
M16	152	500	81	181	62805K66	12.12

Size	Thread Lg., mm (A)	Cap. per Mount, lbs.	Base Dia., mm (B)	O'all Ht., mm (C)		Each
***(8) High Capacity with Stainless Steel Stud** (–20° to 170°F)*						
M6	38	250	30	57	1942K181	$6.50
M8	38	250	30	57	1942K182	7.83
M8	38	250	52	64	1942K183	8.98
M10	51	250	61	76	1942K184	11.14
M12	102	250	61	127	1942K185	14.38
M12	102	500	81	130	1942K186	17.97
***(9) Oil-Resistant Plastic** (–10° to 140°F)*						
M8	25	75	30	39	2814K11	1.26
M8	50	75	30	64	2814K12	1.56
M8	80	75	30	94	2814K13	2.64
M10	25	125	30	39	2814K21	1.52
M10	50	125	30	64	2814K22	1.96
M10	80	125	30	94	2814K23	2.66

Vibration-Damping Leveling Mounts

The pad on the bottom of these mounts reduces vibration and grips the floor. Pad is made of oil-resistant black rubber with a temperature range of –40° to 200°F except 6167K14 and K17, which have a maximum temperature of 150°F. Base and stud are zinc-plated steel.

Size	Thread Lg. (A)	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Base Dia. (B)	O'all Ht. (C)		
1/4″-20	1 5/16″	75	0.04″	1 1/2″	2 1/16″	6167K15	$11.44
1/4″-20	1 5/16″	150	0.04″	1 1/2″	2 1/16″	6167K16	12.45
3/8″-16	1 5/8″	75	0.04″	2 1/8″	2 9/16″	6167K17	10.80
3/8″-16	1 5/8″	150	0.04″	2 1/8″	2 9/16″	6167K18	12.00
3/8″-16	1 5/8″	300	0.04″	2 1/8″	2 9/16″	6167K19	13.50
1/2″-13	1 11/16″	75	0.04″	2 1/8″	2 11/16″	6167K14	11.38
1/2″-13	1 11/16″	150	0.04″	2 1/8″	2 11/16″	6167K11	11.38
1/2″-13	1 11/16″	300	0.04″	2 1/8″	2 11/16″	6167K12	14.31
1/2″-13	1 11/16″	450	0.06″	2 1/8″	2 7/8″	6167K13	16.10

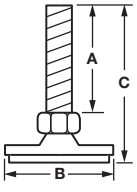

Heavy Duty Vibration-Damping Leveling Mounts

Higher deflection ratings translate to greater vibration and shock isolation. Mounts have a black rubber base bonded to a threaded steel insert. Temperature range is –20° to 180°F.

Mounts ***with stud*** include a flange nut and a hex nut for height adjustment. Stud is zinc-plated steel.

Mounts ***with threaded hole*** can be used with your own threaded rod or bolt. Grade 2 is recommended.

Thread Size	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Base Dia. (B)	With Stud: Thread Lg. (A)	With Stud: O'all Ht. (C)			With Threaded Hole: Thread Dp. (D)	With Threaded Hole: O'all Ht. (C)		
3/8″-16	35	0.25″	2 3/16″	2 1/2″	3 5/16″	60855K72	$5.90	1/2″	1 3/16″	60855K71	$3.12
3/8″-16	65	0.25″	2 3/16″	2 1/2″	3 5/16″	60855K74	5.90	1/2″	1 3/16″	60855K73	3.12
3/8″-16	130	0.25″	2 3/16″	2 1/2″	3 5/16″	60855K76	5.90	1/2″	1 3/16″	60855K75	3.12
1/2″-13	40	0.20″	2 3/16″	2 1/2″	3 5/16″	60855K51	7.42	1/2″	1 3/16″	60855K31	4.00
1/2″-13	80	0.20″	2 3/16″	2 1/2″	3 5/16″	60855K52	7.42	1/2″	1 3/16″	60855K32	4.00
1/2″-13	180	0.20″	2 3/16″	2 1/2″	3 5/16″	60855K53	7.42	1/2″	1 3/16″	60855K33	4.00
1/2″-13	300	0.20″	2 3/16″	2 1/2″	3 5/16″	60855K54	7.42	1/2″	1 3/16″	60855K34	4.00
1/2″-13	600	0.20″	2 3/16″	2 1/2″	3 5/16″	60855K55	7.42	1/2″	1 3/16″	60855K35	4.00

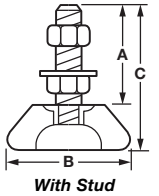

With Stud

With Stud

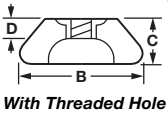

With Threaded Hole

Quick-Install Vibration-Damping Leveling Mounts

The separate bolt and base simplify installation and require less clearance than one-piece mounts. The pad under the base absorbs vibration and shock to prolong machine life. Pad is black rubber, resists oil and grease, and has a temperature range of –20° to 180°F. Base is steel; bolt is zinc-plated steel. 60915K77 is designed for machines that create strong horizontal forces, such as injection-molding equipment.

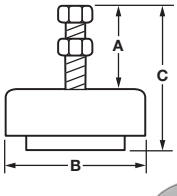

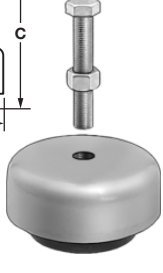

Size	Thread Lg. (A)	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Base Dia. (B)	O'all Ht. (C)		
1/4″-28	1 3/4″	100	0.05″	2″	2 3/4″	60915K72	$33.96
3/8″-24	3″	300	0.06″	3 1/8″	4 1/2″	60915K73	36.82
1/2″-13	5″	1,000	0.13″	4 3/4″	6 1/2″	60915K74	39.20
3/4″-10	5″	4,200	0.19″	6 5/16″	6 5/8″	60915K75	55.03
3/4″-10	5″	10,000	0.18″	7 1/4″	6 5/8″	60915K83	106.15
1″-14	8″	13,000	0.10″	9″	10 1/2″	60915K76	124.99
1″-14	8″	13,000	0.12″	9″	10 1/4″	60915K77	124.99

Low-Profile Swivel Leveling Mounts

At less than 2″ tall, it's easy to position these compact mounts when clearance is limited. Stud and base are stainless steel for rust and corrosion resistance. The base nut swivels 10° to compensate for uneven surfaces. NSF certified.

Mounts ***with nonskid rubber pad*** are nonmarring and add an extra measure of stability. Pad is black and has a temperature range of 0° to 180°F.

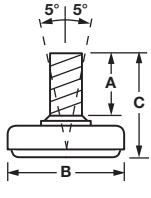

Size	Thread Lg. (A)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)		
With Nonskid Rubber Pad						
3/8″-16	13/16″	88	1 1/4″	1 7/16″	83685T11	$8.72
3/8″-16	13/16″	176	1 9/16″	1 7/16″	83685T12	10.42
3/8″-16	13/16″	220	2″	1 1/2″	83685T13	12.67
Without Pad						
3/8″-16	13/16″	440	1 1/4″	1 7/16″	83685T15	9.39
3/8″-16	13/16″	704	1 9/16″	1 7/16″	83685T16	11.20
3/8″-16	13/16″	792	2″	1 1/2″	83685T17	14.40

Swivel Leveling Mounts

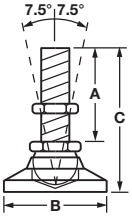

The ball-and-socket nut in the base of these mounts allows the stud to swivel 15° to keep equipment level on uneven floors. Mounts include a removable zinc-plated steel nut.

Mounts *with nonskid pad* add an extra measure of stability. Pad is black rubber and has a temperature range of –20° to 170° F.

Nickel-Plated Steel— Provides some corrosion resistance. Stud is nickel-plated steel.

Zinc-Plated Steel— Offers more corrosion resistance than nickel. Stud is zinc-plated steel.

Black Luster Steel— Use where appearance is a concern. Stud is zinc-plated steel.

Acetal— An economical choice in corrosive environments that don't require high load capacities. Base is white and nonmarring; stud is zinc-plated steel. Temperature range is –20° to 170° F.

Inch

Thread Size	Thread Lg. (A)	Base Dia. (B)	O'all Ht. (C)	Cap. per Mount, lbs.	Nickel-Plated Steel		Zinc-Plated Steel		Black Luster Steel		Cap. per Mount, lbs.	Acetal	
10-32	1"	3/4"	1 1/2"	700	6111K39	$4.76	6111K74	$4.78	6111K214	$6.32	150	6111K71	$4.40
10-32	2"	3/4"	2 1/2"	700	6111K45	5.00	6111K12	5.10	6111K215	6.65	150	6111K408	4.66
1/4"-20	1 1/4"	1"	1 15/16"	1,000	6111K46	5.16	6111K75	5.28	6111K216	6.95	200	6111K72	5.04
1/4"-20	2 1/2"	1"	3 3/16"	1,000	6111K47	5.33	6111K23	5.51	6111K217	7.09	200	6111K411	5.20
1/4"-28	1 1/4"	1"	1 15/16"	775	6111K151	5.30	6111K165	5.35	6111K218	7.51	200	6111K412	5.25
5/16"-18	2"	1 1/4"	2 7/8"	2,500	6111K48	5.79	6111K24	5.82	6111K219	7.74	250	6111K414	5.76
5/16"-18	4"	1 1/4"	4 7/8"	2,500	6111K49	5.94	6111K31	6.05	6111K222	7.96	250	6111K417	5.82
3/8"-16	2"	1 1/4"	2 7/8"	3,750	6111K51	6.08	6111K21	6.31	6111K223	8.09	300	6111K41	5.94
3/8"-16	4"	1 1/4"	4 7/8"	3,750	6111K52	6.80	6111K32	7.26	6111K224	9.90	300	6111K422	6.77
3/8"-24	2"	1 1/4"	2 7/8"	3,300	6111K152	8.11	6111K166	7.97	6111K225	11.48	250	6111K421	7.17
1/2"-13	2"	1 7/8"	3 1/8"	5,000	6111K55	9.62	6111K22	9.77	6111K226	12.72	700	6111K42	8.68
1/2"-13	4"	1 7/8"	5 1/8"	5,000	6111K56	10.39	6111K33	10.43	6111K227	14.17	700	6111K423	10.05
1/2"-13	6"	1 7/8"	7 1/8"	5,000	6111K311	10.43	6111K317	10.65	6111K314	23.51	700	6111K324	10.93
1/2"-20	2"	1 7/8"	3 1/8"	4,000	6111K153	11.28	6111K167	11.74	6111K228	15.91	625	6111K424	11.08
5/8"-11	2"	2 1/2"	3 1/4"	6,000	6111K57	13.09	6111K13	15.20	6111K229	17.29	1,200	6111K43	12.83
5/8"-11	4"	2 1/2"	5 1/4"	6,000	6111K58	15.09	6111K34	16.68	6111K231	20.20	1,200	6111K426	14.50
5/8"-11	6"	2 1/2"	7 1/4"	6,000	6111K312	17.34	6111K318	15.83	6111K315	39.71	1,200	6111K325	15.69
5/8"-18	2"	2 1/2"	3 1/4"	5,000	6111K154	16.30	6111K168	17.63	6111K232	23.06	1,100	6111K427	16.03
3/4"-10	2"	3"	3 1/2"	7,400	6111K59	20.94	6111K14	21.61	6111K233	25.38	1,800	6111K44	19.08
3/4"-10	4"	3"	5 1/2"	7,400	6111K63	22.71	6111K35	23.37	6111K234	28.02	1,800	6111K429	21.29
3/4"-10	6"	3"	7 1/2"	7,400	6111K313	26.77	6111K319	24.31	6111K316	47.43	1,800	6111K326	20.97
3/4"-16	2"	3"	3 1/2"	6,200	6111K155	22.16	6111K169	22.62	6111K235	30.86	1,650	6111K431	21.80
7/8"-9	4"	4"	5 7/8"	15,000	6111K158	35.16	6111K174	35.51	6111K242	54.09	1,700	6111K437	32.82
7/8"-14	4"	4"	5 7/8"	13,500	6111K159	36.14	6111K175	36.52	6111K243	55.84	1,950	6111K438	34.04
1"-8	3 1/2"	4"	5 3/8"	20,000	6111K64	26.52	6111K11	26.63	6111K236	34.06	2,400	6111K37	24.90
1"-8	6"	4"	7 7/8"	20,000	6111K65	32.82	6111K36	29.84	6111K238	44.22	2,400	6111K432	31.10
1"-8	8"	4"	9 7/8"	20,000	6111K66	36.26	6111K38	32.33	6111K239	48.83	2,400	6111K435	32.60
1"-12	3 1/2"	4"	5 3/8"	18,000	6111K157	37.17	6111K173	34.88	6111K241	51.61	2,250	6111K436	31.69
1 1/4"-7	4"	6"	6 3/4"	43,000	6111K161	71.40	6111K176	89.25	6111K244	99.74	3,600	6111K439	68.98
1 1/4"-7	6"	6"	8 3/4"	43,000	6111K162	79.80	6111K177	99.75	6111K245	111.40	3,600	6111K441	76.60

Inch with Nonskid Pad

Thread Size	Thread Lg. (A)	Base Dia. (B)	O'all Ht. (C)	Cap. per Mount, lbs.	Nickel-Plated Steel		Zinc-Plated Steel		Black Luster Steel		Cap. per Mount, lbs.	Acetal	
10-32	1"	3/4"	1 5/8"	525	6111K121	$5.57	6111K81	$5.62	6111K511	$6.11	150	6111K442	$5.40
10-32	2"	3/4"	2 5/8"	525	6111K146	5.65	6111K172	5.73	6111K512	7.13	150	6111K445	5.52
1/4"-20	1 1/4"	1"	2 1/16"	750	6111K147	5.78	6111K82	5.95	6111K513	8.08	200	6111K448	5.79
1/4"-20	2 1/2"	1"	3 5/16"	750	6111K148	5.92	6111K273	6.23	6111K514	8.26	200	6111K451	6.13
5/16"-18	2"	1 1/4"	3"	1,875	6111K163	6.28	6111K274	6.70	6111K515	9.42	250	6111K454	6.41
5/16"-18	4"	1 1/4"	5"	1,875	6111K164	7.05	6111K371	7.20	6111K516	10.07	250	6111K457	6.89
3/8"-16	2"	1 1/4"	3"	2,800	6111K178	7.16	6111K83	7.56	6111K517	10.13	300	6111K462	7.21
3/8"-16	4"	1 1/4"	5"	2,800	6111K179	8.53	6111K372	8.95	6111K518	11.33	300	6111K463	7.72
3/8"-24	2"	1 1/4"	3"	2,475	6111K181	8.81	6111K202	9.03	6111K519	10.13	250	6111K464	8.24
1/2"-13	2"	1 7/8"	3 1/4"	3,750	6111K182	10.32	6111K84	11.10	6111K521	14.13	700	6111K466	9.69
1/2"-13	4"	1 7/8"	5 1/4"	3,750	6111K183	11.14	6111K373	12.97	6111K522	16.79	700	6111K469	12.08
1/2"-13	6"	1 7/8"	7 1/8"	3,750	6111K255	12.89	6111K321	14.74	6111K523	19.36	700	6111K327	13.54
1/2"-20	2"	1 7/8"	3 1/4"	3,000	6111K184	12.25	6111K203	13.56	6111K524	14.13	625	6111K471	13.05
5/8"-11	2"	2 1/2"	3 3/8"	4,500	6111K185	14.91	6111K85	16.15	6111K525	20.11	1,200	6111K472	15.32
5/8"-11	4"	2 1/2"	5 3/8"	4,500	6111K191	17.73	6111K374	18.80	6111K526	26.36	1,200	6111K475	17.89
5/8"-11	6"	2 1/2"	7 1/4"	4,500	6111K256	22.39	6111K322	25.60	6111K527	29.30	1,200	6111K328	18.09
5/8"-18	2"	2 1/2"	3 3/8"	3,750	6111K199	17.75	6111K204	19.25	6111K528	23.82	1,100	6111K476	18.38
3/4"-10	2"	3"	3 5/8"	5,550	6111K246	20.34	6111K86	23.29	6111K529	27.58	1,800	6111K478	21.67
3/4"-10	4"	3"	5 5/8"	5,550	6111K247	24.35	6111K375	25.23	6111K531	31.25	1,800	6111K481	23.27
3/4"-10	6"	3"	7 1/2"	5,550	6111K257	33.36	6111K323	38.14	6111K532	40.84	1,800	6111K329	22.69
7/8"-9	4"	4"	6"	11,250	6111K249	36.14	6111K208	38.54	6111K533	42.20	1,700	6111K494	36.63
1"-8	3 1/2"	4"	5 1/2"	15,000	6111K252	26.12	6111K88	27.87	6111K534	42.52	2,400	6111K484	25.03
1"-8	6"	4"	8"	15,000	6111K253	30.98	6111K376	31.23	6111K535	45.02	2,400	6111K487	28.79
1"-8	8"	4"	10"	15,000	6111K254	35.69	6111K378	37.43	6111K536	49.31	2,400	6111K492	35.61
1 1/4"-7	4"	6"	6 7/8"	32,250	6111K258	83.83	6111K212	104.75	6111K537	112.87	3,600	6111K496	78.76

Metric

Thread Size	Thread Lg. (A)	Base Dia. (B)	O'all Ht. (C)	Cap. per Mount, lbs.	Zinc-Plated Steel	
M6	25 mm	19 mm	38 mm	695	6301K71	$4.66
M8	32 mm	25 mm	49 mm	990	6301K72	5.42
M10	51 mm	32 mm	73 mm	3,740	6301K73	6.51
M12	51 mm	48 mm	79 mm	4,950	6301K74	9.97
M16	51 mm	64 mm	83 mm	5,940	6301K75	$16.03
M20	51 mm	76 mm	89 mm	7,370	6301K76	22.65
M24	89 mm	102 mm	137 mm	19,800	6301K77	26.63

(Continued on following page)

For information about leveling mounts, see page 1366.

Swivel Leveling Mounts *(Continued from previous page)*

Metric with Nonskid Pad

Thread Size	Thread Lg. (A)	Base Dia. (B)	O'all Ht. (C)	Cap. per Mount, lbs.	Zinc-Plated Steel	
M6	25 mm	19 mm	41 mm	515	6301K78	$5.36
M8	32 mm	25 mm	52 mm	750	6301K79	5.95
M10	51 mm	32 mm	76 mm	2,795	6301K81	7.20
M12	51 mm	48 mm	83 mm	3,740	6301K82	11.10
M16	51 mm	64 mm	86 mm	4,500	6301K83	$17.94
M20	51 mm	76 mm	92 mm	5,545	6301K84	24.58
M24	89 mm	102 mm	140 mm	14,960	6301K85	29.38

Swivel Leveling Mounts with Threaded Hole

Add your own threaded stud or bolt to build a swivel leveling mount that fits your needs. A ball-and-socket nut allows the stud to swivel 15° to keep equipment level on uneven floors.

Mounts *with nonskid pad* add an extra measure of stability. Pad is black rubber and has a temperature range of –20° to 170° F.

Nickel-Plated Steel— Provides some corrosion resistance.

Zinc-Plated Steel— Offers more corrosion resistance than nickel.

Black Luster Steel— Use where appearance is a concern.

Acetal— An economical choice in corrosive environments that don't require high load capacities. It's white and nonmarring. Temperature range is –20° to 170° F.

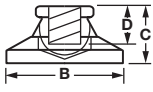

Inch

Thread Size	Thread Dp. (D)	Base Dia. (B)	O'all Ht. (C)	Cap. per Mount, lbs.	Nickel-Plated Steel		Zinc-Plated Steel		Black Luster Steel		Cap. per Mount, lbs.	Acetal	
10-32	3/16"	3/4"	1/2"	700	6103K64	$3.45	6103K74	$3.40	6103K124	$4.80	150	6103K71	$3.15
1/4"-20	5/16"	1"	11/16"	1,000	6103K65	3.30	6103K75	3.84	6103K125	4.95	200	6103K72	3.38
5/16"-18	3/8"	1 1/4"	7/8"	2,500	6103K66	4.73	6103K63	4.76	6103K127	6.66	250	6103K96	4.54
3/8"-16	3/8"	1 1/4"	7/8"	3,750	6103K67	5.88	6103K21	5.87	6103K129	8.23	300	6103K41	5.67
1/2"-13	7/16"	1 7/8"	1 1/8"	5,000	6103K68	7.17	6103K22	7.22	6103K133	9.80	700	6103K42	6.97
1/2"-20	7/16"	1 7/8"	1 1/8"	4,000	6103K202	8.37	6103K203	8.60	6103K134	12.25	625	6103K116	9.25
5/8"-11	7/16"	2 1/2"	1 1/4"	6,000	6103K69	11.24	6103K13	11.41	6103K135	16.49	1,200	6103K43	11.06
5/8"-18	7/16"	2 1/2"	1 1/4"	5,000	6103K204	13.14	6103K205	13.59	6103K136	19.16	1,100	6103K117	12.59
3/4"-10	11/16"	3"	1 1/2"	7,400	6103K92	15.39	6103K14	17.06	6103K137	22.90	1,800	6103K44	14.91
3/4"-16	11/16"	3"	1 1/2"	6,200	6103K206	16.19	6103K207	17.03	6103K138	23.48	1,650	6103K118	15.49
1"-8	13/16"	4"	1 7/8"	20,000	6103K93	19.45	6103K12	19.90	6103K139	25.69	2,400	6103K73	18.69
1"-12	13/16"	4"	1 7/8"	18,000	6103K213	19.96	6103K214	20.54	6103K144	29.04	2,250	6103K122	19.24
1 1/4"-7	1 1/8"	6"	2 3/4"	43,000	6103K215	42.00	6103K216	48.80	6103K145	62.87	3,600	6103K123	41.50

Inch with Nonskid Pad

Thread Size	Thread Dp. (D)	Base Dia. (B)	O'all Ht. (C)	Cap. per Mount, lbs.	Nickel-Plated Steel		Zinc-Plated Steel		Black Luster Steel		Cap. per Mount, lbs.	Acetal	
10-32	3/16"	3/4"	5/8"	525	6103K166	$4.01	6103K81	$4.12	6103K331	$5.05	150	6103K23	$3.78
1/4"-20	5/16"	1"	13/16"	750	6103K167	4.19	6103K82	4.58	6103K332	5.82	200	6103K24	3.86
5/16"-18	3/8"	1 1/4"	1"	1,875	6103K169	5.62	6103K95	5.77	6103K333	7.89	250	6103K45	5.48
3/8"-16	3/8"	1 1/4"	1"	2,800	6103K172	6.24	6103K83	7.13	6103K334	7.89	300	6103K46	5.52
1/2"-13	7/16"	1 7/8"	1 1/4"	3,750	6103K174	7.04	6103K84	8.00	6103K335	11.47	700	6103K47	6.50
1/2"-20	7/16"	1 7/8"	1 1/4"	3,000	6103K175	9.09	6103K181	10.26	6103K336	12.90	625	6103K104	8.44
5/8"-11	7/16"	2 1/2"	1 3/8"	4,500	6103K176	12.15	6103K85	13.73	6103K337	18.23	1,200	6103K48	11.82
5/8"-18	7/16"	2 1/2"	1 3/8"	3,750	6103K188	15.00	6103K182	16.34	6103K338	21.19	1,100	6103K105	14.73
3/4"-10	11/16"	3"	1 5/8"	5,550	6103K189	18.10	6103K86	20.49	6103K339	25.39	1,800	6103K49	16.39
3/4"-16	11/16"	3"	1 5/8"	4,650	6103K231	19.86	6103K183	20.34	6103K341	26.03	1,650	6103K106	19.54
1"-8	13/16"	4"	2"	15,000	6103K234	22.45	6103K88	23.42	6103K342	29.52	2,400	6103K51	21.91
1"-12	13/16"	4"	2"	13,500	6103K235	23.79	6103K186	24.49	6103K343	32.80	2,250	6103K109	23.35
1 1/4"-7	1 1/8"	6"	2 7/8"	32,250	6103K236	77.26	6103K187	65.10	6103K344	68.75	3,600	6103K112	59.18

Metric

Thread Size	Thread Dp. (D)	Base Dia. (B)	O'all Ht. (C)	Cap. per Mount, lbs.	Zinc-Plated Steel	
M6	4.3 mm	19 mm	13 mm	690	6120K31	$3.72
M8	7.9 mm	25 mm	17 mm	990	6120K32	4.41
M10	9.7 mm	32 mm	22 mm	3,740	6120K33	5.50
M12	11.2 mm	48 mm	29 mm	4,950	6120K34	8.12
M16	11.2 mm	64 mm	32 mm	5,940	6120K35	$13.24
M20	15.9 mm	76 mm	38 mm	7,370	6120K36	17.06
M24	20.6 mm	102 mm	48 mm	19,800	6120K37	22.17

Metric with Nonskid Pad

Thread Size	Thread Dp. (D)	Base Dia. (B)	O'all Ht. (C)	Cap. per Mount, lbs.	Zinc-Plated Steel	
M6	4.3 mm	19 mm	16 mm	515	6120K38	$4.12
M8	7.9 mm	25 mm	20 mm	750	6120K39	4.90
M10	9.7 mm	32 mm	25 mm	2,795	6120K41	6.02
M12	11.2 mm	48 mm	32 mm	3,740	6120K42	8.86
M16	11.2 mm	64 mm	35 mm	4,500	6120K43	$14.44
M20	15.9 mm	76 mm	41 mm	5,545	6120K44	18.38
M24	20.6 mm	102 mm	51 mm	14,960	6120K45	24.09

High-Capacity Acme Threaded Swivel Leveling Mounts

Broader, stronger threads enable faster adjustments and higher load capacities than standard V-shaped threads.

Base swivels 15° to compensate for uneven floors. Stud includes a removable nut. Made of zinc-plated steel.

Thread Size	Thread Lg. (A)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)		
1/4"-16	1 1/4"	1,500	1"	1 15/16"	6858K11	$9.09
5/16"-14	2"	3,750	1 1/4"	2 7/8"	6858K13	10.87
3/8"-12	2"	5,625	1 1/4"	2 7/8"	6858K15	11.48
1/2"-10	2"	7,500	1 7/8"	3 1/8"	6858K17	15.40
1/2"-10	4"	7,500	1 7/8"	5 1/8"	6858K18	20.52
5/8"-8	2"	9,000	2 1/2"	3 1/4"	6858K19	24.72
3/4"-6	2"	11,100	3"	3 1/2"	6858K22	31.26
1"-5	3 1/2"	30,000	4"	5 3/8"	6858K24	47.68
1"-5	6"	30,000	4"	7 7/8"	6858K26	55.74
1 1/4"-5	4"	60,000	6"	6 3/4"	6858K28	126.00

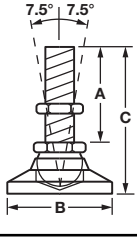

For information about leveling mounts, see page 1366.

Stainless Steel Swivel Leveling Mounts

With Stud

With Threaded Hole

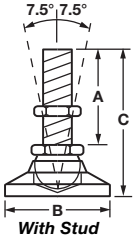

With Stud

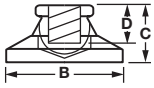

With Threaded Hole

Made entirely of stainless steel, these mounts hold up in harsh environments. They include a ball-and-socket nut in the base that allows the stud to swivel 15°.

Mounts ***with stud*** include a removable nut.

Mounts ***with threaded hole*** allow you to build your own swivel leveling mount with a threaded rod or bolt.

Type 303 Stainless Steel— Resists corrosion when exposed to water and most chemicals.

Type 316 Stainless Steel— Provides superior corrosion resistance.

Size	Thread Lg. (A)	Thread Dp. (D)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)	Type 303 Stainless Steel		Type 316 Stainless Steel	
With Stud									
Inch									
10-32	1″	—	700	¾″	1½″	6111K27	$11.90	6111K112	$19.60
10-32	2″	—	700	¾″	2½″	6111K67	12.62	6111K113	20.97
¼″-20	1¼″	—	1,000	1″	1 15/16″	6111K28	13.65	6111K114	22.50
¼″-20	2½″	—	1,000	1″	3 3/16″	6111K68	13.84	6111K115	23.07
5/16″-18	2″	—	2,500	1¼″	2⅞″	6111K69	15.33	6111K117	25.20
5/16″-18	4″	—	2,500	1¼″	4⅞″	6111K97	15.46	6111K118	27.05
⅜″-16	2″	—	3,750	1¼″	2⅞″	6111K61	17.52	6111K119	28.00
⅜″-16	4″	—	3,750	1¼″	4⅞″	6111K89	18.92	6111K122	31.69
½″-13	2″	—	5,000	1⅞″	3⅛″	6111K62	24.60	6111K124	39.37
½″-13	4″	—	5,000	1⅞″	5⅛″	6111K92	26.09	6111K125	47.46
½″-13	6″	—	5,000	1⅞″	7⅛″	6111K331	28.32	6111K334	52.17
½″-20	2″	—	4,000	1⅞″	3⅛″	6111K188	31.54	6111K126	55.41
⅝″-11	2″	—	6,000	2½″	3¼″	6111K53	40.54	6111K127	64.74
⅝″-11	4″	—	6,000	2½″	5¼″	6111K93	42.80	6111K128	73.18
⅝″-11	6″	—	6,000	2½″	7¼″	6111K332	46.03	6111K335	73.26
¾″-10	2″	—	7,400	3″	3½″	6111K54	51.92	6111K132	87.15
¾″-10	4″	—	7,400	3″	5½″	6111K94	57.05	6111K133	93.78
¾″-10	6″	—	7,400	3″	7½″	6111K333	61.33	6111K336	117.23
1″-8	3½″	—	20,000	4″	5⅜″	6111K29	61.79	6111K135	103.08
1″-8	6″	—	20,000	4″	7⅞″	6111K95	69.80	6111K137	117.62
1″-8	8″	—	20,000	4″	9⅞″	6111K96	75.17	6111K138	125.55
Metric									
M6	25 mm	—	690	19 mm	38 mm	6301K86	11.33	6301K31	22.87
M8	32 mm	—	990	25 mm	49 mm	6301K87	12.60	6301K32	25.91
M10	51 mm	—	3,740	32 mm	73 mm	6301K88	15.33	6301K33	31.50
M12	51 mm	—	4,950	48 mm	79 mm	6301K89	23.43	6301K34	48.26
M16	51 mm	—	5,940	64 mm	83 mm	6301K91	38.92	6301K35	75.53
M20	51 mm	—	7,370	76 mm	89 mm	6301K92	51.92	6301K36	106.22
M24	89 mm	—	19,800	102 mm	137 mm	6301K93	61.79	6301K37	126.35
With Threaded Hole									
Inch									
10-32	—	3/16″	700	¾″	½″	6103K27	8.31	6103K146	13.50
¼″-20	—	5/16″	1,000	1″	11/16″	6103K28	10.00	6103K147	16.50
5/16″-18	—	⅜″	2,500	1¼″	⅞″	6103K94	12.46	6103K149	20.94
⅜″-16	—	⅜″	3,750	1¼″	⅞″	6103K61	14.09	6103K152	23.10
½″-13	—	7/16″	5,000	1⅞″	3⅛″	6103K62	17.27	6103K154	31.53
½″-20	—	7/16″	4,000	1⅞″	1⅛″	6103K222	23.21	6103K155	39.42
⅝″-11	—	7/16″	6,000	2½″	1¼″	6103K53	32.45	6103K156	53.28
¾″-10	—	11/16″	7,400	3″	1½″	6103K54	47.46	6103K158	74.83
1″-8	—	13/16″	20,000	4″	1⅞″	6103K29	54.08	6103K163	90.85
Metric									
M6	—	4 mm	690	19 mm	13 mm	6120K46	7.71	—	—
M8	—	8 mm	990	25 mm	17 mm	6120K47	9.63	—	—
M10	—	10 mm	3,740	32 mm	22 mm	6120K48	12.00	—	—
M12	—	11 mm	4,950	48 mm	29 mm	6120K49	17.27	—	—
M16	—	11 mm	5,940	64 mm	32 mm	6120K51	28.22	—	—
M20	—	16 mm	7,370	76 mm	38 mm	6120K52	38.92	—	—
M24	—	21 mm	19,800	102 mm	48 mm	6120K53	51.92	—	—

Bolt-Down Swivel Leveling Mounts with Threaded Hole

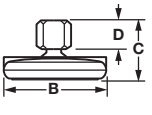

Bolt down these mounts to keep your equipment from moving. They have two punch-out holes on either side and swivel 15° to compensate for uneven floors. Add a threaded stud or bolt to build your own swivel leveling mount. Base is nonmarring black nylon. Temperature range is –20° to 170° F.

Mounts ***with nonskid bottom*** have a black rubber pad that adds an extra measure of stability.

Zinc-Plated Steel— Offers some corrosion resistance.

Type 303 Stainless Steel— Provides superior corrosion resistance.

Thread Size	Thread Dp. (D)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)■	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.	ZINC-PLATED STEEL NUT Plain Bottom		ZINC-PLATED STEEL NUT Nonskid Bottom		TYPE 303 SS NUT Plain Bottom		TYPE 303 SS NUT Nonskid Bottom	
⅜″-16	⅜″	3,500	4″	1⅝″	7/16″	2 11/16″	60985K34	$6.06	60985K35	$7.38	60985K36	$12.32	60985K37	$15.40
½″-13	7/16″	4,000	2″	1⅝″	¼″	1 5/16″	60985K62	5.71	60985K73	6.83	60985K67	11.12	60985K78	12.55
½″-13	7/16″	5,000	4″	1 13/16″	7/16″	2 11/16″	60985K38	6.51	60985K39	7.76	60985K49	12.82	60985K59	15.66
⅝″-11	7/16″	5,000	3″	1 11/16″	5/16″	2 3/16″	60985K13	6.28	60985K23	7.73	60985K43	15.36	60985K53	17.22
⅝″-11	7/16″	6,000	4″	1⅞″	7/16″	2 11/16″	60985K87	9.29	60985K88	11.88	60985K89	16.88	60985K91	19.85
¾″-10	11/16″	7,500	4″	2″	7/16″	2 11/16″	60985K63	13.51	60985K74	19.08	60985K68	22.39	60985K79	26.09
1″-8	13/16″	7,500	4″	2⅜″	7/16″	2 11/16″	60985K101	16.32	60985K102	20.56	60985K103	33.88	60985K104	39.94
1″-8	13/16″	10,000	5″	3″	½″	3⅞″	60985K64	31.66	60985K75	36.88	60985K69	39.51	60985K81	45.88

■ Mounts with nonskid bottom: Add 1/16″ to overall height for 3,500- to 7,500-lb. mounts; add 5/16″ to 10,000-lb. mounts.

For information about leveling mounts, see page 1366.

Bolt-Down Swivel Leveling Mounts

Punch-out holes in the base let you bolt down these mounts to keep your equipment stationary (fasteners not included). The base nut swivels 15° to compensate for uneven floors. Mounts also include a removable nut. Base is nonmarring black nylon. Temperature range is –20° to 170° F.

Mounts ***with offset mounting hole*** have a teardrop shape that offsets the hole so you can install without moving your machine.

Mounts ***with nonskid bottom*** have a pad that provides an extra measure of stability. Pad is black rubber.

Zinc-Plated Steel—Offers some corrosion resistance.

Type 303 Stainless Steel—Provides superior corrosion resistance.

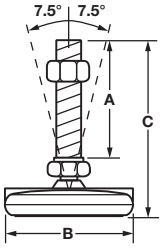

Two Mounting Holes—Inch

Thread Size	Thread Lg. (A)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)■	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.	ZINC-PLATED STEEL STUD Plain Bottom		ZINC-PLATED STEEL STUD Nonskid Bottom		TYPE 303 SS STUD Plain Bottom		TYPE 303 SS STUD Nonskid Bottom	
3/8"-16	3"	5,000	3"	4 1/8"	5/16"	2 3/16"	2531K59	$5.83	2531K61	$7.30	2531K84	$8.72	2531K89	$12.82
3/8"-16	4"	4,000	2"	5 1/8"	1/4"	1 5/16"	2531K31	6.11	2531K32	7.32	2531K33	9.29	2531K34	11.61
3/8"-16	4"	5,000	3"	5 1/8"	5/16"	2 3/16"	2531K91	6.22	2531K92	7.95	2531K93	10.42	2531K94	12.95
3/8"-16	6"	4,000	2"	7 1/8"	1/4"	1 5/16"	2531K24	6.97	2531K25	8.51	2531K44	14.38	2531K45	15.56
3/8"-16	6"	5,000	3"	7 1/8"	5/16"	2 3/16"	2531K95	7.17	2531K96	8.68	2531K97	15.57	2531K98	15.61
3/8"-16	8"	5,000	3"	9 1/8"	5/16"	2 3/16"	2531K101	7.95	2531K102	9.28	2531K103	16.87	2531K104	20.30
1/2"-13	3"	5,000	4"	4 5/16"	7/16"	2 11/16"	2531K123	7.52	2531K124	10.66	2531K125	13.68	2531K126	16.69
1/2"-13	4"	4,000	2"	5 1/8"	1/4"	1 5/16"	2531K35	6.26	2531K36	8.18	2531K37	12.31	2531K38	13.94
1/2"-13	4"	5,000	3"	5 1/8"	5/16"	2 3/16"	2531K39	6.37	2531K41	8.63	2531K42	12.81	2531K43	15.17
1/2"-13	4"	5,000	4"	5 5/16"	7/16"	2 11/16"	2531K127	7.92	2531K128	11.06	2531K129	14.24	2531K131	17.60
1/2"-13	6"	4,000	2"	7 1/8"	1/4"	1 5/16"	2531K105	7.06	2531K106	9.26	2531K107	12.95	2531K108	16.77
1/2"-13	6"	5,000	3"	7 1/8"	5/16"	2 3/16"	2531K114	7.05	2531K115	9.76	2531K116	14.42	2531K117	18.29
1/2"-13	6"	5,000	4"	7 5/16"	7/16"	2 11/16"	2531K132	9.48	2531K133	11.96	2531K134	15.45	2531K135	19.59
1/2"-13	8"	4,000	2"	9 1/8"	1/4"	1 5/16"	2531K109	8.54	2531K111	10.80	2531K112	14.18	2531K113	17.58
1/2"-13	8"	5,000	3"	9 1/8"	5/16"	2 3/16"	2531K118	7.77	2531K119	10.59	2531K121	15.67	2531K122	19.33
1/2"-13	8"	5,000	4"	9 5/16"	7/16"	2 11/16"	2531K136	9.98	2531K137	12.42	2531K138	16.49	2531K139	20.24
5/8"-11	3"	4,000	2"	4 1/8"	1/4"	1 5/16"	2531K141	6.38	2531K142	7.69	2531K143	15.00	2531K144	16.76
5/8"-11	3"	5,000	3"	4 1/8"	5/16"	2 3/16"	2531K158	6.84	2531K159	8.36	2531K161	15.60	2531K162	18.18
5/8"-11	3"	6,000	4"	4 5/16"	7/16"	2 11/16"	2531K172	10.03	2531K173	13.86	2531K174	17.68	2531K175	20.65
5/8"-11	4"	5,000	3"	5 1/8"	5/16"	2 3/16"	2531K48	6.91	2531K49	9.39	2531K51	16.91	2531K52	19.29
5/8"-11	4"	6,000	4"	5 5/16"	7/16"	2 11/16"	2531K176	10.59	2531K177	14.39	2531K178	18.61	2531K179	22.08
5/8"-11	6"	4,000	2"	7 1/8"	1/4"	1 5/16"	2531K149	7.55	2531K151	9.34	2531K152	17.51	2531K153	22.06
5/8"-11	6"	5,000	3"	7 1/8"	5/16"	2 3/16"	2531K163	7.72	2531K164	10.41	2531K165	21.66	2531K166	24.12
5/8"-11	6"	6,000	4"	7 5/16"	7/16"	2 11/16"	2531K66	13.27	2531K67	16.24	2531K68	23.29	2531K69	27.25
5/8"-11	8"	5,000	3"	9 1/8"	5/16"	2 3/16"	2531K167	8.30	2531K168	10.92	2531K169	22.00	2531K171	26.45
5/8"-11	8"	6,000	4"	9 5/16"	7/16"	2 11/16"	2531K181	13.12	2531K182	16.32	2531K183	22.11	2531K184	25.58
5/8"-11	10"	10,000	5"	12 1/4"	1/2"	3 7/8"	2531K198	29.12	2531K199	35.25	2531K201	43.35	2531K202	51.77
3/4"-10	4"	5,000	3"	5 1/8"	5/16"	2 3/16"	2531K203	9.39	2531K204	11.26	2531K205	18.62	2531K206	20.73
3/4"-10	4"	7,500	4"	5 5/16"	7/16"	2 11/16"	2531K216	14.30	2531K217	17.26	2531K218	23.09	2531K219	26.72
3/4"-10	4"	10,000	5"	6 1/4"	1/2"	3 7/8"	2531K225	21.87	2531K226	29.08	2531K227	38.00	2531K228	44.11
3/4"-10	6"	5,000	3"	7 1/8"	5/16"	2 3/16"	2531K207	11.47	2531K208	13.76	2531K209	23.47	2531K211	27.30
3/4"-10	6"	7,500	4"	7 5/16"	7/16"	2 11/16"	2531K71	18.31	2531K72	19.64	2531K73	26.63	2531K74	31.38
3/4"-10	6"	10,000	5"	8 1/4"	1/2"	3 7/8"	2531K85	23.07	2531K86	30.69	2531K87	38.86	2531K88	45.23
3/4"-10	8"	5,000	3"	9 1/8"	5/16"	2 3/16"	2531K212	12.41	2531K213	15.35	2531K214	25.11	2531K215	28.88
3/4"-10	8"	7,500	4"	9 5/16"	7/16"	2 11/16"	2531K221	17.73	2531K222	21.56	2531K223	27.89	2531K224	32.37
3/4"-10	8"	10,000	5"	10 1/4"	1/2"	3 7/8"	2531K229	26.40	2531K231	35.22	2531K232	42.94	2531K233	51.08
3/4"-10	10"	10,000	5"	12 1/4"	1/2"	3 7/8"	2531K234	29.66	2531K235	36.03	2531K236	45.69	2531K237	56.18
1"-8	6"	10,000	5"	8 1/4"	1/2"	3 7/8"	2531K11	35.39	2531K17	42.88	2531K14	47.92	2531K21	53.93

■ Mounts with nonskid bottom: Add 1/16" to overall height for 4,000- to 7,500-lb. mounts; add 5/16" to 10,000-lb. mounts.

Two Mounting Holes—Metric

Thread Size	Thread Lg., mm (A)	Cap. per Mount, lbs.	Base Dia., mm (B)	O'all Ht. (C)■	Mount. Holes, mm Dia.	Mount. Holes, mm Ctr.-to-Ctr.	ZINC-PLATED STEEL STUD Plain Bottom		ZINC-PLATED STEEL STUD Nonskid Bottom		TYPE 303 SS STUD Plain Bottom		TYPE 303 SS STUD Nonskid Bottom	
M10	102	5,000	76	130	8.9	55.9	6992K13	$6.05	6992K37	$8.30	6992K65	$11.20	6992K84	$13.22
M12	76	4,000	51	105	6.4	33.8	6992K14	5.77	6992K38	7.97	6992K66	10.81	6992K85	13.72
M12	152	4,000	51	181	6.4	33.8	6992K16	6.43	6992K41	8.51	6992K68	12.00	6992K87	14.33
M12	152	5,000	102	185	11.9	68.8	6992K18	11.53	6992K43	14.02	6992K71	17.55	6992K89	21.14
M16	102	5,000	76	130	8.9	55.9	6992K19	10.39	6992K44	12.17	6992K72	19.27	6992K91	22.89
M16	152	6,000	102	185	11.9	68.8	6992K21	11.17	6992K45	12.73	6992K73	20.85	6992K92	25.27
M20	152	7,500	102	185	11.9	68.8	6992K22	14.21	6992K46	16.89	6992K74	26.87	6992K93	32.17

■ Mounts with nonskid bottom: Add 1.6 mm to overall height.

Offset Mounting Hole—Inch

Thread Size	Thread Lg. (A)	Cap. per Mount, lbs.	Base Size (B)	O'all Ht. (C)■	Mount. Hole Dia.	ZINC-PLATED STEEL STUD Plain Bottom		ZINC-PLATED STEEL STUD Nonskid Bottom		TYPE 303 SS STUD Plain Bottom		TYPE 303 SS STUD Nonskid Bottom	
1/2"-13	4"	5,000	4"×5 7/16"	5 5/16"	9/16"	6144K11	$15.72	6144K51	$18.80	6144K31	$28.22	6144K71	$34.39
1/2"-13	8"	5,000	4"×5 7/16"	9 5/16"	9/16"	6144K13	19.83	6144K53	23.85	6144K33	31.64	6144K73	38.67
5/8"-11	4"	6,000	4"×5 7/16"	5 5/16"	9/16"	6144K14	21.08	6144K54	25.51	6144K34	37.25	6144K74	44.47
5/8"-11	8"	6,000	4"×5 7/16"	9 5/16"	9/16"	6144K16	26.12	6144K56	31.53	6144K36	43.81	6144K76	51.26
3/4"-10	4"	7,500	4"×5 7/16"	5 5/16"	9/16"	6144K17	28.21	6144K57	33.37	6144K37	46.87	6144K77	52.45

■ Mounts with nonskid bottom: Add 1/16" to overall height.

Leveling Mounts & Tube Inserts

For information about leveling mounts, see page 1366.

Ultra-High Capacity Leveling Mounts

Don't let their small size fool you—these adjustable mounts provide remarkably high load capacities. Add height to mounts using a swivel top or shim. Use with inch or metric bolts.

All are unthreaded and made of steel. You can use one swivel top and one shim per mount. ***Swivel tops*** allow mounts to swivel up to 4° in any direction while providing additional height adjustment. Use a ***shim*** under any mount to increase the height. Two ***spanner wrenches*** are required to adjust the height of each mount—one to brace the bottom half of the mount and the other to turn the top half.

For Bolt Size	Cap. per Mount, lbs.	Dia.	Mounts: Ht. Adj. Range Min.	Max.			Swivel Tops: Ht.		Shims: Ht.		Spanner Wrench	
5/16" (M8)	10,700	1 1/4"	1 1/16"	7/8"	3757K13	$45.98	3/8"	3757K61	$30.30	3/16"	3757K76	$12.50	3637K21	$16.41
5/16" (M8)	10,700	1 1/4"	1 3/8"	2 3/16"	3757K39	49.57	3/8"	3757K61	30.30	3/16"	3757K76	12.50	3637K21	16.41
3/8" (M10)	20,800	1 3/4"	7/8"	1 3/16"	3757K15	49.57	1/2"	3757K62	33.23	1/4"	3757K77	14.92	6975A17	18.75
3/8" (M10)	20,800	1 3/4"	1 5/8"	2 5/8"	3757K42	58.57	1/2"	3757K62	33.23	1/4"	3757K77	14.92	6975A17	18.75

Leveling Mounts for Tubing

Square

Round

Insert these adjustable mounts into tube ends and level your equipment in a single step. They're black plastic and have a temperature range of –40° to 350° F.

Fits Tubing: Outside	Inside	Wall	Base Dia.	Cap. per Mount, lbs.	Ht. Adj. Range: Min.	Max.		
Square								
3/4"	11/16"	0.05"	1"	220	7/8"	1 13/16"	4146T11	$2.29
7/8"	13/16"	0.05"	1"	220	7/8"	1 13/16"	4146T12	2.33
1"	15/16"	0.05"	1"	330	1"	1 7/8"	4146T13	2.53
1 3/16"	1 1/8"	0.05"	1 1/4"	660	1"	1 13/16"	4146T14	3.07
1 3/8"	1 5/16"	0.05"	1 1/4"	660	1 3/8"	2 3/16"	4146T15	3.70
1 1/2"	1 7/16"	0.05"	1 1/4"	660	1 3/8"	2 3/16"	4146T16	4.24
1 3/4"	1 11/16"	0.05"	1 3/4"	660	1 3/8"	2 1/2"	4146T17	5.38
2"	1 15/16"	0.05"	1 3/4"	660	1 3/8"	2 1/2"	4146T18	5.77
Round								
1 1/4"	1 3/16"	0.05"	1 1/4"	660	1"	1 13/16"	4146T21	1.51
1 1/2"	1 7/16"	0.05"	1 1/4"	660	1 3/8"	2 3/16"	4146T23	3.59

Threaded Tube Inserts

Square

Round

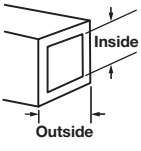

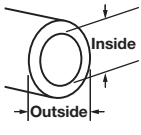

Install these inserts and you'll be able to use threaded leveling mounts on your tube-end machinery supports, instrument bases, and conveyor equipment. Inserts are plastic with brass threads and tap into place with a rubber hammer.

Inch inserts have a temperature range of 20° to 180° F.

Metric inserts have a temperature range of –20° to 180° F.

Inch

Fits Tubing: Outside	Inside	Wall	Cap. per Insert, lbs.	O'all Ht.	THREADED HOLE SIZE: 3/8"-16		1/2"-13		5/8"-11		3/4"-10	
Square												
1" sq.	15/16" sq.	0.07"	1,100	1 3/16"	60945K56	$5.39	60945K57	$4.97	—	—	—	—
1 3/16" sq.	1 1/16" sq.	0.07"	1,200	1 5/16"	60945K58	6.31	—	—	—	—	—	—
1 1/2" sq.	1 3/8" sq.	0.08"	1,000	1 11/16"	60945K21	6.89	60945K22	6.89	60945K23	$6.89	60945K24	$6.89
1 1/2" sq.	1 5/16" sq.	0.12"	1,000	1 11/16"	60945K25	6.89	60945K26	6.89	60945K27	6.89	60945K28	6.89
2" sq.	1 7/8" sq.	0.07"	1,000	1 15/16"	60945K52	9.54	60945K53	9.54	60945K54	9.54	60945K55▲	9.54
2" sq.	1 13/16" sq.	0.12"	1,000	1 15/16"	60945K29	9.38	60945K31	9.38	60945K32	9.38	60945K33▲	9.38
2"×3"	1 3/4"×2 3/4"	0.13"	1,760	1 15/16"	—	—	—	—	60945K49	12.33	60945K51	12.33
Round												
1 1/2" dia.	1 3/8" dia.	0.07"	1,000	1 11/16"	60945K13	6.59	60945K14	6.59	60945K15	6.59	60945K42	6.59
1 11/16" dia.	1 9/16" dia.	0.07"	1,000	1 11/16"	60945K84	6.75	60945K85	6.75	60945K86	6.52	—	—
1 15/16" dia.	1 11/16" dia.	0.11"	1,000	1 15/16"	60945K65	7.99	60945K66	7.99	60945K67	7.99	60945K68▲	7.99
2" dia.	1 15/16" dia.	0.07"	1,000	1 15/16"	60945K16	7.83	60945K17	7.83	60945K46	7.83	60945K48▲	7.83

▲Maximum capacity is 1,760 lbs.

Metric

Fits Tubing: Outside	Inside	Wall	Cap. per Insert, lbs.	O'all Ht.	THREADED HOLE SIZE: M10		M12		M16		M20	
Square												
1 1/2" sq.	1 5/16" sq.	0.12"	1,500	1 11/16"	60945K75	$6.42	60945K76	$6.42	60945K77	$6.42	60945K78	$6.42
2" sq.	1 13/16" sq.	0.12"	2,000	2"	60945K79	7.00	60945K81	7.00	60945K82	7.00	60945K83	7.00
Round												
1 1/2" dia.	1 5/16" dia.	0.065"	1,500	1 11/16"	60945K91	6.42	60945K92	6.42	60945K93	6.42	60945K94	6.42
2" dia.	1 13/16" dia.	0.065"	2,000	1 15/16"	60945K95	7.00	60945K96	7.00	60945K97	7.00	60945K98	7.00

Light Duty Threaded Tube Inserts

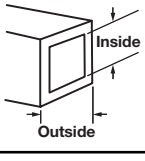

Slip these inserts in square tube ends to provide a thread for leveling mounts in your light equipment and furniture. Inserts have four flexible spring steel walls that grip the inside of tubing. Base is zinc-plated steel. Not rated for capacity.

Fits Tubing: Outside, sq.	Inside, sq.	Wall	O'all Ht.	Thread	Pkg. of 4	
1"	15/16"	0.07"	1 1/16"	1/4"-20	2417T27	$4.63
1"	15/16"	0.07"	1 1/16"	5/16"-18	2417T28	4.72
1 1/4"	1 3/16"	0.07"	1 1/16"	1/4"-20	2417T61	5.73
1 1/4"	1 3/16"	0.07"	1 1/16"	5/16"-18	2417T62	7.47
1 1/2"	1 7/16"	0.07"	1 1/16"	3/8"-16	2417T63	6.24

For information about leveling mounts, see page 1366.

Leveling Legs

Adjust these legs to compensate for uneven floors. You can also use them to set workbenches and tables at a comfortable working height. NSF certified.

Threaded stud is steel. ***Square mounting plate*** is zinc-plated steel and has four 5/16″ dia. mounting holes spaced 2 5/8″ center-to-center (fasteners not included).

Ht. Adj. Range Min.	Ht. Adj. Range Max.	Base Dia.	Cap., lbs.	3/4″ Long Threaded Stud Thread		3 1/2″ Sq. Mounting Plate	
Style 1							
Black Plastic Leg with Nickel-Plated Zinc Foot— *Max. temp. is 175° F.*							
6″	6 3/4″	2 3/8″	2,000	1/2″-13	8365T51	$18.41	8365T52 $20.67
Nickel-Plated Zinc Leg and Foot							
6″	7″	2 3/8″	2,000	1/2″-13	8365T57	20.52	— —
Nickel-Plated Zinc Leg with Stainless Steel Foot							
6″	7″	2 3/8″	2,000	1/2″-13	8365T58	20.38	8365T59 37.10
Style 2							
Stainless Steel Leg and Foot							
6″	7 3/4″	1 5/8″	2,000	1/2″-13	8365T53	23.26	8365T54 32.15
6″	7 3/4″	2″	2,000	3/4″-10	8365T62	22.12	8365T61 40.48

Leveling Mounts with Bracket

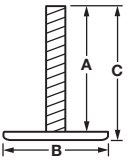

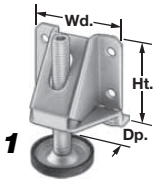

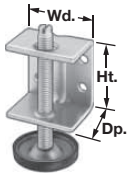

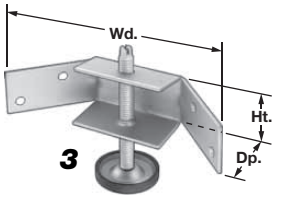

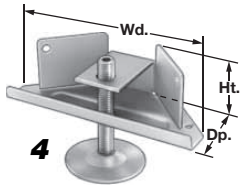

Brackets allow installation of leveling mounts on equipment that does not have feet or a base. Each mount includes a base with a threaded stud and a mounting bracket. Mounts and brackets are steel. Brackets have four mounting holes and include 5/8″ long tapping screws.

Styles 1-3 have a black plastic pad on the base. Temperature range is –20° to 170° F.

	Thread Size	Thread Lg. (A)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)	Bracket Ht.	Bracket Wd.	Bracket Dp.	Pkg. Qty.		Pkg.
1	M10	2 11/16″	100	1 1/4″	3″	2 1/8″	2 1/8″	1 5/16″	4	6943K1	$14.91
2	M8	2 1/16″	100	1 5/16″	3″	1 5/8″	1 1/2″	1 1/8″	1	6943K3	3.80
3	M8	2 1/16″	100	1 5/16″	3″	1 5/16″	4 13/16″	1 7/16″	1	6943K5	4.07
4	M10	2 1/2″	100	2″	2 3/4″	1 7/16″	4 15/16″	1 15/16″	2	6943K7	12.89

Swivel Leveling Mounts with Bracket

The stud swivels 25° to compensate for uneven surfaces and the bracket allows installation on equipment that does not have feet or a base. Brackets are stainless steel and have four mounting holes (fasteners not included).

Aluminum mounts have an aluminum base and a zinc-plated steel threaded stud. ***Stainless steel*** mounts have a stainless steel base and threaded stud.

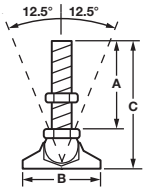

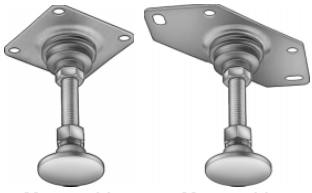

Mounts

Thread Size	Thread Lg. (A)	Cap. per Mount, lbs.	Base Dia. (B)	O'all Ht. (C)	Bracket Lg.	Bracket Wd.	Bracket Ht.	Mount. Hole Dia.	Aluminum		Stainless Steel	
With Square Bracket												
1/2″-13	3″	500	1 7/8″	4 5/16″	3″	3″	1 11/16″	5/16″	6577K23	$41.38	6577K32	$52.76
5/8″-11	3 1/2″	1,000	2 3/8″	5 1/4″	3 7/8″	3 7/8″	1 1/4″	3/8″	6577K25	56.90	6577K34	76.55
With Corner Bracket												
1/2″-13	3″	500	1 7/8″	4 5/16″	4 3/8″	4 3/8″	1 11/16″	1 1/2″	6577K27	43.45	6577K36	54.83
5/8″-11	3 1/2″	1,000	2 3/8″	5 1/4″	6″	6″	1 1/4″	2″	6577K29	64.66	6577K38	84.31

Replacement Brackets

	Square		Corner	
For 1/2″-13 Mounts	6577K12	$19.41	6577K16	$21.76
For 5/8″-11 Mounts	6577K14	32.35	6577K18	41.18

Wedge-Style Leveling Mounts

Level machines and equipment with inaccessible mounting feet or no feet at all—your machine rests on the mounts instead of being bolted to them. The wedge moves up and down to provide lift, while moving side-to-side to compensate for uneven floors. A ribbed top provides maximum grip and prevents liquids from settling. Mounts adjust laterally up to 5°. Mounts are cast iron; bolt is zinc-plated steel.

Vibration-damping mounts have a pad under the base that reduces noise and absorbs vibration and shock to prolong machine life. Pads resist oil, grease, and acids. Temperature range is 0° to 150° F.

Standard

Vibration Damping

Cap. per Mount, lbs.	Base Lg.	Base Wd.	Anchor Hole Dia.	Standard Ht. Adj. Range Min.	Standard Ht. Adj. Range Max.			Vibration Damping Ht. Adj. Range Min.	Vibration Damping Ht. Adj. Range Max.	Pad Thick.	Deflect. @ Max. Cap.		
3,000	3 1/2″	6″	—	1 1/8″	1 3/8″	6012K41	$95.81	1 7/8″	2 1/8″	3/4″	0.15″	6012K44	$122.65
9,000	3 1/2″	6″	—	2 1/4″	2 5/8″	6012K51	99.74	3″	3 3/8″	3/4″	0.15″	6012K54	127.23
15,000	3 1/2″	6″	1″	2 3/8″	2 9/16″	6015K2	107.96	2 7/8″	3 1/16″	1/2″	0.09″	6015K22	153.68
20,000	3 1/2″	6″	1 1/8″	2 3/4″	3″	6015K3	119.58	3 1/4″	3 1/2″	1/2″	0.09″	6015K32	165.39
30,000	3 1/2″	6″	1 1/8″	2 3/4″	3″	6015K41	165.26	3 1/4″	3 1/2″	1/2″	0.20″	6015K68	186.42

Vibration-Damping Swivel Leveling Mounts

About Vibration-Damping Mounts

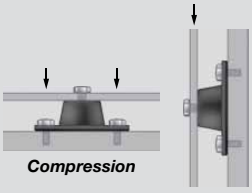

Vibration-damping mounts isolate vibration, shock, and noise transmitted to and from machinery. They reduce maintenance costs, prolong equipment life, and protect floors. Performance is measured by deflection (the distance the mount moves when subjected to force). Generally, the higher the deflection rating, the greater the vibration, shock, and noise isolation.

Most vibration-damping mounts are used in *compression* applications. Some mounts can also be used in *shear* applications, where force is applied to the stud or bolt hole from the side.

Before selecting a mount, consider how your machine weight is distributed. If the weight is evenly distributed, use the following formula:

$$\text{Capacity per Mount} = \frac{\text{Total Machine Weight}}{\text{No. of Mounting Points}}$$

If the weight is unevenly distributed, select the capacity for each mount based on where the weight is concentrated.

Vibration-Damping Swivel Leveling Mounts

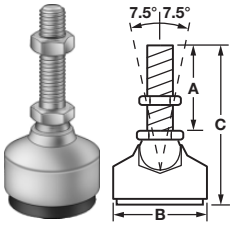

With Stud

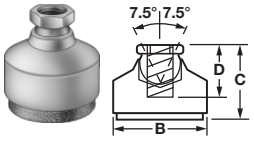

With Threaded Hole

A pad under the base reduces noise and absorbs vibration and shock to prolong machine life. The base has a ball-and-socket nut that allows the stud to swivel 15° to compensate for uneven floors. Base is zinc-plated steel. Pad has a temperature range of –20° to 170° F.

Standard mounts have a black pad. ***High capacity*** mounts have a brown pad.

Mounts ***with stud*** come with a removable locking nut. Stud is zinc-plated steel.

Mounts ***with threaded hole*** can be used with your own threaded rod or bolt.

Thread Size	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Base Dia. (B)	With Stud: Thread Lg. (A)	With Stud: O'all Ht. (C)			With Threaded Hole: Thread Dp. (D)	With Threaded Hole: O'all Ht. (C)		
Standard											
1/4"-20	150	0.05"	1 1/4"	1 1/4"	2 11/16"	6330K41	$13.47	5/16"	1 7/16"	6319K61	$11.64
5/16"-18	200	0.05"	1 1/4"	2"	3 1/2"	6330K43	14.16	3/8"	1 1/2"	6319K63	12.27
3/8"-16	200	0.05"	1 1/4"	2"	3 1/2"	6330K21	12.20	3/8"	1 1/2"	6319K41	10.58
1/2"-13	1,000	0.04"	1 7/8"	2"	3 3/4"	6330K28	20.65	7/16"	1 3/4"	6319K37	18.30
5/8"-11	1,800	0.05"	2 1/2"	2"	3 7/8"	6330K29	30.20	7/16"	1 7/8"	6319K38	23.24
3/4"-10	2,500	0.06"	3"	2"	4 1/8"	6330K31	39.21	9/16"	2 1/8"	6319K51	36.46
1"-8	4,500	0.06"	4"	3 1/2"	6"	6330K32	55.13	11/16"	2 1/2"	6319K52	50.62
1 1/4"-7	10,000	0.06"	6"	4"	6 7/8"	6330K33	68.00	1 1/4"	2 7/8"	6319K53	69.82
High Capacity											
1/4"-20	750	0.05"	1 1/4"	1 1/4"	2 11/16"	6330K42	22.67	5/16"	1 7/16"	6319K62	21.00
5/16"-18	900	0.05"	1 1/4"	2"	3 1/2"	6330K44	23.87	3/8"	1 1/2"	6319K64	22.13
3/8"-16	995	0.05"	1 1/4"	2"	3 1/2"	6330K34	20.56	3/8"	1 1/2"	6319K54	19.07
1/2"-13	2,400	0.06"	1 7/8"	2"	3 3/4"	6330K35	27.40	7/16"	1 3/4"	6319K55	26.89
5/8"-11	4,400	0.06"	2 1/2"	2"	3 7/8"	6330K36	41.54	7/16"	1 7/8"	6319K56	34.90
3/4"-10	6,500	0.08"	3"	2"	4 1/8"	6330K37	55.09	9/16"	2 1/8"	6319K57	51.00
1"-8	11,800	0.08"	4"	3 1/2"	6"	6330K38	79.53	11/16"	2 1/2"	6319K58	71.45
1 1/4"-7	27,100	0.08"	6"	4"	6 7/8"	6330K39	114.02	1 1/4"	2 7/8"	6319K59	109.51

Heavy Duty Vibration-Damping Swivel Leveling Mounts

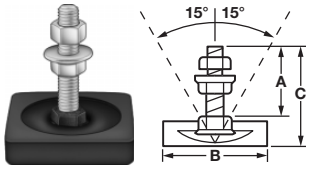

Square Base with Stud

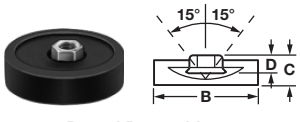

Round Base with Threaded Hole

Higher deflection ratings translate to greater vibration and shock isolation. All of these mounts have a solid base made of oil-resistant black rubber. A steel bracket within the base allows the stud to swivel 30° to compensate for uneven floors. Temperature range is –20° to 180° F.

Mounts ***with stud*** include removable nuts. Bolt is zinc-plated steel.

Mounts ***with threaded hole*** can be used with your own threaded rod or bolt.

Size	Thread Lg. (A)	Thread Dp. (D)	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Base (B)	O'all Ht. (C)		
Square Base with Stud								
1/2"-13	2 5/8"	—	350	0.13"	3" Sq.	3 1/2"	63965K47	$19.96
1/2"-13	2 5/8"	—	700	0.13"	3" Sq.	3 1/2"	63965K48	22.51
Round Base with Stud								
1/2"-13	2 5/8"	—	500	0.13"	3" Dia.	3 1/2"	63965K66	21.59
1/2"-13	2 5/8"	—	1,000	0.13"	3" Dia.	3 1/2"	63965K67	23.51
3/4"-10	4 1/4"	—	3,700	0.13"	5" Dia.	5 3/4"	63965K68	44.04
3/4"-10	4 1/4"	—	8,000	0.13"	5" Dia.	5 3/4"	63965K69	48.14
Square Base with Threaded Hole								
1/2"-13	—	1/2"	350	0.13"	3" Sq.	7/8"	63965K45	12.60
1/2"-13	—	1/2"	700	0.13"	3" Sq.	7/8"	63965K46	14.14
Round Base with Threaded Hole								
1/2"-13	—	1/2"	500	0.13"	3" Dia.	1"	63965K62	13.59
1/2"-13	—	1/2"	1,000	0.13"	3" Dia.	1"	63965K63	14.74
3/4"-10	—	3/4"	3,700	0.13"	5" Dia.	1 3/4"	63965K64	34.85
3/4"-10	—	3/4"	8,000	0.13"	5" Dia.	1 3/4"	63965K65	37.28

Quick-Install Vibration-Damping Swivel Leveling Mounts

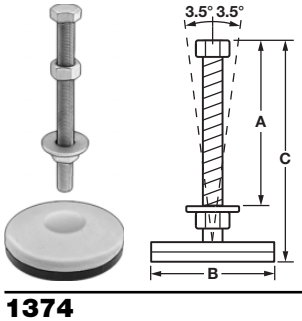

The bolt and base are separate components to simplify installation—they require less clearance than one-piece mounts. Slide the base under equipment and insert and adjust the bolt from above. Bolt rests in an unthreaded depression in the center of the base and swivels up to 7° to compensate for uneven floors.

Base is cast iron and has an oil-resistant black rubber pad to reduce slipping. Temperature range is –40° to 200° F. Bolt is zinc-plated steel.

Size	Thread Lg. (A)	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Base Dia. (B)	O'all Ht. (C)		
5/16"-24	3 1/2"	250	0.04"	2 1/2"	4 1/4"	6011K11	$26.96
1/2"-20	5 1/2"	500	0.04"	3 1/2"	6 5/8"	6011K12	40.52
1/2"-20	5 1/2"	1,000	0.04"	3 1/2"	6 5/8"	6011K13	47.93
3/4"-16	5 1/2"	2,000	0.04"	7"	6 7/8"	6011K14	99.74
3/4"-16	5 1/2"	4,000	0.04"	7"	6 7/8"	6011K15	121.22
3/4"-16	5 1/2"	8,000	0.06"	7"	7"	6011K18	148.75
3/4"-16	5 1/2"	12,000	0.06"	7"	7"	6011K19	178.84

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Stainless Steel Vibration-Damping Swivel Leveling Mounts

All-stainless steel construction stands up to water and chemicals and won't rust or corrode like other metals can. There is a black rubber pad under the base that reduces noise and absorbs vibration and shock, prolonging machine life. Pad has a temperature range of 0° to 200° F, except pad for 1¼″ base dia. mounts has a temperature range of –20° to 170° F. Mounts swivel to compensate for uneven floors. Mounts ***with extra-long stud*** provide more clearance between your equipment and the floor.

Standard mounts swivel 15°. All include one removable locking nut and one removable washer.

Bolt-down mounts have a hole in the base so you can bolt them down to keep equipment stationary. Mounting hole is 0.63″ (fasteners not included). Mounts swivel 10°.

FDA-compliant mounts have no place for contamination to accumulate, so they meet FDA requirements for food-processing equipment. A casing covering the threaded-stud surface serves as the nut, ensuring there are no exposed threads between the stud and the base. Base nut swivels 20°.

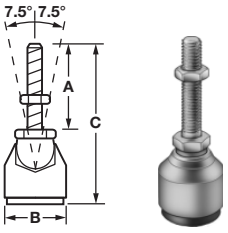

Standard (1¼″ Base Dia.)

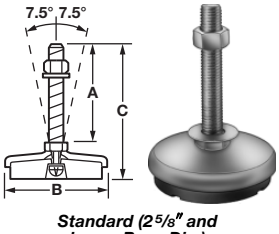

Standard (2⅝″ and larger Base Dia.)

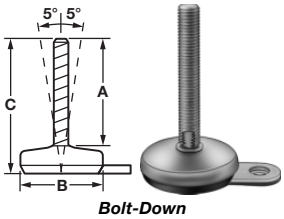

Bolt-Down

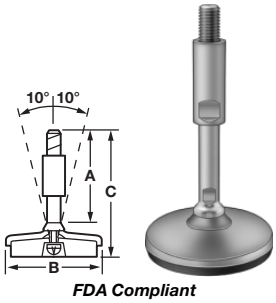

FDA Compliant

Thread Size	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Base Dia. (B)	With Stud: O'all Ht. (C)	With Stud: Thread Length (A)			With Extra-Long Stud: O'all Ht. (C)	With Extra-Long Stud: Thread Length (A)		
Standard											
1/4″-20	300	0.50″	1¼″	5½″	4″	6221K31	$28.32	7½″	6″	6221K32	$29.91
5/16″-18	400	0.50″	1¼″	5½″	4″	6221K33	29.20	7½″	6″	6221K34	30.84
3/8″-16	500	0.50″	1¼″	5½″	4″	6221K35	30.11	7½″	6″	6221K36	31.80
1/2″-13	500	0.07″	2⅝″	4 15/16″	4″	6221K44	42.29	6 15/16″	6″	6221K45	45.67
1/2″-13	1,000	0.12″	3 13/16″	5⅜″	4″	6221K11	47.80	7⅜″	6″	6221K51	53.00
1/2″-13	2,000	0.12″	3 13/16″	5⅜″	4″	6221K21	49.82	7⅜″	6″	6221K61	53.38
1/2″-13	3,000	0.17″	5½″	5 15/16″	4″	6221K71	72.41	7 15/16″	6″	6221K72	74.45
5/8″-11	500	0.07″	2⅝″	5″	4″	6221K42	47.72	7″	6″	6221K43	52.30
5/8″-11	1,000	0.12″	3 13/16″	5 7/16″	4″	6221K12	53.38	7 7/16″	6″	6221K52	57.95
5/8″-11	2,000	0.12″	3⅞″	5 7/16″	4″	6221K22	55.41	7 7/16″	6″	6221K62	59.96
5/8″-11	3,000	0.17″	5½″	6″	4″	6221K73	76.38	8″	6″	6221K81★	81.46
3/4″-10	1,000	0.12″	3⅞″	5 9/16″	4″	6221K13	60.61	7 9/16″	6″	6221K53	66.95
3/4″-10	2,000	0.12″	3⅞″	5 9/16″	4″	6221K23	62.62	7 9/16″	6″	6221K63	68.96
3/4″-10	3,000	0.17″	5½″	6⅛″	4″	6221K75	80.44	8⅛″	6″	6221K76	85.52
3/4″-10	4,000	0.17″	5½″	6⅛″	4″	6221K82	84.50	8⅛″	6″	6221K83	89.49
M12	500	0.07″	2⅝″	5 11/16″	4¾″	6221K27	48.12	—	—	—	—
M12	1,000	0.12″	3⅞″	6⅛″	4¾″	6221K28	56.04	—	—	—	—
M12	2,000	0.12″	3⅞″	6⅛″	4¾″	6221K29	58.07	—	—	—	—
M16	500	0.07″	2⅝″	5 11/16″	4¾″	6221K47	59.62	—	—	—	—
M16	1,000	0.12″	3⅞″	6⅛″	4¾″	6221K48	61.50	—	—	—	—
M16	2,000	0.12″	3⅞″	6⅛″	4¾″	6221K49	65.16	—	—	—	—
M20	1,000	0.12″	3⅞″	5 11/16″	4¾″	6221K66	70.50	—	—	—	—
M20	2,000	0.12″	3⅞″	6 5/16″	4¾″	6221K67	68.40	—	—	—	—
Bolt-Down											
1/2″-12	1,770	0.01″	2 15/16″	4⅞″	4″	6221K16	34.29	—	—	—	—
1/2″-12	2,220	0.06″	3 15/16″	5¼″	4″	6221K91	51.14	—	—	—	—
5/8″-11	1,770	0.01″	2 15/16″	4⅞″	4″	6221K37	36.86	6⅞″	6″	6221K38	39.00
5/8″-11	2,220	0.06″	3 15/16″	5¼″	4″	6221K84	53.43	7¼″	6″	6221K85	55.86
3/4″-10	1,770	0.01″	2 15/16″	—	—	—	—	6⅞″	6″	6221K19	43.86
3/4″-10	2,220	0.06″	3 15/16″	—	—	—	—	7¼″	6″	6221K98	60.71
FDA Compliant											
5/8″-11	1,100	0.05″	2⅜″	7⅝″	6½″	3356K2	59.16	9½″	8½″	3356K3	67.80
5/8″-11	2,200	0.05″	3 3/16″	7¾″	6½″	3356K7	66.00	9½″	8½″	3356K8	74.04
5/8″-11	3,300	0.05″	3 15/16″	7⅞″	6½″	3356K15	77.90	—	—	—	—
3/4″-10	1,100	0.05″	2⅜″	7⅞″	6½″	3356K4	63.60	—	—	—	—
3/4″-10	2,200	0.05″	3 3/16″	7¾″	6½″	3356K9	72.48	9 11/16″	8½″	3356K13	80.68
3/4″-10	3,300	0.05″	3 15/16″	7⅞″	6½″	3356K21	84.78	—	—	—	—
1″-8	5,500	0.16″	4 11/16″	7⅞″	6½″	3356K33	110.40	—	—	—	—

★ Capacity per mount is 4,000 lbs.

Tear-Resistant Light Duty Vibration-Damping Mounts

A specially designed natural rubber body provides uniform stress distribution, isolates vibration, and protects from occasional shock in compression load applications. Metal parts are aluminum for 2-8 lb. capacity mounts and steel for 12-90 lb. capacity mounts. Rubber is black. Temperature range is 0° to 170° F.

All have four mounting holes (fasteners not included). ***Surface*** mounts have a holder that raises the entire mount above the supporting base, eliminating the need to drill a large hole in the base material. ***Optional washers*** can be installed (one on each end of the mount) to keep equipment supported if the rubber fails.

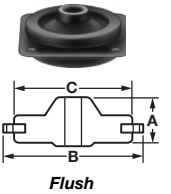

Flush

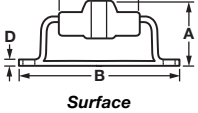

Surface

Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Duro-meter	O'all Ht. (A)	O'all Wd. (B)	(C)	(D)	Center Hole Dia.	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.	Mounts		Optional Washer	
Flush													
2	0.06″	35A	0.41″	1.25″	1.00″	0.03″	0.17″	0.14″	1.00″	6008K41	$7.33	6008K97	$1.58
4	0.06″	40A	0.41″	1.25″	1.00″	0.03″	0.17″	0.14″	1.00″	6008K13	7.84	6008K97	1.58
8	0.06″	45A	0.50″	1.25″	1.00″	0.03″	0.17″	0.14″	1.00″	6008K61	7.29	6008K97	1.58
12	0.06″	50A	0.62″	1.75″	1.50″	0.05″	0.26″	0.17″	1.38″	6008K14	6.24	6008K98	1.71
20	0.06″	45A	1.00″	2.25″	2.00″	0.06″	0.39″	0.20″	1.75″	6008K15	11.46	6008K99	3.87
30	0.06″	45A	1.12″	1.75″	1.50″	0.05″	0.26″	0.17″	1.38″	6008K63	7.27	6008K98	1.71
45	0.06″	50A	1.00″	2.25″	2.00″	0.06″	0.39″	0.20″	1.75″	6008K33	10.31	6008K99	3.87
90	0.06″	53A	1.81″	2.25″	2.00″	0.06″	0.39″	0.20″	1.75″	6008K67	25.10	6008K99	3.87
Surface													
2	0.06″	35A	0.78″	1.69″	1.00″	0.03″	0.17″	0.14″	1.38″	6008K42	16.36	6008K97	1.58
4	0.06″	40A	0.78″	1.69″	1.00″	0.03″	0.17″	0.14″	1.38″	6008K16	15.80	6008K97	1.58
8	0.06″	45A	0.81″	1.69″	1.00″	0.03″	0.17″	0.14″	1.38″	6008K62	13.16	6008K97	1.58
12	0.06″	50A	1.12″	2.38″	1.50″	0.05″	0.26″	0.17″	1.94″	6008K26	15.22	6008K98	1.71
20	0.06″	45A	1.56″	3.00″	2.00″	0.06″	0.39″	0.26″	2.50″	6008K34	20.84	6008K99	3.87
30	0.06″	45A	1.41″	2.38″	1.50″	0.05″	0.26″	0.17″	1.94″	6008K64	19.14	6008K98	1.71
45	0.06″	50A	1.56″	3.00″	2.00″	0.06″	0.39″	0.20″	2.50″	6008K36	26.36	6008K99	3.87
90	0.06″	53A	2.38″	3.00″	2.00″	0.06″	0.39″	0.20″	2.50″	6008K71	40.52	6008K99	3.87

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Oil-Resistant Light Duty Vibration-Damping Mounts

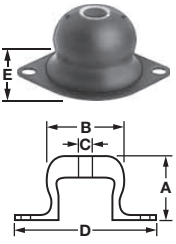

Specifically designed for light vertical load applications, these mounts buckle under loads to protect small equipment such as compressors and pumps from vibration and shock. They're made of oil-resistant rubber and have an aluminum mounting flange with two holes (fasteners not included). Temperature range is –20° to 180° F. Rubber is black.

Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Durometer	O'all Ht. (A)	OD (B)	ID (C)	Base Lg. (D)	Base Wd. (E)	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.		
6.5	0.12″	40A	0.75″	0.90″	0.26″	1.68″	1.25″	0.16″	1.41″	6772K811	$7.20
11	0.12″	50A	0.75″	0.90″	0.26″	1.68″	1.25″	0.16″	1.41″	6772K812	7.20
15	0.12″	60A	0.75″	0.90″	0.26″	1.68″	1.25″	0.16″	1.41″	6772K813	7.20
18	0.12″	70A	0.75″	0.90″	0.26″	1.68″	1.25″	0.16″	1.41″	6772K814	7.20

Vibration-Damping Grommets and Bushings

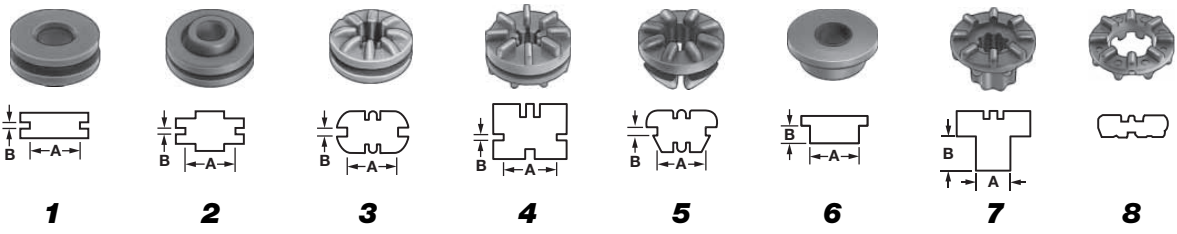

Dampen vibration as well as isolate and reduce shock and motion in motors, fans, blowers, actuators, circuit boards, and other electromechanical equipment. Unlike grommets, bushings can work with a range of hole thicknesses.

Ribbed grommets and bushings are more flexible. Use *ribbed bushings* (Style 7) with *flat ribbed rings* (Style 8) to fill space between the bushing and the equipment surface.

High Damping— Made of PVC, these grommets and bushings absorb vibration quickly and rebound less than their low-damping equivalents. Durometer is 56A. Temp. range is 55° to 105° F. Color is blue.

Low Damping— Compared to high-damping grommets and bushings, these absorb vibration more slowly and have more elastic for greater rebound. They are made of rubber. Durometer is 57A. Temperature range is –40° to 120° F. Color is black.

					HIGH DAMPING Compression Cap. per Mount, lbs.	HIGH DAMPING Compression Deflect. @ Max. Cap.	HIGH DAMPING Shear Cap. per Mount, lbs.	HIGH DAMPING Shear Deflect. @ Max. Cap.			LOW DAMPING Compression Cap. per Mount, lbs.	LOW DAMPING Compression Deflect. @ Max. Cap.	LOW DAMPING Shear Cap. per Mount, lbs.	LOW DAMPING Shear Deflect. @ Max. Cap.		
ID	OD	O'all Thick. (A)	(B)							Pkg. of 25						Pkg. of 25
(1) Grommets																
0.18″	0.44″	0.19″	0.31″	0.06″	13	0.02″	0.2	0.01″	9311K124	$11.32	13	0.02″	0.2	0.01″	9311K5	$11.32
0.18″	0.46″	0.22″	0.32″	0.04″	14	0.02″	0.2	0.02″	9311K125	11.32	14	0.02″	0.4	0.02″	9311K1	11.32
0.18″	0.50″	0.18″	0.34″	0.06″	17	0.01″	0.2	0.01″	9311K123	11.32	17	0.02″	0.3	0.02″	9311K4	11.32
0.18″	0.75″	0.40″	0.56″	0.06″	40	0.04″	1.5	0.03″	9311K128	12.45	40	0.04″	1.7	0.04″	9311K2	12.45
0.19″	0.39″	0.31″	0.24″	0.05″	10	0.02″	0.2	0.01″	9311K126	11.32	10	0.03″	0.3	0.01″	9311K7	11.32
0.19″	0.50″	0.12″	0.36″	0.06″	17	0.01″	0.2	0.01″	9311K121	11.32	17	0.01″	0.2	0.02″	9311K3	11.32
0.19″	0.50″	0.18″	0.38″	0.06″	17	0.01″	0.2	0.01″	9311K122	11.32	17	0.03″	0.3	0.02″	9311K6	11.32
0.25″	0.63″	0.62″	0.44″	0.12″	26	0.07″	1.7	0.02″	9311K132	11.89	26	0.07″	1.6	0.02″	9311K11	11.89
0.27″	0.63″	0.33″	0.38″	0.06″	25	0.03″	0.7	0.01″	9311K127	11.32	25	0.04″	1.0	0.02″	9311K8	11.32
0.28″	0.75″	0.40″	0.50″	0.07″	40	0.03″	1.3	0.02″	9311K129	12.45	40	0.04″	1.6	0.02″	9311K9	12.45
0.30″	0.75″	0.50″	0.50″	0.08″	40	0.05″	2.1	0.03″	9311K131	11.89	40	0.06″	2.4	0.03″	9311K12	11.89
(2) Grommets																
0.25″	0.75″	0.38″	0.56″	0.06″	2	0.03″	0.1	0.02″	9311K141	12.45	2	0.03″	0.01	0.02″	9311K111	12.45
(3) Ribbed Grommets																
0.15″	0.39″	0.28″	0.30″	0.05″	0.3	0.01″	—	—	9311K64	10.92	0.3	0.01″	—	—	9311K65	10.92
0.16″	0.38″	0.23″	0.25″	0.06″	3	0.01″	—	—	9311K138	11.32	3	0.01″	—	—	9311K17	11.32
0.16″	0.39″	0.27″	0.30″	0.04″	0.3	0.01″	—	—	9311K35	11.32	0.3	0.01″	—	—	9311K18	11.32
0.18″	0.44″	0.19″	0.31″	0.05″	1.5	0.01″	—	—	9311K133	9.62	1.5	0.01″	—	—	9311K13	9.62
0.19″	0.56″	0.32″	0.38″	0.06″	6	0.02″	0.1	0.02″	9311K139	11.32	6	0.03″	0.2	0.03″	9311K19	11.32
0.22″	0.56″	0.31″	0.38″	0.06″	6	0.02″	0.1	0.02″	9311K134	11.32	—	—	—	—	—	—
0.23″	0.56″	0.38″	0.38″	0.13″	6	0.03″	0.2	0.02″	9311K136	11.32	6	0.03″	0.2	0.02″	9311K14	11.32
0.28″	0.63″	0.31″	0.38″	0.06″	6	0.02″	0.1	0.01″	9311K135	11.32	6	0.02″	0.1	0.01″	9311K15	11.32
0.28″	0.63″	0.38″	0.38″	0.13″	6	0.03″	0.2	0.02″	9311K137	11.32	6	0.02″	0.1	0.02″	9311K16	11.32
(4) Ribbed Grommets																
0.17″	0.75″	0.39″	0.56″	0.06″	8	0.02″	0.2	0.06″	9311K62	12.45	8	0.03″	0.2	0.06″	9311K63	12.34
(5) Ribbed Grommets																
0.16″	0.38″	0.26″	0.25″	0.06″	3	0.01″	—	—	9311K66	10.89	3	0.01″	—	—	9311K67	10.89
(6) Bushings																
0.19″	0.50″	0.18″	0.36″	0.12″	17	0.01″	0.2	0.21″	9311K51	9.62	17	0.02″	0.3	0.03″	9311K112	9.62
0.27″	0.75″	0.26″	0.42″	0.14″	40	0.02″	1.0	0.02″	9311K53★	10.87	40	0.04″	1.5	0.02″	9311K113★	10.87
0.43″	1.27″	0.33″	0.75″	0.09″	100	0.04″	3.7	0.06″	9311K142★	10.87	100	0.03″	2.6	0.03″	9311K114★	10.87
(7) Ribbed Bushings																
0.26″	0.81″	0.56″	0.47″	0.31″	10	0.05″	0.5	0.03″	9311K143★	9.96	10	0.05″	0.5	0.04″	9311K116★	9.96
0.26″	1.00″	1.06″	0.47″	0.54″	25	0.08″	2.1	0.2″	9311K144■	11.63	25	0.05″	1.3	0.05″	9311K115■	11.63
(8) Flat Ribbed Rings																
0.46″	0.81″	0.25″	—	—	10	0.05″	0.5	0.04″	9311K145★	9.96	10	0.05″	0.5	0.04″	9311K117★	9.96
0.46″	1.00″	0.52″	—	—	25	0.05″	1.3	0.06″	9311K146■	11.63	25	0.05″	1.3	0.06″	9311K118■	11.63

★ Package quantity is 10. ■ Package quantity is 5.

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Versa-Mount Vibration-Damping Mounts

Mount in any direction with this two-piece design. Mounts have an unthreaded zinc-plated steel insert to handle both compression and shear loads. Made of oil-resistant black rubber. Furnished with a washer to keep equipment supported if the rubber fails. Temperature range is –20° to 180° F.

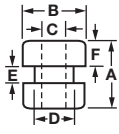

Compression: Cap. per Mount, lbs.	Compression: Deflect. @ Max. Cap.	Shear: Cap. per Mount, lbs.	Shear: Deflect. @ Max. Cap.	Durometer	O'all Ht. (A)	OD (B)	ID (C)	(D)	(E)	(F)		
40	0.04″	20	0.01″	35A	1.25″	1.31″	0.40″	0.79″	0.28″	0.49″	6309K31	$5.73
90	0.04″	30	0.01″	45A	1.25″	1.31″	0.40″	0.79″	0.28″	0.49″	6309K32	5.73
130	0.07″	50	0.02″	35A	1.94″	1.88″	0.53″	1.30″	0.38″	0.78″	6309K34	6.65
140	0.04″	40	0.01″	55A	1.25″	1.31″	0.40″	0.79″	0.28″	0.49″	6309K58	5.73
240	0.07″	90	0.02″	55A	1.94″	1.88″	0.53″	1.30″	0.38″	0.78″	6309K35	6.65
250	0.04″	50	0.01″	65A	1.25″	1.31″	0.40″	0.79″	0.28″	0.49″	6309K33	5.73
380	0.07″	165	0.02″	65A	1.94″	1.88″	0.53″	1.30″	0.38″	0.78″	6309K36	6.65
490	0.08″	225	0.03″	55A	2.43″	2.55″	0.66″	1.58″	0.63″	0.90″	6309K39	9.17
630	0.07″	280	0.02″	75A	1.94″	1.88″	0.53″	1.30″	0.38″	0.78″	6309K37	6.65
860	0.08″	385	0.03″	65A	2.43″	2.55″	0.66″	1.58″	0.63″	0.90″	6309K41	9.17
1,330	0.08″	690	0.03″	75A	2.43″	2.55″	0.66″	1.58″	0.63″	0.90″	6309K42	9.17

Extreme-Temperature Light Duty Vibration-Damping Mounts

These clear silicone gel mounts retain flexibility in temperatures from –40° to 390° F, and won't discolor when exposed to the sun. Use them for protecting fragile equipment, such as electronics, from vibration in light duty compression load applications. All have an unthreaded brass insert. Not rated for deflection.

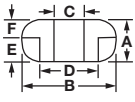

Cap. per Mount, lbs.	Durometer	O'all Ht. (A)	OD (B)	ID (C)	(D)	(E)	(F)		
0.4	5A	0.26″	0.43″	0.12″	0.28″	0.14″	0.12″	1074N1	$14.84
1.3	10A	0.32″	0.55″	0.12″	0.35″	0.16″	0.16″	1074N2	14.98
2.2	14A	0.32″	0.55″	0.12″	0.35″	0.16″	0.16″	1074N3	14.98
8.2	15A	0.46″	0.98″	0.16″	0.55″	0.26″	0.20″	1074N4	16.18
17.6	30A	0.46″	0.98″	0.16″	0.55″	0.26″	0.20″	1074N5	16.18

Vibration-Damping Mounts

Rubber with high-damping qualities provides effective shock protection and a quick return to system equilibrium in compression load applications. Use with precision and electromechanical equipment as well as small pumps and fans. Temperature range is 55° to 105° F. Color is blue.

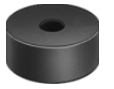

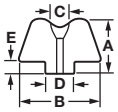

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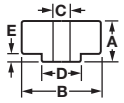

2

	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Durometer	O'all Ht. (A)	OD (B)	ID (C)	(D)	(E)		
1	20	0.07″	56A	0.97″	1.50″	0.19″	0.50″	0.22″	60525K13	$3.53
1	20	0.06″	56A	0.97″	1.50″	0.33″	0.51″	0.22″	60525K14	3.53
2	70	0.02″	56A	0.63″	1.17″	0.33″	0.50″	0.13″	60525K21	3.57
2	140	0.03″	56A	0.82″	1.66″	0.44″	0.75″	0.19″	60525K22	9.85
2	300	0.03″	56A	1.01″	2.37″	0.58″	1.01″	0.26″	60525K23	11.82
2	700	0.06″	56A	1.39″	3.67″	0.55″	1.00″	0.36″	60525K24	19.24

Oil-Resistant Vibration-Damping Mounts

Made of oil-resistant rubber, mounts isolate vibration, shock, and noise in compression load applications. Install under machines and equipment such as generators, HVAC equipment, electric motors, pumps, and blowers. Temperature range is 10° to 180° F. Rubber is black.

Styles 3, ***5***, and ***6*** can be stacked for additional shock protection. ***Style 6*** base is covered by rubber.

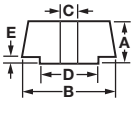

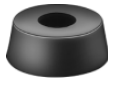

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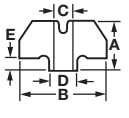

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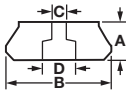

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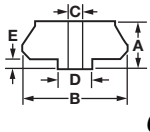

6

	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Durometer	O'all Ht. (A)	OD (B)	ID (C)	(D)	(E)		
Rubber										
3	130	0.18″	40A	0.81″	1.75″	0.63″	1.12″	0.12″	64865K85	$1.74
3	200	0.18″	50A	0.81″	1.75″	0.63″	1.12″	0.12″	64865K86	1.74
3	250	0.18″	60A	0.81″	1.75″	0.63″	1.12″	0.12″	64865K87	1.74
3	400	0.18″	70A	0.81″	1.75″	0.63″	1.12″	0.12″	64865K88	1.74
4	100	0.26″	40A	1.78″	3.00″	0.62″	1.06″	0.47″	64865K201	5.60
4	150	0.26″	50A	1.78″	3.00″	0.62″	1.06″	0.47″	64865K202	5.60
4	230	0.26″	60A	1.78″	3.00″	0.62″	1.06″	0.47″	64865K203	5.60
4	300	0.26″	70A	1.78″	3.00″	0.62″	1.06″	0.47″	64865K204	5.60
Rubber with Steel Top Plate										
5	75	0.10″	40A	1.00″	2.50″	0.63″	1.25″	—	64865K94	5.66
5	100	0.10″	50A	1.00″	2.50″	0.63″	1.25″	—	64865K95	5.66
5	150	0.10″	60A	1.00″	2.50″	0.63″	1.25″	—	64865K96	5.66
5	250	0.10″	70A	1.00″	2.50″	0.63″	1.25″	—	64865K97	5.66
Rubber with Steel Top Plate and Bottom Plates										
5	250	0.21″	40A	1.25″	2.75″	0.63″	1.12″	—	64865K81	7.89
5	350	0.21″	50A	1.25″	2.75″	0.63″	1.12″	—	64865K82	7.89
5	450	0.21″	60A	1.25″	2.75″	0.63″	1.12″	—	64865K83	7.89
5	600	0.21″	70A	1.25″	2.75″	0.63″	1.12″	—	64865K84	7.89
6	660	0.21″	40A	1.77″	4.06″	0.64″	1.27″	0.30″	64865K89	19.09
6	1,100	0.21″	50A	1.77″	4.06″	0.64″	1.27″	0.30″	64865K91	19.09
6	1,400	0.21″	60A	1.77″	4.06″	0.64″	1.27″	0.30″	64865K92	19.09
6	1,800	0.21″	70A	1.77″	4.06″	0.64″	1.27″	0.30″	64865K93	19.09

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Chemical-Resistant Vibration-Damping Mounts

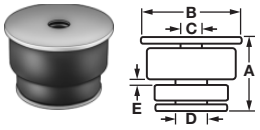

Made of a specially formulated rubber, mounts withstand exposure to weather and resist oil, antifreeze, and other petroleum-based fluids. Use for long-term service in compression applications such as electric motors, air compressors, and generators. An unthreaded steel insert in the center of the mount provides stability, while steel washers at the top and bottom add support. Temp. range is –40° to 200° F. Rubber is black.

Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Durometer	O'all Ht. (A)	OD (B)	ID (C)	(D)	(E)		
1,150	0.16″	70A	2⅜″	2½″	½″	1¼″	¼″	7145N2	$24.37
1,650	0.22″	88A	1 11/16″	2½″	½″	⅞″	¼″	7145N1	19.93

Bolt-Down Vibration-Damping Mounts

Keep mounts stationary in compression load applications—mounting holes in the flange base allow you to fasten them in place. Mounts provide vibration, shock, and noise isolation for rotating equipment such as fans, blowers, pumps, compressors, and generators. Made of oil-resistant rubber with a steel base. Styles 1-7 have a tapped hole in the center that allows you to use your own threaded rod or bolt; Style 8 has an unthreaded through-hole. Base has two mounting holes, except Style 7 has four holes (fasteners not included).

Fail-safe mounts have an interlocking steel design that keeps the mount intact even if the rubber fails.

Styles 1&2— Temperature range is 10° to 180° F.

Styles 3&4— Mounts are covered in rubber for superior corrosion resistance. The underside of the base has a nonskid surface. *Style 3* have a slotted flange hole. Temp. range is –20° to 180° F. *Style 4* include a bolt and washer. Temp. range is –20° to 225° F.

Style 5— An arch shape provides high deflection and shock isolation. Temperature range is –20° to 180° F.

Styles 6&7— Mounts have a low profile and a high load capacity. Temperature range is 0° to 180° F.

Style 8— Temperature range is 10° to 180° F.

To Order: Please specify capacity per mount where necessary from those listed in the table.

Thread/ Hole Dia.	Available Capacities per Mount, lbs. (Durometer)	Deflect. @ Max. Cap.	O'all Ht. (A)	(B)	Base Lg. (C)	Base Wd. (D)	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.	Color		
Standard											
1 5/16″-18	50 (40A), 80 (50A), 110 (60A), 160 (70A)	0.12″	1.00″	1.20″	3.13″	1.75″	0.34″	2.38″	Black	64875K1	$4.40
2 ⅜″-16	130 (40A), 250 (50A), 350 (60A), 480 (70A)	0.12″	1.12″	1.83″	3.75″	2.25″	0.34″	3.00″	Black	64875K3	6.69
2 ⅜″-16	210 (30A)	0.10″	1.12″	1.78″	3.75″	2.27″	0.34″	3.00″	Black	64875K241	8.14
2 ⅜″-16	370 (40A)	0.10″	1.12″	1.78″	3.75″	2.27″	0.34″	3.00″	Black	64875K242	8.14
2 ⅜″-16	520 (50A)	0.10″	1.12″	1.78″	3.75″	2.27″	0.34″	3.00″	Black	64875K243	8.14
2 ⅜″-16	680 (60A)	0.10″	1.12″	1.78″	3.75″	2.27″	0.34″	3.00″	Black	64875K244	8.14
2 ⅜″-16	750 (70A)	0.08″	1.12″	1.78″	3.75″	2.27″	0.34″	3.00″	Black	64875K245	8.14
2 ½″-20	130 (40A), 250 (50A), 350 (60A), 480 (70A)	0.12″	1.12″	1.83″	3.75″	2.25″	0.34″	3.00″	Black	64875K2	6.69
3 ½″-13	1,500 (40A)	0.25″	1.63″	3.00″	6.25″	4.63″	0.56″	5.00″	Black	64875K711	45.86
3 ½″-13	1,500 (40A)	0.50″	2.75″	3.00″	6.25″	4.63″	0.56″	5.00″	Black	64875K811	58.40
3 ½″-13	2,250 (50A)	0.25″	1.63″	3.00″	6.25″	4.63″	0.56″	5.00″	Red	64875K712	45.86
3 ½″-13	2,250 (50A)	0.50″	2.75″	3.00″	6.25″	4.63″	0.56″	5.00″	Red	64875K812	58.40
3 ½″-13	3,000 (60A)	0.25″	1.63″	3.00″	6.25″	4.63″	0.56″	5.00″	Green	64875K713	45.86
3 ½″-13	3,000 (60A)	0.50″	2.75″	3.00″	6.25″	4.63″	0.56″	5.00″	Green	64875K813	58.40
3 ½″-13	4,000 (70A)	0.25″	1.63″	3.00″	6.25″	4.63″	0.56″	5.00″	Gray	64875K714	45.86
3 ½″-13	4,000 (70A)	0.50″	2.75″	3.00″	6.25″	4.63″	0.56″	5.00″	Gray	64875K814	58.40
4 5/16″-18	45 (30A), 75 (40A), 125 (50A)	0.35″	1.50″	1.19″	3.19″	1.63″	0.31″	2.38″	Black	6423K4	14.52
4 ⅜″-16	150 (40A), 380 (60A), 600 (70A)	0.40″	1.88″	1.75″	3.88″	2.31″	0.31″	3.00″	Black	6423K5	17.23
4 ½″-13	600 (60A), 1,000 (70A)	0.50″	2.75″	2.56″	5.50″	3.31″	0.50″	4.13″	Black	6423K6	40.17
4 ½″-13	2,100 (70A)	0.50″	2.75″	3.38″	6.25″	4.00″	0.50″	5.00″	Black	6423K613	50.91
4 ½″-13	4,300 (70A)	0.50″	2.75″	3.38″	6.75″	4.38″	0.50″	5.50″	Black	6423K614	64.50
5 ½″-13	60 (48A), 100 (56A), 130 (64A)	0.20″	1.50″	1.53″	4.41″	2.00″	0.41″	3.75″	Black	67555K31	40.40
5 ½″-13	200 (56A), 260 (64A)	0.20″	1.50″	1.53″	4.41″	4.00″	0.41″	3.75″	Black	67555K61	42.60
5 ½″-13	700 (40A), 1,000 (50A), 1,500 (60A), 2,500 (70A)	0.25″	1.61″	3.13″	5.13″	3.00″	0.44″	4.13″	Black	67555K11	43.83
5 ½″-13	1,500 (50A), 2,000 (60A), 3,000 (70A), 4,400 (80A)	0.19″	1.61″	5.31″	7.25″	3.00″	0.44″	6.25″	Black	67555K71	128.89
5 ¾″-10	700 (40A), 1,000 (50A), 1,500 (70A)	0.25″	1.50″	3.13″	5.13″	3.00″	0.44″	4.13″	Black	67555K41	49.83
5 M12	700 (40A), 1,000 (50A), 1,500 (60A), 2,500 (70A)	0.25″	1.61″	3.13″	5.13″	3.00″	0.44″	4.13″	Black	67555K21	45.17
6 ⅝″-11	1,500 (65A)	0.03″	1.19″	4.00″	7.00″	2.50″	0.66″	5.50″	Black	57535K46	72.29
6 ⅝″-11	3,000 (60A)	0.03″	1.19″	4.00″	7.00″	4.00″	0.66″	5.50″	Black	57535K47	120.11
7 ⅝″-11	7,500 (50A)	0.03″	1.19″	4.00″	7.00″	8.00″	0.66″	5.50″	Black	57535K48	280.18
Fail Safe											
1 ¼″-20	46 (30A), 87 (40A), 115 (50A), 137 (60A)	0.05″	0.75″	0.92″	2.27″	1.25″	0.26″	1.75″	Black	64875K39	6.35
1 5/16″-18	85 (30A), 170 (40A), 250 (50A), 340 (60A)	0.08″	1.02″	1.20″	3.13″	1.73″	0.34″	2.38″	Black	64875K16	5.18
1 ⅜″-16	210 (30A), 360 (40A), 520 (50A), 680 (60A)	0.10″	1.25″	1.60″	3.81″	2.32″	0.34″	3.00″	Black	64875K36	8.57
1 ½″-13	471 (30A), 713 (40A), 940 (50A), 1,064 (60A)	0.13″	1.78″	2.42″	5.50″	3.37″	0.51″	4.12″	Black	64875K23	18.60
1 ¾″-10	900 (30A), 1,106 (40A), 1,630 (50A), 2,500 (60A)	0.13″	1.84″	3.10″	6.41″	4.09″	0.53″	5.00″	Black	64875K46	24.16
1 ¾″-10	2,270 (30A), 3,520 (40A), 4,124 (50A), 6,600 (60A)	0.17″	2.25″	4.12″	7.41″	5.10″	0.63″	6.00″	Black	64875K48	29.34
1 M6	46 (30A), 87 (40A), 115 (50A), 137 (60A)	0.05″	0.75″	0.92″	2.27″	1.25″	0.26″	1.75″	Black	64875K42	6.35
1 M8	85 (30A), 170 (40A), 250 (50A), 340 (60A)	0.08″	1.02″	1.20″	3.13″	1.73″	0.34″	2.38″	Black	64875K43	5.10
1 M8	210 (30A), 360 (40A), 520 (50A), 680 (60A)	0.10″	1.25″	1.60″	3.81″	2.32″	0.34″	3.00″	Black	64875K44	7.50
1 M12	470 (30A), 715 (40A), 940 (50A), 1,064 (60A)	0.13″	1.78″	2.42″	5.50″	3.37″	0.51″	4.12″	Black	64875K45	17.44
1 M20	900 (30A), 1,106 (40A), 1,630 (50A), 2,500 (60A)	0.13″	1.84″	3.10″	6.41″	4.09″	0.53″	5.00″	Black	64875K47	24.16
8 ½″ Dia.	375 (40A), 800 (50A), 925 (60A), 1,425 (70A)	0.13″	1.66″	3.25″	5.38″	3.25″	0.53″	4.12″	Black	64875K5	13.62
8 ⅝″ Dia.	525 (40A), 1,000 (50A), 1,250 (60A), 1,950 (70A)	0.13″	1.66″	3.94″	6.25″	3.94″	0.53″	5.00″	Black	64875K38	19.34
8 ¾″ Dia.	525 (40A), 1,000 (50A), 1,250 (60A), 1,950 (70A)	0.13″	1.66″	3.94″	6.25″	3.94″	0.53″	5.00″	Black	64875K6	20.26

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Extreme-Temperature Bolt-Down Vibration-Damping Mounts

Made of silicone, mounts withstand temperatures from –80° to 300° F in compression load applications. All have a flange base with two mounting holes so you can bolt them in place (fasteners not included). Mounts have a tapped hole in the center for use with your own threaded rod or bolt. **To Order:** Please specify capacity per mount from those listed in the table.

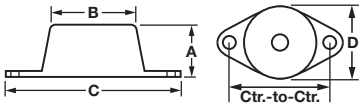

Thread	Available Capacities per Mount, lbs. (Durometer)	Deflect. @ Max. Cap.	O'all Ht. (A)	OD (B)	Base Lg. (C)	Base Wd. (D)	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.		
5/16″-18	35 (30A), 45 (40A), 70 (50A), 120 (60A)	0.20″	1.00″	1.25″	3.13″	1.75″	0.34″	2.38″	6962K41	$14.51
5/16″-18	35 (30A), 45 (40A), 70 (50A), 120 (60A)	0.40″	1.25″	1.25″	3.13″	1.75″	0.34″	2.38″	6962K44	16.80
3/8″-16	135 (30A), 170 (40A), 240 (50A), 380 (60A), 550 (70A)	0.25″	1.25″	1.75″	3.88″	2.38″	0.34″	3.00″	6962K42	20.26
3/8″-16	135 (30A), 170 (40A), 240 (50A), 380 (60A), 550 (70A)	0.50″	1.75″	1.75″	3.88″	2.38″	0.34″	3.00″	6962K45	23.54
1/2″-13	250 (40A), 525 (50A), 750 (60A), 1,100 (70A)	0.25″	1.75″	2.50″	5.50″	3.38″	0.56″	4.13″	6962K43	41.40
1/2″-13	250 (40A), 525 (50A), 750 (60A), 1,100 (70A)	0.50″	2.88″	2.50″	5.50″	3.38″	0.56″	4.13″	6962K46	46.94

Versa-Mount Bolt-Down Vibration-Damping Mounts

Mount in any direction for use in compression and shear load applications. Made of oil-resistant rubber encased in zinc-plated steel for a long service life. Mounts have four mounting holes (fasteners not included). Temperature range is –20° to 180° F.

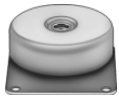

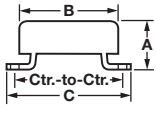

Thread	Cap. per Mount, lbs.	Compression Deflect. @ Max. Cap.	Shear Deflect. @ Max. Cap.	Durometer	O'all Ht. (A)	OD (B)	Base Size, sq. (C)	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.		
1/4″-20	14	0.01″	0.01″	40A	1 1/8″	2 5/16″	2 3/8″	0.20″	1 15/16″	6188K411	$24.56
1/4″-20	24	0.01″	0.01″	50A	1 1/8″	2 5/16″	2 3/8″	0.20″	1 15/16″	6188K412	24.56
1/4″-20	60	0.01″	0.01″	68A	1 1/8″	2 5/16″	2 3/8″	0.20″	1 15/16″	6188K414	24.56
3/8″-16	50	0.01″	0.01″	44A	1 1/2″	3″	3″	0.27″	2 1/2″	6188K512	37.27
3/8″-16	110	0.01″	0.01″	70A	1 1/2″	3″	3″	0.27″	2 1/2″	6188K514	37.27

Spring-Action High-Deflection Bolt-Down Vibration-Damping Mounts

Spring action provides high deflection, which translates to greater isolation of vibration and noise for machines operating as slowly as 500 rpm. Mounts are for use in compression load applications. They have upper and lower cast iron housings that contain a steel spring and prevent horizontal movement of the mount. A layer of rubber between the housings prevents metal-to-metal contact while a rubber pad bonded to the base plate limits movement.

Mounts have two mounting slots (fasteners not included). An adjustment bolt with locking nut lets you use mounts for leveling. For best results, adjust the leveling bolt so that the upper housing is 1/4″-1/2″ above the top of the lower housing. Temperature range is –20° to 180° F.

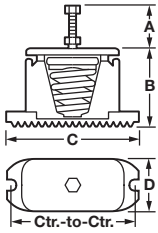

Thread Size	Thread Lg. (A)	Cap. per Mount, lbs.	Deflection @ Max. Cap.	Ht. (B)	Base Lg. (C)	Base Wd. (D)	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.	Mounts		Repl. Spring	
3/8″-16	3″	50	1.00″	3 3/8″	5 7/8″	2 3/8″	7/16″	5″	6219K71	$43.67	6219K11	$6.69
3/8″-16	3″	100	1.00″	3 3/8″	5 7/8″	2 3/8″	7/16″	5″	6219K84	43.67	6219K12	6.69
3/8″-16	3″	150	1.00″	3 3/8″	5 7/8″	2 3/8″	7/16″	5″	6219K72	43.55	6219K13	6.69
3/8″-16	3″	250	0.83″	3 3/8″	5 7/8″	2 3/8″	7/16″	5″	6219K73	43.55	6219K14	6.69
3/8″-16	3″	370	0.75″	3 3/8″	5 7/8″	2 3/8″	7/16″	5″	6219K87	43.55	6219K15	6.69
3/8″-16	3″	520	0.75″	3 3/8″	5 7/8″	2 3/8″	7/16″	5″	6219K88	43.67	6219K25	13.31
1/2″-13	3 1/2″	675	1.32″	5 1/4″	7 3/4″	3″	5/8″	6 1/2″	6219K74	58.00	6219K17	15.62
1/2″-13	3 1/2″	900	1.02″	5 1/4″	7 3/4″	3″	5/8″	6 1/2″	6219K91	58.00	6219K18	15.62
1/2″-13	3 1/2″	1,200	0.90″	5 1/4″	7 3/4″	3″	5/8″	6 1/2″	6219K92	63.88	6219K19	15.62
1/2″-13	3 1/2″	1,785	0.88″	5 1/4″	7 3/4″	3″	5/8″	6 1/2″	6219K94	66.88	6219K35	21.26

Inflatable High-Deflection Vibration-Damping Mounts

Connect these compact mounts to your air supply for vibration and shock isolation in compression load applications. They handle the high deflection of equipment such as punch presses, blowers, forging hammers, shakers, vibrators, and air compressors. Add or release air to use these mounts as leveling devices (±1/4″ adjustment). Mounts have four mounting holes (fasteners not included) and a 0.30″ dia. threaded air connection—inflate as you would a bicycle tire. Temperature range is –20° to 180° F.

Mounts are black rubber. They have an aluminum top plate, except 62075K24, K25, and K26 have a steel top plate. All have an aluminum base plate.

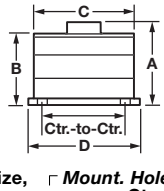

Thread	Max. Static Cap. per Mount, lbs.	Max. Deflection	Max. psi	Durometer	O'all Ht. (A)	(B)	OD (C)	Base Size, sq. (D)	Mount. Holes Dia.	Mount. Holes Ctr.-to-Ctr.		
3/8″-16	100	1″	60	60A	2.50″	2.00″	2.88″	3.00″	0.30″	2.38″	62075K21	$80.07
1/2″-13	300	1″	60	60A	2.45″	1.91″	4.14″	4.19″	0.30″	3.50″	62075K22	87.06
1/2″-13	600	1.5″	80	60A	3.50″	2.94″	5.00″	5.12″	0.30″	4.25″	62075K23	111.24
1/2″-13	1,200	1.5″	80	60A	3.50″	2.94″	6.74″	6.88″	0.30″	6.00″	62075K24	126.17
5/8″-11	2,400	1.5″	80	60A	3.50″	2.94″	9.66″	10.00″	0.56″	8.50″	62075K25	212.46
5/8″-11	4,800	1.5″	80	60A	3.50″	2.94″	13.31″	13.50″	0.56″	12.00″	62075K26	305.63
M10	100	0.5″	85	65A	2.50″	1.94″	2.89″	3.00″	0.30″	2.38″	62075K31	59.78
M12	300	0.5″	85	65A	2.50″	1.94″	4.14″	4.19″	0.30″	3.50″	62075K32	75.33
M12	600	0.5″	85	65A	3.50″	2.94″	5.00″	5.13″	0.30″	4.25″	62075K33	109.44
M12	1,200	0.5″	85	65A	3.50″	2.94″	6.74″	6.88″	0.30″	6.00″	62075K34	171.22
M16	2,400	0.5″	85	65A	3.50″	2.94″	9.66″	10.00″	0.56″	8.50″	62075K35	218.22

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Seismic Vibration-Damping Mounts

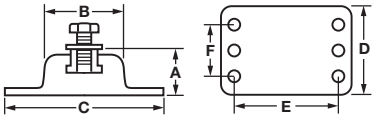

Limit damage during moderate earthquakes. The mounts have a seismic rating of 1g (acceleration of gravity) and dissipate vibration and noise in compression and shear load applications. They are made of black rubber with a steel housing, come with a cadmium-plated steel cap screw and washer for height adjustment, and have six mounting holes (fasteners not included). Temperature range is –20° to 225°F.

	Compression		Shear					Base		Mount. Holes				
Thread	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Durometer	Ht. (A)	OD (B)	Lg. (C)	Wd. (D)	Dia.	(E)	(F)		
1/2"-13	250	0.15"	200	0.09"	30A	1 7/8"	2 3/4"	4 3/4"	3"	7/16"	3 7/8"	2"	5724K41	$48.65
1/2"-13	525	0.15"	420	0.09"	45A	1 7/8"	2 3/4"	4 3/4"	3"	7/16"	3 7/8"	2"	5724K42	48.65
1/2"-13	1,000	0.15"	800	0.09"	60A	1 7/8"	2 3/4"	4 3/4"	3"	7/16"	3 7/8"	2"	5724K43	48.65
5/8"-11	1,400	0.15"	400	0.09"	40A	1 7/8"	3 1/2"	6 1/4"	3 3/4"	9/16"	5"	2 1/2"	5724K44	58.85
5/8"-11	2,100	0.15"	600	0.09"	50A	1 7/8"	3 1/2"	6 1/4"	3 3/4"	9/16"	5"	2 1/2"	5724K45	58.85
5/8"-11	3,500	0.15"	1,000	0.09"	60A	1 7/8"	3 1/2"	6 1/4"	3 3/4"	9/16"	5"	2 1/2"	5724K46	58.85

Oil-Resistant Heavy Duty Vibration-Damping Mounts

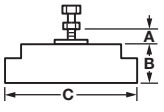

Made of resilient, black nitrile rubber that withstands oil, these mounts have an aluminum top plate that not only supports heavy loads, but also displaces vibration and shock through the entire mount. Use them in compression load applications with punch presses, milling machines, grinders, and air compressors. Hundreds of suction pockets on the bottom of each mount prevent machine walking. Mounts come with a zinc-plated steel bolt and nut, and have two tapped holes for mounting versatility. Temperature range is –25° to 250°F.

Cap. per Mount, lbs.	Deflection @ Max. Cap.	Durometer	Thread Size	Thread Lg. (A)	Ht. (B)	Base Size, sq. (C)		
500	0.18"	60A	1/2"-20	1 1/2"	1 3/16"	4"	6424K21	$40.06
1,000	0.12"	60A	1/2"-20	1 1/2"	1 3/16"	6"	6424K12	50.87
1,875	0.21"	80A	1/2"-20	1 1/2"	1 3/16"	4"	6424K23	40.06
2,500	0.13"	80A	1/2"-20	1 1/2"	1 3/16"	6"	6424K14	50.87

Chemical-Resistant Heavy Duty Vibration-Damping Mounts

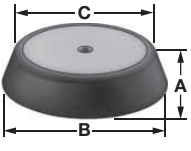

The polyurethane base on these mounts resists solvents, gasoline, and oil, while the metal plate sustains heavy loads. Use them in compression load applications to minimize vibration and noise. Temperature range is –80° to 180°F. Base is blue.

Zinc-plated steel plate offers some corrosion resistance. ***Stainless steel plate*** provides superior corrosion resistance.

Thread	Cap. per Mount, lbs.	Deflection @ Max. Cap.	Durometer	O'all Ht. (A)	Base Dia. (B)	Dia. (C)	*Zinc-Plated Steel Plate*		*Stainless Steel Plate*	
5/16"-18	250	0.22"	65A	1/2"	2"	1 5/8"	6102K11	$31.16	6102K17	$48.93
3/8"-16	1,500	0.24"	65A	5/8"	3"	2 1/2"	6102K12	44.64	6102K18	69.46
3/8"-16	3,000	0.34"	65A	7/8"	4"	3 3/8"	6102K13	69.38	6102K19	104.46
1/2"-13	5,000	0.28"	65A	1"	5"	4 1/4"	6102K14	86.43	6102K21	133.84
5/8"-11	7,000	0.30"	65A	1 1/4"	6"	5"	6102K15	129.46	6102K22	170.71
3/4"-10	12,000	0.39"	65A	1 1/2"	8"	6 3/4"	6102K16	176.07	6102K23	283.75

Vibration-Damping Sandwich Mounts

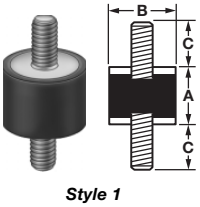

Style 1

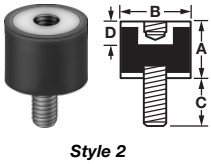

Style 2

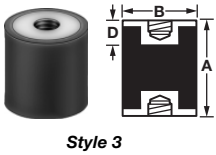

Style 3

Diminish vibration, shock, and noise in compression and shear load applications. Mounts have two threaded studs and/or inserts that are sandwiched between black natural rubber or neoprene. Durometer is 50A, unless noted.

Natural rubber has superior resistance to tears and abrasion as well as good flexibility in cold temperatures. Temperature range is –10° to 150°F. ***Neoprene*** has good resistance to weather and acids; moderate resistance to oils. Temperature range is 10° to 180°F.

		Compression		Shear				Thread				
Inch Thread	Metric Thread	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Ht. (A)	Wd. (B)	Lg. (C)	Dp. (D)	*Inch Thread*		*Metric Thread*	
Style 1— *Male Threaded Stud on Each End*													
Steel Studs— **To Order:** *Please specify natural rubber or neoprene mount.*													
6-32	—	3	0.03"	—	—	1/4"	3/16"	1/2"	—	9376K181	$2.63	—	—
8-32	M4	7	0.05"	0.75	0.04"	1/2"	3/8"	1/2"	—	9376K11	1.57	9376K201	$1.57
8-32	M4	20	0.05"	3	0.06"	1/2"	5/8"	1/2"	—	9376K25	1.97	9376K202	1.97
10-32	—	8	0.05"	—	—	1/2"	3/8"	1/2"	—	9376K183	2.53	—	—
1/4"-20	M6	31	0.07"	4.5	0.06"	5/8"	5/8"	1/2"	—	9376K27	1.76	9376K203	1.76
1/4"-20	M6	40	0.08"	6	0.08"	3/4"	3/4"	1/2"	—	9376K32	1.80	9376K204	1.80
1/4"-20	M6	45	0.10"	8	0.10"	1"	1"	1/2"	—	9376K37	1.83	9376K208	1.83
1/4"-20	M6	50	0.05"	15	0.10"	1/2"	1"	1/2"	—	9376K33	1.89	9376K205	1.89
1/4"-20	M6	50	0.08"	9	0.10"	3/4"	1"	1/2"	—	9376K34	1.87	9376K206	1.87
1/4"-20	—	50	0.08"	9	0.10"	3/4"	1"	3/4"	—	9376K116	1.91	—	—
1/4"-20	M6	75	0.08"	12	0.12"	3/4"	1 1/4"	1/2"	—	9376K38	1.95	9376K209	1.95
1/4"-20	M6	110	0.08"	18	0.15"	3/4"	1 1/2"	1/2"	—	9376K39	2.40	9376K211	2.40
5/16"-18	—	30	0.10"	3	0.08"	1"	3/4"	5/8"	—	9376K121	2.03	—	—
5/16"-18	M8	40	0.30"	—	—	3"	1"	5/8"	—	9376K47	2.48	9376K215	2.48
5/16"-18	M8	45	0.10"	8	0.10"	1"	1"	5/8"	—	9376K45	2.03	9376K214	2.03

(Continued on following page)

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Vibration-Damping Sandwich Mounts (Continued from previous page)

Inch Thread	Metric Thread	Compression Cap. per Mount, lbs.	Compression Deflect. @ Max. Cap.	Shear Cap. per Mount, lbs.	Shear Deflect. @ Max. Cap.	Ht. (A)	Wd. (B)	Thread Lg. (C)	Thread Dp. (D)	Inch Thread		Metric Thread	
Style 1— *Male Threaded Stud on Each End (Cont.)*													
Steel Studs— **To Order:** *Please specify natural rubber or neoprene mount.*													
5/16″-18	M8	50	0.08″	9	0.10″	3/4″	1″	5/8″	—	9376K43	$2.17	9376K213	$2.17
5/16″-18	M8	70	0.10″	12	0.12″	1″	1 1/4″	5/8″	—	9376K55	2.18	9376K217	2.18
5/16″-18	M8	70	0.13″	10	0.12″	1 1/4″	1 1/4″	5/8″	—	9376K56	2.39	9376K218	2.39
5/16″-18	M8	75	0.08″	12	0.12″	3/4″	1 1/4″	5/8″	—	9376K49	2.28	9376K216	2.28
5/16″-18	M8	80	0.10″	15	0.14″	1″	1 3/8″	5/8″	—	9376K58	2.18	9376K219	2.18
5/16″-18	M8	110	0.08″	18	0.15″	3/4″	1 1/2″	5/8″	—	9376K59	2.24	9376K221	2.24
5/16″-18	M8	125	0.10″	20	0.15″	1″	1 9/16″	5/8″	—	9376K61	2.92	9376K222	2.92
5/16″-24	—	125	0.10″	20	0.15″	1″	1 9/16″	5/8″	—	9376K132	2.92	—	—
3/8″-16	M10	125	0.10″	20	0.15″	1″	1 9/16″	5/8″	—	9376K64	3.30	9376K224	3.30
3/8″-16	M10	165	0.16″	55	0.20″	1 5/8″	2″	5/8″	—	9376K66	5.08	9376K226	5.08
3/8″-16	M10	180	0.14″	46	0.20″	1 3/8″	2″	5/8″	—	9376K156	7.66	9376K157	7.66
3/8″-16	M10	370	0.08″	90	0.15″	3/4″	2″	1 1/8″	—	9376K65	4.72	9376K225	4.72
3/8″-16	M10	375	0.06″	85	0.16″	5/8″	1 9/16″	5/8″	—	9376K154	5.00	9376K155	5.00
3/8″-16	M10	560	0.09″	160	0.25″	7/8″	2 1/2″	1 1/8″	—	9376K67	5.33	9376K227	5.33
1/2″-13	M12	668	0.15″	199	0.31″	1 1/2″	3 1/8″	1 1/4″	—	9376K68	10.78	9376K228	10.78
1/2″-13	M12	720	0.40″	140	0.30″	2 1/4″	3 1/8″	1 1/4″	—	9376K69	16.78	9376K229	16.78
Stainless Steel Studs— *Mount is natural rubber. Studs are stainless steel for excellent corrosion resistance.*													
8-32	M4	20	0.05″	3	0.06″	1/2″	5/8″	1/2″	—	5823K2	6.27	5823K61	6.27
1/4″-20	M6	50	0.08″	9	0.10″	3/4″	1″	1/2″	—	5823K5	5.47	5823K62	5.47
5/16″-18	M8	45	0.10″	8	0.10″	1″	1″	5/8″	—	5823K8	6.22	5823K63	6.22
5/16″-18	M8	70	0.13″	10	0.12″	1 1/4″	1 1/4″	5/8″	—	5823K11	9.47	5823K64	9.47
5/16″-18	M8	80	0.10″	15	0.14″	1″	1 3/8″	5/8″	—	5823K14	8.97	5823K65	8.97
3/8″-16	M10	125	0.10″	20	0.15″	1″	1 9/16″	5/8″	—	5823K17	9.43	5823K66	9.43
3/8″-16	M10	370	0.08″	90	0.15″	3/4″	2″	1 1/8″	—	5823K21	9.56	5823K67	9.56
Style 2— *Male Threaded Stud on One End; Female Threaded Insert on One End*													
Steel Stud and Insert— **To Order:** *Please specify natural rubber or neoprene mount.*													
8-32	M4	7	0.05″	0.75	0.04″	1/2″	3/8″	1/2″	1/8″	9376K71	1.93	9376K231	1.93
8-32	M4	20	0.05″	3	0.06″	1/2″	5/8″	1/2″	3/16″	9376K72	2.06	9376K232	2.06
1/4″-20	M6	31	0.07″	4.5	0.06″	5/8″	5/8″	1/2″	3/16″	9376K73	2.17	9376K233	2.17
1/4″-20	M6	50	0.06″	15	0.10″	3/4″	1″	1/2″	3/16″	9376K74	2.41	9376K234	2.41
1/4″-20	M6	55	0.10″	8	0.10″	1″	1″	1/2″	3/16″	9376K75	2.65	9376K235	2.65
1/4″-20	M6	75	0.03″	25	0.10″	1/2″	1″	1/2″	3/16″	9376K76	2.35	9376K236	2.35
5/16″-18	M8	55	0.10″	8	0.10″	1″	1″	5/8″	3/16″	9376K77	2.41	9376K237	2.41
5/16″-18	M8	80	0.10″	15	0.14″	1″	1 3/8″	5/8″	3/16″	9376K78	2.54	9376K238	2.54
3/8″-16	M10	125	0.10″	20	0.15″	1″	1 9/16″	5/8″	1/4″	9376K168	5.50	9376K169	5.50
3/8″-16	M10	165	0.16″	55	0.20″	1 5/8″	2″	5/8″	7/16″	9376K82	5.50	9376K242	5.50
3/8″-16	M10	165	0.20″	45	0.20″	2″	2″	1 1/8″	7/16″	9376K81	5.75	9376K241	5.75
3/8″-16	M10	192	0.14″	54	0.20″	1 3/8″	2″	5/8″	7/16″	9376K92	4.91	9376K252	4.91
3/8″-16	M10	375	0.06″	85	0.16″	5/8″	1 9/16″	5/8″	1/4″	9376K158	5.17	9376K159	5.17
1/2″-13	M12	720	0.40″	140	0.30″	2 1/4″	3 1/8″	1 1/4″	9/16″	9376K83	21.00	9376K243	21.00
Stainless Steel Stud and Insert— *Mount is natural rubber. Stud and insert are stainless steel for excellent corrosion resistance.*													
8-32	M4	20	0.05″	3	0.06″	1/2″	5/8″	1/2″	3/16″	5823K22	8.33	5823K68	8.33
1/4″-20	M6	50	0.08″	9	0.10″	3/4″	1″	1/2″	5/8″	5823K23	10.43	5823K69	10.43
5/16″-18	M8	55	0.08″	8	0.10″	1″	1″	5/8″	3/4″	5823K24	9.69	5823K71	9.69
5/16″-18	M8	70	0.13″	10	0.12″	1 1/4″	1 1/4″	5/8″	3/4″	5823K25	10.48	5823K52	10.48
5/16″-18	M8	80	0.10″	15	0.14″	1″	1 3/8″	5/8″	3/4″	5823K26	12.17	5823K73	12.17
3/8″-16	M10	125	0.10″	20	0.15″	1″	1 9/16″	5/8″	3/4″	5823K27	14.26	5823K75	14.26
Style 3— *Female Threaded Insert on Each End*													
Steel Inserts— **To Order:** *Please specify natural rubber or neoprene mount.*													
8-32	M4	7	0.05″	0.75	0.04″	1/2″	3/8″	—	1/8″	9376K84	2.18	9376K244	2.18
8-32	M4	25	0.03″	5	0.03″	1/2″	5/8″	—	3/16″	9376K85	2.13	9376K245	2.13
1/4″-20	M6	55	0.10″	8	0.10″	1″	1″	—	3/16″	9376K174	3.30	9376K175	3.30
1/4″-20	M6	210	0.02″	30	0.05″	1/2″	1″	—	3/16″	9376K86	2.61	9376K246	2.61
5/16″-18	M8	55	0.10″	8	0.10″	1″	1″	—	3/16″	9376K87	2.75	9376K247	2.75
5/16″-24	M8	170	0.10″	40	0.15″	1″	1 1/2″	—	3/16″	9376K88	4.50	9376K248	4.50
3/8″-16	M10	165	0.16″	55	0.20″	1 5/8″	2″	—	7/16″	9376K89	5.45	9376K249	5.45
3/8″-16	M10	192	0.14″	54	0.20″	1 3/8″	2″	—	7/16″	9376K176	7.27	9376K177	7.27
1/2″-13	M12	720	0.40″	140	0.30″	2 1/4″	3 1/8″	—	9/16″	9376K91	18.50	9376K251	18.50
Steel Inserts with Locking Hex Nut— *Mount is neoprene.*													
1/2″-13	—	90	0.12″	25	0.20″	2 1/8″	2″	—	7/16″	64885K51★	8.37	—	—
1/2″-13	—	130	0.12″	45	0.20″	2 1/8″	2″	—	7/16″	64885K52	8.37	—	—
1/2″-13	—	150	0.08″	60	0.20″	1 3/4″	2″	—	7/16″	64885K42	8.66	—	—
1/2″-13	—	185	0.16″	45	0.20″	2 5/8″	2″	—	7/16″	64885K34▲	21.08	—	—
1/2″-13	—	210	0.12″	70	0.20″	2 1/8″	2″	—	7/16″	64885K53▲	8.37	—	—
1/2″-13	—	265	0.06″	90	0.20″	1 1/2″	2″	—	7/16″	64885K31	16.10	—	—
1/2″-13	—	280	0.16″	70	0.20″	2 5/8″	2″	—	7/16″	64885K35♣	21.08	—	—
1/2″-13	—	310	0.08″	140	0.20″	1 3/4″	2″	—	7/16″	64885K44♣	8.66	—	—
1/2″-13	—	310	0.12″	100	0.20″	2 1/8″	2″	—	7/16″	64885K54♣	8.37	—	—
1/2″-13	—	370	0.06″	125	0.20″	1 1/2″	2″	—	7/16″	64885K32▲	16.10	—	—
1/2″-13	—	560	0.06″	200	0.20″	1 1/2″	2″	—	7/16″	64885K33♣	16.10	—	—
Stainless Steel Inserts— *Mount is natural rubber. Inserts are stainless steel for excellent corrosion resistance.*													
8-32	M4	20	0.05″	3	0.06″	1/2″	5/8″	—	3/16″	5823K31	6.84	5823K81	6.84
5/16″-18	M6	50	0.08″	9	0.10″	3/4″	1″	—	3/16″	5823K32	10.66	5823K82	10.66
5/16″-18	M8	55	0.10″	8	0.10″	1″	1″	—	3/16″	5823K33	11.33	5823K83	11.33
5/16″-18	M8	70	0.13″	10	0.12″	1 5/16″	1 1/4″	—	3/16″	5823K34	12.73	5823K84	12.73
5/16″-18	M8	80	0.10″	15	0.14″	1″	1 3/8″	—	3/16″	5823K35	13.50	5823K85	13.50
3/8″-16	M10	125	0.10″	20	0.15″	1″	1 9/16″	—	1/4″	5823K36	16.50	5823K86	16.50

★ Durometer is 40A. ▲ Durometer is 60A. ♣ Durometer is 70A.

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Chemical-Resistant Vibration-Damping Sandwich Mounts

Solvents, acids, and oils are no problem for these mounts. Made of black polyurethane sandwiched between two threaded steel studs and/or inserts, they're excellent for reducing vibration and noise in motors, fans, blowers, pumps, and office machines.

Standard mounts are tough, yet flexible. Use them in compression and shear load applications. Temperature range is 55° to 105° F. ***Extra-soft mounts*** are more flexible than standard mounts. Use them in compression load applications. Temperature range is –20° to 160° F.

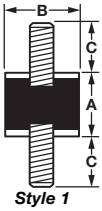

Style 1

Style 2

Thread	Compression: Cap. per Mount, lbs.	Compression: Deflect. @ Max. Cap.	Shear: Cap. per Mount, lbs.	Shear: Deflect. @ Max. Cap.	Durometer	Ht. (A)	Wd. (B)	Thread: Lg. (C)	Thread: Dp. (D)		
Style 1—*Male Threaded Stud on Each End*											
Standard Inch											
4-40	4	0.04″	1.5	0.15″	58A	5/16″	5/16″	3/16″	—	**96905K31**	$4.74
6-32	8	0.03″	3	0.24″	58A	1/2″	3/8″	3/8″	—	**96905K48**	5.03
8-32	8	0.03″	3	0.24″	58A	1/2″	3/8″	3/8″	—	**96905K32**	5.18
1/4″-20	20	0.04″	5	0.14″	58A	5/8″	5/8″	1/2″	—	**96905K33**	5.53
5/16″-18	50	0.03″	13	0.09″	58A	3/4″	1″	5/8″	—	**96905K34**	6.35
Extra-Soft Inch											
8-32	8	0.15″	—	—	7A	1/2″	3/4″	1/2″	—	**20125K61**	5.86
1/4″-20	16	0.20″	—	—	7A	1″	1 1/2″	1/2″	—	**20125K63**	7.23
1/4″-20	40	0.17″	—	—	7A	13/16″	1 3/4″	1/2″	—	**20125K68**	7.84
Extra-Soft Metric											
M6	15	0.20″	—	—	7A	1″	1 1/2″	1/2″	—	**20125K67**	7.59
M6	40	0.17″	—	—	7A	7/8″	1 3/4″	1/2″	—	**20125K65**	8.00
Style 2—*Male Threaded Stud on One End; Female Threaded Insert on One End*											
Standard Inch											
4-40	2	0.02″	0.8	0.08″	58A	5/16″	5/16″	3/16″	1/8″	**96905K35**	4.74
6-32	4	0.02″	2	0.16″	58A	1/2″	3/8″	3/8″	3/16″	**96905K39**	5.03
8-32	4	0.02″	2	0.16″	58A	1/2″	3/8″	3/8″	3/16″	**96905K36**	5.18
1/4″-20	12	0.02″	3.5	0.10″	58A	5/8″	5/8″	1/2″	1/4″	**96905K37**	5.59
5/16″-18	45	0.03″	10	0.07″	58A	3/4″	1″	5/8″	5/16″	**96905K38**	8.26
Extra-Soft Inch											
8-32	6	0.15″	—	—	7A	1/2″	3/4″	1/2″	1/4″	**20125K62**	5.86
1/4″-20	18	0.20″	—	—	7A	1″	1 1/2″	1/2″	3/8″	**20125K64**	7.23
1/4″-20	40	0.17″	—	—	7A	13/16″	1 3/4″	1/2″	3/8″	**20125K69**	7.84
Extra-Soft Metric											
M6	18	0.20″	—	—	7A	1″	1 1/2″	1/2″	1/2″	**20125K66**	7.59
M6	40	0.17″	—	—	7A	7/8″	1 3/4″	1/2″	1/2″	**20125K71**	8.00

Extreme-Temperature Vibration-Damping Sandwich Mounts

In addition to having the widest temperature range of all the sandwich mounts we offer, these resist UV light, ozone, and oxidation. Mounts are made of silicone sandwiched between two threaded, zinc-plated steel studs and/or inserts. Use them to isolate vibration and shock in compression and shear load applications. Temperature range is –80° to 300° F. Color is black for 30A durometer; green for 40A durometer; and orange for 50A, 60A, and 70A durometer.

Style 1

Style 2

Inch Thread	Metric Thread	Compression: Cap. per Mount, lbs.	Compression: Deflect. @ Max. Cap.	Shear: Cap. per Mount, lbs.	Shear: Deflect. @ Max. Cap.	Durometer	Ht. (A)	Wd. (B)	Thread: Lg. (C)	Thread: Dp. (D)	Inch Thread		Metric Thread	
Style 1—*Male Threaded Stud on Each End*														
1/4″-20	M6	25	0.08″	8	0.12″	30A	3/4″	1″	1/2″	—	**4403K277**	$6.14	**4403K722**	$6.46
1/4″-20	M6	35	0.08″	12	0.12″	40A	3/4″	1″	1/2″	—	**4403K311**	6.14	**4403K755**	6.46
1/4″-20	M6	40	0.06″	8	0.07″	30A	1/2″	1″	1/2″	—	**4403K122**	5.71	**4403K53**	6.00
1/4″-20	M6	50	0.08″	16	0.12″	50A	3/4″	1″	1/2″	—	**4403K333**	6.14	**4403K788**	6.46
1/4″-20	M6	60	0.06″	12	0.07″	40A	1/2″	1″	1/2″	—	**4403K155**	5.71	**4403K56**	6.00
1/4″-20	M6	65	0.08″	22	0.12″	60A	3/4″	1″	1/2″	—	**4403K36**	6.14	**4403K81**	6.46
1/4″-20	M6	80	0.06″	16	0.07″	50A	1/2″	1″	1/2″	—	**4403K188**	5.71	**4403K59**	6.00
1/4″-20	M6	90	0.08″	30	0.12″	70A	3/4″	1″	1/2″	—	**4403K39**	6.14	**4403K84**	6.46
1/4″-20	M6	100	0.06″	20	0.07″	60A	1/2″	1″	1/2″	—	**4403K211**	5.71	**4403K65**	6.00
1/4″-20	M6	140	0.06″	28	0.07″	70A	1/2″	1″	1/2″	—	**4403K244**	5.71	**4403K68**	6.00
5/16″-18	M8	50	0.09″	12	0.12″	30A	3/4″	1 1/4″	5/8″	—	**4403K422**	8.89	**4403K73**	9.11
5/16″-18	M8	60	0.12″	15	0.12″	30A	1″	1 1/2″	5/8″	—	**4403K577**	9.83	**4403K85**	10.06
5/16″-18	M8	75	0.09″	22	0.12″	40A	3/4″	1 1/4″	5/8″	—	**4403K455**	8.89	**4403K76**	9.11
5/16″-18	M8	90	0.12″	20	0.12″	40A	1″	1 1/2″	5/8″	—	**4403K611**	9.83	**4403K86**	10.06
5/16″-18	M8	100	0.09″	30	0.12″	50A	3/4″	1 1/4″	5/8″	—	**4403K488**	8.89	**4403K79**	9.11
5/16″-18	M8	125	0.12″	30	0.12″	50A	1″	1 1/2″	5/8″	—	**4403K633**	9.83	**4403K87**	10.06
5/16″-18	M8	150	0.09″	40	0.12″	60A	3/4″	1 1/4″	5/8″	—	**4403K511**	8.89	**4403K82**	9.11
5/16″-18	M8	175	0.12″	45	0.12″	60A	1″	1 1/2″	5/8″	—	**4403K661**	9.83	**4403K88**	10.06
5/16″-18	M8	180	0.09″	55	0.12″	70A	3/4″	1 1/4″	5/8″	—	**4403K544**	8.89	**4403K83**	9.11
5/16″-18	M8	225	0.12″	55	0.12″	70A	1″	1 1/2″	5/8″	—	**4403K699**	9.83	**4403K89**	10.06
Style 2—*Male Threaded Stud on One End; Female Threaded Insert on One End*														
1/4″-20	M6	25	0.08″	8	0.10″	30A	3/4″	1″	1/2″	1/4″	**4403K133**	6.77	**4403K588**	7.11
1/4″-20	M6	35	0.08″	12	0.10″	40A	3/4″	1″	1/2″	1/4″	**4403K166**	6.77	**4403K622**	7.11
1/4″-20	M6	50	0.08″	16	0.10″	50A	3/4″	1″	1/2″	1/4″	**4403K199**	6.77	**4403K644**	7.11
1/4″-20	M6	65	0.08″	22	0.10″	60A	3/4″	1″	1/2″	1/4″	**4403K22**	6.77	**4403K67**	7.11
1/4″-20	M6	90	0.08″	30	0.10″	70A	3/4″	1″	1/2″	1/4″	**4403K25**	6.77	**4403K71**	7.11
5/16″-18	M8	50	0.08″	12	0.08″	30A	3/4″	1 1/4″	5/8″	5/16″	**4403K288**	9.77	**4403K11**	9.97
5/16″-18	M8	60	0.10″	15	0.12″	30A	1″	1 1/2″	5/8″	5/16″	**4403K433**	10.83	**4403K29**	11.03
5/16″-18	M8	75	0.08″	22	0.08″	40A	3/4″	1 1/4″	5/8″	5/16″	**4403K322**	9.77	**4403K14**	9.97
5/16″-18	M8	90	0.10″	20	0.12″	40A	1″	1 1/2″	5/8″	5/16″	**4403K466**	10.83	**4403K35**	11.03
5/16″-18	M8	100	0.08″	30	0.08″	50A	3/4″	1 1/4″	5/8″	5/16″	**4403K344**	9.77	**4403K17**	9.96
5/16″-18	M8	125	0.10″	30	0.12″	50A	1″	1 1/2″	5/8″	5/16″	**4403K499**	10.83	**4403K38**	11.03
5/16″-18	M8	150	0.08″	40	0.08″	60A	3/4″	1 1/4″	5/8″	5/16″	**4403K377**	9.77	**4403K23**	9.97
5/16″-18	M8	175	0.10″	45	0.12″	60A	1″	1 1/2″	5/8″	5/16″	**4403K522**	10.83	**4403K44**	11.03
5/16″-18	M8	180	0.08″	55	0.08″	70A	3/4″	1 1/4″	5/8″	5/16″	**4403K411**	9.77	**4403K26**	9.97
5/16″-18	M8	225	0.10″	55	0.12″	70A	1″	1 1/2″	5/8″	5/16″	**4403K555**	10.83	**4403K47**	11.03

For information about vibration-damping mounts, see page 1374.

Extreme-Temperature Wire Rope Vibration-Damping Mounts

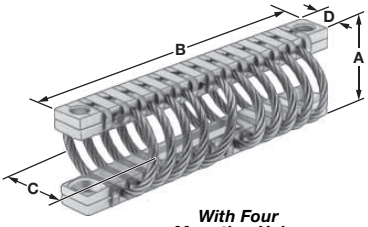

With Four Mounting Holes

With Eight Mounting Holes

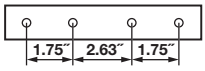

Mounting Holes for 62225K6, K8 & K14

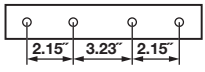

Mounting Holes for 62225K9

Isolate shock and vibration in harsh temperatures as well as harsh environments. Able to withstand temperatures from –150° to 500° F, these rugged mounts are resistant to corrosion and oils. They're made of stainless steel cable that is wound into aluminum bars, which are chromate coated for additional corrosion resistance. Use them in compression and shear load applications with pumps, compressors, generators, and electronic equipment. Mounts have four or eight mounting holes for installation (fasteners not included).

Compression		Shear		O'all	O'all	O'all	Bar	Mounting Holes				
Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Cap. per Mount, lbs.	Deflect. @ Max. Cap.	Ht. (A)	Lg. (B)	Wd. (C)	Wd. (D)	No.	Dia.	Ctr.-to-Ctr.		
9	0.13″	2	0.13″	1.0″	3.1″	1.2″	0.4″	4	0.20″	2.70″	62225K1	$47.40
12	0.13″	3	0.13″	1.4″	4.4″	1.6″	0.5″	4	0.20″	3.95″	62225K11	50.90
17	0.13″	4	0.13″	1.3″	4.4″	1.5″	0.5″	4	0.20″	4.00″	62225K7	51.30
25	0.13″	7	0.13″	1.1″	4.4″	1.3″	0.5″	4	0.20″	4.00″	62225K2	51.30
40	0.13″	12	0.13″	1.5″	5.0″	1.8″	0.6″	4	0.30″	4.50″	62225K3	55.93
55	0.13″	19	0.13″	1.3″	5.0″	1.6″	0.6″	4	0.30″	4.50″	62225K12	56.90
75	0.13″	20	0.13″	1.3″	5.0″	1.7″	0.6″	4	0.30″	4.50″	62225K4	53.00
125	0.13″	39	0.13″	1.6″	5.0″	1.8″	0.6″	4	0.30″	4.50″	62225K13	57.90
175	0.13″	53	0.13″	1.4″	5.0″	1.6″	0.6″	4	0.30″	4.50″	62225K5	56.50
200	0.13″	95	0.13″	2.9″	6.7″	3.5″	1.0″	8	0.30″	★	62225K14	107.00
300	0.13″	60	0.13″	2.8″	8.5″	3.3″	1.0″	8	0.30″	★	62225K6	99.74
500	0.13″	105	0.13″	3.5″	8.5″	4.1″	1.0″	8	0.30″	★	62225K8	171.36
900	0.13″	200	0.13″	3.9″	10.5″	4.4″	1.0″	8	0.40″	★	62225K9	222.50

★ See illustrations for location and distances between mounting holes.

Extreme-Temperature Stainless Steel Mesh Vibration-Damping Mounts

Tightly layered stainless steel mesh provides superior damping in temperatures from –130° to 500° F. It also offers excellent resistance to corrosion and oils. Use these mounts in compression load applications with HVAC systems, blowers, fans, compressors, gas engines, and electric motors.

To install ***mounts with counterbore hole***, use a standard socket head cap screw (not included).

Round

Cap. per Mount, lbs.	Deflect. @ Max. Cap.	O'all Ht. (A)	OD (B)	ID (E)	Counterbore Dia. (F)	Counterbore Dp. (G)		
Solid								
280	0.18″	9/16″	15/16″	—	—	—	1073N11	$12.63
315	0.18″	9/16″	1″	—	—	—	1073N12	12.98
450	0.24″	13/16″	1 3/8″	—	—	—	1073N13	13.33
560	0.26″	13/16″	1 3/4″	—	—	—	1073N14	17.75
900	0.26″	13/16″	2 1/8″	—	—	—	1073N15	21.17
With Hole								
9	0.08″	3/8″	9/16″	5/16″	—	—	1073N21	11.03
75	0.13″	3/8″	3/4″	5/16″	—	—	1073N22	11.22
110	0.22″	5/8″	7/8″	1/4″	—	—	1073N23	11.74
135	0.21″	5/8″	15/16″	7/16″	—	—	1073N24	11.92
175	0.21″	9/16″	1 1/8″	3/8″	—	—	1073N25	12.63
220	0.22″	9/16″	1 3/8″	3/8″	—	—	1073N26	14.07
335	0.23″	13/16″	1 11/16″	13/16″	—	—	1073N28	14.63
335	0.27″	13/16″	1 9/16″	7/16″	—	—	1073N27	14.63
500	0.28″	13/16″	2 1/8″	3/4″	—	—	1073N29	18.06
670	0.23″	13/16″	2 7/16″	1 9/16″	—	—	1073N74	19.47
With Counterbore Hole								
50	0.11″	1/2″	13/16″	3/16″	3/8″	3/16″	1073N41	12.63
65	0.12″	1/2″	13/16″	1/4″	7/16″	1/4″	1073N42	12.63
90	0.14″	5/8″	1″	1/4″	1/2″	5/16″	1073N43	13.15
110	0.24″	13/16″	1 3/8″	3/8″	5/8″	7/16″	1073N44	13.39
785	0.28″	7/8″	2 1/16″	7/16″	11/16″	3/8″	1073N45	21.17

Round Solid

Round with Hole

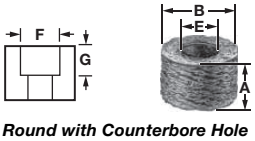

Round with Counterbore Hole

Rectangle

Cap. per Mount, lbs.	Deflect. @ Max. Cap.	O'all Ht. (A)	O'all Lg. (C)	O'all Wd. (D)	ID (E)	Counterbore Dia. (F)	Counterbore Dp. (G)		
With Counterbore Hole									
165	0.22″	3/4″	1 1/8″	1 1/8″	1/4″	7/16″	5/16″	1073N51	$16.36
1,120	0.21″	1″	2 9/16″	2″	3/8″	13/16″	3/8″	1073N52	34.72

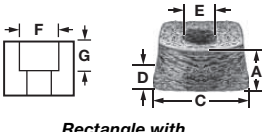

Rectangle with Counterbore Hole

Ring

Cap. per Mount, lbs.	Deflect. @ Max. Cap.	O'all Ht. (A)	OD (B)	ID (E)	(H)	(J)		
7	0.01″	3/16″	11/16″	5/16″	1/2″	1/8″	1073N31	$11.39
20	0.02″	3/16″	13/16″	7/16″	5/8″	1/8″	1073N32	11.74
30	0.03″	1/4″	15/16″	9/16″	11/16″	3/16″	1073N33	11.57
45	0.06″	5/16″	1 3/16″	11/16″	7/8″	3/16″	1073N34	12.27
45	0.07″	5/16″	1 7/16″	7/8″	1 1/8″	3/16″	1073N35	14.42

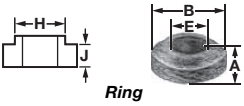

Ring

For information about vibration-damping mounts, see page 1374. For information about durometer, see page 3526.

Precision Equipment Mounts

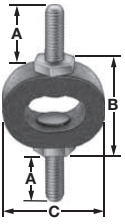

Allowing deflection in all directions, these ring mounts are made of rubber to protect your equipment from shock and vibration. Often used with electronics, measuring devices, small pumps, and compressors. Mounts are suitable for both compression and shear load applications. Threads are male, and made of zinc-plated steel. Temperature range is –10° to 150° F. Color of ring is black.

Thread Size	Thread Lg. (A)	Compression Cap. per Mount, lbs.	Compression Deflection @ Max. Cap.	Shear Cap. per Mount, lbs.	Shear Deflection @ Max. Cap.	Durometer	Ring Ht. (B)	Ring Dia. (C)		
6-32	1/2″	1	0.04″	1	0.08″	55A	9/16″	9/16″	5822K3	$9.00
6-32	1/2″	2	0.04″	2	0.06″	65A	9/16″	9/16″	5822K4	9.00
10-32	5/8″	2.5	0.09″	2.5	0.16″	55A	11/16″	13/16″	5822K6	9.42
10-32	5/8″	3	0.10″	3	0.12″	65A	11/16″	13/16″	5822K7	9.42
1/4″-20	3/4″	5	0.09″	5	0.15″	55A	15/16″	1 1/8″	5822K8	10.96
1/4″-20	3/4″	8	0.11″	8	0.12″	65A	15/16″	1 1/8″	5822K9	10.96
5/16″-18	15/16″	13	0.22″	13	0.20″	55A	1 11/16″	1 11/16″	5822K11	12.50
5/16″-18	15/16″	20	0.26″	20	0.15″	65A	1 11/16″	1 11/16″	5822K12	12.50

About Vibration-Damping Pads

Slide pads under equipment, such as drill presses, milling machines, saws, and air conditioning units, to minimize vibration. Performance is measured by deflection (the distance the pad material moves when subjected to force)—the higher the rating, the greater the vibration isolation. Stack pads for increased deflection; metal shims are recommended between layers.

Before selecting a pad, consider how your machine weight is distributed. If the weight is evenly distributed, use the following formulas to determine the capacity per mounting point in psi.

$$\text{Capacity per Mounting Point} = \frac{\text{Total Machine Weight}}{\text{No. of Mounting Points}}$$

$$\text{psi} = \frac{\text{Capacity per Mounting Point}}{\text{Area (in sq. in.)}}$$

If the weight is unevenly distributed, select the capacity for each mount based on where the weight is concentrated.

Depending on your application, some pad materials are better suited than others. Use this chart to compare the resistance qualities of different materials:

Material	Oil	Weather	Tear	Abrasion
PVC	Fair	Fair	Fair	Fair
Natural Rubber	Poor	Fair	Excellent	Excellent
Recycled Rubber	Excellent	Excellent	Excellent	Excellent
Silicone	Good	Excellent	Fair	Good
Nitrile	Excellent	Poor	Fair	Good
Neoprene	Good	Good	Fair	Good

Chemical-Resistant PVC Vibration-Damping Pads

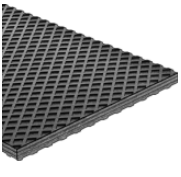

Made of fiber-reinforced PVC, pads endure exposure to corrosive chemicals, such as ammonium hydroxide (used in cleaning agents and solutions), chlorine, and hydrochloric acid. Pads that are 5/8″ thick also contain cork for increased deflection. Pads have a diamond texture. Temperature range is 32° to 150° F. Color is green.

Pads

Lg.	Wd.	Thick.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Each
20″	10″	1/4″	174	0.04″	85A	5998K4	$20.08
20″	10″	5/8″	116	0.05″	80A	5998K5	51.81
39″	20″	1/4″	174	0.04″	85A	5998K1	70.07
39″	20″	5/8″	116	0.05″	80A	5998K2	195.13

Pad Packs

Packs include four 1/4″ thick pads and four 5/8″ thick pads.

Lg.	Wd.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Pkg. of 8
2″	2″	90	0.05″	80A	60105K61	$9.07
3″	3″	90	0.05″	80A	60105K62	19.52
4″	4″	90	0.05″	80A	60105K63	32.20
5″	5″	90	0.05″	80A	60105K64	48.12
6″	6″	90	0.05″	80A	60105K65	67.86
8″	8″	90	0.04″	80A	60105K66	113.57
10″	10″	90	0.04″	80A	60105K67	177.46

Tear-Resistant Rubber Vibration-Damping Pads

Natural

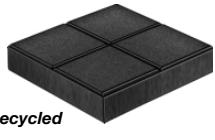

Recycled

For excellent durability, try pads made of textured rubber, which resist abrasion and tears. Color is black.

Natural rubber has a waffle design composed of 2″ squares for a suction-cup grip between machinery and the floor. Temperature range is –20° to 180° F.

Recycled rubber provides greater capacity for heavier equipment than natural rubber pads. It offers excellent oil and weather resistance. Pads are textured. Temperature range is –20° to 200° F.

Lg.	Wd.	Thick.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		
Natural Rubber							
6″	6″	3/8″	45	0.06″	45A	60015K42	$9.83
6″	6″	3/4″	30	0.11″	40A	60015K43	15.69
18″	18″	3/8″	45	0.06″	45A	60015K21	51.97
18″	18″	3/4″	30	0.11″	40A	60015K41	79.68
Recycled Rubber							
36″	36″	1/2″	225	0.22″	45A	60015K54	115.00
36″	36″	1″	225	0.44″	55A	60015K55	149.50

Extreme-Temperature Silicone Vibration-Damping Pads

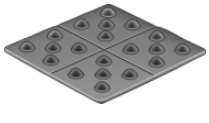

Able to withstand temperatures from –40° to 375° F, these small pads work well with precision equipment, small pumps, and compressors. Made of silicone gel, pads have a nubby texture on top to secure your equipment, while a smooth bottom grips the underlying surface.

Lg.	Wd.	Thick.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer	Color		
4″	4″	1/4″	2	0.09″	10A	Black	1075N1	$57.07
4″	4″	1/4″	6	0.11″	20A	Gray	1075N2	57.07
4″	4″	1/4″	11	0.11″	40A	Green	1075N3	57.07

For information about vibration-damping pads, see page 1384. For information about durometer, see page 3526.

Oil-Resistant Nitrile Vibration-Damping Pads

For excellent resistance to oil and solvents, choose nitrile pads.

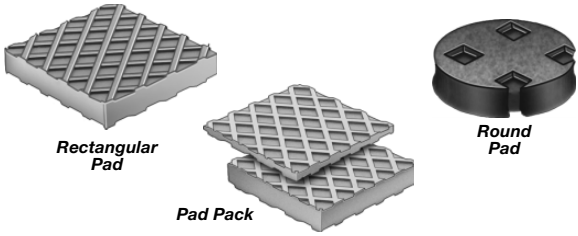

Rectangular Pads

Temperature range is 5° to 200° F. *Low-damping* pads are black. *High-damping* pads are green.

Lg.	Wd.	Thick.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Each
Low Damping							
6″	6″	5/16″	50	0.03″	50A	4056K41	$9.52
6″	6″	5/16″	100	0.03″	60A	4056K42	9.83
6″	6″	5/16″	200	0.03″	70A	4056K43	10.17
6″	6″	1/2″	280	0.04″	80A	4056K44	22.07
18″	18″	5/16″	50	0.03″	50A	4056K45	60.00
18″	18″	5/16″	100	0.03″	60A	4056K46	61.67
18″	18″	5/16″	200	0.03″	70A	4056K47	63.43
18″	18″	1/2″	280	0.04″	80A	4056K48	108.44
High Damping							
20″	20″	9/16″	250	0.16″	70A	4056K53	123.12
20″	20″	1″	250	0.22″	70A	4056K57	197.02
20″	40″	9/16″	250	0.16″	70A	4056K51	222.55
20″	40″	1″	250	0.22″	70A	4056K55	360.60

Rectangular Pad Packs

Packs contain four 1/4″ thick pads and four 5/8″ thick pads. Temperature range is 5° to 200° F. Color is green.

Lg.	Wd.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Pkg. of 8
2″	2″	220	0.14″	70A	4159K61	$11.03
3″	3″	220	0.12″	70A	4159K62	23.82
4″	4″	220	0.12″	70A	4159K63	43.55
5″	5″	220	0.12″	70A	4159K64	57.78
6″	6″	220	0.12″	70A	4159K65	81.51
8″	8″	220	0.07″	70A	4159K66	129.98
10″	10″	220	0.06″	70A	4159K67	184.67

Round Pads

Temperature range is 40° to 200° F. Color is black.

Dia.	Thick.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Each
2″	5/16″	50	0.04″	48A	5996K11	$4.04
2″	5/16″	100	0.04″	65A	5996K12	4.49
2″	1/2″	200	0.06″	48A	5996K13	5.33
2″	1/2″	300	0.06″	65A	5996K14	6.44
4″	5/16″	50	0.04″	48A	5996K41	13.07
4″	5/16″	100	0.04″	65A	5996K42	14.60
4″	1/2″	200	0.06″	48A	5996K43	17.20
4″	1/2″	300	0.06″	65A	5996K44	20.93
6″	5/16″	50	0.04″	48A	5996K61	29.94
6″	5/16″	100	0.04″	65A	5996K62	33.34
6″	1/2″	200	0.06″	48A	5996K63	39.30
6″	1/2″	300	0.06″	65A	5996K64	47.88
8″	5/16″	50	0.04″	48A	5996K81	53.51
8″	5/16″	100	0.04″	65A	5996K82	59.62
8″	1/2″	200	0.06″	48A	5996K83	60.57
8″	1/2″	300	0.06″	65A	5996K84	67.02

Oil-Resistant Neoprene Vibration-Damping Pads

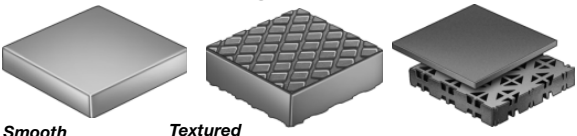

Isolate shock and vibration with neoprene pads, which are durable and resist oils, solvents, and weather. Temperature range is 0° to 175° F.

Pads

Color is dark green. *Textured* pads provide stability and a secure grip between your machinery and the floor.

Lg.	Wd.	Thick.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Each
Smooth							
6″	6″	3/8″	500	0.04″	90A	5996K51	$9.89
6″	6″	5/8″	500	0.06″	90A	5996K52	15.07
6″	6″	1″	500	0.16″	90A	5996K53	22.15
18″	18″	3/8″	500	0.04″	90A	5996K71	89.07
18″	18″	5/8″	500	0.06″	90A	5996K72	135.71
18″	18″	1″	500	0.16″	90A	5996K73	199.35
20″	20″	9/16″	500	0.06″	90A	5996K32	126.72
20″	40″	9/16″	500	0.06″	90A	5996K31	229.09
Textured							
20″	20″	1″	500	0.16″	90A	5996K34	195.05
20″	40″	1″	500	0.16″	90A	5996K33	357.00

Pad Packs

Packs contain four 1/4″ thick top pads with a smooth surface and four 1/2″ thick bottom pads with a patterned surface that grips the floor. Color is black.

Lg.	Wd.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Pkg. of 8
2″	2″	60	0.05″	45A	1968K51	$10.95
3″	3″	60	0.05″	45A	1968K52	23.55
4″	4″	60	0.05″	45A	1968K53	43.10
5″	5″	60	0.06″	45A	1968K54	64.38
6″	6″	60	0.06″	45A	1968K55	80.73
8″	8″	60	0.05″	45A	1968K56	128.78
10″	10″	60	0.05″	45A	1968K57	182.93

High-Capacity Oil-Resistant Nitrile Vibration-Damping Pads

Able to shoulder a maximum load of 1,500 psi, these pads can support heavy machinery. Temperature range is –65° to 200° F. Color is black.

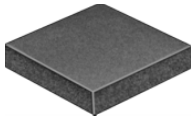

Pads

Lg.	Wd.	Thick.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Each
12″	12″	1/8″	1,500	0.04″	80A	5940K57	$30.11
12″	12″	1/4″	1,500	0.09″	80A	5940K58	34.50
12″	12″	3/8″	1,500	0.14″	80A	5940K59	42.22
12″	12″	1/2″	1,500	0.15″	80A	5940K51	56.75
12″	12″	1″	1,500	0.28″	80A	5940K54	94.14
12″	24″	1/8″	1,500	0.04″	80A	5940K61	40.03
12″	24″	1/4″	1,500	0.09″	80A	5940K62	57.25
12″	24″	3/8″	1,500	0.14″	80A	5940K63	63.65
12″	24″	1/2″	1,500	0.15″	80A	5940K52	95.07
12″	24″	1″	1,500	0.28″	80A	5940K55	179.89
24″	24″	1/8″	1,500	0.04″	80A	5940K64	67.09
24″	24″	1/4″	1,500	0.09″	80A	5940K65	107.23
24″	24″	1/2″	1,500	0.15″	80A	5940K53	181.69
24″	24″	1″	1,500	0.28″	80A	5940K56	314.75

Pad Packs

Lg.	Wd.	Thick.	Cap. per Mounting Point, psi	Deflect. @ Max. Cap.	Durometer		Pkg. of 4
4″	4″	1/8″	1,500	0.02″	80A	5713K11	$28.86
4″	4″	1/4″	1,500	0.05″	80A	5713K9	20.92
4″	4″	3/8″	1,500	0.06″	80A	5713K8	25.56
4″	4″	1/2″	1,500	0.08″	80A	5713K3	27.72
4″	4″	1″	1,500	0.20″	80A	5713K5	54.89
6″	6″	1/8″	1,500	0.02″	80A	5713K4	41.69
6″	6″	1/4″	1,500	0.05″	80A	5713K2	46.98
6″	6″	3/8″	1,500	0.06″	80A	5713K1	50.46
6″	6″	1/2″	1,500	0.08″	80A	5713K6	62.81
6″	6″	1″	1,500	0.20″	80A	5713K7	103.51

Hydraulic Cylinders with Manual Pump and Hose

Cylinder, Pump, and Wire-Reinforced Rubber Hose

The complete package—each unit includes a steel cylinder, quick-engage hand pump that pumps fast until load is engaged, and 6-ft. hydraulic hose with couplers; a pressure gauge is also included where indicated. Maximum pressure is 10,000 psi (unless noted). Pumps are supplied with hydraulic oil.

Cylinders with hollow ram have an unthreaded hole through the entire length of the ram so you can insert a threaded rod for pulling applications; be sure to secure the rod with a nut.

Nylon pumps have a nylon-covered aluminum base, nylon reservoir, and fiberglass handle. ***Steel pumps*** are all steel, unless noted.

CYLINDER										PUMP				
Cap., tons	Min. Ht.	Max. Lift	Max. Ht.	O'all OD	Ram OD	Center Hole Dia.	Effective Area, sq. in.	Oil Cap., cu. in.	Collar Threads	Oil Cap., cu. in.	Oil Flow per Stroke, cu. in.	Overall Size, Lg.×Wd.×Ht.		
Cylinder, Pump, and Wire-Reinforced Rubber Hose														
Cylinders with Manual-Return Solid Ram, 13/16″-20 Female Coupler, and Aluminum Pump														
2	5 3/8″	3 1/16″★	8 15/32″	1 5/16″	7/8″	—	0.76	2.3	None	21	0.18/0.05	15 1/8″ × 4 3/8″ × 5 1/4″	2897T63■	$424.67
Cylinders with Spring-Return Solid Ram, 3/8″ NPT Female Coupler, and Steel Pump														
5	8 1/2″	5″	13 1/2″	1 1/2″	1″	—	0.99	5.0	1 1/2″-16	20	0.23/0.06	13 1/2″ × 5 3/4″ × 5 3/4″	2897T13	568.34
5	10 5/8″	7″	17 5/8″	1 1/2″	1″	—	0.99	7.0	1 1/2″-16	45	0.82/0.16	23″ × 5 3/4″ × 5 3/4″	2897T43	612.31
10	4 25/32″	2 1/8″	6 29/32″	2 1/4″	1 1/2″	—	2.24	5.2	2 1/4″-14	45	0.82/0.16	23″ × 5 3/4″ × 5 3/4″	2897T22	631.31
10	9 3/4″	6 1/8″	15 7/8″	2 1/4″	1 1/2″	—	2.24	13.7	2 1/4″-14	45	0.82/0.16	23″ × 5 3/4″ × 5 3/4″	2897T24	641.29
25	10 3/4″	6 1/4″	17″	3 3/8″	2 1/4″	—	5.15	32.2	3 5/16″-12	145	0.82/0.16	23″ × 5 3/4″ × 6 5/8″	2897T45	883.34
30	4 5/8″	2 7/16″	7 1/16″	4″	2 1/4″	—	6.49	15.8	None	45	0.82/0.16	23″ × 5 3/4″ × 5 3/4″	2897T33	831.21
55	11 1/8″	6 1/4″	17 3/8″	5″	3 1/8″	—	11.05	69.0	5″-12	145	0.82/0.16	23″ × 5 3/4″ × 6 5/8″	2897T34	1,157.38
100	5 9/16″	2 1/4″	7 13/16″	6 1/2″	3 5/8″	—	19.63	44.2	None	145	0.82/0.16	23″ × 5 3/4″ × 6 5/8″	2897T35	1,211.41
Cylinders with Spring-Return Hollow Ram, 3/8″ NPT Female Coupler, and Steel Pump														
12	7 5/16″	3″	10 5/16″	2 3/4″	1 3/8″	49/64″	2.76	8.3	2 3/4″-16	45	0.82/0.16	23″ × 5 3/4″ × 5 3/4″	2902T35	948.08
20	6 27/64″	2″	8 27/64″	3 7/8″	2 1/8″	1 1/16″	4.73	9.46	3 7/8″-12	45	0.82/0.16	23″ × 5 3/4″ × 5 3/4″	2902T31	1,066.21
30	7 1/32″	2 1/2″	9 17/32″	4 1/2″	2 1/2″	1 5/16″	8.64	18.05	4 1/2″-12	45	0.82/0.16	23″ × 5 3/4″ × 5 3/4″	2902T32	1,172.54
Cylinder, Pump, Thermoplastic Hose, and Stainless Steel Pressure Gauge♣														
Cylinders with Spring-Return Solid Ram, 3/8″ NPTF Female Coupler, and Nylon Pump														
5	8 1/2″	5″	13 1/2″	1 1/2″	1″	—	0.99	5.0	1 1/2″-16	20	0.221/0.055	13 1/4″ × 3 3/4″ × 5 5/8″	2897T51	715.98
10	4 3/4″	2 1/8″	6 7/8″	2 1/4″	1 1/2″	—	2.24	4.8	2 1/4″-14	55	0.687/0.151	21″ × 4 3/4″ × 7″	2897T52	792.83
10	9 3/4″	6 1/8″	15 7/8″	2 1/4″	1 1/2″	—	2.24	13.7	2 1/4″-14	55	0.687/0.151	21″ × 4 3/4″ × 7″	2897T53	851.79
25	10 3/4″	6 1/4″	17″	3 3/8″	2 1/4″	—	5.16	32.2	3 5/16″-12	55	0.687/0.151	21″ × 4 3/4″ × 7″	2897T54	1,081.66
30	4 5/8″	2 7/16″	7 1/16″	4″	2 5/8″	—	6.49	15.8	None	55	0.687/0.151	21″ × 4 3/4″ × 7″	2897T55	1,064.81
50	4 13/16″	2 3/8″	7 3/16″	4 7/8″	2 3/4″	—	9.62	22.9	None	55	0.687/0.151	21″ × 4 3/4″ × 7″	2897T56	1,192.83

★ With adjustment screw fully extended. ■ Maximum pressure is 5,100 psi. ♣ Gauges have 10,000 psi range with 100 psi graduations.

Hydraulic Wedges with Manual Pump and Hose

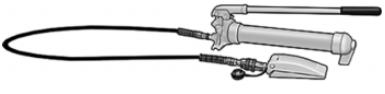

These powerful wedges get into tight spots for spreading, prying, and opening. ***Complete units*** include a hand pump, a wedge with spring-loaded jaws that close automatically when the pump valve is opened, and a 6-ft. wire-reinforced rubber hose. Maximum pressure for wedges and pumps is 10,000 psi, except the 2988T35 wedge is 8,000 psi.

	WEDGE				PUMP				
Cap., tons	Jaw Size Closed	Jaw Size Open	Oil Cap., cu. in.	O'all Size, Lg.×Wd.×Ht.	Oil Cap., cu. in.	Oil Flow per Stroke, cu. in.	O'all Size, Lg.×Wd.×Ht.	***Complete Units***	***Wedge Only***
1	1/2″	3 3/4″	0.22	9 3/8″ × 2 1/4″ × 2″	37	0.19	24 1/2″ × 5 1/2″ × 6 1/4″	2988T16 ... $526.67	2988T35 ... $193.83
1	1 3/8″	11 3/4″	3.4	21″ × 2 3/8″ × 6 7/8″	37	0.19	24 1/2″ × 5 1/2″ × 6 1/4″	2988T36 ... 891.33	2988T15 ... 531.91

Hydraulic Cylinder and Pump Sets

10-ton Deluxe Set

All sets contain a cylinder, hand pump, and 6-ft. hose with coupler.

Basic Sets— Also contain a 9″ Lg.×2 11/64″ Wd. hydraulic wedge, rubber head, wedge head, 90° combination head, flat base, cylinder toe, plunger toe, male connector, serrated saddle, and plastic case.

4-ton set also includes six 1 1/4″ dia. ram extension tubes: one each of 3″, 6 1/8″, 8 1/2″, 16 1/2″, 19 1/2″, and 27″ lengths. *10-ton set* also includes four 1 3/4″ dia. ram extension tubes: one each of 4 1/8″, 10″, 18″, and 27″ lengths.

Deluxe Sets— Also contain a 7″ Lg.×2 1/4″ Wd. hydraulic wedge, female lock-on adapter, male lock-on adapter, threaded connector, four locking pins, two lock-on connectors (three in the 4-ton set), two chains with hooks, flexible rubber head (two in the 10-ton set), threaded plunger toe, 90° V-base (two in the 4-ton set), lock-on clamp toe, wedge head, flat base, chain plate, clamp head, and metal case.

4-ton set also includes six 1 3/64″ dia. ram extension tubes: one each of 3″, 6″, and 18″ lengths; three of 15″ length. Meets MIL-A-A-314. *10-ton set* also includes a spreader toe and collar toe, plus four 1 21/32″ dia. ram extension tubes: one each of 6″, 12″, 15″, and 18″ lengths. Meets MIL-A-A-313.

Note: When the extension tubes and/or offset attachments are used, the rated capacity is reduced by 50% for each tube or attachment connected.

Sets

		CYLINDER						PUMP					
Cap., tons	Max. Pressure, psi	Min. Ht.	Max. Lift	Max. Ht.	O'all OD	Ram OD	Oil Cap., cu. in.	Oil Cap., cu. in.	Oil Flow per Stroke, cu. in.	O'all Size, Lg.×Wd.×Ht.	Case Size, Lg.×Wd.×Ht.		
Basic													
4	10,000	11″	4 3/4″	15 3/4″	1 1/2″	1″	3.7	16.5	0.15	17 9/16″ × 5 7/8″ × 6″	23″ × 13″ × 6 3/4″	2964T2	$199.90
10	10,000	13 3/4″	6″	19 3/4″	2 1/4″	1 5/8″	14.5	37	0.15	20 1/2″ × 5 7/8″ × 6″	38 3/4″ × 16 3/4″ × 9 1/4″	2964T5	313.05
Deluxe													
4	7,000	10 5/8″	5 1/4″	15 7/8″	2″	3/4″	8	15	0.094	14 3/4″ × 4 1/2″ × 5″	21″ × 10″ × 6″	2894T47	949.33
10	10,000	12 3/8″	5 7/8″	18 1/4″	2 1/2″	1 1/4″	18.1	50	0.131	20″ × 5″ × 5 3/8″	27″ × 12″ × 10″	2894T48	1,317.73

Steel Self-Tightening Pulling Clamps— Jaws clamp down when the ring is pulled.

	Cap., tons	Clamp Opening Wd.	Clamp Opening Ht.	Ring ID	O'all Lg.		
1	3	1 1/4″	1/4″	1 1/8″	7″	2964T11	$98.65
2	5	1 1/2″	1/2″	1 1/2″	9″	2964T12	109.04
3	5	2″	1/2″	1 1/4″	5″	2964T13	144.61
4	5	2 1/4″	1/2″	1 1/2″	9 1/4″	2964T14	113.73
5	6	2 1/4″	5/8″	1 1/2″	9 1/2″	2964T15	125.75

Warning! ***These products should not be used to support people or loads over people.***

Hydraulic Cylinders

Use these steel hydraulic cylinders either vertically or horizontally. Maximum pressure is 10,000 psi, except *Style 1* is 5,100 psi. To calculate applied force in lbs., multiply the effective area (sq. in.) by the pressure (psi) you are using. Cylinders are furnished without mounting fasteners.

Cylinder with manual-return solid ram (Style 1) is only for use with 2942T6 pump on this page and 2916T7 hose (see page 1389).

Cylinders with a hollow ram (Style 3) have an unthreaded hole through the entire length of the ram so you can insert a threaded rod for pulling applications; be sure to secure the rod with a nut.

Cap., tons	Min. Ht.	Max. Lift	Max. Ht.	Cylinder Size	Ram OD	Ram Hole Dia.	Effective Area, sq. in.	Oil Cap., cu. in.	Collar Threads♠	Mounting Hole Dia. (2 each)	Carrying Handle		
(1) Cylinder with Manual-Return Solid Ram and 13/16″-20 Female Coupler with Dust Cap— *Temperature not rated*													
2	5 3/8″	3 1/16″	8 15/32″★	1 5/16″ OD	7/8″	—	0.76	2.3	None	None	No	2990T14	$169.91
(2) Cylinders with Spring-Return Solid Ram and 3/8″ NPTF Female Coupler with Dust Cap— *Temperature Range: –20° to +180°F*													
5	8 1/2″	5″	13 1/2″	1 1/2″ OD	1″	—	0.99	5.0	1 1/2″-16	1/4″-20	No	2990T12	238.77
5	10 5/8″	7″	17 5/8″	1 1/2″ OD	1″	—	0.99	7.0	1 1/2″-16	1/4″-20	No	2990T13	284.13
5	12 3/4″	9 1/8″	21 7/8″	1 1/2″ OD	1″	—	0.99	9.1	1 1/2″-16	1/4″-20	No	2990T11	362.21
10	4 25/32″	2 1/8″	6 29/32″	2 1/4″ OD	1 1/2″	—	2.24	5.2	2 1/4″-14	5/16″-18	No	2990T17	260.17
10	9 3/4″	6 1/8″	15 7/8″	2 1/4″ OD	1 1/2″	—	2.24	13.7	2 1/4″-14	5/16″-18	No	2990T18	311.91
10	13 3/4″	10 1/8″	23 7/8″	2 1/4″ OD	1 1/2″	—	2.24	22.7	2 1/4″-14	5/16″-18	No	2990T21	382.26
15	10 11/16″	6″	16 11/16″	2 3/4″ OD	1 5/8″	—	3.14	19.0	2 3/4″-16	3/8″-16	No	2990T24	408.92
25	10 3/4″	6 1/4″	17″	3 3/8″ OD	2 1/4″	—	5.15	32.2	3 5/16″-12	1/2″-13	No	2990T27	521.35
25	18 3/4″	14 1/4″	33″	3 3/8″ OD	2 1/4″	—	5.15	73.4	3 5/16″-12	1/2″-13	No	2990T28	908.20
30	15 1/4″	8 1/4″	23 1/2″	4″ OD	2 1/4″	—	6.49	53.6	3 5/16″-12	None	No	2990T2	955.05
55	11 1/8″	6 1/4″	17 3/8″	5″ OD	3 1/8″	—	11.05	69.0	5″-12	1/2″-13	Yes	2990T32	901.76
100	13 1/4″	7 7/16″	20 11/16″	6 1/4″ OD	4 1/8″	—	20.63	137.0	6 1/4″-12	None	Yes	2990T4	1,843.90
(3) Cylinders with Spring-Return Hollow Ram and 3/8″ NPTF Female Coupler with Dust Cap— *Temperature Range: –20° to +180°F*													
12	7 5/16″	3″	10 5/16″	2 3/4″ OD	1 3/8″	49/64″	2.76	8.3	2 3/4″-16	5/16″-18	No	2990T34	554.33
20	6 27/64″	2″	8 27/64″	3 7/8″ OD	2 1/8″	1 1/16″	4.73	9.46	3 7/8″-12	3/8″-16	No	2990T64	655.48
30	7 1/32″	2 1/2″	9 17/32″	4 1/2″ OD	2 1/2″	1 5/16″	8.64	18.05	4 1/2″-12	3/8″-16	No	2990T65	824.73
30	13 1/64″	6 1/8″	19 13/64″	4 1/2″ OD	2 1/2″	1 5/16″	7.22	44.23	4 1/2″-12	3/8″-16	No	2990T66	1,166.47
60	9 3/4″	3″	13 1/4″	6 1/4″ OD	3 5/8″	2 1/8″	12.73	38.29	6 1/4″-12	1/2″-13	Yes	2990T67	1,373.19
(4) Low-Profile/Low-Lift Rectangular Cylinders with Spring-Return Solid Ram and 3/8″ NPTF Female Coupler with Dust Cap— *Temperature Range: +20° to +140°F*													
5	1 3/8″	1/4″	1 5/8″	2 9/16″ Lg. × 1 3/4″ Wd.	1 1/16″	—	0.995	0.25	None	7/32″	No	2921T11	197.77
5	1 25/32″	5/8″	2 13/32″	2 9/16″ Lg. × 1 3/4″ Wd.	1 1/16″	—	0.995	0.6	None	7/32″	No	2921T2	197.77
10	1 11/16″	7/16″	2 1/8″	3 1/4″ Lg. × 2 13/16″ Wd.	1 7/16″	—	2.074	0.9	None	9/32″	No	2921T12	270.34
20	2 1/32″	29/64″	2 31/64″	4″ Lg. × 3″ Wd.	2″	—	4.43	2.0	None	25/64″	No	2921T4	472.89
30	2 5/16″	1/2″	2 13/16″	4 1/2″ Lg. × 3 3/4″ Wd.	2 5/8″	—	6.492	3.3	None	13/32″	No	2921T14	543.51
50	2 5/8″	5/8″	3 1/4″	5 1/2″ Lg. × 5″ Wd.	3 1/2″	—	11.045	6.9	None	15/32″	No	2921T15	634.24
(5) Low-Profile Cylinders with Spring-Return Solid Ram and 3/8″ NPT Female Coupler with Dust Cap— *Temperature Range: –20° to +180°F*													
10	3 15/32″	1 1/2″	4 31/32″	2 3/4″ OD	1 1/2″	—	2.23	3.4	None	None	No	2945T12	297.09
20	3 7/8″	1 3/4″	5 5/8″	3 5/8″ OD	2″	—	4.43	7.8	None	None	No	2945T14	444.21
30	4 5/8″	2 7/16″	7 1/16″	4″ OD	2 1/4″	—	6.49	15.8	None	None	No	2945T16	492.64
50	4 13/16″	2 3/8″	7 3/16″	5″ OD	2 1/4″	—	9.62	22.8	None	None	No	2945T18	608.73
100	5 9/16″	2 1/4″	7 13/16″	6 1/2″ OD	3 5/8″	—	19.63	44.2	None	None	No	2945T21	919.38

★ With adjustment screw fully extended. ♠ Use collar threads to mount cylinder in a fixture or use them with mounting plates.

Manual Hydraulic Pumps

Use these pumps with the steel cylinders sold separately on this page. Handle is approximately as long as the overall length. Use horizontally; they can also be used vertically, however the pump head (where the handle meets the pump) must be pointed downward. Max. pressure is 10,000 psi. Pumps are supplied with hydraulic oil; mounting fasteners not included.

To determine how many strokes it will take to make the ram travel one inch, divide the effective area (sq. in.) of your cylinder by the oil flow (cu. in.) per stroke of the pump.

Quick-engage pumps pump fast until load is engaged.

Foot/Hand-Operated Pump (Style C)— Has a spring-return foot pedal with a 2 7/8″ Lg. × 2 3/4″ Wd. pad.

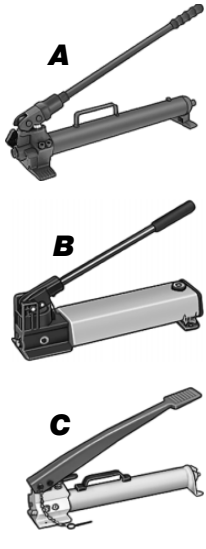

Oil Cap., cu. in.	Oil Flow per Stroke, cu. in.	Outlet, NPTF female	Overall Size, Lg. × Wd. × Ht.	Mounting Hole Dia. (Qty.)		
Hand Operated						
(A) Steel Pump, Reservoir, and Handle						
45	0.16	3/8″	23″ × 5 3/4″ × 5 3/4″	None	2992T15	$298.34
(A) Steel Quick-Engage Pump, Reservoir, and Handle						
20	0.23/0.06	3/8″	13 1/2″ × 5 3/4″ × 5 3/4″	19/32″ (2)	2992T13	272.74
45	0.82/0.16	3/8″	23″ × 5 3/4″ × 5 3/4″	None	2992T17	354.01
145	0.82/0.16	3/8″	23″ × 5 3/4″ × 6 5/8″	1/2″ (2)	2992T73	430.15
(A) Aluminum Pump and Reservoir, and Steel Handle						
21	0.18/0.05	13/16″	15 1/8″ × 4 3/8″ × 5 1/4″	5/16″ (2)	2942T6♦	245.74
(A) Aluminum Quick-Engage Pump, Reservoir, and Handle						
70	0.91/0.19	3/8″	24 1/8″ × 4″ × 5 3/16″	3/8″ (4)	2992T82	427.28
(B) Nylon-Covered Aluminum Pump, Nylon Reservoir, and Fiberglass Handle						
20	0.055	1/4″	13 1/4″ × 3 3/4″ × 5 5/8″	9/32″ (2)	2942T4■	321.24
55	0.151	3/8″	21″ × 4 3/4″ × 7″	None	2942T5	378.42
(B) Nylon-Covered Aluminum Quick-Engage Pump, Nylon Reservoir, and Fiberglass Handle						
20	0.221/0.055	1/4″	13 1/4″ × 3 3/4″ × 5 5/8″	9/32″ (2)	2942T1■	315.62
55	0.687/0.151	3/8″	21″ × 4 3/4″ × 7″	None	2942T2	367.83
155	2.40/0.151	3/8″	21 3/4″ × 7 1/8″ × 9″	13/32″ (2)	2942T3	623.06
Foot/Hand Operated						
(C) Aluminum Quick-Engage Pump, Steel Reservoir, and Aluminum Handle						
55	0.55/0.13	3/8″	23 1/4″ × 4 1/2″ × 6″	5/16″ (4)	2884T43	668.73

♦ For use only with 2990T14 cylinder on this page and 2916T7 hose (see page 1389).
■ Requires either 2916T4 or 2916T24 hose (see page 1389) to connect to cylinders on this page.

Warning! These products should not be used to support people or loads over people.

Electric-Powered Hydraulic Pumps

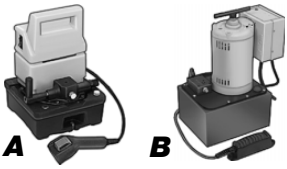

Operate these pumps from up to 10 feet away with the included wired remote. They work in the vertical position only and allow you to raise, hold, and release manual-return and spring-return cylinder rams. Maximum pressure is 10,000 psi. Mounting fasteners are not included. Pumps are supplied with hydraulic oil.

Style A—Has a composite reservoir with a handle and an aluminum cover plate. Motor is 115 VAC, 50/60 Hz, draws 9.5 amps, and has a 6-ft. power cord with three-prong plug.

Style B—Made of steel and aluminum. Motor is dual voltage (115/230 VAC, 60 Hz) wired for 115 VAC, draws 25 amps, and has an 8-ft. power cord with a three-prong plug that fits a NEMA 5-20 receptacle (see page 787 for illustration).

	hp	Oil Cap., cu. in.	Oil Flow, cu. in./min. @ 0 psi (No Load)	Oil Flow, cu. in./min. @ 10,000 psi (Max. Load)	Outlet, NPTF female	Overall Size, Lg. × Wd. × Ht.	Mounting Hole Dia. (Qty.)		
A	1/2	115.5	200	20	3/8″	9 5/8″ × 9 5/8″ × 14 1/4″	25/64″ (2)	28945T31	$1,735.89
B	1 1/2	590.0	500	46	3/8″	11 1/2″ × 9 1/2″ × 19 5/8″	1/2″-20 (4)	2920T17	3,073.06

Air-Powered Hydraulic Pumps

Count on air power where electricity is unavailable or impractical. These pumps have a hand/foot-operated three-position pedal to raise, hold, and release manual-return and spring-return cylinder rams. Maximum pressure is 10,000 psi. Supplied with hydraulic oil.

Styles C and ***E*** are made of steel and aluminum. Mounting fasteners are not included. ***Style D*** is made of steel and aluminum with a composite reservoir. It includes an oil sight gauge and mounting fasteners.

	Oil Cap., cu. in.	Oil Flow, cu. in./min. @ 200 psi	Oil Flow, cu. in./min. @ 10,000 psi	Outlet, NPTF female	Air Inlet, NPTF female	Req'd Air Pressure, psi	Overall Size, Lg. × Wd. × Ht.	Mounting Hole Dia. (Qty.)		
Operates Horizontally and Vertically										
C	36	40	8	3/8″	1/4″	60-120	14 11/16″ × 5 5/8″ × 5 23/32″	21/64″ (4)	29215T12	$569.36
D	127	60	10	3/8″	1/4″	25-125	13 5/8″ × 6 1/2″ × 8 5/16″	3/16″ (4)	29215T13	657.33
Operates Horizontally Only										
E	90	63	11	3/8″■	1/4″■	60-150	10 11/16″ × 5 13/16″ × 8 3/8″	3/8″ (4)	29215T37	568.53

■ Threads are NPT.

Harsh Environment Cylinders, Manual Pumps, and Valves

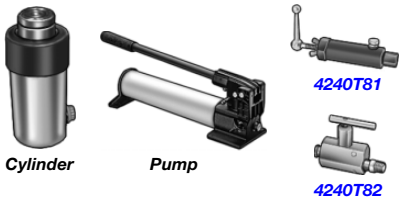

Wet, hot, corrosive environments are no match for these cylinders, pumps, and valves—all have seals that withstand temperatures from –40° to +392° F. Mounting fasteners are not included.

Cylinders have a spring-return ram. They have a nickel-plated steel body, ram, and saddle, along with stainless steel bolts and pins and a bronze piston and bearings.

Pumps are quick-engage style, so they pump quickly until load is engaged. They have a nylon-encapsulated base, an anodized aluminum reservoir, fiberglass handle, and stainless steel hardware. Supplied with hydraulic oil.

Valves have a nickel-plated steel body. *Pressure-relief valve* opens whenever the set pressure is reached. *Manual check valve* is for load-holding applications; the valve has to be manually opened.

Cylinders

Cap., tons	Min. Ht.	Max. Lift	Max. Ht.	Cylinder OD	Ram OD	Effective Area, sq. in.	Oil Cap., cu. in.	Collar Threads	Mounting Hole Dia. (2 each)	Carrying Handle		
5	6 1/2″	3″	9 1/2″	1 1/2″	1″	0.99	2.98	1 1/2″-16	1/4″-20	No	4240T61	$417.20
10	4 25/32″	2 1/8″	6 29/32″	2 1/4″	1 1/2″	2.24	4.75	2 1/4″-14	5/16″-18	No	4240T62	503.40
10	9 3/4″	6 1/8″	15 7/8″	2 1/4″	1 1/2″	2.24	13.70	2 1/4″-14	5/16″-18	No	4240T63	615.24
25	10 3/4″	6 1/4″	17″	3 3/8″	2 1/4″	5.16	32.23	3 5/16″-12	1/2″-13	No	4240T64	972.12

Pumps

Oil Cap., cu. in.	Oil Flow per Stroke, cu. in.	Outlet, NPTF female	Overall Size, Lg. × Wd. × Ht.	Mounting Hole Dia. (Qty.)		
20	0.221/0.055	1/4″	13 1/4″ × 3 3/4″ × 5 5/8″	9/32″ (2)	4240T71	$513.42
55	0.687/0.151	3/8″	21″ × 4 3/4″ × 7″	None	4240T72	598.39

Valves

Valve Type	Connections, NPTF		
Pressure Relief	3/8″ Female♣	4240T81	$313.60
Manual Check	3/8″ Female, 3/8″ Male	4240T82	298.74

♣ Has three ports (two in and one out).

Special Application Hydraulic Hand Pumps

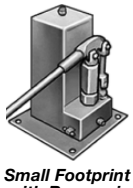

Small Footprint with Reservoir

Small-footprint pumps are taller than they are long to fit into tight spaces. Made of cast iron, they have a 19 1/4″ long handle and must be bolted in place for stability. Mounting fasteners are not included. *Pumps with reservoir* operate in the vertical position only and are supplied with oil. *Pumps without reservoir* can supply backup manual power and can also be tapped into an existing system with a reservoir. They operate in any position.

Quick-engage pump is supplied without oil, so it's a great choice for applications where standard hydraulic oil is not acceptable. Use with biodegradable food-grade hydraulic oil (sold separately; see page 2174 for more information about this and other types of hydraulic oil). The pump is quick-engage style, so it pumps fast until the load is engaged. It has a nylon-encapsulated aluminum body, nylon reservoir, and 20 1/2″ long fiberglass handle. Use horizontally and vertically.

Note: For vertical use, the pump head (where the handle meets the pump) must be pointed down.

Quick-Engage Pump

Oil Cap., cu. in.	Max. Pressure, psi	Oil Flow per Stroke, cu. in.	Ports NPTF female Inlet	Ports NPTF female Outlet	Overall Size, Lg. × Wd. × Ht.	Mounting Hole Dia. (Qty.)		
Small-Footprint Pumps with Filled Reservoir								
148	3,000	1.33	3/8″	3/8″	8″ × 8″ × 11 3/32″	9/16″ (4)	42985K78	$578.47
148	6,500	0.53	3/8″	3/8″	8″ × 8″ × 11 3/32″	9/16″ (4)	42985K74	578.47
148	12,000	0.30	3/8″	3/8″	8″ × 8″ × 11 3/32″	9/16″ (4)	42985K77	578.47
Small-Footprint Pumps without Reservoir								
—	3,000	1.33	3/8″	3/8″	5 1/16″ × 2 3/4″ × 8 5/8″	3/8″ (2)	42985K76	428.11
—	12,000	0.30	3/8″	3/8″	5 1/16″ × 2 3/4″ × 8 5/8″	3/8″ (2)	42985K75	428.11
Quick-Engage Pump with Empty Reservoir								
55	200/10,000	0.687/0.151	None	3/8″	21″ × 4 3/4″ × 7″	None	42985K81	452.47
Biodegradable Food-Grade Hydraulic Oil—*1 gal. (For use with quick-engage pump only)*							3499K22	22.31

Warning! ***These products should not be used to support people or loads over people.***

Hydraulic Pump and Cylinder Accessories

All hydraulic accessories have a maximum pressure of 10,000 psi.

Hydraulic Hose with Fittings

Hose has male threads on one end and a male thread-connect coupler with dust cap (unless noted) on the other.

Black rubber hose is reinforced with two layers of braided steel.

Yellow thermoplastic hose is designed for long life and abrasion resistance. This hose consists of four layers: polyamide inner core, two steel wire braids, and a polyurethane outer jacket.

Hose Ends, NPTF	O'all Lg.	Black Rubber		Yellow Thermoplastic	
1/4"	6 ft.	2916T2♦	$74.04	—	—
1/4", 3/8"	6 ft.	2916T4	120.05	2916T24	$153.53
3/8"	6 ft.	2916T5	107.40	2916T21	139.13
3/8"	10 ft.	2916T8	149.84	2916T22	191.56
3/8"	20 ft.	2916T9	278.55	2916T23	359.02
13/16"	6 ft.	2916T7▲	50.27	—	—

♦ Does not include a dust cap.
▲ For use only with 2990T14 cylinder and 2942T6 pump (see page 1387).

Hydraulic Manifolds

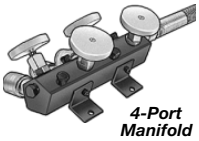

4-Port Manifold

6-Port Manifold

Operate multiple cylinders from a single pump. Manifolds are made of steel.

4-port manifold comes with four control/shut-off control valves, an 18" rubber hose, gauge port, and mounting fasteners. Connections are 3/8" NPTF female. Two or more manifolds can be joined for larger systems.

6-port manifold has a hexagon shape with six 3/8" NPT female ports (one port is for the pump). Includes four plugs to cover ports not in use. Mounting fasteners are not included.

Size	Mounting Hole Dia. (Qty.)		
4 Port	9" Lg.	1/4" (2)	2983T31	$701.81
6 Port	2 5/16" Wd. × 1 5/8" Ht.	1/4"-20 (2)	2983T33	107.98

Hydraulic Fittings

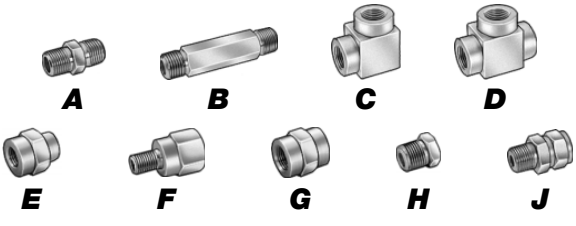

All are made of steel.

		Connections, NPTF		
A	Hex Nipple	3/8" Male/3/8" Male	2983T34	$13.71
B	3" Nipple	3/8" Male/3/8" Male	2983T35	29.68
C	90° Elbow	3/8" Female/3/8" Female	2983T36	27.32
D	Tee	3/8" Female/3/8" Female	2983T37	34.21
E	Reducing Connector	3/8" Female/1/4" Female	2983T13	27.73
F	Reducing Connector	3/8" Female/1/4" Male	2983T14	19.92
G	Coupler	3/8" Female/3/8" Female	2983T15	25.31
H	Reducer Bushing	3/8" Male/1/4" Female	2983T16	10.66
J	Swivel Fitting	3/8" Male/3/8" Female	2983T17	54.86

Threaded Cylinder Mounting Plates

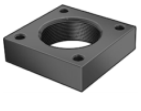

Simply thread one of these plates onto your cylinder's collar and use the four mounting holes to secure it in place (mounting fasteners not included). All are made of ductile iron with a black powder-coated finish.

For Cylinder Cap.	Collar Threads	Plate Size, Sq. × Thick.	*Mounting Holes* Dia.	Ctr.-to-Ctr.		
5 Ton	1 1/2"-16	3" × 1"	11/32"	2 1/8"	2983T27	$110.61
10 Ton	2 1/4"-14	3 1/2" × 1"	11/32"	2 5/8"	2983T57	126.58
15 Ton	2 3/4"-16	3 1/2" × 1"	11/32"	2 5/8"	2983T64	180.18
25 Ton	3 5/16"-12	5" × 2"	21/32"	3 21/32"	2983T76	225.79

Hydraulic Couplers

Thread Connect

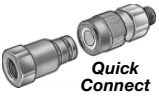

Quick Connect

Connect a hose and cylinder, or hose and pump. Couplers consist of male and female halves and include a dust cap for the female half.

Thread Connect— Thread the sleeve of the male half into the female half for a tight connection.

Quick Connect— Simply push the male and female halves together for a fast, leak-free connection.

	Connections, NPTF		
Thread Connect	1/4"	2941T12	$46.06
Thread Connect	3/8"	2941T11★	46.21
Quick Connect	3/8"	2941T13	174.27

★ Includes dust cap for both the male and female halves.

Hydraulic Pressure Gauges and Adapter

Pressure Gauge with Adapter

Monitor pressure levels to guard against overload. These liquid-filled gauges measure from 0-10,000 psi with a red warning zone beyond 10,000 psi. They have a Type 303 stainless steel case. Full scale accuracy is ±1%. Operating temperature is –30° to +150° F.

Gauge Adapter— Required for inline mounting of gauge. Made of steel, it's 4 1/4" long with a 1/4" NPTF female connection for the gauge and 3/8" NPTF connections at either end (one male, one female).

Gauge Dia.	Graduations psi/bar	Connections, NPTF		
2 1/2"	500/50	1/4" Male	2965T5	$74.73
4"	500/50	1/4" Male	2965T6	138.95
Gauge Adapter			2965T7	41.18

Hydraulic Valves

Control/ Shut-Off Valve

All are made of steel.

Control/shut-off valves are needle style. Use them to control the speed of ram retraction, or shut off to hold the load. ***Manual check valve*** is for load-holding applications; the valve has to be manually opened. ***Pressure relief valve*** opens whenever the set pressure is reached.

Valve Type	Connections, NPTF		
Control/Shut Off	1/4" Female, 1/4" Female	2983T18	$116.38
Control/Shut Off	3/8" Female, 3/8" Female	2983T41	94.62
Manual Check	3/8" Female, 3/8" Female	2983T19■	273.23
Pressure Relief	3/8" Female♣	2983T21	315.06

■ Connections are NPT. ♣ Has three ports (two in and one out).

Cylinder Ram Saddles and Threaded Adapters

Serrated with Threaded Adapter

All are made of ductile iron with a black powder-coated finish. A ***threaded adapter*** is required for mounting saddle into a cylinder ram.

For Cylinder Sizes	O'all Size		
Smooth Saddles			
5 Ton	1 5/16" Dia. × 1 1/8" Thick.	2983T24	$45.61
10 Ton	2" Dia. × 1 1/8" Thick.	2983T54	49.74
25 Ton	3" Dia. × 1 5/16" Thick.	2983T74	95.79
Serrated Saddles			
5 Ton	1 5/16" Dia. × 1 1/8" Thick.	2983T23	68.42
10 Ton and 15 Ton	2" Dia. × 1 1/8" Thick.	2983T53	85.53
25 Ton	3" Dia. × 1 5/16" Thick.	2983T73	136.84
90° V Saddles			
5 Ton	1 3/8" Lg. × 1 11/16" Wd.	2983T26	52.46
10 Ton	2 1/8" Lg. × 2 1/8" Wd.	2983T56	76.40
Threaded Adapters			
5 Ton	1 5/8" Lg.	2983T22	42.19
10 Ton and 15 Ton	1 13/16" Lg.	2983T52	49.74
25 Ton	2 3/4" Lg.	2983T72	92.37

Cylinder Ram Piston Clevises

Thread onto your cylinder's ram for applications that require a clevis. All are made of ductile iron with a black powder-coated finish.

For Cylinder Sizes	O'all Size, Lg. × Wd.	Clevis Hole Size		
5 Ton	1 3/4" × 1 1/8"	5/8"	2983T25	$90.09
10 Ton and 15 Ton	2 9/16" × 1 11/16"	7/8"	2983T55	104.91
25 Ton	2 15/16" × 2 1/4"	1 1/4"	2983T75	152.81

Warning! ***These products should not be used to support people or loads over people.***

Wheeled Hydraulic Jacks

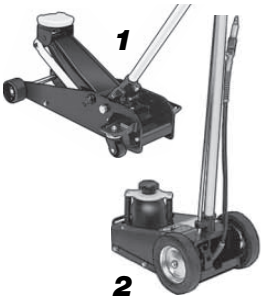

Roll these jacks from job to job and quickly position them under a load. All have a spring-return ram and are supplied with hydraulic oil.

Manually Operated Jacks (Style 1)—*Aluminum* has two 2¼″ dia. and two 2″ dia. wheels. *Steel* has two 2¼″ dia. and two 3½″ dia. wheels. *Steel quick-lift jack* requires just one pump of the handle to raise the saddle to the load; the handle must then be pumped to lift the load. It has two 2¼″ dia. and two 3″ dia. wheels.

Air-Operated Jack (Style 2)—Air power raises loads quickly and effortlessly. It operates on 90-175 psi of air pressure and has a ¼″ male quick-connect air inlet, a 4-ft. long air hose, and a remote control pendant. Jack rolls on two 7⅞″ Dia. × 1¾″ Wd. wheels.

Cap., tons	Min. Ht.	Max. Lift	Max. Ht.	Saddle Dia.	Base Size, Lg. × Wd. × Ht.	Handle Lg.		
(1) Manually Operated Jacks								
Aluminum 2	3¾″	15¼″	19″	5″	26″ × 13″ × 4¾″	44½″	2908T11	$440.73
Steel 2¼	5″	27″	32″	5¾″	48″ × 11½″ × 17½″	47″	29815T11	444.87
Steel Quick Lift 3	5¾″	14¼″	20″	5½″	27¾″ × 13⅜″ × 6¾″	42⅛″	2908T17	240.24
(2) Air-Operated Jack								
Steel 22	9⅞″	10⅜″	20¼″	2⅛″	22⅞″ × 12½″ × 9⅞″	48¾″	28975T26	629.29

Wheeled Hydraulic Jacks with Support Cradle

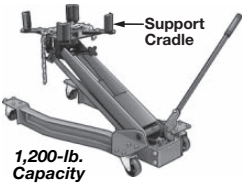

1,200-lb. Capacity

These jacks have a cradle that tilts forward, backward, and side-to-side plus adjustable corner brackets for precise adjustments and perfect alignment. They roll on four 3″ dia. swivel casters. The handle rotates 360° to operate in any position. They are supplied with hydraulic fluid as well as chains and brackets to secure heavy equipment to the cradle.

Cap., lbs.	Min. Ht.	Max. Lift	Max. Ht.	Cradle Size, Lg. × Wd.	*Cradle Degree of Tilt* Front	Back	Side	Base Size, Lg. × Wd.	Handle Lg.		
1,200	6¼″	25¼″	31½″	14″ × 14″	15	12	15	36¾″ × 18⅛″	24″	2906T35	$493.96
2,000	6¼″	25¼″	31½″	15½″ × 15¾″	15	10	15	38¼″ × 19¾″	24″	2906T45	668.67

High-Lift Hydraulic Jacks

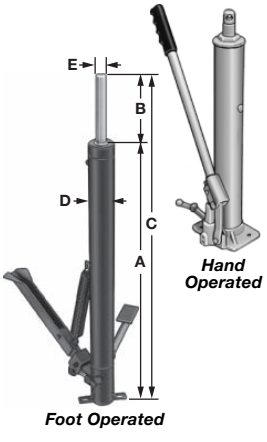

Combining high minimum heights with an extra long stroke, these steel jacks provide maximum height where high lifts are required. Jacks must be bolted down for proper use. All are supplied with hydraulic fluid.

Foot-operated jacks have two foot pedals for hands-free use: a folding 14″ Lg. × 2⅞″ Wd. pedal for raising the ram and an 8 13/16″ Lg. × 1½″ Wd. pedal for rapid lowering of the ram. All have two 11/32″ mounting holes in the base (mounting fasteners not included). They operate in a vertical position only.

Hand-operated jacks have a manual-return ram. The ram tip has a ½″ dia. hole (⅝″ dia. on 2923T41) for securing equipment to the ram. All have two ⅜″ mounting holes in the base except 2923T41, which has two 13/32″ holes (mounting fasteners not included). They operate in a vertical position only.

Repair Kits—Contain parts that are subject to wear such as O-rings, washers, seals, and springs.

Cap., tons	Min. Ht. (A)	Max. Lift (B)	Max. Ht. (C)	Cylinder OD (D)	Ram OD (E)	Base Size, Lg. × Wd.	Handle Lg.	*Jacks*		*Repair Kits*	
Foot Operated											
1	26″	19″	45″	2″	13/16″	¾″ × 4¼″	14″	2831T63	$467.69	2831T81	$124.67
1	32″	25″	57″	2″	13/16″	¾″ × 4¼″	14″	2831T66	482.46	2831T81	124.67
1	38″	31″	69″	2″	13/16″	¾″ × 4¼″	14″	2831T69	497.23	2831T81	124.67
Hand Operated											
1½	19⅞″	15⅜″	35¼″	2⅜″	1″	5⅛″ × 4½″	19¾″	2923T51	74.36	2923T36	16.91
3	19⅞″	15⅜″	35¼″	2⅜″	1″	5⅛″ × 4½″	19¾″	2923T62	81.31	2923T36	16.91
4	19⅞″	15⅜″	35¼″	2⅜″	1″	5⅛″ × 4½″	19¾″	2923T31	95.22	2923T36	16.91
8	24⅛″	19⅛″	43¼″	2 23/64″	1¼″	5″ × 4¾″	19¾″	2923T41	136.79	2923T39	31.48

Wet-Environment Compact Hydraulic Jacks

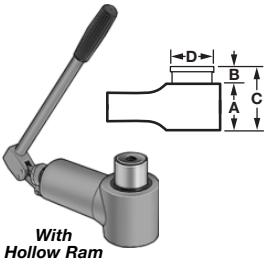

Suitable for use in washdown applications, these steel jacks can even be used under water. They have a manual-return ram as well as a completely sealed hydraulic system that allows them to be used in any position. Great for jobs where space is limited. The handle rotates 360° for use in any position.

Jacks with hollow ram have an unthreaded hole through the entire length of the ram so you can insert a threaded rod for pulling applications; be sure to secure the rod with a nut.

Cap., tons	Min. Ht. (A)	Max. Lift (B)	Max. Ht. (C)	Ram OD (D)	Ram Hole Dia.	O'all Size, Lg. × Wd.	Handle Lg.		
With Solid Ram									
17	2 29/32″	1 3/16″	4 3/32″	1 37/64″	—	11 13/16″ × 2 45/64″	10″	2980T41	$1,307.69
17	5 1/16″	3″	8 1/16″	1 3/16″	—	11 13/16″ × 2 45/64″	10″	2980T42	1,497.74
33	3 7/64″	1 3/16″	4 19/64″	1 37/64″	—	13½″ × 3 13/16″	10″	2980T43	1,486.51
With Hollow Ram									
11	2 29/32″	1 3/16″	4 3/32″	1 37/64″	21/32″	11 13/16″ × 2 45/64″	10″	2980T51	1,346.15
23	5 7/64″	3″	8 7/64″	2 23/64″	1 13/64″	15″ × 4 7/64″	10″	2980T52	2,115.38

Hydraulic Dual-Lift Toe/Saddle Jacks

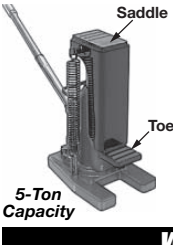

5-Ton Capacity

Twice as versatile as other bottle jacks—these steel jacks lift from the low-profile toe or from the saddle when you need a large surface area for more stable lifting. Supplied with hydraulic fluid.

Jacks with spring-return ram have a 360° turn lever socket for pumping the handle in any direction.

Cap., tons	Max. Lift	*Toe Ht.* Min.	Max.	Toe Size, Wd. × Dp.	*Saddle Ht.* Min.	Max.	Saddle Size, Wd. × Dp.	Base Size, Lg. × Wd.	Handle Lg.		
With Manual-Return Ram											
2	4 7/16″	⅝″	5 1/16″	1¾″ × 1¾″	9¼″	13 11/16″	2½″ × 3½″	4 59/64″ × 7″	24″	8799T29	$394.44
With Spring-Return Ram											
5	4⅝″	1″	5⅝″	2¾″ × 2″	11¾″	16⅜″	3½″ × 5″	7¼″ × 10⅝″	26″	8799T31	861.45
10	5⅞″	1¼″	7⅛″	3¼″ × 2″	13⅛″	19″	4½″ × 5¾″	9½″ × 11¼″	34″	8799T32	1,326.99

Warning! ***These products should not be used to support people or loads over people.***

Hydraulic Bottle Jacks

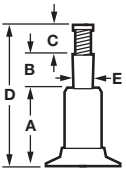

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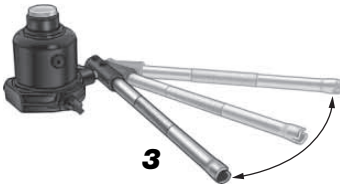

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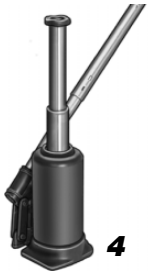

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5

The pump, cylinder, and other components are contained in a single bottle-shaped steel housing. All jacks have a manual-return ram. The saddle is the same size as the ram, except where noted. The bases do not have mounting holes. Supplied with hydraulic oil. Use these jacks either vertically or horizontally. *Note:* When used horizontally, the pumping mechanism (where the handle meets the jack) must be positioned under the jack body in order for jack to operate.

(1-4) Manually Operated— All include a removable handle.

(2) Heavy duty jacks are ruggedly constructed for long life in demanding applications. *3- to 30-ton jacks* have a nickel-plated ram, a black-phosphate coated adjustment screw, and black-oxide coated piston and release valve. Meet MIL-A-A-381. *60-ton jack* is black-phosphate coated and meets Part Two of ASME-PALD-2005 (Portable Automotive Lifting Devices).

(3) Low-profile jacks pump from side to side instead of up and down, so they don't require a lot of vertical space. They are shorter than the other bottle jacks to fit in tight spaces.

(4) Telescopic jacks have a telescopic ram that provides the highest maximum lift of all of our bottle jacks to quickly and efficiently raise a load to the height you want.

(5) Air-Operated Jacks— Air operation means you can use these jacks at a safer distance from the load, plus avoid the work of manually pumping the handle to lift the load. When an air supply is unavailable, the 12-, 20-, and 30-ton jacks can be operated manually by pumping the included handle. All jacks have a 4-ft. long air hose with a 1/4″ female quick-connect fitting. They operate on 90 to 175 psi of air pressure.

Cap., tons	Min. Ht. (A)	Max. Lift (B)	Screw Extension (C)	Max. Ht. (D)	Ram OD (E)	Base Size, Lg. × Wd.	Handle Lg.		
(1) Manually Operated— *Temperature Range: 0° to 120° F*									
2	6 1/4″	4″	2 1/2″	12 3/4″	7/8″	3 3/4″ × 3 3/4″	12″	**8803T51**	$20.15
4	6 1/2″	4 1/4″	2 1/2″	13 1/4″	1 1/8″	4 1/2″ × 4″	12″	**8803T52**	27.07
6	8″	5 1/4″	2 3/4″	16″	1 1/4″	4 1/2″ × 4 3/4″	12″	**8803T53**	36.29
8	7 3/4″	5″	2 3/4″	15 1/2″	1 1/2″	4 3/4″ × 5″	13″	**8803T54**	50.70
12	7″	4″	2″	13″	1 5/8″	5 1/2″ × 5 1/4″	13″	**8803T56**	59.84
12	8 1/2″	5 3/4″	2 3/4″	17″	1 5/8″	5 1/2″ × 5 1/4″	16″	**8803T55**	61.98
20	7 3/4″	4 1/4″	2 1/4″	14 1/4″	2 1/4″	6 3/4″ × 6 1/4″	17″	**8803T58**	119.01
20	9 5/8″	6 3/8″	2 1/4″	18 1/4″	2 1/4″	6 3/4″ × 6 1/4″	17″	**8803T57**	122.04
30	11″	7 5/8″	—	18 5/8″	2 1/8″	7″ × 7″	31″	**8803T59**	259.00
50	12″	7″	—	19″	3 1/4″	8 1/2″ × 7″	27″	**8803T61**	506.73
(2) Heavy Duty Manually Operated— *Temperature Range: –25° to +120° F, unless noted*									
3	8 1/2″	6 1/2″	2″	17″	7/8″	4 7/16″ × 5 7/8″	21″	**2912T12**	182.55
3	10 1/8″	7 5/8″	3″	20 3/4″	1 3/16″	5 13/16″ × 4 3/16″	21″	**2912T83**	198.13
5	8 5/8″	6″	3″	17 5/8″	1 3/16″	6 1/4″ × 4 11/16″	21″	**2912T13**	176.90
5	10 1/8″	7 1/2″	3″	20 5/8″	1 3/8″	6 1/4″ × 4 9/16″	21″	**2912T84**	204.55
8	9 1/8″	5 7/8″	4 1/4″	19 1/4″	1 3/8″	6 1/2″ × 5 1/4″	21″	**2912T14**	184.96
8	11″	8″	4 1/4″	23 1/4″	1 5/8″	6 1/2″ × 5 1/8″	21″	**2912T85**	212.91
12	9 1/8″	6 1/8″	3″	18 1/4″	1 5/8″	6 3/4″ × 5 3/4″	21″	**2912T15**	209.86
20	10 7/8″	6 3/4″	—	17 5/8″	1 7/8″	6 3/4″ × 6 7/8″	21″	**2912T16**	340.15
30	11 1/8″	7″	—	18 1/8″	2 1/8″	5 1/2″ × 7″	21″	**2912T17**	652.44
60	12″	6 11/16″	—	18 11/16″	3 3/16″	9 5/16″ × 7 3/8″	39 1/2″	**2912T9** ♦	1,049.66
(3) Low-Profile Manually Operated— *Temperature Range: –20° to +140° F*									
5	2 1/2″	3/4″	—	3 1/4″	1 1/8″	2 15/16″ Dia.	9 7/16″	**2976T11**	170.89
5	3 1/2″	1 1/2″	—	5″	1 1/8″	2 15/16″ Dia.	9 7/16″	**2976T12**	326.05
10	4 3/4″	1 3/16″	—	5 15/16″	1 5/8″	4 3/8″ Dia.	17 5/16″	**2976T13**	455.00
20	5 1/8″	1 3/16″	—	6 5/16″	2 1/8″	4 3/4″ Dia.	23 13/16″	**2976T14**	549.35
(4) Telescopic Manually Operated— *Temperature Range: –20° to +140° F*									
6	8 1/2″	12″	—	20 1/2″	1 3/4″ ★	4 3/4″ × 5 1/4″	27 9/16″	**2840T1**	350.16
13	9 1/16″	10″	3 5/16″	22 3/8″	1 7/8″ ★	6 15/16″ × 7 5/16″	27 9/16″	**2840T3**	403.22
(5) Air Operated— *Temperature Range: Not Rated*									
12	9 1/2″	6″	3 1/2″	19″	1 7/8″	7 5/8″ × 6 1/2″	23 5/8″	**29575T11**	238.38
20	9 3/4″	6″	3 7/8″	19 5/8″	2 1/8″	8 1/4″ × 7 1/4″	23 5/8″	**29575T12**	315.51
30	11″	7″	—	18″	2 5/8″	10 1/4″ × 8 1/4″	38″	**29575T13**	633.88
50	12″	7″	—	19″	2 5/8″	10 7/8″ × 7 3/8″	23 5/8″	**29575T14**	1,149.16

♦ Temperature range is +10° to +180° F. ★ Refers to the saddle diameter because the saddle is larger than the ram.

Ratchet Dual-Lift Jacks

Vertically lift your load from the toe or the saddle of these versatile jacks—the choice is up to you. The ratchet action allows you to raise or lower the load one notch at a time; when the jack is not loaded, the notches can be bypassed for quicker raising and lowering. All have a large, stable base (the bases do not have mounting holes) and a two-position handle socket so you can get the best angle for lifting. All are supplied with a steel handle.

Aluminum— Lighter than steel for easier handling.

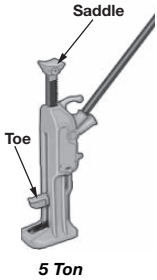

5 Ton

Cap., tons	Max. Lift	Toe Ht. Min.	Toe Ht. Max.	Toe Size, Lg. × Wd.	Saddle Ht. Min.	Saddle Ht. Max.	Saddle Size, Lg. × Wd.	Base Size, Lg. × Wd.	Handle Lg.		
Alloy Steel											
5	7″	1 3/4″	8 3/4″	2 1/2″ × 1 1/8″	14″	21″	2 5/8″ × 2 5/16″	5″ × 7 3/8″	36″	**2954T1**	$510.83
5	10″	1 3/4″	11 3/4″	2 1/2″ × 1 1/8″	17″	27″	2 5/8″ × 2 5/16″	5″ × 7 3/8″	36″	**2954T2**	539.01
5	13″	1 3/4″	14 3/4″	2 1/2″ × 1 1/8″	20″	33″	2 5/8″ × 2 5/16″	5″ × 7 3/8″	36″	**2954T3**	579.84
10	9 1/2″	2″	11 1/2″	3″ × 1 5/32″	17 1/4″	26 3/4″	2 7/8″ × 2 5/8″	6″ × 8 3/4″	60″	**2954T51**	913.23
10	12″	2 1/4″	14 1/4″	3 1/8″ × 3 1/4″	21 5/8″	33 5/8″	3″ × 2 1/2″	6 1/2″ × 10 1/4″	60″	**2954T4**	980.15
15	13″	2 1/4″	15 1/4″	2 5/8″ × 1 3/4″	23 1/4″	36 1/4″	3 1/2″ × 2 7/8″	8″ × 10 1/4″	72″	**2954T56**	1,160.99
15	18″	2 1/4″	20 1/4″	2 5/8″ × 1 3/4″	28 1/4″	46 1/4″	3 1/2″ × 2 7/8″	8″ × 11″	72″	**2954T57**	1,245.66
Aluminum											
10	12″	2 1/4″	14 1/4″	3 1/8″ × 3 1/4″	21 5/8″	33 5/8″	3″ × 2 1/2″	6 1/2″ × 10 1/4″	60″	**2954T9**	992.76

Warning! ***These products should not be used to support people or loads over people.***

High-Lift Ratchet Jacks

These jacks offer the highest lifting height of all our mechanical jacks, yet require only 4½″ to get under low loads. Use them to lift, spread, push, pull, and clamp. For clamping, position the clevis horizontally (see inset); it has a maximum clamping force of 750 lbs. and a 1½″ Ht.×1¼″ Wd. opening.

Jacks are ductile iron and have a 30″ long steel handle. Toe is 4½″ Lg.×1⅜″ Wd. Base is 7″ Lg.×4″ Wd.

Note: Load jacks with at least 150 lbs. When loaded with less than 150 lbs., the notches are bypassed and the load drops freely. When loaded with at least 150 lbs., jacks lower in a safer manner of one notch at a time. Designed to prevent the lifting mechanism from dropping an overweight load.

Cap., tons	Min. Ht.	Max. Lift	Max. Ht.	O'all Ht.		
1¼ ♦	4½″	45¼″	49¾″	61¾″	2925T7	$109.62
2¼	4½″	34⅛″	38⅝″	50¾″	2925T6	107.16

♦ Capacity is 2¼ tons from 4½″-48″ of the overall height.

Screw Jacks

With Optional Turning Bar

Lift and support machinery and equipment with these multipurpose jacks. The jack head has four openings so you can choose the best angle for inserting the optional turning bar (sold separately). A welded stop prevents overextension of the screw.

These flared-base jacks are housed in ductile iron and have a drop-forged steel serrated saddle that pivots and rotates to keep loads from slipping.

Optional turning bars are made of steel.

Cap., tons	Min. Ht.	Max. Lift	Max. Ht.	Saddle Dia.	Base Dia.		
12	9¾″	3¾″	13½″	2⅞″	4¾″	2926T13	$128.82
12	11⅝″	5¾″	17⅜″	2⅞″	5½″	2926T14	136.67
12	15⅝″	9¾″	25⅜″	2⅞″	6¼″	2926T16	174.30
20	11¾″	5″	16¾″	3⅛″	6″	2926T18	186.74
20	13¾″	7″	20¾″	3⅛″	6½″	2926T19	202.85
20	15¾″	9″	24¾″	3⅛″	6¾″	2926T21	220.90
24	17″	8¼″	25¼″	3¼″	7¼″	2926T24	294.73
24	23″	14¼″	37¼″	3¼″	8½″	2926T27	410.64
Optional Turning Bar for 12-ton Jacks (24″ long)						2926T42	31.69
Optional Turning Bar for 20-ton Jacks (36″ long)						2926T43	30.53
Optional Turning Bar for 24-ton Jacks (42″ long)						2926T44	85.88

Leveling Screw Jacks

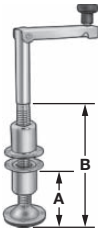

Designed for permanent installation, these screw-style jacks lift platforms and other equipment to the required height and hold them in place. To install, drill a 1¼″ dia. hole through the platform or frame of your equipment and bolt it between the upper and lower flanges of the jack's divided housing. Flanges are 3⅝″ Dia.×⅛″ Thick. and have six ¼″ dia. mounting holes on a 3″ circle. Screw dia. is 1¼″.

Jacks are steel with a polished chrome finish and have an 8½″ long handle that folds down when not in use. They stand on a 3⅞″ dia. base that swivels and rotates and has a slip-resistant rubber pad.

Cap., tons Lift	Hold	Max. Lift	*Bottom Flange Ht.* Min. (A)	Max. (B)	O'all Ht.		
2½	5	9″	4½″	13½″	18″	2953T1	$116.67
2½	5	17″	4½″	21½″	26″	2953T2	133.33
2½	5	21″	4½″	25½″	30″	2953T3	141.49
Replacement Base and Pad Assembly						2953T11	28.65

Jack Pads

Don't let a soft surface such as dirt or asphalt hinder your lifting jobs—these pads provide a solid surface for jacks as well as outriggers. Use them with vertical loads and loads angled up to 45°. Made of polyethylene with a ½″ dia. nylon rope handle, pads are resistant to moisture, chemicals, and oil. Temperature range is –40° to +180° F.

O'all Size		
18″ Lg.×18″ Wd.×1″ Ht.	4130T26	$159.44
24″ Lg.×22″ Wd.×1″ Ht.	4130T27	208.63
24″ Lg.×24″ Wd.×2″ Ht.	4130T28	424.55

Miniature Screw Jacks

Nonswivel Saddle

Swivel Saddle

Compact enough to use in confined spaces, these jacks are ideal for leveling surface plates, machinery, and storage tanks. When jacks are loaded, height can be adjusted with a wrench. Made of steel.

With Nonswivel Saddle—Also known as a spreader jack, this model has a serrated saddle that rotates.

With Swivel Saddle—Also known as planer jacks, these models have a smooth saddle that swivels and rotates. A locking screw keeps jacks extended and prevents lowering due to vibration.

Cap., tons	Min. Ht.	Max. Lift	Max. Ht.	Saddle Dia.	Hex Base Size		
With Nonswivel Saddle							
3	3″	1″	4″	1⅜″	2″	2915T21	$75.28
With Swivel Saddle							
2	2¾″	1″	3¾″	1¼″	2⅜″	8791T6	75.32
4	3¾″	1½″	5¼″	1 11/16″	3⅛″	8791T5	92.43
6	5¼″	2¼″	7½″	2 1/16″	4″	8791T7	162.82
8	7½″	4″	11½″	2½″	5⅜″	8791T8	268.82

Scissor Jacks

Hydraulic

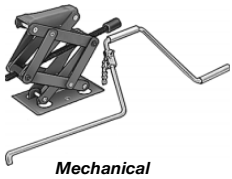

Mechanical

The scissor design allows these jacks to fit under low-height loads.

Hydraulic—Pump the handle of this self-contained jack and its hydraulic power quickly lifts the load. The saddle accepts vehicle panel rails. When fully lowered, the overall size is 15 5/16″ Lg.×4⅜″ Wd.×4 9/16″ Ht. The handle is removable, has a rubber grip, and is 14¾″ long.

Mechanical—When fully lowered, overall size is 10½″ Lg.×4¼″ Wd.×4¼″ Ht. Lift the load by turning the included 23½″ long handle. Base has two ⅜″ dia. mounting holes (fasteners not included).

Cap., lbs.	Min. Ht.	Max. Lift	Max. Ht.	Saddle Size, Lg.×Wd.	Base Size, Lg.×Wd.		
Hydraulic							
1,760	4½″	10½″	15″	2 3/16″×1 3/16″	4¼″×4¼″	28985T15	$105.12
Mechanical							
250●	4¼″	9 3/16″	13 7/16″	3⅛″ ×1½″	7⅜″×4¼″	2952T51	56.05

● Capacity is rated at min. ht.; capacity at 7″ ht. is 693 lbs.; capacity at max. ht. is 3,000 lbs.

Jack Stands

Handle Lock

12-ton Pin Lock

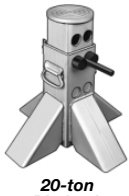

20-ton Pin Lock

Once you've raised a load, support it with these steel jack stands.

Note: Always use stands in pairs and on a hard flat surface.

Handle Lock—The handle engages the ratchet bar to lock the load in place. Height adjusts in ⅝″ increments.

Pin Lock—Insert the included steel pin through the riser (or through the riser and base on 8059T14) to support the load. Height is adjustable in 1½″ increments for the 12-ton stands and in 3″ increments for the 20-ton stands.

Cap., tons (per stand)	Min. Ht.	Max. Ht.	Saddle Size, Lg.×Wd.	Base Size, Lg.×Wd.		
Handle Lock						
3	11″	17⅝″	1″ ×3⅜″	7½″× 7″	8059T11	$19.31
6	14″	24″	1¼″×4¼″	9¾″×11″	8059T12	33.45
Pin Lock						
12	19″	29½″	3″ ×6″	15⅞″ Dia.	8059T13	282.13
20	15¼″	24″	6″ Dia.	18″ ×18″	8059T14	565.40

Warning! ***These products should not be used to support people or loads over people.***

Heavy-Load Stabilizing Jacks and Stand

All are steel with a safety yellow finish and have two 10″ Dia.×2½″ Wd. rubber wheels, unless noted. ***Beam saddle (Styles 3 & 5)*** distribute the load over a wider area. ***Gas-activated stand (Style 5)*** has a gas spring that raises and lowers the saddle—just pull the pin to activate. *Note:* Not for lifting applications.

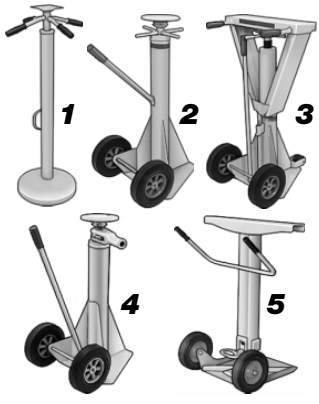

Cap., tons Holding	Lifting	Min. Ht.	Max. Lift	Max. Ht.	Saddle Size	Base Size	Handle Lg.		
Screw-Action Jack with Square Saddle									
1	25	2½	43″	8″	51″	5″ Sq.	14″ Dia.	None	8817T61♠ $120.73
Screw-Action Jack with Round Saddle and Removable Handle									
2	50	20	38″	12½″	50½″	8″ Dia.	16″ Lg. ×18″ Wd.	20″	8817T62 324.36
Screw-Action Jack with Beam Saddle and Removable Handle									
3	50	20	39½″	11½″	51″	24″ Lg.×6″ Wd.	16″ Lg. ×18″ Wd.	20″	8817T74 447.40
Ratchet-Action Jacks with Round Saddle and Removable Handle									
4	50	20	39″	12½″	51½″	8″ Dia.	16″ Lg. ×18″ Wd.	20″	8817T63 348.78
4	62½	25	39½″	11½″	51″	8″ Dia.	16″ Lg. ×18″ Wd.	20″	8817T64 459.76
4	50	20	39½″	11½″	51″	8″ Dia.	27″ Lg. ×48″ Wd.	20″	8817T46▲ 352.17
4	50	25	34½″	15½″	50″	8″ Dia.	17⅝″ Lg.×16″ Wd.★	20½″	8817T14 449.40
Ratchet-Action Jack with Beam Saddle and Removable Handle									
3	50	20	39½″	11½″	51″	24″ Lg.×6″ Wd.	16″ Lg. ×18″ Wd.	20″	8817T67 447.40
Gas-Activated Stand with Beam Saddle									
5	50	—	42″	10½″	52½″	30″ Lg.×5″ Wd.	18½″ Lg.×17″ Wd.	15″	8817T73 680.99

♠ Not furnished with wheels. ▲ Wheels are 10″ Dia.×2¾″ Wd. ★ Triangular shape; width at widest point.

Mountable Jacks with Foot Plate

Mount to the frame of your equipment—the foot plate holds the load in position. Jacks with a *top crank handle* require additional clearance but the handle locks down out of the way when not in use. All have a round body, unless noted. The (A) dimension is the distance above the mounting point; (B) is the distance below.

Swivel Plate Mount—Weld the included 4″×5″ (unless noted) mounting plate to your equipment then attach the jack to the plate. Mount allows jack to be swiveled 90° out of the way and locked into position.

Swivel Tube Mount—Weld the included 2″ dia. tube-style mount to your equipment then attach the jack to the mount. The mount has four holes at 90° positions so you can insert the pin to lock the jack in position.

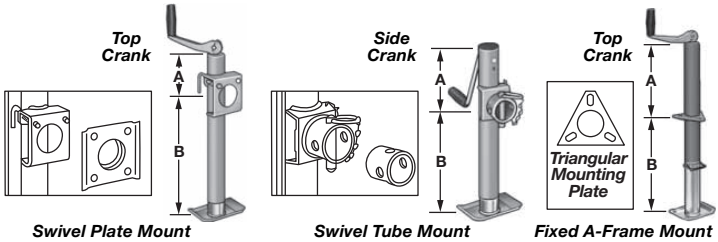

Swivel Plate Mount ***Swivel Tube Mount*** ***Fixed A-Frame Mount***

Fixed A-Frame Mount—Bolt or weld the 5⅛″×4″ triangular mounting plate to the inside of an A-frame trailer coupler. Mount improves stability because it better centers the load. It has a 2¼″ ID center hole and three 7/16″×13/16″ slotted mounting holes (mounting bolts not included).

Cap., tons	(A)	(B) Min.	(B) Max.	Max. Lift	Handle Lg.		
Swivel Plate Mount							
Top Crank Handle—*With 3 13/16″ Lg.×7½″ Wd. foot plate (unless noted)*							
1	4″	11″	21″	10″	6½″	2963T24	$68.73
1	5″	14″	29″	15″	6″	2963T25■	58.76
2½	4″	11¼″	21¼″	10″	7⅝″	2963T28◇	67.32
2½	10″	14½″	29½″	15″	7⅝″	2963T35	75.20
Side Crank Handle—*With 3 13/16″ Lg.×7½″ Wd. foot plate (unless noted)*							
1	6¼″	10 13/16″	20 13/16″	10″	6⅞″	2963T44	77.96
1	6″	15⅝″	30⅝″	15″	6⅛″	2963T45✓	71.17
2½	6¼″	10⅜″	20⅜″	10″	6½″	2963T48	87.14
2½	6¼″	15⅜″	30⅜″	15″	6½″	2963T49	91.26
Swivel Tube Mount							
Top Crank Handle—*With 3 13/16″ Lg.×7½″ Wd. foot plate*							
1	4″	16″	31″	15″	6½″	2963T15	79.30
2½	4″	11 3/16″	21 3/16″	10″	6½″	2963T18	85.51
2½	4¼″	15⅜″	30⅜″	15″	6½″	2963T19	88.02

■ Mounting plate is 4⅞″ square. Foot plate is 4″ Lg.×7¼″ Wd.
◇ Mounting plate is 4⅜″×5″. ✓ Foot plate is 3¼″ Lg.×7¼″ Wd.
● Has a square body.

Cap., tons	(A)	(B) Min.	(B) Max.	Max. Lift	Handle Lg.		
Swivel Tube Mount (Cont.)							
Side Crank Handle—*With 3 13/16″ Lg.×7½″ Wd. foot plate (unless noted)*							
1	6¼″	10 13/16″	20 13/16″	10″	6⅞″	2963T71	$95.42
1	6″	16″	31″	15″	6½″	2963T72✓	85.14
2½	6 3/16″	10½″	20½″	10″	6½″	2963T73	96.27
2½	6 3/16″	15½″	30½″	15″	6½″	2963T74	99.74
Side Crank Handle—*With 8″ Lg.×6″ Wd. foot plate*							
3½	6⅜″	11″	21″	10″	8½″	2963T75	112.35
Side Crank Handle—*With 10″ Lg.×9¾″ Wd. foot plate*							
5	10⅛″	17″	29⅝″	12⅝″	18 3/16″	2963T76●	258.64
Fixed A-Frame Mount							
Top Crank Handle—*With 4⅜″ Lg.×6⅜″ Wd. foot plate*							
1	12 3/16″	8 3/16″	23 3/16″	15″	7⅝″	2933T31	68.11
2½	10 3/16″	10 5/16″	25 3/16″	15″	6⅝″	2933T11	63.67
Top Crank Handle—*Without a foot plate (for use on concrete)*							
2½	10 11/16″	10 13/16″	25 13/16″	15″	7⅝″	2933T35	50.44
Side Crank Handle—*With 4⅜″ Lg.×6⅜″ Wd. foot plate*							
1	13″	8½″	21½″	13″	6½″	2933T32	75.67

Mountable Jacks with Caster

Mount these jacks onto the frame of your equipment for an easy way to move and position your load. All include a swivel caster with a 6″ Dia.×2″ Wd. polypropylene wheel (unless noted), a side crank handle, and mounting fasteners (unless noted). The (A) dimension indicates the distance above the mounting point; (B) is the distance below the mounting point except *Style 8*, which has an adjustable mounting point.

(6) Swivel Mount—A pin in the mounting plate locks the jack in a vertical position; simply pull the pin to rotate the jack 90° into a horizontal position when not in use.

(8) Fixed Mount, Rack-and-Pinion Design—Self-locking worm gear greatly reduces cranking effort.

(9) Fixed A-Frame Mount—Bolt or weld the 5⅛″×4″ triangular mounting plate to the inside of an A-frame trailer coupler. Mount improves stability because it better centers the load. It has a 2¼″ ID center hole and three 7/16″×13/16″ slotted mounting holes (mounting bolts not included).

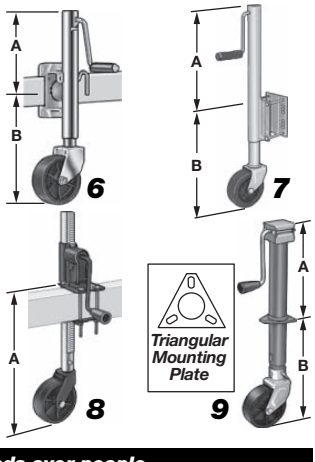

Cap., lbs.	(A)	(B) Min.	(B) Max.	Max. Lift	Fits Frame Size, Lg.×Wd.	Handle Lg.		
(6) Swivel Mount—*Steel*								
1,200	10½″	12¾″	22¾″	10″	3″×4″ to 3″×5″	6½″	8792T44	$63.52
1,250	10″	12¾″	22¾″	10″	3″×4″ to 3″×5″	6⅜″	8792T43	72.62
(6) Swivel Mount—*Galvanized Steel for Corrosion Resistance*								
1,500	13 9/16″	13⅝″	25⅝″	12″	2″×2″ to 3″×5″	6″	2958T25♦	151.04
(7) Fixed Mount—*Zinc-Plated Steel for Corrosion Resistance*								
1,000	14½″	13¼″	28¼″	15″	2″×3″ to 3″×5″	6½″	8792T45♥	76.14
(8) Fixed Mount, Rack-and-Pinion Design—*Steel*								
750	—	7½″	23½″	16″	2″×2″ to 3″×5″	5½″	2958T6	146.98
(9) Fixed A-Frame Mount—*Steel*								
1,200	13″	16″	29″	13″	—	6½″	2933T22♣	88.58

♦ Wheel is 8″ Dia.×2″ Wd. ♥ Wheel is polyolefin. ♣ Mounting bolts not included.

Warning! **These products should not be used to support people or loads over people.**

Mini Vertical Brace

The perfect size for supporting loads in low-height spaces. This brace has a steel rod inside of a steel post; height is adjusted easily with a quick-release knob. It has a 12½″ Lg.×5½″ Wd. plastic top plate with eight 3/16″ dia. mounting holes. It also has a 5½″ square plastic base plate with two 3/16″ dia. mounting holes. Mounting fasteners are not included.

Optional extensions provide additional height when needed.

Note: Only one extension can be used at a time.

Cap., lbs. @ 15½″-19″	20″-21″	22″-24″	Min. Ht.	Max. Ht.		
400	250	100	15½″	24″	28965T31	$74.95
Optional Extensions						
1-ft. Length (Capacity is 400 lbs. up to 31″)					28965T41	22.80
2-ft. Length (Capacity is 400 lbs. up to 43″)					28965T42	25.48
3-ft. Length (Capacity is 400 lbs. up to 55″)					28965T43	28.16

Quick-Set Vertical Braces

Optional Mounting Plate

Braces set up in seconds and can be easily moved from job to job. Made entirely of steel, they have a 1⅞″ dia. rod that slides inside a 2⅜″ dia. post; both have holes spaced in 4″ increments. Extend the rod to the approximate height and insert the pin into a hole. A ring at the top of the brace permits adjusting within 2″ of your required height. Make final height adjustments by turning the 11″ long handle.

Braces have a 6″ square top plate and base plate, both with four 9/16″ dia. mounting holes (fasteners not included).

Note: Do not use for lifting.

Optional mounting plates secure and stabilize either the rod (top) or the post of the brace.

	Capacity, tons @ 6′2″	8′2″	9′	10′	11′1″	12′	13′1″
2929T41	4½	4	3½	3	2½	—	—
2929T42	—	4	3½	3	2½	2	1½

Min. Ht.	Max. Ht.		
6′2″	11′1″	2929T41	$157.46
8′2″	13′1″	2929T42	158.00
Optional Mounting Plates			
Plate for 1⅞″ Dia. Rod (6″ Lg.×5″ Wd.)		2929T62	6.20
Plate for 2⅜″ Dia. Post (6″ Lg.×5½″ Wd.)		2929T61	7.13

High-Capacity Vertical Braces

Designed for permanent installation, these braces support beams and joists. They have a 2⅜″ dia. steel post that's notched in 4″ increments. Simply extend the post to the approximate height and slide the included safety lock ring into the notch to hold the post in place. Make final height adjustments by turning the 10″ long steel handle.

Braces have a 4″ square top plate and base plate, both with two 3/8″ and two 5/8″ dia. mounting holes (fasteners not included).

Note: Do not use for lifting.

Capacity, tons @ Min. Ht.	Max. Ht.	Min. Ht.	Max. Ht.		
8¾	7	5′8″	8′4″	2946T1	$113.19
9	8½	3′4″	5′4″	2946T3	88.61
9	8½	2′1″	3′5″	2946T4	74.07
9	9	1′4″	2′0″	2946T5	63.64

Extendable Side Braces

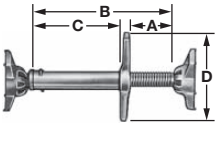

Shore up trenches when installing pipes, cables, and other buried equipment. Braces are made of steel and malleable iron and can be used in permanent installations. Each end of the brace has a ball and socket joint that tilts up to 10° for angular shoring as well as spikes that dig in for a tight grip.

8-ton braces have 3″ Lg.×6″ Wd. ends and a 1⅜″ dia. screw. They include a pipe that can be replaced with a longer piece of Schedule 40 pipe up to 40½″ long. ***13-ton braces*** have 4″ Lg.×8″ Wd. ends and a 1⅞″ dia. screw. They include a pipe that can be replaced with a longer piece of Schedule 40 pipe up to 50″ long.

Cap., tons	Min. Lg.	Screw Travel (A)	Max. Lg. (B)	Pipe Lg. (C)	Handle Lg. (D)		
8	18½″	7″	25½″	10½″	9½″	2950T11	$116.70
8	30½″	10½″	41″	22½″	9½″	2950T15	131.43
13	37″	14″	51″	26″	11″	2950T17	210.28
13	49″	14″	63″	38″	11″	2950T19	218.94

Inflatable Air Wedges

Thin enough to fit even the smallest spaces. Made of reinforced vinyl, these wedges are commonly used by locksmiths to separate a car door from its frame. To use, slip wedge between two objects and squeeze the bulb to inflate; a release valve deflates it.

Wedge Size, Lg.×Wd.	Deflated Ht.	Inflated Height		
6¼″×5¾″	5/64″	2¾″	3833T43	$40.85
11″ ×5⅛″	5/64″	2¾″	3833T44	48.75

Air-Powered Lifting Bags

Lifting Bag Shown with Hose and Control Unit

Just place these bags under your load and inflate. They require only 1″ of clearance and work well on soft ground and under water.

Bags are made of neoprene with six layers of aramid fabric reinforcement. They have male quick-connect couplings; maximum air pressure is 118 psi. Operating temperature is –40° to +150° F. A limit of two bags can be stacked for added height.

For a complete lifting system, you'll need a bag, a push-button control unit, and an air hose (all sold separately). Fittings on the control unit and air hose are designed to fit this lifting system only.

Components—*Push-button control unit* allows precise inflation and deflation of bags. It has three female quick-connect couplings (one is for the air hose). *Air hose* is 3/8″ dia. and has a female quick-connect coupling on one end and a male nipple on the other end. To connect the air hose to the air supply, use the *dual male-end quick-connect adapter with shut-off valve*. It has a ¼″ NPT×¼″ NPT connection to fit your air supply. If shop air is not available, use the *foot/hand pump* to manually inflate the bags.

Cap., tons	Deflated Height	Max. Lift	Inflated Height	Bag Size, Lg.×Wd.		
1	5/8″	2⅜″	3″	6″× 6″	28935T61	$315.56
2¾	5/8″	2⅞″	3½″	12″× 6″	28935T62	417.26
6½	¾″	5⅝″	6⅜″	12″×12″	28935T63	625.89
10¾	¾″	7 7/16″	8 3/16″	15″×15″	28935T64	732.82
15	¾″	8¼″	9″	21″×15″	28935T11	781.05
20	¾″	10¼″	11″	20″×20″	28935T12	978.15
29¾	¾″	12¼″	13″	24″×24″	28935T13	1,096.61
70	1″	19″	20″	37″×37″	28935T15	2,486.77
Components						
Push-Button Control Unit					28935T21	603.87
Air Hose—16 ft. Lg.					28935T311	63.95
Air Hose—32 ft. Lg.					28935T413	72.80
Dual Male-End Adapter with Shut-Off Valve					28935T51	85.97
Foot/Hand Pump					28935T414	769.52

Air-Powered Jacks

4200T5

Use your air supply to raise and lower loads. Jacks have an internal steel telescoping shaft that provides vertical and lateral stability. The saddle rotates 360° for easy positioning and has a cross-shaped groove for holding cylindrical parts.

Jacks are steel with a powder-coated finish. Bladders are rubber. Furnished with two carrying handles and a female ¼″ NPT air valve. Max. temperature is 120° F. Max. air pressure is 105 psi.

Note: Use on a solid, flat surface. Base must be parallel to the lifting point.

Cap., tons	Min. Ht.	Max. Lift	Max. Ht.	Saddle Dia.	Base Dia.		
2	5¾″	8″	13¾″	3″	14″	4200T5	$526.65
2	6 13/16″	11 3/16″	18″	3″	14″	4200T6	691.93

Air-Powered Lifters and Positioners

With Optional CO_2 Tank

Simply hook up to your air supply or to a CO_2 tank and you're ready to lift. Units have a hand control that activates the up/down action, along with a 16-ft. air hose and a male 1/8″ quick-connect coupling. Made of high-strength aluminum, they have swivel casters with 5″ Dia.×1¼″ Wd. polyurethane wheels and wheel locks; legs fold out of the way for easy storage.

Optional CO_2 tank attaches to the base of these units. A full tank will provide approximately 30 lifts at maximum height and load capacity.

Cap., lbs.	Min. Ht.	Max. Lift	Max. Ht.	Platform Size, Lg.×Wd.		
250	4′6″	13′10½″	18′4½″	19″×24″	22265T31	$2,054.56
300	3′5″	9′5⅝″	12′5⅝″	19″×24″	22265T32	1,881.54
Optional CO_2 Tank (Shipped Empty)					22265T25	519.80

Warning! ***These products should not be used to support people or loads over people.***

Chain Wheels for Overhead Valves

Operate overhead valves right from the floor. The wheels consist of a sprocket rim with chain guide arm. You can attach them to almost any standard handwheel-operated valve with the included attachment set. Use with single-loop, coil-style, hot-galvanized steel chain (not included; see page 1402).

Aluminum wheels have an aluminum guide arm. They're lightweight, strong, and corrosion resistant.

Cast iron wheels have a malleable iron guide arm and are for general purpose use.

Ductile iron wheels have a malleable iron guide arm. These heavy duty wheels include a hammer-blow plate (unless noted). The plate withstands heavy impact for releasing large and stubborn valves. Attach to the valve wheel with lugs so the rim can rotate about 1/3 revolution in either direction before impact. Spokes on the sprocket then contact lugs on the plate, causing the valve to open or close.

Galvanized wheels are for high-moisture environments. Attachment set is galvanized steel.

Cast Iron

Ductile Iron with Hammer-Blow Plate

Wheel Size	For Handwheel Diameter	Sprocket OD	Bore ID	O'all Ht.	Uses Chain Trade Size	Hub Dia.	Aluminum		Cast Iron		Ductile Iron		Galvanized	
0	2″ to 4″	4″	½″	4⅝″	2	½″	9765K71	$49.77	9765K11	$31.89	9765K51 ♦	$35.73	8017K21	$56.97
1	4¼″ to 5¾″	5¾″	⅞″	6⅜″	1/0	⅞″	9765K72	51.79	9765K13	49.75	9765K52 ♦	60.59	8017K22	79.98
1½	6″ to 7½″	7½″	1″	7¾″	1/0	1″	9765K73	59.90	9765K15	56.13	9765K53 ♦	62.51	8017K23	93.31
2	7¾″ to 9″	9″	2⅛″	10½″	1/0	2⅛″	9765K74	77.54	9765K17	75.26	9765K54	185.66	8017K24	128.42
2½	9¼″ to 12½″	12″	2⅛″	12½″	4/0	2⅛″	9765K75	117.75	9765K19	108.46	9765K55	224.55	8017K25	183.66
3	12¾″ to 15½″	15½″	2⅛″	15½″	4/0	2⅛″	9765K76	138.65	9765K21	132.69	9765K56	297.28	8017K26	226.63
3½	15¾″ to 19″	18½″	3″	18½″	4/0	3″	9765K77	278.63	9765K23	195.22	9765K57	635.43	8017K27	327.35
4	19¼″ to 22″	21½″	3″	21½″	5/0	3″	9765K78	421.31	9765K25	267.94	9765K58	849.12	8017K28	490.93
4½	22¼″ to 26″	25¾″	3″	25¾″	5/0	3″	9765K79	720.15	9765K27	421.05	9765K59	1,056.44	8017K29	662.67
5	26¼″ to 30″	30″	3″	30¼″	5/0	3″	9765K81	1,043.33	9765K29	494.63	—	—	8017K51	802.51

♦ Without hammer-blow plate.

Pulls

Operate overhead doors, ventilators, skylights, and more with these manual pulls.

To Order: Please specify length: 1, 2, 5, or 8 ft.

Rope pull is made of braided nylon rope with a white nylon ball on one end. Offers good strength in light duty applications. Not load rated.

Sash chain pulls are made of metal chain and have a split ring on each end. They offer greater strength in heavier applications than rope pulls. Not load rated. See page 1400 for actual size of chain.

Utility chain pulls are the strongest pulls we offer. They are made of welded steel and have an end fitting on one end.

Rope Pull

Sash Chain Pull

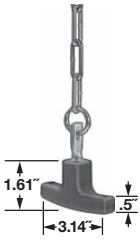

Utility Chain Pull with T-Handle

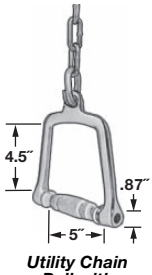

Utility Chain Pull with D-Handle

Rope Pull

Rope Diameter	Ball Diameter	Base Price for 1-ft. Length Each	Extra Length Per Ft.
0.25″	1″	2677T5 $9.33	$0.67

Sash Chain Pulls

Chain Trade Size	Split Ring ID	Base Price for 1-ft. Length Each	Extra Length Per Ft.
Zinc-Plated Steel with Zinc-Plated Steel Split Rings			
8	1.062″	2678T1 $11.40	$0.91
40	1.062″	2678T3 11.90	1.33
Type 304L Stainless Steel with Stainless Steel Split Rings			
8	1.16″	2678T6 15.90	2.98
35	1.16″	2678T7 15.73	2.94

Utility Chain Pulls

Work Load Limit, lbs.	Inside Link Size, Wd. × Lg.	Base Price for 1-ft. Length Each	Extra Length Per Ft.
Steel with Black Nylon T-Handle			
55	0.21″ × 1.11″	2679T1 $47.00	$1.32
Zinc-Plated Steel with Steel D-Handle			
350	0.31″ × 1.23″	2679T8 99.62	2.38

Rope Ends and Stops

Screw-on ends consist of a hard nylon fitting and a Type 316 stainless steel screw (included). The screw threads into the end of the rope, forcing it against the specially molded fitting for a strong connection. Use with twisted or braided nylon and polyester ropes. Color is black. Maximum temperature is 240° F.

For Rope Dia.	Pkg. Qty.		Pkg.
5/16″	10	3382T11	$8.52
3/8″	10	3382T12	8.85
1/2″	10	3382T13	9.18
5/8″	10	3382T14	9.55
3/4″	10	3382T15	14.76

Shrink-fast ends are adhesive-lined polyolefin tubing that you cut to size, slip over your rope, and shrink with a heat gun.

Use with manila, cotton, and synthetic ropes. Color is black. Maximum temperature is 230° F.

For Rope Dia.	Lg., ft.		Each
1/8″ to 1/4″	4	3847T22	$4.84
3/16″ to 3/8″	4	3847T23	5.38
3/8″ to 3/4″	4	3847T24	8.11
3/4″ to 1½″	4	3847T25	19.38

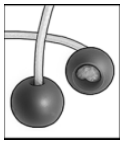

Stops slide onto the end of fibrous rope to keep it from slipping through pulleys and cleat systems. Made of nylon. Not rated for temperature.

To Order: Please specify color: black, blue, green, or red.

For Rope Dia.	Stop Dia.	Pkg. Qty.		Pkg.
5/32″	5/8″	10	1381T11	$9.15
3/16″	3/4″	10	1381T12	11.02
3/16″	1″	10	1381T13	12.48
1/4″	1 1/4″	1	1381T14	1.60

Throw Weights

Add a little weight to your rope so it lands where you want it. Weights consist of a durable nylon bag filled with 16 oz. of #8 shot and a 7/8″ dia. corrosion-resistant nickel-plated ring for attaching your rope.

Throw weights with rope include 150 feet of 1/8″ dia. high-visibility yellow polyethylene rope.

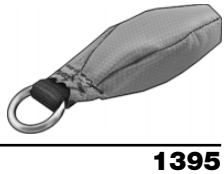

	Bag Size, Lg. × Wd.	Orange Bag		Red Bag	
Throw Weights	5¼″ × 2″	8318T111	$12.13	8318T112	$12.13
Throw Weights with Rope	5¼″ × 2″	8318T211	23.18	8318T212	23.18

Alloy Steel Chain—For Lifting

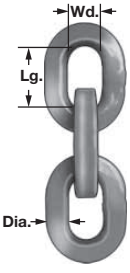

Grade 120

Attack your lifting jobs with confidence. This durable alloy steel chain is available in a variety of grades. Choosing a higher grade not only gives you a stronger chain, but also a smaller, lighter chain for a particular work load limit. Chain is welded and heat treated.

Note: When using fittings on the chain, be sure to match the grade and trade size. For fittings, see pages 1423-1438.

Grade 120— The strongest chain we offer. It's approximately 20% stronger than Grade 100 chain and about 50% stronger than Grade 80 chain. Plus, it has the highest strength-to-weight ratio, which allows you to use a smaller chain size for your application and reduces the weight of your lifting assembly. Links are rounded on the inside and square on the outside so wear spreads evenly across the contact points. Maximum temperature is 400° F.

Grade 100— This chain is approximately 25% stronger than Grade 80 chain. It's made in accordance with NACM (National Association of Chain Manufacturers) standards and is stamped with NACM grade designation. Maximum temperature is 400° F. Meets ASTM A973 specifications.

Grade 80— The most common chain for lifting. Chain is made in accordance with NACM (National Association of Chain Manufacturers) standards and is stamped with NACM grade designation. Maximum temperature is 400° F.

Grade 63— Withstands higher temperatures than any other alloy steel chain. Maximum temperature is 500° F.

Blue powder-coated and ***painted*** finishes provide corrosion resistance. ***Zinc*** and ***black super-corrosion-resistant*** finishes provide better corrosion resistance than the other finishes.

To Order: Please specify length from those listed.

Grade 100

Grade 80

Grade 63

Trade Size Inch	Trade Size mm	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Wt., lbs. per ft.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
Grade 120										
Blue Powder-Coated Finish										
9/32″	7	0.28″	0.39″	0.87″	5,200	0.87	14	2, 5, 10, 25, 50, 100	5478T1	$11.67
3/8″	10	0.39″	0.56″	1.30″	10,600	1.75	10	2, 5, 10, 25, 50, 100	5478T2	17.08
1/2″	13	0.51″	0.73″	1.61″	17,900	3.09	8	2, 5, 10, 25, 50, 100	5478T3	28.74
Grade 100										
Plain Finish										
7/32″	5.5	0.22″	0.32″	0.68″	2,700	0.47	17	2, 5, 10, 25, 50, 100	3410T74	7.05
9/32″	7	0.28″	0.38″	0.83″	4,300	0.74	14	2, 5, 10, 25, 50, 100	3410T62	7.60
5/16″	8	0.32″	0.43″	0.95″	5,700	0.94	12	2, 5, 10, 25, 50, 100	3410T77	8.16
3/8″	10	0.39″	0.53″	1.18″	8,800	1.48	10	2, 5, 10, 25, 50, 100	3410T64	10.41
1/2″	13	0.51″	0.69″	1.54″	15,000	2.55	7	2, 5, 10, 25, 50, 100	3410T72	14.37
5/8″	16	0.63″	0.85″	1.89″	22,600	3.83	6	2, 5, 10, 25, 50, 100	3410T66	26.00
3/4″	20	0.79″	1.01″	2.44″	35,300	5.78	4	2, 5, 10, 25, 50, 100	3410T75▲	34.76
Black Super-Corrosion-Resistant Finish										
7/32″	5.5	0.22″	0.32″	0.68″	2,700	0.47	17	2, 5, 10, 25, 50, 100	3410T95	8.56
9/32″	7	0.28″	0.38″	0.83″	4,300	0.74	14	2, 5, 10, 25, 50, 100	3410T82	12.67
5/16″	8	0.32″	0.43″	0.95″	5,700	0.94	12	2, 5, 10, 25, 50, 100	3410T97	14.54
3/8″	10	0.39″	0.53″	1.18″	8,800	1.48	10	2, 5, 10, 25, 50, 100	3410T84	17.69
1/2″	13	0.51″	0.69″	1.54″	15,000	2.55	7	2, 5, 10, 25, 50, 100	3410T92	22.38
5/8″	16	0.63″	0.85″	1.89″	22,600	3.83	6	2, 5, 10, 25, 50, 100	3410T86	40.64
3/4″	20	0.79″	1.01″	2.44″	35,300	5.78	4	2, 5, 10, 25, 50, 100	3410T96	55.20
Grade 80										
Black-Painted Finish										
7/32″	5.5	0.22″	0.32″	0.68″	2,100	0.47	18	2, 5, 10, 25, 50, 100	3587T22	4.98
9/32″	7	0.28″	0.41″	0.88″	3,500	0.72	13	2, 5, 10, 25, 50, 100	3587T14	4.68
5/16″	8	0.33″	0.48″	1.02″	4,500	1.06	11	2, 5, 10, 25, 50, 100	3587T57	5.57
3/8″	10	0.40″	0.57″	1.22″	7,100	1.50	9	2, 5, 10, 25, 50, 100	3587T15	6.41
1/2″	13	0.51″	0.75″	1.54″	12,000	2.55	8	2, 5, 10, 25, 50, 100	3587T16	13.93
5/8″	16	0.63″	0.92″	1.93″	18,100	3.60	6	2, 5, 10, 25, 50, 100	3587T17	14.36
3/4″	20	0.79″	1.01″	2.44″	28,300	5.78	4	2, 5, 10, 25, 50, 100	3587T18	35.63
Zinc Finish										
9/32″	7	0.27″	0.41″	0.83″	3,500	0.71	13	2, 5, 10, 25, 50, 100	3457T31	9.19
5/16″	8	0.31″	0.48″	0.95″	4,500	0.91	12	2, 5, 10, 25, 50, 100	3457T61	9.28
1/2″	13	0.51″	0.75″	1.54″	12,000	2.48	8	2, 5, 10, 25, 50, 100	3457T41	16.07
5/8″	16	0.63″	0.87″	1.89″	18,100	3.62	6	2, 5, 10, 25, 50, 100	3457T51	25.18
Grade 63										
Plain Finish										
9/32″	7	0.28″	0.41″	0.85″	2,800	0.72	14	2, 5, 10, 25, 50, 100	3387T21	7.33
5/16″	8	0.31″	0.45″	1.04″	4,200	1.11	11	2, 5, 10, 25, 50, 100	3387T31	7.50
3/8″	10	0.39″	0.57″	1.21″	5,000	1.47	9	2, 5, 10, 25, 50, 100	3387T41	7.88
1/2″	13	0.51″	0.74″	1.57″	9,000	2.43	7	2, 5, 10, 25, 50, 100	3387T51	11.97

▲ Has a gray-painted finish.

Wear Gauge for Grade 100 and Grade 80 Chain— Gauge measures the maximum allowable wear tolerances on links of Grade 100 and Grade 80 alloy steel chain, as required by OSHA. If the gauge can be inserted over any part of the link, then the chain should be taken out of service. For use on chain sizes: 7/32″, 9/32″, 3/8″, 1/2″, 5/8″, 3/4″, 7/8″, 1″, and 1 1/4″.

3831T38 ..... $4.62

Corrosion-Resistant Grade 50 Stainless Steel Chain—For Lifting

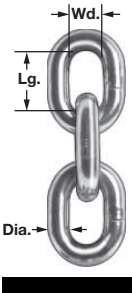

Made of Type 316L stainless steel with a polished finish, this Grade 50 chain is welded and resists rust, diluted acidic solutions, salt water, and pitting, including pitting caused by phosphoric and most acetic solutions. Maximum temperature is 750° F.

Note: When using fittings on the chain, be sure to match the grade and trade size. For fittings, see pages 1423-1438.

To Order: Please specify length from those listed.

Trade Size Inch	Trade Size mm	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Wt., lbs. per ft.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
3/16″	5	0.20″	0.30″	0.63″	1,100	0.38	19	2, 5, 10, 25, 50, 100	33645T51	$9.63
9/32″	7	0.28″	0.38″	0.83″	2,200	0.74	14	2, 5, 10, 25, 50, 100	33645T52	21.02
3/8″	10	0.39″	0.53″	1.18″	4,400	1.48	10	2, 5, 10, 25, 50, 100	33645T53	40.63
1/2″	13	0.51″	0.69″	1.54″	7,100	2.55	7	2, 5, 10, 25, 50, 100	33645T54	54.79
5/8″	16	0.63″	0.85″	1.89″	11,000	3.83	6	2, 5, 10, 25, 50, 100	33645T55	75.37

Warning! **Never exceed work load limits.**

Steel Chain—*Not for Lifting*

The higher the grade, the stronger the chain—choosing a higher grade also gives you a smaller, lighter chain for a particular work load limit. Chain is welded. Maximum temperature is 400° F (unless noted).

Note: When using fittings on the chain, be sure to match the grade and trade size. For fittings, see pages 1423-1438.

Grade 70—Also known as transport chain and System 7 chain, this chain is approximately 20% stronger than Grade 40/43 chain and about 60% stronger than Grade 30 chain. Ideal for load binding, towing, and logging jobs. The links are heat treated. Chain is made in accordance with NACM (National Association of Chain Manufacturers) standards and is stamped with NACM grade designation. Meets D.O.T. 49 CFR, 393.102.

Grade 40/43—Also known as high-test chain, binding chain, and System 4 chain, this chain is approximately 50% stronger than Grade 30 chain. Use for load binding, tie downs, and towing. Chain is made in accordance with NACM (National Association of Chain Manufacturers) standards, and is stamped with NACM grade designation.

Grade 30—Also known as proof coil chain, this chain is ideal for applications that don't require the greater strengths of Grade 70 and Grade 40/43. Ideal for tailgates, towing, tie downs, and logging jobs.

Zinc-plated, cold-galvanized, and ***hot-galvanized*** finishes provide some corrosion resistance. ***Poly-coated*** finish minimizes scratching and damage to items that come in contact with the chain.

To Order: Please specify length from those listed.

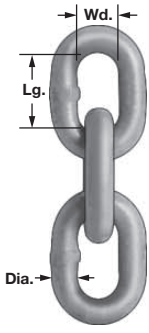

Grade 70

Grade 40/43

Grade 30

Trade Size Inch	Trade Size mm	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Wt., lbs. per ft.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
Grade 70										
Zinc-Plated Finish										
1/4″	7	0.28″	0.46″	1.24″	3,150	0.74	9	2, 5, 10, 25, 50, 100	3363T91	$2.61
5/16″	8	0.33″	0.49″	1.15″	4,700	1.00	10	2, 5, 10, 25, 50, 100	3363T92	3.26
3/8″	10	0.40″	0.60″	1.30″	6,600	1.45	9	2, 5, 10, 25, 50, 100	3363T93	4.37
1/2″	13	0.52″	0.81″	1.56″	11,300	2.64	7	2, 5, 10, 25, 50, 100	3363T95	7.50
Cold-Galvanized Finish										
1/4″	7	0.27″	0.48″	1.24″	3,150	0.65	9	2, 5, 10, 25, 50, 100	34245T4	4.00
5/16″	8	0.33″	0.48″	1.12″	4,700	1.03	10	2, 5, 10, 25, 50, 100	34245T5	4.54
3/8″	10	0.39″	0.55″	1.37″	6,600	1.40	8	2, 5, 10, 25, 50, 100	34245T6	5.34
1/2″	13	0.51″	0.75″	1.78″	11,300	2.34	6	2, 5, 10, 25, 50	34245T7	10.08
Gray Poly-Coated Finish										
1/4″	7	0.27″	0.48″	1.24″	3,150	0.65	10	2, 5, 10, 25, 50, 100	3412T72★	8.40
3/8″	10	0.39″	0.55″	1.37″	6,600	1.37	9	2, 5, 10, 25, 50, 100	3412T74★	11.04
1/2″	13	0.51″	0.75″	1.78″	11,300	2.34	7	2, 5, 10, 25, 50, 100	3412T76★	15.11
Grade 40/43										
Plain Finish										
1/4″	7	0.28″	0.50″	1.02″	2,600	0.69	11	5, 10, 25, 50, 100	3588T14	2.02
5/16″	8	0.33″	0.49″	1.15″	3,900	1.00	10	5, 10, 25, 50, 100	3588T15	2.42
3/8″	10	0.40″	0.60″	1.30″	5,400	1.45	9	2, 5, 10, 25, 50, 100	3588T16	2.78
1/2″	13	0.52″	0.81″	1.56″	9,200	2.65	7	2, 5, 10, 25, 50, 100	3588T18	5.13
5/8″	16	0.63″	0.85″	2.02″	13,000	3.75	6	2, 5, 10, 25, 50, 100	3588T49	8.16
3/4″	20	0.79″	1.13″	2.60″	20,200	6.10	5	2, 5, 10, 25, 50, 100	3588T51	18.97
Zinc-Plated Finish										
1/4″	7	0.28″	0.50″	1.02″	2,600	0.69	11	5, 10, 25, 50, 100	3588T34	2.57
5/16″	8	0.33″	0.49″	1.15″	3,900	1.00	10	5, 10, 25, 50, 100	3588T35	2.94
3/8″	10	0.40″	0.60″	1.30″	5,400	1.45	9	2, 5, 10, 25, 50, 100	3588T36	3.57
1/2″	13	0.52″	0.81″	1.56″	9,200	2.65	7	2, 5, 10, 25, 50, 100	3588T37	6.15
Hot-Galvanized Finish										
1/4″	7	0.28″	0.50″	1.02″	2,600	0.69	11	2, 5, 10, 25, 50, 100	3588T22	2.65
5/16″	8	0.33″	0.49″	1.15″	3,900	1.00	10	2, 5, 10, 25, 50, 100	3588T23	3.53
3/8″	10	0.40″	0.60″	1.30″	5,400	1.45	9	2, 5, 10, 25, 50, 100	3588T24	3.86
1/2″	13	0.52″	0.81″	1.56″	9,200	2.65	7	2, 5, 10, 25, 50, 100	3588T26	6.86
5/8″	16	0.63″	1.00″	1.87″	13,000	3.93	6	2, 5, 10, 25, 50, 100	3588T27	9.79
Grade 30										
Plain Finish										
1/8″	4	0.16″	0.28″	0.90″	400	0.21	13	10, 25, 50, 100, 300	3592T12	.71
3/16″	5	0.21″	0.39″	0.95″	800	0.38	12	10, 25, 50, 100, 300	3592T14	.81
1/4″	7	0.28″	0.46″	1.24″	1,300	0.69	9	5, 10, 25, 50, 100	3592T15	1.18
5/16″	8	0.33″	0.49″	1.30″	1,900	1.00	9	5, 10, 25, 50, 100	3592T16	1.71
3/8″	10	0.40″	0.60″	1.45″	2,650	1.45	8	5, 10, 25, 50, 100	3592T17	2.50
1/2″	13	0.52″	0.81″	1.56″	4,500	2.64	7	2, 5, 10, 25, 50, 100	3592T19	5.36
5/8″	16	0.63″	1.00″	1.87″	6,900	3.93	6	2, 5, 10, 25, 50, 100	3592T22	8.61
3/4″	20	0.78″	1.04″	2.71″	10,600	6.28	5	2, 5, 10, 25, 50, 100	3592T23	18.36
Zinc-Plated Finish										
1/8″	4	0.16″	0.28″	0.90″	400	0.21	13	10, 25, 50, 100, 300	3592T13	.87
3/16″	5	0.21″	0.39″	0.95″	800	0.38	12	10, 25, 50, 100, 300	3592T31	1.06
1/4″	7	0.28″	0.46″	1.24″	1,300	0.69	9	5, 10, 25, 50, 100	3592T32	1.47
5/16″	8	0.33″	0.49″	1.30″	1,900	1.00	9	5, 10, 25, 50, 100	3592T33	2.01
3/8″	10	0.40″	0.60″	1.45″	2,650	1.45	8	2, 5, 10, 25, 50, 100	3592T34	2.63
1/2″	13	0.52″	0.81″	1.56″	4,500	2.64	7	2, 5, 10, 25, 50, 100	3592T36	7.13
Hot-Galvanized Finish										
1/8″	4	0.16″	0.28″	0.90″	400	0.21	13	10, 25, 50, 100, 300	3592T18	.98
3/16″	5	0.21″	0.39″	0.95″	800	0.38	12	5, 10, 25, 50, 100	3592T44	1.23
1/4″	7	0.28″	0.46″	1.24″	1,300	0.69	9	5, 10, 25, 50, 100	3592T45	1.86
5/16″	8	0.33″	0.49″	1.30″	1,900	1.00	9	2, 5, 10, 25, 50, 100	3592T46	2.53
3/8″	10	0.40″	0.60″	1.45″	2,650	1.45	8	2, 5, 10, 25, 50, 100	3592T47	3.87
1/2″	13	0.52″	0.81″	1.56″	4,500	2.64	7	2, 5, 10, 25, 50, 100	3592T49	6.16
5/8″	16	0.63″	1.00″	1.87″	6,900	3.93	6	2, 5, 10, 25, 50, 100	3592T81	13.08
Green Poly-Coated Finish										
1/8″	4	0.16″	0.28″	0.95″	400	0.19	13	5, 10, 25, 50, 100	3411T51★	2.26
3/16″	5	0.21″	0.40″	0.95″	800	0.40	12	5, 10, 25, 50, 100	3411T71★	2.57
1/4″	7	0.27″	0.48″	1.24″	1,300	0.65	10	2, 5, 10, 25, 50, 100	3411T72★	3.12
5/16″	8	0.32″	0.48″	1.28″	1,900	0.95	9	2, 5, 10, 25, 50, 100	3411T73★	4.74
3/8″	10	0.39″	0.55″	1.37″	2,650	1.38	9	2, 5, 10, 25, 50, 100	3411T74★	6.33
1/2″	13	0.51″	0.75″	1.78″	4,500	2.34	7	2, 5, 10, 25, 50, 100	3411T75★	12.25

★ Maximum temperature is 200° F.

Warning! ***Never exceed work load limits; never use for lifting.***

Short-Link Grade 30 Steel Chain—Not for Lifting

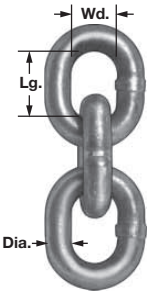

Shorter welded links make this steel chain more flexible than our other Grade 30 steel chain. Maximum temperature is 400° F.

Note: When using fittings on the chain, be sure to match the grade and trade size. For fittings, see pages 1423-1438.

Hot-galvanized finish provides some corrosion resistance.

To Order: Please specify length from those listed.

Trade Size Inch	Trade Size mm	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Wt., lbs. per ft.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
Plain Finish										
1/4″	7	0.28″	0.50″	1.02″	1,300	0.72	13	5, 10, 25, 50, 100	**3575T22**	$2.60
5/16″	8	0.34″	0.50″	1.00″	1,900	1.10	12	2, 5, 10, 25, 50, 100	**3575T23**	4.06
3/8″	10	0.41″	0.62″	1.09″	2,650	1.56	11	2, 5, 10, 25, 50, 100	**3575T24**	4.67
1/2″	13	0.53″	0.75″	1.34″	4,500	2.77	8	2, 5, 10, 25, 50, 100	**3575T26**	6.19
Hot-Galvanized Finish										
1/4″	7	0.28″	0.43″	0.87″	1,300	0.72	13	2, 5, 10, 25, 50, 100	**3575T32**	3.15
5/16″	8	0.34″	0.50″	1.00″	1,900	1.10	12	2, 5, 10, 25, 50, 100	**3575T33**	4.89
3/8″	10	0.41″	0.62″	1.09″	2,650	1.56	11	2, 5, 10, 25, 50, 100	**3575T34**	7.05
1/2″	13	0.53″	0.75″	1.34″	4,500	2.77	8	2, 5, 10, 25, 50, 100	**3575T36**	11.46

Corrosion-Resistant Chain—Not for Lifting

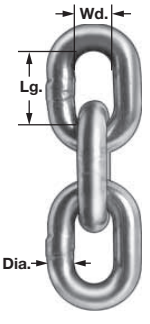

This is the welded chain you need in applications where corrosive conditions and weather can deteriorate ordinary chain.

Brass— In addition to being corrosion resistant, this brass Alloy 260 chain is also nonmagnetic and nonsparking. Good for light to medium duty material handling in hazardous areas and suitable for barrier chain, decorative purposes, and suspending fixtures.

Aluminum— This aluminum-magnesium Alloy 5056 chain is nonmagnetic, nonsparking, and resists corrosion from salt water, food, and many chemicals. Excellent for chemical and food processing. It's also rustproof, lightweight, and easy to handle.

Type 304L Stainless Steel— Has good resistance to atmospheric corrosion.

Type 316L Stainless Steel— Has superior corrosion resistance compared to Type 304L chain. Ideal for chemical and food processing applications.

To Order: Please specify length from those listed.

Trade Size Inch	Trade Size mm	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
Brass— *Plain Finish*									
3/16″	5	0.22″	0.40″	0.95″	300	13	2, 5, 10, 25, 50, 100	**3619T451**	$40.40
1/4″	7	0.28″	0.50″	1.00″	500	12	2, 5, 10, 25, 50, 100	**3619T561**	48.42
3/8″	10	0.41″	0.63″	1.25″	850	9	2, 5, 10, 25, 50, 100	**3619T581**	72.38
Aluminum— *Polished Finish*									
17/64″	7	0.26″	0.37″	1.06″	550	11	2, 5, 10, 25, 50, 100	**3620T21**	16.38
Type 304L Stainless Steel— *Polished Finish*									
1/8″	4	0.16″	0.26″	0.94″	410	13	2, 5, 10, 25, 50, 100	**3392T41**	4.92
3/16″	5	0.20″	0.38″	0.95″	1,200	13	2, 5, 10, 25, 50, 100	**3392T51**	7.72
9/32″	7	0.28″	0.45″	0.86″	2,000	14	2, 5, 10, 25, 50, 100	**3392T52**	13.31
5/16″	8	0.32″	0.46″	0.94″	2,450	13	2, 5, 10, 25, 50, 100	**3392T53**	17.96
3/8″	10	0.39″	0.55″	1.10″	3,550	11	2, 5, 10, 25, 50, 100	**3392T54**	24.83
Type 316L Stainless Steel— *Polished Finish*									
5/64″	2	0.08″	0.18″	0.87″	55	14	2, 5, 10, 25, 50, 100	**3618T11**	3.09
7/64″	3	0.12″	0.21″	1.02″	132	12	2, 5, 10, 25, 50, 100	**3618T12**	4.76
1/8″	4	0.16″	0.26″	0.94″	410	13	2, 5, 10, 25, 50, 100	**3618T13**	5.11
3/16″	5	0.20″	0.38″	0.95″	1,200	13	2, 5, 10, 25, 50, 100	**3618T14**	8.33
9/32″	7	0.28″	0.43″	0.87″	2,000	14	2, 5, 10, 25, 50, 100	**3618T15**	15.34
5/16″	8	0.32″	0.46″	0.94″	2,850	13	2, 5, 10, 25, 50, 100	**3618T16**	20.45
3/8″	10	0.39″	0.55″	1.10″	3,550	11	2, 5, 10, 25, 50, 100	**3618T17**	28.78
1/2″	13	0.51″	0.69″	1.54″	7,400	8	2, 5, 10, 25, 50, 100	**3618T18**	43.36

Cut-Resistant Security Chain—Not for Lifting

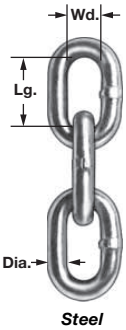

Steel

Alloy Steel

Secure your tools and other valuable equipment with confidence—chain is welded, heat treated for strength, and case hardened for maximum cut and wear resistance. Chain is not load rated.

Steel— Links are extremely abrasion resistant.

Alloy Steel— For maximum security, this chain has square links, which make it difficult to cut with bolt cutters.

Zinc-plated finish provides some corrosion resistance. ***Gray poly-coated*** finish minimizes scratching and damage to items that come in contact with the chain.

To Order: Please specify length from those listed.

Trade Size Inch	Trade Size mm	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
Steel								
Zinc-Plated Finish								
3/16″	5	0.21″	0.34″	0.95″	12	2, 5, 10, 25, 50, 100	**8949T31**	$4.29
1/4″	7	0.26″	0.45″	1.20″	10	2, 5, 10, 25, 50, 100	**8949T32**	4.43
5/16″	8	0.31″	0.47″	1.27″	9	2, 5, 10, 25, 50, 100	**8949T33**	5.35
3/8″	10	0.37″	0.57″	1.36″	8	2, 5, 10, 25, 50, 100	**8949T34**	5.84
1/2″	13	0.51″	0.75″	1.70″	7	2, 5, 10, 25, 50, 100	**8949T35**	14.99
Gray Poly-Coated Finish								
1/4″	7	0.25″	0.44″	1.50″	10	2, 5, 10, 25, 50, 100	**8954T18**	6.49
Alloy Steel								
Zinc-Plated Finish								
9/32″	7	0.28″	0.37″	0.94″	12	2, 5, 10, 25, 50, 100	**36015T4**	7.06
3/8″	10	0.39″	0.60″	1.50″	8	2, 5, 10, 25, 50, 100	**36015T3**	16.85

Warning! Never exceed work load limits; never use for lifting.

General Utility Steel Chain—Not for Lifting

This economical welded steel chain is flexible and strong. Great for tailgates, barrier chain, guard chain, agricultural implements, and industrial equipment.

Straight-Link Chain—Has short, wide links that minimize kinking and tangling. It also has a slightly higher work load limit than twisted-link chain. For plastic straight link chain, see page 1911.

Twisted-Link Chain—Has long, slightly narrower twisted links that lie flat.

Machine chain has smaller links than coil chain and is designed for tight spaces. ***Coil chain*** has longer links than machine chain. *Zinc-plated* and *hot-galvanized* finishes provide some corrosion resistance. *Poly-coated* finish is bright yellow and offers high visibility making it great for marking off restricted areas. It also minimizes scratching and damage to items that come in contact with the chain.

To Order: Please specify length from those listed.

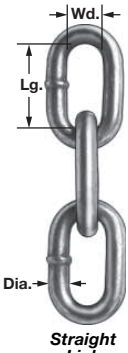

Straight Link

Twisted Link

Trade Size	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Approx. Links per Ft.	Available Lengths, ft.	Plain Finish	Per Ft.	Zinc-Plated Finish	Per Ft.	Hot-Galvanized Finish	Per Ft.
Straight-Link Chain												
Machine Chain												
4	0.12″	0.21″	0.55″	215	21	10, 25, 50, 100	3593T14	$0.99	3593T41	$1.24	—	—
3	0.14″	0.24″	0.59″	270	20	5, 10, 25, 50, 100	—	—	3593T47	1.65	—	—
2	0.15″	0.26″	0.61″	325	19	5, 10, 25, 50, 100	3593T15	1.33	3593T42	1.60	—	—
1	0.16″	0.28″	0.63″	390	19	5, 10, 25, 50, 100	—	—	3593T48	1.60	—	—
1/0	0.18″	0.32″	0.74″	465	16	5, 10, 25, 50, 100	3593T16	1.35	3593T43	1.59	—	—
2/0	0.19″	0.34″	0.78″	545	15	5, 10, 25, 50, 100	3593T17	1.40	3593T44	1.88	—	—
3/0	0.21″	0.36″	1.01″	635	11	5, 10, 25, 50, 100	—	—	3593T49	1.75	—	—
4/0	0.22″	0.40″	0.97″	700	12	5, 10, 25, 50, 100	3593T12	1.52	3593T59	2.03	—	—
5/0	0.25″	0.44″	1.07″	925	11	2, 5, 10, 25, 50, 100	3593T19	1.90	3593T46	2.77	—	—
6/0	0.28″	0.49″	1.32″	1,175	9	2, 5, 10, 25, 50, 100	3593T26	3.36	—	—	—	—
7/0	0.31″	0.54″	1.49″	1,440	8	2, 5, 10, 25, 50, 100	—	—	3593T58	4.12	—	—
7/0	0.33″	0.55″	1.19″	1,370	6	2, 5, 10, 25, 50, 100	3593T25	2.84	—	—	—	—
Coil Chain												
4	0.12″	0.21″	1.11″	205	10	5, 10, 25, 50, 100	3594T14	.79	3594T44	.92	3594T24	$1.81
2	0.15″	0.26″	1.18″	310	10	5, 10, 25, 50, 100	3594T15	.87	3594T45	1.01	3594T25	1.60
1	0.16″	0.28″	1.25″	370	9	5, 10, 25, 50, 100	3594T22	1.02	3594T52	1.30	—	—
1/0	0.18″	0.32″	1.25″	440	9	5, 10, 25, 50, 100	3594T16	1.01	3594T46	1.27	3594T26	1.73
2/0	0.19″	0.34″	1.30″	520	9	5, 10, 25, 50, 100	3594T17	1.04	3594T47	1.24	3594T27	1.92
3/0	0.21″	0.36″	1.30″	605	9	5, 10, 25, 50, 100	—	—	3594T53	1.49	—	—
4/0	0.22″	0.38″	1.39″	670	8	5, 10, 25, 50, 100	3594T18	1.35	3594T48	1.52	3594T28	1.87
5/0	0.25″	0.45″	1.55″	880	7	5, 10, 25, 50, 100	3594T19	1.55	3594T49	1.69	3594T29	2.14
6/0	0.28″	0.50″	1.81″	1,110	6	2, 5, 10, 25, 50, 100	3594T79	2.21	3594T89	2.59	3594T96	2.64
7/0	0.30″	0.50″	1.92″	1,370	6	2, 5, 10, 25, 50, 100	3594T75	2.11	3594T85	2.56	3594T95	3.22
9/0	0.36″	0.60″	2.17″	2,000	5	2, 5, 10, 25, 50, 100	3594T76	3.04	3594T86	3.57	3594T97	2.83
							Poly-Coated Finish					
2/0	0.19″	0.32″	1.29″	520	9	5, 10, 25, 50, 100	3594T91	$1.93	—	—	—	—
4/0	0.22″	0.38″	1.39″	670	8	5, 10, 25, 50, 100	3594T92	2.16	—	—	—	—
Twisted-Link Chain												
Coil Chain							***Plain Finish***		***Zinc-Plated Finish***			
4	0.12″	0.18″	1.09″	195	11	10, 25, 50, 100	3594T34	$0.88	3594T64	$1.02	—	—
3	0.14″	0.21″	1.14″	240	10	5, 10, 25, 50, 100	—	—	3594T71	1.31	—	—
2	0.15″	0.22″	1.15″	295	10	5, 10, 25, 50, 100	3594T35	.94	3594T65	1.02	—	—
1/0	0.17″	0.27″	1.22″	415	9	5, 10, 25, 50, 100	3594T36	1.36	3594T66	1.44	—	—
2/0	0.19″	0.29″	1.24″	495	9	5, 10, 25, 50, 100	3594T37	1.33	3594T67	1.45	—	—

Tangle-Resistant Chain—Not for Lifting

Get maximum resistance to kinking and tangling with this highly flexible welded chain. It's great for tie downs, animal control chain, suspending fixtures, and any application where a change in direction might cause tangling.

Straight-Link Chain—Also known as passing link chain, this chain has links that revolve around each other and change direction easily to reduce kinking and tangling. *Zinc-plated* finish provides some corrosion resistance.

Twisted-Link Chain—Also known as curb chain, this is the most flexible chain we offer. *Type 304 stainless steel chain* offers greater corrosion resistance than steel chain.

To Order: Please specify length from those listed.

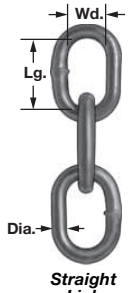

Straight Link

Twisted Link

Straight-Link Chain

Trade Size	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
Steel with Plain Finish								
2/0	0.19″	0.47″	0.88″	450	13	5, 10, 25, 50, 100	3596T14	$1.46
4/0	0.21″	0.50″	0.88″	600	13	5, 10, 25, 50, 100	3596T16	1.73
Steel with Zinc-Plated Finish								
2/0	0.19″	0.47″	0.88″	450	13	5, 10, 25, 50, 100	3596T24	1.61
4/0	0.21″	0.50″	0.88″	600	13	5, 10, 25, 50, 100	3596T26	1.82

Twisted-Link Chain

Trade Size, mm	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
Steel—*Polished-Nickel Finish*								
1.8	0.07″	0.12″	0.24″	—	46	5, 10, 25, 50, 100	3614T111	$1.42
2.0	0.08″	0.14″	0.31″	—	42	5, 10, 25, 50, 100	3614T201	1.45
2.3	0.10″	0.17″	0.33″	—	36	5, 10, 25, 50, 100	3614T301	1.55
2.8	0.12″	0.18″	0.40″	—	30	5, 10, 25, 50, 100	3614T141	1.90
Type 304 Stainless Steel—*Plain Finish*								
1.8	0.07″	0.14″	0.24″	70	35	2, 5, 10, 25, 50, 100	3602T11	4.51
2.3	0.09″	0.16″	0.31″	130	41	2, 5, 10, 25, 50, 100	3602T12	5.03
2.8	0.11″	0.20″	0.48″	190	25	2, 5, 10, 25, 50, 100	3602T13	4.93

Warning! ***Never exceed work load limits; never use for lifting.***

Snag-Resistant Steel Chain—Not for Lifting

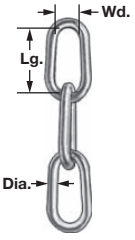

Also known as end-welded sash chain, this steel chain is designed so the sides are smooth, making the chain flexible and resistant to snagging and kinking. Use for barriers and suspending fixtures. *Trade size 1/8″* is also known as heel coil chain.

Zinc-plated, brass-plated, and ***nickel-plated*** finishes provide some corrosion resistance.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Trade Size Inch	Trade Size mm	Finish	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Approx. Links per Ft.	Available Lengths, ft.		Per Ft.
5/64″	2	Plain	0.08″	0.12″	0.50″	75	26	10, 25, 50, 100	8951T17	$0.66
5/64″	2	Zinc Plated	0.08″	0.12″	0.50″	75	26	10, 25, 50, 100	8951T16	.89
5/64″	2	Brass Plated	0.08″	0.12″	0.50″	75	26	10, 25, 50, 100	8951T18	1.00
5/64″	2	Nickel Plated	0.08″	0.12″	0.50″	75	26	10, 25, 50, 100	8951T19	1.08
1/8″	3	Zinc Plated	0.12″	0.34″	1.35″	255	9	10, 25, 50, 100	36055T12	.95

Sash Chain—Not for Lifting

Illustrations are actual size.

Miniature Size 12

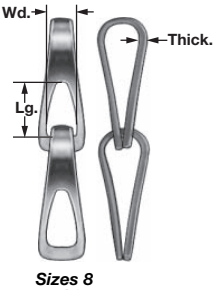

Sizes 8 and 25

Sizes 30, 35, 40, and 45

Size 50

Size 60

Size 65

All chain is weldless and has a flat profile. ***Miniature flat link*** is ideal as a general utility chain. ***Flat link*** chain is designed for use over pulleys and for counterbalanced, double-hung window sashes.

Stainless steel offers superior corrosion resistance. ***Nickel-plated, zinc-plated,*** and ***copper-plated*** finishes provide some corrosion resistance.

To Order: Please specify length from those listed. The last length listed is the max. continuous length.

Trade Size	Thick.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Available Lengths, ft.		Per Ft.
Miniature Flat Link							
Steel—*Plain Finish*							
12	0.016″	0.08″	0.13″	20	10, 25, 50, 100, 300, 500	3385T14	$0.67
Steel—*Nickel-Plated Finish*							
12	0.016″	0.08″	0.13″	20	10, 25, 50, 100, 300	3385T16	.71
Brass—*Plain Finish*							
12	0.015″	0.08″	0.13″	17	10, 25, 50, 100	3385T17	1.23
Brass—*Nickel-Plated Finish*							
12	0.015″	0.08″	0.13″	17	5, 10, 25, 50, 100	3385T18	1.09
Type 430 Stainless Steel—*Plain Finish*							
12	0.015″	0.08″	0.13″	20	5, 10, 25, 50, 100	8950T14	1.06
Flat Link							
Steel—*Plain Finish*							
8	0.035″	0.15″	0.30″	75	25, 50, 100, 300, 500	3607T14	.37
25	0.042″	0.15″	0.30″	95	25, 50, 100, 300, 500	3607T15	.44
30	0.028″	0.17″	0.40″	80	25, 50, 100, 300, 500	3607T16	.48
35	0.035″	0.17″	0.40″	105	10, 25, 50, 100, 300, 500	3607T17	.53
40	0.042″	0.17″	0.40″	140	10, 25, 50, 100, 300, 500	3607T18	.61
45	0.050″	0.17″	0.40″	175	10, 25, 50, 100, 300	3607T19	.69
50	0.062″	0.21″	0.45″	225	10, 25, 50, 100, 300	3607T21	.86
60	0.062″	0.26″	0.54″	230	5, 10, 25, 50, 100	3607T22	1.33
65	0.072″	0.31″	0.63″	315	5, 10, 25, 50, 100	3607T23	1.64
Steel—*Zinc-Plated Finish*							
8	0.035″	0.15″	0.30″	75	25, 50, 100, 300, 500	3607T24	.46
25	0.042″	0.15″	0.30″	95	10, 25, 50, 100, 300, 500	3607T25	.54
30	0.028″	0.17″	0.40″	80	10, 25, 50, 100, 300, 500	3607T26	.55
35	0.035″	0.17″	0.40″	105	10, 25, 50, 100, 300, 500	3607T27	.59
40	0.042″	0.17″	0.40″	140	10, 25, 50, 100, 300, 500	3607T28	.69
45	0.050″	0.17″	0.40″	175	10, 25, 50, 100, 300	3607T29	.84
50	0.062″	0.21″	0.45″	225	5, 10, 25, 50, 100, 300	3607T31	1.07
60	0.062″	0.26″	0.54″	230	5, 10, 25, 50, 100	3607T32	1.61
65	0.072″	0.31″	0.63″	315	5, 10, 25, 50, 100	3607T33	2.03
Steel—*Copper-Plated Finish*							
8	0.035″	0.15″	0.30″	75	25, 50, 100, 300	3607T34	.44
25	0.042″	0.15″	0.30″	95	10, 25, 50, 100, 300	3607T35	.52
30	0.028″	0.17″	0.40″	80	10, 25, 50, 100, 300	3607T36	.52
35	0.035″	0.17″	0.40″	105	10, 25, 50, 100, 300	3607T37	.56
40	0.042″	0.17″	0.40″	140	10, 25, 50, 100, 300	3607T38	.62
45	0.050″	0.17″	0.40″	175	10, 25, 50, 100, 300	3607T39	.72
50	0.062″	0.21″	0.45″	225	10, 25, 50, 100, 300	3607T41	.93
60	0.062″	0.26″	0.54″	230	5, 10, 25, 50, 100	3607T42	1.37
65	0.072″	0.31″	0.63″	315	5, 10, 25, 50, 100	3607T43	1.73
Steel—*Nickel-Plated Finish*							
8	0.035″	0.15″	0.30″	75	10, 25, 50, 100, 300	3607T64	.56
25	0.042″	0.15″	0.30″	95	10, 25, 50, 100, 300	3607T65	.63
30	0.028″	0.17″	0.40″	80	10, 25, 50, 100, 300	3607T66	.67
35	0.035″	0.17″	0.40″	105	10, 25, 50, 100, 300	3607T67	.74
40	0.042″	0.17″	0.40″	140	10, 25, 50, 100, 200	3607T68	.90
45	0.050″	0.17″	0.40″	175	10, 25, 50, 100	3607T69	1.03
50	0.062″	0.21″	0.45″	225	5, 10, 25, 50, 100	3607T71	1.21
60	0.062″	0.26″	0.54″	230	5, 10, 25, 50, 100	3607T72	1.77
65	0.072″	0.31″	0.63″	315	2, 5, 10, 25, 50, 100	3607T73	2.34
Bronze—*Plain Finish*							
8	0.035″	0.15″	0.30″	70	5, 10, 25, 50, 100	3607T54	2.01
25	0.042″	0.15″	0.30″	80	5, 10, 25, 50, 100	3607T55	2.21
30	0.028″	0.17″	0.40″	75	5, 10, 25, 50, 100	3607T56	2.32
35	0.035″	0.17″	0.40″	100	2, 5, 10, 25, 50, 100	3607T57	3.11
40	0.042″	0.17″	0.40″	125	2, 5, 10, 25, 50, 100	3607T58	3.19
45	0.050″	0.17″	0.40″	160	2, 5, 10, 25, 50, 100	3607T59	3.77
50	0.062″	0.21″	0.45″	210	2, 5, 10, 25, 50, 100	3607T61	4.62
Type 304 Stainless Steel (Unless Noted)—*Plain Finish*							
8	0.040″	0.12″	0.26″	75	2, 5, 10, 25, 50, 100	3610T21	3.00
25	0.042″	0.15″	0.30″	200	2, 5, 10, 25, 50, 100	3610T11★	2.58
35	0.040″	0.19″	0.34″	175	2, 5, 10, 25, 50, 100	3610T32	4.17

★ Type 302 stainless steel.

Warning! Never exceed work load limits; never use for lifting.

Flat-Link Plumbers' Chain—Not for Lifting

Also known as safety chain, this weldless chain has flat links that take up little space and fold back on themselves for maximum flexibility. Ideal for plumbing fixtures and general utility applications.

Type 302 stainless steel offers superior corrosion resistance. ***Aluminum*** is corrosion resistant and lighter in weight than the other chain. ***Nickel-plated*** and ***zinc-plated*** finishes provide some corrosion resistance.

To Order: Please specify length from those listed. The last length listed is the max. continuous length.

Illustrations are actual size.

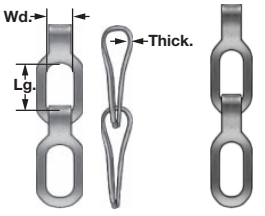

Size 2/0 Size 1/0

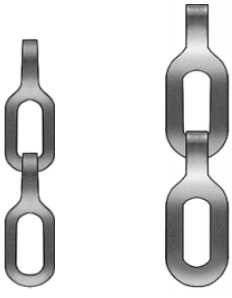

Size 1 Size 2

Trade Size	Thick.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Available Lengths, ft.		Per Ft.
Steel—*Plain Finish*							
2/0	0.018″	0.13″	0.28″	31	10, 25, 50, 100, 300	3608T11	$0.48
1/0	0.023″	0.13″	0.29″	40	10, 25, 50, 100, 300	3608T12	.52
1	0.028″	0.13″	0.34″	58	10, 25, 50, 100, 300	3608T13	.61
2	0.028″	0.14″	0.39″	63	10, 25, 50, 100, 300	3608T14	.81
Steel—*Zinc-Plated Finish*							
2/0	0.018″	0.13″	0.28″	31	10, 25, 50, 100, 300	3608T26	.57
1/0	0.023″	0.13″	0.29″	40	10, 25, 50, 100, 300	3608T27	.63
1	0.028″	0.13″	0.34″	58	10, 25, 50, 100, 300	3608T28	.71
2	0.028″	0.14″	0.39″	63	10, 25, 50, 100, 300	3608T29	.90
Steel—*Nickel-Plated Finish*							
2/0	0.018″	0.13″	0.28″	31	10, 25, 50, 100, 300	3608T711	.76
1/0	0.023″	0.13″	0.29″	40	10, 25, 50, 100, 300	3608T721	.80
1	0.028″	0.13″	0.34″	58	10, 25, 50, 100, 300	3608T731	.88
2	0.028″	0.14″	0.39″	63	10, 25, 50, 100, 300	3608T741	.98
Type 302 Stainless Steel—*Plain Finish*							
2/0	0.018″	0.13″	0.28″	50	5, 10, 25, 50, 100, 300	3608T51	1.12
1/0	0.023″	0.13″	0.29″	75	5, 10, 25, 50, 100, 300	3608T52	1.20
1	0.028″	0.13″	0.34″	100	5, 10, 25, 50, 100	3608T53	1.28
Brass—*Plain Finish*							
2/0	0.018″	0.13″	0.28″	23	5, 10, 25, 50, 100	3608T21	1.64
1/0	0.023″	0.13″	0.29″	35	5, 10, 25, 50, 100	3608T22	1.87
1	0.028″	0.13″	0.34″	40	5, 10, 25, 50, 100	3608T41	1.64
2	0.028″	0.14″	0.39″	50	5, 10, 25, 50, 100	3608T24	1.97
Brass—*Nickel-Plated Finish*							
2/0	0.018″	0.13″	0.28″	23	5, 10, 25, 50, 100	3608T31	1.52
1/0	0.023″	0.13″	0.29″	30	5, 10, 25, 50, 100	3608T32	1.58
1	0.028″	0.13″	0.34″	40	5, 10, 25, 50, 100	3608T33	1.85
2	0.028″	0.14″	0.39″	50	5, 10, 25, 50, 100	3608T34	2.02
Aluminum—*Plain Finish*							
2/0	0.028″	0.13″	0.28″	22	10, 25, 50, 100	3608T92	.82

Single-Jack Chain—Not for Lifting

The links of this weldless chain are formed into a figure eight and then twisted into a 90° angle for an extremely lightweight chain with a small diameter. Suitable for light duty suspending applications.

Type 304 stainless steel offers superior corrosion resistance. ***Zinc-plated, nickel-plated,*** and ***brass-plated*** finishes provide some corrosion resistance.

To Order: Please specify length from those listed. The last length listed is the max. continuous length.

Illustrations are actual size.

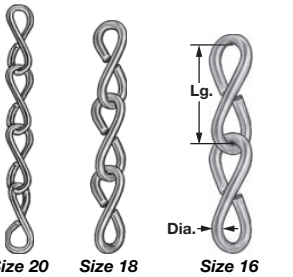

Size 20 Size 18 Size 16

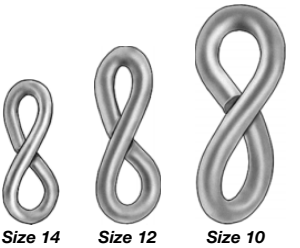

Size 14 Size 12 Size 10

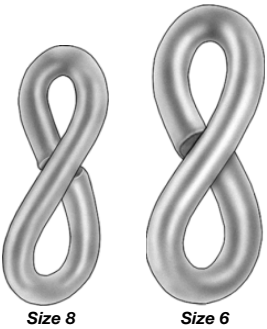

Size 8 Size 6

Trade Size	Dia.	Inside Link Lg.	Work Load Limit, lbs.	Available Lengths, ft.		Per Ft.
Steel—*Zinc-Plated Finish*						
18	0.05″	0.39″	5	25, 50, 100, 300, 500	3603T36	$0.29
16	0.06″	0.52″	10	25, 50, 100, 300, 500	3603T37	.30
14	0.08″	0.63″	16	25, 50, 100, 300, 500	3603T76	.34
12	0.11″	0.75″	29	25, 50, 100, 300	3603T77	.41
10	0.14″	0.95″	43	10, 25, 50, 100, 300	3603T41	.62
8	0.16″	1.09″	60	10, 25, 50, 100, 300	3603T42	.70
6	0.19″	1.22″	88	10, 25, 50, 100, 300	3603T773	.74
Steel—*Nickel-Plated Finish*						
20	0.03″	0.30″	3	25, 50, 100, 300	3603T85	.35
18	0.05″	0.39″	5	25, 50, 100, 300	3603T86	.36
16	0.06″	0.52″	11	25, 50, 100, 300	3603T87	.36
14	0.08″	0.63″	16	25, 50, 100, 300	3603T88	.40
12	0.11″	0.75″	29	25, 50, 100, 300	3603T89	.46
10	0.14″	0.95″	47	10, 25, 50, 100, 200	3603T91	.84
8	0.16″	1.09″	60	10, 25, 50, 100, 200	3603T92	.91
6	0.19″	1.22″	95	10, 25, 50, 100	3603T93	.91
Steel—*Brass-Plated Finish*						
20	0.03″	0.30″	3	25, 50, 100, 300	3603T94	.35
18	0.05″	0.39″	5	25, 50, 100, 300	3603T95	.36
16	0.06″	0.52″	11	25, 50, 100, 300	3603T96	.36
14	0.08″	0.63″	16	25, 50, 100, 300	3603T97	.39
12	0.11″	0.75″	29	25, 50, 100, 300	3603T98	.48
10	0.14″	0.95″	47	10, 25, 50, 100, 200	3603T99	.84
8	0.16″	1.09″	60	10, 25, 50, 100, 200	3603T101	.91
6	0.19″	1.22″	95	10, 25, 50, 100	3603T102	.91
Brass—*Plain Finish*						
20	0.03″	0.30″	2	25, 50, 100, 200	3603T926	.54
18	0.05″	0.39″	4	10, 25, 50, 100, 200	3603T354	.72
16	0.06″	0.52″	8	10, 25, 50, 100	3603T928	.90
14	0.08″	0.63″	11	10, 25, 50, 100	3603T903	.94
12	0.11″	0.75″	20	5, 10, 25, 50, 100	3603T904	1.68
10	0.14″	0.95″	34	5, 10, 25, 50, 100	3603T905	2.38
8	0.16″	1.09″	42	2, 5, 10, 25, 50, 100	3603T906	3.04
Type 304 Stainless Steel—*Plain Finish*						
18	0.05″	0.39″	5	10, 25, 50, 100, 200	3617T2	.67
16	0.06″	0.52″	10	10, 25, 50, 100, 200	3617T3	.73
14	0.08″	0.63″	16	10, 25, 50, 100, 200	3617T4	.95
12	0.11″	0.75″	29	5, 10, 25, 50, 100, 200	3617T5	1.36
10	0.14″	0.95″	43	5, 10, 25, 50, 100, 200	3617T6	2.34
8	0.16″	1.09″	60	2, 5, 10, 25, 50, 100, 200	3617T7	3.28

Warning! ***Never exceed work load limits; never use for lifting.***

Register Chain—Not for Lifting

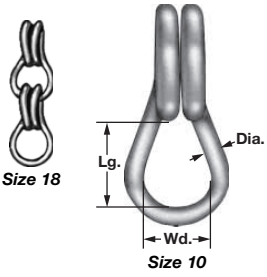

Chain has two cut ends on each link that interlock with the loop on the next link, making this weldless steel chain stronger than single-jack chain for light duty suspending. Chain is also used for furnace ducts and ventilation registers.

Zinc-plated finish offers some corrosion resistance.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Trade Size	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Available Lengths, ft.		Per Ft.
Plain Finish							
18	0.048″	0.11″	0.39″	9	25, 50, 100, 200	3601T14	$0.37
10	0.135″	0.38″	1.00″	83	10, 25, 50, 100	3601T18	1.08
Zinc-Plated Finish							
18	0.048″	0.11″	0.39″	9	25, 50, 100	3601T34	.46
10	0.135″	0.38″	1.00″	83	5, 10, 25, 50, 100, 200	3601T38	1.11

Single-Loop Coil Chain—Not for Lifting

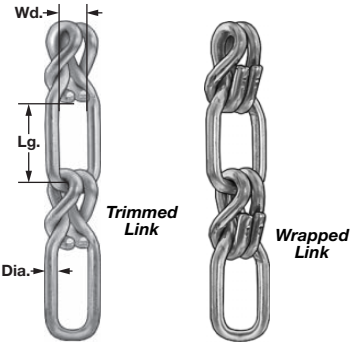

Also known as lock-link chain and babbitt chain, this weldless steel chain is stronger than the other weldless chains we offer. It's perfect for operating overhead doors, transoms, ventilators, skylights, machinery, and valve-wheel-activated mechanisms (see 9765K on page 1395 for chain wheels).

Trimmed Links— The link connector is cut to allow better seating in a sprocket or valve wheel.

Wrapped Links— The link connector wraps all the way around each link, making the chain slightly stronger than trimmed-link chain.

Zinc-plated and ***hot-galvanized*** finishes provide some corrosion resistance.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Trade Size	Dia.	Inside Link Size Wd.	Inside Link Size Lg.	Work Load Limit, lbs.	Available Lengths, ft.		Per Ft.
Trimmed Links							
Zinc-Plated Finish							
2	0.09″	0.34″	0.58″	155	10, 25, 50, 100, 300	3600T34	$0.72
1/0	0.12″	0.43″	0.57″	265	10, 25, 50, 100, 300	3600T36	.93
4/0	0.16″	0.52″	0.86″	485	5, 10, 25, 50, 100	3600T39	1.47
5/0	0.18″	0.64″	1.12″	580	5, 10, 25, 50, 100	3600T41	2.11
Hot-Galvanized Finish							
2	0.09″	0.34″	0.58″	155	10, 25, 50, 100	3600T56	.98
1/0	0.12″	0.43″	0.57″	265	10, 25, 50, 100, 200	3600T58	1.27
4/0	0.16″	0.52″	0.86″	485	5, 10, 25, 50, 100	3600T62	1.93
5/0	0.18″	0.64″	1.12″	580	5, 10, 25, 50, 100	3600T63	2.24
Wrapped Links							
Zinc-Plated Finish							
2/0	0.14″	0.43″	0.71″	340	10, 25, 50, 100	3600T37	.97
3/0	0.15″	0.52″	0.69″	405	5, 10, 25, 50, 100	3600T38	1.23
Hot-Galvanized Finish							
2/0	0.14″	0.43″	0.71″	340	5, 10, 25, 50, 100, 200	3600T59	1.40

Chain to Fit Babbitt Rims and Wheels

For Babbitt Rims	Fits Valve Wheel Dia.	Use Chain Trade Size
No. 0	2″-4″	No. 2
Nos. 1, 1½, 2	4¼″-9″	No. 1/0
Nos. 2½, 3, 3½	9¼″-19″	No. 4/0
Nos. 4, 4½, 5	19¼″-30″	No. 5/0

Double-Loop Coil Chain—Not for Lifting

Ideal for many general-purpose applications, this weldless chain is widely used for tethering and hanging light fixtures.

Zinc-plated and ***hot-galvanized*** finishes provide some corrosion resistance. ***Poly-coated*** finish offers high visibility and minimizes scratching and damage to items that come in contact with the chain.

Zinc-plated steel with vinyl sleeve is covered by a transparent vinyl sleeve to reduce rattling and prevent marring and scratching on finished surfaces. ***Type 304 stainless steel*** offers superior corrosion resistance.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Trade Size	Dia.	Inside Link Size Wd.	Inside Link Size Lg. (1)	Inside Link Size Lg. (2)	Work Load Limit, lbs.	Available Lengths, ft.		Per Ft.
Steel								
Zinc-Plated Finish								
5	0.06″	0.20″	0.28″	0.36″	55	25, 50, 100, 300, 500	3599T46	$0.35
4	0.07″	0.23″	0.30″	0.40″	70	25, 50, 100, 300, 500	3599T47	.39
3	0.08″	0.25″	0.33″	0.42″	90	25, 50, 100, 300, 500	3599T48	.39
2	0.09″	0.27″	0.40″	0.52″	115	25, 50, 100, 250	3599T49	.42
1	0.11″	0.33″	0.53″	0.65″	155	25, 50, 100, 250	3599T51	.42
1/0	0.12″	0.35″	0.55″	0.74″	200	25, 50, 100, 250	3599T52	.46
2/0	0.14″	0.40″	0.76″	0.76″	255	25, 50, 100, 250	3599T53	.67
2/0	0.14″	0.40″	1.09″	1.03″	255	25, 50, 100, 250	3599T57	.52
3/0	0.15″	0.38″	0.76″	0.76″	305	10, 25, 50, 100, 250	3599T54	.68
4/0	0.16″	0.40″	0.82″	0.82″	365	10, 25, 50, 100	3599T55	.73
Zinc-Plated Finish with Vinyl Sleeve								
3	0.08″	0.25″	0.33″	0.42″	90	10, 25, 50, 100, 300, 500	8963T12	1.14
1/0	0.12″	0.35″	0.55″	0.74″	200	5, 10, 25, 50, 100, 250	8963T14	1.44
2/0	0.14″	0.40″	0.76″	0.76″	255	5, 10, 25, 50, 100, 225	8963T16	1.79
Hot-Galvanized Finish								
3	0.08″	0.25″	0.33″	0.42″	90	10, 25, 50, 100	3599T78	.58
1/0	0.12″	0.35″	0.55″	0.74″	200	10, 25, 50, 100	3599T82	1.28
2/0	0.14″	0.40″	0.76″	0.76″	255	10, 25, 50, 100	3599T83	1.33
4/0	0.16″	0.40″	0.82″	0.82″	365	5, 10, 25, 50, 75, 100	3599T85	1.45
8/0	0.23″	0.55″	0.88″	1.00″	705	2, 5, 10, 25, 50, 75, 100	3599T88	3.16
White Poly-Coated Finish								
3	0.08″	0.21″	0.31″	0.33″	90	10, 25, 50	3599T61	1.08
Yellow Poly-Coated Finish								
2/0	0.14″	0.35″	0.75″	0.75″	255	10, 25, 50, 100, 125	3599T65	.93
Type 304 Stainless Steel								
Plain Finish								
3	0.08″	0.25″	0.36″	0.36″	90	5, 10, 25, 50, 100	3616T24	1.52
1	0.11″	0.35″	0.59″	0.59″	155	2, 5, 10, 25, 50, 100	3616T25	2.49
2/0	0.14″	0.38″	0.76″	0.76″	255	2, 5, 10, 25, 50, 100	3616T26	2.96

Warning! ***Never exceed work load limits; never use for lifting.***

Quick-Connect Round Bead Chain—Not for Lifting

Bead Chain—Also known as ball chain, versatile bead chain can be used as a retainer to keep tools with machines, keys with chucks, as well as gas and dust caps with tanks. Chain swivels at each bead to resist tangling and kinking.

Fittings—All are size-compatible with the chains. Package quantity is 100, unless noted.

End couplings are used to attach gas and dust caps to the chain with a screw, bolt, or rivet. Hole diameter for trade size Nos. 3 and 6 is 0.130″; hole diameter for trade size Nos. 8, 10, and 13 is 0.193″; and hole diameter for trade size No. 20 is 0.262″. ***Splicing links*** repair broken chain and make endless chains. Pull chain through the hole to adjust length. ***Connectors*** join chain ends. ***Retainer sleeves*** are used to attach pens to the chain as well as for ends on pull chains and electrical outlet caps.

Nickel-plated and *black enamel-coated* finishes provide some corrosion resistance.

Type 304 stainless steel provides superior corrosion resistance.

To Order: Please specify chain length from those listed. The last length listed is the maximum continuous length.

Chain illustrations are actual size.

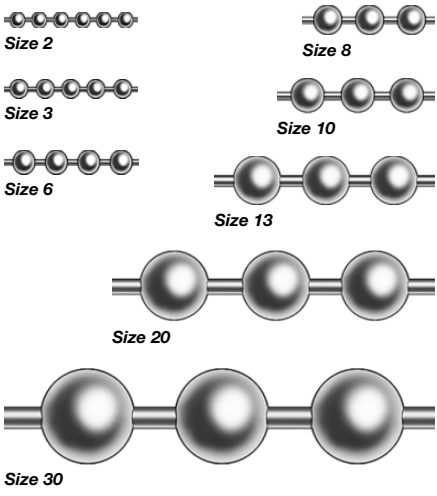

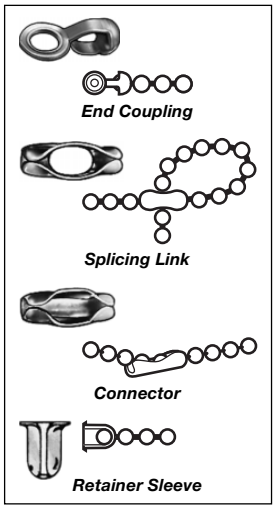

Chain and Fittings

CHAIN					FITTINGS							
Trade Size	Bead Dia.	Tensile Strength, lbs.	Available Lengths, ft.	Per Ft.	End Couplings	Pkg.	Splicing Links	Pkg.	Connectors	Pkg.	Retainer Sleeves	Pkg.
Nickel-Plated Steel Chain and Nickel-Plated Brass Fittings												
3	3/32″	20	25, 50, 100, 300, 500, 1,000	3606T89 $0.20	3606T27	$9.32	3606T37	$2.91	3606T72	$2.83	3606T141	$3.14
6	1/8″	30	25, 50, 100, 300, 500, 1,000	3606T91 .22	3606T27	9.32	3606T41	3.19	3606T73	3.20	3606T142	4.42
8	5/32″	40	25, 50, 100, 300, 500	3606T92 .27	3606T31	11.97	3606T44	4.79	3606T74	4.33	3606T143	7.56
10	3/16″	45	25, 50, 100, 300, 500	3606T93 .31	3606T31	11.97	3606T44	4.79	—	—	3606T143	7.56
13	1/4″	90	25, 50, 100, 250	3606T94 .57	3606T34♦	2.78	3606T47	9.20	—	—	3606T144	10.70
20	3/8″	150	10, 25, 50, 100	3606T301 1.14	3606T331♦	8.28	3606T441♦	5.60	—	—	—	—
30	1/2″	200	5, 10, 25, 50, 100	3606T302 1.69	—	—	3606T442♦	7.69	—	—	—	—
Nickel-Plated Brass Chain and Nickel-Plated Brass Fittings												
2	0.082″	16	25, 50, 100, 300, 500, 1,000	3606T52 .28	—	—	3606T37	2.91	3606T72	2.83	3606T141	3.14
3	3/32″	20	25, 50, 100, 300, 500, 1,000	3606T11 .28	3606T27	9.32	3606T37	2.91	3606T72	2.83	3606T141	3.14
6	1/8″	30	25, 50, 100, 300, 500, 1,000	3606T64 .33	3606T27	9.32	3606T41	3.19	3606T73	3.20	3606T142	4.42
8	5/32″	40	25, 50, 100, 300, 500	3606T65 .46	3606T31	11.97	3606T44	4.79	3606T74	4.33	3606T143	7.56
10	3/16″	45	25, 50, 100, 300, 500	3606T17 .49	3606T31	11.97	3606T44	4.79	—	—	3606T143	7.56
13	1/4″	90	10, 25, 50, 100, 250	3606T51 .91	3606T34♦	2.78	3606T47	9.20	—	—	3606T144	10.70
20	3/8″	150	5, 10, 25, 50, 100	3606T303 1.46	3606T331♦	8.28	3606T441♦	5.60	—	—	—	—
30	1/2″	200	5, 10, 25, 50, 100	3606T304 1.98	—	—	3606T442♦	7.69	—	—	—	—
Yellow Brass Chain and Yellow Brass Fittings												
3	3/32″	16	25, 50, 100, 300, 500, 1,000	3606T118 .21	—	—	3606T813	1.85	3606T811	1.84	3606T818	2.81
6	1/8″	20	25, 50, 100, 300, 500, 1,000	3606T119 .29	3606T816	9.32	3606T814	3.03	3606T812	3.03	3606T819	3.80
10	3/16″	30	25, 50, 100, 300, 500	3606T121 .46	3606T817	11.97	3606T815	4.33	—	—	3606T821	5.84
Aluminum Chain and Nickel-Plated Brass Fittings (Unless Noted)												
3	3/32″	15	25, 50, 100, 300, 500, 1,000	3606T53 .21	3606T27	9.32	3606T37	2.91	3606T471★	2.71	3606T141	3.14
6	1/8″	25	25, 50, 100, 300, 500, 1,000	3606T54 .24	3606T27	9.32	3606T41	3.19	3606T472★	3.06	3606T142	4.42
10	3/16″	40	25, 50, 100, 300, 500	3606T55 .39	3606T31	11.97	3606T272★	4.54	—	—	3606T143	7.56
13	1/4″	80	10, 25, 50, 100, 250	3606T56 .73	3606T34♦	2.78	3606T273★	10.06	—	—	3606T144	10.70
20	3/8″	150	5, 10, 25, 50, 100, 250	3606T305 1.31	3606T331♦	8.28	3606T274♦★	5.60	—	—	—	—
Type 304 Stainless Steel Chain and Type 304 Stainless Steel Fittings												
3	3/32″	25	25, 50, 100, 300, 500, 1,000	3606T13 .40	3606T29	14.53	3606T39	3.55	3606T78	3.54	—	—
6	1/8″	45	25, 50, 100, 300, 500, 1,000	3606T16 .45	3606T29	14.53	—	—	3606T79	3.87	—	—
10	3/16″	80	10, 25, 50, 100, 300, 500	3606T19 .61	3606T33♦	2.65	3606T275	9.81	—	—	—	—
13	1/4″	125	5, 10, 25, 50, 100, 250	3606T23 1.26	3606T36♦	3.87	—	—	—	—	—	—
Black Enamel-Coated Steel Chain and Black Enamel-Coated Brass Fittings												
3	3/32″	20	10, 25, 50, 100, 500, 1,000	3376T31 .66	3376T622	36.69	3376T521	6.81	—	—	3376T527	16.07
6	1/8″	30	10, 25, 50, 100, 500, 1,000	3376T33 .75	3376T622	36.69	3376T522	6.81	—	—	3376T528	16.07
10	3/16″	45	10, 25, 50, 100, 500	3376T35 .82	3376T623	38.12	3376T523	10.89	—	—	3376T529	29.69

♦ Package quantity is 10. ★ Made of aluminum.

Chain Handy Packs

These convenient packs consist of 4″ or 6″ lengths of chain. Each length includes a connector. Package quantity is 100.

	Trade Size	Ball Dia.	Tensile Strength, lbs.	4″ Length	Pkg.	6″ Length	Pkg.
Nickel-Plated Steel	3	3/32″	20	3606T1	$6.59	3606T6	$9.01
Nickel-Plated Brass	3	3/32″	20	3606T2	9.08	3606T7	12.79
Yellow Brass	3	3/32″	16	3606T3	9.08	3606T8	12.79
Aluminum	3	3/32″	15	3606T4	6.94	3606T9	9.54
Type 304 Stainless Steel	3	3/32″	25	3606T5	11.53	3606T175	14.95

Dog Tags

Tags are made of Type 304 stainless steel and are 2″ Lg.×1 1/8″ Wd.×0.033″ Thick. Use with trade size Nos. 3 and 6 chain. Package quantity is 25.

3606T48 ..... Pkg. $13.65

Warning! Never use for lifting.

About Wire Rope

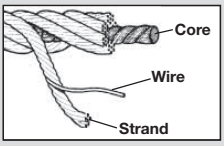

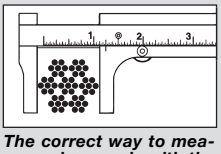

The correct way to measure wire rope is with the faces of the caliper in contact with the crowns of two opposing strands.

Wires are the basic components of wire rope. They are wrapped around a center wire to form strands. The strands are then wrapped around a core to form the rope. The core of the rope can be fiber, a wire strand, or a wire rope (IWRC—Independent Wire Rope Core). Wrapping just the wire strands together (without a core) creates a hollow core wire rope.

We offer wire rope that meets the standards of Fed. Spec. RR-W-410. We also offer wire rope that meets both the strength requirements of the Fed. Spec. and the stringent MIL-DTL-83420 standards for high fatigue resistance over drums and pulleys or MIL-DTL-87161 for applications requiring high corrosion and abrasion resistance, but not fatigue resistance.

Breaking Strength— The strength at which new, unused wire rope will break under a stationary load. As a wire rope wears over time, the breaking strength is naturally reduced.

Breaking strength should never be considered the wire rope's work load limit. The work load limit depends on application and the method used to create a finished assembly, and is always significantly lower than the breaking strength. The most common applications and factors to apply for breaking strength can be found in our additional information 8912TAC (see below).

Construction— The number of strands, the number of wires per strand, and the core composition used to make the wire rope. For example, a 6×7 fiber core wire rope consists of six strands, each made with seven wires, and formed around a fiber core.

The following common wire rope constructions are known as class constructions: 6×7, 6×19, 6×37, 7×19, and 8×19. Within a given class construction, the number of wires is allowed to vary within established industry guidelines. For example, a 6×37 class fiber core rope may have 27 to 49 wires in one strand.

When wires and strands are shaped into the form they will take on as a wire rope, the wire rope is called preformed. Preformed wire rope is easier to handle, resists kinking, and won't unravel when cut. All of our wire rope is preformed (unless noted). Lubrication is provided on many ropes to increase service life.

Abrasion— Surface wear on the wires of a wire rope occurs as the wire rope moves over any surface. A wire rope constructed of strands with fewer wires will be more abrasion resistant than wire rope made with more wires. For example, 6×19 rope construction is more abrasion resistant than 6×37 construction.

Fatigue— Caused when a wire rope is repeatedly bent around drums and pulleys. A wire rope constructed of strands with more wires is more fatigue resistant than one made of strands with fewer wires. For example, 7×19 construction is more fatigue resistant than 7×7 construction.

Crushing— Any external force that causes a wire rope to become flattened or distorted and lead to breakage. This is especially true when a wire rope is used on drums and pulleys. In general, strand core and IWRC wire ropes are more crush resistant (less susceptible to flattening and distortion) than fiber and hollow core wire ropes.

Flexibility— A measure of the wire rope's ability to stand up to bending stresses such as repeated movement over drums and pulleys. Typically, small diameter fiber core and hollow core wire ropes are more flexible than large diameter strand and IWRC wire ropes. For wire ropes of the same diameter, flexibility increases as the number of wires per strand increases. For example, a 1/4″ diameter 7×19 construction wire rope is more flexible than a 1/4″ diameter 7×7 construction wire rope.

Materials and Coating

Plain steel is stronger than galvanized iron and steel, but is not corrosion resistant. ***Galvanized iron*** and ***steel*** offer corrosion resistance and are an economical alternative to stainless steel. ***Type 302*** and ***Type 304 stainless steel*** are more economical than the other stainless steels and provide good corrosion resistance. ***Type 316 stainless steel*** is the choice for extreme conditions. It offers the most corrosion resistance. ***Type 305 stainless steel*** is a special grade nonmagnetic stainless steel. It offers good corrosion resistance. ***Monel*** resists atmospheric corrosion and salt water. ***Phosphor bronze*** is nonsparking and nonmagnetic.

We offer wire rope coated with nylon, vinyl, or FEP (fluorinated ethylene-propylene) to protect against corrosion and reduce wear. We also offer polypropylene-impregnated and coated wire rope. The polypropylene coating fills internal spaces and coats the exterior of the wire rope to protect against fatigue, chemicals, and corrosion.

General Purpose Wire Rope

ⓘ For additional information about selecting wire rope, go to mcmaster.com and search for **8912TAC**.

General Purpose Plain Steel Wire Rope

6×19 Class Fiber Core

6×37 Class Fiber Core

6×19 Class IWRC

6×37 Class IWRC

All are preformed and lubricated. The 6×19 class construction is more abrasion resistant yet less flexible than the 6×37 class construction of the same diameter.

Fiber Core Rope— A fiber core makes this rope more flexible than IWRC constructions but also less crush resistant. Meets Fed. Spec. RR-W-410, unless noted.

IWRC Rope— A wire rope core makes this rope stronger and more crush resistant than fiber core rope. Meets Fed. Spec. RR-W-410, unless noted.

Heavy Duty IWRC Rope— Made of premium steel for high strength.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

Dia.	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
Fiber Core Rope				
6×19 Class				
3/16″	3,420	10, 25, 50, 100, 300	3440T15★	$0.81
1/4″	6,020	10, 25, 50, 100, 300	3440T16	1.14
5/16″	9,380	5, 10, 25, 50, 100	3440T17	1.58
3/8″	13,420	5, 10, 25, 50, 100	3440T18	1.68
7/16″	18,200	5, 10, 25, 50, 100	3440T19	2.07
1/2″	23,600	5, 10, 25, 50, 100	3440T21	2.17
5/8″	36,800	5, 10, 25, 50, 100	3440T23	2.89
6×37 Class				
1/4″	6,020	5, 10, 25, 50, 100	3441T15	1.72
5/16″	9,360	5, 10, 25, 50, 100	3441T16	1.83
Fiber Core Rope (Cont.)				
6×37 Class (Cont.)				
3/8″	13,420	5, 10, 25, 50, 100	3441T17	$1.88
7/16″	18,200	2, 5, 10, 25, 50, 100	3441T18	2.59
1/2″	23,600	2, 5, 10, 25, 50, 100	3441T19	2.86
5/8″	36,800	2, 5, 10, 25, 50, 100	3441T22	3.96
IWRC Rope				
6×19 Class				
3/16″	3,840	10, 25, 50, 100, 300	3440T55★	.81
1/4″	6,800	10, 25, 50, 100	3440T56	1.24
5/16″	10,540	5, 10, 25, 50, 100	3440T57	1.61
3/8″	15,100	5, 10, 25, 50, 100	3440T58	1.83
7/16″	20,400	5, 10, 25, 50, 100	3440T59	2.46
1/2″	26,600	5, 10, 25, 50, 100	3440T61	2.68
9/16″	33,600	2, 5, 10, 25, 50, 100	3440T62	3.17
5/8″	41,200	2, 5, 10, 25, 50, 100	3440T63	3.75
6×37 Class				
1/4″	6,800	5, 10, 25, 50, 100	3441T65	2.15
5/16″	10,540	5, 10, 25, 50, 100	3441T66	2.27
3/8″	15,100	5, 10, 25, 50, 100	3441T67	2.33
7/16″	20,400	5, 10, 25, 50, 100	3441T68	2.62
1/2″	26,600	2, 5, 10, 25, 50, 100	3441T69	3.25
9/16″	33,600	2, 5, 10, 25, 50, 100	3441T73	3.57
5/8″	41,200	2, 5, 10, 25, 50, 100	3441T72	4.24
Heavy Duty IWRC Rope				
6×19 Class				
3/8″	16,600	5, 10, 25, 50, 100	3440T66	2.11
1/2″	29,200	2, 5, 10, 25, 50, 100	3440T67	3.06
5/8″	45,400	2, 5, 10, 25, 50, 100	3440T68	4.42
6×37 Class				
3/8″	16,600	5, 10, 25, 50, 100	3441T74	2.58
1/2″	29,200	2, 5, 10, 25, 50, 100	3441T75	3.25
5/8″	45,400	2, 5, 10, 25, 50, 100	3441T76	3.92

★ Does not meet Fed. Spec. RR-W-410.

Warning! ***Breaking strength should never be considered the rope's working load.***

For information about wire rope, see page 1404.

For additional information about selecting wire rope, go to mcmaster.com and search for **8912TAC**.

Special Purpose Plain Steel Wire Rope

All are preformed and lubricated.

Improved-Flexibility Rope—8×19 class fiber core is the preferred construction for maximum flexibility, but with minimal crush resistance. Meets Fed. Spec. RR-W-410. ***7×19 class IWRC*** is somewhat less flexible, but stronger and more crush resistant than the 8×19 class fiber core.

Rotation-Resistant Rope—19×7 class IWRC has outer strands that lay in the opposite direction of its internal wire core, resulting in a rotation-resistant rope. Meets Fed. Spec. RR-W-410.

Long-Wear Rope—6×19 class IWRC is made of compacted strands for increased life and strength. The strands maximize the steel density in a given diameter and spread contact over a greater surface area for more abrasion resistance. ***19×7 strand core*** combines long wear and rotation resistance. The internal wire gives it good crush resistance, the compacted strands increase strength and abrasion resistance, and the construction makes it rotation resistant.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

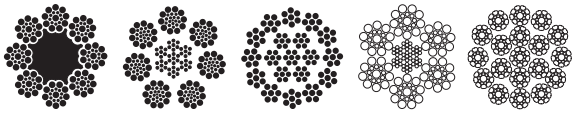

8×19 Class Fiber Core | *7×19 Class IWRC* | *19×7 IWRC* | *6×19 IWRC Long Wear* | *19×7 Strand Long Wear*

Dia.	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
Improved-Flexibility Rope				
8×19 Class Fiber Core				
1/4"	5,180	5, 10, 25, 50, 100	3442T33	$2.32
5/16"	8,040	5, 10, 25, 50, 100	3442T34	2.35
3/8"	11,520	2, 5, 10, 25, 50, 100	3442T35	2.38
1/2"	20,400	2, 5, 10, 25, 50, 100	3442T37	3.31
7×19 Class IWRC				
5/16"	10,540	5, 10, 25, 50, 100	3688T11	2.33
3/8"	15,100	2, 5, 10, 25, 50, 100	3688T12	2.79
7/16"	20,400	2, 5, 10, 25, 50, 100	3688T13	4.30
1/2"	26,600	2, 5, 10, 25, 50, 100	3688T14	4.33
Improved-Flexibility Rope (Cont.)				
7×19 Class IWRC (Cont.)				
9/16"	33,600	2, 5, 10, 25, 50, 100	3688T17	$5.51
5/8"	41,200	2, 5, 10, 25, 50, 100	3688T16	5.56
Rotation-Resistant Rope				
19×7 IWRC				
3/16"	3,140	5, 10, 25, 50, 100	3690T14	1.98
1/4"	5,540	5, 10, 25, 50, 100	3690T15	2.31
5/16"	8,600	5, 10, 25, 50, 100	3690T16	2.35
3/8"	12,300	2, 5, 10, 25, 50, 100	3690T17	2.80
7/16"	16,660	2, 5, 10, 25, 50, 100	3690T21	3.30
1/2"	21,600	2, 5, 10, 25, 50, 100	3690T19	3.28
9/16"	27,200	2, 5, 10, 25, 50, 100	3690T22	4.30
Long-Wear Rope				
6×19 Class IWRC				
3/8"	17,600	2, 5, 10, 25, 50, 100	3321T11	3.95
7/16"	23,800	2, 5, 10, 25, 50, 100	3321T12	4.55
1/2"	30,600	2, 5, 10, 25, 50, 100	3321T13	5.14
19×7 Strand Core				
1/2"	30,800	2, 5, 10, 25, 50, 100	3321T23	6.39

Galvanized Iron and Steel Wire Rope

Key	Meets Specification
A	Fed. Spec. RR-W-410
B	ASTM A475
C	MIL-DTL-83420
D	MIL-DTL-87161
E	ASTM A1023

6×7 Class Fiber Core | *1×7 Strand* | *1×19 Strand* | *6×37 Class Fiber Core* | *6×37 Class IWRC* | *7×7 Strand Core* | *7×19 Strand Core*

A zinc coating on this galvanized rope provides corrosion protection. All are preformed and unlubricated (unless noted). Galvanized rope is generally not as strong as plain steel rope.

Galvanized Iron Rope— Also known as sash cord, this light duty rope has a 6×7 class fiber core.

Galvanized Steel Multipurpose Strand Rope— Constructed of a single strand, rope has low flexibility. 1×19 construction is more flexible than 1×7.

Galvanized Steel Multipurpose Rope—6×37 class fiber core is more flexible, but less crush resistant than IWRC rope. ***6×37 IWRC*** is stronger than fiber core. ***7×19 strand core*** is more flexible and fatigue resistant than 7×7 strand core.

Galvanized Steel Mil. Spec. Rope— Use in applications where rope is cycled back and forth over pulleys and drums.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

Dia.	Meets Spec.	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
Galvanized Iron Rope					
6×7 Class Fiber Core					
1/16"	—	140	25, 50, 100, 300, 500	3449T14	$0.43
3/32"	—	315	25, 50, 100, 300, 500	3449T15	.54
1/8"	—	500	10, 25, 50, 100, 300	3449T16	.63
3/16"	—	1,150	10, 25, 50, 100, 300	3449T18	1.30
1/4"	—	1,840	5, 10, 25, 50, 100	3449T19	1.84
Galvanized Steel Multipurpose Strand Rope					
1×7 Strand					
1/32"	D	185	50, 100, 200, 300, 500	3498T41 ♦	.07
3/64"	D	375	50, 100, 200, 300, 500	3498T42 ♦	.11
1/4"	B	6,650	25, 50, 100, 300, 500	3498T54	.50
5/16"	B	11,200	10, 25, 50, 100, 300	3498T55	.70
3/8"	B	15,400	10, 25, 50, 100, 300	3498T56	.96
1/2"	B	26,900	5, 10, 25, 50, 100	3498T58	1.92
1×19 Strand					
1/16"	D	500	50, 100, 200, 300, 500	3498T61 ♦	.15
3/32"	D	1,200	50, 100, 200, 300, 500	3498T62 ♦	.26
1/8"	D	2,100	25, 50, 100, 300, 500	3498T63 ♦	.41
5/32"	D	3,300	25, 50, 100, 300, 500	3498T64 ♦	.61
3/16"	—	4,700	25, 50, 100, 300, 500	3498T65 ♦	.75
1/4"	—	8,200	10, 25, 50, 100, 300	3498T66 ♦	1.16
Galvanized Steel Multipurpose Rope					
6×37 Class Fiber Core					
1/4"	A	4,940	5, 10, 25, 50, 100	3323T71	$2.41
3/8"	A	10,980	2, 5, 10, 25, 50, 100	3323T72	3.45
1/2"	A	21,200	2, 5, 10, 25, 50, 100	3323T76	4.96
6×37 Class IWRC					
1/4"	A	6,800	5, 10, 25, 50, 100	3323T21	2.37
3/8"	A	15,100	2, 5, 10, 25, 50, 100	3323T22	3.07
1/2"	A	26,600	2, 5, 10, 25, 50, 100	3323T23	4.14
7×7 Strand Core					
3/64"	—	270	25, 50, 100, 300, 500	3450T82	.20
1/16"	A	480	25, 50, 100, 300, 500	3450T24	.21
3/32"	A	920	25, 50, 100, 300, 500	3450T26	.23
1/8"	E	1,700	25, 50, 100, 300, 500	3450T28	.32
5/32"	E	2,600	25, 50, 100, 300, 500	3450T29	.39
3/16"	E	3,700	25, 50, 100, 300, 500	3450T31	.50
1/4"	E	6,100	10, 25, 50, 100, 300	3450T32	.65
7×19 Strand Core					
3/32"	A	1,000	25, 50, 100, 300, 500	3450T37	.34
1/8"	A	2,000	25, 50, 100, 300, 500	3450T38	.43
5/32"	A	2,800	25, 50, 100, 300, 500	3450T39	.46
3/16"	A	4,200	10, 25, 50, 100, 300	3450T41	.59
7/32"	A	5,600	10, 25, 50, 100, 300	3450T42	.86
1/4"	A	7,000	10, 25, 50, 100, 300	3450T43	.98
5/16"	A	9,800	5, 10, 25, 50, 100	3450T45	1.22
3/8"	A	14,400	5, 10, 25, 50, 100	3450T46	1.48
Galvanized Steel Mil. Spec. Rope					
7×19 Strand Core					
3/32"	C	1,000	10, 25, 50, 100, 300	3332T51 ♦	.59
1/8"	C	2,000	10, 25, 50, 100, 300	3332T52 ♦	.58
5/32"	C	2,800	10, 25, 50, 100, 300	3332T53 ♦	.63
3/16"	C	4,200	10, 25, 50, 100, 300	3332T54 ♦	.81
7/32"	C	5,600	5, 10, 25, 50, 100	3332T55 ♦	1.17
1/4"	C	7,000	5, 10, 25, 50, 100	3332T56 ♦	1.33
5/16"	C	9,800	5, 10, 25, 50, 100	3332T58 ♦	1.67
3/8"	C	14,400	2, 5, 10, 25, 50, 100	3332T59 ♦	2.04

♦ Lubricated.

Warning! ***Breaking strength should never be considered the rope's working load.***

For information about wire rope, see page 1404.

For additional information about selecting wire rope, go to mcmaster.com and search for **8912TAC**.

Type 302 and Type 304 Stainless Steel Wire Rope

1×7 Strand

1×19 Strand

3×7 Hollow Core

6×19 Class IWRC

6×37 Class IWRC

6×42 Fiber Core

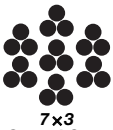

7×3 Strand Core

7×7 Strand Core

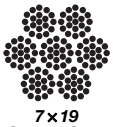

7×19 Strand Core

19×7 Strand Core

Key	Meets Specification
A	Fed. Spec. RR-W-410
C	MIL-DTL-83420
D	MIL-DTL-87161
E	MIL-DTL-83140

All are preformed and unlubricated (unless noted).

1×7 and ***1×19 Strand***—Ideal for linear force applications, these single-strand constructions have good abrasion resistance, but low flexibility. The 1×19 strand is slightly more flexible, but less abrasion resistant than the 1×7 strand.

3×7 Hollow Core—Perfect for light duty applications, this small diameter construction is extremely flexible.

6×19 and ***6×37 Class IWRC***—IWRC rope is stronger and more crush resistant than fiber core rope. The 6×37 construction is more flexible, but less abrasion resistant than the 6×19.

6×42 Fiber Core—This is the most flexible rope of all the six-strand constructions we offer. However, it is not as strong or abrasion resistant as the others.

7×3 Strand Core—Offered in small diameters, this rope provides more flexibility and higher fatigue resistance than single-strand constructions, but has a lower breaking strength.

7×7 Strand Core and ***7×19 Strand Core***—These constructions are stronger, but less flexible than 6×19 and 6×37 class constructions. The 7×19 class construction is both more flexible and more fatigue resistant than the 7×7 construction.

19×7 Strand Core—The most flexible of all our stainless steel constructions. The center strand of this rope lays in the opposite direction of its outer strands, resulting in a rotation-resistant rope.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

Dia.	Breaking Strength, lbs.	Available Lengths, ft.	Type 302 SS Meets Spec.		Per Ft.	Type 304 SS Meets Spec.		Per Ft.
1×7 Strand								
0.012″	25	50, 100, 200, 300, 500	—	3458T141	$0.08	—	3461T1	$0.07
1/64″	40	50, 100, 200, 300, 500	—	3458T11	.07	—	3461T2	.07
0.018″	55	50, 100, 200, 300, 500	—	3458T142	.07	—	3461T3	.07
0.021″	80	50, 100, 200, 300, 500	—	3458T115	.07	—	3461T4	.07
0.024″	100	50, 100, 200, 300, 500	—	3458T144	.07	—	3461T5	.07
0.027″	125	50, 100, 200, 300, 500	—	3458T145	.07	—	3461T6	.07
1/32″	150	50, 100, 200, 300, 500	D	3458T151 ◆	.10	—	3461T61	.07
0.038″	260	50, 100, 200, 300, 500	—	3458T1	.08	—	3461T8	.08
3/64″	375	50, 100, 200, 300, 500	D	3458T131 ◆	.16	—	3461T9	.12
1/16″	500	50, 100, 200, 300, 500	D	3458T14 ◆	.23	—	3461T11	.20
3/32″	1,200	25, 50, 100, 300, 500	—	3458T16	.42	—	3461T12	.47
1/8″	2,100	25, 50, 100, 300, 500	—	3458T17	.57	—	3461T13	.62
3/16″	4,700	10, 25, 50, 100, 300	—	3458T19	1.05	—	3461T131	1.21
1/4″	8,500	10, 25, 50, 100, 300	—	3458T195	1.32	—	3461T132	1.38
3/8″	18,000	5, 10, 25, 50, 100	—	3458T2	2.59	—	3461T133	2.68
1×19 Strand								
1/32″	150	50, 100, 200, 300, 500	—	3458T21	.15	—	3461T188	.14
3/64″	375	50, 100, 200, 300, 500	D	3458T22 ◆	.15	—	3461T175	.14
1/16″	500	50, 100, 200, 300, 500	D	3458T23 ◆	.26	—	3461T82	.24
5/64″	800	25, 50, 100, 300, 500	D	3458T24 ◆	.33	—	3461T829	.30
3/32″	1,200	25, 50, 100, 300, 500	D	3458T25 ◆	.40	—	3461T83	.36
1/8″	2,100	25, 50, 100, 300, 500	D	3458T26 ◆	.73	—	3461T84	.66
5/32″	3,300	10, 25, 50, 100, 300	D	3458T27 ◆	1.08	—	3461T85	.98
3/16″	4,700	10, 25, 50, 100, 300	D	3458T28 ◆	1.54	—	3461T18	1.40
1/4″	8,200	5, 10, 25, 50, 100	D	3458T91 ◆	2.10	—	3461T21	1.91
5/16″	12,500	2, 5, 10, 25, 50, 100	D	3458T93 ◆	3.04	—	3461T23	2.76
3/8″	17,500	2, 5, 10, 25, 50, 100	D	3458T94 ◆	4.19	—	3461T24	3.81
3×7 Hollow Core								
1/32″	110	50, 100, 200, 300, 500	A,C	3458T51 ◆	.18	—	3461T91	.17
6×19 Class IWRC								
7/16″	16,300	2, 5, 10, 25, 50, 100	A	3458T121	5.63	A	3461T76	5.63
1/2″	22,800	2, 5, 10, 25, 50, 100	A	3458T122	7.29	A	3461T75	7.29
6×37 Class IWRC								
3/16″	3,000	2, 5, 10, 25, 50, 100	A	3458T111	2.83	A	3461T26	2.98
1/4″	5,400	2, 5, 10, 25, 50, 100	A	3458T54	2.95	A	3461T22	3.10
5/16″	8,300	2, 5, 10, 25, 50, 100	A	3458T55	3.79	A	3461T25	3.98
3/8″	11,700	2, 5, 10, 25, 50, 100	A	3458T56	4.96	A	3461T27	5.22
6×42 Fiber Core								
1/8″	700	5, 10, 25, 50, 100, 200	A	3458T31 ♣	1.32	A	3461T53 ♣	1.37
3/16″	1,600	2, 5, 10, 25, 50, 100	A	3458T32 ♣	1.60	A	3461T54 ♣	1.67
1/4″	3,200	2, 5, 10, 25, 50, 100	A	3458T33 ♣	1.71	A	3461T55 ♣	1.79
5/16″	4,900	2, 5, 10, 25, 50, 100	A	3458T34 ♣	2.36	—	—	—
3/8″	6,900	2, 5, 10, 25, 50, 100	—	—	—	A	3461T56 ♣	2.41
7×3 Strand Core								
0.018″	40	25, 50, 100, 300, 500	—	3458T86	.29	—	—	—
0.024″	60	25, 50, 100, 300, 500	—	3458T87	.43	—	—	—
0.030″	110	25, 50, 100, 300, 500	—	3458T89	.52	—	—	—
7×7 Strand Core								
0.018″	40	10, 25, 50, 100, 300	—	—	—	—	3461T31 ♣	.44
0.027″	90	10, 25, 50, 100, 300	—	—	—	—	3461T32 ♣	.60
1/32″	140	25, 50, 100, 300, 500	—	3458T429	.35	—	3461T325	.36
0.036″	160	10, 25, 50, 100, 300	—	—	—	—	3461T33	.59
3/64″	270	25, 50, 100, 300, 500	A,C	3458T43 ◆	.33	A,C	3461T35 ◆	.34
1/16″	480	25, 50, 100, 300, 500	A,C	3458T44 ◆	.31	A,C	3461T44 ◆	.32
5/64″	650	25, 50, 100, 300, 500	—	3458T451	.36	—	3461T57	.37
3/32″	920	25, 50, 100, 300, 500	A,C	3458T46 ◆	.46	A,C	3461T45 ◆	.47
1/8″	1,700	10, 25, 50, 100, 300	—	3458T47	.61	—	3461T46	.63
5/32″	2,400	5, 10, 25, 50, 100	—	3458T48	.95	—	3461T47	.98
3/16″	3,700	5, 10, 25, 50, 100	—	3458T49	1.15	—	3461T48	1.17
1/4″	6,100	5, 10, 25, 50, 100	—	3458T118	2.21	—	3461T51	1.87
3/8″	12,000	2, 5, 10, 25, 50, 100	—	3458T53	3.54	—	3461T52	3.85
7×19 Strand Core								
0.024″	70	5, 10, 25, 50, 100	—	—	—	—	3461T62 ♣	1.32
0.038″	160	5, 10, 25, 50, 100	—	—	—	—	3461T63 ♣	1.15
3/64″	270	10, 25, 50, 100, 300	—	3458T74	1.20	—	3461T632	1.29
1/16″	480	10, 25, 50, 100, 300	A,C	3458T75 ◆	.66	A	3461T633	.73
3/32″	920	10, 25, 50, 100, 300	A,C	3458T76 ◆	.79	A,C	3461T64 ◆	.88
1/8″	1,760	5, 10, 25, 50, 100	A,C	3458T77 ◆	.94	A,C	3461T65 ◆	1.05
5/32″	2,400	5, 10, 25, 50, 100	A,C	3458T78 ◆	1.03	A,C	3461T66 ◆	1.15
3/16″	3,700	5, 10, 25, 50, 100	A,C	3458T79 ◆	1.29	A,C	3461T67 ◆	1.43
7/32″	5,000	5, 10, 25, 50, 100	A,C	3458T81 ◆	1.37	A	3461T78	1.52
1/4″	6,400	5, 10, 25, 50, 100	A,C	3458T82 ◆	2.07	A,C	3461T69 ◆	2.30
5/16″	9,000	2, 5, 10, 25, 50, 100	A,C	3458T84 ◆	3.39	A,C	3461T72 ◆	3.77
3/8″	12,000	2, 5, 10, 25, 50, 100	A,C	3458T85 ◆	4.17	A,C	3461T73 ◆	4.63
19×7 Strand Core								
1/8″	1,500	5, 10, 25, 50, 100	—	3458T61 ◆	.78	—	3461T37 ◆	.87
3/16″	3,330	2, 5, 10, 25, 50, 100	E	3458T63 ◆	1.36	E	3461T38 ◆	1.51
1/4″	5,760	2, 5, 10, 25, 50, 100	E	3458T65 ◆	2.39	E	3461T34 ◆	2.66
3/8″	10,800	2, 5, 10, 25, 50, 100	E	3458T67 ◆	4.46	E	3461T36 ◆	4.96

◆ Lubricated. ♣ Not preformed.

Warning! ***Breaking strength should never be considered the rope's working load.***

For information about wire rope, see page 1404.

For additional information about selecting wire rope, go to mcmaster.com and search for **8912TAC**.

Type 316 Stainless Steel Wire Rope

The most corrosion-resistant stainless steel rope we offer. All are preformed and unlubricated.

1×7 and ***1×19 Strand***—These single-strand constructions have good abrasion resistance, but low flexibility. They are ideal for linear force applications. The 1×19 strand is slightly more flexible, but less abrasion resistant than the 1×7 strand.

6×19 Class IWRC—The IWRC core makes this rope strong and crush resistant.

7×7 Strand Core and ***7×19 Strand Core***—These constructions are stronger, but less flexible than six-strand rope. The 7×19 construction is more flexible and more fatigue resistant than the 7×7 construction.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

1×7 Strand

1×19 Strand

6×19 Class IWRC

7×7 Strand Core

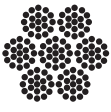

7×19 Strand Core

Dia.	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
1×7 Strand				
1/16″	450	50, 100, 200, 300, 500	8908T27	$0.26
3/32″	1,080	25, 50, 100, 300, 500	8908T28	.57
1/8″	1,640	10, 25, 50, 100, 300	8908T29	.94
1×19 Strand				
1/8″	1,780	10, 25, 50, 100, 200, 300	8908T12	.85
3/16″	4,000	5, 10, 25, 50, 100	8908T16	2.34
1/4″	6,900	2, 5, 10, 25, 50, 100	8908T22	3.59
5/16″	10,600	2, 5, 10, 25, 50, 100	8908T24	5.39
3/8″	14,800	2, 5, 10, 25, 50, 100	8908T26	7.42
6×19 Class IWRC				
1/2″	19,300	2, 5, 10, 25, 50, 100	8908T58	11.45
7×7 Strand Core				
1/16″	360	25, 50, 100, 300, 500	8908T32	.49
3/32″	700	10, 25, 50, 100, 300	8908T64	.63
1/8″	1,360	10, 25, 50, 100, 300	8908T66	.84
7×19 Strand Core				
1/8″	1,300	25, 50, 100, 300	8908T44	1.21
3/16″	2,900	5, 10, 25, 50, 100	8908T48	1.94
1/4″	4,900	2, 5, 10, 25, 50, 100	8908T52	3.52
5/16″	7,600	2, 5, 10, 25, 50, 100	8908T54	4.31
3/8″	11,000	2, 5, 10, 25, 50, 100	8908T56	5.99

Type 305 Stainless Steel Wire Rope

This specialty grade Type 305 stainless steel rope is nonmagnetic, has good corrosion resistance, and meets MIL-DTL-18375. All are preformed and lubricated. The 7×19 construction is more flexible and more fatigue resistant than the 7×7 construction.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

7×7 Strand Core

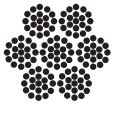

7×19 Strand Core

Dia.	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
7×7 Strand Core				
1/16″	360	25, 50, 100, 300, 500	8909T12	$0.41
3/32″	700	10, 25, 50, 100, 300	8909T14	.55
7×19 Strand Core				
1/8″	1,300	5, 10, 25, 50, 100	8909T16	1.00
3/16″	2,900	5, 10, 25, 50, 100	8909T22	1.69
1/4″	4,900	2, 5, 10, 25, 50, 100	8909T31	2.39

Monel Wire Rope

Monel is highly resistant to atmospheric corrosion and salt water, as well as various acidic and alkaline solutions. All are preformed and unlubricated.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

7×7 Strand Core

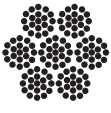

7×19 Strand Core

Dia.	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
7×7 Strand Core				
3/64″	135	10, 25, 50, 100, 300	3453T31	$0.73
1/16″	215	10, 25, 50, 100, 300	3453T32	1.20
3/32″	480	5, 10, 25, 50, 100	3453T33	1.51
1/8″	850	2, 5, 10, 25, 50, 100	3453T34	3.47
7×19 Strand Core				
3/32″	480	5, 10, 25, 50, 100	3453T51	2.51
1/8″	875	2, 5, 10, 25, 50, 100	3453T52	3.85
3/16″	1,950	2, 5, 10, 25, 50, 100	3453T54	5.86
1/4″	3,500	2, 5, 10, 25, 50, 100	3453T55	13.13

Nonsparking Phosphor Bronze Wire Rope

This nonsparking and nonmagnetic rope resists atmospheric and chemical corrosion, as well as salt water. All are preformed and unlubricated (unless noted).

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

6×7 Class Fiber Core

6×19 Class Fiber Core

7×7 Strand Core

7×19 Strand Core

Dia.	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
6×7 Class Fiber Core				
1/32″	40	10, 25, 50, 100, 300	3462T11♣	$0.31
3/64″	85	10, 25, 50, 100, 300	3462T12	.40
1/16″	150	10, 25, 50, 100, 300	3462T13	.65
3/32″	340	5, 10, 25, 50, 100	3462T14	.86
1/8″	600	5, 10, 25, 50, 100	3462T15	1.89
6×19 Class Fiber Core				
1/8″	615	2, 5, 10, 25, 50, 100	3462T21	1.68
3/16″	1,370	2, 5, 10, 25, 50, 100	3462T22	3.41
1/4″	2,380	2, 5, 10, 25, 50, 100	3462T23	6.56
7×7 Strand Core				
1/32″	43	10, 25, 50, 100, 300	3462T51	.89
1/16″	170	10, 25, 50, 100, 300	3462T53	.70
1/8″	660	5, 10, 25, 50, 100	3462T55	2.11
7×19 Strand Core				
1/8″	660	2, 5, 10, 25, 50, 100	3462T61	2.45
3/16″	1,470	2, 5, 10, 25, 50, 100	3462T62	4.49

♣ Not preformed.

Warning! ***Breaking strength should never be considered the rope's working load.***

For additional information about selecting wire rope, go to mcmaster.com and search for **8912TAC**.

Nylon-Coated Wire Rope

1×7 Strand

3×7 Hollow Core

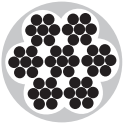

7×7 Strand Core

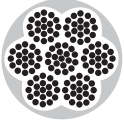

7×19 Strand Core

A chemical-resistant nylon coating not only protects your rope from abrasion, but also your drums and pulleys from wear. Our nylon-coated rope has better impact, abrasion, and fatigue resistance than our vinyl-coated rope, but is less flexible. Type 302/304 stainless steel is more corrosion resistant than galvanized steel. All are preformed (unless noted).

Warning: When attaching fittings to coated wire rope, the coating must be removed from the installation area.

Commercial Grade Rope— Rope with a bare dia. of 0.006″-0.038″ has a temperature range of –40° to +180° F; rope with a bare dia. of 3/64″-3/8″ has a temperature range of –65° to +200° F. Rope is lubricated (unless noted). ***1×7 strand*** is constructed of a single strand. It has low flexibility and is not suitable for use on drums and pulleys. ***3×7 hollow core*** has a small diameter and is more flexible than strand core rope. ***7×7 strand core*** is moderately flexible. It is commonly used in controls and mechanical applications. ***7×19 strand core*** is more flexible and fatigue resistant than the 7×7 construction.

Mil. Spec. Rope— Meets MIL-DTL-83420 standards for applications where the rope is cycled back and forth over pulleys and drums. Coating is natural opaque. Temperature range is –65° to +200° F. Rope is lubricated. ***7×7 strand core*** is moderately flexible. It is commonly used in controls and mechanical applications. ***7×19 strand core*** is more flexible and fatigue resistant than the 7×7 construction.

Low-Stretch Rope— Rope is stretched during construction to minimize elongation that other ropes experience under the same load. Coating is natural opaque. Temperature range is –40° to +180° F. Rope is unlubricated. ***7×7 strand core*** is moderately flexible. It is commonly used in controls and mechanical applications. ***7×19 strand core*** is more flexible and fatigue resistant than the 7×7 construction.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available. For Commercial Grade Rope, please also specify coating color: natural nylon, opaque black, opaque red, or translucent orange. *Note:* As coating thickness increases, the natural nylon may appear gray in color.

Rope Dia. Bare	Rope Dia. Coated	Available Lengths, ft.	Galvanized Steel Breaking Strength, lbs.		Galvanized Steel Per Ft.	Type 302/304 Stainless Steel Breaking Strength, lbs.		Type 302/304 Stainless Steel Per Ft.
Commercial Grade Rope								
1×7 Strand								
0.006″	0.010″	25, 50, 100, 300, 500	—	—	—	5	8930T14■♣	$0.16
3×7 Hollow Core								
0.009″	0.014″	25, 50, 100, 300, 500	—	—	—	10	8930T16■♣	.32
0.032″	0.037″	25, 50, 100, 300, 500	—	—	—	110	8930T52■	.35
7×7 Strand Core								
0.014″	0.019″	25, 50, 100, 300, 500	—	—	—	26	8930T18■♣	.44
0.018″	0.024″	25, 50, 100, 300, 500	—	—	—	40	8930T22■♣	.43
0.027″	0.034″	10, 25, 50, 100, 300	—	—	—	90	8930T24■♣	.56
0.032″	0.037″	10, 25, 50, 100, 300	—	—	—	120	8930T26■	.57
0.036″	0.044″	10, 25, 50, 100, 300	—	—	—	160	8930T28■	.57
3/64″	1/16″	25, 50, 100, 300, 500	270	8923T115▲	$0.32	270	8923T314▲	.32
1/16″	3/32″	25, 50, 100, 300, 500	480	8923T125▲	.39	480	8923T324▲	.45
1/16″	1/8″	25, 50, 100, 300, 500	480	8923T134▲	.48	480	8923T33▲	.57
3/32″	1/8″	25, 50, 100, 300, 500	920	8923T144▲	.48	920	8923T344▲	.54
3/32″	5/32″	10, 25, 50, 100, 300	920	8923T154▲	.57	920	8923T354▲	.63
3/32″	3/16″	10, 25, 50, 100, 300	920	8923T164▲	.66	920	8923T36▲	.77
7×19 Strand Core								
0.024″	0.030″	5, 10, 25, 50, 100	—	—	—	70	8930T51■♣	1.30
0.032″	0.037″	5, 10, 25, 50, 100	—	—	—	120	8930T53■♣	1.29
0.038″	0.046″	5, 10, 25, 50, 100	—	—	—	160	8930T54■♣	1.29
3/64″	1/16″	5, 10, 25, 50, 100	—	—	—	270	8930T32■	1.18
1/16″	3/32″	5, 10, 25, 50, 100	—	—	—	480	8930T34■	1.15
1/8″	3/16″	10, 25, 50, 100, 300	2,000	8923T517▲	.99	1,760	8923T71▲	1.05
1/8″	7/32″	10, 25, 50, 100, 300	2,000	8923T524▲	1.04	1,760	8923T724▲	1.10
3/16″	1/4″	5, 10, 25, 50, 100	4,200	8923T535▲	1.48	3,700	8923T734▲	1.64
3/16″	5/16″	5, 10, 25, 50, 100	4,200	8923T541▲	1.61	3,700	8923T74▲	1.79
1/4″	5/16″	2, 5, 10, 25, 50, 100	7,000	8923T554▲	2.00	6,400	8923T754▲	3.05
5/16″	13/32″	5, 10, 25, 50, 100	9,800	8923T564▲	2.70	—	—	—
3/8″	15/32″	5, 10, 25, 50, 100	14,400	8923T574▲	3.32	—	—	—
Mil. Spec. Rope								
7×7 Strand Core								
3/64″	1/16″	25, 50, 100, 300, 500	270	3459T61	.52	270	3459T41	.46
1/16″	3/32″	10, 25, 50, 100, 300	480	3459T62	.68	480	3459T42	.52
1/16″	1/8″	10, 25, 50, 100, 300	480	3459T63	.91	480	3459T43	.71
3/32″	1/8″	10, 25, 50, 100, 300	920	3459T64	.76	920	3459T44	.75
3/32″	5/32″	10, 25, 50, 100, 300	920	3459T65	.96	920	3459T45	.93
7×19 Strand Core								
3/32″	1/8″	10, 25, 50, 100, 300	1,000	3459T31	.93	920	3459T71	1.12
1/8″	3/16″	10, 25, 50, 100, 300	2,000	3459T32	1.16	1,760	3459T72	1.45
3/16″	1/4″	5, 10, 25, 50, 100	4,200	3459T33	1.73	3,700	3459T73	2.28
1/4″	5/16″	2, 5, 10, 25, 50, 100	7,000	3459T34	2.66	6,400	3459T74	3.64
1/4″	3/8″	2, 5, 10, 25, 50, 100	7,000	3459T35	3.67	6,400	3459T75	4.47
Low-Stretch Rope								
7×7 Strand Core								
0.024″	0.030″	10, 25, 50, 100, 300	—	—	—	70	34235T21♣	.95
0.027″	0.034″	10, 25, 50, 100, 300	—	—	—	90	34235T22♣	1.00
0.032″	0.037″	10, 25, 50, 100, 300	—	—	—	120	34235T23♣	.83
0.036″	0.046″	10, 25, 50, 100, 300	—	—	—	160	34235T24♣	.90
0.048″	0.063″	10, 25, 50, 100, 300	—	—	—	270	34235T25♣	.93
7×19 Strand Core								
0.024″	0.030″	5, 10, 25, 50, 100	—	—	—	60	34235T26♣	1.81
0.032″	0.037″	5, 10, 25, 50, 100	—	—	—	100	34235T27♣	1.75
0.036″	0.046″	5, 10, 25, 50, 100	—	—	—	150	34235T28♣	1.66
0.048″	0.063″	5, 10, 25, 50, 100	—	—	—	270	34235T29♣	1.59

■ Available in natural nylon only. ♣ Not preformed. ▲ Unlubricated.

Warning! ***Breaking strength should never be considered the rope's working load.***

For information about wire rope, see page 1404.

For additional information about selecting wire rope, go to mcmaster.com and search for **8912TAC**.

Vinyl-Coated Wire Rope

More flexible with better UV resistance than nylon-coated rope. The vinyl coating not only protects the rope from abrasion, but also pulleys and drums from wear. Temperature range is –30° to +180° F. All are preformed and unlubricated. *Type 302/304 stainless steel* is more corrosion resistant than galvanized steel.

Warning: When attaching fittings to coated wire rope, the coating must be removed from the installation area.

7×7 Strand Core— Rope is moderately flexible and commonly used in controls and mechanical applications.
7×19 Strand Core— More flexible and fatigue resistant than the 7×7 construction.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available. Please also specify coating color: clear, opaque black, opaque orange, opaque yellow, or translucent red.

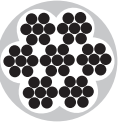

7×7 Strand Core

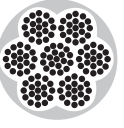

7×19 Strand Core

Rope Dia. Bare	Rope Dia. Coated	Available Lengths, ft.	Galvanized Steel Breaking Strength, lbs.		Galvanized Steel Per Ft.	Type 302/304 Stainless Steel Breaking Strength, lbs.		Type 302/304 Stainless Steel Per Ft.
7×7 Strand Core								
3/64″	1/16″	25, 50, 100, 300, 500	270	8912T114	$0.29	270	8912T314	$0.32
1/16″	3/32″	25, 50, 100, 300, 500	480	8912T125	.31	480	8912T324	.45
1/16″	1/8″	25, 50, 100, 300, 500	480	8912T13	.37	480	8912T33	.53
3/32″	1/8″	25, 50, 100, 300, 500	920	8912T145	.37	920	8912T344	.53
3/32″	5/32″	25, 50, 100, 300, 500	920	8912T154	.41	920	8912T354	.59
3/32″	3/16″	25, 50, 100, 300, 500	920	8912T16	.42	920	8912T36	.62
7×19 Strand Core								
1/8″	3/16″	10, 25, 50, 100, 300	2,000	8912T51	.68	1,760	8912T71	.91
1/8″	7/32″	10, 25, 50, 100, 300	2,000	8912T524	.74	1,760	8912T724	.99
3/16″	1/4″	5, 10, 25, 50, 100	4,200	8912T531	1.08	3,700	8912T734	1.38
3/16″	5/16″	5, 10, 25, 50, 100	4,200	8912T54	1.24	3,700	8912T74	1.61
1/4″	5/16″	5, 10, 25, 50, 100	7,000	8912T555	1.76	6,400	8912T754	2.81
5/16″	13/32″	2, 5, 10, 25, 50, 100	9,800	8912T564	2.23	9,000	8912T764	3.47
3/8″	15/32″	2, 5, 10, 25, 50, 100	14,400	8912T574	2.73	12,000	8912T774	4.75

Fluorescent-Colored Vinyl-Coated Galvanized Steel Wire Rope

Fluorescent colors make this moderately flexible 7×7 strand core rope easy to see. The vinyl coating is flexible and resists sunlight and oxidation. Temperature range is –30° to +180° F. All are preformed and unlubricated.

Warning: When attaching fittings to coated wire rope, the coating must be removed from the installation area.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available. Please also specify fluorescent coating color: green, red, or yellow.

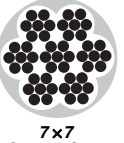

7×7 Strand Core

Rope Dia. Bare	Rope Dia. Coated	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
1/16″	1/8″	480	25, 50, 100, 300, 500	9018T11	$0.39
3/32″	3/16″	920	25, 50, 100, 300, 500	9018T21	.48
1/8″	3/16″	1,700	25, 50, 100, 300, 500	9018T31	.55
3/16″	5/16″	3,700	10, 25, 50, 100, 300	9018T41	1.24

FEP-Coated Type 302/304 Stainless Steel Wire Rope

A tough, clear FEP (fluorinated ethylene-propylene) coating provides a low-friction, nonstick, and non-conductive surface on this corrosion-resistant Type 302/304 stainless steel rope. The coating is chemical and weather resistant. Temperature range is –350° to +400° F. All are preformed and unlubricated (unless noted).

Warning: When attaching fittings to coated rope, the coating must be removed from the installation area.

7×7 Strand Core— Rope is moderately flexible and commonly used in controls and mechanical applications.
7×19 Strand Core— More flexible and fatigue resistant than the 7×7 construction.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

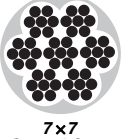

7×7 Strand Core

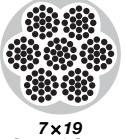

7×19 Strand Core

Rope Dia. Bare	Rope Dia. Coated	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
7×7 Strand Core					
0.014″	0.021″	26	10, 25, 50, 100, 300	3423T21♣	$0.60
0.018″	0.026″	40	10, 25, 50, 100, 300	3423T22♣	.55
0.027″	0.036″	90	10, 25, 50, 100, 300	3423T23♣	.75
0.032″	0.040″	120	10, 25, 50, 100, 300	3423T24	.88
0.036″	0.049″	160	5, 10, 25, 50, 100	3423T26	.78
0.0468″	0.062″	270	5, 10, 25, 50, 100	3423T28	.80
0.0625″	0.084″	480	5, 10, 25, 50, 100	3423T31	1.20
7×19 Strand Core					
0.032″	0.040″	120	5, 10, 25, 50, 100	3423T25♣	1.38
0.038″	0.049″	160	5, 10, 25, 50, 100	3423T27♣	1.52
0.0468″	0.062″	270	5, 10, 25, 50, 100	3423T29	1.45
0.0625″	0.084″	480	2, 5, 10, 25, 50, 100	3423T32	1.68

♣ Not preformed.

Polypropylene-Impregnated and Coated Galvanized Wire Rope

With polypropylene inside as well as coating it, this strand core rope is chemical and corrosion resistant with high fatigue resistance. The coating seals in lubrication and has a temperature range of 0° to 200° F. All are preformed and lubricated. Color is black (unless noted).

Warning: When attaching fittings to coated rope, the coating must be removed from the installation area.

7×7 Strand Core— Rope is moderately flexible and commonly used in controls and mechanical applications.
7×19 Strand Core— More flexible and fatigue resistant than the 7×7 construction.

To Order: Please specify length from those listed; continuous lengths greater than the longest length listed are also available.

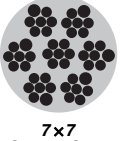

7×7 Strand Core

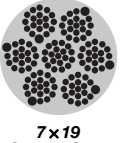

7×19 Strand Core

Rope Dia. Bare	Rope Dia. Coated	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
7×7 Strand Core					
3/32″	1/8″	920	10, 25, 50, 100, 300	8939T21	$0.48
1/8″	5/32″	1,700	10, 25, 50, 100, 300	8939T22	.62
1/8″	5/32″	1,700	10, 25, 50, 100, 300	8939T23★	.62
1/8″	5/32″	1,700	10, 25, 50, 100, 300	8939T24●	.64
5/32″	7/32″	2,600	5, 10, 25, 50, 100	8939T25	1.07
3/16″	1/4″	3,700	5, 10, 25, 50, 100	8939T26	1.31
1/4″	5/16″	6,100	5, 10, 25, 50, 100	8939T27	2.10
7×19 Strand Core					
5/16″	13/32″	9,800	2, 5, 10, 25, 50, 100	8939T28	3.48
3/8″	15/32″	14,400	2, 5, 10, 25, 50, 100	8939T29★	4.82

★ Color is yellow. ● Color is green.

Warning! ***Breaking strength should never be considered the rope's working load.***

About Fibrous Rope Material

Material	Page No.	Strength	Abrasion Resistance	Stretch Resistance	Sunlight Resistance	Acid Resistance	Oil and Gas Resistance	Floats	Max. Temp.
Cotton	1411, 1413	Poor	Poor	Good	Good	Poor	Poor	No	150° F
Manila	1413	Good	Poor	Good	Very Good	Poor	Poor	No	180° F
Nylon	1410-1411	Very Good	Very Good	Fair	Excellent	Good	Good	No	300° F
Polyester	1411	Very Good	Very Good	Very Good	Excellent	Very Good	Excellent	No	200° F
Polypropylene	1412	Good	Good	Poor	Poor	Excellent	Excellent	Yes	200° F
Sisal	1413	Fair	Poor	Good	Good	Poor	Poor	No	180° F
Spectra	1412-1413	Excellent	Excellent	Very Good	Fair	Excellent	Very Good	Yes	150° F
Technora	1412-1413	Excellent	Fair	Excellent	Fair	Good	Excellent	No	480° F
Vectran	1412-1413	Excellent	Excellent	Excellent	Fair	Good	Very Good	No	200° F

Work Load Limit—The maximum safe load that can be applied to a straight length of new rope. Work load limits will be reduced by jerking and pulling at an angle; applying a load at accelerated and fluctuating rates; plus twisting, knotting, weathering, age, and high temperatures.

Nylon Rope

Shock-Absorbing Nylon Rope

Commonly used in dock lines and towing applications, nylon rope stretches to provide shock absorption. It is strong for its size, but can lose some strength when wet. It resists rot and mildew and is soft to the touch.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Twisted

- Can be spliced
- Does not flatten
- Meets MIL-R-17343

Twisted construction is easy to grip. This rope is great for general-purpose applications where strength is desired and stretch is needed. Commonly used in tie-up lines. Color is white.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
3/16″	75	100, 200, 300, 600, 1,000	3827T31	$9.15
1/4″	124	100, 200, 300, 600, 1,000, 1,200	3827T37	11.03
5/16″	192	50, 100, 200, 300, 600, 1,200	3827T33	18.74
3/8″	278	50, 100, 200, 300, 600, 1,200	3827T34	25.88
1/2″	525	50, 100, 200, 300, 600, 1,200	3827T35	52.42
5/8″	935	10, 50, 100, 300, 600, 1,200	3827T36	85.31
3/4″	1,420	10, 50, 100, 300, 600, 1,200	3827T21	115.62
1″	2,520	Any up to 1,200	3827T22	171.79
1 1/4″	3,760	Any up to 600	3827T23	257.50
1 1/2″	5,320	Any up to 600	3827T24	318.28

Abrasion-Resistant Solid Braided

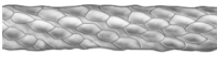

- Does not flatten
- Does not rotate under load
- Knots easily

Rope has a smooth surface for the best abrasion resistance of our nylon ropes. Commonly used in dock lines. Color is white.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
1/8″	26	100, 200, 500, 1,000	3838T711	$4.34
5/32″	37	100, 200, 500, 1,000	3838T721	5.60
3/16″	52	100, 200, 500, 1,000	3838T531	7.99
7/32″	71	100, 200, 500, 1,000	3838T741	8.25
1/4″	90	50, 100, 200, 500, 1,000	3838T561	11.67
5/16″	135	50, 100, 200, 500, 1,000	3838T751	17.77
3/8″	192	50, 100, 200, 500, 1,000	3838T771	24.29
7/16″	258	25, 100, 200, 500, 1,000	3838T681	33.77
1/2″	323	25, 50, 100, 200, 500, 1,000	3838T791	43.71

Extra-Strength Double Braided

- Can be spliced
- Does not flatten
- Does not rotate under load
- Meets MIL-DTL-24050

The braided core adds strength while the braided cover provides abrasion resistance. Strongest of the all-nylon ropes, this rope stands up to the demands of mooring and tow lines. Color is white with blue and red marking strands.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
1/4″	400	25, 50, 100, 200, 300, 600	3836T31	$35.45
5/16″	580	25, 50, 100, 200, 300, 600	3836T33	47.27
3/8″	840	25, 50, 100, 200, 300, 600	3836T34	52.68
1/2″	1,460	25, 50, 100, 200, 300, 600	3836T35	83.57
5/8″	2,580	10, 50, 100, 200, 300, 600	3836T36	131.30
3/4″	3,200	Any up to 600	3836T37	180.22
1″	6,120	Any up to 600	3836T38	282.06
1 1/4″	8,840	Any up to 600	3836T39	392.73

Flexible Diamond Braided

Standard

High Capacity

- Does not flatten
- Does not rotate under load
- Knots easily

Thanks to a nonbraided core, these are the most flexible nylon ropes.

Standard rope is perfect for engine starter rope. It has a polyester core for stretch resistance. Color is white.

Acrylic-coated rope offers increased abrasion resistance.

High-capacity rope is also known as static kernmantle rope. The protective polyester cover and shock-absorbing nylon core make it ideal for positioning and rigging applications. Color is white with a blue marking strand.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Standard—*Uncoated*				
7/64″	23	100, 200, 500, 1,000, 3,000	3696T13	$5.52
1/8″	30	100, 200, 500, 1,000, 3,000	3696T16	5.83
9/64″	39	100, 200, 500, 1,000, 3,000	3696T19	6.61
5/32″	47	100, 200, 500, 1,000, 3,000	3696T23	7.04
3/16″	61	100, 200, 500, 1,000, 3,000	3696T26	10.90
Standard—*Acrylic Coated*				
7/64″	23	100, 200, 500, 1,000, 3,000	3696T12	6.10
1/8″	30	100, 200, 500, 1,000, 3,000	3696T15	6.55
9/64″	39	100, 200, 500, 1,000, 3,000	3696T18	7.57
5/32″	47	100, 200, 500, 1,000, 3,000	3696T22	8.34
3/16″	61	100, 200, 500, 1,000, 3,000	3696T25	11.91
High Capacity				
3/8″	1,100	150, 200, 300, 600	5378K1	102.33
7/16″	1,420	150, 200, 300, 600	5378K2	110.80
1/2″	2,000	150, 200, 300, 600	5378K3	149.45
5/8″	2,400	150, 200, 300, 600	5378K4	191.66

Warning! ***Never exceed work load limits; never use to lift people or items over people.***

For information about fibrous rope material, see page 1410.

Clear Nylon Line

Also known as monofilament fishing line, this line is very thin yet strong and abrasion resistant. Ideal for tying and hanging light objects.

Line Dia.	Work Load Limit, lbs.	Spool Lg., ft.		
0.008″	4	990	9442T5	$7.79
0.012″	8	990	9442T1	7.96
0.017″	17	990	9442T2	9.22
0.022″	30	750	9442T3	11.33
0.028″	50	825	9442T4	11.65

Low-Stretch Polyester Rope

Stretch resistance makes polyester rope ideal for rigging with pulleys as well as tie down and anchor applications. This rope is similar in appearance and strength to nylon rope, but has lower stretch and does not lose strength when wet. It has a smooth finish and resists rot.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Twisted

Standard

Extra Grip

Lightweight Blend

- Can be spliced
- Does not flatten

Twisted construction is easy to grip. Ideal for applications such as stringing and winch lines where you don't want line stretch.

Standard rope is white.

Extra-grip rope feels and handles like natural manila rope, yet has the strength, stretch resistance, and flexibility of synthetic rope. Color is white with an orange marking strand.

Lightweight-blend rope is a polyester/copolymer blend and is approximately 20% lighter than standard polyester rope. Color is white (has a blue tint) with green and red marking strands.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Standard				
3/16″	64	100, 200, 300, 600	3828T14	$11.58
1/4″	110	50, 100, 200, 300, 600	3828T11	16.56
5/16″	171	50, 100, 200, 300, 600	3828T12	28.27
3/8″	242	25, 50, 100, 200, 300, 600	3828T13	39.72
1/2″	424	25, 50, 100, 200, 300, 600	3828T23	73.29
5/8″	652	10, 50, 100, 200, 300, 600	3828T24	109.30
3/4″	933	Any up to 600	3828T25	145.48
1″	1,648	Any up to 600	3828T26	223.97
Extra Grip				
5/16″	460	50, 100, 200, 300, 600	36955T11	30.87
3/8″	640	50, 100, 200, 300, 600	36955T12	34.32
7/16″	820	50, 100, 200, 300, 600	36955T13	40.96
1/2″	1,160	50, 100, 200, 300, 600	36955T14	47.92
Lightweight Blend				
3/8″	740	50, 100, 200, 300, 600	8878T35	33.62
1/2″	1,240	25, 50, 100, 200, 300, 600	8878T46	56.02
5/8″	1,800	50, 100, 200, 300, 600	8878T57	76.68
3/4″	2,660	Any up to 600	8878T66	142.84
1″	4,580	Any up to 600	8878T77	252.48

Abrasion-Resistant Solid Braided

Standard

Reflective

- Does not flatten
- Does not rotate under load
- Knots easily

Rope has a smooth surface for the best abrasion resistance of our polyester ropes. Use in guy lines, sash cords, blocks, and pulleys.

Standard rope is white. Meets MIL-C-43256.

Reflective rope is black with a reflective marking strand that is visible day and night.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Standard				
1/8″	67	100, 200, 500, 1,000	3852T11	$6.10
5/32″	98	100, 200, 500, 1,000	3852T51	11.86
3/16″	93	100, 200, 500, 1,000	3852T36	16.41
7/32″	142	100, 200, 500, 1,000	3852T35	9.00
1/4″	158	50, 100, 200, 500, 1,000	3852T38	19.90
5/16″	240	50, 100, 200, 500, 1,000	3852T41	34.64
3/8″	326	25, 50, 100, 200, 500, 1,000	3852T42	49.74
1/2″	548	25, 50, 100, 200, 500, 1,000	3852T43	76.87
Reflective				**Each**
1/8″	33	50	3132T5	$27.74
5/32″	66	40	3132T9	29.59

Extra-Strength Double Braided

Loop End

- Can be spliced
- Does not flatten
- Does not rotate under load
- Knots easily

The braided core adds strength while the braided cover provides abrasion resistance. Strongest of the all-polyester ropes, this rope is the choice for flagpole pulleys, hoisting, and other demanding rigging applications. Color is white with a red marking strand.

Rope with loop ends is also known as winch line and allows quick attachment to tie downs and hooks. For additional winch lines, see page 1453.

To Order: Please specify rope length: 3, 6, 8, 12, 20, or 50 ft.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Standard				
3/16″	240	50, 100, 200, 300, 600	3789T21	$31.35
1/4″	400	25, 50, 100, 200, 300, 600	3789T22	46.86
5/16″	600	25, 50, 100, 200, 300, 600	3789T23	61.58
3/8″	880	50, 100, 200, 300, 600	3789T24	79.64
7/16″	1,320	10, 50, 100, 200, 300, 600	3789T25	102.11
1/2″	1,700	10, 50, 100, 200, 300, 600	3789T26	129.25
5/8″	2,880	Any up to 600	3789T28	196.84
3/4″	4,000	Any up to 600	3789T19	245.72

Rope Dia.	Work Load Limit, lbs.	Loop Lg.		***Base Price for 3-ft. Lg.*** Each	***Extra Length*** Per Ft.
With Loop on One End					
1/2″	1,900	4″	8328T1	$31.73	$1.87
With Loop on Both Ends					
1/2″	1,900	4″	8328T6	57.13	1.87

Rope Reinforced with Wire Core

Nylon Cover

Cotton Cover

- Does not flatten
- Does not rotate under load

A solid braided cover has a smooth surface for abrasion resistance. The galvanized wire core provides strength with very little stretch.

Nylon-cover rope is for pulleys and sheaves. Color is white. ***Cotton-cover*** rope is for sash cord. Color is off-white.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Rope Dia.	Wire Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Nylon Cover					
3/16″	3/32″	184	25, 50, 100, 200, 500, 1,000	8921T61	$41.72
1/4″	3/32″	184	25, 50, 100, 200, 500, 1,000	8921T82	48.97
5/16″	1/8″	340	25, 50, 100, 200, 500, 1,000	8921T83	61.72
3/8″	5/32″	520	25, 50, 100, 200, 500, 1,000	8921T84	72.76
Cotton Cover					
3/16″	3/32″	184	25, 50, 100, 200, 500, 1,000	3849T44	40.34
1/4″	3/32″	184	25, 50, 100, 200, 500, 1,000	3849T45	47.67
5/16″	3/32″	184	25, 50, 100, 200, 500, 1,000	3849T46	60.00
3/8″	3/32″	184	25, 50, 100, 200, 500, 1,000	3849T47	65.17

Warning! ***Never exceed work load limits; never use to lift people or items over people.***

For information about fibrous rope material, see page 1410.

Lightweight Polypropylene Rope

Economical polypropylene rope is strong, floats in water, and resists rot, making it the choice for water rescue lines and water markers. It is also ideal for crowd-control barriers. **To Order:** Please specify length from those listed. The last length listed is the maximum continuous length.

Twisted

Solid-Color Standard

- Can be spliced
- Does not flatten

Twisted construction is easy to grip.

Solid-color standard rope.
To Order: Please specify color: black, white, or yellow, unless noted.

Striped Standard

Striped standard rope is the best choice for crowd-control barriers.
To Order: Please specify color: black/yellow, magenta/yellow, or red/white.

UV-Ray Resistant Standard

UV-ray resistant standard rope is also known as truck tie-down rope. It has a smooth finish. Color is black with a bright orange marking strand.

Extra Dense

Extra-dense rope has the benefits of polypropylene rope plus the strength of nylon rope. It is 16% lighter and stretches less than nylon rope. It resists UV rays. Color is seafoam green.

Extra Grip

Extra-grip rope has the texture and extra-firm grip of manila rope, yet is stronger and 35% lighter. This rope knots easily. Color is brown.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Standard—Solid Color				
1/8″	27	100, 300, 600, 1,000, 3,000	3837T33★	$2.11
3/16″	54	100, 200, 300, 600, 1,000, 1,200	3837T16	3.64
1/4″	94	100, 200, 300, 600, 1,200	3837T17	5.96
3/8″	203	100, 200, 300, 600, 1,200	3837T18	13.51
1/2″	315	50, 100, 200, 300, 600, 1,200	3837T19	21.76
5/8″	465	50, 100, 200, 300, 600	3837T21	32.79
3/4″	638	50, 100, 200, 300, 600	3837T22	47.20
1″	1,069	25, 100, 200, 300, 600	3837T23	74.29
Standard—Striped				
1/4″	220	200, 300, 600	6068T14	7.75
5/16″	305	200, 300, 600	6068T15	10.95
3/8″	465	100, 200, 300, 600	6068T16	15.50
Standard—UV-Ray Resistant				
3/8″	203	100, 200, 300, 600	3818T21	13.51
7/16″	263	100, 200, 300, 600	3818T22	23.86
1/2″	315	50, 100, 200, 300, 600	3818T23	22.98
5/8″	465	50, 100, 200, 300, 600	3818T24	32.76
3/4″	638	25, 100, 200, 300, 600	3818T25	47.20
1″	1,069	10, 100, 200, 300, 600	3818T26	74.29
Extra Dense				
1/4″	297	100, 200, 600, 1,200	3875T2	5.14
5/16″	507	100, 200, 600, 1,200	3875T3	6.71
3/8″	779	100, 200, 600, 1,200	3875T4	10.90
1/2″	918	50, 100, 200, 600, 1,200	3875T5	17.95
5/8″	1,915	50, 100, 200, 600, 1,200	3875T6	27.50
3/4″	2,442	50, 100, 200, 600, 1,200	3875T7	41.64
1″	3,911	25, 100, 200, 600, 1,200	3875T8	66.74
Extra Grip				
1/4″	94	100, 200, 300, 600	3846T22	7.52
3/8″	203	50, 100, 200, 300, 600	3846T24	17.67
1/2″	315	50, 100, 200, 300, 600	3846T26	31.80
5/8″	465	50, 100, 200, 300, 600	3846T28	46.47
3/4″	638	25, 100, 200, 300, 600	3846T31	61.90

★ Available in yellow only.

Abrasion-Resistant Solid Braided

- Does not flatten
- Does not rotate under load
- Knots easily

Rope has a smooth surface for abrasion resistance. Ideal for barriers and tie downs. Color is white.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
1/8″	43	100, 200, 500, 1,000	3873T18	$5.28
5/32″	70	100, 200, 500, 1,000	3873T19	7.36
3/16″	90	100, 200, 500, 1,000	3873T21	10.40
1/4″	120	50, 100, 200, 500, 1,000	3873T23	14.96
5/16″	195	50, 100, 200, 500, 1,000	3873T24	24.31
3/8″	270	25, 100, 200, 500, 1,000	3873T25	34.17

Flexible Hollow Diamond Braided

- Can be spliced
- Does not rotate under load

No core (hollow) means superior flexibility compared to other polypropylene ropes. Commonly used for barriers and floating lines.

Rope Dia.	Work Load Limit, lbs.	Color	Available Lengths, ft.		Per 100 Ft.
1/8″	24	Yellow	100, 200, 300, 500, 1,000	3856T13	$3.46
3/16″	37	Yellow	100, 200, 300, 500, 1,000	3856T14	3.87
1/4″	83	Orange	100, 200, 300, 500, 1,000	3856T21	4.83
1/4″	83	Red/White	100, 200, 300, 500, 1,000	3856T31	4.83
1/4″	83	Blue/White	100, 200, 300, 500, 1,000	3856T41	4.83
1/4″	100	Yellow	100, 200, 300, 500, 1,000	3856T15	5.00
5/16″	140	Yellow	100, 200, 300, 500, 1,000	3856T16	8.37
3/8″	180	Yellow	100, 200, 300, 500, 1,000	3856T18	11.77

High-Performance Rope

High-performance fibers offer excellent strength with stretch resistance. A lightweight alternative to wire rope.
To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Extra-Strength Braided

Spectra

- Can be spliced
- Does not flatten
- Does not rotate under load

Made of braided 100% high-performance fibers for the ultimate in strength.

Spectra rope (high-performance polyethylene) floats and knots easily. Color is dark pink.

Vectran

Vectran rope (high-performance polyester) offers excellent slip resistance. Color is tan.

Technora

Technora rope (high-performance aramid) is the choice in high-temperature applications up to 480°F. It is flexible and knots easily. Color is dark tan.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Spectra (Single Braided)				
1/4″	1,700	Any up to 600	36965T21	$121.55
5/16″	2,600	Any up to 600	36965T22	182.18
3/8″	3,800	Any up to 600	36965T23	235.87
1/2″	5,600	Any up to 600	36965T24	365.11
Vectran (Hollow Braided)				
1/4″	1,500	Any up to 500	2222T41	165.49
5/16″	2,400	Any up to 500	2222T42	256.14
3/8″	3,500	Any up to 500	2222T43	339.66
1/2″	5,500	Any up to 500	2222T44	587.98
Technora (Single Braided)				
3/16″	1,020	50, 100, 200, 300, 600	3790T31	122.41
1/4″	1,630	50, 100, 200, 300, 600	3790T32	160.00
5/16″	2,400	50, 100, 200, 300, 600	3790T33	215.22
3/8″	3,600	50, 100, 200, 300, 600	3790T34	294.00
1/2″	6,600	50, 100, 200, 300, 600	3790T36	457.43

(Continued on following page)

Warning! ***Never exceed work load limits; never use to lift people or items over people.***

For information about fibrous rope material, see page 1410.

High-Performance Rope *(Continued from previous page)*

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Double-Braided with UV-Ray Resistant Cover

Spectra

Vectran

Technora

- Can be spliced
- Does not flatten
- Does not rotate under load

The braided high-performance fiber core offers strength while the braided polyester cover provides UV ray and abrasion resistance.

Spectra rope (high-performance polyethylene) floats and knots easily. Color is white with black and red marking strands.

Vectran rope (high-performance polyester) offers excellent slip resistance. Color is white with a green marking strand.

Technora rope (high-performance aramid) is ideal in high-temperature applications. It is flexible and knots easily. Color is white with red and yellow marking strands.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Spectra				
1/4″	800	Any up to 600	36965T15	$115.46
5/16″	1,400	Any up to 600	36965T16	163.46
3/8″	2,000	Any up to 600	36965T17	191.78
1/2″	3,800	Any up to 600	36965T18	323.61
Vectran				
1/4″	1,000	Any up to 500	2222T45	133.33
5/16″	1,500	Any up to 500	2222T46	187.72
3/8″	2,500	Any up to 500	2222T47	256.67
1/2″	4,000	Any up to 500	2222T48	445.90
Technora				
3/16″	600	25, 50, 100, 300, 600	3790T11	62.55
1/4″	1,100	10, 50, 100, 300, 600	3790T12	91.19
5/16″	1,400	10, 50, 100, 200, 300, 600	3790T13	123.40
3/8″	2,320	10, 50, 100, 200, 300, 600	3790T14	191.14
7/16″	3,120	10, 50, 100, 200, 300, 600	3790T15	261.83
1/2″	4,200	10, 50, 100, 200, 300, 600	3790T16	350.05

General-Purpose Manila Rope

- Can be spliced
- Does not flatten
- Knots easily
- Meets Fed. Spec. TR605

Twisted construction is easy to grip. Manila rope is stronger than sisal rope. Color is tan.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
1/4″	54	100, 200, 300, 400, 600, 1,200	3825T31	$6.70
3/8″	122	100, 200, 300, 400, 600, 1,200	3825T32	12.67
1/2″	264	50, 100, 200, 300, 600, 1,200	3825T33	28.37
5/8″	496	50, 100, 200, 300, 600, 1,200	3825T34	41.93
3/4″	695	50, 100, 200, 300, 600, 1,200	3825T35	53.47
1″	1,160	25, 50, 100, 200, 600, 1,200	3825T36	87.73
1 1/4″	1,740	10, 50, 100, 200, 300, 600	3825T37	142.73
1 1/2″	2,380	Any up to 600	3825T38	198.56
2″	4,000	Any up to 600	3825T39	342.39

Easy-Knot Sisal Rope

- Can be spliced
- Does not flatten
- Knots easily

Twisted construction is easy to grip. This rope has coarser fibers and holds knots better than manila rope. Color is tan.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
3/16″	24	100, 200, 500, 2,000	3819T51	$3.82
1/4″	32	100, 200, 500, 1,000	3819T52	5.27
5/16″	53	100, 200, 500, 1,000	3819T53	8.92
3/8″	72	100, 200, 500	3819T54	10.83
1/2″	142	50, 100, 200, 500	3819T56	21.83
3/4″	288	50, 100, 200, 500	3819T58	45.08

Comfort-Grip Cotton Rope

Standard

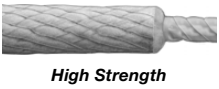

High Strength

Extra Strength

- Does not flatten
- Does not rotate under load
- Knots easily

Solid braided construction has a smooth surface for a comfortable grip.

Standard rope has cotton/polyester cover and a polyester core for stretch resistance. Color is white.

The *9/64″ dia.* rope is also known as Venetian blind cord.

High-strength rope has a nylon/polyester core so it is stronger than standard rope. It's coated to resist rot, mildew, and wear. Also known as sash cord. Color is white. Complies with Fed. Spec. A-A-55622B.

Extra-strength rope has a nylon core making it the strongest cotton rope. It is coated for chemical and weather resistance. Also known as sash cord. Color is white with a red marking strand (unless noted). Complies with Fed. Spec. A-A-55622B.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Rope Dia.	Work Load Limit, lbs.	Available Lengths, ft.		Per 100 Ft.
Standard				
7/64″	20	100, 200, 500, 1,000, 3,000	3851T31	$5.42
1/8″	33	100, 200, 500, 1,000, 3,000	3851T32	5.98
9/64″	35	100, 200, 500, 1,000, 3,000	3851T33	6.62
5/32″	40	100, 200, 500, 1,000, 3,000	3851T34	8.76
High Strength				**Each**
3/16″	79	100	3848T51	$10.86
7/32″	94	100	3848T52	12.77
1/4″	120	100	3848T53	14.51
5/16″	203	100	3848T54	21.70
3/8″	255	100	3848T55	29.97
7/16″	360	100	3848T56	43.37
1/2″	465	100	3848T57	54.26
Extra Strength				
3/16″	105	100	3848T41	11.95
7/32″	124	100	3848T42	14.10
1/4″	150	100	3848T43	16.01
9/32″	214	100	3848T44★	18.53
5/16″	240	100	3848T45	24.82
3/8″	300	100	3848T46	32.76
7/16″	465	100	3848T47	46.46
1/2″	540	100	3848T48	56.76

★ Does not have a red marking strand.

Marlin Spikes

For Fibrous Rope

For Wire Rope

Easily splice fibrous rope as well as wire rope. Spikes are forged high-carbon steel. They are 1″ dia. at the thickest part (unless noted) and have a 5/16″ dia. lanyard hole. Lengths may vary slightly.

Lg.	*For Fibrous Rope*		*For Wire Rope*	
6″	3876T11 ♦	$15.57	—	—
8″	3876T12	16.79	3876T17	$37.74
10″	3876T13	18.68	3876T18	43.68
12″	3876T14	22.26	3876T19	44.72

♦ 5/8″ at thickest part.

Warning! *Never exceed work load limits; never use to lift people or items over people.*

Twine

Twine has a smaller diameter than rope. It is designed for light duty applications such as tying, binding, cinching, and bailing.

Twisted All-Purpose Nylon

Great for tying. Twine resists UV rays and rot. Also known as Seine twine. Color is white.

Handy pack comes on a card small enough to fit in your pocket or tool box.

Twine Dia.	Trade Size	Breaking Strength, lbs.	Length, ft.		
Handy Pack					
0.058″	18	180	250	1938T18	$2.22
1/2-lb. Tube					
0.046″	12	105	900	1938T31	3.97
0.058″	18	180	550	1938T32	3.98
0.065″	21	210	400	1938T33	3.98
0.073″	24	255	330	1938T34	3.98
0.078″	30	295	313	1938T35	3.98
0.085″	36	338	268	1938T36	3.84
0.103″	48	430	190	1938T37	3.84
0.125″	72	630	131	1938T38	3.84
1-lb. Tube					
0.046″	12	105	1,800	1938T39	7.68
0.058″	18	180	1,100	1938T41	7.68
0.065″	21	210	800	1938T42	7.68
0.073″	24	255	660	1938T43	7.68
0.078″	30	295	628	1938T44	7.68
0.085″	36	338	535	1938T45	7.47
0.103″	48	430	380	1938T46	7.47
0.125″	72	630	262	1938T47	7.47

Braided All-Purpose Nylon

Nylon twine has a smooth surface and is less likely to unravel compared to twisted twine. It resists abrasion, UV rays, and rot.

High-visibility fluorescent-color twine can easily be seen. **To Order:** Please specify color: orange, pink, or yellow.

Twine Dia.	Trade Size	Breaking Strength, lbs.	Length, ft.		
White					
0.046″	12	86	100	2057T35	$3.60
0.046″	12	86	250	2057T36	4.93
0.058″	18	135	240	2057T75	4.79
0.058″	18	135	480	2057T76	8.55
0.058″	18	135	960	2057T77	16.55
High-Visibility Fluorescent Color					
0.058″	18	150	250	2057T88	5.57
0.058″	18	150	500	2057T86	10.48
0.058″	18	150	1,000	2057T87	19.76

Braided Extra-Strength Polyester

Twine has a smooth surface, is flexible, knots easily, and is less likely to unravel compared to twisted twine. It resists abrasion and rot. Use for lanyards, dial cords, counterweight systems, and linkages. Color is white.

To Order: Please specify length from those listed. The last length listed is the maximum continuous length.

Twine Dia.	Breaking Strength, lbs.	Available Lengths, ft.		Per 100 Ft.
0.033″	50	100, 200, 500, 1,000	8936T41	$11.88
0.042″	90	100, 200, 500, 1,000	8936T42	13.45
0.060″	180	100, 200, 500, 1,000, 2,000, 3,000	8936T43	17.51

Twisted Lightweight Polypropylene

This twine floats and is resistant to rot, oil and gas, and acid. Color is white.

Handy pack comes on a card small enough to fit in your pocket or tool box.

Twine Dia.	Breaking Strength, lbs.	Length, ft.		
Handy Pack				
0.05″	135	150	2078T34	$2.48
10-lb. Tube				
0.05″	135	8,500	2078T11	33.89
0.07″	180	6,500	2078T12	33.89
0.08″	210	5,500	2078T13	33.89
0.10″	260	4,500	2078T14	33.89
0.11″	255	4,208	2078T21	35.58
0.11″	385	2,805	2078T23	35.58
0.11″	399	2,722	2078T22	35.58
0.13″	325	3,500	2078T15	33.89
0.24″	599	1,815	2078T24	35.58

Twisted Easy-Knot Sisal

Sisal twine has coarser fibers and knots better than jute twine. Color is tan.

Handy pack comes on a card small enough to fit in your pocket or tool box.

Twine Dia.	Breaking Strength, lbs.	Length, ft.		
Handy Pack				
0.094″	70	150	1932T51	$2.28
10-lb. Tube				
0.094″	183	3,000	1932T1	19.86
0.125″	342	1,470	1932T2	20.33
50-lb. Reel				
0.094″	183	15,000	1932T3	102.85
0.125″	342	7,350	1932T4	109.12

Twisted Comfort-Grip Cotton

Cable Cord

Polished Cotton

Unpolished Cotton

Commonly used for tying. Color is white.

Cable-cord twine has a natural unpolished finish and is good for chalk lines.

Polished-cotton twine offers a smooth finish and moisture resistance. Ideal for mason lines.

Unpolished twine has a smooth finish.

Handy packs come on a card small enough to fit in your pocket or tool box.

Twine Dia.	Trade Size	Breaking Strength, lbs.	Length, ft.		
Cable Cord—1/2-lb. Ball (unless noted)					
0.060″	18	35	510	1931T13	$4.08
0.075″	24	45	390	1931T15	4.08
0.078″	30	60	300	1931T18	4.08
0.094″	36	70	255	1931T21	4.08
0.110″	48	85	188	1931T24	4.08
0.120″	60	108	140	1931T25	4.08
0.125″	72	124	255	1931T26★	8.20
Polished Cotton—1/2-lb. Ball (unless noted)					
0.058″	24	48	500	1931T51	6.17
0.080″	60	98	270	1931T35	6.42
0.098″	4 1/2	110	400	1931T36★	11.88
0.116″	6	115	320	1931T47★	11.88
Unpolished Cotton Handy Packs					
0.046″	—	20	250	1929T41	2.52
0.078″	—	40	150	1929T42	2.76
Unpolished Cotton—2 1/2-lb. Cone					
0.038″	—	15	8,231	1929T12	15.02
0.046″	—	20	6,174	1929T14	15.02
0.054″	—	25	5,000	1929T16	15.02
0.062″	—	30	4,116	1929T28	15.02

★ 1-lb. ball.

Twisted Extra-Soft Jute

Jute twine holds knots tightly and is softer than sisal twine. Color is brown.

Handy pack comes on a card small enough to fit in your pocket or tool box.

Twine Dia.	Trade Size	Breaking Strength, lbs.	Length, ft.		
Handy Pack					
0.094″	14	42	250	1936T61	$1.96
1/2-lb. Ball (Approximate)					
0.078″	24	72	219	1936T31	1.74
0.141″	24	120	254	1936T32	2.65
50-lb. Reel					
0.078″	28	84	24,400	1936T24	108.97
0.141″	28	140	14,650	1936T44	108.97

Twisted Waxed Linen

Use for lacing in electrical and electronic applications as well as for wrapping and tying. Twine consists of multiple-ply 100% pure linen threads treated with a wax compound to resist mildew. Meets MIL-T-713, Type N. Color is off-white.

Twine Dia.	Trade Size	Breaking Strength, lbs.	Length, ft.		
0.040″	6	32	450	3858T13	$17.37
0.046″	8	48	330	3858T12	17.37
0.056″	12	70	225	3858T11	17.37

Warning! ***Never exceed breaking strengths; never use to lift people or items over people.***

For fibrous rope, see pages 1410-1414. For wire rope, see pages 1404-1409.

Fibrous Rope Clamps—Not for Lifting

Create loops without splicing. These clamps are made of black nylon and have threaded brass inserts and stainless steel screws. Temperature range is –40° to +300°F. Use with nylon and polypropylene fibrous rope.

For Rope Dia.	Lg.×Wd.×Thick.			Each
3/16"	1 3/8" ×	1/2" ×	3/8"	36815T11 $3.70
1/4", 5/16"	1 5/8" ×	3/4" ×	1/2"	36815T12 4.30
3/8"	2" ×	1" ×	1/2"	36815T13 5.09
7/16", 1/2"	2 1/4" ×	1 1/4" ×	3/4"	36815T14 6.67
9/16", 5/8"	2 7/8" ×	1 1/2" ×	7/8"	36815T15 8.03
3/4"	3 3/4" ×	1 7/8" ×	1"	36815T16 11.39

Fibrous Rope Thimbles—Not for Lifting

Protect your rope—these thimbles evenly distribute weight and eliminate snagging and tangling. All are made of white nylon. Temperature range is –40° to +169°F.

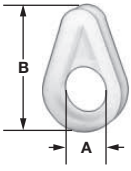

For Rope Dia.	(A)	(B)		Each
1/4"	9/16"	1 9/16"	34925T72	$0.85
3/8"	1"	2 11/16"	34925T74	1.36
1/2"	1"	2 7/8"	34925T75	1.51
5/8"	1 1/16"	3 1/8"	34925T76	2.24
3/4"	1 3/16"	3 9/16"	34925T77	2.53
1"	1 3/4"	4 15/16"	34925T78	5.24

Compression Sleeves and Tools for Fibrous Rope—Not for Lifting

Sleeves—Use to splice twisted or braided nylon fibrous rope. Made of aluminum.

Compression Tools—Compress sleeves onto rope. Use a tool that is the same rope diameter as your sleeve. All have steel handles (unless noted). *Multidiameter tools* can be used with more than one sleeve size.

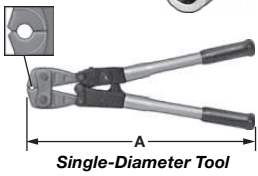

Single-Diameter Tool

For Rope Dia.	Sleeve Length	Required No. of Compressions	SLEEVES Pkg. Qty.		Per Pkg.	COMPRESSION TOOLS Single Diameter (A)		Each	Multidiameter (A)		Each
1/16"	3/8"	1	25	3633T2	$4.46	18 3/8"	3633T13	$170.33	20"	3633T23	$197.23
1/8"	11/16"	3	25	3633T4	8.14	18 7/16"	3633T14	170.33	20"	3633T23	197.23
3/16"	1"	4	25	3633T5	9.16	18 5/8"	3633T15	170.33	20 1/4"	3633T26	197.23
1/4"	1 1/4"	5	10	3633T6	5.88	18 3/4"	3633T16	170.33	20 1/4"	3633T26	197.23
5/16"	1 1/8"	1	10	3633T7	8.51	23"	3633T27▲	1,558.52	—	—	—
3/8"	1 9/16"	2	10	3633T8	14.00	33 1/8"	3633T35★	3,240.46	—	—	—
1/2"	2"	2	5	3633T9	11.53	33 1/8"	3633T36★	3,240.46	—	—	—

▲ Hydraulic hand tool; handle is fiberglass. ★ Hydraulic bench tool; handle is aluminum.

Low-Profile Steel Wire Rope Clamps—Not for Lifting

Also known as tiller clamps, these have a smooth, thin body that won't snag wire rope. Screws are included. Use with 6×37 and 7×7 wire rope.

Zinc-plated steel clamps have good corrosion resistance in most environments.

Nickel-plated steel clamps have better corrosion resistance than zinc-plated steel clamps.

For Rope Dia.	Lg.×Wd.×Thick.			Zinc-Plated Steel	Each	Nickel-Plated Steel	Each
1/8"	1 9/16" ×	3/4" ×	3/8"	3471T11	$3.06	3471T22	$5.08
3/16"	1 5/8" ×	3/4" ×	7/16"	3471T12	3.39	3471T23	5.18
1/4"	1 3/4" ×	1" ×	7/16"	3471T13	4.01	3471T24	5.56
5/16"	1 7/8" ×	1" ×	1/2"	3471T14	4.93	3471T25	6.56
3/8"	2 5/16" ×	1 1/8" ×	5/8"	3471T15♦	11.67	3471T26♠	12.38

♦ Zinc-plated malleable iron. ♠ Nickel-plated malleable iron.

Low-Profile Stainless Steel Wire Rope Clamps—Not for Lifting

These slim stainless steel clamps won't snag and catch like other wire rope clamps can. Bolts and nuts are included.

One-bolt clamps are for use in light duty and suspension applications.

Two-bolt clamps are stronger than one-bolt clamps and provide superior, nonslip holding power.

Type 304 stainless steel clamps offer excellent corrosion resistance.

Type 316 stainless steel clamps provide maximum corrosion resistance.

For Rope Dia.	Lg.×Wd.×Thick.			Type 304 Stainless Steel	Each	Type 316 Stainless Steel	Each
One Bolt							
1/8" to 1/4"	1 3/16" ×	7/8" ×	1/2"	5513T1	$3.32	3416T31	$4.45
Two Bolt							
5/64"	1 3/8" ×	7/16" ×	13/32"	5513T11	2.82	3677T51	4.11
1/8"	1 9/16" ×	9/16" ×	3/8"	5513T12	3.36	3677T52	5.17
5/32"	1 3/4" ×	3/4" ×	1/2"	5513T13	3.86	3677T53	6.03
3/16"	2" ×	7/8" ×	9/16"	5513T14	5.27	3677T54	8.26
1/4"	2 1/2" ×	1 1/16" ×	5/8"	5513T15	7.62	3677T55	10.16
5/16"	3" ×	1 1/8" ×	1"	5513T16	9.22	3677T56	12.31
3/8"	3 3/4" ×	1 3/8" ×	1 3/16"	5513T17	11.62	3677T58	15.26

Quick-Install Wire Rope Clamps—Not for Lifting

No tools required—feed wire rope through the clamp in one direction, form a loop, and feed the rope back through in the opposite direction until it is at least 3" past the clamp body. A key to release the grip so you can adjust the wire rope length is included. 34785T5 and T8 include screws for permanent installation. All are made of zinc alloy.

For Rope Dia.	Lg.×Wd.×Thick.			Each
1/16", 3/32"	2 1/8" ×	1" ×	1/4"	34785T3 $1.73
1/8"	2 7/16" ×	1 1/16" ×	5/16"	34785T4 2.18
3/16"	3 7/8" ×	1 3/8" ×	3/8"	34785T8 4.83
1/4"	4 1/8" ×	1 3/4" ×	9/16"	34785T5 11.28
3/8"	4 7/8" ×	2 1/4" ×	5/8"	34785T7 23.55

Grip-It Wire Rope Clamps—Not for Lifting

Assemble these three-piece clamps faster than wire rope clips, and get nearly the same smooth configuration of a swage fitting. They are cadmium-plated steel and consist of one coupler that threads onto two wedge halves. Meet MIL-STD 16843 and conform to Fed. Spec. FF-C-450. Use with 6×19 IWRC and 7×19 wire rope.

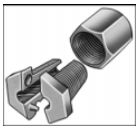

For Rope Dia.	Torque, ft.-lbs.		Each
1/8"	35	3489T27	$13.83
3/16"	80	3489T29	14.93
1/4"	145	3489T32	16.83
5/16"	225	3489T33	23.32
3/8"	325	3489T34	26.67
1/2"	575	3489T36	43.42

Combination Wire Rope Clamps and Thimbles—Not for Lifting

A wire rope clamp and thimble in one fitting. The clamp lets you create a loop and the thimble evenly distributes weight and eliminates snagging and tangling. Made of manganese bronze (unless noted). Use with six- or seven-strand wire rope.

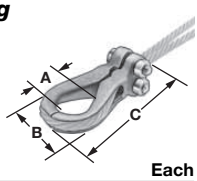

For Rope Dia.	Torque, ft.-lbs.	(A)	(B)	(C)		Each
1/8"	8	9/16"	1 1/16"	2 1/2"	3467T14	$8.63
3/16"	12	21/32"	1 11/32"	2 7/8"	3467T15	9.92
1/4"	19	7/8"	1 3/4"	3 3/4"	3467T16	14.70
5/16"	19	1 1/16"	2 1/8"	4 5/8"	3467T17	20.30
3/8"	40	1 1/4"	2 7/16"	5 3/8"	3467T19■	35.00

■ Made of steel.

Warning! Do not use with coated wire rope unless coating is removed.

Wire Rope Clips

For wire rope, see pages 1404-1409.

About Wire Rope Clip Installation

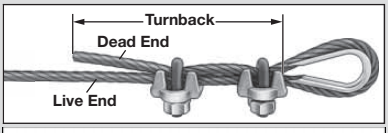

Single-Saddle Clips

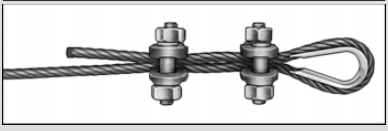

Double-Saddle Clips

Wire rope clips must match your wire rope diameter and be installed correctly to obtain maximum holding power. To get the clips you need, look at the tables below and find your wire rope diameter, the number of clips required, the amount of wire turnback on which to apply the clips, and the torque needed to properly tighten the nuts. Wire rope clips are not rated for work load; the work load limit is determined by the wire rope.

To install ***single-saddle clips,*** position the saddle on the "live" or long end of rope and the U-bolt on the "dead" or short end.

For ***double-saddle clips,*** orientation doesn't matter—just position a saddle on each end. There is no U-bolt; the saddles fasten together to apply equal pressure without crimping or crushing the wire.

Crosby Forged Wire Rope Clips—*Not for Lifting*

Single-Saddle Clip

Double-Saddle Clip

Forged construction makes these heavy duty clips ideal for use on support lines, tie downs, and other critical applications.

Single-Saddle Clips—*Zinc-plated steel* clips have a red-painted steel U-bolt.

Zinc-plated steel clips offer good corrosion resistance in most environments. All except 1/8" and 3/16" rope dia. sizes meet Fed. Spec. FF-C-450. ***Type 316 stainless steel*** clips provide maximum corrosion resistance.

	SINGLE-SADDLE CLIPS								DOUBLE-SADDLE CLIPS					
				Zinc-Plated Steel			Type 316 Stainless Steel					Zinc-Plated Steel		
					Each			Each					Each	
For Rope Dia.	Min. Clips Req'd.	Rope Turn-back	Torque, ft.-lbs.		1-9	10-Up		1-9	10-Up	Min. Clips Req'd.	Rope Turn-back	Torque, ft.-lbs.	1-9	10-Up
1/8"	2	3 1/4"	4.5	3465T11	$2.38	$2.14	8913T12	$18.46	$15.67	—	—	—	—	—
3/16"	2	3 3/4"	7.5	3465T12	2.56	2.29	8913T13	20.89	17.73	2	4"	30	3466T12	$8.54	$7.74
1/4"	2	4 3/4"	15	3465T13	3.55	3.19	8913T14	24.43	20.73	2	4"	30	3466T12	8.54	7.74
5/16"	2	5 1/4"	30	3465T14	3.71	3.32	—	—	—	2	5"	30	3466T13	9.00	8.15
3/8"	2	6 1/2"	45	3465T15	3.98	3.56	8913T15	34.75	29.48	2	5 1/4"	45	3466T14	9.35	8.47
7/16"	2	7"	65	3465T16	6.28	5.64	—	—	—	2	6 1/2"	65	3466T16	11.28	10.25
1/2"	3	11 1/2"	65	3465T17	6.34	5.71	8913T16	47.00	40.65	2	11"	65	3466T16	11.28	10.25
9/16"	3	12"	95	3465T47	8.17	7.22	—	—	—	3	12 3/4"	130	3466T18	15.51	14.12
5/8"	3	12"	95	3465T38	8.17	7.22	8913T17	69.84	60.41	3	13 1/2"	130	3466T18	15.51	14.12
3/4"	4	18"	130	3465T19	10.43	9.35	—	—	—	3	16"	225	3466T19	22.38	20.42
7/8"	4	19"	225	3465T21	14.88	13.34	—	—	—	4	26"	225	3466T45	28.62	26.23
1"	5	26"	225	3465T22	17.26	15.48	—	—	—	5	37"	225	3466T37	35.87	32.83
1 1/8"	6	34"	225	3465T41	19.25	17.26	—	—	—	5	41"	360	3466T38	46.11	42.20
1 1/4"	7	44"	360	3465T42	28.24	25.31	—	—	—	6	55"	360	3466T39	48.94	44.80
1 3/8"	7	44"	360	3465T43	36.98	33.16	—	—	—	—	—	—	—	—	—
1 1/2"	8	54"	360	3465T44	38.07	34.14	—	—	—	—	—	—	—	—	—

Cast Wire Rope Clips—*Not for Lifting*

The choice when the extra strength of forged clips is not required. All are single saddle.

Malleable iron clips are good for applications where corrosion is not a factor. All except 1/16" and 3/32" rope dia. sizes meet Fed. Spec. FF-C-450. *Zinc-plated* clips provide good corrosion resistance. *Hot-dipped galvanized* clips offer better corrosion resistance than zinc-plated clips. ***Type 304*** and ***Type 316 stainless steel*** clips are mildly magnetic and provide better corrosion resistance than all of the malleable iron clips. *Type 316 stainless steel* clips provide maximum corrosion resistance.

				MALLEABLE IRON								
				Plain Finish			Zinc Plated			Hot-Dipped Galvanized		
					Each			Each			Each	
For Rope Dia.	Min. Clips Req'd.	Rope Turn-back	Torque, ft.-lbs.		1-9	10-Up		1-9	10-Up		1-9	10-Up
1/16"	3	4 3/4"	2	—	—	—	30325T13	$0.34	$0.31	—	—	—
3/32"	3	4 3/4"	2	30325T14	$0.47	$0.44	30325T15	.55	.50	—	—	—
1/8"	3	4 3/4"	3	30325T61	.58	.51	30325T26	.58	.53	—	—	—
3/16"	3	5 1/2"	4.5	30325T62	.62	.56	30325T27	.64	.58	—	—	—
1/4"	3	7"	15	30325T63	.74	.67	30325T28	.79	.68	30325T83	$0.98	$0.88
5/16"	3	7 3/4"	15	30325T64	.84	.74	30325T29	.86	.77	30325T84	1.15	1.02
3/8"	3	9 1/2"	30	30325T65	1.14	1.04	30325T31	1.26	1.12	30325T85	1.57	1.39
7/16"	3	10 1/4"	40	30325T66	1.29	1.19	30325T32	1.46	1.34	30325T86	1.94	1.71
1/2"	4	15 1/4"	45	30325T67	1.44	1.33	30325T33	1.63	1.44	30325T87	2.25	1.99
9/16"	4	16"	50	30325T48	1.72	1.59	30325T49	1.97	1.84	30325T55	2.55	2.28
5/8"	4	16"	75	30325T39	1.80	1.67	30325T45	2.10	1.88	30325T46	2.75	2.56
3/4"	5	22 1/4"	75	30325T69	2.58	2.40	30325T35	2.89	2.58	30325T89	3.81	3.40
7/8"	5	23 1/2"	130	30325T71	3.95	3.66	30325T36	4.25	3.81	30325T9	5.48	4.91
1"	6	31"	130	30325T72	4.66	4.28	30325T37	5.31	4.73	30325T91	6.99	6.28

	TYPE 304 STAINLESS STEEL						TYPE 316 STAINLESS STEEL					
					Each						Each	
For Rope Dia.	Min. Clips Req'd.	Rope Turn-back	Torque, ft.-lbs.		1-9	10-Up	For Rope Dia.	Min. Clips Req'd.	Rope Turn-back	Torque, ft.-lbs.	1-9	10-Up
1/16"	2	—	—	31985T19	$1.08	$0.95	5/64"	2	2 1/4"	3	$5.24	$4.37
1/8"	2	3 1/4"	—	31985T71	1.50	1.32	1/8"	2	3 1/4"	4.5	5.71	4.76
5/32"	2	3 3/4"	—	31985T81	1.73	1.53	5/32"	2	3 3/4"	7.5	5.82	4.84
3/16"	2	3 3/4"	—	31985T72	1.81	1.59	3/16"	2	3 3/4"	7.5	6.63	5.54
1/4"	2	4 3/4"	8	31985T73	2.29	2.05	1/4"	2	4 3/4"	15	7.54	6.29
5/16"	2	5 1/4"	15	31985T83	3.54	3.12	5/16"	3	5 1/4"	30	12.28	10.23
3/8"	2	6 1/2"	30	31985T74	6.94	6.12	3/8"	3	6 1/2"	45	16.23	13.97
1/2"	3	11 1/2"	45	31985T75	11.30	9.95	1/2"	3	11 1/2"	45	25.33	21.10
5/8"	3	12"	95	31985T26	21.19	18.67	5/8"	3	12"	95	37.56	31.30
3/4"	4	18"	130	31985T27	33.72	29.16	3/4"	4	18"	130	43.87	36.57
7/8"	4	19"	225	31985T28	57.03	49.32	7/8"	4	19"	225	60.24	50.20
1"	5	26"	225	31985T29	68.75	59.46	1"	5	26"	225	88.17	75.57

Warning! ***Do not use with coated wire rope unless coating is removed.***

For wire rope, see pages 1404-1409.

Wire Rope Clip and Thimble Kits—Not for Lifting

Each kit includes the required number of single-saddle clips for your rope diameter and one medium duty zinc-plated steel thimble (unless noted).

Malleable iron clips are good for applications where corrosion is not a factor. ***Forged steel*** clips are stronger than malleable iron clips and good for applications where corrosion is not a factor. ***Type 304 stainless steel*** clips offer excellent corrosion resistance.

For Rope Dia.	Rope Turnback	Torque, ft.-lbs.	Kits with Malleable Iron Clips: Clip Qty.		Each	Kits with Forged Steel Clips: Clip Qty.		Each	Kits with Type 304 Stainless Steel Clips ♦: Torque, ft.-lbs.	Clip Qty.		Each
1/8″	3 1/4″	4.5	3	3372T61	$2.87	2	3372T21	$5.18	—	2	3372T41	$4.61
3/16″	3 3/4″	7.5	3	3372T62	3.02	2	3372T22	5.63	—	2	3372T42	6.47
1/4″	4 3/4″	15	3	3372T63	3.20	2	3372T23	7.42	8	2	3372T43	8.00
5/16″	5 1/4″	30	3	3372T64	3.51	2	3372T24	7.77	15	2	3372T44	12.00
3/8″	6 1/2″	45	3	3372T65	4.41	2	3372T25	8.32	30	2	3372T45	22.97
7/16″	7″	65	3	3372T66	5.87	2	3372T26	12.77	45	2	3372T16■	34.91
1/2″	11 1/2″	65	4	3372T67	8.11	3	3372T27	17.64	45	3	3372T47●	55.53
5/8″	12″	95	4	3372T68	12.14	3	3372T28	23.85	95	3	3372T18	77.20
3/4″	18″	130	5	3372T69	19.02	4	3372T29	36.88	130	4	3372T19	109.75

♦ Thimble is Type 304 stainless steel. ■ For 7/16″ and 1/2″ dia. rope.
● For 1/2″ and 9/16″ dia. rope. Torque for 9/16″ dia. rope is 95 ft.-lbs.

Wire Rope Thimbles—Not for Lifting

By evenly distributing weight around the loop, these thimbles (when used with wire rope clips or compression sleeves) protect your wire rope assemblies from damage and wear.

Zinc-plated steel thimbles have good corrosion resistance in most environments. ***Hot-dipped galvanized steel*** thimbles have a thicker zinc coating and better corrosion resistance than zinc-plated thimbles. ***Type 304 stainless steel*** thimbles offer excellent corrosion resistance. ***Type 316 stainless steel*** thimbles provide maximum corrosion resistance.

Light Duty

Also known as thin pattern thimbles. All except 3436T12 meet AN-100.

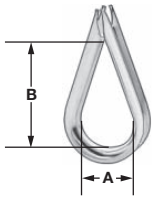

For Rope Dia.	(A)	(B)	Zinc-Plated Steel: Pkg. Qty.		Per Pkg.	Type 304 Stainless Steel: Pkg. Qty.		Per Pkg.
1/64″ to 3/64″	1/8″	3/16″	—	—	—	10	3436T12	$3.38
3/64″, 1/16″, 5/64″, 3/32″	3/8″	11/16″	10	8914T12	$2.71	10	8914T22	4.34
3/32″, 7/64″, 1/8″	3/8″	11/16″	10	8914T13	3.26	10	8914T23	5.70
5/32″	3/8″	13/16″	10	8914T14	3.92	10	8914T24	6.64
3/16″	1/2″	1″	10	8914T15	4.35	10	8914T25	7.59
7/32″, 1/4″	11/16″	1 7/16″	5	8914T16	2.85	1	8914T26	1.60
9/32″, 5/16″	7/8″	1 13/16″	5	8914T17	5.01	1	8914T28	2.33
3/8″	1″	2″	5	8914T18	8.20	1	8914T27	3.53

Light Duty Open Design

More space between ends allows for easier attachment of fittings.

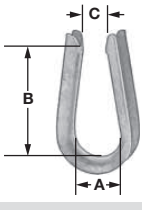

For Rope Dia.	(A)	(B)	(C)	Hot-Dipped Galvanized Steel	Each
1/4″	11/16″	1 7/16″	3/8″	30335T1	$0.72
5/16″	13/16″	1 1/2″	1/2″	30335T2	.76
3/8″	15/16″	1 3/4″	5/8″	30335T3	.85
1/2″	1 1/8″	2″	3/4″	30335T4	1.05
5/8″	1 3/8″	2 3/8″	1″	30335T5	2.44

Light Duty Endless Design

With closed ends, there are no sharp edges to snag and damage material.

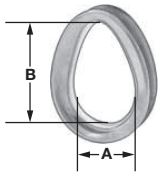

For Rope Dia.	(A)	(B)	Type 304 Stainless Steel	Each
1/8″	5/16″	5/8″	3634T71	$5.77
3/16″	11/16″	1 1/16″	3634T73	6.49
1/4″	13/16″	1 5/16″	3634T74	9.03
5/16″	1″	1 9/16″	3634T75	20.62

Medium Duty

Also known as standard pattern thimbles, these offer better wear resistance than light duty thimbles. Meet Fed. Spec. FF-T-276b.

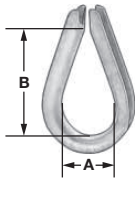

For Rope Dia.	Hot-Dipped Galvanized Steel: (A)	(B)		Each	Type 304 Stainless Steel: (A)	(B)		Each	Type 316 Stainless Steel: (A)	(B)		Each
3/32″	—	—	—	—	3/8″	9/16″	3868T41	$0.79	3/8″	9/16″	3868T21	$0.97
1/8″	11/16″	1 5/16″	3494T11	$0.63	3/8″	5/8″	3868T42	.84	3/8″	5/8″	3868T22	1.27
5/32″	—	—	—	—	1/2″	3/4″	3868T43	1.09	1/2″	3/4″	3868T23	1.72
3/16″	11/16″	1 5/16″	3494T12	.66	1/2″	13/16″	3868T44	1.21	1/2″	13/16″	3868T24	2.37
1/4″	11/16″	1 5/16″	3494T13	.70	9/16″	1″	3868T45	1.75	9/16″	1″	3868T25	2.93
5/16″	13/16″	1 1/2″	3494T14	.86	7/8″	1 1/2″	3868T47	2.40	7/8″	1 1/2″	3868T27	4.18
3/8″	15/16″	1 5/8″	3494T15	.91	1″	1 1/2″	3868T48	5.64	1″	1 1/2″	3868T28	6.72
1/2″	1 1/8″	1 7/8″	3494T16	.95	1 3/16″	2 1/16″	3868T49	7.15	1 3/16″	2 1/16″	3868T29	7.91
5/8″	1 3/8″	2 1/4″	3494T17	2.49	—	—	—	—	1 3/8″	2 1/4″	3868T31	11.98
3/4″	1 5/8″	2 1/2″	3494T18	3.29	1 3/4″	2 9/16″	3868T46	10.48	1 3/4″	2 9/16″	3868T26	13.30
7/8″	1 7/8″	3 1/2″	3494T19	5.06	2″	3″	3868T52	11.94	2″	3″	3868T32	13.97
1″	2 1/2″	4 1/4″	3494T21	5.65	2 1/16″	3 1/16″	3868T53	13.85	2 1/16″	3 1/16″	3868T33	16.22
1 1/8″ to 1 1/4″	2 3/4″	4 1/2″	3494T22	18.48	—	—	—	—	—	—	—	—

Heavy Duty

Also known as heavy pattern thimbles, these offer long-term wear resistance. Meet Fed. Spec. FF-T-276b.

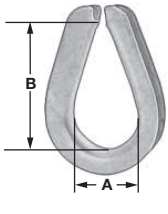

For Rope Dia.	Hot-Dipped Galvanized Steel: (A)	(B)		Each	Type 304 Stainless Steel: (A)	(B)		Each	Type 316 Stainless Steel: (A)	(B)		Each
1/4″	7/8″	1 5/8″	3495T14	$0.67	15/16″	1 5/8″	3495T44	$2.04	15/16″	1 5/8″	3495T52	$4.62
5/16″	1 1/16″	1 7/8″	3495T15	1.17	1 1/16″	1 7/8″	3495T45	2.64	1 1/16″	1 7/8″	3495T53	5.15
3/8″	1 1/8″	2 1/8″	3495T16	1.67	1 1/8″	2″	3495T46	5.53	1 1/8″	2″	3495T54	9.36
7/16″	1 1/4″	2 3/8″	3495T17	3.03	1 1/4″	2 3/8″	3495T39	9.07	1 1/4″	2 3/8″	3495T58	13.35
1/2″	1 1/2″	2 3/4″	3495T18	3.46	1 1/2″	2 5/8″	3495T47	13.88	1 1/2″	2 5/8″	3495T55	15.80
9/16″	1 1/2″	2 3/4″	3495T18	3.46	1 1/2″	2 15/16″	3495T41	12.31	1 1/2″	2 15/16″	3495T59	16.28
5/8″	1 3/4″	3 1/4″	3495T21	3.67	1 13/16″	3″	3495T51	15.90	1 13/16″	3″	3495T56	20.12
3/4″	2″	3 3/4″	3495T22	8.51	2″	3 13/16″	3495T49	35.90	2″	3 13/16″	3495T57	48.60
7/8″	2 1/4″	4 1/4″	3495T23	9.48	2 5/16″	4 1/16″	3495T42	42.18	2 5/16″	4 1/16″	3495T61	57.84
1″	2 1/2″	4 1/2″	3495T24	15.20	2 9/16″	4 13/16″	3495T43	55.90	2 9/16″	4 13/16″	3495T62	72.65

Warning! ***Do not use with coated wire rope unless coating is removed.***

For wire rope, see pages 1404-1409.

Compression Sleeves and Tools for Wire Rope

Compression Sleeves— Have a small profile and good connection strength for permanent installation. Must be compatible with the diameter and material of your uncoated rope.

Note: Sleeves are for use with the tools on this page or with Nicopress® tools.

Oval sleeves are ideal for creating loops or joining two wire ropes. All except aluminum meet MIL-STD 51844.

Note: All copper and stainless steel oval sleeves can be used in lifting applications. They must use the proper rope diameter and be properly installed. Test all assemblies for required strength before use.

Stop sleeves create a stop at the end of the wire rope. *Note:* Stop sleeves are not for lifting applications.

Compression Tools— Compress the sleeves onto wire rope. They must be compatible with the rope diameter and sleeve that they are being used with. All have metal handles and include a measuring gauge (unless noted) to ensure accurate sleeve compression.

Single-diameter tools compress one sleeve size.

Multidiameter tools compress more than one sleeve size. See the chart at right for oval and stop sleeve compatibility.

Hydraulic tools provide increased strength to compress larger sleeve sizes. All include a die for the sleeve material and size specified (unless noted); to use hydraulic tools with other sleeve materials and sizes, see additional dies sold separately on the following page.

MULTIDIAMETER TOOL COMPATIBILITY

Oval Sleeves for Rope Dia.	Sleeve Material	Multidiameter Tool Part No.
1/16″, 3/32″, 1/8″, and 5/32″	All except stainless steel	3582T1
1/8″, 5/32″, and 3/16″	All except stainless steel	3582T3
3/64″, 1/16″, and 3/32″	All	3582T5 ♦
1/8″, 3/16″, and 1/4″	All except stainless steel	3582T6
1/8″	All except stainless steel	3582T22
Stop Sleeves for Rope Dia.	**Sleeve Material**	**Multidiameter Tool Part No.**
1/16″	All except stainless steel	3582T1
3/64″ and 1/16″	All	3582T5
1/4″, 5/16″, and 3/8″	All except stainless steel	3582T6
3/32″, 1/8″, 5/32″, 3/16″, and 7/32″	All except stainless steel	3582T22

♦ Fits 3/64″ only in stainless steel.

Also Available: Replacement sleeve-compression measuring gauge. Please ask for 3377T13.

Oval Sleeve

Compressed Oval Sleeve

Stop Sleeve

Compressed Stop Sleeve

Pliers-Style Tool

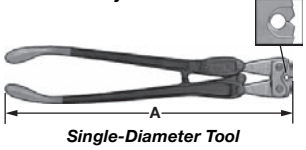

Single-Diameter Tool

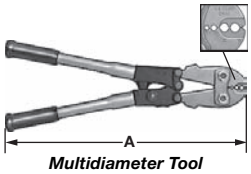

Multidiameter Tool

Hydraulic Hand Tool

Hydraulic Bench Tool

For Rope Dia.	Sleeve Length	Required No. of Compressions	SLEEVES Pkg. Qty.	SLEEVES Per Pkg.	COMPRESSION TOOLS Single Diameter (A)	COMPRESSION TOOLS Single Diameter Each	COMPRESSION TOOLS Multidiameter (A)	COMPRESSION TOOLS Multidiameter Each
Oval Sleeves and Compression Tools—For Lifting								
Copper Sleeves for Steel and Galvanized Wire Rope								
1/32″	1/4″	2	50	3897T31 $2.29	8 1/8″	3377T23● $42.09	—	—
3/64″	3/8″	3	50	3897T21 6.51	18 3/8″	3377T11 170.33	11 5/8″	3582T5 $142.83
1/16″	3/8″	1	50	3897T22 7.59	18 3/8″	3377T12 170.33	20″	3582T1 197.23
3/32″	3/8″	1	50	3897T23 9.31	18 3/8″	35155T13 170.33	20″	3582T1 197.23
1/8″	9/16″	3	25	3897T5 10.75	18 7/16″	35155T14 170.33	20″	3582T1 197.23
5/32″	5/8″	3	10	3897T6 4.95	18 5/8″	35155T15 170.33	20″	3582T1 197.23
3/16″	15/16″	4	10	3897T7 9.70	18 3/4″	35155T16 170.33	20 1/4″	3582T3 197.23
7/32″	7/8″	4	10	3897T8 10.57	18 1/4″	35155T17 170.33	—	—
1/4″	1 1/8″	3	10	3897T9 14.77	33″	3377T18 383.55	34″	3582T6 477.90
5/16″	1 1/16″	3	5	3897T11 13.24	33 7/16″	35155T19 383.55	—	—
3/8″	1 1/4″	1	2	3897T12 9.18	23″	3433T178▲ 1,696.02	—	—
Zinc-Plated Copper Sleeves for Steel and Galvanized Wire Rope								
1/32″	1/4″	1	50	3898T29 2.24	8 1/8″	3377T23● 42.09	—	—
3/64″	3/8″	2	50	3898T31 6.75	18 3/8″	3377T11 170.33	11 5/8″	3582T5 142.83
1/16″	3/8″	1	50	3898T32 7.10	18 3/8″	3377T12 170.33	20″	3582T1 197.23
3/32″	3/8″	1	50	3898T33 9.59	18 3/8″	35155T13 170.33	20″	3582T1 197.23
1/8″	9/16″	3	25	3898T14 9.78	18 7/16″	35155T14 170.33	20″	3582T1 197.23
5/32″	5/8″	3	10	3898T15 4.67	18 5/8″	35155T15 170.33	20″	3582T1 197.23
3/16″	15/16″	4	10	3898T16 8.42	18 3/4″	35155T16 170.33	20 1/4″	3582T3 197.23
7/32″	7/8″	4	10	3898T17 9.84	18 1/4″	35155T17 170.33	—	—
1/4″	1 1/8″	3	5	3898T18 7.18	33″	3377T18 383.55	34″	3582T6 477.90
5/16″	1 1/16″	3	2	3898T19 6.24	33 7/16″	35155T19 383.55	—	—
3/8″	1 1/4″	1	2	3898T21 7.30	23″	3433T178▲ 1,696.02	—	—
1/2″	1 7/8″	2	1	3898T2 7.83	23″	3433T197▲ 1,696.02	—	—
Tin-Plated Copper Sleeves for Stainless Steel Wire Rope								
3/64″	3/8″	1	50	3883T21 7.39	18 3/8″	3377T11 170.33	11 5/8″	3582T5 142.83
1/16″	3/8″	1	50	3883T22 8.08	18 3/8″	3377T12 170.33	20″	3582T1 197.23
3/32″	3/8″	2	50	3883T42 10.04	18 3/8″	35155T13 170.33	20″	3582T1 197.23
1/8″	9/16″	3	25	3883T43 10.23	18 7/16″	35155T14 170.33	20″	3582T1 197.23
5/32″	5/8″	3	10	3883T44 5.17	18 5/8″	35155T15 170.33	20″	3582T1 197.23
3/16″	15/16″	4	10	3883T45 11.66	18 3/4″	35155T16 170.33	20 1/4″	3582T3 197.23
7/32″	7/8″	4	10	3883T46 11.29	18 1/4″	35155T17 170.33	—	—
1/4″	1″	3	5	3883T47 8.60	33″	3377T18 383.55	34″	3582T6 477.90
5/16″	1 1/16″	3	2	3883T48 5.84	33 7/16″	35155T19 383.55	—	—
3/8″	1 3/16″	1	2	3883T71 8.72	23″	3433T178▲ 1,696.02	—	—
Type 304 Stainless Steel Sleeves for Stainless Steel Wire Rope								
1/32″	1/4″	1	10	3755T11 11.76	11 1/4″	3632T17 130.00	—	—
3/64″	3/8″	2	10	3755T12 12.37	18 3/8″	3632T11 170.33	11 5/8″	3582T5 142.83
1/16″	3/8″	1	10	3755T13 7.93	18 3/8″	3632T11 170.33	—	—
3/32″	3/8″	1	10	3755T14 8.97	18 3/8″	3632T12 170.33	—	—
1/8″	3/8″	1	5	3755T15 8.92	18 3/8″	3632T13 170.33	—	—
5/32″	11/16″	3	2	3755T16 6.00	18 7/16″	3632T14 170.33	—	—
3/16″	1″	4	2	3755T17 7.20	18 5/8″	3632T15 170.33	—	—
1/4″	1 1/8″	1	1	3755T1 6.49	33 1/8″	3433T173★ 3,240.47	—	—
Oval Sleeves and Compression Tools—Not for Lifting								
Aluminum Sleeves for Steel and Galvanized Wire Rope								
1/16″	3/8″	1	50	3896T31 6.34	18 3/8″	3377T12 170.33	20″	3582T1 197.23
3/32″	1/2″	2	50	3896T32 8.13	18 3/8″	35155T13 170.33	11 5/8″	3582T5 142.83
1/8″	5/8″	3	50	3896T3 10.25	18 7/16″	35155T14 170.33	20″	3582T1 197.23
5/32″	3/4″	3	10	3896T4 2.69	18 5/8″	35155T15 170.33	20″	3582T1 197.23
3/16″	7/8″	4	10	3896T5 3.73	18 3/4″	35155T16 170.33	20 1/4″	3582T3 197.23
1/4″	1″	3	10	3896T6 5.36	33″	3377T18 383.55	34″	3582T6 477.90
5/16″	1 3/8″	4	5	3896T7 4.22	33 7/16″	35155T19 383.55	—	—
3/8″	1 7/8″	2	5	3896T8 5.25	23″	3433T183▲ 1,696.02	—	—
1/2″	2 1/8″	3	5	3896T11 9.81	23″	3433T184▲ 1,696.02	—	—

● Pliers style. Does not include a sleeve-compression measuring gauge. ▲ Hydraulic hand tool.
★ Hydraulic bench tool.

(Continued on following page)

Warning! **Do not use with coated wire rope unless coating is removed.**

For wire rope, see pages 1404-1409.

Compression Sleeves and Tools for Wire Rope *(Continued from previous page)*

Stop sleeves create a stop at the end of the wire rope. *Note:* Stop sleeves are not for lifting applications.

Stop Sleeve

Compressed Stop Sleeve

For Rope Dia.	OD	OD (Compressed)	Sleeve Length	Required No. of Compressions	SLEEVES Pkg. Qty.	SLEEVES Per Pkg.	COMPRESSION TOOLS Single Diameter (A)	Single Diameter Each	Multidiameter (A)	Multidiameter Each
Stop Sleeves and Compression Tools—Not for Lifting										
Aluminum Sleeves for Steel and Galvanized Wire Rope										
1/16″	7/32″	3/16″	3/16″	1	50	3914T11 $7.55	18 3/8″	3377T12 $170.33	20″	3582T1 $197.23
3/32″	11/32″	9/32″	5/16″	1	50	3914T2 7.77	—	—	18 3/4″	3582T22 170.33
1/8″	11/32″	9/32″	5/16″	1	50	3914T3 7.97	—	—	18 3/4″	3582T22 170.33
5/32″	13/32″	11/32″	5/16″	1	50	3914T4 9.16	—	—	18 3/4″	3582T22 170.33
3/16″	7/16″	11/32″	5/16″	1	50	3914T5 9.36	—	—	18 3/4″	3582T22 170.33
1/4″	21/32″	19/32″	11/16″	2	10	3914T6 5.21	33″	3377T18 383.55	34″	3582T6 477.90
5/16″	11/16″	19/32″	11/16″	2	10	3914T7 5.97	33″	3377T18 383.55	34″	3582T6 477.90
Copper Sleeves for Steel and Galvanized Wire Rope										
1/32″	1/8″	—	1/4″	2	50	3926T42 6.60	8 1/8″	3377T23● 42.09	—	—
3/64″	3/16″	5/32″	3/16″	1	50	3926T43 6.80	18 3/8″	3377T11 170.33	11 5/8″	3582T5 142.83
1/16″	7/32″	3/16″	3/16″	1	50	3926T44 7.11	18 3/8″	3377T12 170.33	20″	3582T1 197.23
3/32″	11/32″	9/32″	5/16″	1	50	3926T32 9.24	—	—	18 3/4″	3582T22 170.33
1/8″	11/32″	9/32″	5/16″	1	50	3926T33 10.53	—	—	18 3/4″	3582T22 170.33
5/32″	7/16″	11/32″	5/16″	1	25	3926T34 8.60	—	—	18 3/4″	3582T22 170.33
3/16″	7/16″	11/32″	5/16″	1	25	3926T35 7.53	—	—	18 3/4″	3582T22 170.33
7/32″	7/16″	11/32″	5/8″	2	10	3926T36 4.96	—	—	18 3/4″	3582T22 170.33
1/4″	21/32″	19/32″	11/16″	2	5	3926T37 7.87	33″	3377T18 383.55	34″	3582T6 477.90
5/16″	21/32″	19/32″	11/16″	2	5	3926T38 8.07	33″	3377T18 383.55	34″	3582T6 477.90
3/8″	21/32″	19/32″	11/16″	2	5	3926T39 8.29	33″	3377T18 383.55	34″	3582T6 477.90
Zinc-Plated Copper Sleeves for Stainless Steel, Steel, and Galvanized Wire Rope										
1/32″	1/8″	—	1/4″	2	50	3936T33 8.87	8 1/8″	3377T23● 42.09	—	—
3/64″	3/16″	5/32″	3/16″	1	50	3936T34 9.15	18 3/8″	3377T11 170.33	11 5/8″	3582T5 142.83
1/16″	7/32″	3/16″	3/16″	1	50	3936T35 9.42	18 3/8″	3377T12 170.33	20″	3582T1 197.23
3/32″	11/32″	9/32″	5/16″	1	50	3936T13 11.54	—	—	18 3/4″	3582T22 170.33
1/8″	11/32″	9/32″	5/16″	1	50	3936T14 12.12	—	—	18 3/4″	3582T22 170.33
5/32″	7/16″	11/32″	5/16″	1	25	3936T15 9.92	—	—	18 3/4″	3582T22 170.33
3/16″	7/16″	11/32″	5/16″	1	25	3936T16 10.28	—	—	18 3/4″	3582T22 170.33
7/32″	7/16″	11/32″	5/8″	2	10	3936T17 6.19	—	—	18 3/4″	3582T22 170.33
1/4″	21/32″	19/32″	11/16″	2	5	3936T18 8.83	33″	3377T18 383.55	34″	3582T6 477.90
5/16″	21/32″	19/32″	11/16″	2	5	3936T19 9.05	33″	3377T18 383.55	34″	3582T6 477.90
3/8″	21/32″	19/32″	11/16″	2	5	3936T21 9.28	33″	3377T18 383.55	34″	3582T6 477.90

● Pliers style. Does not include a sleeve-compression measuring gauge.

Compression Sleeve Assortments for Wire Rope—*Not for Lifting*

Sleeves for the most popular rope diameters in convenient assortments. All come in a plastic case with a lid chart.

Aluminum Oval/Stop Kit

270 pieces for steel and galvanized wire rope.

For Rope Dia.	3/64″	1/16″	3/32″	1/8″	5/32″	3/16″	1/4″
Oval Sleeves (No.)	35	50	30	20	8	6	3
Stop Sleeves (No.)	—	50	30	20	8	8	2

30965T1 ..... Each $111.62

Copper Oval/Stop Kit

385 pieces for steel and galvanized wire rope.

For Rope Dia.	1/32″	3/64″	1/16″	3/32″	1/8″	5/32″	3/16″	1/4″
Oval Sleeves (No.)	40	35	50	30	20	8	6	3
Stop Sleeves (No.)	40	35	50	30	20	8	8	2

30965T2 ..... Each $127.12

Tin-Plated Copper Oval/Zinc-Plated Copper Stop Kit

305 pieces for stainless steel wire rope.

For Rope Dia.	3/64″	1/16″	3/32″	1/8″	5/32″	3/16″	1/4″
Oval Sleeves (No.)	35	50	30	20	8	6	3
Stop Sleeves (No.)	35	50	30	20	8	8	2

30965T3 ..... Each $130.24

Zinc-Plated Copper Oval/Stop Kit

385 pieces for steel and galvanized wire rope.

For Rope Dia.	1/32″	3/64″	1/16″	3/32″	1/8″	5/32″	3/16″	1/4″
Oval Sleeves (No.)	40	35	50	30	20	8	6	3
Stop Sleeves (No.)	40	35	50	30	20	8	8	2

30965T4 ..... Each $132.84

Compression Tools for Wire Rope

Multidiameter Hand Tools with Built-In Wire Rope Cutter

One tool, two great functions. These tools compress sleeves onto a variety of wire rope diameters plus cut the wire rope. All have hardened blades that surround and support the wire rope for a smooth, clean cut.

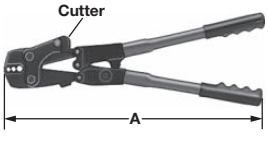

Tools for oval sleeves can be used with all sleeve materials except stainless steel.

Tools for stop sleeves can be used with all sleeve materials.

For Rope Dia.	(A)	Steel Handles	Steel Handles Each	Fiberglass Handles	Fiberglass Handles Each
For Oval Sleeves					
1/16″ to 5/32″	20″	3497T11	$276.61	3497T21	$336.61
1/8″, 5/32″, 3/16″	20 1/4″	3497T12	276.61	3497T22	336.61
For Stop Sleeves					
1/16″	20″	3497T11	276.61	3497T21	336.61

Hydraulic Hand and Bench Tools and Dies

Hydraulic tools offer increased strength to compress sleeves for wire rope up to 1/2″ diameter.

Hand Tool

Hand tools have a lightweight fiberglass handle and a replaceable cartridge that lasts for 10,000 to 12,000 compressions.

To Order: For hand tools with die and individual dies, please specify wire rope diameter, oval or stop sleeves, and the sleeve material being used.

Bench tools are for use with stainless steel oval sleeves.

To Order: For bench tools with die and individual dies, please specify wire rope diameter.

	Hand Tools	Hand Tools Each	Bench Tools	Bench Tools Each
Tool with Case (Die not incl.)	3433T11	$1,598.02	3433T12	$3,141.20
Tool and Die with Case	3433T17	1,696.02	—	—
Tool and Die	—	—	3433T18	3,240.47
Die	3433T69	176.87	3433T81	256.14
Repl. Cartridge for Tools	3433T13	151.76	—	—

Warning! ***Do not use with coated wire rope unless coating is removed.***

Corrosion-Resistant Socket-End Swage Fittings—*Not for Lifting*

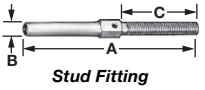

Stud Fitting

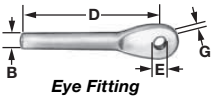

Eye Fitting

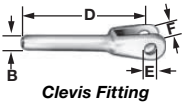

Clevis Fitting

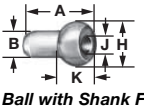

Ball with Shank Fitting

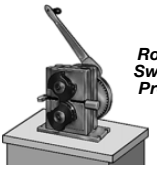

Roller Swage Press

Made of 300 series stainless steel, these rugged fittings require the use of a roller swage press (sold separately) to compress the socket onto wire rope.

Mil. Spec. Stud Fittings—Meet MS21259.

For Rope Dia.	Thread Size	(A)	(B)	(C)		Each
1/16″	6-40	2 1/2″	3/16″	1 1/16″	3870T21	$5.53
3/32″	10-32	2 7/8″	1/4″	1 3/16″	3870T22	5.73
1/8″	1/4″-28	3 5/16″	1/4″	1 3/8″	3870T23	7.73
5/32″	1/4″-28	3 5/8″	5/16″	1 3/8″	3870T27	7.73
3/16″	5/16″-24	4″	3/8″	1 1/2″	3870T25	10.04
1/4″	3/8″-24	4 15/16″	1/2″	1 3/4″	3870T26	25.53

Eye Fittings—Meet MS20668.

For Rope Dia.	(B)	(D)	(E)	(G)		Each
1/16″	3/16″	1 5/8″	3/16″	1/16″	3872T11	$6.09
3/32″	3/16″	2 1/16″	3/16″	1/8″	3872T12	6.42
1/8″	1/4″	2 5/16″	3/16″	3/16″	3872T13	7.91
5/32″	5/16″	2 11/16″	1/4″	3/16″	3872T14	11.00
3/16″	3/8″	3″	5/16″	1/4″	3872T15	16.36
1/4″	1/2″	3 3/4″	3/8″	5/16″	3872T17	28.00

Ball with Shank Fittings—Meet MS20664.

For Rope Dia.	(A)	(B)	(H)	(J)	(K)		Each
1/16″	1/4″	1/8″	1/4″	1/16″	1/8″	3869T61	$1.10
3/32″	3/8″	3/16″	5/16″	1/8″	1/8″	3869T62	1.65
1/8″	1/2″	1/4″	3/8″	1/8″	3/16″	3869T63	1.96
5/32″	5/8″	1/4″	7/16″	3/16″	1/4″	3869T64	2.66
3/16″	3/4″	5/16″	1/2″	3/16″	1/4″	3869T65	3.55
1/4″	1″	7/16″	5/8″	1/4″	5/16″	3869T67	9.46

Stud Fittings

For Rope Dia.	Thread Size	(A)	(B)	(C)		Each
1/16″	6-32	2 1/2″	3/16″	1 1/16″	3870T34	$5.54
3/32″	10-24	2 7/8″	1/4″	1 3/16″	3870T28	5.74
1/8″	1/4″-20	3 5/16″	1/4″	1 3/8″	3870T29	7.73
5/32″	1/4″-20	3 5/8″	5/16″	1 3/8″	3870T31	8.07
3/16″	5/16″-18	4″	3/8″	1 1/2″	3870T32	10.05
1/4″	3/8″-16	4 15/16″	1/2″	1 3/4″	3870T33	25.53

Clevis Fittings—Meet MS20667.

For Rope Dia.	(B)	(D)	(E)	(F)		Each
1/16″	3/16″	1 9/16″	3/16″	1/16″	3865T12	$11.53
3/32″	3/16″	1 15/16″	3/16″	1/8″	3865T13	12.02
1/8″	1/4″	2 3/8″	3/16″	3/16″	3865T14	16.24
5/32″	5/16″	2 11/16″	1/4″	3/16″	3865T15	20.60
3/16″	3/8″	3 1/16″	5/16″	1/4″	3865T16	27.20
1/4″	1/2″	3 13/16″	3/8″	5/16″	3865T18	44.98

Roller Swage Press and Dies

Roller Swage Press—Use on 1/16″ to 3/8″ diameter wire rope. Dies sold separately.

3429T4 ..... **Each** $5,026.40

Dies—For 1/16″ to 3/8″ dia. wire rope (unless noted). Set of two. **To Order:** Please specify wire rope diameter.

		Per Set
For Stud, Eye, and Clevis Fittings	3429T1	$626.97
For Ball with Shank Fittings	3429T2★	932.33

★ For 1/16″ to 1/4″ dia. wire rope.

Strong-Grip End Fittings—*For Lifting*

1 Pull the sleeve over the end of the wire rope.

2 Fray the end of the wire rope and insert plug.

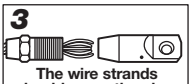

3 The wire strands should cover the plug.

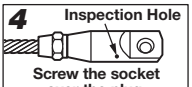

4 Screw the socket over the plug.

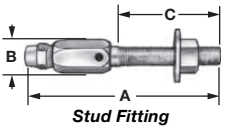

Stud Fitting

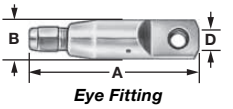

Eye Fitting

Top View

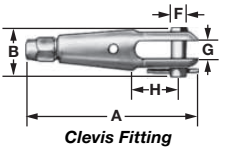

Clevis Fitting

No swage press required. These fittings install easily and have an inspection hole that allows you to check for proper installation—if you see wire strands, the plug was properly installed and has a secure grip. Use with 6×19 fiber core, 6×19 IWRC, 7×7, and 7×19 wire rope.

Note: Fittings used in lifting applications must be installed properly and should be tested before use.

Steel fittings are good where corrosion is not a factor. ***Zinc-plated steel*** fittings have good corrosion resistance in most environments. ***Type 316 stainless steel*** fittings provide maximum corrosion resistance.

Also Available: Replacement plugs. Please ask for 3475T1 and specify wire rope diameter.

Also Available: Assembly kits. Please ask for 3473T888 and specify wire rope diameter.

Stud Fittings

For Rope Dia.	Thread Size	(A)	(B)	(C)	Steel	Each	Zinc-Plated Steel	Each	Type 316 Stainless Steel	Each
3/64″ to 1/16″	10-32	3″	1/2″	1 9/16″	3475T15	$14.87	3475T16	$18.60	3475T14	$35.70
5/64″ to 3/32″	1/4″-28	3 1/2″	9/16″	1 7/8″	3475T52	16.91	3475T62	20.03	3475T28	40.61
1/8″	1/4″-20	4 1/8″	1/2″	2 1/2″	3475T885	18.69	3475T892	23.36	3475T898	44.89
1/8″	1/4″-28	3 1/2″	9/16″	1 7/8″	3475T53	17.80	3475T63	22.25	3475T29	42.75
3/16″	3/8″-16	6 5/16″	5/8″	4 1/8″	3475T886	26.62	3475T893	33.27	3475T899	63.91
3/16″	3/8″-24	4 3/16″	1 1/16″	2 3/16″	3475T181	25.35	3475T351	31.67	3475T742	60.87
1/4″	1/2″-13	8″	7/8″	5″	3475T887	28.48	3475T894	35.59	3475T901	68.36
1/4″	1/2″-20	7 1/16″	7/8″	4 9/16″	3475T211	27.12	3475T371	33.90	3475T852	65.09
3/8″	5/8″-11	8 1/8″	1″	4 3/4″	3475T889	44.98	3475T895	56.38	3475T902	108.02
3/8″	3/4″-16	8 3/16″	1 1/8″	4 15/16″	3475T241	42.85	3475T411	53.68	3475T872	102.87
1/2″	3/4″-10	10 5/8″	1 1/4″	6 3/8″	3475T904	63.87	3475T896	79.85	3475T903	150.53
1/2″	7/8″-14	11″	1 7/16″	6 15/16″	3475T261	60.84	3475T431	76.05	3475T882	121.31

Eye Fittings

For Rope Dia.	(A)	(B)	(D)	(E)	Steel	Each	Zinc-Plated Steel	Each	Type 316 Stainless Steel	Each
3/64″ to 1/16″	2 1/16″	1/2″	3/16″	3/16″	3474T31	$15.19	3474T61	$18.99	3474T41	$34.22
5/64″ to 3/32″	2 1/2″	5/8″	1/4″	1/4″	3474T32	16.11	3474T62	20.11	3474T42	36.42
1/8″	2 1/2″	5/8″	1/4″	1/4″	3474T33	16.29	3474T63	20.37	3474T43	36.83
3/16″	3″	3/4″	5/16″	5/16″	3474T181	18.36	3474T652	22.97	3474T452	41.58
1/4″	3 3/4″	15/16″	3/8″	3/8″	3474T211	19.20	3474T662	24.02	3474T462	43.47
3/8″	4 7/8″	1 3/16″	1/2″	7/16″	3474T241	30.21	3474T682	37.90	3474T482	68.55

Clevis Fittings

For Rope Dia.	(A)	(B)	(F)	(G)	(H)	Steel	Each	Zinc-Plated Steel	Each	Type 316 Stainless Steel	Each
3/64″ to 1/16″	2 1/16″	11/16″	3/16″	3/16″	3/8″	3473T51	$23.04	3473T61	$28.81	3473T71	$51.87
5/64″ to 3/32″	2 7/16″	13/16″	1/4″	1/4″	1/2″	3473T52	24.39	3473T62	30.50	3473T72	54.93
1/8″	2 7/16″	13/16″	1/4″	1/4″	1/2″	3473T53	24.67	3473T63	30.84	3473T73	55.51
3/16″	2 15/16″	1″	5/16″	5/16″	5/8″	3473T181	27.37	3473T381	34.84	3473T122	59.75
1/4″	3 11/16″	1 1/8″	3/8″	3/8″	3/4″	3473T211	29.11	3473T411	36.39	3473T132	68.49
3/8″	4 13/16″	1 1/2″	1/2″	7/16″	1″	3473T241	47.10	3473T441	58.92	3473T852	110.82

Warning! ***Do not use with coated wire rope unless coating is removed.***

For wire rope, see pages 1404-1409.

Quick-Grip End Fittings—Not for Lifting

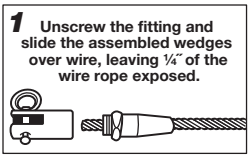

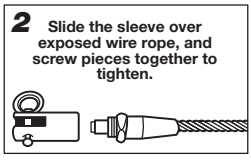

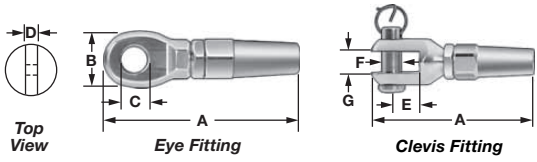

Install these fittings in a fraction of the time it takes to install other fittings. There's no need to fray the wire and only a wrench is required. All are made of corrosion-resistant Type 316 stainless steel. Use with all types of stainless steel wire rope, except fiber core and hollow core.

Eye Fittings

For Rope Dia.	(A)	(B)	(C)	(D)		Each
1/8″	2 1/4″	9/16″	1/4″	15/64″	35215T11	$20.26
5/32″	2 11/16″	3/4″	5/16″	17/64″	35215T21	26.52
3/16″	3 3/16″	7/8″	3/8″	5/16″	35215T22	33.27
1/4″	3 13/16″	1 1/8″	1/2″	23/64″	35215T23	41.89
5/16″	4 3/4″	1 3/16″	9/16″	13/32″	35215T24	63.56
3/8″	5 1/4″	1 1/2″	5/8″	33/64″	35215T25	93.73

Clevis Fittings

For Rope Dia.	(A)	(E)	(F)	(G)		Each
1/8″	2 1/2″	3/8″	5/16″	1/4″	35215T12	$26.32
5/32″	2 7/8″	1/2″	5/16″	5/16″	35215T26	39.83
3/16″	3 1/4″	9/16″	3/8″	3/8″	35215T27	53.73
1/4″	3 3/4″	3/4″	1/2″	1/2″	35215T28	68.83
5/16″	4 11/16″	13/16″	9/16″	9/16″	35215T29	102.99
3/8″	5 1/4″	15/16″	5/8″	5/8″	35215T31	144.44

Adjustable-Length Quick-Grip Fitting—Not for Lifting

Just insert the wire rope, tighten the fitting, and rotate the fitting body to increase tension and adjust the length of the wire rope. This universal fitting can be used in straight runs, along stairs, and up to a 45° angle. Made of Type 316 stainless steel.

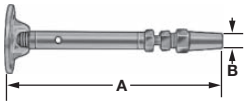

For Rope Dia.	(A) Min.	(A) Max.	(B)		Each
5/32″	4 3/4″	6″	7/32″	9161T1	$23.67

Wedge-Lock Clevis End Fittings—For Lifting

Also known as open wedge sockets, these fittings are easy to install and even easier to use. The wire rope clip secures the wire rope which is wedged against the clevis end fitting. The pin fits into the eye of the clevis end fitting to secure attachments for lifting and pulling applications. Clevis end fitting, wedge, pin, and wire rope clip are cast steel. Use with 6- to 8-strand wire rope.

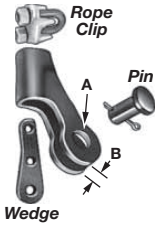

For Rope Dia.	(A)	(B)	Clevis End Fittings	Each	Replacement Wedges	Each	Replacement Pins	Each
3/8″	7/8″	13/16″	3484T71	$73.96	3484T81	$15.12	3484T47	$5.95
1/2″	1 1/16″	1″	3484T72	97.82	3484T82	16.10	3484T48	5.10
5/8″	1 7/32″	1 1/4″	3484T73	165.08	3484T83	21.42	3484T49	17.12
3/4″	1 13/32″	1 1/2″	3484T74	197.64	3484T84	29.30	3484T51	22.00

Wire Rope Cutting Bands

Prevent wire rope from fraying when you cut it. Simply install these tough yet flexible bands on each side of the cut location and fasten the grooved seam with pliers (not included). Also known as seizing bands. Made of zinc-plated steel.

For Rope Dia.	Band Length	Pkg. Qty.		Per Pkg.
3/16″	3/4″	50	3501T11	$8.29
1/4″	15/16″	50	3501T12	8.44
5/16″	1 1/8″	50	3501T13	10.11
3/8″	1 3/8″	50	3501T14	10.30
7/16″	1 9/16″	50	3501T15	12.67
1/2″	1 13/16″	50	3501T16	12.91
9/16″	2″	10	3501T17	3.38
5/8″	2 1/4″	10	3501T18	3.44
3/4″	2 11/16″	10	3501T21	4.38
1″	3 7/16″	10	3501T25	5.99

Corrosion-Resistant Bead Chain Lanyards—Not for Lifting

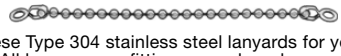

Choose these Type 304 stainless steel lanyards for your light duty applications. All have an eye fitting on each end.

Lg.	Approx. Bead Dia.	Eye Dia.		Each
4″	3/16″	3/16″	92730A110	$0.77
6″	3/16″	3/16″	92730A120	.87
8″	3/16″	3/16″	92730A130	1.15
12″	3/16″	3/16″	92730A150	1.55

Sash Chain Lanyards—Not for Lifting

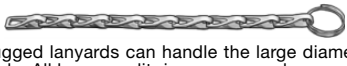

These rugged lanyards can handle the large diameter pins of your heavier loads. All have a split ring on one end.

Zinc-plated steel lanyards have good corrosion resistance in most environments.

Type 302 stainless steel lanyards offer excellent corrosion resistance.

Lg.	Thick.	Chain Trade Size	Split Ring Dia.	Zinc-Plated Steel	Each	Type 302 Stainless Steel	Each
4″	1/32″	8	5/8″	92692A110	$0.74	92692A540	$1.61
6″	1/32″	8	5/8″	92692A120	.79	92692A550	1.90
8″	1/32″	8	5/8″	92692A130	.86	92692A560	2.26
12″	1/32″	8	5/8″	92692A150	1.04	92692A551	2.97
18″	1/32″	8	5/8″	92692A160	1.24	92692A552	4.47

Nonconductive Nylon Lanyards—Not for Lifting

Loop/Eye

Not only do these lanyards protect your sensitive equipment from static, they are nonabrasive so they don't damage the surface of your material. All are made of lightweight molded black nylon. Maximum temperature is 160° F.

Fittings, Each End	Rope Dia.	Lg.	Loop Lg.	Eye Dia.	Pkg. Qty.		Per Pkg.
Loop/Loop	3/32″	10″	1 1/2″	—	10	2019T13	$6.29
Loop/Eye	3/32″	10″	2″	3/16″	10	2019T11	6.29
Eye/Eye	3/32″	10″	—	1/4″	25	2019T14	14.31

Warning! Do not use with coated wire rope unless coating is removed.

Load-Rated Wire Rope Lanyards—Not for Lifting

Eye/Eye Lanyard

FITTINGS

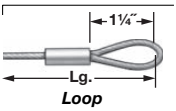

Loop

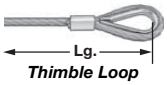

Thimble Loop

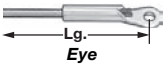

Eye

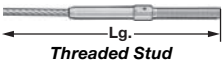

Threaded Stud

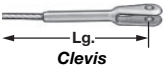

Clevis

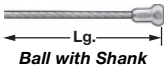

Ball with Shank

With larger diameter wire rope than our other wire rope lanyards, these handle heavy duty applications where a work load limit is required. They consist of 7×19 uncoated or clear-coated wire rope with a variety of fittings available at each end.

To Order: Sold in 1- to 10-ft. lengths. Please specify length.

Galvanized Steel Wire Rope Lanyards—*Loop* ends have copper sleeves. *Thimble loop* ends have copper sleeves and galvanized steel thimbles. *Eyes* are galvanized steel. *Clevis, stud,* and *ball with shank* have stainless steel fittings.

300 Series Stainless Steel Wire Rope Lanyards— Have Type 300 series stainless steel fittings and provide excellent corrosion resistance.

Coated Wire Rope— A nylon coating reduces abrasion. The coating adds 1/16″ to the rope diameter. Temp. range is –40° to +200° F.

Eye Fittings— For 1/8″ dia. rope have 1/4″ dia. eye; for 3/16″ dia. rope have a 1/2″ dia. eye.

Also Available: Additional lengths and fitting combinations. Please ask for 30645T999 for galvanized steel and 30745T999 for 300 series stainless steel and tell us what you need.

Fittings, Each End	Galvanized Steel Wire Rope — Uncoated: Base Price for 1-ft. Lg.	Uncoated: Extra Lg. Each	Uncoated: Extra Lg. Per Ft.	Coated: Base Price for 1-ft. Lg.	Coated: Extra Lg. Each	Coated: Extra Lg. Per Ft.	300 Series Stainless Steel Wire Rope — Uncoated: Base Price for 1-ft. Lg.	Uncoated: Extra Lg. Each	Uncoated: Extra Lg. Per Ft.	Coated: Base Price for 1-ft. Lg.	Coated: Extra Lg. Each	Coated: Extra Lg. Per Ft.
1/8″ Rope Dia.—*Work load limit is 400 lbs. for galvanized steel; 352 lbs. for 300 series stainless steel.*												
Loop/Loop	30645T101	$24.44	$1.74	30645T513	$25.34	$2.06	30745T101	$31.88	$3.97	30745T436	$33.66	$4.96
Loop/Eye	30645T102	21.86	1.74	30645T514	10.85	2.06	30745T102	26.60	3.97	30745T437	27.79	4.96
Loop/Clevis	30645T103	53.66	1.74	30645T515	52.23	2.06	30745T103	58.53	3.97	30745T438	59.94	4.96
Thimble Loop/Thimble Loop	30645T13	10.87	1.74	30645T17	12.29	2.06	30745T13	15.88	3.97	30745T17	19.24	4.96
Eye/Eye	30645T11	9.53	1.74	30645T15	9.92	2.06	30745T11	17.94	3.98	30745T15	20.13	4.96
Eye/Thimble Loop	30645T115	22.52	1.74	30645T517	23.19	2.06	30745T115	27.36	3.97	30745T441	27.85	4.96
Eye/Threaded Stud	30645T116	30.19	1.74	30645T518	29.56	2.06	30745T116	35.75	3.97	30745T442	36.10	4.96
Ball with Shank/Ball with Shank	30645T117	29.59	1.74	30645T52	28.41	2.06	30745T117	31.35	3.97	30745T443	30.16	4.96
Ball with Shank/Plain End	30645T118	15.56	1.74	30645T521	15.85	2.06	30745T118	17.23	3.97	30745T444	17.87	4.96
Ball with Shank/Threaded Stud	30645T119	40.80	1.74	30645T522	39.11	2.06	30745T119	42.69	3.97	30745T445	44.43	4.96
Threaded Stud/Threaded Stud	30645T121	52.03	1.74	30645T523	50.52	2.06	30745T121	52.71	3.97	30745T446	53.78	4.96
Threaded Stud/Clevis	30645T122	67.47	1.74	30645T524	64.42	2.06	30745T122	69.61	3.97	30745T727	68.01	4.96
3/16″ Rope Dia.—*Work load limit is 840 lbs. for galvanized steel; 740 lbs. for 300 series stainless steel.*												
Loop/Loop	30645T298	21.47	1.88	30645T654	23.00	2.15	30745T296	32.71	4.52	30745T578	34.80	5.23
Loop/Eye	30645T299	22.90	1.88	30645T655	24.88	2.15	30745T297	41.50	4.52	30745T579	43.46	5.23
Loop/Clevis	30645T3	73.46	1.88	30645T656	73.61	2.15	30745T298	72.49	4.52	30745T58	73.14	5.24
Thimble Loop/Thimble Loop	30645T14	14.88	1.88	30645T18	15.49	2.15	30745T14	23.49	4.51	30745T18	27.19	5.24
Eye/Eye	30645T303	27.81	1.88	30645T659	34.53	2.15	30745T12	38.18	4.51	30745T16	39.52	5.24
Eye/Thimble Loop	30645T302	28.17	1.88	30645T658	35.07	2.15	30745T3	40.21	4.52	30745T582	38.89	5.24
Eye/Threaded Stud	30645T304	48.64	1.88	30645T661	49.12	2.15	30745T301	48.96	4.52	30745T583	50.31	5.24
Ball with Shank/Ball with Shank	30645T305	28.37	1.88	30645T662	31.17	2.15	30745T302	24.34	4.52	30745T584	29.04	5.23
Ball with Shank/Plain End	30645T306	16.91	1.88	30645T663	18.23	2.15	30745T303	17.10	4.52	30745T585	18.92	5.23
Ball with Shank/Threaded Stud	30645T307	44.96	1.88	30645T664	47.53	2.15	30745T304	42.05	4.52	30745T586	40.84	5.24
Threaded Stud/Threaded Stud	30645T308	42.06	1.88	30645T665	43.67	2.15	30745T305	42.66	4.52	30745T587	45.63	5.24
Threaded Stud/Clevis	30645T309	73.68	1.88	30645T667	75.36	2.15	30745T306	59.87	4.52	30745T588	76.28	5.24

Wire Rope Lanyards—Not for Lifting

Eye/Eye Straight Lanyard

Eye/Eye Coiled Lanyard

Lanyards come in your choice of 7×7 uncoated or clear-coated wire rope with a variety of fittings available at each end. *Coated rope* reduces abrasion and adds 1/32″ to the rope diameter.

To Order: Please specify uncoated or coated rope.

Straight Lanyards—Coating is nylon. Temp. range is –40° to +200° F.

Coiled Lanyards—Coating is vinyl. Temp. range is –30° to +180° F.

Galvanized Steel Wire Rope Lanyards—Have aluminum sleeves and offer good corrosion resistance in most environments.

Eye fittings are zinc-plated copper; *ball with shank fittings* are Type 303 stainless steel.

Type 304 Stainless Steel Wire Rope Lanyards—Provide excellent corrosion resistance. Sleeves and fittings are 300 series stainless steel.

FITTINGS

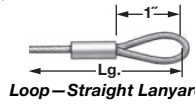

Loop—Straight Lanyard

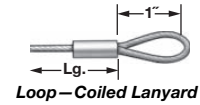

Loop—Coiled Lanyard

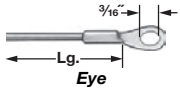

Eye

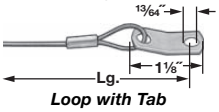

Loop with Tab

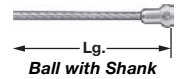

Ball with Shank

Straight Lanyards

Fittings, Each End	6″ Length	Each	8″ Length	Each	12″ Length	Each	18″ Length	Each	24″ Length	Each
With 3/64″ Dia. Galvanized Steel Wire Rope										
Loop/Loop	90312A150	$1.42	90312A200	$1.50	90312A280	$1.70	90312A360	$1.90	90312A440	$2.36
Loop/Eye	90312A160★	1.63	90312A240★	1.78	90312A290★	2.08	90312A370★	2.66	90312A450★	2.79
Loop/Loop w/ Tab	90312A170	2.07	90312A250	2.20	90312A300	2.50	90312A380	3.02	90312A460	3.43
Eye/Eye	90312A140	1.35	90312A190	1.44	90312A270	1.59	90312A350	1.81	90312A400	2.09
Ball with Shank/ Plain End	90312A180	2.00	90312A260	1.77	90312A340	1.80	90312A390	1.87	90312A470	2.23
With 3/64″ Dia. Type 304 Stainless Steel Wire Rope										
Loop/Loop	30345T23	1.86	30345T31	1.93	30345T36	2.07	30345T42	2.48	30345T47	2.49
Loop/Eye	30345T27★	1.98	30345T32★	2.19	30345T37★	2.38	30345T43★	2.60	30345T48★	3.28
Loop/Loop w/ Tab	30345T28	2.36	30345T33	2.44	30345T38	2.64	30345T44	2.96	30345T49	3.29
Eye/Eye	30345T16	1.79	30345T3	1.84	30345T35	1.97	30345T41	2.36	30345T46	2.30
Ball with Shank/ Plain End	30345T29	1.87	30345T34	1.90	30345T39	2.03	30345T45	2.44	30345T51	2.74

★ Length does not include 1″ loop.

Coiled Lanyards with 1/16″ Dia. Galvanized Wire Rope

Fittings, Each End	12″ Extended Length	Each	18″ Extended Length	Each	24″ Extended Length	Each	36″ Extended Length	Each	48″ Extended Length	Each
Loop/Loop	90312A102	$5.32	90312A107	$5.51	90312A113	$5.57	90312A118	$5.62	90312A124	$5.76
Loop/Eye	90312A101	5.30	90312A106	5.17	90312A112	5.44	90312A117	5.59	90312A123	5.72
Loop/Loop w/ Tab	90312A103	6.94	90312A108	7.02	90312A114	7.10	90312A119	7.53	90312A125	7.72
Eye/Eye	90312A184	4.87	90312A105	4.93	90312A111	5.08	90312A116	5.13	90312A122	5.27

Lanyard Kits—*Not for Lifting*

Everything you need to create your own lanyards. Temperature range is 0° to 120° F.

Light Duty Kits—Contain 1/32″ dia. 1×7 Type 302 stainless steel wire rope with black or clear nylon coating, 25 brass sleeves, and a combination compression tool/wire cutter.

Wire rope with black coating has black-oxide brass sleeves. *Wire rope with clear coating* has nickel-plated brass sleeves.

Heavy Duty Kit

Heavy Duty Kits—Contain 1/16″ dia. 7×7 wire rope with a clear nylon coating, 50 aluminum sleeves, 20 zinc-plated copper eye fittings, 10 Type 304 stainless steel tabs, and a compression tool.

Wire Rope	Rope Lg., ft.		Each
Light Duty Kits			
Type 302 SS with Black Coating	30	97840A680	$14.57
Type 302 SS with Clear Coating	30	97840A670	14.57
Heavy Duty Kits			
Galvanized Steel	25	97840A660	46.91
Type 304 Stainless Steel	20	97840A860	52.78

Individual Components

	Pkg. Qty.		Per Pkg.
For Light Duty Kits			
Black-Oxide Brass Sleeves	25	97840A430	$2.70
Nickel-Plated Brass Sleeves	25	97840A420	2.70
			Each
30-ft. Type 302 SS Wire Rope w/Black Coating	—	97840A570	$3.52
30-ft. Type 302 SS Wire Rope w/Clear Coating	—	97840A560	3.52
Combination Compression Tool/Wire Cutter	—	97840A410	11.78
For Heavy Duty Kits			**Per Pkg.**
Aluminum Sleeves	10	97840A450	2.19
Zinc-Plated Copper Eye Fittings	10	97840A470	1.80
Type 304 Stainless Steel Tabs	10	97840A460	7.12
			Each
25-ft. Galvanized Steel Wire Rope	—	97840A440	$6.25
25-ft. Type 304 Stainless Steel Wire Rope	—	97840A490	11.66
Compression Tool	—	97840A480	14.40

Optional Attachments and Accessories

		Each
Type 316 Stainless Steel Split Ring	90905A655	$0.66
1/4″ Dia. Zinc-Plated Steel Quick-Release Pin	98320A130	1.45

Oblong Links with Coupling Links—*For Lifting*

Ideal for three- and four-leg slings, the large coupling links attached to the oblong link reduce rubbing and twisting. All links are welded alloy steel. A connector (not included, see page 1424) must be used to connect the coupling links to the chain or rope.

Note: Work load limits are based on a 60° lifting angle. Do not use a greater lifting angle than 60°. Work load limit is for links only. The type of chain or rope used will determine the ultimate work load limit.

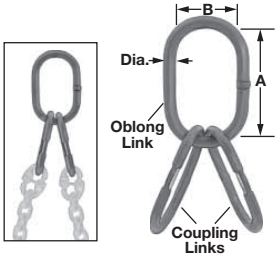

For Chain Trade Size	Oblong Link Dia.	Oblong Link (A)	Oblong Link (B)	Coupling Links (A)	Coupling Links (B)	Work Load Limit, lbs.		Each
Ultramax (Grade 120)—*Blue Powder-Coated Finish*								
9/32″	1 1/16″	7 1/2″	4 5/16″	2 3/4″	1 5/16″	13,500	8472T11	$106.48
3/8″	1 5/16″	9 1/16″	5 1/8″	3 5/16″	1 9/16″	27,500	8472T12	191.28
1/2″	1 1/2″	10 13/16″	5 7/8″	5 1/2″	2 9/16″	46,500	8472T13	319.08
Supermax (Grade 100)—*Yellow Powder-Coated Finish*								
7/32″	3/4″	5 7/8″	3 1/2″	4 11/16″	2 13/16″	11,000	7163T11	83.33
9/32″	7/8″	6 5/16″	3 11/16″	5 1/2″	3 1/8″	17,600	7163T12	120.27
5/16″	1″	7 1/2″	4 5/16″	5 7/8″	3 1/2″	21,300	7163T13	154.13
3/8″	1 3/16″	7 7/8″	4 11/16″	6 5/16″	3 11/16″	35,200	7163T14	197.89
1/2″	1 5/8″	9 13/16″	5 7/8″	7 7/8″	4 11/16″	57,200	7163T15	340.32
5/8″	2″	11 13/16″	7 7/8″	7 7/8″	4 11/16″	77,000	7163T16	517.34
High Strength (Grade 80)—*Orange Powder-Coated Finish*								
7/32″	5/8″	5 5/16″	3″	4 13/16″	2 11/16″	7,200	8948T12	68.62
9/32″	3/4″	6 5/8″	3 11/16″	5 5/16″	3″	11,200	8948T13	80.17
3/8″	1″	7 1/2″	4 5/16″	6 5/8″	3 11/16″	21,200	8948T14	113.16
1/2″	1 1/4″	9 1/4″	5 5/16″	7 1/2″	4 5/16″	29,920	8948T15	147.76
5/8″	1 3/4″	12 7/8″	7 3/8″	9 1/4″	5 5/16″	57,720	8948T16	447.82

Oblong and Pear-Shaped Links—*For Lifting*

Use as a master link in a sling assembly or anywhere large links are required.

Note: Work load limit is for links only. The type of chain or rope used will determine the ultimate work load limit.

Weldless Links—Offer greater strength than welded links. Links are forged.

Pear-Shaped Links—Provide additional room for multiple connectors.

Ultramax (Grade 120) are made of alloy steel.

Supermax (Grade 100) are made of alloy steel.

High-Strength (Grade 80) links are the most commonly used links for lifting applications. Made of alloy steel.

Corrosion-resistant (Grade 50) links are Type 316 (Ti) stainless steel, except *30765T8* and *T85* are Type 316L. They resist corrosion, rust, and salt water.

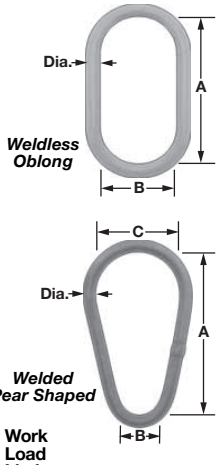

For Chain Trade Size: Single Leg	Double Leg	Dia.	(A)	(B)	(C)	Work Load Limit, lbs.		Each
Oblong Links								
Welded Ultramax (Grade 120)—*Blue Powder-Coated Finish*								
9/32″	—	1/2″	4 5/8″	2 3/4″	—	6,100	5512T11	$20.83
3/8″	—	3/4″	6 1/4″	3 3/4″	—	12,800	5512T12	46.03
1/2″	—	1″	7 1/2″	4 1/4″	—	30,000	5512T13	94.01
Welded Supermax (Grade 100)—*Plain Finish*								
7/32″	—	3/8″	3 1/2″	2 1/2″	—	3,800	3119T2	11.67
9/32″	7/32″	1/2″	4 5/8″	2 3/4″	—	6,100	3119T3	15.80
5/16″	9/32″	5/8″	5 1/2″	3 1/8″	—	8,400	3119T11	23.53
3/8″	5/16″	3/4″	6 1/4″	3 3/4″	—	12,800	3119T5	31.27
1/2″	3/8″	7/8″	6 1/4″	4 1/4″	—	18,500	3119T6	40.94
5/8″	1/2″	1″	7 1/2″	4 1/4″	—	30,000	3119T12	71.14
3/4″	5/8″	1 1/4″	9″	5 1/8″	—	45,000	3119T13	125.51
7/8″	3/4″	1 1/2″	10 3/4″	5 7/8″	—	61,000	3119T14	228.54
Welded High Strength (Grade 80)—*Plain Finish*								
7/32″	7/32″	3/8″	3″	1 1/2″	—	3,600	3568T38	26.02
9/32″	9/32″	1/2″	5″	2 1/2″	—	5,000	3568T39	25.68
5/16″, 3/8″	5/16″, 3/8″	3/4″	5 1/2″	2 3/4″	—	15,000	3568T41	28.61
1/2″, 5/8″	1/2″	1″	7″	3 1/2″	—	22,500	3568T36	43.69
3/4″	5/8″	1 1/4″	8 3/4″	4 3/8″	—	32,500	3568T37	67.88
Weldless High Strength (Grade 80)—*Silver Painted*								
1/4″, 9/32″	1/4″, 9/32″	5/8″	5″	2 3/4″	—	7,400	31195T31	23.46
5/16″	5/16″	5/8″	6″	3″	—	9,000	31195T32★	27.48
3/8″	3/8″	3/4″	6″	3 1/4″	—	9,900	31195T51	29.75
5/8″	1/2″	1″	7 1/2″	4 1/4″	—	26,000	31195T24	56.00
3/4″	5/8″	1 1/4″	9 1/2″	5 1/2″	—	39,100	31195T35	90.57
Welded Corrosion Resistant (Grade 50)—*Plain Finish*								
3/16″, 7/32″	3/16″, 7/32″	3/8″	3 1/8″	1 7/8″	—	1,900	30765T8	26.55
9/32″	—	1/2″	4 1/4″	2 3/8″	—	2,900	30765T85	27.39
—	9/32″	5/8″	4 1/4″	2 3/8″	—	3,800	30765T9	54.08
3/8″	—	5/8″	5 1/4″	2 7/8″	—	4,400	30765T91	59.88
1/2″	3/8″	7/8″	6 1/4″	3 1/2″	—	7,500	30765T93	75.83
5/8″	1/2″	1″	7″	3 7/8″	—	12,100	30765T94	128.38
—	5/8″	1 1/4″	7 7/8″	4 1/4″	—	18,700	30765T95	222.40
Pear-Shaped Links								
Welded High Strength (Grade 80)—*Plain Finish*								
9/32″	9/32″	1/2″	6″	1 1/2″	3″	4,100	3570T34	30.40
5/16″, 3/8″	5/16″, 3/8″	3/4″	6″	1 3/4″	3″	13,200	3570T35	45.65
1/2″, 5/8″	1/2″	1″	8″	2 1/2″	4″	22,500	3570T36	54.65
3/4″	5/8″	1 1/4″	9″	3″	6″	32,500	3570T37	80.21
7/8″	3/4″	1 1/2″	12″	3″	6″	52,700	3570T42	106.22
1″	7/8″	1 3/4″	12″	4″	7″	73,500	3570T39	187.96
1 1/4″	1″	2″	14″	4″	7″	88,900	3570T43	217.33

★ Gold painted.

Chain Sling Identification Tag

Front ***Back***

A slot in the hole makes this tag easy to attach to a sling link. Use a permanent marker or 1/4″ to 3/8″ high stamps to apply markings. Tag is made of steel. Attaching a tag to a chain sling is required for meeting OSHA specification 1910.184.

Hole Dia.	Overall Size, Lg.×Ht.×Thick.	Pkg. Qty.		Per Pkg.
1 1/16″	4 1/8″×1 1/2″×1/8″	5	8893T1	$14.49

Warning! ***Never exceed work load limits.***

Figure-Eight Connectors—For Lifting

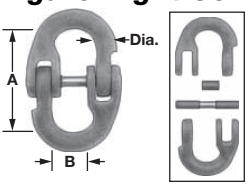

Assemble these connectors with a hammer and then use them to attach hooks, rings, master links, and other end fittings to chain or wire rope. All are forged.

Removable Connectors—Also known as hammer locks.

Nonremovable Connectors—Provide security and must be cut or burned off to be removed.

Ultramax (Grade 120) are made of alloy steel and can be reused.

Supermax (Grade 100) are made of alloy steel and can be reused. *Black super-corrosion-resistant* connectors have a dual-coating for enhanced corrosion resistance.

High-Strength (Grade 80) connectors are the most commonly used connectors for lifting applications. They are made of alloy steel and can be reused.

Corrosion-resistant (Grade 50) links are made of Type 316 (Ti) stainless steel and resist corrosion, diluted acids, pitting, rust, and salt water. Not for reuse.

For Chain Trade Size	Dia.	(A)	(B)	Work Load Limit, lbs.		Each
Removable Connectors						
Ultramax (Grade 120)—*Blue Powder-Coated Finish*						
9/32″	7/16″	2″	5/8″	5,200	**5514T3**	$25.59
3/8″	5/8″	2 3/4″	13/16″	10,600	**5514T4**	33.87
1/2″	13/16″	3 3/4″	1 1/64″	17,900	**5514T5**	59.42
Supermax (Grade 100)—*Black Super-Corrosion-Resistant Finish*						
7/32″	5/16″	1 3/4″	9/16″	2,700	**33585T91**	23.45
9/32″	3/8″	2″	5/8″	4,300	**33585T62**	24.55
5/16″	7/16″	2 7/16″	3/4″	5,700	**33585T92**	28.19
3/8″	1/2″	2 13/16″	15/16″	8,800	**33585T64**	32.63
1/2″	3/4″	3 7/16″	1 1/16″	15,000	**33585T72**	48.73
5/8″	53/64″	4 1/16″	1 5/16″	22,600	**33585T66**	63.84
3/4″	31/32″	4 1/2″	1 5/8″	35,300	**33585T93**	91.81
7/8″	1 9/64″	5 5/16″	1 7/8″	42,700	**33585T94**	159.00
Supermax (Grade 100)—*Orange Powder-Coated Finish*						
7/32″	5/16″	1 3/4″	9/16″	2,700	**33585T81**	20.93
9/32″	3/8″	2″	5/8″	4,300	**33585T42**	21.49
5/16″	7/16″	2 7/16″	3/4″	5,700	**33585T82**	25.00
3/8″	1/2″	2 13/16″	15/16″	8,800	**33585T44**	25.78
1/2″	3/4″	3 7/16″	1 1/16″	15,000	**33585T52**	43.34
5/8″	53/64″	4 1/16″	1 5/16″	22,600	**33585T46**	57.95
3/4″	31/32″	4 1/2″	1 5/8″	35,300	**33585T83**	83.50
7/8″	1 9/64″	5 5/16″	1 7/8″	42,700	**33585T84**	148.20
High Strength (Grade 80)—*Plain Finish*						
7/32″	1/4″	1 3/8″	1/2″	2,100	**3578T13**	14.90
9/32″	5/16″	1 15/16″	11/16″	3,500	**3578T14**	17.89
3/8″	1/2″	2 3/8″	7/8″	7,100	**3578T15**	19.07
1/2″	11/16″	3 3/8″	1 3/8″	12,000	**3578T16**	31.58
5/8″	13/16″	4 1/16″	1 11/16″	18,100	**3578T17**	38.85
3/4″	15/16″	4 3/4″	2″	28,300	**3578T18**	52.48
7/8″	1 3/64″	5 1/8″	2 1/4″	34,200	**3578T19**	79.36
Corrosion Resistant (Grade 50)—*Plain Finish*						
3/16″	9/32″	1 7/16″	1/2″	1,100	**30915T21**	49.46
9/32″	11/32″	2 1/8″	5/8″	2,200	**30915T22**	60.28
3/8″	33/64″	2 7/8″	15/16″	4,400	**30915T23**	74.82
1/2″	43/64″	3 5/8″	1 1/8″	7,100	**30915T24**	110.98
5/8″	53/64″	4 1/16″	1 7/16″	11,000	**30915T25**	195.01
Nonremovable Connectors						
Supermax (Grade 100)—*Orange Powder-Coated Finish*						
9/32″	25/64″	2″	5/8″	4,300	**6070T52**	20.10
3/8″	1/2″	2 13/16″	7/8″	8,800	**6070T53**	22.18
1/2″	3/4″	3 7/16″	1 1/16″	15,000	**6070T54**	39.43
5/8″	53/64″	4 1/16″	1 5/16″	22,600	**6070T55**	58.04

Pear-Shaped Links with Removable Connector—For Lifting

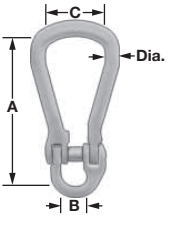

By having a built-in connector, these master links eliminate the need for a separate sling link and connector. The design allows easy access to the inside of the master link, and the built-in connector makes size selection easy. Made of forged high-strength (Grade 80) alloy steel with a yellow powder-coated finish.

For Chain Trade Size	Dia.	(A)	(B)	(C)	Work Load Limit, lbs.		Each
9/32″	9/16″	5″	19/32″	2″	3,500	**3697T81**	$56.29
3/8″	11/16″	6 19/64″	51/64″	2 19/32″	7,100	**3697T82**	85.45
1/2″	7/8″	7 13/32″	1″	2 51/64″	12,000	**3697T83**	112.40

All-In-One Length-Adjusting Chain Fittings—For Lifting

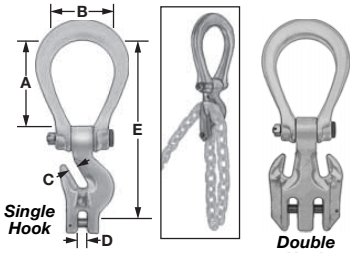

Create your own adjustable-length chain sling. The master link is pear shaped with a clevis pin and has a grab hook for adjusting the length of the chain. All are made of forged alloy steel with a silver-painted finish. Use with supermax (Grade 100) and high-strength (Grade 80) chain.

For Chain Trade Size	(A)	(B)	(C)	(D)	(E)	Work Load Limit, lbs.		Each
Single Hook								
1/4″	3 7/8″	3″	7/16″	3/8″	8 3/16″	4,300	**9168T1**	$59.23
5/16″	3 7/8″	3″	7/16″	3/8″	8 3/16″	5,700	**9168T2**	60.31
3/8″	4 13/16″	3 1/2″	1/2″	7/16″	10 1/16″	8,800	**9168T3**	108.16
1/2″	6″	4 1/8″	5/8″	9/16″	12 7/8″	15,000	**9168T4**	139.11
5/8″	6 7/8″	4 3/4″	3/4″	11/16″	15 1/4″	22,600	**9168T5**	183.91
Double Hook								
1/4″	3 7/8″	3″	7/16″	3/8″	8 3/16″	8,600	**9168T6**	67.50
5/16″	3 7/8″	3″	7/16″	3/8″	8 3/16″	11,400	**9168T7**	68.73
3/8″	4 13/16″	3 1/2″	1/2″	7/16″	10 1/16″	17,600	**9168T8**	160.12
1/2″	6″	4 1/8″	5/8″	9/16″	12 7/8″	30,000	**9168T9**	199.74
5/8″	6 7/8″	4 3/4″	3/4″	11/16″	15 1/4″	45,200	**9168T11**	292.55

Chain Sling Saddle Links—For Lifting

Create slings quickly and easily. Slots in the saddle firmly hold chain for control of unbalanced loads. Links are welded supermax (Grade 100) alloy steel.

Note: Work load limits are based on a 60° lifting angle. Do not use a greater lifting angle than 60°. Work load limit is for links only. The type of chain or rope used will determine the ultimate work load limit.

One slot creates a two-leg sling; ***two slots*** create a four-leg sling.

For Chain Trade Size	Dia.	(B)	Work Load Limit, lbs.		Each
With One Slot					
9/32″	37/64″	2 1/2″	7,400	**3660T31**	$158.60
3/8″	13/16″	3″	15,200	**3660T32**	186.91
With Two Slots					
9/32″	13/16″	3″	11,200	**3660T41**	241.13
3/8″	1 1/8″	4″	22,800	**3660T42**	349.20

Rings—For Lifting

Rings rotate for even wear. All are welded. ***High-strength (Grade 80)*** rings are made of alloy steel. ***Corrosion-resistant (Grade 50)*** rings are made of Type 316L stainless steel.

Dia.	(A)	Work Load Limit, lbs.		Each
High Strength (Grade 80)				
1/2″	2 1/2″	4,300	**3569T21**	$39.68
3/4″	4″	8,600	**3569T22**	53.31
7/8″	4″	13,200	**3569T23**	66.24
1″	4″	19,000	**3569T24**	81.95
1 1/4″	5″	24,000	**3569T25**	88.91
Corrosion Resistant (Grade 50)				
3/8″	2″	750	**33555T71**	37.33
1/2″	2 1/2″	1,300	**33555T72**	50.57
5/8″	3″	1,850	**33555T73**	62.78

D-Rings—Not for Lifting

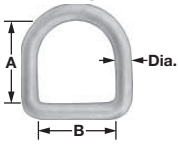

Great for binding, pulling, and towing applications. All are forged. ***Zinc-plated steel*** D-rings offer good corrosion resistance in most environments. ***Type 316L stainless steel*** D-rings offer maximum corrosion resistance.

Dia.	(A)	(B)	Work Load Limit, lbs.		Each
Zinc-Plated Steel					
1/2″	2 1/2″	2 3/8″	4,080	**31215T21**	$6.50
5/8″	3″	3″	6,130	**31215T22**	10.29
3/4″	3″	3″	9,120	**31215T23**	13.11
1″	4″	3″	15,586	**31215T24**	17.47
Type 316L Stainless Steel					
7/32″	3/4″	1 1/8″	1,100	**30375T21**	16.16
5/16″	3/4″	1 3/8″	1,650	**30375T22**	21.33
3/8″	1 1/8″	1 7/8″	3,000	**30375T23**	32.53

Warning! ***Never exceed work load limits.***

Oblong and Pear-Shaped Links—Not for Lifting

All are forged steel.

Pear-shaped links provide additional room for multiple connectors.

Hot-dipped galvanized steel links offer good corrosion resistance.

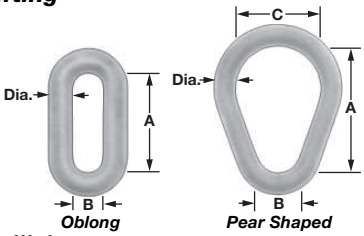

Oblong *Pear Shaped*

Dia.	(A)	(B)	(C)	Work Load Limit, lbs.	Red Painted	Each	Hot-Dipped Galvanized	Each
Oblong Links								
5/16"	1 3/4"	1/2"	—	2,500	3566T14	$6.16	3566T44	$6.49
3/8"	1 7/8"	9/16"	—	3,800	3566T15	6.80	3566T45	7.02
1/2"	2 3/8"	3/4"	—	6,500	3566T16	8.13	3566T46	8.38
5/8"	3 1/4"	1"	—	9,300	3566T17	12.20	3566T47	13.22
7/8"	5 1/8"	2"	—	12,000	3566T19	35.87	3566T49	38.50
3/4"	3 1/2"	1 1/8"	—	14,000	3566T18	17.68	3566T48	19.27
1"	5 3/4"	2 1/4"	—	15,200	3566T21	58.00	3566T51	65.31
1 1/4"	7"	2 1/2"	—	26,400	3566T22	92.19	3566T52	101.31
Pear-Shaped Links								
3/8"	2 1/4"	3/4"	1 1/2"	1,800	3567T14	6.26	3567T31	6.55
1/2"	3"	1"	2"	2,900	3567T15	7.82	3567T32	8.22
5/8"	3 3/4"	1 1/4"	2 1/2"	4,200	3567T16	12.00	3567T33	12.94
3/4"	4 1/2"	1 1/2"	3"	6,000	3567T17	17.29	3567T34	18.96
7/8"	5 1/4"	1 3/4"	3 1/2"	8,300	3567T18	27.27	3567T35	29.76
1"	6"	2"	4"	10,800	3567T19	42.96	3567T36	46.11
1 1/4"	7 3/4"	2 1/2"	5"	16,750	3567T21	76.67	3567T37	85.10

Rings—Not for Lifting

Rings wear evenly. Use in binding, pulling, and towing applications. All are welded.

Steel rings are good where corrosion is not a factor. ***Zinc-plated steel*** rings offer good corrosion resistance in most environments. ***Hot-dipped galvanized steel*** rings have better corrosion resistance than zinc-plated rings. ***Type 304 stainless steel*** rings offer excellent corrosion resistance.

Dia.	(A)	Work Load Limit, lbs.		Each
Steel				
3/16"	1 1/4"	200	3564T31	$0.57
3/16"	2"	150	3564T24	.63
1/4"	1 1/2"	450	3564T25	.72
1/4"	2"	350	3564T26	.90
5/16"	2"	600	3564T14	1.20
3/8"	2"	900	3564T16	1.72
3/8"	3"	700	3564T17	2.04
3/8"	4"	550	3564T18	2.62
1/2"	2 1/2"	1,400	3564T21	4.76
1/2"	3"	1,200	3564T22	5.75
5/8"	4"	1,700	3564T23	9.86
Zinc-Plated Steel				
3/16"	1 1/4"	200	3564T41	.69
3/16"	2"	150	3564T53	.81
1/4"	1 1/2"	450	3564T43	1.09
1/4"	2"	350	3564T44	1.29
5/16"	2"	600	3564T45	1.55
3/8"	2"	900	3564T46	1.97
3/8"	3"	700	3564T47	2.39
3/8"	4"	550	3564T48	3.10
1/2"	2 1/2"	1,400	3564T49	5.11
1/2"	3"	1,200	3564T51	6.18
5/8"	4"	1,700	3564T52	11.43
Hot-Dipped Galvanized Steel				
1/4"	1 1/2"	480	3068T21	1.22
1/4"	2"	390	3068T28	1.40
5/16"	2"	710	3068T29	1.94
3/8"	2"	945	3068T24	2.82
1/2"	3"	1,450	3068T25	4.02
1/2"	4"	1,215	3068T26	5.08
5/8"	4"	1,800	3068T27	12.56
Type 304 Stainless Steel				
3/16"	3/4"	500	3769T71	1.15
3/16"	1"	500	3769T72	1.20
3/16"	1 1/4"	300	3769T73	1.35
1/4"	1"	600	3769T74	1.75
1/4"	1 1/2"	400	3769T75	2.33
5/16"	1 1/2"	750	3769T76	4.67
5/16"	2"	600	3769T77	4.93

Hammer-Close Chain Connectors—Not for Lifting

An easy-to-use two-piece design with locking prongs lets you connect end fittings to chain. To close, strike the prongs with a ball peen hammer. Designed for connecting links and chain with the same diameter.

Steel connectors are forged and good for applications where corrosion is not a factor. Meet Fed Spec. RR-C-271D, Type II.

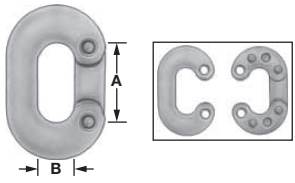

Hot-dipped galvanized steel connectors are forged and provide good corrosion resistance. Meet Fed. Spec. RR-C-271D, Type II and ASTM A153.

Type 316 stainless steel connectors are cast and provide maximum corrosion resistance.

For Chain Trade Size	(A)	(B)	Work Load Limit, lbs.		Each
Steel					
1/4"	7/8"	7/16"	1,400	3576T12	$6.22
5/16"	1"	1/2"	2,000	3576T13	6.78
3/8"	1 1/8"	9/16"	2,800	3576T14	6.63
1/2"	1 7/16"	11/16"	4,750	3576T16	8.00
5/8"	1 7/8"	13/16"	7,250	3576T18	11.11
Hot-Dipped Galvanized Steel					
1/4"	7/8"	7/16"	1,400	3576T32	6.23
5/16"	1"	1/2"	2,000	3576T33	6.85
3/8"	1 1/8"	9/16"	2,800	3576T34	7.88
1/2"	1 7/16"	11/16"	4,750	3576T36	9.38
5/8"	1 7/8"	13/16"	7,250	3576T38	13.15
Type 316 Stainless Steel					
1/4"	7/8"	7/16"	1,400	3863T22	12.97
5/16"	1"	1/2"	2,000	3863T23	20.86
3/8"	1 1/8"	9/16"	2,800	3863T21	29.79
1/2"	1 1/2"	3/4"	2,000	3863T34	26.14
5/8"	1 7/8"	1"	3,000	3863T35	35.57

Bend-Close Chain Connectors—Not for Lifting

An economical way to join chain links and attach fittings.

Light duty connectors are also known as lap links and repair links.

Medium duty connectors are also known as cold shuts. To close, drive the end through the eye and flatten the extended end to prevent opening. Connectors can also be welded closed.

Steel connectors are good for applications where corrosion is not a factor. ***Zinc-plated steel*** connectors offer good corrosion resistance in most environments.

Warning: Connectors must be completely closed to perform at rated capacity. Never reuse connectors after they've been closed.

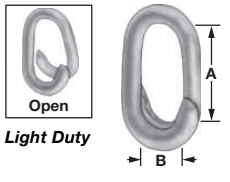

Light Duty

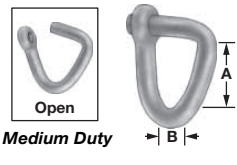

Medium Duty

For Chain Trade Size	(A)	(B)	Work Load Limit, lbs.	Pkg. Qty.	Steel	Per Pkg.	Zinc-Plated Steel	Per Pkg.
Light Duty Connectors								
1/8"	3/4"	1/4"	125	10	—	—	3579T9	$4.82
3/16"	1"	1/2"	240	10	3579T71	$3.97	3579T81	6.24
1/4"	1 1/4"	1/2"	400	10	3579T53	7.09	3579T73	7.18
5/16"	1 1/2"	3/4"	700	5	3579T54	6.53	3579T55	8.16
3/8"	2"	3/4"	1,250	1	3579T76	2.03	3579T86	2.70
1/2"	2 1/2"	1"	2,125	1	3579T77	3.10	3579T87	4.77
Medium Duty Connectors								
3/16"	7/8"	3/8"	750	10	3579T101	5.45	3579T108	5.80
1/4"	1 1/8"	3/8"	1,250	10	3579T102	6.03	3579T109	6.12
5/16"	1 3/16"	7/16"	1,900	10	3579T103	6.17	3579T111	6.46
3/8"	1 1/4"	1/2"	2,650	10	3579T104	7.98	3579T112	8.74
7/16"	1 7/16"	5/8"	3,500	5	3579T105	5.27	3579T113	6.04
1/2"	1 1/2"	11/16"	4,500	5	3579T106	6.78	3579T114	8.36
5/8"	2 3/8"	1"	6,900	1	3579T107	4.64	3579T115	4.94

Warning! **Never exceed work load limits.**

Double-Clevis Connectors—For Lifting

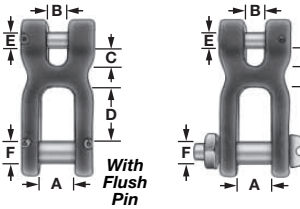

Create strong lifting, towing, and tie-down systems with these connectors. Made of forged high-strength (Grade 80) alloy steel. Body has a red powder-coated finish.

Connectors with flush pins prevent snagging. ***Connectors with safety pins*** are ideal for applications that require frequent pin removal. The safety pin consists of a round pin secured with a nut and a cotter pin (also known as a bolt, nut, and cotter pin).

For Chain Trade Size	(A)	(B)	(C)	(D)	(E)	(F)	Work Load Limit, lbs.	With Flush Pin	Each	With Safety Pin	Each
3/8"	13/16"	1/2"	1/2"	1 3/8"	1/2"	5/8"	7,100	3532T11	$72.16	3532T26	$83.38
1/2"	1 1/16"	5/8"	5/8"	1 7/8"	5/8"	3/4"	12,000	3532T12	96.80	3532T27	108.24
5/8"	1 5/16"	11/16"	3/4"	2"	3/4"	1"	18,100	3532T13	138.60	3532T28	138.30

High-Strength Anchor Shackles—For Lifting

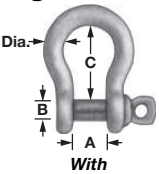

With Screw Pin

Choose these when you need a strong shackle with a wide body for easier connections. Also known as bow shackles. All are forged. *Note:* Work load limits are based on loads applied in line with a straight length of chain or wire rope.

Shackles with screw pin are ideal for lifting applications where shackles are frequently removed. The pin screws into position without the use of tools. Do not use if there will be movement or vibration of the pin.

Shackles with safety pin are the most secure choice for lifting. The safety pin consists of a round pin secured with a nut and a cotter pin (also known as a bolt, nut, and cotter pin).

Shackles with captive self-locking screw pin have indentations that lock the pin in place as it is tightened. They also have a slight lip on the end of the screw pin that prevents separation from the shackle and eliminates lost pins.

Black-oxide steel shackles have a corrosion-resistant finish and blend into dark backgrounds. Meet Fed. Spec. RR-C-271D. ***Hot-dipped galvanized alloy steel*** shackles are stronger than hot-dipped galvanized carbon steel shackles and offer good corrosion resistance. Meet Fed. Spec. RR-C-271D and ASTM A153. ***Hot-dipped galvanized carbon steel*** shackles have alloy steel pins and offer good corrosion resistance. Meet Fed. Spec. RR-C-271D and ASTM A153. ***Type 316*** and ***Type 316L stainless steel*** shackles provide maximum corrosion resistance.

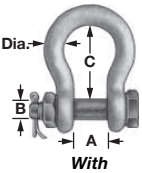

With Safety Pin

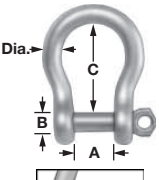

With Captive Self-Locking Screw Pin

Dia.	(A)	(B)	(C)	With Screw Pin: Work Load Limit, lbs.		Each	With Safety Pin: Work Load Limit, lbs.		Each
Black-Oxide Steel									
1/4"	15/32"	5/16"	1 1/8"	1,000	8494T12	$5.36	1,000	8494T26	$12.08
5/16"	17/32"	3/8"	1 1/4"	1,500	8494T13	6.75	1,500	8494T27	12.62
3/8"	21/32"	7/16"	1 7/16"	2,000	8494T14	7.68	2,000	8494T28	14.50
7/16"	23/32"	1/2"	1 11/16"	3,000	8494T15	8.88	3,000	8494T29	18.32
1/2"	13/16"	5/8"	1 15/16"	4,000	8494T16	10.35	4,000	8494T31	19.37
5/8"	1 1/16"	3/4"	2 1/2"	6,500	8494T17	19.10	6,500	8494T32	28.02
3/4"	1 1/4"	7/8"	3"	9,500	8494T18	28.02	9,500	8494T33	40.30
7/8"	1 7/16"	1"	3 1/4"	13,000	8494T19	38.76	13,000	8494T34	57.98
1"	1 11/16"	1 1/8"	3 3/4"	17,000	8494T21	51.38	17,000	8494T35	78.48
Hot-Dipped Galvanized Alloy Steel									
3/8"	5/8"	7/16"	1 7/16"	4,000	3663T51	8.66	—	—	—
1/2"	13/16"	5/8"	1 7/8"	6,600	3663T42	13.10	6,600	8966T51	31.41
5/8"	1 1/16"	3/4"	2 3/8"	10,000	3663T43	18.09	10,000	8966T52	41.72
3/4"	1 1/4"	7/8"	2 13/16"	14,000	3663T44	25.98	14,000	8966T53	63.78
7/8"	1 7/16"	1"	3 5/16"	19,000	3663T45	33.88	19,000	8966T54	70.02
1"	1 11/16"	1 1/8"	3 3/4"	25,000	3663T46	46.70	25,000	8966T55	94.94
1 1/4"	2"	1 3/8"	4 11/16"	36,000	3663T47	82.08	36,000	8966T76	132.36
1 1/2"	2 3/8"	1 5/8"	5 3/4"	50,000	3663T48	177.26	60,000	8966T57	247.56
1 3/4"	2 7/8"	2"	7"	68,000	3663T52	309.33	80,000	8966T12	452.26
2"	3 1/4"	2 1/4"	7 3/4"	86,000	3663T49	430.46	100,000	8966T14	608.14
Hot-Dipped Galvanized Carbon Steel									
3/16"	3/8"	1/4"	7/8"	666	3558T44	5.67	734	3555T45	7.81
1/4"	7/16"	5/16"	1 1/8"	1,102	3558T45	4.84	1,102	3555T46	7.82
5/16"	1/2"	3/8"	1 1/4"	1,500	3558T46	7.36	1,653	3555T47	10.79
3/8"	5/8"	7/16"	1 7/16"	2,204	3558T47	6.85	2,204	3555T48	11.09
7/16"	3/4"	1/2"	1 11/16"	3,306	3558T48	7.04	3,306	3555T49	12.50
1/2"	13/16"	5/8"	1 7/8"	4,409	3558T49	8.81	4,409	3555T51	17.81
5/8"	1 1/16"	3/4"	2 3/8"	7,165	3558T51	15.46	7,165	3555T52	24.43
3/4"	1 1/4"	7/8"	2 13/16"	10,471	3558T52	24.03	10,471	3555T53	35.12
7/8"	1 7/16"	1"	3 5/16"	14,330	3558T53	32.89	14,330	3555T54	46.87
1"	1 11/16"	1 1/8"	3 3/4"	18,739	3558T54	40.77	18,739	3555T55	63.63
1 1/8"	1 13/16"	1 1/4"	4 1/4"	20,943	3558T55	61.54	20,943	3555T56	86.03
1 1/4"	2"	1 3/8"	4 11/16"	26,455	3558T56	88.71	24,000	3555T57	130.94
1 3/8"	2 1/4"	1 1/2"	5 1/4"	29,762	3558T57	98.98	27,000	3555T78	149.56
1 1/2"	2 3/8"	1 5/8"	5 3/4"	34,000	3558T58	176.14	34,000	3555T59	198.55
1 3/4"	2 7/8"	2"	7"	50,000	3558T59	288.75	50,000	3555T61	321.73
2"	3 1/4"	2 1/4"	7 3/4"	70,000	3558T61	353.05	70,000	3555T62	368.35
Type 316 Stainless Steel									
1/4"	1/2"	5/16"	1 1/8"	1,000	3583T34	6.63	1,000	3860T51	19.70
5/16"	1/2"	3/8"	1 3/16"	1,300	3583T81	11.40	1,300	3860T71	21.13
3/8"	11/16"	7/16"	1 3/8"	1,500	3583T82	18.09	1,500	3860T72	27.28
7/16"	3/4"	1/2"	1 3/4"	2,000	3583T83	19.21	2,000	3860T73	33.50
1/2"	13/16"	5/8"	1 13/16"	3,000	3583T84	30.00	3,000	3860T74	46.80
5/8"	1"	3/4"	2 3/8"	4,000	3583T85	56.16	4,000	3860T75	72.90
3/4"	1 1/4"	7/8"	2 13/16"	6,000	3583T86	81.82	6,000	3860T76	120.00
7/8"	1 1/2"	1"	3 5/16"	8,000	3583T87	85.27	8,000	3860T77	150.30
1"	1 11/16"	1 1/8"	3 13/16"	10,000	3583T88	122.58	10,000	3860T78	203.10

Dia.	(A)	(B)	(C)	Work Load Limit, lbs.	With Captive Self-Locking Screw Pin	Each
Type 316L Stainless Steel						
5/32"	5/16"	3/16"	11/16"	550	3797T41	$13.26
3/16"	3/8"	1/4"	7/8"	827	3797T42	15.56
1/4"	7/16"	1/4"	1 1/16"	1,157	3797T43	20.55
5/16"	5/8"	5/16"	1 7/16"	2,040	3797T44	30.39
13/32"	3/4"	7/16"	1 3/16"	2,866	3797T45	47.00

Warning! **Never exceed work load limits.**

High-Strength D-Shackles—For Lifting

Also known as chain shackles, the narrow body on these restricts movement of rigging lines. All are forged.

Note: Work load limits are based on loads applied in line with a straight length of chain or wire rope.

Shackles with screw pin are ideal for lifting applications where shackles are frequently removed. The pin screws into position without the use of tools. Do not use if there will be movement or vibration of the pin.

Shackles with safety pin are the most secure choice for lifting. The safety pin consists of a round pin secured with a nut and a cotter pin (also known as a bolt, nut, and cotter pin).

Shackles with self-locking screw pin have indentations that lock the pin in place as it is tightened. *Shackles with elongated body* increase the reach of the connection.

Shackles with captive self-locking screw pin are the same as the shackles with self-locking screw pin above, but they also have a slight lip on the end of the screw pin that prevents separation from the shackle. *Shackles with elongated body* increase the reach of the connection.

Hot-dipped galvanized steel shackles have alloy steel pins and offer good corrosion resistance. Meet Fed. Spec. RR-C-271D and ASTM A153. ***Type 316*** and ***Type 316L stainless steel*** shackles provide maximum corrosion resistance.

Also Available: Black-oxide steel shackles. Please ask for 8496T888 and specify screw pin or safety pin and diameter.

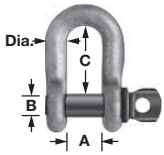

With Screw Pin

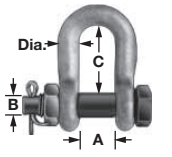

With Safety Pin

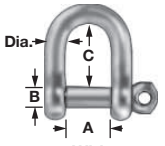

With Self-Locking Screw Pin

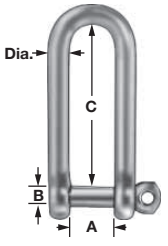

With Captive Self-Locking Screw Pin and Elongated Body

			With Screw Pin			With Safety Pin		
Dia.	(A)	(B)	(C)	Work Load Limit, lbs.	Each	(C)	Work Load Limit, lbs.	Each
Hot-Dipped Galvanized Steel								
1/4″	7/16″	5/16″	7/8″	1,000	3560T44	7/8″	1,102	3556T26	$9.20
5/16″	1/2″	3/8″	1 1/32″	1,500	3560T45	1 1/16″	1,653	3556T27	10.37
3/8″	5/8″	7/16″	1 1/4″	2,000	3560T46	1 1/4″	2,204	3556T28	11.58
7/16″	3/4″	1/2″	1 7/16″	3,000	3560T47	1 1/2″	3,306	3556T29	14.93
1/2″	13/16″	5/8″	1 5/8″	4,409	3560T48	1 11/16″	4,409	3556T14	17.89
5/8″	1 1/16″	3/4″	2″	7,165	3560T49	2 1/16″	7,165	3556T15	25.00
3/4″	1 1/4″	7/8″	2 3/8″	10,471	3560T51	2 7/16″	10,471	3556T16	38.00
7/8″	1 7/16″	1″	2 13/16″	14,330	3560T52	2 7/8″	14,330	3556T17	51.72
1″	1 11/16″	1 1/8″	3 3/16″	18,739	3560T53	3 1/4″	18,739	3556T18	62.40
1 1/8″	1 13/16″	1 1/4″	3 9/16″	19,000	3560T54	3 9/16″	19,000	3556T19	99.38
1 1/4″	2″	1 3/8″	3 15/16″	26,455	3560T55	3 15/16″	24,000	3556T21	160.38
1 3/8″	2 1/4″	1 1/2″	4 7/16″	27,000	3560T86	4 7/16″	27,000	3556T32	201.26
1 1/2″	2 3/8″	1 5/8″	4 7/8″	34,000	3560T57	4 7/8″	34,000	3556T23	241.36
1 3/4″	2 7/8″	2″	5 3/4″	50,000	3560T58	5 3/4″	50,000	3556T24	394.26
2″	3 1/4″	2 1/4″	6 3/4″	70,000	3560T59	6 3/4″	70,000	3556T25	540.97
Type 316 Stainless Steel								
1/4″	7/16″	5/16″	7/8″	1,000	35895T11	3.89	—	—	—	—
5/16″	1/2″	3/8″	1″	1,300	35895T72	6.45	—	—	—	—
3/8″	5/8″	7/16″	1 1/4″	1,500	35895T73	10.39	1 1/4″	1,500	35895T81	23.58
1/2″	13/16″	5/8″	1 9/16″	3,000	35895T74	19.90	1 9/16″	3,000	35895T82	40.35
5/8″	1 1/16″	3/4″	1 15/16″	4,000	35895T75	35.74	1 15/16″	4,000	35895T83	62.81
3/4″	1 3/16″	7/8″	2 3/8″	6,000	35895T76	59.49	2 3/8″	6,000	35895T84	103.35
7/8″	1 7/16″	1″	2 7/8″	8,000	35895T77	84.47	2 7/8″	8,000	35895T85	139.07
1″	1 11/16″	1 1/8″	3 3/16″	10,000	35895T78	116.11	3 3/16″	10,000	35895T86	337.40

	With Self-Locking Screw Pin					With Captive Self-Locking Screw Pin			
Dia.	(A)	(B)	(C)	Work Load Limit, lbs.	Each	(B)	(C)	Work Load Limit, lbs.	Each
Type 316L Stainless Steel									
5/32″	5/16″	1/8″	1/2″	387	3824T61	$7.55	3/16″	1/2″	550	3824T41	$11.43
3/16″	3/8″	3/16″	5/8″	550	3824T32	8.68	3/16″	5/8″	825	3824T42	13.89
1/4″	7/16″	1/4″	3/4″	881	3824T33	11.26	1/4″	3/4″	1,212	3824T43	17.73
5/16″	5/8″	5/16″	1″	1,487	3824T34	17.59	5/16″	1″	2,000	3824T44	27.18
13/32″	3/4″	3/8″	1 5/16″	2,375	3824T35	28.86	7/16″	1 5/16″	2,875	3824T45	42.55
15/32″	15/16″	7/16″	1 1/2″	3,300	3824T56	50.36	1/2″	1 1/2″	3,850	3824T46	64.68
Type 316L Stainless Steel with Elongated Body									
5/32″	5/16″	1/8″	7/8″	387	3841T61	9.00	3/16″	1 3/16″	550	3841T51	14.55
3/16″	3/8″	3/16″	1 1/8″	550	3841T42	10.97	1/4″	1 1/2″	825	3841T52	17.21
1/4″	7/16″	1/4″	1 5/16″	881	3841T43	14.24	1/4″	1 13/16″	1,212	3841T53	23.24
5/16″	5/8″	5/16″	1 3/4″	1,487	3841T44	22.43	5/16″	2 7/16″	2,000	3841T54	36.84

Web Sling Shackles—For Lifting

An extra-wide body on these shackles keeps web slings from sliding and bunching. All are forged alloy steel.

Shackles with screw pin are ideal for lifting applications where shackles are frequently removed. The pin screws into position without the use of tools. Do not use if there will be movement or vibration of the pin.

Shackles with safety pin are the most secure choice for lifting. The safety pin consists of a round pin secured with a nut and a cotter pin (also known as a bolt, nut, and cotter pin).

Optional spools (sold separately) fit on the pin to center attachments and keep them from sliding across the pin.

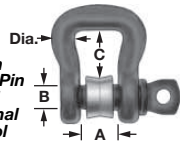

With Screw Pin and Optional Spool

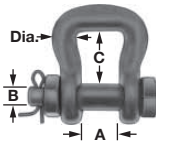

With Safety Pin

Web Wd.	Dia.	(A)	(B)	(C)	Work Load Limit, lbs.	With Screw Pin Each	With Safety Pin Each	Spools Each
1″	3/4″	7/8″	3/4″	1 1/2″	6,500	35505T1	$24.89	35505T84★	$22.87	35505T92	$11.16
1 1/2″	1″	1 1/4″	7/8″	1 7/8″	13,000	35505T2	28.08	35505T85	43.04	35505T93	14.48
2″	1 1/8″	1 3/8″	1″	2 13/16″	17,500	35505T3	37.08	35505T86	57.35	35505T94	17.84
3″	1 3/8″	1 5/8″	1 1/4″	3 1/16″	25,000	35505T4	80.04	35505T87	105.23	35505T95	20.96
4″	1 3/4″	2 1/8″	1 1/2″	5 1/2″	41,000	35505T5	163.38	35505T88	188.72	35505T96	28.75
5″	2 1/4″	2 1/2″	2″	6 5/16″	70,000	35505T6	289.08	35505T89	326.84	35505T97	36.31
6″	2 3/4″	3″	2 1/4″	7 11/16″	100,000	35505T7	614.65	35505T91	673.36	35505T98	50.90

★ (A) is 1 1/16″.

Heavy Duty Shackles—For Lifting

Among the strongest shackles we offer, these are easy to assemble and disassemble with a hammer. The flush pin prevents snags and accidental disengagement. Made of forged alloy steel. The body has a red powder-coated finish.

For Chain Trade Size	Dia.	(A)	(B)	(C)	Work Load Limit, lbs.	Each
9/32″	5/16″	1 1/16″	3/8″	1 5/16″	3,500	3812T21	$19.16
3/8″	7/16″	7/8″	9/16″	1 13/16″	7,100	3812T22	22.03
1/2″	9/16″	1 1/16″	3/4″	2 9/16″	12,000	3812T23	34.52
5/8″	11/16″	1 5/16″	15/16″	3″	18,000	3812T24	43.73

Warning! ***Never exceed work load limits.***

High-Strength Anchor Shackles—Not for Lifting

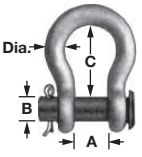

Look no further if you want a corrosion resistant shackle with a wide body for easier connections. A cotter pin secures the end of the round pin. All are forged. Also known as bow shackles.

Note: Work load limits are based on loads applied in line with a straight length of chain or wire rope.

Hot-dipped galvanized alloy steel shackles are stronger than hot-dipped galvanized carbon steel shackles and offer good corrosion resistance. Meet Fed. Spec. RR-C-271D and ASTM A153. ***Hot-dipped galvanized carbon steel*** shackles have alloy steel pins and offer good corrosion resistance. Meet Fed. Spec. RR-C-271D and ASTM A153. ***Type 316 stainless steel*** shackles provide maximum corrosion resistance.

Also Available: Black-oxide steel shackles. Ask for 8494T777 and specify diameter.

Dia.	(A)	(B)	(C)	Work Load Limit, lbs.		Each
Hot-Dipped Galvanized Alloy Steel						
1/2"	13/16"	5/8"	1 7/8"	6,600	32345T11	$14.02
5/8"	1 1/16"	3/4"	2 3/8"	10,000	32345T12	24.12
3/4"	1 1/4"	7/8"	2 13/16"	14,000	32345T13	36.75
7/8"	1 7/16"	1"	3 5/16"	19,000	32345T14	49.02
1"	1 11/16"	1 1/8"	3 3/4"	25,000	32345T15	65.41
1 1/4"	2"	1 3/8"	4 11/16"	36,000	32345T16	134.60
Hot-Dipped Galvanized Carbon Steel						
3/16"	3/8"	1/4"	7/8"	666	3559T11	5.96
1/4"	7/16"	5/16"	1 1/8"	1,102	3559T44	4.58
5/16"	17/32"	3/8"	1 3/16"	1,653	3559T45	5.81
3/8"	5/8"	7/16"	1 7/16"	2,204	3559T46	6.53
7/16"	3/4"	1/2"	1 11/16"	3,306	3559T47	6.97
1/2"	13/16"	5/8"	1 7/8"	4,409	3559T48	8.62
5/8"	1 1/16"	3/4"	2 3/8"	7,165	3559T49	15.41
3/4"	1 1/4"	7/8"	2 13/16"	10,471	3559T51	22.54
7/8"	1 7/16"	1"	3 5/16"	14,330	3559T52	32.26
1"	1 11/16"	1 1/8"	3 3/4"	18,739	3559T53	44.03
1 1/8"	1 13/16"	1 1/4"	4 1/4"	20,943	3559T54	51.88
1 1/4"	2"	1 3/8"	4 11/16"	24,000	3559T12	121.25
1 3/8"	2 1/4"	1 1/2"	5 1/4"	27,000	3559T13	147.41
1 1/2"	2 3/8"	1 5/8"	5 3/4"	34,000	3559T14	181.64
1 3/4"	2 7/8"	2"	7"	50,000	3559T15	256.17
2"	3 1/4"	2 1/4"	7 3/4"	70,000	3559T16	395.82
Type 316 Stainless Steel						
1/4"	15/32"	5/16"	1 1/8"	1,000	3859T34	6.97
5/16"	17/32"	3/8"	1 3/16"	1,300	3859T71	12.74
3/8"	21/32"	7/16"	1 3/8"	1,500	3859T72	20.69
7/16"	23/32"	1/2"	1 3/4"	2,000	3859T73	23.18
1/2"	13/16"	5/8"	1 13/16"	3,000	3859T74	32.33
5/8"	1"	3/4"	2 3/8"	4,000	3859T75	53.80

Corrosion-Resistant D-Shackles—Not for Lifting

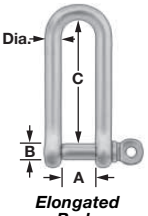

Elongated Body

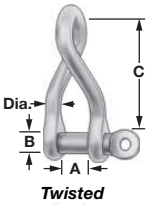

Twisted Body

Type 316 stainless steel construction makes these shackles ideal for corrosive environments. All have a screw pin that screws into position without the use of tools. Ideal for applications where the shackle is frequently removed. Do not use if there will be movement or vibration of the pin.

Note: Work load limits are based on loads applied in line with a straight length of chain or wire rope.

Shackles with elongated body increase the reach of your connection. ***Shackles with twisted body*** have the body turned 90°.

Dia.	(A)	(B)	(C)	Work Load Limit, lbs.		Each
With Elongated Body						
3/16"	7/16"	3/16"	1 1/2"	500	35685T52	$5.23
1/4"	1/2"	1/4"	1 3/4"	750	35685T43	6.50
5/16"	11/16"	5/16"	2 5/16"	1,000	35685T54	8.13
3/8"	3/4"	3/8"	2 7/8"	1,200	35685T55	12.01
With Twisted Body						
5/32"	3/8"	1/8"	7/8"	660	33845T22	7.85
3/16"	3/8"	3/16"	1 1/16"	880	33845T23	9.08
1/4"	9/16"	1/4"	1 1/2"	1,545	33845T24	10.90
5/16"	5/8"	5/16"	1 7/8"	2,975	33845T25	19.12
3/8"	5/8"	3/8"	2 1/16"	4,960	33845T26	32.75
1/2"	3/4"	1/2"	2 1/2"	8,265	33845T27	49.76

Corrosion-Resistant Anchor Shackles—Not for Lifting

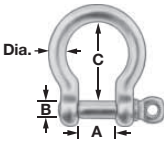

The choice when your application calls for maximum corrosion resistance, but does not require high strength. The pin screws into position without tools. Ideal for applications where the shackle is frequently removed. Do not use if there will be movement or vibration of the pin. Made of cast Type 316 stainless steel.

Note: Work load limits are based on loads applied in line with a straight length of chain or wire rope.

Dia.	(A)	(B)	(C)	Work Load Limit, lbs.		Each
3/16"	7/16"	3/16"	15/16"	500	35355T13	$3.02
1/4"	1/2"	1/4"	1 1/16"	750	35355T14	3.86
5/16"	11/16"	5/16"	1 7/16"	1,000	35355T25	5.36
3/8"	13/16"	3/8"	1 3/4"	1,200	35355T26	9.28
1/2"	1 1/16"	1/2"	2 5/16"	2,500	35355T27	25.97
1"	1 15/16"	15/16"	4 7/16"	6,000	35355T28	105.43

High-Strength D-Shackles—Not for Lifting

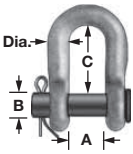

Utilize the narrow body on these shackles to restrict movement of rigging lines. A cotter pin secures the end of the round pin. All are forged. Also known as chain shackles.

Note: Work load limits are based on loads applied in line with a straight length of chain or wire rope.

Hot-dipped galvanized steel shackles have alloy steel pins and offer good corrosion resistance. Meet Fed. Spec. RR-C-271D. ***Type 316 stainless steel*** shackles provide maximum corrosion resistance.

Also Available: Black-oxide steel shackles. Ask for 8496T777 and specify diameter.

Dia.	(A)	(B)	(C)	Work Load Limit, lbs.		Each
Hot-Dipped Galvanized Steel						
1/4"	7/16"	5/16"	7/8"	1,000	3561T11	$5.87
5/16"	1/2"	3/8"	1"	1,500	3561T12	6.09
3/8"	5/8"	7/16"	1 1/4"	2,000	3561T13	6.64
7/16"	3/4"	1/2"	1 7/16"	3,000	3561T14	10.25
1/2"	13/16"	5/8"	1 5/8"	4,000	3561T15	13.92
5/8"	1 1/16"	3/4"	2"	7,165	3561T49	19.50
3/4"	1 1/4"	7/8"	2 3/8"	10,472	3561T51	27.07
7/8"	1 7/16"	1"	2 13/16"	13,000	3561T16	46.91
1"	1 11/16"	1 1/8"	3 3/16"	17,000	3561T17	61.99
1 1/8"	1 13/16"	1 1/4"	3 9/16"	19,000	3561T18	72.18
1 1/4"	2"	1 3/8"	3 15/16"	24,000	3561T19	125.45
1 3/8"	2 1/4"	1 1/2"	4 7/16"	27,000	3561T21	168.50
1 1/2"	2 3/8"	1 5/8"	4 7/8"	34,000	3561T22	199.72
1 3/4"	2 7/8"	2"	5 3/4"	50,000	3561T23	295.01
2"	3 1/4"	2 1/4"	6 3/4"	70,000	3561T24	446.72
Type 316 Stainless Steel						
3/8"	5/8"	7/16"	1 1/4"	1,500	35895T91	15.58
1/2"	13/16"	5/8"	1 9/16"	3,000	35895T92	27.74
5/8"	1 1/16"	3/4"	1 15/16"	4,000	35895T93	48.33
3/4"	1 3/16"	7/8"	2 3/8"	6,000	35895T94	71.82
7/8"	1 7/16"	1"	2 7/8"	8,000	35895T95	112.89
1"	1 11/16"	1 1/8"	3 1/4"	10,000	35895T96	150.00

Double-Clevis Connectors—Not for Lifting

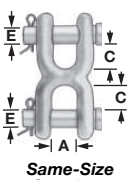

Same-Size Openings

Small- and Large-Size Openings

A simple and secure connection. Use to attach steel chain to hooks, rings, end links, and other fittings. A cotter pin secures the end of the round pins. All are forged.

Connectors with same-size openings are zinc-plated carbon steel. ***Connectors with small- and large-size openings*** have a carbon steel body with a red-painted finish. Pins are alloy steel.

For Chain Trade Size	(A)	(B)	(C)	(D)	(E)	(F)	Work Load Limit, lbs.		Each
Same-Size Openings									
1/4"	7/16"	—	7/16"	—	3/8"	—	2,600	3562T14	$4.68
5/16"	1/2"	—	1/2"	—	7/16"	—	3,900	3562T15	5.98
3/8"	5/8"	—	3/4"	—	1/2"	—	5,400	3562T16	7.48
7/16"	3/4"	—	3/4"	—	9/16"	—	7,200	3562T17	9.27
1/2"	13/16"	—	7/8"	—	5/8"	—	9,200	3562T18	11.64
Small- and Large-Size Openings									
1/4"	3/4"	1/2"	3/8"	3/4"	5/16"	1/2"	2,600	3562T21	13.70
5/16" to 3/8"	1"	9/16"	1/2"	1"	7/16"	5/8"	5,400	3562T23	18.87
1/2"	1 1/4"	13/16"	11/16"	1 1/4"	5/8"	3/4"	9,200	3562T25	32.62

Warning! **Never exceed work load limits.**

Bearing Swivels—For Lifting

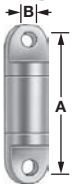

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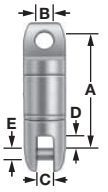

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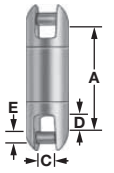

3

Designed to swivel under load in low-torque and high-rotation applications, these swivels keep the load stable by releasing tension and removing twisting in the rope or chain. All are made of alloy steel and have contoured ends that prevent snagging. The bearings are permanently lubricated and sealed to keep out dirt and grime.

Note: For use in straight-line lifting applications.

(2&3) Clevis ends have removable pins. A thimble is required for use with wire rope. Please see page 1417 for thimbles.

(A)	(B)	(C)	(D)	(E)	Work Load Limit, lbs.		Each
(1) Eye and Eye							
2 5/8"	1/4"	—	—	—	1,000	33575T661	$156.43
3 9/16"	3/8"	—	—	—	1,500	33575T662	188.88
4 3/4"	5/8"	—	—	—	3,000	33575T663	275.79
6 1/8"	7/8"	—	—	—	6,000	33575T664	327.38
9 3/8"	1 1/4"	—	—	—	10,000	33575T665	447.52
(2) Eye and Clevis							
2 5/16"	1/4"	5/16"	1/4"	3/8"	1,000	33575T1	133.13
3 7/8"	3/8"	9/16"	1/2"	3/8"	1,500	33575T2	224.95
4 1/4"	5/8"	9/16"	9/16"	1/2"	3,000	33575T3	308.25
5 1/2"	7/8"	3/4"	5/8"	5/8"	6,000	33575T4	343.13
8 5/16"	1 1/4"	1"	1 1/8"	7/8"	10,000	33575T5	486.38
(3) Clevis and Clevis							
2 1/8"	—	5/16"	1/4"	3/8"	1,000	33575T651	137.12
3 1/2"	—	9/16"	1/2"	3/8"	1,500	33575T652	233.84
3 13/16"	—	9/16"	9/16"	1/2"	3,000	33575T653	306.55
4 7/8"	—	3/4"	5/8"	5/8"	6,000	33575T654	341.22
7 3/8"	—	1"	1 1/8"	7/8"	10,000	33575T655	483.69

Bearing Swivels—Not for Lifting

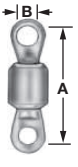

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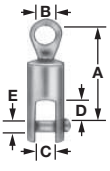

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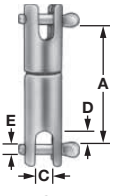

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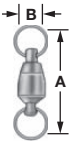

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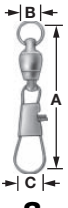

8

Fully enclosed ball bearings in these swivels give you smooth rotation under load.

(4-6) Standard swivels are made of Type 316 stainless steel.

(7&8) Miniature swivels have tapered holes so the snap and split ring can swing freely and pull from the center for perfect alignment. The body is nickel-plated brass; ball bearings are Type 302 stainless steel.

(A)	(B)	(C)	(D)	(E)	Work Load Limit, lbs.		Each
Standard Swivels							
(4) Eye and Eye							
2 1/16"	5/16"	—	—	—	1,100	8928T21	$63.17
(5) Eye and Clevis							
1 7/8"	5/16"	3/8"	7/16"	1/4"	1,870	8928T13	69.00
(6) Clevis and Clevis							
1 13/16"	—	3/8"	3/8"	1/4"	1,870	8928T11	81.19
3 1/8"	—	7/16"	7/16"	3/8"	2,860	8928T12	128.29
Miniature Swivels							
(7) Split Ring and Split Ring							
9/16"	1/8"	—	—	—	12	3179T1	2.21
11/16"	3/16"	—	—	—	15	3179T2	2.38
15/16"	1/4"	—	—	—	30	3179T3	2.91
1 1/8"	1/4"	—	—	—	50	3179T4	3.50
1 1/2"	3/8"	—	—	—	70	3179T5	4.05
(8) Split Ring and Snap							
1 1/16"	1/8"	3/16"	—	—	12	3179T6	3.21
1 7/16"	3/16"	1/4"	—	—	15	3179T7	3.24
1 11/16"	1/4"	5/16"	—	—	30	3179T8	3.41
2"	1/4"	3/8"	—	—	50	3179T9	3.84
2 1/2"	3/8"	7/16"	—	—	70	3179T11	4.24

Swivels—Not for Lifting

Use these swivels on rope and chain to relieve stress caused by twisting and knotting while being pulled taut. Ideal for connecting two different ropes or chains.

Note: Work load limits are based on use in a straight line and should not be used at an angle. Swivels are not designed for spinning or rotating under load.

Hot-dipped galvanized steel swivels offer good corrosion resistance.

Type 316 stainless steel swivels provide maximum corrosion resistance.

(9) Eye and eye swivels have an extra-large eye opening for oversized chain and rope.

(10&11) Eye and clevis swivels are used where frequent attaching and detaching is required.

Style 10 have a round pin secured by a cotter pin.

Style 11 have a screw pin for quick and easy attachment without tools.

(12) Clevis and clevis swivels connect combinations of chain and fittings. The screw pins allow quick and easy attachment without tools.

9

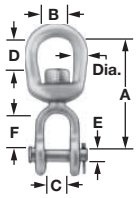

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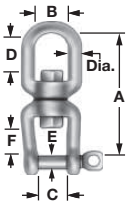

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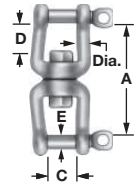

12

Dia.	(A)	(B)	(C)	(D)	(E)	(F)	Work Load Limit, lbs.		Each
(9) Eye and Eye									
Forged Hot-Dipped Galvanized Steel									
1/4"	2 7/8"	3/4"	3/4"	3/4"	—	1 1/16"	850	3552T14	$17.37
5/16"	3 5/8"	1"	1"	3/4"	—	1 1/4"	1,250	3552T15	18.77
3/8"	4 1/4"	1 1/4"	1 1/4"	1"	—	1 1/2"	2,250	3552T16	22.39
1/2"	5 3/4"	1 1/2"	1 1/2"	1 1/4"	—	1 15/16"	3,600	3552T17	28.17
5/8"	6 3/4"	1 3/4"	1 3/4"	1 5/8"	—	2 3/8"	5,200	3552T18	44.20
3/4"	7 1/4"	2"	2"	1 3/4"	—	2 1/2"	7,200	3552T19	57.02
7/8"	8 3/4"	2 1/4"	2 1/4"	2 1/8"	—	3 1/16"	10,000	3552T21	101.81
1"	9 3/4"	2 1/2"	2 1/2"	2 1/4"	—	3 1/2"	12,500	3552T22	120.23
1 1/4"	11 1/2"	3 1/8"	3 1/8"	3 1/4"	—	3 7/8"	18,000	3552T24	218.33
Cast Type 316 Stainless Steel									
3/16"	1 5/8"	1/2"	1/2"	1/2"	—	1/2"	297	3714T91	7.87
1/4"	2 1/16"	5/8"	5/8"	5/8"	—	5/8"	396	3714T92	8.79
5/16"	2 7/8"	3/4"	3/4"	13/16"	—	13/16"	673	3714T93	11.71
3/8"	3 5/8"	15/16"	15/16"	1 1/8"	—	1 1/8"	1,192	3714T94	16.38
1/2"	4 3/4"	1 3/8"	1 3/8"	1 5/16"	—	1 5/16"	2,871	3714T95	28.78
5/8"	5 7/8"	1 1/2"	1 1/2"	1 3/4"	—	1 3/4"	4,950	3714T96	52.29
(10) Eye and Clevis— *With round pin*									
Forged Hot-Dipped Galvanized Steel									
1/4"	2 7/16"	3/4"	1/2"	3/4"	1/4"	3/4"	850	3553T14	21.24
5/16"	2 7/8"	1"	1/2"	3/4"	3/8"	13/16"	1,250	3553T15	24.74
3/8"	3 1/2"	1 1/4"	11/16"	1"	3/8"	1 1/16"	2,250	3553T16	26.12
1/2"	4 11/16"	1 1/2"	3/4"	1 1/4"	1/2"	1 3/8"	3,600	3553T17	34.42
5/8"	5 1/2"	1 3/4"	15/16"	1 5/8"	5/8"	1 1/2"	5,200	3553T18	58.27
3/4"	5 7/8"	2"	1 1/8"	1 3/4"	3/4"	1 3/4"	7,200	3553T19	74.55
7/8"	7"	2 1/4"	1 3/16"	2 1/8"	7/8"	2 1/16"	10,000	3553T21	124.42
1"	8 5/8"	2 1/2"	1 3/4"	2 1/4"	1 1/8"	2 7/16"	12,500	3553T22	160.96
1 1/4"	8 7/16"	3 1/8"	2 1/16"	3 1/4"	1 3/8"	2 13/16"	18,000	3553T24	310.44
(11) Eye and Clevis— *With screw pin*									
Cast Type 316 Stainless Steel									
1/4"	2"	9/16"	1/2"	5/8"	1/4"	7/16"	770	30365T31	9.77
5/16"	2 5/8"	3/4"	5/8"	13/16"	3/8"	5/8"	1,430	30365T32	12.81
3/8"	3 3/16"	1"	3/4"	1 1/8"	3/8"	13/16"	2,200	30365T33	18.93
1/2"	4 1/2"	1 5/16"	1"	1 1/4"	5/8"	1"	3,080	30365T34	41.47
5/8"	5 3/4"	1 1/2"	1 7/32"	1 5/8"	5/8"	1 3/8"	5,500	30365T35	67.76
3/4"	6 3/4"	1 9/16"	1 3/8"	2"	3/4"	1 9/16"	8,800	30365T36	126.26
(12) Clevis and Clevis									
Cast Type 316 Stainless Steel									
1/4"	1 7/8"	—	1/2"	7/16"	1/4"	—	600	37405T24	7.15
5/16"	2 7/16"	—	5/8"	5/8"	3/8"	—	1,100	37405T25	13.03
3/8"	3 1/8"	—	3/4"	7/8"	3/8"	—	1,540	37405T26	22.02
7/16"	4 5/16"	—	1"	1 1/8"	1/2"	—	2,640	37405T27	39.12
9/16"	5 1/2"	—	1 1/4"	1 3/8"	5/8"	—	4,750	37405T28	70.97
3/4"	6 5/16"	—	1 1/2"	1 5/8"	3/4"	—	7,100	37405T29	115.20

Warning! **Never exceed work load limits.**

About Turnbuckles and End Fittings

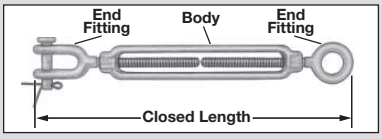

Turnbuckles are mechanical coupling devices that adjust length and tension. They consist of two threaded end fittings and a threaded body. One end fitting has right-hand threads (fitting tightens clockwise), and the other end has left-hand threads (fitting tightens counterclockwise). The turnbuckle body has matching right- and left-hand internal threads. Turning the turnbuckle body adjusts the end fittings an equal amount on each end.

High-Strength Corrosion-Resistant Turnbuckles

Suited to your toughest applications, these turnbuckles offer strong, seamless, forged construction (unless noted) and are ideal for outdoor and wet environments.

Jaw end fittings include one removable pin and one cotter pin. ***Stub end fittings*** are partially threaded. ***Stud end fittings*** are fully threaded.

Galvanized steel turnbuckles have a hot-dipped finish and offer good corrosion resistance. Meet ASTM F1145-05 Type 1, Grade 1. ***Type 316 stainless steel*** turnbuckles provide maximum corrosion resistance. Meet ASTM F1145-92 Type 1.

Also Available: Jam nuts. Please ask for 30045T555 and specify thread size and right- or left-hand thread.

Eye and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(B)	Thread Size		Each
Galvanized Steel with Round Eyes							
500	8″	4″	1/2″	—	1/4″-20	2999T51	$13.37
800	9″	4 1/2″	5/8″	—	5/16″-18	2999T52	16.62
1,200	11 1/2″	6″	3/4″	—	3/8″-16	2999T53	17.96
2,200	13″	6″	1″	—	1/2″-13	2999T54	20.92
2,200	16″	9″	1″	—	1/2″-13	2999T55	28.79
2,200	19″	12″	1″	—	1/2″-13	2999T56	33.32
3,500	13 1/2″	6″	1 1/4″	—	5/8″-11	2999T57	26.33
3,500	17″	9″	1 1/4″	—	5/8″-11	2999T58	38.45
3,500	20 1/2″	12″	1 1/4″	—	5/8″-11	2999T59	41.77
5,200	14 3/4″	6″	1 1/2″	—	3/4″-10	2999T61	44.97
5,200	18″	9″	1 1/2″	—	3/4″-10	2999T62	53.89
5,200	21 3/4″	12″	1 1/2″	—	3/4″-10	2999T63	62.98
5,200	27 3/4″	18″	1 1/2″	—	3/4″-10	2999T64	79.62
7,200	18″	6″	1 3/4″	—	7/8″-9	2999T481	70.60
7,200	22 1/2″	12″	1 3/4″	—	7/8″-9	2999T65	80.77
7,200	28 1/2″	18″	1 3/4″	—	7/8″-9	2999T66	106.36
10,000	17″	6″	2″	—	1″-8	2999T67	83.88
10,000	25″	12″	2″	—	1″-8	2999T68	91.39
10,000	31″	18″	2″	—	1″-8	2999T69	121.91
Type 316 Stainless Steel with Oval Eyes							
500	8″	4″	5/16″	3/4″	1/4″-20	3022T31	27.82
800	9 1/4″	4 1/2″	7/16″	15/16″	5/16″-18	3022T32	39.52
1,200	11 1/2″	6″	1/2″	1 1/8″	3/8″-16	3022T33	54.38
2,200	13″	6″	3/4″	1 7/16″	1/2″-13	3022T34	86.59
3,500	14 1/2″	6″	7/8″	1 3/4″	5/8″-11	3022T35	145.77
5,200	16 1/4″	6″	1″	2 1/16″	3/4″-10	3022T36	208.62

Jaw and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(B)	(C)	(D)	Thread Size		Each
Galvanized Steel with Round Eye									
500	8 1/4″	4″	1/2″	—	3/8″	1/4″	1/4″-20	3000T51	$16.37
800	9 1/8″	4 1/2″	5/8″	—	15/32″	1/4″	5/16″-18	3000T52	19.42
1,200	11 1/2″	6″	3/4″	—	1/2″	5/16″	3/8″-16	3000T53	21.89
2,200	13 1/4″	6″	1″	—	5/8″	7/16″	1/2″-13	3000T54	23.19
2,200	16 1/4″	9″	1″	—	5/8″	7/16″	1/2″-13	3000T55	29.93
2,200	19 1/4″	12″	1″	—	5/8″	7/16″	1/2″-13	3000T56	35.03
3,500	14 5/8″	6″	1 1/4″	—	7/8″	1/2″	5/8″-11	3000T57	32.04
3,500	17 7/8″	9″	1 1/4″	—	7/8″	1/2″	5/8″-11	3000T58	41.00
3,500	21 1/8″	12″	1 1/4″	—	7/8″	1/2″	5/8″-11	3000T59	47.16
5,200	15 5/8″	6″	1 1/2″	—	15/16″	5/8″	3/4″-10	3000T61	48.18
5,200	18 3/4″	9″	1 1/2″	—	15/16″	5/8″	3/4″-10	3000T62	53.65
5,200	22″	12″	1 1/2″	—	15/16″	5/8″	3/4″-10	3000T63	65.82
5,200	28″	18″	1 1/2″	—	15/16″	5/8″	3/4″-10	3000T64	80.69
7,200	19″	6″	1 3/4″	—	1 1/8″	3/4″	7/8″-9	3000T32	80.14
7,200	23 1/2″	12″	1 3/4″	—	1 1/8″	3/4″	7/8″-9	3000T65	84.88
7,200	29 1/2″	18″	1 3/4″	—	1 1/8″	3/4″	7/8″-9	3000T66	112.42
10,000	19 1/8″	6″	2″	—	1 3/16″	7/8″	1″-8	3000T67	91.48
10,000	25 1/4″	12″	2″	—	1 3/16″	7/8″	1″-8	3000T68	99.64
10,000	31 1/4″	18″	2″	—	1 3/16″	7/8″	1″-8	3000T69	139.77
Type 316 Stainless Steel with Oval Eye									
500	7 7/8″	4″	5/16″	3/4″	7/16″	1/4″	1/4″-20	3022T41	28.69
800	9 1/4″	4 1/2″	7/16″	15/16″	1/2″	1/4″	5/16″-18	3022T42	40.74
1,200	11″	6″	1/2″	1 1/8″	9/16″	5/16″	3/8″-16	3022T43	60.90
2,200	12 1/2″	6″	3/4″	17/16″	5/8″	3/8″	1/2″-13	3022T44	86.69
3,500	14″	6″	7/8″	1 3/4″	3/4″	1/2″	5/8″-11	3022T45	130.00
5,200	15 5/8″	6″	1″	2 1/16″	1″	5/8″	3/4″-10	3022T46	194.81

Hook and Hook

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(E)	Thread Size		Each
Galvanized Steel						
400	8 1/2″	4″	1/4″	1/4″-20	2997T51	$13.37
1,000	9 1/2″	4 1/2″	1/2″	5/16″-18	2997T52	16.62
1,000	12″	6″	1/2″	3/8″-16	2997T53	17.96
1,500	14 1/4″	6″	13/16″	1/2″-13	2997T54	20.92
1,500	17 1/4″	9″	13/16″	1/2″-13	2997T55	28.79
1,500	20 1/4″	12″	13/16″	1/2″-13	2997T56	33.32
2,250	14 3/4″	6″	13/16″	5/8″-11	2997T57	26.33
2,250	17 3/4″	9″	13/16″	5/8″-11	2997T58	38.45
2,250	20 3/4″	12″	13/16″	5/8″-11	2997T59	41.77
3,000	16 3/4″	6″	7/8″	3/4″-10	2997T61	44.97
3,000	19 3/4″	9″	7/8″	3/4″-10	2997T62	53.89
3,000	22 3/4″	12″	7/8″	3/4″-10	2997T63	62.98
3,000	28 3/4″	18″	7/8″	3/4″-10	2997T64	79.62
5,000	20″	6″	1 1/4″	1″-8	2997T67	83.88
5,000	25 1/2″	12″	1 1/4″	1″-8	2997T68	91.39
Type 316 Stainless Steel—Cast						
300	6 7/8″	4″	3/8″	1/4″-20	3022T612	27.82
500	7 3/4″	4 1/2″	7/16″	5/16″-18	3022T622	39.52
750	10 3/8″	6″	1/2″	3/8″-16	3022T632	54.38
1,050	10 1/2″	6″	9/16″	1/2″-13	3022T642	86.59

Hook and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(B)	(E)	Thread Size		Each
Galvanized Steel with Round Eye								
400	8 1/4″	4″	1/2″	—	1/4″	1/4″-20	2998T51	$13.37
700	9 1/4″	4 1/2″	5/8″	—	1/2″	5/16″-18	2998T52	16.62
1,000	11 3/4″	6″	3/4″	—	1/2″	3/8″-16	2998T53	17.96
1,500	13 5/8″	6″	1″	—	13/16″	1/2″-13	2998T54	20.92
1,500	16 5/8″	9″	1″	—	13/16″	1/2″-13	2998T55	28.79
1,500	19 5/8″	12″	1″	—	13/16″	1/2″-13	2998T56	33.32
2,250	14 1/8″	6″	1 1/4″	—	13/16″	5/8″-11	2998T57	26.33
2,250	17 3/8″	9″	1 1/4″	—	13/16″	5/8″-11	2998T58	38.45
2,250	20 5/8″	12″	1 1/4″	—	13/16″	5/8″-11	2998T59	41.77
3,000	15 3/4″	6″	1 1/2″	—	7/8″	3/4″-10	2998T61	44.97
3,000	18 7/8″	9″	1 1/2″	—	7/8″	3/4″-10	2998T62	53.89
3,000	22 1/4″	12″	1 1/2″	—	7/8″	3/4″-10	2998T63	62.98
3,000	28 1/4″	18″	1 1/2″	—	7/8″	3/4″-10	2998T64	79.62
5,000	19 3/4″	6″	2″	—	1 1/4″	1″-8	2998T67	83.88
5,000	25 1/4″	12″	2″	—	1 1/4″	1″-8	2998T68	91.39
Type 316 Stainless Steel with Oval Eye—Cast								
300	7 1/2″	4″	5/16″	3/4″	3/8″	1/4″-20	3022T611	27.82
500	8 1/2″	4 1/2″	3/8″	15/16″	7/16″	5/16″-18	3022T621	39.52
750	10 3/4″	6″	1/2″	1 1/8″	1/2″	3/8″-16	3022T631	54.38
1,050	12″	6″	3/4″	17/16″	9/16″	1/2″-13	3022T641	86.59

(Continued on following page)

Warning! Never exceed work load limits.

High-Strength Corrosion-Resistant Turnbuckles *(Continued from previous page)*

Jaw and Jaw

Work Load Limit, lbs.	Closed Length	Max. Adjust-ment	(C)	(D)	Thread Size		Each
Galvanized Steel							
500	8½″	4″	3/8″	1/4″	1/4″-20	3001T51	$19.48
800	9¼″	4½″	15/32	1/4″	5/16″-18	3001T52	23.20
1,200	11½″	6″	1/2″	5/16″	3/8″-16	3001T53	25.89
2,200	13½″	6″	5/8″	7/16″	1/2″-13	3001T54	27.70
2,200	16½″	9″	5/8″	7/16″	1/2″-13	3001T55	36.45
2,200	19½″	12″	5/8″	7/16″	1/2″-13	3001T56	41.07
3,500	14¾″	6″	7/8″	1/2″	5/8″-11	3001T57	37.25
3,500	18¾″	9″	7/8″	1/2″	5/8″-11	3001T58	49.87
3,500	21¾″	12″	7/8″	1/2″	5/8″-11	3001T59	56.98
5,200	16½″	6″	15/16″	5/8″	3/4″-10	3001T61	49.74
5,200	19½″	9″	15/16″	5/8″	3/4″-10	3001T62	56.20
5,200	22½″	12″	15/16″	5/8″	3/4″-10	3001T63	68.71
5,200	28½″	18″	15/16″	5/8″	3/4″-10	3001T64	82.69
7,200	19½″	6″	15/32″	3/4″	7/8″-9	3001T32	88.72
7,200	24½″	12″	15/32″	3/4″	7/8″-9	3001T65	89.26
7,200	30½″	18″	15/32″	3/4″	7/8″-9	3001T66	110.74
10,000	20 3/16″	6″	1 3/16″	7/8″	1″-8	3001T67	97.91
10,000	25½″	12″	1 3/16″	7/8″	1″-8	3001T68	107.38
10,000	31½″	18″	1 3/16″	7/8″	1″-8	3001T69	145.23
10,000	39¾″	24″	1 3/8″	7/8″	1″-8	3001T71	209.93
15,200	31 9/16″	12″	1 3/4″	1 1/8″	1 1/4″-7	3001T72	226.05
15,200	37 9/16″	18″	1 3/4″	1 1/8″	1 1/4″-7	3001T73	282.47
15,200	44 5/32″	24″	1 3/4″	1 1/8″	1 1/4″-7	3001T74	375.04
Type 316 Stainless Steel							
500	7¾″	4″	7/16″	1/4″	1/4″-20	3022T51	34.00
800	9″	4½″	1/2″	1/4″	5/16″-18	3022T52	47.62
1,200	10⅝″	6″	9/16″	5/16″	3/8″-16	3022T53	66.51
2,200	12″	6″	5/8″	3/8″	1/2″-13	3022T54	88.00
3,500	13½″	6″	3/4″	1/2″	5/8″-11	3022T55	133.07
5,200	15″	6″	1″	5/8″	3/4″-10	3022T56	170.00
8,000	18″	6″	1 1/4″	7/8″	1″-8	3022T59	285.53

Stub and Stub

Also Available: Stud and stud turnbuckles. For galvanized steel, please ask for 3041T777 and specify work load limit and closed length. For stainless steel, please ask for 3022T888 and specify work load limit and closed length.

Work Load Limit, lbs.	Closed Length	Max. Adjust-ment	(F)	Thread Size		Each
Galvanized Steel						
500	10″	4″	2 9/16″	1/4″-20	3041T81	$13.07
800	11″	4½″	2 9/16″	5/16″-18	3041T82	16.09
1,200	16″	6″	4″	3/8″-16	3041T83	17.06
2,200	16″	6″	4″	1/2″-13	3041T84	19.30
2,200	19″	9″	4″	1/2″-13	3041T85	26.39
2,200	22″	12″	4″	1/2″-13	3041T86	33.85
3,500	16″	6″	3½″	5/8″-11	3041T87	23.91
3,500	19″	9″	3½″	5/8″-11	3041T88	35.02
3,500	22″	12″	3½″	5/8″-11	3041T89	39.97
5,200	17″	6″	4″	3/4″-10	3041T71	31.28
5,200	20″	9″	4″	3/4″-10	3041T72	40.22
5,200	23″	12″	4″	3/4″-10	3041T73	56.53
5,200	29″	18″	4 3/8″	3/4″-10	3041T74	83.59
7,200	18″	6″	4″	7/8″-9	3041T75	41.67
7,200	24″	12″	4″	7/8″-9	3041T76	72.62
7,200	30″	18″	4″	7/8″-9	3041T77	125.40
9,800	19″	6″	4½″	1″-8	3041T78	51.78
9,800	25″	12″	4½″	1″-8	3041T79	78.18
9,800	31″	18″	4½″	1″-8	3041T91	124.01
14,800	20″	6″	4½″	1 1/4″-7	3041T92	83.34
21,000	20½″	6″	4¼″	1½″-6	3041T93	120.49
Type 316 Stainless Steel						
500	9″	4″	2″	1/4″-20	3022T21	34.63
800	10½″	4½″	2¼″	5/16″-18	3022T22	50.50
1,200	13″	6″	2 7/8″	3/8″-16	3022T23	68.65
2,200	14 1/8″	6″	3″	1/2″-13	3022T24	99.47
3,500	15″	6″	3¼″	5/8″-11	3022T25	160.88
5,200	16″	6″	3½″	3/4″-10	3022T26	190.82
8,000	18″	6″	4″	1″-8	3022T29	253.89

Individual Replacement Components

To Order: For all end fittings, specify right- or left-hand thread. **Also Available:** Stud end fittings. For galvanized steel, please ask for 2997T777 and specify thread size and max. adjustment. For stainless steel, please ask for 3022T777 and specify thread size and max. adjustment.

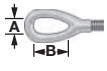

Oval Eye

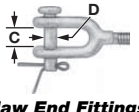

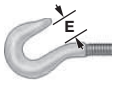

Thread Size	Max. Adjust-ment	Bodies O'all Lg.		Each	Eye End Fittings (A)	(B)		Each	Jaw End Fittings (C)	(D)		Each	Hook End Fittings (E)		Each
Galvanized Steel															
1/4″-20	4″	4 13/16″	30045T41	$7.54	1/2″	—	2999T741	$4.12	3/8″	1/4″	3001T11	$7.64	1/4″	2997T101	$4.12
5/16″-18	4½″	5 9/16″	30045T42	10.07	5/8″	—	2999T742	5.16	15/32	1/4″	3001T12	8.23	1/2″	2997T102	5.16
3/8″-16	6″	7⅛″	30045T43	10.58	3/4″	—	2999T743	5.95	1/2″	5/16″	3001T13	9.38	1/2″	2997T103	5.95
1/2″-13	6″	7½″	30045T44	11.85	1″	—	2999T744	7.09	5/8″	7/16″	3001T14	9.90	13/16″	2997T104	7.09
1/2″-13	9″	10½″	30045T45	17.52	1″	—	2999T745	8.33	5/8″	7/16″	3001T15	12.71	13/16″	2997T105	8.33
1/2″-13	12″	13½″	30045T46	20.38	1″	—	2999T746	10.45	5/8″	7/16″	3001T16	14.21	13/16″	2997T106	10.45
5/8″-11	6″	7⅞″	30045T47	14.68	1 1/4″	—	2999T747	9.54	7/8″	1/2″	3001T17	15.05	13/16″	2997T107	9.54
5/8″-11	9″	10⅞″	30045T48	21.01	1 1/4″	—	2999T748	12.71	7/8″	1/2″	3001T18	18.57	13/16″	2997T108	12.71
5/8″-11	12″	13⅞″	30045T49	24.07	1 1/4″	—	2999T749	13.30	7/8″	1/2″	3001T19	21.06	13/16″	2997T109	13.30
3/4″-10	6″	8¼″	30045T51	19.75	1 1/2″	—	2999T751	18.92	15/16″	5/8″	3001T21	20.61	7/8″	2997T111	18.92
3/4″-10	9″	11¼″	30045T52	23.54	1 1/2″	—	2999T752	18.92	15/16″	5/8″	3001T22	22.21	7/8″	2997T112	20.88
3/4″-10	12″	14¼″	30045T53	35.74	1 1/2″	—	2999T753	20.88	15/16″	5/8″	3001T23	27.29	7/8″	2997T113	21.33
3/4″-10	18″	20¼″	30045T54	53.62	1 1/2″	—	2999T754	21.33	15/16″	5/8″	3001T24	28.38	7/8″	2997T114	23.23
7/8″-9	6″	8⅝″	30045T28	24.99	1 3/4″	—	2999T755	30.55	1 1/8″	3/4″	3001T25	37.71	1 1/16″	2997T115	30.55
7/8″-9	12″	14⅝″	30045T55	38.09	1 3/4″	—	2999T756	29.08	1 1/8″	3/4″	3001T26	38.77	1 1/16″	2997T116	29.08
7/8″-9	18″	20⅝″	30045T56	74.77	1 3/4″	—	2999T757	31.53	1 1/8″	3/4″	3001T27	41.39	1 1/16″	2997T117	31.53
1″-8	6″	9″	30045T57	30.81	2″	—	2999T758	36.98	1 3/16″	7/8″	3001T28	41.39	1 1/4″	2997T118	36.98
1″-8	12″	15″	30045T58	46.14	2″	—	2999T759	38.91	1 3/16″	7/8″	3001T29	44.27	1 1/4″	2997T119	38.91
1″-8	18″	21″	30045T59	74.77	2″	—	2999T761	42.18	1 3/16″	7/8″	3001T31	56.79	1 1/4″	2997T121	42.18
1 1/4″-7	6″	9¾″	30045T85	50.61	—	—	—	—	—	—	—	—	—	—	—
1 1/4″-7	12″	15⅛″	30045T62	70.21	1 13/16″	3 9/16″	2999T764★	87.88	1 3/4″	1 1/8″	3001T34	131.87	—	—	—
1 1/4″-7	18″	21⅛″	30045T63	110.53	1 13/16″	3 9/16″	2999T765★	112.22	1 3/4″	1 1/8″	3001T35	146.57	—	—	—
1 1/4″-7	24″	27⅛″	30045T64	154.15	1 13/16″	3 9/16″	2999T766★	138.26	1 3/4″	1 1/8″	3001T36	197.37	—	—	—
Type 316 Stainless Steel															
1/4″-20	4″	4¾″	3022T11	14.53	5/16″	3/4″	3022T892★	6.27	7/16″	1/4″	3022T884	11.38	3/8″	3022T899	3.67
5/16″-18	4½″	5½″	3022T12	19.38	7/16″	15/16″	3022T893★	9.56	1/2″	1/4″	3022T885	16.02	7/16″	3022T901	7.16
3/8″-16	6″	7⅛″	3022T13	27.19	1/2″	1 1/8″	3022T894★	15.62	9/16″	5/16″	3022T886	25.00	1/2″	3022T902	14.04
1/2″-13	6″	7½″	3022T14	42.53	3/4″	1 7/16″	3022T895★	24.44	5/8″	3/8″	3022T887	29.18	9/16″	3022T903	21.76
5/8″-11	6″	7 13/16″	3022T15	68.33	7/8″	1 3/4″	3022T896★	37.69	3/4″	1/2″	3022T906	47.24	5/8″	3022T904	35.00
3/4″-10	6″	8 3/16″	3022T16	88.37	1″	2 1/16″	3022T897★	54.69	1″	5/8″	3022T889	62.09	7/8″	3022T905	34.73
1″-8	6″	9″	3022T19	116.60	1 3/8″	3 1/16″	3022T898★	91.89	1 1/4″	7/8″	3022T891	121.91	—	—	—

★ Eye is oval.

Warning! *Never exceed work load limits.*

High-Strength Weld-Mount Turnbuckles

Weldability—that's what these turnbuckles are all about. Bodies are made of forged plain steel and meet F1145-05, Type 1, Grade 1. Stub and stud ends are made of 1018 steel. ***Stub ends*** are partially threaded. ***Stud ends*** are fully threaded. **To Order:** For replacement end fittings, please specify right- or left-hand thread.

Also Available: Jam nuts. Please ask for 2995T222 and specify thread size and right- or left-hand thread.

Stub Ends Shown

Work Load Limit, lbs.	Max. Adjustment	(F)	Thread Size	Turnbuckles: Closed Length	Stub Ends	Each	Stud Ends	Each	Repl. Bodies: O'all Lg.		Each	Replacement Stub Ends	Each	Replacement Stud Ends	Each
500	4"	2 9/16"	1/4"-20	10"	2996T14	$11.94	2996T521	$12.28	4 13/16"	2995T14	$6.12	2995T795	$2.68	2995T821	$2.80
800	4 1/2"	2 9/16"	5/16"-18	11"	2996T15	14.35	2996T522	15.13	5 9/16"	2995T15	8.20	2995T796	2.94	2995T822	3.06
1,200	6"	4"	3/8"-16	16"	2996T16	15.23	2996T523	15.66	7 1/8"	2995T16	8.58	2995T797	3.20	2995T823	3.33
2,200	6"	4"	1/2"-13	16"	2996T17	17.22	2996T524	17.71	7 1/2"	2995T17	9.21	2995T798	3.68	2995T824	3.83
2,200	9"	4"	1/2"-13	19"	2996T18	24.13	2996T525	24.83	10 1/2"	2995T18	14.23	2995T799	4.48	2995T825	4.67
2,200	12"	4"	1/2"-13	22"	2996T19	30.95	2996T526	31.84	13 1/2"	2995T19	16.54	2995T801	6.65	2995T826	6.93
3,500	6"	3 1/2"	5/8"-11	16"	2996T21	19.49	2996T527	21.95	7 7/8"	2995T21	11.40	2995T802	4.59	2995T827	4.79
3,500	9"	3 1/2"	5/8"-11	19"	2996T22	32.02	2996T528	32.95	10 7/8"	2995T22	16.33	2995T803	6.87	2995T828	7.16
3,500	12"	3 1/2"	5/8"-11	22"	2996T23	36.54	2996T529	37.59	13 7/8"	2995T23	19.56	2995T804	7.83	2995T829	8.16
5,200	6"	4"	3/4"-10	17"	2996T24	27.28	2996T531	28.72	8 1/4"	2995T24	15.29	2995T805	5.81	2995T831	6.05
5,200	9"	4"	3/4"-10	20"	2996T25	36.79	2996T532	37.85	11 1/4"	2995T25	18.68	2995T806	8.16	2995T832	8.50
5,200	12"	4"	3/4"-10	23"	2996T26	50.47	2996T533	53.20	14 1/4"	2995T26	28.33	2995T807	10.37	2995T833	10.80
5,200	18"	3 7/8"	3/4"-10	29"	2996T47	74.63	2996T534	78.66	20 1/4"	2995T47	42.57	2995T808	14.99	2995T834	15.62
7,200	6"	4"	7/8"-9	18"	2996T28	34.73	2996T535	38.26	8 5/8"	2995T28	19.41	2995T809	8.19	2995T835	8.54
7,200	12"	4"	7/8"-9	24"	2996T29	63.32	2996T536	68.32	14 5/8"	2995T29	30.95	2995T811	16.61	2995T836	17.30
9,800	6"	4 1/2"	1"-8	19"	2996T321	42.22	2996T538	47.55	9"	2995T321	24.43	2995T813	10.08	2995T838	10.76
9,800	12"	4 1/2"	1"-8	25"	2996T331	69.80	2996T539	73.56	15"	2995T331	32.89	2995T814	15.35	2995T839	16.38
9,800	18"	4 1/2"	1"-8	31"	2996T52	110.72	2996T541	116.69	21"	2995T52	54.39	2995T815	24.22	2995T841	25.23
14,800	6"	4 1/2"	1 1/4"-7	20"	2996T371	67.95	2996T542	76.52	9 3/4"	2995T371	36.45	2995T816	15.96	2995T843	17.04
21,000	6"	4 11/16"	1 1/2"-6	20 1/2"	2996T431	106.96	2996T543	110.61	10 3/8"	2995T431	56.20	2995T817	20.47	2995T847	21.86

Corrosion-Resistant Turnbuckles

Made of cast Type 316 stainless steel (unless noted), these turnbuckles are the economical choice when you need corrosion resistance.

Jaw end fittings include one removable pin and one cotter ring.

Also Available: For replacement bodies, ask for 30315T666 and specify thread size. For replacement end fittings and jam nuts, ask for 30315T333 and specify type of end fitting (eye, jaw, hook, or stub) or jam nut, thread size, and right- or left-hand thread.

Eye and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	Thread Size		Each
300	5 1/2"	2 1/2"	3/8"	3/16"-24	30315T57	$11.95
440	6 5/16"	3"	7/16"	1/4"-20	30315T52	13.45
800	7 9/16"	4"	1/2"	5/16"-18	30315T53	20.00
1,200	11"	6"	5/8"	3/8"-16	30315T54	24.63
2,200	11"	6"	3/4"	1/2"-13	30315T15	37.26
2,800	15 5/8"	8"	7/8"	5/8"-11	30315T56	76.34
3,500	18 1/4"	10"	1 1/8"	3/4"-10	30315T771	123.81

Hook and Hook

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(E)	Thread Size		Each
100	5 7/16"	2 1/2"	5/16"	3/16"-24	30315T31	$11.95
200	6 5/8"	3"	3/8"	1/4"-20	30315T32	13.45
400	8 1/8"	4"	7/16"	5/16"-18	30315T33	20.00
700	11 1/16"	6"	1/2"	3/8"-16	30315T34	24.63
1,000	11 1/2"	6"	5/8"	1/2"-13	30315T35	37.26
1,600	15 3/4"	8"	5/8"	5/8"-11	30315T37	76.34
2,000	18 1/4"	10"	1 1/8"	3/4"-10	30315T773	123.81

Jaw and Jaw

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(C)	(D)	Thread Size		Each
300	5 1/4"	2 1/2"	5/16"	3/16"	3/16"-24	30315T611	$15.93
440	6 1/4"	3"	3/8"	1/4"	1/4"-20	30315T612	19.80
800	7 11/16"	4"	3/8"	5/16"	5/16"-18	30315T613	26.02
1,200	10 11/16"	6"	7/16"	3/8"	3/8"-16	30315T614	34.13
2,200	12 1/16"	6"	9/16"	7/16"	1/2"-13	30315T615	42.59
2,800	16 3/8"	8"	11/16"	5/8"	5/8"-11	30315T616	109.25
3,500	20"	10"	7/8"	3/4"	3/4"-10	30315T617	169.25

Jaw and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(C)	(D)	Thread Size		Each
300	5 3/8"	2 1/2"	3/8"	5/16"	3/16"	3/16"-24	30315T411	$15.93
440	6 1/4"	3"	7/16"	3/8"	1/4"	1/4"-20	30315T412	19.80
800	7 9/16"	4"	1/2"	3/8"	5/16"	5/16"-18	30315T413	26.02
1,200	10 7/8"	6"	5/8"	7/16"	3/8"	3/8"-16	30315T414	34.13
2,200	11 7/8"	6"	3/4"	9/16"	7/16"	1/2"-13	30315T415	42.69
2,800	15 11/16"	8"	7/8"	11/16"	5/8"	5/8"-11	30315T416	95.02
3,500	18 3/4"	10"	1 1/8"	3/4"	3/4"	3/4"-10	30315T417	151.92

Hook and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(E)	Thread Size		Each
100	5 9/16"	2 1/2"	3/8"	5/16"	3/16"-24	30315T21	$11.95
200	6 3/8"	3"	7/16"	3/8"	1/4"-20	30315T22	13.45
400	7 11/16"	4"	1/2"	7/16"	5/16"-18	30315T23	20.00
700	11"	6"	5/8"	1/2"	3/8"-16	30315T24	24.63
1,000	11 9/16"	6"	3/4"	5/8"	1/2"-13	30315T25	37.26
1,600	15 1/2"	8"	7/8"	5/8"	5/8"-11	30315T27	76.34
2,000	18"	10"	1 1/8"	1 1/8"	3/4"-10	30315T772	123.81

Stub and Stub—Forged

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(F)	Thread Size		Each
300	5 1/16"	2 1/2"	11/16"	3/16"-24	30315T111	$15.41
440	9 1/16"	3"	2"	1/4"-20	30315T112	26.51
800	10 9/16"	4"	2 1/8"	5/16"-18	30315T113	40.54
1,200	13 1/16"	6"	2 1/2"	3/8"-16	30315T114	54.02
2,200	14 7/16"	6"	3"	1/2"-13	30315T115	76.12
2,800	16 1/4"	8"	3 1/4"	5/8"-11	30315T116	131.75
3,500	18 3/4"	10"	3 3/8"	3/4"-10	30315T117	174.10

Warning! *Never exceed work load limits.*

For information about turnbuckles and end fittings, see page 1430.

Closed-Body Corrosion-Resistant Turnbuckles

The right choice for outdoor and harsh environments. These turnbuckles pair up a closed body to protect the threads from debris and 300 series stainless steel construction for corrosion resistance. They also have a slim body for use in tight spaces. Jam nuts are included.

Jaw end fittings pivot for easier connections and include one removable pin and one cotter ring. Fittings with ½"-20 and ⅝"-18 thread sizes have corrosion-resistant bronze inserts on the pivots.

Also Available: Replacement bodies and end fittings.

For replacement bodies, please ask for 3082T666 and specify thread size.

For replacement end fittings, please ask for 3082T888 and specify type of end fitting (eye, jaw, or hook), thread size, and right- or left-hand thread.

Eye and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	Thread Size		Each
400	6⅜"	2½"	5/16"	3/16"-32	3082T11	$20.35
1,000	8"	3"	⅜"	¼"-28	3082T12	28.64
1,600	9"	3¾"	½"	5/16"-24	3082T13	45.62
2,800	10"	4¼"	⅝"	⅜"-24	3082T14	66.30
4,200	12"	4¾"	¾"	½"-20	3082T15	104.17
5,900	14"	5"	⅞"	⅝"-18	3082T16	127.53

Jaw and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(C)	(D)	Thread Size		Each
400	6⅜"	2½"	5/16"	3/16"	3/16"	3/16"-32	3082T21	$22.04
1,000	8"	3"	⅜"	¼"	¼"	¼"-28	3082T22	30.40
1,600	9"	3¾"	½"	5/16"	5/16"	5/16"-24	3082T23	42.65
2,800	9½"	4¼"	⅝"	⅜"	⅜"	3/8"-24	3082T24	66.30
4,200	12"	4¾"	¾"	½"	½"	½"-20	3082T25	129.07
5,900	14"	5"	⅞"	⅝"	⅝"	⅝"-18	3082T26	173.88

Hook and Hook

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(E)	Thread Size		Each
82	6⅜"	2½"	¼"	3/16"-32	3082T37	$39.55
195	8"	3"	⅜"	¼"-28	3082T42	49.17
290	9"	3¾"	½"	5/16"-24	3082T45	59.85
405	10"	4¼"	⅝"	⅜"-24	3082T48	71.60
770	12"	4¾"	¾"	½"-20	3082T52	142.15
1,235	14"	5"	⅞"	⅝"-18	3082T55	209.47

Hook and Eye

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(E)	Thread Size		Each
82	6⅜"	2½"	5/16"	¼"	3/16"-32	3082T38	$29.82
195	8"	3"	⅜"	⅜"	¼"-28	3082T43	33.12
290	9"	3¾"	½"	½"	5/16"-24	3082T46	47.02
405	10"	4¼"	⅝"	⅝"	⅜"-24	3082T49	65.20
770	12"	4¾"	¾"	¾"	½"-20	3082T53	129.32
1,235	14"	5"	⅞"	⅞"	⅝"-18	3082T56	192.38

Jaw and Jaw

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(C)	(D)	Thread Size		Each
400	6⅜"	2½"	3/16"	3/16"	3/16"-32	3082T31	$20.77
1,000	8"	3"	¼"	¼"	¼"-28	3082T32	30.96
1,600	9"	3¾"	5/16"	5/16"	5/16"-24	3082T33	42.16
2,800	9½"	4¼"	⅜"	⅜"	⅜"-24	3082T34	63.64
4,200	12"	4¾"	½"	½"	½"-20	3082T35	138.88
5,900	14"	5"	⅝"	⅝"	⅝"-18	3082T36	183.68

Hook and Jaw

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(C)	(D)	(E)	Thread Size		Each
82	6⅜"	2½"	3/16"	3/16"	¼"	3/16"-32	3082T41	$28.32
195	8"	3"	¼"	¼"	⅜"	¼"-28	3082T44	39.02
290	9"	3¾"	5/16"	5/16"	½"	5/16"-24	3082T47	48.10
405	10"	4¼"	⅜"	⅜"	⅝"	⅜"-24	3082T51	66.28
770	12"	4¾"	½"	½"	¾"	½"-20	3082T54	137.88
1,235	14"	5"	⅝"	⅝"	⅞"	⅝"-18	3082T57	202.00

Light Duty Turnbuckles

If you have small-wire applications that require low tension, these are the turnbuckles you need.

Closed-body turnbuckles keep debris out of the threads.

Zinc-alloy steel bodies offer good corrosion resistance in most environments. ***Aluminum bodies*** are corrosion resistant, strong, and lightweight.

Zinc-plated steel end fittings offer good corrosion resistance in most environments. ***Type 304 stainless steel end fittings*** provide excellent corrosion resistance.

To Order: Please specify end fittings: eye and eye, hook and eye, or hook and hook.

Open Body with Eye and Eye

Open Body with Hook and Eye

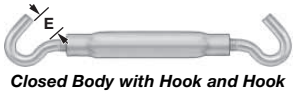

Closed Body with Hook and Hook

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(E)	Thread Size		Each
Open Body							
Zinc-Alloy Steel with Zinc-Plated Steel End Fittings							
Not Rated	3½"	1¼"	5/16"	5/16"	5/32"-32	3010T2	$1.12
Not Rated	4½"	1⅝"	5/16"	5/16"	3/16"-24	3010T3	1.22
Not Rated	5⅞"	2⅜"	7/16"	7/16"	¼"-20	3010T4	2.00
Not Rated	6⅝"	2¾"	9/16"	9/16"	5/16"-18	3010T5	2.51
Not Rated	7¾"	3"	⅝"	⅝"	⅜"-16	3010T6	2.97
Aluminum with Zinc-Plated Steel End Fittings							
36	3⅜"	1¼"	¼"	¼"	5/32"-32	3003T3	1.18
38	4"	1½"	5/16"	5/16"	3/16"-24	3003T4	1.24
52	4½"	1⅞"	⅜"	⅜"	7/32"-24	3003T5	1.32
68	5½"	2⅛"	7/16"	7/16"	¼"-20	3003T6	1.41
96	6¾"	2½"	9/16"	½"	5/16"-18	3003T7	2.34
144	7½"	3"	11/16"	9/16"	⅜"-16	3003T8	3.37

Work Load Limit, lbs.	Closed Length	Max. Adjustment	(A)	(E)	Thread Size		Each
Open Body (Cont.)							
Aluminum with Type 304 Stainless Steel End Fittings							
36	3⅜"	1¼"	¼"	¼"	5/32"-32	30095T7	$3.96
38	4"	1½"	5/16"	5/16"	3/16"-24	30095T4	4.14
52	4½"	1⅞"	⅜"	⅜"	7/32"-24	30095T8	4.56
68	5½"	2⅛"	7/16"	7/16"	¼"-20	30095T5	5.89
96	6¾"	2½"	9/16"	½"	5/16"-18	30095T9	9.44
144	7½"	3"	11/16"	9/16"	⅜"-16	30095T6	11.79
Closed Body							
Aluminum with Zinc-Plated Steel End Fittings							
45	4⅛"	1 11/16"	¼"	¼"	3/16"-24	30125T2	1.37
55	4⅝"	1 15/16"	5/16"	5/16"	7/32"-24	30125T3	1.70
90	5⅜"	2⅛"	⅜"	⅜"	¼"-20	30125T4	1.95
130	6⅜"	2 9/16"	½"	½"	5/16"-18	30125T5	2.61
215	7⅝"	3⅛"	⅝"	⅝"	⅜"-16	30125T6	3.36

Warning! Never exceed work load limits.

Grab Hooks—*For Lifting*

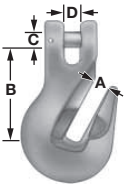

With Clevis

For use as a shortening hook when taking up excess chain, these hooks securely hold a single link of chain in their narrow opening. They have contoured sides with grooves that allow weight to be more evenly distributed across the links of the chain. All are made of forged alloy steel. Maximum temperature is 300° F.

Ultramax (Grade 120) hooks are the strongest grab hooks we offer. When used with chain of the same grade they are approximately 20% stronger than Supermax (Grade 100) hooks and about 35% stronger than high-strength (Grade 80) hooks.

Supermax (Grade 100) hooks are approximately 20% stronger than high-strength (Grade 80) hooks when used with chain of the same grade.

High-strength (Grade 80) hooks are the industry standard for lifting.

Also Available: Black super-corrosion-resistant finish Supermax (Grade 100) hooks with clevis. Hooks are zinc plated and have an epoxy coating for enhanced corrosion resistance. Please ask for 33985T888 and specify chain trade size.

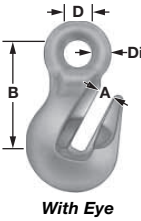

With Eye

For Chain Trade Size	Work Load Limit, lbs.	With Clevis (A)	(B)	(C)	(D)	Each	With Eye Dia.	(A)	(B)	(D)	Each
Ultramax (Grade 120)—*Blue Powder-Coated Finish*											
9/32″	5,200	—	—	—	—	—	7/16″	7/16″	2 3/4″	13/16″	**5493T11** $16.58
3/8″	10,600	—	—	—	—	—	9/16″	1/2″	3 7/16″	7/8″	**5493T12** 22.48
1/2″	17,900	—	—	—	—	—	11/16″	11/16″	4 7/16″	1″	**5493T13** 48.16
Supermax (Grade 100)—*Orange Powder-Coated Finish*											
7/32″	2,700	5/16″	1 3/4″	5/16″	1/4″	**33985T81** $19.36	5/16″	5/16″	2 1/16″	7/16″	**34645T21** 12.12
9/32″	4,300	3/8″	2 3/8″	3/8″	3/8″	**33985T82** 22.80	7/16″	3/8″	2 3/4″	3/4″	**34645T22**● 13.92
5/16″	5,700	3/8″	2 3/8″	3/8″	3/8″	**33985T83** 27.48	7/16″	3/8″	2 3/4″	3/4″	**34645T22** 13.92
3/8″	8,800	1/2″	3″	1/2″	7/16″	**33985T84** 34.06	9/16″	1/2″	3 7/16″	13/16″	**34645T23** 20.07
1/2″	15,000	5/8″	4 1/16″	5/8″	9/16″	**33985T85** 64.13	11/16″	5/8″	3 13/16″	15/16″	**34645T24** 35.57
5/8″	22,600	3/4″	4 1/4″	3/4″	13/16″	**33985T86** 87.29	7/8″	11/16″	5 1/16″	1 1/4″	**34645T25** 54.88
3/4″	35,300	7/8″	5 1/2″	15/16″	7/8″	**33985T87** 126.21	1″	15/16″	5 15/16″	1 3/8″	**34645T26** 74.35
High Strength (Grade 80)—*Orange-Painted Finish*											
7/32″	2,100	—	—	—	—	—	3/8″	3/8″	1 5/8″	5/8″	**3512T61** 9.68
3/4″	28,300	7/8″	5 1/2″	15/16″	7/8″	**3889T65** 102.68	—	—	—	—	—

● Work load limit is 5,700 lbs.

Grab Hooks with Securing Pin—*For Lifting*

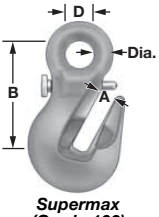

Supermax (Grade 100)

Keep it together—these hooks have a spring-loaded pin that prevents your chain and hook from separating when chain slackens. All are made of forged alloy steel.

Supermax (Grade 100) hooks are approximately 20% stronger than high-strength (Grade 80) hooks when used with chain of the same grade. Maximum temperature is 400° F.

High-strength (Grade 80) hooks are the industry standard for lifting. Maximum temperature is 300° F.

Also Available: Securing pin repair kit for high-strength (Grade 80) hooks. Please ask for 3702T88 and specify chain trade size.

For Chain Trade Size	Work Load Limit, lbs.	Dia.	(A)	(B)	(D)	Each
Supermax (Grade 100)—*Orange Powder-Coated Finish*						
9/32″, 5/16″	5,700	7/16″	3/8″	2 3/4″	13/16″	**5142T1** $33.20
3/8″	8,800	9/16″	1/2″	3 7/16″	7/8″	**5142T2** 39.77
1/2″	15,000	11/16″	11/16″	4 7/16″	1″	**5142T3** 68.08
5/8″	22,600	15/16″	3/4″	5 1/16″	1 1/4″	**5142T4** 104.90

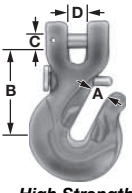

High Strength (Grade 80)

For Chain Trade Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	Each
High Strength (Grade 80)—*Red Powder-Coated Finish*						
1/4″, 5/16″	3,500	3/8″	2 3/8″	5/16″	7/16″	**3702T21** $49.02
3/8″	7,100	1/2″	2 13/16″	7/16″	1/2″	**3702T22** 57.19
1/2″	12,000	5/8″	3 13/16″	5/8″	3/4″	**3702T23** 69.80
5/8″	18,100	11/16″	4 1/2″	3/4″	11/16″	**3702T24** 88.30
3/4″	28,300	7/8″	5 13/16″	1″	7/8″	**3702T25** 169.67

Grab Hooks—*Not for Lifting*

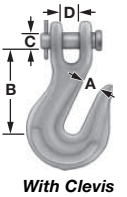

With Clevis

Securely hold a single link of chain in the narrow opening of these forged hooks. Ideal for use as a shortening hook when taking up excess chain as well as in binding and tie-down applications. Maximum temperature is 400° F.

Steel hooks are good for applications where corrosion is not a factor.

Type 316 stainless steel hooks provide maximum corrosion resistance.

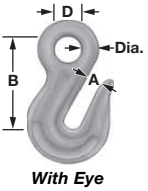

With Eye

For Chain Trade Size	Work Load Limit, lbs.	With Clevis (A)	(B)	(C)	(D)	Each	With Eye Dia.	(A)	(B)	(D)	Each
Steel—*Orange-Painted Finish (unless noted)*											
1/4″	3,500	3/8″	1 7/8″	5/16″	5/16″	**3536T54** $6.50	3/8″	3/8″	2″	1/2″	**3536T81**★ $5.75
5/16″	4,500	7/16″	2 3/8″	3/8″	3/8″	**3536T55** 9.45	7/16″	7/16″	2 3/8″	5/8″	**3536T82**★ 7.98
3/8″	7,100	1/2″	2 5/8″	1/2″	7/16″	**3536T56** 12.41	1/2″	1/2″	2 3/4″	3/4″	**3536T83**★ 9.55
7/16″	6,900	9/16″	3″	1/2″	1/2″	**3536T87** 18.59	9/16″	9/16″	3 3/16″	13/16″	**3536T84**★ 17.58
1/2″	12,000	5/8″	3 5/16″	9/16″	9/16″	**3536T78** 22.31	5/8″	5/8″	3 9/16″	15/16″	**3536T85**★ 19.74
5/8″	18,100	3/4″	3 15/16″	3/4″	3/4″	**3536T79** 40.48	11/16″	11/16″	4 9/16″	1 1/16″	**3536T86**★ 32.62
Type 316 Stainless Steel—*Plain Finish*											
1/4″	1,500	5/16″	1 13/16″	3/8″	5/16″	**38115T3** 19.55	1/4″	5/16″	2″	1/2″	**38405T1** 15.78
5/16″	2,000	3/8″	2 1/16″	3/8″	3/8″	**38115T4** 27.98	5/16″	3/8″	2 1/4″	9/16″	**38405T2** 23.62
3/8″	2,500	1/2″	2 9/16″	7/16″	7/16″	**38115T5** 37.55	3/8″	1/2″	2 1/2″	5/8″	**38405T3** 34.30
1/2″	3,600	5/8″	2 13/16″	1/2″	1/2″	**38115T6** 81.83	1/4″	5/8″	3 3/8″	7/8″	**38405T4** 74.26

★ Has a clear finish.

Warning! Never exceed work load limits.

Sling Hooks with Latch—For Lifting

These forged hooks have a latch that springs back to the closed position to keep your chain and hook from separating when the chain slackens. The hook opening accommodates large anchor points and allows chain to move freely through the closed hook.

Note: When used with wire rope, ensure that the eye diameter can accommodate the wire rope thimble.

Ultramax (Grade 120) are the strongest sling hooks with latch we offer. They are approximately 20% stronger than Supermax (Grade 100) hooks and about 35% stronger than high-strength (Grade 80) hooks. Made of alloy steel. Maximum temperature is 300° F.

Supermax (Grade 100) hooks are approximately 25% stronger than high-strength (Grade 80) hooks. All are made of alloy steel. Maximum temperature is 300° F.

Black super-corrosion-resistant hooks are zinc plated and have an epoxy coating for enhanced corrosion resistance.

High-strength (Grade 80) hooks are the industry standard for lifting applications. All are made of alloy steel. Maximum temperature is 400° F.

Hooks with half link have a built-in half-link connector.

Corrosion-resistant (Grade 50) hooks are Type 316L stainless steel for maximum corrosion resistance. Maximum temperature is 750° F.

Medium-strength hooks swivel to make positioning and connecting to the load easier. They are made of nongraded alloy steel. Maximum temperature is 199° F.

Replacement latches include latch, spring, and installation hardware.

Ultramax (Grade 120) and Supermax (Grade 100)

With Clevis

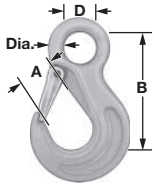

With Eye

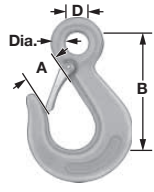

High Strength (Grade 80) with Eye

For Chain Trade Size	Work Load Limit, lbs.	With Clevis (A)	(B)	(C)	(D)	Each	With Eye Dia.	(A)	(B)	(D)	Each	Repl. Latches	Each
Ultramax (Grade 120)—*Blue Powder-Coated Finish*													
9/32"	5,200	—	—	—	—	—	7/16"	1"	4"	1"	5502T5	$34.02	33795T112	$11.24
3/8"	10,600	—	—	—	—	—	5/8"	1 1/4"	5 3/16"	1 5/16"	5502T7	52.78	33795T113	12.93
1/2"	17,900	—	—	—	—	—	3/4"	1 9/16"	6 1/4"	1 11/16"	5502T9	77.06	33795T114	16.09
Supermax (Grade 100)—*Black Super-Corrosion-Resistant Finish*													
7/32"	2,700	3/4"	2 11/16"	5/16"	1/4"	33795T61	$30.54	3/8"	3/4"	3 5/16"	3/4"	33825T87	22.01	33795T111	8.30
9/32"	4,300	1"	3 3/4"	3/8"	3/8"	33795T82	37.39	7/16"	1"	4 3/16"	1"	33825T88●	30.94	33795T112	11.24
5/16"	5,700	1"	3 11/16"	3/8"	3/8"	33795T62	39.15	7/16"	1"	4 3/16"	1"	33825T88	30.94	33795T112	11.24
3/8"	8,800	1 3/16"	4 5/16"	1/2"	7/16"	33795T84	59.23	5/8"	1 3/16"	5 1/8"	1 5/16"	33825T89	46.58	33795T113	12.93
1/2"	15,000	1 1/2"	5 3/8"	5/8"	9/16"	33795T72	97.04	3/4"	1 1/2"	6 7/16"	1 11/16"	33825T91	79.37	33795T114	16.09
5/8"	22,600	1 3/4"	6 1/8"	13/16"	11/16"	33795T86	164.47	15/16"	1 3/4"	7 3/16"	1 15/16"	33825T92	154.03	33795T115	18.53
3/4"	35,300	—	—	—	—	—	—	1 1/16"	2 1/16"	8 1/16"	2 3/16"	33825T93	209.71	33795T116	27.32
7/8"	42,700	—	—	—	—	—	—	1 1/8"	2 7/16"	8 7/8"	2 3/8"	33825T94	307.24	33795T117	32.76
Supermax (Grade 100)—*Orange Powder-Coated Finish*													
7/32"	2,700	3/4"	2 11/16"	5/16"	1/4"	33795T51	27.52	3/8"	3/4"	3 5/16"	3/4"	33825T31	17.96	33795T111	8.30
9/32"	4,300	1"	3 3/4"	3/8"	3/8"	33795T32	32.33	7/16"	1"	4 3/16"	1"	33825T62●	24.28	33795T112	11.24
5/16"	5,700	1"	3 11/16"	3/8"	3/8"	33795T52	33.26	7/16"	1"	4 3/16"	1"	33825T62	24.28	33795T112	11.24
3/8"	8,800	1 3/16"	4 5/16"	1/2"	7/16"	33795T34	52.79	5/8"	1 3/16"	5 1/8"	1 5/16"	33825T63	37.35	33795T113	12.93
1/2"	15,000	1 1/2"	5 3/8"	5/8"	9/16"	33795T42	83.65	3/4"	1 1/2"	6 7/16"	1 11/16"	33825T73	56.69	33795T114	16.09
5/8"	22,600	1 3/4"	6 1/8"	13/16"	11/16"	33795T36	132.20	15/16"	1 3/4"	7 3/16"	1 15/16"	33825T65	108.85	33795T115	18.53
3/4"	35,300	2 1/16"	7 3/16"	15/16"	15/16"	33795T53	198.59	1 1/16"	2 1/16"	8 1/16"	2 3/16"	33825T32	156.02	33795T116	27.32
7/8"	42,700	—	—	—	—	—	—	1 1/8"	2 7/16"	8 7/8"	2 3/8"	33825T33	237.42	33795T117	32.76
High Strength (Grade 80)—*Orange-Painted Finish*													
7/32"	2,100	—	—	—	—	—	—	3/8"	1 1/8"	3 1/16"	3/4"	8934T41	25.50	8934T49	9.97

● Work load limit is 5,700 lbs.

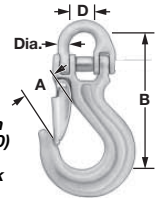

High Strength (Grade 80) with Half Link

For Chain Trade Size	Work Load Limit, lbs.	Dia.	(A)	(B)	(D)	With Half Link	Each	Replacement Latches	Each
High Strength (Grade 80)—*Yellow Powder-Coated Finish*									
9/32"	3,500	3/8"	1 5/16"	4 5/8"	11/16"	3804T12	$48.24	3804T22	$6.00
3/8"	7,100	1/2"	1 5/8"	5 13/16"	1"	3804T13	62.22	3804T23	7.44
1/2"	12,000	9/16"	1 7/8"	7 5/16"	1 1/8"	3804T14	92.40	3804T24	12.53
5/8"	18,100	3/4"	2 3/16"	8 1/2"	1 3/8"	3804T15	126.33	3804T35	17.11
3/4"	28,300	7/8"	2 5/8"	9 3/16"	1 11/16"	3804T16	188.50	3804T36	23.82

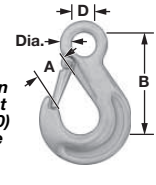

Corrosion Resistant (Grade 50) with Eye

For Chain Trade Size	Work Load Limit, lbs.	Dia.	(A)	(B)	(D)	With Eye	Each	Replacement Latches	Each
Corrosion Resistant (Grade 50)—*Plain Finish*									
3/16"	1,100	5/16"	7/8"	3 1/8"	13/16"	30725T11	$84.66	30725T21	$23.36
9/32"	2,200	7/16"	1 1/8"	4 1/16"	15/16"	30725T12	111.92	30725T22	27.99
3/8"	4,400	9/16"	1 3/8"	4 15/16"	1 3/16"	30725T13	150.81	30725T23	27.47
1/2"	7,100	11/16"	1 11/16"	6"	1 9/16"	30725T14	234.94	30725T24	30.50
5/8"	11,000	7/8"	1 7/8"	6 7/8"	1 7/8"	30725T15	310.64	30725T25	40.22

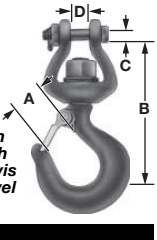

Medium Strength with Clevis and Swivel Hook

For Chain Trade Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	With Clevis and Swivel Hook	Each	Replacement Latches	Each
Medium Strength—*Black-Painted Finish*									
5/16" to 1/2"	1,000	15/16"	4 9/16"	3/8"	9/16"	3527T5	$62.69	35315T42	$4.61
5/16" to 1/2"	2,000	1 1/8"	5 13/16"	7/16"	11/16"	3527T6	77.27	35315T44	5.11

Warning! **Never exceed work load limits.**

Sling Hooks with Locking Latch—*For Lifting*

With Clevis

With Eye

You load them up and their latch locks them down. The latch on these hooks automatically closes when the load is applied and can only be opened by pressing the release button. All hooks are forged alloy steel. Maximum temperature is 400° F.

Swivel hooks make positioning and connecting to the load easier. ***Ball-bearing swivel hooks*** also swivel under load.

Replacement latch springs include a spring and installation hardware.

Supermax (Grade 100) hooks are approximately 20% stronger than high-strength (Grade 80) hooks when used with chain of the same grade. ***High-strength (Grade 80)*** hooks are the industry standard for lifting.

For Chain Trade Size	Work Load Limit, lbs.	With Clevis (A)	(B)	(C)	(D)		Each	With Eye Dia.	(A)	(B)	(D)		Each	Replacement Latch Springs	Each
Supermax (Grade 100)—*Silver Powder-Coated Finish*															
1/4", 9/32"	4,300	1 1/2"	4 1/2"	3/8"	3/8"	5057T1	$97.98	7/16"	1 1/2"	5 5/16"	1 1/8"	5057T6★	$93.52	5057T11	$20.53
5/16"	5,700	1 1/2"	4 1/2"	3/8"	3/8"	5057T2	99.74	7/16"	1 1/2"	5 5/16"	1 1/8"	5057T6	93.52	5057T11	20.53
3/8"	8,800	2 3/16"	5 1/2"	1/2"	7/16"	5057T3	127.54	9/16"	2 3/16"	6 9/16"	1 5/16"	5057T7	119.46	5057T12	24.24
1/2"	15,000	2 1/4"	6 13/16"	1 1/16"	9/16"	5057T4	183.88	3/4"	2 1/4"	8 1/4"	1 5/8"	5057T8	169.12	5057T13	29.58
5/8"	22,600	2 5/8"	8 1/4"	1 3/16"	11/16"	5057T5	306.71	7/8"	2 5/8"	10 1/16"	2 3/16"	5057T9	270.04	5057T14	37.31
High Strength (Grade 80)—*Red Powder-Coated Finish*															
7/32"	2,100	1 3/8"	3 11/16"	5/16"	1/4"	3816T28	48.64	7/16"	1 3/8"	4 5/16"	13/16"	8957T2	41.64	3816T39	7.99
9/32", 5/16"	4,500	1 11/16"	4 13/16"	3/8"	3/8"	3816T29	74.39	1/2"	1 11/16"	5 3/8"	1 1/16"	8957T3	63.52	3816T41	12.22
3/8"	7,100	2 3/16"	5 11/16"	1/2"	1/2"	3816T33	99.08	9/16"	2 3/16"	6 5/8"	1 3/8"	8957T4	87.26	3816T42	13.76
1/2"	12,000	2 11/16"	7 1/16"	5/8"	9/16"	3816T34	141.14	13/16"	2 11/16"	8 1/16"	1 9/16"	8957T5	129.21	3816T43	15.48

★ Work load limit is 5,700 lbs.

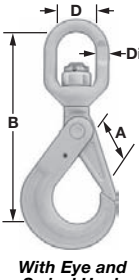

With Eye and Swivel Hook

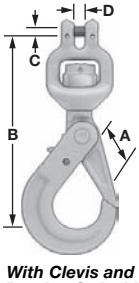

With Clevis and Ball-Bearing Swivel Hook

For Chain Trade Size	Work Load Limit, lbs.	Dia.	(A)	(B)	(D)	With Eye and Swivel Hook	Each	Replacement Latch Springs	Each
Supermax (Grade 100)—*Yellow Powder-Coated Finish*									
7/32"	2,700	7/16"	1 1/8"	5 7/8"	1 5/16"	3682T88	$149.37	3682T38	$8.47
9/32"	4,300	1/2"	1 1/2"	7 3/16"	1 1/2"	3682T89	174.04	3682T39	9.28
3/8"	8,800	9/16"	1 11/16"	8 5/8"	1 11/16"	3682T91	204.92	3682T41	11.69
1/2"	15,000	3/4"	2 1/8"	11"	1 7/8"	3682T92	298.74	3682T42	15.98
5/8"	22,600	7/8"	2 3/8"	13 1/2"	2 3/8"	3682T93	358.08	3682T43	24.45

For Chain Trade Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	With Clevis and Ball-Bearing Swivel Hook	Each	Replacement Latch Springs	Each
High Strength (Grade 80)—*Yellow Powder-Coated Finish*									
7/32"	2,100	1 1/8"	5 13/16"	5/16"	1/4"	3719T61	$142.98	3719T81	$7.23
9/32", 5/16"	4,500	1 3/8"	7 1/8"	3/8"	3/8"	3719T71	178.83	3719T82	9.40

Slip Hooks—*Not for Lifting*

With Clevis

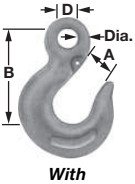

With Eye

A large hook opening on these slip hooks means your chain easily slides through. Ideal for securing your load and for pulling applications. All are made of forged Grade 63 alloy steel and have an orange powder-coated finish. Maximum temperature is 400° F.

For Chain Trade Size	Work Load Limit, lbs.	With Clevis (A)	(B)	(C)	(D)		Each	With Eye Dia.	(A)	(B)	(D)		Each
1/4"	2,750	15/16"	2 5/16"	5/16"	5/16"	30395T11	$10.16	5/16"	7/8"	2 5/8"	1/2"	3547T24	$7.22
5/16"	3,600	1 1/16"	2 9/16"	3/8"	3/8"	30395T12	15.89	3/8"	1 1/16"	3"	5/8"	3547T25	10.40
3/8"	5,500	1 1/4"	3"	1/2"	7/16"	30395T13	17.90	7/16"	1 1/4"	3 11/16"	3/4"	3547T26	12.54
7/16"	6,900	1 9/16"	3 1/2"	1/2"	1/2"	30395T14	32.80	7/16"	1 7/16"	3 15/16"	13/16"	3547T27●	22.23
1/2"	9,400	1 3/4"	3 15/16"	9/16"	9/16"	30395T15	35.13	1/2"	1 3/4"	4 5/16"	15/16"	3547T28	27.98
5/8"	14,200	2"	4 3/4"	3/4"	3/4"	30395T16	53.82	11/16"	2"	5 5/16"	1 3/16"	3547T29	46.23

● Work load limit is 7,100 lbs.

Slip Hooks with Latch—*Not for Lifting*

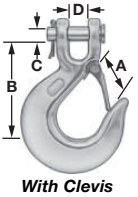

With Clevis

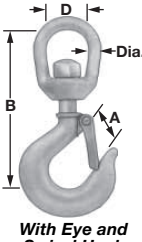

With Eye and Swivel Hook

A latch on these hooks provides added security. Maximum temperature is 400° F.

Hooks with clevis are forged. ***Hooks with eye*** are cast and swivel to make positioning and connecting to the load easier. ***Hot-dipped galvanized steel*** hooks offer good corrosion resistance. ***Type 316 stainless steel*** hooks provide maximum corrosion resistance.

Replacement latches include latch, spring, and installation hardware.

For Chain Trade Size	Work Load Limit, lbs.	With Clevis (A)	(B)	(C)	(D)		Each	Replacement Latches	Each
Type 316 Stainless Steel									
1/4"	1,000	9/16"	2 9/16"	3/8"	3/8"	32805T33	$32.78	32805T91	$8.63
5/16"	1,500	13/16"	2 3/4"	3/8"	3/8"	32805T34	40.41	32805T92	10.30
3/8"	2,000	15/16"	3 1/16"	1/2"	7/16"	32805T35	55.16	32805T93	13.08
1/2"	3,000	1 1/16"	3 1/2"	9/16"	1/2"	32805T36	107.58	32805T94	15.57

For Chain Trade Size	Work Load Limit, lbs.	With Eye and Swivel Hook Dia.	(A)	(B)	(D)		Each	Replacement Latches	Each
Hot-Dipped Galvanized Steel									
3/8"	1,500	3/8"	7/8"	4 7/16"	1 1/4"	3924T24	$21.47	3924T26	$3.73
1/2"	2,000	1/2"	15/16"	5 1/4"	1 1/2"	3924T25	25.76	3924T26	3.73
Type 316 Stainless Steel									
3/16"	770	1/4"	11/16"	3 11/16"	7/8"	35165T63	18.86	35165T21	6.26
1/4"	1,430	5/16"	3/4"	4 5/16"	1 1/8"	35165T64	28.66	35165T22	6.26
1/4", 5/16"	2,200	3/8"	3/4"	4 3/4"	1 1/8"	35165T65	41.99	35165T23	7.48
5/16", 3/8"	3,300	1/2"	1 1/8"	5 13/16"	1 7/16"	35165T66	76.64	35165T24	12.52

Warning! ***Never exceed work load limits.***

Hooks with Oversized Eye—For Lifting

If you've got large wire rope thimbles and heavy duty chain connectors, these hooks have a large eye to accommodate them. Also known as rigging hooks and hoist hooks. All are forged.

Swivel hooks make positioning and connecting to the load easier.

Steel Hooks without Latch—Maximum temperature is 199° F. *Alloy steel* hooks have a gold-painted finish. *Carbon steel* hooks have a red-painted finish. *Optional latches* lock into place by inserting the included cotter pin into the drilled pinhole in the tip of the hook. Latches are steel.

Type 316 Stainless Steel Hooks with Latch—Offer maximum corrosion resistance. Maximum temperature is 600° F. *Replacement latches* include latch, spring, and installation hardware.

Steel Hook with Optional Latch

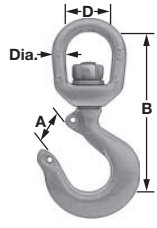

Steel Swivel Hook without Latch

Type 316 Stainless Steel Swivel Hook with Latch

Steel Hooks without Latch

Dia.	(A)	(B)	(D)	Alloy Steel Work Load Limit, lbs.	Alloy Steel Each	Carbon Steel Work Load Limit, lbs.	Carbon Steel Each	Optional Latches Each
Hooks								
3/8"	7/8"	3 5/16"	3/4"	2,200	35315T31	1,650	35315T21	$8.82 / $7.98 / 35315T41 $4.61
7/16"	7/8"	3 13/16"	15/16"	3,300	35315T32	2,200	35315T22	12.05 / 9.66 / 35315T42 4.61
9/16"	1"	4 1/8"	1 1/8"	4,400	35315T33	3,300	35315T23	13.93 / 12.27 / 35315T43 4.99
9/16"	1 1/8"	4 11/16"	1 1/4"	6,600	35315T34	4,400	35315T24	19.29 / 16.71 / 35315T44 5.11
3/4"	1 3/8"	5 3/4"	1 9/16"	11,000	35315T35	6,600	35315T25	32.87 / 29.30 / 35315T45 8.42
7/8"	1 5/8"	7 3/8"	2"	15,400	35315T36	11,000	35315T26	74.16 / 53.91 / 35315T46 13.73
1 1/8"	2 1/16"	9 1/16"	2 7/16"	24,200	35315T37	16,500	35315T27	105.90 / 83.00 / 35315T47 17.40
1 1/4"	2 1/4"	10 1/16"	2 13/16"	33,000	35315T38	22,000	35315T28	148.80 / 114.64 / 35315T48 17.40
1 9/16"	3"	12 1/2"	3 1/2"	48,400	35315T39	33,000	35315T29	372.12 / 288.98 / 35315T49 38.91
Swivel Hooks								
3/8"	15/16"	4 9/16"	1 1/4"	2,200	3525T52	1,650	3525T43	26.45 / 22.59 / 35315T41 4.61
1/2"	15/16"	5 3/8"	1 1/2"	3,300	3525T53	2,200	3525T44	35.38 / 28.95 / 35315T42 4.61
5/8"	1 1/16"	6 1/8"	1 3/4"	4,400	3525T54	3,300	3525T45	40.19 / 37.01 / 35315T43 4.99
5/8"	1 3/16"	6 1/2"	1 3/4"	6,600	3525T55	4,400	3525T46	48.09 / 44.73 / 35315T44 5.11
3/4"	1 1/2"	7 1/2"	2"	11,000	3525T56	6,600	3525T47	70.33 / 59.58 / 35315T45 8.42
1"	1 3/4"	9 5/8"	2 1/2"	15,400	3525T57	11,000	3525T48	129.17 / 115.08 / 35315T46 13.73
1 1/8"	2 3/8"	11 3/8"	2 3/4"	24,200	3525T58	16,500	3525T49	227.91 / 190.87 / 35315T47 17.40
1 1/4"	2 5/8"	12 1/4"	3 1/8"	33,000	3525T59	22,000	3525T51	297.02 / 237.89 / 35315T48 17.40

Type 316 Stainless Steel Hooks with Latch

Work Load Limit, lbs.	Dia.	(A)	(B)	(D)	Each	Repl. Latches Each
Hooks						
1,250	5/16"	7/8"	3 3/16"	3/4"	3386T66 $76.94	3386T61 $7.74
2,650	1/2"	1 1/8"	4 1/16"	1 1/8"	3386T67 134.90	3386T62 9.18
4,500	5/8"	1 1/4"	4 11/16"	1 1/4"	3386T68 197.21	3386T62 9.18
Swivel Hooks						
1,000	3/8"	15/16"	4 3/8"	1 3/16"	3584T71 157.97	3386T61 7.74
1,500	1/2"	1 1/16"	5 1/4"	1 3/8"	3584T72 171.92	3584T612 7.96
2,000	1/2"	1 1/8"	5 5/8"	1 3/8"	3584T73 195.80	3386T62 9.18
2,500	5/8"	1 1/4"	6 1/2"	1 5/8"	3584T74 259.53	3386T62 9.18

Hook Latches—For Lifting

Add functionality by installing a latch on your hook, or extend the life of your hook by replacing a damaged latch. All latches come with a nut and zinc-plated latch bolt (hooks not included).

Spring Latches

Ideal for most hooks with a drilled pinhole. To select the correct size, check the work load limit (measured in tons) of your hook. Made of Type 302 stainless steel.

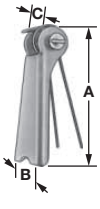

For Work Load Limit, tons: For Carbon Steel Hooks	For Alloy Steel Hooks	(A)	(B)	(C)	Bolt Hole Dia.	Each
3/4	1	1 7/16"	9/16"	3/8"	5/32"	3526T71 $4.02
1	1 1/2	1 5/8"	9/16"	3/8"	5/32"	3526T72 4.19
1 1/2-2	2-3	1 13/16"	13/16"	1/2"	3/16"	3526T73 4.47
3	4 1/2	2 7/16"	1"	9/16"	11/64"	3526T74 7.43
5	7	2 15/16"	1 3/16"	9/16"	13/64"	3526T75 12.05
7 1/2-10	11-15	3 11/16"	1 1/2"	9/16"	17/64"	3526T76 15.06
15	22	4 15/16"	1 7/8"	13/16"	25/64"	3526T77 34.33
20	30	5 7/8"	2 9/16"	15/16"	33/64"	3526T78 39.98
25-30	37-45	6 1/2"	3 13/16"	2 3/16"	25/64"	3526T79 68.36
40	60	7 7/8"	4 1/8"	3 5/16"	33/64"	3526T81 137.43

Clamp-On Spring Latches

Choose the latch that matches the neck diameter and hook opening of your hook, and clamp it in place.

Zinc-plated steel latches offer good corrosion resistance in most environments. ***Type 304 stainless steel*** latches provide excellent corrosion resistance.

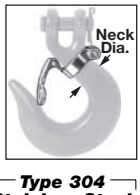

Neck Dia.	Hook Opening	Zinc-Plated Steel Each	Type 304 Stainless Steel Each
9/16"-5/8"	1 1/16"-1 1/8"	3544T11 $10.78	3544T31 $41.09
3/4"-13/16"	1 1/4"-1 5/16"	3544T12 12.33	3544T32 44.92
7/8"-1 1/16"	1 3/8"-1 9/16"	3544T13 13.31	3544T33 47.18
1 1/8"-1 1/4"	1 5/8"-1 7/8"	3544T14 15.56	3544T34 60.95
1 3/8"-1 1/2"	2"-2 1/8"	3544T15 20.71	3544T35 67.92
1 5/8"-1 11/16"	2 3/16"-2 5/16"	3544T16 22.95	3544T36 90.04
1 3/4"-1 13/16"	2 3/8"-2 1/2"	3544T17 24.20	3544T37 90.61
1 7/8"-2"	2 9/16"-3"	3544T18 26.60	3544T38 102.43
2 1/16"-2 1/8"	3 1/16"-3 3/8"	3544T19 28.98	3544T39 119.36
2 3/16"-2 1/4"	3 7/16"-3 1/2"	3544T21 31.02	3544T41 130.05
2 5/16"-2 3/8"	3 9/16"-3 3/4"	3544T22 32.73	3544T42 132.01
2 7/16"-2 13/16"	3 13/16"-4"	3544T23 36.78	3544T43 136.19
2 15/16"-3 5/16"	4 1/16"-4 1/2"	3544T24 40.33	3544T44 150.43

Two-Way Safety Spring Latches

To prevent accidental release as well as keep the hook tip from snagging, these latches catch themselves in the hook opening. They fit most hooks with a drilled pinhole. Made of Type 304 stainless steel.

(A)	(B)	(C)	Bolt Hole Dia.	Each
1 9/16"	9/16"	1/2"	5/32"	8944T12 $16.76
1 13/16"	13/16"	9/16"	3/16"	8944T14 18.71
2 3/8"	15/16"	11/16"	3/16"	8944T16 27.68
3"	1 3/16"	3/4"	3/16"	8944T18 36.66
3 5/8"	1 1/2"	13/16"	1/4"	8944T21 56.60
4 15/16"	1 15/16"	1 1/8"	3/8"	8944T23 73.18

Warning! ***Never exceed work load limits.***

Hooks with Swing-Lock Latch—*For Lifting*

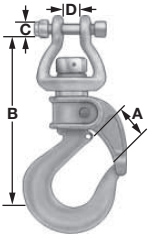

With Clevis and Swivel Hook

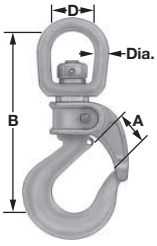

With Eye and Swivel Hook

Easily shut with one hand, the spring-loaded latch on these hooks swings 150° and snaps back in place to secure your load. Once closed, the latch can only be opened by releasing the locking mechanism. Hooks are made of forged nongraded alloy steel with a zinc-plated finish. Max. temp. is 199° F.

Hooks with clevis attach by inserting the included alloy steel pin through a chain link (chain not included). ***Hooks with eye*** accommodate shackles and other open-end connectors. ***Hooks with threaded shank*** are ideal for use with pulley blocks. Nut is included.

Swivel hooks make positioning and connecting to the load easier. ***Ball-bearing swivel hooks*** also swivel under load.

Replacement latches include latch, spring, and installation hardware.

Work Load Limit, lbs.	(A)	(B)	(C)	(D)	With Clevis and Swivel Hook	Each	Repl. Latches	Each
2,800	1 1/16"	5 9/16"	3/8"	1/2"	3946T11	$135.07	3946T43	$49.12
3,400	1 1/8"	5 13/16"	3/8"	1/2"	3946T12	138.52	3946T44	51.84
4,600	1 1/4"	6 7/8"	7/16"	5/8"	3946T13	182.25	3946T45	68.33

Work Load Limit, lbs.	Dia.	(A)	(B)	(D)	With Eye and Swivel Hook	Each	Repl. Latches	Each
1,000	5/16"	1 1/16"	4 3/8"	1"	3946T58	$70.70	—	—
2,000	3/8"	1"	5 1/4"	1 1/4"	3946T81	105.48	3946T42	$49.74
2,800	1/2"	1 1/16"	6 1/8"	1 1/2"	3946T82	123.07	3946T43	49.12
3,400	1/2"	1 1/8"	6 9/16"	1 1/2"	3946T83	127.00	3946T44	51.84
4,600	5/8"	1 1/4"	7 7/16"	1 3/4"	3946T85	175.09	3946T45	68.33
8,000	5/8"	1 3/8"	8"	1 3/4"	3946T57	220.45	3946T46	73.01
8,400	3/4"	1 1/2"	8 5/8"	2"	3946T89	278.02	3946T47	101.43
11,000	7/8"	1 3/4"	7 15/16"	2 1/4"	3946T59	351.98	3946T51	101.45
14,400	1"	1 7/8"	10 11/16"	2 1/2"	3946T74	384.20	3946T48	118.18

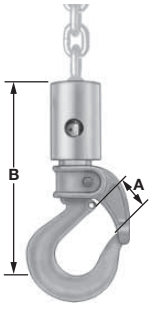

With Clevis and Ball-Bearing Swivel Hook

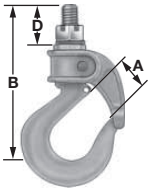

With Threaded Shank

For Chain Trade Size	Work Load Limit, lbs.	(A)	(B)	With Clevis and Ball-Bearing Swivel Hook	Each	Repl. Latches	Each
1/4"-9/32"	3,400	1 1/8"	6 1/2"	3970T91	$165.43	3946T44	$51.84
5/16"-3/8"	4,600	1 1/4"	7 3/8"	3970T93	211.61	3946T45	68.33
1/2"-9/16"	8,400	1 1/2"	9 9/16"	3970T95	399.95	3946T47	101.43

Thread Size	Work Load Limit, lbs.	(A)	(B)	(D)	With Threaded Shank	Each	Repl. Latches	Each
1/2"-13	2,000	1"	4 1/4"	9/16"	3947T71	$80.36	3946T42	$49.74
9/16"-12	2,800	1 1/16"	4 7/8"	3/4"	3947T72	94.25	3946T43	49.12
5/8"-11	3,400	1 1/8"	5 3/16"	1 3/16"	3947T73	93.74	3946T44	51.84
3/4"-10	4,600	1 1/4"	5 13/16"	1"	3947T55	118.56	3946T45	68.33
7/8"-9	8,000	1 3/8"	6 9/16"	1 3/16"	3947T27	147.22	3946T46	73.01
1"-8	8,400	1 1/2"	6 15/16"	1 3/8"	3947T59	193.11	3946T47	101.43
1 1/8"-7	11,000	1 3/4"	7 9/16"	1 1/2"	3947T52	235.91	3946T51	101.45
1 1/4"-7	14,400	1 7/8"	8 1/2"	1 13/16"	3947T64	278.47	3946T48	118.18

Wide-Mouth Hooks—*For Lifting*

With Clevis

With Eye

Also known as foundry hooks, they are ideal for lifting molds and castings. The tapered tip allows them to fit into narrow openings. All are forged alloy steel.

Supermax (Grade 100) hooks are approximately 20% stronger than high-strength (Grade 80) hooks when used with chain of the same grade. Maximum temperature is 400° F.

High-strength (Grade 80) hooks are the industry standard for lifting applications. Maximum temperature is 500° F.

For Chain Trade Size	Work Load Limit, lbs.	With Clevis (A)	(B)	(C)	(D)		Each	With Eye Dia.	(A)	(B)	(D)		Each
Supermax (Grade 100)—Red-Painted Finish													
9/32"	4,300	2 5/8"	4 7/16"	3/8"	5/16"	3814T11	$63.59	7/16"	2 5/8"	4 3/4"	5/8"	3814T15	$73.01
3/8"	8,800	3"	5 1/2"	9/16"	7/16"	3814T12	91.38	5/8"	3 1/8"	5 3/4"	13/16"	3814T16	97.18
1/2"	15,000	3 7/8"	6 5/8"	3/4"	9/16"	3814T13	111.60	3/4"	3 3/4"	6 7/8"	1"	3814T17	132.28
5/8"	22,600	4 1/8"	7 5/8"	15/16"	11/16"	3814T14	155.60	7/8"	4 1/4"	8 1/16"	1 1/4"	3814T18	159.76
High Strength (Grade 80)—Red Powder-Coated Finish													
1/4"	3,500	2 5/8"	4 5/16"	3/8"	3/8"	3540T27	55.28	9/16"	2 5/8"	4 7/8"	11/16"	3540T21	53.12
3/8"	7,100	3"	5 3/16"	1/2"	1/2"	3540T28	66.79	5/8"	3"	5 13/16"	13/16"	3540T22	65.38
1/2"	12,000	3 1/2"	6 5/16"	5/8"	5/8"	3540T29	102.37	13/16"	3 1/2"	6 7/8"	1"	3540T23	98.87
5/8"	18,100	4"	7 1/2"	3/4"	3/4"	3540T31	140.44	15/16"	4"	8 1/8"	1 5/16"	3540T24	126.98
3/4"	28,300	—	—	—	—	—	—	1"	4 1/2"	9 5/16"	1 5/8"	3540T25	172.02

Tapered-Tip Hooks—*For Lifting*

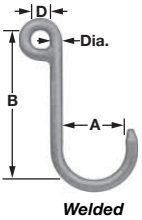

Welded

Forged

When you need to insert a hook into holes, eyebolts, rings, and chain links, the tapered tip on these hooks makes it easy. Ideal for foundry and general sorting operations. Also known as J-hooks. Maximum temperature is 400° F.

Alloy steel hooks are good for applications where corrosion is not a factor. ***Type 316L stainless steel*** hooks provide maximum corrosion resistance.

Work Load Limit, lbs.	Dia.	(A)	(B)	(D)		Each
Alloy Steel—Welded						
250	5/16"	1 1/4"	5"	3/4"	3786T45	$26.43
350	3/8"	1 1/2"	6"	3/4"	3786T46	28.57
500	1/2"	2 1/2"	6"	3/4"	3786T15	29.57
800	5/8"	3 1/2"	8 1/2"	3/4"	3786T16	38.36
1,300	3/4"	3 1/2"	8 1/2"	3/4"	3786T37	44.71
1,600	13/16"	3 1/2"	8 1/2"	7/8"	3786T38	48.12
2,500	1"	4"	8 1/2"	1"	3786T19	58.65

Work Load Limit, lbs.	Dia.	(A)	(B)	(D)		Each
Alloy Steel—Forged						
2,250	7/16"	2 11/16"	4 3/8"	3/4"	3786T25	$106.61
3,600	7/16"	3 5/8"	6 3/4"	3/4"	3786T26	128.55
Type 316L Stainless Steel—Welded						
200	1/2"	3"	6"	9/16"	3786T39	47.24
300	5/8"	3"	6"	9/16"	3786T41	48.66
500	3/4"	3"	6"	3/4"	3786T42	65.63
900	1"	3"	6"	3/4"	3786T43	114.29

Warning! ***Never exceed work load limits.***

Shank Hooks—For Lifting

You can thread the plain shank on these hooks to meet your requirements. A drilled pinhole hole lets you add a latch. All hooks are forged alloy steel with a black-painted finish. Maximum temperature is 199° F.

Optional latches include a latch, spring, latch bolt, and self-locking nut.

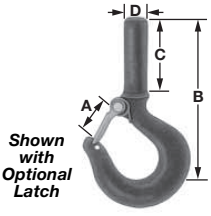

Work Load Limit, lbs.	(A)	(B)	(C)	(D)	Hooks	Each	Optional Latches	Each
2,200	15/16"	4 7/16"	2 1/16"	9/16"	3535T31	$7.70	35315T41	$4.61
3,300	1"	4 13/16"	2 1/4"	11/16"	3535T32	10.66	35315T42	4.61
4,400	1 1/16"	5 3/8"	2 9/16"	3/4"	3535T33	11.50	35315T43	4.99
6,600	1 3/16"	6"	2 13/16"	7/8"	3535T34	16.86	35315T44	5.11
11,000	1 1/2"	7 5/16"	3 7/16"	1 3/16"	3535T35	27.61	35315T45	8.42
15,400	1 3/4"	8 5/8"	3 13/16"	1 7/16"	3535T36	54.57	35315T46	13.73

Pull-Pin Hooks—Not for Lifting

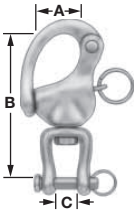

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A heavy duty, spring-loaded pin on these snaps locks the full-opening arm in place. To release the arm, simply pull out the pin. Where access is limited, attach a rope or lanyard to the ring on the pin for remote release. Snaps are corrosion resistant and swivel to make positioning and connecting to the load easier.

	Work Load Limit, lbs.	(A)	(B)	(C)		Each
Type 316 Stainless Steel						
1	1,500	3/4"	2 7/8"	1/2"	3899T55	$22.91
1	2,000	1 1/16"	4 3/16"	3/4"	3899T56	59.20
2	1,500	3/4"	2 7/8"	5/8"	3899T53	19.40
2	2,000	1 1/16"	4 1/8"	7/8"	3899T54	39.58
Type 17-4 PH Stainless Steel						
1	2,137	13/16"	3 1/4"	7/16"	3899T41	61.75
1	3,875	1"	4 1/4"	11/16"	3899T52	113.16
2	1,212	5/8"	2 3/8"	7/16"	3899T43	42.90
2	4,400	1"	4 1/8"	13/16"	3899T46	90.56

Weld-On Hooks—For Lifting

Weld these hooks into place to suit your application. Hooks have a spring-loaded latch. Made of forged high-strength (Grade 80) alloy steel with a yellow powder-coated finish. Maximum temperature is 400° F.

Replacement latches include a latch, spring, and two pins.

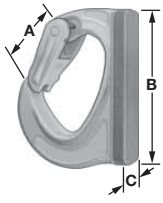

Work Load Limit, lbs.	(A)	(B)	(C)	Hooks	Each	Replacement Latches	Each
6,612	1 3/16"	5 3/16"	3/8"	34685T31	$106.64	34685T41	$50.62
11,020	1 5/16"	6 1/2"	1/2"	34685T22	163.49	34685T42	55.21
22,040	1 7/8"	8 11/16"	9/16"	34685T23	217.20	34685T43	63.62

Quick-Release Hooks—For Lifting

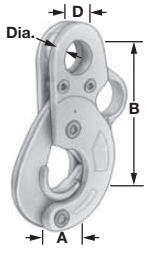

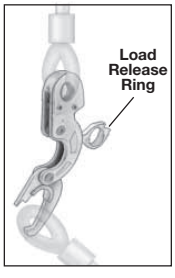

These hooks have a quick-load release that's ideal for laboratory drop-test simulation. To use, push the bottom link into the hook body to lock it then pull the load release ring to open. For remote release of loads, attach a rope or lanyard to the load release ring. Hooks are forged. Maximum temperature is 480° F.

Alloy steel hooks are good where corrosion is not a factor. ***Type 316 stainless steel*** hook provides maximum corrosion resistance.

Warning: Any release under load must be carefully studied as to its applicability and safety.

Work Load Limit, lbs.	Max. Release Load, lbs.	Dia.	(A)	(B)	(D)		Each
Alloy Steel							
4,500	3,500	1/2"	1 1/8"	4 1/2"	15/16"	3398T1	$214.29
18,000	10,000	15/16"	2 3/16"	7"	1 1/2"	3398T31	544.12
Type 316 Stainless Steel							
2,000	2,000	1/2"	1 3/8"	4 1/2"	15/16"	3398T6	492.42

Fall-Arrest Hooks—Not for Lifting

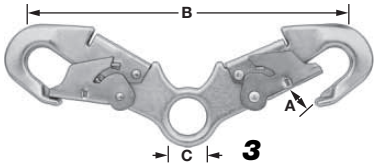

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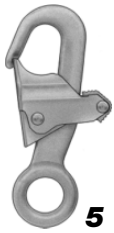

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A locking mechanism secures the latches on these snaps. All snaps are made of alloy steel. They meet ANSI Z359.2-1992, which allows for use in fall arrest systems.

(3&4) Quick-disconnect lock snaps release the latch when you squeeze the mechanism on both sides of the snap body.

Double-end quick-disconnect snap has a snap on each end.

(5) Safety-lock snap has a positive-locking mechanism that disengages when you squeeze the front trigger and slide the latch grip down.

(6) Locking wide-throat snaps not only lock the latch but are ideal for large diameter pipe and rope.

Warning: Proof load is not the same as the work load. The work load is less than the proof load and varies depending on the type of application.

	Proof Load, lbs.	(A)	(B)	(C)		Each
Double-End Quick-Disconnect Lock						
3	5,000♣	5/8"	8 1/2"	1"	3927T39	$41.30
Quick-Disconnect Lock						
4	5,000	3/4"	5"	1"	3927T41	17.39
Safety Lock						
5	5,000	5/8"	5"	1"	3927T22	36.41
Locking Wide Throat						
6	5,000	1 15/16"	6 1/2"	1"	3927T43	33.70
6	5,000	2 1/2"	7 3/4"	1"	3927T44	42.83

♣ Proof load is 5,000 lbs. when pulled hook-end to hook-end. It decreases to 3,600 lbs. when pulled at an angle.

Warning! ***Never exceed work load limits.***

Threaded Connectors—Not for Lifting

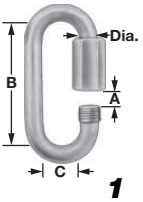

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Also known as quick links, these threaded connectors offer a fast and easy way to attach end fittings. They can also be reused. To close, simply screw the nut onto the threaded end.

Oval connectors are ideal for general-purpose applications.

Square connectors have a flat top and bottom for use with webbing and strapping.

Pear-shaped connectors are for use with thimbles, bulky fittings, and combination chain and rope connections.

Triangle connectors are great for three-sided connections. The flat bottom can also be used with webbing and strapping.

Zinc-plated steel connectors offer good corrosion resistance in most environments.

Type 316 stainless steel connectors provide maximum corrosion resistance.

Also Available: Brass oval connectors. For connectors with a standard opening, please ask for 8947T888 and specify diameter.

For connectors with a large opening, please ask for 3711T888 and specify diameter.

				Zinc-Plated Steel			Type 316 Stainless Steel		
Dia.	(A)	(B)	(C)	Work Load Limit, lbs.		Each	Work Load Limit, lbs.		Each
(1) Oval—Standard Opening									
1/8″	3/16″	1 1/8″	3/8″	220	8947T14	$0.91	450	8947T24	$1.82
5/32″	7/32″	1 1/4″	7/16″	440	8947T11	1.00	600	8947T12	2.00
3/16″	1/4″	1 1/2″	1/2″	660	8947T15	1.43	950	8947T25	2.38
1/4″	9/32″	1 3/4″	9/16″	880	8947T16	1.53	1,400	8947T26	2.84
9/32″	3/8″	2″	11/16″	1,000	8947T44	1.21	1,400	8947T33	4.09
5/16″	3/8″	2 3/8″	11/16″	1,760	8947T17	2.26	2,400	8947T27	4.72
3/8″	1/2″	2 7/16″	3/4″	2,200	8947T18	3.47	3,900	8947T28●	8.18
1/2″	1/2″	3 3/16″	7/8″	3,300	8947T23	5.50	5,500	8947T29	12.94
9/16″	9/16″	3 7/8″	1″	3,600	8947T31	10.10	7,715	8947T82▲	57.96
5/8″	3/4″	4 1/4″	1 1/8″	4,000	8947T32	17.34	9,920	8947T83	86.53
(2) Oval—Large Opening									
1/8″	3/8″	1 9/16″	3/8″	200	3711T21	2.82	440	3711T32	7.46
5/32″	7/16″	1 3/4″	1/2″	352	3711T71	3.32	550	3711T73	8.62
3/16″	1/2″	2 1/16″	1/2″	550	3711T22	3.52	880	3711T33	10.14
1/4″	9/16″	2 5/16″	9/16″	770	3711T23	4.03	1,280	3711T34	13.04
5/16″	11/16″	2 13/16″	11/16″	1,430	3711T24	6.16	2,160	3711T35	22.80
3/8″	3/4″	3″	3/4″	1,760	3711T25	6.77	2,755	3711T36	26.89
1/2″	15/16″	3 15/16″	15/16″	2,755	3711T26	11.21	4,850	3711T37	51.16
9/16″	1 1/16″	4 1/2″	1 1/16″	4,410	3711T27	15.79	6,835	3711T38	78.84
5/8″	1 1/8″	5 1/16″	1 1/8″	5,510	3711T28	24.25	8,820	3711T39	117.51
11/16″	1 1/4″	5 1/2″	1 1/4″	6,615	3711T29	39.65	10,780	3711T11★	78.45
3/4″	1 1/4″	5 1/2″	1 1/4″	—	—	—	10,800	3711T12	75.00
25/32″	1 3/8″	6 1/4″	1 3/8″	7,935	3711T31	56.56	—	—	—
(3) Square									
7/64″	5/32″	15/16″	11/16″	85	33785T41	4.04	240	33785T61	9.03
1/8″	3/16″	1 1/16″	7/8″	155	33785T42	4.11	330	33785T62	9.17
5/32″	7/32″	1 1/4″	1″	220	33785T43	4.15	440	33785T63	9.94
3/16″	1/4″	1 1/2″	1 1/8″	330	33785T44	4.40	715	33785T64	10.71
1/4″	9/32″	1 11/16″	1 1/4″	550	33785T45	4.91	990	33785T65	14.34
9/32″	11/32″	1 15/16″	1 5/16″	880	33785T46	5.76	1,375	33785T66	17.95
5/16″	3/8″	2 5/32″	1 7/16″	1,210	33785T47	6.70	1,695	33785T67	24.74
3/8″	7/16″	2 3/8″	1 9/16″	1,540	33785T48	8.01	2,160	33785T68	29.46
7/16″	1/2″	2 11/16″	1 11/16″	1,985	33785T49	9.51	2,755	33785T69	37.18
1/2″	5/8″	3 1/16″	1 15/16″	2,425	33785T51	13.16	3,860	33785T71	51.95
9/16″	11/16″	3 1/2″	2 1/4″	3,970	33785T52	19.78	5,400	33785T72	89.72
5/8″	3/4″	4 1/16″	2 1/2″	4,850	33785T53	28.54	6,945	33785T73	128.78
(4) Pear Shaped									
1/8″	3/8″	1 13/16″	13/16″	125	3712T21	4.03	285	3712T31	7.27
5/32″	7/16″	2 1/16″	15/16″	176	3712T52	4.08	374	3712T47	8.08
3/16″	1/2″	2 3/8″	1 1/16″	265	3712T22	4.84	595	3712T32	11.66
1/4″	9/16″	2 11/16″	1 3/16″	440	3712T23	5.95	880	3712T33	15.68
5/16″	11/16″	3 5/16″	1 3/8″	1,060	3712T24	8.11	1,455	3712T34	23.66
3/8″	3/4″	3 1/2″	1 1/2″	1,320	3712T25	9.68	1,850	3712T35	27.61
1/2″	15/16″	4 11/16″	2″	1,940	3712T26	17.32	3,305	3712T36	59.08
9/16″	1 1/16″	5 1/16″	2 3/16″	3,175	3712T27	24.66	4,630	3712T37	94.34
5/8″	1 1/8″	5 11/16″	2 1/2″	4,410	3712T28	26.97	5,940	3712T38	141.21
(5) Triangle									
1/8″	3/16″	1 3/16″	1″	155	3709T21	3.03	330	3709T31	7.82
5/32″	1/4″	1 1/4″	1 1/16″	220	3709T61	3.69	440	3709T53	10.20
3/16″	1/4″	1 1/2″	1 3/16″	330	3709T22	4.16	715	3709T32	10.76
1/4″	9/32″	1 11/16″	1 3/8″	550	3709T23	4.22	990	3709T33	13.97
5/16″	13/32″	2 1/4″	1 9/16″	1,210	3709T24	6.84	1,695	3709T34	19.34
3/8″	7/16″	2 5/16″	1 5/8″	1,540	3709T25	7.61	2,160	3709T35	24.34
1/2″	19/32″	3 1/8″	1 15/16″	2,425	3709T26	11.26	3,860	3709T36	53.11
9/16″	21/32″	3 11/16″	2 1/4″	3,970	3709T27	17.70	5,400	3709T37	82.74
5/8″	3/4″	4 3/16″	2 7/16″	4,850	3709T28	28.95	6,945	3709T38	123.21

● (B) is 3 1/2″. ▲ (A) is 11/16″. (B) is 3 21/32″. (C) is 1 1/16″. ★ (C) is 2″.

Warning! ***Never exceed work load limits.***

Carabiner-Style Connectors—Not for Lifting

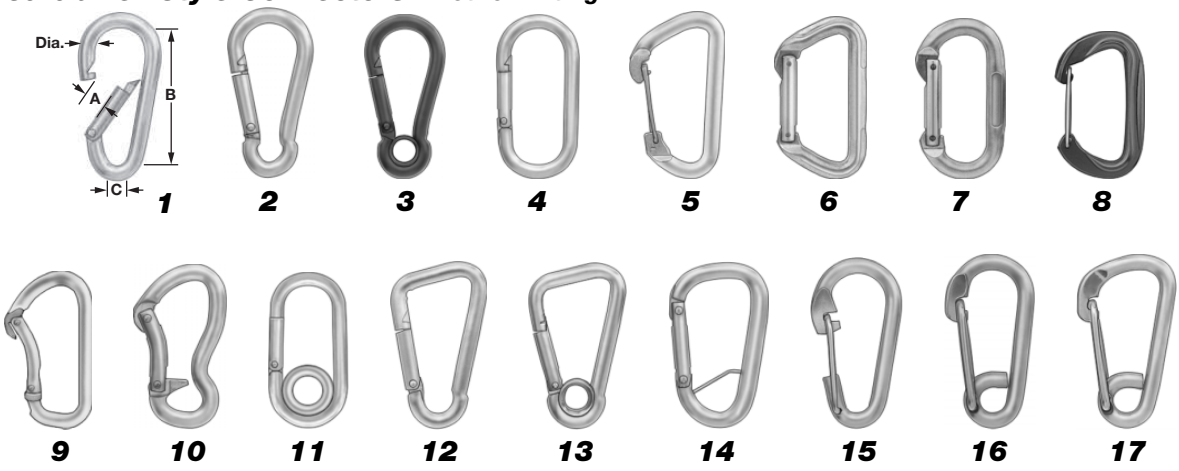

Zinc-plated steel snaps offer good corrosion resistance in most environments. ***Black powder-coated steel*** snaps blend into dark backgrounds and offer some corrosion resistance. ***Brass*** snaps offer better corrosion resistance than zinc-plated steel and black powder-coated steel snaps. ***Aluminum*** snaps offer excellent corrosion resistance. ***Black anodized aluminum*** snaps blend into dark backgrounds and offer excellent corrosion resistance. ***Type 316 stainless steel*** snaps provide maximum corrosion resistance.

	Work Load Limit, lbs.	Dia.	(A)	(B)	(C)		Each
Zinc-Plated Steel							
1	140	1/4"	3/8"	1 7/8"	5/16"	**3885T11**	$1.68
1	280	5/16"	7/16"	2 9/16"	1/2"	**3885T21**	2.60
1	400	3/8"	1/2"	3 1/4"	9/16"	**3885T31**	4.10
2	175	3/16"	1/4"	1 5/8"	1/4"	**3933T41**	1.62
2	205	1/4"	5/16"	1 7/8"	5/16"	**3933T12**	1.76
2	380	5/16"	3/8"	2 9/16"	1/2"	**3933T14**	2.94
2	675	3/8"	1/2"	3 3/16"	5/8"	**3933T16**	4.09
2	820	7/16"	5/8"	3 15/16"	9/16"	**3933T18**	6.66
2	950	1/2"	1"	5 5/16"	7/8"	**3933T19**	8.37
3	264	1/4"	5/16"	1 7/8"	1/4"	**3933T22**	.62
3	507	5/16"	3/8"	2 5/8"	3/8"	**3933T23**	1.03
3	771	3/8"	7/16"	3 1/4"	1/2"	**3933T24**	1.90
3	881	7/16"	5/8"	3 7/8"	9/16"	**3933T25**	2.88
3	992	1/2"	3/4"	4 1/2"	5/8"	**3933T26**	3.63
4	400	3/8"	1/2"	3 1/4"	1 1/16"	**3934T12**	2.11
4	500	7/16"	3/4"	3 7/8"	1 3/8"	**3934T14**	3.70
5	900	7/16"	1 3/16"	3 3/8"	1 7/16"	**3934T15**	14.50
Black Powder-Coated Steel							
1	140	1/4"	3/8"	1 7/8"	1/4"	**3079T21**	3.31
1	280	5/16"	7/16"	2 1/2"	3/8"	**3079T22**	4.78
1	400	3/8"	1/2"	3 1/4"	7/16"	**3079T23**	7.17
2	175	3/16"	1/4"	1 5/8"	1/4"	**3079T31**	1.10
2	205	1/4"	5/16"	1 7/8"	5/16"	**3079T32**	1.51
2	380	5/16"	3/8"	2 1/2"	1/2"	**3079T33**	2.07
2	675	3/8"	1/2"	3 1/4"	5/8"	**3079T34**	2.90
2	820	7/16"	5/8"	3 7/8"	9/16"	**3079T35**	4.89
2	950	1/2"	1"	5 1/4"	7/8"	**3079T36**	8.74
3	175	3/16"	1/4"	1 5/8"	1/4"	**3079T41**	1.35
3	205	1/4"	5/16"	1 7/8"	1/4"	**3079T42**	1.64
3	380	5/16"	3/8"	2 1/2"	3/8"	**3079T43**	2.75
3	675	3/8"	1/2"	3 1/4"	1/2"	**3079T44**	3.84
3	820	7/16"	5/8"	3 7/8"	5/8"	**3079T45**	5.34
Brass							
2	115	3/16"	1/4"	1 5/8"	1/4"	**3125T51**	3.82
2	140	1/4"	5/16"	1 7/8"	5/16"	**3125T52**	4.91
2	250	5/16"	3/8"	2 1/2"	1/2"	**3125T53**	8.57
2	450	3/8"	1/2"	3 1/4"	5/8"	**3125T54**	11.35
2	550	7/16"	5/8"	3 7/8"	3/4"	**3125T55**	11.57
2	650	1/2"	1"	5 1/4"	7/8"	**3125T56**	12.10
3	115	3/16"	1/4"	1 5/8"	1/4"	**3125T61**	4.89
3	140	1/4"	5/16"	1 7/8"	5/16"	**3125T62**	6.87
3	250	5/16"	3/8"	2 1/2"	3/8"	**3125T63**	10.21
3	450	3/8"	1/2"	3 1/4"	1/2"	**3125T64**	10.24
3	550	7/16"	5/8"	3 7/8"	5/8"	**3125T65**	13.57
Aluminum							
6	450	3/8"	3/4"	3 3/8"	1 1/4"	**31375T15**	6.60
6	450	7/16"	3/4"	3 3/8"	1 1/8"	**31375T13**	8.60
7	450	7/16"	5/8"	3 5/16"	1 1/16"	**31375T17**	7.80
8	450	7/16"	1 1/8"	2 3/4"	1 5/16"	**31375T19**	9.90
9	3,000	7/16"	3/4"	3 1/4"	7/8"	**31375T11**	31.58
10	3,000	7/16"	11/16"	3 3/8"	7/8"	**31375T12**	31.59
Black Anodized Aluminum							
6	450	3/8"	3/4"	3 3/8"	1 1/4"	**31375T16**	$9.15
6	450	7/16"	3/4"	3 3/8"	1 1/8"	**31375T14**	10.90
7	450	7/16"	5/8"	3 5/16"	1 1/16"	**31375T18**	11.40
Type 316 Stainless Steel							
1	150	1/4"	3/8"	1 7/8"	1/4"	**31165T47**	5.78
1	280	5/16"	7/16"	2 9/16"	3/8"	**31165T48**	8.41
1	400	3/8"	9/16"	3 3/16"	7/16"	**31165T49**	14.07
1	450	7/16"	3/4"	3 7/8"	1/2"	**31165T51**	19.15
2	120	3/16"	1/4"	1 5/8"	5/16"	**31165T31**	4.47
2	170	1/4"	1/4"	1 7/8"	3/8"	**31165T22**	5.71
2	280	5/16"	3/8"	2 1/2"	1/2"	**31165T43**	10.39
2	400	3/8"	9/16"	3 1/8"	5/8"	**31165T42**	15.25
2	540	7/16"	5/8"	3 3/4"	3/4"	**31165T24**	18.95
3	220	3/16"	1/4"	1 5/8"	1/4"	**3716T51**	5.88
3	264	1/4"	5/16"	2"	1/4"	**3716T52**	6.40
3	506	5/16"	3/8"	2 1/2"	3/8"	**3716T53**	10.80
3	770	3/8"	1/2"	3 1/4"	1/2"	**3716T54**	13.33
3	880	7/16"	5/8"	3 7/8"	5/8"	**3716T55**	20.24
4	100	3/16"	3/8"	2 3/8"	9/16"	**3777T16**	7.48
4	150	1/4"	3/8"	1 7/8"	11/16"	**3777T11**	7.28
4	280	5/16"	7/16"	2 9/16"	15/16"	**3777T12**	10.59
4	400	3/8"	5/8"	3 3/16"	1 3/16"	**3777T13**	16.38
4	400	3/8"	5/8"	3 9/16"	1 3/8"	**3777T14**	18.21
4	450	7/16"	7/8"	3 7/8"	1 1/2"	**3777T15**	21.24
11	120	1/4"	7/16"	2 11/16"	11/16"	**3777T21**	10.36
11	200	5/16"	1/2"	2 7/8"	3/4"	**3777T22**	14.24
11	330	3/8"	9/16"	3 3/4"	1"	**3777T17**	20.93
12	230	1/4"	7/16"	1 7/8"	1/4"	**33975T51**	4.32
12	460	5/16"	9/16"	2 1/2"	1/2"	**33975T52**	7.70
12	720	3/8"	11/16"	3 1/4"	5/8"	**33975T53**	13.50
12	1,320	7/16"	15/16"	3 3/4"	13/16"	**33975T54**	18.10
13	230	1/4"	7/16"	1 7/8"	1/4"	**33975T61**	5.70
13	460	5/16"	9/16"	2 1/2"	7/16"	**33975T62**	9.31
13	720	3/8"	11/16"	3 1/4"	9/16"	**33975T63**	14.21
13	1,320	7/16"	15/16"	3 7/8"	11/16"	**33975T64**	17.30
14	520	5/16"	1/2"	2 1/2"	7/16"	**3777T73**	13.03
14	880	3/8"	5/8"	3 1/4"	1/2"	**3777T52**	21.20
15	330	1/4"	3/8"	1 7/8"	5/16"	**3764T44**	16.72
15	887	5/16"	1/2"	2 1/2"	1/2"	**3764T35**	14.30
16	330	1/4"	3/8"	1 7/8"	5/16"	**3764T31**	18.02
16	887	5/16"	1/2"	2 1/2"	7/16"	**3764T32**	23.76
16	1,375	3/8"	9/16"	3 3/16"	1/2"	**3764T33**	31.98
16	2,100	1/2"	13/16"	3 3/4"	5/8"	**3764T59**	51.48
17	440	1/4"	7/16"	1 7/8"	1/4"	**3764T47**	19.93
17	937	5/16"	9/16"	2 1/2"	7/16"	**3764T91**	26.07
17	1,432	3/8"	11/16"	3 3/16"	1/2"	**3764T39**	35.22
17	2,481	1/2"	15/16"	3 3/4"	5/8"	**3764T69**	55.40

Warning! ***Never exceed work load limits.***

Locking Carabiner-Style Connectors—*Not for Lifting*

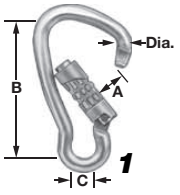

A locking latch ensures a safe and secure connection. Plus, there are no sharp edges to snag on rope and webbing.

(1&2) Twist-lock snaps open by lifting and twisting the latch, which snaps closed when released.
(3&4) Screw-lock snaps have a knurled sleeve that screws down over the latch.
(5) Slide-lock snaps lock slides down over the latch. And since they open outward, these snaps offer a larger opening than snaps that open inward.

Zinc-plated steel snaps offer good corrosion resistance in most environments. ***Aluminum*** snaps are lightweight yet strong and offer excellent corrosion resistance. ***Type 316 stainless steel*** snaps offer maximum corrosion resistance.

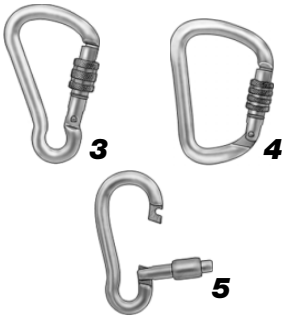

Dia.	(A)	(B)	(C)	Zinc-Plated Steel Work Load Limit, lbs.	Zinc-Plated Steel Each	Aluminum Work Load Limit, lbs.	Aluminum Each	Type 316 Stainless Steel Work Load Limit, lbs.	Type 316 Stainless Steel Each
Twist Lock—Inward Opening									
1 7/16"	13/16"	4"	11/16"	1,600	3216T11 $18.78	1,600	3293T31 $20.82	2,000	3370T51 $30.35
2 1/2"	1 1/16"	3 1/2"	1 1/16"	3,500	3216T12 32.16	2,200	3293T32 30.02	2,500	3370T52 43.49
Screw Lock—Inward Opening									
3 5/16"	11/16"	2 3/4"	1/2"	600	3216T21 14.87	400	3293T41 15.39	1,000	3370T61 21.90
3 3/8"	11/16"	3 5/16"	1/2"	1,200	3216T22 17.80	1,200	3293T42 19.21	1,500	3370T62 29.34
3 7/16"	15/16"	4 1/16"	11/16"	1,600	3216T23 19.05	1,600	3293T43 21.11	2,000	3370T63 34.71
4 1/2"	1 1/16"	3 1/2"	1 1/16"	3,500	3216T24 29.41	2,200	3293T44 31.02	2,500	3370T64 42.30
Slide Lock—Outward Opening									
5 5/16"	13/16"	3 3/16"	7/16"	—	—	—	—	450	3415T71 22.51
5 3/8"	1 1/4"	4"	9/16"	—	—	—	—	675	3415T72 32.55

S-Hooks—*Not for Lifting*

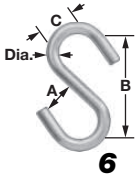

Zinc-plated steel hooks offer good corrosion resistance in most environments. ***Black-oxide steel*** hooks blend into dark backgrounds and offer some corrosion resistance. ***Brass*** and ***hot-dipped galvanized steel*** hooks offer better corrosion resistance than zinc-plated steel and black-oxide steel hooks. ***Type 304 stainless steel*** hooks offer excellent corrosion resistance. ***Black nylon*** hook is lightweight, won't scratch your surface, and offers excellent corrosion resistance.

(6) Open End

Dia.	(A)	(B)	(C)	Zinc-Plated Steel Work Load Limit, lbs.	Qty.	Per Pkg.	Black-Oxide Steel Work Load Limit, lbs.	Qty.	Per Pkg.	Brass Work Load Limit, lbs.	Qty.	Per Pkg.
1/16"	3/16"	5/8"	1/4"	11	25	9381T21 $1.83	11	25	6056T1 $3.85	8	25	9379T21 $2.91
1/16"	1/4"	1"	5/16"	12	25	9381T22 1.90	12	25	6056T2 3.98	8	25	9379T22 3.58
1/8"	7/16"	1 1/2"	1/2"	28	25	9381T24 4.06	28	10	6056T3 3.45	20	25	9379T24 8.61
1/8"	1/4"	1"	5/16"	31	25	9381T23 2.09	31	10	6056T4 3.40	21	25	9379T23★ 8.34
1/8"	1/4"	1 3/4"	9/16"	43	25	9381T25 4.22	43	10	6056T5 3.66	30	1	9379T25● 3.13
3/16"	1/4"	1"	5/16"	106	25	9381T51 4.31	106	10	6056T6 3.40	72	25	9379T11 10.63
3/16"	7/16"	1 1/2"	1/2"	117	10	9381T52 2.38	117	5	6056T7 5.13	80	10	9379T27 10.62
1/4"	9/16"	2"	11/16"	189	10	9381T55 3.91	189	5	6056T8 5.41	130	5	9379T28 11.25
1/4"	5/16"	1 1/2"	1/2"	230	10	9381T54 4.05	230	5	6056T9 5.40	—	—	—
5/16"	9/16"	2"	11/16"	450	10	9381T56 7.01	450	1	6056T13 2.69	—	—	—
5/16"	9/16"	2 3/8"	3/4"	320	10	9381T57 8.74	320	1	6056T11 2.79	—	—	—
3/8"	1 1/16"	2 1/2"	7/8"	428	10	9381T58 11.69	428	1	6056T12 3.08	—	—	—
1/2"	3/4"	3"	1 1/8"	800	1	9381T59 3.02	—	—	—	—	—	—

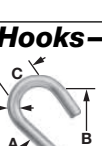

Dia.	(A)	(B)	(C)	Hot-Dipped Galv. Steel Work Load Limit, lbs.	Qty.	Per Pkg.	Type 304 Stainless Steel Work Load Limit, lbs.	Qty.	Per Pkg.	Black Nylon Work Load Limit, lbs.	Qty.	Per Pkg.
1/16"	3/16"	5/8"	1/4"	—	—	—	15	25	9378T21 $3.54	—	—	—
1/16"	1/4"	1"	5/16"	12	25	9380T22 $3.75	16	25	9378T22 3.70	—	—	—
1/8"	7/16"	1 1/2"	1/2"	28	25	9380T24 6.72	32	25	9378T24♣ 10.24	—	—	—
1/8"	1/4"	1"	5/16"	31	25	9380T23 5.12	31	25	9378T23 4.27	—	—	—
1/8"	1/4"	1 3/4"	9/16"	43	25	9380T25 7.25	55	10	9378T25 7.74	—	—	—
3/16"	1/4"	1"	5/16"	106	25	9380T9 7.46	140	10	9378T11 5.05	—	—	—
3/16"	7/16"	1 1/2"	1/2"	117	10	9380T1 3.37	117	10	9378T12 9.31	—	—	—
1/4"	9/16"	2"	11/16"	189	10	9380T12 5.05	189	5	9378T15 8.07	—	—	—
1/4"	5/16"	1 1/2"	1/2"	230	10	9380T16 5.21	300	5	9378T14 7.09	—	—	—
1/4"	1"	2 1/2"	5/8"	—	—	—	—	—	—	120	8	1926T21 $7.71
5/16"	9/16"	2"	11/16"	450	10	9380T13 7.98	119	1	9378T16 2.59	—	—	—
5/16"	9/16"	2 3/8"	3/4"	320	10	9380T17 8.28	420	1	9378T18 2.97	—	—	—
3/8"	1 1/16"	2 1/2"	7/8"	428	5	9380T14 9.97	—	—	—	—	—	—
1/2"	3/4"	3"	1 1/8"	800	1	9380T15 3.77	—	—	—	—	—	—

★ (A) is 3/16"; (C) is 3/8". ● (A) is 1/2"; (B) is 1 13/16"; (C) is 3/4". ♣ (B) is 1 9/16".

Work Load Limit, lbs.	Dia.	(A)	(B)	(C)	Pkg. Qty.	Per Pkg.
Closed End						
(7) Type 304 Stainless Steel						
Not Rated	1/16"	1/16"	9/16"	3/16"	10	9375T31 $3.20
Not Rated	3/32"	1/16"	5/8"	3/16"	10	9375T32 3.96
Not Rated	1/8"	1/16"	1"	3/8"	10	9375T33 5.45
Straight Closed End						
(8) Zinc-Plated Steel						
15	1/8"	1/16"	1 1/2"	5/8"	25	9377T11 2.83
17	1/16"	1/16"	1"	3/8"	25	9377T13 2.87
19	1/8"	1/16"	1 5/16"	1/2"	25	9377T12 2.96
30	1/8"	1/16"	1"	5/16"	25	9377T14 3.00
37	1/8"	1/16"	1"	3/8"	25	9376T3 2.88
37	1/8"	1/16"	1 3/4"	11/16"	25	9376T1 3.74
(8) Type 304 Stainless Steel						
20	1/8"	1/16"	1 1/2"	5/8"	10	9375T67 4.17

Work Load Limit, lbs.	Dia.	(A)	(B)	(C)	Pkg. Qty.	Per Pkg.
Straight Closed End (Cont.)						
(8) Type 304 Stainless Steel (Cont.)						
25	1/8"	1/16"	1 1/4"	1/2"	10	9375T66 $3.82
40	1/8"	1/16"	1"	5/16"	10	9375T65 3.95
48	1/8"	1/16"	1"	3/8"	10	9375T68 4.77
48	1/8"	1/8"	1 3/4"	11/16"	10	9375T71 7.42
50	1/8"	1/16"	1 3/8"	1/2"	10	9375T69 5.74
Combination Open/Closed End						
(9) Zinc-Plated Steel						
269	3/8"	3/4"	3 1/2"	5/8"	10	9373T11 10.19
(10) Type 316 Stainless Steel						
176	1/4"	3/8"	2"	5/16"	1	3631T88 6.63
264	5/16"	7/16"	2 1/4"	7/16"	1	3631T82 8.64
275	3/16"	3/8"	1 3/4"	1/4"	1	3631T89 6.49
352	3/8"	9/16"	2 11/16"	5/8"	1	3631T84 12.41

Warning! ***Never exceed work load limits.***

S-Hooks—For Lifting

Ideal for paint lines, conveyor systems, and other applications where small lifting eyes or holes cannot accommodate foundry hooks and tapered-tip hooks.

Alloy steel hooks are good where corrosion is not a factor.

Type 316L stainless steel hooks provide maximum corrosion resistance.

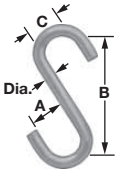

Work Load Limit, lbs.	Dia.	(A)	(B)	(C)		Each
Alloy Steel						
250	1/4"	3/4"	2 3/4"	3/4"	3784T21	$30.88
500	3/8"	1 1/8"	4 1/8"	1 1/8"	3784T22	36.44
1,000	1/2"	1 1/2"	5 1/2"	1 1/2"	3784T23	44.12
1,500	5/8"	1 7/8"	7"	1 7/8"	3784T24	51.40
2,000	3/4"	2 1/4"	8 1/4"	2 1/4"	3784T25	60.66
2,400	7/8"	2 5/8"	9 1/2"	2 5/8"	3784T28	45.16
3,200	1"	3"	11"	3"	3784T27	98.27
Type 316L Stainless Steel						
75	1/4"	3/4"	2 3/4"	3/4"	3784T29	31.91
165	3/8"	1 1/8"	4 1/8"	1 1/8"	3784T31	37.39
325	1/2"	1 1/2"	5 1/2"	1 1/2"	3784T32	47.53
500	5/8"	1 7/8"	7"	1 7/8"	3784T33	54.60
660	3/4"	2 1/4"	8 1/4"	2 1/4"	3784T34	64.70
900	7/8"	2 5/8"	9 1/2"	2 5/8"	3784T35	90.40
1,060	1"	3"	11"	3"	3784T36	117.49

S-Hooks with Latches—Not for Lifting

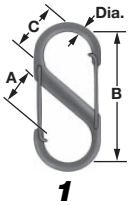

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2

For extra security, latches on these hooks snap back into place to secure your load.

Plastic hooks are lightweight and won't scratch your surface. Color is black.

400 series stainless steel hooks have a black powder-coated finish and offer excellent corrosion resistance. ***Type 316 stainless steel*** hooks provide maximum corrosion resistance.

	Work Load Limit, lbs.	Dia.	(A)	(B)	(C)		Each
Latch on Both Ends							
Plastic							
1	10	3/16"	3/8"	1 5/8"	9/16"	6043T2	$1.88
1	25	1/4"	11/16"	2 15/16"	1"	6043T3	2.50
400 Series Stainless Steel							
1	10	1/8"	1/2"	1 3/4"	5/8"	6043T4	2.63
1	75	1/4"	13/16"	3 1/16"	1 1/8"	6043T5	3.75
Latch on One End							
Type 316 Stainless Steel							
2	105	1/4"	3/8"	2"	3/8"	6043T6	4.62
2	235	5/16"	5/8"	2 3/8"	5/8"	6043T7	7.36

Quick-Release Snap—Not for Lifting

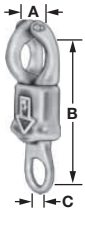

Just tug on the collar to release the hook from its locked position. Made of nickel-plated iron.

(A)	(B)	(C)		Each
5/8"	3 1/4"	5/8"	37115T4	$3.91

Mil. Spec. S-Hooks—Not for Lifting

These hooks meet MS-87006.

Steel hooks are good where corrosion is not a factor.

Cadmium-plated steel hooks offer some corrosion resistance.

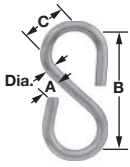

Work Load Limit, lbs.	Dia.	(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
Steel							
3	5/64"	3/16"	13/16"	1/8"	5	6027T11	$2.50
10	1/8"	9/16"	1 7/16"	5/16"	5	6027T15	2.56
15	1/8"	3/8"	1 7/16"	1/4"	5	6027T14	2.68
18	7/64"	1/16"	1 1/16"	3/8"	5	6027T13	2.75
20	7/64"	3/16"	15/16"	3/16"	5	6027T12	2.81
40	1/8"	1/4"	1 1/16"	3/16"	5	6027T16	2.84
65	5/32"	1/4"	1 1/16"	1/4"	5	6027T17	2.99
Cadmium-Plated Steel							
3	5/64"	3/16"	13/16"	1/8"	5	6027T18	2.80
14	1/8"	9/16"	1 7/16"	5/16"	5	6027T23	3.11
20	7/64"	3/16"	15/16"	3/16"	5	6027T19	3.21
20	7/64"	1/16"	1 1/16"	3/8"	5	6027T21	3.27
20	1/8"	3/8"	1 7/16"	1/4"	5	6027T22	3.38
45	1/8"	1/4"	1 1/16"	3/16"	5	6027T24	3.46
65	5/32"	1/4"	1 1/16"	1/4"	5	6027T25	3.59

High-Strength Snaps—Not for Lifting

3

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7

Swivel snaps make positioning and connecting to the load easier.

Zinc-plated steel snaps offer good corrosion resistance in most environments. ***Type 316, Type 316L,*** and ***Type 17-4 PH stainless steel*** snaps provide superior corrosion resistance.

	Work Load Limit, lbs.	(A)	(B)	(C)		Each
Snaps						
Zinc-Plated Steel						
3	750	3/4"	3 1/8"	3/4"	3949T1	$5.15
4	900	1/2"	2 9/16"	5/8"	3949T2	5.09
Type 316 Stainless Steel						
3	300	11/16"	3 1/8"	3/4"	8907T11	12.34
Type 316L Stainless Steel						
5	165	1/4"	1 5/8"	1/4"	8907T61	19.99
5	387	1/2"	2 3/8"	3/8"	8907T71	30.46
5	825	1/2"	2 7/8"	1/2"	8907T72	58.46
Type 17-4 PH Stainless Steel						
6	1,000	3/8"	2 3/8"	3/8"	8907T73	35.62
6	2,225	9/16"	2 7/8"	9/16"	8907T74	72.05
Swivel Snaps						
Type 316L Stainless Steel						
7	137	1/2"	2 3/8"	1/2"	8907T64	47.46
7	325	9/16"	3 3/8"	3/4"	8907T65	74.18

Slide-Bolt Spring Snaps with Split Ring—Not for Lifting

Color-code keys and other small items with these plastic snaps. The split ring swivels and is made of nickel-plated steel.

To Order: Please specify color: black, blue, red, white, or yellow.

(A)	(B)	(C)		Each
3/8"	3 1/8"	7/8"	34365T1	$0.99

50-Piece Snap Assortment—Ten each of black, blue, red, white, and yellow.

34365T61 ..... **Each** $61.42

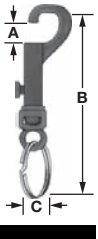

Warning! **Never exceed work load limits.**

Slide-Bolt Spring Snaps—Not for Lifting

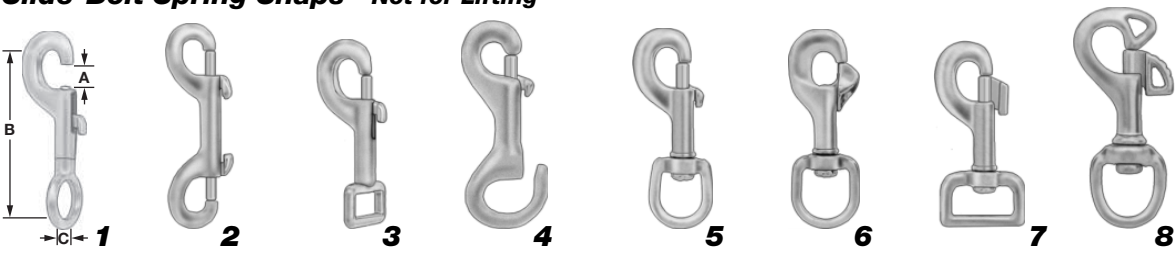

Quick connection and disconnection is a slide away with these snaps. ***Swivel snaps*** make positioning and connecting to the load easier. ***Nickel-plated zinc, zinc-plated iron,*** and ***nickel-plated iron*** snaps offer good corrosion resistance in most environments. ***Bronze*** and ***nickel-plated brass*** snaps offer excellent corrosion resistance. ***Type 316 stainless steel*** snaps provide maximum corrosion resistance.

(A)	(B)	(C)		Each
Snaps				
Nickel-Plated Zinc				
1	5/16″	3″	5/8″	**3906T14**	$1.77
1	5/16″	3″	3/4″	**3906T16**	1.98
1	3/8″	2 3/4″	1/2″	**3906T12**	1.70
2	3/8″	2 7/8″	—	**3901T16**	1.86
2	3/8″	3 1/4″	—	**3901T19**	2.16
2	3/8″	4″	—	**3901T24**	2.89
3	3/8″	2 5/8″	1″▲	**3902T16**	2.30
Zinc-Plated Iron				
2	3/8″	3 5/8″	—	**3901T52**	2.99
2	3/8″	4 1/8″	—	**3901T53**	3.78
4	3/16″	2 1/4″	3/8″	**3910T11**	1.76
4	5/16″	2 7/8″	3/8″	**3910T12**	2.62
4	3/8″	3″	5/8″	**3910T13**	3.02
4	3/8″	3 1/4″	5/8″	**3910T14**	3.35
4	1/2″	5″	1″	**3910T18**	7.54
4	9/16″	4 1/4″	3/4″	**3910T19**	6.54
Bronze				
2	7/16″	4″	—	**3901T32**	5.99
4	3/8″	3″	3/8″	**3910T31**	3.75
4	1/2″	3 1/2″	1/2″	**3910T32**	5.62
Type 316 Stainless Steel				
2	1/4″	2 15/16″	—	**3901T54**	10.53
2	3/8″	3 1/2″	—	**3901T31**	16.10
2	1/2″	4 1/8″	—	**3901T55**	17.66

▲ Dimension represents strap width. Use with strap up to 1/4″ thick.

(A)	(B)	(C)		Each
Swivel Snaps				
Nickel-Plated Zinc				
5	3/16″	2 1/8″	3/8″	**3913T26**	$1.01
5	3/8″	2 1/2″	3/8″	**3913T11**	1.20
5	3/8″	2 5/8″	1/2″	**3913T12**	1.36
5	3/8″	2 7/8″	5/8″	**3913T16**	1.58
5	3/8″	2 7/8″	3/4″	**3913T17**	1.62
5	3/8″	3 1/8″	7/8″	**3913T19**	1.90
5	3/8″	3 1/8″	1″	**3913T22**	2.10
5	7/16″	3 3/8″	1 1/8″	**3913T23**	2.76
6	3/8″	2 1/2″	5/8″	**3963T1**	1.79
6	3/8″	2 3/4″	3/4″	**3963T2**	1.85
7	3/8″	2 5/8″	1″▲	**3902T24**	2.56
Nickel-Plated Iron				
5	5/8″	3 7/8″	5/8″	**3913T25**	3.55
Bronze				
5	1/4″	2 1/2″	3/8″	**3913T61**	2.37
5	3/8″	2 5/8″	5/8″	**3913T71**	4.27
5	1/2″	4″	1 1/4″	**3913T72**	11.07
8	3/8″	3 1/8″	3/4″	**3908T6**	5.41
Nickel-Plated Brass				
5	3/16″	1 3/8″	1/4″	**3913T73**	1.56
Type 316 Stainless Steel				
5	3/8″	3″	3/8″	**3913T51**	11.10
5	3/8″	3″	1/2″	**3913T52**	11.21
5	3/8″	3″	5/8″	**3913T53**	11.35
5	3/8″	3 1/4″	3/4″	**3913T54**	12.42
5	1/2″	4 1/4″	1 1/4″	**3913T56**	16.14
5	9/16″	4 1/8″	1 1/8″	**3913T55**	16.31

Spring Snaps—Not for Lifting

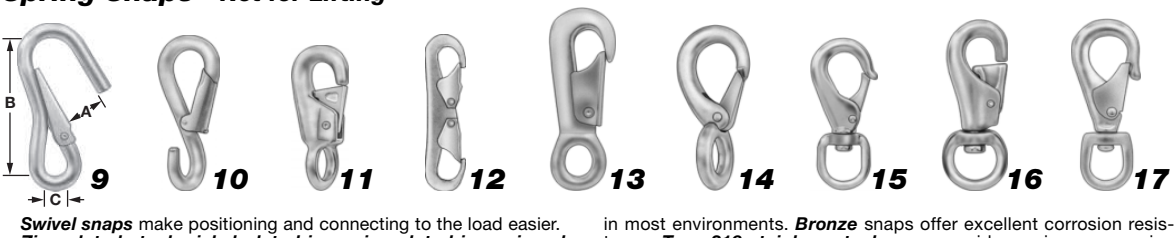

Swivel snaps make positioning and connecting to the load easier. ***Zinc-plated steel, nickel-plated iron, zinc-plated iron, zinc alloy,*** and ***nickel-plated zinc*** snaps offer good corrosion resistance in most environments. ***Bronze*** snaps offer excellent corrosion resistance. ***Type 316 stainless steel*** snaps provide maximum corrosion resistance.

(A)	(B)	(C)		Each
Snaps				
Zinc-Plated Steel				
9	3/4″	3 1/2″	1/2″	**3956T1**	$3.16
10	1/4″	2 1/4″	3/8″	**8985T34**	3.54
10	3/8″	3″	1/2″	**8985T36**	4.60
10	1/2″	3 3/8″	5/8″	**8985T37**	7.03
Nickel-Plated Iron				
11	1/2″	3″	3/4″	**3920T14**	4.16
12	5/16″	3 1/16″	—	**3904T18**	2.76
12	7/16″	4 1/2″	—	**3904T28**	4.12
Zinc-Plated Iron				
13	9/16″	3 7/8″	5/8″	**3735T15**	3.78
Zinc Alloy				
14	1/4″	1 1/2″	7/16″	**3905T11**	1.13
14	5/16″	1 13/16″	1/2″	**3905T12**	1.70
14	7/16″	2 1/8″	9/16″	**3905T13**	2.15
14	9/16″	2 5/8″	11/16″	**3905T14**	3.27
14	5/8″	3 1/16″	13/16″	**3905T16**	4.14
14	3/4″	3 11/16″	1″	**3905T18**	7.13
Type 316 Stainless Steel				
14	3/16″	1 3/4″	3/8″	**3717T41**	7.36
14	3/8″	2 3/8″	5/8″	**3717T42**	9.00
14	7/16″	3″	11/16″	**3717T43**	9.30
14	5/8″	3 3/8″	3/4″	**3717T44**	11.28

(A)	(B)	(C)		Each
Swivel Snaps				
Nickel-Plated Zinc				
15	1/2″	2 1/2″	3/8″	**3943T1**	$2.59
15	1/2″	2 3/4″	1/2″	**3943T2**	2.66
15	1/2″	2 3/4″	5/8″	**3943T3**	2.58
15	1/2″	2 7/8″	3/4″	**3943T4**	2.69
15	1/2″	3 1/16″	1″	**3943T5**	3.09
Nickel-Plated Iron				
16	1/2″	3 3/8″	7/8″	**3921T14**	3.91
Zinc-Plated Iron				
17	3/8″	3 3/16″	5/8″	**3903T12**	5.71
17	3/4″	5 1/8″	1 1/8″	**3903T22**	9.65
Bronze				
15	3/8″	2 13/16″	5/8″	**3903T41**	4.86
15	7/16″	3 1/4″	3/4″	**3903T42**	6.28
15	9/16″	3 15/16″	7/8″	**3903T43**	9.21
Type 316 Stainless Steel				
15	5/16″	3″	3/4″	**3715T41**	10.44
15	7/16″	3 3/8″	13/16″	**3715T42**	13.08
15	1/2″	4″	13/16″	**3715T43**	14.70

Trigger Snaps—Not for Lifting

Trigger-action operation paired with overlapping arms gives you quick connection and disconnection as well as added security. Snaps swivel for easier positioning and connecting to the load.

Nickel-plated zinc and ***nickel-plated iron*** snaps offer good corrosion resistance in most environments. ***Bronze*** snaps offer excellent corrosion resistance. ***Type 316 stainless steel*** snaps provide maximum corrosion resistance.

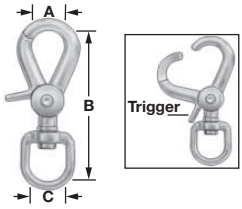

(A)	(B)	(C)		Each
Nickel-Plated Zinc				
3/8″	2 1/16″	1/2″	3919T12	$1.67
3/8″	2 3/8″	3/4″	3919T16	2.29
7/16″	2 1/8″	3/8″	3919T11	2.15
7/16″	2 1/4″	5/8″	3919T13	2.08
7/16″	2 1/8″	3/4″■	3919T24	2.43
11/16″	3 3/16″	3/4″	3919T14	3.42

■ Dimension represents strap width. Use with strap up to 1/8″ thick.

(A)	(B)	(C)		Each
Nickel-Plated Iron				
7/8″	3 7/16″	3/4″	3919T23	$3.78
1 1/16″	4 1/16″	1″	3919T15	5.68
Bronze				
3/8″	2 3/16″	1/2″	3932T14	3.58
Type 316 Stainless Steel				
3/8″	2 3/16″	1/2″	3919T21	9.85
7/16″	2 1/8″	5/8″	3919T22	10.28

Light Duty Spring Snaps—Not for Lifting

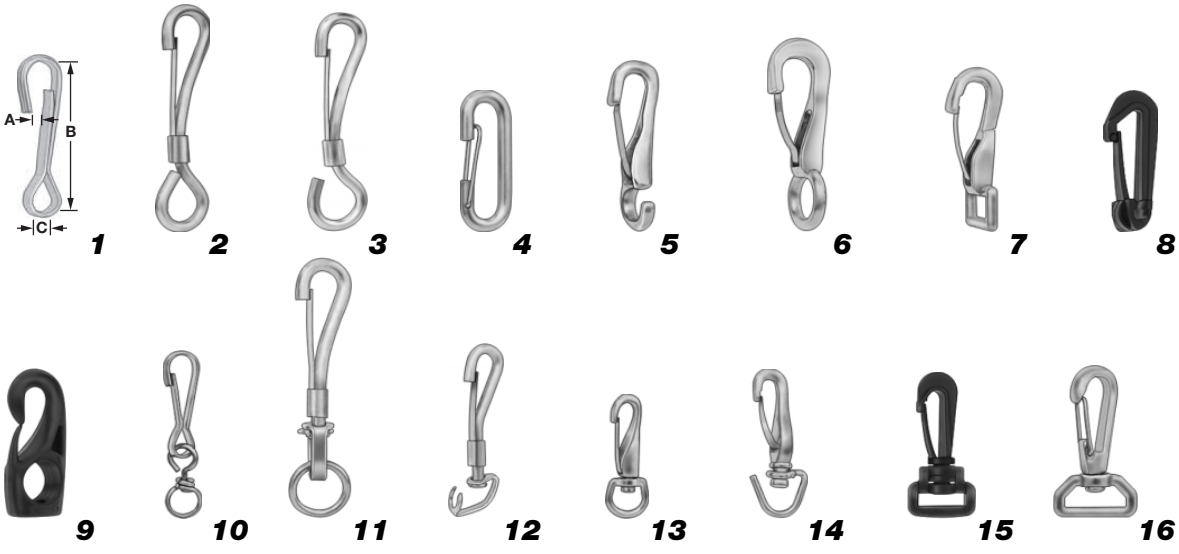

An economical alternative to our spring snaps on page 1444. ***Swivel snaps*** make positioning and connecting to the load easier. ***Nickel-plated steel, zinc-plated steel, zinc-plated iron,*** and ***nickel-plated zinc*** snaps offer good corrosion resistance in most environments. ***Plastic*** and ***Type 304 stainless steel*** snaps offer excellent corrosion resistance.

(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
Snaps					
Nickel-Plated Steel					
1	1/8″	15/16″	3/16″	10	3960T1	$1.59
1	1/8″	1 1/8″	1/4″	10	3960T2	1.63
1	1/8″	1 1/4″	1/4″	10	3960T3	1.73
1	3/16″	1 3/8″	1/4″	10	3960T4	1.59
1	3/16″	1 5/8″	5/16″	10	3960T5	2.34
1	1/4″	1 7/8″	3/8″	10	3960T6	2.60
1	5/16″	2 3/16″	7/16″	10	3960T7	3.95
1	5/16″	2 1/2″	7/16″	10	3960T8	5.14
Zinc-Plated Steel					
2	3/8″	3 9/16″	5/8″	10	3959T1	9.71
3	3/8″	3 9/16″	5/8″	1	3958T1	1.08
4	1/4″	1 3/8″	3/8″	10	8990T61	7.86
4	5/16″	2 1/16″	7/16″	10	8990T62	10.57
Zinc-Plated Iron					
5	1/4″	2 1/2″	3/8″	1	3930T12	1.17
5	3/8″	2 3/4″	1/2″	1	3930T14	1.53
Nickel-Plated Zinc					
6	5/16″	2 5/8″	5/8″	1	3957T1	1.63
7	1/4″	2 1/4″	5/8″ ◆	1	3900T16	1.28
7	1/4″	2 1/4″	3/4″ ◆	1	3900T18	1.47
7	5/16″	2 3/8″	1″ ◆	1	3900T22	1.65
7	3/8″	2 3/4″	1 1/4″ ◆	1	3900T24	1.78
7	3/8″	2 3/4″	1 1/2″ ◆	1	3900T25	1.86
7	3/8″	3″	2″ ◆	1	3900T26	1.90
Black Plastic					
8	1/4″	1 1/2″	3/16″	10	30655T35	2.57
9	1/4″	1 3/8″	7/16″	10	8979T4	7.69
9	5/16″	1 3/4″	9/16″	1	8979T5	.88
9	3/8″	2 1/8″	3/4″	1	8979T6	1.36
White Plastic					
9	1/4″	1 1/2″	7/16″	10	8979T1	7.69
9	5/16″	1 3/4″	9/16″	1	8979T2	.88
9	3/8″	2 1/8″	3/4″	1	8979T3	1.36

(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
Swivel Snaps					
Nickel-Plated Steel					
10	1/8″	2 1/8″	5/16″	10	8977T12	$6.00
10	1/4″	2 1/2″	3/8″	10	8977T13	6.25
10	1/4″	2 3/4″	7/16″	10	8977T14	8.33
10	5/16″	3 1/2″	1/2″	10	8977T15	8.80
Zinc-Plated Steel					
11	5/16″	4″	3/4″	1	3916T12	.96
11	5/16″	4 1/8″	7/8″	1	3916T14	1.06
12	1/4″	2 5/8″	3/4″	10	3922T14	8.40
12	1/4″	3 1/2″	9/16″	10	3922T16	10.77
12	1/4″	3 1/2″	11/16″	10	3922T15	10.35
12	1/4″	3 3/4″	5/8″	1	3922T17	1.06
Nickel-Plated Zinc					
13	3/16″	1 5/8″	1/4″	10	3929T12	9.62
13	3/16″	1 5/8″	3/8″	10	3929T14	9.65
13	9/32″	3 1/8″	3/4″	1	3929T26	2.01
14	3/16″	2 1/8″	3/8″	10	3929T18	10.94
Black Plastic					
15	1/4″	1 7/8″	3/4″■	10	30655T36	5.60
15	1/4″	1 7/8″	1″■	10	30655T37	6.99
15	1/4″	1 7/8″	1 1/2″■	10	30655T38	7.68
15	1/4″	1 7/8″	2″■	10	30655T39	8.70
Type 304 Stainless Steel					
16	3/8″	2 1/4″	1″♣	1	3482T11	7.93
16	3/8″	2 1/4″	1 1/2″♣	1	3482T12	9.16
16	3/8″	2 1/4″	2″♣	1	3482T13	10.93

◆ Dimension represents strap width. Use with strap up to 5/16″ thick.
■ Dimension represents strap width. Use with strap up to 1/8″ thick.
♣ Dimension represents strap width. Use with strap up to 3/16″ thick.

About Pulleys, Mounted Pulleys, and Pulley Blocks

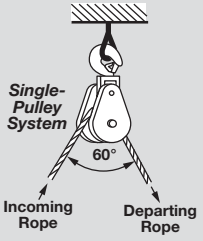

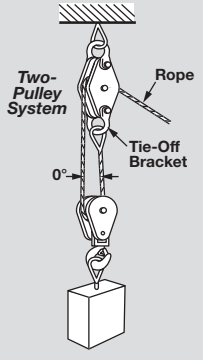

Use pulleys, mounted pulleys, and pulley blocks to change the direction of one or more ropes (lines) as well as to make it easier to lift and haul loads.

A ***pulley*** is a grooved wheel. The groove is designed to minimize wear on the rope. A ***mounted pulley*** is one or more pulleys in a metal housing that has a mounting plate for permanent installation. A ***pulley block*** is one or more pulleys with a wood, plastic, or metal housing that usually has some sort of mounting hardware (for example, a hook or an eye) for suspending the pulley. For more information about pulley blocks, see page 1450.

You can reduce the force needed to move a load by increasing the number of pulleys in your system. Multiple pulley systems also provide finer motion control by reducing the amount of load movement.

Angle Factor Multipliers	
Angle	Factor
0°	2.00
30°	1.93
45°	1.84
60°	1.73
90°	1.41
120°	1.00
150°	0.52
160°	0.35
180°	0.00

Work Load Limit— The maximum weight pulleys and pulley blocks and their connecting fittings are designed to hold.

You must determine the total load being imposed on each pulley in your system to properly determine the capacity you'll need. The load on a single pulley can vary depending on the angle between the incoming and departing ropes.

The chart at left indicates what factor you should multiply your rope pull by to determine your load on the pulley.

For example, if 1,000 lbs. of force is applied to your single-pulley system, and the angle between the incoming and departing ropes is 60°, then the load on the pulley is 1,730 lbs. (1,000 lbs. × 1.73 factor = 1,730 lbs.). Using the same example, if the angle is 0° (ropes are parallel), then the load on the pulley is 2,000 lbs. (1,000 lbs. × 2 factor = 2,000 lbs.).

Size Selection— The capacity and life span of wire and fibrous rope is reduced when used over pulleys. To minimize these effects, we recommend you choose the largest possible pulley diameter. By doing this, you'll minimize the bending stresses on your rope.

Pulley Gauge Set— Ensure the tread of your pulley is the appropriate size for your wire rope as well as check the pulley groove for wear. Set includes 14 steel gauges for 1/4″ to 1 1/2″ wire rope diameters.

3181T51 ..... $28.00

Pulleys

Acetal and Nylon Pulleys for Wire Rope

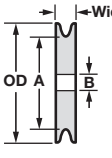

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Acetal and nylon pulleys are light in weight, yet provide corrosion resistance. These pulleys are ideal for small-diameter wire rope.

(1) Acetal pulleys are corrosion and moisture resistant.

(2) Nylon pulleys are corrosion and impact resistant.

(3-6) High-strength nylon pulleys are corrosion and impact resistant with added material for strength, reduced friction, and longer pulley and rope life.

Bearings—*Plain bore* pulleys ride directly on the shaft. Use in light-duty applications. *Precision ball bearings* provide smooth rotation and are double-shielded to keep out contaminants. *Plain bronze bearings* are long lasting. Ideal for slower moving applications. *Plain stainless steel bearings* provide corrosion resistance. *Roller bearings* are for use in continuous-run applications.

	For Rope Dia.	OD	Work Load Limit, lbs.	Bearings	(A)	For Shaft Dia. (B)	Width		
Acetal									
1	1/32″	3/8″	Not Rated	Plain Bore	5/16″	1/8″	1/8″	**3434T31**	$1.23
1	1/32″	5/8″	Not Rated	Plain Bore	1/2″	1/8″	1/8″	**3434T32**	1.30
1	3/64″	3/4″	Not Rated	Plain Bore	5/8″	1/8″	3/16″	**3434T33**	1.45
1	3/64″	1″	Not Rated	Plain Bore	13/16″	3/16″	3/16″	**3434T75**	1.57
1	3/64″	1 1/16″	Not Rated	Plain Bore	7/8″	3/16″	1/4″	**3434T34**	1.62
1	1/16″	1 1/4″	Not Rated	Plain Bore	1 1/16″	3/16″	1/4″	**3434T35**	1.70
1	1/8″	1 3/4″	Not Rated	Plain Bore	1 3/8″	1/4″	5/16″	**3434T37**	2.02
1	3/16″	1 9/16″	Not Rated	Plain Bore	1 1/4″	1/4″	3/8″	**3434T38**	2.05
1	1/4″	1 15/16″	Not Rated	Plain Bore	1 9/16″	5/16″	7/16″	**3434T39**	2.58
Nylon									
2	1/32″	5/8″	10	Precision Ball	1/2″	1/8″	1/8″	**3434T12**	9.50
2	3/64″	3/4″	10	Precision Ball	5/8″	1/8″	3/16″	**3434T13**	9.50
2	3/64″	1 1/16″	90	Precision Ball	7/8″	3/16″	1/4″	**3434T14**	9.62
2	1/16″	1 1/4″	90	Precision Ball	1 1/16″	3/16″	1/4″	**3434T73**	9.62
2	3/32″	1 1/2″	90	Precision Ball	1 1/4″	1/4″	5/16″	**3434T15**	10.00
2	1/8″	1 3/4″	90	Precision Ball	1 3/8″	1/4″	5/16″	**3434T16**	10.00
High-Strength Nylon									
3	3/16″	1 1/2″	250	Plain SS	1 1/8″	1/4″	1/2″	**9466T75**	5.85
3	3/16″	2 3/4″	750	Plain SS	2″	1/4″	1/2″	**9466T72**	6.67
3	3/16″	3″	1,200	Plain SS	2″	5/16″	9/16″	**9466T73**	8.35
4	3/32″	2 1/2″	200	Plain Bronze	2 3/16″	1/4″	1/4″	**9466T61**	6.29
4	3/32″	2 1/2″	200	Roller	2 3/16″	1/4″	1/4″	**9466T81**	17.07
5	3/16″	2 1/2″	800	Roller	2″	1/2″	7/16″	**9466T82**	14.57
5	3/16″	3″	800	Plain Bronze	2 1/2″	1/2″	7/16″	**9466T63**	7.20
5	3/16″	3 1/2″	800	Plain Bronze	3″	1/2″	7/16″	**9466T64**	7.75
5	3/16″	3 1/2″	800	Roller	3″	1/2″	7/16″	**9466T84**	15.88
5	1/4″	4″	1,400	Plain Bronze	3 3/8″	3/4″	1/2″	**9466T65**	9.85
5	1/4″	4″	1,400	Roller	3 3/8″	3/4″	1/2″	**9466T85**	19.30
5	1/4″	4 1/2″	1,400	Plain Bronze	3 7/8″	3/4″	1/2″	**9466T66**	10.62
5	1/4″	5″	1,400	Plain Bronze	4 3/8″	3/4″	1/2″	**9466T67**	11.03
5	1/4″	5″	1,400	Roller	4 3/8″	3/4″	1/2″	**9466T87**	21.12
6	5/16″	5 1/2″	1,600	Plain Bronze	4 5/8″	3/4″	5/8″	**9466T68**	13.00
6	5/16″	6″	1,600	Plain Bronze	5 1/4″	3/4″	5/8″	**9466T69**	14.45
6	5/16″	6″	1,600	Roller	5 1/4″	3/4″	5/8″	**9466T89**	23.50

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

For information about pulleys, mounted pulleys, and pulley blocks, see pages 1446 and 1450.

Cast Iron, Steel, and Stainless Steel Pulleys for Wire Rope

Cast iron, zinc-plated steel, and stainless steel pulleys are stronger than acetal and nylon pulleys for handling small-diameter wire rope.

(1) Cast iron pulleys handle high capacities and have a painted finish.

(2-4) Zinc-plated steel pulleys are strong and corrosion resistant. *Style 2* and *Style 4* are machined for tighter tolerances. *Style 3* are stamped and riveted.

(5) Type 316 stainless steel pulleys provide superior corrosion resistance.

Bearings—*Plain bronze bearings* are long lasting. Ideal for slow moving applications. *Precision ball bearings* run smooth and quietly. *Ball bearings* create less friction, making them ideal for faster applications and quick direction changes. *Shielded stainless steel ball bearings* resist corrosion and contamination.

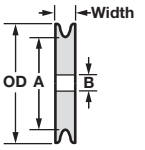

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For Rope Dia.	OD	Work Load Limit, lbs.	Bearings	(A)	For Shaft Dia. (B)	Width		
Cast Iron								
1	1/4″	3″	950	Plain Bronze	2 3/8″	3/8″	9/16″	**3168T25** $23.82
1	3/8″	3″	1,250	Plain Bronze	2 1/4″	3/8″	13/16″	**3168T26** 35.37
1	3/8″	4″	2,000	Plain Bronze	3 1/4″	3/4″	13/16″	**3168T42** 43.38
1	1/2″	5″	3,000	Plain Bronze	3 7/8″	3/4″	1 1/16″	**3168T43** 62.87
Zinc-Plated Steel								
2	3/64″	1/2″	36	Precision Ball	3/8″	1/8″	3/16″	**3434T21** 3.82
2	3/32″	1 1/16″	175	Precision Ball	7/8″	3/16″	1/4″	**3434T22** 4.18
2	1/8″	1″	145	Precision Ball	3/4″	3/16″	3/8″	**3434T74** 4.00
2	3/16″	1 1/4″	175	Precision Ball	7/8″	1/4″	7/16″	**3434T23** 4.82
2	1/4″	1 3/4″	290	Precision Ball	1 1/4″	3/8″	1/2″	**3434T24** 6.67
3	3/16″	1 1/4″	88	Ball	1″	5/32″	5/16″	**3164T11** 9.96
3	9/32″	2 3/4″	300	Ball	2 3/16″	5/8″	7/16″	**3164T28** 10.98
3	11/32″	2 3/4″	300	Ball	2 3/8″	3/8″	1/2″	**3164T18** 11.82
3	11/32″	3″	300	Ball	2 3/8″	3/8″	1/2″	**3164T22** 13.38
3	3/8″	2 7/8″	300	Ball	2 9/16″	1/4″	1/2″	**3164T13** 12.72
3	3/8″	3 1/16″	300	Ball	2 9/16″	3/8″	9/16″	**3164T23** 13.90
3	3/8″	4 1/16″	471	Ball	3 9/16″	3/8″	9/16″	**3164T25** 17.71
3	7/16″	3 3/8″	300	Ball	2 11/16″	3/8″	5/8″	**3164T33** 17.24
3	1/2″	3″	293	Ball	2 5/8″	5/16″	5/8″	**3164T16** 13.75
3	17/32″	2 7/8″	300	Ball	2 1/4″	1/2″	11/16″	**3164T26** 15.35
4	1/8″	2 1/2″	685	Plain Bronze	2 1/4″	1/2″	1/2″	**3434T78** 7.09
4	3/16″	1 1/2″	525	Plain Bronze	1″	1/2″	1/2″	**3434T116** 3.55
4	3/16″	2″	600	Plain Bronze	1 1/2″	1/2″	1/2″	**3434T117** 4.80
4	1/4″	2 1/2″	685	Plain Bronze	2″	1/2″	1/2″	**3434T118** 7.56
4	1/4″	3″	800	Plain Bronze	2 1/2″	1/2″	1/2″	**3434T119** 9.64
4	5/16″	3 1/2″	1,550	Plain Bronze	3″	3/4″	11/16″	**3434T121** 13.78
4	3/8″	4″	1,700	Plain Bronze	3 1/4″	3/4″	11/16″	**3434T79** 17.74
4	3/8″	5″	1,850	Plain Bronze	4 1/4″	3/4″	11/16″	**3434T81** 28.58
4	5/8″	6″	6,000	Plain Bronze	5 1/4″	1″	1″	**3164T82** 34.31
Type 316 Stainless Steel								
5	1/8″	2 1/4″	1,000	Plain Bronze	1 7/8″	1/4″	13/16″	**31695T21** 21.02
5	1/8″	2 1/4″	1,000	Shielded SS Ball	1 7/8″	3/8″	13/16″	**3628T11** 38.69
5	3/16″	3 1/4″	1,200	Shielded SS Ball	2 3/4″	1/2″	15/16″	**3628T22** 75.62
5	3/16″	3 1/4″	1,500	Plain Bronze	2 3/4″	3/8″	15/16″	**31695T23** 41.98
5	1/4″	4 1/4″	1,200	Shielded SS Ball	3 1/2″	1/2″	1 3/16″	**3628T23** 87.18
5	1/4″	4 1/4″	3,000	Plain Bronze	3 1/2″	1/2″	1 1/8″	**31695T25** 77.30
5	5/16″	5 1/4″	5,000	Plain Bronze	4 3/8″	1/2″	1 3/8″	**31695T27** 124.82
5	3/8″	6 1/4″	8,000	Plain Bronze	5 1/4″	1/2″	1 5/8″	**31695T29** 160.76

Premium Steel Pulleys for Wire Rope

Heavy steel construction makes these pulleys stronger and more durable than our other steel pulleys. They are machined to tight tolerances for less wear on the wire rope and have larger ODs to minimize bending stresses. All have a tough, chip-resistant powder-coated finish.

(6) Have long lasting plain bronze bearings that are ideal for use in slow moving applications.

(7) Have maintenance-free sealed ball bearings that keep moving parts free of debris for smooth rotation.

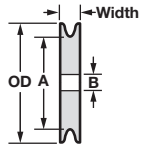

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For Rope Dia.	OD	Work Load Limit, lbs.	Bearings	(A)	For Shaft Dia. (B)	Width		
6	1/4″	4″	1,200	Plain Bronze	3 1/4″	1/2″	13/16″	**3175T41** $60.31
6	1/4″	4″	1,200	Plain Bronze	3 1/4″	3/4″	13/16″	**3175T42** 62.14
6	5/16″	5″	1,800	Plain Bronze	4″	3/4″	1″	**3175T45** 82.05
6	3/8″	4″	1,600	Plain Bronze	3 1/8″	1/2″	13/16″	**3175T43** 60.14
6	3/8″	4 1/8″	1,600	Plain Bronze	3″	1″	1 1/2″	**3175T46** 67.38
6	3/8″	4″	1,700	Plain Bronze	3 1/8″	3/4″	13/16″	**3175T44** 62.26
6	3/8″	6″	2,700	Plain Bronze	4 15/16″	1 1/4″	1 1/8″	**3175T49** 106.51
6	3/8″	6″	2,800	Plain Bronze	5″	3/4″	1 1/16″	**3175T47** 103.69
6	3/8″	6″	2,800	Plain Bronze	5″	1″	1 1/16″	**3175T48** 104.62
6	3/8″	8″	3,600	Plain Bronze	6 1/2″	1 1/4″	1 3/8″	**3175T61** 167.20
6	1/2″	6″	3,200	Plain Bronze	4 7/8″	3/4″	1 1/16″	**3175T62** 90.92
6	1/2″	6″	3,600	Plain Bronze	4 7/8″	1″	1 1/16″	**3175T63** 91.80
6	1/2″	6″	3,600	Plain Bronze	4 15/16″	1 1/4″	1 1/8″	**3175T64** 106.63
6	1/2″	8″	4,800	Plain Bronze	6 5/8″	1″	1 3/8″	**3175T65** 165.34
6	5/8″	6″	3,200	Plain Bronze	5″	3/4″	1 1/16″	**3175T66** 103.96
6	5/8″	6″	4,200	Plain Bronze	5″	1″	1 1/16″	**3175T67** 104.97
6	5/8″	8″	6,000	Plain Bronze	6 5/8″	1 1/4″	1 3/8″	**3175T68** 146.50
6	7/8″	5 7/8″	4,300	Plain Bronze	4 3/8″	1 1/2″	1 3/4″	**3175T69** 126.01
7	1/8″	2 1/4″	1,000	Sealed Ball	2″	7/16″	13/16″	**3183T18** 106.17
7	1/4″	4 1/4″	3,500	Sealed Ball	3 3/4″	3/4″	1 3/16″	**3183T11** 155.17
7	3/8″	6″	7,000	Sealed Ball	5 5/16″	1 1/8″	1 1/2″	**3183T12** 192.50
7	1/2″	8″	10,500	Sealed Ball	7″	1 3/8″	1 11/16″	**3183T13** 263.67
7	5/8″	10″	16,000	Sealed Ball	8 3/4″	1 3/4″	2″	**3183T14** 410.31

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

Pulleys for Fibrous Rope

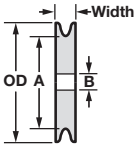

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Choose from a variety of pulleys to handle fibrous rope.

(1) Acetal pulleys are corrosion and moisture resistant.

(2&3) Aluminum pulleys are lighter in weight than our other metal pulleys.

(2,3&4) Galvanized cast iron pulleys are strong and corrosion resistant.

(5&6) Type 316 stainless steel pulleys offer maximum corrosion resistance.

Bearings—*Plain bore* pulleys ride directly on the shaft. *Sealed needle roller bearings* are maintenance free—ideal for continuous-run applications. *Plain bronze bearings* are long lasting for use in slow-moving applications. *Sealed stainless steel ball bearings* are maintenance free and provide smooth rotation.

For Rope Dia.	OD	Work Load Limit, lbs.	Bearings	(A)	For Shaft Dia. (B)	Width		
Acetal								
1	3/16″	2 5/8″	Not Rated	Plain Bore	2 1/16″	5/16″	5/8″	**8901T46** $7.44
1	1/4″	3/4″	Not Rated	Plain Bore	9/16″	5/16″	1/4″	**8901T11** 1.76
Aluminum								
2	1/2″	2″	Not Rated	Sealed Needle Roller	1 5/8″	3/8″	5/8″	**3091T531** 35.69
2	5/8″	2 3/8″	Not Rated	Sealed Needle Roller	2″	3/8″	13/16″	**3091T551** 41.57
2	5/8″	4″	Not Rated	Sealed Needle Roller	3 3/8″	5/8″	13/16″	**3091T591** 63.73
3	1/2″	2″	Not Rated	Plain Bronze	1 5/8″	3/8″	5/8″	**3091T521** 13.04
3	5/8″	4″	Not Rated	Plain Bronze	3 3/8″	5/8″	13/16″	**3091T581** 41.27
Galvanized Cast Iron (Unless Noted)								
2	1″	4 3/4″	3,000	Plain Bronze	4 3/16″	5/8″	1 1/8″	**3165T45** 61.72
3	3/8″	1 3/4″	750	Plain Bronze	1 7/16″	3/8″	1/2″	**3165T41** 23.15
4	1/2″	2 1/4″	1,000	Plain Bronze	1 15/16″	3/8″	5/8″	**3165T42**■ 27.19
4	5/8″	3″	1,250	Plain Bronze	2 11/16″	3/8″	3/4″	**3165T43**♦ 32.89
4	3/4″	3 1/2″	2,000	Plain Bronze	3″	1/2″	1″	**3165T44**♦ 45.49
Type 316 Stainless Steel								
5	1/4″	1 1/4″	400	Plain Bronze	1″	1/4″	1/2″	**3524T11** 13.88
5	5/16″	1 3/4″	600	Plain Bronze	1 7/16″	1/4″	5/8″	**3524T12** 16.44
5	3/8″	2 1/4″	1,000	Plain Bronze	1 7/8″	3/8″	13/16″	**3524T14** 21.44
5	7/16″	3 1/4″	1,500	Plain Bronze	2 13/16″	1/4″	15/16″	**3524T16** 32.29
5	1/2″	3 1/4″	1,500	Plain Bronze	2 3/4″	1/2″	15/16″	**3524T18** 40.21
5	9/16″	4 1/4″	3,000	Plain Bronze	3 11/16″	3/8″	1 1/8″	**3524T2** 48.15
5	5/8″	4 1/4″	3,000	Plain Bronze	3 5/8″	1/2″	1 1/8″	**3524T22** 64.19
5	3/4″	5 1/4″	5,000	Plain Bronze	4 1/2″	1/2″	1 3/8″	**3524T24** 78.12
5	1″	6 1/4″	8,000	Plain Bronze	5 1/4″	1/2″	1 5/8″	**3524T26** 136.37
6	1/4″	1 1/4″	300	Sealed SS Ball	1″	1/4″	1/2″	**3629T21** 29.64
6	3/8″	2 1/4″	1,000	Sealed SS Ball	1 7/8″	3/8″	13/16″	**3629T12** 38.79
6	1/2″	3 1/4″	1,200	Sealed SS Ball	2 3/4″	1/2″	1 1/16″	**3629T23** 57.38
6	5/8″	4 1/4″	2,500	Sealed SS Ball	3 5/8″	5/8″	1 1/16″	**3629T24** 86.63
6	1″	6 1/4″	8,000	Plain Bronze	5 1/4″	3/4″	1 5/8″	**3524T27** 136.37

■ Galvanized steel. ♦ Galvanized powdered metal.

Mounted Pulleys for Wire Rope

7

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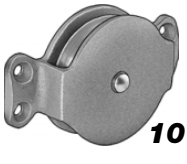
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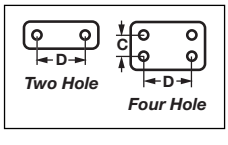

Guide and change the direction of your wire rope with these pulleys. Units consist of one pulley mounted in a housing that has a mounting plate for permanent installation.

(7) Bronze unit offers corrosion protection.

(8-11) Galvanized steel come in a variety of styles and offer corrosion resistance.

(12) Zinc-plated steel units are corrosion resistant and have a machined pulley and a stamped mounting plate.

(13) Type 304 stainless steel offer maximum corrosion resistance. Pulley and mounting plate are machined.

Bearings—*Plain bore* pulleys ride directly on shaft. *Plain bronze bearings* have less friction and protect the shaft and bore from wear. *Sealed double ball bearings* are maintenance free and offer smooth rotation.

For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Holes Dia.	No.	(C)	(D)	Bearings		
Bronze Housing with Bronze Pulley									
7	1/4″	2″	Not Rated	1/4″	2	—	2 1/4″	Plain Bore	**3087T45** $45.52
Galvanized Steel Housing with Galvanized Iron Pulley									
8	1/4″	2″	Not Rated	1/4″	2	—	2 1/4″	Plain Bore	**3087T41** 15.23
8	3/8″	3″	Not Rated	1/4″	2	—	3 5/8″	Plain Bore	**3087T42** 30.44
9	1/4″	3 1/4″	Not Rated	1/4″	4	13/16″	4 3/16″	Plain Bore	**3087T15** 23.09
9	3/16″	2 1/2″	Not Rated	3/16″	4	1/2″	3 1/4″	Plain Bore	**3087T28** 22.95
9	3/8″	4 1/2″	Not Rated	5/16″	4	13/16″	5 1/2″	Plain Bore	**3087T16** 43.53
10	1/4″	2″	Not Rated	1/4″	4	13/16″	3 7/16″	Plain Bore	**3074T11** 18.60
10	3/8″	3″	Not Rated	1/4″	4	1 1/16″	4 3/4″	Plain Bore	**3074T12** 42.60
11	1/4″	3 1/4″	Not Rated	3/16″	4	13/16″	4 7/16″	Plain Bore	**3074T32** 24.00
11	3/16″	2 1/2″	Not Rated	3/16″	4	9/16″	3 1/2″	Plain Bore	**3074T31** 20.60
11	3/8″	4 1/2″	Not Rated	1/4″	4	7/8″	6 1/4″	Plain Bore	**3074T33** 48.82
Zinc-Plated Steel Housing with Zinc-Plated Steel Pulley									
12	3/16″	2″	600	3/16″	4	1 1/16″	1 7/16″	Plain Bronze	**3099T34** 6.39
12	1/4″	3″	800	3/16″	4	1 1/16″	1 7/16″	Plain Bronze	**3099T38** 11.44
12	5/16″	3 1/2″	1,550	1/4″	4	1″	2 5/8″	Plain Bronze	**3099T42** 19.09
12	3/8″	3 1/2″	1,550	1/4″	4	1″	2 5/8″	Plain Bronze	**3099T4** 19.09
Type 304 Stainless Steel Housing with Type 304 Stainless Steel Pulley									
13	1/4″	4 1/4″	3,500	3/8″	4	2 3/8″	3 7/16″	Sealed Double Ball	**3303T76** 533.38
13	3/8″	6″	7,000	1/2″	4	3 1/4″	4 7/8″	Sealed Double Ball	**3303T78** 795.63

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

For information about pulleys, mounted pulleys, and pulley blocks, see pages 1446 and 1450.

Premium Mounted Pulleys for Wire Rope

The housing and pulley are heavy steel construction for strength and durability. Units consist of one pulley mounted in a housing that has a mounting plate for permanent installation. They are machined to tight tolerances for precise applications and have a chip-resistant, powder-coated finish.

(2) Pivot 160° for different pull directions.

Bearings—*Sealed double ball bearings* are maintenance free and offer smooth rotation.

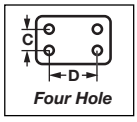

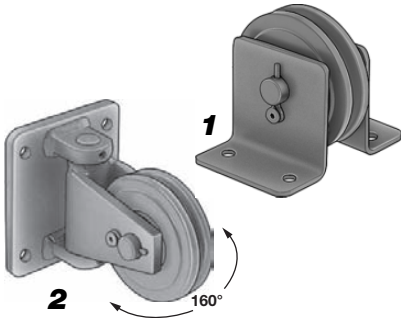

	For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Holes Dia.	No.	(C)	(D)	Bearings		
1	1/4"	4 1/4"	3,500	3/8"	4	2 3/8"	3 7/16"	Sealed Double Ball	**32225T41**	$321.99
1	3/8"	6"	7,000	1/2"	4	3 1/4"	4 13/16"	Sealed Double Ball	**32225T42**	471.69
1	1/2"	8"	10,500	3/4"	4	4 1/2"	5 15/16"	Sealed Double Ball	**32225T43**	643.98
2	1/4"	4 1/4"	3,500	1/2"	4	3 1/2"	3 7/8"	Sealed Double Ball	**3417T43**	499.40
2	3/8"	6"	7,000	9/16"	4	5 7/8"	8 1/2"	Sealed Double Ball	**3417T45**	838.96
2	1/2"	8"	10,500	9/16"	4	7 1/8"	7 7/8"	Sealed Double Ball	**3417T47**	1,641.34

Mounted Double Pulleys for Wire Rope

Reduce the lifting effort on heavier jobs. Units consist of two pulleys in a housing that has a mounting plate for permanent installation.

(3&4) Galvanized steel units are corrosion resistant.

(5) Zinc-plated steel units offer strength and corrosion resistance.

Bearings—*Plain bore* pulleys ride directly on the shaft. *Plain bronze bearings* have less friction and protect the shaft and bore from wear.

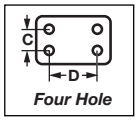

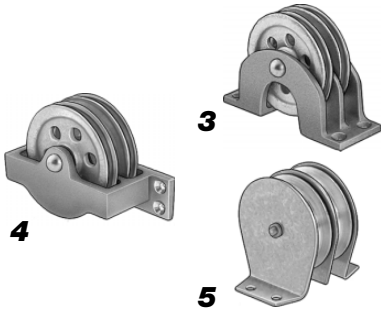

	For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Holes Dia.	No.	(C)	(D)	Bearings		
Galvanized Steel Housing with Galvanized Iron Pulleys										
3	3/16"	2 1/2"	Not Rated	3/16"	4	7/8"	3 1/4"	Plain Bore	**3087T31**	$22.88
3	1/4"	3 1/4"	Not Rated	5/16"	4	1 1/16"	4 1/8"	Plain Bore	**3087T17**	31.04
4	1/4"	3 1/4"	Not Rated	3/16"	4	3/4"	4 7/16"	Plain Bore	**3074T35**	41.19
Zinc-Plated Steel Housing with Zinc-Plated Steel Pulleys										
5	3/16"	2"	600	3/16"	4	11/16"	2"	Plain Bronze	**3099T44**	10.74
5	1/4"	3"	800	3/16"	4	11/16"	2"	Plain Bronze	**3099T46**	20.88

Mounted Pulleys for Fibrous Rope

Guide and change the direction of your fibrous rope with these pulleys. Units consist of one pulley mounted in a housing that has a mounting plate for permanent installation.

(6) Bronze units provide corrosion resistance.

(7) Aluminum units are lighter in weight than our other metal mounted pulleys.

(8) Nickel-plated malleable iron units swivel to align with the pulling direction.

(9-13) Galvanized iron units have good corrosion resistance.

(14) Type 316 stainless steel unit offers superior corrosion resistance.

(15) High strength nylon unit is corrosion and impact resistant with added material for strength, reduced friction, and longer pulley and rope life.

Bearings—*Plain bore* pulleys ride directly on the shaft. *Plain nylon bearings* are corrosion resistant and protect the shaft and bore from wear. *Ball bearings* provide smooth rotation.

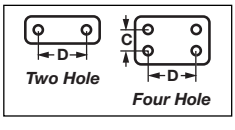

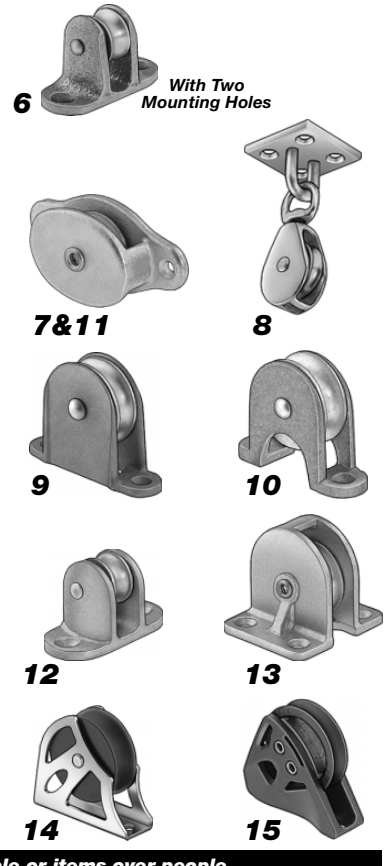

	For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Holes Dia.	No.	(C)	(D)	Bearings		
Bronze Housing with Bronze Pulley										
6	1/4"	11/16"	Not Rated	3/16"	2	—	1 3/8"	Plain Bore	**3071T21**	$12.66
6	3/8"	1 1/2"	Not Rated	1/4"	4	1 3/8"	1 3/4"	Plain Bore	**3071T23**	35.16
Aluminum Housing with Aluminum Pulley										
7	1/4"	1 1/8"	Not Rated	3/16"	2	—	2 1/2"	Plain Bore	**3073T21**	14.16
7	5/16"	1 3/8"	Not Rated	3/16"	2	—	2 7/8"	Plain Bore	**3073T22**	16.88
Nickel-Plated Malleable Iron Housing with Nickel-Plated Malleable Iron Pulley										
8	1/4"	1"	Not Rated	3/16"	4	1"	1"	Plain Bore	**3117T4**	13.28
8	5/16"	1 1/4"	Not Rated	3/16"	4	1 1/8"	1 1/8"	Plain Bore	**3117T5**	14.63
8	3/8"	1 1/2"	Not Rated	1/4"	4	1 3/16"	1 3/16"	Plain Bore	**3117T6** ♦	16.83
Galvanized Iron Housing with Galvanized Iron Pulley										
9	3/8"	1 1/2"	Not Rated	1/4"	2	—	2 1/8"	Plain Bore	**3071T2**	7.94
9	5/8"	2 1/2"	Not Rated	1/4"	2	—	3 1/2"	Plain Bore	**3071T4**	28.20
10	5/16"	1 3/8"	Not Rated	3/16"	2	—	1 13/16"	Plain Bore	**3071T1**	5.94
10	1/2"	2"	Not Rated	1/4"	2	—	2 9/16"	Plain Bore	**3071T3**	15.04
11	1/4"	1 1/8"	Not Rated	3/16"	2	—	2 1/2"	Plain Bore	**3073T11**	8.38
11	3/8"	1 1/2"	Not Rated	3/16"	2	—	3"	Plain Bore	**3073T13**	11.84
11	5/16"	1 3/8"	Not Rated	3/16"	2	—	2 7/8"	Plain Bore	**3073T12**	9.02
12	1/4"	11/16"	Not Rated	3/16"	2	—	1 3/8"	Plain Bore	**3071T7**	7.75
13	3/8"	1 1/2"	Not Rated	1/4"	4	1 3/8"	1 3/4"	Plain Bore	**3071T8**	14.31
Type 316 Stainless Steel Housing with Nylon Pulley										
14	1/2"	2"	1,760	1/4"	2	—	2 3/16"	Plain Nylon	**3211T32**	61.06
High Strength Nylon Housing with High Strength Nylon Pulley										
15	3/8"	25/32"	1,100	1/4"	2	—	25/32"	Ball Bearings	**3211T41**	44.52

♦ Zinc-plated steel mounting plate.

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

For information about pulleys, mounted pulleys, and pulley blocks, see page 1446.

About Pulley Blocks

Pulley blocks, also known as shell blocks, consist of a single, double, or triple pulley enclosed in a housing that has mounting hardware for suspending the block. A rope end is fed through the housing for operation.

Most often the mounting hardware is a hook, eye, or shackle (see mounting hardware styles below). However, some units have mounting holes so you can attach your own mounting hardware (this style is also known as a tail block).

Pulley-access blocks, also known as snatch blocks, open from the side (see styles below) so it's easier to install the rope—no free rope end is needed. They consist of a single or double pulley enclosed in a housing that has mounting hardware for suspending the block.

Most often the mounting hardware is a hook, eye, or shackle (see mounting hardware styles below). Some units also include a tie-off bracket (also known as a becket) mounted to the housing for easier set up in multiple-block applications.

Mounting Hardware Styles

Rigid Eye

Swivel Eye

Shackle

Swivel Shackle

Swivel Hook

Rigid Hook with Latch

Swivel Hook with Latch

Mounting Holes

Cross Bolt

Pulley-Access Styles

Closed

Open

Split Side

Removable Pulley

Spring Latch

Hinged Top

Pulley Blocks for Wire Rope

1
With Rigid Eye

2

3

4

5
With Mounting Holes

6

7

(1-4, 6-10, 12) Steel— The strongest pulley blocks we offer. *Zinc-plated* and *galvanized steel* are corrosion resistant. *Heavy duty steel* are heavier gauge to withstand the most demanding conditions.

(5&11) Stainless Steel— Offer superior corrosion resistance.

Bearings— *Plain bronze bearings* are long lasting for use in slower moving applications. *Roller bearings* spin freely without resistance. *Ball bearings* have less friction, making them ideal for faster applications and quick direction changes. *Plain bore* pulleys ride directly on the shaft.

For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Hardware Style	Mounting Hardware Opening	Pulley-Access Style	O'all Lg.		
Pulley Blocks with Single Pulley								
Zinc-Plated Steel Housing with Zinc-Plated Steel Pulley— *Plain Bronze Bearings (Unless Noted)*								
1 3/16"	2"	600	Swivel Hook w/Latch	5/16"	—	4 5/8"	3099T49	$16.34
1 3/16"	2"	600	Rigid Eye	3/8"	—	3 3/4"	3099T54	7.65
1 3/16"	2"	600	Swivel Eye	5/8"	—	4 1/4"	3099T14	9.67
1 1/4"	2 1/2"	685	Swivel Hook w/Latch	1/2"	—	5 3/4"	3099T53	19.28
1 1/4"	3"	800	Swivel Hook w/Latch	1/2"	—	6 1/4"	3099T59	22.29
1 1/4"	3"	800	Rigid Eye	3/8"	—	4 13/16"	3099T58	12.92
1 1/4"	3"	800	Swivel Eye	7/8"	—	5 5/8"	3099T18	15.91
1 5/16"	3 1/2"	1,550	Swivel Hook w/Latch	13/16"	—	8 1/2"	3099T61	33.56
1 5/16"	3 1/2"	1,550	Rigid Eye	9/16"	—	6 1/2"	3099T62	22.42
1 5/16"	3 1/2"	1,550	Swivel Eye	13/16"	—	7 5/8"	3099T22	27.17
1 3/8"	3 1/2"	1,550	Swivel Hook w/Latch	13/16"	—	8 1/2"	3099T68	33.56
1 3/8"	3 1/2"	1,550	Rigid Eye	9/16"	—	6 1/2"	3099T69	22.42
1 3/8"	3 1/2"	1,550	Swivel Eye	13/16"	—	7 5/8"	3099T108	27.17
2 1/2"	4"	2,000	Swivel Eye	1 3/8"	—	8 3/4"	3170T27★	156.02
Painted Steel Housing with Cast Iron Pulley and Tie-Off Bracket— *Plain Bronze Bearings*								
3 3/8"	6"	6,000	Shackle	2 11/16"	—	17 5/16"	3129T65	233.52
Heavy Duty Steel Housing with Manganese Pulley— *Roller Bearings*								
4 3/8"	4"	10,000	Shackle	1 1/4"	—	7 3/4"	8545T32	421.28
4 1/2"	6"	13,000	Shackle	1 1/2"	—	10 1/2"	8545T33	551.09
4 5/8"	8"	13,000	Shackle	1 3/4"	—	14 1/2"	8545T34	756.66
4 3/4"	10"	13,000	Shackle	1 3/4"	—	16 1/2"	8545T35	927.26
4 7/8"	12"	25,000	Shackle	2 1/4"	—	19 3/4"	8545T36	1,350.88
Type 300 Stainless Steel Housing with Plated Steel Pulley— *Ball Bearings (Unless Noted)*								
5 3/16"	1 1/4"	166	Mounting Holes	3/16"	—	1 3/4"	3213T52	9.46
5 3/16"	1 1/4"	166	Swivel Eye	3/8"	—	2 3/4"	3213T57	12.70
5 1/4"	1 3/8"	166	Swivel Eye	3/8"	—	2 13/16"	3213T59●	9.05
Pulley Blocks with Double Pulley								
Zinc-Plated Steel Housing with Zinc-Plated Steel Pulley— *Plain Bronze Bearings*								
6 3/16"	1 1/2"	525	Swivel Eye	5/8"	—	3 13/16"	3099T23	13.97
6 1/4"	3"	800	Swivel Eye	7/8"	—	5 5/8"	3099T26	26.52
6 5/16"	3 1/2"	1,550	Swivel Eye	1 3/16"	—	7 5/8"	3099T27	44.23
Pulley-Access Blocks with Single Pulley								
Zinc-Plated Steel Housing with Zinc-Plated Steel Pulley— *Plain Bronze Bearings*								
7 3/16"	2"	600	Swivel Eye	5/8"	Removable Pulley	4 1/4"	3099T13	10.83
7 1/4"	2 1/2"	685	Swivel Eye	5/8"	Removable Pulley	5"	3099T15	14.45
7 5/16"	3 1/2"	1,550	Swivel Eye	1 3/16"	Removable Pulley	7 5/8"	3099T21	28.34
7 3/8"	3 1/2"	1,550	Swivel Eye	1 3/16"	Removable Pulley	7 5/8"	3099T41	28.34

★ Pulley is powdered metal. Has roller bearings. ● Pulley is nylon. Has no bearings.

(Continued on following page)

For information about pulleys, mounted pulleys, and pulley blocks, see pages 1446 and 1450.

Pulley Blocks for Wire Rope *(Continued from previous page)*

	For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Hardware Style	Mounting Hardware Opening	Pulley-Access Style	O'all Lg.		
Pulley-Access Blocks with Single Pulley (Cont.)									
Galvanized Steel Housing with Galvanized Steel Pulley— *Plain Bronze Bearings*									
8	3/8"	3"	4,000	Swivel Latch w/Hook	1"	Split Side	10"	**3257T14**	$153.70
8	3/8"	3"	4,000	Swivel Shackle	1 1/4"	Split Side	10 5/8"	**3257T24**	162.06
8	3/8"	3"	4,000	Cross Bolt	1/2" Dia.	Split Side	4 7/8"	**3257T34**	97.46
8	1/2"	4 1/2"	8,000	Swivel Latch w/Hook	1 15/16"	Split Side	14 1/2"	**3257T15**	256.44
8	1/2"	4 1/2"	8,000	Swivel Shackle	1 3/4"	Split Side	15"	**3257T25**	242.74
8	1/2"	4 1/2"	8,000	Cross Bolt	3/4" Dia.	Split Side	7 1/2"	**3257T35**	156.88
8	3/4"	6"	16,000	Swivel Latch w/Hook	1 7/8"	Split Side	20 3/8"	**3257T16**	603.62
8	3/4"	6"	16,000	Swivel Shackle	2"	Split Side	20 3/16"	**3257T26**	627.94
Painted Steel Housing with Painted Steel Pulley— *Plain Bronze Bearings*									
9	3/8"	3"	4,400	Swivel Hook	1 1/16"	Split Side	9 9/16"	**3197T11**	121.45
9	1/2"	4 1/2"	8,800	Swivel Hook	1 3/16"	Split Side	15 1/8"	**3197T12**	199.60
9	1/2"	4 1/2"	8,800	Swivel Shackle	1 3/16"	Split Side	14 1/4"	**3197T22**	191.24
9	3/4"	6"	17,600	Swivel Hook	1 3/16"	Split Side	18 7/8"	**3197T13**	330.15
9	3/4"	6"	17,600	Swivel Shackle	1 3/16"	Split Side	18 15/16"	**3197T23**	370.82
Painted Steel Housing with Plain Steel Pulley— *Plain Bronze Bearings*									
10	7/8"	6"	26,400	Swivel Hook	2 3/16"	Split Side	19 3/4"	**3128T33**	576.89
10	7/8"	8"	26,400	Swivel Shackle	3"	Split Side	20 15/16"	**3128T36**	759.20
Type 316 Stainless Steel Housing with Nylon Pulley— *Plain Bore*									
11	1/8"	1 1/4"	990	Rigid Eye	3/8"	Removable Pulley	2 1/2"	**31265T81**	22.35
11	5/32"	1 3/4"	1,870	Rigid Eye	7/16"	Removable Pulley	3 1/4"	**31265T11**	33.00
Pulley-Access Blocks with Double Pulley									
Zinc-Plated Steel Housing with Zinc-Plated Steel Pulley— *Plain Bronze Bearings*									
12	3/16"	2"	600	Swivel Eye	5/8"	Removable Pulley	4 1/4"	**3099T33**	17.31
12	5/16"	3 1/2"	1,550	Swivel Eye	1 3/16"	Removable Pulley	7 5/8"	**3099T39**	45.41

8 With Swivel Shackle — **9** With Swivel Hook — **10** With Swivel Hook

11 — **12**

Pulley Blocks for Fibrous Rope

(13, 33-34) Wood— Made of durable, impact-resistant sealed hardwood.

(14&27) Nylon— Ideal in wet environments.

(15&35) Aluminum— Corrosion resistant and lighter in weight than our other metal pulley blocks.

(16) Nickel-Plated Zinc Die Cast— Nickel plating adds corrosion resistance.

(17) Bronze— Provide better corrosion resistance than brass.

(18-20, 29-30) Iron— *Nickel-plated* and *galvanized iron* are corrosion resistant.

(21-23, 28, 31, 36) Steel— Our strongest pulley blocks. *Zinc-plated* and *galvanized steel* are corrosion resistant.

(24-26, 32, 37) Stainless Steel— Offer superior corrosion resistance.

Bearings— *Plain bronze, plain brass,* and *plain acetal bearings* are long lasting for use in slower moving applications. *Plain bore* pulleys ride directly on the shaft. *Roller bearings* spin freely without resistance. *Ball bearings* have less friction, making them ideal for faster applications and quick direction changes. *Needle bearings* reduce friction for easier movement.

13 — **14**

	For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Hardware Style	Mounting Hardware Opening	Pulley-Access Style	O'all Lg.		
Pulley Blocks with Single Pulley									
Wood Housing with Powdered Metal Pulley and Tie-Off Bracket— *Plain Bronze Bearings*									
13	3/8"	1 3/4"	500	Rigid Hook w/Latch	13/16"	—	10 1/4"	**3146T27**	$68.62
13	1/2"	2 1/4"	1,000	Rigid Hook w/Latch	13/16"	—	11"	**3146T28**	74.83
13	5/8"	3"	1,200	Rigid Hook w/Latch	13/16"	—	13"	**3146T29**	80.92
13	3/4"	3 1/2"	1,800	Rigid Hook w/Latch	13/16"	—	14 1/4"	**3146T31**	98.13
Nylon Housing with Nylon Pulley and Tie-Off Bracket— *Plain Bore*									
14	1/2"	2"	500	Swivel Hook w/Latch	7/8"	—	10 3/4"	**3748T1**	90.76
Aluminum Housing with Aluminum Pulley— *Plain Bore*									
15	3/16"	3/4"	Not Rated	Rigid Eye	1/4"	—	2 1/16"	**3742T61**	9.27
15	5/16"	1 3/8"	Not Rated	Rigid Eye	1/2"	—	3 1/4"	**3742T62**	10.77
Nickel-Plated Zinc Die Cast Housing with Nickel-Plated Zinc Die Cast Pulley— *Plain Bore*									
16	7/16"	2"	Not Rated	Swivel Eye	3/4"	—	4 1/4"	**3742T57**	12.36
Bronze Housing with Bronze Pulley— *Plain Bore*									
17	3/16"	3/4"	Not Rated	Rigid Eye	1/4"	—	2"	**3083T19**	16.18
17	1/4"	1"	Not Rated	Rigid Eye	3/8"	—	2 1/2"	**3083T21**	19.68
17	5/16"	1 3/8"	Not Rated	Rigid Eye	1/2"	—	3"	**3083T22**	28.00
17	3/8"	1 1/2"	Not Rated	Rigid Eye	9/16"	—	3 1/2"	**3083T23**	30.85
Nickel-Plated Iron Housing with Nickel-Plated Iron Pulley— *Plain Bore*									
18	5/32"	1/2"	Not Rated	Swivel Eye	7/16"	—	1 3/4"	**3742T51**	1.97
18	3/16"	3/4"	Not Rated	Swivel Eye	1/2"	—	2 1/4"	**3742T52**	2.86
18	1/4"	1"	Not Rated	Swivel Eye	9/16"	—	2 1/2"	**3742T53**	3.32
18	5/16"	1 1/2"	Not Rated	Swivel Eye	5/8"	—	3 1/2"	**3742T55**	5.16
18	7/16"	2"	Not Rated	Swivel Eye	3/4"	—	4 1/4"	**3742T56**	6.70
Galvanized Iron Housing with Galvanized Iron Pulley— *Plain Bore*									
19	3/8"	1 1/2"	Not Rated	Rigid Eye	9/16"	—	3 1/2"	**3083T14**	9.07
19	1/2"	2"	Not Rated	Rigid Eye	11/16"	—	4 1/2"	**3083T16**	17.52
19	5/8"	2 1/2"	Not Rated	Rigid Eye	7/8"	—	5 3/8"	**3083T17**	23.40
19	3/4"	3"	Not Rated	Rigid Eye	15/16"	—	6 3/8"	**3083T18**	31.35
Painted Iron Housing with Painted Steel Pulley and Tie-Off Bracket— *Plain Bronze Bearings*									
20	1/2"	2 1/4"	2,000	Swivel Hook w/Latch	15/16"	—	12 7/16"	**3148T1**	162.63
Zinc-Plated Steel Housing with Powdered Metal Pulley— *Roller Bearings*									
21	1 1/4"	4 1/2"	2,000	Swivel Eye	1 3/8"	—	8 5/8"	**31775T26**	126.23
Painted Steel Housing with Powdered Metal Pulley and Tie-Off Bracket— *Plain Bronze Bearings*									
22	5/8"	3"	1,200	Rigid Hook w/Latch	3/4"	—	8 1/16"	**3151T35**	67.91
22	3/4"	3 1/2"	1,800	Rigid Hook w/Latch	1 1/16"	—	11 7/16"	**3151T36**	93.64

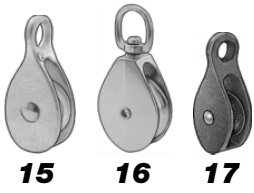

15 — **16** — **17**

18 — **19**

20 — **21** — **22**

(Continued on following page)

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

For information about pulleys, mounted pulleys, and pulley blocks, see pages 1446 and 1450.

Mounting Hardware Styles

Rigid Eye

Swivel Eye

Shackle

Swivel Shackle

Swivel Hook

Rigid Hook with Latch

Swivel Hook with Latch

Mounting Holes

Cross Bolt

Pulley-Access Styles

Closed

Open

Split Side

Removable Pulley

Spring Latch

Hinged Top

Pulley Blocks for Fibrous Rope *(Continued from previous page)*

23
With Swivel Hook with Latch

24
With Swivel Eye

25
With Rigid Eye

26
With Tie-Off Bracket

27

28

29

30

31

32

(13, 33-34) Wood— Made of durable, impact-resistant sealed hardwood.
(14&27) Nylon— Ideal in wet environments.
(15&35) Aluminum— Corrosion resistant and lighter in weight than our other metal pulley blocks.
(16) Nickel-Plated Zinc Die Cast— Nickel plating adds corrosion resistance.
(17) Bronze— Provide better corrosion resistance than brass.
(18-20, 29-30) Iron— *Nickel-plated* and *galvanized iron* are corrosion resistant.
(21-23, 28, 31, 36) Steel— The strongest pulley blocks we offer. *Zinc-plated* and *galvanized steel* are corrosion resistant.
(24-26, 32, 37) Stainless Steel— Offer superior corrosion resistance.

Bearings— *Plain bronze, plain brass,* and *plain acetal bearings* are long lasting for use in slower moving applications. *Plain bore* pulleys ride directly on the shaft. *Roller bearings* spin freely without resistance. *Ball bearings* have less friction, making them ideal for faster applications and quick direction changes. *Needle bearings* reduce friction for easier movement.

For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Hardware Style	Mounting Hardware Opening	Pulley-Access Style	O'all Lg.		
Pulley Blocks with Single Pulley (Cont.)								
Painted Steel Housing with Cast Iron Spoked Pulley (Unless Noted)— *Roller Bearings*								
23	7/8"	8"	1,000	Swivel Hook w/Latch	15/16"	—	13 1/2"	**3140T1** $177.42
23	1"	10"	1,000	Swivel Hook w/Latch	15/16"	—	15 1/2"	**3140T2**♦ 185.12
23	1"	12"	1,000	Swivel Hook w/Latch	15/16"	—	17 1/2"	**3140T3**♦ 207.35
Type 304 SS Housing with Type 316 SS Pulley (Unless Noted)— *Plain Bronze Bearings*								
24	1/4"	1 1/4"	400	Swivel Eye	5/8"	—	3 1/4"	**3499T11** 25.80
24	3/8"	2"	750	Swivel Hook	9/16"	—	5 3/8"	**3113T12**● 30.46
24	5/16"	1 3/4"	600	Swivel Eye	5/8"	—	3 7/8"	**3499T12** 29.74
24	3/8"	2 1/4"	1,000	Swivel Eye	13/16"	—	5"	**3499T13** 38.48
Type 316 Stainless Steel Housing with Acetal Pulley— *Plain Bore (Unless Noted)*								
25	3/16"	3/4"	330	Rigid Eye	1/8"	—	1 1/2"	**3184T55**♥ 12.06
25	5/16"	1 1/8"	660	Rigid Eye	3/16"	—	1 15/16"	**3221T75** 18.18
25	1/4"	1"	330	Swivel Shackle	1/4"	—	2 1/8"	**3221T89** 17.10
Type 316 SS and Acetal Housing w/Acetal Pulley & Tie-Off Bracket— *Plain Stainless Steel Bearings*								
26	7/16"	1 9/16"	880	Swivel Shackle	7/16"	—	3 1/2"	**3194T82**■ 23.44
26	1/2"	2"	1,650	Swivel Shackle	7/16"	—	4 7/8"	**3195T52** 43.44
26	1/2"	2"	1,650	Swivel Shackle	7/16"	—	4"	**3195T51**■ 36.84
Pulley Blocks with Double Pulley								
Nylon Housing with Nylon Pulley and Tie-Off Bracket— *Plain Bore*								
27	1/2"	2"	1,000	Swivel Hook w/Latch	7/8"	—	10 7/8"	**3748T2** 126.79
Galvanized Steel Housing and Pulley— *Plain Bore*								
28	3/8"	1 1/2"	Not Rated	Rigid Eye	1/2"	—	3 1/2"	**3083T43** 15.74
28	1/2"	2"	Not Rated	Rigid Eye	11/16"	—	4 5/8"	**3083T45**▲ 30.38
Nickel-Plated Iron Housing with Nickel-Plated Iron Pulley— *Plain Bore*								
29	3/16"	7/8"	Not Rated	Swivel Eye	3/8"	—	2 1/2"	**3742T43** 6.10
29	1/4"	1 1/4"	Not Rated	Swivel Eye	1/2"	—	3 1/2"	**3742T45** 10.67
29	5/16"	1 5/8"	Not Rated	Swivel Eye	11/16"	—	4 1/4"	**3742T46** 12.76
Painted Iron Housing with Steel Pulley and Tie-Off Bracket— *Plain Bronze Bearings*								
30	1/2"	2 1/4"	3,000	Swivel Hook w/Latch	1"	—	12 7/16"	**3148T3** 229.00
Painted Steel Housing w/Painted Steel Pulley (Unless Noted) & Tie-Off Bracket— *Plain Bronze Bearings*								
31	1/2"	2 1/4"	1,400	Rigid Hook w/Latch	1 1/16"	—	11"	**3151T57** 104.81
31	5/8"	3"	1,800	Rigid Hook w/Latch	1 1/16"	—	10"	**3151T58**★ 112.34
31	3/4"	3 1/2"	2,500	Rigid Hook w/Latch	1 1/16"	—	12 13/16"	**3151T59**★ 131.98
Type 304 Stainless Steel Housing and Type 316 Stainless Steel Pulley— *Plain Bronze Bearings*								
32	1/4"	1 1/4"	400	Swivel Eye	9/16"	—	3 1/4"	**3503T15** 49.88
32	5/16"	1 3/4"	600	Swivel Eye	5/8"	—	3 7/8"	**3503T16** 58.56
32	3/8"	2 1/4"	1,000	Swivel Eye	13/16"	—	5"	**3503T21** 63.29

♦ Pulley is steel. ● Pulley is Type 304 stainless steel. ♥ Has plain acetal bearings. ■ Does not have a tie-off bracket. ▲ Housing is iron. ★ Pulley is powdered metal.

(Continued on following page)

Warning! **Never exceed work load limits. Never use to lift people or items over people.**

For information about pulleys, mounted pulleys, and pulley blocks, see pages 1446 and 1450.

Pulley Blocks for Fibrous Rope *(Continued from previous page)*

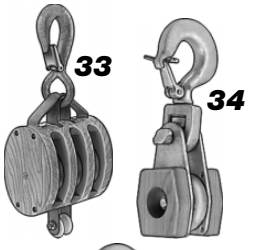

For Rope Dia.	Pulley OD	Work Load Limit, lbs.	Mounting Hardware Style	Mounting Hardware Opening	Pulley-Access Style	O'all Lg.		
Pulley Blocks with Triple Pulley								
Wood Housing with Galvanized Powdered Metal Pulley and Tie-Off Bracket—*Plain Bronze Bearings*								
33	1/2"	2 1/4"	1,800	Rigid Hook w/Latch	13/16"	———	11"	**3146T64** $149.38
33	5/8"	3"	2,400	Rigid Hook w/Latch	1 1/16"	———	13"	**3146T65** 167.43
33	3/4"	3 1/2"	3,200	Rigid Hook w/Latch	1 1/16"	———	15"	**3146T66** 209.32
Pulley-Access Blocks with Single Pulley								
Wood Housing with Powdered Metal Pulley—*Plain Bronze Bearings*								
34	7/8"	3"	4,000	Swivel Hook w/Latch	1 5/32"	Split Side	11"	**3144T61** 223.76
34	1 1/8"	4"	8,000	Swivel Hook w/Latch	1 13/32"	Split Side	14 3/16"	**3144T62** 294.64
Aluminum Housing with Aluminum Pulley—*Plain Bronze Bearings (Unless Noted)*								
35	1/2"	2"	Not Rated	Rigid Eye	7/8"	Split Side	5"	**9493T41** 34.40
35	5/8"	2 3/8"	Not Rated	Rigid Eye	15/16"	Split Side	4 1/2"	**9493T42**♣ 74.20
Galvanized Steel Housing with Powdered Metal Pulley—*Plain Bronze Bearings*								
36	7/8"	3"	4,000	Swivel Hook w/Latch	1 5/32"	Split Side	10 7/8"	**3144T63** 214.45
36	1 1/8"	4"	8,000	Swivel Hook w/Latch	1 13/32"	Split Side	13 15/16"	**3144T64** 297.42
Type 304 SS Housing with Type 316 SS Pulley—*Tie-Off Bracket & SS Roller Bearings (Unless Noted)*								
37	1/2"	3 1/4"	1,500	Swivel Eye	1 1/2" × 15/16"	Spring Latch	8 11/16"	**31625T41**▲ 104.00
37	1/2"	3 1/4"	2,000	Swivel Eye	1 1/2" × 3/4"	Hinged Top	8 15/16"	**31625T31** 129.41
37	5/8"	4 1/4"	2,500	Swivel Eye	1 1/2" × 15/16"	Spring Latch	9 3/4"	**31625T42**▲ 194.22
37	5/8"	4 1/4"	3,000	Swivel Eye	1 13/16" × 15/16"	Hinged Top	11"	**31625T32** 172.37
37	3/4"	5 1/4"	4,000	Swivel Eye	2 1/16" × 1 1/16"	Hinged Top	13 1/4"	**31625T19** 296.11

♣ Has needle bearings. ▲ Does not have tie-off bracket. Has plain bronze bearings.

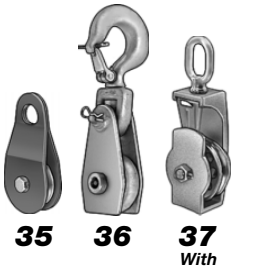

Manhole-Cover Lifter

Remove manhole covers by yourself without risking pinched fingers and crushed feet. A long handle gives you the extra leverage you need to lift and swing covers as heavy as 500 lbs. with minimal effort.

Made of steel, lifter is 22" Ht. × 60" Lg., and adjusts to fit most manhole cover sizes.

8906T65 ..... $220.01

Pulling Tongs

Also known as skidding tongs, these specially designed tongs have finely ground points to grab and hold even the hardest wood while you pull it. When tension is applied, the grip increases. Tongs are made of alloy steel. Meet ANSI/ASME B30.20.

Note: Never use for lifting. Not rated with a work load limit.

For Material Thickness	Closed Size, Ht. × Wd.	Eye ID		
3 9/16"-16"	19 1/2" × 9 1/2"	2 1/2"	**3374T16**	$104.11
4 1/2" -25"	26 1/4" × 12"	4"	**3374T18**	126.12
7" -32"	33" × 15 1/4"	3 1/4"	**3374T21**	193.10

Puller Hooks

Strong enough to pull and lift cumbersome crates, boxes, and bales, these hooks are also known as manhole or chain hooks. They're made of 5/8" hex high-grade tool steel.

Length	Point Size	Handle Opening, Lg. × Wd.		
18"	1/2"	3" × 4"	**2029T2**	$26.32
30"	5/8"	3" × 4"	**2029T1**	31.18

Wire Rope with Hook for Winches

Includes a 7 × 19 galvanized wire rope (unless noted), thimble, hook with latch, and a clamp on one end.

To Order: Standard length is 10 feet; other lengths are available. Please specify length.

Rope Dia.	Breaking Strength, lbs.	Base Price & 10-ft. Lg. Price	Each	Extra Length Per Ft.
1/8"	2,000	**3308T51**	$20.76	$0.48
5/32"	2,800	**3308T52**	23.15	.74
3/16"	4,200	**3308T53**	24.86	.80
7/32"	5,600	**3308T54**	28.34	1.04
1/4"	7,000	**3308T55**	34.40	1.51
5/16"	9,800	**3308T57**	41.32	1.76
3/8"	14,400	**3308T58**	52.92	2.19
7/16"	16,000	**3308T59**●	66.42	2.85
1/2"	20,600	**3308T61**●	78.31	2.89
9/16"	26,000	**3308T62**●	115.81	3.52
3/4"	56,000	**3308T85**●	124.87	3.38

● 6 × 37 plain steel with wire rope core (IWRC).

Fibrous Rope with Hook for Winches

Consists of black polypropylene rope with a hook with latch.

To Order: Standard length is 10 feet; other lengths are available. Please specify length.

Rope Dia.	Breaking Strength, lbs.	Base Price & 10-ft. Lg. Price	Each	Extra Length Per Ft.
5/16"	1,710	**2302T81**	$17.18	$0.12
3/8"	2,440	**2302T82**	17.59	.13
1/2"	3,780	**2302T83**	18.09	.17
5/8"	5,600	**2302T84**	21.93	.29

Strap with Hook for Winches

Polyester web strap includes a hook with latch. Installation hardware is included.

Strap, Wd. × Lg.	Breaking Strength, lbs.		
2" × 15'	4,200	**3169T22**	$12.83
2" × 20'	4,200	**3169T24**	14.71
2" × 25'	4,200	**3169T26**	16.42
3" × 20'	6,500	**3169T41**	24.75

Warning! *Never exceed work load limits. Never use to lift people or items over people.*

About Winches

Winch Capacity— Capacity drops as rope is wound on the drum. *First layer capacity* requires a minimum of five wraps of rope or two wraps of strap on the drum with no overlap. *Full drum capacity* is the lowest capacity.

Hand Winch Gear Ratio— A *high gear ratio* such as 3:1 equals three handle turns for one full turn of the drum. The load can be moved quickly, but more effort is required. A *low gear ratio* such as 22:1 equals 22 handle turns for one full turn of the drum. The load doesn't move as quickly, but less effort is required.

For mounting hole dimensions of the hand winches on this page, go to mcmaster.com and search for **3644TAC**.

Horizontal-Pulling Hand Winches

With Empty Drum

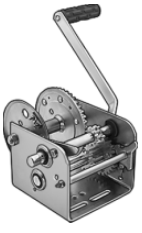

With Empty Drum and Two Gear Ratios

With Strap Installed on Drum and Cover

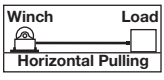

No power needed—these winches can be used anywhere. Plus, they are more economical than electric winches. All are corrosion-resistant zinc-plated steel and have riveted stamped gears. A crank handle lets you control the winch speed. Ratchet can be disengaged so drum can rotate freely for quick and easy attachment to the load.

Winch covers not only protect the gears, they prevent injury. Made of black polypropylene. Installation hardware is included.

Winches with Empty Drum— You pick the best material and length for your application. Choose from winches for fibrous- and wire-rope (sold separately). The rope is the diameter listed and includes a hook (see page 1453 for additional sizes).

Winches with Strap Installed on Drum— Use right out of the box. Strap is low-stretch polyester and wraps neatly around the drum to prevent tangles and kinks in the line.

Winches with two gear ratios reduce user fatigue. They provide quick winding in high gear and easier pulling in low gear.

Covers for Winches		Pair
With 600- to 900-lb. First Layer Capacity	3644T14	$7.32
With 1,200- to 1,400-lb. First Layer Capacity	3644T15	7.93
With 1,700-lb. First Layer Capacity	3644T16	8.54

Winches with Empty Drum

Cap., lbs. First Layer	Cap., lbs. Full Drum	Rope Dia.	Rope Lg. On Full Drum, ft.	Gear Ratio	Base Size, Lg.×Wd.	Drum Dia.	Handle Lg.	Winches	Winches Each	Rope with Hook	Rope with Hook 10-ft. Lg. Each	Rope with Hook Extra Lg. Per Ft.
For Fibrous Rope												
900	685	5/16″	20	3.1:1	4 7/8″×3 7/16″	3/4″	5″	3644T64	$26.30	2302T81	$17.18	$0.12
900	685	5/16″	20	3.1:1	4 7/8″×3 7/16″	3/4″	7″	3644T65	28.50	2302T81	17.18	.12
1,200	1,020	5/16″	33	4.1:1	5 3/8″×3 7/16″	3/4″	7″	3644T66	30.88	2302T81	17.18	.12
1,400	1,115	3/8″	24	4.1:1	5 3/8″×3 7/16″	3/4″	7″	3644T67	42.77	2302T82	17.59	.13
1,700	1,475	1/2″	28	5.1:1	5 5/8″×4″	1″	8″	3644T68	47.87	2302T83	18.09	.17
2,300	1,950	1/2″	18	4.1:1/11.8:1	6 1/8″×5 7/16″	1″	10″	3644T57	90.02	2302T83	18.09	.17
2,800	2,275	5/8″	10	5.1:1/14.7:1	6 3/4″×5 1/4″	1″	10″	3644T58	95.89	2302T84	21.93	.29
For Wire Rope												
600	578	1/8″	114	3.1:1	4 7/8″×3 7/16″	2″	6″	3644T51	32.56	3308T51	20.76	.48
900	750	1/8″	114	3.1:1	4 7/8″×3 7/16″	2″	7″	3644T52	32.21	3308T51	20.76	.48
1,200	1,020	3/16″	88	4.1:1	5 3/8″×3 7/16″	2″	7″	3644T53	34.66	3308T53	24.86	.80
1,400	1,020	3/16″	88	4.1:1	5 3/8″×3 7/16″	2″	7″	3644T54	44.91	3308T53	24.86	.80
2,300	1,300	1/4″	62	4.1:1/11.8:1	6 1/8″×5 7/16″	2″	10″	3644T78	102.19	3308T55	34.40	1.51
2,800	1,450	1/4″	98	5.1:1/14.7:1	6 3/4″×5 1/4″	2″	10″	3644T79	105.47	3308T55	34.40	1.51
3,200	1,450	1/4″	94	5.1:1/14.7:1	6 3/4″×5 1/4″	2″	10″	3736T3	128.67	3308T55	34.40	1.51
3,700	1,450	7/32″	185	5.1:1/15.8:1	8″ ×6 3/4″	1 3/4″	10″	3736T4	236.07	3308T54	28.34	1.04

Winches with Strap Installed on Drum

Cap., lbs. First Layer	Cap., lbs. Full Drum	Strap Wd.	Strap Lg. On Full Drum, ft.	Gear Ratio	Base Size, Lg.×Wd.	Drum Dia.	Handle Lg.	Winches	Winches Each	Replacement Strap with Hook	Replacement Strap with Hook Each
400	250	2″	15	Ratchet	3 1/2″×3 3/16″	3/4″	9″	2300T41	$42.83	3169T22	$12.83
900	685	2″	15	3.1:1	4 7/8″×3 7/16″	3/4″	7″	2300T43	47.57	3169T22	12.83
1,200	1,020	2″	20	4.1:1	5 3/8″×3 7/16″	3/4″	7″	2300T44	48.30	3169T24	14.71
1,400	1,115	2″	20	4.1:1	5 3/8″×3 7/16″	3/4″	7″	2300T45	52.04	3169T24	14.71
1,700	1,475	2″	20	5.1:1	5 5/8″×4″	1″	8″	2300T46	59.21	3169T24	14.71
2,300	1,950	2″	20	4.1:1/11.8:1	6 1/8″×5 7/16″	2″	10″	2300T71	105.77	3169T24	14.71
2,800	2,275	2″	20	5.1:1/14.7:1	6 3/4″×5 1/4″	2″	10″	2300T72	111.66	3169T24	14.71
3,200	2,600	3″	20	5.1:1/14.7:1	6 3/4″×5 1/4″	2″	10″	2300T73	151.26	3169T41	24.75

Precise-Positioning Horizontal-Pulling Hand Winches

Intermediate Duty

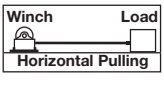

When you stop cranking the handle, the worm gears prevent further movement and hold your load exactly where you want it. Winches are made of steel. They are used with wire rope (sold separately). The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes).

Intermediate duty winches are lightweight and compact with riveted stamped gears.

Heavy duty winches have one-piece machined gears for durability. All except 3732T17 have the gears enclosed by a cast-iron housing.

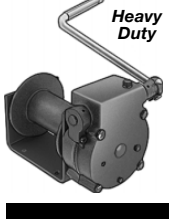

Heavy Duty

Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	Base Size, Lg.×Wd.	Drum Dia.	Handle Lg.	Winches	Winches Each	Wire Rope w/Hook	Wire Rope w/Hook 10-ft. Lg. Each	Wire Rope w/Hook Extra Lg. Per Ft.
Intermediate Duty												
1,500	750	3/16″	64	31:1	5 3/16″ ×5 1/2″	2″	8″	3205T15	$69.67	3308T53	$24.86	$0.80
2,000	1,000	3/16″	64	41:1	5 3/16″ ×5 1/2″	2″	8″	3205T16	75.50	3308T53	24.86	.80
3,000	1,800	5/16″	60	51:1	8 5/8″ ×7 9/16″	3 1/8″	10″	3205T17	240.74	3308T57	41.32	1.76
Heavy Duty												
750	400	3/16″	59	20:1	5 3/4″ ×4 1/2″	1 1/2″	8 3/4″	3732T17	165.33	3308T53	24.86	.80
1,000	500	3/16″	61	15:1	4 7/16″ ×3 1/2″	1 1/2″	9″	3732T2	265.57	3308T53	24.86	.80
2,000	1,300	1/4″	77	24:1	6 11/16″ ×5″	2 1/2″	7 1/4″	3732T3	408.17	3308T55	34.40	1.51
4,000	2,500	3/8″	140	26:1	9″ ×8″	4″	12 1/4″	3732T4	1,054.00	3308T58	52.92	2.19

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

For information about winches, see page 1454.

For mounting hole dimensions of the hand winches on this page, go to mcmaster.com and search for **3644TAC**.

Incline-Pulling Hand Winches with Brake

Just what you need for incline-pulling applications—winches with an automatic brake to prevent runaway loads when the handle is released. All are made of corrosion-resistant zinc-plated steel and have riveted stamped gears. They are used with wire rope (sold separately). The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes).

Enclosed-gear winches are for harsh environments. The enclosure not only protects the gears, it also prevents injury.

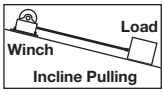

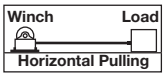

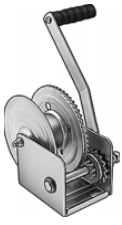

Exposed Gear

Enclosed Gear

Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	Base Size, Lg.×Wd.	Drum Dia.	Handle Lg.	Winches	Each	Wire Rope w/Hook	10-ft. Lg. Each	Extra Lg. Per Ft.
Exposed Gear												
350	102	1/8″	84	3.2:1	5 1/32″ × 3 7/8″	1″	7″	3196T55	$52.62	3308T51	$20.76	$0.48
800	310	3/16″	68	4.4:1	5 1/32″ × 3 7/8″	1 7/8″	7″	3196T56	57.53	3308T53	24.86	.80
1,200	507	7/32″	69	5.4:1	5 1/32″ × 3 7/8″	2 1/2″	7″	3196T57	67.04	3308T54	28.34	1.04
1,500	635	1/4″	60	5.4:1	5 1/2″ × 4 3/4″	2 1/2″	9 3/8″	3196T24	87.24	3308T55	34.40	1.51
2,500	1,000	5/16″	34	17.3:1	7″ × 4 7/8″	2 1/2″	9 3/8″	3196T64	113.02	3308T57	41.32	1.76
Enclosed Gear												
1,200	629	7/32″	46	4:1	6 1/8″ × 3 19/32″	2 1/2″	12 1/4″	3196T61	91.13	3308T54	28.34	1.04
1,500	647	1/4″	45	6:1	7 1/8″ × 3 9/16″	2 1/2″	12 1/4″	3196T44	120.28	3308T55	34.40	1.51
2,500	1,322	5/16″	40	12:1	10 1/8″ × 5 9/16″	3 1/8″	12 1/4″	3196T62	208.82	3308T57	41.32	1.76
3,500	1,849	3/8″	28	18.75:1	9 9/16″ × 5 9/16″	2 1/2″	12 1/4″	3196T63	223.51	3308T58	52.92	2.19

Lifting Hand Winches with Brake

These winches have an automatic brake that keeps the load in place when the handle is released. All have one-piece machined gears for durability and are used with wire rope (sold separately). The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes).

Enclosed Gear— Enclosure not only protects gears from dirt and debris, it also prevents injury.

Totally Enclosed— Covered by a housing. Ideal for harsh environments and outdoor applications.

Type 304 stainless steel winches provide corrosion resistance.

Steel winches have a powder-coated finish (unless noted).

Precise-positioning winches are also known as worm-gear winches. They allow more controlled movement so you can hold the load exactly where you want it. 3732T15 can also be powered by a maximum 400 rpm power drill using a 1 1/8″ hex socket (not included).

Wall-mount winches have a side-mount plate for attaching the winch to a wall while still allowing for handle clearance.

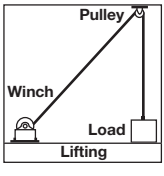

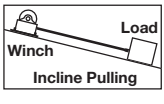

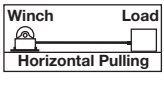

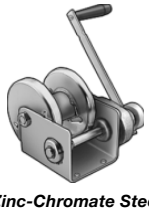

Zinc-Chromate Steel

Type 304 Stainless Steel

Steel Precise Positioning

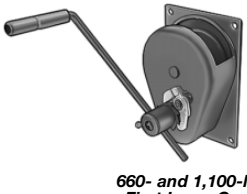

660- and 1,100-lb. First Layer Cap. Steel Wall Mount

Capacity, lbs. First Layer	Capacity, lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	Base Size, Lg.×Wd.	Drum Dia.	Handle Lg.	Winches	Each	Wire Rope w/Hook	10-ft. Lg. Each	Extra Lg. Per Ft.
Enclosed Gear												
Zinc-Chromate Steel												
1,000	500	7/32″	43	2.85:1	5″ × 3 11/16″	1 1/2″	10 5/8″	9472T31	$330.67	3308T54	$28.34	$1.04
2,000	1,200	5/16″	40	14.7:1	6″ × 5 9/16″	2 1/2″	10 5/8″	3806T67	536.35	3308T57	41.32	1.76
2,000 Wide Drum	1,200	5/16″	80	14.7:1	6″ × 8 5/16″	2 1/2″	10 5/8″	3806T68	557.02	3308T57	41.32	1.76
4,000	2,500	1/2″	83	19.54:1	12 1/2″ × 9 1/2″	4″	18 3/8″	3806T75	1,533.97	3308T61	78.31	2.89
10,000	5,400	3/4″	100	25:1	17″ × 12″	5″	18 1/2″	3806T71	2,066.67	3308T85	124.87	3.38
Totally Enclosed												
Type 304 Stainless Steel												
1,000	600	7/32″	83	3.83:1	6″ × 5 1/4″	2 1/2″	10 5/8″	23145T21	887.63	3308T54	28.34	1.04
2,000	1,200	5/16″	40	14.7:1	6″ × 5 5/16″	2 1/2″	10 5/8″	23145T22	1,188.33	3308T57	41.32	1.76
Steel Precise Positioning												
1,000	500	3/16″	61	15:1	4 15/32″ × 3 1/2″	1 1/2″	10 5/8″	3732T16★	457.77	3308T53	24.86	.80
2,000	1,200	1/4″	77	32:1	7 1/4″ × 6 5/8″	2 1/2″	10 5/8″	3732T15★	697.74	3308T55	34.40	1.51
4,000	2,500	3/8″	140	26:1	9″ × 8″	4″	18 5/8″	3732T14★	1,389.83	3308T58	52.92	2.19
Steel Wall Mount												
275	115	1/8″	171	1:1	2 3/4″ × 12″	1 1/2″	9 7/8″	3224T21	468.22	3308T51	20.76	.48
660	298	3/16″	81	1.5:1	7 7/8″ × 11 13/16″	2″	9 7/8″	3224T22	741.56	3308T53	24.86	.80
1,100	661	1/4″	46	4.5:1	7 7/8″ × 11 13/16″	2 3/4″	9 7/8″	3224T23	784.22	3308T55	34.40	1.51

★ Has a painted finish.

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

115 VAC Electric Winches

For information about winches, see page 1454.

For mounting hole dimensions of the electric winches on this page, go to mcmaster.com and search for **9475TAC**.

115 VAC Horizontal-Pulling Winches

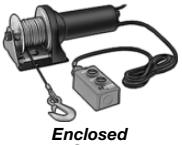

Enclosed Gear

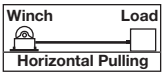

Totally Enclosed

Ready when you need them, these winches plug into any standard wall outlet. They have a handheld push-button control with forward and reverse functions and include the wire rope. The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes). All power cords have a three-prong plug.

Enclosed-gear winch has an aluminum housing that protects the gears from dirt and debris and also prevents injury. Duty cycle at full load is maximum 20 seconds continuous on, 30 minutes off. Winch has an aluminum drum, steel and aluminum gears, a tension plate to wind wire rope properly on drum, a 6-ft. control cord, and a 6-ft. power cord.

Totally enclosed winches are covered by a polyethylene housing. Ideal for harsh environments and outdoor applications. Winches have steel gears and drum. Duty cycle at full load is maximum 3 minutes continuous on, 30 minutes off. Units have a 10-ft. control cord and a 10-ft. power cord.

Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Assembly Dia.×Lg.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	hp	Line Speed @ First Layer, fpm	Amp Draw @ First Layer	Winches		Repl. Wire Rope with Hook	
Enclosed Gear													
1,000	550	5/32″×45′	45	148:1	13⅜″ × 5⅜″	1¼″	0.6	13	10	9475T25	$420.04	9475T251	$58.36
Totally Enclosed													
1,200	424	3/16″×20′	50	189:1	10″ × 6¼″	1⅛″	—	9	6	9354T41	371.76	3308T15	32.86
2,700	1,022	7/32″×25′	50	570:1	11 5/16″ × 8¾″	1⅛″	—	3.5	8	9354T42	413.45	3308T717	43.94

115 VAC Incline-Pulling Winch

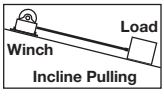

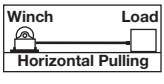

This winch requires only minimal cool-down time. Plus, worm gears give you precise load control. Unit has double-reduction gears for less stress on the motor. Gears are made of hardened steel and bronze and are enclosed in an oil bath for constant lubrication and longer life. Housing is aluminum. Drum is steel with aluminum flanges. Winch has a hand-held toggle control with forward and reverse functions and is used with wire rope (sold separately).

The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes). Duty cycle at full load is max. 1 minute continuous on with just 1 minute off. Control cord is 10 ft. long; power cord is 10 ft. long with a three-prong plug.

Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	hp	Line Speed @ First Layer, fpm	Amp Draw @ First Layer	Winch		Wire Rope w/Hook 10-ft. Lg.	Wire Rope w/Hook Extra Lg.
											Each	Each	Per Ft.
1,200	700	¼″	135	533:1/267:1	20½″×8″	3″	1.3	17	17	9475T41	$1,690.50	3308T55	$34.40	$1.51

115 VAC Lifting Winches

A

B

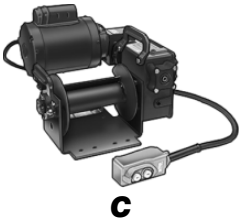

C

D

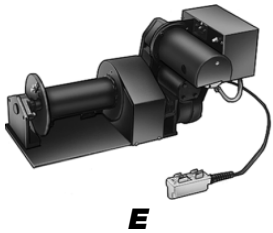

E

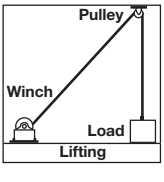

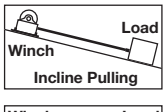

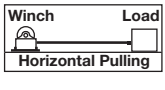

These winches have a brake that holds your load even when the power is turned off. They have a cast aluminum housing and drum (unless noted) and machine-cut bronze gears (unless noted) enclosed in an oil bath for constant lubrication and longer life. All come with a handheld push-button control with forward and reverse functions and are used with wire rope (sold separately). The rope is the diameter listed and includes a hook (see page 1453 for additional sizes). All power cords have a three-prong plug. Duty cycle at full load is maximum 15 minutes continuous on, 45 minutes off.

(A) Has a plate to guide the wire rope on and off the drum, 6-ft. control cord, and an 8-ft. power cord.

(B&E) Have bronze and steel gears, 10-ft. control cord, and 15-ft. power cord. *Style E* has a machined steel drum.

(C) Has a plate that guides the wire rope on and off the drum. Control cord is 16 ft. long; power cord is 16 ft. long.

(D) Control cord is 6 ft. long; power cord is 8 ft. long.

	Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	hp	Line Speed @ First Layer, fpm	Amp Draw @ First Layer	Winches		Wire Rope w/Hook 10-ft. Lg.	Wire Rope w/Hook Extra Lg.
												Each	Each	Per Ft.
A	800	330	¼″	280	32:1	17½″×21″	2½″	1	26	12.4	9475T72	$2,155.24	3308T55	$34.40	$1.51
B	1,000	600	¼″	250	286:1	22⅝″×11½″	2″	1.4	20	19	9475T36	2,083.20	3308T55	34.40	1.51
C	2,000	800	5/16″	190	160:1	16⅝″×17 13/16″	2½″	1.3	8	16	9475T71	1,874.76	3308T57	41.32	1.76
D	2,000	1,200	5/16″	90	119:1	14⅜″× 8⅞″	3″	1.2	13	16	9475T45	1,909.21	3308T57	41.32	1.76
E	2,880	2,150	⅜″	110	1,430:1	27¼″×13¼″	3½″	1.4	7.25	19	9475T33	2,770.49	3308T58	52.92	2.19

Warning! **Never exceed capacities. Never use to lift people or items over people.**

For information about winches, see page 1454.

For mounting hole dimensions of the electric winches on this page, go to mcmaster.com and search for **3075TAC**.

12 VDC Compact Horizontal-Pulling Winches

For use in tight spaces, these winches hook up to any 12 VDC power source. All have a handheld toggle control with forward and reverse functions, an automatic brake, and rollers to guide the wire rope on and off the drum. Winches also have an automatic-reset circuit breaker for motor protection and a clutch to disengage the gears so drum can rotate freely for quick and easy attachment to the load. The wire rope and cable for connecting to the battery are included. The rope is the diameter listed and includes a hook (see page 1453 for additional sizes). The drum and gear housing are cast aluminum; motor housing is steel. Duty cycle at full load is max. 20 seconds continuous on, 20 min. off.

Enclosed-gear winches keep dirt and debris off the gears and also prevent injury. Control cord is 15 ft. long; battery cable is 8 ft. long.

Totally enclosed winches are ideal for harsh environments and outdoor applications. Control cord is 30 ft. long; battery cable is 5 ft. long.

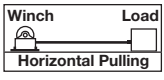

Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Assembly, Dia.×Lg.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	hp	Line Speed @ First Layer, fpm	Amp Draw @ First Layer	Winches		Repl. Wire Rope with Hook	
Enclosed Gear													
2,300	1,100	5/32″×60′	60	153:1	12 1/2″ ×5 5/8″	1 1/4″	0.71	1.6	140	3075T42	$298.74	3308T18	$60.15
3,000	1,300	3/16″×50′	50	153:1	12 23/32″×6″	1 1/4″	1.1	5.0	180	3075T43	345.46	3308T41	56.86
Totally Enclosed													
3,000	1,475	3/16″×60′	60	159:1	15 1/8″ ×7 7/32″	1 5/8″	1.3	4.5	220	3075T44	421.96	3308T19	64.86
5,000	2,150	1/4″ ×50′	50	159:1	15 1/8″ ×7 7/32″	1 5/8″	2.1	4.5	350	3075T45	492.62	3308T42	94.80

12 VDC Incline-Pulling Winches

These high-capacity winches operate from any 12 VDC power source. They have a handheld control with forward and reverse functions and a clutch to disengage the gears so drum can rotate freely for quick and easy attachment to the load. All have steel gears and drum.

Economy winch has a cast aluminum housing. The wire rope is included. The rope is the diameter listed and includes a hook (see page 1453 for additional sizes). Duty cycle at full load is max. 60 seconds continuous on, 20 min. off. Control cord is 15 ft. long; battery cable is 6 ft. long.

Premium winches have a steel motor housing. Winches are used with wire rope (sold separately). The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes). Duty cycle at full load is max. 30 seconds continuous on, 10 min. off. Control cord is 32 ft. long; battery cable is not included (see page 747).

3104T36 and 3104T37 have thermal overload protection to prevent motor damage. 3104T36 has an aluminum gear housing. 3104T37 and 3104T38 have an aluminum and steel gear housing.

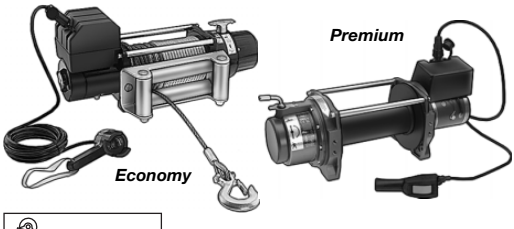

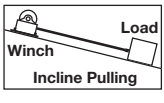

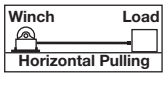

Economy Winch

Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Assembly, Dia.×Lg.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	hp	Line Speed @ First Layer, fpm	Amp Draw @ First Layer	Winch		Repl. Wire Rope w/Hook	
9,500	5,329	3/8″×85′	85	148:1	24 1/4″×6 1/4″	2 1/2″	5.2	5	430	3104T65	$835.23	3104T66	$79.98

Premium Winches

Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	hp	Line Speed @ First Layer, fpm	Amp Draw @ First Layer	Winches	Each	Wire Rope w/Hook 10-ft. Lg.	Wire Rope w/Hook Extra Lg. Per Ft.
9,000	5,940	3/8″	126	199:1	26 1/16″ ×8 7/16″	4″	2.5	4	450	3104T36	$1,788.07	3308T58	$52.92	$2.19
12,000	7,850	3/8″	126	315:1	26 15/16″×8 7/16″	4″	2.5	4	481	3104T37	1,888.88	3308T58	52.92	2.19
15,000	10,417	1/2″	79	315:1	26 15/16″×8 7/16″	4″	3.8	3.2	525	3104T38	2,080.20	3308T61	78.31	2.89

12 VDC Lifting Winches

These winches have a load-holding brake and run off any 12 VDC power source. The motor housing and gears are steel; gear housing is steel and aluminum. Drum is cast aluminum. Winches include a handheld toggle control and a separate control box that connects to the battery. Control cord is 12 ft. long. Cable for connecting to the battery is not included (see page 747). The control box includes a 16″ cable and can be mounted directly to the winch (hardware included). All are used with wire rope (sold separately). The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes).

2647T33 duty cycle at full load is max. 75 sec. continuous on, 10 min. off.
2647T35 duty cycle at full load is max. 2 1/2 min. continuous on, 10 min. off.
2647T36 duty cycle at full load is max. 100 sec. continuous on, 10 min. off.

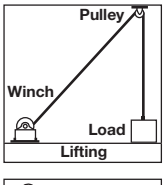

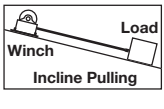

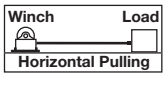

Cap., lbs. First Layer	Cap., lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	hp	Line Speed @ First Layer, fpm	Amp Draw @ First Layer	Winches	Each	Wire Rope w/Hook 10-ft. Lg. Each	Wire Rope w/Hook Extra Lg. Per Ft.
1,200	900	3/16″	58	216:1	14 3/4″ ×6 5/16″	6″	1.3	18	153	2647T33	$946.59	3308T53	$24.86	$0.80
2,000	1,800	1/4″	43	261:1	17 27/32″×6 5/16″	4 1/4″	2.1	15	200	2647T35	1,295.34	3308T55	34.40	1.51
3,000	2,250	5/16″	119	199:1	21 25/32″×9 15/16″	5 5/16″	2.5	11	255	2647T36	2,138.28	3308T57	41.32	1.76

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

Air-Powered, Hydraulic & Capstan Winches

For information about winches, see page 1454.

For mounting hole dimensions of the air-powered, hydraulic, and base-mount capstan winches on this page, go to mcmaster.com and search for **38635TAC**.

Air-Powered Lifting Winches

Intermittent Duty

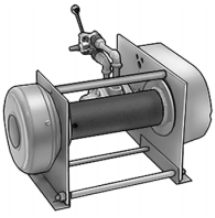

1,500-lb. First Layer Cap. Continuous Duty

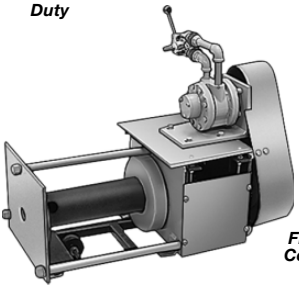

5,000-lb. First Layer Cap. Continuous Duty

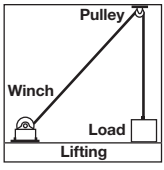

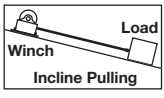

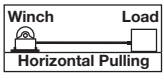

Because they run on air, these winches give you long operating times and variable speed control. They also have an automatic brake that holds the load when the motor stops. All have forward and reverse functions. They are used with wire rope (sold separately). The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes). Air hose is not included, see pages 240-246.

Intermittent-duty winch is aluminum with steel gears enclosed in an oil bath for continuous lubrication, resulting in reduced wear. The included valve control regulates speed. Duty cycle at full load is maximum 15 minutes continuous on, 45 minutes off. Operates on 80 cfm @ 100 psi. Motor is 1.2 hp.

Continuous-duty winches are specially designed for continuous operation. They are made of steel and have gears that operate at higher speeds than the intermittent-duty winch. A hand-operated toggle control regulates speed. Units operate on 100 cfm @ 90 psi.

3651T21, *T22,* and *T12* have a 4-hp motor; 3651T14 has an 8-hp motor.

Capacity, lbs. First Layer	Capacity, lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	Line Speed @ First Layer, fpm	Air Inlet, NPT	Winches	Each	Wire Rope w/Hook 10-ft. Lg.	Each	Extra Lg. Per Ft.
Intermittent Duty													
2,000	1,200	5/16″	90	119:1	14 3/8″ × 8 7/8″	3″	13	1/2″	38635T11	$2,612.86	3308T57	$41.32	$1.76
Continuous Duty													
750	500	1/4″	125	30:1	14 5/8″ × 14 3/4″	2 7/8″	40	1/2″	3651T21	3,998.02	3308T55	34.40	1.51
1,500	1,000	1/4″	170	47.2:1	21 1/2″ × 17 1/2″	4″	40	1/2″	3651T22	6,085.71	3308T55	34.40	1.51
5,000	3,000	3/8″	230	111.2:1	30″ × 14 1/2″	4″	15	1/2″	3651T12	8,772.09	3308T58	52.92	2.19
12,000	8,000	1/2″	420	173.5:1	37 1/2″ × 17″	4 1/2″	11	3/4″	3651T14	12,038.36	3308T61	78.31	2.89

Hydraulic Incline-Pulling Winches

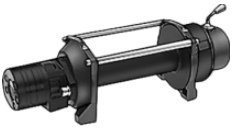

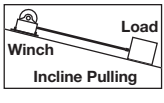

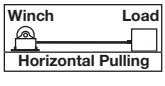

These winches combine hardened steel gears and a powerful hydraulic motor for reliable operation. An automatic brake holds your load securely when power is shut off and a locking clutch lever disengages the gears so drum can rotate freely for quick and easy attachment to the load.

All have 7/8″-14 UNF O-ring ports for hydraulic power connection. They are used with wire rope (sold separately). The wire rope is the diameter listed and includes a hook (see page 1453 for additional sizes). Gear housing is cast aluminum; drum and motor housing are steel. Duty cycle is maximum 20 minutes continuous on, 20 minutes off.

Capacity, lbs. First Layer	Capacity, lbs. Full Drum	Wire Rope Dia.	Wire Rope Lg. On Full Drum, ft.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Dia.	Line Speed @ First Layer, fpm	Max. Inlet Flow	Winches	Each	Wire Rope w/Hook 10-ft. Lg.	Each	Extra Lg. Per Ft.
6,000	3,600	5/16″	102	26:1	20 1/2″ × 6 5/16″	2 1/2″	26	12 gpm @ 1,300 psi	3232T21	$1,334.34	3308T57	$41.32	$1.76
9,000	5,940	3/8″	126	27:1	23 1/2″ × 8 7/16″	4″	47	12 gpm @ 2,600 psi	3232T27	1,362.41	3308T58	52.92	2.19
12,000	7,850	7/16″	126	36:1	24 1/4″ × 8 7/16″	4″	24	16 gpm @ 1,820 psi	3232T23	1,581.97	3308T59	66.42	2.85

Electric Capstan Winches

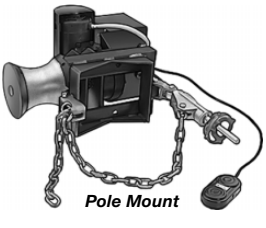

Pole Mount

Base Mount

These winches assist in manual pulling, lifting, and lowering applications. All have forward and reverse functions. Gears are hardened steel and bronze and are enclosed in an oil bath for continuous lubrication, resulting in reduced wear. The frame is steel; the housing is aluminum. Fibrous rope (not included, see pages 1410-1413) wraps around, but does not accumulate on the concave drum. Duty cycle at full load is maximum 15 minutes continuous on, 45 minutes off.

Pole-mount winch has a 1.4-hp motor and includes pole binder hardware. Unit has a foot-operated control with 10-ft. cord. Power cord is 15 ft. long and has a three-prong plug.

Base-mount winches are for surface mounting.

3744T18 has a 1.4-hp motor and a foot-operated control with a 10-ft. cord. Power cord is 15 ft. long and has a three-prong plug.

3744T16 has a handheld control with a 10-ft. cord. Cable for connecting to a 12 VDC battery is not included, see page 747 for battery cable.

Capacity, lbs.	Gear Ratio	O'all Size, Lg.×Wd.	Drum Diameter	Line Speed @ Rated Capacity, fpm	Voltage	Amp Draw @ Rated Capacity		
Pole Mount								
800	286:1	18 1/8″ × 11 1/2″	4″	30	115 VAC	19	3744T12	$2,541.39
Base Mount								
800	286:1	18 1/2″ × 11 1/2″	4″	30	115 VAC	19	3744T18	2,072.54
800	175:1	18 1/2″ × 11 1/2″	4″	15	12 VDC	100	3744T16	1,902.05

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

Fibrous Rope Ratchet Pullers

Twisted fibrous rope passes through these pullers without coiling on the drum so you can pull items longer distances. The rope is polyester and is lighter than wire rope and not prone to kinking. Pullers have a steel body and come with forged steel hooks with latches. 33425T21 and 33425T22 include components to convert to double line. Double line gives you twice the capacity, but half the reach.

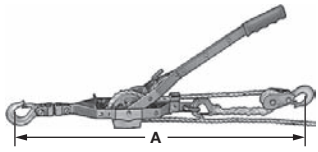

Cap., lbs.	Reach, ft.	(A) Min.	Handle Lg.	Rope Dia.	Hook Opening		
1,500	20	27″	19″	1/2″	3/4″	33425T7	$90.34
1,500	50	27″	19″	1/2″	3/4″	33425T8	106.71
1,500	75	27″	19″	1/2″	3/4″	33425T9	119.49
1,500/3,000	50/25	28″	18″	1/2″	3/4″	33425T21	118.87
1,500/3,000	100/50	28″	18″	1/2″	3/4″	33425T22	137.74

Wire Rope Ratchet Pullers

Wire rope provides strength in your pulling applications. All pullers have forged steel hooks with latches. When not under load, the ratchet can be disengaged (unless noted) so drum can rotate freely for quick and easy attachment to the load. Units with *single/double* lines include components to convert to double line. Double line gives you twice the capacity, but half the reach.

General Duty—Made of steel and include 7×19 galvanized wire rope.

Heavy Duty—Made of iron and include 6×37 wire rope.

Premium—Made of cast aluminum and include 7×19 galvanized wire rope (unless noted) and swivel hooks. The handle is reversible and designed to bend when puller is overloaded. Pullers have an integral RFID chip which allows location and maintenance tracking. They also have a guide so wire rope wraps properly on the drum. 3349T23 has a telescoping handle. ***Rapid-release*** units release wire rope four times faster than the other pullers. A lever-actuated mechanism allows the pawl to come in contact with every fourth ratchet tooth, eliminating 75% of the stops for faster operation. When fine positioning is needed, the selector lever returns puller to normal action. ***Corrosion-resistant*** pullers have stainless steel wire rope and anodized aluminum castings that make them ideal for marine and other corrosive environments.

Also Available: Replacement handles for premium pullers. Please ask for 3349T888 and specify part number.

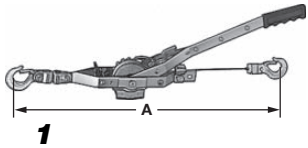

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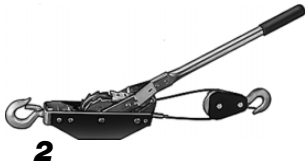

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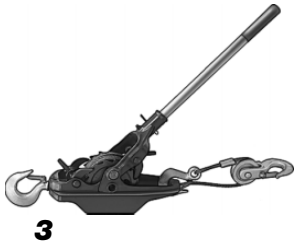

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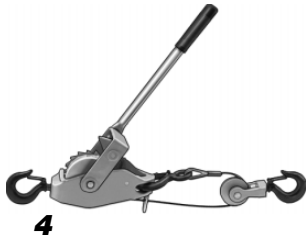

4

Cap., lbs.	Reach, ft.	No. of Lines	(A) Min.	Handle Length	Wire Rope Dia.	Hook Opening		
General Duty								
1 1,000	15	Single	17 1/2″	15 1/2″	3/16″	5/8″	3054T63	$38.09
1 1,500	22	Single	21 1/2″	19″	5/32″	3/4″	3344T13■	55.44
1 2,000	7.5	Double	20 1/2″	15 1/2″	3/16″	7/8″	3054T64	45.36
1 2,000	12	Single	21 1/2″	19″	3/16″	3/4″	3344T54■	52.64
1 2,000/4,000	12/6	Single/Double	30″/24″	19″	3/16″	3/4″	3344T55■	70.49
2 2,000	6	Double	22″	18″	7/32″	1″	3054T42■	75.91
2 3,000	6	Double	29 1/2″	35″	5/16″	1 1/8″	3054T43■	184.43
Heavy Duty								
3 2,000/4,000	31.9/15.8	Single/Double	27″/27″	18″	5/16″	13/16″	3343T5	280.91
3 3,000/6,000	16.9/ 8.3	Single/Double	27″/27″	18″	5/16″	13/16″	3343T4	257.81
Premium								
4 750/1,500	25/12.5	Single/Double	20″/23″	15″	5/32″	1″	3349T18	171.23
4 1,000	15	Single	18″	17 1/2″	3/16″	1″	3349T17	134.91
4 1,125/2,250	20/10	Single/Double	20″/23″	17 1/2″	3/16″	1″	3349T19	176.42
4 1,500/3,000	30/15	Single/Double	22″/29″	25″	7/32″	1″	3349T21	224.15
4 2,000/4,000	20/10	Single/Double	22″/29″	30″	1/4″	1″	3349T22	231.42
4 3,000/6,000	15/ 7.5	Single/Double	26 1/2″/34″	36″-55″	5/16″	1″	3349T23	544.81
Premium Rapid Release								
4 750/1,500	25/12.5	Single/Double	20″/23″	15″	5/32″	1″	3349T38	204.43
4 1,000	15	Single	18″	17 1/2″	3/16″	1″	3349T37	170.19
4 1,500/3,000	30/15	Single/Double	22″/29″	25″	7/32″	1″	3349T41	269.81
4 2,000/4,000	20/10	Single/Double	22″/29″	30″	1/4″	1″	3349T42	275.00
Premium Corrosion Resistant								
4 750/1,500	25/12.5	Single/Double	20″/23″	15″	5/32″	1″	3349T78	223.11
4 1,000	15	Single	18″	17 1/2″	3/16″	1″	3349T77	176.43
4 1,125/2,250	20/10	Single/Double	20″/23″	17 1/2″	3/16″	1″	3349T79	228.30
4 1,500/3,000	30/15	Single/Double	22″/29″	25″	7/32″	1″	3349T81	286.42
4 2,000/4,000	20/10	Single/Double	22″/29″	30″	1/4″	1″	3349T82	293.68

■ Gears cannot be disengaged.

Strap Ratchet Pullers

The weather-resistant strap on these pullers is lighter than wire rope and ideal for using over surfaces that would be damaged by wire rope. Strap is made of nylon (unless noted). Pullers have a steel body and come with forged steel hooks with latches.

Easy-store pullers have a folding handle for storage in the included carrying case.

Easy Store

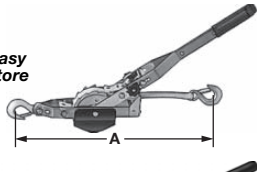

General Duty

Cap., lbs.	Reach, ft.	(A) Min.	Handle Length	Strap Width	Hook Opening		
Easy Store							
750	8	17″	19 1/2″	1″	5/8″	33495T33	$47.03
1,500	4	20 1/2″	19 1/2″	1″	7/8″	33495T34	58.47
General Duty							
1,000	8	20″	24″	1″	1″	33495T51	74.41
1,500	12	23″	35″	1 3/4″	1″	33495T52◆	167.46

◆ Strap is polyester.

Warning! **Never exceed capacities. Never use to lift people or items over people.**

Chain Ratchet Puller/Hoists

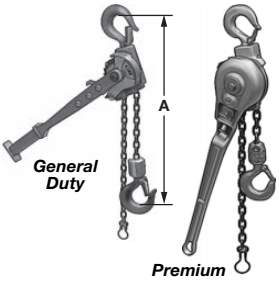

With no brake to disengage, these pullers are easier to use. When not under load, the ratchet disengages allowing the chain wheel to rotate freely for quick and easy attachment to the load. Body is aluminum and has forged steel swivel hooks with latches. Chain is hardened steel. A stop on the end of the chain prevents it from being pulled completely through the hoist.

To Order: Please specify reach. Standard reaches are 5, 10, 15, and 20 ft.; other reaches are available.

General duty CM Rigger pullers have a short handle for use in confined areas.

Premium Coffing RA pullers have a long handle for greater leverage and easier lifting. Meet ANSI/ASME B30.21.

Cap., lbs.	(A) Min.	Handle Lg.	Hook Opening		Base Price with 5-ft. Reach Each	Extra Reach Per Ft.
General Duty						
1,600	10 3/4″	15 3/8″	1 1/32″	3263T1	$265.47	$7.27
3,300	12 1/2″	15 3/8″	1 1/32″	3263T2	346.26	14.52
Premium						
1,500	12 7/16″	20 1/2″	1″	3227T4	427.97	11.99
3,000	17 1/4″	20 1/2″	1″	3227T5	593.75	23.51
6,000	17 1/4″	20 1/2″	11 1/16″	3227T7	791.97	33.85

Tool Box Lever Chain Hoists

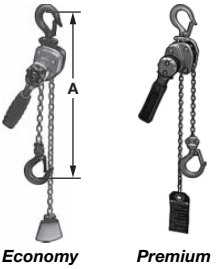

With their compact design, not only can these hoists be stored in your tool box, they are great for tight spaces. Hoists have a steel body, forged steel top and bottom swivel hooks with latches, and a mechanical brake to securely hold the load. Levers rotate 360° for use in any position. The neutral position disengages the gears and allows the chain to be pulled through the hoist for quick and easy attachment to the load. A stop on the end of the chain prevents it from being pulled completely through the hoist. Meet ANSI/ASME B30.21.

Economy hoists have zinc-plated steel chains. ***Premium*** hoists have nickel-plated steel chains.

Cap., lbs.	Lift, ft.	Lever Effort @ Cap., lbs.	(A) Min.	Hook Opening	Lever Length		
Economy							
550	5	58	9 7/16″	13/16″	6 5/16″	3523T1	$120.23
1,100	5	58	11 1/4″	15/16″	6 3/8″	3523T57	159.67
Premium							
550	5	40	8 3/32″	25/32″	5 29/32″	3030T1	154.30
1,100	5	62	9 23/32″	1″	7 3/32″	3030T2	222.88

Lever Chain Hoists

Three-position control and a mechanical brake on these hoists provide load control and positioning. The neutral position disengages the gears and allows the chain to be pulled through the hoist for quick and easy attachment to the load. All have hardened steel chain. A stop on the end of the chain prevents it from being pulled completely through the hoist. Top and bottom swivel hooks with latches are forged steel. Hoists are suitable for outdoor use. Meet ANSI/ASME B30.21. The lever on *Styles 1, 2,* and *4* rotates 360° for use in any position.

To Order: Please specify lift. Standard lifts are 5, 10, 15, and 20 ft.; other lifts are available.

(1) Economy Steel with Overload Protection— Lever prevents gears from engaging when the load exceeds capacity.

(2) General Duty Steel— These Coffing LSB hoists have a short-stroke lever for maneuverability in tight areas.

(3) Premium Steel— These Harrington LB hoists are compact and lighter in weight than other hoists with comparable capacities, yet are rugged enough for big jobs. *Hoists with overload protection* give two visual and one audible signal when the load exceeds capacity.

(4) Premium Aluminum with Short Lever— Made by CM, they have a short-stroke lever for use in close quarters. The lever on *hoists with overload protection* prevents the gears from engaging when load exceeds capacity.

(5) Premium Aluminum with Long Lever— Made by CM, they have an extra-long lever for greater take-up per stroke resulting in faster lifting. The lever on *hoists with overload protection* bends when the load exceeds capacity.

Cap., lbs.	Lever Effort @ Cap., lbs.	(A) Min.	Hook Opening	Lever Length		Base Price with 5-ft. Lift Each	Extra Lift Per Ft.
(1) Economy Steel with Overload Protection							
1,500	31	12 13/16″	13/16″	11″	3832T41	$246.34	$4.97
3,000	49	15″	1 13/32″	16 1/8″	3832T42	307.52	6.50
6,000	71	18 15/16″	1 9/16″	16 1/8″	3832T43	499.46	9.77
(2) General Duty Steel							
1,500	46	11 5/8″	15/16″	9 1/4″	3162T1	240.24	6.92
3,000	59	13″	1 1/4″	14 9/16″	3162T2	360.36	7.51
6,000	75	16 15/16″	17/32″	14 9/16″	3162T3	488.20	10.65
(3) Premium Steel							
1,500	54	11″	15/16″	9 5/8″	3305T62	372.32	10.89
2,000	72	11 13/16″	1 1/8″	9 5/8″	3305T11	418.92	12.16
3,000	64	13 3/16″	1 1/4″	10 3/8″	3305T14	525.51	12.20
4,000	59	14 13/16″	17/16″	10 3/8″	3305T12	563.35	15.11
5,500	81	14 13/16″	17/16″	10 3/8″	3305T63	599.79	15.11
6,000	69	15 5/8″	1 1/2″	16 5/16″	3305T13	688.94	16.22
(3) Premium Steel with Overload Protection							
1,500	36	11″	15/16″	14 3/8″	3305T65	511.64	10.89
2,000	46	11 13/16″	1 1/8″	14 3/8″	3305T15	557.84	12.16
3,000	45	13 3/16″	1 1/4″	14 3/8″	3305T16	663.51	12.20
4,000	42	14 13/16″	17/16″	14 3/8″	3305T17	701.03	15.11
5,500	57	14 13/16″	17/16″	14 3/8″	3305T66	731.58	15.11
6,000	69	15 5/8″	1 1/2″	16 7/8″	3305T18	825.54	16.22
(4) Premium Aluminum with Short Lever							
1,600	45	12 1/4″	1 1/32″	12″	9476T16	472.85	12.25
3,300	55	14 3/4″	1 1/8″	16 3/4″	9476T17	657.15	16.76
(4) Premium Aluminum with Short Lever and Overload Protection							
1,600	45	12 1/4″	1 1/32″	12″	9476T26	713.00	12.25
3,300	55	14 3/4″	1 1/8″	16 3/4″	9476T27	897.30	16.76
(5) Premium Aluminum with Long Lever							
1,600	58	10 3/4″	1 1/32″	21 1/4″	3336T1	488.61	12.66
3,300	89	14 1/4″	1 1/8″	21 1/4″	3336T2	679.05	17.31
6,600	95	16 15/16″	17/32″	21 1/4″	3336T3	879.12	34.63
(5) Premium Aluminum with Long Lever and Overload Protection							
1,600	58	10 3/4″	1 1/32″	23 3/4″	3336T5	604.03	12.66
3,300	89	14 1/4″	1 1/8″	23 3/4″	3336T6	794.47	17.31
6,600	95	16 15/16″	17/32″	23 3/4″	3336T7	994.54	34.63

Warning! **Never exceed capacities. Never use to lift people or items over people.**

Hand Chain Hoists

Use these hand chain hoists to lift your loads in areas where getting power for an electric hoist would be difficult. Choose from hook-mount and trolley-mount hoists. All come with forged steel bottom swivel hook with a latch, a brake that securely holds the load, and hardened steel chain (unless noted). Hand chain length is 2 ft. shorter than the lift. Hoists meet ANSI/ASME B30.16 and HST-2M.

Hoists with overload protection will not operate when the load exceeds capacity.

To Order: Please specify lift. Standard lifts are 8, 10, 12, 15, 20, and 30 feet (unless noted); other lifts are available.

Hook Mount— Have a versatile forged steel swivel top hook with latch that can quickly be hung from almost any structure.

Trolley Mount— Trolleys roll along all styles of I-beams for easy load movement. They take up less overhead room than hook-mount hoists and can be permanently mounted on fixed beams as well as on jib, gantry, and workstation cranes.

Hoists with a manual trolley require the user to move the trolley; ideal for lighter capacity loads and lifting applications less than 20 feet. *Hoists with a hand chain trolley* provide more precise load positioning. The user pulls the hand chain to move the trolley; ideal for higher capacity loads and lifting applications over 20 feet.

(1) Economy steel are CM's Model 622 and provide good lifting capacity at an economical price for infrequent lifting needs.

(2) Steel with overload protection have gears that are totally enclosed to protect them from debris and contamination for consistent smooth operation. A unique handwheel design allows you to operate the hand chain in any direction without binding.

(3) Steel with rotary handwheel and overload protection are CM's Hurricane hoist. A 360° rotating handwheel cover allows the hand chain to be used in any direction.

(4&7) Heavy duty steel are Chester Hoist Model AM. They have rugged construction for more demanding applications, yet require less user effort to use than the economy model.

(5, 8&9) Premium aluminum with overload protection are CM's Cyclone. A large handwheel reduces user effort to lift a load. Ideal for frequent lifting operations where user fatigue is a concern.

Confined-space hoists are more compact for use in areas where space is limited.

(6) Spark resistant have bronze alloy swivel hooks, aluminum bodies, and stainless steel lifting chain for use in areas where spark resistance is essential.

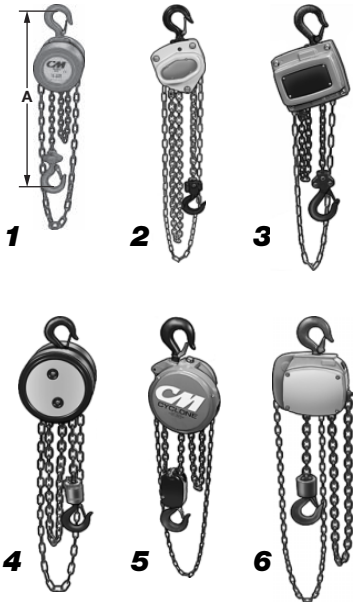

Hook Mount

Cap., lbs.	Hand Chain Pull @ Capacity: Effort, lbs.	To Lift Load 1 ft.	(A) Min.	Hook Opening		Base Price with 8-ft. Lift Each	Extra Lift Per Ft.
(1) Economy Steel							
1,100	53	29 ft.	11 5/8″	1 1/16″	3094T1 ♠	$132.83	$11.15
2,200	77	37 ft.	13″	1 1/32″	3094T2 ♠	150.64	12.72
4,400	82	80 ft.	18 1/8″	1 1/4″	3094T3 ♠	295.49	20.10
6,600	65	154 ft.	21 29/32″	1 5/16″	3094T4 ♠	380.31	34.63
11,000	105	147 ft.	23 7/8″	1 13/16″	3094T5 ♠	774.50	34.63
(2) Steel with Overload Protection							
1,000	50	28 ft.	10 5/8″	13/16″	3912T41	199.74	14.29
2,000	66	37 ft.	12 1/2″	1 1/16″	3912T42	230.60	15.30
3,000	70	31 ft.	15 11/16″	13/8″	3912T43	307.37	19.88
(3) Steel with Rotary Handwheel and Overload Protection							
1,100	44	30 ft.	11 13/16″	15/16″	3713T81 ♠	272.06	12.56
2,200	54	49 ft.	13 3/16″	1 1/8″	3713T82 ♠	308.70	14.02
4,400	74	71 ft.	15 9/16″	13/8″	3713T83 ♠	446.11	15.43
22,000	102	261 ft.	32 1/2″	2 11/16″	3713T84 ♠	1,732.05	96.82
(4) Heavy Duty Steel							
1,100	32	44 ft.	12 1/4″	7/8″	3287T43	632.38	10.86
2,200	64	44 ft.	12 1/4″	7/8″	3287T44	706.55	10.86
4,400	66	88 ft.	15 1/2″	1″	3287T45	969.10	13.66
6,600	68	132 ft.	16 1/2″	1 1/8″	3287T46	1,177.86	14.89
(5) Premium Aluminum with Overload Protection							
550	23	22 1/2 ft.	12 7/8″	1 3/32″	3324T1 ♠	732.76	23.03
1,100	46	22 1/2 ft.	12 7/8″	1 3/32″	3324T2 ♠	738.12	23.03
2,200	69	30 ft.	14″	1 1/8″	3324T3 ♠	862.51	25.40
3,300	80	40 1/2 ft.	17 5/16″	15/16″	3324T4 ♠	1,182.72	27.08
4,400	83	52 ft.	17 5/16″	15/16″	3324T5 ♠	1,320.13	27.94
6,600	85	81 ft.	21 1/2″	15/8″	3324T6 ♠	1,862.91	45.56
8,800	88	104 ft.	21 1/2″	15/8″	3324T7 ♠	2,217.41	45.56
11,000	75	156 ft.	24 1/4″	15/8″	3324T8 ♠	2,635.41	60.73
(6) Spark Resistant							
1,000	48	25 ft.	12 1/2″	1″	3322T15	1,747.66	82.14
2,000	70	35 ft.	13 1/4″	1″	3322T16	1,414.42	147.49
4,000	78	68 1/2 ft.	16 9/16″	1 1/8″	3322T17	1,920.79	250.75

♠ Not available in 8- and 12-ft. lifts. Base price is based on 10-ft. lift.

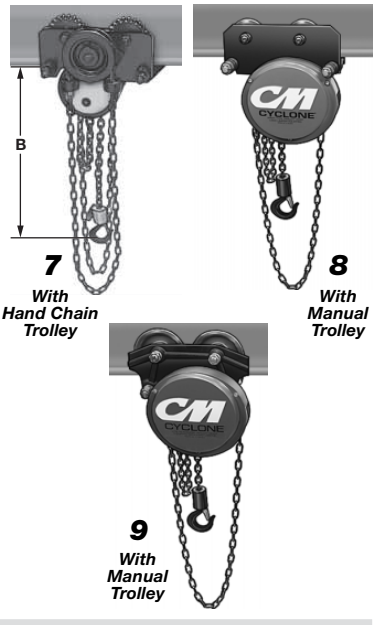

7 *With Hand Chain Trolley*

8 *With Manual Trolley*

9 *With Manual Trolley*

Trolley Mount

Cap., lbs.	Hand Chain Pull @ Capacity: Effort, lbs.	To Lift Load 1 ft.	Fits I-Beam Flange Wd.	Min. Curve Radius	(B) Min.	Hook Opening		MANUAL TROLLEY Base Price with 8-ft. Lift Each	MANUAL TROLLEY Extra Lift Per Ft.		HAND CHAIN TROLLEY Base Price with 8-ft. Lift Each	HAND CHAIN TROLLEY Extra Lift Per Ft.
(7) Heavy Duty Steel												
1,100	32	44 ft.	2 5/8″ to 4 5/8″	48″	11 1/8″	7/8″	3287T61	$756.62	$10.86	3287T71	$1,014.10	$19.87
2,200	64	44 ft.	2 5/8″ to 4 5/8″	48″	11 1/8″	7/8″	3287T62	813.62	10.86	3287T72	1,078.14	19.87
4,400	66	88 ft.	3″ to 5 1/2″	60″	13 11/16″	1″	3287T63	1,110.21	13.66	3287T73	1,427.79	15.31
6,600	68	132 ft.	3 3/8″ to 6″	78″	15 5/8″	1 1/8″	3287T64	1,515.21	14.89	3287T74	1,896.10	15.01
(8) Premium Aluminum with Overload Protection												
1,100	46	22 1/2 ft.	2 5/8″ to 5 1/2″	30″	11 3/4″	1″	3313T1	1,310.50	24.77	3313T6★	2,180.77	38.16
2,200	69	30 ft.	2 5/8″ to 5 1/2″	30″	11 3/4″	1″	3313T2	1,491.03	27.32	3313T7★	2,217.03	40.79
4,400	83	52 ft.	3 5/8″ to 5 5/8″	30″	15 5/16″	1 3/8″	3313T3	2,073.72	29.64	3313T8	2,479.42	42.88
(9) Confined-Space Premium Aluminum with Overload Protection												
1,100	46	22 1/2 ft.	3 3/8″ to 5″	36″	8 7/8″	1 1/32″	3058T1	1,761.60	24.77	—	—	—
2,200	69	30 ft.	3 3/8″ to 5″	36″	9 1/4″	1 1/8″	3058T2	1,865.18	27.31	—	—	—
4,400	83	52 ft.	3 5/8″ to 5 1/2″	48″	12 1/2″	1 5/16″	3058T4	2,825.36	29.33	3058T5	3,447.02	41.45

★ Dimension (B) is 11 13/16″ and fits 3 3/8″ I-beam flange width.

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

Fibrous Rope Pulley Hoists

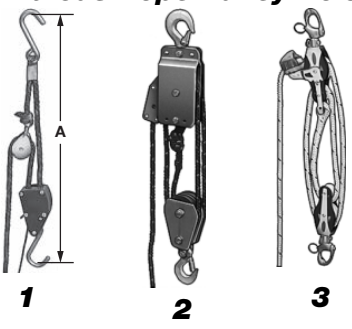

Great for use in areas where electricity is not available. These hoists are lighter in weight than hand chain hoists so they are easy to transport. Plus, the fibrous rope reduces the chance of hand injuries.

Economy have pivoting hooks. *Style 1* has steel wire-formed hooks, a cam-lever lock to hold the load, braided polypropylene rope, and a release cord; *Style 2* has zinc-plated forged steel hooks with latches, braided nylon rope, and a ratcheting lock to hold the load.

Corrosion-resistant hoists are great in harsh environments. They have double-braided polyester rope, acetal sheaves, Type 316 stainless steel blocks, and a rope cleat to hold the load. Both have stainless steel top and bottom swivel snaps.

	Cap., lbs.	Lift, ft.	Pulling Effort @ Cap., lbs.	(A) Min.	Rope Dia.	Hook Opening		
Economy								
1	250	10	125	17½″	⅜″	1⅛″	**2973T41**	$22.62
2	350	12	87½	20″	⅜″	¾″	**2973T27**	57.05
Corrosion Resistant								
3	880	7½	220	14″	5/16″	1″	**31825T21**	269.11
3	1,240	8½	310	16″	⅜″	1″	**31825T22**	376.33

Electric Wire Rope Hoist

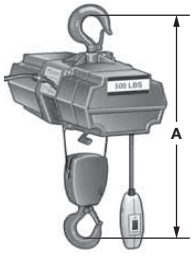

This hoist requires only an electric power source for operation and has a versatile top hook that can be hung from almost any structure.

Hoist is single phase, 115 VAC, 60 Hz and includes 7×19 galvanized steel wire rope. It has an aluminum housing, forged steel top and bottom swivel hooks with latches, and a handheld toggle control. Control cord is 6 ft. long; power cord is 12″ long with a three-prong plug. A disc brake holds the load. Thermal motor protection prevents overheating and an upper limit switch keeps the load from hitting the hoist. UL listed.

Cap., lbs.	Lift, ft.	Lifting Speed, fpm	hp	(A) Min.	Wire Rope Dia.	Hook Opening	Amps	Contin. On Time, Min./Hour		
500	10	10	⅙	13¾″	⅛″	13/16″	2.1	10	**9479T51**	$828.09

Workstation Hoists

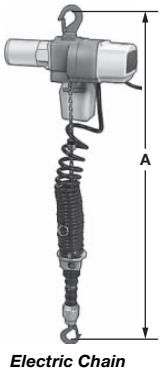

Electric Chain

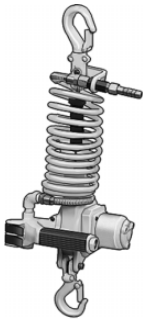

Air-Operated Wire Rope

Small and easy to use, these hoists are ideal for light load manipulation at assembly workstations.

Electric chain hoists are dual speed and have a toggle control on the handle for selecting the speed. To adjust the load, simply push up or pull down on the ergonomic handle. All are single phase, 120 VAC, 60 Hz. Disc and mechanical brakes hold the load and an upper limit switch regulates upward chain travel to prevent damage to the hoist. Hoists have an aluminum housing; a forged steel rigid top hook with latch; and a forged steel swivel bottom hook with latch. Chain is manganese alloy and nickel; chain container is included. Power cord is 16 ft. long with three-prong plug. Meet ANSI/ASME H2.

Air-operated wire rope hoist is variable speed with the control conveniently located on the handle for continuous use and slow precise movements. A disc brake holds the load. Hoist has a cast iron housing, forged steel top and bottom swivel hooks with latches, and 5/32″ dia. 7×19 galvanized wire rope. Operates on 21.2 cfm at 95 psi. Air inlet is ⅜″ NPT. Air hose is not included, see pages 240-246.

Cap., lbs.	Lift, ft.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	Amps	Contin. On Time, Min./Hour		
Electric Chain									
125	6	69/13	0.04	37 3/16″	1″	5	15	**2811T63**	$2,412.93
220	6	43/10	0.04	37 3/16″	1″	5	15	**2811T64**	2,446.88
350	6	66/13	0.08	37 13/16″	1″	10	20	**2811T65**	3,016.02
525	6	44/10	0.08	37 13/16″	1″	10	20	**2811T66**	3,065.27
Air-Operated Wire Rope									
300	6½	0-36	—	22¾″	15/16″	—	60	**23155T4**	1,724.75

Electric Wire Rope Winch/Hoists

These combination winch/hoists allow you to pull and lift with one portable tool. Motor and mechanical brakes hold the load. Hoists have a glass-filled nylon housing, a forged steel swivel bottom hook with latch, and a control switch mounted in the handle. An overload protection switch shuts hoists off if load exceeds capacity. Both hoists are single phase and include 7″×19″ galvanized steel wire rope.

3630T61 has a 12″ power cord. It operates on 110 VAC, 60 Hz. 3630T62 is cordless and includes two NiMH rechargeable battery packs. It operates on 24 VDC, 60 Hz.

Cap., lbs.	Lift, ft.	Lifting Speed, fpm	hp	(A) Min.	Wire Rope Dia.	Hook Opening	Amps	Contin. On Time, Min./Hour		
1,000	15	8	1	22½″	7/32″	⅞″	10	1	**3630T61**	$241.25
1,000	15	6	1.6	22½″	7/32″	⅞″	25	1	**3630T62**	430.82

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

For replacement parts, see page 1468.

About Electric Chain Hoists

The hoists feature a motor brake that holds the load when the control switch is released or if there is a loss of power.

Continuous run time per hour is restricted to prevent heat buildup from damaging the motor and gears. Run time may be affected by temperature, dust, humidity, and exposure to weather and corrosive fumes. Hoists are rated ANSI/ASME H4 (unless noted) and meet ANSI/ASME B30.16.

Your hoist will run inefficiently, or not at all, if it is operating on low voltage. Low-voltage conditions occur when using power cords with small conductors, or when the distance from the power source to the hoist is 100 feet or more.

An upper limit switch regulates upward chain travel to prevent damage to the hoist; a lower limit switch prevents the chain from being released through the hoist during operation. Our hoists include a chain container (unless noted).

Note: Replacement parts for the electric chain hoists on pages 1463-1466, as well as parts for other hoist models, are available on page 1468.

CM Shopstar Compact Electric Chain Hoists

- Disc-style motor brake
- Maintenance-free gears
- Overload protection prevents hoists from running if the load exceeds capacity
- A stop on the end of the chain prevents it from being pulled completely through the hoist
- Hardened alloy steel chain
- Vinyl chain container is included with standard lifts, unless noted
- UL listed; ANSI/ASME H4 rated; meet ANSI/ASME B30.16
- Choose from 115 VAC, 60 Hz, single phase; 230 VAC, 60 Hz, three phase; and 460 VAC, 60 Hz, three phase
- For replacement parts, see page 1468

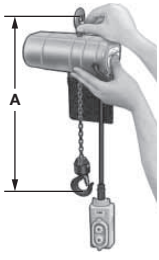

These economical hoists are small, lighter in weight, and easier to move between lift points than other electric chain hoists. They offer the shortest distance between hooks, making them ideal for lifting in small, tight spaces. Hoists feature an aluminum housing, forged steel rigid top hook with latch and swivel bottom hook with latch, all with an acid-resistant, powder-coated finish and a handheld push-button control. Control is in a NEMA 4 (indoor/outdoor) housing; control cord is 4 feet shorter than the lift. Power cord is 6 feet long.

To Order: Please specify voltage and lift. Standard lifts are 10, 15, and 20 feet; other lifts are available.

115 VAC hoists have a three-prong plug; ***230 VAC/460 VAC hoists*** do not have a plug (see pgs. 784-789 for plugs).

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	115 VAC Single-Phase Motor Amps	115 VAC Single-Phase Motor Contin. Run Time, Min./Hour	230 VAC/460 VAC Three-Phase Motor Amps @ 230 VAC	230 VAC/460 VAC Three-Phase Motor Amps @ 460 VAC	230 VAC/460 VAC Three-Phase Motor Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
300	16	1/6	11 1/16"	7/8"	2.7	30	0.6	0.9	30	23285T57	$1,188.23	$18.22
600	8	1/6	11 15/16"	7/8"	2.7	30	0.6	0.9	30	23285T58★	1,308.09	24.23

★ 15- and 20-ft. lifts have a fabric chain container.

CM Valustar Electric Chain Hoists

- Caliper-style motor brake
- Maintenance-free gears
- Overload protection prevents hoists from running if the load exceeds capacity
- A stop on the end of the chain prevents it from being pulled completely through the hoist
- Hardened alloy steel chain
- Fabric chain container is included with standard lifts
- ANSI/ASME H4 rated; meet ANSI/ASME B30.16
- Choose from 115 VAC, 60 Hz, single phase; 230 VAC, 60 Hz, three phase; and 460 VAC, 60 Hz, three phase
- For replacement parts, see page 1468

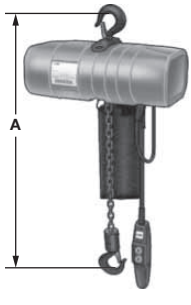

More rugged and heavy duty than the Shopstar, yet economical. Hoists feature an aluminum housing, forged steel rigid top hook with latch and swivel bottom hook with latch, all with an acid-resistant, powder-coated finish and a handheld push-button control. Control is in a NEMA 4 (indoor/outdoor) housing; control cord is 4 feet shorter than the lift. Power cord is 5 feet long and does not include a plug (see pages 784-789 for plugs).

To Order: Please specify voltage and lift. Standard lifts are 10, 15, and 20 feet; other lifts are available.

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	115 VAC Single-Phase Motor Amps	115 VAC Single-Phase Motor Contin. Run Time, Min./Hour	230 VAC/460 VAC Three-Phase Motor Amps @ 230 VAC	230 VAC/460 VAC Three-Phase Motor Amps @ 460 VAC	230 VAC/460 VAC Three-Phase Motor Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
550	16	1/4	14 1/4"	1"	5.7	35	1.6	0.81	51	9477T1	$1,566.88	$18.42
1,100	16	1/2	14 1/4"	1"	10.5	39	1.7	0.85	37	9477T2	1,863.22	18.42
2,200	8	1/2	17 7/8"	1 1/8"	10.5	39	1.7	0.85	37	9477T3	2,029.89	31.52
2,200	16	1	15 9/16"	1 1/8"	12.3	35	3.0	1.5	34	9477T4	2,142.76	31.52
4,400	8	1	22 1/2"	1 5/16"	12.3	35	3.0	1.5	34	9477T5	2,623.34	39.60

Budgit Dual-Brake Electric Chain Hoists

- Disc-style motor brake/mechanical load brake
- Gears are enclosed in an oil bath
- Overload protection prevents hoists from running if the load exceeds capacity
- Upper and lower limit switches
- Hardened alloy steel chain
- Plastic chain container comes with standard lifts, unless noted
- ANSI/ASME H4 rated; meet ANSI/ASME B30.16
- Choose from 115 VAC, 60 Hz, single phase; 230 VAC, 60 Hz, single phase; 230 VAC, 60 Hz, three phase; and 460 VAC, 60 Hz, three phase
- For replacement parts, see page 1468

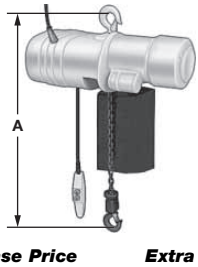

Get the added protection of two brakes—a disc-style motor brake, plus a mechanical brake. Hoists have an aluminum housing with a painted finish; a forged steel swivel top hook with latch and painted finish; a plain-finish forged steel swivel bottom hook with latch; and a handheld push-button control. Control is in a NEMA 4X (corrosion-resistant) housing; control cord is 4 feet shorter than the lift. Power cord is 3 feet long and does not include a plug (see pages 784-789 for plugs).

To Order: Please specify voltage and lift. Standard lifts are 10, 15, and 20 feet; other lifts are available.

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	Contin. Run Time, Min./Hour	115 VAC/230 VAC Single-Phase Motor Amps @ 115 VAC	115 VAC/230 VAC Single-Phase Motor Amps @ 230 VAC	230 VAC/460 VAC Three-Phase Motor Amps @ 230 VAC	230 VAC/460 VAC Three-Phase Motor Amps @ 460 VAC		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
550	16	1/4	15 5/8"	1 1/4"	30	4.36	2.18	1.1	0.55	3319T11	$1,832.45	$13.42
1,100	16	1/2	15 5/8"	1 1/4"	30	6.3	3.15	2	1.0	3319T12	2,073.35	13.42
2,200	8	1/2	15 5/8"	1 1/4"	30	6.3	3.15	2	1.0	3319T13	2,172.54	22.57
2,200	16	1	15 5/8"	1 1/4"	30	11.2	5.6	3	1.5	3319T14	2,273.79	22.57
4,400	8	1	21 7/16"	1 3/8"	30	11.2	5.6	3	1.5	3319T15	2,714.61	40.39
4,400	16	2 1/2	21 7/16"	1 3/8"	30	—	—	6.8	3.4	3319T16	3,040.51	40.39
6,600	5	1	24"	1 1/2"	30	11.2	5.6	3	1.5	3319T17♦	3,352.04	60.25
6,600	10	2 1/2	24"	1 1/2"	30	—	—	6.8	3.4	3319T18♦	3,706.91	60.25

♦ 20-ft. lifts do not include a chain container.

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

For information about electric chain hoists, see page 1463. For replacement parts, see page 1468.

CM Lodestar Electric Chain Hoists

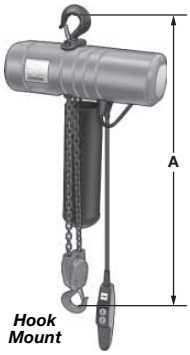

Hook Mount

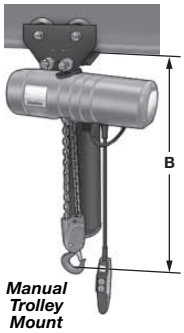

Manual Trolley Mount

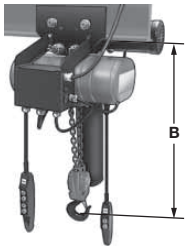

Motorized Trolley Mount

- Disc-style motor brake
- Maintenance-free gears
- Overload protection prevents hoists from running if the load exceeds capacity
- Adjustable upper and lower limit switches
- Hardened alloy steel chain
- Chain container is included with standard lifts (unless noted)
- ANSI/ASME H4 rated (unless noted); meet ANSI/ASME B30.16
- Choose from hook, manual trolley, and motorized trolley mounts
- Choose from 115 VAC, 60 Hz, single phase; 230 VAC, 60 Hz, three phase; and 460 VAC, 60 Hz, three phase (unless noted)
- For replacement parts, see page 1468

Known for their reliability and long service, these hoists offer the broadest range of capacities and lifting speeds. Hoists have an aluminum housing with an acid-resistant, powder-coated finish; a powder-coated forged steel swivel bottom hook with latch; and a handheld push-button control. Control is in a NEMA 4 (indoor/outdoor) housing; control cord is 4 feet shorter than the lift. Power cord is 15 feet long and does not include a plug (see pages 784-789 for plugs). Chain container for 10-, 15-, and 20-ft. lifts is fabric; chain container for 25-, 30-, 40-, and 50-ft. lifts is steel.

To Order: Please specify voltage and lift. Standard lifts are 10, 15, 20, 25, 30, 40, and 50 feet; other lifts are available.

Hook mount have a forged steel rigid top hook with latch and an acid-resistant powder-coated finish.

Trolley mount have a steel trolley with a powder-coated finish. Trolley fits on tapered or wide (flat) flange I-beams.

Motorized trolleys have a 1/4-hp motor and travel 75 fpm. A handheld push-button control is included.

Hook Mount

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	115 VAC Amps	115 VAC Contin. Run Time, Min./Hour	230 VAC/460 VAC Amps @ 230 VAC	230 VAC/460 VAC Amps @ 460 VAC	230 VAC/460 VAC Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
275	32	1/4	16 1/4"	1"	7	35	1.66	0.7	51	3316T811	$1,842.96	$18.42
275	60	1/2	16 1/4"	1"	8.8	39	2.22	1.18	37	3316T812	1,997.79	18.42
550	16	1/4	16 1/4"	1"	7	35	1.66	0.7	51	3316T813	2,072.21	18.42
550	32	1/2	16 1/4"	1"	8.8	39	2.22	1.18	37	3316T814	2,178.86	18.42
1,100	8	1/4	19 5/8"	1 1/8"	7	35	1.66	0.7	51	3316T815	2,341.87	31.52
1,100	16	1/2	16 1/4"	1"	8.8	39	2.22	1.18	37	3316T816	2,366.18	18.42
1,100	32	1	18 9/16"	1 1/8"	11.9	35	4.9	2.7	34	3316T817	2,716.25	22.46
2,200	8	1/2	19 5/8"	1 1/8"	8.8	39	2.22	1.18	37	3316T818	2,598.31	31.52
2,200	16	1	18 9/16"	1 1/8"	11.9	35	4.9	2.7	43	3316T819	2,654.85	22.46
4,400	8	1	24 1/8"	1 5/16"	11.9	35	4.9	2.7	34	3316T821■	3,258.37	39.60
4,400	16	2	24 1/8"	1 5/16"	—	—	9.1	5.7	23	3316T822■♦	4,155.85	39.60
6,600	5.5	1	29 9/16"	1 5/16"	11.9	35	4.9	2.7	43	3316T823♣	3,993.56	56.74
6,600	11	2	29 9/16"	1 5/16"	—	—	9.1	5.7	23	3316T824♦♣	4,774.38	56.74

Trolley Mount

Cap., lbs.	Lifting Speed, fpm	hp	(B) Min.	Hook Opening	Fits I-Beam Flange Width	115 VAC Amps	115 VAC Contin. Run Time, Min./Hour	230 VAC/460 VAC Amps @ 230 VAC	230 VAC/460 VAC Amps @ 460 VAC	230 VAC/460 VAC Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
Manual Trolley													
550	16	1/4	16 1/4"	1"	2 5/8"-5 5/8"	7	35	1.66	0.7	51	3316T827	$2,430.18	$18.42
550	32	1/2	16 1/4"	1"	2 5/8"-5 5/8"	8.8	39	2.22	1.18	37	3316T828	2,540.29	18.42
1,100	8	1/4	19 1/4"	1 1/8"	2 5/8"-5 5/8"	7	35	1.66	0.7	51	3316T829	2,671.23	31.52
1,100	16	1/2	16 1/4"	1"	2 5/8"-5 5/8"	8.8	39	2.22	1.18	37	3316T831	2,443.05	18.42
2,200	8	1/2	19 1/4"	1 1/8"	2 5/8"-5 5/8"	8.8	39	2.22	1.18	37	3316T833	3,059.25	31.52
2,200	16	1	18 1/4"	1 1/8"	2 5/8"-5 5/8"	11.9	35	4.9	2.7	34	3316T834	3,201.93	22.46
4,400	8	1	23 3/4"	1 5/16"	3 3/8"-6"	11.9	35	4.9	2.7	34	3316T835■	3,890.96	39.60
6,600	5.5	1	30 1/8"	1 5/16"	4" -5 5/8"	11.9	35	4.9	2.7	34	3316T837♣	4,950.19	56.74
Motorized Trolley													
1,100	16	1/2	16 3/4"	1"	3 3/8"-5 5/8"	12.2	39	3.5	1.8	37	3316T839	5,341.73	18.42
2,200	8	1/2	19 3/4"	1 1/8"	3 3/8"-5 5/8"	12.2	39	3.5	1.8	37	3316T841	5,508.05	31.52
4,400	8	1	23 3/4"	1 5/16"	3 3/8"-5 5/8"	15.3	35	6.2	3.4	34	3316T842■	6,236.48	39.60
6,600	5.5	1	30 1/8"	1 5/16"	4" -5 5/8"	15.3	35	6.2	3.4	34	3316T843♣	7,546.34	56.74

■ 40- and 50-ft. lift models do not include a chain container. ♦ Not available in 115 VAC; ANSI/ASME rating is H3.
♣ 25- to 50-ft. lift models do not include a chain container.

Powerlift Electric Chain Hoists

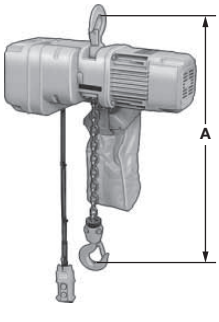

- Current-driven electromagnetic brake
- Gears are enclosed in an oil bath
- Overload protection prevents hoists from running if the load exceeds capacity
- Upper and lower limit switch
- Hardened nickel-plated steel chain
- Canvas chain container is included with standard lifts
- ANSI/ASME H4 rated; meet ANSI/ASME B30.16
- Choose from 230 VAC, 60 Hz, three phase and 460 VAC, 60 Hz, three phase
- For replacement parts, see page 1468

The premium choice for handling your most demanding jobs. Hoists have a totally-enclosed, fan-cooled motor, a heavy duty chain guide, and a coil-free brake for increased reliability. A sealed aluminum housing with a powder-coated finish permits use indoors, outdoors, and in harsh environments. For quicker maintenance, units have easily replaced parts and a flip-down motor cover so service can be done without removing the hoist from the job site. All have a forged steel rigid top hook with latch and powder-coated finish; a forged steel swivel bottom hook with latch and powder-coated finish; and a handheld push-button control. The control is in an IP65 housing; control cord is 4 feet shorter than the lift. Power cord is 15 feet long and does not include a plug (see pages 784-789 for plugs).

To Order: Please specify voltage and lift. Standard lifts are 10, 15, and 20 feet; other lifts are available.

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	230 VAC/460 VAC Three-Phase Motor Amps @ 230 VAC	Amps @ 460 VAC	Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
275	55	3/4	13 13/16"	1 1/8"	3.4	1.7	60	2672T51	$2,054.84	$11.45
550	36	3/4	13 13/16"	1 1/8"	3.4	1.7	60	2672T53	1,816.63	11.45
550	53	1.2	14 5/8"	1 1/8"	4.8	2.5	60	2672T52	2,430.35	15.57
1,100	15	3/4	14 5/8"	1 1/8"	3.4	1.7	60	2672T54	1,925.73	15.57
1,100	29	1.2	14 5/8"	1 1/8"	4.8	2.5	60	2672T55	2,150.31	15.57
2,200	14	1.2	16 7/8"	1 3/16"	4.8	2.5	60	2672T56	2,163.95	13.39
4,400	14	2.4	22 5/8"	1 1/2"	8.6	4.2	60	2672T58	2,894.60	19.33
6,600	17	4.7	32 7/8"	1 13/16"	16.4	7.9	60	2672T61	3,686.90	44.28

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

For information about electric chain hoists, see page 1463. For replacement parts, see page 1468.

Dual-Speed Electric Chain Hoists

- Disc-style motor brake
- Grease-lubricated gears
- Overload protection prevents hoists from running if the load exceeds capacity
- Adjustable upper and lower limit switches
- Hardened zinc-plated alloy steel chain
- Polymer chain container is included with standard lifts (unless noted)
- UL listed; ANSI/ASME H4 rated; meet ANSI/ASME B30.16
- Choose from hook and manual trolley mounts
- Choose from 230 VAC, 60 Hz, three phase and 460 VAC, 60 Hz, three phase
- For replacement parts, see page 1468

Hoists have two speeds—a high speed for quick lifting and lowering and a low speed for precise positioning. They also have a multiple disc brake design that significantly reduces wear and extends brake life. Hoists have an aluminum housing with a painted finish; a zinc-plated forged steel swivel bottom hook with latch; and a handheld push-button control. Control is in a NEMA 4X (corrosion-resistant) housing; control cord is 4 feet shorter than the lift. Power cord is 15 feet long and does not include a plug (see pages 784-789 for plugs).

To Order: Please specify lift and voltage. Standard lifts are 10, 15, and 20 feet; other lifts are available.

Hook mount have a forged steel swivel top hook with latch and a painted finish. ***Manual trolley mount*** have a steel trolley with a painted finish. Trolleys fit on tapered or wide (flat) flange I-beams.

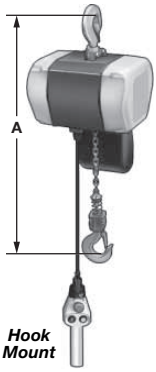

Hook Mount

Hook Mount

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	230 VAC/460 VAC Three-Phase Motor: Amps @ 230 VAC	Amps @ 460 VAC	Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
550	8/32	1.0	17 1/8″	1 1/8″	3.5	1.8	30	3329T11	$2,379.90	$14.81
1,100	8/32	1.0	17 1/8″	1 1/8″	3.5	1.8	30	3329T13	2,631.43	14.81
2,200	4/16	1.0	18 3/4″	1 1/8″	3.5	1.8	30	3329T14	2,947.02	25.02
2,200	8/32	2.1	21 25/32″	1 3/8″	8	4	30	3329T15	3,758.07	17.49
4,400	4/16	2.1	24 11/16″	1 3/8″	8	4	30	3329T16★	4,093.47	28.32

Manual Trolley Mount

Cap., lbs.	Lifting Speed, fpm	hp	(B) Min.	Hook Opening	Fits I-Beam Flange Width	230 VAC/460 VAC Three-Phase Motor: Amps @ 230 VAC	Amps @ 460 VAC	Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
550	8/32	1.0	17 3/8″	1 1/8″	2 13/16″-8″	3.5	1.8	30	3329T21	$2,483.22	$14.81
1,100	8/32	1.0	17 3/8″	1 1/8″	2 13/16″-8″	3.5	1.8	30	3329T23	2,763.18	14.81
2,200	4/16	1.0	18 15/16″	1 1/8″	3 1/16″ -8″	3.5	1.8	30	3329T24	3,137.45	25.02
4,400	4/16	2.1	24 13/32″	1 1/4″	3 11/32″-8″	8	4	30	3329T26★	4,301.36	28.32

★ For hoist with 20-ft. lift, chain container is steel with a polyurethane finish.

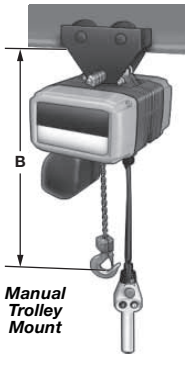

Manual Trolley Mount

Varispeed Electric Chain Hoists

- Disc-style motor brake
- Maintenance-free gears
- Overload protection prevents hoists from running if the load exceeds capacity
- Adjustable upper and lower limit switches
- Hardened alloy steel chain
- Fabric chain container is included with standard lifts
- ANSI/ASME H4 rated; meet ANSI/ASME B30.16
- Choose from hook and manual trolley mount
- Choose from 230 VAC, 60 Hz, three phase and 460 VAC, 60 Hz, three phase
- For replacement parts, see page 1468

Ideal in applications where positioning is critical, these hoists allow you to change or hold the speed at any time during operation. Hoists have an aluminum housing with an acid-resistant, powder-coated finish; a powder-coated forged steel swivel bottom hook with latch; and a handheld push-button control. Control is in a NEMA 4 (indoor/outdoor) housing; control cord is 4 feet shorter than the lift. Power cord is 15 feet long and does not include a plug (see pages 784-789 for plugs). Hoists are for indoor use only.

To Order: Please specify lift and voltage. Standard lifts are 10, 15, and 20 feet; other lifts are available.

Hook mount have a forged steel rigid top hook with latch and an acid-resistant, powder-coated finish.

Manual trolley mount have a steel trolley with a powder-coated finish. Trolleys fit on tapered or wide (flat) flange I-beams.

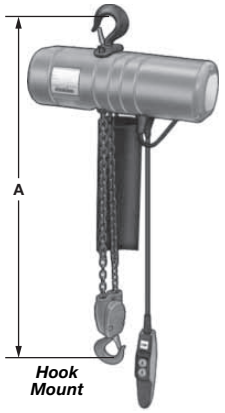

Hook Mount

Hook Mount

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	230 VAC/460 VAC Three-Phase Motor: Amps @ 230 VAC	Amps @ 460 VAC	Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
550	2.67-16	1/4	16 1/4″	1″	1.8	0.9	30	2917T31	$2,533.81	$18.42
1,100	2.67-16	1/2	16 1/4″	1″	1.9	0.81	30	2917T32	2,851.12	18.42
2,200	2.67-16	1	18 9/16″	1 1/8″	4.4	2.2	30	2917T33	3,456.30	31.52
4,400	1.33- 8	1	24 1/8″	1 5/16″	4.4	2.2	30	2917T34	4,038.51	39.60

Manual Trolley Mount

Cap., lbs.	Lifting Speed, fpm	hp	(B) Min.	Hook Opening	Fits I-Beam Flange Width	230 VAC/460 VAC Three-Phase Motor: Amps @ 230 VAC	Amps @ 460 VAC	Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
550	2.67-16	1/4	16 3/8″	1″	2 5/8″-5 5/8″	1.8	0.9	30	2917T41	$2,826.27	$18.42
1,100	2.67-16	1/2	16 3/8″	1″	2 5/8″-5 5/8″	1.9	0.81	30	2917T42	3,136.44	18.42
2,200	2.67-16	1	18 1/8″	1 1/8″	2 5/8″-5 5/8″	4.4	2.2	30	2917T43	3,741.44	18.42
4,400	1.33- 8	1	23 1/8″	1 5/16″	3 3/8″-6″	4.4	2.2	30	2917T44	4,586.57	39.60

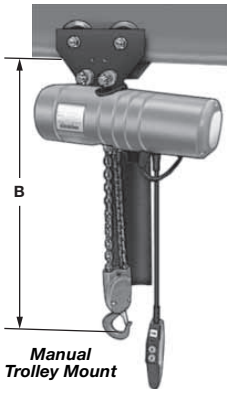

Manual Trolley Mount

Warning! Never exceed capacities. Never use to lift people or items over people.

For information about electric chain hoists, see page 1463. For replacement parts, see page 1468.

Weatherstop Electric Chain Hoists

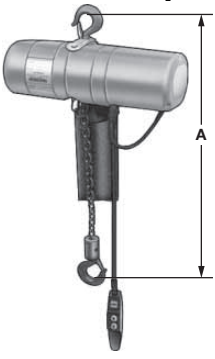

- Disc-style motor brake
- Maintenance-free gears
- Overload protection prevents hoists from running if the load exceeds capacity
- Adjustable upper and lower limit switches
- Hardened zinc-plated alloy steel chain
- Fabric chain container is included with standard lifts
- ANSI/ASME H4 rated; meet ANSI/ASME B30.16
- Choose from 115 VAC, 60 Hz, single phase; 230 VAC, 60 Hz, three phase; and 460 VAC, 60 Hz, three phase
- For replacement parts, see page 1468

A sealed, weatherproof aluminum housing with an acid-resistant finish keeps out moisture and humidity, making these hoists the choice for outdoor and washdown applications. Hoists have a forged steel rigid top hook with latch and acid-resistant finish; a plain-finish forged steel swivel bottom hook with latch; and a handheld push-button control. Control is in a NEMA 4 (indoor/outdoor) housing; control cord is 4 feet shorter than the lift. Power cord is 15 feet long and does not include a plug (see pages 784-789 for plugs).

To Order: Please specify voltage and lift. Standard lifts are 10, 15, and 20 feet; other lifts are available.

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	115 VAC Single-Phase Motor Amps	115 VAC Single-Phase Motor Contin. Run Time, Min./Hour	230 VAC/460 VAC Three-Phase Motor Amps @ 230 VAC	230 VAC/460 VAC Three-Phase Motor Amps @ 460 VAC	230 VAC/460 VAC Three-Phase Motor Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
550	16	1/4	16 1/4″	1″	7	35	1.7	0.7	51	31885T31	$2,177.16	$18.42
1,100	16	1/2	16 1/4″	1″	8.8	39	2.2	1.2	37	31885T32	2,485.25	18.42
2,200	8	1/2	19 5/8″	1 1/8″	8.8	39	2.2	1.2	37	31885T33	2,661.18	31.52

Cleanchoice Electric Chain Hoists

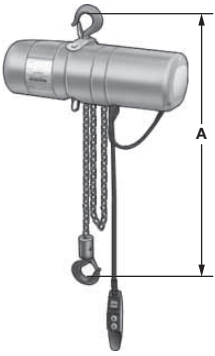

- Disc-style motor brake
- Maintenance-free gears
- Overload protection prevents hoists from running if the load exceeds capacity
- Adjustable upper and lower limit switches
- Type 347 stainless steel chain
- Chain container is not included
- ANSI/ASME H4 rated; meet ANSI/ASME B30.16
- Choose from 115 VAC, 60 Hz, single phase; 230 VAC, 60 Hz, three phase; and 460 VAC, 60 Hz, three phase
- For replacement parts, see page 1468

For use in areas where cleanliness is required, these hoists have a sealed, unpainted aluminum housing and stainless steel chain and load hook to reduce corrosion and the chance of contamination. Hoists have a plain steel rigid top hook with latch; a Type 347 stainless steel swivel bottom hook with latch; and a handheld push-button control. Control is in a NEMA 4 (indoor/outdoor) housing; control cord is 4 feet shorter than the lift. Power cord is 15 feet long and does not include a plug (see pages 784-789 for plugs).

To Order: Please specify voltage and lift. Standard lifts are 10, 15, and 20 feet; other lifts are available.

Cap., lbs.	Lifting Speed, fpm	hp	(A) Min.	Hook Opening	115 VAC Single-Phase Motor Amps	115 VAC Single-Phase Motor Contin. Run Time, Min./Hour	230 VAC/460 VAC Three-Phase Motor Amps @ 230 VAC	230 VAC/460 VAC Three-Phase Motor Amps @ 460 VAC	230 VAC/460 VAC Three-Phase Motor Contin. Run Time, Min./Hour		Base Price with 10-ft. Lift Each	Extra Lift Per Ft.
550	16	1/4	16 1/4″	1″	7	35	1.7	0.7	51	24555T81	$3,102.79	$49.12
1,100	16	1/2	16 1/4″	1″	8.8	39	2.2	1.2	37	24555T82	3,410.89	49.12
2,200	8	1/2	19 5/8″	1 1/8″	8.8	39	2.2	1.2	37	24555T83	3,833.02	93.64

About Air-Powered Chain Hoists

Unlike electric hoists, which have restricted run times, air-powered hoists have a cool-running motor suitable for continuous operation. They have either a pull control or lever that regulates the airflow to adjust the lifting speed. Air brakes automatically engage to secure the load when the motor is shut down. Some models also have a mechanical load brake that holds the load and provides precise movement and spotting. Meet ANSI/ASME B30.16.

Some hoists have mufflers to reduce the sound level during operation as well as mechanical chain stops to prevent damage by stopping the chain at a specified point during upward travel. Chain stops also keep the chain from being released through the hoist during operation.

CM ShopAir Air-Powered Chain Hoists

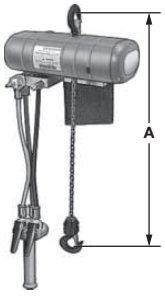

- Disc-style air brake
- Overload protection prevents hoists from running if the load exceeds capacity
- Lower mechanical stop
- Hardened alloy steel chain
- Vinyl chain container is included
- Meet ANSI/ASME B30.16

Compact and lightweight, these hoists are ideal for workstation applications. Hoists have an aluminum housing with an acid-resistant, powder-coated finish; a forged steel rigid top hook with latch; a forged steel swivel bottom hook with latch; and a handheld lever control with 6 ft. long hoses. A filter-regulator-lubricator is required to lubricate the gears and clean and regulate the incoming air (see pages 977-982).

Cap., lbs.	Lift, ft.	Lifting Speed, fpm	(A) Min.	Inlet Size, NPT	cfm @ 90 psi	Hook Opening		
300	10	0-31	10 7/8″	3/8″	34	1″	2340T41	$1,648.34
300	15	0-31	10 7/8″	3/8″	34	1″	2340T411	1,725.03
300	20	0-31	10 7/8″	3/8″	34	1″	2340T412	1,799.91
500	10	0-21	10 7/8″	3/8″	34	1″	2340T42	1,777.29
600	10	0-16	10 7/8″	3/8″	34	1″	2340T43	1,835.00
1,000	10	0-11	11 15/16″	3/8″	34	1″	2340T44	1,964.85

Warning! Never exceed capacities. Never use to lift people or items over people.

For information about air-powered chain hoists, see page 1466.

For diagrams of replacement parts for these hoists, go to mcmaster.com and search for **3320TAC** for Budgit and **21955TAC** for Ingersoll-Rand.

Budgit Air-Powered Chain Hoists

- *2200 Series:* Shoe-style air brake
  6000 Series: Mechanical load brake
- *6000 Series:* Overload protection prevents hoists from running if the load exceeds capacity
- Upper and lower mechanical stops
- Muffler reduces operating noise
- Hardened alloy steel chain (unless noted)
- Metal chain container is included with standard lifts (unless noted)
- Meet ANSI/ASME B30.16

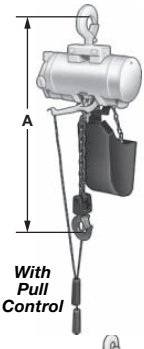

With Pull Control

Hoists have an aluminum housing with painted finish; a forged steel swivel top hook with latch and painted finish (unless noted); and a plain-finish forged steel swivel bottom hook with latch (unless noted). Control air hoses are 4 feet shorter than the lift. A filter-regulator-lubricator is required to lubricate the gears and clean and regulate the incoming air (see pages 977-982).

To Order: Please specify lift. Standard lifts are 10, 15, and 20 feet; other lifts are available.

Also Available: Replacement parts. Please ask for 3320T951 and specify part required, hoist capacity, lifting speed, lift length, and if hoist is spark resistant.

2200 Series— Use less air than the 6000 Series. ***6000 Series—*** Have a larger body and motor for higher capacities.

Spark resistant hoists have bronze alloy hooks with stainless steel latches and chrome-nickel stainless steel chain. Chain container not included. **Also Available:** Spark-resistant chain container. Please ask for 3320T777 and specify capacity.

Pull controls have up and down control cords for adjusting speed. ***Lever*** controls have a handheld control.

Cap., lbs.	Lifting Speed, fpm	(A) Min.	Inlet Size, NPT	cfm @ 90 psi	Hook Opening	PULL CONTROL Base Price with 10-ft. Lift	PULL CONTROL Extra Lift Each	PULL CONTROL Extra Lift Per Ft.	LEVER CONTROL Base Price with 10-ft. Lift	LEVER CONTROL Extra Lift Each	LEVER CONTROL Extra Lift Per Ft.
Budgit 2200											
550	65	15¼″	⅜″	48	1⅛″	3320T1	$2,680.39	$14.86	3320T3	$3,182.73	$20.96
1,100	45	15¼″	⅜″	48	1⅛″	3320T2	2,776.24	14.86	3320T4	3,293.55	20.97
2,200	23	18″	⅜″	48	1¼″	—	—	—	3320T5	4,176.27	35.83
Spark Resistant 2200											
825	60	15¼″	⅜″	48	1⅛″	3320T13	3,506.48	62.34	—	—	—
Budgit 6000											
2,200	30	16 9/16″	¾″	80	1¼″	—	—	—	3320T6★	4,680.11	28.96
4,400	15	22¼″	¾″	80	1⅜″	—	—	—	3320T7★	5,442.05	47.84
Spark Resistant 6000											
1,100	16	16¾″	¾″	80	1¼″	—	—	—	3320T17	5,591.90	93.29
2,200	8	22⅞″	¾″	80	1⅜″	—	—	—	3320T18	6,432.16	178.33

★ Includes a plastic chain container.

With Lever Control

Ingersoll-Rand Air-Powered Chain Hoists

- Disc-style air brake
- Upper and lower mechanical stops
- Muffler reduces operating noise
- Hardened zinc-plated steel chain
- Standard lifts include steel chain container
- Meet ANSI/ASME B30.16

Hook Mount with Pull Control

Hoists are designed for high-production and extreme duty applications. All have an aluminum housing with a painted finish and a forged steel swivel bottom hook with a latch. Controls are 4 feet shorter than lift. A filter-regulator-lubricator is required to lubricate the gears and clean and regulate the incoming air (see pages 977-982).

To Order: Please specify lift. Standard lifts are 10, 15, and 20 feet; other lifts are available.

MLK Hoists— For high-speed applications. ***HLK Hoists—*** For more demanding applications.

Hook mount have a forged steel swivel top hook with a latch. ***Manual trolley mount*** have a painted steel trolley. Trolleys fit on tapered and wide (flat) flange beams. ***Pull*** controls have up and down control chains. ***Lever*** controls have a specially designed handle to guard against accidental operation. They also have adjustment screws to limit the max. speed for each lift.

Cap., lbs.	Lifting Speed, fpm	(A) Min.	(B) Min.	Inlet Size, NPT	cfm @ 90 psi	Fits I-Beam Flange Wd.	Hook Opening	PULL CONTROL Base Price with 10-ft. Lift	PULL CONTROL Extra Lift Each	PULL CONTROL Extra Lift Per Ft.	LEVER CONTROL Base Price with 10-ft. Lift	LEVER CONTROL Extra Lift Each	LEVER CONTROL Extra Lift Per Ft.
MLK Hoists													
Hook Mount													
550	0-101	20″	—	½″	74	—	1 1/32″	21955T11♣	$3,294.05	$26.15	21955T14	$3,720.92	$21.56
1,100	0- 55	20″	—	½″	74	—	1 1/32″	21955T12♣	3,369.67	26.15	21955T15	3,806.34	21.56
2,200	0- 28	18″	—	½″	74	—	1 1/32″	21955T13♣	4,095.99	26.15	21955T16	4,526.07	26.15
Manual Trolley Mount													
550	0-101	—	18½″	½″	109	2⅔″-6″	1 1/32″	—	—	—	21955T64	3,875.73	22.15
1,100	0- 55	—	18½″	½″	109	2⅔″-6″	1 1/32″	—	—	—	21955T65	3,965.32	22.15
2,200	0- 28	—	18½″	½″	109	2⅔″-6″	1 1/32″	—	—	—	21955T66	5,026.44	31.20
HLK Hoists													
Hook Mount													
2,200	0- 26	18½″	—	½″	74	—	1 3/16″	—	—	—	21955T21	5,597.60	25.38
4,400	0- 13	23″	—	½″	74	—	1⅜″	—	—	—	21955T23	6,549.15	50.75
Manual Trolley Mount													
2,200	0- 26	—	18⅛″	½″	109	2⅔″-6″	1 3/16″	—	—	—	21955T74	6,045.22	31.48
4,400	0- 13	—	21⅝″	½″	109	3¼″-6″	1⅜″	—	—	—	21955T75	6,996.77	49.59

♣ 70 cfm @ 90 psi.

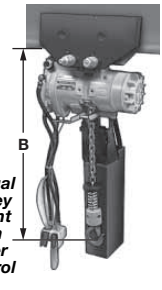

Manual Trolley Mount with Lever Control

Bridge Crane Motorized Trolley-Mounted Electric Wire Rope Hoists

- Disc-style sealed motor brake
- Maintenance-free gears
- Overload protection prevents hoists from running if the load exceeds cap.
- Adjustable upper and lower mechanical stops
- 8×17, ¼″ dia. galvanized wire rope
- Rated ANSI/ASME H4, UL recognized, CSA certified
- Choose from 230 VAC, 60 Hz, 3-phase and 460 VAC, 60 Hz, 3-phase

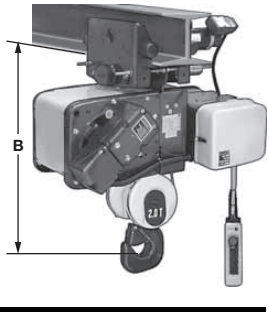

Designed for permanent installation on a bridge crane, these hoists are rugged, yet run quieter than comparable electric chain hoists. Lift is 19′8″; trolley speed is 65 fpm. Hoists have a two-speed three-phase motor, a steel housing with a painted finish, a forged steel swivel bottom hook with latch, and a handheld push-button control that controls both the hoist and trolley. Control is in an IP55/NEMA 4 (indoor/outdoor) housing; control cord is 18′8″ long. Adjustable trolleys fit I-beam flange widths 3 5/32″ to 7⅞″, 7 29/32″ to 13″, or 13 1/32″ to 17 23/32″.

To Order: Please specify voltage and I-beam flange width range.

Cap., lbs.	Lifting Speed, fpm	Hoist Motor hp	Trolley Motor hp	(B) Min.	Hook Opening	230 VAC/460 VAC Three-Phase Motor Amps @ 230 VAC	Amps @ 460 VAC	Contin. Run Time, Min./Hour		
2,000	3/20	3	¾	27″	1¾″	10	6	6	3655T1	$5,928.00
4,000	3/20	3	¾	27″	1¾″	11	6.5	6	3655T2	5,928.00
6,000	3/20	5.8	¾	27″	1¾″	18.3	10	6	3655T3	7,524.00

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

Replacement Parts for Electric Chain Hoists

Minimize your downtime—original manufacturer parts keep your hoist in operation.

To Order: Replacement chain, please specify 10-, 15-, or 20-ft. lift.

Also Available: Other replacement parts. Please specify the manufacturer part number, hoist capacity, and voltage.

For diagrams of replacement parts for some of the electric chain hoists, go to mcmaster.com and search for the document listed. CM Shopstar: **23285TAC**; CM Valustar: **9477TAC**; Budgit: **3319TAC**; and CM Lodestar and Varispeed: **3316TAC**.

Cap., lbs.	Lifting Speed, fpm	Replacement Chain Base Price with 10-ft. Lift Each	Replacement Chain Extra Lift Per Ft.	Top Hook with Latch Each	Bottom Hook with Latch Each	Hook Latch Kit Each	Push-Button Control Each	Chain Container Each
CM Shopstar								
300	16	23285T16 $137.39	$13.73	23285T721 $30.37	23285T726 $28.59	23285T727 $5.28	3304T62♦ $119.81	23285T13 $50.61
600	8	23285T17 259.04	22.50	23285T721 30.37	23285T726 28.59	23285T727 5.28	3304T62♦ 119.81	23285T15 63.93
CM Valustar								
550	16	3316T154 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T145 13.11	3304T62 119.81	3314T511 66.30
1,100	16	3316T154 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T145 13.11	3304T62 119.81	3314T511 66.30
2,200	8	3316T178 396.66	30.13	3304T312 95.80	3304T65 73.14	3324T146 10.75	3304T62 119.81	3314T512 73.15
2,200	16	3316T182 245.78	21.47	3304T313 80.80	3304T64 90.15	3324T146 10.75	3304T62 119.81	3314T512 73.15
4,400	8	3316T183 474.67	37.85	3304T314 125.80	3304T66 93.28	3324T147 13.30	3304T62 119.81	3314T517 101.19
Budgit								
550	16	3319T39 140.43	17.53	3320T411 108.63	3320T381 266.50	3320T291★ 18.57	3319T212 118.64	3280T12 121.25
1,100	16	3319T39 140.43	17.53	3320T411 108.63	3320T383 258.33	3320T291★ 18.57	3319T212 118.64	3280T12 121.25
2,200	8, 16	3319T391 161.90	29.95	3320T411 108.63	3320T416 289.43	3320T291★ 18.57	3319T212 118.64	3280T12 121.25
4,400	8, 16	3319T392 287.90	39.99	3319T193 176.58	3319T198 132.58	3319T194 18.57	3319T212 118.64	3280T24 181.36
6,600	5, 10	3319T393 415.25	56.61	3319T2 215.16	3319T203 197.37	3319T201 15.92	3319T212 118.64	3280T25 205.20
CM Lodestar								
275	32, 60	3316T62 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T145 13.11	3304T62 119.81	3314T511 66.30
550	16, 32	3316T62 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T145 13.11	3304T62 119.81	3314T511 66.30
1,100	8	3316T63 396.66	30.13	3304T312 95.80	3304T65 73.14	3324T146 10.75	3304T62 119.81	3314T512 73.15
1,100	16	3316T62 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T145 13.11	3304T62 119.81	3314T511 66.30
1,100	32	3316T64 245.78	21.47	3304T313 80.80	3304T64 90.15	3324T146 10.75	3304T62 119.81	3314T512 73.15
2,200	8	3316T63 396.66	30.13	3304T312 95.80	3304T65 73.14	3324T146 10.75	3304T62 119.81	3314T512 73.15
2,200	16	3316T64 245.78	21.47	3304T313 80.80	3304T64 90.15	3324T146 10.75	3304T62 119.81	3314T512 73.15
4,400	8, 16	3316T65 474.67	37.85	3304T314 125.80	3304T66 93.28	3324T147 13.30	3304T62 119.81	3314T517 101.19
6,600	5.5, 11	3316T67 705.61	55.04	3304T315 354.76	3304T27 199.01	3324T147 13.30	3304T62 119.81	3314T513 179.05
Powerlift								
275	55, 57	2672T71 196.19	11.45	2672T81 61.51	2672T31 140.74	2672T41 9.71	2672T45 75.56	2672T91 101.02
550	36, 39	2672T71 196.19	11.45	2672T82 61.51	2672T32 140.74	2672T41 9.71	2672T45 75.56	2672T91 101.02
550	53, 60	2672T72 198.29	15.57	2672T81 61.51	2672T33 157.75	2672T41 9.71	2672T45 75.56	2672T93 101.02
1,100	15	2672T72 198.29	15.57	2672T81 61.51	2672T34 281.59	2672T41 9.71	2672T45 75.56	2672T94 101.02
1,100	29, 30	2672T72 198.29	15.57	2672T82 61.51	2672T34 281.59	2672T41 9.71	2672T45 75.56	2672T95 101.02
2,200	14, 16	2672T73 258.35	13.39	2672T84 61.51	2672T35 180.62	2672T42 7.74	2672T45 75.56	2672T96 101.02
4,400	14	2672T74 389.93	19.33	2672T85 98.71	2672T36 229.20	2672T43 12.95	2672T45 75.56	2672T97 165.66
6,600	16, 17	2672T75 663.03	44.28	2672T86 117.51	2672T37 231.82	2672T44 25.17	2672T45 75.56	2672T98 164.82
Dual Speed								
550	8/32	3329T51 118.06	13.07	3329T55 105.67	3329T55 105.67	3329T57 14.85	3329T59▲ 366.04	3329T65 90.66
1,100	8/32	3329T51 118.06	13.07	3329T55 105.67	3329T55 105.67	3329T57 14.85	3329T59▲ 366.04	3329T65 90.66
2,200	4/16	3329T62 135.09	13.96	3329T55 105.67	3329T55 105.67	3329T57 14.85	3329T59▲ 366.04	3329T65 90.66
2,200	8/32	3329T52 150.81	15.08	3329T64 193.89	3329T64 193.89	3329T58 18.80	3329T59▲ 366.04	3329T66 73.45
4,400	4/16	3329T63 171.93	16.66	3329T64 193.89	3329T64 193.89	3329T58 18.80	3329T59▲ 366.04	3329T67 410.15
Varispeed								
550	16	3316T154 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T145 13.11	3304T62 119.81	3314T511 66.30
1,100	16	3316T154 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T146 10.75	3304T62 119.81	3314T511 66.30
2,200	16	3316T182 245.78	21.47	3304T313 80.80	3304T64 90.15	3324T146 10.75	3304T62 119.81	3314T512 73.15
4,400	8	3316T183 474.67	37.85	3304T314 125.80	3304T66 93.28	3324T147 13.30	3304T62 119.81	3314T517 101.19
Weatherstop								
550	16	3316T62 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T145 13.11	3304T62 119.81	3314T511 66.30
1,100	16	3316T62 204.13	17.35	3304T311 57.72	3304T63 66.15	3324T145 13.11	3304T62 119.81	3314T511 66.30
2,200	8	3316T63 396.66	30.13	3304T312 95.80	3304T65 73.14	3324T146 10.75	3304T62 119.81	3314T512 73.15
Cleanchoice								
550	16	24555T41 583.18	47.26	24555T43 53.06	24555T45 873.78	24555T47 7.02	3304T62 119.81	24555T48 644.12
1,100	16	24555T41 583.18	47.26	24555T43 53.06	24555T45 873.78	24555T47 7.02	3304T62 119.81	24555T48 644.12
2,200	8	24555T42 1,101.56	49.45	24555T44 86.56	24555T46 873.78	24555T57 12.04	3304T62 119.81	24555T49 644.12
Coffing ELC								
250	32	2726T11 216.00	18.00	2726T23 114.94	2726T24 189.49	2726T27 7.81	2726T28 186.09	2726T61 54.52
500	16, 32	2726T11 216.00	18.00	2726T23 114.94	2726T24 189.49	2726T27 7.81	2726T28 186.09	2726T61 54.52
1,000	16, 32	2726T11 216.00	18.00	2726T23 114.94	2726T24 189.49	2726T27 7.81	2726T28 186.09	2726T61 54.52
2,000	16	2726T12 501.82	21.83	2726T23 114.94	2726T25 189.49	2726T27 7.81	2726T28 186.09	2726T61 54.52
4,000	8	2726T12 501.82	21.83	2726T23 114.94	2726T26 420.56	2726T27 7.81	2726T28 186.09	2726T62 158.68
Coffing EC								
1,000	16	2726T11 216.00	18.00	2726T41 480.86	2726T24 189.49	2726T43 8.93	2726T28 186.09	2726T44 75.10
2,000	16	2726T12 501.82	21.83	2726T41 480.86	2726T25 189.49	2726T43 8.93	2726T28 186.09	2726T44 75.10
4,000	8	2726T12 501.82	21.83	2726T41 480.86	2726T42 516.60	2726T43 8.93	2726T28 186.09	2726T44 75.10
Coffing JLC								
250	32	2726T11 216.00	18.00	2726T51 113.58	2726T52 112.31	2726T54■ 6.76	2726T56 109.97	2726T63 52.09
500	16, 32	2726T11 216.00	18.00	2726T51 113.58	2726T52 112.31	2726T54■ 6.76	2726T56 109.97	2726T63 52.09
1,000	16, 32	2726T11 216.00	18.00	2726T51 113.58	2726T52 112.31	2726T54■ 6.76	2726T56 109.97	2726T63 52.09
2,000	16	2726T12 501.82	21.83	2726T51 113.58	2726T52 112.31	2726T54■ 6.76	2726T56 109.97	2726T63 52.09
4,000	8	2726T12 501.82	21.83	2726T51 113.58	2726T53 155.39	2726T55 6.77	2726T56 109.97	2726T64 147.77

♦ For 115 VAC, please order 23285T731. ★ Top hook only. For bottom hook latch kit, please order 3320T396.
▲ Please specify 10-, 15-, or 20-ft. lift. ■ Bottom hook only. For top hook latch kit, please order 2726T55.

Warning! *Never exceed capacities. Never use to lift people or items over people.*

About Trolleys

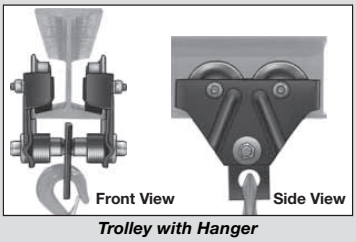

Trolley with Hanger

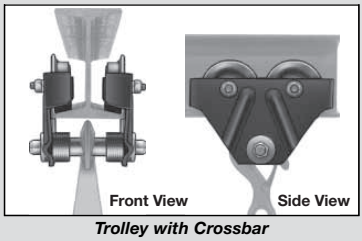

Trolley with Crossbar

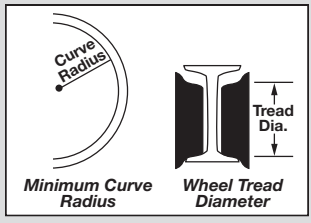

Before choosing a trolley, you'll need to know the height and flange width of the beam where you plan to mount the trolley. This way, you can be sure that the beam will accommodate the trolley's wheels and that the trolley will fit the beam's flange.

Designed especially for use with hook-mount hoists, our trolleys adjust to fit a range of beam flange widths. Plus, you don't have to slide them over the end—they can be taken apart for mounting anywhere along a beam.

Trolleys have either a hanger or a crossbar with a center groove where you attach the top hook of your hoist. The crossbar design is best suited for use where vertical space is limited.

All trolley wheels have a flange so they stay steady on the beam.

Minimum curve radius is the tightest curve along a beam that the trolley can freely navigate.

Wheel tread diameter is the part of the wheel that actually rests on the beam's flange.

Easy-Roll Manual Trolleys

- Cast iron wheels, unless noted
- Maintenance-free ball bearings
- Steel body

These trolleys are easy to roll. The body has wraparound bumpers to protect the wheels and to prevent the load from dropping if a wheel axle fails. The included spacing washers can be added and removed to fit the beam flange width. Use trolleys on tapered and wide (flat) flange beams.

CM 633 trolleys are known for their reliable service.

Premium offer quiet operation. They also have precision ball bearings for long life. *Style 2* has a 3/4″ dia. crossbar for hanging (no hanger). *Style 3* allows you to remove the hanger and use the crossbar for hanging if vertical space is limited.

Also Available: Replacement wheels for premium trolleys. Please ask for 3269T78 and specify trolley capacity.

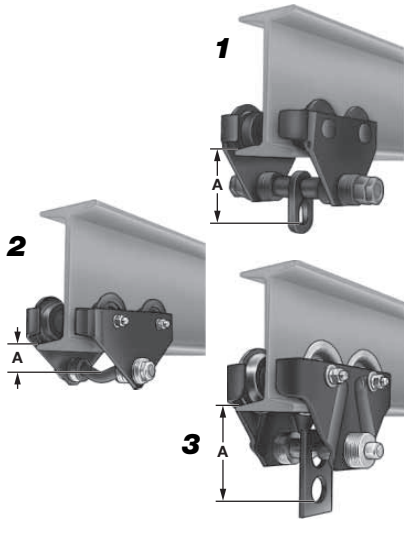

	Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A)	Min. Curve Radius	Wheel Tread Dia.	Hanger Hole Dia.		
CM 633									
1	1,000	2 1/2″ -5 5/8″	3″	4 3/32″	35″	2 9/32″	3 1/32″	9482T74	$162.50
1	2,000	3″ -8″	5″	5 1/16″	35″	3 15/32″	1 5/32″	9482T75	191.41
1	4,000	3 5/8″ -8″	6″	5 13/16″	59″	3 15/16″	1 5/8″	9482T76	319.01
1	6,000	4″ -8″	8″	7 7/16″	71″	5 1/8″	1 31/32″	9482T77	458.88
1	10,000	4 5/8″ -8″	10″	9 15/16″	94″	6 1/8″	2 9/16″	9482T78	715.40
Premium									
2	300	2 5/16″-4 5/8″	3″	2 1/8″	18″	2 1/4″	—	3269T51✓	137.27
3	1,000	2 5/8″ -4 5/8″	4″	5 1/32″	24″	3 1/8″	1 1/2″	3269T52	163.84
3	2,000	3″ -5 1/4″	5″	5 3/8″	36″	4″	1 1/2″	3269T53	219.12
3	4,000	3 5/16″-6″	6″	5 1/2″	48″	4 7/8″	1 1/2″	3269T54	324.76
3	6,000	4″ -8″	8″	7 1/4″	60″	4 1/4″	2 1/2″	3269T55	436.19
3	10,000	4 5/8″ -8″	10″	7 1/2″	60″	4 3/8″	2 1/2″	3269T56	680.26

✓ Has nylon wheels.

Extra-Stable Manual Trolleys

- Steel wheels
- Maintenance-free ball bearings
- Steel body

Two zinc-plated steel connecting bolts not only provide added stability and strength, but also allow trolleys to fit on a wider range of beam flange widths. The body has wraparound bumpers to protect the wheels and to prevent the load from dropping if a wheel axle fails. The included spacing washers can be added and removed to fit the beam flange width. Use trolleys on tapered and wide (flat) flange beams.

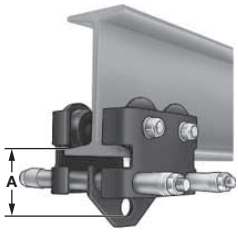

Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A)	Min. Curve Radius	Wheel Tread Dia.	Hanger Hole Dia.		
550	2″ -8 11/16″	4″	3 15/16″	27″	2 11/32″	1 3/16″	3267T61	$138.55
1,100	2″ -8 11/16″	4″	3 15/16″	27″	2 11/32″	1 3/16″	3267T62	141.98
2,200	2 7/32″-8 11/16″	5″	4 5/16″	36″	2 11/32″	1 3/8″	3267T63	165.85
4,400	2 7/32″-8 11/16″	6″	5 1/8″	45″	3 5/32″	1 7/8″	3267T64	271.03
6,600	3″ -8 11/16″	8″	6 3/16″	55″	4 13/32″	2 11/32″	3267T65	448.88

Brawny Manual Trolleys

- Cast iron or steel wheels
- Maintenance-free ball bearings
- Steel body

Constructed of heavy-gauge steel, these are some of the most rugged trolleys around. The body extends past the wheels to protect them from damage. The included spacing washers can be added and removed to fit the beam flange width. Use trolleys on tapered and wide (flat) flange beams (unless noted).

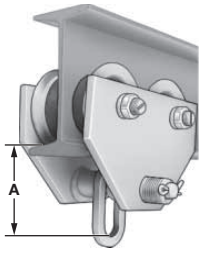

Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A)	Min. Curve Radius	Wheel Tread Dia.	Hanger Hole Dia.		
With Cast Iron Wheels								
2,000	3″ -5 5/8″	5″	5 3/4″	36″	4″	1 1/2″	3270T25	$332.35
4,000	3 1/4″-7″	6″	6 1/2″	36″	4″	1 1/2″	3270T26	443.13
With Steel Wheels								
8,000	4″ -6 1/2″	8″	7 3/4″	42″	5″	2 1/2″	3270T29♣	889.86
12,000	4 5/8″-7 1/8″	10″	8 3/4″	54″	6″	2 3/4″	3270T28♣	1,034.87

♣ Use on tapered flange beams only.

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

For information about trolleys, see page 1469.

Tight-Turn Manual Trolleys

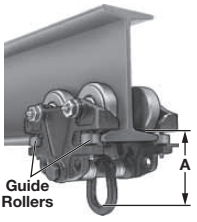

- Steel wheels
- Precision ball bearings with grease fitting (unless noted)
- Steel body

Two guide rollers on each side of these trolleys provide better tracking along tight curves. The rollers maintain contact with the beam flange to prevent wobbling and to keep the trolley body from coming in contact with the beam. The trolley body has wraparound bumpers to protect the wheels and to prevent the load from dropping if a wheel axle fails. The included spacing washers can be added and removed to fit the beam flange width. Use trolleys on tapered flange beams only.

Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A)	Min. Curve Radius	Wheel Tread Dia.	Hanger Hole Dia.		
500	1 13/16″-2 5/8″	2 5/8″	3 1/4″	12″	1 7/8″	1 1/16″	9483T47▲	$94.92
1,000	2 5/8″ -4″	4″	4 1/4″	24″	3 3/16″	1 5/8″	9483T58	196.98
2,000	2 5/8″ -4″	4″	4 1/4″	24″	3 3/16″	1 5/8″	9483T49	208.35

▲ Does not have grease fitting.

Corrosion-Resistant Stainless Steel Manual Trolleys

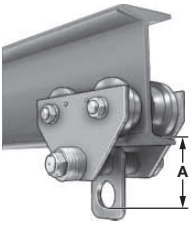

- 300 series stainless steel wheels
- Maintenance-free Type 440 stainless steel precision ball bearings
- 300 series stainless steel body

With their stainless steel construction, corrosion won't be a concern with these trolleys. Plus, the wheels are machined for smooth, quiet operation. The trolley body extends past the wheels to protect them from damage. The included spacing washers can be added and removed to fit the beam flange width. Use trolleys on tapered and wide (flat) flange beams.

Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A)	Min. Curve Radius	Wheel Tread Dia.	Hanger Hole Dia.		
1,000	2 5/8″-5″	4″	4 5/8″	60″	2 7/8″	1 3/4″	3289T11	$2,860.14
2,000	3″ -5″	5″	4 7/8″	70″	3 3/4″	1 3/4″	3289T12	3,090.33
4,000	3 3/8″-6″	6″	6″	90″	4 1/2″	2″	3289T13	4,635.01

Quick-Mount Low-Height Manual Trolleys

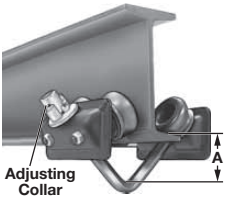

- Steel wheels
- Maintenance-free ball bearings
- Steel body

For quick installation, these CM 632 trolleys have an adjusting collar that adjusts to the beam flange width. Plus, a unique, angled design and a V-shaped hexagon crossbar take up less vertical space so your hoist hangs closer to the beam. Use trolleys on tapered and wide (flat) flange beams.

Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A)	Min. Curve Radius	Wheel Tread Dia.	Crossbar Hex Size		
1,000	2 5/8″-5 1/16″	4″	1 13/16″	7″	2 3/4″	11/16″	3189T2	$146.26
2,000	2 5/8″-5 1/16″	4″	1 5/8″	7″	2 3/4″	7/8″	3189T3	178.86
4,000	3 3/8″-5 5/8″	6″	2″	10″	3 1/2″	1 1/8″	3189T5	292.51
6,000	4″ -6 1/4″	8″	2 5/8″	10″	3 1/2″	1 1/8″	3189T6	513.66

Easy-Adjust Manual Trolleys

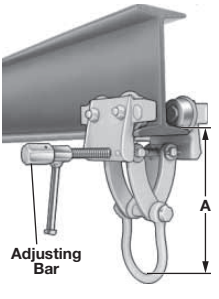

- Steel wheels
- Maintenance-free ball bearings
- Steel body

Just turn the adjusting bar and the trolley opens and closes to fit the beam flange width. A locking collar on the adjusting bar prevents the trolley from coming loose after it is mounted to the beam. The trolley body has wraparound bumpers to protect the wheels and to prevent the load from dropping if a wheel axle fails. Use trolleys on tapered and wide (flat) flange beams with a maximum flange thickness of 1″.

Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A) Min.	(A) Max.	Min. Curve Radius	Wheel Tread Dia.	Hanger Hole Dia.		
2,240	2 1/2″-8″	2 1/2″	8″	9 1/4″	57″	1 3/4″	3 1/2″	9469T15	$517.82
4,480	3″ -8″	2 1/2″	8″	9 1/4″	57″	2″	3 1/2″	9469T17	558.17

Hand-Chain-Driven Trolleys

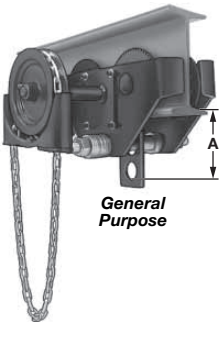

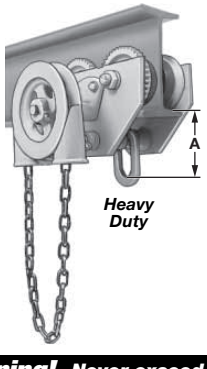

- Cast iron wheels (unless noted)
- Maintenance-free ball bearings
- Steel body
- Zinc-plated steel chain

Simply pulling the hand chain drives the gears on these trolleys so they move smoothly and easily along the beam. The included spacing washers can be added and removed to fit the beam flange width. Use trolleys on tapered and wide (flat) flange beams (unless noted).

General purpose are the economical choice. The trolley body has wraparound bumpers to protect the wheels and to prevent the load from dropping if a wheel axle fails.

Heavy duty have a heavier gauge body for longer life. The body also extends past the wheels to protect them from damage.

Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A)	Min. Curve Radius	Wheel Tread Dia.	Hand Chain Lg., ft.	Hanger Hole Dia.		
General Purpose									
2,200	3″ -8″	5″	5 7/8″	36″	2 3/4″	10	1 9/16″	3295T21	$274.66
4,400	3 5/16″ -8″	6″	6 1/16″	48″	4 1/4″	10	1 9/16″	3295T22	412.45
6,600	3 15/16″-8″	7″	7 7/8″	42″	4 1/2″	10	2 9/16″	3295T23	664.26
11,000	4 5/8″ -8″	8″	8 1/16″	60″	4 1/2″	10	2 9/16″	3295T24	1,029.22
Heavy Duty									
2,000	3″ -5″	5″	5 3/4″	36″	4″	8	1 1/2″	3271T25	896.43
4,000	3 1/4″ -6 3/8″	6″	6 1/2″	36″	4″	8	1 3/8″	3271T36	904.35
8,000	4″ -6 1/2″	8″	7 3/4″	42″	5″	9	2 1/2″	3271T28■	1,580.35
12,000	4 5/8″ -7 1/8″	10″	8 3/4″	54″	6″	9	2 3/4″	3271T29■	1,780.43

■ Has steel wheels. Use on tapered flange beams only.

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

For information about trolleys, see page 1469.

Motorized Trolleys

- Cast iron wheels
- Maintenance-free ball bearings
- Steel and cast iron body

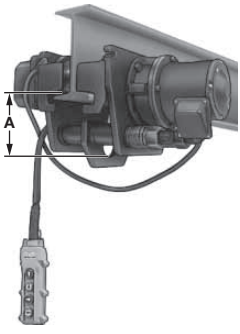

Reduce user fatigue—these CM Railstar trolleys efficiently move your single-speed hoist along the beam at the touch of a button. Hardwire your hoist's power cord and control cord into the control box on the trolley and operate both the trolley and hoist from the included handheld push-button control. Control cord is 16′3″ long. *Note:* The trolley push-button control does not work with two-speed and variable-speed hoists.

Motor is totally enclosed; trolley speed is 78 fpm. The trolley body extends past the wheels to protect them from damage. The included spacing washers can be added and removed to fit the beam flange width. Use trolleys on tapered and wide (flat) flange beams.

To Order: Please specify voltage: 115 VAC, 60 Hz, single phase or 230/460 VAC, 60 Hz, three phase.

Cap., lbs.	Fits Beam Flange Wd.	Min. Beam Ht.	(A)	Min. Curve Radius	Wheel Tread Dia.	Hanger Hole Dia.	Motor hp	Amps @ VAC 115	230	460		
250-4,000	3⅜″-6″	6″	4 13/16″	52″	3 9/16″	2 9/16″	⅓	4.5	1.5	0.7	94855T1	$1,960.36
6,000	4″ -7″	8″	5¼″	71″	3 15/16″	2 15/16″	¾	7.0	2.8	1.4	94855T2	2,431.27

About Cable and Hose Travel Systems

Also known as festooning, cable and hose travel systems offer an organized way to keep the cables and hoses that power your hoists and other mobile equipment tangle free and out of the way.

Once installed, a series of small trolleys follow along a wire rope or channel, carrying your cables and hoses along with them.

Our systems include everything you need, except cable or hose, to install a new system or expand an existing one. For round cable, see page 809; for air hose, see pages 240-246; for flat cable, see page 1473.

Easy-Wire Cable and Hose Travel Systems

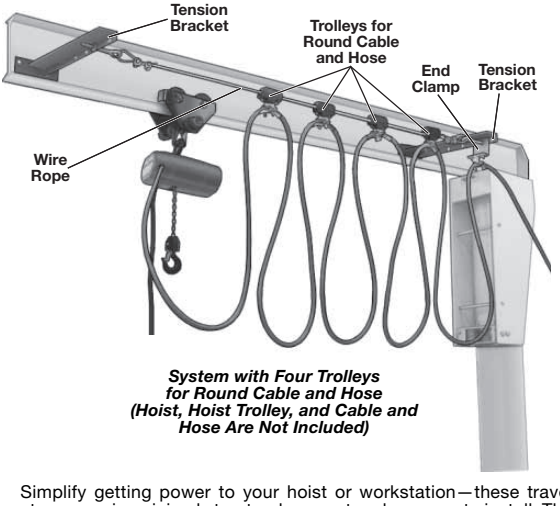

System with Four Trolleys for Round Cable and Hose (Hoist, Hoist Trolley, and Cable and Hose Are Not Included)

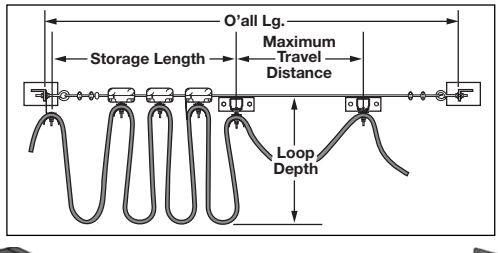

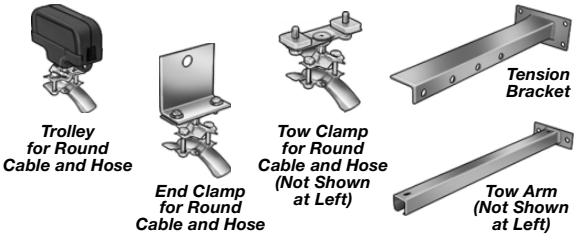

Simplify getting power to your hoist or workstation—these travel systems require minimal structural support and are easy to install. The lightweight wire rope makes them ideal for short-run applications such as along jib cranes and workstation bridge cranes.

The included trolleys snap together for installation anywhere along the included ¼″ dia. nylon-coated galvanized steel wire rope. The trolleys have a two-piece glass-reinforced nylon body and a zinc-plated cradle for supporting cable and hose. Capacity is 15 lbs. per trolley.

Each system also includes: one 18″ tow arm and one tow clamp that are needed only when not using a hoist trolley (hoist trolley is not included), two 18″ tension brackets, one end clamp, and an installation kit that contains the hardware for connecting the wire rope. Kit includes four galvanized steel wire rope clips, two wire rope thimbles, two eyebolts, four flat washers, two lock washers, four hex nuts, and two rubber stops. Tension bracket and tow arm are painted steel; clamps and hardware are made of zinc-plated steel.

Note: "Minimum cable/hose required" (listed below) is based on a 36″ loop depth between trolleys plus an additional 15 feet to allow for 7½-ft. hook-up at each end.

Cable and hose are sold separately. For round cable, see page 809; for air hose, see pages 240-246; for flat cable, see page 1473.

Systems

Max. Travel Distance, ft.	Storage Lg.	O'all Lg., ft.	Min. Cable/Hose Required, ft.	No. of Trolleys		
For 0.60″ to 0.94″ OD Round Cable and Hose						
22	2′4″	25	43	4	3298T11	$308.18
35	3′3″	39	64	7	3298T12	345.36
50	4′3″	56	85	10	3298T13	416.57
65	5′6″	72	106	13	3298T14	467.54
For 0.95″ to 1.25″ OD Round Cable and Hose						
22	2′4″	25	43	4	3298T21	351.07
35	3′3″	39	64	7	3298T22	380.55
50	4′3″	56	85	10	3298T23	439.88
65	5′6″	72	106	13	3298T24	484.78
For Flat Cable						
24	2′4″	27	43	4	3298T31	377.02
39	3′3″	43	64	7	3298T32	437.54
54	4′3″	59	85	10	3298T33	496.24

Replacement Components

For Cable and Hose

Trolleys		
Round 0.60″ to 0.94″ OD	3298T41	$14.09
Round 0.95″ to 1.25″ OD	3298T42	14.43
Flat	3298T43	25.77
End Clamps		
Round 0.60″ to 0.94″ OD	3298T44	29.38
Round 0.95″ to 1.25″ OD	3298T45	43.01
Flat	3298T46	26.27
Tow Clamps		
Round 0.60″ to 0.94″ OD	3298T47	29.20
Round 0.95″ to 1.25″ OD	3298T48	38.32
Flat	3298T49	14.95

Tension Bracket—3″ × 6″ mtg. plate with four 13/32″ dia. mtg. holes.
3298T51 ..... $70.20

Tow Arm—1½″ × 4″ mtg. plate with four 13/32″ dia. mtg. holes.
3298T52 ..... $51.46

Warning! Never exceed capacities. Never use to lift people or items over people.

For information about cable and hose travel systems, see page 1471.

Heavy Duty Cable and Hose Travel Systems

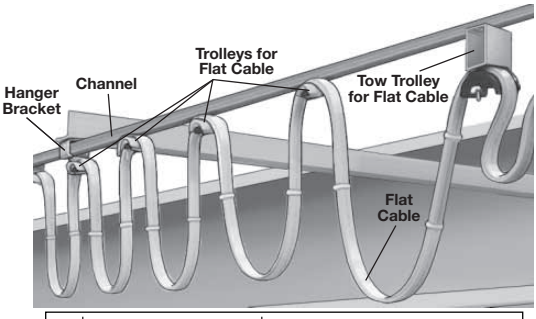

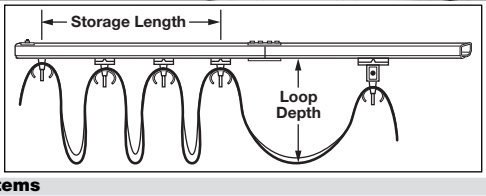

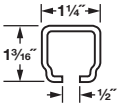

Channel Dimensions

End Clamp for Round Cable

Trolley for Round Cable

Tow Trolley for Flat Cable

Ideal for high speed applications and for use on bridge cranes, these systems (also known as festoon kits) use 14-ga. steel channel so they are stronger and run straighter than wire rope systems. Join two or more systems for long-run applications. All have zinc-plated steel wheels with maintenance-free ball bearings. Capacity is 40 lbs. per trolley. *Trolleys for round cable and hose* have an eye/U-bolt combination with a cable clip; *trolleys for flat cable* have a galvanized steel saddle.

Each system also includes: galvanized steel joint brackets, galvanized steel hanger brackets, one galvanized steel anchor bracket, one galvanized steel and plastic end clamp, one galvanized steel and aluminum tow trolley, and two galvanized steel end stops.

"Minimum cable/hose required" (listed below) is based on a 36″ loop depth between trolleys plus an additional 15 feet to allow for 7½-ft. hookup at each end.

Cable and hose are sold separately. For round cable, see page 809; for air hose, see pages 240-246; for flat cable, see page 1473.

Systems

Max. Travel Distance	Storage Length	Min. Cable/Hose Required, ft.	No. of Trolleys	No. of 10-ft. Lg. Channels	No. of Joint Brackets	No. of Hanger Brackets	Kit	
For 0.40″ to 0.63″ OD Round Cable and Hose								
18′	1′7″	43	4	2	1	4	3358T41	$297.59
37′	2′8″	71	8	4	3	8	3358T42	520.59
46′6″	3′2″	85	10	5	4	10	3358T43	621.36
74′11″	4′10″	127	16	8	7	16	3358T44	953.21
For 0.75″ to 1.00″ OD Round Cable and Hose								
18′4″	1′4″	36	3	2	1	4	3358T51	274.03
37′3″	2′5″	64	7	4	3	8	3358T52	522.15
46′9″	2′11″	78	9	5	4	10	3358T53	608.74
75′	4′7″	120	15	8	7	16	3358T54	925.82
For 1.00″ to 1.37″ OD Round Cable and Hose								
18′4″	1′4″	36	3	2	1	4	3358T61	298.74
37′3″	2′5″	64	7	4	3	8	3358T62	556.13
46′9″	2′11″	78	9	5	4	10	3358T63	619.69
75′6″	4′7″	120	15	8	7	16	3358T64	942.72
For Flat Cable								
18′4″	1′4″	36	3	2	1	4	3358T71	228.23
37′3″	2′5″	64	7	4	3	8	3358T72	363.23
46′9″	2′11″	78	9	5	4	10	3358T73	433.90
75′	4′7″	120	15	8	7	16	3358T74	650.90

Replacement Components

For Cable and Hose

Trolleys		
Round 0.40″ to 0.63″ OD	3358T81	$30.22
Round 0.67″ to 0.98″ OD	3358T82	32.20
Round 1.02″ to 1.42″ OD	3358T84	39.54
Flat	3358T85	13.39
End Clamps		
Round 0.40″ to 0.63″ OD	3358T31	19.49
Round 0.75″ to 1.00″ OD	3358T32	19.94
Round 1.00″ to 1.37″ OD	3358T33	20.31
Flat	3358T34	15.96
Tow Trolleys		
Round 0.40″ to 0.63″ OD	3358T86	38.25
Round 0.75″ to 1.00″ OD	3358T87	39.00
Round 1.00″ to 1.37″ OD	3358T88	40.10
Flat	3358T89	19.58
Channel, Brackets, and End Stop		
10-ft. Channel	3358T35	19.67
Joint Bracket	3358T36	10.35
Hanger Bracket	3358T37	5.63
Anchor Bracket	3358T38	7.43
End Stop	3358T39	3.56

Trolleys for Cable and Hose Travel Systems

1

For Flat Cable

2

For Round Cable

3

4

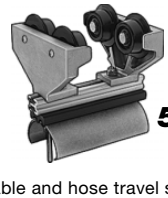

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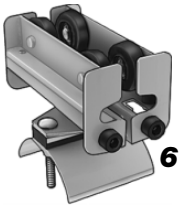

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Create your own cable and hose travel system (also known as festoon kits) with these trolleys. They can also be used for replacing trolleys in an existing system.

Trolleys for Wire Rope— Lightweight and easy to install. All have a wheel with a plain bore (no bearing) and a zinc-plated steel cable/hose clamp. *Style 1* mounts at the end of the rope. Body and wheel are nylon. *Style 2* have a two-part glass-reinforced nylon body so they can be mounted anywhere along the wire rope; wheel is acetal.

Trolleys for Channel— Designed for use with heavy duty travel systems. They have a galvanized steel body, zinc-plated steel wheels with maintenance-free ball bearings, and a plastic cable/hose clip.

Trolleys for I-Beam— Are two-piece so they can be mounted anywhere along an I-beam. *Style 4* adjusts to the I-beam width. Has a plain steel body, nylon wheels with maintenance-free precision ball bearings, and a steel cable/hose clamp. Use on tapered flange I-beams. *Style 5* adjusts to the I-beam width. Has an aluminum body, nylon wheels with plain bore (no bearing), and an aluminum cable/hose cradle. Use on tapered and wide (flat) flange I-beams. *Style 6* have a steel body with a yellow powder-coated finish, polyurethane wheels with maintenance-free ball bearings, and an aluminum cable/hose cradle. Use on tapered flange I-beams.

For Wire Rope

	For Cable and Hose	Fits Wire Rope Dia.	Cap., lbs.		
1	Round up to 1″ OD	¼″ to ⅜″	25	3288T14	$22.50
2	Round 0.60″ to 0.94″ OD	³⁄₁₆″ to ⅜″	15	3298T41	14.09
2	Round 0.95″ to 1.25″ OD	³⁄₁₆″ to ⅜″	15	3298T42	14.43
2	Flat	³⁄₁₆″ to ⅜″	15	3298T43	25.77

For Channel

	For Cable and Hose	Fits Channel Size	Cap., lbs.		
3	Round 0.40″ to 0.63″ OD	1¼″×1³⁄₁₆″	30	3358T81	$30.22
3	Round 0.67″ to 0.98″ OD	1¼″×1³⁄₁₆″	30	3358T82	32.20
3	Round 1.02″ to 1.42″ OD	1¼″×1³⁄₁₆″	30	3358T84	39.54
3	Flat	1¼″×1³⁄₁₆″	30	3358T85	13.39

For I-Beam

	For Cable and Hose	Fits I-Beam Flange Wd.	Cap., lbs.		
4	Round 0.50″ to 1.50″ OD	2⁵⁄₁₆″ to 5″	35	3301T16	$47.82
5	Flat	Up to 4½″	55	3301T21	86.91
6	Flat	2⅝″	175	3301T22	470.26
6	Flat	3″	175	3301T23	480.74
6	Flat	3⅜″	175	3301T24	492.78

Warning! **Never exceed capacities. Never use to life people or items over people.**

Flat Electrical Cable and Connectors

Use with new and existing cable and hose travel systems for indoor and outdoor applications. Cable is rated 600 VAC. See pages 1471-1472 for cable and hose travel systems. For information on AWG specifications, see page 758.

Cable— Has a yellow PVC jacket and resists oil and UV. Temp. range is –31° to +221° F. UL listed and CSA certified.

Connectors— Provide a secure connection between a single cable and junction box. Mounting nut and sealing gasket are included.

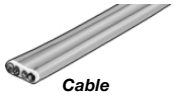

Cable

Connector

Cable						Connectors		
AWG	No. of Conductors	Amps	Wd. x Thick.		Per Ft.	For Knockout Dia.		Each
16	8	15	1.110″×0.20″	3120T43	$3.96	1½″	3120T51	$31.02
16	12	15	1.605″×0.20″	3120T44	5.36	2⅛″	3120T36	43.87
14	4	25	0.625″×0.21″	3120T39	2.94	1³⁄₁₆″	3120T35	19.04
14	8	17	1.175″×0.21″	3120T45	5.48	1½″	3120T51	31.02
14	12	17	1.70″ ×0.21″	3120T41	8.09	2⅛″	3120T36	43.87
12	4	30	0.710″×0.23″	3120T42	4.10	1³⁄₁₆″	3120T35	19.04
12	8	21	1.340″×0.23″	3120T46	7.70	1⅞″	3120T52	46.06
10	4	40	0.88″ ×0.27″	3120T47	5.78	1½″	3120T51	31.02
8	4	50	1.19″ ×0.365″	3120T71	9.96	1⅞″	3120T52	46.06
6	4	70	1.45″ ×0.43″	3120T72	15.61	1⅞″	3120T52	46.06

Bridge Crane End Trucks

End trucks connect a bridge beam (not included) to the runway beams (not included) of your bridge crane. Two end trucks are required (one for each runway beam). They can be mounted anywhere along the runway beams. All are made of steel.

Top/bottom flange mount allow you to run the bridge beam along either the top or bottom flange of the runway beams. Trucks have cast iron wheels with maintenance-free precision ball bearings. Extended end plates prevent the end trucks from dropping if a wheel axle fails. Use on tapered and wide (flat) flange runway beams. Hardware for connecting the end trucks to the bridge beam is included. Installation requires drilling mounting holes in the flange of the bridge beam.

Bottom flange mount are used on the bottom flange of tapered flange runway beams. Trucks have steel wheels with maintenance-free ball bearings. Wraparound bumpers prevent end trucks from dropping if a wheel axle fails. Installation hardware is included. Trucks slide onto the end of the beam so no drilling is required.

Top/Bottom Flange Mount

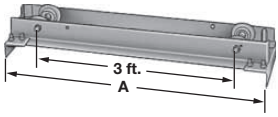

Bottom Flange Mount

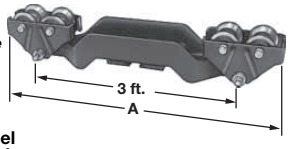

Cap., lbs.	FOR RUNWAY BEAM Flange Width Min.	Max.	Height Min.	Max.	FOR BRIDGE BEAM Flange Width Min.	Max.	Height Min.	Max.	Length Max.	Wheel Tread Dia.	(A)		Pair
Top/Bottom Flange Mount													
1,000	2²¹⁄₃₂″	5¼″	4″	12″	3⁵⁄₁₆″	4¹¹⁄₁₆″	6″	10″	30′	3⅛″	3′11¾″	3247T31	$523.40
2,000	2²¹⁄₃₂″	5¼″	4″	12″	3²¹⁄₃₂″	5¹⁄₁₆″	7″	12″	30′	3⅛″	3′11¾″	3247T41	670.50
4,000	3⁵⁄₁₆″	5¹⁄₁₆″	6″	12″	3⁵⁄₁₆″	6″	12″	18″	30′	4¼″	4′1¾″	3247T71	1,178.23
6,000	3⁵⁄₁₆″	5¹⁄₁₆″	6″	12″	5″	6″	12″	18″	30′	4¼″	4′1¾″	3247T81	1,286.63
Bottom Flange Mount													
4,000	3″	5″	5″	12″	3⁵⁄₁₆″	5½″	6″	15″	30′	4″	4′1″	3751T1	1,765.72

Steel and Aluminum Gantries

Gantries provide a structural I-beam for handling lifting jobs around your facility. Four swivel casters provide mobility. Conform to OSHA and CMAA (Crane Manufacturers Association of America) standards. Shipped unassembled.

Fixed— Made of steel. Casters have polyurethane wheels with roller bearings.

Adjustable— The height (A) and width (B) adjust to accommodate different lifts and to make it easier to move the unit through doorways.

Steel have a yellow-painted finish and can handle higher capacities. Height adjusts in 1-ft. increments and the legs pivot for maneuverability in tight places (unless noted). Casters have steel wheels with roller bearings (unless noted).

Aluminum are lighter in weight for easier movement. Height adjusts in 6″ increments. Casters have mold-on polyurethane wheels with roller bearings and four-position swivel locks.

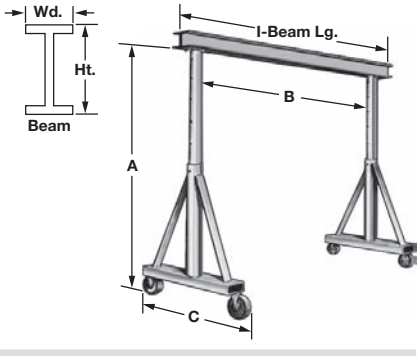

Fixed

Cap., lbs.	(A)	(B)	I-Beam Flange Wd.	Ht.	Lg.	(C)	Wheel Size		
2,000	10′	10′11″	3⅜″	6″	12′	5′11″	6″×2″	3110T52	$1,265.15
4,000	10′	10′11″	4″	8″	12′	5′11″	6″×2″	3110T53	1,486.47

Adjustable

Cap., lbs.	(A) Min.	Max.	(B) Min.	Max.	I-Beam Flange Wd.	Ht.	Lg.	(C)	Wheel Size		
Steel											
2,000	4′4″	7′	4′	10′	4″	8″	11′6″	4′	6″×2″	3110T22★	$1,629.03
2,000	5′4″	9′	4′	10′	4″	8″	11′6″	5′	6″×2″	3110T23★	1,654.84
2,000	6′5″	10′	5′6″	10′4″	3⅜″	6″	11′6″	5′6″	6″×2″	3110T24	1,857.12
2,000	7′5″	12′	6′6″	10′4″	3⅜″	6″	11′6″	6′6″	6″×2″	3110T25	2,125.18
2,000	8′5″	14′	7′6″	10′4″	3⅜″	6″	11′6″	7′6″	6″×2″	3110T26	2,290.41
4,000	6′2″	9′	5′	10′4″	4″	8″	11′6″	5′	8″×3″	3110T33	2,176.10
4,000	6′8″	10′	5′6″	10′4″	4″	8″	11′6″	5′6″	8″×3″	3110T34	2,345.18
4,000	8′8″	14′	7′6″	10′4″	4″	8″	11′6″	7′6″	8″×3″	3110T36	2,584.42
6,000	6′11″	10′	5′6″	9′3″	4⅝″	10″	11′6″	5′6″	8″×3″	3110T44	2,975.45
6,000	8′11″	14′	7′6″	9′3″	4⅝″	10″	11′6″	7′6″	8″×3″	3110T46	3,208.70
10,000	9′	14′	7′6″	9′3″	5″	12″	11′6″	7′6″	8″×3″	3110T63	4,276.98
Aluminum											
2,000	7′8″	10′2″	4′	6′11″	3⅜″	6″	8′	5′1″	6″×2″	3763T11	2,891.21
2,000	7′8″	10′2″	6′	10′11″	4″	8″	12′	5′1″	6″×2″	3763T12	3,299.55
4,000	7′8″	10′2″	4′	6′11″	4″	8″	8′	5′1″	6″×2″	3763T31	4,035.61
4,000	7′8″	10′2″	6′	10′11″	5″	12″	12′	5′1″	6″×2″	3763T33	5,493.94

★ Has phenolic swivel casters with roller bearings. Legs do not pivot.

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

Easy-Store Gantries

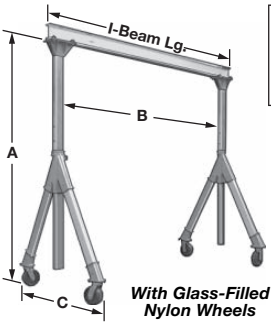

With Glass-Filled Nylon Wheels

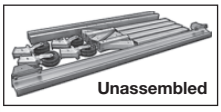

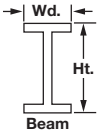

Locking pin connections allow these gantries to be easily disassembled after use for convenient transport and storage. Plus, the height (A) and width (B) are adjustable. Height adjusts in 6″ increments. All are made of corrosion-resistant aluminum so the I-beam is lightweight and can be adjusted without a hoist or fork truck. All have swivel casters with a four-position swivel lock. Meet ANSI/ASME B30.20 and Crane Manufacturers Association of America (CMAA) standards.

The *1,500-lb. capacity* units have pneumatic wheels with maintenance-free ball bearings; *2,000-* and *4,000-lb. capacity* units have glass-filled nylon wheels with needle roller bearings.

Cap., lbs.	(A) Min.	(A) Max.	(B) Min.	(B) Max.	I-Beam Flange Wd.	I-Beam Ht.	I-Beam Lg.	(C)	Caster Wheel Size		
1,500	7′8″	10′2″	4′	7′	3 5/16″	6″	8′	4′6″	12″×3 1/2″	3775T82	$3,392.65
1,500	7′8″	10′2″	4′	11′	4″	8″	12′	4′6″	12″×3 1/2″	3775T83	4,061.06
2,000	7′8″	10′2″	4′	7′	3 3/8″	6″	8′	4′6″	8″×2″	3775T84	3,034.87
2,000	7′8″	10′2″	4′	11′	4″	8″	12′	4′6″	8″×2″	3775T85	3,702.12
4,000	7′8″	10′2″	4′	7′	4″	8″	8′	4′6″	8″×2″	3775T86	4,170.35
4,000	7′8″	10′2″	4′	11′	4″	8″	12′	4′6″	8″×2″	3775T87	4,942.20

Floor-Mount Workstation Cranes with Cable Travel System

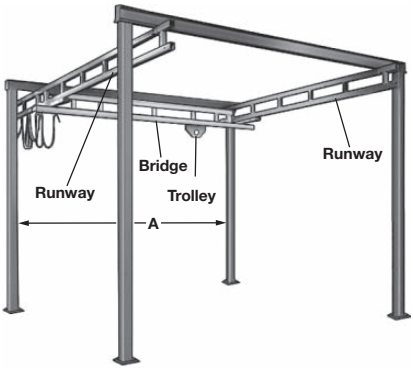

No need to create a special foundation—cranes can be mounted to a minimum 6″ deep reinforced-concrete floor using Grade 5 anchors (see 98880A on pages 3314-3315) with an epoxy anchoring system (see page 3313). The cranes consist of two runway beams supported by four uprights and a bridge beam with a trolley supported on end trucks that travel along the runways. Each upright has four 13/16″ dia. mounting holes. Trolley has a crossbar for hanging your hoist; trolley height is 12 ft. To keep your cable organized and to provide power to your lifting device, a complete cable travel system with 14-gauge/4-conductor flat cable and plastic cradles to support and move cable along is also included. Cranes are designed so the load can reach any point within the workstation. The runway beams and uprights are steel with a gray baked-enamel finish; bridge beam is steel with a yellow baked-enamel finish. All beams are enclosed track-style, which keeps dirt and dust out of the rolling surface, prolonging the life of the trolley wheels. Trolley wheels are polyamide with maintenance-free ball bearings.

Cap., lbs.	Bridge Lg.	Runway Lg.	(A)	O'all Wd.	O'all Ht.	Trolley Crossbar Dia.	Cable Lg.		
500	10′	11′6″	10′4″	11′6″	13′10 9/16″	3/4″	30′	3299T11	$4,979.38
500	15′	23′	15′4″	16′6″	13′10 9/16″	3/4″	49′	3299T31	6,246.92
1,000	10′	11′6″	10′4″	11′6″	14′2 5/8″	1″	30′	3299T12	5,445.69
1,000	15′	23′	15′4″	16′6″	14′2 5/8″	1″	49′	3299T32	7,234.46
2,000	10′	11′6″	10′4″	11′7″	14′6 1/8″	1″	30′	3299T13	6,561.69
2,000	15′	23′	15′4″	16′7″	14′8 3/8″	1″	49′	3299T33	8,835.08

Modular Workstation Cranes

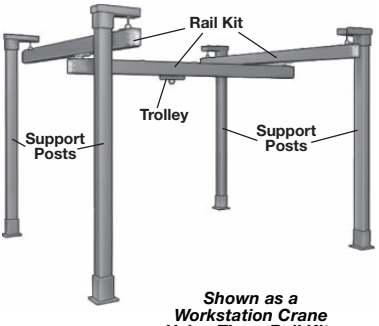

Shown as a Workstation Crane Using Three Rail Kits and Four Support Posts

Build your own monorail crane or workstation crane using these bolt-together components. Combine one rail kit with two support posts for a monorail crane or three rail kits with four support posts for a bridge crane. Rail kits and support posts are sold separately. All components are made of steel with an orange powder-coated finish. Capacity is 1,000 lbs.

Rail Kits—Two rails bolt together to create one enclosed track-style runway for the included trolley. Trolley has nylon wheels with maintenance-free bearings and a hanger for holding your lifting device. Kits also include end caps, rubber stops, and adjustable mounting bolts to keep the runways level. All installation hardware is included. ***Connection brackets*** (sold separately) join runway sections together to extend the length of the runway.

Support Posts—Have a 10″×10″ mounting plate with four 5/8″ mounting holes. Mount to the floor using 5/8″-11×5″ Grade 5 bolts (sold separately).

Rail Kits

Length, ft.		
8	4281T51	$369.72
12	4281T52	394.37
Connection Bracket	4281T57	64.08

Support Posts

For Trolley Height, ft.	Overall Height, ft.		
10	12	4281T53	$394.37
12	14	4281T54	419.01
14	16	4281T55	443.66
5/8″-11×5″ Grade 5 Mounting Bolt		92865A814	4.80

Light Duty Floor-Mount Rotating Jib Cranes

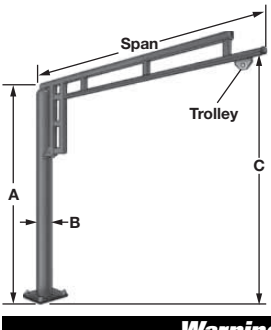

Also known as enclosed track jib cranes, the boom on these cranes rotates 360° for maximum versatility. Cranes mount to a minimum 6″ deep reinforced-concrete floor using Grade 5 anchors (see 98880A on pages 3314-3315) with an epoxy anchoring system (see page 3313).

Cranes are made of steel with a blue baked-enamel finish. Mast has four 1″ dia. mounting holes. The enclosed track-style boom includes a trolley that has plastic wheels with maintenance-free ball bearings and a 1/2″ dia. crossbar for hanging your lifting device.

Cap., lbs.	(A)	(B)	(C)		
8-ft. Span					
150	11′1/4″	6 5/8″	10′	22485T151	$1,358.15
250	9′1/4″	6 5/8″	8′	22485T251	1,430.06
250	11′1/4″	8 5/8″	10′	22485T253	1,588.69
10-ft. Span					
150	11′1/4″	6 5/8″	10′	22485T152	1,378.69
250	9′3 1/4″	6 5/8″	8′	22485T252	1,710.82
250	11′3 1/4″	8 5/8″	10′	22485T254	1,762.17

Warning! **Never exceed capacities. Never use to lift people or items over people.**

Heavy Duty Foundation-Mount Rotating Jib Cranes

Mounting these cranes requires anchor bolts (sold separately) set in a new, reinforced-concrete foundation, which results in much higher capacities than our floor-mount rotating jib cranes.

Cranes consist of a mast, head assembly, and wide (flat) flange beam made of steel with a yellow-painted finish. The beam rotates 360° for versatility and accommodates most trolleys. A base plate pattern to use as a template for properly setting anchor bolts into the foundation is included.

Also Available: Other capacities up to 10,000 lbs.; other spans up to 20 ft.; and other under-beam clearances (dimension A) up to 20 ft. Please ask for 3244T999 and specify capacity, span, and under-beam clearance (dimension A).

Anchor bolts are L-shaped steel and include leveling nuts and securing nuts with washers to hold the mast's base plate.

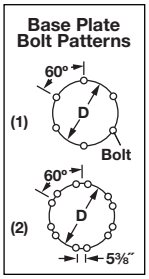

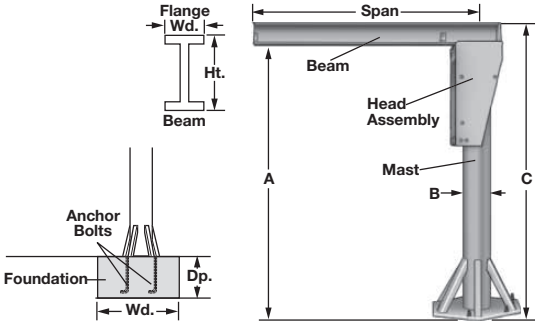

Cap., lbs.	(A)	(B)	Beam Flange Wd.	Beam Ht.	(C)	Foundation Size Dp.	Foundation Size Wd.	Base Plate Bolt Pattern	(D)	Cranes	Each	Anchor Bolts Dia.	Anchor Bolts Lg.	Anchor Bolts Pkg. Qty.	Anchor Bolts	Pkg.
10-ft. Span																
500	10′	8⅝″	4 1/32″	6⅜″	10′6⅜″	3′	4′ × 4′	1	2′	3244T71	$2,045.22	1″	2′9″	6	3244T15	$221.67
1,000	10′	8⅝″	4 1/32″	6⅜″	10′6⅜″	3′	4′ × 4′	1	2′	3244T72	2,090.67	1″	2′9″	6	3244T15	221.67
2,000	10′	12¾″	5⅜″	8⅜″	10′8⅜″	4′	5′ × 5′	1	2′6″	3244T73	2,454.38	1¼″	3′6″	6	3244T16	353.33
2,000	12′	12¾″	5⅜″	8⅜″	12′8⅜″	4′	5′ × 5′	1	2′6″	3244T74	2,725.22	1¼″	3′6″	6	3244T16	353.33
12-ft. Span																
1,000	10′	12¾″	5⅜″	8⅜″	10′8⅜″	3′	4′ × 4′	1	2′6″	3244T81	2,738.48	1¼″	2′9″	6	3244T17	285.48
2,000	10′	12¾″	5⅞″	10⅜″	10′10⅜″	4′	6′ × 6′	1	2′6″	3244T82	2,789.56	1¼″	3′6″	6	3244T16	353.33
2,000	12′	14″	5⅞″	10⅜″	12′10⅜″	4′	6′ × 6′	1	3′	3244T83	3,667.09	1¼″	3′6″	6	3244T16	353.33
14-ft. Span																
1,000	10′	12¾″	5⅜″	8⅜″	10′8⅜″	3′	5′ × 5′	1	2′6″	3244T91	2,790.34	1¼″	2′9″	6	3244T17	285.48
2,000	10′	14″	6½″	12½″	11′1½″	4′	6′ × 6′	1	3′	3244T51	3,430.51	1¼″	3′6″	6	3244T16	353.33
2,000	12′	14″	6½″	12½″	13′1½″	4′	6′ × 6′	1	3′	3244T52	3,536.53	1¼″	3′6″	6	3244T16	353.33
4,000	12′	16″	7″	16⅛″	13′4⅛″	4′	7′ × 7′	2	3′6″	3244T53	4,173.00	1¼″	3′6″	12	3244T18	667.74

Structural Column-Mount Rotating Jib Cranes

Mount these cranes to a load-bearing structural column in your facility using 12 Grade A325 bolts (not included, see 91571A on page 3159) to minimize obstructions and save floor space. Cranes are steel with a yellow-painted finish. All have a wide (flat) flange beam that rotates for versatility and accommodates many trolleys. End stops on the beam limit trolley travel. Beams, brackets, and connecting hardware are included. See page 1476 for replacement brackets and tie rods.

Note: Structural columns to which cranes are to be attached must support the thrust and pull forces of the crane under load. Be sure to evaluate the structural integrity and height of the column as well as how the column is supported at the base and at the top.

Top-Support Cranes

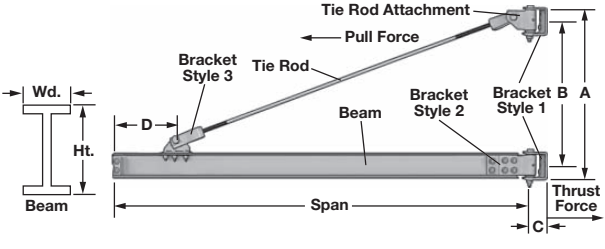

The economical choice with good thrust/pull force support. The beam is supported by a 1″ dia. steel tie rod (1½″ dia. for 4,000-lb. capacity) and rotates 200°.

Also Available: Other spans up to 30 ft. and capacities up to 10,000 lbs. Please ask for 3245T999 and specify span and capacity.

Cap., lbs.	Thrust/ Pull Force, lbs.	Beam Wd.	Beam Ht.	(A)	(B)	(C)	(D)		
8-ft. Span									
1,000	3,930	4 1/32″	6⅜″	3′5⅛″	2′9″	3½″	1′3″	3245T41	$848.14
2,000	7,710	4 1/32″	6⅜″	3′5⅛″	2′9″	3½″	1′3″	3245T71	854.76
10-ft. Span									
1,000	4,550	4 1/32″	6⅜″	3′8⅛″	3′	3½″	1′6″	3245T42	931.56
2,000	8,885	4 1/32″	6⅜″	3′8⅛″	3′	3½″	1′6″	3245T72	933.78
12-ft. Span									
1,000	4,400	4 1/32″	6⅜″	4′5⅛″	3′9″	3½″	1′9″	3245T76	930.13
2,000	8,560	4 1/32″	6⅜″	4′5⅛″	3′9″	3½″	1′9″	3245T87	932.10
14-ft. Span									
1,000	4,325	4 1/32″	6⅜″	5′2⅛″	4′6″	3½″	2′	3245T77	1,017.24
2,000	8,425	5⅜″	8⅜″	5′2⅛″	4′6″	3½″	2′	3245T88	1,119.17
4,000	16,580	5⅜″	8⅜″	5′3½″	4′6″	4″	2′	3245T98	1,378.62
20-ft. Span									
1,000	4,565	5⅜″	8⅜″	7′2⅛″	6′6″	3½″	2′3″	3245T78	1,264.02
2,000	8,650	5⅞″	10⅜″	7′2⅛″	6′6″	3½″	2′6″	3245T99	1,554.68
4,000	16,980	6½″	12½″	7′3½″	6′6″	4″	2′6″	3245T96	1,679.72

Cantilever Cranes

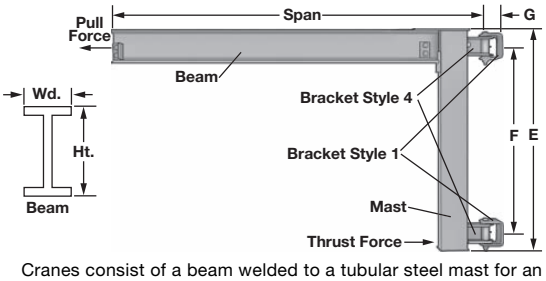

Cranes consist of a beam welded to a tubular steel mast for an L-shaped design that maximizes overhead space. Beam rotates approximately 188° (unless noted).

Also Available: Other spans up to 20 ft. and capacities up to 10,000 lbs. Please ask for 3729T999 and specify span and capacity.

Cap., lbs.	Thrust/ Pull Force, lbs.	Beam Wd.	Beam Ht.	(E)	(F)	(G)		
8-ft. Span								
500	1,295	4 1/32″	6⅜″	4′8⅞″	4′	4″	3729T65	$750.42
1,000	2,430	5⅜″	8⅜″	4′8⅞″	4′	4″	3729T66	808.65
2,000	4,745	5⅜″	8⅜″	4′8⅞″	4′	4″	3729T67	821.19
10-ft. Span								
500	1,685	4 1/32″	6⅜″	4′8⅞″	4′	4″	3729T75	819.83
1,000	3,080	5⅜″	8⅜″	4′8⅞″	4′	4″	3729T76	890.02
2,000	5,000	5⅞″	10⅜″	5′9″	5′	4″	3729T77 ♦	1,677.96
12-ft. Span								
500	2,095	4 1/32″	6⅜″	4′8⅞″	4′	4″	3729T87	964.25
1,000	3,730	5⅜″	8⅜″	4′8⅞″	4′	4″	3729T88	1,045.73
2,000	6,040	5⅞″	10⅜″	5′9″	5′	4″	3729T89 ♦	1,506.73
4,000	15,000	6½″	12½″	4′10½″	4′	6″	3729T86 ★	1,727.04
14-ft. Span								
1,000	4,750	5⅜″	8⅜″	4′8⅞″	4′	4″	3729T96	1,143.64
2,000	7,080	5⅞″	10⅜″	5′9″	5′	4″	3729T97 ♦	1,647.32
20-ft. Span								
1,000	5,350	6½″	12½″	6′9″	6′	4″	3729T54 ♦	1,855.74

♦ Rotates 180°. ★ Rotates 212°.

Warning! Never exceed capacities. Never use to lift people or items over people.

Bracket Sets for Structural Column-Mount Rotating Jib Cranes

Add these brackets to tapered or wide (flat) flange beams (not included) and build a rotating jib crane as well as replace damaged and worn brackets on an existing crane. Brackets are steel with a gray primer finish. Hardware for attaching brackets to the beam and the beam to the structural column is not included. Use Grade A325 bolts (see 91571A on page 3159).

Also Available: Brackets and tie rods for higher capacities. For top-support brackets, please ask for 3395T888 and specify capacity; for tie rods, please ask for 3395T777 and specify capacity and span; and for 4,000-lb. capacity cantilever brackets, please ask for 3390T12.

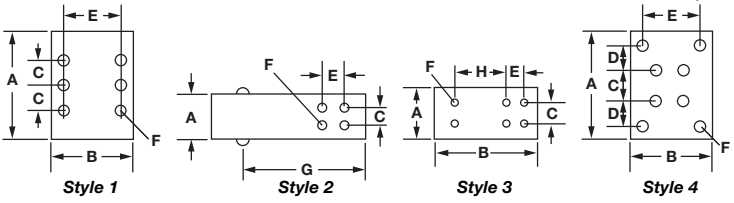

Mounting Bracket Dimensions								
Style	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
1	6½″	5″	1½″	—	3½″	11/16″	—	—
2	4½″	—	2¼″	—	2¼″	11/16″	7⅛″	—
3	4″	6″	2″	—	2″	9/16″	—	2½″
4	8½″	5″	2″	2¼″	2¾″	11/16″	—	—

For Top-Support Cranes

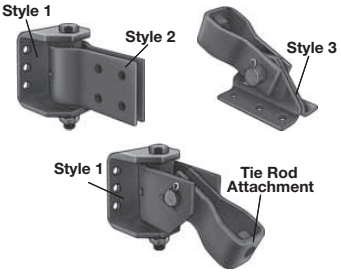

***Brackets*—**Use with 500- to 2,000-lb. capacity cranes. Set includes one Style 1 bracket attached to a Style 2 bracket by a hinge-style connection for mounting the beam to the structural column; one Style 1 bracket with a connection to attach the tie rod to the structural column; and one Style 3 bracket that mounts the tie rod to the beam.

3395T11 ..... **Set** $471.91

***Tie Rods*—**Use with 500- to 2,000-lb. capacity cranes. They are 1″ dia. steel and are offered for a variety of beam spans. Two nuts are included to secure the threaded ends of the tie rod to the brackets.

For Span		Each
8 ft.	3395T14	$195.56
10 ft.	3395T17	204.44
12 ft.	3395T21	213.33
14 ft.	3395T24	216.28
20 ft.	3395T27	235.56

For Cantilever Cranes

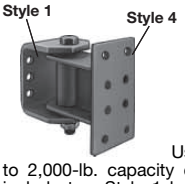

***Brackets*—**Use with 500- to 2,000-lb. capacity cranes. They include two Style 1 brackets, each attached to a Style 4 bracket with a hinge-style connection, for mounting the beam to a structural column.

3390T11 ..... **Set** $367.45

Mobile Hydraulic Cranes

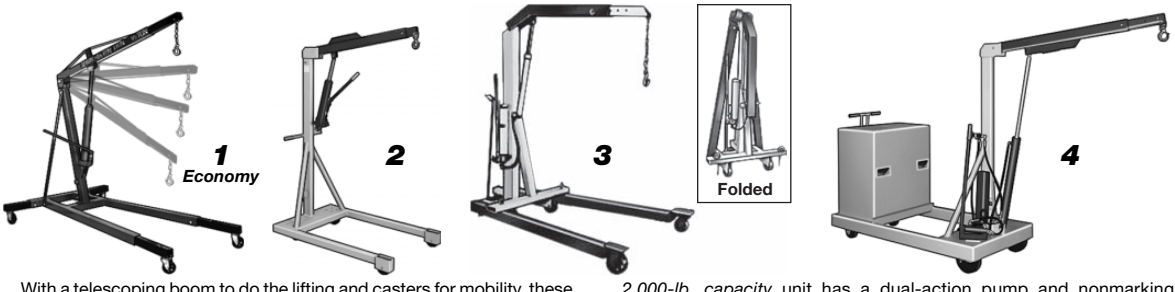

With a telescoping boom to do the lifting and casters for mobility, these cranes handle a variety of lifting jobs. A hydraulic pump raises and lowers the boom. *Note:* Capacity decreases as boom length increases.

All cranes are made of steel and have a forged steel swivel load hook with latch. A single- or dual-action pump moves the boom. Single-action pumps move the boom on the down stroke; dual-action pumps move the boom on the up and down stroke for increased efficiency.

(1) Economy*—**Inexpensive yet versatile. Leg height is 7″; clearance between legs is 25″ to 34″ (unless noted). Units have a dual-action pump and four swivel casters with steel wheels. The boom includes an 11½″ long adjustable chain with load hook. Hook opening is 1″. Units exceed ANSI/ASME-PALD-12 (Portable Automotive Lifting Devices). ***Economy unit has adjustable-length front and rear legs. ***Fold away*** unit allows the legs and boom to fold up for convenient storage and transport. Clearance between legs is 16½″ to 31½″.

***(2) Premium*—**The load hook is mounted to the boom and has a 1″ opening. Units have two swivel casters and two wheels. Meet ANSI Z535 and ASME-PALD-12 (Portable Automotive Lifting Devices).

1,000-lb. capacity unit has a single-action pump and nonmarking phenolic wheels. Leg height is 6″; clearance between legs is 28″.

2,000-lb. capacity unit has a dual-action pump and nonmarking phenolic wheels. Leg height is 6½″; clearance between legs is 24½″.

3,000-lb. capacity unit has a dual-action pump and cast iron wheels. Leg height is 8″; clearance between legs is 24½″.

***(3) Premium Fold Away*—**Folds for storage and transport. Also offers adjustable-width legs. Leg height is 8″; clearance between legs is 24″ to 48″. Unit has a dual-action pump and nonmarking phenolic wheels. When the legs are folded, the crane rests on three wheels; when unfolded, the crane rests on one rigid caster, one swivel caster, and two wheels. The boom includes a 16⅞″ long chain with grab hook for shortening chain and a forged steel swivel load hook. Load hook has a 1¼″ opening; grab hook has a ½″ opening.

***(4) Premium Reverse Boom*—**Counterweighted with no legs in front, so they don't interfere with the load. The load hook has a 1″ opening. All have a dual-action pump except 3255T51, which has a single-action pump. Units have two swivel casters and two wheels. Wheels are phenolic except for 3255T55, which are cast iron. Units exceed ANSI Z535 and ASME-PALD-12 (Portable Automotive Lifting Devices) requirements.

Repair kits contain hydraulic components subject to wear such as O-rings, gaskets, and seals.

Cap., lbs./Reach: First Boom Position	Last Boom Position	No. of Positions	Hook Ht.: Min.	Hook Ht.: Max.	Base Wd.	Base Lg.	Mast Ht.	Wheel Size: Front	Wheel Size: Rear	Cranes		Repair Kits	
(1) Economy													
4,400/2′8½″	1,100/5′1½″	4	1′10″	6′	3′1″	7′10½″	4′8⅜″	3½″	3½″	32275T3	$441.78	32275T38	$15.59
(1) Economy Fold Away													
4,400/2′2½″	1,100/3′11⅞″	4	8″	5′10¾″	3′2″	5′8½″	4′10″	3½″	3½″	32275T41	514.07	32275T45	11.36
(2) Premium													
1,000/3′10⅜″	200/5′4¼″	4	1′2¾″	10′1″	2′11⅞″	4′5⅛″	5′11⅞″	5″	4″	3237T41	1,320.00	3237T61	56.82
2,000/4′9½″	300/7′5½″	4	10″	10′1″	2′8¼″	5′9¾″	5′7¼″	6″	5″	3237T42	2,512.00	3237T62	76.44
3,000/5′3¾″	500/7′11½″	4	2′1″	10′7″	2′11″	6′7″	6′4″	8″	6″	3237T43	3,325.00	3237T62	76.44
(3) Premium Fold Away													
2,200/2′9″	1,650/4′	6	0″	9′7″	5′1″	6′11″	6′8″	6″	6″	3733T1	3,862.47	3733T15	93.11
(4) Premium Reverse Boom													
500/3′5″	350/4′11″	4	9″	8′8″	2′6½″	4′1⁹⁄₁₆″	4′9¼″	6″	4″	3255T51	2,203.39	3237T61	56.82
1,000/3′10″	600/5′4″	4	6″	8′8″	2′6½″	5′1″	5′4¾″	8″	5″	3255T52	3,372.88	3255T71	72.62
2,000/4′3¾″	1,000/7′7¼″	5	8″	11′6″	2′6½″	6′	6′3¼″	8″	6″	3255T53	4,872.88	3237T62	76.44
2,000/4′3¾″	1,000/7′7¼″	5	8″	11′6″	2′6½″	6′	6′3¼″	8″	6″	3255T55	5,042.37	3237T62	76.44

Warning! Never exceed capacities. Never use to lift people or items over people.

Hand Winch Cranes

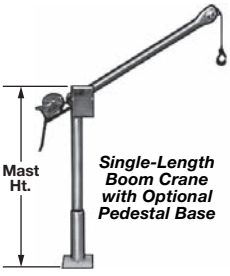

Single-Length Boom Crane with Optional Pedestal Base

Telescoping Boom Crane with Optional Pedestal Base

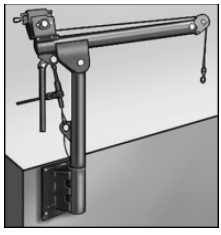

Telescoping Boom Crane with Optional Dock-Mount Base

Telescoping Boom Crane with Optional Mobile Base

Create a custom hand winch crane—simply choose the crane and mounting base (both sold separately) that suit your needs.

Cranes

Cranes consist of a mast, a single-length or telescoping boom, and a hand-operated winch. The winch has an automatic brake that holds your load securely when the handle is released. Powder-coated and galvanized units have galvanized wire rope with a forged steel swivel hook with latch; stainless steel units have stainless steel wire rope with a stainless steel hook with latch. All hooks have a 11/16″ opening. Cranes rotate 360° and are labeled with capacity for each boom position.

Cap., lbs./Reach: First Position	Cap., lbs./Reach: Last Position	Approx. Hook Travel●	Wire Rope, Dia. × Lg.	Mast Height: Pedestal Base	Mast Height: Dock-Mount Base	Mast Height: Mobile Base	Powder-Coated Steel		Galvanized Steel		Stainless Steel	
Cranes with Single-Length Boom												
500/42″-35″	—	12′1″	3/16″ × 20′	4′1″	2′10″	4′6″	3276T71	$705.25	3276T73	$773.06	32525T61	$1,829.51
500/42″-35″	—	37′1″	3/16″ × 45′	4′1″	2′10″	4′6″	3276T72	730.44	3276T74	798.25	32525T62	1,860.00
Cranes with Telescoping Boom												
1,000/36″-23″	500/66″-44″	21′2″	1/4″ × 36′	5′8 7/16″	4′6″	6′3″	3276T81	1,457.00	3276T83	1,619.75	32525T63	3,343.93
1,000/36″-23″	500/66″-44″	45′2″	1/4″ × 60′	5′8 7/16″	4′6″	6′3″	3276T82	1,484.12	3276T84	1,646.88	32525T64	3,428.30
1,300/45″-28″	1,000/81″-53″	43′10″	1/4″ × 60′	5′4 1/4″	4′11½″	5′9″	3276T76	2,260.09	3276T78	2,556.53	32525T66	5,613.54
1,600/45″-28″	1,000/81″-53″	19′10″	1/4″ × 36′	5′4 1/4″	4′11½″	5′9″	3276T75	2,232.97	3276T77	2,529.41	32525T65	5,534.26

● Based on pedestal base and boom in horizontal position. Subtract 14″ for dock-mount base and add 5″ for mobile base.

Mounting Bases

For Cranes with Single-Length Boom

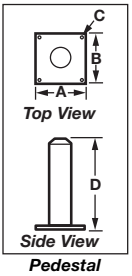

Pedestal

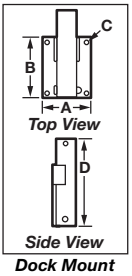

Dock Mount

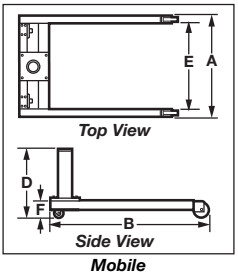

Mobile

For Cranes with Telescoping Boom

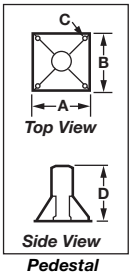

Pedestal

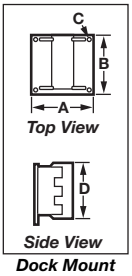

Dock Mount

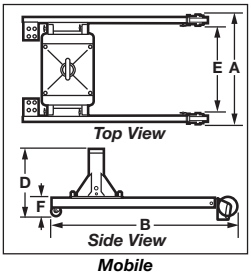

Mobile

Pedestal and ***dock-mount bases*** allow you to permanently install your crane. *Pedestal bases* mount to the floor; *dock-mount bases* mount to the wall of your loading dock.

Mobile bases have two wheels in the front and two swivel casters in the rear for mobility.

Base Style	(A)	(B)	(C)	(D)	(E)	(F)	Powder-Coated Steel		Galvanized Steel		Stainless Steel	
For Cranes with Single-Length Boom												
Pedestal	8″	8″	13/32″	1′2¾″	—	—	3276T29	$125.94	3276T26	$146.28	32525T13	$260.59
Dock Mount	8″	9″	13/32″	1′2½″	—	—	3276T68	242.19	3276T67	282.88	32525T15	420.44
Mobile	2′5″	3′8½″	—	1′7½″	2′1½″	4¾″	3276T88	587.06	—	—	—	—
For Cranes with Telescoping Boom and 1,000-lb. First Position Capacity												
Pedestal	1′4″	1′4″	11/16″	1′2¾″	—	—	3276T85	298.74	3276T91	362.31	32525T71	630.16
Dock Mount	1′4″	1′4″	11/16″	1′2½″	—	—	3276T86	356.50	3276T92	426.25	32525T72	666.75
Mobile	2′11″-4′4″	4′9½″-7′3½″	—	1′8¾″	2′2½″-3′7½″	6″	3276T87	1,234.19	—	—	—	—
For Cranes with Telescoping Boom and 1,300- and 1,600-lb. First Position Capacity												
Pedestal	1′4″	1′4″	11/16″	1′2¾″	—	—	3276T21	385.56	3276T23	463.06	32525T73 ♦	887.31
Dock Mount	1′4″	1′4″	11/16″	1′2½″	—	—	3276T22	447.56	3276T24	528.94	32525T74	1,002.16
Mobile	2′10″-4′2″	5′6½″-7′6½″	—	1′10″	2′1½″-3′4½″	7″	3276T79	1,588.75	—	—	—	—

♦ Dimension D is 1′3¼″.

Light Duty Permanent Magnets

Remove metal parts and debris from tanks, retrieve metal objects from hard-to-reach places, and move ferrous metal material with these small, manual-release magnets.

Magnet with handle has a plastic housing, rubber grip handle, and two slide-on shields to cover the magnet when not in use. Capacity is based on 1/4″ material thickness. Max. operating temp. is 180° F.

Magnets with lifting eye have a painted steel housing and a zinc-plated steel lifting eye for attaching a hook or sling. Capacity is based on 1/2″ material thickness. Max. operating temp. is 400° F.

	(A)	(B)	(C)	Approx. Pull, lbs.	Lifting Eye ID		
With Handle							
1	1⅛″	5⅛″	3⅝″	100	—	55025A51	$11.58
With Lifting Eye							
2	2″	2″	2 7/16″	100	9/16″	55025A23	15.74
2	2″	5″	2⅜″	150	9/16″	55025A24	20.01
2	2″	5″	2⅜″	225	9/16″	55025A27	40.49
3	¾″	6″	1 15/16″	100	9/16″	55025A38	12.29

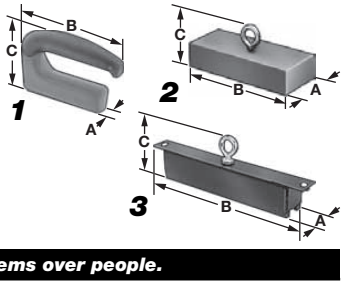

Warning! ***Never exceed capacities. Never use to lift people or items over people.***

Permanent Lifting Magnets

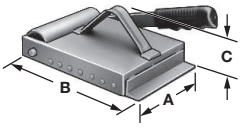

For use in a broad range of applications, these versatile magnets have a maximum operating temperature of 266° F and a large lifting bracket that accepts a wide variety of hooks and slings. All are lightweight and have a cam-style release. Housing and lifting bracket are Type 304 stainless steel. Use for lifting flat steel that has a clean, smooth surface.

Safe Lifting Guidelines		Material Thickness					
		1/16″	1/8″	1/4″	3/8″	1/2″	1″
3750T41	Capacity, lbs.	100	230	500	585	900	1,000
	Max. Size, sq. ft.	9	9	12	16	20	25
	Max. Lg., ft.	3	4	4	5	5	6
3750T42	Capacity, lbs.	175	375	750	875	1,375	1,500
	Max. Size, sq. ft.	9	16	25	30	30	36
	Max. Lg., ft.	4	5	6	6	7	8
3750T43	Capacity, lbs.	275	625	1,250	1,450	2,275	2,500
	Max. Size, sq. ft.	16	24	32	42	50	56
	Max. Lg., ft.	5	7	8	9	10	12

Overall Size (A)	(B)	(C)	Lifting Bracket Opening, Wd. × Ht.	Handle Length			
6 1/2″	9 1/2″	3 7/8″	3 1/4″ × 2″	10″	3750T41	$582.35
6 1/2″	13 3/4″	5 1/4″	5″ × 3 1/2″	13″	3750T42	595.57
6 3/4″	16 1/2″	7″	6″ × 4″	15 1/2″	3750T43	1,170.19

Nonmarring Permanent Lifting Magnets

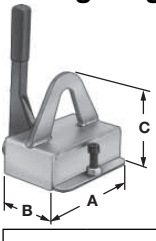

Specially designed with a nonmarring roller cam, these magnets require less torque to release your load, without scraping or gouging. Jackscrew can also be tightened to release the load or adjust magnet placement. Housing is Type 304 stainless steel and has a forged-steel lifting eye for attaching hooks and slings. Maximum operating temperature is 300° F. Use for lifting flat steel that has a clean, smooth surface.

Safe Lifting Guidelines		Material Thickness					
		3/16″	1/4″	1/2″	3/4″	1″	2″
3292T71	Capacity, lbs.	400	400	400	400	400	400
	Max. Size, sq. ft.	36	36	20	13	10	5
	Max. Lg., ft.	6	6	8	8	10	10
3292T72	Capacity, lbs.	600	900	1,000	1,000	1,000	1,000
	Max. Size, sq. ft.	36	36	49	33	24	12
	Max. Lg., ft.	6	6	8	8	10	10
3292T73	Capacity, lbs.	800	1,000	1,500	1,500	1,500	1,500
	Max. Size, sq. ft.	36	36	64	49	37	18
	Max. Lg., ft.	6	6	8	8	10	10
3292T74	Capacity, lbs.	800	1,100	2,700	3,000	3,000	3,000
	Max. Size, sq. ft.	36	36	64	64	73	37
	Max. Lg., ft.	6	6	8	8	10	10

Overall Size (A)	(B)	(C)	Lifting Eye Opening, Wd. × Ht.	Handle Length		
7 3/4″	7 1/4″	6 3/4″	3″ × 2 1/4″	16″	3292T71	$382.92
10 1/4″	7 1/4″	6 3/4″	3″ × 2 1/4″	16″	3292T72	522.17
14 3/4″	7 1/4″	6 3/4″	3″ × 2 1/4″	16″	3292T73	682.00
19 1/4″	10 1/2″	7″	3″ × 2 1/4″	16″	3292T74	1,354.92

Electric Lifting Magnet

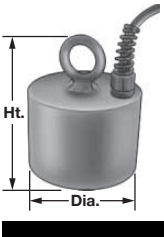

A powerful magnetic field on this circular magnet can lift flat steel that has a clean, smooth surface. Operates on 110 VAC, 60 Hz and can run continuously. Housing and lifting eye are steel. Maximum operating temperature is 165° F. Magnet includes a 3-ft. power cord without plug (see pages 784-789 for plugs).

Overall Size, Dia. × Ht.	Amps	Lifting Eye ID		
4″ × 4 3/4″	0.4	1″	3693T11	$398.74

Permanent Lifting Magnets with On/Off Control

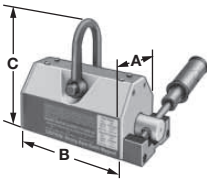

Small but powerful, these rare-earth magnets have an on/off handle that engages the magnet only when you need it. The handle locks in both the "on" and "off" positions to prevent accidental release. Housing and lifting eye are steel. Maximum operating temperature is 180° F. Use for lifting flat and round steel that has a clean, smooth surface.

Note: Capacities listed are for flat items. Capacities are reduced by 50% when lifting round items.

Safe Lifting Guidelines		Material Thickness				
		1/4″	3/8″	1/2″	1″	1 1/2″
3384T79	Capacity, lbs.	180	250	250	250	250
	Max. Size, sq. ft.	16	16	12	6	4
	Max. Lg., ft.	6	8	8	10	10
3384T75	Capacity, lbs.	270	500	615	800	800
	Max. Size, sq. ft.	24	32	32	19	13
	Max. Lg., ft.	6	8	8	10	10
3384T76	Capacity, lbs.	—	—	800	1,600	1,600
	Max. Size, sq. ft.	—	—	39	39	26
	Max. Lg., ft.	—	—	8	10	10
3384T77	Capacity, lbs.	—	—	—	1,490	2,500
	Max. Size, sq. ft.	—	—	—	32	32
	Max. Lg., ft.	—	—	—	10	10

Overall Size (A)	(B)	(C)	Lifting Eye Opening, Wd. × Ht.	Handle Length		
2 5/8″	3 5/8″	6 5/8″	1 1/2″ × 1 3/8″	5 7/8″	3384T79	$298.74
3 5/8″	6 3/8″	8 7/8″	1 3/4″ × 2 3/8″	6 7/8″	3384T75	638.30
4 7/8″	9 1/8″	8 7/8″	2 1/4″ × 3 1/2″	6 3/4″	3384T76	1,293.62
7 1/8″	10 5/8″	8 7/8″	3 3/4″ × 4 3/4″	10 1/8″	3384T77	2,097.87

Battery-Powered Lifting Magnets

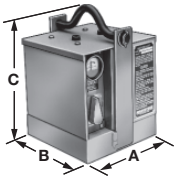

Use them anywhere—these magnets have a self-contained, automotive-style 12-volt battery that creates a magnetic force without an electrical power source. All have a recessed on/off switch and a safe-charge indicator. Housing and lifting bracket are steel. Magnets include a 12-volt charger with 9-ft. cord and three-prong plug for charging from any 115 VAC outlet. Maximum operating temperature is 140° F. Use for lifting flat steel that has a clean, smooth surface.

Note: Capacities are based on SAE 1020 steel. Using other materials may reduce capacity.

Safe Lifting Guidelines		Material Thickness						
		1/4″	3/8″	1/2″	3/4″	1″	1 1/2″	2″
3530T14	Capacity, lbs.	175	400	625	1,100	1,500	2,000	2,000
	Max. Size, sq. ft.	16	25	30	36	36	36	36
	Max. Lg., ft.	5	6	7	7	8	8	8
3530T15	Capacity, lbs.	225	500	800	1,550	2,300	3,750	5,000
	Max. Size, sq. ft.	22	32	38	50	56	61	61
	Max. Lg., ft.	7	8	9	12	12	15	15

Overall Size (A)	(B)	(C)	Lifting Bracket Opening, Wd. × Ht.			
8 3/4″	8 3/4″	12 11/16″	2 1/2″ × 3″	3530T14	$1,668.49
16 3/4″	8″	19 15/16″	4″ × 5″	3530T16	2,465.75

Warning! Never exceed capacities. Never use to lift people or items over people.

Long-Reach Magnetic Retrievers

The extra length you need to go after iron and steel items in hard-to-reach places.

1 Has a disc-style neodymium magnet, which is offset 45° from the 36″ long tubular steel handle. The magnet housing is nickel-chrome plated. Handle has a vinyl grip.

2 Has a horseshoe-style ceramic magnet and a 38½″ long, two-piece straight steel handle that can be unscrewed for a shorter 20⅝″ overall length.

3 Made of Type 303 stainless steel, these retrievers have a 1″ dia. rotary-style Alnico magnet, which is encased in a 1⅛″ dia. tube. Slide the included neoprene ring across the tube to remove material. The handle is straight, 48″ long, and has a neoprene grip. Base has two 2⅝″ dia. neoprene wheels.

4 Have a flat-style Alnico magnet and a 48″ long straight wood handle. They also have a ball-joint base, which lets you pivot the magnet back and forth. Magnet is protected by a removable steel cover plate.

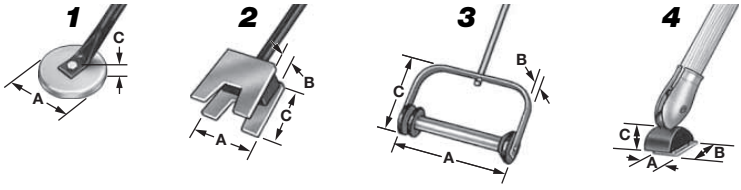

	Approx. Pull, lbs.	(A)	(B)	(C)	Overall Lg.		
1	65	3 7/32″ dia.	—	1″	37″	3899A46	$22.78
2	44.7	3 7/32″	1 11/16″	2¾″	41¼″	58235A23	67.12
3	23	11⅜″	1″	6¾″	52¼″	58235A25	152.50
3	35	16¼″	1″	6¾″	52¼″	58235A27	188.75
3	55	21⅛″	1″	6¾″	52¼″	58235A29	272.95
4	20	2″	2⅜″	2 11/16″	52″	58235A31	48.13
4	30	2⅜″	1⅛″	3⅜″	52″	58235A32	65.60
4	45	2½″	1 15/16″	3⅜″	52″	58235A33	97.72

Hand-Held Retrieving and Holding Magnets

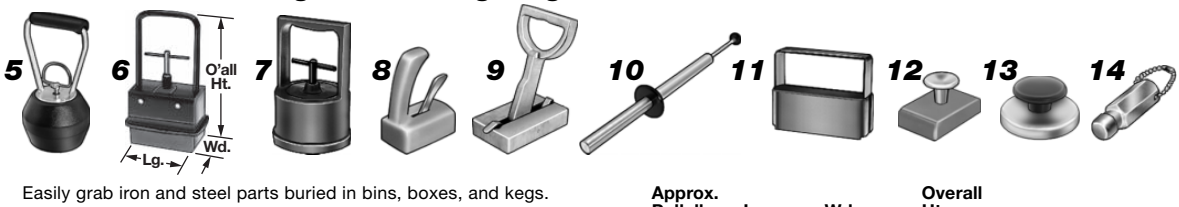

Easily grab iron and steel parts buried in bins, boxes, and kegs.

5&6 These ceramic magnets have a fingertip release bar to release materials. All have a sturdy plastic housing, unless otherwise stated.

Style 6—Models 5839A21, A23, A14, and A15 have a Type 304 stainless steel housing that's for use with hot and abrasive materials. **Also Available:** Stainless steel housings for 5839A11, A31, A12, A32, A13, and A33, plus plastic housings and springs for Style 6 models. Please ask for 5839A84 and specify housing material and magnet part number.

7 These slightly recessed round ceramic magnets have a plastic housing and a release bar to release materials.

8 Recommended for ⅜″ thick or greater steel plate or block, this ceramic magnet has an aluminum housing and a release lever to release materials.

9 These ceramic magnets are recommended for horizontally pulling ⅛″ thick or greater steel sheets (except for 7421A32, which is for ¼″ thick or greater steel plate or block), dies, and assemblies. To release material, simply push the handle completely forward. Magnet base is 1⅛″-1 7/16″ thick. Housing and handle are aluminum. **Also Available:** Replacement handles and handle springs. For handles, please ask for 7421A55; for springs, please ask for 7421A58.

10 These tools have a rare earth magnet. They also have a safety disc that protects your hand by keeping materials from creeping up the body. Pull the slide-action bar to quickly release materials. Housing is Type 304 stainless steel.

11 Magnet is ceramic with a Type 304 stainless steel handle; housing is steel. No release mechanism—remove material manually.

12&13 Also known as blueprint holders, these ceramic magnets require you to remove your material manually. Housing is steel.

14 Material must be removed manually from these Alnico magnets. Housing is hexagon-shaped aluminum with a rounded end and key chain.

	Approx. Pull, lbs.	Lg.	Wd.	Overall Ht.		
5	4-6	—	4″ dia.	8″	5839A35	$29.79
5	4-6	—	4″ dia.	28″	5839A37	34.04
6	2-3	4¾″	1⅝″	9¼″	5839A11	67.24
6	2-3	4¾″	1⅝″	9¼″	5839A21	99.74
6	2-3	4¾″	1⅝″	32½″	5839A31	90.42
6	4-5	4¾″	3⅛″	9¼″	5839A12	99.17
6	4-5	4¾″	3⅛″	32½″	5839A32	142.92
6	6-8	6¼″	4¾″	9¼″	5839A13	161.88
6	6-8	6¼″	4¾″	9¼″	5839A23	248.96
6	6-8	6¼″	4¾″	32½″	5839A33	205.63
6	10	8½″	4¾″	9¾″	5839A14	188.36
6	13	11¼″	4¾″	9¾″	5839A15	228.68
7	9	—	4½″ dia.	8 15/16″	56725A21	81.97
7	9	—	4½″ dia.	19⅝″	56725A22	116.00
8	100	3⅜″	2⅜″	4 13/16″	57865A55	115.05
9	100	6⅛″	3⅝″	9″	7421A31	125.95
9	250	6⅛″	7¼″	9″	7421A32	181.28
9	400	6⅛″	7¼″	9″	7421A33	206.98
9	600	6⅛″	7¼″	9″	7421A34	251.28
10	8	15″	1″ dia.	—	4495A11	79.45
10	8	36″	1″ dia.	—	4495A12	117.99
11	80	4⅜″	1¼″	3¾″	5839A41	109.56
12	12	2⅜″	1⅜″	1 5/16″	83475A42	9.05
12	25	2⅜″	1⅝″	1 5/16″	83475A43	15.10
12	38	2″	1⅝″	1⅜″	83475A11	5.42
12	45	3″	2⅜″	1 7/16″	83475A12	5.74
13	16	—	1.43″ dia.	1″	83475A21	4.14
13	65	—	2.63″ dia.	1¼″	83475A13	6.88
14	5	2 5/16″	½″ hex	—	54945A41	12.13
14	7	2½″	¾″ hex	—	54945A42	19.04

Magnetic Sheet Metal Separators

Separate regularly and irregularly shaped steel sheets without scratching or bending the metal. These self-contained Type 304 stainless steel separators have ceramic magnets, which allow your stacked sheets to fan out. When you remove the top sheet, the next sheet automatically pops into position. Each has two ⅛″ thick, nonmagnetic 300 series stainless steel skid bars on the magnet plate to reduce friction drag. Maximum temperature is 400° F.

Style	Maximum Stack Ht.	Overall Size, Lg. × Wd. × Ht.		
A	12″	5½″ × 8¼″ × 13″	5864K28	$474.21
B	10″	4⅝″ × 6¼″ × 11″	5864K15	297.50
C	6½″	3⅛″ × 4¼″ × 7⅜″	5864K12	177.92
C	9½″	3⅛″ × 4¼″ × 10⅜″	5864K13	220.37
C	15½″	3⅛″ × 4¼″ × 16⅜″	5864K14	304.49

How to Select a Separator—Using the chart below, locate the sheet width and thickness you're working with to determine the separator style and how many individual separators you'll need. *Note:* Chart is approximate. You may need to add more separators.

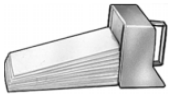

	Sheet Thickness			
Sheet Width	**¼″ Style (Qty.)**	**7-10 ga. Style (Qty.)**	**12-18 ga. Style (Qty.)**	**20-26 ga. Style (Qty.)**
6″	A (1)	A (1)	B (2)	C (2)
12″	A (2)	A (2)	B (1)	C (1)
18″-24″	A (4)	A (2)	B (2)	C (2)
36″-48″	A (4)	A (3)	B (2)	C (2)

Warning! ***"Approx. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

Suction-Cup Lifters

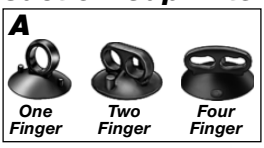

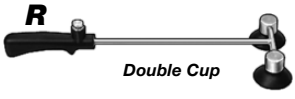

All of these lifters can be used on flat as well as curved surfaces that are smooth and nonporous, unless otherwise stated. They have black rubber cups, unless noted. Maximum temperature is 200° F, unless otherwise stated.

(A-C) Small Suction-Cup Lifters—Perfectly sized for light jobs.
Style A—Have one, two, or four finger rings. Break the suction by pressing one of the tabs on the cup.
Style B—Break the suction by lifting the lipped edge.
Style C—Break the suction with the push-button release valve.

Style	Cup Dia.	Load Cap., lbs.		
A .... One Finger	2⅛″	4	**8547A14**	$1.11
A .... One Finger	2⅝″	6	**8547A11**	1.77
A .... Two Finger	3¼″	10	**8547A12**	2.63
A .... Four Finger	4¾″	25	**56595A41**★	7.26
B .... Knob Top	3¼″	15	**8547A13**	8.98
C .... Knob Top	2⅛″	4	**8547A21**	20.30
C .... Knob Top	3¼″	10	**7387A41**	22.30
C .... Knob Top	3¼″	10	**7387A11**●	27.39
Replacement Cup (3-lb. Load Cap.) for 8547A21			**5795A6**	4.67
Replacement Cup (5-lb. Load Cap.) for 7387A41			**5795A7**	6.11

★ Black vinyl; use on flat, nonporous surfaces; max. temp. is 125° F.
● Red silicone; max. temp. is 450° F.

(D-K) Pump-Style Suction-Cup Lifters—A few quick strokes on the built-in pump create a strong vacuum. For added safety, a red ring indicator on the pump lets you know when you have insufficient vacuum. Use the lift tabs (except for *Styles J* and *K*, which have a release valve) to break the suction. Handles are metal (unless noted). Max. temp. is 120° F.
Style D—*Model* 53615A15 is for use on flat surfaces.
Style H—Has a pivoting tie down ring instead of a handle. Secure suction cup to surface and then attach a rope, chain, or cord to the ring.
Styles J&K—For use on flat surfaces. Furnished in a plastic case.
Also Available: Replacement cups. Please ask for 53615A41 and specify McMaster-Carr suction-cup lifter part number.

Style	Cup Dia.	Load Cap., lbs.		
D .. T-Handle	3″	15	**53615A19**♠	$46.09
D .. T-Handle	3″×6″	40	**53615A15**	56.44
E .. Vertical Handle	6″	70	**53615A31**	73.01
F .. Rigid Handle	6″	70	**53615A11**	60.52
G .. Movable Handle	6″	70	**53615A12**	64.03
H .. Tiedown Ring	6″	70	**53615A34**	63.93
J .. Horizontal Handle	8″	125	**53615A13**	111.04
K .. Horizontal Handle	8″	125	**53615A14**♠	74.51

♠ Black plastic handle.

(L-P) Multi-Cup Suction-Cup Lifters—Locking levers ensure a strong, continuous cup vacuum. Flip the levers back to release. For use on flat, nonporous surfaces. ***Styles L*** and ***N*** have a yellow plastic body. ***Styles M*** and ***P*** have an aluminum body. ***Styles L, M,*** and ***P*** have rigid heads. ***Style N*** has swiveling heads. ***Replacement cup kit*** includes a cup, a lever, and a spring. ***Lifter holder*** is orange plastic and and mounts to a wall (fasteners included).

No. of Cups	Cup Dia.	Load Cap., lbs.	Overall Size, Lg.×Wd.×Ht.		
L 2	4¾″	66	13″ ×4¾″×2¾″	**5535A81**	$39.94
M 2	4¾″	66	13″ ×4¾″×2¾″	**5535A83**	46.10
N 2	4¾″	50	15½″×4¾″×2¾″	**5535A82**	69.44
P 3	4¾″	110	13″ ×9″ ×2¾″	**5608A91**	89.79
Replacement Cup Kit				**5608A93**	12.08
Lifter Holder—*14″ Ht.×9″ Wd.*				**5717A7**	33.97

(Q) Grab-Bar Suction-Cup Lifters—Using one lifter, two people can easily carry large loads such as metal, glass, and plastic sheets. Push down on the steel bar to apply suction; pull up on finger rings to release. Suction cups are 19¾″ center-to-center.

Bar Length	Cup Dia.	Load Cap., lbs.	***Lifters***		***Repl. Cup***	
31″	4″	50	**5793A11**	$75.45	**5795A8**	$12.42
31″	5″	75	**5793A12**	78.18	**5793A5**	15.00
Repl. Flow Valve for Suction Cups					**5717A5**	$2.11

(R) Long-Handle Suction-Cup Lifters—Long handles provide added reach. Push down on the steel rod to apply suction; press the fingertip button on the handle to release. Length is measured from the end of the handle to the center of the cup.

Cup Dia.	Load Cap., lbs.	***15″ Long Lifters***		***18″ Long Lifters***		***Repl. Cup***	
Single Cup							
2⅛″	3	**5795A2**	$36.28	**5795A14**	$39.68	**5795A6**	$4.67
3¼″	5	**5795A23**	38.09	**5795A25**	41.39	**5795A7**	6.11
4″	6	**5795A24**	41.81	**5795A26**	46.28	**5795A8**	12.42
Double Cup—*Cups are 3¼″ center-to-center.*							
2⅛″	6	**5795A1**	60.11	**5795A13**	62.23	**5795A6**	4.67

Heavy Duty Suction-Cup Lifters

Single Cup

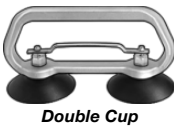
Double Cup

Grab and move bulky items with these lifters. All have cast aluminum handles and are for use on flat and curved smooth surfaces. ***Single-cup lifters*** have a 6″ wide handle and finger-pull suction release. ***Double-cup lifters*** have a 10″ wide handle (unless noted) and a pull-up suction-release bar. Their cups are 6″ center-to-center, unless noted. ***Long-reach double-cup lifters*** have a 32″ vertical handle with a finger-pull suction release. Their cups are 6″ center-to-center. ***Replacement cups*** include a ⅝″-18 male fitting. ***Lifter holder*** is orange plastic and mounts to a wall (fasteners included) for quick lifter access. Size is 14″ Ht.×9″ Wd. **Also Available:** Replacement air flow valves for suction cups. Please ask for 5717A5.

Cup Dia.	***Single Cup*** Load Cap., lbs.			***Double Cup*** Load Cap., lbs.			***Long-Reach Double Cup*** Load Cap., lbs.			***Replacement Cup***		***Lifter Holder***	
Black Rubber Suction Cups—*Maximum temperature is 200° F.*													
3″	15	**5762A18**	$30.41	30	**5717A16**♣	$33.54	—	—	—	**5717A4**	$9.33	**5717A7**	$33.97
4″	25	**5762A22**	32.55	50	**5717A21**	37.06	50	**5717A35**	$129.41	**5795A8**	12.42	**5717A7**	33.97
5″	35	**5762A25**	34.49	75	**5717A22**	41.36	75	**5717A36**	135.88	**5793A5**	15.00	**5717A7**	33.97
Red Silicone Suction Cups—*Maximum temperature is 450° F.*													
4″	25	**5762A44**	45.20	50	**5717A64**	64.71	50	**5717A68**	150.49	**5717A72**	24.44	**5717A7**	33.97
5″	35	**5762A45**	49.39	75	**5717A65**	72.55	75	**5717A69**	159.02	**5717A73**	29.22	**5717A7**	33.97

♣ Handle width is 7″; cups are 3½″ center-to-center.

Rubber Suction Cups

With Male Thread

Great as nonslip feet for office machines and other items. All have a molded-in machine screw with male threads (except for 53535A33, which has an untapped hole). All are made of black rubber (except for 53535A45, which is gray). Maximum temperature is 200° F.

Cup Dia.	Load Cap., lbs.	(A)	Screw Size	(B)	Pkg. Qty.		Pkg.
1″	2.5	5/16″	8-32	¼″	10	**53535A11**	$7.07
1″	2.5	5/16″	8-32	⅜″	10	**53535A22**	7.95
1¼″	3	1⅛″	9/32″	—	10	**53535A33**	7.02
1⅜″	3	½″	8-32	¼″	10	**53535A12**	7.51
1⅜″	3	½″	8-32	⅜″	10	**53535A25**	9.83
1½″	3.5	⅝″	8-32	⅜″	12	**53535A23**	13.27
3⅛″	30	1 17/32″	¼″-20	⅜″	4	**53535A45**	9.68
3¾″	50	1⅜″	5/16″-18	⅝″	1	**53535A46**	5.36

Warning! Never exceed capacities. Never use to lift people or items over people.

About Plate-Lifting Clamps

- Lift one plate at a time.
- Plate surface must be clean and free from oil.
- Insert plate into full clamping depth (dimension A) before lifting.
- Plate thickness should be within the range listed.
- Attach the clamp to a sling, not a hoist hook, to achieve a more vertical lift.
- Clamps should be lifted vertically. The maximum angle out of vertical should not exceed 10° (unless noted).

Vertical lifts raise the plate straight up from its original vertical position. No turning is involved.

Horizontal lifts, using two or more clamps, pick up the plate from its horizontal position. No turning is involved.

90° lifts begin with a horizontal plate and turn it so that it is vertical.

180° lifts take a plate from horizontal to vertical to horizontal through a 180° arc.

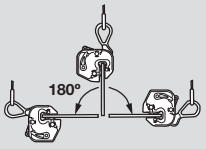

Grip-Tight Plate-Lifting Clamps

Lift metal plates safely—as the load increases so does the grip of these clamps. All clamps are made of steel.

Spring-Loaded Clamps with Wear-Indicating Teeth

Spring-loaded clamps release only when not under load and the lifting eye has been pressed in. The teeth on the cams visibly flatten to indicate wear so you know the cams need replacing. Use with plates that have a hardness less than Rockwell C43/400 Brinell. No minimum load is required for operation.

Also Available: Repair kits. Please ask for 8857T87 and specify McMaster-Carr part number and lifting eye or cam/pad kit required.

(1) Standard—The economical and reliable choice to get the job done.

(2) Standard with Slings—Same as Style 1, but have two clamps with slings for two gripping points that better stabilize larger plates. 8857T21 has 34″ long slings; 8857T22 has 43″ long slings.

(3) Short Leg—A shallow throat allows a secure bite on small and odd-shaped pieces. Ideal for I-beams.

(4) Sharp Leg—One long, pointed leg gets in between stacked plates to engage the clamp.

Work Load Limit, lbs.	For Plate Thickness	(A)	(B)	(C)	(D)	Lifting Eye Opening, Wd. × Ht.		
(1) Standard—*For Vertical, Horizontal, and 180° Lifts*								
1,100	1/16″- 5/8″	2 3/16″	1 3/8″	9 1/2″	4″	2″ × 2 3/4″	8857T32	$310.82
2,200	1/16″- 3/4″	3 1/16″	1 5/8″	11 1/4″	4 3/4″	2 1/16″ × 3 1/16″	8857T33	441.48
6,600	1/16″-1″	3 9/16″	2″	14″	6″	3″ × 3 13/16″	8857T35	786.62
(2) Standard with Slings—*For Vertical, Horizontal, and 180° Lifts*								
1,100	1/16″- 5/8″	2 3/16″	1 3/8″	9 1/2″	4″	2″ × 2 3/4″	8857T21 ♦	814.31
2,200	1/16″- 3/4″	3 1/16″	1 5/8″	11 1/4″	4 3/4″	2 1/16″ × 3 1/16″	8857T22 ♦	1,016.23
(3) Short Leg—*For Vertical, Horizontal, and 180° Lifts*								
1,100	1/16″- 5/8″	2 1/8″	1 3/8″	9 1/2″	4″	2″ × 2 5/8″	8857T18	384.78
2,200	1/16″- 3/4″	2 5/8″	1 21/32″	11 5/16″	4 3/4″	2 1/16″ × 3 1/16″	8857T58	546.33
6,600	1/16″-1″	3 7/16″	2″	15 1/16″	6″	3″ × 3 13/16″	8857T59	792.77
(4) Sharp Leg—*For Vertical, Horizontal, and 90° Lifts*								
1,100	1/16″- 5/8″	2 3/16″	1 3/8″	11 13/16″	4″	2″ × 2 3/4″	8857T62	504.83
2,200	1/16″- 3/4″	3 1/16″	1 5/8″	14″	4 3/4″	2 1/16″ × 3 1/16″	8857T63	710.64

♦ The work load limit is for each leg of the two-part sling.

Lock-Open/Lock-Closed Clamps

The cams on these clamps lock in the open position for easy loading and then, for added safety over spring-loaded clamps, lock closed to prevent accidental release. A minimum load of 10% of the work load limit is required for operation (unless noted).

Also Available: Replacement parts for 8845T and 3352T. Please ask for 8845T77 or 3352T888 and specify McMaster-Carr part number and part required.

Also Available: Repair kits for 8857T. Please ask for 8857T87 and specify McMaster-Carr part number and lifting eye or cam/pad kit required.

(5&6) Compact—The smallest clamps we offer, yet with work load limits comparable to larger clamps. Use on plates with hardness less than Rockwell C37/345 Brinell. ***Style 6*** has a pivoting lifting eye that allows lifts at angles up to 45°.

(7) Wear Indicating—The teeth on the cams visibly flatten to indicate wear so you know the cam needs replacing. Use with plates that have a hardness less than Rockwell C43/400 Brinell. No minimum load is required for operation.

(8) Super Tough—These clamps have heavy-gauge construction and a larger grip range. Plus, all components of the clamp are enclosed in the frame for protection. Also, the locking lever has a hole for attaching a remote release line. Use with plates that have a hardness less than Rockwell C45/420 Brinell. ***4,000-*** and ***8,000-lb***. units have two parallel cams for extra grip surface.

(9&10) Remote Release—A pull chain with ring allows the operator to release the clamp when not under load while standing away from the lifting site. ***Style 9*** is for use with plates that have a hardness less than Rockwell C33/300 Brinell. A minimum load of 50% of the work load limit is required for operation. ***Style 10*** also has teeth on the cams that visibly flatten to indicate wear so you know the cam needs replacing. Use with plates that have a hardness less than Rockwell C43/400 Brinell. No minimum load is required for operation.

Work Load Limit, lbs.	For Plate Thickness	(A)	(B)	(C)	(D)	Lifting Eye Opening, Wd. × Ht.		
(5) Compact—*For Vertical and 180° Lifts*								
2,200	0″ - 3/4″	1 3/4″	1 1/2″	8 1/2″	4 1/2″	1 3/16″ Dia.	8845T72	$322.10
4,400	0″ -1 3/8″	3 1/16″	2 3/16″	13 1/4″	7 1/2″	2 3/4″ Dia.	8845T73	452.30
(6) Compact Pivoting Eye—*For Vertical and 180° Lifts*								
2,200	0″ - 3/4″	1 3/4″	1 1/2″	8 3/4″	4 1/2″	1 3/16″ Dia.	8845T74	403.74
(7) Wear Indicating—*For Vertical, Horizontal, and 180° Lifts*								
1,100	1/16″- 5/8″	2 1/8″	1 3/16″	10″	5 15/16″	2″ × 2 5/8″	8857T11	463.20
2,200	1/16″- 3/4″	3 13/16″	1 5/8″	11 1/4″	6 9/16″	2 1/16″ × 3 1/16″	8857T12	517.08
(8) Super Tough—*For Vertical and 180° Lifts*								
1,000	0″ -1 3/8″	2 3/4″	1 1/2″	12″	5 1/2″	2 1/2″ Dia.	8845T57	298.74
2,000	0″ -1 3/8″	2 3/4″	1 1/2″	12″	5 1/2″	2 1/2″ Dia.	8845T56	408.84
4,000	0″ -1 5/8″	4 1/8″	2 3/8″	16 1/4″	8″	3 1/2″ Dia.	8845T55	532.61
8,000	0″ -2 1/8″	4 5/8″	2 1/2″	18″	9 1/2″	4″ Dia.	8845T58	809.57
(9) Remote Release—*For Vertical Lifts*								
1,000	0″ - 3/4″	2 13/16″	1 1/2″	11 1/4″	4 5/8″	2 3/8″ Dia.	3352T19	266.79
2,000	0″ - 3/4″	3 3/16″	1 5/8″	13 3/4″	5 7/8″	2 5/8″ Dia.	3352T21	375.00
4,000	0″ -1″	3 1/2″	2 1/8″	16 3/8″	6 3/4″	3 5/8″ Dia.	3352T22	495.00
(10) Remote Release with Wear-Indicating Teeth—*For Vertical, Horizontal, and 90° Lifts*								
6,600	1/16″-1 1/4″	4 3/8″	2″	14 3/8″	7 1/4″	2″ × 3 1/2″	8857T14	893.06
11,000	1/16″-1 1/2″	5″	2 11/16″	16″	8 7/8″	2 1/2″ × 3 1/2″	8857T15	1,481.30

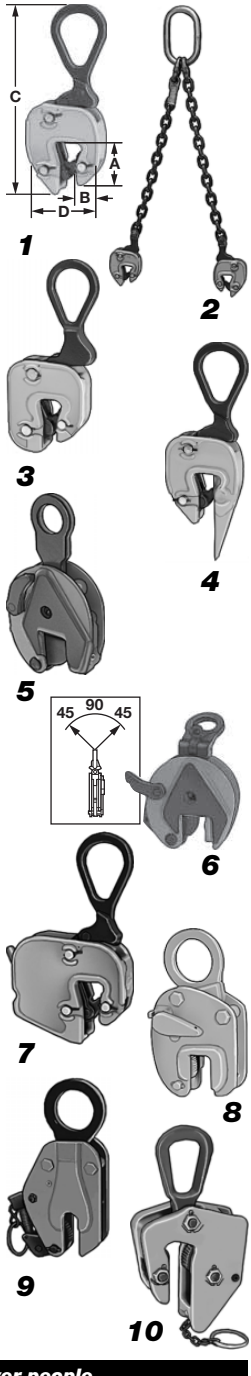

Warning! **Never exceed work load limits. Never use to lift people or items over people.**

For information about plate-lifting clamps, see page 1481.

Light Duty Plate-Lifting Clamps

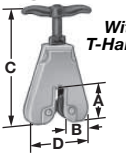

Lifting Eye

Tension on the cams increases as you lift. Use only for vertical lifting of metal plates with a hardness less than Rockwell C43/400 Brinell. Clamps are made of steel. The ***T-handle*** design is for carrying and pulling. Handle is 4″ wide. The ***lifting eye*** is for use in overhead conveying applications. Eye is 1¼″ Wd. × 1½″ Ht.

Work Load Limit, lbs.	Plate Thickness	(A)	(B)	(C)	(D)		
With T-Handle							
500	0″-5/16″	1⅞″	1⅝″	6″	3¾″	**3359T14**	$195.61
With Lifting Eye							
500	0″-5/16″	1⅞″	1⅝″	8″	3¾″	**3359T15**	223.28

Nonmarring Plate-Lifting Clamps

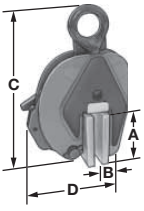

Lock Open/
Lock Closed

Thick Plate

Super-gripping nonmetallic pads on the cams increase their grip as you lift, yet securely handle delicate material without damage. Clamps are made of steel with a painted finish.

Lock-Open/Lock-Closed Clamps— Cams lock open for easy loading, and then lock shut to prevent accidental release. Cams have synthetic pads.

Thick Plate Clamps— Fit the broadest range of plate thicknesses of any clamp we offer. The cams lock open and then spring closed. Cams have rubber pads. Use only for vertical lifts. *Note:* Do not use with glass.

Work Load Limit, lbs.	For Plate Thickness	(A)	(B)	(C)	(D)	Lifting Eye ID	
Lock-Open/Lock-Closed Clamps—*For Vertical and 180° Lifts*							
1,100	0″ - ⅜″	3 5/16″	2 15/16″	9 5/16″	5″	1 9/16″	**8804T51** $612.27
2,200	0″ - ¾″	4 5/16″	2 3/16″	10⅝″	7¼″	1 3/16″	**8804T52** 838.27
Thick Plate Clamps—*For Vertical Lifts*							
2,200	⅝″ -2″	8 9/16″	⅞″	14″	6¼″	1″	**8804T55** 487.66
2,200	1 3/16″-3″	10″	⅞″	15⅝″	7½″	1″	**8804T56** 534.52

Horizontal Plate-Lifting Clamps

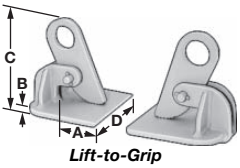

Lift-to-Grip

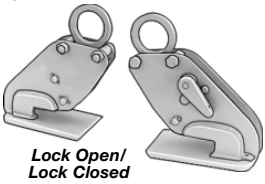

Lock Open/
Lock Closed

Use one or more pairs of these clamps to lift and transfer plates in a horizontal position. Clamps are made of heat-treated steel. Use for lifting metal plates with a hardness less than Rockwell C45/421 Brinell. Minimum lift capacity is 5% of the work load limit.

Lift-to-grip clamps require tension from an attached sling (not included) to firmly grasp the plate.

Lock-open/lock-closed clamps have cams that lock open for easy loading, and then lock shut to prevent accidental release.

Work Load Limit, lbs. (Per Pair)	For Plate Thick.	(A)	(B)	(C)	(D)	Lifting Eye ID	Pair
Lift-to-Grip Clamps							
1,000	0″-1″	4″	⅜″	6¼″	4½″	1½″	**8955T2** $228.03
2,000	0″-2″	5″	½″	10⅛″	6″	1½″	**8955T3** 361.93
3,000	0″-2″	5″	½″	10⅛″	6″	1½″	**8955T4** 432.44
6,000	0″-2″	5″	⅝″	10¼″	6½″	1½″	**8955T5** 478.07
16,000	0″-3″	6½″	1″	14″	8″	2⅜″	**8955T6** 852.26
Lock-Open/Lock-Closed Clamps							
4,000	0″-1″	5½″	½″	11⅞″	4″	2¼″	**8955T81** 665.26
8,000	0″-1½″	6½″	⅝″	14⅞″	5″	3″	**8955T82** 879.85
12,000	0″-1½″	6½″	¾″	15″	5″	3″	**8955T83** 1,030.07
16,000	0″-2″	7¼″	1″	19½″	6⅛″	3½″	**8955T84** 1,394.89

Heavy Duty Screw Plate-Lifting Clamps

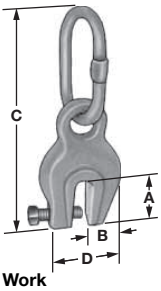

For long life and reliability in demanding applications, these clamps are made of heat-treated steel and have only one moving part. A specially designed clamping screw bites into material for a secure hold. Use only for vertical lifts of metal plates with a hardness less than Rockwell C32/300 Brinell.

Note: Do not use on hardened alloy or abrasion-resistant plates.

Work Load Limit, lbs.	For Plate Thick.	(A)	(B)	(C)	(D)	Lifting Eye Opening, Wd. × Ht.		
5,000	0″-1″	4½″	2¼″	14½″	5½″	2½″ × 6″	**3357T1**	$404.78
5,000	0″-1½″	4½″	2½″	14½″	6½″	2½″ × 6″	**3357T2**	476.79
5,000	0″-2″	4½″	2¾″	14½″	7½″	2½″ × 6″	**3357T3**	564.64

Pivoting Cam Plate-Lifting Clamps

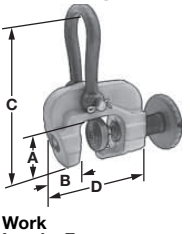

The pivoting serrated cam on these clamps can be quickly tightened by hand and increases its grip as the load increases. Clamps are made of carbon steel and are for horizontal, vertical, and 180° lifts of metal plates with a hardness less than Rockwell C43/400 Brinell. Meet ANSI/ASME B.30.20 specifications.

Work Load Limit, lbs.	For Plate Thick.	(A)	(B)	(C)	(D)	Lifting Eye Opening, Wd. × Ht.		
2,200	1/16″-1″	2¼″	1½″	7¾″	5¼″	1¾″ × 2⅞″	**3700T11**	$432.64
6,600	1/16″-2″	3¾″	2⅜″	10½″	7¾″	1⅞″ × 3⅜″	**3700T12**	852.38
13,200	1/16″-3″	4½″	3″	14¼″	10″	3¼″ × 4½″	**3700T14**	1,687.78

Long-Arm Lifting Tongs

Also known as die-lifting tongs, these tongs have long arms for lifting tall objects and for reaching into machinery. When tension is applied to the lifting eye the grip increases. Tongs are made of alloy steel with a painted finish. Conform to ASME B.30.20.

Work Load Limit, lbs.	For Max. Object Size, Wd. × Thick.	Closed Size, Ht. × Wd.	Lifting Eye ID		
2,000	7″ × 20″	36″ × 9¾″	4″	**22735T31**	$599.89
2,500	9½″ × 28″	47″ × 12½″	5″	**22735T32**	867.43
3,000	10¾″ × 38″	57″ × 13¾″	6″	**22735T33**	997.83

Beam Tongs

Apply tension to the lifting eye and the scissor-action grip of these tongs firmly grabs tapered and wide (flat) flange I-beams. Tongs are made of steel.

3367T1 has a hold-open latch for easy loading and releasing.

Work Load Limit, lbs.	For Max. Flange, Wd. × Thick.	Closed Size, Ht. × Wd.	Lifting Eye ID		
2,000	10″ × 1″	26″ × 8″	4″	**3367T1**	$446.79
3,000	5″ × 5/8″	15″ × 6½″	4″	**3367T6**	324.64
6,000	8″ × 1″	19″ × 10″	4″	**3367T3**	592.50

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

Coil Lifting Hooks

Quickly and easily lift and move bulky, hard-to-maneuver coils from a horizontal to a vertical position. A unique wedge-style end on these hooks pivots forward so it can be inserted between stacked coils that are separated by spacer blocks. Hooks are made of steel with a painted finish. Meet ANSI/ASME B30.20.

Note: Never use for vertical-to-horizontal movement.

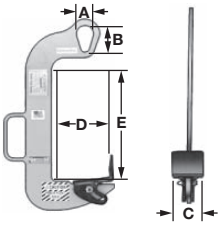

Work Load Limit, lbs.	(A)	(B)	(C)	Coil Size Max. Wd. (D)	Max. Radius (E)	Min. ID		
1,000	2″	3 5/16″	3 1/2″	6″	13″	9″	3595T14	$431.19
2,000	2″	3 5/16″	3 1/2″	8″	16″	10″	3595T17	586.27
4,000	2 5/8″	4″	2″	10″	18″	12 1/2″	3595T18	893.35

Industrial Battery Lifters

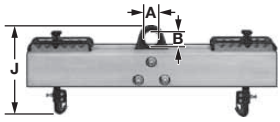

To prevent shock, the beam on these lifters is made of nonconductive, 2″×6″ laminated maple wood. The lifting eye and hooks are made of black powder-coated steel. Hooks adjust in 3″ increments on each side of the beam to accommodate various battery lengths. A unique plunger-style latch locks the hooks into place to ensure safe battery transport. Beam is marked with the work load limit.

Forklift attachment is ideal for lifting heavy batteries. It has 1 5/8″×6 1/2″ fork openings spaced 11 1/2″ center-to-center. Includes a 48″ safety chain with hook to secure to the forklift carriage and a powder-coated steel swivel hook with latch to attach to the lifter. Capacity is 6,000 lbs.

Work Load Limit, lbs.	For Battery Length	Spread	(A)	(B)	(J)		
4,000	21″-42″	24″-39″	2 1/2″	3″	15″	70605K65	$464.83
6,000	25″-46″	28″-43″	2 1/2″	3″	15″	70605K66	505.54
Forklift Attachment						70605K63	217.32

Pallet Lifters

Convert your crane or hoist into an aerial fork lift so you can access areas where it was impossible before. Lifters have built-in guiding handles and are counterbalanced to hang level when empty. Forks are fixed and tapered to slip effortlessly under pallets. Use for high-lift construction work, ship loading, unpaved storage areas, flat cars, open-top trucks, barges, and similar applications.

Lifters are steel with a yellow-painted finish, conform to ASME B30.20, and are marked with work load limit.

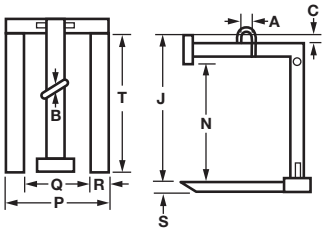

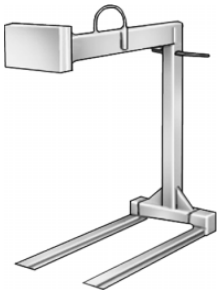

Work Load Limit, lbs.	(A)	(B)	(C)	(J)	(N)	(P)	(Q)	(R)	(S)	(T)		
2,000	3″	1″	5″	60 1/2″	48″	25″	21″	2″	2″	48″	3645T16	$1,394.13
4,000	3″	1″	5″	61 1/2″	48″	25″	17″	4″	2″	48″	3645T23	1,806.13
6,000	4″	1 1/2″	7″	65″	48″	27″	18″	4 1/2″	2 1/2″	48″	3645T26	2,513.78

Spreader Beams

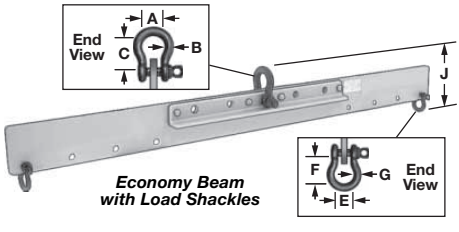

Economy Beam with Load Shackles

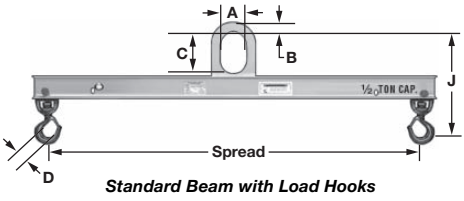

Standard Beam with Load Hooks

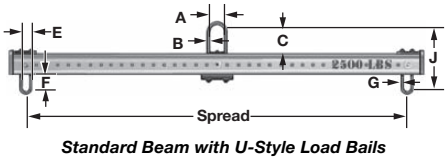

Standard Beam with U-Style Load Bails

Beams are steel with a yellow-painted finish and are marked with work load limit. All meet ANSI/ASME B30.20.

Economy Beams with Load Shackles— Adjustable suspension and load shackles with screw pins let you redistribute weight when lifting unbalanced loads. Shackles are adjustable in the following increments: 3″ for the 250-lb. model, 4″ for the 500-lb. model, and 6″ for all others. Suspension and load shackles are forged steel with an orange-painted finish.

Standard Beams with Load Hooks— Spread adjusts via load hooks. Beams include a steel suspension plate with a yellow-painted finish and forged steel load hooks with a red-painted finish and latches.

Standard Beams with U-Style Load Bails— More versatile for lifting unbalanced loads than the economy models. Suspension and load bails adjust every 2″ for maximum precision. Suspension and load bails are steel with a black-painted finish.

Work Load Limit, lbs.	Spread	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(J)		
Economy Beams with Load Shackles											
250	18″ to 36″	1 1/16″	7/16″	1 1/4″	—	3/4″	27/32″	1/4″	5 3/32″	37615T21	$127.94
500	22″ to 46″	1 3/16″	1/2″	1 11/32″	—	1 1/16″	1 21/64″	7/16″	5 11/16″	37615T22	269.37
1,000	36″ to 72″	1 3/16″	1/2″	1 11/32″	—	1 1/16″	1 21/64″	7/16″	6 7/8″	37615T23	328.55
2,000	36″ to 72″	1 3/4″	3/4″	2 1/64″	—	1 3/16″	1 11/32″	1/2″	7 21/64″	37615T24	385.19
4,000	41″ to 77″	2″	7/8″	2 27/64″	—	1 1/2″	1 5/8″	5/8″	10 1/2″	37615T25	629.24
8,000	48″ to 96″	2 5/8″	1 1/8″	2 15/16″	—	1 3/4″	1 49/64″	3/4″	12 1/4″	37615T26	786.62
Standard Beams with Load Hooks											
2,000	36″ and 48″	3″	7/8″	5″	7/8″	—	—	—	12 3/4″	3657T11	619.57
2,000	48″, 60″, and 72″	3″	7/8″	5″	7/8″	—	—	—	13 11/16″	3657T12	640.83
4,000	36″ and 48″	3″	7/8″	5″	7/8″	—	—	—	13 11/16″	3657T21	658.40
4,000	48″, 60″, and 72″	3″	7/8″	5″	7/8″	—	—	—	14 11/16″	3657T22	769.23
Standard Beams with U-Style Load Bails											
2,500	12″ to 72″	2 1/2″	3/4″	5″	—	1 1/2″	3″	1/2″	12″	3977T11	748.62
4,000	12″ to 72″	3″	1″	6″	—	2″	4″	3/4″	15″	3977T12	977.57
8,000	16″ to 96″	4″	1 1/4″	8″	—	3″	6″	1″	22″	3977T13	1,374.98
10,000	16″ to 120″	5″	1 1/2″	10″	—	3″	6″	1″	26″	3977T14	1,707.03

Warning! **Never exceed work load limits. Never use to lift people or items over people.**

About Web, Mesh, and Wire Rope Slings

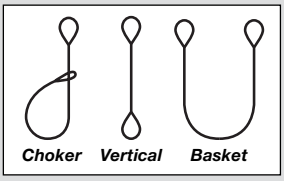

Web, mesh, and wire rope slings can be used in choker, vertical, and basket configurations (see drawings at left) to meet a variety of applications.

Web slings are ideal for lifting irregular-shaped loads and are an excellent alternative to chain and wire rope slings. They are light in weight and less likely to mar, scratch, or dent fragile loads. However, they are susceptible to cutting and abrasion, and therefore should not be exposed to sharp edges (see web sling protectors on page 1485). Sling capacity and stiffness increase with the number of plies. *One-ply* webbing is 1/8″ thick; *two-ply* webbing is 1/4″ thick; and *four-ply* webbing is 9/16″ thick. Higher capacity one- and two-ply slings are made from denser webbing and are stiffer than the same ply slings with lower capacities.

Wire mesh slings and ***chain mesh slings*** (see page 1487) withstand high temperatures and are cut resistant making them an excellent alternative to web slings.

Wire rope slings (see page 1487) are more cut and abrasion resistant than mesh slings.

ⓘ For additional information about web, mesh, and wire rope slings, including eye length and fitting dimensions, go to mcmaster.com and search for **8864TAC**.

Nylon and Polyester Web Slings

Choose from a variety of nylon and polyester slings to handle your general duty lifting applications. A sewn-on tag shows the material, length, and work load limits. Maximum temperature is 180° F. All meet OSHA standard 1910.184 and ANSI specification B30.9. ***Nylon*** slings stretch more than polyester slings to minimize shock to the load. ***Polyester*** slings resist most acids, plus they stretch less than nylon slings, which reduces load creeping.

Choker, Vertical, and Basket Slings

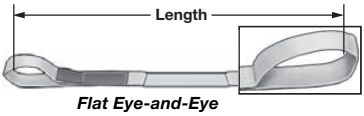

Flat Eye-and-Eye

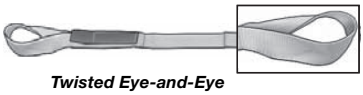

Twisted Eye-and-Eye

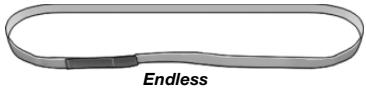

Endless

All slings have a red warning core that shows when the jacket is worn and the sling should be removed from service.

Flat eye-and-eye slings, also known as Type 3, are very versatile and lay in a flat position for easier removal from beneath the load.

Twisted eye-and-eye slings, also known as Type 4, are similar to flat (Type 3) except the eyes are turned 90° to form a better choker. The ends also nest together for use in a single-hook basket configuration.

Endless slings, also known as Type 5, are the most universal general duty slings. The wear/load bearing point changes position every time the sling is used, which increases the life of the sling.

To Order: Please specify nylon or polyester. All slings are sold in lengths of 3, 6, 8, 10, and 12 ft., or any length you choose up to a maximum of 20 ft. Please specify length.

EYE-AND-EYE SLINGS																			
	Work Load Limit, lbs.			No. of Plies	Flat (Type 3)			Twisted (Type 4)			ENDLESS SLINGS (TYPE 5)								
	Choker	Vertical	Basket		Base Price for 3-ft. Lg.	Each	Extra Length Per Ft.	Base Price for 3-ft. Lg.	Each	Extra Length Per Ft.	Choker	Vertical	Basket	No. of Plies	Base Price for 3-ft. Lg.	Each	Extra Length Per Ft.
1″ Web Width																	
	950	1,200	2,400	1	9073T631	$10.46	$0.72	9073T391	$10.46	$0.72	1,900	2,400	4,800	1	9073T181●	$8.90	$1.70
	1,200	1,500	3,000	1	3403T429	12.79	.89	3403T529	12.79	.89	2,480	3,100	6,200	1	3403T681	13.80	1.93
	1,900	2,400	4,800	2	9072T631	14.42	1.62	9072T681	14.42	1.62	3,800	4,800	9,600	2	9072T636●	18.44	3.50
	2,480	3,100	6,200	2	3383T429	15.61	2.14	3383T529	15.61	2.13	4,960	6,200	12,400	2	3383T681	26.75	4.23
	4,400	5,500	11,000	4	9077T1	33.94	4.74	9077T6	33.94	4.74	8,800	11,000	22,000	4	9077T15	43.26	9.19
2″ Web Width																	
	1,900	2,400	4,800	1	9073T632■	13.75	1.42	9073T392■	13.75	1.42	3,800	4,800	9,600	1	9073T182●	12.86	2.93
	2,480	3,100	6,200	1	3403T431	17.44	1.45	3403T531	17.44	1.45	4,960	6,200	12,400	1	3403T682	20.56	3.21
	3,800	4,800	9,600	2	9072T632	19.55	2.95	9072T682	19.55	2.95	7,700	9,600	19,200	2	9072T637●	26.13	5.70
	4,960	6,200	12,400	2	3383T431	19.45	3.28	3383T531	19.45	3.28	10,000	12,500	25,000	2	3383T682	35.84	6.12
	8,800	11,000	22,000	4	9077T2	45.35	7.87	9077T8	45.35	7.87	17,600	22,000	44,000	4	9077T16	68.59	15.59
3″ Web Width																	
	2,640	3,300	6,600	1	9073T11■	24.51	1.70	9073T14■	24.51	1.70	5,280	6,600	13,200	1	9073T17	20.03	3.96
	3,760	4,700	9,400	1	3403T432	27.16	1.94	3403T532	27.16	1.94	7,520	9,400	18,800	1	3403T683	24.80	5.10
	5,280	6,600	13,200	2	9072T14■	31.81	3.84	9072T21■	31.81	3.84	10,560	13,200	26,400	2	9072T43	30.78	8.75
	7,520	9,400	18,800	2	3383T432	31.67	4.46	3383T532■	31.69	4.46	15,040	18,800	37,600	2	3383T683	51.49	10.35
	13,120	16,400	32,800	4	9077T3	73.71	10.00	9077T9	73.71	10.00	26,320	32,900	65,800	4	9077T17	103.19	23.32
4″ Web Width																	
	3,520	4,400	8,800	1	9073T12■	32.17	2.21	9073T15■	32.17	2.21	7,040	8,800	17,600	1	9073T18	26.11	4.95
	4,960	6,200	12,400	1	3403T433	37.84	2.79	3403T533	37.84	2.79	10,000	12,500	25,000	1	3403T101	36.84	6.78
	6,900	8,600	17,200	2	9072T15■	42.65	5.30	9072T32■	42.65	5.30	13,120	16,400	32,800	2	9072T37	39.87	10.70
	10,000	12,500	25,000	2	3383T433	40.98	6.00	3383T533■	40.98	6.00	20,000	25,000	50,000	2	3383T685	69.18	13.23
	16,320	20,400	40,800	4	9077T4	89.89	13.27	9077T13	89.89	13.27	32,640	40,800	81,600	4	9077T18	134.89	30.60
6″ Web Width																	
	5,280	6,600	13,200	1	9073T13▲	54.48	4.45	9073T16▲	54.48	4.45	10,560	13,200	26,400	1	9073T19	46.94	9.11
	7,520	9,400	18,800	1	3403T434	65.93	5.74	3403T534	65.93	5.74	15,040	18,800	37,600	1	3403T684	61.31	12.08
	9,840	12,300	24,600	2	9072T17▲	65.23	10.51	9072T35▲	65.23	10.52	19,680	24,600	49,200	2	9072T41	85.95	22.67
	15,040	18,800	37,600	2	3383T434	61.19	10.00	3383T534■	61.18	10.00	30,080	37,600	75,200	2	3383T684	109.08	24.32
	24,480	30,600	61,200	4	9077T5	132.76	22.48	9077T14■	132.73	22.48	48,960	61,200	122,300	4	9077T102	190.45	48.20

■ Base price is for 4-ft. length. ▲ Base price is for 5-ft. length. ● Base price is for 2-ft. length.

Extra-Wide Basket Slings

Standard Duty

Heavy Duty

Also known as cargo slings, these slings handle bulky loads in basket configurations only. The extra width balances the load and the tapered eyes easily fit into hooks. ***Standard duty*** slings have reversible eyes that can be folded inside out to allow both sides to wear equally. ***Heavy duty*** slings have reinforced eyes.

To Order: Please specify nylon or polyester. All slings are sold in lengths of 6, 8, 10, and 12 ft., or any length you choose up to a maximum of 20 ft. Please specify length.

Web Wd.	Work Load Limit, lbs.	No. of Plies	Eye Lg.	Base Price for 6-ft. Lg.	Each	Extra Length Per Ft.
Standard Duty						
6″	6,000	1	9″	8937T44	$59.87	$4.58
12″	6,000	1	18″	8937T45	102.47	11.60
16″	10,000	1	24″	8937T46	117.55	17.43
24″	10,000	1	24″	8937T47	152.94	24.78
Heavy Duty						
6″	18,600	1	9″	8937T2	$65.70	$7.11
12″	37,200	1	16″	8937T3	127.05	12.75
16″	44,000	1	20″	8937T4	174.00	18.55
24″	66,000	1	24″	8937T5	275.20	28.63

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

For information about web slings, see page 1484.

Wear-Resistant Web Slings

These tough slings offer better wear and abrasion resistance than our other nylon and polyester slings. All have a sewn-on tag that shows material, length, and work load limits. Maximum temperature is 194° F. Meet OSHA standard 1910.184 and ANSI specification B30.9.

Edge-guard slings have polymer-coated threads woven into the edges for wear resistance. Choose from *nylon slings* that stretch more than polyester slings to minimize shock to the load and *polyester slings* that are acid resistant and stretch less than nylon slings to reduce load creeping.

Super-edge slings are nylon with hard thermoplastic beading to protect the edge. Eyes are reinforced with ultra abrasion-resistant nylon for added wear protection.

Tough-web slings, also known as Cordura jacketed, have ultra abrasion-resistant nylon threads woven into the outer layers to protect the inner load-carrying yarns.

Premium super-web slings, also known as Cordura reinforced, are the most wear resistant slings we offer. Nylon with ultra abrasion-resistant nylon wear strips sewn on both sides of the body and eyes offers superior abrasion resistance.

Flat eye-and-eye slings, also known as Type 3, lay in a flat position for easier removal from beneath the load. ***Twisted eye-and-eye*** slings, also known as Type 4, are similar to flat (Type 3) except the eyes are turned 90° to form a better choker configuration and the ends nest together for use in a single-hook basket configuration. ***Reversible eye-and-eye*** slings, also known as Type 6, have reversible eyes that can be folded inside out to allow both sides to wear equally. ***Endless*** slings, also known as Type 5, allow the wear/load bearing point to change position every time the sling is used, which increases the life of the sling.

To Order: All slings are sold in lengths of 3, 6, 8, 10, and 12 ft., or any length you choose up to a maximum of 20 ft. Please specify length. For edge-guard slings, also specify nylon or polyester.

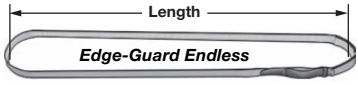

Edge-Guard Endless

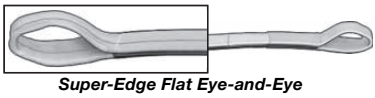

Super-Edge Flat Eye-and-Eye

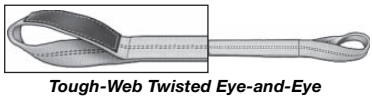

Tough-Web Twisted Eye-and-Eye

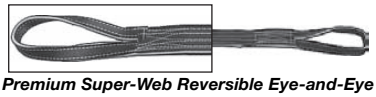

Premium Super-Web Reversible Eye-and-Eye

Work Load Limit, lbs. Choker	Vertical	Basket	No. of Plies	EYE-AND-EYE SLINGS Flat (Type 3) Base Price for 3-ft. Lg.	Extra Lg. Each	Extra Lg. Per Ft.	Twisted (Type 4) Base Price for 3-ft. Lg.	Extra Lg. Each	Extra Lg. Per Ft.	ENDLESS SLINGS (TYPE 5) Work Load Limit, lbs. Choker	Vertical	Basket	No. of Plies	Base Price for 3-ft. Lg.	Extra Lg. Each	Extra Lg. Per Ft.
Edge-Guard																
1″ Web Width																
1,300	1,600	3,200	1	33625T121●	$13.61	$2.33	33625T551●	$13.61	$2.33	2,600	3,200	6,400	1	33625T541●	$11.96	$3.11
2,500	3,100	6,200	2	3360T73●	13.93	2.55	3360T53●	13.93	2.55	5,000	6,200	12,400	2	3360T28●	30.74	5.81
4,400	5,500	11,000	4	3468T126	33.66	6.25	3468T131	33.66	6.25	8,800	11,000	22,000	4	3468T122	61.02	13.34
2″ Web Width																
2,500	3,100	6,200	1	33625T74●	16.60	3.18	33625T46●	16.60	3.18	5,000	6,200	12,400	1	33625T17●	16.69	4.60
5,000	6,200	12,400	2	3360T76●	19.35	3.51	3360T57●	19.35	3.51	9,900	12,400	24,800	2	3360T35●	41.08	9.65
8,800	11,000	22,000	4	3468T127	47.47	10.66	3468T132	47.47	10.66	17,600	22,000	44,000	4	3468T123	81.90	18.43
3″ Web Width																
3,800	4,700	9,400	1	33625T77●	26.59	3.91	33625T57●	26.59	3.91	7,500	9,400	18,800	1	33625T26●	26.55	7.75
7,000	8,800	17,600	2	3360T83●	29.26	5.49	3360T63●	29.26	5.49	14,100	17,600	35,200	2	3360T43●	55.03	16.48
13,200	16,500	32,900	4	3468T128	69.03	13.92	3468T133	69.03	13.92	26,300	32,900	65,800	4	3468T124	130.40	28.76
4″ Web Width																
5,000	6,200	12,400	1	33625T85●	40.68	4.74	33625T66●	40.68	4.74	9,900	12,400	24,800	1	33625T36●	35.69	10.03
8,800	11,000	22,000	2	3360T86●	43.49	7.73	3360T67●	43.49	7.73	17,600	22,000	44,000	2	3360T46●	77.12	17.33
16,300	20,400	40,800	4	3468T129	92.20	21.74	3468T134	92.20	21.74	32,600	40,800	81,600	4	3468T125	157.12	18.12
Super-Edge																
2″ Web Width																
5,120	6,400	12,800	2	8493T51	52.42	4.42	8493T53	52.42	4.42	—	—	—	—	—	—	—
4″ Web Width																
9,200	11,500	23,000	2	8493T52■	86.64	5.87	8493T54■	86.64	5.87	—	—	—	—	—	—	—
Tough-Web																
1″ Web Width																
800	1,000	2,000	1	3056T27	16.23	1.01	3056T41	16.23	1.01	1,600	2,000	4,000	1	3056T11	13.95	2.02
1,600	2,000	4,000	1	3056T37	23.95	1.82	3056T51	23.95	1.82	3,200	4,000	8,000	1	3056T21	23.97	3.38
2″ Web Width																
1,600	2,000	4,000	1	3056T29	25.65	1.90	3056T43	25.65	1.90	3,200	4,000	8,000	1	3056T13	22.92	3.88
3,200	4,000	8,000	1	3056T39	40.36	3.38	3056T53	40.36	3.38	6,400	8,000	16,000	1	3056T23	37.67	6.62
Premium Super-Web																
2″ Web Width				Flat (Type 3)			Reversible (Type 6)			Endless (Type 5)						
3,680	4,600	9,200	1	8964T555	$17.10	$5.83	8964T551	$17.10	$5.83	4,960	6,200	12,400	1	8964T15	$38.92	$11.83
6,160	7,700	15,400	2	8964T557	30.36	8.38	8964T553	30.36	8.38	10,000	12,500	25,000	2	8964T36	61.14	17.54
4″ Web Width																
7,360	9,200	18,400	1	8964T556	26.64	9.93	8964T552	26.64	9.93	10,000	12,500	25,000	1	8964T32	57.22	20.97
12,400	15,500	31,000	2	8964T558	39.89	13.96	8964T554	39.89	13.96	20,000	25,000	50,000	2	8964T38	86.94	31.55

● Base price is for 2-ft. length. ■ Base price is for 4-ft. length.

Endless Nylon Slings

Slings are single-ply nylon webbing. A sewn-on tag shows material, length, and work load limits. Maximum temperature is 180° F . Meet OSHA standard 1910.184 and ANSI specification B30.9. ***Combination box*** includes one sling of each size.

Width	Work Load Limit, lbs. Choker	Vertical	Basket	30″ Length Each	40″ Length Each	50″ Length Each	Combination Box Box
1″	1,760	2,200	4,400	3463T84 $12.82	3463T85 $14.77	3463T86 $16.62	3463T37 $45.10
1″	2,480	3,100	6,200	3463T94 18.00	3463T95 20.97	3463T96 22.54	3463T47 61.26

Web Sling Protectors

Reduce damage from cuts and abrasion—position a sling protector over areas prone to wear and increase the life of your slings.

Nylon hook and loop can be used even when fittings are installed on both ends of the slings.

Kevlar slip-on are the most cut-resistant sling protection we offer. *Note:* Slip-on sling protectors aren't designed for use on slings with fittings on both ends; choose hook and loop instead.

Lg. × Wd. × Thick.	Fits Web Width		
Nylon Hook and Loop			
12″ × 3″ × 1/4″	1″	3339T1	$12.84
12″ × 4″ × 1/4″	2″	3339T2	14.95
12″ × 6″ × 1/4″	4″	3339T3	21.05

Lg. × Wd. × Thick.	Fits Web Width		
Kevlar Slip-On			
12″ × 2″ × 1/16″	1″	3279T1	$10.55
12″ × 3″ × 1/16″	2″	3279T2	14.57
12″ × 4″ × 1/16″	3″	3279T3	19.06
12″ × 6″ × 1/16″	4″	3279T4	26.61

Nylon Hook and Loop

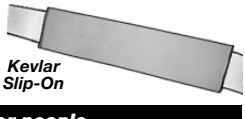

Kevlar Slip-On

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

For information about web slings, see page 1484.

Polyester Round Slings

Eye-and-Eye

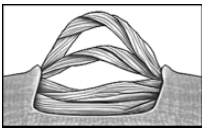

Cutaway View

Endless

For flexibility and a high strength-to-weight ratio, these slings consist of continuous-strand polyester fibers encased by two seamless layers of woven polyester, unless noted. The flexible internal fibers allow the sling to conform to the shape of the load. Slings resist sunlight, grease, and most acids. Stretch is 3% of length at the rated work load limits. Sewn-on tag shows material, length, and work load limits. Maximum temperature is 194° F. Meet OSHA standard 1910.184 and ANSI specification B30.9.

Eye-and-eye slings have an additional abrasion-resistant nylon cover over the body to improve wear resistance. ***Endless*** slings allow the wear points to be rotated for even wearing and longer life.

To Order: Sold in the minimum lengths shown as well as 3, 6, 8, 10, and 12 ft., or any length you choose up to a max. of 20 ft. Specify length.

Sling hooks with latch (sold separately) prevent rigging errors—just match the color and capacity of the hook to the compatible sling. Use in vertical configurations only.

Slings

Work Load Limit, lbs. Choker	Vertical	Basket	Color	Web Wd.	Min. Lg., ft.	Base Price for Min. Lg.	Each	Extra Length Per Ft.
Eye-and-Eye								
2,100	2,600	5,200	Purple	3¼″	3	33995T41	$17.37	$6.61
4,200	5,300	10,600	Green	3¼″	3	33995T43	22.91	7.60
6,700	8,400	16,800	Yellow	4¼″	3	33995T45	28.42	8.78
8,500	10,600	21,200	Tan	4¼″	3	33995T47	30.94	9.72
10,600	13,200	26,400	Red	4¼″	4	33995T49	52.74	12.32
13,400	16,800	33,600	White	6¼″	4	33995T51	58.14	14.53
17,000	21,200	42,400	Blue	6¼″	4	33995T53	68.95	16.75
24,800	31,000	62,000	Gray	4⅝″	5	33995T72	106.76	21.31
42,400	53,000	106,000	Brown	6¼″	8	33995T73	241.65	30.08
Endless								
2,100	2,600	5,200	Purple	1½″	2	33995T11	8.60	3.06
4,200	5,300	10,600	Green	2″	2	33995T13	11.86	4.09
6,700	8,400	16,800	Yellow	2⅜″	3	33995T15	19.17	5.00
8,500	10,600	21,200	Tan	2½″	3	33995T17	23.20	5.97
10,600	13,200	26,400	Red	3″	3	33995T19	28.37	7.45
13,400	16,800	33,600	White	3¾″	3	33995T21	31.51	8.60
17,000	21,200	42,400	Blue	3¾″	3	33995T23	43.29	12.06
24,800	31,000	62,000	Gray	4⅝″	3	33995T25★	85.71	17.18
42,400	53,000	106,000	Brown	6¼″	8	33995T27	215.60	26.74

★ Lengths less than 8 feet have a side seam.

Sling Hooks with Latch

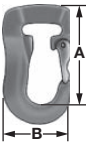

Vertical Work Load Limit, lbs.	Color	Hook Opening	(A)	(B)		
2,600	Purple	1⅛″	4⁵⁄₁₆″	2⅞″	8582T61	$62.22
5,300	Green	1⁵⁄₁₆″	5⁹⁄₁₆″	3⅝″	8582T62	76.33
8,400	Yellow	1⁵⁄₁₆″	5⅞″	4⁵⁄₁₆″	8582T63	111.11

Wear-Resistant Polyester Round Slings

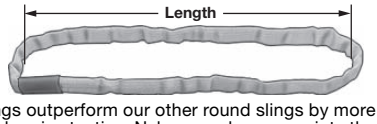

These slings outperform our other round slings by more than 300% in standard abrasion testing. Nylon wear bars sewn into the outer cover slow deterioration. Sewn-on tag shows material, length, and work load limits. Maximum temperature is 194° F. Meet OSHA standard 1910.184 and ANSI specification B30.9.

To Order: Sold in the minimum lengths shown as well as 3, 6, 8, 10, and 12 ft., or any length you choose up to a max. of 20 ft. Specify length.

Work Load Limit, lbs. Choker	Vertical	Basket	Color	Web Wd.	Min. Lg., ft.	Base Price for Min. Lg.	Each	Extra Length Per Ft.
2,100	2,600	5,200	Purple	1⅝″	2	8527T31	$11.48	$3.40
4,200	5,300	10,600	Green	2″	2	8527T32	13.74	4.43
6,700	8,400	16,800	Yellow	2⁷⁄₁₆″	3	8527T33	23.44	5.99
8,500	10,600	21,200	Tan	2⁷⁄₁₆″	3	8527T34	26.94	6.71
10,600	13,200	26,400	Red	3″	3	8527T35	34.71	8.86
13,400	16,800	33,600	White	3½″	3	8527T36	38.11	10.32
17,000	21,200	42,400	Blue	3¾″	3	8527T37	51.20	14.14

Web Slings with Choker Fittings

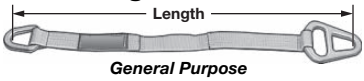

General Purpose

Edge-Guard

Tough-Web

Quick Connect

Slip the end fitting on one end through the choker end fitting on the other end for use as a choker sling. Can also be used in vertical and basket configurations (unless noted). All slings have a sewn-on tag that shows material, length, and work load limits. Maximum temperature is 180° F. Meet OSHA standard 1910.184 and ANSI specification B30.9.

General purpose slings have a triangle fitting on one end and a choker triangle on the other end. Choose from *nylon slings* that stretch more than polyester slings to minimize shock to the load and *polyester slings* that are acid resistant and stretch less than nylon slings to reduce load creeping.

Edge-guard slings provide greater resistance to edge cutting and abrasion than general purpose slings. They are made of heavy duty polyester with polymer-coated threads woven into the edges with a web trap triangle fitting on one end and a web trap triangle choker on the other end. The web trap is specially designed to keep the web of the sling correctly positioned during use.

Tough-web slings, also known as Cordura jacketed, provide better wear resistance than edge-guard slings. They have ultra abrasion-resistant nylon threads woven into the outer layers to protect the inner load-carrying yarns. They have the same fittings on both ends, which allows either fitting to be threaded through the other to create a choker.

Quick-connect slings are made of heavy duty nylon with a quick-connect fitting on one end and a flat eye on the other end. The fitting easily interlocks with the body of the sling to form a choker and reduce rigging time. *Note:* Use in choker configurations only.

To Order: Sold in standard lengths of 3, 6, 8, 10, and 12 ft., or any length you choose up to a maximum of 20 ft. Please specify length. For general purpose slings, also specify nylon or polyester.

Work Load Limit, lbs. Choker	Vertical	Basket	No. of Plies	Base Price for 3-ft. Lg.	Each	Extra Length Per Ft.
General Purpose						
2″ Web Width						
1,760	2,200	4,400	1	9073T396	$78.61	$1.57
2,480	3,100	6,200	1	3403T331	81.56	1.90
3,520	4,400	8,800	2	9072T193	80.89	2.75
4,960	6,200	12,400	2	3383T329	81.30	3.28
3″ Web Width						
2,640	3,300	6,600	1	9073T397	107.14	2.16
3,760	4,700	9,400	1	3403T332	108.37	2.67
5,280	6,600	13,200	2	9072T195	110.11	4.28
7,040	8,800	17,600	2	3383T332	113.79	5.18
4″ Web Width						
3,520	4,400	8,800	1	9073T398	146.36	3.05
4,960	6,200	12,400	1	3403T333	146.36	3.77
6,560	8,200	16,400	2	9072T196	151.36	5.84
8,800	11,000	22,000	2	3383T333	155.91	7.09
Edge Guard						
2″ Web Width						
2,500	3,200	6,400	1	3485T21	67.11	2.26
5,000	6,400	12,800	2	3485T27	76.39	5.19
3″ Web Width						
3,800	4,800	9,600	1	3485T23	107.23	3.63
7,040	8,800	17,600	2	3485T29	123.10	8.40
4″ Web Width						
5,000	6,400	12,800	1	3485T25	124.34	4.66
9,200	11,500	23,000	2	3485T32	158.19	10.89
Tough Web						
2″ Web Width						
3,200	4,000	8,000	1	3283T73	111.07	5.01
6,400	8,000	16,000	2	3283T83	123.54	10.59
3″ Web Width						
4,800	6,000	12,000	1	3283T74	178.10	7.49
8,600	10,800	21,600	2	3283T84	198.16	15.64
4″ Web Width						
6,400	8,000	16,000	1	3283T75	222.14	9.36
11,500	14,400	28,800	2	3283T85	262.04	19.47
Quick Connect						
2″ Web Width						
4,000	—	—	2	3300T63	117.72	3.65
3″ Web Width						
7,000	—	—	2	3300T64	150.55	5.80
4″ Web Width						
9,000	—	—	2	3300T65	265.05	7.88

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

Wire Mesh and Chain Mesh Slings with Choker Fittings

Mesh slings resist cuts and abrasion, withstand temperatures up to 550°F, conform to irregular shapes, and maintain balanced loads. Mesh and end fittings are alloy steel. Use in choker, vertical, and basket configurations.

Wire mesh slings provide superior abrasion resistance and are zinc-plated for corrosion resistance. Serial number and work load limits are stamped on the fitting. ***Chain mesh*** slings are made of separate strands of chain woven with 1/8″ wire rope. They have a greater capacity for the same width as wire mesh style, plus they have bidirectional flexibility. End fittings have a green painted finish. Slings are tagged with the serial number and work load limits.

To Order: Sold in standard lengths of 3, 6, 8, 10, and 12 ft., or any length you choose up to a maximum of 20 ft. Please specify length.

Sling Width	Work Load Limit, lbs. Choker	Vertical	Basket		Base Price for 3-ft. Lg. Each	Extra Length Per Ft.
Wire Mesh						
2″	2,300	2,300	4,600	**3404T31**	$151.56	$20.40
3″	3,500	3,500	7,000	**3404T32**	169.41	22.25
4″	4,800	4,800	9,600	**3404T33**	187.38	23.92
6″	7,200	7,200	14,400	**3404T34**	218.80	27.64
Wire Mesh (Cont.)						
8″	9,600	9,600	19,200	**3404T35**	$250.27	$30.16
Chain Mesh						
2″	6,000	6,000	12,000	**34015T4**	339.33	40.96
4″	10,000	10,000	20,000	**34015T5**	411.36	71.26

Steel Wire Rope Slings

Rope slings provide better abrasion and cut resistance than web slings. Slings are tagged with work load limits. Meet both OSHA 1910.184 and ANSI B30.9 (unless noted). *Note:* When wire rope is bent to create a basket, the strength of the rope decreases. Therefore, basket values apply only when the diameter of the curve divided by the rope diameter (D/d ratio where D = dia. of curve; d = rope dia.) is 25 or greater for 6×19 mechanical-splice slings; 10 or greater for 7×7×7 cable-laid mechanical-splice slings; and 15 or greater for all hand-splice slings.

1

Mechanical-Splice Slings

The ends of the sling are secured with a pressed metal sleeve. All have a max. temp. of 400°F.

6×19 IWRC are made from a single wire rope—the most popular construction. ***6×19 IWRC braided*** slings consist of three wire ropes braided together—for more flexibility than 6×19 IWRC slings. ***7×7×7 galvanized cable laid*** slings are the most flexible of all mechanical-splice slings. They grip tighter and are easier to handle, but are less resistant to cuts and abrasion.

To Order: Sold in the minimum length shown as well as 6, 8, 10, and 12 ft., or any length you choose up to a maximum of 20 ft. Please specify length.

Also Available: 6×19 IWRC (Style 1) slings in stainless steel. Please ask for 3550T999 and specify stainless steel, rope diameter, and sling length.

2

Wire Rope Dia.	Work Load Limit, lbs. Choker	Vertical	Basket	Min. Lg., ft.	Base Price for Min. Lg.	Each	Extra Length Per Ft.
(1) 6×19 IWRC—Rope Loop Both Ends							
1/4″	960	1,300	2,600	2	**3550T11**	$9.62	$1.74
3/8″	2,200	2,800	5,800	2	**3550T14**	13.92	2.05
1/2″	3,800	5,000	10,200	3	**3550T17**	21.48	2.22
5/8″	5,800	7,800	15,600	3	**3550T21**	34.31	3.39
3/4″	8,200	11,200	22,000	4	**3550T24**	58.07	4.73
7/8″	11,200	15,200	30,000	4	**3550T27**	83.88	6.43
1″	14,400	19,600	40,000	5	**3550T31**	118.32	7.97
(1) 6×19 IWRC Braided★—Rope Loop Both Ends							
1/4″	740	840	1,680	2	**3432T41**♣	78.48	2.77
3/8″	1,420	1,600	3,200	3	**3432T42**♣	111.03	3.18
1/2″	2,400	2,800	5,600	3	**3432T43**	123.65	3.97
5/8″	3,800	4,400	8,800	4	**3432T44**	172.23	4.18
3/4″	5,600	6,400	12,800	4	**3432T45**	172.42	4.87
(1) 7×7×7 Galvanized Cable Laid—Rope Loop Both Ends							
1/4″	740	1,000	2,000	2	**8942T81**	21.25	3.11
3/8″	1,600	2,200	4,400	2	**8942T82**	25.73	3.13
1/2″	2,800	3,800	7,600	2	**8942T83**	31.05	3.76
5/8″	4,000	5,600	11,200	3	**8942T84**	51.26	5.44
(2) 6×19 IWRC—Thimble Loop Both Ends							
1/4″	—	1,300	2,600	2	**3550T34**	15.07	1.74
3/8″	—	2,800	5,800	2	**3550T37**	23.15	2.05
1/2″	—	5,000	10,200	2	**3550T41**	30.00	2.22
5/8″	—	7,800	15,600	2	**3550T44**	45.48	3.39
3/4″	—	11,200	22,000	3	**3550T47**	72.18	4.73
7/8″	—	15,200	30,000	3	**3550T51**	97.30	6.43
(3) 6×19 IWRC—Rope Loop End/Sling Hook with Latch End							
1/4″	960	1,300	2,600	2	**3550T54**	28.25	1.54
3/8″	2,200	2,800	5,800	2	**3550T57**	38.47	2.05
1/2″	3,800	5,000	10,200	3	**3550T61**	58.78	2.22
5/8″	5,800	7,800	15,600	4	**3550T64**	92.55	2.22
(4) 6×19 IWRC—Slip-Through Thimble Loop Both Ends with Sliding Choker Hook							
3/8″	2,200	—	—	4	**3550T71**	90.91	2.05
1/2″	3,800	—	—	4	**3550T74**	106.85	2.22
(5) 7×7×7 Galv. Cable Laid—Rope Loop End/Slip-Through Thimble End w/Sliding Choker Hook							
1/4″	740	—	—	2	**8942T91**	46.37	3.11
3/8″	1,600	—	—	2	**8942T92**	52.76	3.13
1/2″	2,800	—	—	2	**8942T93**	58.47	3.76

★ Diameter listed is the overall sling diameter (all three wires together). Meets ANSI B30.9.
♣ Constructed of 7×19 galvanized steel strand core wire rope.

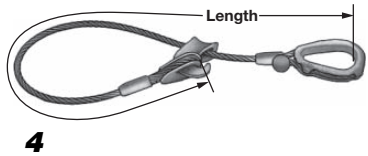

3

4

Hand-Splice Slings

Loops are formed by hand and the ends are tucked back into the sling's body for a tapered and concealed splice. All are made from a single wire rope so they are more flexible, but less crush resistant than other constructions. Maximum temperature is 180°F.

To Order: Sold in the minimum length shown as well as 6, 8, 10, and 12 ft., or any length you choose up to a maximum of 20 ft. Please specify length.

5

Wire Rope Dia.	Work Load Limit, lbs. Choker	Vertical	Basket	Min. Lg., ft.	Base Price for Min. Lg.	Each	Extra Length Per Ft.
(6) 6×19 Fiber—Rope Loop Both Ends							
1/4″	840	1,080	2,200	3	**3550T81**	$22.08	$1.09
3/8″	1,700	2,400	4,800	3	**3550T84**	25.13	1.42

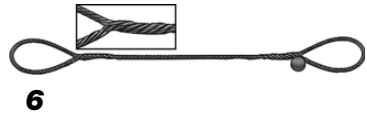

6

Warning! **Never exceed work load limits. Never use to lift people or items over people.**

About Slings with Fittings

Our wide selection of sling materials and fittings allows you to design a sling to suit your application—simply choose a sling material and specify your desired length and combination of end fittings. All our slings, except Grade 50 stainless steel, meet OSHA 1910.184 and ANSI B30.9.

Slings with fittings are also known as bridle slings. ***Single-leg*** slings are designed for straight, vertical lifting applications. You must choose a top and bottom fitting. ***Two-leg*** slings provide more stability and control than single-leg slings. All come with a top link and your choice of a set of end fittings. ***Three-*** and ***four-leg*** slings give multicorner support to heavy, odd-shaped loads. Both types come with a top link and your choice of a set of end fittings.

Chain Slings— Have a long life and are ideal for lifting in rugged applications where heat and abrasion resistance are required. Each sling includes a test certificate. All have a steel tag that shows chain grade and size, length, configuration, and work load limits. Sling fittings are made of the same material as the chain. Links and hooks are either mechanically connected to the chain or welded for increased tamper resistance.

Grade 80 alloy steel chain resists wear and is heat-treated for high strength. Maximum temperature for rated work load limit is 400° F.

Grade 100 alloy steel chain has superior strength and is heat-treated for high strength. Maximum temperature for rated work load limit is 400° F.

Grade 120 alloy steel chain has strength and wear resistance superior to all other alloy steel chains. It has a blue powder-coated finish for easy identification and corrosion resistance. Maximum temperature for rated work load limit is 400° F.

Grade 50 Type 316L stainless steel chain resists rust, saltwater, and acidic solutions. Maximum temperature for rated work load limit is 750° F.

Web Slings— Are lightweight and nonconductive. They're made of two-ply web and have forged alloy steel fittings. Web on single-leg slings is 1/8″ thick; web on multi-leg slings is 1/4″ thick. A sewn-on tag shows material, length, and work load limits. Maximum temperature is 194° F.

Wire Rope Slings— Provide better abrasion and temperature resistance than web slings. The ends of the slings are mechanically spliced and secured with a pressed metal sleeve. All are tagged with work load limits. Maximum temperature is 400° F.

Fittings— Top and bottom ends are shown below. *Sling hooks* include latches. *Locking hooks* have a locking latch that can't be opened under load. *Grab* and *foundry hooks* don't have latches. *Shackles* have a screw style pin.

To Determine Price— Suppose you want a two-leg, 6-ft., 9/32″, Grade 80 alloy steel chain sling with sling hook end fittings (see 3406T24 on page 1489). To determine the cost, you would first take the base price for the 2 ft. chain with top link ($94.92) and add the price for an additional 4 ft. of chain (4 × $7.02). Then, add the price for a set of sling hook end fittings ($68.70). Your total cost would be $191.70.

Note: Work load limits apply to balanced loads lifted at defined load angles (see pictures below).

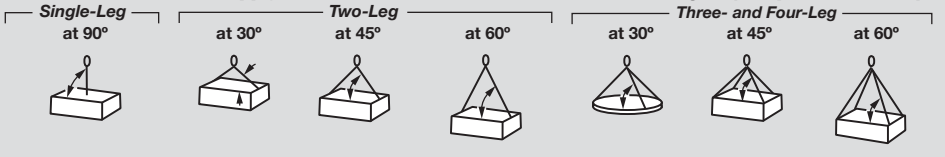

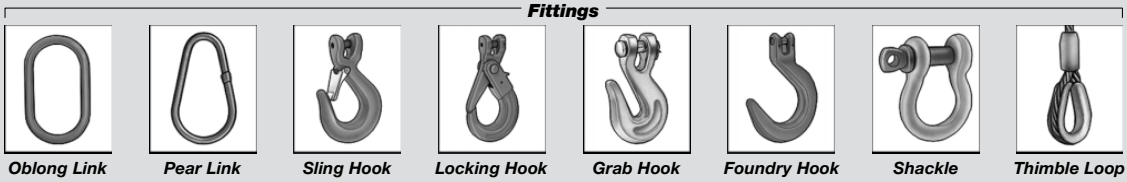

ⓘ For additional information about slings with fittings, including end fitting dimensions, go to mcmaster.com and search for **8864TAC**.

Single-Leg Chain and Nylon Web Slings with Fittings

Chain Sling with Sling Hook and Grab Hook

Nylon Web Sling with Oblong Link and Locking Hook

To Order: Slings are sold in standard lengths of 3, 6, 8, and 10 ft., or any length you choose up to a maximum of 20 ft. Please specify length, top fitting, and bottom fitting. To determine your total cost add the base price, plus the price for each additional foot of length, plus the price of the top fitting, and the price of the bottom fitting.

Chain Size/ Web Wd.	Work Load Limit, lbs.■	Min. Lg., ft.		Base Price for Min. Lg. Each	Extra Length Per Ft.	FITTINGS Oblong Link Each	Sling Hook Each	Locking Hook Each	Grab Hook Each	Foundry Hook Each
Grade 80 Alloy Steel Chain										
9/32″	3,500	2	**3405T1**	$20.31	$3.56	$44.35	$37.17	$96.63	$28.45	$99.74
3/8″	7,100	2	**3405T2**	24.33	5.53	54.06	50.53	110.22	33.93	131.82
1/2″	12,000	2	**3405T3**	37.80	9.41	79.02	78.86	166.71	60.16	178.87
5/8″	18,100	2	**3405T4**	46.45	13.18	96.10	116.16	194.31	86.49	233.58
Grade 100 Alloy Steel Chain										
3/8″	8,800	2	**33945T7**	117.05	9.59	61.98	42.32	110.91	29.98	101.21
1/2″	15,000	2	**33945T8**	159.29	14.80	89.51	74.04	155.80	58.21	160.97
Grade 120 Alloy Steel Chain										
9/32″	5,200	2	**8340T51**	112.57	10.62	54.95	26.73	____	18.42	____
3/8″	10,600	2	**8340T52**	153.52	15.52	87.87	44.16	____	28.17	____
1/2″	17,900	2	**8340T53**	244.47	25.54	158.00	72.39	____	53.03	____
Grade 50 Type 316L Stainless Steel Chain										
3/16″	1,100	1	**33675T2**	157.57	7.48	25.53	110.87	____	____	____
9/32″	2,200	2	**33675T6**	214.01	13.02	26.34	146.66	____	____	____
Nylon Web										
1″	3,100	3	**8864T4**	24.96	2.00	21.37	19.39	150.67	____	____
2″	6,200	3	**8864T5**	31.45	3.35	19.91	42.69	213.75	____	____

■ Work load limit is for vertical (90°) lifting.

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

For information about slings with fittings, see page 1488.

Multi-Leg Steel and Stainless Steel Chain Slings with Fittings

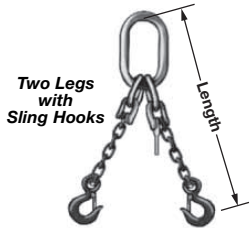

Two Legs with Sling Hooks

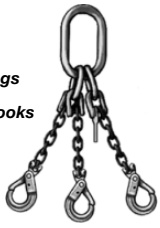

Three Legs with Locking Hooks

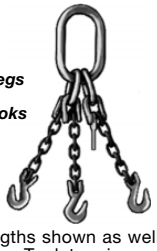

Three Legs with Grab Hooks

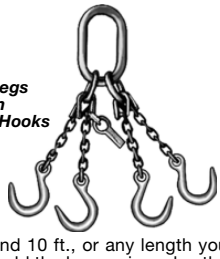

Four Legs with Foundry Hooks

Furnished with a top oblong link. **To Order:** Slings are sold in the minimum lengths shown as well as 3, 6, 8, and 10 ft., or any length you choose up to a maximum of 20 ft. Please specify length plus the bottom end fittings. To determine your total cost, add the base price, plus the price for each additional foot of length, and the price for a set of end fittings.

Chain Size	Work Load Limit, lbs. at 30°	at 45°	at 60°	Min. Lg., ft.		Base Price for Minimum Lg. Each	Extra Length Per Ft.	END FITTINGS Sling Hooks Set	Locking Hooks Set	Grab Hooks Set	Foundry Hooks Set
Grade 80 Alloy Steel Chain— *Mechanically Connected Fittings*											
Two Leg											
7/32″	2,100	3,000	3,600	1	3406T23	$120.08	$9.30	$94.58	____	$58.51	____
9/32″	3,500	4,900	6,100	2	3406T24	94.92	7.02	68.70	$178.70	52.59	$185.41
3/8″	7,100	10,000	12,300	2	3406T25	113.74	10.23	93.45	203.81	62.74	243.74
1/2″	12,000	17,000	20,800	2	3406T26	164.21	17.38	145.79	299.86	111.25	330.74
5/8″	18,100	25,600	31,300	3	3406T27	242.26	24.38	214.79	359.28	159.91	431.91
Three Leg											
9/32″	5,200	7,400	9,100	2	3408T16	201.76	10.52	109.28	284.12	83.64	294.79
3/8″	10,600	15,000	18,400	2	3408T17	262.88	16.44	148.58	317.73	99.74	379.94
1/2″	18,000	25,000	31,200	3	3408T18	362.77	27.60	218.70	449.82	166.89	495.94
5/8″	27,100	38,400	47,000	3	3408T19	639.50	38.76	341.50	538.94	253.60	673.29
Four Leg											
9/32″	5,200	7,400	9,100	2	3409T24	217.76	13.14	137.45	350.76	103.26	363.94
3/8″	10,600	15,000	18,400	2	3409T25	284.57	20.45	183.44	400.09	123.13	478.44
1/2″	18,000	25,000	31,200	3	3409T26	410.02	34.72	286.19	588.64	218.39	649.24
5/8″	27,100	38,400	47,000	3	3409T27	667.18	48.75	421.61	705.28	313.91	847.84
Grade 80 Alloy Steel Chain— *Welded Fittings*											
Two Leg											
3/8″	7,100	10,000	12,300	2	3496T61	216.56	11.15	72.49	166.92	24.47	101.04
1/2″	12,000	17,000	20,800	2	3496T62	245.40	20.81	99.40	280.48	61.64	152.19
5/8″	18,100	25,600	31,300	2	3496T63	291.19	26.79	173.84	____	82.53	242.78
Three Leg											
3/8″	10,600	15,100	18,400	2	3456T71	323.44	16.71	108.72	250.42	36.71	151.53
1/2″	18,000	25,500	31,200	3	3456T72	451.08	31.25	149.11	420.72	92.46	228.31
5/8″	27,100	38,400	47,000	3	3456T73	543.09	40.22	260.79	____	123.83	363.89
Four Leg											
3/8″	10,600	15,100	18,400	2	3483T81	409.39	22.30	145.00	333.91	48.94	202.06
1/2″	18,000	25,500	31,200	3	3483T82	574.07	41.66	198.83	560.98	123.29	304.43
5/8″	27,100	38,400	47,000	3	3483T83	692.32	53.65	347.72	____	165.16	485.20
Grade 100 Alloy Steel Chain— *Mechanically Connected Fittings*											
Two Leg											
9/32″	4,300	6,100	7,400	2	33945T2	116.60	15.44	83.84	244.79	54.48	173.05
3/8″	8,800	12,400	15,200	2	33945T99	206.96	21.66	138.62	314.02	83.12	230.19
1/2″	15,000	21,200	26,000	2	33945T1	287.90	33.64	226.75	440.71	161.37	365.88
Three Leg											
9/32″	6,400	9,100	11,200	2	3500T51	237.56	23.16	125.78	367.11	81.94	259.41
3/8″	13,200	18,700	22,900	2	3500T52	412.39	32.28	207.42	467.26	124.75	345.20
1/2″	22,500	31,800	39,000	2	3500T53	540.26	50.48	230.06	661.08	242.00	548.69
Four Leg											
9/32″	6,400	9,100	11,200	2	3446T41	287.61	30.75	167.30	490.19	108.96	345.80
3/8″	13,200	18,700	22,900	2	3446T42	509.94	43.02	277.10	627.59	156.64	415.23
1/2″	22,500	31,800	39,000	2	3446T43	645.30	67.45	453.11	881.90	322.61	731.62
Grade 120 Alloy Steel Chain— *Mechanically Connected Fittings*											
Two Leg											
9/32″	5,200	7,400	9,000	2	8490T41	198.04	22.56	154.90	____	115.99	____
3/8″	10,600	15,000	18,400	2	8490T42	308.57	33.64	235.50	____	162.91	____
1/2″	17,900	25,300	31,000	3	8490T43	545.05	55.39	338.81	____	265.97	____
Three Leg											
9/32″	7,800	11,000	13,500	2	8490T71	321.83	34.07	232.23	____	173.74	____
3/8″	15,900	22,500	27,500	3	8490T72	515.20	50.47	353.19	____	244.22	____
1/2″	26,900	38,000	46,500	3	8490T73	853.09	83.03	508.09	____	399.04	____
Four Leg											
9/32″	7,800	11,000	13,500	2	8490T81	416.07	45.28	309.55	____	231.88	____
3/8″	15,900	22,500	27,500	3	8490T82	603.45	67.45	471.00	____	325.50	____
1/2″	26,900	38,000	46,500	3	8490T83	993.98	110.80	677.51	____	531.59	____
Grade 50 Type 316L Stainless Steel Chain— *Mechanically Connected Fittings*											
Two Leg											
3/16″	1,100	1,600	1,900	1	33675T15	294.03	14.61	209.71	____	____	____
9/32″	2,200	3,100	3,800	2	33675T16	373.02	25.91	276.26	____	____	____
3/8″	4,400	6,200	7,500	2	33675T17	622.70	46.94	414.46	____	____	____
Three Leg											
3/16″	1,700	2,300	2,900	2	33675T18	467.42	21.92	313.65	____	____	____
9/32″	3,300	4,600	5,700	2	33675T19	625.72	38.68	406.64	____	____	____
3/8″	6,600	9,300	11,500	2	33675T25	951.72	70.28	547.89	____	____	____
Four Leg											
3/16″	1,700	2,300	2,900	2	33675T26	570.72	29.18	410.08	____	____	____
9/32″	3,300	4,600	5,700	2	33675T27	692.43	51.55	542.01	____	____	____
3/8″	6,600	9,300	11,500	2	33675T28	1,181.41	93.52	730.52	____	____	____

Warning! **Never exceed work load limits. Never use to lift people or items over people.**

For information about slings with fittings, see page 1488.

For additional information about slings with fittings, including end fitting dimensions, go to mcmaster.com and search for **8864TAC**.

Multi-Leg Nylon Web Slings with Fittings

Two Legs with Sling Hooks

Furnished with a top oblong link.

To Order: Slings are sold in standard lengths of 3, 6, 8, and 10 ft., or any length you choose up to a maximum of 20 ft. Please specify length plus the bottom end fittings. To determine your total cost, add the base price, plus the price for each additional foot of length, and the price for a set of end fittings.

Web Wd.	Work Load Limit, lbs. at 30°	at 45°	at 60°	Min. Lg., ft.		Base Price for 3-ft. Lg. Each	Extra Length Per Ft.	END FITTINGS Oblong Links Set	Sling Hooks Set	Locking Hooks Set
Two Leg										
1″	3,100	4,350	5,350	3	8864T81	$61.44	$3.73	$41.83	$42.09	$269.57
2″	6,200	8,750	10,700	3	8864T83	107.83	6.43	54.00	94.85	363.03
Three Leg										
1″	4,650	6,550	8,050	3	8864T85	80.26	5.78	58.27	64.90	402.15
2″	9,300	13,150	16,100	3	8864T87	135.95	9.18	75.73	142.30	544.51
Four Leg										
1″	6,200	8,750	10,700	3	8864T54	127.80	7.20	79.62	85.70	536.31
2″	12,400	17,500	21,450	3	8864T56	202.85	12.82	103.20	189.69	726.02

Multi-Leg Steel Wire Rope Slings with Fittings

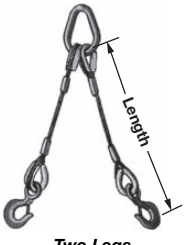

Two Legs with Sling Hooks

Furnished with a top pear link and 6×19 IWRC wire rope. A compression sleeve secures the splice on the rope ends.

To Order: Slings are sold in the minimum lengths shown as well as 3, 6, 8, and 10 ft., or any length you choose up to a maximum of 20 ft. Please specify length plus the bottom end fittings. To determine your total cost, add the base price, plus the price for each additional foot of length, and the price for a set of end fittings.

Rope Dia.	Work Load Limit, lbs. at 30°	at 45°	at 60°	Min. Lg., ft.		Base Price for Min. Lg. Each	Extra Length Per Ft.	END FITTINGS Sling Hooks Set	Shackles Set	Thimble Loops Set
Two Leg										
1/4″	1,300	1,820	2,200	2	9089T21	$44.30	$2.40	$27.46	$18.43	$0.94
3/8″	2,800	4,000	5,000	2	9089T22	59.24	3.23	39.46	21.42	2.50
1/2″	5,000	7,200	8,800	3	9089T23	105.34	4.17	63.58	38.35	4.44
5/8″	7,800	11,000	13,600	3	9089T24	205.38	5.65	111.87	56.38	5.85
Three Leg										
1/4″	1,940	2,800	3,400	2	8940T71	107.03	4.33	61.75	31.60	3.24
3/8″	4,400	6,000	7,400	2	8940T72	165.12	5.30	91.65	38.54	7.66
1/2″	7,600	10,800	13,200	3	8940T73	264.09	7.15	149.00	66.09	13.34
Four Leg										
1/4″	2,600	3,600	4,400	2	8952T41	131.38	5.32	85.00	40.20	4.46
3/8″	5,800	8,200	10,000	2	8952T42	175.65	7.15	118.38	51.40	10.91
1/2″	10,200	14,200	17,600	3	8952T43	281.26	9.42	192.67	92.02	21.32

Grade 100 Alloy Steel Adjustable Chain Slings with Fittings

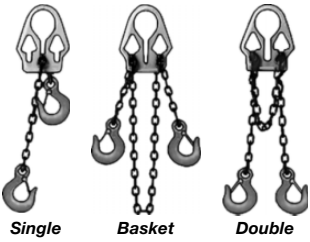

Single *Basket* *Double*

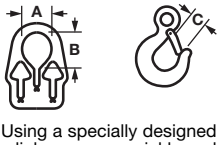

Using a specially designed top link, you can quickly and easily adjust these slings into all three configurations shown. The top link has a yellow powder-coated finish and is marked with the work load limits. End fittings are sling hooks with latches. *Note:* Not recommended for use at angles less than 45°. See page 1488 for illustration.

Chain Size	Work Load Limit, lbs. Single (90°)	Double (60°)	(A)	(B)	(C)	Chain Lg., ft.		
7/32″	2,700	4,700	2 3/16″	2 11/16″	15/16″	6	33665T33	$117.40
7/32″	2,700	4,700	2 3/16″	2 11/16″	15/16″	10	33665T34	143.44
9/32″	4,300	7,400	2 7/8″	3 1/2″	1 1/16″	6	33665T43	146.68
9/32″	4,300	7,400	2 7/8″	3 1/2″	1 1/16″	10	33665T44	170.16
3/8″	8,800	15,200	3 3/4″	4 5/8″	1 9/16″	10	33665T53	255.62
3/8″	8,800	15,200	3 3/4″	4 5/8″	1 9/16″	14	33665T54	285.79

Sure-Grip Cylinder Slings

With their secure grip, these nylon choker slings safely lift, carry, and suspend compressed gas cylinders. Slings have molded urethane gripping pads that provide traction and flexibility without slipping or damaging the surface of the cylinder. Maximum temperature is 150° F. Meet OSHA CFR 1910.101 for proper handling of gas cylinders.

Lg. × Wd.	Fits Cylinder Dia.	Work Load Limit, lbs.		
52″ × 2″	4″-12″	400	4306T12	$184.66
70″ × 2″	4″-15″	400	4306T11	184.66

Quick-Adjust Grade 100 Alloy Steel Adjustable Chain Slings with Fittings

Single Leg

Use the grab hook to quickly adjust the chain to the length you need. The top link, chain, and the end fitting of these slings come already assembled for use. All slings have an attached chain wear gauge and a tag that shows the type, length, and work load limit.

Chain has a black finish; the oblong top link, sling hook with latch, and grab hook are painted blue.

Single leg work load limit is for vertical (90°) lifting. ***Two leg*** work load limit is for 60° lifting.

Chain Size	Work Load Limit, lbs.	8-ft. Length		16-ft. Length	
Single Leg					
9/32″	4,300	8370T41	$115.52	8370T43	$153.78
3/8″	8,800	8370T42	156.23	8370T44	199.42
Two Leg					
9/32″	7,400	8370T45	206.37	8370T47	285.60
3/8″	15,200	8370T46	280.40	8370T48	409.42

Blanket Slings

Lift dirt, rocks, and other odd-shaped objects. Slings have a 14″ lifting eye at each corner. When not in use, slings fold up for easy storage. Made of heavy duty 22-oz., UV-resistant polyvinyl with reinforcing nylon straps. Color is red.

Size	Cap., lbs.		
6′ × 6′	700	3649T21	$384.60
7′ × 7′	1,100	3649T22	633.84
8′ × 8′	1,400	3649T23	888.56

Warning! ***Never exceed work load limits. Never use to lift people or items over people.***

About Hoist Rings

Hoist rings pivot and swivel to compensate for pitch, roll, and sway when lifting heavy or unbalanced loads. A hoist ring's ability to pivot 180° and swivel 360° from a center point provides resistance to stresses that would bend or break an eyebolt. Hoist rings are recommended for applications requiring angular lifts.

Safety Note: Install the hoist ring base flush to the mounting surface and tighten to the recommended torque shown on the ring. Some loosening may develop after prolonged service. Tighten the mounting bolt periodically to maintain specified torque. For torque wrenches, please see pages 2811-2814.

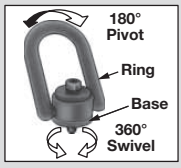

Forged and Machined Alloy Steel Hoist Rings

Designed with the lifting ring centered over the base, these hoist rings provide the full rated capacity regardless of the lift angle. They are an excellent choice for vertical and angular lifting applications. All hoist rings are made of alloy steel.

Forged hoist rings have a simple design and are an economical alternative to machined hoist rings. A corrosion-resistant coating minimizes rust. The lifting ring is held in place with built-in pins secured inside the hoist ring base.

Machined hoist rings are also known as safety-engineered hoist rings. They are precision-machined to protect slings and hooks from damage and excess wear during lifting. A black-oxide finish offers some corrosion resistance. The lifting ring is held in place by pins that are secured to the hoist ring base.

Also Available: Replacement mounting bolts. Please ask for 3052T888 and specify the McMaster-Carr hoist ring part number.

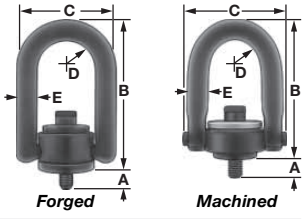

Forged—Inch Thread

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)		
1/4"-20	550	9/16"	3 1/4"	2 3/8"	5/8"	7/16"	2994T59	$53.58
5/16"-18	800	9/16"	3 1/4"	2 3/8"	5/8"	7/16"	2994T61	53.58
5/16"-18	800	1 1/16"	3 1/4"	2 3/8"	5/8"	7/16"	2994T62	53.58
3/8"-16	1,000	9/16"	3 1/4"	2 3/8"	5/8"	7/16"	2994T63	53.58
3/8"-16	1,000	1 1/16"	3 1/4"	2 3/8"	5/8"	7/16"	2994T64	53.58
1/2"-13	2,250	1 1/16"	3 1/4"	2 3/8"	5/8"	7/16"	2994T41	53.58
1/2"-13	2,500	3/4"	5 3/8"	3 1/2"	1"	3/4"	2994T91	64.90
1/2"-13	2,500	3/4"	6 7/8"	3 1/2"	1"	3/4"	2994T42	72.21
1/2"-13	2,500	1"	5 3/8"	3 1/2"	1"	3/4"	2994T65	64.90
1/2"-13	2,500	1"	6 7/8"	3 1/2"	1"	3/4"	2994T92	72.21
1/2"-13	2,500	1 1/4"	5 3/8"	3 1/2"	1"	3/4"	2994T66	64.90
1/2"-13	2,500	1 1/4"	6 7/8"	3 1/2"	1"	3/4"	2994T93	72.21
5/8"-11	4,000	3/4"	5 3/8"	3 1/2"	1"	3/4"	2994T94	64.90
5/8"-11	4,000	3/4"	6 7/8"	3 1/2"	1"	3/4"	2994T43	72.21
5/8"-11	4,000	1"	5 3/8"	3 1/2"	1"	3/4"	2994T67	64.90
5/8"-11	4,000	1"	6 7/8"	3 1/2"	1"	3/4"	2994T95	72.21
5/8"-11	4,000	1 1/4"	5 3/8"	3 1/2"	1"	3/4"	2994T68	64.90
5/8"-11	4,000	1 1/4"	6 7/8"	3 1/2"	1"	3/4"	2994T96	72.21
3/4"-10	5,000	1"	5 3/8"	3 1/2"	1"	3/4"	2994T69	67.42
3/4"-10	5,000	1"	6 7/8"	3 1/2"	1"	3/4"	2994T44	75.06
3/4"-10	5,000	1 1/2"	5 3/8"	3 1/2"	1"	3/4"	2994T71	67.42
3/4"-10	5,000	1 1/2"	6 7/8"	3 1/2"	1"	3/4"	2994T45	75.06
3/4"-10	7,000	1 3/16"	7 3/8"	5 1/8"	1 3/8"	1"	2994T72	146.76
3/4"-10	7,000	1 3/16"	9"	5 1/8"	1 3/8"	1"	2994T97	163.38
3/4"-10	7,000	1 7/16"	7 3/8"	5 1/8"	1 3/8"	1"	2994T73	146.76
7/8"-9	8,000	1 3/16"	7 3/8"	5 1/8"	1 3/8"	1"	2994T74	146.77
7/8"-9	8,000	1 3/16"	9"	5 1/8"	1 3/8"	1"	2994T98	163.38
1"-8	10,000	1 3/16"	7 3/8"	5 1/8"	1 3/8"	1"	2994T76	152.26
1"-8	10,000	1 3/16"	9"	5 1/8"	1 3/8"	1"	2994T85	169.54
1"-8	10,000	1 7/16"	7 3/8"	5 1/8"	1 3/8"	1"	2994T75	152.26
1"-8	10,000	1 7/16"	9"	5 1/8"	1 3/8"	1"	2994T99	169.54
1"-8	10,000	2 3/16"	7 3/8"	5 1/8"	1 3/8"	1"	2994T77	152.27
1"-8	10,000	2 3/16"	9"	5 1/8"	1 3/8"	1"	2994T78	169.54
1 1/4"-7	15,000	1 7/8"	9 1/4"	6 3/4"	2"	1 1/4"	2994T79	214.25
1 1/4"-7	15,000	2 5/8"	9 1/4"	6 3/4"	2"	1 1/4"	2994T81	231.36
1 3/8"-6	20,000	2 5/8"	9 1/4"	6 3/4"	2"	1 1/4"	2994T82	247.60
1 1/2"-6	24,000	2 5/8"	9 1/4"	6 3/4"	2"	1 1/4"	2994T83	266.55
2"-4 1/2	30,000	2 15/16"	9 1/4"	6 3/4"	2"	1 1/4"	2994T84	415.69

Machined—Inch Thread

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)		
1/4"-20	600	9/16"	2 3/4"	1 7/8"	1/2"	3/8"	3052T103	$59.57
5/16"-18	800	5/16"	2 3/4"	1 7/8"	1/2"	3/8"	3052T102	59.57
5/16"-18	800	9/16"	2 3/4"	1 7/8"	1/2"	3/8"	3052T55	63.03
3/8"-16	1,000	9/16"	2 3/4"	1 7/8"	1/2"	3/8"	3052T56	63.03
1/2"-13	2,500	3/4"	4 7/8"	3 5/8"	7/8"	3/4"	3052T58	91.99
1/2"-13	2,500	13/16"	6 3/4"	3 1/2"	7/8"	3/4"	3052T87	98.74
1/2"-13	2,500	1"	4 7/8"	3 5/8"	7/8"	3/4"	3052T72	85.86
1/2"-13	2,500	1 1/16"	3 7/8"	2 5/8"	3/4"	1/2"	3052T57	86.05
1/2"-13	2,500	1 1/16"	6 3/4"	3 1/2"	7/8"	3/4"	3052T86	88.33
1/2"-13	2,500	1 1/4"	4 7/8"	3 5/8"	7/8"	3/4"	3052T81	85.86
1/2"-13	2,500	1 5/16"	6 3/4"	3 1/2"	7/8"	3/4"	3052T88	88.33
5/8"-11	4,000	13/16"	4 7/8"	3 1/2"	7/8"	3/4"	3052T73	83.90
5/8"-11	4,000	13/16"	6 3/4"	3 1/2"	7/8"	3/4"	3052T15	88.35
5/8"-11	4,000	1"	4 7/8"	3 5/8"	7/8"	3/4"	3052T59	85.86
5/8"-11	4,000	1 1/16"	6 3/4"	3 1/2"	7/8"	3/4"	3052T89	88.33
5/8"-11	4,000	1 1/4"	4 7/8"	3 5/8"	7/8"	3/4"	3052T61	85.86
5/8"-11	4,000	1 5/16"	6 3/4"	3 1/2"	7/8"	3/4"	3052T91	88.33
3/4"-10	5,000	1"	4 7/8"	3 5/8"	7/8"	3/4"	3052T62	85.86
3/4"-10	5,000	1 1/16"	6 3/4"	3 1/2"	7/8"	3/4"	3052T92	88.33
3/4"-10	5,000	1 1/2"	4 7/8"	3 5/8"	7/8"	3/4"	3052T63	86.67
3/4"-10	5,000	1 9/16"	6 3/4"	3 1/2"	7/8"	3/4"	3052T93	88.33
3/4"-10	7,000	1 1/16"	6 5/8"	5 1/4"	1 1/2"	1"	3052T64	171.67
3/4"-10	7,000	1 1/16"	8 1/8"	5 1/8"	1 1/2"	1"	3052T94	180.58
3/4"-10	7,000	1 1/2"	6 5/8"	5 1/4"	1 1/2"	1"	3052T82	198.43
3/4"-10	7,000	1 9/16"	8 1/8"	5 1/8"	1 1/2"	1"	3052T95	180.58
7/8"-9	8,000	1 1/16"	6 5/8"	5 1/4"	1 1/2"	1"	3052T65	174.95
7/8"-9	8,000	1 1/16"	8 1/8"	5 1/8"	1 1/2"	1"	3052T96	180.58
1"-8	10,000	1 5/16"	6 1/2"	5 1/8"	1 1/2"	1"	3052T66	179.32
1"-8	10,000	1 5/16"	8 1/8"	5 1/8"	1 1/2"	1"	3052T97	180.58
1"-8	10,000	1 9/16"	6 5/8"	5 1/4"	1 1/2"	1"	3052T67	186.36
1"-8	10,000	1 9/16"	8 1/8"	5 1/8"	1 1/2"	1"	3052T98	180.58
1"-8	10,000	2 1/4"	6 5/8"	5 1/4"	1 1/2"	1"	3052T83	198.59
1"-8	10,000	2 5/16"	8 1/8"	5 1/8"	1 1/2"	1"	3052T101	180.58
1 1/4"-7	15,000	1 7/8"	8 3/4"	6 1/2"	1 3/4"	1 1/4"	3052T68	289.92
1 1/2"-6	24,000	2 3/4"	12 1/2"	8 5/8"	2 1/4"	1 3/4"	3052T74	344.31
2"-4 1/2	30,000	3"	12 1/2"	8 5/8"	2 1/4"	1 3/4"	3052T69	490.91
2 1/2"-4	50,000	4"	16 7/8"	11 3/4"	3"	2 1/4"	3052T75	1,309.27
3"-4	75,000	5 3/16"	19 1/2"	14 1/4"	3 3/4"	2 3/4"	3052T76	1,997.74

Forged—Metric Thread

Thread Size	Work Load Limit kg	Work Load Limit lbs.	(A)	(B)	(C)	(D)	(E)		
M8×1.25	400	880	16	82	58	16	11	3005T71	$61.91
M10×1.5	450	990	16	82	58	16	11	3005T72	61.91
M12×1.75	1,050	2,300	25	135	89	25	19	3005T73	74.83
M12×1.75	1,050	2,300	25	175	89	25	19	3005T74	83.44
M16×2	1,900	4,180	25	135	89	25	19	3005T75	74.83
M16×2	1,900	4,180	25	175	89	25	19	3005T76	83.44
M20×2.5	2,200	4,850	38	135	89	25	19	3005T77	77.91
M20×2.5	2,200	4,850	38	175	89	25	19	3005T78	86.73
M24×3	4,200	9,250	38	187	130	35	25	3005T79	169.60
M24×3	4,200	9,250	38	229	130	35	25	3005T81	188.80
M30×3.5	4,500	9,920	48	187	130	35	25	3005T64	175.96
M30×3.5	7,000	15,430	67	234	172	51	32	3005T82	255.89
M36×4	11,000	24,250	67	234	172	51	32	3005T65	328.34
M42×4.5	12,500	27,550	80	234	172	51	32	3005T66	551.55
M48×5	13,500	29,760	80	234	172	51	32	3005T67	551.55

Machined—Metric Thread

Thread Size	Work Load Limit kg	Work Load Limit lbs.	(A)	(B)	(C)	(D)	(E)		
M8×1.25	400	880	13	68	47	11	10	29495T41	$75.04
M10×1.5	450	990	18	68	47	11	10	29495T42	75.75
M12×1.75	1,050	2,300	19	123	90	22	19	29495T43	90.49
M12×1.75	1,050	2,300	19	171	90	22	19	29495T71	94.96
M16×2	1,900	4,180	29	123	90	22	19	29495T44	90.49
M16×2	1,900	4,180	29	171	90	22	19	29495T72	94.96
M20×2.5	2,150	4,730	34	123	90	22	19	29495T45	91.38
M20×2.5	2,150	4,730	34	171	90	22	19	29495T73	96.03
M24×3	4,200	9,250	37	163	131	35	26	29495T47	196.26
M24×3	4,200	9,250	37	206	131	35	26	29495T74	199.70
M30×3.5	7,000	15,430	46	222	166	44	32	29495T48	339.33
M30×3.5	7,000	15,430	66	222	166	44	32	29495T51	354.85
M36×4	11,000	24,250	68	317	218	57	45	29495T52	444.86
M42×4.5	12,500	27,550	68	317	218	57	45	29495T53	519.04
M48×5	13,500	29,760	88	317	218	57	45	29495T54	547.67

Warning! Never exceed load limits.

Corrosion-Resistant Hoist Rings

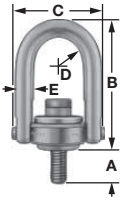

Superior corrosion resistance—that's what these hoist rings are all about. Designed with the lifting ring centered over the base, these hoist rings provide the full rated capacity regardless of the lift angle. They are an excellent choice for vertical and angular lifting applications.

Nickel-coated alloy steel hoist rings offer corrosion resistance and higher work load limits than Type 316 stainless steel.

Type 316 stainless steel hoist rings are the most corrosion resistant hoist rings we offer.

Also Available: Replacement mounting bolts. Please ask for 2949T777 and specify McMaster-Carr hoist ring part number.

Nickel-Coated Alloy Steel—Inch Thread

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)		
5/16"-18	800	9/16"	2 11/16"	1 7/8"	1/2"	3/8"	3145T21	$97.39
3/8"-16	1,000	9/16"	2 11/16"	1 7/8"	1/2"	3/8"	3145T22	97.39
1/2"-13	2,500	3/4"	4 13/16"	3 9/16"	7/8"	3/4"	3145T24	117.24
1/2"-13	2,500	3/4"	6 3/4"	3 9/16"	7/8"	3/4"	3145T25	140.33
1/2"-13	2,500	1"	4 13/16"	3 9/16"	7/8"	3/4"	3145T71	126.49
1/2"-13	2,500	1 1/16"	3 3/4"	2 9/16"	3/4"	1/2"	3145T23	117.24
1/2"-13	2,500	1 1/4"	4 13/16"	3 9/16"	7/8"	3/4"	3145T26	117.24
5/8"-11	4,000	1"	4 13/16"	3 9/16"	7/8"	3/4"	3145T27	117.24
5/8"-11	4,000	1"	6 3/4"	3 9/16"	7/8"	3/4"	3145T28	140.33
5/8"-11	4,000	1 1/4"	4 13/16"	3 9/16"	7/8"	3/4"	3145T29	117.24
3/4"-10	5,000	1"	4 13/16"	3 9/16"	7/8"	3/4"	3145T31	117.24
3/4"-10	5,000	1 1/2"	4 13/16"	3 9/16"	7/8"	3/4"	3145T32	117.24
3/4"-10	5,000	1 1/2"	6 3/4"	3 9/16"	7/8"	3/4"	3145T33	140.33
3/4"-10	7,000	1"	6 9/16"	5 3/16"	1 1/2"	1"	3145T72	270.24
3/4"-10	7,000	1 1/2"	6 9/16"	5 3/16"	1 1/2"	1"	3145T73	270.24
7/8"-9	8,000	1"	6 9/16"	5 3/16"	1 1/2"	1"	3145T74	277.17
1"-8	10,000	1 1/4"	6 9/16"	5 3/16"	1 1/2"	1"	3145T34	250.52
1"-8	10,000	1 1/2"	6 9/16"	5 3/16"	1 1/2"	1"	3145T75	277.17
1"-8	10,000	2 1/4"	6 9/16"	5 3/16"	1 1/2"	1"	3145T35	250.52
1 1/4"-7	15,000	1 7/8"	8 3/4"	6 1/2"	1 3/4"	1 1/4"	3145T76	598.97
1 1/2"-6	24,000	2 3/4"	12 1/2"	8 9/16"	2 1/4"	1 3/4"	3145T77	788.44
2"-4 1/2	30,000	3 1/8"	12 1/2"	8 9/16"	2 1/4"	1 3/4"	3145T78	919.91
2 1/2"-4	50,000	4"	16 1/2"	11 3/4"	3"	2 1/4"	3145T79	2,061.28

Type 316 Stainless Steel—Inch Thread

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)		
1/4"-20	300	1/2"	2 11/16"	1 7/8"	1/2"	3/8"	2949T24	$228.55
5/16"-18	400	5/16"	2 11/16"	1 7/8"	1/2"	3/8"	2949T25	228.55
5/16"-18	400	9/16"	2 11/16"	1 7/8"	1/2"	3/8"	2949T31	228.55
3/8"-16	500	9/16"	2 11/16"	1 7/8"	1/2"	3/8"	2949T32	228.55
1/2"-13	1,250	3/4"	4 13/16"	3 9/16"	7/8"	3/4"	2949T34	297.43
1/2"-13	1,250	3/4"	6 3/4"	3 9/16"	7/8"	3/4"	2949T86	320.36
1/2"-13	1,250	1 1/16"	3 13/16"	2 5/8"	3/4"	1/2"	2949T33	297.43
1/2"-13	1,250	1 1/16"	4 13/16"	3 9/16"	7/8"	3/4"	2949T26	297.43
1/2"-13	1,250	1 5/16"	4 13/16"	3 9/16"	7/8"	3/4"	2949T35	297.43
5/8"-11	2,000	1 1/16"	4 13/16"	3 9/16"	7/8"	3/4"	2949T36	297.43
5/8"-11	2,000	1 1/16"	6 3/4"	3 9/16"	7/8"	3/4"	2949T88	320.36
5/8"-11	2,000	1 5/16"	4 13/16"	3 9/16"	7/8"	3/4"	2949T37	297.43
3/4"-10	2,500	1 1/16"	4 13/16"	3 9/16"	7/8"	3/4"	2949T38	297.43
3/4"-10	2,500	1 9/16"	4 13/16"	3 9/16"	7/8"	3/4"	2949T39	297.43
3/4"-10	2,500	1 9/16"	6 3/4"	3 9/16"	7/8"	3/4"	2949T41	320.36
3/4"-10	3,500	1 1/16"	6 9/16"	5 3/16"	1 1/2"	1"	2949T27	573.70
3/4"-10	3,500	1 9/16"	6 9/16"	5 3/16"	1 1/2"	1"	2949T28	573.70
7/8"-9	4,000	1 1/16"	6 9/16"	5 3/16"	1 1/2"	1"	2949T29	573.70
1"-8	5,000	1 5/16"	6 9/16"	5 3/16"	1 1/2"	1"	2949T44	573.70
1"-8	5,000	1 9/16"	6 9/16"	5 3/16"	1 1/2"	1"	2949T54	573.70
1"-8	5,000	2 5/16"	6 9/16"	5 3/16"	1 1/2"	1"	2949T46	573.70
1 1/4"-7	7,500	1 15/16"	8 3/4"	6 1/2"	1 3/4"	1 1/4"	2949T55	1,085.51
1 1/2"-6	12,000	2 3/4"	12 1/2"	8 9/16"	2 1/4"	1 3/4"	2949T56	1,465.21
2"-4 1/2	15,000	3"	12 1/2"	8 9/16"	2 1/4"	1 3/4"	2949T57	1,538.08

Nickel-Coated Alloy Steel—Metric Thread

Thread Size	Work Load Limit kg	Work Load Limit lbs.	(A)	(B)	(C)	(D)	(E)		
M8×1.25	400	880	13	68	47	11	10	3145T41	$97.39
M10×1.5	450	990	18	68	47	11	10	3145T42	97.39
M12×1.75	1,050	2,300	19	123	90	22	19	3145T43	117.24
M16×2	1,900	4,180	29	123	90	22	19	3145T44	117.24
M20×2.5	2,150	4,730	34	123	90	22	19	3145T45	117.24
M24×3	4,200	9,250	37	163	131	36	26	3145T46	250.52
M30×3.5	7,000	15,430	46	222	166	44	32	3145T47	427.09
M30×3.5	7,000	15,430	66	222	166	44	32	3145T81	598.97
M36×4	11,000	24,250	68	317	218	57	45	3145T82	788.44
M42×4.5	12,500	27,550	68	317	218	57	45	3145T83	919.91
M48×5	13,500	29,760	88	317	218	57	45	3145T84	970.62
M64×6	22,500	49,600	96	420	298	76	58	3145T85	2,061.28

Type 316 Stainless Steel—Metric Thread

Thread Size	Work Load Limit kg	Work Load Limit lbs.	(A)	(B)	(C)	(D)	(E)		
M8×1.25	200	440	13	68	47	11	10	2949T61	$260.68
M10×1.5	250	550	18	68	47	11	10	2949T62	260.68
M12×1.75	525	1,150	19	121	89	22	19	2949T63	317.60
M16×2	950	2,090	29	121	89	22	19	2949T64	317.60
M20×2.5	1,075	2,360	34	121	89	22	19	2949T65	317.60
M24×3	2,100	4,625	37	166	131	36	25	2949T66	635.06
M30×3.5	3,500	7,700	42	222	165	45	32	2949T67	1,067.76
M30×3.5	3,500	7,700	62	222	165	45	32	2949T59	1,067.76
M36×4	5,500	12,125	64	317	217	57	44	2949T71	1,538.49
M42×4.5	6,250	13,775	82	317	217	57	44	2949T72	1,538.49
M48×5	6,750	14,880	82	317	217	57	44	2949T73	1,615.00

Wide-Base Hoist Rings

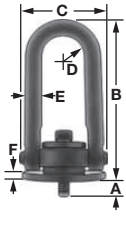

A wide, round base distributes the load and adds stability. The lifting ring is centered over the base so these hoist rings provide the full rated capacity regardless of the lift angle. They are an excellent choice for vertical and angular lifting applications. All hoist rings are made of alloy steel and are precision-machined to protect slings and hooks from damage and excess wear during lifting. A black-oxide finish offers some corrosion resistance.

Inch Thread

Thread Size	Work Load Limit, lbs.	Base Dia.	(A)	(B)	(C)	(D)	(E)	(F)		
1/2"-13	2,500	3 1/2"	3/4"	7"	3 1/2"	15/16"	3/4"	1/4"	3070T51	$115.42
5/8"-11	4,000	3 1/2"	15/16"	7"	3 1/2"	15/16"	3/4"	1/4"	3070T52	115.42
3/4"-10	5,000	3 1/2"	1 1/8"	7"	3 1/2"	15/16"	3/4"	1/4"	3070T53	115.42
1"-8	10,000	5"	1 1/2"	8 1/2"	5 1/8"	1 7/16"	1"	7/16"	3070T54	228.54
1 1/4"-7	15,000	7"	1 7/8"	9 1/4"	6 1/2"	1 3/4"	1 1/4"	1/2"	3070T55	357.80
1 1/2"-6	15,000	7"	2 1/4"	9 1/4"	6 1/2"	1 3/4"	1 1/4"	1/2"	3070T56	357.80
2"-4 1/2	30,000	8 1/2"	3"	13"	8 5/16"	2 1/4"	1 3/4"	1/2"	3070T57	559.32

Metric Thread

Thread Size	Work Load Limit kg	Work Load Limit lbs.	Base Dia., mm	(A)	(B)	(C)	(D)	(E)	(F)		
M12×1.75	1,050	2,300	89	18	178	89	22	20	7	3070T61	$115.42
M16×2	1,900	4,180	89	24	178	89	22	20	7	3070T62	115.42
M20×2.5	2,150	4,730	89	30	178	89	22	20	7	3070T63	115.42
M24×3	4,200	9,250	127	36	216	130	35	26	11	3070T64	228.54
M30×3.5	7,000	15,430	178	50	235	165	44	32	13	3070T65	357.80

Warning! Never exceed work load limits.

Large-Opening Hoist Rings

The lifting ring has a wide, round opening that accepts large hooks and a slim profile that makes connecting easier. A hex head on the bolt makes tightening simple. These hoist rings are an excellent choice for vertical and angular lifting applications and provide the full rated capacity regardless of the lift angle.

Type 630 stainless steel hoist rings offer corrosion resistance.

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)	Alloy Steel		Type 630 Stainless Steel	
5/16"-18	800	1/2"	3 5/8"	2 1/4"	3/4"	3/8"	3046T61	$60.94	3046T71	$143.15
3/8"-16	1,000	9/16"	3 5/8"	2 1/4"	3/4"	3/8"	3046T62	63.86	3046T72	150.04
1/2"-13	2,500	11/16"	6 3/8"	4 7/16"	1 1/2"	3/4"	3046T63	72.75	3046T73	170.91
5/8"-11	4,000	15/16"	6 3/8"	4 7/16"	1 1/2"	3/4"	3046T64	77.35	3046T74	181.72
3/4"-10	5,000	1 1/8"	6 3/8"	4 7/16"	1 1/2"	3/4"	3046T65	81.54	3046T75	191.57
1"-8	10,000	1 1/2"	9 11/16"	5 13/16"	1 13/16"	1 1/8"	3046T66	156.97	———	———

Side-Mount Hoist Rings

Look no further if you need a lifting point to the side. The lifting ring is mounted offset from the center. All are made of alloy steel.

D-ring hoist rings are the economical choice for side-mount applications. They can also be top mounted.

Round-ring hoist rings have a large opening to accommodate a variety of hook sizes and styles.

Also Available: Repl. bolts. Please ask for 29525T888 and specify McMaster-Carr hoist ring part number.

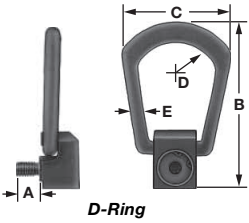

D-Ring

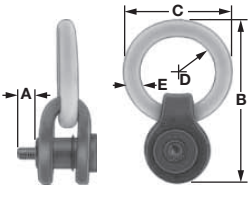

Round Ring

Inch Thread

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)		
D-Ring								
5/16"-18	650	1/2"	4"	2 1/2"	1"	3/8"	29525T51	$23.94
3/8"-16	800	9/16"	4"	2 1/2"	1"	3/8"	29525T52	34.76
1/2"-13	1,800	3/4"	6 1/2"	3 1/8"	1 1/2"	9/16"	29525T53	50.47
5/8"-11	2,500	15/16"	6 1/2"	3 1/8"	1 1/2"	9/16"	29525T54	57.66
3/4"-10	4,100	1 1/8"	6 1/2"	3 1/8"	1 1/2"	9/16"	29525T55	91.20
Round Ring								
5/16"-18	650	5/8"	4 1/16"	2 3/4"	1"	3/8"	29525T82	85.23
3/8"-16	800	3/4"	4 1/16"	2 3/4"	1"	3/8"	29525T83	85.23
1/2"-13	1,800	1"	6 3/8"	4 1/4"	1 1/2"	5/8"	29525T84	104.85
5/8"-11	2,500	1 1/4"	6 3/8"	4 1/4"	1 1/2"	5/8"	29525T85	104.85
3/4"-10	4,000	1 1/2"	9 3/8"	6"	2"	1"	29525T86	234.45
1"-8	7,000	2"	9 3/8"	6"	2"	1"	29525T87	234.45
1 1/4"-7	14,000	2"	13 1/16"	8 3/4"	3"	1 3/8"	29525T88	471.92

Metric Thread

Thread Size	Work Load Limit kg	Work Load Limit lbs.	Dimensions, mm (A)	(B)	(C)	(D)	(E)		
D-Ring									
M8×1.25	325	710	16	101	64	25	8	29525T63	$25.14
M10×1.5	500	1,100	20	101	64	25	8	29525T65	36.49
M12×1.75	725	1,590	24	165	80	38	14	29525T66	52.99
M16×2	1,400	3,080	32	165	80	38	14	29525T67	60.55
M20×2.5	2,290	5,040	40	165	80	38	14	29525T68	95.75
Round Ring									
M8×1.25	325	710	16	103	70	25	10	29525T91	98.34
M10×1.5	500	1,100	20	103	70	25	10	29525T92	98.34
M12×1.75	725	1,590	24	162	108	38	16	29525T93	128.40
M16×2	1,400	3,080	31	162	108	38	16	29525T94	128.40
M20×2.5	2,290	5,040	40	238	153	50	26	29525T95	253.79
M24×3	3,050	6,720	47	238	153	50	26	29525T96	253.79
M30×3.5	4,850	10,690	44	332	223	76	35	29525T97	688.82

Easy-Swivel Ball Bearing Hoist Rings

A ball bearing swivel with a machined bearing surface evenly distributes the load and provides smooth swiveling under load. All are made of Grade 80 steel. The lifting ring is oval shaped and has a red powder-coated finish. The base is hex shaped and secures with a wrench.

Also Available: Hoist rings with M12, M16, M20, M24, and M30 threads. Please ask for 2932T889 and specify metric thread size.

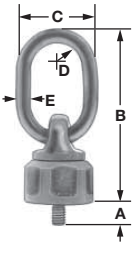

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)		
5/16"-18	800	1/2"	3 15/32"	1 3/4"	9/16"	5/16"	2932T21	$90.20
3/8"-16	1,000	1/2"	3 15/32"	1 3/4"	9/16"	5/16"	2932T22	94.82
1/2"-13	2,500	3/4"	5 27/32"	2 3/8"	11/16"	1/2"	2932T23	121.07
5/8"-11	4,000	1"	5 27/32"	2 3/8"	11/16"	1/2"	2932T24	127.12
3/4"-10	5,000	1 1/4"	7 1/16"	3"	3/4"	3/4"	2932T25	173.36

Quick-Release Hoist Rings

Ideal for items that are frequently moved—thread the insert into a tapped hole and push the lock/release button for insertion and removal. The button is recessed in the base of the lifting ring to prevent accidental release. The lifting ring is round and has a large opening and a slim profile for easy attachment of hooks. All are corrosion-resistant Type 630 stainless steel.

Extra inserts let you use one hoist ring on multiple items.

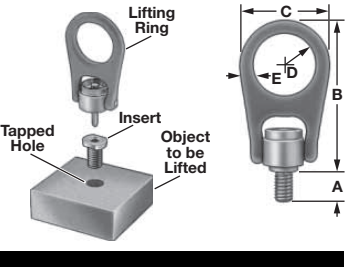

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)	Hoist Rings with Insert		Extra Insert	
1/2"-13	400	13/16"	3 5/8"	2 1/4"	3/4"	1/4"	2986T72	$127.53	2986T81	$31.72
3/4"-10	700	7/8"	3 5/8"	2 1/4"	3/4"	1/4"	2986T73	140.91	2986T82	34.48
3/4"-10	1,000	7/8"	3 5/8"	2 1/4"	3/4"	1/4"	2986T74	140.91	2986T83	34.48
1 1/8"-7	1,250	1 1/4"	3 5/8"	2 1/4"	3/4"	1/4"	2986T75	157.64	2986T84	43.24
1 1/8"-7	1,400	1 1/4"	3 5/8"	2 1/4"	3/4"	1/4"	2986T76	157.64	2986T85	43.24

Warning! Never exceed work load limits.

For information about hoist rings, see page 1491.

Turn-and-Lock Hoist Rings

Swivel these hoist rings to the desired position then lock them in place for lifting. Hand tighten the set screw to lock the base for lifting; loosen it to swivel. The lifting ring is shackle-style and pivots for angular lifting. All are made of alloy steel.

Also Available: Replacement bolts. Please ask for 3026T888 and specify the McMaster-Carr hoist ring part number.

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)		
1/2"-13	6,000	1"	4 5/16"	2 5/8"	13/16"	1/2"	3026T41	$128.44
5/8"-11	9,000	1 1/8"	5 5/16"	3 1/8"	15/16"	5/8"	3026T42	135.62
3/4"-10	13,000	1 1/4"	6 1/16"	3 7/8"	1"	3/4"	3026T43	162.94
7/8"-9	17,000	1 3/8"	7 1/8"	4 3/8"	1 3/16"	7/8"	3026T44	233.54
1"-8	20,000	1 1/2"	8"	4 7/8"	1 1/4"	1"	3026T45	292.19
1 1/4"-7	28,000	2"	9 3/4"	6"	1 5/8"	1 1/4"	3026T46	352.47
1 1/2"-6	40,000	2 1/4"	11 7/8"	7"	1 7/8"	1 1/2"	3026T47	478.97

Fixed-Base High-Capacity Hoist Rings

Top View Two Mounting Holes

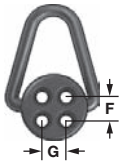

Top View Four Mounting Holes

Unlike other hoist rings, these have a fixed base for applications where swiveling is not required. They also offer small thread sizes with high work load limits and can be permanently installed. The lifting ring pivots for angular lifts. All are forged alloy steel and have a black-oxide finish for some corrosion resistance. Mounting bolts are included.

Thread Size	Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)	(F)	(G)		
With Two Mounting Holes										
5/16"-18	2,000	13/16"	3 1/8"	2 1/2"	1/2"	5/16"	1"	—	29505T21	$14.33
3/8"-16	2,500	3/4"	3 13/16"	3 3/16"	5/8"	3/8"	1 1/8"	—	29505T22	17.18
1/2"-13	5,000	1 3/8"	4 5/8"	3 7/8"	3/4"	1/2"	1 1/2"	—	29505T23	25.96
With Four Mounting Holes										
1/2"-13	12,000	1 3/8"	6 1/16"	5 1/4"	7/8"	3/4"	1 5/8"	1 1/4"	29505T24	57.51
5/8"-11	20,000	1 1/2"	7 5/8"	6 3/16"	1"	1"	2 1/16"	1 1/4"	29505T25	89.15

Forged Eye Nuts

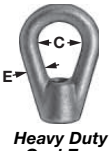

Heavy Duty Oval Eye

Round Eye

Oval Eye

Add eye nuts to an existing stud or bolt to create a lifting eye.

Note: Work load limits shown are based on a vertical lift and apply to the eye nuts only. The stud or bolt you use will influence the ultimate work load limit.

Steel eye nuts are forged and offer up to double the work load limit of galvanized steel. ***Zinc-plated steel*** eye nuts are forged and provide good corrosion resistance in most environments. ***Galvanized steel*** eye nuts are forged and have a hot-dipped finish for better corrosion resistance than zinc-plated steel. ***Type 304 stainless steel*** eye nuts are forged and have excellent corrosion resistance. ***Type 316 stainless steel*** eye nuts are forged, nonmagnetic, and offer better corrosion resistance than Type 304 stainless steel.

Inch Thread

Thread Size	Work Load Limit, lbs.	(C)	(E)		
Steel—Heavy Duty Oval Eye					
3/8"-16	1,800	7/8"	5/16"	3274T41	$6.59
1/2"-13	3,600	1 1/8"	7/16"	3274T42	8.36
5/8"-11	5,800	1 3/8"	9/16"	3274T43	10.77
3/4"-10	10,600	1 1/2"	3/4"	3274T44	18.45
7/8"-9	14,400	1 5/8"	7/8"	3274T51	29.06
1"-8	18,800	1 3/4"	1"	3274T46	33.88
1 1/4"-7	29,400	2"	1 1/4"	3274T47	61.50
1 1/2"-6	35,600	2 1/2"	1 3/8"	3274T48	89.81
Zinc-Plated Steel—Round Eye					
1/4"-20	300	3/4"	5/16"	3112T31	5.00
5/16"-18	300	3/4"	5/16"	3112T32	5.00
3/8"-16	500	15/16"	3/8"	3112T33	5.54
1/2"-13	745	1 1/8"	1/2"	3112T34	7.17
5/8"-11	1,540	1 3/8"	9/16"	3112T35	11.24
3/4"-10	2,645	1 9/16"	5/8"	3112T36	16.27
7/8"-9	3,965	1 15/16"	3/4"	3112T37	34.59
1"-8	3,965	1 15/16"	3/4"	3112T38	34.33
1 1/4"-7	11,240	2 3/4"	1 1/8"	3112T39	107.78
1 1/2"-6	15,430	3 1/8"	1 1/4"	3112T41	180.22
Galvanized Steel—Oval Eye					
1/4"-20	520	3/4"	1/4"	3019T14	6.03
5/16"-18	840	3/4"	1/4"	3019T15	6.16
3/8"-16	1,240	1"	5/16"	3019T16	6.36
7/16"-14	1,700	1 1/4"	3/8"	3019T17	6.46
1/2"-13	2,240	1 1/4"	3/8"	3019T18	7.03
5/8"-11	3,600	1 1/2"	1/2"	3019T19	7.56
3/4"-10	5,200	1 3/4"	5/8"	3019T21	11.27
7/8"-9	7,200	2"	3/4"	3019T22	16.86
1"-8	10,000	2 1/4"	7/8"	3019T23	24.28
1 1/4"-7	15,500	2 1/2"	1"	3019T25	43.21
1 1/2"-6	22,500	3 1/8"	1 1/4"	3019T27	136.66
Type 316 Stainless Steel—Heavy Duty Oval Eye					
3/8"-16	1,800	7/8"	5/16"	3061T43	21.70
1/2"-13	3,600	1 1/8"	7/16"	3061T44	35.38
5/8"-11	5,800	1 3/8"	9/16"	3061T45	61.13
3/4"-10	10,600	1 1/2"	3/4"	3061T46	88.58
Type 316 Stainless Steel—Oval Eye					
1/4"-20	520	3/4"	1/4"	3061T14	15.77
5/16"-18	840	3/4"	1/4"	3061T15	16.78
3/8"-16	1,240	1 1/4"	3/8"	3061T25	19.98
1/2"-13	2,240	1 1/4"	3/8"	3061T18	21.26
5/8"-11	3,600	1 1/2"	1/2"	3061T21	28.96
3/4"-10	5,200	1 3/4"	5/8"	3061T23	42.94

Metric Thread

Thread Size	Work Load Limit kg	Work Load Limit lbs.	Dimensions, mm (C)	Dimensions, mm (E)		
Steel—Heavy Duty Oval Eye						
M8×1.25	499	1,100	22.2	8	3274T61	$10.64
M12×1.75	1,044	2,300	28.5	11.1	3274T62	13.49
M16×2	1,679	3,700	35	14.2	3274T63	16.37
M18×2.5	2,722	6,000	38.1	19	3274T64	24.60
M20×2.5	3,448	7,600	41.3	22.2	3274T65	39.45
M24×3	4,991	11,000	44.5	25.4	3274T66	46.52
M30×3.5	6,352	14,000	50.8	31.8	3274T67	83.36
M36×4	8,621	19,000	63.5	35	3274T68	122.85
Zinc-Plated Steel—Round Eye						
M6×1	50	110	14	6	3112T51	3.24
M8×1.25	95	200	20	8	3112T52	4.51
M10×1.5	170	370	25	10	3112T53	5.83
M12×1.75	240	525	30	12	3112T54	6.51
M16×2	500	1,100	35	14	3112T55	9.67
M20×2.5	830	1,825	40	16	3112T56	13.81
M24×3	1,270	2,795	50	20	3112T57	26.43
M30×3.5	2,600	5,730	60	24	3112T58	51.07
Galvanized Steel—Oval Eye						
M6×1	159	350	19	6.4	3019T31	8.65
M8×1.25	295	650	25.4	7.9	3019T32	8.97
M10×1.5	363	800	31.75	9.5	3019T33	9.26
M12×1.75	771	1,700	31.75	9.5	3019T34	9.47
M16×2	1,134	2,500	38	12.7	3019T35	11.57
M20×2.5	1,588	3,500	50.8	19	3019T36	26.31
M24×3	2,269	5,000	50.8	19	3019T37	26.31
Type 304 Stainless Steel—Round Eye						
M8×1.25	100	220	20	8	3155T11	5.03
M10×1.5	170	370	25	10	3155T12	10.95
M12×1.75	240	525	30	12	3155T13	10.53
M16×2	500	1,100	35	14	3155T14	16.74
M24×3	1,290	2,840	50	20	3155T17	44.19
M36×4	3,300	7,275	70	28	3155T19	176.64
Type 316 Stainless Steel—Round Eye						
M8×1.25	100	220	20	8	3174T11	6.71
M10×1.5	170	370	25	10	3174T12	10.18
M12×1.75	240	525	30	12	3174T13	13.33
M16×2	500	1,100	35	14	3174T14	24.91
M24×3	1,290	2,840	50	20	3174T16	66.07
M30×3.5	2,300	5,070	60	24	3174T17	121.89
M36×4	3,300	7,275	70	28	3174T18	195.77

Warning! Never exceed work load limits.

About Lifting with Eyebolts

Eyebolt with Shoulder

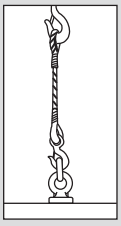

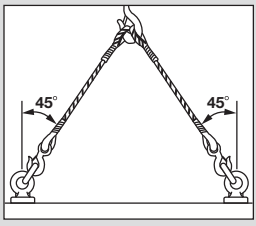

Eyebolt without Shoulder

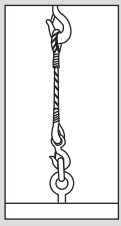

Eyebolts with shoulder can be used for vertical lifts as well as angular lifts up to 45°. However, angular lifts significantly reduce the work load. For example, lifting at 45° reduces the work load limit by 75%. For angular lifts, we recommend using hoist rings, sold on pages 1491-1494.

Eyebolts without shoulder are for vertical lifts only.

The work load limit for all eyebolts is based on a straight vertical lift. *Note:* Any eyebolt that has been modified from its original design will have a reduced work load limit and should be discarded.

Steel Eyebolts—For Lifting

Also known as machinery eyebolts. All are made of forged carbon steel.

Steel eyebolts are good for general purpose applications where corrosion is not a factor. For hex nuts, see pages 3186-3192.

Zinc-plated steel eyebolts have good corrosion resistance in most environments. For hex nuts, see pages 3186-3192.

Galvanized steel eyebolts are hot dipped and offer better corrosion resistance than zinc-plated steel.

Also Available: Hex nuts for galvanized steel eyebolts. Please ask for 3013T777 and specify thread size.

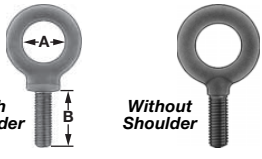

Thread Size	Work Load Limit, lbs.	(A)	(B)	WITH SHOULDER Steel		WITH SHOULDER Zinc-Plated Steel		WITH SHOULDER Galvanized Steel		WITHOUT SHOULDER Steel		WITHOUT SHOULDER Zinc-Plated Steel		WITHOUT SHOULDER Galvanized Steel	
1/4″-20	500	3/4″	1″	3014T45	$2.85	3014T251	$4.16	3014T861	$4.54	3013T45	$2.85	3013T341	$4.16	3013T821	$4.54
1/4″-20	500	3/4″	2″	3014T901	10.22	3014T102	11.56	3014T201	12.46	3013T901	10.22	3013T128	11.56	3013T171	12.46
1/4″-20	500	3/4″	3″	3014T902	11.88	3014T103	13.43	3014T202	14.51	3013T902	11.88	3013T129	13.43	3013T172	14.51
1/4″-28	500	3/4″	1″	3014T256	4.86	3014T104	5.39	—	—	3013T111	4.86	3013T13	5.39	—	—
5/16″-18	900	7/8″	1 1/8″	3014T46	3.01	3014T252	4.49	3014T862	4.79	3013T46	3.01	3013T342	4.49	3013T822	4.79
5/16″-18	900	7/8″	2″	3014T903	10.73	3014T105	13.12	3014T203	14.24	3013T903	10.73	3013T131	13.12	3013T174	14.24
5/16″-18	900	7/8″	3″	3014T904	12.23	3014T106	14.22	3014T15	15.75	3013T904	12.23	3013T132	14.22	3013T175	15.75
5/16″-18	900	7/8″	4″	3014T905	13.94	3014T107	16.29	3014T151	17.61	3013T905	13.94	3013T133	16.29	3013T176	17.61
5/16″-24	900	7/8″	1 1/8″	3014T257	5.11	3014T108	5.71	—	—	3013T121	5.89	3013T134	5.71	—	—
3/8″-16	1,300	1″	1 1/4″	3014T471	3.59	3014T253	5.32	3014T863	5.82	3013T471	3.59	3013T343	5.32	3013T823	5.82
3/8″-16	1,300	1″	4 1/2″	3014T907	15.02	3014T11	18.17	3014T159	18.56	3013T907	15.02	3013T136	18.17	3013T179	18.56
3/8″-16	1,400	1″	2 1/2″	3014T62	12.21	3014T142	13.33	3014T162	14.39	3013T62	12.21	3013T101	13.33	3013T117	14.39
3/8″-16	1,400	1″	3″	3014T63	12.50	3014T143	13.76	3014T163	14.88	3013T63	12.50	3013T102	13.76	3013T118	14.88
3/8″-16	1,400	1″	4″	3014T906	13.88	3014T109	15.46	3014T157	16.57	3013T906	13.88	3013T135	15.46	3013T178	16.57
3/8″-24	1,400	1″	1 1/4″	3014T258	8.94	—	—	—	—	—	—	—	—	—	—
7/16″-14	1,800	1 1/16″	1 3/8″	3014T481	4.53	3014T144	5.68	3014T864	6.17	3013T481	4.53	3013T103	5.68	3013T824	6.17
7/16″-14	2,000	1 1/16″	2″	3014T908	11.84	3014T112	14.36	3014T16	15.53	3013T908	11.84	3013T137	14.36	3013T18	15.53
7/16″-14	2,000	1 1/16″	3″	3014T909	12.66	3014T113	14.86	3014T161	14.44	3013T909	12.66	3013T138	14.86	3013T181	14.44
7/16″-14	2,000	1 1/16″	4″	3014T911	14.23	3014T114	16.34	3014T17	17.54	3013T911	14.23	3013T139	16.34	3013T182	17.54
7/16″-14	2,000	1 1/16″	4 1/2″	3014T912	16.16	3014T115	18.21	3014T171	19.57	3013T912	16.16	3013T14	18.21	3013T183	19.57
1/2″-13	2,400	1 3/16″	1 1/2″	3014T491	4.85	3014T254	5.85	3014T865	6.57	3013T491	4.85	3013T104	5.85	3013T825	6.57
1/2″-13	2,600	1 3/16″	2 1/2″	3014T64	13.46	3014T145	14.73	3014T164	16.09	3013T64	13.46	3013T105	14.73	3013T119	16.09
1/2″-13	2,600	1 3/16″	3″	3014T65	14.10	3014T146	15.60	3014T165	16.83	3013T65	14.10	3013T106	15.60	3013T12	16.83
1/2″-13	2,600	1 3/16″	4″	3014T913	15.29	3014T116●	18.76	3014T172	18.56	3013T913	15.29	3013T141●	18.76	3013T184	18.56
1/2″-13	2,600	1 3/16″	4 1/2″	3014T914	17.11	3014T117●	20.60	3014T173	20.49	3013T914	17.11	3013T142●	20.60	3013T185	20.49
1/2″-20	2,600	1 3/16″	1 1/2″	3014T259	4.45	3014T118	7.67	—	—	3013T344	4.45	3013T143	7.67	—	—
1/2″-20	2,600	1 3/16″	2 1/2″	3014T263	11.09	3014T119	15.45	—	—	3013T126	17.92	3013T144	15.45	—	—
9/16″-12	3,000	1 1/4″	1 5/8″	3014T51	7.45	3014T147	7.82	3014T866	8.60	3013T51	7.45	3013T107	7.82	3013T826	8.60
9/16″-12	3,000	1 1/4″	2″	3014T915	14.75	3014T12	16.95	3014T174	18.22	3013T915	14.75	3013T145	16.95	3013T186	18.22
9/16″-12	3,000	1 1/4″	3″	3014T916	15.83	3014T121	17.86	3014T175	19.13	3013T916	15.83	3013T146	17.86	3013T187	19.13
9/16″-12	3,000	1 1/4″	4″	3014T917	17.68	3014T122	19.69	3014T176	20.60	3013T917	17.68	3013T147	19.69	3013T188	20.60
9/16″-12	3,000	1 1/4″	4 1/2″	3014T918	19.56	3014T123	21.56	3014T177	24.07	3013T918	19.56	3013T148	21.56	3013T189	24.07
5/8″-11	4,000	1 3/8″	1 3/4″	3014T52	7.66	3014T148	10.62	3014T867	11.61	3013T52	7.66	3013T108	10.62	3013T829	11.61
5/8″-11	4,000	1 3/8″	2 1/2″	3014T66	19.51	3014T149	21.14	3014T166	22.65	3013T66	19.51	3013T109	21.14	3013T125	22.65
5/8″-11	4,000	1 3/8″	3″	3014T67	20.40	3014T152	22.33	3014T167	24.01	3013T67	20.40	3013T11	22.33	3013T122	24.01
5/8″-11	4,000	1 3/8″	4″	3014T919	22.62	3014T124	26.44	3014T178	28.01	3013T919	22.62	3013T149	26.44	3013T19	28.01
5/8″-11	4,000	1 3/8″	4 1/2″	3014T921	24.94	3014T125	27.84	3014T179	29.36	3013T921	24.94	3013T15	27.84	3013T191	29.36
5/8″-18	4,000	1 3/8″	1 3/4″	3014T264	12.11	3014T126	12.46	—	—	3013T345	12.11	3013T151	12.46	—	—
3/4″-10	5,000	1 1/2″	2″	3014T531	7.93	3014T255	14.15	3014T868	15.11	3013T531	7.93	3013T112	14.15	3013T828	15.11
3/4″-10	6,000	1 1/2″	2 1/2″	3014T68	22.34	3014T153	24.70	3014T168	26.42	3013T68	22.34	3013T113	24.70	3013T123	26.42
3/4″-10	6,000	1 1/2″	3″	3014T69	23.34	3014T154	25.47	3014T169	27.79	3013T69	23.34	3013T114	25.47	3013T124	27.79
3/4″-10	6,000	1 1/2″	4″	3014T922	25.83	3014T127	28.75	3014T18	30.71	3013T922	25.83	3013T152	28.75	3013T192	30.71
3/4″-10	6,000	1 1/2″	4 1/2″	3014T923	27.24	3014T128	29.98	3014T181	32.03	3013T923	27.24	3013T153	29.98	3013T193	32.03
3/4″-10	6,000	1 1/2″	5″	3014T924	29.26	3014T129	32.03	3014T182	33.55	3013T924	29.26	3013T154	32.03	3013T194	33.55
3/4″-16	6,000	1 1/2″	2″	3014T261	11.94	3014T13	15.76	—	—	3013T346	11.94	3013T155	15.76	—	—
7/8″-9	7,000	1 11/16″	2 1/4″	3014T54	11.12	3014T155	18.88	3014T869	20.14	3013T54	11.12	3013T115	18.88	3013T827	20.14
7/8″-9	7,000	1 11/16″	3″	3014T925	26.02	3014T131	30.39	3014T183	33.17	3013T925	26.02	3013T156	30.39	3013T195	33.17
7/8″-9	7,000	1 11/16″	4″	3014T926	28.67	3014T132	32.47	3014T184	35.29	3013T926	28.67	3013T157	32.47	3013T196	35.29
7/8″-9	7,000	1 11/16″	4 1/2″	3014T927	30.86	3014T133	34.21	3014T185	37.18	3013T927	30.86	3013T158	34.21	3013T197	37.18
7/8″-9	7,000	1 11/16″	5″	3014T928	32.22	3014T134	35.64	3014T186	38.01	3013T928	32.22	3013T159	35.64	3013T198	38.01

● Work load limit is 2,400 lbs.

Warning! **Never exceed work load limits.**

Large Thread Size Steel Eyebolts—For Lifting

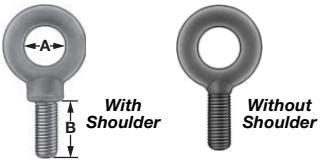

Big lifts are no problem for these eyebolts. Also known as machinery eyebolts. All are made of forged carbon steel.

Steel eyebolts are good for general purpose applications where corrosion is not a factor. For hex nuts, see pages 3186-3192.

Zinc-plated steel eyebolts have good corrosion resistance in most environments. For hex nuts, see pages 3186-3192.

Galvanized steel eyebolts are hot dipped and offer better corrosion resistance than zinc-plated steel.

Also Available: Hex nuts for galvanized steel eyebolts. Please ask for 3013T777 and specify thread size.

Thread Size	Work Load Limit, lbs.	(A)	(B)	WITH SHOULDER Steel		WITH SHOULDER Zinc-Plated Steel		WITH SHOULDER Galvanized Steel		WITHOUT SHOULDER Steel		WITHOUT SHOULDER Zinc-Plated Steel		WITHOUT SHOULDER Galvanized Steel	
1″-8	9,000	1 13/16″	2 1/2″	3014T55	$15.18	3014T156	$26.45	3014T871	$28.09	3013T55	$15.18	3013T116	$26.45	3013T831	$28.09
1″-8	9,000	1 13/16″	3″	3014T929	31.74	3014T135	37.44	3014T187	40.70	3013T929	31.74	3013T16	37.44	3013T199	40.70
1″-8	9,000	1 13/16″	4″	3014T931	35.14	3014T136	41.12	3014T188	44.70	3013T931	35.14	3013T161	41.12	3013T201	44.70
1″-8	9,000	1 13/16″	4 1/2″	3014T932	37.64	3014T137	43.49	3014T189	47.44	3013T932	37.64	3013T162	43.49	3013T202	47.44
1″-8	9,000	1 13/16″	5″	3014T933	39.32	3014T138	45.38	3014T19	48.54	3013T933	39.32	3013T163	45.38	3013T203	48.54
1″-14	9,000	1 13/16″	2 1/2″	3014T262	23.69	3014T139	31.15	—	—	3013T127	23.69	3013T164	31.15	—	—
1 1/8″-7	12,000	2″	2 3/4″	3014T56	25.28	3014T14	36.42	3014T872	39.77	3013T56	25.28	3013T165	36.42	3013T832	39.77
1 1/4″-7	15,000	2 3/16″	3″	3014T57	33.37	3014T141	57.24	3014T873	47.92	3013T57	33.37	3013T166	57.24	3013T833	47.92
1 1/2″-6	21,000	2 1/2″	3 1/2″	3014T58	61.43	3014T191	71.07	3014T874	81.75	3013T58	61.43	3013T167	71.07	3013T834	81.75
1 3/4″-5	28,000	2 7/8″	3 3/4″	3014T59	101.91	3014T192	112.38	3014T195	121.57	3013T59	101.91	3013T168	112.38	3013T204	121.57
2″-4 1/2	38,000	3 1/4″	4″	3014T61	138.75	3014T193	153.10	3014T196	162.57	3013T61	138.75	3013T169	153.10	3013T205	162.57
2 1/2″-4	56,000	4″	5″	3014T101	368.28	3014T194	505.27	3014T197	563.98	3013T88	368.28	3013T17	505.27	3013T206	563.98

Black-Oxide Steel Eyebolts—For Lifting

The black-oxide finish blends into the background in applications where concealment is important. It also offers some corrosion resistance. For hex nuts, see pages 3186-3192.

Thread Size	Work Load Limit, lbs.	(A)	(B)	With Shoulder		Without Shoulder	
1/4″-20	500	3/4″	1″	3067T51	$4.33	3067T71	$4.33
5/16″-18	900	7/8″	1 1/8″	3067T52	4.58	3067T72	4.58
3/8″-16	1,400	1″	1 1/4″	3067T53	5.44	3067T73	5.44
3/8″-16	1,400	1″	3″	3067T54	13.91	3067T74	13.91
1/2″-13	2,600	1 3/16″	1 1/2″	3067T55	6.65	3067T75	6.65
1/2″-13	2,600	1 3/16″	3″	3067T56	15.94	3067T76	15.94
5/8″-11	4,000	1 3/8″	1 3/4″	3067T57	10.94	3067T77	10.94
5/8″-11	4,000	1 3/8″	3″	3067T58	23.31	3067T78	23.31
3/4″-10	6,000	1 1/2″	2″	3067T59	14.72	3067T79	14.72
3/4″-10	6,000	1 1/2″	3″	3067T61	26.12	3067T81	26.12
7/8″-9	7,000	1 11/16″	2 1/4″	3067T62	19.93	3067T82	19.93
1″-8	9,000	1 13/16″	2 1/2″	3067T64	27.20	3067T84	27.20
1 1/4″-7	15,000	2 3/16″	3″	3067T66	47.46	3067T86	47.46
1 1/2″-6	21,000	2 1/2″	3 1/2″	3067T67	71.59	3067T87	71.59

High-Strength Alloy Steel Eyebolts—For Lifting

The highest strength eyebolts we offer. Plus these eyebolts are the best choice for low-temperature applications. They will retain their strength in temperatures as low as –40° F. Made of 8620 alloy steel. Meet ASTM F541. For hex nuts, see pages 3186-3192.

Thread Size	Work Load Limit, lbs.	(A)	(B)	With Shoulder		Without Shoulder	
3/8″-16	1,480	1″	1 1/4″	3049T72	$14.89	3049T71	$14.89
1/2″-13	2,700	1 3/16″	1 1/2″	3049T92	16.77	3049T82	16.77
5/8″-11	4,300	1 3/8″	1 3/4″	3049T93	25.74	3049T83	25.74
3/4″-10	6,400	1 1/2″	2″	3049T94	30.60	3049T84	30.60
7/8″-9	8,800	1 11/16″	2 1/4″	3049T95	44.98	3049T85	44.98
1″-8	11,600	1 13/16″	2 1/2″	3049T96	58.89	3049T86	58.89
1 1/4″-7	18,400	2 3/16″	3″	3049T51	83.89	—	—
1 1/2″-6	26,600	2 1/2″	3 1/2″	3049T52	127.28	—	—

Stainless Steel Eyebolts—For Lifting

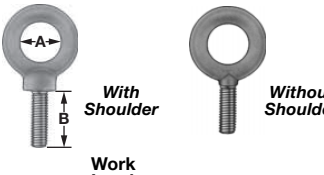

The most corrosion-resistant eyebolts we offer. For hex nuts, see pages 3186-3192.

Type 304 stainless steel eyebolts offer excellent corrosion resistance.

Type 316 stainless steel eyebolts are nonmagnetic and provide superior corrosion resistance.

Thread Size	Work Load Limit, lbs.	(A)	(B)	With Shoulder		Without Shoulder	
Type 304 Stainless Steel							
1/4″-20	460	3/4″	1″	33045T77	$9.08	33045T71	$9.08
5/16″-18	780	7/8″	1 1/8″	33045T78	13.33	33045T72	13.33
5/16″-18	900	7/8″	3″	33045T51	20.64	—	—
3/8″-16	1,300	1″	1 1/4″	33045T81	17.86	33045T79	17.86
3/8″-16	1,300	1″	3″	33045T52	22.31	33045T35	22.31
1/2″-13	2,150	1 3/16″	1 1/2″	33045T82	17.69	33045T73	17.69
1/2″-13	2,400	1 3/16″	3″	33045T53	28.27	33045T34	28.27
5/8″-11	3,440	1 3/8″	1 3/4″	33045T83	34.11	33045T74	34.11
5/8″-11	4,000	1 3/8″	3″	33045T37	52.08	—	—
3/4″-10	5,000	1 1/2″	2″	33045T84	45.07	33045T75	45.07
3/4″-10	5,000	1 1/2″	3″	33045T54	66.45	—	—
1″-8	9,000	1 13/16″	2 1/2″	33045T85	82.94	33045T76	82.94
1 1/4″-7	15,000	2 3/16″	3″	33045T86	112.53	—	—

Thread Size	Work Load Limit, lbs.	(A)	(B)	With Shoulder		Without Shoulder	
Type 316 Stainless Steel							
1/4″-20	500	3/4″	1″	8891T72	$10.79	8891T32	$10.79
1/4″-20	500	3/4″	3″	8891T55	28.13	8891T61	28.13
5/16″-18	900	7/8″	1 1/8″	8891T75	16.76	8891T35	16.76
5/16″-18	900	7/8″	3″	8891T51	29.56	8891T56	29.56
3/8″-16	1,400	1″	1 1/4″	8891T88	19.17	8891T48	19.17
3/8″-16	1,400	1″	3″	8891T52	34.67	8891T57	34.67
1/2″-13	2,600	1 3/16″	1 1/2″	8891T79	24.81	8891T39	24.81
1/2″-13	2,600	1 3/16″	3″	8891T53	42.09	8891T58	42.09
5/8″-11	4,000	1 3/8″	1 3/4″	8891T82	35.92	8891T42	35.92
5/8″-11	4,000	1 3/8″	3″	8891T54	60.11	8891T59	60.11
3/4″-10	6,000	1 1/2″	2″	8891T84	51.93	8891T44	51.93

Warning! Never exceed work load limits.

For information about lifting with eyebolts, see page 1495.

Metric Steel Eyebolts with Shoulder—*For Lifting*

Also known as machinery eyebolts. All are made of forged steel. For hex nuts, see pages 3192-3194.

Steel eyebolts are good for general purpose applications where corrosion is not a factor.

Zinc-plated steel eyebolts offer good corrosion resistance in most environments. Meet DIN 580.

Galvanized steel eyebolts have a hot-dipped finish and offer better corrosion resistance than zinc-plated steel eyebolts.

Type 304 stainless steel eyebolts provide excellent corrosion resistance. Meet DIN 580.

Type 316 stainless steel eyebolts are nonmagnetic and have better corrosion resistance than Type 304 stainless steel. Meet DIN 580.

Steel and Galvanized Steel

Zinc-Plated Steel and Stainless Steel

Thread Size	Work Load Limit kg	Work Load Limit lbs.	Dimensions, mm (A)	Dimensions, mm (B)		
Steel						
M6×1	210	460	19	12	3040T11	$4.00
M7×1	370	815	22	14	3040T12	5.55
M8×1.25	450	990	25	76	3040T31	14.57
M8×1.25	500	1,100	25	16	3040T13	5.55
M10×1.5	740	1,630	27	20	3040T14	5.78
M12×1.75	1,030	2,270	30	24	3040T15	6.24
M12×1.75	1,030	2,270	30	76	3040T33	16.37
M14×2	1,600	3,525	33	28	3040T16	6.91
M16×2	1,600	3,525	35	32	3040T17	7.91
M16×2	1,600	3,525	35	76	3040T35	24.82
M18×2.5	2,140	4,715	38	36	3040T18	12.54
M18×2.5	2,140	4,715	38	76	3040T36	28.56
M20×2.5	2,860	6,305	41	40	3040T19	12.90
M24×3	3,850	8,485	46	48	3040T21	21.83
M27×3	5,200	11,460	51	48	3040T22	22.73
M30×3.5	6,400	14,105	55	60	3040T23	41.89
M36×4	8,970	19,775	63	72	3040T24	63.60
M42×4.5	11,960	26,365	73	84	3040T25	103.20
M48×5	16,400	36,155	82	96	3040T27	142.62
Zinc-Plated Steel						
M6×1	70	154	14	12	3107T41	3.26
M8×1.25	140	308	20	13	3107T42	3.52
M10×1.5	230	507	25	17	3107T43	4.14
M12×1.75	340	749	30	20.5	3107T44	5.51
M16×2	700	1,543	35	27	3107T45	7.35
M20×2.5	1,200	2,645	40	30	3107T46	9.27
M24×3	1,800	3,968	50	36	3107T47	11.56
M30×3.5	3,200	7,054	60	45	3107T48	32.22
M36×4	4,600	10,141	70	54	3107T49	51.20
M42×4.5	6,300	13,889	80	63	3107T65	94.44
M48×5	8,600	18,959	90	68	3107T66	143.33

Thread Size	Work Load Limit kg	Work Load Limit lbs.	Dimensions, mm (A)	Dimensions, mm (B)		
Galvanized Steel						
M6×1	210	462	19	25.4	4843T11	$3.64
M7×1	370	814	22	28.5	4843T12	3.83
M8×1.25	450	992	25	31.7	4843T13	4.52
M10×1.5	740	1,628	28	35	4843T14	5.15
M12×1.75	1,030	2,266	30	38	4843T15	5.82
M14×2	1,600	3,520	35	44.5	4843T16	7.78
M16×2	1,600	3,520	35	44.5	4843T17	9.04
M18×2.5	2,140	4,708	38	51	4843T18	12.04
M20×2.5	2,860	6,292	43	57	4843T19	16.43
M24×3	3,850	8,470	46	63.5	4843T21	21.71
M27×3	5,200	11,440	51	70	4843T22	35.04
M30×3.5	6,400	14,080	55	76	4843T23	42.05
M36×4	8,970	19,734	63	89	4843T24	71.75
Type 304 Stainless Steel						
M8×1.25	100	220	20	13	3100T11	5.17
M10×1.5	170	370	25	17	3100T12	7.92
M12×1.75	240	525	30	20.5	3100T13	13.54
M16×2	500	1,100	35	27	3100T14	20.52
M20×2.5	860	1,895	40	30	3100T15	36.30
M24×3	1,290	2,840	50	36	3100T16	77.08
M30×3.5	2,300	5,070	60	45	3100T17	102.10
M36×4	3,300	7,275	70	54	3100T18	223.20
Type 316 Stainless Steel						
M8×1.25	100	220	20	13	3130T11	5.46
M10×1.5	170	370	25	17	3130T12	9.73
M12×1.75	240	525	30	20.5	3130T13	16.21
M16×2	500	1,100	35	27	3130T14	33.09
M20×2.5	860	1,895	40	30	3130T15	32.46
M24×3	1,290	2,840	50	36	3130T21	82.49
M30×3.5	2,300	5,070	60	45	3130T22	161.99
M36×4	3,300	7,275	70	54	3130T23	230.72

Swivel Eyebolts and Eye Nuts—*For Lifting*

Unlike conventional eyebolts and eye nuts that are in a fixed position when installed, these bolt down and swivel 360° to adjust the direction of the load. They can be used for vertical, 45°, and 90° lifts. All are made of forged alloy steel.

Eyebolts include a removable key for tightening the bolt. For hex nuts, see pages 3186-3194.

Vertical Lift

45° Angular Lift

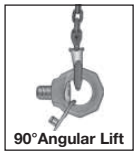

90°Angular Lift

Eyebolts

Thread Size	Work Load Limit, lbs. Vertical Lift	Work Load Limit, lbs. Angular Lift	(A)	(B)	(E)		
Inch Thread							
3/8″-16	2,200	880	1″	9/16″	5/16″	3059T69	$47.41
1/2″-13	4,400	1,650	13/16″	11/16″	3/8″	3059T71	54.22
5/8″-11	8,820	3,300	1 3/8″	15/16″	9/16″	3059T72	61.73
3/4″-10	13,250	5,070	1 9/16″	1 3/16″	11/16″	3059T73	90.16
1″-8	17,630	7,050	1 7/8″	1 3/8″	13/16″	3059T74	113.63
1 1/4″-7	26,450	9,920	2 3/8″	1 3/4″	1″	3059T75	162.02
1 1/2″-6	35,270	15,430	2 13/16″	2 1/8″	1 1/4″	3059T76	264.19
2″-4 1/2	70,550	26,450	3 11/16″	2 13/16″	1 11/16″	3059T77	446.76

Thread Size	Work Load Limit Vertical Lift kg	Work Load Limit Vertical Lift lbs.	Work Load Limit Angular Lift kg	Work Load Limit Angular Lift lbs.	Dimensions, mm (A)	Dimensions, mm (B)	Dimensions, mm (E)		
Metric Thread									
M12×1.75	2,000	4,405	750	1,650	30	18	10	3059T51	$54.58
M16×2	4,000	8,815	1,500	3,305	35	24	14	3059T52	63.27
M20×2.5	6,000	13,225	2,300	5,070	40	30	16	3059T53	83.82
M24×3	8,000	17,635	3,200	7,050	48	36	19	3059T54	114.58

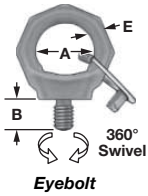

Eyebolt

Eye Nuts

Thread Size	Work Load Limit Vertical Lift kg	Work Load Limit Vertical Lift lbs.	Work Load Limit Angular Lift kg	Work Load Limit Angular Lift lbs.	Dimensions, mm (A)	Dimensions, mm (E)		
Metric Thread								
M12×1.75	2,000	4,405	750	1,650	30	10	3059T31	$65.34
M16×2	4,000	8,815	1,500	3,305	35	14	3059T32	84.08
M20×2.5	6,000	13,225	2,300	5,070	40	16	3059T33	96.06
M24×3	8,000	17,635	3,200	7,050	48	19	3059T34	119.37

Eye Nut

Warning! **Never exceed work load limits.**

For information about lifting with eyebolts, see page 1495.

Steel Eyebolts with Nuts—For Lifting

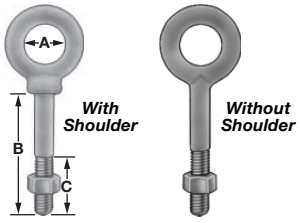

Also known as nut eyebolts, these eyebolts have a partially threaded shank and include a hex nut.

Galvanized steel eyebolts are hot dipped and offer corrosion resistance.

Type 304 stainless steel eyebolts offer excellent corrosion resistance. For hex nuts, see pages 3186-3192.

Type 316 stainless steel eyebolts are nonmagnetic and provide superior corrosion resistance. For hex nuts, see pages 3186-3192.

Also Available: Additional hex nuts for galvanized steel eyebolts. Please ask for 3016T888 and specify thread size.

Thrd. Size	Work Load Limit, lbs.	(A)	(B)	(C)	With Shoulder		Without Shoulder	
Galvanized Steel								
1/4″-20	500	1/2″	2″	1 1/2″	3018T14	$4.00	3016T14	$4.00
1/4″-20	500	1/2″	3″	1 1/2″	3018T23	4.09	3016T15	4.09
1/4″-20	500	1/2″	4″	2″	3018T34	5.11	3016T16	5.11
1/4″-20	500	1/2″	5″	2 1/2″	—	—	3016T17	6.46
1/4″-20	500	1/2″	6″	3″	—	—	3016T18	6.61
5/16″-18	800	5/8″	2 1/4″	1 1/2″	3018T15	4.82	3016T23	4.82
5/16″-18	800	5/8″	3 1/4″	1 1/2″	3018T24	5.06	3016T24	5.06
5/16″-18	800	5/8″	4 1/4″	2 1/2″	3018T35	5.40	3016T26	5.40
5/16″-18	800	5/8″	5″	2 1/2″	—	—	3016T27	6.61
5/16″-18	800	5/8″	6″	3″	—	—	3016T28	7.75
3/8″-16	1,200	3/4″	2 1/2″	1 1/2″	3018T16	5.26	3016T32	5.26
3/8″-16	1,200	3/4″	3″	1 1/2″	3018T25	5.82	3016T33	5.82
3/8″-16	1,200	3/4″	4 1/4″	2″	—	—	3016T35	6.52
3/8″-16	1,200	3/4″	4 1/2″	2″	3018T36	6.52	3016T34★	6.62
3/8″-16	1,200	3/4″	4 1/2″	2 1/2″	3018T83	10.07	3016T76	10.07
3/8″-16	1,200	3/4″	5″	2 1/2″	3018T26	7.90	3016T36	7.90
3/8″-16	1,200	3/4″	6″	3″	3018T27	8.06	3016T37	8.06
3/8″-16	1,200	3/4″	8″	4″	3018T28	10.71	3016T38	10.71
3/8″-16	1,200	3/4″	10″	4″	—	—	3016T11	14.53
1/2″-13	2,100	1″	2″	1 7/8″	3018T44	6.86	3016T39	6.86
1/2″-13	2,100	1″	3 1/4″	1 1/2″	3018T17	7.14	3016T42	7.14
1/2″-13	2,100	1″	4″	2″	—	—	3016T41	7.78
1/2″-13	2,100	1″	4 1/2″	2″	3018T29	7.31	3016T44	7.31
1/2″-13	2,100	1″	6″	3″	3018T37	9.26	3016T45	9.26
1/2″-13	2,100	1″	8″	4″	3018T45	12.89	3016T46	12.89
1/2″-13	2,100	1″	10″	4″	3018T46	16.13	3016T47	16.13
1/2″-13	2,100	1″	12″	4″	3018T47	16.57	3016T48	16.57
5/8″-11	3,500	1 1/4″	4 1/2″	2″	3018T43	10.99	3016T52	10.99
5/8″-11	3,500	1 1/4″	6″	3″	3018T38	13.47	3016T53	13.47
5/8″-11	3,500	1 1/4″	8″	4″	3018T48	19.97	3016T54	19.97
5/8″-11	3,500	1 1/4″	10″	4″	3018T49	22.31	3016T55	22.31
5/8″-11	3,500	1 1/4″	12″	4″	3018T51	23.39	3016T56	23.39
5/8″-11	3,500	1 1/4″	15″	6″	—	—	3016T57	30.17
5/8″-11	3,500	1 1/4″	18″	6″	—	—	3016T58	39.32
5/8″-11	3,500	1 1/4″	24″	6″	—	—	3016T59	48.74
5/8″-11	5,200	1 1/4″	4″	2″	3018T18	15.15	3016T82	15.15
3/4″-10	5,200	1 1/2″	4 1/2″	2 1/2″	3018T19	16.04	3016T62	16.04
3/4″-10	5,200	1 1/2″	6″	3″	3018T39	18.05	3016T63	18.05
3/4″-10	5,200	1 1/2″	8″	4″	—	—	3016T64	27.74
3/4″-10	5,200	1 1/2″	10″	4″	—	—	3016T65	29.99
3/4″-10	5,200	1 1/2″	12″	4″	—	—	3016T66	30.77
3/4″-10	5,200	1 1/2″	15″	6″	—	—	3016T67	36.18
3/4″-10	5,200	1 1/2″	18″	6″	—	—	3016T68	48.74
7/8″-9	7,000	1 3/4″	5″	2 1/2″	3018T21	27.04	3016T71	27.04
Galvanized Steel (Cont.)								
7/8″-9	7,000	1 3/4″	6″	3 1/2″	—	—	3016T12	$32.07
7/8″-9	7,000	1 3/4″	8″	4″	3018T41	$33.95	3016T72	33.95
7/8″-9	7,000	1 3/4″	12″	4″	—	—	3016T73	45.62
7/8″-9	7,000	1 3/4″	18″	6″	—	—	3016T74	59.75
1″-8	10,000	2″	6″	3″	3018T22	36.87	3016T84	36.87
1″-8	10,000	2″	9″	4″	3018T42	43.54	3016T85	43.54
1″-8	10,000	2″	12″	4″	—	—	3016T87	52.90
1″-8	10,000	2″	18″	6″	—	—	3016T88	60.28
1″-8	10,000	2″	24″	6″	—	—	3016T83	87.62
1 1/4″-7	13,500	2 1/8″	6″	4″	—	—	3016T95	74.27
1 1/4″-7	13,500	2 1/8″	12″	4″	—	—	3016T97	87.00
1 1/4″-7	21,000	2 1/2″	8″	4″	3018T81	102.44	—	—
1 1/4″-7	21,000	2 1/2″	12″	4″	3018T82	114.18	—	—
1 1/4″-7	21,000	2 1/2″	20″	6″	—	—	3016T98	132.13
1 1/2″-6	20,000	2 1/2″	12″	4 1/2″	—	—	3016T13	130.28
1 1/2″-6	24,000	3″	15″	6″	3018T86	148.96	—	—
Type 304 Stainless Steel								
1/4″-20	460	3/4″	4″	1″	3069T52	27.35	3069T31■	27.35
5/16″-18	780	7/8″	4″	1 1/4″	3069T53	28.49	3069T32▲	28.49
3/8″-16	1,160	3/4″	4 1/2″	1 1/2″	3069T41	41.07	—	—
1/2″-13	2,150	1″	4 1/2″	2″	3069T54	38.91	3069T33	38.91
1/2″-13	2,150	1″	6″	2″	3069T42	45.65	3069T34	45.65
5/8″-11	3,440	1 3/8″	4″	2 1/2″	3069T55	60.73	3069T35	60.73
5/8″-11	3,440	1 3/8″	6″	2 1/2″	3069T43	64.98	3069T36	64.98
3/4″-10	5,140	1 1/2″	6″	3″	3069T44	95.56	3069T37	95.56
7/8″-9	7,130	1 5/8″	6″	3 1/2″	—	—	3069T38	126.96
1″-8	9,370	2″	6″	4″	3069T45	161.50	3069T39	161.50
Type 316 Stainless Steel								
1/4″-20	500	1/2″	1 1/4″	1″	3032T64	12.56	3032T51	12.56
1/4″-20	500	1/2″	2″	1 1/2″	3032T41	12.92	3032T31	12.92
1/4″-20	500	1/2″	4″	2″	3032T61	14.28	3032T57	14.28
5/16″-18	800	5/8″	1 3/8″	3/8″	3032T65	15.42	3032T52	15.42
5/16″-18	800	5/8″	2 1/4″	1 1/2″	3032T42	15.92	3032T32	15.92
5/16″-18	800	5/8″	4 1/4″	2 1/2″	3032T62	17.21	3032T58	17.21
3/8″-16	1,200	3/4″	3/4″	3/4″	3032T66	17.80	3032T53●	17.80
3/8″-16	1,200	3/4″	1 1/2″	1″	3032T67	18.97	3032T54	18.97
3/8″-16	1,200	3/4″	2 1/2″	1 1/2″	3032T43	19.61	3032T33	19.61
3/8″-16	1,200	3/4″	4 1/2″	2″	3032T63	21.88	3032T59◆	21.88
1/2″-13	2,200	1″	3 1/4″	1 1/2″	3032T44	25.94	3032T34	25.94
1/2″-13	2,200	1″	6″	3″	3032T45	30.63	3032T35	30.63
5/8″-11	3,500	1 1/4″	4 1/2″	2″	3032T46	41.70	3032T36	41.70
3/4″-10	5,140	1 1/2″	4 1/2″	2″	3032T47	70.70	3032T37	70.70
7/8″-9	7,130	1 3/4″	5″	2 1/2″	3032T48	109.67	3032T38	109.67
1″-8	9,370	2″	6″	3″	3032T49	147.48	3032T39	147.48

★ (B) dimension is 4″; (C) dimension is 1 1/2″. ■ (A) dimension is 1/2″. ▲ (A) dimension is 5/8″. ● (C) dimension is 1/2″. ◆ (B) dimension is 4 1/4″.

Fiberglass Eyebolts—Not for Lifting

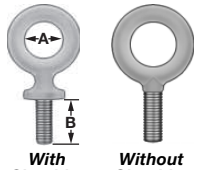

Fiberglass-filled polyurethane construction gives you excellent corrosion and chemical resistance. Temperature range is −40° to +300° F. Color is off-white. For fiberglass square nuts, see 91332A on page 3195.

Thread Size	(A)	(B)	With Shoulder		Without Shoulder	
1/4″-20	1/2″	1″	30295T12	$5.41	30295T2	$5.41
1/4″-20	1/2″	1 1/2″	30295T13	6.16	30295T3	6.16
3/8″-16	3/4″	1″	30295T14	6.72	30295T4	6.72
3/8″-16	3/4″	1 1/2″	30295T15	7.00	30295T5	7.00
1/2″-13	1″	1 1/4″	30295T16	7.59	30295T6	7.59
1/2″-13	1″	1 3/4″	30295T17	8.00	30295T7	8.00
5/8″-11	1 1/4″	1 3/4″	30295T18	8.25	30295T8	8.25

Thimble Eyebolts—Not for Lifting

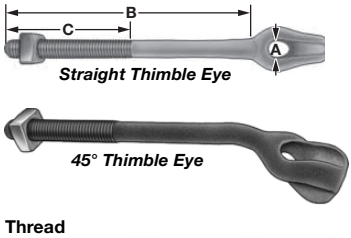

A large-radius eye reduces kinks and minimizes wear of your wire rope. All eyebolts are made of forged galvanized steel, have a partially threaded shank, and include a square nut.

Thread Size	(A)	(B)	(C)		
Straight Thimble Eye					
5/8″-11	9/16″	10″	4″	3081T41	$12.83
3/4″-10	11/16″	12″	6″	3081T52	19.72
45° Thimble Eye					
5/8″-11	9/16″	10″	4″	3081T42	16.67
3/4″-10	11/16″	12″	6″	3081T54	26.58

Warning! Never exceed work load limits.

Unthreaded Forged Steel Eyebolts—Not for Lifting

Also known as blank eyebolts, you can weld or thread these as needed to suit your application.

Steel eyebolts are good for general purpose applications where corrosion is not a factor.

Type 316 stainless steel eyebolts are nonmagnetic and provide corrosion resistance.

With Shoulder

Without Shoulder

Shank Dia.	(A)	(B)	With Shoulder		Without Shoulder	
Steel						
1/4"	3/4"	1"	3080T41	$2.98	3080T11	$2.98
5/16"	7/8"	1 1/8"	3080T42	3.50	3080T12	3.50
3/8"	1"	1 1/4"	3080T43	3.60	3080T13	3.60
3/8"	1"	2 1/2"	3080T44	7.98	3080T14	7.98
3/8"	1"	3"	3080T45	7.98	3080T15	7.98
1/2"	1 3/16"	1 1/2"	3080T47	4.35	3080T17	4.35
1/2"	1 3/16"	3"	3080T49	9.70	3080T19	9.70
5/8"	1 3/8"	1 3/4"	3080T52	7.14	3080T22	7.14
3/4"	1 1/2"	2"	3080T55	9.94	3080T25	9.94
3/4"	1 1/2"	3"	3080T57	19.25	3080T27	19.25
7/8"	1 11/16"	2 1/4"	3080T58	13.62	3080T28	13.62
Steel (Cont.)						
1"	1 13/16"	2 1/2"	3080T59	$18.48	3080T29	$18.48
1 1/8"	2"	2 3/4"	3080T61	34.88	3080T31	34.88
1 1/4"	2 3/16"	3"	3080T62	39.15	3080T32	39.15
1 1/2"	2 1/2"	3 1/2"	3080T63	73.96	3080T33	73.96
Type 316 Stainless Steel						
1/4"	1/2"	1 1/4"	3109T63	11.78	3109T52	11.78
1/4"	3/4"	3/4"	3109T62	11.55	3109T51	11.55
3/8"	3/4"	3/4"	3109T66	16.35	3109T55	16.35
3/8"	3/4"	1 1/2"	3109T67	16.35	3109T56	16.35
1/2"	1 3/16"	3/4"	3109T68	29.41	_____	_____

Nylon Eyebolts with Nuts—Not for Lifting

A smooth eye means no more snagging your wire and cable. All are made of lightweight, nonconductive, corrosion-resistant nylon. Color is white. Temperature range is –112° to +185° F. A hex nut is included. For additional hex nuts, see pages 3186-3192.

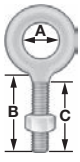

Thread Size	(A)	(B)	(C)	Pkg. Qty.		Pkg.
6-32	1/4"	3/4"	5/8"	25	9686T71	$5.67
8-32	1/4"	1 1/8"	1"	25	9686T72	5.83
10-24	3/8"	1"	7/8"	25	9686T73	5.98
1/4"-20	1/2"	1"	7/8"	25	9686T74	9.99
1/4"-20	1/2"	1 1/2"	1 1/4"	25	9686T75	10.17
1/4"-20	1/2"	2"	1 1/4"	25	9686T76	10.50
5/16"-18	5/8"	1"	7/8"	25	9686T78	$11.29
5/16"-18	5/8"	2"	1 1/4"	25	9686T79	11.71
3/8"-16	3/4"	1"	7/8"	25	9686T81	12.86
3/8"-16	3/4"	2"	1 1/4"	25	9686T82	13.57
3/8"-16	3/4"	2 1/2"	1 1/2"	10	9686T83	6.43
3/8"-16	3/4"	4"	2 1/2"	10	9686T84	6.86

Light Duty Eyebolts with Nuts—Not for Lifting

Make wire-guide and tie-down applications easier with these partially threaded bent-wire eyebolts. A hex nut is included. For additional hex nuts, see pages 3186-3192.

Zinc-plated steel eyebolts offer good corrosion resistance in most environments. ***Black-oxide steel*** eyebolts have better corrosion resistance than zinc-plated steel. ***Type 304 stainless steel*** eyebolts provide excellent corrosion resistance.

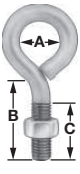

Thread Size	(A)	(B)	(C)	Zinc-Plated Steel Pkg. Qty.		Pkg.	Black-Oxide Steel Pkg. Qty.		Pkg.	Type 304 Stainless Steel Pkg. Qty.		Pkg.
6-32	1/4"	3/4"	5/8"	10	9489T45	$1.86	10	9489T111	$2.10	5	9489T52	$5.84
8-32	1/4"	1 1/8"	1"	10	9489T46	1.89	10	9489T112	2.20	5	9489T53	6.82
10-24	5/16"	1 3/8"	1 1/4"	10	9489T48	2.25	10	9489T114	2.61	5	9489T55	8.33
10-24	3/8"	1"	7/8"	10	9489T47	2.25	10	9489T113	2.61	5	9489T54	7.55
10-24	3/8"	2"	1"	10	9489T49	2.42	10	9489T115	2.89	5	9489T81	8.74
10-24	3/8"	3"	1 1/2"	10	9489T51	2.63	10	9489T116	3.17	5	9489T82	9.10
1/4"-20	1/2"	1"	7/8"	10	9489T17	2.99	10	9489T117	3.77	5	9489T56	8.01
1/4"-20	1/2"	1 1/2"	1 1/4"	10	9489T18	3.14	10	9489T118	3.99	5	9489T57	8.68
1/4"-20	1/2"	2"	1 1/4"	10	9489T19	3.50	10	9489T119	4.37	5	9489T58	9.18
1/4"-20	1/2"	2 1/2"	1 1/4"	10	9489T21	3.71	10	9489T121	4.71	5	9489T59	9.70
1/4"-20	1/2"	3"	1 1/2"	10	9489T22	3.77	10	9489T122	4.78	5	9489T61	10.19
1/4"-20	1/2"	3 1/2"	2"	10	9489T711	4.08	10	9489T721	5.23	5	9489T771	10.76
1/4"-20	1/2"	4"	2 1/2"	10	9489T23	4.34	10	9489T123	5.59	5	9489T62	11.55
1/4"-20	1/2"	5"	3"	10	9489T24	4.64	10	9489T124	6.09	1	9489T63	2.49
1/4"-20	1/2"	6"	3 3/4"	10	9489T25	5.54	10	9489T125	7.20	1	9489T64	2.86
5/16"-18	5/8"	1"	7/8"	10	9489T26	4.58	10	9489T126	5.84	1	9489T65	2.29
5/16"-18	5/8"	2"	1 1/4"	10	9489T27	5.09	10	9489T127	6.66	1	9489T66	2.66
5/16"-18	5/8"	3"	1 1/2"	10	9489T28	5.54	10	9489T128	7.35	1	9489T67	3.07
5/16"-18	5/8"	3 1/2"	2"	10	9489T712	5.70	10	9489T722	7.82	1	9489T772	3.28
5/16"-18	5/8"	4"	2 1/2"	10	9489T29	6.14	10	9489T129	8.23	1	9489T68	3.47
5/16"-18	5/8"	5"	3"	10	9489T713	7.26	10	9489T723	9.93	1	9489T773	3.97
5/16"-18	5/8"	6"	3 3/4"	10	9489T714	8.10	10	9489T724	11.07	1	9489T774♣	4.39
3/8"-16	1/2"	7 3/8"	2 1/2"	1	9489T86	2.29	1	9489T142	2.49	1	9489T251	9.73
3/8"-16	1/2"	9 3/8"	2 1/2"	1	9489T87	2.80	1	9489T143	3.08	1	9489T252	11.40
3/8"-16	1/2"	11 3/8"	2 1/2"	1	9489T88	2.29	1	9489T144	2.49	1	9489T253	12.20
3/8"-16	3/4"	1"	7/8"	10	9489T31	6.55	10	9489T131	8.70	1	9489T71	3.38
3/8"-16	3/4"	2"	1 1/4"	10	9489T32	7.36	10	9489T132	9.80	1	9489T72	3.94
3/8"-16	3/4"	2 1/2"	1 1/2"	10	9489T33	7.66	10	9489T133	10.28	1	9489T73	4.21
3/8"-16	3/4"	3"	1 1/2"	10	9489T34	7.90	10	9489T134	10.81	1	9489T74	4.49
3/8"-16	3/4"	3 1/2"	2"	10	9489T715	7.83	10	9489T725	11.11	1	9489T775	4.68
3/8"-16	3/4"	4"	2 1/2"	10	9489T35	9.13	10	9489T135	12.04	1	9489T75	5.32
3/8"-16	3/4"	5"	3"	10	9489T36	10.12	10	9489T136	13.20	1	9489T76	5.60
3/8"-16	3/4"	6"	3 3/4"	10	9489T37	11.18	1	9489T137	1.48	1	9489T77♣	6.48
1/2"-13	5/8"	7 3/16"	2 1/2"	1	9489T89	3.54	1	9489T145	3.78	1	9489T261	18.68
1/2"-13	5/8"	9 3/16"	2 1/2"	1	9489T91	3.76	1	9489T146	4.00	1	9489T262	21.40
1/2"-13	5/8"	11 3/16"	2 1/2"	1	9489T92	4.01	1	9489T147	4.26	1	9489T263	23.30
1/2"-13	1"	2"	1 1/2"	5	9489T38	8.67	1	9489T138	2.34	1	9489T78	8.80
1/2"-13	1"	4"	2 1/2"	1	9489T39	2.07	1	9489T139	2.75	1	9489T79	10.29
1/2"-13	1"	6"	3 3/4"	1	9489T41	2.36	1	9489T141	3.20	1	9489T85♣	12.47
5/8"-11	3/4"	7"	2 1/2"	1	9489T93	6.18	1	9489T148	6.62	_____	_____	_____
3/4"-10	7/8"	6 15/16"	3"	1	9489T94	13.83	1	9489T149	16.02	_____	_____	_____
3/4"-10	7/8"	8 15/16"	3"	1	9489T95	14.85	1	9489T151	17.19	_____	_____	_____
3/4"-10	7/8"	11 15/16"	3"	1	9489T96	18.17	1	9489T152	18.88	_____	_____	_____

♣ (C) is 4".

Warning! ***Never use for lifting.***

Light Duty Welded Eyebolts with Nuts—Not for Lifting

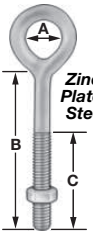

A bent-wire welded eye design keeps wire and cable from slipping out. Hex nut is included.
Type 316 stainless steel are nonmagnetic and more corrosion resistant than zinc-plated steel. Two washers are included.

Thread Size	(A)	(B)	(C)		Pkg.	
Zinc-Plated Steel						
5/16"-18	5/8"	2 1/2"	1 1/4"	9494T51		$1.96
3/8"-16	3/4"	2 1/2"	1 1/2"	9494T52		2.44
3/8"-16	3/4"	4"	2 1/2"	9494T53		2.69
1/2"-13	1"	4"	2 1/2"	9494T54		4.88
1/2"-13	1"	6"	3 3/4"	9494T55		5.89
Type 316 Stainless Steel						
10-24	3/8"	2"	1 1/2"	9494T31		6.02
Type 316 Stainless Steel (Cont.)						
10-24	3/8"	3"	2"	9494T32		$6.55
1/4"-20	7/16"	2"	1 1/2"	9494T34		7.02
1/4"-20	7/16"	3"	2"	9494T35		7.98
1/4"-20	7/16"	4"	2"	9494T36		8.88
1/4"-20	7/16"	5"	2"	9494T37		9.48
1/4"-20	7/16"	6"	2"	9494T38		10.62
5/16"-18	1/2"	3"	2"	9494T39		11.04
5/16"-18	1/2"	4"	2"	9494T41		$12.36
5/16"-18	1/2"	5"	2"	9494T42		13.83
5/16"-18	1/2"	6"	2"	9494T43		15.30
3/8"-16	5/8"	3"	2"	9494T44		11.59
3/8"-16	5/8"	4"	2"	9494T45		12.65
3/8"-16	5/8"	5"	2"	9494T46		13.47
3/8"-16	5/8"	6"	2"	9494T47		14.83

Light Duty Wood Screw Thread Eyebolts—Not for Lifting

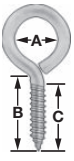

Also known as screw eyes, these bent-wire eyebolts have a sharp, cutting point for mounting directly into wood.
Zinc-plated steel and ***brass*** have good corrosion resistance. ***Type 304 stainless steel*** offer excellent corrosion resistance.

Trade Size	Wire Dia.	(A)	(B)	(C)	Zinc-Plated Steel Pkg. Qty.		Pkg.	Brass Pkg. Qty.		Pkg.	Type 304 Stainless Steel Pkg. Qty.		Pkg.
2141/2	5/64"	1/8"	5/16"	3/16"	50	9496T36	$4.56	50	9497T57	$11.09	25	30425T21	$7.71
214	5/64"	1/8"	1/2"	5/16"	50	9496T35	4.56	50	9497T51	11.09	25	30425T22	7.75
212 1/2	7/64"	3/16"	3/8"	1/4"	50	9496T34	5.52	50	9497T58	12.77	25	30425T23	8.38
212	7/64"	3/16"	9/16"	7/16"	50	9496T33	5.52	50	9497T52	12.39	25	30425T24	8.43
210	9/64"	3/16"	11/16"	9/16"	50	9496T32	6.20	50	9497T53	15.69	25	30425T25	9.67
208	5/32"	1/4"	13/16"	11/16"	50	9496T31	8.00	20	9497T54	10.37	20	30425T26	10.10
206	3/16"	1/4"	15/16"	3/4"	50	9496T29	10.56	20	9497T55	13.88	20	30425T27	15.94
204	7/32"	5/16"	1 1/8"	15/16"	20	9496T28	7.32	10	9497T56	10.68	10	30425T28	15.69
114	5/64"	1/4"	1/2"	5/16"	50	9496T27	5.14	50	9497T41	11.37	25	30425T29	8.27
112	7/64"	1/4"	9/16"	7/16"	50	9496T26	6.12	50	9497T42	13.37	25	30425T31	9.15
110	9/64"	5/16"	11/16"	9/16"	50	9496T25	6.88	25	9497T43	8.82	25	30425T32	10.98
108	5/32"	3/8"	13/16"	11/16"	50	9496T24	9.00	20	9497T44	10.42	20	30425T33	14.77
106	3/16"	7/16"	15/16"	3/4"	50	9496T23	10.28	20	9497T45	15.54	10	30425T34	9.77
104	7/32"	7/16"	1 1/8"	15/16"	20	9496T22	6.96	10	9497T46	13.38	10	30425T35	15.86
14	5/64"	5/16"	1/2"	5/16"	50	9496T21	5.60	50	9497T31	13.15	25	30425T36	8.80
12	7/64"	3/8"	9/16"	7/16"	50	9496T19	6.52	50	9497T32	14.94	25	30425T37	9.14
10	9/64"	3/8"	11/16"	9/16"	50	9496T18	7.48	25	9497T33	10.19	25	30425T38	11.84
9	9/64"	7/16"	3/4"	5/8"	50	9496T17	8.52	20	9497T34	10.14	20	30425T39	12.93
8	5/32"	7/16"	13/16"	11/16"	50	9496T16	9.48	20	9497T35	11.57	20	30425T17	11.70
6	3/16"	1/2"	15/16"	3/4"	50	9496T15	12.52	10	9497T36	8.14	10	30425T41	10.03
4	7/32"	5/8"	1 1/8"	15/16"	20	9496T14	8.72	10	9497T37	14.35	10	30425T18	11.50
2	17/64"	11/16"	15/16"	1 1/8"	10	9496T13	6.84	5	9497T38	9.50	5	30425T42	11.61
0	5/16"	13/16"	19/16"	1 1/4"	10	9496T12	8.72	5	9497T39	16.14	5	30425T19	13.43
000	23/64"	1 1/8"	2 1/16"	1 5/8"	10	9496T11	14.52	—	—	—	1	30425T43	6.73
—	1/4"	1/2"	2 3/4"	1 1/2"	10	9589T1	5.92	—	—	—	5	30455T61 ● ★	5.99
—	1/4"	1/2"	4"	1 7/8"	—	—	—	—	—	—	5	30455T62 ★	6.56
—	5/16"	5/8"	2 3/4"	1 5/8"	10	9589T2	8.85	—	—	—	5	30455T63 ■ ★	8.31
—	5/16"	5/8"	4 3/4"	1 3/4"	—	—	—	—	—	—	1	30455T51 ★	2.36
—	3/8"	3/4"	3"	2"	10	9589T3	12.69	—	—	—	1	30455T52 ♦ ★	2.80

● (C) is 1 5/16". ★ Made of corrosion-resistant Type 302 stainless steel. ■ (C) is 1 3/4". ♦ (B) is 2 3/4"; (C) is 1 3/4".

Open-Eye Eyebolts—Not for Lifting

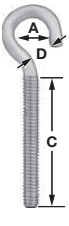

A bent-wire open-eye design means easy insertion of material. Made of zinc-plated steel. For hex nuts, see page 3185.

Thread Size	(A)	(C)	(D)	Pkg. Qty.		Pkg.
10-24	5/16"	2 5/16"	3/16"	20	9490T1	$6.79
10-24	5/16"	3 5/16"	3/16"	20	9490T2	8.17
10-24	5/16"	5 5/16"	3/16"	10	9490T3	8.00
1/4"-20	1/2"	2"	5/16"	20	9490T4	7.60
1/4"-20	1/2"	3"	5/16"	20	9490T5	11.56
1/4"-20	1/2"	5"	5/16"	10	9490T6	8.65

Removable Ringbolts—Not for Lifting

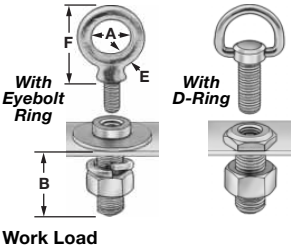

Once in place, the mounting bolt stays in place but lets you remove the ring when not in use. Made of zinc-plated steel.

To install, drill a hole in your panel, insert the mounting bolt, and secure it with the included hardware. Screw the ring into the internal threads of the mounting bolt to create the anchor point. You'll get two rings and two mounting bolts.

Work Load Limit, lbs.	(A)	(B)	(E)	(F)	Mounting Bolt Dia.		Pair
With Eyebolt Ring							
460	15/16"	1 3/4"	3/8"	2"	3/8"	8830T51	$11.02
860	15/16"	1 3/4"	1/2"	2 7/16"	1/2"	8830T52	15.57
With D-Ring							
1,330	2 5/16"	4"	7/16"	3 11/16"	5/8"	8830T53	25.07

Ringbolts—Not for Lifting

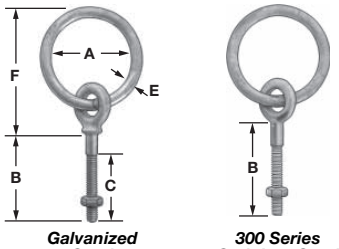

Galvanized Steel — *300 Series Stainless Steel*

Hex nut is included.

Galvanized steel ringbolts have a shoulder that provides extra stability.

300 series stainless steel ringbolts offer more corrosion resistance than galvanized steel ringbolts.

Work Load Limit, lbs.	(A)	(B)	(C)	(E)	(F)	Thread Size		
Galvanized Steel								
250	1 3/4"	2"	1 1/2"	1/4"	2 3/4"	1/4"-20	3025T43	$19.41
400	2"	2 1/4"	1 1/2"	5/16"	3 1/2"	5/16"-18	3025T44	21.91
600	2 1/2"	2 1/2"	1 1/2"	3/8"	4"	3/8"-16	3025T45	22.46
1,100	3"	3 1/4"	1 1/2"	1/2"	5 3/16"	1/2"-13	3025T46	33.26
300 Series Stainless Steel								
250	1 3/4"	2"	1 1/2"	1/4"	2 3/4"	1/4"-20	3025T78	6.75
400	2"	2 1/4"	1 1/2"	5/16"	3 1/4"	5/16"-18	3025T79	10.78
600	2 1/2"	2 1/2"	1 1/2"	3/8"	4 1/4"	3/8"-16	3025T81	16.82

Warning! **Never exceed work load limits. Never use for lifting applications.**

Tie-Down Rings

A pivoting ring lets you secure loads in various directions. Mounting screws not included. ***Zinc-plated steel*** rings provide some corrosion resistance. ***300 series stainless steel*** rings offer more corrosion resistance. ***Steel*** ring has square mounting holes that accept carriage bolts. ***High-strength steel*** rings have a red powder coating that provides some corrosion resistance.

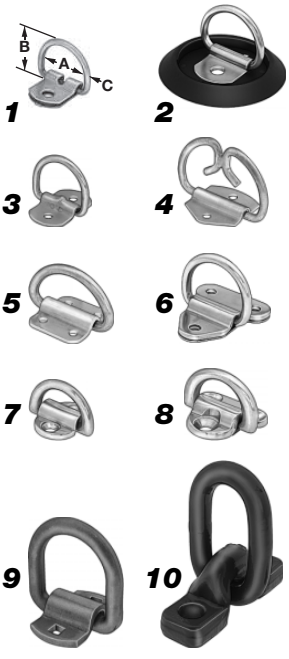

	Work Load Limit, lbs.	(A)	(B)	(C)	Base Plate Wd.	Base Plate Lg.	Screw Size	Mtg. Holes, Ctr.-to-Ctr.		
Zinc-Plated Steel										
1	500	2″	2¼″	¼″	1⅝″	1 5/16″	⅜″	—	**3076T13**	$1.05
2	200	1⅞″	2″	3/16″	4″ Dia.	—	⅜″	1⅜″	**88525T31**	1.98
2	500	2″	2¼″	¼″	4 1/16″ Dia.	—	⅜″	1 3/16″	**3076T12**	2.12
3	400	1½″	1 11/16″	¼″	1¼″	2 3/16″	No. 14	1¼″	**3076T34**	1.50
3	800	15/16″	1 13/16″	¼″	13/16″	2⅛″	No. 14	1⅜″	**3076T35**	1.60
3	1,000	1½″	1⅜″	¼″	1¼″	1⅝″	¼″	15/16″	**3076T31**	2.08
4	1,000	2¾″	2¼″	¼″	1⅞″	2⅛″	¼″	1⅜″	**3076T71**	7.90
5	3,500	2 5/16″	1¾″	5/16″	1⅞″	2⅛″	5/16″	1⅛″, 1¼″	**3076T33**	18.64
5	3,500	3 3/16″	3¾″	5/16″	2½″	2 3/16″	¼″	1¾″, 1⅜″	**3076T36**	12.82
300 Series Stainless Steel										
1	50	⅞″	⅞″	⅛″	11/16″	13/16″	No. 12	—	**33815T31**	1.09
1	400	1½″	1½″	3/16″	1⅛″	1 5/16″	⅜″	—	**33815T51**	4.29
3	210	1½″	1 5/16″	¼″	1⅛″	2″	No. 12	1 5/16″	**33815T32**	7.47
3	400	1″	1½″	3/16″	⅝″	2″	¼″	1⅜″	**33815T41**	23.92
6	1,000	1½″	1½″	¼″	2″	2¼″	¼″	1¼″, 1½″	**33815T42**	41.62
6	1,500	2″	2⅛″	5/16″	2½″	3″	5/16″	1½″, 2″	**33815T43**	69.90
7	1,200	1 1/16″	1⅛″	¼″	1 1/16″	1½″	No. 12	1 1/16″	**33815T22**	18.87
7	2,000	1⅜″	1 5/16″	5/16″	1⅜″	1 15/16″	No. 14	1 1/16″	**33815T23**	23.36
7	4,000	1¾″	1 9/16″	⅜″	1¾″	2½″	No. 16	1⅝″	**33815T24**	38.47
8	1,500	1 1/16″	1 3/16″	¼″	1½″	1⅝″	¼″	1 1/16″, 1 1/16″	**33815T11**	52.42
8	2,500	1⅜″	1⅜″	5/16″	2″	2 3/16″	5/16″	1⅜″, 1⅜″	**33815T12**	65.86
8	5,000	1⅞″	1¾″	13/32″	2½″	2¾″	⅜″	1¾″, 1¾″	**33815T13**	92.87
Steel										
9	4,080	2⅜″	3½″	½″	1¾″	3″	⅜″	2″	**3076T11**	8.45
High-Strength Steel										
10	6,940	1 9/16″	5⅛″	11/16″	1½″	5⅛″	M16	3½″	**3076T61**	40.52
10	11,680	1 15/16″	6¾″	⅞″	1⅞″	6½″	M20	4½″	**3076T62**	68.60

Recessed Tie-Down Rings

Rings mount flush and fold down when not in use to protect the ring and your load from damage. Mount rings in a 1″ deep cutout. Rings are made of zinc-plated steel.

D-rings swivel 360°. *Dual D-ring* has an extra D-ring with a 2⅛″ wide flat section for webbing and meets MS-209J.

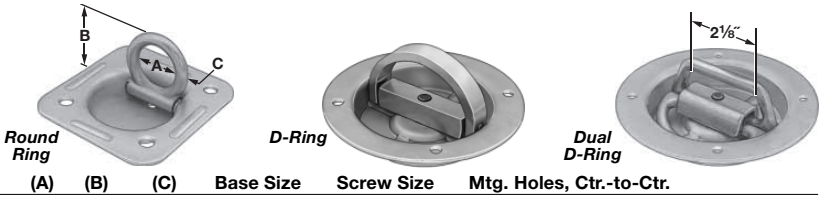

Round Ring *D-Ring* *Dual D-Ring*

	Work Load Limit, lbs.	(A)	(B)	(C)	Base Size	Screw Size	Mtg. Holes, Ctr.-to-Ctr.		
Round Ring	1,665	1⅜″	1¾″	7/16″	4½″ × 4⅞″	⅜″	3″, 3¼″	**8304T13**	$4.88
D-Ring	2,000	3⅜″	1 13/16″	5/16″	6¼″ Dia.	⅜″	3 13/16″, 3 13/16″	**8304T11**	18.38
Dual D-Ring	830	2⅞″	1½″	⅜″	6¼″ Dia.	¼″	3 13/16″, 3 13/16″	**8304T12**	20.75

Swivel Tie-Down Rings

All are made of 300 series stainless steel for excellent corrosion resistance. Mounting fasteners not included.

Swivel eyes rotate 360°. ***Heavy duty swivel tabs*** have a single mounting hole and swivel around a concrete bolt anchor (see 92405A on page 3316).

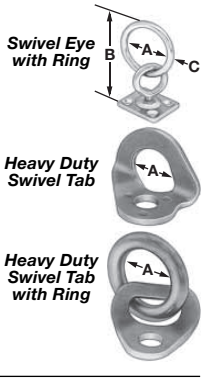

Swivel Eye with Ring *Heavy Duty Swivel Tab* *Heavy Duty Swivel Tab with Ring*

Work Load Limit, lbs.	(A)	(B)	(C)	Base Plate Wd.	Base Plate Lg.	Screw/ Anchor Size	Mtg. Holes, Ctr.- to-Ctr.		
Swivel Eye									
200	⅝″	1 9/32″	3/16″	1¼″	1 3/16″	No. 8	⅞″, 1 1/16″	**31665T1**	$4.14
300	¾″	1 9/16″	¼″	1 5/16″	1 9/16″	No. 8	1″, ¾″	**31665T2**	4.86
480	¾″	1 13/16″	5/16″	1 9/16″	1 15/16″	No. 10	1⅜″, 1″	**31665T4**	6.63
Swivel Eye with Ring									
200	1 3/16″	2½″	3/16″	1¼″	1 3/16″	No. 8	⅞″, 1 1/16″	**31665T21**	6.12
300	1 9/16″	3⅛″	¼″	1 5/16″	1 9/16″	No. 8	1″, ¾″	**31665T22**	7.42
480	1 15/16″	3¾″	5/16″	1 9/16″	1 15/16″	No. 10	1⅜″, 1″	**31665T24**	10.72
Heavy Duty Swivel Tab									
1,120	1 3/16″	—	—	1 11/16″	2⅜″	⅜″	—	**31665T43**	6.14
Heavy Duty Swivel Tab with Ring									
1,120	1 5/16″	3¼″	11/16″	2″	2 1/16″	⅜″	—	**31665T42**	13.89

Weld-On Tie-Down Eyes

Also known as pad eyes, these eyes provide a strong and rigid anchor point on machinery, equipment, and vehicles. Not rated for work load limit. ***300 series stainless steel*** eyes offer more corrosion resistance than steel eyes.

(A)	(B)	(C)	Base Plate Dia.		
Steel					
¼″	¾″	3/16″	⅝″	**3024T14**	$2.52
⅜″	1″	¼″	⅞″	**3024T16**	3.01
⅝″	1 5/16″	¼″	1″	**3024T18**	3.51
¾″	1⅝″	⅜″	1 1/16″	**3024T22**	3.86
1″	2 5/16″	9/16″	1 7/16″	**3024T23**	6.07
1 3/16″	2⅜″	7/16″	1 11/16″	**3024T24**	6.64
1¼″	2¾″	11/16″	1¾″	**3024T26**	9.42

(A)	(B)	(C)	Base Plate Dia.		
300 Series Stainless Steel					
½″	1 1/16″	3/16″	⅜″	**8892T9**	$6.20
⅝″	1 5/16″	¼″	9/16″	**8892T11**	8.68
¾″	1 9/16″	5/16″	⅝″	**8892T12**	10.60
1″	2″	⅜″	⅞″	**8892T14**	19.96
1¼″	2½″	½″	1″	**8892T16**	29.84
1½″	3¼″	⅝″	1⅜″	**8892T18**	61.20

Warning! ***Never exceed work load limits. Never use for lifting applications.***

Weld-On Tie-Down Rings

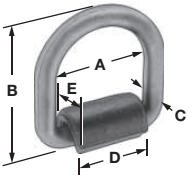

Also known as lashing rings, these pivoting rings have a welding plate for permanent attachment.

Steel—Finish is plain, except 3028T31, which has a zinc-plated ring.

High-Strength Steel—Welding plate has a plain finish; ring has a red painted finish.

300 Series Stainless Steel—Rings offer more corrosion resistance than steel rings.

Work Load Limit, lbs.	(A)	(B)	(C)	(D)	(E)		
Steel							
2,000	2 9/16″	2 11/16″	3/8″	2″	15/16″	3028T31	$6.46
4,080	2 3/8″	3 1/2″	1/2″	2″	1 5/16″	3028T32	9.97
6,130	3″	4 1/4″	5/8″	2 1/2″	1 5/8″	3028T25	13.68
9,120	3″	4 1/2″	3/4″	2 1/4″	1 5/8″	3028T26	18.43
15,500	3″	6″	1″	2 1/4″	2 1/8″	3028T27	19.43
High-Strength Steel							
2,100	1 3/8″	2 13/16″	1/2″	1 5/16″	1 5/16″	3028T53	20.70
3,500	1 11/16″	3 5/16″	9/16″	1 1/2″	1 1/2″	3028T54	23.96
7,100	1 7/8″	4″	11/16″	1 11/16″	1 13/16″	3028T55	25.31
12,000	2 9/16″	5 11/16″	1″	2 3/8″	2 3/8″	3028T56	38.62
18,100	2 13/16″	6 1/8″	1 1/16″	2 9/16″	2 11/16″	3028T57	64.90
300 Series Stainless Steel							
1,100	1 3/8″	3″	1/2″	1 5/16″	1 1/4″	3028T33	107.42
2,200	2″	3 13/16″	5/8″	1 13/16″	1 5/8″	3028T34	197.60

Magnetic Tie-Down Rings

Powerful rare earth magnets attach to ferrous metal surfaces with a turn of the handle. The handle has an eye as well as hooks for a variety of connections. Housing is nickel-plated steel. Handle is steel with a black powder coating. Work load limit is based on direct contact on a flat, smooth, untreated 1/4″ thick surface. Variations in mounting surface conditions will reduce the work load limit.

Work Load Limit, lbs.	(B)	Base Size		
30	3 7/16″	1 9/16″ Dia.	3154T1	$52.38
60	4″	2 11/16″ Dia.	3154T2	114.28
135	4 3/4″	3″ Lg. × 2″ Wd.	3154T3	197.62

Adhesive-Backed Tie-Down Rings

Create anchor points without drilling or welding. Strong polyethylene rope is sewn to an adhesive-backed foam rubber base. Base flexes to mount on curved surfaces and adheres to glass, metal, or plastic. Adhesive is acrylic. Begins to harden in 20 minutes and reaches full strength in 72 hours. Temperature range is –95° to +165° F.

Work Load Limit, lbs.	Base Wd	Base Lg.		
140	2 1/2″	3 1/8″	8310T13	$11.00

Webbing Guides

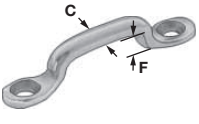

Also known as footman's loops, guides are made of zinc-plated steel. They can also be used as anchor points in tie-down applications.

Also Available: 300 series stainless steel webbing guides. Please ask for 8030T888 and specify maximum webbing width and (F).

For Max. Webbing Wd.	(C)	(F)	Mtg. Holes Dia.	Mtg. Holes Ctr.-to-Ctr.	Pkg. Qty.		Pkg.
1″	1/4″	1/4″	1/4″	2 1/8″	10	8030T11	$7.14
1 1/2″	1/4″	5/16″	1/4″	2 5/8″	10	8030T12	7.50
1 1/2″	1/4″	7/16″	1/4″	2 5/8″	10	8030T13	7.78
2″	1/4″	5/16″	1/4″	3 1/8″	10	8030T14	8.33

Adhesive-Mount Webbing Guides

Guide is made of glass-reinforced thermoplastic and has adhesive tabs to hold it in place temporarily during installation (adhesive for mounting is sold separately).

Adhesive is acrylic. Begins to harden in 30 minutes and reaches full strength in 24 hours. Temp. range is –67° to +250° F. This product is compliant under all state VOC rules in effect on April 1, 2011.

Work Load Limit, lbs.	For Max. Webbing Wd.	Base Wd.	Base Lg.		
100	1″	1″	3 1/4″	8310T11	$10.50
Adhesive (0.12 oz.)				8310T12	4.44

Rope Guides

Guides are made of 300 series stainless steel for excellent corrosion resistance.

For Max. Rope Dia.	(C)	Mtg. Holes Dia.	Mtg. Holes Ctr.-to-Ctr.		
3/8″	1/8″	1/8″	1 1/4″	8860T81	$2.64
1/2″	5/16″	1/8″	1 9/16″	8860T85	2.97
9/16″	3/16″	1/8″	1 9/16″	8860T82	3.46
5/8″	3/16″	3/16″	1 15/16″	8860T83	4.22
11/16″	5/16″	5/16″	2 7/16″	8860T84	7.33

Rope Cleats

Provide a temporary hold for rope. Mounting screws not included.

(1-3) Wing Style—Wrap rope around the cleat.

(4) Folding—Flip up when needed and store flat when not in use.

(5) Open Jam—The tapered gripping body provides quick holding.

(6) Rotating Cam—Two cams pinch together onto hard-to-hold ropes. All have corrosion-resistant ball bearings.

	For Max. Rope Dia.	O'all Lg.	O'all Ht.	Screw Size	Mtg. Holes, Ctr.-to-Ctr.		
Wing Style							
Black Nylon							
1	1/4″	3″	11/16″	No. 6	1″	33805T31	$1.33
1	5/16″	4″	7/8″	No. 8	1 1/8″	33805T32	1.55
1	3/8″	5″	1 1/16″	No. 10	1 7/16″	33805T33	2.61
1	7/16″	6 1/2″	1 3/8″	No. 12	1 11/16″	33805T34	4.76
Galvanized Iron							
1	1/4″	3 1/2″	1″	No. 8	13/16″	33805T41	.92
1	5/16″	4″	1 1/8″	No. 10	7/8″	33805T42	1.26
1	3/8″	5″	1 5/16″	No. 12	1 1/16″	33805T43	1.52
1	7/16″	6″	1 3/8″	No. 14	1 1/4″	33805T44	1.79
1	5/8″	8″	2 1/8″	5/16″	1 11/16″	33805T45	5.34
1	3/4″	10″	2 1/2″	3/8″	2 3/8″	33805T46	7.87
1	1″	14″	3 1/2″	1/2″	4 1/4″	33805T48	23.29
Aluminum							
1	5/8″	8″	1 7/8″	No. 14	1 1/2″	33805T54	7.86
1	3/4″	10″	2 1/4″	5/16″	1 15/16″	33805T55	11.05
Brass							
2	3/16″	2 1/2″	1/2″	No. 6	7/16″	33805T51	1.46
2	1/4″	4 1/16″	3/4″	No. 8	1/2″	33805T52	3.24
Chrome-Plated Zinc							
2	1/4″	4 7/16″	7/8″	No. 10	13/16″	33805T53	1.70
300 Series Stainless Steel							
3	7/16″	6″	1 1/4″	No. 14	2 1/4″, 1 1/8″	33805T21	13.15
3	5/8″	8″	1 1/2″	No. 14	2 13/16″, 1 3/8″	33805T22	20.51
3	3/4″	10″	1 7/8″	5/16″	3 5/8″, 1 3/4″	33805T23	31.03
Folding							
300 Series Stainless Steel							
4	3/8″	3 7/16″	1 13/16″	No. 14	1 1/4″, 1 1/4″	33805T61	18.88
Open Jam							
Black Nylon							
5	1/4″	2 1/16″	13/16″	No. 8	1 7/16″	34915T42	3.19
5	5/16″	2 7/8″	1″	No. 10	2 1/8″	34915T44	4.35
5	1/2″	3 3/4″	1 3/8″	No. 14	2 13/16″	34915T41	7.85
Rotating Cam							
Glass-Reinforced Acetal							
6	5/16″	1 7/8″	3/4″	No. 10	1 1/16″	3491T75	20.73
6	1/2″	2 5/8″	1″	No. 10	1 1/2″	3491T76	24.66
Aluminum							
6	1/2″	2 9/16″	1 3/16″	No. 10	1 1/2″	3491T94	31.10
6	5/8″	3 3/8″	1 1/4″	1/4″	2 1/16″	3491T95	49.02
Optional Accessories for Rotating-Cam Cleats							
Rope Guide for 3491T75						3491T84	8.80
Rope Guide for 3491T76						3491T86	8.80
Rope Guide for 3491T94						3491T12	8.80
Saddle for 3491T75						3491T83	3.98
Saddle for 3491T76						3491T85	3.98
Saddle for 3491T94						3491T11	4.12
Saddle for 3491T95						3491T13	4.12

Warning! ***Never exceed work load limits. Never use for lifting applications.***

Cargo-Securing Track, Straps, and Accessories

Start with track and add the straps and accessories you need to keep your cargo from shifting inside vans, trucks, and trailers.

Track

Also known as E-track, this track has connection slots for a variety of cargo securement and organizing options. Track has 1/4″ dia. mounting holes (mounting fasteners not included).

Powder-coated steel is gray. *Galvanized steel* is more corrosion resistant.

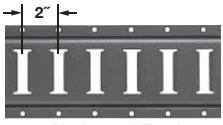

Horizontal Track

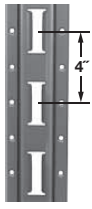

Vertical Track

Lg.	Wd.	Powder-Coated Steel		Galvanized Steel	
Horizontal Track					
5 ft.	5″	88525T11	$16.38	88525T8	$18.76
10 ft.	5″	88525T17	32.76	88525T18	37.38
Vertical Track					
5 ft.	3 7/16″	88525T42	13.76	—	—
10 ft.	3 7/16″	88525T51	27.38	—	—

Plates

Plates are a smaller version of the track. ***Single-slot plates*** have 5/16″ dia. mounting holes (mounting fasteners not included). ***Double-slot plate*** includes fasteners for mounting.

Zinc-plated steel and *black-finish steel* are corrosion resistant. *Type 201 stainless steel* provides more corrosion resistance.

Single-Slot Plate

Double-Slot Plate

Lg.	Wd.	Zinc-Plated Steel		Black-Finish Steel		Type 201 Stainless Steel	
Single-Slot Plate							
1″	5 7/8″	88525T93	$4.14	88525T95	$4.14	88525T94	$7.46
Double-Slot Plate							
5 1/8″	6 1/4″	88525T92	20.02	—	—	—	—

Straps

With Track Fittings on Both Ends and Ratchet-Tight Buckle

Quick-Tight Buckle

Latch Hook and D-Ring on One End

D-Ring and Wire Hook on One End

Also known as logistic straps. All buckles, fittings, and hooks are made of zinc-plated steel. Track fittings snap into slots on the track.

Ratchet-tight buckles let you apply maximum tension on the strap, but take longer to tighten.

Torque-limiting ratchet-tight buckles prevent damage caused by overtightening. You set the amount of tension applied.

Quick-tight buckles, also known as cam buckles, tighten the fastest. Pull the strap through; push the spring-loaded cam down to release.

Buckle Type	Webbing Wd.	Max. Lg.	Work Load Limit, lbs.	Low-Stretch Polyester Webbing Color			Abrasion-Resistant Polyester Webbing Color		
Track Fittings on Both Ends									
Ratchet-Tight	2″	12 ft.	1,000	Gold	8794T52	$19.77	Yellow	3356T33	$23.45
Ratchet-Tight	2″	16 ft.	1,000	Gray	8794T53	21.17	Yellow	3356T34	26.77
Ratchet-Tight	2″	20 ft.	1,000	Dark Blue	8794T56	22.56	Yellow	3356T36	30.09
Torque-Limiting Ratchet-Tight	2″	12 ft.	1,330	Yellow	8794T61	41.89	—	—	—
Torque-Limiting Ratchet-Tight	2″	16 ft.	1,330	Yellow	8794T62	42.82	—	—	—
Quick-Tight	2″	12 ft.	800	Gold	8794T54	15.76	Yellow	3356T31	22.66
Quick-Tight	2″	16 ft.	800	Gray	8794T55	17.03	Yellow	3356T32	25.98
Quick-Tight	2″	20 ft.	800	Dark Blue	8794T57	18.29	Yellow	3356T35	29.30
Latch Hook and D-Ring on One End; Track Fitting on One End									
Ratchet-Tight	1″	4 ft.	1,000	Blue	8837T13	26.14	—	—	—
D-Ring and Wire Hook on One End; Track Fitting on One End									
Ratchet-Tight	1″	4 ft.	1,000	Blue	8837T11	27.51	—	—	—

Accessories

Accessories have fittings that snap or lock into the track and are made of zinc-plated steel.

Track fitting with slot has a slot for 2″ wide webbing (see page 1509).

Track fitting with D-ring has a 6″ Lg.×2″ Wd. polyester webbing strap with a D-ring sewn on the end.

Coupling connects two track fittings so you can change the end fitting on your strap or connect two straps together.

Adjustable aluminum beams provide lightweight decking and bracing. Beams have a zinc-plated steel track fitting on each end. Work load limit is based on an evenly distributed load.

Wood beam bracket allows you to mount a 2×4 to the track for economical bracing.

Storage bag has a track fitting on each end. Made of vinyl.

Cargo net has a track fitting and tightening buckle in each corner. Made of nylon mesh. Includes a vinyl storage bag.

Track Fitting with Slot

Track Fitting with Hook

Track Fitting with D-Ring

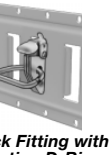

Track Fitting with Pivoting D-Ring

Coupling

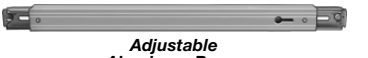

Adjustable Aluminum Beam

Wood Beam Bracket

	Work Load Limit, lbs.		
Track Fitting with Slot	1,000	3648T25	$3.12
Track Fitting with Hook	335	88525T35	3.13
Track Fitting with D-Ring	1,000	88525T16	6.39
Track Fitting with Pivoting D-Ring	2,000	88525T26	11.70
Track Fitting with Pivoting Round Ring	2,000	88525T37	4.87
Coupling	1,330	88525T27	7.46
Adjustable Aluminum Beam (85″-95″ Lg.)	2,000	88525T19	79.00
Adjustable Aluminum Beam (92″-102″ Lg.)	2,000	88525T21	84.00
Wood Beam Bracket	Not Rated	88525T22	6.49
Storage Bag (14″ Ht.×24″ Wd.)	Not Rated	88525T36	16.43
Cargo Net (48″ Ht.×84″ Wd.)	Not Rated	88525T34	141.35

Storage Bag

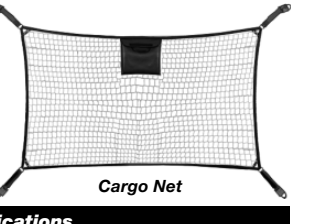

Cargo Net

Warning! Never exceed work load limits. Never use for lifting applications.

Quick-Adjust Cargo-Securing Track

Slide fittings between anchor points on the track for quick adjustment. Also known as logistics track or L-track.

Track and Plate

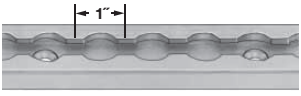

Track

Plate

Track and plate are made of aluminum.

Track has 1/4″ dia. mounting holes (mounting fasteners not included). Meets MS-33601.

Plate is a smaller version of the track that provides an attachment point for single-mount fittings. Plate has 3/16″ dia. mounting holes (mounting fasteners not included).

Length	Width		
Track			
2 ft.	1 3/8″	39695T31	$12.12
4 ft.	1 3/8″	39695T32	23.44
8 ft.	1 3/8″	39695T33	46.78
Plate			
1 3/4″ Dia.	—	39695T35	5.67

Fittings

Single-Mount Round Ring

Single-Mount D-Ring

Single-Mount Mounting Stud

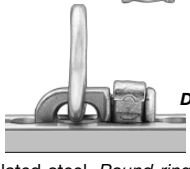

Double-Mount Round Ring

All fittings are made of zinc-plated steel. *Round rings* and *D-rings* are spring loaded. *Mounting stud* is 15/16″ long and has 3/8″-24 threads for mounting items to the track.

Single mount fit into one anchor point. ***Double mount*** fit into two anchor points.

Fitting Type	Work Load Limit, lbs.	(A)		
Single Mount				
Round Ring	670	1 1/8″	39695T34	$5.00
D-Ring	670	2 1/8″	39695T38	12.78
Mounting Stud	1,330	—	39695T37	26.00
Double Mount				
Round Ring	1,670	1 3/4″	39695T36	6.42

Cargo Nets

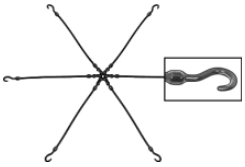

Elastic Polyurethane Cord

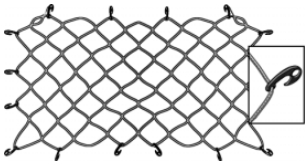

Elastic Polypropylene Mesh

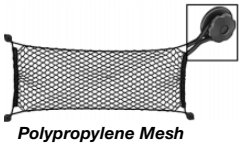

Polypropylene Mesh

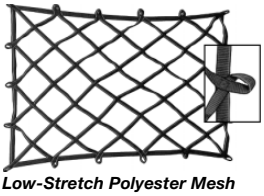

Low-Stretch Polyester Mesh

Secure and contain material in vans and trailers.

Elastic polyurethane cord nets are weather and chemical resistant. Cords are strung together on a central ring and have a plastic 1 1/2″ ID mounting hook on each end. **To Order:** Please specify black, red, or yellow.

Elastic polypropylene mesh nets include plastic 1″ ID mounting hooks. Net color varies.

Polypropylene mesh nets are woven and framed with elastic cord. Nets have a loop in each corner and include plastic adhesive-backed mounting knobs. For a more secure hold, use the included fasteners to mount the knobs. Opening size is 1″×1 1/4″. Color is black. 44115T3 folds in half to create a basket for holding your cargo; each mounting knob securely holds two loops.

Low-stretch polyester mesh nets are stronger than polypropylene and polyurethane nets. They are made of quick-drying black polyester webbing. Opening size is 7″×6 3/8″. Nets have loops for anchoring every 11 1/4″.

Min. Size Lg.	Min. Size Wd.	Max. Size Lg.	Max. Size Wd.	No. of Mounting Points		
Elastic Polyurethane Cord— *With Mounting Hooks*						
33″ Dia.	—	66″ Dia.	—	4	30145T21	$22.37
45″ Dia.	—	90″ Dia.	—	6	30145T22	37.57
Elastic Polypropylene Mesh— *With Mounting Hooks*						
50″	40″	75″	60″	16	30145T31	25.93
96″	72″	114″	108″	32	30145T51	44.77
Polypropylene Mesh— *With Mounting Knobs*						
30″	12″	36″	12″	4	44115T2	20.08
45″	24″	60″	24″	2	44115T3	27.26
48″	12″	60″	12″	4	44115T1	23.16
Low-Stretch Polyester Mesh— *With Mounting Loops*						
—	—	60″	46″	18	9933T53	49.74
—	—	80″	60″	24	9933T54	55.48

Cargo Bars

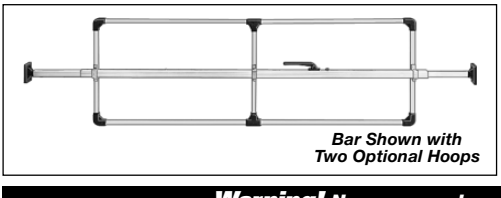

Bar Shown with Two Optional Hoops

Place bars against trailer or truck bed walls to brace your loads. All have pivoting rubber pads at each end for slip resistance. Lengths under 80″ are for use in trucks and vans. Lengths over 80″ can be used in full-sized trailers. Steel provides high strength. Aluminum is lightweight yet strong.

(1) Lever Lock— Lift the lever and pull the bar to extend length, then press down to lock. Lift lever again to release.

(2-4) Ratchet— Have a ratchet handle with a spring-loaded release. Press the spring-loaded release to manually adjust the length, then ratchet the handle to tighten the bar.

(3) Folding ratchet style folds at a center hinge for storage.

(4) Heavy duty ratchet style is more durable than other ratchet-style bars.

(5) Pump Tight— Push the spring-loaded button to adjust the length in 3″ increments, then pump the handle to further tighten the bar. Internal hydraulics prevent the bar from overtightening. Has a separate push-button release.

Optional hoops provide added protection against cargo shifting. Two hoops are provided, unless noted. Hoops are made of aluminum, except 3182T11 and 3182T19, which are galvanized steel.

Style	Length Range	OD	Bars Each		Optional Hoops Set	
Steel						
1 Lever Lock	90″-104″	1 1/2″	3182T21	$37.76	3182T19	$48.58
2 Ratchet	40″- 70″	1″	3182T72	37.57	—	—
3 Folding Ratchet	88″-116″	1 1/2″ Sq.	3182T1	74.64	3182T11	64.80
4 Heavy Duty Ratchet	45″- 70″	1″	3182T74	114.08	—	—
4 Heavy Duty Ratchet	88″-120″	1 1/4″	3182T15	127.08	3182T17	74.83
Aluminum						
1 Lever Lock	90″-104″	1 1/2″	3182T18	46.90	3182T19	48.58
4 Heavy Duty Ratchet	88″-120″	1″	3182T14	124.45	3182T16	74.83
5 Pump Tight	83″-114″	1 3/4″ Sq.	3182T12	101.82	3182T23 ♦	52.73

♦ Set includes one hoop.

Warning! Never exceed work load limits. Never use for lifting applications.

Ratchet Load Binders

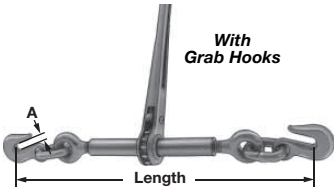

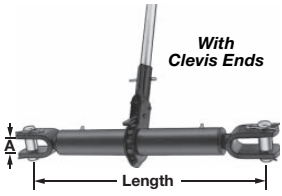

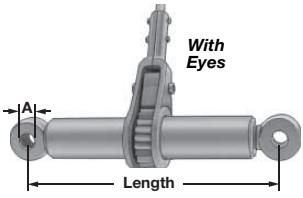

Also known as ratchet jacks, these steel load binders have a reversible ratchet that lets you incrementally tension or release your load without kickbacks.

With Grab Hooks— Bind loads on heavy equipment in transit and during construction activities. Meet D.O.T. (Department of Transportation) 393.102 specifications and CVSA (Commercial Vehicle Safety Alliance) requirements.

With Clevis Ends— Push apart or pull together walls, structural members, steel plates, and more. Pin diameter is 1″.

With Eyes— Tighten down loads in heavy duty applications such as connecting barges and constructing bridges.

For Chain Size	Work Load Limit, lbs.	Approx. Length Range	Take-Up Length	(A)	Handle Length		
With Grab Hooks							
5/16″-3/8″	8,800	23″-31″	8″	1/2″	14″	**2967T5**	$96.86
3/8″-1/2″	9,200	38″-60″	22″	5/8″	14″	**2967T7**	197.10
3/8″-1/2″	15,000	25″-33″	8″	5/8″	14″	**2967T3**	106.40
1/2″-5/8″	16,000	26″-34″	8″	11/16″	14″	**2967T6**	157.44
With Clevis Ends							
———	15,000/8,000▲	20″-28″	8″	1 1/8″	12″	**2966T14**	122.16
With Eyes							
———	40,000	23″-37″	14″	1 5/16″	26″	**2979T24**	513.51

▲Pulling/pushing.

Lever Load Binders

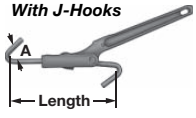

Pull the lever on these binders to take up the slack in the chain. Made of steel.

With J-Hooks— Has one rigid and one swivel hook.

With Grab Hooks— Have two swivel hooks. Meet D.O.T. (Department of Transportation) 393.102 specifications and CVSA (Commercial Vehicle Safety Alliance) requirements.

Easy Release with Grab Hooks— The body pivots as you release tension on the chain, preventing kickback. Has two swivel hooks. Meets D.O.T. 393.102 specifications and CVSA requirements.

For Chain Size Grade 30	Grade 40/43	Grade 70	Work Load Limit, lbs.	Max. Length	Take-Up Length	(A)	Handle Length		
With J-Hooks									
3/16″	—	—	375	9 1/2″	3″	1 1/8″	9 3/4″	**3098T67**	$14.60
With Grab Hooks									
1/4″	1/4″	—	2,600	16 3/8″	3 3/4″	5/16″	11″	**2968T4**	29.61
3/8″	3/8″	5/16″	5,400	23″	4 1/2″	1/2″	16″	**2968T5**	44.48
—	3/8″-1/2″	3/8″-1/2″	9,200	25 3/4″	4 1/2″	5/8″	19″	**2968T2**	105.02
—	1/2″-5/8″	1/2″-5/8″	13,000	29 3/4″	4 3/4″	11/16″	21″	**2968T3**	193.52
Easy Release with Grab Hooks									
—	3/8″	5/16″	4,700●	23 5/8″	5″	1/2″	13″	**2968T9**	39.66

●Work load limit is 5,400 lbs. when used with 3/8″ Grade 40/43 chain.

Tow Straps

Standard Straps

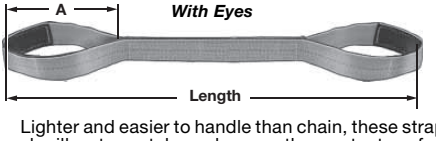

Lighter and easier to handle than chain, these straps absorb shock and will not scratch or damage the contact surface. ***Straps with eyes*** are silver polyester webbing with a reinforced eye at each end. ***Straps with hooks*** are made of orange nylon webbing and have a steel hook at each end.

To Order: Please specify length: 15, 20, 25, or 30 ft.

Webbing Width	Work Load Limit, lbs.	(A)	15-ft. Length	Each	Extra Length Per Ft.
With Eyes					
2″	5,300	10″	**3798T11**	$35.56	$1.18
2″	10,700	10″	**3798T13**	57.47	2.29
3″	8,000	11″	**3798T12**	49.74	2.40
3″	14,300	11″	**3798T14**	83.11	4.95
With Hooks					
2″	5,166	15/16″	**3798T36**	58.91	1.57
2″	9,000	1 1/8″	**3798T38**	84.45	3.38
3″	12,000	1 7/16″	**3798T39**	162.04	4.91

Retractable Strap

Strap retracts into the plastic housing for quick, tidy storage. Strap is made of yellow polypropylene webbing with a steel hook at each end.

Webbing Width	Work Load Limit, lbs.	Length		Each
2″	3,000	14 ft.	**3798T15**	$23.16

Welded Chain with Hooks

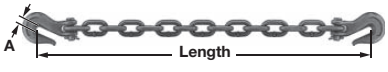

Bind, bundle, tow, and haul—rugged steel chain with a steel grab hook at each end does it all. Meets D.O.T. (Department of Transportation) 393.102 specifications.

Grade 70 (transport) chain has a high strength-to-weight ratio. It has a zinc-plated finish.

Chain Size	Work Load Limit, lbs.	(A)	14-ft. Length		20-ft. Length	
Grade 40/43 (High Test) Chain						
5/16″	3,900	7/16″	**3426T41**	$48.05	**3426T44**	$61.44
3/8″	5,400	1/2″	**3426T51**	60.11	**3426T8**	81.60
1/2″	9,200	5/8″	—	—	**3426T5**	144.16
Grade 70 (Transport) Chain						
5/16″	4,700	7/16″	**3362T61**	58.14	**3362T73**	79.56
3/8″	6,600	1/2″	**3362T63**	72.77	**3362T76**	99.25
1/2″	11,300	5/8″	—	—	**3362T43**	213.60

Corner Protectors and Pads for Straps

Prevent damage to your webbing and cargo. For additional styles, see page 1485.

Plastic protector has a corner recess to protect cargo edges.

Rubber pads resist abrasion and conform to the load to evenly distribute corner stresses.

Plastic Protector

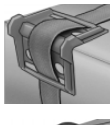

Rubber Pad

For Webbing Width		
Plastic Protector		
2″-4″	**88405T5**	$2.53
Rubber Pads		
2″-3″	**88405T6**	3.97
4″	**88405T7**	4.66

Warning! **Never exceed work load limits. Never use for lifting applications.**

Tie-Down Winches and Straps

Winches

Weld On

Bolt On

Weld On/Bolt On

Easy-Ratchet Cap

Tensioning Bar

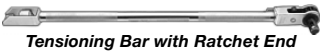
Tensioning Bar with Ratchet End

Pair these winches with a strap (sold separately) to secure loads for transit. Designed for right-hand operation. Meet D.O.T. (Department of Transportation), California Highway Patrol, and North American Cargo Securement Standard requirements. Winches and accessories are made of steel.

Weld-on and ***bolt-on*** winches require a tensioning bar (sold separately). Winches have a black finish. *Bolt-on* winches have two mounting bolts.

Weld-on/bolt-on winch tensions with a 1⅛″ hex wrench (see 5163A86 on page 2773). Weld or bolt in place. Winch has two ½″ dia. mounting holes (fasteners not included). It has a spring-loaded release. Frame has a black finish; all other components have a zinc-plated finish.

Easy-ratchet cap slips onto the winch to allow continuous tensioning without removing the tensioning bar. ***Tensioning bar with ratchet end*** has a built-in ratchet so you can quickly tighten the winch. The other end can attach to lever load binder handles for safe opening and closing.

Mounting Style	For Webbing Wd.	Work Load Limit, lbs.	Ht.	Wd.	Dp.		
Weld-On Winches							
Bottom	2″-4″	5,500	5½″	7¾″	3½″	33545T11	$22.72
Bottom/Side	2″-4″	5,500	4⅜″	7¾″	4″	33545T22	22.27
Weld-On/Bolt-On Winches							
Bottom/Side	2″	3,335	4″	5″	3″	33545T31	17.84
Bolt-On Winches							
Bottom	2″-4″	5,500	5½″	7¾″	3½″	33545T18	25.71
Bottom/Side	2″-4″	5,500	4⅜″	7¾″	4″	33545T23	25.71
Accessories for Weld-On and Bolt-On Winches							
Tensioning Bar						33545T19	25.90
Easy-Ratchet Cap						33545T37	21.71
Tensioning Bar with Ratchet End						33545T21	58.28

Straps

Flat Hook

Delta Ring

Loop Eye

Thread one end of the strap through a winch (sold separately); the ratcheting of the winch tensions the strap. Straps have a flat hook, delta ring, or loop eye on the other end. *Flat hook* and *delta ring* are zinc-plated steel, except flat hooks on low-stretch polyester webbing, which have a black finish.

Low-stretch polyester webbing is quick drying. Color is yellow.

Abrasion-resistant polyester webbing is yellow with black cut-resistant edges.

Ultra abrasion-resistant polyester webbing is impregnated with PVC for the most abrasion resistance and UV protection. Color is orange.

Webbing Wd.	Work Load Limit, lbs.	(A)	WITH FLAT HOOK 27-ft. Length		30-ft. Length		(B)	WITH DELTA RING 27-ft. Length		30-ft. Length		(C)	WITH LOOP EYE 27-ft. Length		30-ft. Length	
Low-Stretch Polyester Webbing																
2″	3,335	⅝″	9572T51	$25.36	9572T42	$27.06	1⅞″	9572T73	$26.26	9572T74	$29.12	—	—	—	—	—
3″	5,400	⅝″	9572T54	25.33	9572T56	26.89	—	—	—	—	—	—	—	—	—	—
4″	5,400	⅝″	9572T55	25.73	9572T47	27.83	2⅞″	9572T81	28.72	9572T82	31.33	6″	—	—	9572T86 ●	$20.86
Abrasion-Resistant Polyester Webbing																
3″	5,000	½″	3521T31	34.10	3521T33	37.03	2⅞″	3521T35	39.09	3521T37	41.75	7″	3521T63	$31.15	3521T64	36.87
4″	5,000	½″	3521T32	35.12	3521T34	38.30	2⅞″	3521T36	41.07	3521T38	43.89	7″	3521T67	33.44	3521T68	38.39
Ultra Abrasion-Resistant Polyester Webbing																
2″	3,335	½″	3792T61	25.95	3792T62	28.65	1⅞″	3792T51	25.95	3792T52	28.65	—	—	—	—	—
3″	4,335	⅝″	3792T69	30.62	3792T71	33.12	2⅛″	3792T74	31.25	3792T75	33.75	—	—	—	—	—
4″	5,000	⅝″	3792T41	34.88	3792T42	37.38	2⅝″	3792T78	35.38	3792T79	37.88	—	—	—	—	—

● Work load limit is 5,000 lbs.

Heavy Duty Ratchet Tie-Down Straps

Flat Hook

Wire Hook

Latch Hook

Tough jobs are no problem—these straps have high-strength webbing, buckles, and hooks to handle demanding applications. Meet D.O.T. (Department of Transportation), CVSA (Commercial Vehicle Safety Alliance), and California Highway Patrol regulations. Straps have ratchet-tight buckles for maximum tension. *Zinc-plated steel* offers some corrosion resistance. *300 series stainless steel* provides more corrosion resistance.

Low-stretch polyester webbing is quick drying. Color is yellow.

Abrasion-resistant polyester webbing is yellow with black cut-resistant edges.

Ultra abrasion-resistant polyester webbing is impregnated with PVC for the most abrasion resistance and UV protection. Color is orange.

Webbing Wd.	Work Load Limit, lbs.	(A)	WITH FLAT HOOKS 12-ft. Max. Lg.		27-ft. Max. Lg.		30-ft. Max. Lg.		(A)	WITH WIRE HOOKS 12-ft. Max. Lg.		27-ft. Max. Lg.		30-ft. Max. Lg.	
Zinc-Plated Steel Buckle and Hooks															
Low-Stretch Polyester Webbing															
2″	2,000	½″	29665T13	$22.98	29665T31	$24.38	29665T32	$26.88	¾″	29665T33	$22.98	29665T34	$30.29	29665T35	$31.39
2″	3,335	½″	29665T14	24.52	29665T41	27.38	29665T42	31.45	⅞″	29665T36	24.52	29665T37	27.38	29665T38	31.45
2″	4,000	⅝″	29665T15▲	30.48	29665T51▲	30.63	29665T52▲	33.12	⅞″	29665T43	29.76	29665T44	36.25	29665T45	38.75
3″	5,000	⅝″	29665T16	58.00	29665T21	62.22	29665T22	64.44	1″	29665T46	58.00	29665T47	70.21	29665T48	72.34
4″	5,000	⅝″	29665T17	60.00	29665T18	65.56	29665T19	67.78	1″	29665T53	60.00	29665T54	83.70	29665T55	85.87
Abrasion-Resistant Polyester Webbing															
2″	1,600	½″	3428T22	22.55	3428T26	33.13	3428T27	35.07	⅝″	3428T61	25.16	3428T62	36.28	3428T63	38.30
2″	3,300	½″	3428T32	25.29	3428T36	39.16	3428T37	41.39	1″	3428T64	25.84	3428T65	39.50	3428T66	41.78
3″	5,000	½″	3428T42	64.67	3428T46	73.20	3428T47	75.52	1″	3428T67	60.85	3428T68	73.04	3428T69	75.47
4″	5,000	½″	3428T51	75.28	3428T52	87.71	3428T53	93.31	1″	3428T71	72.74	3428T72	85.61	3428T73	89.73
Ultra Abrasion-Resistant Polyester Webbing															
2″	2,000	½″	3791T25	26.19	3791T21	26.83	3791T23	28.75	¾″	3791T61	26.19	3791T62	27.18	3791T63	28.99
2″	3,335	½″	3791T45	26.79	3791T41	29.82	3791T43	31.64	¾″	3791T64	26.79	3791T65	29.82	3791T66	31.64
2″	4,000	⅝″	3791T35▲	33.33	3791T31▲	35.19	3791T33▲	37.08	⅞″	3791T67	33.33	3791T68	35.19	3791T69	37.08
3″	5,000	⅝″	3791T55	65.00	3791T51	77.29	3791T53	79.38	1″	3791T71	65.00	3791T72	84.38	3791T73	86.46
4″	5,000	⅝″	3791T81	68.00	3791T82	86.67	3791T83	88.89	1″	3791T74	67.82	3791T75	88.89	3791T76	91.11
300 Series Stainless Steel Buckle and Hooks															
Low-Stretch Polyester Webbing															
2″	1,670	1″	3509T73★	116.11	3509T74★	128.41	3509T75★	129.45	—	—	—	—	—	—	—

▲ Hooks have a black finish. ★ Straps have latch hooks.

Warning! Never exceed work load limits. Never use for lifting applications.

Heavy Duty Ratchet Tie-Down Straps with Webbing Spool

Excess webbing spools onto the ratchet-tight buckle of these straps to keep it neatly out of your way during use. The buckle and fittings are made of zinc-plated steel; the webbing is yellow polyester. Max. length is 27 ft.

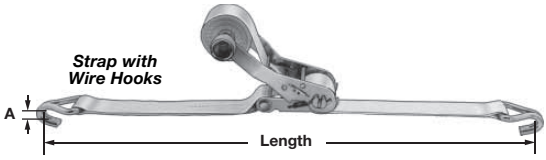

Hook Type	Webbing Wd.	Work Load Limit, lbs.	(A)		
Flat Hooks	2″	3,330	5/8″	29665T57	$39.28
Wire Hooks	2″	3,330	3/4″	29665T56	37.06

Ratchet Tie-Down Straps

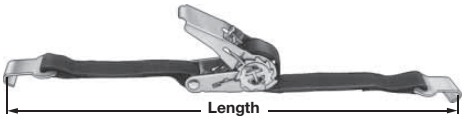

Ratchet-tight buckles let you apply maximum tension to the straps.

Straps with Hooks

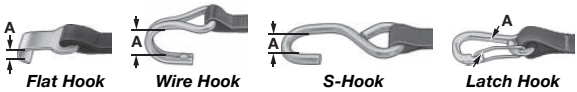

Straps come with your choice of webbing material: ultra-abrasion-resistant nylon or low-stretch polyester.

Straps with Zinc-Plated Steel Hooks—1″ wide nylon webbing is black; 2″ wide nylon webbing is gray. 1″ wide polyester webbing is white; 2″ wide polyester webbing is brown.

Straps with Stainless Steel Hooks—Have what it takes to stand up to corrosive environments. The buckle is also stainless steel. Nylon webbing is black; polyester webbing is blue.

To Order: Please specify nylon or polyester webbing as well as length: 3, 4, 6, 8, 10, 12, 16, or 20 ft.

Hook Type	Webbing Wd.	Work Load Limit, lbs.	(A)	3-ft. Length	Each	Extra Length Per Ft.
With Zinc-Plated Steel Hooks						
Flat Hooks	1″	333	1/4″	8834T3	$25.87	$0.59
Flat Hooks	2″	1,666	11/16″	8834T32	33.44	1.00
Wire Hooks	1″	333	11/32″	8834T22	22.38	.59
Wire Hooks	2″	500	15/16″	8834T1	33.64	1.00
S-Hooks	1″	333	11/32″	8834T19	20.67	.59
Latch Hooks	2″	1,666	15/16″	8834T38	35.73	1.00
With Stainless Steel Hooks						
Flat Hooks	1″	350	1/4″	31025T81	44.43	.68
Flat Hooks	1 1/2″	1,000	5/8″	31025T83	96.45	.79
Flat Hooks	2″	1,500	5/8″	31025T85	109.55	.84
Wire Hooks	1″	400	3/4″	31025T87	45.54	.68
Wire Hooks	1 1/2″	1,000	3/4″	31025T89	97.50	.68
Wire Hooks	2″	1,500	3/4″	31025T92	109.55	.84
Latch Hooks	1″	350	15/16″	31025T17	53.49	.68
Latch Hooks	1 1/2″	1,100	1 1/8″	31025T18	107.80	.79
Latch Hooks	2″	1,540	1 9/16″	31025T19	132.05	.84

Straps with D-Rings

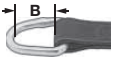

The buckle and D-rings are zinc-plated steel. Straps come with your choice of webbing material: ultra-abrasion-resistant nylon or low-stretch polyester. 1″ wide nylon webbing is black; 2″ wide nylon webbing is gray. 1″ wide polyester webbing is white; 2″ wide polyester webbing is brown.

To Order: Please specify nylon or polyester webbing as well as length: 3, 4, 6, 8, 10, 12, 16, or 20 ft.

Webbing Wd.	Work Load Limit, lbs.	(B)	3-ft. Length	Each	Extra Length Per Ft.
1″	333	1 3/8″	8834T15	$23.36	$0.59
2″	1,666	1 3/4″	8834T17	33.16	1.00

Straps with Mounting Plates

The buckle and mounting plates are zinc-plated steel. Straps come with your choice of webbing material: ultra-abrasion-resistant nylon or low-stretch polyester. 1″ wide nylon webbing is black; 2″ wide nylon webbing is gray. 1″ wide polyester webbing is white; 2″ wide polyester webbing is brown.

To Order: Please specify nylon or polyester webbing as well as length: 3, 4, 6, 8, 10, 12, 16, or 20 ft.

Webbing Wd.	Work Load Limit, lbs.	(C)	3-ft. Length	Each	Extra Length Per Ft.
1″	333	1/2″	8834T34	$21.66	$0.59
2″	1,666	3/4″	8834T36	31.91	1.00

Combination-End Ratchet Tie-Down Straps

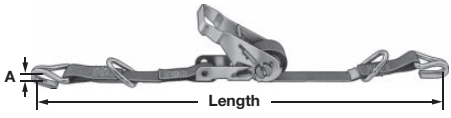

Each end of these straps has a wire hook along with a movable D-ring—use them together to create a soft loop in a choker configuration, or separately in a variety of applications. All have a ratchet-tight buckle to apply maximum tension on the strap. The buckle and fittings are zinc-plated steel. The webbing is blue polyester.

To Order: Please specify length: 3, 4, 6, 8, 10, 12, 16, or 20 ft.

Webbing Wd.	Work Load Limit, lbs.	(A)	3-ft. Length	Each	Extra Length Per Ft.
1″	835	3/8″	9575T51	$22.45	$0.20
2″	1,670	7/8″	9575T52	24.98	.52

Retractable Ratchet Tie-Down Straps

A lever handle with spring release provides quick and easy dispensing and retracting of the webbing, while a ratchet allows you to apply just the right amount of tension for your application.

Straps with S-Hooks on Both Ends

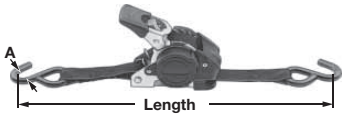

Ratchets and hooks are black plastic-coated steel. Webbing is black nylon, except 9116T12 is polyester.

Webbing Wd.	Max. Lg.	Work Load Limit, lbs.	(A)		
1″	6 ft.	500	1″	9116T61	$17.23
1″	10 ft.	400	7/8″	9116T12	18.85
2″	6 ft.	1,100	1 1/8″	9116T62	20.48
2″	10 ft.	1,100	1 1/8″	9116T64	21.25

Multi-Mount Straps with S-Hook on One End

45° Mounting Bracket

Latch Hook

Cargo Track Fitting

Strap has a 3/8″ dia. mounting hole in the ratchet housing and includes fasteners so you can permanently mount the strap or connect it to one of the accessories (sold separately). The ratchet housing is black plastic. The hook is black plastic-coated steel; webbing is black polyester.

45° mounting bracket is steel with a black finish.

Latch hook is black plastic-coated steel with a zinc-plated steel mounting plate. Overall length is 10″.

Cargo track fitting has a zinc-plated steel mounting plate on one end and an E-track style connector on the other. Overall length is 7″.

Webbing Wd.	Max. Lg.	Work Load Limit, lbs.	(A)		
Straps					
2″	6 ft.	1,167	1 1/8″	8836T3	$41.32
Accessories					
45° Mounting Bracket				8836T41	6.73
Latch Hook				8836T42	6.67
Cargo Track Fitting				8836T43	7.07

Warning! ***Never exceed work load limits. Never use for lifting applications.***

Sliding-Ratchet Tie-Down Straps

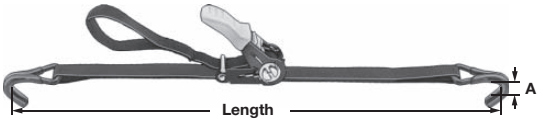

The ratchet slides along the webbing, so you can position it where you want. Straps have a plastic-coated steel hook at each end. The ratchet is black powder-coated steel. Webbing is black polyester.

Webbing Wd.	Max. Lg.	Work Load Limit, lbs.	(A)		
1″	16 ft.	450	1″	3886T11	$14.40
1 1/8″	16 ft.	900	1″	3886T12	25.38

Pull-Tight Tie-Down Ropes

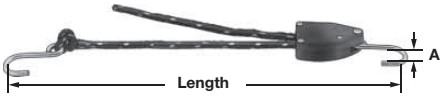

Tie-Down Ropes

Pull the rope through the automatic-locking ratchet to tension; press the lever to release. The ratchet is glass-filled nylon. Rope is braided polypropylene and has zinc-plated steel hooks.

Rope Dia.	Max. Lg.	Work Load Limit, lbs.	(A)		
1/8″	6 ft.	75	5/8″	29925T14■	$6.72
1/4″	8 ft.	150	1 1/8″	29925T13	10.22
1/4″	10 ft.	150	1 1/8″	29925T12	10.63
3/8″	8 ft.	250	1 1/4″	29925T23	15.72
3/8″	10 ft.	250	1 1/4″	29925T22	16.48
3/8″	15 ft.	250	1 1/8″	29925T25	17.76
1/2″	10 ft.	500	1 1/2″	29925T24	28.64
1/2″	15 ft.	500	1 9/16″	29925T26	31.98

■ Rope is braided polyester.

Create-Your-Own Tie-Down Ropes

Add one of these ratchets to rope sold separately on pg. 1412 to make your own tie down. Ratchets include a hook for the end of the rope.

For Rope Dia.	(A)		
1/4″	1 1/8″	29925T51	$6.86
3/8″	1 1/4″	29925T52	10.86

Retractable Seatbelt-Style Tie-Down Straps

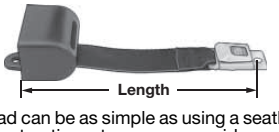

Securing your load can be as simple as using a seatbelt. Permanently mount the spring-retracting strap on one side and the buckle on the other—they both have a 3/8″ dia. mounting hole (fasteners not included). The housing is black plastic, the webbing is black polyester, and the end fitting and buckle are zinc-plated steel.

Webbing Wd.	Max. Lg.		
1″	5′9″	3285T71	$22.61
2″	4′11″	3285T72	21.66

Shock-Absorbing Tie-Down Straps

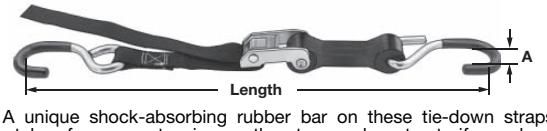

A unique shock-absorbing rubber bar on these tie-down straps stretches for proper tension on the strap and contracts if your load shifts. The design also reduces damage to loads caused by overtightening. Straps have a zinc-plated steel quick-tight buckle, which is also known as a cam buckle; lift the cam, pull the webbing through, then release the cam to hold. Webbing is black nylon. Hooks are plastic-coated steel.

Webbing Wd.	Max. Lg.	(A)		
1″	6 ft.	1 1/2″	2352T11	$16.38
1″	10 ft.	1 1/2″	2352T12	19.24
1″	19 ft.	1 1/2″	2352T13	21.53

Pull-Tight Tie-Down Straps

Strap with Quick-Tight Buckle

Try these pull-tight straps in low-tension applications for faster tightening than ratchet-style straps. All straps have a zinc-plated steel quick-tight buckle, unless otherwise indicated. Quick-tight buckles are also known as cam buckles; lift the cam, pull the webbing through, then release the cam to hold.

Straps with Hooks

Flat Hook *Wire Hook* *S-Hook* *Latch Hook*

Straps have a zinc-plated steel hook on each end. Comes in your choice of webbing material: ultra-abrasion-resistant gray nylon or low-stretch brown polyester. **To Order:** Please specify webbing material, as well as length: 3, 4, 6, 8, 10, 12, 16, or 20 ft.

Hook Type	Webbing Wd.	Work Load Limit, lbs.	(A)	3-ft. Length	Each	Extra Length Per Ft.
Flat Hooks	1″	333	5/16″	8834T58	$15.12	$0.70
Flat Hooks	2″	1,000	11/16″	8834T6	20.31	1.00
Wire Hooks	1″	500	7/16″	8834T5	13.28	.70
Wire Hooks	2″	500	15/16″	8834T4	17.75	1.00
S-Hooks	1″	400	1 1/16″	8834T48	11.80	.70
Latch Hooks	2″	1,000	15/16″	8834T66	21.55	1.00

Straps with D-Rings

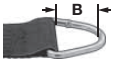

These straps have a zinc-plated steel D-ring on each end. Comes in your choice of webbing material: ultra-abrasion-resistant gray nylon or low-stretch brown polyester. **To Order:** Please specify webbing material, as well as length: 3, 4, 6, 8, 10, 12, 16, or 20 ft.

Webbing Wd.	Work Load Limit, lbs.	(B)	3-ft. Length	Each	Extra Length Per Ft.
1″	500	1 3/16″	8834T44	$13.71	$0.70
2″	1,000	1 3/4″	8834T46	19.91	1.00

Straps with Mounting Plates

Straps have a zinc-plated steel mounting plate on each end. Comes in your choice of webbing material: ultra-abrasion-resistant gray nylon or low-stretch brown polyester. **To Order:** Please specify webbing material, as well as length: 3, 4, 6, 8, 10, 12, 16, or 20 ft.

Webbing Wd.	Work Load Limit, lbs.	(C)	3-ft. Length	Each	Extra Length Per Ft.
1″	333	1/2″	8834T62	$12.69	$0.70
2″	1,000	3/4″	8834T64	18.43	1.00

Straps with Wire Hooks and Loop Grip

Strap with Lift-Release Buckle

In addition to having a zinc-plated steel hook on each end, the free end of these straps has a sewn loop for an easier grip when tightening.

Strap with ***lift-release buckle*** has gray polyester webbing; the buckle has a textured roller that holds the webbing in place after you pull it through; release the tension by lifting the pull tab.

Strap with ***quick-tight*** buckle has black polypropylene webbing; buckle is also known as a cam buckle; lift the cam, pull the webbing through, then release the cam to hold.

Buckle Type	Webbing Wd.	Max. Lg.	Work Load Limit, lbs.	(A)		Each
Lift-Release	2″	18 ft.	333	1″	3659T43	$27.44
Quick-Tight	2″	20 ft.	333	1″	3659T54	35.97

Protective Covers for Buckles

Avoid damage to your load caused by buckle vibration during transport with these black vinyl covers. Hook and loop edging secures the cover around buckles for up to 2″ wide webbing.

88405T8 ..... $9.64

Warning! ***Never exceed work load limits. Never use for lifting applications.***

Elastic Tie-Down Straps

Elastic straps stretch and adjust for easy load securing. Straps are made of rubber with a polypropylene cover and have nonmarring plastic-coated steel swivel hooks on each end.

Strap Wd.	O'all Lg.	Maximum Stretched Lg.	(A)	Color		
2″	16″-24″	36″	1½″	Green	8832T1	$2.93
2″	22″-32″	48″	1½″	Orange	8832T2	3.05
2″	28″-48″	72″	1½″	Yellow	8832T3	3.18

Light Duty Straps with Fittings

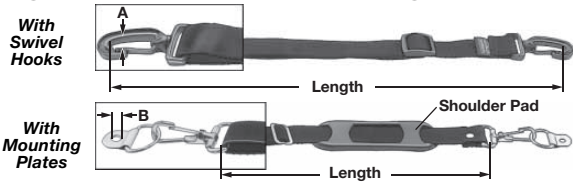

Carry or tie down loads with these adjustable straps. Color is black.

Straps ***with swivel hooks*** allow the load to rotate without twisting the strap. Hooks are black plastic.

Straps ***with mounting plates*** have a rubber shoulder pad and a latch hook to release the strap from the mounting plate. Mounting plates and latch hooks are nickel-plated steel. Mounting fasteners not included.

Also Available: Shoulder pads. Please ask for 88405T888 and specify webbing width.

Webbing Wd.	Lg.	(A)	(B)	Lightweight Polypropylene		Shock-Absorbing Nylon	
With Swivel Hooks							
1″	28″-48″	3/8″	—	3090T151	$5.54	3090T191	$8.18
2″	28″-48″	3/8″	—	3090T171	7.44	3090T221	8.52
With Mounting Plates							
1″	29″-48″	—	7/32″	29685T81	8.00	29685T84	8.54
1½″	29″-48″	—	7/32″	29685T82	8.82	29685T85	9.54
2″	29″-48″	—	7/32″	29685T83	11.62	29685T86	10.57

Slides for Webbing

Add slides to webbing to make your own adjustable straps. You can either thread both ends of the webbing through the plate or sew one end of the webbing to the plate.

Light Duty

Slides are not load rated. Color is black.

For Max. Webbing Wd.	Plastic Pkg. Qty.		Pkg.	Painted Steel Pkg. Qty.		Pkg.
3/4″	25	2974T45	$4.48	—	—	—
1″	25	2974T46	5.00	5	3361T67	$2.70
1½″	25	2974T47	9.63	5	3361T68	3.70
2″	25	2974T48	11.04	5	3361T69	4.40

Heavy Duty

Choose these slides for higher-tension applications.

For Max. Webbing Wd.	Zinc-Plated Steel Work Load Limit, lbs.		Each	Stainless Steel Work Load Limit, lbs.		Each
1″	333	3648T4	$2.16	150	3361T71	$3.13
1½″	—	—	—	200	3361T72	3.76
2″	1,670	3648T35	4.55	250	3361T73	5.47

Finishing Tips for Webbing

Prevent frayed ends and make threading easier. Install with a hammer, pliers, or a vise. Made of plated steel.

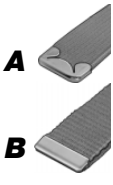

	For Webbing Wd.	Pkg. Qty.		Pkg.
A	3/4″	50	9576T47	$7.71
A	1½″	50	9576T49	8.57
B	1″	50	9576T48	12.74
B	2″	25	9576T51	19.28

Webbing

Create your own straps, belts, and tie downs. Webbing has a finished end and a locking stitch that won't unravel when cut. To prevent fraying after cutting cotton, Nomex, and Kevlar webbing, fold and sew or use a finishing tip. For a finished end when cutting polypropylene, nylon, and polyester, use a hot-blade knife (see page 2361).

Note: Breaking strength is the force at which new webbing will break, and should never be considered the work load limit. The work load limit depends on application and the method used to create a finished assembly, and is always significantly lower than the breaking strength.

Extra-strength cotton has a nylon core. ***Lightweight polypropylene*** is economical and resists moisture. ***Shock-absorbing nylon*** has good stretch and recovery with abrasion and mildew resistance. ***Ultra-abrasion-resistant nylon*** is tightly woven for abrasion and slip resistance. ***Low-stretch polyester*** is soft and quick drying. ***Slip-resistant polyurethane-coated polyester*** has good cut resistance and stays flexible in low temperatures.

To Order: Please specify length from those listed. Please also specify color where necessary.

Also Available: Additional lengths. Please ask for 3643T888 and specify webbing material, width, length, and color (where necessary).

Standard Lengths

Wd.	Thick.	Breaking Strength, lbs.	Available Lengths, ft.		Per Ft.
Cotton— *Color is olive.*					
3/4″	1/16″	300	10, 25, 50, 100, 200	3643T11	$0.48
1″	1/16″	300	10, 25, 50, 100, 200	3643T12	.62
1½″	1/16″	440	5, 10, 25, 50, 100	3643T13	1.01
2″	1/16″	580	5, 10, 25, 50, 100	3643T14	1.03
Extra-Strength Cotton— *Color is tan.*					
1″	3/32″	1,150	5, 10, 25, 50, 100	3531T11	.68
1½″	3/32″	2,200	5, 10, 25, 50, 100	3531T12	.80
2″	3/32″	2,400	5, 10, 25, 50, 100	3531T13	1.04
Lightweight Polypropylene— *Color is black or yellow.*					
3/4″	1/16″	600	25, 50, 100, 200, 300	8852T41	.23
1″	1/16″	800	25, 50, 100, 200, 300	8852T42	.25
1½″	1/16″	1,250	10, 25, 50, 100, 200, 300	8852T43	.39
2″	1/16″	1,450	10, 25, 50, 100, 200, 300	8852T46	.46
Shock-Absorbing Nylon— *Color is black, blue, red, or yellow.*					
3/4″	3/32″	2,850	10, 25, 50, 100, 150	3510T11	.48
1″	3/32″	3,800	10, 25, 50, 100, 150	3510T12	.52
1½″	3/32″	5,100	5, 10, 25, 50, 100, 150	3510T13	.70
2″	3/32″	6,800	5, 10, 25, 50, 100, 150	3510T14	.71
Ultra-Abrasion-Resistant Nylon— *1″ wide is black; 2″ wide is gray.*					
1″	1/16″	2,500	5, 10, 25, 50, 100, 150	3439T11	$0.91
2″	1/16″	4,800	5, 10, 25, 50, 100, 150	3439T13	1.00
Low-Stretch Polyester— *Color is black or brown*					
1″	1/16″	1,200	5, 10, 25, 50, 100, 150	3444T82	.67
2″	1/16″	2,400	5, 10, 25, 50, 100, 200	3444T84	1.02
Slip-Resistant Polyurethane-Coated Polyester— *Color is black.*					
3/4″	3/32″	750	5, 10, 25, 50, 100	3364T131	.99
1″	3/32″	1,000	5, 10, 25, 50, 100	3364T141	1.23
1½″	3/32″	1,500	5, 10, 25, 50, 100	3364T151	1.87
2″	3/32″	2,000	5, 10, 25, 50, 100	3364T161	2.32
High-Temperature Nomex— *Color is black.*					
3/4″	1/16″	600	5, 10, 25, 50, 100	8737T51	2.01
1″	1/16″	850	5, 10, 25, 50, 100	8737T49	2.74
2″	1/16″	1,700	5, 10, 25, 50, 100	8737T52	6.12
Cut-Resistant Kevlar— *Color is black.*					
3/4″	1/16″	2,500	5, 10, 25, 50, 100	8739T72	3.15
1″	1/16″	4,000	5, 10, 25, 50, 100	8739T74	4.16
1½″	1/16″	5,500	5, 10, 25, 50, 100	8739T76	6.15

Short Lengths

Webbing has a finished end. Color is black.

Wd.	Breaking Strength, lbs.	Lg., ft.	Pkg. Qty.		Pkg.
Lightweight Polypropylene					
1″	700	1	10	8852T21	$5.87
1″	700	2	5	8852T22	4.95
1″	700	3	5	8852T23	5.85
1″	700	4	2	8852T24	3.74
1″	700	5	2	8852T25	4.60
1″	700	6	2	8852T26	4.88
Shock-Absorbing Nylon					
1″	1,000	1	10	3510T51	$8.38
1″	1,000	2	5	3510T52	6.93
1″	1,000	3	5	3510T53	8.88
1″	1,000	4	2	3510T54	5.36
1″	1,000	5	2	3510T55	6.62
1″	1,000	6	2	3510T56	7.33

Warning! ***Never exceed work load limits. Never use for lifting applications.***

Buckles for Webbing

Add these buckles to webbing (see page 1509) to create your own cinching and tie-down straps.

Light Duty

Sew-On Squeeze-Release Buckle

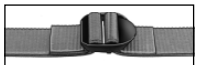

No-Sew Feed-Through Buckle

Buckles are not load rated. *Sew-on* buckles require at least one end of the webbing to be permanently attached. *No-sew* buckles have a gripper bar on each side that holds webbing in place without sewing.

(1&2) Feed-through buckles are easy to thread and cinch quickly. *Plastic* buckles release by lifting up on the end. *Nickel-plated steel* buckles have a movable center bar for tightening and releasing.

(3) Hinged buckles hold tight upon cinching; push down on the end of the buckle to release.

(4) Squeeze-release buckles can be released with one hand.

(5) Easy-release buckle needs just a pinch on the sides to release, making it ideal for gloved hands.

(6) Spring-loaded clamp buckle has a clamp that holds the webbing. To release, push down on the clamp.

(7) Quick-tight buckles are also known as cam buckles. Lift the cam up to release.

For Webbing Wd.	Pkg. Qty.	Sew On	Pkg.	No Sew	Pkg.
Feed-Through—*Black Plastic*					
1 ¾″	25	**29705T11**	$5.04	**29705T21**	$6.67
1 1″	25	**29705T81**	5.68	**29705T22**	7.05
1 1½″	25	**29705T13**	13.40	—	—
1 2″	5	**29705T14**	14.41	**29705T94**	6.85
Feed-Through—*Nickel-Plated Steel*					
2 ¾″	25	**9576T61**	10.68	—	—
2 1″	25	**9576T62**	13.53	—	—
Hinged—*Nickel-Plated Steel*					
3 1½″	5	**9576T65**	9.37	—	—
3 2″	5	**9576T66**	9.58	—	—
Squeeze-Release—*Black Plastic*					
4 ¾″	10	**29705T82**	4.65	**29705T93**	8.24
4 1″	10	**29705T83**	5.74	**29705T86**	7.18
4 1½″	10	**29705T361**	13.01	**29705T87**♦	11.63
4 2″	5	**29705T17**	11.02	**29705T85**	13.47

♦ Package quantity is 5.

For Webbing Wd.	Pkg. Qty.	Sew On	Pkg.	No Sew	Pkg.
Squeeze-Release—*Aluminum*					
4 ¾″	1	**9576T74**	$3.18	—	—
4 1″	1	**9576T75**	3.48	—	—
4 1½″	1	**9576T76**	5.76	—	—
4 2″	1	**9576T77**	6.36	—	—
Easy-Release—*Black Plastic*					
5 1″	10	—	—	**29705T88**	$11.19
Spring-Loaded Clamp—*Nickel-Plated Steel*					
6 1″	10	**9576T63**	17.63	—	—
Quick-Tight—*Black Plastic*					
7 ¾″	10	**29705T27**	7.09	**29705T91**	5.79
7 1″	10	**29705T29**	7.42	**29705T92**	7.18
7 1½″	10	**29705T84**	9.85	**29705T95**	10.06
7 2″	5	**29705T31**	13.52	—	—

Heavy Duty

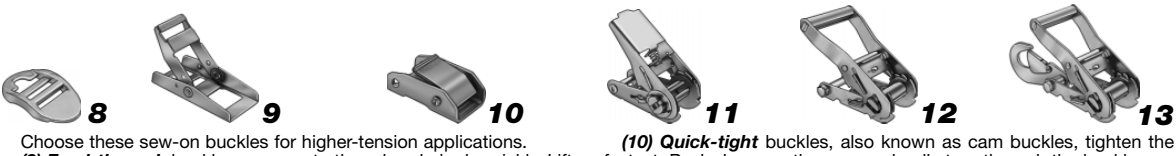

Choose these sew-on buckles for higher-tension applications.

(8) Feed-through buckles are easy to thread and cinch quickly. Lift the end of the buckle to release.

(9) Flip-tight buckles, also known as over-center buckles, tighten by flipping and locking the buckle into position.

(10) Quick-tight buckles, also known as cam buckles, tighten the fastest. Push down on the cam and pull strap through the buckle.

(11-13) Ratchet-tight buckles let you apply maximum tension on the webbing but take longer to tighten.

For Webbing Wd.	Work Load Limit, lbs.		Each
Feed-Through—*Stainless Steel*			
8 1″	500	**9576T78**	$8.70
Flip-Tight—*Zinc-Plated Steel*			
9 ¾″ and 1″	335	**3648T82**	3.28
9 2″	500	**3648T75**	7.52
Flip-Tight—*Stainless Steel*			
9 ¾″ and 1″	260	**3648T23**	15.38
9 2″	500	**3648T24**	20.45
Quick-Tight—*Zinc-Plated Steel*			
10 ¾″ and 1″	400	**3648T31**	4.36
10 2″	833	**3648T71**	7.74

For Webbing Wd.	Work Load Limit, lbs.		Each
Quick-Tight—*Stainless Steel*			
10 1″	100	**3648T17**	$8.52
Ratchet-Tight—*Zinc-Plated Steel*			
11 ¾″ and 1″	500	**3648T3**	8.30
12 2″	3,670	**3648T14**	19.27
13 2″	3,670	**3648T15**	44.88
Ratchet-Tight—*Stainless Steel*			
11 1″	350	**3648T21**	16.03
12 1½″	1,320	**3648T16**	50.96
12 2″	1,670	**3648T22**	67.43

Mounting Plates for Webbing

3648T41 ***3648T95***

Create a permanent attachment point for tie-down straps. Plates are made of zinc-plated steel.

For Webbing Wd.	Work Load Limit, lbs.	Mtg. Hole Dia.		
¾″ and 1″	333	½″	**3648T41**	$3.25
2″	1,000	½″	**3648T95**	5.36

Cut-to-Length Cinching Straps

Polypropylene Webbing and Feed-Through Buckle

EPDM Rubber and Squeeze-Release Buckle

Cut rolls to length and add the included no-sew buckles. Webbing and rubber are black. Buckles are black plastic.

Polypropylene webbing is lightweight, economical, and moisture resistant. Comes with feed-through buckles, which are easy to thread quickly.

EPDM rubber is weather resistant and stretches to hold tarps and bundles tight. Comes with squeeze-release buckles, which can be released with one hand.

Straps					Extra Buckles		
Wd.	Lg., ft.	No. of Buckles		Each	Pkg. Qty.		Pkg.
Polypropylene Webbing							
1″	30	6	**8846T49**	$8.46	10	**8846T52**	$4.20
EPDM Rubber							
1″	25	5	**8846T61**	22.93	10	**29705T86**	7.18

Warning! ***Never exceed work load limits. Never use for lifting applications.***

Hooks for Webbing

For webbing, see page 1509.

Sew On

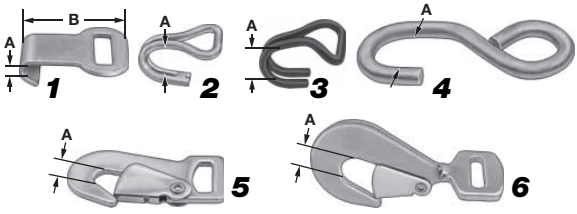

Hooks require webbing to be permanently attached, except *Style 3*, which is split so you can slip it on and off any sewn loop.

For Webbing Wd.	Work Load Limit, lbs.	(A)	(B)		
***Flat Hook—**Zinc-Plated Steel*					
1 ... 3/4″ and 1″	600	5/16″	2″	3648T45	$4.05
1 ... 2″	1,666	5/8″	3 1/16″	3648T85	3.50
***Flat Hook—**Stainless Steel*					
1 ... 1″	350	1/4″	1 1/16″	3648T18	2.48
1 ... 1 1/2″	1,000	5/8″	2 13/16″	3648T19	6.82
1 ... 2″	1,500	5/8″	2 13/16″	3648T29	11.50
***Wire Hook—**Zinc-Plated Steel*					
2 ... 3/4″ and 1″	666	1 1/8″	2 1/2″	3648T43	3.61
2 ... 2″	833	7/16″	1 11/16″	3648T83	1.52
***Wire Hook—**Stainless Steel*					
2 ... 1″	400	3/4″	2 3/4″	3648T33	5.46
2 ... 1 1/2″	1,000	3/4″	3 7/16″	3648T34	8.10
2 ... 2″	1,500	3/4″	3 7/16″	3648T36	12.66
***Removable Wire Hook—**Black Plastic-Coated Steel*					
3 ... 2″	1,000	1 1/4″	3 7/16″	88525T28	4.14
***S-Hook—**Zinc-Plated Steel*					
4 ... 3/4″ and 1″	400	1 1/8″	4 11/16″	3648T42	1.81
4 ... 3/4″ and 1″	500	1 1/8″	4 5/8″	3648T47●	2.40
***S-Hook—**Stainless Steel*					
4 ... 3/4″ and 1″	200	1″	4″	3648T26	5.21
4 ... 1 1/2″	300	1 1/2″	4 1/2″	3648T37	6.22
4 ... 2″	400	2 1/4″	6 3/16″	3648T27	12.15
***Latch Hook—**Zinc-Plated Steel*					
5 ... 3/4″ and 1″	1,835	1/2″	3 3/4″	3648T46	2.33
5 ... 2″	2,100	1″	4 1/4″	3648T93	2.87
***Latch Hook—**Stainless Steel*					
6 ... 2″	1,670	1″	6″	3648T28	27.54

●Hook is black plastic-coated steel.

No Sew

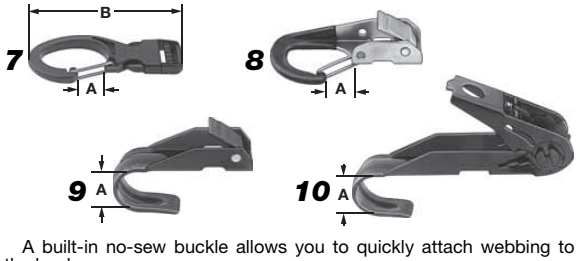

A built-in no-sew buckle allows you to quickly attach webbing to the hook.

Style 7 has a squeeze-release buckle with a gripper bar that holds webbing in place.

Styles 8 and ***9*** have a quick-tight buckle, also known as a cam buckle. Push down on the spring-loaded cam and pull webbing through the buckle.

Style 10 has a ratchet-tight buckle for maximum tension.

For Webbing Wd.	Work Load Limit, lbs.	(A)	(B)		
***Latch Hook—**Black Plastic*					
7 ... 1″	40	3/4″	4 3/4″	29705T89	$2.75
***Latch Hook—**Zinc-Plated Steel*					
8 ... 1″	400	1″	4 7/8″	3648T76	8.75
***J-Hook—**Black Powder-Coated Steel*					
9 ... 1″	400	1 1/2″	4 1/2″	3648T77	8.50
10 ... 1″	400	1 1/2″	7 3/8″	3648T78	15.63

Rings for Webbing

For webbing, see page 1509.

D-Rings

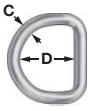

For Webbing Wd.	Work Load Limit, lbs.	(C)	(D)	Pkg. Qty.		Pkg.
Black Plastic						
3/4″	—	3/16″	5/8″	25	3781T51	$5.62
1″	—	3/16″	5/8″	25	3781T52	6.15
2″	—	3/16″	3/4″	25	3781T54	8.35
Nickel-Plated Steel						
1″	200	7/32″	13/16″	10	9372T21	6.00
1 1/4″	200	1/4″	1 1/8″	10	9372T15	7.33
1 1/2″	200	1/4″	1 1/2″	10	9372T16	8.67
2″	200	1/4″	1 3/4″	10	9372T23	13.33
Zinc-Plated Steel						**Each**
3/4″ and 1″	1,670	1/4″	1 5/16″	—	3648T73	$2.46
2″	1,666	1/4″	1 11/16″	—	3648T87	2.55
Stainless Steel						
1 1/2″	400	3/16″	1 1/2″	—	34905T91	2.57
2″	400	3/16″	2″	—	34905T92	2.97
2″	780	1/4″	2 1/8″	—	34905T93	4.37
2 1/2″	1,200	5/16″	2 3/8″	—	34905T95	7.67
3″	1,200	5/16″	2 5/8″	—	34905T96	8.27

Round Rings

Rings are nickel-plated steel. For load-rated round rings, see page 1425.

For Webbing Wd.	(C)	Pkg. Qty.		Pkg.
1/2″	1/8″	10	8894T1	$3.33
5/8″	1/8″	10	8894T2	3.45
3/4″	1/8″	10	8894T3	3.57
7/8″	1/8″	10	8894T4	4.68
1″	1/8″	10	8894T5	5.18
1 1/4″	3/16″	10	8894T7	4.81

Chemical-Resistant Polyurethane Tie-Down Cords and Straps

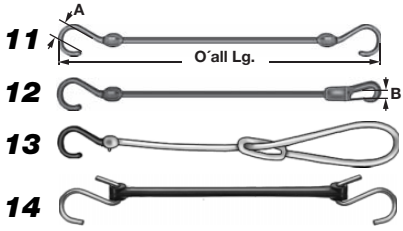

Polyurethane stands up to oil, grease, fuel, ozone, and salt water. *Plastic hooks* protect the contact surface. *Zinc-plated steel hooks* are stronger than plastic and offer some corrosion resistance. *Stainless steel hooks* provide superior corrosion resistance.

Style 13 has a loop end you can cinch around large anchor points.

To Order: Please specify black, blue, orange, red, or yellow.

O'all Lg.	Maximum Stretched Lg.	(A)	(B)	Cord Dia./ Strap Wd.		
(11) Cords with Plastic Hooks						
12 1/2″	24″	1″	—	5/16″	3097T61	$2.64
18 1/2″	36″	1″	—	5/16″	3097T62	2.91
24 1/2″	48″	1″	—	5/16″	3097T63	3.24
(12) Cords with Plastic Hook and Plastic Latch Hook						
18 1/2″	36″	1″	7/16″	5/16″	3097T11	3.73
24 1/2″	48″	1″	7/16″	5/16″	3097T21	4.18
(13) Cord with Plastic Hook and Loop End						
30 1/4″	60″	3/4″	—	3/8″	3097T85	3.80
(14) Straps with Zinc-Plated Steel Hooks						
12 1/4″	24″	1″	—	3/4″	3097T41	3.11
18 1/4″	36″	1″	—	3/4″	3097T42	3.76
24 1/4″	48″	1″	—	3/4″	3097T43	4.38
30 1/4″	72″	1″	—	3/4″	3097T44	5.84
(14) Straps with Stainless Steel Hooks						
12 1/4″	24″	1 1/2″	—	3/4″	3097T51	4.87
18 1/4″	36″	1 1/2″	—	3/4″	3097T52	5.36
24 1/4″	48″	1 1/2″	—	3/4″	3097T53	6.02
30 1/4″	72″	1 1/2″	—	3/4″	3097T54	7.60

Harsh-Environment Fluoroelastomer Tie-Down Straps

Fluoroelastomer rubber straps and stainless steel hooks provide superior protection from corrosion with excellent resistance to weather, heat, oil, grease, and fuel. Straps are black.

O'all Lg.	Maximum Stretched Lg.	(A)	Strap Wd.		
14″	19″	7/8″	11/32″	3895T11	$27.67
19″	26″	7/8″	11/32″	3895T12	31.70

Warning! ***Never exceed work load limits. Never use for lifting applications.***

Weather-Resistant EPDM Rubber Tie-Down Straps

Standard Strap

Adjustable Strap with Holes

Adjustable Strap with Slide Fitting

Made of black weather-resistant EPDM rubber, these tie-down straps, which are also called tarp straps, stretch for a secure hold. ***Zinc-plated steel hooks*** offer good corrosion resistance. ***Stainless steel hooks*** offer excellent corrosion resistance. ***Plastic-coated steel hooks*** are nonmarring to protect surfaces.

Standard Straps

Also Available: Standard straps without hooks. Please ask for 3891T888 and specify length: 10″, 15″, 21″, 31″, or 41″.

O'all Lg.	Maximum Stretched Lg.	(A)	Strap Wd.	Zinc-Plated Steel Hooks	Each	Stainless Steel Hooks	Each
6″	9″	9/16″	3/4″	3891T12	$0.90	—	—
10″	15″	15/16″	5/8″	3891T13	1.03	—	—
14″	22″	1″	3/4″	3891T14	1.21	3891T22	$2.79
19″	31″	1″	3/4″	3891T15	1.44	3891T23	3.12
25″	40″	1″	3/4″	3891T18	1.50	3891T24	3.53
28″	42″	1″	3/4″	3891T16	1.76	—	—
35″	58″	1″	3/4″	3891T19	1.97	3891T26	3.83
45″	70″	7/8″	3/4″	3891T21	3.07	3891T27	4.73

Extra Hooks—Have a 7/8″ opening (A).

Zinc-Plated Steel Hooks (10/Pkg.)	3891T51	Pkg.	$3.83
Stainless Steel Hooks (10/Pkg.)	3891T52	Pkg.	$16.67

Adjustable Straps

O'all Lg.	Maximum Stretched Lg.	(A)	Strap Wd.	Zinc-Plated Steel Hooks	Each	Plastic-Coated Steel Hooks	Each
With Holes							
24″	54″	1″	3/4″	3891T1	$3.09	—	—
34″	79″	1″	3/4″	3891T2	3.46	—	—
With Slide Fitting							
41″	61″	13/16″	9/16″	—	—	3891T3	$3.67

Assortments

10-Pc. Assortments—Include four each of 14″ long and two each of 19″, 25″, and 35″ long standard straps.

Straps with Zinc-Plated Steel Hooks	3891T42	Pkg.	$21.17
Straps with Stainless Steel Hooks	3891T43	Pkg.	$37.83

60-Pc. Assortment—Includes ten each of 6″, 14″, 19″, 24″, 28″, and 35″ long standard straps.

Straps with Zinc-Plated Steel Hooks	3891T41	Pkg.	$80.50

Fabric-Covered Elastic Tie-Down Cords and Straps

You may know these as Bungee cords and shock cords—they have a woven fabric cover that protects the inner elastic cord from abrasion. Cover is polypropylene unless otherwise stated.

Heavy duty cords provide better abrasion resistance and longer life. ***UV-resistant cords*** are ideal for outdoor use. ***Corrosion-resistant cords*** have a nylon cover and stand up to chlorine and salt water.

Plastic-coated steel and ***plastic hooks*** are nonmarring to protect surfaces. ***Zinc-plated steel hooks*** offer good corrosion resistance. ***Stainless steel hooks*** provide excellent corrosion resistance. ***Aluminum carabiner hooks*** are spring loaded, so they snap closed for a more secure hold than open hooks.

O'all Lg.	Maximum Stretched Lg.	(A)	Cord Dia.	Color	Pkg. Qty.		Pkg.
(1) Cords with Plastic-Coated Steel Hooks							
8″	14″	3/4″	3/16″	Multi	10	8835T87	$9.42
8″	14″	3/4″	1/4″	Multi	10	8835T93	10.70
8″	14″	3/4″	13/32″	Multi	5	8835T108	9.90
12″	21″	3/4″	3/16″	Multi	10	8835T88	10.18
12″	21″	3/4″	1/4″	Multi	5	8835T94	5.88
12″	21″	3/4″	13/32″	Multi	5	8835T21	10.02
16″	28″	3/4″	1/4″	Multi	5	8835T95	6.42
16″	28″	3/4″	13/32″	Multi	5	8835T81	8.24
18″	32″	3/4″	3/16″	Multi	10	8835T89	11.24
18″	32″	3/4″	1/4″	Multi	5	8835T96	6.70
18″	32″	3/4″	13/32″	Multi	5	8835T22	10.58
24″	43″	3/4″	3/16″	Multi	10	8835T91	12.58
24″	43″	3/4″	1/4″	Multi	5	8835T97	7.36
24″	43″	3/4″	13/32″	Multi	5	8835T24	11.10
28″	50″	3/4″	1/4″	Multi	5	8835T98	7.90
28″	50″	3/4″	13/32″	Multi	5	8835T26	11.38
32″	57″	3/4″	1/4″	Multi	5	8835T101	8.42
32″	57″	3/4″	13/32″	Multi	5	8835T27	12.06
36″	64″	3/4″	1/4″	Multi	5	8835T102	8.82
36″	64″	3/4″	13/32″	Multi	5	8835T28	12.58
40″	72″	3/4″	1/4″	Multi	5	8835T103	9.38
40″	72″	3/4″	13/32″	Multi	5	8835T29	13.10
48″	86″	3/4″	1/4″	Multi	5	8835T104	10.30
48″	86″	3/4″	13/32″	Multi	5	8835T82	14.46
56″	100″	3/4″	1/4″	Multi	5	8835T105	13.75
56″	100″	3/4″	13/32″	Multi	1	8835T83	3.59
64″	115″	3/4″	1/4″	Multi	1	8835T106	3.20
64″	115″	3/4″	13/32″	Multi	1	8835T84	4.19
72″	129″	3/4″	13/32″	Multi	1	8835T85	4.33
(1) Heavy Duty Cords with Zinc-Plated Steel Hooks							Each
18″	27″	13/16″	3/8″	Black	—	8687T61	$2.53
24″	36″	13/16″	3/8″	Black	—	8687T62	2.69
32″	48″	13/16″	3/8″	Black	—	8687T63	3.01
48″	72″	13/16″	3/8″	Black	—	8687T65	3.56
(1) UV-Resistant Cords with Zinc-Plated Steel Hooks							
12″	18″	7/8″	3/8″	Black	—	8835T61	2.71
16″	24″	7/8″	3/8″	Black	—	8835T31	3.11

O'all Lg.	Maximum Stretched Lg.	(A)	Cord Dia./ Strap Wd.	Color		Each
(1) UV-Resistant Cords with Zinc-Plated Steel Hooks (Cont.)						
18″	27″	7/8″	3/8″	Black	8835T62	$3.24
24″	36″	7/8″	3/8″	Black	8835T32	3.63
28″	42″	7/8″	3/8″	Black	8835T63	3.89
32″	48″	7/8″	3/8″	Black	8835T33	4.13
36″	54″	7/8″	3/8″	Black	8835T64	4.42
48″	72″	7/8″	3/8″	Black	8835T35	5.18
56″	84″	7/8″	3/8″	Black	8835T36	5.71
72″	108″	7/8″	3/8″	Black	8835T38	6.75
(1) Corrosion-Resistant Cords with Stainless Steel Hooks						
12″	18″	7/8″	13/32″	Wht/Blk	8835T11	4.71
16″	24″	7/8″	13/32″	Wht/Blk	8835T12	4.91
18″	27″	7/8″	13/32″	Wht/Blk	8835T13	5.13
24″	36″	7/8″	13/32″	Wht/Blk	8835T14	5.43
36″	54″	7/8″	13/32″	Wht/Blk	8835T17	6.02
48″	72″	7/8″	13/32″	Wht/Blk	8835T19	6.69
72″	108″	7/8″	13/32″	Wht/Blk	8835T46	7.96
(2) Cords with Plastic-Coated Steel Large-Opening Hooks						
18″	27″	1 1/8″	11/32″	Teal	8687T51	2.03
24″	36″	1 1/8″	11/32″	Red	8687T52	2.37
32″	48″	1 1/8″	11/32″	Green	8687T53	2.60
40″	60″	1 1/8″	11/32″	Blue	8687T54	2.86
48″	72″	1 1/8″	11/32″	Purple	8687T55	3.14
(3) Heavy Duty Cords with Aluminum Carabiner Hooks						
24″	36″	3/4″	11/32″	Red	8687T71	7.02
36″	48″	3/4″	11/32″	Green	8687T72	7.30
48″	72″	3/4″	11/32″	Purple	8687T73	7.58
(4) Adjustable Cords with Plastic Hooks						
6″-20″	30″	1″	3/8″	Multi	88595T33	2.23
6″-30″	45″	1″	3/8″	Multi	88595T34	2.79
6″-40″	60″	1″	3/8″	Multi	88595T35	2.86
(5) Adjustable Heavy Duty Cords with Plastic-Coated Steel Hooks						
16″-24″	36″	1″	11/32″	Green	4018T1	2.80
22″-32″	48″	1″	11/32″	Orange	4018T3	2.93
28″-48″	72″	1″	11/32″	Yellow	4018T4	3.20
(6) Adjustable Straps with Plastic-Coated Steel Hooks						
10″-54″	81″	13/16″	3/4″	Wht/Grn	8687T74	3.22

Warning! ***Never use for lifting applications.***

Elastic Cord and Strap

Make your own elastic tie downs by combining this cord and strap with the fittings on this page.

Latex Rubber Cord and Strap with Cover

Also known as Bungee cord, this stretches up to 1.5 times its length. All have a woven polypropylene cover, unless otherwise stated.

UV-resistant cord and ***strap*** are ideal for outdoor use.

Abrasion-resistant cord has a durable nylon cover that stands up to chlorine and salt water.

To Order: Please specify length and color where necessary; continuous lengths greater than the longest length listed are also available.

General Purpose Cord

UV-Resistant Strap

Dia./Wd.	Available Lengths, ft.	Available Colors		Per Ft.
General Purpose Cord				
3/32″	50, 100, 200, 500	Blk, Blu, Grn, Red, Yel	8858T81	$0.08
1/8″	50, 100, 200, 500	Blk, Blu, Grn, Red, Yel	8858T82	.11
3/16″	50, 100, 200, 500	Blk, Blu, Grn, Red, Yel	8858T21	.20
1/4″	50, 100, 200, 500	Multi	8858T5	.25
5/16″	25, 50, 100, 200, 300	Multi	8858T2	.35
3/8″	25, 50, 100, 200, 300	Multi	8858T3	.45
1/2″	10, 25, 50, 100, 200, 300	Multi	8858T6	.71
5/8″	2, 5, 10, 25, 50, 100	Multi	8858T71	3.19
3/4″	2, 5, 10, 25, 50, 100	Multi	8858T73	4.00
UV-Resistant Cord				
3/32″	50, 100, 200, 500	White/Blue	8858T83	.12
1/8″	50, 100, 200, 500	White/Blue	8858T84	.16
3/16″	50, 100, 200, 500	White/Blue	8858T85	.25
1/4″	25, 50, 100, 200, 500	White/Blue	8858T12	.36
5/16″	25, 50, 100, 200, 500	White/Blue	8858T13	.46
3/8″	25, 50, 100, 200, 300	White/Blue	8858T14	.62

Dia./Wd.	Available Lengths, ft.	Available Colors		Per Ft.
UV-Resistant Cord (Cont.)				
1/2″	10, 25, 50, 100, 200, 300	White/Blue	8858T15	$1.09
5/8″	2, 5, 10, 25, 50, 100	White/Blue	8858T72	3.61
3/4″	2, 5, 10, 25, 50, 100	White/Blue	8858T74	4.49
UV-Resistant Strap				
5/8″	10, 25, 50, 100, 200, 500	Blk, Yel	8850T11	.81
Abrasion-Resistant Cord				
3/32″	50, 100, 200, 500	White/Black	8866T31	.15
1/8″	50, 100, 200, 500	White/Black	8866T32	.20
3/16″	50, 100, 200, 500	White/Black	8866T14	.32
1/4″	25, 50, 100, 200, 500	White/Black	8866T15	.39
5/16″	25, 50, 100, 200, 500	White/Black	8866T16	.54
3/8″	10, 25, 50, 100, 200, 300	White/Black	8866T17	.72
1/2″	10, 25, 50, 100, 200, 300	White/Black	8866T18	1.16
5/8″	2, 5, 10, 25, 50, 100	White/Black	8866T19	3.74
3/4″	2, 5, 10, 25, 50, 100	White/Black	8866T21	5.80

Weather-Resistant EPDM Rubber Cord and Strap

EPDM stretches up to three times its length.

To Order: Please specify length; continuous lengths greater than the longest length listed are also available.

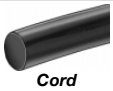
Cord

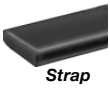
Strap

Dia./Wd.	Available Lengths, ft.	Color		Per Ft.
Cord				
5/16″	25, 50, 100	Black	3937T32	$0.50
7/16″	25, 50, 100, 200	Black	3937T31	.60
Strap				
1/2″	25, 50, 100, 200	Black	3937T43	.50
3/4″	25, 50, 100	Black	3937T44	.71

Chemical-Resistant Polyurethane Cord

This premium cord is nonmarring, plus it stands up to oils, ozone, and salt water. It stretches up to two times its length.

To Order: Please specify length and color; continuous lengths greater than the longest length listed are also available.

Dia.	Available Lengths, ft.	Available Colors		Per Ft.
7/32″	10, 25, 50	Blk, Blu, Red, Yel	3961T4	$0.66
1/4″	10, 25, 50	Blk, Blu, Red, Yel	3961T2	.74
5/16″	5, 10, 25, 50	Blk, Blu, Red, Yel	3961T3	1.09
3/8″	5, 10, 25, 50	Blk, Blu, Red, Yel	3961T1	1.51

Hooks for Elastic Cord and Strap

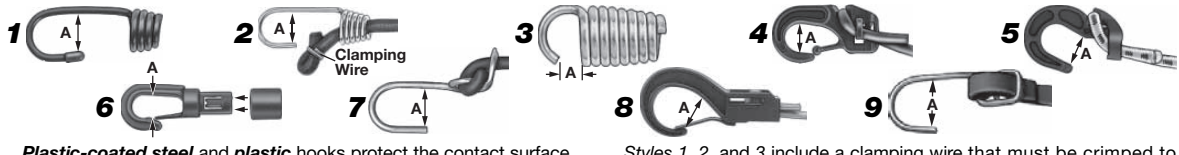

Plastic-coated steel and ***plastic*** hooks protect the contact surface. Color is black.

Stainless steel hooks have excellent corrosion resistance.

Styles 1, 2, and *3* include a clamping wire that must be crimped to the end of the cord to retain the hook.

Style 6 include a collar that grips the cord when pushed into place.

	For Dia./Wd.	(A)	Pkg. Qty.		Pkg.
Plastic-Coated Steel—*For Cord*					
1	3/16″	3/4″	10	3862T51	$4.23
1	1/4″	3/4″	10	3862T52	4.37
1	5/16″	3/4″	10	3862T53	4.57
1	3/8″	3/4″	10	3862T54	6.51
1	1/2″	7/8″	10	3862T55	6.97
Zinc-Plated Steel—*For Cord*					
2	3/16″	9/16″	10	3862T61	5.78
2	1/4″	11/16″	10	3862T62	7.19
2	5/16″	3/4″	10	3862T63	8.91
2	3/8″	7/8″	10	3862T64	9.69
2	1/2″	7/8″	5	3862T21	5.80
Stainless Steel—*For Cord*					
2	3/16″	9/16″	10	3862T81	17.65
2	1/4″	11/16″	10	3862T82	20.54
2	5/16″	3/4″	10	3862T83	21.11
2	3/8″	7/8″	10	3862T84	23.85
2	1/2″	7/8″	10	3862T85	24.83

	For Dia./Wd.	(A)	Pkg. Qty.		Pkg.
Heavy Duty Zinc-Plated Steel—*For Cord*					
3	3/16″, 1/4″	1/4″	10	3862T45	$9.41
3	5/16″, 3/8″	3/8″	10	3862T47	13.09
3	7/16″, 1/2″	3/8″	10	3862T48	16.18
Adjustable Plastic—*For Cord*					
4	1/8″, 3/16″, 1/4″	3/4″	10	3961T15	7.57
5	5/16″, 3/8″	7/8″	10	3862T2	8.04
Plastic—*For Cord*					
6	7/32″, 1/4″	3/8″	6	3961T6	5.06
6	5/16″	7/16″	6	3961T7	7.72
Galvanized Steel—*For Cord*					
7	5/16″	15/16″	25	3937T12	9.12
7	7/16″	15/16″	25	3937T22	9.12
Plastic—*For Strap*					
8	5/8″	1 1/4″	10	3862T86	7.00
Galvanized Steel—*For Strap*					
9	1/2″, 3/4″	1″	25	3937T52	14.02

Ball Fittings and Locks for Elastic Cord

Position fittings and locks anywhere along your cord. All are black plastic.

Ball fittings include a clamping wire that must be crimped onto the cord ends to hold fitting in place.

Wheel locks have a slide-release serrated wheel that grips the cord as it is pulled through the lock.

Ball and ***barrel locks*** are spring loaded for quick adjustment.

For Dia.		Pkg. Qty.		Pkg.
1/8″	Ball Fittings	10	3862T26	$3.80
1/8″	Wheel Locks	25	3734T4	10.03
3/16″	Wheel Locks	25	3734T2	10.52
3/16″	Ball Locks	25	3734T1	4.90
3/16″	Barrel Locks	25	3734T3	7.03
1/4″	Ball Fittings	10	3862T27	4.20
1/4″	Barrel Locks	25	3734T5	7.10

Ball Fitting

Wheel Lock

Ball Lock

Barrel Lock

Warning! **Never use for lifting applications.**

Cinching Straps

With Ratchet-Tight Buckle and Hook

Flip-Tight Buckle

Quick-Tight Buckle

Also known as lashing straps, these load-rated cinching straps have one loose end and one end permanently attached to the buckle. Buckles are zinc-plated steel, unless noted.

Straps with Hook— A hook on the loose end quickly releases from the buckle.

Ratchet-tight buckles let you apply maximum tension on the strap, but take longer to tighten.

Flip-tight buckles, also called over-center buckles, tighten faster than ratchet-tight by flipping and locking the buckle into position.

Quick-tight buckles, also called cam buckles, tighten the fastest. Press down on the spring-loaded cam, pull the webbing, then release the cam to hold.

Straps come in your choice of webbing material: ultra-abrasion-resistant gray nylon or low-stretch brown polyester (unless noted). **To Order:** Please specify material and length: 3, 4, 6, 8, 10, 12, 16, or 20 ft.

Web. Wd.	Work Load Limit, lbs.	STRAPS 3-ft. Length	Each	Extra Length Per Ft.	STRAPS WITH HOOK 3-ft. Length	Each	Extra Length Per Ft.
Ratchet-Tight Buckle							
1″	333	8842T17 ●	$14.50	$0.53	8842T19 ♦	$18.70	$0.52
2″	1,666	8842T18	24.95	.88	8842T26	28.70	.88
Flip-Tight Buckle							
1″	333	8842T29	13.15	.53	8842T37	14.96	.53
2″	500	8842T85 ♥	15.25	.88	8842T94 ♥	18.18	.88
Quick-Tight Buckle							
1″	333	8842T47	9.60	.53	8842T49	11.40	.53
2″	1,000	8842T48	12.95	.88	8842T56	15.62	.88

● Work Load Limit is 833 lbs. ♦ Nylon webbing is black; polyester webbing is white. ♥ Buckle is steel with a black-oxide finish.

Hook and Loop Cinching Straps

The hook and loop closure provides a quick way to secure your bundle. Use straps again and again without any loss in gripping strength. Straps have a nickel-plated steel ring unless otherwise stated.

Choose-a-color nylon straps come in black, blue, green, orange, red, and yellow. Ring is plastic. **To Order:** Please specify strap color.

Elastic black nylon straps stretch to hold items tightly. Ring is plastic.

Super-grip black nylon straps have high-strength hook and loop. ***Weather-resistant black polyester*** straps resist water and UV light; they meet ASTM D6193 and MIL-F-21840.

Straps

O'all Lg.	Pkg. Qty.	5/8″ Wide	Pkg.	1″ Wide	Pkg.	2″ Wide	Pkg.
Choose-a-Color Nylon							
12″	5	3955T331	$6.04	3955T347	$6.59	3955T364	$9.35
18″	5	3955T334	6.37	3955T351	7.85	3955T367	11.76
24″	5	3955T337	7.09	3955T354	9.41	3955T371	13.25
36″	5	3955T341	8.21	3955T357	11.91	3955T374	16.26
48″	5	3955T344	9.64	3955T361	14.03	3955T377	18.78
Elastic Black Nylon							
12″	1	3029T132	1.85	3029T148	2.20	3029T165	3.44
18″	1	3029T135	2.33	3029T152	2.35	3029T168	4.62
24″	1	3029T138	2.82	3029T155	2.91	3029T172	5.78
36″	1	3029T142	3.90	3029T158	5.00	3029T175	8.30
48″	1	3029T145	4.98	3029T162	6.44	3029T178	10.80
Extra-Long Black Nylon							
120″	1	———	——	3955T93	3.31	3955T95	5.20
240″	1	———	——	3955T94	5.29	3955T96	8.86
Super-Grip Black Nylon							
12″	1	———	——	3955T71	3.18	3955T76	5.63
18″	1	———	——	3955T72	5.23	3955T77	8.90
24″	1	———	——	3955T73	5.39	3955T78	9.39
36″	1	———	——	3955T74	6.39	3955T79	11.63
48″	1	———	——	3955T75	7.41	3955T81	15.25
Weather-Resistant Black Polyester							
12″	5	3955T61	8.13	3955T66	9.81	3955T83	12.90
18″	5	3955T62	9.57	3955T67	11.89	3955T84	15.14
24″	5	3955T63	10.91	3955T68	14.00	3955T85	18.74
36″	5	3955T64	12.87	3955T69	18.25	3955T86	26.23
48″	5	3955T65	16.45	3955T82	22.44	3955T87	32.89

Cut-to-Length Straps

Cinching strap is a 1″ Wd.×15 ft. Lg. piece of black hook and loop and includes 10 no-sew black plastic cinching rings.

Cinching Strap	8846T62	Each	$18.09
Extra Cinching Rings (10/Pkg.)	8846T53	Pkg.	$2.00

Light Duty Cinching Straps

Feed-Through Buckle

Squeeze-Release Buckle

Quick-Tight Buckle

Spring-Loaded Clamp Buckle

Hinged Buckle

Secure your rolls and bundles—just pull the webbing through the buckle to the desired tension.

Plastic Buckles— Have good wear resistance.

Steel Buckles— Are nickel plated. They have serrated edges that hold the webbing after tightening and a finishing tip on the loose end.

Feed-through buckles secure the strap with an adjustable center bar.

Squeeze-release buckles can be opened with one hand.

Quick-tight buckles are also called cam buckles; lift the cam, pull the webbing, then press down the cam to hold.

Spring-loaded clamp buckles release when you press on the clamp.

Hinged buckles hold tight under tension and release when lifted.

To Order: Please specify length: 2, 3, 4, 6, 8, or 12 ft. Please also specify color where necessary.

Buckle Style	Webbing Wd.	2-ft. Length	Each	Extra Length Per Ft.
Plastic Buckle				
Lightweight Polypropylene Webbing—Color is black or yellow.				
Feed-Through	1″	29695T105	$2.87	$0.27
Squeeze-Release	3/4″	29695T29	3.72	.25
Squeeze-Release	1″	29695T39	4.04	.27
Squeeze-Release	2″	29695T53	6.04	.38
Quick-Tight	3/4″	29695T57	2.60	.25
Quick-Tight	1″	29695T59	3.33	.27
Quick-Tight	2″	29695T63	5.21	.38
Shock-Absorbing Nylon Webbing—Color is black or yellow.				
Feed-Through	1″	29695T69	3.88	.27
Squeeze-Release	3/4″	29695T392	4.34	.25
Squeeze-Release	1″	29695T393	4.32	.27
Squeeze-Release	1 1/2″	29695T394	6.17	.34
Quick-Tight	3/4″	29695T291	4.62	.25
Quick-Tight	1″	29695T292	4.45	.27
Shock-Absorbing Nylon Webbing—Color is black.				
Squeeze-Release	2″	29695T96	8.91	.38
Quick-Tight	2″	29695T391	8.91	.38
Steel Buckle				
Cotton Webbing—Color is olive.				
Feed-Through	3/4″	3706T111	3.70	.47
Feed-Through	1″	3706T131	5.76	.56
Extra-Strength Cotton Webbing—Color is tan.				
Spring-Loaded Clamp	1″	3705T161	6.30	1.07
Hinged	1 1/2″	3705T141	8.99	1.24
Hinged	2″	3705T99	11.83	1.64
Lightweight Polypropylene Webbing—Color is black.				
Spring-Loaded Clamp	1″	8854T739	6.09	.52
Hinged	1 1/2″	8854T121	6.97	.53
Hinged	2″	8854T759	8.38	.61

Elastic Cinching Cords

Cord with Ball Fitting

Adjustable Cord with Locking Fitting

Get the stretch of elastic combined with the ease of a cinching cord. Cords are covered in polypropylene, except 8730T51 is in polyester. Fittings are plastic.

Cords with Ball Fitting— Wrap the loop around your bundle and back over the ball to secure; the cord with the *locking ball fitting* also allows you to adjust the cord length.

Adjustable Cords with Locking Fitting— Pull the cord through the fitting to the proper tension and lock it in place.

O'all Lg.	Max. Stretched Lg.	Cord Dia.	Pkg. Qty.		Pkg.
Cords with Ball Fitting					
8″	12″	3/16″	25	8730T42	$11.47
12″	18″	3/16″	10	8730T43	5.79
Adjustable Cord with Locking Ball Fitting					
12″	18″	5/32″	8	8730T44	5.37
Adjustable Cords with Locking Fitting					
24″	36″	5/16″	1	8730T41	2.10
40″	60″	5/16″	1	8730T51	2.79

Warning! Never exceed work load limits. Never use for lifting applications.

Steel Routing Rings

Also known as bridle rings, these have an open design for easy insertion of wire and cable. Made of zinc-plated steel for good corrosion resistance.

Rings with insert have a greater surface area to prevent kinking and damage to materials. Insert is made of polypropylene. Max. temp. is 190° F.

(A) Standard thread rings mount onto beam clamps and threaded rod hangers.

(B) Wood screw thread rings have a sharp cutting point and mount into wood.

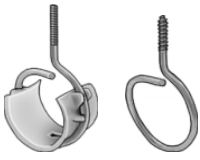

A *With Insert* **B** *Without Insert*

Thread Size	Lg.	Ring ID	Without Insert Pkg. Qty.		Pkg.	With Insert Pkg. Qty.		Pkg.
(A) Standard Thread								
10-24	1″	1″	10	1706T11	$4.46	—	—	—
¼″-20	1″	1½″	10	1706T12	5.55	5	1706T51	$8.41
¼″-20	1″	2″	10	1706T13	5.84	5	1706T52	8.93
¼″-20	1″	4″	10	1706T14	12.58	1	1706T53	4.71
(B) Wood Screw Thread								
3/16″	1″	1″	10	1706T31	4.92	—	—	—
¼″	1″	1½″	10	1706T32	6.19	5	1706T61	8.77
¼″	1″	2″	10	1706T33	7.28	5	1706T62	12.00
¼″	1″	4″	10	1706T34	15.19	—	—	—

Nylon Cable Tie Kits

Kits include a standard twist-to-cut style installation tool and adhesive-backed/screw-mount holders. Color is white. Come in a compartmented plastic box. Maximum temperature is 185° F.

Standard Kit

Lg.	Cable Ties Tensile Strength, lbs.	No. of Pcs.
Standard		
4″	18	100
5⅝″	40	100
8 13/16″	40	100
11″	50	100

Cable Tie Holders Screw Size	No. of Pcs.
#4 (0.11″ Dia.)	100
#6 (0.14″ Dia.)	100
7338K33	$61.55

Deluxe Kit

Lg.	Cable Ties Tensile Strength, lbs.	No. of Pcs.
Standard		
4″	18	100
5⅝″	40	100
11″	50	100
Screw Mount		
5″	40	100
7″	50	100
Releasable		
5″	50	100

Cable Tie Holders Screw Size	No. of Pcs.
#4 (0.11″ Dia.)	100
#6 (0.14″ Dia.)	100
7338K34	$83.41

Cable Tie Holders

Add a cable tie and these holders keep your bundles securely in place. All are made of nylon (unless noted). ***Two-way*** holders allow ties to be inserted from one of two opposite sides. ***Four-way*** holders allow ties to be inserted from any side. ***360° swivel*** holder allows you to route cables in any direction.

(D-M) Screw-mount holders do not include screws. *Style M* holds up to five closely spaced bundles.

(N-Q) Anchor-mount holders require a ¼″ drilled hole (unless noted). *Style N* routes cable above the surface in masonry applications. A ridged shaft provides a secure hold. *Style P* routes cable above the panel. *Style Q* routes cable below the panel.

Max. Tie Wd.	Screw Size	Lg. × Wd.	Mount Ht.	Max. Temp., °F	Pkg. Qty.	White	Pkg.	UV-Resistant Black	Pkg.
Adhesive Backed									
Two Way									
C 0.19″	—	1 1/16″ × 1 1/16″	¼″	185°	50	7566K23♣	$8.87	—	—
Adhesive Backed/Screw Mount									
Two Way									
D 0.30″	#6 (0.14″ Dia.)	1¼″ × 1″	5/16″	185°	50	7566K27	16.51	—	—
Four Way									
E 0.19″	#6 (0.14″ Dia.)	¾″ × ¾″	3/16″	150°	100	7566K25	13.62	7582K11	$14.88
F 0.18″	#8 (0.16″ Dia.)	1⅛″ × 1⅛″	¼″	122°	50	7566K62	11.32	7582K22	9.16
F 0.35″	#10 (0.19″ Dia.)	1½″ × 1½″	5/16″	122°	25	7566K64	8.52	7582K23	10.20
F 0.50″	¼″	2″ × 2″	7/16″	125°	25	7566K47	16.11	7566K71	13.25
360° Swivel									
G 0.14″	#8 (0.16″ Dia.)	1″ × 1″	⅜″	185°	10	7566K52	3.71	7566K53	3.27
Screw Mount									
Two-Way Low Profile									
H 0.19″	#8 (0.16″ Dia.)	¾″ × ½″	⅛″	185°	100	7566K29	19.23	—	—
Two-Way Heavy Duty									
J 0.12″	#4 (0.11″ Dia.)	9/16″ × ⅜″	¼″	185°	100	7566K12	9.94	—	—
J 0.21″	#8 (0.16″ Dia.)	¾″ × 9/16″	5/16″	185°	100	7566K13	10.45	—	—
J 0.30″	¼″	⅞″ × 1 1/16″	⅜″	185°	50	7566K55	7.20	7566K68	6.75
J 0.31″	¼″	1 1/16″ × ⅝″	7/16″	221°	100	—	—	7585K11	15.43
K 0.50″	#8 (0.16″ Dia.)	1 11/16″ × ¾″	⅝″	185°	10	—	—	7582K81	14.11
K 0.50″	#10 (0.19″ Dia.)	1 11/16″ × ¾″	⅝″	185°	10	—	—	7582K82	14.11
K 0.50″	¼″	1 11/16″ × ¾″	⅝″	185°	10	—	—	7582K83	14.11
Four Way									
F 0.14″	#4 (0.11″ Dia.)	¾″ × ¾″	⅛″	185°	100	7566K24	13.46	7582K61	3.35
F 0.18″	#8 (0.16″ Dia.)	1⅛″ × 1⅛″	3/16″	185°	50	7566K41	10.12	7582K62	3.29
F 0.35″	#8 (0.16″ Dia.)	1½″ × 1½″	¼″	185°	25	7566K43	7.77	7582K63	4.35
Four-Way Compact									
L 0.18″	#8 (0.16″ Dia.)	13/16″ × 7/16″	3/16″	185°	100	7566K28	12.46	7582K64	4.66
L 0.18″	#10 (0.19″ Dia.)	13/16″ × 7/16″	3/16″	185°	100	7566K35	12.46	7582K65	4.66
Multi-Bundle									
M 0.30″	#6 (0.14″ Dia.)	8⅛″ × ⅝″	3/16″	185°	1	7566K46	5.86	—	—
Anchor Mount									
Two-Way Masonry									
N 0.18″	—	1 3/16″ × ⅜″	¼″	185°	10	—	—	7566K33▲	7.88
Two-Way Top Feed-Through									
P 0.18″	—	⅝″ × 7/16″	3/16″	185°	50	7566K31	11.20	7582K71	2.65
Two-Way Bottom Feed-Through									
Q 0.19″	—	7/16″ × 7/16″	1/16″	185°	50	7566K32	8.24	7566K36	7.26

♣ Made of Noryl plastic. ▲ Requires a 3/16″ drilled hole.

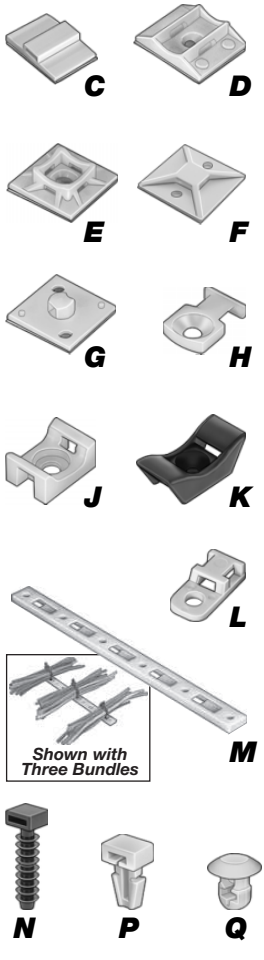

Stainless Steel Cable Tie Holders

Type 304 stainless steel construction provides excellent corrosion resistance. Ties can be inserted from one of two opposite sides. Screws are not included.

Max. Tie Wd.	Screw Size	Lg. × Wd.	Mount Ht.		
R 0.31″	#8 (0.16″ Dia.)	15/16″ × 7/16″	3/16″	5253T62	$2.01
R 0.31″	#10 (0.19″ Dia.)	15/16″ × 7/16″	3/16″	5253T63	2.01
R 0.31″	¼″	15/16″ × 7/16″	3/16″	5253T64	2.01
S 0.31″	#8 (0.16″ Dia.)	¾″ × ¾″	5/16″	5253T65	3.57

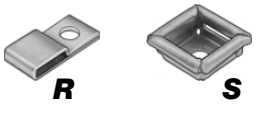

Cable Ties

All ties are made of nylon. Temperature range is –40° to +185° F.

Ties

A

B

C

D

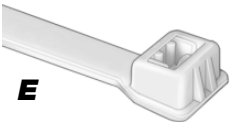

E

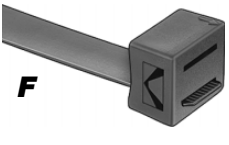

F

(A) Standard ties have the most common cable tie design. Also known as zip ties. 7130K45, *K46, K16, K56,* and *K81* are UL listed.

(B) Smooth-body ties provide quiet adjustment. A stainless steel lock in the low-profile head holds the tie securely. The end of the tie is turned up and has a textured surface for quicker and easier tensioning. UL listed.

(C) Double-lock ties have teeth on both sides of the body for a secure hold. UL recognized.

(D) Tight-grip ties are very flexible and conform to the shape of the bundle. This keeps them from moving along the length of the bundle. A tapered tip makes threading easy.

(E&F) High tensile strength and ***extra-high tensile strength*** ties have the highest strength for the most demanding applications.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Meet MIL Spec.	Pkg. Qty.	White Per Pkg. 1-9	White Per Pkg. 10-Up	UV-Resistant Black Per Pkg. 1-9	UV-Resistant Black Per Pkg. 10-Up
(A) Standard									
4″	7/8″	18	0.10″	MS3367-4	100	7130K12	$2.23	$1.84	7130K52 $2.39 $1.95
5 1/2″	1″	50	0.19″	—	100	7130K47	5.37	4.59	7130K48 5.80 4.96
5 3/4″	1 3/8″	40	0.14″	MS3367-5	100	7130K13	4.23	3.46	7130K53 4.70 3.85
6″	1 1/2″	18	0.10″	MS3367-4	100	7130K41	4.01	3.28	7130K42 4.35 3.56
7 1/2″	1 7/8″	50	0.18″	MS3367-1	100	7130K19	3.71	3.08	7130K59 4.04 3.36
8″	2 1/8″	18	0.10″	MS3367-4	100	7130K31	4.81	3.95	7130K32 5.51 4.52
8″	2 3/8″	40	0.14″	—	100	7130K14	5.35	4.39	7130K54 5.98 4.89
8 1/2″	2″	120	0.30″	—	50	7130K43	7.16	6.27	7130K44 8.30 7.23
11″	3″	50	0.19″	MS3367-7	100	7130K15	6.87	5.72	7130K55 7.46 6.21
12″	3 3/8″	120	0.30″	—	50	7130K45	8.05	6.79	7130K46 9.45 8.21
14 1/2″	4 1/8″	50	0.19″	MS3367-2	50	7130K16	4.52	3.76	7130K56 5.71 4.65
15″	4″	120	0.30″	MS3367-3	50	7130K172	9.99	8.64	7130K572 11.18 9.46
17″	4 3/4″	50	0.19″	—	50	7130K21	5.85	5.06	7130K61 6.92 5.99
18″	5″	120	0.30″	—	50	7130K49	12.08	10.47	7130K51 13.15 11.40
18″	5″	175	0.35″	—	10	80005K44	3.21	2.69	80005K54 3.91 3.28
21″	5 7/8″	175	0.35″	—	10	80005K45	7.72	6.52	80005K55 4.42 3.74
21 1/2″	6″	120	0.31″	—	10	7130K33	6.66	5.70	7130K68 7.26 6.15
24″	7″	120	0.30″	—	25	7130K912	7.15	6.20	7130K922 9.00 7.80
24″	7″	175	0.35″	MS3367-10	10	80005K46	5.37	4.53	80005K56 6.21 5.21
28″	8″	120	0.30″	MS3367-6	10	7130K932	3.20	2.81	7130K942 3.89 3.36
30″	9″	175	0.35″	MS3367-11	25	80005K27	15.14	12.72	80005K28 17.70 14.88
36″	11″	175	0.34″	MS3367-11, 12, 13	25	7130K22	10.23	8.57	7130K62 11.20 9.39
41″	12″	175	0.35″	—	10	7130K242	6.52	5.74	7130K642 8.00 6.90
45 1/2″	14″	175	0.36″	—	10	7130K34	14.46	11.47	7130K66 15.88 12.59
48″	15″	175	0.35″	—	10	7130K252	5.92	5.31	7130K652 8.25 7.14
60″	20″	175	0.35″	—	5	7130K81	9.81	8.23	— — —
(B) Smooth Body									
3 5/8″	5/8″	18	0.09″	MS3367-4	100	6614K11	5.63	4.80	6614K51 12.09 10.57
5 1/2″	1 1/8″	30	0.14″	MS3367-5	50	6614K22	7.52	6.34	6614K62 8.37 7.01
7 5/16″	1 3/4″	50	0.19″	MS3367-1	50	6614K13	8.98	7.45	6614K53 9.52 7.98
8 3/16″	2″	30	0.14″	—	50	6614K24	8.31	6.88	6614K64 10.29 8.63
11 9/16″	3″	50	0.19″	MS3367-7	50	6614K15	15.30	13.39	6614K55 17.66 15.46
13 3/8″	3 1/2″	120	0.27″	MS3367-3	10	6614K16	6.73	5.92	6614K56 7.72 6.80
14 3/16″	4″	50	0.19″	MS3367-2	50	6614K17	16.39	14.45	6614K57 18.48 16.28
30″	9″	120	0.27″	MS3367-6	10	6614K18	14.04	12.36	6614K58 16.91 14.89
(C) Double Lock									
8″	2″	75	0.17″	—	100	80005K11	7.00	5.89	80005K51 7.62 6.40
10 7/8″	3″	75	0.17″	—	100	80005K12	12.38	10.40	80005K52 14.14 11.88
13 15/16″	4″	75	0.17″	—	100	80005K13	13.38	11.24	80005K53 15.12 12.70
(D) Tight Grip									
4 3/16″	1″	18	0.12″	—	50	7345K21	10.38	9.03	7345K22 12.10 10.68
6 3/16″	1 1/2″	40	0.17″	—	50	7345K23	12.02	10.44	7345K24 13.12 11.58
8 5/16″	2″	50	0.23″	—	50	7345K25	15.18	13.20	7345K26 14.41 12.71
10 3/8″	2 9/16″	70	0.23″	—	25	7345K27	13.16	11.61	7345K28 14.65 12.93
12 3/8″	3 3/16″	70	0.23″	—	25	7345K29	13.76	12.14	7345K31 14.74 13.01
15 5/16″	4 1/8″	120	0.33″	—	5	7345K32	4.72	4.17	7345K33 5.13 4.53
18 9/16″	5 3/16″	175	0.38″	—	5	7345K34	5.98	5.28	7345K35 6.86 6.05
(E) High Tensile Strength									
15″	4″	250	0.50″	—	25	69455K21	12.90	10.87	69455K41 13.60 11.39
22″	6″	250	0.50″	—	10	69455K22	7.86	6.66	69455K42 8.70 7.30
28 3/4″	8″	250	0.50″	—	10	69455K23	10.19	8.54	69455K43 11.17 9.41
(F) Extra-High Tensile Strength									Black
15″	4″	350	0.50″	—	5	—	—	—	7177K44 $5.13 $4.62
33″	9 11/16″	350	0.50″	—	5	—	—	—	7177K45 6.08 5.47
50″	15 1/16″	350	0.50″	—	5	—	—	—	7177K46 8.57 7.71

400-Piece Standard Cable Tie Assortments

Come in a plastic clamshell.

Lg.	Tensile Strength, lbs.	No. of Pcs.
4″	18	200
7 1/2″	50	100
11″	50	100

White	7338K53	Each	$12.32
UV-Resistant Black	7338K36	Each	$12.52

500-Piece Double-Lock Cable Tie Assortments

Come in a plastic canister.

Lg.	Tensile Strength, lbs.	No. of Pcs. White	No. of Pcs. Black
4″	18	200	200
6″	45	100	200
8″	45	200	100

White	80005K1	Each	$19.70
UV-Resistant Black	80005K2	Each	$22.60

Cable Tie Tools

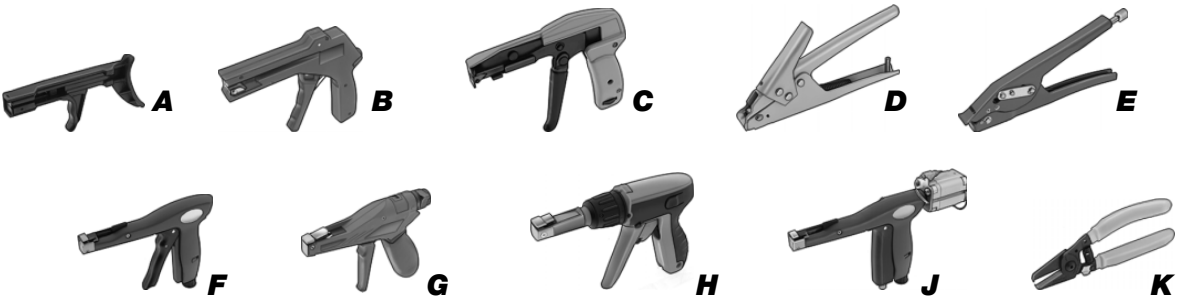

A little help from these tools makes tensioning, cutting, and removing cable ties easier.

Standard Installation Tools— Good for occasional use and small jobs.

(A) Pump the trigger to tension the tie; twist the tool to cut the tie.

(B&C) Pump the trigger to reach desired tension and cut the tie. Tension is adjustable.

(D) Squeeze the handles together to tension the tie; pull the cutting lever to cut the tie.

Deluxe Installation Tools— Designed to be used every day. All have adjustable tension and automatically cut ties.

(E) Squeeze the handles together to reach the selected tension. Tension knob has infinite adjustment.

(F) Pump the trigger one time to reach selected tension; release the trigger and the excess tie is ejected. Tension knob has eight settings.

(G) Has two tension levels with a knob that lets you fine tune the tension at each level. Pump the trigger to reach the selected tension. Low-friction internal parts and padded grips provide less hand fatigue.

(H) The barrel rotates 360° for use in awkward and tight spaces without twisting the tool or your wrist. Pump the trigger to reach the selected tension. Tension knob has eight settings and a push-button lock to prevent an accidental change in the setting. The trigger operates with minimal hand force and has soft molded grips. The trigger span is adjustable to provide a comfortable fit for any size hand. Tools also have an anti-recoil cutting mechanism to reduce shock and vibration.

(J) Air-Powered Installation Tool— Ideal for high-production jobs. Minimal effort is required so you avoid repetitive-motion injuries. Just touch the trigger and the tool does the rest. Has eight tension settings. Operates on 100 psi compressed air and includes a 1/8″ NPT male connector.

(K) Removal Tool— Cut away ties without damaging bundles. Safety guards at the tips protect the bundle. The spring-loaded handles rebound after every cut and have cushion grips and a lock. Overall length is 6½″.

	For Cable Ties					
	Width	Tensile Strength, lbs.	Style	Tool Material		Each
Standard Installation Tools						
A	0.10″ to 0.18″	18 to 50	Twist-to-Cut	Plastic	7139K75	$16.34
A	0.19″ to 0.35″	120 to 150	Twist-to-Cut	ABS	7139K76	40.70
B	0.09″ to 0.19″	6 to 30	Tension-to-Cut	Nylon	5401T11	36.73
C	0.09″ to 0.25″	13 to 30	Tension-to-Cut	Aluminum	5202T11	58.05
D	0.30″ to 0.35″	120 to 175	Pull-to-Cut	Steel	70415K61	65.43
Deluxe Installation Tools						
E	0.01″ to 0.50″	18 to 350	Squeeze-to-Cut	Steel	7371K11	87.62
F	0.10″ to 0.19″	18 to 50	Auto Tension-to-Cut	Aluminum	7368K5	182.41
G	0.09″ to 0.53″	18 to 250	Trigger Tension-to-Cut	Glass-Reinforced Nylon	75785K39	252.95
H	0.01″ to 0.19″	18 to 50	Rotating Barrel Trigger Tension-to-Cut	High-Impact Plastic	5035T83	157.33
H	0.19″ to 0.30″	50 to 120	Rotating Barrel Trigger Tension-to-Cut	High-Impact Plastic	5035T84	287.98
Air-Powered Installation Tools						
J	0.10″ to 0.19″	18 to 50	Auto Tension-to-Cut	Aluminum	7368K6	621.55
Removal Tool						
K	All	18 to 250	Scissor Action	Alloy Steel	7635K12	25.55

Colored Cable Ties

Make identification easy—just look at the color of the tie. All are made of nylon. Temp. range is –40° to +185° F.

(L) Solid Colored Cable Ties— UL recognized and CSA certified. **To Order:** Please specify color: blue, gray, green, orange, purple, red, or yellow; fluorescent blue, fluorescent green, fluorescent orange, fluorescent pink, fluorescent yellow.

(M) Striped Colored Cable Ties— **To Order:** Please specify tie color: orange or green; and stripe color: black, purple, red, white, or yellow.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Meet MIL Spec.★	Pkg. Qty.		Per Pkg. 1-9	Per Pkg. 10-Up
(L) Solid Colored								
4 1/8″	7/8″	18	0.10″	MS3367-4	100	71295K62	$2.16	$1.93
5 13/16″	1 7/16″	40	0.14″	MS3367-5	100	71295K63	3.26	2.90
7½″	1 7/8″	50	0.18″	MS3367-1	100	71295K69	3.32	2.98
8 13/16″	2 3/8″	40	0.14″	MS3367-5	100	71295K64	3.53	3.21
11¼″	3 1/16″	50	0.18″	MS3367-7	100	71295K66	6.68	5.93
14½″	4 1/8″	50	0.18″	MS3367-2	100	71295K67	8.40	7.54
15″	4 1/16″	120	0.30″	MS3367-3	25	71295K78 ♦	6.00	5.33
(M) Striped Colored								
4″	7/8″	18	0.10″	———	50	6632K3	4.99	4.30

★ Fluorescent colors do not meet MIL Spec. ♦ Not available in purple and fluorescent yellow.

400-Piece Solid Colored Assortment— Colors are blue, green, red, and yellow. Comes in a plastic clamshell.

Lg.	Tensile Strength, lbs.	No. of Pcs.
4″	18	50 of each color
7″	50	25 of each color
11″	50	25 of each color

7338K35 ..... **Each** $18.08

50-Piece Striped Colored Assortment— Colors are blue, brown, gray, green, and orange, all with white stripes. Comes in a vinyl pouch.

Lg.	Tensile Strength, lbs.	No. of Pcs.
4″	18	10 of each color

7338K43 ..... **Each** $7.39

400-Piece Assortment

Low-Profile Cable Ties

Reduced head height means these ties will fit into spaces that ties with conventional head designs will not. The head is also flexible for a tight fit around bundles. Ties are made of nylon. Temp. range is –40° to +185° F .

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Pkg. Qty.	White	Per Pkg.	UV-Resistant Black	Per Pkg.
11 1/4″	3 1/16″	50	0.18″	50	7483K34	$4.68	7483K35	$4.78
14 9/16″	4 1/16″	50	0.18″	50	7483K36	5.34	7483K37	5.46
16″	4 1/16″	120	0.30″	25	7483K38	5.11	7483K39	5.22

Flush-Fit Cable Ties

Get the snug, contoured fit around pipe, tube, and other round bundles that ties with conventional heads can't provide. Ties are made of nylon. Temperature range is –40° to +185° F for white ties; –40° to +221° F for high-temperature black ties. UL recognized.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Pkg. Qty.	White	Per Pkg.	High-Temp. Black	Per Pkg.
4″	1/2″	20	0.10″	100	6705K31	$7.12	6705K35	$10.02
8″	1 3/4″	60	0.19″	100	6705K32	9.25	6705K36	28.09

Super-Flex Cable Ties

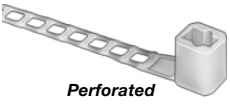

Perforated

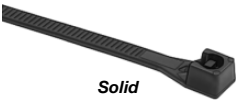

Solid

Being more flexible than most other ties makes these ideal for bundling multiple components and irregular-shaped material. Ties are made of nylon. Temperature range is –40° to +185° F for white ties; –40° to +221° F for high-temperature black ties. UL recognized.

Perforated ties are more economical than solid ties. ***Solid*** ties are stronger than perforated ties and have a double locking head to maintain tension under environmental changes and vibration.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Meet MIL Spec.	Pkg. Qty.	White	Per Pkg. 1-9	Per Pkg. 10-Up	High-Temp. Black	Per Pkg. 1-9	Per Pkg. 10-Up
Perforated											
7″	1 3/4″	40	0.14″	—	100	6788K11	$4.03	$3.56	6788K51	$4.21	$3.72
11″	3″	40	0.14″	—	100	6788K12	5.72	5.05	6788K52	6.29	5.56
Solid											
15″	4″	50	0.20″	MS3367-2	100	6788K42	14.19	12.61	6788K44	15.62	13.88

Multiple-Bundle Cable Ties

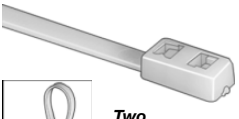

Two Bundle

Three Bundle

Look no further if you want to hold two or three parallel bundles with the same tie—multiple slots in the head let you do just that. Ties are made of nylon. Temperature range is –40° to +185° F. White ties are UL recognized.

Lg.	Max. Dia. Per Bundle	Tensile Strength, lbs.	Wd.	Pkg. Qty.	White	Per Pkg.	UV-Resistant Black	Per Pkg.
Two Bundle								
8 1/4″	3/4″	50	0.19″	50	6705K13	$8.73	—	—
15 1/2″	2″	50	0.19″	50	6705K24	9.73	—	—
Three Bundle								
20″	1 5/8″	125	0.50″	1	—	—	6705K62	$2.96

Conductive Cable Ties

Dissipate static charges and protect your critical bundling applications. Ties are made of nylon and have a surface resistivity of less than 10^8 ohms. Temperature range is –40° to +190° F.

To Order: Please specify color: blue, green, red, or yellow, unless noted.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.		Each
4″	1 1/4″	18	0.10″	7262K41	$1.99
8″	2 1/4″	40	0.14″	7262K42	2.12
11″	3 3/4″	50	0.19″	7262K43	2.33
18″	6″	50	0.19″	7262K44	2.67
36″	14″	50	0.19″	7262K46●	6.67

● Color is pink.

Detectable Cable Ties

Not only are these ties bright blue so they can be easily seen, they contain a special compound designed to be located by metal detectors and X-ray equipment. Ideal for food processing and pharmaceutical applications. Ties are made of nylon and have a smooth body for quiet adjustment. A stainless steel lock in the low-profile head holds the tie securely. Temp. range is –40° to +185° F.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Pkg. Qty.		Per Pkg.
3 5/8″	5/8″	18	0.10″	10	7418K53	$3.12
7 5/16″	1 3/4″	50	0.19″	10	7418K54	3.55
13 3/8″	3 1/2″	120	0.27″	5	7418K55	9.88
14 3/16″	4″	50	0.19″	10	7418K56	6.97

Easy-Removal Cable Ties

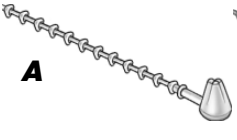

A

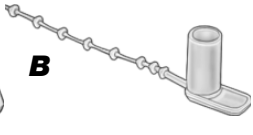

B

Ideal for bundling and tagging applications where a tie is needed, but can also be quickly and easily removed. Ties are beaded and made of nylon. Temperature range is –40° to +185° F. **To Order:** Please specify color: black, blue, orange, red, white, or yellow.

Style A ties are ideal for tagging. They must be cut to be removed. *Style B* ties are great on fire extinguishers for tamper detection. They can be removed by hand.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Bead Dia.	Pkg. Qty.		Per Pkg.
A	5 1/2″	1 3/16″	15	1/16″	500	7189K31	$5.56
B	8 5/8″	2″	8★	1/16″	100	7189K32	5.98

★ Tensile strength for white ties is 18 lbs.

Harsh-Environment Cable Ties

Cable ties in a variety of materials have your harsh-environment applications covered.

High-temperature black nylon ties have added chemical stabilizers that permit continuous use at temperatures from –40° to +221° F. Meet UL 94V2 flammability requirements.

Ultra high-temperature brown PEEK (polyetheretherketone) ties have a temperature range of –76° to +500° F and stand up to most chemicals. Meet UL 94V0 flammability requirements.

Fire-retardant white nylon ties have a temp. range of –40° to +203° F. Meet UL 94V0 flammability requirements.

Chemical-resistant and fire-retardant blue Tefzel ties resist most chemicals, solvents, and strong mineral acids as well as weather and moisture. Temp. range is –65° to +302° F. Meet UL 94V0 flammability requirements.

Low-smoke and flame-retardant maroon Halar ties meet requirements as a wire-positioning device in air handling (plenum) spaces for low-smoke density and flammability. Temperature range is –50° to +302° F. Meet UL 94V0 flammability requirements. UL listed.

Dry-environment black polypropylene ties will not become brittle in dry environments. Also withstand the effects of most acids, alcohols, and salts. Temp. range is +40° to +221° F. Meet UL 94VHB flammability requirements.

Weather-resistant black acetal ties are strong and resist UV, moisture, and most chemicals. Temperature range is –58° to +194° F. Meet UL 94HB flammability requirements.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Pkg. Qty.		Per Pkg.
High-Temperature Black Nylon						
3 13/16″	3/4″	18	0.09″	100	70215K51	$4.08
5 5/8″	1 1/4″	40	0.14″	100	70215K52	6.28
7 1/2″	1 3/4″	50	0.19″	100	70215K53	8.12
8″	2″	120	0.31″	25	70215K56	7.05
11 1/2″	3″	50	0.19″	100	70215K54	12.20
14 1/2″	4″	50	0.19″	100	70215K55	14.43
14 3/4″	4″	120	0.31″	25	70215K57	9.46
28 1/2″	8″	120	0.31″	10	70215K59	10.58
Ultra High-Temperature Brown PEEK						
7 3/8″	1 7/8″	150	0.19″	1	70215K28	3.34
Fire-Retardant White Nylon						
3 13/16″	3/4″	18	0.09″	100	70215K71	5.01
6 13/64″	1 1/4″	40	0.14″	100	70215K72	9.45
7 1/2″	1 3/4″	50	0.19″	100	70215K73	13.06
11 1/2″	3″	50	0.19″	50	70215K74	12.41
Chemical-Resistant and Fire-Retardant Blue Tefzel						
3 13/16″	3/4″	12	0.09″	10	70215K81	4.02
7 1/2″	1 3/4″	35	0.19″	10	70215K92	11.28
Chemical-Resistant and Fire-Retardant Blue Tefzel (Cont.)						
14 1/2″	4″	35	0.19″	10	70215K93	$14.09
14 3/4″	4″	90	0.31″	1	70215K94	3.57
Low-Smoke and Flame Retardant Maroon Halar						
4″	7/8″	18	0.10″	10	70215K32	14.66
7 3/8″	1 7/8″	50	0.19″	1	70215K33	3.47
11 5/8″	3″	50	0.19″	1	70215K34	3.85
Dry-Environment Black Polypropylene						
3 13/16″	3/4″	12	0.09″	100	70215K61	10.41
6 13/64″	1 1/4″	25	0.14″	100	70215K62	6.99
7 1/2″	1 3/4″	35	0.19″	100	70215K63	7.27
8″	2″	90	0.31″	25	70215K64	5.03
11 1/2″	3″	35	0.19″	50	70215K65	9.38
14 1/2″	4″	35	0.19″	50	70215K66	9.89
14 3/4″	4″	90	0.31″	25	70215K67	9.94
28 1/2″	8″	90	0.31″	25	70215K68	13.80
Weather-Resistant Black Acetal						
15″	4″	350	0.50″	5	7177K34	8.37
33″	9 11/16″	350	0.50″	5	7177K35	12.06
50″	15 1/16″	350	0.50″	5	7177K36	14.58

Stainless Steel Harsh-Environment Cable Ties

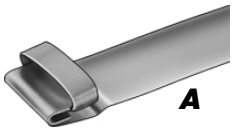

A

B

Black Nylon Coated Shown

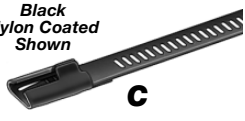

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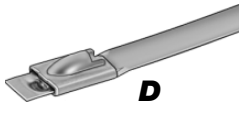

D

The best protection in harsh-environment applications.

(A) Reusable Type 304 stainless steel ties secure bundles by folding the body back at the head. They are wider and longer than other ties to handle large bundles.

(B) Reusable black nylon-coated 200/300 series stainless steel ties secure bundles by folding the body back at the head. They also provide added corrosion resistance and protect the surface of your bundles. Temperature range is –50° to +300° F.

(C) Type 316 stainless steel ties have notches on the body that lock into the head. UL listed and CE approved.

Black nylon-coated ties provide added corrosion resistance and protect the surface of your bundles. Temperature range is –50° to +300° F.

(D) Type 316 stainless steel smooth-body ties provide quiet adjustment. A stainless steel lock in the low-profile head holds the tie securely. CE and Coast Guard approved.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.		Each
(A) Reusable Type 304 Stainless Steel					
10″	2 5/16″	Not Rated	0.75″	1853T61	$0.69
16″	3 5/8″	Not Rated	0.75″	1853T62	.96
28″	8 5/16″	Not Rated	0.75″	1853T63	1.40
45″	12 1/2″	Not Rated	0.75″	1853T64	2.36
78″	23″	Not Rated	0.75″	1853T65	4.24

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Pkg. Qty.		Per Pkg. 1-9	Per Pkg. 10-Up
(B) Reusable Black Nylon-Coated 200/300 Series Stainless Steel							
6″	1 1/2″	75	0.25″	5	69855K71	$9.80	$8.82
6″	1 1/2″	100	0.38″	5	69855K81	10.64	9.58
9″	2 1/2″	75	0.25″	5	69855K72	10.56	9.50
9″	2 1/2″	100	0.38″	5	69855K82	12.72	11.45
12″	3 3/8″	75	0.25″	5	69855K73	11.35	10.22
12″	3 3/8″	100	0.38″	5	69855K83	13.35	12.01
18″	5 3/8″	75	0.25″	5	69855K74	13.53	12.07
18″	5 3/8″	100	0.38″	5	69855K84	14.63	13.16
24″	7 1/4″	75	0.25″	5	69855K75	15.61	14.05
24″	7 1/4″	100	0.38″	5	69855K85	15.19	14.68
30″	9″	100	0.38″	5	69855K86	15.65	15.21
36″	11″	100	0.38″	5	69855K87	17.28	17.06
(C) Type 316 Stainless Steel							
6″	1 1/4″	250	0.27″	5	6898K42	10.27	8.88
6″	1 1/4″	400	0.47″	5	6898K43	10.60	9.17
9″	2 3/16″	250	0.27″	5	6898K44	11.09	9.60
(C) Type 316 Stainless Steel (Cont.)							
9″	2 3/16″	400	0.47″	5	6898K45	$11.67	$10.10
12″	3 3/16″	250	0.27″	5	6898K46	12.00	10.38
12″	3 3/16″	400	0.47″	5	6898K47	13.11	11.35
18″	5″	250	0.27″	5	6898K48	13.67	11.83
18″	5″	400	0.47″	5	6898K49	15.76	15.16
24″	7″	250	0.27″	5	6898K52	15.06	14.04
24″	7″	400	0.47″	1	6898K53	3.87	3.35
(C) Black Nylon-Coated Type 316 Stainless Steel							
6″	1 1/4″	250	0.27″	5	6898K22	13.98	12.10
6″	1 1/4″	400	0.47″	5	6898K23	15.47	13.39
9″	2 3/16″	250	0.27″	5	6898K24	15.80	14.42
9″	2 3/16″	400	0.47″	1	6898K25	3.67	3.18
12″	3 3/16″	250	0.27″	5	6898K26	15.51	14.47
12″	3 3/16″	400	0.47″	1	6898K27	3.87	3.35
18″	5″	250	0.27″	5	6898K28	15.53	15.02
18″	5″	400	0.47″	1	6898K29	4.74	4.10
24″	7″	250	0.27″	5	6898K32	15.50	15.06
24″	7″	400	0.47″	1	6898K33	5.60	4.85
(D) Type 316 Stainless Steel Smooth Body							
7 7/8″	2″	200	0.18″	5	6898K61	8.08	7.00
7 7/8″	2″	300	0.31″	5	6898K68	9.29	8.04
10 3/16″	2 11/16″	200	0.18″	5	6898K62	8.94	7.73
10 3/16″	2 11/16″	300	0.31″	5	6898K69	10.40	8.98
14 3/16″	4″	200	0.18″	5	6898K63	9.82	8.50
14 3/16″	4″	300	0.31″	5	6898K71	11.60	10.04
20 3/8″	6″	200	0.18″	5	6898K64	11.89	10.28
20 3/8″	6″	300	0.31″	5	6898K72	15.00	12.98
26 3/4″	8″	200	0.18″	5	6898K65	14.40	12.46
26 3/4″	8″	300	0.31″	1	6898K73	3.58	3.10
33″	10″	200	0.18″	5	6898K66	15.58	14.98
33″	10″	300	0.31″	1	6898K74	4.16	3.60
42″	12″	200	0.18″	1	6898K67	4.33	3.75
42″	12″	300	0.31″	1	6898K75	5.09	4.41

Installation Tools

		Each
Tensioning Hook for Style B Ties	69855K95	$22.29
Tension/Cutting Tool for Style C Ties	6898K83	716.89
Tension/Cutting Tool for Style D Ties	6898K84	708.72

Reusable Cable Ties

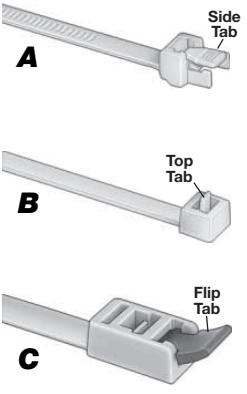

Whether you plan to change the bundle size or just need a temporary hold, these ties have a convenient release tab for easy removal and reuse. All are nylon. Temperature range is –40° to +185° F.

(A) Side tab ties are the easiest to release in most applications. UL recognized.

(B) Top tab ties are generally the most secure. UL recognized, unless noted.

(C) Flip tab tie acts as both the lock and the release. Flip the tab down to adjust and release; flip it up to lock when desired tension is reached. The high-visibility color allows ties to be easily seen.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Pkg. Qty.	White	Per Pkg. 1-9	Per Pkg. 10-Up	UV-Resistant Black	Per Pkg. 1-9	Per Pkg. 10-Up
(A) Side Tab										
5 1/2″	1 1/4″	40	0.21″	50	7134K51	$5.27	$4.61	7134K52	$5.77	$5.05
8″	2″	40	0.21″	50	7134K53	5.78	5.05	7134K54	6.32	5.53
10 1/2″	2 1/2″	40	0.21″	50	7134K45	8.27	7.23	7134K46	9.09	7.95
15 1/4″	4″	250	0.52″	25	7134K32	13.13	11.49	7134K33	14.45	12.64
21 1/2″	6″	250	0.52″	10	7134K93	9.51	8.32	—	—	—
27 3/4″	8″	250	0.52″	5	7134K95	5.47	4.79	—	—	—
(B) Top Tab										
6″	1 1/2″	50	0.19″	100	7134K21	6.34	5.54	7134K2	7.29	6.38
8″	2″	50	0.19″	100	7134K31	6.96	6.09	7134K3	7.73	6.76
9″	2 1/8″	250	0.49″	25	7134K41	6.89	6.32	7134K4	7.36	4.77
15 5/16″	4″	175	0.35″	10	7134K42 ♦	6.92	5.97	7134K5 ♦	8.25	7.48
22 1/4″	5 7/8″	250	0.49″	10	7134K43	10.15	8.76	7134K6	11.27	9.73
(C) Flip Tab					Yellow					
29 1/2″	8 1/4″	200	0.51″	5	7134K81	$8.23	$7.22	—	—	—

♦ Not UL recognized.

Reusable Beaded Cable Ties

An easy way to lock and release bundles—and they can be used over and over again. Temperature range is –40° to +185° F for white nylon ties; +32° to +149° F for colored polypropylene ties.

To Order: For colored polypropylene ties, please specify color: blue, red, or yellow.

Lg.	Max. Bundle Dia.	Bead Dia.	Pkg. Qty.	White Nylon Tensile Strength, lbs.		Per Pkg.	Colored Polypropylene Tensile Strength, lbs.		Per Pkg.
4″	1″	3/32″	100	25	7567K31	$4.90	15	7567K41	$4.95
5″	1 1/4″	3/32″	100	25	7567K32	5.75	15	7567K42	6.10
6″	1 3/4″	3/32″	100	25	7567K33	8.25	15	7567K43	8.65
8 3/4″	2 3/8″	1/8″	50	50	7567K34	5.98	30	7567K44	6.41
10 3/4″	3 1/8″	1/8″	50	50	7567K35	7.56	30	7567K45	7.91
12 3/4″	3 5/8″	1/8″	50	50	7567K56	7.80	30	7567K66	8.52

Reusable Cut-to-Length Cable Ties

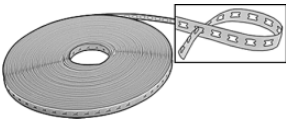

A no hassle way to bundle. Simply wrap around your bundle, cut to length, insert one end through a hole on the other end, and pull tight. Made of 0.56″ wide high-density yellow polyethylene. Comes 500 ft. per roll. Temperature range is –10° to +110° F.

14655T12 ..... **Per Roll** $28.12

Reusable Rubber Cable Ties

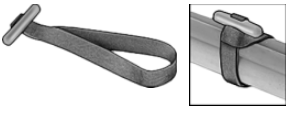

Easily secure bundles of rope, cord, hose, and more with these stretchy ties. The head is made of polystyrene for a secure hold. *Note:* Not rated for temperature.

EPDM rubber ties have excellent weather resistance as well as ozone, aging, steam, and water resistance.

Lg.	Max. Bundle Dia.	Wd.	Head Lg.	Head Dia.	Color	Pkg. Qty.		Per Pkg.
Rubber								
3″	13/16″	3/8″	1 5/16″	1/4″	Red	10	30185T11	$5.31
4″	1 3/16″	3/8″	1 5/16″	1/4″	Green	10	30185T12	5.54
5″	1 1/2″	3/8″	1 5/16″	1/4″	Orange	10	30185T13	5.63
5″	1 1/2″	5/8″	2 3/16″	3/8″	Blue	10	30185T14	6.11
11″	3 1/2″	5/8″	2 3/16″	3/8″	Lt. Blue	10	30185T16	9.54
EPDM Rubber								
3 1/2″	1″	3/8″	1 5/16″	1/4″	Black	10	30185T17	5.83
5″	1 1/2″	5/8″	2 3/16″	3/8″	Black	10	30185T21	8.94
7″	2 1/8″	5/8″	2 3/16″	3/8″	Black	10	30185T19	11.06
11″	3 1/2″	5/8″	2 3/16″	3/8″	Black	5	30185T23	12.57

Reusable Hinged Cable Ties

A hinge allows ties to open wide for easy bundling. Ratchet-style adjustability provides a firm hold and a thumb lever allows for quick release. Ties are made of black plastic.

Note: Not rated for temperature.

For Bundle Dia.	Wd.		Each
1/2″ to 3/4″	7/16″	5413T31	$1.42
1″ to 1 5/8″	1/2″	5413T32	1.98
1 5/8″ to 2 3/4″	5/8″	5413T33	2.64

Reusable Quick-Twist Cable Ties

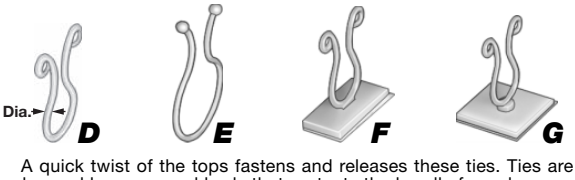

A quick twist of the tops fastens and releases these ties. Ties are nylon and have a round body that protects the bundle from damage. Color is white. Temperature range is –40° to +185° F. UL recognized.

(F) Adhesive-backed base keeps ties in place. Base is 1″ Lg. × 1/2″ Wd.

(G) Adhesive-backed standoff base creates distance between the bundle and the surface. Base is 1″ Lg. × 1″ Wd.

Max. Bundle Dia.	O'all Ht.	Dia.	Pkg. Qty.		Per Pkg.
(D) With Loop Ends					
1/4″	7/8″	0.08″	100	70535K51	$5.31
3/8″	1″	0.08″	100	70535K52	5.60
1/2″	1 3/16″	0.08″	100	70535K53	5.94
5/8″	1 1/4″	0.08″	100	70535K54	6.44
3/4″	1 1/2″	0.08″	100	70535K55	6.93
1″	1 3/4″	0.08″	100	70535K56	8.31
(E) With Ball Ends					
1 3/16″	2 3/16″	0.08″	100	70535K57	9.92
1 7/16″	2 11/16″	0.08″	100	70535K58	11.56
1 9/16″	2 15/16″	0.08″	100	70535K59	14.04
1 13/16″	3 7/16″	0.08″	100	70535K61	15.43
(F) With Loop Ends and Adhesive-Backed Base					
3/8″	1 1/16″	0.08″	50	70535K72	10.60
1/2″	1 3/16″	0.08″	50	70535K73	11.72
3/4″	1 9/16″	0.08″	50	70535K75	12.31
(G) With Loop Ends and Adhesive-Backed Standoff Base					
3/8″	1 1/4″	0.08″	50	70535K66	14.43
1/2″	1 7/16″	0.08″	50	70535K67	13.60

Coated-Wire Twist Ties

A quick and easy way to bundle and close bags.
Note: Not rated for temperature.

Cut Ties

Paper-coated ties are the economical choice.
Plastic-coated ties hold up in wet environments and are reusable.

To Order: Please specify color: blue, green, red, white, or yellow.

Lg.	Wd.	Wire Ga.	Pkg. Qty.	Paper Coated	Per Pkg.	Plastic Coated	Per Pkg.
4″	5/32″	29	2,000	2065T61	$6.30	2048T81	$6.70
6″	5/32″	29	2,000	2065T62	11.31	2048T82	10.65
8″	5/32″	29	1,000	2065T63	10.00	2048T83	9.31
10″	5/32″	29	1,000	2065T64	12.26	2048T84	12.68
12″	5/32″	29	1,000	2065T65	15.49	2048T85	15.15

Rolls

Plastic-coated ties are good for all applications. Comes on a spool. Spool hole diameter is 1″. **To Order:** Please specify color: blue, green, red, white, or yellow.

Cushion plastic/rubber-coated ties are round and have a soft outer cover to protect fragile bundles. **To Order:** Please specify color: black or green.

Plastic Coated

Roll Lg., ft.	Size	Wire Ga.		Per Roll
Plastic Coated				
1,500	1/8″ Wd.	27	2048T21	$12.86
Cushion Plastic/Rubber Coated				
16	3/16″ Dia.	21	2048T19	5.14

Fixed-Loop Cable Ties

If you're working with bundles that are all the same size, these are the ties you need. Ties lock in a fixed-size loop. Also great for use in tagging applications. Ties are made of nylon. Temperature range is –40° to +185° F.

To Order: Please specify color: black, blue, green, or red.

Lg.	Loop Dia.	Tensile Strength, lbs.	Wd.	Pkg. Qty.		Per Pkg.
5″	17/16″	30	0.11″	100	1881T71	$10.03

Hook and Loop Cable Ties

Flexible, reusable, quick and easy to use. Plus they will not damage your bundles.

***Wrap-Around Ties*—**Insert the narrow end through the slit in the wide end and pull to tension.

Colored ties temperature range is 0° to +220° F. **To Order:** Please specify color: black, green, orange, or red.

Black flame-retardant ties meet requirements for use as a wire-positioning device in air handling (plenum) spaces. Also meet UL 94V2 flammability requirements. Temperature range is 0° to +122° F.

***Closed-Loop Ties*—**Just slide your bundle through the center opening and press tie firmly around the bundle to tension. Use hook and loop material on the loose ends to hang and secure around pipe, conduit, and other material. Temperature range is –70° to +200° F.

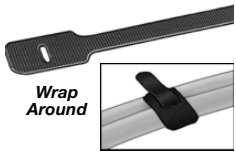

Wrap Around

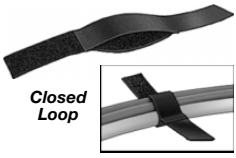

Closed Loop

Lg.	Max. Bundle Dia.	Wd.	Pkg. Qty.		Per Pkg. 1-9	10-Up
Wrap Around*—*Colored						
6″	1 1/4″	3/8″	10	6605K23	$5.80	$5.18
6″	1 1/4″	1/2″	10	6605K11	5.76	4.97
8″	1 7/8″	1/2″	10	6605K12	6.43	5.62
11″	2 7/8″	1/2″	10	6605K13	7.57	6.62
13″	3 1/2″	1/2″	10	6605K24	10.18	9.19
15″	4 1/8″	3/4″	5	6605K14	8.74	7.86
18″	5 1/16″	3/4″	5	6605K15	11.04	9.66
24″	7″	3/4″	5	6605K16	13.93	12.19
Wrap Around*—*Black Flame Retardant						
6″	1 1/4″	1/2″	10	6605K51	7.13	6.40
8″	1 7/8″	1/2″	10	6605K52	9.38	8.43
11″	2 7/8″	1/2″	10	6605K53	11.04	9.14
15″	4 1/8″	3/4″	5	6605K54	10.87	9.77
18″	5 1/16″	3/4″	5	6605K55	12.52	11.25
24″	7″	3/4″	5	6605K56	13.89	12.46
Closed Loop*—*Black						
7″	2 3/16″	1″	5	6605K91	10.61	9.21
10″	2 3/4″	1″	5	6605K92	11.52	10.00

***Wrap-Around Colored Tape*—**Simply cut the length you need to secure your bundles. Temperature range is 0° to +150° F.

To Order: Please specify color: black, blue, green, orange, purple, white, or yellow, unless noted.

Wd.	Roll Lg., ft.		Per Roll
1/2″	30	9402T1	$5.94
1″	30	9402T2	9.54
1 1/2″	30	9402T3	14.34
2″	30	9402T4★	19.14

★ Not available in white.

ID Tag Cable Ties

For identification at a glance, use any permanent-ink marker to label the rectangular writing surface. Ties are made of nylon. Temperature range is –40° to +185° F (unless noted).

Colored ties make identification even easier. Writing surface is white. **To Order:** Please specify color: blue, green, ivory, orange, red, or yellow.

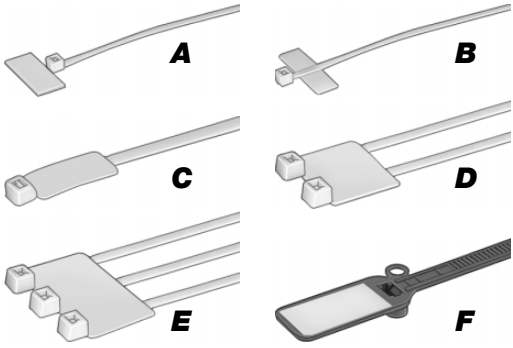

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Writing Surface, Lg. × Wd.	Pkg. Qty.		Per Pkg.
White							
A 4 5/16″	3/4″	18	0.10″	3/8″ × 13/16″	50	7568K12	$6.43
B 3 15/16″	3/4″	18	0.09″	5/16″ × 13/16″	50	7568K11	6.43
C 7 3/4″	1 15/16″	50	0.18″	1 1/16″ × 1/2″	50	7568K21●	4.61
C 15 5/16″	3 15/16″	50	0.19″	2 3/16″ × 1/2″	50	7568K81	14.22
D 8 1/16″	1 11/16″	50	0.19″	1″ × 1 1/8″	10	7568K82	5.02
E 8 1/16″	1 11/16″	50	0.19″	1″ × 1 13/16″	10	7568K83	4.46
Colored							
F 7 1/4″	2″	60	0.25″	7/8″ × 1/2″	10	8515T62	5.67

● Temperature range is +40° to +185° F.

Aluminum ID Tag Cable Ties

Stamp and emboss these blank tags for permanent identification. All are made of aluminum.

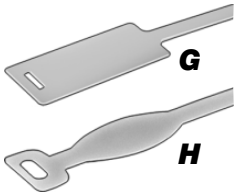

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Writing Surface, Lg. × Wd.	Pkg. Qty.		Per Pkg.
G 11 1/16″	3/8″	16	0.25″	1/2″ × 1/2″	50	1601T65	$11.73
G 3 3/8″	15/16″	16	0.25″	9/16″ × 1″	50	1601T64	12.26
G 3 1/2″	1″	16	0.25″	3/4″ × 1 3/8″	50	1601T13	12.68
G 10″	3″	16	0.50″	3/4″ × 2 3/4″	50	1601T61	13.55
H 6 1/2″	1 15/16″	16	0.25″	9/16″ × 1″	50	1601T63	12.29

Fastener-Mount Cable Ties

A

B

Use a screw, nail, bolt, or rivet (not included) to mount these ties to any surface. All are made of nylon. Temperature range is –40° to +185° F. UL recognized.

(B) Smooth-body ties provide quiet adjustment. The low-profile head has a lock for a secure hold.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Mounting Hole Dia.	Pkg. Qty.	White	Per Pkg.	UV-Resistant Black	Per Pkg.
(A) Standard									
4 5/16″	3/4″	18	0.10″	0.12″	100	7295K1	$7.74	7295K11	$9.26
6 1/4″	1 1/4″	30	0.14″	0.16″	100	7295K2	12.37	7295K12	10.81
8 7/16″	1 3/4″	50	0.18″	0.19″	100	7295K3	7.61	7295K13	8.73
11″	3″	50	0.19″	0.19″	100	7295K6	11.36	7295K16	11.36
15″	4″	120	0.31″	1/4″	10	7295K5	6.21	7295K15	6.90
15 5/16″	4″	50	0.18″	0.19″	50	7295K41	12.03	7295K14	14.49
22″	6″	120	0.31″	1/4″	25	7295K42	14.22	7295K43	15.04
29″	8″	120	0.31″	1/4″	10	7295K44	9.19	7295K45	9.89
(B) Smooth Body									
4″	5/8″	18	0.09″	0.11″	10	7296K11	4.11	7296K21	4.50
6″	1 1/8″	40	0.14″	0.16″	10	7296K12	4.14	7296K22	4.60
7 3/4″	1 3/4″	50	0.18″	0.19″	10	7296K13	4.40	7296K23	5.20
13 7/8″	3 1/2″	120	0.30″	1/4″	10	7296K15	11.54	7296K25	13.75
14 9/16″	4″	50	0.18″	0.19″	10	7296K14	8.67	7296K24	11.90

Panel-Mount Cable Ties

C

D

E

F

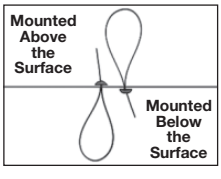

Install these in a drilled hole for your panel-mount applications. Made of nylon. Temperature range for white ties is –40° to +185°F; –40° to +221°F for UV-resistant black ties.

(C&D) Anchor-mount ties have a flared end that acts as an anchor for a tight hold.

(E) Anchor-mount with standoff ties are the same as above, but they also have a 1/4″ standoff for clearance from the mounting surface.

(F) Double-lock through-hole mount ties have a dual-lock, button-style head that mounts above or below the surface. Teeth on both sides of the body provide a secure hold.

Lg.	Max. Bundle Dia.	Tensile Strength, lbs.	Wd.	Fits Hole Size	Pkg. Qty.	White	Per Pkg.	UV-Resistant Black	Per Pkg.
(C) Anchor Mount									
8 1/4″	1 15/16″	50	0.19″	1/4″	25	—	—	6686K21	$8.75
(D) Anchor Mount									
8 1/4″	1 11/16″	50	0.19″	1/4″	100	6686K16	$13.41	—	—
(E) Anchor-Mount with Standoff									
4 1/2″	3/4″	18	0.10″	3/16″	100	6686K11	6.58	—	—
(F) Double-Lock Through-Hole Mount									
15″	4 5/16″	105	0.22″	1/4″ to 5/8″	10	—	—	6686K26	7.71

Mountable Hook and Loop Cable Ties

G

H

Mount ties to your surface, but still have easy access to bundles. Made of nylon. **To Order:** Please specify color: black, gray, or white.

(G) Adhesive-backed ties adhere to any clean, dry surface. Press firmly around the bundle to secure. Temp. range is –20° to +200° F.

(H) Mounting grommet and tensioning buckle ties mount to any rack or surface with 1/4″ fasteners (not included). Cinch the buckle to tension. Grommets are brass; buckles are plastic. Temp. range is –70° to +200° F.

1″ wide ties have one grommet; *2″ wide ties* have two grommets on 7/8″ centers.

Lg.	Max. Bundle Dia.	Wd.		Each 1-9	Each 10-Up
(G) Adhesive Backed					
2″	3/4″	0.63″	6912K41	$2.83	$2.59
2″	3/4″	1″	6912K43	3.10	2.79
4″	1 1/2″	0.63″	6912K42	3.26	2.99
4″	1 1/2″	1″	6912K44	3.48	3.19
8″	3 1/4″	1″	6912K45	4.57	4.19
12″	4 1/2″	1″	6912K46	5.66	5.19
(H) Mounting Grommet and Tensioning Buckle					
7″	1 1/2″	1″	6912K54	3.81	3.50
10″	2 1/2″	1″	6912K55	4.03	3.70
16″	2 1/2″	2″	6912K57	6.43	5.90
22″	6 1/4″	1″	6912K56	4.90	4.50
28″	6 1/4″	2″	6912K58	8.18	7.50
46″	12″	2″	6912K59	10.76	9.87

Plastic Routing D-Rings

Also known as distribution rings, these are just what you need for routing multiple runs of wire, cable, and other light materials. All are nonconductive. Mounting hole diameter is 7/32″ (fasteners not included). Maximum temperature is 465° F. Color is black.

Inside Ht. × Wd.	Mtg. Holes Ctr.-to-Ctr. (A)	(B)		Each
2 3/8″ × 1 3/4″	3 1/16″	4 5/16″	1710T31	$2.31
3 1/4″ × 3″	4 1/4″	5 1/2″	1710T32	2.52
3 1/4″ × 5″	6 3/8″	7 5/8″	1710T33	3.37

Easy-Load Routing D-Rings

Spring action makes these D-rings easy to open and close. All are made of polypropylene and have a 1 3/8″ Ht. × 19/32″ Wd. slot for wall mounting. Mounting hole diameter is 1/4″ (fasteners not included). Maximum temperature is 194° F. Color is light gray.

Ht. × Wd. × Lg.	Max. Bundle Dia.		Each
1 13/16″ × 15/16″ × 1 9/16″	1 1/4″	3141T44	$2.14
3 3/8″ × 1 1/8″ × 1 11/16″	1 1/8″	3141T45	2.78
4 7/8″ × 1 1/8″ × 2 1/2″	1 11/16″	3141T46	4.46

Steel Routing Hooks

Wall-Mount Style with Retaining Clip Closed

Beam-Mount Style with Retaining Clip Open

Route multiple runs of wire, cable, hose, and tube. Both styles include a removable locking retaining clip to keep the bundle in the hook.

Wall-mount hook has 1/4″ dia. mounting holes (fasteners not included).

Beam-mount hook accepts flanges up to 1/2″ thick.

Style	Max. Bundle Dia.	Ht. × Wd.		Each
Wall Mount	2″	6″ × 2 1/4″	1717T91	$2.75
Beam Mount	2″	6″ × 2 1/4″	1717T93	4.63

Wire and Strand Guide Eyebolts—*Not for Lifting*

Designed for wire and strand guide applications where corrosion resistance, wear resistance, and electrical insulation are a concern. Made of zinc-plated steel with a pink ceramic eye insert.

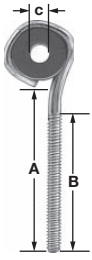

Thread Size	(A)	(B)	(C)		Each
6-32	2 1/8"	1 1/2"	3/16"	3011T11	$8.31
8-32	2 5/16"	1 5/16"	3/16"	3011T12	8.31
10-24	1 11/16"	1 1/8"	1/4"	3011T13	9.18
10-24	2 5/16"	1 13/16"	1/4"	3011T14	9.18
10-32	1 1/2"	7/8"	1/4"	3011T15	9.18
10-32	2 3/8"	1 13/16"	1/4"	3011T16	9.18

Adhesive-Backed Cable Holders

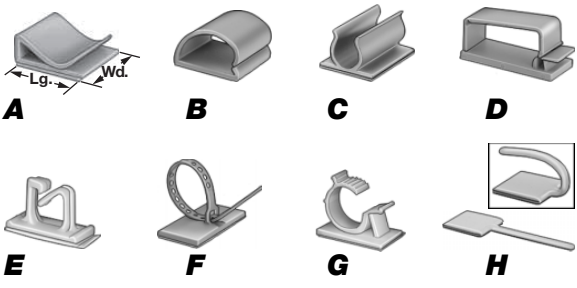

Stick holders to any clean, smooth surface to mount, secure, and route cable and wire.

(A&B) Self-closing holders automatically close. Made of gray PVC. Temp. range is +32° to +120° F. Meet UL 94V0 flammability requirements.

(C) Press-in holders have an open top for easy loading. Made of PVC. Meet UL 94V0 flammability requirements. Holders are gray and have a temp. range of +32° to +122° F.

(D) Snap-lock holders push closed. Made of white nylon. Temp. range is –40° to +185° F. Meet UL 94V2 flammability requirements.

(E) Locking-arm holders keep your bundles securely inside. Made of white nylon. Temp. range is –40° to +185° F. UL recognized.

(F) Adjustable-strap holders work like a cable tie and can be released and reused. Strap is 4 1/2" Lg. × 1/4" Wd. Made of black nylon. Temp. range is –40° to +185° F.

(G) Adjustable-loop holders have ratchet-like adjustability and can be released and reused. Made of white nylon. Temp. range is –40° to +185° F. UL recognized.

(H) Fold-over strap holders have a flexible strap that bends over your bundles. Made of steel with a white PVC coating. Temp. range is +32° to +122° F.

69845K61 strap is 9/16" Lg. × 1/8" Wd. 69845K62 strap is 1" Lg. × 3/16" Wd. 69845K63 strap is 1 9/16" Lg. × 3/16" Wd.

For Bundle Size	Base, Lg. × Wd.	O'all Ht.	Pkg. Qty.		Per Pkg.
Self Closing					
A 1/4" Max.	1 1/16" × 1"	3/8"	100	69965K91	$14.18
B 1/4" Max.	1/2" × 1/2"	3/8"	25	7565K31	2.85
B 1/2" Max.	3/4" × 3/4"	3/4"	25	7565K32	4.03
B 3/4" Max.	1 1/8" × 1"	1"	25	7565K33	9.70
B 1" Max.	1 1/2" × 1 1/4"	1 5/16"	10	7565K34	5.25
Press In					
C 1/8" Max.	3/4" × 3/4"	5/16"	25	7586K11	7.06
C 1/4" Max.	3/4" × 3/4"	1/2"	25	7586K12	6.08
C 3/8" Max.	3/4" × 3/4"	5/8"	25	7586K14	9.20
C 1/2" Max.	1" × 1"	11/16"	25	7586K15	13.38
Snap Lock					
D 1/4" Max.	1 3/4" × 3/4"	7/16"	10	69965K81	9.14
D 1/2" Max.	3 1/16" × 3/4"	3/4"	1	69965K93	.95
Locking Arm					
E 1/4" Max.	1" × 1/2"	11/16"	50	7565K41	10.25
Adjustable Strap					
F 1 1/8" Max.	13/16" × 1"	1 3/8"	1	7565K56	.53
Adjustable Loop					
G 5/16" to 3/8"	1" × 3/4"	7/8"	25	7565K46	8.54
G 1/2" to 9/16"	1 1/4" × 3/4"	1 1/8"	25	7565K47	10.61
G 5/8" to 3/4"	1 1/2" × 3/4"	1 1/4"	10	7565K48	5.88
G 7/8" to 1"	2" × 1"	1 3/4"	10	7565K49	6.62
Fold-Over Strap					
H 1/8" Max.	5/16" × 5/16"	1/8"	25	69845K61	9.95
H 5/16" Max.	9/16" × 9/16"	3/16"	25	69845K62	11.33
H 5/16" Max.	3/4" × 3/4"	7/16"	10	69845K63	5.98

Fastener-Mount Cable Holders

Use a nail or screw to mount these holders. All have a 13/64" dia. mounting hole (unless noted). Fasteners not included. Temp. range is –40° to +185° F.

(J) Flexible-loop holders allow you to install or change cable without removing the fastener. Made of white nylon.

(K) Adjustable-strap holders have a releasable strap and can be reused. Made of black nylon.

7565K51 strap is 4 3/4" Lg. × 1/2" Wd. 7565K52 strap is 6" Lg. × 1/2" Wd. 7565K53 strap is 7 3/4" Lg. × 1/2" Wd.

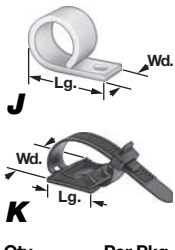

Max. Bundle Size	Lg. × Wd.	O'all Ht.	Pkg. Qty.		Per Pkg.
(J) Flexible Loop					
1/8"	3/4" × 5/16"	3/16"	50	7572K11★	$6.13
1/4"	7/8" × 3/8"	3/8"	50	7572K12	6.51
3/8"	7/8" × 3/8"	1/2"	50	7572K13	6.88
1/2"	1 3/16" × 3/8"	5/8"	50	7572K14	7.26
5/8"	1 1/8" × 1/2"	3/4"	50	7572K15	7.60
3/4"	1 5/16" × 1/2"	7/8"	50	7572K16	8.36
1"	1 9/16" × 1/2"	1 1/8"	50	7572K17	8.89
1 1/2"	2 1/8" × 1/2"	1 5/8"	50	7572K18	10.15
(K) Adjustable Strap					
1"	1 1/8" × 1 1/8"	1 1/2"	10	7565K51	8.77
1 1/2"	1 1/8" × 1 1/8"	1 7/8"	10	7565K52	8.94
2"	1 1/8" × 1 1/8"	2 1/4"	10	7565K53	9.24

★ Mounting hole diameter is 5/32".

Anchor-Mount Cable Holders

Trust the V-shaped anchor to secure these holders in a drilled hole. Temp. range is –40° to +185° F.

(L) Locking-arm holders keep your bundles securely inside. Made of white nylon.

(M) Adjustable-strap holders work like a cable tie and can be released and reused. Strap is 4 11/16" Lg. × 1/4" Wd. Made of white nylon.

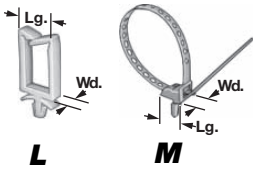

Max. Bundle Size	Fits Hole Size, Dia. × Dp.	Lg. × Wd.	O'all Ht.●	Pkg. Qty.		Per Pkg.
(L) Locking Arm						
1/8"	3/16" × 1/16"	5/8" × 1/4"	9/16"	100	7565K42	$7.07
5/16"	3/16" × 1/16"	5/8" × 1/4"	3/4"	100	7565K43	7.33
11/16"	3/16" × 1/16"	5/8" × 1/4"	1 1/8"	100	7565K44	9.41
1"	3/16" × 1/16"	5/8" × 1/4"	1 3/8"	100	7565K45	10.12
(M) Adjustable Strap						
1 1/8"	1/4" × 1/16"	5/8" × 1/4"	1 1/2"	25	7565K54	7.24

● Does not include anchor.

Plastic Loop Clamps

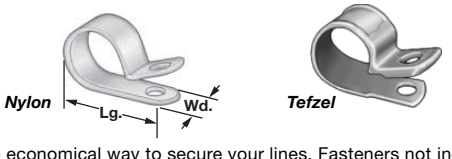

An economical way to secure your lines. Fasteners not included.

Clamps for 1/8" to 1/2" OD have an 11/64" dia. mounting hole; *clamps for 5/8" to 1 1/2" OD* have a 13/64" dia. mounting hole.

Nylon clamps are nonconductive and noncorrosive. All are Type 6/6 nylon. Temperature range is –40° to +185° F. Meet ASTM D-4066. **To Order:** Please specify color: black or white.

Tefzel clamps are used where heat, flammability, and chemical resistance are a concern. Temp. range is –50° to +302° F. Color is green.

For OD	Lg. × Wd.	Thick.	Nylon Pkg. Qty.		Per Pkg.	Tefzel Pkg. Qty.		Per Pkg.
1/8"	11/16" × 3/8"	3/64"	100	8876T11	$5.40	25	2220T62	$7.03
3/16"	13/16" × 3/8"	3/64"	100	8876T12	5.40	25	2220T63	7.38
1/4"	13/16" × 3/8"	3/64"	100	8876T13	5.33	25	2220T64	7.87
5/16"	7/8" × 3/8"	3/64"	100	8876T2	6.94	25	2220T65	8.26
3/8"	1" × 3/8"	3/64"	100	8876T22	5.84	25	2220T66	9.40
7/16"	1" × 3/8"	3/64"	100	8876T24	6.55	—	—	—
1/2"	1 1/8" × 3/8"	3/64"	100	8876T3	7.36	25	2220T67	10.37
5/8"	1 1/4" × 1/2"	3/64"	100	8876T32	10.41	10	2220T68■	7.89
3/4"	1 7/16" × 1/2"	3/64"	100	8876T33	10.57	10	2220T69■	8.30
7/8"	1 1/2" × 1/2"	3/64"	100	8876T4	12.42	—	—	—
1"	1 5/8" × 1/2"	3/64"	100	8876T42	12.82	—	—	—
1 1/8"	1 13/16" × 1/2"	3/64"	50	8876T44	12.95	—	—	—
1 1/4"	2 3/16" × 1/2"	3/64"	50	8876T52	13.93	—	—	—
1 1/2"	2 5/16" × 1/2"	3/64"	50	8876T53	13.87	—	—	—

■ Thickness is 1/16".

Metal Clamps

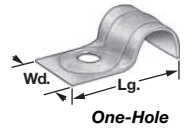

One-Hole Mount

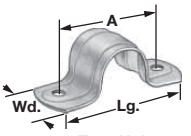

Two-Hole Mount

Choose from a variety of metal clamps with either one or two mounting holes to secure pipe, conduit, and tubing. Fasteners not included.

Heavy duty clamps are extra thick so they're less likely to bend under heavy loads.

Steel clamps are good where corrosion is not a factor.
Zinc-plated steel clamps offer good corrosion resistance in most environments.
Type 304 stainless steel clamps provide excellent corrosion resistance.
Type 316 stainless steel clamps offer maximum corrosion resistance.
Brass clamps have excellent conductivity and good corrosion resistance.

One-Hole Mount for Pipe and Rigid Conduit

For OD	For Pipe/ Rigid Conduit Size	Lg.		Wd.	Thick.	Mtg. Hole Dia.	Pkg. Qty.		Pkg.
Steel									
7/16"	1/8"	1 3/16"	×	5/8"	3/64"	3/16"	50	9434T16	$4.34
9/16"	1/4"	1 5/16"	×	5/8"	3/64"	3/16"	50	9434T17	4.64
11/16"	3/8"	1 5/8"	×	3/4"	3/64"	1/4"	50	9434T18	6.20
13/16"	1/2"	1 7/8"	×	7/8"	3/64"	1/4"	50	9434T19	6.69
1 1/16"	3/4"	2 1/8"	×	7/8"	3/64"	1/4"	50	9434T22	8.44
1 5/16"	1"	2 3/4"	×	1"	1/16"	1/4"	50	9434T24	12.37
Zinc-Plated Steel									
1 1/16"	1 1/4"	3 1/4"	×	7/8"	3/32"	1/4"	10	9435T66	6.11
2 3/8"	2"	4 13/16"	×	7/8"	1/8"	1/4"	10	9435T68	11.66
Heavy Duty Zinc-Plated Steel									
13/16"	1/2"	2"	×	7/8"	1/8"	1/4"	25	9434T71	10.54
1 1/16"	3/4"	2 3/8"	×	7/8"	1/8"	1/4"	25	9434T72	11.25
1 5/16"	1"	2 7/8"	×	7/8"	1/8"	1/4"	25	9434T73	14.99
1 11/16"	1 1/4"	3 1/8"	×	1"	1/8"	5/16"	10	9434T74	9.19
1 7/8"	1 1/2"	3 3/4"	×	1 1/4"	1/8"	3/8"	5	9434T75	6.33
2 3/8"	2"	4 3/8"	×	1 1/4"	3/16"	3/8"	5	9434T76	9.48
Type 304 Stainless Steel									
13/16"	1/2"	1 7/8"	×	7/8"	5/64"	1/4"	5	8897T11	5.41
1 1/16"	3/4"	2 5/16"	×	7/8"	5/64"	1/4"	5	8897T12	6.94
1 5/16"	1"	2 11/16"	×	7/8"	5/64"	1/4"	5	8897T13	8.01
1 11/16"	1 1/4"	3 1/8"	×	1"	3/32"	5/16"	1	8897T14	2.02
1 7/8"	1 1/2"	3 11/16"	×	1"	1/8"	3/8"	1	8897T15	3.55
2 3/8"	2"	4 3/8"	×	1 1/4"	1/8"	3/8"	1	8897T16	4.96
Type 316 Stainless Steel									
13/16"	1/2"	1 3/4"	×	5/8"	1/16"	5/64"	1	9750T71	1.64
Brass									
13/16"	1/2"	1 7/8"	×	7/8"	3/64"	1/4"	10	9488T11	10.82
1 5/16"	1"	2 11/16"	×	1"	1/16"	1/4"	1	9488T12	2.01

One-Hole Mount for Thin-Wall (EMT) Conduit

For OD	For Thin-Wall (EMT) Conduit Size	Lg.		Wd.	Thick.	Mtg. Hole Dia.	Pkg. Qty.		Pkg.
Steel									
11/16"	1/2"	1 5/8"	×	3/4"	3/64"	1/4"	50	9434T18	$6.20
15/16"	3/4"	1 15/16"	×	7/8"	3/64"	1/4"	50	9434T28	7.76
1 3/16"	1"	2 3/16"	×	7/8"	3/64"	1/4"	50	9434T23	10.40
1 1/2"	1 1/4"	2 13/16"	×	1"	1/16"	1/4"	25	9434T25	8.60
Heavy Duty Zinc-Plated Steel									
11/16"	1/2"	1 13/16"	×	7/8"	1/8"	1/4"	25	9434T77	9.54
15/16"	3/4"	2 1/16"	×	7/8"	1/8"	1/4"	25	9434T78	11.27
1 3/16"	1"	2 11/16"	×	7/8"	1/8"	1/4"	10	9434T79	6.25
Type 304 Stainless Steel									
11/16"	1/2"	1 11/16"	×	7/8"	5/64"	1/4"	5	8897T21	4.99
15/16"	3/4"	1 15/16"	×	7/8"	5/64"	1/4"	5	8897T22	6.68
1 3/16"	1"	2 7/16"	×	7/8"	5/64"	1/4"	5	8897T23	7.41

One-Hole Mount for Tubing

For OD	For Tube Size	Lg.		Wd.	Thick.	Mtg. Hole Dia.	Pkg. Qty.		Pkg.
Steel									
1/8"	1/8"	13/16"	×	1/2"	1/32"	3/16"	50	9434T11	$3.39
3/16"	3/16"	7/8"	×	1/2"	1/32"	3/16"	50	9434T12	3.55
1/4"	1/4"	15/16"	×	1/2"	1/32"	3/16"	50	9434T13	3.48
5/16"	5/16"	15/16"	×	1/2"	1/32"	3/16"	50	9434T14	3.76
3/8"	3/8"	1 3/16"	×	5/8"	3/64"	3/16"	50	9434T15	4.20
1/2"	1/2"	1 5/16"	×	5/8"	3/64"	3/16"	50	9434T17	4.64
3/4"	3/4"	1 11/16"	×	3/4"	3/64"	1/4"	50	9434T27	6.53
1"	1"	2 1/8"	×	7/8"	3/64"	1/4"	50	9434T22	8.44
1 1/2"	1 1/2"	2 13/16"	×	1"	1/16"	1/4"	25	9434T25	8.60
Brass									
1/8"	1/8"	13/16"	×	1/2"	1/32"	3/16"	25	9488T15	7.29
3/16"	3/16"	7/8"	×	1/2"	1/32"	3/16"	25	9488T16	7.56
1/4"	1/4"	1"	×	1/2"	1/32"	3/16"	25	9488T17	7.56
5/16"	5/16"	15/16"	×	1/2"	1/32"	3/16"	25	9488T18	8.02
3/8"	3/8"	1 3/16"	×	5/8"	3/64"	3/16"	25	9488T19	8.95
1/2"	1/2"	1 5/16"	×	5/8"	3/64"	3/16"	25	9488T21	11.67
3/4"	3/4"	1 11/16"	×	3/4"	3/64"	1/4"	10	9488T22	7.12
1 1/2"	1 1/2"	3"	×	1"	1/16"	1/4"	1	9488T24	2.38

Two-Hole Mount for Pipe and Rigid Conduit

For OD	For Pipe/ Rigid Conduit Size	Lg.		Wd.	Thick.	Mtg. Hole Dia.	(A)	Pkg. Qty.		Pkg.
Steel										
9/16"	1/4"	1 3/4"	×	5/8"	1/32"	1/8"	1 3/16"	50	9439T41	$4.97
11/16"	3/8"	2 1/2"	×	3/4"	1/32"	3/16"	1 11/16"	50	9439T42	6.18
13/16"	1/2"	2 9/16"	×	3/4"	1/32"	3/16"	1 13/16"	50	9439T43	7.62
1 1/16"	3/4"	2 13/16"	×	3/4"	1/32"	3/16"	2 1/16"	50	9439T44	8.00
1 5/16"	1"	3 1/8"	×	3/4"	1/32"	3/16"	2 7/16"	50	9439T24	9.94
1 11/16"	1 1/4"	4 3/8"	×	7/8"	3/64"	1/4"	3 1/4"	25	9439T23	7.69
Heavy Duty Steel										
13/16"	1/2"	4 3/16"	×	1 1/4"	1/8"	7/16"	2 7/8"	1	3039T14	1.44
1 1/16"	3/4"	4 5/16"	×	1 1/4"	1/8"	7/16"	3"	1	3039T15	1.47
1 5/16"	1"	4 3/4"	×	1 1/4"	1/8"	7/16"	3 3/8"	1	3039T16	1.52
1 11/16"	1 1/4"	5 1/8"	×	1 1/4"	1/8"	7/16"	3 3/4"	1	3039T17	1.68
1 7/8"	1 1/2"	5 9/16"	×	1 1/4"	1/8"	7/16"	4 1/4"	1	3039T18	2.06
2 3/8"	2"	5 13/16"	×	1 1/4"	1/8"	7/16"	4 1/2"	1	3039T19	2.22
2 7/8"	2 1/2"	6 5/8"	×	1 1/4"	1/4"	7/16"	5 1/4"	1	3039T21	3.72
3 1/2"	3"	7 5/16"	×	1 1/4"	1/4"	7/16"	6"	1	3039T22	3.92
4 1/2"	4"	8 13/16"	×	1 1/2"	1/4"	1/2"	7 3/8"	1	3039T24	4.67
Zinc-Plated Steel										
1 5/16"	1"	3 1/16"	×	3/4"	3/32"	13/64"	2 3/8"	10	9439T11	6.35
1 11/16"	1 1/4"	4 3/8"	×	7/8"	3/32"	9/32"	3 5/16"	10	9439T12	7.76
1 7/8"	1 1/2"	4 9/16"	×	1"	3/32"	9/32"	3 7/16"	10	9439T13	10.07
2 3/8"	2"	5 1/8"	×	1 1/4"	3/32"	11/32"	3 7/8"	1	9439T14	1.35
2 7/8"	2 1/2"	6 3/16"	×	1 1/4"	3/32"	13/32"	4 11/16"	1	9439T15	1.69
3 1/2"	3"	7 1/8"	×	1 1/4"	1/8"	13/32"	5 1/2"	1	9439T16	2.55
4"	3 1/2"	8 3/4"	×	1 1/4"	3/16"	21/32"	6 9/16"	1	9439T17	4.05
4 1/2"	4"	9 1/16"	×	1 1/4"	3/16"	21/32"	6 11/16"	1	9439T18	4.38
Heavy Duty Zinc-Plated Steel										
13/16"	1/2"	4 3/16"	×	1 1/4"	1/8"	7/16"	2 7/8"	1	9439T31	2.10
1 1/16"	3/4"	4 5/16"	×	1 1/4"	1/8"	7/16"	3"	1	9439T32	2.10
1 5/16"	1"	4 3/4"	×	1 1/4"	1/8"	7/16"	3 3/8"	1	9439T33	2.22
1 11/16"	1 1/4"	5 1/8"	×	1 1/4"	1/8"	7/16"	3 3/4"	1	9439T34	2.53
1 7/8"	1 1/2"	5 9/16"	×	1 1/4"	1/8"	7/16"	4 1/4"	1	9439T35	3.04
2 3/8"	2"	5 13/16"	×	1 1/4"	1/8"	7/16"	4 1/2"	1	9439T36	3.35
2 7/8"	2 1/2"	6 5/8"	×	1 1/4"	1/4"	7/16"	5 1/4"	1	9439T37	5.19
3 1/2"	3"	7 5/16"	×	1 1/4"	1/4"	7/16"	6"	1	9439T38	5.61
4 1/2"	4"	8 13/16"	×	1 1/2"	1/4"	1/2"	7 3/8"	1	9439T39	7.22
Type 304 Stainless Steel										
9/16"	1/4"	1 7/8"	×	5/8"	1/32"	3/16"	1 1/4"	1	8874T14	1.04
11/16"	3/8"	2"	×	5/8"	1/32"	3/16"	1 7/16"	1	8874T15	1.20
13/16"	1/2"	2 7/16"	×	5/8"	1/32"	3/16"	1 11/16"	1	8874T16	1.36
1 1/16"	3/4"	2 7/8"	×	3/4"	1/32"	17/64"	2 1/16"	1	8874T13	1.58
1 5/16"	1"	3 1/2"	×	3/4"	3/64"	17/64"	2 1/2"	1	8874T18	1.71
1 11/16"	1 1/4"	3 11/16"	×	7/8"	3/64"	17/64"	2 7/8"	1	8874T19	2.84
1 7/8"	1 1/2"	4 1/2"	×	1 1/4"	1/16"	17/64"	3 3/8"	1	8874T21	4.88
2 3/8"	2"	5 1/8"	×	1 1/4"	1/16"	17/64"	3 7/8"	1	8874T22	5.39

Two-Hole Mount for Thin-Wall (EMT) Conduit

For OD	For Thin-Wall (EMT) Conduit Size	Lg.		Wd.	Thick.	Mtg. Hole Dia.	(A)	Pkg. Qty.		Pkg.
Steel										
11/16"	1/2"	2 9/16"	×	3/4"	1/32"	3/16"	1 13/16"	50	9429T34	$6.21
15/16"	3/4"	2 3/4"	×	3/4"	1/32"	3/16"	2 1/16"	50	9429T35	6.74
1 3/16"	1"	3 3/16"	×	3/4"	1/32"	3/16"	2 5/8"	50	9429T36	7.18
1 1/2"	1 1/4"	3 7/8"	×	7/8"	3/64"	1/4"	2 15/16"	50	9429T37	10.06
1 3/4"	1 1/2"	4 5/16"	×	1"	3/64"	1/4"	3 1/16"	25	9429T38	8.64
2 3/16"	2"	5"	×	1"	3/64"	1/4"	3 3/4"	25	9429T39	11.10
Type 304 Stainless Steel										
9/16"	3/8"	1 7/8"	×	5/8"	1/32"	3/16"	1 1/4"	1	8874T41	1.04
11/16"	1/2"	2 1/16"	×	5/8"	1/32"	3/16"	1 7/16"	1	8874T42	1.21
15/16"	3/4"	2 3/4"	×	3/4"	1/32"	17/64"	1 7/8"	1	8874T43	1.35
1 3/16"	1"	3 3/16"	×	3/4"	3/64"	17/64"	2 5/16"	1	8874T44	1.62
1 1/2"	1 1/4"	3 1/2"	×	7/8"	3/64"	17/64"	2 5/8"	1	8874T45	3.01
1 3/4"	1 1/2"	3 7/8"	×	1 1/4"	1/16"	17/64"	3 1/4"	1	8874T46	3.29
2 3/16"	2"	4 5/16"	×	1 1/4"	1/16"	17/64"	3 11/16"	1	8874T47	5.92

Metal Loop Clamps

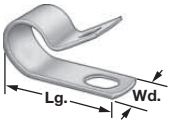

Stronger than plastic loop clamps for securing lines. Fasteners not included.

Galvanized steel clamps have a hot-dipped finish for corrosion resistance. *1/2″ wide clamps* have a 9/32″ dia. mounting hole; *3/4″ wide clamps* have a 13/32″ dia. mounting hole.

Aluminum clamps are more corrosion resistant than galvanized steel. Mounting hole diameter is 7/32″.

300 series stainless steel clamps offer excellent corrosion resistance. Mounting hole diameter is 13/64″.

For OD	Thick.	Pkg. Qty.	GALVANIZED STEEL 1/2″ Wide Lg.		Pkg.	3/4″ Wide Lg.		Pkg.
3/16″	1/32″	50	7/8″	8863T31	$9.08	1 3/8″	8863T32	$10.58
1/4″	1/32″	50	15/16″	8863T1	9.49	1 3/16″	8863T33	11.21
3/8″	1/32″	50	1 1/16″	8863T2	9.62	1 5/16″	8863T34	11.51
1/2″	1/32″	50	1 3/16″	8863T3	10.46	1 7/16″	8863T35	12.32
5/8″	3/64″	25	1 5/16″	8863T4	5.58	1 9/16″	8863T36	6.66
3/4″	3/64″	25	1 7/16″	8863T5	6.00	1 11/16″	8863T37	7.05
7/8″	3/64″	25	1 9/16″	8863T6	6.70	1 13/16″	8863T38	8.03
1″	3/64″	25	1 11/16″	8863T7	7.11	1 15/16″	8863T39	8.56
1 1/4″	3/64″	25	1 15/16″	8863T8	7.95	2 3/16″	8863T41	9.46
1 1/2″	3/64″	25	2 3/16″	8863T9	8.57	2 7/16″	8863T42	10.24
1 3/4″	3/64″	25	2 7/16″	8863T11	9.59	2 11/16″	8863T43	11.41
2″	3/64″	10	2 11/16″	8863T44	7.89	2 15/16″	8863T45	9.22

For OD	Lg.×Wd.	Pkg. Qty.	Aluminum Thick.		Pkg.	300 Series SS Thick.		Pkg.
3/16″	3/4″ × 1/2″	5	1/32″	8863T51	$4.94	1/32″	8863T64■	$5.16
1/4″	13/16″ × 1/2″	5	1/32″	8863T52	4.98	1/32″	8863T65■	5.28
3/8″	15/16″ × 1/2″	5	1/32″	8863T53	5.05	1/32″	8863T66■	5.34
1/2″	1 1/16″ × 1/2″	5	1/32″	8863T54	5.12	1/32″	8863T67■	5.53
5/8″	1 3/16″ × 1/2″	5	1/32″	8863T55	5.19	1/32″	8863T68■	5.58
3/4″	1 7/16″ × 1/2″	5	1/16″	8863T56	5.74	1/32″	8863T69	6.11
7/8″	1 9/16″ × 1/2″	5	1/16″	8863T57	5.85	1/32″	8863T71	6.20
1″	1 11/16″ × 1/2″	5	1/16″	8863T58	6.59	1/32″	8863T72	10.13
1 1/4″	1 15/16″ × 1/2″	5	1/16″	8863T59	9.71	1/32″	8863T73	10.26
1 1/2″	2 3/16″ × 1/2″	5	1/16″	8863T61	9.78	1/32″	8863T74	9.85
1 3/4″	2 7/16″ × 1/2″	5	1/16″	8863T62	10.18	1/32″	8863T75	10.30
2″	2 11/16″ × 1/2″	5	1/16″	8863T63	10.27	1/32″	8863T76	11.17

■ Width is 3/8″.

Sure-Grip Cushioned Loop Clamps

A wedge at the end of the cushion grips the entire circumference of your material to keep it from slipping. Mounting hole diameter is 13/64″ (fasteners not included). Meet MIL-STD 21919.

Neoprene cushion resists ozone, flame, and oil. Color is black. Temperature range is –40° to +212°F. ***Silicone cushion*** offers good resistance to ozone, sunlight, and oxidation. Color is white. Temperature range is –80° to +450°F.

Aluminum clamps are corrosion resistant. ***300 series stainless steel*** clamps offer excellent corrosion resistance.

Also Available: Clamps for 2 1/4″ to 4″ OD in 1/4″ increments. Please ask for 3177T888 and specify material, cushion type, and OD.

For OD	Lg.×Wd.	Thick.	Pkg. Qty.	Neoprene Cushion	Pkg.
Aluminum					
1/4″	1 1/4″ × 1/2″	1/32″	5	3177T1	$5.18
3/8″	1 3/8″ × 1/2″	1/32″	5	3177T11	5.53
1/2″	1 1/2″ × 1/2″	1/32″	5	3177T12	5.97
5/8″	1 3/4″ × 1/2″	3/64″	5	3177T13	6.93
3/4″	1 13/16″ × 1/2″	3/64″	5	3177T14	7.06
7/8″	2″ × 1/2″	3/64″	5	3177T15	7.48
1″	2″ × 1/2″	3/64″	5	3177T16	7.65
1 1/4″	2 3/8″ × 1/2″	1/16″	5	3177T17	8.92
1 1/2″	2 5/8″ × 1/2″	1/16″	1	3177T18	1.78
1 3/4″	2 7/8″ × 1/2″	1/16″	1	3177T19	1.91
2″	3 1/8″ × 1/2″	1/16″	1	3177T2	2.15

For OD	Lg.×Wd.	Thick.	Pkg. Qty.	Neoprene Cushion	Pkg.	Silicone Cushion	Pkg.
300 Series Stainless Steel							
1/4″	1 1/4″ × 3/8″	1/32″	5	3177T5	$5.75	3177T7	$6.78
3/8″	1 3/8″ × 3/8″	1/32″	5	3177T51	6.09	3177T71	7.21
1/2″	1 1/2″ × 3/8″	1/32″	5	3177T52	6.51	3177T72	7.85
5/8″	1 3/4″ × 1/2″	1/32″	5	3177T53	7.66	3177T73	9.31
3/4″	1 13/16″ × 1/2″	1/32″	5	3177T54	7.73	3177T74	9.40
7/8″	1 15/16″ × 1/2″	1/32″	5	3177T55	8.20	3177T75	9.97
1″	2 1/16″ × 1/2″	1/32″	5	3177T56	8.31	3177T76	10.46
1 1/4″	2 3/8″ × 1/2″	1/32″	5	3177T57	9.94	3177T77	11.98
1 1/2″	2 9/16″ × 1/2″	1/32″	1	3177T58	1.90	3177T78	2.39
1 3/4″	2 13/16″ × 1/2″	1/32″	1	3177T59	2.08	3177T79	2.44
2″	3 1/8″ × 1/2″	3/64″	1	3177T6	2.33	3177T8	2.96

Vinyl-Coated Loop Clamps

A vinyl coating dampens vibration and noise while securing your lines. Clamps are corrosion-resistant galvanized steel; coating is black. Temperature range is –30° to +180°F.

1/2″ wide clamps have a 9/32″ dia. mounting hole; *3/4″ wide clamps* have a 13/32″ dia. mounting hole. Fasteners not included.

Also Available: Clamps for 2 1/4″ to 4″ OD in 1/4″ increments. Please ask for 8863T888 and specify width and OD.

For OD	Thick.	Pkg. Qty.	1/2″ Wide Lg.		Pkg.	3/4″ Wide Lg.		Pkg.
3/16″	1/32″	25	15/16″	8863T23	$5.56	1 1/8″	8863T24	$6.09
1/4″	1/32″	25	1″	8863T12	5.65	1 3/16″	8863T25	6.22
3/8″	3/64″	25	1 1/8″	8863T13	5.46	1 5/16″	8863T26	6.56
1/2″	3/64″	25	1 1/4″	8863T14	6.28	1 1/2″	8863T27	8.86
5/8″	3/64″	25	1 3/8″	8863T15	6.90	1 5/8″	8863T28	8.52
3/4″	3/64″	25	1 1/2″	8863T16	7.39	1 3/4″	8863T29	9.00
7/8″	3/64″	25	1 5/8″	8863T17	7.88	1 7/8″	8863T77	9.49
1″	3/64″	25	1 3/4″	8863T18	9.21	2″	8863T78●	4.48
1 1/4″	3/64″	25	2″	8863T19	10.09	2 1/4″	8863T79	12.46
1 1/2″	3/64″	10	2 1/4″	8863T21	4.44	2 1/2″	8863T81▲	14.02
1 3/4″	3/64″	10	2 1/2″	8863T22	4.70	2 3/4″	8863T82	5.92
2″	3/64″	10	2 3/4″	8863T83	9.32	3″	8863T84	9.72

● Package quantity is 10. ▲ Package quantity is 25.

Rubber-Cushioned Loop Clamps

The wear-resistant rubber cushion on these clamps provides better vibration and noise damping than a vinyl coating. Mounting hole dia. is 17/64″. Fasteners not included.

EPDM cushion has excellent resistance to ozone, aging, steam, and water. Color is black. Temperature range is –40° to +212°F. ***Silicone cushion*** offers good resistance to ozone, sunlight, and oxidation. Color is red. Temperature range is –80° to +450°F.

Zinc-plated steel clamps offer good corrosion resistance in most environments. ***300 series stainless steel*** clamps provide excellent corrosion resistance.

For OD	Lg.×Wd.	EPDM Cushion Thick.	Pkg. Qty.		Pkg.	Silicone Cushion Thick.	Pkg. Qty.		Pkg.
Zinc-Plated Steel									
1/4″	1 1/8″ × 1/2″	1/32″	25	3225T2	$5.76	3/64″	10	3225T42	$4.13
3/8″	1 3/8″ × 1/2″	1/32″	25	3225T3	5.80	3/64″	10	3225T43	4.49
1/2″	1 5/8″ × 1/2″	1/32″	25	3225T4	6.14	3/64″	10	3225T44	4.88
5/8″	1 7/8″ × 1/2″	1/32″	25	3225T5	6.91	3/64″	10	3225T45	5.35
3/4″	2 1/8″ × 1/2″	1/32″	25	3225T6	7.29	3/64″	10	3225T46★	5.71
7/8″	2 1/4″ × 1/2″	1/32″	25	3225T7	7.71	3/64″	10	3225T47★	6.28
1″	2 3/8″ × 1/2″	1/32″	25	3225T8	8.01	3/64″	10	3225T48	6.64
1 1/4″	2 5/8″ × 1/2″	3/64″	25	3225T14	16.56	3/64″	10	3225T56	8.22
1 1/2″	3 1/4″ × 1/2″	3/64″	10	3225T9	6.22	3/64″	10	3225T49	8.67
1 3/4″	3 3/8″ × 1/2″	3/64″	10	3225T15	7.75	3/64″	10	3225T52	11.00
2″	3 5/8″ × 1/2″	3/64″	10	3225T11	10.75	3/64″	10	3225T53	12.37
2 1/4″	3 3/8″ × 1/2″	3/64″	5	3225T81	7.77	3/64″	5	3225T91	9.48
2 1/2″	3 5/8″ × 1/2″	3/64″	1	3225T82	1.29	3/64″	1	3225T92	1.98
2 3/4″	3 7/8″ × 1/2″	3/64″	1	3225T83	1.64	3/64″	1	3225T93	2.05
3″	4 1/8″ × 1/2″	3/64″	1	3225T84	1.67	3/64″	1	3225T94	2.31
3 1/4″	4 3/8″ × 1/2″	3/64″	1	3225T85	1.70	3/64″	1	3225T95	2.67
3 1/2″	4 5/8″ × 1/2″	3/64″	1	3225T86	1.73	3/64″	1	3225T96	3.10
3 3/4″	4 7/8″ × 1/2″	3/64″	1	3225T87	2.12	3/64″	1	3225T97	3.35
4″	5 1/8″ × 1/2″	3/64″	1	3225T88	2.16	3/64″	1	3225T98	3.45
300 Series Stainless Steel									
1/4″	1 1/8″ × 1/2″	1/32″	25	3225T22	8.18	3/64″	10	3225T62	4.88
3/8″	1 3/8″ × 1/2″	1/32″	25	3225T23	8.86	3/64″	10	3225T63	5.25
1/2″	1 5/8″ × 1/2″	1/32″	25	3225T24	9.55	3/64″	10	3225T64	5.62
5/8″	1 7/8″ × 1/2″	1/32″	25	3225T25	10.56	3/64″	10	3225T65	6.11
3/4″	2 1/8″ × 1/2″	1/32″	25	3225T26	11.28	3/64″	10	3225T66★	6.75
7/8″	2 1/4″ × 1/2″	1/32″	25	3225T27	12.09	3/64″	10	3225T67★	7.50
1″	2 3/8″ × 1/2″	1/32″	25	3225T28	12.82	3/64″	10	3225T68	8.33
1 1/4″	2 5/8″ × 1/2″	3/64″	10	3225T34	8.42	3/64″	10	3225T61	9.17
1 1/2″	3 1/4″ × 1/2″	3/64″	10	3225T29	8.85	3/64″	10	3225T69	10.20
1 3/4″	3 3/8″ × 1/2″	3/64″	10	3225T35	9.64	3/64″	10	3225T72	11.67
2″	3 5/8″ × 1/2″	3/64″	10	3225T31	11.90	3/64″	10	3225T73	15.00
2 1/4″	3 3/8″ × 1/2″	3/64″	5	3225T13	8.43	3/64″	5	3225T51	10.77
2 1/2″	3 5/8″ × 1/2″	3/64″	1	3225T32	1.16	3/64″	1	3225T54	2.17
2 3/4″	3 7/8″ × 1/2″	3/64″	1	3225T17	2.04	3/64″	1	3225T55	2.49
3″	4 1/8″ × 1/2″	3/64″	1	3225T18	2.10	3/64″	1	3225T57	2.72
3 1/4″	4 3/8″ × 1/2″	3/64″	1	3225T19	2.15	3/64″	1	3225T58	2.76
3 1/2″	4 5/8″ × 1/2″	3/64″	1	3225T21	2.20	3/64″	1	3225T59	2.90
3 3/4″	4 7/8″ × 1/2″	3/64″	1	3225T36	2.26	3/64″	1	3225T71	3.16
4″	5 1/8″ × 1/2″	3/64″	1	3225T37	2.32	3/64″	1	3225T75	3.35

★ Length is 2″.

Plastic Clamps

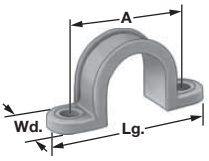

As an alternative to metal clamps, use these plastic clamps to avoid the corrosion problems of metal-to-metal contact when securing pipe and conduit. All are made of polypropylene. Color is gray. Temperature range is –30° to +190° F. Fasteners are not included.

For OD	For Pipe/Rigid Conduit Size	Lg. × Wd.	Thick.	Mounting Hole Dia.	(A)	Pkg. Qty.		Pkg.
13/16″	1/2″	2 1/16″ × 1/2″	1/8″	3/16″	1 1/2″	50	3192T51	$9.49
1 1/16″	3/4″	2 3/8″ × 1/2″	1/8″	3/16″	1 13/16″	50	3192T52	8.84
1 5/16″	1″	2 5/8″ × 9/16″	1/8″	3/16″	2″	25	3192T53	6.78
1 11/16″	1 1/4″	3″ × 9/16″	1/8″	3/16″	2 3/8″	25	3192T54	12.33
1 7/8″	1 1/2″	3 3/8″ × 5/8″	1/8″	3/16″	2 11/16″	25	3192T55	15.47
2 3/8″	2″	4 1/8″ × 3/4″	3/16″	3/16″	3 3/8″	5	3192T56	3.65
2 7/8″	2 1/2″	5 1/2″ × 1″	3/16″	5/16″	4 1/2″	5	3192T57	5.75
3 1/2″	3″	6 3/8″ × 1 1/8″	3/16″	3/8″	5 1/4″	5	3192T58	8.51
4 1/2″	4″	7 1/2″ × 1 5/16″	3/16″	3/8″	6 1/2″	5	3192T59	10.20

Chemical-Resistant Plastic Clamps

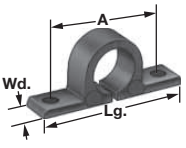

Polyethylene construction provides corrosion, chemical, and UV resistance. They grip the entire circumference of your material for a secure hold. Mounting hole dia. is 3/16″ (fasteners not included). Color is black. Temperature range is –35° to +230° F.

For OD	Lg. × Wd.	Thick.	(A)	Pkg. Qty.		Pkg.
1/4″	1 1/2″ × 3/8″	1/8″	1 1/8″	25	8871T31	$7.99
3/8″	1 5/8″ × 3/8″	1/8″	1 1/4″	25	8871T32	8.06
1/2″	1 3/4″ × 3/8″	1/8″	1 3/8″	25	8871T33	8.15
5/8″	2 1/4″ × 1/2″	3/16″	1 3/4″	10	8871T34	4.31
7/8″	2 1/2″ × 1/2″	3/16″	2″	10	8871T35	4.51
1 1/8″	2 3/4″ × 1/2″	3/16″	2 1/4″	10	8871T36	4.89
1 3/8″	3″ × 1/2″	3/16″	2 1/2″	10	8871T37	5.17
1 5/8″	3 1/4″ × 3/4″	3/16″	2 3/4″	10	8871T38	6.44
2 1/8″	3 3/4″ × 3/4″	3/16″	3 1/4″	10	8871T39	6.53

Plastic Expansion Clamps

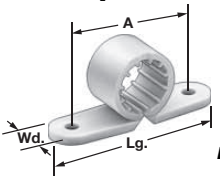

With Bottom Base

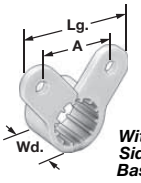

With Side Base

Flexible wedges inside these clamps allow for material expansion and contraction. Made of high-impact plastic.

Mounting hole dia. is 3/16″. Fasteners are not included. Color is ivory. Temperature range is 32° to 140° F.

For OD	For Pipe Size	Lg. × Wd.	Thick.	(A)		
With Bottom Base						
5/8″	1/2″	2 13/32″ × 5/8″	1/8″	1 13/16″	8972T11	$0.49
With Side Base						
5/8″	1/2″	2 13/32″ × 5/8″	1/8″	1 7/32″	8972T31	.50
7/8″	3/4″	2 7/16″ × 1 1/16″	1/8″	1 13/32″	8972T32	.59
1 1/8″	1″	2 27/32″ × 1 3/16″	1/8″	1 13/32″	8972T33	.58

Adhesive-Backed Nylon Clamps

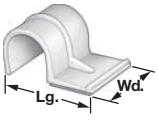

One-Sided Mount

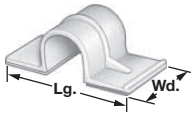

Two-Sided Mount

With their foam adhesive-tape backing, these clamps are easy to mount. All are made of noncorrosive and nonconductive nylon. Color is white. Temperature range is –10° to +158° F.

For OD	Lg. × Wd.	Thick.	Pkg. Qty.		Pkg.
One-Sided Mount					
1/8″	1/2″ × 3/8″	1/16″	50	2978T65	$12.26
1/4″	7/8″ × 1/2″	1/16″	50	2978T66	12.94
3/8″	1″ × 5/8″	1/16″	50	2978T67	14.30
1/2″	1 1/8″ × 3/4″	1/16″	50	2978T68	14.66
Two-Sided Mount					
1/8″	3/4″ × 3/8″	1/16″	50	2978T61	13.96
1/4″	1 3/8″ × 1/2″	1/16″	50	2978T62	14.64
3/8″	1 1/2″ × 5/8″	1/16″	50	2978T63	15.81
1/2″	1 5/8″ × 3/4″	1/16″	50	2978T64	16.71

Single- and Double-Line Plastic Clamps

Single Line

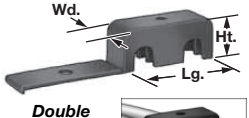

Double Line

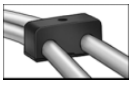

Secure and route single and double lines of material. All clamps are polypropylene and resist oils, chemicals, and mild acids. Mounting hole diameter is 1/4″ (fasteners not included). Color is black. Temperature range is –22° to +194° F.

For OD	Lg. × Wd. × Ht.	Pkg. Qty.		Pkg.
Single Line				
1/8″	7/8″ × 1/2″ × 7/16″	25	2993T81	$6.78
1/4″	7/8″ × 1/2″ × 7/16″	25	2993T82	6.78
5/16″	7/8″ × 1/2″ × 7/16″	25	2993T14	6.78
3/8″	1 1/16″ × 5/8″ × 9/16″	25	2993T83	8.88
7/16″	1 1/16″ × 5/8″ × 9/16″	25	2993T16	8.88
1/2″	1 3/8″ × 13/16″ × 7/8″	10	2993T84	6.33
5/8″	1 3/8″ × 13/16″ × 7/8″	10	2993T19	6.33
3/4″	1 11/16″ × 13/16″ × 1 3/16″	10	2993T85	7.92
7/8″	1 11/16″ × 13/16″ × 1 3/16″	10	2993T22	7.92
1″	1 11/16″ × 13/16″ × 1 3/16″	10	2993T86	7.92

For OD	Lg. × Wd. × Ht.	Pkg. Qty.		Pkg.
Double Line				
1/8″	1 1/4″ × 1/2″ × 7/16″	25	2993T91	$9.68
1/4″	1 1/4″ × 1/2″ × 7/16″	25	2993T92	9.68
5/16″	1 1/4″ × 1/2″ × 7/16″	25	2993T35	9.68
3/8″	1 1/2″ × 5/8″ × 9/16″	25	2993T93	13.20
7/16″	1 1/2″ × 5/8″ × 9/16″	25	2993T37	13.20
1/2″	2 1/16″ × 3/4″ × 7/8″	10	2993T94	8.97
5/8″	2 1/16″ × 3/4″ × 7/8″	10	2993T42	8.97
3/4″	2 3/4″ × 3/4″ × 1 3/16″	10	2993T95	11.78
7/8″	2 3/4″ × 3/4″ × 1 3/16″	10	2993T48	11.78
1″	2 3/4″ × 3/4″ × 1 3/16″	10	2993T96	11.78

Double-Line Snap-In Plastic Clamps

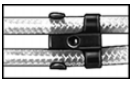

Quickly run two lines of material—just snap your material in place. Clamps are UV-resistant acetal and have a mounting hole in the center (fasteners not included). Color is black. Temperature range is –40° to +212° F.

For OD	Lg. × Wd.	Mtg. Hole Dia.	Pkg. Qty.		Pkg.
5/32″ to 1/4″	11/16″ × 5/8″	1/8″	10	7429K41	$3.78
1/4″ to 5/16″	13/16″ × 13/16″	1/8″	10	7429K42	4.58
5/16″ to 3/8″	1″ × 1″	5/32″	10	7429K43	4.64
3/8″ to 1/2″	1 1/8″ × 1 3/16″	5/32″	10	7429K44	4.73
1/2″ to 5/8″	1 5/16″ × 1 3/8″	11/64″	10	7429K45	5.38
5/8″ to 3/4″	1 5/8″ × 1 11/16″	13/64″	10	7429K46	7.96
3/4″ to 7/8″	1 7/8″ × 2″	7/32″	10	7429K47	9.42
7/8″ to 1″	2 3/8″ × 2 7/16″	1/4″	10	7429K48	13.23

Double-Line Metal Clamps

Perfect when you need to run parallel lines. Mounting hole diameter is 3/16″ (fasteners not included).

Zinc-plated steel clamps offer good corrosion resistance in most environments. ***Brass*** clamps are compatible with copper products and provide good corrosion resistance.

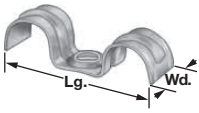

For OD, Each Side	Lg.	× Wd.	Thick.	Pkg. Qty.		Pkg.
Zinc-Plated Steel						
1/8″	1″	× 1/2″	1/32″	50	9431T11	$4.42
1/4″	1 1/4″	× 1/2″	1/32″	50	9431T12	4.97
1/4″ and 3/8″	1 3/8″	× 1/2″	1/32″	50	9431T14	6.62
3/8″	1 5/8″	× 1/2″	1/32″	50	9431T13	6.88
1/2″	1 13/16″	× 1/2″	1/32″	50	9431T18	8.28
5/8″	2″	× 1/2″	1/32″	50	9431T39	8.55

For OD, Each Side	Lg.	× Wd.	Thick.	Pkg. Qty.		Pkg.
Brass						
1/8″	1″	× 1/2″	1/32″	25	9431T21	$9.32
1/4″	1 1/4″	× 1/2″	1/32″	25	9431T22	12.10
1/4″ and 3/8″	1 3/8″	× 1/2″	1/32″	25	9431T24	14.74
3/8″	1 5/8″	× 1/2″	1/32″	25	9431T23	15.17
1/2″	1 13/16″	× 1/2″	1/32″	10	9431T26	8.68
5/8″	2″	× 1/2″	1/32″	10	9431T27	9.22

Multiline Plastic Clamps

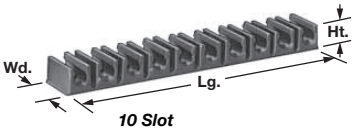

10 Slot

Neatly organize multiple lines and save space. All are black polyethylene. Temperature range is –80° to +260° F. Mounting hole dia. is 3/16″ (fasteners not included).

10-slot clamps have a mounting hole on the bottom of each slot. They can be cut between the slots for single- or multiple-line applications.

7- and ***5-slot*** clamps have a mounting hole on each end.

For OD	Lg.	× Wd.	× Ht.		
10 Slot					
5/32″	4″	× 5/8″	× 3/8″	2216T11	$1.56
3/16″	4″	× 5/8″	× 3/8″	2216T12	1.56
1/4″	4″	× 5/8″	× 3/8″	2216T13	1.56
7 Slot					
3/8″	4 3/8″	× 11/16″	× 5/8″	2216T14	5.14
5 Slot					
1/2″	4 7/16″	× 11/16″	× 13/16″	2216T15	5.14

Connectable Clamps

Mount these clamps at any angle for use in single- or multiple-line horizontal and vertical applications. Clamps are made of Type 303 stainless steel and consist of two halves held together by two 1/4″-28 screws. All screws are included.

Stacking clamps have a flat side with a 1/4″-20 threaded hole and a flat side with a 10-24 threaded hole. This allows you to connect to another stacking clamp or to an end clamp.

End clamps have a flat side with a 1/4″-20 threaded hole for mounting to threaded rod or for connecting to the 10-24 threaded hole of a stacking clamp.

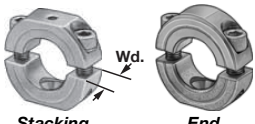

Stacking Clamp *End Clamp*

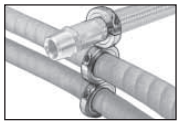

For OD	Dia.	Wd.	Stacking Clamp		End Clamp	
3/4″	1 1/2″	1/2″	2236T21	$25.30	2236T31	$21.85
1″	1 3/4″	1/2″	2236T22	27.62	2236T32	24.18
1 1/8″	1 7/8″	1/2″	2236T23	28.82	2236T33	25.35
1 1/4″	2 1/16″	1/2″	2236T24	30.37	2236T34	26.93
1 3/8″	2 1/4″	9/16″	2236T25	33.15	2236T35	29.70
1 1/2″	2 3/8″	9/16″	2236T26	35.40	2236T36	31.95

Vibration-Damping Clamps

Rubber inserts on these clamps dampen vibration and noise as well as absorb shock. Inserts are black. Fasteners are not included.

Thermoplastic rubber (TPR) insert resists most oils, chemicals, and cleaning solvents. Temperature range is –50° to +275° F. ***SBR rubber insert*** provides better vibration and noise control than thermoplastic rubber insert. They resist abrasion, oxidation, and moisture. Temperature range is –75° to +250° F.

Zinc-plated steel clamps offer good corrosion resistance in most environments. ***Type 304 stainless steel*** clamps provide excellent corrosion resistance.

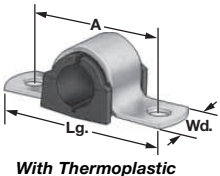

With Thermoplastic Rubber (TPR) Insert

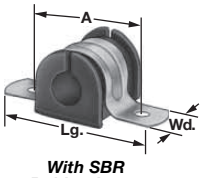

With SBR Rubber Insert

For OD	For Tube/ Pipe Size	THERMOPLASTIC RUBBER (TPR) INSERT Lg.	× Wd.	Thick.	Mtg. Hole Dia. (A)	Zinc-Plated Steel		Type 304 SS		SBR RUBBER INSERT Lg.	× Wd.	Thick.	Mtg. Hole Dia. (A)	Zinc-Plated Steel		Type 304 SS	
For Tube																	
1/4″	1/4″	1 13/16″	× 5/8″	1/16″	1/4″	1 3/16″	11355T21	$1.45	11355T61	$3.14	2 7/16″	× 5/8″	1/32″	3/16″	1 11/16″	8981T61	$1.30	8981T24	$3.56
3/8″	3/8″	1 15/16″	× 5/8″	1/16″	1/4″	1 5/16″	11355T22	1.48	11355T62	3.22	2 7/16″	× 5/8″	1/32″	3/16″	1 11/16″	8981T62	1.33	8981T25	3.56
1/2″	1/2″	2 1/4″	× 3/4″	1/16″	1/4″	1 11/16″	11355T23	1.52	11355T63	3.33	2 7/16″	× 5/8″	1/32″	3/16″	1 11/16″	8981T63	1.36	8981T26	3.64
5/8″	5/8″	2 5/16″	× 3/4″	1/16″	1/4″	1 11/16″	11355T24	1.62	11355T64	3.39	2 7/16″	× 5/8″	1/32″	3/16″	1 11/16″	8981T64	1.38	8981T27	3.68
3/4″	3/4″	2 1/2″	× 3/4″	1/16″	1/4″	1 13/16″	11355T25	1.84	11355T65	3.82	2 7/16″	× 5/8″	1/32″	3/16″	1 11/16″	8981T65	1.40	8981T28	3.72
7/8″	7/8″	2 11/16″	× 3/4″	1/16″	1/4″	2 1/16″	11355T26	2.01	11355T66	4.35	3 3/8″	× 3/4″	3/64″	1/4″	2 1/2″	8981T68	3.28	8981T32	7.33
1″	1″	2 11/16″	× 3/4″	1/16″	1/4″	2 1/8″	11355T27	2.09	11355T67	4.47	3 3/8″	× 3/4″	3/64″	1/4″	2 1/2″	8981T69	3.11	8981T33	7.41
1 1/8″	1 1/8″	2 15/16″	× 3/4″	1/16″	1/4″	2 5/16″	11355T28	2.39	11355T68	5.25	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T73	5.63	8981T36	20.48
1 1/4″	1 1/4″	3″	× 1 1/4″	1/16″	1/4″	2 3/8″	11355T29	2.59	11355T69	5.61	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T74	5.17	8981T37	20.12
1 3/8″	1 3/8″	3 1/8″	× 1 1/4″	1/16″	1/4″	2 9/16″	11355T31	2.73	11355T71	5.75	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T75	5.17	8981T38	20.37
1 1/2″	1 1/2″	3 1/4″	× 1 1/4″	1/16″	1/4″	2 11/16″	11355T32	2.84	11355T72	6.02	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T76	5.23	8981T39	20.62
1 5/8″	1 5/8″	3 3/8″	× 1 1/4″	1/16″	1/4″	2 7/8″	11355T33	3.45	11355T73	7.25	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T77	4.80	8981T41	20.38
1 3/4″	1 3/4″	3 31/32″	× 1 1/4″	1/8″	5/16″	3 1/8″	11355T34	3.82	11355T74	8.10	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T78	4.86	8981T42	20.63
1 7/8″	1 7/8″	4″	× 1 1/4″	1/8″	5/16″	3 5/16″	11355T35	3.93	11355T75	8.82	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T79	4.96	8981T43	20.90
2″	2″	4 3/16″	× 1 1/4″	1/8″	5/16″	3 3/8″	11355T36	5.41	11355T76	11.34	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T85	5.03	8981T51	21.17
2 1/8″	2 1/8″	4 1/2″	× 1 1/4″	1/8″	5/16″	3 11/16″	11355T37	6.36	11355T77	13.76	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T81	5.05	8981T44	21.45
For Pipe																	
9/16″	1/4″	—	—	—	—	—	—	—	—	2 7/16″	× 5/8″	1/32″	3/16″	1 11/16″	8981T66	1.41	8981T29	3.72
11/16″	3/8″	—	—	—	—	—	—	—	—	2 7/16″	× 5/8″	1/32″	3/16″	1 11/16″	8981T67	1.43	8981T31	3.76
13/16″	1/2″	—	—	—	—	—	—	—	—	3 3/8″	× 3/4″	3/64″	1/4″	2 1/2″	8981T71	3.40	8981T34	7.50
7/8″	1/2″	2 11/16″	× 3/4″	1/16″	1/4″	2 1/16″	11355T26	2.01	11355T66	4.35	—	—	—	—	—	—	—	—	—
1 1/16″	3/4″	2 13/16″	× 3/4″	1/16″	1/4″	2 1/4″	11355T42	2.39	11355T82	5.25	3 3/8″	× 3/4″	3/64″	1/4″	2 1/2″	8981T72	3.44	8981T35	7.59
1 5/16″	1″	3 1/8″	× 1 1/4″	1/16″	1/4″	2 9/16″	11355T43	2.73	11355T83	5.75	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T82	6.21	8981T45	19.11
1 11/16″	1 1/4″	3 31/32″	× 1 1/4″	1/8″	5/16″	3 1/8″	11355T44	3.82	11355T84	8.10	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T83	5.64	8981T46	18.98
1 7/8″	1 1/2″	4″	× 1 1/4″	1/8″	5/16″	3 5/16″	11355T35	3.93	11355T75	8.82	4 11/16″	× 1 1/4″	1/16″	5/16″	4 3/8″	8981T84	5.18	8981T47	18.95

Weld-Mount Vibration-Damping Clamps for Pressurized Lines

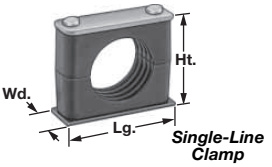

Single-Line Clamp

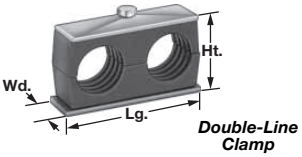

Double-Line Clamp

Dampen vibration and noise as well as absorb shock when supporting tubing and pipe in hydraulic systems. All clamps have a bottom plate that welds into place. For strut-mount vibration-damping clamps, please see pages 1554-1555.

Polypropylene clamps are available in single- and double-line styles. They handle lines with max. pressure of 2,000 psi. Color is green (unless noted). Temperature range is –22° to +194° F (unless noted).

High-pressure polypropylene clamps are for single lines and can handle max. pressure of 10,000 psi. Color is black. Temperature range is –22° to +212° F.

High-temperature/high-pressure aluminum clamps are for single lines and withstand temperatures of –40° to +500° F. They can handle lines with max. pressure of 10,000 psi.

Clamps with zinc-plated steel hardware have a zinc-plated steel top plate and a steel with zinc-phosphate coating bottom plate.

Zinc-plated steel hardware offers good corrosion resistance in most environments. ***Type 304 stainless steel*** hardware provides excellent corrosion resistance. ***Steel*** hardware is high strength.

Polypropylene Clamps

For OD	For Tube/ Pipe Size	Lg.×Wd.×Ht.	Zinc-Plated Steel Hardware		Type 304 SS Hardware	
Single Line						
For Tube						
1/4"	1/4"	1 1/2"×1 1/4"×1"	3015T21	$2.49	3015T41	$10.79
3/8"	3/8"	1 1/2"×1 1/4"×1"	3015T22	2.56	3015T42	10.96
1/2"	1/2"	1 5/8"×1 1/4"×1 1/4"	3015T23	2.59	3015T43	11.24
5/8"	5/8"	1 5/8"×1 1/4"×1 1/4"	3015T24	2.63	3015T44	11.56
3/4"	3/4"	2"×1 1/4"×1 1/4"	3015T25	2.72	3015T45	12.03
7/8"	7/8"	2"×1 1/4"×1 1/4"	3015T26	2.74	3015T46	12.20
1"	1"	2"×1 1/4"×1 1/4"	3015T27	2.77	3015T47	12.37
1 1/4"	1 1/4"	2 7/8"×1 1/4"×2 1/4"	3015T28	3.26	3015T48	14.39
1 1/2"	1 1/2"	2 7/8"×1 1/4"×2 1/4"	3015T29	3.30	3015T49	14.78
1 3/4"	1 3/4"	3 1/2"×1 1/4"×2 1/2"	3015T31	4.78	3015T51	16.60
2"	2"	3 1/2"×1 1/4"×2 1/2"	3015T32	4.92	3015T52	17.11
2 1/4"	2 1/4"	4 7/8"×1 1/4"×3 1/2"	3015T311	8.90	3015T121	31.85
2 1/2"	2 1/2"	4 7/8"×1 1/4"×3 1/2"	3015T312	9.01	3015T122	32.56
2 3/4"	2 3/4"	4 7/8"×1 1/4"×3 1/2"	3015T319	9.23	3015T329	33.30
3"	3"	4 7/8"×1 1/4"×3 1/4"	3015T313	9.59	3015T123	33.68
4"	4"	5 3/4"×1 1/4"×4 1/2"	3015T314	12.39	3015T124	51.53
For Pipe						
9/16"	1/4"	1 5/8"×1 1/4"×1 1/4"	3015T33	2.44	3015T53	11.56
11/16"	3/8"	1 5/8"×1 1/4"×1 1/4"	3015T34	2.51	3015T54	11.72
13/16"	1/2"	2"×1 1/4"×1 1/2"	3015T35	2.60	3015T55	12.03
1 1/16"	3/4"	2 3/8"×1 1/4"×1 1/2"	3015T36	3.06	3015T56	13.08
1 5/16"	1"	2 7/8"×1 1/4"×2"	3015T37	3.26	3015T57	14.39

■ Color is black. Temperature range is –22° to +212° F.

For OD	For Tube/ Pipe Size	Lg.×Wd.×Ht.	Zinc-Plated Steel Hardware		Type 304 SS Hardware	
Single Line (Cont.)						
For Pipe (Cont.)						
1 11/16"	1 1/4"	2 7/8"×1 1/4"×2"	3015T38	$3.30	3015T58	$14.59
1 7/8"	1 1/2"	3 1/2"×1 1/4"×2 1/2"	3015T39	4.66	3015T59	17.95
2 3/8"	2"	4 7/8"×1 1/4"×3 1/2"	3015T315	9.12	3015T125	32.56
2 7/8"	2 1/2"	4 7/8"×1 1/4"×3 1/2"	3015T316	9.23	3015T126	33.30
3 1/2"	3"	5 7/8"×1 1/4"×4 1/2"	3015T317	11.75	3015T127	51.53
4 1/2"	4"	5 3/4"×1 1/4"×4 3/4"	3015T338■	15.51	3015T328■	32.39
Double Line						
For Tube						
1/4"	1/4"	1 1/2"×1 1/4"×1"	3252T111	2.71	3252T124	10.44
3/8"	3/8"	1 1/2"×1 1/4"×1"	3252T112	2.76	3252T125	10.69
1/2"	1/2"	2 1/4"×1 1/4"×1"	3252T3	3.15	3252T23	15.54
5/8"	5/8"	2 1/4"×1 1/4"×1"	3252T4	3.32	3252T24	15.74
3/4"	3/4"	2 3/4"×1 1/4"×1 3/8"	3252T5	3.75	3252T25	17.31
1"	1"	2 3/4"×1 1/4"×1 3/8"	3252T6	3.80	3252T26	17.53
1 1/4"	1 1/4"	4 3/8"×1 1/4"×2"	3252T7	5.22	3252T27	22.69
1 1/2"	1 1/2"	4 3/8"×1 1/4"×2"	3252T8	5.28	3252T28	22.99
For Pipe						
11/16"	3/8"	2 1/4"×1 1/4"×1"	3252T9	3.15	3252T29	15.54
13/16"	1/2"	2 3/4"×1 1/4"×1 1/2"	3252T11	3.75	3252T31	16.88
1 1/16"	3/4"	3 3/8"×1 1/4"×1 1/2"	3252T12	4.42	3252T32	19.13
1 5/16"	1"	4 3/8"×1 1/4"×2"	3252T13	5.25	3252T33	22.69

High-Pressure Single-Line Polypropylene Clamps

For OD	For Tube Size	Lg.×Wd.×Ht.	Steel Hardware		Type 304 SS Hardware	
For Tube						
1/4"	1/4"	2 7/8"×1 1/4"×2"	3249T101	$5.24	3249T221	$25.03
3/8"	3/8"	2 7/8"×1 1/4"×2"	3249T102	5.36	3249T222	25.70
1/2"	1/2"	2 7/8"×1 1/4"×2"	3249T103	5.39	3249T223	26.42
5/8"	5/8"	2 7/8"×1 1/4"×2"	3249T104	5.54	3249T224	27.17
3/4"	3/4"	3 3/8"×1 1/4"×2 1/2"	3249T105	6.58	3249T225	28.59
7/8"	7/8"	3 3/8"×1 1/4"×2 1/2"	3249T106	6.67	3249T226	29.39
1"	1"	3 3/8"×1 1/4"×2 1/2"	3249T107	6.86	3249T227	30.23
1 1/4"	1 1/4"	4"×1 1/4"×3"	3249T108	7.00	3249T228	31.16
1 1/2"	1 1/2"	4"×1 1/4"×3"	3249T109	7.10	3249T229	32.03
1 3/4"	1 3/4"	5 7/8"×1 3/4"×4 1/4"	3249T111	11.92	3249T231	57.77
2"	2"	5 7/8"×1 3/4"×4 1/4"	3249T112	12.24	3249T232	61.73
2 1/4"	2 1/4"	5 7/8"×1 3/4"×4 1/4"	3249T311	13.29	3249T321	60.89
2 1/2"	2 1/2"	5 7/8"×1 3/4"×4 1/4"	3249T113	13.52	3249T233	64.37
2 3/4"	2 3/4"	5 7/8"×1 3/4"×4 1/4"	3249T114	13.68	3249T234	65.30
3"	3"	7 3/8"×2 1/4"×5 1/2"	3249T249	34.25	3249T235	140.78
4"	4"	10"×3"×7 5/8"	3249T251	92.76	3249T236	335.26

For OD	For Pipe Size	Lg.×Wd.×Ht.	Steel Hardware		Type 304 SS Hardware	
For Pipe						
9/16"	1/4"	2 7/8"×1 1/4"×2"	3249T115	$5.24	3249T237	$23.77
11/16"	3/8"	2 7/8"×1 1/4"×2"	3249T116	5.39	3249T238	24.51
13/16"	1/2"	3 3/8"×1 1/4"×2 1/2"	3249T117	6.67	3249T239	27.84
1 1/16"	3/4"	3 3/8"×1 1/4"×2 1/2"	3249T118	6.86	3249T241	28.59
1 5/16"	1"	4"×1 1/4"×3"	3249T119	7.40	3249T242	31.16
1 11/16"	1 1/4"	5 7/8"×1 3/4"×4 1/4"	3249T121	12.57	3249T243	57.77
1 7/8"	1 1/2"	5 7/8"×1 3/4"×4 1/4"	3249T122	12.92	3249T244	59.29
2 3/8"	2"	5 7/8"×1 3/4"×4 1/4"	3249T123	13.29	3249T245	60.89
2 7/8"	2 1/2"	7 3/8"×2 1/4"×5 1/2"	3249T252	32.54	3249T246	140.78
3 1/2"	3"	7 3/8"×2 1/4"×5 1/2"	3249T253	33.42	3249T247	142.52
4 1/2"	4"	10"×3"×7 5/8"	3249T254	90.38	3249T248	351.61

High-Temperature/High-Pressure Single-Line Aluminum Clamps

For OD	For Tube Size	Lg.×Wd.×Ht.	Zinc-Plated Steel Hardware	
For Tube				
3/8"	3/8"	2 7/8"×1 1/4"×1 7/8"	3050T71	$9.43
1/2"	1/2"	2 7/8"×1 1/4"×1 7/8"	3050T72	9.83
5/8"	5/8"	2 7/8"×1 1/4"×1 7/8"	3050T73	10.04
3/4"	3/4"	3 3/8"×1 1/4"×2 1/2"	3050T74	13.45
7/8"	7/8"	3 3/8"×1 1/4"×2 1/2"	3050T75	13.74
1"	1"	3 3/8"×1 1/4"×2 1/2"	3050T76	14.04
1 1/4"	1 1/4"	4"×1 1/4"×3"	3050T77	15.59
1 1/2"	1 1/2"	4"×1 1/4"×3"	3050T78	15.93
1 3/4"	1 3/4"	5 1/2"×1 3/4"×4 3/8"	3050T79	33.66
2"	2"	5 1/2"×1 3/4"×4 3/8"	3050T81	35.07
2 1/2"	2 1/2"	5 1/2"×1 3/4"×4 3/8"	3050T82	35.81
2 3/4"	2 3/4"	5 1/2"×1 3/4"×4 3/8"	3050T83	36.59
3"	3"	7 1/8"×2 3/8"×5 1/2"	3050T68	71.52
4"	4"	8 7/8"×3 1/8"×7 7/8"	3050T69●	161.83

For OD	For Pipe Size	Lg.×Wd.×Ht.	Zinc-Plated Steel Hardware	
For Pipe				
11/16"	3/8"	2 7/8"×1 1/4"×1 7/8"	3050T84	$9.83
13/16"	1/2"	3 3/8"×1 1/4"×2 1/2"	3050T85	13.45
1 1/16"	3/4"	3 3/8"×1 1/4"×2 1/2"	3050T86	13.74
1 5/16"	1"	4"×1 1/4"×3"	3050T87	15.59
1 11/16"	1 1/4"	5 3/4"×1 3/4"×4 3/8"	3050T88	35.81
1 7/8"	1 1/2"	5 3/4"×1 3/4"×4 3/8"	3050T89	36.58
2 3/8"	2"	5 3/4"×1 3/4"×4 3/8"	3050T91	37.40
2 7/8"	2 1/2"	7 1/8"×2 3/8"×5 1/2"	3050T62	74.38
3 1/2"	3"	7 1/8"×2 3/8"×5 1/2"	3050T63	75.90
4 1/2"	4"	8 7/8"×3 1/8"×7 3/4"	3050T64●	161.83
5 9/16"	5"	10 5/8"×3 5/8"×9 1/8"	3050T65●	270.42
6 5/8"	6"	10 5/8"×3 5/8"×9 1/8"	3050T66●	275.62
8 5/8"	8"	13 3/8"×4 3/4"×12 5/8"	3050T67●	615.00

● Top and bottom plates are steel.

Rail-Mount Vibration-Damping Clamps for Pressurized Lines

Great for supporting tubing and pipe in high-pressure hydraulic systems, these clamps dampen vibration and noise as well as absorb shock. All are made of polypropylene and include rail nuts for mounting into rails (sold separately). For strut-mount vibration-damping clamps, please see pages 1554-1555.

Polypropylene clamps are available in single- and double-line styles. They handle lines with max. pressure of 2,000 psi. Color is green (unless noted). Temperature range is –22° to +194° F (unless noted).

High-pressure polypropylene clamps are for single lines and can handle max. pressure of 10,000 psi. Color is black. Temperature range is –22° to +212° F.

Clamps with zinc-plated steel hardware have a zinc-plated steel top plate.

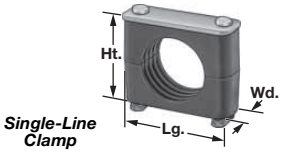

Single-Line Clamp

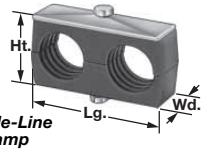

Double-Line Clamp

Zinc-plated steel hardware offers good corrosion resistance in most environments. ***Type 304 stainless steel*** hardware provides excellent corrosion resistance. ***Steel*** hardware is high strength. ***Type 316 stainless steel*** hardware provides maximum corrosion resistance.

Polypropylene Clamps

For OD	For Tube/ Pipe Size	Lg.xWd.xHt.	Zinc-Plated Steel Hardware		Type 304 SS Hardware	
Single Line						
For Tube						
1/4"	1/4"	1 1/2"×1 1/4"×1"	3015T1	$3.12	3015T81	$11.29
3/8"	3/8"	1 1/2"×1 1/4"×1"	3015T2	3.21	3015T82	11.38
1/2"	1/2"	1 5/8"×1 1/4"×1 1/4"	3015T3	3.35	3015T83	11.89
5/8"	5/8"	1 5/8"×1 1/4"×1 1/4"	3015T4	3.41	3015T84	12.22
3/4"	3/4"	2" ×1 1/4"×1 1/4"	3015T5	3.47	3015T85	12.44
7/8"	7/8"	2" ×1 1/4"×1 1/4"	3015T6	3.52	3015T86	12.62
1"	1"	2" ×1 1/4"×1 1/4"	3015T7	3.58	3015T87	12.80
1 1/4"	1 1/4"	2 7/8"×1 1/4"×2 1/4"	3015T8	3.66	3015T88	14.71
1 1/2"	1 1/2"	2 7/8"×1 1/4"×2 1/4"	3015T9	3.76	3015T89	15.30
1 3/4"	1 3/4"	3 1/2"×1 1/4"×2 1/2"	3015T11	5.26	3015T91	17.17
2"	2"	3 1/2"×1 1/4"×2 1/2"	3015T12	5.34	3015T92	17.68
2 1/4"	2 1/4"	4 7/8"×1 1/4"×3 1/2"	3015T411	9.29	3015T131	30.09
2 1/2"	2 1/2"	4 7/8"×1 1/4"×3 1/2"	3015T412	9.43	3015T132	28.42
2 3/4"	2 3/4"	4 7/8"×1 1/4"×3 1/2"	3015T419	9.58	3015T429	28.42
3"	3"	4 7/8"×1 1/4"×3 1/4"	3015T413	9.88	3015T133	29.23
4"	4"	5 3/4"×1 1/4"×4 1/2"	3015T414	12.03	3015T134	40.21
For Pipe						
9/16"	1/4"	1 5/8"×1 1/4"×1 1/4"	3015T13	3.11	3015T93	11.89
11/16"	3/8"	1 5/8"×1 1/4"×1 1/4"	3015T14	3.21	3015T94	12.05
13/16"	1/2"	2" ×1 1/4"×1 1/2"	3015T15	3.32	3015T95	12.44
1 1/16"	3/4"	2 3/8"×1 1/4"×1 1/2"	3015T16	3.62	3015T96	14.09
1 5/16"	1"	2 7/8"×1 1/4"×2"	3015T17	3.58	3015T97	14.71

■ Color is black. Temperature range is –22° to +212° F.

For OD	For Tube/ Pipe Size	Lg.xWd.xHt.	Zinc-Plated Steel Hardware		Type 304 SS Hardware	
Single Line (Cont.)						
For Pipe (Cont.)						
1 11/16"	1 1/4"	2 7/8"×1 1/4"×2"	3015T18	$4.08	3015T98	$15.30
1 7/8"	1 1/2"	3 1/2"×1 1/4"×2 1/2"	3015T19	5.26	3015T191	18.50
2 3/8"	2"	4 7/8"×1 1/4"×3 1/2"	3015T415	9.29	3015T135	26.92
2 7/8"	2 1/2"	4 7/8"×1 1/4"×3 1/2"	3015T416	9.43	3015T136	26.92
3 1/2"	3"	5 7/8"×1 1/4"×4 1/2"	3015T417	11.69	3015T137	44.45
4 1/2"	4"	5 3/4"×1 1/4"×4 3/4"	3015T418■	16.10	3015T428■	38.86
Double Line						
For Tube						
1/4"	1/4"	1 1/2"×1 1/4"×1"	3252T141	2.83	3252T161	10.79
3/8"	3/8"	1 1/2"×1 1/4"×1"	3252T142	2.87	3252T162	10.92
1/2"	1/2"	2 1/4"×1 1/4"×1"	3252T83	4.16	3252T63	10.84
5/8"	5/8"	2 1/4"×1 1/4"×1"	3252T84	4.21	3252T64	11.14
3/4"	3/4"	2 3/4"×1 1/4"×1 3/8"	3252T85	4.76	3252T65	12.35
1"	1"	2 3/4"×1 1/4"×1 3/8"	3252T86	4.83	3252T66	12.52
1 1/4"	1 1/4"	4 3/8"×1 1/4"×2"	3252T87	6.15	3252T67	15.55
1 1/2"	1 1/2"	4 3/8"×1 1/4"×2"	3252T88	6.24	3252T68	15.97
For Pipe						
11/16"	3/8"	2 1/4"×1 1/4"×1"	3252T89	4.16	3252T69	10.84
13/16"	1/2"	2 3/4"×1 1/4"×1 1/2"	3252T91	4.76	3252T71	12.09
1 1/16"	3/4"	3 3/8"×1 1/4"×1 1/2"	3252T92	5.03	3252T72	13.32
1 5/16"	1"	4 3/8"×1 1/4"×2"	3252T93	6.15	3252T73	15.55

Ht.	Wd.	39 3/8" LG. MOUNTING RAILS Steel		39 3/8" LG. MOUNTING RAILS Type 304 SS		78 3/4" LG. MOUNTING RAILS Steel		78 3/4" LG. MOUNTING RAILS Type 304 SS	
7/16"	1 1/8"	3015T432	$6.65	3015T442	$31.56	3015T433	$13.26	3015T443	$63.11
9/16"	1 1/8"	3015T99	7.35	3015T992	33.79	3015T431	14.79	3015T441	67.64
1 3/16"	1 1/8"	3015T991	13.13	3015T993	55.82	3015T434	24.12	3015T444	111.60

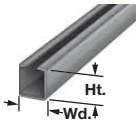

High-Pressure Single-Line Polypropylene Clamps

For OD	For Tube Size	Lg.xWd.xHt.	Steel Hardware		Type 316 SS Hardware	
For Tube						
1/4"	1/4"	2 1/4"×1 1/4"×1 3/4"	3249T61	$5.37	3249T255	$31.67
3/8"	3/8"	2 1/4"×1 1/4"×1 3/4"	3249T62	5.51	3249T256	32.50
1/2"	1/2"	2 1/4"×1 1/4"×1 3/4"	3249T63	5.66	3249T257	33.38
5/8"	5/8"	2 1/4"×1 1/4"×1 3/4"	3249T64	5.81	3249T184	34.31
3/4"	3/4"	2 3/4"×1 1/4"×2 1/4"	3249T65	6.28	3249T185	37.22
7/8"	7/8"	2 3/4"×1 1/4"×2 1/4"	3249T66	6.46	3249T186	38.21
1"	1"	2 3/4"×1 1/4"×2 1/4"	3249T67	6.65	3249T187	39.36
1 1/4"	1 1/4"	3 3/8"×1 1/4"×2 3/4"	3249T68	6.83	3249T188	36.09
1 1/2"	1 1/2"	3 3/8"×1 1/4"×2 3/4"	3249T69	7.03	3249T189	37.18
1 3/4"	1 3/4"	4 1/2"×1 3/4"×3 7/8"	3249T71	12.18	3249T191	59.46
2"	2"	4 1/2"×1 3/4"×3 7/8"	3249T72	12.50	3249T192	61.11
2 1/4"	2 1/4"	4 1/2"×1 3/4"×3 7/8"	3249T312	13.19	3249T125	60.94
2 1/2"	2 1/2"	4 1/2"×1 3/4"×3 7/8"	3249T73	13.57	3249T193	62.86
2 3/4"	2 3/4"	4 1/2"×1 3/4"×3 7/8"	3249T74	13.97	3249T194	66.67
3"	3"	6" ×2 1/4"×5 1/8"	3249T313	44.77	3249T126	194.98

For OD	For Pipe Size	Lg.xWd.xHt.	Steel Hardware		Type 316 SS Hardware	
For Pipe						
9/16"	1/4"	2 1/4"×1 1/4"×1 3/4"	3249T75	$5.51	3249T195	$33.38
11/16"	3/8"	2 1/4"×1 1/4"×1 3/4"	3249T76	5.66	3249T196	34.31
13/16"	1/2"	2 3/4"×1 1/4"×2 1/4"	3249T77	6.11	3249T197	39.36
1 1/16"	3/4"	2 3/4"×1 1/4"×2 1/4"	3249T78	6.28	3249T198	40.59
1 5/16"	1"	3 3/8"×1 1/4"×2 3/4"	3249T79	6.83	3249T199	38.34
1 11/16"	1 1/4"	4 1/2"×1 3/4"×3 7/8"	3249T81	12.67	3249T211	65.28
1 7/8"	1 1/2"	4 1/2"×1 3/4"×3 7/8"	3249T82	12.84	3249T212	66.67
2 3/8"	2"	4 1/2"×1 3/4"×3 7/8"	3249T83	13.38	3249T213	68.75
2 7/8"	2 1/2"	6" ×2 1/4"×5 1/8"	3249T315	47.13	3249T129	206.23
3 1/2"	3"	6" ×2 1/4"×5 1/8"	3249T316	48.41	3249T131	210.27

Ht.	Wd.	39 3/8" LG. MOUNTING RAILS Steel		39 3/8" LG. MOUNTING RAILS Type 316 SS		78 3/4" LG. MOUNTING RAILS Steel		78 3/4" LG. MOUNTING RAILS Type 316 SS	
7/8"	1 9/16"	3249T97	$33.03	3249T971	$124.76	3249T98	$56.74	3249T981	$227.08

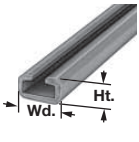

Wall-Mount Clamping Hangers

Secure vertical pipes in sanitation drain applications. All have an adjustable mounting bracket that allows them to be mounted at a variety of heights and widths. Bracket has two 1 1/4"×7/16" mounting slots that accept 3/8" dia. screws. Clamps are corrosion-resistant Type 304 stainless steel and include an adjustment bolt with nut for clamping. For stainless steel screws, please see pages 3146-3151. *Note:* Not rated for work load limit.

For OD	For Pipe Size		
4 1/2"	4"	3116T71	$83.68
6 5/8"	6"	3116T72	88.66
8 5/8"	8"	3116T73	103.10
10 3/4"	10"	3116T74	132.78
12 3/4"	12"	3116T75	$151.18
14"	14"	3116T76	183.58
16"	16"	3116T77	196.72

Top-Mount Clamping Hangers

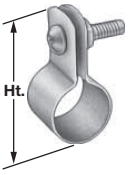

A top-mount design lets you use these hangers with eyelet adapters (not included, see page 1542) for threaded rod as well as rigid steel straps (not included, see page 1555). Hangers are made of corrosion-resistant zinc-plated steel and include a bolt and nut to close the hanger.

For OD	For Pipe Size	Work Load Limit, lbs.	Ht.		
13/16"	1/2"	275	2"	3033T11	$0.38
1 1/16"	3/4"	275	2 1/4"	3033T12	.41
1 5/16"	1"	275	2 1/2"	3033T13	.45
1 11/16"	1 1/4"	275	3"	3033T14	.48
1 7/8"	1 1/2"	275	3 1/4"	3033T15	.53
2 3/8"	2"	275	3 7/8"	3033T16	.67
2 7/8"	2 1/2"	500	4 3/8"	3033T17	.97
3 1/2"	3"	500	5 1/2"	3033T18	1.17
4 1/2"	4"	500	6 1/2"	3033T21	1.66
5 9/16"	5"	500	7 1/2"	3033T32	1.95
6 5/8"	6"	500	8 3/4"	3033T33	2.20

Rod-Mount Clamping Hangers

No additional fasteners or adapters required—just insert 3/8"-16 threaded rod (not included) directly into these hangers. Hangers can be stacked to hold multiple lines. All are made of plastic. Color is black. Temperature range is –40° to +275° F.

For OD	Work Load Limit, lbs.	Lg. × Ht.		
3/4"	154	1 1/2" × 1 5/8"	3945T71	$1.89
1"	154	1 5/8" × 1 5/8"	3945T73	2.04
1 1/4"	154	2 1/8" × 1 5/8"	3945T75	2.33
1 1/2"	154	2 3/8" × 1 5/8"	3945T77	2.78
2"	154	2 3/4" × 1 5/8"	3945T79	3.22

Push-Close Clamping Hangers

For 1/8" to 2" Pipe/Rigid Conduit Size (Shown Closed)

For 2 1/2" to 4" Pipe/Rigid Conduit Size (Shown Open)

No bolts and nuts to hassle with—simply insert material and push these hangers closed. They open with a turn of a screwdriver. A variety of mounting options make these hangers a versatile choice. They have an unthreaded hole for mounting with a fastener, or they can be used with an adapter (sold separately) to suspend them from strut channel or threaded rod (fasteners, strut channel, and threaded rod not included). Hangers are made of gray thermoplastic. Temperature range is –40° to +194° F. Meet UL standards 1565 and 2043.

Optional strut channel adapters allow hangers to mount in 1 5/8" Wd. × 13/16" Dp. and 1 5/8" Wd. × 1 5/8" Dp. strut channel. Made of gray thermoplastic. Temperature range is –40° to +194° F. ***Optional threaded rod adapters*** allow you to suspend hangers from threaded rod. Made of Type 304 stainless steel.

For OD	For Pipe/Rigid Conduit Size	For Thin-Wall (EMT) Conduit Size	For Copper Tube Size	Work Load Limit, lbs.	Lg. × Ht.	Mounting Hole Dia.		
3/8" to 7/16"	1/8"	—	1/4"	100	11/16" × 1"	3/8"	30075T72	$0.67
7/16" to 9/16"	1/4"	—	3/8"	121	13/16" × 13/16"	3/8"	30075T81	.84
9/16" to 11/16"	—	—	1/2"	132	13/16" × 13/16"	5/16"	30075T32	.79
11/16" to 3/4"	3/8"	1/2"	5/8"	143	7/8" × 1 3/8"	5/16"	30075T14	.88
3/4" to 7/8"	1/2"	—	—	147	1" × 1 9/16"	3/8"	30075T3	1.03
7/8"	—	3/4"	3/4"	150	1 1/8" × 1 5/8"	3/8"	30075T16	1.14
1" to 1 11/16"	3/4"	—	—	187	1 3/16" × 1 3/4"	3/8"	30075T4	1.46
1 1/16" to 1 1/4"	—	1"	1"	208	1 5/16" × 1 15/16"	3/8"	30075T5	1.57
1 1/4" to 1 3/8"	1"	—	1 1/4"	220	1 1/2" × 2 1/8"	3/8"	30075T35	2.05
1 3/8" to 1 9/16"	—	1 1/4"	—	243	1 5/8" × 2 5/16"	3/8"	30075T19	2.17
1 9/16" to 1 11/16"	1 1/4"	1 1/2"	1 1/2"	254	1 13/16" × 2 1/2"	3/8"	30075T36	2.76
1 13/16" to 2"	1 1/2"	—	—	287	2 1/8" × 2 7/8"	3/8"	30075T37	3.52
2" to 2 3/16"	—	2"	2"	309	2 5/16" × 3 1/8"	3/8"	30075T38	3.80
2 5/16" to 2 1/2"	2"	—	—	353	2 5/8" × 3 1/2"	3/8"	30075T39	4.69
2 13/16" to 3 1/8"	2 1/2"	2 1/2"	3"	485	3 7/16" × 4 7/8"	1/2"	30075T41	5.63
3 1/8" to 3 9/16"	3"	3"	—	575	3 7/8" × 5 3/8"	1/2"	30075T22	6.87
4 7/16" to 5"	4"	4"	—	880	5 1/2" × 7 1/16"	1/2"	30075T43	12.51

Optional Strut Channel Adapters

For OD		
3/8" to 2 1/2"	30075T29	$2.76
2 13/16" to 5"	30075T31	7.81

Optional Threaded Rod Adapters

For OD	Accepts Thread Size		
3/8" to 2 1/2"	1/4"-20	30075T21	$0.60
2 13/16" to 5"	3/8"-16	30075T25	2.58

Bottom-Load Clamping Hangers

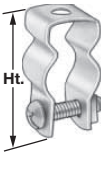

Also known as conduit hangers, these hangers have the opening at the bottom to make loading and unloading material easier. Close the hanger by inserting a 1/4"-20 bolt and nut (unless noted). Choose from hangers with and without the bolt and nut included. Hangers have an unthreaded hole on top for mounting with a fastener or inserting threaded rod (fastener and threaded rod not included). Hangers are UL listed.

Zinc-plated steel hangers offer good corrosion resistance in most environments. ***Type 304 stainless steel*** hangers provide excellent corrosion resistance.

For OD	For Rigid Conduit Size	For Thin-Wall (EMT) Conduit Size	Work Load Limit, lbs.	Ht.	Mtg. Hole Dia.	Pkg. Qty.	ZINC-PLATED STEEL With Bolt and Nut	Pkg.	ZINC-PLATED STEEL Without Bolt and Nut	Pkg.	TYPE 304 STAINLESS STEEL With Bolt and Nut	Each	TYPE 304 STAINLESS STEEL Without Bolt and Nut	Each
11/16" to 13/16"	3/8" to 1/2"	1/2"	50	1 7/8"	1/4"	10	3006T78	$4.38	3006T71	$3.05	3006T51	$1.84	3006T86	$1.41
1 1/16"	3/4"	3/4"	50	2"	1/4"	10	3006T79	5.04	3006T72	3.49	3006T52	1.99	3006T87	1.53
1 5/16"	1"	1"	60	2 3/8"	1/4"	10	3006T81	5.94	3006T73	4.49	3006T53	2.48	3006T88	2.07
1 1/2"	—	1 1/4"	75	2 5/8"	1/4"	10	3006T312	6.34	3006T311	5.26	3006T314	2.58	3006T313	2.09
1 3/4"	1 1/4"	1 1/2"	80	2 7/8"	1/4"	10	3006T82	7.06	3006T74	5.46	3006T5	2.65	3006T89	2.20
1 7/8"	1 1/2"	—	80	3 3/16"	5/16"	10	3006T27	10.06	3006T18	8.21	3006T68	4.21	3006T32	3.35
2 3/8"	2"	2"	100	3 13/16"	5/16"	10	3006T83	11.23	3006T75	9.18	3006T94	5.10	3006T91	4.17
2 7/8"	2 1/2"	2 1/2"	125	4 3/8"	5/16"	10	3006T28	14.42	3006T19	12.71	3006T69	5.94	3006T33	5.10
3 1/2"	3"	3"	165	5 1/8"	5/16"	5	3006T84 ◆	8.44	3006T76 ◆	6.80	3006T95 ◆	7.84	3006T92 ◆	6.20
4"	3 1/2"	3 1/2"	200	5 11/16"	5/16"	5	3006T31 ◆	9.78	3006T2 ◆	9.01	3006T7 ◆	8.35	3006T48 ◆	6.98
4 1/2"	4"	4"	230	7 1/2"	1/2"	2	3006T85 ■	11.05	3006T77 ■	8.61	3006T96 ■	12.47	3006T93 ■	10.61

◆ Bolt size is 5/16"-18. ■ Bolt size is 1/2"-13.

Warning! ***Never exceed work load limits.***

For threaded rod, see pages 3164-3175.

Versa-Mount Clamping Hangers

Get two mounting options in one hanger—snap these hangers into strut channel or use the threaded hole to insert 3/8″-16 threaded rod (strut channel and threaded rod not included). Hangers push closed for a tight grip on your material. All are made of 6/6 nylon. Color is black. Temperature range is –70° to +250° F.

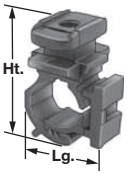

For OD	For Pipe Size	Work Load Limit, lbs.	Lg. × Ht.		
9/16″	1/4″	170	1 5/8″ × 2″	3166T41	$0.94
11/16″	3/8″	195	1 1/2″ × 2 1/8″	3166T42	.97
13/16″	1/2″	215	1 5/8″ × 2 1/4″	3166T43	1.03
1 1/16″	3/4″	315	1 3/4″ × 2 1/4″	3166T44	1.06
1 5/16″	1″	320	2″ × 2 1/2″	3166T45	1.11
1 11/16″	1 1/4″	365	2 1/2″ × 2 5/8″	3166T46	1.27
1 7/8″	1 1/2″	380	3 1/8″ × 3 1/2″	3166T47	1.49
2 3/8″	2″	410	3 1/4″ × 3 1/4″	3166T48	1.64
2 7/8″	2 1/2″	500	3 3/4″ × 3 3/4″	3166T49	2.04
3 1/2″	3″	600	3 1/2″ × 5 5/8″	3166T51	8.20
4″ to 4 1/2″	3 1/2″ to 4″	950	4 1/2″ × 6 3/4″	3166T52	13.47

Vinyl-Covered Clamping Hangers

Avoid the corrosion problems of metal-to-metal contact. These hangers are made of corrosion-resistant zinc-plated steel and have a black vinyl covering on the loop. All include a screw to close the hanger and a 12″ Lg. × 1″ Wd. hanging strip for mounting. Mounting holes are spaced on 7/8″ centers and alternate 9/32″ and 7/32″ diameter (fasteners not included). Temperature range is 0° to 150° F.

For OD	For Pipe Size	Work Load Limit, lbs.	Ht.		
1 7/8″	1 1/2″	150	3 5/8″	30565T5	$3.18
2 3/8″	2″	150	4 1/8″	30565T6	3.38
3 1/2″	3″	150	5 1/4″	30565T7	3.71
4 1/2″	4″	150	6 1/4″	30565T8	4.17
6 5/8″	6″	150	8″	30565T9	12.12

Split-Ring Clamping Hangers

Load your material between the two halves of the ring and tighten the included bolts for a snug hold. Hangers are rod mount and have a threaded hole on top for inserting a threaded rod (not included). All meet Fed. Spec. WW-H-171E, Type 25 and Manufacturers' Standardization Society SP-69 and SP-58, Type 12.

Iron hangers have good strength for applications where corrosion is not a factor. ***Zinc-plated iron*** hangers are strong and offer some corrosion resistance. ***Type 304 stainless steel*** hangers provide excellent corrosion resistance.

For OD	For Pipe Size	Work Load Limit, lbs.	Lg. × Ht.	Accepts Thread Size	*Iron*		*Zinc-Plated Iron*		*Type 304 Stainless Steel*	
11/16″	3/8″	180	1 3/4″ × 1 1/8″	3/8″-16	3023T67	$2.59	3023T22	$2.89	3023T81	$24.82
15/16″	1/2″	180	2″ × 1 5/16″	3/8″-16	3023T68	2.69	3023T23	3.54	3023T82	29.67
1 1/16″	3/4″	180	2 1/8″ × 1 1/2″	3/8″-16	3023T69	2.96	3023T24	3.65	3023T83	29.73
1 5/16″	1″	180	2 1/2″ × 1 15/16″	3/8″-16	3023T71	3.08	3023T25	3.69	3023T84	34.07
1 11/16″	1 1/4″	180	3 1/8″ × 2 1/4″	3/8″-16	3023T72	3.85	3023T26	5.00	3023T85	32.34
1 7/8″	1 1/2″	180	3 1/2″ × 2 1/2″	3/8″-16	3023T73	5.50	3023T27	6.68	3023T86	48.10
2 3/8″	2″	180	3 5/8″ × 2 15/16″	3/8″-16	3023T74	7.42	3023T28	8.62	3023T87	45.66
2 7/8″	2 1/2″	300	4 1/2″ × 3 3/4″	1/2″-13	3023T15	10.75	3023T29	12.22	3023T88	75.27
3 1/2″	3″	300	5 1/4″ × 4 1/4″	1/2″-13	3023T16	12.78	3023T31	14.56	3023T89	75.68
4 1/2″	4″	300	6 1/2″ × 5 3/8″	1/2″-13	3023T48	20.38	3023T32	23.02	3023T91	79.37

Vibration-Damping Clamping Hangers

A rubber cushion on these hangers reduces vibration and noise. To close the hanger, insert the head of the included bolt into the slot end for a temporary hold before tightening with a Phillips screwdriver. Hangers have a threaded nut on top for inserting 3/8″-16 threaded rod (not included). All are made of corrosion-resistant zinc-plated steel. Cushion is black. Temperature range is –58° to +230° F.

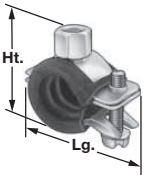

For OD	For Pipe/ Rigid Conduit Size	For Tube Size	Work Load Limit, lbs.	Lg. × Ht.		
3/8″	1/4″	3/8″	180	1 3/4″ × 1 1/4″	2615T11	$1.58
1/2″	3/8″	1/2″	180	1″ × 1 7/16″	2615T12	1.62
3/4″	1/2″	3/4″	180	2 1/4″ × 1 3/4″	2615T13	1.66
1″	3/4″	1″	180	2 3/8″ × 1 7/8″	2615T14	1.81
1 1/4″	1″	1 1/4″	180	2 3/4″ × 2″	2615T15	1.89
1 1/2″	1 1/4″	1 1/2″	180	3″ × 2 3/8″	2615T16	1.91
1 7/8″	1 1/2″	—	180	3 1/4″ × 2 5/8″	2615T17	2.07
2″	—	2″	180	3 3/4″ × 3″	2615T18	2.12
2 3/8″	2″	—	180	3 7/8″ × 3 1/8″	2615T19	2.17
2 1/2″	—	2 1/2″	300	4 1/8″ × 3 3/8″	2615T21	2.26
2 7/8″	2 1/2″	—	300	4 3/8″ × 3 9/16″	2615T22	2.38
3″	—	3″	300	4 3/4″ × 4″	2615T23	2.48
3 1/2″	3″	—	300	5″ × 4 1/8″	2615T24	2.54
4″	3 1/2″	4″	300	6 1/4″ × 5 3/8″	2615T25	2.88
4 1/2″	4″	—	300	6 1/4″ × 5 1/2″	2615T26	3.02

Weld-Mount Washdown Clamping Hangers

No worries in your wet environments when you use these hangers. All are made of Type 304 stainless steel for excellent corrosion resistance and have either rubber grommets or a plastic insert to dampen vibration and minimize movement. A rod (not included, please see pages 3690-3691) can be welded to the top for hanging. Temperature range is –20° to +230° F.

Rubber grommets grip your material tightly for a secure hold. Color is black.

Plastic insert allows for material expansion and contraction. Color is white.

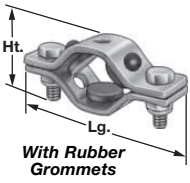

With Rubber Grommets

With Plastic Insert

For OD	Work Load Limit, lbs.	Lg. × Ht.	*With Rubber Grommets*		*With Plastic Insert*	
1/2″, 3/4″	873	3 7/16″ × 1 7/16″	2218T1	$6.86	—	—
1″	873	3 7/16″ × 1 7/16″	2218T2	7.54	2218T41	$7.84
1 1/2″	873	4″ × 2 1/8″	2218T3	8.12	2218T42	8.58
2″	873	4 1/2″ × 2 1/2″	2218T4	9.80	2218T43	10.28
2 1/2″	873	5″ × 3 1/8″	2218T5	11.16	2218T44	10.87
3″	873	5 1/2″ × 3 3/4″	2218T6	12.60	2218T45	12.25
4″	873	7″ × 4 3/4″	2218T7	16.44	2218T46	16.15
6″	873	9 1/4″ × 6 5/8″	2218T71	24.76	2218T47	40.27
8″	873	11 1/2″ × 8 5/8″	2218T72	53.00	2218T48	61.53

Warning! **Never exceed work load limits.**

For threaded rod, see pages 3164-3175.

Rod-Mount Washdown Clamping Hangers

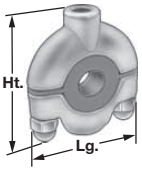

Tackle hanging applications in wet environments. Hardware is Type 316 stainless steel for maximum corrosion resistance. Rounded edges reduce contamination and acorn nuts conceal fastener threads. All have a threaded hole on top for inserting threaded rod (not included). Temperature range is –60° to +400° F.

Silicone insert tightly grips your material to minimize movement and vibration. It's FDA compliant and withstands steam cleaning. Color is blue. ***PTFE insert*** allows material to move with thermal expansion and is FDA compliant. Color is white.

For OD	Work Load Limit, lbs.	Lg.	× Ht.	Accepts Thread Size	With Silicone Insert		With PTFE Insert	
1/4"	400	2"	× 2 1/4"	3/8"-16	8831T31	$26.27	—	—
3/8"	400	2"	× 2 1/4"	3/8"-16	8831T32	26.27	—	—
1/2"	400	2"	× 2 1/4"	3/8"-16	8831T33	26.27	8831T46	$27.58
3/4"	400	2"	× 2 1/4"	3/8"-16	8831T34	26.26	8831T47	27.58
1"	400	2 1/2"	× 2 3/4"	3/8"-16	8831T35	28.66	8831T48	33.79
1 1/4"	400	2 1/2"	× 2 3/4"	3/8"-16	8831T36	30.81	—	—
1 1/2"	600	3 5/8"	× 3 1/2"	3/8"-16	8831T37	49.22	8831T62	58.87
2"	600	3 5/8"	× 3 1/2"	3/8"-16	8831T38	49.22	8831T63	58.87
2 1/2"	600	5 1/4"	× 5 1/16"	1/2"-13	8831T39	89.56	8831T64	107.71
3"	600	5 1/4"	× 5 1/16"	1/2"-13	8831T41	89.56	8831T65	107.71
4"	1,000	6 3/4"	× 6 5/8"	5/8"-11	8831T42	131.56	8831T66	153.38
6"	2,000	9"	× 8 7/8"	3/4"-10	8831T43	226.15	8831T67	259.75

Rod-Mount Block-Style Sanitary Clamping Hangers

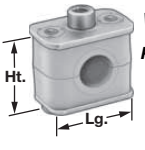

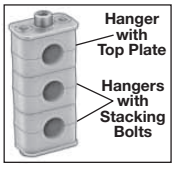

A smooth contact surface on the insert prevents bacterial build up, making these hangers ideal for sanitary applications. Insert is made of beige Santoprene; hardware is Type 304 stainless steel for excellent corrosion resistance. Temperature range is –40° to +275° F.

Hangers with top plate have a threaded hole on top for inserting 3/8"-16 threaded rod (not included).

Hangers with stacking bolts are designed for running multiple lines using minimal horizontal space. These hangers cannot be mounted independently. They must first be mounted to a hanger with top plate and then connected to another hanger with stacking bolts.

Note: All hangers must be the same length and height. Do not exceed work load limit of individual hanger in multiple hanger applications.

For OD	Work Load Limit, lbs.	Lg.	× Ht.	With Top Plate		With Stacking Bolts	
1/4"	350	1 7/8"	× 1 3/8"	3063T11	$18.98	3063T19	$19.73
1/2"	350	1 7/8"	× 1 3/8"	3063T12	18.98	3063T21	19.73
3/4"	350	1 7/8"	× 1 3/8"	3063T13	18.98	3063T22	19.73
1"	350	1 7/8"	× 1 3/8"	3063T14	18.98	3063T23	19.73
1"	350	3 3/8"	× 2 5/8"	3063T24	23.43	3063T31	22.04
1 1/2"	350	3 3/8"	× 2 5/8"	3063T25	23.43	3063T32	22.04
2"	350	3 3/8"	× 2 5/8"	3063T26	23.43	3063T33	22.04
2"	350	5"	× 4 3/8"	3063T84	32.14	3063T95	28.42
2 1/2"	350	5"	× 4 3/8"	3063T85	32.14	3063T96	28.42
3"	350	5"	× 4 3/8"	3063T86	32.14	3063T97	28.42
3 1/2"	350	5"	× 4 3/8"	3063T87	32.14	3063T98	28.42

Loop-Style Hangers

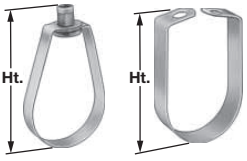

A-C **D**

Also known as teardrop hangers, their loop shape makes these hangers just what you need for heavy duty pipe-hanging applications such as suspending fire sprinkler pipe.

(A) Zinc-plated steel hangers offer good corrosion resistance. They have a threaded hole on top for inserting threaded rod (not included). Meet Fed. Spec. WW-H-171E, Type 10 and Manufacturers' Standardization Society SP-69, Type 10. UL listed; FM approved.

(B) Copper-plated steel hangers are compatible with copper pipe and have a threaded hole on top for inserting threaded rod (not included). Meet Fed. Spec. WW-H-171E, Type 10 and Manufacturers' Standardization Society SP-69, Type 10.

(C) PVC-coated steel hangers avoid the corrosion problems of metal-to-metal contact. They have a threaded hole on top for inserting threaded rod (not included). Coating is black. Temperature range is –30° to +200° F. Meet Fed. Spec. WW-H-171E, Type 10 and Manufacturers' Standardization Society SP-69, Type 10.

(D) Type 304 stainless steel hangers offer excellent corrosion resistance. All have an unthreaded hole on top for mounting with a fastener or inserting threaded rod (fastener and threaded rod not included).

Also Available: Type 316 stainless steel hangers. Please ask for 3064T888 and specify pipe size.

For OD	For Pipe Size	Work Load Limit, lbs.	Ht.	Accepts Thread Size	Pkg. Qty.		Pkg.
(A) Zinc-Plated Steel							
13/16"	1/2"	400	3"	3/8"-16	10	3064T11	$5.92
1 1/16"	3/4"	400	3 1/8"	3/8"-16	10	3064T12	5.92
1 5/16"	1"	400	3 3/8"	3/8"-16	10	3064T13	6.12
1 11/16"	1 1/4"	400	3 3/4"	3/8"-16	10	3064T14	6.12
1 7/8"	1 1/2"	400	4"	3/8"-16	10	3064T15	6.36
2 3/8"	2"	400	4 5/8"	3/8"-16	10	3064T16	6.75
2 7/8"	2 1/2"	600	5 1/2"	1/2"-13	1	3064T17	2.41
3 1/2"	3"	600	6 3/8"	1/2"-13	1	3064T18	2.51
4"	3 1/2"	600	7"	1/2"-13	1	3064T19	3.62
4 1/2"	4"	1,000	7 1/2"	5/8"-11	1	3064T21	4.53
(B) Copper-Plated Steel							
5/8"	1/2"	400	3"	3/8"-16	10	3064T31	8.95
7/8"	3/4"	400	3"	3/8"-16	10	3064T32	8.95
1 1/8"	1"	400	3 1/4"	3/8"-16	10	3064T33	9.20
1 3/8"	1 1/4"	400	3 3/8"	3/8"-16	10	3064T34	9.20
1 5/8"	1 1/2"	400	3 3/4"	3/8"-16	10	3064T35	10.57
2 1/8"	2"	400	4 1/8"	3/8"-16	1	3064T36	.94
2 5/8"	2 1/2"	600	4 3/4"	3/8"-16	1	3064T37	1.09
3 1/8"	3"	600	5 3/8"	3/8"-16	1	3064T38	1.77
4 1/8"	4"	1,000	7"	3/8"-16	1	3064T79	1.89
(C) PVC-Coated Steel							**Each**
13/16"	1/2"	610	2 5/16"	3/8"-16	—	3064T41	$4.11
1 1/16"	3/4"	610	2 5/8"	3/8"-16	—	3064T42	4.11
1 5/16"	1"	610	2 7/8"	3/8"-16	—	3064T43	4.35
1 11/16"	1 1/4"	610	3 7/16"	3/8"-16	—	3064T44	4.40
1 7/8"	1 1/2"	610	3 11/16"	3/8"-16	—	3064T45	5.98
2 3/8"	2"	610	4 3/16"	3/8"-16	—	3064T46	6.62
2 7/8"	2 1/2"	970	5 5/16"	1/2"-13	—	3064T47	8.21
3 1/2"	3"	970	6"	1/2"-13	—	3064T48	9.80
4"	3 1/2"	970	6 1/2"	1/2"-13	—	3064T49	10.60
4 1/2"	4"	1,250	7 1/8"	5/8"-11	—	3064T51	12.81

For OD	For Pipe Size	Work Load Limit, lbs.	Ht.	Mounting Hole Dia.		Each
(D) Type 304 Stainless Steel						
13/16"	1/2"	610	2"	3/8"	3273T51	$7.45
1 1/16"	3/4"	610	2 1/8"	3/8"	3273T52	7.70
1 5/16"	1"	610	2 5/8"	3/8"	3273T53	8.19
1 7/8"	1 1/2"	610	3 3/8"	3/8"	3273T54	9.45
2 3/8"	2"	610	4 1/8"	3/8"	3273T55	11.69
3 1/2"	3"	970	5"	1/2"	3273T57	18.62
4 1/2"	4"	970	6"	5/8"	3273T58	30.16
6 5/8"	6"	1,250	9"	3/4"	3273T59	52.24

Roller Hangers

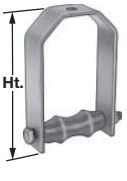

If you need to allow for material movement and expansion in your hydraulic applications, the roller on these hangers is just what you're looking for. All have an unthreaded hole on top for mounting with a fastener or inserting threaded rod (fastener and threaded rod not included). Hangers are made of steel; rollers are heavy duty cast iron.

For OD	For Pipe Size	Work Load Limit, lbs.	Ht.	Mtg. Hole Dia.		
2 3/8"	2"	150	5 5/16"	3/8"	3084T31	$12.12
2 7/8"	2 1/2"	225	6 3/4"	1/2"	3084T32	14.93
3 1/2"	3"	310	7 3/8"	1/2"	3084T33	16.65
4"	3 1/2"	390	8"	1/2"	3084T34	22.21
4 1/2"	4"	475	8 5/8"	5/8"	3084T35	22.90
5 9/16"	5"	685	10 1/8"	5/8"	3084T36	25.86
6 5/8"	6"	780	11 1/2"	3/4"	3084T37	$32.16
8 5/8"	8"	780	13 15/16"	3/4"	3084T38	48.12
10 3/4"	10"	965	16 1/4"	7/8"	3084T39	57.33
12 3/4"	12"	1,200	18 7/8"	7/8"	3084T41	84.26
14"	14"	1,200	20 11/16"	1"	3084T42	207.56
16"	16"	1,200	22 5/8"	1"	3084T43	266.42

Warning! ***Never exceed work load limits.***

For threaded rod, see pages 3164-3175.

Pivoting Hangers

Don't use just any hanger to suspend pipe that carries a flow. These hangers pivot 15° forward and backward to withstand movement and vibration better than conventional hangers. Also known as clevis hangers, they have an unthreaded hole on top for mounting with a fastener or inserting threaded rod (fastener and threaded rod not included). All meet Fed. Spec. WW-H-171, Type 1 and Manufacturers' Standardization Society SP-69 and SP-58, Type 1.

Steel hangers are good where corrosion is not a factor. Hangers for 1 1/16" to 12 3/4" OD are UL listed. ***Zinc-plated steel*** hangers offer good corrosion resistance in most environments. Hangers for 2 7/8" to 8 5/8" OD are UL and C-UL listed and FM approved. ***Type 304 stainless steel*** hangers provide excellent corrosion resistance. Hangers for 2 3/8" to 8 5/8" OD are UL listed and hangers for 1 1/16" to 8 5/8" OD are FM approved.

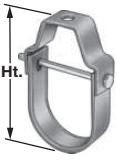

For OD	For Pipe Size	Mtg. Hole Dia.	Steel Work Load Limit, lbs.	Steel Ht.			Zinc-Plated Steel Work Load Limit, lbs.	Zinc-Plated Steel Ht.			Type 304 Stainless Steel Work Load Limit, lbs.	Type 304 Stainless Steel Ht.		
13/16"	1/2"	3/8"	730	2 1/8"	3037T12	$0.96	610	2 1/8"	3037T61	$1.63	610	2 3/16"	3309T512	$5.99
1 1/16"	3/4"	3/8"	730	2 7/16"	3037T14	.96	610	2 3/8"	3037T62	1.63	610	2 3/8"	3309T522	6.05
1 5/16"	1"	3/8"	730	2 13/16"	3037T15	.99	610	2 3/4"	3037T63	1.74	610	2 7/8"	3309T532	6.12
1 11/16"	1 1/4"	3/8"	730	3 7/16"	3037T16	1.15	610	3 5/16"	3037T64	1.98	610	3 3/8"	3309T542	7.10
1 7/8"	1 1/2"	3/8"	730	4"	3037T17	1.25	610	3 15/16"	3037T65	2.15	610	3 15/16"	3309T552	7.83
2 3/8"	2"	3/8"	730	4 1/2"	3037T18	1.44	610	4 1/2"	3037T66	2.37	610	4 5/8"	3309T562	7.76
2 7/8"	2 1/2"	1/2"	1,350	5 9/16"	3037T32	2.49	1,130	5 1/4"	3037T67	3.75	1,130	6 1/16"	3309T572	20.10
3 1/2"	3"	1/2"	1,350	6 3/4"	3037T33	3.39	1,130	6"	3037T68	4.71	1,130	6 11/16"	3309T582	21.27
4"	3 1/2"	1/2"	1,350	7"	3037T22	2.92	1,130	6 1/2"	3037T69	4.93	1,130	8"	3309T592●	27.95
4 1/2"	4"	5/8"	1,430	7 13/16"	3037T23	3.51	1,130	7 3/4"	3037T81	5.68	1,430	8 3/8"	3309T612	24.24
5 9/16"	5"	5/8"	1,430	9 1/16"	3037T24	4.85	1,430	9 3/4"	3037T72	7.82	1,430	8 3/4"	3309T622	32.84
6 5/8"	6"	3/4"	1,940	10 7/16"	3037T25	6.45	1,940	11 3/4"	3037T73	9.95	1,940	10 5/16"	3309T632	44.14
8 5/8"	8"	3/4"	2,000	12 3/4"	3037T34	10.65	2,000	14"	3037T74	15.71	2,000	12 3/8"	3309T642	61.54
10 3/4"	10"	7/8"	3,600	15 1/4"	3037T27	19.00	3,600	16 1/2"	3037T75	31.64	3,600	15 1/2"	3309T654	109.11
12 3/4"	12"	7/8"	3,800	17 5/8"	3037T28	23.95	3,800	18 5/8"	3037T76	35.93	3,800	18 1/4"	3309T655	120.15

● Made of Type 316 stainless steel.

Easy-Access Side-Load Hangers

A removable bolt on the side of these hangers allows you to load your material after mounting. The easy-access design also makes changing or replacing sections of existing suspended pipe easier. They have an unthreaded hole on the side for wall mounting and an unthreaded hole on top for mounting with a fastener or inserting threaded rod (fasteners and threaded rod not included).

Zinc-plated steel hangers offer good corrosion resistance in most environments. ***Type 304 stainless steel*** hangers provide excellent corrosion resistance.

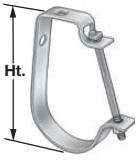

For OD	For Pipe Size	Mounting Hole Dia. Side	Mounting Hole Dia. Top	Zinc-Plated Steel Work Load Limit, lbs.	Zinc-Plated Steel Ht.			Type 304 Stainless Steel Work Load Limit, lbs.	Type 304 Stainless Steel Ht.		
1 1/16"	3/4"	7/16"	3/8"	400	3 5/8"	3131T52	$2.19	400	3 1/2"	3131T66	$8.67
1 5/16"	1"	7/16"	3/8"	400	3 7/8"	3131T53	2.25	400	3 3/4"	3131T67	9.07
1 11/16"	1 1/4"	7/16"	3/8"	400	4 3/8"	3131T54	2.34	400	4 3/16"	3131T68	9.89
1 7/8"	1 1/2"	7/16"	3/8"	400	4 7/8"	3131T55	2.48	400	4 5/8"	3131T69	10.58
2 3/8"	2"	7/16"	3/8"	400	5 1/8"	3131T56	3.19	400	5"	3131T71	11.33
2 7/8"	2 1/2"	9/16"	1/2"	500	6 1/8"	3131T57	5.99	500	6"	3131T72	14.30
3 1/2"	3"	9/16"	1/2"	500	6 7/8"	3131T58	6.37	500	6 11/16"	3131T73	15.13
4"	3 1/2"	9/16"	1/2"	800	8 3/8"	3131T59	7.71	500	7 1/4"	3131T74	15.44
4 1/2"	4"	9/16"	5/8"	550	8 5/8"	3131T61	9.10	550	8 9/16"	3131T75	17.98
5 9/16"	5"	9/16"	5/8"	550	9 7/8"	3131T62	21.59	550	9 3/4"	3131T76	21.44
6 5/8"	6"	9/16"	3/4"	600	11 3/8"	3131T63	22.05	600	11 5/16"	3131T77	27.16

Stand-Off Hangers

Eliminate the need for blocking spacers—these hangers hold your material away from the mounting surface. They're a good choice for horizontal pipe runs. All are made of corrosion-resistant zinc-plated steel and include mounting fasteners. UL and C-UL listed.

Note: Not rated for work load limit.

For OD	For Pipe Size	Lg. × Ht.		Pkg. Qty.		Pkg.
1 1/16"	3/4"	3 5/8" × 2 11/16"	10	3311T61	$11.61
1 5/16"	1"	3 11/16" × 2 15/16"	10	3311T62	12.09
1 5/8"	1 1/4"	3 5/8" × 3 5/16"	10	3311T63	12.80
1 7/8"	1 1/2"	4 1/2" × 3 7/8"	10	3311T64	13.98
2 3/8"	2"	5 1/4" × 4"	10	3311T65	14.93

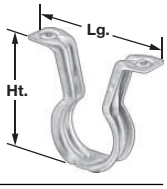

Riser Clamps

Keep vertical pipes in place. Mounting fasteners are included.

Zinc-plated steel clamps offer good corrosion resistance in most environments. Meet Fed. Spec. WW-H-171, Type 8 and Manufacturers' Standardization Society SP-58 and SP-69, Type 8. ***Type 304 stainless steel*** clamps provide excellent corrosion resistance. Meet Manufacturers' Standardization Society SP-58 and SP-69, Type 8.

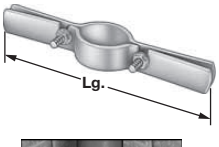

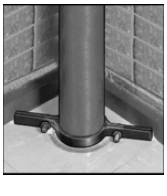

For OD	For Pipe Size	Zinc-Plated Steel Work Load Limit, lbs.	Zinc-Plated Steel Lg.			Type 304 Stainless Steel Work Load Limit, lbs.	Type 304 Stainless Steel Lg.		
13/16"	1/2"	255	8 1/2"	3065T44	$3.82	220	8 7/8"	2989T31	$14.45
1 1/16"	3/4"	255	9"	3065T45	3.94	220	8 7/8"	2989T32	14.98
1 5/16"	1"	255	9"	3065T46	3.97	220	8 7/8"	2989T33	15.89
1 11/16"	1 1/4"	255	9 7/16"	3065T47	4.82	250	10"	2989T41	17.61
1 7/8"	1 1/2"	255	9 7/8"	3065T48	5.09	250	10 1/4"	2989T34	18.59
2 3/8"	2"	255	10 1/4"	3065T23	5.43	300	10 1/4"	2989T15	23.30
2 7/8"	2 1/2"	390	11"	3065T51	5.64	400	11 1/4"	2989T16	23.42
3 1/2"	3"	530	11 3/4"	3065T52	5.92	500	11 3/8"	2989T37	24.20
4"	3 1/2"	670	12 5/8"	3065T53	7.31	600	12 7/8"	2989T42	29.70
4 1/2"	4"	810	13"	3065T54	8.56	750	12 7/8"	2989T38	30.57
5 9/16"	5"	1,160	14 1/2"	3065T25	10.11	1,160	13 3/4"	2989T39	42.20
6 5/8"	6"	1,570	16"	3065T56	13.09	1,570	14 3/4"	2989T19	46.35
8 5/8"	8"	2,500	18 1/4"	3065T27	25.80	2,500	18 1/2"	2989T21	87.11
10 3/4"	10"	2,500	20 5/8"	3065T28	33.03	2,500	20 1/4"	2989T22	98.09
12 3/4"	12"	2,700	22 3/8"	3065T29	50.83	2,700	22 3/4"	2989T23	152.13

Warning! **Never exceed work load limits.**

Steel and Stainless Steel U-Bolts

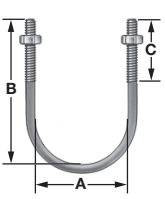

Without Mounting Plate

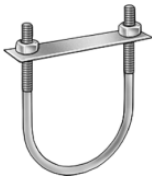

With Mounting Plate

Choose a U-bolt to suit your application—they're available in a variety of finishes with and without a mounting plate. A mounting plate provides a more secure hold. All U-bolts include two hex nuts.

Zinc-plated steel U-bolts offer good corrosion resistance in most environments. ***Black-oxide steel*** U-bolts have a uniform corrosion-resistant finish and blend into dark backgrounds. ***Hot-dipped galvanized steel*** U-bolts offer better corrosion resistance than zinc-plated steel and black-oxide steel. ***Type 304 stainless steel*** U-bolts provide excellent corrosion resistance.

Also Available: Mounting plates.
For zinc-plated steel, ask for 8875T888 and specify thread size, OD, pipe size, and thread length.
For black-oxide steel, ask for 3201T888 and specify thread size, OD, pipe size, and thread length.
For hot-dipped galvanized steel, ask for 2936T666 and specify thread size and pipe size.
For Type 304 stainless steel, ask for 8889T888 and specify thread size and pipe size.

For OD (A)	For Pipe Size	(B)	(C)	Work Load Limit, lbs.	Zinc-Plated Steel Pkg. Qty.	Zinc-Plated Steel Pkg.	Black-Oxide Steel Each	Hot-Dipped Galvanized Steel Each	Type 304 Stainless Steel Each
Without Mounting Plate									
1/4"-20 Thread Size									
9/16"	1/4"	1 1/4"	3/4"	435	10	3043T92 $5.09	3201T28 $0.66	2936T31 $0.66	8896T91 $2.30
3/4"	3/8"	1 1/4"	5/8"	435	10	3043T11 5.09	3201T11 .72	2936T32 .68	8896T101 2.35
3/4"	3/8"	2 1/4"	1 1/2"	435	10	3043T12 5.86	3201T31 .75	2936T33 .77	8896T102 2.60
1"	1/2"	1 3/4"	1"	435	10	3043T13 6.28	3201T12 .78	2936T34 .77	8896T103 2.64
1 1/8"	3/4"	2"	1"	435	10	3043T15 6.62	3201T13 .80	2936T35 .81	8896T104 2.77
1 1/4"	3/4"	2 1/4"	1 1/4"	435	10	3043T93 6.87	3201T29 .81	2936T36 .84	8896T92 3.07
1 1/2"	1"	2 3/4"	1 3/8"	435	10	3043T18 7.21	3201T14 .85	2936T37 .88	8896T105 3.16
1 3/4"	1 1/4"	3"	1 3/8"	435	10	3043T19 7.54	3201T15 .88	2936T38 .92	8896T106 3.24
2"	1 1/2"	3 1/4"	1 3/8"	435	10	3043T21 7.84	3201T16 .90	2936T39 .97	8896T107 3.43
5/16"-18 Thread Size									
1"	1/2"	2 3/16"	1 3/8"	610	10	3043T22 7.99	3201T32 .95	2936T41 1.14	8896T124 3.53
1 3/8"	1"	2 3/16"	1"	610	10	3043T24 8.12	3201T17 1.02	— —	8896T125 3.60
1 1/2"	1"	2 3/16"	1"	610	10	3043T26 8.22	3201T33 1.04	2936T43 1.15	8896T126 3.69
1 3/4"	1 1/4"	2 11/16"	1 1/8"	610	10	3043T27 9.06	3201T34 1.10	2936T44 1.23	8896T127 4.14
2"	1 1/2"	2 11/16"	1"	610	10	3043T29 9.55	3201T18 1.14	2936T45 1.27	8896T128 4.26
2 1/2"	2"	3 3/16"	1"	610	10	3043T32 9.77	3201T19 1.23	2936T46 1.33	8896T129 4.64
3"	2 1/2"	3 11/16"	1"	610	10	3043T34 10.57	3201T35 1.29	2936T47 1.40	8896T131 5.06
3/8"-16 Thread Size									
1"	1/2"	2 1/4"	1 1/4"	1,090	5	3043T35 5.38	3201T36 1.31	2936T48 1.46	8896T54 5.16
1 1/4"	3/4"	2 1/4"	1 1/4"	1,090	5	3043T36 5.48	3201T37 1.34	2936T49 1.50	8896T55 5.26
1 1/2"	1"	2 1/2"	1 1/4"	1,090	5	3043T37 5.74	3201T21 1.41	2936T51 1.57	8896T56 5.56
1 3/4"	1 1/4"	2 3/4"	1 1/8"	1,090	5	3043T38 6.03	3201T38 1.42	2936T52 1.65	8896T24 5.72
2"	1 1/2"	2 5/8"	1 1/4"	1,090	5	3043T39 6.28	3201T22 1.46	2936T53 1.71	8896T25 5.89
2 1/2"	2"	3 1/8"	1 1/4"	1,090	5	3043T41 6.33	3201T23 1.55	2936T54 1.73	8896T26 6.05
3"	2 1/2"	3 5/8"	1 1/4"	1,090	5	3043T42 7.03	3201T39 1.67	2936T55 1.82	8896T57 6.43
3 1/2"	3"	4 1/8"	1 1/4"	1,090	5	3043T44 7.59	3201T24 1.88	2936T56 1.96	8896T58 6.86
1/2"-13 Thread Size									
3"	2 1/2"	4 1/2"	1 5/8"	2,020	1	3043T46 3.20	3201T41 3.18	2936T57 3.78	8896T27 12.05
3 1/2"	3"	5"	1 1/2"	2,020	1	3043T47 3.42	3201T25 3.62	2936T58 4.17	8896T28 13.26
4"	3 1/2"	5 1/2"	1 1/2"	2,020	1	3043T49 3.69	3201T42 3.85	2936T59 4.55	8896T41 15.95
4 1/2"	4"	6"	1 1/2"	2,020	1	3043T51 4.15	3201T26 4.34	2936T61 5.13	8896T29 16.10
5 5/8"	5"	7 1/4"	2"	2,020	1	3043T2 5.68	3201T43 5.40	2936T62 7.38	8896T31 19.64
6 3/4"	6"	8 3/8"	2"	2,020	1	3043T3 6.08	3201T27 6.42	2936T63 8.16	8896T32 26.51
8 3/4"	8"	10 3/8"	2"	2,020	1	3043T4 6.97	3201T44 7.30	2936T64 9.38	8896T33 29.98
With Mounting Plate									
1/4"-20 Thread Size									
9/16"	1/4"	1 1/4"	3/4"	435	10	3043T94 6.86	3201T45 .89	2936T65 .89	8896T93 3.11
3/4"	3/8"	1 1/4"	5/8"	435	10	3043T52 7.04	3201T46 .93	2936T66 .91	8896T116 3.14
3/4"	3/8"	2 1/4"	1 1/2"	435	10	3043T53 7.74	3201T47 1.00	2936T67 .97	8896T117 3.63
1"	1/2"	1 3/4"	1"	435	10	3043T54 7.85	3201T48 1.06	2936T68 1.02	8896T118 3.77
1 1/8"	3/4"	2"	1"	435	10	3043T56 7.99	3201T49 1.14	2936T69 1.09	8896T119 3.85
1 1/4"	3/4"	2 1/4"	1 1/4"	435	10	3043T95 8.40	3201T51 1.18	2936T71 1.13	8896T94 4.16
1 1/2"	1"	2 3/4"	1 3/8"	435	10	3043T59 8.80	3201T52 1.22	2936T72 1.22	8896T121 4.43
1 3/4"	1 1/4"	3"	1 3/8"	435	10	3043T61 9.32	3201T53 1.25	2936T73 1.31	8896T122 4.69
2"	1 1/2"	3 1/4"	1 3/8"	435	10	3043T62 9.62	3201T54 1.29	2936T74 1.35	8896T123 4.96
5/16"-18 Thread Size									
1"	1/2"	2 3/16"	1 3/8"	610	5	3043T63 5.13	3201T55 1.32	2936T75 1.43	8896T68 5.16
1 3/8"	1"	2 3/16"	1"	610	5	3043T65 5.42	3201T56 1.38	— —	8896T69 5.29
1 1/2"	1"	2 3/16"	1"	610	5	3043T67 5.46	3201T57 1.42	2936T77 1.52	8896T71 5.39
1 3/4"	1 1/4"	2 11/16"	1 1/8"	610	5	3043T68 5.89	3201T58 1.50	2936T78 1.57	8896T72 5.49
2"	1 1/2"	2 11/16"	1"	610	5	3043T71 6.12	3201T59 1.56	2936T79 1.63	8896T73 5.61
2 1/2"	2"	3 3/16"	1"	610	5	3043T73 6.65	3201T61 1.66	2936T81 1.77	8896T74 6.05
3"	2 1/2"	3 11/16"	1"	610	5	3043T75 7.24	3201T62 1.73	2936T82 1.87	8896T75 6.86
3/8"-16 Thread Size									
1"	1/2"	2 1/4"	1 1/4"	1,090	1	3043T76 1.55	3201T63 1.77	2936T83 1.94	8896T76 7.06
1 1/4"	3/4"	2 1/4"	1 1/4"	1,090	1	3043T77 1.72	3201T64 1.86	2936T84 2.13	8896T77 7.20
1 1/2"	1"	2 1/2"	1 1/4"	1,090	1	3043T78 1.79	3201T65 1.94	2936T85 2.23	8896T78 7.52
1 3/4"	1 1/4"	2 3/4"	1 1/8"	1,090	1	3043T79 1.92	3201T66 2.07	2936T86 2.38	8896T79 8.12
2"	1 1/2"	2 5/8"	1 1/4"	1,090	1	3043T81 1.95	3201T67 2.16	2936T87 2.42	8896T81 8.22
2 1/2"	2"	3 1/8"	1 1/4"	1,090	1	3043T82 2.13	3201T68 2.30	2936T88 2.53	8896T82 9.32
3"	2 1/2"	3 5/8"	1 1/4"	1,090	1	3043T83 2.18	3201T69 2.45	2936T89 2.82	8896T83 10.14
3 1/2"	3"	4 1/8"	1 1/4"	1,090	1	3043T85 2.35	3201T71 2.67	2936T91 3.04	8896T84 11.35
1/2"-13 Thread Size									
3"	2 1/2"	4 1/2"	1 5/8"	2,020	1	3043T86 4.18	3201T72 3.88	2936T92 4.96	8896T85 16.77
3 1/2"	3"	5"	1 1/2"	2,020	1	3043T87 4.63	3201T73 4.35	2936T93 5.33	8896T86 18.21
4"	3 1/2"	5 1/2"	1 1/2"	2,020	1	3043T89 4.99	3201T74 4.79	2936T94 5.83	8896T87 20.70
4 1/2"	4"	6"	1 1/2"	2,020	1	3043T91 5.55	3201T75 5.36	2936T95 6.52	8896T88 21.28

Warning! **Never exceed work load limits.**

For additional hex nuts, see pages 3186-3192.

Extended-Length Steel and Stainless Steel U-Bolts

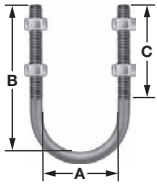

Also known as long-tangent U-bolts, the long legs on these are perfect for mounting to thick flanges. They include four hex nuts except Type 316 stainless steel U-bolts for 15/16″ to 4 5/8″ OD, which include two hex nuts. All meet Manufacturers' Standardization Society ANSI/MSS-SP-58, Type 24 except Type 316 stainless steel.

Steel U-bolts are good for general purpose applications where corrosion is not a factor. ***Zinc-plated steel*** U-bolts offer good corrosion resistance in most environments. ***Hot-dipped galvanized steel*** U-bolts offer better corrosion resistance than zinc-plated steel. ***Type 304 stainless steel*** U-bolts provide excellent corrosion resistance. ***Type 316 stainless steel*** U-bolts offer maximum corrosion resistance.

Also Available: Mounting plates.
For zinc-plated steel, please ask for 8875T888 and specify thread size, OD, pipe size, and thread length.
For hot-dipped galvanized steel, please ask for 2936T666 and specify thread size and pipe size.
For Type 304 stainless steel, please ask for 8889T888 and specify thread size and pipe size.
For Type 316 stainless steel, please ask for 29605T888 and specify pipe size.

For OD (A)	For Pipe Size	(B)	(C)	Work Load Limit, lbs.	Steel Pkg. Qty.	Steel	Steel Pkg.	Zinc-Plated Steel Pkg. Qty.	Zinc-Plated Steel	Zinc-Plated Steel Pkg.	Hot-Dipped Galvanized Steel	Hot-Dipped Galvanized Steel Each	Type 304 Stainless Steel	Type 304 Stainless Steel Each	Type 316 SS Work Load Limit, lbs.	Type 316 SS	Type 316 SS Each
1/4″-20 Thread Size																	
7/8″	1/2″	2 15/16″	2 1/2″	435	5	8880T31	$4.40	5	8875T31	$6.64	8862T21	$1.80	8889T41	$4.48	485	29605T41★◆	$4.03
1 1/8″	3/4″	3 3/16″	2 1/2″	435	5	8880T32	4.60	5	8875T32	6.80	8862T22	1.84	8889T42	4.55	485	29605T42◆▲	4.21
1 3/8″	1″	3 7/16″	2 1/2″	435	5	8880T33	4.97	5	8875T33	7.11	8862T23	1.93	8889T43	4.69	485	29605T43◆	4.30
5/16″-18 Thread Size																	
15/16″	1/2″	2 7/16″	1 1/2″	—	—	—	—	—	—	—	—	—	—	—	950	29605T1	5.64
1 1/8″	3/4″	2 3/4″	1 1/2″	—	—	—	—	—	—	—	—	—	—	—	950	29605T2	5.74
1 7/16″	1″	3 1/16″	1 1/2″	—	—	—	—	—	—	—	—	—	—	—	950	29605T3	5.92
1 3/4″	1 1/4″	3 3/16″	1 1/2″	—	—	—	—	—	—	—	—	—	—	—	950	29605T4	6.12
2″	1 1/2″	3 1/2″	1 1/2″	—	—	—	—	—	—	—	—	—	—	—	950	29605T5	6.33
3/8″-16 Thread Size																	
15/16″	1/2″	3″	2 3/8″	1,090	5	8880T43	7.60	5	8875T79	8.96	8862T24	2.45	8889T31	7.07	—	—	—
1 1/8″	3/4″	3 5/16″	2 3/8″	1,090	5	8880T44	7.80	5	8875T81	9.11	8862T25	2.49	8889T32	7.23	—	—	—
1 3/8″	1″	3 7/16″	2 3/8″	1,090	5	8880T45	8.00	5	8875T82	9.27	8862T26	2.54	8889T33	7.41	—	—	—
1 11/16″	1 1/4″	3 11/16″	2 3/8″	1,090	5	8880T34	8.19	5	8875T71	9.33	8862T27	2.46	8889T44	7.62	1,220	29605T44◆	6.68
2″	1 1/2″	4″	2 1/2″	1,090	5	8880T35	8.50	5	8875T72	9.88	8862T28	2.68	8889T45	7.44	1,220	29605T45	9.66
2 7/16″	2″	4 7/16″	2 1/2″	1,090	5	8880T36	9.00	5	8875T73	9.77	8862T29	2.90	8889T46	8.27	—	—	—
2 1/2″	2″	4 5/16″	1 3/4″	—	—	—	—	—	—	—	—	—	—	—	1,250	29605T6	8.77
3″	2 1/2″	4 13/16″	1 3/4″	—	—	—	—	—	—	—	—	—	—	—	1,250	29605T7	9.42
3 5/8″	3″	5 3/8″	1 3/4″	—	—	—	—	—	—	—	—	—	—	—	1,250	29605T8	10.10
4 1/8″	3 1/2″	5 13/16″	1 3/4″	—	—	—	—	—	—	—	—	—	—	—	1,250	29605T9	10.64
4 5/8″	4″	6 1/2″	1 3/4″	—	—	—	—	—	—	—	—	—	—	—	1,250	29605T11	11.43
1/2″-13 Thread Size																	
2 15/16″	2 1/2″	5 3/16″	3″	2,020	1	8880T37	3.38	1	8875T74	3.37	8862T31	5.13	8889T47	15.31	2,260	29605T46	18.86
3 9/16″	3″	5 3/4″	3″	2,020	1	8880T38	3.55	1	8875T75	3.48	8862T32	5.31	8889T48	16.37	2,260	29605T47	20.77
4 1/16″	3 1/2″	6 1/4″	3″	2,020	1	8880T39	3.78	1	8875T76	3.82	8862T33	6.46	8889T63	18.35	2,260	29605T48	23.39
4 9/16″	4″	6 3/4″	3″	2,020	1	8880T41	3.81	1	8875T77	3.88	8862T34	6.53	8889T49	19.06	2,260	29605T49	24.12
5 5/8″	5″	7 13/16″	3″	2,020	1	8880T42	4.03	1	8875T78	4.09	8862T35	7.47	8889T51	23.80	2,250	29605T12	24.89
5/8″-11 Thread Size																	
6 3/4″	6″	9 1/2″	3 3/4″	3,230	1	8880T16	12.92	1	8875T43	14.50	8862T36	22.19	8889T52	51.60	3,550	29605T13■	46.24
8 3/4″	8″	11 1/2″	3 3/4″	3,230	1	8880T17	15.80	1	8875T44	15.84	8862T37	21.77	8889T53	57.92	3,550	29605T14	74.01
3/4″-10 Thread Size																	
10 7/8″	10″	13 13/16″	4″	4,830	1	8880T18	28.04	1	8875T45	26.66	8862T38	37.62	8889T54	81.22	5,250	29605T15	116.07
7/8″-9 Thread Size																	
12 7/8″	12″	16 1/16″	4 1/4″	6,730	1	8880T19	34.54	1	8875T46	39.94	8862T39	55.60	8889T55	160.98	7,500	29605T16	172.68
14 1/8″	14″	17 5/16″	4 1/4″	6,730	1	8880T21	45.15	1	8875T47	54.34	8862T41	63.62	8889T56	168.56	7,500	29605T51	265.46
16 1/8″	16″	19 5/16″	4 1/4″	6,730	1	8880T22	60.12	1	8875T48	76.47	8862T42	71.10	8889T57	176.20	7,500	29605T52	377.27

★ (B) is 3 3/16″. ◆ (C) is 2 1/8″. ▲ (B) is 3 5/16″. ■ (C) is 3 1/2″.

Stainless Steel U-Bolts with Dual Mounting Plates

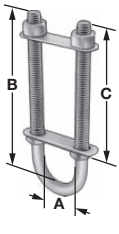

Two mounting plates are better than one when it comes to supporting and securing your material. All are made of Type 304 stainless steel for excellent corrosion resistance. Four hex nuts are included.

For OD (A)	For Pipe Size	(B)	(C)	Work Load Limit, lbs.		
3/8″-16 Thread Size						
1 1/16″	3/4″	2 1/4″	1 1/8″	3,200	29535T11	$7.65
1 1/16″	3/4″	3 1/2″	2 1/2″	3,200	29535T12	7.85
1 1/16″	3/4″	4 5/8″	3 7/16″	3,200	29535T13	8.45
7/16″-14 Thread Size						
1 3/8″	1″	4 3/4″	3 7/16″	3,817	29535T14	12.38
1/2″-13 Thread Size						
1 3/8″	1″	3 7/8″	2 1/2″	4,833	29535T15	11.64
1 3/8″	1″	4 3/4″	3 7/16″	4,833	29535T16	11.91
1 1/2″	1″	6″	4 3/4″	4,833	29535T17	17.55
1 1/2″	1″	7 5/8″	6″	4,833	29535T18	26.95

Square U-Bolts

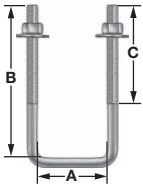

Their square shape makes these U-bolts perfect for suspending metal channel and duct work. They have 3/8″-16 threads and include two hex nuts and two flat washers.

Zinc-plated steel U-bolts offer good corrosion resistance in most environments. ***Type 304 stainless steel*** U-bolts provide excellent corrosion resistance.

For Width (A)	(B)	(C)	Work Load Limit, lbs.	Zinc-Plated Steel		Type 304 Stainless Steel	
2″	2 5/8″	1 1/2″	1,090	3060T44	$2.46	3060T71	$7.88
2″	4 5/8″	3″	1,090	3060T45	2.87	3060T72	9.18
2″	6 5/8″	3 3/4″	1,090	3060T46	3.57	3060T73	11.73
4″	2 5/8″	1 1/2″	1,090	3060T47	2.75	3060T74	8.56
4″	4 5/8″	3″	1,090	3060T48	3.13	3060T75	9.95
4″	6 5/8″	3 3/4″	1,090	3060T49	3.86	3060T76	12.79
6″	4 5/8″	3″	1,090	3060T51	3.57	3060T77	12.35
6″	6 5/8″	3 3/4″	1,090	3060T52	4.15	3060T78	14.59
6″	8 5/8″	5 5/8″	1,090	3060T53	5.12	3060T79	18.53
8″	4 5/8″	3″	1,090	3060T54	4.82	3060T81	16.04
8″	6 5/8″	3 3/4″	1,090	3060T55	5.94	3060T82	18.61
8″	8 5/8″	5 5/8″	1,090	3060T56	6.27	3060T83	22.12

Warning! **Never exceed work load limits.**

For additional hex nuts, see pages 3186-3194.

Polyurethane U-Bolts

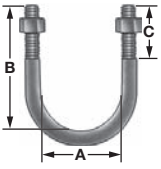

Thanks to glass-reinforced polyurethane construction, these U-bolts are nonconductive and abrasion-, chemical-, and UV-resistant. All come with two polyurethane hex nuts. Color is gray. Temperature range is –40° to +150° F.

For OD (A)	For Pipe Size	(B)	(C)	Work Load Limit, lbs.		
3/8"-16 Thread Size						
15/16"	1/2"	2 1/16"	1 1/4"	75	30485T21	$3.48
1 1/8"	3/4"	2 1/4"	1 1/4"	75	30485T22	3.60
1 3/8"	1"	2 1/2"	1 1/4"	75	30485T23	3.75
1 11/16"	1 1/4"	2 13/16"	1 1/4"	75	30485T24	3.91
2"	1 1/2"	3 1/8"	1 1/4"	75	30485T25	4.93
1/2"-13 Thread Size						
2 7/16"	2"	3 3/4"	1 1/2"	150	30485T26	7.03
2 15/16"	2 1/2"	4 3/8"	1 1/2"	150	30485T27	7.65
3 9/16"	3"	4 7/16"	1 1/2"	150	30485T28	8.27
4 1/16"	3 1/2"	5 3/8"	1 1/2"	150	30485T29	8.36
4 9/16"	4"	5 7/8"	1 1/2"	150	30485T31	8.98

Rubber-Coated U-Bolts

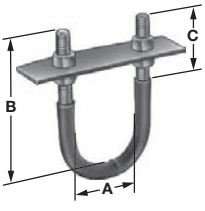

Reduce wear and vibration—the black rubber coating on these does just that. All include four hex nuts and a black neoprene rubber mounting plate. Temperature range is –67° to +230° F.

Note: Not rated for work load limit.

Hot-dipped galvanized steel U-bolts offer very good corrosion resistance. ***Type 304 stainless steel*** U-bolts provide excellent corrosion resistance.

For OD (A)	For Pipe Size	(B)	(C)	Hot-Dipped Galv. Steel		Type 304 Stainless Steel	
1/4"-20 Thread Size							
1"	3/4"	3 5/16"	2 1/2"	30555T31	$5.06	30555T41	$7.78
1 1/4"	1"	3 1/2"	2 1/2"	30555T32	5.13	30555T42	7.81
3/8"-16 Thread Size							
1 5/8"	1 1/4"	3 3/4"	2 1/2"	30555T23	7.40	30555T53	9.85
1 7/8"	1 1/2"	4"	2 1/2"	30555T33	7.54	30555T43	12.53
2 3/8"	2"	4 1/2"	2 1/2"	30555T34	7.87	30555T44	13.71
1/2"-13 Thread Size							
2 7/8"	2 1/2"	5 1/4"	3"	30555T35	10.09	30555T45	17.24
3 1/2"	3"	5 3/4"	3"	30555T36	10.62	30555T46	21.41
4 1/2"	4"	6 3/4"	3"	30555T37	12.11	30555T47	24.34
5 1/2"	5"	7 13/16"	3"	30555T24	13.60	30555T54	28.47
5/8"-11 Thread Size							
6 5/8"	6"	9 1/2"	3 3/4"	30555T38	17.44	30555T48	38.72
8 5/8"	8"	11 1/2"	3 3/4"	30555T39	20.41	30555T49	54.72
3/4"-10 Thread Size							
10 3/4"	10"	13 7/8"	4"	30555T21	27.96	30555T51	66.07
7/8"-9 Thread Size							
12 3/4"	12"	16"	4 1/4"	30555T22	39.17	30555T52	107.42

Aluminum U-Bolts

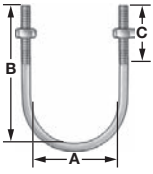

These U-bolts are lightweight yet offer moderate strength and corrosion resistance. All come with two hex nuts.

For OD (A)	For Pipe Size	(B)	(C)	Work Load Limit, lbs.		
1/4"-20 Thread Size						
3/4"	3/8"	1 1/4"	5/8"	218	3035T11	$2.54
1"	1/2"	1 3/4"	1"	218	3035T12	2.68
1 1/8"	3/4"	2"	1"	218	3035T13	2.78
1 1/2"	1"	2 3/4"	1 3/8"	218	3035T14	2.99
1 3/4"	1 1/4"	3"	1 3/8"	218	3035T15	3.12
2"	1 1/2"	3 1/4"	1 3/8"	218	3035T16	3.22
5/16"-18 Thread Size						
2 1/2"	2"	3 3/16"	1"	429	3035T19	4.36
3"	2 1/2"	3 11/16"	1"	429	3035T55	4.60
3/8"-16 Thread Size						
3 1/2"	3"	4 1/8"	1 1/4"	648	3035T24	6.89
1/2"-13 Thread Size						
4 1/2"	4"	6"	1 1/2"	1,010	3035T26	19.94

Metric Clamping U-Bolts

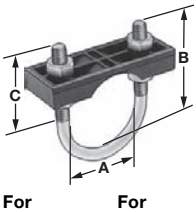

Look no further if you need a U-bolt with metric threads. All are made of corrosion-resistant zinc-plated steel and have a contoured black polypropylene mounting plate. Four hex nuts are included. Temperature range is –22° to +194° F.

Note: Not rated for work load limit.

For OD (A)	For Pipe Size	(B)	(C)		
M10 Thread Size					
1 3/16"	3/4"	2 3/8"	1 9/16"	3066T31	$6.43
1 1/2"	1"	2 9/16"	1 9/16"	3066T32	6.53
1 13/16"	1 1/4"	3"	1 15/16"	3066T33	7.00
2 1/16"	1 1/2"	3 1/4"	1 15/16"	3066T34	7.76
M12 Thread Size					
2 1/2"	2"	3 13/16"	2 3/8"	3066T35	9.17
3 1/4"	3"	4 7/16"	2 3/8"	3066T36	12.37
3 11/16"	3"	4 15/16"	2 3/8"	3066T37	13.66
M16 Thread Size					
4 3/4"	4"	6 1/8"	3 1/8"	3066T38	19.67
5 13/16"	5"	6 7/8"	3 1/8"	3066T59	20.79
6 15/16"	6"	9 3/16"	3 1/8"	3066T41	36.98

Clamping U-Bolts

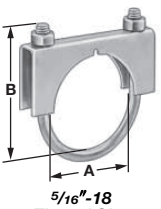

5/16"-18 Thread Size

3/8"-16 Thread Size

Also known as muffler clamps, these U-bolts grip the entire circumference of your material for a secure hold. Two locking nuts are included.

Note: Not rated for work load limit.

Steel U-bolts are good for general purpose applications where corrosion is not a factor. ***Zinc-plated steel*** U-bolts offer good corrosion resistance in most environments. ***Chrome-plated steel*** U-bolts offer very good corrosion resistance. ***Type 304 stainless steel*** U-bolts provide excellent corrosion resistance.

For OD (A)	(B)	Thread Length	Steel		Zinc-Plated Steel		Chrome-Plated Steel		Type 304 Stainless Steel	
5/16"-18 Thread Size										
1 1/8"	2"	1"	3042T68	$1.47	3042T81	$1.61	3042T93	$3.76	—	—
1 1/4"	2 1/8"	1"	3042T69	1.46	3042T82	1.66	3042T94	3.80	—	—
1 3/8"	2 1/4"	1"	3042T71	1.49	3042T83	1.68	3042T95	3.84	—	—
1 1/2"	2 1/2"	1"	3042T72	1.54	3042T84	1.71	3042T96	3.88	—	—
1 5/8"	2 9/16"	1"	3042T73	1.56	3042T85	1.75	3042T97	3.60	—	—
1 3/4"	2 7/8"	1"	3042T74	1.59	3042T86	1.80	3042T98	3.72	—	—
1 7/8"	2 7/8"	1"	3042T75	1.61	3042T87	1.84	3042T99	3.78	—	—
2"	3 1/16"	1"	3042T76	1.63	3042T88	1.86	3042T27	4.30	—	—
2 1/8"	3 1/8"	1"	3042T77	1.72	3042T89	1.91	3042T28	4.02	—	—
2 1/4"	3 5/16"	1"	3042T78	1.74	3042T91	1.95	3042T29	4.20	—	—
2 1/2"	3 9/16"	1"	3042T79	1.79	3042T92	1.98	3042T44	4.34	—	—
3/8"-16 Thread Size										
2"	3 11/16"	1 1/2"	3042T14	2.17	3042T31	2.52	3042T45	6.15	3042T55	$7.12
2 1/4"	3 13/16"	1 1/2"	3042T15	2.24	3042T32	2.67	3042T46	6.21	3042T56	7.82
2 1/2"	4 1/16"	1 1/2"	3042T16	2.30	3042T33	2.76	3042T47	6.29	3042T57	8.45
2 3/4"	4 5/16"	1 1/2"	3042T17	2.35	3042T34	2.82	3042T48	6.37	3042T58	8.98
3"	4 9/16"	1 1/2"	3042T18	2.43	3042T35	2.88	3042T49	6.42	3042T59	9.39
3 1/4"	4 13/16"	1 1/2"	3042T19	2.53	3042T36	2.98	3042T51	6.50	3042T61	10.01
3 1/2"	5 1/16"	1 1/2"	3042T21	2.58	3042T37	3.04	3042T52	6.58	3042T62	10.61
4"	5 7/8"	1 1/2"	3042T22	2.67	3042T38	3.13	3042T53	6.68	3042T63	11.52
4 1/2"	6 3/16"	1 1/2"	3042T23	2.79	3042T39	3.21	3042T54	6.74	3042T64	13.91
5"	6 13/16"	1 1/2"	3042T24	2.97	3042T41	3.52	3042T11	7.28	3042T65	16.53
5 1/2"	7 1/8"	1 1/2"	3042T25	3.12	3042T42	3.74	3042T12	7.46	3042T66	17.18
6"	7 1/2"	1 1/2"	3042T26	3.59	3042T43	4.06	3042T13	7.78	3042T67	18.14

Warning! ***Never exceed work load limits.***

Vibration-Damping Clamping U-Bolts

Designed with a thermoplastic elastomer cushion, these U-bolts reduce vibration. All include two hex nuts.

Zinc-plated steel U-bolts offer good corrosion resistance in most environments. ***Type 316 stainless steel*** U-bolts provide maximum corrosion resistance.

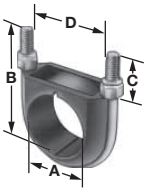

For Tube

For OD (A)	For Tube Size	(B)	(C)	(D)	Zinc-Plated Steel		Type 316 Stainless Steel	
¼″-20 Thread Size—Work load limit is 435 lbs.								
7/8″	7/8″	1 15/16″	1″	1 3/8″	3176T45	$5.61	3176T49	$12.41
1″	1″	2 1/8″	1″	1 9/16″	3176T46	5.98	3176T5	12.78
1 1/4″	1 1/4″	2 5/16″	1″	1 13/16″	3176T47	6.13	3176T51	13.38
1 3/8″	1 3/8″	2 3/8″	1″	1 13/16″	3176T48	6.26	3176T52	13.69

For Pipe

For OD (A)	For Pipe Size	(B)	(C)	(D)	Zinc-Plated Steel		Type 316 Stainless Steel	
¼″-20 Thread Size—Work load limit is 435 lbs.								
13/16″	1/2″	1 5/16″	1″	1 3/8″	3176T31	$5.75	3176T11	$12.51
1 1/16″	3/4″	2 1/8″	1″	1 9/16″	3176T32	6.05	3176T12	12.95
1 5/16″	1″	2 3/8″	1″	1 13/16″	3176T33	6.25	3176T13	13.43
⅜″-16 Thread Size—Work load limit is 1,090 lbs.								
1 11/16″	1 1/4″	2 15/16″	1 3/16″	2 3/16″	3176T34	7.59	3176T14	17.95
1 7/8″	1 1/2″	3 1/8″	1 3/16″	2 7/16″	3176T35	8.17	3176T15	18.46
2 3/8″	2″	3 11/16″	1 3/16″	3″	3176T36	8.85	3176T16	19.06
½″-13 Thread Size—Work load limit is 2,020 lbs.								
2 7/8″	2 1/2″	4 7/16″	1 3/8″	3 3/8″	3176T37	10.95	3176T17	31.19
3 1/2″	3″	5 1/16″	1 3/8″	4″	3176T38	12.11	3176T18	33.25
4″	3 1/2″	5 11/16″	1 1/2″	4 1/2″	3176T39	14.50	3176T19	40.07
4 1/2″	4″	6 1/8″	1 1/2″	5″	3176T41	15.35	3176T21	45.10
5 9/16″	5″	7 1/4″	1 5/8″	6 1/16″	3176T42	21.81	3176T22	48.55
⅝″-11 Thread Size—Work load limit is 3,230 lbs.								
6 5/8″	6″	8 15/16″	2″	7 1/8″	3176T43	30.37	3176T23	85.40
8 5/8″	8″	10 11/16″	2″	9 3/16″	3176T44	49.20	3176T24	108.85

Supports with Strut Channel

Used with the strut channel accessories on pages 1548-1555, the 1 5/8″ Wd. × 13/16″ Dp. strut channel on these supports offers a variety of ways to secure your material. Supports sit on the surface—no mounting with fasteners required. Ideal for rooftop applications.

Block-Style Supports

Reduce vibration and accommodate pipe expansion and contraction. Supports consist of a black polyethylene block with built-in zinc-plated steel strut channel. Temp. range is –40° to +150° F.

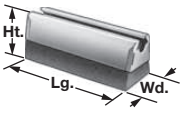

O'all Size Lg. × Wd.	Ht.	Work Load Limit, lbs.		
10 3/8″ × 4″	4″	50	3253T43	$24.80
10 3/8″ × 5″	6″	50	3253T44	30.32

Adjustable-Stand Supports

Suited for harsh weather conditions, supports consist of a black polypropylene base and hot-dipped galvanized steel strut channel and threaded rods. Use the threaded rods to adjust the pipe height. Fits up to 2 1/2″ pipe size, unless noted. Temperature range is –30° to +180° F.

Support with strut channel and loop hanger also allows you to suspend material.

Note: Pipe height listed in the table represents the distance the pipe is supported above the surface.

With Strut Channel and Loop Hanger

Strut Channel Lg.	Work Load Limit, lbs.	Base, Lg. × Wd.	Pipe Ht.		
With Strut Channel					
8″	150	10″ × 8″	3 1/2″ to 10″	8487T15	$27.82
12″	300	16″ × 10″	3 1/2″ to 16″	8487T16★	58.25
With Strut Channel and Loop Hanger					
12″	300	16″ × 10″	3″ to 10″	8487T18	68.07

★ Fits up to 3 1/2″ pipe size.

Bolt-Down Adjustable Pipe Supports

Set supports at the height you need—cut 2″ pipe size steel extension pipe (sold separately on page 39) approx. 4″ shorter than desired height. Apply tack welds to the cup on the support and the cup on the included base and insert extension pipe. Then, mount the base to the floor. Fine-tune the height using the adjustment screw on the support.

Supports are galvanized steel. Adjustment screw has a 3″ height range; minimum height is 7″.

Bases are ¼″ thick galvanized steel and have 9/16″ dia. mounting holes (fasteners not included, see page 3149 for anchor bolts).

4″ Lg. × 6″ Wd. bases have two mounting holes; *8″ Lg. × 8″ Wd.* bases have four mounting holes.

Also Available: Stainless steel supports. Please ask for 8427T888 and specify style and pipe size.

Saddle-Style Supports

The saddle comes in direct contact with half of the pipe's circumference for secure support. A black neoprene pad for holding PVC, ductile iron, and steel pipe is included. Temperature range is –70° to +200° F.

For OD	For Pipe Size	Work Load Limit, lbs.	Saddle Wd.	Saddle Thick.	Base, Lg. × Wd.		
2 3/8″	2″	10,000	2″	3/8″	6″ × 4″	8427T21	$92.52
3 1/2″	3″	10,000	2″	3/8″	6″ × 4″	8427T23	92.52
4 1/2″	4″	10,000	2″	1/2″	8″ × 8″	8427T24	111.95
6 5/8″	6″	10,000	2″	1/2″	8″ × 8″	8427T25	111.95
8 5/8″	8″	10,000	2″	1/2″	8″ × 8″	8427T26	111.95
10 3/4″	10″	10,000	2″	1/2″	8″ × 8″	8427T27	130.05
12 3/4″	12″	10,000	2″	1/2″	8″ × 8″	8427T28	130.88

Bolt-On Flange-Style Supports

Bolt directly to the flange on Class 125 pipe (fasteners not included). Flange plate on support is ¼″ thick.

Note: To ensure a correct fit, refer to the flange plate bolt hole center-to-center in the table.

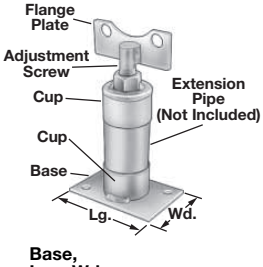

For OD	For Pipe Size	Work Load Limit, lbs.	Flange Plate Bolt Hole Ctr.-to-Ctr.	Flange Plate Bolt Hole Dia.	Base, Lg. × Wd.		
2 3/8″	2″	10,000	3 3/8″	3/4″	6″ × 4″	8427T61	$99.74
3 1/2″	3″	10,000	4 1/4″	3/4″	6″ × 4″	8427T63	99.74
4 1/2″	4″	10,000	2 7/8″	3/4″	6″ × 4″	8427T64	99.74
6 5/8″	6″	10,000	3 5/8″	7/8″	6″ × 4″	8427T65	99.74
8 5/8″	8″	10,000	4 1/2″	7/8″	6″ × 4″	8427T66	99.74
10 3/4″	10″	10,000	3 11/16″	1″	6″ × 4″	8427T67	107.65
12 3/4″	12″	10,000	4 3/8″	1″	6″ × 4″	8427T68	107.65

Clamp-Style Supports

Tighten the two halves of the clamp with the included bolts for a snug hold. A black neoprene pad for holding PVC and steel pipe is included. Temperature range is –70° to +200° F.

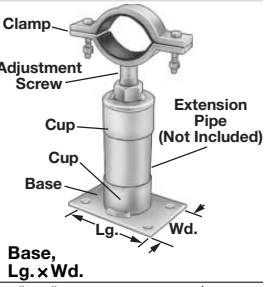

For OD	For Pipe Size	Work Load Limit, lbs.	Clamp Thick.	Base, Lg. × Wd.		
2 3/8″	2″	10,000	3/8″	6″ × 4″	8427T69	$139.35
3 1/2″	3″	10,000	3/8″	6″ × 4″	8427T71	139.35
4 1/2″	4″	10,000	1/2″	8″ × 8″	8427T72	152.82
6 5/8″	6″	10,000	1/2″	8″ × 8″	8427T73	156.20
8 5/8″	8″	10,000	1/2″	8″ × 8″	8427T74	160.39
10 3/4″	10″	10,000	1/2″	8″ × 8″	8427T75	165.45
12 3/4″	12″	10,000	1/2″	8″ × 8″	8427T76	173.92

Warning! Never exceed work load limits.

About Cable and Hose Carriers

Carriers are designed to guide, contain, and protect cable and hose during machine movement as well as reduce safety hazards to operators. They are ideal for use between fixed and moving portions of machines. When installing, evenly distribute cable and hose weight within the carrier.

Our flexible multiconductor cable on pages 803-806 is ideal for use with carriers.

To select the correct carrier size and length, use the following guidelines:

1. Select a carrier with an interior height (A) that's larger than the largest diameter cable or hose.
2. Select a carrier with an interior width (B) that's larger than the sum of the cable and hose diameters laid side by side.
3. Ensure the bend radius (R) is greater than the minimum bend radius of the cables and hoses.
4. Ensure the loop height (H) is less than the available space.
5. Determine the required carrier length using the following formula:

$$\frac{\text{Loop Length (L)}}{12''} + \tfrac{1}{2}\ \text{Max. Travel (T)}$$

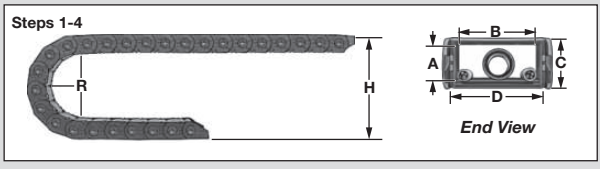

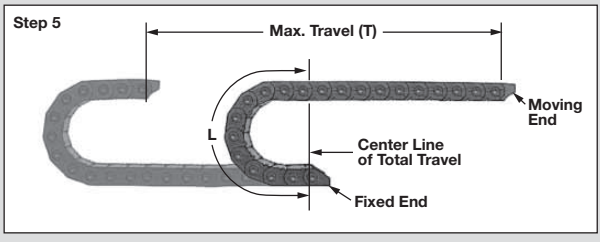

Snap-Together Cable and Hose Carriers

Snap-together links make length adjustment quick and easy. Lengths can be joined by hand but require a screwdriver for easier disassembly. Carriers are made of black glass-filled nylon. Operating temperature is –40° to +266° F. Compatible with this style of Igus carriers.

Open carriers prevent heat buildup, allow debris to pass through, and keep cable and hose visible at all times.

Feed-through carriers require cable and hose to be threaded through the entire length.

Hinged carriers have snap-on cross bars that allow access at any point along the length and make it easy to install cable and hose from the top.

Enclosed carriers protect cable and hose from damage caused by dirt, chips, and sharp debris. Their snap-on cross bars allow access at any point along the length and make it easy to install cable and hose from the bottom.

To Order: For carriers, please specify length: 1, 3, or 6 ft.

Mounting brackets are black glass-filled nylon. Fasteners for mounting the brackets to the surface are not included.

Mounting Brackets	No. of Holes	Dia.
4556T56-T59 and T65-T67	2	0.24″
4556T68-T71	2	0.32″
4617T711	4	0.25″
4617T712	4	0.35″
4617T713	4	0.42″

Interior Size Ht. (A)	Interior Size Wd. (B)	O'all Size Ht. (C)	O'all Size Wd. (D)	Bend Radius (R)	Loop Ht. (H)	Loop Lg. (L)	Max. Travel, ft. (T)	Open Feed-Through Carriers	Per Ft.	Open Hinged Carriers	Per Ft.	Enclosed Hinged Carriers	Per Ft.	Mounting Brackets	Per Pair
Medium Duty															
For 0.81″ Max. Cable and Hose OD															
0.98″	1.50″	1.38″	2.13″	2.17″	5.71″	10.87″	6.56	4516T21	$14.37	4409T51	$17.38	—	—	4556T56★	$10.58
0.98″	1.50″	1.38″	2.13″	3.94″	9.25″	16.30″	6.56	4516T22	14.37	4409T52	17.38	4591T11	$29.52	4556T56★	10.58
0.98″	1.50″	1.38″	2.13″	4.92″	11.22″	19.53″	6.56	4516T23	14.37	4409T53	17.38	4591T12	29.52	4556T56★	10.58
0.98″	2.24″	1.38″	2.87″	2.17″	5.71″	10.87″	6.56	4516T24	15.97	4409T54	18.98	—	—	4556T57★	10.58
0.98″	2.24″	1.38″	2.87″	3.94″	9.25″	16.30″	6.56	4516T25	15.97	4409T55	18.98	4591T13	31.04	4556T57★	10.58
0.98″	2.24″	1.38″	2.87″	4.92″	11.22″	19.53″	6.56	4516T26	15.97	4409T56	18.98	4591T14	31.04	4556T57★	10.58
0.98″	3.03″	1.38″	3.66″	2.17″	5.71″	10.87″	6.56	4516T27	17.96	4409T57	20.72	—	—	4556T58★	10.58
0.98″	3.03″	1.38″	3.66″	3.94″	9.25″	16.30″	6.56	4516T28	17.96	4409T58	20.72	4591T15	31.54	4556T58★	10.58
0.98″	3.03″	1.38″	3.66″	4.92″	11.22″	19.53″	6.56	4516T29	17.96	4409T59	20.72	4591T16	31.54	4556T58★	10.58
0.98″	4.06″	1.38″	4.69″	2.17″	5.71″	10.87″	6.56	4516T31	21.02	4409T61	24.65	—	—	4556T59★	10.58
0.98″	4.06″	1.38″	4.69″	3.94″	9.25″	16.30″	6.56	4516T32	21.02	4409T62	24.65	4591T17	33.03	4556T59★	10.58
0.98″	4.06″	1.38″	4.69″	4.92″	11.22″	19.53″	6.56	4516T33	21.02	4409T63	24.65	4591T18	33.03	4556T59★	10.58
For 1.15″ Max. Cable and Hose OD															
1.38″	1.97″	1.97″	2.60″	2.48″	7.09″	13.19″	7.22	4516T34	22.06	4409T64	28.38	—	—	4556T65	14.00
1.38″	1.97″	1.97″	2.60″	3.94″	9.84″	18.70″	7.22	4516T35	22.06	4409T65	28.38	4591T19	43.00	4556T65	14.00
1.38″	1.97″	1.97″	2.60″	5.91″	13.78″	25.59″	7.22	4516T36	22.06	4409T66	28.38	4591T21	43.00	4556T65	14.00
1.38″	2.95″	1.97″	3.58″	2.48″	7.09″	13.19″	7.22	4516T37	22.51	4409T67	28.80	—	—	4556T66	14.00
1.38″	2.95″	1.97″	3.58″	3.94″	9.84″	18.70″	7.22	4516T38	22.51	4409T68	28.80	4591T22	44.64	4556T66	14.00
1.38″	2.95″	1.97″	3.58″	5.91″	13.78″	25.59″	7.22	4516T39	22.51	4409T69	28.80	4591T23	44.64	4556T66	14.00
1.38″	3.94″	1.97″	4.57″	2.48″	7.09″	13.19″	7.22	4516T41	23.08	4409T71	29.67	—	—	4556T67	14.00
1.38″	3.94″	1.97″	4.57″	3.94″	9.84″	18.70″	7.22	4516T42	23.08	4409T72	29.67	4591T24	45.86	4556T67	14.00
1.38″	3.94″	1.97″	4.57″	5.91″	13.78″	25.59″	7.22	4516T43	23.08	4409T73	29.67	4591T25	45.86	4556T67	14.00
For 1.47″ Max. Cable and Hose OD															
1.77″	2.95″	2.52″	3.74″	3.94″	10.43″	19.69″	8.20	—	—	4409T74	29.73	—	—	4556T68	17.88
1.77″	2.95″	2.52″	3.74″	5.91″	14.37″	28.54″	8.20	—	—	4409T75	29.73	4591T27	44.73	4556T68	17.88
1.77″	2.95″	2.52″	3.74″	7.87″	18.31″	34.45″	8.20	—	—	4409T76	29.73	4591T28	44.73	4556T68	17.88
1.77″	4.53″	2.52″	5.31″	3.94″	10.43″	19.69″	8.20	—	—	4409T77	31.85	—	—	4556T69	17.88
1.77″	4.53″	2.52″	5.31″	5.91″	14.37″	28.54″	8.20	—	—	4409T78	31.85	4591T31	47.19	4556T69	17.88
1.77″	4.53″	2.52″	5.31″	7.87″	18.31″	34.45″	8.20	—	—	4409T79	31.85	4591T32	47.19	4556T69	17.88
1.77″	6.89″	2.52″	7.68″	3.94″	10.43″	19.69″	8.20	—	—	4409T81	42.29	—	—	4556T71	17.88
1.77″	6.89″	2.52″	7.68″	5.91″	14.37″	28.54″	8.20	—	—	4409T82	42.29	4591T34	53.17	4556T71	17.88
1.77″	6.89″	2.52″	7.68″	7.87″	18.31″	34.45″	8.20	—	—	4409T83	42.29	4591T35	53.17	4556T71	17.88

★ **To Order:** Please specify for open or enclosed carrier.

(Continued on following page)

For information about cable and hose carriers, see page 1538.

Snap-Together Cable and Hose Carriers *(Continued from previous page)*

To Order: For carriers, please specify length: 1 or 5 ft. **To Order:** For mounting brackets, please specify for open or enclosed carrier.

Interior Size Ht. (A)	Interior Size Wd. (B)	O'all Size Ht. (C)	O'all Size Wd. (D)	Bend Radius (R)	Loop Ht. (H)	Loop Lg. (L)	Max. Travel, ft. (T)	Open Hinged Carriers	Per Ft.	Enclosed Hinged Carriers	Per Ft.	Mounting Brackets	Per Pair
Heavy Duty													
For 1.37″ Max. Cable and Hose OD													
1.65″	5.91″	2.52″	6.97″	5.91″	14.37″	28.54″	10.66	4617T31	$46.68	4617T51	$55.77	4617T711	$27.88
1.65″	5.91″	2.52″	6.97″	7.87″	18.31″	34.45″	10.66	4617T32	46.68	4617T52	55.77	4617T711	27.88
For 1.83″ Max. Cable and Hose OD													
2.20″	5.91″	3.31″	7.32″	5.91″	15.16″	29.53″	14.76	4617T37	54.39	4617T57	65.18	4617T712	45.56
2.20″	5.91″	3.31″	7.32″	7.87″	19.09″	35.43″	14.76	4617T38	54.39	4617T58	65.18	4617T712	45.56
For 2.62″ Max. Cable and Hose OD													
3.15″	5.91″	4.25″	7.87″	5.91″	16.14″	29.53″	19.69	4617T44	69.96	4617T64	82.19	4617T713	54.79
3.15″	5.91″	4.25″	7.87″	7.87″	20.08″	35.43″	19.69	4617T45	69.96	4617T65	82.19	4617T713	54.79

Compact Snap-Together Cable and Hose Carriers

When space is tight, you need low-profile carriers. Snap-together links make length adjustment quick and easy. Join lengths by hand; use a screwdriver for disassembly. All are black glass-filled nylon. Operating temp. is –40° to +266° F. Compatible with this style of Igus carriers.

Feed-through carriers require the cable and hose to be threaded through the entire length. ***Pull-open top carriers*** give you easy access and allow you to install cable and hose from the top.

To Order: For carriers, please specify length: 1, 3, or 6 ft.

Mounting brackets are made of black glass-filled nylon and have a built-in plate for strain relief. Fasteners for mounting the brackets to the surface are not included.

Mounting Brackets	No. of Holes	Dia.
55835K1-K8 and K111-K113	2	0.13″
55835K114-K116	4	0.13″
55835K121-K124	2	0.43″

Interior Size Ht. (A)	Interior Size Wd. (B)	O'all Size Ht. (C)	O'all Size Wd. (D)	Bend Radius (R)	Loop Ht. (H)	Loop Lg. (L)	Max. Travel, ft. (T)	Feed-Through Carriers	Per Ft.	Pull-Open Top Carriers	Per Ft.	Mounting Brackets	Per Pair
For 0.34″ Max. Cable and Hose OD													
0.41″	0.24″	0.59″	0.49″	1.10″	2.83″	5.51″	1.64	55835K31	$9.95	55835K411	$12.83	55835K1	$5.85
0.41″	0.39″	0.59″	0.65″	1.10″	2.83″	5.51″	1.64	55835K32	10.60	55835K421	13.97	55835K2	6.58
0.41″	0.63″	0.59″	0.89″	1.10″	2.83″	5.51″	1.64	55835K33	11.19	55835K431	14.16	55835K3	7.31
0.41″	0.79″	0.59″	1.06″	1.10″	2.83″	5.51″	1.64	55835K34	12.00	55835K441	14.37	55835K4	8.28
0.41″	1.18″	0.59″	1.46″	1.10″	2.83″	5.51″	1.64	55835K35	14.41	55835K451	16.67	55835K5	9.01
0.41″	1.57″	0.59″	1.85″	1.10″	2.83″	5.51″	1.64	55835K36	14.81	55835K461	17.04	55835K6	9.63
0.41″	1.97″	0.59″	2.24″	1.10″	2.83″	5.51″	1.64	55835K37	15.53	55835K471	17.62	55835K7	10.23
0.41″	2.52″	0.59″	2.80″	1.10″	2.83″	5.51″	1.64	55835K38	16.46	55835K481	18.53	55835K8	10.85
For 0.49″ Max. Cable and Hose OD													
0.59″	0.39″	0.76″	0.72″	1.50″	3.78″	6.30″	3.28	55835K39	12.93	55835K491	16.29	55835K111	7.59
0.59″	0.63″	0.76″	0.95″	1.50″	3.78″	6.30″	3.28	55835K87	13.53	55835K511	16.48	55835K112	8.52
0.59″	0.79″	0.76″	1.11″	1.50″	3.78″	6.30″	3.28	55835K88	14.32	55835K521	16.69	55835K113	9.50
0.59″	1.18″	0.76″	1.50″	1.50″	3.78″	6.30″	3.28	55835K89	16.74	55835K531	18.99	55835K114	10.23
0.59″	1.57″	0.76″	1.90″	1.50″	3.78″	6.30″	3.28	55835K91	17.13	55835K541	19.37	55835K115	10.85
0.59″	1.97″	0.76″	2.29″	1.50″	3.78″	6.30″	3.28	55835K92	17.85	55835K551	19.95	55835K116	11.45
For 0.55″ Max. Cable and Hose OD													
0.67″	0.59″	0.91″	1.02″	1.50″	3.94″	7.28″	3.94	55835K93●	11.95	55835K561	17.67	55835K121	9.46
0.67″	0.98″	0.91″	1.42″	1.50″	3.94″	7.28″	3.94	55835K94●	12.32	55835K571	18.16	55835K122	9.46
0.67″	1.50″	0.91″	1.93″	1.50″	3.94″	7.28″	3.94	55835K95●	13.44	55835K581	19.16	55835K123	9.46
0.67″	1.97″	0.91″	2.40″	1.50″	3.94″	7.28″	3.94	55835K96●	14.18	55835K591	20.16	55835K124	9.46

● Maximum travel is 4.27 ft.

Dura-Guard Cable and Hose Carriers

Bands of Type 304 stainless steel surround flexible black nylon to minimize damage from dirt, chips, and hot, sharp debris. The modular links are held together by removable rivets for easy length adjustment and access to cable and hose. Plus, lengths can be easily joined. Operating temperature is –40° to +266° F. Compatible with this style of Kabelschlepp carriers.

To Order: For carriers, please specify length: 1 or 3 ft.

Mounting brackets are cast aluminum and include fasteners.

Also Available: Repair kit with two top and bottom Type 304 stainless steel pieces, two center nylon pieces, and four connecting rivets. Please ask for 5608K888 and specify interior height (A) and bend radius (R).

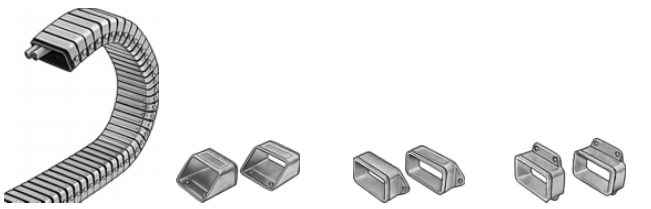

Interior Size Ht. (A)	Interior Size Wd. (B)	O'all Size Ht. (C)	O'all Size Wd. (D)	Bend Radius (R)	Loop Ht. (H)	Loop Lg. (L)	Max. Travel, ft. (T)	Carriers	Per Ft.	Surface-Mount Brackets	Per Pair	Side-Mount Brackets	Per Pair	Top-Mount Brackets	Per Pair
For 0.81″ Max. Cable and Hose OD															
0.98″	1.77″	1.50″	2.44″	2.56″	6.61″	15.94″	4.9	5608K71	$39.72	5608K511	$24.72	5608K513	$24.72	5608K514	$24.72
0.98″	1.77″	1.50″	2.44″	5.91″	13.31″	26.57″	4.9	5608K72	39.72	5608K511	24.72	5608K513	24.72	5608K514	24.72
For 1.25″ Max. Cable and Hose OD															
1.50″	2.87″	2.05″	3.62″	3.94″	9.92″	20.28″	6.6	5608K73	44.62	5608K521	29.97	5608K523	29.97	5608K524	29.97
1.50″	2.87″	2.05″	3.62″	5.91″	13.86″	26.57″	6.6	5608K74	44.62	5608K521	29.97	5608K523	29.97	5608K524	29.97
For 1.7″ Max. Cable and Hose OD															
2.05″	4.01″	2.64″	4.92″	5.51″	13.66″	27.17″	7.4	5608K75	60.25	5608K531	33.57	5608K533	33.57	5608K534	33.57
2.05″	4.01″	2.64″	4.92″	8.86″	20.35″	37.80″	7.4	5608K76	60.25	5608K531	33.57	5608K533	33.57	5608K534	33.57
For 2.3″ Max. Cable and Hose OD															
2.76″	3.94″	3.39″	5.00″	6.10″	15.59″	29.13″	9.0	5608K77	68.22	5608K541	40.95	—	—	—	—

For information about cable and hose carriers, see page 1538.

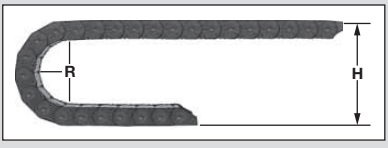

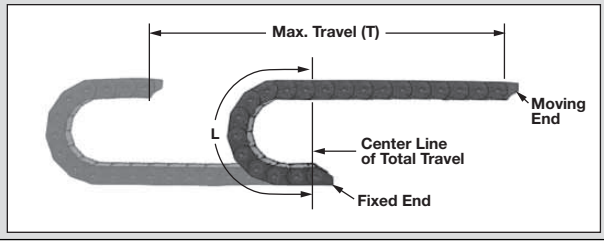

Heavy Duty Cable and Hose Carriers

Made of zinc-plated steel, these carriers offer high strength and corrosion resistance. Their open design prevents heat buildup, allows debris to pass through, and keeps cable and hose visible at all times. Twist-out aluminum crossbars allow you to install cable and hose from the top and access it at any point along the length of the carrier. Operating temperature is –40° to +266° F. Compatible with this style of Kabelschlepp carriers.

To Order: For carriers, please specify length: 1 or 5 ft.

Determine the required carrier length using the following formula:

$$\frac{\text{Loop Length (L)}}{12''} + \tfrac{1}{2}\ \text{Max. Travel (T)}$$

Mounting brackets can mount inside or outside the carrier frame. All are made of zinc-plated steel. Each set includes two brackets for the fixed end, two brackets for the moving end, and fasteners.

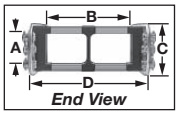

Interior Size Ht. (A)	Interior Size Wd. (B)	O'all Size Ht. (C)	O'all Size Wd. (D)	Bend Radius (R)	Loop Ht. (H)	Loop Lg. (L)	Max. Travel, ft. (T)	Carriers	Per Ft.	Mtg. Brackets	Per Set
For 1.01″ Max. Cable and Hose OD											
1.22″	3.34″	1.97″	4.72″	4.53″	11.02″	24.45″	9.8	56135K61	$59.17	56135K71	$16.75
1.22″	3.34″	1.97″	4.72″	6.10″	14.17″	29.41″	9.8	56135K62	59.17	56135K71	16.75
1.22″	5.34″	1.97″	6.72″	4.53″	11.02″	24.45″	9.8	56135K63	62.50	56135K71	16.75
1.22″	5.34″	1.97″	6.72″	6.10″	14.17″	29.41″	9.8	56135K64	62.50	56135K71	16.75
For 1.5″ Max. Cable and Hose OD											
1.81″	7.31″	2.68″	9.00″	6.69″	16.06″	35.98″	14.8	56135K65	68.35	56135K72	24.58
1.81″	9.31″	2.68″	11.00″	6.69″	16.06″	35.98″	14.8	56135K66	72.60	56135K72	24.58

Smooth-Travel Cable and Hose Carriers

A flexible one-piece design offers smooth, quiet travel for vibration-sensitive applications. There are no links or hinges, making the carriers suitable for Class 10 clean room use. Cable and hose are pressed through the top into the interior. Carriers can be cut with a utility knife. Made of polypropylene. Color is black. Compatible with this style of Kabelschlepp carriers. Operating temp. is –40° to +85° F.

Mounting brackets are black polypropylene and have a built-in plate for strain relief (unless noted). Fasteners for mounting the brackets to the surface are not included.

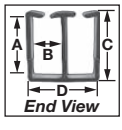

Mounting Brackets	No. of Holes	Dia.
All	2	0.26″

Lg., ft.	Max. Cable OD	Interior Size Ht. (A)	Interior Size Wd. (B)	O'all Size Ht. (C)	O'all Size Wd. (D)	Min. Bend Radius (R)	Min. Loop Ht. (H)	Max. Travel, ft. (T)	Carriers	Each	Mtg. Brackets	Per Pair
6	0.16″	0.43″	0.33″	0.59″	0.96″	2.95″	8.82″	4.91	5607K1	$65.63	5607K24●	$9.63
6	0.43″	1.34″	0.47″	1.57″	1.26″	2.95″	8.82″	13.61	5607K2	49.41	5607K7	10.15
6	0.63″	1.34″	0.67″	1.57″	1.65″	2.95″	8.82″	13.61	5607K3	51.58	5607K8	10.70
6	0.83″	1.34″	0.87″	1.57″	2.05″	2.95″	8.82″	13.61	5607K4	53.57	5607K9	10.91
6	1.02″	1.34″	1.06″	1.57″	2.44″	2.95″	8.82″	13.61	5607K5	55.75	5607K11	11.56
6	1.18″	1.34″	1.26″	1.57″	2.84″	2.95″	8.82″	13.61	5607K6	57.86	5607K12	11.78

Optional Connecting Rivets—Hold multiple carriers together side by side (6/Pkg.) ..... 5607K25 **Per Pkg.** $3.60

● Do not have a built-in plate for strain relief.

Any-Which-Way Snap-Together Cable and Hose Carriers

Capable of flexing up to 380° in any direction, these round carriers are ideal for robotic arms. Links press in for loading and unloading cable and hose. Their snap-together links make length adjustment quick and easy. Lengths can be joined by hand, but use a screwdriver for easier disassembly. All carriers are made of black glass-filled nylon. Operating temperature is –40° to +266° F. Compatible with this style of Igus carriers.

Note: Extra length will be needed to accommodate rotation.

To Order: For carriers, please specify length: 1, 3, or 6 ft.

Mounting brackets are black glass-filled nylon. Fasteners for mounting the brackets to the surface are not included. *End brackets* have teeth for strain relief. *Supporting brackets* are used as needed along the length of the carrier.

To Order: Please specify end or supporting bracket.

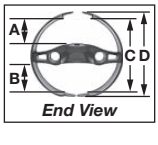

End

Supporting

Mounting Brackets	No. of Holes	Dia.
5614K14	3	0.26″
5614K15-K17	3	0.35″

Max. Cable OD For (A)	Max. Cable OD For (B)	Interior Size (A)	Interior Size (B)	Interior Size Dia. (C)	O'all Dia. (D)	Bend Radius (R)	Carriers	Per Ft.	Mtg. Brackets	Each
0.43″	0.51″	0.51″	0.59″	1.50″	1.69″	2.28″	5614K1	$71.53	5614K14	$94.11
0.68″	0.80″	0.77″	0.89″	2.24″	2.55″	3.43″	5614K2	75.09	5614K15	109.53
0.86″	1.02″	0.94″	1.10″	2.81″	3.19″	4.33″	5614K3	79.71	5614K16	122.00
1.20″	1.39″	1.28″	1.48″	3.75″	4.25″	5.71″	5614K4	91.60	5614K17	134.34

Cable and Hose Trays

Instead of pulling your cable and hose through conduit or wireway, just lay it in these trays. Trays and accessories are made of aluminum except hanging clamps and hanging bars, which are made of steel.

Trays

Trays offer excellent ventilation. Plus, they have the strength to support up to 284 lbs. per foot (based on a tray support every 8 feet). Usable depth is 3″. All shapes include two straight connectors (except horizontal tees, which include four connectors) for joining sections together.

To Order: For 90° vertical bends, please specify: inside or outside.

Also Available: Horizontal crosses. Please ask for 30065T888 and specify width.

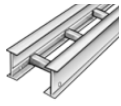

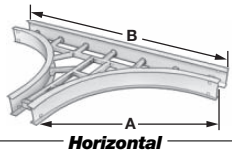

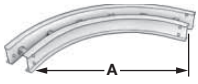

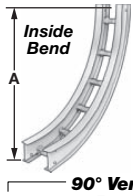

O'all Size, Wd.×Dp.	Straightaways 6-ft. Length	Each	Straightaways 12-ft. Length	Each	Horizontal Tees (A)	(B)	Horizontal Tees	Each	90° Horizontal Bends (A)	90° Horizontal Bends	Each	90° Vertical Bends (A)	90° Vertical Bends	Each
6″×4″	30065T424	$103.03	30065T311	$165.85	30″	60″	30065T321	$252.01	30″	30065T317	$112.21	31″	30065T115	$149.34
12″×4″	30065T425	109.69	30065T411	179.06	33″	66″	30065T421	319.78	33″	30065T417	132.39	31″	30065T116	160.71
18″×4″	30065T426	120.68	30065T412	197.40	36″	72″	30065T422	296.25	36″	30065T418	147.30	31″	30065T117	166.29
24″×4″	30065T427	130.68	30065T413	215.02	39″	78″	30065T453	321.28	39″	30065T419	195.35	31″	30065T118	175.17

Optional Accessories

All accessories include mounting hardware (unless otherwise stated). Threaded rod is not included, please see pages 3164-3175.

Hanging clamps attach to sides of tray section to suspend it from ½″-13 threaded rod using two hex nuts (not included) on each clamp.

Hanging bars allow trays to rest on a slotted strut channel suspended from ½″-13 threaded rod.

Also Available: Center-mount hangers leave sides open for easy loading and unloading. Please ask for 30065T666 and specify tray width.

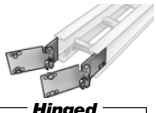

For Tray Wd.	Straight Connectors	Per Pair	Hinged Connectors	Per Pair	Vertical-Adjustment Connectors	Per Pair	Hanging Clamps	Per Pair	Hanging Bars	Each	Drop Outs	Each
6″	30065T513	$11.55	30065T511	$68.68	30065T512	$66.52	30065T518	$14.47	30065T222	$19.06	30065T331	$11.97
12″	30065T513	11.55	30065T511	68.68	30065T512	66.52	30065T518	14.47	30065T223	20.96	30065T441	19.08
18″	30065T513	11.55	30065T511	68.68	30065T512	66.52	30065T518	14.47	30065T224	23.14	30065T551	21.94
24″	30065T513	11.55	30065T511	68.68	30065T512	66.52	30065T518	14.47	30065T225	26.01	30065T443	24.80

Easy-Form Cable and Hose Trays

Create trays that suit your needs—even curves, drops, and crosses. All you need are trays, accessories, a pair of bolt cutters, and a wrench.

Black-painted steel blends into dark backgrounds. ***Zinc-plated steel*** offers good corrosion resistance in most environments. ***Type 316 stainless steel*** provides maximum corrosion resistance.

Trays

Made of wire mesh, trays are easy to cut, bend, and connect. Each package contains two 78″ long sections of tray and two straight connectors for joining the two sections in a straight line. Trays are UL classified, CSA certified, and CE approved.

To Order: For steel trays, please specify finish: black painted or zinc plated.

Wd.×Dp.	Work Load Limit, lbs.♦	Steel	Per Pkg.	Type 316 Stainless Steel	Per Pkg.
2″×2″	11	1823T25	$61.23	1823T21	$77.62
4″×2″	23	1823T26	104.88	1823T22	128.27
8″×2″	25	1823T27	117.57	1823T23	171.25
12″×2″	25	1823T28	140.13	1823T24	197.17

♦ Based on mounting brackets spaced every 6 feet.

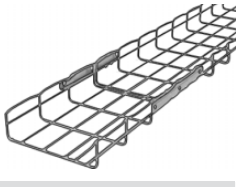

Optional Accessories

Hanging clips attach to sides of tray to suspend it from ¼″-20, ⅜″-16, and ½″-13 threaded rod (not included, see pages 3164-3175). Two nuts and two washers (not included) are required for each clamp.

Mounting brackets have 0.34″×0.98″ slotted mounting holes. Fasteners are not included.

Also Available: Center-mount hangers leave the sides open for easy loading and unloading. Please ask for 1823T666 and specify tray material and width.

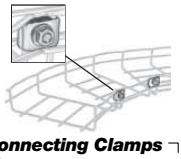

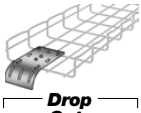

For Tray Wd.	Straight Connectors	Each	Connecting Clamps Pkg. Qty.		Per Pkg.	Hanging Clips Pkg. Qty.		Per Pkg.	MOUNTING BRACKETS Wall	Each	Ceiling	Each	Straight	Each	Drop Outs	Each
Steel—To Order: For steel accessories, please specify black-painted or zinc-plated finish (unless noted).																
2″	1823T48	$4.84	2	1823T49	$3.12	2	1823T63★	$5.04	—	—	—	—	—	—	1823T53	$7.40
4″	1823T48	4.84	2	1823T49	3.12	2	1823T63★	5.04	1823T66	$7.40	1823T77	$12.94	—	—	1823T53	7.40
8″	1823T48	4.84	2	1823T49	3.12	2	1823T63★	5.04	1823T67	10.88	1823T78	14.62	1823T97	$7.26	1823T53	7.40
12″	1823T48	4.84	2	1823T49	3.12	2	1823T63★	5.04	1823T68	13.54	1823T79	19.88	1823T98	10.88	1823T53	7.40
Type 316 Stainless Steel																
2″	1823T59	15.37	2	1823T62	4.63	2	1823T64	11.13	—	—	—	—	—	—	1823T56	25.38
4″	1823T59	15.37	2	1823T62	4.63	2	1823T64	11.13	1823T72	29.67	1823T82	75.72	—	—	1823T56	25.38
8″	1823T59	15.37	2	1823T62	4.63	2	1823T64	11.13	1823T74	62.51	1823T84	90.02	1823T94	30.53	1823T56	25.38
12″	1823T59	15.37	2	1823T62	4.63	2	1823T64	11.13	1823T76	59.63	—	—	1823T96	45.92	1823T56	25.38

★ Not available in black-painted steel.

Warning! ***Never exceed work load limits.***

For threaded rod, see pages 3164-3175.

Anchors for Threaded Rod

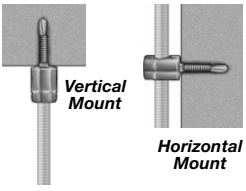

You can count on these anchors to securely hold your threaded rod (not included). Anchors are made of zinc-plated steel.

Note: Work load limit is for the anchor only. Mounting surface and hardware will affect the ultimate work load.

Anchors for steel have a sharp cutting point for mounting directly into steel. Use a drill along with the drive socket (sold separately) for installation.

Anchors for wood require a drill along with the drive socket (sold separately) for installation.

Anchors for concrete require a hole drilled by an ANSI 1/4″ masonry bit. Use a rotary hammer or hammer drill along with the drive socket (sold separately) for installation.

Minimum Material Thickness	Work Load Limit, lbs.	Pkg. Qty.	Accepts 1/4″-20 Thread Size	Per Pkg.	Accepts 3/8″-16 Thread Size	Per Pkg.
Vertical-Mount Anchors						
For Steel						
1/16″	157	5	97085A470	$5.95	97085A510	$6.22
For Wood						
1 1/2″	353	5	97085A520	5.95	97085A530	6.22
For Concrete						
2 1/4″	437	5	97085A540	5.96	97085A550	6.22
Horizontal-Mount Anchors						
For Steel						
1/16″	347	5	97085A583	6.54	97085A560	7.38
For Wood						
1 1/2″	292	5	97085A570	6.54	97085A580	7.38
For Concrete						
2 1/4″	438	5	97085A581	6.55	97085A582	7.38
Drive Socket					97085A210	Each $20.84

Hangers for Threaded Rod

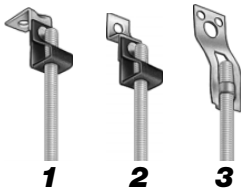

With these hangers, suspending threaded rod in a variety of applications just got easier. Hangers are made of spring steel (unless noted); mounting plates are zinc-plated steel. Fasteners are not included.

Note: Work load limit is for the hanger only. Mounting surface and hardware will affect the ultimate work load.

Accepts Thread Size	Mtg. Holes No.	Mtg. Holes Dia.	Work Load Limit, lbs.	Pkg. Qty.		Per Pkg.
Angle Bracket Mount						
1 1/4″-20	1	1/4″	160	10	11715T71	$7.51
1 3/8″-16	1	1/4″	160	10	11715T72	7.71
Offset Bracket Mount						
2 1/4″-20	1	1/4″	160	10	11715T73	7.90
2 3/8″-16	1	1/4″	160	10	11715T74	8.10
3 3/8″-16	3	1/4″ and 1/2″	250	10	11715T75■	12.11

■ Hanger is zinc-plated steel.

Eyelet Adapters for Threaded Rod

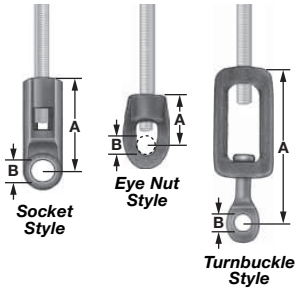

Suitable for a variety of applications when used as a rod end for threaded rod (not included). All are made of malleable iron.

Note: Work load limit is for the adapter only. Mounting surface and hardware will affect the ultimate work load.

Turnbuckle style adapters have a swivel eye. Meet Fed. Spec. WW-H-171E, Type 15 and Manufacturers' Standardization Society MSS-SP-69, Type 15.

Accepts Thread Size	(A)	(B)	Threaded Hole Dp.	Work Load Limit, lbs.		Each
Socket Style						
3/8″-16	2 1/16″	1/2″	5/8″	610	29995T71	$3.69
1/2″-13	2 5/16″	1/2″	1 1/16″	1,130	29995T72	5.71
5/8″-11	2 7/16″	1/2″	7/8″	1,550	29995T73	7.43
3/4″-10	2 7/8″	1/2″	1″	2,100	29995T74	10.86
Eye Nut Style						
1/4″-20	1″	1/4″	7/16″	230	9436T029	1.16
3/8″-16	1 1/4″	1/4″	5/8″	610	9436T041	1.28
1/2″-13	1 3/8″	1/4″	9/16″	1,130	9436T82	1.82
5/8″-11	1 9/16″	3/8″	11/16″	1,810	9436T83	3.88
3/4″-10	1 7/8″	1/2″	3/4″	2,710	9436T84	7.12
Turnbuckle Style						
1/4″-20	2 1/2″	7/32″	1 1/4″	230	3002T5	6.99
3/8″-16	3 7/8″	13/32″	1 7/8″	730	3002T1	7.13
1/2″-13	3 7/8″	13/32″	1 13/16″	730	3002T6	8.66
5/8″-11	4 7/8″	1/2″	2 5/16″	730	3002T3	14.66
3/4″-10	4 7/8″	9/16″	2 5/16″	860	3002T4	18.85

Mounting Plates for Threaded Rod

Also known as nut plates, these mounting plates easily affix to your wall or ceiling to support threaded rod (not included). All have two mounting holes (fasteners not included).

Note: Work load limit is for the plate only. Mounting surface and hardware will affect the ultimate work load.

Malleable iron plates have good strength for applications where corrosion is not a factor. ***Zinc-plated malleable iron*** plates offer good corrosion resistance in most environments. ***Type 304 stainless steel*** plates provide excellent corrosion resistance.

Accepts Thread Size	Mtg. Holes Dia.	Mtg. Holes (A)	Work Load Limit, lbs.		Each
Malleable Iron					
3/8″-16	5/16″	1 15/16″	180	11445T1	$1.83
1/2″-13	5/16″	1 15/16″	180	11445T2	2.11
Zinc-Plated Malleable Iron					
3/8″-16	5/16″	1 15/16″	180	11445T3	2.03
1/2″-13	5/16″	1 15/16″	180	11445T4	2.55
Type 304 Stainless Steel					
3/8″-16	5/16″	2 1/4″	180	11445T13	14.21
1/2″-13	5/16″	2 1/4″	180	11445T11	15.78

Brackets for Threaded Rod

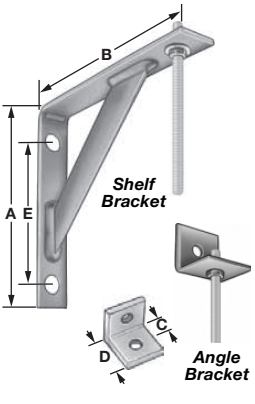

Here they are—the brackets you need to hang threaded rod at a fixed distance from the mounting surface. Use a nut to secure the threaded rod in the brackets. Fasteners, nuts, and threaded rod are not included.

Note: Work load limit is for the bracket only. Mounting surface and hardware will affect the ultimate work load.

Shelf brackets are ideal for hanging threaded rod from walls. ***Angle brackets*** let you hang threaded rod from beams and joists. Use a lag screw or bolt to secure the bracket to the surface.

Steel brackets are good for general purpose applications where corrosion is not a factor. ***Zinc-plated steel*** brackets offer good corrosion resistance in most environments.

Also Available: Type 304 stainless steel brackets. For shelf brackets, please ask for 2971T888 and specify height (A). For angle brackets, please ask for 3053T888 and specify thread size.

Accepts Thread Size	(A)	(B)	(C)	(D)	Mtg. Holes Dia.	Mtg. Holes (E)	Work Load Limit, lbs.	Steel	Each	Zinc-Plated Steel	Each
Shelf Brackets											
3/8″-16	9″	10″	—	—	13/16″	6 1/2″	730	2971T11	$28.99	2971T21	$31.12
3/8″-16	13″	14″	—	—	13/16″	10 1/2″	730	2971T12	42.15	2971T22	48.31
3/8″-16	19″	20″	—	—	13/16″	16 1/2″	730	2971T13	84.85	2971T23	104.38
Angle Brackets											
3/8″-16	—	—	1 1/8″	2″	7/16″	—	650★	3053T4	1.91	3053T14	2.18
1/2″-13	—	—	1 1/8″	2″	9/16″	—	650★	3053T5	2.16	3053T15	2.92
5/8″-11	—	—	1 3/8″	2 1/2″	11/16″	—	850●	3053T6	5.43	3053T16	7.10

★ Work load limit for a lag screw mounting into wood. Work load limit is 1,150 lbs. when bolt mounts into steel.
● Work load limit for a lag screw mounting into wood. Work load limit is 2,000 lbs. when bolt mounts into steel.

Warning! ***Never exceed work load limits.***

For threaded rod, see pages 3164-3175.

Vibration and Sound Dampers for Threaded Rod

Reduce vibration and sound on air-handling units, pipe, and duct work suspended from threaded rod. Dampers have a neoprene mount and zinc-plated steel housing. Two lengths of threaded rod and two hex nuts are required for installation (threaded rod and hex nuts not included). Not rated for temperature.

Note: Work load limit is for damper only. Mounting surface and hardware will affect the ultimate work load limit.

Dampers without spring provide sound control under most conditions.

Dampers with spring not only have a mount for sound damping, they have a powder-coated steel spring to dampen vibration.

Accepts Thread Size	Work Load Limit, lbs.	Deflect. @ Max. Load	Housing, Lg.×Wd.×Ht.		Each
Without Spring					
3/8″-16	75	3/8″	2 1/4″×2″ ×3″	29895T54	$15.51
3/8″-16	120	3/8″	2 1/4″×2″ ×3″	29895T56	16.11
5/8″-11	550	1/2″	3″ ×2 1/4″×4 1/2″	29895T63	21.72
With Spring					
3/8″-16	80	1 3/32″	2 3/4″×2 1/4″×5 1/4″	29895T4	24.77
5/8″-11	100	1 9/32″	3 1/4″×3″ ×7″	29895T45	29.04
5/8″-11	150	1 7/16″	3 1/4″×3″ ×7″	29895T72	30.33
5/8″-11	250	1 5/32″	3 1/4″×3″ ×7″	29895T73	30.33
5/8″-11	370	1 1/4″	3 1/4″×3″ ×7″	29895T48	32.50

Without Spring *With Spring*

I-Beam Clamps for Threaded Rod

Attach these clamps directly to the flange of an I-beam and utilize the threaded hole to insert threaded rod (not included).

Malleable iron, carbon steel, and ***spring steel*** clamps have good strength for applications where corrosion is not a factor. ***Zinc-plated steel*** clamps offer good corrosion resistance in most environments.

Zinc-plated malleable iron clamps offer some corrosion resistance. ***Type 304 stainless steel*** clamps offer excellent corrosion resistance. ***Type 316 stainless steel*** clamps provide maximum corrosion resistance. Clamps may be mildly magnetic.

Bottom Flange Mount Clamps

Designed for use on the bottom flange of beams. A securing bolt is included.

(A, B, C&G) Clamps include a locknut to prevent loosening.

Style B are UL listed and FM approved. Also meet Fed. Spec. WW-H-171, Type 23 and Manufacturers' Standardization Society MSS-SP-69, Type 23.

(D, E&H) Clamps also have a threaded hole on the side for supporting a hanger or routing ring.

(F) Clamp swivels as well as pivots up to 45° on angular mounts to ensure threaded rod hangs straight, even on angled beams.

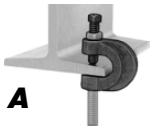

A

B&G

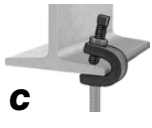

C

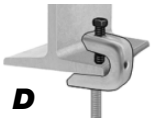

D

E&H

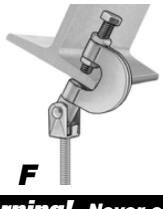

F

Accepts Thread Size	Max. Flange Thick.	Work Load Limit, lbs.		Each
Malleable Iron				
A 3/8″-16	3/4″	400	3048T51	$1.94
A 1/2″-13	3/4″	500	3048T61	2.66
A 5/8″-11	3/4″	550	3048T43	3.34
Carbon Steel				
B 3/8″-16	13/16″	400	29915T81	1.72
B 1/2″-13	13/16″	500	29915T82	2.91
B 5/8″-11	13/16″	550	29915T83	4.16
B 3/4″-10	13/16″	600	29915T84	6.14
B 7/8″-9	1 3/16″	900	29915T85	15.17
C 3/8″-16	5/8″	1,500	3235T81	2.08
C 3/8″-16	7/8″	1,500	3235T82	2.33
C 1/2″-13	5/8″	4,050	3235T83	2.59
C 1/2″-13	7/8″	4,050	3235T84	3.91
Zinc-Plated Steel				
D 1/4″-20	1/2″	75	3044T1	1.04
D 3/8″-16	3/4″	200	3044T2	3.93
E 10-24	3/4″	275	88715T712	1.26
E 1/4″-20	3/4″	275	88715T713	1.33
E 5/16″-18	3/4″	525	88715T717	3.77
E 3/8″-16	3/4″	750	88715T718	5.43
E 1/2″-13	7/8″	900	88715T719	8.13
E M6	3/4″	275	3173T2	6.37
E M8	3/4″	275	3173T4	8.02
E M10	3/4″	525	3173T5	9.32
F 3/8″-16	11/16″	330	4725T23	9.84
Type 304 Stainless Steel				
G 3/8″-16	13/16″	400	3241T38	17.66
G 1/2″-13	13/16″	500	3241T39	19.59
Type 316 Stainless Steel				
H 1/4″-20	7/8″	150	29615T1	15.53
H 3/8″-16	1 3/16″	750	29615T2	28.99
H 1/2″-13	1 3/16″	1,100	29615T3	42.47

Top Flange Mount Clamps

Designed for use on the top flange of beams. A securing bolt is included.

(J) Clamps include a locknut to prevent loosening. They are UL listed and FM approved. Also meet Fed. Spec. WW-H-171, Type 19 and Manufacturers' Standardization Society MSS-SP-69, Type 19.

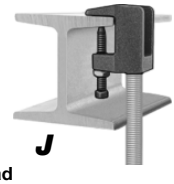

J

Accepts Thread Size	Max. Flange Thick.	Work Load Limit, lbs.		Each
Malleable Iron				
J 5/8″-11	1 5/16″	1,200	3027T95	$9.19
J 3/4″-10	1 5/16″	1,600	3027T96	11.69

Bottom/Top Flange Mount Clamps

You can use these versatile clamps on the bottom as well as the top flange of beams.

(K) Hammer clamps onto the flange.

(L, N&P) Clamps include a locknut to prevent loosening. All are UL listed and FM approved. A securing bolt is included.

(M) Clamp also has a threaded hole on the side for supporting a hanger or routing ring. A securing bolt is included.

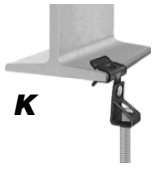

K

L

M

N&P

Accepts Thread Size	Max. Flange Thick.	Work Load Limit, lbs.		Each
Spring Steel				
K 1/4″-20	1/4″	160	11715T81	$0.91
K 1/4″-20	1/2″	160	11715T82	.93
K 1/4″-20	3/4″	160	11715T83	1.24
K 3/8″-16	1/4″	160	11715T84	.93
K 3/8″-16	1/2″	160	11715T85	.95
K 3/8″-16	3/4″	160	11715T86	1.30
Malleable Iron				
L 3/8″-16	3/4″	250	3027T87♣	1.68
L 3/8″-16	1 1/4″	250	3027T93♣	2.77
L 1/2″-13	3/4″	760	3027T88▲	2.76
L 1/2″-13	1 1/4″	760	3027T94▲	3.76
Zinc-Plated Malleable Iron				
M 1/4″-20	3/4″	100	3027T76♦	1.88
N 3/8″-16	3/4″	400	3027T11	1.94
N 1/2″-13	3/4″	500	3027T12	2.38
N 5/8″-11	3/4″	600	3027T13	5.38
N 3/4″-10	3/4″	800	3027T34	9.13
N 7/8″-9	3/4″	1,200	3027T35	9.23
Type 304 Stainless Steel				
P 3/8″-16	3/4″	400	3020T1	20.63
P 1/2″-13	3/4″	500	3020T2	22.37

♣ Work load limit is 500 lbs. when clamp is used on top flange.
▲ Work load limit is 950 lbs. when clamp is used on top flange.
♦ Work load limit is 250 lbs. when clamp is used on top flange.

Warning! ***Never exceed work load limits.***

Angled-Body Clamps for Threaded Rod

You've found them—clamps that support threaded rod on purlins as well as I-beams that have 45° or 90° lips (threaded rod not included, see pages 3164-3175). Also known as purlin clamps, they attach to the lower flange of the beam with the included securing bolt and nut. UL listed and FM approved. Meet Fed. Spec. WW-H-171, Type 23 and Manufacturers' Standardization Society MSS-SP-58, Type 23.

Malleable iron clamp is for applications where corrosion is not a factor. ***Zinc-plated malleable iron*** clamp offers some corrosion resistance.

Accepts Thread Size	Max. Lip Size 45°	Max. Lip Size 90°	Work Load Limit, lbs.		Each
Malleable Iron					
3/8"-16	2"	1 1/2"	400	11365T18	$8.52
Zinc-Plated Malleable Iron					
3/8"-16	2"	1 1/2"	400	11365T19	10.95

Double-Grip Adjustable I-Beam Clamps for Threaded Rod

Not only do these clamps get a secure grip on each side of the beam, they have an adjusting screw to accommodate a range of flange widths. Their threaded socket-style adapter hangs beneath the center of the beam to support threaded rod (not included, see pages 3164-3175). Clamps and adapters are malleable iron; adjusting screws are carbon steel and include two nuts and washers. Meet Fed. Spec. WW-H-171, Type 30 and Manufacturers' Standardization Society MSS-SP-58, Type 30.

Accepts Thread Size	Fits Flange Wd.	Max. Flange Thick.	Work Load Limit, lbs.		Each
3/8"-16	2 3/8" to 7"	9/16"	610	3266T43	$13.18
1/2"-13	2 3/8" to 7"	9/16"	1,130	3266T44	13.48
5/8"-11	2 3/8" to 7"	9/16"	1,365	3266T45	13.79
3/4"-10	2 3/8" to 7"	9/16"	1,365	3266T46	13.79
7/8"-9	2 3/8" to 7"	9/16"	1,365	3266T52	13.79

Double-Grip I-Beam Clamps with Hanging Bolt

Shown w/Socket-Style Adapter and Threaded Rod (Not Included)

Suspend threaded rod, wire rope, and chain (none included) from beneath the center of I-beams by sliding the hanging bolt through an eye nut, socket, wire rope thimble, or chain link (none included, see page 1542 for eyelet adapters). The clamps grip each side of the beam for a secure hold. All meet Manufacturers' Standardization Society MSS-SP-69, Type 21 for galvanized steel and MSS-SP-58, Type 21 for stainless steel.

Hot-dipped galvanized steel clamps offer good corrosion resistance. ***Type 304 stainless steel*** clamps provide excellent corrosion resistance.

Fits Flange Wd.	Max. Flange Thick.	Work Load Limit, lbs.	Hot-Dipped Galvanized Steel	Each	Type 304 Stainless Steel	Each
With 1/2"-13 Hanging Bolt						
3"	3/8"	700	3045T51	$6.51	3086T31	$12.62
4"	1/2"	700	3045T52	7.17	3086T32	13.17
5"	5/8"	700	3045T53	7.51	3086T33	13.70
6"	3/4"	700	3045T54	7.71	3086T34	14.13
7"	7/8"	700	3045T55	9.23	3086T35	14.58
With 5/8"-11 Hanging Bolt						
3"	3/8"	1,000	3045T74	18.49	—	—
4"	1/2"	1,000	3045T75	19.84	—	—
5"	5/8"	1,000	3045T76	21.38	—	—
6"	3/4"	1,000	3045T77	23.16	—	—
7"	7/8"	1,000	3045T78	24.08	—	—
8"	7/8"	1,000	3045T79	25.27	—	—
With 3/4"-10 Hanging Bolt						
4"	1/2"	3,000	3045T81	24.69	—	—
5"	5/8"	3,000	3045T82	26.14	—	—
6"	3/4"	3,000	3045T83	27.69	—	—
7"	7/8"	3,000	3045T84	29.46	—	—
8"	7/8"	3,000	3045T85	30.08	—	—

I-Beam Clamps for Pipe and Conduit

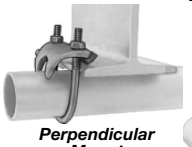

Perpendicular Mount

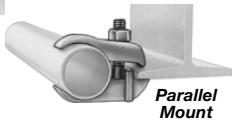

Parallel Mount

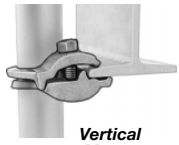

Vertical Mount

No drilling is necessary when you use these clamps for mounting pipe, rigid conduit, and thin-wall (EMT) conduit to a beam.

Note: Not rated for work load limit.

Hot-dipped galvanized malleable iron clamps offer good corrosion resistance. ***Type 316 stainless steel*** clamps provide maximum corrosion resistance.

For Pipe/ Conduit Size	Max. Flange Thick.	PERPENDICULAR MOUNT Hot-Dipped Galv. Malleable Iron	Each	Type 316 Stainless Steel★	Each
3/8"	1/4"	29585T21	$3.10	—	—
1/2"	1/4"	29585T22	3.24	29585T1▲	$18.28
3/4"	1/4"	29585T23	3.38	29585T2▲	19.94
1"	1/4"	29585T24	3.73	29585T3▲	20.31
1 1/4"	1/4"	29585T25	4.19	29585T4▲	25.53
1 1/2"	1/4"	29585T26	4.69	29585T5▲	29.68
2"	1/4"	29585T27	6.83	29585T6▲	38.42
2 1/2"	1/4"	29585T28	8.45	29585T7▲	46.04
3"	1/4"	29585T29	8.69	29585T8▲	53.33
3 1/2"	1/4"	29585T31	9.94	29585T9▲	56.73
4"	1/4"	29585T32	11.89	29585T11▲	61.32
6"	1/4"	29585T34	37.47	—	—
		PARALLEL MOUNT Hot-Dipped Galv. Malleable Iron		**VERTICAL MOUNT Hot-Dipped Galv. Malleable Iron**	
1/2"	1/4"	8868T21	$4.93	8868T41	$6.07
3/4"	1/4"	8868T22	5.10	8868T42	6.45
1"	1/4"	8868T23	5.61	8868T43	7.45
1 1/4"	1/4"	8868T24	7.14	8868T44	8.86
1 1/2"	1/4"	8868T25	7.42	8868T45	9.86
2"	1/4"	8868T26	9.93	8868T46	12.01
2 1/2"	1/4"	8868T31	13.67	8868T47	14.90
3"	1/4"	8868T27	14.28	8868T48	17.81
3 1/2"	1/4"	8868T29	16.40	—	—
4"	1/4"	8868T28	18.23	—	—

★ Not for use with thin-wall (EMT) conduit. ▲ Max. flange thick. is 5/8".

Swiveling I-Beam Clamps for Pipe and Conduit

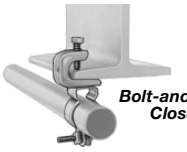

Bolt-and-Nut Close

Squeeze Close

Once attached to the beam, the swiveling hanger on these clamps lets you position pipe and conduit at any angle. No drilling is required.

Bolt-and-nut close clamps include a bolt with nut to close the hanger. They also have a 1/4"-20 threaded hole on the side to support a routing ring or additional hanger. Made of zinc-plated steel. A securing bolt is included.

Squeeze-close clamps are hammered onto the flange of the beam and need only a quick squeeze to close. Made of finished spring steel.

For OD	For Pipe/ Rigid Conduit Size	For Thin-Wall (EMT) Conduit Size	Max. Flange Thick.	Work Load Limit, lbs.		Each
Bolt-and-Nut Close						
13/16"	3/8" to 1/2"	1/2"	1/2"	50	30015T31	$1.62
1 1/16"	3/4"	3/4"	1/2"	50	30015T32	1.66
1 5/16"	1"	1"	1/2"	60	30015T33	1.69
1 1/2"	—	1 1/4"	1/2"	75	30015T14	1.73
1 3/4"	1 1/4"	1 1/2"	1/2"	80	30015T15	1.84
1 7/8"	1 1/2"	—	1/2"	80	30015T16	1.98
2 3/8"	2"	2"	1/2"	100	30015T17	2.13
Squeeze Close						
13/16"	1/2"	1/2" to 3/4"	1/2"	75	3007T11	.96
1 5/16"	1"	1"	1/2"	75	3007T12	1.06
1 5/8"	1 1/4"	1 1/4"	1/2"	75	3007T13	2.42
1 7/8"	1 1/2"	1 1/2"	1/2"	75	3007T14	2.50
2 3/8"	2"	2"	1/2"	75	3007T15	2.58

Warning! **Never exceed work load limits.**

High-Capacity Beam-to-Beam Clamps

Suspend one I-beam from another. Clamps grip the flanges of two beams for a secure connection at a range of angles. Ideal for lifting equipment, creating overhead conveyor systems, and supporting structural applications. Made of corrosion-resistant zinc-plated steel. Securing bolts are included.

Fits Flange Wd.	Fits Flange Thick.	Work Load Limit, lbs.		Per Set
3″ to 7″	3/16″ to 3/4″	6,744	3008T41	$275.84

Double-Grip Adjustable I-Beam Clamps

Whether you use them for pulling and lifting or as anchor points for hoists, these clamps grip each side of the beam to create a secure hold and to position the shackles, suspension bars, and eyes beneath the center of the beam. They adjust to fit a range of flange widths and thicknesses and can be used on flat and tapered beams.

Low-Profile Adjustable Clamps

Ideal for low-headroom areas. Two bolts with spacers grip each side of the beam. The shackle can pivot up to 45° in lifting and suspending applications. Made of zinc-plated and painted steel.

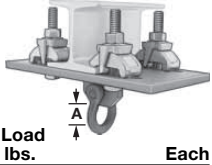

Fits Flange Wd.	Max. Flange Thick.	(A)	Work Load Limit, lbs.		Each
4″ to 8″	1 3/4″	2″	5,000	8821T11	$192.08
8″ to 12″	1 3/4″	2″	5,000	8821T12	219.98
12″ to 16″	1 3/4″	2″	5,000	8821T13	237.25
16″ to 20″	2 1/2″	2″	5,000	8821T14	270.17

Quick-Adjust Clamps

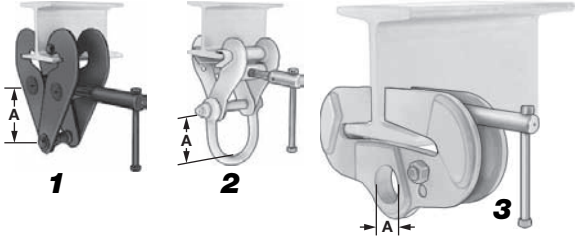

A T-handle provides quick and easy attachment and removal, and an adjustment screw accommodates a range of flange widths. Made of steel.

(1) Clamps with suspension bar are the economical choice. The built-in suspension bar is ideal for holding hooks. *Note:* The work load limit is applicable only at 0° from vertical.

(2) Clamps with shackle pivot for applications that may include sway. *Note:* The work load limit is applicable 0° to 15° from vertical, unless noted.

(3) Clamps with universal eye are ideal for lifting with slings. The clamps grip both the flange and the web portion of the beam. *Note:* The work load limit is applicable 0° to 90° from vertical.

Fits Flange Wd.	Max. Flange Thick.	(A)	Work Load Limit, lbs.		Each
(1) With Suspension Bar					
3″ to 9″	13/16″	2 7/8″ min.	2,000	8941T71●	$79.65
3″ to 9″	13/16″	2 7/8″ min.	4,000	8941T72●	91.85
3 3/16″ to 12 5/8″	1″	4 1/16″ min.	6,000	8941T73●	136.39
3 5/8″ to 12 3/16″	1″	3 1/2″ min.	10,000	8941T74●	171.30
3 5/8″ to 12 5/8″	1 1/2″	5 3/16″ min.	20,000	8941T75●	272.77
(2) With Shackle					
3″ to 7 1/2″	7/8″	3 3/4″	4,480	8941T25♣	225.03
3″ to 7 1/2″	7/8″	3 3/4″	6,720	8941T26♣	316.05
3″ to 7 1/2″	7/8″	4 1/8″	11,200	8941T18	547.16
3 1/2″ to 12″	1″	3 3/4″	6,720	8941T27♣	557.14
3 1/2″ to 12″	1″	4 1/2″	11,200	8941T16	669.97
6″ to 10″	7/8″	3 7/8″	8,960	8941T13	460.98
6″ to 12″	1 5/8″	4 1/8″	11,200	8941T42	582.65
8″ to 18″	1 5/8″	4 1/8″	13,440	8941T14	740.86
(3) With Universal Eye					
6″ to 8″	1″	2 3/4″	6,720	8941T62	899.07
6″ to 12″	1″	2 3/4″	11,200	8941T63	1,230.11

● Not designed for pulling applications.
♣ Work load limit is applicable only at 0° from vertical.

Clamps for Flat Steel I-Beams

Join the flanges of two flat steel beams without welding or drilling. Also ideal for hanging threaded rod from flat structures.

Note: Do not use on tapered flanges.

Zinc-plated malleable iron clamps offer good corrosion resistance in most environments. ***Hot-dipped galvanized malleable iron*** clamps offer better corrosion resistance than zinc-plated malleable iron.

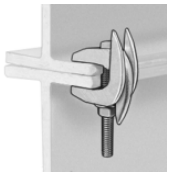

Clamping Range	Bolt Size	Work Load Limit, lbs.	Zinc-Plated Malleable Iron	Each	Hot-Dipped Galvanized Malleable Iron	Each
3/4″ to 1 11/16″	3/8″-16	440	3272T41	$10.66	3272T46	$12.80
1″ to 2 3/8″	1/2″-13	630	3272T42	16.41	3272T47	19.70
1 1/8″ to 2 3/4″	5/8″-11	1,260	3272T43	24.25	3272T48	27.84
1 1/4″ to 3 1/4″	3/4″-10	1,880	3272T44	42.73	3272T49	45.60
1 3/4″ to 3 3/4″	1″-8	3,147	3272T45	120.05	3272T51	127.80

Pipe and Scaffolding Clamps with Threaded Fasteners

Super Grip

Quick Install

Secure Nut

Clamp on to pipe and truss and utilize the included vertical bolt to hang lighting fixtures and other equipment. Clamps are made of aluminum.

Super-grip clamps are grooved on the inside for a superior grip. The vertical bolt can be removed to insert threaded rod (not included). Clamps have a black anodized finish and include a securing bolt. Bolts are zinc-plated steel (unless noted).

Quick-install clamp has a large T-handle that makes securing quick and easy. The vertical bolt is zinc-plated steel and can be removed to insert threaded rod (not included).

Secure-nut clamp has M12×50 mm steel bolts and wing nuts. Simply remove and then tighten wing nut to mount equipment.

For OD	Accepts Thread Size	Work Load Limit, lbs.		Each
Super Grip				
5/8″ to 1 5/16″	5/16″-18	125	30285T35	$11.09
1 1/4″ to 2 3/8″	1/2″-13	600	30285T56	16.11
1 1/4″ to 2 3/8″	1/2″-13	600	30285T57■	28.89
Quick Install				
1 7/8″ to 2″	1/2″-13	1,100	3126T33	41.11
Secure Nut				
1 7/8″ to 2″	———	1,650	3126T31	53.13

■ Bolts are Type 316 stainless steel.

Adjustable Wire Rope Hangers

Save valuable time and effort in hanging applications. Hangers have a convenient steel snap-hook fitting at the top that can be used to create a choker loop around a supporting structure. At the other end is a steel lock that allows you to thread the included 7×7 wire rope through and lock it in place. To adjust the length of the wire rope or completely release it, insert the included release tool or a flat head screwdriver into the lock. Wire rope is zinc-plated steel and offers good corrosion resistance in most environments.

Optional cable cutter (sold separately) can be used to trim excess wire rope.

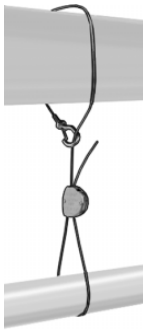

Wire Rope Lg., ft.	Wire Rope Dia.	Work Load Limit, lbs.		Each
3.3	0.079″	100	1827T51	$9.61
3.3	0.118″	200	1827T61	9.13
6.6	0.079″	100	1827T52	11.07
6.6	0.118″	200	1827T62	13.81
9.9	0.079″	100	1827T53	12.55
9.9	0.118″	200	1827T63	15.27
16.4	0.079″	100	1827T54	15.77
16.4	0.118″	200	1827T64	14.45
32.8	0.079″	100	1827T55	16.01
32.8	0.118″	200	1827T65	22.05

Optional Cable Cutter ..... 39615A81 Each $75.00

Warning! ***Never exceed work load limits.***

About Strut Channel and Accessories

The U-shaped design of strut channel provides connection points in suspending and routing applications. Strut channel can also be used to build structures such as racks.

Slotted-hole and ***round-hole strut channel*** allow connections to the channel opening, as well as connections to the back of the channel without drilling.

Solid strut channel allows connections to the channel opening.

Strut channel and accessories are available in a variety of materials:

Zinc-plated steel offers good corrosion resistance in most environments.

Primed steel, also known as galvannealed steel, is ready for custom painting with no prep work required. It provides some corrosion resistance and can be welded.

Painted and ***choose-a-color steel*** are ideal for color coding your system. The powder-coated finish provides rust protection.

Aluminum is lightweight, yet strong and corrosion resistant.

Galvanized steel has a hot-dipped zinc coating for better corrosion resistance than zinc-plated steel.

Type 304 stainless steel offers excellent corrosion resistance.

Type 316 stainless steel provides maximum corrosion resistance.

Fiberglass (polyester) is nonconductive and maintenance free with good corrosion resistance. Compatible with metal accessories. Temperature range is –35° to +200°F.

Strut Channel

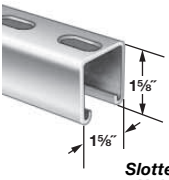

Slotted Hole

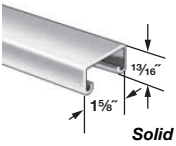

Solid

Save time—we have the length you need already cut. Strut channel is great for supporting conduit, pipe, electrical components, and duct.

Slotted-Hole Channel— Holes are 9/16″ Wd.×1 1/8″ Lg. except on fiberglass, which has 3/8″ Wd.×1″ Lg. holes. All holes are spaced on 2″ centers.

Steel and ***Stainless Steel Channel—*** *1 5/8″×1 5/8″* channel is 0.105″ thick and *13/16″×1 5/8″* channel is 0.079″ thick.

Aluminum Channel— *1 5/8″×1 5/8″* channel is 0.08″ thick and *13/16″×1 5/8″* channel is 0.064″ thick.

Fiberglass Channel— Wall thickness is 0.13″ for each side and 0.21″ for the bottom. Color is gray.

6′8″ length channel is for use with beams spaced 6 ft. apart. The length allows 4″ on each end to attach the channel to the beam.

To Order: For 1- to 4-ft. lengths, please specify length: 1, 1 1/2, 2, 3, or 4 ft.

To Order: For choose-a-color steel, please specify color: black, red, white, or yellow.

Material	1- to 4-ft. Lengths Per Ft.	5-ft. Length Each	6-ft. Length Each	6′8″ Length Each	8-ft. Length Each	10-ft. Length Each
Slotted-Hole Channel						
1 5/8″×1 5/8″						
Zinc-Plated Steel	3310T201 $3.74	3310T39 $17.77	3310T212 $20.20	3310T213 $22.44	3310T214 $26.93	3310T4 $31.79
Primed Steel	3310T334 4.18	3310T116 19.85	3310T117 22.57	3310T118 25.08	3310T119 30.10	3310T126 35.53
Green-Painted Steel	3310T107 4.97	3310T481 17.77	3310T172 20.20	3310T173 22.44	3310T174 26.93	3310T483 31.79
Choose-a-Color Steel	3310T285 4.80	3310T286 22.80	3310T287 25.92	3310T288 28.80	3310T289 34.56	3310T29 40.80
Aluminum	3230T81 5.43	3230T47 25.79	3230T82 29.32	3230T83 32.58	3230T84 39.10	3230T48 46.16
Galvanized Steel	3310T628 6.41	3310T656 30.45	3310T657 34.61	3310T658 38.46	3310T659 46.15	3310T661 54.48
Type 304 Stainless Steel	33085T531 12.53	33085T22 59.52	33085T541 67.66	33085T542 75.18	33085T543 90.22	33085T43 106.50
Type 316 Stainless Steel	33085T571 16.52	33085T76 78.47	33085T581 89.21	33085T582 99.12	33085T583 118.94	33085T761 140.42
Fiberglass	3261T65 9.80	3261T35 46.55	3261T66 52.92	3261T67 58.80	3261T68 70.56	3261T36 88.20
13/16″×1 5/8″						
Zinc-Plated Steel	3310T204 2.85	3310T49 13.54	3310T242 15.39	3310T243 17.10	3310T244 20.52	3310T8 24.23
Primed Steel	3310T335 3.27	3310T127 15.53	3310T128 17.66	3310T129 19.62	3310T136 23.54	3310T137 27.80
Green-Painted Steel	3310T202 2.85	3310T621 13.54	3310T222 15.39	3310T223 17.10	3310T224 20.52	3310T623 24.23
Choose-a-Color Steel	3310T291 3.27	3310T292 15.53	3310T293 17.66	3310T294 19.62	3310T295 23.54	3310T296 27.80
Aluminum	3230T85 3.57	3230T55 16.96	3230T86 19.28	3230T87 21.42	3230T88 25.70	3230T56 30.34
Galvanized Steel	3310T629 5.20	3310T663 24.70	3310T664 28.08	3310T665 31.20	3310T668 37.44	3310T669 44.20
Type 304 Stainless Steel	33085T611 10.70	33085T24 50.82	33085T631 57.78	33085T632 64.20	33085T633 77.04	33085T47 90.95
Type 316 Stainless Steel	33085T681 12.73	33085T774 60.47	33085T691 68.74	33085T692 76.38	33085T693 91.66	33085T775 108.20
Solid Channel						
1 5/8″×1 5/8″						
Zinc-Plated Steel	3310T103 4.08	3310T37 19.38	3310T132 22.03	3310T133 24.48	3310T134 29.38	3310T2 34.68
Primed Steel	3310T336 4.25	3310T149 20.19	3310T156 22.95	3310T157 25.50	3310T158 30.60	3310T159 36.12
Green-Painted Steel	3310T101 4.08	3310T441 19.38	3310T112 22.03	3310T113 24.48	3310T114 29.38	3310T443 34.68
Choose-a-Color Steel	3310T297 4.74	3310T298 22.52	3310T299 25.60	3310T301 28.44	3310T302 34.13	3310T303 40.29
Aluminum	3230T21 5.64	3230T65 26.79	3230T22 30.46	3230T23 33.84	3230T24 40.61	3230T66 47.94
Galvanized Steel	3310T631 6.90	3310T672 32.77	3310T673 37.26	3310T674 41.40	3310T675 49.68	3310T676 58.65
Type 304 Stainless Steel	33085T15 13.70	33085T21 65.08	33085T16 73.98	33085T17 82.20	33085T18 98.64	33085T41 116.45
Type 316 Stainless Steel	33085T25 17.68	33085T39 83.98	33085T26 95.47	33085T27 106.08	33085T28 127.30	33085T49 150.28
Fiberglass	3261T61 7.95	3261T25 37.76	3261T62 42.93	3261T63 47.70	3261T64 57.24	3261T26 67.58
13/16″×1 5/8″						
Zinc-Plated Steel	3310T106 3.13	3310T47 14.87	3310T162 16.90	3310T163 18.78	3310T164 22.54	3310T6 26.61
Primed Steel	3310T337 3.30	3310T166 15.67	3310T167 17.82	3310T168 19.80	3310T169 23.76	3310T176 28.05
Green-Painted Steel	3310T104 3.13	3310T581 14.87	3310T142 16.90	3310T143 18.78	3310T144 22.54	3310T583 26.61
Choose-a-Color Steel	3310T304 3.47	3310T305 16.48	3310T306 18.74	3310T307 20.82	3310T308 24.98	3310T309 29.50
Aluminum	3230T31 3.71	3230T75 17.62	3230T32 20.03	3230T33 22.26	3230T34 26.71	3230T76 31.54
Galvanized Steel	3310T632 5.29	3310T678 25.13	3310T679 28.57	3310T681 31.74	3310T682 38.09	3310T683 44.97
Type 304 Stainless Steel	33085T411 11.06	33085T23 52.54	33085T421 59.72	33085T422 66.36	33085T423 79.63	33085T45 94.01
Type 316 Stainless Steel	33085T461 13.44	33085T59 63.84	33085T471 72.58	33085T472 80.64	33085T473 96.77	33085T75 114.24

For information about strut channel and accessories, see page 1546.

Deep Strut Channel

Strut channel's strength increases with channel depth. ***Steel channel*** is 0.105″ thick; ***aluminum channel*** is 0.08″ thick.
Slotted-Hole Channel— Holes are 9/16″ Wd.×1 1/8″ Lg. and are spaced on 2″ centers.

To Order: For 1- to 4-ft. lengths, please specify length: 1, 1 1/2, 2, 3, or 4 ft.

To Order: For choose-a-color steel, please specify color: black, red, white, or yellow.

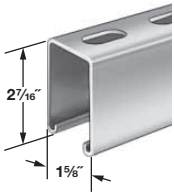

Slotted Hole

Solid

Material	1- to 4-ft. Lengths Per Ft.		5-ft. Length Each		10-ft. Length Each	
Slotted-Hole Channel						
2 7/16″ × 1 5/8″						
Zinc-Plated Steel	3548T44	$6.49	3548T17	$30.83	3548T18	$55.16
Green-Painted Steel	3548T45	6.49	3548T15	30.83	3548T16	55.16
Choose-a-Color Steel	3548T46	6.64	3548T34	31.54	3548T35	56.44
Aluminum	3548T47	7.11	3548T27	33.77	3548T28	60.44
Galvanized Steel	3548T48	7.34	3548T36	34.87	3548T37	62.39
3 1/4″ × 1 5/8″						
Zinc-Plated Steel	3563T43	7.61	3563T17	36.15	3563T18	64.69
Green-Painted Steel	3563T44	7.61	3563T15	36.15	3563T16	64.69
Choose-a-Color Steel	3563T45	8.50	3563T32	40.38	3563T33	72.25
Aluminum	3563T46	8.57	3563T21	40.71	3563T22	72.84
Galvanized Steel	3563T48	9.88	3563T34	46.93	3563T37	83.98
Solid Channel						
2 7/16″ × 1 5/8″						
Zinc-Plated Steel	3548T38	7.12	3548T13	33.82	3548T14	60.52
Green-Painted Steel	3548T39	7.12	3548T11	33.82	3548T12	60.52
Choose-a-Color Steel	3548T41	7.32	3548T29	34.77	3548T31	62.22
Aluminum	3548T42	6.44	3548T23	30.59	3548T24	54.74
Galvanized Steel	3548T43	7.64	3548T32	36.29	3548T33	64.94
3 1/4″ × 1 5/8″						
Zinc-Plated Steel	3563T38	8.30	3563T13	39.43	3563T14	70.55
Green-Painted Steel	3563T39	8.30	3563T11	39.43	3563T12	70.55
Choose-a-Color Steel	3563T41	8.93	3563T27	42.42	3563T28	75.91
Aluminum	3563T157	8.85	3563T158	42.04	3563T159	75.22
Galvanized Steel	3563T42	10.83	3563T29	51.44	3563T31	92.06

Strut Channel with Mounting Plates

Mount lengths of strut channel quickly and easily to walls, beams, and other lengths of strut channel. All channel is 0.105″ thick. Mounting plates have two 9/16″ dia. mounting holes (fasteners not included).

Solid Channel— The mounting plate is 1/4″ thick. Mounting holes are spaced on 3″ centers.

Solid Double Channel— Two lengths of channel are welded back-to-back to provide connection points on the top, bottom, and both sides. The mounting plate is 3/8″ thick. Mounting holes are spaced on 4 5/8″ centers.

To Order: For choose-a-color steel, please specify color: black, red, white, or yellow.

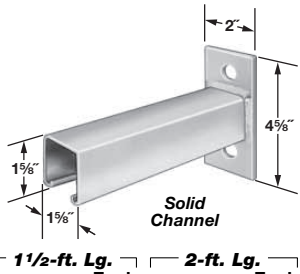

Solid Channel

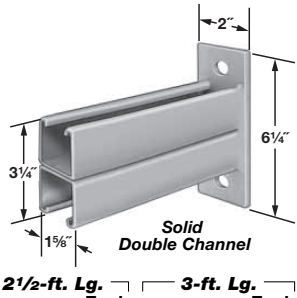

Solid Double Channel

Material	6″ Lg. Each		1-ft. Lg. Each		1 1/2-ft. Lg. Each		2-ft. Lg. Each		2 1/2-ft. Lg. Each		3-ft. Lg. Each	
Solid Channel												
1 5/8″ × 1 5/8″												
Zinc-Plated Steel	3188T31	$8.33	3188T32	$10.00	3188T33	$11.66	3188T34	$13.33	3188T127	$19.99	3188T135	$22.49
Green-Painted Steel	3188T21	8.33	3188T22	10.00	3188T23	11.66	3188T24	13.33	3188T129	19.99	3188T137	22.49
Choose-a-Color Steel	3188T183	8.75	3188T18	10.50	3188T122	12.25	3188T125	14.00	3188T131	21.00	3188T138	23.62
Galvanized Steel	3188T184	14.50	3188T119	17.40	3188T123	20.30	3188T126	23.20	3188T132	34.80	3188T139	39.15
Type 304 Stainless Steel	3188T41	19.48	3188T42	23.38	3188T43	27.27	3188T44	31.17	3188T133	46.75	3188T141	52.60
Type 316 Stainless Steel	3188T51	30.99	3188T52	37.19	3188T53	43.39	3188T54	49.58	3188T134	74.38	3188T142	83.67
Solid Double Channel												
3 1/4″ × 1 5/8″												
Zinc-Plated Steel	—	—	3188T35	20.64	3188T36	25.59	3188T37	28.90	3188T38	35.09	3188T39	38.18
Green-Painted Steel	—	—	3188T25	20.64	3188T26	25.59	3188T27	28.90	3188T28	35.09	3188T29	38.18
Choose-a-Color Steel	—	—	3188T194	27.93	3188T197	34.63	3188T211	39.10	3188T214	47.48	3188T217	51.67
Galvanized Steel	—	—	3188T195	31.38	3188T198	43.93	3188T212	53.35	3188T215	62.76	3188T218	78.45
Type 304 Stainless Steel	—	—	3188T45	49.50	3188T46	61.38	3188T47	69.30	3188T48	84.15	3188T49	91.58
Type 316 Stainless Steel	—	—	3188T55	67.98	3188T56	84.30	3188T57	95.17	3188T58	115.57	3188T59	125.76

Curved Strut Channel

Top/Bottom Opening

Inside Opening

Outside Opening

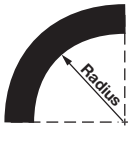

Curved 115°, this zinc-plated steel channel lets you create continuous runs without corners. All channel is 1 5/8″×1 5/8″ and 0.105″ thick.

Top/bottom opening channel is great for use in light duty conveying and other trolley applications. For trolleys and brackets, see page 1552.

Inside opening and ***outside opening*** channel is great for electrical runs around columns, along curved structures, and for transitioning from walls to ceilings.

Style	Length, ft.	Radius, ft.		Each
Top/Bottom Opening	6	3	3147T1	$95.05
Inside Opening	6	3	3147T2	79.21
Outside Opening	6	3	3147T3	79.21

For information about strut channel and accessories, see page 1546.

Double Strut Channel

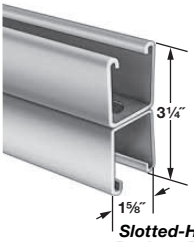

Slotted-Hole Back-to-Back

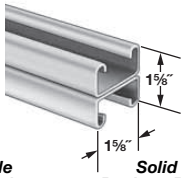

Solid Back-to-Back

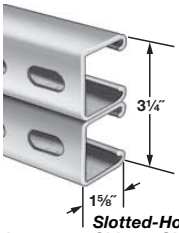

Slotted-Hole Side-to-Side

Two lengths of strut channel joined, either back-to-back or side-to-side, provide multiple connection points.

Slotted-Hole Channel—Holes are 9/16″ Wd.×1⅛″ Lg. (unless noted). All holes are spaced on 2″ centers.

Steel and ***Stainless Steel Channel***—*3¼″×1⅝″* is 0.105″ thick; *1⅝″×1⅝″* is 0.079″ thick.

Aluminum Channel—*3¼″×1⅝″* is 0.08″ thick; *1⅝″×1⅝″* is 0.064″ thick.

Fiberglass Channel—Wall thickness is 0.13″ for each side and 0.21″ for the bottom. Color is gray.

To Order: For 1- to 4-ft. lengths, specify length: 1, 1½, 2, 3, or 4 ft.

To Order: For choose-a-color steel, specify color: black, red, white, or yellow.

Material	SLOTTED-HOLE CHANNEL 1- to 4-ft. Lgs.	Per Ft.	5-ft. Length	Each	10-ft. Length	Each	SOLID CHANNEL 1- to 4-ft. Lgs.	Per Ft.	5-ft. Length	Each	10-ft. Length	Each
Back-to-Back												
3¼″×1⅝″												
Zinc-Plated Steel	3208T1	$7.48	3208T19	$35.53	3208T174	$63.58	3208T192	$7.46	3208T44	$35.44	3208T45	$63.41
Primed Steel	3208T11●	10.35	3208T2●	49.16	3208T175●	87.97	3208T193	11.09	3208T59	52.68	3208T64	94.27
Green-Painted Steel	3208T12	7.48	3208T21	35.53	3208T176	63.58	3208T194	7.46	3208T42	35.44	3208T43	63.41
Choose-a-Color Steel	3208T13	7.63	3208T22	36.24	3208T177	64.86	3208T195	8.03	3208T61	38.14	3208T65	68.25
Aluminum	3208T14	10.60	3208T23	50.35	3208T178	90.10	3208T196	11.72	3208T53	55.67	3208T54	99.62
Galvanized Steel	3208T15	12.34	3208T24	58.62	3208T179	104.89	3208T197	11.62	3208T62	55.19	3208T66	98.77
Type 304 Stainless Steel	3291T11	25.64	3291T12	121.79	3291T13	217.94	3291T14	28.28	3291T61	134.33	3291T62	240.38
Fiberglass	3208T17♦	18.98	3208T26♦	90.16	3208T182♦	161.33	3208T199	19.19	3208T63	91.15	3208T67	163.12
1⅝″×1⅝″												
Zinc-Plated Steel	3208T27	5.30	3208T37	25.18	3208T183	45.05	3208T211	5.84	3208T48	27.74	3208T49	49.64
Primed Steel	3208T28●	9.59	3208T38●	45.55	3208T184●	81.52	3208T212	10.09	3208T68	47.93	3208T73	85.77
Green-Painted Steel	3208T29	5.30	3208T39	25.18	3208T185	45.05	3208T213	5.84	3208T46	27.74	3208T47	49.64
Choose-a-Color Steel	3208T3	6.32	3208T4	30.02	3208T186	53.72	3208T214	6.85	3208T69	32.54	3208T74	58.22
Aluminum	3208T33	8.16	3208T41	38.76	3208T187	69.36	3208T215	9.25	3208T31	43.94	3208T32	78.62
Galvanized Steel	3208T34	10.38	3208T5	49.31	3208T188	88.23	3208T216	8.29	3208T71	39.38	3208T75	70.46
Type 304 Stainless Steel	3291T15	18.67	3291T16	88.68	3291T17	158.70	3291T18	25.96	3291T63	123.31	3291T64	220.66
Side-to-Side												
3¼″×1⅝″												
Zinc-Plated Steel	3611T26	11.32	3611T36	53.77	3611T45	96.22	3611T54	8.89	3611T13	42.23	3611T14	75.56
Green-Painted Steel	3611T28	11.32	3611T38	53.77	3611T47	96.22	3611T56	8.89	3611T11	42.23	3611T12	75.56
Black-Painted Steel	3611T29	14.73	3611T39	69.97	3611T48	125.20	3611T57	11.17	3611T15	53.06	3611T16	94.94
Aluminum	3611T32	19.10	3611T41	45.37	3611T49	89.14	3611T58	12.88	3611T21	31.79	3611T31	58.57
Type 304 Stainless Steel	3611T34●	31.51	3611T43●	149.67	3611T52●	267.84	3611T61	23.86	3611T17	113.33	3611T18	202.81

● Holes are 9/16″ Wd.×1″ Lg. ♦ Holes are 3/8″ Wd.×1″ Lg.

Telescoping Round-Hole Strut Channel

Channel

Tube

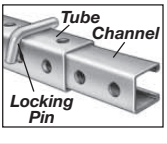

Slide the channel into the tube (both sold separately) to create a length-adjustable strut channel. Ideal for applications where requirements such as table or conveyor height may change over time. Channel and tube are made of 0.105″ thick steel and have 9/16″ dia. holes spaced on 1⅞″ centers.

Channel is 1⅝″×1⅝″. Holes are opposite the channel opening.

Tube is 1⅞″ square. Holes are on all sides. Can also be used with any 1⅝″×1⅝″ slotted channel.

Optional locking pin (sold separately) is for adjustments when strut channel is used with tube. Made of zinc-plated steel.

Material	CHANNEL 5-ft. Length	Each	10-ft. Length	Each	TUBE 5-ft. Length	Each	10-ft. Length	Each
Zinc-Plated Steel	3138T61	$18.29	3138T62	$34.75	3138T31	$45.39	3138T32	$86.24
Green-Painted Steel	3138T41	18.29	3138T42	34.75	3138T11	45.39	3138T12	86.24
Black-Painted Steel	3138T51	22.22	3138T52	42.22	3138T21	78.49	3138T22	149.13
Locking Pin							3138T71	Each $12.34

Post Bases for Strut Channel

Single Channel 4″×6″ Plate Standard Post

Single Channel 6″×6″ Plate Standard Post

Single Channel Polyurethane

Double Channel Offset Post

Create a solid foundation when you mount these bases to the floor to support upright 1⅝″×1⅝″ strut channel (not included). Mounting holes are spaced on 4¼″ centers (unless noted). Mounting bolts are not included. *Note:* Base height does not include plate thickness.

Steel and ***stainless steel*** bases with 6″×6″ plates have four ¾″ dia. mounting holes. Bases with 4″×6″ plates have two ¾″ dia. mounting holes. ***Polyurethane*** bases are compatible with fiberglass strut channels. They have four 7/16″ dia. mounting holes. Color is gray.

To Order: For choose-a-color steel, please specify color: black, red, white, or yellow.

Material	Plate Thick.	Base Ht.	SINGLE-CHANNEL BASES 4″×6″ Plate Standard Post★	Each	6″×6″ Plate Standard Post	Each	Offset Post	Each	DOUBLE-CHANNEL BASES 6″×6″ Plate Standard Post	Each	Offset Post	Each
Zinc-Plated Steel	¼″	3½″	33145T53	$13.97	33145T32	$17.46	33145T19	$17.46	33145T28	$19.64	33145T44	$19.64
Green-Painted Steel	¼″	3½″	33145T51	13.97	33145T31	17.46	33145T21	17.46	33145T29	19.64	33145T45	19.64
Choose-a-Color Steel	¼″	3½″	33145T11	18.23	33145T16	20.26	33145T22	20.26	33145T36	21.15	33145T46	21.15
Galvanized Steel	¼″	3½″	33145T13	17.54	33145T18	21.92	33145T24	21.92	33145T38	22.99	33145T48	22.99
Type 304 Stainless Steel	¼″	3½″	33145T54	57.64	33145T33	73.90	33145T25	73.90	33145T39	77.41	33145T49	77.41
Type 316 Stainless Steel	¼″	3½″	33145T14	79.62	33145T34	99.53	33145T26	99.53	33145T42	105.97	33145T55	105.97
Polyurethane	3/16″	3″	—	—	33145T41♠	27.82	—	—	33145T43♣	37.35	—	—

★ Mounting holes are spaced on 4″ centers. ♠ Base plate is 5″×5″; mounting holes are spaced on 3¾″ centers.
♣ Base plate is 6⅝″×5″; mounting holes are spaced on 5 7/16″ and 3 13/16″ centers.

For information about strut channel and accessories, see page 1546.

I-Beam Clamps for Strut Channel

Strut channel and I-beam are not included.

Bottom Flange-Mount Clamps

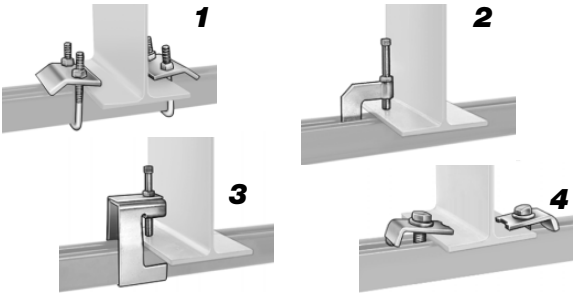

(1) Square-bend clamps consist of mounting plates that grip the beam flange and square U-bolts that cradle the channel. Four hex nuts are included.

(2) Slide-on clamps have a bottom gripping plate for the rolled lip of the strut channel to rest on. A bolt to secure the clamp to the beam flange and a locknut to prevent loosening are included. Clamps also have a threaded hole on the bottom for supporting threaded rod.

(3) Pass-through clamp has a bolt for securing to the beam flange and a locknut to prevent loosening. The strut channel feeds through and is supported by the body of the clamp. Clamp also has a threaded hole on the bottom for supporting threaded rod.

(4) Low-profile clamps twist into the channel and secures to the beam flange with a bolt and ½″-13 channel nut (not included).

For Channel Depth	Max. Flange Thick.	Accepts Thread Size	Work Load Limit, lbs.	Pkg. Qty.		Per Pkg.
(1) Square Bend—Zinc-Plated Steel						
13/16″ to 1⅝″	¾″	———	1,000	2	1815T11	$7.56
2 7/16″ to 3¼″	¾″	———	1,000	2	1815T13	8.66
(1) Square Bend—Type 304 Stainless Steel						
13/16″ to 1⅝″	¾″	———	1,200	2	1815T12	58.98
1⅝″ to 3¼″	¾″	———	1,200	2	1815T14	65.18
(2) Slide On—Zinc-Plated Steel						
1⅝″ to 3¼″	1″	⅜″-16	250	1	1815T31	7.05
1⅝″ to 3¼″	1″	½″-13	360	1	1815T42	6.64
(3) Pass Through—Zinc-Plated Steel						
13/16″ to 1⅝″	1⅝″	⅜″-16	400	1	1815T21	7.32
(4) Low Profile—Zinc-Plated Steel						
13/16″ to 3¼″	½″	½″-13	1,100	2	1815T16	3.09

Side-Mount Clamps

Mount strut channel inside beam flanges. The set includes one stationary and one adjustable clamp that go into each end of the channel. Studded tops hold them securely against the flange. Clamps are 1⅝″×1⅝″ and made of zinc-plated steel. *Note:* Channel must be cut to the size of the opening minus 1½″.

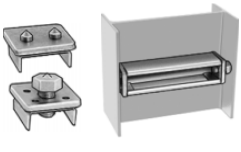

For Strut Channel	Work Load Limit, lbs.		Per Set
1⅝″×1⅝″	500	1815T15	$11.23

Casters for Strut Channel

Add mobility to structures built with strut channel. Casters are zinc-plated steel and have a polypropylene stem that easily slides into 1⅝″×1⅝″ (0.105″ and 0.079″ thick) slotted channel (not included). A bolt and washer are included for easy attachment. All have a ⅜″ dia. solid axle. Leg is 3/32″ thick. The wheel is black solid rubber with plain acetal wheel bearings. Durometer is 70A to 85A.

Swivel casters have double-ball swivel bearings.

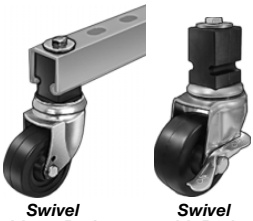

Swivel without Brake — *Swivel with Brake*

Wheel Dia.×Wd.	Mount Ht.■	Cap. Each, lbs.	Swivel	Swivel Each	Rigid	Rigid Each
Without Brake						
3″×1¼″	4½″	250	2356T11	$19.17	2356T12	$19.17
With Side Wheel Brake						
3″×1¼″	4 11/16″	210	2356T14	20.38	———	———

■ Measured from floor to bottom of strut.

Closure Strips for Strut Channel

Choose these strips to create a raceway or simply give your strut system a finished look. They fit all 1⅝″ wide strut channel (not included).

To Order: For choose-a-color steel strips, please specify color: black, red, white, or yellow.

Material	5-ft. Lengths	Each	10-ft. Lengths	Each
Green Plastic	3204T11	$4.25	3204T71	$8.07
Black Plastic	3204T12	4.25	3204T72	8.07
White Plastic	3204T15	4.38	3204T16	8.32
Zinc-Plated Steel	3204T83	5.27	3204T74	10.01
Green-Painted Steel	3204T81	6.76	3204T73	12.84
Choose-a-Color Steel	3204T17	7.57	3204T18	14.38
Aluminum	3204T84	6.35	3204T77	12.06
Type 304 Stainless Steel	3204T85	12.55	3204T75	23.84

End Caps and Covers for Strut Channel

End Cap — *Plastic End Cover* — *Steel End Cover*

Protect the ends of strut channel (not included).

To Order: For plastic end caps and plastic end covers, please specify color: black, green, red, white, or yellow.

Fits Channel Size	Plastic	Plastic Each	Zinc-Plated Steel	Zinc-Plated Steel Each	Type 304 Stainless Steel	Type 304 Stainless Steel Each
End Caps						
For Single Channel						
1⅝″× 13/16″	3312T55	$0.48	———	———	———	———
1⅝″×1⅝″	3312T56	.62	———	———	———	———
For Deep Channel						
1⅝″×2 7/16″	3312T57	1.00	———	———	———	———
1⅝″×3¼″	3312T58	1.06	———	———	———	———
For Double Back-to-Back Channel						
1⅝″×1⅝″	3312T59	.71	———	———	———	———
1⅝″×3¼″	3312T61	1.24	———	———	———	———
End Covers						
For Single Channel						
1⅝″× 13/16″	3312T62	.97	3312T81	$0.74	3312T83	$2.67
1⅝″×1⅝″	3312T63	1.12	3312T82	.82	3312T84	3.03
For Deep Channel and Double Back-to-Back Channel						
1⅝″×3¼″	3312T65	1.38	———	———	———	———

Connectors for Strut Channel

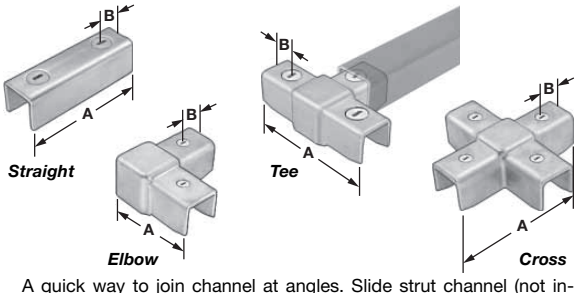

A quick way to join channel at angles. Slide strut channel (not included) over these connectors and tighten the included cam screws.

Connectors for 1⅝″×1⅝″ strut channel are 0.08″ thick aluminum (unless noted). Use with steel and stainless steel strut channel only.

Connectors for 1⅝″×13/16″ strut channel are 0.105″ thick zinc-plated steel. Use with steel strut channel only. *Elbow connectors* require channel to be cut at a 45° angle.

Connector Style	(A)	(B)		Each
For 1⅝″×1⅝″ Strut Channel				
Straight	4½″	⅞″	33135T32▲	$12.37
Elbow	2 5/16″	⅞″	33135T38	24.52
Tee	4½″	⅞″	33135T34	24.96
Cross	4½″	⅞″	33135T36	42.34
For 1⅝″×13/16″ Strut Channel				
Straight	4½″	⅞″	33135T31	19.15
Elbow	2 5/16″	⅞″	33135T37	29.40
Tee	4½″	⅞″	33135T33	38.66
Cross	4½″	⅞″	33135T35	43.04

▲ Made of 0.105″ thick zinc-plated steel.

Warning! ***Never exceed work load limits.***

For information about strut channel and accessories, see page 1546.

Brackets, Braces, Hinges, and Plates for Strut Channel

A variety of accessories lets you connect strut channel (not included) to each other as well as to other structures. All fit 1⅝″ wide strut channel.

Steel and ***stainless steel*** accessories are ¼″ thick and have 9⁄16″ dia. mounting holes (fasteners not included).

Fiberglass accessories are ⅜″ thick and have 7⁄16″ dia. mounting holes (unless noted). Fasteners not included.

To Order: For choose-a-color steel, please specify color: black, red, white, or yellow.

90° Angle Brackets

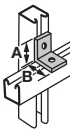

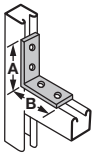

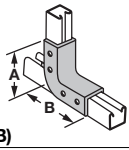

Material	(A)	(B)		Each	(A)	(B)		Each	(A)	(B)		Each
Zinc-Plated Steel	2¼″	1⅝″	33125T32	$1.24	4⅛″	3½″	33125T34	$2.00	—	—	—	—
Green-Painted Steel	2¼″	1⅝″	33125T31	1.73	4⅛″	3½″	33125T33	2.50	—	—	—	—
Choose-a-Color Steel	2¼″	1⅝″	33125T143	3.11	4⅛″	3½″	33125T145	5.19	—	—	—	—
Galvanized Steel	2¼″	1⅝″	33125T144	2.98	4⅛″	3½″	33125T146	4.85	—	—	—	—
Type 304 SS	2″	1⅞″	33125T11	5.63	3⅞″	3¾″	33125T12	9.88	—	—	—	—
Fiberglass	1⅞″	1⅞″	33125T111♠	9.86	4″	4″	33125T112	15.36	4⅞″	4⅞″	33125T73◇	$13.98

♠ ¼″ thick; 9⁄16″ dia. mounting holes. Made of polyurethane. ◇ ⅛″ thick. Made of polyurethane.

Corner Braces

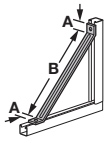

Material	(A)	(B)		Each
Zinc-Plated Steel	1⅝″	16⅝″	3574T12	$6.36
Green-Painted Steel	1⅝″	16⅝″	3574T11	7.64
Choose-a-Color Steel	1⅝″	16⅝″	3574T15	9.92
Galvanized Steel	1⅝″	16″	3574T16	13.61
Type 304 SS	1⅝″	16″	3574T14	26.11
Fiberglass	—	—	—	—

Outside Angle Brackets

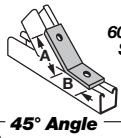

60° Angle Shown

60° Angle

Material	(A)	(B)		Each
Zinc-Plated Steel	3⅜″	1⅞″	33125T46	$1.89
Green-Painted Steel	3⅜″	1⅞″	33125T19	3.10
Choose-a-Color Steel	3⅜″	1⅞″	33125T149★	4.66
Galvanized Steel	3½″	2⅛″	33125T151	4.83
Type 304 SS	3¼″	2⅛″	33125T24	12.95
Fiberglass	—	—	—	—

45° Angle

Material	(A)	(B)		Each
Zinc-Plated Steel	3″	2⅜″	33125T45	$2.23
Green-Painted Steel	3″	2⅜″	33125T28	3.10
Choose-a-Color Steel	3″	2⅜″	33125T154★	4.56
Galvanized Steel	3½″	2⅛″	33125T155	3.88
Type 304 SS	3¼″	2⅛″	33125T35	12.95
Fiberglass	3″	2⅜″	33125T113●	26.74

30° Angle

Material	(A)	(B)		Each
Zinc-Plated Steel	3¼″	2⅛″	33125T44	$2.08
Green-Painted Steel	3¼″	2⅛″	33125T39	3.10
Choose-a-Color Steel	3¼″	2⅛″	33125T159	5.01
Galvanized Steel	3½″	2⅛″	33125T161	4.83
Type 304 SS	3¼″	2⅛″	33125T48	12.95
Fiberglass	—	—	—	—

★ For white, (A) is 3¼″ and (B) is 2⅛″. ♦ Available in black only. ● ¼″ thick.

Hinges

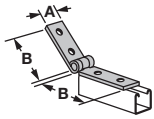

Material	(A)	(B)		Each
Zinc-Plated Steel	1⅝″	4″	3505T12	$11.93
Green-Painted Steel	1⅝″	4″	3505T11	13.06
Choose-a-Color Steel	1⅝″	4″	3505T13♦	15.68
Galvanized Steel	—	—	—	—
Type 304 SS	—	—	—	—
Fiberglass	—	—	—	—

Inside Angle Brackets

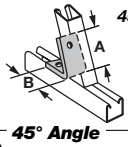

45° Angle Shown

60° Angle

Material	(A)	(B)		Each
Zinc-Plated Steel	3⅛″	2½″	33125T43	$2.36
Green-Painted Steel	3⅛″	2½″	33125T16	3.34
Choose-a-Color Steel	3⅛″	2½″	33125T147■	4.75
Galvanized Steel	3½″	2½″	33125T148	4.46
Type 304 SS	3½″	2½″	33125T18	22.51
Fiberglass	—	—	—	—

45° Angle

Material	(A)	(B)		Each
Zinc-Plated Steel	3⅛″	2½″	33125T42	$1.95
Green-Painted Steel	3⅛″	2½″	33125T25	3.10
Choose-a-Color Steel	3⅛″	2½″	33125T152■	4.32
Galvanized Steel	3½″	2½″	33125T153	3.92
Type 304 SS	3½″	2½″	33125T27	22.51
Fiberglass	—	—	—	—

30° Angle

Material	(A)	(B)		Each
Zinc-Plated Steel	3½″	2½″	33125T41	$2.86
Green-Painted Steel	3½″	2½″	33125T156	2.52
Choose-a-Color Steel	3½″	2½″	33125T157	3.36
Galvanized Steel	3½″	2½″	33125T158	4.18
Type 304 SS	3½″	2½″	33125T38	22.51
Fiberglass	—	—	—	—

■ For white, (A) is 3½″.

Connecting Plates

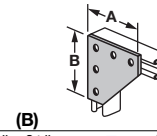

Material	(A)	(B)		Each
Zinc-Plated Steel	1⅝″	7¼″	33125T126	$1.78
Green-Painted Steel	1⅝″	7¼″	33125T127	2.42
Choose-a-Color Steel	1⅝″	7¼″	33125T162	2.75
Galvanized Steel	1⅝″	7¼″	33125T163	3.56
Type 304 SS	1⅝″	7¼″	33125T128	8.64
Fiberglass	1⅝″	6½″	33125T114	7.44

Connecting Plates

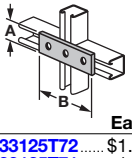

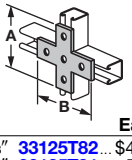

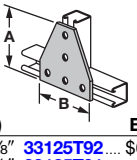

Material	(A)	(B)		Each	(A)	(B)		Each	(A)	(B)		Each	(A)	(B)		Each
Zinc-Plated Steel	1⅝″	5⅜″	33125T72	$1.49	5⅜″	5⅜″	33125T82	$4.47	5⅜″	5⅜″	33125T92	$6.04	5⅜″	5⅜″	33125T22	$6.50
Green-Painted Steel	1⅝″	5⅜″	33125T71	1.54	5⅜″	5⅜″	33125T81	5.03	5⅜″	5⅜″	33125T91	5.51	5⅜″	5⅜″	33125T21	5.88
Choose-a-Color Steel	1⅝″	5⅜″	33125T164	3.57	5⅜″	5⅜″	33125T166	9.73	5⅜″	5⅜″	33125T168	11.56	5⅜″	5⅜″	33125T171	11.29
Galvanized Steel	1⅝″	5⅜″	33125T165	3.98	5⅜″	5⅜″	33125T167	9.89	5⅜″	5⅜″	33125T169	12.05	5⅜″	5⅜″	33125T172	11.18
Type 304 SS	1⅝″	5⅜″	33125T74	7.13	5⅜″	5⅜″	33125T76	35.22	5⅜″	5⅜″	33125T78	30.33	5⅜″	5⅜″	33125T83	34.94
Fiberglass	1⅝″	4⅞″	33125T115	5.64	4⅞″	4⅞″	33125T116	15.72	4⅞″	4⅞″	33125T117	12.60	4⅞″	4⅞″	33125T118	14.42

Connecting Plates

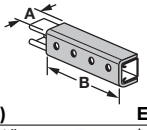

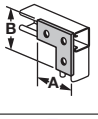

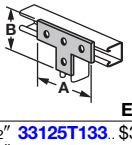

Material	(A)	(B)		Each	(A)	(B)		Each	(A)	(B)		Each	(A)	(B)		Each
Zinc-Plated Steel	1⅝″	7¼″	33125T139	$7.94	3½″	3½″	33125T136	$2.08	5⅜″	3½″	33125T133	$3.21	3¾″	5¼″	33125T129	$2.62
Green-Painted Steel	1⅝″	7¼″	33125T141	8.70	3½″	3½″	33125T137	2.73	5⅜″	3½″	33125T134	3.90	3⅝″	5¼″	33125T131	3.20
Choose-a-Color Steel	1⅝″	7¼″	33125T173	9.67	3½″	3½″	33125T175	2.99	5⅜″	3½″	33125T177	4.88	3⅝″	5¼″	33125T179	3.99
Galvanized Steel	1⅝″	7¼″	33125T174	12.00	3½″	3½″	33125T176	3.39	5⅜″	3½″	33125T178	5.04	3¾″	5¼″	33125T181	4.84
Type 304 SS	1⅝″	7¼″	33125T142	30.28	3½″	3½″	33125T138	10.44	5⅜″	3½″	33125T135	15.57	3¾″	5¼″	33125T132	16.37
Fiberglass	1⅞″	7¼″	33125T119♠	15.72	3¼″	3¼″	33125T121	9.74	4⅞″	3¼″	33125T122	11.20	3⅝″	5¼″	33125T123	7.92

♠ ¼″ thick; 9⁄16″ dia. mounting holes. Made of polyurethane.

(Continued on following page)

For information about strut channel and accessories, see page 1546.

Brackets, Braces, Hinges, and Plates for Strut Channel *(Continued from previous page)*

To Order: For choose-a-color steel, please specify color: black, red, white, or yellow.

BRACKETS

Material	(B)	For 13/16″ Channel Depth (A)		Each	For 1 5/8″ Channel Depth (A)		Each	For 2 7/16″ Channel Depth (A)		Each	For 3 1/4″ Channel Depth (A)		Each
Z-Style Brackets													
Zinc-Plated Steel	3 3/4″	1 1/8″	33125T53	$2.42	1 7/8″	33125T54 ◤	$2.87	2 3/4″	33125T55	$3.25	3 1/2″	33125T56	$3.29
Green-Painted Steel	3 3/4″	1 1/8″	33125T51	2.32	1 7/8″	33125T52 ◤	3.89	2 3/4″	33125T57	4.44	3 1/2″	33125T58	4.30
Choose-a-Color Steel	3 3/4″	1 1/8″	33125T182 ♥	4.06	1 7/8″	33125T184 ◤	5.26	2 3/4″	33125T186 ♥	6.01	3 1/2″	33125T188 ♥	4.97
Galvanized Steel	3 3/4″	1 1/8″	33125T183	4.25	1 7/8″	33125T185	5.22	2 3/4″	33125T187	6.24	3 1/2″	33125T189	5.25
Type 304 SS	3 1/2″	1 1/8″	33125T851	19.93	1 7/8″	33125T852	16.71	2 3/4″	33125T853	20.00	3 1/2″	33125T854	20.63
Fiberglass	3 1/2″	—	—	—	1 7/8″	33125T124 ♠	8.16	—	—	—	—	—	—
U-Style Brackets													
Zinc-Plated Steel	5 3/8″	1 1/8″	33125T64	2.42	1 7/8″	33125T65	2.90	2 3/4″	33125T68	4.84	3 1/2″	33125T66	4.49
Green-Painted Steel	5 3/8″	1 1/8″	33125T61	2.92	1 7/8″	33125T62	3.44	2 3/4″	33125T67	5.26	3 1/2″	33125T63	5.50
Choose-a-Color Steel	5 3/8″	1 1/8″	33125T191	4.98	1 7/8″	33125T193	5.43	2 3/4″	33125T195	9.56	3 1/2″	33125T197	9.04
Galvanized Steel	5 3/8″	1 1/8″	33125T192	5.15	1 7/8″	33125T194	5.36	2 3/4″	33125T196	9.73	3 1/2″	33125T198	9.83
Type 304 SS	5 3/8″	1 1/8″	33125T881	22.51	1 7/8″	33125T882	25.12	2 3/4″	33125T883	29.63	3 1/2″	33125T884	32.88
Fiberglass	5 3/8″	—	—	—	1 7/8″	33125T125 ♠	8.98	—	—	—	—	—	—

◤ (B) is 3 1/2″. ♥ For white and yellow, (B) is 3 1/2″. ♠ 1/4″ thick; 9/16″ dia. mounting holes. Made of polyurethane.

Nuts for Strut Channel

Hang threaded rod and other accessories from 1 5/8″ wide strut channel.

Standard Nuts

The serrated grooves on these nuts get a nonslip grip on the lip of the channel.

Accepts Thread Size	Pkg. Qty.	For 13/16″ Channel Dp.	Per Pkg.	For 1 5/8″, 2 7/16″, and 3 1/4″ Channel Dp.	Per Pkg.
Zinc-Plated Steel					
10-24	5	3259T42	$3.93	3259T42	$3.93
1/4″-20	5	3259T31	4.41	3259T31	4.41
5/16″-18	5	3259T43	5.04	3259T43	5.04
3/8″-16	5	3259T32	5.76	3259T32	5.76
1/2″-13	5	3259T41	5.90	3259T44	6.41
5/8″-11	5	3259T112	6.10	3259T85	6.88
M6	5	3259T33	6.16	3259T33	6.16
M8	5	3259T34	4.62	3259T34	4.62
M10	5	3259T35	5.31	3259T35	5.31
M12	5	3259T127	6.22	3259T36	5.63
Type 304 Stainless Steel					
10-24	1	3259T113	3.39	3259T113	3.39
M6	1	3259T613	3.68	3259T613	3.68
M8	1	3259T614	2.77	3259T614	2.77
M10	1	3259T615	4.17	3259T615	4.17
M12	1	3259T616	4.33	3259T616	4.33
Type 316 Stainless Steel					
1/4″-20	1	3259T45	5.08	3259T45	5.08
5/16″-18	1	3259T86	5.41	3259T86	5.41
3/8″-16	1	3259T612	3.72	3259T612	3.72
1/2″-13	1	3259T48	5.88	3259T48	5.88
5/8″-11	1	—	—	3259T82	8.69

Nuts with Spring

Serrated grooves on these nuts get a nonslip grip on the lip of the channel and the spring provides a more secure hold.

Accepts Thread Size	Pkg. Qty.	For 13/16″ Channel Dp.	Per Pkg.	For 1 5/8″ Channel Dp.	Per Pkg.	For 2 7/16″ and 3 1/4″ Channel Dp.	Per Pkg.
Zinc-Plated Steel							
10-24	5	3259T55	$5.88	3259T11	$6.51	3259T101	$10.04
1/4″-20	5	3259T17	6.54	3259T12	5.15	3259T102	9.09
5/16″-18	5	3259T61	6.09	3259T13	5.78	3259T103	8.91
3/8″-16	5	3259T18	5.01	3259T14	5.85	3259T104	10.86
1/2″-13	5	3259T19	6.13	3259T15	6.51	3259T105	10.87
5/8″-11	5	3259T886	11.68	3259T16	8.77	3259T106	10.67
M6	5	3259T129	7.19	3259T51	5.17	3259T107	13.67
M8	5	3259T131	8.62	3259T52	5.75	3259T108	16.14
M10	5	3259T132	9.20	3259T53	6.21	3259T109	17.48
M12	5	3259T133	9.65	3259T54	7.95	3259T111	19.81
Type 304 Stainless Steel							
10-24	1	3259T831	3.60	3259T83	5.12	3259T832	3.80
M6	1	3259T811	3.70	3259T211	4.30	3259T821	3.90
M8	1	3259T812	3.63	3259T212	4.57	3259T822	3.90
M10	1	3259T813	4.33	3259T213	5.70	3259T823	4.57
M12	1	3259T814	4.47	3259T214	3.47	3259T824	5.00
Type 316 Stainless Steel							
1/4″-20	1	3259T26	7.05	3259T23	6.66	3259T512	7.79
5/16″-18	1	3259T712	7.25	3259T62	7.10	3259T513	8.69
3/8″-16	1	3259T27	7.28	3259T24	7.22	3259T514	10.27
1/2″-13	1	3259T28	8.85	3259T25	7.41	3259T515	10.95
5/8″-11	1	—	—	3259T84	9.24	3259T516	8.90

Nuts with Wings—*Zinc-Plated Steel*

Plastic wings make handling these nuts easier. Serrated grooves on the nuts get a nonslip grip on the lip of the channel.

Accepts Thread Size	Pkg. Qty.	For 13/16″ Channel Dp.	Per Pkg.	For 1 5/8″, 2 7/16″, and 3 1/4″ Channel Dp.	Per Pkg.
1/4″-20	5	3259T116	$7.12	3259T116	$7.12
3/8″-16	5	3259T117	9.39	3259T117	9.39
1/2″-13	5	3259T119	11.78	3259T118	11.78

Square Nuts—*Zinc-Plated Steel*

Also known as insert nuts, these nuts convert slotted holes to threaded round holes and keep them centered.

Accepts Thread Size		Each
1/4″-20	2233K15	$1.23
3/8″-16	2233K16	1.30
1/2″-13	2233K17	1.41
5/8″-11	2233K18	1.90

Slot Nut—*Zinc-Plated Steel*

Slip this nut through slotted holes and turn it 90° to lock in the slot.

Accepts Thread Size		Each
3/8″-16	2233K14	$0.69

Tab-Lock Nuts—*Steel*

A plastic tab on these nuts fits tight against the lip of the channel to keep it from slipping through.

Accepts Thread Size		Each
1/4″-20	2233K11	$0.98
3/8″-16	2233K12	1.00
1/2″-13	2233K13	1.10

Clamping Nut—*Malleable Iron*

Nut connects two slotted channels to create back-to-back double channel. One nut is required every foot. Minimum of two nuts.

Min. Slot Lg.	Min. Slot Wd.		Each
9/16″	7/8″	2233K19	$2.00

For information about strut channel and accessories, see page 1546.

Stud Nuts for Strut Channel

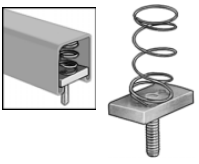

The stud on these nuts makes connections simple—no separate fasteners required. Nuts have serrated grooves that grip the lip of 1⅝″×1⅝″ strut channel (not included) and a spring to hold them securely in place. They are made of zinc-plated steel.

Stud Thread Size	7/8″ Stud Lg.	Each	1 1/8″ Stud Lg.	Each	1 3/8″ Stud Lg.	Each
1/4″-20	3580T11	$4.70	3580T12	$4.75	3580T13	$4.85
5/16″-18	3580T21	5.32	3580T22	5.50	3580T23	6.10
3/8″-16	3580T31	5.55	3580T32	5.65	3580T33	6.30
1/2″-13	3580T41	7.10	3580T42	6.79	3580T43	6.78

Washers for Strut Channel

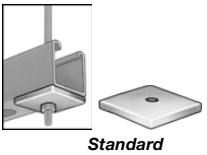

Standard

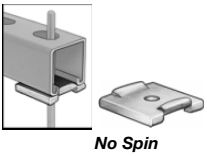

No Spin

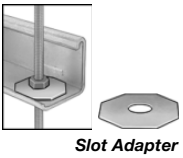

Slot Adapter

Scissor Action

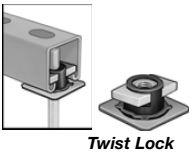

Twist Lock

Use with hex nuts (except scissor-action style) to connect threaded rod to slotted strut channel in a variety of support-system applications (hex nuts, rod, and channel not included). Washers fit all 1⅝″ wide strut channel.

No-spin washers are notched on two sides to securely grip the channel and stay in place.

Slot-adapter washers have a round punched hole to keep hardware centered in the channel when mounting slotted channel directly to structural elements.

Scissor-action washers are designed to attach anywhere along the rod. Great for adding to existing threaded rod installations. Eliminates the need for hex nuts and washers.

Twist-lock washers consist of a threaded strut channel nut and washer all in one.

Accepts Rod/Thread Size	Zinc-Plated Steel	Each	Type 304 Stainless Steel	Each
Unthreaded Washers				
Standard				
1/4″	3133T11	$0.64	3133T28	$3.05
5/16″	3133T21	.65	3133T25	2.61
3/8″	3133T12	.67	3133T14	2.79
1/2″	3133T13	.73	3133T15	2.88
5/8″	3133T22	.89	3133T26	2.95
3/4″	3133T23	.96	3133T27	3.05
7/8″	3133T24	1.28	3133T29	4.05
No Spin				
5/16″	3585T11	.63	———	———
3/8″	3585T12	.66	3585T14	3.66
1/2″	3585T13	.67	3585T15	3.75
Slot Adapter				
1/4″	3260T21	.19	———	———
5/16″	3260T22	.20	———	———
Threaded Washers				
Scissor Action				
1/4″-20	3260T14	2.47	3260T17♣	44.53
3/8″-16	3260T15	2.54	3260T18♣	42.38
1/2″-13	3260T16	2.84	3260T19♣	43.44
Twist Lock				
1/4″-20	3260T11	1.67	———	———
3/8″-16	3260T12	1.72	———	———
1/2″-13	3260T13	1.76	———	———

♣ Made of Type 316 stainless steel.

Trolleys and Brackets for Strut Channel

Use with straight or curved 1⅝″ Wd.×1⅝″ Dp. (or deeper) strut channel (not included) to create conveyance systems and runs in any configuration.

Trolleys

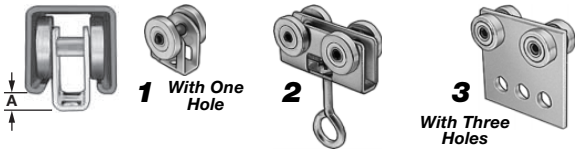

All trolleys have 1 3/16″ dia. wheels (unless noted) with stainless steel wheel bearings.

Style 1 trolleys have a horizontal plate with holes for hanging threaded rod and eyebolts. *Plate with one hole* has a 9/32″ dia. center hole. *Plate with three holes* has a 9/32″ dia. center hole and two 9/32″×9/16″ slotted holes. Holes are spaced on 1″ centers.

Style 2 trolley has a horizontal plate with a 3/4″ dia. eyebolt plus two 9/32″×9/16″ slotted holes for hanging threaded rod. Holes are spaced on 1″ centers.

Style 3 trolleys have a vertical plate with holes for attaching hooks and shackles. *Plate with one hole* has a 9/16″ dia. center hole. *Plate with three-holes* has three 9/16″ dia. holes on 15/16″ centers.

	Cap., lbs.	Lg.×Wd.×Ht.	(A)	No. of Holes	Sets of Wheels		Each
Zinc-Plated Steel							
1	50	1 1/4″×7/16″×1 5/8″	3/16″	1	1	3626T14	$9.17
1	100	3 1/8″×7/16″×1 11/16″	1/4″	3	2	3626T15	16.73
2	100	3 1/8″×7/16″×4 11/16″	2 11/16″	2	2	3626T16	22.29
3	437	1 1/4″×1/4″×3 3/8″	1 15/16″	1	1	3626T12	10.10
3	600	3 1/2″×1/4″×3 3/8″	1 15/16″	3	2	3626T11	23.07
Type 304 Stainless Steel							
3	300	1 1/4″×1/4″×3 3/8″	1 15/16″	1	1	3626T22♥	72.01
3	600	3 1/2″×1/4″×3 3/8″	2 1/8″	3	2	3626T23♥	116.74

♥ Wheel diameter is 1 1/8″.

Brackets—*Zinc-Plated Steel*

Hanging/ Connecting Bracket

Fasteners not included.

Hanging bracket mounts outside the strut channel to allow channel to hang without disrupting trolley movement. Bracket has a 9/16″ dia. top hole and two 7/16″ dia. side holes for securing channel.

Hanging/connecting bracket is the same as the hanging bracket but longer, which makes it capable of joining lengths of strut.

Bracket	Lg.×Wd.×Ht.	Cap., lbs.		Each
Hanging	1 5/8″×1″×3 3/4″	1,200	3626T41	$5.35
Hanging/Connecting	3 1/2″×1″×3 3/4″	2,500	3626T42	8.16

Bolt-Down Strut-Mount Clamps

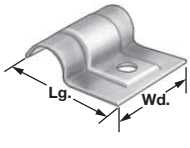

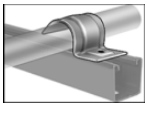

Easily secure tubing to all 1⅝″ wide strut channel (not included). Clamps are made of zinc-plated steel and have one 1/4″ dia. mounting hole (bolt not included).

Note: Not rated for work load limit.

For Tube OD	Lg.×Wd.	Thick.		Each
1/4″	1 1/4″×1 5/8″	1/16″	3545T11	$0.81
5/16″	1 1/4″×1 5/8″	1/16″	3545T12	.81
3/8″	1 3/8″×1 5/8″	1/16″	3545T13	.81
1/2″	1 1/2″×1 5/8″	1/16″	3545T14	.81
5/8″	1 5/8″×1 5/8″	1/16″	3545T15	.86
3/4″	1 3/4″×1 5/8″	1/16″	3545T16	.80
7/8″	2″×1 5/8″	1/16″	3545T17	.91
1″	2 1/8″×1 5/8″	1/16″	3545T18	.91

Strut-Mount Hangers

4

5

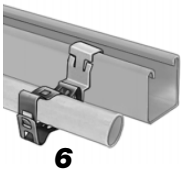

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Slip these hangers onto the lip of top-opening strut channel and quickly attach chain, wire rope, conduit, and threaded rod (none are included). Hangers are made of spring steel and fit all 1⅝″ wide strut channel.

	Hole Size	Fits OD/ Thread Size	Work Load Limit, lbs.		Each
For Chain					
4	9/32″	———	150	3217T11	$0.82
For Threaded Rod					
5	———	1/4″-20	150	3217T17	1.79
5	———	3/8″-16	150	3217T18	1.88
For Conduit					
6	———	3/8″	25	3217T14	1.95
6	———	1/2″ to 3/4″	25	3217T16	2.10

Warning! **Never exceed work load limits.**

For information about strut channel and accessories, see page 1546.

Strut-Mount Clamps

Mount pipe, tube, thin-wall (EMT) conduit, and thick-wall (rigid) conduit to strut channel. Bolt and nut are included. Clamps fit all 1⅝″ wide strut channel (not included).

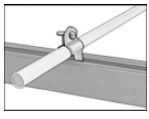

For Tube

For Tube OD	Work Load Limit, lbs.	Zinc-Plated Steel	Each	Copper-Plated Steel	Each
1/4″	400	3115T119	$1.21	—	—
3/8″	400	3115T122	1.27	3115T123	$1.32
1/2″	400	3115T351	1.33	3115T29	1.40
5/8″	400	3115T352	1.40	3115T31	1.46
7/8″	400	3115T353	1.49	3115T11	1.52
1 1/8″	600	3115T354	1.55	3115T32	1.68
1 3/8″	600	3115T355	1.69	3115T33	1.77
1 5/8″	600	3115T356	1.74	3115T12	1.92
2 1/8″	800	3115T357	1.83	3115T35	2.19
2 5/8″	800	3115T358	2.04	3115T36	2.39
3 1/8″	800	3115T359	2.24	3115T37	2.64
3 5/8″	1,000	3115T361	2.82	3115T98	3.36
4 1/8″	1,000	3115T362	3.23	3115T39	3.65

For Conduit

For Conduit Size	Work Load Limit, lbs.	Zinc-Plated Steel	Each	PVC-Coated Steel	Each
1/2″	400	3115T81	$1.04	3115T71	$3.12
3/4″	600	3115T77	1.10	3115T72	3.21
1″	600	3115T83	1.16	3115T73	3.43
1 1/4″	600	3115T84	1.23	3115T74	3.65
1 1/2″	800	3115T85	1.33	3115T75	3.89
2″	800	3115T86	1.48	3115T76	4.21

For Pipe

For OD	For Pipe Size	Work Load Limit, lbs.	Zinc-Plated Steel	Each	Type 304 Stainless Steel	Each	Type 316 Stainless Steel Work Load Limit, lbs.		Each
11/16″	3/8″	400	3115T13	$1.25	3115T41	$2.79	400	3115T94	$3.33
13/16″	1/2″	400	3115T14	1.30	3115T42	3.00	400	3115T96	3.28
1 1/16″	3/4″	600	3115T15	1.35	3115T43	3.42	600	3115T56	3.96
1 5/16″	1″	600	3115T16	1.39	3115T44	3.62	600	3115T57	4.20
1 11/16″	1 1/4″	600	3115T17	1.57	3115T45	3.83	600	3115T58	4.48
1 7/8″	1 1/2″	800	3115T18	1.65	3115T46	4.43	800	3115T59	5.18
2 3/8″	2″	800	3115T19	1.84	3115T47	4.77	800	3115T61	5.59
2 7/8″	2 1/2″	800	3115T21	2.00	3115T48	5.10	800	3115T62	5.97
3 1/2″	3″	800	3115T22	2.20	3115T49	5.67	800	3115T63	6.62
4″	3 1/2″	1,000	3115T23	2.92	3115T51	6.87	1,000	3115T64	10.06
4 1/2″	4″	1,000	3115T24	2.96	3115T52	7.67	1,000	3115T65	10.68
5 9/16″	5″	1,000	3115T25	4.04	3115T53	8.69	1,000	3115T115	12.32
6 5/8″	6″	1,000	3115T26	4.32	3115T54	9.64	1,000	3115T116	13.76
8 5/8″	8″	1,000	3115T27	5.12	3115T66	11.44	1,000	3115T117	16.35
10 3/4″	10″	1,000	3115T28	7.13	3115T67	15.24	1,000	3115T118	20.71
12 3/4″	12″	1,000	3115T112	9.90	3115T113	18.26	1,000	3115T114	24.24

Easy-Adjust Strut-Mount Clamps

Even when these clamps are installed side by side, the bolts are easily accessible. They fit all 1⅝″ wide strut channel (not included).

Clamps with top bolt have the bolt centered at the top of the clamp. Made of zinc-plated steel.

Clamps with angled bolt have the bolt extended up at a 30° angle making them easy to access with a screwdriver or drill in low headroom applications. Made of zinc-plated steel with a gold finish.

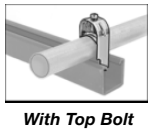

With Top Bolt

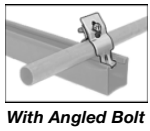

With Angled Bolt

For OD	With Top Bolt: For Rigid Conduit Size	For Thin-Wall (EMT) Conduit Size	Work Load Limit, lbs.		Each	With Angled Bolt: For Rigid/EMT Conduit Size	Work Load Limit, lbs.		Each
13/16″	—	1/2″	200	3979T7	$0.99	1/2″	400	3979T14	$1.53
1 1/16″	1/2″	3/4″	200	3979T8	1.03	3/4″	600	3979T15	1.70
1 5/16″	3/4″	1″	200	3979T9	1.03	1″	600	3979T16	1.85
1 11/16″	1″	1 1/4″	200	3979T11	1.07	1 1/4″	600	3979T17	2.35
1 7/8″	1 1/4″	1 1/2″	350	3979T12	1.15	1 1/2″	800	3979T18	2.35
2 3/8″	1 1/2″	2″	350	3979T13	1.23	2″	800	3979T19	2.56

Parallel Strut-Mount Clamps

Look no further if you need a clamp that holds pipe and conduit parallel with the strut channel. Clamps are made of zinc-plated steel and include a hex head screw and nut. They fit all 1⅝″ wide strut channel (not included). *Note:* Not rated for work load limit.

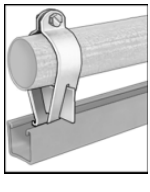

For OD	For Pipe/Rigid Conduit Size		Each	For OD	For Pipe/Rigid Conduit Size		Each
11/16″	3/8″	3193T11	$2.97	2 3/8″	2″	3193T17	$4.03
13/16″	1/2″	3193T12	3.13	2 7/8″	2 1/2″	3193T18	4.32
1 1/16″	3/4″	3193T13	3.27	3 1/2″	3″	3193T19	4.62
1 5/16″	1″	3193T14	3.33	4″	3 1/2″	3193T21	4.95
1 11/16″	1 1/4″	3193T15	3.50	4 1/2″	4″	3193T22	5.10
1 7/8″	1 1/2″	3193T16	3.77				

Stand-Off Strut-Mount Clamps

Hold your pipe and conduit away from strut channel (not included). Clamps are made of zinc-plated steel and include a bolt and nut. They fit all 1⅝″ wide strut channel.

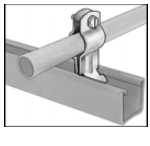

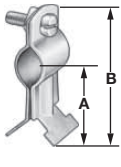

For OD	For Pipe/Rigid Conduit Size	Work Load Limit, lbs.	(A)	(B)		Each
11/16″	3/8″	25	1 1/2″	2 7/8″	3571T11	$1.72
13/16″	1/2″	35	1 7/8″	3″	3571T12	1.76
1 1/16″	3/4″	40	2″	3 3/16″	3571T13	1.80
1 5/16″	1″	50	2 1/8″	3 1/2″	3571T14	1.86

Warning! ***Never exceed work load limits.***

For information about strut channel and accessories, see page 1546.

Strut-Mount Clamps for Insulated Tubing

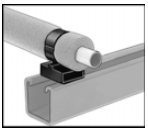

Clamps snap closed over the insulation on your copper tubing. They accept tubing with 3/8″ or 1/2″ thick insulation. Clamps are made of black plastic and fit all 1 5/8″ wide strut channel (not included). Temperature range is –40° to +140° F.

For OD	For Copper Tube Size		Each	For OD	For Copper Tube Size		Each
1/2″	1/2″	3656T83	$2.74	1″	1″	3656T86	$4.23
5/8″	5/8″	3656T84	3.17	1 1/4″	1 1/4″	3656T87	5.06
3/4″	3/4″	3656T85	3.37	1 1/2″	1 1/2″	3656T88	5.91

Vibration- and Noise-Damping Strut-Mount Clamps

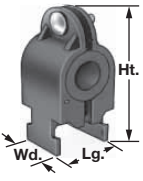

The rubber inserts on these clamps greatly reduce vibration and line noise. Clamps are made of corrosion-resistant black glass-filled nylon and have a stainless steel nut and bolt. They all fit 1 5/8″ wide strut channel (not included). Excellent for refrigeration, HVAC, and hydraulic applications. Temperature range is –35° to +250° F.

For OD	For Tube/ Pipe Size	Lg. × Wd. × Ht.		Each
For Tube				
1/4″	1/4″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T1	$2.87
5/16″	5/16″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T2	2.93
3/8″	3/8″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T3	2.93
1/2″	1/2″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T4	3.07
5/8″	5/8″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T5	3.14
3/4″	3/4″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T6	3.21
7/8″	7/8″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T7	3.29
1″	1″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T8	3.46
For Pipe				
1/2″	1/4″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T9	2.87
11/16″	3/8″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T11	2.93
13/16″	1/2″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T12	2.93
1″	3/4″	1 1/2″ × 1 5/8″ × 2 5/8″	3190T13	3.07

Vibration-Damping Strut-Mount Clamps

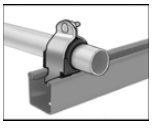

Not only do the thermoplastic inserts on these clamps reduce vibration, they resist most oils, chemicals, and cleaning compounds. Inserts on clamps with a 1 3/4″ and smaller OD are hinged for easier insertion of material. Clamps fit all 1 5/8″ wide strut channel (not included). Temperature range is –50° to +275° F.

Zinc-chromate steel clamps with a 1 3/8″ and smaller OD include a shoulder bolt to prevent overtightening. ***Type 316 stainless steel*** clamps have Type 304 stainless steel bolts and nuts, unless noted.

Also Available: Hot-dipped galvanized steel clamps. Please ask for 32625T888 and specify tube/pipe size.

For OD	For Tube/ Pipe Size	Lg. × Wd. × Ht.	Zinc-Chromate Steel	Each	Type 304 Stainless Steel	Each	Lg. × Wd. × Ht.	Type 316 Stainless Steel	Each
For Tube									
1/4″	1/4″	5/8″ × 1 1/4″ × 1″	32625T49	$1.55	32625T37	$3.52	5/8″ × 1 1/4″ × 1 1/8″	32625T89	$4.45
3/8″	3/8″	13/16″ × 1 1/4″ × 1 1/8″	32625T51	1.60	32625T38	3.61	3/4″ × 1 1/4″ × 1 1/4″	32625T93	4.45
1/2″	1/2″	15/16″ × 1 1/4″ × 1 5/16″	32625T52	1.63	32625T39	3.68	7/8″ × 1 1/4″ × 1 3/8″	32625T94	4.63
5/8″	5/8″	1 1/16″ × 1 1/4″ × 1 1/2″	32625T53	1.72	32625T41	3.73	1″ × 1 1/4″ × 1 1/2″	32625T95	4.63
3/4″	3/4″	1 3/16″ × 1 1/4″ × 1 11/16″	32625T54	1.82	32625T42	4.80	1 5/16″ × 1 1/4″ × 1 3/4″	32625T96	5.30
7/8″	7/8″	1 5/16″ × 1 1/4″ × 1 13/16″	32625T55	2.14	32625T82	5.44	1 7/16″ × 1 1/4″ × 1 15/16″	32625T97	6.28
1″	1″	1 7/16″ × 1 1/4″ × 2″	32625T56	2.19	32625T44	5.72	1 5/8″ × 1 1/4″ × 2″	32625T98	7.40
1 1/8″	1 1/8″	1 9/16″ × 1 1/4″ × 2 1/16″	32625T57	2.48	32625T45	6.64	1 3/4″ × 1 1/4″ × 2 3/16″	32625T99	7.53
1 1/4″	1 1/4″	1 11/16″ × 1 1/4″ × 2 3/16″	32625T58	2.69	32625T46	7.12	1 15/16″ × 1 1/4″ × 2 5/16″	32625T182	8.81
1 3/8″	1 3/8″	1 13/16″ × 1 1/4″ × 2 5/16″	32625T59	2.92	32625T47	7.91	2 1/4″ × 1 1/4″ × 2 3/4″	32625T183	9.35
1 1/2″	1 1/2″	1 15/16″ × 1 1/4″ × 2 1/2″	32625T61	2.92	32625T48	8.42	2 1/4″ × 1 1/4″ × 2 3/4″	32625T111	10.68
1 5/8″	1 5/8″	2 1/16″ × 1 1/4″ × 2 5/8″	32625T62	3.37	32625T11	9.38	2 1/2″ × 1 1/4″ × 3″	32625T112	10.83
1 3/4″	1 3/4″	2 1/4″ × 1 1/4″ × 2 3/4″	32625T31	3.94	32625T12	9.55	2 1/2″ × 1 1/4″ × 3″	32625T113	11.97
1 7/8″	1 7/8″	2 5/16″ × 1 1/4″ × 2 7/8″	32625T73	4.33	32625T13	10.60	2 1/2″ × 1 1/4″ × 3 1/4″	32625T114	14.35
2″	2″	2 1/2″ × 1 1/4″ × 3″	32625T63	5.14	32625T14	11.63	2 3/4″ × 1 1/4″ × 3 1/4″	32625T115	13.17
2 1/8″	2 1/8″	2 9/16″ × 1 1/4″ × 3 1/4″	32625T64	5.79	32625T15	12.06	3″ × 1 1/4″ × 3 1/2″	32625T116	13.32
2 1/4″	2 1/4″	3 1/4″ × 1 1/4″ × 3 3/4″	32625T26	4.81	32625T43	13.43	3 1/4″ × 1 1/4″ × 3 3/4″	32625T117	14.98
2 3/8″	2 3/8″	3 1/4″ × 1 1/4″ × 3 3/4″	32625T32	4.96	32625T65	13.33	3 1/4″ × 1 1/4″ × 3 3/4″	32625T118	14.80
2 1/2″	2 1/2″	2 15/16″ × 1 1/4″ × 3 13/16″	32625T33	7.34	32625T16	17.04	3 1/2″ × 1 1/4″ × 4″	32625T119	23.61
2 5/8″	2 5/8″	3 1/2″ × 1 1/4″ × 4″	32625T79	5.05	32625T88	22.61	3 1/2″ × 1 1/4″ × 4″	32625T121	22.90
3″	3″	3 9/16″ × 1 1/4″ × 4 7/16″	32625T34	9.74	32625T84	18.16	4″ × 1 1/4″ × 4 1/2″	32625T122	23.35
3 1/8″	3 1/8″	3 9/16″ × 1 1/4″ × 4 7/16″	32625T35	10.68	32625T85	19.11	4″ × 1 1/4″ × 4 1/2″	32625T123	24.38
3 1/2″	3 1/2″	3 15/16″ × 1 1/4″ × 4 13/16″	32625T36	12.27	32625T87	19.35	4 1/2″ × 1 1/4″ × 5″	32625T124★▲	34.78
4 1/8″	4 1/8″	5 1/16″ × 1 1/4″ × 5 5/8″	32625T66	13.08	32625T67	26.89	5 1/16″ × 1 1/4″ × 5 5/8″	32625T125▲	39.23
For Pipe									
9/16″	1/4″	1″ × 1 1/4″ × 1 5/16″	32625T17	1.62	32625T23	3.54	7/8″ × 1 1/4″ × 1 3/8″	32625T126	5.61
11/16″	3/8″	1 1/8″ × 1 1/4″ × 1 1/2″	32625T18	1.70	32625T81	3.73	1 1/16″ × 1 1/4″ × 1 9/16″	32625T127	6.03
13/16″	1/2″	1 5/16″ × 1 1/4″ × 1 13/16″	32625T71	2.14	32625T82	5.44	1 7/16″ × 1 1/4″ × 1 7/8″	32625T128	7.18
1 1/16″	3/4″	1 9/16″ × 1 1/4″ × 2 1/16″	32625T19	2.43	32625T24	6.64	1 3/4″ × 1 1/4″ × 1 1/8″	32625T129	8.56
1 5/16″	1″	1 3/4″ × 1 1/4″ × 2 5/16″	32625T72	2.81	32625T83	7.90	2 1/4″ × 1 1/4″ × 2 3/4″	32625T131	10.45
1 11/16″	1 1/4″	2 3/16″ × 1 1/4″ × 2 3/4″	32625T21	3.78	32625T25	9.15	2 1/2″ × 1 1/4″ × 3″	32625T132	11.85
1 7/8″	1 1/2″	2 15/16″ × 1 1/4″ × 2 7/8″	32625T73	4.33	32625T13	10.60	2 1/2″ × 1 1/4″ × 3 1/4″	32625T133	14.63
2 3/8″	2″	2 13/16″ × 1 1/4″ × 3 11/16″	32625T74	6.64	32625T27	14.54	3 1/4″ × 1 1/4″ × 3 3/4″	32625T134	14.80
2 7/8″	2 1/2″	3 5/16″ × 1 1/4″ × 4 3/16″	32625T75	8.79	32625T28	17.04	3 3/4″ × 1 1/4″ × 4 1/4″	32625T135▲	27.38
3 1/2″	3″	3 15/16″ × 1 1/4″ × 4 13/16″	32625T36	12.27	32625T87	19.35	4 3/8″ × 1 1/4″ × 4 15/16″	32625T136▲	37.11
4″	3 1/2″	4 7/16″ × 1 1/4″ × 5 1/8″	32625T91	13.70	32625T92	30.97	5″ × 1 1/4″ × 5 1/2″	32625T137▲	42.65
4 1/2″	4″	5 1/2″ × 1 1/4″ × 6″	32625T163	16.75	32625T164	40.83	5 1/2″ × 1 1/4″ × 6″	32625T184▲	48.27
5 9/16″	5″	6 1/2″ × 1 1/4″ × 7″	32625T68	26.67	32625T77	50.88	6 1/2″ × 1 1/4″ × 7″	32625T138▲	60.33
6 5/8″	6″	7 1/2″ × 1 1/4″ × 8″	32625T76	36.30	32625T78	61.52	7 1/2″ × 1 1/4″ × 8″	32625T139▲	71.00

★ Fits 3 5/8″ tube size. ▲ Bolt and nut are made of Type 316 stainless steel.

For information about strut channel and accessories, see page 1546.

Vibration-Damping Strut-Mount Clamps for Pressurized Lines

Dampen vibration and noise and absorb shock when supporting tubing and pipe in hydraulic applications up to 2,000 psi. Clamps are polypropylene and are secured by dual-clamping bolts and nuts. They fit all 1⅝" wide strut channel (not included). Temperature range is –22° to +194° F.

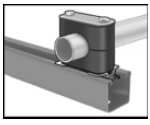

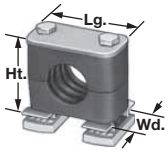

For OD	For Tube Size	Lg. × Wd. × Ht.	Zinc-Plated Steel Hardware Each	Type 316 Stainless Steel Hardware Each
For Tube				
1/4"	1/4"	1 7/16" × 1 3/16" × 1 3/16"	1819T11 $5.58	1819T31 $35.31
3/8"	3/8"	1 7/16" × 1 3/16" × 1 3/16"	1819T12 5.58	1819T32 35.31
1/2"	1/2"	1 5/8" × 1 3/16" × 1 7/16"	1819T13 5.73	1819T33 35.96
5/8"	5/8"	1 5/8" × 1 3/16" × 1 7/16"	1819T14 5.73	1819T34 35.96
3/4"	3/4"	1 15/16" × 1 3/16" × 1 1/2"	1819T15 6.00	1819T35 36.07
7/8"	7/8"	1 15/16" × 1 3/16" × 1 1/2"	1819T16 6.00	1819T36 36.07
1"	1"	1 15/16" × 1 3/16" × 1 1/2"	1819T17 6.00	1819T37 36.07
1 1/4"	1 1/4"	2 13/16" × 1 3/16" × 2 3/8"	1819T18 6.61	1819T38 38.34
1 1/2"	1 1/2"	2 13/16" × 1 3/16" × 2 3/8"	1819T19 6.61	1819T39 38.34
1 3/4"	1 3/4"	3 3/8" × 1 3/16" × 2 11/16"	1819T51 8.00	1819T61 39.44
2"	2"	3 3/8" × 1 3/16" × 2 11/16"	1819T21 8.00	1819T41 39.44
2 1/4"	2 1/4"	4 3/4" × 1 3/16" × 3 7/8"	1819T52 11.00	1819T62 51.60
2 1/2"	2 1/2"	4 3/4" × 1 3/16" × 3 7/8"	1819T53 11.00	1819T63 51.60
3"	3"	4 3/4" × 1 3/16" × 3 7/8"	1819T54 11.00	1819T64 51.60
4"	4"	5 3/4" × 1 3/16" × 4 7/8"	1819T55 13.33	1819T65 62.54

For OD	For Pipe Size	Lg. × Wd. × Ht.	Zinc-Plated Steel Hardware Each	Type 316 Stainless Steel Hardware Each
For Pipe				
9/16"	1/4"	1 5/8" × 1 3/16" × 1 7/16"	1819T22 $5.73	1819T42 $35.96
11/16"	3/8"	1 5/8" × 1 3/16" × 1 7/16"	1819T23 5.73	1819T43 35.96
13/16"	1/2"	1 15/16" × 1 3/16" × 1 1/2"	1819T24 6.00	1819T44 36.07
1 1/16"	3/4"	2 5/16" × 1 3/16" × 1 3/4"	1819T25 6.47	1819T45 37.40
1 5/16"	1"	2 13/16" × 1 3/16" × 2 3/8"	1819T26 6.61	1819T46 38.34
1 11/16"	1 1/4"	2 13/16" × 1 3/16" × 2 3/8"	1819T27 6.61	1819T47 38.34
1 7/8"	1 1/2"	3 3/8" × 1 3/16" × 2 11/16"	1819T28 8.00	1819T48 41.08
2 3/8"	2"	4 3/4" × 1 3/16" × 3 7/8"	1819T29 11.00	1819T49 53.75
2 7/8"	2 1/2"	4 3/4" × 1 3/16" × 3 7/8"	1819T56 11.00	1819T66 53.75
3 1/2"	3"	5 3/4" × 1 3/16" × 4 7/8"	1819T57 13.33	1819T67 62.54

Strut-Mount Shelf Brackets

These brackets lay against the channel opening of 1⅝" wide strut channel (not included) and the tab on the end fits inside for extra support. Brackets are 1/4" thick and have 9/16" mounting holes (fasteners not included).

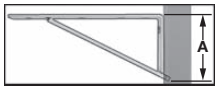

Material	8½" Length (A)	Each	10½" Length (A)	Each	12½" Length (A)	Each	14½" Length (A)	Each	16½" Length (A)	Each
Zinc-Plated Steel	4"	3200T53 $10.26	4"	3200T63 $10.77	6"	3200T73 $11.80	6"	3200T83 $12.31	6"	3200T91 $15.90
Green-Painted Steel	4"	3200T51 11.58	4"	3200T61 12.16	6"	3200T71 13.32	6"	3200T81 13.90	6"	3200T92 17.95
Black-Painted Steel	4"	3200T52 11.71	4"	3200T62 12.30	6"	3200T72 13.47	6"	3200T82 14.05	6"	3200T93 18.15
Galvanized Steel	4"	3200T85 16.45	4"	3200T86 17.27	6"	3200T87 18.92	6"	3200T88 19.72	6"	3200T89 25.50
Type 304 Stainless Steel	4"	3200T54 34.62	4"	3200T64 36.35	6"	3200T74 39.81	6"	3200T84 41.54	6"	3200T94 60.58

Tied-Wire Hangers

Attach these hangers to I-beams and other structural elements, and use the stiff wire that is securely tied to them in suspended ceiling and other hanging applications. The steel tied wire is 6-feet long and 0.105" dia.

(1) Anchor for wood hanger has a sharp point for use on wood.

(2) Beam clip hangers attach to I-beam flanges.

(3) Angle bracket hanger attaches to walls, ceilings, and the side or bottom of I-beams. It has a 3/16" dia. mounting hole (fastener not included).

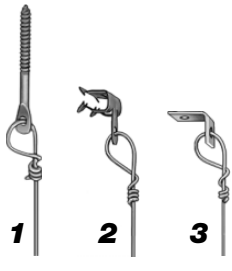

	Style	Fits Flange Thick.	Work Load Limit, lbs.		Each
1	Anchor for Wood	—	200	5326K21	$0.79
2	Beam Clip	1/8" to 1/4"	200	5326K17	1.56
2	Beam Clip	5/16" to 1/2"	200	5326K19	1.56
3	Angle Bracket	—	150	5326K11	.85

Rigid Straps

A basic yet effective design—straps have mounting holes for securing your duct (fasteners not included). ***Galvanized steel*** straps are corrosion resistant.

Lg. × Wd.	Thick.	Mounting Hole Dia.	Mounting Hole Ctr.-to-Ctr.	Galvanized Steel	Each	Steel	Each
60" × 3/4"	1/16"	9/32"	11/16"	9600T36	$5.29	—	—
60" × 7/8"	1/16"	9/32"	11/16"	9600T37	6.14	—	—
60" × 1"	5/64"	9/32"	11/16"	9600T38	8.71	—	—
60" × 1 1/4"	7/64"	3/8"	5/8"	—	—	9600T51	$11.66

Flexible Straps

Flexibility is the name of the game when using these to secure duct, pipe, and large bundles.

Straps with mounting holes have alternately spaced 1/8" dia. and 1/4" dia. holes on 1/2" centers. ***Straps without mounting holes*** allow you to drill your own holes.

Galvanized steel straps offer corrosion resistance. ***Copper-plated steel*** straps are compatible with copper tube. ***Type 304 stainless steel*** straps are more corrosion resistant than galvanized steel.

Width	Thick.	10-ft. Coils	Each	100-ft. Coils	Each
With Mounting Holes					
Galvanized Steel					
3/4"	1/32"	3051T11	$1.73	3051T12	$12.12
3/4"	3/64"	3051T13	2.05	3051T14	15.31
Copper-Plated Steel					
3/4"	1/32"	3051T15	3.36	3051T16	27.65
Type 304 Stainless Steel					
3/4"	1/32"	3051T21	8.11	3051T22	77.54
3/4"	3/64"	3051T23	11.49	3051T24	97.80

Width	Thick.	10-ft. Coils	Each	100-ft. Coils	Each
Without Mounting Holes					
Galvanized Steel					
1"	1/32"	3051T25	$5.77	3051T26	$29.34
1"	3/64"	3051T27	7.23	3051T28	33.43
Type 304 Stainless Steel					
1"	1/32"	3051T31	15.71	3051T32	92.29
1"	3/64"	3051T33	18.57	3051T34	123.81

Warning! ***Never exceed work load limits.***

One mil equals 0.001″.

Press-to-Close Bags

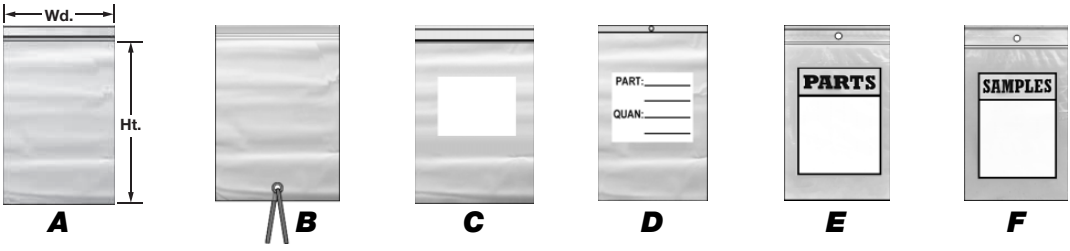

Bags are made of FDA-compliant polyethylene resin. 8″×8″ bags have an approximate capacity of one quart. 12″×12″ bags have an approximate capacity of one gallon. The 6- and 8-mil thick bags are more puncture resistant than 2- and 4-mil thick bags.

Standard—Color is clear.

Greenline—Designed to decompose in landfill conditions, these bags meet ASTM D5511 for plastic. Color is clear.

Choose-a-Color—**To Order:** Please specify opaque black, opaque white, translucent blue, translucent green, translucent red, or translucent yellow.

Bags with Brass Grommet—Bags include a twist tie for hanging tags and instructions. Color is clear.

Mark-On—Bags have a white space to write on. Color is clear. Bags with imprint have black letters.

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
(A) Standard					
2″	3″	2	100	**1959T11**	$1.62
2″	3″	4	100	**1959T71**	2.31
2″	3″	6	100	**19215T11**	6.48
3″	3″	2	100	**1959T28**	1.91
3″	3″	4	100	**1959T83**	3.49
3″	4″	2	100	**1959T12**	2.20
3″	4″	4	100	**1959T23**	3.79
3″	5″	2	100	**1959T13**	2.71
3″	5″	4	100	**1959T24**	4.81
3″	5″	6	100	**19215T12**	7.94
4″	4″	2	100	**1959T14**	2.80
4″	4″	4	100	**1959T25**	4.92
4″	6″	2	100	**1959T15**	3.64
4″	6″	4	100	**1959T26**	6.91
4″	6″	6	100	**19215T81**	11.37
4″	6″	8	50	**14545T12**	11.94
5″	8″	2	100	**1959T16**	5.39
5″	8″	4	100	**1959T27**	10.24
5″	8″	6	50	**19215T13**	10.31
5″	8″	8	25	**14545T24**	8.25
6″	6″	2	100	**1959T17**	4.84
6″	6″	4	100	**1959T29**	9.57
6″	8″	6	50	**19215T82**	11.57
6″	8″	8	25	**14545T13**	8.66
6″	9″	2	100	**1959T18**	7.62
6″	9″	4	100	**1959T31**	13.48
6″	9″	6	25	**19215T14**	7.00
6″	9″	8	25	**14545T25**	9.33
8″	8″	2	50	**1959T39**	4.43
8″	8″	4	50	**1959T84**	6.91
8″	8″	6	25	**19215T15**	6.93
8″	8″	8	25	**14545T26**	12.18
8″	10″	2	100	**1959T19**	9.13
8″	10″	4	100	**1959T32**	14.49
8″	10″	6	25	**19215T83**	7.42
8″	10″	8	10	**14545T14**	4.64
9″	12″	2	50	**1959T45**	5.27
9″	12″	4	50	**1959T48**	9.08
9″	12″	6	25	**19215T84**	9.08
9″	12″	8	10	**14545T15**	5.59
10″	12″	2	50	**1959T63**	5.92
10″	12″	4	50	**1959T74**	10.04
10″	12″	6	25	**19215T85**	9.69
10″	12″	8	10	**14545T16**	5.81
10″	13″	2	50	**1959T57**	7.40
10″	13″	4	50	**1959T85**	11.73
12″	12″	2	50	**1959T64**	7.79
12″	12″	4	50	**1959T75**	13.12
12″	12″	6	25	**19215T16**	13.40
12″	12″	8	10	**14545T27**	7.90
12″	15″	2	50	**1959T65**	8.50
12″	15″	4	50	**1959T76**	14.23
12″	15″	6	25	**19215T86**	13.85
12″	15″	8	10	**14545T17**	7.39
13″	18″	2	25	**1959T66**	5.81
13″	18″	4	25	**1959T86**	10.49
13″	18″	6	10	**19215T87**	7.53
13″	18″	8	10	**14545T18**	10.18
16″	20″	2	25	**1959T67**	8.58
16″	20″	4	10	**1959T87**	6.50

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
(A) Standard (Cont.)					
16″	20″	6	10	**19215T91**	$11.54
16″	20″	8	10	**14545T19**	13.55
18″	24″	2	25	**1959T68**	11.88
18″	24″	4	10	**1959T88**	8.53
18″	24″	6	10	**19215T92**	12.73
18″	24″	8	5	**14545T21**	8.91
24″	24″	2	10	**1959T69**	12.10
24″	24″	4	10	**1959T89**	13.26
24″	24″	6	5	**19215T93**	10.85
24″	24″	8	5	**14545T22**	11.51
24″	30″	6	5	**19215T17**	16.01
24″	30″	8	5	**14545T28**	12.10
24″	36″	6	5	**19215T24**	11.54
24″	36″	8	1	**14545T29**	2.83
28″	30″	6	5	**19215T94**	14.15
28″	30″	8	1	**14545T23**	3.18
30″	36″	6	1	**19215T26**	3.56
30″	36″	8	1	**14545T31**	4.65
36″	48″	6	1	**19215T28**	5.02
36″	48″	8	1	**14545T32**	6.66
42″	48″	6	1	**19215T31**	5.73
42″	48″	8	1	**14545T33**	7.53
(A) Greenline					
2″	2″	2	100	**20605T1**	2.72
2″	3″	2	100	**20605T2**	3.25
3″	4″	2	100	**20605T3**	4.32
4″	6″	2	100	**20605T4**	6.09
5″	7″	2	100	**20605T5**	8.07
6″	9″	2	100	**20605T6**	10.59
9″	12″	2	100	**20605T7**	16.30
(A) Choose-a-Color					
2″	3″	2	100	**1959T21**	2.93
3″	5″	2	100	**1959T22**	4.43
4″	6″	2	100	**1959T33**	5.80
6″	9″	2	100	**1959T34**	10.80
8″	10″	2	50	**1959T72**	7.27
9″	12″	2	50	**1959T73**	8.50
(B) With Brass Grommet					
3½″	6″	4	25	**1959T516**	8.44
4½″	9″	4	25	**1959T513**	9.12
5″	7″	4	25	**1959T511**	10.80
5½″	9″	4	25	**1959T512**	11.35
5¾″	11″	4	25	**1959T514**	11.75
9½″	13″	4	25	**1959T515**	18.84
(C) Mark-On					
2″	3″	2	100	**1959T51**	1.44
2″	3″	4	100	**1959T47**	2.65
3″	4″	2	100	**1959T52**	1.93
3″	4″	4	100	**1959T91**	3.35
3″	5″	2	100	**1959T53**	2.52
3″	5″	4	100	**1959T58**	4.65
4″	6″	2	100	**1959T54**	3.35
4″	6″	4	100	**1959T59**	6.85
4″	6″	6	25	**14555T11**	7.72
4″	6″	8	25	**14555T61**	9.12
5″	8″	2	100	**1959T55**	5.39
5″	8″	4	100	**1959T61**	10.67
5″	8″	6	50	**14555T17**	9.39
5″	8″	8	25	**14555T19**	10.84
6″	8″	6	25	**14555T12**	10.39
6″	8″	8	25	**14555T62**	11.70

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
(C) Mark-On (Cont.)					
6″	9″	2	100	**1959T56**	$5.28
6″	9″	4	100	**1959T62**	10.34
6″	9″	6	25	**14555T21**	10.21
6″	9″	8	25	**14555T22**	11.87
8″	10″	2	25	**1959T92**	1.92
8″	10″	4	25	**1959T93**	3.80
8″	10″	6	25	**14555T13**	13.33
8″	10″	8	10	**14555T63**	5.89
9″	12″	2	50	**1959T46**	6.27
9″	12″	4	50	**1959T49**	12.29
9″	12″	6	10	**14555T14**	5.99
9″	12″	8	10	**14555T64**	7.24
10″	12″	2	50	**1959T94**	5.19
10″	12″	4	50	**1959T95**	9.56
10″	12″	6	10	**14555T15**	6.91
10″	12″	8	10	**14555T65**	7.54
12″	12″	6	10	**14555T23**	8.12
12″	12″	8	10	**14555T24**	10.82
12″	15″	6	10	**14555T16**	8.28
12″	15″	8	10	**14555T66**	10.57
18″	24″	6	10	**14555T18**	16.38
18″	24″	8	5	**14555T25**	12.53
24″	30″	6	5	**14555T26**	12.05
24″	30″	8	5	**14555T27**	14.66
24″	36″	6	5	**14555T28**	14.02
24″	36″	8	1	**14555T29**	3.33
31″	36″	6	1	**14555T31**	5.00
31″	36″	8	1	**14555T32**	6.14
(D) Mark-On with "Part" and "Quan" Imprint					
3″	4″	2	100	**1959T35**	4.12
3″	4″	4	100	**1959T41**	5.73
4″	6″	2	100	**1959T36**	6.56
4″	6″	4	100	**1959T42**	10.69
6″	8″	2	50	**1959T37**	5.04
6″	8″	4	50	**1959T43**	8.33
9″	12″	2	50	**1959T38**	8.63
9″	12″	4	25	**1959T44**	7.93
10″	12″	2	50	**1959T96**	7.28
10″	12″	4	25	**1959T97**	6.64
12″	15″	2	25	**1959T98**	5.15
12″	15″	4	25	**1959T99**	9.98
(E) Mark-On with "Parts" Imprint					
3″	4″	2	100	**14525T11**	4.81
3″	4″	4	100	**14525T19**	6.79
4″	6″	2	100	**14525T13**	8.17
4″	6″	4	100	**14525T22**	12.27
6″	8″	2	50	**14525T15**	6.30
6″	8″	4	50	**14525T24**	10.31
9″	12″	2	50	**14525T17**	11.39
9″	12″	4	25	**14525T26**	8.10
(F) Mark-On with "Samples" Imprint					
3″	4″	2	100	**14525T12**	4.81
3″	4″	4	100	**14525T21**	7.40
4″	6″	2	100	**14525T14**	8.18
4″	6″	4	100	**14525T23**	12.27
6″	8″	2	50	**14525T16**	6.30
6″	8″	4	50	**14525T25**	10.31
9″	12″	2	50	**14525T18**	11.39
9″	12″	4	25	**14525T27**	7.71

One mil equals 0.001″.

Specialty Press-to-Close Bags

UV Inhibiting—Protect contents from damage caused by ultraviolet light. Bags are polyethylene. Color is translucent brown, except 19495T23, which is opaque brown.

Corrosion Inhibiting—A corrosion inhibitor protects ferrous and nonferrous metals from corrosion. Bags are nitrite-free polyethylene. Color is translucent blue.

Tarnish Inhibiting—Bags have a coating that prevents tarnishing of precious metals. All are made of polyethylene. Color is clear.

Antistatic—Bags are made of polyethylene with an additive that prevents static charge from building up on the bag's surface. Bags qualify as electrostatic protective barrier material under MIL-B-81705B. Color is translucent pink.

Static Dissipative—Bags are made of antistatic, amine-free polyethylene with an additional layer of coated polyester to protect against static discharge. Meet MIL-PRF-81705, Type II. Color is clear.

Static Shielding—Offer multi-layered protection for static-sensitive electronic components. The inner layer is amine-free polyethylene with an additive that prevents static build-up. The outer layer is coated polyester to protect against static discharge. The middle layer is aluminized polyester that stops static from passing through the bag. Meet MIL-PRF-81705D, Type III. Color is translucent silver.

Static Shielding Moisture Barrier—Bags have all the benefits of static-shielding bags plus a layer of aluminum for protection from EMI/RFI static fields and moisture. The inner layer is amine-free polyethylene. The outer layer is coated polyester. Meet IPC/JEDEC J-STD-033 and MIL-PRF-81705D, Type I. Color is opaque silver.

Clean Room—Suitable for medical and pharmaceutical applications and Class 100 clean rooms. Bags are polyethylene. Color is clear.

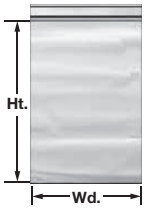

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
UV Inhibiting					
3″	5″	3	25	19495T19	$3.43
4″	6″	3	25	19495T21	3.79
6″	8″	3	25	19495T22	5.92
8″	10″	3	25	19495T31	7.79
9″	12″	3	25	19495T32	9.01
12″	12″	3	25	19495T23	13.10
15″	18″	3	25	19495T33	19.40
20″	20″	3	25	19495T34	21.64
Corrosion Inhibiting					
4″	6″	4	25	19635T75	8.97
6″	8″	4	25	19635T72	9.22
8″	10″	4	10	19635T76	6.65
9″	12″	4	10	19635T77	9.23
12″	18″	4	10	19635T74	12.37
Tarnish Inhibiting					
4″	4″	2	50	19635T83	4.94
4″	6″	2	50	19635T84	6.47
5″	7″	2	50	19635T85	7.10
6″	8″	2	50	19635T86	8.42
Antistatic					
3″	5″	4	50	2053T63	7.59
4″	6″	4	50	2053T64	8.73
4″	6″	6	25	2053T41	4.89
Antistatic (Cont.)					
6″	8″	4	50	2053T65	$14.39
6″	8″	6	25	2053T42	8.29
8″	10″	4	25	2053T24	9.23
8″	10″	6	25	2053T19	12.89
9″	12″	4	25	2053T25	12.00
9″	12″	6	10	2053T44	5.51
12″	12″	4	25	2053T26	13.66
12″	12″	6	10	2053T45	7.62
12″	15″	4	10	2053T71	4.13
12″	15″	6	10	2053T74	6.54
13″	18″	4	10	2053T27	8.91
13″	18″	6	10	2053T46	9.23
15″	18″	4	10	2053T28	8.19
18″	24″	4	10	2053T72	7.01
18″	24″	6	5	2053T75	6.91
20″	20″	4	10	2053T29	11.83
24″	24″	4	10	2053T73	9.74
24″	24″	6	5	2053T76	8.96
Static Dissipative					
3″	5″	3.5	10	1948T81	3.67
4″	6″	3.5	10	1948T82	3.66
5″	8″	3.5	10	1948T83	3.75
8″	10″	3.5	10	1948T84	5.87
Static Dissipative (Cont.)					
10″	12″	3.5	10	1948T85	$7.69
12″	16″	3.5	10	1948T86	9.17
12″	18″	3.5	10	1948T87	9.73
Static Shielding					
3″	5″	3	25	4663T1	5.71
4″	6″	3	25	4663T2	6.25
6″	8″	3	25	4663T3	9.00
6″	10″	3	25	4663T4	9.64
8″	10″	3	25	4663T5	11.39
10″	12″	3	10	4663T6	6.29
12″	15″	3	10	4663T7	8.40
24″	18″	3	1	4663T8	3.11
30″	23″	3	1	4663T9	5.63
Static Shielding Moisture Barrier					
6″	8″	3.6	10	2178K19	11.43
8″	10″	3.6	10	2178K21	13.14
10″	12″	3.6	5	2178K22	8.57
12″	15″	3.6	5	2178K23	13.57
Clean Room					
4″	6″	4	50	4896T6	11.50
6″	8″	4	50	4896T7	14.00
8″	10″	4	25	4896T8	10.82
10″	12″	4	10	4896T9	6.01
12″	15″	4	10	4896T11	8.21

Zipper Bags

Get a secure seal with a zipper that can be easily closed while wearing gloves. Bags are made from FDA-compliant polyethylene resin; zippers are polypropylene. Color is clear.

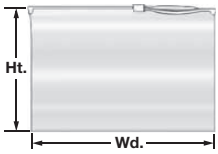

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
8″	7″	2.7	25	20085T4	$12.41
9″	12″	2.7	25	20085T5	15.30
10″	7″	2.7	25	20085T6	14.60
10½″	11″	2.7	25	20085T7	15.82
14″	11″	2.7	10	20085T8	7.42
16″	12″	2.7	10	20085T9	9.34
16″	16″	2.7	10	20085T21	9.41

Zipper Bags with Air-Removal Valve

Reduce storage space and shipping costs as well as prevent unwanted movement during shipment. Press any vacuum hose to the one-way valve to remove air from the bag. Bags have a double seal with a zipper for a secure closure. All are made of FDA-compliant resins. The inner layer is polyethylene and the outer layer is nylon. Color is clear.

Wd.	Ht.	Thick., mils		Pkg.
21″	33″	3.9	1665T1	$7.12
26″	39″	3.9	1665T2	8.36
35″	47″	3.9	1665T3	14.87

Sterile Leakproof Bags

Bags have pull tabs so you can hold them open without touching the inside. For a leakproof seal, turn bag tops over the double-wire closure three times and fold in the tabs. Bags are made of polyethylene. Color is clear.

Mark-on bags have a white space to write on.

Wd.	Ht.	Thick., mils	Pkg. Qty.	*Plain*	Pkg.	*Mark-On*	Pkg.
2½″	5″	2.25	50	—	—	1942T61	$7.80
3″	5″	2.25	50	1942T51	$8.25	1942T62	8.50
4½″	9″	2.5	50	1942T54	13.19	1942T64	13.60

Bubble Bags

The convenience of a bag and the protection of bubble wrap all in one. Bags are made of polyethylene and have 3/16″ high bubbles.

Plain bags are clear.

Antistatic bags contain an additive that prevents static charge from building up on the surface. Color is translucent pink.

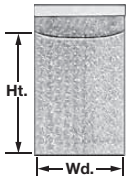

Bag with Adhesive Strip

Press-to-Close Bag

Wd.	Ht.	*Plain* Pkg. Qty.		Pkg.	*Antistatic* Pkg. Qty.		Pkg.
Bags with Adhesive Strip							
4″	5½″	50	1922T31	$6.01	50	1922T41	$7.51
7″	8½″	50	1922T32	11.39	50	1922T42	15.53
8″	11½″	50	1922T23	16.48	25	1922T43	12.24
12″	23½″	25	1922T28	19.37	—	—	—
15″	17½″	25	1922T27	18.92	—	—	—
18″	23½″	10	1922T33	12.70	10	1922T46	16.02
Press-to-Close Bags							
4″	6″	5	1922T47	6.22	5	1922T53	7.22
6″	8″	5	1922T48	7.06	5	1922T54	8.22
8″	10″	1	1922T49	1.78	1	1922T55	2.67
10″	12″	1	1922T51	2.00	1	1922T56	2.97
12″	15″	1	1922T52	2.46	1	1922T57	3.13

One mil equals 0.001″.

Open-Top Bags

Seal the top with heat or close with a twist tie. For heat sealers, see page 1559. For twist ties, see page 1521.

Standard

Flat

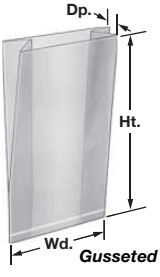

Gusseted

Flat Bottom

Bags are made from FDA-compliant polyethylene resin. Color is clear, unless otherwise stated.
Gusseted bags have an accordion fold on each side that expands to fit bulky items.
Flat-bottom bags have a cardboard insert so they can stand and be filled more easily. Color is translucent white.

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
Flat					
3″	3″	1.5	100	1928T11	$1.29
3″	3″	2	100	1928T52	1.58
3″	3″	4	100	1928T53	2.41
3″	4″	1.5	100	1928T12	1.47
3″	4″	2	100	1928T64	1.87
3″	4″	4	100	1928T65	2.95
3″	5″	1.5	100	1928T13	1.78
3″	5″	2	100	1928T5	1.87
3″	5″	4	100	1928T51	3.60
4″	6″	1.5	100	1928T14	2.47
4″	6″	2	100	1928T66	2.64
4″	6″	4	100	1928T67	5.32
5″	6″	1.5	100	1928T15	2.96
5″	6″	2	100	1928T68	3.10
5″	6″	4	100	1928T69	5.80
5″	8″	1.5	100	1928T16	3.80
5″	8″	2	100	1928T7	3.96
5″	8″	4	100	1928T71	7.66
6″	12″	1.5	100	1928T17	4.76
6″	12″	2	100	1928T72	5.06
6″	12″	4	100	1928T73	10.85
7″	9″	1.5	100	1928T18	3.55
7″	9″	2	100	1928T74	3.64
7″	9″	4	100	1928T75	8.22
8″	10″	1.5	100	1928T19	6.25
8″	10″	2	100	1928T76	7.21
8″	10″	4	50	1928T77	7.88
9″	12″	1.5	100	1928T21	7.13
9″	12″	2	100	1928T78	8.73
9″	12″	4	50	1928T79	8.96
10″	12″	1.5	100	1928T22	8.52
10″	12″	2	100	1928T8	9.97
10″	12″	4	50	1928T81	10.92

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
Flat (Cont.)					
10″	16″	2	100	1928T82	$12.38
10″	16″	4	50	1928T83	11.53
12″	16″	1.5	100	1928T23	12.96
12″	16″	2	50	1928T54	8.12
12″	16″	4	50	1928T55	12.64
12″	18″	1.5	100	1928T24	13.58
12″	18″	2	50	1928T84	8.96
12″	18″	4	25	1928T85	8.85
14″	20″	1.5	25	1928T91	4.43
14″	20″	2	25	1928T96	5.66
14″	20″	4	25	1928T913	10.29
16″	24″	1.5	25	1928T92	5.61
16″	24″	2	25	1928T97	7.08
16″	24″	4	25	1928T914	13.08
18″	24″	1.5	25	1928T93	6.23
18″	24″	2	25	1928T98	7.71
18″	24″	4	25	1928T915	14.69
20″	24″	1.5	25	1928T94	6.92
20″	24″	2	25	1928T99	8.80
20″	24″	4	10	1928T916	6.37
24″	30″	1.5	25	1928T95	9.77
24″	30″	2	25	1928T912	12.77
24″	30″	4	10	1928T917	8.32

Wd.	Ht.	Dp.	Thick., mils	Pkg. Qty.		Pkg.
Gusseted						
4″	8″	2″	1.5	100	1928T31	$3.99
4″	8″	2″	2	100	1928T34	5.66
4″	12″	2″	1.5	100	1928T32	6.00
8″	18″	4″	1.5	50	1928T33	7.99
8″	18″	4″	2	50	1928T36	9.45
8″	18″	4″	4	25	1928T28	14.64
Flat Bottom						
6″	10″	3½″	4	25	1939T41	7.10
7″	13½″	4″	4	25	1939T42	9.67

Specialty

Antistatic bags are polyethylene with an additive that prevents static charge from building up on the bag's surface. Bags qualify as electrostatic protective barrier material under MIL-PRF-81705D. Color is translucent pink.
Static-shielding bags offer multi-layered protection. The inner layer is amine-free polyethylene with an additive that prevents static build-up. The outer layer is coated polyester to protect against static discharge. The middle layer is aluminized polyester that stops static from passing through the bag. Meet MIL-PRF-81705D, Type III. Color is translucent silver.

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
Antistatic					
3″	5″	4	100	2096T21	$6.94
3″	5″	6	100	2096T31	12.27
4″	6″	4	100	2096T22	9.93
4″	6″	6	100	2096T32	14.92
6″	8″	4	100	2096T23	13.69
6″	8″	6	50	2096T33	10.86
8″	10″	4	50	2096T24	10.97
8″	10″	6	25	2096T34	7.59
9″	12″	4	50	2096T41	13.00
9″	12″	6	25	2096T43	9.88
12″	18″	4	25	2096T42	10.80
12″	18″	6	10	2096T44	7.20
18″	24″	4	10	2096T51	7.43
18″	24″	6	10	2096T53	12.97

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
Antistatic (Cont.)					
24″	36″	4	10	2096T52	$13.55
24″	36″	6	5	2096T54	11.19
Static Shielding					
3″	5″	3	100	2082T61	12.90
4″	6″	3	50	2082T71	8.23
5″	8″	3	50	2082T62	10.76
6″	8″	3	50	2082T72	14.39
6″	10″	3	50	2082T63	16.91
8″	10″	3	25	2082T64	11.17
9″	12″	3	25	2082T73	13.51
10″	12″	3	25	2082T65	15.90
12″	18″	3	10	2082T66	10.72
18″	24″	3	5	2082T74	9.20
24″	30″	3	1	2082T75	3.02

Cut-to-Length Bags on a Roll

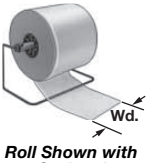

Roll Shown with Optional Dispenser

Cut the length you need and heat seal the ends to create a bag. Bags are made of FDA-compliant polyethylene resin. Rolls have a 1″ ID core. Color is clear. For heat sealers, see page 1559. ***Optional dispensers*** fit rolls up to 14″ OD.

	2 MILS THICK		4 MILS THICK		6 MILS THICK	
Wd.	1,500-ft. Roll 10¼″ OD	3,000-ft. Roll 14″ OD	750-ft. Roll 10¼″ OD	1,500-ft. Roll 14″ OD	500-ft. Roll 10¼″ OD	1,000-ft. Roll 14″ OD
2⅝″	2062T702 $37.09	2062T24 $56.11	2062T802 $37.09	2062T16 $56.11	2062T902 $37.09	— —
3″	2062T703 41.63	2062T18 64.14	2062T803 41.63	2062T21 64.14	2062T903 41.63	2062T23 $64.14
4″	2062T704 52.20	2062T25 81.60	2062T804 52.20	2062T27 81.60	2062T904 52.20	2062T29 81.60
5″	2062T705 61.49	2062T32 99.74	2062T805 61.49	2062T34 99.74	2062T905 61.49	2062T31 99.74
6″	2062T706 73.03	2062T36 119.97	2062T806 73.03	2062T38 119.97	2062T906 73.03	2062T42 119.97
8″	2062T708 91.74	2062T44 153.57	2062T808 91.74	2062T46 153.57	2062T908 91.74	2062T48 153.57
10″	2062T71 101.69	2062T52 188.06	2062T81 101.69	2062T54 188.06	2062T91 101.69	2062T56 188.06
12″	2062T712 123.34	2062T58 225.63	2062T812 123.34	2062T62 225.63	2062T912 123.34	2062T64 225.63
14″	2062T714 131.50	2062T66 257.74	2062T814 131.50	2062T68 257.74	2062T914 131.50	2062T65 257.74
16″	2062T716 159.86	2062T72 294.49	2062T816 159.86	2062T74 294.49	2062T916 159.86	2062T76 294.49
18″	2062T718 174.74	2062T73 320.66	2062T818 174.74	2062T75 320.66	2062T918 174.74	2062T78 320.66

Optional Dispenser for Rolls up to 12″ Wide 2062T11 $21.88
Optional Dispenser for Rolls up to 24″ Wide 2062T12 28.67

One mil equals 0.001″.

Open-Top Bags on a Roll

Perforated so you can quickly and easily tear them off. Bags are made of polyethylene and are compatible with automatic, semi-automatic, and manual packaging systems. Color is clear.

Rolls have a 1″ ID core. Roll OD is 10″. Bags can be heat-sealed shut.

		1.5 mils Thick			2 mils Thick		
Wd.	Lg.	No. of Bags		Roll	No. of Bags		Roll
3″	3″	5,500	19615T41	$72.71	—	—	—
3″	5″	3,000	19615T42	56.98	—	—	—
4″	4″	4,000	19615T43	83.59	3,000	19615T53	$70.85
4″	6″	2,500	19615T44	58.70	2,000	19615T54	59.36
5″	6″	2,500	19615T45	67.06	2,000	19615T55	65.57
6″	8″	1,750	19615T66	57.65	1,500	19615T56	69.33
8″	10″	1,500	19615T47	73.44	1,250	19615T57	84.95

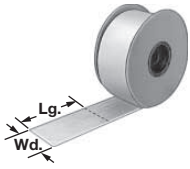

Heat Sealers with Timer

Also known as impulse sealers, these sealers have an operating temperature of approximately 550°F and an eight-setting timer that regulates the length of the heating cycle. Seal polyethylene, polyolefin, PVC, and Mylar. All sealers have a flat sealing surface with nonstick covers. Operate on 120 VAC, 60 Hz and have a 5½-ft. cord with a three-prong plug. Sealers have one heating element, except 19475T11, T12, and T13, which have two heating elements.

Hand-operated sealers with cutter have a built-in blade to cut off excess material.

Foot-operated sealers include a 5½″ deep shelf that adjusts from 21″ to 29½″ in height. 19475T18, T23, and T24 are UL listed.

Repair kits for hand-operated sealers include two heating elements and three covers (two upper and one lower). *Kits for hand-operated sealers with cutter* also include a replacement cutting blade. ***Repair kits for foot-operated sealers*** include two heating elements and an upper and lower cover.

To Order: For replacement cover, please specify upper or lower cover.

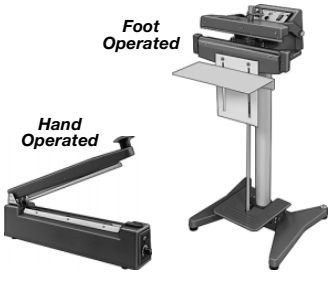

Seal Wd.	Seal Lg.	Max. Total Material Thick., mils	Amps	Heat Sealer		Repair Kit		Replacement Heating Element		Replacement Sealing Pad		Replacement Cover	
Hand Operated													
4″	3/32″	5	2	2054T29	$67.50	2054T49	$5.13	2054T11	$1.71	2054T59	$8.00	2054T68	$1.71
8″	3/32″	6	3	2054T31	87.18	2054T51	11.43	2054T12	2.29	2054T61	12.00	2054T78	2.14
12″	3/32″	6	5	2054T32	122.50	2054T52	17.14	2054T13	3.93	2054T62	16.00	2054T79	2.86
16″	3/32″	6	7	2054T35	182.05	2054T55	22.86	2054T14	4.86	2054T65	20.00	2054T82	3.43
20″	3/32″	6	7	2054T89	298.74	2054T93	28.57	2054T15	5.86	2054T37	24.00	2054T83	3.94
Hand Operated with Cutter													
8″	3/32″	6	3	2054T33	151.11	2054T53	15.38	2054T26	2.29	2054T38	12.00	2054T96	2.27
12″	3/32″	6	5	2054T34	207.78	2054T54	20.51	2054T27	3.50	2054T39	16.00	2054T97	2.94
16″	3/32″	6	7	2054T36	286.36	2054T56	30.77	2054T28	4.86	2054T43	20.00	2054T98	3.53
Foot Operated													
12″	3/32″	6	5	19475T18	361.70	19475T25	22.86	19475T81	4.86	19475T87	20.00	19475T14	9.10
12″	3/16″	20	14	19475T11	650.94	19475T42	35.45	19475T91	7.14	19475T94	20.00	19475T17	9.10
18″	3/32″	6	6	19475T23	419.15	19475T26	34.29	19475T82	5.71	19475T88	28.00	19475T15	11.43
18″	3/16″	20	17	19475T12	786.79	19475T43	47.27	19475T92	9.00	19475T95	28.00	19475T19	11.43
24″	3/32″	6	8	19475T24	478.72	19475T27	48.57	19475T83	6.57	19475T89	36.00	19475T16	14.90
24″	3/16″	20	20	19475T13	915.09	19475T44	65.45	19475T93	10.71	19475T96	36.00	19475T22	14.90

Hand-Held Heat Sealers

You choose the temperature and control the duration of the heat application. Typically used with thick, tough-to-seal materials. Operate on 120 VAC, 60 Hz. Sealers have one heating element, except 19035T1, 2064T16, and 2064T18, which have two heating elements.

Spot-crimp style has a pliers-style design for sealing vacuum-formed polyethylene, polystyrene, polypropylene, and PVC trays and blister packs. Has a 6-ft. cord with a two-prong plug.

Iron style seals overwraps of irregularly shaped packages and bags. Use on cellophane and foils. Add a nonstick cover (included) for sealing Pliofilm, polyethylene, and vinyl. Has a 4½-ft. cord with a three-prong plug. UL listed.

Clamp style are not only for hand-held use; they have feet under the bottom jaw for table-top operation, as well as a detachable foot pedal for hands-free operation.

2064T13 is suitable for polyethylene, polypropylene, and PVC. It includes nonstick covers and a 4½-ft. cord with a two-prong plug.

2064T16 and *T18* are suitable for cellophane, aluminum foil, and waxed and coated papers. 2064T16 also seals cloth foil, brown-paper foil, and similar laminates. Both have an 8-ft. cord with a two-prong plug.

Rotary style have a wheel to seal large polyethylene and cellophane films. Also have a heat shield and a protective handle. Cord is 6 ft. long with a two-prong plug.

Seal Wd.	Seal Lg.	Max. Total Material Thick., mils	Amps	Sealing Surface	Operating Temperature, °F		Each
Spot-Crimp Style							
3/8″	3/16″	100	0.1	Textured	356°, 410°	19035T1	$136.73
Iron Style							
4″	1 3/4″	16	2	Flat	100°-500°	1983T2	101.11
Clamp Style							
6″	1/16″	12	0.3	Flat	270°	2064T13	235.67
6″	9/16″	120	0.5	Flat	260°, 350°, 500°	2064T16	285.83
6″	9/16″	120	0.5	Serrated	260°, 350°, 500°	2064T18	285.83
Rotary Style							
—	3/16″	6	0.7	Textured	80°-420°	1986T3	181.63
—	11/32″	6	0.7	Textured	80°-420°	1986T4	212.24

Replacement Parts

		Each
Heating Element for 1983T2	1983T5	$20.00
Heating Element for 2064T13, T16, and T18	2064T22	38.18
Thermostat for 1983T2	1983T6	37.33

		Pkg.
Covers for 1983T2 (2/Pkg.)	1983T4	$10.18
Cover for 2064T13 (1/Pkg.)	2064T21	7.13
Top and Bottom Housing for 2064T13, T16, and T18	2064T24	94.18

One mil equals 0.001″.

Vacuum Heat Sealers and Bags

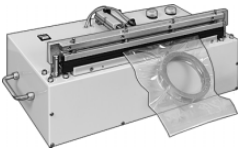

Create an airtight seal around your items. Sealer heat seals the bag and removes air at the same time. It has a 1/4″ NPT inlet for connection to your compressed air line. Air consumption is 2.5 cfm. Working pressure is 80-125 psi. Operates on 120 VAC, 60 Hz and has a 12-ft. cord with a three-prong plug.

Bags have a nylon outer layer and a polyethylene inner layer. Color is clear.

Sealer

Seal Wd.	Seal Lg.	Max. Total Material Thick., mils	Amps		Each
15 1/2″	1/4″	8	10	4895T1	$1,658.33

Bags

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
6″	8″	3	50	4895T2	$6.88
8″	10″	3	25	4895T3	5.31
10″	12″	3	25	4895T4	7.34
12″	15″	3	10	4895T5	5.00

Heat-Shrink Wrapping Systems

Systems include a cradle, a heat sealer, a heat gun, and a roll of film that shrinks when heated. Sealer has a 6-ft. cord with a three-prong plug; heat gun has an 8-ft. cord with a two-prong plug. Both operate on 120 VAC, 60 Hz. Film is clear and made of PVC. Rolls are 500 ft. long. 19435T3 includes 15″ wide film. 19435T4 includes 26″ wide film.

System for 6″-16″ Wide Rolls	19435T3	$446.37
System for 6″-28″ Wide Rolls	19435T4	635.08
Replacement Heat Gun	19435T5	87.44

Heat-Shrink Bags

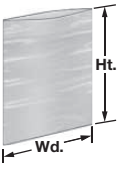

A great alternative to press-to-close bags and paper wrap, these bags can be heat sealed and shrunk for a skin-tight barrier. Recommended shrink temperature is approximately 200° F. Bags have an open top and are made of PVC. Color is clear.

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
6 1/4″	10 3/4″	1	50	19945T2	$4.36
8″	12″	1	50	19945T3	5.13
9″	14″	1	50	19945T4	6.54
12 1/4″	18″	1	25	19945T8	6.99
12 1/2″	14″	1	25	19945T5	5.51
14″	18″	1	25	19945T9	8.08

Heat-Shrink Film

Film shrinks when heated to create a form-fitting barrier. Rolls are 500 ft. long. Color is clear.

PVC film requires less heat to shrink. Recommended shrink temp. is 200°-275° F.

Polyolefin film is food grade and is more flexible than PVC. Recommended shrink temperature is 270°-300° F.

Wd.	Thick., mils	PVC	Roll	Polyolefin	Roll
10″	0.6			19435T1	$37.66
10″	0.75	19435T6	$31.68	19435T2	41.43
12″	0.75	19435T7	38.00	19435T22	49.71
14″	0.75			19435T24	58.00
16″	0.75	19435T8	50.68	19435T26	66.29
18″	0.75			19435T28	74.57
26″	1	19435T9	117.45		

Drawstring Bags

Bags have a cotton drawstring closure.

Cotton

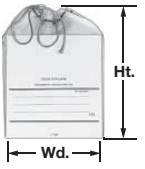

Mailing

Bags are made of 100% 4-oz. cotton. Color is off-white. *Mailing* bags have a white cardboard address tag attached. Tag is 4″ Lg. × 3 1/2″ Wd.

Wd.	Ht.	Pkg. Qty.	Plain	Pkg.	Mailing	Pkg.
3 1/4″	5″	25	1925T61	$6.66	1925T71	$10.21
4″	6″	25	1925T82	7.54	1925T72	11.50
5″	8″	25	1925T63	10.47	1925T73	14.72
6″	10″	25	1925T84	14.47	1925T74♥	7.76
8″	12″	10	1925T66	8.12	1925T76	10.31

♥ Package quantity is 10.

Polyethylene

Color is clear.

Wd.	Ht.	Thick., mils	Pkg. Qty.		Pkg.
4″	6″	2	100	20705T2	$11.78
5″	8″	2	100	20705T3	13.88
6″	10″	2	50	20705T4	7.91
9″	12″	2	50	20705T6	8.31
10″	14″	2	50	20705T7	9.70

Paper Bags

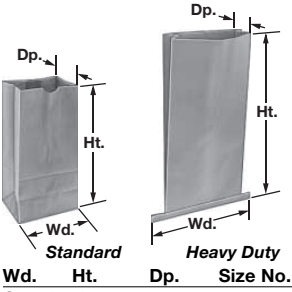

Standard *Heavy Duty*

Bags have an open top. Color is brown.

Standard bags have a flat bottom that allows them to stand and be filled more easily.

Heavy duty bags are taller and stronger than other paper bags. They're two-ply and have sewn bottoms for added durability.

Wd.	Ht.	Dp.	Size No.	Pkg. Qty.		Pkg.
Standard						
4 1/8″	7 7/8″	2 1/2″	2	100	1977T1	$6.51
5 1/4″	10 15/16″	3 7/16″	5	100	1977T4	7.39
6 1/8″	12 3/8″	4″	8	50	1977T7	7.70
7 3/4″	16″	4 3/4″	16	25	1977T21	9.80
8 1/4″	18″	5 1/4″	25	25	1977T23	7.40
12″	17″	7″	1/6	25	1977T24	8.24
Heavy Duty						
6″	39″	3 1/2″	—	1	14325T11	1.83
12″	24″	4″	—	1	14325T15	.57
18″	36″	9″	—	1	14325T16	1.42

Burlap Bags

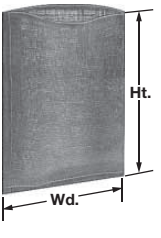

Bags have an open top. Color is tan.

Lightweight bags are made of 7-oz. burlap and have a loose weave.

Heavyweight bags are made of 10-oz. burlap and have a tighter weave for extra sturdiness.

Wd.	Ht.	Pkg. Qty.	Lightweight	Pkg.	Heavyweight	Pkg.
8″	12″	10	1923T11	$6.22	1923T31	$7.31
12″	20″	10	1923T12	7.90	1923T32	8.39
14″	20″	10	1923T13	8.36	1923T33	9.04
18″	24″	10	1923T14	11.17	1923T34	12.26
21″	44″	5	1923T15	8.66	1923T35	9.07

Square Corrugated Cardboard Tubes

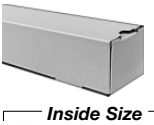

The shape of these tubes prevents rolling. Tubes meet Edge Crush Test (ECT) 32, which means they can withstand up to 32 lbs. of force per inch before the edges collapse. Close by tucking tabs into their slots. Shipped flat. Color is white.

Inside Size Wd.	Ht.	Lg.	Wall Thick.		
3″	3″	25″	0.125″	20895T72	$1.99
3″	3″	37″	0.125″	20895T73	2.63
3″	3″	43″	0.125″	20895T74	2.73
5″	5″	25″	0.125″	20895T75	2.55
5″	5″	37″	0.125″	20895T76	3.31
5″	5″	43″	0.125″	20895T77	3.75

Cardboard Tubes

Store and mail blueprints, posters, and maps, as well as protect parts and rods.

End-Cap Style—Come with two polyethylene end caps. Color is white.

Heavy Duty End-Cap Style—Tubes are thick for extra crush resistance. Two steel end caps with gripper teeth are included. Color is brown.

Telescoping-Cap Style—A 6″ cap slides on to close the tube. Tape the seam when shipping. Tubes have a permanent steel end. Color is white.

Screw-Cap Style—A threaded cap provides a secure closure. Tubes have a crimped cap on the end. Caps are made of aluminum. Color is brown.

End-Cap Style

Telescoping-Cap Style

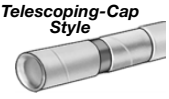

Screw-Cap Style

Inside Dia.	Lg.	Wall Thick.	Pkg. Qty.		Pkg.
End-Cap Style					
2″	18″	0.060″	5	20545T21	$6.84
2″	24″	0.060″	5	20545T22	7.65
2″	30″	0.060″	5	20545T23	8.47
2″	36″	0.060″	5	20545T24	10.14
2″	48″	0.060″	5	20545T29	13.64
3″	18″	0.070″	5	20545T25	9.29
3″	24″	0.070″	5	20545T26	10.38
3″	30″	0.070″	5	20545T27	11.96
3″	36″	0.070″	5	20545T28	13.66
4″	18″	0.080″	5	20545T35	13.31
4″	24″	0.080″	1	20545T36	3.89
4″	30″	0.080″	1	20545T37	4.07
4″	36″	0.080″	1	20545T38	4.56
4″	48″	0.080″	1	20545T39	5.53
Extra End Caps for 2″ Dia. Tubes			10	20545T41	2.70
Extra End Caps for 3″ Dia. Tubes			10	20545T42	4.80
Extra End Caps for 4″ Dia. Tubes			10	20545T43	7.43
Heavy Duty End-Cap Style					Each
3¼″	39″	0.150″		1951T33	$11.15
3¼″	51″	0.150″		1951T35	12.67
3¼″	63″	0.150″		1951T37	13.74
Extra Steel End Cap				1951T39	.62
Telescoping-Cap Style					
2⅞″	24″	0.125″		20545T31	2.48
2⅞″	36″	0.125″		20545T33	2.74
2⅞″	42″	0.125″		20545T34	3.09
Screw-Cap Style					
1¾″	4¼″	0.125″		38585T11	2.42
2¼″	6¾″	0.125″		38585T14	3.14
3⅛″	7½″	0.125″		38585T15	4.21

Cut-to-Length Plastic Tubes

Round Tube (Shown with Square End Caps)

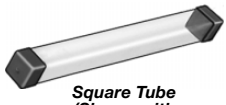

Square Tube (Shown with Square End Caps)

Use scissors to cut these clear, semirigid polyethylene tubes to the length you need. Tubes are oil and moisture resistant. Wall thickness is 0.022″.

Round tubes use red vinyl end caps (sold separately). *Sealed-end* tubes have one open end.

Square tubes won't roll away. They can be stacked, and the flat surface is easier to label than a round surface. PVC end caps (sold separately) close the ends of the tubes. **To Order:** For end caps, please specify black or red.

Inside Size	Tubes Lg.	Tubes Each	End Caps Shape	End Caps Pkg. Qty.	End Caps	Pkg.
Round						
0.28″ Dia.	48″	2044T41	$0.83	Square	100	2044T61	$7.60
0.40″ Dia.	48″	2044T42	1.10	Square	100	2044T62	8.87
0.53″ Dia.	48″	2044T43	1.37	Square	100	2044T63	9.03
0.70″ Dia.	48″	2044T44	1.56	Square	100	2044T64	13.27
0.79″ Dia.	48″	2044T45	1.72	Square	100	2044T65	17.73
0.93″ Dia.	48″	2044T46	2.06	Square	50	2044T66	8.80
1.09″ Dia.	48″	2044T47	2.21	Square	50	2044T67	10.77
1.36″ Dia.	48″	2044T48	2.85	Square	50	2044T68	13.22
1.64″ Dia.	48″	2044T49	3.89	Square	25	2044T69	9.87
2.05″ Dia.	48″	2044T51■	6.14	Round	25	2044T71	10.63
2.55″ Dia.	48″	2044T52■	6.88	Round	25	2044T72	12.90
Round with Sealed End						
0.28″ Dia.	5″	2044T73	.56	Square	100	2044T61	7.60
0.40″ Dia.	4¾″	2044T74	.58	Square	100	2044T62	8.87
0.53″ Dia.	7″	2044T75	.83	Square	100	2044T63	9.03
0.70″ Dia.	6⅛″	2044T76	1.02	Square	100	2044T64	13.27
0.79″ Dia.	6⅛″	2044T77	1.17	Square	100	2044T65	17.73
0.93″ Dia.	4¾″	2044T78	1.01	Square	50	2044T66	8.80
1.09″ Dia.	7″	2044T79	1.21	Square	50	2044T67	10.77
1.36″ Dia.	4¾″	2044T81	1.31	Square	50	2044T68	13.22
Square						
0.40″ Sq.	48″	1921T11	1.53	Square	100	1921T31	8.08
0.53″ Sq.	48″	1921T12	1.81	Square	100	1921T32	8.82
0.79″ Sq.	48″	1921T13	2.13	Square	50	1921T33	7.08
1.09″ Sq.	48″	1921T14	2.96	Square	50	1921T34	9.08
1.36″ Sq.	48″	1921T15	3.58	Square	25	1921T35	8.66

■ Wall thickness is 0.028″.

Adjustable-Length Plastic Tubes

Set the length of these tubes to fit their contents. Durable and reusable, tubes are made of rigid PVC and resist oil and moisture. Color is clear. Wall thickness is 0.04″.

Round tubes can be adjusted by twisting the two halves. A hexagon end prevents rolling.

Square tubes are easier to label and stack. To adjust the length, push the ends of the tube together or pull them apart.

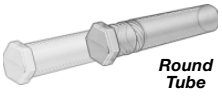

Round Tube

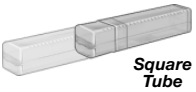

Square Tube

Inside Size	TUBE LENGTH 3⅛″ Min. to 4¾″ Max.		TUBE LENGTH 4¾″ Min. to 7⅞″ Max.		TUBE LENGTH 7⅞″ Min. to 13¾″ Max.	
Round Tubes						
0.39″ Dia.	2108T11	$0.88	2108T12	$0.98		
0.51″ Dia.	2108T14	.94	2108T15	1.05	2108T16	$1.28
0.63″ Dia.	2108T17	1.06	2108T18	1.21	2108T19	1.52
0.79″ Dia.	2108T21	1.11	2108T22	1.33	2108T23	1.61
0.87″ Dia.	2108T24	1.20	2108T25	1.39	2108T26	1.73
1.02″ Dia.	2108T27	1.58	2108T28	1.66	2108T29	2.13
1.26″ Dia.	2108T31	1.63	2108T32	1.81	2108T33	2.26
1.46″ Dia.	2108T34	1.71	2108T35	1.92	2108T36	2.37
1.65″ Dia.	2108T37	1.74	2108T38	1.97	2108T39	2.46
2.05″ Dia.	2108T41♣	1.97	2108T42♣	2.39	2108T43♣	3.19
2.56″ Dia.	2108T44♣	2.39	2108T45♣	3.12	2108T46♣	4.15
3.15″ Dia.	2108T47♣	5.79	2108T48♣	7.48	2108T49♣	8.52
4.13″ Dia.	2108T51♣	7.02	2108T52♣	8.52	2108T53♣	9.42
Square Tubes						
0.55″ Sq.	2108T54	.85	2108T55	.95	2108T56	1.15
1″ Sq.	2108T57	1.10	2108T58	1.18	2108T59	1.51
1.77″ Sq.	2108T61	1.87	2108T62	2.19	2108T63	2.76
2.17″ Sq.	2108T64♣	2.12	2108T65♣	2.46	2108T66♣	3.18

♣ Made of polyethylene; color is white.

Spools

Store twine, wire, rope, and chain. Spools are black plastic.

One-Piece Spools

No assembly required—these spools are all one piece.

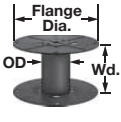

Wd.	Core OD	Core ID	Flange Dia.		Each
4″	1⅞″	¾″	6½″	2381T11	$6.05
5″	1⅞″	¾″	6½″	2381T21	6.24
5″	3½″	¾″	10½″	2381T15	16.60
6″	1⅞″	¾″	6½″	2381T13	6.51
6″	3½″	¾″	10½″	2381T17	16.70
8″	1⅞″	¾″	6½″	2381T22	6.65
8″	3½″	¾″	10½″	2381T19	17.02
10″	1⅞″	¾″	6½″	2381T23	6.93
10″	3½″	¾″	10½″	2381T25	17.53
12″	1⅞″	¾″	6½″	2381T24	7.21
12″	3½″	¾″	10½″	2381T26	17.91

Build-Your-Own Spools

Create a custom spool with these interchangeable cores and flanges. *Note:* For each spool, order one core plus one pair of flanges.

Flanges are threaded and have tabs for nonslip stacking.

Cores Wd.	OD	ID		Each	Flanges Dia.		Pair
4½″	6″	1½″	38305T28	$3.43	12″	38305T33	$6.43
5½″	6″	1½″	38305T29	3.43	14″	38305T21	10.46
7¼″	6″	2¼″	38305T31	3.43	18″	38305T22	12.51
9″	6″	1½″	38305T32	3.43	24″	38305T23	21.89
11″	6″	1½″	38305T11	4.26			
17″	6″	1½″	38305T12	4.89			
19″	8″	2¼″	38305T13	6.37			
25″	8″	1½″	38305T14	8.06			

Shipping Envelopes

Bubble-Lined Paper

Envelopes have an adhesive-strip closure, except for *open-top paper* envelopes.

Paper envelopes have a durable exterior. Color is brown.

Plastic envelopes have a water- and tear-resistant exterior. Color is white.

Padded envelopes have a paper-filled liner to cushion contents. Envelopes also have a reinforced bottom.

Bubble-lined envelopes have a puncture-resistant liner with 1/8″ high bubbles that protects contents.

Bubble Lined

Wd.	Ht.	Size No.	Paper Pkg. Qty.	Paper Pkg.	Plastic Pkg. Qty.	Plastic Pkg.
5″	10″	00	25	2049T83	—	—
6″	10″	0	25	2049T84	10	$7.62
8½″	12″	2	25	2049T86	10	9.95
9½″	14½″	4	25	2049T88	10	12.18
10½″	16″	5	10	2049T89	10	14.95
14¼″	20″	7	10	2049T92	10	23.52
5″	10″	00	25	2049T83	10	1901T62 $7.62
6″	10″	0	25	2049T84	10	1901T63 9.95
8½″	12″	2	25	2049T86	10	1901T64 12.18
9½″	14½″	4	25	2049T88	10	1901T65 14.95
10½″	16″	5	10	2049T89	10	1901T66 23.52

Padded

Wd.	Ht.	Size No.	Pkg. Qty.	Open-Top Paper Pkg.	Paper Pkg.
5″	10″	00	10	1947T12 $4.49	—
6″	10″	0	10	1947T13 4.82	1947T91 $6.49
8½″	12″	2	10	1947T15 6.09	1947T93 8.04
9½″	14½″	4	10	1947T17 7.22	1947T95 9.91
10½″	16″	5	10	1947T18 8.33	1947T96 12.09
14¼″	20″	7	5	1947T23 7.76	1947T98 8.97

Plain

Wd.	Ht.	Pkg. Qty.	Plastic Pkg.
6″	9″	25	19535T11 $9.34
7½″	10½″	25	19535T17 10.22
9″	12″	25	19535T13 11.78
10″	13″	25	19535T14 12.34
12″	15½″	10	19535T15 8.56
14½″	19″	10	19535T18 10.20

Corrugated Cardboard Boxes

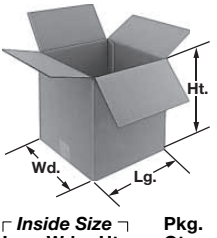

Optional Stand

Flaps meet in the center when folded. Boxes are tested to Edge Crush Test (ECT) standards, which measure the amount of force a carton can withstand before the edges collapse. Color is brown. Shipped flat.

Standard boxes meet ECT 32 (32 lbs. per inch), which is comparable to a 200-lb. burst strength. ***Heavy duty*** boxes meet ECT 44 (44 lbs. per inch), which is comparable to a 250-lb. burst strength. ***Double-wall heavy duty*** boxes meet ECT 51 (51 lbs. per inch), which is comparable to a 275-lb. burst strength.

Optional stand has five dividers for sorting boxes. It is made of steel with a black painted finish.

For box sealing tape and sealing tape dispensers, see pages 3433-3437.

Inside Size Lg.	Wd.	Ht.	Pkg. Qty.		Pkg.
Standard					
4″	4″	4″	10	2056T211	$5.76
5″	5″	5″	10	2056T212	6.80
6″	4″	4″	10	2056T213	6.52
6″	6″	4″	10	2056T214	7.20
6″	6″	6″	10	2056T215	7.34
8″	6″	4″	10	2056T216	9.00
8″	6″	6″	10	2056T217	9.97
8″	8″	4″	10	2056T218	10.19
8″	8″	6″	10	2056T219	10.49
8″	8″	8″	10	2056T311	11.95
9″	9″	9″	10	2056T23	14.64
10″	6″	6″	10	2056T312	10.74
10″	8″	6″	10	2056T313	12.34
10″	8″	8″	10	2056T314	13.52
10″	10″	5″	10	2056T315	13.75
10″	10″	10″	10	2056T316	16.60
12″	6″	4″	10	2056T317	10.07
12″	6″	6″	10	2056T34	10.64
12″	8″	6″	10	2056T318	13.02
12″	8″	8″	10	2056T319	14.48
12″	10″	4″	10	2056T361	14.26
12″	10″	6″	10	2056T362	15.58
12″	10″	8″	10	2056T363	17.77
12″	12″	2″	10	2056T814	24.57
12″	12″	6″	10	2056T364	18.28
12″	12″	10″	10	2056T365	20.06
12″	12″	12″	10	2056T366	21.28
14″	8″	8″	10	2056T367	15.43
14″	10″	8″	10	2056T103	19.01
14″	11″	6″	10	2056T368	17.15
14″	14″	14″	10	2056T369	28.84
Standard (Cont.)					
16″	12″	10″	10	2056T411	$23.82
16″	12″	12″	10	2056T121	26.69
16″	16″	12″	10	2056T412	34.71
16″	16″	16″	10	2056T413	37.60
18″	6″	6″	10	2056T414	12.52
18″	10″	8″	10	2056T415	23.63
18″	12″	6″	10	2056T416	24.19
18″	12″	10″	10	2056T417	25.24
18″	12″	12″	10	2056T418	25.91
18″	14″	8″	10	2056T419	26.62
18″	18″	4″	5	2056T815	16.98
18″	18″	18″	5	2056T421	23.27
20″	12″	8″	5	2056T442	18.10
20″	14″	12″	5	2056T443	19.88
20″	20″	12″	5	2056T444	31.38
20″	20″	20″	5	2056T67	34.42
24″	4″	4″	5	2056T811	15.40
24″	6″	6″	5	2056T445	13.41
24″	12″	12″	5	2056T446	21.32
24″	16″	16″	5	2056T169	33.52
24″	24″	6″	5	2056T816	32.14
24″	24″	16″	5	2056T75	43.20
24″	24″	24″	5	2056T76	45.31
26″	18″	16″	5	2056T77	36.78
30″	14″	10″	5	2056T175	29.88
32″	6″	6″	5	2056T812	19.12
36″	14″	10″	5	2056T447	31.47
36″	16″	16″	5	2056T448	38.22
36″	24″	6″	5	2056T817	37.36
48″	8″	8″	5	2056T813	30.86
Heavy Duty					
4″	4″	4″	10	20855T61	$24.62
6″	6″	6″	5	20855T62	8.25
8″	6″	4″	5	20855T63	10.91
8″	6″	6″	5	20855T64	14.09
8″	8″	8″	5	20855T65	13.88
10″	10″	10″	5	20855T66	13.52
12″	12″	6″	5	20855T67	14.53
12″	12″	12″	5	20855T68	18.29
14″	14″	14″	5	20855T69	16.97
16″	12″	10″	5	20855T81	15.92
16″	16″	16″	5	20855T82	20.09
18″	12″	12″	5	20855T83	15.60
18″	18″	12″	5	20855T84	26.81
18″	18″	18″	5	20855T39	28.94
20″	16″	14″	5	20855T85	26.86
20″	20″	20″	5	20855T42	35.75
24″	12″	12″	5	20855T43	24.24
24″	18″	12″	5	20855T86	28.97
24″	24″	16″	5	20855T44	44.74
24″	24″	24″	5	20855T45	46.70
Double-Wall Heavy Duty					
12″	12″	12″	5	20855T11	23.69
14″	14″	14″	5	20855T12	27.83
16″	16″	16″	5	20855T13	32.57
18″	18″	18″	5	20855T14	38.10
20″	20″	20″	5	20855T15	44.26
24″	24″	24″	5	20855T16	58.81

Optional Stand (44″ Lg. × 18″ Wd. × 26″ Ht.) ..... 2056T818 Each $196.25
Optional Casters for Stand (4/Set) ..... 2056T819 Set 38.54

Adjustable-Height Corrugated Cardboard Boxes

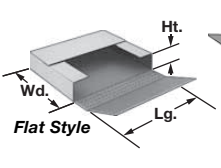

Flat Style

Standard Style

Fold along the incremental creases to adjust the height. Boxes meet Edge Crush Test (ECT) 32, withstanding up to 32 lbs. of force per inch before the edges collapse. Shipped flat. ***Flat style*** are sized for mailing catalogs and books. Color is white. ***Standard style*** are brown.

Inside Size Lg.	Wd.	Ht.	Style	Pkg. Qty.		Pkg.
9⅝″	6⅝″	⅝″, 1¼″	Flat	5	20905T11	$5.59
11⅛″	8⅝″	½″, 1″, 1½″, 2″	Flat	5	20905T13	6.60
11¼″	8¾″	2″, 4″, 6″	Standard	5	20905T21	18.57
12″	9″	2″, 4″, 6″	Standard	5	20905T23	18.26
14″	12″	2″, 4″, 6″	Standard	5	20905T26	23.48
17⅛″	14⅛″	½″, 1″, 1½″, 2″	Flat	5	20905T16	11.29
26″	20″	4″, 6″, 8″, 10″, 12″	Standard	5	20905T28	43.67

Reinforced Corrugated Cardboard Boxes

Once folded, these reinforced cartons have double walls on three sides for added support. Boxes meet Edge Crush Test (ECT) 32, withstanding up to 32 lbs. of force per inch before the edges collapse. Color is white. Shipped flat.

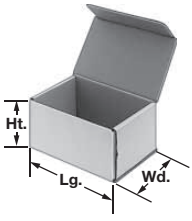

Inside Size Lg.	Wd.	Ht.	Pkg. Qty.		Pkg.
3″	3″	2″	10	21225T81	$5.56
4″	4″	3″	10	21225T82	7.46
5″	3″	2″	10	21225T83	6.20
5″	5″	3″	10	21225T85	9.04
6″	4″	3″	10	21225T86	7.97
6½″	4⅞″	3¾″	10	21225T87	9.89
8″	4″	4″	10	21225T91	9.66
10″	4″	4″	10	21225T93	9.14
13½″	3½″	3½″	10	21225T94	9.29
36¼″	4⅞″	4″	10	21225T97	23.42

Static Control Corrugated Cardboard Boxes

Protect your static-sensitive materials. Boxes are lined with 1½″ thick (½″ base, 1″ peak) foam that prevents static build-up. Rated to 200 lbs. for burst strength. Box color is black. Shipped assembled.

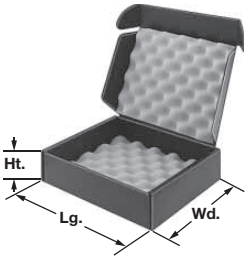

Inside Size Lg.	Wd.	Ht.		
7″	5″	2½″	20835T11	$5.84
10½″	8½″	2½″	20835T14	9.64
12½″	10½″	2½″	20835T16	11.90
15¼″	7⅛″	2½″	20835T15	10.99
20½″	15½″	2½″	20835T17	32.46

Liquid Shipping Containers

Containers are authorized for shipping hazardous materials per CFR Title 49. All containers include a corrugated cardboard box.

Note: It is the responsibility of the shipper to properly package and label all hazardous materials, and ensure appropriate method of shipment in compliance with all applicable regulatory guidelines.

Certified for Packing Groups II and III

Suitable for most liquids, containers are made of FDA-compliant polyethylene resin. The *5-gal. containers* have a handle.

Built-in container collapses as it dispenses for uninterrupted flow. Container has a 38 mm screw cap. Box is white and has an opening to access the container's spout.

Removable container has a 70 mm screw cap with threads for attaching a spigot. It also has a pouring vent with a cap. Box is brown.

Built-In Container

Removable Container

Cap., gal.	Meet Specification		
Built-In Container			
2½	UN 4G/Y16/S	4935T8	$9.23
5	UN 4G/Y32/S	4935T9	11.23
Removable Container			
5	UN 4G/Y30/S	49525T68	14.43

Certified for Packing Groups I, II, and III

Get superior leak protection for hazardous liquids. Primary container is made of amber glass and has a 53 mm PTFE-coated screw cap. Include a sorbent pouch, a can-style secondary container, a 4-mil thick poly bag, a corrugated insert, a box, tape for all sealing requirements, and instructions.

Cap., oz.	Meet Specification		
16	UN 4GV/X4/S	49525T72	$46.80
32	UN 4GV/X4/S	49525T82	49.18

Insulated Corrugated Cardboard Boxes

Lined with 2″ thick polystyrene panels, these boxes protect temperature-sensitive products during shipping. Rated to 200 lbs. for burst strength. Box color is white. Shipped assembled.

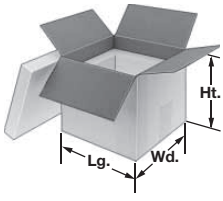

Inside Size Lg.	Wd.	Ht.		
6½″	8″	6″	20725T4	$13.26
8″	9½″	6″	20725T5	14.40
8″	9½″	9½″	20725T6	17.21
12″	15″	12″	20725T7	28.58

Lightweight Cardboard Boxes

Boxes conform to Fed. Spec. PPP-B-566 Variety I, Style II, Type D, Class A for folding cardboard boxes. Color is brown. Shipped flat.

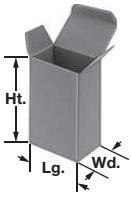

Inside Size Lg.	Wd.	Ht.	Wall Thick.	Pkg. Qty.		Pkg.
2″	2″	3″	0.024″	10	2070T22	$7.55
3″	2″	5¼″	0.036″	10	2070T23	8.47
4″	2½″	6¼″	0.036″	10	2070T25	9.04
5″	3¼″	7¼″	0.036″	10	2070T26	10.61

Corrugated Polypropylene Boxes

Strong and reusable, boxes resist punctures, moisture, and many acids. Color is white. Shipped flat.

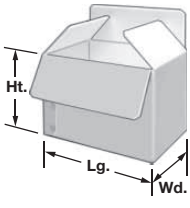

Inside Size Lg.	Wd.	Ht.	Wall Thick.		
10″	10″	10″	0.16″	20975T1	$16.77
24″	12″	12″	0.2″	20975T5	31.81
26″	18″	16″	0.2″	20975T6	34.46

Cardboard Shipping Crates

Multiple layers of laminated cardboard make these crates a more durable alternative to corrugated boxes. They are also lighter, less expensive, and more shock resistant than wood crates. Crates consist of two U-shaped channels and two U-shaped end caps. They can be cut to any length with a band saw. To assemble, place one channel on top of the other and close off the ends with the end caps. Color is white.

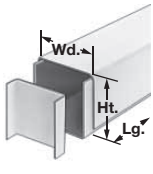

Overall Size Lg.	Wd.	Ht.	Crate Wall Thick.			Extra End Cap	
48″	4″	4″	0.16″	30165T52	$27.78	30165T32	$0.70
48″	6″	6″	0.16″	30165T53	33.73	30165T33	1.63
48″	8″	8″	0.16″	30165T54	46.76	30165T34	2.65
48″	12″	8″	0.16″	30165T55	54.12	30165T35	4.07

Box-Stitching Wire

Refill your electric box-bottom stitchers. Wire is furnished in a 25-lb. coil that has an approximate 2⅝″ ID. Made of steel with a copper finish.

Wd.	Thick.		
0.074″	0.037″	1954T3	$67.84
0.103″	0.020″	1954T6	67.84

Box Reducers

Save on shipping costs—cut your boxes down to size. Run the steel scoring wheel along the inside of the box to create new flaps that fold over. You can reduce box height by 2⅜″ to 11¾″. Reducer is 12¾″ long and made of chrome-plated steel.

Box Reducer	2036T15	$16.94
Repl. Scoring Wheel	2036T19	2.12

Box Staplers

Precisely set staples into corrugated cardboard boxes. These staplers have adjustable settings that control the tightness of the staple clinch and the depth of the staple, which prevents the staple from coming into contact with the box contents.

Staplers for 5/8″ leg length are for use on single-wall corrugated boxes. For double-wall corrugated boxes, use staplers for 3/4″ leg length.

Anvils perform the clinching operation in the stapler. They are interchangeable, so you can modify staplers to accept either leg length by swapping the anvil with another size (replacement anvils sold separately).

Air-powered staplers have a 1/4″ NPT air inlet and operate on 80-90 psi.

Roll-style staplers are for high-production applications. To modify the leg length capacity of the staplers, the staple tray (sold separately) must also be changed.

Repair kits contain the most frequently requested parts, including springs and fasteners. Kits for air-powered staplers also include O-rings and a fully assembled valve stem. *Note:* Kits do not include anvils; replacement anvils are sold separately.

Replacement anvils include one right-hand and one left-hand anvil plus mounting screws.

Replacement staple trays (also known as magazines) hold the strip or roll of staples.

Staple Wd.	Staple Leg Lg.	Staplers: Staple Capacity	Staplers: Each	Staples: Staples per Box	Staples: Box	Repair Kits: Each	Replacement Anvils: Each	Replacement Staple Trays: Each
Manual Strip-Style Staplers								
1 1/4″	5/8″	150	2028T61 $208.25	2,500	2028T15 $8.98	2028T71 $27.04	2026T42 $32.89	2038T52 $66.44
1 1/4″	3/4″	150	2028T62 208.25	2,000	2028T16 8.02	2028T71 27.04	2026T43 32.89	2038T52 66.44
1 3/8″	5/8″	100	2028T63 208.25	2,500	2028T17 10.98	2028T71 27.04	2026T42 32.89	2038T52 66.44
1 3/8″	3/4″	100	2028T64 208.25	2,000	2028T18 9.43	2028T71 27.04	2026T43 32.89	2038T52 66.44
Air-Powered Strip-Style Staplers								
1 1/4″	5/8″	150	2038T41 398.74	2,500	2028T15 8.98	2026T41 81.27	2026T42 32.89	2038T52 66.44
1 1/4″	3/4″	150	2038T42 398.74	2,000	2028T16 8.02	2026T41 81.27	2026T43 32.89	2038T52 66.44
1 3/8″	5/8″	100	2038T43 398.74	2,500	2028T17 10.98	2026T41 81.27	2026T42 32.89	2038T52 66.44
1 3/8″	3/4″	100	2038T44 398.74	2,000	2028T18 9.43	2026T41 81.27	2026T43 32.89	2038T52 66.44
Air-Powered Roll-Style Staplers				Staples per Roll	Roll			
1 1/4″	5/8″	1,000	2026T21 497.74	1,000	2026T13 4.48	2026T41 81.27	2026T42 32.89	2026T24 178.85
1 1/4″	3/4″	1,000	2026T22 497.74	1,000	2026T14 4.69	2026T41 81.27	2026T43 32.89	2026T25 175.83

Box-Bottom Staplers

Manual

Also known as bottomers, these staplers secure the bottoms of boxes. They hold 250 1 1/4″ wide staples (sold separately) with either a 5/8″ or 3/4″ leg length. Staplers are 46″ Lg.×24″ Wd. (at the rear legs)×52″ Ht. and have leveling pads for stability. Max. box height is 39″.

Air-powered stapler is furnished with a combination filter/regulator. It has a 1/4″ NPT air inlet and operates on 60-80 psi.

Staplers		Each
Manual	19245T11	$734.50
Air-Powered	19245T12	1,159.58

Staples: Leg Lg.	Staples per Box		Box
5/8″	2,500	2028T15	$8.98
3/4″	2,000	2028T16	8.02

Box Staples

Staples with 5/8″ long legs are for use on single-wall corrugated cardboard boxes. For double-wall corrugated cardboard boxes, use staples with 3/4″ long legs.

Strip-Style Staples

Staple Type	Wd.	Leg Lg.	Staples per Box	Box 1-9	Box 10-Up
For BEA, Beck, CCC, Duo-Fast, ISM, Kihlberg, and Salco Staplers					
C58, JK561-C58	1 1/4″	5/8″	2,500	2028T15 $8.98	$7.77
C34, JK561-C34	1 1/4″	3/4″	2,000	2028T16 8.02	6.94
A58	1 3/8″	5/8″	2,500	2028T17 10.98	9.53
A34	1 3/8″	3/4″	2,000	2028T18 9.43	8.16
For Bostitch Staplers					
SW7437-58	1 3/8″	5/8″	2,500	2028T21 11.68	10.13
SW7437-34	1 3/8″	3/4″	2,000	2028T23 10.38	9.35

Roll-Style Staples

Staple Type	Wd.	Leg Lg.	Staples per Roll	Roll 1-23	Roll 24-Up
For BEA, Beck, CCC, Duo-Fast, ISM, Kihlberg, and Salco Staplers					
RR1-58, JK555-5/8	1 1/4″	5/8″	1,000	2026T13 $4.48	$3.93
RR1-34, JK555-3/4	1 1/4″	3/4″	1,000	2026T14 4.69	4.12
For Bostitch Staplers					
SWC7437-58-1M	1 3/8″	5/8″	1,000	2026T15 4.67	4.10
SWC7437-34-1M	1 3/8″	3/4″	1,000	2026T18 4.90	4.30

Corrugated Sheets

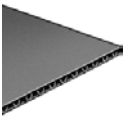

Use these sheets as liners between pallets or layers of stacked material. Sheets can also reinforce the bottom of shipping boxes.

Cardboard sheets are brown.

Polypropylene sheets resist punctures, moisture, and many acids. Color is white.

Wd.	Lg.	Thick.	Pkg. Qty.		Pkg.
Cardboard					
24″	36″	3/16″	5	20585T22	$6.89
36″	48″	3/16″	5	20585T24	11.21
Crush-Resistant Cardboard					
20″	48″	1/2″	4	2088T42	28.12
Polypropylene					
12″	12″	1/8″	5	20585T25	5.63
24″	24″	1/8″	1	20585T26	4.60
24″	48″	1/8″	1	20585T27	9.20
48″	48″	1/8″	1	20585T28	17.48

Corrugated Cardboard Rolls

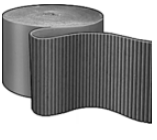

Wrap or weave between items to provide cushioning. Rolls have a 17″ diameter. Color is brown.

Wd.	Lg., ft.	Thick.		Roll
18″	100	3/16″	1917T5	$15.04
24″	100	3/16″	1917T6	19.41
36″	100	3/16″	1917T7	28.91
48″	100	3/16″	1917T8	38.46

Paper Roll Cutters

Horizontal

Vertical

A spring-loaded blade provides clean cuts every time. Cutters fit rolls up to 9″ in diameter. Made of steel with a gray powder-coated finish. Mounting fasteners not included.

Horizontal cutters mount on a countertop, under a counter, or on the wall. Cutters have four 1/4″ dia. mounting holes. Come with rubber feet. Shipped assembled.

Vertical cutters fit in a 14″×14″ area. Four 1/2″ dia. mounting holes in the legs let you stabilize the cutter. Shipped unassembled.

For Roll Wd.		
Horizontal Cutters		
12″	1945T3	$34.00
18″	1945T5	41.25
20″	1945T6	44.26
24″	1945T7	49.14
30″	1945T8	56.12
36″	1945T9	60.75
Vertical Cutters		
30″ and 36″	2067T16	203.49
40″ and 48″	2067T18	241.57

One mil equals 0.001″.

Paper Rolls and Sheets

Rolls have a 9″ diameter with a 1″ ID core.
White Newsprint—Clean, low-cost packing material.
Brown Kraft—Good as an outer wrap for parcels.
Reinforced Brown—Two sheets of brown paper (also known as kraft paper) are layered and reinforced with high-strength fiberglass to handle heavy products. Also protects contents from moisture.
Raised Pattern Brown—The raised pattern provides absorbency. Ideal as an interleaving material.
Laminated White—Also known as freezer paper, this FDA-compliant paper is coated with polyethylene on one side for resistance to moisture and tearing.

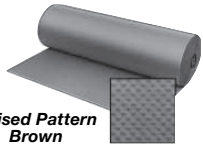
Raised Pattern Brown

Rolls

Wd.	White Newsprint Lg., ft.	Thick., mils	Roll	Brown Kraft Lg., ft.	Thick., mils	Roll	White Kraft Lg., ft.	Thick., mils	Roll
12″	1,440	2	20565T13 $19.43	1,000	4.5	1916T51 $23.72	1,000	4	2174T11 $31.28
18″	1,440	2	20565T14 29.15	1,000	4.5	1916T52 33.83	1,000	4	2174T12 47.00
24″	1,440	2	20565T15 38.90	1,000	4.5	1916T53 41.57	1,000	4	2174T13 62.56
30″	1,440	2	20565T16 48.45	1,000	4.5	1916T54 60.68	1,000	4	2174T14 78.46
36″	1,440	2	20565T17 58.10	1,000	4.5	1916T55 64.52	1,000	4	2174T15 94.15
48″	1,440	2	20565T19 77.53	1,000	4.5	1916T57 85.38	1,000	4	2174T16 125.59

Wd.	Reinforced Brown Lg., ft.	Thick., mils	Roll	Raised Pattern Brown Lg., ft.	Thick., mils	Roll	Laminated White Lg., ft.	Thick., mils	Roll
12″	—	—	—	—	—	—	1,000	3.5	1974T21 $41.80
18″	300	8	2060T38■ $59.41	360	15	2138T12 $24.84	1,000	3.5	1974T22 62.60
24″	300	8	2060T39■ 79.95	360	15	2138T13 33.24	1,000	3.5	1974T23 82.76
30″	300	8	2060T37■ 99.95	360	15	2138T14 41.55	1,000	3.5	1974T24 107.16
36″	300	8	2060T41■ 112.95	360	15	2138T15 49.65	1,000	3.5	1974T25 165.47
48″	300	8	2060T42■ 148.87	—	—	—	1,000	3.5	1974T26 220.67

■ Has a 6″ dia.

Sheets

Wd.	Lg.	White Newsprint Thick., mils	Sheets/Pkg.	Pkg.	Brown Kraft Thick., mils	Sheets/Pkg.	Pkg.
15″	20″	2	2,400	20565T21 $54.33	4	1,800	1916T71 $88.45
18″	24″	2	1,660	20565T22 54.33	4	1,250	1916T72 88.45
24″	36″	2	165	20565T23 19.22	—	—	—
24″	36″	2	833	20565T12 54.33	4	625	1916T73 88.45

Corrosion- and Tarnish-Inhibiting Wrap

Also known as volatile corrosion inhibitor (VCI) wrap, these chemically impregnated wraps protect metals from corrosion and tarnish. For the best protection, the coated side should be in contact with the metal.

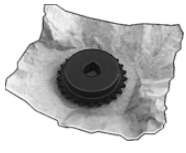

Corrosion-Inhibiting Wrap

Paper—Also known as kraft paper, for use on ferrous metal products. Meets MIL-PRF-3420.
Polyethylene Film—Heat-sealable film that's particularly effective for protecting steel and tin. The *18″ roll* unfolds into 36″×36″ perforated sheets; the *24″ roll* unfolds into 48″×48″ perforated sheets. The *48″ roll* is not folded or perforated.

Wd.	Roll Lg., ft.	Dia.	Thick., mils	Color	Roll
Paper					
36″	300	6″	4.4	Brown	7889T32 $98.00
36″	300	7″	7	Brown	7889T34 115.80
Polyethylene Film					
18″	500	6″	1.5	Yellow	7889T28 67.71
24″	500	6″	1.5	Yellow	7889T29 93.90
48″	250	5″	4	Green	7889T27 99.74

Tarnish-Inhibiting Wrap

This bleached, odorless paper protects silver- and gold-plated electronic components.

Wd.	Lg.	Thick., mils	Sheets/Pkg.	Color	Pkg.
12″	12″	4	50	White	2074T21 $8.58

Polyethylene Mesh Sleeves

Shield shafts and threaded parts from abrasion and chipping. Sleeves can be cut to size. They are approximately 1/16″ thick.
Corrosion-inhibiting sleeves contain a corrosion inhibitor to protect metals.
To Order: For elastic sleeves, please specify length from available lengths listed. The last length listed is the maximum continuous length.

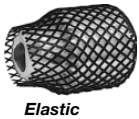
Elastic

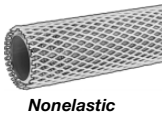
Nonelastic

Elastic Sleeves

For Dia.	Available Lengths, ft.	Color	Per Ft.
1/4″-1/2″	10, 50, 100, 200, 300, 650	Yellow	5969K21 $0.19
1/2″-1″	10, 50, 100, 200, 300, 550	Blue	5969K22 .19
1″-1 1/2″	10, 50, 100, 200, 340	Red	5969K23 .28
1 1/2″-2″	10, 50, 100, 180	Black	5969K24 .51
2″-2 1/2″	10, 50, 100, 160	White	5969K25 .61
2 1/2″-3″	10, 50, 100, 120	Yellow	5969K26 .73
3″-4″	10, 50, 90	Green	5969K27 .90
4″-5″	10, 50, 70	Orange	5969K28 1.06
5″-6″	10, 50, 60	Brown	5969K31 1.12
6″-7″	10, 50	Blue	5969K32 1.45
7″-9″	10, 40	White	5969K33 1.87

Corrosion-Inhibiting Elastic Sleeves

For Dia.	Available Lengths, ft.	Color	Per Ft.
1/4″-3/8″	10, 50, 100, 200, 300, 550, 650	White	5969K41 $0.33
3/8″-3/4″	10, 50, 100, 200, 300, 550, 650	White	5969K42 .35
1/2″-1″	10, 50, 100, 200, 300, 550, 650	White	5969K43 .49
1″-1 1/2″	10, 50, 100, 200, 300, 550, 650	White	5969K44 .60
1 1/2″-2″	10, 50, 100, 200, 300, 550, 650	White	5969K45 .65
2″-2 1/2″	10, 50, 100, 200, 300, 550, 650	White	5969K46 .68
2 1/2″-3″	10, 50, 100, 200, 300, 550, 650	White	5969K47 .86
3″-4″	10, 50	White	5969K48 .99
4″-5″	10, 50	White	5969K49 1.27
5″-6 1/4″	10, 50	White	5969K51 1.32
6 1/4″-7 1/2″	10, 50	White	5969K52 1.59
7 1/2″-9″	10, 50	White	5969K53 2.17

Nonelastic Sleeves

For Dia.	Lg., ft.	Color	Each
1/2″	3	White	5979K81 $0.65
3/4″	3	Orange	5979K82 .90
1″	3	Black	5979K83 1.22
1 1/4″	3	Green	5979K84 1.50
1 1/2″	3	Yellow	5979K85 1.56
1 3/4″	3	Gray	5979K86 1.87
2″	3	Blue	5979K87 $1.98
2 1/2″	3	Red	5979K88 2.70
3″	3	Purple	5979K89 2.88
3 1/2″	3	Brown	5979K91 3.43
4″	3	White	5979K92 4.01

One mil equals 0.001″.

Bubble Wrap

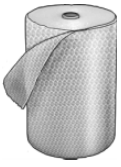

Rolls are perforated every 12″ and have a 3″ ID core. Wrap is polyethylene. Color is clear.

Bubble wrap in dispenser box allows one-hand use. The 2051T11 box is 20″ Sq.×12½″ Wd.; the 2051T36 box has an octagonal shape and is 25″ Dia.×51″ Wd.

Self-adhering bubble wrap instantly clings to itself but not the item being wrapped. Wrap continues to adhere after multiple uses.

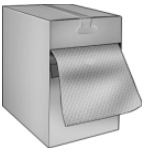

2051T11

Bubble Ht.	Bubble Dia.	Roll Wd.	Roll Lg., ft.	Roll Dia.		Roll
Bubble Wrap						
3/16″	3/8″	12″	150	18½″	2051T63	$25.00
3/16″	3/8″	12″	300	25″	2051T42	37.63
3/16″	3/8″	24″	150	18½″	2051T65	47.93
3/16″	3/8″	24″	300	25″	2051T46	82.38
1/2″	1¼″	12″	62	21½″	2051T67	14.00
1/2″	1¼″	12″	125	28″	2051T44	22.32
1/2″	1¼″	24″	62	20″	2051T69	27.64
1/2″	1¼″	24″	125	27″	2051T48	42.56
Bubble Wrap in Dispenser Box						
3/16″	3/8″	12″	175	—	2051T11	37.80
1/2″	1¼″	48″	80	—	2051T36	59.18
Self-Adhering Bubble Wrap						
3/16″	3/8″	12″	150	18″	2051T51	51.70
3/16″	3/8″	12″	300	24½″	2051T52	90.19
3/16″	3/8″	24″	150	18″	2051T53	98.78
3/16″	3/8″	24″	300	24½″	2051T54	155.14

Protective-Wrap Dispensers

Wrap Sold Separately

Mount to a wall, tabletop, or floor to dispense foam wrap or bubble wrap. Dispensers fit rolls up to 40″ in diameter and are made of steel with a black painted finish. Mounting fasteners included.

For Max. Roll Wd.	Dispenser Lg.	Dispenser Wd.	Dispenser Ht.		
12″	18½″	15½″	22″	1116T1	$41.67
24″	18½″	27½″	22″	1116T2	48.33

Absorbent Wrap

Multilayered cellulose packaging material soaks up spills and moisture and has thermal insulation qualities similar to fiberglass. It cushions, absorbs shock, and protects contents from scratches. Wrap is 100% recycled.

Rolls are perforated every 12″ and come in a dispenser box for one-hand use. Color is tan. Box size is 24″ Lg.×12¼″ Wd.×24″ Ht.

Thick.	Wd.	Lg., ft.		Roll
0.175″	12″	200	3388T17	$30.00
0.25″	12″	200	3388T25	37.61

Foam Peanuts and Dispensers

Peanuts are made of polystyrene. Color is white.

Dispenser includes a 39″ Wd.×51″ Ht. dispenser bag with frame, 6″ ID×2½ ft. Lg. flexible tube, valve to control dispensing, rope and pulleys, and mounting hardware. Minimum ceiling height is 10 ft.

Peanuts		
7½ cu. ft. Package	20535T24	$24.62
Dispenser		
30 cu. ft. Capacity	20535T11	192.31
Replacement Parts		
Tube (6″ ID×3 ft. Lg.)	20535T21	28.72
Tube (6″ ID×6 ft. Lg.)	20535T26	57.45
Valve	20535T22	58.51
Valve Tension Spring	20535T37	4.26

Foam Wrap

2007T71

Made of polyethylene, this foam is nonabrasive and moisture resistant. Rolls are perforated every 12″ and have a 3″ ID core. Color is white.

Foam wrap in dispenser box allows one-hand use. Box is 19½″ Lg.×12½″ Wd.×20″ Ht.

Self-adhering foam wrap instantly clings to itself but not the item being wrapped. Wrap continues to adhere after multiple uses.

Thick.	Wd.	Lg., ft.	Dia.		Roll
Foam Wrap					
1/16″	12″	625	25″	2007T23	$36.45
1/16″	24″	625	25″	2007T24	72.90
1/8″	12″	275	24″	2007T27	29.40
1/8″	24″	275	24″	2007T28	58.75
Foam Wrap in Dispenser Box					
1/8″	12″	175	—	2007T71	45.98
Self-Adhering Foam Wrap					
1/16″	12″	625	24″	2007T31	256.11
1/16″	24″	625	24″	2007T32	503.14

Disposable Void-Filler Air Bags

Reduce product damage in transit. These inflatable paper bags prevent tipping and provide a cushion between products and walls. Color is brown.

Use the ***inflator nozzle*** (sold separately) to fill bags with compressed air (3 psi maximum). The nozzle connects to your air supply and includes a tip that fits a receptacle in each bag. Puncture bags to deflate.

Wd.	Ht.		
24″	36″	19295T51	$13.90
36″	48″	19295T52	17.24
36″	66″	19295T53	18.17
36″	72″	19295T61	18.67
36″	84″	19295T54	19.29
48″	48″	19295T62	17.85
48″	60″	19295T63	18.43
48″	72″	19295T64	18.85
48″	84″	19295T55	21.58
48″	96″	19295T65	22.20
Inflator Nozzle (¼″ NPT Female)		19295T57	103.03
Replacement Nozzle Tip		19295T58	42.00

Heavy Duty Heat-Shrink Wrap

Use wrap for long-term storage and transportation of large and irregularly shaped objects. Wrap is made of thick polyethylene that shrinks when heated to create a skin-tight barrier. Material is folded on the roll for compact storage. Rolls are approximately 5 ft. wide and have a 3″ ID core. Shrink temperature is 275° F. Color is white.

Tape holds seams together and patches holes.

For heat gun, see 30975K11 on page 2735.

Wd.	Lg.	Thick., mils		Roll
17 ft.	110 ft.	7	9441T1	$185.27
24 ft.	120 ft.	7	9441T2	285.37
32 ft.	100 ft.	7	9441T3	317.08
Tape (2″ Wd.×180 ft. Lg.)			9441T4	13.56
Tape (4″ Wd.×180 ft. Lg.)			9441T5	25.56

Corrosion-Inhibiting Heat-Shrink Bags

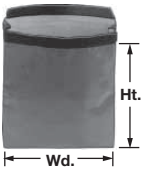

Get all the benefits of heat-shrink wrap in a convenient bag. Bags also contain a corrosion inhibitor to protect metals and are UV resistant. They're made of polyester-lined polyethylene that shrinks when heated and have a hook-and-loop closure so it's easy to seal them. Shrink temperature is 210° F. Color is tan. For heat guns, see page 2733.

Wd.	Ht.	Thick., mils		
12″	12″	7	4656T1	$7.17
18″	18″	7	4656T2	10.20
24″	24″	7	4656T3	14.43

Instant-Expanding Package Foam

Create custom-fitted packaging for products of almost any size or shape. Put a flat foam pack on each side of your product and press on the indicated spots until foam begins to expand. When activated, packs expand up to 27 times the original size and start to set within 60 seconds. Pack is made of polyethylene; foam is a polyurethane composite. Color is blue.

Max. Expansion, cu. in.	Flat Size Lg.	Flat Size Wd.	For Approximate Box Size Lg.	For Approximate Box Size Wd.	For Approximate Box Size Ht.		
180	18″	15″	8″	8″	8″	1978T74	$4.99
390	18″	18″	10″	10″	10″	1978T75	6.13
510	24″	18″	12″	12″	12″	1978T76	7.64
630	24″	18″	14″	14″	14″	1978T77	8.43
755	27″	22″	18″	12″	12″	1978T78	9.44

Stretch Wrap

Bundle cartons and stabilize pallet loads without tape, strapping, or twine, plus protect your shipments from moisture, dirt, and abrasion. This polyethylene stretch wrap conforms to the contours of any item and adheres to itself. Rolls have a 3″ ID core.

Standard Wrap

To Order: For choose-a-color wrap, please specify opaque black, opaque white, translucent blue, translucent green, translucent orange, or translucent red.

Wd.	Gauge (Thickness)	Lg., ft.	Dia.	Rolls/ Case		Roll Partial Case	Roll Full Case
Clear							
3″	80 (0.0008″)	1,500	5½″	18	2092T48	$6.88	$5.74
3″	90 (0.0009″)	1,000	4¾″	18	2092T22	5.75	5.02
3″	120 (0.0012″)	600	4¾″	18	2092T35	4.61	4.04
5″	80 (0.0008″)	1,500	5½″	12	2092T53	11.44	9.57
5″	90 (0.0009″)	1,000	4¾″	12	2092T24	9.65	8.45
5″	120 (0.0012″)	600	4¾″	12	2092T36	7.74	6.72
12″	60 (0.0006″)	2,000	5⅝″	4	2008T21	17.57	14.96
12″	80 (0.0008″)	1,500	5⅝″	4	2008T24	16.35	14.06
12″	90 (0.0009″)	1,500	5 13/16″	4	2008T41	18.40	15.82
15″	60 (0.0006″)	2,000	5⅝″	4	2008T22	21.95	18.68
15″	80 (0.0008″)	1,500	5⅝″	4	2008T25	20.42	17.56
15″	90 (0.0009″)	1,500	5 13/16″	4	2008T28	22.98	19.76
18″	60 (0.0006″)	2,000	5⅝″	4	2008T23	26.35	22.43
18″	80 (0.0008″)	1,500	5⅝″	4	2008T26	24.51	21.08
18″	90 (0.0009″)	1,500	5 13/16″	4	2008T43	27.58	23.72
Choose-a-Color							
3″	80 (0.0008″)	1,000	4¾″	18	2092T61	7.36	6.49
5″	80 (0.0008″)	1,000	4¾″	15	2092T62	9.27	7.64
15″	80 (0.0008″)	1,500	5 11/16″	4	2008T51	26.14	22.08
18″	80 (0.0008″)	1,500	5 11/16″	4	2008T52	31.51	26.61

Specialty Wrap

High-performance wrap has already been through a stretching process, which results in better load holding. Unlike other stretch wrap, it does not decrease in width during application, meaning fewer trips around to cover the load. Color is clear.

Corrosion-inhibiting wrap contains a corrosion inhibitor to protect metals. Wrap is FDA compliant for use on food containers and handling equipment. Color is translucent blue.

Antistatic wrap protects sensitive items from static charges. Color is translucent dark red.

Wd.	Gauge (Thickness)	Lg., ft.	Dia.		Roll
High Performance					
13″	35 (0.00035″)	2,000	5⅜″	2141T41	$13.46
13″	47 (0.00047″)	1,500	5 1/16″	2141T51	14.72
15″	35 (0.00035″)	2,000	5⅜″	2141T42	15.54
15″	47 (0.00047″)	1,500	5 1/16″	2141T52	17.00
17″	35 (0.00035″)	2,000	5⅜″	2141T43	17.62
17″	47 (0.00047″)	1,500	5 1/16″	2141T53	19.30
18″	63 (0.00063″)	1,500	5″	2141T54	23.71
Corrosion Inhibiting					
18″	100 (0.001″)	1,500	6″	19905T4	77.53
Antistatic					
18″	80 (0.0008″)	1,500	5½″	1899T75	42.10

Wide Stretch Wrap for Machines

Furnished in longer lengths for high-volume applications, rolls are compatible with stretch wrap machines and have a 3″ ID core. Wrap is polyethylene. Color is clear.

High-strength wrap is thinner but more elastic and puncture resistant than standard wrap.

Wd.	Gauge (Thickness)	Lg., ft.	Dia.		Roll
Standard					
20″	80 (0.0008″)	5,000	8 11/16″	19575T41	$124.00
50″	80 (0.0008″)	6,000	10″	19575T43	252.92
High Strength					
20″	63 (0.00063″)	5,000	8″	19575T42	97.81

Narrow Stretch Wrap with Comfort Handle

A plastic handle with a soft plastic sleeve allows the roll to spin freely. Squeeze the sleeve to reduce the roll's spinning speed. One handle is included. Wrap is polyethylene. Rolls have a 1¾″ ID core.

Standard Wrap

Wd.	Gauge (Thickness)	Lg., ft.	Dia.	Rolls/ Case		Case
Clear						
3″	80 (0.0008″)	1,000	4⅜″	4	21265T2	$23.79
3″	120 (0.0012″)	650	4¼″	4	21265T4	23.68
5″	80 (0.0008″)	1,000	4⅜″	4	21265T3	32.01
5″	120 (0.0012″)	650	4¼″	4	21265T5	32.52
Translucent Blue						
3″	80 (0.0008″)	1,000	4⅜″	4	21265T812	27.79
5″	80 (0.0008″)	1,000	4⅜″	4	21265T822	37.05
Translucent Green						
3″	80 (0.0008″)	1,000	4⅜″	4	21265T813	27.79
5″	80 (0.0008″)	1,000	4⅜″	4	21265T823	37.05
Translucent Orange						
3″	80 (0.0008″)	1,000	4⅜″	4	21265T814	27.79
5″	80 (0.0008″)	1,000	4⅜″	4	21265T824	37.05
Translucent Red						
3″	80 (0.0008″)	1,000	4⅜″	4	21265T811	27.79
5″	80 (0.0008″)	1,000	4⅜″	4	21265T821	37.05
Replacement Handle					21265T6	Each $5.79

Wrap with Message

Send your message loud and clear. Wrap is clear and has a repeating message printed in black on an eye-catching 1½″ red stripe.

Message	Wd.	Gauge (Thickness)	Lg., ft.	Dia.		Roll
Do Not Break Load	5″	80 (0.0008″)	500	4″	20305T1	$18.80
Fragile	5″	80 (0.0008″)	500	4″	20305T3	18.80
Do Not Double Stack	5″	80 (0.0008″)	500	4″	20305T2	18.80
Do Not Accept If Seal Is Broken	5″	80 (0.0008″)	500	4″	20305T6	18.80

Wide Stretch Wrap with Handles

Comfort Handles

Cardboard Handles

No need for a separate dispenser—these rolls already have dispensing handles. Wrap is polyethylene. Rolls have a 1″ ID core.

Wrap with Comfort Handles

Plastic handles with soft plastic sleeves allow the roll to spin freely. Squeeze the sleeves to reduce the roll's spinning speed. *Opaque black* has an ultraviolet inhibitor (UVI) additive that protects from ultraviolet rays.

To Order: For choose-a-color wrap, please specify opaque black, opaque white, translucent blue, translucent green, translucent orange, or translucent red.

Wd.	Gauge (Thickness)	Lg., ft.	Dia.	Rolls/ Case		Roll Partial Case	Roll Full Case
Clear Wrap							
15″	80 (0.0008″)	1,000	4⅛″	4	20915T81	$19.09	$17.22
20″	80 (0.0008″)	1,000	4⅛″	4	20915T2	28.62	25.44
20″	120 (0.0012″)	800	4⅛″	4	20915T4	29.88	26.56
30″	80 (0.0008″)	1,000	4⅛″	4	20915T3	40.25	35.78
Choose-a-Color Wrap							
20″	80 (0.0008″)	1,000	4⅛″	4	20915T71	27.28	24.44

Wrap with Cardboard Handles

The cardboard core extends out of each end for use as handles. A pair of protective gloves is included to reduce friction.

Wd.	Gauge (Thickness)	Lg., ft.	Dia.	Rolls/ Case		Case
Clear Wrap						
20″	80 (0.0008″)	1,000	3¾″	4	2047T41	$105.45

Stretch Wrap Dispensers

A B C D E

(A) Includes a grip ring to protect your hand and a core ring to turn the roll. Made of plastic.
(B) Made of plastic.
(C) Made of steel. Has a tension-control knob and a cushion grip.
Styles D and ***E*** have tension control that adjusts the roll's spinning speed from free rolling to maximum stretch.
(D) Have an angled handle with a cushion grip to reduce fatigue. Made of cast zinc alloy.
(E) The long handle eliminates bending and reaching. Has a brake lever and a handle with a 12″ long cushion grip. Made of aluminum. Overall length is 60″.

	For Roll Wd.	Fits Core ID		Pair
A	Any	3″	6241T11	$5.42
				Each
B	3″ to 6″	3″	2092T19	$4.09
C	3″ to 6″	3″	2092T21	31.82
D	12″, 15″, 18″	3″	2089T1	69.42
D	18″ to 20″	3″	2089T2	81.05
E	11″ to 20″	3″	2089T31	196.13

Rolling Stretch Wrap Dispensers

Stretch Wrap Sold Separately

Roll this dispenser to wherever you need it. It has adjustable-height steering handles and four swivel casters for easy maneuverability. Dispenser is made of steel. The stretch wrap holder can be adjusted for varying roll widths and accepts rolls with a max. diameter of 15″ (stretch wrap sold separately). A two-stage brake system provides precise control of how fast the roll spins. Overall size is 20″ Lg.×35″ Wd.×78″ Ht.

Stretch wrap is 50″ Wd.×6,000 ft. Lg. Wrap is made of clear polyethylene and is 0.0008″ thick. Roll has a 10″ diameter and a 3″ ID core.

For Max. Roll Wd.	Fits Core ID		
60″	3″	19575T21	$730.77
Stretch Wrap		19575T43	252.92

Stretch Wrap Machines

A powered platform on these machines turns your pallets while stretch wrap unrolls off the mast for quick and easy coverage. Mast controls the tension while you move the counterbalanced wrap holder up and down.

Max. load size is 52″ Lg.×52″ Wd.×84″ Ht. Unit accepts 12″ to 20″ wide rolls with a maximum diameter of 9″ and a 3″ ID core (stretch wrap sold separately). Platform is 3″ Ht.×56″ Dia. and rotates up to 15 rpm. Overall size is 92″ Ht.×95″ Lg. Machine is made of steel. It has a ½-hp motor with a knob to control the speed. Operates on 120 VAC @ 15 amps, 60 Hz and includes a 12-ft. power cord with three-prong plug.

Stretch wrap is 20″ Wd.×5,000 ft. Lg. Wrap is made of clear polyethylene and is 0.0008″ thick. Roll has an 8 11/16″ diameter and a 3″ ID core.

Optional pallet truck ramp makes loading and unloading with pallet trucks easier. Size is 60″ Lg.×48″ Wd. Made of steel.

Stretch Wrap Machine	6098T63	$3,617.02
Stretch Wrap	19575T41	124.00
Optional Pallet Truck Ramp	6098T73	510.25

Document Holders

Press-to-Close

Holders are clear polyethylene pouches with an adhesive back to attach them to a package.

Holders ***with adhesive closure*** secure documents inside. ***Press-to-close*** holders are resealable. Holders ***with open end*** provide easy access to documents.

Wd.	Ht.	Pkg. Qty.		Pkg.
With Adhesive Closure				
7″	5½″	100	2077T17	$8.78
10″	5½″	100	2077T26	12.34
10″	7″	100	2077T27	18.11
12″	9½″	50	2077T38	12.93
Press-to-Close				
7″	4½″	50	2077T51	9.88
7″	6½″	25	2077T53	6.76
10″	6½″	25	2077T54	8.29
10″	8½″	25	2077T55	9.40
11″	5½″	25	2077T52	7.53
11″	8½″	25	2077T56	10.00
13″	9½″	10	2077T57	5.72
With Open End				
8″	4″	100	2077T13	7.36
8″	4½″	100	2077T14 ♦	8.78

♦ Back is red.

Document Holders with Message

Pouch-Style Holders

F G H J

Holders consist of clear polyethylene pouches with an orange and black imprint. All have an adhesive back to attach them to a package.

Holders ***with adhesive closure*** secure documents inside. Holders ***with open end*** provide easy access to documents.

Imprint	Wd.	Ht.	Pkg. Qty.		Pkg.
With Adhesive Closure					
F Packing List Enclosed	5½″	4½″	100	2077T21	$4.53
F Packing List Enclosed	6″	4½″	100	2077T23	5.65
F Packing List Enclosed	7″	5½″	100	2077T15	8.78
G Invoice Enclosed	5½″	4½″	100	2077T31	4.08
G Invoice Enclosed	6″	4½″	100	2077T32	5.10
G Packing List Enclosed	5½″	4½″	100	2077T22	4.53
G Packing List Enclosed	6″	4½″	100	2077T25	5.65
G Packing List Enclosed	7″	5½″	100	2077T16	8.78
G Packing List Enclosed	10″	5½″	100	2077T24	12.34
G Packing List Enclosed—Spanish/English	5½″	4½″	100	2077T11	4.92
G Packing List Enclosed—French/English	5½″	4½″	100	2077T18	4.92
H Material Safety Data Sheet Enclosed	6″	4½″	100	2077T49▲	5.48
With Open End					
J Packing List Enclosed	8″	5¼″	100	2077T12★	11.22
J Packing List Enclosed	10″	8½″	50	2077T41★	11.34

▲ Imprint is red and black. ★ Front is orange.

Tape-Style Holders

Pad

Roll

Dispenser for Rolls

With adhesive backing on the edges, this clear polypropylene tape forms a pouch for documents.

Pad— Peel the holder off the pad to reveal the adhesive edges. Imprint has orange letters.

Rolls— Cut a holder from the roll and apply. Rolls have a 4″ diameter with a 3″ ID core. *Packing List Enclosed* imprint has red letters. *Documents Enclosed* imprint has orange letters. Use *dispenser for rolls* (sold separately) for easy dispensing and cutting.

Imprint	Wd.	Ht.	No. of Holders		Each
Pad					
Packing List Enclosed	6″	5″	25	19565T31	$2.31
Rolls					
Packing List Enclosed	6″	5″	333	19565T51	19.27
Documents Enclosed	6″	5″	333	19565T41	36.27
Dispenser for Rolls				75785A41	83.27
Replacement Blade for Dispenser				75785A43	19.66

International-Symbol Shipping Labels

14385T32

14385T33

14385T39

14385T35

14385T31

14385T36

14385T34

14385T42

14385T37

14385T38

14385T41

Recognized worldwide, these labels are made of paper with an adhesive backing. All are white and have a black and red imprint. Label size is 3″ Wd.×4″ Ht. except 14385T36, which is 4″ Wd.×8″ Ht. Roll diameter is 4¼″, except 14385T36, which is 5¼″. All rolls have a 1″ ID core.

Wd.	Ht.	Labels per Roll	Roll
3″	4″	250	$12.88
4″	8″	100	12.03

Shock-Indicating Labels

You'll know at a glance if your package has incurred shock. All labels are adhesive backed.

Sensitivity is measured in "G" (G-force), which represents the force required to activate the indicator.

Single Use

At the center of these paper labels is a small liquid-filled glass vial with a protective plastic housing. When subjected to shock, the liquid turns a bright color.

Use the table to determine the proper label for your package.

	Package Size				
Package Wt.	0-1 cu. ft.	1-5 cu. ft.	6-15 cu. ft.	16-50 cu. ft.	50-Up cu. ft.
0-10 lbs.	Green	Green	Orange	Orange	Red
11-25 lbs.	Green	Orange	Orange	Red	Red
26-50 lbs.	Orange	Orange	Red	Red	Purple
51-100 lbs.	Orange	Red	Red	Purple	Purple
101-250 lbs.	Red	Red	Purple	Purple	Yellow
251-1,000 lbs.	Red	Red	Purple	Yellow	Yellow
1,001 lbs.-Up	_____	Purple	Yellow	Yellow	Yellow

Indicator Color	Sensitivity, G-force	Wd.	Ht.	Pkg. Qty.		Pkg.
Green	100 G	3 13/16″	3 13/16″	50	2032T5	$189.53
Orange	75 G	3 13/16″	3 13/16″	50	2032T6	189.53
Red	50 G	3 13/16″	3 13/16″	50	2032T7	189.53
Purple	37 G	3 13/16″	3 13/16″	50	2032T9	181.11
Yellow	25 G	3 13/16″	3 13/16″	50	2032T8	181.11

Resettable

Reset these indicating labels with a paper clip—they can be reused up to 50 times. Labels have arrows that turn from red to blue to indicate which surface of the package sustained impact. *Note:* Mount the labels in the direction you want shock to be monitored. Use three indicating labels to monitor a package in all directions.

A 3¾″ Wd.×3⅞″ Ht. warning label for the outside of the package and a 3¾″ Wd.×¾″ Ht. label for the bill of lading are also included. Indicating labels are made of plastic; warning labels are made of paper.

Indicating Label

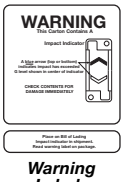

Warning Labels

Sensitivity, G-force	Wd.	Ht.		Each
100 G	⅞″	2″	19095T16	$6.22
50 G	⅞″	2″	19095T15	6.22
25 G	⅞″	2″	19095T14	6.22
15 G	⅞″	2″	19095T13	6.22
10 G	⅞″	2″	19095T12	6.22
5 G	⅞″	2″	19095T11	6.22

Hazardous-Material Shipping Labels

All labels are made of paper with an adhesive backing. For D.O.T. vehicle placards, see page 1891.

D.O.T. (Department of Transportation) Labels

1964T14

1964T24

1964T25

1964T26

1964T27

1964T28

1964T11

1964T82

1964T13

1964T88

1964T12

1964T93

Labels comply with D.O.T. 49CFR 172.400 (HM 181) and are consistent with IATA (International Air Transport Association), ICAO (International Civil Aviation Organization), and IMDG (International Maritime Dangerous Goods) regulations. May be used for international and domestic shipments. Size is 4″ Wd.×4″ Ht. except 1964T93, which is 5″ Wd.×5″ Ht. Roll diameter is 4¼″. Rolls have a 3″ ID core.

Labels per Roll	Roll
250	$12.91

ORM (Other Regulated Material) Labels

Label products that are "other regulated materials, domestic" (ORM-D). This includes products that are considered hazardous but aren't covered under specific product classifications. Labels are blue with a white imprint. Size is 2½″ Wd.×1½″ Ht. Roll diameter is 4″. Rolls have a 3″ ID core.

Imprint	Labels per Roll		Roll
ORM-D	250	1971T42	$5.36
ORM-D-AIR	250	1971T41	5.36

Package Tip-Indicating Labels

Quickly identify containers that have been tipped during transit. An arrow-shaped window on the red indicator turns blue if the package is tipped 90° or more. Includes five 2¾″ Wd.×3¾″ Ht. indicating labels, five 3¾″ Wd.×5¼″ Ht. warning labels for the outside of the package, and five 3¾″ Wd.×¾″ Ht. warning labels for the bill of lading. All labels are adhesive backed. Indicating labels are made of plastic; warning labels are made of paper. Warning labels are white with a red imprint.

Indicating Label

Warning Labels

19455T5 ..... Pkg. $10.76

Package-Handling Warning Labels

Get the attention of package handlers. Labels are made of paper with an adhesive backing. Roll diameter is 4½″, except 2031T53, which is 5″. Rolls have a 3″ ID core.

Fragile is white with a red imprint.

Attention electrostatic sensitive devices is yellow with a black imprint.

Heavy is white with black, red, and yellow imprint.

Imprint	Wd.	Ht.	Labels per Roll		Roll
Fragile	4″	4″	250	2031T56	$14.56
Attention Electrostatic Sensitive Devices	4″	4″	250	2031T55	14.56
Heavy	8″	2″	250	2031T53	14.94

Metal Strapping

Coil

Mini Coil in Dispenser Box

Solid

Punched

Secure your pallet loads, bundles, and crates with this strapping.

Coils are wound like a spool of thread. *Carbon steel* coils weigh approximately 100 lbs. *Type 302 stainless steel* coils weigh approximately 85 lbs. ***Mini coils*** are wound like a roll of tape, so the coil width is equal to the strapping width.

Low-carbon steel has a black painted finish, finished edges, and a wax coating to reduce friction. Meets ASTM D3953.

High-carbon steel is heat treated, providing high strength with elongation for shock resistance. Strapping has a black painted finish, rounded edges, and a wax coating to reduce friction. Meets ASTM D3953.

Type 302 stainless steel offers superior corrosion resistance over carbon steel. This strapping is oiled for lubricity. Meets ASTM A666.

Note: To match strapping with compatible seals, tools, and dispensers, choose items with the same "Strapping Group No." For strapping tensioners and kits, see page 1571. For strapping dispensers, see page 1574.

Strapping Group No.	Strapping Wd.	Strapping Thick.	Average Breaking Strength, lbs.	Coil 3″ Wd. × 16″ ID Approx. Lg., ft.			Mini Coil in Dispenser Box Approx. Lg., ft.		
Low-Carbon Steel—Solid									
1	3/8″	0.015″	675	5,500	19285T11	$162.98	300	19285T31	$26.08
2	1/2″	0.015″	900	4,125	19285T12	159.78	300	19285T32	28.14
2	1/2″	0.020″	1,200	3,085	19285T13	148.06	300	19285T33	29.80
3	1/2″	0.023″	1,380	2,685	19285T14	147.74	300	19285T34	30.33
4	5/8″	0.015″	1,125	3,295	19285T15	158.18	300	19285T35	31.05
4	5/8″	0.020″	1,500	2,475	19285T16	146.62	300	19285T36	31.28
5	5/8″	0.023″	1,725	2,150	19285T17	146.08	300	19285T37	32.52
6	3/4″	0.015″	1,350	2,750	19285T18	160.24	300	19285T38	30.98
6	3/4″	0.020″	1,800	2,055	19285T19	143.14	300	19285T39	31.28
7	3/4″	0.023″	2,070	1,795	19285T21	140.76	300	19285T41	31.68
Low-Carbon Steel—Punched (0.14″ hole dia. on 3/4″ centers)									
6	3/4″	0.020″	1,425	1,960	19285T96	138.56	200	19285T91	47.09
High-Carbon Steel—Solid									
2	1/2″	0.020″	1,500	3,085	14615T11	162.88	300	14615T41	30.28
4	5/8″	0.020″	1,875	2,475	14615T12	158.73	300	14615T42	34.77
5	5/8″	0.023″	2,150	2,150	14615T13	159.75	300	14615T43	39.50
8	3/4″	0.025″	2,800	1,645	14615T14	148.83	300	14615T47	43.90
8	3/4″	0.031″	3,500	1,330	14615T15	144.94	300	14615T48	42.08
9	1 1/4″	0.029″	5,540	865	14615T18★	149.06	—	—	—
9	1 1/4″	0.031″	5,500	810	14615T21★	143.15	200	14615T46	31.89
Type 302 Stainless Steel—Solid									
2	1/2″	0.015″	900	3,330	2111T21	537.10	200	2111T35	47.50
2	1/2″	0.020″	1,200	2,500	2111T22	541.46	200	2111T36	58.67
6	3/4″	0.020″	1,800	1,665	2111T23	545.90	200	2111T37	90.42
8	3/4″	0.025″	2,675	1,330	2111T24	550.41	200	2111T38	108.33

★ Coil is 1 1/4″ wide.

Seals for Metal Strapping

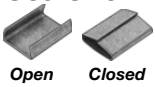

Open Closed

Seals are crimped onto metal strapping with a sealer (sold separately) to keep strapping under tension.

Open seals are for use on flat surfaces. They snap onto overlapping strap ends during or after application of tension.

Closed seals are for use on irregular surfaces as well as rounded objects. They feed onto strap ends before tension is applied with a tensioner.

Zinc-plated steel seals meet ASTM D3953. ***Type 304 stainless steel*** seals meet ASTM A666.

Note: To match seals with compatible strapping, choose items with the same strapping width or "Strapping Group No."

For Strapping Group No.	For Strapping Width	Length	Pkg. Qty.	Open Seals	Pkg.	Closed Seals	Pkg.
Zinc-Plated Steel							
1	3/8″	1″	250	14595T1	$8.97	14595T5	$11.84
2, 3	1/2″	1″	250	14595T2	10.59	14595T6	11.33
4, 5	5/8″	1″	250	14595T3	10.80	14595T7	13.02
6-8	3/4″	1″	250	14595T4	11.65	14595T8	13.56
6-8	3/4″	1 3/4″	50	14595T9	5.91	14595T12	8.17
9	1 1/4″	2 3/16″	50	14595T11	9.38	14595T13	10.57
Type 304 Stainless Steel							
2, 3	1/2″	1″	25	2112T31	7.46	2112T32	9.25
6-8	3/4″	1″	25	—	—	2112T33	10.14

Sealers for Metal Strapping

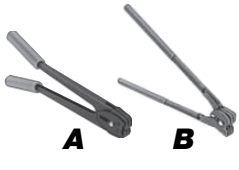

A B

C

Also known as crimpers, sealers secure seals (sold separately) onto metal strapping.

(A&B) Front-action sealers are for use with lower-capacity (narrow and thin) strapping.

(C) Side-action sealers are for use with higher-capacity (wide and thick) strapping when extra force is needed.

Sealers for open seals cut two notches on each side of the seal with one operation.

Sealers for closed seals cut a single notch on each side of the seal with one operation. For best results, apply two notches per seal.

Note: To match a sealer with compatible strapping, choose items with the same strapping width and thickness or "Strapping Group No."

For Strapping Group No.	For Strapping Width	For Strapping Thickness	For Open Seals		For Closed Seals	
Front-Action Sealers						
A.... 1	3/8″	0.015″-0.023″	20275T46	$97.40	20275T513	$104.54
A.... 2, 3	1/2″	0.015″-0.023″	20275T47	96.76	20275T514	104.54
A.... 4, 5	5/8″	0.015″-0.023″	20275T48	97.40	20275T515	104.54
A.... 6, 7	3/4″	0.015″-0.023″	20275T49	97.40	20275T516	104.54
B.... 3	1/2″	0.023″-0.031″	20275T51	180.40	—	—
B.... 5	5/8″	0.023″-0.031″	20275T52	180.40	—	—
B.... 7, 8	3/4″	0.023″-0.031″	20275T53	180.40	—	—
Side-Action Sealers						
C.... 8	3/4″	0.025″-0.035″	20275T57	420.83	20275T55	319.81
C.... 9	1 1/4″	0.025″-0.035″	20275T58	420.83	20275T56	319.81

Tensioners for Metal Strapping

Tensioners draw strapping tight around your packages.

Tensioners for Open Seals— Use on flat surfaces. Strapping is wrapped around the package and overlapped on top.

Tensioners for Closed Seals— Use on irregular surfaces as well as rounded objects. Place the seal on one end and fold strapping back to form a hook, then slide the other end of the strapping through the seal. Tensioners push against the seal as they tighten strapping.

Styles A and ***C*** have ratchet action for unlimited take-up. Tensioner holds the bottom strap while a feedwheel bites into the strap and tightens it.

Style B holds the bottom strap and tensions the top strap by winding it around the take-up wheel for maximum tension.

Styles D and ***E*** are a rack-and-pinion style that pushes the seal to create high tension without slip. Pull strapping tight manually before applying tension.

Note: To match a tensioner to compatible strapping, choose items with the same strapping width and thickness or "Strapping Group No." For strapping, see page 1570.

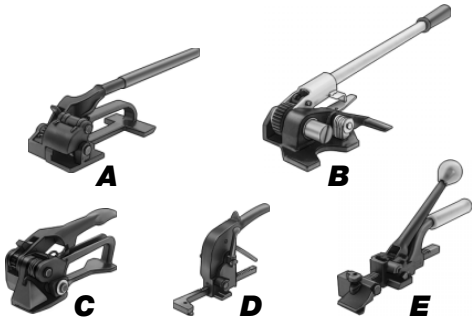

Tensioners For Open Seals

For Strapping Group No.	For Strapping Width	For Strapping Thickness		
Standard				
A... 1-7	3/8″- 3/4″	0.015″-0.023″	2071T163	$186.96
A... 8, 9	3/4″-1 1/4″	0.025″-0.031″	2071T164	438.94
High Tension				
B... 8, 9	3/4″-1 1/4″	0.025″-0.035″	2071T79	365.73

Tensioners For Closed Seals

For Strapping Group No.	For Strapping Width	For Strapping Thickness		
Standard				
C... 1-7	3/8″- 3/4″	0.015″-0.025″	20275T24	$379.18
C... 5, 7-9	5/8″-1 1/4″	0.023″-0.031″	20275T25	463.22
High Tension				
D... 1-7	3/8″- 3/4″	0.015″-0.023″	20275T23	310.38
E... 5, 7-9	5/8″-1 1/4″	0.023″-0.031″	20275T22	413.20

Combination Tensioners/Sealers for Metal Strapping

These tools do double duty, pulling metal strapping tight and then sealing it. They create a sealless joint by crimping interlocking notches into the strapping and cutting off the excess.

Note: To match tensioners/sealers with compatible strapping, choose items with the same strapping width and thickness or "Strapping Group No." For strapping, see page 1570.

For Strapping Group No.	For Strapping Width	For Strapping Thickness		
2, 3	1/2″	0.015″-0.025″	20275T91	$1,124.76
4, 5	5/8″	0.015″-0.025″	20275T92	1,124.76
6, 7	3/4″	0.015″-0.025″	20275T93	1,124.76

Metal Strapping Kits

All kits include a tensioner, a sealer, and a strap cutter.

Open seals are best for flat surfaces. *Closed seals* can be used on irregular surfaces as well as rounded objects.

Kits with mini coils have two 200-ft. mini coils of low-carbon steel strapping in dispenser boxes and 500 open seals. Kits come in a steel carrying case with trays for storing tools.

Dispenser kits include a steel dispenser with a tool tray and wheels and 2,500 seals for high-volume applications. Use with 3″ wide coils of strapping (sold separately on page 1570). *Note:* To match a kit to compatible strapping, choose items with the same strapping width and thickness or "Strapping Group No."

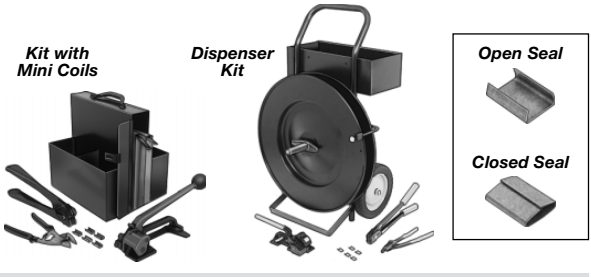

Kits with Mini Coils

	Average Breaking Strength, lbs.	Kits with Open Seals Each		Extra Strapping Each		Extra Seals Pkg. Qty.	Extra Seals Pkg.	
With 1/2″×0.020″ Strapping	1,180	20455T24	$440.20	20455T32	$24.26	500	20455T56	$9.88
With 3/4″×0.020″ Strapping	1,765	20455T26	492.21	20455T34	34.60	500	20455T58	12.47

Dispenser Kits

For Strapping Group No.	For Strapping Width	For Strapping Thickness	Kits with Open Seals Each		Kits with Closed Seals Each		Extra Seals Pkg. Qty.	Extra Seals Open Seals Pkg.		Extra Seals Closed Seals Pkg.	
2, 3	1/2″	0.015″-0.023″	20455T11	$617.40	20455T15	$870.56	250	14595T2	$10.59	14595T6	$11.33
4, 5	5/8″	0.015″-0.023″	20455T12	617.40	20455T16	870.56	250	14595T3	10.80	14595T7	13.02
6, 7	3/4″	0.015″-0.023″	20455T13	617.40	20455T17	996.09	250	14595T4	11.65	14595T8	13.56

Edge and Corner Protectors

Protect the edges and corners of your boxes from strapping indentations and bumps during shipping. All protectors are formed 90° angles.

Cardboard protectors are made of multiple layers of cardboard that are glued and laminated. They also improve the stacking strength of boxes. Color is white.

Plastic protectors have a ridged channel to hold metal or plastic strapping in place during tightening. The outside of the protector is nonslip and nonmarring. Color is black.

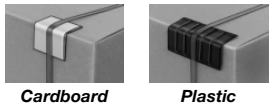

Cardboard Protectors

Wd.	Ht.	0.160″ Thick Pkg. Qty.		Pkg.	0.225″ Thick Pkg. Qty.		Pkg.
3″	2″	50	19275T31	$9.15	—	—	—
3″	3″	—	—	—	25	19275T41	$7.84
24″	3″	5	19275T32	6.42	5	19275T42	9.28
36″	3″	5	19275T33	8.50	1	19275T43	4.23
48″	3″	1	19275T34	4.35	1	19275T44	4.44

Plastic Protectors

Wd.	Ht.	Thick.	Pkg. Qty.		Pkg.
1 3/8″	1″	0.095″	100	1967T43♦	$6.25
2 1/2″	1 3/4″	0.090″	100	1967T44	12.12
5 1/4″	2″	0.120″	50	1967T45	15.45

♦ Color is white.

Plastic Strapping

Coil

Mini Coil in Dispenser Box

Embossed

Bonded

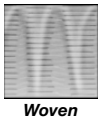
Woven

Heavy Duty Woven

Lighter and safer than metal, plastic strapping is also more flexible.

Coils are wound like a spool of thread. ***Mini coils*** are wound like a roll of tape, so the coil width equals the strapping width.

Embossed polypropylene is for light duty applications. Color is black.

Smooth polyester is stronger than polypropylene strapping. It can sustain a moderate stretch and return to its original condition. Color is black.

Bonded polyester is pliable and shock resistant. Color is white.

Woven polyester is flexible and shock resistant like bonded polyester but has a cross thread to prevent tearing and fraying. Color is white.

Heavy duty woven polyester is thicker and more durable than woven polyester strapping. Color is white.

Note: To match strapping with compatible seals, tools, and dispensers, choose items with the same "Strapping Group No." For strapping tensioners and kits, see page 1573. For strapping dispensers, see page 1574.

Strapping Group No.	Strapping Wd.	Strapping Thick.	Average Breaking Strength, lbs.	Coils 3″ Wd.×16″ ID Approx. Lg., ft.			Coils 6″ Wd.×16″ ID Approx. Lg., ft.			Mini Coils in Dispenser Box Approx. Lg., ft.		
Embossed Polypropylene												
10	⅜″	0.020″	250	6,000	14495T76	$39.33	12,000	14495T51	$87.24	300	14495T77	$4.91
11	½″	0.018″	300	4,500	14495T32	40.50	9,000	14495T52	58.13	300	14495T62	7.83
11	½″	0.022″	500	—	—	—	8,000	14495T81★	135.31	300	14495T82★	10.40
11	½″	0.026″	500	3,600	14495T74	39.51	7,200	14495T73	74.07	300	14495T75	7.91
12	½″	0.030″	600	3,600	14495T33	54.24	7,200	14495T53	88.74	300	14495T63	10.05
13	⅝″	0.025″	700	3,000	14495T34	54.87	6,000	14495T54	99.74	300	14495T78	10.60
17	¾″	0.033″	1,000	2,200	14495T71	63.08	4,500	14495T72	110.61	300	14495T79	15.56
Smooth Polyester												
14	½″	0.020″	600	3,600	14465T11	76.13	7,200	14465T21	141.28	300	14465T31	12.96
14	½″	0.025″	775	2,900	14465T12	74.62	5,800	14465T22	140.59	300	14465T32	14.57
15	⅝″	0.025″	900	2,300	14465T13	75.21	4,600	14465T23	149.85	300	14465T33	17.62
16	⅝″	0.030″	1,100	1,900	14465T14	73.49	3,800	14465T51 ♣	128.44	300	14465T34	20.86
16	⅝″	0.035″	1,400	2,000	14465T15	79.11	4,000	14465T52 ♣	141.28	300	14465T53	24.61
17	¾″	0.040″	1,600	—	—	—	3,000	14465T16 ♣	158.11	300	14465T17 ♣	28.38
Bonded Polyester				***5½″ Wd.×3″ ID***								
10	⅜″	0.025″	500	5,250	14575T51	108.11	—	—	—	1,125	14575T41 ♥	31.08
14	½″	0.025″	650	3,900	14575T52	106.76	—	—	—	750	14575T42 ♥	31.08
15	⅝″	0.025″	800	3,000	14575T53	105.41	—	—	—	600	14575T43 ♥	31.08
17	¾″	0.025″	950	2,100	14575T54	102.70	—	—	—	420	14575T44 ♥	31.08
Woven Polyester				***5½″ Wd.×3″ ID***								
10	⅜″	0.025″	500	5,250	14575T14	112.16	—	—	—	300	14575T21	12.66
11	½″	0.025″	650	3,900	14575T11	110.81	—	—	—	300	14575T22	16.20
13	⅝″	0.025″	800	3,000	14575T12	109.43	—	—	—	300	14575T23	21.00
17	¾″	0.025″	950	2,100	14575T13	106.76	—	—	—	300	14575T24	23.68
Heavy Duty Woven Polyester				***6¼″ Wd.×3″ ID***								
18	⅝″	0.032″	1,005	3,000	1585T22	111.80	—	—	—	—	—	—
19	¾″	0.041″	1,835	2,000	1585T24	136.10	—	—	—	250	1585T27 ▲■	18.90
20	1¼″	0.042″	2,865	—	—	—	—	—	—	330	1585T25 ■	33.90

★ Made of smooth polypropylene. ♣ Color is green. ♥ Coil is 3″ wide. ▲ Coil is 6¼″ wide. ■ Coil does not come in a dispenser box.

Buckles and Seals for Plastic Strapping

Buckles and seals hold strapping under tension. *Note:* To match buckles and seals to compatible strapping, choose items with the same strapping material and width or material and "Strapping Group No."

Buckles

Plastic

Steel Wire

Buckles are designed for low-tension applications. Tighten strapping by hand or with a tensioner. ***Plastic*** and ***steel wire*** buckles are for polypropylene and bonded and woven polyester strapping. ***Heavy duty steel wire*** buckles are for heavy duty woven polyester strapping.

For Strapping Group No.	For Strapping Width	Lg.	Pkg. Qty.		Pkg.
Plastic					
10-12, 14	⅜″, ½″	2⅛″	250	1958T81	$7.58
11-15	½″, ⅝″	2¼″	200	1958T87	7.26
Steel Wire					
10	⅜″	¾″	250	1958T83	10.30
11, 12, 14	½″	1″	250	1958T84	11.14
13, 15	⅝″	1¼″	100	1958T85	5.51
17	¾″	1¼″	100	1958T86	6.51
Heavy Duty Steel Wire					
18	⅝″	1″	10	1958T65	3.85
19	¾″	1¼″	10	1958T66	4.92
20	1¼″	2¼″	10	1958T67	5.18

Seals

Smooth

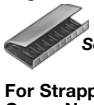
Serrated

Crimp with a sealer after tightening strapping with a tensioner. Seals are made of zinc-plated steel.

Smooth seals meet ASTM D3950. ***Serrated*** seals have teeth on the inside to bite strapping for high-strength applications.

For Strapping Group No.	For Strapping Width	Lg.	Pkg. Qty.		Pkg.
Smooth—For Polypropylene Strapping					
10	⅜″	1¼″	250	1958T91	$10.03
11, 12	½″	1¼″	100	1958T92	4.99
13	⅝″	1¼″	100	1958T93	5.62
17	¾″	1¼″	100	1958T94	6.24
Serrated—For Smooth Polyester Strapping					
14	½″	1¼″	100	1958T53	7.26
15, 16	⅝″	1¼″	100	1958T76	9.53
17	¾″	1¼″	50	1958T11	9.88

Sealers for Plastic Strapping

Also known as crimpers, sealers secure seals (sold separately) on strapping.

Note: To match a sealer to compatible strapping, choose items with the same strapping width and thickness or "Strapping Group No."

For Strapping Group No.	For Strapping Width	For Strapping Thickness	Handle Length		
For Smooth Seals and Polypropylene Strapping					
10	⅜″	0.015″-0.023″	14″	20885T31	$182.90
11	½″	0.010″-0.027″	13″	20885T32	46.82
11	½″	0.010″-0.027″	17″	20885T33	52.93
12	½″	0.015″-0.031″	17″	20885T41	94.00
13	⅝″	0.010″-0.027″	17″	20885T38	57.18
17	¾″	0.015″-0.040″	17″	20885T61	94.00
For Serrated Seals and Smooth Polyester Strapping					
14	½″	0.015″-0.040″	17″	20885T27	105.00
15, 16	⅝″	0.020″-0.050″	17″	20885T28	105.00
17	¾″	0.020″-0.050″	17″	20885T11	166.86

Tensioners for Plastic Strapping

(A&B) Hand-tension styles are designed for use with buckles in low-tension applications. ***Style A*** lets you tighten strapping while threading plastic or wire buckles. It has a built-in cutter. ***Style B*** uses leverage to pull strapping tight.

(C-E) High-tension styles hold the bottom strap and tension the top strap by winding it around a take-up wheel. All have a built-in cutter.

Note: To match tensioners to compatible strapping, choose items with the same strapping material, width, and thickness or material and "Strapping Group No." For strapping, see page 1572.

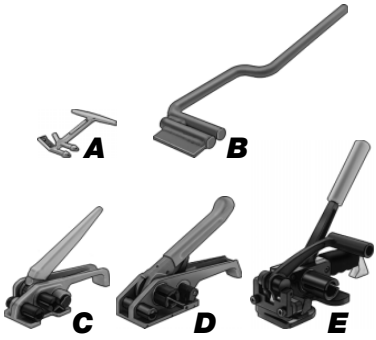

	For Strapping Material	For Strapping Group No.	For Strapping Width	For Strapping Thickness		
Hand Tension						
A	Polypropylene	10-13, 17	¼″-¾″	Up to 0.045″	**20885T81**	$4.50
B	Heavy Duty Woven Polyester	18-20	Up to 1½″	Up to 0.070″	**20885T14**	41.10
High Tension						
C	Polypropylene	10-13, 17	¼″-¾″	Up to 0.035″	**20885T65**	60.34
D	Polypropylene and Polyester	11-19	½″-¾″	0.015″-0.050″	**20885T263**	145.11
E	Polypropylene and Polyester	13, 15-20	⅝″-1½″	0.020″-0.060″	**20885T66**	442.40

Combination Tensioners/Sealers for Plastic Strapping

With one tool you can tighten and seal polypropylene and smooth polyester strapping.

(F) Manual tensioners/sealers have multiple levers for tensioning and sealing. They require a separate seal to make the joint in a strapping assembly. Serrated zinc-plated steel seals sold separately.

(G&H) Battery-powered tensioners/sealers use heat and friction to create a sealless weld on strapping.

(G) Has manual tension, so the battery is used only for the sealing and cutting process. An adjustable friction clutch prevents overtightening of the strapping. Comes with a rechargeable 12-volt battery and a battery charger that operates on 120 VAC and has a 6-ft. power cord with a two-prong plug.

(H) Have automatic tension, cutting, and sealing. Come with two rechargeable 18-volt batteries and battery charger that operates on 120 VAC and has a 5-ft. power cord with a two-prong plug.

Note: To match tensioners/sealers to compatible strapping, choose items with the same strapping material, width, and thickness or material and "Strapping Group No." For strapping, see page 1572.

	For Strapping Group No.	For Strapping Width	For Strapping Thickness	***Tensioners/Sealers***	Each	***Seals*** Pkg. Qty.		Pkg.
Manual								
F	11, 14	½″	Up to 0.031″	**20885T62**	$590.00	100	**1958T53**	$7.26
F	13, 15, 16	⅝″	Up to 0.040″	**20885T67**	590.00	100	**1958T76**	9.53
Battery Powered								
G	10-17	⅜″-¾″	0.018″-0.040″	**20995T3**	1,870.89	—	—	—
H	11, 14	½″	0.016″-0.026″	**2097T43**	3,760.29	—	—	—
H	12	½″	0.025″-0.041″	**2097T44**	3,760.29	—	—	—
H	13, 15, 16	⅝″	0.025″-0.041″	**2097T45**	3,760.29	—	—	—

Replacement 12-Volt Battery for 20995T3 ..... **20995T7** Each $236.27
Replacement 18-Volt Battery for 2097T43, T44, and T45 ..... **2097T51** Each $143.75

Plastic Strapping Kits

Everything you need to handle plastic strapping tasks. Strapping is black and comes in a dispenser box, except for Style L, which comes on a steel dispenser with wheels.

Smooth polyester strapping is stronger than polypropylene. It can sustain a moderate stretch and return to its original condition.

(J) Include a tensioner with built-in cutter and 300 buckles.
(K) Includes a tensioner, sealer, and 1,000 seals.
(L) Include a tensioner, sealer, and 500 seals.

	Strapping Wd.	Thick.	Average Breaking Strength, lbs.	Coil Lg., ft.		Each
Kits with Polypropylene Strapping						
With Plastic Buckles						
J	½″	0.018″	300	3,000	**1966T1**	$46.64
With Steel Wire Buckles						
J	½″	0.018″	300	3,000	**1966T3**	46.64
With Smooth Seals						
K	½″	0.026″	500	7,200	**1966T31**	284.73
L	½″	0.026″	500	3,600	**1966T32**	582.41
Kit with Smooth Polyester Strapping						
With Serrated Seals						
L	½″	0.025″	775	5,800	**1966T33**	646.87

Extra Buckles and Seals			
Plastic Buckles (250/Pkg.)	**1966T8**	**Pkg.**	$7.58
Wire Buckles (250/Pkg.)	**1966T9**	**Pkg.**	$11.14
Smooth Seals (1,000/Pkg.)	**1966T11**	**Pkg.**	$24.50
Serrated Seals (100/Pkg.)	**1958T53**	**Pkg.**	$7.26

Strapping Machines

Capable of securing 15 polypropylene straps per minute, this portable machine saves you time and energy. Strapping is manually pulled over the package and fed into the strapping inlet. Machine tensions the strapping around the package, makes a sealless weld, and feeds out strapping for the next package. Use with 8″ wide× 8″ ID coils of polypropylene strapping (sold separately).

Machine is 35″ Lg.×23″ Wd.× 30″ Ht. It has four swivel casters, two with brakes. Unit operates on 120 VAC @ 4.6 amps, 50/60 Hz. Comes with a 15-ft. power cord with a three-prong plug.

For Strapping Width		
⅜″ and ½″	**1950T5**	$1,210.64

Plastic Strapping for Strapping Machines

Polypropylene strapping is furnished on coils designed to fit strapping machines. Color is white.

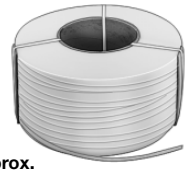

Strapping Width	Thickness	Average Breaking Strength, lbs.	Approx. Lg., ft.		
8″ Wd.×8″ ID Coils					
¼″	0.024″	200	18,000	**1950T11**	$96.00
⅜″	0.022″	300	12,900	**1950T6**	80.44
½″	0.024″	325	9,900	**1950T7**	80.51
½″	0.024″	500	7,200	**1950T12**	85.42
9″ Wd.×8″ ID Coils					
¼″	0.024″	200	18,000	**1950T13**	96.00
⅜″	0.024″	300	12,900	**1950T14**	80.44
½″	0.023″	350	9,900	**1950T15**	80.51
½″	0.024″	500	7,200	**1950T16**	85.42

Strapping Dispensers

A

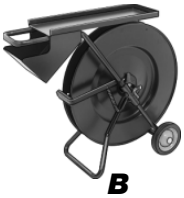
B

C

D

E

F

G

Keep strapping coils neat and ready to use. All dispensers are steel with a black painted finish. ***Styles A-B*** and ***D-G*** include a tool tray.

(A) Has large wheels for better maneuvering and has a spring-loaded brake that prevents strapping from unspooling.

(B) Fits in narrow spaces and has a spring-loaded brake that prevents strapping from unspooling.

(C) Lays horizontally on a work surface.

(D) Has pneumatic tires that work well on rough surfaces and a brake that prevents strapping from unspooling.

(F) Holds a mini coil in a dispenser box.

(G) Holds up to three mini coils in dispenser box.

Note: To match dispensers to compatible strapping, choose items with the same strapping material, width, coil width, and ID or the same material and "Strapping Group No." For strapping, see pages 1570 and 1572.

	For Strapping Material	For Strapping Group No.	For Strapping Width	For Coil Width	For Coil ID		
For Coils							
A	Steel and Plastic	1-8, 10-19	3/8"-3/4"	3"-6"	16"	14635T11	$333.51
B	Steel	1-8	3/8"-3/4"	3"	16"	14635T12	343.02
C	Steel	1-8	3/8"-3/4"	3"	16"	14635T15	571.07
D	Steel	9	3/4"-2"	3/4"-2"	16"	14635T14	641.31
E	Bonded and Woven Polyester	11, 13-15, 17-19	1/2"-1 1/4"	3"-6 1/4"	3"	14635T17	220.50
For Mini Coils in Dispenser Box							
F	Steel and Plastic	1-8, 10-19	3/8"-3/4"	3/8"-3/4"	—	14635T16	207.70
G	Steel and Plastic	6-9, 17, 19, 20	3/4"-2"	3/4"-2"	—	14635T13	518.09

Bale and Bundle Wire Ties

Single-loop ties have a loop on one end. Feed the straight end through the loop and twist. They are longer for cardboard, lumber, and other large bundles. *Black annealed steel* is pliable. *Painted steel* is more corrosion resistant than black annealed steel. Color is gray.

Double-loop ties are shorter than single-loop ties and have a loop on each end that can be twisted around each other for a secure closure. Use on bags, cables, and other small bundles. *Black annealed steel* is pliable. *Type 304 stainless steel* offers better corrosion resistance than black annealed steel. *PVC-coated steel* reduces slipping and allows for extra-tight twists. Color is yellow.

Single-Loop Ties

Lg., ft.	Pkg. Qty.	Black Annealed Steel	Pkg.	Painted Steel	Pkg.
14 Gauge (0.08" OD)					
8	25	2000T81	$9.92	2000T21	$10.36
10	25	2000T82	12.34	2000T22	12.92
12	25	2000T83	14.75	2000T23	15.43
14	25	2000T84	17.19	2000T24	17.97
15	25	2000T85	18.35	2000T25	19.20
18	25	2000T86	21.96	2000T26	22.97
13 Gauge (0.09" OD)					
8	25	2000T71	12.98	2000T31	13.58
10	25	2000T72	16.13	2000T32	16.87
12	25	2000T73	19.26	2000T33	20.15
14	25	2000T74	22.41	2000T34	23.44
15	25	2000T75	23.98	2000T35	25.09
18	25	2000T76	28.66	2000T36	29.98

Double-Loop Ties

Lg.	Pkg. Qty.		Pkg.
Black Annealed Steel			
19 Gauge (0.041" OD)			
4"	500	2001T54	$10.35
6"	500	2001T55	11.30
8"	500	2001T56	12.28
17 Gauge (0.054" OD)			
3"	500	2001T58	11.65
4"	500	2001T59	12.12
5"	500	2001T61	11.72
16 Gauge (0.063" OD)			
6"	250	2001T64	7.35
7"	250	2001T66	9.51
8"	250	2001T67	9.68
9"	250	2001T68	10.37
10"	250	2001T69	10.78
11"	250	2001T51	11.29
12"	250	2001T52	11.82
14"	250	2001T53	12.82
17"	250	2001T79	14.55

Lg.	Pkg. Qty.		Pkg.
Black Annealed Steel (Cont.)			
14 Gauge (0.08" OD)			
12"	250	2001T88	$15.40
15"	250	2001T98	17.24
Type 304 Stainless Steel			
16 Gauge (0.063" OD)			
6"	50	2001T211	9.02
8"	50	2001T212	9.34
12"	50	2001T213	11.71
PVC-Coated Steel			
16 Gauge (0.063" OD)			
4"	250	2001T24	10.10
5"	250	2001T31	11.40
6"	250	2001T26	12.42
7"	250	2001T27	13.24

Wire Tie Twisters

Use with Bale and Bundle Wire Ties. Hooks and shafts are steel; handles are plastic.

Standard-grip twister has a revolving handle for quick twisting.

Spring-return twister has a spiral shaft that rotates when the handle is pulled back.

Standard-Grip Twister	2002T3	$2.88
Spring-Return Twister	2002T5	29.63

High-Strength Rubber Banding

Heavy Duty

An economical alternative to strapping, these reusable bands keep items of all shapes and sizes in place during transit. No tools required. Color is green.

Heavy duty are suitable for drums, barrels, pails, and for securing protective covers.

Light duty hold rolled material and small boxes together.

Heavy Duty

Relaxed Band Size Wd.	Thick.	Circum.	For Pallet Size Width	Depth	Pkg. Qty.		Pkg.
1/2"	1/16"	72"	32"	40"	5	8848T24	$19.91
1/2"	1/16"	92"	40"	48"	5	8848T25	21.63
3/4"	1/16"	56"	24"	32"	5	8848T26	16.51
3/4"	1/16"	72"	32"	40"	5	8848T27	18.18
3/4"	1/16"	84"	36"	48"	5	8848T28	21.91
3/4"	1/16"	92"	40"	48"	5	8848T29	22.91
3/4"	1/16"	112"	48"	60"	5	8848T31	24.91
1 1/2"	1/16"	72"	32"	40"	2	8848T83	25.06
1 1/2"	1/16"	92"	48"	48"	2	8848T84	25.57
1 1/2"	1/16"	113"	48"	60"	2	8848T32	27.43

Light Duty

Relaxed Band Size Wd.	Thick.	Circum.	Approximate Pkg. Qty. (1-lb. Pkg.)		Pkg.
1/4"	1/16"	24"	55	8848T91	$20.49
1/4"	1/16"	28"	51	8848T92	20.49
1/4"	1/16"	46"	32	8848T94	20.18
1/4"	1/16"	52"	27	8848T95	20.18
1/4"	1/16"	80"	17	8848T96	20.18
1/2"	1/16"	28"	27	8848T93	20.18
1/2"	1/16"	46"	18	8848T81	20.18
3/4"	1/16"	46"	11	8848T82	20.18

High-Security Tamper Seals

Our strongest tamper seals require cable or bolt cutters for removal. Not offered blank for security reasons. Seals meet C-TPAT (Customs-Trade Partnership Against Terrorism) and U.S. International Customs (ISO/PAS 17712) requirements, unless noted.

(1) Wire Rope Seals— Seals are made of strong steel cable with a chrome-plated steel locking end fitting.

(2) Pull-Tight Wire Rope Seals— Insert the free end of the rope into the seal and pull it tight. Seal body is powder-coated zinc; wire rope is galvanized steel.

(3) Bolt-Style Seal— Bolt is steel with a plastic coating that resists corrosion yet scratches easily to show evidence of tampering. To install, snap apart the plastic attachment holding the bolt and body together and insert the bolt into the body.

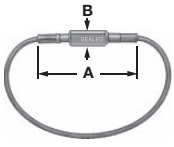

1

2

3
Open

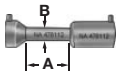

Sealed

Stock Seals

Wire rope seals are stamped "Sealed" and have random numbers. *Bolt-style seal* is stamped with two letters and seven random numbers. When sealed, overall length is 3½″.

Seal Size (A)	Seal Size (B)	Wire Rope Dia.	Open Lg.	Avg. Breaking Strength, lbs.	Color		Each
(1) Wire Rope Seal							
3½″	9/16″	3/16″	16½″	2,250	—	1943T12	$2.63
(2) Pull-Tight Wire Rope Seals							
¾″	1⅛″	1/16″	11¼″	750	White	2083T31 ♦	3.74
¾″	1⅛″	⅛″	11¼″	3,000	White	2083T32	4.15
1½″	1¾″	3/16″	11″	5,380	White	2083T33	5.17
(3) Bolt-Style Seal							
1 9/16″	7/16″	—	—	4,000	Yellow	19515T2	2.59

♦ Does not meet C-TPAT or ISO/PAS 17712 requirements.

Custom Seals

Personalize seals with wording and numbers. **To Order:** Please specify characters, starting number (all seals will be consecutively numbered from the starting number), and color (where applicable). Blu=Blue, Grn=Green, and Wh=White.

Note: The maximum number of characters per line includes spaces.

Seal Size (A)	Seal Size (B)	Wire Rope Dia.	Open Lg.	Avg. Breaking Strength, lbs.	Characters Max. Lines	Characters Max. per Line	Max. Digits in Starting Number	Available Colors	Min. Order		Per 100
(1) Wire Rope Seal											
3½″	9/16″	3/16″	16½″	2,250	1	8	6	—	100	1943T11	$298.74
(2) Pull-Tight Wire Rope Seals											
¾″	1⅛″	1/16″	11¼″	750	1	10	6	Blu, Grn, Red, Wh	100	2083T41 ♦	327.50
¾″	1⅛″	⅛″	11¼″	3,000	1	10	6	Blu, Grn, Red, Wh	100	2083T42	362.50
1½″	1¾″	3/16″	11″	5,380	1	10	7	Blu, Grn, Red, Wh	100	2083T43	452.50

♦ Does not meet C-TPAT or ISO/PAS 17712 requirements.

Tamper Seals

Insert the free end into the seal body to close. Seals must be cut or broken to be opened. Not offered blank for security reasons. Seals are plastic, unless otherwise stated.

Fixed-loop seals have a set loop size when the seal end is pushed into the seal body. Use on trucks and other containers with large openings. ***Pull-tight seals*** adjust to keep a tight seal on containers.

(5&6) Conform to Mil. Spec. FF-S-2738A. Made of tin-plated steel.

(7) Imprinted with a black bar code. Made of tin-plated steel. *Code 39* seal has M11 identification and eight characters. *Interleaved 2 of 5* seal has M12 identification and 12 characters.

(9) Have a wire hasp loop end.

(10) Has a pull tab for tool-free removal.

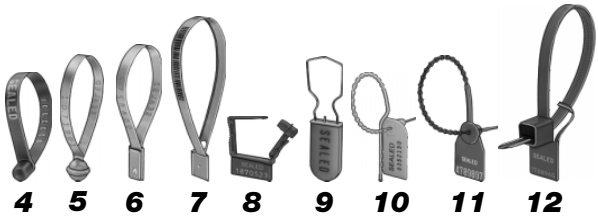
4 5 6 7 8 9 10 11 12

Stock Seals

Seals are stamped "Sealed" and have random consecutive numbers, except Style 4, which is consecutively numbered 1-50.

Wd.	Open Lg.	Avg. Breaking Strength, lbs.	Color	Pkg. Qty.		Pkg.
Fixed-Loop Seals						
4	3/8″	7½″	35	Blue	50	2076T14	$11.43
5	5/16″	8½″	150	Silver	50	2003T62	13.35
6	5/16″	8¾″	90	Silver	50	2003T61	8.38
Fixed-Loop Bar-Code Seal *—Code 39*							
7	3/8″	8⅜″	100	White	25	21155T21	11.25
Fixed-Loop Bar-Code Seal *—Interleaved 2 of 5*							
7	3/8″	8⅜″	100	White	25	21155T22	11.25

Wd.	Open Lg.	Avg. Breaking Strength, lbs.	Color	Pkg. Qty.		Pkg.
Padlock-Style Seals						
8	1 1/16″	1½″	3	Red	50	19125T3	$10.22
9	¾″	3⅛″	100	Red	50	2041T5	10.70
Pull-Tight Seals						
10	⅛″	7⅞″	6	White	50	2162T11	12.47
11	3/16″	9⅞″	50	Red	50	21245T21	10.20
12	3/8″	11⅝″	110	Red	50	21075T21	12.79

Custom Seals

Personalize seals with wording and numbers. Styles 5 and 6 are available with a silver finish or coated with colored polyester.

To Order: Please specify characters and starting number (all seals will be consecutively numbered from the starting number). For seals with two or three lines of characters, please specify characters and on which line they should appear. Where applicable, please also specify color. Blk=Black, Blu=Blue, Gry=Gray, Grn=Green, Or=Orange, and Yel=Yellow.

Note: The maximum number of characters per line includes spaces.

Wd.	Open Lg.	Avg. Breaking Strength, lbs.	Characters Max. Lines	Characters Max. per Line	Max. Digits in Starting Number	Available Colors	Min. Order		Per 1,000 1,000-4,999	Per 1,000 5,000-Up
Fixed-Loop Seals										
4	3/8″	7½″	35	1	17	7	Blu, Grn, Red, Yel	1,000	2076T11	$283.33	$242.86
4	3/8″	10″	35	1	17	7	Blu, Grn, Red, Yel	1,000	2076T12	303.33	259.98
5	5/16″	8½″	150	1	18	7	Silver	1,000	2003T28 ■	250.84	229.68
5	5/16″	8½″	150	1	18	7	Blu, Grn, Or, Red, Yel	1,000	2003T29 ■	268.41	247.24
6	5/16″	8¾″	90	1	15	7	Silver	1,000	2003T26 ■	142.70	117.08
6	5/16″	8¾″	90	1	15	7	Blu, Grn, Or, Red, Yel	1,000	2003T27 ■	169.73	144.11
Padlock-Style Seals										
8	1 1/16″	1½″	3	2	11	7	Blu, Grn, Red, Yel	1,000	19125T2	325.00	276.60
9	¾″	3⅛″	100	3	13	7	Blk, Blu, Gry, Grn, Or, Red, Yel	1,000	2041T7	199.74	180.47
Pull-Tight Seals										
11	3/16″	9⅞″	50	3	11	7	Blu, Grn, Red, Yel	1,000	21245T11	385.00	327.66
12	3/8″	11⅝″	110	3	13	7	Blu, Grn, Red, Yel	1,000	21075T11	437.50	364.58

■ Order in multiples of 100.

Tamper Seal Labels

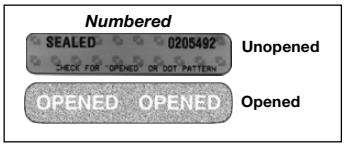

You'll know instantly if someone has peeled off these security labels. When peeled, the adhesive separates from the backing to reveal the word "Opened." Not offered blank for security reasons.

Numbered label is imprinted with "Sealed" and random consecutive numbers. ***Numbered and bar coded*** label is imprinted with random consecutive numbers and standard bar code 39.

	Lg.	Wd.	Pkg. Qty.		Pkg.
Numbered	2½″	½″	50	20195T3	$10.91
Numbered and Bar Coded	2⅝″	1″	100	20195T5	13.80

Disc-Style Tamper Seals

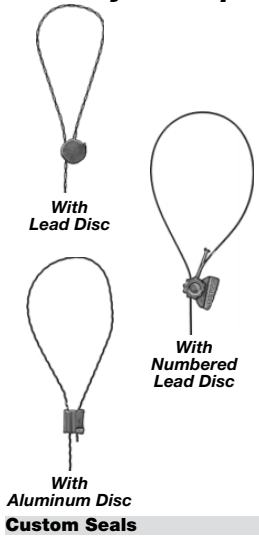

Know if your controls, valves, and containers have been tampered with. To seal, insert the end of the wire into the hole in the disc and close it permanently with a seal press (sold separately).

Stock Seals

One end of the wire is anchored in the disc. Discs are blank, except ***numbered discs***, which are printed with "Sealed" and six random consecutive numbers.

Disc Size	Wire Ga.	Wire OD	Pkg. Qty.	6″ Lg. Wire	Pkg.	8″ Lg. Wire	Pkg.	12″ Lg. Wire	Pkg.
Lead Disc with Copper-Coated Steel Wire									
5/16″ Dia.	23	0.052″	100	2011T111	$11.78	2011T121	$12.95	2011T141	$13.91
3/8″ Dia.	23	0.052″	100	2011T151	12.93	2011T161	13.84	2011T181	14.60
7/16″ Dia.	23	0.052″	100	2011T191	13.58	2011T211	14.10	2011T231	14.69
1/2″ Dia.	23	0.052″	100	2011T241	15.86	2011T251	16.30	2011T271	17.35
Lead Disc with Type 304 Stainless Steel Wire									
5/16″ Dia.	27	0.030″	100	2011T331	12.12	2011T341	13.19	2011T361	14.73
3/8″ Dia.	27	0.030″	100	2011T621	12.70	2011T631	13.64	2011T651	15.33
7/16″ Dia.	27	0.030″	100	2011T661	14.55	2011T671	14.97	2011T691	16.67
1/2″ Dia.	27	0.030″	100	2011T921	15.11	2011T931	16.08	2011T951	17.84
Lead Disc with Copper Wire									
5/16″ Dia.	22	0.050″	100	2011T711	18.08	2011T721	20.53	2011T741	25.64
3/8″ Dia.	22	0.050″	100	2011T751	19.22	2011T761	21.82	2011T781	27.04
7/16″ Dia.	22	0.050″	100	2011T791	20.24	2011T801	22.67	2011T821	27.60
1/2″ Dia.	22	0.050″	100	2011T831	24.25	2011T841	25.81	2011T861	30.02
Numbered Lead Disc with Galv. Steel Wire				***12″ Lg. Wire***		***16″ Lg. Wire***		***20″ Lg. Wire***	
7/16″ Dia.	30	0.030″	10	2006T2	$7.80	2006T5	$8.00	2006T3	$8.80
Aluminum Disc with Galvanized Steel Wire				***8″ Lg. Wire***		***10″ Lg. Wire***		***12″ Lg. Wire***	
15/32″ Lg. × 3/8″ Wd.	25	0.055″	50	2069T21	$9.55	2069T23	$10.45	2069T25	$11.25

Custom Seals

Personalize your seals with wording and numbers. Discs are lead and wire is galvanized steel. One end of the wire is anchored in the disc. **To Order:** Please specify characters (up to 10, including spaces) and starting number (up to six digits; all seals will be consecutively numbered from the starting number).

Disc Size	Wire Ga.	Wire OD	Min. Order	12″ Lg. Wire Per 1,000 1,000-4,999	12″ Lg. Wire Per 1,000 5,000-Up	16″ Lg. Wire Per 1,000 1,000-4,999	16″ Lg. Wire Per 1,000 5,000-Up	20″ Lg. Wire Per 1,000 1,000-4,999	20″ Lg. Wire Per 1,000 5,000-Up
7/16″ Dia.	30	0.030″	1,000	2006T1 $625.00	$555.56	2006T7 $650.00	$577.78	2006T9 $750.00	$666.67

Make-Your-Own Seals

Lead Disc

Wire Spool

Create seals using discs and strips or spools of twisted wire. ***Discs*** have two holes and are blank. ***Wire spools*** have a 6″ OD and 5/8″ ID.

Disc Size	Hole Dia.	Pkg. Qty.	Discs	Pkg.
Lead				
5/16″ Dia.	0.055″	100	2037T11	$6.96
3/8″ Dia.	0.062″	100	2037T12	8.61
7/16″ Dia.	0.072″	100	2037T15	11.46
1/2″ Dia.	0.085″	100	2037T13	13.79
Aluminum—Use with 22- and 23-ga. wire.				
15/32″ Lg. × 3/8″ Wd.	0.095″	100	2069T31	9.12

Wire Ga.	Wire OD	Wire Lg.	Pkg. Qty.	Wire Strips	Pkg.
Copper-Coated Steel					
23	0.052″	6″	100	2013T61	$6.35
23	0.052″	8″	100	2013T62	8.23
23	0.052″	12″	100	2013T63	12.10
23	0.052″	18″	100	2013T64	12.47

Wire Material	Wire Ga.	Wire OD	250-ft. Wire Spools Each	500-ft. Wire Spools Each	1,000-ft. Wire Spools Each
Copper-Coated Steel	23	0.052″	2013T26 $23.19	2013T24 $37.94	2013T25 $70.26
Galvanized Steel	23	0.052″	2013T27 29.55	2013T36 48.36	2013T37 89.55
Type 304 Stainless Steel	27	0.030″	2013T29 38.66	2013T35 63.26	2013T55 117.14
Copper	22	0.050″	2013T28 67.85	2013T47 111.03	2013T46 205.61

Seal Presses

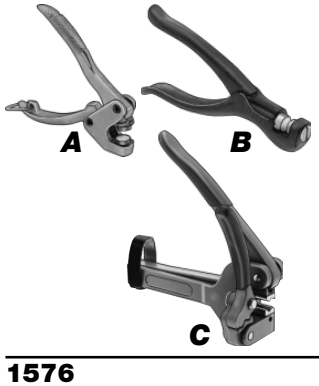

Squeeze the spring-loaded top handle together with the bottom handle to seal discs.

(A) Presses for lead-disc seals come with two flat dies. Presses are made of steel.

(B) Presses for lead- and aluminum-disc seals have two flat dies. One die is adjustable to fine-tune the depth of the impression on the seal. *Extra die* replaces the adjustable die. Presses are made of malleable iron.

(C) Presses for aluminum-disc seals have an ergonomic design plus two curved dies to create a secure seal with less effort. Presses also have a lever to retain wire tension while sealing the disc. Body is lightweight aluminum.

To Order: For engraved dies, please specify characters: For styles A and B, up to four characters including spaces for each die. For style C, up to six characters per line including spaces; maximum two lines per die.

	Max. Disc Size	O'all Lg.	Presses with Blank Dies Each	Presses with Engraved Dies Each	Extra Dies Blank Each	Extra Dies Engraved Each
A	7/16″ Dia.	5″	2012T3 $49.54	2012T1 $73.55	2012T4 $7.64	2012T5 $8.56
B	9/16″ Dia.	8″	2016T1 95.43	2016T2 107.36	2016T24 19.94	2016T25 22.16
					Pair	
C	5/8″ Lg. × 3/8″ Wd.	6¾″	2691T21 82.54	2691T11 99.47	2691T22 $18.26	____

About Tension and Compression Force Gauges

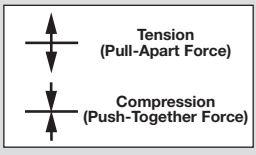

Also called push-pull gauges, these gauges measure tension (pull-apart) force and compression (push-together) force. For example, they can measure the tension force needed to pull adhesive-backed hooks off a wall and the compression force needed to compress a spring to a certain length.

When selecting a gauge, choose one that has twice the capacity of the measurement you expect. For example, if you need to weigh 100 lbs., choose a scale with a 200-lb. capacity.

Tension and Compression Force Gauges

Count on highly accurate readings with these easy-to-operate gauges. They let you measure tension on one end of the gauge and compression on the other. They have a switch for activating or deactivating maximum readings and can be easily reset to zero. Housing is aluminum. Dial is 2″ dia. with a plastic lens. Gauges are furnished with a plastic carrying case and a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

Standard gauges include six force measurement attachments: small hook, large hook, flat, notched, cone, and chisel, as well as a 3″ extension rod for attachments. Measuring shaft has 10-32 threads. Housing is 9 3/32″ Ht.×2 5/8″ Wd.×1 13/16″ Dp. ***High-capacity*** gauge includes a removable handle and two force measuring attachments: small hook and flat. Measuring shaft has M10 threads. Housing is 9 1/2″ Ht.×3 3/4″ Wd.×2 1/2″ Dp.

English, lbs. Cap.	Grads.	Accuracy		Each
Standard				
2	0.01	±0.006	17435T31	$467.21
5	0.025	±0.015	17435T32	467.21
10	0.05	±0.03	17435T33	467.21
20	0.1	±0.06	17435T34	467.21
30	0.2	±0.09	17435T35	467.21
50	0.25	±0.15	17435T36	467.21
100	0.5	±0.3	17435T37	467.21
High Capacity				
200	2.0	±1.0	17435T39	1,072.46

Metric Cap.	Grads.	Accuracy		Each
Standard				
3 kg	20 g	±9 g	17435T42	$467.21
10 kg	50 g	±30 g	17435T43	467.21
20 kg	100 g	±60 g	17435T44	467.21
50 kg	250 g	±150 g	17435T45	467.21

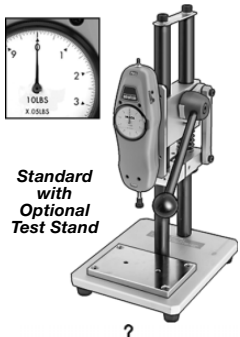

Standard with Optional Test Stand

Optional test stand has a lever that allows quick, consistent testing. Columns are steel; base is aluminum with a steel plate for mounting fixtures.

Optional handle provides a sure grip for hand-held testing with standard gauges. It extends 4″ on each side and attaches with included fasteners. Made of steel with a white baked-enamel finish. Cannot be used with test stand.

	Cap., lbs.	O'all Size, Ht.×Wd.×Dp.	Vertical Travel		Each
Optional Test Stand	220	17 51/64″×7 29/32″×9 29/32″	2″	17435T63	$707.25
Optional Handle	220			17435T38	120.75

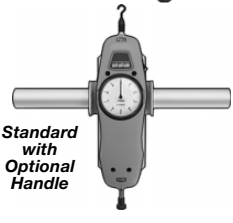

Standard with Optional Handle

Digital Tension and Compression Force Gauges

View highly accurate measurements on an easy-to-read LCD.

Standard Gauges

Display indicates on/off and maximum reading and has auto shut-off. Gauges include two force measurement attachments: hook and 3/4″ dia. compression plate, plus a 1 3/16″ long extension rod for attachments. Measuring shaft has 10-32 threads. Housing is 5 1/4″ Ht.×3″ Wd.×1 1/4″ Dp. and made of ABS plastic. LCD characters are 3/8″ high. Gauges operate on four AA batteries (included). Temperature range is 50° to 95° F.

English, lbs. Cap.	Grads.	Accuracy	Metric, kg Cap.	Grads.	Accuracy	Newtons Cap.	Grads.	Accuracy		Each
11	0.01	±0.055	5	0.005	±0.025	50	0.05	±0.25	1903T51	$413.21
45	0.05	±0.22	20	0.02	±0.1	200	0.2	±1.0	1903T52	535.65

Replacement AA Batteries (4/Pkg.) ..... 71455K53 **Per Pkg.** $2.94

With Optional Test Stand

Optional test stand has a lever that allows quick, consistent testing. Column is steel; base is black anodized aluminum with a plate for mounting fixtures.

Cap., lbs.	O'all Size, Ht.×Wd.×Dp.	Vertical Travel		Each
110	16 1/2″×6″×9 7/64″	6 11/16″	1903T55	$541.66

Gauges with RS-232 Cable and NIST Certificate

Display indicates tension or compression, maximum reading, zero setting, low battery, and power on. It also has auto shut-off. Gauges include a 6-ft. long RS-232 cable with 9-pin serial connector for uploading data to your PC and two force measurement attachments: hook and flat. Measuring shaft has 10-32 threads. Housing is 4″ Ht.×2 3/4″ Wd.×1 1/4″ Dp. and made of aluminum. LCD characters are 1/2″ high. Gauges also measure in ounces. They're furnished with a 120 VAC, 60 Hz adapter (0.6 amp draw), rechargeable NiMH (Nickel Metal Hydride) battery pack, a plastic carrying case, and a certificate of calibration traceable to NIST (National Institute of Standards and Technology). Temperature range is 50° to 100° F.

English, lbs. Cap.	Grads.	Accuracy	Metric, kg Cap.	Grads.	Accuracy	Newtons Cap.	Grads.	Accuracy		Each
5	0.005	±0.015	2.5	0.002	±0.0075	25	0.02	±0.075	17595T81	$850.00
10	0.01	±0.03	5	0.005	±0.015	50	0.05	±0.15	17595T82	850.00
50	0.05	±0.15	25	0.02	±0.075	250	0.2	±0.75	17595T84	850.00
100	0.1	±0.3	50	0.05	±0.15	500	0.5	±1.5	17595T85	850.00

Optional test stand has a force-gauge mounting plate on the steel column. Base is black anodized aluminum with a 5/8″ thick compression plate. Stand includes a tension hook with 10-32 threads that screws into the base.

Cap., lbs.	O'all Size, Ht.×Wd.×Dp.	Vertical Travel		Each
100	15″×10″×10″	12″	17595T1	$674.60

With Optional Test Stand

Optional Data-Logging Software—Compatible with Windows 3.X, 95, 98, 2000, or NT. This software allows you to upload your force data into Excel, Access, Lotus, or other statistics programs. Furnished on a CD.
1852T5 ..... **Each** $313.08

For information about tension and compression force gauges, see page 1577.

Remote-Reading Digital Tension and Compression Force Gauge

Gauge with Load Cell

Connect this gauge to a remote load cell to take measurements in areas that would otherwise be inaccessible. A complete unit requires a gauge and load cell, each sold separately.

Gauge

Includes a 6-ft. long RS-232 cable with a 9-pin serial connector for uploading data to your PC. The LCD indicates maximum reading, zero setting, and low battery. It displays 1/8″ high characters on up to eight lines. Gauge has auto shut-off to preserve battery life and analog output for a chart recorder via the analog output connector.

Housing is 7 3/4″ Ht. × 2 7/8″ Wd. × 1 5/8″ Dp. and made of aluminum. Gauge includes a universal 120/230 VAC, 50/60 Hz adapter, rechargeable NiMH (Nickel Metal Hydride) battery pack, and a certificate of calibration traceable to NIST (National Institute of Standards and Technology). Temperature range is 40° to 110° F.

19105T51 ..... Each $1,175.34

Load Cells— 1/2″-20 Female Connection

Include an 8-ft. retractable cable with a 15-pin connection for the gauge.

English, lbs. Cap.	Grads.	Accuracy	Metric, kg Cap.	Grads.	Accuracy	Newtons Cap.	Grads.	Accuracy	O'all Size, Ht. × Wd. × Dp.		Each
500	0.05	±1.25	250	0.02	±0.625	2,000	0.2	±5	3″ × 2″ × 1″	19105T55	$894.65
1,000	0.1	±2.5	500	0.05	±1.25	5,000	0.5	±12.5	3″ × 2 1/2″ × 1″	19105T56	894.65

Dual-Scale Tension and Compression Force Gauges

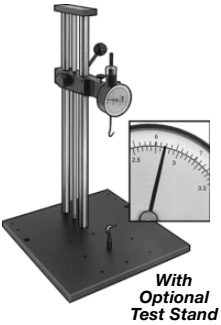

With Optional Test Stand

Calibrated in both English and metric units, you won't need to convert your measurements. These gauges have a maximum-reading indicator, which captures the highest reading, and a zero-reset button. Graduations begin at 10% of capacity. Gauges are furnished with a plastic carrying case and three force measuring attachments: hook, flat, and 2 3/8″ long extended point. Measuring shaft has M4 threads. Housing is high-impact plastic. Overall length is 4 3/8″ without attachments. Dial is 2 1/4″ dia. with a plastic lens. Gauges ***with NIST certificate*** have a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

English Cap.	Grads.	Accuracy	Metric Cap.	Grads.	Accuracy	Standard	Each	With NIST Certificate	Each
32 oz.	0.25 oz.	±0.50 oz.	1,000 g	10 g	±20 g	8728T74	$264.31	8728T32	$344.83
5 lbs.	1.00 oz.	±2 oz.	2,500 g	25 g	±50 g	8728T75	264.31	8728T34	344.83
10 lbs.	2.00 oz.	±2 oz.	5 kg	50 g	±50 g	8728T76	264.31	8728T35	344.83
20 lbs.	0.25 lb.	±0.25 lb.	10 kg	100 g	±100 g	8728T77	264.31	8728T36	344.83
40 lbs.	0.50 lb.	±0.50 lb.	20 kg	200 g	±200 g	8728T78	264.31	8728T37	344.83
60 lbs.	0.50 lb.	±0.50 lb.	30 kg	250 g	±250 g	8728T79	264.31	8728T38	344.83

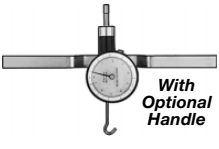

With Optional Handle

Optional test stand has a force-gauge mounting plate on the steel column. Base is black anodized aluminum with a 5/8″ thick compression plate. Stand includes a tension hook with 10-32 threads that screws into the base.

Optional handle provides a sure grip for hand-held testing. It extends 2 1/4″ on each side and attaches with included fasteners. Made of stainless steel.

	Capacity, lbs.	O'all Size, Ht. × Wd. × Dp.	Vertical Travel		Each
Optional Test Stand	100	15″ × 10″ × 10″	12″	17595T1	$674.60
Optional Handle (cannot be used with test stand)				8728T84	42.31

Slimline Tension and Compression Force Gauges

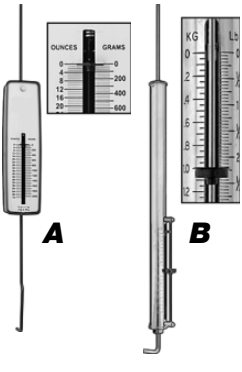

The linear design of these spring-operated gauges allows for use in tight spots.

(A) Standard Gauges— Housing is high-impact polystyrene.

(B) Gauges with Maximum-Reading Pointer— Indicator captures maximum reading. Gauges can be easily reset to zero. Housing is made of brass.

English Cap.	Grads.	Accuracy	Metric Cap.	Grads.	Accuracy	Overall Size		Each
(A) Standard Gauges								
8 oz.	0.25 oz.	±0.25 oz.	220 g	5 g	±5 g	14″ Lg. × 1 1/2″ Wd. × 1″ Dp.	2115T11	$71.20
36 oz.	0.5 oz.	±0.5 oz.	1,020 g	20 g	±20 g	14″ Lg. × 1 1/2″ Wd. × 1″ Dp.	2115T12	71.20
72 oz.	1 oz.	±1 oz.	2,025 g	25 g	±25 g	14″ Lg. × 1 1/2″ Wd. × 1″ Dp.	2115T13	71.20
15 lbs.	4 oz.	±4 oz.	6,804 g	100 g	±100 g	14″ Lg. × 1 1/2″ Wd. × 1″ Dp.	2115T14	71.20
(B) Gauges with Maximum-Reading Pointer								
1 lb.	0.25 oz.	±0.25 oz.	500 g	5 g	±5 g	16 9/16″ Lg. × 5/8″ Dia.	1365T25	237.46
2 lbs.	0.5 oz.	±0.5 oz.	1,000 g	10 g	±10 g	16 9/16″ Lg. × 5/8″ Dia.	1365T26	237.46
5 lbs.	1 oz.	±1 oz.	2.25 kg	0.05 kg	±0.05 kg	19 3/16″ Lg. × 7/8″ Dia.	1365T21	237.46
10 lbs.	2 oz.	±2 oz.	4.5 kg	0.05 kg	±0.05 kg	19 3/16″ Lg. × 7/8″ Dia.	1365T22	237.46
20 lbs.	4 oz.	±4 oz.	9 kg	0.1 kg	±0.1 kg	19 3/16″ Lg. × 7/8″ Dia.	1365T23	237.46
40 lbs.	8 oz.	±8 oz.	18 kg	0.2 kg	±0.2 kg	19 3/16″ Lg. × 7/8″ Dia.	1365T24	237.46

Gripping Attachments for Tension and Compression Force Gauges

Hold your testing material securely in place with these attachments. One end threads onto the force gauge shaft and the other grips the material. All have 10-32 female threads and include a 10-32 threaded stud to convert to male.

Style C has fine-point grip with smooth jaw faces. Made of steel. ***Style D*** is designed for testing filament or wire up to 1/32″ OD. Made of aluminum. ***Style E*** has one serrated jaw face and one smooth face. Made of steel. ***Style F*** has serrated jaw faces. Made of aluminum and steel.

	Load Cap., lbs.	O'all Lg.	Jaw Wd.	Max. Jaw Opening	Throat Dp.		Each
C	30	1 7/8″	1/16″	1/16″	3/8″	1828T45	$158.62
D	50	2 1/2″	—	—	—	1828T42	168.97
E	100	2 1/2″	1″	5/16″	1/2″	1828T46	$224.14
F	100	2 1/8″	3/16″	1/8″	5/8″	1828T44	332.76

For information about tension and compression force gauges, see page 1577.

Compression Force Gauges

Apply your compression load directly to the steel ball on top of these gauges and view your reading on the dial. As you increase the load, the two halves of the beam close, causing the pointer to move. A second pointer captures maximum readings. To rotate dial, unlock the knurled screw, reposition, and lock in place by tightening the screw. Dial has a plastic lens. Mount horizontally or vertically using the threaded mounting hole on the bottom of the gauge. Gauges are furnished with a plastic carrying case and a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

Cap.	English, lbs. Grads.	Accuracy	Mounting Threads	Gauge Material	Overall Size, Ht.×Wd.×Dp.	Dial Size		Each
100	1	±1	1/4″-28	Aluminum	2.94″×4.25″×2″	2.25″ Dia.	8725T31	$843.54
250	2.5	±2.5	1/4″-28	Aluminum	2.94″×4.25″×2″	2.25″ Dia.	8725T32	839.47
500	5	±5	1/4″-28	Aluminum	2.94″×4.25″×2″	2.25″ Dia.	8725T33	854.74
2,000	20	±20	1/2″-20	E4340 Alloy Steel	3.44″×4.75″×2.5″	2.75″ Dia.	8725T34	1,088.77
5,000	50	±50	1/2″-20	E4340 Alloy Steel	3.94″×4.75″×2.5″	2.75″ Dia.	8725T35	1,343.16

Compression Force Gauges for Springs

Determine the amount of pressure required to compress a spring to a specified length with these gauges. Place your spring on the lower platform, find the compression length desired on the side scale (reads in inches and in millimeters), then use the lever handle to pull the upper platform down until spring is compressed to the length specified. Dial will register compression force.

Gauges have a zero reset and capture maximum readings. Housing is 15 3/4″ Ht.×5 3/4″ Wd.×10 1/2″ Dp. and made of cast aluminum. Dial is 4 3/4″ dia. with a plastic lens. Gauges measure springs up to 2 1/4″ Dia.×4 3/4″ Lg. and have three 1/4″ holes for bench mounting (fasteners not included).

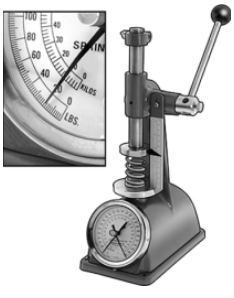

English, lbs. Cap.	Grads.	Accuracy	Metric, kg Cap.	Grads.	Accuracy		Each
125	1	±2.5	57	1	±1.1	6635T5	$697.74
250	1	±5	113	1	±2.3	6635T1	697.74
350	1	±7	159	1	±3.2	6635T2	697.74
500	2	±10	227	2	±4.5	6635T3	697.74
1,000	5	±20	454	5	±9.1	6635T4	697.74

Quick-Test Tension Force Gauges

Simplify taking tension force measurements. Just place the tip of the pivot arm perpendicular to the force to be measured and the arm will deflect left or right to give you a reading. The dial moves clockwise and counterclockwise and an indicator captures the maximum reading. Gauges have an aluminum housing. Dial has a shatter-resistant glass lens. Furnished in a plastic case.

Flat-tip gauges provide surface contact with test object. Dial is 1 1/2″ dia.

Round-tip gauges provide single-point contact with test object. Dial is 2 1/2″ dia.

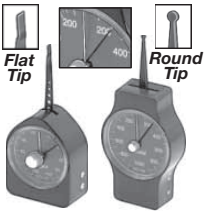

Cap.	Metric, g Grads.	Accuracy	Overall Size, Ht.×Wd.×Dp.		Each
Flat Tip					
0 to 10	0.2	±0.2	3 3/4″×1 3/4″×1″	1368T21	$221.76
5 to 35	1	±1	3 3/4″×1 3/4″×1″	1368T2	221.76
10 to 50	1	±1	3 3/4″×1 3/4″×1″	1368T3	221.76
20 to 100	2	±2	3 3/4″×1 3/4″×1″	1368T4	221.76
40 to 350	10	±10	3 3/4″×1 3/4″×1″	1368T22	221.76
50 to 150	5	±5	3 3/4″×1 3/4″×1″	1368T52	221.76
50 to 250	10	±10	3 3/4″×1 3/4″×1″	1368T62	221.76
Round Tip					
60 to 500	20	±20	6 1/8″×2 5/8″×1 1/4″	1368T7	350.74
150 to 1,000	25	±25	6 1/8″×2 5/8″×1 1/4″	1368T82	350.74
300 to 2,000	50	±50	6 1/8″×2 5/8″×1 1/4″	1368T92	350.74
700 to 4,000	100	±100	6 1/8″×2 5/8″×1 1/4″	1368T97	350.74

Tension Force Gauges for Wire

The nylon rollers on these gauges allow easy insertion of wire and cable for tension measurement. To use, insert test material between the two rollers at the bottom of the gauge and the slot at the top. Read the needle position and then use the table on the instrument handle to convert the needle reading to a tension measurement. Gauge is anodized aluminum. Accuracy is ±3%.

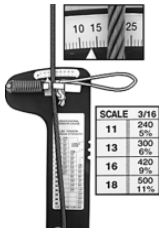

Wire Size	Min.-Max. Cap., lbs.	Wire Size	Min.-Max. Cap., lbs.	Wire Size	Min.-Max. Cap., lbs.	Overall Size, Ht.×Wd.		Each
3/32″	70-300	1/8″	100-500	5/32″	140-800	8″×4″	1840T34	$151.07
3/16″	180-1,240	7/32″	320-1,680	1/4″	300-2,000	12″×5″	1840T35	159.18
9/32″	500-2,500	5/16″	320-3,000	3/8″	200-4,500	18″×7″	1840T36	320.35

Combination Tension Force Gauges and Scales

The shackles at either end of these gauges (also known as dynamometers) let you measure tension force as well as weight. To measure tension, attach your test material to either the top or bottom shackle. To weigh an item, hang it from the bottom shackle. The shackles are connected to a beam and as they are pulled by force, the beam deflects incrementally. Measurements will register on the dial. These gauges have a maximum-reading indicator that captures the highest reading and can be manually reset to zero. Shackles are steel. Dial has a plastic lens. Gauges include a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

Gauges with 5″ dia. dial have a polycarbonate housing and are furnished in a plastic storage case.

Gauges with 10″ dia. dial have an aluminum housing. *Optional steel storage case* can accommodate 1,000- to 20,000-lb. capacity gauges.

Cap.	English, lbs. Grads.	Accuracy	Shackle Opening, Ht.×Wd.	O'all Ht.		Each
Gauges with 5″ Dia. Dial						
500	5	±2.5	1 7/8″ ×1 11/16″	12 1/2″	1360T1	$936.14
1,000	10	±5	1 7/8″ ×1 11/16″	12 1/2″	1360T2	890.35
2,000	20	±10	1 7/8″ ×1 11/16″	12 1/2″	1360T23	890.35
4,000	25	±20	1 7/8″ ×1 11/16″	12 1/2″	1360T24	961.58
5,000	50	±25	1 7/8″ ×1 11/16″	12 1/2″	1360T5	936.14
8,000	50	±40	1 7/8″ ×1 11/16″	12 1/2″	1360T25	1,053.16
10,000	100	±50	1 7/8″ ×1 11/16″	12 1/2″	1360T7	1,042.98
15,000	100	±75	1 7/8″ ×1 11/16″	12 1/2″	1360T18	1,200.70
20,000	200	±100	1 7/8″ ×1 11/16″	12 1/2″	1360T19	1,170.18
Gauges with 10″ Dia. Dial						
1,000	5	±5	1 7/8″ ×1 11/16″	12 1/2″	1361T12	1,098.95
2,000	10	±10	1 7/8″ ×1 11/16″	12 1/2″	1361T43	1,098.95
10,000	50	±50	1 7/8″ ×1 11/16″	12 1/2″	1361T17	1,231.23
20,000	100	±100	1 7/8″ ×1 11/16″	12 1/2″	1361T19	1,338.07
50,000	200	±250	5″ ×3 1/2″	28 5/8″	1361T47	3,632.63
Optional Steel Storage Case for 10″ Dial					1361T33	131.82

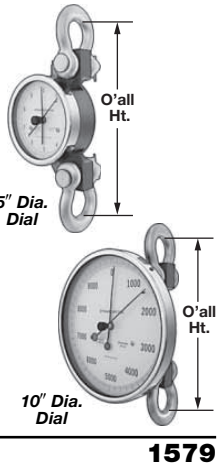

For information about tension force gauges, see page 1577.

Combination Digital Tension Force Gauges and Scales

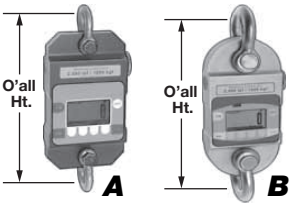

An easy-to-read LCD registers both tension and weight measurements. Also called dynamometers, these gauges have steel shackles at either end. To measure tension, attach your test material to either the top or bottom shackle. To weigh an item, hang it from the bottom shackle. Gauges capture maximum reading; reset to zero with the push of a button. All are NEMA 4X rated for protection from dust, water, and mild corrosives. LCD displays up to six digits; character height is 1″. Temp. range is –4° to +140° F. Operate on two C batteries (included). Furnished with a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

(A) Standard— Housing is aluminum alloy with gray powder-coated finish.

(B) High Accuracy— In addition to the units below, these gauges allow you to program custom capacity units. *2,500- to 10,000-lb. capacity* gauges have an aluminum alloy housing. *25,000-lb. and 100,000-lb. capacity* gauges have an alloy steel housing with nickel plating.

English, lbs. Cap.	Grads.	Accuracy	Metric, kg Cap.	Grads.	Accuracy	Newtons Cap.	Grads.	Accuracy	Shackle Opening, Ht.×Wd.	Overall Size, Ht.×Wd.×Dp.		Each
(A) Standard												
2,500	2	±5	1,000	1	±2	10,000	10	±20	1 13/64″×1 5/32″	11″×5″×2″	1844T21	$1,282.11
5,000	5	±10	2,000	2	±4	20,000	20	±40	1 13/32″×1 11/16″	14″×5″×2″	1844T22	1,353.33
10,000	10	±20	5,000	5	±10	50,000	50	±100	2 13/64″×2 9/32″	16″×6″×2″	1844T23	1,429.65
(B) High Accuracy												
2,500	0.5	±2.5	1,000	0.2	±1	10,000	2	±10	1 13/32″×1 11/16″	14″×5″×2″	1844T41	1,745.09
5,000	1	±5	2,000	0.5	±2	20,000	5	±20	1 13/32″×1 11/16″	14″×5″×2″	1844T42	1,958.77
10,000	2	±10	5,000	1	±5	50,000	10	±50	2 13/64″×2 9/32″	16″×6″×2″	1844T43	2,330.18
25,000	5	±25	10,000	2	±10	100,000	20	±100	3 39/64″×3 1/4″	19″×6″×2″	1844T44	2,971.23
100,000	20	±100	50,000	10	±50	500,000	100	±500	9 5/16″ ×7 5/16″	35″×7″×4″	1844T45	6,781.17

Replacement C Batteries (6/Pkg.) ..... 71455K54 **Per Pkg.** $6.49

Easy-to-Read Hanging Scales

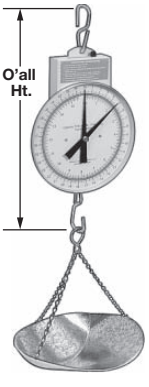

Double Revolution with Optional Scoop

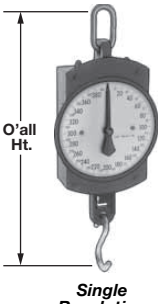

Single Revolution

Easily view measurements on the large open-face anodized aluminum dial. These scales have a tare function to zero out the weight of the container and only weigh the contents.

Double Revolution— Pointer completes two revolutions before reaching scale capacity. Scales are steel with a gray baked-enamel finish and have top and bottom steel hooks. Dial is 8″ dia.

An *optional scoop* (sold separately below) can be used with the double revolution scales. Made of galvanized steel, scoop is 6″ Ht.×11 1/2″ Wd.×15 1/2″ Dp. It has three chains for stability and adds 18″ to the overall height of the scales.

Single Revolution— Capacity is reached in one revolution of the pointer. These spring scales have a zero-reset screw and an S-hook on the bottom of the scale. *Steel housing* scales have a 1 13/32″ Ht.×29/64″ Wd. loop opening. Dial is 8″ dia. *Cast iron housing* scales have a 2 9/64″ Lg.×59/64″ Wd. loop opening. Dial is 7″ dia.

English Cap.	Grads.	Accuracy	Metric Cap.	Grads.	Accuracy	Each
Double Revolution— *20″ Ht.×8″ Wd.×2″ Dp.*						
20 lbs.	1 oz.	±3.2 oz.	9 kg.	25 g	±90 g	1752T1 $51.59
70 lbs.	0.1 lbs.	±0.7 lbs.	31 kg.	50 g	±310 g	1752T6 53.63
Optional Scoop						1752T8 25.30
Single Revolution with Steel Housing— *18″ Ht.×8″ Wd.×2″ Dp.*						
50 lbs.	0.25 lbs.	±0.25 lbs.	—	—	—	1753T1 233.13
100 lbs.	0.5 lbs.	±0.5 lbs.	—	—	—	1753T2 233.13
200 lbs.	1 lbs.	±1 lbs.	—	—	—	1753T3 249.21
Single Revolution with Cast Iron Housing— *18″ Ht.×7″ Wd.×3″ Dp.*						
200 lbs.	0.5 lbs.	±0.5 lbs.	—	—	—	1753T4 288.21
400 lbs.	1 lbs.	±1 lbs.	—	—	—	1753T5 298.59

Load-Estimating Hanging Scales

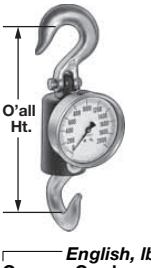

Determine approximate weights so you can efficiently load vehicles and trailers. These scales can be suspended from a block and tackle lift, an A-frame, or a forklift blade. They operate on hydraulic fluid instead of a spring so they can weigh heavier objects. Housing is anodized aluminum; dial is 4″ dia. with a plastic lens. Hooks are 4 25/32″ Ht.×3 5/8″ Wd. and made of forged steel.

Note: Not for overhead use.

English, lbs. Cap.	Grads.	Accuracy	Overall Size, Ht.×Wd.×Dp.		Each
2,000	20	±60	11″×5″×5″	17685T41	$298.91
5,000	100	±150	11″×5″×5″	17685T42	298.91

Slimline Hanging Scales

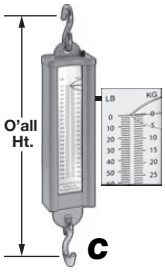

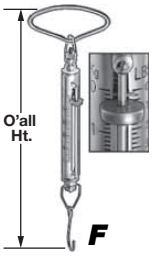

The linear design allows these scales to fit in tight spaces. All have a zero reset except *Style D*.

Accuracy for all scales is ±1 graduation.

(C&D) Standard— *Style C* have a gray baked-enamel finish. Top hook opening is 1 5/16″ dia. *Style D* has a cast iron body enclosed in steel. Top loop opening is 2 9/64″ Ht.×59/64″ Wd.

(E&F) With Tare— Use the knurled knob on the top to zero out the weight of the container and weigh only the contents. *Style E* have a 1″ Lg.×7/8″ Wd. top loop opening, except the *50-lb. capacity* scale has a 1 3/4″ Ht.×1 1/4″ Wd. opening. *Style F* have a maximum-reading indicator that captures the highest reading. They have a 1 7/8″ Lg.×2 3/4″ Wd. top loop opening except the *60- and 100-lb. capacity* scales, which have a 4″ Ht.×4 3/4″ Wd. opening.

English Cap.	Grads.	Metric Cap.	Grads.	Overall Size, Ht.×Wd.×Dp.		Each
(C) Standard— *Steel Housing*						
50 lbs.	1 lb.	22.5 kg.	0.5 kg.	12″×2″×2″	1756T1	$35.41
110 lbs.	1 lb.	50 kg.	0.5 kg.	20″×4″×2″	1756T2	47.41
220 lbs.	2 lbs.	100 kg.	1 kg.	20″×4″×2″	1756T4	55.64
330 lbs.	5 lbs.	150 kg.	2 kg.	20″×4″×2″	1756T5	60.70
(D) Standard— *Cast Iron and Steel Housing*						
500 lbs.	5 lbs.	—	—	24″×3″×3″	1756T6	409.03
				Ht.×Dia.		
(E) With Tare— *Aluminum Housing*						
4 lbs.	1 oz.	2 kg.	25 g	10″×1″	1757T37	56.25
10 lbs.	2 oz.	5 kg.	50 g	10″×1″	1757T38	56.25
20 lbs.	4 oz.	10 kg.	100 g	10″×1″	1757T34	56.25
50 lbs.	8 oz.	25 kg.	250 g	13″×2″	1757T39	56.25
(F) With Tare— *Brass Housing*						
2 lbs.	1/2 oz.	1 kg.	20 g	11″×1″	1757T51	103.74
4 lbs.	1 oz.	2 kg.	50 g	11″×1″	1757T52	103.74
6 lbs.	1 oz.	3 kg.	25 g	13″×1″	1757T53	103.74
10 lbs.	4 oz.	5 kg.	100 g	11″×1″	1757T54	103.74
15 lbs.	4 oz.	7.5 kg.	100 g	11″×1″	1757T55	103.74
30 lbs.	8 oz.	15 kg.	250 g	12″×1″	1757T56	103.74
50 lbs.	8 oz.	25 kg.	250 g	14″×1″	1757T57	103.74
60 lbs.	8 oz.	—	—	16″×2″	1757T58	218.39
100 lbs.	1 lb.	50 kg.	500 g	16″×2″	1757T59	218.39

High-Capacity Hanging Scales

Heavy duty construction allows these scales (also known as crane scales) to simultaneously lift and weigh bulk loads. They have a maximum-reading indicator that captures the highest reading and a zero-reset knob. The tare function zeros out the container weight (up to 20% of scale capacity) and only weighs the contents. Scales have a steel swivel J-hook with safety latch, cast aluminum housing, and 10″ dia. dial with a plastic lens. Furnished with a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

All scales have a 1 27/32″ Ht. × 1 11/16″ Wd. shackle opening and 1 13/32″ hook opening except the ***20,000-lb. capacity*** scale, which has a 2 7/32″ hook opening.

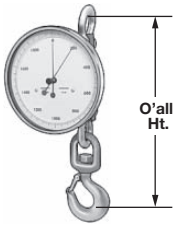

Cap.	English, lbs. Grads.	Accuracy	Overall Size, Ht. × Wd. × Dp.		Each
1,000	5	±5	20″ × 10 1/2″ × 6″	1766T52	$1,061.25
2,000	10	±10	20″ × 10 1/2″ × 6″	1766T53	1,061.25
5,000	20	±25	20″ × 10 1/2″ × 6″	1766T54	1,092.39
10,000	50	±50	20″ × 10 1/2″ × 6″	1766T55	1,428.91
20,000	100	±100	28″ × 10 1/2″ × 6″	1766T61	1,515.92

Compact Digital Hanging Scales

Compact for portability, these scales offer both pound and ounce graduations in English measurements. The LCD has auto shut-off, a hold feature to capture the last reading, and tare function to zero out the container weight and only weigh the contents. LCD characters are 0.6″ high. Scales have an ABS plastic housing, steel S-hook, and come with a T-bar handle for hand-held operation. Shackle opening is 1 39/64″ Ht. × 21/32″ Wd. Temperature range is 32° to 104° F. Operate on one 9-volt battery (included) and come with a waterproof polyester carrying pouch.

English Cap.	Grads.	Accuracy	Metric Cap.	Grads.	Accuracy	Overall Size, Ht. × Wd. × Dp.		Each
22 lbs.	0.02 lb./0.25 oz.	±0.1 lb./±1.8 oz.	10 kg	0.01 kg	±0.05 kg	13 3/8″ × 3 45/64″ × 2 13/32″	3952T51	$98.96
55 lbs.	0.05 lb./0.5 oz.	±0.2 lb./±4.4 oz.	25 kg	0.02 kg	±0.1 kg	13 3/8″ × 3 45/64″ × 2 13/32″	3952T52	98.96
99 lbs.	0.1 lb./2 oz.	±0.5 lb./±8.0 oz.	45 kg	0.05 kg	±0.2 kg	13 3/8″ × 3 45/64″ × 2 13/32″	3952T53	116.00

Replacement 9-Volt Battery (1/Pkg.) ..... 71455K56 **Per Pkg.** $2.75

Legal-for-Trade Compact Digital Hanging Scales

Use these scales where products are sold by weight—they meet NIST (National Institute of Standards and Technology) requirements. Scales are compact for portability and have an LCD with auto shut-off, maximum-reading hold to capture the highest reading, and zero-reset button. LCD characters are 0.95″ high. Housing is ABS plastic. Top loop is 3/4″ dia. Hook is made of steel. Temperature range is 32° to 104° F. Operate on four C batteries (not included).

English Cap.	Grads.	Accuracy	Metric Cap.	Grads.	Accuracy	Overall Size, Ht. × Wd. × Dp.		Each
6 lbs.	0.005 lb.	±0.005 lb.	2.7 kg	2 g	±0.002 kg	10 1/2″ × 4 3/4″ × 1 3/4″	3952T41	$278.30
15 lbs.	0.01 lb.	±0.01 lb.	6.8 kg	5 g	±0.005 kg	10 1/2″ × 4 3/4″ × 1 3/4″	3952T42	278.30
30 lbs.	0.02 lb.	±0.02 lb.	13.6 kg	0.01 kg	±0.01 kg	10 1/2″ × 4 3/4″ × 1 3/4″	3952T43	278.30

C Batteries (6/Pkg.) ..... 71455K54 **Per Pkg.** $6.49

Digital Hanging Scales

The sealed cast aluminum housing protects these scales (also known as crane scales) in corrosive environments as they lift and weigh your material. Just press a button for tare (zero out the weight of the container and only weigh the contents), total weight of multiple loads, or reset to zero. Scales have a 2″ Ht. × 1″ Wd. top loop opening and steel swivel J-hook with safety latch. Hook opening is 1″. The LCD has 0.75″ high characters. Temperature range is 14° to 122° F. Operate on four C batteries (included).

Cap.	English, lbs. Grads.	Accuracy	Overall Size, Ht. × Wd. × Dp.		Each
250	0.05	±0.25	12 1/2″ × 6 3/4″ × 4 3/8″	17545T24	$1,239.07
500	0.1	±0.5	12 1/2″ × 6 3/4″ × 4 3/8″	17545T25	1,239.07
1,000	0.2	±1	12 1/2″ × 6 3/4″ × 4 3/8″	17545T26	1,239.07

Repl. C Batteries (6/Pkg.) ..... 71455K54 **Per Pkg.** $6.49

High-Capacity Digital Hanging Scales

The highest capacity digital scales we offer, these scales (also called crane scales) both lift and weigh your heaviest loads. They have a tare button to zero out the weight of the container and weigh only the contents. Shackle and hook are steel. All include batteries. ***NEMA 12 enclosures*** are rated for indoor use and protect from dust and light noncorrosive splashes. ***NEMA 4*** and ***4X enclosures*** are rated for indoor/outdoor use and protect from dust and washdowns. ***NEMA 4X*** also protects from corrosion.

Style A scales are legal-for-trade and include a certificate of calibration traceable to NIST (National Institute of Standards and Technology). They have a cast aluminum housing, LED with 1.2″ high characters, and bottom swivel hook with safety latch. 17395T13 and T14 have a 1.12″ hook opening. 17395T31 and T32 have a 1.80″ hook opening. Temperature range is –4° to +122° F.

Style B scales have a black powder-coated steel housing, top and bottom shackles, and an LCD with 0.75″ high characters. Temperature range is 32° to 140° F.

Style C scales include a certificate of calibration traceable to NIST (National Institute of Standards and Technology). They have an LCD with 1″ high characters, anodized aluminum housing, and a bottom swivel hook with safety latch. 1824T21 and 1824T25 have a 1.14″ hook opening; 1824T27 has a 1.39″ hook opening. Temperature range is –4° to +140° F.

A

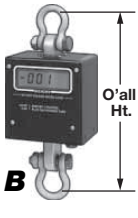

B

C

Cap.	English, lbs. Grads.	Accuracy	Cap.	Metric, kg Grads.	Accuracy	Shackle Opening, Ht. × Wd.	Overall Size, Ht. × Wd. × Dp.		Each
NEMA 12 Enclosures—Operate on a rechargeable battery pack (charger included)									
A	1,000	0.5	±1	500	0.2	±0.5	2 29/64″ × 2″	11 15/16″ × 9″ × 12 45/64″	17395T13	$1,794.78
A	2,000	1	±2	1,000	0.5	±1	2 29/64″ × 2″	11 15/16″ × 9″ × 12 45/64″	17395T14	1,794.78
A	5,000	2	±5	2,500	1	±2.5	3 13/32″ × 2 29/64″	16 43/64″ × 9″ × 12 45/64″	17395T31	2,362.61
A	10,000	5	±10	5,000	2	±5	3 13/32″ × 2 29/64″	16 43/64″ × 9″ × 12 45/64″	17395T32	2,362.61
Replacement 6-Volt Rechargeable Battery Pack for Style A									17395T21	122.84
Replacement Battery Charger for Style A									17395T22	193.97
NEMA 4 Enclosure—Operates on a rechargeable battery pack (charger included)									
B	2,000	1	±2	—	—	—	1 1/2″ × 1 1/4″	12 3/4″ × 5 1/4″ × 4 3/8″	1820T17	1,311.12
NEMA 4 Enclosure—Operates on four nonrechargeable C batteries									
B	2,000	1	±2	—	—	—	1 1/2″ × 1 1/4″	12 3/4″ × 5 1/4″ × 4 3/8″	1820T11	1,264.91
NEMA 4X Enclosures—Operate on two nonrechargeable C batteries									
C	2,500	2	±2.5	1,000	1	±1	1 11/32″ × 1 11/16″	20 27/32″ × 5″ × 12 1/32″	1824T21	1,745.09
C	5,000	5	±5	2,000	2	±2	1 11/32″ × 1 11/16″	20 27/32″ × 5″ × 12 1/32″	1824T25	1,923.16
C	10,000	10	±10	5,000	5	±5	2 1/32″ × 2 9/32″	25 13/32″ × 5 11/32″ × 15 1/64″	1824T27	2,416.67

Replacement C Batteries (6/Pkg.) ..... 71455K54 **Per Pkg.** $6.49

Beam-Balance Scales

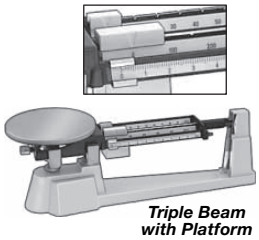

Triple Beam with Platform

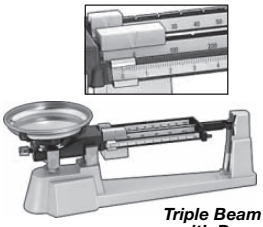

Triple Beam with Pan

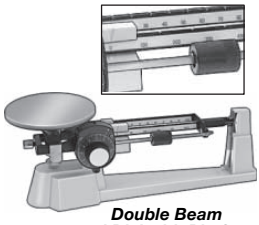

Double Beam and Dial with Platform

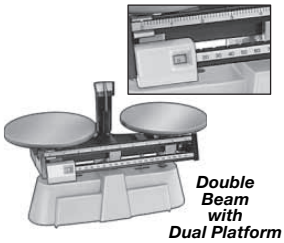

Double Beam with Dual Platform

Sliding weights on tiered beams offer an economical method of weighing small quantities of solids, liquids, and powders. These scales have magnetic damping to reduce pointer vibration and a zero-point adjustment knob. Housing is beige epoxy powder-coated zinc. Beams are aluminum.

Scales ***with tare*** function zero out the weight of the container (up to 225 g) to weigh only the contents.

Scales ***with platform*** have a 6″ dia. Type 201 stainless steel platform.

Triple beam with pan have a 6″ Dia.×¾″ Ht. Type 304 stainless steel pan. ***Double beam and dial with platform*** allows fine weight adjustments. ***Double beam with dual platform*** have two 6″ dia. Type 201 stainless steel platforms. They're commonly used for comparative weighing to determine the difference in mass between two objects, rather than their actual weight.

Optional Weight Set— Increase the capacity of single platform and pan scales by adding weights. Set includes one 500 g and two 1,000 g weights.

Total Cap., g	Front Beam, g Cap.	Front Beam, g Grads.	Front Beam, g Accuracy	Middle Beam, g Cap.	Middle Beam, g Grads.	Middle Beam, g Accuracy	Back Beam, g Cap.	Back Beam, g Grads.	Back Beam, g Accuracy	Cap. w/ Additional Weights, g	Without Tare	Without Tare Each	With Tare	With Tare Each
Triple Beam with Platform—6″ Ht.×17¼″ Wd.×6″ Dp.														
610	10	0.1	±0.15	500	100	±0.35	100	10	±0.25	2,610	1856T21	$138.30	1856T22	$188.89
Triple Beam with Pan—6″ Ht.×17¼″ Wd.×6″ Dp.														
610	10	0.1	±0.15	500	100	±0.35	100	10	±0.25	2,610	1856T26	214.44	1856T27	263.33
Double Beam and Dial with Platform—7″ Ht.×17¼″ Wd.×6″ Dp.														
610	10	0.1	±0.2	500	100	±0.35	100	10	±0.25	2,610	—	—	17185T11	255.28
Double Beam with Dual Platform—6½″ Ht.×14″ Wd.×6¼″ Dp.														
2,000	200	10	±0.1	10	0.1	±0.1	—	—	—	—	1748T1	273.96	1748T3	286.42

Optional Weight Set—*For Triple Beam Scales and Double Beam and Dial Scale with Platform* ..... 1856T25 **Each** $46.09

Bench Scales

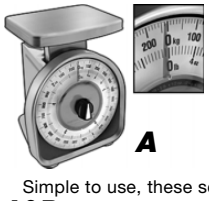

A

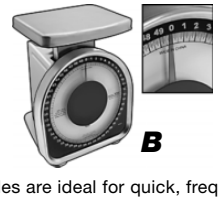

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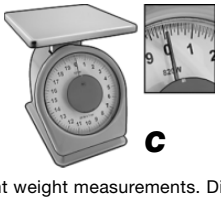

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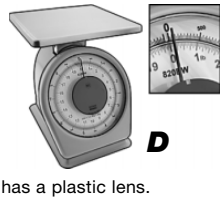

D

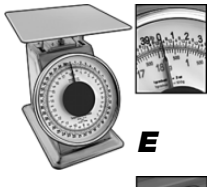

E

Simple to use, these scales are ideal for quick, frequent weight measurements. Dial has a plastic lens.

A&B Aluminum Housing— Scales have a steel weighing mechanism. *Style A* has a dial for tare that allows you to zero out the weight of the container and weigh only the contents. NSF (National Sanitation Foundation) certified. *Style B* has zero-point adjustment.

C&D Steel Housing— Scales have a rust-resistant steel weighing mechanism. Dial is angled 30°. *5- to 40-lb. cap.* scales have a beige powder-coated finish and are NSF certified. *60- to 200-lb. cap.* scales have a beige enamel finish. *Style D* has a dial for tare that allows you to zero out the weight of the container and weigh only the contents.

E Type 304 Stainless Steel Housing— Scales have a steel weighing mechanism. Dial is angled 30°.

F Low-Profile Steel Housing— Portable and easy to store. Dial can be viewed from the top or side. Scales have a memory lock lever—press during weighing to hold the dial reading when obscured by a large item. They have a reinforced ribbed platform, nonskid feet, carrying handle, and zero-point adjustment knob. 1728T16 and T17 have a gray enamel finish.

F

	English Cap.	English Grads.	English Accuracy	Metric Cap.	Metric Grads.	Metric Accuracy	Dial Dia.	Platform Size, Lg.×Wd.	Platform Material	Overall Size, Ht.×Wd.×Dp.		Each
Aluminum Housing												
A	2 lbs.	0.25 oz.	±0.25 oz.	900 g	5 g	±5 g	5⅞″	6″ × 4⅝″	Type 430 SS	8⅝″× 6½″× 6⅝″	1814T81	$110.05
A	5 lbs.	0.5 oz.	±0.5 oz.	2.2 kg.	10 g	±10 g	5⅞″	6″ × 4⅝″	Type 430 SS	8⅝″× 6½″× 6⅝″	1814T82	112.80
A	25 lbs.	2 oz.	±2 oz.	11.3 kg.	50 g	±50 g	5⅞″	6″ × 4⅝″	Type 430 SS	8⅝″× 6½″× 6⅝″	1814T83	113.95
B	50 lbs.	2 oz.	±2 oz.	—	—	—	5¾″	6″ × 4¾″	Type 304 SS	8¾″× 6¾″× 6¾″	1730T8	49.83
Steel Housing												
C	5 lbs.	0.5 oz.	±0.5 oz.	—	—	—	7″	9″ × 9″	Type 304 SS	10⅝″× 7¼″×10⅞″	1818T69	134.34
C	10 lbs.	1 oz.	±1 oz.	—	—	—	7″	9″ × 9″	Type 304 SS	10⅝″× 7¼″×10⅞″	1818T7	135.55
C	20 lbs.	1 oz.	±1 oz.	—	—	—	7″	9″ × 9″	Type 304 SS	10⅝″× 7¼″×10⅞″	1818T71	137.00
C	40 lbs.	2 oz.	±2 oz.	—	—	—	8″	9″ × 9″	Type 304 SS	10⅝″× 7¼″×10⅞″	1818T72	138.57
C	60 lbs.	4 oz.	±4 oz.	—	—	—	10½″	13″ ×13″	Chrome-Plated Steel	14⅝″×10½″×10¼″	1818T73	236.96
C	100 lbs.	4 oz.	±4 oz.	—	—	—	10½″	13″ ×13″	Chrome-Plated Steel	14⅝″×10½″×10¼″	1818T74	265.96
C	200 lbs.	8 oz.	±8 oz.	—	—	—	10½″	15½″×15½″	Chrome-Plated Steel	14⅝″×10½″×10¼″	1818T75	351.81
D	10 lbs.	1 oz.	±1 oz.	4.5 kg.	25 g	±25 g	7″	9″ × 9″	Type 304 SS	10⅝″× 7¼″×10⅞″	17525T13	110.44
D	20 lbs.	1 oz.	±1 oz.	9 kg.	25 g	±25 g	7″	9″ × 9″	Type 304 SS	10⅝″× 7¼″×10⅞″	17525T14	111.63
D	40 lbs.	2 oz.	±2 oz.	18 kg.	50 g	±50 g	7″	9″ × 9″	Type 304 SS	10⅝″× 7¼″×10⅞″	17525T15	112.91
D	60 lbs.	4 oz.	±4 oz.	27 kg.	100 g	±100 g	10½″	13″ ×13″	Chrome-Plated Steel	14⅝″×10½″×10¼″	17525T18	236.96
D	100 lbs.	4 oz.	±4 oz.	45 kg.	100 g	±100 g	10½″	13″ ×13″	Chrome-Plated Steel	14⅝″×10½″×10¼″	17525T22	265.94
D	200 lbs.	8 oz.	±8 oz.	90 kg.	250 g	±250 g	10½″	15½″×15½″	Chrome-Plated Steel	14⅝″×10½″×10¼″	17525T24	344.00
Type 304 Stainless Steel Housing												
E	5 lbs.	0.5 oz.	±0.5 oz.	2.2 kg.	10 g	±10 g	8″	9″ × 9″	Type 304 SS	10¾″× 6¾″× 9¾″	17525T51	153.39
E	10 lbs.	1 oz.	±1 oz.	4.5 kg.	20 g	±20 g	8″	9″ × 9″	Type 304 SS	10¾″× 6¾″× 9¾″	17525T52	156.80
E	20 lbs.	1 oz.	±1 oz.	9 kg.	50 g	±50 g	8″	9″ × 9″	Type 304 SS	10¾″× 6¾″× 9¾″	17525T53	160.36
E	40 lbs.	2 oz.	±2 oz.	18 kg.	100 g	±100 g	8″	9″ × 9″	Type 304 SS	10¾″× 6¾″× 9¾″	17525T54	166.13
Low-Profile Steel Housing												
F	100 lbs.	1 lb.	±1 lb.	—	—	—	—	13¼″×10½″	Steel	3⅞″×13¼″×10½″	1728T16	118.88
F	250 lbs.	1 lb.	±1 lb.	—	—	—	—	13¼″×10½″	Steel	3⅞″×13¼″×10½″	1728T17	118.88
F	250 lbs.	1 lb.	±1 lb.	—	—	—	—	13¼″×10½″	Type 304 SS	3⅞″×13¼″×10½″	1728T19	149.30

Digital Bench Scales

Compact for portability, use these scales for lightweight items. All have an easy-to-read LCD and ABS plastic housing.

Standard— Operate on a 120 VAC, 60 Hz adapter (0.2 amp draw) or a 9-volt battery (both sold separately). LCD characters are 7/16″ high. Temperature range is 40° to 104° F. *5-lb. capacity* scale has oz./g, zero-reset, on, and off keys. *10-lb. capacity* scale has oz./g, reset/hold, on, and off keys. The reset key can also be used for tare (zeros out container weight and weighs only the contents). The hold function locks in the weight of a large package when the display is obscured.

Corrosion-Resistant Platform— All measure in grams, ounces, troy ounces, and pennyweights. *21.17-*, *70.55-*, and *211.65-oz. capacity* scales also weigh in pounds; *70.55-* and *211.65-oz. capacity* scales also weigh in kilograms. Scales have two keys: zero-reset/on/off and print/unit select. Scales have tare function to zero out the weight of the container and weigh only the contents. LCD characters are 0.6″ high. Units operate on the included 120 VAC, 60 Hz adapter (0.12 amp draw) or four AA batteries (sold separately). Temperature range is 50° to 104° F.

Round Platform

A

B

	English Cap.	English Grads.	English Accuracy	Metric, g Cap.	Metric, g Grads.	Metric, g Accuracy	Platform Size, Wd.×Dp.	Platform Material	Overall Size, Ht.×Wd.×Dp.		Each
Standard											
A	5 lbs.	0.1 oz.	±0.14 oz.	2,000	2.83	±4	5⅞″×5⅞″	Plastic	1⅞″×5⅞″ ×8″	**1863T81**	$84.99
A	10 lbs.	0.2 oz.	±0.35 oz.	5,000	5.66	±10	5⅞″×5⅞″	Plastic	1⅞″×5⅞″ ×8″	**1863T82**	94.02
Adapter										**1863T85**	18.22
Corrosion-Resistant Platform											
B	7.06 oz.	0.0005 oz.	±0.0005 oz.	200	0.01	±0.01	4.7″ Dia.	Type 304 SS	2⅛″×7 9/16″×8¼″	**1760T89**	334.91
B	14.11 oz.	0.005 oz.	±0.005 oz.	400	0.1	±0.1	4.7″ Dia.	Type 304 SS	2⅛″×7 9/16″×8¼″	**1760T9**	184.91
B	21.17 oz.	0.005 oz.	±0.005 oz.	600	0.1	±0.1	6½″×5½″	Type 304 SS	2⅛″×7 9/16″×8¼″	**1760T92**	273.58
B	70.55 oz.	0.005 oz.	±0.005 oz.	2,000	0.1	±0.1	6½″×5½″	Type 304 SS	2⅛″×7 9/16″×8¼″	**1760T86**	347.17
B	211.65 oz.	0.05 oz.	±0.05 oz.	6,000	1.0	±1.0	6½″×5½″	Type 304 SS	2⅛″×7 9/16″×8¼″	**1760T94**	286.79
Optional 9-Pin RS-232 Interface (includes 6-ft. cable for data upload)										**1760T41**	104.25
Optional USB Interface (includes 6-ft. cable for data upload)										**1760T42**	116.51
Replacement Adapter										**1760T3**	31.45

Batteries

9-Volt (1/Pkg.)	**71455K56**	**Per Pkg.**	$2.75
AA (4/Pkg.)	**71455K53**	**Per Pkg.**	$2.94

Digital Bench Scales with Remote Display

The remote display lets you weigh items that are larger than the platform without obstructing the LCD. These scales have four keys: lb./kg, zero-reset (which also acts as a tare function to zero out the weight of the container and weigh only the contents), on, and off. The display can be set on a bench top or wall-mounted up to 9 ft. from the scale using the two 3/16″ dia. keyhole slots on the back (fasteners not included). Display housing is 2½″ Ht.×6¼″ Wd.×1¾″ Dp. and made of ABS plastic. LCD characters are 1″ high.

Scales operate on the included 120 VAC, 60 Hz adapter (0.2 amp draw) or a 9-volt battery (sold separately). Platform has a black powder-coated finish, an embossed tread pattern, and nonskid feet. Temperature range is 41° to 95° F.

English, lbs. Cap.	English, lbs. Grads.	English, lbs. Accuracy	Metric, kg Cap.	Metric, kg Grads.	Metric, kg Accuracy	Platform Size, Ht.×Wd.×Dp.	Platform Material		Each
150	0.2	±0.6	68	0.1	±0.3	2¼″×12½″×12″	Steel	**17295T31**	$135.86
400	0.5	±1.5	181	0.2	±0.75	2¼″×12½″×12″	Steel	**17295T39**	166.94
Replacement Adapter								**17295T33**	**Each** $17.15
9-Volt Battery (1/Pkg.)								**71455K56**	**Per Pkg.** $2.75

Pocket-Size Digital Scales

Not much bigger than a calculator, these scales provide accurate readings for on-the-go use. They have a tare function (zeros out the container weight and weighs only the contents) and auto shut-off. All scales have an ABS plastic housing; LCD characters are 3/8″ high.

Styles C&D run on three LR44 alkaline batteries (included). Temperature range is 41° to 95° F. *Style C* has on/tare and off keys. *Style D* has on/tare and oz./g keys.

Style E has on and zero-reset/off keys and a backlit display. Operates on two AAA batteries (included). Temperature range is 50° to 77° F.

Optional test weight is 200 g.

C

D

E

	English, oz. Cap.	English, oz. Grads.	Metric, g Cap.	Metric, g Grads.	Platform Size, Wd.×Dp.	Platform Material	Overall Size, Ht.×Wd.×Dp.		Each
C	—	—	120	0.1	3⅞″ ×2¾″	Plastic	⅝″ ×6⅛″ ×3″	**1722T65**	$119.39
D	42	0.05 for 0-16 0.1 for 16-42	1,200	1 for 0- 500 2 for 500-1,200	3″ ×3¾″	Plastic	⅝″ ×3½″ ×5¾″	**1722T61**	134.00
E	17.6	0.005	500	0.1	2¾″ ×2″	Type 304 SS	13/16″ ×4 5/16″ ×2 15/16″	**1722T71**	32.49

Style C Accuracy	
0-10 g	±0.2 g
10-30 g	±0.4 g
30-60 g	±0.6 g
60-120 g	±0.8 g
Style D Accuracy	
0-16 oz.	±0.1 oz.
16-42 oz.	±0.2 oz.
0-100 g	±2 g
100-600 g	±4 g
600-1,200 g	±10 g
Style E Accuracy	
0-17.6 oz.	±0.03 oz.
0-500 g	±0.6 g

Optional Test Weight for Styles D and E	**1777T28**	**Each**	$16.17
Replacement LR44 Battery for Styles C and D	**7604K14**	**Each**	$1.44
Replacement AAA Batteries for Style E (4/Pkg.)	**71455K62**	**Per Pkg.**	$2.82

Corrosion-Resistant Legal-for-Trade Digital Bench Scales

Type 304 stainless steel construction holds up in harsh environments. These scales are legal-for-trade for use wherever products are sold by weight. They have keys for gross, tare (zeros out the container weight and weighs only the contents), net, on/zero-reset, and off. Display has 1/2″ high LED characters. Operate on an included 120 VAC, 50/60 Hz adapter (0.08 amp draw). Temperature range is 14° to 104° F.

Cap.	Grads.	Accuracy	Platform Size, Wd. × Dp.	Overall Size, Ht. × Wd. × Dp.		Each
English						
99.95 oz.	0.05 oz.	±0.05 oz.	6 3/4″ × 5 1/4″	2 3/4″ × 7 1/2″ × 7″	18605T83	$482.51
8 lbs.	0.002 lb.	±0.002 lb.	6 3/4″ × 5 1/4″	2 3/4″ × 7 1/2″ × 7″	18605T84	482.51
10 lbs.	0.005 lb.	±0.005 lb.	6 3/4″ × 5 1/4″	2 3/4″ × 7 1/2″ × 7″	18605T85	482.51
20 lbs.	0.01 lb.	±0.01 lb.	6 3/4″ × 5 1/4″	2 3/4″ × 7 1/2″ × 7″	18605T86	514.78
Metric						
4,000 g	1.0 g	±1.0 g	6 3/4″ × 5 1/4″	2 3/4″ × 7 1/2″ × 7″	18605T82	482.51
Replacement Adapter					18605T95	53.91

Washdown Legal-for-Trade Digital Bench Scales

Choose these USDA-accepted scales for your washdown applications. They're legal-for-trade for use wherever products are sold by weight. Scales have keys for on/zero-reset, off, tare (zeros out container weight and weighs only the contents), and net/gross. The five-digit LCD indicates negative weight, center zero, stability underload and overload, and low battery. It also offers display hold and auto shut-off. LCD characters are 0.9″ high. Housing is ABS plastic. Scales operate on six D batteries (sold separately). Temperature range is 14° to 104° F.

English, lbs. Cap.	Grads.	Accuracy	Metric Cap.	Grads.	Accuracy	Platform Size, sq.	Platform Material	Overall Size, Ht. × Wd. × Dp.		Each
4	0.002	±0.002	2 kg	1 g	±1 g	9″ × 9″	Type 304 SS	6.9″ × 9.8″ × 10.6″	17345T61	$392.21
10	0.005	±0.005	4 kg	2 g	±2 g	9″ × 9″	Type 304 SS	6.9″ × 9.8″ × 10.6″	17345T62	392.21
20	0.01	±0.01	10 kg	5 g	±5 g	9″ × 9″	Type 304 SS	6.9″ × 9.8″ × 10.6″	17345T63	392.21
40	0.02	±0.02	20 kg	10 g	±10 g	9″ × 9″	Type 304 SS	6.9″ × 9.8″ × 10.6″	17345T64	392.21
D Batteries (6/Pkg.)									71455K55	Per Pkg. $7.32

Legal-for-Trade Digital Bench Scales

Standard and Washdown

Roller-Ball Top

Place items on the platform and position the display for an unobstructed view. These scales are legal-for-trade for use wherever products are sold by weight. All have a tare function to zero out the weight of the container and weigh only the contents. Temperature range is 14° to 104° F.

Standard and ***washdown scales*** have keys for on/zero-reset/off; print/unit selection; and tare; plus auto shut-off. Display is 8 5/16″ Ht. × 12 3/8″ Wd. × 3″ Dp. The display has an RS-232 9-pin serial port for uploading data to your PC or printer (cable not included; see pages 1866-1867). UL and C-UL listed.

Standard scales have a painted steel column connecting the display to the platform. Display can be set on a bench top. Housing is ABS plastic; LCD characters are 1″ high. Operate on the included 120 VAC, 60 Hz adapter (1 amp draw) or six C batteries (sold separately).

Washdown scales have a Type 304 stainless steel housing. Display is rated NEMA 4X/IP66 for high-pressure washdowns. LCD characters are 1″ high. Scale has a stainless steel column connecting the display to the platform. The display can be set on a bench top. Operate on the included 120 VAC, 50/60 Hz hardwire power cord or the included rechargeable batteries. Optional battery charger sold separately below.

Roller-ball top scale allows you to easily slide items on and off the platform surface, which has chrome-plated steel balls in a zinc-plated steel housing. Scale has two displays: one primary with 0.5″ high LCD characters and one remote with 1.5″ high LCD characters. Both have keys for zero-reset and unit selection. Remote display is 4″ Ht. × 7 1/2″ Wd. × 1 5/16″ Dp. and can be positioned up to 8 ft. from the platform. It can be set on a bench top or wall mounted using the two 5/16″ dia. keyhole slots (fasteners not included). Housing is ABS plastic. Scale operates through your PC with the included 6-ft. USB cable (no other power source required). Also use USB cable to upload data to your PC.

English, lbs. Cap.	Grads.	Accuracy	Metric, kg Cap.	Grads.	Accuracy	Platform Size, Ht. × Wd. × Dp.	Platform Material	Overall Size, Ht. × Wd. × Dp.		Each
Standard										
25	0.002	±0.002	10	0.001	±0.001	3 11/16″ × 12″ × 12″	Type 304 SS	23 3/16″ × 12″ × 16 11/16″	1852T81	$907.02
50	0.005	±0.005	25	0.002	±0.002	3 11/16″ × 12″ × 12″	Type 304 SS	23 3/16″ × 12″ × 16 11/16″	1852T82	907.02
100	0.01	±0.01	50	0.005	±0.005	4 1/2″ × 18″ × 18″	Type 304 SS	37″ × 18″ × 22 11/16″	1852T83	1,027.63
250	0.02	±0.02	100	0.01	±0.01	4 1/2″ × 18″ × 18″	Type 304 SS	37″ × 18″ × 22 11/16″	1852T84	1,027.63
500	0.05	±0.05	250	0.02	±0.02	5 3/8″ × 24″ × 24″	Type 304 SS	37″ × 24″ × 28 11/16″	1852T85	1,555.71
Replacement Display									1852T88	544.50
Replacement Adapter									1852T89	15.40
Optional C Batteries for Standard Scales (6/Pkg.)									71455K54	Per Pkg. $6.49
Washdown										
25	0.002	±0.002	10	0.001	±0.001	3 11/16″ × 12″ × 12″	Type 304 SS	23 3/16″ × 12″ × 16 11/16″	1851T51	1,612.60
50	0.005	±0.005	25	0.002	±0.002	3 11/16″ × 12″ × 12″	Type 304 SS	23 3/16″ × 12″ × 16 11/16″	1851T52	1,612.60
100	0.01	±0.01	50	0.005	±0.005	4 1/2″ × 18″ × 18″	Type 304 SS	37″ × 18″ × 22 11/16″	1851T53	2,019.60
250	0.02	±0.02	100	0.01	±0.01	4 1/2″ × 18″ × 18″	Type 304 SS	37″ × 18″ × 22 11/16″	1851T54	2,019.60
500	0.05	±0.05	250	0.02	±0.02	5 3/8″ × 24″ × 24″	Type 304 SS	37″ × 24″ × 28 11/16″	1851T55	2,497.74
Replacement Display									1851T61	809.72
Optional Battery Charger for Washdown Scales									1851T71	138.27
Roller-Ball Top										
150	0.05	±0.05	68	0.02	±0.02	3 37/64″ × 14″ × 14″	Chrome-Plated Steel	3 37/64″ × 14″ × 14″	1855T77	732.06

Weighing Scoops

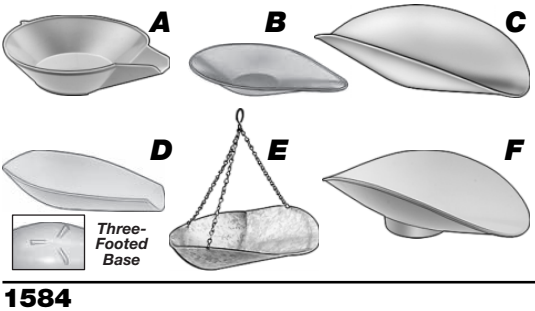

Material	Overall Size		Each
Flat Base—*Polypropylene color is white; antistatic polypropylene is black.*			
A Polypropylene	10″ Dia. × 2 3/4″ Ht.	1783T46	$10.88
A Antistatic Polypropylene	10″ Dia. × 2 3/4″ Ht.	1783T48	27.12
B Type 302 Stainless Steel	12″ Lg. × 7 3/8″ Wd. × 1 3/4″ Ht.	1783T25	43.33
C Type 304 Stainless Steel	21 1/4″ Lg. × 11″ Wd. × 5 1/2″ Ht.	1784T36	132.40
Three-Footed Base—*Color is white.*			
D Polypropylene	12″ Lg. × 6 1/4″ Wd. × 2 3/4″ Ht.	1783T32	23.40
Basin Base with Hanging Chains			
E Galvanized Steel	15 1/2″ Lg. × 11 1/2″ Wd. × 6″ Ht.	1752T8★	25.30
Round-Footed Base—*Polypropylene color is white.*			
F Polypropylene	21 1/2″ Lg. × 11 1/2″ Wd. × 5 1/2″ Ht.	1783T55	41.67
F Type 304 Stainless Steel	21 1/2″ Lg. × 11″ Wd. × 5 7/8″ Ht.	1783T21	149.65

★ Height is 18″ with chains.

Compact Counting Bench Scales

Compact size makes it easy to count and weigh anywhere. These scales come ready to weigh grams, but you can set them to weigh in milligrams, kilograms, pennyweights, carats, pounds, ounces, ounces troy, grain, taels, mommes, Newtons, and ticals. They have keys for on/off, mode, tare (zeros out container weight and weighs only the contents), and enter/print. All scales have a set-point over/under function that lets you program a low and high limit and a 9-pin RS-232 serial port for uploading data to your PC and/or printer (cable not included; see pages 1866-1867). Housing is ABS plastic. LCD has 1″ high characters. Operate on the included 120 VAC, 60 Hz adapter (0.5 amp draw). Temperature range is 50° to 86° F. ***Standard*** scales can also run on four AA batteries (sold separately). For higher accuracy, choose a ***precision*** scale.

Styles B and ***C*** have a draft shield to protect the scale from moving air and vibration that can affect accuracy. Draft shield for ***Style C*** has three doors: one on each side and one on top.

Printer—Connect this 5×7 dot matrix to your scale using the 6-ft. RS-232 cable (sold separately). It prints 40 characters per line on 2¼″ wide paper. Operates on the included 120 VAC, 60 Hz adapter (0.48 amp draw). Overall size is 3 7/16″ Ht.×4 1/16″ Wd.×7 1/16″ Dp. Temperature range is 30° to 104° F.

Data-Logging Software—Compatible with Windows 3.X, 95, 98, or NT. This software allows you to upload your data into Excel, Access, Lotus, or other statistics programs. Furnished on a CD.

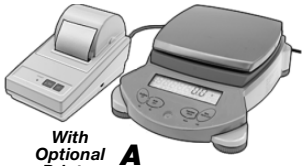

With Optional Printer **A**

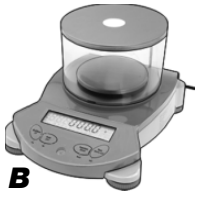

B

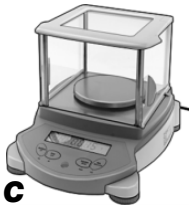

C

Cap.	Grads.	Accuracy	Platform Size, Wd.×Dp.	Platform Material	O'all Size, Ht.×Wd.×Dp.	O'all Ht. w/ Draft Shield		Each
Standard								
A 210 g	0.01 g	±0.01 g	4¾″ Dia.	Type 304 SS	2 53/64″×7 19/32″×10″	—	1764T16	$720.50
A 810 g	0.01 g	±0.01 g	5 13/16″×6 5/16″	Type 304 SS	2 53/64″×7 19/32″×10″	—	1764T17	782.57
A 2,100 g	0.1 g	±0.1 g	5 13/16″×6 5/16″	Type 304 SS	2 53/64″×7 19/32″×10″	—	1764T18	720.50
A 4,100 g	0.1 g	±0.1 g	5 13/16″×6 5/16″	Type 304 SS	2 53/64″×7 19/32″×10″	—	1764T21	803.00
A 8,100 g	0.1 g	±0.1 g	5 13/16″×6 5/16″	Type 304 SS	2 53/64″×7 19/32″×10″	—	1764T19	782.57
B 51 g	0.001 g	±0.001 g	4″ Dia.	Type 304 SS	2 53/64″×7 19/32″×10″	5 45/64″	1764T25	825.92
Optional AA Batteries for Standard Scales (4/Pkg.)							71455K53	Per Pkg. $2.94
Precision								
A 2,100 g	0.01 g	±0.01 g	6 19/32″×7 7/64″	Type 304 SS	3 19/64″×8 11/16″×11 13/16″	—	1910T34	1,240.88
C 260 g	0.0001 g	±0.0001 g	3½″ Dia.	Type 304 SS	3 19/64″×8 11/16″×11 13/16″	12″	1910T37	2,798.25
C 310 g	0.001 g	±0.001 g	4 11/16″ Dia.	Type 304 SS	3 19/64″×8 11/16″×11 13/16″	7½″	1910T23	1,395.26
Optional Printer							1764T31	527.71
Optional RS-232 Printer Cable for 1764T31 Printer							1764T43	118.18
Optional Data-Logging Software							1852T5	313.08

Counting Bench Scales

The wide platform on these scales accommodates large samples and weighing containers. Count as well as weigh material and use the tare function to zero out container weight and weigh only the contents.

Standard—The triple display lets you view weight, unit weight, and quantity simultaneously. Scales have a full numeric keypad plus function keys. Housing is ABS plastic. LCD is backlit with 0.87″ high characters. Scales operate on 120 VAC, 60 Hz (0.5 amp draw) and have a 6-ft. power cord with 2-prong plug as well as a 200-hour rechargeable battery for portability. Temp. range is 32° to 104° F.

D

E

F

Legal-for-Trade—Use wherever products are sold by weight. These scales have a 9-pin RS-232 serial port for uploading data to your PC (cable not included; see pages 1866-1867). Temperature range is 14° to 104° F. *Single Display*—Turn off the counting function to use as weigh-only scales. They have zero-reset, sample set, unit select, and print keys. LED characters are 0.56″ high. Housing is aluminum. Operate on 110 VAC, 50/60 Hz (0.25 amp draw) and have a 6-ft. power cord with three-prong plug. *Triple Display*—View weight, unit weight, and quantity simultaneously. These scales have a full numeric keypad plus keys for on/off, memory (stores 100 values), and set-point over/under (programs a low and high limit). LCD characters are 0.75″ high. Housing is ABS plastic. Operate on 115 VAC, 60 Hz (0.16 amp draw) and have a 5′9″ power cord with two-prong plug.

English, lbs. Cap.	Grads.	Accuracy	Metric Cap.	Grads.	Accuracy	Platform Size, Wd.×Dp.	Platform Material	Overall Size, Ht.×Wd.×Dp.		Each
(D) Standard—*Triple Display*										
6	0.0005	±0.0005	—	—	—	9⅞″×8 5/16″	Type 304 SS	4 21/32″×13¼″×11 7/32″	1743T3	$410.64
12	0.001	±0.001	—	—	—	11⅞″×9 39/64″	Type 304 SS	4 21/32″×13¼″×11 7/32″	1743T5	410.64
24	0.002	±0.002	—	—	—	13¼″×11 7/64″	Type 304 SS	5 5/16″×13¼″×13 5/16″	1743T7	410.64
(E) Legal-for-Trade—*Single Display*										
2	0.0002	±0.002	907.2 g	0.1 g	±0.907 g	8″×8″	Aluminum	5¼″×14″×15½″	17565T51	697.74
5	0.0005	±0.005	2,268 g	0.5 g	±2.268 g	8″×8″	Aluminum	5¼″×14″×15½″	17565T52	697.74
10	0.001	±0.01	4,536 g	0.5 g	±4.536 g	14″×12″	Type 304 SS	5¼″×14″×15½″	17565T53	697.74
20	0.002	±0.02	9.072 kg	0.001 kg	±0.009 kg	14″×12″	Type 304 SS	5¼″×14″×15½″	17565T38	697.74
50	0.005	±0.05	22.68 kg	0.005 kg	±0.022 kg	14″×12″	Type 304 SS	5¼″×14″×15½″	17565T55	697.74
100	0.01	±0.1	45.36 kg	0.005 kg	±0.045 kg	14″×12″	Type 304 SS	5¼″×14″×15½″	17565T56	697.74
200	0.02	±0.2	90.72 kg	0.01 kg	±0.090 kg	14″×12″	Type 304 SS	5¼″×14″×15½″	17565T39	697.74
(F) Legal-for-Trade—*Triple Display*										
10	0.002	±0.1	4.5 kg	0.001 kg	±0.05 kg	13″×10″	Type 304 SS	4½″×14″×13¾″	17315T53	720.24
25	0.005	±0.25	11.34 kg	0.002 kg	±0.1 kg	13″×10″	Type 304 SS	4½″×14″×13¾″	17315T38	720.24
50	0.01	±0.5	22.67 kg	0.005 kg	±0.25 kg	13″×10″	Type 304 SS	4½″×14″×13¾″	17315T55	720.24
100	0.02	±1	45.35 kg	0.01 kg	±0.5 kg	13″×10″	Type 304 SS	4½″×14″×13¾″	17315T81	720.24

Optional Data-Logging Software for Legal-for-Trade Scales—Compatible with Windows 3.X, 95, 98, 2000, or NT. This software allows you to upload your data into Excel, Access, Lotus, or other statistics programs. Furnished on a CD.
1852T5 ..... **Each** $313.08

Disposable Weighing Dishes

Use these dishes once and throw them away when you're done.

Aluminum weighing dishes have a smooth bottom. Maximum temperature is 1250° F.

Polystyrene weighing dishes are flexible with a smooth bottom. Maximum temperature is 140° F. **To Order:** Please specify color: blue or translucent white.

Aluminum w/ Crimped Sides and Tab Handle

Aluminum w/ Smooth Sides

Polystyrene w/ Smooth Sides

Overall Size	Pkg. Qty.	Per Pkg.
Aluminum with Crimped Sides and Tab Handle		
1 11/16″ Dia.×½″ Ht.	100	17805T63 $7.47
2¼″ Dia.×5/8″ Ht.	100	17805T64 8.93
2¾″ Dia.×5/8″ Ht.	100	17805T65 12.47
Aluminum with Crimped Sides		
2¾″ Dia.×¼″ Ht.	25	17805T72 12.38
4″ Dia.×5/16″ Ht.	25	17805T74 12.78
5 1/16″ Dia.×3/16″ Ht.	50	17805T76 14.32

Overall Size	Pkg. Qty.	Per Pkg.
Aluminum with Smooth Sides		
2⅞″ Dia.×11/16″ Ht.	100	17805T81 $10.38
4 1/16″ Dia.×¾″ Ht.	25	17805T82 8.67
Polystyrene with Smooth Sides		
1⅝″ Sq.×5/16″ Ht.	100	17735T94 5.88
3½″ Sq.×1″ Ht.	100	17735T95 9.88
5½″ Sq.×⅞″ Ht.	50	17735T96 8.22

Floor Scale for Trailer Loading

Avoid overloading your trailer tongue—position it directly on the scale to determine the weight. A removable 2¼″ long extension supports the tongue in the ball socket. Use the first time you load any trailer and every time the load changes. Scales convert weight into a direct reading on a hydraulic pressure gauge. The reading (in psi) is equivalent to the tongue weight in pounds. Body is red anodized aluminum; piston is steel with black-oxide finish. Gauge has a plastic lens.

English, lbs. Cap.	Grads.	Accuracy	Scale Ht.	Overall Ht. with Extension	Base Dia.	Gauge Dia.		Each
1,000	20	±10	4½″	6¾″	3¼″	2¾″	17645T21	$161.41
2,000	50	±20	4½″	6¾″	3¼″	2¾″	17645T32	161.41
5,000	100	±50	4½″	6¾″	3¼″	2¾″	17645T45	161.41

Mobile Floor Scales

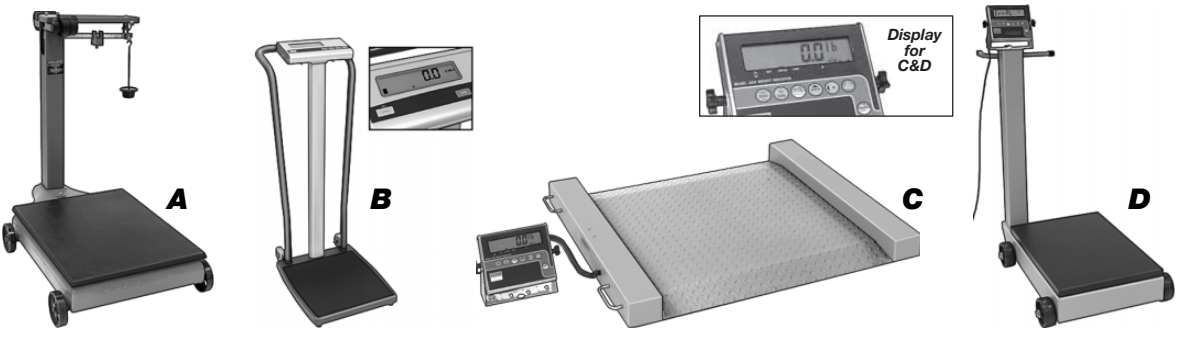

No struggling to move these heavy duty scales—just roll them where needed. The large platform handles your big weighing jobs.

Use *legal-for-trade* scales wherever products are sold by weight.

Standard beam scale and ***legal-for-trade beam*** scales have numbers and graduations on both sides of the beam. They come with a sliding weight and weight hanger. Column is steel. Wheels are cast iron except for 1799T19, which has polypropylene wheels.

All ***digital*** scales have a tare function to zero out the weight of the container and weigh only the contents. They have keys for on/off, zero-reset, and unit selection.

Standard digital scale has two rubber wheels and is similar in style to a hand truck. Frame is tubular steel. Display has an aluminum housing and 1″ high LED characters. Operates on six C batteries (included) and has a battery life indicator. It can be programmed for always on or auto-off from 12 seconds to 25 minutes. Also includes weight recall and reweigh functions. Temp. range is 32° to 100° F.

Remote display digital and ***legal-for-trade digital*** scales have a 9-pin RS-232 serial port for uploading data to your PC (cable not included; see pages 1866-1867). Operate on included 120 VAC, 50/60 Hz adapter (0.8 amp draw) or six C batteries (sold separately). Temp. range is 14° to 104° F.

Remote display digital scales let you position the LCD up to 15 ft. from the platform so large items won't block your view. Platform has two integral handles, two urethane wheels, and a ramp on two sides so you can easily slide or roll material on and off. Display has a 6⅝″ Ht.×8″ Wd.×2⅛″ Dp. Type 304 stainless steel housing and 1″ high LCD characters.

Legal-for-trade digital scale has a steel column and polypropylene wheels. Display housing is Type 304 stainless steel. LCD characters are 1″ high.

English, lbs. Cap.	Grads.	Accuracy	Metric, kg Cap.	Grads.	Accuracy	Platform Size, Ht.×Wd.×Dp.	Platform Material	O'all Ht.	Wheel Dia.		Each
Standard Beam											
A 2,000	1	±1	—	—	—	8½″×24″ ×31″	Cast Iron	42¾″	5″	1799T17	$622.50
Standard Digital											
B 500	0.1	±0.1	225	0.1	±0.1	1¾″×16″ ×18″	Cast Aluminum	42″	3″	5721T75	856.67
Remote Display Digital											
C 500	0.2	±0.5	225	0.1	±0.225	1½″×32½″×30″	Steel	3½″	3″	5934T67	1,450.02
C 1,000	0.5	±1	450	0.2	±0.45	1½″×32½″×30″	Steel	3½″	3″	5934T73	1,450.02
Legal-for-Trade Beam											
A 1,000	0.5	±0.5	—	—	—	5⅞″×18″ ×27″	Steel	44″	4⅞″	1799T13	852.99
A 2,000	0.5	±0.5	—	—	—	8⅝″×28″ ×28″	Steel	45″	5″	1799T19	1,052.64
Legal-for-Trade Digital											
D 1,000	0.5	±0.5	440	0.2	±0.2	7½″×19″ ×28″	Steel	49¾″	5″	1858T65	1,355.70
C Batteries (6/Pkg.)										71455K54	Per Pkg. $6.49

Optional Data-Logging Software for Remote Display and Legal-for-Trade Digital Scales—Compatible with Windows 3.X, 95, 98, 2000, or NT. This software allows you to upload your force data into Excel, Access, Lotus, or other statistics programs. Furnished on a CD.
1852T5 ..... **Each** $313.08

Build-Your-Own Floor Scales

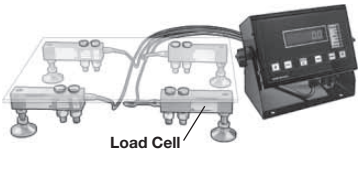

Designed to accept any size platform, these floor scales can be customized to meet your needs. They include four 2″ dia. load cells with load-centering leveling feet and an LED display. Simply bolt the load cells to a load-bearing surface, attach the cables, and you have a complete scale.

Load cells are nickel-plated steel and include mounting hardware. Display includes an adjustable tilt stand. It has keys for tare (zeros out the weight of the platform and container and weighs only the contents), unit selection, and print. Housing is 7″ Ht.×8″ Wd.×4½″ Dp. and made of black powder-coated steel. LED characters are 0.56″ high. Operates on 120 VAC, 50/60 Hz (0.5 amp draw) and has a 6-ft. power cord with three-prong plug. Temperature range is 32° to 104° F.

English, lbs. Cap.	Grads.	Accuracy	Metric, kg Cap.	Grads.	Accuracy		Each
2,000	0.2	±0.2	907	0.1	±0.1	1912T84	$1,416.67
4,000	0.5	±0.4	1,814	0.2	±0.2	1912T85	1,416.67
10,000	1.0	±1.0	4,535	0.5	±0.5	1912T86	1,416.67
20,000	2.0	±2.0	9,071	1.0	±1.0	1912T87	1,416.67

Legal-for-Trade Digital Floor Scales

The generous platform surface on these scales can handle large loads and pallets. They're legal-for-trade for use wherever products are sold by weight. Scales have keys for zero-reset, unit selection, and print, as well as a tare function (zeros out the weight of the container and weighs only the contents). The 9-pin RS-232 serial port lets you upload data to your PC (cable not included; see pages 1866-1867). The LED display has 9/16″ high characters, a 6½″ Ht.×10″ Wd.×4″ Dp. Type 304 stainless steel washdown housing, and a 20-ft. cord for remote readings. Mount the display using the included 10⅛″ Lg.×3½″ Wd. wall bracket with four 9/32″ dia. keyhole slots or the *optional 38″ high column*, which floor mounts using the four ⅜″ dia. holes (fasteners not included). Scales operate on 120 VAC, 50/60 Hz (0.25 amp draw) and have a 6-ft. power cord with three-prong plug. Temp. range is 14° to 104°F. Accuracy is ±1 graduation.

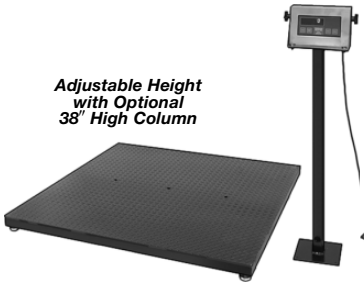

Adjustable Height with Optional 38″ High Column

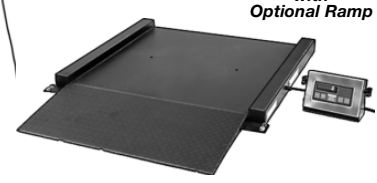

Low Incline with Optional Ramp

Optional ramps make it easier to roll loads on and off the platform and have a diamond-tread surface. Steel ramps have a black powder-coated finish.

Adjustable Height Scales— Platforms have adjustable feet to increase the height to 3½″. *Steel* platform has a diamond-tread surface and black powder-coated finish. *Type 304 stainless steel* platform has a textured surface. *Optional ramps* are 36″ Lg.×48″ Wd.

Low Incline Scales— Platforms are smooth and have 3½″ Ht.×3″ Wd. side rails to keep loads from rolling off. *Steel* platform has a black powder-coated finish. *Optional ramps* are 16″ long and the same width as the corresponding platform.

English, lbs. Cap.	Grads.	Metric, kg Cap.	Grads.	Platform Size, Ht.×Wd.×Dp.	STEEL Scales	Each	STEEL Optional Ramps	Each	TYPE 304 STAINLESS STEEL Scales	Each	TYPE 304 STAINLESS STEEL Optional Ramps	Each
Adjustable Height												
1,000	0.2	453	0.1	3″ ×48″×48″	19005T31	$1,457.46	19005T44	$335.00	—	—	—	—
2,000	0.5	907	0.2	3″ ×48″×48″	19005T32	1,457.46	19005T44	335.00	—	—	—	—
5,000	1.0	2,267	0.5	3″ ×48″×48″	19005T33	1,457.46	19005T44	335.00	19005T64	$3,734.33	19005T75	$1,497.74
10,000	2.0	4,535	1.0	3″ ×48″×48″	19005T35	1,457.46	19005T44	335.00	—	—	—	—
Low Incline												
1,000	0.2	453	0.1	1½″×36″×30″	1892T11	1,587.31	1892T25	280.33	1892T13■	2,620.90	1892T27	467.21
2,500	0.5	1,133	0.2	1½″×42″×36″	1892T12	1,781.34	1892T26	289.47	1892T14★	3,308.96	1892T28	475.00
Optional 38″ High Column for Display					19005T46	$258.82	—	—	19005T77	$292.54	—	—

■ Overall width is 42″. ★ Overall width is 48″.

Counting Over/Under Floor Scales

Program a low and high limit on these scales, which count as well as weigh. They also automatically adjust graduations for material weight so you get more exact readings for lighter material. The display is column mounted and tilted for easier viewing—it won't be obstructed by large material. Scales are legal-for-trade for use wherever products are sold by weight. They have eight keys: F (function), set, range, mode, print, on/off, zero-reset, and tare. The 7-pin RS-232 serial port lets you upload data to your PC (cable not included; see pages 1866-1867). Platform material is Type 304 stainless steel. All operate on 120 VAC, 60 Hz. Temperature range is 14° to 104°F. Accuracy is ±1 graduation.

Scales without printer have 1″ high LCD characters and operate on the included adapter (0.06 amp draw) or six D batteries (sold separately below). Display housing is ABS plastic. ***Scales with printer*** have a vacuum fluorescent display (VFD) with 0.8″ high characters and a 6-ft. power cord with three-prong plug (1.1 amp draw). The printer is a 5×7 dot matrix built into the display head and prints 16 characters per line. Display housing is ABS plastic. ***NEMA 4X/IP65 scales without printer*** are all Type 304 stainless steel and NEMA 4X rated for indoor/outdoor use. They protect from dust, washdowns, and corrosion. Scales have 0.8″ high VFD characters and a 6-ft. power cord with three-prong plug (0.8 amp draw).

With Printer

English, lbs. Cap.	Grads.	Metric, kg Cap.	Grads.	Platform Size, Ht.×Wd.×Dp.	O'all Ht.	Without Printer	Each	With Printer	Each	NEMA 4X/IP65 Without Printer	Each
150	0.01 for 0-30 0.02 for 30-60 0.05 for 60-150	60	0.005 for 0-15 0.01 for 15-30 0.02 for 30-60	3.9″×13″ ×16.7″	31″	17195T64	$728.56	17195T66	$1,143.43	17195T68	$1,105.15
500	0.05 for 0-150 0.1 for 150-300 0.2 for 300-500	220	0.02 for 0-60 0.05 for 60-150 0.1 for 150-220	4.9″×15.4″×20.9″	31″	17195T65	805.75	17195T67	1,235.90	17195T69	1,197.61

D Batteries (6/Pkg.) ..... 71455K55 **Per Pkg.** $7.32

Optional Data-Logging Software— Compatible with Windows 3.X, 95, 98, 2000, or NT. This software allows you to upload your force data into Excel, Access, Lotus, or other statistics programs. Furnished on a CD.

1852T5 ..... **Each** $313.08

Personnel Scales

Just like what you've seen in a doctor's office, these scales have a plastic platform and steel base. Accuracy is ±1 graduation.

Beam scales work by sliding weights, called poise, on the two beams. 1834T11 has a steel rod for measuring heights 24″-84″ and 60-213 cm and includes 150-lb. and 40-kg counterweights that increase capacity from 350 lbs. to 500 lbs. and 160 kg to 200 kg.

Digital scale has 1″ high LCD characters. The head swivels approximately 350°. Scale has two 1¾″ dia. ABS plastic wheels and a handle for mobility. The 9-pin RS-232 serial port lets you upload data to your PC (cable not included; see pages 1866-1867). Operates on the included 120 VAC, 60 Hz adapter (0.5 amp draw) or six C batteries (sold separately). Temperature range is 50° to 104°F. UL listed. NEMA 2 compliant for indoor use and protection from dirt and light splashes.

Beam with Height-Measuring Rod

Digital

English, lbs. Cap.	Grads.	Metric, kg Cap.	Grads.	Platform Size, Ht.×Wd.×Dp.	Overall Ht.		Each
Beam							
350	0.25	160	0.1	4¼″×10⅝″×14″	57¼″	1834T14	$291.46
Beam with Height-Measuring Rod							
500	0.25	227	0.1	4¼″×10⅝″×14″	57¼″	1834T11	312.56
Digital							
500	0.2	227	0.1	2¾″×14¼″×14¼″	44½″	1834T26	649.09

C Batteries (6/Pkg.) ..... 71455K54 **Per Pkg.** $6.49

Grip-Handle Test Weights

The built-in handle makes these cast iron weights easy to move around. All are marked with their weight. For applications requiring traceability, choose a weight with an NIST (National Institute of Standards and Technology) traceable certificate.
Class 7 weights meet ANSI/ASTM Class 7 tolerances. Use with platform scales.
Class F weights meet the tolerances of NIST Handbook 105-1. Use with legal-for-trade scales.

Weight	Tolerance	Overall Size, Lg. × Wd. × Ht.	With Certificate of Accuracy	Each	With NIST Certificate	Each
English						
Class 7						
5 lbs.	±0.0016 lb.	2 9/16″ × 4″ × 3″	1788T86	$54.55	1788T87	$122.55
10 lbs.	±0.0022 lb.	3 5/16″ × 5 1/16″ × 3 7/8″	1788T15	72.73	1788T71	139.57
Class F						
20 lbs.	±0.002 lb.	4 1/2″ × 5 7/8″ × 5″	1788T14	86.36	1788T72	152.34
25 lbs.	±0.002 lb.	4 1/2″ × 6 9/16″ × 4 15/16″	1788T13	104.55	1788T73	169.36
50 lbs.	±0.005 lb.	5 1/2″ × 8″ × 6 3/8″	1788T12	118.18	1788T74	182.13
100 lbs.	±0.009 lb.	7″ × 9 1/4″ × 7 3/4″	1788T11	472.73	1788T75	540.43
500 lbs.	±0.05 lb.	11 3/4″ × 11 1/2″ × 16″	1788T46	1,164.00	1788T77	1,327.69
Metric						
Class F						
10 kg	±0.001 kg	4 9/16″ × 6 1/8″ × 5″	1788T25	95.00	1788T79	147.23
20 kg	±0.002 kg	5 5/8″ × 7 3/4″ × 5 7/8″	1788T26	109.09	1788T81	168.51
25 kg	±0.0025 kg	5 9/16″ × 7 7/8″ × 9 1/8″	1788T27	140.91	1788T82	198.30
250 kg	±0.02 kg	12 1/2″ × 11 3/4″ × 17 1/2″	1788T34	1,248.00	1788T85	1,408.46

Easy-Grip Test Weights

Bottleneck design allows sure handling. Weights include a certificate of accuracy and are marked with their weight.

Class 7 Type 303 Stainless Steel Weights and Sets

Weight Set

All meet ANSI/ASTM Class 7 tolerances.
Weight sets include a plastic case.

Weight	Tolerance	Dia. × Ht.	Each
Individual Metric Weights			
1 g	±0.0045 g	3/16″ × 5/16″	1777T21 $5.76
2 g	±0.007 g	5/16″ × 5/16″	1777T22 5.76
5 g	±0.013 g	5/16″ × 1/2″	1777T23 5.76
10 g	±0.021 g	7/16″ × 5/8″	1777T24 5.76
20 g	±0.033 g	9/16″ × 3/4″	1777T25 5.76
50 g	±0.062 g	3/4″ × 1 1/16″	1777T26 7.40
Individual Metric Weights (Cont.)			
100 g	±0.100 g	1″ × 1 7/32″	1777T27 $10.11
200 g	±0.160 g	1 1/4″ × 1 1/2″	1777T28 16.17
500 g	±0.300 g	1 5/8″ × 2 1/4″	1777T29 32.16
1,000 g	±0.470 g	1 15/16″ × 2 7/8″	1777T31 59.80
2,000 g	±0.750 g	2 3/8″ × 3 7/8″	1777T32 109.60

	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1,000 g	2,000 g		Each
Metric Weight Sets													
12 Piece	1	2	1	2	1	1	2	1	1	0	0	1787T12	$75.76
13 Piece	1	2	1	2	1	1	2	1	1	1	0	1787T13	112.70
14 Piece	1	2	1	1	2	1	1	2	1	1	1	1787T14	189.62

Class F Type 303 and 304 Stainless Steel Weights and Sets

Weight Set

All are Class F for use with legal-for-trade scales and meet the tolerances of NIST (National Institute of Standards and Technology) Handbook 105-1.
Weight sets include a plastic case.

Weight	Tolerance	Dia. × Ht.	Each
Individual English Weights			
0.5 oz.	±0.00009 oz.	1/2″ × 9/16″	1908T23 $28.07
1 oz.	±0.00019 oz.	5/8″ × 13/16″	1908T22 28.07
2 oz.	±0.00038 oz.	13/16″ × 7/8″	1908T21 29.50
4 oz.	±0.00081 oz.	1″ × 1 3/16″	1908T19 33.90
8 oz.	±0.00158 oz.	1 1/4″ × 1 9/16″	1908T18 37.76
12 oz.	±0.00246 oz.	1 3/8″ × 2″	1908T17 39.97
1 lb.	±0.00015 lb.	1 1/2″ × 2 3/16″	1908T16 43.26
2 lbs.	±0.0002 lb.	1 7/8″ × 2 11/16″	1908T15 58.88
3 lbs.	±0.0003 lb.	2 1/4″ × 2 13/16″	1908T14 80.70
5 lbs.	±0.0005 lb.	2 1/2″ × 3 3/4″	1908T12 109.65
10 lbs.	±0.00099 lb.	3 3/16″ × 4 7/16″	1908T11 141.85
Individual Metric Weights			
1 g	±0.0009 g	3/16″ × 1/4″	1908T41 21.39
2 g	±0.0011 g	1/4″ × 5/16″	1908T42 21.39
Individual Metric Weights (Cont.)			
5 g	±0.0015 g	3/8″ × 3/8″	1908T44 $22.10
10 g	±0.002 g	7/16″ × 9/16″	1908T45 27.93
20 g	±0.004 g	5/8″ × 5/8″	1908T46 27.93
50 g	±0.01 g	3/4″ × 7/8″	1908T48 29.37
100 g	±0.02 g	1″ × 1″	1908T49 32.68
200 g	±0.04 g	1 1/4″ × 1 3/8″	1908T51 36.77
300 g	±0.06 g	1 3/8″ × 1 3/4″	1908T52 42.70
400 g	±0.070 g	1 1/2″ × 1 15/16″	1908T53 48.27
500 g	±0.07 g	1 1/2″ × 2 3/8″	1908T54 55.87
1 kg	±0.0001 kg	1 7/8″ × 3″	1908T56 64.97
2 kg	±0.0002 kg	2 1/2″ × 3 5/16″	1908T58 103.23
3 kg	±0.0003 kg	2 11/16″ × 4 1/8″	1908T61 146.76
5 kg	±0.0005 kg	3 3/16″ × 4 7/8″	1908T65 174.70

	0.001 lb.	0.002 lb.	0.005 lb.	0.01 lb.	0.02 lb.	0.05 lb.	0.1 lb.	0.2 lb.	0.5 lb.	1 lb.	2 lbs.	5 lbs.	10 lbs.		Each
English Weight Sets															
11 Piece	1	2	1	1	2	1	1	2	0	0	0	0	0	9047T34	$194.59
17 Piece	1	2	1	1	2	1	1	2	1	1	2	1	1	9047T33	663.72

	1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	20 g	50 g		Each
Metric Weight Sets																	
20 Piece	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	9048T41	$162.55

	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1,000 g		
12 Piece	1	2	1	1	2	1	1	2	1	0	9048T42	251.06
13 Piece	1	2	1	1	2	1	1	2	1	1	9048T43	319.15

Hook-Style Test Weights

Hooks on both ends of these weights allow you to connect several in a series for use as a dead weight tester. Or, push bottom hook into recess so the weight can stand on a scale platform. All are marked with their weight and include a certificate of accuracy.

Class 6 weights meet ANSI/ASTM Class 6 tolerances. ***Class F*** weights meet tolerances of NIST (National Institute of Standards and Technology) Handbook 105-1. Suitable for use with legal-for-trade scales.

English

Weight	Tolerance	Dia. × Ht.		Each
Class 6—*Type 304 Stainless Steel*				
1 oz.	±0.0001 oz.	5/8″ × 2 1/4″	1914T21	$75.68
2 oz.	±0.0002 oz.	13/16″ × 2 1/4″	1914T19	75.68
4 oz.	±0.0004 oz.	1″ × 2 1/4″	1914T18	75.68
8 oz.	±0.0007 oz.	1 1/4″ × 4″	1914T17	75.68
1 lb.	±0.0001 lb.	1 5/8″ × 4 1/2″	1914T16	82.16
2 lbs.	±0.0001 lb.	2″ × 5″	1914T15	99.74
5 lbs.	±0.0004 lb.	2 5/8″ × 6 1/2″	1914T14	160.00
10 lbs.	±0.0007 lb.	3 1/2″ × 6 1/4″	1914T13	225.00
20 lbs.	±0.0011 lb.	4″ × 9 3/16″	1914T12	435.00

Metric

Weight	Tolerance	Dia. × Ht.		Each
Class 6—*Type 304 Stainless Steel*				
1 kg	±0.0001 kg	2″ × 5 3/8″	1914T33	$88.89
2 kg	±0.0002 kg	2 5/8″ × 5 17/32″	1914T32	152.89
5 kg	±0.0005 kg	3 3/4″ × 6 11/32″	1914T31	213.33
Class F—*Type 303 Stainless Steel*				
50 g	±0.01 g	13/16″ × 2 3/32″	1914T36	38.03
100 g	±0.02 g	1″ × 2 9/16″	1914T35	46.43
200 g	±0.04 g	1 1/4″ × 2 29/32″	1914T34	50.49
500 g	±0.07 g	1 3/4″ × 3 7/8″	1914T37	89.43

Interlocking Test Weights

Slotted design allows these weights to be hung on a test fixture for tensile strength tests in addition to weight testing. Weights meet ANSI/ASTM Class 6 tolerances. They're made of cast iron and marked with their weight. Slot width is 9/16″. Weights include a statement of accuracy.

Optional weight hangers are used to stack and hang more than one weight at a time.

Weights

Optional Weight Hanger

Weights

English, lbs.

Weight	Tolerance	Dia. × Thick.		Each
0.5	±0.0001	3 3/4″ × 5/16″	1850T11	$36.50
1	±0.00015	5″ × 5/16″	1850T12	39.03
2	±0.0002	5″ × 9/16″	1850T13	43.15
5	±0.0005	5″ × 1 1/8″	1850T14	62.11
10	±0.001	6″ × 1 1/2″	1850T15	77.91
20	±0.002	8″ × 1 7/8″	1850T16	102.34
50	±0.005	10 1/4″ × 2 3/4″	1850T17	194.40

Metric

Weight	Tolerance	Dia. × Thick.		Each
500 g	±0.05 g	5″ × 5/16″	1850T22	$38.15
1 kg	±0.0001 kg	5″ × 9/16″	1850T23	51.24
2 kg	±0.0002 kg	5″ × 1″	1850T24	56.45
5 kg	±0.0005 kg	6″ × 1 11/16″	1850T25	89.51
10 kg	±0.001 kg	8″ × 1 15/16″	1850T26	121.61
20 kg	±0.002 kg	10 1/4″ × 2 3/8″	1850T27	215.11

Optional English Weight Hangers

Capacity	Dia. × Ht.		Each
200 lbs.	3 3/4″ × 9 1/4″	1850T41	$79.30
200 lbs.	3 3/4″ × 20 1/4″	1850T42	90.03

Optional Metric Weight Hanger

Capacity	Dia. × Ht.		Each
75 kg	3 3/4″ × 9 1/4″	1850T51	$126.27

Interlocking Calibration Weights

Also called counterpoise or counterbalancing weights, these stackable cast iron weights are commonly used to calibrate beam scales. Just match the ratio of the weights (as noted in the table) to your scale's ratio. All meet ANSI/ASTM Class 7 tolerances and are marked with their weight. Slot width is approximately 1/2″.

Optional weight hanger is used to stack and hang more than one weight on a beam scale.

Weights

English, lbs.

Weight	Tolerance	Dia. × Ht.		Each
Ratio —*1/2:100*				
1/2 × 100	±0.01	2 29/32″ × 9/16″	1809T18	$25.85
1 × 200	±0.02	3 17/32″ × 3/4″	1809T19	30.64
Ratio —*1:100*				
1/2 × 50	±0.01	2 29/32″ × 9/16″	1809T14	25.85
1 × 100	±0.01	4 3/32″ × 5/8″	1809T15	27.77
2 × 200	±0.02	4 5/32″ × 15/16″	1809T16	28.72
5 × 500	±0.10	3 29/32″ × 2 3/16″	1809T17	30.64

Weight

Optional Weight Hanger

Optional Weight Hanger

Capacity	Dia. × Ht.		Each
25 lbs.	3 31/32″ × 6 5/16″	1809T31	$55.53

High-Accuracy Calibration Weights

The most accurate weights we offer, these highly polished Type 316 stainless steel weights can be used to calibrate precision scales and balances. They're so accurate that even oil from your fingers can affect them—always handle with gloves or forceps. Meet ANSI/ASTM Class 1 tolerances. All are marked with their weight and include a statement of accuracy.

Easy-grip weights have a bottleneck design for sure handling.

Cylindrical *Easy Grip*

Individual Metric Weights

All weights come in a protective polypropylene case and include a cotton glove.

Weight	Tolerance	Dia. × Ht.		Each
Cylindrical				
30 g	±0.000074 g	5/8″ × 7/8″	17605T31	$61.20
40 g	±0.000074 g	3/4″ × 13/16″	17605T32	63.52
50 g	±0.00012 g	3/4″ × 15/16″	17605T33	63.64
100 g	±0.00025 g	1″ × 1 1/16″	17605T34	72.16
150 g	±0.00025 g	1 1/16″ × 1 7/16″	17605T35	80.18
200 g	±0.0005 g	1 1/8″ × 1 9/16″	17605T36	80.31
300 g	±0.00075 g	1 5/16″ × 1 13/16″	17605T37	96.53
Cylindrical (Cont.)				
400 g	±0.00075 g	1 3/8″ × 2 3/16″	17605T38	$103.24
500 g	±0.0012 g	1 1/2″ × 2 5/16″	17605T39	107.92
Easy Grip				
1,000 g	±0.0025 g	2″ × 2 5/8″	17605T41	131.18
2 kg	±0.000005 kg	2 1/2″ × 3 5/16″	17605T42	156.49
4 kg	±0.0000075 kg	3″ × 4 9/16″	17605T43	302.67
5 kg	±0.000012 kg	3 1/4″ × 4 7/8″	17605T44	326.33

Weight Set

Metric Weight Sets

Weights are easy-grip style. Sets include forceps and are furnished in a polypropylene case. ***1 mg*** to ***2 mg*** weights are made of aluminum. ***5 mg*** to ***500 mg*** weights are made of Type 304 stainless steel. ***1 g*** to ***100 g*** weights are made of Alloy 8 stainless steel.

	1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	20 g	50 g	100 g		Each
9 Piece	0	0	0	0	0	0	0	0	0	1	2	1	1	2	1	1	9049T11	$539.91
17 Piece	0	0	0	1	2	1	1	2	1	1	2	1	1	2	1	1	9049T12	801.67
21 Piece	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	9049T13	851.48

Push-Button Counters

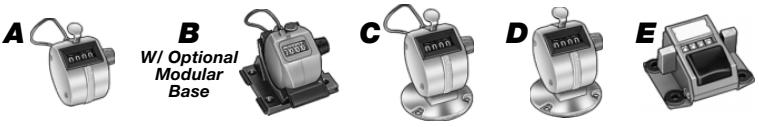

All counters add only. Mounting fasteners not included. ***Styles A-C*** include a finger ring. ***Style B*** can be used with the optional modular base (sold separately). You can snap several bases together to form a single row of multiple counters. Counters can be removed from the bases and easily reinstalled.

Digits No.	Digits Ht.	Reset Knob	Housing Material	Overall Size	Mounting Holes No.	Mounting Holes Dia.	Mounting Holes Ctr.-to.-Ctr.		Each
Hand-Held									
A	4	0.15″	One Side	Chrome-Plated Steel	1.54″ Lg. × 2.32″ Ht.	—	—	—	**1707T5**	$10.97
B	4	0.188″	One Side	Plastic	1.68″ Lg. × 1.87″ Ht.	—	—	—	**16705T21**	27.39
Optional Modular Base for Style B					2.1″ Lg. × 2.2″ Wd.	4	1/8″	1.4″ × 1.82″	**16705T36**	4.54
Base Mount									
C	4	0.15″	One Side	Chrome-Plated Steel	2.09″ Dia. × 2.76″ Ht.	3	0.13″	1 1/2″ Bolt Circle	**1888T34**	15.15
D	4	0.15″	One Side	Chrome-Plated Steel	2.09″ Dia. × 2.76″ Ht.	3	0.13″	1 1/2″ Bolt Circle	**1888T14**	13.96
D	4	0.15″	One Side	Type 304 Stainless Steel	2.09″ Dia. × 2.76″ Ht.	3	0.13″	1 1/2″ Bolt Circle	**1888T44**	66.35
E	4	0.17″	Both Sides	Die Cast Zinc	2.67″ Lg. × 2.38″ Wd. × 1.58″ Ht.	4	1/4″	2″ × 1 1/2″	**1714T3**	55.93

Push-Button LCD Counters

These hand-held counters feature an LCD display; large, easy-to-use buttons; and a high-impact plastic housing. Include a battery and a lanyard.

Digits No.	Digits Ht.	Reset Knob	Count Function	Overall Size, Lg. × Wd. × Dp.		Each
4	0.35″	Top Button	Adds	2.4″ × 1.4″ × 0.6″	**1960T66**	$11.63
4	0.35″	Top Button	Adds and Subtracts	2.4″ × 1.4″ × 0.6″	**1960T67**	28.64

Grouped Push-Button Counters

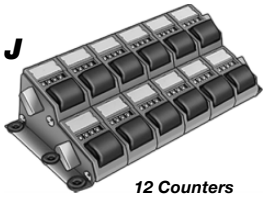

Count more than one item at a time with these counters. A quick turn of the reset knob clears an entire row. All counters add only. Mounting fasteners not included. *Styles G, H,* and *J* have paper tabs for labeling.

Style H has a four-digit totalizer that provides a grand total of all the other counters.

Counters Qty.	Digits	Digit Ht.	Reset Knob	Overall Size, Lg. × Ht. × Dp.	Mounting Holes No.	Mounting Holes Dia.	Mounting Holes Ctr.-to-Ctr.		Each
(F) Single Row with Chrome-Plated Steel Housing									
2	4	0.15″	One Side	2.46″ × 2.76″ × 2.76″	4	0.16″	2.25″ × 2″	**1882T11**	$35.15
3	4	0.15″	One Side	3.58″ × 2.76″ × 2.76″	4	0.16″	3.5″ × 2″	**1882T12**	51.69
4	4	0.15″	One Side	4.76″ × 2.76″ × 2.76″	4	0.16″	4.75″ × 2″	**1882T13**	76.42
5	4	0.15″	One Side	5.91″ × 2.76″ × 2.76″	4	0.16″	5.51″ × 2″	**1882T14**	84.10
6	4	0.15″	One Side	7.09″ × 2.76″ × 2.76″	4	0.16″	6.71″ × 2″	**1882T15**	115.98
8	4	0.15″	One Side	9.43″ × 2.76″ × 2.76″	4	0.16″	9.62″ × 2″	**1882T17**	136.12
10	4	0.15″	One Side	11.75″ × 2.76″ × 2.76″	4	0.16″	11.36″ × 2″	**1882T19**	158.01
(G) Single Row with Die Cast Zinc Housing									
2	4	0.17″	Both Sides	3.96″ × 1.58″ × 2.38″	4	1/4″	3.33″ × 1.5″	**1714T11**	92.76
3	4	0.17″	Both Sides	5.25″ × 1.58″ × 2.38″	4	1/4″	4.62″ × 1.5″	**1714T12**	132.44
4	4	0.17″	Both Sides	6.54″ × 1.58″ × 2.38″	4	1/4″	5.91″ × 1.5″	**1714T13**	172.79
5	4	0.17″	Both Sides	7.46″ × 1.58″ × 2.38″	4	1/4″	5.83″ × 1.5″	**1714T14**	197.34
6	4	0.17″	Both Sides	9.12″ × 1.58″ × 2.38″	4	1/4″	8.49″ × 1.5″	**1714T15**	239.91
8	4	0.17″	Both Sides	11.70″ × 1.58″ × 2.38″	4	1/4″	11.08″ × 1.5″	**1714T17**	319.28
10	4	0.17″	Both Sides	12.62″ × 1.58″ × 2.38″	4	1/4″	13.66″ × 1.5″	**1714T19**	349.94
12	4	0.17″	Both Sides	16.50″ × 1.58″ × 2.38″	4	1/4″	16.24″ × 1.5″	**1714T22**	395.85
(H) Single Row with Gray Powder-Coated Steel Housing and Totalizer									
5	3	0.156″	One Side	10″ × 2″ × 3″	4	0.14″	7.81″ × 2.44″	**1893T13**	306.56
8	3	0.156″	One Side	12.70″ × 2″ × 3″	4	0.14″	10.49″ × 2.44″	**1893T14**	426.23
10	3	0.156″	One Side	13.34″ × 2″ × 3″	4	0.14″	11.13″ × 2.44″	**1893T15**	503.28
(J) Dual Row with Die Cast Zinc Housing									
6	4	0.17″	Both Sides	5.25″ × 2.61″ × 4.63″	4	1/4″	4.62″ × 3.77″	**1714T25**	256.56
8	4	0.17″	Both Sides	6.54″ × 2.61″ × 4.63″	4	1/4″	5.91″ × 3.77″	**1714T26**	330.71
10	4	0.17″	Both Sides	7.83″ × 2.61″ × 4.63″	4	1/4″	7.20″ × 3.77″	**1714T27**	386.24
12	4	0.17″	Both Sides	9.12″ × 2.61″ × 4.63″	4	1/4″	8.49″ × 3.77″	**1714T28**	451.40
16	4	0.17″	Both Sides	11.33″ × 2.61″ × 4.63″	—	—	—	**1714T47**	581.98

Air-Actuated Counters

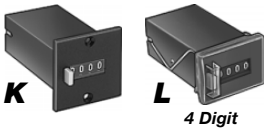

Register up to 600 counts/min. with these counters that are actuated by compressed air pulses. Pressure must drop to 0 psi between air pulses. To get 600 counts/min., hose length between pulse source and counter should not exceed 2 1/2 feet. Counts decrease as hose length increases. Temp. range is 32° to 140° F. All have a 10-32 female air connection (mounting fasteners and hose not included). Housing is black plastic.

Style N has total count and preset count displays. Built-in three-way pneumatic valve stops a machine, starts a machine, or signals that count has been reached.

Optional Brass Adapters— Convert the 10-32 female connection to a 1/8″ NPT female connection.

Operating Pressure, psi	Digits No.	Digits Ht.	Overall Size, Ht. × Wd. × Dp.	For Panel Cutout Size, Ht. × Wd.	Push-Button Reset	Mounting Holes No.	Mounting Holes Dia.	Mounting Holes Ctr.-to-Ctr.		Each
(K) Panel Screw Mount										
25-100	4	0.16″	1.58″ × 1.58″ × 2.5″	0.89″ × 1.32″	Yes	2	0.125″	1.26″	**8684T23**	$145.59
25-100	6	0.16″	1.58″ × 2.09″ × 2.5″	0.97″ × 1.91″	No	2	0.125″	1.26″	**8684T12**	159.75
25-100	6	0.16″	1.58″ × 2.09″ × 2.5″	0.97″ × 1.91″	Yes	2	0.125″	1.26″	**8684T14**	184.79
(L) Water Resistant Panel Spring Clip Mount										
25-100	4	0.16″	1.03″ × 1.46″ × 2.83″	0.87″ × 1.3″	Yes	—	—	—	**8684T53**	162.50
25-100	6	0.16″	1.11″ × 2.05″ × 2.83″	0.95″ × 1.89″	Yes	—	—	—	**8684T54**	207.33
(M) Base Mount										
25-100	4	0.16″	1.9″ × 1.46″ × 3.19″	—	Yes	2	0.17″	1.46″	**8684T35**	162.39
25-100	6	0.16″	1.9″ × 2.04″ × 3.2″	—	No	2	0.17″	1.46″	**8684T16**	176.27
25-100	6	0.16″	1.9″ × 2.04″ × 3.2″	—	Yes	2	0.17″	1.46″	**8684T26**	201.59
(N) Panel Screw Mount with Preset and Output Controls										
30-115	5	0.16″	2.95″ × 2.36″ × 2.85″	2.06″ × 2.06″	Yes	2	0.166″	2.48″	**8684T51**	682.76
Optional Water-Resistant Cover for Style N									**8684T52**	Each $53.33
Optional Brass Adapters (5/Pkg.)									**5454K69**	Per Pkg. $10.58

Lever-Actuated Counters

A

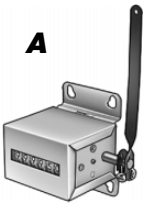

B

C

Right-Hand Lever with 5 Digits

D

E

Right-Hand Lever

To keep an accurate count, connect one of these mechanical counters to an object moving in a straight line, such as a punch press ram or drill press ram. All include an attached spring that returns the lever to prepare it for the next count, except *Styles A* and *G*, which have an internal spring mechanism. Mounting holes are in the base, except for *Style H*, which has a separate mounting bracket. Mounting fasteners not included. Temperature range is –15° to +117°F, unless noted. All counters count up from zero.

F

Right-Hand Lever

G

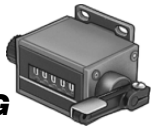

H

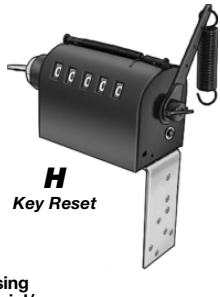

Key Reset

Digits No.	Digits Ht.	Counts/ Min.	Count Activation: Degrees of Travel	Count Activation: Lever Direction★	Count Activation: Reset	Overall Size, Ht.×Wd.×Dp.	Mounting Holes: No.	Mounting Holes: Size, or Ht.×Wd.	Mounting Holes: Center-to-Center	Housing Material/ Color		Each
Nonresettable Right-Hand Lever												
A	6	0.14″	500	17	CCW	—	2.25″×2.37″×1.69″	4	0.14″ Dia.	1.75″×1.13″	Steel/Silver	**1895T34**	$38.50
Resettable Right-Hand Lever												
B	4	0.19″	600	40-45	CCW	Knob	1.44″×2.53″×1.25″	4	0.13″ Dia.	0.61″×1.19″	Plastic/Black	**1895T42**	36.21
C	5	0.19″	1,000	40-45	CCW	Knob	1.44″×2.53″×1.28″	4	0.13″×0.24″	0.81″×1.2″	Plastic/Gray	**1895T49**	36.91
C	5	0.19″	1,000	49-60	CCW	Knob	1.44″×3.21″×1.36″	4	0.13″×0.38″	0.83″×1.21″	Plastic/Black	**1895T52**	51.83
C	6	0.3″	1,000	40-70	CCW	Knob	3.25″×5.57″×2.13″	4	0.21″×1.23″	1.97″×2.86″	Steel/Gray	**1895T53**	106.07
D	5	0.25″	400	40	CCW	Wing Nut	1.91″×3.59″×1.88″	4	0.12″ Dia.	1.63″×1.92″	Steel/Black	**1895T23**■	197.11
E	5	0.31″	750	36-45	CCW	Remote	3.42″×4.94″×1.75″	4	0.19″ Dia.	2.02″×2.83″	Iron/Gray	**1895T51**	138.65
F	5	0.34″	800	37-60	CCW	Wing Nut	3.77″×5.95″×2.25″	4	0.22″ Dia.	4.38″×1.13″	Steel/Black	**1895T11**■	190.71
G	5	0.19″	1,000	40-45	CCW	Knob	1.44″×2.53″×1.28″	4	0.13″×0.24″	0.81″×1.2″	Plastic/Gray	**1685T31**	32.81
Resettable Right-Hand Lever with Separate Mounting Bracket												
H	5	0.27″	600	36-45	CCW	Knob	2.83″×4.45″×2.13″	2	0.18″ Dia.	1″	Steel/Black	**1895T47**	133.65
H	5	0.27″	600	36-45	CCW	Key	2.83″×4.45″×2.13″	2	0.18″ Dia.	1″	Steel/Black	**1895T48**	186.10
Resettable Left-Hand Lever												
C	5	0.19″	1,000	40-45	CW	Knob	1.44″×2.53″×1.28″	4	0.13″×0.24″	0.81″×1.2″	Plastic/Gray	**1895T26**	36.21
E	5	0.31″	750	36-45	CW	Remote	3.42″×4.94″×1.75″	4	0.19″ Dia.	2.02″×2.83″	Iron/Gray	**1895T24**	138.58
F	5	0.34″	800	37-60	CW	Wing Nut	3.77″×5.95″×2.25″	4	0.22″ Dia.	4.38″×1.13″	Steel/Black	**1895T28**■	203.50

★ CCW=Counterclockwise; CW=Clockwise. ■ Temperature range is 14° to 140°F.

Rotating-Shaft Counters

Get precise counts from clutches, couplings, integrally mounted rotors, and machinery with rotating shafts with these base-mount mechanical counters. Mounting fasteners not included.

Style J has a shaft size of 1/8″ Dia.×7/16″ Lg.
Style K has a shaft size of 0.276″ Dia.×11/16″ Lg.
Style L counts down from a preset number. When the counter reaches zero, an internal relay triggers an alarm or light, or shuts off the machine. Relay is rated for 15 amps @ 230 VAC or 20 amps @ 115 VAC. They have a shaft size of 1/4″ Dia.×3/4″ Lg. Preset digits are 0.165″ high.

J

Right-Hand Shaft with Clockwise Rotation

K

Right- and Left-Hand Shafts with Counterclockwise Rotation

L

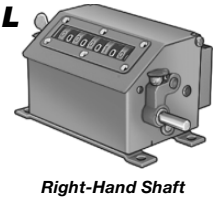

Right-Hand Shaft

Digits No.	Digits Ht.	Counts/ Min.	COUNT ACTIVATION: Counts/ Revolution	COUNT ACTIVATION: Shaft Dir. Add.★	COUNT ACTIVATION: Shaft Dir. Sub.★	COUNT ACTIVATION: Reset	Overall Size, Ht.×Wd.×Dp.	Mounting Holes: No.	Mounting Holes: Size, Dia. or Ht.×Wd.	Mounting Holes: Center-to-Center	Housing Material/ Color		Each
Resettable													
(J) Right-Hand Shaft Location— *Temperature Range: –15°F to +140°F*													
5	0.19″	10,000	10	CW	—	Knob	1.38″×3.13″×1.44″	4	0.13″×0.38″	0.83″×1.2″	Plastic/Black	**1697T22**	$58.08
5	0.19″	10,000	10	CCW	—	Knob	1.38″×3.13″×1.44″	4	0.13″×0.38″	0.83″×1.2″	Plastic/Black	**1697T23**	57.79
5	0.19″	10,000	10	CCW	CW	Knob	1.38″×3.13″×1.44″	4	0.13″×0.38″	0.83″×1.2″	Plastic/Black	**1697T64**	66.73
5	0.19″	10,000	10	CW	CCW	Knob	1.38″×3.13″×1.44″	4	0.13″×0.38″	0.83″×1.2″	Plastic/Black	**1697T65**	66.84
(J) Left-Hand Shaft Location— *Temperature Range: –15°F to +140°F*													
5	0.19″	10,000	10	CW	CCW	Knob	1.38″×3.13″×1.44″	4	0.13″×0.38″	0.83″×1.2″	Plastic/Black	**1697T32**	69.31
(K) Right- and Left-Hand Shaft Location— *Temperature Range: Not Rated*													
7	0.31″	1,000	1	CW/CCW	—	Key	3.15″×5.04″×1.89″	4	0.18″×0.22″	2.68″×2.76″	Plastic/Gray	**1697T84**	176.83
Resettable with Preset and Output													
(L) Right-Hand Shaft Location— *Temperature Range: 32°F to 122°F*													
5	0.21″	2,500	1	CCW	—	Wing Nut	3.69″×6.42″×2.57″	4	0.2″ Dia.	1.69″×3.94″	Metal/Gray	**1697T34**	480.60
5	0.21″	2,500	1	CW	—	Wing Nut	3.69″×6.42″×2.57″	4	0.2″ Dia.	1.69″×3.94″	Metal/Gray	**1697T35**	480.60
(L) Left-Hand Shaft Location— *Temperature Range: 32°F to 122°F*													
5	0.21″	2,500	1	CCW	—	Wing Nut	3.69″×6.42″×2.57″	4	0.2″ Dia.	1.69″×3.94″	Metal/Gray	**1697T36**	480.60
5	0.21″	2,500	1	CW	—	Wing Nut	3.69″×6.42″×2.57″	4	0.2″ Dia.	1.69″×3.94″	Metal/Gray	**1697T37**	480.60

★ CCW=Counterclockwise; CW=Clockwise.

Voltage-Actuated Counters

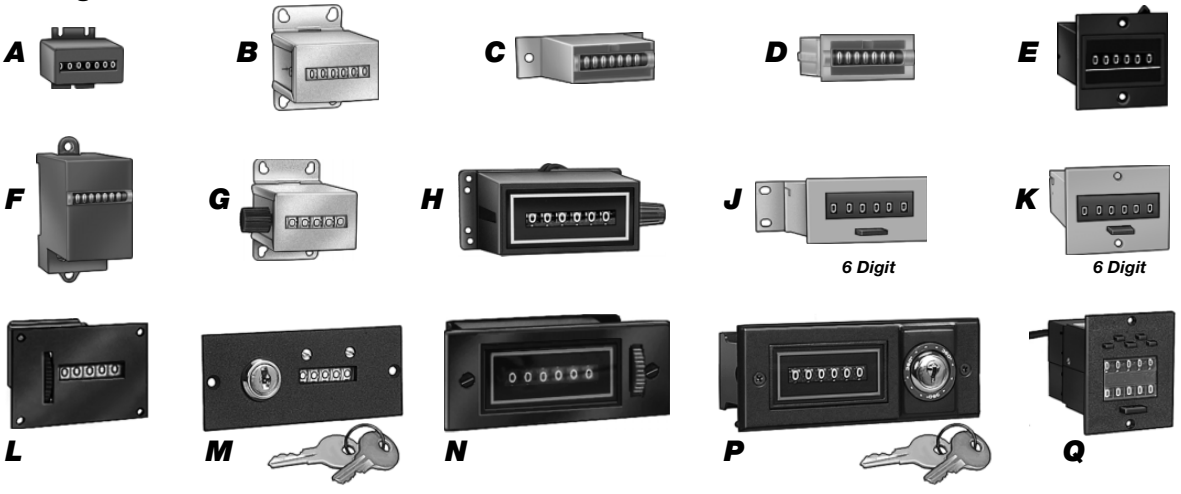

Also known as electromechanical counters, connect one of these counters to receive an input voltage that causes a mechanical count. Ideal for use on machine tools, printing presses, and packaging machinery. Counters have wire leads, unless noted. Mounting fasteners not included (except for *Styles N* and *P*). All counters count up and all except *Style Q* are UL recognized (see listing for additional approvals). Temperature range is –4° to +122°F, except for *Styles C, D, F,* and *Q*, which have a range of 14° to 140°F. ***AC counters*** operate on 50/60 Hz.

Style Q counters have two displays. One shows the preset point continuously; the other counts the incoming pulses. When the count reaches the preset value, it triggers a 5-amp relay. It then continues to count any additional incoming pulses. A press of the push buttons resets count and preset values.

Input Voltage	Digits No.	Digits Ht.	Counts/ Min.	Reset	Overall Size, Ht.×Wd.×Dp.	Panel Cutout Size, Ht.×Wd.	Mounting Holes No.	Mounting Holes Size	Mounting Holes Center-to-Center	Wire Lead Lg.	Housing Material/ Color		Each
Nonresettable AC Counters													
Base Mount													
A 24 VAC	7	0.13″	600	—	1.7″×1.6″×1.4″	—	3	0.13″ Dia.	0.62″ ×1.08″	6″	Plastic/Black	1876T79	$28.53
A 115 VAC	7	0.13″	600	—	1.7″×1.6″×1.4″	—	3	0.13″ Dia.	0.62″ ×1.08″	6″	Plastic/Black	1876T78	28.53
B 115 VAC	6	0.14″	600	—	2.4″×1.8″×2.3″	—	4	0.14″ Dia.	1.13″ ×1.75″	12″	Steel/Gray	1876T38	33.04
C 115 VAC	7	0.16″	600	—	0.6″×1.8″×1.7″	—	2	0.14″ Dia.	1.46″	6″	Plastic/Clear	1806T11✓	42.43
Panel Mount													
D 115 VAC	7	0.16″	600	—	0.6″×1.3″×1.5″	0.51″×1.18″	—	—	—	6″	Plastic/Clear	1806T12✓	42.44
E 115 VAC	6	0.17″	1,000	—	1.8″×1.8″×2.3″	1.05″×1.72″	2	0.13″ Dia.	1.4″	12″	Plastic/Black	1876T34★	38.87
Base/DIN 3 Rail Mount—Conforms to EN 50 022													
F 115 VAC	7	0.16″	600	—	3″ ×1.2″×2.4″	—	2	0.18″ Dia.	2.56″	●	Plastic/Black	1806T13✓	55.57
Resettable AC Counters													
Base Mount													
G 115 VAC	5	0.16″	600	Knob	2.4″×2.3″×2.3″	—	4	0.14″ Dia.	1.125″×1.75″	12″	Steel/Silver	8686T16	68.00
H 115 VAC	6	0.19″	1,000	Knob	2.6″×3.7″×1.8″	—	8	0.15″ Dia.	3.23″ ×0.88″	8″	Plastic/Black	8686T57★	105.10
J 115 VAC	4	0.16″	600	Button	2.9″×2.6″×1.2″	—	4	0.12″×0.2″	2.13″ ×0.63″	10″	Plastic/Gray	8686T27	44.42
J 115 VAC	6	0.16″	600	Button	2.9″×3.1″×1.2″	—	4	0.12″×0.2″	2.68″ ×0.63″	10″	Plastic/Gray	8686T45	53.77
Panel Mount													
K 115 VAC	4	0.16″	600	Button	1.8″×1.8″×2.6″	1.01″×1.46″	2	0.12″ Dia.	1.4″	10″	Plastic/Gray	8686T28	42.17
K 115 VAC	6	0.16″	600	Button	1.8″×2.3″×2.6″	1.01″×2″	2	0.12″ Dia.	1.4″	10″	Plastic/Gray	8686T46	53.02
L 115 VAC	5	0.16″	600	Wheel	1.9″×2.8″×2.2″	1.38″×2.13″	4	0.14″ Dia.	1.56″ ×2.44″	12″	Steel/Black	8686T21	55.84
M 115 VAC	5	0.16″	600	Key	1.9″×4.5″×2.3″	1.5″ ×3.13″	2	0.14″ Dia.	4.13″	12″	Steel/Black	8686T23	104.68
N 115 VAC	6	0.19″	1,000	Wheel	1.9″×4.5″×2.3″	1.76″×3.85″	4	0.14″ Dia.	4.06″ ×1.5″	8″	Steel/Black	8686T58★	125.96
P 115 VAC	6	0.19″	1,000	Key	2.2″×5.6″×2.3″	1.75″×4.88″	4	0.14″ Dia.	5.13″ ×1.75″	8″	Steel/Black	8686T59★	159.62
Resettable AC Counter with Preset													
Panel Mount													
Q 115 VAC	5	0.2″	600	Button	2.7″×2.2″×2.5″	1.97″×1.97″	2	0.12″ Dia.	2.36″	♥	Plastic/Black	2148T24	195.08
Nonresettable DC Counters													
Base Mount													
A 12 VDC	7	0.13″	600	—	1.7″×1.6″×1.4″	—	3	0.13″ Dia.	0.62″ ×1.08″	6″	Plastic/Black	1806T67	34.14
B 24 VDC	6	0.14″	600	—	2.4″×1.8″×2.3″	—	4	0.14″ Dia.	1.13″ ×1.75″	12″	Steel/Silver	1806T79	38.35
C 12 VDC	7	0.16″	1,500	—	0.6″×1.8″×1.7″	—	2	0.14″ Dia.	1.46″	6″	Plastic/Clear	1806T14✓	32.84
C 24 VDC	7	0.16″	1,500	—	0.6″×1.8″×1.7″	—	2	0.14″ Dia.	1.46″	6″	Plastic/Clear	1806T15✓	32.84
Panel Mount													
D 12 VDC	7	0.16″	1,500	—	0.6″×1.3″×1.5″	0.51″×1.18″	—	—	—	6″	Plastic/Clear	1806T16✓	32.84
D 24 VDC	7	0.16″	1,500	—	0.6″×1.3″×1.5″	0.51″×1.18″	—	—	—	6″	Plastic/Clear	1806T17✓	32.84
E 12 VDC	6	0.17″	1,200	—	1.8″×1.8″×2.3″	1.05″×1.72″	2	0.13″ Dia.	1.4″	12″	Plastic/Black	1806T63★	39.72
E 24 VDC	6	0.17″	1,200	—	1.8″×1.8″×2.3″	1.05″×1.72″	2	0.13″ Dia.	1.4″	12″	Plastic/Black	1806T64★	35.83
Base/DIN 3 Rail Mount—Conform to EN 50 022													
F 12 VDC	7	0.16″	1,500	—	2.9″×1.2″×2.3″	—	2	0.18″ Dia.	2.56″	●	Plastic/Black	1806T18✓	42.94
F 24 VDC	7	0.16″	1,500	—	2.9″×1.2″×2.3″	—	2	0.18″ Dia.	2.56″	●	Plastic/Black	1806T19✓	42.94
Resettable DC Counters													
Base Mount													
J 24 VDC	6	0.16″	600	Button	1.2″×3.1″×2.9″	—	4	0.12″×0.2″	2.68″ ×0.63″	10″	Plastic/Gray	1806T42	52.45
Panel Mount													
K 12 VDC	6	0.16″	600	Button	1.8″×2.3″×2.6″	1.01″×2″	2	0.12″ Dia.	1.4″	10″	Plastic/Gray	1806T44	61.70
K 24 VDC	6	0.16″	600	Button	1.8″×2.3″×2.6″	1.01″×2″	2	0.12″ Dia.	1.4″	10″	Plastic/Gray	1806T41	49.90
Resettable DC Counter with Preset													
Panel Mount													
Q 24 VDC	5	0.2″	600	Button	2.7″×2.2″×2.5″	1.97″×1.97″	2	0.12″ Dia.	2.36″	♥	Plastic/Black	2148T18	183.61

★ CSA certified. ✓ CE approved. ● Has screw terminals. ♥ Has push-on connections.

1/32 DIN Voltage-Actuated LCD and LED Counters

Designed for locations where space is limited, our smallest counters snap into any 1/32 DIN size (0.87″ Ht.×1.77″ Wd.) panel cutout. All have a black plastic housing, push-button and remote reset, and screw terminals. All counters require a device such as a switch, sensor, or encoder to provide count input. For proximity and sensing switches, see pages 896-899.

LCD Counters—Powered by a replaceable internal lithium battery with a 7-year life (included). Temperature range is 14° to 131° F. UL recognized, CSA certified, and CE approved.

LCD Counters with Backlight Display—Powered by a nonreplaceable internal lithium battery with a 10-year life (included). Backlight display requires external 5 VDC power supply (20 mA @ 5 V). Have decimal positioning up to three places. Temperature range is 14° to 140° F. CE approved; UL and C-UL recognized.

1737T43 requires 10-30 VDC external power supply for add and subtract (quadrature) input circuit.

LED Counters—Powered by 10-30 VDC. Count is maintained even if power is lost. Both have decimal positioning up to three places. Temperature range is 14° to 122° F. CE approved.

1745T21 has a scaling function that allows you to adjust the input pulses by a constant to obtain useful units of measure.

A

B

C

Count Function	Digits No.	Digits Ht.	Counts/ Min.	Count Input Type	Overall Size, Ht.×Wd.×Dp.		Each
(A) LCD Counters—*NEMA 4 (indoor/outdoor)*							
Adds	8	0.338″	60,000♣	Switch Contact	0.94″×1.89″×1.91″	1737T22	$64.00
Adds	8	0.338″	60,000♣	4.5-30 VDC High Level; 0-2 VDC Low Level	0.94″×1.89″×1.91″	1737T23	79.00
Adds	8	0.338″	1,200	24-240 VAC/VDC, 50/60 Hz High Level; 0-2.4 VAC/VDC Low Level	0.94″×1.89″×1.91″	1737T25	81.00
(B) LCD Counters with Backlight Display—*NEMA 4X (washdown/corrosion resistant)*							
Adds or Subtracts	8	0.35″	600,000♣	Switch Contact or up to 18 VDC	0.95″×1.77″×2.00″	1737T41	52.70
Adds or Subtracts	8	0.35″	600	10-110 VDC; 10-240 VAC	0.95″×1.77″×2.00″	1737T52	59.55
Adds and Subtracts	8	0.35″	150,000	5 to 18 VDC	0.95″×1.77″×2.00″	1737T43	69.60
(C) LED Counters—*NEMA 4X (washdown/corrosion resistant)*							
Adds	6	0.315″	600,000	Switch Contact or 4-30 VDC High Level; 0-1 VDC Low Level	0.94″×1.88″×2.32″	1745T11	148.00
Adds and Subtracts	6	0.315″	600,000	Switch Contact or 4-30 VDC High Level; 0-1 VDC Low Level	0.94″×1.88″×2.32″	1745T21	172.43

♣ Low level counts per minute is 1,800.

1/16 DIN Voltage-Actuated LCD Counters with Output Controls

These counters count up to or down from a preset number, then trigger a relay output. They feature a push-button reset (which can be disabled upon setup) and screw terminals. When snapped into a 1/16 DIN size panel cutout (1.77″×1.77″) with the included rubber gasket, they are rated IP65 (protected from direct water spray). Housing is black plastic.

Counters require a device such as a switch, sensor, or encoder to provide count input. For proximity and sensing switches, see pages 896-899.

Single preset counter has a SPST output relay (see page 855 for information on output relays) that is programmable as normally open (NO) or normally closed (NC). Rated at 0.5 amps on resistive loads @ 230 VAC and 2 amps on resistive loads @ 30 VDC and powered by two 1/2 AA cell lithium batteries. Counter has six top digits (0.28″ Ht.) and six bottom digits (0.18″ Ht.) and include a mounting adapter plate with mounting clips. Overall size is 1.89″ Ht.×1.89″ Wd.×3.1″ Dp. Temperature range is 14° to 122° F.

Dual preset counter has two SPST-NO or NC relays rated at 5 amps on resistive loads @ 250 VAC/30 VDC. Counter adds and subtracts (quadrature), and the count can be scaled to useful units of measure. Powered by 85-250 VAC, 50/60 Hz or 11-14 VDC. Counter has six top digits (0.3″ Ht.) and six bottom digits (0.2″ Ht.). Overall size is 1.95″ Ht.×1.95″ Wd.×4.17″ Dp. Temperature range is 32° to 122° F.

Single Preset

Dual Preset

	Counts/Min.	Count Input Type		Each
Single Preset	1,500	12-250 VAC/12-250 VDC	1774T23	$141.99
Dual Preset	24,000-690,000	Switch Contact or 0-30 VDC	1774T45	168.30

1/8 DIN Voltage-Actuated LED Counters

Counters fit into a 1/8 DIN panel cutout (1.77″×3.62″) and offer a password lockout feature, set points, scaling, and decimal positioning. They can be programmed easily using the front-panel buttons. Count and programming instructions are retained even if power is lost or interrupted.

Counters accept switch contact or voltage input up to 30 VDC. They register up to 1.2 million counts per minute and have a scaling function that allows you to adjust the input pulses to obtain a useful unit of measure. All counters require a device such as a switch, sensor, or encoder to provide count input. For proximity and sensing switches, see pages 896-899.

Powered by 120 VAC, 50/60 Hz. They feature six 0.56″ high digits. Overall size is 2.04″ Ht.×3.93″ Wd.×3.24″ Dp. Temperature range is 32° to 131° F. Counters have screw terminals, a black plastic housing, installed neoprene gasket, and are NEMA 4X rated (washdown/corrosion resistant). UL listed and CE approved. ***Counters with output controls*** can be programmed to halt a process or activate an alarm when dual presets are reached. Two SPDT-NO or NC relays are rated at 5 amps @ 250 VAC.

Count Function		Each
LED Counters		
Adds or Subtracts	7959T33	$220.57
Adds and Subtracts	7959T37	246.50
LED Counter with 12 VDC Power for External Sensor/Encoder		
Adds or Subtracts	7959T41	255.15
LED Counters with Output Controls		
Adds or Subtracts	7959T42	273.00
Adds and Subtracts	7959T38	298.93
LED Counters with 12 VDC Power for External Sensor/Encoder and Output Controls		
Adds or Subtracts	7959T43	307.58
Adds and Subtracts	7959T39	333.52

1/8 DIN LED Counters/Ratemeters and Plug-In Output Controls

Keep counts and rates along with the ability to change output controls. The optional plug-in output modules (sold separately) give flexibility for relay, analog, and communication outputs. Install up to one relay, one analog, and one communication module at a time.

Counter

Counters fit into a 1/8 DIN panel cutout (1.77″×3.62″). Counters add and subtract (quadrature), accept switch contact and voltage input up to 30 VDC, and register up to 2 million counts per minute. The scaling function allows you to adjust input pulses to obtain useful units of measure. They have a six digit, 0.56″ high display of variable intensity for high- or low-light conditions. Counters have a built-in 12 VDC power supply to power external sensors. All require a device such as a switch, sensor, or encoder to provide a count input. For proximity and sensing switches, see pages 896-899.

Housing is black plastic, has screw terminals, and is NEMA 4X rated (washdown/corrosion resistant). Overall size is 1.95″ Ht.×3.8″ Wd.×4.2″ Dp. Temp. range is 32° to 122° F. CE approved; UL and C-UL listed.

		Each
LED Counters		
Powered by 85-250 VAC, 50/60 Hz	2620T51	$291.42
Powered by 11-36 VDC	2620T52	322.83
Plug-In Relay Modules		
Dual Set Point Relay Output	2620T53	41.17
Quad Set Point Relay Output	2620T54	53.08
Plug-In Analog Output Module	2620T55	81.25
Plug-In Communication Modules		
RS-485 Serial Communication	2620T56	53.08
RS-232 Serial Communication	2620T57	53.08
DeviceNet Communication	2620T58	127.83
MODBUS Communication	2620T59	66.08
PROFIBUS-DP Communication	2620T61	166.83

Compact Voltage-Actuated LCD Counter/Ratemeter

Ideal for counting and displaying rates in units such as gallons per minute, program this battery-operated, eight-digit counter to the decimal point with the touch of two keys. Counter has push-button and remote reset. Housing is gray plastic. Accepts switch contact and DC voltage input (2-28 VDC high level; 0-1.2 VDC low level). Digits are 0.43″ high. Max. count speed is 1,200 counts per minute with switch contact input; 600,000 counts per minute with DC voltage input. Adds only. Counter requires a device such as a switch, sensor, or encoder to provide count input. For proximity and sensing switches, see pages 896-899.

Powered by an internal replaceable lithium battery with a 5-year life, the counter has screw terminals and a temp. range of –4° to +158° F. Measures 1.57″ Ht.×2.95″ Wd.×1.25″ Dp. It mounts into a 1.30″ Ht.×2.68″ Wd. panel cutout (hardware included). When properly installed with the included rubber mounting gasket, front panel is NEMA 4X rated (washdown/corrosion resistant).

16665T27 ..... **Each** $156.13

Base-Mount and Panel-Mount Voltage-Actuated LCD Counters

A

B

C

Lock and Key Reset

D

These LCD counters are for any application. Mounting fasteners not included (unless noted). Powered by a nonreplaceable, internal battery with a 7-yr. life (unless noted). Require a device such as a switch, sensor, or encoder for count input. For proximity and sensing switches, see pages 896-899.

A&B Housing has 1/4″ spade terminals. Temp. range is –40° to +185° F. Also accepts 10-300 VDC count input. CE approved; UL and C-UL recognized.

C&D Have 8″ wire leads. Temperature range is –14° to +122° F. CE approved.

Count Function	Digits No.	Digits Ht.	Count Input Type	Counts/ Minute	Display Power	Overall Size, Ht.×Wd.×Dp.		Each
Panel Mount Black Plastic Housing with Remote Reset— *0.95″ Ht.×1.45″ Wd. Cutout*								
A ..Adds	8	0.28″	300 VAC	2,400	Battery	1.1″ ×2.13″×1.19″	**1874T91**★	$30.43
B ..Adds	8	0.28″	300 VAC	2,400	Battery	2.21″ Dia.×1.19″ Dp.	**1874T93**★	30.43
Panel Mount Iron Housing with Push-Button Reset— *1.75″ Ht.×3″ Wd. Cutout*								
C ..Adds	6	0.5″	6-240 VAC/VDC	2,400	Battery	1.87″×4.44″×2.9″	**1874T82**	175.00
Panel Mount Iron Housing with Lock and Key Reset— *1.75″ Ht.×3″ Wd. Cutout*								
C ..Adds	6	0.5″	6-240 VAC/VDC	2,400	Battery	1.87″×4.44″×2.9″	**1874T83**	191.98
Base Mount Iron Housing with Push-Button Reset— *Four 0.14″×0.24″ Mounting Holes*								
D ..Adds	6	0.5″	6-240 VAC/VDC	2,400	Battery	1.75″×3.81″×2.97″	**1874T81**	164.92

★ Includes fasteners. Battery has a 15-yr. life.

Large-Display Voltage-Actuated LED Counters

Six-Digit Counter

Adjustable-intensity red LEDs are visible from up to 130 ft. away for 2 1/4″ digits, and 180 ft. away for 4″ digits. These counters register 600 counts per minute and have a temp. range of 32° to 120° F. Enclosures are aluminum with a black finish and are rated NEMA 4 (indoor/outdoor). Each mounting bracket has one 1/4″ hex mounting bolt.

Counters operate on 85-250 VAC, 50/60 Hz and draw 14 volt amps, or 11-16 VDC and draw up to 400 mA. All have a 6-ft. power cord with a three-prong plug and accept a switch contact or 5-28 VDC voltage input. CE approved. UL recognized.

Note: All require a device such as a switch, sensor, or encoder to provide count input. For proximity and sensing switches, see pages 896-899.

Counters with preset count up from zero to a set number or down to zero. Simply select up/down mode; push a button to set the preset.

Count Function	Digits No.	Digits Ht.	Overall Size, Ht.×Wd.×Dp.		Each
Counters					
Adds	4	2 1/4″	4″ ×12″×2 1/4″	**16635T41**	$385.67
Adds	4	4″	7 7/8″×20″×2 1/4″	**16635T42**	541.67
Adds	6	2 1/4″	4″ ×16″×2 1/4″	**16635T43**	446.33
Adds	6	4″	7 7/8″×26″×2 1/4″	**16635T44**	653.25
Counters with Preset					
Adds and Subtracts	6	2 1/4″	4″ ×16″×2 1/4″	**16635T81**	502.67
Adds and Subtracts	6	4″	7 7/8″×26″×2 1/4″	**16635T83**	709.58

Enclosed Electronic Counters with Sensor

With Proximity Sensor

Take the guessing out of building a counting system. Everything you need is included, wired together, and housed in an enclosure. Simply mount, plug in, and start counting. Counters have a fiberglass enclosure and a variable intensity LED display for readability in high- and low-light conditions. Both are programmable for single-direction up/down counting. Mounting fasteners not included, unless noted.

Enclosed LED Counter with Proximity Sensor

Use to count metallic objects. Sensor is rated NEMA 4 (indoor/outdoor); counter and enclosure are rated NEMA 4X (washdown/corrosion resistant). System has a 7-ft. power cord with three-prong plug; draws 18 volt-amps. Counter has dual set point relay control outputs rated at 5 amps on resistive loads @ 120/240 VAC or 28 VDC. Counter temp. range is 32° to 122° F. Sensor has a 3/4″ Dia.×3 1/2″ Lg. Type 304 stainless steel housing, 10-ft. cable, and includes mounting bracket and fasteners. Sensor temperature range is 0° to 140° F. CE approved; UL and C-UL listed.

Sensing Distance	Count Function	Digits No.	Digits Ht.	Powered By	Counts/ Minute	Enclosure Size, Ht.×Wd.×Dp.	Mounting Holes No.	Mounting Holes Dia.	Mounting Holes Ctr.-to-Ctr.		Each
0.059″	Adds and Subtracts	6	0.56″	85-250 VAC, 50/60 Hz	300,000	7 1/2″×7 1/2″×5 1/8″	4	1/4″	6 7/16″	**18875T71**	$561.36

Enclosed LED Counter with Shaft Encoder

To count shaft revolutions, mount encoder to a machine shaft, pulley, or gear, or face mount with the four 8-32 threaded holes spaced 1 1/16″ center-to-center. Encoder is rated NEMA 13 (strongly oil resistant) and has a 3.38″ Ht.×2.75″ Wd.×1.65″ Dp. aluminum housing and a 3/8″ Dia.×1 1/4″ Lg. stainless steel shaft extension. A 10-ft. cable connects encoder to the counter.

Encoder temp. range is 0° to 140° F. Counter has a 7-ft. power cord with three-prong plug; draws 18 volt-amps. It has dual set point relay control outputs rated at 5 amps on resistive loads @ 120/240 VAC or 28 VDC. Counter temp. range is 32° to 122° F. Counter and enclosure are rated NEMA 4X (washdown/corrosion resistant). CE approved; UL and C-UL listed.

Pulses/ Revolution	Count Function	Max. Shaft Speed	Digits No.	Digits Ht.	Powered By	Enclosure Size, Ht.×Wd.×Dp.	Mounting Holes No.	Mounting Holes Dia.	Mounting Holes Ctr.-to-Ctr.		Each
100	Adds and Subtracts	6,000 rpm	6	0.56″	85-250 VAC, 50/60 Hz	7 1/2″×7 1/2″×5 1/8″	4	1/4″	6 7/16″	**18875T72**	$570.82

LCD Counters with Built-In Light-Beam Sensor

Because counter and sensor are one piece, you can display your count right at the sensing point without wiring a remote counter to your sensor. Memory backup retains the count for up to 100 hours in case of power loss. Reset by touching the top with the included magnet. Register up to 2,000 counts per minute. Powered by 10-250 VAC, 50/60 Hz or 12-115 VDC. Counter has six 0.188″ Ht. digits, 6-ft. wire leads, and a NEMA 4X (washdown/corrosion resistant) rated black plastic housing. Overall size is 2.5″ Ht.×1.44″ Wd.×1.96″ Dp. Temp. range is 32° to 122° F. Mounting fasteners included.

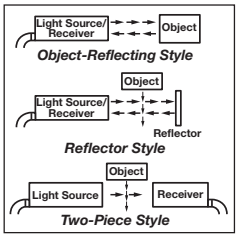

Reflector Style

Light-Beam Sensor	Minimum Object Size	Sensor Range	Beam Style		Each
Object Reflecting	0.06″ Dia.	1.5″	Visible Red	4403T51	$253.26
Reflector Style	3″ Dia.	6″-30′	Visible Red	4403T52	257.61
Two-Piece	0.5″ Dia.	200′	Infrared	4403T53	322.83

Voltage-Actuated LCD Hour Meters with Maintenance Monitors

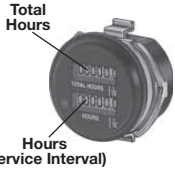

Ensure the timely maintenance of your equipment with these devices. Meters are programmable; set them to any service interval required, up to 99999.9 hours.

Meters have two LCD displays. The top display shows the total number of hours your equipment has been used and is nonresettable. Accumulated hours are stored if power is interrupted. The bottom display shows how much time has elapsed since the last maintenance and has remote reset. Hourglass symbols in both displays indicate that the meter is running. Meters have one LED light, which turns on when your chosen service interval has been reached. Meters can also be wired to send a signal to an alarm or other remote indicator.

Units are 1.7″ deep, have a 2.3″ dia. face, and 10 1-ft. wire leads. Meters mount into a 2″ dia. panel cutout using a push-on retaining ring with a foam gasket. Housing is black plastic. Temp. range is –13° to +185° F.

Voltage		Each
10-40 VDC	17045T81	$74.07
85-265 VAC, 50/60 Hz	17045T82	88.89

Magnetic-Field-Actuated LCD Hour Meter

Attach sensor to any AC or DC electric motor casing using its adhesive back or the included magnet; the motor's magnetic field triggers the sensor. Powered by a lithium battery (included)—no external power connection needed. Meters display actual running time up to 9999.9 hours. Digit height is 0.31″. Meter housing is black ABS plastic and can be wall mounted using the two 0.14″ mounting holes spaced 2.5″ center to center (fasteners not included). Size is 2⅞″ Wd.×1 13/16″ Ht.×¾″ Dp. Temperature range is –40° to +185° F.

Resettable meter can be programmed to maintain a defined maintenance interval to alert the user when the set time has elapsed.

		Each
Nonresettable	1114T27	$76.29
Resettable	1114T28	76.29

Optical Shaft Encoders

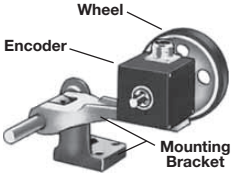

Convert shaft motion into an electrical output. Use these encoders with an electronic counter (not included) to count shaft revolutions. Units require 5-28 VDC at up to 80 mA of current. Choose a counter that accepts a DC input voltage in this range (5-28 VDC). Encoders have an aluminum housing, are 2.25″ square, and have ⅜″ Dia.×¾″ Lg. shaft extensions on both sides. Maximum shaft speed is 6,000 rpm. Temp. range is 32° to 158° F.

Add-and-subtract (quadrature) encoders increase or decrease count depending on direction of shaft rotation.

Mating connectors with cable (sold separately) simplify wiring. Optional *mounting bracket* and *wheels* (sold separately) allow you to use the encoder for length measurement applications. *Mounting bracket* is 8.28″ Lg.×7.28″ Wd.×5.91″ Ht. Includes fasteners for encoder mounting. Base has four 0.221″ dia. holes spaced 1½″×1½″ center-to-center for surface mounting (fasteners not included). *Wheel* circumference is 12″.

Cycles Per Revolution	Add Only	Each	Add and Subtract	Each
10	16695T21	$154.83	16695T24	$208.33
60	16695T22	154.83	16695T25	208.33
100	16695T32	154.83	16695T42	208.33
120	16695T33	154.83	16695T43	208.33
500	16695T23	154.83	16695T26	208.33
600	16695T34	154.83	16695T44	208.33
1,200	16695T35	154.83	16695T45	206.52

Mating Connector with 10-ft. Cable	16695T14	Each	$49.86
Mating Connector with 20-ft. Cable	16695T27	Each	$92.53
Mounting Bracket	16695T13	Each	$132.58
Rubber Wheel (3.82″ Dia.×0.75″ Wd.)	16695T12	Each	$88.56
Urethane Wheel (3.82″ Dia.×0.7″ Wd.)	16695T28	Each	$76.95

Wireless LCD Counter with Built-In Light-Beam Sensor

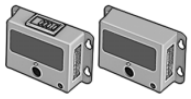
Counter and Sensor

With a light-beam sensor and battery power, this counting system has no wires to get in your way. To start counting, just position the counter and sensor between 2 and 10 feet apart. Counter has a six digit, ¼″ high display and a push-button reset. Counts up to 480 counts/min. Counter and sensor measure 1.3″ Ht.×2.1″ Wd.×0.6″ Dp. and have mounting flanges with four ¼″ dia. holes. Housing is water-resistant, tan ABS plastic. Include 3.6-volt replaceable batteries. Temp. range is 14° to 185° F.

Counter and Sensor with Serial Communication— Includes counter, sensor, receiver, voltage adapter, and software. Receiver obtains data sent wirelessly up to 600 feet by the counter and sends it serially to your PC. Has an RS232/422 interface, a DB9 serial connection. Complies with Part 15 of FCC rules.

Counter and Sensor (Two-Piece Style)	4258T17	Each	$551.99
Counter and Sensor w/ Serial Communication	4258T18	Each	$933.29

Combination Hour Meter/Counters

These nonresettable, two-in-one devices keep track of counts and time. Hour meter is motor driven and counts to 99999.99 hours; counter is electromechanical and counts to 9999999. Overall size is 2.17″ Ht.×2.17″ Wd.×1.5″ Dp. Meters have screw terminals and mount into a panel cutout size of 1.81″Ht.×1.81″Wd. (mounting clip included). Housing is black plastic. Temp. range is 5° to 140° F.

Voltage		Each
24 VAC, 60 Hz	16655T141	$125.64
115 VAC, 60 Hz	16655T142	121.47
12-24 VDC	16655T171	180.59

Vibration-Actuated Hour Meters

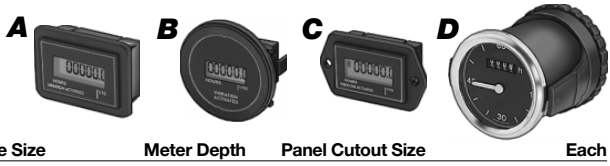

No electricity? These hour meters record the running time of machines and vehicles that vibrate during operation. They respond to any moderate, continuous movement. They are also water resistant. Meters are nonresettable. Housing is black plastic.

Styles A-C are powered by a nonreplaceable battery with an 8-yr. life. ***Style D*** does not generate an electric spark and is safe to use in hazardous locations.

Panel Mount Type	Counts To	Digit Ht.	Face Size	Meter Depth	Panel Cutout Size		Each
LCD Display— *Temperature Range: –13° to +158° F*							
A Push On	99999.9	0.196″	1.22″ Ht.×1.72″ Wd.	0.61″	0.95″ Ht.×1.46″ Wd.	8678T64	$38.95
B Push On	99999.9	0.196″	2.31″ Dia.	1.42″	2″ Dia.	8678T62	38.95
C Screw On	99999.9	0.196″	1.22″ Ht.×2.12″ Wd.	0.61″	———	8678T63	38.95
Rotating Digit Display with Minute Indicator— *Temperature Range: 5° to 140° F*							
D U-Bracket for Vertical Panel	99999	0.125″	2.28″ Dia.	2.95″	2.05″ Dia.	8678T73	134.57
D U-Bracket for Horizontal Panel	99999	0.125″	2.28″ Dia.	2.95″	2.05″ Dia.	8678T74	134.57

Minute and Hour Meters

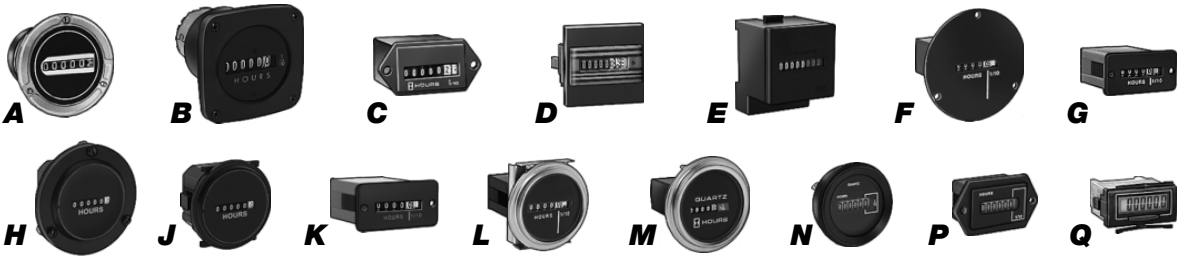

All meters are nonresettable, unless noted. AC meters operate on 60 Hz, unless noted. All are UL recognized, except *Styles B*, 1693T26, 1684T21, and 1684T23, which are UL listed (see listing for additional approvals). *Styles B*, 1693T26, *C*, *H*, and *P* include mounting fasteners; others do not.

Voltage	Counts To	Digit Ht.	Face Size	Cutout Size	Mtg. Depth	Mtg. Holes No.	Mtg. Holes Dia.	Housing Material/Color	Temp. Range (°F)	Approvals		Each
Analog Minute Meters												
Motor-Drive Screw-On Panel Mount with 8″ Wire Leads												
A ... 115 AC	99999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★	**8672T75**	$49.77
A ... 115 AC	9999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T55▲**	99.38
Motor-Drive Screw-On Panel Mount with Screw Terminals												
A ... 115 AC	9999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T65▲**	105.51
Motor-Drive Screw-On Panel Mount with 6″ Wire Leads												
B ... 115 AC	9999.9	0.25″	2.97″×2.97″	2.25″×2.25″	3.03″	4	0.13″	Plastic/Black	–4° to +131°	★	**1693T57▲**	95.84
Analog Hour Meters												
Motor-Drive Screw-On Panel Mount with 8″ Wire Leads												
A ... 24 AC	99999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T15**	43.80
A ... 115 AC	9999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T51▲**	86.75
A ... 115 AC	99999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T11**	43.76
A ... 230 AC	99999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T12**	45.93
Motor-Drive Screw-On Panel Mount with 6″ Wire Leads												
A ... 115 AC	99999.9	0.25″	3.5″ Dia.	2.82″ Dia.	2.61″	3	0.13″	Plastic/Black	–4° to +131°	★	**1693T26**	55.43
B ... 115 AC	99999.9	0.25″	2.97″×2.97″	2.25″×2.25″	2.61″	4	0.13″	Plastic/Black	–4° to +131°	★	**1693T84**	55.43
Motor-Drive Screw-On Panel Mount with 7″ Wire Leads												
C ... 120 AC	99999.9	0.12″	1.02″×2.07″	0.95″×1.45″	1.84″	2	0.15″	Polycarbonate/Black	–65° to +154°	★ ✓	**1684T31**	44.90
Motor-Drive Screw-On Panel Mount with Screw Terminals												
A ... 115 AC	9999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T61▲**	86.98
A ... 115 AC	99999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T31**	43.50
A ... 230 AC	99999.9	0.19″	2.84″ Dia.	2.21″ Dia.	1.98″	3	0.12″	Lexan/Clear	–20° to +160°	★ ✓	**8672T32**	50.93
C ... 120 AC	99999.9	0.12″	1.02″×2.07″	0.95″×1.45″	1.84″	2	0.15″	Polycarbonate/Black	–65° to +154°	★ ✓	**1684T21**	40.28
C ... 240 AC	99999.9	0.12″	1.02″×2.07″	0.95″×1.45″	1.84″	2	0.15″	Polycarbonate/Black	–65° to +154°	★ ✓	**1684T23**	40.02
Motor-Drive Push-On Panel Mount with Screw Terminals												
D ... 24 AC	99999.99	0.2″	2.05″×2.05″	1.77″×1.77″	1.38″	—	—	Plastic/Black	14° to +122°	★	**8681T84**	49.74
D ... 115 AC	99999.99	0.2″	2.05″×2.05″	1.77″×1.77″	1.38″	—	—	Plastic/Black	14° to +122°	★	**8681T85**	49.74
D ... 220 AC	99999.99	0.2″	2.05″×2.05″	1.77″×1.77″	1.38″	—	—	Plastic/Black	14° to +122°	★	**8681T86**	49.74
Motor-Drive DIN 3 Rail Mount with Screw Terminals												
E ... 110 AC	99999.99	0.158″	2.4″ ×1.9″	—	1.89″	—	—	Plastic/Black	5° to 122°	—	**8695T31**	70.23
E ... 220 AC	99999.99	0.158″	2.4″ ×1.9″	—	1.89″	—	—	Plastic/Black	5° to 122°	—	**8695T32**	69.76
Quartz-Drive Screw-On Panel Mount with 6″ Wire Leads												
F ... 115 AC	9999.9	0.13″	2.8″ Dia.	2″ Dia.	1.89″	3	0.15″	Plastic/Black	–22° to +149°	—	**1877T86**	36.25
G ... 115 AC	9999.9	0.13″	1.03″×2.06″	0.94″×1.45″	1.89″	2	0.15″	Plastic/Black	–22° to +149°	—	**1877T82**	36.25
Quartz-Drive Screw-On Panel Mount with 1/4″ Male Quick Disconnects and NEMA 4X and NEMA 12 Gasket												
H ... 24 AC	99999.9	0.14″	2.8″ Dia.	2″ Dia.	1.26″	3	0.15″	Plastic/Black	–40° to +185°	✓ ♠	**1672T85■**	30.85
H ... 115 AC	99999.9	0.14″	2.8″ Dia.	2″ Dia.	1.26″	3	0.15″	Plastic/Black	–40° to +185°	✓ ♠	**1672T84■**	30.85
H ... 230 AC	99999.9	0.14″	2.8″ Dia.	2″ Dia.	1.26″	3	0.15″	Plastic/Black	–40° to +185°	✓ ♠	**1672T89■**	30.85
Quartz-Drive Push-On Panel Mount with 1/4″ Male Quick Disconnects												
J ... 24 AC	99999.9	0.14″	2.31″ Dia.	2″ Dia.	1.26″	—	—	Plastic/Black	–40° to +185°	✓ ♠	**1672T82■**	30.71
J ... 115 AC	99999.9	0.14″	2.31″ Dia.	2″ Dia.	1.26″	—	—	Plastic/Black	–40° to +185°	✓ ♠	**1672T81■**	30.71
J ... 230 AC	99999.9	0.14″	2.31″ Dia.	2″ Dia.	1.26″	—	—	Plastic/Black	–40° to +185°	✓ ♠	**1672T88■**	30.71
Quartz-Drive Screw-On Panel Mount with 1/4″ Male Quick Disconnects												
C ... 10-80 DC	9999.9	0.12″	1.26″×2.13″	0.95″×1.45″	1.87″	2	0.15″	Plastic/Black	–40° to +185°	★	**1896T53**	56.47
F ... 8-32 DC	9999.9	0.13″	2.8″ Dia.	2″ Dia.	1.89″	3	0.15″	Plastic/Black	–22° to +149°	✓	**1877T85**	36.25
H ... 10-80 DC	9999.9	0.12″	2.86″ Dia.	2″ Dia.	1.87″	3	0.15″	Plastic/Black	–40° to +185°	★	**1896T51**	63.75
K ... 8-32 DC	9999.9	0.13″	1.03″×2.06″	0.94″×1.45″	1.89″	2	0.15″	Plastic/Black	–22° to +149°	✓	**1877T81**	36.25
Quartz-Drive Panel Mount with Bracket and 1/4″ Male Quick Disconnects												
L ... 8-32 DC	9999.9	0.13″	2.3″ Dia.	2″ Dia.	1.93″	—	—	Plastic/Black	–22° to +149°	✓	**1877T83**	36.25
M ... 10-80 DC	9999.9	0.12″	2.5″ Dia.	2″ Dia.	1.85″	—	—	Plastic/Black	–40° to +185°	★	**1896T52**	52.29
LCD Hour Meters												
Electronic AC/DC U-Clamp Panel Mount with 1/4″ Male Quick Disconnects												
N ... 75-270 AC												
36-185 DC	99999.9	0.2″	2.3″ Dia.	2.05″ Dia.	0.52″	—	—	Plastic/Black	–40° to +185°	✓	**1878T71♣**	41.50
N ... 15- 75 AC												
9- 60 DC	99999.9	0.2″	2.3″ Dia.	2.05″ Dia.	0.52″	—	—	Plastic/Black	–40° to +185°	✓	**1878T67♣**	41.50
Electronic AC/DC Screw-On Panel Mount with 1/4″ Male Quick Disconnects												
P ... 75-270 AC												
36-185 DC	99999.9	0.2″	1.23″×2.1″	0.95″×1.45″	0.71″	2	0.15″	Plastic/Black	–40° to +185°	✓	**1878T42♣**	27.27
P ... 15- 75 AC												
9- 60 DC	99999.9	0.2″	1.23″×2.1″	0.95″×1.45″	0.71″	2	0.15″	Plastic/Black	–40° to +185°	✓	**1878T43♣**	27.27
Rectangular Snap-On Panel Mount with Screw Terminals and NEMA 4X Gasket												
Q ... 10-240 AC												
5-110 DC	99999.9	0.35″	0.95″×1.89″	0.87″×1.77″	2.1″	—	—	Plastic/Black	14° to 140°	★ ✓	**17015T11▲■**	47.64
No Voltage (Switch Contact) Rectangular Snap-On Panel Mount with Screw Terminals and NEMA 4X Gasket												
Q ... —	99999.99	0.35″	0.95″×1.89″	0.87″×1.77″	2.1″	—	—	Plastic/Black	14° to 140°	★ ✓	**17015T12▲**	35.45

★ CSA certified. ✓ CE approved. ♠ C-UL recognized. ▲ Resettable. ■ Meters operate on 50/60 Hz. ♣ Meters operate on 48-440 Hz.

Furniture & Storage

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Economy Combination Drawer Chest and Mobile Cabinet

Economical and dependable, this chest and mobile cabinet combination is ideal for less frequent use. Made of 22- to 20-gauge steel with 24-gauge drawers. Drawers fully extend on friction slides, while drawer stops keep them from completely pulling out. Both the chest and the cabinet include locking security bars and have a lock with two keys.

The chest, which is removable, has recessed side handles. Its three bottom drawers are made of black polystyrene.

The cabinet has four casters (two swivel with brakes; two rigid) with 3″ dia. polypropylene wheels. Color is red. Shipped partially assembled.

	Overall Size, Wd. × Ht. × Dp.	Cap., lbs.
Chest and Cabinet	26½″ × 44″ × 14″	400
Top Compartment (Chest)	21½″ × 3¼″ × 11½″	25
4 Drawers (Chest)	18″ × 2″ × 10¾″	25
3 Bottom Drawers (Chest)	4¼″ × ¾″ × 6″	25
2 Drawers (Mobile Cabinet)	22″ × 4″ × 12¾″	25
Bottom Compartment (Mobile Cabinet)	23 5/16″ × 16″ × 13¼″	25

63885A45 ..... Each $181.43

Light Duty Drawer Chests and Mobile Cabinets

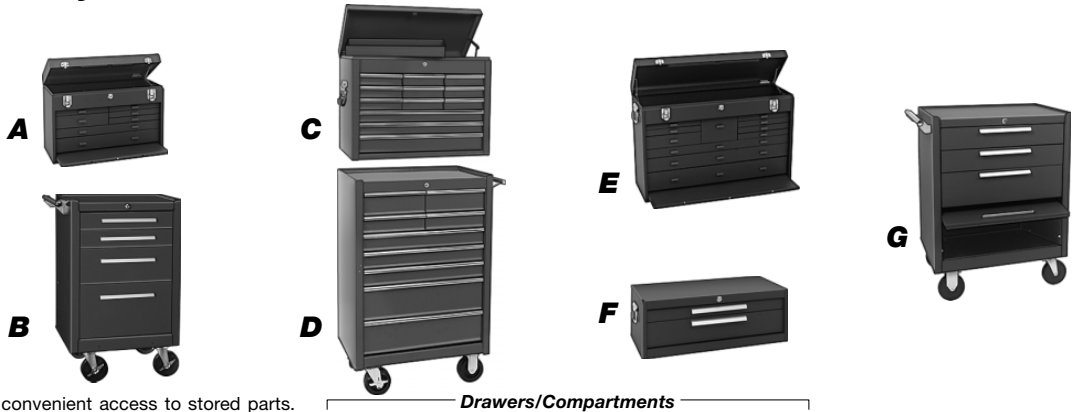

Get convenient access to stored parts. All are made of steel. Drawers fully extend on friction slides (unless noted) and have drawer stops to keep them from completely pulling out. Have a lock with two keys.

A&B ***Narrow Drawer Chest and Mobile Cabinet***—Made of 22- to 16-ga. steel. Color is brown with a textured finish. Shipped assembled.

Style A—Has a top handle and a drop-front panel that prevents access to drawers. The drawers are lined with felt to protect your stored parts and have adjustable galvanized steel dividers. You can stack this 7-drawer chest on top of our 5-drawer mobile cabinet (*Style B* sold separately).

Style B—Has a push handle and four casters (two swivel with brakes; two rigid) with 5″ dia. rubber wheels. Drawers have ball-bearing slides.

C&D ***Standard Drawer Chest and Mobile Cabinet***—Made of 24- to 18-ga. steel. Full-width, recessed drawer pulls provide "grab anywhere" flexibility. Color is red. Shipped partially assembled.

Style C—Has a 17¼″ Wd. × 3 5/32″ Ht. × 6⅞″ Dp. lift-out tote tray and side handles. You can stack this 12-drawer chest on top of our 9-drawer mobile cabinet (*Style D* sold separately).

Style D—Has a push handle and four casters (two swivel with brakes; two rigid) with 5″ dia. polypropylene wheels.

E-G ***Standard Drawer Chests and Mobile Cabinet***—Made of 22- to 16-ga. steel. Color is brown with a textured finish. Shipped assembled.

Styles E&F—Both have side handles and drawers that are felt-lined to protect parts. *Style E* has adjustable galvanized steel dividers and a drop-front panel that prevents access to drawers. You can stack the 2- or 11-drawer chest on top of our 3-drawer mobile cabinet (*Style G* sold separately) or use chests stacked together for added storage.

Style G—Has a bottom compartment with a lift-up panel, and a push handle that you can attach to either side. It has four casters (two swivel with brakes; two rigid) with 5" dia. rubber wheels.

Drawers/Compartments No.	Overall Size, Wd. × Ht. × Dp.	Cap., lbs.	Overall Cap., lbs.		Each
Narrow Drawer Chest and Mobile Cabinet					
(A) 7-Drawer Chest—*Overall Size: 20⅛″ Wd. × 13⅝″ Ht. × 8½″ Dp.*					
Top Compartment	20″ × 3¼″ × 8⅜″	100			
4 Drawers	8⅝″ × 1″ × 7½″	60			
1 Drawer	8⅝″ × 2″ × 7½″	60			
1 Drawer	18¼″ × 1½″ × 7½″	60			
1 Drawer	18¼″ × 2¼″ × 7½″	60	200	6578A1	$227.44
(B) 4-Drawer Mobile Cabinet—*Overall Size: 21″ Wd. × 28″ Ht. × 18″ Dp.*					
2 Drawers	16½″ × 2¾″ × 16½″	120			
1 Drawer	16½″ × 6″ × 16½″	120			
1 Drawer	16½″ × 9″ × 16½″	120	750	6382A66	474.89
Standard Drawer Chest and Mobile Cabinet					
(C) 12-Drawer Chest—*Overall Size: 26″ Wd. × 19¾″ Ht. × 12″ Dp.*					
Top Compartment	26″ × 4¼″ × 11 15/16″	50			
9 Drawers	6¾″ × 2″ × 10¾″	50			
2 Drawers	22⅜″ × 2″ × 10¾″	50			
1 Drawer	22⅜″ × 3⅛″ × 10¾″	50	800	6379A11	411.72
(D) 9-Drawer Mobile Cabinet—*Overall Size: 26½″ Wd. × 41⅛″ Ht. × 18″ Dp.*					
2 Drawers	10⅝″ × 3″ × 16 7/16″	50			
2 Drawers	10⅝″ × 4⅛″ × 16 7/16″	50			
3 Drawers	22⅜″ × 3″ × 16 7/16″	50			
2 Drawers	22⅜″ × 6 5/16″ × 16 7/16″	50	800	6379A14	575.37
Standard Drawer Chests and Mobile Cabinet					
(E) 11-Drawer Chest—*Overall Size: 26¾″ Wd. × 18″ Ht. × 8½″ Dp.*					
Top Compartment	26½″ × 3¼″ × 8⅜″	100			
1 Drawer	5½″ × 4⅜″ × 7½″	60			
6 Drawers	8⅝″ × 1″ × 7½″	60			
1 Drawer	8⅝″ × 2″ × 7½″	60			
1 Drawer	24¾″ × 1½″ × 7½″	60			
1 Drawer	24¾″ × 2¼″ × 7½″	60			
1 Drawer	24¾″ × 3⅛″ × 7½″	60	350	6586A4	364.58
(F) 2-Drawer Chest—*Overall Size: 26¾″ Wd. × 9½″ Ht. × 12½″ Dp.*					
1 Drawer	25″ × 2″ × 10⅞″	90			
1 Drawer	25″ × 4⅛″ × 10⅞″	90	250	6563A24	144.37
(G) 3-Drawer Mobile Cabinet—*Overall Size: 27″ Wd. × 35″ Ht. × 18″ Dp.*					
2 Drawers	23″ × 4″ × 16½″	125			
1 Drawer	23″ × 6″ × 16½″	125			
Bottom Compartment	24⅛″ × 11¼″ × 17¾″	375	800	6623A15	481.40

Optional Drawer Dividers

Dividers are adjustable and made of aluminum.

For Use With	Pkg. Qty		Per Pkg.
Style G Mobile Cabinet	4	6623A52	$18.11

Extra-Wide Light Duty Mobile Cabinet

More horizontal space allows you to store and organize longer parts. Cabinet has 22- to 18-ga. steel construction. Full-width, recessed drawer pulls provide "grab anywhere" flexibility. Drawers fully extend on ball bearing slides; drawer stops keep them from completely pulling out. Has a push handle, a vinyl work surface, and a lock with two keys. Comes with four casters (two swivel with brakes; two rigid) with 5″ dia. polypropylene wheels. Shipped partially assembled. **To Order:** Please specify color: black or red.

No.	Drawers/Compartments Overall Size, Wd.×Ht.×Dp.	Cap., lbs.	Overall Cap., lbs.	Each
11-Drawer Mobile Cabinet— *Overall Size: 41″ Wd.×37½″ Ht.×19″ Dp.*				
1 Drawer	36½″ × 3½″ × 16¼″	50		
1 Drawer	22¼″ × 1¼″ × 16¼″	50		
4 Drawers	22¼″ × 2⅜″ × 16¼″	50		
1 Drawer	22¼″ × 5⅜″ × 16¼″	50		
1 Drawer	11½″ × 1¼″ × 16¼″	50		
2 Drawers	11½″ × 2⅜″ × 16¼″	50		
1 Drawer	11½″ × 12¼″ × 16¼″	50	700	63895A77 $741.06

Medium Duty Drawer Chests and Cabinets

Built with higher drawer capacities than our light duty chests and cabinets, these are made of 20- to 16-ga. steel. Drawers fully extend on friction slides; drawer stops keep them from completely pulling out. All have a lock with two keys. Color is brown with a textured finish. Shipped assembled.

Note: Use chests alone or stacked on top of mobile cabinets.

A-C ***Drawer Chests—*** All have side handles.

Style B— Has a 19½″ Wd.×3⅜″ Ht.×7¾″ Dp. lift-out tote tray with socket-set divider.

D&E ***Mobile Drawer Cabinets—*** Have a push handle and four casters (two swivel with brakes; two rigid) with 5″ dia. rubber wheels.

Style D— Includes a bottom compartment with a lift-up panel. Attach the push handle to either side.

A

B

C

D

E

No.	Drawers/Compartments Overall Size, Wd.×Ht.×Dp.	Cap., lbs.	Overall Cap., lbs.	Each
Drawer Chests				
(A) 5-Drawer Chest— *Overall Size: 27″ Wd.×16⅝″ Ht.×18″ Dp.*				
4 Drawers	23″ × 2″ × 16½″	125		
1 Drawer	23″ × 4″ × 16½″	125	800	6580A34 $409.36
(B) 6-Drawer Chest— *Overall Size: 26⅛″ Wd.×14¾″ Ht.×12″ Dp.*				
Top Compartment	26″ × 2⅝″ × 11⅞″	125		
3 Drawers	6⅞″ × 2″ × 10¾″	90		
2 Drawers	22⅞″ × 2″ × 10¾″	90		
1 Drawer	22⅞″ × 3″ × 10¾″	90	665	6623A14 391.19
(C) 2-Drawer Chest— *Overall Size: 26⅝″ Wd.×11¾″ Ht.×12½″ Dp.*				
2 Drawers	22⅞″ × 4⅛″ × 10¾″	90	180	6623A47 195.86
Mobile Drawer Cabinets				
(D) 3-Drawer Cabinet— *Overall Size: 27″ Wd.×35″ Ht.×18″ Dp.*				
2 Drawers	23″ × 4″ × 16½″	125		
1 Drawer	23″ × 6″ × 16½″	125		
Bottom Compartment	24⅛″ × 11¼″ × 17¾″	375	800	6623A15 481.40
(E) 7-Drawer Cabinet— *Overall Size: 29″ Wd.×35″ Ht.×20″ Dp.*				
3 Drawers	25″ × 2″ × 18½″	125		
3 Drawers	25″ × 4″ × 18½″	125		
1 Drawer	25″ × 6″ × 18½″	125	1000	6581A14 709.27

Optional Drawer Dividers

Dividers are adjustable and made of aluminum.

For Use With	Pkg. Qty.	Per Pkg.
Style A Chest and Style D Mobile Cabinet	4	6623A52 $18.11
Styles B and C Chests	4	6623A51 18.04
Style E Mobile Cabinet	4	6580A33 20.13

Extra-Wide Medium Duty Mobile Cabinet

Similar to our Extra-Wide Light Duty Mobile Cabinet, except this has higher capacities. Made of 22- to 18-ga. steel. Cabinet has nonslip polyethylene drawer liners and a drawer latch system that prevents accidental opening. Drawers fully extend on ball-bearing drawer slides; drawer stops keep them from completely pulling out. Has a push handle, a hardboard work surface, and a lock with two keys. Comes with four casters (two swivel with brakes; two rigid) with 6″ dia. polypropylene wheels. Shipped partially assembled. **To Order:** Please specify color: black or red.

No.	Drawers/Compartments Overall Size, Wd.×Ht.×Dp.	Cap., lbs.	Overall Cap., lbs.	Each
11-Drawer Mobile Cabinet— *Overall Size: 41″ Wd.×41″ Ht.×18″ Dp.*				
1 Drawer	36½″ × 3½″ × 16¼″	100		
1 Drawer	22¼″ × 1¼″ × 16¼″	100		
1 Drawer	22¼″ × 2⅜″ × 16¼″	100		
3 Drawers	22¼″ × 5⅜″ × 16¼″	100		
1 Drawer	22¼″ × 1¼″ × 16¼″	100		
3 Drawers	22¼″ × 2⅜″ × 16¼″	100		
1 Drawer	22¼″ × 12¼″ × 16¼″	100	1200	7933A73 $1,241.06

Heavy Duty Drawer Cabinets

Count on these rugged cabinets for durable storage. Made of 14-ga. steel with an 18- to 12-ga. steel frame. Drawers fully extend on ball-bearing drawer slides; drawer stops keep them from completely pulling out. Each drawer holds 400 lbs. Drawer handles have a label holder. When one drawer is open, the others lock closed to prevent tipping. Cabinets have a base with forklift entry and cover strips that conceal channels for a finished appearance. They have a lock with two keys. Cabinets can be used individually or stacked up to two high. Welded and shipped assembled. *Note:* Only stack cabinets with the same width and depth dimensions. **To Order:** Please specify color: blue or light gray.

Counter-Height Drawer Cabinet (45″ Wide)

Full-Height Drawer Cabinet (30″ Wide) with Optional 8-Compartment Drawer Divider Set

Cabinets

Total No. of Drawers	Drawers No.	Drawers Usable Height	Drawers Depth	Overall Cap., lbs.	30″ Wd. Cabinets; 25 1/8″ Wd. Drawers	Each	45″ Wd. Cabinets; 39 1/2″ Wd. Drawers	Each
Bench-Height Drawer Cabinets—*Overall Size: 33 1/4″ Ht. × 28 1/4″ Dp.*								
4	1	2 1/4″, 3 7/8″, 5 3/8″, 12 1/2″	25 1/8″	1600	4795T65	$1,021.28	49555T87	$1,691.27
5	1	3″, 3 7/8″	25 1/8″					
	3	5 3/8″	25 1/8″	2000	4795T66	1,154.58	49555T88	1,906.94
Counter-Height Drawer Cabinets—*Overall Size: 44 1/4″ Ht. × 28 1/4″ Dp.*								
6	1	3 7/8″, 4 5/8″	25 1/8″					
	2	5 3/8″, 7″	25 1/8″	2400	4795T55	1,356.18	49555T85	2,280.67
7	3	2 1/4″	25 1/8″					
	1	3 7/8″, 5 3/8″, 6 1/4″, 10 1/8″	25 1/8″	2800	4795T16	1,465.59	49555T37	2,443.38
7	2	2 1/4″, 6 1/4″	25 1/8″					
	1	3″, 5 3/8″, 7″	25 1/8″	2800	4795T17	1,479.10	49555T36	2,467.00
9	4	2 1/4″, 3″	25 1/8″					
	1	9 3/8″	25 1/8″	3600	4795T18	1,704.30	49555T86	2,821.74
Full-Height Drawer Cabinets—*Overall Size: 59 1/4″ Ht. × 28 1/4″ Dp.*								
7	2	5 3/8″, 6 1/4″, 7″	25 1/8″					
	1	10 1/8″	25 1/8″	2800	4795T11	1,609.75	49555T81	2,841.08
10	3	2 1/4″, 3″	25 1/8″					
	1	4 5/8″, 5 3/8″, 6 1/4″, 12 1/2″	25 1/8″	4000	4795T12	1,929.29	49555T38	3,095.27
10	2	2 1/4″, 3 7/8″	25 1/8″					
	3	5 3/8″	25 1/8″					
	1	3″, 6 1/4″, 7″	25 1/8″	4000	4795T13	1,947.54	49555T83	3,218.13
11	2	2 1/4″, 3″	25 1/8″					
	3	3 7/8″	25 1/8″					
	4	5 3/8″	25 1/8″	4400	4795T14	2,123.75	49555T84	3,272.10
17	17	2 1/4″	25 1/8″	6800	4795T15	2,808.44	49555T39	4,108.22

Optional Drawer Divider Sets—Made of galvanized steel.

For Usable Drawer Height	8-Compartment Set	Per Set	12-Compartment Set	Per Set	24-Compartment Set	Per Set
For 30″ Wide Cabinets						
2 1/4″, 3″	4795T75	$10.01	4795T85	$12.78	4795T29	$14.58
3 7/8″, 4 5/8″	4795T76	12.36	4795T86	15.93	4795T39	19.66
5 3/8″, 6 1/4″	4795T77	15.49	4795T87	17.07	4795T49	26.92
7″ through 12 1/2″	4795T78	17.99	4795T88	19.84	4795T59	32.04
For 45″ Wide Cabinets						
2 1/4″, 3″	49555T22	8.94	49555T26	19.21	49555T31	21.10
3 7/8″, 4 5/8″	49555T23	12.16	49555T27	25.28	49555T32	55.11
5 3/8″, 6 1/4″	49555T24	15.38	49555T28	31.24	49555T33	69.41
7″ through 12 1/2″	49555T25	17.86	49555T29	36.97	49555T34	83.67

Premium Heavy Duty Drawer Cabinets

Bench-Height Drawer Cabinet

With a load capacity of 440 lbs. per drawer, these cabinets will stand up to your heaviest storage needs. Made of 20- to 16-ga. steel with a 14-ga. steel frame. Drawers have handles with a label holder and adjustable compartments (dividers included). When one drawer is open, the others lock closed to prevent tipping. Drawers fully extend on ball-bearing drawer slides; drawer stops keep them from completely pulling out. Cabinets have a lock with two keys. All except the mobile cabinets can be connected side by side and stacked up to two high. Welded and shipped assembled. *Note:* Only stack cabinets with the same width and depth dimensions. **To Order:** Please specify color: blue or dark gray.

Full-height drawer cabinet has a recessed base with forklift entry.

Mobile drawer cabinets have a push handle. The top of the cabinet has three raised edges with an open front and a ribbed PVC work surface mat. Have four casters (two swivel with brakes; two rigid) with 6″ dia. rubber wheels.

Mobile Drawer Cabinet

Drawers No.	Drawers Usable Ht. (No. of Compartments)	Overall Drawer Size, Wd. × Dp.	Overall Cap., lbs.		Each
Bench-Height Drawer Cabinet					
6-Drawer Cabinet—*Overall Size: 22 3/16″ Wd. × 33 1/2″ Ht. × 28 1/2″ Dp.*					
2	2 1/8″ (44), 5 1/16″ (13)				
1	3 1/8″ (9), 7 1/32″ (4)	18″ × 24″	2640	7573T66	$1,085.28
Full-Height Drawer Cabinet					
7-Drawer Cabinet—*Overall Size: 28 1/4″ Wd. × 59 1/2″ Ht. × 28 1/2″ Dp.*					
4	5 1/16″ (42)				
1	7 1/32″ (9), 9″ (4), 11″ (4)	24″ × 24″	3080	7573T61	1,673.95
Mobile Drawer Cabinets					
7-Drawer Mobile Cabinet—*Overall Size: 28 1/4″ Wd. × 41 1/2″ Ht. × 22 1/2″ Dp.*					
4	2 1/8″ (52)				
1	3 1/8″ (8), 5 1/16″ (6), 7 1/32″ (6)	24″ × 18″	3080	7573T67	1,546.68
7-Drawer Mobile Cabinet—*Overall Size: 40 1/4″ Wd. × 41 1/2″ Ht. × 22 1/2″ Dp.*					
4	2 1/8″ (58)				
1	3 1/8″ (18), 5 1/16″ (12), 7 1/32″ (6)	36″ × 18″	3080	7573T68	1,859.22

Stainless Steel Drawer Cabinet

Great for sanitary and Class 100 clean room environments, this cabinet is made of 20- to 18-ga. Type 304 stainless steel with a brushed finish. It has stainless steel drawer pulls, push handle, and hardware. Drawers extend up to 92% on ball-bearing drawer slides; drawer stops keep them from completely pulling out. Cabinet has a lock with two keys and four casters (two swivel with brakes; two rigid) with 5″ dia. polyurethane wheels. Shipped assembled.

	Overall Size, Wd. × Ht. × Dp.	Cap., lbs.		Each
Cabinet	29″ × 35″ × 20″	1000		
1 Drawer	25″ × 2″ × 18 1/2″	125		
3 Drawers	25″ × 4″ × 18 1/2″	125		
1 Drawer	25″ × 10″ × 18 1/2″	125	6372A32	$2,762.52

Drawer Cabinet Liners

Protect drawers from scratches and dents. Color is black.
Standard liner is PVC-coated polyester. ***Corrosion-preventive*** liner is polyethylene and impregnated with a blend of oils and corrosion inhibitors to protect contents from rust.

	Size, Wd. × Thick.	Max. Lg., ft.		Per Ft.
Standard	24″ × 1/8″	100	6181T85	$2.78
Corrosion Preventive	40″ × 3/32″	30	6181T87	15.00

Drawer Cabinet Organizer

Keep drawers neat and organized with this 10-compartment polystyrene organizer. Size is 16″ Wd. × 1 1/4″ Ht. × 11″ Dp.

47625T87 ..... **Each** $29.88

Plastic Small-Parts Drawer Cabinets

Our lightweight polystyrene cabinets have a black frame (unless noted) and clear polypropylene drawers so you can see what you need in an instant. Drawers have stops to keep them from completely pulling out. Stand cabinets on top of a workbench or wall mount using the four 1/2″ × 3/4″ keyhole slots (fasteners not included). Shipped assembled.
Optional dividers are gray polypropylene, except 9619T56 and T54, which are clear polystyrene. Each drawer holds one divider.
Also Available: Replacement drawers for 10 9/16″ and 20″ wide cabinets. Please ask for 9619T81 and specify drawer size.

16-Drawer Cabinet

39-Drawer Cabinet

Drawers: No.	Drawers: Overall Size, Wd. × Ht. × Dp.	Cabinets: Overall Size, Wd. × Ht. × Dp.	Cabinets: Each	Optional Dividers: Pkg. Qty.	Optional Dividers: Per Pkg.
16-Drawer Cabinet					
16	2 1/8″ × 1 1/2″ × 5 1/4″	10 9/16″ × 8 1/2″ × 6 3/8″	9619T61 $17.10	16	9619T92 $4.37
18-Drawer Cabinet					
18	4 3/8″ × 2 1/4″ × 5 1/2″	14 7/8″ × 18 1/2″ × 6 3/8″	9619T49 ♦ 25.70	16	9619T56 4.27
24-Drawer Cabinet					
24	4 3/8″ × 2″ × 5 1/4″	20″ × 15 13/16″ × 6 3/8″	9619T71 37.98	6	9619T93 4.30
26-Drawer Cabinet					
20	2 1/8″ × 1 1/2″ × 5 1/4″			16	9619T92 4.37
6	4 3/8″ × 2″ × 5 1/4″	20″ × 10 11/32″ × 6 3/8″	9619T62 24.70	6	9619T93 4.30
39-Drawer Cabinet					
30	2 1/8″ × 1 3/8″ × 5 1/2″			48	9619T54 4.27
9	4 3/8″ × 2 1/4″ × 5 1/2″	14 7/8″ × 18 1/2″ × 6 3/8″	9619T48 ♦ 26.94	16	9619T56 4.27
44-Drawer Cabinet					
32	2 1/8″ × 1 1/2″ × 5 1/4″			16	9619T92 4.37
12	4 3/8″ × 2″ × 5 1/4″	20″ × 15 13/16″ × 6 3/8″	9619T75 35.58	6	9619T93 4.30
64-Drawer Cabinet					
64	2 1/8″ × 1 1/2″ × 5 1/4″	20″ × 15 13/16″ × 6 3/8″	9619T77 39.51	16	9619T92 4.37

♦ Cabinets have a light gray frame.

Modular Plastic Small-Parts Cabinet with Plastic Boxes

Need to take a few parts with you but don't want to move an entire storage system? This cabinet has five slide-out trays that give you access to five removable, covered boxes; stops keep the trays from completely pulling out. Made entirely of polypropylene. An interlocking feature provides stability—multiple cabinets can be stacked and interlocked top-to-bottom without sliding apart. Wall mount using the four 7/8″ × 3/16″ keyhole slots (fasteners not included). Boxes include 16 adjustable dividers. The cabinet is black, trays are gray, and boxes are translucent. Shipped assembled.

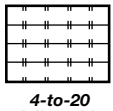

4-to-20 Adjustable Compartments

No. of Boxes	No. of Compartments per Box	O'all Box Size, Wd. × Ht. × Dp.	O'all Cabinet Size, Wd. × Ht. × Dp.	Each
5	4 to 20 (Adjustable)	13 1/2″ × 2 3/16″ × 9 1/2″	15 1/4″ × 16″ × 14 3/4″	67425T33 $83.36
Replacement Covered Box				4629T62 14.29

Design-Your-Own Steel Small-Parts Cabinet with Plastic Boxes

Box Configurations

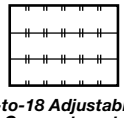

3-to-18 Adjustable Compartment

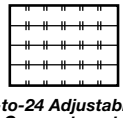

4-to-24 Adjustable Compartment

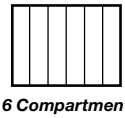

6 Compartment

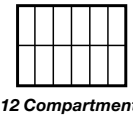

12 Compartment

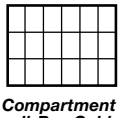

18 Compartment for Small-Box Cabinet

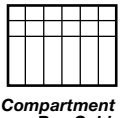

18 Compartment for Large-Box Cabinet

Choose a cabinet and then select any combination of five boxes (sold separately below) that match the cabinet size. A hinge on the cabinet secures all five boxes during transport and can be locked with a padlock (not included) that has a maximum shackle diameter of 3/8″.
Cabinets are made of 24-ga. steel. A handle makes transport easy. Wall mount with four 7/8″ × 3/16″ keyhole slots (fasteners not included). Color is dark gray. Shipped partially assembled.
Boxes (sold separately below) are clear polypropylene. They're removable and come with a lid. Overall box size is 11″ Wd. × 1 3/4″ Ht. × 6 3/4″ Dp. for small-box cabinets; 13 1/8″ Wd. × 2 5/16″ Ht. × 9″ Dp. for large-box cabinets.

6-Compartment Box

Cabinet with Boxes

Small-Box Cabinet and Boxes

Overall Cabinet Size, Wd. × Ht. × Dp.	Each
11 1/4″ × 10 3/4″ × 6 3/4″	45505T21 $42.58

No. of Compartments per Box	O'all Compartment Size, Wd. × Ht. × Dp.	Each
3 to 18 (Adjustable)	10 1/2″ × 1 9/16″ × 2″	45505T31 $6.76
6	1 3/4″ × 1 9/16″ × 6 1/4″	45505T32 5.93
12	1 3/4″ × 1 9/16″ × 3 1/8″	45505T33 5.93
18	1 3/4″ × 1 9/16″ × 2″	45505T34 5.93

Large-Box Cabinet and Boxes

Overall Cabinet Size, Wd. × Ht. × Dp.	Each
13 1/2″ × 13 1/4″ × 9 1/8″	45505T41 $48.07

No. of Compartments per Box	O'all Compartment Size, Wd. × Ht. × Dp.	Each
4 to 24 (Adjustable)	12 1/2″ × 2″ × 2 1/16″	45505T51 $8.84
6	2 1/16″ × 2″ × 8 1/2″	45505T52 7.34
12	2 1/16″ × 2″ × 4 1/4″	45505T53 7.34
18	2 1/16″ × 2″ × 2 1/16″	45505T54★ 7.34

★ The front six compartments are 2 1/16″ Wd. × 2″ Ht. × 4 1/4″ Dp.

Conductive Plastic Small-Parts Drawer Cabinets

26-Drawer Cabinet

With a surface resistivity of 10^5 ohms/sq. in., these cabinets protect your sensitive components from electrostatic damage. They're made of black polyethylene and come with a 3-ft. long static-safe ground cord. Drawer stops keep drawers from completely pulling out. Shipped assembled.

Optional dividers are black polypropylene. Each cabinet drawer holds a maximum of three dividers.

Drawers No.	Overall Size, Wd. × Ht. × Dp.	Cabinets	Each	Optional Dividers Pkg. Qty.		Per Pkg.
26-Drawer Cabinet— *Overall Size: 12″ Wd. × 16½″ Ht. × 6¼″ Dp.*						
15 Drawers	2″ × 1⅜″ × 5⅜″			25	4845T68	$4.79
8 Drawers	2½″ × 2¼″ × 5⅜″			24	4845T73	11.92
2 Drawers	5⅜″ × 2¼″ × 5⅜″			12	4845T82	9.10
1 Drawer	10⅞″ × 2¼″ × 5⅜″	4845T57	$96.88	12	4845T82	9.10
30-Drawer Cabinet— *Overall Size: 12″ Wd. × 11¼″ Ht. × 6¼″ Dp.*						
30 Drawers	2″ × 1⅜″ × 5⅜″	4845T53	78.47	25	4845T68	4.79

Steel Small-Parts Drawer Cabinets

A

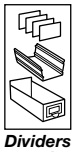

Dividers and Insert

B

Choose from a variety of cabinet styles and drawer configurations for small-parts storage that's just right for you. All drawers have convenient pull handles and drawer stops to prevent accidental removal. They have label holders (except *Styles B* and *E*). Cabinets are made of steel. Color is light gray, except *Styles B*, *F*, and *G*, which are dark gray. All are welded and shipped assembled.

Dividers and ***divider sets*** are steel, except *Styles B* and *E*, which are polystyrene. *Styles A* and *C* require one insert (sold separately) per drawer for the optional dividers.

A&B Small-Drawer Cabinets—*Style A* are 22- to 19-ga. steel.
Style B are 24-ga. steel. Cabinet base has forklift channels. Drawers include two polystyrene dividers.

C Medium-Drawer Cabinets are made of 24- to 19-ga. steel. A base holds the cabinets 5″ off the floor for easier access to bottom drawers.

D Large-Drawer Cabinets are made of 24- to 19-ga. steel. The base holds these cabinets 5″ off the floor for easier access to the bottom drawers. *Note:* Order one optional *divider set* for each drawer.

E-G Stackable Drawer Cabinets are made of 24-ga. steel. *Note:* Only stack cabinets with the same width and depth dimensions.

Style E includes two adjustable polystyrene dividers per drawer. Cabinets have 5⁄16″ dia. holes in each corner (fasteners not included) and can be stacked up to four high. *Optional bases* are sold separately below.

Each drawer for *Styles F* and *G* has a label holder and two adjustable steel dividers. Cabinets have ¼″ dia. holes in each corner (fasteners not included) and can be stacked up to two high. *Style F* have drawer handles you attach with included fasteners.

C

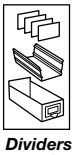

Dividers and Insert

D

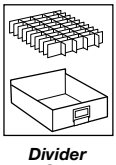

Divider Set

E

With Optional Base

F

G

Drawers Total No.	No. Across × Down	Overall Size, Wd. × Ht. × Dp.	Cabinets Overall Size, Wd. × Ht. × Dp.		Each	Dividers Pkg. Qty.		Per Pkg.
Small-Drawer Cabinets								
A 50	5 × 10	3″ × 2½″ × 8″	19″ × 34½″ × 9″	4620T13	$406.12	10	4620T24	$9.41
A 50	10 × 5	3″ × 2½″ × 8″	36″ × 17¾″ × 9″	4620T16	406.12	10	4620T24	9.41
A 100	10 × 10	3″ × 2½″ × 8″	36″ × 34½″ × 9″	4620T11	676.49	10	4620T24	9.41
B 48	6 × 8	5⅜″ × 2¾″ × 11¼″	34⅛″ × 33¾″ × 12¼″	4522T21	474.23	12	4522T43	8.68
B 72	6 × 12	5⅜″ × 2¾″ × 11¼″	34⅛″ × 48⅛″ × 12¼″	4522T31	623.15	12	4522T43	8.68
B 96	6 × 16	5⅜″ × 2¾″ × 11¼″	34⅛″ × 62½″ × 12¼″	4522T41	845.36	12	4522T43	8.68
Medium-Drawer Cabinets								
C 27	3 × 9	9″ × 3″ × 12″	30⅛″ × 41″ × 13½″	4619T31	420.22	10	4619T14	12.30
C 27	3 × 9	9″ × 3″ × 16″	30⅛″ × 41″ × 16¾″	4619T32	589.71	10	4619T14	12.30
Large-Drawer Cabinets								
D 6	1 × 6	15½″ × 6¾″ × 18½″	17⅞″ × 53⅜″ × 20″	4924T61	536.44	1	4924T64★	27.62
D 10	1 × 10	15½″ × 4″ × 18½″	17⅞″ × 53⅜″ × 20″	4924T62	656.17	1	4924T65★	39.78
Stackable Drawer Cabinets								
E 9	3 × 3	5⅜″ × 2¾″ × 11¼″	17¼″ × 10⅞″ × 11⅝″	5150T26	86.95	12	4522T43	8.68
E 12	6 × 2	5⅜″ × 2¾″ × 11¼″	33¾″ × 7⅜″ × 11⅝″	5150T67	111.64	12	4522T43	8.68
E 18	3 × 6	5⅜″ × 2¾″ × 11¼″	17¼″ × 21¼″ × 11⅝″	5150T27	141.62	12	4522T43	8.68
E 18	6 × 3	5⅜″ × 2¾″ × 11¼″	33¾″ × 10⅞″ × 11⅝″	5150T14	133.20	12	4522T43	8.68
E 18	6 × 3	5⅜″ × 3½″ × 11¼″	33¾″ × 12⅞″ × 11¾″	5150T11	164.00	12	4522T43	8.68
E 18	6 × 3	5⅜″ × 3½″ × 17″	33¾″ × 12⅞″ × 17¼″	5150T21	239.61	12	4522T43	8.68
E 24	6 × 4	5⅜″ × 2¾″ × 11¼″	33¾″ × 14⅜″ × 11⅝″	5150T16	181.89	12	4522T43	8.68
E 24	6 × 4	5⅜″ × 3½″ × 11¼″	33¾″ × 17″ × 11¾″	5150T12	218.91	12	5150T33	8.62
E 24	6 × 4	5⅜″ × 3½″ × 17″	33¾″ × 17″ × 17¼″	5150T22	309.04	12	5150T33	8.62
E 30	6 × 5	5⅜″ × 2¾″ × 11¼″	33¾″ × 17¾″ × 11⅝″	5150T68	236.12	12	4522T43	8.68
E 30	6 × 5	5⅜″ × 3½″ × 11¼″	33¾″ × 21⅛″ × 11¾″	5150T13	250.25	12	5150T33	8.62
E 30	6 × 5	5⅜″ × 3½″ × 17″	33¾″ × 21⅛″ × 17¼″	5150T23	345.05	12	5150T33	8.62
F 8	4 × 2	5⅝″ × 3⅛″ × 11″	23″ × 9⅜″ × 12″	4613T13	152.38	1	9980T44	1.70
F 18	6 × 3	5⅝″ × 3⅛″ × 11″	34⅛″ × 13⅝″ × 12″	4613T14	317.59	1	9980T44	1.70
F 18	6 × 3	5⅝″ × 3⅛″ × 17″	34⅛″ × 13⅝″ × 18″	4613T17	401.31	1	9980T44	1.70
G 12	4 × 3	8⅜″ × 3⅛″ × 11″	34⅛″ × 13⅝″ × 12″	4613T41	381.29	5	4613T49	10.40
G 12	4 × 3	8⅜″ × 3⅛″ × 17″	34⅛″ × 13⅝″ × 18″	4613T42	479.82	5	4613T49	10.40
G 24	8 × 3	4¼″ × 3⅛″ × 11″	34⅛″ × 13⅝″ × 12″	4613T22	428.49	10	4613T47	6.87
G 24	8 × 3	4¼″ × 3⅛″ × 17″	34⅛″ × 13⅝″ × 18″	4613T23	624.27	10	4613T47	6.87

Accessories

		Per Pkg.
Labels for Style A Cabinets (Pkg. qty. is 50)	4620T1	$15.11
Labels for Styles C and D Cabinets (Pkg. qty. is 50)	4619T1	15.11
Labels for Styles F and G Cabinets (Pkg. qty. is 320)	1515T334	11.63
Adhesive-Backed Labels for Styles B and E Cabinets (Pkg. qty. is 360)	4522T1	14.71
		Each
Insert for Style A Cabinets	4620T22	$3.44
Insert for Style C 12″ Dp. Drawers	4619T13	4.00
Insert for Style C 16″ Dp. Drawers	4619T17	4.10
Optional 5¾″ Ht. Base for Style E 33¾″ Wd. × 11⅝″ Dp. or 33¾″ Wd. × 11¾″ Dp. Cabinets	5150T52	46.68
Optional 5¾″ Ht. Base for Style E 17¼″ Dp. Cabinets	5150T53	62.30

★ Divider sets.

Steel Small Parts Drawer Cabinets with Plastic Drawers

Store and organize small parts with these sturdy steel-frame cabinets. Color is dark gray. Shipped assembled.

A&B All have clear polystyrene fronts and gray polystyrene drawers, except 4600T32, which has gray polypropylene drawers. The drawers come with two black polystyrene dividers, a label holder, and label. The top of *Style A* cabinets has round indents in each corner for stacking. *Style B* has a hinged door with a lock with two keys to secure the drawers. The door is polystyrene.

C Has translucent polypropylene drawers that come with one clear polystyrene divider but can hold up to three dividers. The top of the cabinet has round indents in each corner to allow stacking.

D Have clear polypropylene drawers with scoop bottoms for easy removal of small parts. Each drawer comes with two clear polystyrene dividers but can hold up to three dividers. Cabinets have two 1/8″×5/8″ keyhole slots for wall mounting (fasteners not included).

Also Available: Replacement drawers for Styles A, B, and C cabinets. Please ask for 4600T91 and specify drawer size.

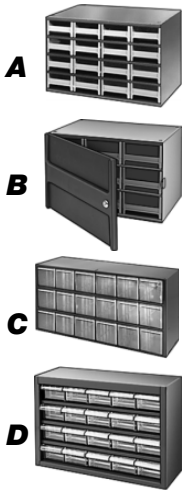

	Total No. of Drawers	O'all Drawer Size, Wd.×Ht.×Dp.	O'all Cabinet Size, Wd.×Ht.×Dp.	Cabinets	Each	Extra Dividers Pkg. Qty.		Per Pkg.
A	9	5 3/16″×3 1/16″×10 9/16″	17″×11″×11″	4600T41	$92.28	25	4600T53	$15.49
A	15	3 3/16″×3 1/16″×10 9/16″	17″×11″×11″	4600T38	92.28	25	4600T52	12.72
A	16	4″×2 1/8″×10 9/16″	17″×11″×11″	4600T36	92.28	25	4600T51	11.81
A	20	3 3/16″×2 1/16″×10 9/16″	17″×11″×11″	4600T33	92.28	25	4600T48	11.26
A	28	2 3/16″×2 1/16″×10 9/16″	17″×11″×11″	4600T32	92.28	25	4600T47	13.28
B	9	5 3/16″×3 1/16″×10 9/16″	17″×11″×11″	5058T51	131.81	25	4600T53	15.49
C	18	2 3/4″×2 1/2″×5 3/4″	18″×9 1/2″×6″	4600T21	59.11	25	4600T22	9.83
D	20	2 13/16″×1 7/8″×5 1/2″	16 3/4″×12″×6 3/8″	4532T51	90.25	20	4532T54	6.34
D	64	2 13/16″×1 7/8″×5 1/2″	25 7/8″×21 3/8″×6 3/8″	4532T52	213.18	20	4532T54	6.34

Design-Your-Own Steel Small-Parts Drawer Cabinet

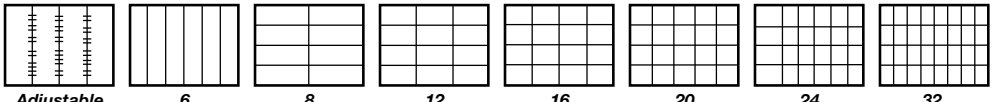

In just two steps, you can design your own small-parts cabinet. Select the drawer cabinet style you need, then order any combination of drawers (sold separately) in the same style and size. All cabinets are made of 24- to 20-ga. steel. Color is dark gray, except heavy duty cabinets, which are black. Cabinets can be stacked and secured with four 5/16″ dia. holes (fasteners not included, except heavy duty cabinets). Shipped assembled. ***Optional bases*** hold cabinets off the floor.

Standard cabinets have friction drawer slides and are reinforced to prevent tipping, even when several fully loaded drawers are open. ***Standard with locking door*** cabinet has a lock and two keys. *Optional locking hinges* are chrome-plated steel. They have a maximum shackle diameter of 3/8″ and mount onto cabinets (fasteners included).

Heavy duty cabinets have ball-bearing drawer slides.

Drawers (sold separately) fully extend and have a cover and handle. Scoop bottoms make it easy to remove small parts. Drawers are steel; compartments are polystyrene, except heavy duty cabinets, which have polypropylene compartments.

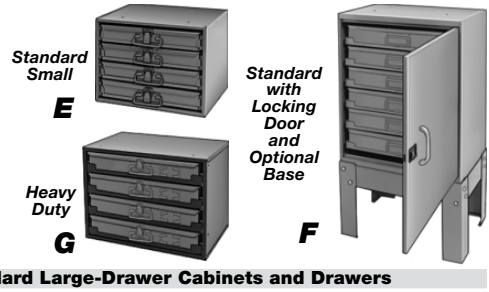

(E) Standard Small-Drawer Cabinets and Drawers

Cabinet Capacity	Overall Size, Wd.×Ht.×Dp.		Each
2 Drawers	15 1/4″×6 1/4″×11 3/4″	5158T31	$58.95
4 Drawers	15 1/4″×11 1/4″×11 3/4″	5158T23	75.10
6 Drawers	15 1/4″×16 3/8″×11 3/4″	5158T33	107.44

Compartments per Drawer	Comp. Size, Wd.×Dp.	O'all Drawer Size, Wd.×Ht.×Dp.		Each
4 to 13 (Adjustable)	2 3/16″×9″	13 3/8″×2″×9 1/4″	5158T2	$19.35
8	6 3/8″×2 3/16″	13 3/8″×2″×9 1/4″	5158T46	17.14
12	4 3/16″×2 3/16″	13 3/8″×2″×9 1/4″	5158T45	17.14
16	3 3/16″×2 3/16″	13 3/8″×2″×9 1/4″	5158T44	17.14
20	2 1/2″×2 3/16″	13 3/8″×2″×9 1/4″	5158T43	17.14
24 (20)	1 15/16″×2 3/16″			
(4)	2 3/4″×3 3/16″	13 3/8″×2″×9 1/4″	5158T24	16.88
Optional 15 1/8″ High Base			5158T26	45.34
Optional 4-Drawer Locking Hinge			5158T61	12.56
Optional 6-Drawer Locking Hinge			5158T62	12.56

(F) Standard with Locking Door Cabinet and Drawers

Cabinet Capacity	Overall Size, Wd.×Ht.×Dp.		Each
6 Drawers	20 3/4″×24″×14″	6885T11	$162.33

Compartments per Drawer	Comp. Size, Wd.×Dp.	O'all Drawer Size, Wd.×Ht.×Dp.		Each
4 to 16 (Adjustable)	4 3/8″×11 13/16″	18″×3″×12″	6885T21	$23.55
6	2 7/8″×11 13/16″	18″×3″×12″	6885T15	23.35
12	6″×3″	18″×3″×12″	6885T22	23.35
16	2 7/8″×4 3/8″	18″×3″×12″	6885T16	23.35
20	4 1/2″×3″	18″×3″×12″	6885T23	23.35
24 (20)	2 5/8″×3″			
(4)	3 1/4″×3″	18″×3″×12″	6885T24	23.35
32	2 7/8″×2 1/8″	18″×3″×12″	6885T17	23.35
Optional 12″ High Base			6885T31	42.18

(E) Standard Large-Drawer Cabinets and Drawers

Cabinet Capacity	Overall Size, Wd.×Ht.×Dp.		Each
2 Drawers	20″×8 1/8″×15 3/4″	5158T34	$62.76
4 Drawers	20″×15″×15 3/4″	5158T22	87.52

Compartments per Drawer	Comp. Size, Wd.×Dp.	O'all Drawer Size, Wd.×Ht.×Dp.		Each
4 to 13 (Adjustable)	4″×11 5/8″	18″×3″×12″	5158T19	$28.62
6	2 7/8″×11 5/8″	18″×3″×12″	5158T57	28.62
12	5 3/4″×2 7/8″	18″×3″×12″	5158T56	28.62
16	4 3/8″×2 7/8″	18″×3″×12″	5158T55	28.62
20	3 7/16″×2 7/8″	18″×3″×12″	5158T54	28.62
24 (20)	2 3/4″×2 7/8″			
(4)	3 3/4″×2 7/8″	18″×3″×12″	5158T21	28.62
32	2 1/8″×2 7/8″	18″×3″×12″	5158T52	28.62
Optional 15 1/8″ High Base			5158T25	51.39
Optional 4-Drawer Locking Hinge			5158T62	12.56

(G) Heavy Duty Cabinets and Drawers

Cabinet Capacity	Overall Size, Wd.×Ht.×Dp.		Each
4 Drawers	20 1/2″×15″×12 1/2″	8641A71	$138.98
6 Drawers	20 1/2″×24 13/16″×12 1/2″	8641A72	216.29

Compartments per Drawer	Comp. Size, Wd.×Dp.	O'all Drawer Size, Wd.×Ht.×Dp.		Each
4 to 16 (Adjustable)	4 5/16″×11 11/16″	18″×3″×12″	8641A83	$32.30
16	4 5/16″×2 1/8″★	18″×3″×12″	8641A84	30.20
20	4 5/16″×2 1/4″	18″×3″×12″	8641A85	30.20
24 (20)	2 9/16″×2 13/16″			
(4)	3 7/8″×2 13/16″	18″×3″×12″	8641A86	30.20
32	2 1/8″×2 13/16″	18″×3″×12″	8641A87	30.20
Optional 6″ High Base			8641A88	62.64

★ One compartment is 4 5/16″ Wd.×11 11/16″ Dp.

How to Maximize the Number of Bin Boxes on Your Bin-Box Holder

1. Select a holder from the bin-box holders listed below. Note the usable height of the holder.

2. Now choose any combination of bin boxes (see bottom of page) as long as the sum of the height used per bin box does not exceed the usable height of the holder. See example.

3. Once you've selected the bin box sizes you want, refer back to the bin box table for the max. number of bin boxes per row.

Example: Select holder 4666T55 (Style 1 below), which has 48″ of usable height. To fill the holder, you can choose 3 rows of bin box Style B (4″ of height used), 2 rows of Style C (6″ of height used), and 2 rows of Style F (12″ of height used). The sum of all the heights used per bin box is 4″+4″+4″+6″+6″+12″+12″=48″, which is the usable height of the holder.

Design-Your-Own Bin-Box Systems

1

2

3

4

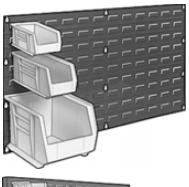
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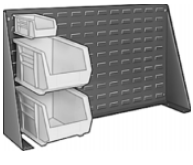
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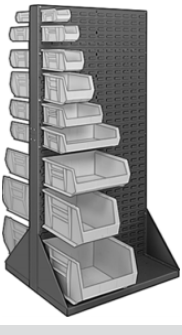
8&9

Create a custom system to perfectly suit your storage needs with these individual bin-box holders and bin boxes (sold separately). If you prefer, you can also purchase complete bin-box systems that we've created for you on page 1605.

Bin-Box Holders

All bin-box holders are dark gray 16-ga. steel. *Mobile bin-box holders* have two swivel and two rigid casters without brakes, unless noted. Racks and cart are shipped unassembled.

Rail bin-box holders *(Styles 1-4)* allow the bin boxes to hang from rails—an economical storage solution. *Optional mobile kit for Style 2* has four casters (two rigid, one swivel, and one swivel with brake) with 4″ dia. polyolefin wheels.

Louvered bin-box holders *(Styles 5-9)* have a solid back for increased support.

Overall Size, Wd.×Ht.×Dp.	Usable Ht. of Holder	Cap., lbs.		Each
Rail Bin-Box Holders				
(1) Single-Sided Rail Floor Rack				
36″ ×53″ ×14⅛″	48″	250	4666T55	$248.95
(2) Double-Sided Rail Floor Rack				
36″ ×53″ ×20″	48″ per side	500	4666T57	257.81
Optional Mobile Kit for Style 2		250	4666T71	104.35
(3) Double-Sided Mobile Cart— *Four 3″ dia. polyolefin wheels*				
38½″×36½″×24″	24″ per side	250	4666T58■	499.94
(4) Wall-Mount Single Rail				
48″ × 3″ × ½″	6″	110	4666T39	29.94
Louvered Bin-Box Holders				
(5) Wall-Mount Panels				
18″ ×19″ × ¼″	18″	160	4666T18	25.18
35¾″×19″ × ¼″	18″	160	4666T41	35.18
36″ ×61″ × 1″	60″	500	4666T19	120.01
(6) Bench Racks				
28″ ×20″ ×8½″	19″	120	4666T47	54.95
36″ ×20″ ×8″	19″	120	4666T59	70.25
(7) Single-Sided Floor Rack				
36″ ×66″ ×12½″	60″	750	4666T8	297.01
(8) Double-Sided Floor Rack				
35¾″×75⅛″×32″	72″ per side	2000	4666T48	558.47
(9) Double-Sided Mobile Floor Rack— *Four 5″ dia. hard rubber wheels*				
36″ ×72″ ×25″	54″ per side	1200	4666T28	561.60

■ One swivel caster has a brake.

Bin Boxes

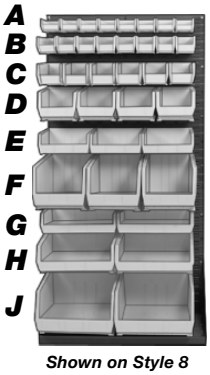

Shown on Style 8

Bin boxes are polypropylene with an open front and a label holder. All dividers are black polystyrene and come in packages of six. **To Order:** Please specify bin-box color: blue, red, yellow, or translucent (unless noted). Translucent bin boxes are FDA compliant.

Also Available: Clear lids for solid-color bin boxes (where noted below), and labels for all bin boxes. For lids, please ask for 4666T97 and specify bin-box size. For labels, please ask for 1515T322 for 4⅛″ wide bin boxes or 1512T127 for all other widths.

	Overall Size, Wd.×Ht.×Dp.	Height Used per Bin Box	Max. No. of Bin Boxes per Row by Bin-Box Holder Width 18″	27¾″	28″	35¾″	36″	38½″	48″	Cap., lbs.	Bin Boxes	Each	Dividers	Per Pkg.
A	4⅛″× 3″× 5⅜″	4″	4	6	6	8	8	8	11	10	4666T61♦	$1.41	4666T42	$6.01
A	4⅛″× 3″× 7⅜″	4″	4	6	6	8	8	8	11	10	4666T62♦	2.46	4666T43	6.51
B	4⅛″× 4″×10⅞″	4″	4	6	6	8	8	8	11	30	4666T91★	3.66	—	—
C	5½″× 5″×10⅞″	6″	3	4	4	6	6	6	8	30	4666T63♦	6.25	4666T44	8.93
C	5½″× 5″×14¾″	6″	3	4	4	6	6	6	8	50	4666T92	6.93	—	—
D	8¼″× 7″×10¾″	8″	2	3	3	4	4	4	—	50	4666T64	9.72	4666T46	10.45
D	8¼″× 7″×14¾″	8″	2	3	3	4	4	4	—	60	4666T65	11.63	4666T45	12.29
E	11″ × 5″×10⅞″	6″	1	2	2	3	3	3	4	50	4666T66♦	8.84	4666T44	8.93
F	11″ ×10″×18″	12″	1	2	2	3	3	3	—	75	42185T52	18.57	42185T82	24.15
G	16½″× 5″×10⅞″	6″	1	1	1	2	2	2	2	60	4666T93★	14.10	4666T44	8.93
H	16½″× 7″×14¾″	8″	1	1	1	2	2	2	—	75	4666T67	16.36	4666T45	12.29
J	16½″×11″×18″	14″	1	1	1	2	2	2	—	75	42185T53	23.61	42185T59	24.15

♦ Lids are available for solid-color bin boxes. ★ Translucent bin boxes are not available.

Warning! Do not exceed the load capacity of the storage unit, which may be less than the sum of the box capacities.

For information about designing your own bin-box systems, see page 1604.

Complete Bin-Box Systems

For your convenience, we've taken our most popular components (shown separately on the previous page) and created complete bin-box systems for you. They include a holder (rail floor rack, louvered panel, or louvered rack) and the polypropylene bin boxes specified. Made of 16-ga. steel; color is dark gray. Shipped unassembled.

To Order: Please specify bin-box color: blue, red, or yellow.

No. of Bin Boxes	Bin Boxes: Overall Size, Wd. × Ht. × Dp.	Bin Boxes: Cap., lbs.	Holders: Overall Size, Wd. × Ht. × Dp.	Holders: Cap., lbs.		Each
Rail Bin-Box Systems						
Single-Sided Rail Floor Racks						
18	8¼″ × 7″ × 14¾″ (12 each)	60				
	16½″ × 7″ × 14¾″ (6 each)	75	36″ × 53″ × 14⅛″	250	4666T87	$412.53
24	8¼″ × 7″ × 10¾″	50	36″ × 53″ × 14⅛″	250	4666T75	412.49
39	5½″ × 5″ × 10⅞″ (30 each)	30				
	11″ × 5″ × 10⅞″ (9 each)	50	36″ × 53″ × 14⅛″	250	4666T85	438.43
48	4⅛″ × 3″ × 7⅜″ (16 each)	10				
	5½″ × 5″ × 10⅞″ (24 each)	30				
	8¼″ × 7″ × 10¾″ (8 each)	50	36″ × 53″ × 14⅛″	250	4666T84	457.51
48	5½″ × 5″ × 10⅞″	30	36″ × 53″ × 14⅛″	250	4666T74	475.26
96	4⅛″ × 3″ × 7⅜″	10	36″ × 53″ × 14⅛″	250	4666T73	411.84
Double-Sided Rail Floor Racks						
24 per side	8¼″ × 7″ × 10¾″	50	36″ × 53″ × 20″	500	4666T89	627.85
48 per side	5½″ × 5″ × 10⅞″	30	36″ × 53″ × 20″	500	4666T88	683.38
Louvered Bin-Box Systems						
Wall-Mount Panels						
18	5½″ × 5″ × 10⅞″	30	35¾″ × 19″ × ¼″	160	4666T95	123.74
32	4⅛″ × 3″ × 7⅜″	10	35¾″ × 19″ × ¼″	160	4666T94	92.73
Bench Racks						
12	5½″ × 5″ × 10⅞″	30	28″ × 20″ × 8½″	120	4666T79	113.49
18	5½″ × 5″ × 10⅞″	30	36″ × 20″ × 8″	120	4666T99	160.13
30	4⅛″ × 3″ × 7⅜″	10	28″ × 20″ × 8½″	120	4666T78	112.86
40	4⅛″ × 3″ × 7⅜″	10	36″ × 20″ × 8″	120	4666T98	149.84

Single-Sided Rail Floor Rack with 48 Bin Boxes (4666T84)

Louvered Wall-Mount Panel with 18 Bin Boxes

Louvered Bench Rack with 40 Bin Boxes

Design-Your-Own Static-Control Bin-Box Systems

These racks and panels hold antistatic and conductive bin boxes to protect sensitive electronic components from static. Racks and bin boxes are sold separately, so you can create your own storage configurations. Shipped unassembled. ***Warning:*** Do not exceed the load capacity of the storage unit, which may be less than the sum of the bin-box capacities.

A B C D

Wall-Mount Louvered Panel

Bin-Box Holders

All bin-box holders are 16-ga. steel with a black conductive coating. The louvered holders mount securely to a wall or bench. They have nine ¾″ dia. mounting holes (fasteners not included).

Optional mobile kit fits the double-sided rail floor rack, so you can move your parts anywhere. Has four casters (two rigid, one swivel, and one swivel with brake) with 4″ dia. rubber wheels.

Note: For information about designing your own bin-box system, see page 1604.

Overall Size, Wd. × Ht. × Dp.	Usable Ht. of Holder	Cap., lbs.		Each
Wall-Mount Louvered Panels				
18″ × 18″ × ⅜″	18″	160	4925T58	$36.70
36″ × 18″ × ⅜″	18″	160	4925T59	61.81
Bench Louvered Racks				
18″ × 18″ × 7½″	18″	130	4925T71	62.74
36″ × 18″ × 7½″	18″	130	4925T72	90.68
Double-Sided Rail Floor Rack				
36″ × 54″ × 20″	48″ per side	1200	4925T24	286.40
Optional Mobile Kit for Double-Sided Rail Floor Rack		500	4925T31	116.40

E F G H J K L

Double-Sided Rail Floor Rack

Bin Boxes

Bin boxes are polypropylene with an open front and a label holder. *Antistatic* bin boxes are for use wherever static electricity needs to be drained slowly. Surface resistivity is 10^9-10^{12} ohms/sq. Color is blue. *Conductive* bin boxes are for applications where static electricity needs to be drained quickly. Surface resistivity is less than 10^5 ohms/sq. Color is black.

Also Available: Labels for bin boxes. Please ask for 1515T322.

	Overall Size, Wd. × Ht. × Dp.	Height Used per Bin Box	Max. No. of Bin Boxes per Row by Bin-Box Holder Width: 18″	36″	Cap., lbs.		Each
Antistatic							
A	4″ × 2″ × 3½″	4″	4	8	40	4925T41	$6.02
B	4″ × 3″ × 7″	4″	4	8	40	4925T42	7.53
C	5¹³⁄₁₆″ × 5″ × 9½″	6″	3	6	40	4925T44	18.31
D	8¹³⁄₁₆″ × 3″ × 6½″	4″	2	4	40	4925T43♣	15.44
Conductive							
E	4″ × 2″ × 3½″	4″	4	8	40	4925T61	4.61
F	4″ × 3″ × 7″	4″	4	8	40	4925T62	4.76
G	5¾″ × 5″ × 9½″	6″	3	6	40	4925T64	10.33
H	8⅛″ × 6″ × 12¹³⁄₁₆″	6″	2	4	40	4925T66	26.51
J	8¾″ × 3″ × 6½″	4″	2	4	40	4925T63♣	13.13
K	8¹³⁄₁₆″ × 5″ × 9⁵⁄₁₆″	6″	2	4	40	4925T65♣	23.60
L	11⁷⁄₁₆″ × 6″ × 12¹³⁄₁₆″	6″	1	2	40	4925T67	32.03

♣ The 36″ wide double-sided rail floor rack (4925T24) can only hold 3 bin boxes of this size.

Warning! ***Do not exceed load capacity of the storage unit, which may be less than the sum of the box capacities.***

Modular Bin-Box Racks

Growing storage needs? You can add onto these racks at any time—no tools required. They interlock horizontally and vertically, allowing you to customize for your storage needs. Each rack includes bin boxes, has a capacity of 60 lbs., and can be stacked a maximum of three high. Color is dark gray. Bin boxes include a recessed handle, two black dividers, one window and a slotted label holder. Each box also has seven divider slots molded in so it can be divided into multiple compartments. Racks, bin boxes and dividers are made of high impact polystyrene. Windows are made of clear plastic and fit on the front of the bin box. Shipped assembled.

To Order: Please specify bin-box color: blue or dark gray.

Overall Bin-Box Size, Wd. × Ht. × Dp.	RACKS 11 3/4″ Wd. × 11″ Ht. × 11 3/8″ Dp. Total No. of Boxes		Each	Replacement Bin Boxes Cap., lbs.		Each	Replacement Dividers Pkg. Qty.		Per Pkg.	Replacement Windows Pkg. Qty.		Per Pkg.
2 3/4″ × 3 5/16″ × 11″	12	9986T75	$83.35	15	9986T81	$3.83	25	9986T91	$12.91	25	9986T94	$14.14
5 5/8″ × 2 1/2″ × 11″	8	9986T76	73.31	15	9986T82	4.62	25	9986T92	14.23	25	9986T95	15.57
5 5/8″ × 3 5/16″ × 11″	6	9986T77	67.18	15	9986T83	5.10	25	9986T93	15.75	25	9986T96	16.69

Design-Your-Own Tilt-Out Bin-Unit Racks

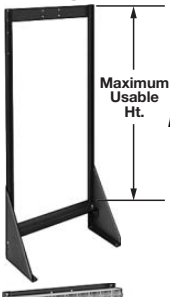

Rack Only

Single-Sided Rack with Bin Units

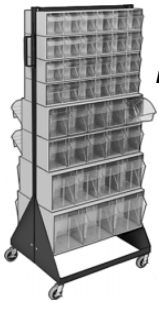

Double-Sided Mobile Rack with Bin Units

Bench Rack with Bin Units

Wall Mount Rack with Bin Units

Adjustable Bin Unit

5-Bin Unit

Create a storage center with these bins that tilt forward for easy access to contents. Racks and bin units are sold separately. Shipped unassembled.

Racks are black 14-ga. steel. Fasteners for attaching bin units to racks are included. *Double-sided mobile* rack has a pull handle on the side, four swivel casters with brakes, and 3″ dia. polyurethane wheels. *Wall-mount* rack has four 5/16″ dia. mounting holes (mounting hardware not included). Not rated for capacity.

Bin units are the complete row of bin boxes, enclosed in a case. They can be set on a shelf, mounted to a wall, or combined with a rack. They are beige polystyrene with clear bins that have an area for a label. They have six 3/16″ dia. mounting holes. The *adjustable* bin unit includes five clear polystyrene dividers, so you can create up to six storage areas. Additional dividers are sold separately.

If you would like to maximize the space on your rack with bin units of the same size, see the table below for the maximum number of bin units that can fit on each rack. To maximize space with bin units that are different sizes, make sure the sum of the height used per bin unit does not exceed the usable height of rack.

Racks

Style	Overall Size, Wd. × Ht. × Dp.	Usable Ht. of Rack	Cap., lbs.	Max. No. of Bin Units that Fit on Each Rack: Adjustable Bin	3 Bin	4 Bin	5 Bin	6 Bin	9 Bin		Each
Single Sided	23 5/8″ × 52″ × 8″	48″	250	8	5	6	7	11	16	4453T23	$231.78
Double Sided	23 5/8″ × 52″ × 16″	48″ per side	500	16	10	12	14	22	32	4453T24	417.38
Double-Sided Mobile	23 5/8″ × 55″ × 16″	48″ per side	500	16	10	12	14	22	32	4453T25	509.94
Bench	23 5/8″ × 28″ × 8″	24″	250	4	2	3	3	5	8	4453T26	210.49
Wall Mount	12″ × 24″ × 1″	24″	—	4	2	3	3	5	8	4453T31	57.20

Bin Units

No. of Bins in Unit	Overall Bin Size, Wd. × Ht. × Dp.	Height Used per Bin Unit	Overall Bin-Unit Size, Wd. × Dp.	Cap., lbs.		Each	Optional Dividers Pkg. Qty.		Per Pkg.
1 to 6	Adjustable★	6″	23 5/8″ × 5 1/4″	30	4453T14	$32.63	4	4453T81	$10.12
3	7 3/8″ × 8 5/8″ × 5 7/8″	9 1/2″	23 5/8″ × 7 3/4″	50	4453T22	67.26	3	4453T82	16.25
4	5 5/8″ × 7 1/2″ × 5″	8″	23 5/8″ × 6 5/8″	50	4453T21	60.82	4	4453T83	12.54
5	4 1/4″ × 5 3/4″ × 3 3/4″	6 1/2″	23 5/8″ × 5 1/4″	40	4453T5	34.39	—	—	—
6	3 1/2″ × 3 3/4″ × 2 5/8″	4 1/2″	23 5/8″ × 3 5/8″	40	4453T6	25.16	—	—	—
9	2 3/16″ × 2 1/2″ × 1 3/4″	3″	23 5/8″ × 2 1/2″	40	4453T9	22.05	—	—	—

★ Smallest bin is 3″ Wd. × 5 15/16″ Ht. × 5 1/4″ Dp. Largest is 23 1/8″ Wd. × 5 15/16″ Ht. × 5 1/4″ Dp.

Heavy Duty Modular Steel Bin-Box Racks

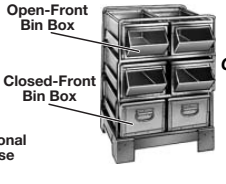

Three Racks, Optional Base, and Bin Boxes

These sturdy components offer our largest bin-box capacities and interlock, so no tools or hardware are needed for assembly. Choose the rack size you need and bin boxes with an open or closed front. Matching racks, bin boxes, and optional bases appear on the same line in the table below. Shipped unassembled.

Racks are 18-ga. steel with an unpainted finish. Each rack holds two bin boxes side by side. Racks that are 9″ high can be stacked up to seven high. Racks 11″ and higher can be stacked up to five high.

Bin boxes are 18-ga. welded steel with an unpainted finish. *Open-front bin boxes* offer easy access to parts. The front extends 3 1/4″; a handle is at the closed end. *Closed-front bin boxes* have a handle at both ends.

Optional bases are 14-ga. steel with an unpainted finish.

RACKS Overall Size, Wd. × Ht. × Dp.	Cap., lbs.		Each	BIN BOXES Overall Size, Wd. × Ht. × Dp.	Cap., lbs.	Open Front	Each	Closed Front	Each	OPTIONAL BASES Overall Size, Wd. × Ht. × Dp.		Each
21″ × 9″ × 15 1/2″	150	4720T78	$46.63	8 3/4″ × 7 1/2″ × 15 1/2″	250	4720T71	$31.62	—	—	21″ × 5 1/2″ × 16″	4720T85	$52.29
23 1/2″ × 9″ × 16″	150	4720T36	48.44	10″ × 8″ × 16″	250	4720T56	33.58	4720T52	$41.02	23 1/2″ × 5 1/2″ × 20 1/4″	4720T46	55.22
23 1/2″ × 9″ × 20″	150	4720T35	52.00	10″ × 8″ × 20″	250	4720T55	35.92	4720T51	43.17	23 1/2″ × 5 1/2″ × 20 1/4″	4720T45	56.50
27 1/2″ × 9″ × 18″	150	4720T37	53.14	12″ × 8″ × 18″	250	4720T57	36.48	4720T53	44.51	27 1/2″ × 5 1/2″ × 18 1/4″	4720T47	57.36
27 1/2″ × 11″ × 20″	150	4720T38	56.43	12″ × 10″ × 20″	250	4720T58	40.23	4720T54	47.46	27 1/2″ × 5 1/2″ × 20 1/4″	4720T48	58.62
33″ × 12 1/2″ × 19 1/8″	150	4720T79	61.19	14 3/4″ × 11″ × 19 1/8″	250	4720T72	43.44	—	—	33″ × 5 1/2″ × 19 5/8″	4720T86	62.88
33 1/2″ × 11″ × 24″	150	4720T77	63.35	15″ × 10″ × 24″	250	—	—	4720T73	52.94	33 1/2″ × 5 1/2″ × 24 1/4″	4720T84	67.73

Warning! *Do not exceed load capacity of the storage unit, which may be less than the sum of the box capacities.*

Jumbo Bin-Box Racks

Oversized bin boxes allow you to easily store large parts. Racks come with bin boxes.

Racks are made of 14-ga. steel. Color is dark gray. Shipped unassembled.

Bin boxes are made of fiberglass-reinforced polyester to resist oil as well as most chemicals and solvents. They won't rust or corrode and withstand temperatures from –60° to +250° F. They have a hopper-style front that extends 4¾″, a molded hand grip, and an area for a label. **To Order:** Please specify bin-box color: gray, green, or red.

Rack with 12 Bin Boxes

No. of Bin Boxes	Bin Boxes Overall Size, Wd. × Ht. × Dp.	Bin Boxes Cap., lbs.	Racks Overall Size, Wd. × Ht. × Dp.	Racks Cap. per Tier, lbs.	Racks with Bin Boxes	Each	Replacement Bin Boxes	Each
6	16¼″ × 8″ × 24″	500	36¾″ × 30″ × 19¼″	150	9973T31	$429.66	9973T2	$46.21
12	11⅜″ × 7⅞″ × 24″	500	27″ × 57″ × 19¼″	150	9973T32	661.08	9973T1	36.79
12	16¼″ × 8″ × 24″	500	36¾″ × 57″ × 19¼″	150	9973T33	728.14	9973T2	46.21
16	11⅜″ × 7⅞″ × 24″	500	27″ × 75″ × 19¼″	150	9973T34	830.03	9973T1	36.79
16	16¼″ × 8″ × 24″	500	36¾″ × 75″ × 19¼″	150	9973T35	915.54	9973T2	46.21

Dust-Free Wall-Mount Bin Units

Parts stay clean and dust-free with these virtually unbreakable bins. Bins are made of translucent polypropylene; outer frame is ABS plastic. All have a spring-loaded lid that stays open for easy access and snaps securely shut when not in use. Fasteners for wall mounting are included. **To Order:** Please specify outer frame color: black or light gray.

9 Bins

30 Bins

No. of Bins	Bins Overall Size, Wd. × Ht. × Dp.	Bins Cap., lbs.	Overall Size, Wd. × Ht. × Dp.		Each
9	4¾″ × 4¾″ × 4¾″	5	18⅜″ × 20½″ × 5¼″	4645T1	$66.60
18	4¾″ × 4¾″ × 4¾″	5	34″ × 20½″ × 5¼″	4645T2	118.80
30	4¾″ × 4¾″ × 4¾″	5	34″ × 33″ × 5¼″	4645T3	173.70

Bin-Box Carts

Our versatile carts are great for organizing and transporting items around warehouses, offices, and assembly lines. You'll get a cart and the solid-color polypropylene bin boxes specified. Shipped unassembled.

Plastic carts are made of strong yet lightweight structural polyethylene. Carts also have a push handle with compartments to hold supplies. Carts have four casters (two swivel with brakes; two rigid) with 5″ dia. polyurethane wheels. Color is light gray. **To Order:** Please specify bin-box color: blue or yellow.

Steel carts are made of 14-ga. steel and have a push handle. Carts have four casters (two rigid, one swivel, and one swivel with brake) with 3″ dia. polyolefin wheels. Color is dark gray. **To Order:** Please specify bin-box color: blue or yellow.

Plastic Cart with 30 Bin Boxes

Steel Cart with 48 Bin Boxes

No. of Bin Boxes	Bin Boxes Overall Size, Wd. × Ht. × Dp.	Bin Boxes Cap., lbs.	Carts Overall Size, Wd. × Ht. × Dp.	Carts Cap., lbs.	Top Shelf Overall Size, Wd. × Dp.	Top Shelf Cap., lbs.	Carts with Bin Boxes	Each	Replacement Bin Boxes	Each
Plastic Carts										
8	16½″ × 7″ × 14¾″	75	45″ × 34¾″ × 24″	400	32″ × 22″	200	5130T73	$362.75	4666T67	$16.36
16	8¼″ × 7″ × 14¾″	60	45″ × 34¾″ × 24″	400	32″ × 22″	200	5130T72	398.61	4666T65	11.63
18	11″ × 5″ × 10⅞″	50	45″ × 34¾″ × 24″	400	32″ × 22″	200	5130T69	378.27	4666T66	8.84
30	5½″ × 5″ × 10⅞″	30	40″ × 34¾″ × 19½″	400	28″ × 17″	200	5130T63	360.78	4666T63	6.25
36	5½″ × 5″ × 10⅞″	30	45″ × 34¾″ × 24″	400	32″ × 22″	200	5130T68	416.73	4666T63	6.25
70	4⅛″ × 3″ × 5⅜″	10	40″ × 34¾″ × 19½″	400	28″ × 17″	200	5130T61	306.08	4666T61	1.41
80	4⅛″ × 3″ × 7⅜″	10	45″ × 34¾″ × 24″	400	32″ × 22″	200	5130T67	399.59	4666T62	2.46
Steel Carts										
48	5½″ × 5″ × 10⅞″	30	38½″ × 36½″ × 24″	250	36″ × 24″	250	4666T77	675.41	4666T63	6.25
96	4⅛″ × 3″ × 7⅜″	10	38½″ × 36½″ × 24″	250	36″ × 24″	250	4666T76	635.51	4666T62	2.46

Jumbo Bin-Box Carts

Keep large parts and components organized and easily move them to work areas. Carts have an 11-ga. steel frame with three tiers of stackable high-density polypropylene bin boxes. They have four casters (two rigid; two swivel with brakes) with 5″ dia. polyolefin wheels. Carts are dark gray; bin boxes are blue. Welded and shipped partially assembled.

6 Bin Boxes

12 Bin Boxes

No. of Bin Boxes	Bin Boxes Overall Size, Wd. × Ht. × Dp.	Bin Boxes Cap., lbs.	Carts Overall Size, Wd. × Ht. × Dp.	Carts Cap., lbs.		Each
6	18⅜″ × 12″ × 20″	150	41″ × 48″ × 18″	900	9430T11	$710.38
9	18⅜″ × 12″ × 20″	150	59″ × 48″ × 18″	1350	9430T12	809.65
12	18⅜″ × 12″ × 20″	150	78″ × 48″ × 18″	1500	9430T13	912.15

Heavy Duty Mobile Steel Storage Bin Units

Organizing and moving heavier parts and components is no problem with these rugged storage bins. Made of 12-ga. steel, each bin has three tiers with permanent storage compartments. The compartments have an open hopper-style front for easy access to contents. Furnished with four swivel casters with 6″ dia. phenolic wheels. Color is light gray. Welded and shipped assembled.

3 Bins

9 Bins

No. of Bins	Overall Bin Size, Wd. × Ht. × Dp.	Overall Bin-Unit Size, Wd. × Ht. × Dp.	Cap. per Tier, lbs.	Overall Cap., lbs.		Each
3	32″ × 12½″ × 15″	32″ × 45½″ × 20″	800	2400	9339T1	$621.30
6	16″ × 12½″ × 15″	32″ × 45½″ × 20″	800	2400	9339T2	665.00
9	10½″ × 12½″ × 15″	32″ × 45½″ × 20″	800	2400	9339T3	731.50
12	8″ × 12½″ × 15″	32″ × 45½″ × 20″	800	2400	9339T4	796.10

Warning! ***Do not exceed load capacity of the storage unit, which may be less than the sum of the box capacities.***

Bin-Box Shelving

Shelving with 96 Bin Boxes

There's a notch on the back of each bin box that catches the underside of the shelf above, so you can tilt each box to display the contents without them falling out. Shelving is 22- to 16-ga. steel and comes with polypropylene bin boxes, which have an open front for convenient access to parts and an area for labeling. Bin boxes come with a black polypropylene divider, except 4665T3 for which dividers are not available. Color is dark gray. Shipped unassembled.

To Order: Please specify bin-box color: blue, red, or yellow.

Also Available: Labels for bin boxes. Please ask for 1515T32.

No. of Bin Boxes	Bin Boxes Overall Size, Wd.×Ht.×Dp.	Cap., lbs.	No. of Shelves	Cap. per Shelf, lbs.	Shelving with Bin Boxes	Each	Replacement Bin Boxes	Each	Optional Dividers Pkg. Qty.	Optional Dividers	Per Pkg.
36″ Wd.x75″ Ht.x12″ Dp. Shelving											
36	11⅛″×4″×11⅝″	25	12	400	4665T19	$398.82	4644T7	$5.52	6	4644T26	$9.51
48	8⅜″×4″×11⅝″	25	12	400	4665T18	332.00	4644T6	3.73	12	4644T25	13.22
60	6⅝″×4″×11⅝″	25	12	400	4665T2	360.12	4644T3	3.41	24	4644T22	11.62
78	4⅛″×4″×11⅝″ (48)	25					4644T2	2.21	24	4644T21	10.41
	6⅝″×4″×11⅝″ (30)	25	12	400	4665T4	371.58	4644T3	3.41	24	4644T22	11.62
96	4⅛″×4″×11⅝″	25	12	400	4665T1	372.61	4644T2	2.21	24	4644T21	10.41
144	2¾″×4″×11⅝″	25	12	400	4665T3	388.81	4644T1	1.96	—	—	—
36″ Wd.x75″ Ht.x18″ Dp. Shelving											
36	11⅛″×4″×17⅞″	25	12	400	4665T29	563.37	4644T9	9.11	6	4644T26	9.51
48	8⅜″×4″×17⅞″	25	12	400	4665T28	469.43	4644T8	5.72	12	4644T25	13.22
60	6⅝″×4″×17⅞″	25	12	400	4665T6	449.42	4644T5	4.15	24	4644T22	11.62
78	4⅛″×4″×17⅞″ (48)	25					4644T4	2.92	24	4644T21	10.41
	6⅝″×4″×17⅞″ (30)	25	12	400	4665T7	461.78	4644T5	4.15	24	4644T22	11.62
96	4⅛″×4″×17⅞″	25	12	400	4665T5	480.82	4644T4	2.92	24	4644T21	10.41

Gravity-Flow Bin-Box Shelving

Single-Sided Bench Shelving with Corrugated Bin Boxes

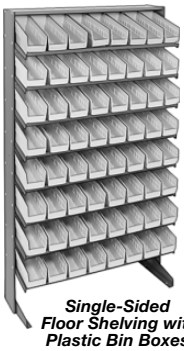

Single-Sided Floor Shelving with Plastic Bin Boxes

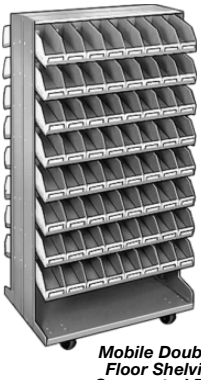

Mobile Double-Sided Floor Shelving with Corrugated Bin Boxes

Angled shelves allow parts to flow forward and let you easily see and access your parts without pulling out the bin boxes. Shelving comes with bin boxes, which have an open front for easy parts access and an area for labeling. Shipped unassembled.

With Corrugated Bin Boxes— Bin boxes are 4″ Wd.×4″ Ht.×12″ Dp. and made of white corrugated cardboard. Shelving is made of dark gray 22- to 20-ga. steel. *Mobile double-sided floor shelving* includes four swivel casters with 3″ dia. polypropylene wheels. *Note:* Corrugated bin boxes are not rated for load capacity.

With Plastic Bin Boxes— Bin boxes are 4⅛″ Wd.×4″ Ht.×11⅝″ Dp., made of polypropylene and polyethylene, and have a 20-lb. capacity. Shelving is made of light gray 20-ga. steel. *Mobile double-sided floor shelving* includes four casters (two swivel; two rigid) with 5″ dia. rubber wheels. **To Order:** Please specify bin-box color: blue, red, or yellow.

Shelving with Bin Boxes

No. of Bin Boxes	With Corrugated Bin Boxes Overall Size, Wd.×Ht.×Dp.	Cap., lbs.		Each	With Plastic Bin Boxes Overall Size, Wd.×Ht.×Dp.	Cap., lbs.		Each
Single-Sided Bench Shelving								
24	33⅞″×23″ ×12¼″	450	5060T15	$72.45	36″×21″×12″	250	5060T34	$125.34
Single-Sided Floor Shelving								
64	33⅞″×61″ ×12¼″	1200	5060T16	178.66	36″×60″×12″	500	5060T32	290.65
Double-Sided Floor Shelving								
128	33⅞″×61″ ×24½″	2400	5060T17	346.00	36″×60″×24″	1000	5060T33	604.55
Mobile Double-Sided Floor Shelving								
128	33⅞″×64⅞″×24¼″	1000	5060T18	443.43	36″×67″×24″	1000	5060T35	699.95

Replacement Bin Boxes and Accessories

	Pkg. Qty.		Per Pkg.
Corrugated Bin Boxes (4″ Wd.×4″ Ht.×12″ Dp.)	5	5073T11	$5.27
Corrugated Dividers	25	5073T43	10.65
Plastic Bin Boxes (4⅛″ Wd.×4″ Ht.×11⅝″ Dp.)	1	5060T41	1.70
Polystyrene Dividers—Color is black	50	5060T42	17.25
Labels for Plastic Bin Boxes	50	5060T43	14.37

Jumbo Bin-Box Shelving

Shelving with 15 Bin Boxes

Furnished with oversized bin boxes, this shelving is perfect for storing large parts, tools, and supplies. Made of 22-ga. steel. Color is dark gray. Shipped unassembled.

Bin boxes are polystyrene. They have an open front for easy parts access and a labeling area. *Optional dividers* are black polystyrene. **To Order:** Please specify bin-box color: blue or yellow.

Also Available: Labels for bin boxes. Please ask for 61525T5 and specify bin-box size.

No. of Bin Boxes	Bin Boxes Overall Size, Wd.×Ht.×Dp.	Cap., lbs.	No. of Shelves	Cap. per Shelf, lbs.	Shelving with Bin Boxes	Each	Replacement Bin Boxes	Each	Optional Dividers Pkg. Qty.	Optional Dividers	Per Pkg.
36″ Wd.x75″ Ht.x12″ Dp. Shelving											
14	16½″ × 7″ ×14¾″	75	7	400	61525T32	$339.27	42185T49	$15.36	6	42185T78	$12.42
28	8¼″ × 7″ ×14¾″	60	7	400	61525T31	390.86	42185T48	8.82	6	42185T78	12.42
36″ Wd.x75″ Ht.x18″ Dp. Shelving											
10	16½″ ×11″ ×18″	75	5	400	61525T26	440.54	42185T53	23.61	6	42185T59	24.15
15	11″ ×10″ ×18″	75	5	400	61525T25	456.76	42185T52	18.57	6	42185T82	24.15
21	11″ × 8″ ×16″	75	7	400	61525T24	513.50	42185T51	13.62	6	42185T81	21.59
24	8¼″ × 9″ ×18″	60	6	400	61525T34	586.42	42185T96	15.67	6	42185T97	23.45

Warning! ***Do not exceed the load capacity of the storage unit, which may be less than the sum of the box capacities.***

Bin-Box Wire Shelving

Open-wire shelving maximizes air circulation and light penetration and will not collect dust. All shelving comes furnished with bin boxes. Shipped unassembled.

Shelving is made of 10- and 6-ga. chrome-plated steel. Legs have leveling feet to compensate for uneven floors.

Bin boxes are polypropylene and have an open front and space for a label. *Optional dividers* are black polystyrene.

Optional casters fit all shelving units. Set includes four casters (two rigid; two swivel with brake) with 5″ dia. polyurethane wheels.

To Order: Please specify bin-box color: blue or yellow, except where noted.

Shelving with 20 Bin Boxes

Shelving with Bin Boxes

No. of Bin Boxes	Bin Boxes Overall Size, Wd. × Ht. × Dp.	Bin Boxes Cap., lbs.	Shelving Overall Size, Wd. × Ht. × Dp.	Shelving Cap. per Shelf, lbs.●		Each
With 5 Shelves						
10	16½″ × 11″ × 18″	75	36″ × 74⅝″ × 18″	800	5830T21	$374.42
20	8¼″ × 9″ × 18″	60	36″ × 74⅝″ × 18″	800	5830T22	423.46
With 6 Shelves						
30	8¼″ × 9″ × 18″	60	48″ × 74⅝″ × 18″	800	5830T23	615.45
42	6⅝″ × 7″ × 17⅞″	25	48″ × 74⅝″ × 18″	800	5830T24■	506.15
Optional Casters					5830T81	Per Set $140.00

● When using the optional casters, load capacity is reduced to 800 lbs. for the entire unit.

■ Bin boxes available in black only.

Replacement Bin Boxes and Optional Dividers

Bin Boxes Wd. × Ht. × Dp.	Cap., lbs.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.	Optional Dividers	Each
6⅝″ × 7″ × 17⅞″	25	10	8361T73■	$7.75	$6.97		
8¼″ × 9″ × 18″	60	12	28765T36	20.33	18.28	28765T55	$3.75
16½″ × 11″ × 18″	75	12	28765T35	30.92	27.81	28765T56	4.54

■ Bin boxes available in black only.

Plastic Revolving Storage Bins

Tiers of pie-shaped compartments rotate independently to give you convenient parts access. Shipped unassembled.

Bench-top storage bin is made of polystyrene. Each tier lifts off. Color is black.

Mobile storage bin rolls right up to your work area when you need it and out of the way when you're through. Made of structural foam. Has four swivel casters with 3″ dia. polyolefin wheels. Color is dark gray.

Bench Top *Mobile*

No. of Tiers	No. of Compartments per Tier	Cap. per Tier, lbs.	Overall Ht.	Overall Compartment Size, Wd. × Ht. × Dp.		Each
Bench Top—Overall Diameter: 11⅞″						
3	6	30	13½″	5 11/16″ × 1¼″ × 5⅜″	44545T1	$17.47
Mobile—Overall Diameter: 19⅞″						
4	6	75	37½″	9⅜″ × 2⅛″ × 8¼″	44535T12	223.98

Steel Revolving Storage Bins

Give these bins a spin and you'll have access to a multitude of parts from just one spot. Each bin has independently rotating tiers of pie-shaped compartments that can be partitioned with optional dividers; both bins and dividers are made of 20-ga. steel. Each tier has a space to attach labels, except 4649T25. Color is light gray. Shipped unassembled.

17″ Diameter Bins— Compartments have scooped bottoms for easy parts removal. Create up to 16 compartments per tier by adding up to 12 optional dividers per tier.

28″ Diameter Bins— Create up to 24 compartments per tier by adding up to 18 optional dividers per tier.

34″ Diameter Bins— Create up to 30 compartments per tier by adding up to 25 optional dividers per tier.

34″ Diameter Bulk Bin— Has wider compartments than the other 34″ dia. bins. Create up to 16 compartments per tier by adding up to 12 optional dividers per tier.

Polypropylene Storage Pan for 34″ Diameter Bins—Great for further subdividing compartments. Up to three pans fit into each compartment. Color is gray.

17″ Dia. Bin with 10 Tiers

34″ Dia. Bulk Bin

Storage Pan for 34″ Dia. Bins

No. of Tiers	No. of Compartments per Tier	Cap. per Tier, lbs.	Overall Ht.	Overall Compartment Size, Wd. × Ht. × Dp.	Storage Bins	Each	Optional Dividers	Each
17″ Diameter Bins								
4	4	60	17⅜″	13″ × 3″ × 7½″	4649T23	$206.17	4649T24	$5.17
6	4	60	25⅜″	13″ × 3″ × 7½″	4649T72	280.25	4649T24	5.17
10	4	60	41⅜″	13″ × 3″ × 7½″	4649T41	436.73	4649T24	5.17
28″ Diameter Bins								
5	6	500	34⅛″	14½″ × 5¾″ × 12″	4649T54	641.08	4649T87	4.84
8	6	500	52⅞″	14½″ × 5¾″ × 12″	4649T51	961.28	4649T87	4.84
10	6	500	65¾″	14½″ × 5¾″ × 12″	4649T16	1,124.74	4649T87	4.84
34″ Diameter Bins								
4	5	500	34¼″	21″ × 5¾″ × 15″	4649T33	632.35	4649T88	6.12
6	5	500	49¾″	21″ × 5¾″ × 15″	4649T31	940.75	4649T88	6.12
8	5	500	65¾″	21″ × 5¾″ × 15″	4649T11	1,165.60	4649T88	6.12
34″ Diameter Bulk Bin								
4	4	500	65½″	24″ × 7″ × 15″	4649T25	1,022.49	4649T26	13.88

Polypropylene Storage Pan for 34″ Diameter Bins (Not for use with 34″ Diameter Bulk Bin) ..... 4649T75 **Each** $7.00

Warning! ***Do not exceed the load capacity of the storage unit, which may be less than the sum of the box capacities.***

Wall-Mount Cabinet with Electronic Keypad Lock

Secure storage is at your fingertips. This cabinet has a convenient, push-button lock powered by four AA batteries (included). Lock has a dated history of entry, security alarm, and low-battery indicator. This unit also has an external power supply that can be plugged into the keypad, and a key to bypass the electronic lock. Cabinet is light-duty, 22-gauge steel and shelf adjusts on 2″ centers. Mounting fasteners are included. Shipped unassembled.

Overall Size, Wd. × Ht. × Dp.	No. of Shelves	Cap. per Shelf, lbs.	Color		Each
30″ × 30″ × 12″	1	150	Black	4312T11	$168.00
30″ × 30″ × 12″	1	150	Light Gray	4312T13	168.00
30″ × 30″ × 12″	1	150	Tan	4312T12	168.00

Wall- and Bench-Mount Bin-Box Cabinets

Clear-View Door Cabinet with 24 Bin Boxes

Place these cabinets on top of a workbench or wall mount using the six 3/8″ dia. mounting holes (fasteners not included). Cabinets are made of 22-ga. steel with 18-ga. louvered panels for hanging the included bin boxes. They have chrome-plated steel handles with a lock and two keys. Color is light gray. Welded and shipped assembled.

Bin boxes are polypropylene; they have an open-front design for convenient parts access and an area for labeling.

Clear-view door cabinets have clear plastic (PETG) paneled doors for easy viewing.

To Order: Please specify bin-box color: blue, red, or yellow.

Also Available: Labels for bin boxes. Please ask for 1515T322.

No. of Bin Boxes	Bin Boxes: Overall Size, Wd. × Ht. × Dp.	Bin Boxes: Cap., lbs.	Cabinets: Overall Size, Wd. × Ht. × Dp.	Cabinets: Cap., lbs.	Solid-Door Cabinets	Each	Clear-View Door Cabinets	Each	Replacement Bin Boxes	Each
16	8¼″ × 7″ × 10¾″	50	36″ × 30″ × 12″	200	6390T33	$349.20	6390T36	$407.82	4666T64	$9.72
24	4⅛″ × 4″ × 10⅞″	30	36″ × 30″ × 12″	200	6390T31	299.38	6390T34	358.00	4666T91	3.66
24	5½″ × 5″ × 10⅞″	30	36″ × 30″ × 12″	200	6390T32	339.06	6390T35	397.68	4666T63	6.25

Medium Duty Low-Profile Bin-Box Cabinets

Wall- or Bench-Mount Cabinet with 42 Bin Boxes

Full-Height Cabinet with 40 Bin Boxes

At only 10″ deep, these cabinets turn a tight space into an efficient storage center. Cabinets come with bin boxes. Made of 20-ga. steel. Doors have recessed chrome-plated handles with a lock and two keys. Color is light gray. Welded and shipped assembled.

Bin boxes are polyethylene; they have an open-front design for convenient parts access and an area for labeling. *Optional dividers* are white polystyrene. **To Order:** For replacement bin boxes, please specify color: blue, green, or red.

Wall- or ***bench-mount*** cabinets can be mounted with four 1/2″ dia. keyhole slots on the back (fasteners not included).

Also Available: Labels for bin boxes. Please ask for 4903T7 and specify bin-box size.

Cabinets

Total No. of Bin Boxes	Bin Boxes: No.	Color	Overall Size, Wd. × Ht. × Dp.	Cap., lbs.	Cabinets: Overall Size Wd. × Ht. × Dp.	No. of Shelves	Cap. per Shelf, lbs.		Each
Wall or Bench Mount									
22	6	Blue	4¼″ × 3″ × 6½″	7					
	16	Blue	5⅞″ × 4¾″ × 9¼″	14	27″ × 30″ × 10″	5	60	41535T77	$424.34
42	42	Blue	4¼″ × 3″ × 6½″	7	27″ × 30″ × 10″	7	60	41535T78	433.98
Full Height									
40	20	Red	5⅞″ × 4¾″ × 9¼″	14					
	20	Green	5⅞″ × 4¾″ × 9¼″	14	27″ × 63″ × 10″	10	60	4905T44	736.03
52	24	Red	5⅞″ × 4¾″ × 9¼″	14					
	28	Blue	5⅞″ × 4¾″ × 9¼″	14	27″ × 80″ × 10″	13	60	4905T43	892.69
90	42	Red	4¼″ × 3″ × 6½″	7					
	48	Green	4¼″ × 3″ × 6½″	7	27″ × 63″ × 10″	15	60	4905T42	763.84
114	54	Blue	4¼″ × 3″ × 6½″	7					
	60	Red	4¼″ × 3″ × 6½″	7	27″ × 80″ × 10″	19	60	4905T41	922.66

Accessories

Replacement Bin Box (4¼″ Wd. × 3″ Ht. × 6½″ Dp.)	4905T6	Each	$2.08
Replacement Bin Box (5⅞″ Wd. × 4¾″ Ht. × 9¼″ Dp.)	4905T5	Each	$4.95
Optional Divider for 4¼″ Wd. × 3″ Ht. × 6½″ Dp. Bin Box	4903T32	Each	$1.44
Optional Divider for 5⅞″ Wd. × 4¾″ Ht. × 9¼″ Dp. Bin Box	4903T31	Each	$2.68
Replacement Shelf for All Cabinets (60-lb. cap.)	4905T99	Each	$12.37

Medium Duty Clear-View Bin-Box Cabinets

See-through panels let you view your inventory through closed cabinet doors. Cabinets come with bin boxes. Made of 20-ga. steel. They are beige and have break-resistant, polycarbonate door panels that keep dust out plus a chrome-plated door handle with a lock and two keys. Welded and shipped assembled.

Bin boxes are yellow polypropylene with an open-front design for convenient parts access and an area for labels. *Optional dividers* are black polystyrene.

Also Available: Labels for bin boxes. Please ask for 1512T127.

No. of Bin Boxes	Bin Boxes: Overall Size, Wd. × Ht. × Dp.	Bin Boxes: Cap., lbs.	Cabinets: Overall Size, Wd. × Ht. × Dp.	Cabinets: Cap., lbs.		Each	Replacement Bin Boxes	Each
18	16½″ × 7″ × 14¾″	75	36″ × 78″ × 18″	1,000	4381T13	$1,197.74	4666T15	$16.36
36	8¼″ × 7″ × 14¾″	60	36″ × 78″ × 18″	1,000	4381T14	1,218.66	4666T14	11.63

Optional Dividers (6/Pkg.) ..... 4666T45 Per Pkg. $12.29

Warning! ***Do not exceed the load capacity of the storage unit, which may be less than the sum of the box capacities.***

Heavy Duty Bin-Box Cabinets

Designed to stand up to frequent use, these cabinets are made of 16-ga. steel. For added storage, the doors have removable bin boxes. Cabinets have a hasp that accepts a padlock (not included) with a maximum shackle diameter of 1/4″. Leveling feet compensate for uneven floors. Color is gray. Welded and shipped assembled.

Styles A and ***B*** have cabinet shelves that adjust on 4″ centers. ***Style A*** have bin boxes in the bottom half of the cabinet and doors. Door shelves adjust on 2″ centers. ***Style B*** have bin boxes in the doors only. ***Style C*** has bin boxes that fill up both the door and cabinet.

All bin boxes are made of polypropylene. They have an open front for convenient access to parts and an area for labeling. **To Order:** Please specify bin-box color: blue or yellow. **Also Available:** Labels for bin boxes. For 4 1/8″ wide bin boxes, please ask for 1515T322. For all others, please ask for 1512T127.

Style A

Style B

Style C

Cabinets with Bin Boxes

Total No.	Bin Boxes No.	Bin Boxes Overall Size, Wd.×Ht.×Dp.	Bin Boxes Cap.	Cabinets Overall Size, Wd.×Ht.×Dp.	Cabinets No. of Shelves	Cabinets Cap. per Shelf	Doors No. of Shelves	Doors Cap. per Shelf		Each
Style A										
64	48	4 1/8″×3″× 7 3/8″	10 lbs.							
	16	8 1/4″×7″×14 3/4″	60 lbs.	38″×72″×24″	2	800 lbs.	6	30 lbs.	4554T51	$1,164.93
84	64	4 1/8″×3″× 7 3/8″	10 lbs.							
	20	8 1/4″×7″×14 3/4″	60 lbs.	48″×72″×24″	2	700 lbs.	6	30 lbs.	4554T52	1,382.98
Style B										
96	96	4 1/8″×3″× 5 3/8″	10 lbs.	38″×72″×24″	4	800 lbs.	—	—	4554T53	1,018.80
128	128	4 1/8″×3″× 5 3/8″	10 lbs.	48″×72″×24″	4	700 lbs.	—	—	4554T54	1,311.14
Style C										
132	48	4 1/8″×3″× 5 3/8″	10 lbs.							
	48	4 1/8″×3″× 7 3/8″	10 lbs.							
	18	5 1/2″×5″×10 7/8″	30 lbs.							
	12	8 1/4″×7″×14 3/4″	60 lbs.							
	6	16 1/2″×7″×14 3/4″	75 lbs.	38″×72″×24″	—	—	—	—	4554T55	1,311.55

Replacement Bin Boxes

Wd.×Ht.×Dp.	Cap.		Each
4 1/8″×3″× 5 3/8″	10 lbs.	4666T61	$1.41
4 1/8″×3″× 7 3/8″	10 lbs.	4666T62	2.46
5 1/2″×5″×10 7/8″	30 lbs.	4666T63	6.25
8 1/4″×7″×14 3/4″	60 lbs.	4666T65	11.63
16 1/2″×7″×14 3/4″	75 lbs.	4666T67	16.36

Additional Shelves

	Cap.		Each
Door Shelves for Style A			
38″ Wd. Cabinet	30 lbs.	4554T34	$17.18
48″ Wd. Cabinet	30 lbs.	4554T35	17.18
Cabinet Shelves for Styles A and B			
38″ Wd. Cabinet	800 lbs.	4554T36	58.48
48″ Wd. Cabinet	700 lbs.	4554T37	68.96

Extra-Heavy Duty Bin-Box Cabinets

Tough barely begins to describe the heaviest duty bin-box cabinets we carry. All have a hasp for a padlock (not included). Their 6″ high, 7-ga. steel legs bolt to the floor for extra stability (fasteners not included). Color is dark gray. Welded and shipped assembled.

Style D have bins in the doors and open shelves in the cabinet. ***Style E*** have bins in the doors and bottom half of the cabinet with shelves in the top half. ***Style F*** have bins that fill up the doors and cabinet.

Cabinets come in three sizes. The ***36″*** and ***48″*** wide cabinets are 12-ga. steel with 14-ga. steel shelves that adjust on 2″ centers. Hasp accepts a padlock with a maximum shackle diameter of 1/2″. Legs have 3/4″ dia. mounting holes. The ***60″*** wide cabinets are 13-ga. steel with 14-ga. steel shelves that adjust on 2″ centers. Hasp accepts a padlock with a maximum shackle diameter of 3/8″. Legs have 1/2″ dia. mounting holes.

Bin boxes are removable and made of polypropylene. They have an open front for easy access to parts and an area for labeling. **To Order:** Please specify bin-box color: blue or yellow. **Also Available:** Labels for bin boxes. For 4 1/8″ wide bin boxes, please ask for 1515T322. For all others, please ask for 1512T127.

Style D

Style E

Style F

Cabinets with Bin Boxes

Total No.	Bin Boxes No.	Bin Boxes Overall Size, Wd.×Ht.×Dp.	Bin Boxes Cap., lbs.	Cabinets Overall Size, Wd.×Ht.×Dp.	Cabinets No. of Shelves	Cabinets Cap. per Shelf, lbs.		Each
Style D								
94	94	4 1/8″×3″× 7 3/8″	10	36″×78″×24″	4	1350	4491T61	$1,324.16
144	144	4 1/8″×3″× 7 3/8″	10	48″×78″×24″	4	850	4491T45	1,659.93
Style E								
110	94	4 1/8″×3″× 7 3/8″	10					
	16	8 1/4″×7″×14 3/4″	60	36″×78″×24″	3	1350	4491T62	1,406.24
164	144	4 1/8″×3″× 7 3/8″	10					
	20	8 1/4″×7″×14 3/4″	60	48″×78″×24″	3	850	4491T46	1,880.21
185	80	4 1/8″×3″× 5 3/8″	10					
	90	4 1/8″×3″× 7 3/8″	10					
	6	8 1/4″×7″×14 3/4″	60					
	9	16 1/2″×7″×14 3/4″	75	60″×84″×24″	3	500	5819T58	1,607.33
Style F								
126	94	4 1/8″×3″× 7 3/8″	10					
	32	8 1/4″×7″×14 3/4″	60	36″×78″×24″	—	—	4491T63	1,486.60
184	144	4 1/8″×3″× 7 3/8″	10					
	40	8 1/4″×7″×14 3/4″	60	48″×78″×24″	—	—	4491T47	1,997.74
227	80	4 1/8″×3″× 5 3/8″	10					
	90	4 1/8″×3″× 7 3/8″	10					
	30	5 1/2″×5″×10 7/8″	30					
	18	8 1/4″×7″×14 3/4″	60					
	9	16 1/2″×7″×14 3/4″	75	60″×84″×24″	—	—	5819T59	1,551.40

Replacement Bin Boxes

Wd.×Ht.×Dp.	Cap., lbs.		Each
4 1/8″×3″× 5 3/8″	10	4666T61	$1.41
4 1/8″×3″× 7 3/8″	10	4666T62	2.46
5 1/2″×5″×10 7/8″	30	4666T63	6.25
8 1/4″×7″×14 3/4″	60	4666T65	11.63
16 1/2″×7″×14 3/4″	75	4666T67	16.36

Additional Shelves for Styles D and E

For	Cap., lbs.		Each
36″ Wd. Cabinet	1350	4491T75	$72.00
48″ Wd. Cabinet	850	4491T49	68.00
60″ Wd. Cabinet	500	5819T71	89.20

Warning! ***Do not exceed the load capacity of the storage unit, which may be less than the sum of the box capacities.***

Wall- and Bench-Mount Shelf Cabinets

A

B *14″ Wide Cabinet*

C

D

E

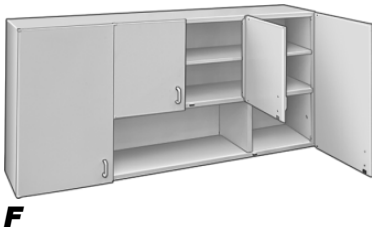

F

G

H

J

NSF

A ***Light duty plastic*** cabinet resists rust, dents, and moisture. Made of polypropylene. Shelf adjusts on 4¾″ centers. Cabinet doors have handles that secure with a padlock (not included) that has a maximum shackle diameter of ¼″. Color is gray. Mounting fasteners are included.

B ***Light duty steel low-profile*** cabinets are 20-ga. steel and doors are 18-ga. steel. All shelves are fixed. The *8″ wide cabinet* has two full-width shelves; the *14″ wide cabinet* has two full-width and two half-width shelves. Each cabinet has two locks for extra security, so you'll need both keys to open it (two keys per lock included). Color is tan. Cabinets have four 3/16″ dia. mounting holes (fasteners not included).

C ***Light duty steel with pegboard*** cabinet has 5³⁄₁₆″ deep doors that rest flush against the wall when fully open. Made of 24-ga. steel. One door has two fixed shelves that provide extra storage space, while the other door has a fixed tool rack and small parts tray. A steel pegboard in the back of the cabinet is 27″ Wd.×18″ Ht. and includes 12 hooks. Doors secure with a padlock (not included) that has a maximum shackle diameter of 5/16″. Color is dark gray. Mounting fasteners are included.

D ***Medium duty steel*** cabinets are available with 1, 2, 3, or 5 shelves. Made of 20-ga. steel. Have a lock with two keys. Color is light gray. Cabinets have four ⅜″ dia. mounting holes (fasteners not included).

Cabinets with adjustable shelves have one or two shelves (see table below) that adjust on 4″ centers.

E ***Medium duty steel with pegboard*** cabinets are 20-ga. steel. They have one fixed shelf and one shelf that adjusts on 4″ centers. Doors have a pegboard strip (4″ Wd.×26½″ Ht. on 5041T15; 4″ Wd.×20½″ Ht. on 5041T11). They also have a lock with two keys. Color is light gray. Cabinets have four 5/16″ dia. mounting holes (fasteners not included).

F ***Extra-wide medium duty steel*** cabinets provide lots of storage area for supplies. Cabinets are 22-ga. steel. They have two fixed shelves in each side compartment, two fixed shelves in the center compartment, and an open bottom center compartment. Color is white. Cabinets have four 5/16″ dia. mounting holes (fasteners not included).

G ***Heavy duty steel clear-view*** cabinet has doors with clear polycarbonate panels (framed in black), so you can see what is being stored. Cabinet is 20-ga. steel. Shelf adjusts on 2″ centers. Has a locking handle with two keys. Color is beige. Mounting fasteners are included.

H ***Extra-heavy duty steel*** cabinet is the strongest wall-mount cabinet we offer. Made of 12-ga. steel with two 14-ga. shelves that adjust on 2″ centers. Secures with a padlock (not included) that has a maximum shackle diameter of ⅜″. Color is dark gray. Has two mounting brackets, one on each side of the cabinet; each bracket has five ½″ dia. mounting holes (fasteners not included).

J ***Stainless steel*** cabinet is 18-ga. Type 304 stainless steel for corrosion resistance. It has a sloped top to prevent dust buildup. Shelves adjust on ½″ centers. Cabinet is NSF certified. Mounting holes must be drilled (fasteners not included).

Overall Size, Wd.×Ht.×Dp.	No. of Fixed Shelves	No. of Adjustable Shelves	Cap. per Shelf, lbs.	No. of Doors	Cabinets	Each	Extra Shelves	Each
(A) Light Duty Plastic— *Unassembled*								
28″ ×28″ ×13¼″	—	1	50	2	**8236T4**	$77.50	—	—
(B) Light Duty Steel Low Profile— *Welded and Assembled*								
8″ ×12⅛″ × 2⅝″	2	—	10	1	**4460T1**	77.48	—	—
14″ ×17⅛″ × 3⅛″	4	—	10	1	**4460T2**	95.10	—	—
(C) Light Duty Steel with Pegboard— *Welded and Assembled*								
30″ ×24″ ×11½″	3	—	30	2	**4590T28**	105.03	—	—
(D) Medium Duty Steel— *Welded and Assembled*								
18″ ×24″ × 9″	—	2	40	1	**5102T24**	138.23	**5102T34**	$22.82
26½″×21″ × 9″	3	—	50	2	**4531T25**	107.05	—	—
26½″×30″ × 9″	1	1	40	2	**5102T27**	156.78	**5102T37**	24.89
26½″×30″ × 9″	2	—	50	2	**4531T27**	125.64	—	—
26½″×30″ × 9″	5	—	50	2	**4531T26**	147.33	—	—
35½″×24″ × 9″	1	—	50	2	**4531T28**	136.58	—	—
(E) Medium Duty Steel with Pegboard— *Welded and Assembled*								
26½″×30″ × 9″	1	1	40	2	**5041T15**	174.64	**5102T37**	24.89
35½″×24″ × 9″	1	1	40	2	**5041T11**	187.89	**5041T22**	26.19
(F) Extra-Wide Medium Duty Steel— *Assembled*								
42″ ×30″ ×13″	6	—	50	3	**5090T43**	298.74	—	—
66″ ×30″ ×13″	6	—	50	4	**5090T42**	425.00	—	—
(G) Heavy Duty Steel Clear View— *Assembled*								
30″ ×26″ ×12″	—	1	225	2	**14725T55**	454.56	**14725T56**	29.33
(H) Extra-Heavy Duty Steel— *Welded and Assembled*								
36″ ×48″ ×14″	—	2	1000	2	**4447T35**	1,103.64	**4447T45**	48.00
(J) Stainless Steel— *Assembled*								
36″ ×36″ ×12″	—	2	250	2	**4746T1**	1,079.48	**4746T3**	73.08

Warning! ***Load capacity may be reduced due to wall material and fastener choice.***

Bench- and Counter-Height Shelf Cabinets

A 14795T33

B

C,D&F

E

G 5090T13

H

J

K

A&B ***Light duty plastic*** cabinets won't rust or corrode. All have two doors. Color is beige (unless noted). 14795T42 is polypropylene and has two shelves that adjust on 9″ centers. Handles accept a padlock (not included) with a maximum shackle diameter of 1/4″. 14795T33 is polyethylene with steel reinforcements and has one fixed shelf. Also has a lock with two keys. *Style B* is polyethylene with a corrugated polystyrene back panel. It has one fixed shelf and one removable shelf that can be positioned 15″ from the bottom. Has a lock with two keys.

C&D ***Light duty steel*** and ***light duty steel mobile*** cabinets are 24- to 22-ga. steel and have two 22-ga. shelves (unless noted) that adjust on 2″ centers. All have two doors, unless noted.

Style C have a lock with two keys. *Mobile* cabinets have four swivel casters (two with brakes) with 5″ dia. polypropylene wheels. Unassembled cabinet is tan; assembled cabinets are dark gray.

Style D have a locking handle with two keys. *Mobile* cabinets have two rigid and two swivel (with brake) casters with 5″ dia. polypropylene wheels. **To Order:** Please specify color: dark gray or tan for unassembled; light gray or tan for assembled.

E ***Light duty steel with sliding doors*** cabinets are 22-ga. steel and have one shelf that adjusts on 2″ centers, except 42″ high cabinets, which have two shelves. All have two doors and a lock with two keys. Cabinets have a textured finish. **To Order:** Please specify color: light gray or tan.

F ***Medium duty steel*** cabinets are 24- to 20-ga. steel and have two 22-ga. shelves (unless noted) that adjust on 2″ centers. All have two doors and a locking handle with two keys. **To Order:** Please specify color: light gray or tan.

Medium duty steel mobile cabinet is made of 22-ga. steel and has two shelves that adjust on 2″ centers. It has four swivel casters (two with brakes) with 5″ dia. hard rubber wheels. Has one door and a locking handle with two keys. Casters and handle are not attached. Color is light gray.

G ***Medium duty steel with work surface*** cabinets are 22-ga. steel with one fixed shelf. Both have two doors and a 1½″ thick white plastic laminated top with a 5³⁄₁₆″ high backsplash. A drawer provides additional storage for small tools and supplies (5090T14 has two drawers). Color is white.

H ***Medium duty steel clear-view*** cabinets have two doors with clear acrylic panels so you can see what is being stored. Made of 24- to 22-ga. steel with two 24-ga. shelves that adjust on 2″ centers. They have a lock with two keys. **To Order:** Please specify color: beige or dark gray.

J ***Heavy duty steel*** cabinet is made of 14- to 12-ga. steel with two 14-ga. fixed shelves. Has one door with a locking handle and includes two keys. Cabinet also has a hasp that accepts a padlock (not included) with a maximum shackle diameter of ½″. Color is light gray.

K ***Extra-heavy duty steel*** and ***extra-heavy duty steel mobile*** cabinets are made of super-strong 12-ga. steel with two 14-ga. shelves that adjust on 2″ centers. A hasp accepts a padlock (not included) with a maximum shackle diameter of ½″, except 3973T14, which has a hasp that accepts a diameter of ⅜″. All have two doors, unless noted. Color is dark gray. ***Mobile*** cabinets have two rigid and two swivel casters with 6″ dia. rubber wheels, a floor brake, and a push handle. Overall capacity for each unit is 2000 lbs. *Note:* Do not exceed the overall capacity of the unit, which may be less than the sum of the shelf capacities.

Overall Size, Wd.×Ht.×Dp.	No. of Shelves	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
(A) Light Duty Plastic— *Unassembled*						
30″×36⅜″×20¼″	2	75	14795T42★	$92.48		
36″×32″ ×16″	1	75	14795T33	266.25		
(B) Light Duty Plastic— *Unassembled*						
36″×46″ ×22″	2	125	47505T3	385.50		
(C) Light Duty Steel— *Unassembled*						
36″×30″ ×24″	2	100	4927T47♠	182.67	4927T48	23.63
36″×30″ ×18″	2	200	4927T54	227.42	4927T55	29.00
(C) Light Duty Steel Mobile— *Welded and Assembled*						
18″×36″ ×24″	2	100	4927T51♠	289.83		
36″×36″ ×18″	2	200	4927T52	321.50		
(D) Light Duty Steel— *Unassembled*						
36″×42″ ×18″	2	175	4588T61	169.58	5089T56	19.44
(D) Light Duty Steel— *Welded and Assembled*						
36″×42″ ×18″	2	150	4588T62	195.63	4588T84	16.06
(D) Light Duty Steel Mobile— *Unassembled*						
36″×47½″×18″	2	175	4588T79	268.90		
(E) Light Duty Steel with Sliding Doors— *Welded and Assembled*						
36″×30″ ×12″	1	150	5071T8	220.62	5071T31	18.68
36″×30″ ×18″	1	150	5071T9	244.07	5071T41	22.71
36″×42″ ×12″	2	150	39795T2	244.82	5071T31	18.68
36″×42″ ×18″	2	150	39795T3	261.44	5071T41	22.71
(F) Medium Duty Steel— *Unassembled*						
36″×42″ ×18″	2	150	4588T63	237.59	4588T84	16.06
(F) Medium Duty Steel— *Unassembled*						
36″×42″×24″	2	200	4588T65	$251.55	4588T87	$22.19
(F) Medium Duty Steel— *Welded and Assembled*						
48″×42″×24″	2	400	4588T51▲	427.85	4588T52	28.53
(F) Medium Duty Steel Mobile— *Riveted and Assembled*						
36″×36″×24″	2	200	4006T22	324.75	4006T712	39.08
(G) Medium Duty Steel with Work Surface— *Welded and Assembled*						
24″×35″×24″	1	50	5090T13	425.24		
30″×35″×24″	1	50	5090T14	531.78		
(H) Medium Duty Steel Clear View— *Welded and Assembled*						
36″×42″×18″	2	180	2697T61	338.33	2697T71	27.60
36″×42″×24″	2	180	2697T62	395.09	2697T72	37.00
(J) Heavy Duty Steel— *Welded and Assembled*						
24″×42″×19″	2	1000	5108T31	316.68		
(K) Extra-Heavy Duty Steel— *Welded and Assembled*						
24″×36″×20″	2	1000	4362T6♠	650.00	45965T27	61.82
36″×30″×18″	2	1350	4362T5	689.66	4362T81	69.23
36″×36″×20″	2	1600	4362T7	787.93	3973T65	76.92
36″×42″×20″	2	1600	3973T11	896.30	3973T65	76.92
48″×42″×24″	2	1200	3973T14	1,129.63	45965T34	87.42
(K) Extra-Heavy Duty Steel Mobile— *Welded and Assembled*						
24″×44″×20″	2	1000	3973T41♠	864.81	45965T27	61.82
36″×44″×20″	2	1600	3973T42	1,012.96	3973T65	76.92
36″×50″×20″	2	1600	3973T43	1,059.26	3973T65	76.92

★ Color is gray. ■ Has one 20-ga. steel shelf. ♠ Has one door. ▲ Has two 24-ga. steel shelves.

Light Duty Full-Height Shelf Cabinets

Gauge (Inches)	
24	(0.0250″)
22	(0.0312″)
20	(0.0375″)
18	(0.0500″)
16	(0.0625″)
14	(0.0781″)
12	(0.1094″)

Made from plastic or 24- to 20-ga. steel (unless noted). Shelves can hold variously 50 to 300 lbs. Cabinets are shipped either unassembled (fasteners included) or assembled.

A *36″ Wide Cabinet*

B

C

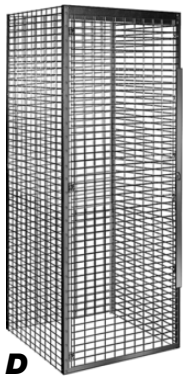

D

Plastic Shelf Cabinets

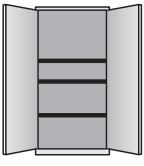

A Lightweight plastic cabinets won't rust or dent. Shipped unassembled.

The *30″ wide cabinet* is polypropylene. Has four shelves that adjust on 7″ centers. Color is gray. Handle accepts a padlock (not included) with a maximum shackle diameter of ¼″.

The *33″* and *36″ wide cabinets* are made of polyethylene. They have one fixed middle shelf and two or three shelves that adjust on 8″ centers. Color is beige. Cabinets have a lock with two keys.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Fixed Shelves	No. of Adjustable Shelves		Each
30″×72⅜″×20¼″	75	–	4	41085T8	$166.50
33″×66″ ×18″	75	1	2	41085T7	348.23
36″×72″ ×22″	125	1	3	41085T4	442.38

Scotsman Steel Shelf Cabinets

B Cabinets are made of 24- to 20-ga. steel with four 22-ga. full-width shelves that adjust on 2″ centers. They have a locking handle with two keys.

Mobile cabinets have four swivel casters (two with brake) with 4″ dia. PVC wheels.

To Order: Please specify color: black, light gray, or tan.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	Unassembled	Each	Welded and Assembled	Each
Stationary Cabinets					
36″×72″ ×18″	150	5089T53	$215.21	5089T51	$260.60
36″×72″ ×24″	200	5089T52	240.67	5089T54	317.26
Mobile Cabinets					
36″×78¾″×18″	150	5089T65	323.32	5089T41	339.47
36″×78¾″×24″	200	5089T73	344.68	5089T55	428.14

Slimline Steel Shelf Cabinets

Full-Width Shelves

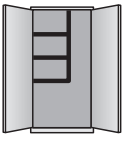

Half-Width Shelves

B Slip these cabinets into narrow places to get the most out of your space.

Cabinets with full-width shelves are 24- to 20-ga. steel with 24-ga. shelves. Their four shelves (except where noted) adjust on 2″ centers. Have a locking handle with two keys. Color is tan.

Cabinet with half-width shelves is 24-ga. steel. It has three 18″ wide fixed shelves on the left side and space on the right for brooms, mops, and dusters. Has a locking handle with one key. Color is beige.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
Single Door with Full-Width Shelves— *Unassembled*					
18″×42″×18″	175	4451T51♦	$141.78	4451T55	$9.04
18″×66″×18″	175	4451T52	188.13	4451T55	9.04
Double Door with Full-Width Shelves— *Unassembled*					
30″×66″×15″	175	4451T53	206.95	4451T54	12.40
Double Door with Half-Width Shelves— *Welded and Assembled*					
30″×66″×15″	85	6899T44♠	240.42	—	—

♦ Has two shelves. ♠ Handle requires assembly.

Combination Wardrobe/Shelf Steel Cabinets

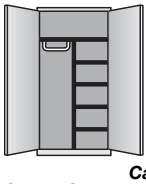

B One full-width shelf, a half-width garment rod, and four half-width shelves provide versatile storage options.

Cabinets are 24- to 20-ga. steel with a 22-ga. full-width fixed shelf and 24-ga. half-width shelves that adjust on 2″ centers. Have a locking handle with two keys.

To Order: Please specify color: dark gray or tan.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs. Full-Width	Half-Width	Cabinets	Each	Extra Half-Width Shelves	Each
Unassembled						
36″×72″×18″	175	85	4585T1	$224.57	4585T22	$8.07
Assembled						
36″×72″×18″	175	85	4585T85	267.44	4585T22	8.07

Wardrobe Steel Shelf Cabinets

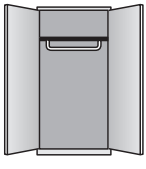

B A garment rod and one full-width shelf sit near the top of these roomy cabinets.

Made of 24- to 20-ga. steel with a 22-ga. shelf that adjusts on 2″ centers. Have a locking handle with two keys.

To Order: Please specify color: dark gray or tan.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
Unassembled					
36″×72″×18″	175	5180T1	$207.52	5089T56	$19.44
Assembled					
36″×72″×18″	175	5180T5	247.15	5089T56	19.44

Steel Shelf Cabinets with Sliding Doors

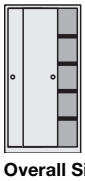

C Sliding doors on these cabinets offer a great alternative to swing-open doors. Ideal for space-restricted areas. Made of 22-ga. steel, they have four shelves that adjust on 2″ centers. They have a lock with two keys. Welded and shipped assembled.

To Order: Please specify color: light gray or tan.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
36″×72″×12″	150	41595T4	$287.43	5071T31	$18.68
36″×72″×18″	150	41595T5	294.57	5071T41	22.71

Ventilated Steel Cabinets

D Cabinets are made of 4-ga. welded rectangular-mesh wire for ventilation and visibility. They have a 14-ga. galvanized steel frame. Mesh has 1½″×3″ openings. The door has a hasp that accepts a padlock (not included) with a maximum shackle diameter of ½″. Shipped unassembled.

Optional floor panels/shelves are made of solid 22-ga. galvanized steel and adjust on 1″ centers.

Overall Size, Wd.×Ht.×Dp.	Cabinets	Each	Optional Floor Panels/Shelves Cap., lbs.	Each
36″×90″×36″	45995T26	$328.08	300	45995T131 $90.19
48″×90″×48″	45995T28	403.71	280	45995T134 119.81

A

B

C

D

Made from 22- to 16-ga. steel, these cabinets are larger, heavier, and sturdier than our light duty cabinets. Shelves can hold variously 75 to 350 lbs. Cabinets are shipped either unassembled (fasteners included) or assembled.

Gauge (Inches)	
24	(0.0250″)
22	(0.0312″)
20	(0.0375″)
18	(0.0500″)
16	(0.0625″)
14	(0.0781″)
12	(0.1094″)

Superla Steel Shelf Cabinets

A Four full-width shelves in these cabinets allow convenient storage of supplies. They are made of 20-ga. steel with 24- to 22-ga. shelves that adjust on 2″ centers. Have a locking handle with two keys.

Mobile cabinets have four swivel casters (two with brake) with 4″ dia. PVC wheels.

To Order: Please specify color: black, light gray, or tan.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Unassembled	Unassembled Each	Welded and Assembled	Welded and Assembled Each
Stationary Cabinets					
36″ × 78″ × 18″	150	4587T73	$316.17	4587T71	$373.87
36″ × 78″ × 24″	200	4587T75	350.01	4587T72	407.72
48″ × 78″ × 24″	400	4625T1	466.49	4587T94	571.57
Mobile Cabinets					
36″ × 84¾″ × 24″	200	4587T86	443.26	4587T87	517.61
48″ × 84¾″ × 24″	250	4625T3	608.19	4587T95	646.97

Fire-Resistant Steel Shelf Cabinet

A Double-wall construction provides 1½″ of air space between walls to insulate contents from heat. Made of 18-ga. steel with four full-width 18-ga. steel shelves that adjust on 2½″ centers. Cabinet has a three-point latch and locking handle with two keys. Color is beige. Welded and shipped assembled.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinet	Cabinet Each	Extra Shelf	Extra Shelf Each
34″ × 65″ × 18″	350	4840T61	$835.28	4840T62	$46.20

Combination Wardrobe/Shelf Steel Cabinets

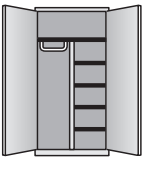

A One side has hanging space with a steel garment rod. The other side has four half-width shelves (unless noted) that adjust on 2″ centers. A fixed full-width top shelf provides extra storage space. Cabinets have a locking handle with two keys.

Stationary cabinets are made of 22- to 20-ga. steel and have 22-ga. steel shelves. ***Mobile*** cabinet is 22-ga. steel and has 20-ga. steel shelves. Has four swivel casters (two with brake) with 5″ dia. polypropylene wheels. **To Order:** Please specify color: light gray or tan for stationary cabinets; beige or dark gray for mobile cabinet.

Overall Size, Wd. × Ht. × Dp.	Full-Shelf Cap.	Half-Shelf Cap.	Cabinets	Cabinets Each	Extra Half-Width Shelves	Extra Half-Width Shelves Each
Stationary—Unassembled						
36″ × 78″ × 18″	150 lbs.	75 lbs.	4585T2	$343.44	4585T44	$12.21
36″ × 78″ × 24″	200 lbs.	75 lbs.	4585T4	378.64	4585T54	14.01
Stationary—Welded and Assembled						
36″ × 78″ × 18″	150 lbs.	75 lbs.	4585T8	410.87	4585T44	12.21
36″ × 78″ × 24″	200 lbs.	75 lbs.	4585T9	435.62	4585T54	14.01
Mobile—Welded and Assembled						
36″ × 78″ × 24″	200 lbs.	85 lbs.	9699T17★	570.71	9699T27	26.35

★ Has three half-width shelves.

Wardrobe Steel Shelf Cabinets

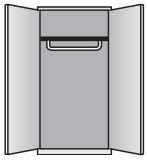

A Cabinets have a steel garment rod and a full-width shelf. Shelf adjusts on 2″ centers. Have a locking handle with two keys.

Stationary cabinets are 22- to 20-ga. steel with a 22-ga. steel shelf. ***Mobile*** cabinet is 22-ga. steel with a 20-ga. steel shelf. It has four swivel casters (two with brake) with 5″ dia. polypropylene wheels.

To Order: Please specify color: light gray or tan for stationary cabinets; beige or dark gray for mobile cabinet.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinets	Cabinets Each	Extra Shelves	Extra Shelves Each
Stationary—Unassembled					
36″ × 78″ × 24″	200	5180T2	$310.78	4587T63	$22.19
Stationary—Welded and Assembled					
36″ × 78″ × 18″	150	5180T4	335.37	5141T8	16.06
36″ × 78″ × 24″	200	5180T3	368.70	4587T63	22.19
Mobile—Welded and Assembled					
36″ × 78″ × 24″	200	9699T22	498.23	9699T54	38.60

Combination Shelf/File Steel Cabinet

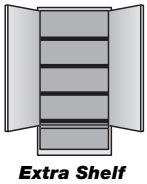

B Get shelf storage and a full-suspension lateral file cabinet drawer in one place. Cabinet is 22-ga. steel with full-width 22-ga. shelves. Center shelf is fixed; the other two shelves adjust on 2″ centers. Cabinet has a lock with two keys. Welded and shipped assembled.

To Order: Please specify color: beige, black, or light gray.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinet	Cabinet Each	Extra Shelf	Extra Shelf Each
36″ × 72″ × 18″	180	9694T35	$465.00	9694T45	$29.00

Clear-View Steel Shelf Cabinets

C Clear acrylic panels in the doors allow you to view the contents. All cabinets have four full-width shelves that adjust on 2″ centers. Cabinets are 22-ga. steel and have 22-ga. shelves; 10795T74 has 20-ga. shelves. They have a locking handle with two keys. Welded and shipped assembled.

To Order: Please specify color: beige or dark gray.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinets	Cabinets Each	Extra Shelves	Extra Shelves Each
36″ × 72″ × 18″	200	10795T71	$478.20	10795T1	$32.22
36″ × 72″ × 24″	200	10795T72	532.04	10795T2	41.12
46″ × 72″ × 18″	230	10795T73	695.48	10795T3	64.22
46″ × 72″ × 24″	230	10795T74	718.80	10795T4	58.00

Ventilated Steel Shelf Cabinet

D Cabinet has 13-ga. diamond-mesh door and sides for air circulation and ventilation. Made of 18- to 16-ga. steel with four full-width 16-ga. shelves that adjust on 2″ centers. Mesh has 1⅝″ openings. The door has a three-point latch and a hasp that accepts a padlock (not included) with a maximum shackle diameter of ⅜″. Legs are 6″ high (included in overall height). Color is light gray. Welded and shipped assembled.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinet	Cabinet Each	Extra Shelf	Extra Shelf Each
24″ × 78″ × 21″	210	8209T25	$650.43	8209T27	$35.56

Heavy Duty Full-Height Shelf Cabinets

A

B

C

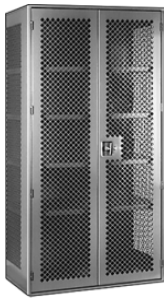

D

E

F *With Optional Shelves*

Gauge (Inches)	
24	(0.0250″)
22	(0.0312″)
20	(0.0375″)
18	(0.0500″)
16	(0.0625″)
14	(0.0781″)
12	(0.1094″)

Made from 18- to 12-ga. steel (unless noted), these cabinets are larger, heavier, and sturdier than our light and medium duty cabinets. Shelves can hold variously 600 to 1500 lbs. All cabinets are welded and shipped assembled, except NSF-listed ventilated steel shelf cabinets, which are shipped unassembled (fasteners included).

Samson Steel Shelf Cabinets

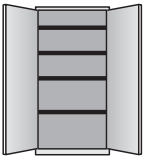

A Cabinets are made of 18- to 12-ga. steel with reinforced 14-ga. steel shelves. They have one full-width, fixed shelf that is second from the bottom and three full-width shelves that adjust on 4″ centers. Have a locking handle with two keys. Color is light gray.

Mobile cabinets have two rigid and two swivel (with brake) casters with 5″ dia. phenolic wheels, which add 6½″ to overall height.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	Stationary Cabinets	Each	Mobile Cabinets	Each
36″×72″×19″	1500	4775T33	$666.50	4775T77	$803.20
36″×72″×24″	1500	4775T38	807.52	4775T84	962.91
36″×78″×19″	1500	4775T18	697.74	4775T78	844.13
36″×78″×24″	1500	4775T63	852.00	4775T85	1,005.72
48″×72″×19″	1500	4775T71	787.83	4775T87	922.50
48″×72″×24″	1500	4775T73	911.79	4775T89	1,058.46

Slimline Steel Shelf Cabinets

B At only 18″ wide, cabinets can slide into narrow spaces. They are made of 18- to 12-ga. steel and have four 14-ga. shelves that adjust on 4″ centers. They have a locking handle with two keys. Color is light gray.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
18″×60″×24″	1500	4576T31	$528.58	4576T65	$34.40
18″×72″×24″	1500	4576T32	605.80	4576T65	34.40

Three-Compartment Steel Shelf Cabinet

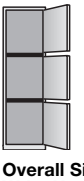

C Store equipment and supplies for different projects, shifts, or departments in this cabinet with three separate, lockable compartments. Made of 14-ga. steel. Each door has a handle and hasp that accepts a padlock (not included) with a maximum shackle diameter of ⅜″. Color is light gray.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.		Each
24″×74″×24″	1200	5107T12	$566.63

Ventilated Steel Shelf Cabinets

D

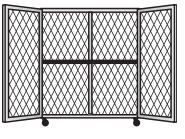

E

D&E Cabinets have steel diamond-mesh construction that allows air to circulate and lets you see what's being stored.

Style D—Stationary cabinets are 18- to 12-ga. steel with 14-ga. shelves. They have four full-width shelves; the shelf that is second from the bottom is fixed, and the other three adjust on 4″ centers. The doors and sides are mesh with 1″ openings; cabinets have solid backs. Cabinets have a recessed locking handle and have a lock with two keys. Color is light gray.

Style E—Mobile cabinet is made of flattened 14-ga. expanded metal on a 3⁄16″ thick angle iron frame. Has one fixed full-width 14-ga. steel shelf (reinforced with angle iron). The doors, sides, and back are mesh with ¾″ openings. Cabinet has two rigid and two swivel casters with 5″ dia. phenolic wheels. Door has a hasp that accepts a padlock (not included) with a maximum shackle diameter of 7⁄16″. Color is blue.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
(D) Stationary					
36″×72″×19″	1500	4537T11	$758.94	4775T35	$58.51
36″×72″×24″	1500	4537T12	897.74	4775T83	70.95
48″×72″×19″	1500	4537T13	874.32	4775T56	70.95
48″×72″×24″	1500	4537T14	993.60	4775T57	80.93
(E) Mobile					
48″×57″×30″	1000	8736T33	627.99	———	———

NSF-Listed Ventilated Steel Shelf Cabinets

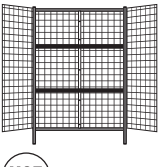

Stationary Cabinet with Optional Shelves

F Listed by the National Sanitation Foundation (NSF), these open-wire square-mesh cabinets allow visibility while maintaining security. Made of 3-ga. chrome-plated steel mesh (with 1⅝″ openings) supported on four 16-ga. 1″ OD posts. Doors swing open to fold flat and can be secured to the cabinet sides. Cabinets have a hasp that accepts a padlock (not included) with a maximum shackle diameter of 5⁄16″. Shipped unassembled.

Stationary cabinets have leveling feet. ***Mobile*** cabinets have four swivel casters with protective bumpers and 5″ dia. polyurethane wheels.

Optional shelves (sold separately) are chrome-plated wire, have 10-ga. wire ribs with 6-ga. wire supports, and adjust on 1″ centers.

Overall Size, Wd.×Ht.×Dp.	Cabinets	Each	Optional Shelves Cap., lbs.	Optional Shelves Each
Stationary				
38½″×66 13⁄16″×27¼″	8281T25★	$738.19	800	8744T81 $48.02
62½″×66 13⁄16″×27¼″	8281T26★	996.13	600	8744T83 67.50
Mobile				
41″ ×68½″ ×27¼″	8744T71★	831.25	800	8744T81 48.02
53″ ×68½″ ×27¼″	8744T72★	989.20	800	8744T82 56.86
65″ ×68½″ ×27¼″	8744T73★	1,047.02	600	8744T83 67.50

★ Max. load capacity for entire cabinet is 1200 lbs.

A

B

C

D

E

Hercules Steel Shelf Cabinets

A All cabinets have shelves that are adjustable on 2″ centers. They have a locking handle with a hasp that accepts a padlock (not included) with a maximum shackle diameter of ½″.

Steel cabinets with full-width shelves have four shelves (unless noted). ***Steel cabinets with half-width shelves*** have four shelves on the right and a full-height section on the left for tall items. All steel cabinets are dark gray.

Stainless steel cabinets with full-width shelves offer corrosion and acid resistance. Made of Type 304 stainless steel. They have four shelves.

Full-Width Shelves

Half-Width Shelves

The heaviest duty cabinets we carry. All are 12-ga. steel or stainless steel with 14-ga. shelves. Shelves hold variously 775 to 1950 lbs. For added stability, the cabinets have 6″ high, 7-ga. legs with ¾″ holes that can be bolted to the floor. All cabinets are welded and shipped assembled.

Gauge (Inches)	
24	(0.0250″)
22	(0.0312″)
20	(0.0375″)
18	(0.0500″)
16	(0.0625″)
14	(0.0781″)
12	(0.1094″)

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
Steel with Full-Width Shelves					
36″×66″×24″	1900	45965T18 ♦	$908.16	45965T33	$83.08
36″×78″×20″	1600	45965T12	948.98	45965T31	80.91
36″×78″×24″	1900	45965T13	983.67	45965T33	83.08
48″×66″×24″	1200	45965T14 ♦	1,097.74	45965T34	87.42
48″×78″×24″	1200	45965T15	1,163.27	45965T34	87.42
60″×78″×24″	1650	45965T16	1,269.39	45965T36	111.11
72″×78″×24″	1525	45965T44	1,689.80	45965T47	132.65
Steel with Half-Width Shelves					
36″×78″×24″	1025	6149T67	941.07	44695T51	74.00
48″×78″×24″	1375	6149T68	1,116.67	44695T52	80.00
60″×78″×24″	1750	6149T69	1,285.19	45965T33	83.08
Stainless Steel with Full-Width Shelves					
36″×78″×24″	1900	9678T52	3,541.38	9678T56	148.08
48″×78″×24″	1200	9678T54	4,282.76	9678T57	180.77

♦ Has three shelves.

Wardrobe Steel Shelf Cabinets

A Cabinets have a garment rod welded to a full-width shelf. The handle has a hasp that accepts a padlock (not included) with a maximum shackle diameter of ½″. Color is dark gray.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
36″×78″×24″	1900	4305T21	$850.00	45965T33	$83.08
48″×78″×24″	1200	4305T22	985.00	45965T34	87.42

Combination Wardrobe/Shelf Steel Cabinets

A Cabinets have a garment rod with one half-width shelf on the left and four half-width shelves on the right. Half-width shelves are adjustable on 2″ centers. All have a handle with a hasp that accepts a padlock (not included) with a max. shackle dia. of ½″. Color is dark gray. **Also Available:** Extra shelves. To order, please ask for 44695T9, and specify left or right shelf, and overall cabinet width.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs. Left	Right	Shelf Width Left	Right	Cabinets	Each
36″×78″×24″	775	1,100	14″	20 1/16″	44695T41	$1,052.54
48″×78″×24″	1,050	1,500	19 1/16″	27 1/16″	44695T42	1,266.10
60″×78″×24″	1,300	1,900	23 13/16″	34 5/16″	44695T43	1,408.33

Clear-View Steel Shelf Cabinets

B Cabinet doors have clear polycarbonate windows to let you see at a glance what's being stored. They have four full-width shelves that are adjustable on 2″ centers. A locking handle with hasp accepts a padlock (not included) with a maximum shackle diameter of ½″. Color is dark gray.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
48″×78″×24″	1200	44905T32	$1,404.76	45965T34	$87.42
60″×78″×24″	1650	44905T33	1,590.48	45965T36	111.11

Ventilated Steel Shelf Cabinets

C Rugged steel diamond-mesh doors allow you to view contents while providing ventilation. Cabinets have four full-width shelves that are adjustable on 2″ centers. Mesh has 1 9/16″×9/16″ openings. Their handle has a hasp that accepts a padlock (not included) with a maximum shackle diameter of ½″. Color is dark gray.

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
36″×78″×24″	1900	9662T71	$1,018.18	45965T33	$83.08
48″×78″×24″	1200	9662T72	1,150.00	45965T34	87.42
60″×78″×24″	1650	9662T73	1,266.07	45965T36	111.11

Two- and Four-Compartment Steel Shelf Cabinets

D&E Store supplies for multiple departments or shifts. All cabinets have eight half-width shelves that adjust on 2″ centers. Each compartment locks separately with a latch. The handle has a hasp that accepts a padlock (not included) with a maximum shackle diameter of ½″. Color is dark gray.

D

E

Overall Size, Wd. × Ht. × Dp.	Cap. per Shelf, lbs.	Cabinets	Each	Extra Shelves	Each
(D) Two Compartments					
36″×78″×24″	950	45975T4	$1,091.53	45975T11	$36.54
48″×78″×24″	1275	45975T2	1,284.75	45975T12	42.31
60″×78″×24″	1600	45975T3	1,377.97	45975T13	44.23
72″×78″×24″	1950	45975T5	1,444.07	45975T14	48.08
(E) Four Compartments					
48″×78″×24″	1275	29395T22	1,505.08	45975T12	42.31
60″×78″×24″	1600	29395T23	1,620.34	45975T13	44.23
72″×78″×24″	1950	29395T24	1,697.74	45975T14	48.08

Heavy Duty Steel Storage Chests with Forklift Access

A *Without Casters Shown with Two Optional Trays*

B *With Casters*

C *Without Casters*

Demanding job-site locations are no problem for these chests. All chests have 16-gauge steel construction with raised leg supports (3″ high for *Styles A* and *B*; 3½″ high for *Style C*) for forklift access. They can be used both indoors and outdoors.

***A* Chests with Optional Trays—**These durable chests have one top and two side handles that are all recessed. They also have a single recessed locking system that accepts a padlock (padlock not included; max. padlock width of 2¼″ and max. shackle diameter of 11/32″). Color is tan.

Models with casters have four bolted-on casters (two rigid; two swivel with brakes) with polypropylene wheels. The *48″ wide chests* have 4″ dia. wheels. The *60″* and *72″ wide chests* have 6″ dia. wheels.

Optional trays are excellent for storing small parts. They measure 4″ Ht.×8″ Wd. and are designed to suspend across the top opening (front to back) of the chest. They include handles.

***B* Chests with Shelving—**For easy opening, these chests have a bi-fold lid with gas springs, which you can lift up and out of the way with one hand. Inside the chests, you'll find two fixed full-width shelves. Each shelf is 12 5/16″ deep and has a 2 9/16″ high lip.

All chests have one top and two side handles that are all recessed. They also have a single recessed locking system that accepts a padlock (padlock not included; max. padlock width of 2¼″ and max. shackle diameter of 11/32″). Color is tan.

Models with casters have four bolted-on casters (two rigid; two swivel with brakes) with 6″ dia. polypropylene wheels.

***C* Slant-Top Chests with Shelving—**The slant-top design makes it easier to reach contents from the sides of the chests. The bi-fold lid with gas springs makes it easy to lift the lid up and out of the way with one hand. Inside the chests, you'll find two full-width shelves. Each shelf is 12″ deep and has a 1″ high lip. The top shelf is fixed, while the bottom shelf is hinged so you can fold it out of the way when it's not in use.

All chests have two top handles and two recessed side handles. They also have two recessed locks that accept padlocks (padlocks not included; max. padlock width of 4¾″ and max. shackle diameter of ⅜″). Color is green.

Models with casters have four bolted-on casters (two rigid; two swivel with swivel locks) with 6″ dia. hard rubber wheels.

O'all Size, Wd.×Dp.	Storage Cap., cu. ft.	Chests without Casters O'all Ht. Closed	Open		Each	Chests with Casters O'all Ht. Closed	Open		Each	Optional Trays	Each
(A) Chests with Optional Trays											
32″×19″	5	18⅜″	34⅜″	6758A1	$351.18	—	—	—	—	6758A51	$63.38
36″×19″	7	21⅜″	37⅜″	6758A2	368.09	—	—	—	—	6758A51	63.38
42″×19″	9	23⅜″	39⅜″	6758A3	414.71	—	—	—	—	6758A51	63.38
48″×24″	16	28¼″	49¼″	6758A4	511.62	33⅜″	54⅜″	6758A24	$648.24	6758A52	63.38
48″×30″	25.2	34¼″	61¼″	6758A5	592.00	39⅜″	66⅜″	6758A25	739.85	6758A53	67.24
60″×24″	20.2	28¼″	49¼″	6758A6	598.85	35½″	56½″	6758A26	752.00	6758A52	63.38
60″×30″	39.3	41⅜″	68¼″	6758A7	604.91	48⅜″	75¼″	6758A27	855.40	6758A53	67.24
72″×24″	24.5	28⅛″	49¼″	6758A8	684.53	35⅜″	56½″	6758A28	861.46	6758A52	63.38
(B) Chests with Shelving											
48″×30″	38.2	49″	78″	6568A46	946.67	56¼″	85¼″	6568A51	1,105.51	—	—
60″×30″	47.8	49″	78″	6568A48	979.70	56¼″	85¼″	6568A52	1,134.96	—	—
72″×30″	57.5	49″	78″	6568A49	1,115.66	56¼″	85¼″	6568A54	1,268.25	—	—
(C) Slant-Top Chests with Shelving											
48″×30″	34	51½″	81⅝″	6183A76	732.07	58¾″	88⅝″	6183A81	808.51	—	—
60″×30″	44	51½″	81⅝″	6183A77	814.48	58¾″	88⅝″	6183A82	891.64	—	—

Heavy Duty Cabinet-Style Steel Storage Chests with Forklift Access

D *With Casters*

E *Without Casters*

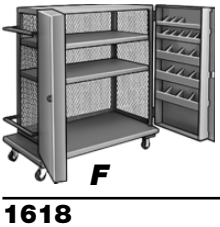

F

Large doors open wide for complete visibility and easy access to all of your stored contents. All chests have 16-gauge steel construction with raised leg supports (3″ high for *Styles D* and *E*; 3½″ high for *Style F*) for forklift access. They can be used both indoors and outdoors.

***D&E* Chests with Full-Width and Half-Width Shelving—**All chests have one handle per set of doors and two side handles that are all recessed. They also have a single recessed locking system for each set of doors that accepts a padlock (padlock not included; max. padlock width of 2¼″ and max. shackle diameter of 11/32″). Color is brown.

Models with casters have four bolted-on casters (two rigid; two swivel with brakes) with 6″ dia. polypropylene wheels.

(D) Chests with full-width shelving have three full-width shelves inside the chest. The two top shelves are fixed. The bottom shelf is adjustable on 3″ centers. The *two-door model* has one set of doors on the front of the chest. The *four-door model* has one set of doors on the front as well as on the back of the chest for dual entry.

(E) Chests with half-width shelving have three fixed shelves on the left side of the chest. The right side has a 28″ Wd.×19¾″ Dp.×57″ Ht. open space for storing large items.

***F* Ventilated Chest with Full-Width Shelving—**Mesh steel sides and back not only provide ventilation, but also allow you to easily see your stored items. Inside the chest you'll find two fixed, full-width shelves. Each shelf has a 1″ high lip. Inside each door are five fixed shelves (4″ deep with 1″ high lip) with a total of 46 individual compartments. There's also a 6″ wide base extension with two support bars on one outer side to store large items such as brooms and shovels. Chest has a single recessed locking system that accepts a padlock (padlock not included; max. padlock width of 4¾″ and max. shackle diameter of ⅜″). Furnished with four bolted-on casters (two rigid; two swivel with brakes) with 6″ dia. hard rubber wheels. Color is green.

No. of Doors	Overall Size, Wd.×Dp.	Storage Cap., cu. ft.	Chests without Casters O'all Ht.		Each	Chests with Casters O'all Ht.		Each
(D) Chests with Full-Width Shelving								
2	60″×24″	47.5	60″	7336A45	$1,316.45	67¼″	7336A51	$1,475.77
4	60″×30″	59.4	60″	7336A46	1,686.13	67¼″	7336A52	1,810.55
(E) Chests with Half-Width Shelving								
2	60″×24″	47.5	60″	7336A47	1,398.28	67¼″	7336A53	1,469.76
(F) Ventilated Chest with Full-Width Shelving								
2	48″×28″	37.3	—	—	—	59½″	8448T62	1,458.75

Steel Chests

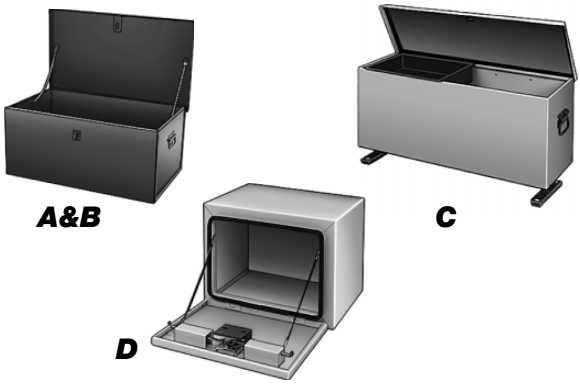

All of these chests are suitable for indoor and outdoor use.

A&B Standard Chests—Also known as foot lockers, these chests have two side handles (unless noted) and a padlockable hasp (padlock not included; maximum shackle diameter of 3/8″).

Style B also has two lid snaps and a removable tote tray.

C Floor-Mountable Chest—Furnished with baseplates that can be installed on most flat surfaces, this chest can be permanently or temporarily anchored in one place. For stationary use, place the chest on the baseplates and turn the locking rods inside the chest. The chest is now anchored. For portable use, simply unlock the rods to remove the chest and take it anywhere it's needed. Fasteners for mounting the baseplates are included.

Chest has two side handles and a sliding, removable small-parts tray. The lid has a key lock with two keys.

D Fold-Down-Door Chests—Often used for the underbed of a truck (fasteners not included), the door on these chests folds down and is suspended in an open position by coated galvanized-steel aircraft cable. An EPDM gasket around the door opening keeps moisture and dust out. All have a three-point locking system with keyed, recessed T-handle and two keys. Inside height is 12 3/4″.

Overall Size, Wd.×Dp.×Ht.	Storage Cap., cu. ft.	Ga.	Color		Each
Standard Chests					
A.. 18″× 7 3/4″ × 7″	1.0	16	Tan	6566A2 ♦	$118.05
A.. 24″×10 3/4″ × 9 1/2″	1.75	16	Tan	6566A4	139.46
A.. 30″×16″ ×12″	3.3	16	Brown	6566A5	173.22
A.. 31″×18″ ×15″	4.5	16	Green	6566A9	266.63
B.. 55″×18″ ×18″	12	14	Tan	6561A14	482.41
Floor-Mountable Chest					
C.. 32″×10 13/16″×12 3/4″	2.2	18	White	7331A56	156.44
Fold-Down-Door Chests					
D.. 24″×18″ ×18″	4.3	14	White	6781A43	337.52
D.. 24″×18″ ×18″	4.3	14	Black	6781A53	337.52
D.. 36″×18″ ×18″	6.4	14	White	6781A44	415.26
D.. 36″×18″ ×18″	6.4	14	Black	6781A54	415.26
D.. 48″×18″ ×18″	8.6	14	White	6781A45	466.49
D.. 48″×18″ ×18″	8.6	14	Black	6781A55	466.49
D.. 60″×18″ ×18″	10.7	14	White	6781A46	553.38
D.. 60″×18″ ×18″	10.7	14	Black	6781A56	553.38

♦ Furnished with a top handle.

Marine-Grade Fiberglass Chests

With Optional Rubber Feet

Tough enough for use in demanding saltwater marine environments, all of the latches, hinges, and hardware are stainless steel. The latches are padlockable (padlock not included; max. shackle diameter of 5/16″). Furnished with two gas springs (except for 8579A54, which only has one) to make it easier for you to lift the lid. Color is white.

Optional rubber feet are 1″ high and include mounting fasteners. Color is white.

Overall Size Wd.×Dp.×Ht.	Storage Cap., cu. ft.		Each
39 1/2″×19 3/4″×21 1/2″	5.3	8579A54	$422.19
44 1/4″×26 1/4″×27 1/2″	10.5	8579A55	514.18
72″ ×26 1/2″×27 1/2″	18.4	8579A57	751.57
85″ ×22″ ×24 1/4″	17.7	8579A58	715.15
Optional Rubber Feet *(Set of Four)*		8579A91 Per Set	$30.90

Aluminum Chests

6622A6, A3, and A4

Lightweight as well as rugged, these chests have an attractive, bright satin finish. For indoor and outdoor use.

16-ga. models have a locking center draw latch with two keys as well as one heavy duty draw latch on each side of the center draw latch. Furnished with a stainless steel wire lid-stay and one handle on each side.

11-ga. models have a padlockable center hasp (padlock not included; max. shackle dia. of 5/16″) as well as twist locks (one on each side of the center hasp for 6622A5; two on each side of the center hasp for 6622A6, A3, and A4). All come furnished with a chain lid-stay and two handles on each side.

Overall Size, Wd.×Dp.×Ht.	Storage Cap., cu. ft.		Each
16 Gauge			
30″×13 1/2″×12 1/4″	2.8	6622A1	$297.74
36″×17 1/2″×14 1/2″	5.2	6622A2	298.36
11 Gauge			
24″×22″ ×24″	7.3	6622A5	493.04
36″×22″ ×24″	11.0	6622A6	548.78
48″×22″ ×24″	14.7	6622A3	633.02
60″×22″ ×24″	18.3	6622A4	714.78

Corrosion- and Impact-Resistant Chests

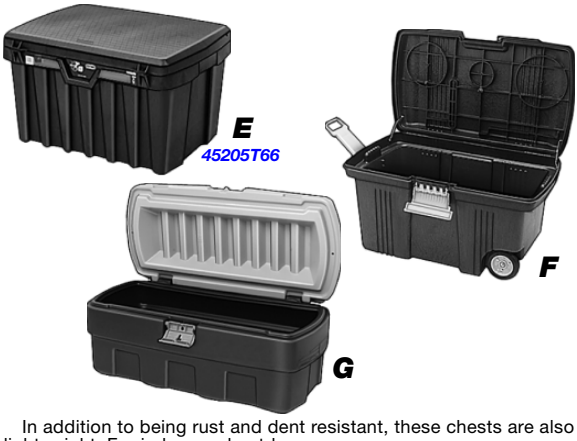

In addition to being rust and dent resistant, these chests are also lightweight. For indoor and outdoor use.

E Structural Foam Chests—With greater strength and higher impact resistance than other plastic chests, structural-foam chests are only exceeded by metal for strength. All have two padlock hasps (padlocks not included; maximum shackle diameter of 3/8″) and two molded-in side handles.

Model 45205T66 also has a molded-in key lock that comes furnished with two keys.

F Rolling Structural Foam Chest—Similar to the Structural Foam Chests above, but with a 12 3/4″ long fold-down handle and two 6″ Dia.× 1 1/2″ Wd. rubber wheels for easy mobility. It has one recessed latch, a padlock hasp (padlock not included; maximum shackle dia. of 3/8″), and two molded-in side handles.

G Polyethylene Chests—Have a center-lock latch that can be padlocked (padlock not included; max. shackle dia. of 1/4″).

Overall Size, Wd.×Dp.×Ht.	Storage Cap., cu. ft.	Color		Each
Structural Foam Chests				
E...35″ ×15 1/2″×14″	2.6	Black	45205T65	$56.70
E...37″ ×22″ ×20 1/2″	6.75	Black	45205T66	96.82
Rolling Structural Foam Chest				
F...38″ ×23″ ×20 1/2″	6.1	Black/Yellow	45205T87	113.40
Polyethylene Chests				
G..34 1/2″×16 3/8″×18 1/2″	5.4	Black/Gray/Red	63695A65	127.74
G..43 3/4″×20 1/2″×17 5/32″	7.5	Black/Gray/Red	63695A62	165.53

About Safety Cabinets for Flammables and Combustibles

Our cabinets provide a secure location for hazardous liquid materials. We offer them with hinged doors, self-closing hinged doors, and self-closing sliding doors. Hinged doors close manually. Self-closing doors close automatically but have fusible links that can be used to hold doors open. A high temperature melts the fusible links, causing doors to automatically close.

Since the Uniform Fire Code requires the use of cabinets with self-closing doors in some cities, counties, and states, we recommend that you check your local fire codes.

All our metal safety cabinets meet OSHA requirements and conform to National Fire Protection Association (NFPA) Code 30 requirements, except where noted. Additionally, many of our cabinets carry Factory Mutual (FM) approval.

Class I—Flammables	***Class II—Combustibles***	***Class III—Combustibles***
Flash Point: Below 100° F	**Flash Point:** 100° to 139° F	**Flash Point:** 140° F and Up
Examples:	**Examples:**	**Examples:**
• Acetone	• Nos. 1 and 2 Fuel Oil	• Ethylene Glycol
• Gasoline	• Kerosene	• Glycerin
• Methyl Alcohol		
• Turpentine		

When storing flammable and combustible liquids in a cabinet, the combined total of Class I and Class II liquids should not exceed 60 gallons; the total of all Class I, Class II, and Class III liquids should not exceed 120 gallons.

To select the proper size cabinet, you first need to determine whether your liquid is flammable (Class I) or combustible (Class II or Class III). The flash point of your liquid (see the guide above) classifies it as flammable or combustible. If the liquid you plan to store is not shown on the scale we've supplied, please check the liquid's MSDS (Material Safety Data Sheet) to find the flash point.

We've provided can capacities per shelf based on standard can sizes.

Safety Cabinets for Flammables and Combustibles

Full-Height Cabinet with Hinged Doors and Three Shelves

Counter-Height Cabinet with Self-Closing Sliding Door

Bench-Height Cabinet with Self-Closing Hinged Doors

Safely store flammables and combustibles (not recommended for acids; see page 1623 for cabinets for acids). Cabinets are made of 18-ga. steel and have double-wall construction with 1½″ of air space between walls.

Shelves are adjustable. Cabinets include a connection for a ground wire and capped vents with built-in flash arrester. The doors have piano (continuous) hinges, a three-point latch, and a locking handle with two keys. Handle also has a hasp that accepts a padlock (not included) with a max. shackle dia. of ⅜″, unless noted. Door sills are raised at least 2″ to contain spills. Leveling feet compensate for uneven floors.

Cabinets are yellow and marked with a ″Flammable: Keep Fire Away″ label on the front. They meet NFPA Code 30 and OSHA requirements and are FM approved, unless noted. Welded and shipped assembled.

Cabinets ***with self-closing doors*** have fusible links that melt at 165° F, causing doors to close automatically.

Overall Size, Wd. × Ht. × Dp.	Cans per Shelf 5 gal.	Cans per Shelf 1 gal.	No. of Shelves●	Shelf Adjustment	No. of Doors	Cabinets	Cabinets Each	Extra Shelves	Extra Shelves Each
Full-Height Cabinets									
With Hinged Doors									
23¼″ × 65″ × 18″	1	3	4	3″	1	**4477T11**	$624.33	**4477T13**	$33.74
34″ × 65″ × 34″	5	12	3	3″	2	**4477T4**	894.71	**4477T9**	78.26
43″ × 65″ × 18″	3	8	3	3″	2	**4477T3**	742.95	**4477T8**	47.05
43″ × 65″ × 31″	6	20	3	2⅝″	2	**4477T61**■	958.71	**4477T82**	92.41
With Self-Closing Hinged Doors									
23¼″ × 65″ × 18″	1	3	4	3″	1	**4477T12**	705.88	**4477T13**	33.74
34″ × 65″ × 34″	5	12	3	3″	2	**4495T26**	1,019.61	**4477T9**	78.26
43″ × 65″ × 18″	3	7	3	3″	2	**4495T25**	816.26	**4477T8**	47.05
43″ × 67″ × 31″	6	20	3	2⅝″	2	**4495T54**■	1,067.74	**4477T82**	92.41
With Self-Closing Sliding Door									
34″ × 65″ × 34″	5	12	3	3″	1	**4495T13**	1,091.30	**4477T9**	78.26
43″ × 65″ × 18″	3	10	3	2⅝″	1	**4495T51**■	719.62	**4598T76**	47.49
43″ × 65″ × 31″	6	20	3	2⅝″	1	**4495T53**■★	1,040.24	**4477T82**	92.41
Counter-Height Cabinets									
With Hinged Doors									
24″ × 44″ × 18″	1	5	2	2⅝″	1	**4477T87**■	431.00	**4477T86**	40.93
43″ × 44″ × 18″	3	8	2	3″	2	**4477T2**	599.81	**4477T8**	47.05
With Self-Closing Hinged Doors									
24″ × 46″ × 18″	1	5	2	2⅝″	1	**4477T88**■	486.03	**4477T86**	40.93
43″ × 44″ × 18″	3	7	2	3″	2	**4495T24**	658.99	**4477T8**	47.05
With Self-Closing Sliding Door									
43″ × 44″ × 18″	3	10	2	2⅝″	1	**4495T52**■	586.39	**4598T76**	47.49
Bench-Height Cabinets									
With Hinged Doors									
23¼″ × 35″ × 18″	1	3	2	3″	1	**4477T31**	425.38	**4477T13**	33.74
36″ × 35″ × 24″	3	7	2	3″	2	**4477T51**	697.74	**4477T52**	41.23
47″ × 35 9/16″ × 22″	3	12	2	2⅝″	2	**4477T62**■	685.23	**4477T83**	66.11
59″ × 35 9/16″ × 22″	4	16	2	2⅝″	4	**4477T89**■	855.97	**4477T93**	85.00
With Self-Closing Hinged Doors									
23¼″ × 35″ × 18″	1	3	2	3″	1	**4495T21**	438.47	**4477T13**	33.74
35″ × 35″ × 22″	3	9	2	3″	2	**4495T27**	655.37	**4477T81**	48.46
With Self-Closing Sliding Doors									
47″ × 35⅝″ × 22″	3	12	2	2⅝″	1	**4495T56**■★	756.40	**4477T83**	66.11
59″ × 35⅝″ × 22″	4	16	2	2⅝″	2	**4495T83**■★	956.68	**4477T93**	85.00

● Includes bottom shelf. ■ Does not have a hasp for a padlock. ★ Not FM approved.

For information about safety cabinets for flammables and combustibles, see page 1620.

Wall-Mount and Bench-Top Safety Cabinets for Flammables and Combustibles

Similar to the Safety Cabinets for Flammables and Combustibles on the previous page, these provide the same storage protection for smaller quantities. Not recommended for nitric or sulfuric acids. Cabinets are made of 18-ga. steel and have double-wall construction with 1½″ of air space between walls.

Shelves are adjustable, except bottom shelf. Cabinets have a connection for a ground wire and capped vents with built-in flash arrester. Doors have piano (continuous) hinges, three-point latch, and a locking handle with two keys. Handle also has a hasp that accepts a padlock (not included) with a max. shackle dia. of ⅜″, unless noted. Door sills are raised at least 2″ to contain spills. Cabinets are yellow and marked with a "Flammable: Keep Fire Away" label on the front. They meet NFPA Code 30 and OSHA requirements and are FM approved, unless noted. Welded and shipped assembled.

Wall-Mount Cabinet with Hinged Doors

Bench-Top Cabinet with Hinged Door

Wall-mount cabinets can also be stacked up to two high. *Note:* Only stack cabinets with the same width and depth dimensions.

Bench-top cabinets have leveling feet for uneven surfaces.

Cabinets ***with self-closing hinged doors*** have fusible links that melt at 165°F, causing doors to close automatically.

Overall Size, Wd.×Ht.×Dp.	Cans per Shelf 5-gal.	Cans per Shelf 1-gal.	No. of Shelves●	Shelf Adjustment	No. of Doors	With Hinged Doors	Each	With Self-Closing Hinged Doors	Each	Extra Shelves	Each
Wall-Mount Cabinets											
43″×18″×18″	—	7	1	—	2	4477T16	$491.60	4477T32	$550.53	—	—
43″×24″×18″	3	7	2	3″	2	4477T17	579.67	4477T27	650.07	4477T8	$47.05
Wall Mounting Hardware (For All Wall-Mount Cabinets)										4477T14	Each $59.03
Bench-Top Cabinets											
17″×22″×17″	—	3	2	2⅝″	1	4477T63♦	294.83	4495T55♦♠	341.79	4477T84	36.29

● Includes bottom shelf. ♦ Does not have a hasp for a padlock. Not FM approved. ♠ Cabinet is 2″ taller than listed height.

Mobile Safety Cabinets for Flammables and Combustibles

Easily move your stored flammables and combustibles from place to place. Not recommended for nitric or sulfuric acids. Cabinets are made of 18-ga. steel and have double-wall construction with 1½″ of air space between walls.

Shelves are adjustable, except bottom shelf. Cabinets include a connection for a ground wire and capped vents with built-in flash arrester. Doors have piano (continuous) hinges, a three-point latch, and a lock with two keys. Door sills are raised at least 2″ to retain spills. Have two rigid and two swivel casters with 4″ dia. polyolefin wheels. Cabinets are yellow and marked with a "Flammable: Keep Fire Away" label on the front. Meet NFPA Code 30 and OSHA requirements and are FM approved. Welded and shipped assembled.

Cabinets ***with self-closing hinged doors*** have fusible links that melt at 165°F, causing doors to close automatically.

Bench-Height Cabinet with Self-Closing Hinged Doors

Overall Size, Wd.×Ht.×Dp.	Cans per Shelf 5-gal.	Cans per Shelf 1-gal.	No. of Shelves●	Shelf Adjustment	No. of Doors	With Hinged Doors	Each	With Self-Closing Hinged Doors	Each	Extra Shelves	Each
Full-Height Cabinets											
43″×69″×31″	6	20	3	2⅝″	2	4158T74	$1,230.50	4158T76♠	$1,383.16	4477T82	$92.41
Counter-Height Cabinets											
43″×48″×18″	3	10	2	2⅝″	2	4158T71	739.36	4158T72♠	845.00	4598T76	47.49
Bench-Height Cabinets											
24″×39″×18″	1	5	2	2⅝″	1	4158T81	574.24	4158T82♠	616.05	4477T86	40.93
36″×39″×24″	3	12	2	2⅝″	2	4158T83	734.30	4158T84♠	845.00	4158T77	56.10

● Includes bottom shelf. ♠ Cabinet is 2″ taller than listed height.

Safety Cabinets for Flammables and Combustibles in 1-Gallon Cans

Also known as paint and ink cabinets, these offer more shelves for storing 1-gal. cans than other safety cabinets. Made of 18-ga. steel and have double-wall construction with 1½″ of air space between walls.

Shelves are adjustable, except bottom shelf. Cabinets include a connection for a ground wire and capped vents with built-in flash arrester. Doors have piano (continuous) hinges, a three-point latch, and a locking handle with two keys. Door sills are raised at least 2″ to retain spills.

Cabinets are marked with a "Flammable: Keep Fire Away" label on the front. They meet NFPA Code 30 and OSHA requirements and are FM approved. Welded and shipped assembled.

Cabinets ***with self-closing hinged doors*** have fusible links that melt at 165°F, causing doors to close automatically.

To Order: Please specify color: red or yellow.

Full-Height Cabinet with Hinged Doors

Overall Size, Wd.×Ht.×Dp.	1-gal. Cans per Shelf	No. of Shelves●	Shelf Adjustment	No. of Doors	With Hinged Doors	Each	With Self-Closing Hinged Doors	Each	Extra Shelves	Each
Full-Height Cabinets										
31″×65″×31″	16	6	2⅝″	2	4598T7	$960.63	4598T8♠	$1,131.20	4598T72	$77.35
43″×65″×18″	10	6	2⅝″	2	4598T84	767.71	4598T87♠	873.32	4598T76	47.49
Counter-Height Cabinets										
24″×44″×18″	7	3	2⅝″	1	4598T88	477.68	4598T89♠	519.52	4477T86	40.93
43″×44″×18″	10	4	3″	2	4598T5▲	752.09	4598T6▲	828.35	4477T8	47.05

● Includes bottom shelf. ♠ Cabinet is 2″ taller than listed height.
▲ Also has a hasp for a padlock (not included); max. shackle dia. is ⅜″.

Aerosol Can Storage Cabinets

Two slide-out shelves are specifically designed to store up to 24 aerosol cans and offer easy access to cans in the back. Holders fit cans up to 2¾″ Dia. × 10″ Ht. Cabinets can sit on the floor or on a bench. Shipped assembled.

Cabinet for aerosol cans is made of 20-ga. steel. Door has two surface-mount hinges and a lock with two keys. Color is light gray. Does not meet NFPA Code 30 or OSHA requirements.

Safety cabinet for aerosol cans is made of 18-ga. steel and has double-wall construction with 1½″ of air space between walls. Shelves are 24-ga. galvanized steel. Has a connection for a ground wire and capped vents with built-in flash arrester. Door has a piano (continuous) hinge, three-point latch, and a locking handle with two keys. Handle also has a hasp that accepts a padlock (not included) with a max. shackle dia. of ⅜″. Door sill is raised at least 2″ to retain spills. Cabinet is yellow with a "Flammable" label on the front. Meets NFPA Code 30 and OSHA requirements.

Safety Cabinet for Aerosol Cans

Overall Size, Wd.×Ht.×Dp.	Cans per Cabinet	No. of Shelves	No. of Doors		Each
Cabinet for Aerosol Cans					
18″×26″×18″	24	2	1	4975T11	$171.35
Safety Cabinet for Aerosol Cans					
21″×27″×18″	24	2	1	4938T1	803.55

For information about safety cabinets for flammables and combustibles, see page 1620.

Safety Cabinets for Flammables and Combustibles in 55-Gallon Drums

Vertical Storage Cabinet (With Optional Spill Control Pallet)

Horizontal Storage Cabinet (With Optional Drum Stand)

Perfect for storing and securing 55-gallon drums. Made of 18-ga. steel and have double-wall construction with 1½″ of air space between walls. All include a connection for a ground wire and capped vents with built-in flash arrester. The two doors have piano (continuous) hinges; cabinets have a three-point latch and a locking handle with two keys. Door sills are raised at least 2″ to retain spills. Leveling feet compensate for uneven floors. Color is yellow. Meet NFPA Code 30 and OSHA requirements. Welded and shipped assembled.

Cabinets ***with self-closing hinged doors*** have fusible links that melt at 165°F, causing doors to close.

Vertical Storage Cabinets— Roller bearings on the inside bottom make loading and removing cans and drums quick and easy. All have an adjustable shelf for storing 5-gallon cans; shelf is made of galvanized steel for added corrosion resistance. Cabinets have "Flammable: Keep Fire Away" and "Hazardous Waste" labels on the front. All are FM approved.

An *optional spill control pallet* (sold separately) can be placed under cabinets for extra spill containment. Made of polyethylene. Pallets are 6¼″ high and bring vertical storage cabinets into compliance with EPA 40 CFR 264.175 and Uniform Fire Code 7901.8.5.

Horizontal Storage Cabinets— Cabinets have a track to guide an *optional drum stand* (sold separately) into position as well as space for a drip can. All are marked with a "Flammable: Keep Fire Away" label on the front. The handle also has a hasp that accepts a padlock (not included) with a max. shackle dia. of ⅜″.

Optional Ramp— Made of steel. Use this 24½″ Wd.×28″ Dp. ramp for more efficient loading and unloading. Color is yellow.

Overall Size, Wd.×Ht.×Dp.	No. per Cabinet 55-gal. Drums	5-gal. Cans	Shelf Adjustment	With Hinged Doors	Each	With Self-Closing Hinged Doors	Each	Extra Shelves	Each
Vertical Storage Cabinets									
31″×65″×31″	1	1	2⅝″	45885T71	$756.22	45885T73♦	$869.91	45885T55	$85.00
56″×65″×31″	2	2	2⅝″	45885T72	1,384.46	45885T74♦	1,486.88	45885T56	89.72
Optional Spill Control Pallet for 1-Drum Cabinets (82-gal. capacity)						45885T4	Each		$381.99
Optional Spill Control Pallet for 2-Drum Cabinets (100-gal. capacity)						45885T6	Each		$439.03
Horizontal Storage Cabinets									
30″×50″×48″	1	—	—	9877T15	938.90	9877T16	1,294.65	—	—
Optional Drum Stand						2301T9	Each		$140.06
Optional Ramp— *For Vertical and Horizontal Storage Racks*						9877T21	Each		$126.53

♦ Cabinet is 2″ taller than listed height.

Outdoor Cabinets for 55-Gallon Drums

Two-Drum Polyethylene Cabinet

Three-Drum Steel Cabinet

Keep your workplace safe and free up valuable floor space by storing drums outdoors. A secondary reservoir holds leaks from damaged drums and has removable grating for easy sump cleaning. All cabinets have forklift channels.

Polyethylene Cabinets— All are weatherproof and UV resistant. The roll-top door is ideal when there isn't room for swing-open doors. Doors lock with a padlock (not included); shackle must be at least 1″ long with a maximum diameter of 5⁄16″. Cabinets are yellow; door is gray. Removable grating is black polyethylene. Shipped unassembled.

Steel Cabinets— Made of 16-ga. steel and have double-wall construction with 3″ of air space between walls. They have static-grounding connections (two inside, two outside), air vents, and an explosion-relief panel on the rear wall, which releases at 20 lbs. per sq. ft. Each has a fully hinged door, a locking handle with two keys, and an adjustable anchor rod to hold door open. Color is gray. The removable grating is made of galvanized steel. Four bolt-down plates with ⅞″ mounting holes allow anchoring. Meet NFPA Code 30 and OSHA requirements and are FM approved. Welded and shipped partially assembled.

Overall Size, Wd.×Ht.×Dp.	55-gal. Drums per Cabinet	Reservoir Cap., gal.	No. of Doors	Forklift Channel Size, Wd.×Ht.		Each
Polyethylene Cabinets						
60″× 72″×36″	2	58	1	6⁵⁄₁₆″×4″	5375T45	$797.74
65″× 69″×58″	4	66	1	8½″ ×2¾″	5375T46	1,087.30
Steel Cabinets						
60″× 85″×60″	3	77	1	7½″ ×3½″	4555T61	4,463.10
84″×102″×60″	5	114	1	7½″ ×3½″	4555T62	4,997.74

Self-Closing Door Conversion Kits for Safety Cabinets

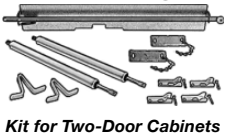

Kit for Two-Door Cabinets

Use these kits to convert most hinged safety cabinets into a cabinet with self-closing hinged doors. They have fusible links that melt when temperatures reach 165°F, causing doors to close automatically. When properly installed, kits help you to comply with city, county, or state Uniform Fire Codes that require self-closing hinged doors. All parts and installation templates are included. Can be used on FM approved cabinets.

Kit for One-Door Cabinets— Fits cabinet sizes: 17″ Wd.×22″ Ht.×17″ Dp.; 23¼″ Wd.×35″ Ht.×18″ Dp.; and 24″ Wd.×44″ Ht.×18″ Dp.

44775T24 ..... **Each** $77.58

Kit for Two-Door Cabinets— **To Order.** Please specify cabinet size: 34″ Wd.×65″ Ht.×34″ Dp.; 35″ Wd.×35″ Ht.×22″ Dp.; 43″ Wd.×44″ Ht.×12″ Dp.; 43″ Wd.×44″ Ht.×18″ Dp.; and 43″ Wd.×65″ Ht.×18″ Dp.

44775T25 ..... **Each** $199.48

Refrigerators and Freezers for Flammables

Refrigerator

Definitely not your typical household appliances—these are built for long-lasting safety and service in your laboratory or plant. Exterior is steel with a white finish; interior is easy-to-clean plastic. The doors and sides are filled with polyurethane foam insulation for energy efficiency. Shelves are removable and adjustable. Both have a 6-ft. power cord with three-prong plug. Both meet OSHA requirements and are UL listed. Overload, relay, and thermostat are totally enclosed. Shipped assembled.

The ***refrigerator*** runs on 2.5 amps; operates on 115 VAC, 60 Hz; and meets NFPA Code 99. Shelves adjust on 1¾″ centers. The ***refrigerator/freezer*** runs on 1.9 amps; operates on 120 VAC, 60 Hz; and meets NFPA Code 45 and Code 99. Shelves adjust on 1½″ centers.

Overall Size, Wd.×Ht.×Dp.	Cap., cu. ft.	Temp. Range of Refrigerator	Temp. Range of Freezer	No. of Shelves	No. of Doors	Defrost		Each
Refrigerator								
23⅞″×34″ ×26″	6.1	33° to 45°F	—	2	1	Automatic	46215T31	$1,874.32
Refrigerator/Freezer								
23½″×60¾″×30″	10.1	30° to 46°F	–4° to +10°F	3	2	Manual	46215T37	2,948.35

Safety Cabinets for Acids/Corrosives

Protect your work environment from moderate and flammable corrosives. Cabinets are 18-ga. steel and have double-wall construction with 1½″ of air space between walls. They include polyethylene shelf-liner trays. Use cabinets with the Optional Polyethylene Cabinet (sold separately) and you can store harsher liquids, such as hydrochloric, nitric, phenol, or sulfuric acids.

All shelves are adjustable, except bottom shelf. Cabinets include a connection for a ground wire and capped vents with built-in flash arrester. They have a three-point latch and a locking handle with two keys and a hasp for a padlock (not included) with a max. shackle dia. of ⅜″. Door sills are raised at least 2″ to contain spills. Cabinets are blue and are marked with an "Acid" label. Meet NFPA Code 30 and OSHA requirements and are FM approved, unless noted. Welded and shipped assembled.

Cabinets ***with hinged*** and ***self-closing hinged doors*** have doors with piano (continuous) hinges. Cabinets ***with self-closing doors*** have fusible links that melt when temp. reaches 165°F, causing doors to close automatically.

Optional Polyethylene Cabinet— Use inside 43″ wide cabinets (except 9988T12) to separate acids or add corrosion resistance. Cabinet is blue and marked with an "Acids/Corrosives" label. Shipped assembled.

Full-Height Cabinet with Hinged Doors

Bench-Top Cabinet with Hinged Doors

Optional Polyethylene Cabinet

Cabinet Style	Overall Size, Wd.×Ht.×Dp.	Cans per Shelf 5-gal.	Cans per Shelf 1-gal.	No. of Shelves●	Shelf Adjustment	No. of Doors	Cabinets	Cabinets Each	Extra Shelves	Extra Shelves Each	Extra Shelf-Liner Trays	Extra Shelf-Liner Trays Each
With Hinged Doors												
Bench Top	17″×22″×17″	–	4	2	3″	1	9988T32★	$487.82	9988T6	$24.47	9988T7	$37.48
Bench Top	43″×18″×18″	3	7	1	–	2	9988T12	571.93	—	—	—	—
Bench Height	35″×35″×22″	3	9	2	3″	2	9988T5	723.51	9988T81	48.46	9988T11	72.77
Counter Height	43″×44″×18″	3	7	2	3″	2	9988T1	797.81	4477T8	47.05	9988T4	67.92
Full Height	34″×65″×34″	5	15	3	3″	2	9988T14	1,245.90	4477T9	78.26	9988T8	58.83
Full Height	43″×65″×18″	3	7	3	3″	2	9988T2	959.44	4477T8	47.05	9988T4	67.92
With Self-Closing Hinged Doors												
Counter Height	43″×44″×18″	3	7	2	3″	2	9988T28	919.30	4477T8	47.05	9988T4	67.92
Full Height	34″×65″×34″	5	15	3	3″	2	9988T17	1,406.04	4477T9	78.26	9988T8	58.83
Full Height	43″×65″×18″	3	7	3	3″	2	9988T18	1,055.88	4477T8	47.05	9988T4	67.92
With Self-Closing Sliding Doors												
Counter Height	43″×44″×18″	3	8	2	3″	1	9988T15	862.46	4477T8	47.05	9988T4	67.92
Full Height	43″×65″×18″	3	8	3	3″	1	9988T16	986.45	4477T8	47.05	9988T4	67.92
Optional Polyethylene Cabinet												
—	38″×18″×13″	3	5	1	–	2	4180T3	240.95	—	—	—	—

● Includes bottom shelf. ★ Not FM approved.

Plastic Safety Cabinets for Acids/Corrosives

Safely store the harshest liquids and provide superior protection from corrosion—even acid vapors. Doors lock with a padlock (not included) with a max. shackle diameter of 5⁄16″. Shipped assembled.

Bench Top— Cabinet is made of white polypropylene and is safe for clean rooms. Has a polypropylene door hinge and a 2″ well in the base to contain spills. Marked with an "Acids/Corrosives" label.

Bench Height— Cabinet is made of blue polyethylene and includes capped vents. A divider separates the interior into two compartments, and a grooved top doubles as a work surface. Two half-width shelves adjust on 2¼″ centers, and molded shelves on the inside of the doors are handy for storing small containers. Cabinet has two removable trays (one on each side) to catch small spills, and leveling feet to compensate for uneven floors. Includes two labels, "Acid" and "Corrosives."

Bench Top

Bench Height

Cabinet Style	Overall Size, Wd.×Ht.×Dp.	1-gal. Cans per Cabinet	No. of Shelves●	No. of Doors	Cabinets	Cabinets Each	Extra Shelves	Extra Shelves Each
Bench Top	12″×16″×16″	2	1	1	45315T47	$398.55	—	—
Bench Height	36″×35″×23½″	6	3	2	43325T45	803.16	43325T46	$26.33

● Includes bottom shelf.

Storage Cabinets for Gas Cylinders

Avoid dangerous rolling or tipping of volatile gas cylinders. These cabinets have fixed shelves (where applicable). Doors have welded hinges and a hasp for a padlock (not included); shackle must be at least 2″ long with a maximum diameter of ¼″ for steel cabinets and 1″ for aluminum cabinets. All include either a "Flammable: Keep Away From Flame" or "Flammable: Keep Fire Away" label. Meet OSHA 1910.110 and NFPA 58 requirements.

Cabinets for horizontal storage have slotted shelves. *Cabinets for vertical storage* have solid shelves (where applicable).

Steel cabinets have 16- to 13-ga. expanded metal sides, a solid 12-ga. steel top, and a 3⁄16″ thick steel frame, unless noted. Each foot has a 9⁄16″ bolt hole for mounting to the floor. Color is yellow. Choose unassembled or welded and assembled cabinets.

Aluminum cabinets are corrosion resistant. Made of 14-ga. solid aluminum with a 1⁄16″ thick aluminum frame. Each foot has a ½″ bolt hole for mounting to the floor. Cabinets are welded and shipped assembled.

Cabinet for Horizontal Storage (Steel)

Cabinet for Vertical Storage

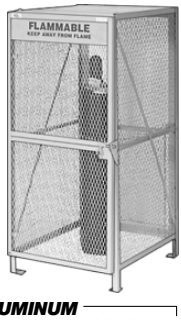

Cylinders per Cabinet	No. of Shelves●	No. of Doors	STEEL Unassembled Overall Size, Wd.×Ht.×Dp.	STEEL Unassembled Each	STEEL Welded and Assembled Overall Size, Wd.×Ht.×Dp.	STEEL Welded and Assembled Each	ALUMINUM Welded and Assembled Overall Size, Wd.×Ht.×Dp.	ALUMINUM Welded and Assembled Each
For Horizontal Storage of 20-, 30-, 33-, and 40-lb. Cylinders of LP Gas (Unless Noted)								
4	2	1	32½″×37″×39″	9993T21 $443.94	33″×39″×38½″	9993T14♠ $449.36	30″×33″×32″	4751T41♣▲ $415.47
6	2	1	—	—	—	—	43″×33″×32″	4751T45♣▲ 527.10
8	4	1	32½″×70″×39″	9993T22 644.80	33″×70″×38½″	9993T11♠ 691.24	30″×65″×32″	4751T42♣▲ 644.48
12	4	1	49″ ×70″×39″	9993T23 768.08	51″×70″×38½″	9993T12♠▲ 812.44	43″×65″×32″	4751T43♣▲ 878.90
16	4	2	65″ ×70″×39″	9993T24 1,026.00	62″×70″×38½″	9993T13♠ 1,056.05	60″×65″×32″	4751T44♣ 1,072.58
For Vertical Storage of 20- and 33-lb. Cylinders of LP Gas								
2	1	2	—	—	31″×33″×16″	9993T25★ 362.91	31″×33″×16″	4751T51 360.53
For Vertical Storage of Up to 200-lb. Cylinders of Acetylene, MAPP, Oxygen, and Similar Gases								
5-10	–	1	32½″×70″×39″	4669T3 516.35	33″×70″×38″	4669T2♠ 590.48	—	—
10-20	–	2	65″ ×70″×39″	4669T4 795.45	60″×70″×38″	4669T1♠ 904.29	—	—

● Includes bottom shelf. ♠ Feet have ⅜″ bolt holes. ♣ Only for 20- and 30-lb. cylinders of LP gas. ▲ Has two doors.
★ Made of 14-ga. solid steel with a 1⁄16″ thick steel frame. Feet have ½″ bolt holes. Maximum shackle diameter is 1″.

Shelf Brackets

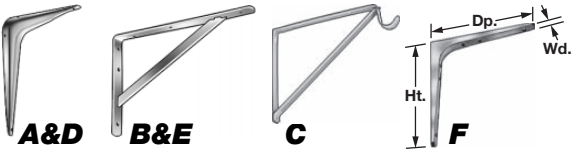

The choice for general shelving applications. Mounting screws are not included, except where noted.

Style C has a rod holder that holds a rod with a maximum diameter of 1 3/8″ (not included). Rod holder capacity is 250 lbs. per pair of brackets.

Style E **To Order:** Please specify color: black or white.

Style F include mounting screws.

Dp.	Ht.	Wd.	Cap. per Pair, lbs.	Gauge	Screw Size		Each■
(A) Light Duty Steel— *Gray*							
3 3/16″	5 3/16″	1 3/8″	200	22	#7	**1735A51**	$0.61
5 3/16″	7 1/8″	1 5/8″	200	22	#7	**1735A53**	1.00
7 1/8″	9 3/16″	1 5/8″	200	22	#7	**1735A54**	1.26
9 1/8″	11 1/8″	1 11/16″	200	22	#7	**1735A55**	1.98
11 1/8″	13 1/8″	1 7/8″	200	22	#7	**1735A56**	2.82
(B) Medium Duty Steel— *White*							
8 3/4″	10 1/4″	1″	500	14	#10	**47095T77**	2.91
18 3/16″	13 5/8″	1 1/8″	500	11	#10	**47095T78**	11.11
(C) Medium Duty Steel with Rod Holder— *White*							
10 3/4″	9 3/8″	1″	300	13	#10	**47055T28**	2.88
(D) Heavy Duty Steel— *Black*							
12″	8″	1 1/2″	1,000	11	#8	**2217T21**	13.82
24″	18″	1 1/2″	1,000	11	#8	**2217T23**	27.94
(E) Heavy Duty Steel— *Black or White*							
11 13/16″	8″	1 3/16″	1,000	9	5/16″	**2736A1**	8.77
15 3/4″	10″	1 3/16″	1,000	9	5/16″	**2736A2**	11.00
19 11/16″	13 7/64″	1 3/16″	1,000	9	5/16″	**2736A3**	13.17
21 21/32″	14 7/32″	1 3/16″	1,000	9	5/16″	**2736A4**	15.89
(F) Type 304 Stainless Steel— *Satin*							
3 15/16″	4 11/16″	9/16″	88	16	#7	**19135A22**	17.15
5 13/16″	7 1/8″	9/16″	110	16	#7	**19135A23**	25.87
7 13/16″	9 7/16″	11/16″	122	16	#7	**19135A24**	39.51
9 3/8″	11 13/16″	7/8″	154	16	#7	**19135A25**	46.01
15 3/4″	18 7/8″	1 3/16″	362	16	#10	**19135A27**	146.66

■ Prices are 10% lower when you buy in quantities of 10 or more.

Fold-Away Shelf Brackets

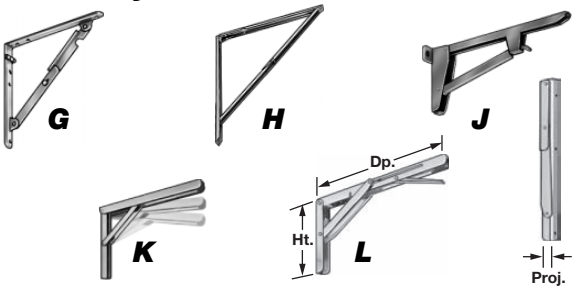

Fold these brackets down and out of the way when not in use. Mounting screws are not included, except where noted.

Styles G and ***H*** include mounting screws.

Style K have a spring-loaded release lever that lets you create angled shelving at 70°, 80°, and 90°.

Style L is NSF certified. Includes a latch to lock open.

Dp.	Ht.	Proj.	Cap. per Pair, lbs.	Gauge	Screw Size		Each
(G) Light Duty Steel— *Gray*							
8″	8″	1 11/32″	Not Rated	15	#8	**1738A1**	$11.55
12″	12″	1 11/32″	Not Rated	15	#8	**1738A2**	13.80
16″	16″	1 11/32″	Not Rated	15	#8	**1738A3**	14.01
(H) Light Duty Steel— *Zinc Plated*							
23 3/4″	21″	1 3/8″	200	18-16	#10	**1780A2**	29.87
(J) Heavy Duty Steel— *Gray*							
13″	5 1/4″	2″	330	11-8	5/16″	**47025T33**	71.69
16 17/32″	7 1/16″	2 11/32″	1100	11-8	3/8″	**47025T43**	105.87
18 7/8″	6″	2″	330	11-8	5/16″	**47025T35**	78.84
22 13/16″	8 7/8″	2 11/32″	1100	11-8	3/8″	**47025T45**	129.18
(K) Multi-Position Steel— *Zinc Plated*							
11 13/16″	8″	7/8″	750	14	#10	**1294A51**	21.20
15 3/4″	10 5/8″	1 1/16″	750	14	#14	**1294A52**	30.18
(L) Type 304 Stainless Steel— *Polished*							
12″	6 1/2″	1 9/64″	660	16	#10	**19085A37**	42.05

Adjustable Standards, Shelf Brackets, and Shelves

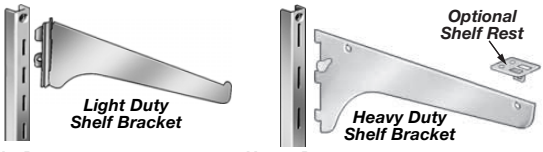

Light Duty Standard ***Heavy Duty Standard***

Unlike shelf brackets alone, these single-slotted standard and bracket combinations let you easily adjust the spacing between shelves. Simply mount the standards to wall studs, and add brackets with the same duty rating (light or heavy) and material, and your choice of shelves.

Type 304 stainless steel has excellent corrosion resistance. Ideal for food-service areas and corrosive environments. All have a satin finish.

Standards

All have mounting holes on 12″ centers. *Light duty standards* have 9/16″ Ht.×1/8″ Wd. slots on 1″ centers. Mount with #8 screws (not included). *Heavy duty standards* have 1 1/16″ Ht.×1/8″ Wd. slots on 2″ centers. Mount with #10 screws (not included).

To Order: For steel standards, please specify zinc plated or white.

Lg.	Wd.×Dp.		Each■
Light Duty Steel— *16 Ga.*			
12″	5/8″×13/32″	**1736A8**	$2.55
24″	5/8″×13/32″	**1736A7**	2.82
36″	5/8″×13/32″	**1736A1**	4.20
48″	5/8″×13/32″	**1736A2**	5.56
60″	5/8″×13/32″	**1736A3**	6.83
72″	5/8″×13/32″	**1736A4**	7.78
84″	5/8″×13/32″	**1736A42**★	9.58
96″	5/8″×13/32″	**1736A6**	10.93
Heavy Duty Steel— *12 Ga.*			
24″	7/8″×11/16″	**1752A41**	7.76
36″	7/8″×11/16″	**1752A42**	11.67
Heavy Duty Steel (Cont.)			
48″	7/8″×11/16″	**1752A43**	$15.55
60″	7/8″×11/16″	**1752A44**	19.27
72″	7/8″×11/16″	**1752A45**	23.16
84″	7/8″×11/16″	**1752A46**	28.30
96″	7/8″×11/16″	**1752A47**	31.09
Heavy Duty Type 304 SS— *14 Ga.*			
24″	7/8″×11/16″	**1713A41**	26.62
36″	7/8″×11/16″	**1713A42**	35.40
48″	7/8″×11/16″	**1713A43**	44.37
60″	7/8″×11/16″	**1713A44**	55.22
72″	7/8″×11/16″	**1713A45**	66.22

■ Prices are 10% lower when you buy in quantities of 10 or more.
★ Not available in white.

Shelf Brackets

Light duty brackets have a 1/4″ lip that secures shelves. *Heavy duty brackets* have a nylon locking lever to secure brackets to standards and two mounting holes to attach to shelves.

To Order: For steel brackets, please specify zinc plated or white.

Accepts Shelf Dp.	Cap. per Pair, lbs.		Each■
Light Duty Steel— *16 Ga.*			
4″	400	**1737A9**	$2.04
6″	320	**1737A1**	2.07
8″	320	**1737A2**	2.09
10″	240	**1737A3**	2.46
12″	190	**1737A4**	2.53
14″	200	**1737A5**	2.87
16″	190	**1737A6**	3.42
18″	160	**1737A7**	3.89
20″	120	**1737A8**	4.61
Heavy Duty Steel— *12 Ga.*			
8″	880	**1752A71**	6.24
10″	760	**1752A72**	6.53
12″	1060	**1752A73**	8.16
Heavy Duty Steel (Cont.)			
14″	910	**1752A74**	$8.83
16″	720	**1752A75**	9.63
18″	540	**1752A76**	10.11
20″	770	**1752A77**	11.00
22″	620	**1752A78**	12.51
24″	540	**1752A79**	15.05
Heavy Duty Type 304 SS— *14 Ga.*			
8″	560	**1713A71**	14.80
10″	420	**1713A72**	17.52
12″	400	**1713A73**	19.07
14″	340	**1713A74**	22.13
16″	340	**1713A75**	24.53
20″	260	**1713A76**	31.33

■ Prices are 10% lower when you buy in quantities of 10 or more.

Optional shelf rest is for heavy duty steel brackets. Made of 16-ga. steel, it attaches to the top of the brackets to stabilize shelving such as particleboard. Mounting screws included. Sold in packages of 10.

To Order: For optional shelf rest, please specify zinc-plated or white.

1752A39 ..... **Per Pkg.** $6.67

Shelves for Heavy Duty Standards and Shelf Brackets

For Heavy Duty Standards and Shelf Brackets Only

Made of 18-ga. galvanized steel or Type 304 stainless steel with a satin finish. Shelves have rolled front and side edges and a 1″ high backsplash. Mounting fasteners to attach shelves to shelf brackets included.

Note: When selecting shelves, make sure they are the same depth as the shelf brackets (not included) for proper fit.

Dp.	Wd.	Cap., lbs.	***Steel***	Each	***Type 304 SS***	Each
8″	32″	200	**2129A11**	$49.42	**2174A31**	$94.32
10″	32″	200	**2129A12**	52.08	**2174A32**	104.20
12″	32″	200	**2129A13**	54.54	**2174A33**	113.40
14″	32″	200	**2129A14**	59.10	**2174A34**	134.56
16″	32″	200	**2129A15**	70.12	**2174A35**	146.80
20″	32″	200	**2129A17**	74.14	**2174A37**	151.48

Warning! ***Load capacity may be reduced due to wall material, shelf material, and fastener choice.***

High-Stability Adjustable Standards and Shelf Brackets

A double-slotted design on these standards and brackets offers additional stability and support. **To Order:** Please specify zinc plated or white.

Standards— Made of 16-ga. steel. They have 1″ Ht.×1/8″ Wd. slots on 1″ centers. Mounting holes are on 12″ centers. Mount with #10 screws (not included).

Shelf Brackets— Made of 16-ga. steel. Brackets have a 1/8″ lip that secures your shelving.

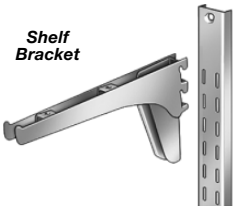

Standards

Lg.	Wd.×Dp.		Each■
24″	1 1/4″×1/2″	1751A41	$4.43
36″	1 1/4″×1/2″	1751A42	5.97
48″	1 1/4″×1/2″	1751A43	8.00
60″	1 1/4″×1/2″	1751A44	9.87
72″	1 1/4″×1/2″	1751A45	11.98
84″	1 1/4″×1/2″	1751A46	13.81
96″	1 1/4″×1/2″	1751A47	15.01

Shelf Brackets

Accepts Shelf Dp.	Cap. per Pair, lbs.		Each■
8″	680	1751A51	$6.89
10″	570	1751A52	7.23
12″	520	1751A53	7.75
14″	480	1751A54	8.15
16″	440	1751A55	8.64
18″	380	1751A56	9.26
20″	360	1751A57	10.30
22″	320	1751A58	14.62
24″	320	1751A59	15.47

■ Prices are 10% lower when you buy in quantities of 10 or more.

Adjustable Standards and Supports for Cabinets and Bookcases

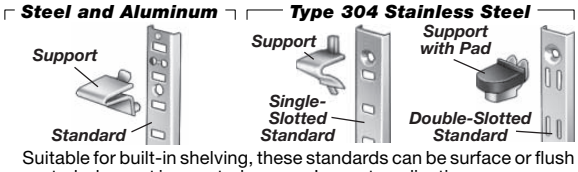

Suitable for built-in shelving, these standards can be surface or flush mounted when set in a routed groove. In most applications, we recommend using four standards and four supports (sold separately).

Type 304 Stainless Steel— Offers excellent corrosion resistance. Ideal for use in corrosive environments. All have a satin finish.

Steel and Aluminum Standards

Standards are 5/8″ Wd.×3/16″ Dp. They have 1/8″ Ht.×9/32″ Wd. slots on 1/2″ centers. Mounting holes are on 6″ centers. Mount with #3 screws (not included).

Lg.	Zinc-Plated Steel (19 Ga.)	Each■	White-Painted Steel (19 Ga.)	Each■	Aluminum (17 Ga.)	Each■
18″	1748A49	$1.08	1748A22	$1.69	1748A79	$1.00
24″	1748A56	1.31	1748A23	1.78	1748A78	1.22
36″	1748A61	1.94	1748A24	2.75	1748A81	1.56
48″	1748A62	2.53	1748A25	3.67	1748A82	2.50
60″	1748A63	3.25	1748A26	4.47	1748A83	3.03
72″	1748A64	3.81	1748A27	5.42	1748A84	3.64
84″	1748A65	4.44	1748A28	6.28	1748A85	4.28

■ Prices are 10% lower when you buy in quantities of 10 or more.

Steel and Aluminum Supports— 100/Pkg.

Steel supports have a capacity of 240 lbs. per four supports. *Aluminum supports* have a capacity of 160 lbs. per four supports.

Wd.×Proj.	Zinc-Plated Steel (19 Ga.)	Per Pkg.	White-Painted Steel (19 Ga.)	Per Pkg.	Aluminum (17 Ga.)	Per Pkg.
5/8″×3/4″	1748A93	$13.33	1748A41	$14.81	1748A95	$14.89

Type 304 Stainless Steel Standards

Standards are 19/32″ Wd.×3/16″ Dp. *Single-slotted standards* have 1/8″ Ht.×7/32″ Wd. slots on 19/32″ centers and mounting holes on 7 11/16″ centers. *Double-slotted standards* have 11/32″ Ht.×1/16″ Wd. slots on 7/8″ centers and mounting holes on 6 15/16″ centers. Mount with #5 screws (not included).

	Lg.		Each
Single Slotted	71 5/8″	11865A11	$11.18
Double Slotted	71 5/8″	11865A12	13.65

Type 304 Stainless Steel Supports— 12/Pkg.

Supports for single-slotted standards have a capacity of 44 lbs. per four supports. *Supports for double-slotted standards* have a capacity of 99 lbs. per four supports and have a rubber pad for cushioning.

	Wd.×Proj.		Per Pkg.
Single Slotted	15/32″×3/4″	11865A21	$8.98
Double Slotted	19/32″×3/4″	11865A22	14.95

Versatile-Mount Standards and Shelf Brackets

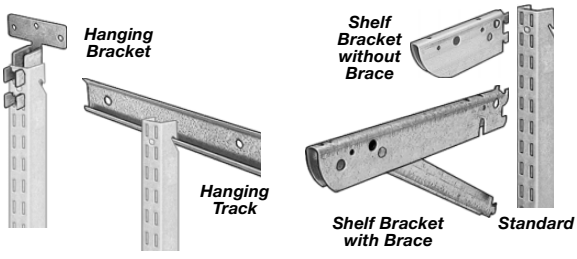

We know it's not always easy to find wall studs; that's why we offer these standards that can be mounted to a wall or hung from a specially designed bracket or track.

Hanging Bracket for Standards— Made of 13-ga. galvanized steel, this bracket can be mounted to a top plate or joist and allows you to hang a standard. Mounting screws included.

Hanging Tracks for Standards— Made of 14-ga. galvanized steel, these tracks can be mounted to studs or a top plate and allow you to quickly hang standards at any point along their length. Mounting holes are on 8″ centers. Mount with #10 screws (not included).

Standards— Made of 14-ga. galvanized steel. Standards have 9/16″ Ht.×1/8″ Wd. slots on 1″ centers. Mounting holes are on 12″ centers. When mounting to a wall, use #10 screws (not included). Standards also have an angled back slot so you can attach them to the hanging track.

Shelf Brackets— All easily attach to standards. *Brackets without brace* are made of 14-ga. galvanized steel. *Brackets with brace* are made of 16-ga. galvanized steel and support heavier loads.

Hanging Bracket

Ht.	Wd.		Each■
3″	2 1/2″	1938A23	$2.58

Hanging Tracks

Lg.	Ht.	Dp.		Each■
40″	1 11/16″	3/8″	1938A21	$5.25
80″	1 11/16″	3/8″	1938A22	9.58

Standards

Lg.	Wd.	Dp.		Each■
24″	1 1/4″	1″	1938A11	$4.06
48″	1 1/4″	1″	1938A12	7.95
72″	1 1/4″	1″	1938A13	11.85

Shelf Brackets

Dp.	Cap. per Pair, lbs.		Each■
Without Brace			
5 1/4″	300	1938A31	$2.93
10″	300	1938A32	3.55
13 7/8″	300	1938A33	4.15
With Brace			
10″	600	1938A41	4.28
12 7/8″	600	1938A42	4.90
19 7/8″	600	1938A43	6.90

■ Prices are 10% lower when you buy in quantities of 10 or more.

Shelf Supports

Designed to hold shelves, these supports fit into the mounting holes of cabinets and bookcases. They are not load rated. Package quantity is 50.

Stud Size	Wd.	Proj.	Material		Per Pkg.
1/4″	1/2″	3/4″	Nickel-Plated Steel	1741A11	$7.11
1/4″	1/2″	3/4″	Brass-Plated Steel	1741A12	7.40
5 mm	1/2″	3/4″	Nickel-Plated Steel	1741A13	6.62
5 mm	9/16″	9/16″	Brown Plastic	1741A19	8.55

Laminated Particleboard Shelves

Use these stain- and scratch-resistant shelves on our brackets and supports or for existing applications. Have a laminate finish on all sides, unless noted. **To Order:** Please specify oak woodgrain or white, unless noted.

Dp.	Wd.		Each♦
5/8″ Thick., 200-lb. Capacity			
6″	24″	50385T22♣	$5.86
8″	24″	50385T24	6.24
8″	36″	50385T2	6.76
8″	48″	50385T29	10.79
10″	24″	50385T28	6.74
10″	36″	50385T3	8.42
10″	48″	50385T5	11.23
10″	60″	50385T32	15.83
10″	72″	50385T7	16.83
12″	24″	50385T9	6.76
12″	36″	50385T4	10.09

Dp.	Wd.		Each♦
5/8″ Thick., 200-lb. Capacity (Cont.)			
12″	48″	50385T6	$13.48
12″	60″	50385T1	16.83
12″	72″	50385T8	20.17
16″	36″	50385T25♣	14.91
16″	48″	50385T26♣	19.92
16″	60″	50385T27♣	24.85
3/4″ Thick., 300-lb. Capacity			
12″	36″	50385T45▲	15.41
12″	48″	50385T46▲	19.21
20″	36″	50385T47▲	26.42

♦ Prices are 10% lower when you buy in quantities of 5 or more.
♣ White finish only. ▲ The back of the shelf is unfinished.

Warning! Load capacity may be reduced due to wall material, shelf material, and fastener choice.

Wall-Mount Shelving with Solid Shelves

The solid shelf of this unit has seamless construction, a 1½″ high backsplash, and a rolled front edge, leaving bacteria nowhere to hide.

Shelving is made of 18-ga. steel. All shelving is corrosion resistant. ***Type 304 stainless steel*** is perfect for food-service areas as well as food-processing and chemical plants.

Shelving up to 72″ wide includes two wall brackets with four 5/16″ dia. mounting holes. Shelving 84″ to 108″ wide includes three wall brackets with six 5/16″ dia. mounting holes. 120″ wide shelving includes four wall brackets with eight 5/16″ dia. mounting holes. Mounting fasteners not included.

All shelving is NSF certified. Shipped unassembled.

Wd.	Cap. per Shelf, lbs.	8″ Ht.×12″ Dp.	Each	12″ Ht.×16″ Dp.	Each
Galvanized Steel Shelving					
24″	100	**4584T21**	$65.48	**4584T24**	$77.16
36″	100	**4584T12**	72.75	**4584T13**	85.75
48″	100	**4584T6**	84.61	**4584T14**	96.82
60″	100	**4584T7**	93.36	**4584T15**	107.73
72″	100	**4584T8**	103.07	**4584T16**	119.18
84″	200	**4584T9**	121.59	**4584T17**	141.52
96″	200	**4584T11**	130.61	**4584T18**	151.57
108″	200	**4584T22**	143.04	**4584T25**	164.21
120″	200	**4584T23**	157.29	**4584T26**	180.11
Type 304 Stainless Steel Shelving					
24″	100	**45855T34**	93.54	**45855T24**	112.25
36″	100	**45855T12**	103.93	**45855T13**	124.71
48″	100	**45855T6**	113.62	**45855T14**	142.04
60″	100	**45855T7**	129.57	**45855T15**	158.66
72″	100	**45855T8**	149.66	**45855T16**	178.75
84″	200	**45855T9**	182.21	**45855T17**	220.32
96″	200	**45855T11**	197.46	**45855T18**	235.57
108″	200	**45855T35**	220.86	**45855T25**	259.82
120″	200	**45855T36**	238.68	**45855T26**	278.02

Wall-Mount Shelving with Wire Shelves

Providing better ventilation and light penetration than solid shelves, the wire shelves of this unit also minimize dust buildup. Ideal for food-service areas, pharmaceutical plants, and clean rooms.

Shelving consists of two 1″ OD, 16-ga. posts with circular grooves every 1″ for easy shelf adjustment.

One-shelf units include four wall brackets, ***two-shelf*** units have six wall brackets, and ***three-shelf*** units have eight wall brackets. Each bracket has two 11/32″ dia. mounting holes. Mounting fasteners not included.

Shelving is NSF certified and meets MIL-S-40144E. Shipped unassembled.

Note: The overall capacity for each unit is 250 lbs.

Wd.×Dp.	One Shelf, 16″ O'all Ht.	Each	Two Shelves, 36″ O'all Ht.	Each	Three Shelves, 56″ O'all Ht.	Each
Chrome-Plated Steel Shelving						
24″×14″	**4717T61**	$121.77	**4717T62**	$223.79	**4717T63**	$311.32
24″×18″	**4717T74**	130.53	**4717T75**	240.65	**4717T76**	327.88
36″×14″	**4717T65**	127.13	**4717T66**	229.95	**4717T67**	298.74
36″×18″	**4717T78**	131.46	**4717T79**	242.51	**4717T81**	325.15
48″×14″	**4717T69**	133.01	**4717T71**	237.55	**4717T72**	328.19
48″×18″	**4717T83**	140.12	**4717T84**	259.83	**4717T85**	356.65
60″×14″	**4717T3**	140.12	**4717T4**	259.83	**4717T5**	356.65
60″×18″	**4717T7**	147.88	**4717T8**	275.30	**4717T9**	379.85
Type 304 Stainless Steel Shelving						
24″×14″	**4717T87**	294.72	**4717T88**	576.26	**4717T89**	835.48
24″×18″	**4717T45**	338.00	**4717T46**	641.81	**4717T47**	919.91
36″×14″	**4717T92**	293.14	**4717T93**	568.52	**4717T94**	854.63
36″×18″	**4717T49**	337.72	**4717T13**	654.71	**4717T14**	946.68
48″×14″	**4717T96**	332.19	**4717T97**	641.71	**4717T98**	928.42
48″×18″	**4717T18**	362.22	**4717T191**	707.96	**4717T211**	1,026.57
60″×14″	**4717T35**	372.68	**4717T55**	717.07	**4717T1**	1,050.43
60″×18″	**4717T29**	414.48	**4717T31**	800.21	**4717T33**	1,176.28

Low-Profile Shelving

Polyethylene

Aluminum and Type 304 Stainless Steel

Chrome-Plated Steel and Type 304 Stainless Steel Wire

Also known as dunnage racks, this shelving is perfect for storing bulky items just off the floor. All except the polyethylene have an open design that increases air circulation and minimizes dust collection. Shelving is NSF certified.

Polyethylene shelving has one-piece construction that is easy to wash or steam clean. Its slotted openings allow slight air circulation. Color is light gray. Shipped assembled.

Aluminum and ***Type 304 stainless steel shelving*** have all-welded construction. Shipped assembled. *Aluminum shelving* is made of 1½″ Wd.×1¾″ Ht. rectangular tubing. *Type 304 stainless steel shelving* is made of 1″ square, 18-ga. tubing.

Chrome-plated steel and ***Type 304 stainless steel wire shelving*** have 1″ OD, 16-ga. legs with leveling feet to compensate for uneven floors. Legs also have grooves every 1″ that allow you to adjust the height of the shelf. Shipped unassembled.

Overall Size, Wd.×Ht.×Dp.	Cap., lbs.	Each
Polyethylene Shelving		
36″×12″ ×22″	2,200	**9272T25** $104.31
48″×12″ ×22″	2,200	**9272T26** 117.80
60″×12″ ×22″	2,200	**9272T27** 135.83
Aluminum Shelving		
36″×12″ ×24″	2,500	**9272T35** 82.85
48″×12″ ×24″	2,500	**9272T36** 96.96
60″×12″ ×24″	2,000	**9272T37** 103.08
Type 304 Stainless Steel Shelving		
36″×12″ ×24″	2,500	**9272T45** 261.67
48″×12″ ×24″	2,500	**9272T46** 286.36
60″×12″ ×24″	2,000	**9272T47** 311.58
Chrome-Plated Steel Wire Shelving		
24″×14⅝″×18″	800	**9272T15** 76.78
36″×14⅝″×24″	800	**9272T17** 89.05
Type 304 Stainless Steel Wire Shelving		
24″×14⅝″×18″	800	**9272T16** 226.24
36″×14⅝″×24″	800	**9272T18** 262.42

Ultra-Light Duty Steel Shelving

Open Shelving

Closed Shelving

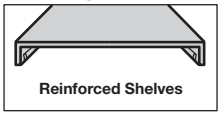

Reinforced Shelves

Made of light-gauge steel, this shelving is an ideal choice for your general storage needs. All units have 16-ga. angle posts and 22-ga. shelves that adjust on 1″ centers. Shelves are reinforced for added stability and attach with included shelf clips. Color is dark gray. Shipped unassembled.

Open shelving allows you to easily see and access stored materials. Includes back and side braces for added support.

Closed shelving has 24-ga. back and side panels to keep materials better contained.

Extra shelves include shelf clips.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	Shelving	Each	Extra Shelves	Each
Open Shelving						
36″×75″×12″	400	5	**4660T22**	$76.83	**4660T32**	$9.96
36″×75″×18″	400	5	**4660T23**	98.03	**4660T33**	13.65
36″×75″×24″	400	5	**4660T24**	124.46	**4660T34**	18.24
Closed Shelving						
36″×75″×12″	400	5	**4660T42**	135.81	**4660T32**	9.96
36″×75″×18″	400	5	**4660T43**	169.10	**4660T33**	13.65
36″×75″×24″	400	5	**4660T44**	208.38	**4660T34**	18.24

★ Includes top and bottom shelf.

Ultra-Light Duty Plastic Shelving

Made of plastic, this shelving will not rust, dent, peel, or chip. Units have 1 9/16″ OD tubular polyethylene posts and fixed polystyrene shelves spaced 15″ apart. The shelves are vented to prevent moisture and dust buildup as well as allow air to circulate. Color is beige. The shelving is quick and easy to assemble—no need for tools and fasteners. Shipped unassembled.

NSF-certified shelving has 6″ long legs with leveling feet. Excellent for food-service areas.

NSF-Certified Shelving

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★		Each
Standard Shelving				
36 1/4″×54 1/2″×18 1/8″	150	4	9076T65	$79.81
NSF-Certified Shelving				
36 1/4″×60 1/4″×18 1/8″	150	4	9076T66	141.62

★ Includes top and bottom shelf.

Light Duty Steel Shelving

Perfect for your light duty storage needs, this shelving comes in a variety of sizes and styles and can be customized with the ***accessories*** sold separately below.

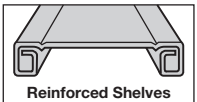

Reinforced Shelves

Shelves are reinforced for extra strength and adjust on 1″ centers. They attach to the posts using the included shelf clips. Choose *20-ga. shelves* for normal loads or *18-ga. shelves* for larger loads.

All shelving is dark gray and shipped unassembled.

Open shelving allows you to easily see and access your stored materials. Includes back and side braces for additional support.

Closed shelving has 24-ga. back and side panels to keep materials better contained. Also includes a base strip to prevent dust buildup underneath shelving.

Extra shelves include shelf clips. Nuts and bolts are sold separately below.

Open Shelving

Closed Shelving

Closed Shelving with Optional Dividers and Doors

Shelving

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	Open Shelving	Each	Closed Shelving	Each	Extra Shelves	Each
Shelving with 20-ga. Shelves								
36″×85″×12″	725	6	4586T11	$119.19	4586T14	$181.51	4586T17	$12.22
36″×85″×18″	750	6	4586T12	145.60	4586T15	204.30	4586T18	16.37
36″×85″×24″	775	6	4586T13	174.16	4586T16	248.36	4586T19	21.11
48″×85″×12″	525	6	4586T21	143.24	4586T24	216.99	4586T27	17.50
48″×85″×18″	540	6	4586T22	169.90	4586T25	269.35	4586T28	21.68
48″×85″×24″	550	6	4586T23	210.32	4586T26	323.27	4586T29	27.51
Shelving with 18-ga. Shelves								
36″×85″×12″	975	6	4955T21	139.75	4955T24	196.70	4955T11	16.44
36″×85″×18″	1,050	6	4955T22	170.35	4955T25	240.22	4955T12	21.26
36″×85″×24″	1,100	6	4955T23	187.26	4955T26	279.20	4955T13	26.94
48″×85″×12″	600	6	4955T31	170.78	4955T34	243.28	4955T14	22.49
48″×85″×18″	650	6	4955T32	201.98	4955T35	283.72	4955T15	27.50
48″×85″×24″	700	6	4955T33	249.98	4955T36	339.50	4955T16	33.50

★ Includes top and bottom shelf.

Accessories

Shelf Dividers—Create compartments within your shelving. Dividers are made of 22-ga. steel and adjust on 2″ centers across the width of the shelf. Shelf clips included.

Ht.	For 12″ Dp. Shelves	Each	For 18″ Dp. Shelves	Each	For 24″ Dp. Shelves	Each
6″	4586T32	$3.25	4586T36	$3.67	4586T91	$4.61
9″	4586T33	4.55	4586T37	4.81	4586T92	6.30
12″	4586T34	4.82	4586T38	5.09	4586T93	7.36

Optional Doors—For use with 36″ wide shelving. Doors are made of 20-ga. steel and are attached to a welded frame. Color is dark gray. Set includes mounting frame, two doors, a handle, lock, two keys, and fasteners.

4641T26 ..... **Per Set** $197.74

Extra Shelf Fasteners—Use to attach shelves to units.

Nuts and Bolts (100 nuts and 100 bolts/pkg.) .. 4586T81 **Per Pkg.** $6.64
Shelf Clips (20/pkg.) ..... 4955T41 **Per Pkg.** $6.46

Light Duty Easy-to-Assemble Steel Shelving with Particleboard Shelves

No fumbling around with nuts, bolts, or shelf clips. Assemble this shelving by simply using a rubber mallet to connect the steel beams to the slotted 14-ga. uprights. ***Complete units*** and ***add-on units*** include particleboard shelves. Shelves are 5/8″ thick and adjust on 1 1/2″ centers. Color is light gray. Shipped unassembled.

Add-on units attach onto the posts of a complete unit.

Extra shelves include particleboard shelf and shelf beams.

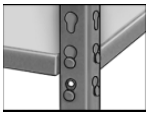

Complete Unit

Add-On Unit

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	Complete Units	Each	Add-On Units	Each	Extra Shelves	Each
36″×84″×12″	600	6	44605T66	$104.54	44605T71	$99.74	44605T51	$14.28
36″×84″×18″	600	6	44605T67	119.49	44605T72	115.00	44605T52	17.26
36″×84″×24″	600	6	44605T68	130.10	44605T73	127.19	44605T53	19.76
48″×84″×12″	500	6	44605T69	122.54	44605T74	117.90	44605T54	17.82
48″×84″×18″	500	6	44605T81	139.42	44605T75	133.97	44605T55	18.71
48″×84″×24″	500	6	44605T82	151.42	44605T76	145.39	44605T56	23.50

★ Includes top and bottom shelf.

Light Duty Mobile Steel Shelving

Open Shelving with 1¼″ High Shelf Lip

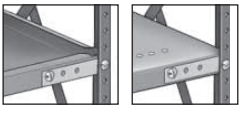

Lipped Shelf — Flush-Surface Shelf

Keep your stored materials on the move with this mobile shelving. Its tubular steel push handle, two rigid casters, and two swivel casters provide easy maneuvering. All but the bottom shelf can be flipped and converted from a lipped shelf to a flush-surface shelf. Shipped unassembled.

Shelving with 1¼″ high shelf lip has 5″ dia. hard rubber wheels. Shelving is steel and has 13-ga. angle posts and 20-ga. shelves that adjust on 1″ centers (bottom shelf is 18 ga. and fixed) and attach with included nuts and bolts. Color is light gray.

Shelving with 3″ high shelf lip has 5″ dia. polypropylene wheels. Shelving is steel and has 16-ga. ribbed angle posts and 18-ga. shelves that attach with included nuts and bolts. Shelf spacing is 13¾″. You can add one extra shelf to create a five-shelf unit that has shelf spacing of 9¼″. Color is dark gray.

Open shelving has no back or side panels, providing easy access to materials and allowing it to carry loads that extend beyond the shelves. *Shelving with a 1¼″ high shelf lip* also includes side braces.

Closed shelving has 24-ga. back and side panels to keep materials better contained.

Extra shelves include nuts and bolts.

Note: Do not exceed the overall capacity of the unit, which is less than the sum of the shelf capacities.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	O'all Cap., lbs.	Open Shelving	Each	Closed Shelving	Each	Extra Shelves	Each
Shelving with 1¼″ High Shelf Lip									
36″×57″×18″	425	5	1,000	2546T61	$197.60	2546T69	$240.19	2546T81	$21.28
36″×57″×24″	425	5	1,000	2546T62	227.49	2546T71	261.10	2546T82	24.55
48″×57″×18″	325	5	1,000	2546T63	229.68	2546T72	264.68	2546T83	24.93
48″×57″×24″	325	5	1,000	2546T64	254.74	2546T73	292.10	2546T84	29.68
Shelving with 3″ High Shelf Lip									
30″×60″×16″	300	4	800	9035T14	185.56	—	—	9035T31	26.24
36″×60″×24″	300	4	800	9035T16	235.26	—	—	9035T32	39.27

★ Includes top and bottom shelf.

Light Duty Mobile Shelving and Trays

Aluminum Wide Opening with Trays (Sold Separately)

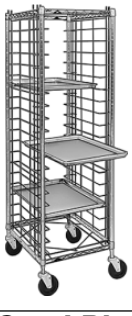

Steel Narrow Opening with Trays (Sold Separately)

Also known as bakery carts, this mobile shelving is designed for efficiency—the two open sides allow you to load and unload from either end. Put them to work in food-service areas as well as small parts and electronics assembly operations. Choose from narrow opening and wide opening styles. NSF certified. Shipped unassembled.

Aluminum shelving has a high-strength, 1″ square aluminum frame and four swivel casters (two have brakes) with 5″ dia. rubber wheels. The slide assemblies are removable for cleaning.

Steel shelving is zinc-plated with a 1″ OD tubular frame and wire tray sides. Shelving has four swivel casters with 5″ dia. rubber wheels.

Removable trays are sold separately below.

Shelving

Holds No. of Trays	Tray Spacing	Cap., lbs.	Narrow Opening Overall Size, Wd.×Ht.×Dp.		Each	Wide Opening Overall Size, Wd.×Ht.×Dp.		Each
Aluminum Shelving								
11	5″	300	20⅜″×64⅛″×28″	9989T63	$472.50	28⅜″×64⅛″×18¾″	9989T61	$480.00
18	3″	300	20⅜″×64⅛″×28″	9989T62	510.00	28⅜″×64⅛″×18¾″	9989T59	510.00
Steel Shelving								
20	3″	200	21¾″×69″×27″	8778T41	268.14	30″×69″×19½″	8778T31	268.14
38	1½″	200	21¾″×69″×27″	8778T42	294.41	30″×69″×19½″	8778T32	294.41

Removable Trays

All trays are NSF certified and suitable for use with any of the mobile shelving listed above.

Aluminum tray has a temperature range of −35° to +220° F.

ABS plastic tray is white and has a temperature range of +32° to +212° F.

	Wd.×Ht.×Dp.		Each 1-11	Each 12-Up
Aluminum Tray	26″×1″×18″	9989T54	$21.33	$18.11
ABS Plastic Tray	26″×1″×18″	9989T56	21.84	18.55

Light Duty Steel Bin Shelving

42 Openings

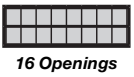

16 Openings

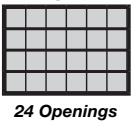

24 Openings

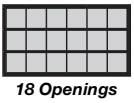

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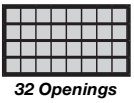

32 Openings

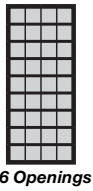

36 Openings

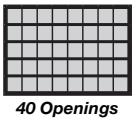

40 Openings

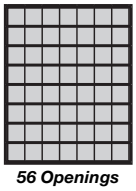

56 Openings

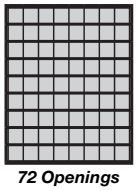

72 Openings

Choose from a variety of sizes and bin openings to keep materials neatly organized. Made of 27- to 23-ga. steel with all-welded construction, this bin shelving will not warp, twist, or sag. Shelves have a 1⅛″ high lip that keeps contents from spilling out and serves as an area to label each bin's contents.

Four 5/16″ dia. mounting holes on the top and bottom allow you to securely bench mount and stack shelving; fasteners not included. *Note:* Only stack units with the same width and depth dimensions. Stacked units should not exceed 70″ high.

Color is dark gray. Shipped assembled.

Note: Not rated for shelf capacity.

Bin Openings Total No. of Openings	Wd.×Ht.	Shelving No. of Bins, Across×Down	Overall Size, Wd.×Ht.×Dp.		Each
16	4″×5⅛″	8×2	33¾″×11½″×12″	4694T11	$84.73
18	5⅜″×6⅜″	6×3	33¾″×19¼″×12″	4694T12	109.69
24	5⅜″×5½″	6×4	33¾″×23⅞″×12″	4694T15	113.74
32	4″×4½″	8×4	33¾″×19¼″×8½″	4694T32	98.46
36	4″×4½″	4×9	17⅞″×42″×12″	4694T17	139.78
40	4″×4″	8×5	33¾″×22¼″×8½″	4694T33	102.61
40	4″×4½″	8×5	33¾″×23⅞″×12″	4694T22	124.39
42	5⅜″×5½″	6×7	33¾″×42″×12″	4694T23	168.22
56	4⅞″×5⅛″	7×8	33¾″×42″×12″	4694T18	181.67
72	4″×4½″	8×9	33¾″×42″×8½″	4694T35	161.81
72	4″×4½″	8×9	33¾″×42″×12″	4694T19	196.22

Medium Duty Adjustable Steel Bin Shelving

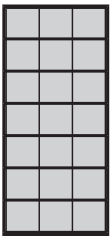
21 Openings (a)

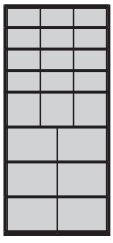
21 Openings (b)

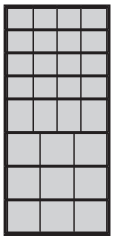
29 Openings

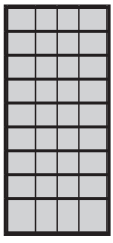
36 Openings

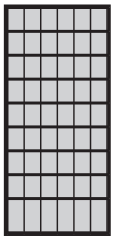
54 Openings

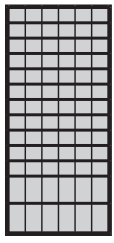
78 Openings

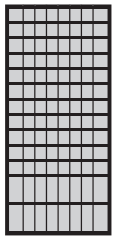
104 Openings

14 Openings

Adjustable dividers allow you to quickly and easily change the width of the bin openings on this shelving. The dividers are made of 22-ga. steel and adjust on 2″ centers. Shelving is made of steel. It has 14-ga. angle posts, 20-ga. shelves, and 24-ga. back and side panels. For added strength and capacity, the shelves are reinforced and ribbed. They attach to the posts with included shelf clips. Color is dark gray. Shipped unassembled.

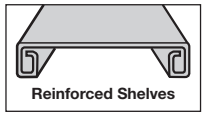
Reinforced Shelves

Shelving

Bin Openings: Total No. of Openings	Qty.	Ht.	Cap. per Shelf, lbs.	SHELVING (Wd.×Ht.×Dp.) 36″×85″×12″	Each	36″×85″×18″	Each	36″×85″×24″	Each
14	14	12″	725	4641T17	$206.42	4641T18	$255.64	4641T19	$296.82
21 (a)	21	12″	725	4641T11	233.77	4641T12	292.51	4641T51	339.67
21 (b)	12	9″							
	9	12″	725	4641T21	237.38	4641T22	296.57	4641T23	346.22
29	16	9″							
	13	12″	725	4641T27	257.82	4641T28	322.02	4641T29	387.05
36	32	9″							
	4	12″	725	4641T14	284.18	4641T15	352.52	4641T16	428.95
54	48	9″							
	6	12″	725	4641T37	336.62	4641T38	419.21	4641T53	515.58
78	66	6″							
	12	9″	725	4641T41	385.32	4641T42	489.25	4641T54	605.95
104	88	6″							
	16	9″	725	4641T44	440.47	4641T45	561.38	4641T46	694.73

Accessories

Extra Dividers—Use these dividers to create more bin openings within your shelving. Dividers are made of 22-ga. steel and adjust on 2″ centers across shelf width. Color is dark gray. Divider clips included.

Ht.	12″ Deep	Each	18″ Deep	Each	24″ Deep	Each
6″	4586T32	$3.25	4586T36	$3.67	4586T91	$4.61
9″	4586T33	4.55	4586T37	4.81	4586T92	6.30
12″	4586T34	4.82	4586T38	5.09	4586T93	7.36

Extra Divider Clips—Include four per package.

4641T52 ..... **Per Pkg.** $0.56

Optional Bin Fronts—Keep small parts from falling off your shelves. Made of 22-ga. steel. Bin fronts are 36″ Wd.×1½″ Ht. Color is dark gray. Fasteners included.

4641T57 ..... **Each** $4.84

Optional Doors—For use with all units. Doors are made of 20-ga. steel and fit on the included welded frame. Color is dark gray. Set includes mounting frame, two doors, a handle, lock, two keys, and fasteners.

4641T26 ..... **Per Set** $197.74

Medium Duty Counter-Height Steel Shelving

Use this versatile, low-height shelving as a bookcase or for counter space. Made of steel, each unit has 13-ga. angle posts, 18-ga. shelves with 13-ga. reinforcements, and 24-ga. back and side panels. Shelves are reinforced for added strength and attach with included fasteners. Three of the shelves have 34″ wide label holders for quick identification of stored materials. The middle two shelves adjust on 1½″ centers. Shelving is dark gray with white back and side panels. Shipped unassembled.

Extra shelves come with fasteners.

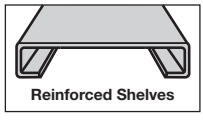
Reinforced Shelves

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	Shelving	Each	Extra Shelves	Each
36″×43½″×18″	700	4	4662T12	$408.32	4662T32	$61.09
36″×43½″×24″	700	4	4662T13	476.33	4662T33	73.24

★Includes top and bottom shelf.

Medium Duty Easy-to-Assemble Plastic Shelving

Our most rugged all-plastic shelving, this high-density polyethylene unit will not rust, dent, peel, or chip. Assembles in a flash with no tools needed—just snap the 2 5/16″ OD tubular posts into place in the slotted openings. Made of chemical-resistant material, this shelving is a safe choice for storing corrosive liquids. Shelves are fixed, spaced 21½″ apart, and vented to prevent moisture and dust buildup. Color is black. Shipped unassembled.

Three Shelves

Overall Size, Wd.×Dp.	Cap. per Shelf, lbs.	Two Shelves★ 27″ O'all Ht.	Each	Three Shelves★ 51″ O'all Ht.	Each	Four Shelves★ 75″ O'all Ht.	Each
36″×24″	250	8383T11	$107.98	8383T23	$181.62	8383T43	$255.25
48″×24″	344	8383T12	174.43	8383T21	288.58	8383T41	402.72
66″×24″	462	8383T13	180.40	8383T25	298.74	8383T45	416.64
96″×24″	675	8383T14	214.75	8383T27	362.03	8383T47	509.28
96″×36″	1,007	8383T15	340.31	8383T28	592.74	8383T48	835.44

★Includes top and bottom shelf.

Medium Duty Easy-to-Assemble Steel Shelving

Open Shelving Complete Unit

Open Shelving Add-On Unit with Cross Braces (Sold Separately)

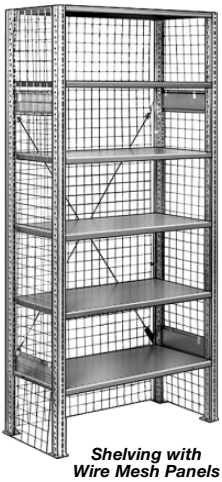

Shelving with Wire Mesh Panels

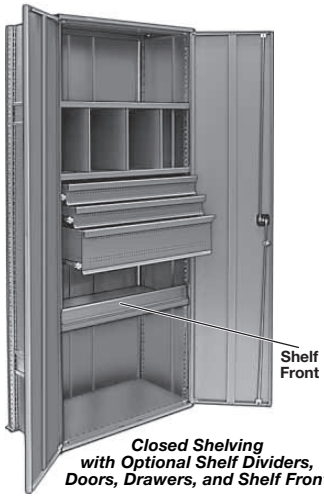

Closed Shelving with Optional Shelf Dividers, Doors, Drawers, and Shelf Front

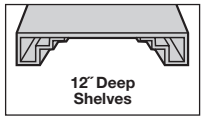

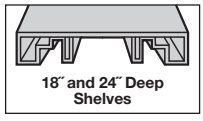

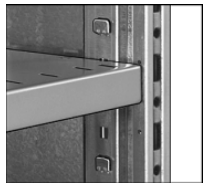

Shelf Clip Lugs

No nuts, bolts, or clips required—the uprights come assembled and shelves quickly snap into place.

Uprights consist of two 18-ga. tubular steel posts with side braces for support. The shelves attach to clip lugs punched into the upright posts. Shelves are made of 20-ga. steel, are reinforced for extra strength, and adjust on 2″ centers. They can be tilted at a 6° or 12° angle to allow items to flow forward for easier access. Color is light gray. Shipped unassembled.

Open shelving allows you to easily see and access your stored materials.

Shelving with wire mesh panels has side and back panels that allow you to see what's being stored while keeping materials better contained. Panels are made of 10-ga. galvanized steel wire with 2″ square openings.

Closed shelving has 22-ga. galvanized steel back and side panels to keep materials better contained.

Complete units come with back cross braces for added support.

Add-on units come with one upright and six shelves. They attach to a complete unit. Cross braces for add-on units are sold separately below.

Note: When connecting multiple shelving units, order one pair of cross braces for every third shelving unit.

Shelving

Overall Size, Wd. × Dp.	Cap. per Shelf, lbs.	No. of Shelves★	Complete Units	Each	Add-On Units	Each	Extra Shelves	Each
Open Shelving—85″ High								
38 7/16″ × 12″	600	6	4909T211	$297.10	4909T231	$201.67	4909T711	$22.90
38 7/16″ × 18″	1,000	6	4909T213	362.68	4909T233	279.07	4909T712	33.48
38 7/16″ × 24″	1,000	6	4909T215	433.90	4909T235	344.23	4909T713	44.43
50 7/16″ × 12″	600	6	4909T217	385.60	4909T237	285.18	4909T714	36.13
50 7/16″ × 18″	1,000	6	4909T219	470.57	4909T239	380.92	4909T715	50.55
50 7/16″ × 24″	1,000	6	4909T222	532.97	4909T242	454.25	4909T716	61.65
Open Shelving—98″ High								
38 7/16″ × 12″	600	6	4909T212	298.74	4909T232	203.70	4909T711	22.90
38 7/16″ × 18″	1,000	6	4909T214	371.82	4909T234	281.12	4909T712	33.48
38 7/16″ × 24″	1,000	6	4909T216	435.92	4909T236	346.30	4909T713	44.43
50 7/16″ × 12″	600	6	4909T218	389.84	4909T238	289.25	4909T714	36.13
50 7/16″ × 18″	1,000	6	4909T221	472.58	4909T241	384.20	4909T715	50.55
50 7/16″ × 24″	1,000	6	4909T223	543.17	4909T243	456.30	4909T716	61.65
Shelving with Wire Mesh Panels—85″ High								
38 7/16″ × 12″	600	6	4909T311	363.73	4909T331	224.07	4909T711	22.90
38 7/16″ × 18″	1,000	6	4909T313	380.92	4909T333	342.23	4909T712	33.48
38 7/16″ × 24″	1,000	6	4909T315	523.52	4909T335	412.93	4909T713	44.43
50 7/16″ × 12″	600	6	4909T317	462.98	4909T337	346.30	4909T714	36.13
50 7/16″ × 18″	1,000	6	4909T319	560.18	4909T339	452.20	4909T715	50.55
50 7/16″ × 24″	1,000	6	4909T322	628.23	4909T342	525.57	4909T716	61.65
Closed Shelving—85″ High								
38 7/16″ × 12″	600	6	4909T411	426.08	4909T431	340.60	4909T711	22.90
38 7/16″ × 18″	1,000	6	4909T413	537.98	4909T433	412.18	4909T712	33.48
38 7/16″ × 24″	1,000	6	4909T415	619.25	4909T435	472.17	4909T713	44.43
50 7/16″ × 12″	600	6	4909T417	540.52	4909T437	414.13	4909T714	36.13
50 7/16″ × 18″	1,000	6	4909T419	643.45	4909T439	528.28	4909T715	50.55
50 7/16″ × 24″	1,000	6	4909T422	725.70	4909T442	611.52	4909T716	61.65
Closed Shelving—98″ High								
38 7/16″ × 12″	600	6	4909T412	463.04	4909T432	346.40	4909T711	22.90
38 7/16″ × 18″	1,000	6	4909T414	555.40	4909T434	418.40	4909T712	33.48
38 7/16″ × 24″	1,000	6	4909T416	632.72	4909T436	481.85	4909T713	44.43
50 7/16″ × 12″	600	6	4909T418	552.53	4909T438	418.22	4909T714	36.13
50 7/16″ × 18″	1,000	6	4909T421	661.85	4909T441	536.03	4909T715	50.55
50 7/16″ × 24″	1,000	6	4909T423	746.13	4909T443	623.13	4909T716	61.65

★ Includes top and bottom shelf.

Accessories

Cross Braces— Braces lock into slots on the back of the posts and provide added stability. Use one pair on every third unit when connecting multiple add-on shelving units.

		Per Pair
For 38 7/16″ Wide Shelving	4909T811	$24.44
For 50 7/16″ Wide Shelving	4909T812	24.44

Shelf Dividers— Dividers are made of 20-ga. galvanized steel and adjust on 1½″ centers. All have tabs on the bottom that fit into slots on the surface of the shelf.

Height	For 12″ Dp. Shelves	Each	For 18″ Dp. Shelves	Each	For 24″ Dp. Shelves	Each
4″	4909T821	$4.64	4909T824	$6.00	4909T829	$6.22
7″	4909T822	5.00	4909T825	6.70	4909T831	7.34
13½″	4909T823	7.46	4909T827	8.40	4909T833	11.00

Doors— For use with 38 7/16″ Wd. × 85″ Ht. shelving. Set includes two doors, a recessed locking handle, two keys, and mounting fasteners. Doors are made of 22-ga. steel. Color is light gray.

4909T841 ..... Per Set $464.44

Shelf Fronts— Keep parts from rolling and sliding off the shelves. Ideal for tilted shelves. All are made of 22-ga. galvanized steel.

Height		Each
For 38 7/16″ Wide Shelving		
1½″	4909T871	$14.04
3½″	4909T872	15.90
For 50 7/16″ Wide Shelving		
1½″	4909T873	16.12
3½″	4909T874	17.96

Drawers— For use with 18″ deep units. All are made of 18-ga. steel. They have a capacity of 150 lbs. and fully extend on ball-bearing roller slides. Color is light gray.

Drawer Height: Overall	Usable		Each
For 38 7/16″ Wd. × 18″ Dp. Shelves			
4″	3 3/8″	4909T851	$193.10
8″	7½″	4909T852	202.22
For 50 7/16″ Wd. × 18″ Dp. Shelves			
4″	3 3/8″	4909T853	206.64
8″	7½″	4909T854	213.31

Heavy Duty Steel Shelving

Reinforced Shelves

With a heavy-gauge steel construction, this shelving is designed to take on heavier loads than our light and medium duty shelving. The posts are made of 15-ga. steel. Choose from 20- and 18-ga. steel shelves. They're reinforced for extra strength, attach to posts with included clips, and adjust on 1½″ centers. Color is light gray. Shipped unassembled.

Open shelving allows you to easily see and access your stored materials. It comes with side and back cross braces for added support. ***Closed shelving*** has 22-ga. steel side and back panels to keep materials better contained.

Add-on units consist of two posts and six shelves. They attach to a complete unit.

Extra shelves include shelf clips.

Shelf dividers adjust on 3″ centers. Dividers are made of 22-ga. steel and are light gray. Divider clips included.

Single-drawer support clips snap onto posts and hold a single drawer (four clips required per drawer).

Multiple-drawer support guides attach to the shelving posts with the included bolts. Any combination of drawers can be used with one set of guides as long as the sum of the overall drawer height equals 18″ or 36″ (depending on the guide you choose).

Drawers are for use with 36″ wide shelving, and they open and close smoothly on ball-bearing rollers. Load capacity is 400 lbs. per drawer. Use with drawer support clips or guides (required; sold separately). Drawers are made of 18-ga. steel. Color is light gray.

Divider sets partition drawers into as many as 24 compartments. Dividers are made of 22-ga. steel and are light gray.

Open Shelving Add-On Unit

Open Shelving Complete Unit

Closed Shelving Complete Unit with Optional Drawers and Shelf Dividers

Shelving

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	OPEN SHELVING Complete Units	Each	OPEN SHELVING Add-On Units	Each	CLOSED SHELVING Complete Units	Each	CLOSED SHELVING Add-On Units	Each	EXTRA SHELVES	Each
With 20-Gauge Steel Shelves												
36″×84″×12″	800	6	4829T801	$217.03	4829T861	$176.59	4829T807	$292.86	4829T867	$233.76	4829T165	$25.96
36″×84″×18″	900	6	4829T802	249.27	4829T862	203.85	4829T808	327.54	4829T868	264.07	4829T166	27.40
36″×84″×24″	800	6	4829T803	286.11	4829T863	234.23	4829T809	373.63	4829T869	304.23	4829T167	34.34
48″×84″×12″	600	6	4829T771	268.86	4829T774	223.16	4829T777	359.18	4829T781	298.00	4829T181	32.00
48″×84″×18″	600	6	4829T772	317.19	4829T775	270.14	4829T778	413.83	4829T782	343.92	4829T182	41.88
48″×84″×24″	560	6	4829T773	360.88	4829T776	313.85	4829T779	461.43	4829T783	395.27	4829T183	50.66
With 18-Gauge Steel Shelves												
36″×84″×12″	1,150	6	4829T821	253.15	4829T881	209.00	4829T827	325.30	4829T887	266.20	4829T184	34.84
36″×84″×18″	1,300	6	4829T822	284.17	4829T882	233.61	4829T828	362.44	4829T888	298.98	4829T185	35.79
36″×84″×24″	1,150	6	4829T823	322.58	4829T883	275.82	4829T829	410.09	4829T889	340.70	4829T186	47.62
48″×84″×12″	750	6	4829T751	322.76	4829T754	276.89	4829T757	412.91	4829T761	351.73	4829T187	38.75
48″×84″×18″	700	6	4829T752	354.93	4829T755	307.88	4829T758	451.58	4829T762	385.89	4829T188	48.76
48″×84″×24″	750	6	4829T753	399.09	4829T756	350.69	4829T759	505.31	4829T763	433.48	4829T189	57.81

★ Includes top and bottom shelf.

Shelf Dividers

Divider Height	For 12″ Dp. Shelving	Each	For 18″ Dp. Shelving	Each	For 24″ Dp. Shelving	Each
6″	4829T567	$5.14	4829T573	$6.17	4829T651	$7.23
9″	4829T568	5.93	4829T574	6.76	4829T652	7.27
12″	4829T569	6.42	4829T575	7.62	4829T653	8.89
15″	4829T571	7.91	4829T576	8.89	4829T654	11.52
18″	4829T572	8.57	4829T577	9.77	4829T655	12.19

Extra Shelf Clips

20/Pkg. 4829T37 Per Pkg. $5.94

Single-Drawer Support Clips

4/Pkg. 4829T145 Per Pkg. $29.44

Multiple-Drawer Support Guides

Height		Per Set
18″	4829T127	$168.56
36″	4829T128	184.12

Drawers and Divider Sets

Drawer Height Overall	Drawer Height Usable	FOR 18″ DP. SHELVING Drawers	Each	FOR 18″ DP. SHELVING Divider Sets	Per Set	FOR 24″ DP. SHELVING Drawers	Each	FOR 24″ DP. SHELVING Divider Sets	Per Set
4″	2½″	4829T222	$197.65	4829T131	$105.31	4829T521	$213.10	4829T136	$108.64
5″	3½″	4829T231	201.40	4829T132	122.35	4829T531	216.60	4829T137	126.10
6″	4½″	4829T241	208.11	4829T133	129.97	4829T581	226.74	4829T138	134.78
7″	5½″	4829T251	224.11	4829T134	129.97	4829T551	239.63	4829T139	134.78

Heavy Duty Mobile Steel Shelving

A 3,000-lb. capacity makes this the heaviest duty mobile shelving we carry. The all-welded construction consists of 3/16″ thick angle posts and 12-ga. steel shelves. Choose from shelves with a 1½″ high lip and shelves without a lip. Space between shelves is 15″ for units with four shelves and 11″ for units with five shelves.

All have a push handle and move on two rigid and two swivel casters with 8″ dia. phenolic wheels. Color is dark gray. Shipped assembled.

Note: Do not exceed the overall capacity of the unit, which is less than the sum of the shelf capacities.

4 Shelves without Lip

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	Overall Cap., lbs.	Shelf with Lip	Each	Shelf without Lip	Each
36 3/8″×62″×24 3/8″	1,000	4	3,000	22205T29	$390.40	22205T19	$390.40
36 3/8″×62″×24 3/8″	1,000	5	3,000	22205T49	449.33	22205T39	449.33
48 3/8″×62″×24 3/8″	1,000	4	3,000	22205T31	422.69	22205T21	422.69
48 3/8″×62″×24 3/8″	1,000	5	3,000	22205T51	485.77	22205T41	485.77
60 3/8″×62″×30 3/8″	1,000	4	3,000	22205T33	522.96	22205T23	522.96
60 3/8″×62″×30 3/8″	1,000	5	3,000	22205T53	606.46	22205T43	606.46

★ Includes top and bottom shelf.

Heavy Duty Wire Shelving

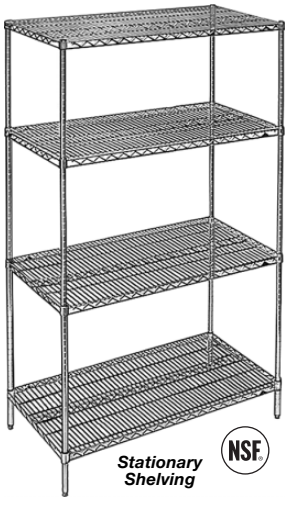

Stationary Shelving

Adjustable Shelving

Quick-Adjust Shelving

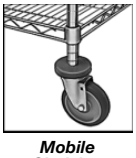

Mobile Shelving

The wire design of this sturdy shelving minimizes dust collection and provides good ventilation and light penetration.

Shelves are made of 10-ga. wire with 6-ga. support wire and adjust on 1″ centers. All shelving is NSF certified and meets MIL-S-40144E. Shipped unassembled.

Zinc-plated steel and *chrome-plated steel* provide good rust and corrosion resistance. All posts are chrome-plated steel. Posts are made of 1″ OD, 16-ga. tubular steel.

Type 304 stainless steel is an excellent choice for pharmaceutical, food processing, and clean room applications. Posts are made of 1″ OD, 18-ga. tubular steel.

Adjustable Shelving— Shelving includes split sleeves, which snap together onto the posts and hold the shelves in place. **Also Available:** Extra shelves with sleeves. To order, please ask for 5101T8 and specify shelf material (zinc-plated, chrome-plated, or stainless steel) and size (Wd.×Dp.).

Quick-Adjust Shelving— Levers at each corner of the shelf frame allow shelving to be adjusted more quickly and easily. Shelving includes split sleeves, which snap together onto the posts and hold the shelves in place. With a push of the quick-adjust lever, the shelf is locked onto the sleeves, securing it to the post. **Also Available:** Extra shelves with sleeves. To order, please ask for 5101T9 and specify shelf material (chrome-plated or stainless steel) and size (Wd.×Dp.).

Stationary Shelving— Units have leveling feet on the bottom of the posts to compensate for uneven floors.

Mobile Shelving— Units have four swivel casters (two with brake) with 5″ dia. polyurethane wheels. Casters add 6⅛″ to height. Overall unit capacity is 1,200 lbs. Note: Do not exceed the overall capacity of the unit, which is less than the sum of the shelf capacities. **Also Available:** Extra casters. For swivel casters, please ask for 5101T47. For swivel casters with brakes, please ask for 5101T48.

Accessories are sold separately on page 1633 and can be used with all adjustable and quick-adjust shelving except where noted.

Also Available: Extra posts. For posts for stationary shelving, please ask for 5101T25. For posts for mobile shelving, please ask for 5101T6. Specify material (chrome-plated or stainless steel) and post height.

			STATIONARY SHELVING						MOBILE SHELVING★			
			18″ Deep		24″ Deep		36″ Deep		18″ Deep		24″ Deep	
Wd.	Cap. per Shelf, lbs.	No. of Shelves▲		Each		Each		Each		Each		Each
Adjustable Shelving— *Zinc-Plated Steel*												
35″ High												
24″	800	2	5101T143	$118.02	5101T146	$132.01	5101T149	$134.44	2563T111	$254.44	2563T114	$272.68
36″	800	2	5101T144	119.84	5101T147	134.44	5101T196●	190.36	2563T112	260.51	2563T115	275.11
48″	800	2	5101T145	133.22	5101T148	152.69	5101T197●	215.63	2563T113	273.89	2563T116	293.36
55″ High												
24″	800	4	5101T51	197.10	5101T52	225.08	5101T213	229.95	2563T117	324.26	2563T312	365.75
36″	800	4	5101T53	198.11	5101T54	229.95	5101T214	373.52	2563T58	329.34	2563T57	370.62
48″	800	4	5101T55	227.52	5101T56	266.45	5101T215	428.27	2563T64	360.55	2563T52	399.53
60″	600	4	5101T57	260.37	5101T58	313.90	5101T216	479.37	2563T65	391.25	2563T53	447.04
72″	600	4	5101T59	294.43	5101T61	351.62	5101T217	557.23	2563T311	421.06	2563T313	492.28
63″ High												
24″	800	4	5101T62	197.74	5101T63	228.73	5101T218	233.60	2563T118	335.82	2563T326	369.40
36″	800	4	5101T64	204.40	5101T65	231.29	5101T219	377.17	2563T322	345.07	2563T63	374.27
48″	800	4	5101T66	231.17	5101T67	270.10	5101T221	431.92	2563T323	371.83	2563T327	410.77
60″	600	4	5101T68	264.02	5101T69	317.55	5101T222	483.02	2563T324	404.68	2563T86	450.70
72″	600	4	5101T71	298.08	5101T72	355.27	5101T223	560.88	2563T325	438.75	2563T328	495.93
75″ High												
24″	800	4	5101T73	205.62	5101T74	231.29	5101T224	238.47	2563T119	346.28	2563T335	374.27
36″	800	4	5101T75	209.27	5101T76	238.47	5101T225	382.03	2563T331	349.93	2563T336	379.13
48″	800	4	5101T77	236.03	5101T78	274.97	5101T226	436.78	2563T332	376.70	2563T337	415.63
60″	600	4	5101T79	268.88	5101T81	322.42	5101T227	487.88	2563T333	409.55	2563T338	463.08
72″	600	4	5101T82	302.95	5101T83	360.13	5101T228	565.75	2563T334	443.62	2563T339	497.74
87″ High												
24″	800	4	5101T84	221.43	5101T85	249.42	5101T229	254.28				
36″	800	4	5101T86	225.08	5101T87	254.28	5101T231	397.85				
48″	800	4	5101T88	251.85	5101T89	290.78	5101T232	452.60				
60″	600	4	5101T91	284.70	5101T92	338.23	5101T233	503.70				
72″	600	4	5101T93	318.77	5101T94	375.95	5101T234	581.57				
Adjustable Shelving— *Type 304 Stainless Steel*												
55″ High												
24″	800	4	5101T311	625.52	5101T321	732.16	5101T235	830.37	2563T121	812.12	2563T355	961.84
36″	800	4	5101T331	694.05	5101T341	823.51	5101T236	1,176.58	2563T351	837.63	2563T356	980.17
48″	800	4	5101T351	776.39	5101T361	976.01	5101T237	1,370.75	2563T352	942.76	2563T357	1,127.38
60″	600	4	5101T371	983.67	5101T381	1,136.02	5101T238	1,568.77	2563T353	1,134.68	2563T358	1,315.97
63″ High												
24″	800	4	5101T421	626.39	5101T431	753.97	5101T239	846.98	2563T122	828.46	2563T365	978.45
36″	800	4	5101T441	708.23	5101T451	839.98	5101T241	1,193.19	2563T361	863.37	2563T366	997.20
48″	800	4	5101T461	809.43	5101T471	960.59	5101T242	1,387.37	2563T362	969.22	2563T367	1,144.42
60″	600	4	5101T481	968.02	5101T491	1,152.25	5101T243	1,585.37	2563T363	1,151.72	2563T368	1,333.00
75″ High												
24″	800	4	5101T513	649.18	5101T514	772.43	5101T244	864.86	2563T123	846.05	2563T375	1,005.72
36″	800	4	5101T515	725.96	5101T101	859.14	5101T245	1,222.75	2563T371	880.40	2563T376	1,014.23
48″	800	4	5101T516	831.22	5101T102	1,003.81	5101T246	1,405.25	2563T372	986.25	2563T377	1,161.45
60″	600	4	5101T517	1,021.27	5101T103	1,189.09	5101T247	1,603.27	2563T373	1,148.84	2563T378	1,350.03
87″ High												
24″	800	4	5101T521	680.52	5101T522	805.27	5101T248	890.42				
36″	800	4	5101T523	752.55	5101T524	884.52	5101T249	1,236.62				
48″	800	4	5101T525	856.60	5101T526	1,029.19	5101T251	1,430.80				
60″	600	4	5101T527	1,036.80	5101T528	1,222.57	5101T252	1,628.81				

★ Overall unit capacity is 1,200 lbs. ▲ Includes top and bottom shelf. ● Shelves are chrome-plated steel.

(Continued on following page)

Heavy Duty Wire Shelving *(Continued from previous page)*

Wd.	Cap. per Shelf, lbs.	No. of Shelves▲	STATIONARY SHELVING 18″ Deep	Each	24″ Deep	Each	36″ Deep	Each	MOBILE SHELVING★ 18″ Deep	Each	24″ Deep	Each
Quick-Adjust Shelving— *Chrome-Plated Steel*												
55″ High												
24″	800	4	4092T111	$222.71	4092T116	$263.54	4092T122	$270.97	4184T431	$365.76	4184T436	$406.59
36″	800	4	4092T112	226.42	4092T117	270.97	4092T123	377.19	4184T432	369.47	4184T437	414.02
48″	800	4	4092T113	261.07	4092T118	306.85	4092T124	433.54	4184T433	404.12	4184T438	449.90
60″	600	4	4092T114	292.00	4092T119	350.15	4092T125	487.49	4184T434	427.80	4184T439	493.20
72″	600	4	4092T115	337.78	4092T121	404.59	4092T126	569.15	4184T435	480.83	4184T441	547.64
63″ High												
24″	800	4	4092T211	226.42	4092T216	267.25	4092T222	274.68	4184T611	369.47	4184T616	410.31
36″	800	4	4092T212	230.14	4092T217	274.68	4092T223	380.91	4184T612	373.19	4184T617	415.13
48″	800	4	4092T213	264.78	4092T218	310.56	4092T224	429.96	4184T613	407.83	4184T618	453.61
60″	600	4	4092T214	295.71	4092T219	353.86	4092T225	491.20	4184T614	438.76	4184T619	496.92
72″	600	4	4092T215	341.49	4092T221	408.31	4092T226	572.86	4184T615	484.54	4184T621	551.36
75″ High												
24″	800	4	4092T311	231.37	4092T316	272.20	4092T322	279.63	4184T711	374.42	4184T716	415.25
36″	800	4	4092T312	235.08	4092T317	279.63	4092T323	385.85	4184T712	378.14	4184T717	422.68
48″	800	4	4092T313	269.73	4092T318	315.51	4092T324	442.20	4184T713	412.78	4184T718	454.71
60″	600	4	4092T314	297.74	4092T319	358.81	4092T325	496.15	4184T714	443.71	4184T719	501.86
72″	600	4	4092T315	346.44	4092T321	405.69	4092T326	577.81	4184T715	489.49	4184T721	556.31
87″ High												
24″	800	4	4092T411	247.46	4092T416	288.29	4092T422	295.71	—	—	—	—
36″	800	4	4092T412	251.17	4092T417	293.23	4092T423	404.59	—	—	—	—
48″	800	4	4092T413	285.81	4092T418	331.59	4092T424	457.05	—	—	—	—
60″	600	4	4092T414	316.75	4092T419	374.90	4092T425	512.24	—	—	—	—
72″	600	4	4092T415	362.53	4092T421	429.34	4092T426	592.66	—	—	—	—
Quick-Adjust Shelving— *Type 304 Stainless Steel*												
55″ High												
24″	800	4	7236T11	707.88	7236T22	846.37	—	—	7236T44	845.92	7236T55	991.59
36″	800	4	7236T12	724.93	7236T23	868.58	7236T34	1,208.83	7236T45	875.53	7236T56	1,011.63
48″	800	4	7236T13	824.47	7236T24	1,008.15	7236T35	1,409.27	7236T46	983.17	7236T57	1,161.34
60″	600	4	7236T14	1,025.71	7236T25	1,197.82	7236T36	1,612.19	7236T47	1,158.94	7236T58	1,353.12
72″	600	4	7236T15	1,180.92	7236T26	1,434.64	7236T37	1,857.85	7236T48	1,335.80	7236T59	1,616.66
75″ High												
24″	800	4	7236T16	742.95	7236T27	881.45	—	—	7236T49	888.17	7236T61	1,026.67
36″	800	4	7236T17	767.12	7236T28	903.22	7236T39	1,241.37	7236T51	910.17	7236T62	1,046.27
48″	800	4	7236T18	874.76	7236T29	1,044.08	7236T41	1,443.92	7236T52	1,017.81	7236T63	1,195.98
60″	600	4	7236T19	1,056.95	7236T31	1,244.71	7236T42	1,629.84	7236T53	1,203.41	7236T64	1,364.63
72″	600	4	7236T21	1,227.39	7236T32	1,508.25	7236T43	1,923.98	7236T54	1,370.44	7236T65	1,651.31

★ Overall unit capacity is 1,200 lbs. ▲ Includes top and bottom shelf.

Accessories

Side and Back Ledges— Prevent items from falling off your shelves with these 4″ high chrome-plated steel ledges. Order by the depth of your shelf for side ledges; by the width of your shelf for back ledges.

Ledge Length		Each	Ledge Length		Each
18″	5101T11	$11.21	48″	5101T19	$20.17
24″	5101T13	12.49	60″	5101T21	21.46
36″	5101T15	16.01	72″	5101T23	25.93

Tote Boxes and Tote Box Slides— *Tote boxes* hang from your shelving for versatile storage. Boxes are 17½″×22½″ and made of gray polypropylene. They can be used with either slide (use one slide per box). *Slides* are made of a one-piece aluminum sheet and enclosed on the top to protect contents from dust. They mount to the bottom of 18″ or 24″ deep shelves with the included support brackets.

Tote Box and Slide

Ht.		Each
Tote Boxes		
5″	5101T135	$17.19
6″	5101T136	18.10
8″	5101T137	22.02
12″	5101T138	28.18
Tote Box Slides		
For 18″ Dp. Shelving	5101T132	82.37
For 24″ Dp. Shelving	5101T133	83.56

Shelf Dividers— Made of chrome-plated steel, dividers are 8″ high and easily snap into place.

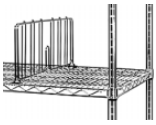

		Each
For 18″ Dp. Shelving	5101T43	$13.77
For 24″ Dp. Shelving	5101T44	17.42
For 36″ Dp. Shelving	5101T139	25.93

S-Hooks— For connecting multiple shelving units. Two hooks are required to attach each shelf. Made of zinc-plated steel.

5101T29 (8/Pkg.) ..... **Per Pkg.** $25.04

Floor Protectors— Fit over leveling feet to protect floors. Made of polyethylene.

5101T49 (4/Pkg.) ..... **Per Pkg.** $13.49

Adjustable Floor Plate— Use to bolt units to the floor for greater stability. Plate has three 5/16″ dia. mounting holes (bolts not included) and adjusts to compensate for uneven floors. Made of zinc-plated steel.

5101T45 ..... **Each** $8.01

Label Holders— Holders are made of clear PVC and simply snap onto shelves. Each includes a blank white label that slides into the holder. Replacement labels are 6″ wide and should be cut in half to fit into the holders.

Holder Size, Wd.×Ht.	Pkg. Qty.		Per Pkg.
3″×1 5/16″	12	1679T33	$10.49
Replacement Labels	104	1679T42	5.97

Push Handles— Attach to shelving posts with split sleeves (included) to make it easier to move mobile shelving.

For Shelving Depth	*Chrome*	Each	*Type 304 Stainless Steel*	Each
18″	5101T1	$24.01	5101T4	$75.88
24″	5101T2	24.66	5101T5	84.21

Extra Split Sleeves— One package is required to install each shelf.

5101T41 *4092T61*

		Per Pkg.
For Adjustable Shelving	5101T41	$5.92
For Quick-Adjust Shelving	4092T61	7.08

Static-Dissipative Split Sleeves and Grounding Cable— Use individually or together to dissipate static electricity. Surface resistivity is 10^4 ohms/sq. One package of *split sleeves* is required to install each shelf. *Grounding cable* is 16½″ long and has a spring-loaded clamp to attach to shelving unit.

		Per Pkg.
Split Sleeves for Adjustable Shelving	5101T791	$7.60
Split Sleeves for Quick-Adjust Shelving	5101T792	22.55
Grounding Cable	5101T793	**Each** $17.81

Heavy Duty Coated-Steel Wire Shelving

Stationary Shelving

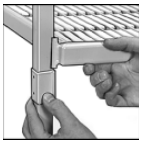

Quick-Lock Shelf Clip

Mobile Shelving

An epoxy coating on the shelves makes them chemical, rust, and corrosion resistant. Their open-wire design provides excellent ventilation and light penetration with minimal dust collection. With quick-lock shelf clips that attach shelves to the posts, shelving is easy to assemble—no need for tools or fasteners. You can also reposition or add a shelf without moving the other shelves. Posts are 1″ square and made of 16-ga. steel. A plastic cap on the top of each post provides a finished appearance. Shelves are made of 10-ga. wire with 4-ga. support wire and a 12-ga. frame. They adjust on 3″ centers. NSF certified. Shipped unassembled. *Note:* Not rated for food contact.

To Order Please specify color: white or light gray.

Stationary shelving has leveling feet to compensate for uneven floors. ***Mobile shelving*** has two rigid casters and two swivel casters with brakes; all casters have 5″ dia. polyurethane wheels. They add 6¼″ to the overall height. Overall unit capacity is 1,200 lbs. *Note:* Do not exceed the overall capacity of the unit, which is less than the sum of the shelf capacities.

Extra shelves include quick-lock shelf clips.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves▲	Stationary Shelving	Each	Mobile Shelving★	Each	Extra Shelves	Each
36″×75″×18″	1,200	4	45955T71	$295.67	45955T93	$386.37	45955T11	$57.47
36″×75″×24″	1,000	4	45955T72	327.92	45955T94	421.20	45955T24	65.71
48″×75″×18″	800	4	45955T73	341.42	45955T95	427.07	45955T15	65.35
48″×75″×24″	725	4	45955T74	369.88	45955T96	464.11	45955T28	76.26
60″×75″×18″	600	4	45955T75	380.24	45955T97	487.83	45955T19	80.67
60″×75″×24″	600	4	45955T76	428.00	45955T98	518.29	45955T33	88.73

★ Overall unit capacity is 1,200 lbs. ▲ Includes top and bottom shelf.

Heavy Duty Mobile Three-Sided Steel Wire Shelving

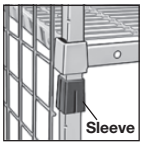

Zinc-plated steel wire panels on the back and sides keep your packages safely on board. Shelving consists of 16-ga., 1″ square steel posts with 3″ square open-wire grid back and side panels. Shelves are made of 8-ga. zinc-plated steel wire and a 12-ga., 1″ square steel frame. They adjust on 2″ centers. Shelving includes sleeves that slide onto the posts and hold the shelves in place. Units have four swivel casters with brakes and 5″ dia. polyurethane wheels. Shelving is NSF certified and shipped unassembled. *Note:* Do not exceed the overall capacity of the unit, which is less than the sum of the shelf capacities.

Extra shelves include sleeves.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	No. of Shelves▲	Overall Cap., lbs.	Shelving	Each	Extra Shelves	Each
36″×70″×18″	1,000	4	1,200	9038T41	$457.39	9038T51	$39.33
36″×70″×24″	1,000	4	1,200	9038T42	509.39	9038T52	44.53
48″×70″×18″	1,000	4	1,200	9038T43	527.26	9038T53	44.98
48″×70″×24″	1,000	4	1,200	9038T44	575.57	9038T54	53.00
60″×70″×18″	800	4	1,200	9038T45	565.17	9038T55	49.68
60″×70″×24″	800	4	1,200	9038T46	635.83	9038T56	63.66

▲ Includes top and bottom shelf.

Heavy Duty Antimicrobial-Plastic Shelving

Stationary Shelving

Quick-Adjust Lever

Mobile Shelving

Shelves have built-in antimicrobial protection to inhibit the growth of bacteria, mold, mildew, and fungi—perfect for use in food service areas and laboratories. They're also vented for good air circulation and light penetration, preventing moisture buildup and minimizing dust collection. For easy cleaning, the shelf surface can be removed in 12″ or 18″ pieces while the unit is assembled and is dishwasher safe.

Shelves consist of a light blue, vented polypropylene surface that snaps onto a ¼″ OD dark gray epoxy-coated steel wire frame. Posts are made of tubular 13-ga. light gray epoxy-coated steel. Shelving comes with sleeves that snap onto the posts. Quick-adjust levers at each corner of the shelf frame lock onto sleeves to hold shelves in place and allow for easy adjustment on 1″ centers. NSF certified. Shipped unassembled.

Stationary shelving has leveling feet to compensate for uneven floors. ***Mobile shelving*** comes with four swivel casters (two with brake) with 5″ dia. polyurethane wheels. Casters have protective bumpers and add 6″ to overall height. Overall unit capacity is 1,200 lbs. *Note:* Do not exceed the overall unit capacity, which is less than the sum of the shelf capacities.

Extra shelves include sleeves. ***Shelf dividers*** are 8″ high and made of light gray epoxy-coated steel. ***Shelf label holder*** is 4″ Wd.×1½″ Ht. and made of light gray plastic. It snaps onto the front of the shelf.

Wd.	Cap. per Shelf, lbs.	No. of Shelves▲	Stationary Shelving 18″ Deep	Each	Stationary Shelving 24″ Deep	Each	Mobile Shelving★ 24″ Deep	Each	Extra Shelves 18″ Deep	Each	Extra Shelves 24″ Deep	Each
54″ High												
24″	800	4	4716T311	$358.50	4716T315	$403.11	4724T615	$565.17	4716T131	$66.39	4716T135	$82.88
36″	800	4	4716T312	372.00	4716T316	424.64	4724T616	571.17	4716T132	69.74	4716T136	84.38
48″	800	4	4716T313	421.34	4716T317	498.70	4724T617	646.17	4716T133	83.62	4716T137	103.12
60″	600	4	4716T314	474.01	4716T318	582.00	4724T618	707.33	4716T134	99.75	4716T138	122.25
63″ High												
24″	800	4	4716T331	369.00	4716T335	421.34	4724T625	564.14	4716T131	66.39	4716T135	82.88
36″	800	4	4716T332	382.50	4716T336	436.16	4724T626	581.67	4716T132	69.74	4716T136	84.38
48″	800	4	4716T333	432.86	4716T337	510.22	4724T627	656.67	4716T133	83.62	4716T137	103.12
60″	600	4	4716T334	485.53	4716T338	576.05	4724T628	729.64	4716T134	99.75	4716T138	122.25
74″ High												
24″	800	4	4716T351	375.00	4716T355	427.93	4724T635	581.67	4716T131	66.39	4716T135	82.88
36″	800	4	4716T352	385.29	4716T356	447.00	4724T636	587.67	4716T132	69.74	4716T136	84.38
48″	800	4	4716T353	439.45	4716T357	516.80	4724T637	662.67	4716T133	83.62	4716T137	103.12
60″	600	4	4716T354	492.11	4716T358	582.63	4724T638	739.17	4716T134	99.75	4716T138	122.25

Accessories

Shelf Divider for 18″ Dp. Shelving	4716T711	Each	$15.00
Shelf Divider for 24″ Dp. Shelving	4716T712	Each	$16.50
Shelf Label Holder	4716T731	Each	$3.52

★ Overall unit capacity is 1,200 lbs. ▲ Includes top and bottom shelf.

Heavy Duty Gravity-Flow Steel Shelving

The 15° slope of these shelves allows items to flow forward, providing easier access and better visibility. Shelves also have a 5/8″ high front lip and 1 1/2″ high side guards to keep parts from falling off.

No tools are needed for assembly. Each upright consists of two 20-ga. galvanized steel posts with support braces. Posts have two 1/4″ holes for floor mounting (fasteners not included). Horizontal beams lock onto the uprights with three-prong connectors to hold the shelves in place. Shelves are made of 20-ga. steel, reinforced for extra strength, and adjust on 2″ centers. They can be removed while the unit is still assembled, allowing for easy cleaning. Shelving is light gray and shipped unassembled.

Add-on units come with one upright and the appropriate number of shelves. They attach to one of the uprights on the complete unit.

Extra shelves include beams with three-prong connectors.

Optional casters are for use with 60″ high shelving. They have 6″ dia. polyurethane wheels and add 7 1/4″ to overall height.

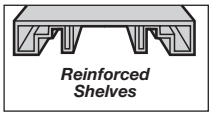

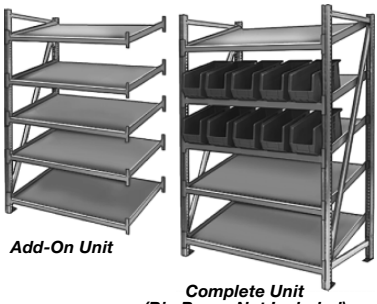

Cap. per Shelf, lbs.	No. of Shelves★	Complete Units: Overall Size, Wd.×Dp.		Each	Add-On Units: Overall Size, Wd.×Dp.		Each	Extra Shelves	Each
60″ High Shelving									
550	4	55 1/4″×24″	46665T61	$803.17	52 7/8″×24″	46665T71	$628.03	46665T54	$129.29
550	4	55 1/4″×32″	46665T62	919.97	52 7/8″×32″	46665T72	728.10	46665T55	145.26
Optional Rigid Casters for 60″ High Shelving								46665T91	Per Pair $150.99
Optional Swivel Casters with Brake for 60″ High Shelving								46665T92	Per Pair $195.10
78 3/4″ High Shelving									
550	5	55 1/4″×24″	46665T64	926.50	52 7/8″×24″	46665T74	774.99	46665T54	129.29
550	5	55 1/4″×32″	46665T65	1,051.10	52 7/8″×32″	46665T75	864.29	46665T55	145.26

★ Includes top and bottom shelf.

Heavy Duty Aluminum Shelving

Well suited for food service areas and freezers, this lightweight, corrosion-resistant aluminum shelving has two-piece shelves, so you can remove the shelf surface for cleaning while the unit is still assembled. The shelf surface is made of 0.040″ thick aluminum and fits onto an aluminum channel frame. Shelves are almost infinitely adjustable—they attach to the 0.150″ thick, 1 5/16″ OD posts with stainless steel set screws (included). NSF certified. Shipped unassembled.

Extra shelves include set screws.

Optional swivel caster with brake has a 5″ dia. polyolefin wheel and adds 6″ to overall height. Capacity is 300 lbs. per caster.

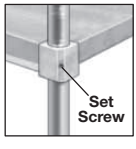

Overall Size, Wd.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	68″ High Shelving	Each	76″ High Shelving	Each	84″ High Shelving	Each	Extra Shelves	Each
36″×18″	800	4	4154T11	$444.73	4154T21	$451.81	4154T31	$459.35	4154T41	$92.72
36″×24″	800	4	4154T12	462.25	4154T22	470.98	4154T32	476.87	4154T42	97.31
48″×18″	800	4	4154T13	497.31	4154T23	506.04	4154T33	511.93	4154T43	105.49
48″×24″	800	4	4154T14	517.89	4154T24	526.62	4154T34	532.51	4154T44	112.96
60″×18″	800	4	4154T15	582.77	4154T25	596.80	4154T35	602.69	4154T45	131.52
60″×24″	800	4	4154T16	631.93	4154T26	640.65	4154T36	646.55	4154T46	143.12

Optional Swivel Caster with Brake ..... 4154T91 Each $27.08

★ Includes top and bottom shelf.

Heavy Duty Type 304 Stainless Steel Shelving

For corrosive environments, as well as the food, chemical, and pharmaceutical industries, this Type 304 stainless steel shelving is the ideal choice.

Posts are made of 1″ OD, 18-ga. steel and have leveling feet to compensate for uneven floors. Shelves are made of 18-ga. steel and adjust on 1″ centers. Split sleeves snap together onto the posts and hold the shelves in place. Shelving is NSF certified and shipped unassembled.

Extra shelves include split sleeves.

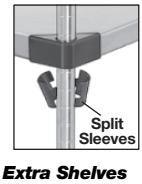

Overall Size, Wd.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	63″ High Shelving	Each	75″ High Shelving	Each	Extra Shelves	Each
36″×18″	800	4	4691T11	$778.46	4691T41	$796.19	4691T81	$165.86
36″×24″	800	4	4691T12	920.07	4691T42	928.61	4691T82	203.10
48″×18″	800	4	4691T13	918.69	4691T43	936.42	4691T83	202.76
48″×24″	800	4	4691T14	1,076.97	4691T44	1,094.71	4691T84	244.48
60″×24″	600	4	4691T15	1,279.68	4691T45	1,306.63	4691T85	297.59

★ Includes top and bottom shelf.

Extra-Heavy Duty Steel Shelving

Our extra-strong steel shelving is designed to stand up to years of heavy use. All units have high-capacity shelves that can support your dies, fixtures, jigs, and other extra-heavy items.

Shelving has 13-ga. angle posts and 14-ga. shelves that are reinforced with steel channel for extra strength. Shelves adjust on 1″ centers. Shelving is dark gray and shipped unassembled.

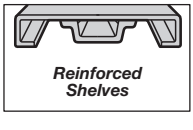

O'all Size, Wd.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	72″ High Shelving	Each	96″ High Shelving	Each	Extra Shelves	Each
36″×18″	3,000	5	4673T21	$256.09	4673T41	$271.00	4673T31	$49.46
36″×24″	3,000	5	4673T22	316.17	4673T42	332.05	4673T34	63.36
48″×18″	3,000	5	4673T23	329.94	4673T43	346.03	4673T32	66.53
48″×24″	3,000	5	4673T24	361.79	4673T44	372.73	4673T35	72.57
60″×18″	3,000	5	4673T25	393.30	4673T45	404.23	4673T33	79.76
60″×24″	3,000	5	4673T26	481.58	4673T46	492.44	4673T36	99.83
72″×24″	3,000	5	4673T27	564.70	4673T47	575.64	4673T37	115.26

★ Includes top and bottom shelf.

Extra-Heavy Duty Assembled Steel Shelving

5 Shelves

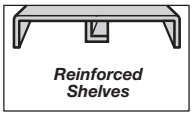

Reinforced Shelves

No assembly required—these high-capacity units are welded and shipped assembled, ready for use. Shelves are made of 12-ga. steel and are reinforced for extra strength. Shelving has 3/16″ thick angle posts with 3″×3″ feet, each with a 5/8″ dia. hole for mounting the unit to the floor (fasteners not included). Color is light gray.

Overall Size, Wd.×Ht.×Dp.	Cap. per Shelf, lbs.	Space Between Shelves		Each
4 Shelves★				
32″×72″×18″	2,000	20 3/4″	7673T11	$281.55
36″×72″×24″	2,000	20 3/4″	7673T12	329.91
48″×72″×24″	2,000	20 3/4″	7673T13	418.00
60″×72″×24″	2,000	20 3/4″	7673T14	480.18
5 Shelves★				
32″×72″×18″	2,000	15″	7673T15	324.73
36″×72″×24″	2,000	15″	7673T16	381.73
48″×72″×24″	2,000	15″	7673T17	494.00
60″×72″×24″	2,000	15″	7673T18	570.00

★ Includes top and bottom shelf.

Extra-Heavy Duty Steel Wire Shelving

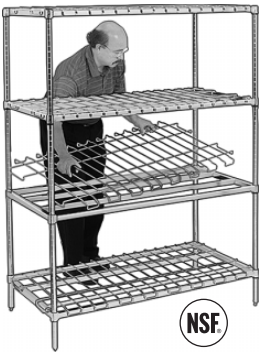

Split Sleeves

Optional Floor Plate

Choose this chrome-plated steel wire shelving for your heavyweight storage needs. Wire shelving provides good ventilation and light penetration with minimal dust collection. Posts are 1″ OD, 16-ga. steel with grooves that allow shelves to adjust on 1″ centers. Split sleeves snap together onto the posts and hold the shelves in place. The shelf surface is made of 5/16″ dia. steel wire. It snaps onto a frame made of 1″ square, 16-ga. steel and is removable for easy cleaning. Posts have leveling feet to compensate for uneven floors. NSF certified. Shipped unassembled.

Extra shelves include split sleeves.

Optional floor plate secures the shelving to the floor for greater stability. Plate is made of zinc-plated steel and has three 5/16″ dia. mounting holes (fasteners not included).

O'all Size, Wd.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	*63″ High Shelving*	Each	*75″ High Shelving*	Each	*Extra Shelves*	Each
24″×18″	1,600	4	4930T11	$470.40	4930T21	$483.35	4930T31	$109.87
24″×24″	1,600	4	4930T12	514.84	4930T22	519.72	4930T32	118.82
36″×18″	1,600	4	4930T13	543.10	4930T23	547.97	4930T33	121.48
36″×24″	1,600	4	4930T14	578.79	4930T24	590.35	4930T34	132.81
48″×18″	1,300	4	4930T15	608.05	4930T25	620.98	4930T35	140.25
48″×24″	1,300	4	4930T16	653.82	4930T26	658.64	4930T36	150.52
60″×18″	1,000	4	4930T17	698.78	4930T27	697.84	4930T37	159.20
60″×24″	1,000	4	4930T18	697.74	4930T28	751.02	4930T38	172.74

Optional Floor Plate ..... 5101T45 Each $8.01

★ Includes top and bottom shelf.

Brute Extra-Heavy Duty Steel Shelving

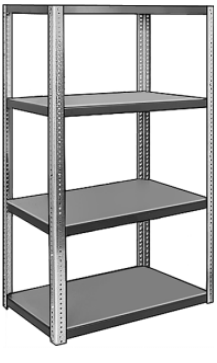

Open Shelving

Closed Shelving

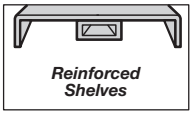

Reinforced Shelves

If you're searching for the strongest, most durable shelving we offer, look no further. This shelving consists of 10-ga. galvanized steel angle posts and 12-ga. steel shelves. The shelves are dark gray and reinforced with steel channel for extra strength.

Shelves adjust on 1″ centers. Shipped unassembled.

Open shelving allows you to easily see and access your stored materials.

Closed shelving has side and back panels to keep materials better contained. Panels are dark gray and made of 20-ga. steel.

O'all Size, Wd.×Dp.	Cap. per Shelf, lbs.	No. of Shelves★	*60″ High Shelving*	Each	*72″ High Shelving*	Each	*Extra Shelves*	Each
Open Shelving								
36″×18″	2,500	4	6595T71	$544.05	6595T75	$611.50	6595T51	$87.52
36″×24″	2,500	4	6595T72	516.58	6595T76	584.03	6595T52	80.18
48″×24″	2,500	4	6595T73	590.72	6595T77	658.17	6595T53	99.96
60″×24″	2,500	4	6595T74	634.40	6595T78	705.22	6595T54	112.88
Closed Shelving								
36″×18″	2,500	4	6595T81	671.97	6595T85	747.55	6595T51	87.52
36″×24″	2,500	4	6595T82	652.55	6595T86	747.87	6595T52	80.18
48″×24″	2,500	4	6595T83	741.62	6595T87	826.68	6595T53	99.96
60″×24″	2,500	4	6595T84	830.30	6595T88	879.84	6595T54	112.88

★ Includes top and bottom shelf.

Extra-Heavy Duty Steel Shelving with Roll-Out Shelves

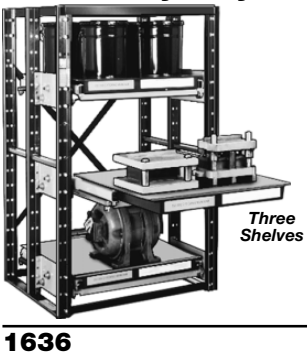

Three Shelves

Unique high-capacity, roll-out shelves make it easy to store and access heavy dies, machinery, and tools. Capacity per shelf is 2,000 lbs.; capacity for the top of the unit is 500 lbs.

Uprights consist of 3″ wide steel channel and support braces. Shelves are 10-ga. steel, adjust every 2″, and extend on roller bearings. When fully extended, the shelves lock in place for safety. Easily retrieve items horizontally with a forklift truck and vertically (with shelves extended) with a hoist, crane, or monorail system. Units come with one set of cross braces for added support. Shelving is light gray and shipped unassembled.

Warning: Shelving must be securely anchored to the floor. Units have four 7/8″ dia. mounting holes (fasteners not included).

Shelf Wd.×Dp.	O'all Wd.	*THREE SHELVES* *62″ High Shelving*	Each	*72″ High Shelving*	Each	*FOUR SHELVES* *85″ High Shelving*	Each	*Extra Shelves*	Each
36″×36″	44″	44665T21	$2,675.22	44665T24	$2,805.77	44665T27	$3,326.99	44665T71	$808.16
48″×36″	56″	44665T22	2,891.50	44665T25	2,947.02	44665T28	3,493.75	44665T72	858.07
48″×48″	56″	44665T23	3,127.88	44665T26	3,219.80	44665T29	3,849.81	44665T73	932.77

Light Duty Racks

Perfect when loading lighter items by hand. Racks are wider and deeper than our shelving units, offering more storage space per level for large items and boxes. No nuts or bolts are required for assembly—rivets on the ends of the beams simply insert into keyhole slots on the posts. Color is dark gray. Shipped unassembled.

Note: Racks and decking are sold separately.

Racks without decking and ***add-on racks without decking*** have three storage levels and consist of 14-ga. steel posts, and 14-ga. to 16-ga. steel horizontal beams. Also include 16-ga. center supports. Beams adjust on 1½″ centers. *Racks without decking* include four posts. *Add-on racks without decking* include two posts and connect to an existing rack.

Extra storage levels without decking come with components for one storage level, including beams and center supports.

Decking is sold separately and requires no fasteners for installation. *Particleboard decking* is ⅝″ thick. *Wire decking* is made of 3-ga. galvanized steel wire mesh with 3″×3″ openings.

Warning: Racks are not for use with pallets or power-lifting equipment such as forklift trucks. Do not exceed the capacity of the rack levels or the decking, whichever is rated lowest within your rack assembly.

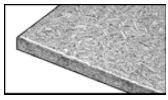

Particleboard Decking

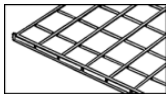

Wire Decking

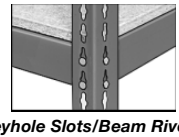

Keyhole Slots/Beam Rivets

Rack with Particleboard Decking (Sold Separately)

Add-On Rack with Particleboard Decking (Sold Separately)

Overall Size, Wd.×Dp.	Beam Cap. per Level, lbs.	Racks without Decking	Each	Add-On Racks without Decking	Each	Extra Storage Levels without Decking	Each	Particleboard Decking for One Level Cap., lbs.		Each	Wire Decking for One Level Cap., lbs.		Each
7 ft. High Racks													
48″×24″	1,200	4942T121	$111.92	4942T64	$106.22	4942T271	$25.70	1,675	4942T51	$12.99	1,000	4942T81	$22.51
48″×36″	1,200	4942T151	125.15	4942T65	120.37	4942T281	30.15	1,400	4942T54	19.40	1,000	4942T82	30.34
48″×48″	1,200	4942T171	137.21	4942T78	130.90	4942T291	34.18	1,200	4942T57	25.84	1,000	4942T83	37.52
72″×24″	750	4942T32	124.78	4942T79	115.06	4942T67	31.37	1,025	4942T52	19.40	1,000	4942T111	32.74
72″×36″	750	4942T35	137.57	4942T94	128.14	4942T68	35.82	850	4942T55	28.84	1,000	4942T112	45.85
72″×48″	750	4942T38	149.29	4942T95	139.88	4942T69	39.91	750	4942T58	38.39	1,000	4942T113	58.21
96″×24″	600	4942T33	164.18	4942T96	154.35	4942T87	47.31	825	4942T53	25.57	1,000	4942T114	45.04
96″×36″	600	4942T36	186.18	4942T97	176.37	4942T88	59.64	700	4942T56	38.39	1,000	4942T115	65.73
96″×48″	600	4942T39	206.40	4942T98	193.35	4942T89	63.67	600	4942T59	51.66	1,000	4942T116	75.05

Medium Duty Racks

When you need to store large items by hand, these racks provide more durability and greater load capacities than our light duty racks. Racks are wider and deeper than our shelving units and have more storage space per level. Color is dark gray. Shipped unassembled.

Note: Racks and decking are sold separately.

Racks without decking and ***add-on racks without decking*** have three storage levels and consist of 16-ga. steel uprights, 16-ga. steel horizontal beams, and 18-ga. steel center supports. Beams have bracket lugs that slide into keyhole slots on the uprights. They adjust on 1½″ centers. *Racks without decking* include two uprights. *Add-on racks without decking* include one upright and connect to an existing rack.

Extra storage levels without decking come with components for one storage level, including beams and center supports.

Steel decking is sold separately and requires no fasteners for installation. Decking is made of 20-ga. ribbed steel.

Warning: Racks are not for use with pallets or power-lifting equipment such as forklift trucks. Do not exceed the capacity of the rack levels or the decking, whichever is rated lowest within your rack assembly.

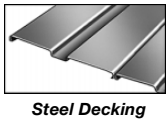

Steel Decking

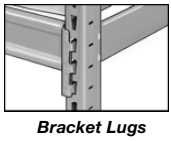

Bracket Lugs

Rack with Steel Decking (Sold Separately)

Add-On Rack with Steel Decking (Sold Separately)

Overall Size, Wd.×Dp.	Beam Cap. per Level, lbs.	Racks without Decking	Each	Add-On Racks without Decking	Each	Extra Storage Levels without Decking	Each	Steel Decking for One Level Cap., lbs.		Each
6 ft. High Racks										
60″×24″	2,400	4869T61	$224.29	4869T71	$172.30	4869T57	$40.13	3,200	4869T47	$31.10
60″×36″	2,400	4869T62	244.09	4869T72	186.95	4869T58	43.25	2,750	4869T48	46.16
60″×48″	2,400	4869T63	263.09	4869T73	197.32	4869T59	46.12	2,400	4869T49	60.50
72″×24″	1,700	4869T64	239.09	4869T74	187.15	4869T55	45.05	2,300	4869T45	36.57
72″×36″	1,700	4869T65	260.03	4869T75	202.88	4869T51	48.57	1,950	4869T41	54.29
72″×48″	1,700	4869T66	281.81	4869T76	219.45	4869T53	52.36	1,700	4869T43	71.22
96″×24″	1,350	4869T67	275.03	4869T77	223.07	4869T56	57.03	1,850	4869T46	48.28
96″×36″	1,350	4869T68	296.76	4869T78	239.61	4869T52	60.80	1,550	4869T42	70.85
96″×48″	1,350	4869T69	318.27	4869T79	255.92	4869T54	64.53	1,350	4869T44	92.90
8 ft. High Racks										
60″×24″	2,400	4869T17	244.91	4869T27	182.62	4869T57	40.13	3,200	4869T47	31.10
60″×36″	2,400	4869T18	266.93	4869T28	198.36	4869T58	43.25	2,750	4869T48	46.16
72″×24″	1,700	4869T15	259.74	4869T25	197.45	4869T55	45.05	2,300	4869T45	36.57
72″×36″	1,700	4869T11	282.81	4869T21	214.26	4869T51	48.57	1,950	4869T41	54.29
96″×24″	1,350	4869T16	295.69	4869T26	233.40	4869T56	57.03	1,850	4869T46	48.28
96″×36″	1,350	4869T12	319.59	4869T22	250.98	4869T52	60.80	1,550	4869T42	70.85
96″×48″	1,350	4869T14	341.22	4869T24	267.41	4869T54	64.53	1,350	4869T44	92.90

Heavy Duty Racks

Rack with Three Storage Levels and Steel Decking (Sold Separately)

Add-On Rack with Three Storage Levels and Steel Decking

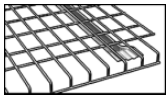

Wire Decking

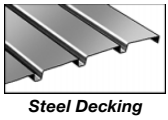

Steel Decking

Keyhole Slots

With capacities higher than our light and medium duty racks, these racks are ideal for large items like heavy machine parts and boxes. Color is tan. Shipped unassembled.

Note: Racks and decking are sold separately.

Racks without decking and ***add-on racks without decking*** consist of 13-ga. welded-steel uprights with 14-ga. steel horizontal beams and 16-ga. steel center supports. Beams have studs that lock into keyhole slots on the frames; they adjust on 4″ centers. Uprights have foot plates with one 5/8″ and two 3/4″ dia. holes for anchoring to the floor (fasteners not included). *Racks without decking* include two uprights. *Add-on racks without decking* include one upright and connect to an existing rack.

Extra storage levels without decking come with components for one storage level, including beams and center supports.

Decking is sold separately and requires no fasteners for installation. *Wire decking* is made of 4-ga. galvanized steel wire mesh with 2″×4″ openings and reinforced with steel channel for strength. *Steel decking* is made of ribbed 20-ga. galvanized steel.

Warning: Racks are not for use with pallets or power-lifting equipment such as forklift trucks. Do not exceed the capacity of the rack levels or the decking, whichever is rated lowest.

O'all Size, Wd.xDp.	Beam Cap. per Level, lbs.	Racks without Decking	Each	Add-On Racks without Decking	Each	Extra Storage Levels without Decking	Each	Wire Decking for One Level Cap., lbs.		Each	Steel Decking for One Level Cap., lbs.		Each
***Racks with Three Storage Levels—**7 ft. High*													
72″×24″	4,025	4670T11	$525.24	4670T38	$414.42	4670T571	$101.20	2,500	4670T524	$34.79	2,300	4670T471	$49.74
72″×30″	4,025	4670T12	551.82	4670T41	427.71	4670T571	101.20	2,500	4670T512	47.26	1,755	4670T472	60.98
72″×36″	4,025	4670T13	534.04	4670T44	423.35	4670T572	102.60	2,500	4670T513	53.39	1,440	4670T473	72.00
72″×48″	4,025	4670T14	577.80	4670T53	442.80	4670T572	102.60	2,500	4670T514	58.91	1,100	4670T474	98.62
96″×24″	2,325	4670T15	607.38	4670T54	462.90	4670T573	124.07	2,500	4670T515	48.47	3,068	4670T611	66.76
96″×30″	2,325	4670T16	622.64	4670T55	463.50	4670T573	124.07	2,500	4670T516	60.82	2,340	4670T612	81.31
96″×36″	2,325	4670T17	626.73	4670T67	467.26	4670T574	127.21	2,500	4670T517	69.64	1,920	4670T613	96.87
96″×48″	2,325	4670T18	654.00	4670T71	477.22	4670T574	127.21	2,500	4670T518	99.95	1,468	4670T614	131.49
120″×24″	1,500	4670T19	679.93	4670T72	494.96	4670T575	152.76	2,500	4670T519	58.45	3,835	4670T355	83.45
120″×36″	1,500	4670T22	693.58	4670T74	497.74	4670T576	154.16	2,500	4670T522	92.57	2,400	4670T353	121.09
120″×48″	1,500	4670T23	732.49	4670T84	517.35	4670T576	154.16	2,500	4670T523	131.76	1,835	4670T354	164.36
***Racks with Four Storage Levels—**8 ft. High*													
72″×24″	4,025	4670T24	709.89	4670T85	484.65	4670T571	101.20	2,500	4670T524	34.79	2,300	4670T471	49.74
72″×36″	4,025	4670T25	726.76	4670T121	568.58	4670T572	102.60	2,500	4670T513	53.39	1,440	4670T473	72.00
72″×48″	4,025	4670T26	739.56	4670T122	574.98	4670T572	102.60	2,500	4670T514	58.91	1,100	4670T474	98.62
96″×24″	2,325	4670T27	819.42	4670T123	666.87	4670T573	124.07	2,500	4670T515	48.47	3,068	4670T611	66.76
96″×36″	2,325	4670T28	836.29	4670T124	669.59	4670T574	127.21	2,500	4670T517	69.64	1,920	4670T613	96.87
96″×48″	2,325	4670T29	849.09	4670T125	684.51	4670T574	127.21	2,500	4670T518	99.95	1,468	4670T614	131.49
120″×36″	1,500	4670T31	933.02	4670T126	774.84	4670T576	154.16	2,500	4670T522	92.57	2,400	4670T353	121.09
120″×48″	1,500	4670T32	945.82	4670T127	781.24	4670T576	154.16	2,500	4670T523	131.76	1,835	4670T354	164.36
***Racks with Four Storage Levels—**10 ft. High*													
96″×36″	2,325	4670T34	902.95	4670T161	711.44	4670T574	127.21	2,500	4670T517	69.64	1,920	4670T613	96.87
96″×48″	2,325	4670T35	920.36	4670T162	720.15	4670T574	127.21	2,500	4670T518	99.95	1,468	4670T614	131.49
120″×36″	1,500	4670T36	961.22	4670T163	808.16	4670T576	154.16	2,500	4670T522	92.57	2,400	4670T353	121.09
120″×48″	1,500	4670T37	1,017.09	4670T164	809.51	4670T576	154.16	2,500	4670T523	131.76	1,835	4670T354	164.36

Light Duty Racks with Boxes

Rack with Three Storage Levels and 60 Boxes

Complete with decking and boxes for storage, these racks include everything you need to create a storage unit. Racks are easy to assemble—rivets on the ends of the beams insert into keyhole slots on the posts. Beams adjust on 1 1/2″ centers. Racks include center supports and 5/8″ thick particleboard decking. The posts, beams, and center supports are made of 14-ga. steel. Color is light gray. Shipped unassembled. The boxes are made of 200-lb. test white corrugated fiberboard and are sized to hold letter- or legal-size files; they include a lid, large label area, and hand holds. Boxes are shipped flat. *Warning:* Not for use with power lifting equipment, such as forklift trucks.

Overall Size, Wd.×Dp.	Beam Cap. per Level, lbs.	No. of Boxes	Box Size, Wd.×Ht.×Dp.		Each
***Racks with Three Storage Levels—**5 ft. High*					
69″×16″	800	30	12″×10″×15″	4965T91	$279.90
69″×32″	800	60	12″×10″×15″	4965T92	433.22
***Racks with Four Storage Levels—**7 ft. High*					
69″×16″	800	40	12″×10″×15″	4965T93	381.43
69″×32″	800	80	12″×10″×15″	4965T94	573.95

Extra Boxes—12″ Wd.×10″ Ht.×15″ Dp. ..... 4965T8 **Each** 1-11 $3.60 ... 12-Up $3.06

Rack and Conveyor Netting

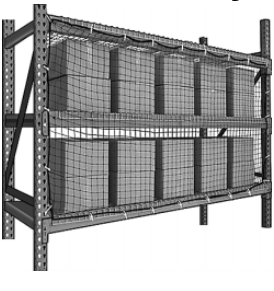

Install this strong netting around your storage racks and conveyors to secure your inventory, increase safety, and help meet OSHA requirements. Netting is made of weather-treated nylon cord bound on all four sides with 5/16″ dia. rope. To achieve stated load rating, netting must be properly secured in 1-ft. increments with cable ties that are rated 175 lbs. or higher (not included, see page 1516). Color is black.

To Order: Please specify width: 8, 10, 12, 25, 50, or 100 ft.

Warning: Not for use as a personnel restraint.

Ht.	Cord Dia.		Per Lin. Ft.
3/4″×3/4″ Mesh; 250-lb. Load Rating			
2 ft.	0.059″	6653T19	$5.58
4 ft.	0.059″	6653T24	8.59
8 ft.	0.059″	6653T64	14.55
1″×1″ Mesh; 500-lb. Load Rating			
2 ft.	0.051″	6653T65	4.94
4 ft.	0.051″	6653T66	7.69
6 ft.	0.051″	6653T67	10.51
8 ft.	0.051″	6653T68	13.25

Ht.	Cord Dia.		Per Lin. Ft.
1 3/4″×1 3/4″ Mesh; 1,250-lb. Load Rating			
2 ft.	0.098″	6653T29	$5.32
4 ft.	0.098″	6653T46	8.50
6 ft.	0.098″	6653T47	11.77
8 ft.	0.098″	6653T74	15.59
10 ft.	0.098″	6653T75	18.05
4″×4″ Mesh; 2,500-lb. Load Rating			
8 ft.	0.161″	6653T77	23.12
10 ft.	0.161″	6653T78	28.38

Heavy Duty Pallet Racks

Unlike the racks shown on the previous pages, these racks are designed for use with power-lifting equipment. They're easy to assemble—simply insert beams into the keyhole slots on the uprights, and beams lock in place, preventing accidental disengagement. All are RMI (Rack Manufacturers Institute) and AISI (American Iron and Steel Institute) compliant. Shipped unassembled.

Uprights have welded horizontal and diagonal braces for maximum strength and rigidity. All are made of 13-ga. steel. Posts are 3″ Wd.×1⅝″ Dp. They have foot plates with two ⅝″ dia. holes for floor mounting (fasteners not included). Color is green.

Beams are made of 15-ga. steel with a 1⅝″ stepped recess for decking (not included, see 44705T and 4341T below). Color is orange.

Note: Do not exceed capacity of uprights or beams, whichever is rated lowest within your rack assembly.

Upright Capacity

Max. Beam Spacing	Cap. per pair, lbs.♣
36″	23,400
48″	19,300
60″	15,000
72″	11,700
84″	9,100
96″	7,100

♣Capacities are reduced by 7% when using beams that are 108″ and wider.

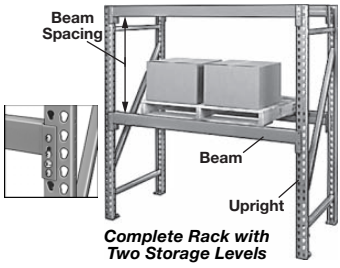

Complete Rack with Two Storage Levels

Racks

All racks include uprights and beams for the number of storage levels shown in the table. ***Complete racks*** come with two uprights. ***Add-on racks*** attach to an existing rack and include one upright. ***Extra storage levels*** consist of one pair of beams.

Overall Size, Wd.×Dp.	Ht.	Beam Cap. per Level, lbs.	Complete Racks	Each	Add-On Racks	Each	Extra Storage Levels	Each
Racks with Two Storage Levels								
60″×30″	5 ft.	7,160	4940T551	$215.22	4940T662	$161.79	4940T62	$56.73
96″×48″	8 ft.	8,260	4940T552	356.37	4940T663	267.28	4940T72	95.42
96″×48″	10 ft.	8,260	4940T734	377.68	4940T664	280.87	4940T72	95.42
120″×48″	10 ft.	6,710	4940T554	415.34	4940T665	316.39	4940T35	113.81
Racks with Three Storage Levels								
96″×48″	12 ft.	8,260	4940T555	513.73	4940T667	393.30	4940T72	95.42
120″×48″	12 ft.	6,710	4940T556	567.01	4940T668	443.27	4940T35	113.81

Create-Your-Own Racks

All components are sold separately so you can custom build a rack to meet your exact requirements. To begin, you'll need two uprights and at least two pairs of beams. Additional racks can be connected side-to-side by using a common upright.

Uprights

Ht.	30″ Deep	Each	36″ Deep	Each	42″ Deep	Each	48″ Deep	Each	54″ Deep	Each
5 ft.	4940T111	$55.94	4940T121	$58.44	4940T131	$60.19	4940T141	$61.78		
6 ft.	4940T112	61.95	4940T122	64.48	4940T132	66.28	4940T142	67.75	4940T152	$69.67
7 ft.	4940T113	74.78	4940T123	77.69	4940T133	80.34	4940T143	83.09	4940T153	87.67
8 ft.	4940T114	82.20	4940T124	86.73	4940T134	89.48	4940T144	92.20	4940T154	94.90
10 ft.	4940T115	94.08	4940T125	98.62	4940T135	101.11	4940T145	103.83	4940T155	106.45
12 ft.			4940T126	118.69	4940T136	122.33	4940T146	126.08	4940T156	135.36
16 ft.					4940T137	167.38	4940T147	172.31	4940T157	173.59

Beams

Wd.×Ht.	Cap. per Pair		Per Pair	Wd.×Ht.	Cap. per Pair		Per Pair	Wd.×Ht.	Cap. per Pair		Per Pair
48″×4″	8,840 lbs.	4940T86	$51.09	84″×4″	5,790 lbs.	4940T91	$73.28	120″×4¾″	5,030 lbs.	4940T169	$104.69
48″×4¾″	11,580 lbs.	4940T87	61.41	84″×5½″	9,370 lbs.	4940T84	85.98	120″×5½″	6,710 lbs.	4940T171	113.81
60″×4″	7,160 lbs.	4940T85	56.73	96″×4″	5,030 lbs.	4940T161	80.95	132″×5½″	5,910 lbs.	4940T173	123.56
60″×4¾″	9,360 lbs.	4940T89	62.97	96″×5½″	8,260 lbs.	4940T163	95.42	132″×5 15/16″	6,780 lbs.	4940T96	134.09
72″×4″	6,680 lbs.	4940T19	64.29	108″×4¾″	5,990 lbs.	4940T165	95.25	144″×5½″	5,020 lbs.	4940T175	133.00
72″×5½″	10,850 lbs.	4940T83	76.56	108″×5½″	7,400 lbs.	4940T167	104.62	144″×5 15/16″	5,970 lbs.	4940T97	144.50

Accessories

Pallet Supports

Place supports on a rack to keep pallets from falling through. Made of 15-ga. steel. Have a zinc finish.

For Rack Dp.		Each	For Rack Dp.		Each
30″	4940T73	$9.20	48″	4940T71	$9.21
36″	4940T54	7.67	54″	4940T69	14.58
42″	4940T51	8.47			

Row Spacers

Spacers tie racks back-to-back to keep rows straight and provide stability. Made of 13-ga. steel. Color is orange. Mounting fasteners included.

Lg.		Each	Lg.		Each
6″	4940T55	$7.31	12″	4940T58	$9.02
8″	4940T56	7.47	18″	4940T59	11.62
10″	4940T57	8.11			

Decking for Heavy Duty Pallet Racks

Give your pallets some added support. Each decking section has a load capacity of 2,500 lbs. (unless noted). Decking requires no fasteners for installation. It fits racks shown above, and other pallet racks with a 1⅝″ stepped recess in the beams.

Ordering Information: Measure the width of the beams in your pallet rack, then use the chart at right to determine the quantity and width of the decking sections you require. Other factors are rack depth and beam design.

Wire Decking— Made of 6-ga. steel wire mesh with 2″×4″ openings and reinforced with steel channel. **To Order:** Please specify finish: gray or galvanized.

Steel Decking— Made of 14-ga. steel and reinforced with steel channel. Decking has a gray finish.

Note: Do not exceed beam capacities.

Beam Wd.	Decking Sections Required per Rack Level
48″	One 46″ Wide
60″	One 58″ Wide
72″	Two 34″ Wide
84″	Two 40″ Wide
96″	Two 46″ Wide
108″	Two 52″ Wide
120″	Two 58″ Wide
132″	One 34″ and Two 46″ Wide
144″	Three 46″ Wide

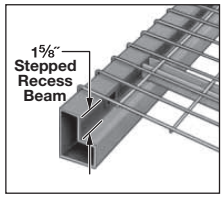

Wd.	30″ Rack Depth	Each	36″ Rack Depth	Each	42″ Rack Depth	Each	48″ Rack Depth	Each	54″ Rack Depth	Each
Wire Decking Sections										
34″	44705T51	$27.84	44705T61	$31.94	44705T71	$33.75	44705T81	$37.24	44705T91★	$42.83
40″	44705T52	29.15	44705T62	31.33	44705T72	34.32	44705T82	38.42	44705T92★	45.06
46″	44705T53	30.39	44705T63	34.88	44705T73	36.93	44705T83	46.62	44705T93★	58.89
52″	44705T54	34.56	44705T64	37.06	44705T74	39.35	44705T84	46.83	44705T94★	59.84
58″	44705T55	35.94	44705T65	39.23	44705T75	46.53	44705T85	49.18	44705T95★	62.62
Steel Decking Sections										
34″	4341T41	123.28	4341T51	132.60	4341T61	144.24	4341T71	174.48	4341T81	186.10
40″	4341T42	130.28	4341T52	141.90	4341T62	153.54	4341T72	186.10	4341T82	197.72
46″	4341T43	134.94	4341T53	148.88	4341T63	162.84	4341T73	195.40	4341T83	209.38
52″	4341T44	141.90	4341T54	155.86	4341T64	169.82	4341T74	207.04	4341T84	221.00
58″	4341T45	148.88	4341T55	165.18	4341T65	179.12	4341T75	216.34	4341T85	232.62

★ Load cap. per section is 2,625 lbs. for decking with gray finish; 2,000 lbs. per section for decking with galvanized finish.

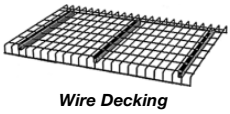
Wire Decking

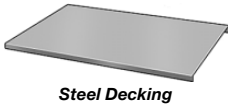
Steel Decking

Extra-Heavy Duty Pallet Racks

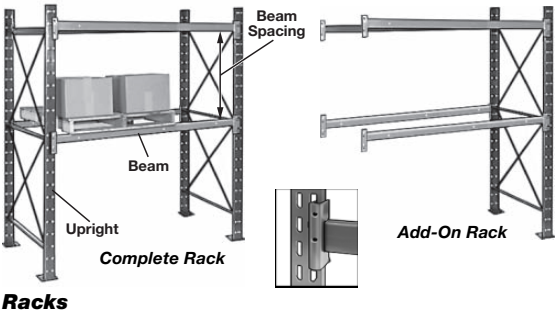

With higher load capacities and thicker corners than our heavy duty racks, these resist side abuse caused by fork trucks. Beams slip into slots on the uprights and are locked into place with the included spring clips. Racks are RMI (Rack Manufacturers Institute) and AISC (American Institute of Steel Construction) compliant. Color is dark gray.

Uprights have welded horizontal and diagonal braces for added rigidity. They're made of 3″ wide steel channel and have foot plates with two 9/16″ dia. holes for floor anchoring (fasteners not included). ***Beams*** are made of structural steel channel and adjust on 2½″ centers.

Note: Do not exceed capacity of the frames or beams, whichever is rated lowest in your rack assembly.

Max. Beam Spacing	Upright Cap. per Pair, lbs.	Max. Beam Spacing	Upright Cap. per Pair, lbs.
48″	31,000	72″	21,000
60″	26,000	84″	17,000

Racks

We've taken the guesswork out of creating your pallet rack. All racks include uprights and beams for two storage levels. ***Complete racks*** come with two uprights. ***Add-on racks*** attach to an existing rack and include one upright. ***Extra storage levels*** consist of one pair of beams.

Overall Size, Wd.×Dp.	Ht.	Beam Cap. per Level, lbs.	Complete Racks	Each	Add-On Racks	Each	Extra Storage Levels	Each
96″×36″	8 ft.	9,600	5217T15	$536.90	5217T25	$394.74	5217T8	$132.93
96″×48″	8 ft.	9,600	5217T16	584.96	5217T26	418.77	5217T8	132.93
96″×48″	10 ft.	9,600	5217T17	617.53	5217T27	435.05	5217T8	132.93

Create-Your-Own Racks

All components are sold separately, so you can custom build a rack to meet your own requirements. For a complete rack, order two uprights and at least two pairs of beams.

Uprights

Ht.	36″ Deep	Each	42″ Deep	Each	48″ Deep	Each
8 ft.	5217T11	$149.64	5217T21	$161.19	5217T31	$174.93
10 ft.	5217T12	182.93	5217T22	188.72	5217T32	192.07
12 ft.	5217T13	212.45	5217T23	232.69	5217T33	225.45
16 ft.	5217T14	317.26	5217T24	333.43	5217T34	315.16

Beams

Wd.×Ht.	Cap. per Pair, lbs.		Per Pair
72″×3″	7,330	5217T41	$85.58
96″×3″	4,530	5217T42	115.34
96″×4″	9,600	5217T45	132.93
108″×3″	3,580	5217T43	119.55
108″×4″	8,310	5217T46♠	135.10
108″×5″	9,600	5217T48	153.83
120″×3″	2,900	5217T44	119.83
120″×4″	6,730	5217T47♠	145.03
120″×5″	8,640	5217T49♠	169.21
144″×5″	7,200	5217T51♠	251.48

♠ Requires one beam tie (sold separately) per pair of beams.

Accessories

Drop-In Pallet Supports

Slip over beams to prevent pallets from falling through. Two supports are recommended per pallet. Supports are 4″ wide. *Heavy duty supports* handle much greater capacities than flush supports and are raised 2″ above beam level.

For Rack Dp.	Flush Cap., lbs.	Flush	Each	Heavy Duty Cap., lbs.	Heavy Duty	Each
36″	1,500	5217T61	$30.90	3,200	5217T64	$33.06
42″	1,300	5217T62	27.59	2,800	5217T65	38.32
48″	1,100	5217T63	33.46	2,400	5217T66	41.43

Beam Tie

Attaches to front and back of rack to prevent beams from rotating during pallet movement. A tie is required on all beams 108″ Wd.×4″ Ht. and larger. Tie is made of 2″ Wd.×5/16″ Thick. steel bars with ½″ dia. threaded rods. Fasteners included.

5217T52 ..... Each $31.57

Row Spacers

Tie racks back-to-back to keep rows straight and add stability. Spacers are made of 2″ square steel tubing and include fasteners.

Lg.		Each
8″	5217T71	$15.31
10″	5217T72	15.68
12″	5217T73	16.76

Wire Decking for Extra-Heavy Duty Pallet Racks

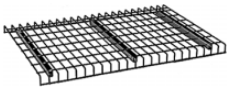

Beam Wd.	Decking Sections Required per Rack Level
72″	Two 34″ Wide
96″	Two 46″ Wide
108″	Two 52″ Wide
120″	Two 34″ and One 46″ Wide
144″	Three 46″ Wide

Wire decking provides extra support for your pallets. Each section has a load capacity of 2,500 lbs. Decking requires no fasteners for installation and is made of 6-ga. steel wire mesh with 2″×4″ openings. It fits the racks shown above and other pallet racks with box- and channel-shaped beams. **To Order:** Please specify finish: gray or galvanized steel.

Note: Do not exceed beam capacities.

Ordering Information: Measure the width of the beams in your pallet rack and use the chart to determine the number and width of the decking sections you require. Also consider rack depth and beam design.

Wd.	For Rack Dp.		Each	Wd.	For Rack Dp.		Each	Wd.	For Rack Dp.		Each
34″	36″	4507T31	$23.50	46″	36″	4507T32	$33.11	52″	36″	4507T33	$37.20
34″	42″	4507T61	36.00	46″	42″	4507T62	42.24	52″	42″	4507T63	48.66
34″	48″	4507T64	39.43	46″	48″	4507T65	44.71	52″	48″	4507T66	52.67

Quick-Mount Rack Netting

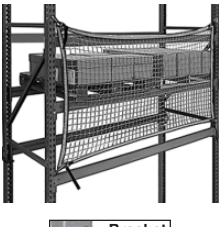

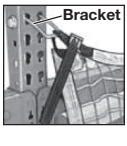

Easily secure this netting to any rack post that has keyhole slots using the included zinc-plated steel hardware. Netting is made of 0.070″ dia. gray nylon cord with a 2″×2″ mesh size and is bound on all sides with 1½″ wide nylon webbing. Tension straps (included) allow the netting width to adapt by ±1 ft, which means the 4 ft. wide netting can be used on 3 ft. to 5 ft. wide racks; the 8 ft. wide netting can be used on 7 ft. to 9 ft. wide racks. It meets OSHA requirements and conforms to NFPA (National Fire Protection Association) standards.

Warning: Not for use as a personnel restraint.

Wd.×Ht.	Load Cap., lbs.		Each
4 ft.×4 ft.	2,500	4563T11	$96.67
8 ft.×4 ft.	2,500	4563T12	104.18
8 ft.×8 ft.	2,500	4563T13	121.33

Rack Upright Post Protectors

Protect your storage racks from damage caused by vehicles. Protectors fit all 3″ wide posts. Color is yellow.

Steel floor-mount protectors bolt to the floor with four ½″ anchors (not included). Made of ¼″ thick steel plate. ***Plastic column-mount*** protector secures to post with two hook and loop straps. It's UV resistant and won't dent like steel.

Ht.		Each 1-11	Each 12-Up
Steel Floor-Mount			
8″	44455T43	$32.22	$29.05
12″	44455T44	34.23	30.87
18″	44455T45	40.29	36.33
24″	44455T46	48.35	43.59
36″	44455T47	60.42	54.48
48″	44455T48	78.55	70.82
Plastic Column-Mount			
18″	4327T31	39.78	35.28

Plastic and Steel Pallets

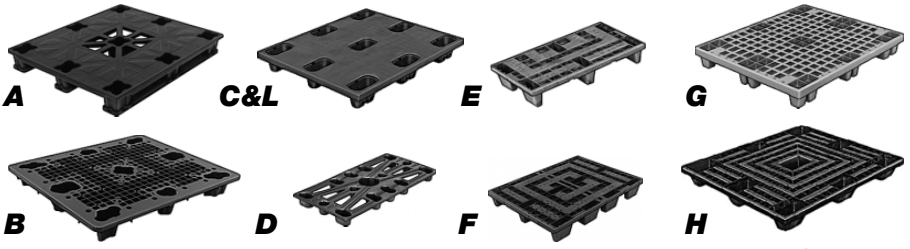

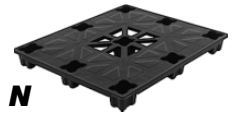

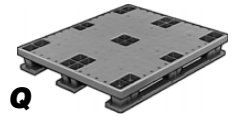

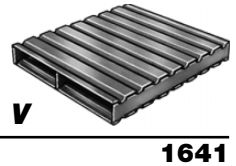

Compared to wood pallets, these are more durable, offer better moisture resistance, and are easier to clean. Plus, there's no need to worry about nails or splinters and they are recyclable. You can use them inside and outside your facility to store, move, and ship material.

Pallets for Racks with Decking— When stored in racks, these pallets require a supporting surface such as decking. See pages 1639-1640 for pallet racks and decking.

Pallets for Racks without Decking— Also known as rackable pallets, these pallets can be stored directly on the beams of a pallet rack and do not require a supporting surface such as decking. They have the highest load capacities of any pallets we offer.

Nestable pallets fit inside like-size pallets to save storage and shipping space.

Stackable pallets can be stacked one on top of another. They offer greater load capacities than nesting pallets.

Pallets with flow-through surface are lighter in weight and allow air and liquid to flow through the pallet.

Pallets with solid surface allow more uniform stacking.

Pallets for Racks with Decking

Overall Size, Wd.	Ht.	Dp.	Max. Load, lbs. Moving★	Stationary■	Smallest Fork Opening Wd.	Ht.	Entry Points For Forklift Truck	Pallet Jack		Each
Nestable Pallets										
Recycled Polyethylene with Flow-Through Surface— *Color is black.*										
A	40″	5″	48″	1,000	7,500	12″	3 1/2″	4-Side	4-Side	**4123T15** $25.86
B	40 3/16″	5 1/2″	48 3/16″	2,300	10,000	11 1/4″	3 11/16″	4-Side	4-Side	**4123T11** 40.37
Recycled Polyethylene with Solid Surface— *Color is black.*										
C	40″	6″	48″	1,200	7,000	12″	4″	4-Side	4-Side	**4560T18** 55.98
Polyethylene with Flow-Through Surface— *Color is black, unless noted.*										
D	12″	1 1/2″	24″	——	800	5 1/4″	1 1/2″	None	2-Side	**4123T26** 5.04
E	19 1/2″	5 1/4″	28″	1,500	5,000	4 11/16″	4″	2-Side	2-Side	**4123T27** 53.11
F	28″	5 1/4″	40″	2,000	10,000	10″	4″	2-Side	2-Side	**4123T55** 66.10
G	40″	6″	48″	1,200	10,000	12″	4″	4-Side	4-Side	**4123T34▲** 64.43
H	39 1/4″	5″	47 1/4″	3,000	30,000	10 3/4″	3 3/4″	4-Side	4-Side	**4123T36** 43.16
H	48″	5 3/4″	48″	4,000	30,000	10 5/8″	3 5/8″	4-Side	4-Side	**4123T38** 113.63
USDA-Approved and FDA-Compliant Polyethylene with Flow-Through Surface— *Color is blue.*										
J	40″	5 1/8″	48″	2,000	10,000	10 3/4″	3 9/16″	4-Side	4-Side	**4123T35** 93.25
Polyethylene with Solid Surface— *Color is black.*										
K	28″	5 1/4″	42″	2,500	10,000	8 1/2″	3 3/4″	4-Side	4-Side	**4560T41** 99.23
L	40″	6″	48″	4,000	30,000	10 3/8″	4 1/2″	4-Side	4-Side	**4560T52** 92.72
L	48″	6″	48″	4,000	30,000	10″	4 1/4″	4-Side	4-Side	**4560T43** 125.25
Polyethylene with Spill-Control Design for Drums— *Color is orange. Holds up to four 55-gallon drums and will contain up to 12 gallons of leakage/overflow within its molded wells.*										
M	48″	5 3/4″	48″	3,500	9,000	9 1/4″	3 5/8″	4-Side	4-Side	**5017T48** 145.88
Stackable Pallets										
Recycled Polyethylene with Flow-Through Surface— *Color is black.*										
N	40″	5 3/4″	48″	1,750	7,500	11 5/8″	3 1/2″	4-Side	4-Side	**4802T75** 42.36
Polyethylene with Flow-Through Surface— *Color is black.*										
P	40″	5 3/4″	47 3/4″	3,500	30,000	11 3/8″	3 19/32″	4-Side	4-Side	**4802T76** 109.85
P	47 3/4″	5 3/4″	60″	3,500	30,000	11″	2 3/4″	4-Side	None	**4802T77** 267.59
P	47 3/4″	5 3/4″	71 3/4″	4,000	30,000	11″	2 3/4″	4-Side	None	**4802T78** 275.38
Polyethylene with Solid Surface— *Color is gray.*										
Q	40″	6 1/2″	48″	1,200	10,000	12″	3 1/2″	4-Side	4-Side	**4953T1** 108.36

★ When being moved by a forklift truck or pallet jack. ■ When on the floor of your facility. ▲ Color is gray.

Pallets for Racks without Decking

Overall Size, Wd.	Ht.	Dp.	Maximum Load, lbs. Moving★	Stationary■	On Rack●	Smallest Fork Opening Wd.	Ht.	Entry Points For Forklift Truck	Pallet Jack		Each
Stackable Pallets											
USDA-Approved and FDA-Compliant Polyethylene with Flow-Through Surface— *Color is blue.*											
R	40″	6 5/8″	47 3/4″	5,000	30,000	2,000	10 1/2″	3 13/16″	4-Side	4-Side	**23125T67** $186.28
Fire Retardant (FM Approved) Polyethylene with Flow-Through Surface— *Color is black.*											
R	40″	6 5/8″	47 3/4″	5,000	30,000	2,000	10 1/2″	3 13/16″	4-Side	4-Side	**23125T84** 260.58
Polyethylene with Flow-Through Surface— *Color is black.*											
S	40″	5 9/16″	48″	5,000	30,000	2,800	12″	3 1/2″	4-Side	4-Side	**4410T41** 156.00
Polyethylene with Solid Surface— *Color is black.*											
T	48″	6 1/4″	48″	4,000	30,000	1,200	10″	4 1/2″	4-Side	4-Side	**4410T32** 181.57
Steel with Flow-Through Surface— *Color is gray. Made of 16-ga. steel.*											
U	48″	4 1/4″	48″	4,000	40,000	4,000	9 7/8″	1 3/4″	4-Side	2-Side	**8748T4** 177.27
Steel with Solid Surface— *Made of unpainted 12-ga. steel.*											
V	42″	5 1/8″	48″	6,000	40,000	8,000	21″	3 1/8″	2-Side	None	**4542T3** 280.33

★ When being moved by a forklift truck or pallet jack. ■ When on the floor of your facility.
● When stored on rack beams without decking.

Horizontal and Vertical Storage Racks

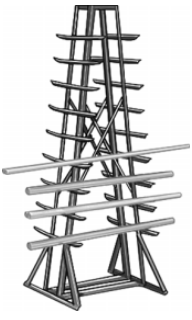

Horizontal Storage Rack

Vertical Storage Rack (Single-Sided)

Save space by storing your bar stock horizontally or vertically—these racks hold a variety of materials including pipe, tubing, and angle iron. Racks are made of 1/8″ thick steel and have fixed arms. Shipped unassembled.

Horizontal storage rack can hold materials up to 10 ft. long. Additional racks can be positioned side-by-side to accommodate materials longer than 10 feet. Color is dark gray.

Vertical storage racks can hold materials up to 12-ft. long and include shelves for storing smaller items. *Single-sided rack* has three shelves (one is 12-ga. steel; two are 14-ga. steel). Color is dark gray. *Double-sided rack* has four 12-ga. steel shelves. Color is green, except shelves are orange.

Overall Size, Wd.×Ht.×Dp.	No. of Arms	Arm Lg.	Cap. per Pair of Arms, lbs.	Cap. per Shelf, lbs.	Overall Cap., lbs.		Each
Horizontal Storage Rack							
Double-Sided Rack							
30″×84″×30″	36	9″	100	—	1,800	44485T57	$266.13
Vertical Storage Racks							
Single-Sided Rack							
36″×84″×24″	12	6″	—	150	3,000	5106T5	227.18
Double-Sided Rack							
42″×84″×36″	32	6″	—	1,200	8,000	5106T2	406.45

Create-Your-Own Mobile Storage Racks

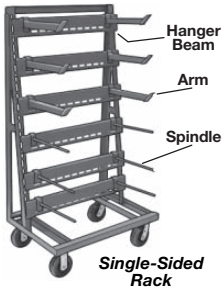

Single-Sided Rack

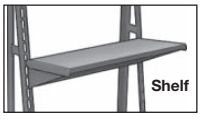

Shelf

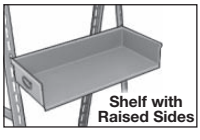

Shelf with Raised Sides

Customize these versatile mobile racks to meet your needs. Use them for typical shelving applications as well as for storing specialty items such as pipe, tubing, and spools. Just choose a rack from the offering below and add accessories. The components easily attach to the rack without fasteners. Color is orange.

Racks

Racks are made of 3/16″ thick steel. They include four casters (two rigid, two swivel) with 6″ dia. phenolic wheels. Welded and shipped assembled.

Holds Max. No. of Shelves	Overall Size, Wd.×Ht.×Dp.	Overall Cap., lbs.		Each
Single-Sided Racks				
7	34 5/8″×65 1/2″×24″	2,500	4651T13	$343.98
14	72 3/8″×65 1/2″×24″	2,500	4651T14	553.72
Double-Sided Racks				
14	34 5/8″×65 1/2″×40 1/2″	2,500	4651T15	448.50
28	72 3/8″×65 1/2″×40 1/2″	2,500	4651T19	872.28

Accessories—For use with all racks sold above.

Shelf—Made of 16-ga. steel. Shelf adjusts vertically along the rack on 2 7/16″ centers. Size is 32 3/4″ Wd.×6″ Ht.×15″ Dp. 500-lb. capacity.

4651T17 ..... **Each** $59.91

Shelf with Raised Sides—Made of 16-ga. steel. Shelf has 6″ high sides and adjusts vertically along the rack on 2 7/16″ centers. Size is 32 3/4″ Wd.×6″ Ht.×15″ Dp. 500-lb. capacity.

4651T18 ..... **Each** $63.67

Hanger Beam—Has 12 slots for hanging arms and spindles (sold separately). Beam adjusts vertically along the rack on 2 7/16″ centers. 500-lb. capacity.

4651T16 ..... **Each** $44.78

Arms—Use with the hanger beam (sold separately) for storing pipe, tubing, and flat stock. Each arm is 15″ long and has a 1 3/8″ high lip to prevent material from falling off. 250-lb. capacity per pair.

4651T23 ..... **Per Pair** $45.24

Spindles—Use with hanger beam (sold separately) for storing spools, gears, and wheels. 150-lb. capacity.

Dia.×Lg.		Each
1/2″×15″	4651T28	$14.44
5/8″×15″	4651T29	15.28
3/4″×15″	4651T31	17.16
1″ ×15″	4651T32	20.12

Light Duty Cantilever Racks

Double-Sided Rack

Perfect for storing lightweight materials such as plastics, conduit, and tubing. Racks have two 12-ga. steel channel columns with 7-ga. steel bases, plus 3/16″ thick structural steel arms that adjust on 1 1/2″ centers. The arms are angled upward 3° and have 2″ high removable lips to prevent material from rolling off. The bases have a lip on each side to provide additional storage space. Racks have two horizontal beams and a cross brace for added stability. Color is dark gray. Shipped unassembled.

Warning: Not for use with power-lifting equipment such as forklift trucks.

Overall Size, Wd.×Ht.×Dp.	No. of Arms	Arm Lg.	Cap. per Pair of Arms, lbs.	Overall Cap., lbs.		Each
Single-Sided Rack						
36″×76 3/16″×18 1/4″	14	12″	500	3,500	4901T91	$433.31
Double-Sided Rack						
36″×76 3/16″×30″	28	12″	500	7,000	4901T92	524.83

Light Duty Mobile Cantilever Rack

Roll this rack right up to your job site. It has two rigid and two swivel casters with 5″ dia. phenolic wheels. Rack is made of 12-ga. steel and has 12-ga. tubular steel arms welded onto the columns. There's one pair each of 12″, 14″, 16″, and 20″ long arms on each side of the rack. Arms have a 3″ high, welded-on lip that prevents material from rolling off. Color is dark gray. Shipped unassembled.

Optional floor lock prevents the rack from rolling while loading and unloading. It can be welded or bolted to the underside of the rack and has four 3/8″×3/4″ mounting slots (fasteners not included).

Warning: Not for use with power lifting equipment such as forklift trucks.

Overall Size, Wd.×Ht.×Dp.	No. of Arms	Cap. per Pair of Arms, lbs.	Overall Cap., lbs.		Each
50″×69″×43″	16	250	1,000	2870T11	$551.11

Optional Floor Lock ..... 2728T22 **Each** $38.47

Medium Duty Cantilever Racks

When you need something more rugged than our light duty racks, use these racks for storing materials such as conduit, lumber, and tubing. Racks are made of 6″ wide steel I-beam columns with a 5″ wide steel channel base, and 14-ga. steel arms that adjust on 1½″ centers. Arms have a 5° incline and a 2″ high lip to prevent material from rolling off. The lip is removable and can be reversed to make the end flush for storing flat material. All racks have two horizontal beams and come with cross braces for added stability. Color is dark gray, except arms have a galvanized finish. Shipped unassembled.

Complete racks include two columns. ***Add-on racks*** include one column and attach to a complete unit.

Warning: Not for use with power-lifting equipment such as forklift trucks.

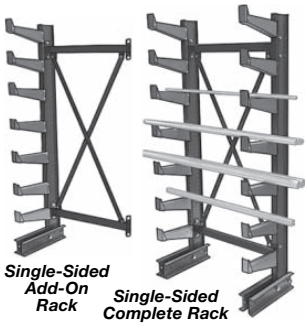

Overall Size, Wd. × Ht. × Dp.	Arm Lg.	Cap. per Arm, lbs.	Cap. per Column, lbs.	Complete Racks: No. of Arms	Complete Racks:	Complete Racks: Each	Add-On Racks: No. of Arms	Add-On Racks:	Add-On Racks: Each
Single-Sided Racks									
41½″ × 84″ × 21″	14″	500	3,500	14	4900T88	$605.51	7	4900T44	$336.12
79½″ × 84″ × 21″	14″	500	3,500	14	4900T91	629.33	7	4900T45	356.92
Double-Sided Racks									
41½″ × 84″ × 34″	14″	500	7,000	28	4900T89	880.70	14	4900T46	466.77
79½″ × 84″ × 34″	14″	500	7,000	28	4900T92	897.74	14	4900T47	493.28

Heavy Duty Cantilever Racks

Store pipe, lumber, and other heavy materials on these durable racks. Arms connect to the columns with pin-and-lock assemblies and adjust on 3″ centers. Color is dark gray. Shipped unassembled.

Columns— Made of 12-ga. steel. Each column includes a base with a lip on each side to provide additional storage space. Bases have four 11/16″ dia. holes for floor anchoring (fasteners not included).

Arms— All are made of 12-ga. steel, except the 36″ long arms are made of 14-ga. steel. Available with and without a removable 2″ high lip that prevents your material from falling off the rack. *Straight arms* extend parallel to the floor for storing flat material. *Inclined arms* are angled upward 18° to prevent round material from rolling off.

Braces— Braces are made of 2½″ × 1½″ steel tubing. For ***create-your-own racks***, the brace set you choose will determine the width of your rack.

Note: Do not exceed the capacity of the columns, which may be lower than the sum of the arm capacities.

Warning: Not for use with power-lifting equipment such as forklift trucks.

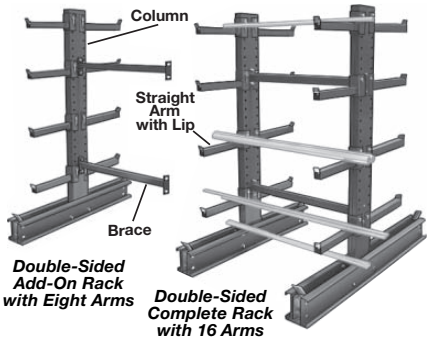

Racks

All the components required to create a rack are included—columns, straight arms with removable lips, and a set of braces. ***Complete racks*** include two columns. ***Add-on racks*** include one column and attach to a complete rack.

Overall Size, Wd. × Ht. × Dp.	Arm Spacing, Center-to-Center	Arm Lg.	Cap. per Arm, lbs.	Cap. per Column, lbs.	Complete Racks: No. of Arms	Complete Racks:	Complete Racks: Each	Add-On Racks: No. of Arms	Add-On Racks:	Add-On Racks: Each
Single-Sided Racks										
43″ × 84″ × 31″	36″	18″	870	10,500	8	44525T7	$591.16	4	44525T701	$317.23
55″ × 84″ × 31″	48″	18″	870	10,500	8	44525T11	606.52	4	44525T101	322.53
55″ × 96″ × 37″	48″	24″	650	7,500	8	44525T12	652.48	4	44525T102	343.33
79″ × 120″ × 46″	72″	36″	430	5,700	12	44525T13	744.14	6	44525T103	410.07
Double-Sided Racks										
43″ × 84″ × 53″	36″	18″	870	21,000	16	44525T8	799.97	8	44525T801	407.60
55″ × 84″ × 53″	48″	18″	870	21,000	16	44525T21	816.36	8	44525T201	410.41
55″ × 96″ × 65″	48″	24″	650	15,000	16	44525T22	891.79	8	44525T202	450.38
79″ × 120″ × 82″	72″	36″	430	11,400	24	44525T23	1,223.07	12	44525T203	649.53

Create-Your-Own Racks

Design a rack to suit your application—all components are sold separately. To begin, you'll need at least two columns, your desired number of arms, and a set of braces. Add on to your rack by using another column, arms, and a set of braces.

Columns

For Arm Lg.	Max. No. of Arms per Side	Single Sided: Overall Dp.	Single Sided: Cap. per Column, lbs.	Single Sided:	Single Sided: Each	Double Sided: Overall Dp.	Double Sided: Cap. per Column, lbs.	Double Sided:	Double Sided: Each
84″ High									
18″	8	31″	10,500	44525T41	$208.84	53″	21,000	44525T44	$239.86
24″	8	37″	7,500	44525T42	214.03	65″	15,000	44525T45	258.55
30″	8	46″	6,500	44525T43	226.60	82″	13,000	44525T46	259.34
36″	8	46″	5,700	44525T43	226.60	82″	11,400	44525T46	259.34
96″ High									
18″	9	31″	10,500	44525T47	223.53	53″	21,000	44525T51	252.33
24″	9	37″	7,500	44525T48	228.72	65″	15,000	44525T52	273.24
30″	9	46″	6,500	44525T49	240.59	82″	13,000	44525T53	273.33
36″	9	46″	5,700	44525T49	240.59	82″	11,400	44525T53	273.33
120″ High									
18″	12	31″	10,500	44525T54	253.38	53″	21,000	44525T57	283.48
24″	12	37″	7,500	44525T55	258.57	65″	15,000	44525T58	303.09
30″	12	46″	6,500	44525T56	270.43	82″	13,000	44525T59	303.17
36″	12	46″	5,700	44525T56	270.43	82″	11,400	44525T59	303.17

Straight Arms

Arm Lg.	Cap. per Arm, lbs.	With Lip	With Lip: Each	Without Lip	Without Lip: Each
18″	870	44525T75	$23.41	44525T86	$21.51
24″	650	44525T76	25.80	44525T87	22.96
30″	520	44525T77	27.16	44525T88	24.67
36″	430	44525T78	30.05	44525T89	27.21

Inclined Arms

Arm Lg.	Cap. per Arm, lbs.	With Lip	With Lip: Each	Without Lip	Without Lip: Each
18″	870	44525T81	$24.28	44525T92	$21.24
24″	650	44525T82	24.81	44525T93	22.64
30″	520	44525T83	27.45	44525T94	25.05
36″	430	44525T84	30.48	44525T95	28.31

Braces

For Overall Rack Wd.	For Arm Spacing, Center-to-Center	Braces per Set		Per Set	For Overall Rack Wd.	For Arm Spacing, Center-to-Center	Braces per Set		Per Set
43″	36″	2	44525T19	$56.46	79″	72″	2	44525T26	$76.06
55″	48″	2	44525T24	59.45	103″	96″	2	44525T27	80.72
67″	60″	2	44525T25	60.80					

Extra-Heavy Duty Cantilever Racks

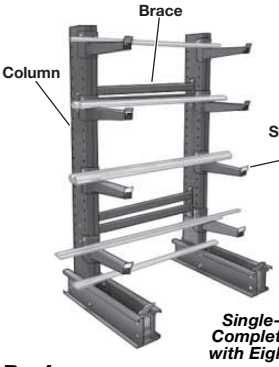

Single-Sided Complete Rack with Eight Arms

Single-Sided Add-On Rack with Four Arms

Designed for storing bar stock, pipe, and other extremely heavy material that is loaded and moved by forklifts or overhead cranes with slings. Arms connect to the columns with pin-and-lock assemblies and adjust on 3″ centers. Color is dark gray. Shipped unassembled.

Columns— Made of reinforced 10-ga. steel, except 96″ high columns are made of 11-ga. steel. Each column includes a base with a lip on each side for additional storage space. Base is 7-ga. steel with one 11/16″ dia. hole for floor anchoring (fasteners not included).

Arms— All are 4″ Wd. × 3″ Ht., tapering to 1½″ high and include pin and lock assemblies. Available with and without a removable 1¼″ high lip. 18″ and 24″ long arms are made of 11-ga. steel. 30″ to 48″ long arms are made of 10-ga. steel. *Straight arms* extend parallel to the floor for storing flat material. *Inclined arms* are angled upward 18° to prevent round material from rolling off.

Braces— Braces are made of 13-ga. steel. For ***create-your-own racks***, the brace set you choose will determine the width of your rack.

Note: Do not exceed the capacity of the columns, which may be lower than the sum of the arm capacities.

Racks

All the components required to create a rack are included—columns, straight arms with removable lips, and a set of braces. ***Complete racks*** include two columns. ***Add-on racks*** include one column and attach to a complete rack.

Overall Size, Wd. × Ht. × Dp.	Arm Spacing, Center-to-Center	Arm Lg.	Cap. per Arm, lbs.	Cap. per Column, lbs.	Complete Racks: No. of Arms		Complete Racks: Each	Add-On Racks: No. of Arms		Add-On Racks: Each
Single-Sided Racks										
82″ × 96″ × 40″	72″	24″	2,000	12,530	8	4849T1	$807.64	4	4849T21	$456.79
82″ × 120″ × 49″	72″	36″	1,300	12,340	12	4849T13	1,213.97	6	4849T22	673.99
82″ × 144″ × 61″	72″	48″	1,000	9,690	16	4849T15	1,562.44	8	4849T23	849.64
Double-Sided Racks										
82″ × 96″ × 65″	72″	24″	2,000	25,060	16	4849T2	1,061.58	8	4849T24	627.32
82″ × 120″ × 82″	72″	36″	1,300	24,680	24	4849T14	1,761.90	12	4849T25	947.74
82″ × 144″ × 106″	72″	48″	1,000	19,380	32	4849T16	2,341.59	16	4849T26	1,236.88

Create-Your-Own Racks

Customize a rack to meet your requirements. To begin, you'll need at least two columns, your desired number of arms, and a set of braces. Add on to your rack using another column, arms, and a brace set.

Columns

For Arm Lg.	Max. No. of Arms per Side	Single Sided: Overall Dp.	Single Sided: Cap. per Column, lbs.		Single Sided: Each	Double Sided: Overall Dp.	Double Sided: Cap. per Column, lbs.		Double Sided: Each
96″ High									
18″	9	31″	14,950	4849T41	$264.29	53″	29,900	4849T45	$311.53
24″	9	37″	12,530	4849T42	274.79	65″	25,060	4849T46	326.18
30″	9	46″	10,780	4849T43	285.26	82″	21,560	4849T47	346.18
36″	9	46″	9,460	4849T43	285.26	82″	18,920	4849T47	346.18
42″	9	58″	8,430	4849T44	302.16	106″	16,860	4849T67	396.69
48″	9	58″	7,600	4849T44	302.16	106″	15,200	4849T67	396.69
120″ High									
18″	12	31″	20,640	4849T68	320.74	53″	41,280	4849T54	367.06
24″	12	37″	16,860	4849T69	328.59	65″	33,720	4849T55	382.89
30″	12	46″	14,250	4849T71	353.10	82″	28,500	4849T56	402.89
36″	12	46″	12,340	4849T71	353.10	82″	24,680	4849T56	402.89
42″	12	58″	10,880	4849T53	358.61	106″	21,760	4849T57	453.40
48″	12	58″	9,730	4849T53	358.61	106″	19,460	4849T57	453.40
144″ High									
18″	14	31″	20,450	4849T58	364.03	53″	40,900	4849T63	414.47
24″	14	37″	16,730	4849T59	377.47	65″	33,460	4849T64	429.11
30″	14	46″	14,160	4849T61	387.94	82″	28,320	4849T65	449.11
36″	14	46″	12,270	4849T61	387.94	82″	24,540	4849T65	449.11
42″	14	58″	10,830	4849T62	404.84	106″	21,660	4849T66	499.63
48″	14	58″	9,690	4849T62	404.84	106″	19,380	4849T66	499.63

Arms

Arm Lg.	Cap. per Arm, lbs.	With Lip		Without Lip	
			Each		Each
Straight Arms					
18″	2,500	4849T91	$27.55	4849T79	$25.21
24″	2,000	4849T92	30.02	4849T81	27.68
30″	1,600	4849T93	33.06	4849T82	30.72
36″	1,300	4849T72	36.66	4849T83	33.73
42″	1,145	4849T73	41.86	4849T84	38.82
48″	1,000	4849T74	46.15	4849T85	40.35
Inclined Arms					
18″	2,500	4849T76	29.74	4849T87	27.40
24″	2,000	4849T77	32.48	4849T88	30.14

Braces

For Overall Rack Wd.	For Arm Spacing, Center-to-Center	Braces per Set		Per Set
For 96″ High Columns				
46″	36″	2	4849T31	$70.61
58″	48″	2	4849T32	80.84
70″	60″	2	4849T33	87.35
82″	72″	2	4849T34	101.45
For 120″ and 144″ High Columns				
46″	36″	3	4849T35	105.92
58″	48″	3	4849T36	121.26
70″	60″	3	4849T37	131.03
82″	72″	3	4849T38	152.18

Wire Decking for Cantilever Racks with Straight Arms

Make your extra-heavy duty and heavy duty cantilever racks more versatile. Wire decking rests on the rack's arms, allowing you to store smaller material that would otherwise fall through.

Decking is made of 6-ga. steel wire mesh with 13-ga. steel reinforcing channels and 2″ × 4″ openings. Color is light gray. Load capacity is 3,000 lbs.

Note: Do not exceed arm capacity.

For Arm Lg.	FOR OVERALL RACK WIDTHS: 43″ and 46″ (36″ Arm Spacing, Center-to-Center)	Each	55″ and 58″ (48″ Arm Spacing, Center-to-Center)	Each	67″ and 70″ (60″ Arm Spacing, Center-to-Center)	Each	79″ and 82″ (72″ Arm Spacing, Center-to-Center)	Each
18″	4881T32	$36.24	4881T42	$43.82	4881T52	$65.12	4881T62	$80.46
24″	4881T33	40.38	4881T43	46.54	4881T53	69.43	4881T63	89.54
30″	4881T34	41.80	4881T44	48.76	4881T54	79.97	4881T64	93.71
36″	4881T35	42.29	4881T45	51.69	4881T55	83.45	4881T65	98.91
42″	4881T36	50.29	4881T46	62.68	4881T56	87.93	4881T66	105.06
48″	4881T37	53.51	4881T47	67.58	4881T57	93.91	4881T67	109.81

Create-Your-Own Sheet Storage Rack

Keep your sheet stock accessible by storing it vertically in this rack. Just order a base and the number of dividers you need. The base holds a maximum of 10 dividers. Dividers attach to the base without hardware and adjust on 3¾″ centers. *Note:* Do not exceed the capacity of the base, which may be less than the sum of the divider capacities.

Base has two-way fork entry and can be moved with a forklift when empty. It's made of 16-ga. steel and has four 9/16″ dia. holes for floor mounting (fasteners are not included). Color is dark gray.

Divider is made of 7-ga., 1½″ square steel tubing. Color is dark gray.

Base with Three Dividers

Cap., lbs.	Wd.×Ht.×Dp.		Each
Base			
1,500	72″ × 7″ × 39¾″	4883T2	$560.95
Divider			
300	69″ × 36″ × 1½″	4883T24	119.64

Cylinder Holders

Keep your cylinders upright and secure. All holders meet OSHA requirements. Steel holders are made of 11-ga. steel, unless noted. ***Caution:*** Chains and straps do not support cylinder weight. Cylinders should rest on the floor or in the base of the holder.

A&B ***Table-Top Holders—****Style A* have mounting holes for securing to a table top (fasteners not included) and are furnished with set screws to secure your cylinder. *Style B* has tabs on the inside that grip the cylinder.

C&D ***Bench-Mount Holders—***Clamp to a bench top without fasteners. *Style C* clamp to any bench top up to 2½″ thick. *Style D* clamp to any bench top from ¾″ to 3½″ thick.

E-H ***Wall-Mount Holders—***Attach to any wall; fasteners are not included. The base of *style H* must rest on the floor in addition to being secured to the wall.

J&K ***Floor-Mount Holders—***Secure to the floor for added security. Mounting fasteners are not included.

L&M ***Holders with Forklift Entry—***Have two-way forklift access, so they can be easily moved around the plant. *Style L* have 6¼″ Wd.×3 15/16″ Ht. forklift channels, and bars that enclose cylinders to keep them upright. *Style M* has 5⅞″ Wd.×3″ Ht. forklift channels. Holder must be empty when moving with a forklift. It can be mounted to the floor for added security (fasteners not included).

	Holds No. of Cylinders	Cylinder Dia. Range	Overall Size, Wd.×Ht.×Dp.	Mtg. Holes No.	Mtg. Holes Dia.		Each
Table Top							
Steel with Set Screws—*Light Gray*							
A	1	3⅜″-4⅜″	10½″ Dia. × 7″ Ht.	3	¼″	2283T66♦	$49.74
A	1	5⅜″-6¾″	14⅝″ Dia. × 7″ Ht.	4	¼″	2283T19♦	68.33
Polyethylene Press Fit—*Red*							
B	1	2⅞″-3″	7″ Dia. × 3″ Ht.	—	—	2283T13	5.97
Bench Mount							
Steel with Steel Chain—*Zinc-Plated Finish*							
C	1	7″-9″	10½″ × 4½″ × 5″	2	⅜″	2283T4♠	27.40
C	1	9″-16″	19½″ × 4½″ × 8″	2	⅜″	2283T5♠	34.15
Steel with 1½″ Wide Polypropylene Strap—*Light Gray*							
D	1	4″-14″	8″ × 4¼″ × 4¼″	—	—	2283T12	46.45
D	2	4″-12″	24″ × 4¼″ × 4¼″	—	—	2283T64	84.00
Type 304 Stainless Steel with 1½″ Wide Polypropylene Strap							
D	1	4″-14″	8″ × 4¼″ × 4¼″	—	—	2283T62	83.60
D	2	4″-12″	24″ × 4¼″ × 4¼″	—	—	2283T65	136.07
Wall Mount							
Steel with Steel Chain—*Zinc-Plated Finish (Unless Noted)*							
E	1	7″-9″	10½″ × 1¼″ × 3″	2	⅜″	2283T1♠	14.67
E	1	9″-16″	19½″ × 1¼″ × 6″	2	⅜″	2283T3♠	21.58
E	2	9¼″/12⅞″★	23″ × 3″ × 6″	3	⅝″	2283T7♣	70.68
Steel with 1½″ Wide Polypropylene Strap—*Light Gray*							
F	1	4″-12″	8″ × 4¼″ × 2¼″	2	13/32″	2283T22	26.12
F	2	4″-12″	24″ × 4¼″ × 2¼″	4	13/32″	2283T72	52.96
F	3	4″-12″	36″ × 4¼″ × 2¼″	4	⅜″	2283T17	72.60
F	4	4″-12″	48″ × 4¼″ × 2¼″	8	⅜″	2283T18	97.00
Type 304 Stainless Steel with 1½″ Wide Polypropylene Strap							
F	1	4″-12″	8″ × 4¼″ × 2¼″	2	13/32″	2283T61	57.70
F	2	4″-12″	24″ × 4¼″ × 2¼″	4	13/32″	2283T63	108.90
Polypropylene with 1½″ Wide Polypropylene Strap and Steel Chain—*Red*							
G	1	4″-14″	9″ × 4″ × 2″	2	5/16″	2283T11	24.49
G	2	4″-12″	24″ × 4½″ × 2″	4	5/16″	2283T67	53.54
Polyethylene with 1″ Wide Nylon Strap—*Yellow*							
H	2	3″-12⅜″	28″ × 30″ × 14″	4	¾″	2283T95	146.55
Floor Mount							
Steel with Steel Chain—*Green*							
J	2	9¼″/12⅞″★	26″ × 28″ × 14″	3	⅝″	2283T9♦	168.48
Steel with 1½″ Wide Polypropylene Strap—*Light Gray*							
K	1	4″-10″	16″ × 15″ × 16″	3	13/32″	2283T16	151.25
K	4	4″-12″	40″ × 30″ × 24″	4	13/32″	2283T14	334.33
K	6	4″-12″	52″ × 30″ × 25″	4	13/32″	2283T15	383.80
With Forklift Entry							
Steel with Bars—*Orange*							
L	4	6″-9″	34″ × 41″ × 23″	—	—	8379T11♦	291.85
L	6	6″-9″	34″ × 41″ × 33″	—	—	8379T12♦	360.86
L	8	6″-9″	34″ × 41″ × 43″	—	—	8379T13♦	436.37
Polyethylene with 1″ Wide Nylon Strap—*Yellow*							
M	6	3″-10″	48″ × 41″ × 31″	4	¾″	2246T33	382.76

♦ Made of 14-ga. steel. ♠ Made of 3/32″ thick steel channel.
★ One side holds a cylinder up to 9¼″ dia.; the other side holds a cylinder up to 12⅞″ dia.
♣ Made of 3/16″ thick steel channel. Color is green.

TABLE TOP

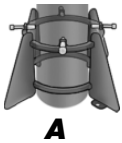

A

B

BENCH MOUNT

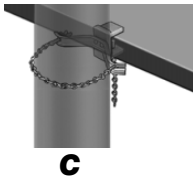

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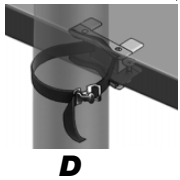

D

WALL MOUNT

E

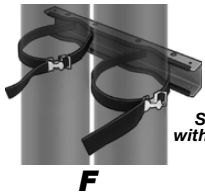

F

Steel with Strap

G

H

FLOOR MOUNT

J

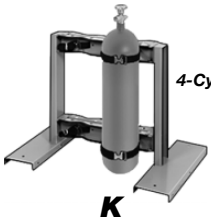

K

4-Cylinder

WITH FORKLIFT ENTRY

L

M

Protective Mesh Sleeving for Cylinders

Protect cylinders from dings and abrasions while keeping identification labels visible. Sleeving can be cut to length with scissors. Made of UV-resistant polyethylene. Color is white.

Fits Cylinder Dia.	Lg.		Each	Fits Cylinder Dia.	Lg.		Each
4″	14″	4764T5	$1.28	8″-9″	43″	4764T8	$4.10
6″-7″	34″	4764T6	3.17	11″	47″	4764T9	4.76
8″-9″	41″	4764T7	3.91				

Drum Platforms

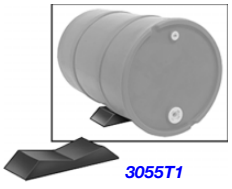

3055T1

3055T2

Store 15- to 55-gallon drums (not included) on shelving, pallets, and pallet racks using these low-profile platforms. Platforms have a slight incline to tilt drums forward for improved drainage. Made of recycled polyethylene. Color is black. 3055T2 has 5¾″ Wd.×3″ Ht. channels for forklift access from the front and back.

Drums per Platform	Overall Size, Wd.×Ht.×Dp.	Cap., lbs.		Each
1	15″×2″ × 6″	550	3055T1	$15.41
1	18″×5½″×36″	550	3055T2	92.20

Stackable Drum Racks

Two-Drum Rack

Stacked Two High

Increase storage space for your 55-gallon drums (not included) without using valuable floor space—these racks can be stacked up to four high. Constructed of 14-ga. steel with a 1″×3″ tubing frame. Racks can be moved with a forklift. Color is orange. Shipped assembled.

Two-Drum Rack—Has forklift access from all sides.

Three-Drum Rack—Has forklift access from the front and back. *Note:* Do not move these racks if stacked more than two high.

Holds No. of Drums	Overall Size, Wd.×Ht.×Dp.	Cap., lbs.		Each
2	45½″×12½″×30″	1,600	2326T11	$121.07
3	71½″×12½″×30″	2,400	2326T12	179.35

Stackable Spill-Control Racks for Pails, Cans, and Drums

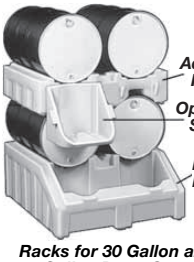

Racks for 30 Gallon and 55 Gallon Drum Storage

These racks provide convenient storage and also contain leaks and spills. Made of rustproof polyethylene. Base racks meet EPA 40 CFR 264.175. Color is yellow. Shipped assembled.

Base rack for 5- and 6½-gallon pails and cans has an 8-gallon containment sump.

Base rack for 30- and 55-gallon drums has a 100-gallon containment sump plus a deep well that holds two 5-gallon pails for easy dispensing. It also has 16¹¹⁄₁₆″ Wd.×2″ Ht. channels for forklift access from the back.

Add-On Racks—Stack up to two additional levels on the base racks. ***Add-on rack for 30- and 55-gallon drums*** has 6″ Wd.×2⅜″ Ht. channels for front and back forklift access. ***Optional shelf*** is for use with the add-on rack for 30- and 55-gallon drums and allows for easy dispensing.

	Holds No. of Containers	Overall Size, Wd.×Ht.×Dp.	Cap., lbs.		Each
For 5- and 6½-Gallon Pails and Cans					
Base Rack	2	31″×15″×29″	200	44895T8	$150.00
Add-On Rack	2	32″×18″×20″	100	44895T9	110.00
For 30- and 55-Gallon Drums					
Base Rack	2	49″×23″×53″	3,000	44895T11	515.62
Add-On Rack	2	49″×13″×41″	2,400	44895T12	218.75
Optional Shelf	—	17″×18″×22″	60	44895T13	81.25

Stackable Storage Racks

Six Racks (Stacked Three High)

Rack with Optional Divider

Stack these racks up to six levels high to create storage space for heavy bar stock, pipe, and lumber. They're extremely rugged, yet light enough to be set up by one person—no tools or fasteners required.

Racks have a welded 14- to 11-ga. steel construction with 2″ square steel posts.

Color is dark gray. Shipped assembled.

Optional dividers (sold separately) divide the vertical space into two openings. Made of 11- to 7-ga. steel, they simply drop into place.

Inside Size, Wd.×Ht.×Dp.	Overall Size, Wd.×Ht.×Dp.	Cap. per Rack, lbs.	Racks	Each	Optional Dividers	Each
8″×12″×12″	12″×14″×16″	2,500	5083T12	$54.00	5083T18	$16.63
10″×15″×15″	14″×17″×19″	3,700	5083T13	56.77	5083T23	33.44
11″×18″×18″	15″×21″×22″	5,600	5083T16	62.40	5083T24	38.61
12″×20″×22″	16″×24″×26″	7,500	5083T15	80.98	5083T19	40.67

Pallet-Style Stackable Racks

You can stack these versatile racks for optimal storage, then disassemble them when they're not in use. 36″ high racks can be stacked up to five high, and 48″ high racks can be stacked up to four high. All have a steel base and forklift access on four sides. A socket in each corner of the rack base accepts a removable post. The top of each post has a 4¼″ square surface for stacking. Color is dark gray. Shipped unassembled.

2,000-lb. capacity racks have 1½″ sq., 13-ga. steel posts. *4,000-lb. capacity racks* have 2³⁄₁₆″ sq., 14-ga. steel posts. *Racks with decking* have 1″×6″ wood boards permanently affixed to the base.

Inside Size, Wd.×Dp.	O'all Size, Wd.×Dp.	Without Decking	Each	With Decking	Each
2,000-lb. Capacity					
36″ High Racks					
44½″×38½″	48″×42″	28775T51	$194.82	28775T61	$216.95
44½″×44½″	48″×48″	28775T53	231.88	28775T63	239.88
48″ High Racks					
44½″×44½″	48″×48″	28775T83	233.92	28775T93	241.98
56½″×44½″	60″×48″	28775T84	241.68	28775T94	247.88
4,000-lb. Capacity					
36″ High Racks					
43″×37″	48″×42″	28775T55	224.12	28775T65	243.06
43″×43″	48″×48″	28775T57	239.13	28775T67	258.70
48″ High Racks					
43″×43″	48″×48″	28775T87	241.47	28775T97	256.77
55″×43″	60″×48″	28775T88	251.60	28775T98	269.10

Assembled Multiperson Steel Locker with Master Door

Individuals can access their locker compartment with their own key, while an authorized person can access all compartments at one time (via the master door) with a master key.

Locker has a 24-ga. steel body with ventilation holes in the back panel, 18-ga. steel doors, and a 16-ga. steel frame. The back panel has eight ¼″×³⁄₁₆″ slots for wall mounting (fasteners not included). Each compartment has a continuous-length hinge and a lock with two keys; each compartment is keyed differently. The master door has four hinges and three locking points for security; it comes furnished with one lock and key. Color is light gray.

Number of Compartments	Compartment Size, Wd.×Ht.×Dp.	Overall Size, Wd.×Ht.×Dp.		Each
10	12″×7″×16″	16½″×77½″×16″	5138T25	$486.26

Unassembled Steel Lockers with Recessed and Hasp Handles

A One Tier

B Two Tier

C Five Tier

D Six Tier

Recessed Handle

Hasp Handle

Slope Top

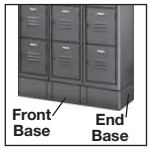

Front and End Bases

These traditional steel lockers are strong and durable, yet are more economical than other lockers we offer. All lockers accommodate a padlock (not included) with a maximum shackle diameter of 7/16″. You can also add a key lock (sold separately below) to all styles, or a combination lock (see 1504A11 on page 2953) to *Styles A* and *B*. All lockers have 6″ high legs. **To Order:** Please specify color: dark gray or tan.

(A&B) Lockers with Recessed Handle— All have a 24-ga. steel body, 16-ga. steel doors and door frames, zinc-plated steel recessed handles, and two sets of louvers (per door) for ventilation. The *12″* and *15″ deep models* have four interior coat hooks per opening. The *18″ deep models* have one interior garment rod per opening.

Style A have three hinges and locking points for security. They also have a fixed shelf 10″ from the top of the locker.

Style B have two hinges and locking points (per door) for security.

(C-F) Lockers with Hasp Handle— All have a 24-ga. steel body, 18-ga. steel doors, 16-ga. steel door frames, two hinges per door, and one set of louvers (per door) for ventilation.

Styles E and *F* have an exterior garment rod. *Note:* Overall height for *Style E* includes garment rod.

Slope Tops— Add a sloping top to the three-lockers wide models to discourage people from placing items on top of the lockers. Made of 24-ga. steel. **To Order:** Please specify color: dark gray or tan.

Also Available: Slope top for one-locker wide models. Please ask for 4916T81 and specify locker width and depth as well as color (dark gray or tan).

Front and End Bases— Provide your lockers with a more finished look. They also prevent dirt and debris from collecting underneath the lockers. All are made of 24-ga. steel. *Note:* For three-lockers wide models, you need to order three front bases. **To Order:** Please specify color: dark gray or tan.

Opening Size, Wd.×Ht.×Dp.	ONE LOCKER WIDE: Overall Size, Wd.×Ht.×Dp.		Each	THREE LOCKERS WIDE: Overall Size, Wd.×Ht.×Dp.	Lockers	Each	Slope Tops	Each	Front Bases	Each	End Bases	Per Pair
(A) One-Tier Lockers with Recessed Handle												
12″×60″×12″	12″×66″×12″	4916T11	$121.16	36″×66″×12″	4916T12	$303.02	4916T29	$32.52	4916T34	$6.23	4916T36	$9.31
12″×60″×15″	12″×66″×15″	4916T13	125.16	36″×66″×15″	4916T14	316.83	4916T31	36.30	4916T34	6.23	4916T37	9.34
12″×60″×18″	12″×66″×18″	4916T15	134.37	36″×66″×18″	4916T16	335.87	4916T32	41.44	4916T34	6.23	4916T38	10.31
12″×72″×12″	12″×78″×12″	4916T17	138.03	36″×78″×12″	4916T18	342.33	4916T29	32.52	4916T34	6.23	4916T36	9.31
12″×72″×15″	12″×78″×15″	4916T19	138.60	36″×78″×15″	4916T21	346.86	4916T31	36.30	4916T34	6.23	4916T37	9.34
12″×72″×18″	12″×78″×18″	4916T1	146.94	36″×78″×18″	4916T2	367.35	4916T32	41.44	4916T34	6.23	4916T38	10.31
15″×72″×18″	15″×78″×18″	4916T23	160.59	45″×78″×18″	4916T24	401.37	4916T33	47.16	4916T35	6.76	4916T38	10.31
(B) Two-Tier Lockers with Recessed Handle												
12″×36″×12″	12″×78″×12″	4916T25	153.76	36″×78″×12″	4916T26	384.30	4916T29	32.52	4916T34	6.23	4916T36	9.31
12″×36″×15″	12″×78″×15″	4916T27	161.46	36″×78″×15″	4916T28	403.22	4916T31	36.30	4916T34	6.23	4916T37	9.34
12″×36″×18″	12″×78″×18″	4916T3	168.11	36″×78″×18″	4916T4	420.38	4916T32	41.44	4916T34	6.23	4916T38	10.31
(C) Five-Tier Lockers with Hasp Handle												
12″×12″×12″	12″×66″×12″	5059T11	167.32	36″×66″×12″	5059T12	419.52	4916T29	32.52	4916T34	6.23	4916T36	9.31
12″×12″×15″	12″×66″×15″	5059T13	170.79	36″×66″×15″	5059T14	427.06	4916T31	36.30	4916T34	6.23	4916T37	9.34
(D) Six-Tier Lockers with Hasp Handle												
12″×12″×12″	12″×78″×12″	5059T15	193.59	36″×78″×12″	5059T16	484.75	4916T29	32.52	4916T34	6.23	4916T36	9.31
12″×12″×15″	12″×78″×15″	5059T17	199.74	36″×78″×15″	5059T18	503.43	4916T31	36.30	4916T34	6.23	4916T37	9.34
12″×12″×18″	12″×78″×18″	5059T19	211.76	36″×78″×18″	5059T21	530.97	4916T32	41.44	4916T34	6.23	4916T38	10.31

Opening Size, Wd.×Ht.×Dp.	Overall Size, Wd.×Ht.×Dp.	Lockers	Each	Front Bases	Each	End Bases	Per Pair
(E) Four-Person Wall-Mount Locker with Hasp Handle							
12″×12″×18″	45½″×17⅜″×18¼″	4870T51	$173.37	—	—	—	—
(F) Sixteen-Person Locker with Hasp Handle							
12″×12″×18″	72″×78″×18″	4870T52	550.67	4916T34	$6.23	4916T38	$10.31

E

Four Person Wall Mount

F

Sixteen Person

Number Plate Sets— The number plates are aluminum with black numerals. Plates measure 7/8″ Ht.×2 5/16″ Wd. and mount onto lockers using the included fasteners.

Numbers in Set		Per Set
1- 25	4916T56	$19.39
26- 50	4916T57	19.39
51- 75	4916T58	19.39
76-100	4916T59	19.39

Also Available: Other numbers. Please ask for 4916T55 and specify number(s).

Key Locks— These locks can be installed through a knockout hole in the locker door. Locks are furnished with two keys. Each individual lock opens with a different key.

		Each
Key Lock for Lockers with Recessed Handle (A & B)	4597T94	$10.93
Key Lock for Lockers with Hasp Handle (C-F)	4597T46	8.47

Unassembled Steel Lockers with Pull-Up Handles

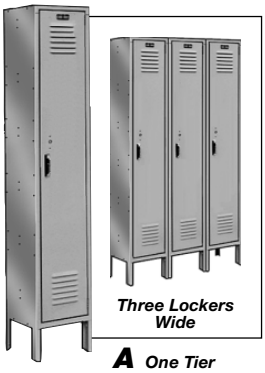

A *One Tier*

B *Two Tier*

C *Three Tier*

Pull-Up Handle

Slope Top

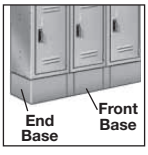

Front and End Bases

Just like our economical steel lockers on the previous page, except these have pull-up handles.

All lockers have a 24-ga. steel body, 16-ga. steel doors and door frames, chrome-plated die-cast zinc handles, and two sets of louvers (per door) for ventilation. They accommodate a padlock (not included) with a maximum shackle diameter of 5/16″. You can also add a key lock (sold separately below) or a combination lock (see 1504A11 on page 2953). All lockers have 6″ high legs. **To Order:** Please specify color: beige or light gray.

(A) One-Tier Lockers— Have three hinges and locking points for security. They also have a fixed shelf 9″ from the top of the locker. The *12″* and *15″ deep models* have four interior coat hooks. The *18″* and *21″ deep models* have three interior coat hooks and a garment rod.

(B&C) Two-Tier and Three-Tier Lockers— Have two hinges and locking points (per door) for security. They also have four interior coat hooks per opening.

Slope Tops— Add a sloping top to the three-lockers wide models to prevent people from leaving items on top of the lockers. Made of 20-ga. steel. **To Order:** Please specify color: beige or light gray.

Also Available: Slope top for one-locker wide models. Please ask for 4862T971 and specify locker width and depth as well as color (beige or light gray).

Front and End Bases— Provide your lockers with a more finished look. They also prevent dirt and debris from collecting underneath the lockers. All are made of 20-ga. steel. Note: For three-lockers wide models, you need to order three front bases. **To Order:** Please specify color: beige or light gray.

	ONE LOCKER WIDE		THREE LOCKERS WIDE							
Opening Size, Wd.×Ht.×Dp.	Overall Size, Wd.×Ht.×Dp.	Each	Overall Size, Wd.×Ht.×Dp.	Lockers	Each	Slope Tops	Each	Front Bases	Each	End Bases	Each
(A) One-Tier Lockers											
12″×60″×12″	12″×66″×12″	4862T1	$155.03	36″×66″×12″	4862T41	$404.27	4862T66	$37.69	4862T95	$12.82	4862T13	$11.99
12″×60″×15″	12″×66″×15″	4862T2	161.61	36″×66″×15″	4862T42	421.45	4862T67	40.31	4862T95	12.82	4862T14	12.69
12″×60″×18″	12″×66″×18″	4862T3	169.88	36″×66″×18″	4862T43	442.96	4862T68	42.76	4862T95	12.82	4862T15	12.96
12″×72″×15″	12″×78″×15″	4862T4	177.46	36″×78″×15″	4862T44	462.97	4862T67	40.31	4862T95	12.82	4862T14	12.69
12″×72″×18″	12″×78″×18″	4862T5	184.44	36″×78″×18″	4862T45	472.95	4862T68	42.76	4862T95	12.82	4862T15	12.96
15″×72″×18″	15″×78″×18″	4862T6	206.10	45″×78″×18″	4862T46	537.55	4862T72	53.96	4862T96	12.90	4862T15	12.96
18″×72″×18″	18″×78″×18″	4862T7	214.37	54″×78″×18″	4862T47	559.22	4862T73	59.50	4862T97	13.35	4862T15	12.96
18″×72″×21″	18″×78″×21″	4862T8	224.50	54″×78″×21″	4862T48	585.59	—	—	4862T97	13.35	4862T16	13.41
(B) Two-Tier Lockers											
12″×30″×12″	12″×66″×12″	4862T9	186.83	36″×66″×12″	4862T34	487.06	4862T66	37.69	4862T95	12.82	4862T13	11.99
12″×36″×12″	12″×78″×12″	4862T91	192.28	36″×78″×12″	4862T35	501.21	4862T66	37.69	4862T95	12.82	4862T13	11.99
12″×36″×15″	12″×78″×15″	4862T92	202.62	36″×78″×15″	4862T36	525.92	4862T67	40.31	4862T95	12.82	4862T14	12.69
12″×36″×18″	12″×78″×18″	4862T93	210.38	36″×78″×18″	4862T37	535.14	4862T68	42.76	4862T95	12.82	4862T15	12.96
15″×36″×15″	15″×78″×15″	4862T94	224.28	45″×78″×15″	4862T38	584.75	4862T69	49.38	4862T96	12.90	4862T14	12.69
(C) Three-Tier Lockers											
12″×24″×15″	12″×78″×15″	4862T98	262.87	36″×78″×15″	4862T99	685.37	4862T67	40.31	4862T95	12.82	4862T14	12.69

Number Plate Sets— Number plates are aluminum with black numerals. They measure 1″ Ht.×2¾″ Wd. and mount onto lockers using the included fasteners.

Numbers in Set		Per Set
1- 25	4862T711	$23.61
26- 50	4862T712	23.61
51- 75	4862T921	25.71
76-100	4862T922	25.71

Also Available: Other numbers. Please ask for 4862T71 and specify number(s).

Key Lock— This lock can be installed through a knockout hole in the locker door. It comes with two keys. Each individual lock opens with a different key.

		Each
Key Lock	4597T93	$7.95

		Each
Replacement Pull-Up Handle	4862T129	$12.65

Modular Assembled Plastic Lockers

Hasp Handle

Flat Top with 9½″ High Opening

Slope Top with 9½″ High Opening

Flat Top with 33″ High Opening

Slope Top with 33″ High Opening

Mix and match different sizes and styles of our plastic lockers to create a customized locker system. You can drill holes for rivets (not included) to connect lockers together as high and as wide as you need. Made of ¼″ thick polyethylene with nylon hinge pins, these lockers are not only quieter than metal lockers, but they're also rust-, dent-, and virtually scratchproof. Simply wash with soap and water to clean (each has two bottom drain holes). Lockers have a hasp handle that accommodates a padlock (not included) with a maximum shackle dia. of 9/32″. Color is light gray.

Lockers with a ***9½″ high opening*** have two hinges and one set of louvers for ventilation. Lockers with a ***33″ high opening*** have three hinges, three sets of louvers for ventilation, and one aluminum coat hook.

Slope-Top Lockers— Can be used alone or placed on top of flat-top lockers. Their design prevents people from leaving items on top of lockers. The interior sloped portion of each locker is hollow for added storage space.

Opening Size, Wd.×Ht.×Dp.	Overall Size, Wd.×Dp.	Flat-Top Lockers Ht.		Each	Slope-Top Lockers Ht.		Each
8½″× 9½″ ×15″	12″×15″	12″	4420T1	$69.03	23″	4420T2	$75.72
8½″×33″ ×15″	12″×15″	36″	4420T5	127.68	47″	4420T6	135.33

Contemporary-Style Unassembled Steel Lockers

With their streamlined design, these lockers are great for offices and corridors.

Lockers have a 24-ga. steel body, 16-ga. steel frame, polystyrene recessed pull handles, and two sets of hidden louvers (per door) for ventilation. Doors have a double-wall construction (outer panel is 20-ga. steel; inner panel is 22-ga. steel) to make opening and closing them quieter than standard lockers. All accommodate a padlock (not included) with a maximum shackle diameter of 7/16″. You can also add a key lock (sold separately below). **To Order:** For complete lockers and add-on lockers, please specify color: dark gray or tan.

(A) One-Tier Locker— Has three hinges, two interior coat hooks, and an interior garment rod. It also has a fixed shelf 14″ from the top of the locker.

(B) Two-Tier Locker— Has two hinges and two interior coat hooks per opening.

(C) Six-Tier Locker— Has two hinges per opening.

(D&E) Four- and Sixteen-Person Lockers— Have two hinges per door as well as an exterior garment rod. Overall height for *style D* includes garment rod.

Add-On Lockers— Mount these units (furnished without one side panel) to either side of a complete locker to make up a row of lockers. We recommend that every fifth locker should be a complete locker (not an add on) to maintain stability. Mounting fasteners included.

A *One-Tier Complete Locker*

B *Two-Tier Add-On Locker*

Two-Tier Complete Locker

C *Six-Tier Complete Locker*

D *Four Person Wall Mount*

Recessed Handle

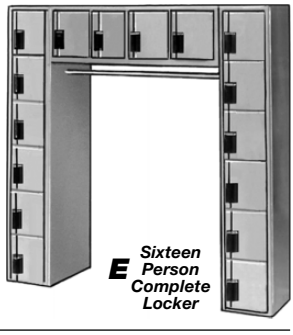

E *Sixteen Person Complete Locker*

Opening Size, Wd.×Ht.×Dp.	COMPLETE LOCKERS Overall Size, Wd.×Ht.×Dp.	Each	ADD-ON LOCKERS Overall Size, Wd.×Ht.×Dp.	Each
(A) One-Tier Locker				
12″ ×72″×18″	12″×72″ ×18″ 4597T1	$143.92	12″×72″×18″ 4597T2	$127.95
(B) Two-Tier Locker				
12″ ×36″×18″	12″×72″ ×18″ 4597T3	152.82	12″×72″×18″ 4597T4	135.27
(C) Six-Tier Locker				
12″ ×12″×18″	12″×72″ ×18″ 4597T6	194.62	12″×72″×18″ 4597T9	179.15
(D) Four-Person Wall-Mount Locker				
11¼″×12″×18″	45″×17⅜″×18″ 4597T8	179.82	—	—
(E) Sixteen-Person Locker				
12″ ×12″×18″	69″×72″ ×18″ 4597T7	569.03	—	—

Key Lock— This lock can be installed through a knockout hole in the locker door. Furnished with two keys. Each individual lock opens with a different key.

4597T46 ..... **Each** $8.47

Hercules Assembled All-Welded Steel Lockers

Here are the most durable lockers we offer. They come assembled and ready to use. All have a 12-ga. steel body and door; 6″ high, 7-ga. steel legs; and lever handles. Each leg has a ¾″ hole for mounting lockers to the floor (fasteners not included). Lockers accommodate a padlock (not included) with a maximum shackle diameter of ½″. Color is dark gray.

(F) One-Tier Lockers— Have three hinges and locking points for security, two sets of louvers for ventilation, one interior coat hook, an interior garment rod, and a shelf fixed 12″ from the top of the locker.

(G) Three-Tier Lockers— Have two hinges and one locking point (per door) for security.

Lever Handle

F *One Tier Three Lockers Wide*

G *Three Tier One Locker Wide*

Opening Size, Wd.×Ht.×Dp.	One Locker Wide Overall Size, Wd.×Ht.×Dp.	Each	Three Lockers Wide Overall Size, Wd.×Ht.×Dp.	Each
(F) One-Tier Lockers				
10″×66¾″×18″	14″×78″×18″ 9618T51	$653.33	38″×78″×18″ 9618T71	$1,131.67
(G) Three-Tier Lockers				
18″×18″	22″×68″×18″ 9618T53	765.38	62″×68″×18″ 9618T73	1,780.66

Heavy Duty Assembled Plastic Lockers

Unlike most of their steel counterparts, these high-density polyethylene lockers won't rust, corrode, or dent. They're also quieter, resistant to scratches, and easy to maintain.

All lockers have a one-piece, ⅜″ thick, thermally welded body. The doors and door frames are ½″ thick with a continuous stainless steel hinge and polyethylene latch that runs the length of the door. Lockers also have two sets of louvers (per door) for ventilation and a pull-up handle with a concealed stainless steel hasp. They accommodate a padlock (not included) with a maximum shackle diameter of 9/32″. *Note:* Lockers come with white sides. Order end panels (sold separately) to give the exposed sides of your lockers a finished look. End panels are made of ⅜″ thick polyethylene.

To Order: For lockers and end panels, please specify color: beige or light gray.

(H) One-Tier Lockers— Have an interior two-prong coat hook as well as a fixed shelf 12″ from the top of the locker.

(J) Two-Tier Lockers— Each opening has an interior two-prong coat hook.

Pull-Up Handle

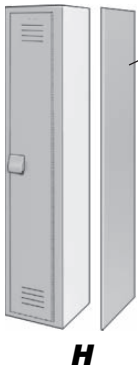

H *One Tier*

J *Two Tier*

K *Three Tier*

Opening Size, Wd.×Ht.×Dp.	Lockers Overall Size, Wd.×Ht.×Dp.	Each	End Panels	Each
(H) One-Tier Lockers				
8¼″×58″ ×11⅛″	12″×60″×12″ 46135T11	$410.67	46135T91	$91.00
8¼″×70″ ×17⅛″	12″×72″×18″ 46135T61	505.62	46135T96	94.06
(J) Two-Tier Lockers				
8¼″×28½″×11⅛″	12″×60″×12″ 46135T12	418.83	46135T91	91.00
8¼″×34½″×17⅛″	12″×72″×18″ 46135T62	442.90	46135T96	94.06
(K) Three-Tier Locker				
8¼″×22⅝″×17⅛″	12″×72″×18″ 46135T63	455.84	46135T96	94.06

Assembled Steel Lockers

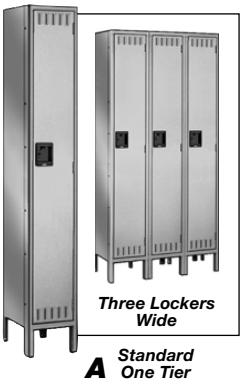

A *Standard One Tier*

B *Standard Two Tier*

C *Standard Five Tier*

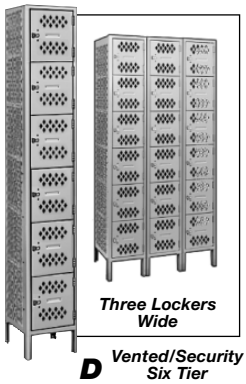

D *Vented/Security Six Tier*

Recessed Handle

Hasp Handle

Slope Top

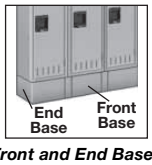

Front and End Bases

Perfect if you don't have the time or personnel to assemble lockers, these lockers come ready to use. All accommodate a padlock (not included) with a maximum shackle diameter of 5/16″. You can also add a key lock (sold separately below) to all styles, or a combination lock (see 1504A21 on page 2953) to *Styles A* and *B*. All have 6″ high legs.

To Order: Please specify color: light gray or tan.

Standard Lockers— All have a 24-ga. steel body and 16-ga. steel doors and door frames, unless noted. Louvers (two sets per door on *Styles A* and *B*; one set per door on *Styles C, D,* and *E*) provide ventilation.

Vented/Security Lockers— Diamond-shaped ventilation slots not only offer maximum air flow to prevent unwanted odors, but they also allow visibility of stored contents. All have a 16-ga. steel body and 14-ga. steel doors and door frames.

Style A have three hinges and locking points for security, three interior coat hooks, and a shelf fixed 8½″ from the top. The *18″, 21″,* and *24″ deep standard lockers* as well as the *one-tier vented/security lockers* also have an interior garment rod.

Style B have two hinges and locking points plus three interior coat hooks per opening.

Styles C, D, and ***E*** have two hinges. *Style E* has 18-ga. steel doors and an exterior garment rod (the rod is included in the overall height).

Slope Tops— Add a sloping top to the three-lockers wide models (except where noted) to prevent people from leaving items on top of the lockers. Made of 20-ga. steel. **To Order:** Please specify color: light gray or tan.

Front and End Bases— Provide your lockers with a more finished look. They also prevent dirt and debris from collecting underneath the lockers. All are made of 20-ga. steel. *Note:* For three-lockers wide models, you need to order three front bases. **To Order:** Please specify color: light gray or tan.

	ONE LOCKER WIDE		THREE LOCKERS WIDE							
Opening Size, Wd.×Ht.×Dp.	Overall Size, Wd.×Ht.×Dp.	Each	Overall Size, Wd.×Ht.×Dp.	Lockers	Each	Slope Tops	Each	Front Bases	Each	End Bases	Each
Standard Lockers											
(A) One-Tier Lockers with Recessed Handle											
12″×60″×12″	12″×66″×12″	$194.09	36″×66″×12″	5162T27	$455.87	5162T91	$37.66	5162T71	$10.91	5162T73	$9.57
12″×60″×15″	12″×66″×15″	199.74	36″×66″×15″	5162T21	459.61	5162T92	40.74	5162T71	10.91	5162T74	9.85
12″×60″×18″	12″×66″×18″	204.24	36″×66″×18″	5162T22	479.59	5162T93	40.59	5162T71	10.91	5162T75	10.40
12″×72″×15″	12″×78″×15″	215.90	36″×78″×15″	5162T24	474.95	5162T92	40.74	5162T71	10.91	5162T74	9.85
12″×72″×18″	12″×78″×18″	230.59	36″×78″×18″	5162T25	489.26	5162T93	40.59	5162T71	10.91	5162T75	10.40
15″×72″×18″	15″×78″×18″	247.75	45″×78″×18″	5162T26	542.58	5162T94	46.12	5162T72	5.81	5162T75	10.40
18″×72″×21″	18″×78″×21″	288.18	—	—	—	5162T85★	35.99	5162T65	6.98	5162T76	13.57
24″×72″×24″	24″×78″×24″	343.86	—	—	—	5162T95★	41.57	5162T96	11.90	5162T97	14.19
(B) Two-Tier Lockers with Recessed Handle											
12″×36″×12″	12″×78″×12″	223.03	36″×78″×12″	5162T42	480.94	5162T91	37.66	5162T71	10.91	5162T73	9.57
12″×36″×15″	12″×78″×15″	232.16	36″×78″×15″	5162T43	506.63	5162T92	40.74	5162T71	10.91	5162T74	9.85
12″×36″×18″	12″×78″×18″	239.93	36″×78″×18″	5162T44	515.89	5162T93	40.59	5162T71	10.91	5162T75	10.40
15″×36″×18″	15″×78″×18″	265.86	45″×78″×18″	5162T45	596.61	5162T94	46.12	5162T72	5.81	5162T75	10.40
(C) Five-Tier Lockers with Hasp Handle											
12″×12″×12″	12″×66″×12″	5162T53● 253.29	36″×66″×12″	5162T56●	462.80	5162T91	37.66	5162T71	10.91	5162T73	9.57
12″×12″×15″	12″×66″×15″	5162T54 246.75	36″×66″×15″	5162T57	454.95	5162T92	40.74	5162T71	10.91	5162T74	9.85
15″×12″×18″	15″×66″×18″	5162T55 293.17	45″×66″×18″	5162T58	689.61	5162T94	46.12	5162T72	5.81	5162T75	10.40
(D) Six-Tier Lockers with Hasp Handle											
12″×12″×12″	12″×78″×12″	5162T61● 272.45	36″×78″×12″	5162T63●	547.08	5162T91	37.66	5162T71	10.91	5162T73	9.57
12″×12″×15″	12″×78″×15″	5162T62● 282.09	36″×78″×15″	5162T64●	549.56	5162T92	40.74	5162T71	10.91	5162T74	9.85
15″×12″×18″	15″×78″×18″	5162T46 337.00	45″×78″×18″	5162T47	801.32	5162T94	46.12	5162T72	5.81	5162T75	10.40
Vented/Security Lockers											
(A) One-Tier Lockers with Recessed Handle											
12″×72″×18″	12″×78″×18″	4201T11 293.79	36″×78″×18″	4201T21	637.62	5162T93	40.59	5162T71	10.91	5162T75	10.40
(B) Two-Tier Lockers with Recessed Handle											
12″×36″×18″	12″×78″×18″	4201T12 313.42	36″×78″×18″	4201T22	703.26	5162T93	40.59	5162T71	10.91	5162T75	10.40
(D) Six-Tier Lockers with Hasp Handle											
12″×12″×18″	12″×78″×18″	4201T13 373.02	36″×78″×18″	4201T23	841.38	5162T93	40.59	5162T71	10.91	5162T75	10.40

★ For one-locker wide models. ● Doors are 18-ga. steel.

E

Opening Size, Wd.×Ht.×Dp.	Overall Size, Wd.×Ht.×Dp.		Each
(E) Four-Person Wall-Mount Standard Locker with Hasp Handle			
12″×12″×18″	48″×16½″×18″	5162T18	$231.22

Number Plate Sets

Number plates are aluminum with black numerals. Mounting fasteners included.

Numbers in Set	Size, Ht.×Wd.		Per Set
1- 25	3/4″×2 7/16″	5162T86	$19.85
26- 50	3/4″×2 7/16″	5162T87	19.85
51- 75	3/4″×2 7/16″	5162T28	19.85

Also Available: Other numbers. Please ask for 5162T78 and specify number(s).

Key Lock

This lock can be installed through a knockout hole in the locker door, and is furnished with two keys. Each individual lock opens with a different key.

		Each
Key Lock	4597T96	$7.95

Create-Your-Own Roller-Curtain Partitions

Roll these flexible curtains into place when you need them, and out of the way when you're through. Made of vinyl, all curtains resist fire, water, oil, mildew, and most acids. They provide privacy, keep areas clean, and are CFM (California Fire Marshal) approved.

Each partition section is furnished with a vinyl curtain, a 16-ga. galvanized steel hanging track, and 10-ga. steel assembly hardware consisting of track connectors and two-wheel rollers with 1″ swivel hooks for hanging curtains. Install the hanging track by suspending it from overhead supports with chain or threaded rod (not included). The top hem of each curtain has grommets for hanging, while the bottom hem is weighted for stability. Hook-and-loop fasteners along the vertical edges of the curtains allow easy access to your enclosed space, yet assure a tight seal when the curtains are closed.

Clear-view curtains have a 16-mil thick, 52″ high clear center section (30″ up from the bottom) that allows you to see in as well as out. The top of the curtain is white, and the bottom is yellow. Both top and bottom are 14 mils thick.

Translucent curtains are 22 mils thick and allow light to pass through. They're great for separating warm and cool-air areas, and for use as a dust barrier. Color is off-white.

Privacy curtains are 14 mils thick and can't be seen through. Use them for in-plant offices, locker rooms, and other restricted areas. Color is yellow.

To Order: Please specify clear view, translucent, or privacy curtain.

To Order a Partition— Determine the overall length, width, and height of your partition as well as the number of sides. Then, determine how many straight and curved sections you'll need. Remember that a curved section measures 2 ft. on each side of the curve.

Clear-View Curtain

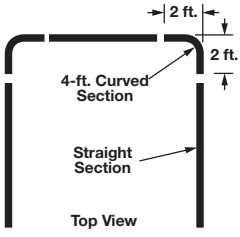

Height	STRAIGHT SECTIONS 6-ft. Wide	Each	8-ft. Wide	Each	10-ft. Wide	Each	4-ft. CURVED SECTIONS (2-ft. Each Side of Curve)	Each
8 ft.	44095T71	$128.06	44095T74	$167.87	44095T77	$193.68	44095T81	$149.95
10 ft.	44095T72	143.11	44095T75	188.66	44095T78	223.33	44095T82	157.64
12 ft.	44095T73	156.86	44095T76	210.87	44095T79	247.56	44095T83	166.12

In-Plant Office Buildings

Easy to assemble and relocate when necessary, these office buildings are just what you need to create private work space in your warehouse or manufacturing facility.

Each building has 3″ thick, fire-rated, R-11 insulated wall panels; 24-ga. steel floor track with screw-on vinyl base; 20-ga. steel posts with wiring access on each side; aluminum top caps and corner posts; 22-ga. corrugated steel roof; and a 24″×48″ noncombustible lay-in acoustical ceiling system. You'll also get a 36″ Wd.×84″ Ht.×1¾″ Thick. door that's made of 20-ga. steel and hung on a 20-ga. steel frame. The door has a 24″ Wd.×24″ Ht.×¼″ Thick. tempered glass window and comes furnished with a keyed lock and two keys (keyed differently). All doors swing out and are hinged on the left. Buildings include up to three (see below) factory-installed tempered glass windows that measure 48″ Wd.×36″ Ht.×¼″ Thick., which can be installed in any wall panel location. They also come with an electrical package that includes 24″×48″ recessed fluorescent light fixtures with acrylic lens cover (four 48″ long T8 bulbs required and not included; see page 697), 110 VAC outlet, wall switch, outlet boxes, conduit (wiring not included), and a circuit breaker panel (with breakers) that's rated at 100 amps with a 70-amp main. Buildings come with four walls but do not come with a floor. Color is beige.

Optional Air Conditioner Cut-Out Kit— Contains one 12-ft. length of 3″ thick wall channel that you cut for an air conditioner opening.

Also Available: Office buildings in different sizes or with additional factory-installed glass windows. Please ask for 6704T777 and specify overall size of building, number of sides, and submit a drawing with the number and location of the additional windows, outlets, and light fixtures.

With One Window

Overall Size, Wd.×Dp.×Ht.	No. of Windows	No. of Outlets	No. of Light Fixtures		Each
8′× 8′×8′	1	1	2	6704T87	$3,831.80
8′× 8′×8′	3	2	2	6704T65	4,132.00
8′×10′×8′	1	1	2	6704T88	4,228.00
8′×10′×8′	3	2	2	6704T69	4,571.00
10′×12′×8′	2	2	3	6704T89	5,233.33
10′×12′×8′	3	3	3	6704T93	5,488.00
12′×16′×8′	3	3	4	6704T94	6,488.00
12′×20′×8′	3	3	4	6704T95	7,265.33
Optional Air Conditioner Cut-Out Kit				6704T92	Each $49.74

Clean Rooms

Create a contaminant-free environment for your critical work with these soft-wall clean rooms. All are rated Class 100,000 clean rooms because they come furnished with one motorized HEPA filter that is 99.99% efficient for particles as small as 0.3 microns—great for pharmaceutical, food, medical, semiconductor, and aerospace applications. The filter operates on 120 VAC, 60 Hz, 2.8 amps and is UL listed. To create a Class 10,000, Class 1,000, or Class 100 clean room, simply remove the ceiling panel(s) and add additional motorized HEPA filter modules (sold separately). *Note:* Use the chart to determine how many filters you will need to reach your desired rating.

Each clean room has an 11-ga. tubular steel, white frame; four clear vinyl walls that are 40-mil thick and overlap each other by 6″ for easy entry and exit; and two 120 VAC recessed light fixtures with four F32T8 fluorescent light bulbs (included). *Note:* There's a 6″ clearance between the bottom of the vinyl walls and the floor.

Optional strip door makes it easier for people with carts to enter and exit the clean room. Door has 80-mil thick clear vinyl strips and measures 48″ Wd.×90″ Ht.

Overall Size, Wd.×Dp.×Ht.		Each
Clean Rooms		
99″ × 99″ ×112″	4160T21	$4,670.40
99″ ×123″ ×112″	4160T22	5,070.00
99″ ×147″ ×112″	4160T23	5,310.00
Additional Motorized HEPA Filter Module		
23⅝″× 47⅝″× 13¼″	4160T51	835.71
Optional Strip Door	4160T81	418.68

Number of Additional Motorized HEPA Filter Modules Required for Higher Clean Room Rating

Part No.	Class 10,000	Class 1,000	Class 100
4160T21	1	2	3
4160T22	1	3	4
4160T23	2	4	5

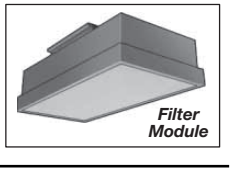

Filter Module

Wire Partitions

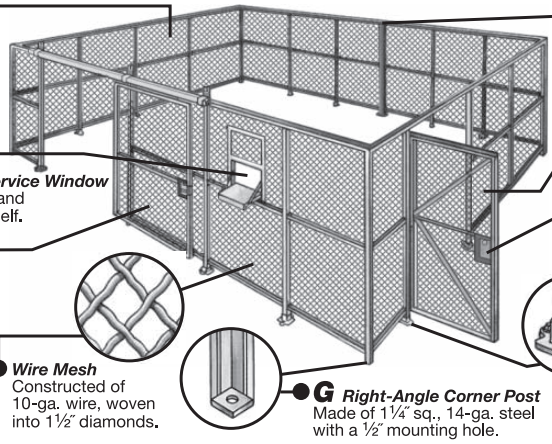

A ***Standard Wall Panel***
Wire mesh is framed with 1¼″ × ⅝″ vertical channels and 1″ × ½″ horizontal channels. Includes a center-reinforcing bar of two 1″ × ⅜″ channels.

B ***Wall Panel with Slide-Up Service Window***
Window is 22½″ Wd. × 18½″ Ht. and includes a 22¼″ Wd. × 12″ Dp. shelf.

D ***Sliding Door Panel***
Furnished with overhead track, two trolleys, and bottom door guide. Actual door opening is 3″ shorter than the listed door height. Choose from doors that slide open to the right and doors that slide open to the left.

Wire Mesh
Constructed of 10-ga. wire, woven into 1½″ diamonds.

G ***Right-Angle Corner Post***
Made of 1¼″ sq., 14-ga. steel with a ½″ mounting hole.

J ***Line Post***

E ***Hinged Door Panel***
Actual door opening height is ½″ shorter than the listed door height. Doors swing out 90°. Choose from doors that swing out to the right and doors that swing out to the left.

Cylinder Lock
Included with all doors. Furnished with two keys. Keyed differently.

L ***Cast Aluminum Floor Shoe***
Included with wall and door panels (except Hinged Dual-Door Panels). Vertical channels of two connecting panels fit into floor shoe. Shoe is 3¹¹⁄₁₆″ Lg. × 1¾″ Wd. × 2″ Ht. with two ⅜″ mounting holes.

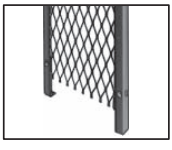

C ***Adjustable Filler Panel***
Includes an expanded metal panel with a 1½″ diamond pattern and two vertical channels for framing. Panel can be cut down from 13″ to 2½″ wide. Floor shoes aren't needed.

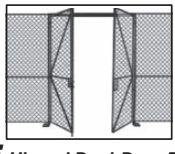

F ***Hinged Dual-Door Panel***
Actual door opening height is ½″ shorter than the listed door height. Choose from doors that swing out 90° and doors that swing in 90°.

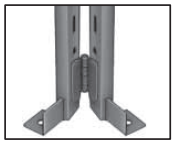

H ***Adjustable Corner Post***
Post is made of 14-ga. steel and has two ⅜″ mounting holes.

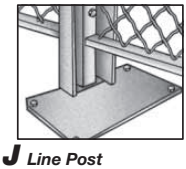

J ***Line Post***
Made of 1″ × 3½″, 12-ga. steel with a 5″ × 9″ baseplate that has four ⁷⁄₁₆″ mounting holes.

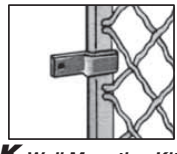

K ***Wall Mounting Kit***
Has one ⅜″ mounting hole for securing a partition to a wall (fasteners included).

This diamond-patterned traditional favorite is great for creating tool and stock rooms, and safely protecting equipment and valuables. Use components such as wall panels, door panels, and accessories to create a custom partition. Panels are made of 10-ga. wire that's woven into framing for strength, except for adjustable filler panels, which are made of expanded metal. All components include fasteners for assembly; however, fasteners for floor shoes are not included. Color is dark gray. Note: There's a 3″ clearance between the bottom of wall and door panels and the floor.

To Order a Partition— Please feel free to contact us or email us your drawing if you need help determining what components you'll need.

1. Make a rough drawing of your partition, including overall width, depth, and height (7-, 8-, 10-, or 12-ft. high).
2. Determine the width and number of wall panels you'll need (***A*** and ***B***). For in-between widths, you may require adjustable filler panels (***C***).
3. Indicate location, size, and style of door panel(s) (***D, E,*** and ***F***).
4. Order a right-angle corner post (***G***) for each 90° corner. For corners other than 90° (up to 270°), order an adjustable corner post (***H***).
5. Order a line post (***J***) for every 15 to 20 feet for added stability.
6. If your partition will make use of an existing wall, order one wall mounting kit (***K***) for each panel you'll connect to a wall.

Width	7-ft. High	Each	8-ft. High	Each	10-ft. High	Each	12-ft. High	Each
Wall Panels								
(A) Standard Wall Panels								
1 ft.	6716T21	$93.69	6716T71	$97.22	6716T171	$130.95	6716T11	$196.50
2 ft.	6716T22	96.05	6716T72	102.40	6716T172	132.78	6716T12	207.91
3 ft.	6716T23	113.19	6716T73	130.82	6716T173	149.91	6716T13	233.71
4 ft.	6716T24	118.33	6716T74	133.19	6716T174	155.56	6716T14	250.67
5 ft.	6716T25	122.77	6716T75	137.28	6716T175	159.83	6716T15	264.43
(B) Wall Panels with Slide-Up Service Window								
3 ft.	6716T26	375.13	6716T76	384.43	6716T176	399.19	6716T16	427.53
5 ft.	6716T711	402.08	6716T712	387.81	6716T714	416.34	6716T17	653.78
(C) Adjustable Filler Panels								
2½″-13″	6716T321	85.59	6716T322	92.25	6716T324	115.08	6716T325	121.15
Door Panels with Cylinder Lock								
(D) Sliding Door Panels— **To Order:** Please specify if door slides open to the right or to the left.								
3 ft.	6716T111	417.74	6716T117	429.69	6716T124	457.61	6716T131	492.48
4 ft.	6716T112	455.14	6716T118	464.48	6716T125	511.16	6716T132	647.84
5 ft.	6716T113	486.26	6716T119	514.18	6716T126	543.54	6716T133	784.99
6 ft.	6716T114	580.59	6716T121	597.48	6716T127	640.66	6716T134	902.45
8 ft.	6716T115	741.12	6716T122	780.08	6716T128	871.31	6716T135	1,076.84
10 ft.	6716T116	833.92	6716T123	909.49	6716T129	1,047.71	6716T136	1,236.69
(E) Hinged Door Panels— **To Order:** Please specify if door swings out to the right or to the left.								
3 ft.	6716T51	261.68	6716T341	303.45	6716T53	333.62	6716T57	476.79
4 ft.	6716T52	290.21	6716T342	341.03	6716T54	371.17	6716T58	550.94
(F) Hinged Dual-Door Panels— **To Order:** Please specify if doors swing out or in.								
6 ft.	6716T35	866.66	6716T37	884.60	6716T39	1,139.14	6716T42	1,528.43
8 ft.	6716T36	935.03	6716T38	975.79	6716T41	1,196.28	6716T43	1,625.64
Posts								
(G) Right-Angle Corner Post	6719T245	22.82	6719T113	24.73	6719T247	27.58	6719T39	45.56
(H) Adjustable Corner Post	6719T248	41.85	6719T241	46.60	6719T242	55.16	6719T44	92.16
(J) Line Post	6719T243	41.85	6719T312	45.91	6719T262	60.87	6719T45	96.19
Accessories								
(K) Wall Mounting Kit— 4 clamps per pkg.							6719T193	Per Pkg. $8.44
(L) Extra Cast Aluminum Floor Shoe							6719T201	Each $5.02

Complete Wire Partitions

Similar to the partitions shown on the previous page, without the guesswork. These complete partitions include everything you'll need: wall and door panels with floor shoes, right-angle corner posts, a line post (when necessary), and wall mounting kits (when necessary; fasteners included). Panels are constructed of 10-ga. wire woven into a 1½″ diamond pattern.

Partitions are offered with and without a roof. Use two-sided partitions to create a room in a corner, three-sided partitions to create a room along a wall, and four-sided partitions to create a freestanding room. The 8-ft. and 12-ft. wide partitions have a 4-ft. wide hinged door that swings out (to the left) 90°; actual door opening height is ½″ shorter than the listed height. The 10-, 20-, and 30-ft. wide partitions have a 5-ft. wide sliding door that slides open to the left; actual door opening height is 3″ shorter than the listed height. All doors include a cylinder lock that comes furnished with two keys (keyed differently). Color is gray. Shipped unassembled.

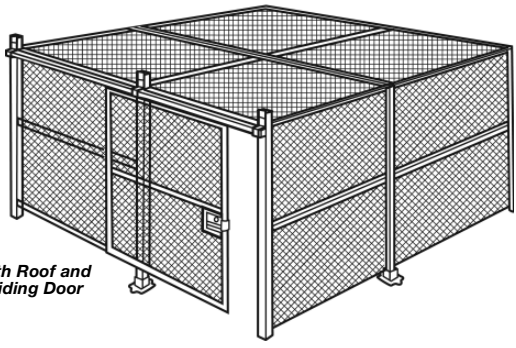

With Roof and Sliding Door

Overall Size, Lg.×Wd.	WITHOUT ROOF 2 Sided	Each	3 Sided★	Each	4 Sided	Each	WITH ROOF 2 Sided	Each	3 Sided★	Each	4 Sided	Each
8-ft. High												
8 ft.× 8 ft.	6719T56	$696.23	6719T36	$936.52	6719T76	$1,199.11	6719T107	$1,007.08	6719T128	$1,212.20	6719T26	$1,418.70
10 ft.×10 ft.	6719T51	885.48	6719T31	1,131.22	6719T71	1,404.39	6719T109	1,214.75	6719T21	1,410.52	6719T28	1,641.03
10 ft.×20 ft.	6719T52	1,153.75	6719T32	1,416.38	6719T72	1,947.56	6719T119	1,811.53	6719T23	2,019.47	6719T46	2,468.22
12 ft.× 8 ft.	6719T57	819.42	6719T37	1,183.33	6719T77	1,418.55	6719T108	1,226.87	6719T129	1,536.73	6719T27	1,754.89
12 ft.×12 ft.	6719T58	916.05	6719T38	1,279.95	6719T78	1,645.34	6719T118	1,681.41	6719T22	1,943.65	6719T29	2,264.38
15 ft.×20 ft.	6719T53	1,275.66	6719T33	1,655.25	6719T73	2,170.45	6719T126	2,374.71	6719T24	2,654.25	6719T47	3,122.47
20 ft.×30 ft.	6719T55	1,655.02	6719T35	2,197.74	6719T75	2,951.72	6719T127	3,955.23	6719T25	4,324.24	6719T48	5,031.88
10-ft. High												
10 ft.×10 ft.	6719T61	1,006.83	6719T41	1,303.47	6719T81	1,640.65	6719T49	1,325.59	6719T68	1,582.66	6719T88	1,877.22
10 ft.×20 ft.	6719T62	1,324.89	6719T42	1,658.95	6719T82	2,297.74	6719T66	1,986.54	6719T86	2,261.87	6719T89	2,819.13
15 ft.×20 ft.	6719T63	1,486.25	6719T43	1,944.04	6719T83	2,607.07	6719T67	2,571.66	6719T87	2,969.27	6719T69	3,552.42

★ Three-sided partitions include two sides that are the listed length and one side that is the listed width.

Easy-to-Assemble Wire Partitions

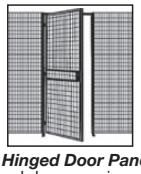

B ***Hinged Door Panel***
Actual door opening height is 94″. Doors swing out and to the left 90°.

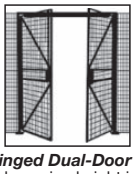

C ***Hinged Dual-Door Panels***
Actual opening height is 94″. Choose from doors that swing in 90° and doors that swing out 90°.

A ***Wall Panels***
Stack to form 8-, 10-, or 12-ft. partitions.

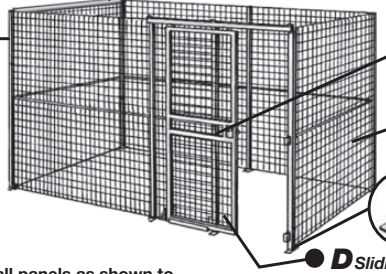

J ***Optional Top Cap Railing***
Gives panels a more finished look. Made of 1¼″ × 2⅛″, 14-ga. steel. It can be cut with a hacksaw or cutoff saw.

Cylinder Lock
Included with all doors. Furnished with two keys. Keyed differently.

Welded Wire
8-ga. galvanized steel with a 1½″ × 3″ rectangular pattern.

E ***Posts***
2″ square, 14-ga. steel, welded to a 6″ × 2″ × ¼″ baseplate, which has two ⅝″ mounting holes.

D ***Sliding Door Panel***
Door slides open to the left.

F ***Post Extension***

E ***Post***

H ***Optional Transom Kit***
For 10- and 12-ft. high partitions.

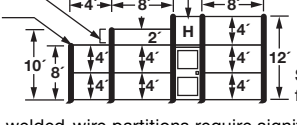

Stack wall panels as shown to form 8-, 10-, or 12-ft. high partitions.

These welded-wire partitions require significantly less nut-and-bolt assembly and can be easily cut to accommodate obstructions like pipes without unraveling, unlike our other wire partitions. Panels are made of 8-ga. galvanized steel. Assembly hardware is included.

Stack ***wall panels*** (***A***) horizontally to form 8-, 10-, or 12-ft. high partitions. All have a modular design, which makes them easier to assemble and relocate than woven-wire models. There are 1″ bends around the top and bottom of each wall panel for extra rigidity. Bolt wall panels together horizontally at the bends and then vertically to the posts (***E***) sold separately.

Door panels (***B, C,*** and ***D***) come with your choice of hinged and sliding doors. Sliding doors come with a door track that mounts to posts (***E***) sold separately.

Note: There's a 2″ clearance between the bottom of the wall and door panels and the floor.

To Order a Partition— Please feel free to contact us or email us your drawing if you need help determining what components you'll need.

1. Make a rough drawing of your partition, including overall width, depth, and height.

2. Indicate location, size, and style of door panel(s) (***B, C,*** and ***D***). If you want to fill the space above the doors on 10- and 12-ft. high partitions, order one transom kit (***H***) per door. Transoms can be cut to match your door width.

3. Determine the number of wall panels (***A***) you will need. Note: Wall panels should be stacked to reach desired partition height. You can cut them if they need to be less than 4- or 8-ft. wide between posts.

4. Use posts (***E***) between each wall panel, on both sides of doors, and at corners. Order extensions (***F***) to make 10- or 12-ft. high posts.

5. If your partition will make use of an existing wall, order one wall mounting kit (***G***) for each panel you'll connect to a wall.

Wd.	Ht.		Each
(A) Wall Panels			
4 ft.	2 ft.	40645T61	$38.62
4 ft.	4 ft.	40645T62	44.03
8 ft.	2 ft.	40645T12	46.31
8 ft.	4 ft.	40645T14	63.47
(B) Hinged Door Panels			
3 ft.	8 ft.	40645T33	236.23
4 ft.	8 ft.	40645T34	273.22
(C) Hinged Dual-Door Panels			
To Order: Specify if doors swing out or in.			
6 ft.	8 ft.	40645T15	892.49
8 ft.	8 ft.	40645T16	978.57

Wd.	Ht.		Each
(D) Sliding Door Panels			
4 ft.	8 ft.	40645T44	$318.36
5 ft.	8 ft.	40645T45	351.99
6 ft.	8 ft.	40645T46	376.13
8 ft.	8 ft.	40645T48	578.22
(E) Posts			
2″	8 ft.	40645T28	49.52
(F) Post Extensions			
2″	2 ft.	40645T22	13.72
2″	4 ft.	40645T24	21.95

		Each
(G) Wall Mounting Kits		
For 4-ft. High Panels	40645T81	$7.73
For 8-ft. High Panels	40645T91	19.31
(H) Optional Transom Kits		
For 10-ft. High Partitions	40645T51	83.81
For 12-ft. High Partitions	40645T52	151.16
(J) Optional Top Cap Railing		
For 4-ft. Wide Panels	40645T17	23.17
For 8-ft. Wide Panels	40645T18	46.35

Plastic Outdoor Storage Buildings

A

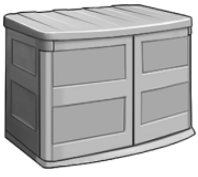

B

C

In addition to resisting weather, rust, rot, and dents, these polypropylene units are also easy to assemble—simply snap them together, no tools required. Unlike steel buildings, these never need to be painted, so maintenance is a breeze.

Each unit has 2½″ thick walls, a floor, and a ramp for easy access. They also have hinged, swing-open doors that accept a padlock (not included; maximum shackle diameter is 5/16″). Color is beige.

All units include a molded-in support for a wood shelf and a template that allows you to create the shelf from your own lumber (one wood shelf for Style A; up to three wood shelves for Styles B and C).

Optional wire shelf for Styles A and B slides into mounting holes in the back of each unit (up to three wire shelves can be used). Load capacity is 100 lbs.

Style A also includes a lift-up top with a rod to prop it open. The top can be locked with the doors, using the same padlock (not included).

	Overall Size, Wd.×Dp.×Ht.	Storage Area, cu. ft.	Inside Size, Wd.×Dp.×Ht.	Door Opening Size, Wd.×Ht.		Each
A	55″×37″×39″	30	49″×31″×33″	49″×33″	**8257T19**	$248.05
B	55″×37″×72″	60	49″×31″×67″	49″×67″	**8257T21**	424.26
C	66″×65″×83″	138	60″×54″×74″	53″×71″	**8257T23**	644.59
C	66″×93″×83″	208	60″×82″×74″	53″×71″	**8257T24**	855.37
C	93″×94″×87″	311	84″×84″×78″	62″×69″	**8257T25**	990.97

Optional Wire Shelf for Styles A and B (49″ Wd.×11″ Dp.×2″ Ht.) **8257T31** **Each** $29.84

Galvanized Steel Outdoor Storage Buildings

D

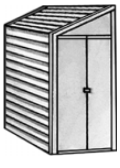

E

F

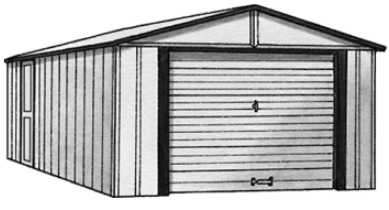

Designed for rust and weather resistance, these buildings solve your outdoor storage needs. All are 34-ga. galvanized steel with 28-ga. galvanized steel framing components. They do not include a floor. Shipped unassembled.

Style D have hinged, swing-open doors that can be installed at either 49″ wide end. Doors accept a padlock (not included) with a maximum shackle diameter of 3/8″.

Style E have horizontal sliding doors that accept a padlock (not included) with a maximum shackle diameter of 3/8″. They also have brown trim and come furnished with a wall brace for added strength.

Style F has an overhead, vertical sliding door that comes with a cylinder lock and two keys (keyed alike). It also has brown trim and includes a heavy duty truss system and wall brace for added strength. A horizontal sliding side door allows additional access to the building.

Foundation Kits— These galvanized steel framing kits provide a perfect base for storage buildings. Kits accept plywood flooring (not included).

Auger and Concrete Anchor Kits— Contain everything you need to anchor your buildings. *Auger kit* includes four 30″ steel augers, 60 ft. of steel cable, and four cable clamps. *Concrete anchor kit* includes four steel corner gussets that fit into the floor frame and perimeter clips that fit over the frame. Also furnished with a ¼″ masonry drill bit and bolts for attaching your building directly to a concrete slab.

Note: You need two auger or concrete kits with Style F building.

Shelving Kit— Includes a 29½″ high wall-mount shelving unit with three 30″ Wd.×12″ Dp. shelves. Each shelf has a load capacity of 85 lbs. Made of galvanized steel. Color is gray.

	Overall Size, Wd.×Dp.×Ht.	Storage Area, cu. ft.	Inside Size, Wd.×Dp.×Ht.	Door Opening Size, Wd.×Ht.	Color	***Storage Buildings***	Each	***Foundation Kits***	Each
D	49″× 80″× 82″	154	48″× 78″× 81″	39″×60″	White	**6722T11**	$424.00	**6696T59**	$115.90
D	49″×116″× 82″	227	48″×114″× 81″	39″×60″	White	**6722T13**	567.31	**6696T59**	115.90
E	123″× 95″× 86″	467	118″× 90″× 85″	56″×65″	Beige	**6697T15**	767.62	**6696T53**	114.13
E	123″×146″× 81″	686	118″×141″× 80″	56″×60″	White	**6749T42**	791.34	**6696T54**	172.15
F	146″×203″×103″	1,419	141″×198″×102″	95″×72″	Beige	**6697T12**	2,147.26	—	—

Auger Anchor Kit **6696T31** **Each** $52.46 ***Concrete Anchor Kit*** **6696T56** **Each** $42.40 ***Shelving Kit*** **6722T22** **Each** $42.40

Outdoor Personnel Buildings

Standard Building

The perfect choice for guardhouses, parking-lot attendant booths, booths for security stops, and more. All buildings come fully assembled and completely wired for connecting to a power source. They're made of 13/16″ thick fiberboard with a corrosion-resistant, anodized aluminum coating and have an insulation rating of R1. The roof has a rubber layer for extra weather resistance as well as gutters that overhang the building by 3″ on the two sides with doors. The floor is also made of aluminum and has a slip-resistant diamond-tread pattern.

All buildings have two sliding doors with a lock and two keys (keyed alike) per door. All windows are 1/8″ thick tempered glass and are 34″ above the floor. Windows in nondoor panels slide open and are 42″ Wd.•45″ Ht.

Each building includes a surface-mounted, fluorescent light fixture with acrylic cover/diffuser that requires two 24″ long, 17-watt, T8 bulbs (not included; see page 697); one 120-volt duplex outlet; one 230-volt outlet; and a 100-amp, 1-phase service box. Buildings also have a laminated particleboard shelf with oak woodgrain finish placed 32″ above the floor. Shelf is 42″ Wd.•21″ Dp.•1″ Thick. Two forklift channels on one side of the building (9″ Wd.•2¾″ Ht. on 32″ centers) allow you to easily transport buildings to where they are needed.

Buildings with Heater— Have a 230-volt, 4,000-watt, wall-mount heater with 13,648 Btu output.

Buildings with Heater and Air Conditioner (HVAC)— Have a 230-volt, 3,670/1,075-watt (heating/cooling), wall-mount unit with 11,600/9,900 Btu (heating/cooling) output.

Overall Size, Wd.×Dp.×Ht.	Door Opening Size, Wd.×Ht.	Door Window Size, Wd.×Ht.	***Standard Buildings***	Each	***Buildings with Heater***	Each	***Buildings with Heater and Air Conditioner***	Each
49″×49″×90″	20″×79″	20″×42″	**6744T71**	$4,874.89	**6744T73**	$5,419.03	**6744T75**	$6,350.18
75″×49″×90″	32″×79″	33″×42″	**6744T72**	5,651.19	**6744T74**	6,268.54	**6744T76**	7,113.29

Workbenches and Accessories

Standard Fixed-Height Workbench

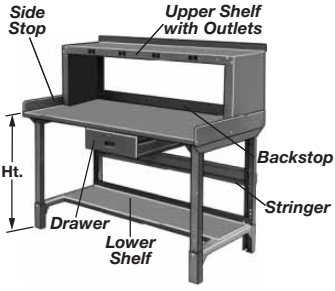

Standard Adjustable-Height Workbench with Accessories

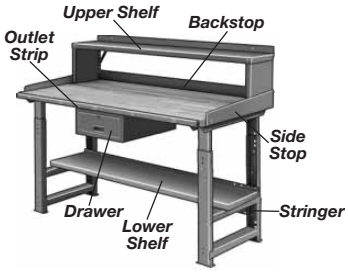

Heavy Duty Adjustable-Height Workbench with Accessories

You select the workbench, and we'll supply the steel legs and steel stringer—then you add all the accessories you want. All legs have a foot plate with two 3/8″ dia. mounting holes for floor mounting (fasteners not included) and knockouts in the front and back to accept duplex electrical outlets. Shipped unassembled.

Workbenches

Standard Fixed-Height Workbenches—Made of 14- to 13-ga. steel with flared legs. Metal parts are dark gray.

Standard Adjustable-Height Workbenches—Made of 14- to 13-ga. steel and have legs that adjust in 1½″ increments (leg bolts are removed using a boltless rivet and keyhole assembly). Metal parts are dark gray.

Heavy Duty Adjustable-Height Workbenches—Made of 18- to 14-ga. steel with 14-ga. steel legs. Legs slide up and down in a slotted channel so they are infinitely adjustable and easy to change—simply loosen a bolt and slide leg into desired position. Metal parts are light gray.

Steel Tops—Made of 12-ga. steel. Color is dark gray.

Hardboard-Over-Steel Tops—Hardboard is bonded to 12-ga. steel and is splinter-, warp-, and moisture resistant.

Particleboard Tops—Nonconductive as well as impact and chemical resistant, all have an MDF (medium density fiberboard) core with particleboard on the top and bottom.

Maple Tops—Nonconductive and impact resistant, all have a mineral-oil finish. NSF certified.

Plastic-Laminate Tops—Nonconductive as well as stain and chemical resistant, all have a plastic-laminate surface that's bonded to a particleboard core. Color is light gray.

Static-Dissipative Plastic-Laminate Tops—All have a static-dissipative plastic-laminate surface that's bonded to a particleboard core. Surface resistivity is 106 to 109 ohms/sq. Come with grounding snaps. Color is almond.

			60″ Wd.×30″ Dp.			72″ Wd.×30″ Dp.			72″ Wd.×36″ Dp.		
Top Material	**Ht.**	**Top Thick.**	**Top Cap., lbs.**		**Each**	**Top Cap., lbs.**		**Each**	**Top Cap., lbs.**		**Each**
Standard Fixed-Height Workbenches											
Steel	33½″	1½″	2,500	**9054T12**	$188.61	3,000	**9054T14**	$208.23	3,600	**9054T16**	$231.43
Hardboard Over Steel	33⅝″	1⅝″	2,500	**9054T22**	223.05	3,000	**9054T24**	233.03	3,600	**9054T26**	273.96
Maple	34″	1¾″	1,875	**9054T82**	269.18	2,250	**9054T84**	309.22	2,700	**9054T86**	353.79
Plastic Laminate	33⅞″	1⅝″	1,250	**9054T702**	208.13	1,500	**9054T704**	224.72	1,800	**9054T706**	253.75
Static-Dissipative Plastic Laminate	33½″	1¼″	962	**9054T608**	248.18	1,155	**9054T609**	277.97	1,386	**9054T701**	323.13
Standard Adjustable-Height Workbenches											
Steel	29⅜″-36⅞″	1½″	2,500	**4773T52**	189.33	3,000	**4773T54**	207.69	3,600	**4773T56**	230.61
Hardboard Over Steel	29½″-37″	1⅝″	2,500	**4773T32**	210.77	3,000	**4773T34**	233.89	3,600	**4773T36**	261.41
Particleboard	29⅝″-37⅛″	1¾″	1,250	**4773T402**	199.74	1,500	**4773T404**	223.29	1,800	**4773T406**	269.28
Maple	29⅝″-37⅛″	1¾″	1,875	**4773T82**	255.79	2,250	**4773T84**	291.89	2,700	**4773T86**	323.81
Plastic Laminate	29½″-37″	1⅝″	1,250	**4773T702**	207.39	1,500	**4773T704**	237.05	1,800	**4773T706**	257.24
Static-Dissipative Plastic Laminate	29⅛″-36⅝″	1¼″	962	**4773T901**	253.02	1,155	**4773T902**	281.88	1,386	**4773T903**	325.71
Heavy Duty Adjustable-Height Workbenches											
Maple	30⅞″-37⅞″	1¾″	1,875	**45725T17**	321.57	2,250	**45725T18**	348.83	2,700	**45725T19**	406.15
Plastic Laminate	30¾″-37¼″	1⅝″	1,250	**45725T34**	266.91	1,500	**45725T35**	288.69	1,800	**45725T36**	313.43

Workbench Accessories

All accessories are 20- to 14-ga. steel.

Drawers—Accommodate a padlock (padlock not included; maximum shackle dia. is 3/8″). Drawer size *for standard workbenches* is 15″ Wd.×18″ Dp.×8¼″ Ht. Size *for heavy duty workbenches* is 15¾″ Wd.×20″ Dp.×6¾″ Ht.

Backstop and Side Stops—Extend 3″ above the workbench.

Lower Shelves—Each shelf is 14″ deep *for standard workbenches* and 13¼″ deep *for heavy duty workbenches*.

Upper Shelves—Have a 1½″ backstop (unless noted) and are 12″ Ht.×10½″ Dp.

Upper Shelves with Outlets for Standard Workbenches—Have a circuit breaker, lighted switch, 8-ft. power cord with three-prong plug, and four duplex outlets. They are 18″ Ht.×15″ Dp.

Outlet Strips for Heavy Duty Workbenches—All are 1½″ high and are rated 15 amps at 125 VAC. There are five outlets on the 60″ wide models and eight outlets on the 72″ wide models. Require hardwiring.

		FITS WORKBENCH SIZE					
	Cap., lbs.	**60″ Wd.×30″ Dp.**	**Each**	**72″ Wd.×30″ Dp.**	**Each**	**72″ Wd.×36″ Dp.**	**Each**
For Standard Workbenches							
Drawers	70	**9054T18**	$67.05	**9054T18**	$67.05	**9054T18**	$67.05
Backstop and Side Stops	—	**9054T52**	39.26	**9054T54**	45.34	**9054T56**	48.22
Lower Shelves	1,000	**9054T42**	52.10	**9054T44**	60.41	**9054T44**	60.41
Upper Shelves	750	**9054T62**	67.97	**9054T64**	85.05	**9054T64**	85.05
Upper Shelves with Outlets	750	**9054T92**	280.61	**9054T94**	296.01	**9054T94**	296.01
For Heavy Duty Workbenches							
Drawers	200	**45725T77**	95.46	**45725T77**	95.46	**45725T77**	95.46
Backstop and Side Stops	—	**45725T21**	42.68	**45725T22**	44.30	**45725T23**	45.54
Lower Shelves	230	**45725T26**	46.82	**45725T27**	53.31	**45725T27**	53.31
Upper Shelves	350	**45725T24**●	81.01	**45725T25**●	82.50	**45725T25**●	82.50
Outlet Strips	—	**45725T91**	66.95	**45725T92**	76.12	**45725T92**	76.12

● Has a 2″ backstop.

Capacities listed are based on an evenly distributed load.

Contemporary-Style Workbenches and Accessories

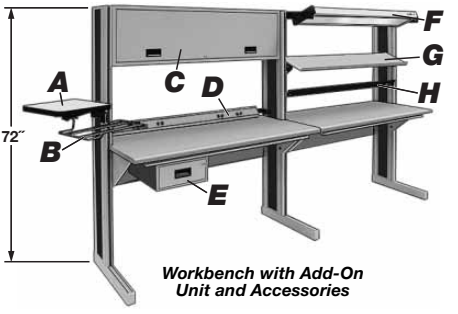

Workbench with Add-On Unit and Accessories

You'll never run out of space with these workbenches—they are infinitely expandable so you can attach as many add-on units as you need. They are adjustable from 21″ to 72″ high, allowing you to mount your top and accessories anywhere along the range. The cantilever-style recessed uprights provide ample leg room. Shipped unassembled.

Workbenches

Workbenches and add-on units have 20- to 16-ga. steel uprights that are 2″ Wd. × 12″ Dp. × 72″ Ht. with channels for mounting tops and accessories. The uprights are light gray with blue trim. Tops are 1¼″ thick plastic laminate. Color is light gray. The static-dissipative top has a surface resistivity of 10^6 to 10^9 ohms/sq.

Workbenches consist of two uprights and a top.

Add-on units consist of one upright and a top.

Top	Wd. × Dp. × Ht.	Cap., lbs.	*Workbenches*	Each	*Add-On Units*	Each
Standard	60″ × 30″ × 72″	500	47495T22	$961.00	47495T41	$642.00
Static Dissipative	60″ × 30″ × 72″	500	47495T46	1,106.94	47495T47	799.40

Accessories

All accessories are 20- to 14-ga. steel, unless otherwise indicated.

(A) Computer monitor holder rotates 360° on a swing arm and has a 1¼″ thick particleboard top.

(B) Computer keyboard holder is made of ⅜″ dia. wire and attaches to the bottom of the computer monitor holder (A).

(C) Cabinet comes with a lock and two keys.

(D) Outlet strip has three duplex outlets, an on/off switch, 15-amp circuit breaker, and 8-ft. power cord with three-prong plug. UL listed.

(E) Drawer comes with a lock and two keys.

(F) Light fixture adjusts in any direction and uses two 48″ fluorescent bulbs with medium bi-pin base (not included; see pg. 697). It comes with an on/off switch and 8-ft. power cord with three-prong plug. UL listed.

(G) Adjustable shelf tilts forward and backward 45°. It has a ⅝″ lip in the front and a plastic-laminate surface.

(H) Bin-box holder is fully adjustable and accepts hanging bin boxes (see 4666T on page 1604 for bin boxes).

		Size	Cap., lbs.	Color		Each
A	Computer Monitor Holder	15″ Wd. × 15″ Dp.	75	Light Gray	47495T44	$157.00
B	Computer Keyboard Holder	18″ Wd. × 9¼″ Dp.	—	Black	47495T45	45.00
C	Cabinet	57½″ Wd. × 14½″ Dp. × 16½″ Ht.	100	Light Gray	47495T32	631.00
D	Outlet Strip	52″ Wd. × 3″ Dp. × 3½″ Ht.	—	Light Gray	47495T23	164.00
E	Drawer	14½″ Wd. × 20″ Dp. × 6½″ Ht.	100	Light Gray	47495T31	171.00
F	Light Fixture	56″ Wd. × 11″ Dp. × 3″ Ht.	—	Ivory	47495T25	276.00
G	Adjustable Shelf	57½″ Wd. × 12″ Dp.	75	Light Gray	47495T24	104.00
H	Bin-Box Holder	57½″ Wd. × 2 5/16″ Ht.	—	Black	47495T27	66.00

Light Duty Workbenches

With Two Optional Drawers

Get the convenience of an adjustable-height workbench at an economical price. All components are made of 22- to 18-ga. steel. All have legs (with knockouts that accept duplex electrical outlets) that adjust in 1″ increments (leg bolts must be removed for positioning). They also have a 12″ deep lower shelf with a capacity of 150 lbs. Color is dark gray. Shipped unassembled.

Plastic-laminate top is nonconductive and has a particleboard core. Color is light gray.

Optional drawer has a capacity of 35 lbs. Overall size is 12″ Wd. × 18″ Dp. × 4″ Ht. Each workbench can hold up to two drawers. Mounting hardware included.

			48″ Wd. × 24″ Dp.			*60″ Wd. × 24″ Dp.*		
Top Material	Top Thick.	Ht.	Top Cap., lbs.		Each	Top Cap., lbs.		Each
Particleboard	1″	29″-34″	1,600	9055T11	$97.15	2,000	9055T12	$119.61
Plastic Laminate	1¼″	29¼″-34¼″	1,200	9055T21	163.29	1,500	9055T22	196.77
Optional Drawer							9055T17	Each $24.70

Workbenches with Folding Legs

Out of sight and out of mind—the legs on these welded workbenches fold up for compact and convenient storage. To fold the legs, remove the wing nut that secures the leg braces. All workbenches are made of 14-ga. steel with a 12-ga. steel top. Legs adjust in 2″ increments (leg bolts must be removed for positioning). Color is light gray. Shipped assembled.

Size Wd. × Dp.	Ht.	Top Cap., lbs.		Each
72″ × 30″	28″-42″	3,000	1759T41	$440.80
72″ × 36″	28″-42″	3,000	1759T42	459.80
84″ × 36″	28″-42″	3,000	1759T43	494.00

Workbenches with Backstop and Side Stops

To keep your work from falling off the top, each workbench has a 3¾″ high backstop and side stops that taper from the back to the front of the work surface.

Workbenches are made of 18- to 12-ga. steel with a 12-ga. steel top. They have four angle iron legs, except 4754T83, which has six. Each leg has a foot plate with two ½″ dia. mounting holes for floor mounting (fasteners not included). Workbenches also come with a 1,000-lb. capacity steel fixed lower shelf and a 100-lb. capacity steel drawer. The drawer accommodates a padlock (padlock not included; maximum shackle dia. is ⅜″). The drawer is 14″ Wd. × 22″ Dp. × 6″ Ht., except 4754T16 and 4754T23, which are 12″ Wd. × 20″ Dp. × 5″ Ht. Color is dark green. Shipped unassembled.

Wd. × Dp. × Ht.	Top Cap., lbs.		Each	Wd. × Dp. × Ht.	Top Cap., lbs.		Each
36″ × 24″ × 35″	3,600	4754T16	$432.68	60″ × 29″ × 35″	7,500	4754T43	$520.75
48″ × 24″ × 35″	4,800	4754T23	464.38	72″ × 29″ × 35″	9,000	4754T63	582.72
48″ × 29″ × 35″	6,000	4754T36	493.53	96″ × 36″ × 35″	12,000	4754T83	891.25

Capacities listed are based on an evenly distributed load.

All-Welded Workbenches

All are fully welded and ready to use. Color is light gray.

Fixed-height workbenches are made of 12-ga. steel. All have foot plates with one 9/16″ dia. hole for floor mounting (fasteners not included). *Steel tops* are 12-ga. steel and are reinforced with angle iron. *Hardboard-over-steel tops* cushion your parts from shock, reduce vibration, and deaden sound. Workbenches *with lower shelf* have a 500-lb. capacity steel shelf.

Mobile fixed-height workbenches are steel and come with four swivel casters with 5″ dia. polyurethane wheels and brakes. Made of 14- to 12-ga. steel with a 12-ga. steel top. Workbenches *without lower shelf* have a steel crossbrace. Workbenches *with lower shelf* have a 1,000-lb. capacity steel shelf.

Adjustable-height workbenches have a 12-ga. steel top that's reinforced with angle iron. Legs adjust in 2″ increments (leg bolts must be removed for positioning). Workbenches *with lower shelf* have a 500-lb. capacity steel shelf.

Fixed Height with Steel Top and Lower Shelf

Mobile Fixed Height with Steel Top without Lower Shelf

Mobile Fixed Height with Steel Top and Lower Shelf

Wd. × Dp.	Top Cap., lbs.	Without Lower Shelf	Each	With Lower Shelf	Each
Fixed-Height Workbenches with Steel Tops— *36″ High*					
48″ × 24″	5,000	6682T41	$227.32	6682T81	$237.50
48″ × 30″	5,000	6682T42	245.11	6682T82	262.95
60″ × 30″	4,500	6682T46	264.64	6682T86	286.70
60″ × 36″	4,500	6682T43	291.79	6682T83	330.80
72″ × 36″	4,000	6682T44	313.33	6682T84	366.43
84″ × 36″	3,000	6682T45	371.52	6682T85	415.62
Fixed-Height Workbenches with Hardboard-Over-Steel Tops— *36″ High*					
48″ × 24″	5,000	6682T61	263.20	6682T91	281.36
48″ × 30″	5,000	6682T62	283.16	6682T92	304.95
60″ × 36″	4,500	6682T63	346.70	6682T93	386.62
72″ × 36″	4,000	6682T64	381.20	6682T94	435.64
84″ × 36″	3,000	6682T65	444.71	6682T95	488.29
Mobile Fixed-Height Workbenches with Steel Tops— *34″ High*					
36″ × 24″	1,000	9051T31	208.66	9051T21★	215.45
48″ × 30″	1,000	9051T32	256.16	9051T22★	276.52
60″ × 30″	1,000	9051T33	283.30	9051T23★	317.23
72″ × 30″	1,000	9051T41	317.23	9051T42★	356.25
Adjustable-Height Workbenches with Steel Tops— *27″-41″ High*					
48″ × 24″	5,000	4528T11	283.27	4528T16	293.64
48″ × 30″	5,000	4528T12	302.27	4528T17	319.55
60″ × 36″	4,500	4528T13	348.91	4528T18	388.64
72″ × 36″	4,000	4528T14	376.55	4528T19	424.91
84″ × 36″	3,000	4528T15	430.09	4528T21	475.00

★ O'all workbench capacity is 1,000 lbs.

Hercules All-Welded Workbenches

Mobile with Lower Shelf and Drawer

Adjustable Height with Lower Shelf

Welded for strength and stability, these workbenches have 7-ga. steel tops that offer our highest top capacities. Made of 12- to 7-ga. steel with angle-iron legs. All have a 500-lb. capacity steel lower shelf and come fully assembled. Color is light gray.

Workbenches are available with a steel drawer that is 30 5/8″ Wd. × 21 1/4″ Dp. × 7 1/2″ Ht. The drawer holds 250 lbs. and can accommodate a padlock (padlock not included; maximum shackle dia. is 1/2″).

Fixed-height workbenches have foot plates with one 5/8″ dia. mounting hole for mounting to the floor (fasteners not included).

Mobile fixed-height workbenches have two rigid and two swivel casters with 6″ dia. phenolic wheels and a floor lock.

Adjustable-height workbenches have legs that adjust in 1″ increments (leg bolts must be removed for positioning).

Wd. × Dp.	Top Cap., lbs.	With Lower Shelf	Each	With Lower Shelf and Drawer	Each
Fixed-Height Workbenches— *34″ High*					
36″ × 30″	10,000	44655T31	$411.67	44655T25	$596.28
48″ × 30″	10,000	44655T12	477.11	44655T26	658.94
60″ × 36″	10,000	44655T13	532.00	44655T27	694.23
72″ × 36″	10,000	44655T14	559.04	44655T28	741.73
84″ × 42″	10,000	44655T21	762.71	44655T29	944.52
Mobile Fixed-Height Workbenches— *34″ High*					
36″ × 30″	3,600●	5206T41	622.78	5206T55	833.89
48″ × 30″	3,600●	5206T42	688.22	5206T56	899.33
60″ × 36″	3,600●	5206T43	741.00	5206T57	931.00
72″ × 36″	3,600●	5206T44	760.00	5206T58	942.69
84″ × 42″	3,600●	5206T51	971.92	5206T59	1,154.62
Adjustable-Height Workbenches— *28″-38″ High*					
36″ × 30″	10,000	3877T11	475.00	3877T61	657.69
48″ × 30″	10,000	3877T12	531.63	3877T62	714.33
60″ × 36″	10,000	3877T13	595.91	3877T63	754.91
72″ × 36″	10,000	3877T14	640.82	3877T64	799.02
84″ × 42″	10,000	3877T15	817.68	3877T65	987.32

● Overall workbench capacity.

Stainless-Steel-Top Workbenches

NSF

Stationary without Backstop

Mobile with Backstop

An economical alternative to our Stainless Steel Workbenches on the next page, these NSF-certified workbenches have a 16-ga. Type 304 stainless steel top with 18- to 16-ga. galvanized steel legs and shelves. All have four legs, except 96″ wide models have six. The lower shelf adjusts in 2″ increments and has a capacity of 195 lbs., except the 96″ wide models have a capacity of 300 lbs. Shipped unassembled.

Stationary workbenches have adjustable feet to compensate for uneven floors.

Mobile workbenches come with four swivel casters (two with brakes), except 96″ wide models have six swivel casters (two with brakes). All include 4″ dia. rubber wheels.

Workbenches are available with and without a 2 3/4″ high backstop.

Wd. × Dp.	Top Cap., lbs.	Without Backstop	Each	With Backstop	Each
Stationary Workbenches— *35″ High*					
48″ × 30″	650	4876T1	$380.65	4876T5	$429.29
60″ × 30″	825	4876T2	425.83	4876T6	480.62
72″ × 30″	975	4876T3	470.40	4876T7	531.11
96″ × 30″	1,300	4876T4	615.08	4876T8	642.08
Mobile Workbenches— *39″ High*					
48″ × 30″	600●	6232T21	503.63	6232T25	504.09
60″ × 30″	600●	6232T22	553.98	6232T26	553.05
72″ × 30″	600●	6232T23	570.82	6232T27	571.93
96″ × 30″	900●	6232T24	764.81	6232T28	764.81

● Overall workbench capacity.

Capacities listed are based on an evenly distributed load.

Stainless Steel Workbenches

Stationary with Lower Shelf

Stationary with 5″ High Backstop without Lower Shelf

Mobile without Lower Shelf

Mobile with 5″ High Backstop, Lower Shelf, and Drawer

Offering good corrosion resistance, these NSF-certified workbenches are perfect for washdown, food service, and health care applications. All components are 18- to 16-ga. Type 304 stainless steel, unless otherwise indicated, with a 16-ga. Type 304 stainless steel top. All have four legs, except the 96″ wide models have six.

All-Welded Workbenches— All come ready to use.

Unassembled Workbenches— The connectors for bracing are made of die-cast aluminum.

Stationary workbenches have adjustable feet to compensate for uneven floors.

Mobile workbenches come with four swivel casters with brakes with 5″ dia. wheels. *All-welded models* have polyurethane wheels and *unassembled models* have polypropylene wheels.

Adjustable-height workbenches have legs that adjust in 2″ increments (leg bolts must be removed for positioning) and adjustable feet to compensate for uneven floors.

Wd. × Dp.	Top Cap., lbs.	Without Lower Shelf	Each	With Lower Shelf: Shelf Cap., lbs.		Each
All-Welded Fixed-Height Workbenches— *34″ High*						
Stationary						
48″ × 30″	750	**4380T11**	$612.00	245	**4380T15**	$678.51
60″ × 30″	930	**4380T12**	650.72	313	**4380T16**	726.28
72″ × 30″	1,125	**4380T13**	724.26	385	**4380T17**	760.00
96″ × 30″	1,500	**4380T14**	885.15	530	**4380T18**	973.79
Stationary with 5″ High Backstop						
48″ × 30″	750	**4380T21**	613.55	245	**4380T35●**	828.95
60″ × 30″	930	**4380T22**	672.18	313	**4380T36●**	889.38
72″ × 30″	1,125	**4380T23**	779.01	385	**4380T37●**	938.38
96″ × 30″	1,500	**4380T24**	941.99	530	**4380T38●**	1,019.72
Mobile						
48″ × 30″	750	**3684T21**	710.42	245	**3684T25**	777.08
60″ × 30″	930	**3684T22**	747.92	313	**3684T26★**	827.08
72″ × 30″	1,000	**3684T23**	825.00	385	**3684T27★**	868.75
Mobile with 5″ High Backstop						
48″ × 30″	750	**3684T31**	716.67	245	**3684T45●**	931.25
60″ × 30″	930	**3684T32**	754.64	313	**3684T46●★**	993.75

● Come with a 20″ Wd. × 20″ Dp. × 5″ Ht. 25-lb. capacity drawer.
★ Overall capacity is 1,000 lbs.

Wd. × Dp.	Top Cap., lbs.	Without Lower Shelf	Each	With Lower Shelf: Shelf Cap., lbs.		Each
All-Welded Fixed-Height Workbenches— *34″ High (Cont.)*						
Mobile with 5″ High Backstop (Cont.)						
72″ × 30″	1,000	**3684T33**	$854.17	385	**3684T47●★**	$1,043.75
All-Welded Adjustable-Height Workbenches— *22″-34″ High*						
Stationary						
48″ × 30″	650	**6015T11**	665.83	195	**6015T21**	732.51
60″ × 30″	825	**6015T12**	748.36	195	**6015T22**	823.32
72″ × 30″	975	**6015T13**	793.00	195	**6015T23**	852.86
96″ × 30″	1,300	**6015T14**	1,018.08	390	**6015T24**	1,071.68
Unassembled Fixed-Height Workbenches— *36″ High*						
Stationary						
48″ × 30″	550	**6223T61**	407.15	180	**6223T65**	540.65
60″ × 30″	650	**6223T62**	441.94	180	**6223T66**	586.14
72″ × 30″	675	**6223T63**	497.92	180	**6223T67**	652.94
96″ × 30″	1,300	**6223T64**	665.83	300	**6223T68**	848.71
Mobile						
48″ × 30″	550	**4122T71**	484.54	180	**4122T75**	618.04
60″ × 30″	650	**4122T72**	519.33	180	**4122T76**	672.08
72″ × 30″	675	**4122T73**	575.33	180	**4122T77**	755.71

Stainless Steel Workbenches with Adjustable Wire Shelving

Workbench with Two Lower Shelves

Workbench with Two Lower Shelves and Two Upper Shelves

In addition to providing a corrosion-resistant, solid work surface, these NSF-certified workbenches have wire shelves that minimize dust collection, allow good ventilation, and permit light penetration for stored items. Perfect for food service, health care, and clean room applications. All components are 16-ga. Type 304 stainless steel with a 16-ga. Type 304 stainless steel top. Shelves adjust in 1″ increments and legs have adjustable feet to compensate for uneven floors. Shipped unassembled.

Workbenches ***with upper shelves*** have a maximum top shelf height of 63″. Upper shelves are 12″ deep.

Wd. × Dp.	Cap., lbs.: Bench Top	Lower Shelves	Upper Shelves		Each
With Two Lower Shelves— *34½″ High*					
36″ × 30″	338	800	—	**4987T11**	$716.21
48″ × 30″	450	800	—	**4987T2**	863.57
60″ × 30″	563	600	—	**4987T3**	995.33
With Two Lower Shelves and Two Upper Shelves— *34½″ High*					
36″ × 30″	338	800	50	**4987T17**	935.15
48″ × 30″	450	800	50	**4987T8**	1,118.01
60″ × 30″	563	600	50	**4987T9**	1,286.16

Maple-Top Workbenches

Sanitary and NSF certified, these workbenches have a 1¾″ thick maple top with a clear finish. Legs are 16-ga. galvanized steel and have adjustable feet to compensate for uneven floors. Workbenches also have galvanized steel bracing. Shipped unassembled.

Wd. × Dp. × Ht.	Top Cap., lbs.		Each
48″ × 30″ × 36″	800	**4777T71**	$462.20
60″ × 30″ × 36″	800	**4777T72**	524.04
72″ × 30″ × 36″	800	**4777T74**	576.48
72″ × 36″ × 36″	800	**4777T75**	677.49
96″ × 30″ × 36″	1,000	**4777T76**	759.61
96″ × 42″ × 36″	1,000	**4777T77**	905.75

Capacities listed are based on an evenly distributed load.

Drain-Top Workbench

Frustrated working with wet, messy parts? A sloped worksurface, drainage hole and plug, and 1½-gal. drain pan make this workbench the perfect choice when working with fluids. Workbench and top are made of 14-ga. steel; top has a 1¼″ lip on all sides. Workbench has steel legs that adjust on 1″ centers (leg bolts must be removed for positioning). Each foot has one ⅜″×⅝″ slotted hole for mounting to the floor (fasteners not included). It also has a 12″ deep steel lower shelf (100-lb. capacity) and a 12″ Wd.×18½″ Dp.×4″ Ht. drawer that has a capacity of 100 lbs. (includes a lock and two keys). Color is dark gray. Shipped unassembled.

Wd.×Dp.	Ht.	Top Cap., lbs.		Each
60″×30″	28″-42″	2,000	44945T37	$641.83

Wall-Mount Workbenches

Now you can have a full-size workbench that doesn't use valuable floor space. These workbenches offer the space-saving convenience you crave by mounting to the wall.

Workbenches offer good corrosion resistance and are NSF certified. They are made of 16-ga. Type 304 stainless steel and have a 16-ga. Type 304 stainless steel top with a 1½″ high backstop that has 5/16″ dia. mounting holes (all have five, except 48765T11 has three). Include two wall brackets, except 48765T13 and T14, which have three. Each wall bracket also has three 5/16″ dia. mounting holes. Mounting hardware is not included. Shipped assembled.

Wd.×Dp.×Ht.	Top Cap., lbs.		Each
36″×24″×18½″	200	48765T11	$254.62
48″×24″×18½″	200	48765T12	318.05
60″×24″×18½″	200	48765T13	372.68
72″×24″×18½″	200	48765T14	438.04

Pedestal Workbenches

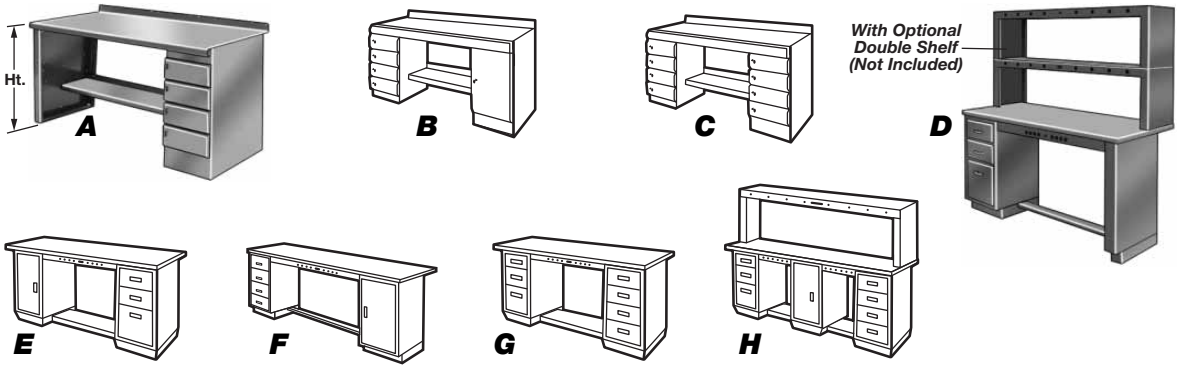

Workbenches are 24- to 18-ga. steel and have drawer and/or door pedestals that offer plenty of storage options for your tools and parts. Shipped unassembled.

(A-C) Workbenches with Backstop

Steel-top workbenches have a 3″ high backstop and ash-top workbenches have a 2 13/16″ high backstop. All have a recessed lower shelf. Drawers have a 60-lb. capacity and are 15″ Wd.×23¾″ Dp.×6¼″ Ht. The drawers (and door on Style B) accommodate a padlock (padlock not included; maximum shackle dia. is 9/32″). Color is dark gray.

Style A has one four-drawer pedestal and electrical knockouts in the leg.

Style B has one four-drawer pedestal and one door pedestal with a removable center shelf. Shelf has a capacity of 100 lbs.

Style C has two four-drawer pedestals.

	Top Cap., lbs.	12-ga. Steel Top Ht.		Each	1¾″ Thick Ash Top Ht.		Each
72″ Wd.×30″ Dp.							
A	1,800	34⅛″	4765T33	$795.07	35¾″	4765T23	$1,081.38
B	1,800	34⅛″	4765T35	978.01	35¾″	4765T25	1,158.54
C	1,800	34⅛″	4765T36	1,254.68	35¾″	4765T26	1,438.65

(D-H) Workbenches with Electrical Outlets

Workbenches have eight electrical outlets (except Style H, which has 20), a switch/pilot light, a circuit breaker, and a 9-ft. power cord with three-prong plug. Electrical rating is 15 amps, 120 VAC, 60 Hz. Color is light gray.

All drawers have a 50-lb. capacity and are 15″ Wd.×20¾″ Dp.×6½″ Ht. (except the three-drawer pedestal on Styles D, E, G, and H has one drawer that is 15″ Wd.×20¾″ Dp.×13½″ Ht.).

The door pedestal on Styles E, F, and H has a center shelf that adjusts on 2″ centers and has a 50-lb. capacity.

Style H is designed to be used by two people, and it has an upper single shelf with electrical outlets (4704T6).

	Top Cap., lbs.	1⅝″ Thick Plastic-Laminate Top Ht.		Each	1¾″ Thick Maple Top Ht.		Each
72″ Wd.×30″ Dp.							
D	750	36⅝″	4704T301	$955.01	36¾″	4704T302	$1,071.57
E	1,000	36⅝″	4704T105	1,044.87	36¾″	4704T205	1,163.78
F	1,000	36⅝″	4704T104	1,122.75	36¾″	4704T204	1,245.69
G	1,000	36⅝″	4704T102	1,330.35	36¾″	4704T202	1,464.02
96″ Wd.×30″ Dp.							
E	1,000	36⅝″	4704T113	1,105.22	36¾″	4704T213	1,256.51
F	1,000	36⅝″	4704T112	1,160.28	36¾″	4704T212	1,335.69
G	1,000	36⅝″	4704T58	1,462.63	36¾″	4704T59	1,597.74
H	1,500	36⅝″	4704T121	1,952.09	36¾″	4704T221	2,233.69

Optional Upper Shelves with Electrical Outlets for Workbenches D-H

These optional shelves provide eight extra outlets per shelf, a switch/pilot light, and a 9-ft. power cord with three-prong plug. Each shelf has a capacity of 150 lbs.

	Ht.×Dp.	For 72″ Wide Workbenches	Each	For 96″ Wide Workbenches	Each
Single Shelf	18½″×15″	4704T5	$366.27	4704T6	$370.36
Double Shelf	37″ ×15″	4704T8	747.19	4704T9	760.93

Capacities listed are based on an evenly distributed load.

Adjustable-Height Hand-Crank Workbenches

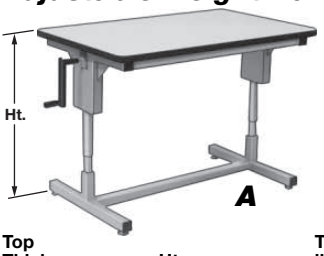

You don't have to worry about clearing the workbench top or loosening leg bolts—simply turn the hand crank to position workbenches at a height that's most comfortable for you.

(A) Workbenches with two legs with leveling feet have a beige 7-ga. steel frame. Tops have a particleboard core with a beige plastic-laminate surface. Shipped assembled.

(B) Workbenches with four legs with casters have a welded, 11-ga. steel frame. All come with two rigid and two swivel casters with brakes with 4″ dia. rubber wheels. Tops have a particleboard core with beige plastic-laminate surface. Shipped assembled.

Top Thick.	Ht.	Top Cap., lbs.	Lifting Cap., lbs. ♦	48″ Wd.×30″ Dp.	Each	60″ Wd.×30″ Dp.	Each	72″ Wd.×30″ Dp.	Each
(A) Workbenches with Two Legs with Leveling Feet									
1⅛″	30″-42″	1,200	500	4781T11	$933.21	4781T12	$984.18	4781T13	$1,021.87
(B) Workbenches with Four Legs with Casters									
1⅛″	31″-43″	1,200	600	4781T51	1,109.60	4781T52	1,179.46	4781T53	1,257.27

♦ Maximum weight on workbench while making height adjustments.

Cabinet Workbenches

(C-F) Steel Workbenches— All have hinged doors, adjustable shelves, and a lock with two keys. Color is dark gray, except Style F, which is light gray. Shipped unassembled.

Workbenches without reversible top are made of 20- to 14-ga. steel. Both have a 16-ga. steel top with 2″ high backstop and side stops. Shelves adjust on 3″ centers.

Workbenches with reversible top have a top you can turn over so you can choose a work surface with or without 2″ high backstop, front stop, and side stops, unless otherwise indicated.

Style E is made of 24- to 14-ga. steel and has a 22-ga. steel top. Shelves adjust on 2″ centers.

Style F is made of 22- to 12-ga. steel and has a 14-ga. steel top. Shelf adjusts on 1½″ centers. Does not have a front stop.

(G-J) Stainless Steel Workbenches— All are NSF certified and are welded 18- to 16-ga. Type 304 stainless steel. The top is 16-ga. Type 304 stainless steel with a 4″ high backstop and the shelf is Type 430 stainless steel. The legs have adjustable feet to compensate for uneven floors. Shipped assembled.

Wd.×Dp.×Ht.	Top Cap., lbs.	No. of Doors	Drawers No.	Drawers Wd.×Dp.×Ht.	Drawers Cap., lbs.	Shelves No.	Shelves Cap., lbs.		Each
Steel Workbenches without Reversible Top									
C 24″×24″ ×32″	250	1	—	—	—	1	250	9045T16	$207.40
D 36″×24″ ×32″	125	2	—	—	—	1	250	9045T18	267.94
Steel Workbenches with Reversible Top									
E 21″×15½″×32″	125	1	—	—	—	3	125	9045T14	135.80
F 36″×24″ ×34″	1,000	2	—	—	—	1	200	4779T1	324.24
Stainless Steel Workbenches									
G 36″×24″ ×35″	400	2	—	—	—	1	120	40545T31	1,660.67
H 36″×24″ ×35″	400	2	2	12″×20″×5″	65	1	120	40545T32	2,377.75
J 48″×24″ ×35″	520	1	3	20″×20″×5″	65	1	155	40545T34	3,323.09

Design-Your-Own Mobile Cabinet Workbenches

Basic Workbench Shown with Optional Drawers and Shelf

Start with the workbench then customize the interior by adding the optional drawers and shelves that best match your needs.

Workbench is made of welded 17- to 16-ga. steel with a 12-ga. steel top. It is divided into two compartments; each compartment has 15 notches on 1¾″ centers to hold any combination of drawers and shelves. Keep in mind, however, that the combination you choose can't use more than 15 notches. To see how many notches each drawer and shelf requires, see table below.

Both cabinet doors have a 13″ Wd.×½″ Dp.×8½″ Ht. interior storage pocket. For extra security, the workbench can be locked with a padlock (padlock not included; maximum shackle dia. is 1 1/16″). It comes with two rigid and two swivel casters with brakes with 6″ dia. phenolic wheels, and has a handle on one end for easy maneuvering. Shipped assembled, except for handle and casters. Color is tan.

Optional drawers and ***optional shelf*** are white.

	O'all Size, Wd.×Dp.×Ht.	O'all Cap., lbs.	Notches Used		Each
Workbench	46¼″×25″ ×37½″	1000	—	9978T27	$1,134.45
Optional Accessories					
Drawer	16″ ×22″ × 1″	100	1	9978T2	135.22
Drawer	16″ ×22″ × 2½″	100	2	9978T3	141.99
Drawer	16″ ×22″ × 4½″	100	3	9978T4	153.93
Drawer	16″ ×22″ × 6″	100	4	9978T5	162.54
Shelf	17½″×21¾″× 1″	100	1	9978T6	83.28

Capacities listed are based on an evenly distributed load.

Mobile Cabinet Workbenches

Make your move—these cabinet workbenches have casters so you can roll them where you need them. All have a push handle (except Style M) for easy maneuvering.

A ***Polypropylene Workbench—*** You'll find this workbench is not only dent- and rust-resistant, but also sturdy. It has a skid-resistant work surface as well as five molded-in compartments for tools and other small parts. Drawers are red and include a locking bar that slides in front of the drawers and can be locked with a padlock (padlock not included; maximum shackle dia. is 1/4″). Comes with two rigid and two swivel casters with brakes with 4″ dia. polyethylene wheels. Shipped assembled.

B&C ***Steel Workbenches with Concealed Drawers—*** For added security, the drawers are concealed behind doors that have a recessed padlock housing (padlock not included; maximum shackle dia. is 5/16″). Workbenches are made of 16-ga. steel with a 16-ga. steel top. Come with a fixed shelf and two rigid and two swivel casters with brakes with 4″ dia. hard-rubber wheels. Shipped assembled, except for door handle and casters.

D-F ***Steel Workbenches with Pressed-Wood Top—*** These workbenches are made of 22- to 18-ga. steel and have a 3/4″ thick pressed-wood top with 3″ high backstop and side stops. The doors have a locking handle and two keys, shelves are adjustable on 5 1/2″ centers, and drawers (where applicable) have recessed handles. Come with two rigid and two swivel casters with 5″ dia. polypropylene wheels. Shipped unassembled.

G-H ***Narrow-Width Steel Workbenches—*** The choice for tight spots. Both are made of welded 20- to 14-ga. steel. The top is 14-ga. steel with 3/4″ high back and side stops. Each drawer can be locked with a padlock (not included; maximum shackle dia. is 3/8″). Come with two rigid and two swivel casters with 5″ dia. polyurethane wheels. Shipped assembled.

Style G has a door with a locking handle and two keys.

Style H has a tray in the top drawer for storing small parts.

J ***Steel Workbench with Reversible Top—*** You can turn the top of this workbench over so you can choose a work surface with or without 2″ high backstop and side stops. Workbenches are made of 22- to 12-ga. steel with a 14-ga. steel top. Shelf adjusts on 1 1/2″ centers. The door has a built-in locking handle and two keys. Comes with two rigid casters and two swivel casters with brakes with 3 1/2″ dia. polyurethane wheels. Shipped unassembled.

K-L ***Heavy Duty Steel Workbenches—*** Of all these mobile workbenches, these offer the highest load capacity. Both are made of 18- to 12-ga. welded steel. The top is 12-ga. steel with 2″ high backstop and side stops. The shelf is adjustable on 2″ centers; each door and drawer (where applicable) has a built-in lock and two keys per lock. Come with two rigid and two swivel casters with 5″ dia. polyurethane wheels. Shipped assembled.

Style L has three drawers. The top drawer includes a tray for storing small parts.

M ***Stainless Steel Workbench—*** Offering excellent corrosion resistance, this NSF-certified workbench is made of welded 18- to 16-ga. Type 304 stainless steel. The top is 16-ga. Type 304 stainless steel with 4″ high backstop. Shelf is fixed and made of Type 430 stainless steel. Comes with four swivel casters (two with brakes) with 4″ dia. hard rubber wheels. Shipped assembled.

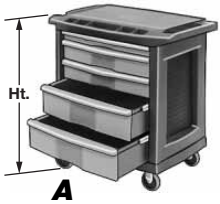

A

B

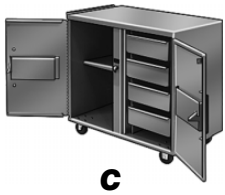
C

D

E

F

G

H

J

K

L

M

O'all Size, Wd. × Dp. × Ht.	O'all Cap., lbs.	No. of Doors	Drawers No.	Drawers Wd. × Dp. × Ht.	Drawers Cap., lbs.	Shelves No.	Shelves Cap., lbs.	Color		Each
Polypropylene Workbench										
A 32 5/8″ × 19 15/16″ × 33 1/2″	250	—	1	22″ × 16 3/4″ × 2″	10					
			2	22″ × 16 3/4″ × 4″	20					
			2	22″ × 16 3/4″ × 6″	25	—	—	Black	**44155T48**	$333.20
Steel Workbenches with Concealed Drawers										
B 40 3/4″ × 25″ × 37 1/2″	800	2	2	14″ × 21 3/4″ × 5″	50	1	200	Tan	**4686T11**	1,155.08
C 40 3/4″ × 25″ × 37 1/2″	800	2	4	14″ × 21 3/4″ × 5″	50	1	200	Tan	**4686T12**	1,336.30
Steel Workbenches with Pressed-Wood Top										
D 42″ × 24″ × 34″	800	2	—	—	—	2	150	Dark Gray	**9760T15**	452.53
E 42″ × 24″ × 34″	800	1	1	17 3/8″ × 19 5/8″ × 4 7/8″	50	2	150	Dark Gray	**9760T12**	492.08
F 42″ × 24″ × 34″	800	1	5	17 3/8″ × 19 5/8″ × 4 7/8″	50	1	150	Dark Gray	**9760T13**	761.69
Narrow-Width Steel Workbenches										
G 24″ × 20″ × 34″	1000	1	2	20″ × 19″ × 5″	100	—	—	Light Gray	**4626T14**	364.21
H 24″ × 20″ × 34″	1000	—	4	20″ × 19″ × 5″	100	—	—	Light Gray	**4626T27**	457.45
Steel Workbench with Reversible Top										
J 36″ × 24″ × 34″	1000	2	—	—	—	1	200	Light Gray	**4779T5**	408.39
Heavy Duty Steel Workbenches										
K 36″ × 24″ × 34″	1400	2	—	—	—	1	600	Green	**4762T19**	604.07
L 36″ × 24″ × 34″	1400	1	3	14″ × 22″ × 6″	75	1	600	Green	**4762T12**	870.62
Type 304 Stainless Steel Workbench										
M 36″ × 24″ × 35″	520	2	—	—	—	1	120	—	**4139T21**	1,819.87

Capacities listed are based on an evenly distributed load.

Two-Wheel Mobile Cabinet Workbenches

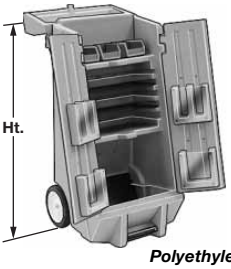

Polyethylene

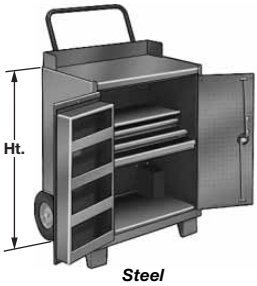

Steel

Simply tilt these workbenches on their two wheels to take them anywhere.

Polyethylene workbench is rust- and solvent-resistant and has a double-wall construction. It also has a lid that opens to become a 16″ Wd.×7½″ Dp.×3″ Ht. work surface. Inside the cabinet you'll find three 3⅜″ Wd.×4⅜″ Dp.×2¾″ Ht. bin boxes, two 30-lb. capacity shelves that adjust on 2″ centers, and a bottom compartment for storing bulky items. Both cabinet doors have two interior storage pockets. You can lock the cabinet with a padlock (not included; maximum shackle dia. is ⅜″). Comes with two 8″ dia. rubber wheels. Color is light gray. Shipped assembled.

Steel workbench is made of 20- to 18-ga. steel and has an 18-ga. steel top with a 3⅜″ high backstop. It also has a three-position adjustable push handle and a lock with two keys. Inside the cabinet you'll find one fixed shelf with a load capacity of 65 lbs. and three 25-lb. capacity drawers. One cabinet door has four removable 6.25-lb. capacity shelves; the other has a steel pegboard for hanging tools, cords, and more. Comes with two 10″ dia. rubber wheels. Color is red. Shipped assembled, except for handle, wheels, and feet.

O'all Size, Wd.×Dp.×Ht.	O'all Cap., lbs.	Drawers No.	Drawers Wd.×Dp.×Ht.		Each
Polyethylene Workbench					
20″×20″×40″	150	—	—	**6376A68**	$337.04
Steel Workbench					
28″×18″×35⅜″	250	3	22½″×10⅜″×1½″	**6384A11**	408.66

Large-Capacity Cabinet Workbenches

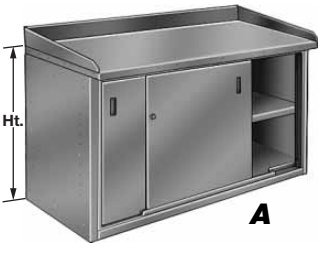

A

B *Steel Workbench with One Drawer*

C

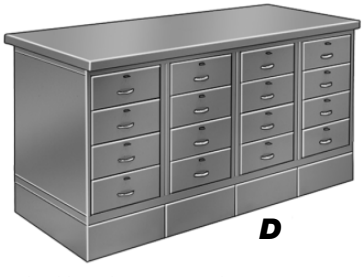

D

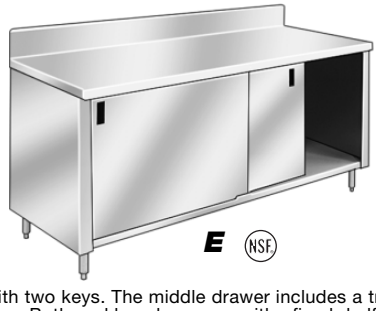

E NSF

Ideal when you need to work with and store many items.

(A&B) Steel workbenches without drawer and ***steel workbench with one drawer*** are shipped unassembled.

Style A are made of 22- to 16-ga. steel with a 12-ga. steel top with 3″ high backstop and side stops that taper down to 1½″ high at the front of the workbench. The doors have recessed handles and a built-in lock with two keys. Shelf adjusts on 1½″ centers.

Style B are made of 18- to 12-ga. steel with a 12-ga. steel top with 3¾″ high backstop and side stops that taper down to 1½″ high at the front of the workbench. Doors have a built-in lock with two keys. Come with a fixed shelf. Each foot has a ½″ dia. mounting hole for mounting to the floor (fasteners not included).

(C) Steel workbenches with three drawers are made of 18- to 12-ga. steel with a 1¾″ thick maple top. All drawers and doors have a lock with two keys. The middle drawer includes a tray for holding small items. Both workbenches come with a fixed shelf and kickplate. Each side panel has two ½″ dia. mounting holes for mounting to the floor (fasteners not included). Shipped unassembled.

(D) Steel workbenches with 16 drawers are made of 20- to 18-ga. steel; 4579T81 has a 12-ga. steel top and 4579T82 has a 1¾″ thick hardwood top. There's a tray in each drawer for holding small items and a padlock hasp on each drawer (padlock not included; maximum shackle dia. is ⅜″). Shipped assembled.

(E) Stainless steel workbenches offer good corrosion resistance and are NSF certified. These welded workbenches are 16-ga. Type 304 stainless steel with a 16-ga. Type 304 stainless steel top. Both have tops with 6″ high backstops and adjustable feet to compensate for uneven floors. Doors can be removed for cleaning. Shipped assembled.

O'all Size, Wd.×Dp.×Ht.	Top Cap., lbs.	Door Style	Drawers Wd.×Dp.×Ht.	Drawers Cap., lbs.	Shelves No.	Shelves Cap., lbs.	Color		Each
Steel Workbenches without Drawer									
A 60″×28″×34″	2,200	Sliding	—	—	1	480	Light Gray	**4784T41**	$652.74
A 72″×28″×34″	2,200	Sliding	—	—	1	300	Light Gray	**4784T42**	788.79
B 60″×29″×32¼″	4,000	Hinged	—	—	1	800	Green	**4880T11**	586.46
Steel Workbenches with One Drawer									
B 60″×29″×32¼″	4,000	Hinged	20″×20″ ×6″	75	1	800	Dark Green	**4880T12**	692.28
Steel Workbenches with Three Drawers									
C 60″×30″×33¾″	10,000	Hinged	14″×22″ ×6″	50	1	800	Dark Green	**4879T11**	1,185.62
C 72″×30″×33¾″	10,000	Hinged	20″×20″ ×6″	50	1	800	Dark Green	**4879T41**	1,430.62
Steel Workbenches with 16 Drawers									
D 72″×28″×34″	3,000	—	14″×23½″×5″	100	—	—	Light Gray	**4579T81**	1,347.34
D 72″×30″×34″	3,000	—	14″×23½″×5″	100	—	—	Light Gray	**4579T82**	1,516.70
Type 304 Stainless Steel Workbenches									
E 60″×30″×34″	500	Sliding	—	—	—	—	—	**6215T31**	1,493.52
E 72″×30″×34″	500	Sliding	—	—	—	—	—	**6215T34**	1,627.92

Capacities listed are based on an evenly distributed load.

Mobile Large-Capacity Cabinet Workbenches

Ideal when you need to work with and store many items, all workbenches have casters and a handle to make maneuvering easy. Shipped assembled.

(A&B) Standard workbenches are made of 18- to 12-ga. welded steel with a 48″ Wd.×26″ Dp. 12-ga. steel top with 3″ high backstop and side stops. They also have a 12″ Wd.×24″ Dp. exterior shelf (500-lb. capacity), two doors with lock and two keys, and one fixed interior shelf (1,000-lb. capacity). Come with two rigid and two swivel casters with 5″ dia. wheels. Color is light gray.

Style B have four 100-lb. capacity concealed drawers. Each drawer has recessed handles and a tray for storing small items.

(C&D) Heavy duty workbenches are made of 20- to 12-ga. welded steel and have a 48″ Wd.×28″ Dp. 12-ga. steel top with 3/16″ thick steel plate (except Style D has a 60″ Wd.×28″ Dp. top). Workbenches have two doors (one on the front; one on the back) with a locking handle with two keys, one fixed interior shelf (800-lb. capacity), and 50-lb. capacity drawers. For added security, the drawers can be concealed behind a locking panel (includes two keys) that slides out of the way when not in use. Come with two rigid and two swivel casters with 8″ dia. wheels; a floor lock keeps workbenches in place. Color is light gray with red drawers.

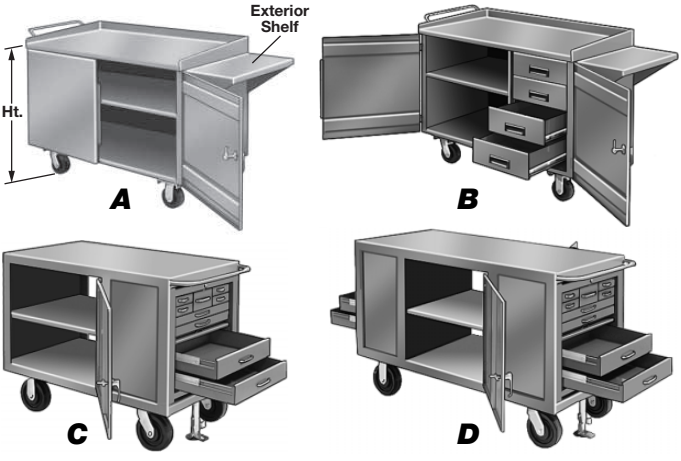

	O'all Size, Wd.×Dp.×Ht.	O'all Cap., lbs.	Drawers No.	Drawers Wd.×Dp.×Ht.		Each
Standard Workbenches with Phenolic Wheels						
A	64″×26″×34″	2,000	—	—	**4624T23**	$608.10
B	64″×26″×34″	2,000	4	14″×23½″×5″	**4624T43**	854.33
Standard Workbenches with Steel Wheels						
A	64″×26″×34″	2,000	—	—	**4624T22**	622.08
B	64″×26″×34″	2,000	4	14″×23½″×5″	**4624T42**	868.13

	O'all Size, Wd.×Dp.×Ht.	O'all Cap., lbs.	Drawers No.	Drawers Wd.×Dp.×Ht.		Each
Heavy Duty Workbenches with Phenolic Wheels						
C	53″×28″×38½″	4,000	4	6½″×16″×1¾″		
			1	6½″×16″×3⅝″		
			2	21⅝″×16″×1¾″		
			2	21⅝″×16″×3⅝″	**4973T53**	$1,376.36
D	65″×28″×38½″	4,000	8	6½″×16″×1¾″		
			2	6½″×16″×3⅝″		
			4	21⅝″×16″×1¾″		
			4	21⅝″×16″×3⅝″	**4973T51**	1,912.97

About Designing Your Own Workbench

Create a customized workbench to fit your needs. For a complete workbench, choose a ***top*** (pages 1663-1664) and either ***legs*** (pages 1665-1666) or a ***base*** (page 1667).

Workbenches up to 72″ wide require two workbench legs. Workbenches 96″ wide and larger require at least three workbench legs.

Stringers add stability to your workbench. You may also want to add ***drawers*** (pages 1667-1668), ***lower shelves*** (pages 1665-1666), ***upper shelves*** (page 1668), or a ***backstop and side stops*** (page 1668).

Note: Capacities listed for the workbench tops are for the tops only. Once you add legs or legs with casters to make a complete workbench, the capacity will change. The new capacity will be that of the component (***top, legs,*** and/or ***base***) with the lowest capacity.

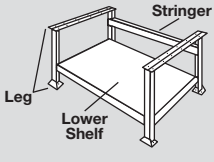

Steel Tops

Made of 12-ga. steel, these heavy duty tops come with stringers for added stability. All are oil and stain resistant. They have a straight front edge. Fasteners for mounting legs included. Color is dark gray.

Note: For use with workbench legs 4885T and 4915T (see page 1665).

Wd.×Dp.×Thick.	Cap., lbs.		Each
60″×30″×1½″	2,500	**9054T113**	$139.75
72″×30″×1½″	3,000	**9054T115**	169.77
72″×36″×1½″	3,600	**9054T116**	192.21

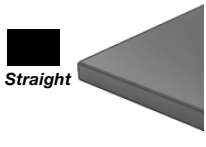

Stainless Steel Tops

Offering strength as well as corrosion resistance, these tops are made of 16-ga. Type 304 stainless steel. All have an MDF (medium-density fiberboard) core and sealed plastic laminate bottom, making them great for food-service use. Tops are chemical, stain, oil, and impact resistant. They have a radius front edge. Fasteners for mounting legs included. NSF certified.

Wd.×Dp.×Thick.	Cap., lbs.	Without Backstop	Each	With 6″ High Backstop	Each
48″×24″×1½″	3,200	**5964T61**	$287.83	**5964T71**	$376.31
48″×30″×1½″	4,000	**5964T62**	334.09	**5964T72**	429.28
60″×30″×1½″	5,000	**5964T63**	389.04	**5964T73**	463.49
72″×30″×1½″	6,000	**5964T64**	409.07	**5964T74**	514.88
96″×30″×1½″	8,000	**5964T66**	524.11	**5964T76**	630.51

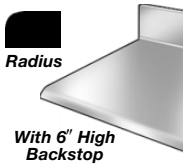

Cushioned Rubber Workbench Mats

Prolong the life of your workbench with these 1/8″ thick rubber mats. Not only do they protect tools and parts by cushioning them when they fall, but they also reduce noise. They are slip-, oil-, and solvent-resistant Buna-N rubber, which is 60A durometer. Color is black.

Fits Top Size, Wd.×Dp.		Each
48″×24″	**5510T11**	$55.24
48″×30″	**5510T21**	69.08
60″×30″	**5510T22**	85.03
72″×30″	**5510T23**	101.75
72″×36″	**5510T43**	124.30
96″×30″	**5510T24**	136.73

Capacities listed are based on an evenly distributed load.

For information about designing your own workbench, see page 1663.

Maple Tops

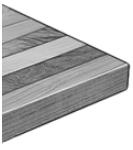

Straight

Radius

Solid pieces of maple are laminated together and sanded to assure durability. Unlike plastic-laminate tops, maple can be sanded and refinished. All tops are nonconductive, impact resistant, and have a mineral-oil finish (for mineral oil, see 3190K on page 2038). Fasteners for mounting legs included. NSF certified.

To Order: Please specify straight or radius front edge.

Wd. × Dp.	Cap., lbs.	1 3/4″ Thick Each		2 1/4″ Thick Each	
36″ × 24″	900	4882T1	$110.80	4882T4	$152.59
36″ × 30″	1,125	4882T2	129.97	4882T5	193.94
36″ × 36″	1,350	4882T3	152.52	4882T6	220.49
48″ × 24″	1,200	4882T11	153.45	4882T27	205.74
48″ × 30″	1,500	4882T12	172.60	4882T28	227.60
48″ × 36″	1,800	4882T13	210.40	4882T29	268.42
60″ × 24″	1,500	4882T14	172.89	4882T47	260.01
60″ × 30″	1,875	4882T15	198.06	4882T48	282.42
60″ × 36″	2,250	4882T16	243.80	4882T49	339.98
72″ × 24″	1,800	4882T17	210.61	4882T51	295.38
72″ × 30″	2,250	4882T18	233.48	4882T52	332.44
72″ × 36″	2,700	4882T19	264.69	4882T56	398.74
96″ × 24″	2,400	4882T21	293.27	4882T61	385.88
96″ × 30″	3,000	4882T22	362.28	4882T62	476.97
96″ × 36″	3,600	4882T23	417.86	4882T66	544.44
120″ × 24″	3,000	4882T24	372.15	4882T67	543.58
120″ × 30″	3,750	4882T25	466.85	4882T68	582.36
120″ × 36″	4,500	4882T26	557.03	4882T69	733.68

Oak Tops

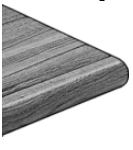

Bullnose

Similar to maple tops, except these tops offer higher capacities and are more consistent in color. They're made of solid pieces of oak that are laminated together and sanded to assure durability. Tops are nonconductive, impact resistant, and have a clear lacquer finish. They have a bullnose front edge. Fasteners for mounting legs included.

Wd. × Dp. × Thick.	Cap., lbs.		Each
60″ × 30″ × 1 3/4″	2,500	48885T31	$248.07
72″ × 30″ × 1 3/4″	3,000	48885T32	292.49
72″ × 36″ × 1 3/4″	3,600	48885T33	346.93

Particleboard Tops

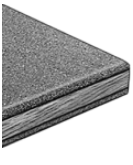

Radius

An economical alternative to maple and oak tops, these tops have an MDF (medium density fiberboard) core between two high-density particleboard sheets that can be sanded and refinished. It is easy to mount drawers, shelves, and vises to these tops. They're nonconductive as well as impact, stain, oil, and chemical resistant. Tops have a clear lacquer finish and a radius front edge. Fasteners for mounting legs included. Color is light brown.

Wd. × Dp. × Thick.	Cap., lbs.		Each
48″ × 24″ × 1 3/4″	800	9064T32	$105.17
48″ × 30″ × 1 3/4″	1,000	9064T33	119.91
60″ × 30″ × 1 3/4″	1,250	9064T34	148.02
72″ × 30″ × 1 3/4″	1,500	9064T35	171.96
72″ × 36″ × 1 3/4″	1,800	9064T36	221.42
96″ × 30″ × 1 3/4″	2,000	9064T37	196.55

Chemical- and Scratch-Resistant Phenolic Tops

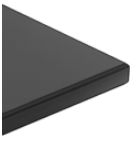

Radius

Excellent for use in laboratories, these nonconductive tops offer high resistance to chemicals, stains, abrasions, scratching, and humidity. Made of solid phenolic resins. All have a radius front edge. Fasteners for mounting legs included. Color is black.

Wd. × Dp. × Thick.	Cap., lbs.		Each
48″ × 24″ × 1″	800	5084T21	$230.01
60″ × 24″ × 1″	1,000	5084T22	287.52
60″ × 30″ × 1″	1,250	5084T23	356.13
60″ × 36″ × 1″	1,500	5084T24	442.05
72″ × 30″ × 1″	1,500	5084T26	429.18
96″ × 30″ × 1″	2,000	5084T27	558.88

Plastic-Laminate Tops

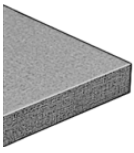

Straight

Bullnose

With their extra-smooth surface, these tops won't trap dirt or oil, and they're easier to clean. All have a plastic-laminate surface that's bonded to a particleboard core. They're nonconductive and resist stains, abrasions, oils, and diluted chemicals. Fasteners for mounting legs included.

To Order: Please specify color: black, white, light gray (for straight edge), or medium gray (for bullnose edge).

Wd. × Dp. × Thick.	Cap., lbs.	Straight Edge Each		Bullnose Edge Each	
24″ × 24″ × 1 5/8″	400	5169T101	$66.97	5169T701	$75.22
30″ × 24″ × 1 5/8″	500	5169T102	76.97	5169T702	89.52
30″ × 30″ × 1 5/8″	625	5169T103	88.64	5169T703	102.06
36″ × 24″ × 1 5/8″	600	5169T104	89.90	5169T704	103.52
36″ × 30″ × 1 5/8″	750	5169T105	103.33	5169T705	117.54
48″ × 24″ × 1 5/8″	800	5169T106	99.28	5169T706	119.31
48″ × 32″ × 1 5/8″	1,066	5169T107	131.99	5169T707	151.67
48″ × 36″ × 1 5/8″	1,200	5169T108	137.09	5169T708	155.53
60″ × 24″ × 1 5/8″	1,000	5169T109	119.37	5169T709	142.61
60″ × 30″ × 1 5/8″	1,250	5169T401	140.72	5169T801	163.06
60″ × 32″ × 1 5/8″	1,333	5169T402	158.53	5169T802	174.17
72″ × 30″ × 1 5/8″	1,500	5169T403	164.33	5169T803	190.89
72″ × 32″ × 1 5/8″	1,600	5169T404	183.67	5169T804	209.96
72″ × 36″ × 1 5/8″	1,800	5169T405	191.77	5169T805	216.64
96″ × 30″ × 1 5/8″	2,000	5169T406	210.88	5169T806	246.32
96″ × 36″ × 1 5/8″	2,400	5169T407	240.89	5169T807	279.66

Static-Dissipative Plastic-Laminate Tops

Straight

Bullnose

Tops resist stains, oils, and diluted chemicals, and they also protect circuit boards and other electronic components from electrostatic discharge (ESD). All tops have a static-dissipative, plastic-laminate surface that's extra-smooth and bonded to a particleboard core. Tops are nonconductive and won't trap dirt or oil. Surface resistivity is 10^6 to 10^9 ohms. They come with 3/8″ grounding snaps for attaching wrist straps (not included) and other static-control devices. Fasteners for mounting legs included.

***Straight Edge*—To Order:** Please specify color: beige or dark blue.

***Bullnose Edge*—**Color is beige.

Wd. × Dp. × Thick.	Cap., lbs.	Straight Edge Each		Bullnose Edge Each	
60″ × 30″ × 1 1/4″	962	4582T111	$168.98	4582T21	$183.49
72″ × 30″ × 1 1/4″	1,155	4582T112	201.82	4582T22	233.32
72″ × 36″ × 1 1/4″	1,386	4582T113	248.53	4582T24	277.28
96″ × 30″ × 1 1/4″	1,540	4582T114	276.22	4582T26	321.26
96″ × 36″ × 1 1/4″	1,848	4582T115	351.16	4582T28	377.33

Workbench Top Mounting Fasteners

Includes 50 zinc-plated Phillips pan-head screws (25 #14 × 3/4″ and 25 #14 × 1 1/2″) and 50 washers for mounting nonmetallic tops.

5118T33 ..... **Per Pkg.** $8.61

Sawhorses

Fixed Height

It's easy to store and transport these sawhorses—they fold to a compact 2″ Ht. × 38″ Wd. × 4″ Dp. Both are 14-ga. steel and have a convenient carrying handle. Color is orange. Shipped assembled.

Adjustable-height sawhorse allows five height adjustments in 4″ increments and can be set up on uneven surfaces. *Note:* As the adjusted height increases, weight capacity decreases.

	Open Ht.	Cap. per Sawhorse at 25″ Ht.	at 40″ Ht.		Each
Fixed Height	25″	1,000 lbs.	—	8055T29	$45.50
Adjustable Height	25″-40″	1,000 lbs.	812 lbs.	8055T31	58.64

Sawhorse Brackets

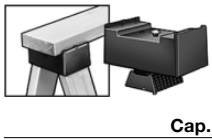

To make your own sawhorse, all you need are these brackets and five 2 × 4s (you can also use 2 × 6s and 2 × 12s). No need to hunt down fasteners—included wing nuts lock legs and rails into place. Made of polystyrene. Color is black.

	Cap. per Pair, lbs.		Per Pair
Brackets	500	8092T18	$16.70

Capacities listed are based on an evenly distributed load.

For information about designing your own workbench, see page 1663.

Workbench Legs with Electrical Knockouts and Accessories

All legs have knockouts on the front and back for adding duplex electrical outlets. They also have sixteen 5/16″ dia. holes for mounting tops (fasteners not included). Color is dark gray.

(A&B) Fixed Height—Legs are 13-ga. steel and flared for extra stability.

(C) Adjustable Height—Legs are made of 14- to 13-ga. steel and adjust in 1 1/2″ increments; simply remove and reposition leg bolts.

Stationary legs have two 3/8″ dia. holes per foot for securing to the floor (fasteners not included).

Mobile legs have two casters with 5″ dia. PVC wheels for maneuverability.

Stringers add stability and are 14-ga. steel.

Lower shelves are 16-ga. steel.

Legs

Fits Top Dp.	28″ High	Each	32″ High	Each
(A) Fixed-Height Stationary—*Capacity per leg is 3,000 lbs.*				
24″	4885T31	$31.10	4885T39	$33.02
30″	4885T32	33.09	4885T41	33.25
36″	4885T33	35.70	4885T42	36.02

	34 5/8″ High with Rigid Casters		34 5/8″ High with Swivel Casters	
(B) Fixed-Height Mobile—*Capacity per leg is 500 lbs.*				
24″	4885T71	$40.92	4885T74	$43.60
30″	4885T72	42.88	4885T75	45.88
36″	4885T73	46.81	4885T76	50.66

	27 7/8″-35 3/8″ High			
(C) Adjustable-Height Stationary—*Capacity per leg is 2,000 lbs.*				
30″	4915T62	$34.32	———	———
36″	4915T43	37.44	———	———

Stringers

Fits Top Wd.		Each
48″	4885T45	$13.09
60″	4885T43	18.38
72″	4885T44	24.77

Lower Shelves

Fits Top Wd.	Fits Top Dp.	Capacity, lbs.		Each
48″	24″, 30″, 36″	700	9054T89	$43.78
60″	24″, 30″, 36″	1,000	9054T42	52.10
72″	24″, 30″, 36″	1,000	9054T44	60.41

Heavy Duty Workbench Legs with Electrical Knockouts and Accessories

A higher capacity makes these legs more heavy duty than the other workbench legs with electrical knockouts on this page. Height is also adjustable—just loosen the built-in leg bolts to easily slide legs to any height from 29 1/8″ to 35 5/8″. Legs are 14-ga. steel with one set of knockouts on the front and back for adding duplex electrical outlets. They have four 11/32″ × 11/16″ slotted holes for mounting tops (fasteners not included). Each leg has adjustable feet to compensate for uneven floors. They also have two 3/8″ dia. holes and one 7/16″ dia. hole per foot plate for securing to the floor (fasteners not included). Color is light gray.

Stringers add stability and are made of 18-ga. steel.

Lower shelves are made of 16-ga. steel.

Legs

Fits Top Dp.	Ht.	Cap. per Leg, lbs.		Each
28″-30″	29 1/8″-35 5/8″	3,000	9956T21	$54.67
34″-36″	29 1/8″-35 5/8″	3,000	9956T26	59.12

Stringers

Fits Top Wd.		Each
48″	9956T58	$29.16
60″	9956T71	30.12
72″	9956T82	31.33

Lower Shelves

Fits Top Wd.	Fits Top Dp.	Cap., lbs.		Each
48″	30″, 36″	330	9956T95	$39.35
60″	30″, 36″	230	45725T26	46.82
72″	30″, 36″	230	45725T27	53.31

Extra Heavy Duty Workbench Legs and Accessories

Offering maximum strength, these legs are made of all-welded angle iron. They also have holes (see below for size and number) for mounting tops (fasteners not included). Color is dark green.

Adjustable Height—Adjust in 1″ increments; just remove and reposition leg bolts.

Stationary legs have two 1/2″ dia. holes per foot plate for securing to the floor (fasteners not included).

Mobile legs have two casters with 5″ dia. polyurethane wheels.

Stringers add stability and are 16-ga. steel.

Lower shelves are 12-ga. steel with a capacity of 1,000 lbs.

Legs

Fits Top Dp.	No. of Top Mounting Holes 1/2″ Dia.	9/32″ Dia.	30″ High	32 1/4″ High	35″ High	Each
Fixed-Height Stationary—*Capacity per leg is 10,000 lbs.*						
24″	6	8	4767T11	4767T12	4767T13	$60.39
30″	10	8	4767T14	4767T15	4767T16	68.08
36″	10	8	4767T21	4767T22	4767T23	73.57
Fixed-Height Mobile with Rigid Casters—*Capacity per leg is 700 lbs.*						
24″	6	8	4767T31	4767T32	4767T33	136.36
30″	10	8	4767T34	4767T35	4767T36	143.43
36″	10	8	4767T41	4767T42	4767T43	150.89
Fixed-Height Mobile with Swivel Casters and Brake—*Capacity per leg is 700 lbs.*						
24″	6	8	4767T81	4767T82	4767T83	166.88
30″	10	8	4767T84	4767T85	4767T86	172.82
36″	10	8	4767T91	4767T92	4767T93	179.37

				30″-36″ High	36″-42″ High	
Adjustable-Height Stationary—*Capacity per leg is 7,000 lbs.*						
24″	6	8	———	5978T31	5978T35	$79.06
30″	10	8	———	5978T32	5978T36	85.98
36″	10	8	———	5978T34	5978T38	90.92

Stringers

Fits Top Wd.		Each	Fits Top Wd.		Each
48″	4767T27	$38.94	72″	4767T25	$45.29
60″	4767T24	42.12	96″	4767T29	60.12

Lower Shelves

Fits Top Wd.	Fits 24″ Deep Tops	Each	Fits 30″ Deep Tops	Each	Fits 36″ Deep Tops	Each
36″	4767T51	$38.24	4767T61	$43.66	4767T71	$50.69
48″	4767T52	44.58	4767T62	51.46	4767T72	61.93
60″	4767T53	62.30	4767T63	72.32	4767T73	90.84
72″	4767T54	72.72	4767T64	89.96	4767T74	106.88
96″	4767T55	97.48	4767T65	121.24	4767T75	153.07

Recessed-Style Workbench Legs and Accessories

Specially designed legs provide more leg room than other leg styles. All legs are 14-ga. steel and have leveling feet to compensate for uneven floors. They also have six 1/2″ dia. holes for mounting tops (fasteners included). Color is light gray.

Adjustable-height leg adjusts in 1″ increments.

Stringers add stability and are 16-ga. steel.

Lower shelves are 16-ga. steel with a 50-lb. capacity.

Legs

Fits Top Dp.	Ht.	Cap. per Leg, lbs. ♦		Each
Fixed Height				
30″-36″	30 1/4″	750	4186T71	$82.33
Adjustable Height				
30″-36″	28 1/4″-39 1/4″	750	5166T72	105.50

♦ With stringer (sold separately) attached. Not rated without stringer.

Stringers

Fits Top Wd.		Each
48″	4186T81	$23.71
60″	4186T82	25.49
72″	4186T83	27.89

Lower Shelves

Fits Top Wd.	Fits Top Dp.		Each
48″	30″, 36″	5166T81	$50.99
60″	30″, 36″	5166T82	57.32
72″	30″, 36″	5166T83	64.15

Capacities listed are based on an evenly distributed load.

For information about designing your own workbench, see page 1663.

Stainless Steel Workbench Legs and Accessories

Stationary Leg

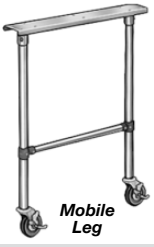

Mobile Leg

An excellent choice for clean rooms, food-processing plants, and chemical plants, these legs are made of corrosion-resistant 16-ga. Type 304 stainless steel. The legs are 1⅝″ dia. and come with die cast aluminum connectors. The top mounting channel has ten 5/16″ dia. holes for mounting tops (fasteners included). NSF certified.

Stationary—Feet adjust to compensate for uneven floors.

Mobile—All come with swivel casters with a brake and 5″ dia. polyurethane wheels.

Stringers add stability and are made of 18-ga. Type 304 stainless steel.

Lower shelves are 18-ga. Type 304 stainless steel; capacity is 200 lbs.

Legs

Fits Top Dp.	Ht.	Stationary Cap. per Leg, lbs.	Stationary	Stationary Each	Mobile Cap. per Leg, lbs.	Mobile	Mobile Each
24″	34 13/16″	300	5979T21	$95.83	150	4828T91	$134.68
30″	34 13/16″	300	5979T22	102.12	150	4828T92	141.42
36″	34 13/16″	300	5979T23	108.37	150	4828T93	150.95

Stringers

Fits Top Wd.		Each
48″	5979T31	$26.63
60″	5979T32	30.86
72″	5979T33	36.79

Lower Shelves

Fits Top Wd.	Fits 24″ Deep Tops	Each	Fits 30″ Deep Tops	Each	Fits 36″ Deep Tops	Each
48″	5979T51	$110.62	5979T52	$127.56	5979T53	$167.77
60″	5979T61	150.38	5979T62	155.54	5979T63	213.62
72″	5979T71	182.36	5979T72	240.26	5979T73	293.85

Fold-Away Table Legs

Fixed-Height Curved Style

Adjustable Height

For easy transport and storage, these legs fold flat against the table top you mount them to. All have plastic foot glides to protect your floors and twelve 1/4″×1/2″ slotted holes for mounting tops (fasteners not included). Shipped assembled.

Fixed-height legs are made of 16-ga. zinc-plated steel tubing.

Adjustable-height legs are made of 18-ga. steel tubing. They adjust in 1″ increments by pushing in a button and sliding the leg. Frames are black with chrome-plated extension tubes.

Fixed Height

Fits Top Dp.	Ht.	(A)	Cap. per Leg, lbs.		Each
Curved-Leg Style					
30″-36″	29″	24″	125	2190T51	$23.31
36″-42″	29″	31″	125	2190T52	23.84
42″-48″	29″	37″	125	2190T53	25.12
Straight-Leg Style					
18″-20″	29″	14″	125	2190T61	22.48
24″-30″	29″	20″	125	2190T62	23.16

Adjustable Height

Fits Top Dp.	Ht.	(A)	Cap. per Leg, lbs. at 24 1/2″ Ht.	Cap. per Leg, lbs. at 38 1/2″ Ht.		Each
24″-30″	24 1/2″-38 1/2″	20″	125	50	3296T11	$27.62
36″-42″	24 1/2″-38 1/2″	30″	125	50	3296T12	30.50

Hydraulic Lift Kits

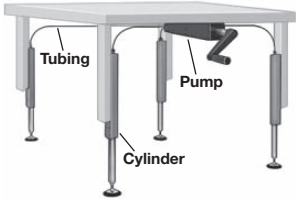

With Adjustable Feet and Pump with Hand Crank (Workbench Not Included)

Transform your fixed-height workbench into an adjustable-height work surface with one of these kits. All come with four aluminum hydraulic-lift cylinders, one hydraulic pump, and tubing (hydraulic lines) to connect cylinders to the pump. Tubing comes in the following lengths: 60″, 60″, 96″, and 96″.

To use, attach each cylinder to your workbench leg with four 1/4″-20 screws (not included; length of screws required depends on the leg thickness). Then, mount the pump under the workbench top and connect cylinders to the pump with the provided tubing.

Kits with Hand Crank—All have a retractable, folding hand crank. Pump has three 1/4″ dia. holes for mounting (fasteners not included).

Kits with Electric Motor—Adjust height with just a push of a button. Pump and motor are attached to a plate with seven 1/4″ dia. holes for mounting to workbench (fasteners not included). Motor is 1/9 hp and operates on 110/115 VAC, 50/60 Hz, single phase. Comes with a rocker switch with two 3/16″ dia. holes for mounting to your workbench (fasteners not included) and an 8-ft. power cord with three-prong plug.

Kits with adjustable feet compensate for uneven floors.

Kits with casters have swivel casters with brake and 3″ dia. polyolefin wheels for mobility.

Max. Adjust. Range	Cap., lbs.	With Hand Crank	Each	With Electric Motor	Each
With Adjustable Feet					
6″	1,000	47105T11	$522.26	47105T21	$732.50
8″	1,000	47105T12	539.23	47105T22	771.56
12″	1,000	47105T13	590.19	47105T23	813.65
16″	1,000	47105T14	624.52	47105T24	815.63
With Casters					
6″	1,000	47105T51	584.31	47105T61	794.98
8″	1,000	47105T52	608.63	47105T62	835.89
12″	1,000	47105T53	642.78	47105T63	861.26
16″	1,000	47105T54	670.56	47105T64	878.11

Maintenance Kit—You'll get 36 feet of tubing, 10 nuts and ferrules, 16 ounces of hydraulic fluid, and an 8-oz. filler bottle with needle.
47105T48 ..... Each $38.59

Single-Column Table Legs

Fixed Height with Standard Base

Fixed-Height Mobile with X-Base

Adjustable Height with T-Base

Great for use in your office as well as for light duty workbench applications. All are made of 13-ga. steel tubing. Mobile models have casters, and all other models have leveling feet to compensate for uneven floors. Come with fasteners for attaching table tops. Color is black.

Mobile legs have swivel casters with brake and 2″ dia. nylon wheels.

Adjustable-height legs have a spring clip that allows you to adjust legs in 1″ increments.

Max. Top Size	Cap. per Leg, lbs.	Mounting Plate Size	Base Size		Each
Fixed Height—*27 3/4″ high*					
With Standard Base (4 required per top)—*Shipped assembled.*					
84″ Wd.	150	4″ Sq.	—	4979T11	$34.30
With T-Base (2 required per top)—*Shipped assembled.*					
72″ Wd.×24″ Dp.	150	10″ Sq.	18″	4979T21	82.44
72″ Wd.×30″ Dp.	150	10″ Sq.	22″	4979T25	83.16
84″ Wd.×36″ Dp.	150	10″ Sq.	26″	4979T31	83.88
With X-Base—*Shipped unassembled.*					
24″ Dia./18″ Sq.	240	10″ Sq.	18″ Sq.	6016T11	104.73
38″ Dia./27″ Sq.	360	10″ Sq.	30″ Sq.	6016T23	114.94
Mobile with X-Base—*Shipped unassembled.*					
24″ Dia./18″ Sq.	240	10″ Sq.	18″ Sq.	6016T12	129.23
38″ Dia./27″ Sq.	360	10″ Sq.	30″ Sq.	6016T24	138.76
Adjustable Height—*24 3/4″-30 3/4″ high*					
With Standard Base (4 required per top)—*Shipped assembled.*					
84″ Wd.	150	4″ Sq.	—	5933T41	77.52
With T-Base (2 required per top)—*Shipped assembled.*					
72″ Wd.×24″ Dp.	150	10″ Sq.	18″	5933T51	116.13
72″ Wd.×30″ Dp.	150	10″ Sq.	22″	5933T55	116.73
84″ Wd.×36″ Dp.	150	10″ Sq.	26″	5933T61	119.30

Capacities listed are based on an evenly distributed load.

For information about designing your own workbench, see page 1663.

Pedestal Workbench Bases

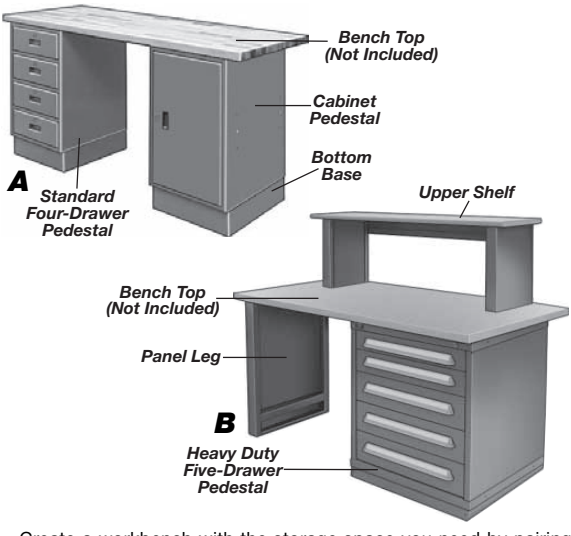

Create a workbench with the storage space you need by pairing pedestal bases with a top (top and fasteners not included). For tops, see pages 1663-1664. Shipped unassembled.

(A) Standard

Pedestal bases and components are 20-ga. steel. Pedestals come with a 5″ high removable bottom base (removing the bottom base will lower the height to 27″). Each drawer and door have one knockout for adding an optional lock (not included; please ask for 48735T11 and specify keyed alike or keyed differently). Color is dark gray.

Drawer pedestals have 13″ Wd.×19″ Dp. drawers.

Cabinet pedestal has an interior shelf that adjusts on 3″ centers. The cabinet door can open to the right or left by turning the pedestal base over.

Wd.×Dp.×Ht.	Drawers No.	Drawers Ht.		Each
***Drawer Pedestals**—O'all capacity is 1,000 lbs.; drawer cap. is 75 lbs.*				
15¾″×20″×32″	3	5½″ (2),12″	9066T11	$368.28
15¾″×20″×32″	4	5½″ (4)	9066T12	353.96
***Cabinet Pedestal**—O'all capacity is 1,000 lbs.*				
15¾″×20″×32″	—	—	9066T13	183.90

(B) Heavy Duty

Pedestal bases and components are 20- to 12-ga. steel. Both drawer pedestals have a single cylinder lock with two keys that locks all drawers at once. Each drawer is 25⅛″ Wd.×25⅛″ Dp.

Panel leg acts as a benchtop support when using only one pedestal base. It has knockouts to accept duplex electrical outlets (not included).

Upper shelves have a 1¼″ thick light gray plastic-laminate top. Shelf supports have knockouts that accept duplex electrical outlets. A brace on the back has a flange for hanging bin boxes (not included).

To Order: For all pedestal bases and components, please specify color: blue or light gray.

Wd.×Dp.×Ht.	Drawers No.	Drawers Ht.		Each
***Drawer Pedestals**—O'all capacity is 10,000 lbs.; drawer cap. is 400 lbs.*				
30″×28¼″×33¼″	4	2¼″, 3⅞″, 5⅜″, 12½″	4795T65	$1,021.28
30″×28¼″×33¼″	5	3″, 3⅞″, 5⅜″ (3)	4795T66	1,154.58
***Panel Leg**—O'all capacity is 400 lbs.*				
3″×24½″×33¼″	—	—	45045T23	80.90
***Upper Shelves**—O'all capacity is 400 lbs.*				
60″×15″ ×19¼″	—	—	45045T1	257.25
72″×15″ ×19¼″	—	—	45045T2	283.58

Low-Profile Organizing Drawers

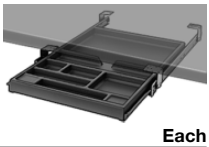

All have two 17-ga. steel drawer slides, a hardboard bottom, and polystyrene organizing tray. Furnished with four steel mounting brackets (mounting hardware included) for easy installation. Color is black.

Wd.×Dp.×Ht.	Cap., lbs.		Each
12⅝″ ×13¾″ ×2³⁄₁₆″	75	5165T11	$26.38
12⅝″ ×19¹¹⁄₁₆″×2³⁄₁₆″	75	5165T12	28.36
22¹⁄₁₆″×17¾″ ×2³⁄₁₆″	75	5165T13	35.83

Adjustable-Height Hand-Crank Workbench Bases

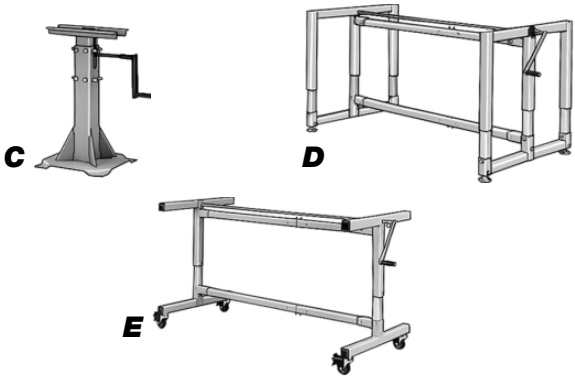

No need to waste time clearing workbench tops and loosening bolts—a hand crank makes these bases easier to adjust than our adjustable-height workbench legs. All hand cranks are retractable. Bases have six ⅜″ dia. holes for mounting tops (fasteners not included).

(C) Pedestal base is welded 7-ga. steel tubing. Includes a 16″ square mounting plate with four ⅜″ dia. holes for securing base to the floor (fasteners not included). Color is beige. Shipped assembled.

(D) Four-leg bases are made of 11-ga. steel tubing and have leveling feet. Color is beige. Shipped assembled.

(E) Mobile two-leg bases come with four locking swivel casters with 4″ dia. polyurethane wheels. All are made of 7-ga. steel tubing. Color is beige. Shipped assembled.

Fits Top Size Wd.	Dp.	Ht.	Cap., lbs.■		Each
(C) Pedestal Base					
24″-36″	24″-30″	30″-42″	500	3517T51	$683.88
(D) Four-Leg Bases					
48″	30″	30″-42″	600	3517T22	944.26
60″	30″	30″-42″	600	3517T23	978.20
72″	30″	30″-42″	600	3517T24	1,018.69
(E) Mobile Two-Leg Bases					
48″	30″ or 36″	30″-42″	750	3517T81	907.42
60″	30″ or 36″	30″-42″	750	3517T82	1,005.08
72″	30″ or 36″	30″-42″	750	3517T83	1,079.75

■ Maximum weight on base while making height adjustments.

Design-Your-Own Workbench Drawers

Two Stacked Light Duty Drawers

Three Stacked Heavy Duty Drawers

Stack these drawers under your workbench. All have ball-bearing rollers and come with hardware to mount them to each other and to your workbench.

Light duty steel drawer is made of 22-ga. steel. Each drawer has one knockout for adding an optional lock (not included; please ask for 48735T11 and specify keyed alike or keyed differently). Color is dark gray.

Heavy duty modular steel drawers are made of 18-ga. steel with steel drawer hangers. You can stack drawers with different heights as long as they have the same depth. All come with a lock with two keys. Color is light gray.

Light Duty Steel Drawer

Inside Size, Wd.×Dp.×Ht.	Cap., lbs.		Each
15⅜″×19¼″×47⅞″	50	4811T61	$74.18

Heavy Duty Modular Steel Drawers

Inside Size, Wd.×Ht.	Cap., lbs.	16″ Deep	Each	23″ Deep	Each
14″× 3″	75	3330T51	$108.22	3330T61	$134.85
14″× 5″	75	3330T52	110.43	3330T62	146.97
14″×11″	75	3330T53	152.19	3330T63	183.73

Capacities listed are based on an evenly distributed load.

For information about designing your own workbench, see page 1663.

Workbench Drawers

For added storage, mount these drawers below your workbench top. Mounting fasteners included (unless otherwise indicated).

Plastic Drawer

Perfect for high-moisture areas, this rust-resistant drawer is made of polystyrene with polypropylene glides. It has six 1/8″ dia. holes for mounting (fasteners not included). Color is beige.

Inside Size, Wd.×Dp.×Ht.	Cap., lbs.		Each
15 3/8″×14 5/8″×3 7/8″	20	4614T32	$20.15

Stainless Steel Drawers

Our corrosion-resistant drawers are 22-ga. Type 304 stainless steel with polyethylene slides. They have four 5/16″ dia. holes for mounting (fasteners not included). NSF certified.

Inside Size, Wd.×Dp.×Ht.	Cap., lbs.		Each
15″×20″×5″	40	4405T88	$89.22
20″×20″×5″	40	4405T89	123.59

Heavy Duty Steel Drawers

With Tray and Cylinder Lock

Made of rugged 18-ga. welded steel, drawers have welded-on steel runners and a tamperproof steel top. Each drawer top has eight 9/32″ dia. holes for mounting. Color is dark green.

Models ***with padlock hasp*** can accommodate a padlock (not included; max. shackle dia. of 3/8″). Models ***with tray and cylinder lock*** have a tray for small items and a cylinder lock with two keys.

Inside Size, Wd.×Dp.×Ht.	Cap., lbs.	With Padlock Hasp	Each	With Tray and Cylinder Lock	Each
12″×20″×4″	120	4772T11	$108.96	4772T41	$159.48
12″×20″×5″	120	4772T12	111.40	4772T42	164.35
14″×22″×6″	120	4772T14	127.83	4772T44	180.78
18″×24″×6″	120	4772T15	143.65	4772T45	198.43
20″×20″×6″	120	4772T16	140.00	4772T46	193.57

Workbench Cabinets

One Door

Storing larger items under your workbench is easy with one of these cabinets. Made of 20- to 18-ga. welded steel, both have a 200-lb. capacity fixed shelf and a locking handle with two keys. They have four 7/16″ dia. holes for mounting, except the 36″ wide model has six (mounting hardware not included). Color is light gray. Shipped assembled.

O'all Size, Wd.×Dp.×Ht.	Cap., lbs.	No. of Doors		Each
18″×19″×19″	400	1	4623T18	$130.31
36″×19″×19″	400	2	4623T19	213.87

Workbench Backstop and Side Stops

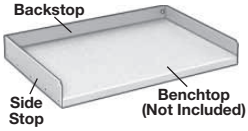

We've pulled out all the stops to keep items from rolling off your workbench. Made of 16-ga. steel and measuring 3″ high, the backstop and side stops are sold as one complete unit. Mounting hardware included. Color is dark gray.

Backstop Wd.	24″ Deep Side Stop	Each	30″ Deep Side Stop	Each	36″ Deep Side Stop	Each
36″	5976T112	$27.77	5976T312	$31.21	5976T512	$32.95
48″	5976T122	35.74	5976T322	35.21	5976T522	37.88
60″	5976T132	38.92	5976T332	36.33	5976T532	36.85
72″	5976T142	41.42	5976T342	40.96	5976T542	42.07
96″	5976T152	50.60	5976T352	40.70	5976T552	42.68

Upper Shelves for Workbenches

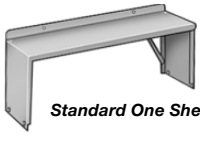

Standard One Shelf

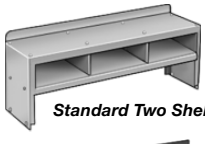

Standard Two Shelves

Adjustable Two Shelves

Adjustable Three Shelves

Add storage space to the top of your workbench for equipment, manuals, and more. Shipped unassembled.

Standard shelves are 16-ga. steel with 2″ high backstops. **To Order:** Please specify color: beige or dark gray.

Models with *two shelves* have a lower shelf that rises 7″ above your workbench top and has two removable dividers to organize your work.

Adjustable shelves are made of 14- to 12-ga. steel with 1 3/4″ high backstops. All shelves can be positioned at any angle and can be reversed so the backstop is at the front to hold books or literature. Color is light gray.

Standard Shelves

For Workbench Wd.	O'all Shelf Size, Dp.×Ht.	Cap. per Shelf, lbs.	One Shelf	Each	Two Shelves	Each
36″	10 1/2″×12″	150	5971T11	$41.90	5971T21	$59.66
48″	10 1/2″×12″	150	5971T12	49.89	5971T22	67.88
60″	10 1/2″×12″	150	5971T13	67.97	5971T23	79.31
72″	10 1/2″×12″	150	5971T14	85.05	5971T24	83.86
96″	10 1/2″×12″	150	5971T15	108.57	5971T25	123.91

Adjustable Shelves

For Workbench Wd.	O'all Shelf Size, Dp.×Ht.	Cap. per Shelf, lbs.	Two Shelves	Each	Three Shelves	Each
60″	13 1/2″×24″	400	45065T41	$297.83		
60″	13 1/2″×36″	400	45065T43	311.06	45065T44	$413.94
72″	13 1/2″×24″	300	45065T51	328.30		
72″	13 1/2″×36″	300	45065T53	345.96	45065T54	466.25

Stainless Steel Upper Shelves for Workbenches (NSF)

Two Shelves

When you need to add storage space to the top of your workbench in food service, health care, and clean room environments, these are the shelves to choose. All are 16-ga. Type 304 welded stainless steel for exceptional corrosion resistance. Shelves have 1 1/2″ high backstops. (Mounting hardware included.) Shipped assembled. NSF certified.

Workbenches with ***two shelves*** have a lower shelf that rises 18″ above your workbench top.

For Workbench Wd.	Cap. per Shelf, lbs.	O'all Shelf Size, Dp.×Ht.		Each
One Shelf				
48″	200	12″×18″	5983T21	$211.68
60″	250	12″×18″	5983T22	230.26
72″	300	12″×18″	5983T23	246.09
96″	400	12″×18″	5983T24	316.65
Two Shelves				
48″	200	12″×30″	5983T31	402.32
60″	250	12″×30″	5983T32	440.34
72″	300	12″×30″	5983T33	473.49
96″	400	12″×30″	5983T34	629.20

Capacities listed are based on an evenly distributed load.

Steel Workbench Pegboards

Create a more efficient and organized workbench with these steel pegboard panels and accessories. Simply mount posts to the top of your workbench (there are four 3/8″ dia. holes per footplate for mounting to the workbench; hardware not included), connect the panels to the posts, and add the accessories you need. Pegboard holes are 5/16″ square and are on 1 1/2″ centers. Panels are mounted with 7″ of clearance above workbench. Made of 16- to 14-ga. steel. Color is light gray.

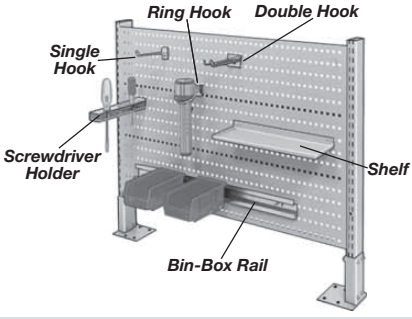

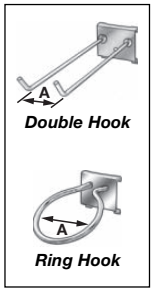

Pegboard Panels with Posts

Pegboard Wd. with Posts	Panel Ht.	Post Ht.	Cap. per Panel, lbs.	No. of Panels	No. of Posts		Each
24″	24″	31″	110	1	2	3202T11	$272.22
36″	24″	31″	110	1	2	3202T12	289.82
48″	24″	31″	110	2	3	3202T13	435.43
60″	24″	31″	110	2	3	3202T14	453.03
72″	24″	31″	110	2	3	3202T15	470.63

Pegboard Accessories

	Proj.	(A)	Cap., lbs.	Pkg. Qty.		Per Pkg.
Single Hook	3 1/8″	—	44	5	3202T21	$9.78
Single Hook	5 7/8″	—	22	5	3202T22	10.52
Double Hook	3 15/16″	1″	33	5	3202T23	15.98
Double Hook	5 7/8″	1″	33	5	3202T24	17.82
						Each
Ring Hook	3″	1 9/16″	44	—	3202T25	$4.88

	Proj.	(A)	Cap., lbs.		Each
Ring Hook	4 1/2″	3 1/8″	33	3202T27	$5.48
Screwdriver Holder	8 11/16″	1/4″, 15/32″★	30	3202T28	9.62
Bin-Box Rail (25″ Lg.)	1″	—	11	3202T29	18.33
Shelf (13 3/4″ Lg.)	4 3/4″	—	8	3202T31	12.75

★ Dimension (A) refers to the hole diameter; there are seven 1/4″ dia. holes and seven 15/32″ dia. holes.

Steel Machine Tables

(A) Light Duty— Assemble these tables with a flat top (as shown) or with a top with 2″ high lip around the edge by turning the top over. The legs are angle iron with corner braces, and the tops are made of 16-ga. steel. Color is dark green. Shipped unassembled. **To Order:** Please specify height from those listed.

Mobile models have swivel casters with brake and 2″ dia. hard-rubber wheels.

(B&C) Medium Duty— All have welded construction, angle-iron legs, and a 12-ga. steel top. Color is light gray. Shipped assembled. **To Order:** Please specify height from those listed.

Mobile models have swivel casters with brake and 3″ dia. hard-rubber wheels.

Style C include a 13″ Wd.×15″ Dp.×5″ Ht. 40-lb. capacity drawer.

(D&E) Medium Duty with Shelves— These machine tables have welded construction, angle-iron legs, and a 12-ga. steel top and shelves. Color is light gray. Shipped assembled.

Stationary models have one 9/16″ dia. hole per footplate for mounting to the floor.

Mobile models have swivel casters with brake and 3″ dia. polyolefin wheels.

(F) Heavy Duty— All have welded construction, angle-iron legs, and a 12-ga. steel top and lower shelf. Color is light gray. Shipped assembled. *Stationary* models have one 9/16″ dia. hole per footplate for mounting to the floor.

Mobile models have swivel casters with brake and 3″ dia. polyolefin wheels.

A Stationary

B Stationary

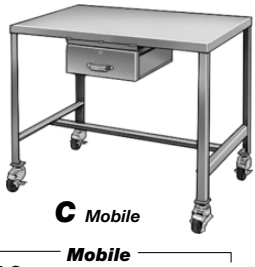
C Mobile

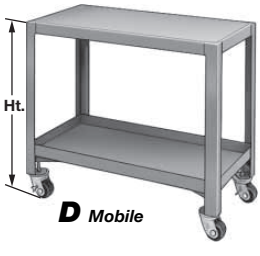

D Mobile

Wd.×Dp.	Choose a Ht.♦	Stationary O'all Cap., lbs.		Each	Mobile O'all Cap., lbs.		Each
(A) Light Duty							
24″×18″	18″, 24″, 30″, 36″	1,000	4791T61	$117.60	800	4791T81	$207.76
26″×22″	18″, 24″, 30″, 36″	1,000	4791T62	123.20	800	4791T82	221.33
30″×24″	18″, 24″, 30″, 36″	1,000	4791T63	128.80	800	4791T83	229.99
36″×24″	18″, 24″, 30″, 36″	1,000	4791T64	140.00	800	4791T84	235.87
(B) Medium Duty							
24″×18″	18″, 24″, 30″, 36″, 42″	2,000	46715T31	126.67	500	46715T61	190.09
36″×24″	18″, 24″, 30″, 36″, 42″	2,000	46715T32	151.03	500	46715T62	219.09
48″×24″	18″, 24″, 30″, 36″, 42″	2,000	46715T33	182.52	500	46715T63	257.12
(C) Medium Duty with Drawer							
24″×18″	18″, 24″, 30″, 36″, 42″	2,000	46715T71	225.87	500	46715T81	302.74
36″×24″	18″, 24″, 30″, 36″, 42″	2,000	46715T72	255.32	500	46715T82	332.06
48″×24″	18″, 24″, 30″, 36″, 42″	2,000	46715T73	293.50	500	46715T83	370.27
(D) Medium Duty with Lower Shelf— *Top and lower shelf capacities are 1,000 lbs.*							
36″×18″	32″	2,000	5167T51	169.17	2,000	5167T21	239.40
36″×24″	32″	2,000	5167T53	180.36	2,000	5167T23	252.25
48″×24″	32″	2,000	5167T55	222.91	2,000	5167T25	292.32
60″×24″	32″	2,000	5167T57	264.41	2,000	5167T27	337.07
(E) Medium Duty with Two Lower Shelves— *Top and lower shelf capacities are 666 lbs.*							
36″×18″	32″	2,000	5167T52	224.53	2,000	5167T22	293.85
36″×24″	32″	2,000	5167T54	241.36	2,000	5167T24	309.71
(F) Heavy Duty with Lower Shelf— *Top and lower shelf capacities are 1,500 lbs. for stationary models; 1,300 lbs. for mobile models.*							
48″×24″	36″	3,000	5167T61	272.40	2,600	5167T41	345.72
48″×28″	36″	3,000	5167T64	284.57	2,600	5167T44	361.98
48″×34″	36″	3,000	5167T67	335.79	2,600	5167T47	401.52
72″×34″	36″	3,000	5167T69	481.34	2,600	5167T49	547.27

♦ Available heights are the same for stationary and mobile models. Overall height includes casters.

E Stationary

F Mobile

Capacities listed are based on an evenly distributed load.

Adjustable-Height Steel Machine Tables

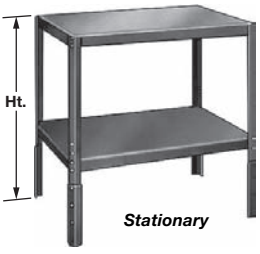

Stationary

Tables allow you to manually adjust height in 2″ increments within the range listed—to adjust, simply remove and reposition leg bolts. Made of 16-ga. steel with a 750-lb capacity top and 750-lb. capacity lower shelf. Lower shelf adjusts in 4″ increments. Color is dark gray. Shipped unassembled. *Mobile* models have swivel casters with brake and 3″ dia. polypropylene wheels.

To Order: Please specify height from those listed.

	Stationary				Mobile			
Wd.×Dp.	Choose a Ht.	O'all Cap., lbs.		Each	Choose a Ht.	O'all Cap., lbs.		Each
24″×18″	18″-24″, 30″-36″	1,500	4605T1	$88.88	22″-28″, 34″-40″	1,000	4605T31	$150.76
30″×24″	18″-24″, 30″-36″	1,500	4605T2	101.00	22″-28″, 34″-40″	1,000	4605T32	180.38
36″×24″	18″-24″, 30″-36″	1,500	4605T3	110.81	22″-28″, 34″-40″	1,000	4605T33	198.27
48″×24″	18″-24″, 30″-36″	1,500	4605T4	126.83	22″-28″, 34″-40″	1,000	4605T34	229.16

Steel Machine Tables with Maple or Particleboard Tops

A Stationary

B Stationary

Don't be fooled by their good looks. All tables have a rugged, nonconductive top and welded frame. Metal components are light gray. Shipped assembled.

(A) With Maple Top—Machine tables have a 1¾″ thick impact-resistant maple top that has a varnish finish. The legs and frame are angle iron.

Stationary models have leveling feet that allow you to adjust height.

Mobile models have swivel casters with brake and 3″ dia. hard rubber wheels.

(B) With Particleboard Top—All have a 1⅜″ thick particleboard top with hardwood edging around all sides and a clear vinyl finish. Top resists corrosion, mild chemicals, and oils. Legs and frames are 18-ga. steel. **To Order:** Please specify height from those listed.

Stationary models have one ⅜″ dia. hole per foot plate for mounting to the floor. *Mobile* models have four swivel casters (two with brake) with 4″ dia. hard rubber wheels.

(C) With Particleboard Top, Lower Shelf, and Drawer—These machine tables are just like Style B above, except they come with a 250-lb. capacity lower shelf and a 15″ Wd.×20″ Dp.×6″ Ht. drawer that has a capacity of 100 lbs. **To Order:** Please specify height from those listed.

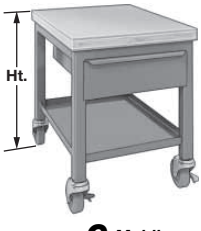

C Mobile

		Stationary			Mobile		
Wd.×Dp.	Choose a Ht.♦	O'all Cap., lbs.		Each	O'all Cap., lbs.		Each
(A) With Maple Top							
24″×24″	●	1,000	9026T51	$268.04	1,000	2664T11	$295.18
36″×24″	●	1,000	9026T52	335.89	1,000	2664T12	363.04
48″×24″	●	1,000	9026T53	398.77	1,000	2664T13	430.89
(B) With Particleboard Top							
24″×18″	24″, 30″, 36″	4,000	6403T11	210.16	1,000	6403T21	256.50
36″×24″	24″, 30″, 36″	4,000	6403T12	223.88	1,000	6403T22	268.52
(C) With Particleboard Top, Lower Shelf, and Drawer							
24″×18″	24″, 30″, 36″	4,000	6403T31	264.33	1,000	6403T41	325.34
36″×24″	24″, 30″, 36″	4,000	6403T32	326.35	1,000	6403T42	386.82

♦ Available heights are the same for both the stationary and mobile models, unless noted. Casters are included in overall height.

● 32″-35″ height for stationary models; 35″ height for mobile models.

Hercules Steel Machine Tables

These aren't your ordinary machine tables—they have an all-welded construction and a 3/16″ thick angle iron-reinforced steel top. Legs are angle iron with a foot plate with one ⅝″ dia. mounting hole. Color is light gray. Shipped assembled. **To Order:** Please specify height from those listed.

Wd.×Dp.	Choose a Ht.	O'all Cap., lbs.		Each
30″×16″	24″, 30″, 36″	10,000	8020T1	$271.19
30″×22″	24″, 30″, 36″	10,000	8020T2	292.09
30″×28″	24″, 30″, 36″	10,000	8020T3	312.87
36″×30″	24″, 30″, 36″	10,000	8020T4	345.12
48″×30″	24″, 30″, 36″	10,000	8020T5	392.74

Stainless Steel Machine Tables

NSF

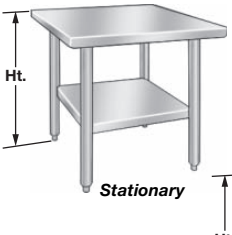

Stationary

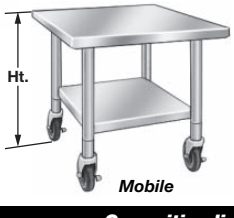

Mobile

Good for corrosive environments, all tables are made of welded 18- to 14-ga. Type 304 stainless steel and have a lower shelf for added storage space. Shipped assembled. NSF certified.

Stationary models have adjustable feet to compensate for uneven floors.

Mobile models have four swivel casters with brake and 5″ dia. polyurethane wheels.

			Stationary		Mobile	
Wd.×Dp.	Top Cap., lbs.	Shelf Cap., lbs.		Each		Each
24″ High Machine Tables						
24″×24″	300	97	45795T42	$419.15	45795T72	$465.08
30″×24″	375	120	45795T43	442.86	45795T73	487.30
30″×30″	470	150	45795T44	465.08	45795T74	507.94
36″×30″	565	180	45795T45	493.65	45795T75	533.33
48″×30″	750	280	45795T47	544.44	45795T77	585.71
36″ High Machine Tables						
24″×24″	300	97	45795T52	465.08	45795T82	512.70
30″×24″	375	120	45795T53	487.30	45795T83	534.92
30″×30″	470	150	45795T54	511.11	45795T84	560.32
36″×30″	565	180	45795T55	542.86	45795T85	587.30

Capacities listed are based on an evenly distributed load.

Heavy Duty Ultra-Precise Steel Machine Tables

Able to hold a whopping 35,000 lbs., these tables have the highest capacity of any machine table we offer. They have an all-welded construction, and the legs are steel angle iron with cross bracing for added strength. They also have tops that are ground to a flatness tolerance of 0.002″ per linear foot. The bottom of each leg has two tapped holes (1/2″-13 and 5/8″-11) and one drilled hole (17/32″ dia.) for mounting to the floor (mounting fasteners not included). Color is light gray with an unpainted top. Shipped assembled. **To Order:** Please specify height: 24″, 30″, 32″, 34″, or 36″.

Wd. × Dp.	O'all Cap., lbs.	Top Thick.		Each
24″ × 24″	35,000	3/4″	4769T42	$762.17
30″ × 24″	35,000	3/4″	4769T43	856.05
30″ × 30″	35,000	3/4″	4769T45	958.59
36″ × 24″	35,000	3/4″	4769T44	946.24
36″ × 30″	35,000	3/4″	4769T46	1,035.42
48″ × 30″	35,000	3/4″	4769T47	1,254.48
48″ × 36″	35,000	3/4″	4769T48	1,411.95
48″ × 48″	35,000	1″	4769T49	1,912.35
60″ × 30″	35,000	3/4″	4769T83	1,363.73
72″ × 30″	35,000	3/4″	4769T84	1,573.00

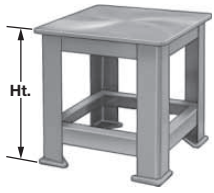

Vibration-Damping Machine Tables

Also known as balance tables, these machine tables provide superior vibration control for all your sensitive equipment. They also provide excellent resistance to impact, thermal shock, stains, and harsh chemicals. Both are made of 3″ thick nonporous, molded marble. They come with a black 2″ dia. cast iron cross brace that strengthens the legs. Color is white. Shipped unassembled.

Wd. × Dp. × Ht.	O'all Cap., lbs.		Each
35″ × 24″ × 31″	1,000	4820T31	$1,205.67
35″ × 24″ × 36″	1,000	4820T32	1,276.60

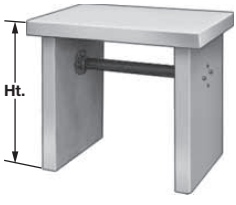

Mobile Slope-Top Instrument Tables

The sloped top positions your multimeters, oscilloscopes, and other instruments at a convenient height and viewing angle. All surfaces are nonconductive, nonmarring, and heat resistant. Legs and frame are made of 18-ga. galvanized steel tubing. Each top has 1 1/4″ high side stops and an adjustable support arm with rubber bumpers to hold your instruments in place. All tables have a 75-lb. capacity removable lower shelf and four swivel casters with 3″ dia. rubber wheels. Shipped unassembled.

The top and shelf are either 3/4″ thick UV-coated birch plywood with a light woodgrain finish or 5/8″ thick light gray plastic laminate over particleboard. Birch plywood is slightly stronger than plastic laminate, but plastic laminate is easier to clean.

Top Size, Wd. × Dp.	Ht. (A)	Ht. (B)	O'all Cap., lbs.	Birch Plywood Top and Shelf	Each	Plastic-Laminate Top and Shelf	Each
15 1/2″ × 19″	34″	28″	150	9031T14	$109.09	9031T16	$105.45
23″ × 19″	34″	28″	150	9031T15	127.27	9031T17	121.00

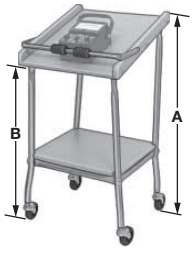

Tables

All tables have a particleboard top with a plastic-laminate surface and a steel frame. Shipped unassembled. **To Order:** Please specify top color: light gray, oak, or walnut (unless noted). *Note:* Walnut is darker than oak.

(A) Standard tables have legs with a chrome-plated finish. *Light gray tops* have a light gray frame. *Oak-color tops* have a beige frame. *Walnut-color tops* have a black frame.

(B) Tables with lower shelf are perfect when you need a shelf for extra storage. *Light gray* and *walnut-color tops* have a black frame and legs. *Oak-color tops* have a brown frame and legs.

(C) Adjustable-height tables adjust in 1″ increments. *Light gray tops* have a dark blue frame and legs. *Oak-color tops* have a black frame and legs.

(D) Adjustable-height tables with recessed legs adjust in 1″ increments, have recessed legs for extra leg room, and have a black modesty panel for privacy (except tables with *oak-color tops* have a beige modesty panel). Legs are steel with a chrome-plated finish and have adjustable leveling glides to compensate for uneven floors.

O'all Size, Wd. × Dp.	Top Thick.	Top Cap., lbs.		Each
(A) Standard Tables—29 1/2″ High				
40″ × 20″	1 1/4″	400	6124T1	$161.82
48″ × 30″	1 1/4″	400	6124T3	178.18
60″ × 20″	1 1/4″	400	6124T2	176.36
60″ × 30″	1 1/4″	400	6124T4	203.70
72″ × 36″	1 1/4″	400	6124T5	260.71
(B) Tables with Lower Shelf—30″ High				
24″ × 24″	3/4″	350	5112T21	129.27
30″ × 18″	3/4″	350	5112T22	131.67
30″ × 30″	3/4″	350	5112T23	134.15
48″ × 18″	3/4″	350	5112T24	135.43
(C) Adjustable-Height Tables—24″-34″ High				
48″ × 24″	1 1/4″	300	5507T4 ♦	258.18
60″ × 30″	1 1/4″	300	5507T5 ♦	297.30
72″ × 30″	1 1/4″	300	5507T6 ♦	333.94
(D) Adjustable-Height Tables with Modesty Panel—26″-30″ High				
36″ × 24″	1 1/4″	350	4718T11	191.54
48″ × 24″	1 1/4″	350	4718T12	218.46
48″ × 30″	1 1/4″	350	4718T15	272.31
60″ × 30″	1 1/4″	350	4718T13	291.54

♦ Walnut top is not available.

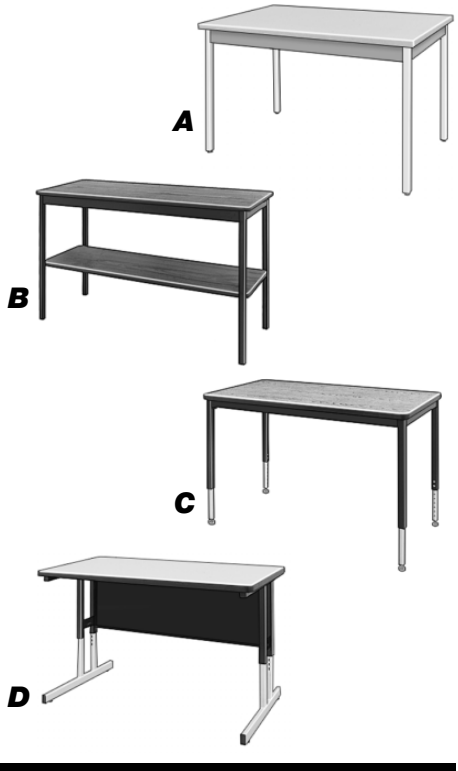

Capacities listed are based on an evenly distributed load.

Tables with Pedestal Base

No matter where you sit, you'll always have plenty of leg room thanks to the pedestal bases on these tables. All pedestals are steel with a cast iron base; the pedestal and base are both black and come with adjustable leveling feet to compensate for uneven floors. All tables have a particleboard top with a plastic-laminate surface. Shipped unassembled. **To Order:** Please specify top color: light gray, oak, or walnut. *Note:* Walnut is darker than oak.

	O'all Size Wd. × Dp.	Ht.	Top Thick.	Top Cap., lbs.	Base Dia.		Each
A	30″ × 30″	29″	1¼″	350	22″	**9610T11**	$136.51
A	36″ × 36″	29″	1¼″	350	30″	**9610T12**	190.00
B	30″ Dia.	29″	1¼″	350	22″	**9610T13**	136.51
B	36″ Dia.	29″	1¼″	350	30″	**9610T14**	190.00
B	42″ Dia.	29″	1¼″	350	30″	**9610T15**	221.55
B	48″ Dia.	29″	1¼″	350	30″	**9610T16**	232.45

Tables with Folding Legs

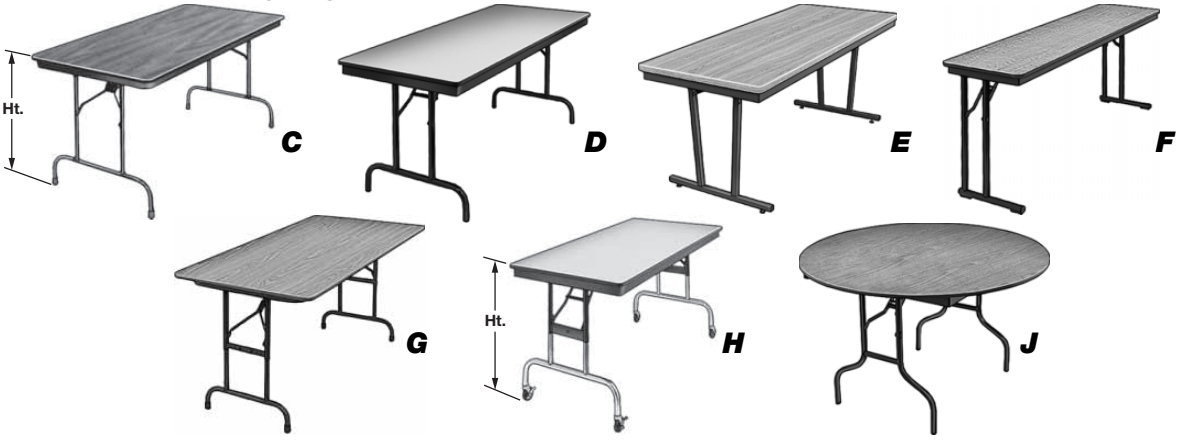

Transporting and storing these tables is easy—the legs fold up and out of the way when not in use. All have a particleboard top (except Styles D, E, and F, which are plywood) with a plastic-laminate surface and steel frame. Legs are steel and come with nonmarring plastic feet. Shipped assembled.

To Order: Please specify color from choices below (unless otherwise indicated). *Note:* Walnut is darker than oak.

- Walnut-color top with black frame and legs.
- Oak-color top with brown frame and legs.
- Light gray top with black frame and legs.

(C) Standard tables are economical. *Walnut-color tops* have a brown frame and legs. *Light gray tops* have a light gray frame and legs.

(E) Heavy duty conference room tables have a thicker top. The plastic feet adjust to compensate for uneven floors.

(F) Heavy duty tables with recessed legs provide added leg room, thanks to their recessed legs.

(G) Adjustable-height tables adjust in 1″ increments. *Walnut-color tops* have a brown frame and legs. *Light gray tops* have a light gray frame and legs.

(H) Mobile adjustable-height tables roll where you need them and adjust in 1″ increments. All come with four swivel casters (two with brake) with 3″ dia. hard-rubber wheels. The lower portion of the legs are chrome plated.

O'all Size, Wd. × Dp.	Top Thick.	Top Cap., lbs.		Each
(C) Standard Rectangular Tables—29″ High				
48″ × 24″	⅝″	250	**4848T6**	$115.58
60″ × 30″	⅝″	250	**4848T1**	125.88
72″ × 18″	⅝″	250	**4848T7**	129.28
72″ × 30″	⅝″	250	**4848T2**	133.00
72″ × 36″	⅝″	250	**4848T4**	143.23
96″ × 30″	⅝″	250	**4848T3**	152.00
96″ × 36″	⅝″	250	**4848T5**	169.06
(D) Heavy Duty Rectangular Tables—30″ High				
60″ × 30″	¾″	700	**5638T2**	192.69
72″ × 30″	¾″	700	**5638T3**	199.96
72″ × 36″	¾″	700	**5638T4**	235.11
96″ × 30″	¾″	700	**5638T5**	241.15
96″ × 36″	¾″	700	**5638T6**	287.36
(E) Heavy Duty Rectangular Conference Room Tables—30″ High				
72″ × 30″	1¼″	900	**5524T1**	277.36
96″ × 30″	1¼″	900	**5524T2**	317.45

O'all Size, Wd. × Dp.	Top Thick.	Top Cap., lbs.		Each
(F) Heavy Duty Rectangular Tables with Recessed Legs—30″ High				
60″ × 18″	¾″	1,000	**5168T5**	$294.22
60″ × 24″	¾″	1,000	**5168T6**	326.62
72″ × 18″	¾″	1,000	**5168T7**	302.85
72″ × 24″	¾″	1,000	**5168T8**	340.29
96″ × 24″	¾″	1,000	**5168T9**	353.90
(G) Adjustable-Height Rectangular Tables—22″-32″ High				
60″ × 30″	⅝″	250	**6171T1**	155.15
72″ × 36″	⅝″	250	**6171T4**	180.04
96″ × 36″	⅝″	250	**6171T5**	198.20
(H) Mobile Adjustable-Height Rectangular Tables—23″-30″ High				
60″ × 30″	¾″	750	**4934T22**	285.58
72″ × 30″	¾″	750	**4934T24**	295.09
96″ × 36″	¾″	750	**4934T26**	370.86
(J) Heavy Duty Round Tables—29″ High				
48″ Dia.	⅝″	1,000	**4156T21**	220.45
60″ Dia.	⅝″	1,000	**4156T23**	287.80
72″ Dia.	⅝″	1,000	**4156T24**	422.83

Aluminum Tables with Folding Legs

Lightweight does not mean light duty. Made entirely of high-strength aluminum, these tables are lighter than similarly sized tables. Their lighter weight makes them easy to transport and store. They are rust and corrosion resistant and will not crack or warp after extended exposure to moisture, heat, and sunlight. Cast aluminum inserts protect corners, and legs have nonmarring feet. Legs and corner inserts are dark gray. Shipped assembled.

O'all Size Wd. × Dp.	Ht.	Top Thick.	Top Cap., lbs.		Each
60″ × 18″	29½″	1½″	4,000	**5234T11**	$321.67
60″ × 30″	29½″	1½″	4,000	**5234T12**	396.67
72″ × 30″	29½″	1½″	4,000	**5234T15**	421.67
96″ × 30″	29½″	1½″	4,000	**5234T18**	495.00

Capacities listed are based on an evenly distributed load.

Polyethylene-Top Tables with Folding Legs

Not only are these tables stain resistant, but they're also lightweight and easy to clean. Their legs fold up and out of the way, making them easy to transport and store. They come with non-marring plastic feet. The top is white; frame and legs are black steel (unless otherwise indicated). Shipped assembled.

(A&B) Rectangular tables are impact and chemical resistant.

Style B tables adjust in 1″ increments.

(C) Center-folding rectangular table folds in half and has a built-in carrying handle. Legs and frame are brown steel.

(D) Round table is impact and chemical resistant.

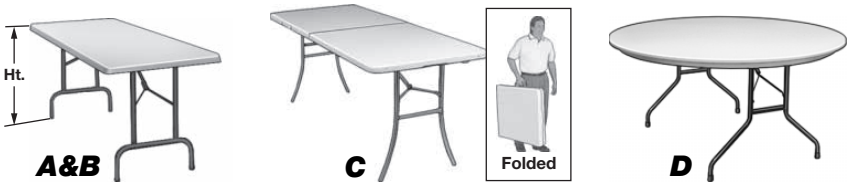

O'all Size, Wd.×Dp.	Top Thick.	Top Cap., lbs.		Each
(A) Rectangular Tables—29″ High				
48″×24″	2½″	250	6167T21	$94.11
60″×30″	2½″	250	6167T35	112.85
72″×18″	2½″	250	6167T22	115.55
72″×30″	2½″	250	6167T51	119.90
96″×30″	2½″	250	6167T52	165.58

O'all Size, Wd.×Dp.	Top Thick.	Top Cap., lbs.		Each
(B) Adjustable-Height Rectangular Tables—22″-32″ High				
48″×24″	2½″	250	5576T21	$141.64
72″×30″	2½″	250	5576T22	176.18
96″×30″	2½″	250	5576T23	225.24
(C) Center-Folding Rectangular Table—29″ High				
72″×30″	1¾″	300	6167T8	88.84
(D) Round Table—29″ High				
60″ Dia.	2½″	250	5589T51	265.31

Caddies for Tables with Folding Legs

Moving and storing tables with folding legs is a breeze with our caddies. All are made of welded steel with a brown finish, except the support beams are wood. Come with four swivel casters with 4″ dia. hard-rubber wheels. Shipped unassembled.

For Table Size	Caddy Size, Wd.×Dp.×Ht.		Each
Caddies for Rectangular Tables—*Each holds 10 to 12 tables.*			
48″, 60″, and 72″ Wide	74″ ×31¼″×36¼″	4162T13	$287.79
96″ Wide	97½″×31¼″×36¼″	4162T14	318.54
Caddy for Round Tables—*Holds 8 tables.*			
60″ and 72″ Dia.	61″ ×31¼″×41¼″	4162T15	439.49

For Rectangular Tables

For Round Tables

Food-Service Tables

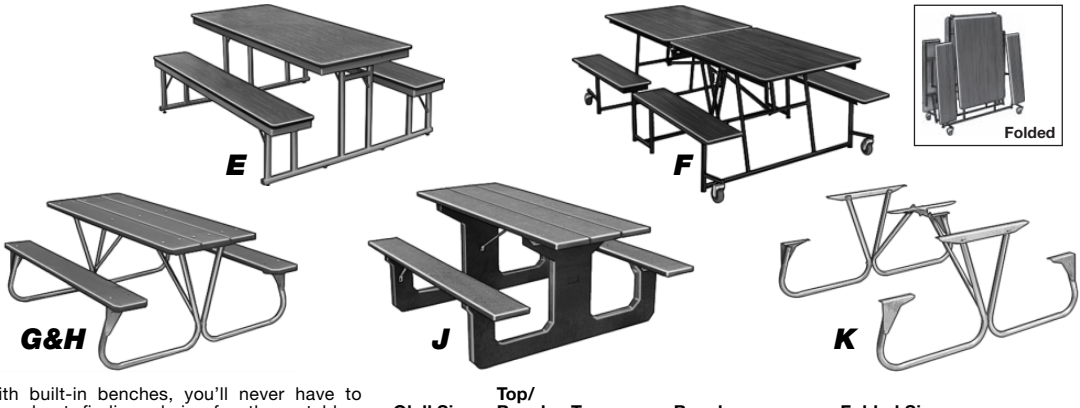

With built-in benches, you'll never have to worry about finding chairs for these tables. Shipped unassembled, except Style F.

Indoor Tables—All have particleboard tops and benches with a walnut-color plastic-laminate surface. The frame has welded construction.

Style E have steel frames and are tan. Come with adjustable plastic feet to compensate for uneven floors.

Style F fold in half and roll on four swivel casters with 4″ dia. polyolefin wheels for compact storage and convenient mobility. Frames are steel and are black. All come with nonmarring plastic feet that provide stability when tables are open.

Outdoor Picnic Tables—All are corrosion resistant.

Style G are economical and have redwood-stained pine tops and benches.

Style H have aluminum tops and benches that make these tables lighter and easier to move than our other picnic tables.

Style J is made from post-consumer and industrial recycled plastic. It will not rust, rot, or crack; is UV resistant; and requires very little maintenance. Top and benches are brown. Frame has a molded one-piece construction and is black.

O'all Size, Wd.×Dp.	Top/Bench Thick.	Top Wd.×Dp.	Bench Wd.×Dp.×Ht.	Folded Size, Wd.×Dp.×Ht.		Each
(E&F) Indoor Tables						
(E) Stationary—*29″ High*						
72″×57″	¾″	72″×30″	72″×12″	×18″	6126T21	$609.55
96″×57″	¾″	96″×30″	96″×12″	×18″	6126T22	691.36
(F) Mobile Fold-Up—*29″ High*						
96″×56″	11/16″	96″×30″	39″×10″	×17″	56″×35″×57″ 6125T12	1,243.44
122″×56″	11/16″	122″×30″	56″×10″	×17″	56″×35″×75″ 6125T13	1,353.58
146″×56″	11/16″	146″×30″	66″×10″	×17″	56″×38″×82″ 6125T14	1,399.16
(G-J) Outdoor Picnic Tables						
(G) Galvanized Steel Frame with Wood Top—*30½″ High*						
72″×60″	2″	72″×30½″	72″× 9¼″	×18½″	9814T12	518.78
96″×60″	2″	96″×30½″	96″× 9¼″	×18½″	9814T14	545.02
(H) Galvanized Steel Frame with Aluminum Top—*30½″ High*						
72″×60″	2″	72″×30½″	72″× 9¼″	×18¾″	9814T22	749.00
96″×60″	2″	96″×30½″	96″× 9¼″	×18¾″	9814T24	868.90
(J) Recycled Plastic—*31½″ High*						
72″×62″	1½″	72″×28½″	72″× 9½″	×19″	6738T129	763.16

(K) Table Frame

You can use this galvanized steel frame to build a table using your own wood top and benches. It can also be used as a replacement frame for Styles G and H. Mounting hardware included.

Galvanized Steel Frame Only ..... 9814T26 **Each** $344.32

Capacities listed are based on an evenly distributed load.

Stand-Up-Height Desks

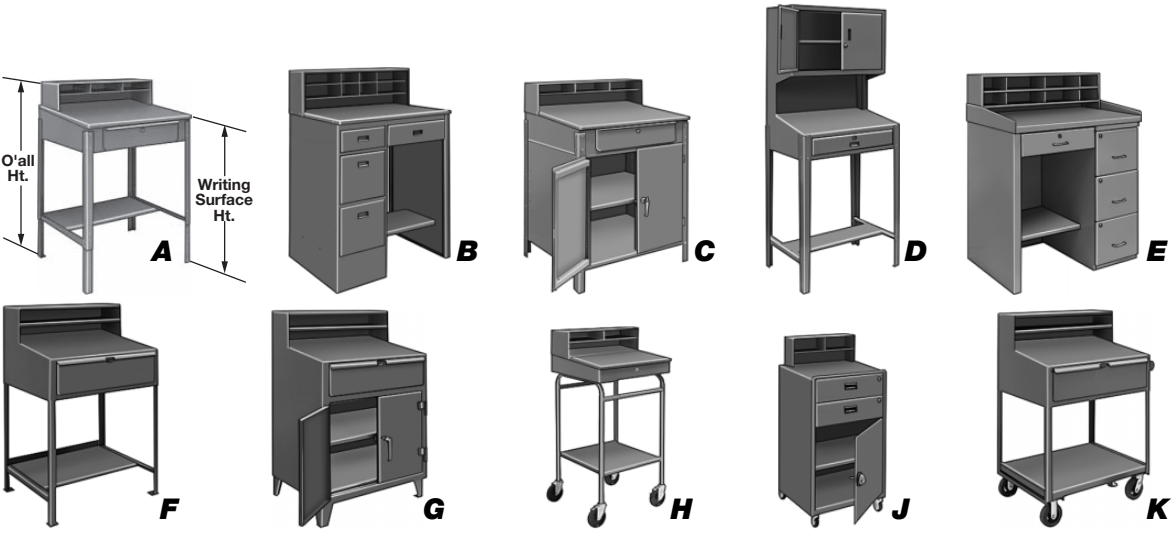

Whether you are standing or sitting on a stool, these desks are perfect for shipping, receiving, and similar applications. They have a writing surface and a storage space both above and below the writing surface.

(A-G) Stationary Desks

All have a drawer directly below the writing surface.

(A-D) Light and Medium Duty Steel— Shipped unassembled.

Style A are dark gray. *Light duty desk* has a 75-lb. capacity lower shelf and a drawer that includes a lock and two keys. *Medium duty desk* has a 125-lb. capacity lower shelf and a drawer that includes a lock and one key.

Style B has a 75-lb. capacity lower shelf and three additional file drawers. (One drawer is 13″ Wd.×20″ Dp.×5″ Ht.; the other two are 13″ Wd.×20″ Dp.×12¼″ Ht.). All drawers have recessed drawer pulls. The drawer under the writing surface includes a lock and two keys. The two large file drawers have knockouts for adding a lock (not included; please ask for 48735T11 and specify keyed alike or keyed differently). Color is dark gray.

Style C have a lower cabinet with an interior shelf that adjusts on 3″ centers. Drawer and cabinet door include a lock and two keys, except the medium duty desk, which only comes with one key.

Light duty desk has a 32″ Wd.×28″ Dp.×28¼″ Ht. cabinet. The shelf has a capacity of 350 lbs. Color is dark gray.

Medium duty desk has a 34½″ Wd.×27½″ Dp.×34½″ Ht. cabinet. The shelf has a capacity of 125 lbs. Color is light gray.

Style D has a top cabinet and lower shelf. Drawer and cabinet door have recessed drawer and door pulls; include locks with two keys. The cabinet is 31½″ Wd.×14¼″ Dp.×18¼″ Ht. and has a fixed 300-lb. capacity shelf. The lower shelf has a capacity of 400 lbs. Color is tan.

(E-G) Heavy Duty Steel— Shipped assembled.

Style E has three additional 12″ Wd.×22½″ Dp.×9¼″ Ht. file drawers. All drawers have pull handles and include a lock and two keys. This desk also has a 250-lb. capacity lower shelf. Color is light gray.

Style F is fully welded and has a 950-lb. capacity lower shelf. Drawer has a padlock hasp (padlock not included; max. shackle dia. is 7/16″). Each leg has one ¾″ dia. mounting hole (fasteners not included). Color is dark gray.

Style G is fully welded and has a lower cabinet with a 2,250-lb. capacity interior shelf that adjusts on 2″ centers. The drawer and cabinet door both have a padlock hasp (padlock not included; max. shackle dia. is 7/16″ for the drawer and ½″ for the cabinet door). The cabinet is 36″ Wd.×28″ Dp.×36″ Ht. Legs have ¾″ dia. mounting holes. Color is dark gray.

(H-K) Mobile Desks

Casters provide easy maneuvering. All mobile desks are shipped assembled and ready to use, except Style J.

(H) Light Duty and Stainless Steel— Desks have a lift-up top with an interior storage compartment; top includes a lock and two keys. Desk also has a lower shelf and comes with four swivel casters (two with brake) that have 5″ dia. polyurethane wheels.

Light duty desk is light gray. Shelf capacity is 100 lbs.

Stainless steel desk is made of series 300 stainless steel. Great for food-service applications. Shelf capacity is 125 lbs. NSF certified.

(J) Medium Duty Steel— This desk is fully welded and has two drawers and a cabinet. Drawers and cabinet door include locks and two keys. Cabinet is 23″ Wd.×20″ Dp.×20¾″ Ht. and has a fixed shelf with a capacity of 50 lbs. A ½″ lip on the front of the writing surface keeps items from rolling off the desk. Comes with four swivel casters that have 3″ dia. soft-rubber wheels. Shipped assembled, except for storage unit and casters. Color is dark gray.

(K) Heavy Duty Steel— This high-capacity desk is fully welded and has a drawer and lower shelf. The drawer has a padlock hasp (padlock not included; max. shackle dia. is 7/16″). Shelf has a capacity of 950 lbs. Comes with four casters (two rigid; two swivel) that have 6″ dia. rubber wheels. Has a floor lock to keep desk in place. Color is dark gray.

	O'all Size, Wd.×Dp.×Ht.	Writing Surface Size, Wd.×Dp.×Ht.	Writing Surface Style	Writing Surface Cap., lbs.	Drawer Size, Wd.×Dp.×Ht.	Drawer Cap., lbs.	Top Thick.		Each
Stationary Desks									
Light Duty Steel									
A	34½″ × 30″ × 53″	34½″ × 21″ × 43″	Sloped	200	24″ × 28″ × 3½″	150	20 ga.	9912T32	$213.35
B	39″ × 28¾″ × 55½″	39″ × 19¾″ × 43⅝″	Flat	200	19″ × 20″ × 5¾″	150	20 ga.	45915T66	726.03
C	34½″ × 30″ × 53″	34½″ × 21″ × 43″	Sloped	200	24″ × 28″ × 3½″	150	20 ga.	4780T19	366.10
D	31½″ × 21″ × 72½″	31½″ × 15″ × 40″	Sloped	200	26¼″ × 17″ × 4″	150	18 ga.	4838T24	353.93
Medium Duty Steel									
A	34 9/16″ × 30″ × 52⅛″	34 9/16″ × 21½″ × 41⅛″	Sloped	330	22¾″ × 27½″ × 3½″	100	18 ga.	9912T371	359.63
C	34 9/16″ × 27¾″ × 52⅛″	34 9/16″ × 21½″ × 41⅛″	Sloped	330	25¼″ × 24½″ × 4¼″	100	18 ga.	4780T31	573.73
Heavy Duty Steel									
E	39″ × 28″ × 53½″	39″ × 20″ × 42″	Flat	1,000	20″ × 23″ × 5″	100	14 ga.	9762T39	925.25
F	36″ × 28″ × 54″	36″ × 17⅝″ × 42″	Sloped	1,600	29″ × 20″ × 6″	225	12 ga.	5662T72	950.50
G	36″ × 28″ × 54″	36″ × 17⅝″ × 42″	Sloped	1,600	29″ × 20″ × 6″	225	12 ga.	8213T71	1,080.00
Mobile Desks									
Light Duty Steel									
H	24″ × 22″ × 49″	24″ × 13½″ × 42″	Sloped	125★	—	—	20 ga.	40795T72	285.00
Stainless Steel									
H	24″ × 22″ × 49″	24″ × 13½″ × 42″	Sloped	150★	—	—	20 ga.	41045T62	661.53
Medium Duty Steel									
J	23″ × 20″ × 51″	23″ × 14″ × 42″	Sloped	500★	20¾″ × 19½″ × 6″	100	16 ga.	40805T52	478.24
Heavy Duty Steel									
K	36″ × 28″ × 54″	36″ × 17⅝″ × 42″	Sloped	2,000★	29″ × 20″ × 6″	225	12 ga.	5013T21	1,157.38

★ Overall capacity.

Capacities listed are based on an evenly distributed load.

Easy-to-Move Stand-Up-Height Desk with Document Holders

Hate to be away from your desk? You can take this easy-to-move desk with you. The writing surface comes with a clear, acrylic document protector and two clips for holding papers. Writing surface and back panel are made of yellow polystyrene. The pedestal base provides maximum leg room and comes with plastic feet; it is made of steel with a black finish. Shipped unassembled.

Document protector for back display panel is hinged and made of clear acrylic.

Center tray is 20 3/16″ Wd. × 9 7/16″ Dp. × 4 3/8″ Ht. and comes with a lock and two keys. Made of steel.

Side tray is 7 7/8″ Wd. × 7 1/2″ Dp. Made of steel.

Vertical file holder has three 2″ wide sections. Made of steel.

Casters have 3″ dia. hard-rubber wheels. All swivel and have a brake.

Desk

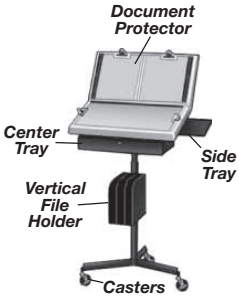

Desk with Accessories

	Writing Surface: O'all Size, Wd. × Dp. × Ht.	Style	O'all Cap., lbs.		Each
Desk	26″ × 13″ × 38″	Sloped	20	5091T51	$304.94
Accessories					
Document Protector for Back Display Panel				5091T69	36.84
Center Tray				5091T81	138.82
Side Tray				5091T62	43.71
Vertical File Holder				5091T66	94.48
Casters (Set of 3)				5091T67 Per Set	$30.50

Desks

In addition to a sturdy, 25- to 16-ga. steel construction, these desks include drawers for storage. Desk tops are particleboard with a plastic-laminate surface. A modesty panel provides privacy, and adjustable feet compensate for uneven floors.

To Order: Please specify color from choices below, unless noted. *Note:* Walnut is darker than oak.

- Walnut-color top with black base
- Walnut-color top with tan base
- Oak-color top with beige base
- Light gray top with light gray base

Styles A&B— The legs are steel with a chrome-plated finish. The center drawer and the set of pedestal drawers each lock individually. Desks come with two keys per lock. Shipped assembled, except for legs and drawer handles.

Style C— For a more contemporary look, this desk has two panel-style legs and recessed handles. Each set of pedestal drawers locks individually with a lock and two keys. Desk comes with two wire-management grommets to accommodate wiring. Shipped assembled.

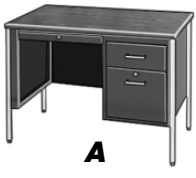

A

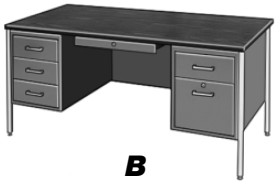

B

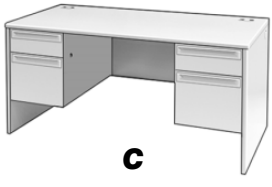

C

	O'all Size, Wd. × Dp. × Ht.	Top Thick.	Top Cap., lbs.	Drawers: Qty.	Size, Wd. × Dp. × Ht.		Each
A	40″ × 24″ × 29 1/2″	1 1/8″	400	1	19 1/4″ × 16 1/2″ × 2″		
				1	12 1/2″ × 19 1/4″ × 5 3/4″		
				1	12 1/2″ × 19 1/4″ × 11 1/2″	8577T91	$355.20
B	60″ × 30″ × 29 1/2″	1 1/8″	600	1	19 1/4″ × 16 1/2″ × 2″		
				4	12 1/2″ × 19 1/4″ × 5 3/4″		
				1	12 1/2″ × 19 1/4″ × 11 1/2″	8577T93	485.91
C	60″ × 30″ × 29 1/2″	1 1/8″	300	2	11 5/16″ × 19 3/16″ × 4 7/8″		
				2	12 1/16″ × 27 1/4″ × 9 5/8″	8215T42■	697.50

■ Walnut-color top is not available.

Desks and Accessories

Select the components you need to create the perfect desk configuration that can be changed as your needs change. Desk height can be adjusted in 1″ increments. They include removable modesty panels for privacy (one on rectangular desks; two on corner desk). Tops are particleboard with a plastic-laminate surface, and legs are chrome-plated steel. Shipped unassembled. **To Order:** Please specify top color: walnut, oak, or light gray. *Note:* Walnut is darker than oak.

Corner desk connects two rectangular desks. The two connecting sides are 30″ deep; angled front is 25″ wide.

Slide-out keyboard holder is 23″ Wd. × 12″ Dp. and is made of 3/4″ thick laminated particleboard. Mounting fasteners included. Color is black.

Adjustable CPU holder adjusts from 5 1/2″ to 9 1/4″ wide and 14 5/8″ to 20 1/2″ high. Made of steel. Mounting fasteners included. Color is black.

Two-drawer pedestal is 15″ Wd. × 19 1/2″ Dp. × 19 1/2″ Ht. It has two 100-lb. capacity drawers: 13″ Wd. × 16″ Dp. × 7″ Ht. and 13″ Wd. × 16″ Dp. × 12″ Ht. The pedestal also comes with a lock and two keys. Made of steel. Mounting fasteners included. **To Order:** Please specify color: black or beige.

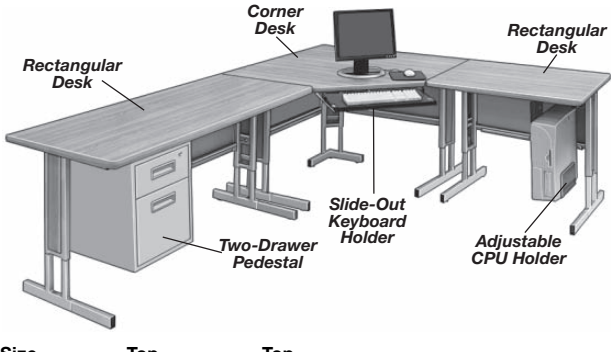

	O'all Size, Wd. × Dp.	Top Thick.	Top Cap., lbs.		Each
Rectangular Desks— *24″-32″ High*					
	36″ × 30″	1 1/4″	400	4316T41	$275.94
	48″ × 30″	1 1/4″	400	4316T42	289.97
	60″ × 30″	1 1/4″	400	4316T43	315.69
Corner Desks— *24″-32″ High*					
	48″ × 30″	1 1/4″	400	4316T44	463.02
Accessories					
Slide-Out Keyboard Holder				4316T51	70.47
Adjustable CPU Holder				4316T52	134.04
Two-Drawer Pedestal				4316T53	326.91

Capacities listed are based on an evenly distributed load.

Wall-Mount Desks

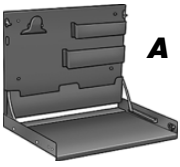

Now you can have a writing surface without sacrificing an inch of floor space. *Note:* Capacity may be reduced due to wall material, shelf material, and fastener choice.

(A) Fold-Up Desks— Simply pull desks down when you need them and fold them up when you're through. Desks protrude 2½″ from the wall when folded. They have 2″ side stops, a spring clip for holding papers, and built-in pockets for storing forms, cards, and pencils. They have four 3⁄16″ dia. holes for wall mounting (mounting fasteners not included). Shipped assembled.

Steel desk has an 18-ga. steel writing surface. **To Order:** Please specify color: beige, dark gray, or white.

Stainless steel desk has a 20-ga., Type 304 stainless steel writing surface.

(B) Lift-Top Desks— Lift the top and you'll find a storage compartment. Desks also have a storage area above the writing surface and two supporting braces that extend from the desk to the wall.

Steel desk is 20-ga. steel and has two ½″ dia. keyhole slots on the back and one 9⁄32″ dia. hole in each brace for wall mounting (mounting fasteners not included). Top includes a lock and one key. Color is light gray. Shipped unassembled.

Stainless steel desk is 20-ga. 300 series stainless steel. There are two 3⁄16″ dia. holes on the back and two ¼″ dia. holes in each brace for wall mounting (mounting fasteners not included). Top includes a lock and two keys. Shipped assembled.

(C) Large Desk with Drawer— Our largest wall-mount desk—it has a drawer below the writing surface and a storage area above the writing surface. The drawer measures 24″ Wd.×28″ Dp.×3½″ Ht., has a capacity of 50 lbs., and comes with a lock and two keys. The writing surface is 20-ga. steel. Two supporting braces extend from the desk to the wall (mounting fasteners included). Color is dark gray. Shipped unassembled.

	Material	O'all Size, Wd.×Dp.×Ht.	Writing Surface Size, Wd.×Dp.	Writing Surface Style	Writing Surface Cap., lbs.		Each
A	Steel	20″ ×17″ ×15″	20″ ×15″	Flat	60	4796T15	$190.00
A	Stainless Steel	20″ ×17″ ×15″	20″ ×15″	Flat	60	4796T21	396.49
B	Steel	24½″ ×23⅛″ ×11¾″	24½″ ×23 1⁄16″	Sloped	100	4894T26	237.20
B	Stainless Steel	24″ ×22 9⁄16″ ×12½″	24″ ×13½″	Sloped	150	4014T47	442.98
C	Steel	34½″ ×30″ ×32½″	34½″ ×22″	Sloped	200	4808T18	205.69

Adjustable Slant-Top Desks

Drawing, drafting, and writing are more comfortable than ever—not only can you adjust the height from 29″ to 46″, but you can also change the slope of the top from 0° to 40°. Tables have a particleboard top with white plastic-laminate surface. Base is steel with adjustable leveling feet to compensate for uneven floors. They have a 42″ Wd.×12″ Dp. fixed lower shelf and a modesty panel for privacy. Shipped unassembled. *Note:* Not rated for capacity.

To Order: Please specify color of base: black or white.

Wd.×Dp.	Ht.	Top Thick.		Each
48″×36″	29″-46″	¾″	6103T6	$344.00
60″×37½″	29″-46″	¾″	6103T1	384.62
72″×37½″	29″-46″	¾″	6103T2	411.21

Computer Workstations

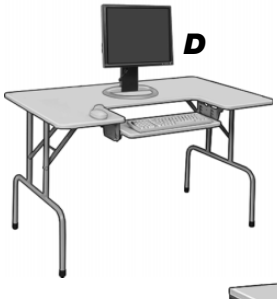

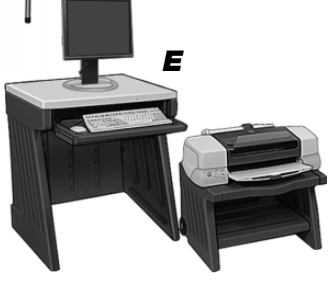

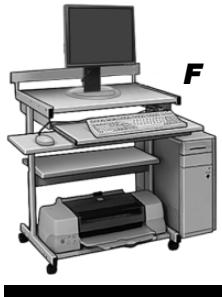

(D) Stationary fold-away workstation folds down to a mere 5¼″ high for convenient storage. The height and angle of the keyboard tray adjusts in ¼″ increments. Monitor shelf and keyboard tray are made of ¾″ thick particleboard with a light gray plastic-laminate surface; legs are made of steel and have plastic feet. Shipped assembled.

(E) Stationary plastic workstation is not only made of durable, scratch-resistant polyethylene, it is also easy to clean. It snaps together for easy assembly—no tools are needed. Comes with a monitor shelf, pull-out keyboard tray with built-in wrist rest, and a mouse platform that mounts on either side of the keyboard tray. Also comes with a mobile printer stand with one fixed shelf and two 3½″ dia. polystyrene wheels. Stand is 21″ Wd.×17″ Dp.×14″ Ht. and can be stored under the workstation. Color is dark gray, except the top of the workstation is light gray. Shipped unassembled.

(F) Mobile workstation has four swivel casters (two with brake) with 1½″ dia. polypropylene wheels that let you easily move your computer from place to place, while a 2½″ high monitor safety rail keeps your monitor from sliding off the back. Unit has a monitor shelf, pull-out keyboard tray, a mouse platform that mounts on either side of the keyboard tray, two fixed lower shelves, and a CPU holder that adjusts from 8″ to 10″ wide and is for use on the left or right side. Made of steel. Color is light gray. Shipped unassembled.

	O'all Size, Wd.×Dp.×Ht.	Monitor Shelf, Wd.×Dp.	Keyboard Tray, Wd.×Dp.		Each
Stationary					
D	47½″ ×29¾″ ×28¾″	47½″ ×19¼″●	20¾″ × 9½″	6459T81	$149.40
E	26″ ×22″ ×30″	26″ ×22″	22″ ×15″	45015T471	298.08
Mobile					
F	36¾″ ×18″ ×29¾″	23½″ ×17¾″	22¾″ ×11¾″	4581T21	180.70

● Depth is measured from the back of the keyboard shelf to the back of the workstation.

Capacities listed are based on an evenly distributed load.

Adjustable-Height Mobile Computer Workstations

Work in a sitting or standing position—adjust the height on these units for your comfort. All have four swivel casters (two with brake). Shipped unassembled.

Laptop adjustable workstation has a knob to adjust the height. Shelf is angled, adjustable, and is made of black plastic laminate with a particleboard core. Casters have 2″ dia. polypropylene wheels. Includes a wrist rest. Frame is black steel.

Desktop adjustable workstation is screw adjustable in 1″ increments to raise and lower the monitor shelf. Includes a pull-out keyboard tray and a mouse platform that pulls out on either side of the keyboard tray. The CPU holder adjusts from 8″ to 10″ wide and can be used on the left or right side. Unit also has one fixed shelf and one adjustable shelf. Casters have 3″ dia. rubber wheels. Frame is gray steel and shelves are black plastic laminate with a particleboard core.

Desktop air-adjustable workstation has an air cylinder that easily raises and lowers monitor shelf to the desired height. A rail on the monitor shelf prevents your monitor from sliding backwards. The keyboard/mouse tray adjusts inward and outward from the edge of the monitor shelf up to 4″. The CPU holder on the bottom of the workstation accommodates up to a 10″ wide CPU. Casters have 2″ dia. nylon wheels. Frame is black steel and shelves are teak laminate.

Laptop Adjustable *Desktop Adjustable* *Desktop Air Adjustable*

	O'all Size, Wd.×Dp.	Ht. Adjustment Range	Monitor Shelf, Wd.×Dp.	Keyboard Tray, Wd.×Dp.		Each
Laptop Adjustable	22½″×18″	27″-43″	24″×16″	_____	**8583T57**	$128.30
Desktop Adjustable	30″ ×24″	27½″-52½″	30″×22″	22½″×12″	**8583T41**	268.42
Desktop Air Adjustable	39½″×31½″	31¼″-39¼″	24″×18¼″	31½″×11¾″	**8583T63**	328.81

Cabinet-Style Computer Workstations

The top compartment has a PETG window that shields your monitor while providing a clear view of the screen. A pull-out tray holds your keyboard. Workstations are made of 20- to 18-ga. steel, have louvered cutouts for ventilation, and have wire-management grommets to accommodate wiring. Shipped assembled.

To Order: Please specify color: beige, blue, or light gray.

Tabletop workstation has one lock on the compartment door and one on the keyboard tray. Locks are keyed alike. Two keys are included.

Mobile workstation has one shelf in the bottom compartment that adjusts in 2⅜″ increments to accommodate your CPU and printer. Each of the following components has one lock: top compartment door, keyboard tray, bottom compartment door, and rear access door. All locks are keyed alike. Two keys are included. Unit has four swivel casters (two with brake) with 4″ dia. hard-rubber wheels.

Tabletop

Mobile

	O'all Size, Wd.×Dp.×Ht.	Compartment Inside Size: Top, Wd.×Dp.×Ht.	Compartment Inside Size: Bottom, Wd.×Dp.×Ht.	Window, Wd.×Ht.×Thick.	Monitor Shelf, Wd.×Dp.	Keyboard Tray, Wd.×Dp.		Each
Tabletop	26″×24″×32″	25⅞″×23⅛″×23⅜″	_____	16⅜″×15⅝″×⅛″	25⅞″×20¼″	21¼″×8⅛″	**49175T2**	$290.82
Mobile	26″×24″×62″	25⅞″×23⅛″×23⅜″	25⅞″×22⅜″×23⅞″	16⅜″×15⅝″×⅛″	25⅞″×20¼″	21¼″×8⅛″	**49175T4**	433.85

Hercules Cabinet-Style Computer Workstations

Made of sturdy 12-ga. welded steel, these workstations are built to endure the demands of tough warehouse and plant environments. A polycarbonate window in the top compartment shields your monitor while providing a clear view of the screen. The monitor shelf is perforated to keep equipment cool. The bottom compartment has two shelves that adjust on 2″ centers. To keep the air inside clean and circulating, units come with a fan/filter assembly that has a 3-ft. cord with two-prong plug. A pull-out tray holds your keyboard. Units come with a seven-outlet, 15-amp surge suppressor outlet strip that has a 6-ft. cord with three-prong plug. Doors have a locking handle that accepts a padlock (not included; max. shackle dia. is 7/16″ for the drawer and ½″ for the door). Color is dark gray. Shipped assembled.

Stationary workstation has four 6″ high steel legs with one ¾″ dia. mounting hole per leg for mounting to the floor (mounting fasteners not included).

Mobile workstation has two swivel and two rigid casters with 6″ dia. rubber wheels. Also comes with a floor lock.

Stationary

Mobile

	O'all Size, Wd.×Dp.×Ht.	Compartment Inside Size: Top, Wd.×Dp.×Ht.	Compartment Inside Size: Bottom, Wd.×Dp.×Ht.	Window, Wd.×Ht.×Thick.	Monitor Shelf, Wd.×Dp.	Keyboard Tray, Wd.×Dp.		Each
Stationary	26″×24″×72″	22″×22″×26½″	22″×22″×30½″	16⅛″×20½″×¼″	25¾″×22″	18½″×13½″	**47815T51**	$1,383.87
Mobile	26″×24″×67 11/16″	22″×22″×20½″	22″×22″×25¾″	16⅛″×14½″×¼″	25¾″×22″	18½″×13½″	**47815T71**	1,477.42

Cabinet-Style Computer Workstation for Harsh Environments

Harsh environments are no problem for this workstation; gasketed construction protects your computer from dirt, dust, and tampering. Each of the following components has one lock: keyboard tray, bottom compartment door, and rear access door. All locks are keyed alike. Two keys are included. The top compartment has a fan/filter assembly inside to clean the air and keep out contaminants; it has a 6-ft. cord with a two-prong plug. A PETG window shields your monitor and provides a clear view of the screen. A pull-out tray with handle holds your keyboard. The bottom compartment has a shelf that adjusts in 1″ increments, a door, and a back access panel for easy hookups. Unit has four swivel casters (two with brake) with 4″ dia. hard-rubber wheels for easy mobility. Made of 20- to 18-ga. steel. Color is light gray. Shipped assembled.

O'all Size, Wd.×Dp.×Ht.	Compartment Inside Size: Top, Wd.×Dp.×Ht.	Compartment Inside Size: Bottom, Wd.×Dp.×Ht.	Window, Wd.×Ht.×Thick.	Monitor Shelf, Wd.×Dp.	Keyboard Tray, Wd.×Dp.		Each
26″×24″×64″	25⅞″×24⅞″×23⅜″	23⅜″×22⅜″×24¼″	16⅜″×15⅝″×⅛″	25⅞″×20¼″	21¼″×8⅛″	**4652T55**	$656.83

Stainless Steel Cabinet-Style Computer Workstations

Tabletop

Mobile

Constructed of Type 304 stainless steel, these workstations are just what you need for corrosive environments and sanitary applications. An acrylic window (23″ Wd.×16″ Ht.×1/8″ Thick.) shields your monitor while providing a clear view of the screen. A pull-out tray (24 7/8″ Wd.×20″ Dp.) holds your keyboard. Units have cutouts on the back for wiring and ventilation. For added security, each of the following components has one lock (one key per lock): top compartment, keyboard tray, and the bottom compartment. Shipped assembled.

Tabletop workstation has a compartment with an inside size of 27 7/16″ Wd.×22 3/4″ Dp.×27 11/16″ Ht.

Mobile workstation moves on four swivel casters (two with brake) with 4″ dia. rubber wheels. The inside size of the top compartment is 27 5/16″ Wd.×22 3/4″ Dp.×20 15/16″ Ht. The bottom compartment is 27 5/16″ Wd.×23 3/4″ Dp.×30 3/4″ Ht. and has one fixed shelf that is ideal for your CPU and printer.

	O'all Size, Wd.×Dp.×Ht.	Monitor/ CPU Shelf, Wd.×Dp.		Each
Tabletop	27 1/2″×24″×34 1/2″	27 7/16″×22 3/4″	3212T8	$1,057.63
Mobile	27 1/2″×24″×65 5/8″	27 5/16″×22 3/4″	3212T9	1,834.65

Computer Printer Stands

Low Profile

Adjustable

Stands are shipped unassembled.

Low-profile stand fits under a desk or work area. Unit has a 7/8″ thick light gray particleboard top shelf with a plastic-laminate surface. Also has a fixed steel wire lower shelf. Frame is made of 16-ga. steel. Stand moves on four swivel (two with brake) casters with 2″ dia. nylon wheels.

Adjustable stand has top brackets that adjust from 24″ to 35″ wide and 6″ to 29″ deep to accommodate almost any printer. A wire rack on the bottom and wire basket in back hold the paper. Paper feeds from the front, back, or underneath and is caught underneath or in back. Rack and basket are made of steel wire; stand is 18- to 16-ga. steel. Color is light gray. Has four swivel casters (two with brake) with 2″ dia. polypropylene wheels.

	O'all Size, Wd.×Dp.×Ht.		Each
Low Profile	19″×16″×13 1/2″	6261T1	$74.77
Adjustable	35″×29″×27″	4855T2	159.65

Computer Holders

Hanging

Mobile

Both are made of steel and shipped unassembled.

Hanging holder mounts horizontally or vertically and adjusts to fit your CPU with the turn of a knob. Horizontal mount adjusts from 13 1/8″ to 25 3/4″ wide and 5 1/8″ to 10″ high. Vertical mount adjusts from 5 1/2″ to 9 3/4″ wide and 13 1/8″ to 17 3/4″ high. Color is black. Mounting hardware is included.

Mobile holder rolls under your work surface. Loosen the set screws on the slide bars to adjust it from 6 1/2″ to 9 1/2″ wide. Has four swivel casters (two with brake) with 1 1/2″ dia. polyethylene wheels. Color is light gray.

		Each
Hanging	6231T1	$77.50
Mobile	6231T4	62.50

Computer Racks

Heavy Duty

Consolidate and organize your local area network (LAN) equipment in one location. These racks provide plenty of space for your monitors, modems, CPUs, printers, keyboards, and more. All consist of framing, adjustable shelves, and leveling feet. Shipped unassembled.

Standard Duty— Unit has five shelves made of 3/4″ thick particleboard with a light gray plastic-laminate surface. Base shelf is 24″ Wd.×29 1/2″ Dp.; all other shelves are 24 1/4″ Wd.×20″ Dp. Shelves adjust in 2″ increments, except base shelf is fixed. Frame is dark gray steel.

Heavy Duty— The floor shelf is freestanding, 18″ Wd.×21″ Dp., and made of steel. The work surface shelf is 24″ Wd.×30″ Dp. and made of 1″ thick particleboard with a light gray plastic-laminate surface. The top two shelves are 24″ Wd.×16″ Dp. and made of steel. All shelves adjust in 1″ increments. Unit also comes with a wire keyboard shelf that attaches to the shelves (mounting fasteners included). Frame and shelves are dark gray steel (except the work surface shelf).

Optional caster sets include four swivel casters (two with brake) with 3″ dia. wheels. *Standard duty* sets have polypropylene wheels. *Heavy duty* sets have rubber wheels.

O'all Size, Wd.×Dp.×Ht.	O'all Load Cap., lbs.	Shelf Cap., lbs.		Each
Standard Duty				
24 1/4″×27 1/2″×72 3/4″	600	250	7660T13	$529.57
Optional Caster Set			7660T14	Per Set $60.92
Heavy Duty				Each
24″ ×35 1/4″×75″	800	300	8586T44	$1,319.85
Optional Caster Set			8586T53	Per Set $165.18

Chair and Stool Accessories

Seat Cushions

Round

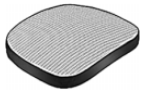
Rectangular

Cushions have foam padding.

Round cushion has a brown corduroy cover and an elastic strap on the bottom to hold the cushion to your stool.

Rectangular cushion is rattan on top with brown corduroy sides and bottom.

	Size		Each
Round	14″ Dia.×2″ Thick.	4841T11	$27.68
Rectangular	17 1/2″ Wd.×18″ Dp.×2″ Thick.	4841T13	32.94

Back Support

Support your back and reduce strain. Cushion has foam padding and a washable polyester cover. It also has a 26 1/2″ long adjustable strap for holding the cushion in place. Color is black.

Size, Wd.×Ht.×Thick.		Each
13″×12 5/8″×4″	46925T21	$36.53

Footrests

Polystyrene

Steel

Polystyrene footrest has three height positions with angle adjustment and nonskid pads on the bottom to keep it in place. Color is gray.

Steel footrest keeps your feet comfortable when you sit up high. The foot platform's height adjusts in 1″ increments by lifting it upward and sliding it to the desired position. A turn of a knob adjusts the tilt. Platform also has slip-resistant rubber matting on the top surface. Frame is steel. Color is black.

	Size, Wd.×Dp.	Ht. Range		Each
Polystyrene	18″×14″	4 1/4″-6 3/4″	45035T37	$56.23
Steel	18″×12″	3″-16″	38945T33	152.17

Folding Chairs

Chairs fold for easy storage. All have nonmarring plastic glides on the legs.

(A) Steel Chair— **To Order:** Please specify color: beige, black, or light blue.

(B&C) Steel Chairs with Padded Seat and Backrest— Seats and backrests have 1 1/4″ thick padding for comfort.

Style B has a vinyl seat and backrest for easy cleaning. **To Order:** Please specify color: beige (frame is beige), black (frame is black), or brown (frame is beige).

Style C has a fabric seat and backrest. **To Order:** Please specify color: beige (frame is beige), dark blue (frame is gray), or light gray (frame is gray).

(D) Chair with Polyethylene Seat and Backrest— Seat and backrest are made of impact- and stain-resistant contoured white polyethylene. Seat and backrest are 1 1/4″ thick. Frame is steel.

A

B

C

D

	Seat Ht.	Seat Size, Wd. × Dp.	Backrest Size, Wd. × Ht.	Cap., lbs.		Each ♦
A	16″	16″ × 16″	18″ × 7″	300	4809T1	$14.74
B	17 3/4″	15 3/4″ × 16″	18 3/4″ × 8 3/4″	300	4821T3	26.98
C	17 3/4″	15 3/4″ × 16″	18 3/4″ × 8 3/4″	300	5556T4	27.87
D	18″	15 3/4″ × 16 1/2″	18″ × 9″	250	6624T5	44.22

♦ Prices are 10% lower when you buy in quantities of four or more.

Folding-Chair Caddies

Storing and transporting your folding chairs is a breeze. Caddies roll on four swivel casters with 4″ dia. rubber wheels. Made of steel. Color is brown. Shipped unassembled.

Two-Tier-Style Caddy— Holds a large number of chairs in a space-saving unit.

No. of Chairs	O'all Size, Wd. × Dp. × Ht.		Each
Platform-Style Caddies			
30	64″ × 21″ × 38 1/2″	9984T26	$282.75
36	76″ × 21″ × 38 1/2″	9984T27	288.84
48	100″ × 21″ × 38 1/2″	9984T28	323.54
Two-Tier-Style Caddy			
84	64 3/4″ × 31 1/2″ × 73″	5131T51	569.13

Platform Style

Two-Tier Style

Stackable Chairs

Chairs stack for space-saving storage.

(E&F) Chairs with Plastic Seat and Backrest— These lightly textured chairs are durable, scratch resistant, and easy to clean.

Style E seat and back are one-piece polyethylene. Frame is chrome-plated steel. Legs have self-leveling nylon glides. **To Order:** Please specify color: black, brown, light gray, or navy blue.

Style F has the largest seat size of all the stackable chairs we offer. Seat and backrest are made of polypropylene and the frame is made of steel. Plastic floor glides protect floor. **To Order:** Please specify color: black or light gray.

(G) Chair with Padded Seat and Backrest— Padding provides extra comfort. Seat and backrest are made of black, easy-to-clean vinyl. Frame is made of black steel. Legs have nonmarring nylon glides.

E

F

G

	Seat Ht.	Seat Size, Wd. × Dp. × Thick.	Backrest Size, Wd. × Ht. × Thick.	Cap., lbs.		Each ♦
Chairs with Plastic Seat and Backrest						
E	17 1/2″	16″ × 14 1/2″ × 3/16″	14″ × 14 1/2″ × 3/16″	300	9768T12	$38.64
F	17″	17 1/2″ × 17 1/4″ × 1/4″	17 1/2″ × 16″ × 1/4″	300	5039T11	57.38
Chair with Padded Seat and Backrest						
G	18″	16″ × 15 3/4″ × 1 1/2″	15″ × 16 1/2″ × 1 1/2″	300	4622T13	34.22

♦ Prices are 10% lower when you buy in quantities of four or more.

Chairs

Ideal for lobbies, waiting rooms, and office visitors, these chairs have a steel frame. Backrest and sides of seat are vinyl. Choose from easy-to-clean vinyl and fabric for the seating surface. Color is black.

Style J has padded vinyl arms.

To Order: Please specify seating surface: vinyl or fabric.

H

J

	Seat Ht.	Seat Size, Wd. × Dp. × Thick.	Backrest Size, Wd. × Ht. × Thick.	Cap., lbs.		Each
H	18 1/2″	19″ × 18 1/2″ × 3″	16 3/4″ × 11″ × 1″	310	4676T1	$163.42
J	18 1/2″	19″ × 18 1/2″ × 3″	16 3/4″ × 11″ × 1″	310	4676T3	196.52

Air-Adjustable Chairs

A pneumatic adjustment lever allows you to raise and lower the seat, which swivels 360°. Base has five legs for added stability and five swivel casters with 2″ dia. wheels for mobility.

(A&B) Standard Chairs— All have a height-adjustable fabric backrest, fabric seat, and a black steel base. Wheels are polypropylene. **To Order:** Please specify color: black, dark blue, or light gray.

Style B also has black polyurethane arms that adjust horizontally and vertically.

(C) Multi-Adjustable Chair— The most versatile chair we offer. Fabric seat and backrest have angle adjustments so you can rock back and forth or lock in at a comfortable angle. It also has a tilt function, a height-adjustable backrest, and horizontal and vertical arm adjustment. Base is black steel, and arms are polyurethane. Wheels are nylon. **To Order:** Please specify color: black, dark blue, or dark gray.

(D) Mesh-Back Multi-Adjustable Chair— Has a unique mesh backing for breathability. It has a tilt function, tilt lock, height-adjustable backrest, and horizontal and vertical arm adjustment. Seat and backrest are fabric, and it has a black fiberglass-reinforced nylon base. Arms are polyurethane. Wheels are nylon. Color is black.

(E) Big-and-Tall Chair— Our highest capacity chair, it also has a larger seat and back. The chair has a tilt function and black reinforced nylon base. Wheels are nylon. **To Order:** Please specify color: black, dark blue, or light gray.

(F) High-Durability Chair— Seat and backrest are made of high-durability polyurethane that resists stains, grease, water, and chemicals. Backrest adjusts vertically and horizontally. Base is made of black reinforced nylon. Wheels are polypropylene. **To Order:** Please specify color: black, dark blue, or light gray.

(G) Chair with Leather Seat— Made of leather, seat is filled with memory foam that adapts to the contours of your body. The chair has a tilt function, tilt lock, and black polypropylene base. Arms are black polyurethane. Wheels are polypropylene. Color is black.

	Seat Ht. Adjust. Range	Seat Size, Wd. × Dp. × Thick.	Backrest Size, Wd. × Ht. × Thick.	Cap., lbs.		Each
A	17½″ to 22½″	19½″ × 19″ × 3″	17½″ × 17″ × 3″	250	**7661T21**	$138.60
B	17½″ to 22½″	19½″ × 19″ × 3″	17½″ × 17″ × 3″	250	**7661T22**	189.09
C	18″ to 22″	20″ × 19″ × 3″	19″ × 20″ × 3″	250	**9463T1**	271.43
D	18″ to 21½″	20½″ × 19¼″ × 4″	19½″ × 20″ ———	250	**7834T6**	278.00
E	19½″ to 23½″	22¼″ × 20¾″ × 3″	23″ × 23″ × 3″	500	**4836T2**	373.44
F	16″ to 21″	18½″ × 17″ × 1½″	16½″ × 12½″ × 1″	300	**3218T51**	189.52
G	16¾″ to 21¼″	22″ × 21″ × 3½″	22″ × 23½″ × 3½″	250	**6166T7**	348.70

Clean Room and Static-Control Air-Adjustable Chairs

Choose from chairs that meet clean room requirements or are perfect for static-control applications. Simply push the adjustment lever to easily raise and lower the seat, which also swivels 360°. Base has five legs for added stability and five swivel casters with 2″ dia. wheels for mobility. **To Order:** Please specify color: black or dark blue.

(H) Clean Room Chair— Designed for use in Class 100 clean rooms. The seat and backrest are easy-to-clean vinyl, and backrest adjusts vertically and horizontally. Base is black reinforced nylon. Wheels are polypropylene.

(J) Static-Control Chair— Has a surface resistivity of 10^8 ohms/sq.; the brass drag chain acts as a ground. Backrest is height adjustable, and the seat and backrest are fabric. Base is cast aluminum. Wheels are rubber.

	Seat Ht. Adjust. Range	Seat Size, Wd. × Dp. × Thick.	Backrest Size, Wd. × Ht. × Thick.	Cap., lbs.		Each
H	17½″ to 22½″	20″ × 17″ × 2½″	17½″ × 19″ × 4″	300	**8752T61**	$322.30
J	17″ to 22″	18½″ × 16½″ × 3″	14½″ × 9½″ × 2″	350	**3809T9**	377.65

Low-Height Mobile Stools

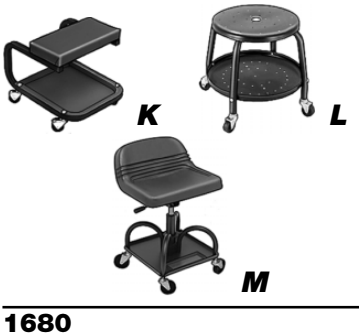

Also known as creeper stools, these stools get you and your tools close to jobs that are low to the ground. All have four swivel casters.

(K) Padded fixed-height stool has a padded black vinyl seat. Lower shelf is polypropylene. Frame is steel. Color is black.

(L) Steel fixed-height stool has a steel frame and lower shelf. Color is light gray.

(M) Air-adjustable stool has a lever under the seat to adjust the height. Seat is padded PVC and swivels 360°. Stool also has an 8″ Ht. × 2½″ Thick. backrest for extra comfort. Frame and lower shelf are steel. Color is black.

	Seat Ht.	Seat Size, Wd. × Dp. × Thick.	Cap., lbs.	Base Size, Wd. × Dp.	Wheel Dia.		Each
K	15″	14¼″ × 7″ × 1¾″	360	14″ × 14½″	2½″	**2585T12**	$51.15
L	14½″	13″ Dia. × 1/16″	300	14½″ Dia.	1½″	**4920T53**	78.72
M	17″ to 22″	18″ × 10″ × 2½″	480	15″ × 15″	3″	**4963T12**	128.16

Stools

A B C D E F G

All stools have a fixed seat. Stools *with backrest* offer extra support.

Style A have steel glides and a steel frame. Frame is light gray.

Styles B-D have an angle iron frame. Frame is green. *Style C* has four swivel casters with 2½″ dia. rubber wheels. *Style D*, also known as a milking stool, has three legs for stability on uneven surfaces and self-leveling nylon glides.

Style E have steel glides, a steel backrest (unless noted) that adjusts vertically and horizontally, and a steel frame. Frame is light gray.

Styles F&G have a frame that is made of angle iron. Frame is green. Backrest is wood. *Style G* have four swivel casters with 2½″ dia. rubber wheels.

Seat Ht.	Seat Size, Dia. × Thick.	Cap., lbs.		Each
Without Backrest				
(A) Steel Seat with Hardboard Seating Surface				
18″	14″ × 1½″	—	4910T11	$42.76
24″	14″ × 1½″	—	4910T12	50.44
30″	14″ × 1½″	—	4910T13	57.57
(A) Steel Seat with Gray Padded Vinyl Seating Surface				
18″	14″ × 2⅛″	—	4910T31	54.95
24″	14″ × 2⅛″	—	4910T32	59.29
30″	14″ × 2⅛″	—	4910T33	61.90
(B) Wood Seat				
24″	14″ × 1″	400	4902T14	68.55
26″	14″ × 1″	400	4902T15	71.45
28″	14″ × 1″	400	4902T16	82.47
30″	14″ × 1″	400	4902T17	87.67
(C) Mobile with Wood Seat				
24″	14″ × 1″	400	5325T21	125.38
30″	14″ × 1″	400	5325T22	137.45
(D) Low Height with Wood Seat				
12″	14″ × 1″	400	6049T51	74.15

Seat Ht.	Seat Size, Dia. × Thick.	Cap., lbs.	Backrest Size, Wd. × Ht. × Thick.		Each
With Backrest					
(E) Steel Seat with Hardboard Seating Surface					
18″	14″ × 1½″	—	11½″ × 6″	× 1/16″ 5122T41	$56.76
24″	14″ × 1½″	—	11½″ × 6″	× 1/16″ 5122T42	60.45
30″	14″ × 1½″	—	11½″ × 6″	× 1/16″ 5122T43	72.97
(E) Steel Seat with Gray Padded Vinyl Seating Surface					
18″	14″ × 2⅛″	—	11½″ × 6″	× 1¼″ 5122T61★	69.83
24″	14″ × 2⅛″	—	11½″ × 6″	× 1¼″ 5122T62★	72.97
30″	14″ × 2⅛″	—	11½″ × 6″	× 1¼″ 5122T63★	95.29
(F) Wood Seat					
24″	14″ × 1″	400	12″ × 6⅛″	× ½″ 4904T24	102.84
26″	14″ × 1″	400	12″ × 6⅛″	× ½″ 4904T25	105.89
28″	14″ × 1″	400	12″ × 6⅛″	× ½″ 4904T26	113.02
30″	14″ × 1″	400	12″ × 6⅛″	× ½″ 4904T27	114.55
(G) Mobile with Wood Seat					
24″	14″ × 1″	400	12″ × 6⅛″	× ½″ 5325T71	154.76
30″	14″ × 1″	400	12″ × 6⅛″	× ½″ 5325T72	168.29

★ Backrest has a padded vinyl insert.

Manually Adjustable Stools

You can manually adjust the height of these stools for a more custom fit.

(H) Steel Fixed Seat with Hardboard Seating Surface— Legs are bolt adjustable in 1″ increments and have self-leveling steel glides. Frame and footrest are steel; color is light gray.

(J) Steel Swivel Seat with Hardboard Seating Surface— All have nylon glides and are knob adjustable. Frame and footrest are steel; color is light gray.

(K) Steel Fixed Seat with Padded Vinyl Seating Surface— Padded seat provides additional comfort. Legs are bolt adjustable in 1″ increments and have self-leveling steel glides. Frame and footrest are steel; color is light gray.

(L) Wood Fixed Seat— Legs are bolt adjustable in 1″ increments, and the seats are hardwood. Frame and feet are angle iron; color is green.

(M&N) Type 304 Stainless Steel Swivel Seat with Rubber Seating Surface— Adjust the height of these stools by turning the seat. Stools are made of Type 304 stainless steel for corrosion resistance. The middle of each seat has a nonslip, electrically conductive black rubber pad. *Style M* have rubber glides. *Style N* have four swivel casters with 2″ dia. rubber wheels.

H J

K L

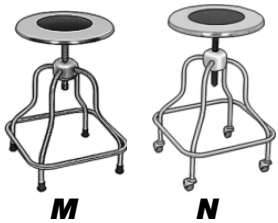

M N

Seat Ht. Adjustment Range	Seat Size, Dia. × Thick.	Cap., lbs.		Each
(H) Steel Fixed Seat with Hardboard Seating Surface				
19″ to 27″	14″ × 1½″	—	5120T51	$58.14
25″ to 33″	14″ × 1½″	—	5120T52	63.28
31″ to 39″	14″ × 1½″	—	5120T53	78.38
(J) Steel Swivel Seat with Hardboard Seating Surface				
22″ to 27½″	14″ × 1⅜″	310	4753T21	135.74
26¾″ to 32¼″	14″ × 1⅜″	310	4753T31	144.41
(K) Steel Fixed Seat with Padded Vinyl Seating Surface				
19″ to 27″	14″ × 2⅛″	—	5120T71	67.54
25″ to 33″	14″ × 2⅛″	—	5120T72	70.82
31″ to 39″	14″ × 2⅛″	—	5120T73	73.41
(L) Wood Fixed Seat				
22″ to 28″	14″ × 1″	400	4906T15	86.04
26″ to 32″	14″ × 1″	400	4906T16	92.65
30″ to 36″	14″ × 1″	400	4906T17	96.73
(M) Type 304 Stainless Steel Swivel Seat with Rubber Seating Surface				
19″ to 25″	14″ × 1″	350	4826T22	476.12
25″ to 31″	14″ × 1″	350	4826T23	491.04
(N) Mobile Type 304 Stainless Steel Swivel Seat with Rubber Seating Surface				
21″ to 27″	14″ × 1″	350	4826T32	503.72
27″ to 33″	14″ × 1″	350	4826T33	528.36

Manually Adjustable Stools with Backrest

A **B** **C** **D** **E** **F** Stationary **G** Mobile **H** Stationary **J** Mobile

You can manually adjust the height of these stools for a more custom fit. All come with a backrest for extra support.

(A) Steel fixed seat with hardboard seating surface have legs that are bolt adjustable in 1″ increments and have self-leveling steel glides. Backrest surface adjusts vertically and horizontally. Frame and footrest are steel; color is light gray.

(B) Steel swivel seat with hardboard seating surface are knob adjustable, have nylon glides, and have a steel backrest. Frame and footrest are steel; color is light gray.

(C) Steel fixed seat with padded vinyl seating surface have self-leveling steel glides and a backrest surface that adjusts vertically and horizontally. Frame and footrest are steel. Legs adjust in 1″ increments. Color is light gray.

(D) Steel swivel seat with padded vinyl seating surface have self-leveling steel glides and a backrest surface that adjusts vertically and horizontally. Frame and footrest are steel. Stool is adjusted by turning the seat. **To Order:** Please specify color of vinyl seating surface: dark gray (with light gray frame) or dark red (with beige frame).

(E) Wood fixed seat have legs that are bolt adjustable in 1″ increments and hardwood seats. Backrest has a hardwood surface and is nonadjustable. Frame and feet are angle iron; color is green.

(F) Wood swivel seat have a locking pin assembly below the seat to adjust seat height; seat locks in place. Backrest is wood and adjusts vertically and horizontally. Frame and footrest are steel; color is black. *Stationary* models have rubber-cushioned metal glides. *Mobile* models have swivel casters with 2″ dia. polypropylene wheels.

(G&H) Fabric swivel seat and vinyl swivel seat are knob adjustable, and the backrest is vinyl and adjusts vertically and horizontally. Frame and footrest are steel. Fabric seat provides extra comfort; vinyl seat is easy to clean. *Stationary* models have nylon glides. *Mobile* models have five swivel casters with 2″ dia. rubber wheels.

To Order: Please specify color: black (with black frame) or light gray (with light gray frame).

(J) Type 304 stainless steel swivel seat with rubber seating surface are adjusted by turning the seat. Stools are made of Type 304 stainless steel for corrosion resistance. The middle of each seat has a nonslip electrically conductive black rubber disc that's flush with the seating surface. *Stationary* model has rubber glides. *Mobile* model has four swivel casters with 2″ dia. rubber wheels.

Seat Size, Wd. × Dp. × Thick.	Cap., lbs.	Backrest Size, Wd. × Ht. × Thick.	Stationary Seat Ht. Adjust. Range	Stationary Each	Mobile Seat Ht. Adjust. Range	Mobile Each
(A) Steel Fixed Seat with Hardboard Seating Surface						
14″ Dia. × 1½″	—	11½″ × 6″ × 1/16″	19″ to 27″	4913T14 $73.56	—	—
14″ Dia. × 1½″	—	11½″ × 6″ × 1/16″	25″ to 33″	4913T15 82.25	—	—
14″ Dia. × 1½″	—	11½″ × 6″ × 1/16″	31″ to 39″	4913T16 96.10	—	—
(B) Steel Swivel Seat with Hardboard Seating Surface						
14″ Dia. × 1⅜″	310	12½″ × 6⅜″ × ¼″	22″ to 27½″	4803T15 155.96	—	—
14″ Dia. × 1⅜″	310	12½″ × 6⅜″ × ¼″	26¾″ to 32¼″	4803T16 161.74	—	—
(C) Steel Fixed Seat with Padded Vinyl Seating Surface						
14″ Dia. × 2⅛″	—	11½″ × 6″ × 1¼″	19″ to 27″	4913T34 89.70	—	—
14″ Dia. × 2⅛″	—	11½″ × 6″ × 1¼″	25″ to 33″	4913T35 92.95	—	—
14″ Dia. × 2⅛″	—	11½″ × 6″ × 1¼″	31″ to 39″	4913T36 113.32	—	—
(D) Steel Swivel Seat with Padded Vinyl Seating Surface						
14″ Dia. × 3¼″	—	11½″ × 6″ × 1¼″	24″ to 28″	47995T1 99.23	—	—
(E) Wood Fixed Seat						
14″ Dia. × 1″	400	12⅛″ × 6⅛″ × ½″	22″ to 28″	4908T35 116.58	—	—
14″ Dia. × 1″	400	12⅛″ × 6⅛″ × ½″	26″ to 32″	4908T36 123.20	—	—
14″ Dia. × 1″	400	12⅛″ × 6⅛″ × ½″	30″ to 36″	4908T37 127.27	—	—
(F) Wood Swivel Seat						
15⅛″ × 13⅞″ × 7/16″	300	14⅛″ × 6″ × ⅜″	16″ to 24″	9057T17 154.92	18½″ to 26½″	9057T25 $160.26
15⅛″ × 13⅞″ × 7/16″	300	14⅛″ × 6″ × ⅜″	20″ to 28″	9057T18 156.47	22½″ to 30½″	9057T26 175.43
15⅛″ × 13⅞″ × 7/16″	300	14⅛″ × 6″ × ⅜″	26″ to 34″	9057T19 164.05	28½″ to 36½″	9057T27 183.02
(G) Fabric Swivel Seat						
17″ × 16″ × 3″	310	15″ × 10″ × 1″	19″ to 27″	6440T5 229.34	21″ to 29″	6440T7 244.69
17″ × 16″ × 3″	310	15″ × 10″ × 1″	25″ to 33″	6440T6 240.41	27″ to 35″	6440T8 256.03
(H) Vinyl Swivel Seat						
17″ × 16″ × 3″	310	15″ × 10″ × 1″	19″ to 27″	4834T94 220.47	21″ to 29″	4834T95 233.46
17″ × 16″ × 3″	310	15″ × 10″ × 1″	25″ to 33″	4834T5 226.97	27″ to 35″	4834T7 239.94
(J) Type 304 Stainless Steel Swivel Seat with Rubber Seating Surface						
14″ Dia. × 1″	350	10″ × 7″ × 3/32″	25″ to 31″	4826T24 595.52	27″ to 33″	4826T34 632.84

Sit/Stand Adjustable Stools

Air Adjustable

Manually Adjustable

Relieve foot and leg strain when working in a standing position—these stools allow you to rest most of your weight on the seat as you work. Each seat is made of black polyurethane.

Air-Adjustable Stools— A pneumatic lever under the seat raises and lowers the seat quickly and easily. Stools have five nylon glides and a seat that swivels 360° and tilts forward. Stool with *nylon* base is black. Stool with *aluminum* base meets standards for Class 10 clean rooms.

Manually Adjustable Close-Positioning Stool— The unique design allows you to get close to your work. Stool is made of steel. The seat is padded, swivels to the right and left, and tilts forward. Base is black and has four antislip rubber glides.

Base Material	Seat Ht. Adjust. Range	Seat Size, Wd. × Dp. × Thick.	Cap., lbs.	Base Size	Each
Air-Adjustable Stools					
Nylon	22″ to 32″	13¼″ × 9″ × 1¾″	300	27″ Dia.	8219T51 $136.02
Aluminum	22″ to 32″	13¼″ × 9″ × 1¾″	300	27″ Dia.	8219T52 179.77
Manually Adjustable Close-Positioning Stool					
Steel	22¾″ to 32¾″	14″ × 9″ × 2″	250	22″ Wd. × 18″ Dp.	8225T62 269.46

Air-Adjustable Stools

A
Stationary

B&C
Stationary

D
Stationary

E
Mobile

F
Mobile

G
Stationary

H&J
Mobile

A pneumatic adjustment lever quickly raises and lowers the seat (except Style F has a foot-operated adjustment). All seats swivel 360°.

(A) Steel Seat— All-steel construction is more durable and easier to clean than fabric. Color is light gray. *Stationary* stools have nickel-plated steel glides. *Mobile* stools have five swivel casters with 2″ dia. rubber wheels.

(B) Fabric Seat and Backrest— A padded fabric seat and backrest offer more comfort than Style A. Footrest is height adjustable and made of chrome-plated steel. Base is nylon. Color is black. *Stationary* stools have nylon glides. *Mobile* stools have five swivel casters with 2″ dia. polyurethane wheels. *Standard* stools have a backrest that adjusts vertically and horizontally. Stools *with tilt control* allow you to angle seat and backrest forward and backward. Backrest also adjusts vertically. **To Order:** Please specify fabric color: black or light gray.

(C) Vinyl Seat and Backrest— Seat and backrest have a padded vinyl surface that's easy to clean. Backrest adjusts vertically and horizontally. Footrest is height adjustable and made of chrome-plated steel. Base is nylon. Color is black. *Stationary* stools have nylon glides. *Mobile* stools have five swivel casters with 2″ dia. polyurethane wheels.

(D-F) Polyurethane Seat— Stools have a durable polyurethane seat that stands up to harsh environments. Base is made of steel, unless otherwise indicated. Color is black.

Style D has a black steel base. *Stationary* stools have plastic glides. *Mobile* stools have five swivel casters with 2″ dia. nylon wheels.

Style E have a lower divided storage tray with steel dividers to organize tools and supplies. Frame and lower shelf are steel. All have five swivel casters (two with brake) with 3″ dia. rubber wheels.

Style F offer hands-free height adjustment—footrest raises and lowers the seat. Base is cast aluminum with a black finish. *Stationary* stools have nylon glides. *Mobile* stools have five swivel casters with 1½″ dia. polyurethane wheels.

(G-J) Polyurethane Seat and Backrest— Stools have a seat and backrest made of polyurethane to withstand harsh conditions. Base is steel. *Stationary* stools have nylon glides, except Styles H and J have plastic glides. *Mobile* stools have five swivel casters with 2″ dia. nylon wheels, unless otherwise indicated.

Style G have a reinforced ABS plastic base and height-adjustable chrome-plated steel footrest. Color is black. *Mobile* stools have five swivel casters with 2¼″ dia. nylon wheels with rubber treads. *Standard* model has a backrest that adjusts horizontally and vertically. Model *with tilt control* has a tilt function and a backrest that adjusts vertically and horizontally.

Style H has two polyurethane footrests at different heights and a backrest that adjusts horizontally and vertically. **To Order:** Please specify seat/backrest color: black, dark blue, or dark gray.

Style J has three polyurethane footrests at different heights. Backrest has a tilt function and adjusts vertically. **To Order:** Please specify seat/backrest color: black, dark blue, or dark gray.

	Seat Size, Wd. × Dp. × Thick.	Cap., lbs.	Backrest Size, Wd. × Ht. × Thick.	Stationary Seat Ht. Adjust. Range		Stationary Each	Mobile Seat Ht. Adjust. Range		Mobile Each
Steel Seat									
Standard									
A	13″ Dia. × 1⅜″	350	—	17″	to 22″	4833T41 $172.31	19″	to 24″	4833T44 $182.90
A	13″ Dia. × 1⅜″	350	—	21″	to 26″	4833T42 175.85	23″	to 28″	4833T45 186.93
A	13″ Dia. × 1⅜″	350	—	25″	to 30″	4833T43 180.82	26″	to 33″	4833T46 194.81
Fabric Seat and Backrest									
Standard									
B	18″ × 17″ × 2¾″	300	16″ × 10″ × 2″	23″	to 33″	45025T61 175.43	24″	to 34″	45025T69 175.43
B	20″ × 18″ × 3″	300	17½″ × 19″ × 4″	24″	to 34″	45025T62 232.33	25″	to 35″	45025T72 242.76
With Tilt Control									
B	20″ × 18″ × 3″	300	17½″ × 19″ × 4″	24″	to 34″	45025T63 280.69	25″	to 35″	45025T73 291.12
Vinyl Seat and Backrest									
Standard									
C	18″ × 17″ × 2¾″	300	16″ × 10″ × 2″	23″	to 33″	4517T211 175.43	24″	to 34″	4517T311 175.43
C	20″ × 18″ × 3″	300	17½″ × 19″ × 4″	24″	to 34″	4517T221 243.63	25″	to 35″	4517T331 247.02
Polyurethane Seat									
Standard									
D	14″ Dia. × 1¾″	250	—	17″	to 35″	45735T1 193.12	19″	to 37″	45735T31 212.56
With Lower Divided Storage Tray									
E	14″ Dia. × 1″	250	—	—	—	—	15½″	to 20½″	47185T17 177.25
E	14″ Dia. × 1″	250	—	—	—	—	19½″	to 26¾″	47185T27 183.78
With Foot-Operated Lift									
F	15″ Dia. × 1½″	300	—	17″	to 22″	5704T91 298.74	17″	to 22″	5704T81 308.10
F	15″ Dia. × 1½″	300	—	21″	to 28½″	5704T92 309.00	21″	to 28½″	5704T82 315.77
Polyurethane Seat and Backrest									
Standard									
G	18″ × 17″ × 1½″	250	17″ × 12″ × 1″	22½″	to 32½″	45745T311 240.88	23½″	to 33½″	45745T411 255.84
H	16½″ × 16½″ × 1½″	250	14¾″ × 8¾″ × 1½″	17″	to 35″	45735T2 272.98	19″	to 37″	45735T32 284.68
J	19″ × 17½″ × 2″	250	15½″ × 12½″ × 1½″	17″	to 35″	45735T4 365.26	19″	to 37″	45735T33 399.78
With Tilt Control									
G	18″ × 17″ × 1½″	250	17″ × 12″ × 1″	23¼″	to 33¼″	45745T321 294.17	24¼″	to 34¼″	45745T421 309.08

Wall-Mount Adjustable Stool

Mount this stool on the wall for a convenient, permanent place to sit. The leg has a rubber glide and contacts the floor when weight is applied. Use the pneumatic lever to adjust the height. Comes with a steel mounting bracket with two holes that accept ½″-13 bolts (not included). Once mounted, the entire stool swings from one side of the mounting bracket to the other. Projection from wall is 20¾″. Made of steel. Color is black.

Seat Ht. Adjust. Range	Seat Size, Dia. × Thick.	Cap., lbs.		Each
22¾″ to 28″	13″ × 1⅜″	350	9056T18	$349.50

Clean Room and Static-Control Air-Adjustable Stools

A Stationary | **B** Mobile | **C** Stationary | **D** Mobile | **E** Mobile | **F** Stationary

Choose from stools that meet clean room requirements or are perfect for static-control applications. A pneumatic adjustment lever under the seat quickly raises and lowers the seat. Seats swivel 360°.

Style A— Chrome-plated, all-steel construction is more durable and easier to clean than fabric. *Stationary* stools have nickel-plated steel glides. *Mobile* stools have five swivel casters with 2″ dia. polyurethane wheels. Color is light gray.

Style B— Seat and backrest have a padded vinyl surface that's comfortable and easy to clean. Footrest is height adjustable and made of chrome-plated steel. Backrest adjusts vertically and horizontally. Base is nylon. Color is black. *Stationary* stools have nylon glides. *Mobile* stools have five swivel casters with 2″ dia. polyurethane wheels.

Style C— Stools have a polyurethane seat and backrest to withstand harsh conditions, and a chrome-plated steel footrest. Seat and backrest have a tilt function, and the backrest also adjusts vertically. Base is reinforced nylon. Color is black. *Stationary* stools have plastic glides. *Mobile* stools have five swivel casters with 2″ dia. polypropylene wheels.

Style D— Seat and backrest have a padded vinyl surface that's comfortable and easy to clean. It has a chrome-plated steel footrest and a brass drag chain that acts as a ground. Backrest adjusts vertically and horizontally. Color is black. *Stationary* stools have nickel-plated steel glides. *Mobile* stools have five swivel casters with 2″ dia. rubber wheels.

Style E— A padded fabric seat and backrest offer more comfort than unpadded stools. Footrest is height adjustable and made of chrome-plated steel. A brass drag chain acts as a ground. *Stationary* stools have nylon glides. *Mobile* stools have five swivel casters with 2″ dia. polyurethane wheels. Base is polished aluminum.

To Order: Please specify fabric color: black or light gray.

Style F— Stools have a seat and backrest made of polyurethane to withstand harsh conditions. Base is polished aluminum. All components are conductive and a brass drag chain acts as a ground. *Stationary* stools have plastic glides. *Mobile* stools have five swivel casters with 2″ dia. polypropylene wheels.

Seat Size, Wd. × Dp. × Thick.	Cap., lbs.	Backrest Size, Wd. × Ht. × Thick.	Stationary Seat Ht. Adjust. Range	Stationary Each	Mobile Seat Ht. Adjust. Range	Mobile Each
Clean Room						
(A) Steel Seat— *Class 10 Clean Rooms*						
13″ Dia. × 1 3/8″	350	—	17″ to 22″	**5092T61** $238.11	16″ to 21″	**5092T64** $256.38
13″ Dia. × 1 3/8″	350	—	21″ to 26″	**5092T62** 245.84	23″ to 30″	**5092T65** 258.50
13″ Dia. × 1 3/8″	350	—	25″ to 30″	**5092T63** 250.71	26″ to 33″	**5092T66** 260.21
(B) Vinyl Seat and Backrest— *Class 100 Clean Rooms*						
20″ × 17″ × 2 1/2″	300	17 1/2″ × 19″ × 4″	22 1/2″ to 32 1/2″	**5080T711** 291.18	23 1/2″ to 33 1/2″	**5080T721** 298.74
(C) Polyurethane Seat and Backrest— *Class 10 Clean Rooms*						
18 1/2″ × 17″ × 1 1/2″	300	16 1/2″ × 12 1/2″ × 1″	22″ to 32″	**4988T13** 272.38	23″ to 33″	**4988T14** 281.98
Static Control						
(D) Vinyl Seat and Backrest— *10^6 ohms/sq.*						
18 1/2″ × 16 1/2″ × 3″	350	14 1/2″ × 9 1/2″ × 2″	21″ to 26″	**4835T62** 438.75	23″ to 28″	**4835T41** 461.25
18 1/2″ × 16 1/2″ × 3″	350	14 1/2″ × 9 1/2″ × 2″	25″ to 30″	**4835T63** 442.50	27″ to 32″	**4835T43** 465.00
(E) Fabric Seat and Backrest— *10^5 ohms/sq.*						
18″ × 17″ × 2 3/4″	300	16″ × 10″ × 2 1/2″	24″ to 34″	**8621T31** 301.55	25″ to 35″	**8621T32** 358.45
(F) Polyurethane Seat and Backrest— *10^8 ohms/sq.*						
18 1/2″ × 17″ × 1 1/2″	300	16 1/2″ × 12 1/2″ × 1″	22″ to 32″	**4971T5** 378.89	23″ to 33″	**4971T6** 431.27

Creepers

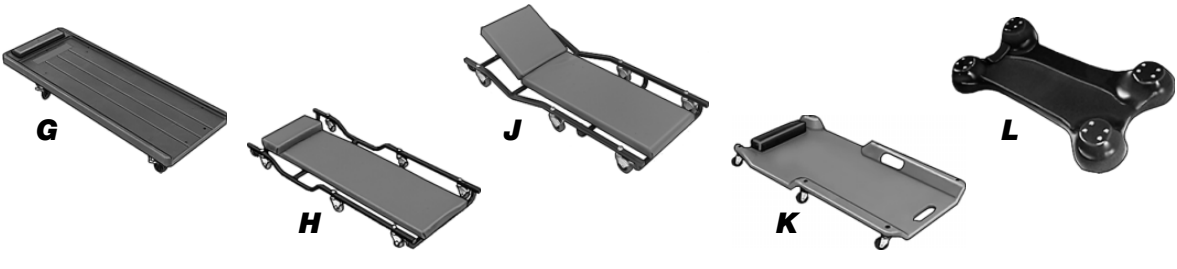

G | **H** | **J** | **K** | **L**

Creepers allow you to work below low-clearance material and equipment. All have swivel casters plus headrests to keep you comfortable.

(G) Economy— Made of polypropylene.

(H) Padded— Creeper has an MDF (medium density fiberboard) platform that's padded for extra comfort and covered with vinyl. Frame is steel.

(J) Padded with Adjustable Headrest— Same as Style H, but with a three-position adjustable headrest.

(K) Chemical Resistant— Made of polyethylene to resist most solvents, grease, and fuel. It has a padded vinyl headrest plus raised sides to support your body.

(L) Rough Duty— Featuring large 5 1/8″ dia. wheels, this creeper rolls easily over cracks, extension cords, drains, and other obstacles. It is specially designed to cradle your body for support. Made of polypropylene.

	O'all Size, Lg. × Wd. × Ht.	Floor Clearance	Cap., lbs.	Body Color	Headrest Color	No. of Wheels	Wheel Material	Wheel Dia.	Each
G	36″ × 15 1/2″ × 3 1/4″	2″	360	Black	Black	4	Polyolefin	2″	**2661T22** $47.76
H	40″ × 17″ × 4″	3/4″	570	Black	Black	6	Polypropylene	2 1/2″	**2661T31** 96.14
J	40″ × 17″ × 3 3/4″	1 1/4″	570	Red	Red	6	Polyolefin	2 1/2″	**2661T57** 93.25
K	38″ × 17 1/2″ × 4″	7/8″	300	Blue	Black	6	Polyurethane	2″	**2661T58** 92.37
L	47″ × 25 1/2″ × 6 1/4″	1″	300	Red	Black	4	Thermoplastic	5 1/8″	**2635T1** 153.05

Equipment Seats

Replace worn-out seats on equipment such as forklifts. All seats are black and have foam padding. Overall capacity is 250 lbs. Seat frames are steel and have four 5/16″ dia. threaded studs for mounting to your equipment. Seats come with a seat belt mounting bracket, unless noted.

Note: Seats are not intended for highway-use vehicles.

(A-G) Seats Designed for Specific Manufacturers' Equipment

Seats can also be used in other equipment that has the same center-to-center width mounting stud pattern. Seats adjust front to back.

Style B—Back cushion folds down onto the seat.

(H-P) Adjustable-Mount Seats

All seats have multiple center-to-center width mounting stud patterns for greater mounting flexibility. Seats adjust front to back.

Style H—Back cushion folds down onto the seat.

Style L—Seat is waterproof.

Style M—Seat has a fabric cover that stays cooler than vinyl. Seat is tear resistant. For indoor use.

Style N—Designed to isolate and reduce vibration with a trampoline-style sling instead of a hardboard metal pan under the seat.

Style P—A 1″ high adjustable suspension creates a smoother ride. Has the same construction and vibration control features as Style N.

(Q) Seat with Suspension for Larger Equipment

This seat provides a comfortable ride for operators of larger equipment. Suspension is 9½″ high and flexes to absorb shock and vibration. Height adjusts 3″ in 1″ increments. The angle of the seat back is adjustable, and seat adjusts front to back.

	Mounting Studs, Center-to-Center Wd. (X)	Dp. (Y)	O'all Size, Ht. × Wd. × Dp.	Seat Size, Wd. × Dp. × Thick.	Backrest Size, Ht. × Wd. × Thick.		Each
Seats Designed for Specific Manufacturers' Equipment							
Clark—*Vinyl Seat*							
A	8″,15″-15¼″	11″	17″ × 18¾″ × 22″	18¾″ × 15¼″ × 4½″	11¼″ × 17″ × 2½″	**2680T16**	$89.19
B	13″	11″	17″ × 18″ × 22″	17½″ × 15¼″ × 4½″	11¼″ × 17″ × 2½″	**2680T41**	73.15
C	13″	11″	22″ × 19″ × 23½″	19″ × 15″ × 2½″	22″ × 19″ × 2½″	**2680T71**♣	236.94
Caterpillar—*Vinyl Seat*							
D	14¼″	11″	18½″ × 20″ × 19¾″	20″ × 17″ × 4½″	13⅛″ × 20″ × 2¼″	**2680T91**	108.35
E	12⅝″	11″	19½″ × 24″ × 21¼″	18″ × 15″ × 2½″	19½″ × 15″ × 2″	**2680T72**♥	330.85
Hyster—*Vinyl Seat*							
F	8″, 9½″, 11¼″	11″	19½″ × 18″ × 21¼″	18″ × 16½″ × 3″	19½″ × 18″ × 2″	**2680T83**♣	146.98
Yale—*Vinyl Seat*							
G	13½″	11″	18¼″ × 19″ × 22¾″	19″ × 15″ × 2½″	16¼″ × 17″ × 2½″	**2680T73**★	183.11
Adjustable-Mount Seats							
Vinyl Seat							
H	4″-15½″	11″	18⅞″ × 21″ × 20½″	17½″ × 15¼″ × 4¼″	11¼″ × 17″ × 2½″	**2680T45**	109.49
J	8″, 9½″, 10 11/16″-11¼″	11″	18″ × 18¾″ × 20″	18¾″ × 14½″ × 4¼″	15″ × 18¾″ × 2½″	**2680T15**	78.69
K	8″, 9½″, 10 11/16″-11¼″	11″	18 1/16″ × 19⅝″ × 19 11/16″	19⅝″ × 14⅛″ × 3″	16 15/16″ × 18 3/16″ × 2½″	**2680T12**★	147.55
L	8″, 9½″, 11¼″	11″	20¾″ × 18″ × 21¼″	18″ × 16½″ × 3″	18¼″ × 18″ × 2″	**2680T58**♣	147.35
Fabric Seat							
M	4″, 8″, 9½″, 10¾″, 11¼″	11″	17½″ × 18¾″ × 21″	18¾″ × 14½″ × 4¼″	17½″ × 13″ × 2″	**2680T84**♥	103.83
Vinyl Seat with Vibration Control							
N	8″, 11″, 14″	11″	25 13/16″ × 18¾″ × 25⅝″	18¾″ × 19¾″ × 3½″	22½″ × 18⅝″ × 3″	**2680T74**★	263.81
Vinyl Seat with Low-Profile Suspension							
P	9½″, 10 11/16″-11¼″	11″	28½″-29½″ × 18¾″ × 25⅝″	18¾″ × 19¾″ × 3½″	22½″ × 18⅝″ × 3″	**2680T76**★	354.27
Seat with Suspension for Larger Equipment							
Vinyl Seat							
Q	12″	11″	34″-37″ × 18¾″ × 23½″	18¼″ × 18¼″ × 3½″	22½″ × 18⅝″ × 3″	**2680T19**	496.88

♣ Furnished with a pre-threaded hole for seat belt attachment. Mounting bracket not required.
♥ Furnished with a pre-drilled hole for seat belt attachment. Secure attachment with a nut and bolt; mounting bracket not required.
★ Not furnished with a seat belt mounting bracket. For a seat belt mounting bar, see 3605T14 below.

Seat Belts

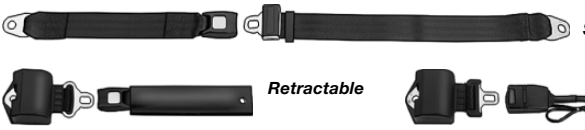
Standard

Continuous

Retractable

Retractable with Switch

Seat Belt Mounting Bar

Add a seat belt to your equipment seat for a safer ride. All are lap style, have a push-button release, and come with mounting fasteners (unless otherwise indicated) to secure the belt to your seat.

Standard—Buckle the belt and pull the strap to tighten.

Continuous—Also known as an endless belt, this belt wraps completely around your seat. Buckle the belt and pull the strap to tighten. No need for mounting hardware.

Retractable—Retracts automatically when buckled.

Retractable with Switch—Similar to the retractable belt above, but your vehicle won't operate unless the belt is buckled. Includes a standard automotive plug that you can cut off to expose two wire leads.

Seat Belt Mounting Bar—Allows equipment seats that do not have a seat belt mounting bracket to accept seat belts. It accommodates seats up to 21″ wide and has two ½″ dia. end holes and six ⅜″x11¼″ slotted holes for 11″, 13″, or 14½″ wide center-to-center mounting patterns. Made of steel. Mounting fasteners not included.

	Size, Lg. × Wd.		Each
Seat Belts			
Standard	25¼″-55″ × 2″	**3605T11**	$23.53
Continuous	92″ × 2″	**3605T8**	16.07
Retractable	15½″-67¼″ × 2″	**3605T12**	35.40
Retractable with Switch	15½″-65″ × 2″	**3605T13**	44.96
Accessories			
Seat Belt Mounting Bar	21¼″ × 1¼″	**3605T14**	10.28

Benches

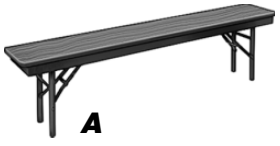
A

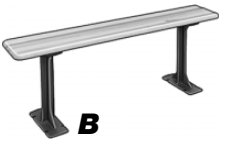
B

C

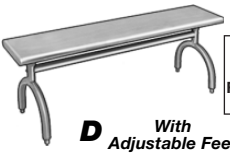

D With Adjustable Feet

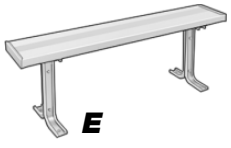
E

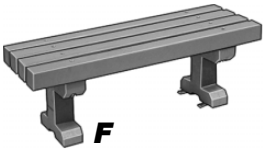
F

Benches are shipped unassembled, except Style A.

(A) Fold-away indoor benches have legs that fold up and out of the way for easy transport and convenient storage. Legs have nonmarring plastic feet. Frame and legs are made of steel and are brown. Top is particleboard with a walnut plastic-laminate surface.

(B) High-capacity indoor benches have cast iron legs, and each leg has a 4″ Wd.×10″ Dp. base with four slots that accept 3/8″ dia. bolts for floor mounting (fasteners not included). Legs have a dark green finish. Top is laminated maple.

(C) Damage-resistant indoor benches have a white polyethylene top that resists scratches, dents, moisture, and chemicals. Legs are made of black anodized aluminum and have a 6″ dia. flanged base with four holes per flange for floor mounting (fasteners included).

(D) Corrosion-resistant indoor benches are made of Type 304 stainless steel for great corrosion resistance and meet standards for use in Class 100 clean rooms. Benches are freestanding and have legs that are curved for extra stability.

Benches *with adjustable feet* have 1″ dia. feet that compensate for uneven floors.

Benches *with adjustable flanged feet* have 3 1/2″ dia. leveling flanges to compensate for uneven floors. Each flange has two 3/8″ dia. holes for floor mounting (fasteners not included).

(E) Lightweight aluminum indoor/outdoor benches are made of anodized aluminum and are durable and corrosion resistant. Each leg has a 2 1/4″ Wd.×12″ Dp. base and comes with rubber feet for free-standing applications and concrete anchors for floor mounting. Top has a skid-resistant surface.

(F) Recycled-plastic indoor/outdoor benches are the environmentally friendly choice. They resist most chemicals, rot, splintering, and damage from UV radiation. Each leg has two Type 304 stainless steel tabs with a 7/16″ dia. mounting hole (fasteners not included). **To Order:** Please specify color: brown or light gray.

O'all Size, Wd.×Dp.×Ht.	Cap., lbs.	Top Thick.	No. of Legs		Each
Indoor Benches					
(A) Fold Away					
72″×12″ ×18″	750	3/4″	4	**4853T31**	$137.77
96″×12″ ×18″	1,000	3/4″	4	**4853T32**	148.85
(B) High Capacity					
36″× 9 1/2″×18″	600	1 1/4″	2	**4854T13**	185.86
48″× 9 1/2″×18″	800	1 1/4″	2	**4854T14**	194.55
60″× 9 1/2″×18″	1,000	1 1/4″	2	**4854T15**	206.62
72″× 9 1/2″×18″	1,200	1 1/4″	2	**4854T16**	222.07
96″× 9 1/2″×18″	1,600	1 1/4″	2	**4854T18**	246.21
120″× 9 1/2″×18″	2,000	1 1/4″	3	**4854T24**	346.14
(C) Damage Resistant					
36″× 9 1/2″×18 1/2″	400	1 1/2″	2	**4776T324**	456.09
48″× 9 1/2″×18 1/2″	400	1 1/2″	2	**4776T334**	482.31
72″× 9 1/2″×18 1/2″	800	1 1/2″	3	**4776T354**	724.85
(D) Corrosion Resistant with Adjustable Feet					
48″×12″ ×18″	400	1 5/8″	2	**46375T24**	684.85
72″×12″ ×18″	600	1 5/8″	2	**46375T26**	776.00
(D) Corrosion Resistant with Adjustable Flanged Feet					
48″×12″ ×18″	400	1 5/8″	2	**46375T44**	825.34
72″×12″ ×18″	600	1 5/8″	2	**46375T46**	916.48
Indoor/Outdoor Benches					
(E) Lightweight Aluminum					
48″× 9 1/2″×17″	480	1 3/4″	2	**2919T69**	220.00
72″× 9 1/2″×17″	720	1 3/4″	2	**2919T71**	230.00
96″× 9 1/2″×17″	960	1 3/4″	2	**2919T72**	250.00
120″× 9 1/2″×17″	1,200	1 3/4″	3	**2919T73**	328.69
(F) Recycled Plastic					
48″×17″ ×16 1/2″	500	4″	2	**6732T23**	297.02
72″×17″ ×16 1/2″	750	4″	3	**6732T24**	407.08

Benches with Backrest

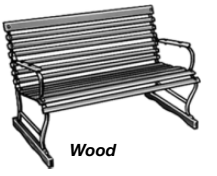
Wood

Recycled Plastic

Give your back a rest—these freestanding benches have a backrest for more comfortable seating than benches without a backrest. Rated for indoor/outdoor use and shipped unassembled.

Wood benches are made of pine slats that are protected with a weather-resistant dark green coating. Frame is steel; color is black. Each leg has two oval mounting holes (fasteners included).

Recycled-plastic benches are environmentally friendly, heavy duty, and maintenance free. They resist most chemicals, rot, splintering, and damage from UV radiation. **To Order:** Please specify color: brown or light gray.

O'all Size, Wd.×Dp.×Ht.	Seat Size, Wd.×Dp.×Ht.	Cap., lbs.		Each
Wood Benches				
48″×20″ ×30″	48″×18″×15″	375	**6331T21**	$139.29
72″×20″ ×30″	72″×18″×15″	475	**6331T34**	185.71
Recycled-Plastic Benches				
48″×21 1/2″×31″	48″×12″×15 1/2″	500	**6731T42**	294.60
72″×21 1/2″×31″	72″×12″×15 1/4″	750	**6731T43**	401.31

Design-Your-Own Maple-Top Benches

Use our individual components to make your own maple-top benches or repair the benches you already have.

Maple Bench Tops

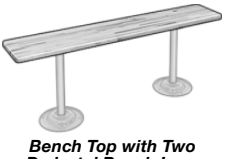
Bench Top with Two Pedestal Bench Legs (Sold Separately)

Made of 1 1/4″ thick maple that is coated for wear resistance. Fasteners not included. For indoor use.

Wd.×Dp.		Each
36″×9 1/2″	**4911T41**	$67.60
48″×9 1/2″	**4911T42**	88.22
60″×9 1/2″	**4911T43**	108.14
72″×9 1/2″	**4911T44**	130.20
96″×9 1/2″	**4911T45**	161.05
120″×9 1/2″	**4911T46**	205.02

Pedestal Bench Leg

Leg is 2 3/16″ Dia.×16 1/4″ Ht. and has a 8 1/4″ dia. flange on the top and the bottom. Each flange has three mounting holes (fasteners included). Capacity per pair of legs is 1,800 lbs. For indoor use. Made of steel. **To Order:** Please specify color: dark gray, light blue, or tan.

Note: For benches up to 96″ wide, use two legs. For benches wider than 96″, use three legs.

9085T3 ..... **Each** $34.93

Fold-Away Bench Leg

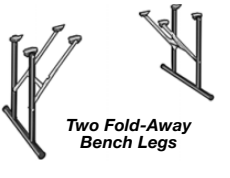
Two Fold-Away Bench Legs

Leg folds flat against bench for easy transport and storage. Each leg is 16 3/4″ high with a 9″ deep top and a 15 3/4″ deep base. There are eight holes to mount leg to the bench top (fasteners included). For indoor and outdoor use. Capacity per leg is 250 lbs. Made of steel.

Note: For benches up to 72″ wide, use two legs. For benches wider than 72″, use three legs.

4958T12 ..... **Each** $13.99

Basketball Equipment

Outdoor basketball set includes a backboard, mounting post, rim, and nylon net. Backboard is aluminum with a white finish. It's maintenance free and measures 35″ Ht.×54″ Wd. Mounting post is one-piece, zinc-coated steel pipe that's 12 feet long with a 3-ft. extension at the top. Rim is steel with an orange finish.

Basketball court stencils allow you to create an official half court. Come with instructions, stencils, and paint roller. Masking tape and approximately 1 qt. of paint are required (tape and paint not included).

		Each
Outdoor Basketball Set	**45425T12**	$750.47
Basketball (Indoor/Outdoor)	**45425T23**	22.22
Basketball Court Stencils	**45425T33**	41.64

Vertical File Cabinets

All cabinets include a single lock that locks all drawers. Lock includes two keys.

(A) Standard cabinets have welded-steel construction. Each drawer has a thumb latch, pull handle, label holder, and an adjustable plate that slides forward and backward to keep papers organized. Shipped assembled. **To Order:** Please specify color: beige, black, or light gray.

(B) Fire- and water-resistant cabinets protect important files from fire. All meet UL Class 350 requirements to maintain an interior temperature of 350° F or less after being subjected to 1700° F for one hour. Each drawer has a pull handle and label holder. Made of steel. Color is beige. Shipped assembled.

(C) Mobile cabinets have four casters (two rigid and two swivel) with 1¾″ dia. nylon wheels that are concealed under the cabinet. They also have file drawers with high sides that accommodate letter-size hanging files without the need for hanging-file frames. Made of steel. Shipped assembled. **To Order:** Please specify color: beige or black.

(D) Easy-access mobile cabinet has two slide-back tops that allow partial or full access to all your files. Tops store conveniently on the sides of the cabinet when open. Cabinet has a removable 13⅝″ Wd.×28¼″ Dp.×1½″ Ht. lower wire shelf and four swivel casters with 3″ dia. plastic wheels. Made of steel. Shipped unassembled. Color is matte gray.

Optional front-to-back hanging-file frames (not shown) support hanging-file folders (not included, see page 1988) in most vertical file cabinets. Frames adjust from 24″ to 27″ deep in ½″ increments. Made of steel. Shipped unassembled.

A&B
4 Drawers

C
4956T42

D

File Size	No. of File Drawers	Drawer Size, Wd.×Dp.×Ht.	O'all Size, Wd.×Dp.×Ht.		Each
(A) Standard Cabinets					
Letter	2	12″ ×25½″×10¾″	15″ ×26½″×28⅜″	**8970T52**	$167.68
Letter	4	12″ ×25½″×10¾″	15″ ×26½″×52″	**8970T53**	236.33
Legal	2	15″ ×25½″×10¾″	18″ ×26½″×28⅜″	**8970T54**	204.00
Legal	4	15″ ×25½″×10¾″	18″ ×26½″×52″	**8970T55**	280.81
(B) Fire- and Water-Resistant Cabinets					
Letter/Legal	2	12 3/16″ ×15⅛″×10⅜″	17¾″ ×22⅛″×27¾″	**4019T16**	634.92
Letter/Legal	4	12 3/16″ ×15⅛″×10⅜″	17¾″ ×22⅛″×52¾″	**4019T17**	1,113.12
(C) Mobile Cabinets					
Letter	1●	11 15/16″ ×17¾″×10 9/16″	15″ ×19⅞″×26⅞″	**4956T42**	284.38
Letter	2	11 15/16″ ×17¾″×10 9/16″	15″ ×19⅞″×26⅞″	**4956T41**	322.28
(D) Easy-Access Mobile Cabinet					
Letter/Legal	—	12⅜″ ×27″ ×10″	14″ ×29⅛″×28⅜″	**4959T23**	205.98
Optional Front-to-Back Hanging-File Frames (Not Shown)					
Letter	—	—	11⅜″ ×24″ to 27″×9 3/16″	**5144T22**	5.98
Legal	—	—	14⅜″ ×24″ to 27″×9 3/16″	**5144T24**	6.66

● Also has two smaller storage drawers: both are 11 15/16″ Wd.×17¾″ Dp.×4⅝″ Ht.

Lateral File Cabinets

Wide instead of deep, these cabinets are excellent for use in narrow aisles. Use them to hold both letter- and legal-size files. You can store your files side-to-side with the included hanging-file frames or front-to-back when you choose the optional front-to-back hanging-file frames (sold separately below). All cabinets include a single lock that locks all drawers, and comes with two keys. Drawers also have a safety interlock system that allows you to open only one drawer at a time. Each drawer has a recessed pull handle, label holder, and slotted bottom to accommodate optional dividers. Leveling glides adjust to compensate for uneven floors. Made of steel. Shipped assembled. **To Order:** Please specify color: beige, black, or light gray.

Two-drawer cabinets have counterweights to prevent tipping. ***Five-drawer cabinets*** have a top opening that has a retractable door and roll-out shelf for easy access to frequently used files.

5 Drawer

No. of File Drawers	Drawer Size, Wd.×Dp.×Ht.	O'all Size, Wd.×Dp.×Ht.		Each
2	27¼″ ×15 7/16″×11⅛″	30″ ×17 15/16″×27 9/16″	**9084T31**	$478.76
2	33¼″ ×15 7/16″×11⅛″	36″ ×17 15/16″×27 9/16″	**9084T35**	486.02
3	33¼″ ×15 7/16″×11⅛″	36″ ×17 15/16″×39⅜″	**9084T36**	567.62
3	39¼″ ×15 7/16″×11⅛″	42″ ×17 15/16″×39⅜″	**9084T41**	607.45
4	33¼″ ×15 7/16″×11⅛″	36″ ×17 15/16″×51¼″	**9084T37**	693.25
4	39¼″ ×15 7/16″×11⅛″	42″ ×17 15/16″×51¼″	**9084T42**	739.22
5	33¼″ ×15 7/16″×11⅛″	36″ ×17 15/16″×65″	**9084T38**	922.77
5	39¼″ ×15 7/16″×11⅛″	42″ ×17 15/16″×65″	**9084T43**	981.27

Optional Front-to-Back Hanging-File Frames ..... **9084T74** **Per Pair** $7.45
Optional Divider ..... **9084T75** **Each** $3.36

Bookcases

To accommodate books, binders, and more, all of these welded-steel bookcases have adjustable shelves. Shipped assembled.

Standard bookcases have shelves that adjust on 2″ centers. **To Order:** Please specify color: black, light gray, or tan.

Mobile bookcases come with four swivel casters (two with brake) with 5″ dia. polypropylene wheels. Shelves adjust on 1″ centers. **To Order:** Please specify color: black, beige, or light gray.

Standard Bookcase with Three Shelves

No. of Shelves	Shelf Size, Wd.×Dp.	Shelf Cap., lbs.	O'all Size Wd.×Dp.×Ht.		Each
Standard Bookcases					
1	34⅜″ ×12⅞″	130	34½″ ×13½″×28″	**4609T1**	$108.12
2	34⅜″ ×12⅞″	130	34½″ ×13½″×40″	**4609T2**	133.98
3	34⅜″ ×12⅞″	130	34½″ ×13½″×52″	**4609T3**	176.62
4	34⅜″ ×12⅞″	130	34½″ ×13½″×66″	**4609T4**	210.24
5	34⅜″ ×12⅞″	130	34½″ ×13½″×78″	**4609T5**	240.18
Mobile Bookcases					
3	35 13/16″ ×16 7/16″	200	36″ ×18″ ×58″	**9095T13**	289.60
4	35 13/16″ ×16 7/16″	200	36″ ×18″ ×78″	**9095T14**	318.47

Flat-Document File Cabinets

Five-Drawer Cabinet with Optional Open Base

Eight-Drawer Cabinet with Optional Closed Base

Store blueprints, CAD drawings, maps, and other large flat documents in these cabinets with low-height drawers. Same-size cabinets are stackable so you can create a filing system that's just right for your needs. All have a front paper depressor to keep documents from curling. Shipped assembled, unless otherwise indicated.

Cabinets with Four and ***Eight Drawers***—Each drawer has two steel handles. Four-drawer cabinets can be stacked five high while eight-drawer cabinets can be stacked two high. Made of steel. Shipped unassembled. **To Order:** Please specify color: dark gray or tan.

Optional closed bases measure 6″ high and are recessed 2½″ from cabinet fronts. Made of steel.

Cabinets with Five Drawers—Each drawer has two chrome-plated steel handles and a label holder. Cabinets can be stacked up to five high (two high when using the optional open bases). Made of steel. **To Order:** Please specify color: light gray or tan.

Optional closed bases measure 6″ high and are recessed 2¾″ from cabinet fronts for toe space. Made of steel.

Optional open bases offer convenient storage space. They're steel and raise the cabinets 20″ off the floor. Shipped unassembled.

Optional lock kit includes a lock and two keys; this single lock will lock all drawers in the cabinet.

Inside Drawer Size, Wd.×Dp.×Ht.	O'all Size, Wd.×Dp.×Ht.	Cabinets	Each	Optional Closed Bases	Each	Optional Open Bases	Each
Cabinets with Four Drawers							
37″×26″×2⅛″	40 7/16″×29⅜″×13¾″	4021T56	$495.46	4603T41	$166.29	_____	_____
43″×32″×2⅛″	46 7/16″×35⅜″×13¾″	4021T57	577.70	4603T42	187.30	_____	_____
Cabinets with Five Drawers							
43″×32″×2⅛″	46½″×35½″×16½″	4603T4	838.47	4603T5	139.51	4603T22	$379.31
50″×38″×2⅛″	53½″×41½″×16½″	4603T6	992.64	4603T7	175.12	4603T27	398.74
Optional Lock Kit for Cabinets with Five Drawers						4603T36	Each $57.77
Cabinets with Eight Drawers							
37″×26″×2⅛″	40 7/16″×29⅜″×24⅞″	4603T1	895.35	4603T41	166.29	_____	_____
43″×32″×2⅛″	46 7/16″×35⅜″×24⅞″	4603T21	1,045.84	4603T42	187.30	_____	_____

Rolled-Document File Cabinets

Stackable Cabinets Stacked Two High, 16 Openings

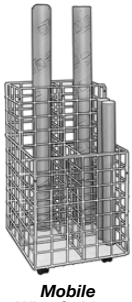

Mobile Wire Cabinet

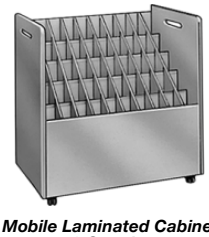

Mobile Laminated Cabinet, 50 Openings

Slotted openings make it easy to store blueprints, charts, and other rolled materials.

Stackable Cabinets

You can use these cabinets side-by-side as well as stacked up to four high. Made of steel, they have fiberboard shelving and dividers that are reinforced with aluminum molding. They also have a reversible hinged door with knob, magnetic closure, and an index grid on the inside for easy document identification. Color is tan. Shipped assembled.

No. of Openings	Opening Size, Wd.×Dp.×Ht.	O'all Size, Wd.×Dp.×Ht.		Each
16	3¼″×37″×3¼″	15¼″×38″×15¼″	4607T31	$384.63
36	2¼″×37″×2¼″	15¼″×38″×15¼″	4607T32	397.59

Mobile Cabinets

For go-anywhere convenience, these cabinets come with casters. They also have a multi-tiered design so you can store various-size rolls. Shipped unassembled.

Wire Cabinet—Constructed of steel rod with a white plastic coating; base is fiberboard. Comes with four swivel casters with 1½″ dia. nylon wheels.

Laminated Cabinets—Made of particleboard with a laminate surface. Come with four swivel casters with 2″ dia. nylon wheels. Color is beige.

No. of Openings	Opening Size, Wd.×Dp.×Ht.	O'all Size, Wd.×Dp.×Ht.		Each
Wire Cabinet				
4	8″×8″×17¾″ to 27¾″	16¼″×16½″×30½″	45845T11	$108.12
Laminated Cabinets				
20	2¾″×2¾″×11″ to 20½″	15¼″×13¼″×23¼″	4918T81	163.64
50	2¾″×2¾″×11″ to 25½″	30¼″×15¾″×29¼″	4918T82	287.57

Safes

Standard Safe

Fire- and Water-Resistant Safe

Fire- and Water-Resistant Media Safe

Safeguard important documents and other valuables. Shipped assembled.

Standard Safe—Made of steel, this safe has an electronic keypad lock with backup key. It also has a removable shelf and can be mounted to the floor or a shelf (mounting hardware included). Color is dark gray.

Fire- and Water-Resistant Safes—Made of insulated, double-walled steel, these safes meet UL Class 350 requirements to maintain an interior temperature of 350° F or less after being subjected to 1700° F for one hour. All include a dual lock system with an electronic keypad and key. To open, enter your security code into the keypad and turn the door key. If battery is low on the keypad, safes can be opened by turning the door key and the emergency key simultaneously. Three each of the door, emergency, and drawer keys (where applicable) are included. Safes also have one shelf that adjusts on ½″ centers. 6483T51 has a 12″ Wd.×12″ Dp.×1¾″ Ht. plastic tray. 6483T53 has a 13″ Wd.×12″ Dp.×3½″ Ht. lockable metal drawer. 6483T55 has a 14″ Wd.×12¾″ Dp.×3½″ Ht. lockable metal drawer. Color is gray.

Fire- and Water-Resistant Media Safe—With its insulated, double-walled polyethylene shell, this safe meets UL Class 125 requirements to maintain an interior temperature of 125° F or less after being subjected to 1700° F for one hour. Perfect for storing CDs, diskettes, and removable drives. Comes with a lock and two keys. Color is beige.

O'all Size, Wd.×Dp.×Ht.	Interior Size, Wd.×Dp.×Ht.	Cap., cu. ft.		Each
Standard Safe				
15″×11 13/16″×11 13/16″	14 13/16″×10 19/64″×11 13/32″	1.0	4932T11	$109.47
Fire- and Water-Resistant Safes				
18⅛″×20″×23⅝″	12⅝″×12¼″×15 5/16″	1.5	6483T51	527.44
18⅞″×20″×26⅜″	13⅜″×12 3/16″×18⅛″	2.0	6483T53	667.62
19⅝″×20⅞″×30 5/16″	14 3/16″×13″×22″	2.3	6483T55	1,080.00
Fire- and Water-Resistant Media Safe				
11⅝″×17½″×10½″	6¼″×8⅞″×5⅞″	0.2	6483T41	490.44

Hanging Document Storage Systems

Unlike flat- and rolled-document cabinets, these hanging file systems have an open design for quick access to your blueprints, charts, CAD drawings, and other large documents. Made of steel. Color is tan. Shipped unassembled.

To create a hanging document storage system, order ***hanging document brackets (A-D)*** and the number of ***document clamps*** you need (sold separately below). Document clamps are required to hold your documents.

(A&B) Wall Mount— Save valuable floor space by bolting these brackets directly to your wall (mounting fasteners included). Brackets extend from the wall, and the maximum document length depends on how high you mount the brackets. Document clamps sold separately below.

Style A comes with two brackets.

Style B has 12 swing-open pivoting brackets, making it easy to leaf through files and find what you need. You can use any combination of the document clamp widths (sold separately below).

(C&D) Mobile— Come with four swivel casters (two with brake).

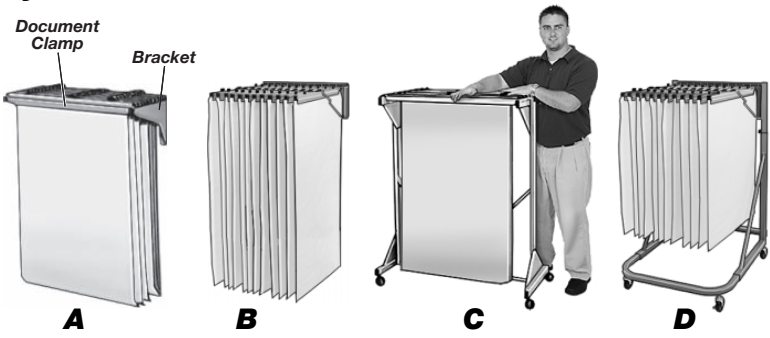

Style C has an adjustable width and 2″ dia. nylon wheels. Maximum document length is 50″. Document clamps sold separately below.

Style D has 12 swing-open pivoting brackets, making it easy to leaf through files and find what you need. The file stand has an adjustable depth and height, and it has 3″ dia. rubber wheels. Maximum document length is 60″. You can use any combination of the document clamp widths (sold separately below).

(A-D) Hanging Document Brackets

O'all Size	For Use with Max. Document Wd. (See Document Clamps Below)	Max. No. of Document Clamps	Max. No. of Documents		Each
Wall Mount					
A .... 12″ Dp.	18″, 24″, 30″, 36″, or 42″	12	1,200	**4954T24**	$42.84
B .... 24″ Wd. × 14¾″ Dp.	18″, 24″, 30″, 36″, or 42″	12	1,200	**5140T34**	188.41
Mobile					
C .... 25¾″-43¾″ Wd. × 20½″ Dp. × 51″ Ht.	24″, 30″, 36″, or 42″	18	1,800	**46115T31**	335.49
D .... 27″ Wd. × 27½″-37½″ Dp. × 43½″-61½″ Ht.	18″, 24″, 30″, 36″, or 42″	12	1,200	**5140T35**	420.00

Document Clamps

Made of aluminum, these clamps fit the brackets above to keep documents neat and organized. Each clamp holds a maximum of 100 documents. Use the black wing knobs to adjust clamp tension.

Max. Document Wd.		Each ♦	Max. Document Wd.		Each ♦
18″	**5140T13**	$31.28	36″	**5140T18**	$40.21
24″	**5140T16**	34.71	42″	**5140T19**	43.86
30″	**5140T17**	39.10			

♦ Prices are 15% less when you order in packages of six.

Mail and Literature Organizers

Keep your mail and literature sorted and easy to access.

Countertop and Floor Organizers

Stackable Countertop Organizers with Steel Back— They can be stacked up to three high and come with fasteners for stacking. Also have a ½″ high front lip that serves as a label holder. Made entirely of steel. Color is tan. Shipped assembled.

Countertop and Floor Organizers with Fiberboard Back— Organizers have a shelf front that serves as a label holder. Made of steel with a fiberboard back. Shipped unassembled.

To Order: Please specify color: black or tan.

Compartments: Total No.	Opening Size, Wd. × Dp. × Ht.	O'all Size, Wd. × Dp. × Ht.		Each
Stackable Countertop Organizers with Steel Back				
9	11″ × 11⅝″ × 3″	33 13/16″ × 11 11/16″ × 10 13/16″	**5105T7**	$80.07
12	11″ × 11⅝″ × 3″	33 13/16″ × 11 11/16″ × 14¼″	**5105T8**	105.65
15	11″ × 11⅝″ × 3″	33 13/16″ × 11 11/16″ × 17¾″	**5105T9**	123.05
Countertop Organizers with Fiberboard Back				
24	9″ × 12¼″ × 3″	37½″ × 12¾″ × 25¾″	**5105T5**	273.46
36	9″ × 12¼″ × 3″	37½″ × 12¾″ × 36½″	**5105T2**	336.40
Floor Organizers with Fiberboard Back				
60	9″ × 12¼″ × 3″	37½″ × 12¾″ × 60″	**5105T6**	526.69
72	9″ × 12¼″ × 3″	37½″ × 12¾″ × 71″	**5105T3**	591.13

9 Compartment

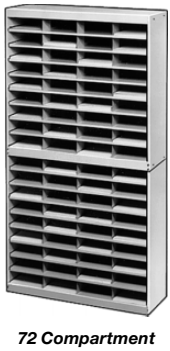

72 Compartment

Modular Stackable Organizer

Combine sorters, riser, and a table (all sold separately below) to design your own organizer. Since no fasteners are needed, changing your configuration is a breeze. Color is light gray. Shipped unassembled.

Sorter includes 20 removable compartment trays that measure 11″ wide and adjust in ⅞″ increments. Compartment trays have finger cut-outs, label holders, and form up to 25 compartments. Additional compartment trays are sold separately below. Sorter is made of steel, and compartment trays are made of gray plastic. *Note:* Sorter can stack up to three high when not using a riser and two high when using a riser.

Riser supports up to two sorters and comes with two openings for routing wires. Made of steel.

Table has a capacity of 500 lbs. and legs that adjust from 28″-36″ in 1″ increments. The shelf has a clearance of 14″ and 150-lb. capacity. Made of steel with a particleboard top with a light gray laminate surface.

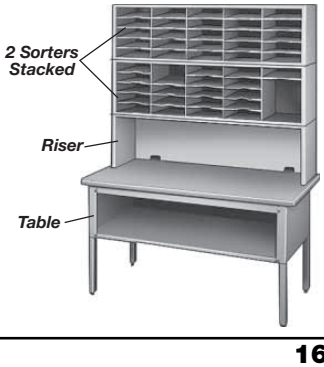

	O'all Size, Wd. × Dp. × Ht.		Each
Sorter	57½″ × 13″ × 14¼″	**5151T13**	$329.19
Riser	57½″ × 13″ × 14″	**5151T12**	188.64
Table	60″ × 30″ × 29⅛″-37⅛″	**5151T11**	690.14

Additional Compartment Trays for Sorter (5/Pkg.) **5151T14** **Per Pkg.** $42.91

Display Racks

A
9 Pockets

B
11 Pockets

C
44 Pockets

Display and organize magazines, forms, and other papers. **To Order:** Where applicable, please specify color.

(A) Clear-View Plastic Wall-Mount Racks— Made of clear PET, these racks allow you to view contents from any angle. Mounting fasteners included. Shipped assembled.

(B) Steel Wall-Mount Racks— Come with two 3/8″ keyhole slots for wall mounting (mounting fasteners not included). All have contoured pockets to allow literature to lean forward to prevent paper curl, unless noted. Made of welded steel. Shipped assembled.

(C) Steel Revolving Floor Racks— These four-sided racks allow you to store large amounts of literature in one compact space. They provide the largest number of pockets and rotate 360° on a turntable so you can easily access rack contents. Pockets are contoured, allowing literature to lean forward to prevent paper curl. Made of steel. Shipped unassembled.

No. of Pockets	Pocket Size, Wd. × Dp. × Ht.	O'all Size, Wd. × Dp. × Ht.	Available Colors		Each
(A) Clear-View Plastic Wall-Mount Racks					
6	9 1/4″ × 1 3/4″ × 11 1/4″	30″ × 2″ × 24 1/2″	Clear	6048T93	$188.21
9	9 1/4″ × 1 3/4″ × 11 1/4″	30″ × 2″ × 36 1/2″	Clear	6048T94	255.96
12	9 1/4″ × 1 3/4″ × 11 1/4″	30″ × 2″ × 49″	Clear	6048T95	280.41
(B) Steel Wall-Mount Racks					
5	8 13/16″ × 3/4″ × 8 1/2″	9 3/4″ × 4 1/8″ × 20 1/4″	Dark Gray, Tan	4722T53	48.74
10	12 1/4″ × 5/16″ × 5 3/4″	13 1/4″ × 1 15/16″ × 26 1/4″	Dark Gray, Tan	4722T63★	59.87
11	8 13/16″ × 3/4″ × 8 1/2″	9 3/4″ × 4 1/8″ × 36″	Dark Gray, Tan	4722T52	71.40
11	12 1/4″ × 3/4″ × 8 3/8″	13 1/4″ × 4 1/8″ × 36″	Dark Gray, Tan	4722T61★	104.34
20	12 1/4″ × 3/4″ × 8 3/8″	13 1/4″ × 4 1/8″ × 58″	Dark Gray, Tan	4722T62★	149.92
23	8 13/16″ × 3/4″ × 8 1/2″	9 3/4″ × 4 1/8″ × 65 1/2″	Dark Gray, Tan	4722T51	99.65
(C) Steel Revolving Floor Racks					
44	8 13/16″ × 3/4″ × 8 1/2″	14 1/8″ × 14 1/8″ × 48 1/2″	Black, Dark Gray	4891T2	344.90
92	8 13/16″ × 3/4″ × 8 1/2″	14 1/8″ × 14 1/8″ × 68 3/8″	Black, Dark Gray	4891T3	475.96

★ Pockets are straight.

Fabric Partitions

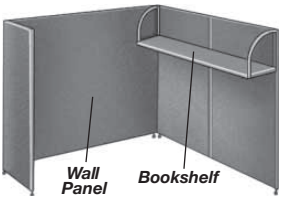

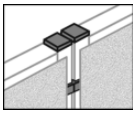

Straight Connector

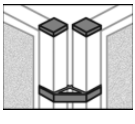

Corner Connector

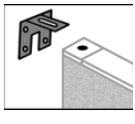

Wall Bracket

Freestanding Panel

Transform your open space into efficient, customized workspaces. All panels are 60″ Ht. × 1″ Thick. and have a welded-steel frame with MDF (medium-density fiberboard) core. Color is light gray.

Wall Panels and Accessories— Create workspaces by connecting wall panels with connectors (sold separately). Wall panels are easy to install, can be reconfigured, and have adjustable leveling feet. Rows of wall panels must be supported every 6 to 8 feet with a wall bracket (sold separately) or with another wall panel set at 90°.

Wall brackets attach a wall panel to an existing wall. Two brackets are included: one for the panel top and one for the bottom. Each bracket has four 1/4″ dia. mounting holes (fasteners not included).

Bookshelves are steel with a light gray finish. They hang anywhere on wall panels with the included shelf brackets. *Note:* Bookshelves must match width of panel.

To design your own panel system: 1. Make a rough drawing of the area you wish to partition, along with the overall measurements. 2. Determine the height, width, and number of panels you'll need. 3. Order the appropriate number and style of connectors you'll need to join the panels. To create a three-way connection, use two pairs of corner connectors; to create a four-way connection, use three pairs of corner connectors. 4. Order wall brackets when necessary. 5. Order bookshelves, if desired.

Freestanding Panels— Perfect for quick setup of temporary offices or meeting rooms. There's nothing to install—simply set them up. All have two dark gray T-leg bases.

Wall Panels and Accessories

Wd.		Each
Wall Panels		
24 1/2″	6438T12	$196.03
30 1/2″	6438T13	198.74
36 1/2″	6438T14	198.74
48 1/2″	6438T15	214.00
60 1/2″	6438T16	222.54

		Per Pair
Accessories		
Straight Connector	6438T29	$12.87
Corner Connector	6438T31	10.89
Wall Brackets	6438T34	32.36
		Each
Bookshelf—48″ Wd.x14″ Dp.x14 1/2″ Ht.	6438T35	$203.56
Bookshelf—60″ Wd.x14″ Dp.x14 1/2″ Ht.	6438T36	232.11

Freestanding Panels

Wd.		Each
24 1/2″	6438T62	$248.45
30 1/2″	6438T63	250.74
36 1/2″	6438T64	251.52
48 1/2″	6438T65	264.69
60 1/2″	6438T66	273.23

Coat Hangers

D

E

F

G

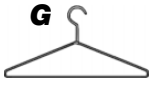

H

J

K

	Material	Max. Hanger Bar Dia.		Each 1-24	Each 25-Up
Open-Hook Hangers					
D	Hardwood	1 1/2″	9059T14	$1.22	$1.03
E	Hardwood With Clips	1 3/4″	9059T24	3.62	3.05
F	Black Plastic	1 1/2″	9059T17	5.15	4.34
G	Chrome-Plated Steel	1 3/4″	9059T22	2.50	2.11
Open-Hook Hangers (Cont.)					
H	Type 304 Stainless Steel	1″	9059T23	$10.70	$9.01
Closed-Loop Hangers					
J	Hardwood	1 1/2″	9059T19	1.80	1.52
K	Chrome-Plated Steel	1 3/4″	9059T15	2.50	2.11

Wall-Mount Coat Racks

You won't have to give up valuable floor space to hang coats. All racks come with mounting hardware. For hangers (not included), see page 1690. Shipped unassembled. ***Aluminum racks*** are corrosion resistant.

A

B

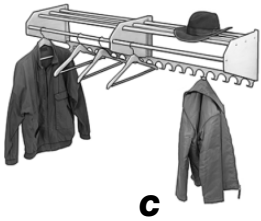

C

O'all Size, Wd. × Dp. × Ht.		Each
(A) Chrome-Plated Steel Racks		
17″ × 13¾″ × 20½″	**4719T213**	$49.01
33″ × 13¾″ × 20½″	**4719T223**	55.78
49″ × 13¾″ × 20½″	**4719T233**	66.65

O'all Size, Wd. × Dp. × Ht.		Each
(B) Aluminum Racks		
24″ × 15″ × 11¾″	**4711T41**	$103.92
36″ × 15″ × 11¾″	**4711T42**	121.83
48″ × 15″ × 11¾″	**4711T43**	154.80
60″ × 15″ × 11¾″	**4711T44**	181.32
72″ × 15″ × 11¾″	**4711T45**	194.93

O'all Size, Wd. × Dp. × Ht.		Each
(C) Aluminum Racks with Coat Hooks		
24″ × 15″ × 13¼″	**4711T15**	$126.85
36″ × 15″ × 13¼″	**4711T16**	139.03
48″ × 15″ × 13¼″	**4711T17**	202.82
60″ × 15″ × 13¼″	**4711T18**	232.20
72″ × 15″ × 13¼″	**4711T32**	251.55

Coat Racks

Space Saver

Stationary Single Sided

Mobile Double Sided with Optional Boot Shelf

Space-Saver Coat Rack

This rack takes up very little floor space. It has four double hanging hooks, a 21″ dia. base, and four legs with adjustable nylon leveling feet to compensate for uneven floors. Overall height is 70″. Made of steel. **To Order:** Please specify color: chrome plated or black.

4708T21 ..... **Each** $75.20

Single- and Double-Sided Coat Racks

Place these racks anywhere to keep belongings neat and organized. For hangers (not included), see page 1674. Shipped unassembled.

Steel Racks— **To Order:** Please specify color: chrome plated or dark gray.

Stainless Steel Racks— Made of Type 304 stainless steel for excellent corrosion resistance, they're great for clean rooms.

Single-sided racks have a single hanger bar. ***Double-sided racks*** have three hanger bars for greater storage capacity.

Mobile racks have four swivel casters (two with brake) with 3″ dia. rubber wheels.

O'all Size, Wd. × Dp.	O'all Ht.	*Single Sided*	Each	*Double Sided*	Each
Steel Racks					
Stationary					
36″ × 20″	65″	**4977T12**	$262.48	**4977T41**	$312.22
48″ × 20″	65″	**4977T19**	271.70	**4977T42**	330.66
60″ × 20″	65″	**4977T8**	299.32	**4977T43**	365.71
Mobile					
36″ × 20″	68″	**4741T6**	296.84	**4741T81**	346.48
48″ × 20″	68″	**4741T7**	305.96	**4741T82**	364.20
60″ × 20″	68″	**4741T8**	333.32	**4741T83**	407.80
Stainless Steel Racks					
Stationary					
36″ × 20″	65″	**5047T1**	475.85	**5047T5**	582.74
48″ × 20″	65″	**5047T2**	504.40	**5047T6**	638.00
60″ × 20″	65″	**5047T3**	591.54	**5047T7**	719.86
Mobile					
36″ × 20″	68″	**5132T1**	610.64	**5132T5**	683.94
48″ × 20″	68″	**5132T2**	659.04	**5132T6**	732.78
60″ × 20″	68″	**5132T3**	693.70	**5132T7**	840.26

Optional Boot Shelves— Simply place on coat-rack base—no mounting hardware needed. Made of steel with a black finish.

		Each
For 36″ Wide Racks	**4977T91**	$64.08
For 48″ Wide Racks	**4977T92**	78.52
For 60″ Wide Racks	**4977T93**	92.06

Bicycle Racks

D

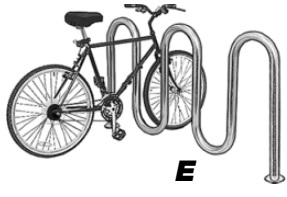

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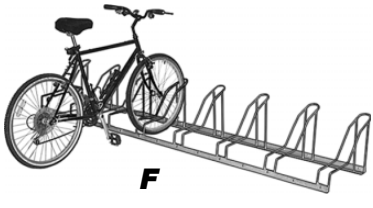

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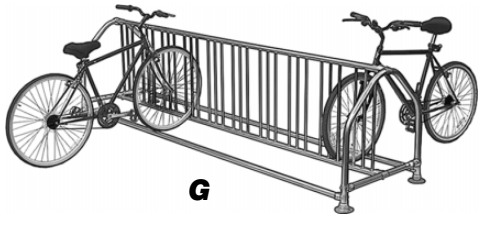

G

Our racks offer convenient parking and storage for bicycles. All except Style F accommodate bicycles on both sides of the rack. Racks mount to any flat surface.

(D) Corrosion Resistant— Rack is made of one-piece polyethylene to resist rot and rust. Each wheel slot has a zinc-plated security bar for securing your bike to the rack. Color is light gray. Mounting hardware included. Shipped assembled.

(E) Contemporary Style— A continuous loop of steel pipe gives this rack a modern look. Each loop and each end holds one bicycle. Each leg has a 5″ dia. flange that has three 7/16″ dia. mounting holes. Mounting hardware not included. Color is light gray. Shipped assembled.

(F) Slotted Style— The slots in this rack provide the most room between bicycles. Rack has two steel bases and steel wheel slots. Each steel base has five ½″ dia. mounting holes. Mounting hardware not included. Shipped unassembled.

(G) Large Capacity— Made of galvanized steel. Each leg has a 4 11/16″ dia. malleable-iron flange with two 15/32″ dia. mounting holes. Mounting hardware not included. Shipped unassembled.

	O'all Size, Wd. × Dp. × Ht.	No. of Bicycles	Wheel Slot Wd.		Each
D	45″ × 16″ × 10½″	5	2½″	**5064T31**	$483.50
E	64⅞″ × 2⅜″ × 36″	7	9⅝″	**6263T25**	361.25
F	115¼″ × 19″ × 18″	8	2¾″	**4793T71**	380.30
G	121″ × 30″ × 33″	20	3¼″	**9987T41**	633.47

Plastic Vials

A B C D 6 Vials

Ideal for storing samples and small quantities. All vials are made of rigid plastic with a translucent polypropylene lid, unless otherwise indicated.

(A) Translucent polypropylene vials with hinged snap-inside lid have a tab on the lid for easy opening. Vials are moisture resistant and made of FDA-compliant resins. Not temperature rated.

(B) Translucent polypropylene vials with hinged snap-outside lid are airtight, moisture resistant, and made of FDA-compliant resins. Not temperature rated.

(C) Clear polystyrene vials with snap-outside lid have thick walls for durability. Lid is white polyethylene. Max. temperature is 158° F.

(D) Translucent polypropylene connected vials with hinged snap-outside lids are connected by tabs to keep them in the same order. Tabs can be cut to release vials. All vials are airtight, moisture resistant, and made of FDA-compliant resins. Not temperature rated.

Capacity oz.	Capacity ml	Capacity Drams	O'all Dia.	O'all Ht.	Pkg. Qty.		Per Pkg.
(A) Translucent Polypropylene with Hinged Snap-Inside Lid							
1/250	0.13	0.03	0.28″	0.54″	10	4574T11	$5.38
1/16	2.07	0.56	0.50″	1.24″	10	4574T12	6.81
1/4	7.18	1.94	0.92″	1.09″	10	4574T13	7.06
1/3	9.5	2.57	0.67″	2.26″	10	4574T14	7.50
2/3	20.21	5.47	0.92″	2.37″	10	4574T15	7.65
1 1/2	44.33	11.99	1.41″	2.18″	10	4574T16	8.29
2 1/4	64.93	17.57	1.86″	1.88″	10	4574T18	8.65
3 1/4	95.87	25.93	1.60″	3.45″	10	4574T17	10.46
(B) Translucent Polypropylene with Hinged Snap-Outside Lid							
1/25	1.32	0.36	0.57″	0.74″	10	5274T61	4.22
1/10	3.34	0.9	0.99″	0.63″	10	5274T64	4.53
1/8	3.42	0.93	0.57″	1.78″	10	5274T62	4.65
1/6	5.47	1.48	0.57″	2.66″	10	5274T63	4.88
3/16	5.89	1.59	1.57″	0.44″	10	5274T681	6.09
1/4	6.41	1.74	0.99″	1.04″	10	5274T65	6.31
1/2	12.94	3.5	1.58″	0.73″	10	5274T691	6.42
2/3	17.58	4.76	0.99″	2.46″	10	5274T661	6.78
3/4	21.22	5.74	0.99″	2.92″	10	5274T67	7.10
1	32.96	8.92	1.57″	1.50″	10	5274T711	7.61
1 1/2	41.88	11.33	1.58″	1.85″	10	5274T72	7.75
2	55.34	14.97	2.03″	1.58″	5	5274T761	7.81

Capacity oz.	Capacity ml	Capacity Drams	O'all Dia.	O'all Ht.	Pkg. Qty.		Per Pkg.
(B) Translucent Polypropylene with Hinged Snap-Outside Lid (Cont.)							
2 1/3	70.79	19.15	1.57″	2.99″	5	5274T73	$7.89
3	71.14	19.25	2.52″	1.28″	5	5274T81	7.91
4	121.97	33	2.03″	3.19″	5	5274T77	9.35
(C) Clear Polystyrene with Snap-Outside Lid							
3/8	11	3	0.75″	1.90″	36	4611T22	12.09
11/16	20	5	0.97″	1.99″	36	4611T32	13.46
7/8	25	7	1.02″	2.01″	36	4611T23	14.33
1 11/32	40	10	1.13″	3.25″	12	4611T33	6.32
1 5/8	48	13	1.18″	2.83″	12	4611T24	7.13
2	60	15	1.43″	2.46″	12	4611T34	7.60
2 1/2	73	20	1.50″	2.52″	12	4611T25	8.90
3 3/4	110	30	1.77″	2.99″	12	4611T31	12.45
5	147	40	1.77″	4.02″	12	4611T26	14.13

No. of Vials	O'all Lg.	INDIVIDUAL VIALS Capacity oz.	Capacity ml	Capacity Drams	O'all Dia.	O'all Ht.	Each
(D) Translucent Polypropylene with Hinged Snap-Outside Lids							
6	7 1/8″	1/5	6.23	1.69	1.00″	1.03″	4242T81 $1.13
8	9 7/16″	5/32	5.2	1.28	0.99″	0.82″	4242T82 1.31
9	10 9/16″	1/6	4.96	1.34	0.99″	0.85″	4242T83 1.41

Glass Vials

Clear

Translucent Amber

Glass vials offer chemical resistance and provide excellent clarity for an unobstructed view of contents. All have a green melamine threaded cap with a PTFE seal. Not temperature rated. ***Translucent amber vials*** protect contents that are sensitive to light and UV rays.

Capacity oz.	Capacity ml	Capacity Drams	Mouth OD	O'all Base Dia.	O'all Ht.	Pkg. Qty.	Clear	Per Pkg.	Translucent Amber	Per Pkg.
1/24	1.2	1/32	13 mm	0.58″	0.75″	6	3773T51	$6.70	—	—
1/16	1.9	1/2	8 mm	0.47″	1.38″	6	4417T41	6.98	4417T61	$8.45
1/16	1.9	1/2	13 mm	0.58″	1.00″	6	3773T52	7.07	3773T62	7.42
5/64	2.3	5/8	13 mm	0.58″	1.02″	6	3773T53	7.29	3773T63	8.19
9/64	4.0	1	13 mm	0.59″	1.78″	6	4417T42	5.66	4417T62	8.29
1/4	7.5	2	15 mm	0.67″	2.38″	6	4417T43	6.25	4417T63	9.37
3/8	11.0	3	15 mm	0.75″	2.56″	6	4417T44	6.81	—	—
1/2	15.0	4	18 mm	0.83″	2.75″	6	4417T45	7.59	4417T64	10.55
43/64	20.0	5	24 mm	1.11″	2.25″	6	4417T48	10.05	—	—
3/4	22.0	6	20 mm	0.91″	3.34″	6	4417T46	10.43	—	—
3/4	22.0	6	24 mm	1.08″	2.75″	6	4417T49	10.91	—	—
1 1/64	30.0	8	22 mm	0.98″	3.75″	6	4417T47	11.42	—	—

Wide-Mouth Plastic Jars

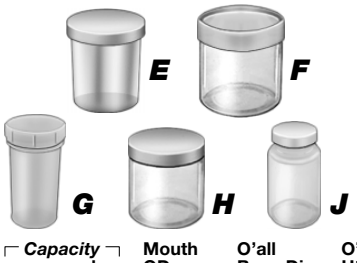

E F G H J

Extremely wide mouths on these jars make filling and dispensing a breeze. Jars are rigid plastic with straight sides and come with threaded caps. All caps are white polypropylene, unless otherwise indicated.

(E) Autoclavable translucent polypropylene jars have a maximum temperature of 249° F.

(F) Autoclavable clear polycarbonate jars have a maximum temperature of 275° F.

(G) Heavy duty translucent polyethylene jars have extra-thick walls, making them our most durable plastic jars. They are made of low-density polyethylene and FDA-compliant resins. Cap is translucent low-density polyethylene and has an inner leakproof seal. Maximum temperature is 176° F.

(H) Clear polystyrene jars have a maximum temperature of 158° F.

(J) Super-clean clear PET jar is pre-cleaned and virtually particle-free. Cap has a polyethylene foam lining. Not temperature rated.

Capacity oz.	Capacity ml	Mouth OD	O'all Base Dia.	O'all Ht.		Each
(E) Autoclavable Translucent Polypropylene						
1	30	43 mm	1 11/16″	1 11/16″	42905T22	$1.31
2	60	53 mm	2 1/8″	1 7/8″	42905T23	1.63
4	120	70 mm	2 3/4″	2 3/8″	42905T24	2.14
8	250	89 mm	3 1/2″	2 5/8″	42905T25	2.75
16	500	89 mm	3 1/2″	3 13/16″	42905T6	4.53
32	1,000	120 mm	4 3/4″	3 15/16″	42905T7	6.39
40	1,200	120 mm	4 3/4″	5 3/16″	42905T8	7.93
(F) Autoclavable Clear Polycarbonate						
4	125	70 mm	2 1/2″	2 7/8″	5761T713	9.13
8	250	70 mm	2 1/2″	4 5/8″	5761T723	10.60
16	500	120 mm	4 13/32″	3 7/16″	5761T733	16.71
32	1,000	120 mm	4 3/8″	5 15/16″	5761T743	20.00

Capacity oz.	Capacity ml	Mouth OD	O'all Base Dia.	O'all Ht.		Each
(G) Heavy Duty Translucent Polyethylene						
1	30	35 mm	1 1/4″	2 9/16″	4489T31	$9.72
3	90	55 mm	2″	2 11/16″	4489T32	10.96
4	120	55 mm	2″	3 1/4″	4489T33	11.20
6	180	55 mm	2″	4 1/2″	4489T34	11.84
(H) Clear Polystyrene						
2	60	53 mm	2 1/16″	1 7/8″	4188T41	1.50
4	120	70 mm	2 3/4″	2 3/8″	4188T42	1.89
6	180	70 mm	2 3/4″	2 13/16″	4188T43	2.43
8	250	89 mm	3 1/2″	2 5/8″	4188T44	3.61
16	500	89 mm	3 1/2″	3 13/16″	4188T45	4.25
32	1,000	120 mm	4 3/4″	3 15/16″	4188T47	8.94
(J) Super-Clean Clear PET						
4	120	38 mm	1 15/16″	3 5/8″	4188T51	3.81

Wide-Mouth Glass Jars

Glass jars protect contents from chemicals, oils, and gases. All are clear and have a threaded cap.

(A) Jars with black phenolic cap are best for general purpose use. *Foam-backed PTFE liners* provide a tight seal to resist attack from a variety of chemicals. Not temperature rated.

(B) Mason jars with tin-plated cap have a cap that allows gases to escape during heating and forms a vacuum seal during cooling. Leakproof when vacuum sealed. Max. temperature is 240° F.

A

B

Capacity		Mouth OD	O'all Base Dia.	O'all Ht.		Each
(A) Jars with Black Phenolic Cap with Pulp Vinyl Seal						
2 oz.	60 ml	53 mm	2 1/8"	1 7/8"	4231T21	$2.95
4 oz.	125 ml	58 mm	2 3/8"	2 11/16"	4231T22	3.19
6 oz.	180 ml	63 mm	2 5/8"	3 1/8"	4231T72	3.45
8 oz.	250 ml	70 mm	2 7/8"	3 1/2"	4231T23	3.91
16 oz.	500 ml	89 mm	3 9/16"	3 3/4"	4231T24	4.15
32 oz.	1,000 ml	89 mm	3 3/4"	6 11/16"	4231T25	5.45
64 oz.	1,920 ml	83 mm	4 7/8"	8 7/16"	4231T26	10.16
(A) Jars with Black Phenolic Cap with Foam-Backed PTFE Liner						
2 oz.	60 ml	53 mm	2 1/8"	1 7/8"	4239T31	4.10
4 oz.	125 ml	58 mm	2 3/8"	2 11/16"	4239T32	4.50
6 oz.	180 ml	63 mm	2 5/8"	3 1/8"	4239T33	5.09
8 oz.	250 ml	70 mm	2 7/8"	3 1/2"	4239T34	5.90
16 oz.	500 ml	89 mm	3 9/16"	3 3/4"	4239T35	7.65
32 oz.	1,000 ml	89 mm	3 3/4"	6 11/16"	4239T36	8.80
64 oz.	1,920 ml	83 mm	4 7/8"	8 7/16"	4239T37■	11.52
(B) Mason Jars with Tin-Plated Cap						**Per Pkg.★**
16 oz.	480 ml	86 mm	3"	4 3/4"	3231T43	$14.10
32 oz.	960 ml	86 mm	4"	6 9/16"	3231T44	15.74

■ Has a green urea cap. ★ Package quantity is 12.

Cans with Friction-Top Lids

Tin-Plated Steel with Handle

Polypropylene with Handle and Optional Lid-Securing Clips

Optional Lid-Securing Plastic Ring

Also known as paint cans.

Tin-Plated Steel Cans— All are leakproof and have a bright finish.

Polypropylene Cans— Made of 100% recycled plastic, these cans have a tin-plated steel rim and lid with a varnish coating on both the inside and outside for corrosion resistance. They are also leakproof and dent resistant. Color is black.

Lid-Securing Steel Clips for All Cans— For added security, use these clips to keep your lids closed. Clips are for one-time use.

Lid-Securing Plastic Rings for Steel Cans— For an even tighter lock on your lid, these rings fit around the entire can. Rings are for one-time use. *Note:* Rings only fit steel cans; not for use with plastic cans.

Capacity	O'all Base Dia.	Top ID	O'all Ht.	Pkg. Qty.		Per Pkg.
Tin-Plated Steel Cans						
Without Handle						
4 oz.	2 1/2"	1 3/4"	2 1/16"	12	4084T41	$35.76
8 oz.	2 7/8"	2 1/8"	3"	12	4084T42	39.75
16 oz.	3 7/16"	2 5/8"	3 15/16"	12	4084T43	44.16
32 oz.	4 1/4"	3 3/8"	4 7/8"	6	4084T44	23.16
64 oz.	5 1/2"	4 1/2"	6"	2	4084T45	23.99
With Steel Bail Handle						
1 gal.	6 5/8"	5 3/4"	7 1/2"	2	4084T66	15.36
1 gal.	6 5/8"	5 3/4"	7 1/2"	34	4084T31	233.20
Polypropylene Cans						
Without Handle						
16 oz.	3 7/16"	2 1/4"	4 1/8"	12	4051T44	29.38
32 oz.	4 5/16"	3 1/8"	4 15/16"	6	4051T45	19.66
With Steel Bail Handle						
1 gal.	6 5/8"	5 1/2"	7 3/4"	1	4051T33	5.64
1 gal.	6 5/8"	5 1/2"	7 3/4"	34	4051T43	150.88
Lid-Securing Steel Clips for All Cans Above						
Fits 4-oz. and 8-oz. Cans				100	2035T1	9.19
Fits 16-oz. and 32-oz. Cans				100	2035T3	9.19
Fits 64-oz. and 1-gal. Cans				100	2035T2	9.19
Lid-Securing Plastic Rings for Steel Cans Above						
Fits 8-oz. Can				6	5099T5	3.82
Fits 16-oz. Can				6	5099T6	4.25
Fits 32-oz. Can				6	5099T7	5.45
Fits 1-gal. Can				6	5099T8	6.11

Steel Cans with Press-Fit Lids

Round

Round with Label

Rectangular with White Finish

Capacity	O'all Size	O'all Ht.	Pkg. Qty.		Per Pkg.
Round					
1 oz.	1 1/2" dia.	1"	12	4332T52	$10.93
2 oz.	2" dia.	1 1/2"	12	4332T24	12.27
2 oz.	2 3/8" dia.	3/4"	12	4332T21	10.50
3 oz.	2 3/4" dia.	7/8"	12	4332T22	10.40
4 oz.	2 3/8" dia.	1 3/4"	6	4332T53	7.44
8 oz.	4" dia.	1 1/8"	6	4332T23	9.58
16 oz.	4" dia.	2 3/8"	3	4332T27	8.71
Round with Label					
1/2 oz.	1 1/2" dia.	7/16"	12	4332T31	8.08
1 oz.	2" dia.	5/8"	12	4332T32	9.16
2 oz.	2" dia.	1 3/8"	12	4332T34	14.40
6 oz.	2 3/4" dia.	1 11/16"	6	4332T55	8.21
Rectangular					**Each**
40 oz.	7 13/16" × 4 7/16"	2 1/8"	—	5690T71	$5.38
81 oz.	8 1/8" × 6 3/16"	2 15/16"	—	5690T72	6.35
Rectangular and Square with White Finish					
16 oz.	5" × 3 5/8"	1 5/8"	—	5690T56	4.16
54 oz.	6 1/8" sq.	2 5/8"	—	5690T57	5.86

Wide-Mouth Rectangular and Square Plastic Bottles

C

D

E&F

G

Rectangular and square bottles take up less storage space than their round counterparts. All are made of rigid plastic and come with a threaded cap.

(C&D) Translucent high-density polyethylene bottles are leakproof. Cap is translucent polypropylene. Max. temperature is 248° F.

(E) Easy-grip translucent high-density polyethylene bottle is leakproof and has hand grips. Cap is white polypropylene. Max. temperature is 248° F.

(F) Easy-grip autoclavable translucent polypropylene bottle has hand grips. Cap is white polypropylene. Max. temperature is 275° F.

(G) Clear PVC bottles have a black phenolic cap with pulp/vinyl seal. Max. temperature is 176° F.

Capacity		Mouth OD	O'all Base Size	O'all Ht.		Each
(C) Translucent High-Density Polyethylene—Rectangular						
4 oz.	125 ml.	28 mm	2 3/8" × 1 1/2"	4"	4293T76	$2.19
8 oz.	250 ml.	38 mm	3" × 2"	4 5/8"	4293T77	3.17
16 oz.	500 ml.	48 mm	3 13/16" × 2 3/8"	5 13/16"	4293T78	4.92
32 oz.	1,000 ml.	53 mm	4 15/16" × 2 13/16"	7 1/8"	4293T79	10.70
64 oz.	2,000 ml.	63 mm	6" × 3 5/16"	9 1/2"	4293T65	18.89
(D) Translucent High-Density Polyethylene—Square						
2 oz.	60 ml.	28 mm	1 1/2" sq.	3 1/2"	4238T18	2.15
6 oz.	175 ml.	38 mm	2" sq.	4"	4238T15	3.43
8 oz.	250 ml.	43 mm	2 1/2" sq.	4 1/2"	4238T17	4.62
16 oz.	500 ml.	53 mm	3" sq.	5 1/2"	4238T14	6.54
32 oz.	1,000 ml.	63 mm	3 3/4" sq.	7"	4238T22	9.81
(E) Easy-Grip Translucent High-Density Polyethylene						
1 gal.	4,000 ml.	100 mm	5 9/16" sq.	11 1/2"	41135T3	27.35
(F) Easy-Grip Autoclavable Translucent Polypropylene						
1 gal.	4,000 ml.	100 mm	5 9/16" sq.	11 1/2"	41135T2	30.46
(G) Clear PVC						
1 1/2 oz.	50 ml.	25 mm	1 1/2" sq.	2 7/8"	43045T42	2.87
3 oz.	100 ml.	33 mm	1 13/16" sq.	2 7/8"	43045T43	3.64
6 oz.	200 ml.	43 mm	2 5/16" sq.	3 7/16"	43045T51	4.85
10 oz.	300 ml.	42 mm	2 5/8" sq.	3 3/4"	43045T52	7.24
16 oz.	500 ml.	57 mm	3 1/8" sq.	4 5/16"	43045T53	8.00
32 oz.	1,000 ml.	70 mm	3 3/4" sq.	5 3/4"	43045T54	10.27
64 oz.	2,000 ml.	70 mm	4 5/8" sq.	7 1/2"	43045T48	17.55

Wide-Mouth Plastic Bottles

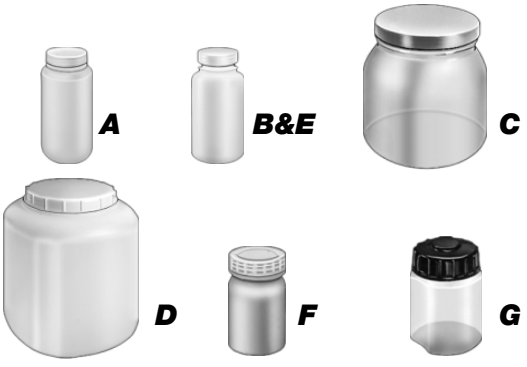

Having a big mouth can be a good thing—the wide mouth on these bottles makes filling and dispensing quick and easy. All bottles have a threaded cap.

(A) Flexible and translucent low-density polyethylene bottles are leakproof and made of FDA-compliant resins. Cap is translucent polypropylene. Max. temperature is 176° F.

(B-D) Translucent high-density polyethylene bottles come in three styles. *Style B* is rigid, leakproof, and made of FDA-compliant resins. The cap is translucent polypropylene. Max. temperature is 248° F. *Style C* is rigid. Cap is white polypropylene (except 42955T4, which has a metal cap). Max. temperature is 230° F. *Style D* is flexible and octagonal in shape. Cap is translucent high-density polyethylene. Max. temperature is 212° F.

(E) Autoclavable translucent polypropylene bottles are rigid, leakproof, and made of FDA-compliant resins. Cap is translucent polypropylene. Max. temperature is 275° F.

(F) Heavy duty autoclavable translucent polypropylene bottles are rigid, leakproof, and have thick walls for durability. Cap is translucent polypropylene and has a standard mason-jar thread with removable seal. Max. temperature is 250° F.

(G) Clear polycarbonate bottles are rigid, leakproof, and stain resistant. The sides are indented for a secure grip. Cap is black polypropylene with a Buna-N seal. Max. temperature is 225° F.

Capacity		Mouth OD	O'all Base Dia.	O'all Ht.		Each
(A) Flexible and Translucent Low-Density Polyethylene						
4 oz.	125 ml	38 mm	1 7/8"	4 3/4"	5109T51	$2.21
8 oz.	250 ml	45 mm	2 1/4"	5 9/16"	5109T52	2.31
16 oz.	500 ml	53 mm	2 13/16"	6 13/16"	5109T53	2.55
32 oz.	1,000 ml	53 mm	3 9/16"	8 1/4"	5109T54	2.82
(B) Translucent High-Density Polyethylene						
1 oz.	30 ml	22 mm	1 1/4"	2 3/4"	4280T31	1.79
2 oz.	60 ml	26 mm	1 9/16"	3 1/4"	4280T32	1.85
4 oz.	125 ml	33 mm	1 15/16"	3 15/16"	4280T33	2.10
8 oz.	250 ml	35 mm	2 3/8"	5 11/16"	4280T34	3.25
16 oz.	500 ml	45 mm	2 15/16"	6 1/2"	4280T35	4.41
32 oz.	1,000 ml	54 mm	3 1/2"	8 1/4"	4280T36	8.10
48 oz.	1,500 ml	63 mm	3 5/8"	11 3/16"	4280T37	12.41
64 oz.	2,000 ml	54 mm	4 11/16"	9 5/8"	4280T38	15.92
(C) Economy Wide-Mouth Translucent High-Density Polyethylene						
64 oz.	2,000 ml	103 mm	5 7/8"	6 5/16"	42955T2●	4.56
1 gal.	4,000 ml	110 mm	6"	10"	42955T4	6.63
(D) Extra-Wide-Mouth Translucent High-Density Polyethylene						
1 1/4 gal.	5,000 ml	119 mm	7 9/16"	9 1/4"	4577T22	61.98
2 1/2 gal.	10,000 ml	119 mm	9 1/8"	12 3/16"	4577T23	67.23
(E) Autoclavable Translucent Polypropylene						
1 oz.	30 ml	28 mm	1 1/4"	2 7/8"	6702T71	1.92
2 oz.	60 ml	33 mm	1 9/16"	3 1/4"	6702T72	2.07
4 oz.	125 ml	38 mm	1 15/16"	3 15/16"	6702T73	2.41
8 oz.	250 ml	45 mm	2 3/8"	5 5/8"	6702T74	3.78
16 oz.	500 ml	55 mm	2 15/16"	6 9/16"	6702T75	5.29
32 oz.	1,000 ml	65 mm	3 1/2"	8 5/16"	6702T76	8.09
64 oz.	2,000 ml	65 mm	4 3/4"	9 11/16"	6702T77	16.11
(F) Heavy Duty Autoclavable Translucent Polypropylene						
16 oz.	500 ml	69 mm	3 3/16"	5 5/16"	4322T1	8.25
32 oz.	1,000 ml	69 mm	3 15/16"	7"	4322T2	12.25
64 oz.	2,000 ml	69 mm	4 15/16"	8 3/8"	4322T4	18.57
1 gal.	4,000 ml	69 mm	5 7/8"	11 1/4"	4322T6	30.00
2 gal.	8,000 ml	69 mm	7 7/16"	13 1/8"	4322T7	43.66
(G) Clear Polycarbonate						
1 oz.	30 ml	40 mm	2"	2 1/16"	3999T1	5.98
2 1/2 oz.	75 ml	40 mm	2"	3 1/16"	3999T2	6.19
5 oz.	150 ml	40 mm	2 7/8"	3"	3999T3	6.59
9 oz.	270 ml	40 mm	2 7/8"	4 1/4"	3999T4	7.20
16 oz.	500 ml	70 mm	3 5/8"	5 1/4"	3999T5	12.36
32 oz.	1,000 ml	70 mm	3 5/8"	8 5/8"	3999T6	13.33
64 oz.	2,000 ml	70 mm	5"	9 3/8"	3999T7	15.89

● Bottle is opaque.

Easy-to-Pour Wide-Mouth Plastic Bottles

1 gal. with Internal Spout

With an easy-to-grab handle, wide mouth, and twist-off cap, these leakproof bottles are easy to pour and reseal. The 1-gal. bottle offers even more controlled pouring thanks to an internal spout. Bottles are rigid and made of high-density polyethylene. Color is light gray with dark gray caps. Max. temperature is 180° F.

Capacity	Mouth OD	O'all Base Size	O'all Ht.		Each
32 oz./1,000 ml	89 mm	4" × 4 3/4"	5 1/4"	6917T11	$5.43
1 gal./4,000 ml	152 mm	6 3/4" sq.	8"	6917T12	10.26

Narrow-Mouth Plastic Bottles

Round *Square*

Narrow mouths offer more controlled pouring. All bottles have a threaded cap.

Flexible and translucent low-density polyethylene bottles are leakproof and made of FDA-compliant resins. Caps are white polypropylene. Max. temperature is 176° F.

Heavy duty translucent low-density polyethylene bottles have rigid, thick walls for durability. Caps are translucent polyethylene. Max. temperature is 176° F.

Translucent high-density polyethylene bottles are rigid and leakproof. Caps are translucent polypropylene. Max. temperature is 248° F. *Round models* are made of FDA-compliant resins.

Autoclavable translucent polypropylene bottles are flexible, leakproof, and made of FDA-compliant resins. Max. temperature is 275° F.

Extreme duty autoclavable translucent FEP bottles resist virtually all chemicals and are excellent for high and low temperature applications. Bottles are flexible and leakproof. Cap is translucent ETFE. Max. temperature is 302° F.

Autoclavable clear polycarbonate bottles are rigid, leakproof, and made of FDA-compliant resins. Caps are white polypropylene. Max. temperature is 275° F.

Capacity oz.	Capacity ml	Mouth OD	O'all Base Size	O'all Ht.		Each
Round						
Flexible and Translucent Low-Density Polyethylene						
1	30	22 mm	1 1/4" dia.	2 5/8"	4218T41	$1.17
2	60	22 mm	1 9/16" dia.	3 1/8"	4218T42	1.22
4	125	28 mm	2" dia.	4"	4218T43	1.67
8	250	28 mm	2 3/8" dia.	5 5/8"	4218T44	2.37
16	500	28 mm	2 15/16" dia.	6 1/2"	4218T45	3.14
32	1,000	28 mm	3 1/2" dia.	8"	4218T46	5.27
Heavy Duty Translucent Low-Density Polyethylene						
64	2,000	25 mm	4 1/2" dia.	11"	4216T1	22.06
1 gal.	4,000	25 mm	6" dia.	14"	4216T2	35.28
2 gal.	7,500	37 mm	7 1/2" dia.	16"	4216T3	58.99
Translucent High-Density Polyethylene						
1	30	20 mm	1 3/8" dia.	2 3/8"	3681T71	1.53
2	60	20 mm	1 1/2" dia.	3 3/8"	3681T72	1.65
4	125	24 mm	2" dia.	4"	3681T73	2.00
6	175	24 mm	2 1/8" dia.	4 15/16"	3681T74	2.84
8	250	24 mm	2 3/8" dia.	5 1/4"	3681T75	3.00
16	500	28 mm	2 7/8" dia.	6 11/16"	3681T76	4.04
32	1,000	38 mm	3 5/8" dia.	8 1/2"	3681T77	7.32
Autoclavable Translucent Polypropylene						
1	30	20 mm	1 3/8" dia.	2 3/8"	3219T51	1.96
2	60	20 mm	1 1/2" dia.	3 3/8"	3219T52	1.99
4	125	24 mm	2" dia.	4"	3219T53	2.72
8	250	24 mm	2 3/8" dia.	5 1/4"	3219T54	3.96
16	500	28 mm	2 7/8" dia.	6 11/16"	3219T55	5.84
32	1,000	38 mm	3 5/8" dia.	8 1/2"	3219T56	9.62
Extreme Duty Autoclavable Translucent FEP						
4	125	24 mm	1 13/16" dia.	4 1/2"	5127T5	69.89
8	250	24 mm	2 3/8" dia.	5 9/32"	5127T6	115.30
32	1,000	38 mm	3 9/16" dia.	8"	5127T7	184.83
64	2,000	38 mm	4 3/4" dia.	9 5/8"	5127T8	298.86
Square						
Translucent High-Density Polyethylene						
1	30	20 mm	1 1/2" sq.	2 1/2"	4113T71	1.82
2	60	24 mm	1 5/8" sq.	3 1/4"	4113T72	1.86
4	125	38 mm	2 1/8" sq.	4 5/16"	4113T73	2.49
8	250	38 mm	2 3/8" sq.	5 3/4"	4113T74	3.77
16	500	38 mm	2 15/16" sq.	7"	4113T75	5.05
32	1,000	38 mm	3 11/16" sq.	8 11/16"	4113T76	9.59
Autoclavable Clear Polycarbonate						
1	30	20 mm	1 1/2" sq.	2 1/2"	4264T51	4.82
2	60	24 mm	1 5/8" sq.	3 1/4"	4264T52	6.39
4	125	38 mm	2" sq.	4 5/16"	4264T53	9.33
8	250	38 mm	2 5/16" sq.	5 3/4"	4264T54	10.98
16	500	38 mm	2 15/16" sq.	7"	4264T55	15.20
32	1,000	38 mm	3 11/16" sq.	8 11/16"	4264T56	20.33
64	2,000	53 mm	4 9/16" sq.	10 11/16"	4264T57	40.74

Glass Bottles

There's no need to worry about contaminating contents—these clear glass bottles protect them from chemicals, oils, and gases. All are furnished with a black threaded phenolic cap with a PTFE seal.

A

B

Capacity oz.	Capacity ml	Mouth OD	O'all Base Size	O'all Ht.		Each
Round						
(A) Narrow Mouth						
1	30	20 mm	1 3/16" dia.	3 1/8"	5782T61	$1.07
2	60	20 mm	1 9/16" dia.	3 11/16"	5782T62	1.25
4	125	22 mm	1 7/8" dia.	4 7/16"	5782T63	1.48
8	250	24 mm	2 3/8" dia.	5 3/8"	5782T64	1.75
16	500	28 mm	2 15/16" dia.	6 5/8"	5782T65	2.32
32	1,000	33 mm	3 11/16" dia.	8 1/8"	5782T66	3.27
Square						
(B) Wide Mouth						
1	30	24 mm	1 3/16" sq.	2 13/16"	3801T71	1.48
2	60	28 mm	1 9/16" sq.	3 3/8"	3801T72	1.64
4	125	33 mm	1 3/4" sq.	4 3/8"	3801T73	2.08
8	250	43 mm	2 3/16" sq.	5 3/8"	3801T74	2.89
16	500	48 mm	2 11/16" sq.	6 9/16"	3801T75	3.64

Safety-Coated Glass Bottles

Accidents happen, but disasters don't have to when you use these bottles. If one of these bottles breaks, the clear safety coating keeps the glass and contents contained long enough for you to safely dispose of them. They are also slip resistant and impact resistant, leading to fewer broken bottles.

All bottles are clear and have a green melamine threaded cap with a PTFE seal.

Narrow Mouth

Capacity oz.	Capacity ml	Mouth OD	O'all Base Dia.	O'all Ht.		Each
Narrow Mouth						
8	240	24 mm	2 3/8"	5 3/8"	44715T31	$7.04
16	480	28 mm	3"	6 5/8"	44715T32	8.66
32	960	33 mm	3 11/16"	8 1/8"	44715T33	13.44
Wide Mouth						
8	270	70 mm	2 7/8"	3 1/2"	44715T41	8.57
16	480	70 mm	3"	5 11/16"	44715T42	10.14
32	960	70 mm	3 11/16"	7"	44715T43	14.08

UN-Compliant Plastic Shipping Bottles

Designed to resist splitting and puncturing, these heavy duty bottles are perfect for shipping hazardous materials. They are UN-compliant and have the IP2 marking molded into the bottom. All are flexible, leakproof, and made of translucent high-density polyethylene. Cap is threaded translucent polypropylene. Max. temperature is 248° F.

Narrow Mouth

Capacity oz.	Capacity ml	Mouth OD	O'all Base Dia.	O'all Ht.		Each
Narrow Mouth						
1	30	20 mm	1 3/8"	2 3/8"	42305T32	$1.76
2	60	20 mm	1 1/2"	3 3/8"	42305T33	1.82
4	125	24 mm	2"	4"	42305T34	2.29
8	250	24 mm	2 3/8"	5 1/4"	42305T35	3.31
16	500	28 mm	2 7/8"	6 3/4"	42305T36	4.68
32	1,000	38 mm	3 5/8"	8 1/2"	42305T37	8.35
1 gal.	4,000	38 mm	6"	13 1/8"	42305T38	34.55
Wide Mouth						
4	125	38 mm	2"	3 15/16"	42305T44	3.30
8	250	43 mm	2 7/16"	5 3/16"	42305T45	4.96
16	500	53 mm	2 7/8"	6 5/8"	42305T46	6.85
32	1,000	63 mm	3 5/8"	8 1/8"	42305T47	12.47

Amber Bottles for Light-Sensitive Products

All have a threaded cap.

High-density polyethylene bottles have an amber polypropylene cap. Max. temperature is 248° F.

Glass bottles have a black phenolic cap with a PTFE seal.

Safety-coated glass bottles have a safety coating that keeps glass and contents contained if bottle breaks, and have a green melamine cap with a PTFE seal.

Narrow-Mouth Polyethylene

Wide-Mouth Glass

Capacity oz.	Capacity ml	Mouth OD	O'all Base Dia.	O'all Ht.		Each
High-Density Polyethylene						
Narrow Mouth						
1/2	15	20 mm	1"	2 5/16"	41055T31	$1.66
4	125	24 mm	2"	4"	41055T34	2.83
8	250	24 mm	2 3/8"	5 1/4"	41055T35	3.86
16	500	28 mm	2 7/8"	6 11/16"	41055T36	5.67
32	1,000	38 mm	3 5/8"	8 1/2"	41055T37	9.52
Wide Mouth						
2	60	28 mm	1 1/2"	3 3/8"	41055T22	3.04
4	125	38 mm	2"	3 7/8"	41055T23	3.51
8	250	43 mm	2 3/8"	5 3/16"	41055T24	5.24
16	500	53 mm	2 7/8"	6 5/8"	41055T25	6.84
32	1,000	63 mm	3 5/8"	7 7/8"	41055T26	12.18
Glass						
Narrow Mouth						
2	60	20 mm	1 9/16"	3 11/16"	6120T81	1.92
4	125	22 mm	1 7/8"	4 7/16"	6120T82	2.16
8	250	24 mm	2 3/8"	5 3/8"	6120T83	2.66
16	500	28 mm	2 15/16"	6 5/8"	6120T84	3.65
32	1,000	33 mm	3 11/16"	8 1/8"	6120T85	5.16
Wide Mouth						
1	30	28 mm	1 7/16"	2 9/16"	41265T31	1.83
2	60	33 mm	1 3/4"	2 15/16"	41265T32	2.30
4	125	38 mm	2 1/8"	3 3/4"	41265T33	2.74
8	250	45 mm	2 9/16"	4 11/16"	41265T34	3.67
16	500	53 mm	3 1/8"	5 3/4"	41265T35	4.68
32	1,000	53 mm	3 7/8"	7"	41265T36	6.12
Safety-Coated Glass						
Narrow Mouth						
4	120	22 mm	1 7/8"	4 3/8"	44715T51	6.81
8	240	24 mm	2 3/8"	5 3/8"	44715T34	7.42
16	480	28 mm	2 15/16"	6 5/8"	44715T35	9.50
32	960	33 mm	3 1/2"	8 1/8"	44715T36	13.64
Wide Mouth						
8	250	45 mm	2 9/16"	4 11/16"	44715T45	11.74
16	500	53 mm	3 1/8"	5 3/4"	44715T46	12.34
32	950	53 mm	4 1/16"	7"	44715T47	14.66
83	2,500	70 mm	5 1/2"	9 3/8"	44715T52	28.62

Plastic Bottles with Protective Coating

Both interior and exterior surfaces are fluorinated to prevent content loss due to permeation. Made of translucent high-density polyethylene, bottles are flexible, leakproof, and resist splitting and puncturing. Cap is threaded translucent polypropylene (except 41165T31 which is threaded white polypropylene). Max. temperature is 248° F.

Wide Mouth

Capacity oz.	Capacity ml	Mouth OD	O'all Base Dia.	O'all Ht.		Each
Narrow Mouth						
8	250	24 mm	2 3/8"	5 1/4"	5262T61	$4.08
16	500	28 mm	2 7/8"	6 3/4"	5262T62	5.70
32	1,000	38 mm	3 5/8"	8 1/2"	5262T63	10.13
64	2,000	38 mm	4 3/4"	9 7/8"	5262T64	28.44
1 gal.	4,000	38 mm	6"	13 1/8"	5262T65	43.21
Wide Mouth						
4	125	38 mm	2"	3 15/16"	41165T22	3.56
8	250	43 mm	2 3/8"	5 3/16"	41165T24	5.40
16	500	53 mm	2 7/8"	6 5/8"	41165T26	7.45
32	1,000	63 mm	3 5/8"	7 7/8"	41165T28	13.62
64	2,000	100 mm	4 1/2"	9 5/8"	41165T31	32.08

Metal Bottles

(C) Aluminum bottles are lightweight yet rigid. Cap is threaded white polypropylene with a polyethylene foam liner.

(D) Tin-plated steel bottles are leakproof. Cap is threaded tin-plated steel with a vinyl-coated pulp liner.

Capacity oz.	Capacity ml	Mouth OD	O'all Base Dia.	O'all Ht.		Each
(C) Aluminum						
2	60	24 mm	1 3/8"	4 1/8"	6810T51	$4.97
8	240	24 mm	2"	7"	6810T53	7.22
(D) Tin-Plated Steel						
12	360	23 mm	2 11/16"	5 5/8"	4084T69	3.15
16	500	23 mm	2 11/16"	7 3/16"	4084T77	6.62
32	1,000	38 mm	3 9/16"	7 3/16"	4084T78	11.93

C

D

Write-On Plastic Bottles

Narrow Mouth

Two labeling areas allow you to clearly identify bottles and contents. Just use a marker (not included) to write on the white label area. Bottles are flexible, leakproof, and made of translucent high-density polyethylene. Caps are threaded translucent polypropylene. Max. temperature is 212° F.

Capacity oz.	Capacity ml	Mouth OD	O'all Base Dia.	O'all Ht.		Each
Narrow Mouth						
16	500	20 mm	2 13/16"	6 13/16"	5082T6	$3.06
32	1,000	29 mm	3 9/16"	8 1/4"	5082T7	4.24
Wide Mouth						
16	500	43 mm	2 13/16"	6 13/16"	5082T8	4.09
32	1,000	43 mm	3 9/16"	8 1/4"	5082T9	5.13

Tamper-Evident Plastic Bottles

You will always know when these bottles have been opened due to their tamper-evident cap. The cap comes with an attached ring, and the cap becomes tamper-evident once it is threaded onto the bottle. Opening the bottle breaks the ring off the cap but still allows for threaded closure.

Bottles have a wide mouth and are flexible, leakproof, and made of translucent high-density polyethylene. Caps are blue polypropylene. Max. temperature is 212° F.

Capacity oz.	Capacity ml	Mouth OD	O'all Base Size	O'all Ht.		Each
16	500	43 mm	2 3/4"	6 7/16"	6497T1	$10.13
32	1,000	43 mm	3"	8 1/2"	6497T2	12.78

Graduated Bottles

A

B

C

D

E

F

Graduation marks help you accurately measure and dispense liquid contents. Wide mouths make these bottles easy to fill as well. All bottles come with a threaded cap.

(A) Flexible and translucent low-density polyethylene bottles are leakproof. Caps are white high-density polypropylene and have a hole in them for attaching a tag. Max. temperature is 176° F.

(B) Translucent high-density polyethylene bottles are rigid and leakproof. Caps are white polypropylene and have a hole for attaching a tag. Max. temperature is 248° F.

(C&D) Autoclavable translucent polypropylene bottles are flexible. The caps are white polypropylene and have a flip top for quick access. Max. temperature is 212° F.

(E) Autoclavable translucent polypropylene bottles with write-on area have a white area for writing with a marker (not included). The bottles are rigid and leakproof. Caps are white polypropylene. Max. temperature is 275° F.

(F) Clear glass bottles have black phenolic caps with a PTFE seal (except 42235T57, which has a green melamine cap). Not temperature rated.

Labeled Capacity	Graduation Intervals	Mouth OD	O'all Base Size	O'all Ht.		Each
(A) Flexible and Translucent Low-Density Polyethylene						
50 ml	10 ml	24 mm	1 1/2" dia.	3 1/2"	4577T41	$1.90
100 ml	20 ml	24 mm	1 7/8" dia.	4 1/16"	4577T42	2.41
250 ml	25 ml	38 mm	2 3/8" dia.	5 1/2"	4577T44	3.58
500 ml	100 ml	38 mm	2 15/16" dia.	6 5/8"	4577T46	4.47
1,000 ml	100 ml	55 mm	3 3/4" dia.	8 1/8"	4577T48	8.18
2,000 ml	100 ml	55 mm	4 3/4" dia.	9 13/16"	4577T21	11.26
(B) Translucent High-Density Polyethylene						
100 ml	20 ml	40 mm	1 21/32" × 1 7/8"	3 1/2"	41665T23	2.42
250 ml	25 ml	40 mm	2 1/4" × 2 3/8"	4 5/16"	41665T24	2.88
500 ml	100 ml	55 mm	2 3/4" × 3 5/32"	5 7/16"	41665T25	3.91
1,000 ml	100 ml	65 mm	3 5/32" × 4"	6 15/16"	41665T26	6.36
2,000 ml	100 ml	65 mm	3 15/16" × 5 1/4"	8 1/4"	41665T27	11.32
(C) Autoclavable Translucent Polypropylene						
16 oz./ 500 ml	4 oz. /100 ml	58 mm	3 1/8" sq.	5 1/2"	4169T51	2.69
32 oz./1,000 ml	4 oz. /100 ml	58 mm	3 1/8" sq.	8 7/8"	4169T52	3.48
64 oz./2,000 ml	8 oz. /200 ml	58 mm	5" × 3 3/4"	9 3/4"	4169T23	4.65
(D) Autoclavable Translucent Polypropylene with Handle						
1 gal./4,000 ml	16 oz. /500 ml	58 mm	7 3/4" × 4 3/4"	10 3/4"	4169T25	7.08
(E) Autoclavable Translucent Polypropylene with Write-On Area						
2 oz./ 60 ml	1/4 oz./ 5 ml	24 mm	1 9/16" dia.	3 1/4"	2801T51	3.19
4 oz./ 125 ml	1/2 oz./ 10 ml	33 mm	2" dia.	3 7/8"	2801T52	3.47
8 oz./ 250 ml	1/2 oz./ 25 ml	35 mm	2 3/8" dia.	5 11/16"	2801T53	4.88
16 oz./ 500 ml	1 oz. / 50 ml	45 mm	2 15/16" dia.	6 1/2"	2801T54	5.59
32 oz./1,000 ml	2 oz. /100 ml	54 mm	3 1/2" dia.	8 1/4"	2801T55	6.69
(F) Clear Glass						
1 oz./ 30 ml	1/8 oz./ 5 ml	33 mm	1 11/32" dia.	2 11/16"	42235T52	2.19
2 oz./ 60 ml	1/4 oz./ 5 ml	38 mm	1 5/8" dia.	3 9/32"	42235T53	2.57
4 oz./ 125 ml	1/4 oz./ 5 ml	48 mm	2" dia.	4"	42235T54	3.33
8 oz./ 250 ml	1/4 oz./ 10 ml	58 mm	2 7/16" dia.	5"	42235T55	4.35
16 oz./ 500 ml	1/2 oz./ 25 ml	70 mm	3" dia.	5 23/32"	42235T56	5.87
32 oz./ 960 ml	1 oz. / 25 ml	58 mm	4" sq.	8 1/4"	42235T57	8.31

Plastic Graduated Cylinders

G

H

J

K

All cylinders are autoclavable and have a pour spout. *Styles G* and *K* meet ISO 6706 standards and DIN 12680 TT, Class B tolerances.

(G&H) Translucent polypropylene cylinders have two styles. *Style G* has a max. temperature of 275° F. *Style H* has a grip handle for steady pouring and a dual scale that reads from top down and from bottom up. Max. temperature is 248° F.

(J) High-stability translucent polypropylene cylinders are more stout than other cylinders; they offer more stability and require less vertical storage space. Base has a drainage hole to prevent suction to wet surfaces. Max. temp. is 275° F.

(K) Clear polymethylpentene cylinders have a max. temperature of 275° F.

Labeled Capacity	Grad. Intervals	O'all Dia.	O'all Ht.		Each
(G) Translucent Polypropylene					
10 ml	0.2 ml	9/16"	5 1/2"	1475T9	$4.65
25 ml	0.5 ml	3/4"	6 11/16"	1475T11	5.03
50 ml	1.0 ml	1"	7 7/8"	1475T12	5.24
100 ml	1.0 ml	1 1/4"	9 7/8"	1475T13	6.61
250 ml	2.0 ml	1 5/8"	12 3/8"	1475T14	8.48
500 ml	5.0 ml	2 3/16"	14 3/16"	1475T15	11.78
1,000 ml	10.0 ml	2 1/2"	17 5/16"	1475T16	16.05
2,000 ml	20.0 ml	3 1/4"	21 1/16"	1475T17	37.63
(H) Translucent Polypropylene with Handle					
1,000 ml	10.0 ml	2 1/2"	17 5/16"	1475T18	28.47
2,000 ml	20.0 ml	3 1/2"	19 5/16"	1475T19	55.63

Labeled Capacity	Grad. Intervals	O'all Dia.	O'all Ht.		Each
(J) High-Stability Translucent Polypropylene					
100 ml	2.0 ml	1 1/2"	6 5/16"	3944T21	$15.20
250 ml	5.0 ml	2 1/8"	7 1/2"	3944T22	20.32
500 ml	10.0 ml	2 11/16"	8 1/2"	3944T23	26.29
1,000 ml	20.0 ml	3 3/16"	11 1/8"	3944T24	34.39
(K) Clear Polymethylpentene					
10 ml	0.2 ml	9/16"	5 1/2"	4436T31	6.96
25 ml	0.5 ml	13/16"	6 11/16"	4436T32	8.14
50 ml	1.0 ml	1"	7 7/8"	4436T33	10.33
100 ml	1.0 ml	1 1/4"	9 7/8"	4436T34	12.37
250 ml	2.0 ml	1 5/8"	12 3/8"	4436T35	15.44
500 ml	5.0 ml	2 3/16"	14 3/16"	4436T36	20.44
1,000 ml	10.0 ml	2 5/8"	17 5/16"	4436T37	25.45
2,000 ml	20.0 ml	3 1/4"	21 1/16"	4436T38	56.36

Plastic Graduated Beakers

A B C D E F G H J

(A) Clear polystyrene beaker has a triangular shape that makes pouring easy. Beaker also has an area for labeling. Max. temperature is not rated.

(B) Autoclavable translucent polypropylene beakers have a pour spout and ribs for stacking. Meet ISO/DIS 7056. Max. temperature is 275° F.

(C) Autoclavable clear polymethylpentene beakers have a pour spout and ribs for stacking. Meet ISO/DIS 7056. Max. temperature is 293° F.

(D&E) Autoclavable translucent polypropylene beakers with handle come in two styles. *Style D* is rectangular and has graduations on three sides. Not temperature rated. *Style E* has a pour spout and a max. temperature of 275° F (except for 9896T4, which is 248° F.)

(F) Autoclavable clear polymethylpentene beakers with handle have a pour spout and a max. temperature of 293° F. *Style H* has a pour spout.

(J) Easy-to-read FDA-compliant clear polycarbonate beakers with handle can be read from the side as well as from the top while pouring. They have a soft black nonslip handle for a better grip. Max. temperature is 194° F.

	Labeled Capacity	Graduation Intervals	Top Opening	O'all Ht.		Each
Beakers						
Clear Polystyrene						
A	34 oz./1,000 cc	2 oz./50 cc	4 7/16″×4 7/16″×4 7/16″	6″	41435T4	$1.20
Autoclavable Translucent Polypropylene						
B	30 ml	5 ml	1 9/16″ OD	2″	4440T61	3.08
B	50 ml	5 ml	1 7/8″ OD	2 3/8″	4440T62	3.14
B	100 ml	10 ml	2 3/8″ OD	3″	4440T63	3.73
B	250 ml	25 ml	3 1/8″ OD	3 11/16″	4440T64	6.69
B	400 ml	25 ml	3 5/8″ OD	4 7/16″	4440T68	8.83
B	600 ml	50 ml	4 1/8″ OD	5″	4440T65	12.40
B	1,000 ml	50 ml	5″ OD	6″	4440T66	15.64
Autoclavable Clear Polymethylpentene						
C	50 ml	5 ml	2″ OD	2 5/16″	40765T22	4.61
C	100 ml	10 ml	2 1/2″ OD	2 15/16″	40765T32	5.54
C	250 ml	25 ml	3 5/16″ OD	3 11/16″	40765T42	9.48
C	600 ml	50 ml	4 3/8″ OD	5″	40765T52	17.31
Beakers with Handles						
Autoclavable Translucent Polypropylene						
D	4 oz./125 ml/ 1/2 cup	1 oz./25 ml/1/8 cup/1/3 cup	3″ Lg. ×2″ Wd.	2 5/16″	9896T9	.86
D	8 oz./250 ml/1 cup	1 oz./25 ml/1/4 cup/1/3 cup	4″ Lg. ×2 1/2″ Wd.	2 15/16″	9896T7	.92
D	16 oz./500 ml/2 cup	1 oz./25 ml/1/4 cup/1/3 cup	5 1/8″ Lg. ×2 7/8″ Wd.	4 11/16″	9896T11	2.27
E	500 ml	25 ml/0.25 L	3 5/8″ OD	4 5/8″	9896T1	6.70
E	1,000 ml	50 ml/0.25 L	4 5/8″ OD	5 1/2″	9896T2	7.66
E	2,000 ml	50 ml/0.25 L	5 3/4″ OD	7″	9896T3	9.00
E	3,000 ml	100 ml/0.25 L	5 3/4″ OD	10 1/2″	9896T4	16.93
E	5,000 ml	250 ml/1.00 L	7 7/16″ OD	9″	9896T5	35.18
Autoclavable Clear Polymethylpentene						
F	32 oz./1,000 ml	4 oz./100 ml	4 3/16″ OD	7 3/16″	40755T28	50.98
F	96 oz./3,000 ml	8 oz./200 ml	6 5/8″ OD	7 5/8″	40755T29	59.48
NSF-Certified Clear Polycarbonate						
G	8 oz./ 225 ml/1 cup	1 oz./ 25 ml/1/8 cup	2 3/4″ OD	3 1/8″	4187T41	5.90
H	16 oz./ 500 ml/2 cup	1 oz./ 25 ml/1/8 cup	3 3/4″ OD	4 3/4″	4187T42	10.98
H	32 oz./1,000 ml/4 cup	2 oz./ 50 ml/1/4 cup	4 3/4″ OD	6 1/8″	4187T43	12.34
H	64 oz./2,000 ml/8 cup	4 oz./125 ml/1/2 cup	5 5/8″ OD	8 1/2″	4187T44	17.02
H	4 qt./4 L	0.50 qt./0.50 L	7″ OD	10 1/2″	4187T45	18.46
Easy-to-Read FDA-Compliant Clear Polycarbonate						
J	8 oz./ 250 ml/1 cup	1 oz./10 ml/1/4 cup/1/3 cup	5 7/8″ Lg. ×3 1/2″ Wd.	3 3/4″	3683T32★	7.71
J	16 oz./ 500 ml/2 cup	1 oz./10 ml/1/4 cup/1/3 cup	7 3/16″ Lg. ×4 3/8″ Wd.	4″	3683T34★	8.80
J	32 oz./1,000 ml/4 cup	1 oz./10 ml/1/4 cup/1/3 cup	8 15/16″ Lg. ×5 3/4″ Wd.	5 3/8″	3683T36●	10.99

★ After 100 ml, graduation marks are labeled in intervals of 50 ml.
● After 8 oz., graduation marks are labeled in intervals of 2 oz.

Glass Graduated Beakers

Glass offers excellent clarity and won't react with most chemicals. All beakers have pour spouts and are autoclavable.

Labeled Capacity	Grad. Intervals	Top Opening, dia.	O'all Ht.		Each
50 ml	10 ml	1 5/8″	2″	2766T51	$3.72
100 ml	10 ml	1 5/16″	2 13/16″	2766T52	3.87
250 ml	25 ml	2 11/16″	3 7/16″	2766T53	4.12
600 ml	50 ml	3 7/16″	4 13/16″	2766T54	5.56
1,000 ml	50 ml	4 13/16″	5 11/16″	2766T55	10.43
2,000 ml	100 ml	5 1/8″	7 1/2″	2766T56	20.69

Plastic Graduated Flasks

Tapered sides make these flasks perfect for mixing solutions. Flasks are rigid, autoclavable, and made of clear polycarbonate, unless noted. Caps are translucent polypropylene. Maximum temperature is 275° F.

Labeled Capacity	Grad. Intervals	Mouth OD	O'all Base Dia.	O'all Ht.		Each
125 ml	25 ml	33 mm	2 5/8″	4 3/8″	4683T82	$14.55
250 ml	25 ml	38 mm	3 1/4″	5 7/16″	4683T83	19.57
500 ml	50 ml	43 mm	4″	7″	4683T84	28.90
1,000 ml	50 ml	53 mm	5 1/8″	8 3/4″	4683T85 ♦	40.88

♦ Made of clear polymethylpentene.

Stainless Steel Beakers

All beakers are autoclavable and have a pour spout. They are 22-gauge, 300 series stainless steel, unless noted.

Capacity	Outside Dia.	O'all Ht.		Each
Plain Beakers without Handle				
4 oz.	2 7/16″	2 5/8″	4352T2	$25.45
8 oz.	2 15/16″	3 7/16″	4352T3	28.49
20 oz.	3 3/4″	4 1/2″	4352T4	30.09
40 oz.	4 5/8″	5 7/8″	4352T5	35.07
67 oz.	5 3/16″	7 1/8″	4352T6	52.37
101 oz.	5 3/4″	8 1/4″	4352T7	55.46
135 oz.	6 9/16″	9 1/4″	4352T8	72.02

■ 18-gauge.

Capacity	Labeled Graduations	Outside Dia.	O'all Ht.		Each
Plain Beakers with Handle					
60 oz.	_____	5 1/16″	6 5/8″	4325T1	$44.69
96 oz.	_____	6 1/16″	7″	4325T2	57.64
Graduated Beaker with Handle					
1 gal./4,000 cc	4 oz./200 cc	6 7/8″	9″	4343T12	106.67
NSF-Certified Graduated Beakers with Handle					
1 pt. / 500 cc	2 oz./ 50 cc	3 3/4″	4 5/8″	4343T1■	54.41
1 qt. /1,000 cc	2 oz./100 cc	4 7/8″	5 5/32″	4343T2■	68.55
2 qt. /2,000 cc	4 oz./100 cc	5 9/16″	6 3/4″	4343T3■	79.14

Plain Beaker without Handle

Graduated Beaker with Handle

Liquid Dispensers

A&B C

(D&E) High-capacity dispensers are also known as basters. *Stainless steel* dispenser also comes with a stainless steel injector needle and a brush.

D E

Cap.	Grads.	O'all Lg.	Pkg. Qty.		Per Pkg.
Eyedroppers					
(A) Glass					
1.3 ml	—	4″	6	4168T22	$14.84
(B) Polyethylene					
0.5 ml	—	3″	6	4168T11	16.03
1.0 ml	—	4½″	6	4168T12	17.22
One-Piece Liquid Droppers					
(C) Polyethylene					
1.5 ml	0.5 ml	5¼″	50	40865T91	16.87
5.0 ml	1.0 ml	7⅝″	50	40865T92	17.96
					Each
High-Capacity Dispensers					
(D) Polyethylene					
1 oz.	¼ oz.	11″	—	1990T23	$3.20
(E) Stainless Steel					
1 oz.	—	10¼″	—	1990T24	11.33

Measuring Pipettes

With Suction Bulb

With Pipette Pump

Whether you prefer tradition or technology, both the suction bulb and pipette pump come with a pipette and allow you to transfer precise amounts of liquid.

Pipette ***with suction bulb*** favors the traditional two-handed measuring method. Bulb is vinyl and 4″ long.

Pipette ***with pipette pump*** is designed for single-hand use. It is polypropylene and 7¼″ long.

Cap., ml	Grads., ml	Pipette Lg.	*With Suction Bulb* Each	*With Pipette Pump* Each
1	0.10	12″	41405T21 $17.70	41405T31 $28.72
2	0.10	12″	41405T22 19.44	41405T32 30.60
5	0.10	13″	41405T23 19.89	41405T33 32.68
10	0.10	13¼″	41405T24 21.49	41405T34 33.57

Burettes

When you need exact measurements, try a burette instead of a pipette. Burettes have a stopcock that allow you to release a more precise amount of liquid—either in drops or a stream. Both are made of clear glass and have 0.1 ml graduations. They come with a flexible, translucent polyethylene reservoir and a removable white plastic base.

Reservoir Cap., ml	Burette Cap., ml	O'all Ht.	Base Dia.		Each
500	10	18½″	4¹¹⁄₁₆″	7432T3	$214.91
1,000	10	18½″	5⅜″	7432T5	221.73

Type 304 Stainless Steel Spoons

F G

(F) Combination spoon/spatula has the spoon angled from the handle.

Cap., ml	O'all Lg.		Each
(F) Combination Spoon/Spatula			
1.5	5⅞″	41705T83	$28.40
1.5	8¼″	41705T84	31.99
8	15¾″	41705T86	64.66
(G) Double-Sided Spoon			
0.5, 2	5⅞″	41705T41	29.57
0.8, 2.8	7¹⁄₁₆″	41705T42	33.30
1.6, 5	8¼″	41705T43	38.50
2, 8	11¹³⁄₁₆″	41705T45	44.26

Plastic Dippers

H

J

K

Cap., oz.	Top OD	Handle Lg.		Per Pkg.
(H) Polypropylene Dippers—*Translucent white; package of 10*				
3⁄16	1⁵⁄₁₆″	5¹⁄₁₆″	8999T41	$5.99
1	1⅝″	4⅜″	8999T42	8.69
2⅜	1¹³⁄₁₆″	1½″	8999T43	9.29
				Each
(J) Short-Handle Polyethylene Dippers—*White*				
1¹¹⁄₁₆	1½″	9″	8999T12	$10.41
3⅜	2″	8⅞″	8999T13	11.48
8⁷⁄₁₆	3½″	9½″	8999T14	13.09
20¼	4″	9½″	8999T16	14.72
33¹³⁄₁₆	5⅝″	11¾″	8999T17	34.33
(K) Extra-Long-Handle Polyethylene Dippers—*White*				
16⅞	4″	36″	9000T12	31.70
16⅞	4″	72″	9000T13	41.27
16⅞	4″	144″	9000T14	97.00
33¹³⁄₁₆	5⅝″	36″	9000T15	47.18
33¹³⁄₁₆	5⅝″	72″	9000T16	56.76
33¹³⁄₁₆	5⅝″	144″	9000T17	99.74

Metal Dippers

L

M

N

P

	Cap., oz.	Top OD	Handle Lg.		Each
Galvanized Steel Dipper—*Handle welded to bowl*					
L	56	6¼″	8″	4391T41	$15.57
Type 304 Stainless Steel Dippers—*One-piece construction*					
M	1	2¼″	10½″	4394T1	5.60
M	3	3″	12¼″	4394T3	7.44
M	4	3¼″	12¼″	4394T9	10.04
300 Series Stainless Steel Dippers—*Handle welded to bowl*					
N	2	2¼″	9⅞″	4394T2	11.58
N	6	3⅝″	12⅜″	4394T4	15.57
N	8	4″	12⅝″	4394T5	17.56
N	12	4⅜″	12⅛″	4394T6	24.05
N	24	6″	18⅛″	4394T7	38.14
N	72	8⅛″	17″	4394T8	74.87
Type 304 Stainless Steel Dipper with Graduations—*Handle welded to bowl; bowl has 2 oz. graduations.*					
P	32	4⅞″	20″	4394T84	116.00

Liquid Nitrogen Dispensing Containers

With Two Carrying Handles

Store, transport, and dispense liquid nitrogen from these rugged cryogenic containers. All have welded double aluminum walls that are vacuum insulated for maximum thermal protection.

Cap., liters	Opening Dia.	O'all Dia.	O'all Ht.		Each
With One Carrying Handle					
5	2³⁄₁₆″	8¹³⁄₁₆″	18¹³⁄₁₆″	8987T24	$630.00
10	2³⁄₁₆″	10⁵⁄₁₆″	22⅛″	8987T26	695.04
With Two Carrying Handles					
21	2″	14½″	25⁵⁄₁₆″	8987T32	920.77
32	2½″	17″	24¹¹⁄₁₆″	8987T33	1,067.05

Test Tubes

Use these test tubes to transport, store, mix, and sample small amounts of liquids and powders.

Plastic test tubes are made of FDA-compliant resins. Choose from *polypropylene,* which are translucent, autoclavable, and have a max. temperature of 275° F and *polystyrene,* which are clear and have a max. temperature of 158° F. *Graduated test tubes* are labeled every 1 ml.

Glass test tubes are clear, autoclavable, and chemical resistant. Max. temperature is 950° F.

Optional caps have a max. temperature of 176° F. Caps for plastic test tubes are white polypropylene (except 6946A18, which is clear low-density polyethylene, and 6946A21, which is translucent polypropylene). Caps for glass test tubes are translucent low-density polyethylene.

Graduated Polystyrene

Standard Polypropylene with Optional Cap

O'all Ht.	O'all Dia.	Capacity	Pkg. Qty.	Polypropylene (Plastic Test Tubes)	Per Pkg.	Polystyrene (Plastic Test Tubes)	Per Pkg.	Optional Caps (Plastic Test Tubes)	Per Pkg.	Glass (Glass Test Tubes)	Per Pkg.	Optional Caps (Glass Test Tubes)	Per Pkg.
Standard													
3″ 75 mm	1/2″ 12 mm	1/8 oz.	10	6946A11	$1.19	7012A44	$1.19	6946A16	$0.97	2378T41	$2.38	2378T45	$1.43
4″ 100 mm	5/8″ 16 mm	1/2 oz.	10	6946A12	1.94	7012A45	1.94	6946A17	1.25	2378T42	3.57	2378T46	1.90
5″ 125 mm	5/8″ 16 mm	5/8 oz.	10	6946A13	2.25	7012A46	2.25	6946A17	1.25	2378T43	4.17	2378T46	1.90
6″ 150 mm	5/8″ 16 mm	3/4 oz.	10	6946A14	4.22	7012A47	4.22	6946A21	1.56	2378T44	4.76	2378T46	1.90
Graduated													
4″ 100 mm	5/8″ 16 mm	1/2 oz.	10	6946A15	1.94	7012A48	1.94	6946A18	1.31	—	—	—	—

Test Tube Holders

Holders stabilize test tubes and keep them upright. They are made of white polypropylene and are rust resistant, corrosion resistant, and autoclavable. Max. temperature is 266° F.

For Test Tube Dia.	No. of Test Tubes Held	O'all Size, Ht. × Wd. × Dp.		Each
1/2″ 12 mm/13 mm	42	2 13/16″ × 5″ × 4 1/8″	1484T5	$23.73
5/8″ 16 mm/17 mm	30	2 13/16″ × 5″ × 4 1/8″	1484T6	24.84
3/4″ 20 mm	20	2 13/16″ × 5″ × 4 1/8″	1484T7	26.05

Petri Dishes

You'll find many uses for these clear, polystyrene sterile dishes. The dish *with vented cover* has three equally spaced ridges on the cover to raise it slightly for improved air flow. Max. temperature is 158° F.

With Standard Cover

O'all Dia.	O'all Ht.	Pkg. Qty.		Per Pkg.
With Standard Cover				
3 1/2″ 89 mm	5/8″ 16 mm	20	3854T81	$6.42
With Vented Cover				
3 1/2″ 89 mm	5/8″ 16 mm	20	3854T82	6.94

Jugs

All jugs come with a threaded cap.

(A&B) High-density polyethylene jugs with handle have a white polypropylene cap with foam seal. Not temperature rated. *Style A* is leakproof.

(C) Heavy duty low-density polyethylene jug with handle is leakproof. Cap is white low-density polyethylene. Max. temperature is 176° F.

(D&E) Glass jugs with finger ring have black phenolic caps with a PTFE seal. Not temperature rated. *Style E* is amber colored to protect contents that are sensitive to light and UV rays.

(F) Tin-plated steel jugs with and without handle have a cap that is tin-plated steel with a vinyl-coated pulp seal. Not temperature rated.

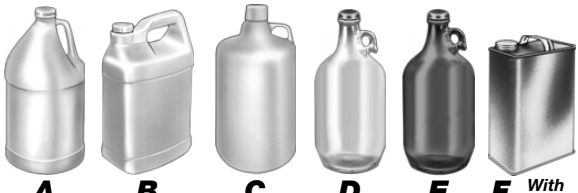

Capacity	Mouth OD	O'all Base Size	O'all Ht.		Each
High-Density Polyethylene					
(A) Round with Handle— *Translucent*					
64 oz.	1,893 ml.	38 mm	4 13/16″ dia.	9 1/2″	4266T59	$2.61
1 gal.	3,785 ml.	38 mm	6 1/8″ dia.	11 11/16″	4266T61	3.29
(B) Rectangular with Handle— *Opaque White*					
16 oz.	480 ml.	33 mm	4 1/8″ × 1 3/4″	6″	46125T44	2.71
32 oz.	960 ml.	33 mm	5 3/16″ × 2 1/8″	7 1/2″	46125T45	3.35
64 oz.	1,920 ml.	38 mm	5 3/16″ × 3 3/8″	9″	46125T46	4.48
1 gal.	4,000 ml.	38 mm	7 1/8″ × 4 1/2″	11 5/8″	46125T7	4.77
Low-Density Polyethylene					
(C) Heavy Duty Round with Handle— *Translucent*					
1 gal.	3,800 ml.	38 mm	6″ dia.	13″	4223T1	49.33

Capacity	Mouth OD	O'all Base Size	O'all Ht.		Each
Glass					
(D) Round with Finger Ring— *Clear*					
64 oz.	2,000 ml.	38 mm	4 15/16″ dia.	10 7/16″	3137T21	$12.16
1 gal.	3,840 ml.	38 mm	6 5/8″ dia.	11 1/2″	3137T22	14.96
(E) Round with Finger Ring— *Amber*					
1 gal.	3,785 ml.	38 mm	6 1/4″ dia.	13 7/16″	3137T32	15.76
Tin-Plated Steel					
(F) Rectangular without Handle					
16 oz.	473 ml.	25 mm	3 15/16″ × 1 3/4″	6 1/4″	4084T33	4.21
32 oz.	946 ml.	32 mm	4 5/8″ × 2 3/8″	7 3/8″	4084T64	5.03
(F) Rectangular with Handle					
64 oz.	1,892 ml.	32 mm	5 1/8″ × 3 1/2″	7 5/8″	4084T55	7.47
1 gal.	3,785 ml.	45 mm	6 5/8″ × 4 1/8″	9 7/8″	4084T56	9.17

Carboy Dispensing Rack

Combine this easy-to-assemble rack with up to four carboys (sold separately) to organize and dispense a variety of liquids. Made of gray plastic and measures 48″ Ht. × 14″ Wd. × 15 1/2″ Dp. It supports up to 200 lbs. of liquid in four 5-gal. plastic containers.

5-gal. carboy is made of translucent polyethylene and has 1-gal. graduations. Size is 10″ Ht. × 9 3/4″ Wd. × 19″ Dp. Container has a 3 1/4″ dia. top fill opening with a screw cap that has a vent opening. The bottom drain opening is 1 1/4″ dia. and has a screw-on faucet for dispensing liquids.

Carboy

Rack with Four Optional Carboys

		Each
Rack	40125T11	$99.74
5-Gallon Carboy	40125T21	19.16

Carboys with Protective Coating

These carboys are fluorinated inside and out to reduce solvent absorption and enhance long-term container performance. All carboys are translucent high-density polyethylene with a fluorinated white polypropylene cap. Max. temperature is 248° F.

Without Faucet

With Faucet

Capacity gal. L	Graduation Intervals	Mouth OD	O'all Base Size	O'all Ht.		Each
Carboys without Faucet						
3 12	1/2 gal./2 L	53 mm	9″ × 7 1/2″	14 1/2″	9091T44	$79.01
6 1/2 25	1 gal. /4 L	53 mm	12″ × 9″	17 1/2″	9091T45	113.28
Carboys with Tefzel Faucet and Stainless Steel Handle						
2 1/3 9	1/4 gal./1 L	89 mm	5 3/4″ × 8 1/2″	13 1/2″	9091T54	186.65
5 1/4 20	1/4 gal./1 L	89 mm	8 5/8″ × 12 1/2″	15″	9091T55	193.70

Carboys

Carboys boast greater storage capacity than jugs. *Style A* are made of FDA-compliant resins and have bottom hand grips for easy pouring. *Carboys with pouring spout* offer less splash and better control when pouring. *Style F* have bottom hand grips for easy pouring and a tether to keep the cap attached to the carboy. *Style G* have a spout that can be stored inside the container to save space.

A **B** **C** **D** **E** **F** **G**

Capacity gal.	Capacity L	Graduation Intervals	Mouth OD	O'all Base Size	O'all Ht.	Max. Temp.	Color of Carboy/Cap		Each
Carboys									
(A) Rectangular High-Density Polyethylene—*High-density polyethylene cap*									
2½	10	—	63 mm	9⅝″ × 9¾″	7¼″	230° F	White/White	43005T2	$19.09
5	20	—	63 mm	9⅝″ × 9¾″	13½″	230° F	White/White	43005T3	29.77
Optional Low-Density Polyethylene Faucet (⅝″ OD outlet) for Style A								4461T2	$2.14
(B) Rectangular High-Density Polyethylene with Stainless Steel Handle—*Polypropylene cap*									
2	9	¼ gal./1 L	100 mm	8 11/16″ × 6″	14 3/16″	248° F	Translucent/White	9884T13	74.53
5	20	¼ gal./1 L	100 mm	12⅝″ × 9″	15 11/16″	248° F	Translucent/White	9884T14	109.35
(C) Autoclavable Octagonal Polypropylene—*Polypropylene cap*									
1¼	5	0.5 L	30 mm	7½″ × 7½″	10⅝″	275° F	Translucent/White	3795T25	36.13
2½	10	0.5 L	70 mm	9⅜″ × 9⅜″	14⅛″	275° F	Translucent/White	3795T26	59.61
5	20	0.5 L	70 mm	11 13/16″ × 11 13/16″	16½″	275° F	Translucent/White	3795T27	75.37
(D) Round Low-Density Polyethylene—*Polypropylene cap*									
6½	25	¼ gal./1 L	83 mm	11 5/16″ dia.	23⅜″	176° F	Translucent/White	4223T3	119.61
13	50	¼ gal./1 L	83 mm	14 15/16″ dia.	26 11/16″	176° F	Translucent/White	4223T4	213.84
(E) Round High-Density Polyethylene—*High-density polyethylene cap*									
5	20	½ gal./5 L	83 mm	10⅞″ dia.	19⅝″	248° F	Translucent/White	4223T2	92.40
Carboys with Pouring Spout									
(F) Round Low-Density Polyethylene—*Polypropylene cap*									
2½	10	1 qt./1 L/1 gal.	83 mm	9⅞″ dia.	15 5/16″	176° F	Translucent/White	9093T33	186.07
5	20	1 qt./1 L/1 gal.	83 mm	11⅛″ dia.	20 11/16″	176° F	Translucent/White	9093T34	227.37
(G) Rectangular High-Density Polyethylene—*High-density polyethylene cap (unless noted)*									
2½	10	—	44.5 mm	9″ × 7½″	13¾″	200° F	Translucent/White	48685T2	12.77
6	22.7	—	12.7 mm	14 5/16″ × 6 11/16″	21 9/16″	—	Blue/White	48685T3★	24.11

★ Has a polypropylene cap.

Carboys with Faucets

You don't need to lift these carboys to dispense their contents—just turn on the faucet. *Style N* can be compressed as liquid is dispensed to save space. Easy to store when not in use.

H **J** **K** **L** **M** **N** **Shown Collapsed**

Capacity gal.	Capacity L	Graduation Intervals	Mouth OD	O'all Base Size	O'all Ht.	Faucet OD	Max. Temp.	Color of Carboy/Cap		Each
(H) Low-Profile Square High-Density Polyethylene—*Polypropylene cap and faucet*										
4	15	—	63 mm	14½″ sq.	8″	⅝″	248° F	Translucent/White	9884T15	$140.09
(J) Rectangular High-Density Polyethylene—*High-density polyethylene cap and low/high-density polyethylene faucet*										
1¼	5	¼ gal./1 L	45 mm	5½″ × 12¾″	10″	13/16″	212° F	Translucent/White	4373T1	108.58
2½	10	½ gal./2.5 L	45 mm	7 5/16″ × 13¼″	14″	13/16″	212° F	Translucent/White	4373T2	134.65
5	20	1 gal./5 L	45 mm	9 5/16″ × 15″	16″	13/16″	212° F	Translucent/White	4373T3	166.64
(K) Rectangular High-Density Polyethylene with Stainless Steel Handle—*Polypropylene cap and faucet*										
2	9	1 qt./1 L/1 gal.	100 mm	6″ × 10½″	14 3/16″	⅝″	248° F	Translucent/White	9884T11	123.99
5	20	1 qt./1 L/1 gal.	100 mm	9″ × 14½″	15 11/16″	⅝″	248° F	Translucent/White	9884T12	155.12
(L) Autoclavable Octagonal Polypropylene—*Polypropylene cap and faucet*										
1¼	5	0.5 L	30 mm	7½″ × 8″	10⅝″	5/16″	275° F	Translucent/White	3795T35	51.79
2½	10	1 L	70 mm	9⅜″ × 10″	14⅛″	5/16″	275° F	Translucent/White	3795T36	72.96
5	20	1 L	70 mm	11 13/16″ × 12″	16½″	5/16″	275° F	Translucent/White	3795T37	87.53
(M) Round Low-Density Polyethylene—*Low-density polyethylene cap and faucet*										
1	3.8	—	38 mm	6″ dia.	14″	¾″	176° F	White/White	4217T1	70.39
2	7.6	—	53 mm	7½″ dia.	16″	¾″	176° F	White/White	4217T2	93.93
6½	24.6	—	90 mm	10½″ dia.	25″	¾″	176° F	White/White	4217T5	140.95
(N) Collapsible Square Low-Density Polyethylene—*Medium-density polyethylene cap and faucet*										
2½	10	—	39.5 mm	9″ sq.	9″	9/16″	212° F	Clear/Red	4414T2	11.95
5	20	—	50 mm	11 5/16″ sq.	11 5/16″	9/16″	212° F	Clear/Red	4414T3	13.98

Pitchers

(A) Graduated low-density polyethylene pitchers have a 3/8″ OD detachable flexible spout that is 13 1/2″ long (unless noted). 9899T11 has 1/4 qt. and 1 liter graduations. 9899T12 has 1/2 qt. and 1 liter graduations. 9899T15 has 1 qt. and 1 liter graduations. Color is translucent.

(B) Large capacity high-density polyethylene pitcher has a long rigid spout for pouring in hard to reach areas. Color is black.

(C-E) Galvanized steel pitchers are galvanized for strength and corrosion resistance. *Style C* has a wide pouring lip with tapered neck to limit spills. *Style D* comes with a fixed spout. *Style E* has a flexible spout.

(F) Large capacity galvanized steel pitcher has a rigid spout and handle on the side and top. Partially enclosed top limits spills.

(G) Graduated steel pitchers with flow control have a flexible spout, recessed bottom for complete draining, enclosed top to limit spills, and a thumb-operated flow control that can be locked in the open position for easy pouring. All have 1 qt. and 1 liter graduations. Color is black.

(H) NSF-certified aluminum pitchers are seamless, anodized aluminum, and have a lip around the top.

Cap.	O'all Ht.	Spout OD×Lg.	Top Opening Size		Each
Graduated Low-Density Polyethylene					
A ... 32 oz.	10 7/8″	5/8″ × 2 1/2″	2 5/8″ Lg. × 1 11/16″ Wd.	9899T11 ♦	$9.23
A ... 64 oz.	12 1/2″	7/8″ × 2 1/2″	3 3/4″ Lg. × 1 5/8″ Wd.	9899T12	9.77
A ... 1 1/4 gal.	13 1/2″	7/8″ × 2 1/2″	4 7/8″ Lg. × 2 1/2″ Wd.	9899T15	15.38
Large Capacity High-Density Polyethylene					
B .. 3 gal.	17 1/2″	1″ × 11″	4″ dia.	4317T6	17.92
Galvanized Steel					
C .. 32 oz.	6 1/2″	—	3″ dia.	4364T7	12.36
C .. 64 oz.	7 3/4″	—	4″ dia.	4364T8	14.40
C .. 1 gal.	10 1/4″	—	4 1/2″ dia.	4364T9	16.94
D .. 32 oz.	7 3/4″	3/4″ × 2 1/2″	2 3/4″ dia.	4364T4	14.85
D .. 64 oz.	9 3/4″	1″ × 2 5/8″	3 5/8″ dia.	4364T5	17.57
D .. 1 gal.	12 1/4″	1″ × 2 5/8″	3 5/8″ dia.	4364T6	18.66
E ... 32 oz.	7 3/8″	1/2″ × 7 5/8″	2 3/4″ dia.	4364T1	20.72
E ... 64 oz.	9 3/4″	3/4″ × 12″	3 5/8″ dia.	4364T2	26.07
E ... 1 gal.	12 1/4″	3/4″ × 12″	3 5/8″ dia.	4364T3	25.15
Large Capacity Galvanized Steel					
F ... 3 gal.	12 3/4″	7/8″ × 5 1/2″	6″ Lg. × 4 1/2″ Wd.	4317T3	29.08
Graduated Steel with Flow Control					
G .. 1 gal.	7 1/2″	5/8″ × 14″	5 1/2″ Lg. × 4 1/2″ Wd.	4340T45	55.57
G .. 1 1/4 gal.	10″	5/8″ × 14″	5 1/2″ Lg. × 4 1/2″ Wd.	4340T7	57.56
G .. 2 gal.	12″	5/8″ × 14″	5 1/2″ Lg. × 4 1/2″ Wd.	4340T9	60.58
NSF-Certified Aluminum					
H .. 16 oz.	4 1/8″	—	4 1/4″ dia.	4346T1	24.51
H .. 32 oz.	5 1/2″	—	5″ dia.	4346T2	28.07
H .. 64 oz.	7 1/4″	—	6 1/4″ dia.	4346T3	33.91
H .. 1 gal.	9 1/4″	—	7 5/8″ dia.	4346T4	41.00

♦ Spout is 11″ long.

Contaminant-Resistant Dispensing System

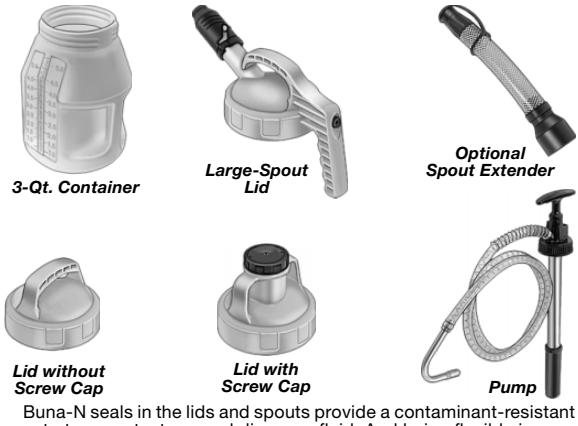

Buna-N seals in the lids and spouts provide a contaminant-resistant way to transport, store, and dispense fluid. And being flexible is easy with this system—containers and lids are fully interchangeable so you can create an arrangement that is perfect for your needs. The system is antistatic, UV resistant, and made of high-density polyethylene. Max. temperature is 176° F. *Note:* Not for use with fuels or solvents.

Containers— Have quart and liter graduations. Color is translucent.

Lids— Come in a choice of five colors so you can color-code your containers. *Small-*, *medium-*, and *large-spout lids* have a twist-to-open spout and push-button air valve. **To Order:** Please specify lid color: black, blue, green, red, or yellow.

Optional Accessories— *Spout extenders* provide more controlled pouring. *Pump* for *lid with screw cap* (5199T58) discharges approximately 1 qt. per 14 downstrokes. It comes with a curved, antidrip 1/2″ OD nozzle and 59″ long hose. *Reducer nozzle* changes the pump OD from 1/2″ to 3/8″.

Containers

Cap.	Opening Size ID	Opening Size OD	O'all Size, Dia. × Ht.		Each
2 qt.	4 13/16″	5″	6 13/16″ × 8 13/16″	5199T51	$14.34
3 qt.	4 13/16″	5″	6 13/16″ × 10 1/2″	5199T52	17.53
5 qt.	4 13/16″	5″	7″ × 11″	5199T53	20.60
10 qt.	4 13/16″	5″	9 13/16″ × 13 13/16″	5199T54	44.17

Lids

	Spout OD × Lg.	O'all Size			Each
Small Spout	3/8″ × 4 7/8″	12 1/2″ Lg.	× 4 3/8″ Ht.	5199T55	$45.81
Medium Spout	5/8″ × 8″	17″ Lg.	× 6 1/4″ Ht.	5199T56	46.46
Large Spout	1 1/8″ × 4 1/2″	11 1/4″ Lg.	× 5″ Ht.	5199T57	56.70
w/o Screw Cap	—	5 3/4″ Dia.	× 4″ Ht.	5199T59	21.50
w/ Screw Cap	—	5 3/4″ Dia.	× 4 3/4″ Ht.	5199T58	24.83

Optional Accessories

		Each
Spout Extender for Small and Med. Lids (11 1/2″ Lg.)	5199T61	$16.90
Spout Extender for Large Lid (10″ Lg.)	5199T62	24.45
Pump for Lid with Screw Cap (5199T58)	5199T63●	81.67
Reducer Nozzle for Pump	5199T64	3.84

● Pump requires a container that is 3 quarts or larger.

Self-Closing Dispensers

Safely dispense flammable liquids with these containers. Just turn the bottle upside down and push against the flange; release to close. Bottle is leakproof and made of high-density polyethylene. FM approved. Color is red. Max. temperature is 120° F.

32 oz.

Cap.	O'all Dia.	O'all Ht.		Each
8 oz.	3 1/8″	5 1/2″	4321T4	$27.78
32 oz.	4″	10 1/2″	4321T3	32.13

Push-Bottom Dispensers

Simply push on the bottom to dispense liquids. These translucent low-density polyethylene dispensers are lightweight, leakproof, and have a nozzle cap.

10 oz.

Cap.	O'all Dia.	O'all Ht.	Nozzle OD × Lg.		Each
6 oz.	3 1/4″	5 1/2″	1/8″ × 3″	4010T35	$9.19
10 oz.	3 1/4″	6 3/4″	1/8″ × 3″	4010T36	10.76
16 oz.	5″	9 1/2″	3/16″ × 6″	4010T38	14.72

Squeeze Bottles

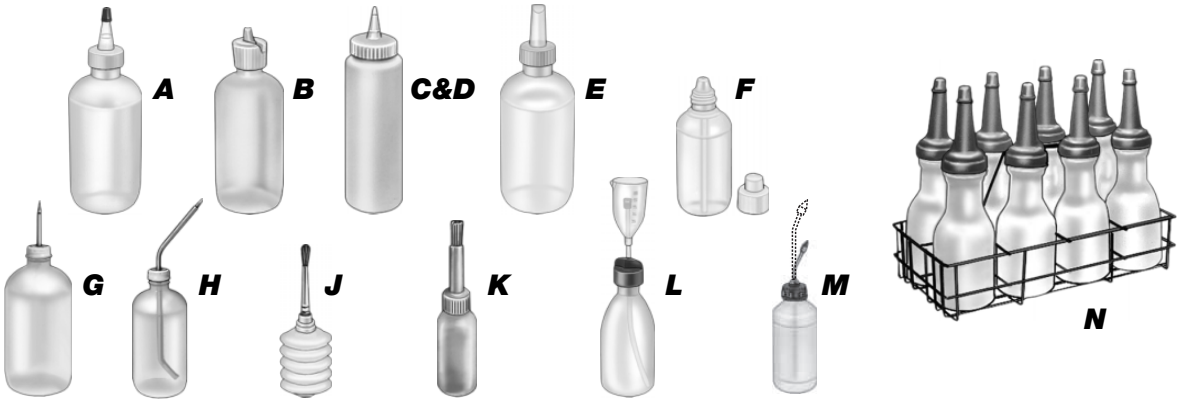

Dispense solutions, dyes and inks (unless otherwise indicated), and other fluids. All bottles are translucent, except Style C, and have threaded caps. Low-density polyethylene bottles are softer and more pliable than high-density polyethylene bottles.

Low-Density Polyethylene

A ***With Standard Nozzle—*** Include a nozzle cover.

B ***With Flip-Up Nozzle—*** Nozzle flips up for dispensing.

C ***Choose-a-Color—*** Cap and bottle are colored for easy identification. **To Order:** Please specify color: clear, red, or yellow.

D ***Antistatic—*** Static-safe bottle has an average surface resistivity of 10^9-10^{10} ohms/sq. Cap and bottle are translucent blue.

E ***With Wide Dispensing Pattern—*** Bottles have a 5/16″ wide ribbon applicator cap.

F ***Sprayer/Dropper—*** Use with the tube to dispense a stream of liquid; remove the tube to use as a dropper. Bottle comes with tube and nozzle cover. *Note:* Not for inks.

G ***With Straight Rigid Precision Nozzle—*** Have a 2″ long aluminum nozzle with nozzle cover.

H ***With Angled Rigid Precision Nozzle—*** Have a 3 3/4″ long aluminum nozzle with nozzle cover, and include an internal tube that reaches to the bottom.

J&K ***With Brush Applicator—*** *Style J* comes with an external Type 304 stainless steel tube and choice of brush material. **To Order:** Please specify brush material: soft camel hair or nylon.

Style K is excellent for cleaning circuit boards, and comes with choice of brush material. *Note:* Not for dyes and inks. **To Order:** Please specify brush material: static-safe horsehair or nylon.

L ***Precise Volume—*** Clear graduated polymethylpentene cup dispenses exact volume of liquid. Simply squeeze the bottle to fill the cup to the desired level. Cup graduation marks are every 5 ml (up to 25 ml).

High-Density Polyethylene

M ***With Adjustable Nozzle—*** Nozzle extends for dispensing in hard-to-reach areas and has a nondrip top.

N ***Dispensing Bottle Set—*** Includes eight bottles, eight nozzles with covers, and one steel wire basket with handle (18″ Lg. × 9″ Wd. × 3 3/4″ Ht.).

	Cap., oz.	O'all Dia.	O'all Ht.	Pkg. Qty.		Per Pkg.
Low-Density Polyethylene						
With Nozzle						
A	1	13/16″	3 7/8″	12	**4176T1**	$13.19
A	2	1 7/16″	4 1/4″	12	**4176T8**	15.04
A	4	1 7/8″	5 11/16″	6	**4176T2**	9.58
A	6	2 3/16″	6 3/8″	6	**4176T3**	12.70
A	8	2 3/8″	6 7/8″	6	**4176T4**	13.22
A	16	3 1/8″	7 11/16″	1	**4176T6**	3.21
B	1	13/16″	3 13/16″	6	**4034T42**	9.39
B	2	1 7/16″	3 9/16″	6	**4034T47**	10.82
B	4	1 7/8″	4 9/16″	6	**4034T46**	11.02
B	8	2 3/8″	5 11/16″	3	**4034T44**	7.44
B	16	3 1/8″	6 9/16″	3	**4034T45**	9.86
C	8	2″	7 1/4″	12	**4370T1**	13.68
D	8	2″	7 1/2″	1	**4066T67**	19.70
E	4	1 7/8″	5 3/4″	6	**4397T1**	9.57
E	6	2 3/16″	6 7/16″	6	**4397T2**	10.90
E	8	2 3/8″	6 15/16″	6	**4397T3**	11.13
E	16	3 1/8″	7 11/16″	6	**4397T5**	17.00
Sprayer/Dropper						
F	1/2	15/16″	3″	3	**4578T22**	10.13
F	1	1 7/32″	3 7/16″	3	**4578T23**	11.41
F	2	1 7/16″	3 13/16″	3	**4578T24**	13.65
With Precision Nozzle						**Each**
G	4	1 3/4″	6 1/4″	—	**1044K2**	$6.37
G	8	2 1/4″	7 1/4″	—	**1044K3**	6.92
G	16	3″	8 1/4″	—	**1044K4**	9.15
H	4	1 3/4″	7 3/8″	—	**1044K5**	7.75
H	8	2 1/4″	8 1/2″	—	**1044K6**	8.75
H	16	3″	9 1/4″	—	**1044K7**	10.05
With Brush Applicator						
J	1	1 7/16″	4 1/4″	—	**2098T95**	12.58
K	2	1 3/8″	6 1/2″	—	**4254T47**	11.68
Precise Volume						
L	8	2 3/8″	11 1/8″	—	**14925T1**	14.35
L	16	2 15/16″	12 3/4″	—	**14925T2**	15.74
L	32	3 11/16″	13 15/16″	—	**14925T3**	20.21
High-Density Polyethylene						
With Adjustable Nozzle						
M	8	2 1/2″	5 1/2″-7 7/8″	—	**1036K12**	5.87
M	16	3″	6 5/8″-10″	—	**1036K13**	6.31
Dispensing Bottle Set (Set of 8)						**Per Set**
N	32	4″	14″	—	**4007T51**	$93.00
						Each
Replacement Bottle for Style N					**4007T81**	$3.20
Replacement Nozzle and Cover for Style N					**4007T71**	3.60
Replacement Wire Basket for Style N					**4007T61**	45.83

Precision Needle-Tip Squeeze Bottles

Choose needle tips for your most precise applications. Bottles are made of low-density polyethylene, have a threaded polypropylene cap, and have a Type 304 stainless steel needle. All needles are protected by a needle cover (except the 3″ needle). Bottle height does not include the needle.

Needle Gauge Size	Needle Length	Applications	1 1/4 oz. Bottles 1 5/8″ Lg. × 7/8″ Wd. × 3″ Ht.	Each	4 oz. Bottles 1 7/8″ Dia. × 4 5/16″ Ht.	Each	8 oz. Bottles 2 5/16″ Dia. × 5 3/8″ Ht.	Each
27 (0.016″ OD × 0.008″ ID)	1″	For water-thin liquids	**1902T17**	$4.33	**1902T41**	$6.67	**1902T61**	$11.50
25 (0.020″ OD × 0.010″ ID)	1″	For thin liquids	**1902T14**	4.33	**1902T42**	6.67	**1902T62**	11.50
25 (0.020″ OD × 0.010″ ID)	3″	For thin liquids	**1902T15**	9.04	—	—	—	—
23 (0.025″ OD × 0.013″ ID)	1″	For SAE 10 oil or equivalent	**1902T16**	4.33	**1902T43**	6.67	**1902T63**	11.50
20 (0.035″ OD × 0.023″ ID)	1 1/4″	For SAE 20 oil or equivalent	**1902T22**	4.33	**1902T45**	6.67	**1902T64**	11.50
18 (0.049″ OD × 0.033″ ID)	1″	For thick liquids	**1902T24**	4.33	**1902T47**	6.67	**1902T65**	11.50
16 (0.065″ OD × 0.047″ ID)	1″	For very thick liquids	**1902T28**	4.33	**1902T49**	6.67	**1902T66**	11.50

Squeeze Bottles with Angled Nozzle

Also called wash bottles, just squeeze these bottles to dispense liquid through the downward angled spout. All bottles are low-density polyethylene, except Styles H and J. All have polypropylene threaded caps, except Styles G and J.

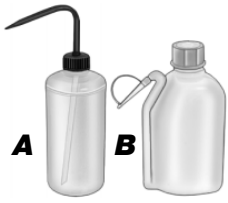

(A) Choose-a-color squeeze bottles have colored nozzles and caps to identify bottle contents at a glance. Bottles are translucent. **To Order:** Please specify cap and nozzle color: blue, green, red, translucent, or yellow (unless noted).

Cap., oz.	O'all Dia.	O'all Ht.	Pkg. Qty.	Narrow Mouth	Each ♦	Wide Mouth	Each ♦
4	1⅞″	6⅞″	6	4527T1▲	$3.73	4527T5▲	$4.11
8	2⁵⁄₁₆″	7¾″	6	4527T2	4.04	4527T6	4.56
16	2⅞″	9¼″	6	4527T3	4.68	4527T7	5.18
32	3⁹⁄₁₆″	10¼″	4	4527T4	7.01	4527T8	7.22

♦ Prices are 15% less when you order in full pkg. quantities.
▲ Available in translucent and red only.

(B) Contaminant-resistant squeeze bottles with integral spout have a nozzle and draw tube that are externally molded to the bottle. Draw tube does not need to be removed when filling, which prevents cross contamination. Bottles are translucent with a translucent cap.

Cap., oz.	O'all Size, Lg. × Wd.	O'all Ht.		Each 1-2	3-Up
8	3½″ × 2¼″	5⁹⁄₁₆″	4378T3	$4.90	$4.02
16	3¾″ × 2½″	7¹⁄₁₆″	4378T4	5.28	4.37

(C&D) Vented squeeze bottles have a vent system to prevent gas buildup and release vapors when bottle is not in use to eliminate dripping. Colored printed labels identify contents and hazard codes. The caps match the color of the labels. Bottles are translucent. *Style D* is contaminant resistant and has an integral nozzle that does not have to be removed for filling. **To Order:** For *Style C*, please specify label: acetone, ethanol, isopropanol, methanol, or a write-on label. For *Style D*, please specify label: acetone, distilled water, ethyl alcohol, isopropanol, or methanol.

	Cap., oz.	O'all Dia.	O'all Ht.	Pkg. Qty.		Each ♦
C	8	2⅜″	8⅛″	5	14805T61	$8.30
C	16	3″	9″	5	14805T62	8.69
D	16	3″	6¹³⁄₁₆″	4	2529T12	9.77

♦ Prices are 15% less when you order in full pkg. quantities.

(E) High visibility squeeze bottles are red with a red cap, making these bottles easy to locate. They are contaminant resistant and have an integral nozzle that does not have to be removed for filling.

Cap., oz.	O'all Dia.	O'all Ht.		Each
8	2½″	5⁷⁄₁₆″	4284T34	$9.56
16	3″	6¹³⁄₁₆″	4284T37	15.86

(F) Squeeze bottles with safety label have printed chemical names, diamond alert symbols to indicate type of hazard, and a chemical abstract service number where appropriate. Bottles are translucent with a colored cap that matches the color of the writing on labels (except toluene, which is a red bottle with red cap). *Note:* Bottles are for dispensing only; not recommended for storage. **To Order:** Please specify label: acetone, bleach, ethanol, ethyl acetate, isopropanol, machine oil, MEK, methanol, soap, toluene, water, or a write-on label, unless noted.

Cap., oz.	O'all Dia.	O'all Ht.		Each 1-11	12-Up
16	2¹³⁄₁₆″	9⅜″	40185T2	$6.85	$5.82
32	3⁹⁄₁₆″	10¾″	40185T3■	11.85	10.07

■ Available in acetone, ethanol, isopropanol, MEK, or a write-on label.

6-Piece Assortment— One 16-oz. bottle each labeled acetone, ethanol, isopropanol, methanol, toluene, and water.

40185T31 ..... **Per Set** $37.67

(G) Static-dissipative squeeze bottle has a surface resistivity of 10^{10} ohms/sq. Bottle is yellow with a yellow high-density polyethylene cap.

Cap., oz.	O'all Dia.	O'all Ht.		Each
8	2⅜″	8″	1228T4	$14.69

(H) Fluorinated squeeze bottle is treated on both the inside and outside to provide additional chemical resistance and to reduce the risk of absorbing contents into the bottle. Nozzle is red and "Solvent Wash Bottle" is printed in red. Bottle is translucent high-density polyethylene with a red cap.

Cap., oz.	O'all Dia.	O'all Ht.		Each 1-5	6-Up
16	2¾″	8¾″	43555T12	$12.94	$10.98

(J) Extreme duty FEP squeeze bottles offer the best chemical resistance and are autoclavable. Bottles are clear with a translucent, ETFE threaded cap.

Cap., oz.	O'all Dia.	O'all Ht.		Each 1-3	4-Up
8	2⅜″	7″	4285T62	$117.66	$98.74
16	2⅞″	8¹³⁄₁₆″	4285T63	159.80	135.82

Dropper Squeeze Bottles

You don't have to worry about releasing too much liquid—this squeeze bottle only dispenses drops. Bottle is leakproof and made of translucent low-density polyethylene. Cap is translucent polypropylene and threaded.

Cap., oz.	O'all Dia.	O'all Ht.		Each
4	2″	4½″	5772T32	$5.59
8	2⅜″	4¹³⁄₁₆″	5772T33	7.13

Eyedropper Bottles

Precisely administer your liquids one drop at a time. Bottles are glass and have a squeeze bulb dropper. All have a threaded phenolic cap, rubber bulb, and glass stem, unless noted. *Amber bottles* protect light-sensitive contents.

Amber

Cap., oz.	O'all Base Size	O'all Ht.		Each
Round				
Clear				
1	1³⁄₁₆″ dia.	4″	1992T41	$2.56
2	1⁹⁄₁₆″ dia.	4⁵⁄₈″	1992T42	3.37
4	1⅞″ dia.	5³⁄₈″	1992T43	4.17
Amber				
4	1⅞″ dia.	5³⁄₈″	1992T53	4.44
Oval				
Amber				
1	1⁷⁄₁₆″ × 1⅛″	4″	1992T51★	8.20
2	1¹¹⁄₁₆″ × 1⁵⁄₁₆″	4¾″	1992T52★	8.92

★ Has a plastic stem.

Mini Applicator Bottles

When you don't want too much of a good thing, choose these mini applicator bottles to store and apply small quantities of liquids. All bottles come with applicators that connect to the cap and have a tapered tip. Overall bottle height with applicator is 2¼″. Bottles are clear plastic (PETG). Cap is aluminum with polypropylene threads.

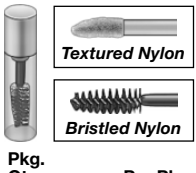

Cap., oz.	Applicator	Applicator Tip Dia.	Applicator O'all Lg.	Pkg. Qty.		Per Pkg.
⅛	Textured Nylon	⅛″ to ¹⁄₁₆″	2″	6	1553T11	$11.40
⅛	Bristled Nylon	¼″ to ³⁄₁₆″	2⅛″	6	1553T12	11.40

Brush-Top Cans

Always have your brush where you need it—brush comes attached to the inside of the lid. Cans are made of tin-plated steel with leakproof seams and come with a threaded lid that has a gasket to ensure tight closure. Brush is black with hog hair bristles.

With Wood Handle

With Ring Handle

Cap., oz.	O'all Dia.	Ht. with Handle		Each
With Removable Wood Handle				
8	2¾″	6⅛″	4300T3	$29.32
16	3½″	7″	4300T5	32.62
32	5⅛″	6¾″	4300T6	38.09
With Ring Handle				
8	2¾″	3¾″	4300T2	30.86

Spray Bottles

A B C D E F G H J

Choose a spray bottle that will perfectly suit your needs. All are made of polyethylene and allow you to adjust output from fine mist to solid stream (except Style C, which only has a fine mist). All are translucent, except Style J. Spray bottles with graduations (9864T53 and Styles D-J) are labeled in oz., ml, and dilution mixing ratios.

A Trigger Spray Bottles—Filter screen at base of tube prevents clogs.

B Easy-to-Reach Trigger Spray Bottle—Comes with a 36″ long tube so it can reach places other sprayers can't. Filter screen at base of tube prevents clogs.

C Misting Pump Spray Bottles—Bottles spray a fine mist and come with a clear protective cap for the plunger pump.

D Choose-a-Color Trigger Spray Bottle—Label is bilingual (English and Spanish). **To Order:** Please specify blue (glass cleaner), green (disinfectant), orange (metal cleaner), purple (degreaser), or red (all-purpose cleaner).

E Leakproof Trigger Spray Bottle—Trigger won't leak, even if bottle is upside down. Comes with a write-on checklist and label to identify contents.

F Any-Angle Trigger Spray Bottles—These bottles spray at any angle—even upside down. Come with a write-on checklist that allows you to identify contents.

G Wide Mouth Trigger Spray Bottles—No funnel needed to fill these bottles—the wide mouth helps you refill quickly and easily without spilling. The 32 oz. bottle also has a high volume trigger sprayer that sprays up to 2½ times more liquid per stroke.

H&J High Volume Trigger Spray Bottles—Dispense up to 2½ times more liquid per stroke. Ergonomically designed long trigger allows you to use more than one finger at a time when spraying. Bottles come with a write-on label to identify contents. *Style J* is silver with a clear window stripe for viewing graduations and contents.

	Cap., oz.	O'all Dia.	O'all Ht.	Mouth OD	Spray Head Material	Bottles Pkg. Qty.	Bottles	Bottles Per Pkg.	Repl. Spray Heads Pkg. Qty.	Repl. Spray Heads	Repl. Spray Heads Per Pkg.
Spray Bottles without Graduations											
A	8	2½″	7¾″	1⅛″	Polypropylene, Polyethylene	6	**9864T51**	$11.74	6	**9864T31**	$6.76
A	16	2 13/16″	11″	1⅛″	Polypropylene, Polyethylene	6	**9864T52**	12.06	6	**9864T31**	6.76
A	32	3⅜″	12¾″	1⅛″	Polyethylene	6	**9864T54**	13.33	6	**9864T34**	6.96
B	1 gal.	6⅛″	11¾″	1½″	Polyethylene	3	**9864T15**	16.67	1	**9864T35**	2.91
C	8	2 11/32″	6¾″	15/16″	Polypropylene	6	**4171T14**	27.80	1	**4171T141**	2.29
C	16	3″	7⅜″	1 1/16″	Polypropylene	6	**4171T16**	34.06	1	**4171T162**	2.99
Spray Bottles with Graduations											
A	24	3¼″	10½″	1⅛″	Polypropylene, Polyethylene	6	**9864T53**	12.24	6	**9864T31**	6.76
D	24	3¼″	11⅛″	1″	Polypropylene, Stainless Steel, Buna-N, Polyethylene	6	**40155T11**	13.70	1	**40155T55**	1.17
E	24	3¼″	10¾″	1⅛″	Polypropylene, Stainless Steel, Foam Gasket	4	**4372T28**	9.35	4	**4372T39**	7.30
F	24	3 3/16″	11½″	1⅛″	Polypropylene	3	**3315T61**	8.28	3	**3315T71**	3.66
F	32	3¼″	13″	1⅛″	Polypropylene	3	**3315T62**	9.83	3	**3315T71**	3.66
G	24	3¼″	10½″	1¾″	Polypropylene	3	**2392T31**	7.80	3	**2392T41**	4.35
G	32	3¼″	13½″	1¾″	Polypropylene	3	**2392T32**	13.39	3	**2392T42**	10.70
H	24	3¼″	11¼″	1⅛″	Polypropylene, Stainless Steel, Buna-N, Polyethylene	3	**4398T1**	11.12	3	**4398T22**	9.77
J	32	3⅝″	11⅞″	1⅛″	Polypropylene, Fluoroelastomer	1	**4382T1**	7.83	1	**4382T2**	5.78

Push-Top Dispensers

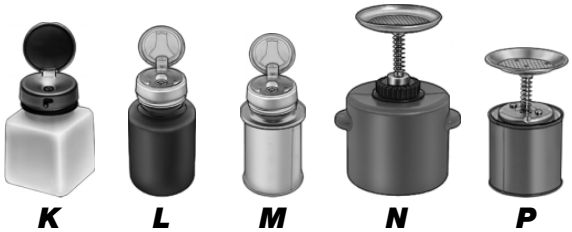

K L M N P

Simply push down on the top of these dispensers and dish fills with liquid to moisten swabs, brushes, wipes, sponges, and cloths. *Plastic* dispensers are high-density polyethylene and can be used with more aggressive solvents and chemicals.

Small Capacity—Perfect for swabs and brushes. All come with stainless steel pump assemblies.

(K) Plastic with locking cap prevent accidental spills.

(K) Static-dissipative plastic has a surface resistivity of 10^7-10^9 ohms/sq.

(L) Conductive plastic has a surface resistivity of 10^2-10^6 ohms/sq.

(L) Amber-colored glass protects light-sensitive contents.

(M) Tin allows storage of fluids that are not compatible with plastic.

Large Capacity—Ideal for wipes, sponges, and cloths. Excess liquid drains back into dispensing can through a perforated flame-arrestor plate. Choose from plastic and steel dispensers. All come with brass pump assemblies and are FM approved.

Cap., oz.	O'all Size	O'all Ht.	Dish Dia.		Each
Small Capacity					
(K) Plastic—*Translucent*					
4	2″ sq.	3¼″	1⅜″	**8998T44**	$14.19
6	2″ sq.	4¼″	1⅜″	**8998T43**	15.50
8	2″ sq.	5″	1⅜″	**8998T42**	16.03
(K) Plastic with Locking Cap—*Translucent*					
4	2 1/16″ sq.	3 3/16″	1⅜″	**8998T17**	31.88
6	2⅛″ sq.	4⅜″	1⅜″	**8998T18**	32.67
8	2 3/16″ sq.	5⅛″	1⅜″	**8998T19**	33.58
(K) Static-Dissipative Plastic—*Blue*					
6	2⅛″ sq.	4¼″	1⅜″	**8998T24**	18.57
(L) Conductive Plastic—*Black*					
6	2¼″ dia.	4 3/16″	1⅜″	**8998T21**	26.40
(L) Amber-Colored Glass					
4	2⅛″ dia.	4⅛″	1⅜″	**8998T37**	23.08
(M) Tin					
4	2⅛″ dia.	3⅞″	1¼″	**8998T39**	26.10
Large Capacity					
(N) Plastic—*Red*					
32	5¼″ dia.	9¾″	5¼″	**4487T76**	48.04
64	6½″ dia.	11″	5¼″	**4487T77**	50.86
1 gal.	7¾″ dia.	13″	5¼″	**4487T78**	57.02
(P) Steel (24-ga.)—*Red*					
16	4⅞″ dia.	6″	2¾″	**4301T4**	41.72
32	7¼″ dia.	6½″	5″	**4301T1**	44.72
64	7¼″ dia.	8″	5″	**4301T2**	45.30
1 gal.	7¼″ dia.	11″	5″	**4301T3**	46.31

Compression Sprayers

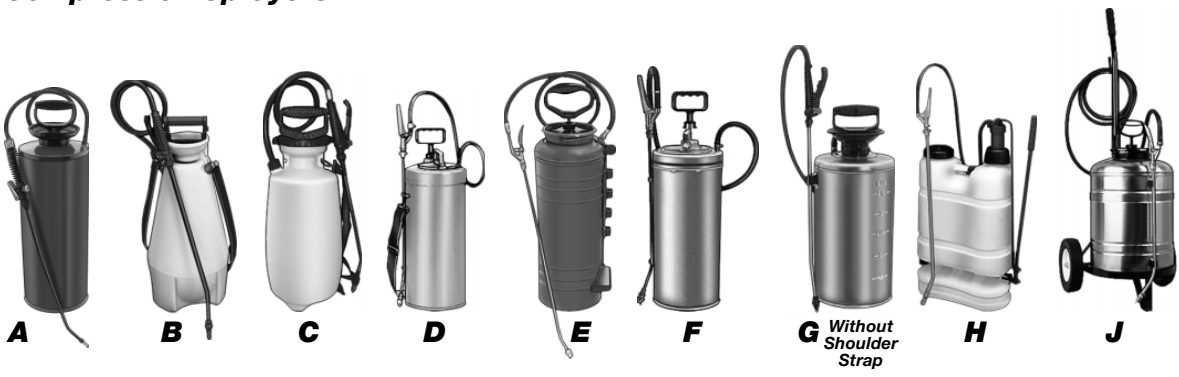

Apply layers of degreasers, insecticides, disinfectants, cleaning solutions, herbicides, and more. All compression sprayers are pressurized by a few strokes of the pump handle. All have fluoroelastomer seals, unless otherwise indicated.

The material of the tank, pump, seal, and gasket can affect a sprayer's compatibility with a chemical or solution. Make sure that all parts of the sprayer are compatible with your application.

A ***Economy Compression Sprayers—*** Have a cone spray nozzle. The ***repair kit*** includes a neoprene pump cylinder gasket, O-ring seals, plunger cup, and pump cylinder check valve.

B-D ***Compression Sprayers—*** *Style B* has a nozzle that adjusts from stream to cone spray, a built-in relief valve, and a shoulder strap. Tank color is translucent white. The ***repair kit*** includes a pump gasket, pump check valve, brass nozzle cap, and O-ring seals.

Style C has a nozzle that adjusts from stream to mist spray, and has a built-in relief valve. Comes with a shoulder strap. Tank color is translucent. The ***repair kit*** includes a gasket, check valve, nozzle cap, O-ring seals, piston, and shut-off spring.

Style D has a flat-fan spray nozzle and a shoulder strap. The ***repair kit*** includes a check valve, plunger cup, and fluoroelastomer tank gasket.

E ***Highly Chemical-Resistant Compression Sprayer—*** PTFE encapsulated silicone and fluoroelastomer O-rings allow this sprayer to resist tough chemicals such as acetone, naphtha, xylene, and toluene. Includes two flat-fan spray nozzles. Tank color is red. The ***repair kit*** includes a PTFE encapsulated silicone O-ring, fluoroelastomer O-rings, plunger cup, gaskets, springs, and a washer.

F&G ***Compression Sprayers with Type 304 Stainless Steel Tank—*** These tanks offer good corrosion resistance. *Style F* has a flat-fan spray nozzle and comes with a shoulder strap. The ***repair kit*** includes O-ring seals, plunger cup, pump cylinder check valve, and fluoroelastomer pump cylinder gasket.

Style G nozzle adjusts from stream to cone spray. 7529T22 comes with a shoulder strap. The ***repair kit*** has a check valve, plunger cup, and fluoroelastomer tank gasket.

H ***Backpack Compression Sprayer—*** Has a flat-fan spray nozzle, two padded shoulder straps, waist belt, and a strainer in the fill opening. Tank color is translucent white. The ***repair kit*** has O-ring seals, plunger cup, pump cylinder check valve, and fluoroelastomer pump cylinder gasket.

J ***Compression Sprayer with Wheels and Type 304 Stainless Steel Tank—*** Easily move sprayer to wherever you are working. Tank offers good corrosion resistance. Sprayer has a flat-fan spray nozzle and two 8″ dia. solid rubber tires. The ***repair kit*** includes a rubber gasket, cup valve, nuts, O-ring seals, plunger cup, rubber bottom valve, springs, and washer.

	Cap., gal.	Tank Material	Wand Material/ Length	Nozzle Material	Pump Material	Hose Material/ Length	Fill Opening Dia.	Sprayers	Each	Repair Kits	Each
Economy Compression Sprayers											
A	1	Galvanized Steel	Polyurethane/12″	Polypropylene	Polypropylene	PVC/42″	3″	7558T41	$32.05	7558T31	$9.76
A	2	Galvanized Steel	Polyurethane/18″	Polypropylene	Polypropylene	PVC/42″	3″	7558T42	35.84	7558T31	9.76
A	3	Galvanized Steel	Polyurethane/18″	Polypropylene	Polypropylene	PVC/42″	3″	7558T43	41.49	7558T31	9.76
Compression Sprayers											
B	2	Polyethylene	Polypropylene/14″	Brass	Polypropylene	PVC/50″	2″	7095T42	53.27	7095T92	9.02
B	3	Polyethylene	Polypropylene/18″	Brass	Polypropylene	PVC/50″	2″	7095T43	60.13	7095T92	9.02
C	1	Polyethylene	Polyethylene/14″	Brass	Polypropylene	PVC/50″	4⅜″	7044T41	41.52	7044T65	11.55
C	2	Polyethylene	Polyethylene/14″	Brass	Polypropylene	PVC/50″	4⅜″	7044T42	42.42	7044T65	11.55
C	3	Polyethylene	Polyethylene/18″	Brass	Polypropylene	PVC/50″	4⅜″	7044T62	43.98	7044T65	11.55
D	2½	Galvanized Steel	Brass/24″	Brass	Brass	PVC/48″	4⅝″●	7103T81	112.72	7103T52	36.16
Highly Chemical-Resistant Compression Sprayer											
E	3½	Epoxy-Lined Steel	Brass/24″	Brass	Brass	Vinyl/48″	4″	5176T27	162.05	5176T31	40.32
Compression Sprayers with Stainless Steel Tank											
F	2½	Stainless Steel	Brass/18″	Brass	Brass	PVC/48″	4⅝″●	7103T82	140.42	7103T51	24.92
F	3½	Stainless Steel	Brass/18″	Brass	Brass	PVC/48″	4⅝″●	7103T84	152.83	7103T51	24.92
G	2	Stainless Steel	Brass/12″	Polypropylene	Polypropylene	PVC/40″	5¼″	7529T32	85.15	7529T12	11.33
G	3	Stainless Steel	Brass/18″	Polypropylene	Polypropylene	PVC/40″	5¼″	7529T22	107.88	7529T12	11.33
Backpack Compression Sprayer											
H	4	Polyethylene	Brass/18″	Brass	Polyethylene	PVC/48″	4″	7528T36	108.85	7528T37	14.24
Compression Sprayer with Wheels and Stainless Steel Tank											
J	6	Stainless Steel	Brass/18″	Brass	Brass	Nylon/10′	4″	43895T38	366.56	43895T49	17.96

● Fill opening is oval; actual opening is 4⅝″ Lg. × 3¾″ Wd.

Air Atomizing Sprayers

Be a friend to the environment and choose these sprayers over aerosol sprayers to uniformly spray thin viscosity liquids up to SAE 10 motor oil. These sprayers are easy to use: simply fill the sprayer and pressurize it with compressed air. If you need to refill, depressurize the sprayer, refill, and recharge. Working pressure is 80 to 145 psi. Max. pressure is 200 psi. The ***repair kits*** include O-ring seals, packing, and replacement nozzles to repair the upper housing assembly.

K&L ***Aluminum Housing and Nickel-Plated Aluminum Housing—*** Use with water-soluble liquids. Both styles come with eight mist nozzles, one pin stream nozzle, and fluoroelastomer seals. 7054T8 is red. *Style L* is nickel plated on the inside and outside for superior chemical resistance.

M&N ***Chrome-Plated Brass Housing—*** Use with water-soluble liquids. Both come with one mist nozzle that can be converted to a pin stream nozzle, and fluoroelastomer and PTFE seals. *Style N* also comes with a relief valve.

P ***Steel Housing—*** Use with liquids that are not water soluble. Comes with one mist nozzle that can be converted to a pin stream nozzle, and fluoroelastomer and PTFE seals. Color is red.

	Cap., oz.	Dia.	Ht.	Sprayers	Each	Repair Kits	Each
Aluminum Housing							
K	8	2⅜″	8¼″	7054T41	$25.98	7054T24	$12.66
K	16	3″	9¼″	7054T8	27.97	7054T24	12.66
Nickel-Plated Aluminum Housing							
L	16	3″	9¼″	7054T7	33.13	7054T24	12.66
Chrome-Plated Brass Housing							
M	32	4″	8½″	7054T12	60.59	7054T17	21.29
N	32	4″	8½″	7054T14	78.95	7054T17	21.29
Steel Housing							
P	32	4″	8½″	7054T11	45.72	7054T17	21.29

Repl. Valve Assembly for K&L (6/Pkg.) .... 7054T23 **Per Pkg.** $7.69

Aerosol Sprayers

Just fill and spray—no extra equipment needed.

6-oz. Sprayer—Uses a power unit to spray up to 16 oz. of liquid. Sprayer includes a power unit, one tube, one strainer, and one 6-oz. glass container with cap and ½ oz. graduations.

8-oz. Sprayer—Uses a power unit to spray up to 18 oz. of liquid. Sprayer includes a power unit, one tube, one spray head, three spray tips, and one 8-oz. white polyethylene bottle with cap and ½ oz. graduations.

Cap., oz.	Dia.	Ht.	Sprayers	Each	Repl. Power Units	Each
6	1¾″	12″	7780T1	$6.30	7780T2	$5.05
8	2½″	7¼″	7773T4	9.33	7773T5	5.27

Hand Pump Sprayers

Spray adjusts from a fine mist to a stream.

Light Duty Sprayers—Pressurizing these tanks is easy—after a few pumps, they're ready to go. Made of translucent high-density polyethylene, they have an on/off thumb control. *Style A* has a polypropylene nozzle and valve, and 4 oz. graduations. *Style B* has a polyethylene nozzle, polyethylene/fluoroelastomer valve, and graduations of 0.5 L and ½ pt.

Heavy Duty Sprayer—Has a metal pump cylinder, brass nozzle, and polyethylene body.

Cap., oz.	Dia.	Ht.		Each
Light Duty				
A 48	4½″	13″	6357T13	$11.43
B 83	17″	14½″	43025T47	27.20
Heavy Duty				
C 32	4⅜″	9⅛″	9807T12	99.71

Rubber and Plastic Pails

All are nestable.

Capacity gal.	L	Top Size	Outside Ht.	Graduation Intervals	Color	Max. Temperature	Bail Handle Material		Each
(D) Crack- and Crush-Resistant Rubber									
2	7.6	10¾″ dia.	8½″	_____	Black	220° F	Galvanized Steel	4268T4	$9.05
3	11.4	12½″ dia.	10½″	_____	Black	220° F	Galvanized Steel	4268T2	10.72
(E) Two-Compartment Polyethylene									
4¾	18	18″	×14½″ 10″	½ qt./1 L	Gray	150° F	Steel with Plastic Grip	43055T47	23.52
(F) NSF-Certified Polyethylene—*Made of FDA-compliant resins.*									
5½	20.8	13⅛″ dia.	14″	1 qt./1 L	White	212° F	Galvanized Steel	4344T72	17.95
Optional Lid for F—Color is yellow.								8993T66	6.01
(G) Extra-Wide Polypropylene—*Large opening for wide mops and other cleaning equipment.*									
6	22.7	20¼″ ×10¼″	10½″	1 L/1 gal.	Blue	160° F	Plastic	5023T2	27.34
(H) Autoclavable Polypropylene									
2	7.6	9½″ dia.	10 3/16″	1 qt./1 L	White	275° F	Nylon-Coated Wire	4210T2	44.15
3½	13.2	11⅜″ dia.	12⅜″	1 qt./1 L	White	275° F	Nylon-Coated Wire	4210T4	58.30

Pouring Pails

All come with a spout for more controlled pouring, and are nestable (except Style Q). **To Order:** Where applicable, please specify color.

Capacity	Top Size	Outside Ht.	Graduation Intervals	Color	Max. Temp.	Bail Handle Material		Each
(J) Crack- and Crush-Resistant Rubber								
3 gal.	12½″ dia.	10½″	1 gal.	Black	220° F	Galvanized Steel	4268T6	$11.42
4½ gal.	13¾″ dia.	12″	1 gal.	Black	220° F	Galvanized Steel	4268T3	14.89
(K) Nonsparking Crack- and Crush-Resistant Rubber—*For use with oils and solvents.*								
3 gal.	12½″ dia.	10½″	1 gal.	Black	220° F	Brass	4268T7	19.01
(L) Choose-a-Color Polyethylene with Wide Spout—*Recessed bottom for easy pouring.*								
2½ gal.	11⅞″ dia.	10¼″	1 pt./1 qt./1 L	Gray, Red, White★	160° F	Steel with Plastic Grip	4485T11	7.81
3½ gal.	13⅜″ dia.	11¼″	1 pt./1 qt./1 L	Gray, Red, White★	160° F	Steel with Plastic Grip	4485T12	11.40
(M) Polyethylene with Lid—*Recessed bottom for easy pouring.*								
3 gal.	11 3/16″ dia.	11⅛″	1 qt./1 L/1 gal.	Translucent	130° F	Galvanized Steel	4525T12	16.14
(N) Heavy Duty Polyethylene—*Wide rim allows pail to hold its shape under heavy loads; recessed bottom for easy pouring.*								
2½ gal.	12⅞″ dia.	9 3/16″	2 pt./1 L	Translucent	248° F	Plastic-Coated Wire	4286T1	75.65
4 gal./15 L	12½″ dia.	13″	1 L	White	248° F	Plastic-Coated Wire	4286T2	120.73
(P) Galvanized Steel with Wide Spout—*Recessed bottom for easy pouring. Made of 28-ga. steel.*								
3 gal.	16⅝″ ×12⅝″	11¼″	_____	_____	Not Rated	Galvanized Steel	4310T14	25.37
(Q) Type 304 Stainless Steel with Side Handle—*Additional handle at base of pail provides extra support and control when pouring.*								
3¼ gal.	11⅜″ dia.	9⅜″	_____	_____	Not Rated	Stainless Steel	4253T1	214.00
4 gal.	11⅝″ dia.	9½″	_____	_____	Not Rated	Stainless Steel	4253T2	221.14

★ White pails are made from FDA-compliant resins.

Steel and Stainless Steel Pails

A

E

B

F&H

C

G

D

Capacity	Top OD	Outside Ht.	Gauge	Bail Handle Material	Nestable		Each
(A) Economy Tin-Plated Steel							
2½ qt.	7 3/16″	4 15/16″	32	Galvanized Steel	Yes	**4288T1**	$3.82
(A) Economy Tin-Plated Steel with Graduations— *With 1 qt. graduations.*							
1¼ gal.	8⅞″	6¼″	32	Galvanized Steel	Yes	**4288T2**	4.28
2 gal.	9⅞″	8½″	32	Galvanized Steel	Yes	**4288T3**	6.50
(B) Easy-to-Grip Tin-Plated Steel with Lid							
2¼ gal.	9″	9½″	28	Galvanized Steel	No	**4243T14**	23.03
3 gal.	9″	13¾″	28	Galvanized Steel	No	**4243T15**	24.27
4½ gal.	9″	19⅜″	28	Galvanized Steel	No	**4243T16**	29.30
(C) Galvanized Steel with Recessed Bottom— *For easy pouring.*							
3 qt.	8¼″	5¼″	30	Steel	Yes	**4260T11**	7.72
1¼ gal.	9″	7″	30	Steel	Yes	**4260T12**	7.83
2 gal.	9¾″	8⅜″	30	Steel	Yes	**4260T1**	8.94
2½ gal.	10⅛″	9¼″	30	Steel	Yes	**4260T2**	9.89
3 gal.	11¼″	10″	30	Steel	Yes	**4260T3**	10.59
3½ gal.	11½″	10¾″	30	Steel	Yes	**4260T4**	12.07
4 gal.	14″	8⅜″	30	Steel	Yes	**4260T5**	16.42
(C) Heavy Duty Galvanized Steel with Recessed Bottom— *For easy pouring.*							
3¾ gal.	12½″	10¾″	28	Steel	Yes	**4260T6**	18.64
5½ gal.	13″	13″	28	Steel	Yes	**4260T8**	23.67
(D) Type 304 Stainless Steel with Recessed Bottom— *For easy pouring.*							
3¼ gal.	12¼″	10⅛″	13	Stainless Steel	Yes	**4245T5**	136.15
5 gal.	14⅝″	11⅛″	13	Stainless Steel	Yes	**4245T6**	188.08
(E) NSF-Certified 300 Series Stainless Steel							
3¼ gal.	11¾″	9½″	22	Stainless Steel	No	**4245T1**	51.60
3½ gal.	12″	10⅛″	18	Stainless Steel	Yes	**4245T2**	98.65
4 gal.	11¾″	11½″	22	Stainless Steel	No	**4245T22**	63.42
5¾ gal.	14⅞″	11⅞″	18	Stainless Steel	Yes	**4245T3**	176.23
(F) NSF-Certified 300 Series Stainless Steel with Side Handle— *Side handle for extra support when pouring.*							
3½ gal.	12″	10⅛″	16	Stainless Steel	No	**4245T4**	157.63
(G) NSF-Certified 300 Series Stainless Steel with Side Handle and Lid— *Side handle for extra support when pouring.*							
5 gal.	9¾″	16 13/16″	22	Stainless Steel	No	**4486T5**	269.37
(H) Type 316 Stainless Steel with Side Handle— *Most corrosion resistant; side handle for extra support when pouring.*							
4 gal.	13⅛″	11¾″	13	Stainless Steel	No	**4245T9**	153.54

Utility Tubs

J

K

L

M

N

Sometimes bigger still is better—if your pail isn't large enough, choose a tub for its greater storage capacity. All are nestable.

(J) Round Reinforced Rubber— Reinforced, ribbed sides make these tubs crack and crush resistant. All are seamless and have a curved lip around the top for carrying. Max. temperature is 212°F. Color is black.

(K) Round Rubber/Polyethylene with Rope Handles— Blend of rubber and polyethylene stands up to hard use and resists cracking. Rope handles are polypropylene. Max. temperature is 165°F. **To Order:** Please specify color: black, blue, or red.

(L-N) Oval, Round, and Square Galvanized Steel with Welded-On Handles— Have a rod-reinforced top edge and leakproof, locked seams. Not temperature rated.

Cap., gal.	Outside Top Size	Outside Ht.	Gauge		Each
(J) Round Reinforced Rubber					
6½	17″ dia.	8″	—	**4164T3**	$13.67
15	26″ dia.	9½″	—	**4164T6**	25.54
(K) Round Rubber/Polyethylene with Rope Handles					
10	18″ dia.	14″	—	**4003T6**	13.23
17½	21¼″ dia.	16½″	—	**4003T7**	22.02
(L) Oval Galvanized Steel with Welded-On Handles					
7¼	23⅝″ × 13¾″	7⅝″	30	**4126T8**	25.90
16¼	32⅝″ × 16½″	10⅝″	30	**4126T9**	37.02
(M) Round Galvanized Steel with Welded-On Handles					
11½	20″ dia.	10⅛″	30	**4126T4**	31.12
17	23¾″ dia.	10¾″	30	**4126T6**	41.08
(N) Square Galvanized Steel with Welded-On Handles					
18½	22¼″ × 22¼″	11½″	30	**4126T3**	55.48

Plastic Pails and Snap-Lock Lids

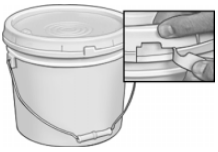

Round Pail with Tear-Tab Lid

Square Pail

Lid with Spout

These pails and tight-fitting lids can be used together to ship nonhazardous materials. All are nestable, made of FDA-compliant polyethylene, and have a max. temperature of 140° F.

Round pails and lids come in various colors. Lids have an SBR rubber gasket. **To Order:** For pails and lids, please specify color: blue, green, red, or white. ***Square*** pails and lids are white.

Lids with tear tab provide tamper evidence so you'll know if the lid has been opened. Once the tear tab has been removed, you can still reuse the lid, but the tamper evidence feature is gone.

Lids with spout have a telescoping spout for no-leak pouring.

Cap., gal.	Top OD	Outside Ht.	Bail Handle Material	Pails with Tear-Tab Lid	Each	Pails	Each	Lids	Each	Lids with Tear Tab	Each	Lids with Spout	Each
Round													
1	7 3/8"	7 5/16"	Plastic	4269T35	$3.84	4269T31	$2.76	____	____	4269T11	$1.02	____	____
2	9 3/4"	9 1/4"	Plastic	4269T36	5.50	4269T32	4.13	____	____	4269T12	1.31	4269T21●	$2.13
3 1/2	11 7/8"	10 1/4"	Steel★	4269T37	7.89	4269T33	5.84	____	____	4269T13	2.03	4269T22	2.84
5	11 7/8"	14 11/16"	Steel★	4269T38	9.88	4269T34	7.83	____	____	4269T13	2.03	4269T22	2.84
Square													
2	9 15/16"	7 9/16"	Steel★	____	____	4269T63	5.43	4269T67	$2.95	4269T68	3.13	____	____
4	9 15/16"	13 3/16"	Steel★	____	____	4269T65	10.96	4269T67	2.95	4269T68	3.13	____	____

★ With plastic grip. ● Includes tear tab.

UN-Compliant Plastic Shipping Pails and Snap-Lock Lids

Pail with Lid (Lid Sold Separately)

Lid with Spout

When paired with one of the tight-fitting lids (sold separately), these pails are perfect for shipping hazardous materials. All pails are nestable, made from polyethylene, have a steel bail handle with a plastic grip, and can be used for shipping only once. Lids have an SBR rubber gasket. Max. temperature is 180° F.

Standard pails and ***lids*** are FDA-compliant, except the black models. **To Order:** For pails and lids, please specify color: black, blue, gray, green, red, or white.

Pails and ***lids with protective coating*** are fluorinated to reduce solvent absorption and permeation. Color is white.

Cap., gal.	Top OD	Outside Ht.	Specifications Met	Pails	Each	Lids	Each	Lids with Spout	Each
For Shipping Hazardous Solids and Liquids									
Standard									
3 1/2	11 7/8"	10 1/2"	UN1H2/Y1.5/30, UN1H2/Y30/S	3995T429	$9.28	3995T459	$4.24	3995T21	$4.68
5	11 7/8"	14 9/16"	UN1H2/Y1.5/30, UN1H2/Y43/S	3995T439	10.89	3995T459	4.24	3995T21	4.68
With Protective Coating									
3 1/2	11 7/8"	10 1/2"	UN1H2/Y1.5/30, UN1H2/Y30/S	3995T27	20.16	3995T25	8.05	3995T26	7.89
5	11 7/8"	14 9/16"	UN1H2/Y1.5/30, UN1H2/Y43/S	3995T23	21.36	3995T25	8.05	3995T26	7.89
For Shipping Hazardous Solids									
Standard									
6	11 7/8"	17 3/16"	UN1H2/Y43/S	3995T471	13.56	3995T459	4.24	3995T21	4.68
With Protective Coating									
6	11 7/8"	17 3/16"	UN1H2/Y43/S	3995T24	24.99	3995T25	8.05	3995T26	7.89

UN-Compliant Plastic Shipping Pails with Easy-Open Twist-Lock Lids

Round

Square

No tools required for twist-lock lids, so opening and closing them is quick and easy. Pails and lids are made from white FDA-compliant polyethylene. All pails have a plastic bail handle, except 40015T59. All lids have a neoprene gasket. Max. temp. is 150° F.

Round pails with drip-free pouring have a solid rim designed for cleaner pouring.

To open the pails that are ***for shipping hazardous solids***, just squeeze the release and turn the lid.

To open pails that are ***for shipping hazardous liquids***, pull the handle back and use it to turn the lid. These pails are available with or without a spout.

Cap., gal.	Top OD	Outside Ht.	Specifications Met		Each
For Shipping Hazardous Solids					
Round					
2	11 1/8"	10 1/4"	UN1H2/Y12/S	40015T63	$8.57
2 1/2	11 1/4"	11 7/8"	UN1H2/Y15/S	40015T64	9.16
3 1/2	14 3/16"	10 5/8"	UN1H2/Y19/S	40015T65	12.09
5	14 1/8"	15 3/16"	UN1H2/Y30/S	40015T66	13.05
6 1/2	14 3/16"	18 1/4"	UN1H2/Y30/S	40015T67	15.93
Round with Drip-Free Pouring					
1/2	7"	7 3/8"	UN1H2/Y4/S	40015T61	3.90
1	8 7/8"	9 1/8"	UN1H2/Y6/S	40015T62	4.07
3 1/2	12 5/8"	12 3/16"	UN1H2/Y19/S	40015T41	12.09
5	12 5/8"	16"	UN1H2/Y30/S	40015T42	13.33
6 1/2	12 5/8"	20"	UN1H2/Y30/S	40015T43	15.93
Large Capacity Square with Molded-In Handles					
11 1/4	♦	18 1/4"	UN3H2/Y40/S	40015T59	33.33
For Shipping Hazardous Liquids					
Round with Drip-Free Pouring					
5	13 3/8"	16 3/4"	UN1H2/Y1.5/30	40015T81	14.11
Round with Spout and Drip-Free Pouring					
5	13 3/8"	16 3/4"	UN1H2/Y1.5/30	40015T82	14.65

♦ Top is 15" square with a 9 1/2" OD opening.

Lid Openers for Plastic Pails with Snap-Lock Lids

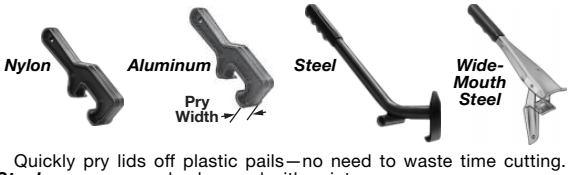

Quickly pry lids off plastic pails—no need to waste time cutting. ***Steel openers*** can also be used with paint cans.

Construction	Pry Width	Length	Opens Can Size		Each
Nylon	1 1/2"	8"	1-7 gal.	21605T33	$8.03
Aluminum	1 1/2"	8"	1-7 gal.	21605T34	13.84
Steel	1"	15 3/8"	5 gal.	21605T35	14.88
Wide-Mouth Steel	2 3/4"	13 3/4"	5 gal.	21605T36	26.72

Dust Caps for Pails

Keep dust out of your pails with these 4-mil thick, FDA-compliant polyethylene dust caps. Elastic gives a snug fit. Package quantity is 5.

Antistatic pink dust cap has a surface resistivity of 10^{11} ohms/sq.

For Pail Size	Clear	Per Pkg.	Antistatic Pink	Per Pkg.
1-gal. Round	4104T11	$10.97	____	____
2-gal. Round	4104T12	11.33	____	____
3 1/2-, 5-, 6-gal. Round; 2- and 4-gal. Square	4104T3	10.87	4104T6	$11.25

Swivel Seat Pail Cover

Use your steel or plastic pail for storage as well as a seat. Cover is polypropylene and swivels on quiet ball bearings. Fits 5-, 6-, and 7-gallon, open-head pails with 11 3/4" to 12 1/4" top OD. Size is 12 1/4" OD × 3" Ht. Color is green.

5835T36 ..... Each $12.89

UN-Compliant Plastic Shipping Pails with Small Mouth Opening

Also known as closed-head pails, these pails are made from FDA-compliant polyethylene. The small mouth allows you to ship higher pressure-rated materials. They have an interlocking design that allows them to stack easily. All have threaded caps and a max. temperature of 150° F. **To Order:** Please specify color when necessary.

Cap with tamper-evident seal assures content integrity. Once the seal is broken, the cap (although reusable) is no longer tamper evident.

Round Pail with Flip-Up Handle

Rectangular Pail with Molded-In Handle

Cap., gal.	Mouth OD	Top Size	Outside Ht.	Specifications Met	Available Colors		Each
Cap with ¾″ NPT Female Knockout							
Round Pail with Flip-Up Handle							
5	70 mm	11¾″ dia.	14¾″	UN1H1/Y1.8/100	Translucent, Blue	4135T11	$15.43
Rectangular Pail with Molded-In Handle							
2½	51 mm	9⅛″ × 7¾″	12¼″	UN3H1/Y1.2/100	Translucent	4135T19	14.29
5	61 mm	11″ × 10¼″	14¼″	UN3H1/Y1.8/100	Translucent, Blue	4135T23	17.68
Cap with Tamper-Evident Seal							
Rectangular Pail with Molded-In Handle							
5	61 mm	11½″ × 10½″	14⅞″	UN3H1/Y1.8/100	Translucent	4135T63	17.88

UN-Compliant Steel Shipping Pails

All pails have an epoxy phenolic lining to inhibit rust. **To Order:** Please specify color: black or gray.

Note: Pails must be used with lids listed below to meet UN specifications.

Open Head— All are nestable and have a steel bail handle with plastic grip. The lids have 16 lugs.

Closed Head with Small Mouth Opening— The 1½″ diameter mouth allows for higher pressure-rated materials to be shipped within this container. Pail has a screw cap, a flip-up handle, and a telescoping metal spout for easy pouring.

Open-Head Pail with Lid

Closed-Head Pail

Lid with Spout

Cap., gal.	Top OD	Outside Ht.	Specifications Met	Gauge Pail	Gauge Lid	Pails	Each	Lids	Each	Lids w/Spout	Each	Pails w/Lid	Each
Open Head													
3½	11¾″	9⅝″	UN1A2/Y1.9/100	26	24	4211T61	$11.48	4211T71	$4.36	4211T72	$4.76	4211T64	$15.74
5	11¾″	13 9/16″	UN1A2/Y2.0/100	24	24	4211T62	13.85	4211T71	4.36	4211T72	4.76	4211T65	17.53
6	11¾″	15¾″	UN1A2/Y2.0/100	26	24	4211T23	14.55	4211T71	4.36	—	—	—	—
Closed Head with Small Mouth Opening													
5	10 15/16″	13⅝″	UN1A1/Y1.8/200	26	—	4211T4	25.18	—	—	—	—	—	—

Steel Pail Closing Tools

Manually close lids on open-head steel pails. Both work with pails that have an 11¼″ ID. *Note:* Not for use in shipping applications.

Style A is made of cast iron and aluminum. *Style B* is made of steel and aluminum, and has wood handles.

A

Shown on Pail

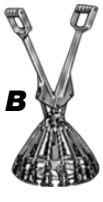

B

	For Pail Lids	No. of Lugs Closed at a Time		Each
A	20- to 28-ga. Steel	4	3987T1	$150.00
B	26- to 28-ga. Steel	16	3987T3	733.75

Pail Liners

Don't waste time cleaning your pails—protect them with these liners. Made of FDA-compliant resins, these round, seamless, 15-mil thick liners have a contoured lip that hugs your pail's rim. All liners are translucent, except the antistatic models, which are translucent pink. *Antistatic models* have a surface resistivity of 10^{11} ohms/sq.

Polyethylene liners have a max. temperature of 175° F.

Polypropylene liner has a max. temperature of 300° F.

Semirigid

For Pail Cap., gal.	Fits Outside Pail Ht.		Each
For Steel Pails			
Flexible Polyethylene			
5	13⅜″	9772T72	$2.61
Antistatic Flexible Polyethylene			
5	13⅜″	9772T76	3.14
Semirigid Polyethylene			
3½	10 1/16″	9772T75	2.68
5	13⅜″	9772T74	2.78
6	15⅞″	9772T77	3.41
Semirigid Polypropylene			
5	13⅜″	9772T78	5.07
For Plastic Pails			
Semirigid Polyethylene			
2	9¼″	9772T79	1.68
3½	10⅛″	9772T81	3.14
3½	10⅝″	9772T82	3.21
5	14″	9772T83	2.94
5	14⅝″	9772T84	3.41
Antistatic Semirigid Polyethylene			
5	14″	9772T85	3.21
5	14⅝″	9772T86	3.35

Round Plastic Batch Cans

Strong yet lightweight, these cans have a smooth, seamless construction to impede bacterial growth. All cans include a loose-fitting cover.

All cans are translucent white, except the *impact-resistant polyethylene cans*, which are translucent yellow.

Cap., gal.	Top OD	O'all Ht.	Wall Thick.	Max. Temp.	Grads., gal./liters		Each
Polyethylene							
5	12⅜″	15⅛″	3/32″	140° F	0.5/ 2	3678K51	$58.06
7½	13 13/16″	18″	3/32″	140° F	0.5/ 2	3678K61	68.42
10	14¾″	20⅜″	3/32″	140° F	1.0/—	3678K63	71.48
15	15″	27⅝″	3/32″	140° F	1.0/ 5	3678K53	87.67
30	20″	29⅞″	3/32″	140° F	2.5/10	3678K55	136.40
55	23⅝″	36⅛″	3/32″	140° F	2.5/10	3678K57	217.14
Heavy Duty Polyethylene							
5	12⅜″	15⅛″	⅛″	140° F	0.5/ 2	3678K11	66.21
7½	13 13/16″	18″	3/16″	140° F	0.5/ 2	3678K62	94.31
10	14¾″	20⅜″	3/16″	140° F	1.0/—	3678K64	93.79
15	15″	27⅝″	3/16″	140° F	1.0/ 5	3678K12	115.84
30	20″	29⅞″	3/16″	140° F	2.5/10	3678K14	173.86
55	23⅝″	36⅛″	¼″	140° F	2.5/10	3678K18	230.33
80	25 9/16″	48 1/16″	¼″	140° F	5.0/20	3678K65	461.09
100	29⅞″	44¼″	¼″	140° F	5.0/25	3678K21	497.94
NSF/USDA-Approved Heavy Duty Polyethylene							
33	19″	31″	3/16″	180° F	—	3678K92	127.64
45	19″	42″	3/16″	180° F	—	3678K93	139.09
64	21¼″	51″	3/16″	180° F	—	3678K94	166.91
82	29¼″	35½″	3/16″	180° F	—	3678K19	245.70
107	29¼″	45½″	3/16″	180° F	—	3678K22	268.20
Impact-Resistant Polyethylene							
30	20″	29⅞″	3/32″	140° F	2.5/10	1212K75	249.98
55	23⅝″	36⅛″	⅛″	140° F	2.5/10	1212K76	351.35
100	30″	44¼″	⅛″	140° F	5.0/25	1212K78	761.55
High-Temperature Heavy Duty Polypropylene							
5	12¼″	15¼″	3/16″	220° F	0.5/ 2	4085K33	117.21
7½	13¾″	17⅞″	3/16″	220° F	0.5/ 2	4085K34	143.62
10	14¾″	20 9/16″	3/16″	220° F	1.0/—	4085K35	152.70
15	14¾″	27¾″	3/16″	220° F	1.0/ 5	4085K36	173.21
30	19⅜″	29 5/16″	3/16″	220° F	2.5/10	4085K37	242.07
55	23¾″	36⅜″	¼″	220° F	2.5/10	4085K38	318.79
80	25 9/16″	48⅜″	5/16″	220° F	5.0/20	4085K39	658.79
100	29¾″	44 5/16″	5/16″	220° F	5.0/25	4085K41	798.98

Round Plastic Batch Cans with Faucet

Not only do these batch cans have a faucet for easy dispensing, but they also have a smooth, seamless construction that impedes bacterial growth. All are translucent white and include a loose-fitting cover.

Economy polyethylene batch cans have a polyethylene faucet that connects to the polypropylene fitting. The *20- and 32-gal. models* have an EPDM gasket. Faucet has a 2″ OD. The *45-gal. model* has a faucet with a 3/4″ OD.

Polyethylene and ***heavy duty polyethylene batch cans*** have a polypropylene faucet that has two TFE O-rings and connects to a polyethylene outlet. Faucet has a 5/8″ OD.

NSF/USDA-approved heavy duty polyethylene batch cans have a polyethylene faucet that connects to a PVC outlet. Faucet has a 3/4″ OD.

Cap., gal.	Top OD	O'all Ht.	Wall Thick.	Max. Temp.	Grads., gal./liters		Each
Economy Polyethylene							
20	14 3/8″	29 3/4″	3/16″	125° F	—	3678K27	$121.73
32	20 1/2″	25 3/4″	3/16″	125° F	—	3678K28	146.45
45	24″	31 1/2″	3/16″	125° F	—	3678K29	180.68
Polyethylene							
5	12 3/8″	15 1/8″	3/32″	140° F	0.5/ 2	3678K52	96.80
7 1/2	13 13/16″	18″	3/32″	140° F	0.5/ 2	3678K72	104.75
10	14 3/4″	20 3/8″	3/32″	140° F	1.0/—	3678K74	107.21
15	15″	27 9/16″	3/32″	140° F	1.0/ 5	3678K54	146.64
30	20″	29 1/8″	3/32″	140° F	2.5/10	3678K56	199.60
55	23 5/8″	36 1/8″	3/32″	140° F	2.5/10	3678K58	225.64
Heavy Duty Polyethylene							
5	12 3/8″	15 1/8″	1/8″	150° F	0.5/ 2	3678K71	104.17
7 1/2	13 13/16″	18″	3/16″	150° F	0.5/ 2	3678K73	123.40
10	14 3/4″	20 3/8″	3/16″	150° F	1.0/—	3678K75	125.72
15	15″	27 5/8″	3/16″	150° F	1.0/ 5	3678K76	142.37
30	20″	29 7/8″	3/16″	150° F	2.5/10	3678K77	209.96
55	23 5/8″	36 1/8″	1/4″	150° F	2.5/10	3678K78	279.74
NSF/USDA-Approved Heavy Duty Polyethylene							
33	19″	31 1/2″	3/16″	145° F	—	3678K83	171.16
45	19″	43″	3/16″	145° F	—	3678K84	182.62
64	21 1/4″	50″	3/16″	145° F	—	3678K85	210.05
82	29 1/4″	35 1/4″	3/16″	145° F	—	3678K86	266.89

Liners for Round Plastic Batch Cans

If cleaning your batch cans is a nuisance, then make the chore easier by using these disposable, flexible liners. All are made of clear polyethylene and FDA-compliant resins. Can be used with the round plastic batch cans shown above and on the previous page.

For Can Cap., gal.	Liner Inside Dia.	Ht.	Max. Temp.	*4 mils Thick*	Each	*8 mils Thick*	Each
5	11 1/2″	30″	190° F	8852K61	$1.80	8852K71	$3.00
7 1/2	13″	32″	190° F	8852K62	2.44	8852K72	3.33
10	14 1/2″	36″	190° F	8852K63	2.56	8852K73	3.44
15	14 3/4″	42″	190° F	8852K64	2.67	8852K74	3.78
30	19″	50″	190° F	8852K65	3.56	8852K75	4.22
55	22 1/2″	60″	190° F	8852K66	3.67	8852K76	5.78
80	24″	65″	190° F	8852K67	3.78	8852K77	5.89
100	29 1/2″	75″	190° F	8852K68	8.00	8852K78	10.58

Polyethylene Batch Cans with Handles

With Stainless Steel Handles and Optional Cover

Get a grip—handles make it easier to move batch cans. Cans are seamless polyethylene and meet FDA and USDA requirements. All are nestable as well as stackable when used with optional covers. Color is translucent white. Max. temperature is 120° F.

Optional covers are loose fitting.

Cap., gal.	Top OD	O'all Ht.	Wall Thick.	*Batch Cans*	Each	*Optional Covers*	Each
With Molded-In Handles							
3	14 7/16″	7″	3/16″	9863T31	$61.00	9863T41	$32.78
10	17″	16″	3/16″	9863T32	77.70	9863T42	32.78
15	17″	21 3/4″	3/16″	9863T33	83.85	9863T42	32.78
With Type 316 Stainless Steel Handles							
20	19″	24″	1/4″	9863T12	154.83	9863T14	41.21
30	19″	31 1/4″	1/4″	9863T16	195.00	9863T14	41.21

Rectangular Plastic Batch Cans

Without Faucet

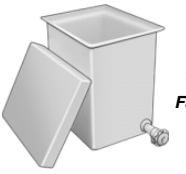

With Faucet

Strong yet lightweight, these batch cans have a smooth, seamless construction that impedes bacterial growth. All include a loose-fitting cover and are translucent white, except impact-resistant polyethylene, which are translucent yellow.

Choose a can ***with faucet*** for convenient dispensing. Faucet is polyethylene and has a 5/8″ OD.

Cap., gal.	O'all Top Size, Lg.×Wd.	O'all Ht.	Wall Thick.	Max. Temp.		Each
Polyethylene						
6	16 11/16″ × 12 11/16″	11 7/16″	5/32″	140° F	1255K62	$80.14
11	20 11/16″ × 14 3/4″	13 9/16″	5/32″	140° F	1255K64	112.18
15	26 5/8″ × 14 5/8″	13 1/4″	5/32″	140° F	1255K65	123.23
30	26 3/16″ × 20 11/16″	19 9/16″	5/32″	140° F	1255K66	196.80
Polyethylene with Faucet						
5	13 1/8″ × 13 1/8″	10″	1/4″	176° F	4420K51	178.81
7 1/2	18 1/4″ × 13 1/4″	10″	1/4″	176° F	4420K52	195.88
10	19 3/4″ × 14 7/8″	10″	1/4″	176° F	4420K53	219.62
15	17 1/8″ × 13 7/8″	19″	1/4″	176° F	4420K54	257.25
20	22 3/4″ × 17 3/4″	14″	1/4″	176° F	4420K55	321.37
Heavy Duty Polyethylene						
2	10 1/8″ × 10 1/8″	9 1/8″	3/16″	140° F	3754K81	50.98
5	18 1/4″ × 12 1/4″	9 3/8″	3/16″	140° F	3754K71	93.81
7	15 3/8″ × 15 3/8″	13 7/8″	1/4″	140° F	3754K72	94.44
11	15″ × 15″	19 3/8″	1/4″	140° F	3754K73	142.50
12	21 1/4″ × 15 3/8″	13″	1/4″	140° F	3754K83	146.66
15	27 3/4″ × 16″	13 3/4″	1/4″	140° F	3754K74	150.00
18	21 1/2″ × 15 3/4″	19″	1/4″	140° F	3754K84	157.50
22	27 3/4″ × 15 7/8″	19 5/8″	1/4″	140° F	3754K75	166.67
27	34 3/8″ × 16 3/8″	20″	1/4″	140° F	3754K86	184.62
Impact-Resistant Polyethylene						
2	10 9/16″ × 10 9/16″	9 1/4″	5/32″	140° F	3685K28	94.62
7	14 9/16″ × 14 9/16″	14 5/16″	5/32″	140° F	3685K34	114.91
11	20 11/16″ × 14 3/4″	13 7/16″	5/32″	140° F	3685K35	169.43
15	20 11/16″ × 14 3/4″	19 13/16″	5/32″	140° F	3685K37	224.94
15	26 5/8″ × 14 5/8″	13 1/4″	5/32″	140° F	3685K36	239.59
30	26 3/16″ × 20 11/16″	19 9/16″	5/32″	140° F	3685K38	306.61
45	26 11/16″ × 20 9/16″	25 3/16″	5/32″	140° F	3685K39	418.82
Heavy Duty Impact-Resistant Polyethylene						
30	34″ × 28 1/4″	12″	7/32″	140° F	3685K11	427.75
50	34″ × 28 1/4″	18 1/8″	7/32″	140° F	3685K12	557.86
50	52″ × 28 1/4″	12″	7/32″	140° F	3685K21	593.78
60	39 15/16″ × 22 1/2″	22″	3/16″	140° F	3685K41	526.80
70	34 1/8″ × 28 1/8″	24 1/8″	7/32″	140° F	3685K13	586.10
75	52″ × 28 1/4″	18 1/8″	7/32″	140° F	3685K22	640.84
85	34″ × 28 1/8″	30″	7/32″	140° F	3685K14	621.71
105	33 3/4″ × 27 7/8″	36″	7/32″	140° F	3685K15	777.01
105	52″ × 28 1/4″	24″	7/32″	140° F	3685K23	726.58
Heavy Duty High-Temperature Polypropylene						
2	10 11/16″ × 10 11/16″	9 5/16″	3/16″	220° F	3726K51	96.59
6	16 7/8″ × 12 13/16″	11 1/2″	1/4″	220° F	3726K53	116.30
7	14 11/16″ × 14 11/16″	14 7/16″	1/4″	220° F	3726K61	120.98
11	14 11/16″ × 14 11/16″	20 15/16″	1/4″	220° F	3726K62	186.78
11	20 7/8″ × 14 11/16″	13 11/16″	1/4″	220° F	3726K54	192.40
15	20 13/16″ × 14 7/8″	19 15/16″	1/4″	220° F	3726K55	233.27
15	26 13/16″ × 14 3/4″	13 3/8″	1/4″	220° F	3726K63	265.43
25	20 13/16″ × 20 13/16″	19 3/8″	1/4″	220° F	3726K56	331.16
30	27 1/16″ × 20 13/16″	19 11/16″	1/4″	220° F	3726K57	336.26
45	26 11/16″ × 20 11/16″	25 3/8″	1/4″	220° F	3726K64	424.02
60	39 3/8″ × 22 7/8″	22 1/8″	5/16″	220° F	3726K58	577.33

Mobile Polyethylene Batch Cans

With Optional Cover

These batch cans are easy to move—all have swivel casters with 2″ dia. rubber wheels. Wall thickness is 3/16″. Color is translucent white. Max. temperature is 140° F.

Optional covers are loose fitting.

Cap., gal.	Top OD	O'all Ht.	No. of Casters	*Drums*	Each	*Optional Covers*	Each
20	15 3/4″	32″	3	3767K14	$175.47	3767K17	$25.61
32	21 1/2″	28 13/16″	4	3767K15	195.00	3767K18	29.30
45	24″	34″	4	3767K16	199.74	3767K19	30.70

Rectangular Stainless Steel Batch Cans

All batch cans are made of 18-ga. stainless steel. ***Batch cans with drain*** have a 1″ NPT female drain centered on the bottom of the can. All *optional covers* are loose fitting.

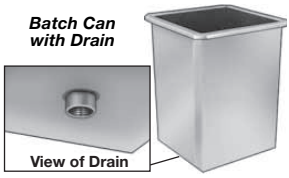

Cap., gal.	Top Size, Lg.×Wd.	O'all Ht.	Batch Cans	Each	Optional Covers	Each
Type 304 Stainless Steel						
1	9⅞″ × 7⅛″	7 1/16″	3763K106	$184.37	3763K38	$56.67
3½	13″ × 10″	10 9/16″	3763K107	240.80	3763K39	66.37
4	14¼″ × 14¼″	6⅛″	3763K101	271.41	3763K31	93.69
7	14¼″ × 14¼″	12⅛″	3763K111	350.26	3763K31	93.69
11	14¼″ × 14¼″	18⅛″	3763K211	408.46	3763K31	93.69
11	20¼″ × 14¼″	12⅛″	3763K121	412.73	3763K32	122.73
17	20¼″ × 14¼″	18⅛″	3763K221	495.21	3763K32	122.73
19	26¼″ × 17¼″	12⅛″	3763K131	513.60	3763K33	148.53
22	26¼″ × 20¼″	12⅛″	3763K151	522.71	3763K35	171.12
28	26¼″ × 17¼″	18⅛″	3763K231	597.97	3763K33	148.53
35	32¼″ × 17¼″	18⅛″	3763K241	626.12	3763K34	164.61
Type 304 Stainless Steel with Drain						
4	14¼″ × 14¼″	7⅛″	3763K102	279.61	3763K31	93.69
6	20¼″ × 14¼″	7⅛″	3763K202	290.50	3763K32	122.73
7	14¼″ × 14¼″	13⅛″	3763K112	358.34	3763K31	93.69
11	14¼″ × 14¼″	19⅛″	3763K212	416.14	3763K31	93.69
11	20¼″ × 14¼″	13⅛″	3763K122	421.00	3763K32	122.73
28	26¼″ × 17¼″	19⅛″	3763K232	593.89	3763K33	148.53
34	26¼″ × 20¼″	19⅛″	3763K252	599.00	3763K35	171.12
35	32¼″ × 17¼″	19⅛″	3763K242	621.83	3763K34	164.61

Cap., gal.	Top Size, Lg.×Wd.	O'all Ht.	Batch Cans	Each	Optional Covers	Each
Type 316 Stainless Steel						
¼	7½″ × 4⅝″	5⅞″	3676K61	$170.33	3676K81	$55.47
1	9⅞″ × 7⅛″	7 1/16″	3676K63	207.03	3676K83	64.57
1	11⅞″ × 7½″	5⅞″	3676K62	203.29	3676K82	70.63
1	13 1/16″ × 4⅜″	10 9/16″	3676K64	239.87	3676K84	61.53
3½	13 1/16″ × 10″	10 9/16″	3676K65	293.80	3676K85	79.73
3½	17⅛″ × 6⅜″	13 9/16″	3676K66	326.00	3676K86	76.70
5	12⅛″ × 12⅛″	14 1/16″	3676K67	349.87	3676K87	85.80
10	14⅛″ × 14⅛″	17 1/16″	3676K68	486.37	3676K88	97.93
20	18⅛″ × 18⅛″	19 1/16″	3676K69	661.50	3676K89	131.60
Type 316 Stainless Steel with Drain						
5	12⅛″ × 12⅛″	15 1/16″	3676K71	383.20	3676K87	85.80
10	14⅛″ × 14⅛″	18 1/16″	3676K72	512.44	3676K88	97.93
20	18⅛″ × 18⅛″	20 1/16″	3676K73	694.83	3676K89	131.60

Round Aluminum and Stainless Steel Batch Cans

A&E *With Optional Cover*

B *With Optional Cover*

C&D *With Optional Cover*

F *With Optional Thermometer*

G

H

J

(A) NSF-Certified Aluminum with Handles— All cans are seamless. Top edge is machined smooth and handles are riveted. *Optional covers* are loose fitting.

(B) NSF-Certified 300 Series Stainless Steel— Cans are stackable when used with optional cover. Brushed bright finish. *Optional covers* are loose fitting.

(C) NSF-Certified 300 Series Stainless Steel with Handles— Cans are stackable when used with optional cover. Brushed bright finish. *Optional covers* are loose fitting.

(D) NSF-Certified 300 Series Stainless Steel with Handles and Aluminum Base— The aluminum base acts as a heat conductor. All cans have a satin finish. *Optional covers* are loose fitting.

(E) Heavy Duty Type 304 Stainless Steel with Handles— Cans have a polished finish. *Optional covers* are snug and dust tight.

Cap., gal.	Top OD	O'all Ht.	Batch Cans Ga.	Each	Optional Covers Ga.	Each
(A) NSF-Certified Aluminum with Handles						
2½	10″	8″	8 4177T61	$55.11	—	—
5	12 3/16″	11″	8 4177T64	80.71	14 4177T74	$22.32
10	15½″	14¾″	8 4177T67	122.76	14 4177T77	27.48
15	17¾″	16¼″	8 4177T68	185.92	—	—
25	20½″	17¾″	3 4177T43	482.07	—	—
(B) NSF-Certified 300 Series Stainless Steel						
1¼ qt.	4 9/16″	5¾″	22 4173T31	19.49	22 4173T41	10.76
2 1/16 qt.	5⅜″	6⅝″	22 4173T32	21.16	22 4173T42	11.53
3 3/16 qt.	6½″	7″	22 4173T33	24.47	22 4173T43	12.87
1 3/16	7⅜″	7⅞″	22 4173T34	28.67	22 4173T44	13.96
1 17/32	8″	8¾″	22 4173T35	37.13	22 4173T45	15.53
2 1/16	8¾″	9⅝″	22 4173T36	44.29	22 4173T46	16.09
3 1/32	9⅝″	11″	22 4173T37	57.96	22 4173T47	20.18
(C) NSF-Certified 300 Series Stainless Steel with Handles						
2	9¾″	7⅝″	22 4173T61	87.78	24 4173T71	20.27
3	10 13/16″	9″	20 4173T62	97.87	24 4173T72	23.82
4	13″	9″	20 4173T63	119.58	24 4173T73	35.67
5	13″	11″	20 4173T64	124.47	24 4173T73	35.67
6	13″	13″	20 4173T65	136.66	24 4173T73	35.67
8	15″	12½″	20 4173T66	164.28	24 4173T74	48.82
10½	15″	16″	20 4173T67	182.66	24 4173T74	48.82
(D) NSF-Certified 300 Series Stainless Steel with Handles and Aluminum Base						
2⅞	11 7/16″	8⅞″	20 4182T32	122.65	—	—
5	12 15/16″	11″	20 4182T34	177.20	24 4182T43	46.86
6	12 15/16″	13″	20 4182T35	191.63	24 4182T43	46.86
9⅝	14 9/16″	15¾″	20 4182T36	256.11	24 4182T46	60.99
15	16¾″	18″	18 4182T37	377.99	24 4182T47	69.91

(F) 300 Series Stainless Steel with Handles, Cover, and Faucet— These cans have a ½″ NPT female Type 316 stainless steel ball valve. Also come with ½″ NPT opening for optional thermometer (sold separately). Cover is loose fitting. Cans are stackable when used with cover. Brushed finish.

(G) Narrow-Mouth Type 304 Stainless Steel with Handles and Cover— Also known as milk cans, these have a 13-ga. bottom ring for extra support. Cover has a tight friction fit and comes with two 7/16″ dia. holes for attaching a tag. Satin finish.

(H) Type 316L Stainless Steel with Handles and Clamp-Down Cover— Clamps hold the cover down for a tight seal, and the cover also has a removable silicone rubber gasket. Polished finish.

(J) Type 316L Stainless Steel with Handles and Lock-Ring Cover— Cover has a locking ring for a tight seal and a removable silicone gasket. Cans are stackable when used with cover. Polished finish.

Cap., gal.	Top OD	O'all Ht.	Batch Cans Ga.	Each	Optional Covers Ga.	Each
(E) Heavy Duty Type 304 Stainless Steel with Handles						
3½	10⅛″	11½″	18 4174T41	$258.82	18 4174T61	$203.36
5½	12″	11½″	18 4174T43	367.50	18 4174T63	212.61
10 13/16	14¼″	17½″	16 4174T44	472.50	18 4174T64	219.71
16	17″	17½″	16 4174T45	568.03	18 4174T65	240.34
21	17″	23½″	16 4174T46	611.48	18 4174T66	240.34
26	19¼″	23½″	16 4174T47	691.25	18 4174T67	265.38
32	21⅛″	23½″	16 4174T48	822.50	18 4174T68	282.36
(F) 300 Series Stainless Steel with Handles, Cover, and Faucet						
10	15″	16″	20 8241T35	251.52	—	—
15	18¾″	13¾″	18 8241T36	323.93	—	—
Optional Thermometer for Style F (0° to 250° F)					3946K157	47.54
(G) Narrow-Mouth Type 304 Stainless Steel with Handles and Cover						
5	7½″	19¾″	20 4078T3	211.02	—	—
10	7½″	23¾″	18 4078T2	238.22	—	—
(H) Type 316L Stainless Steel with Handles and Clamp-Down Cover						
1 3/32	7⅝″	7⅛″	23 41815T8	348.30	—	—
1 13/16	8 13/16″	8¼″	23 41815T9	418.53	—	—
2⅝	10″	9 7/16″	23 41815T2	473.00	—	—
5 5/16	12½″	11 13/16″	21 41815T3	592.62	—	—
9½	14 15/16″	14 3/16″	20 41815T4	838.18	—	—
15 15/16	17 13/16″	17¾″	20 41815T5	1,182.18	—	—
(J) Type 316L Stainless Steel with Handles and Lock-Ring Cover						
5 5/16	12½″	11 13/16″	21 41815T13	826.41	—	—
9½	14 15/16″	14 3/16″	20 41815T14	1,061.52	—	—

Steel Drums

Open Head with Nut-and-Bolt Closing Ring and Solid Cover

Open Head with Leverlock Closing Ring and Cover with Two Openings

Closed Head with Two Openings

All drums are UN-compliant for shipping and have a black finish. The covers, where applicable, are white. All covers for ***open-head drums*** come with EPDM gaskets. ***Covers with two openings*** and all ***closed-head drums*** have one 3/4″ NPS and one 2″ NPS opening with steel plugs. ***Corrosion-resistant drums*** have an epoxy phenolic lining on the inside of the drum.

Cap., gal.	Top OD	O'all Ht.	Body Ga.	Closing Ring Ga.	Specifications Met		Each
Open-Head Drums							
With Nut-and-Bolt Closing Ring and Solid Cover							
55	23 1/16″	34 1/2″	20	12	UN1A2/Y425/S; UN1A2/Y1.2/100	4115T68	$92.59
55	23 1/16″	34 1/2″	18	12	UN1A2/X400/S; UN1A2/Y1.5/150	4115T13	111.11
55	23 1/16″	34 1/2″	16	12	UN1A2/X430/S; UN1A2/Y1.5/175	4115T46	119.26
30	18 11/16″	28 3/4″	18	12	UN1A2/X235/S; UN1A2/Y1.5/150	4115T61	89.29
20	18 11/16″	21 1/4″	18	12	UN1A2/X220/S; UN1A2/Y1.5/150	4115T51	84.52
16	14 5/16″	27 1/8″	20	13	UN1A2/X200/S; UN1A2/Y1.5/150	4115T83	69.85
10	14 5/16″	18 7/8″	20	13	UN1A2/X120/S; UN1A2/Y1.8/150	4115T12	68.53
With Nut-and-Bolt Closing Ring and Cover with Two Openings							
55	23 1/16″	34 1/2″	20	12	UN1A2/Y425/S; UN1A2/Y1.2/100	4115T18	92.98
55	23 1/16″	34 1/2″	20	12	UN1A2/Y425/S; UN1A2/Y1.2/100	4115T24▲	99.74
30	18 11/16″	28 3/4″	18	12	UN1A2/X235/S; UN1A2/Y1.5/150	4115T22	88.79
With Leverlock Closing Ring and Solid Cover							
55	23 1/16″	34 1/2″	20	12	UN1A2/Y425/S; UN1A2/Y1.2/100	4115T28	102.83
30	18 11/16″	28 3/4″	18	12	UN1A2/X235/S; UN1A2/Y1.5/150	4115T29	90.00
20	18 11/16″	21 1/4″	18	12	UN1A2/X220/S; UN1A2/Y1.5/150	4115T34	84.05
16	14 5/16″	27 1/8″	20	13	UN1A2/Y200/S; UN1A2/Y1.5/150	4115T39	69.85
10	14 5/16″	18 7/8″	20	13	UN1A2/X120/S; UN1A2/Y1.5/150	4115T43	68.53
With Leverlock Closing Ring and Cover with Two Openings							
55	23 1/16″	34 1/2″	20	12	UN1A2/Y425/S; UN1A2/Y1.2/100	4115T44	99.74
30	18 11/16″	28 3/4″	18	12	UN1A2/X235/S; UN1A2/Y1.5/150	4115T45	90.52
Corrosion-Resistant Open-Head Drums							
With Nut-and-Bolt Closing Ring and Cover with Two Openings							
55	23 1/16″	34 1/2″	20	12	UN1A2/Y425/S; UN1A2/Y1.2/100	4115T49	108.11
30	18 11/16″	28 3/4″	18	12	UN1A2/X235/S; UN1A2/Y1.5/150	4115T53	106.03
With Leverlock Closing Ring and Solid Cover							
55	23 1/16″	34 1/2″	20	12	UN1A2/Y425/S; UN1A2/Y1.2/100	4115T54	110.00
30	18 11/16″	28 3/4″	18	12	UN1A2/X235/S; UN1A2/Y1.5/150	4115T55	95.69
Closed-Head Drums							
With Two Openings							
55	23 1/16″	35 1/4″	20	—	UN1A1/X1.6/300	4115T38	85.09
55	23 1/16″	35 1/4″	16	—	UN1A1/X1.8/300	4115T59	126.00
30	18 11/16″	29 1/2″	20	—	UN1A1/X1.2/300	4115T62	87.55
20	18 11/16″	21 3/4″	20	—	UN1A1/X1.2/300	4115T52	75.23
16	14 5/16″	27 1/4″	20	—	UN1A1/X1.4/250	4115T63	59.44
10	14 5/16″	19 1/4″	20	—	UN1A1/X1.4/250	4115T64	56.18
Corrosion-Resistant Closed-Head Drums							
With Two Openings							
55	23 1/16″	35 1/4″	16	—	UN1A1/X1.8/300	4115T66	131.58
30	18 11/16″	29 1/2″	20	—	UN1A1/X1.2/300	4115T67	89.22

▲ Also includes one 2″ NPT opening 4″ from the bottom of the drum.

Replacement Parts

Cap., gal.	STEEL COVERS WITH EPDM GASKET: 18-Ga. Solid Cover	Each	16-Ga. Solid Cover	Each	18-Gauge with 3/4″ and 2″ NPS Openings	Each	EPDM Gaskets	Each	12-Ga. Steel Nut-and-Bolt Closing Rings	Each	13-Ga. Steel Leverlock Closing Rings	Each
55	4115T35	$26.30	4115T93	$30.58	4115T272	$27.87	4392T72	$11.10	4115T92	$13.61	4482T94	$22.20
30, 20	4115T27	24.80	4115T36	28.00	4115T75	27.08	4115T32	8.30	4115T82	11.49	4115T79	20.90
16, 10	4115T831	19.20	—	—	—	—	4115T832	4.10	4115T833●	11.80	4482T92	13.70

● 13-gauge steel.

Stainless Steel Drums

Open Head with Nut-and-Bolt Closing Ring and Solid Cover

Closed Head with Two Openings

All drums are UN-compliant for shipping. ***Open-head drums*** have covers with EPDM gaskets. ***Covers with two openings*** and all ***closed-head drums*** come with one 3/4″ NPT and one 2″ NPT opening with stainless steel plugs.

Cap., gal.	Top OD	O'all Ht.	Body Ga.	Closing Ring Ga.	Specifications Met		Each
Open-Head Drums with Steel Nut-and-Bolt Closing Ring							
Type 304 Stainless Steel with Solid Cover							
55	23 1/16″	34 1/2″	18	12	UN1A2/X440/S; UN1A2/Y1.5/150	4392T47	$757.26
55	23 1/16″	34 1/2″	16	12	UN1A2/X430/S; UN1A2/Y1.5/200	4392T36	835.87
30	18 11/16″	28 3/4″	18	12	UN1A2/X225/S; UN1A2/Y1.5/150	4392T35	594.14
20	18 11/16″	21 1/4″	18	12	UN1A2/X160/S; UN1A2/Y1.5/150	4392T54	532.94
16	14 5/16″	27 1/8″	20	13	UN1A2/X200/S; UN1A2/Y1.5/150	4392T69	424.42
10	14 5/16″	18 7/8″	20	13	UN1A2/X120/S; UN1A2/Y1.8/150	4392T64	381.42
8	14 5/16″	16 1/8″	20	13	UN1A2/X96/S; UN1A2/Y1.8/150	4392T65	350.24
Type 304 Stainless Steel with Cover with Two Openings							
55	23 1/16″	34 1/2″	16	12	UN1A2/X430/S; UN1A2/Y1.5/200	4392T48	947.22
30	18 11/16″	28 3/4″	18	12	UN1A2/X225/S; UN1A2/Y1.5/150	4392T49	646.37
Type 316 Stainless Steel with Cover with Two Openings							
55	23 1/16″	34 1/2″	16	12	UN1A2/X430/S; UN1A2/Y1.5/200	4392T58	1,120.87
30	18 11/16″	28 3/4″	18	12	UN1A2/X225/S; UN1A2/Y1.5/150	4392T59	805.86
Closed-Head Drums							
Type 304 Stainless Steel with Two Openings							
55	23 1/16″	35 1/4″	18	—	UN1A1/X1.8/300	4392T38	691.34
30	18 11/16″	29 1/2″	18	—	UN1A1/X1.2/300	4392T66	609.84
20	18 11/16″	21 3/4″	18	—	UN1A1/X1.2/300	4392T67	541.73
16	14 5/16″	27 1/4″	20	—	UN1A1/X1.2/250	4392T75	489.17
10	14 5/16″	19 1/4″	20	—	UN1A1/X1.4/250	4392T71	467.42
Type 316 Stainless Steel with Two Openings							
55	23 1/16″	35 1/4″	18	—	UN1A1/X1.8/550	4392T73	988.10
30	18 11/16″	29 1/2″	18	—	UN1A1/X1.2/300	4392T74	801.19

USDA-Compliant Stainless Steel Drums

In addition to being corrosion resistant, these drums have smooth, welded seams to prevent food and chemicals from collecting in crevices. The top rim is reinforced with a ½″ dia. rod and sealed.

Drums with Protective Bottom Ring— Bottom ring minimizes wear and tear on the bottom of the drum when sliding drum along the floor.

Optional covers are 16-gauge stainless steel and loose fitting.

Optional covers with leverlock closing ring are 16-gauge stainless steel and include an FDA-compliant sponge-rubber gasket.

Drum with Two Handles and Optional Cover with Leverlock Closing Ring

Drum with Protective Bottom Ring

Cap., gal.	Top OD	O'all Ht.	Drums Gauge	Drums Each	Optional Covers	Optional Covers Each	Optional Covers with Leverlock Closing Ring	Optional Covers with Leverlock Closing Ring Each
Drums with Two Handles								
Type 304 Stainless Steel								
58	25¼″	30″	16	4562T25	$576.21	4562T35	$209.97	4562T46	$294.67
49	23¼″	30″	16	4562T24	558.42	4562T34	198.41	4562T45	281.67
40	21¾″	30″	16	4562T23	544.27	4562T33	194.31	4562T42	270.16
33	19¼″	30″	16	4562T22	513.19	4562T32	188.23	4562T41	251.21
Type 316 Stainless Steel								
58	25¼″	30″	16	4562T51	667.06	4562T61	288.10	4562T71	387.33
Drums with Protective Bottom Ring								
Type 304 Stainless Steel								
55	23¼″	34″	14	4562T27	985.98	4562T34	198.41	4562T45	281.67
30	19¼″	30″	14	4562T26	885.23	4562T32	188.23	4562T41	251.21
Type 316 Stainless Steel								
55	23¼″	34″	14	4562T52	1,095.72	4562T62	280.16	4562T72	370.98

Polyethylene Drums

All drums and covers are made of FDA-compliant resins. All drums have one ¾″ NPT and one 2″ NPT opening that come with polyethylene plugs. Max. temperature is 140° F. **To Order:** Please specify color, where applicable.

Open-head drums come with a cover that has an EPDM gasket and a steel closing ring.

Note: In hot-fill applications, allow contents to cool to ambient temperature before stacking.

Open-Head Drum with Nut-and-Bolt Closing Ring

Closed-Head Drum

Open-Head Drums

Cap., gal.	Top OD	O'all Ht.	Wall Thick.	Available Colors	With Nut-and-Bolt Closing Ring	With Nut-and-Bolt Closing Ring Each	With Leverlock Closing Ring	With Leverlock Closing Ring Each
55	23½″	36¼″	3/16″	Black, Blue, Translucent White	4319T913	$114.98	4319T964	$114.98
35	20¾″	31¾″	3/16″	Black, Blue, Translucent White	4319T56	102.53	4319T57	102.53
30	19⅜″	29¾″	3/16″	Translucent White	4319T814	82.32	4319T867	82.33
20	17¼″	26⅜″	3/16″	Translucent White	4319T714	62.18	4319T767	62.18
15	16″	22¾″	3/16″	Translucent White	4319T616	52.32	4319T665	52.32

Closed-Head Drums

Cap., gal.	Top OD	O'all Ht.	Wall Thick.	Available Colors		Each
55	23½″	36¼″	3/16″	Black, Blue, Red, Translucent White, Yellow	4319T36	$93.65
35	20¾″	31¾″	3/16″	Black, Blue, Translucent White	4319T49	83.54
30	19⅜″	29¾″	3/16″	Black, Blue, Red, Translucent White, Yellow	4319T37	62.45
20	17¼″	26⅜″	3/16″	Black, Blue, Translucent White	4319T2	47.67
15	16″	22¾″	3/16″	Black, Blue, Red, Translucent White, Yellow	4319T38	39.69

UN-Compliant Polyethylene Drums

Choose these UN-compliant drums for shipping hazardous materials. All drums have two openings with polypropylene plugs, unless otherwise specified. All are made of FDA-compliant resins, except the black models. Max. temperature is 160° F. **To Order:** Please specify color, where applicable.

Open-head drums come with a cover with steel leverlock closing ring. Cover has a urethane gasket.

Closed-head drums with one or ***two handles*** are easy to move when empty.

Note: In hot-fill applications, allow contents to cool to ambient temperature before stacking.

Standard Open Head

Standard Closed Head

Closed Head with Two Handles

Cap., gal.	Top OD	O'all Ht.	Wall Thick.	Top Openings, Thread Size (Qty.)	Specifications Met	Available Colors		Each
Open-Head Drums								
Standard								
55	22⅞″	36 13/16″	⅛″	2″ NPS (2)	UN1H2/Y250/S, UN1H2/X150/S	Black, Blue	43235T7	$95.90
30	19 5/16″	29⅜″	⅛″	¾″ NPS (1), 2″ NPS (1)	UN1H2/Y180/S	Blue, Translucent White	43235T11	65.17
Nestable								
55	23 13/16″	38 13/16″	⅛″	2″ NPS (2)	UN1H2/Y185/S	Blue	43235T15	98.80
30	21 5/16″	30⅛″	⅛″	2″ NPS (2)	UN1H2/Y180/S	Black, Blue	43235T9	65.01
15	14⅞″	27 13/16″	⅛″	♦	UN1H2/Y100/S, UN1H2/X65/S	Black, Blue	43235T13	41.74
Closed-Head Drums								
Standard								
55	23 5/16″	34 13/16″	⅛″	2″ NPS (1), 2″ BTR ★ (1)	UN1H1/Y1.9/150	Black, Blue, Translucent White	43235T5	69.24
30	19½″	29⅝″	⅛″	2″ NPS (1), 2″ BTR ★ (1)	UN1H1/Y1.9/150	Black, Blue, Translucent White	43235T8	58.20
With One Handle								
15	14⅜″	26 5/16″	⅛″	¾″ NPS (1), 2″ NPT (1)	UN1H1/Y1.9/100	Translucent White	4119T8	31.86
With Two Handles								
15	16″	20⅝″	⅛″	2″ NPS (1), 2″ BTR ★ (1)	UN1H1/Y2.0/150	Black, Blue, Translucent White	4119T5	38.96
15	15⅝″	25½″	⅛″	2″ BTR ★ (1)	UN1H1/X1.9/320	Black	4119T2	43.38

♦ Top is solid; has no openings. ★ BTR = Buttress thread.

Fiber Drums

Round All-Fiber Drum for Dry Materials

Square All-Fiber Drum for Dry Materials

Fiber Drum for Dry Materials with Galvanized Steel Rims

Fiber Drum for Liquid and Dry Materials with Galvanized Steel Rims

Our lightweight fiber drums are an economical choice for your storing and shipping needs. All are tan and not rated for temperature. All drums that meet UN specifications are UN-compliant for shipping.

32415T43 has a two-piece body with a separate lid. Good for fluorescent-bulb recycling, drum holds approximately 85 bulbs that are 1″ in diameter.

Fiber drums for liquid and dry materials with galvanized steel rims come with a 0.004″ thick polyethylene liner. The cover with leverlock closing ring comes with a urethane gasket and two openings (one ¾″ NPS and one 2″ NPS).

Cap., gal.	Cap., lbs.	Top Size	O'all Ht.	Specifications Met		Each
All-Fiber Drums for Dry Materials						
Round with Snug Fiber Cover						
55	400	21½″ dia.	35″	—	32415T35	$36.04
39	225	15½″ dia.	48″	—	32415T43	31.55
30	400	18½″ dia.	25¾″	—	32415T32	26.04
17½	225	15½″ dia.	21½″	—	32415T31	16.76
13	225	14″ dia.	19½″	—	32415T44	14.42
8	150	11¼″ dia.	19½″	—	32415T46	11.55
Square with Snug Fiber Cover						
55	400	22½″ sq.	29½″	—	32415T37	41.09
30	300	18″ sq.	23½″	—	32415T62	29.74
15	225	15½″ sq.	16½″	UN1G/Y75/S	32415T53	18.52
Fiber Drums for Dry Materials with Galvanized Steel Rims						
Round with Steel Cover with Leverlock Closing Ring						
55	300	22⅜″ dia.	35½″	—	4142T4	47.58
55	400	22⅜″ dia.	35½″	UN1G/Y190/S	4142T5	51.24
55	550	22⅜″ dia.	35½″	—	4142T6	57.76
47	400	22⅜″ dia.	31″	—	4142T7	44.39
41	300	20⅞″ dia.	31″	—	4142T8	42.17
30	225	19⅜″ dia.	27″	—	4142T3	34.78
20	225	16⅜″ dia.	25½″	—	4142T9	27.89
15	225	14⅞″ dia.	23½″	—	4142T12	26.37
Fiber Drums for Liquid and Dry Materials with Galvanized Steel Rims						
Round with White Polyethylene Cover with Leverlock Closing Ring						
55	600	22⅜″ dia.	38 1/16″	—	4142T2	62.27
30	600	19⅜″ dia.	28¾″	—	4142T1	51.23

Salvage/Overpack Drums

Steel Drum with Leverlock Closing Ring

Mobile Polyethylene Drum

Perfect not only for secondary containment, but also for temporarily storing and transporting leaking containers. All drums are UN-compliant for shipping.

Steel drums come with a rust-inhibitive coating. All are yellow with a red cover with EPDM gasket, unless noted. All come with "Salvage Drum" printed in English, Spanish, French, German, and Japanese.

Polyethylene drums are nestable. Drums and covers are yellow. Covers screw on and have a polyethylene gasket, unless noted. *Mobile drum* comes with two 6″ dia. polyolefin wheels and has a load capacity of 250 lbs.

Steel Drums

For Drum Size, gal.	Cap., gal.	Top OD	O'all Ht.	Inside Dia.	Inside Ht.	Gauge, Body/Ring	Specifications Met		Each
With Nut-and-Bolt Closing Ring									
85	110	30⅛″	42½″	30″	41″	16/12	UN1A2/Y409/S	4482T23	$392.86
55	96	26⅛″	42½″	26″	41″	16/12	UN1A2/X440/S	4482T24	194.64
30 and 16	55	22⅝″	34½″	22½″	33″	16/12	UN1A2/X430/S; UN1A2/Y1.5/175	4482T16	125.43
15 and 8	30	18 11/32″	28¾″	18¼″	27½″	18/12	UN1A2/X235/S; UN1A2/Y1.5/150	4482T28	101.77
10 and 5	20	18 11/32″	21¼″	18¼″	19¼″	18/12	UN1A2/X220/S; UN1A2/Y1.5/150	4482T29	82.45
5	10	14 1/16″	18⅞″	14″	17″	20/13	UN1A2/X120/S; UN1A2/Y1.8/150	4482T47	73.24
1	8	14 1/16″	16⅛″	14″	14″	20/13	UN1A2/X96/S; UN1A2/Y1.8/150	4482T31	66.77
With Leverlock Closing Ring									
55	85	26⅛″	38¾″	26″	37″	18/12	UN1A2/X440/S; UN1A2T/Y320/S	4482T82●	159.82
55	85	26⅛″	38¾″	26″	37″	16/12	UN1A2/X440/S; UN1A2T/Y320/S	4482T61	179.11
30 and 16	55	22⅝″	34½″	22½″	33″	16/12	UN1A2/X430/S; UN1A2/Y1.4/175	4482T87	141.23
15 and 8	30	18 11/32″	28¾″	18¼″	27½″	18/12	UN1A2/X235/S; UN1A2/Y1.5/150	4482T84	110.31
10 and 5	20	18 11/32″	21¼″	18¼″	19¼″	18/12	UN1A2/X220/S; UN1A2/Y1.5/150	4482T85	94.52
5	10	14 1/16″	18⅞″	14″	17″	20/13	UN1A2/X120/S; UN1A2/Y1.5/150	4482T86	75.84

Polyethylene Drums

For Drum Size, gal.	Cap., gal.	Top OD	O'all Ht.	Inside Dia. Top	Inside Dia. Bottom	Inside Ht.	Wall Thick.	Specifications Met		Each
Stationary										
55	105	31⅜″	45″	27⅛″	25″	42″	¼″	UN1H2/X295/S	4059T32	$259.31
55	95	31⅜″	41½″	27″	24¾″	37″	¼″	UN1H2/X295/S; UN1H2T/Y295/S	4059T33	180.36
30	65	27¾″	37½″	23¾″	22″	34¼″	¼″	UN1H2/X200/S	4059T35	162.50
16	30	22¼″	30″	21½″	17″	28⅛″	⅛″	UN1H2/X100/S	9858T51★	67.59
5	20	22⅜″	18⅞″	21 9/16″	17¼″	17⅜″	⅛″	UN1H2/X75/S	9858T53★	51.51
Mobile										
55	95	31⅜″	47½″	27¼″	24¾″	38½″	¼″	UN1H2/X113/S	4059T31	234.82

● Cover is yellow. ★ Gasket is neoprene.

Drum Locks

For Open Head

For Closed Head

Secure 30- and 55-gal. steel drums. Padlock required (maximum shackle dia. of 5/16″).

Bolt for Open-Head Drums— Replace the standard ⅝″-11 bolt on the drum closing ring and lock.

1900A42 ..... **Each** $72.30

Bar for Closed-Head Drums— Replace plugs on ¾″ and 2″ drum openings with plugs and Buna-N and polyethylene gaskets. Slide the bar through the hole in each plug and lock.

1900A41 ..... **Each** $77.16

Locking Drum Fill Caps

NPT Male

Prevent tampering with the contents of your tank while allowing access for filling. Padlock required (maximum shackle diameter of 5/16″). Made of cast iron. Not rated for temperature.

Pipe Size	O'all Ht.	Dia.		Each
2″ NPT Male	2 ½″	3 5/16″	4906K21	$21.98
2″ NPT Female	1 5/8″	3¼″	4906K23	23.87
3″ NPT Female	2 ⅛″	5 1/16″	4906K27	53.09
4″ NPT Female	2 ¼″	5 15/16″	4906K29	70.97

Drum Vents

Prevent drum failure by using these vents to release pressure and vacuum buildup caused by draining liquids and sudden temperature changes. In case of fire, a flame arrester prevents flashback into the drum. FM approved.

(A) Automatic pressure and manual vacuum relief vents open when internal pressure reaches 5 psi. A knob on top of the vent allows manual vacuum relief. Vents end mount on horizontal drums.

(B-E) Automatic pressure and vacuum relief vents open when internal pressure or vacuum reaches 5 psi. *Style D* has a removable cap so vent can be used as a fill opening. It also has a 6″ long flame arrester. *Style E* comes with two carbon filters. Each filter traps 99% of vapors. Vents top mount on vertical drums.

Thread Size, male	Material: Vent	Material: Flame Arrester	Gasket		Each
Automatic Pressure and Manual Vacuum Relief Vents					
A 2″ NPS	Brass	Brass	Buna-N	**9851T12**	$49.80
A 2″ NPS	Type 316 Stainless Steel	Type 304 Stain. Steel	Fluoroelastomer	**9851T13**	149.97
Automatic Pressure and Vacuum Relief Vents					
B 2″ NPT	Polyethylene	Zinc-Plated Steel	Buna-N	**4488T67**	39.49
B 2″ NPS	Polyethylene	Type 304 Stain. Steel	Buna-N	**4488T68**	72.18
C 2″ NPS	Brass	Brass	Buna-N	**4458T1**	85.87
D 2″ NPS	Brass	Brass	Buna-N	**3988T15**	95.62
E 2″ NPS	Brass	Brass	Buna-N	**6152T73**	188.46

Drum Liners

F-J

K

L-N

P&Q

Why waste time cleaning drums? Simply use one of these liners and then dispose of it. All are made of FDA-compliant resins, except Styles J and K. All antistatic liners (Styles G, M, and Q) have a surface resistivity of 10^{11} ohms/sq. The conductive liners (Style K) have a surface resistivity of 10^{3} to 10^{5} ohms/sq.

For Drum Cap., gal.	Thick., mils	Dia.	Ht.	Max. Temp.		Each
Flexible, Seamed Liners— *Similar to plastic garbage bags*						
(F) Round-Bottom Polyethylene— *Translucent*						
85	8	44″	72″	175°F	**9772T12**	$7.42
55	4	22½″	56″	200°F	**9772T38**	3.62
55	4	22½″	40″	200°F	**9772T31**	2.89
55	8	22½″	56″	200°F	**9772T39**	6.57
55	8	22½″	40″	200°F	**9772T32**	5.64
55	10	22½″	56″	200°F	**9772T29**	6.67
55	10	22½″	40″	200°F	**9772T33**	6.41
30	4	19″	36″	200°F	**9772T36**	2.95
30	8	19″	36″	200°F	**9772T37**	4.23
15	4	16″	36″	200°F	**9772T35**	2.82
(G) Antistatic Round-Bottom Polyethylene— *Translucent pink*						
55	4	23 5/16″	56″	175°F	**9772T46**	6.20
55	8	23 5/16″	56″	175°F	**9772T47**	10.78
30	8	20″	36″	175°F	**9772T45**	7.33
16	4	14″	36″	175°F	**9772T43**	5.61
(H) High-Temperature Round-Bottom Polypropylene— *Translucent*						
55	4	22½″	40″	320°F	**9772T48**	14.14
(J) Chemical-Resistant Round-Bottom PVC— *Translucent*						
55	8	24″	52″-54″	150°F	**9772T15**	21.56
55	20	24″	52″-54″	150°F	**9772T16**	36.02
55	40	24″	38″-40″	150°F	**9772T17**	51.76
30	8	18″	52″-54″	150°F	**9772T18**	20.96
(K) Conductive Straight-Bottom Polyethylene— *Black*						
55	4	23¾″	60″	175°F	**9772T25**	11.69
30	4	18¾″	38″	175°F	**9772T53**	6.43
Rigid, Seamless Liners— *Conform to the sides of your drum*						
(L) Smooth-Wall Polyethylene— *Translucent*						
55	15	22½″	34¼″	175°F	**9772T51**	11.78
55	24	22½″	34¼″	175°F	**9772T63**	16.98
30	15	18 5/16″	28½″	175°F	**9772T61**	10.10
30	24	18 5/16″	28½″	175°F	**9772T62**	12.49
(M) Antistatic Smooth-Wall Polyethylene— *Translucent pink*						
55	15	22½″	34¼″	175°F	**9772T28**	13.86
30	15	18 5/16″	28½″	175°F	**9772T27**	11.78
(N) High-Temperature Smooth-Wall Polypropylene— *Translucent*						
55	15	22½″	34¼″	300°F	**9772T34**	18.59
(P) Pleated-Wall Polyethylene— *Translucent*						
55	15	22½″	33″-34½″	175°F	**9772T13**	10.29
(Q) Antistatic Pleated-Wall Polyethylene— *Translucent pink*						
55	15	22½″	33″-34½″	175°F	**9772T23**	13.92

Protective Drum Covers

For Open-Head Drums with Nut-and-Bolt Closing Ring

For Open-Head Drums without Closing Ring

For Closed-Head Drums

You may not be able to save your drums from dings, but you can protect your drum lids and heads from damage with these drum covers.

Polyethylene covers are 40-mils thick. Max. temperature is 175° F.

Galvanized steel covers have a beaded rim. Made of 26-ga. steel.

For Drum Cap., gal.	Cover ID	Material	Color		Each
For Open-Head Drums with Nut-and-Bolt Closing Ring					
55	25⅜″	Polyethylene	Black	**4503T12**	$8.78
55	25⅜″	Polyethylene	Clear	**4503T26**♣	8.78
55	23½″	Polyethylene	Gray	**4503T18**	13.41
55	24½″	Galvanized Steel	—	**4503T22**	18.05
For Open-Head Drums without Closing Ring					
55	23⅜″	Polyethylene	Gray	**4503T19**	13.41
For Closed-Head Drums					
55	22¾″	Polyethylene	Black	**4503T14**	8.78
55	22¾″	Polyethylene	Clear	**4503T25**♣	8.78
55	22⅝″	Polyethylene	Gray	**4503T16**	13.41
55	23½″	Galvanized Steel	—	**4503T21**	16.90
30	18½″	Polyethylene	Gray	**4503T15**	12.15

♣ Made from FDA-compliant resins

Dust Caps for Drums

Polyethylene dust caps are made from FDA-compliant resins. *Antistatic polyethylene dust caps* have a surface resistivity of 10^{11} ohms/sq.

For Drum Cap., gal.	Thick., mils	Color	Max. Temp.	Pkg. Qty.		Per Pkg.
Polyethylene						
55	4	Clear	175°F	5	**4104T5**	$11.52
8-30	4	Clear	175°F	5	**4104T4**	12.15
Antistatic Polyethylene						
55	4	Pink	175°F	5	**4104T8**	11.89
8-30	4	Pink	175°F	5	**4104T7**	12.61
Chemical-Resistant PVC						
55	6	Clear	Not rated	1	**4104T9**	4.55
55	6	Translucent	Not rated	1	**4104T2**	4.74

Strainers for Drums and Pails

Keep unwanted particles out of your drums and pails. Strainers have a white polyethylene frame. Max. temperature is 180° F. Fine mesh (31×58) is nylon; coarse mesh (24×27) is polyester. Mesh thickness is 28 mils.

Fits	ID	OD	Ht.	Fine Mesh	Each	Coarse Mesh	Each
55-gal. Drum	22⅜″	23½″	6″	**2778T34**	$13.29	**2778T31**	$13.41
5-gal. Pail	10 11/16″	11¾″	4″	**2778T14**	4.40	**2778T11**	4.67

Metal Drum Faucets

A

B

C

D

E

F

All of these faucets are primarily used on drums, but can also be used on tanks, carboys, and other containers. If your drum has a 2″ Buttress or Mauser thread, see page 1717 for drum thread adapters. If you would like to add a threaded outlet to your drum, see page 115 for through-wall fittings.

(C) Cast Iron Drum Faucet with 2″ Handle and 360° Adjustable Spigot— Has a locknut with a rubber gasket that allows you to position the faucet in any direction. Locknut and gasket also provides a tight seal, even on drums with oversized or damaged threads.

	Inlet	Outlet	Materials in Contact with Solution	Lockable	Max. Shackle Dia.		Each
Cast Iron Drum Faucets—2″ Handle							
A	3/4″ NPT male	11/16″ unthreaded	Cast Iron, Brass	Yes	5/16″	**4580T2**	$31.96
A	1 1/2″ NPT male	1 1/2″ unthreaded	Cast Iron, Brass	Yes	5/16″	**4580T5**	40.12
A	2″ NPT male	1 11/16″ unthreaded	Cast Iron, Brass	Yes	5/16″	**4580T6**	43.05
A	3″ NPT male	2 3/8″ unthreaded	Cast Iron, Brass	No	—	**4580T7**	114.42
Cast Iron Drum Faucets—4″ Handle							
B	2″ NPT male	1 11/16″ unthreaded	Cast Iron, Brass	Yes	5/16″	**4580T11**	73.11
B	3″ NPT male	2 3/8″ unthreaded	Cast Iron, Brass	No	—	**4580T12**	119.93
B	4″ NPT male	4″ unthreaded	Cast Iron, Brass	No	—	**4580T8**	233.59
Cast Iron Drum Faucet 360° Adjustable Spigot							
C	2″ NPT male	1 11/16″ unthreaded	Cast Iron, Brass	Yes	5/16″	**4580T15**	57.82
Brass Drum Faucets							
D	3/4″ NPT male	3/4″ GHT★ male	Brass	Yes	7/16″	**4450T4**	51.40
D	3/4″ NPT male	3/4″ NPT female	Brass	Yes	7/16″	**4450T1**	44.80
Brass Drum Faucets with Ball Valve							
E	3/4″ NPT male	3/4″ NPT female	Brass, Chrome-Plated Brass, PTFE	Yes	9/32″	**3975T4**	33.04
E	1″ NPT male	1″ NPT female	Brass, Chrome-Plated Brass, PTFE	Yes	9/32″	**3975T5**	46.38
Aluminum Drum Faucets							
F	3/4″ NPT male	11/16″ unthreaded	Aluminum, Brass	Yes	5/16″	**4435T11**	45.34
F	2″ NPT male	1 11/16″ unthreaded	Aluminum, Brass	Yes	5/16″	**4435T15**	58.71

★ Garden hose thread.

Self-Closing Drum Faucets

G

H

J

K

L

M

N

P
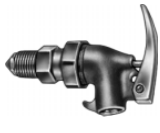
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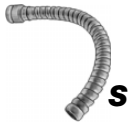
S

Simply push or pull the faucet handle to open, and then release to close—it's that quick and easy. These faucets are primarily used on drums, but can also be used on tanks, carboys, and other containers.

If your drum has a 2″ Buttress or Mauser thread, see page 1717 for drum thread adapters. If you would like to add a threaded outlet to your drum, see page 115 for through-wall fittings.

	Inlet, male	Outlet	Materials in Contact with Solution	Approvals	Flame Arrester	Lockable	Max. Shackle Dia.		Each
Die Cast Zinc Drum Faucets									
G	3/4″ NPT	3/4″ unthreaded	Zinc, Acetal	—	No	Yes	9/32″	**9895T22**	$15.96
G	3/4″ NPT	3/4″ unthreaded	Zinc, Acetal, Type 304 SS	—	Yes	Yes	9/32″	**9895T21**	28.55
Cast Iron Drum Faucets									
H	3/4″ NPT	11/16″ unthreaded	Cast Iron, Brass	—	No	Yes	5/16″	**47985T28**	47.56
J	2″ NPT	1 11/16″ unthreaded	Cast Iron, Brass	—	No	Yes	5/16″	**3981T11**	118.15
Brass Drum Faucets									
K	3/4″ NPT	13/16″ female UNF●	Brass, PTFE, Nylon, Type 304 SS	FM	Yes	Yes	5/16″	**9014T11**	46.25
L	3/4″ NPT	3/4″ unthreaded	Brass, Buna-N, PTFE, Type 302 SS	UL Listed	No	Yes	3/8″	**8988T11**	54.63
Brass Drum Faucets for Viscous Fluids— *For fluids above 2000 SSU (approximately 30W oil).*									
M	3/4″ NPT	13/16″ female UNF●	Brass, PTFE, Nylon, Type 304 SS	FM	No	Yes	5/16″	**40055T18**	40.84
N	2″ NPT	1 5/8″ unthreaded	Brass, PTFE, Type 304 SS	FM	No	No	—	**9004T1**	142.31
Brass Drum Faucet with Liquid Level Gauge— *Max. temperature is 225°F.*									
P	3/4″ NPT	13/16″ unthreaded	Brass, Zinc-Plated Iron, Buna-N, Glass, Type 300 SS	—	No	Yes	9/32″	**4338T1**	128.43
Adjustable Brass Drum Faucet— *Outlet can be adjusted to a downward position.*									
Q	3/4″ NPT	13/16″ female UNF●	Brass, PTFE, Type 304 SS	FM	Yes	Yes	5/16″	**9014T13**	52.01
Adjustable Type 316 Stainless Steel Drum Faucet— *After tightening, if necessary, the outlet can be adjusted to a downward position.*									
Q	3/4″ NPT	13/16″ female UNF●	PTFE, Type 316 SS, Type 303 SS, Type 304 SS	FM	Yes	Yes	5/16″	**9014T14**	151.59
Black Polypropylene Faucet— *Primarily used on coffee pots. Max. temperature is 170°F.*									
R	5/8″-18 UNF●	5/8″ unthreaded	Polypropylene, Silicone Rubber	NSF	No	No	—	**9013T11**	18.53
Optional Flexible Metal Extensions— *Screw into threaded outlets to prevent hazardous spills.*									
S	8″ Brass Extension for Styles K (9014T11), M (40055T18), and Q (9014T13)							**9014T12**	16.03
S	6″ Stainless Steel Extension for Style Q (9014T14)							**9014T15**	35.20

● Unified National Fine thread.

Polyethylene Drum Faucets

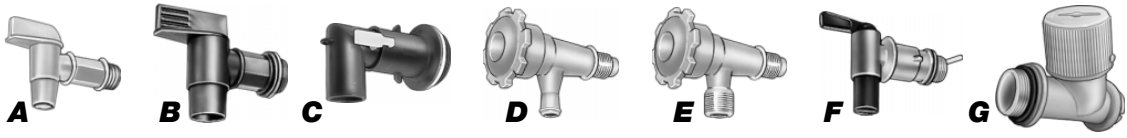

Primarily used on drums, these faucets can also be used on tanks, carboys, and other containers. All faucets are made of FDA-compliant resins, except Style C. Faucets are not lockable.

If your drum has a 2″ Buttress or Mauser thread, see this page for drum thread adapters. If you would like to add a threaded outlet to your drum, see page 115 for through-wall fittings.

	Inlet	Outlet	Materials in Contact with Solution	Max. Temp.		Each
Drum Faucets with Lever Handle						
A	3/4″ NPT male	5/8″ unthreaded	Polyethylene	140° F	**4461T2**	$2.14
B	2″ NPT male	1 7/8″ unthreaded	Polyethylene, EPDM Gasket	140° F	**4461T1**	17.64
Drum Faucets with 360° Swivel Spigot and Push/Pull Handle						
C	2″ NPS male	1 3/16″ unthreaded	Polyethylene, Fluoroelastomer O-Ring	140° F	**4461T3**	30.89
Drum Faucets with Knob Handle						
D	1/2″ NPT male	1/2″ unthreaded	Polyethylene, PTFE O-Ring	176° F	**4462T1**	48.67
D	3/4″ NPT male	1/2″ unthreaded	Polyethylene, PTFE O-Ring	176° F	**4462T2**	48.67
E	3/4″ NPT male	3/4″ GHT★ male	Polyethylene, PTFE O-Ring	176° F	**4462T4**	60.20
Vented Drum Faucet with Lever Handle— *For use with ventless drums.*						
F	3/4″ NPT male	3/4″ unthreaded	Polyethylene, Polypropylene, Rubber	180° F	**9886T11**	3.34
Inline Drum Faucet with Knob Handle						
G	2″ NPT male	2″ NPT male	Polyethylene, Rubber	180° F	**9886T12**	56.29

★ Garden hose thread.

Drum Plugs, Caps, and Gaskets

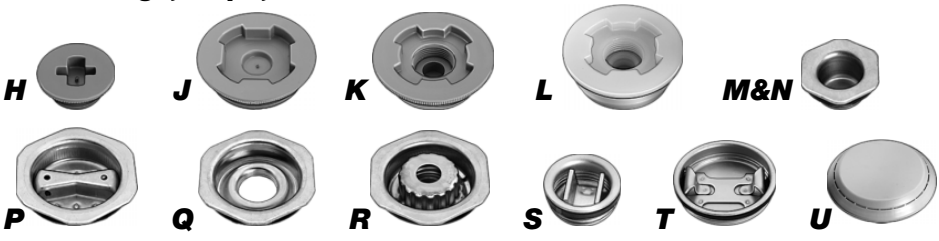

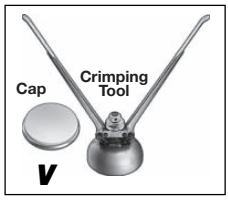

Drum Plugs

All plugs, when properly installed, meet UN specifications. For drum-plug wrenches, see page 2767.

Styles H-L are made of FDA-compliant resins and have a max. temperature of 125° F. Package quantity is 5. *Polypropylene plugs* are gray, unless noted. *Polyethylene plugs* are white.

	Thread Size, male	Features		Per Pkg.
Polypropylene				
H	3/4″ NPS		**8983T41**	$5.17
H	3/4″ NPS	Vent ♦	**8983T35**	8.92
J	2″ NPS		**8983T42**	10.65
J	2″ NPS	Vent ♦ and EPDM Gasket	**8983T36**♠	10.84
K	2″ NPS	3/4″ NPS Female Faucet Knockout	**8983T43**	10.96
L	2″ Buttress	3/4″ NPS Female Faucet Knockout	**8983T37**♠	10.51
Polyethylene				
H	3/4″ NPS		**9030T61**	5.40
H	3/4″ NPS	Vent ♦	**9030T81**	9.26
J	2″ NPS		**9030T62**	10.79
J	2″ NPS	Vent ♦ and EPDM Gasket	**9030T82**	12.86
K	2″ NPS	3/4″ NPS Female Faucet Knockout	**9030T63**	10.77
Polyethylene with EPDM Gasket				
L	2″ Buttress	3/4″ NPS Female Faucet Knockout	**9030T64**	10.79
Zinc-Plated Steel with Buna-N Gasket				**Each**
M	3/4″ NPS		**8983T9**	$1.90
N	3/4″ NPS	Vents at 0.5-4 psi for Pressure Relief	**8983T55**	2.68
N	3/4″ NPS	Vents at 0.5-4 psi for Vacuum Relief	**8983T53**	2.82
P	2″ NPS		**8983T11**	2.91
Q	2″ NPS	3/4″ NPS Female Reducing Hole	**8983T54**	7.80
R	2″ NPS	Vents at 13-15 psi for Pressure Relief	**8983T13**	15.80
Type 316 Stainless Steel with Buna-N Gasket				
S	3/4″ BSP♣		**8983T16**	13.20
T	2″ BSP♣		**8983T17**	18.43

♦ For pressure and vacuum relief. ♠ Color is white.
♣ British Standard Pipe thread.

Drum-Plug Caps

Designed to fit over drum plugs to provide dust protection as well as evidence of tampering. Caps have a breakaway seal and are for one-time use. Color is white.

(U) Snap-on polyethylene caps are simple to use—just apply them by hand.

(V) Crimp-on polyethylene caps with aluminum ring are applied with a crimping tool (sold separately below).

For Plug Style(s)	Plug Size	Max. Temp.	Pkg. Qty.		Per Pkg.
(U) Snap-On Polyethylene Caps					
M and N	3/4″	125° F	10	**8983T26**	$5.82
P, Q, and R	2″	125° F	10	**8983T28**	7.16
S	3/4″	125° F	10	**8983T27**	5.82
T	2″	125° F	10	**8983T29**	7.16
(V) Crimp-On Polyethylene Caps with Aluminum Ring					
H	3/4″	125° F	10	**8983T31**	5.82
J, K, and L	2″	125° F	10	**8983T32**	7.16

Crimping Tool for 8983T31	**8983T44**	**Each**	$504.17
Crimping Tool for 8983T32	**8983T45**	**Each**	$504.17

Drum-Plug Gaskets

	Max. Temp.	Pkg. Qty.		Per Pkg.
For 3/4″ Plugs				
Polyethylene	350° F	100	**8983T25**	$18.24
Buna-N	450° F	100	**8983T24**	9.54
EPDM	450° F	100	**8983T51**	11.50
For 2″ Plugs				
Polyethylene	350° F	100	**8983T23**	33.81
Buna-N	450° F	100	**8983T34**	17.40
EPDM	450° F	100	**8983T52**	20.48

Drum Opening Thread Adapters and Protectors

Adapters convert drum openings that have 2″ Buttress or Mauser threads to 2″ NPT.
Protectors cover plastic threads to prevent damage.

	Max. Temp.		Each
Adapters			
Polyethylene 2″ Buttress Male Thread to 2″ NPT Female	125° F	**2045T4**	$21.90
Polyethylene 2″ Mauser Male Thread to 2″ NPT Female	125° F	**2045T5**▲	23.92
Protectors— *2″ NPT Male to 2″ NPT Female*			
Zinc-Plated Steel	275° F	**2045T6**	27.66
Type 316 Stainless Steel	275° F	**2045T7**	76.08

▲ Includes an EPDM O-ring.

Buttress Thread Adapter ***Mauser Thread Adapter*** ***Thread Protector***

Galvanized Steel Troughs

Round Trough

Durable and corrosion resistant, these troughs have a 3/4″ NPT female brass drain with steel plug, unless noted. The 314-gal. trough also has a steel top brace. For water use only.

Cap., gal.	O'all Body Size, Lg. × Wd.♣	O'all Top Size, Lg. × Wd.	O'all Ht.	Wall Thick.		Each
Oval						
38	44 1/4″ × 20 3/8″	46″ × 22 1/8″	11 1/2″	22 ga.	3745K18●	$115.77
62	60″ × 24 1/8″	61 3/4″ × 25 7/8″	11 1/2″	22 ga.	3745K19	146.54
131	60″ × 24 1/8″	61 3/4″ × 25 7/8″	23 1/8″	22 ga.	3745K12	165.31
195	72″ × 30 3/8″	73 3/4″ × 32 1/8″	23 1/8″	22 ga.	3745K14	204.88
314	96″ × 36 1/4″	97 3/4″ × 38″	23 1/8″	22 ga.	3745K17	310.68
Round						
48	36″ Dia.	37 3/4″ Dia.	11 1/2″	22 ga.	3756K11	147.55
101	36″ Dia.	37 3/4″ Dia.	23 1/8″	22 ga.	3756K21	153.94

♣ Represents dimensions just below top lip. ● Does not have a drain.

Polyethylene Troughs

A

B *With Optional Cover and Optional Mobile Base*

Polyethylene troughs are built tough so they won't rust, dent, or leak—even when frozen. All are nestable.

(A) Structural-foam troughs have a heavy-wall construction and a 1 1/4″ NPT female plastic drain with plug. Max. temperature is 120° F. Color is black.

(B) FDA-compliant trough is ideal for contents where sanitation is important. Made of FDA-compliant resins and meets USDA requirements. Max. temperature is 155° F. Color is white. *Optional cover* is made of white polyethylene. *Optional mobile base* is made of a galvanized steel angle frame and has four 5″ dia. phenolic swivel casters. Base adds 6 7/8″ to trough height.

Cap., gal.	O'all Body Size, Lg. × Wd.♣	O'all Top Size, Lg. × Wd.	O'all Ht.	Wall Thick.		Each
(A) Structural-Foam Troughs						
50	49 1/2″ × 28 5/16″	52″ × 31″	12″	1/4″	3673K49	$137.34
100	49 1/2″ × 28 1/2″	53″ × 31″	25″	1/4″	3673K52	122.47
150	55″ × 36 1/8″	58″ × 39″	25″	5/16″	3673K53	205.02
300	66 1/4″ × 60 1/2″	69″ × 63 1/4″	25″	5/16″	3673K54	323.76

♣ Represents dimensions just below top lip.

Cap., gal.	O'all Body Size, Lg. × Wd.♣	O'all Top Size, Lg. × Wd.	O'all Ht.	Wall Thick.		Each
(B) FDA-Compliant Trough						
70	43″ × 23″	46 5/8″ × 26″	16 1/4″	5/32″	41255T61	$239.95
Optional Cover for Style B					41255T52	136.67
Optional Mobile Base for Style B					41255T62	434.30

Polyethylene Tanks

Vertical Tank

All tanks have graduations and a threaded fill cap. They are UV-stabilized for long-term outdoor service. Color is translucent white.

Vertical tanks are freestanding. All have a polypropylene female drain fitting with EPDM gasket (unless noted). Max. temperature is 140° F (unless noted).

Horizontal tanks with legs have molded legs so they can stand on their own. Max. temperature is 130° F. *Tanks with drain* have a polyethylene female drain fitting with fluoroelastomer gasket.

Vertical Tanks

Cap., gal.	O'all Dia.	O'all Ht.	Wall Thick.	Fill Opening Dia.	Graduation Intervals	With Drain: Drain Fitting		Each
70	23″	44″	3/16″	8″	10 gal.	3/4″ NPT	3662K22★	$245.11
130	29″	51″	3/16″	8″	20 gal.	1 1/2″ NPT	3662K18	374.62
165	31″	59″	3/16″	6″	5 gal.	1 1/2″ NPT	3662K16▲	329.17
300	35″	82″	3/16″	18″	50 gal.	2″ NPT	3662K27■	482.95
550	48″	75″	3/16″	18″	50 gal.	2″ NPT	3662K11■	616.27

★ Gasket is Santoprene. ▲ Drain fitting is polyethylene. Max. temperature is 120° F.
■ Max. temperature is 130° F.

Horizontal Tank with Legs

Horizontal Tanks with Legs

Cap., gal.	O'all Dia.	O'all Lg.	O'all Ht.	Wall Thick.	Fill Opening Dia.	Graduation Intervals	Without Drain: Each	With Drain: Drain Fitting		Each
30	23″	19 1/2″	25 13/16″	1/4″	4 1/2″	5 gal./19 L	3764K51 $164.00	1″ NPT	3764K31	$278.00
60	23″	38 1/2″	25 13/16″	1/4″	4 1/2″	5 gal./19 L	3764K52 254.00	1″ NPT	3764K32	366.00
125	30″	49 1/2″	34 9/16″	1/4″	7″	10 gal./38 L	3764K53 420.00	1″ NPT	3764K33	516.00
230	38″	51 1/2″	42 1/2″	1/4″	7″	20 gal./76 L	3764K54 558.00	1″ NPT	3764K34	654.00
300	38″	72 3/8″	42 1/2″	1/4″	7″	20 gal./76 L	3764K55 680.00	1″ NPT	3764K35	776.00
525	47 13/16″	75″	52 3/8″	1/4″	7″	25 gal./95 L	3764K56 846.15	1″ NPT	3764K36	976.00

Double-Wall Tanks with Forklift Entry

Two walls are better than one—these tanks provide extra protection for products that require double-wall containment, such as diesel and waste oil, solvents, and antifreeze. The second wall forms a compartment that holds 110% of the primary compartment's storage capacity.

All tanks are steel and have a 4″ dia. fill opening with hinged cap and removable strainer. They also have two 2″ NPT female openings for venting, two 4″ NPT female openings for emergency venting, and a 2″ NPT female drain for draining the secondary compartment. There's a 3/8″ NPT female dipstick opening (dipstick included) to check for leaks in the primary compartment. Feet on the bottom of the tank raise the bottom off the floor, allowing forklift entry. Meet UL 142 standards for above-ground storage. Color is red.

Cap., gal.	O'all Size, Lg. × Wd. × Ht.	Wall Thick.	Forklift Entry	Forklift Opening Size, Wd. × Ht.		Each
120	32″ × 36″ × 42″	12 ga.	4-Way	19 1/2″ × 2″	3696K71	$2,165.00
240	55″ × 36″ × 42″	12 ga.	4-Way	19 1/2″ × 2″	3696K73	2,651.74

Easy-Drain Cylindrical Tanks

Slopes aren't just for skiing—the cone-shaped bottom of these tanks is sloped to ensure easy and complete drainage.

(A) Polyethylene tanks with covers have a 19° bottom slope and seamless, heavy-wall construction with rounded corners. All tanks include a loose-fitting cover and PVC NPT female drain fitting with EPDM gasket. Max. temperature is 140° F. Color is translucent white.

Optional stands are steel with a black finish. Choose from styles with or without a mixer mount for attaching a mixer (not included). All stands allow a 15″ minimum clearance from bottom of drain to floor.

(B) Type 304 stainless steel tanks have a 10° bottom slope and come with three 2″ dia. steel pipe legs (nonsanitary) with adjustable feet.

Standard tanks have a smooth dull mill finish and come with a Type 304 stainless steel NPT female drain fitting.

Sanitary tanks have a brushed polished finish inside and out. Furnished with a sanitary, Type 304 stainless steel tri-clamp drain. (See pages 208-210 for fittings compatible with tri-clamp drains.)

Also Available: Hinged and unhinged loose-fitting covers for Style B stainless steel tanks. All covers are made of Type 304 stainless steel and have a smooth dull mill finish. Please ask for 3772K888 and specify tank part number as well as hinged or unhinged cover.

A *With Optional Stand with Mixer Mount*

B

(A) Polyethylene Tanks with Covers

Cap., gal.	O'all Body Dia.	O'all Top Dia.	O'all Ht.	Wall Thick.	Drain Fitting	Tanks	Each	Optional Stands w/out Mixer Mount	Each	Optional Stands with Mixer Mount	Each
5	11¾″	13¼″	15⅛″	3/16″	½″ NPT	3687K101	$95.45	3687K611	$225.00	3687K501	$305.36
10	15⅜″	16⅞″	20⅜″	3/16″	½″ NPT	3687K102	107.69	3687K612	240.98	3687K502	323.21
15	15⅝″	18⅜″	22¾″	3/16″	½″ NPT	3687K103	138.46	3687K612	240.98	3687K503	375.00
30	18¾″	21¾″	33¼″	¼″	½″ NPT	3687K111	160.00	3687K614	330.00	3687K511	425.00
55	23¼″	26⅛″	38⅜″	¼″	½″ NPT	3687K122	212.31	3687K616	390.00	3687K522	514.29
100	30½″	34″	41⅝″	5/16″	1″ NPT	3687K133	481.08	3687K617	496.67	3687K533	604.94
200	31⅛″	34⅝″	66⅜″	5/16″	1″ NPT	3687K155	579.13	3687K618	808.33	3687K555	920.00
250	43″	47″	54¾″	5/16″	1½″ NPT	3687K166	766.67	3687K619	869.64	3687K566	1,003.33

(B) Type 304 Stainless Steel Tanks

Cap., gal.	O'all Body Dia.	O'all Top Dia.	O'all Ht.	Wall Thick.	Standard Tanks: Drain Fitting		Each	Sanitary Tanks: Drain Fitting Tube OD		Each
30	18″	20″	45″	16 ga.	1″ NPT	3772K72	$1,583.48	1″	3772K62	$1,839.62
50	22¾″	24¾″	45″	16 ga.	1″ NPT	3772K73	1,657.09	1″	3772K63	1,869.64
80	30″	32″	45″	16 ga.	1″ NPT	3772K74	1,847.67	1″	3772K64	2,097.12

Tanks with Forklift Entry

When you need large storage containers that are easy to move with a forklift, choose these durable tanks.

Polyethylene horizontal tanks are seamless, UV-resistant, and made with FDA-compliant resins. All have been paired with a sturdy 12-ga. steel skid that has a black finish. All also have an EPDM gasket, threaded cap, and 25-gal. graduations (except 3664K22, which has 50-gal. graduations). Max. temperature is 140° F. Color is translucent white.

Round-bottom tanks have a 1½″ NPT female ball valve drain that's made of PVC. 3664K16 has an 8″ dia. fill opening and 3664K22 has a 6″ dia. fill opening.

Flat-bottom tanks are loaf-shaped for a low center of gravity and greater stability. They have a 6″ dia. fill opening and a 2″ NPT female drain opening that's made of PVC and polyethylene.

Steel vertical tanks meet UL 142 standards for above-ground storage, making them ideal for storing fuel and waste oil. All have two 3/16″ thick steel forklift channels, and they also have a 1½″ NPT female drain with cast iron plug. Color is red.

The *260-gal. capacity tank* has four 2″ NPT female openings and one 3″ NPT female opening.

The *500-gal. capacity tank* has nonslip steps and hand grips for easy access to the top of the tank. It has four 2″ NPT female openings and one 4″ NPT female opening.

Polyethylene Horizontal Flat-Bottom Tank

500-gal. Steel Vertical Tank

Cap., gal.	O'all Size, Lg. × Wd. × Ht.	Wall Thick.	Forklift Entry	Forklift Opening Size, Wd. × Ht.		Each
Polyethylene Horizontal Tanks—*Round Bottom*						
110	49″ × 32″ × 37″	3/16″	2-Way	11¼″ × 5″	3664K16	$912.73
500	81″ × 52″ × 57″	¼″	2-Way	14½″ × 4½″	3664K22	1,678.18
Polyethylene Horizontal Tanks—*Flat Bottom*						
210	50″ × 46″ × 40″	¼″	4-Way	8¾″ × 3″	3664K11	1,225.45
300	50″ × 46″ × 49″	¼″	4-Way	8¾″ × 3″	3664K12	1,498.18
500	50″ × 46″ × 79″	¼″	4-Way	8¾″ × 3″	3664K13	1,807.27
Steel Vertical Tanks						
260	36″ Dia. × 63″ Ht.	12 ga.	2-Way	5⅝″ × 2⅝″	3683K11	1,077.92
500	46″ Dia. × 75″ Ht.	10 ga.	2-Way	5⅝″ × 2⅝″	3683K13	1,697.24

UN-Compliant Tank with Forklift Entry

Also known as an intermediate bulk container (IBC), this tank meets UN31HA1/Y transportation specifications. It has the capacity of five 55-gal. tanks, yet uses up to 25% less floor space. Secured to a galvanized steel pallet, it is easy to maneuver with a forklift. Stacks two high when full and four high when empty.

The tank is made of FDA-compliant polyethylene and is protected by a rigid tubular steel cage. Tank comes with a 6″ top opening with threaded cap and TPE gasket, a 2″ NPT fill opening, and a drain outlet that has a 2″ NPT valve with dust cap. Max. temperature is 150° F. Color is translucent white.

Cap., gal.	O'all Size, Lg. × Wd. × Ht.	Wall Thick.	Forklift Entry	Forklift Opening Size, Wd. × Ht.		Each
275	48″ × 40″ × 46″	1/16″	4-Way	9″ × 2½″	3783K21	$361.32

Steel Elevated Tanks

An elevated bottom provides stability, and a lifting lug on top makes it easy to transport these steel tanks. They are ideal for storing fuel and waste oil. All tanks have a threaded 4″ NPT female emergency vent fitting and three or five 2″ NPT female openings that include plastic plugs. Channels are made of ¼″ thick steel. All meet UL 142 standards for above-ground storage. Color is red.

Cap., gal.	O'all Size, Dia. × Lg. × Ht.	Wall Thick.	Opening Size (Qty.)		Each
150	38″ × 29″ × 41″	12 ga.	2″ NPT (3)	37415K55	$733.57
300	38″ × 60″ × 41″	12 ga.	2″ NPT (5)	37415K71	817.29
550	48″ × 72″ × 51″	12 ga.	2″ NPT (5)	37415K72	1,150.91

Drip Pans

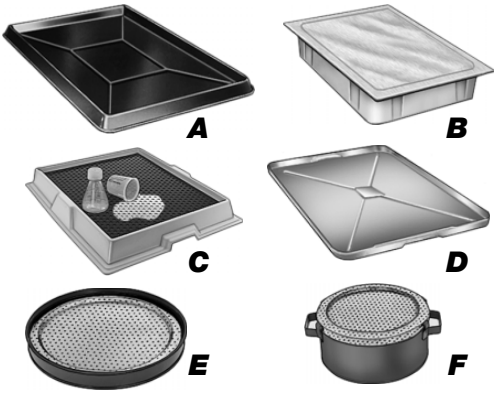

Style B is filled with polypropylene sorbent to prevent liquids from splashing. It is not reusable.

Style C has removable grating for easy cleaning. Weight capacity is 40 lbs.

Styles E and ***F*** have a perforated metal tray to prevent contents from exposure to fire.

Cap., gal.	O'all Size, Lg. × Wd. × Ht.	Color		Each
(A) Polyethylene Drip Pans				
3½	36″ × 24″ × 1½″	Black	4206T1	$17.72
12	52¼″ × 16¼″ × 5″	Black	4206T3	56.90
24	52¼″ × 28¼″ × 5″	Black	4206T4	62.07
(B) Polyethylene Drip Pan with Sorbent				
1	10½″ × 10½″ × 3″	Yellow	42005T55	6.53
(C) Polyethylene Drip Pan with Grating				
2½	25″ × 21½″ × 3″	Yellow and black	40695T82	67.27
(D) Galvanized Steel Drip Pan				
2	25¾″ × 17¾″ × 1″	—	4524T15	6.86
(E) Steel Drip Pan with Perforated Metal Tray				
¼	13¾″ Dia. × 1¼″ Ht.	Red	4524T12	45.22
(F) FM-Approved Steel Drip Pan with Perforated Metal Tray				
1	9⅜″ Dia. × 4½″ Ht.	Red	4524T11	35.19

Drain Pans

(G&H) Polyethylene drain pans have a pouring spout and a handle. *Style G* has a drain with plug and a storage compartment where fluids drain for disposal at a later date. *Style H* has an antisplash lip.

(J&K) Mobile polyethylene drain pans can be moved wherever they are needed. *Style J* has a red polypropylene funnel that mounts on a telescoping tube. It includes four swivel casters with 2½″ dia. polyolefin wheels, a 1¾″ threaded pour spout with cap, and a handle. Shipped unassembled. *Style K* is great for big jobs. Fluid drains from this pan into the storage compartment for disposal at a later date. Has two 3″ dia. polyethylene wheels. Includes a drain with plug, 2³⁄₁₆″ dia. pouring spout, and handgrips.

(L&M) Galvanized steel drain pans come in two styles. *Style L* has a one-piece seamless construction. *Style M* has a pouring spout with an antisplash guard and handles.

(N) FM-approved steel drain pans have a detachable wide-mouth plated-steel funnel, a built-in flame arrester, a ¾″ threaded plug for emptying, and a bail handle.

	Cap., gal.	O'all Size, Dia. × Ht.	Color		Each
Polyethylene Drain Pans					
G	3¾	18″ × 6¾″	Black	40465T4	$14.36
H	5	18″ × 6¾″	Green	40465T3	13.07
Mobile Polyethylene Drain Pans					
J	8	14¼″ × 36½″-74″	Yellow	4296T3	117.62
K	14½	39″ Lg. × 24⅛″ Wd. × 8⅞″ Ht.	Black	41855T73	101.82
Galvanized Steel Drain Pans					
L	3	16″ × 4″	—	4204T4	6.60
M	7	18¾″ × 6⅝″	—	4204T3	24.07
FM-Approved Steel Drain Pans					
N	3	11⅝″ × 12¼″	Red	9887T13	78.32
N	5	11⅝″ × 16¾″	Red	9887T14	85.05

Spill-Control Containers

(P) Polyethylene container for pails is perfect for small containers. Comes with removable grating for easy cleaning.

(Q) Polyethylene container for drums has an octagonal shape that provides greater spill control than same-size round containers.

(R) Large-capacity polyethylene containers have recessed rings to secure drums. All have bottoms with forklift entry except 39855T3, which has a flat bottom so it can be paired with a standard pallet for four-way forklift entry. "HAZARDOUS" is stenciled in black. Meets EPA 40 CFR 264.175.

(S) Large-capacity steel container meets EPA 40 CFR 264.175.

(T) Large-capacity polyethylene container with removable bottom grating can be nested. Meets EPA 40 CFR 264.175.

No. of 55-gal. Drums	Spill Cap., gal.	Weight Cap., lbs.	O'all Size, Lg. × Wd. × Ht.	Color	Forklift Entry	Forklift Opening Size, Wd. × Ht.		Each
(P) Polyethylene Container for Pails								
♦	15	Not Rated	32¾″ × 21 11⁄32″ × 8″	Gray	—	—	12635T1	$66.34
(Q) Polyethylene Container for Drums								
1	19½	500	34″ Dia. × 7¼″ Ht.	Yellow	—	—	40705T77	81.67
(R) Large-Capacity Polyethylene Container								
1	60½	900	30¼″ Dia. × 26″ Ht.	Orange	2-Way	8¼″ × 5¾″	39855T8	178.47
2	102	1,800	58″ × 30½″ × 22″	Orange	2-Way	9½″ × 5¾″	39855T2	274.72
4	174	3,600	50½″ × 50½″ × 17½″	Orange	—	—	39855T3	298.74
Optional Black Cover for 39855T8							39855T9	107.80
Optional Black Cover for 39855T2							39855T5	213.34
Optional Black Cover for 39855T3							39855T6	266.72
(S) Large-Capacity Steel Container								
1	64	880	27″ Dia. × 32″ Ht.	Yellow	4-Way	5 11⁄16″ × 4″	40415T12	210.00
(T) Large-Capacity Polyethylene Container with Removable Bottom Grating								
2	135	1,200	60″ × 33½″ × 25″	Yellow	2-Way	11″ × 3⅝″	12635T16	408.33

♦ Capacity shown is for three 5-gal. pails.

Mobile Spill-Control Containers and Cart

Easily move these containers wherever they are needed. All meet EPA 40 CFR 264.175, except Style A.

(A) Low-profile polyethylene container has a drain spout and four swivel casters with 3″ dia. polyolefin wheels. Color is yellow.

(B) Nestable polyethylene container includes a steel dolly that has four swivel casters with 3″ dia. polyolefin wheels. Drum container is yellow. Dolly is orange.

(C) Steel container has four swivel casters (two locking) with 3″ dia. hard rubber wheels. Color is yellow.

(D) Polyethylene cart has a drain plug for easy drainage, built-in tool tray, and removable top grating deck for easy cleaning. Comes with two locking swivel casters with 8″ dia. polyolefin wheels and two 10″ dia. polyolefin wheels. Cart is yellow with black deck.

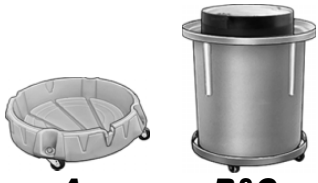

A B&C

40395T21 Shown

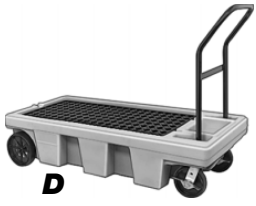

D

No. of 55-gal. Drums	Spill Cap., gal.	Weight Cap., lbs.	O'all Size, Dia. × Ht.		Each
(A) Low-Profile Polyethylene Container					
1	11	500	34″ × 8 13/16″	6145T23	$147.20
Optional Steel T-Handle for Style A				6145T24	30.65
(B) Nestable Polyethylene Container					
1	66	600	32 1/2″ × 35″	40395T21	236.16
(C) Steel Container					
1	64	540	27″ × 33 5/16″	40415T22	233.33
(D) Polyethylene Cart					
2	57	500	66 1/2″ Lg. × 29″ Wd. × 43 7/8″ Ht.■	31135T55	694.03

■ Height is 16″ without handle.

Flexible Spill-Control Pads

When you need an economical alternative to spill-control pallets, choose these reusable, chemical-resistant vinyl-coated polyester pads. Flexible sidewalls allow you to drive in and drop your drums directly onto the pad; walls spring back into shape. Pads fold for easy storage. The six-drum model meets EPA 40 CFR 264.175.

No. of 55-gal. Drums	Spill Cap., gal.	O'all Size, Lg. × Wd. × Ht.	Color		Each
1	7.5	24″ × 24″ × 3″	Yellow	2093T23	$84.00
2	15	24″ × 48″ × 3″	Yellow	2093T24	152.00
4	30	48″ × 48″ × 3″	Yellow	2093T25	216.00
6	45	48″ × 72″ × 3″	Yellow	2093T27	320.00

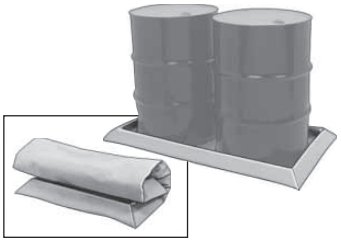

Spill-Control Pallets

All pallets have removable grating for easy cleaning. Grating is black, except Style H, which is gray. Pallets meet EPA 40 CFR 264.175, unless noted.

(E) Low-profile polyethylene pallets have an *optional ramp* that has a ribbed, nonskid surface. The weight capacity is 1,000 lbs. Color is black. *Optional pair of linking connectors* allows you to connect multiple pallets. Use two per side.

(F) Low-profile large-capacity polyethylene pallets with bladder have a pallet to capture overspills and small leaks while larger spills deploy a double layer polyethylene bladder. The bladder holds up to 55 gallons and is 66″ Lg. × 58″ Wd. when fully deployed. *Optional ramp* has a ribbed, nonskid surface. Weight capacity is 600 lbs. Color is yellow.

(G&H) Large-capacity polyethylene pallets with forklift entry are designed with large reservoirs to handle bigger spills. *Style H* has recessed rings for secure drum storage and a deck that can be removed with a forklift. Pallets are stackable and nestable.

(J&K) Low-profile steel and steel pallets with forklift entry are made of 12-ga. steel. *Optional ramps* have a ribbed, nonskid surface. Weight capacity is 1,500 lbs. Color is gray.

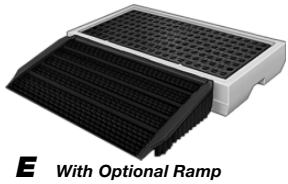

E With Optional Ramp

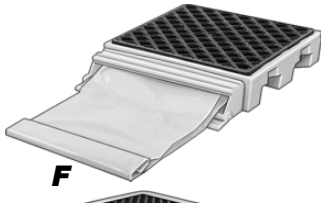

F

G

H

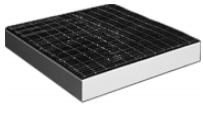

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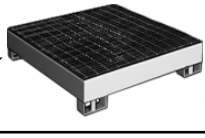

K

No. of 55-gal. Drums	Spill Cap., gal.	Weight Cap., lbs.	O'all Size, Lg. × Wd. × Ht.	Color	Forklift Entry	Forklift Opening Size, Wd. × Ht.		Each
Low-Profile Polyethylene Pallets								
E 2	22	2,400	28 1/2″ × 53″ × 6″	Yellow	—	—	14195T27★	$208.33
E 4	43	6,000	52 1/2″ × 53″ × 6″	Yellow	—	—	14195T28★	246.15
E 6	61	7,000	76 1/2″ × 53″ × 6″	Yellow	—	—	14195T29	333.33
E 8	77	8,000	100″ × 53 1/4″ × 6″	Yellow	—	—	14195T31	537.82
Optional Ramp for Style E							14195T32	176.92
								Per Pair
Optional Pair of Linking Connectors for Style E							14195T91	$74.55
Low-Profile Large-Capacity Polyethylene Pallets with Bladder								**Each**
F 1	66	1,500	25 7/8″ × 30 1/2″ × 5 3/4″	Yellow	—	—	5148T23	$282.96
F 2	77	3,000	52″ × 30 1/2″ × 5 3/4″	Yellow	—	—	5148T24	371.19
F 4	99	6,000	52″ × 56 5/8″ × 5 3/4″	Yellow	—	—	5148T25	494.92
Optional Ramp for Style F							5148T71	171.19
Large-Capacity Polyethylene Pallets with Forklift Entry								
G 1	62	800	40″ × 40″ × 12″	Yellow	2-Way	7″ × 4″	12635T81	250.00
G 2	66	3,000	29″ × 53″ × 16 1/2″	Orange	2-Way	10 3/4″ × 4″	12635T33	267.92
G 4	66	3,000	98″ × 25 1/4″ × 12″	Yellow	2-Way	9″ × 3″	12635T93	298.74
G 4	66	6,000	53″ × 53″ × 11 3/4″	Orange	4-Way	14 3/4″ × 4″	12635T36	350.84
H 4	85	6,500	51″ × 51″ × 17 1/2″	Burgundy	4-Way	7 1/2″ × 4″	12635T72	475.95
Low-Profile Steel Pallets								
J 2	33	3,000	26″ × 51″ × 6 1/2″	Gray	—	—	19805T5★	302.05
J 4	66	6,000	51″ × 51″ × 6 1/2″	Gray	—	—	19805T9	498.55
J 6	99	9,000	76 1/2″ × 51″ × 6 1/2″	Gray	—	—	19805T6	748.63
Optional Ramp for Style J							19805T13	201.27
Steel Pallets with Forklift Entry								
K 2	66	2,000	26″ × 51″ × 16″	Gray	4-Way	18″ × 4″	19805T1	412.48
K 4	66	4,000	51″ × 51″ × 10 1/2″	Gray	4-Way	35″ × 4″	19805T3	560.26
K 6	99	6,000	76 1/2″ × 51″ × 10 1/2″	Gray	4-Way	28″ × 4″	19805T7	829.83
Optional Ramp for 19805T3 and 19805T7							19805T12	287.44

★ Not EPA compliant.

Safety Cans

A

B

C

D

E

F

G

H

J

A safer choice than fuel cans for storing flammable liquids, solvents, and cleaning solutions. All have spring-loaded, self-closing lids; pressure-relief caps; and a flame arrester. ***Type I safety cans*** have a single opening for both filling and pouring. ***Type II safety cans*** have two openings—one for filling, one for pouring.

(A&B) Steel Type I Safety Cans

Cans are FM approved, UL and C-UL listed (unless noted), and meet OSHA and NFPA (National Fire Protection Association) Code 30 requirements. Optional pour spouts are sold separately.

To Order: Please specify color where necessary. Color indicates usage: red for gasoline, yellow for diesel, blue for kerosene, and green for other solvents.

	Cap.	O'all Size Dia.	O'all Size Ht.	Spout OD	Available Colors		
A	1 pt.	4⅜″	6¾″	⅞″	Red	4290T11	$38.96
A	1 qt.	4⅜″	8¼″	⅞″	Red	4290T12	39.15
A	½ gal.	6¾″	8¾″	1½″	Red, Yel, Blu, Grn	4290T37	40.37
A	1 gal.	9″	12″	1¾″	Red, Yel, Blu, Grn	4290T5	41.30
B	2 gal.	9½″	13¾″	1⅝″	Red, Yel, Blu, Grn	4290T151	43.12
B	2½ gal.	11¾″	11½″	1⅝″	Red, Yel, Blu, Grn	4290T181	46.29
B	3 gal.	12″	14¼″	1¾″	Red, Yel, Blu, Grn	4290T51★	46.76
B	5 gal.	11¾″	16⅞″	1⅝″	Red, Yel, Blu, Grn	4290T171	51.95

Optional Pour Spouts for 1- to 5-Gal. Cap. Steel Safety Cans

Rigid Plastic (½″ OD × 11¼″ Lg.)	4290T36	6.94
Flexible Metal (1″ OD × 14″ Lg.)	4290T35	20.66

★ Not C-UL Listed

(C&D) Stainless Steel Type I Safety Cans

Choose one of these corrosion-resistant, Type 316 stainless steel cans for liquids such as acetone, alcohol, ether, toluene, and xylene. Cans are FM approved and meet OSHA and NFPA (National Fire Protection Association) Code 30 requirements. ***Style D*** have a steel rim at the base for added support.

	Cap., gal.	O'all Size	Spout OD		
C	1	8″ Lg. × 6″ Wd. × 13″ Ht.	1½″	4291T19	$157.30
D	2½	11¼″ Dia. × 9⅝″ Ht.	1½″	4291T21	284.52
D	5	11¼″ Dia. × 15⅞″ Ht.	1½″	4291T22	298.74

(E&F) Plastic Type I Safety Cans

These lightweight cans won't rust, dent, or pit. Color is red. FM approved. ***Style F*** are UL listed.

	Cap., gal.	O'all Size	Spout OD		
E	½	7⅝″ Lg. × 4⅝″ Wd. × 9½″ Ht.	1⅝″	4479T21	$48.51
E	1	7⅝″ Lg. × 4⅝″ Wd. × 12¾″ Ht.	1⅝″	4479T22	56.12
F	2½	10¾″ Dia. × 14¼″ Ht.	1⅝″	3994T18	98.33
F	5	12¾″ Dia. × 16″ Ht.	1⅝″	3994T19	104.25

(G-J) Steel Type II Safety Cans

All have a built-in, flexible 9″ long spout, unless noted. ***Styles G&H*** are UL and C-UL listed. ***Styles H&J*** have a vacuum-release valve for controlled, glug-free pouring. ***Style J*** are D.O.T. (Department of Transportation) approved and have a steel roll bar that protects the spout, handle, and trigger during transport.

To Order: Please specify color where necessary. Color indicates usage: red for gasoline, yellow for diesel, blue for kerosene, and green for other solvents.

Cap., gal.	O'all Size Dia.	O'all Size Ht.	Spout OD	Available Colors		
(G) Standard Cans						
1	9″	12″	¾″	Red, Yel, Blu, Grn	4290T52★	$74.47
2	9″	16¼″	¾″	Red, Yel, Blu, Grn	4290T221★	80.04
3	12″	15½″	¾″	Red, Yel, Blu, Grn	4290T231	84.46
5	12″	19½″	¾″	Red, Yel, Blu, Grn	4290T261	96.32
(H) Controlled-Flow Cans						
1	9½″	10½″	⅝″	Red, Yel, Blu, Grn	4290T31	89.70
2½	11¾″	12″	⅝″	Red, Yel, Blu, Grn	4290T53	93.60
5	11¾″	17½″	1″	Red, Yel, Blu, Grn	4290T38	108.18
(J) Transportable Controlled-Flow Cans						
2½	11¾″	12″	⅝″	Red	4290T56	181.66
5	11¾″	17½″	1″	Red	4290T57	189.33

★ Has a 6″ long flexible spout.

Safety Cans with Faucet

Upright Steel Can

Easy-Tilt Steel Can

Use for trouble-free dispensing of flammable liquids. All cans have a flame arrester, a self-closing ¾″ OD faucet, and a self-closing pressure-relief cap. FM approved. Meet OSHA and NFPA (National Fire Protection Association) Code 30 requirements.

Steel cans are for petroleum-based liquids. ***Type 316 stainless steel cans*** are for liquids such as acetone, alcohol, ether, toluene, and xylene. ***Plastic cans*** are for aggressive chemicals and corrosives.

Upright Cans

Steel and plastic cans have a brass faucet. Stainless steel cans have a Type 316 stainless steel faucet.

	Cap., gal.	Can Size Dia.	Can Size Ht.	Fill Spout OD	Color		
Steel	5	11¾″	16⅞″	1½″	Red	9890T11	$106.22
Stainless Steel	5	11¼″	15⅞″	1½″	—	9890T12	516.63
Plastic	5	11½″	17″	1½″	Red	9890T13	150.10

Easy-Tilt Cans

Tip cans down for controlled dispensing, then swing them back to their upright position. All have a steel cradle base (15¾″ Lg. × 15¾″ Wd. × 11¾″ Ht.), brass faucet, and pressure-relief cap with built-in vacuum breaker.

	Cap., gal.	Can Size Dia.	Can Size Ht.	Fill Spout OD	Color		
Steel	5	11¾″	15⅞″	1½″	Red	4510T11	$163.97
Plastic	5	11½″	17″	1½″	Red	4510T12	191.15

Safety Disposal Cans

Store leftover chemicals and solvents until they can be properly discarded.

For Nonflammable Liquids

Use this plastic can to store nonflammable acids and caustics. It has a 1 7/16″ OD spout and a spring-loaded, self-closing cap. Can is translucent and graduated at quart, liter, and gallon intervals.

Cap., gal.	Overall Size Lg.	Wd.	Ht.	Color		
1	7 5/8″	4 5/8″	12 3/4″	White	8989T11	$52.30

For Flammable Liquids

The spring-loaded, self-closing cap on these cans automatically vents to relieve excess vapor pressure, and a flame arrester protects against outside ignition. All have a 3 3/4″ OD spout, are FM approved, and meet OSHA and NFPA (National Fire Protection Association) Code 30 requirements.

Galvanized steel cans are for petroleum-based liquids. ***Type 316 stainless steel cans*** are for liquids such as acetone, alcohol, ether, toluene, and xylene. ***Plastic cans*** are for aggressive chemicals and corrosives.

Cap., gal.	Overall Size Dia.	Ht.	Color		
Galvanized Steel Cans					
2 1/2	11 1/4″	12″	Red	4103T21	$142.13
5	12 1/2″	18″	Red	4103T22	149.42
Type 316 Stainless Steel Cans					
2 1/2	11 1/4″	12″	____	4103T11	334.63
5	11 1/4″	18″	____	4103T12	361.98
Plastic Cans					
2	12″	14 3/4″	White	4103T27	117.92
3	12 1/2″	14 1/2″	Red	4103T23	157.49
5	12″	20″	White	4103T28	121.80
5	12 1/2″	18 1/2″	Red	4103T16	170.63

Fuel Cans

Carry and store fuel in sturdy cans. Color indicates usage. Spouts automatically close to prevent spills. Nozzle OD is 3/4″.

Steel can is D.O.T. (Department of Transportation) approved. To transport a steel can, mount the *optional can-carrier bracket* to your vehicle and secure with the included nylon strap. Also made of steel, the bracket measures 14 1/4″ Wd. × 6″ Dp. × 7 7/8″ Ht. and has four 7/16″ dia. mounting holes (fasteners not included).

Plastic Can

Steel Can with Optional Bracket

Cap., gal.	Overall Size Lg.	Wd.	Ht.	Color		
Plastic Cans for Gasoline						
1	9 1/2″	5 7/8″	7 5/8″	Red	4224T81	$9.98
2	9 1/2″	7 1/2″	10 3/4″	Red	4224T82	13.62
5	15″	8 3/4″	15″	Red	4224T84	16.28
Plastic Cans for Diesel						
5	15″	8 3/4″	15″	Yellow	4224T83	16.28
Plastic Cans for Kerosene						
5	15″	8 3/4″	15″	Blue	4224T88	16.28
Steel Cans for Gasoline						
5	13 3/4″	6 1/2″	18 1/4″	Red	4303T61	53.98
Optional Can-Carrier Bracket for Steel Cans					4303T71	27.12

Dispensing Stands for 5-Gallon Cans

To create a convenient dispensing station, pair this stand with your round, 5-gallon safety can (not included). Made of steel with a sturdy, adjustable safety lock, it can also hold other round containers up to 12 1/4″ in diameter that weigh up to 75 lbs.

Overall size is 14″ Lg. × 14 1/8″ Wd. × 29 3/4″ Ht. The stand folds for compact storage. Color is blue.

2704T14 ..... $81.91

(Can Not Included)

Mobile Fuel Dispensers

Dispense fuel wherever you need it.

Style A has a gravity-fed flow rate of 2 gpm, a 1″ OD nozzle, and a 10-ft. hose. Wheels are plastic. Meets UN specification UN3H1/Y/130.

Style B have a gravity-fed flow rate of 5 gpm, a 3/4″ OD nozzle, and a 10-ft. hose. Wheels are pneumatic rubber. Meets UN specification UN3H1W and are D.O.T. (Department of Transportation) approved.

Style C are our highest capacity steel dispensers. All have a rotary hand pump that dispenses 4 gpm. They also have a 3.5-micron filter that strains out dirt and water, plus a valve to switch between filling and draining. A flame arrester protects against outside ignition. The pump hose is 7-ft. long and has a 3/4″ OD and grounding wire. An 8-ft. grounding strap and clamp are also included. Wheels are rubber. FM approved.

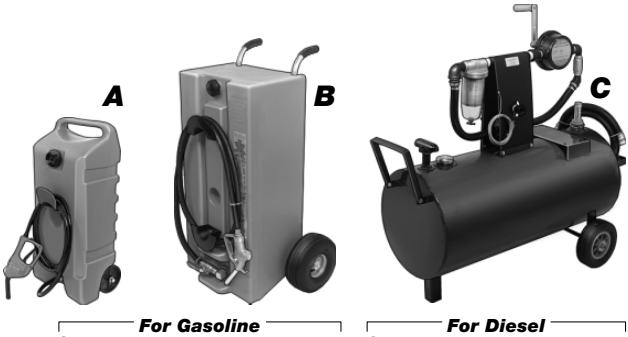

	Cap., gal.	Overall Size Lg.	Wd.	Ht.	Material	For Gasoline Color			For Diesel Color		
A	14	11″	16 1/2″	34″	Plastic	Red	40855T64	$140.10	____	____	____
B	28	22 1/2″	27 1/2″	41″	Plastic	Red	40855T77	470.00	Yellow	40855T89	$470.00
C	34	48″	16 1/2″	38 1/2″	Steel	Red	1341K33	984.14	Green	1341K35	1,050.00

Safety-Rated Steel Pail and Drum Funnels with Cover

Minimize spills while filling pails and drums. Funnels are FM-approved and have a flame arrester to protect against outside ignition. Connection is 2″ NPS male. Color is red.

Pail funnel fits 5-gallon closed-head pails.

Drum funnels fit 30- and 55-gallon closed-head drums. Hinged cover automatically snaps shut at 165° F to extinguish flames. Padlock hasp on cover accommodates a 5/16″ shackle dia. (padlock not included).

Self-closing drum funnel fits 30- and 55-gallon closed-head drums. Hinged cover automatically snaps shut at 165° F to extinguish flames. Padlock hasp on cover accommodates a 5/16″ shackle dia. (padlock not included). It also includes a ball valve that reduces vapors and prevents spills if the drum tips over. A 3/4″ drum vent provides automatic pressure relief.

Pail Funnel

Drum Funnel

Self-Closing Drum Funnel

Capacity	Top OD	Funnel Height	Flame Arrester Height	Material		
Pail Funnels						
1 qt.	4 1/2″	4 1/2″	1″	Stainless Steel	4267T38	$73.87
Drum Funnels						
2 1/2 gal.	10 3/4″	10″	6″	Brass	4267T39	191.88
2 1/2 gal.	10 3/4″	10″	32″	Brass	4267T42	264.31
Self-Closing Drum Funnels						
2 1/2 gal.	10 3/4″	10″	6″	Brass	46995T18	596.22

Plastic Funnels

A&B **C** **D&E**

F **G**

H **J** **K**

L **M** **N**

P **Q** **R**

(A-D) Vapor-lock-resistant funnels have outside ribs to prevent vapor lock. *Styles A* and *C* are autoclavable.

(E) Microfunnels with hanging tab are autoclavable.

(F) Quick-drain funnels have internal ribs to quickly drain materials and are autoclavable.

(G) Weighing funnels can be used as funnels, scoops, and weighing dishes. They are also autoclavable.

(H) Large-capacity funnel has a 6 11/16-gal. capacity.

(J&K) Funnels with filter screen and hanging tab have a permanent 60×60 mesh brass screen. *Style K* has an extra-long spout.

(L) Funnel with flexible spout has a clear extendable spout and a molded-in hand grip.

(M) Funnel with offset spout has a removable tapered stem offset 8″, a handle, and a removable 27×27 mesh brass screen.

(N-Q) Funnels with dirt- and dust-resistant caps have a polypropylene cap for both the funnel and the spout. *Style N* has a hanging tab. *Style P* has a handle. *Style Q* has a flexible spout and a handle.

(R) Funnel for powders has a large spout that allows the flow of powders.

	Cap., oz.	Top OD	O'all Ht.	Spout OD	Spout Lg.	Color		Each
Economy Vapor-Lock-Resistant Funnels—Polypropylene								
A	2	2 11/16″	2 11/16″	3/8″	13/16″	Translucent	**4383T1**	$0.88
A	4	3 7/16″	3 3/4″	3/8″	7/8″	Translucent	**4383T2**	1.14
A	8	4 1/4″	4 11/16″	7/16″	1 1/2″	Translucent	**4383T3**	1.31
Economy Vapor-Lock-Resistant Funnels—Polyethylene								
B	16	5″	5 7/8″	1/2″	1 7/8″	Translucent	**4383T4**	2.04
B	32	6 1/2″	7″	5/8″	2″	Translucent	**4383T5**	3.47
B	64	8 1/8″	8″	3/4″	1 13/16″	Translucent	**4383T6**	4.80
Vapor-Lock-Resistant Funnels—Polypropylene								
C	1	2 1/8″	2 5/8″	9/16″	1 1/2″	Translucent	**1479T2**	7.68
C	3	3″	5″	7/16″	2 3/4″	Translucent	**1479T3**	10.07
C	6	4″	4 1/8″	3/4″	1 3/4″	Translucent	**1479T4**	11.57
C	16	6″	7″	3/4″	3 1/8″	Translucent	**1479T5**	13.87
C	27	7 1/4″	7 3/8″	1″	2 3/4″	Translucent	**1479T6**	15.44
C	128	10 1/2″	13 1/2″	1 3/8″	5 1/2″	Translucent	**1479T7**	40.19
Vapor-Lock-Resistant Funnels with Hanging Tab—Polyethylene								
D	8 1/2	4 3/8″	5 13/16″	1/2″	2 7/8″	Translucent	**4360T3**	15.36
D	26	6 5/8″	7 11/16″	5/8″	3″	Translucent	**4360T4**	23.35
D	124 1/2	10 1/2″	12 1/2″	15/16″	4 5/8″	Translucent	**4360T5**	67.02
Microfunnels with Hanging Tab—Polypropylene								
E	3/32	1 1/8″	1 3/8″	3/16″	5/8″	Translucent	**1479T81**	2.18
E	3/16	1 1/4″	1 5/8″	9/32″	3/4″	Translucent	**1479T82**	2.22
E	1/4	1 5/8″	2″	5/16″	15/16″	Translucent	**1479T83**	2.33
E	1/2	1 13/16″	2 5/16″	5/16″	1″	Translucent	**1479T84**	4.47
Quick-Drain Funnels—Polymethylpentene								
F	1	2 1/4″	7 3/4″	5/16″	6″	Clear	**4005T2**	4.39
F	2 1/2	3 1/8″	8 1/8″	5/16″	6″	Clear	**4005T3**	4.97
F	8	4 7/16″	7 9/16″	3/8″	4 1/4″	Clear	**4005T5**	6.94
F	20	6 3/16″	9 3/4″	5/8″	5 3/16″	Clear	**4005T6**	23.47
F	52	8 1/4″	12 1/4″	1″	6 5/16″	Clear	**4005T7**	31.50
Weighing Funnels—Polypropylene								
G	1/16	15/16″	1 11/16″	1/4″	3/8″	Translucent	**6844A11**	1.42
G	1/4	1 5/16″	2 7/16″	7/16″	1/2″	Translucent	**6844A12**	1.92
G	11/32	1 7/8″	3 1/2″	5/8″	3/4″	Translucent	**6844A13**	3.81
G	7/8	2 9/16″	4 1/2″	3/4″	7/8″	Translucent	**6844A14**	8.51
Large-Capacity Funnel—Polyethylene								
H	858	15″	15 1/2″	1 3/4″	5 1/2″	White	**9022T24**	80.65
Funnels with Filter Screen and Hanging Tab—Polyethylene								
J	64	7″	8 1/2″	1 1/16″	2 1/2″	Red	**4144T3**	3.73
J	192	9″	10 1/2″	1 3/8″	1 1/2″	Red	**4144T4**	6.53
K	16	4 3/4″	20″	5/8″	15″	Red	**40775T47**	4.35
Funnel with Flexible Spout—Polyethylene								
L	32	5 3/8″×6 5/16″	16″	1/2″	5″-11 1/2″	Blue	**40495T1**	3.20
Funnel with Offset Spout—Polyethylene								
M	48	6 1/2″	10 3/4″	3/4″	9″	Orange	**4484T5**	6.52
Funnels with Dirt- and Dust-Resistant Caps—Polyethylene								
N	16	3 3/8″	8 3/4″	9/16″	4″	Orange	**40535T3**	4.79
P	40	4 1/2″	13 1/2″	9/16″	6 5/8″	Blue	**40535T4**	5.65
Q	48	4 1/2″	14 1/4″	3/4″	7 1/4″	Yellow	**40535T5**	6.11
Funnel for Powders—Polyethylene								
R	25	5 9/16″	6 1/2″	1 3/4″	1 1/2″	White	**9017T15**	25.96

Disposable Paper Funnels

Includes a package of 24 funnels in a cardboard dispenser box. Funnels and replacement funnels are white.

Cap., oz.	Top OD	O'all Ht.	Spout OD		Each
10	4″	4 1/2″	1/2″	**40785T2**	$4.77
Replacement Funnels (24/Pkg.)				**40785T4** **Per Pkg.**	$3.94

Metal Funnels

(C) Galvanized steel funnel has a removable 40×60 mesh brass screen.

(D) Quick-drain galvanized steel funnels have a fluted bottom that prevents swirling and increases drainage speed. Also has a removable 50×50 mesh brass screen.

(E) Quick-drain galvanized steel funnels with spill-resistant rim have a fluted bottom that prevents swirling and increases drainage speed. Taller rim allows for faster pouring without spilling. Also has a removable 50×50 mesh brass screen.

(F) Large-capacity galvanized steel funnels have a removable 40×60 brass mesh screen. 4371T2 has a rim with a reinforcing ring.

(G) Galvanized steel funnel with extra-long flexible spout has a 40×60 mesh brass screen.

(H) Galvanized steel funnel with offset spout has a removable 50×50 mesh brass screen.

(J&K) High-stability galvanized steel funnels have two styles. *Style J* have a taller rim that allows for faster pouring without spilling and a skirt to hold the funnel in place. Also come with a fluted bottom that prevents swirling and increases drainage speed, and a removable 50×50 mesh brass screen. *Style K* has legs that rest firmly on the side of the container and hold the spout in place.

(L) Galvanized steel threaded funnel has a 2″ NPT female connection.

(M) Corrosion-resistant Type 304 stainless steel funnels are rust-resistant and have a hanging ring.

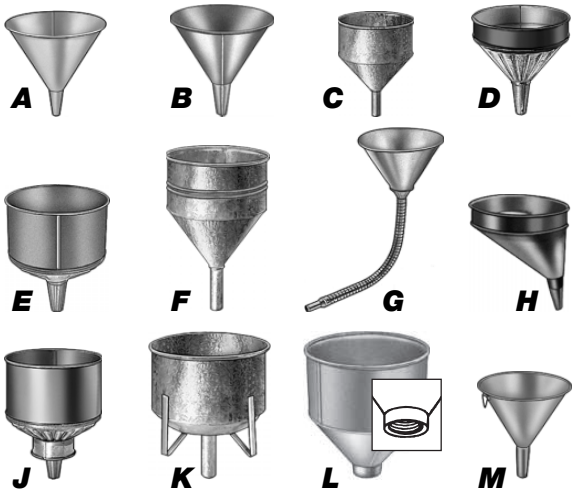

	Cap., oz.	Top OD	O'all Ht.	Spout OD	Spout Lg.	Ga.		Each
Economy Tin Funnels								
A	5	3⅝″	4½″	⅜″	1 15/16″	—	**8996T12**	$4.31
A	10	4 7/16″	5¼″	⅜″	1 15/16″	—	**8996T13**	4.91
A	24	5¾″	6″	½″	2¼″	—	**8996T14**	5.41
A	32	6½″	6⅞″	½″	2½″	—	**8996T15**	6.53
A	56	7⅞″	8½″	¾″	2⅞″	—	**8996T16**	7.44
A	96	9¼″	9″	¾″	2⅞″	—	**8996T17**	8.27
Galvanized Steel Funnels								
B	16	5¾″	6″	½″	2¼″	30	**4363T5**	9.24
B	32	6½″	7″	⅝″	2½″	30	**4363T1**	10.51
B	64	7⅞″	8½″	¾″	2⅞″	30	**4363T2**	11.48
B	128	9¼″	9″	¾″	2⅞″	30	**4363T3**	15.21
C	64	6¼″	8¼″	1″	2¼″	30	**4365T1**	14.01
Quick-Drain Galvanized Steel Funnels								
D	96	8½″	9¼″	9/16″	3⅛″	30	**39865T31**	12.19
D	192	10½″	10½″	1⅛″	3¾″	30	**39865T32**	14.61
D	288	12½″	12″	1⅛″	3¾″	30	**39865T33**	17.22
Quick-Drain Galvanized Steel Funnels with Spill-Resistant Rim								
E	256	9⅝″	11⅞″	1⅛″	3¾″	30	**4377T1**	10.51
E	384	11⅜″	12⅛″	1⅛″	3¾″	30	**4377T2**	12.17

	Cap., oz.	Top OD	O'all Ht.	Spout OD	Spout Lg.	Ga.		Each
Large-Capacity Galvanized Steel Funnels								
F	448	11¾″	17½″	1½″	4½″	27	**4371T1**	$41.04
F	640	11¾″	20½″	1½″	4½″	27	**4371T2**	53.11
Galvanized Steel Funnel with Extra-Long Flexible Spout								
G	48	6″	18¾″	½″	14″	27	**41225T21**	9.29
Galvanized Steel Funnel with Offset Spout								
H	192	10 9/16″	11⅝″	1″	3¾″	28	**4376T1**	20.73
High-Stability Galvanized Steel Funnels								
J	256	9⅝″	11⅞″	1⅛″	3¾″	30	**4377T3**	13.19
J	384	11⅜″	12⅛″	1⅛″	3¾″	30	**4377T4**	14.83
K	384	11¾″	13″	1½″	3″	27	**4220T2**	42.96
Galvanized Steel Threaded Funnel								
L	448	11¾″	12¾″	2″	1¼″	27	**4222T1**	59.51
Corrosion-Resistant Type 304 Stainless Steel Funnels								
M	2⅜	3″	3¾″	½″	1½″	26	**4359T1**	30.93
M	6⅜	4⅛″	4⅞″	½″	1½″	26	**4359T2**	33.90
M	13	5⅛″	5⅝″	½″	1½″	26	**4359T3**	38.05
M	22¼	6¼″	6⅝″	½″	1½″	26	**4359T4**	42.00
M	32	7″	8⅜″	⅞″	2⅝″	26	**4359T5**	48.98
M	64	8⅜″	9½″	⅞″	2⅝″	26	**4359T6**	51.83

Polyethylene Pail and Drum Funnels

Drain oil filters, cans, beakers, bottles and more without spills or tedious pouring. The sloped, scalloped surface channels hazardous liquids into the drain. Color is yellow.

Pail funnel for closed-head pails fits any closed-head pail. Also fits 12″ dia. open-head pails.

Drum funnels for closed-head drums fit into 2″ openings on any drum. *Drum funnel with Type 316 stainless steel screen* has a 14×14 mesh screen.

Drum funnels for open-head and closed-head drums fit over the rim of open-head drums or into 2″ openings on closed-head drums. *Funnel with flame arrester* has an arrester that prevents flashback caused by sparks.

For Closed-Head Pails

For Closed-Head Drums

For Open-Head and Closed-Head Drums

	Cap., gal.	O'all Ht.	OD	***Funnels***	Each	***Optional Covers***	Each
For Closed-Head Pails							
Funnel	½	2¾″	11″	**40035T13**	$41.67	**40035T22**	$33.85
For Closed-Head Drums							
Funnel	5⅞	6″	18″	**40035T16**	33.28	**40035T24**	14.54
Funnel with Type 316 SS Screen	5⅞	6″	18″	**40035T14**	37.57	**40035T24**	14.54
For Open-Head and Closed-Head Drums							
Funnel	4	5½″	26″	**40035T25**	33.33	**40035T27**	36.67
Funnel with Flame Arrester	4	5½″	26″	**40035T26**	191.67	**40035T27**	36.67

Large-Capacity Steel Drum Funnels

Hold up to 300 lbs. of oil-soaked parts in these large-capacity funnels, which mount on any 55-gal. drum. Spout feeds directly into a 2″ drum opening. Drain pan has an angled bottom, a removable drain grid, and a valve to prevent overfilling the drum. Made of 16-ga. steel. Color is red.

Funnel ***with hinged cover*** can be closed manually in case of a fire.

With Open Top

With Hinged Cover

O'all Size, Lg.×Wd.×Ht.	***With Open Top***	Each	***With Hinged Cover***	Each
24″×24″×7½″	**40195T11**	$303.70	**40195T22**	$405.56

Plastic Scoops

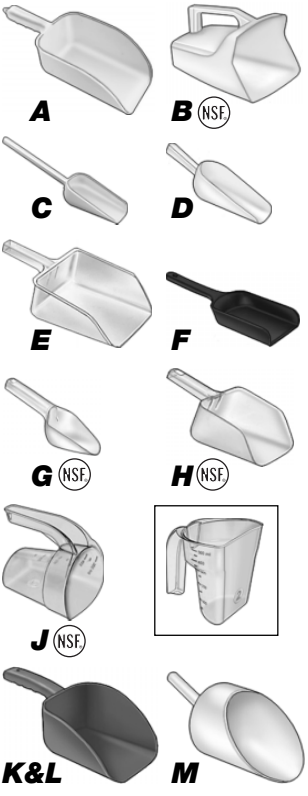

Styles B, D, E, F and ***K-M*** are chemical resistant.
Style C are individually sealed in a polyethylene bag and sterilized. Made from FDA-compliant resins.
Style J allow you to scoop and measure at the same time. Scoops have two flat sides so they can lay flat or stand on end. All come with 100 ml, 1/2 cup, and 4 oz. graduations (except 8750T4, which has 200 ml, 1 cup, and 8 oz. graduations.)
Style K come in a choice of colors. **To Order:** Please specify color.
Style M are thicker walled for heavy duty applications.

	Cap., oz.	Bowl Size Wd.	Bowl Size Lg.	Handle Lg.	Scoop Bottom	Hanging Eyelet	Available Colors		Each
Economy Polystyrene Scoops									
A	82	6 1/4″	10″	5 1/4″	Flat	Yes	Blue	**4421T3**	$4.51
A	82	6 1/4″	10″	5 1/4″	Flat	Yes	White	**4421T2**	4.53
NSF-Certified Economy Polyethylene Scoop									
B	64	6 1/8″	8 1/4″	6″	Flat	No	White	**4418T1**	6.90
Sterilized Polystyrene Scoops									
C	2	1 5/8″	3″	5″	Flat	No	White	**4107T3**	1.29
C	4	2″	3 11/16″	5″	Flat	No	White	**4107T5**	1.69
C	8	2 1/8″	5″	2 1/2″	Round	No	White	**4107T7**	2.25
Autoclavable Polypropylene Scoops									
D	2.5	1 1/2″	3 1/2″	1 7/8″	Round	No	Clear	**4421T5**	2.83
D	6.8	2″	5″	2 1/2″	Round	No	Translucent	**4421T4**	2.92
E	37	4 3/4″	8″	4″	Flat	No	Translucent	**4421T1**	7.86
Polypropylene Scoop									
F	20	4 3/8″	6 7/8″	6 1/2″	Flat	Yes	Black	**4389T2**	8.58
NSF-Certified Clear Polycarbonate Scoops									
G	6	3 1/4″	5 1/8″	4 7/8″	Round	Yes	Clear	**4421T6**	6.41
H	32	4 7/8″	6 1/2″	5 1/8″	Flat	Yes	Clear	**4421T7**	11.48
H	64	6″	8″	6″	Flat	Yes	Clear	**4421T8**	12.77
NSF-Certified Clear Polycarbonate Scoops with Graduations									
J	16	4 5/8″	5 1/4″	4 3/4″	Flat	Yes	Clear	**8750T1**	9.22
J	24	5 1/8″	5 11/16″	5 3/4″	Flat	Yes	Clear	**8750T2**	11.42
J	32	5 5/8″	6 5/8″	6 1/4″	Flat	Yes	Clear	**8750T3**	12.78
J	64	7″	7 3/8″	7″	Flat	Yes	Clear	**8750T4**	17.61
Choose-a-Color Autoclavable Polypropylene Scoops									
K	32	5″	7″	4 1/2″	Flat	Yes	Blue, Green, Red, White, Yellow	**4421T93**	5.20
K	82	6 1/2″	9 3/4″	5 1/4″	Flat	Yes	Blue, Green, Red, White, Yellow	**4421T94**	6.20
Antistatic Autoclavable Polypropylene Scoops									
L	32	5″	7″	4 1/2″	Flat	Yes	Green	**4421T11**	5.20
L	82	6 1/2″	9 3/4″	5 1/4″	Flat	Yes	Green	**4421T13**	6.20
Heavy Duty Polyethylene Scoops									
M	64	5 3/4″	8″	5 1/2″	Round	No	White	**4425T2**	35.66
M	128	7 1/2″	10 1/2″	6 3/4″	Round	No	White	**4425T3**	58.10

Metal Scoops

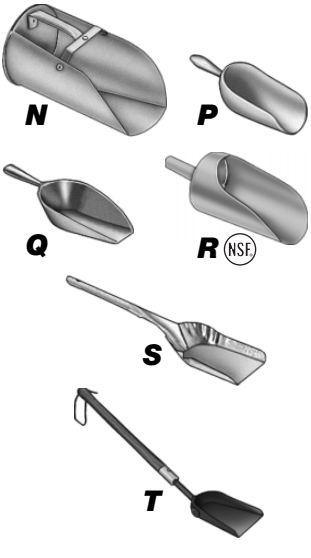

	Cap., oz.	Bowl Size Wd.	Bowl Size Lg.	Handle Lg.	Scoop Bottom	Hanging Eyelet		Each
Galvanized Steel Scoops								
N	96	6 1/2″	8 1/2″	4 3/4″	Flat	No	**4408T2**	$9.29
N	128	7″	11 1/4″	4 3/4″	Flat	No	**4408T3**	11.49
N	193	7″	12 1/2″	4 3/4″	Flat	No	**4408T4**	12.44
Cast Aluminum Scoops								
P	4	2 7/8″	5 3/16″	3 1/2″	Round	No	**4415T9**	6.92
P	6	3 1/8″	6 3/16″	3 1/2″	Round	No	**4415T11**	8.26
P	8	3 3/8″	5 3/16″	2 5/8″	Round	No	**4415T4**	8.96
P	18	4 3/8″	7 3/16″	3 1/4″	Round	No	**4415T5**	13.70
P	32	5 3/8″	8 7/16″	4″	Round	No	**4415T6**	17.89
P	52	5 7/8″	10 7/16″	4″	Round	No	**4415T7**	21.56
P	85	6 1/4″	11″	4″	Round	No	**4415T82**	25.14
Q	4	3 1/8″	5 3/16″	3″	Flat	No	**4415T1**	7.63
Q	8	3 7/8″	5 11/16″	3″	Flat	No	**4415T2**	9.00
Q	12	4 3/8″	6 7/16″	3″	Flat	No	**4415T3**	10.93
NSF-Certified Type 304 Stainless Steel Scoops								
R	8	2 3/4″	4″	4″	Round	No	**9878T26**	58.10
R	16	3 3/8″	5 1/8″	4″	Round	No	**9878T21**	60.76
R	32	4 1/4″	6 5/8″	4″	Round	No	**9878T22**	69.03
R	64	5″	8 1/4″	4″	Round	No	**9878T23**	71.44
R	96	5 1/4″	9 1/2″	4 1/2″	Round	No	**9878T16**	82.97
R	128	6 1/4″	8 1/2″	4 1/2″	Round	No	**9878T24**	94.11
R	160	8″	10″	5″	Round	No	**9878T18**	99.39
Long-Handle Galvanized Steel Scoop								
S	8	4 1/2″	7″	10″	Flat	Yes	**4424T1**	7.05
Long-Handle Steel Scoop with Black Finish								
T	10	5″	7 1/4″	19 3/4″	Flat	Yes	**4424T7**	27.06

Choose-a-Color Polyethylene Cutting Boards NSF

Assign a different color cutting board to each task to prevent cross-contamination. All are made of polyethylene and have a textured, nonslip surface. They're nonabsorbent and will not chip, splinter, or crack. NSF certified.

Polyethylene cutting boards are available in blue, beige, green, red, white, or yellow. **To Order:** Please specify color.

Antimicrobial polyethylene cutting boards have an anti-microbial agent that inhibits the growth of bacteria and lasts for the life of the board. All meet EPA and FDA guidelines. They are available in blue, green, red, white, or yellow. **To Order:** Please specify color.

Size	POLYETHYLENE 1/2″ Thick	Each	POLYETHYLENE 3/4″ Thick	Each	ANTIMICROBIAL POLYETHYLENE 1/2″ Thick	Each
12″×12″	**85865K21**	$11.66	**85865K31**	$17.51	**3354K81**	$24.72
12″×18″	**85865K22**	17.40	**85865K32**	26.06	**3354K82**	36.36
15″×20″	**85865K23**	23.97	**85865K33**	36.00	**3354K83**	49.99
18″×24″	**85865K24**	34.74	**85865K34**	51.57	**3354K84**	72.73
24″×24″	**85865K25**	45.71	**85865K35**	68.63	**3354K85**	86.36

Utensils

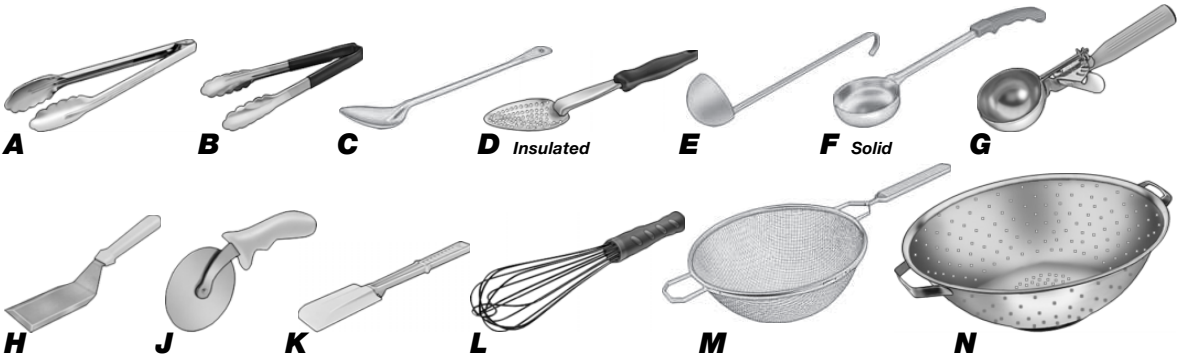

In addition to preparing and serving food, these utensils can be used for other mixing, straining, and portion-control applications. ***(K) Low-heat spatula*** resists heat up to 212° F, while the ***high-heat spatula*** resists heat up to 500° F.

		NSF Certified	Material	Size		Each
A	Tongs	No	Stainless Steel	12″ Long	7131T41	$4.17
B	Insulated Tongs	Yes	Stainless Steel; Plastic Handle	9½″ Long	7131T53	11.68
C	Solid Spoon	No	Stainless Steel	11″ Long	7131T42	3.16
C	Solid Spoon	No	Stainless Steel	18″ Long	7131T43	3.27
C	Insulated Solid Spoon	Yes	Stainless Steel; Plastic Handle	13 13/16″ Long	7131T25	12.26
D	Perforated Spoon	No	Stainless Steel	11″ Long	7131T44	3.16
D	Perforated Spoon	No	Stainless Steel	18″ Long	7131T45	3.27
D	Insulated Perforated Spoon	Yes	Stainless Steel; Plastic Handle	13 13/16″ Long	7131T26	12.44
E	Ladle—2 oz.	No	Stainless Steel	2¼″ Dia. Cup; 9⅞″ Long Handle	4394T2	11.58
E	Ladle—6 oz.	No	Stainless Steel	3⅝″ Dia. Cup; 12⅜″ Long Handle	4394T4	15.57
F	Solid Scoop—4 oz.	Yes	Stainless Steel; Plastic Handle	3¼″ Dia. Cup; 10″ Long Handle	7131T585	11.51
F	Perforated Scoop—4 oz.	Yes	Stainless Steel; Plastic Handle	3¼″ Dia. Cup; 10″ Long Handle	7131T586	11.51
G	Scoop w/Hand Release—4 oz.	Yes	Stainless Steel; Plastic Handle	2 13/16″ Dia. Cup; 6½″ Long Handle	7131T544	12.19
H	Utility Turner	No	Stainless Steel; Plastic Handle	5¼″ Sq. Blade; 11½″ Long	7131T48	3.41
J	Cutter	No	Stainless Steel; Plastic Handle	4″ Dia. Cutting Wheel; 9¾″ Long	7131T49	7.00
K	Low-Heat Spatula	Yes	Rubber; Plastic Handle	4¾″ × 2¾″ Blade; 14¾″ Long	7131T24	3.28
K	High-Heat Spatula	Yes	Silicone; Nylon Handle	4 5/16″ × 2¾″ Blade; 13½″ Long	7131T52	17.74
L	Mixing Whisk	Yes	Stainless Steel; Plastic Handle	12″ Long	7131T55	12.54
L	Mixing Whisk	Yes	Stainless Steel; Plastic Handle	18″ Long	7131T56	16.54
M	Strainer	No	Tin-Plated Steel; Wood Handle	6¼″ Dia. Bowl; 6″ Long Handle	7131T39	9.60
M	Strainer	No	Tin-Plated Carbon Steel; Wood Handle	10¼″ Dia. Bowl; 9″ Long Handle	7131T57	33.42
N	Colander—14 qt.	No	Stainless Steel	16¼″ Dia.	7131T38	33.51

Can Openers

(P-R) Manual Openers— *Style P* are large punch-style openers with a bottle opener. *Style Q* has vinyl-cushioned handles for a firm grip. *Style R* bolt to a table or workbench (mounting hardware included). To use, just crank the handle. Height is adjustable.

(S) Electric Opener— This two-speed opener operates on 115 VAC, 60 Hz and draws 1.0 amp. Comes with a 6-ft. power cord with three-prong plug. UL listed.

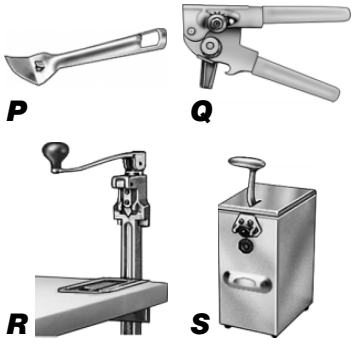

	Material	O'all Size		Each
Manual Openers				
Hand Held— *Maximum Can Height: Any*				
P	Nickel-Plated Steel	6¾″ Lg. × 1⅝″ Wd.	6118T4	$6.75
P	Stainless Steel	6⅞″ Lg. × 1⅝″ Wd.	6118T5	11.00
Q	Chrome-Plated Steel	7″ Lg. × 2¼″ Wd.	6118T1	6.90
Bench Mount— *Maximum Can Height: 11″*				
R	Cast Iron	9″ Lg. × 18½″ Ht.	6118T6	143.08
R	Stainless Steel	9″ Lg. × 20″ Ht.	6118T7●	588.46
Electric Opener				
Bench Top— *Maximum Can Height: 6¾″*				
S	Stainless Steel	4½″ Wd. × 7″ Dp. × 12″ Ht.	6118T8	857.69

● NSF certified.

Stackable Trays (NSF)

Use these durable trays to carry food and small parts. All have a rim to contain items and are dishwasher safe. NSF certified.

Economy polypropylene trays are lightweight and economical. **To Order:** Please specify color: light blue, light gray, or light peach.

Heavy duty fiberglass trays are impact, stain, odor, and scratch resistant. They also have a smooth finish. **To Order:** Please specify color: ivory, light blue, or light gray.

O'all Size, Wd. × Dp. × Ht.		Trays per Pkg.		Each Partial Pkg.	Each Full Pkg.
Economy Polypropylene Trays— *Max. temperature is 140° F.*					
16⅛″ × 11⅞″	× ½″	24	8475T5	$4.34	$3.84
17¾″ × 13 13/16″	× ½″	12	8475T6	5.37	4.69
Heavy Duty Fiberglass Trays— *Max. temperature is 160° F.*					
16 5/16″ × 12″	× 7/16″	12	9764T1	13.95	12.24
18″ × 14″	× 9/16″	12	9764T2	16.68	14.59
20¼″ × 15″	× ⅞″	12	9764T3	20.31	17.76

Fry and Sauce Pans (NSF)

Sauce Pan with Cover *Fry Pan*

Made of aluminum, these pans and covers have a black, stay-cool silicone-rubber handle. NSF certified.

Fry pans have a non-stick coating for easy cleaning.

Top Dia.	O'all Ht.	Cap., qts.	Handle Lg.	Pans	Each	Covers	Each
Sauce Pans							
7¾″	4¼″	2¾	6¼″	4939T21	$29.84	4939T61	$14.92
9⅞″	5 9/16″	5½	7½″	4939T22	41.14	4939T62	18.14
Fry Pans							
8″	1 13/16″	—	6¼″	4249T11	28.22	4939T61	14.92
10″	2⅛″	—	7½″	4249T12	38.10	4249T52	18.44

Microwave Ovens

A

B NSF

C NSF

Cooking is fast and easy with these microwaves. All have an interior light and see-through door. They come with a power cord with three-prong plug and operate on 120 VAC, 60 Hz. UL listed.

(A) Economy Microwave Oven—This oven has 10 power levels, a digital display, a glass turntable that rotates food for even cooking, automatic defrost, and programmable controls that allow one-touch cooking. Comes with a 2-ft. power cord. The interior is made of steel, and the exterior is made of steel and plastic. Color is white.

(B&C) Commercial Microwave Ovens—Both models have bottom-feed heat distribution for uniform cooking. Come with a 4½-ft. power cord. Doors and interiors are made of stainless steel. NSF certified.

Style B has a dial timer that is clearly marked in 10-, 15-, and 30-second intervals to provide up to six minutes of cooking. Exterior is made of steel. Color is light gray.

Style C has 11 power levels, a digital display, and programmable controls for quick one-touch cooking. It also has automatic three-stage programming—you can program the oven to defrost food, begin cooking food at one level, and finish cooking food at another level. Exterior is made of stainless steel.

	O'all Size, Wd.×Dp.×Ht.	Inside Size, Wd.×Dp.×Ht.	Cap., cu. ft.	Amps		Each
Economy Microwave Oven						
A	21⅞″×17¼″×12⅝″	14 13/16″×16″×9⅞″	1.4	13.3	4552T53	$198.58
Commercial Microwave Ovens						
B	20½″×16″×12⅛″	13⅞″×14⅝″×8⅛″	1.0	15	4438T75	316.69
C	20½″×16″×12⅛″	13⅞″×14⅝″×8⅛″	1.0	15	4438T76	551.25

Toasters NSF

Four Slice

With their two wide slots, you'll find it's easy to brown your favorite breads and bagels. Toasters are commercial grade and made of chrome-plated steel. Come with a 6-ft. power cord with three-prong plug and operate on 120 VAC, 60 Hz. UL listed and NSF certified.

Slot Size, Lg.×Wd.	O'all Size, Wd.×Dp.×Ht.	Amps		Each
Two-Slice Toaster				
5½″×1⅜″	12″×7″×7½″	7.5	4933T12	$156.00
Four-Slice Toaster				
9¾″×1⅜″	17¼″×7″×7½″	12.5	4933T15	198.33

Mobile Food Warming Cabinet NSF

Keep food warm during storage and transportation. You can set the temperature from 70° to 200°F. Cabinet is made of high-strength aluminum and has insulation in the top, sides, and doors. The doors have a magnetic latch and handle and can be reversed to open in the opposite direction.

Cabinet has 22 cu. ft. of work space. It has a 125-lb. capacity, and can hold up to 17 trays. Tray racks are spaced every 1½″ and are removable for easy cleaning. Cabinet has four swivel casters (two with brake) with 5″ dia. neoprene wheels. Includes a "power on" indicator light and 7½-ft. long power cord with three-prong plug. Operates on 120 VAC, 60 Hz, single phase and draws 16 amps. UL listed and NSF certified.

Trays are 18″×26″ and are made of aluminum. *Perforated tray* has ⅛″ dia. perforations.

O'all Size, Wd.×Dp.×Ht.	Inside Size, Wd.×Dp.×Ht.		Each
28″×30½″×74¾″	24¾″×26 3/16″×59½″	1346T75	$4,137.43
Standard Tray		1346T24	32.77
Perforated Tray		1346T34	39.99

Appliance Stand

Here's the perfect spot for your toaster, microwave, coffee maker, etc.—it even offers concealed storage space with a roll-out drawer and fixed shelf. Drawer has a 75-lb. capacity; shelf has a 125-lb. capacity. Door has a locking push-button handle. Two keys are included. Stand is made of steel and has a particleboard top with a plastic-laminate surface. Color is light gray. Shipped assembled.

O'all Size, Wd.×Dp.×Ht.	Drawer Size, Wd.×Dp.×Ht.		Each
30⅞″×19⅛″×33⅞″	24″×16½″×2½″	9990T6	$306.07

Microwave Leak Detector

Find radiation leaks that occur from damage or everyday wear and tear in microwave ovens. The analog dial reads "Danger" when radiation levels above the prescribed U.S. minimum (5 milliwatts per square centimeter at a distance of 2″) are detected. The scale has "Safe" to "Danger" zone markings. You don't need batteries or an outside power supply to operate the detector, and it's permanently calibrated. Size is 2⅜″ Wd.×1¼″ Dp.×3⅝″ Ht.

1074T2 ..... **Each** $30.82

Insulated Beverage Dispensers/Coolers

5-Gallon Dispenser/Cooler with Optional Cup Dispenser and Cups

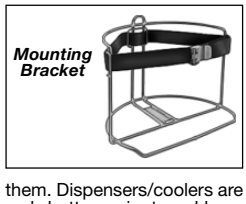
Mounting Bracket

Supply cool drinks wherever you need them. Dispensers/coolers are imprinted with "Drinking Water," have a push-button spigot, and have a pressure-fit lid. Made of rust-, chip-, and dent-resistant polyethylene. Color is safety yellow with a red lid.

Mounting bracket has weather-resistant, welded steel construction and a holding strap (mounting hardware not included).

Dispensers/Coolers

Cap., gal.	Handle Style	O'all Size, Dia.×Ht.		Each
2	Bail	11½″×14¾″	5616T11	$32.82
3	Bail	13½″×14″	5616T12	42.85
5	Side	14 5/16″×20⅜″	5616T13	46.60
10	Side	17¼″×23¼″	5616T14	77.56

Accessories

		Each
Mounting Bracket for 2-, 3-, and 5-gal. Sizes	5554T55	$67.45
Mounting Bracket for 10-gal. Size	5554T56	71.45
Cup Dispenser for 4-oz. Paper Cups	5554T53■	20.79
Cup Dispenser for 6-oz. Paper Cups	5554T64■	30.57
		Per Pkg.
4-oz. Paper Cups—200/Pkg.	5554T57	$6.86
6-oz. Paper Cups—200/Pkg.	52665T8	$6.22

■ For 3-, 5-, and 10-gal. coolers only.

Water Bottles

D E

Style D is clear and has a flip-up lid.

Style E is vacuum-insulated to keep beverages cold up to 12 hours. Comes with a rubber comfort grip and plastic flip-up lid.

Cap.	O'all Size, Dia.×Ht.		Each
(D) Polypropylene Water Bottle			
32 oz./946 ml	2¾″×10½″	4726T4	$6.72
(E) Stainless Steel Insulated Water Bottle			
18 oz./500 ml	2⅝″×10″	4726T7	20.19

Coffee, Tea, and Hot Chocolate

	Cups/ Packet or Can	Packets or Can/ Case		Per Case
Coffee				
Drip-Style Packets				
Regular	4 to 6	42	3586T4	$33.05
Decaffeinated	4 to 6	42	3586T5	36.63
Premium (French Roast)	10 to 12	46	3586T22	81.20
Percolator-Style Can				
Regular (39 oz.)	130	1	3586T7	22.23
Tea Bags				
Regular Black	1	100	3586T16	8.57
Hot Chocolate Packets				
Regular	1	50	3586T14	17.73
Sugar Free	1	25	3586T25	8.93
				Each
Accessories				
Creamer (12 oz.)	—	—	3586T2	$2.27
Sugar (20 oz.)	—	—	3586T1	2.35

Coffee Makers (NSF)

Brew a hot cup of coffee with our UL listed and NSF certified coffee makers. All come with a 6-ft. power cord (unless noted) with a three-prong plug and operate on 120 VAC, 60 Hz.

(A&B) Fast-Brewing Drip-Style Coffee Makers— Get 12 cups of coffee in four to five minutes. These coffee makers have a top warming plate with separate on/off switch and a plastic brewing basket. Made of stainless steel. Both require paper filters (sold separately below).

Style B has a brass 1/4″ NPT male inline water connection to connect directly to a water source; coffee maker then fills automatically with water when you press the "brew" button. It comes with a 5-ft. power cord and includes a hot-water spout for tea or hot chocolate.

Decanters are made of glass and are sold separately below.

(C) Large-Capacity Percolator-Style Coffee Makers— The perfect choice when you need to make coffee for a crowd. Made of polished aluminum with plastic handles. No filters required.

Model 6159T15 has a coffee-level gauge and an on/off switch.

A&B
Shown with Decanter

C
6159T15

	Cap., Cups of Coffee	O'all Size, Wd. × Dp. × Ht.	Amps		Each
Fast-Brewing Drip-Style Coffee Maker					
A	12	8 3/4″ × 14″ × 16 7/8″	14.2	4739T11	$359.56
Inline Fast-Brewing Drip-Style Coffee Maker					
B	12	8 3/4″ × 16 7/8″ × 16 7/8″	14.2	4739T14	715.54
Large-Capacity Percolator-Style Coffee Makers					
C	36	11 7/8″ Dia. × 17 3/8″ Ht.	9.1	6159T16	104.67
C	100	14 1/2″ Dia. × 23″ Ht.	12.5	6159T15	180.23

Accessories

For Coffee Maker Style			Each
A&B	Regular Decanter (Black Handle)	4739T2	$10.67
A&B	Decaffeinated Decanter (Orange Handle)	4739T4	8.78
A&B	Paper Filters (1,000/Pkg.)	4739T3	Per Pkg. $17.02
C	Heat Element Cleaning Tool	6159T1	Each $5.50

Coffee Maker Cleaner

No more nightmares about what's lurking in your coffee maker, this cleaner gets inside for a complete cleaning. Cleaner comes in a filter-paper packet that cleans the brew basket, urn, sight glass, and spigot. Each packet cleans a 12-cup coffee maker. There are 24 packets per package. *Note:* Not for use with aluminum.

6199T1 ..... Per Pkg. $10.81

Electric Kettle

Not just a teapot—this kettle boils water faster than a microwave oven. It charges in a base that has a 2-ft. power cord with a two-prong plug; operates on 120 VAC, 60 Hz; and draws 12.5 amps. Kettle lifts freely from the base—no cords attached—making it easy to pour.

Cap.	O'all Size, Wd. × Dp. × Ht.		Each
64 oz.	9″ × 7 1/2″ × 10 1/2″	7325T1	$66.10

Gatorade Thirst Quenchers and Coolers

Quickly rehydrate your body; Gatorade replaces fluids, carbohydrates, and minerals when mixed with water. And now, thanks to the convenient 1-oz. packets, you can have Gatorade wherever you have bottled water; simply add these packets to your 16.9 fl. oz. water bottle.

Counting calories? ***G2*** has half the calories of regular Gatorade.

Mobile Stand with Cooler

Liquid Concentrate

To Order: Please specify flavor: fruit punch, lemon-lime, or orange.

Size	Makes	Case Qty.		Each 1-3	4-Up
1 gal.	6 gal.	4	52665T9	$12.12	$10.90

Instant Powder

To Order: Please specify flavor: fruit punch, glacier freeze (citrus base), lemon-lime, orange, or riptide rush (berry base), unless noted. The 21-oz. size also has a variety pack, which includes eight each of fruit punch, lemon-lime, orange, and riptide rush.

Packet Size	Packet Makes	Case Qty.		Per Case
Gatorade				
8.5 oz.	1 gal.	40	52665T41★	$63.00
21 oz.	2 1/2 gal.	32	52665T2	119.27
51 oz.	6 gal.	14	52665T3	110.35

★ Glacier freeze is not available.

Instant Powder for Bottled Water

Add packet to any 20 fl. oz. water bottle.

Gatorade is available in three flavors. **To Order:** Please specify flavor: fruit punch, lemon-lime, or orange.

G2 is available in two flavors. **To Order:** Please specify flavor: fruit punch or grape.

Packet Size	Packet Makes	Case Qty.		Per Case
Gatorade				
1.34 oz.	20 oz.	8	52665T52	$4.87
G2				
0.52 oz.	20 oz.	8	52665T53	4.87

Coolers, Mobile Stand, and Cups

Coolers are polyethylene with insulation in the lid and base. Color is orange with a white screw-on lid.

Mobile stand is made of steel and has four swivel casters with 3″ dia. polyurethane wheels. Overall height is 39″.

Cooler Cap., gal.	O'all Size, Dia. × Ht.		Each
3	11 1/2″ × 16 1/4″	52665T5	$42.49
7 (Has Cup Dispenser)	15 3/8″ × 15 15/16″	52665T6	77.95
10 (Has Cup Dispenser)	15 7/8″ × 20 1/2″	52665T7	96.70

Mobile Stand for 3-, 7-, and 10-gal. Coolers ..... 52665T43 .. 337.38

6-oz. Paper Cups for Dispenser—200/Pkg. ... 52665T8 Per Pkg. $6.22

Beverage Dispensers

(D) Pitcher— Made of clear polycarbonate with a pour spout and lid. NSF certified.

(E) Insulated Pitcher— Durable white ABS plastic with foam-insulated walls. Press the thumb trigger to pour.

(F) Pump-Style Insulated Dispenser— Dispenser is made of brushed stainless steel with an unbreakable stainless steel liner and a black polypropylene lid. Pump the lever to pour.

D **E** **F**

Cap.	O'all Size, Dia. × Ht.		Each
D 64 oz.	5 1/2″ × 9 11/16″	4509T7	$19.40
E 33 oz.	5″ × 9 1/4″	4509T2	32.01
F 85 oz.	8″ × 13 3/4″	4509T3	65.00

Food Service Wrap

Furnished in a box with a cutter blade.

Wd.	Clear Plastic Wrap Ft./Roll		Each	Aluminum Foil Ft./Roll		Each
12″	1,000	6712T11	$14.53	500	9060K12	$50.24
18″	1,000	6712T12	16.15	500	9060K17	62.22

Flatware, Plates, Bowls, and Cups

Disposable

Reusable

Reusable plastic plates and ***bowls*** are virtually unbreakable and NSF certified.

	Pkg. Qty.	Case Qty.		Per Pkg. Partial Case	Per Pkg. Full Case
Disposable					
Plastic Flatware— *White*					
Forks	100	10 Pkg.	9769T21	$7.68	$6.52
Knives	100	10 Pkg.	9769T22	7.68	6.52
Teaspoons	100	10 Pkg.	9769T23	7.68	6.52
Soup Spoons	100	10 Pkg.	9769T24	7.68	6.52
Packaged Set▲	25	10 Pkg.	9769T29	7.80	6.62
Foam Plates— *White*					
9″ Dia.	125	4 Pkg.	9769T52	13.00	11.05
Plastic-Coated Paper Plates— *White with design*					
9″ Dia.	125	4 Pkg.	9769T62	21.75	18.48
Foam Bowls— *White*					
12 oz. (5⅞″ Dia.)	125	8 Pkg.	9769T81	7.80	6.62
Foam Hot/Cold Cups— *White with design*					
8 oz. (3⅛″ Dia. Rim)	100	10 Pkg.	9769T31	9.68	8.23
12 oz. (3 7/16″ Dia. Rim)	100	10 Pkg.	9769T35	13.70	11.64
16 oz.	50	15 Pkg.	9769T36	8.84	7.51
20 oz.	30	25 Pkg.	9769T38	6.52	5.54
Lid for 8-oz. Cup	100	20 Pkg.	9769T37	4.27	3.63
Lid for 12-, 16- and 20-oz. Cups	100	20 Pkg.	9769T39	5.48	4.66
Wax-Coated Paper Cold Cups— *White with design*					
9 oz. (3″ Dia. Rim)	100	20 Pkg.	9769T41	8.39	7.13
16 oz. (3½″ Dia. Rim)	50	20 Pkg.	9769T772	6.65	5.58
Lid for 9-oz. Cup	100	20 Pkg.	9769T47	4.75	4.04
Lid for 16-oz. Cup	125	16 Pkg.	9769T775	6.30	5.35
Reusable					
Stainless Steel Flatware					
Forks	12	10 Pkg.	9748T11	16.82	14.14
Knives	12	10 Pkg.	9748T12	31.92	27.06
Teaspoons	12	10 Pkg.	9748T13	12.06	10.22
Plastic Plates— **To Order:** *Please specify black or tan*					
9″ Dia.	12	4 Pkg.	9724T81	64.10	54.32
Plastic Bowls— **To Order:** *Please specify black or tan*					
15 oz. (5¼″ Dia.)	12	4 Pkg.	9724T82	47.72	40.44
Plastic Glassware— *Clear*					
9½ oz. (2¾″ Dia. Rim)	12	12 Pkg.	9724T83	8.79	7.44
16 oz. (3¼″ Dia. Rim)	12	12 Pkg.	9724T84	10.67	9.04

▲ Set includes one fork, knife, teaspoon, and a napkin.

Napkin Dispensers and Napkins

A

B

All dispense from both sides and hold a maximum of 150 napkins (sold separately).

Napkin Dispensers

	O'all Size, Wd.×Dp.×Ht.	Material		Each
A	3¾″×4″×5½″	Stainless Steel	4945T41	$14.67
A	3¾″×4″×5½″	Steel w/Black Finish	4945T3	14.67
B	3⅞″×4¾″×7½″	Stainless Steel	4945T23	15.32
B	4″×4⅜″×7⅜″	Steel w/Black Finish	4945T22	27.22

Napkins

For Dispenser Style	Open Napkin Size	Pkg. Qty.	Case Qty.		Per Pkg. Partial Case	Per Pkg. Full Case
A	7″×12″	400	20 Pkg.	4945T62	$2.58	$2.23
B	6½″×13″	500	20 Pkg.	4945T61	3.34	2.86

Condiment Shakers and Dispensers

C

D

E

F

G

Our handy shakers and dispensers make it easy to add a little spice to your food.

Style C is made of glass with a stainless steel top.
Style D is made of glass with a stainless steel top.
Style E is polystyrene. Color is clear.
Style F is perfect for dispensing condiments, and is made of polyethylene. Color is clear. Package quantity is 12.
Style G is made of paper. Color is white. Package quantity is 250.

	O'all Size, Wd.×Dp.×Ht.	Cap., oz.		Each
(C) Salt/Pepper Shaker	1½″×1½″×4″	2	7581T11	$2.40
(D) Sugar Dispenser	2¾″ Dia.×5½″ Ht.	12	7581T13	3.07
(E) Sugar Packet Dispenser	2½″×3 5/16″×2″	—	7581T15	2.24
				Per Pkg.
(F) Squeeze Bottle	2″ Dia.×7¼″ Ht.	8	7581T211	$14.24
(G) Condiment Cup	2″ Dia.×1¼″ Ht.	2	7581T22	6.45

Flatware Containers

Tray

Stand with Cylinders

Made of easy-to-clean polyethylene. ***Tray*** has four compartments. Each compartment is 4″ wide. ***Stand with cylinders*** has six removable cylinders that are 3¾″ Dia.×5⅝″ Ht.

	O'all Size, Wd.×Dp.×Ht.	Color		Each
Tray	21⅝″×11⅞″×3¾″	Gray	9758T3	$15.55
Stand with Cylinders	15⅛″×10¾″×11″	Gray	9758T28	66.38

Straws, Stir Sticks, Toothpicks, and Dispensers

Dispenser for Straws

Dispenser for Stir Sticks

Straws, stir sticks, and ***toothpicks*** (all sold separately) come packaged in disposable, self-dispensing boxes. *Toothpicks* are mint flavored.

Straw dispenser has a steel housing with vinyl-coated woodgrain oak finish. It dispenses wrapped straws that are 7½″ to 8¾″ long.

Stir stick dispenser is made of clear acrylic. It dispenses stir sticks up to 5½″ long with a turn of the knob.

Straws, Stir Sticks, and Toothpicks

	Lg.	Box Qty.		Per Box
Wrapped Plastic Straws	7¾″	500	5506T41	$5.16
Plastic Stir Sticks	5″	1,000	5506T42	6.22
Wrapped Wood Toothpicks	3″	1,000	5506T43	4.07

Dispensers

	O'all Size, Wd.×Dp.×Ht.	Cap.		Each
For Straws	9″×4″×7″	200 Straws	5506T31	$72.83
For Stir Sticks	6¼″×3¾″×5½″	150 Stir Sticks	5506T32	24.36

Cup Dispensers

All dispensers can be adjusted to accept paper, plastic, and/or foam cups (not included) with different brim diameters. Made of stainless steel.

Wall-mount dispensers allow you to load cups in the top and pull from the bottom. Mounting hardware included.

Countertop dispensers have nonskid plastic feet. Cups load in and pull out from one side. *Note:* Dispensers cannot be stacked.

Paper cups are wax-coated.

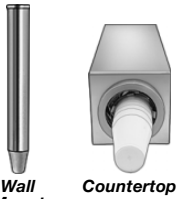

O'all Size, Wd.×Dp.×Ht.	Accepts Cup Brim Dia.	Max. Cup Capacity		Each
Wall-Mount Dispensers				
23⅛″ Ht.	2¾″-3⅜″	50	**4513T2**	$43.26
23⅛″ Ht.	3¼″-3⅞″	50	**4513T3**	46.62
Countertop Dispenser				
8″×24″×8″	2⅜″-5¹⁄₁₆″	50	**4513T5**	186.20
9-oz. Paper Cups (3″ Dia. Brim)—100/Pkg.			**9769T41**	Per Pkg. $8.39
16-oz. Paper Cups (3½″ Dia. Brim)—50/Pkg.			**9769T772**	Per Pkg. $6.65

Cup Holders

Need an extra hand? Place your drink in one of these self-leveling holders. The rubberized swivel joint adjusts to any position or angle and provides vibration protection. Holder is 4″ high with a 3½″ dia. top that tapers to 3″ at the bottom. Bottom has a 1½″ hole for drainage. Holder is made of ABS plastic; mounting flanges and arm are made of aluminum with a black finish. Mounting hardware included for all except the screw mounting style, which has seven ⁷⁄₃₂″ dia. holes.

Mounting Style	Mounting Feature	Mounting Flange Dia.		Each
Screw	Permanent Mount	2⁷⁄₁₆″	**5338T1**	$30.08
Magnetic	Most Metallic Surfaces	2⁹⁄₁₆″	**5338T2**	40.10
Suction	Smooth, Nonporous Surfaces	2⅛″	**5338T3**	35.62
U-Bolt	For ¼″ to 1¼″ dia. Pipes	—	**5338T4**	34.12

Reusable Ice Packs

Less messy than ice, these packs are durable, reusable, and keep contents colder longer than ice. Made of purified water, they are nonstaining and safe for food. Each pack consists of smaller cubes that can be cut apart and used individually. Each cube is 3″ Wd.×2″ Dp. Outer jacket is made of flexible polyethylene.

No. of Cubes	O'all Size, Wd.×Dp.		Each
18	12″× 9″	**5404K1**	$1.69
36	18″×12″	**5404K2**	2.76

Ice Chests

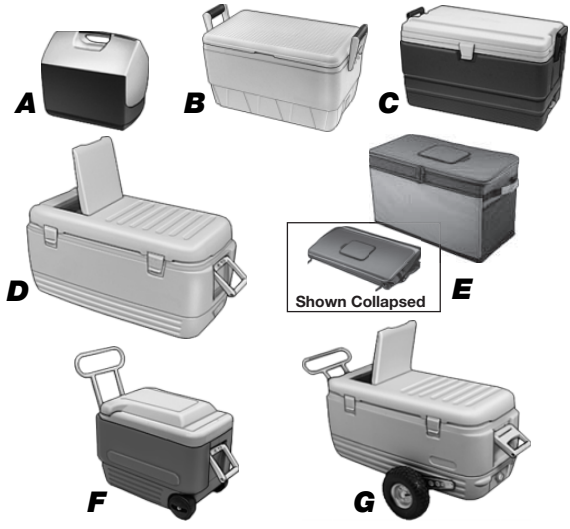

Made of plastic, these chests are insulated to keep contents cold.

Style A have a push-button lid that swings to either side and locks in the closed position to prevent spills.

Styles B-D have a hinged lid, lid latch (unless noted), swing-up side handles, and a drain plug (unless noted). *Style B* also has a lid strap. *Style D* also have a convenient hatch that allows access to the chest without opening the lid.

Style E allows compact storage; its collapsed size is 13″ Wd.× 3″ Dp.×15″ Ht. It has a soft, nylon fabric cover and a leakproof lining.

Style F has a domed lid, lid latch, and swing-up side handles. Also includes a pivoting handle and two 4⁵⁄₈″ dia. polyethylene wheels.

Style G is similar to Style D but has a pivoting handle and two 10″ dia. all-terrain pneumatic rubber tires.

	Cap., qts.	O'all Size, Wd.×Dp.×Ht.	Color of Body/Lid		Each
Portable Ice Chests					
A	7	11¾″ × 8¼″ ×12″	Blue/White	**4283T66**	$20.60
A	16	15⅞″ ×10¼″ ×14⅞″	Blue/White	**4283T67**	32.10
B	36	24¼″ ×13⅝″ ×13″	White/White	**4283T69★**	49.55
C	25	20″ ×11¼″ ×13⅛″	White/White	**4283T68★**	40.83
C	52	25⅜″ ×14¾″ ×14⅜″	Red/White	**4283T64●**	53.40
C	72	29½″ ×16½″ ×16⅛″	White/White	**4283T65**	104.28
D	100	35¼″ ×17⅜″ ×16¾″	White/White	**4283T71**	109.44
D	150	41⅝″ ×18¾″ ×20¼″	White/White	**4283T73**	153.70
Portable/Collapsible Ice Chest					
E	61	24″ ×11½″ ×15″	Blue or Red/Gray	**4283T32**	36.99
Mobile Ice Chests					
F	40	22¹⁵⁄₁₆″ ×13½″ ×17½″	Blue/White	**44755T3**	58.61
G	100	35½″ ×17½″ ×16¾″	White/White	**44755T9**	139.85

★Does not include drain plug. ●Does not include lid latch or drain plug.

Ice Makers

Always have ice when you need it but never more than you can store; all machines stop producing ice automatically when their bin is full. They operate on 115 VAC, 60 Hz and come with adjustable legs for uneven surfaces (except Style H). All produce cubed ice except Style H, which produces crescent-shaped ice. UL listed.

Note: Regular maintenance is required so machines run efficiently. ***Liquid cleaner*** for Styles J-L keeps water lines clear and is sold separately below.

Styles H&J—Both include a power cord with three-prong plug.

Style H does not require a drain. The exterior is made of steel; color is white. The interior is polystyrene and has a removable, clear plastic storage bin. Comes with a compression fitting that accepts ¼″ OD copper tubing for water inlet and a 5-ft. power cord.

Style J exterior is stainless steel with a black plastic door. The interior is polyethylene with a molded-in storage bin. Comes with a ¾″ male GHT (garden hose thread) connection for water inlet and a 6-ft. power cord. A 36″ long drain hose is included. Requires a 5″ clearance for the top, sides, and back.

Styles K&L—These high-capacity machines have a stainless steel housing, molded-in polyethylene storage bin, and dark brown plastic door. Come with a ⅜″ NPT female threaded water inlet connection. NSF certified.

Style K has a 6-ft. power cord, three-prong NEMA 5-20 plug (see page 787 for plug configurations), and ½″ NPT female threaded bin drain. It requires a 5″ clearance for the top, sides, and back.

Style L must be hardwired. It has a ¾″ NPT female threaded bin drain and requires an 8″ clearance for the top and sides; 5″ clearance for the back.

	lbs. of Ice per 24 hrs.	Bin Cap., lbs.	O'all Size, Wd.×Dp.×Ht.		Amps		Each
H	25	25	14¹⁵⁄₁₆″×20″	×27⅜″	2.5	**4474T29**	$1,160.71
J	65	30	19¹¹⁄₁₆″×22⅜″	×36″	4	**4474T15**	1,977.00
K	215	80	26″	×26½″	×38½″	6.5	**4474T13**	2,531.23
L	420	290	30″	×34″	×59½″	13.2	**4474T12**	3,661.68
16-oz. Liquid Cleaner for Styles J-L							**4474T52**	18.13

Compact Refrigerators and Freezers

4.3 cu. ft. Combination Refrigerator/Freezer

6.1 cu. ft. Critical Application Refrigerator

We've got what you need to keep things cool. All models have a steel cabinet with white finish and plastic liners. They have a power cord with three-prong plug and operate on 115 VAC, 60 Hz. UL listed.

Combination refrigerators/freezers have a dial control to select cool, cold, or coldest. Freezer has a manual defrost. Both come with adjustable shelves and three door shelves.

The *4.3 cu. ft. model* has three shelves. The freezer has 0.42 cu. ft. of space. Requires 2″ clearance for the top and back as well as ½″ clearance for the sides. Includes one ice cube tray and a 5½-ft. power cord.

The *5.7 cu. ft. model* has two shelves. The freezer has 0.49 cu. ft. of space. Includes two ice cube trays and a 5-ft. power cord.

Critical application refrigerator and ***critical application freezers*** are equipped with an oversized fan motor to maintain critical temperatures. They also provide fast cooling times and quick temperature recovery after the door has been opened—excellent for science and laboratory applications.

Refrigerator has two shelves, three door shelves, and an 8-ft. power cord. Also has an interior mounted control with temperature display. Monitor provides visual and audible alarms for over/under temperature, door ajar, and power failure conditions.

Freezers have a manual defrost to maintain set temperature and protect contents. The *1.5 cu. ft. model* has a 7-ft. power cord and the *4.5 cu. ft. model* has an 8-ft. power cord and one shelf.

Cap., cu. ft.	O'all Size, Wd.×Dp.×Ht.	Amps	Temp. Range, °F		Each
Combination Refrigerators/Freezers					
4.3	20½″ ×21″ ×32¾″	1.3	32° to 39°★	4551T31	$287.34
5.7	23½″ ×24⅛″ ×34″	1.3	32° to 39°★	4551T32	427.14
Critical Application Refrigerator					
6.1	23⅞″ ×24″ ×34″	3.3	33° to 45°	6333T41	1,362.20
Critical Application Freezers					
1.5	14⅞″ ×22⅛″ ×24¼″	3.3	–4°	6333T42	959.38
4.5	23⅞″ ×24″ ×34″	3.3	–10° to 0°	6333T43	1,264.57

★ Temp. range for the refrigerator.

Dishwasher Racks (NSF)

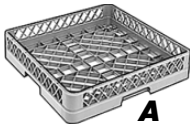

A

B

C

With their open design, these racks allow you to thoroughly wash and dry plates, trays, glasses, flatware, and even parts. They have handles on all four sides. Made of durable plastic with a double-wall construction to provide the chemical, impact, and heat resistance (up to 180° F) you need. Color is beige. NSF certified.

(A) Open rack is the choice for large or irregularly shaped items.

(B) Supporting rack has pegs to support large plates and trays. It also holds cups, glasses, and bowls.

(C) Compartment rack has 16 individual compartments to protect your glassware. Each compartment is 4⁷⁄₁₆″ square×4¹³⁄₁₆″ high.

		O'all Size, Wd.×Dp.×Ht.		Each
A	Open Rack	19¾″×19¾″×4″	4948T61	$28.55
B	Supporting Rack	19¾″×19¾″×4″	4948T62	30.15
C	Compartment Rack	19¾″×19¾″×5⁹⁄₁₆″	4948T63	55.45

Plastic Cups

D
With Optional Lid

E&F

All cups can be nested.

(D) Clear polypropylene cups are great for small-batch mixing. Max. temperature is 225° F for cups. *Optional lids* are made of clear polyethylene. Max. temperature is 155° F.

(E) Translucent polypropylene cups with lid have a max. temperature of 176° F.

(F) Translucent polyethylene cups with lid have a max. temperature of 176° F.

Cap., oz.	Top OD	O'all Ht.	Cups Pkg. Qty.		Per Pkg.	Optional Lids Pkg. Qty.		Per Pkg.
(D) Clear Polypropylene Cups								
½	1¹¹⁄₁₆″	⅝″	125	1865T31	$3.59	125	1865T71	$4.66
1	1¹¹⁄₁₆″	1⁵⁄₁₆″	125	1865T33	4.43	125	1865T71	4.66
1¼	1¹¹⁄₁₆″	1⅝″	125	1865T34	5.71	125	1865T71	4.66
2½	2⅜″	1⅝″	125	1865T35	7.87	125	1865T72	6.44
(E) Translucent Polypropylene Cups with Lid								
8	3⅛″	3¼″	25	41635T43	12.14	—	—	—
16	3⅝″	3⅝″	10	41635T44	6.84	—	—	—
32	4½″	5¼″	10	41635T45	10.85	—	—	—
(F) Translucent Polyethylene Cups with Lid								
4	3⅛″	1½″	25	41635T42	11.50	—	—	—
68	5⅞″	6¼″	5	41635T46	9.53	—	—	—

Stainless Steel Cups and Bowls

Cups

Bowls

Made of 300 series stainless steel, except 1811T43 and 1811T15, which are made of 200 series stainless steel. All can be nested.

Cap.	Top OD	O'all Ht.		Each
Cups				
2½ oz.	2½″	1½″	1811T43	$0.79
6 oz.	3⁷⁄₁₆″	2″	1811T41	5.72
14 oz.	4⅜″	2⅝″	1811T42	9.16
Bowls				
1½ qts.	7⅞″	2⅞″	1811T16	8.75
4 qts.	10⅝″	4″	1811T18	15.13
8 qts.	13½″	4⅝″	1811T22	22.50
13 qts.	16¼″	5⅛″	1811T24	35.75
20 qts.	18⅞″	6″	1811T26	43.93
NSF-Certified Bowls				
¾ qts.	6¼″	2⅜″	1811T15	6.20
⅞ qts.	6⅝″	2½″	1811T28	12.97
1½ qts.	8⅛″	3″	1811T29	14.55
3 qts.	9¾″	4″	1811T31	20.29
5 qts.	11⅞″	4½″	1811T32	27.92
8 qts.	13⁵⁄₁₆″	5⁷⁄₁₆″	1811T34	31.87
13 qts.	16¼″	6″	1811T35	40.20

Flexible Silicone Bowls

Being flexible is easy with these silicone bowls—you can form a spout anywhere on the rim for easy pouring. Bowls have a textured exterior for a secure grip and interior graduations at half and full capacity. All can be nested. Max. temperature is 490° F. **To Order:** Please specify color: green, red, or white.

Cap., qts.	Top OD	O'all Ht.		Each
1	5½″	5⅛″	8982T2	$15.91
1½	6¹¹⁄₁₆″	5⅜″	8982T3	19.89
2	7⅞″	5½″	8982T4	22.72

NSF-Certified Snap-Together Plastic Storage Containers (NSF)

Not only can container bottoms snap into lids for secure stacking, but lids also snap onto each other for convenient storage. Containers are made of clear plastic and are crack and stain resistant. Lids are made of red plastic with a translucent gray window. All can be nested. Max. temperature is 194° F.

Cap., qts.	Top Outside Size, Lg.×Wd.×Ht.		Each
½	5¹⁄₁₆″×5¹⁄₁₆″×3⅜″	5238T2	$4.70
¾	7⅛″ ×7⅛″ ×2½″	5238T3	6.64
1¼	7⅛″ ×7⅛″ ×3⁹⁄₁₆″	5238T4	7.46

Airtight Plastic Storage Containers

All containers are made from FDA-compliant resins. Not rated for temperature.

(A) Airtight containers have lids that snap closed to form an airtight seal and have a hand grip. Containers are made of clear polyethylene; lids are made of white polypropylene.

(B) Airtight and watertight containers have a silicone seal and lids that snap closed on all sides. Containers can be nested without lids and stacked when used with lids. Containers and lids are made of translucent polypropylene.

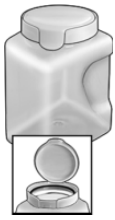

A

B

Cap., qts.	O'all Size, Lg. × Wd. × Ht.		Each
(A) Airtight Containers			
1	4¼″ × 3¾″ × 6¼″	6668A54	$8.31
2¾	5½″ × 4¾″ × 8½″	6668A56	10.11
3 15/16	5½″ × 4¾″ × 10¾″	6668A58	11.74
(B) Airtight and Watertight Containers			
5/16	4¼″ × 4¼″ × 2½″	6840A21	3.55
½	6¼″ × 4¼″ × 2½″	6840A11	5.09
1⅛	8½″ × 6¼″ × 2½″	6840A12	7.23
1 13/16	6¼″ × 4¼″ × 6¾″	6840A13	7.41
2	10″ × 8½″ × 2¼″	6840A18	8.49
2 11/16	8½″ × 6¼″ × 4½″	6840A14	8.60
5¾	8½″ × 6¼″ × 9″	6840A15	11.77
10	10″ × 8½″ × 9″	6840A19	19.37

Clear Plastic Storage Containers

Containers and lids are polystyrene, and containers can be stacked when used with lids.

(C) Small containers with lid have a tight-fitting lid. 9981T36 has a white bottom. Max. temperature is 140° F.

(D) Containers with lid have molded-in handles, except 4494T26, which does not have handles. All can be nested and have a tight-fitting lid. Max. temperature is 120° F.

(E) Container with sliding lid has molded-in handles and can be nested. Lid slides on over a molded lip. Max. temperature is 140° F.

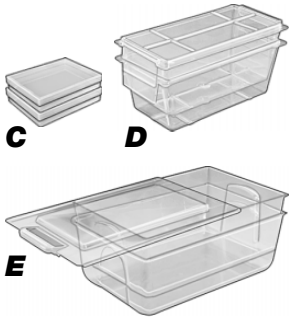

C D E

Top Outside Size, Lg. × Wd. × Ht.		Each
(C) Small Containers with Lid		
1⅛″ × 1⅛″ × ⅞″	9981T33	$0.92
2⅛″ × 2⅛″ × ⅞″	9981T34	1.71
4 15/16″ × 2¼″ × 2⅛″	9981T36	2.25
5¾″ × 4 7/16″ × 1¼″	9981T37	1.98
(D) Containers with Lid		
5½″ × 5½″ × 4⅜″	4494T22	7.36
11″ × 5½″ × 4⅜″	4494T24	10.93
11″ × 11″ × 4⅜″	4494T26	19.84
12½″ × 6⅜″ × 3¾″	9981T26	3.96
(E) Container with Sliding Lid		
13⅛″ × 8⅜″ × 4½″	9981T22	6.11

Plastic Storage Containers and Snap-On Lids (NSF)

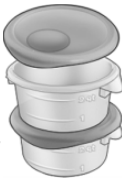

F

With Optional Lid

G

With Optional Lid

H

With Optional Lid

J

With Optional Lid

K&L

With Optional Lid

All containers are NSF certified and are made of FDA-compliant resins. *Polycarbonate containers* (Styles J-L) are crack and stain resistant.

(F) Round containers with graduations have handles and 1 qt. and 1 L graduations. Max. temperature is 212° F. *Optional lids* are made of yellow polyethylene.

(G) Rectangular containers have handles, a marking area for labeling with a grease pencil, and can be nested. Max. temperature is 150° F. *Optional lids* are made of white polyethylene.

(H) Square containers with graduations have 1 qt. and 1 L graduations and can be nested. Max. temperature is 170° F. *Optional lids* are made of translucent polypropylene.

(J) Rectangular containers with graduations have handles and 1 qt. and 1 L graduations. Max. temperature is 212° F. *Optional lids* are made of translucent white polyethylene.

(K) Rectangular containers have handles, a marking area for labeling with a grease pencil, and can be nested. Max. temperature is 212° F. *Optional lids* are made of clear polycarbonate.

(L) Choose-a-color rectangular containers allow for better identification of contents and safer handling through color coding. All have handles and can be nested. Containers are clear with a color tint. Max. temperature is 212° F. **To Order:** Please specify color: blue, green, red, or yellow.

Cap., qts.	Top Outside Size, Lg. × Wd. × Ht.	*Containers*	Each	*Optional Lids*	Each
White Polyethylene					
(F) Round Containers with Graduations					
2	8½″ Dia. × 4″ Ht.	8993T54	$3.12	8993T64	$2.25
4	8½″ Dia. × 7¾″ Ht.	8993T55	4.24	8993T64	2.25
6	10″ Dia. × 7⅝″ Ht.	8993T56	5.35	8993T65	2.41
8	10″ Dia. × 10⅝″ Ht.	8993T57	6.22	8993T65	2.41
12	13⅛″ Dia. × 8⅛″ Ht.	8993T58	11.34	8993T66	6.01
18	13⅛″ Dia. × 11⅞″ Ht.	8993T59	14.41	8993T66	6.01
22	13⅛″ Dia. × 14″ Ht.	8993T63	14.77	8993T66	6.01
(G) Rectangular Containers					
8	18″ × 12″ × 3½″	4533T61	12.92	4533T25	9.32
14	18″ × 12″ × 6″	4533T62	15.97	4533T25	9.32
20	18″ × 12″ × 9″	4533T63	21.35	4533T25	9.32
20	26″ × 18″ × 3½″	4533T41	22.74	4533T23	15.97
34	26″ × 18″ × 6″	4533T42	28.49	4533T23	15.97
50	26″ × 18″ × 9″	4533T43	36.93	4533T23	15.97
66½	26″ × 18″ × 12″	4533T44	52.85	4533T23	15.97
86	26″ × 18″ × 15″	4533T45	54.85	4533T23	15.97
Translucent Polypropylene					
(H) Square Containers with Graduations					
2	6⅝″ × 6⅝″ × 4⅛″	8993T21	3.97	8993T26	1.47
4	6⅝″ × 6⅝″ × 8⅛″	8993T22	6.11	8993T26	1.47
6	8⅝″ × 8⅝″ × 6⅞″	8993T23	7.25	8993T27	2.63
8	8⅝″ × 8⅝″ × 9¼″	8993T24	8.85	8993T27	2.63

Cap., qts.	Top Outside Size, Lg. × Wd. × Ht.	*Containers*	Each	*Optional Lids*	Each
Clear Polycarbonate					
(J) Rectangular Containers with Graduations					
2	8¾″ × 8 5/16″ × 2 11/16″	8993T41	$7.31	8993T48	$4.24
4	8¾″ × 8 5/16″ × 4¾″	8993T42	10.65	8993T48	4.24
6	8¾″ × 8 5/16″ × 6 15/16″	8993T43	13.14	8993T48	4.24
8	8¾″ × 8 5/16″ × 8¾″	8993T44	15.12	8993T48	4.24
12	11 5/16″ × 10½″ × 7¾″	8993T45	23.36	8993T49	6.46
18	11 5/16″ × 10½″ × 11 15/16″	8993T46	34.68	8993T49	6.46
22	11 5/16″ × 10½″ × 14 7/16″	8993T47	38.64	8993T49	6.46
(K) Rectangular Containers					
8	18″ × 12″ × 3½″	4533T51	16.63	4533T24	10.30
14	18″ × 12″ × 6″	4533T52	20.03	4533T24	10.30
20	18″ × 12″ × 9″	4533T53	27.73	4533T24	10.30
20	26″ × 18″ × 3½″	4533T31	28.88	4533T21	19.27
34	26″ × 18″ × 6″	4533T32	37.73	4533T21	19.27
50	26″ × 18″ × 9″	4533T33	48.52	4533T21	19.27
66½	26″ × 18″ × 12″	4533T34	62.37	4533T21	19.27
86	26″ × 18″ × 15″	4533T35	72.77	4533T21	19.27
(L) Choose-a-Color Rectangular Containers					
14	18″ × 12″ × 6″	7537T12	32.88	7537T71	16.66
20	18″ × 12″ × 9″	7537T13	44.10	7537T71	16.66
34	26″ × 18″ × 6″	7537T42	61.48	7537T73	32.18
50	26″ × 18″ × 9″	7537T43	73.52	7537T73	32.18
66½	26″ × 18″ × 12″	7537T44	99.44	7537T73	32.18
86	26″ × 18″ × 15″	7537T45	114.07	7537T73	32.18

Fiberglass Pans

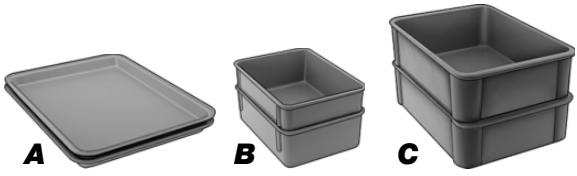

There's nothing delicate about these heavy duty fiberglass pans—they are corrosion resistant, and they won't dent or splinter. Max. temperature is 250° F. **To Order:** Please specify color, where applicable.

Conductive pans have a surface resistivity of 10^5 ohms/sq.

Static-dissipative pans have a surface resistivity of 10^5 to 10^9 ohms/sq. The lower the surface resistivity, the faster charges are dissipated so conductive pans dissipate charges faster than static-dissipative pans.

Top Outside Size, Lg. × Wd. × Ht.	Available Colors		Each
Nestable Pans			
(A) Low Height with Reinforced Rim			
20⅝″ × 16⅝″ × 1½″	Gray, Green, White	41025T4	$34.58
24¼″ × 20¼″ × 1½″	Gray, Green, White	41025T6	42.40
26″ × 26″ × 1¼″	Gray, Green, White	41025T8	44.20
30″ × 20″ × 2″	Gray, Green, White	41025T9	45.78
30″ × 26″ × 1¼″	Gray, Green, White	41025T13	51.16
36½″ × 17½″ × 1⅝″	Gray, Green, White	41025T16	45.78
36½″ × 24¾″ × 1½″	Gray, Green, White	41025T23	63.15
47⅝″ × 23⅞″ × 2¼″	Gray, Green, White	41025T26	78.53
(A) NSF Certified, Low Height with Reinforced Rim			
13¾″ × 10 11/16″ × 11/16″	Gray, Green, White	41025T1	15.15
16⅜″ × 12″ × 11/16″	Gray, Green, White	41025T2	16.10
18″ × 14″ × ⅞″	Gray, Green, White	41025T3	18.25
24″ × 12⅝″ × 11/16″	Gray, Green, White	41025T5	21.88
25¾″ × 17⅞″ × 1⅛″	Gray, Green, White	41025T7	27.36
(A) Conductive, Low Height			
13¾″ × 10⅝″ × 11/16″	Black	26785T22	14.35
17¾″ × 11¾″ × 1″	Black	26785T24	19.13
20⅜″ × 15⅛″ × 1″	Black	26785T26	22.84
25¾″ × 17⅞″ × 1⅛″	Black	26785T34	22.37
(A) Static-Dissipative, Low Height with Reinforced Rim			
22½″ × 20″ × 1″	Black	26785T28	38.84
24″ × 12⅝″ × ¾″	Black	26785T35	31.45
24½″ × 23″ × 1″	Black	26785T32	47.84
27″ × 21″ × 1″	Black	26785T36	49.73
34¼″ × 21⅜″ × 1″	Black	26785T37	61.66
(B) General Purpose			
11¾″ × 8¾″ × 4⅛″	Gray, Green, White	4727T68	12.70
14 19/32″ × 11 19/32″ × 4 3/32″	Gray, Green, Red	4727T1	16.00
22″ × 16½″ × 8½″	Gray, Green, Red	4727T33	38.92
(B) NSF Certified			
20½″ × 12″ × 5″	Gray, Green, White	4727T69	19.89
21¼″ × 15″ × 5″	Gray, Green, White	4727T71	24.63
Stackable Pans			
(C) General Purpose			
16½″ × 11⅜″ × 4⅝″	Gray, Green, White	4727T72	19.25
20⅝″ × 11¼″ × 5½″	Gray, Green, White	4727T73	25.26
33⅛″ × 15⅝″ × 8″	Gray, Green, White	4727T77	55.26
(C) NSF Certified			
18¾″ × 11⅞″ × 1¾″	Gray, Green, White	4727T66	15.09
22″ × 12″ × 1¼″	Gray, Green, White	4727T65	16.39
23⅜″ × 12″ × 3⅛″	Gray, Green, White	4727T74	19.89
23⅜″ × 12″ × 6″	Gray, Green, White	4727T75	29.68
25¾″ × 15¾″ × 7¼″	Gray, Green, White	4727T76	42.93
30⅜″ × 15⅞″ × 2¾″	Gray, Green, White	4727T67	26.04
31¾″ × 19⅛″ × 4½″	Gray, Green, White	4727T78	41.84

Fiberglass Pans with Antiskid Surface

The molded-in rubber surface on these heavy duty, low-height pans provides excellent skid resistance to keep parts from sliding off the pan. They are also NSF certified and have a reinforced rim. All can be nested. Max. temperature is 212° F.

Top Outside Size, Lg. × Wd. × Ht.	Color		Each
13 13/16″ × 10⅝″ × 13/16″	Black	6863T21	$18.16
18″ × 14″ × 13/16″	Black	6863T22	25.74
20¼″ × 15″ × 1 3/16″	Black	6863T31	28.09
25¾″ × 18″ × 1 3/16″	Black	6863T32	38.65

Clear Polycarbonate Pans

With Optional Cover

NSF certified and made of FDA-compliant resins, these pans are crack resistant and nestable. Max. temperature is 212° F.

Top Outside Size, Lg. × Wd. × Ht.	Pans	Each	Optional Covers	Each
12 13/16″ × 6⅞″ × 2½″	6686T63	$7.36	6686T53	$5.01
12 13/16″ × 6⅞″ × 4″	6686T64	9.35	6686T53	5.01
12 13/16″ × 6⅞″ × 6″	6686T65	10.83	6686T53	5.01
12 13/16″ × 10⅜″ × 2½″	6686T44	8.50	6686T52	7.01
12 13/16″ × 10⅜″ × 4″	6686T45	10.63	6686T52	7.01
12 13/16″ × 10⅜″ × 6″	6686T46	13.49	6686T52	7.01
20 13/16″ × 6⅜″ × 2½″	6686T61	13.49	6686T54	10.42
20 13/16″ × 6⅜″ × 4″	6686T62	16.76	6686T54	10.42
20 13/16″ × 12 13/16″ × 2½″	6686T41	16.32	6686T51	12.60
20 13/16″ × 12 13/16″ × 4″	6686T42	19.80	6686T51	12.60
20 13/16″ × 12 13/16″ × 6″	6686T43	23.50	6686T51	12.60

Stain- and Stick-Resistant Plastic Pans

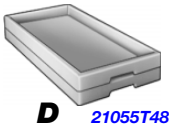

D *21055T48*

E *With Vented Bottom*

F

G *With Vented Bottom*

You're looking at the ultimate in impact, wear, chemical, corrosion, stain, and stick resistance. All pans are autoclavable and made of a blend of PTFE and polypropylene. They are made of FDA- and USDA-compliant resins, and are NSF certified, unless noted. Max. temperature is 250° F.

(D) Stackable Pans

All have handholds.

Top Outside Size, Lg. × Wd. × Ht.	Color		Each
20″ × 10″ × 1⅝″	White	21055T48★	$15.86
23 5/16″ × 9⅛″ × 5 5/16″	White	21055T37	29.81

★ Not NSF certified.

(E) Stackable/Cross-Stackable Pans

All have locking corners that prevent shifting when stacked. Low sidewalls allow better airflow.

Top Outside Size, Lg. × Wd. × Ht.	Color	Solid Bottom	Each	Vented Bottom	Each
30¾″ × 16¼″ × 2½″	White	21055T73	$32.34	21055T63	$32.34
30¾″ × 16¼″ × 4⅛″	White	21055T72	36.06	21055T62	36.06

(F) Stackable/Cross-Stackable Pans

All are designed to stack securely without covers. When pans are stacked, covers can only be used on the top pan. Also have handholds.

Top Outside Size, Lg. × Wd. × Ht.	Pans Color		Each	Optional Covers Color		Each
26″ × 18″ × 3⅛″	♦	21055T11	$23.53	White	21055T21	$20.91
26″ × 20″ × 6⅛″	♦	21055T12	51.04	White	21055T22	23.07

♦ **To Order:** Please specify dark blue or white pan.

(G) Nestable Pans

All have antiskid strips on the bottom for gripping conveyors. Also have handholds.

Top Outside Size, Lg. × Wd. × Ht.	Color	Solid Bottom	Each	Vented Bottom	Each
30″ × 24¼″ × 6″	Gray	21055T43★	$46.14	21055T44★	$46.14

★ Not NSF certified.

Vented Fiberglass Pans

All pans have 1/4″ dia. holes in the bottom and slots on the sides. Pans are corrosion resistant and are unaffected by detergents, mild acids, alkaline solutions, and cutting oils. They have handholds and can be stacked. Maximum temperature is 350° F.

Top Outside Size, Lg. × Wd. × Ht.	Color		Each
16 1/2″ × 11 3/8″ × 4 5/8″	Gray	3488T41	$25.31
23 3/8″ × 12″ × 4 3/8″	Gray	3488T42	36.46

Plastic Pans

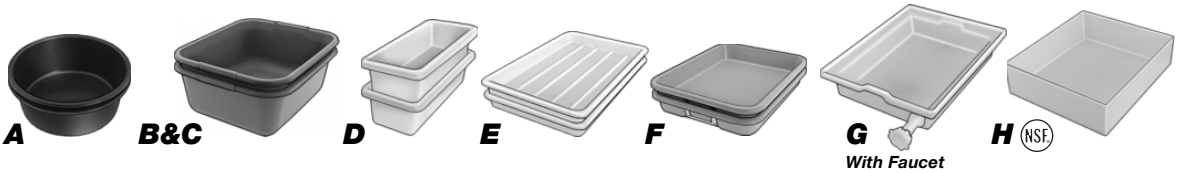

With Faucet

Top Outside Size, Lg. × Wd. × Ht.	Max. Temp.	Color		Each
Nestable				
Round Polyethylene				
A 11 5/8″ Dia. × 4 1/8″ Ht.	175° F	Black	4330T41	$6.38
A 17″ Dia. × 4 1/4″ Ht.	175° F	Black	4330T42	8.54
Rectangular Polypropylene				
B 14 7/16″ × 12 1/2″ × 5 5/8″	212° F	Blue	4197T4	3.90
B 14 7/16″ × 12 1/2″ × 5 5/8″	212° F	White	4197T8	4.45
Rectangular Polyethylene				
C 15 1/4″ × 12 1/2″ × 7 13/16″	158° F	White	4197T9	9.85
USDA-Approved and FDA-Compliant Rectangular Polyethylene				
D 15″ × 6 1/2″ × 4″	180° F	White	4141T7●	30.33
D 15″ × 8 1/2″ × 4″	180° F	White	4141T1●	31.30
D 17 3/4″ × 14″ × 4″	180° F	White	4141T3●	40.11
D 15 7/8″ × 7 3/8″ × 3″	150° F	White	4570T12	26.43
E 28″ × 27 3/4″ × 3/4″	150° F	White	4570T15	37.04
Rectangular Polystyrene with Label Holder				
F 13″ × 10 1/2″ × 2″	Not Rated	Tan	4515T11	12.54
F 13 1/8″ × 10 1/2″ × 4 3/8″	Not Rated	Tan	4515T12	14.12
F 16″ × 11 3/4″ × 4 3/8″	Not Rated	Tan	4515T14	20.76
F 16 5/8″ × 13 1/8″ × 3 1/2″	Not Rated	Tan	4515T15	15.00

● NSF certified.

Top Outside Size, Lg. × Wd. × Ht.	Max. Temp.	Color		Each
Nestable (Cont.)				
Rectangular Polystyrene with Label Holder (Cont.)				
F 18″ × 11 1/2″ × 4 1/4″	Not Rated	Tan	4515T16	$17.27
F 19″ × 13 3/4″ × 4 3/8″	Not Rated	Tan	4515T23	17.54
Non-Nestable				
Rectangular Polyethylene				
G 18 3/4″ × 14 7/8″ × 4 1/4″	171° F	White	3744K21	73.40
G 25″ × 21″ × 4 3/4″	171° F	White	3744K23	91.34
G 26 7/8″ × 20 3/4″ × 6 7/8″	171° F	White	3744K26	123.93
G 28 1/2″ × 24 1/2″ × 4 7/8″	171° F	White	3744K24	104.22
Rectangular Polyethylene with 1/2″ OD Faucet Outlet				
G 18 3/4″ × 14 7/8″ × 4 1/4″	171° F	White	3744K11	112.55
G 22 7/8″ × 19 1/8″ × 4″	171° F	White	3744K12	117.62
G 25″ × 21″ × 4 3/4″	171° F	White	3744K13	134.74
G 26 7/8″ × 20 3/4″ × 6 7/8″	171° F	White	3744K16	168.60
G 28 1/2″ × 24 1/2″ × 4 7/8″	171° F	White	3744K14	150.72
USDA-Approved, FDA-Compliant, and NSF-Certified Rectangular Polyethylene				
H 17 1/2″ × 15 1/2″ × 4″	180° F	White	4141T11	37.67
H 20 3/4″ × 16 1/2″ × 3″	180° F	White	4141T4	39.04
H 23″ × 19″ × 4″	180° F	White	4141T5	44.52
H 29 1/4″ × 23 1/4″ × 4″	180° F	White	4141T2	61.63

Steel and Aluminum Pans

All can be nested, except Style Q.

(J&K) Clear-coat steel pans have a nonstick surface and are seamless.

(L&M) Blued-steel pans have a heavy oxide coating that offers rust and wear resistance. All pans have a rod-reinforced rim.

(N) Rectangular galvanized steel pans are seamless.

(P) Aluminized-steel pans are strong, durable, corrosion resistant, and have a nonstick surface. All have a rod-reinforced rim.

(Q-S) Aluminum pans are corrosion resistant; have a smooth, bright finish; and are seamless.

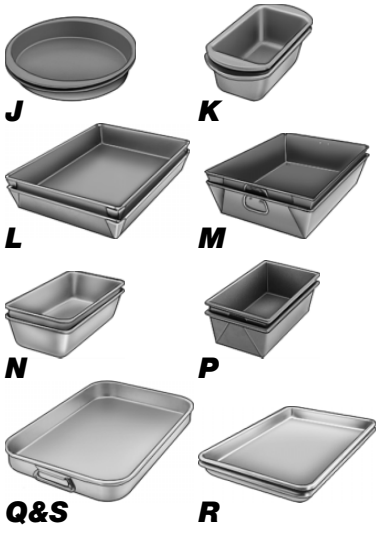

Top Outside Size, Lg. × Wd. × Ht.	Ga.		Each
(J) Round Clear-Coat Steel			
10 3/4″ Dia. × 1 3/4″ Ht.	26	4729T21	$4.69
(K) Rectangular Clear-Coat Steel			
9 3/4″ × 8 1/2″ × 2″	26	4729T19	5.91
10 1/8″ × 5″ × 3″	26	4729T13	4.69
14 3/4″ × 9 1/2″ × 2″	26	4729T17	6.64
15″ × 9 3/4″ × 3/4″	26	4729T22	5.16
17″ × 10 3/4″ × 3/4″	26	4729T23	6.64
19″ × 11 7/8″ × 1″	26	4729T24	7.44
(L) Rectangular Blued-Steel			
9 1/2″ × 5″ × 2 3/4″	30	4732T5	6.91
10″ × 8″ × 2 1/2″	30	4732T1	7.58
14″ × 10″ × 2 1/2″	28	4732T2	9.08
17″ × 12″ × 2 1/2″	28	4732T3	11.38
17″ × 16″ × 2 1/2″	28	4732T4	14.71
(M) Rectangular Blued-Steel with Handles			
18″ × 13″ × 4″	28	4732T7	20.11

Top Outside Size, Lg. × Wd. × Ht.	Ga.		Each
(N) Rectangular Galvanized Steel			
5 5/8″ × 3 1/8″ × 2 1/4″	19	5126T14	$5.89
9 1/2″ × 4 1/4″ × 3″	19	5126T15	7.56
11 1/4″ × 5 3/4″ × 3″	19	5126T16	9.34
18 1/4″ × 11″ × 5 1/2″	19	5126T17	17.78
(P) Rectangular Aluminized-Steel			
9″ × 5″ × 2 3/4″	26	4729T41	17.78
9 1/2″ × 9 1/2″ × 2 1/4″	26	4729T42	20.00
15 1/2″ × 10 1/2″ × 1 1/4″	26	4729T47	21.11
(Q) Rectangular Aluminum with Handles			
18 9/16″ × 12 9/16″ × 2 1/8″	14	4733T11	60.42
(R) NSF-Certified Rectangular Aluminum			
25 3/4″ × 17 3/4″ × 2 1/4″	12	4733T12	64.55
(S) NSF-Certified Rectangular Aluminum with Handles			
25 3/4″ × 17 3/4″ × 3 9/16″	12	4733T13	96.43

Fiberboard Pans

Perfect for handling lightweight materials, these pans have metal corner reinforcements for added strength. They're coated on the inside and outside to resist moisture, grease, and mild acids. All can be nested.

Top Outside Size, Lg. × Wd. × Ht.	Color		Each
5 1/2″ × 5″ × 2 3/4″	Blue Exterior, Tan Interior	2198T1	$3.27
11 1/2″ × 5″ × 2 3/4″	Blue Exterior, Tan Interior	2198T2	3.60
15 3/4″ × 9 1/2″ × 4 1/4″	Blue Exterior, Tan Interior	2198T4	7.53

Aluminum Foil Pans

These economical pans can be nested. *Optional covers* are also made of aluminum foil.

Top Outside Size, Lg. × Wd. × Ht.	Pkg. Qty.		***Pans*** Per Pkg.	***Optional Covers*** Per Pkg.
12 3/4″ × 6 1/2″ × 3 3/8″	10	40265T13	$9.33	40265T33 $5.53
12 3/4″ × 10 3/8″ × 2 3/16″	10	40265T12	9.77	40265T32 6.76
20 3/4″ × 12 13/16″ × 3 3/8″	5	40265T11	11.52	40265T31 5.94

Stainless Steel Pans

A (NSF)
With Optional Cover

B (NSF)
With Optional Cover

C (NSF)

D

E

All pans have an unpolished finish and can be nested.

(A&B) NSF-certified 300 Series stainless steel pans are seamless. *Style A* pans have optional covers that are Type 300 stainless steel. *Style B* pans have ¼″ dia. perforations on the sides and bottom to allow drainage. *Optional covers* are Type 200 stainless steel.

(C&D) Low-height Type 304 stainless steel have a seamless construction. *Style D* has three raised ribs on the pan surface to strengthen the tray.

(E) Type 316 stainless steel pans offer excellent resistance to corrosion and pitting. All have a welded construction.

Top Outside Size, Lg.×Wd.×Ht.	Pans Ga.	Pans Each	Optional Covers Ga.	Optional Covers Each
(A) NSF-Certified 300 Series Stainless Steel				
6⅞″ × 4¼″×2″	22	**4191T13** $13.00	24	**4191T31** $9.91
6⅞″ × 4¼″×4″	22	**4191T14** 15.78	24	**4191T31** 9.91
6⅞″ × 6⅜″×2½″	22	**4191T15** 12.18	24	**4191T32** 9.91
8⅞″ × 5″ ×3″	22	**4191T11** 33.09	22	**4191T33** 17.56
10″ × 6½″×2″	22	**4191T1** 29.36	22	**4191T34** 23.20
12¼″ × 7¾″×2¼″	22	**4191T2** 37.40	22	**4191T35** 26.76
12¾″ × 6⅞″×2½″	22	**4191T16** 16.87	24	**4191T36** 15.00
12¾″ × 6⅞″×4″	22	**4191T17** 24.76	24	**4191T36** 15.00
12¾″ × 6⅞″×4″	20	**4191T78** 36.62	24	**4191T36** 15.00
12¾″ × 6⅞″×6″	22	**4191T18** 35.13	24	**4191T36** 15.00
12¾″ ×10⅜″×2½″	22	**4191T19** 18.56	24	**4191T37** 16.84
12¾″ ×10⅜″×4″	22	**4191T21** 25.91	24	**4191T37** 16.84
12¾″ ×10⅜″×4″	20	**4191T77** 35.47	24	**4191T37** 16.84
12¾″ ×10⅜″×6″	22	**4191T22** 37.04	24	**4191T37** 16.84
13⅞″ ×12⅞″×2½″	22	**4191T23** 34.40	24	**4191T38** 33.89
13⅞″ ×12⅞″×4″	22	**4191T24** 51.11	24	**4191T38** 33.89
16½″ ×10″ ×2½″	22	**4191T3** 34.00	22	**4191T39** 32.29
16½″ ×10″ ×4″	22	**4191T6** 46.78	22	**4191T39** 32.29
(A) NSF-Certified 300 Series Stainless Steel (Cont.)				
20¾″ × 6⅜″ ×2½″	22	**4191T71** $32.69	24	**4191T74** $23.76
20¾″ × 6⅜″ ×4″	22	**4191T72** 40.13	24	**4191T74** 23.76
20¾″ × 6⅜″ ×6″	22	**4191T73** 81.00	24	**4191T74** 23.76
20¾″ ×12¾″ ×1¼″	22	**4191T7** 28.18	24	**4191T41** 31.49
20¾″ ×12¾″ ×2½″	22	**4191T4** 29.33	24	**4191T41** 31.49
20¾″ ×12¾″ ×4″	22	**4191T5** 39.29	24	**4191T41** 31.49
20¾″ ×12¾″ ×4″	20	**4191T75** 52.87	24	**4191T41** 31.49
20¾″ ×12¾″ ×6″	22	**4191T8** 58.78	24	**4191T41** 31.49
20¾″ ×12¾″ ×6″	20	**4191T76** 71.87	24	**4191T41** 31.49
21¾″ ×13¾″ ×8″	18	**4191T9** 189.80	22	**4191T42** 59.96
(B) Perforated, NSF-Certified 300 Series Stainless Steel				
12¾″ ×10⅜″ ×2½″	22	**40995T34** 50.96	24	**40995T36** 30.25
12¾″ ×10⅜″ ×4″	22	**40995T35** 65.27	24	**40995T36** 30.25
20¾″ ×12¾″ ×2½″	22	**40995T31** 81.78	24	**40995T37** 62.09
20¾″ ×12¾″ ×4″	22	**40995T32** 101.05	24	**40995T37** 62.09
20¾″ ×12¾″ ×6″	22	**40995T33** 155.65	24	**40995T37** 62.09
(C) Low-Height, NSF-Certified Type 304 Stainless Steel				
10″ × 6½″ × ¾″	24	**4189T7**▲ 13.70	—	— —
13⅝″ × 9¾″ × ⅝″	22	**4189T1** 38.41	—	— —
15⅛″ ×10½″ × ⅝″	22	**4189T2** 45.10	—	— —
17⅛″ ×11⅝″ × ⅝″	22	**4189T3** 47.44	—	— —
19″ ×12½″ × ⅝″	22	**4189T4** 56.60	—	— —
21¼″ ×16¼″ × ⅞″	20	**4189T5** 93.65	—	— —
(D) Low-Height, USDA-Approved Type 304 Stainless Steel				
36″ ×25″ ×2″	18	**4189T6** 213.54	—	— —
(E) Type 316 Stainless Steel				
15¾″ ×12¾″ ×3″	22	**4143T11** 144.60	—	— —
21¾″ ×17¾″ ×3″	22	**4143T12** 182.15	—	— —
23¾″ ×19¾″ ×3″	22	**4143T13** 190.38	—	— —

▲ Made of 300 Series stainless steel.

Plastic Pan Liners

No need to clean your pans when you protect them with these liners. All are 1-mil thick and are safe for food contact. Max. temperature is 400° F.

For Pan Top Outside Size Lg.×Wd.	Ht.	Pkg. Qty.		Per Pkg.
12¾″× 6⅞″	4″ and 6″	25	**9551T13**	$7.22
12¾″×10⅜″	2½″	25	**9551T21**	7.78
12¾″×10⅜″	4″ and 6″	25	**9551T22**	8.11
20¾″× 6⅜″	4″	25	**9551T25**	8.67
20¾″× 6⅜″	6″	25	**9551T26**	10.00
20¾″×12¾″	2½″ and 4″	10	**9551T41**	6.33
20¾″×12¾″	6″	10	**9551T42**	7.56
20¾″×12¾″	8″	10	**9551T43**	8.67

Keep-It-Cool Plastic Pans (NSF)

Keeping your cool has never been easier. Simply freeze pan for eight hours prior to use—internal gel allows contents to remain below 40° F for eight hours. All pans are NSF certified, autoclavable, and made of ABS plastic. *Optional covers* are clear acrylic. Max. temperature is 212° F. **To Order:** Please specify color: white or black.

Top Outside Size, Lg.×Wd.×Ht.	Pans	Each	Optional Covers	Each
6⅞″ × 6¼″×6⅜″	**2762T11**	$47.08	**2762T81**	$26.11
12¹¹⁄₁₆″× 6⅞″×6″	**2762T12**	53.93	**2762T82**	26.11
12¾″ ×10⅜″×6″	**2762T13**	95.59	**2762T83**	36.04
20¹¹⁄₁₆″×12¾″×6⅜″	**2762T14**	121.31	**2762T84**	45.70

Autoclavable Polypropylene Pans

Round

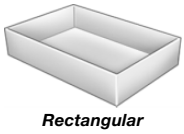

Rectangular

Max. temperature is 275° F. Color is translucent white.

Top Outside Size, Lg.×Wd.×Ht.		Each
Round		
10⅜″ Dia.×3³⁄₁₆″ Ht.	**26775T73**	$75.56
20⅜″ Dia.×4³⁄₁₆″ Ht.	**26775T93**	128.70
Rectangular		
15⅜″×10⅜″×3³⁄₁₆″	**26775T13**	96.23
16⅜″×12⅜″×8³⁄₁₆″	**26775T63**	121.70
20⅜″×15⅜″×3³⁄₁₆″	**26775T23**	124.34
20⅜″×20⅜″×6³⁄₁₆″	**26775T53**	167.96
26⅜″×22⅜″×4³⁄₁₆″	**26775T43**	167.96

HDPE Pans

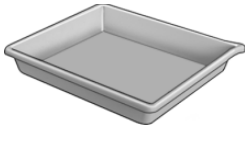

HDPE pans, which are also known as photographic trays, can be nested. All pans except 4922T87 have a pouring lip. Max. temperature is 194° F. Color is white.

Top Outside Size, Lg.×Wd.×Ht.		Each
8⅞″ × 6⅞″×1½″	**4922T81**	$7.08
13¼″ ×11¼″×1⅞″	**4922T82**	15.03
15⅝″ ×13⅜″×2½″	**4922T83**	23.85
17¼″ ×14⅜″×2¼″	**4922T84**	25.15
21″ ×17½″×3⅛″	**4922T85**	39.89
24″ ×20″ ×3″	**4922T86**	50.65
27¾″ ×23½″×3¼″	**4922T87**	83.03

Conductive Fiberglass Tray with Slotted Openings

With a surface resistivity of 10^5 ohms, this tray protects up to twenty-four 3″×3″ to 12″×12″ circuit boards from static electricity. Max. temperature is 250° F. Meets ANSI/ESD S20.20.

O'all Size, Lg.×Wd.×Ht.	Color		Each
15″×9″×5⅛″	Black	**4760T51**	$25.53

Magnetic Stainless Steel Pans

Fully magnetized to hold tools and small parts, you can use these pans right side up, sideways, and even upside down. All pans are 25-ga. Type 430 stainless steel and are seamless. Magnets are covered with rubber to protect metal surfaces from scratches.

Rectangular

	Top Outside Size, Lg.×Wd.×Ht.	O'all Ht. with Magnets		Each
Polished Finish				
Round	6″ Dia.×1⅛″ Ht.	1⅝″	4050T31	$10.22
Rectangular	9½″×5½″×1⅛″	1⅝″	4050T32	20.65
Rectangular	11½″×11″×1⅛″	1⅝″	4050T33	36.65
Rectangular	14¼″×6½″×1⅛″	1⅝″	4050T34	34.11
Red Finish				
Rectangular	9½″×5½″×1⅛″	1⅝″	4050T35	20.83

Compartmented Steel Pans

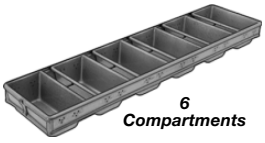

6 Compartments

12 Compartments

Individual compartments keep items from sliding. Pans are made of FDA-compliant materials and aluminized steel. The 12-compartment pan has a wire-reinforced rim for extra strength. Both styles have a seamless construction and can be nested.

No. of Compartments	Compartment Size, Lg.×Wd.×Ht.	Top Outside Size, Lg.×Wd.×Ht.	Ga.		Each
6	5⅝″×3⅛″×2¼″	25⅞″×6″×2¼″	26	5335T11	$61.90
12	3⅞″×2½″×1 5⁄16″	19½″×9⅞″×1 5⁄16″	22	5335T12	53.80

Compartmented Plastic Pans

Individual compartments keep contents from shifting. ***Economy pans*** have a maximum temperature of 125° F. ***General purpose pans*** can be stacked and are not temperature rated. ***Conductive pans*** can be stacked and are furnished with removable dividers to create the number and size of compartments you need. Pans have a surface resistivity of 10^5 ohms/sq. Maximum temperature is 120° F.

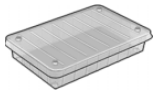

Economy with Cover

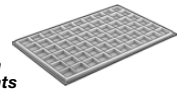

Economy with 60 Compartments

General Purpose

Conductive

No. of Compartments	Compartment Size, Lg.×Wd.×Ht.	Top Outside Size, Lg.×Wd.×Ht.	Color		Each
Economy Pans					
PVC with Cover					
1	10½″×6½″×2″	11⅞″×7¾″×2″	Clear	3758T51	$11.77
PVC					
25	1¾″×1¾″×¾″	10 11⁄16″×10 11⁄16″×¾″	Clear	3758T52	3.23
Polystyrene					
60	1 1⁄16″×1 1⁄16″×5⁄16″	13 13⁄16″×8⅝″×5⁄16″	White	3758T53	1.82
72	1⅛″ Dia.×½″ Ht.	13½″×12¼″×½″	White	3758T54	3.80
General Purpose Pans					
Polystyrene					
3	4½″×3⅛″×2½″	10½″×5½″×2½″	Tan	4897T81	9.51
8	4¼″×4″×3¼″	19″×9½″×3½″	Tan	4897T83	15.91
20	3⅛″×2⅝″×1½″	17½″×12¼″×1½″	Tan	4897T82	14.04
Conductive Pans					
Polypropylene					
56	2½″×1¼″×1⅞″★	16½″×10⅞″×2½″	Black	55165T64	26.52
96	1¼″×1¼″×1⅞″★	16½″×10⅞″×2½″	Black	55165T65	32.20

★ Minimum compartment size.

Easy-to-Assemble Cardboard Bin Boxes

All bin boxes can be assembled easily without the need for tape, glue, or fasteners and are made of corrugated cardboard. Shipped flat. *Note:* Not rated for capacity.

Standard bin boxes have a labeling area and an inventory-control chart on the side. Two notches on the back allow the bin box to catch the shelf above it and tilt out for easy access. All have a white exterior with a tan interior. *Optional dividers* fit side-to-side, are held in position by the tension of the bin box sidewalls, and can be positioned wherever needed. Color is tan.

Tall bin boxes have a labeling area. All have a white exterior with a tan interior.

Conductive boxes have a conductive coating. Surface resistivity is 10^4 ohms/sq. and meets MIL-81705C electrostatic decay requirements. Color is black.

Standard with Optional Divider

Bin Boxes: Top Outside Size, Wd.×Dp.×Ht.	Pkg. Qty.		Per Pkg. 1-4	Per Pkg. 5-Up	Optional Dividers (25/Pkg.)	Per Pkg.
Standard Bin Boxes						
2″×9″×4″	5	5073T57	$4.66	$4.17	5073T42	$9.54
2″×12″×4″	5	5073T12	4.80	4.31	5073T42	9.54
2″×18″×4″	5	5073T27	6.20	5.57	5073T42	9.54
3″×12″×4″	5	5073T29	4.96	4.44	5073T41	9.54
4″×9″×4″	5	5073T58	5.15	4.62	5073T43	10.65
4″×12″×4″	5	5073T11	5.27	4.70	5073T43	10.65
4″×18″×4″	5	5073T18	6.49	5.83	5073T43	10.65
4″×24″×4″	5	5073T54	9.35	8.40	5073T43	10.65
6″×9″×4″	5	5073T59	5.33	4.76	5073T44	10.65
6″×12″×4″	5	5073T14	5.44	4.88	5073T44	10.65
6″×18″×4″	5	5073T19	6.85	6.16	5073T44	10.65
6″×24″×4″	5	5073T55	10.76	9.67	5073T44	10.65
8″×12″×4″	5	5073T15	5.80	5.22	5073T45	10.65
8″×18″×4″	5	5073T21	7.30	6.57	5073T45	10.65
8″×24″×4″	5	5073T56	12.24	11.00	5073T45	10.65
10″×12″×4″	5	5073T61	6.12	5.50	5073T46	10.65
10″×18″×4″	5	5073T62	8.84	7.94	5073T46	10.65
12″×12″×4″	5	5073T63	7.99	7.18	5073T47	12.23
12″×18″×4″	5	5073T64	9.56	8.59	5073T47	12.23

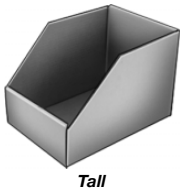

Tall

Conductive

Optional Bin Compartment

Bin Boxes: Top Outside Size, Wd.×Dp.×Ht.	Pkg. Qty.		Each 1-24	Each 25-Up
Tall Bin Boxes				
7¾″×11½″×8″	5	5075T12	$4.22	$3.80
7¾″×17½″×10″	5	5075T13	10.24	9.20
9¾″×17½″×10″	5	5075T14	12.06	10.85
11¾″×17½″×10″	5	5075T17	12.54	11.28
11¾″×23½″×12″	5	5075T18	14.13	12.72
15¾″×23½″×12″	5	5075T19	15.83	14.24
Conductive Bin Boxes				
2″×12″	5	4703T81	5.79	5.21
4″×12″	5	4703T82	5.81	5.23
4″×18″	5	4703T91	6.43	5.78
4″×24″	5	4703T95	8.36	7.52
6″×12″	5	4703T83	6.12	5.48
6″×18″	5	4703T92	6.94	6.24
6″×24″	5	4703T96	9.48	8.53
8″×12″	5	4703T84	6.63	5.96
8″×18″	5	4703T93	8.54	7.68
8″×24″	5	4703T97	11.90	10.70
12″×12″	5	4703T85	7.35	6.61
12″×18″	5	4703T94	7.79	7.00
12″×24″	5	4703T98	11.36	10.22

Optional Bin Compartments—Can be used in Standard and Tall Bin Boxes. Come in packages of 25.
2″ Wd.×3¼″ Dp.×4″ Ht. 5073T52 **Per Pkg.** 1-3 $9.73 4-Up $8.75

Easy-to-Assemble Corrugated Plastic Bin Boxes

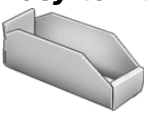

More durable than our cardboard bin boxes but just as easy to assemble (you don't need tape, glue, or fasteners). High back allows it to be tilted out from a shelf without falling out. Shipped flat. All have a 5-lb. capacity and are made of polypropylene. **To Order:** Please specify color: blue, red, or yellow.

Top Outside Size, Wd.×Dp.×Ht.		Each 1-24	Each 25-Up
2″×11¾″×4″	9761T52	$3.31	$2.96
2″×17¾″×4″	9761T61	4.68	4.20
4″×11¾″×4″	9761T54	4.53	4.07
4″×17¾″×4″	9761T63	5.62	5.06
6″×11¾″×4″	9761T56	$5.54	$4.97
6″×17¾″×4″	9761T65	6.81	6.11
8″×11¾″×4″	9761T58	6.78	6.09
8″×17¾″×4″	9761T67	8.89	7.98

Nestable Plastic Bin Boxes

Shown with Optional Dividers and Bin Compartment

Bin Box Shown Tilted Out from Shelf

Two notches on the back of the bin box allow it to be tilted out from the shelf without falling out. Bin boxes have a molded-in label holder. Made of polypropylene. **To Order:** Please specify color: blue, red, or yellow. *Optional dividers* fit side-to-side and are black. *Optional bin compartments* are white.

Also Available: Labels for all bin boxes except 4644T1. Please ask for 1515T32.

Top Outside Size, Wd.×Dp.	4″ HIGH BIN BOXES: Bin Boxes Cap., lbs.		Each 1-11	Each 12-Up	Optional Dividers Pkg. Qty.		Per Pkg.	6″ HIGH BIN BOXES: Bin Boxes Cap., lbs.		Each 1-11	Each 12-Up	Optional Dividers	Each
2¾″×11⅝″	25	4644T1	$1.96	$1.76	—	—	—	—	—	—	—	—	—
4⅛″×11⅝″	25	4644T2	2.21	1.99	24	4644T21	$10.41	30	4644T71	$3.10	$2.79	4644T23	$0.77
4⅛″×17⅞″	25	4644T4	2.92	2.62	24	4644T21	10.41	40	4644T72	4.48	4.03	4644T23	.77
4⅛″×23⅝″	25	4644T53	5.77	5.19	24	4644T21	10.41	50	4644T73	8.51	7.66	4644T23	.77
6⅝″×11⅝″	25	4644T3	3.41	3.07	24	4644T22	11.62	30	4644T77	4.78	4.29	4644T24	.83
6⅝″×17⅞″	25	4644T5	4.15	3.72	24	4644T22	11.62	40	4644T78	5.99	5.39	4644T24	.83
6⅝″×23⅝″	25	4644T51	8.40	7.55	24	4644T22	11.62	50	4644T79	11.64	10.47	4644T24	.83
8⅜″×11⅝″	25	4644T6	3.73	3.34	12	4644T25	13.22	30	4644T93	5.32	4.78	4644T27	1.95
8⅜″×17⅞″	25	4644T8	5.72	5.14	12	4644T25	13.22	40	4644T94	7.98	7.17	4644T27	1.95
8⅜″×23⅝″	25	4644T52	10.14	9.12	12	4644T25	13.22	50	4644T95	15.19	13.67	4644T27	1.95
11⅛″×11⅝″	25	4644T7	5.52	4.97	6	4644T26	9.51	30	4644T96	8.19	7.36	4644T28	2.27
11⅛″×17⅞″	25	4644T9	9.11	8.20	6	4644T26	9.51	40	4644T97	13.25	11.92	4644T28	2.27
11⅛″×23⅝″	25	4644T54	12.45	11.20	6	4644T26	9.51	50	4644T98	17.89	16.10	4644T28	2.27

Optional 2″ Wd.×3¼″ Dp.×3″ Ht. Bin Compartment ..... 4644T91 Each $0.76
Optional 2¾″ Wd.×5″ Dp.×3″ Ht. Bin Compartment ..... 4644T92 Each $1.27

Stackable Plastic Bin Boxes

A&C

B

D

(A&B) Stackable bin boxes have *optional dividers* that fit front-to-back, unless noted. All dividers are black, except those for the polyethylene bin boxes, which are white. **Also Available:** Labels for polyethylene bin boxes. Please ask for 4761T1.

(C&D) Bin boxes with handholds are polypropylene, unless noted. **To Order:** Please specify color: blue, red, or yellow, unless noted.

(A&B) Stackable Bin Boxes

Top Outside Size, Wd.×Dp.×Ht.	Bin Boxes Cap., lbs.		Each 1-11	Each 12-Up	Optional Dividers	Each
(A) Polypropylene						
8¼″ ×18″ × 9″	60	28765T36	$20.33	$18.28	28765T55	$3.75
8¼″ ×20½″ × 7″	60	28765T43★	20.48	18.43	28765T53	2.13
8¼″ ×23⅞″ × 7″	100	42185T88	32.00	28.80	42185T24	7.38
8¼″ ×23⅞″ × 9″	100	42185T89	34.29	30.86	42185T25	7.57
11″ ×20½″ × 7″	75	28765T44★	28.43	25.58	28765T54	2.85
11″ ×23⅞″ × 7″	100	42185T91	35.69	32.11	42185T26	7.89
11″ ×23⅞″ ×10″	100	42185T92	40.49	36.44	42185T27	8.68
16½″ ×18″ ×11″	75	28765T35	30.92	27.81	28765T56	4.54
16½″ ×23⅞″ ×11″	100	42185T94	43.99	39.58	42185T28	9.38
18¼″ ×23⅞″ ×12″	100	42185T95	46.72	42.05	42185T29	9.91
(B) Polyethylene with Molded-In Label Holder						
12⁵⁄₁₆″ ×19¹¹⁄₁₆″ × 7⅞″	40	4761T12	19.96	17.96	4761T26	5.38
12⁵⁄₁₆″ ×19¹¹⁄₁₆″ ×11⅞″	40	4761T13	25.36	22.82	4761T17	6.26
12½″ ×20⅛″ × 5¹³⁄₁₆″	40	4761T11	15.80	14.22	4761T16	4.92
18⅜″ ×19¹¹⁄₁₆″ ×11⅞″	40	4761T14	34.30	30.87	4761T17	6.26
18⅝″ ×28³⁄₁₆″ ×11⅞″	55	4761T15	59.90	53.91	—	—

★ Color is beige. Includes one black side-to-side divider.

(C&D) Stackable Bin Boxes with Handholds

Top Outside Size, Wd.×Dp.×Ht.	Cap., lbs.		Each 1-11	Each 12-Up
(C) With Handhold in Back				
8¼″ ×29⅞″ × 7″	150	28765T71	$35.50	$31.95
11″ ×29⅞″ ×10″	150	28765T72	44.87	40.38
12⅜″ ×20″ × 6″	60	28765T61	17.13	15.41
12⅜″ ×20″ × 8″	60	28765T62	19.46	17.50
12⅜″ ×20″ ×12″	60	28765T63	23.34	21.00
16½″ ×29⅞″ ×11″	150	28765T74	48.74	43.86
16½″ ×35⅞″ ×17½″	175	28765T75	82.03	73.82
18¼″ ×29⅞″ ×12″	150	28765T76	51.79	46.60
18⅜″ ×20″ ×12″	150	28765T64	29.92	26.92
18⅜″ ×29¼″ ×12″	150	28765T65	41.21	37.07
19⅞″ ×35⅞″ ×17½″	175	28765T77	89.93	80.93
23⅞″ ×35⅞″ ×17½″	175	28765T78	97.89	88.09
(D) With Two Side Handholds				
10⅞″ ×17½″ ×12½″	75	28765T81●	21.66	19.50
16½″ ×17½″ ×12½″	75	28765T83●	22.23	20.01
19⅞″ ×15¼″ ×12⁷⁄₁₆″	100	42185T54●▲	18.73	16.86

● Available in blue, gray, or red. ▲ Made of polyethylene.

Nestable and Stackable Plastic Bin Boxes

E

F

(E) Nestable and stackable bin boxes are black. Made of polypropylene.

(F) Dual-access nestable and stackable bin boxes are nestable, stackable, and cross-stackable. Cross-stacking allows you to easily access contents when bin boxes are stacked. All have a molded-in label holder on both ends for easy content identification. Made of polypropylene. **To Order:** Please specify color: blue, red, or yellow. **Also Available:** Labels for bin boxes. Please ask for 1515T322.

Top Outside Size, Wd.×Dp.×Ht.	Cap., lbs.		Each 1-11	Each 12-Up
(E) Nestable and Stackable Bin Boxes				
6⅝″× 8⅞″×5″	6	8361T91	$3.69	$3.32
6⅝″×11⅞″×5″	12	8361T92	4.59	4.12
6⅝″×17⅞″×7″	25	8361T73	7.75	6.97
8⅜″×11⅞″×5″	15	8361T94	6.88	6.18
8⅜″×17⅞″×7″	25	8361T95	8.87	7.98
(F) Dual-Access Nestable and Stackable Bin Boxes				
6⅝″× 9½″×5″	30	7063T71	$4.39	$3.94
6⅝″×12½″×5″	40	7063T72	4.77	4.29
6⅝″×18½″×7″	75	7063T75	8.27	7.44
8⅜″×12½″×5″	40	7063T73	5.66	5.09
8⅜″×18½″×7″	75	7063T76	10.01	9.00
9¼″×14″ ×6½″	60	7063T74	6.86	6.17

Hangable and Stackable Plastic Bin Boxes

A lip on the back allows bin boxes to hang from rails or louvered panels. (See page 1604 for rail bin-box holders and louvered panels.) All are made of FDA-compliant polypropylene, unless noted. Optional dividers fit front-to-back and are black. Optional windows fit on the front of the bin box and are clear.

To Order: For bin boxes, please specify color: blue, red, translucent, or yellow, unless noted.

Bin Boxes: Top Outside Size, Wd.×Dp.×Ht.	Cap., lbs.		Each 1-11	Each 12-Up	Optional Dividers ♦: Pkg. Qty		Per Pkg.	Optional Windows ♦: Pkg. Qty		Per Pkg.
4⅛″ × 5″ × 3″	8	42185T184■	$1.24	$1.11	6	42185T183	$4.62	—	—	—
4⅛″ × 5⅜″ × 3″	10	42185T42	1.33	1.20	6	42185T72	5.29	—	—	—
4⅛″ × 7⅜″ × 3″	10	42185T43	2.33	2.09	6	42185T73	5.57	—	—	—
4⅛″ × 10⅞″ × 4″	30	4666T91■▲	3.66	3.29	—	—	—	—	—	—
5½″ × 10⅞″ × 5″	30	42185T44	5.86	5.26	6	42185T76	7.52	12	42185T34	$10.49
5½″ × 13½″ × 5″	30	42185T45■	6.01	5.40	6	42185T75	8.92	12	42185T35	11.48
5½″ × 14¾″ × 5″	50	4666T92▲	6.93	6.23	—	—	—	—	—	—
8¼″ × 10¾″ × 7″	50	42185T47	9.15	8.23	6	42185T77	11.98	6	42185T64	7.56
8¼″ × 14¾″ × 7″	60	42185T48■	8.82	7.93	6	42185T78	12.42	6	42185T64	7.56
8¼″ × 18″ × 9″	60	42185T96	15.67	14.10	6	42185T97	23.45	6	42185T98	20.15
11″ × 10⅞″ × 5″	50	42185T46	8.41	7.57	6	42185T76	7.52	6	42185T63	8.68
11″ × 16″ × 8″	75	42185T51■	13.62	12.26	6	42185T81	21.59	4	42185T55	9.24
11″ × 18″ × 10″	75	42185T52	18.57	16.71	6	42185T82	24.15	4	42185T56	9.80
16½″ × 10⅞″ × 5″	60	4666T93■▲	14.10	12.68	6	4666T44	8.93	—	—	—
16½″ × 14¾″ × 7″	75	42185T49	15.36	13.81	6	42185T78	12.42	6	42185T66	18.61
16½″ × 18″ × 11″	75	42185T53	23.61	21.24	6	42185T59	24.15	3	42185T57	10.64
33″ × 8⅝″ × 5″	80	4666T29■★	21.41	19.27	6	4666T43	6.51	—	—	—

♦ Optional dividers and optional windows are not available for translucent bin boxes.
■ Translucent bin boxes are not available. ▲ Polypropylene is not FDA compliant.
★ Includes two dividers. Polypropylene is not FDA compliant.

Shown with Optional Divider and Window

Bin Boxes Shown Hanging on a Louvered Panel

Heavy Duty Plastic Bin Boxes

(A) Polystyrene stackable bin box has strong, thick walls and a raised tab on the back that catches the underside of a shelf when tilted. Bin box is waterproof and oil and chemical resistant. Not rated for capacity. Color is gray.

(B) Fiberglass nestable and stackable bin boxes provide high-strength storage and offer excellent chemical, solvent, and oil resistance. **To Order:** Please specify color: gray, green, or red.

(A) Polystyrene Stackable Bin Box

Bin Box: Top Outside Size, Wd.×Dp.×Ht.	Pkg. Qty.		Each: Partial Pkg.	Full Pkg.	Optional Dividers: Pkg. Qty.		Per Pkg.
5⁹⁄₁₆″ × 11⅝″ × 4⅝″	24	4758T51	$6.73	$6.04	4	4758T52	$4.68

A *Shown with Optional Divider*

(B) Fiberglass Nestable and Stackable Bin Boxes

Top Outside Size, Wd.×Dp.×Ht.	Cap., lbs.	Pkg. Qty.		Each: Partial Pkg.	Full Pkg.
11⅜″ × 18⅛″ × 7⅝″	500	10	9973T4	$30.76	$27.68
11⅜″ × 24″ × 7⅞″	500	10	9973T1	36.79	33.10
16¼″ × 24″ × 8″	500	5	9973T2	46.21	41.59

B

Extra-Wide Divided Plastic Bin Boxes

You'll get six compartments in one with these divided bin boxes. All are nestable and stackable. Use ⅜″ diameter dowel rods to stack; 12″ deep bins require two rods and 18″ deep bins require three. (See page 3618 for dowel rods.) Made of polypropylene. **To Order:** Please specify color: blue, red, or yellow.

Optional dividers fit side-to-side and are black.

Top Outside Size, Wd.×Dp.×Ht.	Inside Compartment Size, Wd.×Dp.	Cap., lbs.		Each
33″ × 12″ × 5″	3⁷⁄₁₆″ × 10⅜″	60	8544T1	$25.52
33″ × 18″ × 5″	3⁷⁄₁₆″ × 16⅜″	60	8544T2	37.84
Optional Dividers			8544T3	$3.12

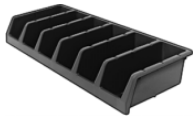

Static-Control Plastic Bin Boxes

Keep your components safe from static with these bin boxes. The antistatic bin boxes drain charges more slowly than the conductive bin boxes, which are used when static electricity needs to be drained more quickly.

Antistatic hangable and stackable bin boxes come with a lip on the back so you can hang them from a rail or louvered panel. (See page 1605 for static-control panels and racks.) All have a label holder and are made of polypropylene. Surface resistivity is 10^9 to 10^{12} ohms/sq. Color is blue. **Also Available:** Labels for bin boxes. Please ask for 1515T322.

Conductive hangable and stackable bin boxes have a lip on the back so you can hang them from a rail or louvered panel. (See page 1605 for static-control panels and racks.) Surface resistivity is 10^5 ohms/sq. Color is black. *Optional dividers* fit front-to-back and are black.

Conductive stackable bin boxes have molded-in label holders and a bar in front for stability (unless noted). Surface resistivity is 10^3 ohms/sq. Color is black. **Also Available:** Labels for bin boxes. Please ask for 4761T1.

Top Outside Size, Wd.×Dp.×Ht.	Cap., lbs.	Bin Boxes:	Each	Optional Dividers:	Each
Antistatic Hangable and Stackable Bin Boxes					
4″ × 3½″ × 2″	40	4925T41	$6.02	—	—
4″ × 7″ × 3″	40	4925T42	7.53	—	—
5¹³⁄₁₆″ × 9½″ × 5″	40	4925T44	18.31	—	—
8¹³⁄₁₆″ × 6½″ × 3″	40	4925T43	15.44	—	—
Conductive Hangable and Stackable Bin Boxes					
4⅛″ × 4½″ × 3″	15	4589T63	4.24	4589T83	$1.94
4⅛″ × 7⅜″ × 3″	20	4589T65	5.47	4589T85	2.36
5½″ × 10⅞″ × 5″	30	4589T66	17.73	4589T86	3.82
8¼″ × 10¾″ × 7″	50	4589T67	25.38	4589T87	6.54
8¾″ × 6½″ × 3″	40	4925T63	13.13	—	—
11″ × 18″ × 10″	75	4589T68	74.81	4589T88	11.21
11⁷⁄₁₆″ × 12¹³⁄₁₆″ × 6″	40	4925T67	32.03	—	—
16½″ × 18″ × 11″	75	4589T69	109.78	4589T89	11.21
Conductive Stackable Bin Boxes					
7⅞″ × 13¹³⁄₁₆″ × 5¹³⁄₁₆″	22	4589T73♣	15.19	—	—
7⅞″ × 13¹³⁄₁₆″ × 7⅞″	22	4589T74	22.05	—	—
12½″ × 20⅛″ × 7⅞″	22	4589T76	38.61	—	—

♣ Bin box does not have a bar in front for stability.

Antistatic Hangable and Stackable

Hangable Bin Boxes Shown on a Rack

Mobile Plastic Bin Boxes

A

B

(A) Mobile stackable plastic bin box has a bar in front that adds strength and acts as a handle. It has a molded-in label holder and four swivel casters with brakes with 3″ dia. polyurethane wheels. Stacks up to four high with casters in place. Made of polyethylene. **To Order:** Please specify color: blue, red, or yellow. **Also Available:** Labels for bin box. Please ask for 17895T115.

(B) Mobile plastic bin boxes with cover are NSF certified and made of FDA-compliant resins. They have a sloped top, a clear polycarbonate cover that slides back for easy access to contents, and come with a 32-oz. scoop. All have four casters (two rigid and two swivel) with 3″ dia. rubber wheels. Made of polypropylene. Color is white.

Top Outside Size, Wd. × Dp. × Ht.	Cap., lbs.		Each
(A) Mobile Stackable Plastic Bin Box			
18⅜″ × 29″ × 14⅞″	300	7523T63	$111.39
(B) Mobile Plastic Bin Boxes with Cover			
13⅛″ × 29¼″ × 28″	140	6175T91	271.03
15½″ × 29½″ × 28″	175	6175T93	285.13
18″ × 29¾″ × 28″	215	6175T94	289.83

Plastic Bin Boxes with Magnetic Base

Swivel Base

Fixed Base

Magnetic bases attach to any steel surface so you can position your bin box where you need it. Boxes are made of ABS plastic and have bottom drain holes to prevent dirt and moisture buildup. Both come with two removable front-to-back dividers. Color is black. *Note:* Not rated for capacity.

Top Outside Size, Wd. × Dp. × Ht.		Each
Bin Box with Swivel Base		
5⁹⁄₁₆″ × 4″ × 5½″■	1275T66	$22.85
Bin Box with Fixed Base		
9⅜″ × 7⁹⁄₁₆″ × 5½″	1275T67	38.10

■ Height includes 2″ base.

Metal Bin Boxes

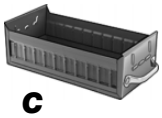

C

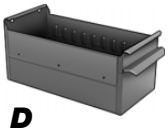

D

E

(C&D) Steel bin boxes have a closed-front design and a raised front and back to prevent accidental spills. Color is gray. *Optional dividers* fit side-to-side. Color is gray.

Style C have a label holder. **Also Available:** Labels for bin boxes. Please ask for 1512T133.

(E) Type 304 stainless steel bin boxes are perfect for corrosive environments. All have a satin finish and are stackable.

	Bin Boxes				Optional Dividers	
	Top Outside Size, Wd. × Dp. × Ht.	Cap., lbs.		Each		Each
Steel Bin Boxes						
C	5⅝″ × 11″ × 3⅛″	60	9980T14	$6.90	9980T44	$1.70
C	5⅝″ × 17″ × 3⅛″	60	9980T15	9.08	9980T44	1.70
D	5⅝″ × 11″ × 5⅜″	60	9980T11	12.96	9980T41	1.84
D	5⅝″ × 17″ × 5⅜″	60	9980T12	18.82	9980T41	1.84
D	8⅜″ × 17″ × 5⅜″	100	9980T18	21.75	9980T46	2.42
D	11¼″ × 17″ × 5⅜″	100	9980T19	22.62	9980T47	3.30
Type 304 Stainless Steel Bin Boxes						
E	4½″ × 8″ × 4½″	300	6615T51	43.66	____	____
E	5½″ × 12″ × 4½″	300	6615T52	49.62	____	____
E	7½″ × 15½″ × 6″	300	6615T53	78.63	____	____

Plastic Dispensing Bins

Keep bulk material dry and ready to use. Material empties quickly through a gravity-fed, wide-mouth opening—just pull the handle and a plastic flap opens for dispensing. Mounting screws and dispensing cup included. Made of polyethylene. *20-lb. capacity bin* is FDA compliant.

Top Outside Size, Wd. × Dp. × Ht.	Dispensing Opening, Wd. × Dp.	Cap., lbs.	Color		Each
13″ × 8¼″ × 18″	3″ × 3½″	20	Tan	4020T67	$39.28
16″ × 10″ × 25″	4″ × 4¾″	40	Black	4020T68	51.74

Modular Steel Dispensing Bins

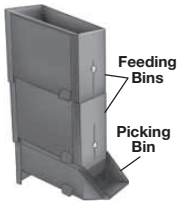

Team up feeding and picking bins with the same rear width to create a dispensing system that's just right for you. Color is green.

Feeding bins have an adjustable front panel and adjustment screw that allow you to control the amount of material that flows into the picking bin. Can be stacked up to two high.

Picking bins have a shallow-angle lip for easy access to parts and a sloped bottom that allows parts to flow forward.

Rear Wd.	Front Wd.	Dp.	Ht.		Each
Feeding Bins					
4½″	3½″	6″	5¼″	4520T71	$15.64
6½″	5½″	9½″	8½″	4520T72	23.70
11½″	10½″	9½″	8½″	4520T73	30.77
Picking Bins					
4½″	3¼″	8″	2½″	4520T61	12.93
6½″	5″	12″	4″	4520T62	15.74
11½″	10″	12″	4″	4520T63	28.28

Stackable Plastic Tote Boxes

Polypropylene

Polyethylene

Strong rims and handholds make stacking and carrying these tote boxes a breeze. All have solid sides and solid bottoms. *Optional covers* are recessed with a ridge around the top for easy stacking.

To Order: Please specify gray or red for polypropylene tote boxes and covers or gray or green for polyethylene tote boxes and covers.

Top Outside Size, Lg. × Wd. × Ht.	Cap., lbs.	Tote Boxes	Each	Optional Covers	Each
Polypropylene Tote Boxes—Compatible with 48″ × 40″ Pallets					
8″ × 6″ × 4¹¹⁄₁₆″	55	4315T71	$6.75	____	____
12″ × 8″ × 4¹¹⁄₁₆″	55	4315T72	10.39	____	____
12″ × 8″ × 6¹¹⁄₁₆″	55	4315T73	12.02	____	____
12″ × 8″ × 8¹¹⁄₁₆″	55	4315T74	13.27	____	____
16″ × 12″ × 4¹³⁄₁₆″	55	4315T1	9.91	4315T84	$7.59
16″ × 12″ × 8¹¹⁄₁₆″	55	4315T2	19.69	4315T84	7.59
16″ × 16″ × 16⅝″	55	4315T64	37.25	4315T67	12.60
24″ × 16″ × 6″	55	4315T76	22.71	4315T85	14.50
24″ × 16″ × 8¹¹⁄₁₆″	55	4315T4	31.49	4315T85	14.50
24″ × 16″ × 9½″	55	4315T77	32.55	4315T85	14.50
24″ × 16″ × 12⅝″	55	4315T5	35.08	4315T85	14.50
24″ × 16″ × 16⅝″	55	4315T6	39.59	4315T85	14.50
32″ × 24″ × 12⅝″	55	4315T7	77.88	____	____
Polyethylene Tote Boxes—Compatible with 48″ × 45″ Pallets					
12″ × 7⅜″ × 5″	55	41195T26	8.65	____	____
12″ × 15″ × 5″	55	41195T27	12.60	41195T76	8.94
12″ × 15″ × 7½″	55	41195T28	13.37	41195T76	8.94
12″ × 15″ × 9½″	55	41195T29	15.22	41195T76	8.94
24″ × 15″ × 5″	55	41195T46	16.66	41195T78	12.36
24″ × 15″ × 7½″	55	41195T47	18.87	41195T78	12.36
24″ × 15″ × 9½″	55	41195T48	20.90	41195T78	12.36
24″ × 22⅜″ × 9½″	55	41195T56	29.02	____	____
24″ × 22⅜″ × 14½″	55	41195T57	34.78	____	____
48″ × 22⅜″ × 7⁵⁄₁₆″	44	41195T58	74.45	____	____

Nestable Plastic Tote Boxes

(A) Square polyethylene tote boxes are nestable in any orientation and are made of FDA-compliant resins. Lip around the top provides handholds. **To Order:** Please specify color: blue, red, or yellow.

(B) Rectangular polyethylene tote boxes have a recessed label area and a lip around the top that forms handholds. Color is gray.

(C) Rectangular polyethylene tote boxes with anti-jamming lugs are easy to separate when nested. Lip around the top provides handholds. Color is gray.

(D) Rectangular polyethylene tote boxes with snap-on lid have handholds. Color is blue.

(E) Rectangular polyethylene tote box with spill-resistant lid has a lid with foam gasket. When used with lid, box can be used to transport hazardous material and will meet UN specification UN4H2/X10.5/S. Color is red.

(F) Rectangular polypropylene tote box has handholds and a molded-in label holder. Color is green. **Also Available:** Labels for boxes. Please ask for 1512T136.

Top Outside Size, Lg.×Wd.×Ht.	Cap., lbs.		Each
(A) Square Polyethylene Tote Boxes			
14½″ ×14½″ ×12″	80	3964T51	$38.14
20½″ ×20½″ ×12″	150	3964T52	54.86
26¾″ ×26¾″ ×12″	280	3964T53	72.02
(B) Rectangular Polyethylene Tote Boxes			
10¾″ × 8⅛″ × 6″	—	4037T55	16.66
16½″ ×10¾″ × 4″	—	4037T59	13.91
16½″ ×10¾″ × 8″	—	4037T56	18.98
21⅝″ ×16⅝″ × 6″	—	4037T61	23.82
21⅝″ ×16⅝″ ×10″	—	4037T57	30.74
25″ ×16″ × 8″	—	4037T63	31.71
34″ ×22″ × 8″	—	4037T62	46.06
(C) Rectangular Polyethylene Tote Boxes with Anti-Jamming Lugs			
22″ ×13¾″ ×11¾″	—	4037T51	33.70
26¼″ ×16¾″ ×12½″	—	4037T58	42.82
28″ ×18¾″ ×15″	—	4037T52	54.44
(D) Rectangular Polyethylene Tote Boxes with Snap-On Lid			
16″ ×10¾″ × 7″	—	4387T51	6.45
24″ ×16″ ×12½″	—	4387T54	14.94
24″ ×16″ ×16½″	—	4387T53	16.62
28½″ ×19 9/16″ ×16⅞″	—	4387T55	22.92
32 1/16″ ×20⅛″ ×16 11/16″	—	4387T56	29.18
(E) Rectangular Polyethylene Tote Box with Spill-Resistant Lid			
15⅝″ ×13″ × 8 5/16″	23	47165T51	34.34
(F) Rectangular Polypropylene Tote Box			
30⅝″ ×21⅛″ ×12½″	81	4294T41	49.63
Optional Lid for Style F		4294T42	34.00

Collapsible Plastic Tote Boxes

Save storage space with these collapsible tote boxes—they collapse to one-third their overall size. All are made of FDA-compliant resins and have handholds. They are stackable and compatible with 48″×45″ pallets. Made of polyethylene. Color is gray.

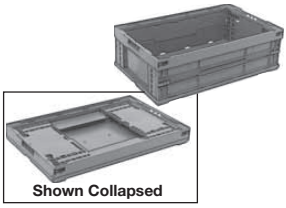
Shown Collapsed

Top Outside Size, Lg.×Wd.×Ht.	Collapsed Ht.	Cap., lbs.		Each
15″×12″× 7½″	2⅝″	40	40985T41	$27.56
24″×15″× 7½″	2⅝″	40	40985T42	40.06
24″×15″×11⅛″	2⅝″	40	40985T43	44.36

Nestable and Stackable Tote Boxes

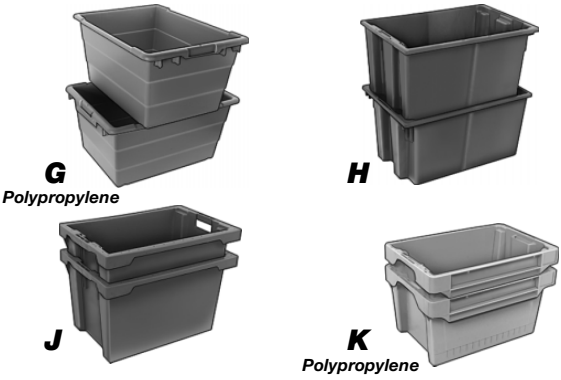

(G) Nestable and cross-stackable tote boxes go from nesting to stacking with a simple 90° turn. *Polypropylene* boxes are gray. *Polyethylene* boxes are made from FDA-compliant resins. Color is translucent white.

(H) FDA-compliant nestable and stackable tote boxes are made of FDA-compliant resins, have ribs under the top lip to prevent jamming when nested, and have handholds. *Optional lids* are made of polypropylene, unless noted. **To Order:** Please specify color for tote boxes and lids: blue, gray, or red, unless noted. *Note:* The red boxes are not FDA compliant.

(J) Nestable and stackable tote boxes compatible with 48″×40″ pallets are nestable in one direction and stackable when turned in the opposite direction. All have handholds. *Optional lids* are made of polypropylene. **To Order:** Please specify color: blue, red, or yellow.

(K) Nestable and stackable tote boxes with built-in label holder and compatible with 48″×40″ pallets are nestable in one direction and stackable when turned in the opposite direction. All have handholds. When paired with an *optional lid,* boxes can be used for shipping. *Polypropylene* boxes have a recessed bar code area.

To Order: Please specify color: blue, red, or yellow.

Also Available: Labels for boxes. For labels for polypropylene boxes, please ask for 1515T336. For labels for polyethylene box, please ask for 4311T12.

Top Outside Size, Lg.×Wd.×Ht.	Cap., lbs.	*Tote Boxes*	Each	*Optional Lids*	Each
(G) Nestable and Cross-Stackable Tote Boxes					
Polypropylene					
17¼″×11″ × 8″	60	5124T27	$7.81	—	—
17¼″×11″ ×12″	60	5124T28	10.29	—	—
23¾″×17¼″× 8″	60	5124T33	17.51	—	—
23¾″×17¼″×12″	60	5124T35	20.21	—	—
Polyethylene					
25″ ×16½″× 8″	—	5124T36	75.68	—	—
29¾″×19¾″×12″	—	5124T32	111.71	—	—
(H) FDA-Compliant Nestable and Stackable Tote Boxes					
Polypropylene					
18″ ×11″ × 6″	45	40365T1	10.69	40365T4	$6.87
19½″×13½″× 8″	55	40365T7	17.24	40365T75	10.24
19½″×15½″×10″	65	40365T2	19.96	40365T5	9.24
Polyethylene					
19⅜″×12⅞″×12⅛″	70	4867T2	23.12	4867T43	10.81
19½″×15½″×13″	80	40365T15●	30.35	40365T17●★	11.58
20⅛″×13″ × 6¼″	70	4867T3	17.04	4867T44★	9.88
21″ ×17″ ×12″	70	4867T4	28.00	4867T45	11.73
23½″×15½″×12″	75	40365T8	26.76	40365T85	14.52
23½″×19½″×10″	100	40365T14●	32.70	40365T18●★	12.98
23½″×19½″×13″	90	40365T3	29.96	40365T6	13.76
24″ ×14⅛″× 7⅞″	70	4867T6	23.42	4867T47	11.00
24″ ×20″ ×13″	70	4867T5	31.30	4867T46	15.04
26⅛″×18¾″×10½″	70	4867T7	34.29	4867T48	14.05
29½″×19½″×15″	100	40365T9	50.59	40365T95	21.11
29⅝″×22⅜″× 6⅛″	70	4867T8	27.42	—	—
30⅛″×24″ ×15⅛″	70	4867T9	56.70	—	—
(J) Nestable and Stackable—Compatible with 48″×40″ Pallets					
Polypropylene					
21⅜″×12⅝″× 6¾″	44	4311T1	17.82	—	—
23⅛″×14⅞″× 7⅞″	22	4311T2	20.73	—	—
23¾″×15⅞″×13⅞″	66	4311T6	38.03	4311T9	13.97
(K) Nestable and Stackable Tote Boxes with Built-In Label Holder—Compatible with 48″×40″ Pallets					
Polypropylene					
23¾″×15⅞″× 7⅞″	70	4367T1	27.02	4367T4	14.68
23¾″×15⅞″×11⅞″	70	4367T2	31.30	4367T4	14.68
23¾″×15⅞″×15⅞″	70	4367T3	42.95	4367T4	14.68
Polyethylene					
23¾″×15⅞″× 9⅞″	44	4311T4	29.63	4311T8	13.05

● Available in gray only. ★ Made of polyethylene.

Heavy Duty Plastic Tote Boxes

A

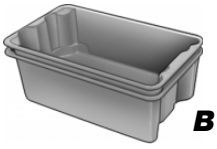

B

(A) NSF-certified nestable polyethylene tote boxes with snap-on lids are made of FDA-compliant resins, have a reinforced bottom to withstand heavy use, and have handholds. **To Order:** Please specify color: gray or white.

(B) Chemical-resistant nestable and stackable fiberglass tote boxes will not dent, bend, splinter, or corrode. All resist most oils, chemicals, and solvents and have handholds. **To Order:** Please specify color: gray, green, red, or yellow, except 4445T57, which is available in gray or green.

Top Outside Size, Lg. × Wd. × Ht.	Cap., lbs.	Tote Boxes	Each	Optional Covers	Each
(A) NSF-Certified Nestable Polyethylene Tote Boxes w/ Snap-On Lids					
27⅞″ × 17⅜″ × 10 11/16″	500	4636T77	$24.94	—	—
27⅞″ × 17⅜″ × 15⅛″	500	4636T78	30.38	—	—
(B) Chemical-Resistant Nestable and Stackable Fiberglass Tote Boxes					
17⅞″ × 10 13/16″ × 5″	500	4445T4	18.74	4445T41	$14.53
19 13/16″ × 12 13/16″ × 6″	500	4445T5	23.87	4445T51	15.64
20⅝″ × 13″ × 8″	500	4445T6	27.81	4445T61	22.62
24″ × 20″ × 12¾″	250	4445T57	52.42	—	—
24⅛″ × 11⅜″ × 9″	500	4445T63	31.67	4445T73	18.16
24 5/16″ × 14 13/16″ × 5⅛″	500	4445T9	30.87	4445T91	19.51
24 5/16″ × 14 13/16″ × 8″	500	4445T3	32.43	4445T91	19.51
25 5/16″ × 18⅛″ × 10⅛″	500	4445T7	43.02	4445T71	22.43
27½″ × 19⅞″ × 14⅛″	500	4445T65	57.30	4445T75	27.52
30⅝″ × 16⅞″ × 11⅛″	500	4445T8	56.96	4445T92	23.89
42½″ × 20⅛″ × 14⅛″	500	4445T85	79.17	4445T93	36.71

Plastic Tote Boxes with Hinged Lids

Solid Color

Translucent

All boxes have lids that interlock and are attached to boxes with metal hinges. A ⅜″ dia. hole allows you to secure lids with a wire seal or cable tie (not included). All are nestable when lids are open, and are stackable when lids are closed. They have handholds and are made of FDA-compliant resins, except the red models. All are compatible with 48″×40″ pallets, unless noted; 21 13/16″ long boxes are also compatible with 48″×45″ pallets.

Solid color boxes are made of polyethylene. **To Order:** Please specify color: blue, gray, or red, unless noted.

Translucent boxes are made of polypropylene.

Top Outside Size, Lg. × Wd. × Ht.	Cap., lbs.	Solid Color	Each	Translucent	Each
11 13/16″ × 9 13/16″ × 7 11/16″	70	4659T8★	$15.45	4400T41	$17.31
15 3/16″ × 10⅞″ × 9 11/16″	70	4659T7▲	17.26	4400T42▲	20.13
19 11/16″ × 11 13/16″ × 7 5/16″	70	4659T9★	17.20	4400T43	24.38
21 13/16″ × 15 3/16″ × 9 13/16″	70	4659T1	20.87	4400T44	29.81
21 13/16″ × 15 3/16″ × 12⅞″	70	4659T2	23.58	4400T45	30.91
22 5/16″ × 13″ × 12 13/16″	70	4659T15	22.70	—	—
23⅞″ × 19⅝″ × 12⅝″	70	4659T4	33.04	4400T47	41.75
26⅞″ × 16⅞″ × 12⅛″	70	4659T3▲	29.35	4400T46▲	41.50

★ Not available in red. ▲ Not compatible with 48″×40″ pallets.

File-Size Tote Boxes

Corrugated Cardboard with Lift-Off Lid

Polyethylene with Hinged Lid

Corrugated cardboard boxes have a large label area and have handholds. Shipped flat but can be assembled in seconds. Boxes and lids are white. *Boxes with folding lid* have a string-and-button closure.

Polyethylene box is water resistant and has handholds, a hinged lid, and removable folder rails for hanging files. Box is nestable. Color is blue.

File Style	Inside Size, Lg. × Wd. × Ht.	Cap., lbs.		Each 1-11	12-Up
Corrugated Cardboard Boxes with Lift-Off Lid					
Letter/Legal	15″ × 12″ × 10″	35	5074T12	$3.60	$3.06
Letter	24″ × 12″ × 10″	50	5074T43	6.04	5.24
Legal	24″ × 15″ × 10″	60	5074T44	6.77	5.87
Corrugated Cardboard Boxes with Folding Lid					
Letter	24″ × 12″ × 10″	50	5074T14	7.92	6.96
Legal	24″ × 15″ × 10″	60	5074T15	8.63	7.22
Polyethylene Box with Hinged Lid					
Letter/Legal/ Hanging	20⅝″ × 16½″ × 11½″	70	45125T42	Each	$32.00

Vented Stackable Plastic Tote Boxes

With Optional Cover

These tote boxes have handholds and strong rims that make stacking and carrying a breeze. They have ¾″×¾″ mesh openings that allow ventilation as well as quick identification of contents. All are compatible with 48″×40″ pallets. Made of polyethylene. *Optional covers* have a ridge around the top for easy stacking and are made of polypropylene. **To Order:** Please specify color for tote boxes and covers: gray or red.

Top Outside Size, Lg. × Wd. × Ht.	Vented Sides with Solid Bottom: Cap., lbs.		Each	Vented Sides with Vented Bottom: Cap., lbs.		Each	Optional Covers	Each
16″ × 12″ × 4 13/16″	55	4315T11■	$12.07	33	4315T91■	$15.31	4315T84	$7.59
16″ × 12″ × 8 11/16″	55	4315T12	20.37	33	4315T92	22.82	4315T84	7.59
16″ × 16″ × 16⅝″	55	4315T61	38.31	33	4315T93	38.85	4315T67	12.60
24″ × 16″ × 6″	55	4315T82	22.24	33	4315T94	26.96	4315T85	14.50
24″ × 16″ × 8 11/16″	55	4315T14	29.44	33	4315T95	30.91	4315T85	14.50
24″ × 16″ × 9½″	55	4315T83	30.22	33	4315T96	32.57	4315T85	14.50
24″ × 16″ × 12⅝″	55	4315T15	32.39	33	4315T97	33.84	4315T85	14.50
24″ × 16″ × 16⅝″	55	4315T16	37.09	33	4315T98	38.26	4315T85	14.50
32″ × 24″ × 12⅝″	55	4315T17	72.61	—	—	—	—	—

■ Sides with handholds are solid.

Vented Nestable and Stackable Plastic Tote Boxes

(A) Standard tote boxes are FDA compliant. Vented sides and bottom allow easy draining. Made of polyethylene. 3642T22 features handholds, reinforced sides for added strength, and a smooth interior for easy cleaning. 3642T41 and T42 have handholds.

(B) Stain- and stick-resistant tote boxes are the ultimate in impact, wear, chemical, corrosion, stain, and stick resistance. All are NSF certified, made of FDA-compliant resins, and have handholds. Sides and bottoms are vented. Made of a blend of PTFE and polypropylene.

(C) Heavy duty chemical-resistant tote boxes are made of reinforced fiberglass so they are lightweight and strong. They also resist most chemicals, solvents, and oils. All have handholds and are compatible with both 48″×40″ and 48″×45″ pallets. **To Order:** Please specify color.

A 3642T41

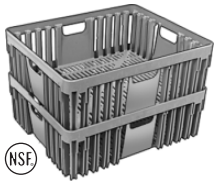

B

C

Top Outside Size, Lg.×Wd.×Ht.	Cap., lbs.	Bottom Perforation Opening Size	Available Colors	Tote Boxes	Each	Optional Covers	Each
(A) Standard Tote Boxes							
23⅝″×15 11/16″×10 3/16″	40	½″× ½″	Green	3642T22	$21.40	____	____
28⅜″×22″ × 4¾″	30	⅞″× ⅞″	Blue	3642T41	28.33	____	____
28⅜″×22″ × 6¾″	30	⅞″× ⅞″	Red	3642T42	31.70	____	____
(B) Stain- and Stick-Resistant Tote Boxes							
24″ ×20″ × 8¼″	—	¼″×2⅛″	White	21055T31	52.36	____	____
24″ ×20″ × 8¼″	—	¼″×2⅛″	Green	21055T32	52.36	____	____
(C) Heavy Duty Chemical-Resistant Tote Boxes							
17⅞″×10⅝″ × 5″	150	⅜″ Dia.	Gray, Green	4117T11	27.74	4117T51	$12.86
20½″×12⅞″ × 8″	150	⅜″ Dia.	Gray, Green	4117T12	33.61	4117T52	15.79
25¼″×18″ ×10″	150	¼″ Dia.	Gray, Green	4117T13	60.20	4117T53	22.61

Create-Your-Own Compartmented Plastic Tote Boxes

Create a tote box with the perfect number of compartments—simply choose the box and number of dividers you need. The dividers fit into molded slots in the boxes and intersect so you can have compartments as small as 1⅛″ square, unless otherwise indicated.

(D) Polyethylene tote boxes have gray dividers; lids are clear. **To Order:** For boxes, please specify color: blue, gray, or red.

(E) Conductive polypropylene tote boxes provide protection from electrostatic fields when used with lid. Surface resistivity is a maximum 105 ohms/sq. Boxes, dividers, and lids are black.

Plastic label holders are 7¾″×4¼″ and snap onto divider boxes. Maximum label size is 7½″×3½″. **Also Available:** Labels for bin boxes. Please ask for 17895T118. Label size is 5″ Wd.×3″ Ht.

D *Shown with Dividers and Snap-On Lid*

E *Shown with Dividers*

Top Outside Size, Lg.×Wd.×Ht.	Cap., lbs.	Each	Ht.	Dividers For Length	Each	Dividers For Width	Each	Snap-On Lids	Each
(D) Polyethylene Tote Boxes									
Maximum Number of Dividers: 5 for Length and 7 for Width									
10 13/16″× 8 5/16″× 2½″	40	40355T51 5.69	1⅞″	40355T68	$1.05	40355T65	$0.95	40355T92	$7.57
10 13/16″× 8 5/16″× 3½″	40	40355T52 5.86	2⅞″	40355T69	1.05	40355T66	.95	40355T92	7.57
10 13/16″× 8 5/16″× 5″	40	40355T53 6.10	4⅜″	40355T71	1.05	40355T67	.95	40355T92	7.57
Maximum Number of Dividers: 7 for Length and 11 for Width									
16½″ ×10⅞″ × 2½″	40	40355T54 7.24	1⅞″	40355T82	1.55	40355T68	1.05	40355T96	9.78
16½″ ×10⅞″ × 3½″	40	40355T55● 7.92	2⅞″	40355T83	2.05	40355T69	1.05	40355T96	9.78
16½″ ×10⅞″ × 5″	40	40355T56● 9.63	4⅜″	40355T84	2.08	40355T71	1.05	40355T96	9.78
16½″ ×10⅞″ × 6″	40	40355T57● 9.94	5⅜″	40355T85	2.40	40355T72	2.05	40355T96	9.78
16½″ ×10⅞″ × 8″	40	40355T59● 12.43	7⅜″	40355T86	2.62	40355T73	2.48	40355T96	9.78
Maximum Number of Dividers: 11 for Length and 15 for Width									
22⅜″ ×17⅜″ × 5″	40	40355T61 15.33	4⅜″	40355T87	2.42	40355T74	2.17	40355T97	19.05
22⅜″ ×17⅜″ × 6″	40	40355T62● 15.61	5⅜″	40355T88	2.90	40355T75	2.35	40355T97	19.05
22⅜″ ×17⅜″ × 8″	40	40355T63● 18.84	7⅜″	40355T89	3.40	40355T76	2.73	40355T97	19.05
22⅜″ ×17⅜″ ×12″	40	40355T64● 25.37	11 5/16″	40355T91	6.78	40355T77	6.58	40355T97	19.05
(E) Conductive Polypropylene Tote Boxes									
Maximum Number of Dividers: 5 for Length and 7 for Width									
10 13/16″× 8 5/16″× 5″	40	4893T11 13.49	4⅜″	4893T15	2.20	4893T14	1.78	4893T16	5.24
Maximum Number of Dividers: 7 for Length and 11 for Width									
16½″ ×10⅞″ × 6″	40	4893T13 19.29	5⅜″	4893T22	3.98	4893T21	3.38	4893T87	10.51
16½″ ×10⅞″ × 8″	40	4893T83 25.23	7⅜″	4893T92	5.22	4893T95	3.84	4893T87	10.51
Maximum Number of Dividers: 11 for Length and 15 for Width									
22⅜″ ×17⅜″ × 8″	40	4893T29 44.97	7⅜″	4893T47	6.13	4893T35	4.89	4893T88	17.93
Plastic Label Holders									
For Style D						40355T95	Each	$1.50	
For Style E						4893T89	Each	$1.74	

● Has ⅜″ dia. holes on both ends for a labeling tag, a flat surface on all sides for labels, and numbered divider slots.

Steel Tote Boxes

All have solid fronts and backs.

Nestable tote boxes have handholds and ⅞″ dia. holes on both ends for a labeling tag.

Stackable solid tote boxes have handholds.

Stackable vented tote box has handholds and 3/16″ dia. perforations on the sides and bottom.

Top Outside Size, Lg.×Wd.×Ht.	Cap., lbs.	Each
Nestable Tote Boxes		
16″ ×11″ ×6″	200	5121T1 $29.07
16″ ×11″ ×9″	200	5121T3 31.32
22″ ×11″ ×6″	200	5121T2 33.28
22″ ×11″ ×9″	200	5121T4 35.57
Stackable Solid Tote Boxes		
9″ × 6″ ×3½″	50	4736T51 16.51
12″ × 8″ ×4″	60	4736T52 17.83
13½″× 9″ ×4½″	70	4736T53 20.83
Stackable Vented Tote Box		
18¾″×12½″×8″	200	4736T14 63.02

Nestable

Stackable Solid

Stackable Vented

Nestable Tote Baskets

A

B

C

(A) Plastic tote baskets with wire handles are made of polypropylene. **To Order:** Please specify color: blue or red.
(B) Steel tote baskets are white.
(C) Steel tote basket with steel handles has a black-painted finish. Handles have a PVC grip.

Top Outside Size ♦, Lg. × Wd. × Ht.	Cap., lbs.	Bottom Mesh Openings		Each
(A) Plastic Tote Baskets with Wire Handles				
17″ × 12″ × 8″	75	3/8″ × 1″	4248T11	$7.44
18″ × 12 3/4″ × 9 3/4″	125	1/2″ × 1/2″	4248T51	12.37
(B) Steel Tote Baskets				
21″ × 17″ × 3 1/4″	—	1 1/4″ × 1 1/4″	42865T21	18.90
21″ × 17″ × 7 1/8″	—	1 1/4″ × 1 1/4″	42865T22	22.60
21″ × 17″ × 11 1/8″	—	1 1/4″ × 1 1/4″	42865T23	30.01
(C) Steel Tote Basket with Steel Handles				
16 1/2″ × 12 1/4″ × 7″	125	1/4″ × 5/8″	4025T11	15.62

♦ Not including handles.

Heavy Duty Tote Baskets

D

E

F

Top Outside Size ♦, Lg. × Wd. × Ht.	Bottom Mesh Openings		Each
(D) Epoxy-Coated Steel Tote Baskets— *Color is blue.*			
11″ × 6″ × 3 1/2″	1/4″ × 3 1/4″	4244T1	$58.20
14″ × 11″ × 3 1/2″	1/4″ × 3 1/4″	4244T2	69.33
20″ × 11″ × 3 1/2″	1/4″ × 3 1/4″	4244T3	79.50
(E) Stackable Zinc-Plated Steel Tote Baskets with Handles			
16″ × 10″ × 4 1/2″	1/2″ × 1″	4354T11	52.37
16″ × 10″ × 4 1/2″	1/4″ × 3/4″	4354T12	64.18
21″ × 13 1/4″ × 6″	1/2″ × 1″	4354T13	72.90
21″ × 13 1/4″ × 6″	1/4″ × 3/4″	4354T14	74.80
24″ × 13 1/4″ × 6″	1/2″ × 1″	4354T16	79.86
(F) Stackable Type 304 Stainless Steel Tote Baskets with Handles			
16″ × 10″ × 4 1/2″	1/2″ × 1″	20165T41	143.99
16″ × 10″ × 4 1/2″	1/4″ × 3/4″	20165T42	180.56
21″ × 13 1/4″ × 6″	1/2″ × 1″	20165T43	197.23
21″ × 13 1/4″ × 6″	1/4″ × 3/4″	20165T44	233.97
24″ × 13 1/4″ × 6″	1/2″ × 1″	20165T45	237.86

♦ Not including handles.

Collapsible Large-Capacity Containers

Container without Casters

Containers collapse to save valuable storage space. All are made of zinc-plated steel and have four-way forklift entry. *Containers without casters* can be stacked four high, except 32″ Lg. × 20″ Wd. containers, which can only stack three high. *Containers with casters* have two rigid and two swivel casters with 4″ dia. phenolic wheels, except for the 32″ Lg. × 20″ Wd. containers, which have 3 1/2″ dia. phenolic wheels. *Note:* Do not stack containers without casters on containers with casters.

O'all Size, Lg. × Wd.	Wire Thick.	Mesh Openings	Bottom Clearance	Without Casters Ht.	Without Casters Cap., lbs.		Without Casters Each	With Casters Ht.	With Casters Cap., lbs.		With Casters Each
Containers with Half-Drop Door on One Length Side											
32″ × 20″	11 ga.	1 1/8″ × 1 1/8″	3 7/8″	21″	1000	5066T64	$107.00	21 1/8″	1000	5066T67	$207.91
32″ × 20″	11 ga.	1/2″ × 1/2″	3 7/8″	21″	1000	5066T65	113.90	21 1/8″	1000	5066T68	211.69
40″ × 32″	3 ga.	2″ × 2″	3 7/8″	34″	4000	5066T31	160.28	35 3/4″	2800	5066T81	267.37
48″ × 40″	3 ga.	2″ × 2″	3 7/8″	30″	4000	5066T56	188.89	31 3/4″	2800	5066T82	292.63
48″ × 40″	3 ga.	2″ × 2″	3 7/8″	36″	4000	5066T32	212.67	37 3/4″	2800	5066T83	352.00
48″ × 40″	3 ga.	2″ × 2″	3 7/8″	42″	4000	5066T72	217.05	43 3/4″	2800	5066T84	324.22
Containers with Half-Drop Door on One Width Side											
48″ × 40″	3 ga.	2″ × 2″	3 7/8″	36″	4000	5066T26	214.31	37 3/4″	2800	5066T85	370.18

Large-Capacity Containers

G

H

J

K

L

O'all Size, Lg. × Wd. × Ht.	Cap., lbs. When Not Stacked	Cap., lbs. When Stacked	Max. Stacking Height	Wall Thick.	Bottom Clearance	Forklift Entry	Color	Containers	Each	Optional Covers	Each
(G) Polyethylene Containers with Cover— *Made of FDA-compliant resins and are nestable.*											
41″ × 28″ × 29″	500	430	3	3/16″	4″	2-Way	Blue	21065T44■	$206.14	—	—
42″ × 34″ × 42″	800	800	2	3/16″	4″	2-Way	Blue	21065T45■	240.09	—	—
51 1/2″ × 22 1/2″ × 19″	550	325	4	3/16″	4″	2-Way	Blue	42115T34	198.95	—	—
(H) UV-Stabilized Polyethylene Container— *Made of FDA-compliant resins and has a smooth interior.*											
48″ × 45″ × 24 13/16″	2000	2000	6	1 3/4″	3 5/8″	4-Way	Blue	4508T61	305.05	45775T14★	$81.57
(J) Collapsible Polyethylene Containers— *Half-drop door on each length side. Have a ribbed exterior and a smooth interior, unless noted.*											
32″ × 30″ × 25″	2300	2000	6	1 1/2″	2 1/4″	4-Way	Black	45775T15	266.53	45775T17	68.54
32″ × 30″ × 34″	2300	2000	6	1 1/2″	2 1/4″	4-Way	Black	45775T16	288.35	45775T17	68.54
48″ × 40″ × 34″	2300	2000	6	1 1/2″	3 1/2″	4-Way	Black	45775T23	428.47	45775T13	90.52
48″ × 40″ × 39″	2300	2000	5	1 1/2″	3 1/2″	4-Way	Black	45775T26	419.65	45775T13	90.52
48″ × 45″ × 25″	2300	2000	6	1 1/2″	3 1/2″	4-Way	Black	45775T29♣	341.28	45775T14	81.57
48″ × 45″ × 34″	2300	2000	6	1 1/2″	3 1/2″	4-Way	Black	45775T33♣	350.27	45775T14	81.57
(K) Polyethylene Containers— *Made of FDA-compliant resins and are nestable and seamless. Cover required for stacking.*											
50″ × 42″ × 36″	2000	2000	2	1/4″	4″	4-Way	White	3674K11	648.21	3674K16	203.93
50″ × 42″ × 45″	2000	2000	2	1/4″	4″	4-Way	White	3674K13	688.63	3674K16	203.93
(L) Steel Containers											
35″ × 30″ × 28 1/4″	4000	4000	5	13 ga.	4″	4-Way	—	4546T16	270.48	—	—
42″ × 42″ × 22 1/4″	4000	4000	5	13 ga.	4″	4-Way	—	4546T13	342.78	—	—
42″ × 42″ × 28 1/4″	4000	4000	5	13 ga.	4″	4-Way	—	4546T17	360.67	—	—
48″ × 48″ × 28 1/4″	4000	4000	5	13 ga.	4″	4-Way	—	4546T18	398.74	—	—

■ Container has handles. ★ Color is black. Not FDA compliant. ♣ Has grated bottom.

Compartmented Plastic Boxes

With Fixed Compartments

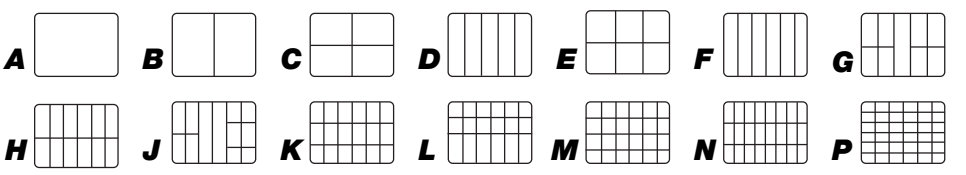

4629T16

	Compartments No.	Compartments Lg.	Compartments Wd.	Overall Size Lg.	Overall Size Wd.	Overall Size Ht.		
Clear								
A	1	4 3/8"	2 5/8"	4 5/8"	2 7/8"	1 1/4"	**4629T56**	$2.54
A	1	6 3/4"	3 1/8"	7"	3 1/2"	1 3/8"	**4629T57**	4.15
A	1	8"	4"	8 1/4"	4 1/4"	1 1/2"	**4629T52**	5.15
A	1	10 1/2"	6 1/8"	10 3/4"	6 1/2"	1 7/8"	**4629T53**	9.68
A	1	12 3/4"	8 1/2"	13"	8 3/4"	2 3/8"	**4629T35**	15.60
D	5	1 1/4"	3 1/8"	7"	3 1/2"	1 3/8"	**4629T38**	4.02
E	6	1 3/8"	1 1/4"	4 5/8"	2 7/8"	1 1/4"	**4629T39**	2.54
F	6	1 1/4"	4"	8 1/4"	4 1/4"	1 1/2"	**4629T15**	5.15
F	6	1 5/8"	6 1/4"	10 3/4"	6 1/2"	1 7/8"	**4629T19**	9.68
F	6	2"	8 1/2"	13"	8 3/4"	2 3/8"	**4629T2**	15.60
G	9 (8)	1 1/4"	1 1/2"					
	(1)	1 1/8"	3 1/8"	7"	3 1/2"	1 3/8"	**4629T14**	4.02
H	12	1 1/4"	1 7/8"	8 1/4"	4 1/4"	1 1/2"	**4629T37**	5.15
H	12	1 5/8"	3"	10 3/4"	6 1/2"	1 7/8"	**4629T17**	9.68
H	12	2"	4 1/8"	13"	8 3/4"	2 3/8"	**4629T21**	15.60
J	12 (6)	1 1/4"	1 1/4"					
	(4)	1 1/4"	2"					
	(2)	1 1/4"	4"	8 1/4"	4 1/4"	1 1/2"	**4629T16**	5.15
K	18	1 1/4"	1 1/4"	8 1/4"	4 1/4"	1 1/2"	**4629T36**	5.15
K	18	1 3/4"	2"	10 3/4"	6 1/2"	1 7/8"	**4629T18**	9.68
L	18 (12)	2"	2"					
	(6)	2"	4 1/8"	13"	8 3/4"	2 3/8"	**4629T22**	15.60
M	24	2"	2"	13"	8 3/4"	2 3/8"	**4629T23**	15.60
P	36	1 1/2"	1"	9 7/8"	6 7/8"	1 3/4"	**4629T34**	10.63
See-Through Choose-a-Color								
To Order: *Please specify color: blue, green, or red.*								
P	36	1 1/2"	1"	9 7/8"	6 7/8"	1 3/4"	**4629T1**	15.41
Impact-Resistant Clear								
A	1	4 1/4"	2 5/8"	4 5/8"	2 7/8"	1 3/8"	**4629T13**	6.10
A	1	11 7/8"	5 7/8"	12 1/4"	6 1/4"	1 3/4"	**4629T54**	18.11
B	2	2 1/8"	2 5/8"	4 5/8"	2 7/8"	1 3/8"	**4629T55**	6.10
C	4	2 1/8"	1 1/4"	4 5/8"	2 7/8"	1 3/8"	**4629T41**	6.10
F	6	1 1/8"	4"	7 1/4"	4 1/4"	1 3/8"	**4629T47**	9.65
N	24	1 3/8"	1 7/8"	12 1/4"	6 1/4"	1 3/4"	**4629T45**	18.11
Ultra-Clear								
A	1	6 3/4"	3 1/8"	7"	3 1/2"	1 1/2"	**8648T61**	3.48
A	1	12 3/4"	8 1/2"	13"	8 3/4"	2 3/8"	**8648T62**	13.85
B	2	3 1/4"	3 1/4"	7"	3 1/2"	1 1/2"	**8648T63**	3.48
C	4	2 1/8"	1 1/4"	4 3/4"	2 7/8"	1 1/4"	**8648T64**	2.54
D	5	1 1/4"	3 1/8"	7"	3 1/2"	1 1/2"	**8648T65**	3.48
E	6	1 3/8"	1 1/4"	4 3/4"	2 7/8"	1 1/4"	**8648T66**	2.54
F	6	1 1/4"	4"	8 1/4"	4 1/4"	1 1/2"	**8648T67**	4.92
F	6	1 5/8"	6 1/4"	10 7/8"	6 1/2"	1 7/8"	**8648T68**	8.63
Low-Profile Translucent								
A	1	2 5/8"	2 5/8"	3"	3 1/8"	3/8"	**4629T58**	1.05
A	1	3 7/8"	3 7/8"	4 3/8"	4 1/4"	3/8"	**4629T59**	2.41
A	1	6 3/8"	6 3/8"	6 3/4"	7"	5/8"	**4629T91**	5.08

	Compartments No.	Compartments Lg.	Compartments Wd.	Overall Size Lg.	Overall Size Wd.	Overall Size Ht.		
Chemical-Resistant Translucent								
A	1	15 1/4"	8 7/8"	15 1/2"	9 1/8"	3 1/4"	**4629T48**	$8.58
C	4	2 1/8"	1 1/4"	4 5/8"	2 7/8"	1 1/4"	**4629T49**	2.10
D	5	1 1/4"	3 1/8"	7"	3 3/8"	1 3/8"	**4629T72**	2.87
E	6	1 3/8"	1 1/4"	4 5/8"	2 7/8"	1 1/4"	**4629T6**	2.10
F	6	1 1/4"	4"	8 1/4"	4 1/4"	1 3/8"	**4629T73**	4.02
F	6	1 5/8"	6 1/4"	10 3/4"	6 3/8"	1 3/4"	**4629T74**	6.66
F	6	2"	8 1/2"	13"	8 3/4"	2 3/8"	**4629T75**	9.94
G	9 (8)	1 1/4"	1 1/2"					
	(1)	1 1/8"	3 1/8"	7"	3 3/8"	1 3/8"	**4629T76**	2.87
H	12	1 5/8"	3"	10 3/4"	6 3/8"	1 3/4"	**4629T78**	6.66
J	12 (6)	1 1/4"	1 1/4"					
	(4)	1 1/4"	2"					
	(2)	1 1/4"	4"	8 1/4"	4 1/4"	1 3/8"	**4629T77**	4.02
K	18	1 1/4"	1 1/4"	8 1/4"	4 1/4"	1 3/8"	**4629T79**	4.02
K	18	1 3/4"	2"	10 3/4"	6 3/8"	1 3/4"	**4629T81**	6.66
M	24	2"	2"	13"	8 3/4"	2 3/8"	**4629T82**	9.94
Chemical-Resistant Solid Yellow								
D	5	1 1/4"	3 1/8"	7"	3 3/8"	1 3/8"	**4629T83**	2.92
E	6	1 3/8"	1 1/4"	4 5/8"	2 7/8"	1 1/4"	**4629T84**	2.13
F	6	1 1/4"	4"	8 1/4"	4 1/4"	1 3/8"	**4629T25**	4.12
F	6	1 5/8"	6 1/4"	10 3/4"	6 3/8"	1 3/4"	**4629T29**	6.79
F	6	2"	8 1/2"	13"	8 3/4"	2 3/8"	**4629T3**	10.14
G	9 (8)	1 1/4"	1 1/2"					
	(1)	1 1/8"	3 1/8"	7"	3 3/8"	1 3/8"	**4629T85**	2.92
H	12	1 5/8"	3"	10 3/4"	6 3/8"	1 3/4"	**4629T28**	6.79
H	12	2"	4 1/8"	13"	8 3/4"	2 3/8"	**4629T31**	10.14
J	12 (6)	1 1/4"	1 1/4"					
	(4)	1 1/4"	2"					
	(2)	1 1/4"	4"	8 1/4"	4 1/4"	1 3/8"	**4629T86**	4.12
K	18	1 1/4"	1 1/4"	8 1/4"	4 1/4"	1 3/8"	**4629T87**	4.12
K	18	1 3/4"	2"	10 3/4"	6 3/8"	1 3/4"	**4629T27**	6.79
L	18 (12)	2"	2"					
	(6)	2"	4 1/8"	13"	8 3/4"	2 3/8"	**4629T32**	10.14
M	24	2"	2"	13"	8 3/4"	2 3/8"	**4629T33**	10.14
Watertight Solid Black with Clear Lid								
A	1	4 3/8"	2 7/8"	5 7/8"	4"	2 1/8"	**4629T88**	19.22
A	1	6 1/2"	3 7/8"	7 1/2"	5"	2 1/8"	**4629T92**	28.39
Conductive Solid Black— *Surface resistivity is 10^2-10^6 ohms/sq.*								
A	1	3"	3"	3"	3"	1 1/4"	**4715T69**	3.54
A	1	4 1/4"	2 1/2"	4 3/8"	2 5/8"	1 1/8"	**4715T71**	3.78
A	1	8"	4 1/8"	8"	4 1/8"	1 1/4"	**4715T61**	5.98
E	6	1 3/8"	1 1/8"	4 3/8"	2 5/8"	1 1/8"	**4715T74**	3.78
H	12	1 1/4"	2"	8"	4 1/8"	1 1/4"	**4715T64**	5.98
Antistatic Solid Black— *Surface resistivity is 10^{10}-10^{11} ohms/sq.*								
A	1	10 1/2"	6 1/8"	10 3/4"	6 1/2"	1 7/8"	**4715T81**	23.35
A	1	12 3/4"	8 1/2"	13"	8 3/4"	2 3/8"	**4715T83**	40.03
K	18	1 3/4"	2"	10 3/4"	6 1/2"	1 7/8"	**4715T82**	26.54
M	24	2"	2"	13"	8 3/4"	2 3/8"	**4715T84**	41.27

With Adjustable Compartments

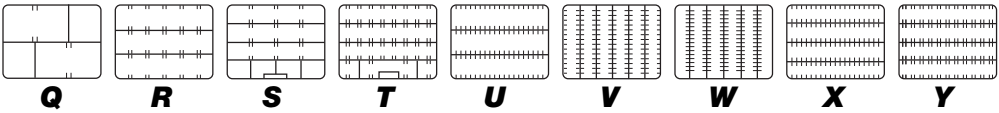

4629T62

	Compartments No.	Compartments Lg.	Compartments Wd.	Overall Size Lg.	Overall Size Wd.	Overall Size Ht.		
Chemical-Resistant Translucent								
Q	4- 6 (2)	1 1/4"	1 1/4"					
	(2)	3"	1 1/4"	4 5/8"	2 7/8"	1 3/8"	**4629T63**	$2.05
R	3-18	6 5/8"	1"	7"	3 5/8"	1 5/8"	**4629T64**	2.46
R	3-18	8 7/8"	1 3/8"	9 1/8"	4 3/8"	1 1/2"	**4629T65**	2.97
S	7-16 (4)	3 3/4"	2 1/8"					
	(3)	15 1/4"	2 1/8"	15 1/2"	9 1/8"	3 1/4"	**4629T66**	10.22
T	4-24 (3)	13 5/8"	2"					
	(1)	13 5/8"	1 5/8"	14"	8 1/2"	2"	**4629T67**	6.33
T	6-22 (3)	15 1/4"	2"					
	(2)	3 1/4"	2"					
	(1)	8 1/2"	2"	15 1/2"	9 1/8"	1 5/8"	**4629T68**	8.58

	Compartments No.	Compartments Lg.	Compartments Wd.	Overall Size Lg.	Overall Size Wd.	Overall Size Ht.		
Chemical-Resistant Translucent (Cont.)								
U	3- 9	6 5/8"	1"	6 7/8"	3 5/8"	1 1/2"	**4629T89**	$4.28
V	6-16	1 5/8"	6 1/8"	10 3/4"	6 3/8"	1 3/4"	**4629T61**	8.04
W	6-18	1 5/8"	6 1/4"	10 7/8"	6 7/8"	1 7/8"	**4629T69**	4.89
X	4-20	13 1/8"	2 1/8"	13 3/8"	9 1/8"	2 1/8"	**4629T62**	14.29
Translucent with Corrosion-Inhibiting Dividers								
S	7-16 (3)	15 1/4"	2 1/4"					
	(2)	3 3/4"	2 1/4"					
	(2)	3 3/4"	1 5/8"	16 1/2"	9 3/4"	3 1/4"	**8704T73**	10.22
W	6-16	1 3/4"	6 5/8"	11"	7 1/4"	1 3/4"	**8704T71**	5.05
Y	4-19	13 3/4"	2"	14"	8 5/8"	2"	**8704T72**	7.30

Compartmented Plastic Boxes with Individual Lids

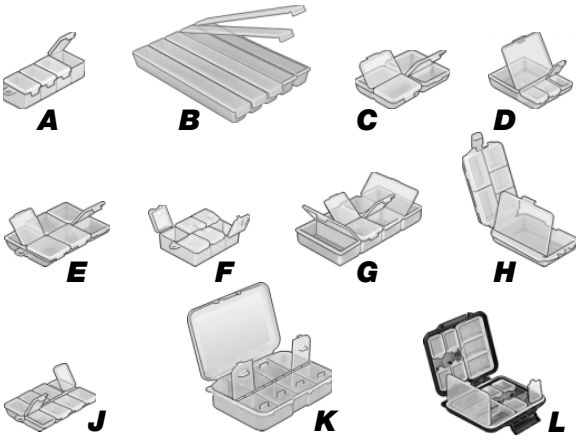

	Compartments No.	Compartments Lg.	Compartments Wd.	Overall Size Lg.	Overall Size Wd.	Overall Size Ht.		
Translucent White								
A	4	3/4″	1 1/8″	3 1/2″	1 1/4″	1″	2673T41	$3.43
B	5	2 7/8″	1/4″	3 1/8″	2 1/8″	3/8″	2673T25	1.06
B	5	4 1/8″	3/8″	4 1/4″	3″	1/4″	2673T26	1.57
C	4	1 3/4″	1 1/8″	3 1/2″	2 1/4″	3/4″	2673T42	4.14
D	4	(3) 1″	5/8″					
		(1) 2″	2 1/4″	3 1/2″	2 1/2″	3/4″	2673T43	4.17
E	6	7/8″	1/2″	3 1/4″	2 1/4″	1/2″	2673T44	4.29
E	6	1 1/8″	1″	4 1/4″	2 5/8″	1″	2673T46	4.66
F	6	7/8″	7/8″	2 7/8″	2 1/4″	1″	2673T45	3.28
G	6	(4) 1 1/8″	1 1/8″					
		(2) 1 1/8″	2 3/4″	6″	3″	1″	2673T47	4.70
H	6	(3) 1 3/8″	1″					
		(2) 1 5/8″	1″					
		(1) 3 1/4″	2″	3 1/2″	2 1/2″	1 1/4″	2673T49	5.50
J	8	5/8″	7/8″	3 1/4″	2 3/8″	1/2″	2673T48	4.29
K	8	1 1/4″	1 3/4″	5 1/2″	3 3/4″	1 1/4″	2673T52	19.00
Opaque Blue								
L	14	(8) 7/8″	3/4″					
		(6) 1 5/8″	7/8″	4″	3 3/4″	1 1/4″	2673T51	16.70

Static-Control Plastic Boxes with Foam

With Clear Lid

Don't let static buildup ruin sensitive parts. Boxes are black with a clear or black lid.
With Clear Lid— The box and foam have a surface resistivity of $<10^5$ ohms/sq.; the lid does not.
With Black Lid— The box, lid, and foam have a surface resistivity of $<10^5$ ohms/sq. Meet Mil. Spec. B-81705-C.

Compartments Lg.	Compartments Wd.	Overall Size Lg.	Overall Size Wd.	Overall Size Ht.	Foam Thick.	Pkg. Qty.		Pkg.
With Clear Lid								
1 1/4″	1 1/4″	1 3/8″	1 3/8″	5/8″	1/4″	5	5050T51	$3.25
2 1/8″	1 5/8″	2 1/4″	1 3/4″	7/8″	1/4″	5	5050T53	4.82
3 1/2″	2 1/2″	3 5/8″	2 5/8″	7/8″	1/2″	5	5050T55	11.35
3 7/8″	1 7/8″	4″	2 1/8″	5/8″	1/4″	5	5050T56	9.56
With Black Lid								
1 5/8″	2 1/8″	1 3/4″	2 3/16″	7/8″	1/4″	5	5050T61	4.79
3 1/2″	2 1/2″	3 5/8″	2 5/8″	7/8″	1/2″	1	5050T62	3.14
4 5/8″	3 1/2″	4 3/4″	3 5/8″	1″	1/2″	1	5050T63	6.20
7″	5″	7 1/8″	5 1/8″	1 1/8″	1/2″	1	5050T64	13.82

Compartmented Boxes with Handle

Steel Box

Plastic Box with One Compartment

Plastic Box

Plastic Box with Compartments on Both Sides

Steel boxes have a plastic-lined lid and plastic lift-out bin cups. Color is blue.
Plastic boxes and lids are opaque gray, unless noted. *Boxes with adjustable compartments* have dividers, so you can create the number and size of compartments you need. *Box with adjustable compartments on both sides* has nine fixed compartments on each side.

Compartments No.	Compartments Lg.	Compartments Wd.	Overall Size Lg.	Overall Size Wd.	Overall Size Ht.		
Steel Boxes with Bin Cups							
20	(16) 3 1/2″	2″					
	(4) 3 3/4″	3 1/2″	14 3/4″	12″	2 1/2″	4907T46	$117.96
23	(15) 3 1/2″	2″					
	(6) 3 3/4″	3 1/2″					
	(2) 7″	3 3/4″	18″	13 1/2″	2 1/2″	4907T44	139.85
35	3 1/2″	2″	18″	13 1/2″	2 1/2″	4907T45	155.82
40	(24) 3 1/2″	2″					
	(14) 3 3/4″	3 1/2″					
	(2) 7″	3 3/4″	23″	18″	2 1/2″	4907T43	193.05
Plastic Boxes with Fixed Compartments							
1	(1) 14 5/8″	10 3/4″	15 1/2″	11 3/4″	2 1/2″	45865T22	20.33
21	(20) 2 7/8″	3″					
	(1) 4″	13″	18 1/2″	13″	3″	45865T19	30.07
24	(20) 2 7/8″	3″					
	(4) 4″	3″	18 1/2″	13″	3″	45865T31	30.07

Compartments No.	Compartments Lg.	Compartments Wd.	Overall Size Lg.	Overall Size Wd.	Overall Size Ht.		
Plastic Boxes with Adjustable Compartments							
4 to 16	(4) 4″	3″	18 1/2″	13″	3″	45865T18	$30.07
6 to 18	(1) 4 1/2″	3 3/4″					
	(2) 4 1/4″	3 3/4″					
	(3) 13 1/8″	3 1/8″	14″	14 5/8″	3 1/2″	45865T25★	12.41
8 to 32	(8) 2 1/8″	2 15/16″	18 1/2″	13″	3″	45865T32	30.07
9 to 24	(1) 8 1/8″	2 1/8″					
	(1) 8 1/8″	1 1/2″					
	(2) 3 1/8″	2″					
	(2) 3 1/8″	2 1/8″					
	(3) 14 1/2″	2″	15 1/2″	11 3/4″	2 1/2″	45865T21	20.93
Plastic Box with Adjustable Compartments on Both Sides							
18 to 48	(2) 8 1/8″	2 1/8″					
	(2) 8 1/8″	1 1/2″					
	(4) 3 1/8″	2 1/8″					
	(6) 14 1/2″	2″					
	(4) 3 1/8″	2″	15 1/2″	11 3/4″	5″	45865T23	42.52

★ Box and lid are translucent white.

Protective Storage Cases

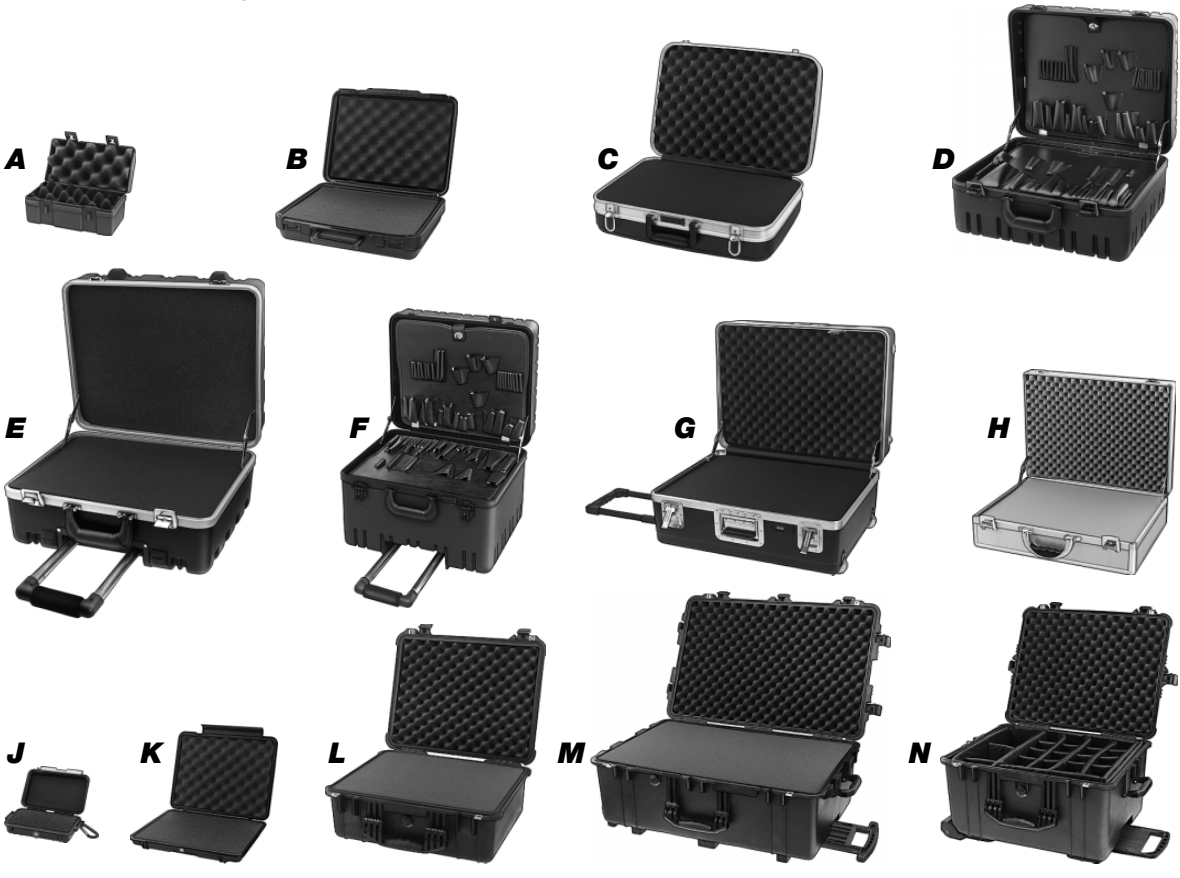

	Overall Size Lg.	Wd.	Ht.	Inside Size Lg.	Wd.	Ht.		
Plastic Cases								
Economy Stackable								
A	6¼″	4⅛″	2⅝″	6″	4″	2″	**6589A12**	$10.49
A	8¾″	4¾″	4¼″	8″	4″	4″	**6589A13**	16.23
A	8¾″	8¾″	4¼″	8⅛″	8⅛″	4″	**6589A14**	19.64
Economy								
B	10″	7½″	2¾″	9¼″	6⅜″	2⅛″	**6589A21**	22.64
B	10″	7½″	3¾″	9¼″	6⅜″	3⅜″	**6589A15**	26.23
B	13½″	10″	3¾″	12½″	8¾″	3¼″	**6589A22**	36.81
B	13½″	10″	5½″	12½″	8¾″	4⅞″	**6589A16**	44.48
B	15″	11″	5½″	14″	9⅞″	4¾″	**6589A17**	47.20
B	17″	12″	3½″	15⅞″	10⅞″	3″	**6589A24**	49.22
B	17″	12″	5½″	15⅞″	10⅞″	5″	**6589A25**	59.86
B	19″	14″	4¾″	18″	13″	4½″	**6589A26**	63.65
B	19″	14″	6″	18″	13″	5⅝″	**6589A27**	72.43
B	20″	16″	9″	18⅞″	15″	8½″	**6589A18**	114.16
B	27½″	16″	7″	26″	14½″	6½″	**6589A28**	136.93
With Key Lock—*Include two keys.*								
C	12½″	10″	5⅛″	12″	8″	5″	**6369A11**	77.78
C	16½″	12¾″	5½″	16″	12″	5″	**6369A12**	87.33
C	19¼″	14¼″	7¾″	18″	13″	7″	**6369A15**	125.00
C	22½″	17″	7¾″	22″	16″	7″	**6369A23**	193.42
C	24½″	18¼″	7¾″	24″	18″	7″	**6369A24**	208.68
C	28½″	21″	7¾″	28″	20″	7″	**6369A27**	240.33
D	19¼″	15¾″	10″	17¾″	14¼″	8″	**6192T37**	263.37
Rolling with Key Lock—*Include two keys.*								
E	18″	14½″	10¼″	17¾″	14¼″	9″	**6157T65**	281.67
Rolling with Padlock Hasp—*5/16″ max. shackle dia.*								
E	18¾″	15½″	13½″	17¾″	14¼″	12″	**6157T66**	328.57
F	19½″	15¼″	11″	17¾″	14½″	12″	**6990T71**	348.76
Rolling with Combination Lock—*Meet ATA shipping standards.*								
G	25″	19½″	13¾″	23¾″	17¾″	11″	**6157T73**	450.00
G	28½″	21½″	13¼″	27½″	19½″	11″	**6157T74**	485.89
G	33¼″	23″	13¾″	31¾″	22″	11″	**6157T75**	514.23
Aluminum Cases								
With Key Lock—*Include two keys.*								
H	15″	9¾″	5″	14⅜″	9″	4⅜″	**6590A61**	90.62
H	15¾″	10¾″	6¼″	15⅛″	10″	5¾″	**6590A62**	106.16
H	18¾″	13¾″	5¾″	18¼″	13¼″	5¼″	**6590A63**	125.50

	Overall Size Lg.	Wd.	Ht.	Inside Size Lg.	Wd.	Ht.		
Aluminum Cases								
With Key Lock—*Include two keys. (Cont.)*								
H	18¾″	13¾″	9″	18¼″	13¼″	8½″	**6590A65**	$142.84
H	21″	12⅞″	6¼″	20¼″	12⅜″	5¾″	**6590A66**	171.00
H	33″	19″	9¼″	32¾″	18⅝″	9″	**6590A73**	329.17
Dust- and Watertight Plastic Cases								
Mini								
J	5⅞″	4″	2⅛″	4⅜″	2⅞″	1⅝″	**6779T11**	21.02
J	7½″	3⅞″	2½″	6⅜″	2⅝″	2″	**6779T12**	28.59
J	7½″	5″	2⅛″	6½″	3⅞″	1¾″	**6779T13**	30.16
Low Profile								
K	13¾″	11″	2½″	12¾″	9¾″	1⅝″	**6409A54**	115.03
K	15⅞″	13⅛″	2⅞″	15″	11¼″	1⅞″	**6409A55**	139.57
Mil. Spec. MIL-C-4150J With Key Lock—*Include two keys.*								
L	16¾″	13″	4⅜″	15⅝″	10⅜″	3¾″	**6409A48**	148.76
Dust- and Watertight Plastic Cases with Padlock Hasp								
Standard—*3/8″ max. shackle dia.*								
L	8⅛″	6⅝″	3⅝″	7¼″	4¾″	3″	**6409A18**	34.81
L	9⅛″	7⅝″	4⅜″	8⅛″	5⅝″	3⅝″	**6409A51**	45.40
L	10⅝″	9¾″	4⅞″	9¼″	7⅛″	4⅛″	**6409A52**	63.14
L	10⅝″	9¾″	6⅞″	9⅞″	7″	6⅛″	**6409A53**	69.50
Mil. Spec. MIL-C-4150J—*3/8″ max. shackle dia.*								
L	13⅜″	11⅝″	6″	11¾″	8⅞″	5⅛″	**6409A21**	111.78
L	18½″	14″	7″	16¾″	11⅛″	6⅛″	**6409A31**	171.00
L	20⅝″	16⅞″	8⅛″	18⅜″	14″	7⅝″	**6409A42**	189.37
L	24¼″	19½″	8¾″	21⅜″	16½″	7⅞″	**6409A35**	231.74
Rolling—*3/8″ max. shackle dia.*								
M	22″	13⅞″	9″	19¾″	11″	7½″	**6409A38**	235.15
M	31⅝″	23″	19½″	28⅛″	19⅝″	17⅝″	**6409A46**	465.35
M	33½″	28½″	18¼″	30″	25″	15″	**6409A47**	509.20
M	53″	16″	6⅛″	50½″	13½″	5¼″	**6409A43**	335.27
Mil. Spec. MIL-C-4150J Rolling—*3/8″ max. shackle dia.*								
M	24¾″	19½″	13⅞″	21⅜″	16⅜″	12½″	**6409A39**	339.25
M	31⅝″	20½″	12½″	28½″	17½″	10⅝″	**6409A45**	351.84
M	38⅛″	16″	6⅛″	35¾″	13½″	5¼″	**6409A65**	283.23
Mil. Spec. MIL-C-4150J with Adj. Dividers—*3/8″ max. shackle dia.*								
N	18½″	14″	7″	16¾″	11⅛″	6⅛″	**7145T21**	198.44
N	24¾″	19½″	13⅞″	21⅜″	16⅜″	12½″	**7145T22**	486.01

Storage Boxes

Single Compartment Storage Boxes

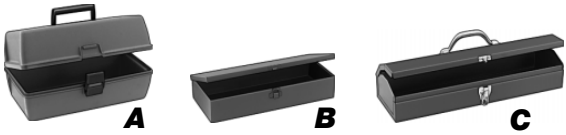

6755A13, 6755A14, and 6373A11 have a padlock hasp that will accommodate up to a 3/16″ shackle dia. padlock (not included).

	Overall Size Lg.	Wd.	Ht.	Color		
Plastic						
A	12 1/8″	7 1/4″	4 1/2″	Gray	6755A11	$10.18
A	12 1/8″	7 1/4″	5 1/2″	Gray	6755A16	12.62
A	14 3/8″	8″	7″	Gray	6755A12	17.99
A	16 3/8″	8 5/8″	7″	Gray	6755A18	21.89
A	17 1/2″	10 1/4″	8 1/2″	Gray	6755A13	29.06
A	19″	11 1/2″	10 1/2″	Gray	6755A14	41.00
Steel						
B	6 1/4″	2 1/2″	1″	Red	63785A11	10.58
B	6 1/4″	3 7/16″	1 1/4″	Red	63785A12	12.47
B	9″	3″	1 1/2″	Red	63785A13	13.17
B	10″	4 1/2″	1 3/4″	Red	63785A14	14.96
B	12″	4 1/2″	2″	Red	63785A16	16.49
B	12″	5 7/8″	2 1/2″	Red	63785A15	19.86
B	14″	5 7/8″	2 1/2″	Red	63785A17	22.70
B	16″	5 7/8″	2 1/2″	Red	63785A19	26.42
B	18″	5 7/8″	2 1/2″	Red	63785A22	27.42
B	19″	5 7/8″	2 1/2″	Red	63785A23	28.87
C	19″	6″	4 1/4″	Red	6373A11	23.02

Rolling Plastic Storage Boxes

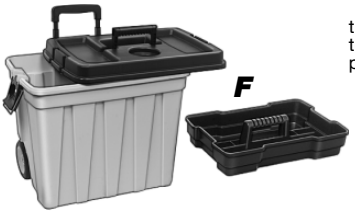

Box has a padlock hasp that will accommodate up to a 1/4″ shackle diameter padlock (not included).

	Overall Size Lg.	Wd.	Ht.	Color		
F	23″	15 1/2″	20″	Yellow/Black	1589A38	$59.80

Storage Boxes with Cantilever Trays

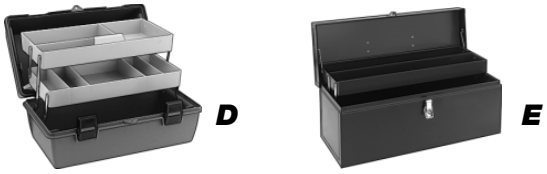

Boxes have a hasp for a padlock (not included).

	Overall Size Lg.	Wd.	Ht.	No. of Trays	Max. Padlock Shackle Dia.	Color		
(D) Plastic								
	17 1/2″	10 1/4″	8 1/2″	2	3/16″	Gray	7328A68	$46.39
	18 1/2″	10 3/4″	10 3/8″	6	3/16″	Gray	7328A69	70.30
(E) Steel								
	19″	7″	7 1/4″	1	5/16″	Green	6575A9	33.50
	22 1/8″	10″	12 5/8″	4	5/16″	Brown	6570A3	163.89

Storage Boxes with Drawers

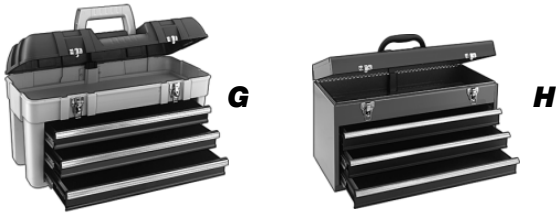

Drawers lock in place when the lid is closed. Boxes have a padlock hasp that will accommodate up to a 3/16″ shackle diameter padlock (not included).

	Overall Size Lg.	Wd.	Ht.	No. of Drawers	Color		
(G) Plastic with Steel Drawers							
	23″	10 3/8″	13 3/8″	3	Yellow	6133A6	$51.05
(H) Steel							
	20″	8 1/2″	10 1/4″	2	Red	6562A27	50.78
	20″	8 1/2″	11 7/8″	3	Red	6562A28	61.46

Storage Boxes with Removable Tote Tray

Boxes have a hasp for a padlock (not included), except 6576A13. ***Style Q*** protects contents from static charge.

	Overall Size Lg.	Wd.	Ht.	Max. Padlock Shackle Dia.	Color		
Plastic							
J	14 1/2″	7 1/2″	5 1/4″	3/16″	Gray	6576A16	$14.17
J	16 3/8″	8 5/8″	7″	—	Orange	6576A13	38.17
J	16 5/8″	8 3/4″	7 1/8″	3/16″	Gray	6576A11	24.31
J	20 1/4″	8 7/8″	8 3/8″	3/16″	Gray	6576A19	28.02
J	23″	10 1/2″	11 3/8″	3/16″	Gray	6576A21	43.56
K	19″	10″	9 1/4″	3/8″	Red	63705A11	27.21
K	26″	9 1/2″	10 3/4″	3/8″	Black	7335A1	56.65
L	20″	9 1/2″	12 3/4″	3/8″	Black	7341A12	45.63
M	26″	10 1/2″	10″	1/4″	Gry/Blk	1203A45	33.84
N	27 1/2″	13 3/4″	14″	3/16″	Gray	6576A31	64.72
Watertight Plastic							
P	15″	8″	10 1/2″	3/16″	Orange	6576A41	$18.58
Antistatic Plastic— *Surface resistivity is 10^{10}-10^{11} ohms/sq.*							
Q	14 1/2″	7 1/2″	5 1/4″	3/16″	Black	63675A2	41.55
Steel							
R	20″	8″	9″	1/4″	Red	6572A13	34.66
R	20 1/8″	8 5/8″	9 3/4″	3/8″	Brown	6571A1	49.74
R	22″	8 1/2″	9 3/4″	3/8″	Brown	6571A2	53.16
R	30″	8″	9″	3/8″	Red	6569A45	60.20
S	16″	7″	7 1/2″	3/16″	Red	6587A24	22.64
S	20″	7″	8″	3/8″	Red	6377A13	47.52

Tote Trays

Plastic with Drawer

Steel

	Overall Size Lg.	Wd.	Ht.	Color		
Plastic						
Without Drawer	15½″	10½″	4½″	Gray	6602A11	$7.26
With Drawer	18½″	11″	6½″	Gray	6602A23	20.14
Steel						
Without Drawer	19⅝″	8⅛″	3⅝″	Red	7301A11	21.62

Steel Tote Trays for Pipe Nipples

Keep your pipe nipples organized with these handy totes. Trays have a 2″ high fold-down handle and will hold nipples ranging in length from ½″ to 6″.

Overall Size Lg.	Wd.	Ht.	Holds Pipe Nipples Size	Qty.		
10½″	7″	7″	½″	77	4598K11	$29.30
12½″	7″	7″	¾″	66	4598K12	31.17
14″	7⅞″	7⅞″	1″	50	4598K13	33.02
18″	7⅞″	7⅞″	1¼″	40	4598K14	35.43
19⅝″	6⅞″	6⅞″	1½″	30	4598K15	37.95
23⅞″	8⅝″	8⅝″	2″	27	4598K16	39.77

Organizers for 5-Gallon Buckets

Style A—Stack up to two of these bags inside your 5-gallon bucket.
Style B—Fits over your 5-gallon bucket to provide 16 pockets inside and 38 pockets outside.
Style C—7796T3 can be stacked up to five high in your 5-gallon bucket; 7796T4 can be stacked up to three high.

	Overall Size Dia.	Ht.	Closing Style	Material	Color		
A	10″	6½″	Drawstring	Polyester	Tan/Green	46265T36	$13.97
B	13½″	12″	None	Polyester	Black	65965A68	14.21
C	10½″	2½″	None	Plastic	Gray	7796T3	3.92
C	10½″	4″	None	Plastic	Gray	7796T4	4.95

Organizing Bags

- Black nylon
- 9¾″×7½″×2½″

6189T33 ..... $52.50

- Gray nylon
- 15½″×11¼″×2½″

6189T32 ..... $103.88

- Black nylon
- 18″×14″×9″

63825A77 ..... $101.87

- Black and tan polyester
- 15″×9″×12″

7766T46 ..... $41.09

- Black and tan polyester
- 24″×11″×12″

6990A28 ..... $55.60

- Black and yellow polyester
- 16½″×8¼″×10¼″

2588T25 ..... $34.69

- Black nylon
- 15″×7″×9″

6717A17 ..... $91.38

- Gray and black nylon
- 17"×9"×15"

8406T21 ..... $104.98

- Brown and green polyester
- 18⅝″×11″×9″

7757T11 ..... $56.27

Bags

	Overall Size Lg.	Wd.	Ht.	Material	Color		
Bags with Zipper Closure							
A	7″	—	4″	Nylon	Black	**6125A35**	$7.28
A	7″	—	4″	Leather	Tan	**6125A34**	8.27
B	8⅛″	—	6″	Polyester	Clear	**7789A41**	26.05
B	12½″	—	8¾″	Polyester	Clear	**7789A42**	31.25
C	10″	—	6¼″	Canvas	White	**6565A11**	6.85
C	10½″	—	6½″	Leather	Tan	**6630A41**	10.48
C	12″	—	9″	Canvas	White	**6565A15**	7.45
D	12″	6″	6″	Nylon	Black	**63845A72**	25.84
E	11⅞″	5⅛″	9⅞″	Polyester	Black/Gray	**8511T17**	14.56
F	17″	6″	13″	Polyester	Brown/Green	**7126T63**	63.00
G	18″	14″	10″	Nylon	Black	**63825A75**	48.83
H	19″	8″	14″	Polyester	Brown/Tan	**6428A61**	21.30
J	24″	7″	6″	Canvas	White	**6429A66**	37.67
J	24″	11″	12″	Polyester	Brown/Tan	**6428A63**	22.66

	Overall Size Lg.	Wd.	Ht.	Material	Color		
Bags with Hook-and-Loop Closure							
K	13″	4″	8″	Canvas	White	**7342A69**	$32.45
L	18″	6″	11″	Canvas	White	**6400A79**	47.84
Bags with Buckle Closure							
M	20″	6¼″	12″	Canvas	White	**6591A4**	53.10
Open-Top Bags							
N	16″	7″	9¼″	Canvas	White	**6123A78**	35.21
P	16″	7½″	12″	Canvas	White	**6619A41**	28.98
P	16″	7½″	12″	Canvas	Orange	**6619A45**	35.68
Q	24″	6″	16″	Canvas	White	**6632A12**	44.47
R	9″	9″	14″	Canvas	White	**6596A1**	30.77
R	12″	12″	13″	Canvas	White	**6411A53**	24.40
R	12″	12″	17″	Canvas	White	**6596A2**	63.59

Roll-Up Pouches with Pockets

Place tools in the pockets, and then roll the pouch for organized, compact storage. All are canvas.

	Overall Size Wd.	Ht.	No. of Pockets	Pocket Size Range Wd.	Ht.	Color		
Pouches with Double-Strap Closure								
S	7¾″	6⅛″	8	½″ to 1″	2¼″ to 2¾″	Red	**6390A41**	$9.62
S	11½″	11⅛″	7	1⅛″ to 1⅝″	3¼″ to 6″	Red	**6390A42**	9.91
S	21¼″	14½″	10	1″ to 3″	2¾″ to 8¼″	Red	**6390A43**	11.33
T	22″	22½″	18	¾″ to 3″	4″ to 8″	Black	**6389A11**	16.20
Pouches with Hook-and-Loop Closure								
S	14″	10″	11	½″ to 1⅝″	3¾″ to 8″	White	**6390A65**	21.00

Belts and Suspenders

	For Waist Sizes	Wd.	Color		
Leather Work Belts					
U	29″ to 46″	1″	Beige	**6627A11**	$10.86
U	29″ to 46″	1¾″	Beige	**6627A15**	16.40
U	29″ to 46″	2″	Beige	**6627A21**	18.29
V	34″ to 38″	1½″	Beige	**6609A111**	15.47
V	38″ to 48″	1½″	Beige	**6609A171**	16.50
V	48″ to 52″	1½″	Beige	**6609A191**	18.66
Cotton/Polyester Work Belts					
W	29″ to 46″	2¼″	Brown	**6610A13**	6.27
Nylon Work Belts					
X	30″ to 42″	2¼″	Black	**7340A22**	18.00
X	34″ to 46″	2¼″	Black	**7340A32**	18.00
X	36″ to 48″	2¼″	Black	**7340A42**	18.00
Polypropylene Suspenders					
Y	One Size	2″	Red	**6776A54**	9.82
Y	One Size	2″	Navy	**6776A64**	9.82

Belt Pouches and Aprons

Leather Pouches

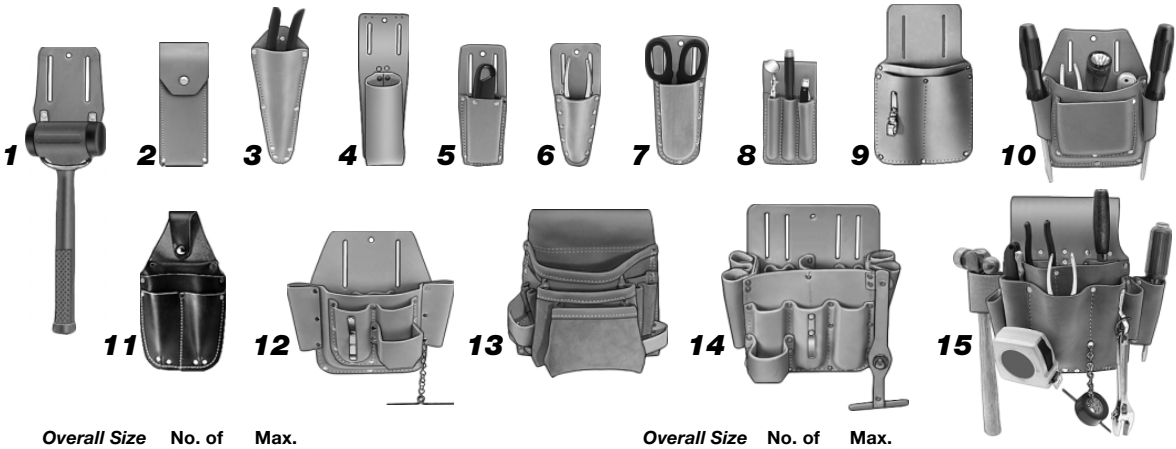

	Overall Size Wd.	Ht.	No. of Pockets	Max. Belt Wd.		
1	4½″	7¾″	–	2¾″	6772A11	$3.92
2	3″	7½″	1	4″	6791A11	20.25
3	3″	6½″	1	2¾″	6662A11	7.37
3	4″	9¾″	1	2¾″	6662A12	9.15
3	4¾″	13″	1	2¾″	6662A13	11.46
4	3¾″	10″	1	2¾″	6628A14	9.51
5	3¼″	8½″	1	2¼″	63685A25	7.15
6	3″	8″	1	2¾″	6775A1	6.17
7	3½″	9″	1	2″	73405A78	8.22
8	3¼″	6¼″	3	1½″	6661A11	$6.87
9	6¼″	11¼″	3	2¾″	6599A5	11.02
10	8″	9″	4	2″	6787A11	16.90
11	6″	10″	4	2″	6658A12	26.89
12	9¾″	9½″	5	2¾″	6599A1	20.51
13	10½″	12″	9	2½″	67715A12	43.08
14	10″	10″	9	3″	6386A11	41.67
15	12½″	10½″	9	2¾″	6600A2	25.42

Fabric Pouches

	Overall Size Wd.	Ht.	No. of Pockets	Max. Belt Wd.	Material		
16	6″	8½″	1	2½″	Nylon	7329A21	$11.44
16	7½″	11″	1	2½″	Nylon	7329A22	13.74
16	9″	15¾″	1	3″	Nylon	7329A66	15.65
17	12″	8½″	1	4½″	Nylon	7329A26	17.66
18	6¼″	9″	4	3½″	Polyester	7337A64	11.38
19	7¾″	14″	1	2¾″	Polyester	6171A42	$11.89
20	9″	14½″	13	2¾″	Polyester	8307T35▲	33.77
20	11¼″	14½″	21	2¾″	Polyester	8307T36	37.18
21	10½″	11″	4	2″	Polyester	6185T73★	17.96

▲Comes with an 8″ x 3″ plastic storage box with 12 compartments. ★Includes a belt that fits waist size 26″- 52″.

Fabric Instrument and Meter Pouches—Clip to any size belt.

	Overall Size Wd.	Ht.	Inside Size Wd.	Ht.	Dp.	Material		
22	3⅛″	5¾″	2½″	5¼″	1″	Nylon	2739T44	$10.20
23	3½″	6½″	3¼″	6¼″	1¾″	Nylon	2739T45	18.37
23	4¼″	5½″	3¾″	4¾″	2¼″	Nylon	2739T47	22.72
24	4″	8″	3″	6″	2″	Polyester	2739T98	11.38
25	6½″	10¾″	6″	9″	1¼″	Nylon	2739T46	24.46

Leather Aprons

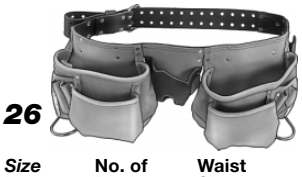

	Overall Size Wd.	Ht.	No. of Pockets	Waist Size		
26	23″	10½″	11	29″-48″	6612A14	$54.62

Fabric Aprons

	O'all Size Wd.	Ht.	No. of Pockets	Waist Size	Material		
27	8″	8″	4	25″-50″	Black Nylon	6172A43	$45.45
28	23½″	20½″	16	27″-54″	Blue Nylon	73415A68	18.19
28	24″	19½″	14	26″-52″	White Canvas	6778A11	9.95
29	22½″	9¾″	12	29″-46″	White Canvas	6779A11	6.08
29	23½″	9½″	14	27″-54″	Blue Nylon	73415A66	13.55

Sand Bags

Rectangular

Tubular

Polypropylene sand bags come in two shapes. *Rectangular* are UV treated for extended life and have built-in polypropylene ties. *Tubular* is laminated with polyethylene, and is oil, tear, puncture, and water resistant. Ties not included.

Burlap sand bag is mildew resistant and has built-in polypropylene ties.

Polyethylene sand bag is made of three layers of reinforced polyethylene. Bag is tear resistant and will withstand extreme outdoor heat for 3-5 years. Ties not included.

Note: Sand not included.

Wire ties are plastic coated and come on a 1,500-ft. spool so you can cut the length you need. Spool OD is 8¼″ with a 1″ dia. center hole for mounting.

O'all Size, Wd.×Ht.	Cap., lbs.	Color	Pkg. Qty.		Per Pkg.
Rectangular					
Polypropylene					
14″ ×26″	40	Orange	25	**4540T3**	$9.24
14″ ×26″	40	Green	25	**4540T4**	9.24
15″ ×27″	40	White	25	**4540T5**	9.80
15″ ×27″	40	Green	25	**4540T8**	9.80
Burlap					
14″ ×26″	40	Brown	10	**4540T7**	15.35
Polyethylene					
15″ ×27″	50	Black	1	**4540T11**	5.78
Tubular					
Polypropylene					
11½″×41″	70	White	1	**4540T12**	1.42
Wire Ties				**2048T18**	Per Roll $12.86

Breathable Canvas Bags

Canvas Bag

All have a drawstring with cord lock for quick, secure closure. Color is white.

Canvas Bags

O'all Size, Wd.×Ht.		Each
12″×18″	**3985T11**	$9.40
14″×24″	**3985T12**	9.76
16″×27″	**65505A12**	10.05
18″×27″	**3985T13**	11.40
28″×36″	**3985T15**	14.00
28″×38″	**3985T16**	14.30

Bag on Holder with Swivel Casters

Stay-Open Canvas Bag and Steel Holders

When paired with a steel holder (sold separately), this canvas bag will always stay open.

Steel holder with wood runners is 18″ Wd.×12″ Dp.×35″ Ht.

Steel holder with swivel casters has two swivel casters with 3″ dia. rubber wheels. It is 18″ Wd.×12″ Dp.×36″ Ht.

O'all Size, Wd.×Dp.×Ht.		Each
Bag		
19½″×12½″×37½″	**1919T4**	$61.88
Steel Holders		
With Wood Runners	**1919T2**	42.62
With Swivel Casters	**1919T3**	66.50

Ventilating Mesh Bags

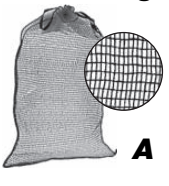

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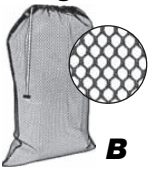

B

C

The mesh design allows air to circulate, inhibiting the growth of mildew and rot.

O'all Size, Wd.×Ht.	Cap., lbs.	Color	Pkg. Qty.		Per Pkg.
(A) Polypropylene with Drawstring					
21″ × 31½″	50	Red	25	**9883T53**	$13.56
21″ × 31½″	50	White	25	**9883T63**	13.56
21″ × 31½″	50	Orange	25	**9883T65**	13.56
24″ × 36″	50	Green	10	**9883T54**	10.60
(B) Polyester with Drawstring and Cord Lock					
18″ × 30″	60	Blue	1	**4133T42**	11.00
24″ × 36″	60	Black	1	**4133T43**	15.03
(C) Nylon with Mesh Top and Zipper Closure					
18″ Lg.×13″ Wd.×3″ Ht.	—	Black	1	**7216T23**	17.78

Nylon Bags

Made of a tough yet lightweight fabric, these bags resist punctures, tears, rot, and mildew. They are also washable and breathable. All are coated with polyurethane and have a drawstring with cord lock.

O'all Size, Wd.×Ht.	Color		Each
14″×24″	Green	**3767T21**	$7.38
18″×27″	Blue	**3767T22**	10.12
24″×36″	Gray	**3767T23**	11.00
28″×38″	Black	**3767T24**	11.89

Heavy Duty Splash-Resistant Vinyl Bags

D

E

F

O'all Size, Wd.×Ht.	Cap., lbs.	Handle Location	Color		Each
Bag with Tie-String Closure					
D 14″ ×26¾″	50	None	Yellow	**9879T1**	$13.98
Bag with Zipper Closure					
E 16″ ×30″	50	Top and Bottom	Yellow	**9879T2**	21.55
Bags with Heavy Duty Zipper Closure					
E 16½″ ×26¾″	50	Top and Bottom	Orange	**9879T3**	28.14
F 13″ ×22½″	50	Side	Blue	**9879T4**	25.57

Water-Resistant Bags

Tall

Duffel

Also known as dry bags, they protect their contents in wet environments.

Tall bags have a translucent window to view contents and a roll-down closure with a plastic buckle.

Duffel bag has a waterproof zipper and a vinyl flap for extra protection. It has two top handles and two end handles.

O'all Size	Color		Each
Tall—*Urethane-coated nylon top and sides; reinforced urethane bottom.*			
8″ Dia. ×20″ Ht.	Blue	**7808A71**	$29.96
9″ Dia. ×20″ Ht.	Blue	**7808A73**	32.96
13″ Dia. ×25″ Ht.	Blue	**7808A74**	47.96
Duffel—*PVC*			
29″ Lg.×17″ Wd. ×10″ Ht.	Black	**7808A82**	172.83

Jumbo Protective Bags

Large enough to cover furniture, machinery, and other equipment, these bags guard against dust, dirt, and moisture. All are made of 2-mil thick polyethylene and come with twist ties for closing the bags. Color is transparent yellow.

O'all Size, Wd.×Ht.	Pkg. Qty.		Per Pkg.
36″× 60″	5	**4079T51**	$7.70
40″× 72″	4	**4079T52**	7.70
45″× 96″	3	**4079T53**	7.70
60″×108″	2	**4079T54**	7.70

Bulk Storage Bags

Also known as flexible intermediate bulk containers, these bags are an economical way to contain and ship a variety of dry materials. All are made of UV-resistant polypropylene and can be collapsed when not in use.

Bags have a 14″×18″ bottom outlet, unless noted, as well as a duffel-style top opening that can be closed with included ties. They have four corner straps for convenient forklift lifting—no special equipment or pallets required. Max. load is 3,300 lbs.

O'all Size, Lg.×Wd.×Ht.	Cap., cu. ft.	Color		Each
35″×35″×35″	25	White	**3791K13**	$50.50
35″×35″×45″	32	White	**3791K14**	54.34
35″×35″×55″	39	White	**3791K15**	59.86
41″×41″×63″	62	White	**3791K18**★	70.44
41″×41″×75″	73	White	**3791K21**	75.02

★Bottom outlet is 26″×26″.

About Choosing the Proper Size Garbage Bags

If You Know the Gallon Size of Your Container— Simply match the gallon size of your container to the gallon capacity size listed in each bag presentation. If the exact gallon capacity of your container is not listed, choose a larger size.

If You Don't Know the Gallon Size of Your Container— Calculate the bag circumference and height (see below) that are required to fit your container. If the exact size is not listed, choose a larger size.

For Round Containers

Bag Circumference Required—Multiply your container's diameter by 3.14.

Bag Height Required—Take the height of your container, add ½ of your container's diameter, and then add 2″ (for overhang).

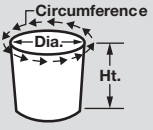

For Square or Rectangular Containers

Bag Circumference Required—Add all four side measurements together.

Bag Height Required—Take the height of your container, add ½ of your container's shortest width, and then add 2″ (for overhang).

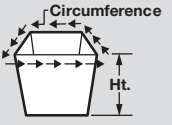

Garbage Bags

Our best multipurpose garbage bags are designed to stretch, resist tearing, and handle items with sharp edges. They even have specially sealed ends, which make them virtually leakproof. All are made of low-density polyethylene and come furnished with twist ties. **To Order:** Please specify color: black or clear.

Perforated Roll in a Dispenser Box

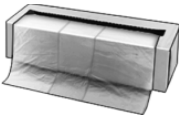

Case

Cap., gal.	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
Lightweight							
4	1.0	34″	17″	17″	250	**4166T79★**	$13.40
4	1.0	34″	17″	17″	1,000	**4166T16**	39.89
7	1.0	40″	22″	20″	250	**4166T81★**	21.49
7	1.0	40″	22″	20″	1,000	**4166T18**	66.93
8	1.0	42″	24″	21″	100	**4166T82★**	10.59
8	1.0	42″	24″	21″	500	**4166T19**	37.82
10	0.8	47½″	27″	23¾″	500	**4166T22**	40.10
10	1.0	48″	24″	24″	175	**4166T1★**	19.20
10	1.0	48″	24″	24″	500	**4166T21**	42.24
11	0.8	46″	27″	23″	100	**4166T84★**	10.00
15	1.0	48″	32″	24″	100	**4166T85★**	12.88
15	1.0	48″	32″	24″	500	**4166T23**	53.81
15	1.0	48″	40″	24″	100	**4166T2★**	18.61
16	1.0	44″	37″	22″	100	**4166T86★**	16.30
16	1.0	44″	37″	22″	500	**4166T24**	62.46
18	1.0	49″	38″	24½″	300	**4166T29**	44.94
20	1.2	59″	34″	29½″	100	**4166T87★**	24.58
20	1.2	59″	34″	29½″	300	**4166T25**	54.67
22	1.0	49″	38″	24½″	100	**4166T88★**	18.69
23	1.0	54″	39″	27″	100	**4166T89★**	21.13
23	1.0	54″	39″	27″	300	**4166T31**	46.26
30	1.0	60″	40″	30″	100	**4166T43★**	20.86
32	1.2	68″	38″	34″	100	**4166T91**	26.68
32	1.2	68″	38″	34″	300	**4166T36**	66.71
35	1.0	71″	45″	35½″	100	**4166T55★**	28.38
35	1.2	71½″	40″	35¾″	200	**4166T39**	49.75
44	1.2	74″	43″	37″	200	**4166T48**	55.88
45	1.2	78″	42½″	39″	200	**4166T49**	57.75
55	1.2	72″	58″	36″	100	**4166T54**	37.25
56	1.0	88″	47″	44″	100	**4166T59**	30.31
60	1.0	76″	60″	38″	100	**4166T67**	36.16
Heavyweight							
30	1.5	60″	37″	30″	250	**4166T26**	57.67
33	2.0	66″	40″	33″	50	**4166T58★**	24.65

★ Bags are furnished on a perforated roll in a dispenser box.

Cap., gal.	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
Heavyweight (Cont.)							
33	2.0	66″	40″	33″	250	**4166T38**	$84.20
35	1.5	52″	48″	26″	100	**4166T41**	30.88
35	1.5	81″	43″	40½″	200	**4166T32**	75.58
40	2.0	80″	48″	40″	100	**4166T46**	54.00
40	2.0	84″	46″	42″	150	**4166T45**	83.33
50	1.5	92″	50″	46″	50	**4166T72★**	31.75
50	1.5	92″	50″	46″	200	**4166T51**	109.32
55	1.5	72″	57″	36″	50	**4166T56★**	29.93
55	2.0	72″	58″	36″	100	**4166T76**	60.12
55	2.0	78″	48″	39″	100	**4166T57**	54.00
56	1.5	88″	47″	44″	50	**4166T73★**	27.33
56	1.5	88″	47″	44″	100	**4166T61**	51.00
56	2.0	85″	47″	42½″	100	**4166T62**	58.25
56	2.0	85″	48″	42½″	100	**4166T63**	60.00
60	2.0	76″	60″	38″	30	**4166T74★**	24.29
60	2.0	76″	60″	38″	50	**4166T69**	37.64
65	2.5	108″	62″	54″	30	**4166T77★**	43.22
65	2.5	116″	62″	58″	30	**4166T94★**	46.00
95	2.5	122″	66″	61″	30	**4166T92★**	52.00
95	2.5	126″	66″	63″	30	**4166T93★**	53.67
Super Heavyweight							
30	3.0	52″	43″	26″	100	**4166T35**	45.29
35	3.0	81″	43″	40½″	100	**4166T34**	83.19
40	3.0	84″	46″	42″	25	**4166T95★**	26.84
40	3.0	84″	46″	42″	100	**4166T47**	92.33
55	2.8	72″	58″	36″	25	**4166T97★**	26.58
55	2.8	72″	58″	36″	100	**4166T78**	91.78
56	3.0	85″	48″	42½″	100	**4166T65**	101.41
56	3.0	88″	47″	44″	25	**4166T98★**	28.73
56	3.0	88″	47″	44″	100	**4166T66**	101.55
56	3.0	92″	50″	46″	25	**4166T96★**	31.96
56	3.0	92″	50″	46″	100	**4166T53**	109.32
60	3.0	76″	60″	38″	20	**4166T99★**	25.33
60	3.0	76″	60″	38″	50	**4166T71**	54.17

Economy Garbage Bags

Perfect for office environments, these bags not only handle lightweight waste and paper, but are also strong enough for wet, bulky items. They are not, however, recommended for containing items with sharp edges.

All of these bags are made of high-density polyethylene. They're strong, but not very thick, which means less impact on the environment. All bags have specially sealed ends, which make them virtually leakproof. Twist ties are not included. **To Order:** Please specify color: black or clear.

Cap., gal.	Thick., microns	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
Lightweight								
4	6	0.23	34″	17″	17″	2,000	**45665T21**	$29.87
7	6	0.23	40″	21″	20″	1,500	**45665T22**	32.00
10	8	0.31	48″	24″	24″	1,000	**45665T23**	30.25
15	8	0.31	48″	33″	24″	1,000	**45665T24**	43.69
30	12	0.47	60″	37″	30″	500	**45665T25**	45.98
33	12	0.47	66″	40″	33″	250	**45665T26**	27.33
45	12	0.47	80″	48″	40″	250	**45665T27**	40.12
56	14	0.55	86″	48″	43″	200	**45665T29**	43.50
60	14	0.55	76″	58″	38″	200	**45665T28**	39.88

Cap., gal.	Thick., microns	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
Lightweight (Cont.)								
65	17	0.66	92″	50″	46″	200	**45665T32**	$53.21
Mediumweight								
30	22	0.86	60″	37″	30″	250	**45665T33**	41.52
33	22	0.86	66″	40″	33″	200	**45665T34**	40.11
45	22	0.86	80″	48″	40″	150	**45665T35**	43.69
55	22	0.86	72″	60″	36″	150	**45665T36**	48.70
56	22	0.86	86″	48″	43″	150	**45665T37**	46.53
60	22	0.86	76″	60″	38″	150	**45665T38**	50.97

For information about choosing the proper size garbage bags, see page 1753.

Extreme-Duty Garbage Bags

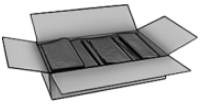

Your tough jobs require our toughest bags. Made from a special blend of low-density polyethylene and high-performance polymers, these bags stretch, resist tearing, and handle items with sharp edges. They even have specially sealed ends, which make them virtually leakproof. Furnished with twist ties. **To Order:** Please specify color: black or clear.

Cap., gal.	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
30	3.0	60″	36″	30″	25	9387T11	$21.68
30	3.0	60″	36″	30″	100	9387T12	75.86
33	3.0	66″	39″	33″	25	9387T13	25.35
33	3.0	66″	39″	33″	100	9387T14	89.92
45	3.0	80″	46″	40″	25	9387T15	35.41
45	3.0	80″	46″	40″	100	9387T16	127.81
55	3.0	72″	58″	36″	25	9387T17	38.01
55	3.0	72″	58″	36″	100	9387T18	137.68

Recycled Plastic Garbage Bags

With a blend of 70% post-consumer recycled plastic and low-density polyethylene, these bags meet many state and local government regulations that require the use of bags made from post-consumer plastics. Furnished with twist ties.

Cap., gal.	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
Black Bags— *Sides are pleated for overstuffing.*							
Lightweight							
10	1.0	48″	24″	24″	250	40925T37	$25.30
10	1.0	48″	24″	24″	500	40925T12	44.91
15	1.0	48″	32″	24″	250	40925T38	31.48
15	1.0	48″	32″	24″	500	40925T13	56.14
Heavyweight							
20	1.5	60″	37″	30″	100	40925T39	25.65
20	1.5	60″	37″	30″	250	40925T14	57.59
33	1.5	66″	40″	33″	100	40925T41	31.18
33	1.5	66″	40″	33″	250	40925T17	69.52
40	1.5	80″	48″	40″	100	40925T42	44.45
40	1.5	80″	48″	40″	250	40925T19	99.68
55	1.5	72″	58″	36″	100	40925T24	46.73
56	1.5	88″	47″	44″	100	40925T27	47.53
56	1.5	92″	50″	46″	100	40925T43	53.45
56	1.5	92″	50″	46″	200	40925T22	96.11
60	1.5	76″	60″	38″	100	40925T3	55.18
Super Heavyweight							
30	3.0	60″	37″	30″	100	40925T44	38.73
33	3.0	66″	40″	33″	100	40925T45	49.74
40	3.0	80″	48″	40″	100	40925T2	72.60
50	3.0	92″	50″	46″	100	40925T36	83.74
55	3.0	72″	58″	36″	100	40925T25	85.24
56	3.0	88″	47″	44″	100	40925T28	86.32
60	3.0	76″	60″	38″	50	40925T31	46.60
Blue Bags							
Lightweight							
13	1.1	48″	30″	24″	250	41485T11	38.86
30	1.1	60″	36″	30″	250	41485T12	58.64
Heavyweight							
13	1.5	48″	30″	24″	100	41485T16	19.25
30	1.5	60″	36″	30″	100	41485T17	27.50
33	1.5	66″	39″	33″	100	41485T18	38.45
40	1.5	80″	46″	40″	100	41485T19	49.12
55	1.5	72″	58″	38″	100	41485T15	58.12

Green Polyethylene Garbage Bags

Made of low-density polyethylene, these bags are stretchable with good puncture and tear resistance. Bags are pleated for overstuffing and furnished with ties. Color is light green.

Cap., gal.	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
Heavyweight							
30	1.5	60″	37″	16″	250	4038T11	$57.40
40	1.5	80″	48″	23″	250	4038T13	112.13
55	1.5	72″	57″	22″	50	4038T12	24.41
Super Heavyweight							
30	3.0	52″	43″	18″	100	4038T17	51.14
55	3.0	72″	60″	22″	100	4038T18	96.43
56	3.0	86″	48″	23″	100	4038T19	91.70

Easy-to-Tie Garbage Bags

Tired of hunting for twist ties? You won't have to with these bags. To close them, just pull and tie the attached draw tape into a knot. Made of low-density polyethylene, these bags stretch and are tear resistant. Color is black, except where noted.

Cap., gal.	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
Lightweight							
13	0.9	49″	27⅜″	24½″	200	4395T81●	$60.62
30	1.0	60″	34″	30″	70	4395T42	27.22
30	1.2	61″	34″	30½″	200	4395T82	75.77
33	1.2	67″	38″	33½″	150	4395T83	81.42
Heavyweight							
45	1.25	78″	42″	39″	50	4395T85	52.63
55	1.25	80″	44″	40″	50	4395T86	54.40

● Color is white.

Large-Volume Bags

Shown as a Pallet Cover

Shown as a Pallet-Box Liner

The extra-large size makes it easy to cover, store, or dispose of large items. Bags fit pallet loads up to 53″ Wd. × 43″ Dp. They can also be used as liners for large-sized pallet boxes (also known as gaylord boxes). All are made of flexible, low-density polyethylene. Bags sold on rolls are perforated for easy removal. Twist ties are not included.

Standard Bags— Color is clear.

UV-Resistant Bags— The choice for temporary outdoor storage, these bags are UV resistant for up to six months. Color is black.

O'all Size, Ht. × Wd. × Dp.	Thick., mils	Max. Pallet Load Ht.	*Individual Bags*	Each	*Bags on a Roll* Bags Per Roll		Per Roll
Standard Bags							
Heavyweight							
73″ × 55″ × 45″	2	48″	1066T21	$3.44	30	1066T31	$75.93
85″ × 55″ × 45″	2	60″	1066T22	3.73	25	1066T32	69.81
97″ × 55″ × 45″	2	72″	1066T23	3.86	20	1066T33	58.24
Super Heavyweight							
73″ × 55″ × 45″	3	48″	1066T24	5.06	20	1066T34	79.44
85″ × 55″ × 45″	3	60″	1066T25	5.46	15	1066T35	66.30
97″ × 55″ × 45″	3	72″	1066T26	6.00	15	1066T36	68.11
UV-Resistant Bags							
Heavyweight							
73″ × 55″ × 45″	2	48″	____	____	30	1066T41	84.94
85″ × 55″ × 45″	2	60″	____	____	25	1066T42	78.07
97″ × 55″ × 45″	2	72″	____	____	20	1066T43	65.12
Super Heavyweight							
73″ × 55″ × 45″	3	48″	____	____	20	1066T44	88.90
85″ × 55″ × 45″	3	60″	____	____	15	1066T45	74.19
97″ × 55″ × 45″	3	72″	____	____	15	1066T46	76.19

Paper Garbage Bag

This garbage bag is made of two layers of wet-strength kraft paper and is laminated with water-resistant adhesive. This bag stands on its own for convenient filling. Perfect for moist as well as dry refuse, such as yard waste.

Cap., gal.	Ht.	Wd.	Dp.	Pkg. Qty.		Per Pkg.
30	35″	16″	12″	5	39965T11	$4.54

For information about choosing the proper size garbage bags, see page 1753.

Compactor Bags

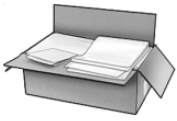

The choice for compactors, these super heavyweight bags are made of low-density polyethylene to stretch and resist tearing. To select a bag, check the identification plate on your compactor for the chamber capacity in cubic feet. Furnished with twist ties.

To Order: Please specify color: black or clear.

Chamber Cap., cu. ft.	Thick., mils	Bag Size Circum.	Bag Size Ht.	Bag Size Wd.	Bags Per Case		Per Case
3- 6	3	52″	43″	26″	100	4203T1	$47.69
6- 8	3.25	60″	46″	30″	100	4203T2	63.41
8-10	3.25	68″	45″	34″	100	4203T4	68.71
10	3.25	100″	48″	50″	50	4203T5	55.16

Garbage-Bag Twist Ties

Paper Coated

A quick and easy way to bundle and close garbage bags. Color is green.

***Paper-Coated Ties*—**Furnished in a package of 2,000 ties.

***Plastic-Coated Ties*—**Furnished on a spool so you can cut the exact length you need. Spool OD is 8¼″ with a 1″ dia. center hole.

Plastic Coated

Lg.	Wd.	Wire Ga.		Per Pkg.
Paper-Coated Ties				
6″	5/32″	29	2065T2	$11.31
12″	5/32″	29	2065T5	15.49
Plastic-Coated Ties				**Per Roll**
1,500 ft.	1/8″	27	2048T18	$12.86

Biohazard Bags

Specifically designed for the removal of infectious waste, the red color and OSHA-required biohazard symbol quickly alert people to the contents of these bags. All are marked "Biohazard—Infectious Waste."

Made of low-density polyethylene, these bags stretch and resist tearing. They even have specially sealed ends, which make them virtually leakproof. Pleated sides allow for overstuffing. Furnished with twist ties.

Cap., gal.	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
Heavyweight							
30	2	60″	36″	30″	75	4053T41	$25.27
40	2	80″	48″	40″	50	4053T43	30.54
Super Heavyweight							
55	3	72″	60″	36″	50	4053T52	53.37

Garbage-Bag Rubber Bands

When garbage bags slip into your containers, waste doesn't always make it into your bag. To avoid the mess, use one of these reusable rubber bands to hold your bags tightly around your containers. Color is red, unless noted.

Fits Container Gallon Size	Circum. Range	Rubber Band Size, Lg.×Wd.	Pkg. Qty.		Per Pkg.
For Round Containers					
10-30	46″- 61″	8½″×¼″	5	9561T1	$2.43
31-55	64″- 83″	12″ ×¼″	5	9561T2	4.23
For Square Containers					
15-21	56″- 63″	8½″×¼″	5	9561T1	2.43
23-32, 36, 40	64″- 78″	12″ ×¼″	5	9561T2	4.23
35, 50, 65, 95	88″-125″	34″ ×¼″	5	9561T3★	6.28

★ Color is green.

Asbestos-Removal Disposal Bags

Contain and remove hazardous asbestos waste with these super heavyweight bags. A blend of 50% post-consumer recycled plastic and low-density polyethylene, all are opaque black with a white "Danger" message. The message reads: "DANGER. Contains Asbestos Fibers. Avoid Creating Dust. Cancer and Lung Disease Hazard. Avoid Breathing Airborne Asbestos." Furnished with twist ties.

Cap., gal.	Thick., mils	Circum.	Ht.	Wd.	Bags Per Case		Per Case
33	4	66″	40″	33″	65	40375T41	$62.48
42	4	66″	50″	33″	50	40375T42	60.09
55	4	72″	60″	38″	40	40375T43	59.19

Wall-Mount Plastic Indoor Waste Containers

Mounted on the wall, these rectangular containers increase your usable floor space. They're also easier to clean around than floor containers. Both are made of lightweight polypropylene with molded-in hooks for holding a liner. The top, which lifts off for easy trash removal, is made of polystyrene and has a self-closing push door.

Containers have a built-in mounting bracket with two keyhole slots (fasteners included). When wall mounted, they're FM approved and California State Fire Marshal (CSFM) approved.

Cap., gal.	Overall Size Wd.×Dp.	Ht.	Circum.	Color		Each
15	19½″×11⅞″	32⅝″	63″	Beige	4571T33	$142.99
15	19½″×11⅞″	32⅝″	63″	Brown	4571T34	142.99

Step-Open Plastic Indoor Waste Containers

You don't need a free hand to open the lids on these containers—just step on the convenient foot pedal. Made of polyethylene, all resist dents and chips. They're also easy to clean. FM approved and California State Fire Marshal (CSFM) approved.

To Order: Where applicable, please specify color.

Round container comes furnished with a rigid polyethylene liner.

Mobile rectangular container has a polyethylene roller for portability.

Cap., gal.	Overall Size Size	Ht.	Circum.	Available Colors		Each
Round Container						
4½	13¼″ Dia.	15⅜″	42″	White	4334T31	$89.07
Rectangular Containers						
12	16¼″ Wd.×15¾″ Dp.	23⅝″	64″	Beige, Red, White	4334T7	101.71
18	19¾″ Wd.×16⅛″ Dp.	26½″	72″	Beige, Red, White	4334T5	115.66
Mobile Rectangular Container						
23	19¾″ Wd.×16⅛″ Dp.	32½″	72″	Beige, Red, White	4334T6	162.69

Round

Rectangular

Mobile Rectangular

Plastic Indoor Waste Containers and Lids

Containers and lids are made of dent- and peel-resistant polyethylene, unless noted. They are sold separately, unless noted. **To Order:** Where applicable, please specify color.

Waste Containers

Recycling Waste Containers—Have a recycling imprint on the side.

Fire-Resistant Waste Containers—Made of fiberglass-reinforced plastic, these containers are UL classified fire safe. They have a raised bottom, which insulates and protects floors from heat transfer. They will not contribute fuel to a fire and will not burn.

	Cap., gal.		Overall Size	Overall Ht.	Overall Circum.	Compatible Lid(s) Sold Below	Available Colors		Each
Polyethylene Waste Containers									
A	3	Rectangular	11⅜″ Wd. × 8″ Dp.	12″	39″	—	Beige, Black, Brown, Gray	**4089T6**	$4.25
B	11	Round	15¾″ Dia.	18¾″	50″	—	Beige, Gray	**4089T5**	12.44
Recycling Polyethylene Waste Container									
A	3	Rectangular	11⅜″ Wd. × 8¼″ Dp.	12⅛″	39″	—	Blue	**4063T41**	7.25
Fire-Resistant Fiberglass-Reinforced Plastic Waste Containers									
C	3½	Rectangular	11″ Wd. × 7⅞″ Dp.	12½″	38″	—	Black, Sand	**9866T1**	14.36
C	6	Rectangular	16″ Wd. × 8½″ Dp.	14″	49″	—	Black, Brown, Sand	**9866T2**	23.36
Polyethylene Waste Containers (Compatible Lids Sold Below)									
D	7	Rectangular	14⅜″ Wd. × 10¼″ Dp.	15″	49″	1	Beige, Black, Gray	**4089T1**	8.52
E	10	Rectangular	15¼″ Wd. × 11″ Dp.	19⅞″	53″	2	Beige, Black, Gray	**4089T2**	13.70
F	15	Rectangular	23⅛″ Wd. × 11″ Dp.	24⅞″	68″	3	Beige, Gray	**4080T9**	42.74
F	23	Rectangular	20″ Wd. × 11″ Dp.	30″	62″	3	Beige, Black, Brown, Gray	**4080T7**	53.71
G	56	Rectangular	25½″ Wd. × 22¾″ Dp.	31⅛″	97″	4	Brown	**4052T11**	169.20
H	22	Round	15¾″ Dia.	30⅛″	50″	5, 6	Beige, Gray	**4080T5**	53.89
J	21	Half Round	21″ Wd. × 11″ Dp.	28″	64″	7	Beige, Gray	**4089T3**	74.83
K	23	Rectangular	16½″ Wd. × 15½″ Dp.	30⅞″	56″	8	Beige, Black, Brown, Gray	**4080T2**	61.46
L	25	Square	16¼″ Sq.	26⅝″	65″	10, 11, 12	Beige, Brown, Gray	**4056T2**	41.68
L	32	Square	16¼″ Sq.	31⅝″	65″	10, 11, 12	Beige, Brown, Gray	**4056T3**	54.40
M	35	Square	19½″ Sq.	27⅝″	78″	13, 14	Beige, Gray	**4080T84**	99.74
M	50	Square	19½″ Sq.	34¼″	78″	13, 14	Beige, Gray	**4080T88**	129.67
Recycling Polyethylene Waste Containers (Compatible Lids Sold Below)									
D	7	Rectangular	14⅜″ Wd. × 10¼″ Dp.	15″	49″	1	Blue	**4063T42**	8.55
E	10	Rectangular	15¼″ Wd. × 11″ Dp.	19⅞″	53″	2	Blue	**4063T43**	14.88
F	23	Rectangular	20″ Wd. × 11″ Dp.	30″	62″	3	Blue	**4063T44**	53.24
J	21	Half Round	21″ Wd. × 11″ Dp.	28″	64″	7	Blue	**4063T92**	82.34
K	23	Rectangular	16½″ Wd. × 15½″ Dp.	30⅞″	56″	9	Blue	**4063T46**	61.02
M	35	Square	19½″ Sq.	27⅝″	78″	13, 14	Blue	**4063T22**	91.45
M	50	Square	19½″ Sq.	34¼″	78″	13, 14	Blue	**4063T52**	124.86
Polyethylene Waste Containers with Included Lids									
N	21	Corner with Open-Top Lid	21½″ Wd. × 16″ Dp.	29″	75″	—	Beige, Black, Brown, Gray	**4089T7**	99.74
P	21	Corner with Self-Closing Push-Door Lid	21½″ Wd. × 16″ Dp.	39½″	75″	—	Beige, Black, Brown, Gray	**4089T8**	122.01

Lids

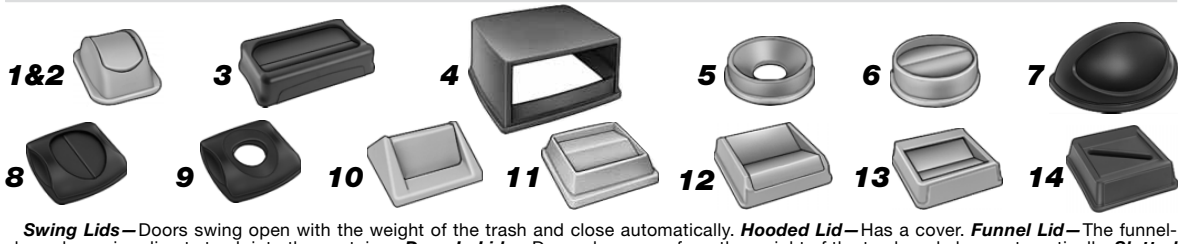

Swing Lids—Doors swing open with the weight of the trash and close automatically. ***Hooded Lid***—Has a cover. ***Funnel Lid***—The funnel-shaped opening directs trash into the container. ***Drop-In Lids***—Doors drop open from the weight of the trash and close automatically. ***Slotted Lid***—Has a 1¾″ Wd. × 14″ Dp. slot, allowing you to collect paper for recycling and keep other trash out.

		Compatible Container Sold Above	Ht.	Available Colors		Each
1	Swing	D	6″	Beige, Black	**4089T9**	$12.37
2	Swing	E	7″	Beige, Black	**4089T27**	12.85
3	Drop-In	F	4¾″	Black, Gray	**4080T8**	36.61
4	Hooded	G	13″	Brown	**4052T43**	177.93
5	Funnel	H	4″	Gray	**4080T97**	23.26
6	Swing	H	5″	Beige, Gray	**4080T6★**	29.29
7	Swing	J	9½″	Black	**4089T35**	114.98
8	Drop-In	K	4″	Beige, Black	**4080T95**	$28.45
9	Funnel	K	3 13/64″	Blue	**4063T56**	26.32
10	Swing	L	7⅞″	Beige, Brown, Gray	**4056T5★**	36.82
11	Swing	L	5¼″	Beige, Brown, Gray	**4056T7★**	20.18
12	Drop-In	L	5″	Beige, Brown, Gray	**4056T8★**	29.65
13	Drop-In	M	6¼″	Beige, Gray	**4080T83**	57.55
14	Slotted	M	6¼″	Blue	**4080T832**	57.76

★ Made of polystyrene.

Metal Indoor Waste Containers

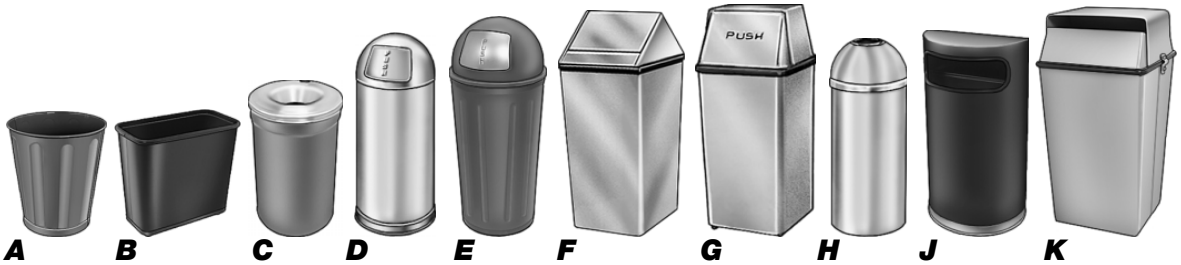

A B C D E F G H J K

Made of metal, all of these waste containers provide better fire protection than comparable plastic containers. **To Order:** Where applicable, please specify color.

Fire-resistant waste containers (A&B) have a raised bottom, which insulates and protects floors from heat transfer. They will not contribute fuel to a fire and will not burn.

Fire-extinguishing waste containers (C-G) are designed to extinguish internal fires by restricting the oxygen flow inside.

(A&B) Fire-Resistant Steel—*Round containers (Style A)* are seamed and have rolled tops, which enclose a reinforcing wire. Embossed sides add extra strength.

Rectangular containers (Style B) have vinyl bumpers to protect your walls and nylon glides to protect your floors.

(C) Fire-Extinguishing Steel with Aluminum Funnel Lid—Containers have a steel body and separate brushed aluminum lid that lifts off for easy trash removal. The lid has a funnel-shaped opening, which directs trash into the container. The interior is coated with a rust preventative.

(D) Fire-Extinguishing Steel with Push-Door Top—Containers have a one-piece steel shell with a self-closing 300 series stainless steel push-door top. To empty, lift off the shell to expose the liner, which is made of galvanized steel. Both containers have a noncorrosive Type 304 stainless steel ring at the base to protect your floors.

(E) Fire-Extinguishing Steel with Push-Door Lid—This container has a steel body and separate steel lid that lifts off for easy waste removal. The lid has a self-closing 300 series stainless steel push door.

(F) Fire-Extinguishing Steel and ***Type 304 Stainless Steel with Swing Lid—***All have a self-closing swing door. They also have rubber bumpers to protect your walls; nonmarking feet to protect your floors.

Steel containers have a separate lid that lifts off for easy waste removal. *Stainless steel containers* have a hinged lid that flips open for easy trash removal.

(G) Fire-Extinguishing Type 304 Stainless Steel with Double Push-Door Lid—Made of brushed stainless steel, these containers have a separate lid that lifts off for easy trash removal. For added convenience, the lid has two self-closing push doors. Vinyl bumpers protect your walls; nonmarking nylon feet protect your floors.

(H) Aluminum with Open Domed Top—Containers have a one-piece satin-finished aluminum shell with a clear finish. To empty, lift off the shell to expose the liner, which is made of galvanized steel with an aluminum bottom. Both containers have a noncorrosive vinyl ring around the trash opening.

(J) Space-Saving Steel with Side Opening—The half-round design hugs your wall to save floor space. Container has a one-piece steel shell. To empty, lift off the shell to expose the liner, which is made of polyethylene. In addition to a noncorrosive vinyl ring around the trash opening, there's a noncorrosive Type 304 stainless steel ring at the base to protect your floors.

(K) Steel with Lockable Lid for Confidential Documents—A curved chute prevents retrieval of sensitive documents until disposal time. Even turning this container upside down won't allow the contents to slide out. To empty, you must unlock the hinged lid and flip it open.

Container is made of steel with vinyl bumpers to protect your walls and nonmarring rubber feet to protect your floors. Lid has a steel padlock hasp for use with a padlock (not included; maximum shackle dia. of ½″).

Cap., gal.		Overall Size	Overall Ht.	Overall Circum.	Approvals	Available Colors		Each
Fire-Resistant Steel								
A 6½	Round	13½″ Dia.	14½″	42″	CSFM, UL	Black, Gray	4028T2	$17.22
A 11	Round	15¾″ Dia.	18″	49″	—	Black, Gray	4028T3	25.11
A 20	Round	16″ Dia.	29″	50″	—	Gray	4032T13	43.75
B 7½	Rectangular	17″ Wd. × 8″ Dp.	15″	50″	CSFM, UL	Black, Gray	4028T6	40.96
B 24	Rectangular	21″ Wd. × 11″ Dp.	30″	64″	—	Black, Gray	4028T5	84.94
Fire-Extinguishing Steel with Aluminum Funnel Lid								
C 6	Round	12⅛″ Dia.	16¼″	38″	FM, UL	Gray	4388T6	57.18
C 15	Round	15⅛″ Dia.	25¾″	47″	FM, UL	Gray	4388T3	82.87
C 30	Round	19⅞″ Dia.	29¾″	62″	FM, UL	Gray	4388T4	116.60
C 55	Round	24″ Dia.	35½″	75″	FM	Gray	4388T5	158.12
Fire-Extinguishing Steel with Push-Door Top								
D 12	Round	15″ Dia.	30″	47″	CSFM, FM, OSHA, UL	White	4048T11	142.71
D 15	Round	15″ Dia.	36″	47″	CSFM, FM, OSHA, UL	Almond, White	4048T2	174.44
Fire-Extinguishing Steel with Push-Door Lid								
E 20	Round	16″ Dia.	37″	50″	CSFM, FM, OSHA, UL	Gray	4032T513	110.75
Fire-Extinguishing Steel with Swing Lid								
F 13	Square	13″ Sq.	29″	52″	OSHA	Almond, White	9888T21	199.22
F 21	Square	15″ Sq.	38″	60″	OSHA	Almond, White	9888T22	211.18
F 36	Square	19″ Sq.	39″	76″	OSHA	Almond, White	9888T23	269.32
Fire-Extinguishing Type 304 Stainless Steel with Swing Lid								
F 16	Square	14″ Sq.	35½″	56″	CSFM, FM, OSHA, UL	—	9888T7	389.19
Fire-Extinguishing Type 304 Stainless Steel with Double Push-Door Lid								
G 21	Square	14″ Sq.	38⅛″	56″	OSHA	—	4031T5	386.58
G 36	Square	18″ Sq.	39⅜″	72″	OSHA	—	4031T6	518.30
Aluminum with Open Domed Top								
H 8	Round	12″ Dia.	30″	38″	—	—	4549T12	259.62
H 16	Round	15″ Dia.	36″	47″	—	—	4549T16	392.68
Space-Saving Steel with Side Opening								
J 9	Half Round	18″ Wd. × 9″ Dp.	32″	46″	—	Black	4388T7	173.47
Steel with Lockable Lid for Confidential Documents								
K 36	Square	19″ Sq.	38″	76″	OSHA	Almond, Gray	4069T16	365.47

Wall-Mount Stainless Steel Indoor Waste Containers

Mounted on the wall, these rectangular containers increase your usable floor space and are easier to clean around than floor containers. All are made of Type 304 stainless steel and have four ⅜″ × 3/16″ keyhole slots for mounting (fasteners not included).

The *7-, 12-,* and *17-gallon models* include a reusable vinyl liner.

Cap., gal.	Overall Size Wd. × Dp.	Overall Ht.	Overall Circum.		Each
2	10½″ × 4¾″	9″	30½″	4566T81	$53.32
7	14″ × 6½″	17″	41″	4566T82	104.73
12	15¼″ × 8″	23″	46½″	4566T85	129.08
17	15¾″ × 11¾″	21⅞″	55″	4566T84	175.56

Step-Open Metal Indoor Waste Containers

A

B

C

D

You don't need a free hand to open the lids on these containers—just step on the convenient foot pedal. Made of metal, all are fire extinguishing (except for *Style B*), which means they are designed to extinguish internal fires by restricting the oxygen flow inside. **To Order:** Where applicable, please specify color.

Style A—Containers have a galvanized steel liner. They also have a vinyl ring at the base to protect your floors.

Style B—Container has a one-piece steel shell with a self-closing stainless steel push door. To empty, lift off the shell to expose the liner, which is made of galvanized steel. There's a noncorrosive stainless steel ring at the base to protect your floors.

Styles C and ***D***—Containers have a rigid plastic liner. They also have a mechanism on the lid to keep the lid from hitting your walls and feet with rubber glides to protect your floors.

Style D also has a handle and two 3″ dia. rubber wheels for mobility.

	Cap., gal.		Overall Size	Overall Ht.	Overall Circum.	Approvals	Available Colors		Each
Steel									
A	3½	Round	11″ Dia.	17″	35″	CSFM, FM, UL	Red, White	4041T13	$66.27
A	5	Round	11″ Dia.	22″	35″	CSFM, FM, UL	Red, White	4041T17	79.51
B	15	Round	15″ Dia.	36″	47″	———	White	4048T8■	224.75
C	12	Square	12″ Sq.	23″	48″	CSFM, FM, UL	White	4008T31	144.13
C	24	Square	15″ Sq.	30″	60″	CSFM, FM, UL	Red, White	4008T12	173.12
C	40	Square	19″ Sq.	30″	76″	CSFM, FM, UL	Red, White	4008T13	234.22
Type 304 Stainless Steel									
C	7	Square	12″ Sq.	17″	48″	CSFM, FM, UL	———	4008T78	213.07
C	12	Square	12″ Sq.	23″	48″	CSFM, FM, UL	———	4008T21	272.60
C	24	Square	15″ Sq.	30″	60″	CSFM, FM, UL	———	4008T22	382.27
C	40	Square	19″ Sq.	30″	76″	CSFM, FM, UL	———	4008T23	537.37
Mobile Steel									
D	40	Square	19″ Sq.	30″	76″	CSFM, FM, UL	White	4041T28	303.93

■ Not fire extinguishing.

No-Touch Indoor Waste Containers

Stainless Steel, Rectangular

You don't have to touch or step on these containers to open the lid—a sensor on the front detects motion up to 10″ away and triggers opening. The lid closes automatically after six seconds. To disable the automatic function, simply flip a switch. All operate on four D batteries (not included).

Cap., gal.		Overall Size	Overall Ht.	Overall Circum.		Each
Beige Polypropylene Base with Beige ABS Plastic Lid						
7	Rectangular	10½″ Wd. × 14″ Dp.	23¼″	49″	4499T1	$59.59
Type 304 Stainless Steel Base with Black ABS Plastic Lid						
11	Rectangular	10½″ Wd. × 14½″ Dp.	27½″	50″	4499T2	121.71
17	Round	18¾″ Dia.	27¾″	58⅞″	4499T3	252.91
21	Round	18¾″ Dia.	32¼″	58⅞″	4499T4	262.39

D Batteries—(*6/Pkg.*) ..... 71455K55 **Per Pkg.** $7.32

Fire-Extinguishing Plastic Indoor/Outdoor Waste Containers

Round

Square

Made of structural polyethylene, these containers withstand indoor and outdoor temperature extremes. They're also fire extinguishing, which means they are designed to extinguish internal fires by restricting the oxygen flow inside. **To Order:** Please specify color.

Round with Push-Door Lid—Containers have a separate lid, which has a self-closing push door and lifts off for easy waste removal. They also have a built-in garbage bag holder.

Square with Double Push-Door Lid—Containers have a hinged lid that flips open for easy trash removal. For added convenience, the lid has two self-closing push doors.

Cap., gal.	Overall Size	Overall Ht.	Overall Circum.	Approvals	Available Colors		Each
Round with Push-Door Lid							
15	15⅜″ Dia.	36½″	49″	CSFM, FM	Beige, Black, Brown, White	4106T1	$147.27
25	18″ Dia.	42″	57″	CSFM, FM	Beige, Black, Brown, White	4106T2	191.92
Square with Double Push-Door Lid							
35	20″ Sq.	40″	80″	CSFM, FM, OSHA	Beige, Brown	4106T3	231.26
50	23½″ Sq.	41″	94″	CSFM, FM, OSHA	Beige, Brown	4106T4	246.01

Plastic Outdoor Waste Containers

All Plastic

Plastic Frame with Stone Panels

Able to stand up to the elements, these durable, square containers have hooded tops to protect the interior from wind, rain, and snow. The tops have openings on all four sides and are hinged so you can flip them open for easy trash removal.

All Plastic—Made of polyethylene, this container has a weighted pedestal base that you can fill with sand, gravel, or water for stability. It comes furnished with a garbage-bag holder. An optional polyethylene liner is sold separately. *Note:* This container can be used with fully automated collection systems.

Plastic Frame with Stone Panels—Not only tough, but also good looking, these containers have a dent- and chip-resistant ABS plastic frame and attractive stone panels. They come furnished with a garbage-bag holder and a polyethylene liner. **To Order:** Please specify frame and stone panel color.

Cap., gal.	Overall Size	Overall Ht.	Overall Circum.	Available Colors		Each
All Plastic						
58	29⅛″ Sq.	44″	117″	Brown	9679T11	$523.44
Optional Liner For All-Plastic Container					9679T22	70.32
All Plastic Frame with Stone Panels						
35	26″ Sq.	40″	104″	*Frame:* Light Brown, Dark Brown *Stone Panels:* Light Brown, Dark Brown	41385T94	675.89
50	26″ Sq.	46½″	104″	*Frame:* Light Brown, Dark Brown *Stone Panels:* Light Brown, Dark Brown	41385T95	755.88

Plastic Indoor/Outdoor Waste Containers, Lids, Dollies, and Caddies

Made of polyethylene (unless noted), the containers, lids, dollies, and caddies are sold separately. **To Order:** Where applicable, please specify color.

Waste Containers

All of these containers have two molded-in side handles (unless noted) and a durable bottom that stands up to dragging across rough surfaces. Containers of the same size and shape can be nested for convenient storage.

Blue, gray, white, and ***yellow containers*** are NSF certified. ***Gray, white,*** and ***yellow containers*** are also USDA listed.

Recycling Waste Containers— Have a recycling imprint on the side.

Jumbo Waste Containers— Accommodate generous amounts of trash. They have two steel handles and a steel ring inside the top rim for added stability. No lids are available.

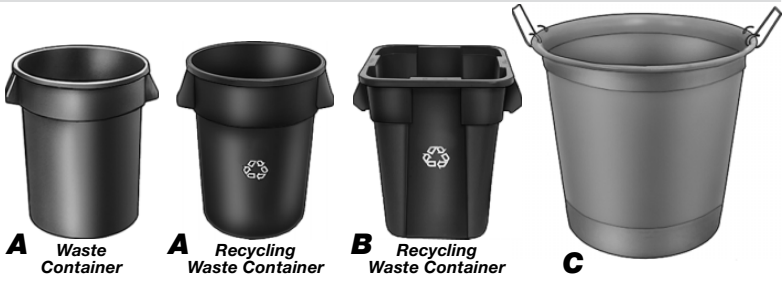

A Waste Container — **A** Recycling Waste Container — **B** Recycling Waste Container — **C**

	Cap., gal.	Size	Overall Ht.	Overall Circum.	Compatible Lid(s) Sold Below	Available Colors		Each
Waste Containers (Compatible Lids Sold Below)								
A	10	Round	15⅝″ Dia.	17⅛″	49″	1	Gray, White	4011T1	$17.18
A	20	Round	19½″ Dia.	22⅞″	62″	4	Blue, Gray, White, Yellow	4011T2	28.20
A	32	Round	22″ Dia.	27¼″	70″	2, 6, 9, 10	Blue, Gray, Red, White, Yellow	4011T4	35.12
A	44	Round	24″ Dia.	31½″	76″	5, 11	Blue, Gray, Red, White, Yellow	4011T5	53.85
A	55	Round	26½″ Dia.	33″	84″	3, 12	Gray	4011T71	85.75
B	28	Square	21½″ Sq.	22½″	86″	7	Gray, White	4091T6	43.06
B	40	Square	23½″ Sq.	28¾″	94″	8	Gray, White	4091T5	60.84
Recycling Waste Containers (Compatible Lids Sold Below)								
A	20	Round	19½″ Dia.	22⅞″	62″	4	Blue	4165T95	30.04
A	32	Round	22″ Dia.	27¼″	70″	2, 6, 9, 10	Blue	4165T91	36.93
A	44	Round	24″ Dia.	31½″	76″	5, 11	Blue	4165T92	61.46
B	40	Square	23½″ Sq.	28¾″	94″	8	Blue	4165T72	58.71
Jumbo Waste Containers								
C	80	Round	32″ Dia.	30″	101″	—	Orange	9853T36	109.62
C	115	Round	34½″ Dia.	46″	109″	—	Orange	9853T39	117.31

Lids for Waste Containers A&B

Gray, white, and ***yellow lids*** are NSF certified and USDA listed, except Style 6.

Styles 4&5— These lids have runoff channels to prevent water from pooling on top.

Style 6— This lid has a 3½″ diameter center hole with "Cans Only" imprint.

Style 9— This lid has a funnel-shaped opening, which directs trash into the container.

		Overall Size	Overall Ht.	Compatible Container(s) Sold Above Cap., gal.	Available Colors		Each
1	Round Flat Lid	16″ Dia.	1″	10	Gray, White	4011T6	$6.20
2	Round Flat Lid	22¼″ Dia.	1⅜″	32	Gray, Red, White, Yellow	4011T8	12.25
3	Round Flat Lid	26¾″ Dia.	2″	55	Gray	4011T72	25.56
4	Round Flat Lid with Runoff Channels	19⅞″ Dia.	1¼″	20	Gray, White, Yellow	4011T7	9.01
5	Round Flat Lid with Runoff Channels	24½″ Dia.	1½″	44	Black	4011T34	20.75
6	Round Flat Lid with 3½″ Dia. Center Hole	22¼″ Dia.	1½″	32	White	4165T12	7.96
7	Square Flat Lid	22″ Sq.	2″	28	Gray, White	4091T75	16.07
8	Square Flat Lid	24″ Sq.	2¼″	40	Gray, White	4091T95	21.81
9	Round Funnel Lid	22⅜″ Dia.	5″	32	Gray	4011T26	36.55
10	Round Hooded Lid with Push Door	22 1/16″ Dia.	12¼″	32	Gray, Red	4011T13	78.58
11	Round Hooded Lid with Push Door	24 13/16″ Dia.	12⅝″	44	Gray, Red	4011T36	82.63
12	Round Hooded Lid with Push Door	27¼″ Dia.	14½″	55	Gray, Red	4011T15	99.74

Dollies and Caddies

D **E** **F** **G&H** **J** **K** **L**

Style D Dolly— Has five swivel casters with 3″ dia. urethane wheels.

Style E Dolly— Has four swivel casters with 3″ dia. plastic wheels.

Style F Dolly— Holds any combination of two 32- and 44-gallon Style A containers, 28- and 40-gallon Style B containers, or one 32- or 44-gallon Style A container with one 55-gallon Style A container. Has two 8″ dia. thermoplastic rubber wheels and two swivel casters with 4″ dia. thermoplastic rubber wheels.

Style G Dolly and Style H Handle— Tow up to three of these dollies (Style G). Each has five swivel casters (two rigid; three swivel) with 3″ dia. polypropylene wheels. Connect handle (Style H) for maneuverability.

Style J-L Caddies— Keep cleaning supplies organized and within easy reach. *Style K* has an integrated garbage-bag strap. Style L is made of nylon-reinforced vinyl.

		Cap., lbs.	Size	Color		Each
D	Dolly for 20-gal. and Larger Style A Containers	250	18¼″ Dia. × 6⅝″ Ht.	Black	4011T61	$69.69
E	Dolly for Style B Containers	250	17¼″ Sq. × 6¼″ Ht.	Black	4091T71	74.12
F	Tandem Dolly for Style A and B Containers	200 per Deck	45″ Lg. × 20¼″ Wd. × 8″ Ht.	Black	4011T29	150.12
G	Towable Dolly for all 20-gal. and Larger Style A and B Containers	250	27⅞″ Lg. × 20⅜″ Wd. × 6⅜″ Ht.	Black	4011T37	108.95
H	Handle for Towable Dolly (Style G)	—	34½″ Lg. × 10⅝″ Wd.	Black	4011T38	49.22
J	Snap-On Miniature Caddy for 44-gal. Style A Container	—	16″ Lg. × 9″ Wd. × 5″ Ht.	Gray	6174T35	29.86
K	Snap-On Caddy for 44-gal. Style A Container	—	32½″ Lg. × 26½″ Wd. × 6¾″ Ht.	Yellow	4011T39	61.10
L	Strap-On Caddy Bag for 32- and 44-gal. Style A Containers	—	20″ Dia. × 20½″ Ht.	Yellow	4011T63	38.96

Mobile Plastic Indoor/Outdoor Waste Containers

A 32 gal.

A 45 gal.

B 35 gal.

C 50 gal.

D

E

Shown with a garbage bag and 23-gal. container (not included).

Two wheels make it much easier to move these containers—especially when they're full. Made of molded polyethylene, the containers are not only crack and dent resistant, but also lightweight, seamless, and leak-proof. Wheels are polyethylene, unless noted. **To Order:** Where applicable, please specify color.

(A) Waste Containers with Removable Lid— The *32-gal. model* has two side handles that lock the lid in place. The *45-gal. model* has a large molded handle on top of the lid and a hand grip on the back of the container for easy maneuvering.

(B-D) Waste Containers with Hinged Lid— All have a hinged lid and a molded handle for a sure grip. *Note:* These containers work with both fully and semi-automated collection systems, unless noted.

(C) Recycling waste containers with hinged lid have a recycling imprint on the front.

(D) Waste container with lockable hinged lid and paper slot is great for securing your confidential paper waste. The lid has a key lock (furnished with two keyed-alike keys) and paper slot to restrict access to contents.

(E) Large-Capacity Waste Container— Our largest-capacity waste container allows you to separate your waste. It has a 55-gal. garbage-bag retainer hoop, a molded-in area that can accommodate a 23-gal. waste container (sold separately), and a storage area for holding and organizing your cleaning supplies. It also has two rear handles and two outward-opening rear doors for easy access to container contents. In addition to the two wheels, this container has two swivel casters with 5″ dia. plastic wheels to make maneuvering in tight spots a breeze. An *optional polyethylene lid* is sold separately below.

	Cap., gal.	Max. Load Rating, lbs.	Overall Size Wd. × Dp.	Overall Size Ht.	Overall Size Circum.	Wheel Dia.	Available Colors		Each
Waste Containers with Removable Lid									
A	32	Not Rated	20¾″ × 22⅝″	35″	60″	4″	Black	**4504T31**	$26.48
A	45	Not Rated	21½″ × 24¼″	39½″	81″	6″	Green	**4504T45**	42.66
Waste Containers with Hinged Lid									
B	35	125	22¾″ × 22 5/16″	38½″	90″	8″	Blue, Gray, Green	**41415T71●**	102.19
B	50	Not Rated	29 3/16″ × 24″	37″	106″	8″	Blue, Gray, Yellow	**4023T2■**	122.20
B	65	220	26″ × 26 13/16″	42 3/16″	105″	10″	Blue, Gray, Green	**41415T72●**	128.00
B	95	340	28″ × 30½″	46½″	117″	12″	Blue, Gray, Green	**41415T73●**	147.37
Recycling Waste Containers with Hinged Lid									
C	50	Not Rated	23⅝″ Sq.	38¾″	95″	8″	Blue	**4349T21■**	117.75
C	96	330	24″ × 35″	43″	118″	12″	Blue	**4349T33●★**	128.51
Waste Container with Lockable Hinged Lid and Paper Slot									
D	65	225	32 5/16″ × 25 5/16″	41 13/16″	115″	10″	Gray	**4110T171**	260.74
Large-Capacity Waste Container									
E	120	400	52⅛″ × 27¼″	42½″	—	12″	Black	**9348T1**	464.56
Optional Lid for Large-Capacity Waste Container (E)							Black	**9348T12**	171.32
Optional 23-gal. Rectangular Waste Container for Large-Capacity Waste Container (E)							Beige, Black, Brown, Gray	**4080T7**	53.71

● Wheels are rubber. ■ Can be used with semi-automated collection systems. ★ Can be used with fully automated collection systems.

Metal Outdoor Waste Containers

F

G

H

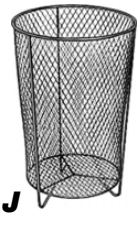
J

K

Styles F-H— Made of galvanized steel for good corrosion resistance, these economical containers have a steel-rod-reinforced top edge for dent resistance as well as corrugated walls for rigidity and durability. Same-size containers can be nested for convenient storage.

Hot-dipped galvanized steel container (noted with a ♣) provides extra leak and corrosion resistance.

Style H has a dome lid with self-closing push door. The lid is made of 22-ga. steel.

Styles J and ***K—*** The open-mesh design provides good ventilation and allows you to see the contents so you know when the containers need emptying.

Style J have top and bottom circular rod frames that are connected to three vertical rods for strength. They also have legs to keep contents off the ground.

Style K mounts to a wall as well as a 2″ dia. to 12½″ dia. pole (with optional strapping kit) to keep garbage up and out of the way. For easy waste removal, there's a hinged bottom with a padlock hasp that can be locked with a padlock (not included; max. shackle dia. of 5/16″) to prevent vandalism. Furnished with two 3/8″ dia. holes for wall mounting (fasteners not included) and two 1″ long slots for pole mounting (Type 304 stainless steel strapping kit sold separately). **To Order:** Please specify color.

	Cap., gal.	Overall Size Dia.	Overall Size Ht.	Overall Size Circum.	Metal Gauge	Available Colors		Each
Galvanized Steel with Wire Handle and Flat Lid								
F	6	12½″	15⅝″	39¼″	30	—	**4121T5**	$15.29
F	10	14¼″	20½″	44¾″	30	—	**4121T6**	16.62
F	10	15¾″	20¼″	50″	30	—	**4062T7♣**	46.49
Galvanized Steel with Side Handles and Flat Lid								
G	20	17″	23″	53″	30	—	**4121T1**	25.53
G	31	20″	27″	62″	30	—	**4121T3**	31.96
G	32	21¼″	26¼″	65″	23	—	**4068T6**	137.76
Galvanized Steel with Side Handles and Dome Lid								
H	32	21¼″	36¾″	65″	23	—	**4068T2**	254.62
Heavy Duty Steel Mesh with Open Top								
J	13	15″	20″	47″	16	Gray	**4016T4**	83.27
J	45	22″	35″	69″	16	Gray	**4016T2**	142.79
J	55	26″	35″	81⅝″	16	Gray	**4016T3**	161.52
Wall-Mount Heavy Duty Steel Mesh with Open Top								
K	10	11½″	23″	36″	16	Brown, Green	**4557T1**	146.67
Optional Strapping Kit for Pole Mounting Waste Container (K)							**4557T19**	33.98

♣ Made of hot-dipped galvanized steel.

Waste Containers for Needles and Blades

Also known as sharps containers, these rectangular containers are for disposing of needles, razor blades, and other sharp objects. All are made of rigid, puncture-resistant polypropylene and are tapered for nesting. For single use only, the exterior can be sterilized with steam (autoclaved). Color is red.

When full, properly dispose of container and contents. *Note:* Not for disposal in landfills.

Capacity	Overall Size Wd. × Dp.	Ht.		Each
1 qt.	4¼″ × 4″	6¼″	39955T41	$3.84
2.2 qt.	6½″ × 4½″	7¼″	39955T42	5.86
2 gal.	10½″ × 7¼″	10″	39955T51	8.95
8 gal.	15½″ × 11″	17½″	39955T61	24.42

8 gal.

Waste-Container Drum Covers

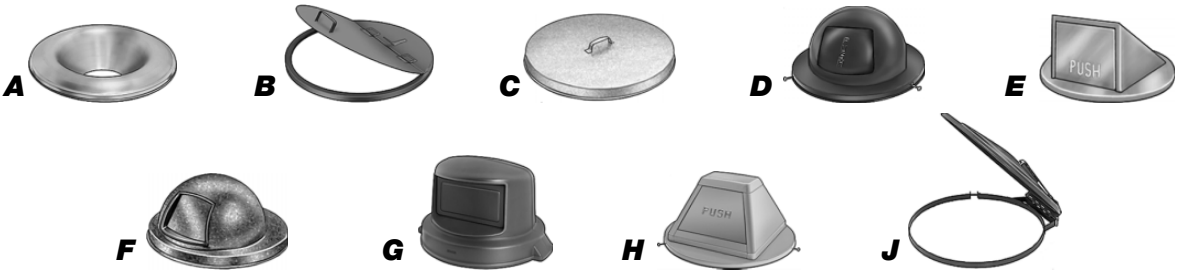

Turn your steel drum into a covered waste container by adding one of these covers. **To Order:** Where applicable, please specify color.

Style A have a funnel-shaped opening, which directs trash into the drum.

Style B are hinged and have a cover stop. The stop does not allow the covers to stay open unless you hold them open.

Styles D and ***H*** include thumb screws for fastening the covers to drums.

Style J is fire extinguishing when used with a steel drum. At 165° F, the fusible link melts to automatically drop the cover to snuff out a fire within. Includes a nut and bolt strap assembly for fastening the cover to a drum.

For Drum Size, gal.	Inside Dia.	Overall Ht.	Metal Gauge	Approvals	Available Colors		Each
Aluminum							
A 30	19⅜″	2⁵⁄₃₂″	20	—	—	44015T35	$52.93
A 55	23⅝″	6¼″	20	—	—	44015T34	75.07
Polyethylene							
A 55	23¹³⁄₁₆″	4³⁄₁₆″	—	—	Blue	9881T5	51.87
Steel							
B 30	20″	1¹⁄₁₆″	16	—	—	4102T31	98.18
B 55	24″	1¹⁄₁₆″	16	—	—	4102T11	138.28
C 55	24″	3″	24	—	—	4100T2	63.95
One-Door Self-Closing Steel							
D 30	20″	10″	20	CSFM ♦, FM ♦	Brown, Green	9894T1	99.87
D 55	24⅝″	11½″	20	CSFM ♦, FM ♦	Green, Red	9894T2	109.82
E 55	23¾″	11″	20	—	Green, White	9894T3	61.76
One-Door Self-Closing Galvanized Steel							
F 31-32	21⅛″	10½″	22	—	—	4096T5	125.75
F 55	24″	11¼″	24	—	—	4096T2	132.45
One-Door Self-Closing Polyethylene							
G 55	24″	17½″	—	—	Blue, Gray, Red, Yellow	9881T3	96.97
Two-Door Self-Closing Steel							
H 55	23¾″	12″	20	FM ♦	Gray, Green	9894T8	161.82
Self-Closing Steel with Fusible Link							
J 55	24¾″	2¾″	20	FM ♦	Red	4573T42	128.08

♦ When used with a steel drum.

Recycling Containers

Make recycling convenient.

Polypropylene Tote— Two or more of these rectangular containers can be nested for convenient storage.

Vinyl Bag and Steel Stand— Pair a bag with a stand (each sold separately) to collect recyclables. The *bag* has a drawstring closure. The *stand* is made of rust-resistant steel rod and folds for storage and portability.

Fiberboard Containers with Lid— Made from 50% recycled material, these square containers are lightweight, durable, and reusable. They are shipped flat and can be quickly assembled. *Optional clear garbage bags* (sold separately) can be used as liners. The bags are 2.0 mils thick.

Polypropylene Tote

Vinyl Bag and Steel Stand (Sold Separately)

Fiberboard Container with "Aluminum Cans Only" Imprint

	Cap., gal.	Overall Size	Ht.	Color		Each
Polypropylene Tote						
—	14	19½″ Wd. × 15½″ Dp.	14½″	Blue	40025T25	$16.42
Vinyl Bag and Steel Stand						
Vinyl Bag	30	16″ Wd. × 15″ Dp.	34″	Blue	40665T23	23.09
Steel Stand	—	—	30″	—	40665T1	26.58
Fiberboard Containers with Lid						
"Waste Only" Imprint	—	15″ Sq.	30″	White	40005T51	21.26
"Aluminum Cans Only" Imprint	—	15″ Sq.	30″	White	40005T52	21.26
"Office Paper Only" Imprint	—	15″ Sq.	30″	White	40005T53	21.26

Optional Clear Garbage Bags for Fiberboard Containers (50/Case) ..... 4166T581 **Per Case** $24.65

Recycling Can Crushers

Wall-Mount Can Crusher

Can Crusher with Container

Easily crush standard aluminum cans for space-saving storage. To use, simply place your aluminum can in one of these crushers and pull the handle down.

Wall-Mount Can Crusher—Made of steel, this crusher is 3¼″ Wd. × 8″ Ht. and has a 12″ long lever-style handle with comfortable foam grip. Color is gray with a black handle. Mounting hardware is included.

4009T1 ..... **Each** $10.91

Can Crusher with Container—This aluminum can crusher is furnished with a 30-gal. rectangular container that holds more than 400 crushed cans. Once you have crushed a can in the crusher, it conveniently drops directly into the container. Made of polyethylene, the can crusher is black and the container is beige. Overall size is 33″ Ht. × 16″ Wd. × 22″ Dp.

9868T5 ..... **Each** $99.82

Collapsible Waste Containers

Container Collapsed Down to 1½″ High

Open these handy containers when you need them and then collapse them down to 1½″ high when you don't for compact storage. Made of durable woven polyethylene, containers have a heavy duty steel spring, which provides support while they are in use. They also have handles for portability.

Cap., gal.	Overall Size Dia.	Opened Ht.	Circum.	Color		Each
32	19″	24″	59 11/16″	Green	**9424T3**	$13.22
38	19″	32″	59 11/16″	Green	**9424T5**	14.11

Oily Waste Cans

A

B

C

Hand Operated

C

Foot Operated

D

Temporarily store oil- and solvent-saturated rags, towels, wipes, paint brushes, and more. All cans are labeled "Empty Every Night" (unless noted) to encourage proper waste removal in your facility. All cans have lids.

To Order: Where applicable, please specify color.

Foot-operated cans allow convenient hands-free operation. Just step on the foot pedal to open the lid.

Style C has a raised ventilated bottom for better air circulation and heat dispersion.

Style D has four swivel casters with 2″ dia. steel wheels for mobility.

	Cap., gal.	Overall Size	Ht.	Approvals	Available Colors	Hand Operated	Each	Foot Operated	Each
Polyethylene Cans									
A Round	6	13½″ Dia.	16″	FM, OSHA	Red, Yellow	—	------	**40655T11**	$53.11
A Round	10	18″ Dia.	18″	FM, OSHA	Red, Yellow	—	------	**40655T12**	63.08
A Round	14	18″ Dia.	21″	FM, OSHA	Red, Yellow	—	------	**40655T13**	68.06
Steel Cans									
B Round	2	9⅝″ Dia.	9⅛″	FM, OSHA	Red, Yellow	**4045T7**	$45.42	—	—
C Round	6	11⅞″ Dia.	15⅞″	FM, OSHA, UL	Red, Yellow	**4070T51**	50.83	**4070T61**	50.80
C Round	10	13 15/16″ Dia.	18¼″	FM, OSHA, UL	Red, Yellow	**4070T52**	60.96	**4070T62**	62.44
C Round	14	16 1/16″ Dia.	20¼″	FM, OSHA, UL	Red, Yellow	**4070T53**	69.63	**4070T63**	79.99
C Round	21	18⅜″ Dia.	23 7/16″	FM, OSHA, UL	Red, Yellow	**4070T54**	118.33	**4070T64**	117.67
Large-Capacity Steel Mobile Can									
D Square	42	18″ Sq.	30″	—	Gray	—	------	**4076T11★**	303.43

★ Not labeled "Empty Every Night."

Pull-Out Waste and Recycling Containers

Waste and Recycling

Conceal waste and recyclables by installing these containers under a counter or inside a cabinet. The durable polypropylene containers resist dents. They mount to a steel frame with a ball-bearing slide for easy pull-out access. Mounting fasteners are included.

Waste and Recycling—Comes with two containers to separate waste from recyclables.

No. of Containers	Cap., gal.	Overall Size, Ht. × Wd. × Dp.	Extended Dp.	Color		Each
Waste Only						
1	8	19⅛″ × 9¾″ × 19¾″	34″	Black	**4805T11**	$59.32
Waste and Recycling						
2	5, 4	19⅛″ × 9¾″ × 18¼″	34½″	Black, Blue	**4805T12**	72.73

Indoor Cigarette Disposal Containers

Wall-Mount Rectangular Butt Containers with Slogan

Made entirely of steel, these containers are available with your choice of slogan (see below). All hold 20 ounces of sand (sold separately on this page) and have two keyhole slots that allow you to lift them off the wall for quick and easy emptying. The slots accept No. 5 screws (not included) for mounting.

Model 4968T17 is also furnished with a spring for holding cigarettes.

Available Slogans:
1—Smokers, Help Prevent Fires, Snuff Out Your Butts Here!
2—Smokers, Help Keep Our Place Clean, Snuff Out Your Butts Here!
3—Smokers, Help Keep Our Place Clean, Park or Snuff Your Butts!
4—No Smoking Beyond This Area, Snuff Out Your Butts Here!

Slogan	Overall Size, Ht. × Wd. × Dp.	Color		Each
1	7″ × 8″ × 5¼″	Red	4968T14	$14.29
2	7″ × 8″ × 5¼″	Yellow	4968T16	14.29
3	7″ × 8″ × 5¼″	White	4968T17	14.29
4	7″ × 8″ × 5¼″	Red	4968T18	14.29

Wall-Mount Round Butt-Concealing Container

To keep butts out of sight, this container has a split-top bowl with a lever that empties the butts into its removable receptacle. Container has a Type 304 stainless steel housing and split-top bowl. The receptacle is aluminum. Mounting fasteners are included.

Overall Size, Dia. × Ht. × Dp.		Each
9½″ × 9″ × 10″	4964T15	$77.50

Round Butt Containers

Both of these containers have a steel body with a black finish. The top bowls are aluminum, hold 32 ounces of sand (sold separately on this page), and lift off for easy cleaning.

Container with kickplate has a chrome-plated steel kickplate.

	Overall Size, Dia. × Ht.		Each
Without Kickplate	10⅛″ × 20″	5182T15	$43.15
With Kickplate	10″ × 20″	5182T25	54.61

With Kickplate

Round Butt and Waste Containers

In addition to a butt container, you'll get a handy waste container all in one. Each has a removable top bowl for butts, which holds 30 ounces of sand (sold separately on this page), and a side opening for trash. Color is black.

Steel—Container has an aluminum top bowl, removable plastic liner, and 5½″ dia. trash opening.

Polyethylene—Container has a chrome-plated steel top bowl, removable metal liner, and 6⅞″ Wd. × 4″ Ht. trash opening.

	Overall Size, Dia. × Ht.		Each
Steel	10″ × 27″	4599T32	$96.71
Polyethylene	12½″ × 19½″	4599T67	116.66

Steel

Ashtrays

Round

Triangular

Minimum storage space is needed for these stackable ashtrays. All are made of heat-resistant plastic. Color is black. Package quantity is 6.

	Overall Size		Per Pkg.
Round	4¾″ Dia. × 1¾″ Ht.	4970T21	$14.84
Triangular	3¾″ Wd. × ⅝″ Ht.	4970T23	11.07

Self-Extinguishing Butt Cans

FM approved, these round cans have a removable, self-extinguishing lid that prevents fire from starting inside the cans. The cans are gray steel; lids are brushed aluminum and come furnished with a removable, nickel-plated steel wire guard to discourage paper disposal. For indoor use.

Cap., gal.	Overall Size, Dia. × Ht.		Each
4½	12⅛″ × 14¼″	5135T14	$59.09
6	12⅛″ × 17¾″	5135T15	64.58

Outdoor Cigarette Disposal Containers

Keep unsightly cigarette butts out of plain view with these outdoor butt-concealing containers.

Wall-Mount Self-Extinguishing Butt-Concealing Container

Snuff out your cigarettes on the container screens and then drop them in. Containers are specially designed to limit the flow of oxygen, so cigarette butts are quickly extinguished and the risk of fire is reduced.

Made of Type 304 stainless steel with a removable galvanized steel liner, this rectangular container has a hinged key-lock cover for easy emptying and vandal resistance. It comes furnished with one key (multiple containers open with the same key).

Container helps you comply with the Americans with Disabilities Act when properly installed. Mounting hardware included.

Overall Size, Ht. × Wd. × Dp.	Butt Opening, Ht. × Wd.		Each
12½″ × 10″ × 3″	1 13/32″ × 1½″	9647T11	$129.98

Self-Extinguishing Butt-Concealing Containers

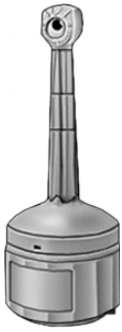
Polyethylene

Steel

Aluminum

The long neck limits the flow of oxygen, so cigarette butts are quickly extinguished and the risk of fire is reduced. A broad base provides stability and prevents spills.

Polyethylene—The base has a lift-off top and removable galvanized steel pail for easy emptying. **To Order:** Please specify color: beige, black, gray, or green.

Steel—FM approved as fire safe and self extinguishing. The top and the base are connected with a nickel-plated brass chain and have Type 304 stainless steel latches to form a tight seal. The base also includes nylon glides. **To Order:** Please specify color: black or bronze.

Optional anchor kit includes a ¼″ Dia. × 1″ Lg. steel lag screw with ¼″ Dia. × 1″ Lg. steel lag anchor and washer for permanent placement as well as theft resistance.

Aluminum—For modern good looks, these containers have a simple streamlined design. The top lifts off the base for easy emptying. **To Order:** Please specify color: black or silver.

	Overall Size, Base Dia. × Ht.	Butt Opening		Each
Polyethylene	16½″ × 38½″	11½″ Dia.	5171T6	$44.85
Steel	16″ × 37½″	11¼″ Dia.	6683T2	172.59
Aluminum	12¾″ × 41″	3½″ Wd. × 1″ Ht.	9343T8	172.62
Optional Anchor Kit for Steel Receptacle			6683T4	16.21

Stone-Panel Butt-Concealing Container

This attractive square container has a cover that protects the built-in ashtray from outdoor elements. The ashtray holds 32 ounces of sand. A package of black pebble sand is included. Frame is anodized aluminum with a bronze finish.

To Order: Please specify black or natural (tan/beige blend) stone panels.

Overall Size, Sq. × Ht.		Each
10½″ × 29″	5133T14	$423.01

Sand for Cigarette Disposal Containers

	Size		Each
Black Sand	25 lbs. (2-gal. Pail)	4086T13	$43.56
White Sand	25 lbs. (2-gal. Pail)	4086T14	43.56
Zinc-Plated Steel Sand Sifter	16″ Lg.	4086T27	40.32

Aerosol Can Recycling System

Turn your aerosol cans into recyclable scrap metal. This system safely punctures aerosol cans to relieve the pressure. A combination filter then filters VOCs and removes odors and harmful emissions from residual gas, and returns residual liquids to your drum. This exempts cans from disposal regulations for hazardous waste. Works on almost any size aerosol can, including 3″ dia. jumbo cans.

To use, thread the puncturing unit directly onto the 2″ dia. opening of a 30- or 55-gallon drum (not included). Then thread the combination filter with replaceable carbon cartridge onto a 3/4″ opening of the drum. Insert your can and push the lever to puncture.

System is made primarily of aluminum and measures 15″ high. It includes safety goggles and a 6-ft. long antistatic wire with a ring terminal, which prevents static buildup by grounding the drum as required by OSHA.

		Each
Complete System	41275T51	$712.21
Replacement Parts		
Combination Filter with Carbon Cartridge	41275T52	172.59
Carbon Cartridge	41275T53	103.91
Can Gasket for Puncture Unit	41275T55	9.58

Air-Powered Pail, Can, and Filter Crusher

Crush quart, gallon, and five-gallon pails and cans as well as oil filters to less than 20% of their original height in under two minutes. *Note:* Not recommended for high-density polyethylene pails and cans.

To use, simply connect this crusher to any compressed air source with an 85-115 psi range. With the touch of a button, you'll get up to 13,000 pounds of force at 100 psi. Crusher uses 9 cfm of air at 100 psi. Air inlet connection is a 1/4″ NPT female fitting.

Crusher is constructed primarily of steel. For safety, it will not operate unless the door is closed. The inside chamber size is 12″ Dia.×15″ Ht. The bottom is recessed with a drain and hose to allow liquid waste disposal. Ram stroke is 14″. Color is red.

	Overall Size, Ht.×Wd.×Dp.		Each
Crusher	44″×22″×21″	41145T51	$2,922.84
Optional Steel Floor Stand	36″×22″×30″	41145T52	154.38

Combination Trash Compactor/ Drum Crusher

As a crusher, this machine uses 38,000 pounds of force to crush 55-gallon drums down to about 6″ in only 25 seconds. As a compactor, it compresses the contents inside the drum. To convert this machine from a crusher to a compactor, all you have to do is remove the drum-crushing plate.

All moving parts are completely enclosed. Safety features include a red emergency stop button, a pressure-relief valve to prevent overload, and a mechanism that prevents the motor from running if the door is unlocked. Compactor/crusher also has built-in 7 5/8″ Wd.×2 5/8″ Ht. forklift channels.

Constructed of steel, this compactor/crusher has a compaction ratio of up to 6:1. It has a 6.5-hp, 208-230/460 VAC, 60 Hz, 3-phase motor and a keyed on/off switch. The hydraulic system operates on 3,000 psi and has a 15-gallon oil reservoir. A hardwire electrical connection is required.

Inside chamber size is 37″ Ht.× 25″ Wd.×25″ Dp. Ram stroke is 36″. Color is blue. Push-button controls meet NEMA 4 standards. Compactor/crusher meets OSHA and JIC (Joint Industrial Council) standards.

Optional Drip Pan—This aluminum pan fits under the compactor/crusher to collect any liquid waste remaining in the drums.

	Overall Size, Ht.×Wd.×Dp.	Ram Plate Dia.		Each
Crusher/Compactor	95″×36″×40″	21″	44565T12	$8,248.55
Optional Drip Pan	3″×30″×20″	—	44565T14	169.05

Manual Trash Compactor

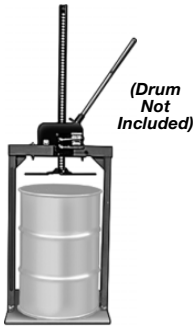

Compact trash the economical way. With no need for fuel or electrical power, this manual compactor can be used anywhere—on job sites or in the plant.

Constructed of steel, this compactor has a compaction ratio of up to 4:1. Just pull the ratchet handle down to compact trash in a 55-gallon drum (not included) with up to 4,000 pounds of force. The handle is 26″ long. Ram stroke is 35″. Color is red.

Overall Size, Ht.×Wd.×Dp.	Ram Plate Dia.		Each
90″×29″×27″	20″	40245T23	$840.04

Air-Powered Trash Compactor

In just one minute or less, this powerful compactor can easily compact trash in a 55-gallon drum (not included). To use, just connect to any compressed air source with a 70-150 psi range and get ready to unleash 2,600 pounds of force at 100 psi and up to 4,000 pounds of force at 150 psi. Compactor uses 8 cfm of air at 100 psi. Air inlet connection is a 1/4″ NPT female fitting.

Constructed of steel, this compactor has a compaction ratio of up to 4:1. It operates with a two-handed safety lever that's designed to keep your hands and face away from the drum. The handle is 46″ long. Ram stroke is 24″. Color is red.

Overall Size, Ht.×Wd.×Dp.	Ram Plate Dia.		Each
76″×36 1/2″×27″	20″	40585T12	$3,157.63

Glass Crusher

This machine provides an efficient way to crush glass, while saving you money on waste removal and handling costs. It breaks glass containers up to one gallon in volume and up to 8″ in diameter for an 80% size reduction. Unit crushes as fast as you can feed it.

Crusher is steel and has an aluminum barrel cover designed to fit on top of either a 30- or 55-gallon steel drum (not included). A window lets you see when the drum is full. The crushing impeller is made of hardened steel for maximum wear resistance.

Unit is powered by a totally enclosed 1/2-hp, 115/230 VAC, 60 Hz, single-phase motor and has an 8-ft. cord with three-prong plug.

Chute has an 8 1/4″ square opening that is 21″ long. Height of crusher from bottom of barrel cover to top of chute is 25 1/2″. Height when placed on a 55-gallon drum is about 61″.

Note: Do not use for crushing fluorescent tubes.

5003T13 ..... **Each** $1,397.33

Rooftop Disposal Chutes

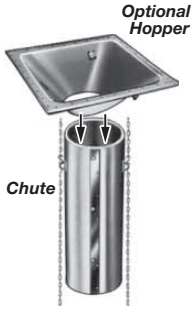

To direct trash into your dumpster and reduce the danger of flying debris, use these trash chutes for roofing, demolition, and other job-site work. Made of tough orange polyethylene, they set up in just minutes.

Chutes are tapered and can be used on buildings from one to ten stories high. To assemble, simply hook the chute sections together with the included support chains, hoist them to roof level, and secure them to the building with strapping (not included). Chutes are easy to disassemble and can be flattened for storage.

Optional Hopper—This hopper is designed to funnel trash into the 18″ dia. chute. It's made of PVC and measures 37″ square with an approximately 14″ dia. hole.

Chute Size		Each
18″ Dia.×4-ft. Lg.	4986T42	$124.56
30″ Dia.×4-ft. Lg.	4986T43	132.20
Optional Hopper		
For 18″ Dia. Chute	4986T41	212.19

Protective Equipment

Gloves	1766
Boots & Shoes	1781
Protective Clothing	1785
Fall Protection	1798
Shower & Eye Wash Stations	1801
First-Aid Supplies	1806
Safety Glasses	1811
Face Shields	1816
Welding Glasses & Helmets	1817
Hard Hats	1820
Earmuffs & Earplugs	1822
Respirators	1824
Protective Curtains & Screens	1829
Safety Mirrors	1833
Fire Protection	1836

Communication & Signs

Buzzers, Bells & Horns	1840
Speakers	1845
Radios & Telephones	1849
Ethernet Switches	1852
Data Cords, Cable & Connectors	1856
Status Indicating & Warning Lights	1870
Signs	1879
Message & Bulletin Boards	1897

Pedestrian & Vehicular Traffic Control

Floor Marking Tape	1903
Road Safety	1906
Warning Barriers & Fencing	1908
Gates & Railing	1916
Machine Guards	1920
Framing Fittings & Components	1922

Identification & Marking

Letters & Numbers	1934
Markers	1938
Stamps	1942
Plates, Tags & Labels	1953
Label Printers	1971

Office Supplies

Clocks & Timers	1975
Organizers & Document Holders	1981
Computer Accessories	1988
Reference Books	1994

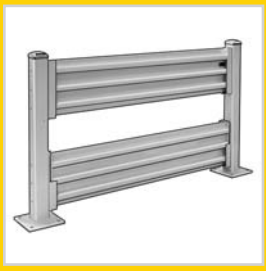

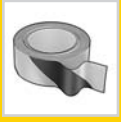

About Gloves

Glove Sizing

To determine your glove size, wrap a tape measure around your palm as shown. This number in inches, and the corresponding letter code below it in the chart, is your glove size. Gloves are listed in men's sizes, unless noted.

Size, in.	6-7	7-8	8-9	9-10	10-11	11-12
Men's	XS	S	M	L	XL	XXL
Women's	S	M	L	XL	____	____

Glove sizes are listed in alpha (S, M, L) or numeric (7, 8, 9) based on manufacturer's labeling. Length is measured from the tip of the middle finger to the end of the glove.

Thickness is measured in mils (1 mil = 0.001″). Thicker materials are more durable for longer life; thinner materials offer better dexterity.

Finger cot sizes are based on their respective glove size.

Glove Surfaces

Smooth— Provide the best dexterity.

Textured— Ridges or pebbles on the surface allow a better grip.

Rough— Texture is similar to sandpaper. Ideal for handling slippery objects.

Glove Linings

Unlined Gloves— Offer the best dexterity because there is less of a barrier between your hand and the material you are working with.

Lined Gloves— Provide comfort by absorbing perspiration. Linings also make gloves easier to pull on and off. *Flocked gloves* have a very thin coating of fibers that form the lining. *Knit linings* have a distinct layer of fabric but still offer good dexterity. *Jersey linings* have a thicker layer of fabric than knit linings and offer better heat and cold protection.

Glove Wear

Inspect all gloves prior to each use and wash to remove chemicals prior to storing. Disposable gloves should only be considered for incidental chemical contact.

Disposable Gloves

ⓘ For additional information about the chemical compatibility of these gloves, go to mcmaster.com and search for **5306TAC.**

Disposable Gloves

For the dexterity and sensitivity needed for intricate work, choose these gloves. All gloves are ambidextrous and conform to your hand, unless noted. They're made from materials that comply with FDA regulations for food contact, unless noted. *Lightly powdered* gloves are easier to pull on and off. *Powder-free* gloves are better for applications where particulate contamination is a concern.

Latex (natural rubber) gloves have excellent elasticity. ***PVC (polyvinyl chloride)*** gloves combine strength with chemical resistance. ***Nitrile*** gloves are a good alternative if you have concerns about latex allergies. These gloves have the best chemical resistance of all the disposable gloves we offer. ***Polyethylene*** gloves are economical and commonly used in food preparation. They are the thinnest disposable gloves we carry and don't conform to your hand.

To Order: Please specify size.

	Thick., mils	Lg.	Color	Surface	Available Sizes	Fits Dispenser(s)★			1-5	6-Up
Standard, Chemical Resistant, Disposable										
Latex										
Lightly Powdered	5	9½″	Beige	Smooth	S,M,L,XL	Style 1, Style 3	6072T2	**Per Box of 100**	$10.33	$9.39
Lightly Powdered	5	9½″	Green	Smooth	S,M,L	Style 2, Style 3	6072T4	**Per Box of 100**	15.71	14.26
Powder Free	5.5	9″	Beige	Textured	S,M,L,XL	Style 1, Style 3	6072T3♠	**Per Box of 100**	17.23	15.47
Powder Free	8	12″	Beige	Textured	S,M,L,XL	Style 1, Style 3	6072T1	**Per Box of 50**	16.67	15.12
Powder Free	13	12″	Blue	Textured	S,M,L,XL	Style 1, Style 3	6072T94♦	**Per Box of 50**	23.11	20.60
PVC										
Lightly Powdered	4	9″	Clear	Smooth	S,M,L,XL	Style 1, Style 3	5327T8	**Per Box of 100**	10.66	9.97
Lightly Powdered	4	10″	Clear	Smooth	S,M,L,XL	Style 2, Style 3	5327T2	**Per Box of 100**	9.48	8.53
Lightly Powdered	5	9½″	Blue	Smooth	S,M,L,XL	Style 1, Style 3	5327T4	**Per Box of 100**	13.97	13.06
Lightly Powdered	6.5	10″	Green	Smooth	S,M,L,XL	Style 2, Style 3	5327T6	**Per Box of 100**	15.99	14.31
Powder Free	3.5	9″	Clear	Smooth	S,M,L,XL	Style 1, Style 3	5599T51	**Per Box of 100**	12.62	11.65
Powder Free	5	9½″	Beige	Smooth	S,M,L,XL	Style 1, Style 3	5599T31	**Per Box of 100**	10.40	9.89
Nitrile										
Lightly Powdered	4	9½″	Green	Smooth	S,M,L,XL	Style 1, Style 3	52555T9	**Per Box of 100**	13.28	12.47
Lightly Powdered	4	9½″	Blue	Smooth	XS,S,M,L,XL	Style 1, Style 3	52555T16	**Per Box of 50**	10.91	10.21
Lightly Powdered	4	9½″	Blue	Smooth	S,M,L,XL	Style 2, Style 3	52555T3	**Per Box of 100**	16.33	15.38
Lightly Powdered	5	9½″	Blue	Textured	S,M,L,XL	Style 1, Style 3	52555T4	**Per Box of 100**	15.00	13.73
Lightly Powdered	8	9½″	Blue	Smooth	S,M,L,XL	Style 2, Style 3	52555T7	**Per Box of 50**	20.68	19.36
Powder Free	5	9½″	Green	Smooth	S,M,L,XL	Style 1, Style 3	52555T5	**Per Box of 100**	16.16	15.15
Powder Free	4	9½″	Blue	Smooth	XS,S,M,L,XL	Style 1, Style 3	52555T17	**Per Box of 50**	11.59	10.85
Powder Free	5	9½″	White	Textured	S,M,L,XL	Style 1, Style 3	52555T15	**Per Box of 100**	17.80	16.80
Powder Free	5	9½″	Blue	Textured	S,M,L,XL	Style 1, Style 3	52555T1	**Per Box of 100**	15.62	14.09
Powder Free	6	11″	Blue	Smooth	S,M,L,XL	Style 2, Style 3	52555T2	**Per Box of 50**	19.43	18.19
Powder Free	6	12″	Green	Textured	S,M,L,XL	Style 1, Style 3	52555T6	**Per Box of 50**	14.10	13.30
Polyethylene										
Powder Free	1	12″	Clear	Textured	S,M,L	____	9737T25	**Per Box of 100**	1.76	1.57
Powder Free	1	18″	Clear	Smooth	L	____	9737T59	**Per Box of 250**	49.58	45.46
Sterile—*Each pair comes individually packaged.*										
Latex										
Powder Free	5.9	9½″	Beige	Textured	S,M,L	Style 1, Style 3	6072T6	**Per Box of 100**	54.74	49.52
PVC										
Powder Free	2	9½″	Beige	Smooth	S,M,L	Style 1, Style 3	5599T41	**Per Box of 100**	40.11	36.00
Static Dissipative—*Remove electrical charge from the items you're handling. Surface resistivity is 4.33×10^{11} ohms/sq.*										
Nitrile										
Powder Free	4	9½″	Black	Textured	S,M,L,XL	Style 1, Style 3	9328T5	**Per Box of 50**	9.38	8.51

★ Dispenser(s) are sold separately on page 1767. ♠ XL gloves come in a box of 90.
♦ Does not comply with FDA regulations for food contact.

(Continued on following page)

For information about gloves and sizing, see page 1766.

ⓘ For additional information about the chemical compatibility of these gloves, go to mcmaster.com and search for **5306TAC**.

Disposable Gloves *(Continued from previous page)*

To Order: Please specify size.

	Thick., mils	Lg.	Color	Surface	Available Sizes	Fits Dispenser(s)★			1-5	6-Up
Skin Soothing—*Inside of glove is coated with aloe to prevent chapping.*										
Latex										
Powder Free	6.3	9½″	Green	Textured	XS,S,M,L,XL	Style 1, Style 3	9809T1●	**Per Box of 100**	$20.65	$18.54
PVC										
Powder Free	2	9½″	Green	Smooth	XS,S,M,L,XL	Style 1, Style 3	9689T4	**Per Box of 100**	13.13	11.79
Nitrile										
Powder Free	5.5	9½″	Green	Textured	XS,S,M,L,XL	Style 1, Style 3	9625T2	**Per Box of 100**	21.31	19.12
Powder Free	6.7	12″	Green	Textured	S,M,L,XL	Style 1, Style 3	9625T3	**Per Box of 50**	20.18	18.11

★ Dispensers are sold separately on this page. ● XL gloves come in a box of 90.

Disposable-Glove Dispensers

Store your boxes of gloves in an easily accessible location. All dispensers have two ½″ slotted mounting holes for wall mounting (fasteners not included).

Styles 1&2— Hold one box of gloves. You will find matching dispenser style(s) listed with our disposable gloves sold separately on this page and page 1766.

Style 3— Hold two boxes of gloves. You will find matching dispenser style(s) listed with our disposable gloves sold separately on this page and page 1766.

Styles 1&2

Style 3

Material	Inside Dimensions, Ht.×Wd.×Dp.		Each
Style 1			
White Plastic	10″×5½″×3¾″	52795T212	$21.17
White Enamel Steel	10″×5½″×3¾″	52795T112	30.33
Type 304 Stainless Steel	10″×5½″×3¾″	52795T113	46.14
Style 2			
Clear Plastic	10″×6½″×4″	52795T216	30.59
White Enamel Steel	10″×6½″×3¾″	52795T114	42.00
Style 2 (Cont.)			
Type 304 Stainless Steel	10″× 6½″×3¾″	52795T115	$65.88
Style 3			
Clear Plastic	10″×10½″×3¾″	52795T116	33.28
White Enamel Steel	10″×10½″×3¾″	52795T117	42.32
Type 304 Stainless Steel	10″×10½″×3¾″	52795T118	60.18

Disposable Finger Cots

Ideal when gloves are too restrictive, these cots provide finger protection while allowing unlimited hand movement. They also minimize contamination from body oils, salts, and particulates.

Latex (Natural Rubber)— Use for general personal and product protection.

Nitrile Antistatic— A good choice if latex allergies are a concern. Surface resistivity is 10^9 ohms/sq.

To Order: Please specify size.

Finger Cot Dispenser— Keeps cots clean and ready to use. It's made of white acrylic with a clear lid and mounts on a table or wall. It has two ⅛″ dia. holes for wall mounting (fasteners not included). Holds approximately 1500 cots. Size is 13″ Ht.×6″ Wd.×8″ Dp.

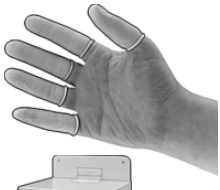

Dispenser

	Thick., mils	Color	Surface	Available Sizes	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Latex								
Powdered	3	White	Smooth	S,M,L,XL	144	5291T6	$4.51	$4.06
Powdered	3	White	Smooth	S,M,L,XL	1440	5291T16	26.38	23.61
Lightly Powdered	3	Beige	Smooth	S,M,L,XL	1440	5291T17	27.83	25.18
Lightly Powdered	9	White	Smooth	S,M,L,XL	144	5291T24	11.49	10.49
Nitrile								
Antistatic	3	White	Smooth	S,M,L	720	5516T2	37.50	34.09
Finger Cot Dispenser						56045T11	**Each**	$67.64

Finger-Protection Tape

Protect as small or large a part of each finger as needed. This self-adhesive gauze allows maximum sensitivity, dexterity, and grip. Tape bonds only to itself and will not stick to skin, hair, or clothing. Use to avoid cuts, burns, and abrasions.

Cotton with Latex (Natural Rubber)— Open-mesh design is water resistant and allows the skin to breathe.

To Order: Please specify color: blue, green, tan, or white.

Latex-Free Vinyl— Waterproof and ideal where latex allergies are a concern. Color is pink.

Cotton with Latex

Roll Size, Wd.×Lg.	Rolls/ Pkg.		Per Pkg. 1-5	Per Pkg. 6-Up
¾″×10 yds.	16	5545T1	$11.15	$9.78
¾″×30 yds.	16	5545T3	23.73	21.24
1″ ×10 yds.	12	5545T5	11.16	9.79
1″ ×30 yds.	12	5545T9	23.73	20.87

Latex-Free Vinyl

Roll Size, Wd.×Lg.		Per Roll 1-11	Per Roll 12-Up	Roll Size, Wd.×Lg.		Per Roll 1-11	Per Roll 12-Up
¼″×5 yds.	9330T1	$2.78	$2.40	1½″×5 yds.	9330T5	$8.48	$7.34
½″×5 yds.	9330T2	2.79	2.41	2″ ×5 yds.	9330T6	11.14	9.64
¾″×5 yds.	9330T3	4.13	3.57	3″ ×5 yds.	9330T7	16.71	14.46
1″ ×5 yds.	9330T4	5.71	4.94	4″ ×5 yds.	9330T8	22.28	19.28

Disposable Sleeves

Designed for one-time use, these sleeves cover the arm from the wrist to past the elbow. Sleeves can be combined with gloves for complete arm protection. Elastic at both ends provides a secure and snug fit. One size fits all. ***Polyethylene*** sleeves are more economical than vinyl, but ***vinyl*** sleeves provide better protection against chemicals and abrasion.

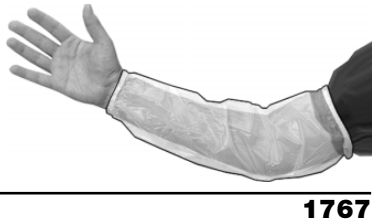

Material	Thick., mils	Lg.	Color	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Polyethylene	1.25	18″	Clear	100	52575T23	$14.48	$13.25
Vinyl	4	18″	Clear	12	52575T15	7.38	6.70
Vinyl	8	18″	Clear	12	52575T17	9.66	8.43

Clean Room & Acid-Resistant Gloves

For information about gloves and sizing, see page 1766.

For additional information about the chemical compatibility of these gloves, go to mcmaster.com and search for **5306TAC**.

Clean Room Disposable Gloves

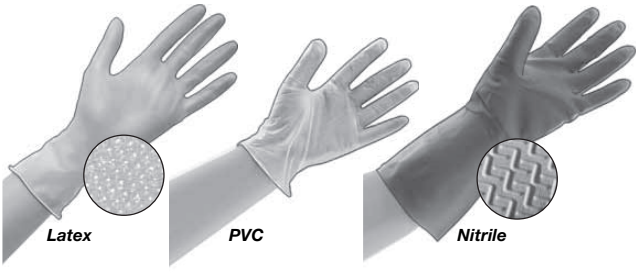

Packaged in a clean room environment, these powder-free, unlined gloves prevent contamination of your work. *Class 100* gloves are packaged in a clean room containing fewer than 100 particles larger than 0.5 microns in each cubic foot of air space. *Class 10* gloves are packaged in a higher-rated clean room containing fewer than 10 particles larger than 0.5 microns in each cubic foot of air space.

Standard— *Latex (natural rubber)* gloves have excellent elasticity and conform to the hand. *PVC (polyvinyl chloride)* gloves are antistatic and chemical resistant. All are ambidextrous.

Heavyweight— Thicker than standard gloves and can last longer depending on your application. *Nitrile* gloves provide chemical protection and superior abrasion, cut, and puncture resistance. *Tri-polymer* gloves combine latex, neoprene, and a nitrile blend to offer durability, comfort, and chemical resistance.

To Order: Please specify size.

Class	Material	Thick., mils	Lg.	Color	Surface	Available Sizes	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Standard										
100	Latex	6	12″	Beige	Textured	S,M,L,XL,XXL	50 pairs	**5995T9**	$45.89	$42.83
10	PVC	5	9½″	Clear	Smooth	S,M,L,XL	50 pairs	**5601T6**	28.26	25.34
100	PVC	6	12″	Clear	Smooth	S,M,L,XL	50 pairs	**5995T8**	24.69	23.24
									Per Pair Partial Pkg.	**Per Pair** Full Pkg.
Heavyweight										
10	Nitrile	11	13″	Green	Textured	7,8,9,10,11	12 pairs	**5221T6**	$3.00	$2.79
10	Tri-Polymer	20	14″	Beige	Textured	7,8,9,10,11	12 pairs	**5330T3**	3.41	3.27

Clean Room Disposable Finger Cots

Packaged in a Class 100 clean room environment, these latex (natural rubber) cots prevent contamination of your work. A Class 100 clean room contains fewer than 100 particles larger than 0.5 microns in each cubic foot of air space.

Latex cots are washed to eliminate residue. ***Antistatic latex*** cots can be used with Class II/Category B electronics and are washed to reduce contamination. Surface resistivity is less than 10^{12} ohms/sq.

To Order: Please specify size.

Thick., mils	Color	Surface	Available Sizes	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Latex							
3	Beige	Smooth	S,M,L,XL	720	**5291T19**	$15.98	$14.30
Antistatic Latex							
3	Pink	Textured	S,M,L,XL	720	**5540T55**	21.61	19.20
5	Pink	Textured	S,M,L,XL	720	**5540T65**	30.25	27.50

Acid-Resistant Latex Gloves

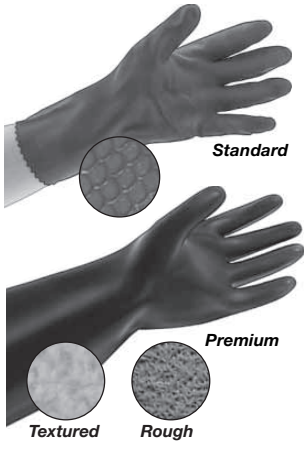

Latex (natural rubber) gloves provide good strength, dexterity, and chemical resistance. They resist most acids, alcohols, and animal fats. All blue gloves and 5306T55 are made from materials that comply with FDA regulations for food contact. ***Premium*** gloves are more durable than standard gloves.

To Order: Please specify size.

Thick., mils	Lg.	Color	Lining	Surface	Available Sizes	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Standard									
17	12″	Blue	Unlined	Textured	7,8,9,10	12 pairs	**5306T87**	$15.18	$13.77
20	12″	Yellow	Flocked	Textured	7,8,9,10	6 pairs	**5306T34**	9.28	8.35
20	12″	Blue	Flocked	Textured	7,8,9,10	6 pairs	**5306T17**	9.28	8.35
								Per Pair Partial Pkg.	**Per Pair** Full Pkg.
Premium									
21	12″	Orange	Flocked	Textured	7,8,9,10	12 pairs	**5306T55**	$3.34	$3.18
30	13″	Orange	Flocked	Textured	7,8,9,10	12 pairs	**5306T99**	3.44	3.24
40★	12″	Blue	Knit	Rough	S,M,L,XL	12 pairs	**5306T83**	5.61	5.27
47	17″	Black	Unlined	Smooth	M,L,XL	12 pairs	**5306T5**	13.76	13.06
59	24″	Black	Unlined	Smooth	M,L,XL	6 pairs	**5306T9**	22.78	21.62

★ Mil thickness is approximate on gloves with a knit lining.

Acid-Resistant Nitrile/Latex Gloves

In addition to dexterity and abrasion resistance, these latex (natural rubber) gloves offer an added layer of security. The hands of these green gloves are dipped in a blue-colored nitrile for strength. When the blue coating wears off to reveal green, it's time to replace the gloves. They resist acids, alkalies, fats, and grease. Made from materials that comply with FDA regulations for food contact.

Thick., mils	Lg.	Color	Lining	Surface	Size	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
26	13″	Blue	Flocked	Textured	6	12 pairs	**14945T141**	$2.50	$2.40
26	13″	Blue	Flocked	Textured	7	12 pairs	**14945T142**	2.50	2.40
26	13″	Blue	Flocked	Textured	8	12 pairs	**14945T143**	2.50	2.40
26	13″	Blue	Flocked	Textured	9	12 pairs	**14945T144**	2.50	2.40
26	13″	Blue	Flocked	Textured	10	12 pairs	**14945T147**	2.50	2.40

For information about gloves and sizing, see page 1766.

For additional information about the chemical compatibility of these gloves, go to mcmaster.com and search for **5306TAC**.

Oil- and Acid-Resistant PVC Gloves

A curved finger design provides better dexterity for delicate operations involving acids. These PVC (polyvinyl chloride) gloves resist alcohols and grease.

31″ long gloves have a ½″ dia. plastic grommet on each sleeve that allows you to tie them across your shoulders.

To Order: Please specify size where necessary.

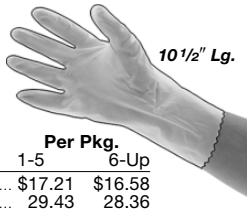

Thick., mils	Lg.	Color	Lining	Surface	Available Sizes	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
10	10½″	Yellow	Unlined	Smooth	S,M,L,XL	12 prs.	52505T6	$17.21	$16.58
20	10½″	Yellow	Unlined	Smooth	L,XL	12 prs.	52505T7	29.43	28.36

Thick., mils	Lg.	Color	Lining	Surface	Available Sizes	Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
25	31″	Black	Unlined	Smooth	L	4 prs.	5597T55	$28.31	$26.65

Oil- and Acid-Resistant Nitrile Gloves

Unlike latex (natural rubber), nitrile acts as a barrier to oil and petroleum products. These gloves resist solvents, some acids, and abrasion. They're made from materials that comply with FDA regulations for food contact. **To Order:** Please specify size.

Thick., mils	Lg.	Color	Lining	Surface	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
9	12″	Blue	Unlined	Textured	7,8,9,10,11	12 pairs	5415T91	$1.82	$1.71
11	13″	Green	Unlined	Textured	7,8,9,10,11	12 pairs	5415T22	1.95	1.85
15	13″	Green	Flocked	Textured	7,8,9,10,11	12 pairs	5415T36	2.14	2.04
15	13″	Blue	Flocked	Textured	7,8,9,10,11	12 pairs	5415T27	2.02	1.93
15	13″	Green	Unlined	Textured	7,8,9,10,11	12 pairs	5415T31	2.14	2.01
18	13″	Green	Flocked	Textured	7,8,9,10,11	12 pairs	5415T45	2.23	2.12
22	15″	Green	Unlined	Textured	8,9,10,11	12 pairs	5415T23	6.81	6.44
22	19″	Green	Unlined	Textured	7,8,9,10,11	12 pairs	5415T46	8.15	7.76

Oil- and Acid-Resistant Neoprene Gloves

Thicker than most nitrile gloves, these neoprene gloves last longer in comparable service. They protect your hands from alcohols, acids, and oils and are made from materials that comply with FDA regulations for food contact, unless noted. Color is black.

Neoprene—31″ long gloves have a 5/16″ dia. brass grommet on each sleeve that allows you to tie them across your shoulders.

Double-Dipped Neoprene— These gloves have an additional coating for added safety. When the inner color shows through, it's time to replace the gloves. **To Order:** Please specify size.

Neoprene—30 mils thick (approx.)

Lg.	Lining	Surface	Size	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
10″	Knit	Smooth	10	12 pairs	5309T1●	$6.51	$6.20
12″	Knit	Smooth	10	12 pairs	5309T3	9.52	9.02
12″	Knit	Rough	10	6 pairs	5310T2	15.14	14.04
14″	Knit	Smooth	10	12 pairs	5309T4	11.20	10.62
14″	Knit	Rough	10	6 pairs	5310T3	15.92	14.76
18″	Knit	Smooth	10	6 pairs	5309T5	17.22	16.32
18″	Knit	Rough	10	4 pairs	5310T4	22.76	21.11
31″	Knit	Smooth	10	4 pairs	5597T56▲	53.24	50.02

● Have a knit wrist. ▲ Not approved for food contact.

Double-Dipped Neoprene

Thick., mils	Lg.	Inner Color	Lining	Surface	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
40★	12″	Blue	Knit	Rough	6,7,8,9	12 pairs	5409T7	$6.57	$6.19
40	14″	Red	Unlined	Textured	9,10,11	6 pairs	5278T7	16.77	15.10

★ Mil thickness is approximate on gloves with a knit lining.

Oil- and Acid-Resistant Neoprene/Latex Gloves

Neoprene and latex (natural rubber) give these gloves flexibility and comfort. They're an economical alternative to all-neoprene gloves but still provide acid and oil resistance. Made from materials that comply with FDA regulations for food contact, unless noted.

Neoprene-coated latex gloves have an additional coating for longer life. 5409T11 gloves have a blue inner color. When the blue shows through, it's time to replace the gloves.

To Order: Please specify size.

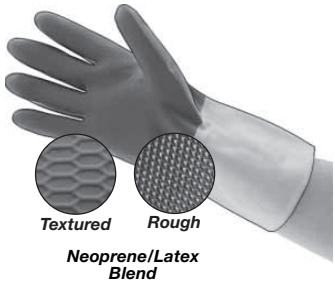

Thick., mils	Lg.	Color	Lining	Surface	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Neoprene/Latex Blend									
20	12″	Green	Flocked	Textured	M,L,XL	12 pairs	5283T6	$2.44	$2.31
28	12″	Blue/Yellow	Flocked	Textured	S,M,L,XL	12 pairs	5283T42▲	2.58	2.47
28	12″	Orange	Flocked	Textured	S,M,L,XL	12 pairs	5283T41▲	3.64	3.26
Neoprene-Coated Latex									
22	12½″	Black	Flocked	Textured	6,7,8,9,10,11	12 pairs	5278T15	3.80	3.58
30	12½″	Black	Flocked	Textured	6,7,8,9,10,11	12 pairs	5278T3	4.59	4.33
30	16″	Black	Flocked	Textured	6,7,8,9,10,11	12 pairs	5278T2	8.17	7.80
40★	14″	Black	Knit	Rough	8,9,10,11	12 pairs	5409T11	10.29	9.26

▲ Not approved for food contact. ★ Mil thickness is approximate on gloves with a knit lining.

For information about gloves and sizing, see page 1766.

For additional information about the chemical compatibility of these gloves, go to mcmaster.com and search for **5306TAC**.

Vapor- and Chemical-Resistant Butyl Gloves

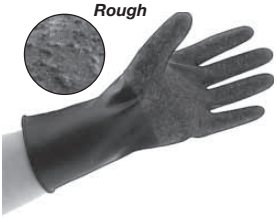

Butyl offers the highest impermeability to gas and water vapors of any material we carry. These unlined gloves provide superior protection, especially when dealing with MEK (methyl ethyl ketone), acetone, and esters such as tricresyl phosphate and ethyl acetate. **To Order:** Please specify size.

				Smooth Surface			Rough Surface		
				Full Pkg. Qty.	Per Pair Partial Pkg.	Per Pair Full Pkg.	Full Pkg. Qty.	Per Pair Partial Pkg.	Per Pair Full Pkg.
Thick., mils	Lg.	Color	Available Sizes						
13	11″	Black	7,8,9,10,11	6 pr. 5607T11	$16.80	$15.82	6 pr. 5607T51	$23.21	$22.07
16	11″	Black	7,8,9,10,11	6 pr. 5607T21	20.33	19.14	4 pr. 5607T61	24.91	23.47
17	14″	Black	8,9,10,11	4 pr. 5607T31	30.18	28.43	4 pr. 5607T71	37.22	35.06
32	14″	Black	8,9,10,11	4 pr. 5607T41	39.53	37.25	4 pr. 5607T81	49.10	46.26

Ultra-Thin Chemical-Resistant Gloves

Thin enough to wear as a liner or over other gloves, these silver-film gloves are an excellent choice for spill cleanups, hazardous control operations, and chemical and petrochemical laboratories. They resist aromatic, chlorinated, and oxygenated (ketones and alcohols) solvents as well as esters. Gloves are ambidextrous.

Thick., mils	Lg.	Color	Size	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
2.7	14½″	Silver	7	10 pairs	6075T11	$6.60	$6.14
2.7	14½″	Silver	8	10 pairs	6075T12	6.60	6.14
2.7	16″	Silver	9	10 pairs	6075T13	6.60	6.14

High-Strength Solvent-Resistant Fluoroelastomer Gloves

These fluoroelastomer gloves are designed to handle water-based solutions, chlorinated solvents, aromatic solvents, and other toxic substances that degrade rubber, neoprene, nitrile, and PVC (polyvinyl chloride). Ideal for use in industrial maintenance as well as chemical and degreasing operations. Gloves are unlined and have a smooth surface.

To Order: Please specify size.

Thick., mils	Lg.	Color	Available Sizes		Per Pair
12	12″	Black	7,8,9,10,11	5604T31	$76.00
20	12″	Black	8,9,10	5604T41	81.75

Solvent-Resistant PVA Gloves

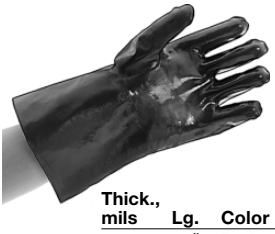

Perfect for protection from oil-based solvents. Rugged PVA (polyvinyl alcohol) coating resists ketones, acetones, and petroleum-based degreasing solvents. Not designed for use in water-based or alkali-based degreasing products. Gloves have a smooth surface and a jersey lining for added comfort.

Thick., mils	Lg.	Color	Size		Per Pair 1-3	Per Pair 4-Up
40	12″	Red	10½	5258T21	$26.83	$25.58
40	14″	Red	10½	5258T22	28.75	27.38
40	17″	Red	10½	5258T23	30.00	28.57

Abrasive Blasting Gloves

The combination of neoprene and vinyl provide the protection you need when working in abrasive-blasting cabinets. These gloves have a cotton lining.

For Hole Dia.	Thick., mils	Lg.	Color	Size		Per Pair
6″	38	24″	Black	One Size	55405T22	$25.28
7″	38	33″	Black	One Size	55405T23	37.02

Chemical-Resistant Sleeves

For abrasive material, oils, and most acids, choose these thick nylon sleeves. They cover the arm from the wrist to past the elbow. Combine them with gloves for complete arm protection. Elastic at both ends provides a secure and snug fit. One size fits all.

Double nitrile-coated sleeves have a nitrile coating on the inside and outside.

Sleeve Coating	Thick., mils	Lg.	Color		Per Pair 1-5	Per Pair 6-Up
Nitrile	16	18″	Black	5564T11	$14.29	$13.47
Double Nitrile	16	18″	White	5564T13	14.72	13.89
Neoprene	16	18″	Yellow	5564T16	15.06	14.19

Dry Box Gloves

Great for use in industrial applications and in chemical and medical research laboratories, these gloves fit 8″ dia. dry box access holes to create a controlled environment. They are unlined with a smooth surface. Dry box sleeves, connectors, and clamps are sold separately on the following page.

Latex (natural rubber) gloves provide the most dexterity and moderate chemical resistance.

Nitrile gloves resist punctures, solvents, oil, and grease.

Neoprene gloves offer great flexibility and touch sensitivity. Resist chemicals, oils, and ozone.

Hypalon gloves have outstanding resistance to abrasion, ozone, and many oxidizing chemicals.

Butyl gloves have the highest impermeability to water vapors, gases, toxic chemicals, and most fuels. Resist oxygenated solvents and most oxidizers and remain flexible in temperatures as low as –40° F.

To Order: Please specify size.

Material	Lg.	Color	Available Sizes	15 mils Thick	Per Pair	30 mils Thick	Per Pair
Latex	32″	Tan	7, 8, 9, 10	5322T61	$98.46	—	—
Nitrile	32″	Off-White	9	5322T11	198.28	—	—
Neoprene	32″	Black	8½, 9¾, 10½, 11½	5322T2	130.49	5322T3	$156.93
Hypalon	32″	White	8½, 9¾, 10½	5322T71	180.65	5322T72	290.20
Butyl	32″	Black	8½, 9¾, 10½	5322T81	194.18	5322T82	206.55

For information about gloves and sizing, see page 1766. For cuff style and pattern information, see page 1772.

For additional information about the chemical compatibility of these gloves, go to mcmaster.com and search for **5306TAC.**

Dry Box Sleeves

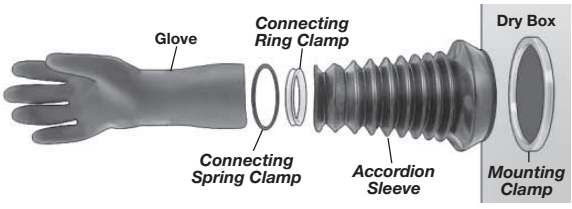

Straight Sleeve

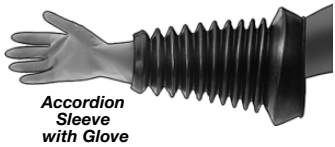
Accordion Sleeve with Glove

A typical dry box installation includes a glove, sleeve, and mounting clamps. Fit sleeves to 8″ dia. dry box access holes to create a controlled environment. Use with the dry box gloves on the previous page or any unlined chemical-resistant glove.

Latex (natural rubber) offers the most dexterity and moderate chemical resistance. *Nitrile* resists punctures, solvents, oils, and greases. *Neoprene* resists cuts, chemicals, oils, and ozone.

Sleeves include a PVC (polyvinyl chloride) ring glove clamp and Type 304 stainless steel spring glove clamp. *Accordion* style prevents the sleeve from collapsing and provides more air circulation.

Sleeve-to-dry box mounting clamps secure sleeves to 8″ dia. dry box access holes. Each sleeve is attached to both the inside and outside of the holes using two ring clamps. Clamps are sold in sets; each set includes four rings. Clamps are aluminum and have an 8″ ID with 1/4″ mounting holes. Fasteners included.

Sleeves with gloves allow you to change the glove quickly while keeping the sleeve attached to the dry box. Include a ring clamp and spring clamp. **To Order:** Please specify size.

Sleeves

Style	Material	Thick.	Max. Lg.	Color		Per Pair
Straight	Nitrile	22 mils	24″	Off-White	55955T8	$215.38
Straight	Neoprene	30 mils	21″	Black	55955T7	93.82
Accordion	Latex	45 mils	20″	Black	55955T6	194.55
Accordion	Nitrile	45 mils	18″	Blue	55955T5	266.67

Clamps

Sleeve-to-Dry Box Mounting Clamp	5322T91	Per Set	$354.41

		Each
Repl. Sleeve-to-Glove Connecting Ring Clamp	55955T84	$9.52
Repl. Sleeve-to-Glove Connecting Spring Clamp	55955T82	6.73

Sleeves with Gloves

Style	Material	Thick., mils Sleeve	Thick., mils Glove	Max. Sleeve Lg.	Sleeve Color	Available Glove Sizes	Sleeves with Gloves	Per Pair	13″ Lg. Repl. Gloves Color		Per Pair
Straight	Nitrile	22	15	32″	Off-White	8, 9, 10, 11	55955T2	$218.18	Off-White	55955T12	$16.74
Straight	Neoprene	30	18	32″	Black	7, 8, 9, 10, 11	55955T1	104.06	Black	55955T9	11.63
Accordion	Latex	45	18	26″	Black	7, 8, 9, 10, 11	55955T3	205.36	Orange	55955T13	11.63
Accordion	Nitrile	45	15	26″	Blue	8, 9, 10, 11	55955T4	272.34	Off-White	55955T12	16.74

Cotton and Cotton Blend Work Gloves

All gloves are washable, unlined, and have a knit-wrist cuff style, unless noted.

A&B ***Knit—*** Breathable and easy to wear for long periods of time. Gloves lend support and allow for good dexterity. Gloves are ambidextrous and can also be used as liners. ***Open fingertip*** styles allow better finger dexterity.

C ***Canvas—*** These durable gloves have a long service life. They're soft and comfortable to wear for extended periods of time.

D ***Jersey—*** Ideal for general plant maintenance and cleanup. Made of 100% cotton jersey. 9725T67 has a slip-on cuff and a red fleece lining for extra comfort and warmth.

E ***Terry Cloth—*** For both durability and comfort, choose these cotton/polyester blend work gloves. The heavyweight terry cloth loop-pile construction resists abrasion.

A

C

B Full Glove

D

B Open Fingertip

E

(A) Knit—Pkg. qty. is 50 pairs.

Style	Lg.	Color	Size		Per Pkg. 1-5	Per Pkg. 6-Up
Cotton—*Light weight*						
Open Fingertip	8½″	Beige	One Size	53335T11	$17.96	$16.49

(B) Knit—Full pkg. qty. is 12 pairs.

Style	Lg.	Color	Size		Per Pair Partial Pkg.	Per Pair Full Pkg.
Cotton—*Medium weight*						
Full Glove	9¼″	Off-White	M	9729T12	$1.06	$0.99
Full Glove	9¾″	Off-White	L	9729T11	1.06	.99
Cotton/Polyester Blend—*Medium weight*						
Full Glove	8½″	White	XS	6078T51	.83	.78
Full Glove	8¾″	Gray	S	6078T412	1.10	1.04
Full Glove	9¼″	White	S	6078T52	.83	.78
Full Glove	9¾″	White	L	6078T53	.83	.78
Full Glove	9¾″	Gray	L	6078T413	1.10	1.04
Open Fingertip	8″	Off-White	S	6078T71	1.44	1.36
Open Fingertip	8¼″	Off-White	M	6078T72	1.44	1.36
Open Fingertip	8½″	Off-White	L	6078T73	1.44	1.36
Cotton/Polyester Blend—*Heavy weight*						
Full Glove	9″	White	S	6078T62	1.18	1.10
Full Glove	9½″	White	M	6078T31	1.18	1.10
Full Glove	10″	White	L	6078T63	1.18	1.10
Open Fingertip	7½″	White	S	6078T82	1.56	1.46
Open Fingertip	8″	White	L	6078T83	1.56	1.46

(C) Canvas, (D) Jersey & (E) Terry Cloth—Full pkg. qty. is 12 pr.

Wt., oz.	Pattern	Lg.	Color	Size		Per Pair Partial Pkg.	Per Pair Full Pkg.
(C) Canvas (Cotton/Polyester Blend)—*Full glove style*							
8	Clute	10¼″	White	S	5321T4	$1.89	$1.76
8	Clute	10¼″	White	L	5321T1	1.89	1.76
(C) Canvas (Cotton)—*Full glove style*							
10	Clute	10½″	Off-White	L	5321T2	1.63	1.46
12	Clute	10½″	Off-White	L	5321T3	2.67	2.50
(D) Jersey—*Full glove style*							
7	Ambidextrous	10½″	White	S	9725T32	1.48	1.38
7	Ambidextrous	10½″	White	L	9725T31	1.48	1.38
8	Clute	9¼″	Brown	M	9725T22	1.79	1.67
8	Clute	9¾″	Brown	L	9725T21	1.79	1.67
13	Gunn	10″	Brown	L	9725T67	2.85	2.69
(E) Terry Cloth—*Full glove style*							
24	Ambidextrous	10¼″	Off-White	L	5324T2	2.02	1.87

For information about gloves and sizing, see page 1766.

About Work Glove Cuff Styles and Patterns

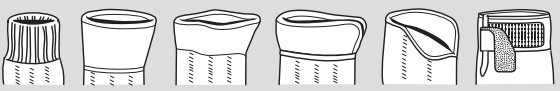

Cuff Styles

Knit Wrist—Provides comfort and a snug fit.
Gauntlet—Easy removal. Holds tucked sleeve in glove so it won't get caught in machinery.
Band Top—Allows easy removal and air circulation.
Safety Cuff—Side slit enables wearer to throw off glove quickly in an emergency.
Slip On—Easy removal. Often referred to as driver's gloves.
Hook and Loop—Adjustable for the best fit.

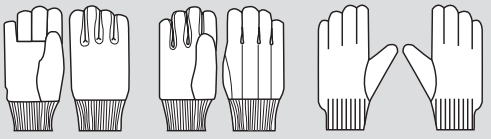

Glove Patterns

Gunn—Extends glove life by keeping seams out of the work area.
Clute—Seams on back of glove reduce splitting; holds work area more tightly to palm.
Ambidextrous—Both sides of the glove are identical. Gloves can be worn on either hand. Extend glove life by merely flipping it over.

Sure-Grip Cotton, Cotton Blend and Synthetic Work Gloves

Gain a firm hold on your workpieces. These gloves have a raised PVC (polyvinyl chloride) pattern on the work surface areas to improve grip. All are washable and have knit-wrist cuff styles.

Grip-Dot—*Cotton/polyester knit* gloves have PVC dots covering both sides of the glove. *Cotton canvas* and *cotton jersey* gloves have PVC dots covering the palm-side of the glove and around the thumb and index finger.

Criss-Cross Grip—Both sides of the gloves have a PVC criss-cross pattern. *Nylon/polyester* have an extra-tacky grip.

To Order: Please specify size.

Weight	Material	Pattern	Lg.	Color, Glove/ Grip Pattern	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Grip-Dot									
Medium	Cotton/Polyester Knit	Ambidextrous	9¼″	Off-White/Blue	S, L	12 pr.	**9727T1**	$1.01	$0.95
Medium	Cotton Canvas	Clute	9¾″	White/Black	S, L	12 pr.	**9727T19**	2.59	2.37
Medium	Cotton Jersey	Clute	10½″	Brown/Brown	M, L	12 pr.	**9727T4**	1.60	1.51
Criss-Cross Grip									
Medium	Cotton/Polyester	Ambidextrous	9½″	White/Clear	S, M, L	12 pr.	**9727T3**	2.34	2.20
Heavy	Nylon/Polyester	Ambidextrous	9″	Orange/Clear	S, M, L	12 pr.	**9727T7**	2.07	1.94

Cotton Sleeves

Protect your arms from abrasion with these 100% cotton arm coverings. All are washable.

Cotton knit sleeves are lightweight and breathable. They have elastic at both ends.

Denim sleeves are durable and have elastic at both ends.

Terry cloth sleeves are moisture absorbent and have moderate heat resistance. They have elastic at one end and a knit wrist at the other

Sleeves on a roll permit custom-cut lengths. Ends are not elasticized.

Sleeves

Material	Lg.	Color	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Cotton Knit	16″	Off-White	12 pairs	**9661T51**	$2.36	$2.02
Denim	18″	Blue	12 pairs	**6071T2**	4.97	4.73
Terry Cloth	12″	Off-White	12 pairs	**5957T45**	6.17	5.41
Terry Cloth	18″	Off-White	12 pairs	**5957T47**	9.00	8.58
Terry Cloth	24″	Off-White	6 pairs	**5957T49**	11.71	11.16

Sleeves on a Roll

Material	Size, Lg. × Wd.	Color		Per Roll 1-5	Per Roll 6-Up
Cotton Knit	17 yds. × 2″	Off-White	**9661T31**	$44.20	$42.50
Cotton Knit	12 yds. × 3″	Off-White	**9661T32**	61.88	59.50

Cotton and Leather Finger and Thumb Cots

Cotton — *Leather Front Coverage, Open Tip* — *Leather Front/ Side Coverage, Over Tip* — *Leather Full Coverage, Closed Tip*

Protect your individual fingers from abrasion without restricting movement. These cots are an excellent alternative to full-hand protection.

Cotton—Knitted from comfortable single-ply cotton yarn. Washable.

Leather—All have elastic backs that hold them securely to your finger or thumb, except for the full-coverage style which is all leather and sewn at the tip.

Front coverage cots protect the finger's face. *Front/side coverage* cots keep the surface and side of the finger safe. *Full coverage* cots shield the entire finger.

Split cowhide is textured and durable. *Grain cowhide* is smooth and allows the finger sensitivity you need in more delicate applications.

To Order: Please specify size.

Cotton

Coverage	Lg.	Color	Size	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Full	2¾″	Off-White	L	10	**9631T25**	$10.22	$8.76

Leather

Coverage	Tip Style	Cowhide Type	Available Sizes	Pkg. Qty.	Finger Cots	Finger Cots Per Pkg. 1-5	Finger Cots Per Pkg. 6-Up	Thumb Cots	Thumb Cots Per Pkg. 1-5	Thumb Cots Per Pkg. 6-Up
Front	Open	Split	S, M, L	10	**5334T51**	$5.92	$5.61	**5334T59**	$8.00	$7.62
Front	Open	Grain	S, M, L	10	**5334T52**	8.00	7.60	**5334T61**	10.50	10.00
Front/Side	Open	Split	S, M, L	10	**5334T54**	7.56	7.17	**5334T76**	9.47	9.00
Front/Side	Open	Grain	S, M, L	10	**5334T55**	10.45	10.00	**5334T77**	13.25	12.62
Front/Side	Over	Split	S, M, L	10	**5334T57**	8.30	7.88	**5334T62**	10.79	10.25
Front/Side	Over	Grain	S, M, L	10	**5334T58**	11.52	10.94	**5334T63**	14.36	13.66
Front/Side	Closed	Grain	M, L	10	**5334T66**	12.20	11.59	—	—	—
Full	Closed	Grain	S, M, L	10	**5334T67**	15.23	14.46	**5334T78**	16.41	15.61

For information about gloves and sizing, see page 1766. For cuff style and pattern information, see page 1772.

Leather-Palm and All-Leather Work Gloves

When you need more durability than knit gloves can offer, these unlined (unless noted) leather work gloves are an excellent choice. *Clute pattern* gloves have a full canvas back, unless noted. *Gunn pattern* gloves have a leather index finger and heel. *Double-palm* gloves have two layers of leather on the palm and index finger. *Open fingertip* gloves allow better finger dexterity. The hook-and-loop closure adjusts for the best fit.

Leather-palm gloves have cotton canvas backs (unless noted) that are lightweight and breathable.
Ultra-fit leather palm gloves have a spandex back that conforms to your hand for superior comfort and dexterity.
All-leather gloves offer better protection for the entire hand.
All-leather with sleeves have an 11″ long cotton sleeve with a 2″ wide strip of nylon mesh for air circulation.

Materials—*Split* or *brushed leather* refers to the rough side of the material; *grain leather* is the smooth side.
Economy Shoulder-Split Cowhide—Coarser than side-split and moderately durable.
Select Shoulder-Split Cowhide—A better, more durable grade of leather than economy.
Heavy Side-Split Cowhide—Made from a thicker leather for a strong, durable glove.
Grain Cowhide—Thick and durable. *High Visibility—*The fluorescent back and cuff and reflective tape on cuff and knuckles make them easy to spot.
Goatskin—Tanning in natural lanolin oils makes it the softest, most abrasion-resistant leather.
Pigskin—The choice for work exposed to moisture, this leather won't stiffen when wet.
Premium Grain Deerskin—Soft and flexible for optimal dexterity.

To Order: Please specify color and size when necessary.

Leather Palm

Grain Pigskin Open Fingertip Leather Palm

Ultra-Fit Leather Palm

All Leather

All Leather with Sleeve

Cuff	Pattern	Lg.	Color	Available Sizes	Full Pkg. Qty.	Per Pair Partial Pkg.	Per Pair Full Pkg.
Leather Palm							
Economy Shoulder-Split Cowhide							
Knit Wrist	Clute	9⅜″	Off-White	Women's S	12 pr.	**5320T4**	$1.81	$1.72
Knit Wrist	Clute	9¾″	Off-White	L	12 pr.	**5320T1**	1.81	1.72
2½″ Safety Cuff	Gunn	10½″	Gray	L	12 pr.	**5320T51**●	2.10	1.87
4½″ Gauntlet	Gunn	12″	Off-White	L	12 pr.	**5320T2**	2.90	2.78
Select Shoulder-Split Cowhide							
Knit Wrist	Gunn	10″	Gray	L	12 pr.	**5354T14**	2.15	2.08
2½″ Safety Cuff	Gunn	10″	Gray	L	12 pr.	**5354T15**	2.78	2.65
Select Shoulder-Split Cowhide Double Palm							
2½″ Safety Cuff	Gunn	10½″	Gray/Yellow	L	12 pr.	**52835T41**●	3.60	3.41
4½″ Gauntlet	Gunn	11½″	Off-White/Green	L	12 pr.	**52835T15**●	3.12	2.93
Heavy Side-Split Cowhide							
2½″ Safety Cuff	Gunn	10½″	Gray	S,M,L,XL	12 pr.	**6077T7**	3.36	3.17
4½″ Gauntlet	Gunn	11¾″	Gray	L	12 pr.	**6077T82**	6.30	6.06
Grain Cowhide—*High Visibility*							
2½″ Safety Cuff	Gunn	10″	Off-White/Fluorescent Orange	S,M,L,XL,XXL	12 pr.	**9782T5**	9.58	9.01
Goatskin							
2½″ Safety Cuff	Gunn	10½″	Off-White	L	12 pr.	**5320T6**	10.93	10.37
Grain Pigskin Open Fingertip—*Mesh back*							
Hook and Loop	Gunn	6¾″	Black	S,M,L,XL	12 pr.	**5305T97**	11.67	10.29
Ultra-Fit Leather Palm							
Grain Cowhide Double Palm							
Hook and Loop	Gunn	8¾″	Black/Gold	S,M,L,XL,XXL	12 pr.	**9204T1**	19.91	18.93
Grain Goatskin Double Palm							
Hook and Loop	Clute	10″	Black/White/Gold	S,M,L,XL,XXL	12 pr.	**9204T7**	24.62	23.41
Grain Pigskin Double Palm							
Hook and Loop	Clute	10″	Black/Gold	S,M,L,XL,XXL	12 pr.	**9204T3**	19.99	19.03
Grain Deerskin Double Palm							
Hook and Loop	Gunn	8¾″	Blue/Gold	S,M,L,XL,XXL	12 pr.	**9204T5**	26.53	25.24
All Leather							
Select Shoulder-Split Cowhide							
Slip On	Gunn	10″	Gray	S,M,L,XL	12 pr.	**5312T1**	4.96	4.66
2½″ Safety Cuff	Gunn	10½″	Gray	L	12 pr.	**5312T8**	5.22	4.70
Grain Cowhide							
Slip On	Gunn	10″	Off-White	S,M,L,XL	12 pr.	**5312T5**	6.99	6.60
Grain Cowhide Double Palm							
Slip On	Gunn	10″	Tan	S,M,L,XL	12 pr.	**5312T2**	10.53	9.90
Goatskin							
Slip On	Gunn	9¾″	White	M,L,XL	12 pr.	**9657T8**■	11.90	11.16
2½″ Safety Cuff	Clute	10″	Gray	S,M,L	12 pr.	**9657T2**★	9.02	8.41
4½″ Gauntlet	Gunn	12″	White/Blue, White/Orange	S,M,L,XL	12 pr.	**9657T9**	9.69	9.04
Brushed Pigskin							
Slip On	Gunn	9½″	Tan	S,M,L,XL	12 pr.	**5312T6**	22.40	19.60
Grain Pigskin							
Slip On	Gunn	9½″	Tan	S,M,L,XL	6 pr.	**5312T4**	24.51	22.75
Grain Pigskin Open Fingertip							
Hook and Loop	Gunn	6¾″	Black	S,M,L,XL	6 pr.	**5305T96**	16.35	14.27
Premium Grain Deerskin							
Slip On	Gunn	9¾″	Tan	S,M,L,XL	4 pr.	**9417T2**	30.11	26.90
All Leather with Sleeves							
Grain Cowhide							
4½″ Gauntlet	Clute	21″	Off-White	S,M,L,XL	4 pr.	**9332T4**	29.30	25.85

● Palm is lined. ■ Full leather back. ★ Grain goatskin.

For information about gloves and sizing, see page 1766. For cuff style and pattern information, see page 1772.

Ultra-Fit Synthetic Leather Work Gloves

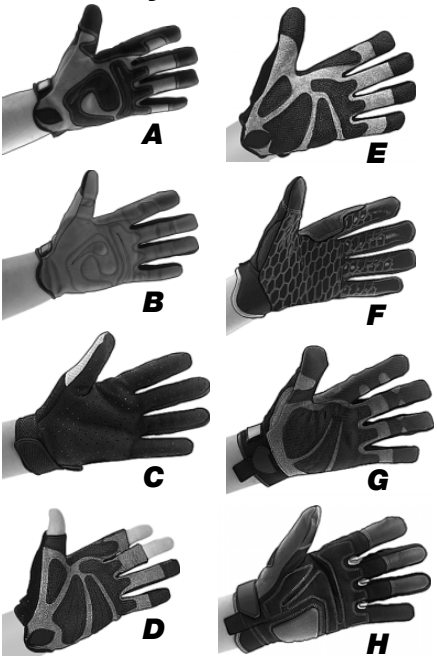

For ultimate dexterity plus abrasion and wear resistance, choose these flexible gloves. They have a synthetic leather palm, a breathable spandex backing, and a hook-and-loop cuff closure. A terry cloth upper on both thumbs (unless noted) allows you to clear debris and perspiration from your face without removing your gloves. All are washable.

(A) Standard gloves have synthetic leather reinforcements on the palm.

(B) High-visibility gloves have an eye-catching reflective backing. Gloves do not have synthetic leather reinforcements on the palm.

(C) Vented gloves allow air circulation to keep your hands cool and reduce perspiration.

(D) Open fingertip extra-abrasion-resistant gloves have PVC (polyvinyl chloride)-based abrasion-resistant reinforcements with open tips for the thumb and first two fingers, providing extra dexterity.

(E) Extra-abrasion-resistant gloves have PVC-based reinforcements on the palm and fingertips.

(F) Sure-grip gloves have a cross-hatched pattern of tacky silicone bonded to the palms and along the length of fingers with a solid patch of silicone on each fingertip, providing a nonslip grip.

(G) Heavy duty gloves have reinforced knuckles to protect the back of your hand.

(H) Double-palm gloves have a second layer of synthetic leather for impact protection.

To Order: Please specify size: S,M,L,XL, or XXL.

	Lg.	Color	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
(A) Standard	9¾″	Black/Gray	4 pairs	**6759T1**	$22.04	$20.30
(B) High Visibility	8½″	Orange	4 pairs	**6759T2**■	26.04	24.74
(C) Vented	8½″	Black/White	4 pairs	**6759T9**	27.83	26.34
(D) Open Fingertip Extra-Abrasion Resistant	8½″	Black/Gray	4 pairs	**6759T4**	26.59	25.26
(E) Extra-Abrasion Resistant	8½″	Black/Gray	4 pairs	**6759T3**	29.83	28.44
(F) Sure Grip	8½″	Black	4 pairs	**6759T5**	31.11	29.56
(G) Heavy Duty	9¼″	Black/Yellow	4 pairs	**6759T6**	33.36	31.71
(H) Double Palm	9¼″	Black	4 pairs	**6759T7**■	40.79	38.61
(H) Double Palm	9¼″	Yellow★	4 pairs	**6759T8**■	40.79	38.61

■ Does not have a terry cloth upper on thumb. ★ Color is high-visibility yellow.

Coated Work Gloves

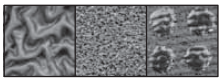

Textured Rough Dotted

Palm-coated gloves protect your hands without limiting dexterity. The back side of the glove is breathable to keep your hands cool and comfortable. ***Fully coated*** gloves provide the same protection to the front and the back of the hand.

Latex (Natural Rubber)— Abrasion resistant. *High Visibility*—Yellow back makes these easy to spot.

Nitrile— Chemical, oil, abrasion, and puncture resistant.

Ultra-Flex Nitrile— Coating combines nitrile and air to provide the benefits of nitrile with maximum dexterity.

Sure-Grip Nitrile— Surface is dotted to improve grip and extend wear.

Polyurethane— Lightweight and abrasion resistant, these gloves offer the sensitivity required for delicate assembly work and small parts handling.

PVC (Polyvinyl Chloride)— The economical choice for chemical and grease resistance.

PVC/Nitrile Blend— Superior chemical and abrasion resistance.

To Order: Please specify size where necessary.

Ultra-Flex Nitrile Palm Coated

PVC Fully Coated

ⓘ For additional information about the chemical compatibility of these gloves, go to mcmaster.com and search for **5306TAC**.

Cuff	Glove Material	Lg.	Color	Surface	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Palm Coated									
Latex									
Knit Wrist	Poly/Cotton	9½″	Blue/Gray	Textured	6,7,8,9,10	12 pr.	**9832T61**	$4.16	$3.94
Latex—High Visibility									
Knit Wrist	Acrylic	10″	Blue/Yellow	Rough	7,8,9,10	12 pr.	**9832T65**	7.50	7.12
Nitrile									
Knit Wrist	Cotton	9¾″	Green	Rough	S,M,L,XL	12 pr.	**9832T62**	5.04	4.75
Knit Wrist	Cotton	10½″	Dark Blue/Beige	Smooth	S,M,L,XL	12 pr.	**91165T1**	5.54	5.18
2½″ Safety Cuff	Cotton	10½″	Dark Blue/Beige	Smooth	S,M,L,XL	12 pr.	**91165T8**	5.06	4.80
Ultra-Flex Nitrile									
Knit Wrist	Nylon	9¼″	Black/Gray	Smooth	6,7,8,9,10,11	12 pr.	**9832T66**	4.95	4.70
Knit Wrist	Nylon	9¼″	Gray/White	Smooth	6,7,8,9,10	12 pr.	**9832T63**	4.95	4.69
Sure-Grip Nitrile									
Knit Wrist	Nylon	9″	Black/Gray	Dotted	XS,S,M,L,XL	12 pr.	**91165T4**	7.83	7.43
Polyurethane									
Knit Wrist	Nylon	8½″	White	Smooth	XS,S,M,L,XL	12 pr.	**8284T5**	6.16	5.82
Fully Coated									
PVC									
Knit Wrist	Cotton	9″	Black	Smooth	XL	12 pr.	**5319T12**	2.54	2.40
Knit Wrist	Cotton	9″	Black	Rough	XL	12 pr.	**5319T6**	3.40	3.21
4″ Gauntlet	Cotton	12″	Black	Smooth	XL	12 pr.	**5319T13**	3.20	3.03
4″ Gauntlet	Cotton	12″	Black	Rough	XL	12 pr.	**5319T7**	3.91	3.70
6″ Gauntlet	Cotton	14″	Black	Smooth	XL	12 pr.	**5319T18**	3.40	3.21
6″ Gauntlet	Cotton	14″	Black	Rough	XL	12 pr.	**5319T8**	4.57	4.32
PVC/Nitrile Blend									
4″ Gauntlet	Cotton	12″	Green	Rough	L	12 pr.	**5414T2**	4.71	4.42
6″ Gauntlet	Cotton	14″	Green	Rough	L	12 pr.	**5414T8**	5.31	4.98
Nitrile									
Knit Wrist	Cotton	10½″	Dark Blue	Smooth	S,M,L,XL	12 pr.	**91165T2**	5.47	5.14
2½″ Safety Cuff	Cotton	10½″	Dark Blue	Smooth	S,M,L,XL	12 pr.	**91165T6**	5.80	5.50
Sure-Grip Nitrile									
Knit Wrist	Cotton	9″	Black	Dotted	XS,S,M,L,XL	12 pr.	**91165T5**	8.19	7.81

For information about gloves and sizing, see page 1766. For cuff style and pattern information, see page 1772.

About Cut-Resistant Gloves

Cut resistance protects the glove from damage and the wearer from injury. The ANSI/ISEA 105-2005 standard classifies a glove's cut resistance based on the weight in grams needed to cut through the material with 25 mm of blade travel. The chart at right defines the levels of cut resistance.

Level	Weight, grams
0	<200
1	≥200
2	≥500

Level	Weight, grams
3	≥1000
4	≥1500
5	≥3500

Kevlar Cut-Resistant Gloves

As comfortable as knit gloves, these durable Kevlar gloves have a long service life. They're ambidextrous, washable, and have a knit wrist. Color is yellow.

Open fingertip gloves allow better finger dexterity.

Full gloves with sleeve provide arm protection.

Dot-pattern gloves have a raised pattern of blue PVC (polyvinyl chloride) dots for an improved grip.

Criss-cross gloves have a clear PVC criss-cross pattern for a superior grip.

Kevlar Kleen gloves are almost lint free to minimize fabric contamination of your application.

To Order: Please specify size.

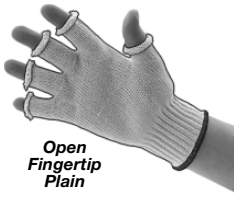

Open Fingertip Plain

Full Glove Plain

Full Glove Dot Pattern

Full Glove with Sleeve

	Lg.	Available Sizes	Full Pkg. Qty.	Level 2 Cut Resistance Per Pair: Partial Pkg.	Level 2 Full Pkg.	Level 3 Cut Resistance Per Pair: Partial Pkg.	Level 3 Full Pkg.
Open Fingertip							
Plain	9″	S,L	12 pairs	6086T75 $5.78	$5.55	—	—
Dot Pattern	9″	S,M,L	12 pairs	6086T8 6.61	6.34	6086T9 $9.23	$8.86
Full Glove							
Plain	9½″	S,M,L	12 pairs	6086T23 5.48	5.25	6086T25 9.43	9.06
Dot Pattern	9½″	S,M,L	12 pairs	6086T34 6.35	6.07	6086T36 10.64	10.18
Criss-Cross	9½″	S,M,L	12 pairs	6086T47 6.35	6.07	—	—
Kevlar Kleen	9½″	S,M,L	12 pairs	—	—	56125T3 11.18	10.62
Full Glove with Sleeve— *Not rated for level of cut resistance.*							
Plain	18″	M,L	6 pairs	59495T18 14.67	13.98	—	—
Plain	22″	M,L	6 pairs	59495T26 18.24	17.35	—	—
Plain	26″	M,L	6 pairs	59495T32 18.60	17.47	—	—

Nitrile-Coated Kevlar Cut- and Abrasion-Resistant Gloves

Get the cut resistance of Kevlar combined with the abrasion resistance of nitrile.

Palm-coated gloves protect from abrasion without limiting dexterity and have a Kevlar/Lycra lining.

Fully coated gloves provide the same protection to the front and the back of the hand.

Ultra-flex nitrile gloves provide extra grip in oily applications.

Nitrile gloves have a jersey lining for comfort.

To Order: Please specify size.

Fully Coated

	Cut Resist.	Cuff	Lg.	Color	Available Sizes	Full Pkg. Qty.	Per Pair: Partial Pkg.	Full Pkg.
Palm Coated								
Ultra-Flex Nitrile	Level 2	Knit Wrist	9½″	Yellow/Black	6,7,8,9,10	12 pr.	53545T27 $7.68	$7.22
Fully Coated								
Nitrile	Level 3	3⅜″ Safety Cuff	11″	Black	8,9,10	6 pr.	53545T23 11.41	10.88
Ultra-Flex Nitrile	Level 2	3⅜″ Safety Cuff	11″	Rust	9,10	6 pr.	53545T25 12.44	11.86

Glove Holders

Avoid the hassle of hunting for your gloves—these holders keep them close at hand. They're made of plastic and include two clips. Attach one clip to your gloves and the other clip to your clothes (belt loop, coveralls, back support, etc.). Holders are 5″ Lg. × 1¼″ Wd. and have a 15-lb. safety break-away.

Color		Each 1-11	12-Up
Black	57945T213	$5.36	$4.59
Blue	57945T214	5.36	4.59
Green	57945T215	5.36	4.59
Red	57945T212	5.36	4.59
Yellow	57945T211	5.36	4.59

Palm-Coated Dyneema Cut-Resistant Gloves

The flexible Dyneema/Lycra liner in these gloves provides greater dexterity than Kevlar without sacrificing cut resistance. The polyurethane-coated palm gives you a better grip in wet and dry applications. Color is gray.

To Order: Please specify size.

Cut Resist.	Cuff	Lg.	Available Sizes	Full Pkg. Qty.	Per Pair: Partial Pkg.	Full Pkg.
Level 3	Knit Wrist	9″	6,7,8,9,10,11	6 pr.	9465T3 $11.40	$10.75

Steel-Reinforced Leather Cut-Resistant Gloves

Add the strength of steel for excellent wear resistance. The palm and fingers of these unlined side-split cowhide gloves are reinforced with embedded steel staples; the thumb is reinforced with two leather patches. Not rated for level of cut resistance.

Cuff	Pattern	Lg.	Size	Full Pkg. Qty.	Per Pair: Partial Pkg.	Full Pkg.
2″ Gauntlet	Clute	10″	L	4 pr.	5313T12 $40.77	$38.55
4″ Gauntlet	Clute	12″	L	4 pr.	5313T14 44.58	41.96

Warning! ***Cut-resistant gloves do not protect against cuts from chain saws and other power equipment.***

For information about gloves and sizing, see page 1766. For information about cut resistance, see page 1775.

Spectra/Type 304 Stainless Steel Cut-Resistant Gloves

Spectra fiber gives these knit gloves the cut protection and dexterity required to work with sharp objects. They're abrasion resistant, washable, and have a knit wrist. Standard duty and heavy duty gloves are ambidextrous and made with materials that comply with FDA regulations for food contact.

Standard duty gloves have a single strand of Spectra and Kevlar fiber wrapped around a stainless steel core.

Heavy duty gloves have two strands of Spectra and Kevlar fiber wrapped around a stainless steel core.

Sure-grip gloves have a single strand of Spectra fiber wrapped around a stainless steel core. Palm and fingers are coated with lines of polyurethane for added grip.

To Order: Please specify size. For sure-grip gloves, specify left or right hand. *Note:* All gloves are sold individually (order two for a pair).

Cut Resistance	Lg.	Color	Available Sizes	Full Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard Duty							
Level 5	10″	White	XS,S,M,L,XL	6	5558T4	$19.48	$18.51
Heavy Duty							
Level 5	10″	White	XS,S,M,L,XL	4	5558T1	21.54	20.46
Sure Grip							
Level 4	10″	Green	XS,S,M,L,XL	4	5558T8	27.83	26.57

Cut- and Puncture-Resistant Gloves

Flexible for dexterity, these gloves provide maximum cut and puncture resistance. They have a clute pattern and a nylon lining, unless noted.

Style A is made of synthetic leather and spandex reinforced with special cut-resistant fabric. Palm, finger, and knuckle protection. Lining is polyester. ***Style B*** is made of full-grain cowhide. Palm and knuckle protection. ***Style C*** is made of special fabric with a hex-patterned surface. Full hand and forearm protection.

To Order: Please specify size.

Cut Resistance	Lg.	Color	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Style A—*Hook-and-Loop Cuff*							
Level 5	9¼″	Black	S,M,L,XL	4 pr.	7845T2	$51.45	$48.59
Style B—*Slip-On Cuff*							
Level 5	9½″	White	S,M,L,XL	4 pr.	7845T5	55.57	52.16
Style C—*8″ Gauntlet Cuff*							
Level 5	18″	Gray	M,L,XL	1 pr.	7845T3	——	173.73

Type 304 Stainless Steel Mesh Cut-Resistant Gloves

Special weld construction and spring-wrist cuffs prevent this glove from harboring bacteria. Also known as a chain mail glove. It's corrosion resistant, unlined, and ambidextrous. Color is silver.

To Order: Please specify size. Sold individually (order two for a pair).

Cut Resist.	Cuff	Lg.	Available Sizes		Each
Level 5	2″ Gauntlet	11″	XS,S,M,L,XL,XXL	5355T81	$108.57

Cut-Resistant Sleeves

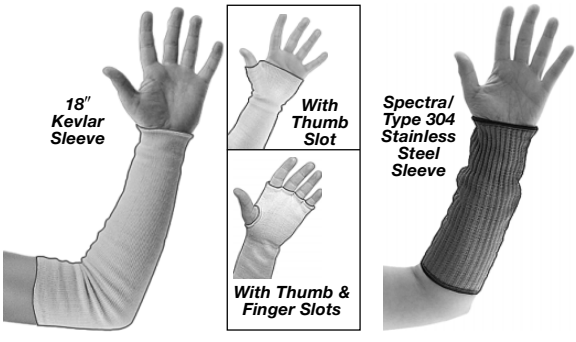

Keep cool with these lightweight and breathable cut-resistant sleeves. They're washable and elasticized for a secure fit.

Kevlar is comfortable and durable. For sleeves you can cut to size, choose the *12-yd. roll*. ***Spectra/Type 304 stainless steel*** offers the best protection. *22″ sleeve* has a clip to secure it to your shirt sleeve.

Cut Resistance	Lg.	Color	Full Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Kevlar						
Sleeve						
Level 2	10″	Yellow	12	5615T31	$2.68	$2.52
Level 2	14″	Yellow	12	5615T32	3.52	3.28
Level 2	18″	Yellow	12	5615T33	4.23	3.95
Not rated	12-yd. Roll	Yellow	1	5615T61	——	71.77
Sleeve with Thumb Slot						
Level 2	10″	Yellow	12	5615T41	3.21	3.00
Level 2	14″	Yellow	12	5615T42	4.22	3.91
Level 2	18″	Yellow	12	5615T43	5.04	4.66
Sleeve with Thumb and Finger Slots						
Level 2	10″	Yellow	12	5615T51	3.38	3.15
Level 2	14″	Yellow	12	5615T52	4.43	4.09
Level 2	18″	Yellow	12	5615T53	5.27	4.87
Spectra/Type 304 Stainless Steel						
Sleeve						
Level 5	10″	Gray	4	5617T52	22.20	21.09
Level 5	22″	Gray	4	5617T53	32.76	31.04

Inspection Gloves

Use these gloves to prevent smudging and contamination during parts inspections. They're also thin enough to be worn as liners. All gloves are ambidextrous. ***Cotton (lisle)*** gloves are unhemmed. ***Nylon (tricot)*** gloves are hemmed and lint free. ***Stretch nylon*** gloves are lint free, washable, and form-fitting with a knit wrist. ***Static-dissipative stretch nylon*** gloves remove electrical charge from the items you're handling.

To Order: Please specify size where necessary.

Lg.	Available Sizes	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Lightweight Cotton—*Color is white.*					
9½″	Women's L,L	12 pr.	5452T1	$13.90	$12.55
14″	L	12 pr.	5452T4	15.08	14.00
Medium Weight Cotton—*Color is white.*					
9½″	Women's L,L	12 pr.	5452T2	14.71	13.66
Heavyweight Cotton—*Color is white.*					
9½″	Women's L,L	12 pr.	5452T3	16.22	15.06
Nylon—*Color is white.*					
8¼″	XS,M,L	12 pr.	5443T22	9.68	9.22

Lg.	Available Sizes	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Stretch Nylon—*Color is white.*					
9¼″	L	5 pr.	53575T6	$9.98	$9.51

Lg.	Available Sizes	Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Static-Dissipative Stretch Nylon—*Color is gray.*					
9″	S,M,L	12 pr.	53575T4	$3.42	$3.13

Warning! ***Cut-resistant gloves do not protect against cuts from chain saws and other power equipment.***

For information about gloves and sizing, see page 1766. For cuff style and pattern information, see page 1772.

Vibration-Protection Gloves and Palm Pads

Gel padding reduces the vibration to the hands and fingers. These gloves and pads allow workers to maintain normal hand movement while using equipment and power tools that produce high levels of vibration. Gloves have a clute pattern.

(A&B) Leather-Palm Open Fingertip— They're unlined with a snug-fitting Lycra-spandex backing and a split cowhide palm. *(A) Gloves/Liners*—Use alone or as liners. They're padded in the palm, thumb, and index finger. *(B) Gloves*—Padded in the palm, all fingers, and thumb.

(***C) All-Leather Open Fingertip—*** Made from grain cowhide, these heavy duty gloves have a cotton lining and a hook-and-loop wrist closure. Palm is padded.

(D) Leather-Palm Full Glove— Protect your whole hand from vibration. They're made of unlined grain cowhide with a spandex back and wrist. They have a hook-and-loop wrist closure.

(E&F) All-Leather Palm Pads— Protect the palms of your hands with these split cowhide pads—just slip the elastic band over the back of your hand. *(E) Standard* have one thumb band and one hand band. *(F) Fitted* conform to your palm and are secured with two bands.

To Order: Please specify size where necessary.

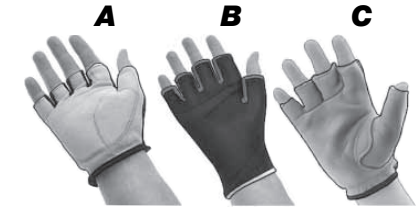

	Lg.	Color	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Leather-Palm Open Fingertip							
(A) Gloves/Liners	6½″	Gray/Black	L	6 pairs	**5460T35**	$13.65	$13.00
(B) Gloves	7¾″	Black/Blue	S,M,L	4 pairs	**5460T66**	26.91	25.52
All-Leather Open Fingertip							
(C) Gloves	6½″	Tan	M,L,XL	4 pairs	**5460T55**	39.08	37.35
Leather-Palm Full Glove							
(D) Gloves	9″	Black	M,L,XL	4 pairs	**4183T6**	25.54	24.23
All-Leather Palm Pads							
(E) Standard	3½″	Rust	L	6 pairs	**5460T51**	18.36	17.41
(F) Fitted	5″	Rust	L	6 pairs	**5460T52**	19.45	18.45

Repetitive-Motion Protection Gloves

Reduce fatigue in applications that require you to perform the same hand motions over and over. These gloves support your palm and wrist. They're made of 88% nylon and 12% spandex, retaining body heat to stimulate circulation and keep muscles relaxed. Use alone or as liners. Gloves are ambidextrous and have a 1½″ elastic cuff.

To Order: Please specify size: S,M,L, or XL.

Lg.	Color	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
5″	Orange	6 pr.	**9603T1**	$10.66	$8.91

Welding Gloves and Pads

Protect your hands and arms from sparks and flames with these welding gloves and pads.

Gloves

All have a gunn pattern and gauntlet cuff. Cuff length is 5½″ for 13″ and 14″ long gloves; 10″ for 18″ long gloves; and 15″ for 23″ long gloves. Critical seams and fingertips are reinforced to prevent burn-through. For more information about leather texture, see page 1773.

Standard duty cowhide gloves have Kevlar threads and a reinforced thumb strap. ***Comfort-fit cowhide*** gloves have Kevlar threads and a thick lining that makes them more comfortable than light duty or standard duty gloves. ***Aluminized comfort-fit cowhide*** gloves have an aluminized shield that resists heat and UV radiation. The shield is on the inside of the *inner layer* gloves and on the back of the *outer layer* gloves. ***Pigskin*** remains flexible even in wet and oily applications. ***Premium elkskin*** gloves offer great dexterity, even after repeated exposure to moisture and heat. The back of the glove is lined with Nomex for heat insulation. The palm is unlined for maximum dexterity. **To Order:** Please specify color and size where necessary.

Comfort-Fit Cowhide

Aluminized Comfort-Fit Cowhide (Outer Layer)

Aluminized Welding Glove Pad (Glove not included)

Leather Texture	Lg.	Available Colors	Lining	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Light Duty Cowhide								
Shoulder Split	14″	Brown, Gray	Cotton	L	12 pr.	**5230T1**	$6.52	$6.19
Shoulder Split	18″	Brown	Cotton	L	12 pr.	**5230T3**	13.41	12.74
Shoulder Split	23″	Brown	Cotton	L	6 pr.	**5230T51**	18.33	17.42
Standard Duty Cowhide								
Shoulder Split	14″	Brown, Gray	Cotton/Foam	L	12 pr.	**9698T8**	10.46	9.83
Side Split	14″	Blue	Cotton/Foam	S,M,L,XL	12 pr.	**9698T2**	12.88	12.10
Comfort-Fit Cowhide								
Side Split	13″	Rust	Acrylic	S,M,L,XL	6 pr.	**5363T5**	16.30	14.64
Side Split	13″	Rust	Wool/Cotton	S,M,L,XL	6 pr.	**5363T7**	16.40	14.76
Side Split	14″	Brown	Cotton	S,M,L,XL	6 pr.	**5363T3**	16.52	15.34
Aluminized Comfort-Fit Cowhide								
Side Split (Inner Layer)	14″	Brown	Wool/Cotton	S,M,L,XL	4 pr.	**9745T1**	39.47	36.65
Side Split (Outer Layer)	14″	Brown/Silver	Wool/Cotton	L	4 pr.	**9745T34**	26.71	24.80
Pigskin								
Grain	14″	Brown	Cotton/Foam	S,M,L,XL	6 pr.	**9287T2**	19.15	16.81
Premium Elkskin								
Side Split	14″	Off-White	Nomex	S,M,L,XL	4 pr.	**5329T6**	24.95	22.34

Pads

Aluminized welding glove pad fits over gloves and protects against heat and splatter. They're made from highly heat reflective aluminized rayon and have two straps to hold them in place.

Side-split cowhide arm pad allows you to rest your arm on a hot surface while welding. Just slip your arm through the elastic bands and adjust the hook-and-loop closure for best fit.

Side-Split Cowhide Arm Pad (Glove not included)

	Size, Lg. × Wd.	Color	Full Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Aluminized Welding Glove Pad	7½″ × 5¼″	Silver	12	**5317T22**	$5.73	$5.00
Side-Split Cowhide Arm Pad—Left	10″ × 6″	Brown	4	**9698T5**	23.93	22.50
Side-Split Cowhide Arm Pad—Right	10″ × 6″	Brown	4	**9698T7**	23.93	22.50

For information about gloves and sizing, see page 1766. For cuff style and pattern information, see page 1772.

TIG and MIG Welding Gloves

4″ Gauntlet Cuff

Get the dexterity and heat resistance you need for TIG and MIG welding. These gloves are unlined for sensitivity and have a gunn pattern. ***TIG welding*** gloves are thinner and offer more dexterity, but are less heat resistant than ***MIG welding*** gloves.

Grain pigskin gloves remain flexible even when wet. *Cowhide* gloves have a seamless index finger. *Split deerskin* gloves are extra soft and flexible for optimal dexterity. *Grain sheepskin* and *grain goatskin* gloves have excellent dexterity. *Grain deerskin* gloves are thick for durability yet soft and comfortable.

To Order: Please specify size.

			2″ Safety Cuff				4″ Gauntlet Cuff				
					Per Pair					Per Pair	
Material	Color	Available Sizes	Lg.	Full Pkg. Qty.		Partial Pkg.	Full Pkg.	Lg.	Full Pkg. Qty.		Partial Pkg.	Full Pkg.
TIG Welding												
Grain Pigskin	Tan	S,M,L,XL	___	___	___	___	___	11″	12 pairs	5346T7	$12.58	$11.83
Side-Split Cowhide	Brown	S,M,L	10½″	12 pairs	5346T9	$11.27	$10.49	13″	6 pairs	5346T8	12.16	11.31
Side-Split Deerskin	Gray	S,M,L,XL	10″	6 pairs	5346T5	12.38	11.51	12″	6 pairs	5346T4	13.50	12.56
Grain Sheepskin	White	S,M,L	10½″	6 pairs	5346T1	13.43	12.70	11½″	6 pairs	5346T2	15.07	14.22
Grain Goatskin	White	S,M,L,XL	10″	6 pairs	5346T3	14.71	13.91	12″	6 pairs	5346T6	15.58	14.73
MIG Welding												
Grain Cowhide	White	S,M,L,XL	___	___	___	___	___	12″	6 pairs	5371T5	16.50	14.67
Grain Pigskin	Gold	S,M,L,XL	___	___	___	___	___	12″	6 pairs	5371T1	13.27	11.90
Grain Deerskin	Gold	S,M,L,XL	___	___	___	___	___	12″	6 pairs	5371T3	16.73	15.00

Cotton Heat-Protection Gloves

Cotton Flannel with Gauntlet Cuff

Cotton Terry Cloth with Gauntlet Cuff

Protect your hands from moderate heat and abrasion. These gloves are washable, unlined, and have a clute pattern, unless noted. ***Cotton flannel*** gloves have a knuckle strap for added protection. ***Cotton terry cloth*** gloves have an outer layer that dissipates heat, keeping hands cool and comfortable.

Max. Temp.	Cuff	Lg.	Color	Size	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Cotton Flannel								
275°F	2″ Safety Cuff	10″	White	L	12 pairs	5411T1	$3.01	$2.75
275°F	4″ Gauntlet	13″	White	L	12 pairs	5411T2	3.30	3.05
375°F	2″ Safety Cuff	10″	White	L	12 pairs	5411T8	3.59	3.15
375°F	4″ Gauntlet	13″	White	L	12 pairs	5411T9	4.13	3.88
Cotton Terry Cloth								
250°F	5″ Gauntlet	13″	White	L	12 pairs	9155T41	8.06	7.74
250°F	11″ Gauntlet	19″	White	L	12 pairs	9155T42	9.59	9.21
250°F	Knit Wrist	9½″	White	M	12 pairs	9155T51 ♦	3.40	3.12
450°F	2½″ Safety Cuff	11″	Brown/White	XL	6 pairs	9155T25 ♦ ♠	13.62	12.91
450°F	4½″ Gauntlet	13″	Brown/White	XL	6 pairs	9155T26 ♦ ♠	13.43	12.77

♦ Ambidextrous. ♠ Cotton lining.

Nitrile-Coated Cotton Heat-Protection Gloves

Get a better grip on hot surfaces with these washable gloves. Gloves have non-woven felt insulation and a full-length heat barrier, plus additional insulation to protect the backs of your hands from radiant heat. All have a gunn pattern.

To Order: Please specify size.

Max. Temp.	Cuff	Lg.	Color	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
400°F	2″ Gauntlet	10″	Gray	S,M,L	12 pairs	56025T1	$10.15	$9.67
400°F	6″ Gauntlet	14″	Gray	M,L	6 pairs	56025T2	13.46	12.83

Comfort-Fit Heat-Protection Gloves and Finger Cots

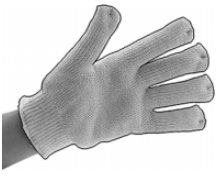

Nomex gloves offer a cotton knit fit with high temperature resistance. They quickly cool down after removal from a hot surface so you don't have to worry about burning your hands when you take them off. Gloves are antistatic, ambidextrous, washable, and have a knit wrist. Color is beige.

Zetex finger cots protect your fingers without the bulkiness of gloves. Cots are not combustible. Color is white.

Max. Temp.	Lg.	Size	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Nomex Gloves						
500°F	10″	L	4 pr.	53385T1	$52.84	$48.12

					Each Partial Pkg.	Each Full Pkg.
Zetex Finger Cots						
1100°F	4″	L	12	5619T57	$3.77	$3.39

Neoprene Heat-Protection/Chemical-Resistant Gloves

A thermal lining protects your hands while you handle hot surfaces, and a neoprene outer coating resists chemicals, grease, and solvents. These washable gloves are extra long for added arm protection. Made from materials that comply with FDA regulations for food contact. Color is black.

18″ long gloves have a 9″ gauntlet cuff; ***26″ long*** have a 17″ gauntlet cuff.

ⓘ For additional information about the chemical compatibility of these gloves, go to mcmaster.com and search for **5306TAC**.

			18″ Long			26″ Long		
				Per Pair			Per Pair	
Max. Temp.	Size	Full Pkg. Qty.		Partial Pkg.	Full Pkg.		Partial Pkg.	Full Pkg.
400°F	8	4 pr.	5399T1	$30.88	$28.64	5399T3	$36.65	$33.98
400°F	10	4 pr.	5399T2	30.88	28.64	5399T4	36.65	33.98

Warning! ***Heat-protection gloves are designed for intermittent use only at temperatures listed.***

For information about gloves and sizing, see page 1766. For cuff style and pattern information, see page 1772.

Leather Heat-Protection Gloves

Made of flexible leather, these gloves protect your hands in high-temperature applications. All have a gauntlet cuff, clute pattern, and wool lining. 11″ long gloves have a 1″ cuff; 13″ long have a 3″ cuff.

Heavyweight gloves have an added layer of fabric that allows longer heat exposure time.

Extra-heavyweight gloves have two added layers of fabric and wool for longer exposure time than heavyweight.

Max. Temp.	Lg.	Color	Size	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Standard							
500°F	11″	Rust/Gray	L	4 pr.	5331T3	$23.83	$20.14
500°F	13″	Rust/Gray	L	4 pr.	5331T1	24.24	20.72
Heavyweight							
500°F	11″	Rust/Gray	L	4 pr.	5331T6	26.92	22.75
500°F	13″	Rust/Gray	L	4 pr.	5331T7	28.37	23.97
Extra Heavyweight							
500°F	13″	Rust/Gray	L	4 pr.	5331T5	29.17	24.65

Firefighters' Leather Heat-Protection Gloves

In severe conditions, these gloves can take the heat that destroys other gloves. Used in firefighting and similar severe duty applications, they have a self-extinguishing, waterproof Gore lining. Gloves have a gunn pattern and a 3″ Nomex knit wrist cuff. Not rated for maximum temperature. Meet OSHA, CAL-OSHA, and NFPA (National Fire Protection Association) requirements. ***Side-split cowhide*** is specially tanned to remain soft even after repeated soakings. ***Brushed pigskin*** is durable and abrasion resistant.

To Order: Please specify size.

	Lg.	Color	Available Sizes		Per Pair 1-2	Per Pair 3-Up
Side-Split Cowhide	13″	Blue	S,M,L,XL	5247T9	$70.08	$63.26
Brushed Pigskin	13″	Tan	S,M,L,XL	5247T8	75.87	68.29

Extreme Heat-Protection Gloves and Mittens

Get top-notch protection during intense heat applications. These gloves and mittens are designed for intermittent contact with high-heat objects.

All have a gauntlet cuff. 11″ long gloves and mittens have a 2″ cuff; 13″ and 14″ have a 5″ cuff (unless noted); 18″ have a 9″ cuff; and 23″ have a 14″ cuff. Size is large for all gloves and mittens (unless noted). Gloves have a clute pattern; mittens are ambidextrous.

Leather-palm gloves and mittens offer better cut and abrasion resistance but have lower heat resistance than standard gloves.

Aluminized gloves and mittens protect against radiant heat and molten splashes. They offer better heat protection from radiant heat than standard gloves, but they're not designed to handle objects above 400°F.

Standard Glove *Aluminized Glove* *Double-Palm Mitten*

Kevlar Gloves—Color is yellow.

All are 24-oz. weight.

Lg.	Lining	STANDARD 600°F Max. Temp.	Per Pair
13″	Cotton	9664T21♣	$38.53
13″	Wool	9664T14	33.43

♣ Size is XL. Cuff is 5½″.

Kevlar Blend Gloves and Mittens—Colors: Yellow (★) and Silver (■).

Standard and *leather palm* are 22-oz. weight; *aluminized* are 19 oz.

Lg.	STANDARD★ 650°F Max. Temp.	Per Pair	LEATHER PALM★ 400°F Max. Temp.	Per Pair	ALUMINIZED■ 400°F Max. Temp.	Per Pair
Gloves						
11″	9177T21	$35.64	9177T41	$44.91	9177T61	$46.36
14″	9177T22	38.73	9177T42	49.74	9177T62	54.73
18″	9177T23	48.18	9177T43	55.64	9177T63	65.66
23″	9177T24	53.67	9177T44	64.17	9177T64	83.17
Mittens						
11″	9177T31	30.61	9177T71	40.00	9177T91	40.20
14″	9177T32	34.69	9177T72	43.88	9177T92	51.02

Zetex Gloves—Color is White (▲), White/Green (●), and Silver (■).

All are 25-oz. weight and have wool-lined fingertips.

Lg.	STANDARD▲ 1000°F Max. Temp.	Per Pair	LEATHER PALM● 600°F Max. Temp.	Per Pair	ALUMINIZED■ 400°F Max. Temp.	Per Pair
11″	9654T7	$38.46	9654T37	$46.91	9654T11	$52.29
14″	9654T6	37.79	9654T31	52.62	9654T12	58.91
18″	9654T9	46.71	9654T32	59.10	9654T13	73.69
23″	9654T8	61.28	9654T33	63.81	9654T14	96.25

Zetex Mittens—Color is white.

All are 25-oz. weight and have wool-lined fingertips.

Lg.	STANDARD 1000°F Max. Temp.	Per Pair	LEATHER PALM 600°F Max. Temp.	Per Pair
11″	9654T41	$29.33	9654T71	$41.87
14″	9654T5	38.28	9654T72	51.50

Zetex Plus Gloves and Mittens—Color is tan.

All are 35-oz. weight and have wool-lined fingertips. *Double-palm* have an extra layer of material for handling heavier objects.

Lg.	STANDARD 1500°F Max. Temp.	Per Pair	LEATHER PALM 400°F Max. Temp.	Per Pair	DOUBLE PALM 1500°F Max. Temp.	Per Pair
Gloves						
11″	6081T7	$53.15	6081T31	$70.81	6081T51	$69.41
14″	6081T1	59.93	6081T3	75.38	6081T53	80.84
18″	6081T9	69.52	6081T35	83.10	6081T55	96.02
Mittens						
11″	6081T42	46.84	———	———	6081T5	58.83
14″	6081T4	52.70	———	———	6081T15	68.30

PBI Kevlar Blend Gloves and Mittens—Color is gold.

These gloves are abrasion resistant and have a wool lining.

22-oz. gloves are lightweight yet they have one of the highest maximum temperatures.

Lg.	22-oz. WEIGHT 1400°F Max. Temp.	Per Pair	45-oz. WEIGHT 1700°F Max. Temp.	Per Pair
Gloves				
11″	5536T21	$53.69	5536T41	$98.10
14″	5536T22	64.15	5536T42	118.00
18″	5536T23	73.97	5536T43	135.81
23″	5536T24	84.62	5536T44	147.33
Mittens				
11″	5536T31	45.40	5536T51	83.87
14″	5536T32	51.36	5536T52	93.91
18″	5536T33	66.46	5536T53	106.31

Cold-Protection Glove Liners

Keep hands warm and dry while you work. Made from Dacron polyester fibers, these snug-fitting liners trap air and absorb moisture. They are ambidextrous and have a knit wrist.

Lg.	Color	Size	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
9½″	White	L	12 pairs	53415T4	$4.03	$3.80

Warning! ***Heat-protection gloves are designed for intermittent use only at temperatures listed.***

For information about gloves and sizing, see page 1766. For cuff style and pattern information, see page 1772.

Heat-Protection Sleeves

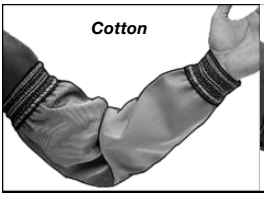
Cotton

Leather with Arm Straps

Protect your arms from heat and sparks with these flame-resistant sleeves.

Cotton canvas sleeves are designed for light duty applications and have elastic ends. *Note:* Washing will compromise the sleeves' flame resistance.

Cotton sleeves have elastic ends. They retain their flame resistance through repeated washings.

Leather sleeves are made of shoulder-split cowhide that's tanned for flame and abrasion resistance. All have wrist snaps; the 18″ and 23″ lengths also have arm straps.

Kevlar blend sleeves resist heat and abrasions. All have wrist snaps; the 18″ and 23″ lengths also have arm straps.

			12″ Length			18″ Length			23″ Length		
				Per Pair			Per Pair			Per Pair	
	Wt., oz	Color	Full Pkg. Qty.	Partial Pkg.	Full Pkg.	Full Pkg. Qty.	Partial Pkg.	Full Pkg.	Full Pkg. Qty.	Partial Pkg.	Full Pkg.
Cotton Canvas	10	Off-White	12 pairs	5342T5	$5.66	$5.36	12 pairs	5342T11	$7.00	$6.66	12 pairs	5342T6	$8.37	$7.62
Cotton	9	Green	12 pairs	5342T14	8.61	8.18	12 pairs	5342T16	12.03	11.38	6 pairs	5342T18	14.50	13.59
Leather	—	Brown	6 pairs	5342T21	15.00	14.10	6 pairs	5342T22	16.83	15.92	4 pairs	5342T23	21.57	20.32
Kevlar Blend	22	Yellow	6 pairs	5342T33	19.36	18.36	4 pairs	5342T36	21.45	20.27	4 pairs	5342T39	28.01	26.50

Leather Cold-Protection Gloves

High Visibility

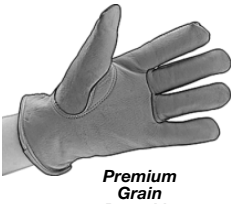
Premium Grain Deerskin

An insulated lining combined with the comfort and durability of leather provides protection in cold environments. All gloves have a gunn pattern. All have an elastic wristband for added comfort and easy removal.

Leather palm gloves have multiple layers of insulated lining. ***High-visibility*** gloves have a safety-orange nylon back and cuff with a reflective knuckle strap.

Cowhide gloves resist abrasion. Split refers to the rough side of the material; grain is the smooth side. *Grain pigskin* gloves remain flexible even in wet and oily environments. *Grain deerskin* gloves provide the best dexterity, even in extremely cold temperatures.

To Order: Please specify size where necessary.

Hand Warmer Pads— Place inside gloves for ten hours of warmth.

Material	Cuff	Lining	Lg.	Color	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Leather Palm									
2-Layer Split Cowhide	2½″ Safety Cuff	Foam	10½″	Off-White	L	12 pairs	5320T65	$7.26	$6.87
2-Layer Grain Pigskin	2½″ Safety Cuff	Thinsulate	11″	Off-White	L	12 pairs	5320T8	11.16	9.59
2-Layer Grain Pigskin	Knit Wrist	Thinsulate	11″	Off-White	L	12 pairs	5320T9	12.01	10.81
4-Layer Grain Pigskin	2½″ Safety Cuff	Polyester/Nylon	12″	Gold	L,XL	12 pairs	34025T11	12.49	11.86
4-Layer Grain Pigskin	Knit Wrist	Polyester/Nylon	10½″	Gold	L	12 pairs	34025T24	12.49	12.02
High-Visibility Leather Palm									
Grain Pigskin	3″ Safety Cuff	Polyester	11″	Tan/Orange	M,L,XL	6 pairs	3694T2	16.37	15.64
Grain Pigskin	Knit Wrist	Polyester	11″	Tan/Orange	M,L,XL	6 pairs	3694T1	16.05	15.34
Premium All Leather									
Grain Cowhide	Slip On	Fleece	10″	Tan	M,L,XL	6 pairs	5490T82	13.88	12.61
Grain Deerskin	Slip On	Thinsulate	10″	Black	S,M,L,XL	4 pairs	5490T44	28.69	25.82
Grain Deerskin	Slip On	Thinsulate	10″	Gold	M,L,XL	4 pairs	5490T56	36.11	32.57

Hand Warmer Pads, 2¾″ Wd. × 3¾″ Lg. (2/Pkg.) ..... 42295T21 **Per Pkg.** 1-5 $0.77 6-Up $0.71

PVC Cold-Protection Gloves

Removable Lining

The PVC (polyvinyl chloride) coating on these gloves provides an enhanced grip and resists acids, solvents, and abrasion.

Removable nylon/foam lining pulls out for easy cleaning.

Cuff	Lg.	Color	Size	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
Permanent Fleece/Foam Lining							
3″ Safety Cuff	12″	Blue	L	12 pr.	5438T7	$12.27	$11.25
Removable Nylon/Foam Lining							
Knit Wrist	10″	Red	L	12 pr.	5438T6	9.73	9.24

Neoprene Cold/Wet Protection Gloves

Keep your hands warm in wet environments. These foam-insulated neoprene gloves provide protection from cold and detergents. Sealed seams are water resistant—water will bead off the gloves. The textured surface enhances grip, and an attached hook-and-loop wrist strap provides a secure fit.

Note: Gloves are not designed to be immersed in liquids.

To Order: Please specify size.

Lg.	Color	Available Sizes	Full Pkg. Qty.		Per Pair Partial Pkg.	Per Pair Full Pkg.
10½″	Black	S,L,XL	4 pairs	5863T7	$32.51	$30.65

Extreme Cold-Protection Gloves

5″ Gauntlet Cuff

Get superior protection in temperatures as low as –250° F without sacrificing dexterity and flexibility. These blue nylon gloves have a clute pattern and a breathable liner that provides both insulation and water resistance.

Note: Gloves are not designed to be immersed in liquids.

To Order: Please specify size.

Cuff	Lg.	Available Sizes		Per Pair
Knit Wrist	12¼″	S,M,L,XL	5608T7	$89.98
5″ Gauntlet	14″	S,M,L,XL	5608T1	97.97
9″ Gauntlet	18½″	S,M,L,XL	5608T8	123.92

Women's-to-Men's Footwear Size Conversion Chart

Women's	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½	18
Men's	6		7		8		9		10		11		12		13		14		15		16	
Men's	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½

Work Boots

We offer a variety of boot styles and materials—choose the ones best suited for your application. These boots are designed to fit over socks. *Steel shanks* provide additional support for demanding work such as extensive ladder climbing. *Fiberglass* and *composite shanks* are similar in strength to steel but lighter. *Steel midsoles* provide extra puncture resistance when working around glass, nails, and scrap metal. All of our *steel toe* boots meet ASTM F2413-05.

PVC—The economical choice for everyday water resistance.

PVC/Polyurethane—This combination offers chemical resistance and durability.

Insulated PVC/Polyurethane—Wool felt insulation keeps your feet warm.

Premium PVC/Polyurethane—More polyurethane in the blend gives these boots better chemical resistance than PVC/polyurethane.

Rubber—Keep your feet dry in water and mud. These boots are flexible and abrasion resistant.

Insulated Rubber—Also known as firefighters' boots, these boots provide the heat protection and durability required by firefighters. Uppers are ozone resistant and foam insulated. *15″ boots* meet OSHA 29 CFR 1910.136 and 1910.156 and CSA Z195-M92. They are also UL certified as meeting NFPA Standard for structural firefighting.

Neoprene Rubber—Use in heavy duty applications exposed to petrochemicals. These boots also resist most acids and animal fats.

Leather and ***Insulated Leather***—More comfortable and flexible than many of the other boots we offer. *Leather* have nonmarking soles. *Insulated leather* have waterproof rubber bottoms and multiple-layer insulation that includes a wool/polyester blend and foam.

To Order: Please specify full size, unless noted. For all boots, order your normal shoe size.

Also Available: Replacement liners for insulated PVC/polyurethane boots. Please ask for 56145T86 and specify size.

Ht.	Color	Additional Features	Available Full Sizes	Plain Toe	Per Pair	Steel Toe	Per Pair
PVC							
6″	Black	Steel Shank	Men's 6-13	—	—	50615T42	$25.77
14″	White	—	Women's 5-10	5061T6	$20.60	5061T8	23.23
16″	Black	—	Men's 6-14	5311T5	17.37	5311T17	20.29
16″	White	Steel Shank	Men's 6-13	5311T7	23.77	5311T9	26.81
PVC/Polyurethane							
6″	Black	Steel Shank	Men's 6-13	—	—	52865T1	28.79
14″	Black	—	Women's 5-11	53235T4	24.70	53235T6	27.35
16″	Black	Steel Shank	Men's 5-15	5547T3	24.70	5547T5	27.40
16″	Black	Steel Midsole	Men's 6-15	—	—	56085T3	53.84
Insulated PVC/Polyurethane—*Protects to –35°F*							
10″	Black	Steel Shank	Men's 7-14	56145T12	61.78	56145T15	69.75
Premium PVC/Polyurethane							
16″	Brown	Steel Shank	Men's 6-15	5454T1	63.57	5454T2	66.15
Rubber							
16″	Black	Steel Shank	Men's 7-13	—	—	5266T3	41.56
16″	Black	Steel Midsole	Men's 7-13	—	—	5266T2	92.08
Insulated Rubber—*Not rated for temperature*							
15″	Black	Steel Shank	Men's 5-15★	—	—	9133T7	161.26
32″	Black	Steel Shank/Midsole	Men's 5-15	—	—	9133T8	204.03
Neoprene Rubber							
12″	Brown	—	Men's 5-13	52325T2	74.30	52325T4	80.86
16″	Brown	—	Men's 5-13	52325T6	78.69	52325T8	83.89
Leather							
4″	Black	Fiberglass Shank	Men's 7½-13▲	—	—	9691T7	124.59
Insulated Leather—*Protects to –148°F*							
13″	Black	Composite Shank	Men's 7-15	—	—	1740T11●	196.08

★ Available in ½ sizes. ▲ Available in ½ sizes except for 12½.
● Has a composite toe and meets ASTM F2413-05.

Waders

Wear these waders for more coverage than ordinary boots in wet environments. They fit right over your socks. Steel toe meet ASTM F2413-05 for impact and compression; steel midsole meet ASTM F2413-05 and CSA Z195-02, Grade 1 for puncture resistance. Lengths are approximate and measured from the bottom of the heel to the top of the wader.

Hip Waders—Provide protection to mid-thigh. All have adjustable straps with snaps that loop through your belt for a secure fit. ***Chest Waders***—*Rubber* have insulated boots, a drawstring waist, and suspenders. *PVC* have suspenders and a belt. *Neoprene* have bib-style suspenders and reinforced knees.

Rubber is the best choice for durability around water, mud, and sludge. *PVC* resists oil, gasoline, and ozone. *Neoprene* is good for use around petrochemicals. *Steel shanks* provide additional support for demanding work such as extensive ladder climbing. *Steel midsoles* provide extra puncture resistance when working around glass, nails, and scrap metal. For a shank and midsole illustration, see work boots on this page.

To Order: Please specify size.

Material	Toe	Seam Lg. Inner	Seam Lg. Outer	Color	Additional Features	Available Full Sizes		Per Pair
Hip Waders								
Rubber	Steel	30″	36″	Black	Steel Shank	Men's 7-14	5268T64	$68.77
PVC	Plain	32″	35″	Black	—	Men's 7-13	51955T11	80.67
PVC	Steel	32″	35″	Black	—	Men's 7-13	51955T22	83.67
PVC	Steel	32″	35″	Black	Steel Midsole	Men's 8-13	51955T44	101.16
Chest Waders								
Rubber	Plain	31″	52″	Dk. Green	—	Men's 6-14	5268T15	155.00
PVC	Plain	32″	56″	Black	—	Men's 7-13	51955T33	132.52
PVC	Steel	32″	56″	Black	Steel Midsole	Men's 8-13	51955T55	165.62
Neoprene	Plain	34″	57″	Brown	—	Men's 7-13	56035T7	184.61

Repl. Nylon Adjustable Suspenders (Brown) for Rubber Chest Waders ..... 5268T62 ..... 17.02
PVC and Rubber Repair Kit ..... 5268T32 **Each** $11.28

Hip Waders *Chest Waders*

Overshoes

Pull-On Rubber

Pull-On PVC

Snap Closure

Strap Closure

Insulated Buckle Closure with Studded Sole

Fit these overshoes right over your shoes or boots to protect them from wet conditions. Soles are skid resistant.

Snap- and ***strap-closure*** overshoes provide a secure fit and more protection above the ankle.

Insulated buckle closure with studded sole overshoes protect to –60° F and provide a better grip in icy conditions.

To Order: Please specify size. Overshoes are designed to fit over street shoes, so order your normal size. However, consider ordering a larger size if wearing with boots. For letter sizes, use chart below. For a women's-to-men's numeric size conversion chart, see page 1781.

Shoe Size	6½-7½	8-9½	10-11½	12-13	14-15	16
Men	S	M	L	XL	XXL	3XL
Women	—	S	M	L	—	—

Material	Ht.	Color	Available Full Sizes		Per Pair
Pull-On					
Rubber	3″	Black	S-XL	53745T15	$18.70
PVC	4″	Black	S-XXL	5647T1	15.77
Snap Closure					
PVC	10″	Black	S-XXL	5300T7	19.54
PVC	10″	Yellow	S-XXL	5300T8	19.54
PVC	17″	Black	S-XXL	53935T4	24.83
Strap Closure					
PVC	17″	Black	Men's 7-15	51995T35	29.87
PVC	17″	Yellow	Men's 7-15	51995T21	29.87
Buckle Closure					
Rubber	5″	Black	Men's 6-16	5629T333	44.42
Rubber	11″	Black	Men's 7-15	5629T447	31.37
Rubber	14″	Black	Men's 7-15	5629T662	33.28
Insulated Buckle Closure with Studded Sole					
Rubber	5″	Black	Men's 6-16	5629T21	92.78
Rubber	12″	Black	Men's 6-16	5629T31	115.50

Overshoes with Super-Grip Soles

Pull-On

Coated with an aluminum-oxide grit, these super-grip overshoes increase traction in slick conditions. Made of black PVC.

To Order: Please specify size. Overshoes are designed to fit over street shoes, so order your normal size. However, consider ordering a larger size if wearing with boots.

Shoe Size	4-5½	6-7	7-9½	10-11½	12-13½	14-15½	16+
Men	S	M	L	XL	XXL	3XL	4XL
Women	—	S	M	L	XL	XXL	—

Ht.	Available Sizes		Per Pair
Pull-On			
4″	S-4XL	52905T2	$57.42
Snap Closure			
10″	S-3XL	5600T6	64.08
15″	M-3XL	5600T7	71.46

Socks

Size is men's 9-12. ***Crew*** socks are for everyday wear. They're made of a cotton/nylon blend. Color is white. ***Cold weather*** socks are made of a wool blend for warmth. Color is charcoal with a light brown band top.

	Pkg. Qty.		Per Pkg. 1-5	6-Up
Crew	3 pairs	6588T71	$16.57	$14.50
			Per Pair	
Cold Weather		6588T41	$19.17	$17.42

Shoe and Boot Toe Protector

Extend the life of your shoes and boots with this protective epoxy. It dries to an abrasion-resistant, flexible layer that permanently bonds to almost any surface. Coat one pair of shoes with one applicator.

To Order: Please specify color: black, brown, or tan.

2344T5 ..... **Each** $23.89

Shoe and Boot Laces

	Black	Per Pair	Brown	Per Pair	Brown/Yellow	Per Pair
27″ Cotton	5223T113	$2.08	—	—	—	—
54″ Nylon	5223T772	2.42	5223T771	$2.42	5223T775	$2.51
72″ Nylon	5223T776	2.77	5223T774	2.77	5223T777	2.77
72″ Leather	—	—	5223T333	4.88	5223T335★	4.88

★ Color is tan.

Ice Grippers

Standard Duty Pull-On

Heavy Duty Strap-On

Gripping studs provide traction on otherwise dangerous surfaces. These grippers fit over your shoes and boots.

Standard Duty Pull-On— Easily pull on and off by stretching the rubber harness over any shoe or boot. They have four studs on the front and two on the heel. Available in sizes S (up to 7½), M/L (8-10½), and XL (11-up). ***Heavy Duty Strap-On—*** 17 steel studs on each gripper dig in and hold tight. They have hook-and-loop straps, making them adjustable and easy to slip on and off. Available in sizes XS (5-6), S (6½-7½), M (8-10), L (10½-12), and XL (12½-14).

All sizes are men's. **To Order:** Please specify size.

		Per Pair 1-3	4-Up
Standard Duty Pull-On	5440T4	$30.56	$28.95
Heavy Duty Strap-On	5408T6	39.71	37.72
Repl. Studs for Heavy Duty Strap-On (50/Pkg.)	5408T21	**Per Pkg.**	$6.41

Shoe and Boot Insoles

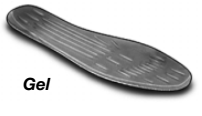
Gel

Stainless Steel

Keep your feet comfortable with our cushioned insoles. Gel insoles have an antimicrobial top layer to reduce odors.

Gel insoles are made of polyurethane and provide maximum shock and impact absorption. Air flow channels allow breathability to keep your feet cooler. **To Order:** Please specify full or half size.

Type 301 stainless steel insoles protect against punctures. They're flexible and made of 0.019″ thick stainless steel under a 1/16″ thick foam pad. Meet ANSI Z41.5-1999. **To Order:** Please specify full size.

Available Sizes		Per Pair 1-5	6-Up
Gel			
Women's 4½-12, Men's 5-15	5451T4	$21.91	$19.90
Type 301 Stainless Steel			
Men's 7-15	5208T1	23.68	21.43

Toe and Foot Guards

Plastic Toe Guard — *Plastic Toe/Foot Guard* — *Steel Toe Guard* — *Aluminum Alloy Foot Guard* — *Aluminum Alloy Toe/Foot Guard* — *Steel/Rubber Overshoe* — *Steel/Rubber Overshoe for Work Boots*

Light duty guards deflect low-impact blows. Meet ANSI Class 30. ***Heavy duty*** guards protect against high-impact blows. Meet ANSI Class 75.
Aluminum alloy foot guards (also known as metatarsal guards) fit over steel-toe work boots to protect the tops of your feet.
Overshoes with toe guards are made of stretchable rubber to easily slide over your shoes. **To Order:** For 4606T17, please specify men's size S (7-8½), M (8½-9½), L (9½-11), XL (11-12), or XXL (12-13). For 4606T19, specify men's S (5-7), M (8-10), L (11-12), L/XL (13-14), XL (15-16), or XXL (17-19).

Material	Style	Protection Lg.	Protection Wd.	Color		Guards Per Pair 1-3	Guards Per Pair 4-Up		Repl. Straps Per Pair 1-5	Repl. Straps Per Pair 6-Up
Light Duty— *30 lbs. max.*										
Plastic	Women's Toe Guards	3½″	3½″	Yellow	5282T21	$22.84	$20.59	5282T19	$3.26	$2.93
Plastic	Men's Toe Guards	4⅛″	3½″	Yellow	5282T22	27.18	24.51	5282T19	3.26	2.93
Plastic	Toe/Foot Guards	6″	4¾″	Yellow	5282T23	38.42	33.90	5282T19	3.26	2.93
Heavy Duty— *75 lbs. max.*										
Steel	Toe Guards	3⅝″	4½″	Silver	5397T11	28.67	25.67	5397T12	5.60	4.91
Aluminum Alloy	Foot Guards with Rubber Straps	5¼″	5½″	Silver	6090T71	29.69	27.14	6090T85	5.00	4.41
Aluminum Alloy	Foot Guards with Spring Fastener	5¼″	5½″	Silver	6090T72	32.10	28.84	6090T97	5.77	5.08
Aluminum Alloy	Toe/Foot Guards with Rubber Strap	7″	5″	Silver	5404T13	43.12	39.43	5404T15	5.66	5.00
Aluminum Alloy	Toe/Foot Guards with Rubber Strap	7″	5½″	Silver	5404T23	44.52	40.00	5404T15	5.66	5.00
Aluminum Alloy	Toe/Foot Guards with Rubber Strap	8″	6″	Silver	5404T33	57.58	51.74	5404T16	6.43	5.68
Aluminum Alloy	Toe/Foot Guards with Rubber Strap	8″	6½″	Silver	5404T43	57.58	51.74	5404T16	6.43	5.68
Aluminum Alloy	Toe/Foot Guards with Leather Strap	7″	5″	Silver	5404T11	58.91	53.86	5404T14	14.72	13.00
Aluminum Alloy	Toe/Foot Guards with Leather Strap	7″	5½″	Silver	5404T21	58.92	53.86	5404T14	14.72	13.00
Aluminum Alloy	Toe/Foot Guards with Leather Strap	8″	6″	Silver	5404T31	71.56	65.43	5404T17	16.99	15.01
Aluminum Alloy	Toe/Foot Guards with Leather Strap	8″	6½″	Silver	5404T41	71.56	65.43	5404T17	16.99	15.01
Steel/Rubber	Overshoes with Toe Guards	2⅛″	♣	Black	4606T17	33.79	30.55	—	—	—
Steel/Rubber	Overshoes with Toe Guards for Work Boots	♣	♣	Black	4606T19■	55.30	50.00	—	—	—

♣ Varies by size. ■ Size S does not have strap shown in photo.

Boot and Glove Drying Racks

Boot Rack

Glove Rack

Store and dry up to four pairs of boots or gloves on these steel racks. Boot rack has three mounting holes; glove rack has two. Holes are 16″ apart; mounting screws are included. ***PVC-coated*** rack holds up in harsh environments where acids or solvents are present.

	Ht.×Wd.×Dp.	Epoxy Coated	Each	PVC Coated	Each
Boot Rack	4½″ ×35¼″×10½″	1042T6	$27.43	1042T1	$29.67
Glove Rack	14″ ×22″ × 5¼″	1042T8	25.88	1042T2	29.90

Shin and Ankle Guards

Shin Guards (Knee pads not included) — *Ankle and Foot Guards* — *Shin and Foot Guards*

Shin guards can be worn in conjunction with your knee pads. Just loop the nylon strap around the bottom knee pad strap and secure with the two hook-and-loop closures. For knee pads, see page 1784.

Ankle and foot guards, also known as spats, protect from sparks and moderate molten-metal splashes. They have a snap-button closure and adjustable instep strap.

Shin and foot guards, also known as leggings, protect from sparks and moderate molten metal splashes. They also offer moderate resistance to abrasion and tears. A spring-tension wire frame keeps them securely in place.

	Ht.	Color		Per Pair
Shin Guards				
Polyester with Foam Insert	10″	Blue	5528T8	$14.43
Ankle and Foot Guards				
Leather	7″	Gray	9680T1	22.12
Leather	10″	Gray	9680T2	24.82
Shin and Foot Guards				
Kevlar	14″	Yellow	5528T1	58.25
Kevlar with Leather Foot	14″	Yellow	5528T3	58.23

Cut-Resistant Chaps

Protect your legs from chain saw injuries with these chaps. Each leg has padded protection on the front and left side. Chaps have a zippered front pocket and color is orange. Meet ASTM F1970-98 leg protection standards for chain saw users.

Standard chaps are made of 420 denier nylon and include quick-release buckles.

Extra-abrasion resistant chaps are made of 1000 denier Cordura nylon, which is more abrasion resistant than the standard duty material. They include three sets of leg straps with buckles.

Standard

Lg.	Standard	Each	Extra-Abrasion Resistant	Each
28″	5286T11	$79.84	5286T23	$103.12
33″	5286T12	79.84	5286T21	103.12
36″	5286T13	79.84	5286T22	103.12

Elbow Pads

Covered with abrasion-resistant black nylon fabric, these foam-rubber pads have nonslip rubber caps for added stability. Brass grommets allow air circulation. Includes elastic straps with hook-and-loop closures.

Size		Per Pair
Large	56285T83	$30.20

Knee Pads

Foam Rubber | Leather | Protective Cap | Hinged | Gel Filled Ultra Glide | Gel Filled Swivel Cap | Fluid Filled

Foam rubber pads are ergonomically designed for a secure fit and have a hook-and-loop strap. Color is tan. *Light duty* pads are 5/8″ thick. *Heavy duty* pads are 3/4″ thick with an added layer of rubber for longer life.

Leather pads have a tough leather exterior for superior abrasion resistance. They're 1/2″ thick with a rivet-reinforced inner layer of water-resistant felt and an adjustable leather strap with a metal buckle.

Protective cap pads provide additional protection on rough and hard surfaces. They have two straps with buckle/button closures. *Plastic cap* is white with black nylon fabric. *Nonslip rubber cap* provides traction on wet surfaces. They're black rubber with black nylon fabric. *Nonmarring rubber cap* won't mark or scuff surfaces. They're tan with black nylon fabric. *Flame-resistant plastic caps* don't support combustion and will not burn. They're black plastic with gray cotton fabric.

Hinged pads provide maximum protection without sacrificing mobility. These pads not only guard the knee cap but also protect above and below the knee. Pads have a gray hard plastic outer shell that's cushioned with 1/2″ of foam rubber. Each pad has a nonskid strip, two elastic adjustable straps, and two fastening clips.

Gel-filled pads have a gel center for comfort and longer life. *Ultra-glide* pads allow easy movement with little resistance on hard surfaces. They're nylon rubber with black nylon fabric and have a hook-and-loop closure. *Swivel cap* is translucent plastic with black polyester fabric and a hook-and-loop closure. *Leather* pads have a tough exterior for superior abrasion resistance. They have two straps with buckle/button closures.

Fluid-filled pads provide more comfort and protection than foam rubber pads. They have a replaceable fluid-filled insert that distributes pressure evenly around the knee cap. Pads consist of black polyurethane caps and black nylon fabric held firmly in place by hook-and-loop straps.

		Per Pair
Foam Rubber		
Light Duty	9688T41	$11.38
Heavy Duty	9688T45	19.66
Leather		
Felt Lined	7630T14	22.00
Protective Cap		
Plastic Cap	52695T21	26.43
Nonslip Rubber Cap	52695T22	28.15
Nonmarring Rubber Cap	52695T23	30.12
Flame-Resistant Plastic Cap	52695T28	26.85

			Per Pair
Hinged			
Plastic	51975T21		$34.94
Replacement Nonskid Strips (2/Pkg.)	51975T34	Per Pkg.	$9.18
Replacement Straps (4) and Clips (4)	51975T33	Per Pkg.	18.02
Gel Filled			
Ultra Glide	3004T11		$45.10
Swivel Cap	52695T31		39.90
Leather	7630T23		45.87
Fluid Filled			
Polyurethane	5205T11		83.33
Replacement Fluid-Filled Insert	5205T15		30.30

Safety Vests and Shirts

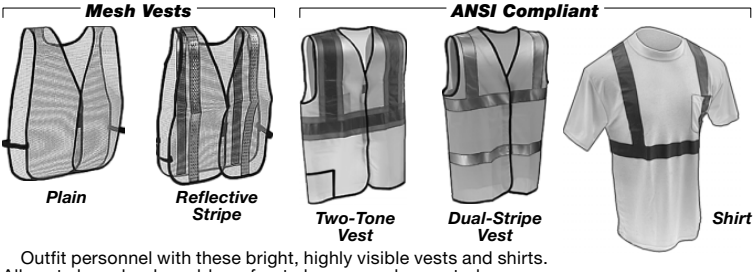

Mesh Vests: Plain | Reflective Stripe

ANSI Compliant: Two-Tone Vest | Dual-Stripe Vest | Shirt

Outfit personnel with these bright, highly visible vests and shirts. All vests have hook-and-loop front closures, unless noted.

Mesh vests are 23″ long and have elastic side straps that fit chest sizes 34″-40″. Fluorescent lime vests are polyester; orange vests are vinyl. Meet OSHA standards for daytime use. *Reflective stripe vests* have sewn-on stripes. Fluorescent lime vests have 3/4″ wide reflective white stripes; orange vests have 1 3/8″ wide reflective lime stripes.

ANSI-compliant vests and ***shirt*** meet ANSI 107, Class 2 standards for high visibility safety apparel. All are made of polyester and have 2″ wide reflective tape stripes. *Two-tone single stripe* is trimmed in bright orange. *Dual stripe with pockets* has nine outside and three inside pockets. ***Shirt*** has one chest pocket and wicks away perspiration to keep you cooler.

To Order: Please specify fluorescent lime (FL), fluorescent yellow (FY), or orange (O) color when necessary. For ANSI-compliant vests and shirt, please specify size: M (chest size 37-39/30″ Lg.), L (chest size 39-43/27″ Lg.), XL (chest size 43-46/27 1/2″ Lg.), XXL (chest size 46-49/28″ Lg.), 3XL (chest size 49-52/28 1/2″ Lg.).

Style	Color		Each
Mesh Vests			
Plain	FL, O	8325T11	$6.90
Reflective Stripe	FL, O	8325T55	11.31
ANSI-Compliant Fabric Vests			
Single Stripe	FY	8324T11★	19.84
Two-Tone Single Stripe	FY	8324T12	21.58
Dual Stripe	FY	8324T13	21.00
Dual Stripe with Pockets	FY, O	8324T14●	22.18
ANSI-Compliant Mesh Vest			
Dual Stripe	FY, O	8324T15	21.00
ANSI-Compliant Shirt			
Single Stripe	FY, O	8324T17■	24.67

★ Zipper is brass with nylon teeth.
● Zipper is nylon.
■ Also available in S (chest size 35-37/30″ Lg.).

Shop Aprons

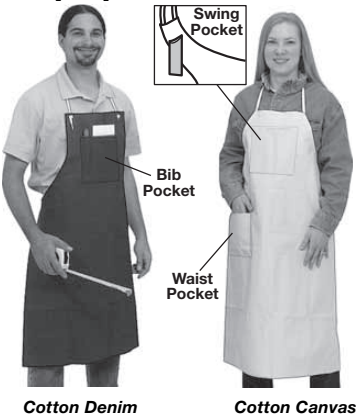

Cotton Denim | Cotton Canvas

Cotton-denim and ***cotton-canvas*** aprons come in three pocket styles: *bib pocket* with two compartments; *swing and waist pocket*, which has a bib pocket that swings out from the bottom to prevent items from falling out when you bend over plus a regular waist pocket; and *bib and waist pocket*. ***Leather*** is good for general abrasion resistance. ***Extra abrasion-resistant leather*** is stronger than leather and perfect for jobs that require greater abrasion resistance. ***Kevlar*** is durable and heat resistant.

Pocket Style	Wd. × Lg.	Color		Each 1-5	Each 6-Up
Cotton Denim					
Bib Pocket (Two Compartments)	28″ × 36″	Blue	5256T7	$5.63	$4.91
Swing and Waist Pocket	28″ × 36″	Blue	5256T8	6.50	6.16
Swing and Waist Pocket	28″ × 42″	Blue	5257T4	8.03	7.57
Bib and Waist Pocket	29″ × 39″	Blue	5256T2	9.82	8.31
Bib and Waist Pocket	29″ × 42″	Blue	5256T4	12.33	10.09
Cotton Canvas					
Bib and Waist Pocket	29″ × 39″	Beige	5256T3	7.50	6.06
Swing and Waist Pocket	29″ × 39″	Beige	5257T3	8.75	8.29
Leather					
Bib Pocket	22″ × 36″	Gray	5265T22	27.62	24.07
Extra Abrasion-Resistant Leather					
Bib Pocket	22″ × 36″	Tan	5265T12	36.64	31.93
Kevlar					
No Pocket	24″ × 39″	Yellow	9173T4	47.07	44.50

Liquid-Repellent Aprons

Protect your clothes from splashes. All aprons are one size fits all except coat-style aprons. *Note:* 1 mil = 0.001″.

Acid-Resistant PVC (Polyvinyl Chloride) Aprons

These aprons resist chemicals and abrasion.

Reinforced aprons have a stomach patch for added strength and longer mid-section wear. ***Heavy duty*** aprons have a reinforced neck strap and waist ties for greater durability.

Wd. × Lg.	Thick., mils	Color		Per Pkg. 1-5	Per Pkg. 6-Up
Standard Duty— *Pkg. quantity is 6.*					
27″ × 36″	4	Clear	5975T1	$7.05	$6.27
35″ × 45″	6	White	5975T4	10.35	9.20
35″ × 45″	8	White	5975T7	13.95	12.40
Reinforced				Each 1-5	Each 6-Up
33″ × 44″	20	Green	53445T72	$6.04	$5.56
33″ × 44″	20	White	53445T74	6.18	5.67
33″ × 49″	20	Green	53445T76	6.41	5.90
Heavy Duty					
24″ × 36″	8	Clear	5250T1	6.40	5.71
24″ × 36″	12	Clear	5250T5	9.00	7.83
27″ × 36″	4	Clear	5250T11	5.50	4.91
27″ × 42″	4	Clear	5250T12	5.60	5.00
27″ × 44″	20	Clear	5250T9	10.50	9.38
36″ × 42″	8	Clear	5250T2	7.70	6.88
36″ × 42″	12	Clear	5250T6	9.50	8.48
36″ × 48″	8	Clear	5250T4	8.10	7.23
36″ × 48″	12	Clear	5250T8	10.10	9.02
36″ × 48″	20	Clear	5250T17	12.70	11.34

Acid-Resistant PVC Coated — *Acid-Resistant PVC* — *Water-Resistant SBR Rubber-Coated Cotton/Poly* — *Coat Style*

Acid-Resistant PVC-Coated Aprons

For the chemical and abrasion resistance of PVC with the long life of fabric, choose these aprons. ***Reinforced*** apron has a stomach patch for added strength and extended mid-section wear.

Wd. × Lg.	Material	Thick., mils	Color		Each 1-5	Each 6-Up
Standard Duty						
35″ × 45″	Polyester	16	Yellow	5254T22	$10.72	$9.64
35″ × 48″	Polyester	16	Yellow	5254T24	11.52	10.60
Reinforced						
33″ × 45″	Polyester	20	Yellow	5254T23	15.44	14.58

Water-Resistant SBR Rubber-Coated Cotton/Poly Aprons

Ideal for general maintenance applications, these aprons also resist mild acids.

Wd. × Lg.	Thick., mils	Color		Each 1-5	Each 6-Up
24″ × 36″	18	Black	5251T1	$16.96	$14.78
35″ × 45″	18	Black	5251T2	19.81	17.26

Oil-Resistant Nitrile-Coated Aprons

These aprons resist abrasion, solvents, and grease. ***Reinforced*** apron has a stomach patch for added strength and extended mid-section wear.

Wd. × Lg.	Material	Thick., mils	Color		Each 1-5	Each 6-Up
Standard Duty						
29″ × 35″	Cotton/Poly	16	Black	5246T11	$17.56	$16.60
35″ × 45″	Cotton/Poly	16	Black	5246T12	16.25	15.36
Reinforced						
35″ × 48″	Polyester	20	Yellow	5553T1	41.57	37.42

Acid-Resistant Acrylic Apron

Great for working with acids, caustics, and lacquers, this apron can withstand cold temperatures without stiffening or cracking. Apron is made of acrylic and is reinforced with cotton and polyester.

Wd. × Lg.	Thick., mils	Color		Each 1-5	Each 6-Up
35″ × 45″	17	Yellow	5248T3	$20.67	$18.98

Flame-Resistant PVC-Coated Polyester Apron

This apron also resists chemicals.

Wd. × Lg.	Thick., mils	Color		Each 1-5	Each 6-Up
35″ × 48″	16	Green	11395T43	$19.10	$16.64

Coat-Style Aprons

Protect your chest, shoulders, and arms with these extra-coverage aprons. **To Order:** Please specify size where necessary.

Acid-resistant apron withstands corrosive liquids. This heavy duty apron has heat-sealed seams for extra protection and comes in the following lengths: S (48″), M (53″), and L, XL, and XXL (54″).

Oil-resistant neoprene-coated apron also resists acids, caustics, and alkalies. It's made from materials that comply with FDA regulations for food contact. Length is 50″.

Material	Thick., mils	Color	Available Sizes		Each 1-5	Each 6-Up
Acid-Resistant Heavy Duty						
PVC	8	Blue	S, M, L, XL, XXL	50085T11	$14.81	$13.94
Oil-Resistant Neoprene Coated						
Nylon	10	Yellow	S, M, L, XL	50075T11	85.39	76.85

Disposable Aprons and Overshoes

Protect your clothes and shoes from splashes.

Note: 1 mil = 0.001″.

Polyethylene garments are commonly used in food preparation environments. They're made from materials that comply with FDA regulations for food contact. *Overshoes* fit over street shoes up to men's size 14. Tie around legs to secure.

Latex overshoes resist acids, alcohol, and salts and have a nonslip sole.

Polyethylene Aprons

Wd. × Lg.	Thick., mils	Color	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Smooth						
28″ × 46″	1.50	White	25	9738T81	$9.66	$9.11
Embossed			Box Qty.		Per Box	Per Box
28″ × 46″	1.25	White	100	9738T12	$32.46	$28.85
28″ × 46″	1.75	White	100	9738T82	42.79	38.04

Polyethylene Overshoes

Ht.	Thick., mils	Color	Box Qty.		Per Box 1-5	Per Box 6-Up
18¼″	3	Clear	50	9670T3	$20.48	$18.85

Latex Overshoes

Ht.	Thick., mils	Color	Size		Per Pair 1-11	Per Pair 12-Up
12″	23	Yellow	L (Men's 7-9)	52315T47	$7.02	$6.32
12″	23	Yellow	XL (Men's 10-12)	52315T31	7.02	6.32
12″	23	Yellow	XXL (Men's 13-16)	52315T33	7.02	6.32

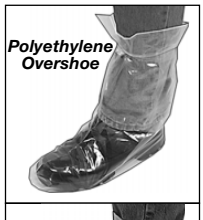

Polyethylene Overshoe

Latex Overshoe

Sizing Guidelines for Disposable Clothing

The chart at right is a general guideline for sizing. Proper fit varies with individual body shape and underclothing.

Size	Height	Weight
S	5′0″-5′7″	100-125 lbs.
M	5′2″-5′7″	125-160 lbs.
L	5′5″-5′10″	140-200 lbs.
XL	5′7″-6′2″	150-220 lbs.

Size	Height	Weight
XXL	5′11″-6′4″	180-240 lbs.
3XL	6′2″-6′5″	230-280 lbs.
4XL	6′5″-6′7″	240-290 lbs.
5XL	6′6″-6′8″	260-310 lbs.

Disposable Clothing

For environments where reuse or decontamination is impractical, these garments are the ideal solution.

Tyvek Garments and Accessories

Heat- and pressure-bonded olefin fibers form a soft yet strong material. Tyvek is an excellent barrier against dust, dirt, and nonhazardous liquids. It's low-linting and breathable to keep you cooler. *Note:* Tyvek provides limited splash protection and is not recommended for continuous liquid exposure. **To Order:** Please specify size where necessary.

Tyvek—*Pants* have an elastic waist. *Shirt* and *coats* have a snap front. Aprons are one size fits all. All other garments are available in sizes S, M, L, XL, XXL, and 3XL, unless noted. *Accessories* are one size fits all except shoe and boot covers, which fit up to men's size 12.

	Color	Case Qty.		Each Partial Case	Each Full Case
Garments					
Open Cuff Coveralls	White	25	5231T31●	$5.89	$5.22
Elastic Cuff Coveralls	White	25	5231T35■	7.32	6.78
Elastic Cuff Coveralls with Hood	White	25	5231T37	6.11	5.63
Elastic Cuff Coveralls with Hood and Boots	White♣	25	5231T39	8.44	7.88
Apron, 28″×36″	White	100	5584T19	2.70	2.16
Pants	White	50	5584T16	4.49	3.54
Shirt	White	50	5584T15	5.48	4.15
Coat	White	30	5584T12	5.98	4.98
Coat with Pockets	White	30	5584T13	6.04	5.03

● Also come in 4XL. ■ Also come in 4XL, 5XL. ♣ Boots are gray.

	Color	Case Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Accessories					
Hood with Elastic	White	10	5583T12	$12.40	$11.57
Bouffant Hat	White	10	5583T17	11.24	10.54
18″ Lg. Sleeve with Elastic	White	10 pr.	5583T18	11.10	10.32
Shoe Covers	White	10 pr.	5583T22	8.13	6.97
Nonskid Shoe Covers	Gray	5 pr.	5583T24	7.33	6.73
17″ Ht. Boot Covers	White	5 pr.	5583T26	9.12	8.41
18″ Ht. Nonskid Boot Covers	Gray	5 pr.	5583T21	10.93	10.21

Polycoated Tychem QC— Made of polyethylene-coated Tyvek for splash protection from inorganic acids, bases, and other liquid chemicals. *Coveralls* are available in sizes S, M, L, XL, XXL, 3XL, and 4XL. *Accessories* are one size fits all.

	Color	Case Qty.		Each Partial Case	Each Full Case
Coveralls					
Open Cuff	Yellow	12	5224T2	$12.41	$10.48
Elastic Cuff	Yellow	12	5224T4	12.41	10.48
Elastic Cuff w/Hood and Boots	Gray	12	5224T6	18.38	15.79

	Color	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Accessories					
18″ Lg. Sleeve w/Elastic	Yellow	5 pr.	54365T5	$11.54	$10.60

Laminated Tychem SL— Composed of Tyvek laminated to Saranex 23 P film. These coveralls are an effective barrier against water, acids, bases, insecticides, pesticides, and most hazardous chemicals. Available in sizes S, M, L, XL, XXL, 3XL, and 4XL.

	Color	Case Qty.		Each Partial Case	Each Full Case
Coveralls					
Open Cuff	White	12	5969T71	$22.70	$20.51
Elastic Cuff	White	12	5969T73	29.41	25.95
Elastic Cuff w/Hood and Boots	White	12	5969T75	30.00	26.47

Kleenguard Garments and Accessories

Three layers of polypropylene provide durability and abrasion resistance. This antistatic material serves as an excellent barrier against dust, dirt, and liquids, plus it's soft and breathable for comfort. *Coveralls* are available in sizes M, L, XL, and XXL except elastic cuff with hood and boots, which is not available in medium. **To Order:** Please specify size. *Bouffant* hat is one size fits all. *Shoe covers* fit up to men's size 13.

	Color	Case Qty.		Each Partial Case	Each Full Case
Coveralls					
Elastic Cuff	White	24	52245T47	$6.79	$5.91
Elastic Cuff with Hood	White	24	52245T52	7.20	6.27
Elastic Cuff w/Hood and Boots	White	24	52245T53	7.85	6.84

	Color	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Accessories					
Bouffant Hat	White	50	54165T74★	$13.82	$12.04
Shoe Covers	White	10 pairs	54165T78	9.30	8.10

★ Made of rayon.

(Continued on following page)

Disposable Clothing *(Continued from previous page)*

Polypropylene Garments and Accessories

Soft and durable, this breathable lightweight fabric offers protection from dust and dirt in nonhazardous environments. Polypropylene is more economical than Tyvek but is less abrasion resistant. *Note:* These garments are not designed for use with liquids.

To Order: Please specify size where necessary.

Available Sizes—*Coveralls* come in S, M, L, XL, XXL, 3XL, and 4XL. *Aprons* are one size fits all. *Coat* comes in S, M, L, XL, XXL, 3XL, 4XL, and 5XL. *Accessories* are one size fits all except for boot covers, which will fit up to men's size 14.

	Color	Case Qty.		Each Partial Case	Each Full Case
Garments					
Open Cuff Coveralls	White	25	54525T5	$2.13	$1.95
Elastic Cuff Coveralls	White	25	54525T7	2.29	2.11
Apron, 28″×36″	White	100	5593T48	.71	.65
Apron, 28″×44″	White	100	5593T49	.77	.71
Coat	White	30	5593T11	2.11	1.94

	Color	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Accessories					
Bouffant Hat	White	100	5357T14	$5.79	$4.97
Beard Cover	White	100	5357T16	5.86	5.03
Earloop Mask	Light Blue	50	54435T31	9.85	8.76
Tie-Back Mask	Light Blue	50	54435T33	5.91	5.25
18″ Lg. Sleeve w/Elastic	White	20 pr.	5357T8	10.16	8.74
13″ Ht. Boot Covers	White	20 pr.	5357T12	10.79	9.27
Hood with Elastic	White	20	5357T6	12.61	10.84

Polyethylene-Coated Polypropylene Coveralls

Durable, lightweight, and liquid resistant, these coveralls are also an excellent barrier against dry particulates. They're virtually impermeable and nonlinting but lack the breathability of Tyvek.

To Order: Please specify size: S, M, L, XL, XXL, or 3XL.

	Color	Case Qty.		Each Partial Case	Each Full Case
Open Cuff	White	25	6642T2	$2.79	$2.57
Elastic Cuff	White	25	6642T4	2.96	2.73
Elastic Cuff with Hood	White	25	6642T6	3.08	2.83
Elastic Cuff w/Hood and Boots	White	25	6642T8	3.22	2.96

Polyester Mesh Hair Nets

All have 1/8″ openings and an elastic headband. **To Order:** Please specify color.

Size, Lg.×Wd.	Available Colors	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
20″×20″	Black, Brown, White	100	9101T14	$15.45	$14.17
24″×24″	Black, Brown, White	100	9101T69	16.66	15.34

Flame-Resistant Coveralls

Made of a self-extinguishing material that meets NFPA 701, these coveralls also resist tearing. The material is breathable to keep you cool. *Note:* Coveralls are not designed for fire protection.

To Order: Please specify size: S, M, L, XL, XXL, 3XL, 4XL, or 5XL.

	Color	Case Qty.		Each Partial Case	Each Full Case
Open Cuff	Light Blue	25	8371T11	$6.73	$6.25
Elastic Cuff	Light Blue	25	8371T12	7.48	6.96
Elastic Cuff with Hood	Light Blue	25	8371T13	8.06	7.49
Elastic Cuff with Hood and Boots	Light Blue	25	8371T14	8.40	7.81

Fluid Repellent Garments and Accessories

Made from a special wood pulp and polyester fabric, these cloth-like garments are finished with a unique certified blood/fluid repellent treatment. **To Order:** Please specify size where necessary.

Coveralls have open ankles. *Coat* has elastic wrists. Both are available in sizes S, M, L, XL, XXL, 3XL, and 4XL. *Apron with sleeves* is available in sizes S, M, L, XL, and XXL. *Shoe covers* fit men's sizes 10-14.

	Color	Case Qty.		Each Partial Case	Each Full Case
Garments					
Elastic Cuff Coveralls	Light Blue	12	54395T2	$7.34	$6.65
Coat	Light Blue	12	54395T1	5.96	5.40
Apron with Sleeves	Light Blue	12	54395T3	6.01	5.45

	Color			Per Pair 1-11	Per Pair 12-Up
Accessories					
Shoe Covers	Light Blue	—	54395T4	$1.57	$1.43

Clean Room Clothing

Class 100 garments and accessories are for use in a clean room containing fewer than 100 particles larger than 0.5 microns in each cubic foot of air space. *Class 1000* are for use in a clean room containing fewer than 1,000 particles larger than 0.5 microns in each cubic foot of air space.

Color is white. **To Order:** Please specify size where necessary.

Disposable Tyvek Garments and Accessories

Individually polybagged to meet Class 100 clean room standards, this clothing is made of Tyvek, which is a flashspun continuous polyethylene. It provides light splash protection from nonhazardous liquids, plus it's breathable and low-linting. Meet Federal Standard 209E for airborne particle count levels.

Coveralls have a zipper front and elastic wrists and ankles. ***Coat*** has a snap front with elastic wrists. ***Hood*** has side ties. ***Boot covers*** have a PVC sole, elastic tops, and ties at the ankles. They fit up to men's size 18.

	Available Sizes		Each 1-5	Each 6-Up
Garments				
Elastic Cuff Coveralls	S,M,L,XL,XXL	53075T3	$11.80	$10.72
Coat	S,M,L,XL,XXL	53075T5	11.84	10.76
Accessories				
Open Face Hood	One Size	53075T7	4.90	4.46
			Per Pair	
18½″ Ht. Boot Covers	One Size	53075T9	$4.65	$4.23

Washable Polyester Garments and Accessories

Get the splash protection you need from acids and alkalies. Clothing is launderable to meet clean room standards. *Note:* Must be laundered prior to first use.

Coat has a military collar with snap front and wrist closures. ***Coveralls*** have a zipper front and snap closures on the neck, wrist, and ankles. ***Hood*** comes with a detachable face cover.

	Class	Available Sizes		Each 1-3	Each 4-Up
Garments					
Snap Cuff Coveralls	100	S,M,L,XL,XXL	5019T18	$51.83	$46.47
Coat	1000	S,M,L,XL,XXL	5019T21	29.13	26.12
Accessories					
Hood w/Face Cover	100	S,M,L,XL	5019T28	23.37	20.95

Disposable Cotton Hood

Also known as a painters' spray sock, this hood protects you from paint, dust, and other common impurities. Plus, it's breathable for comfort.

Color	Pkg. Qty.		Per Pkg. 1-5	Per Pkg. 6-Up
Off-White	6	52445T11	$8.22	$7.41

About Selecting the Proper Clothing Size

When measuring jacket size, position the tape measure snugly under your arms and shoulder blades, and measure around the fullest part of your chest. Find your waist size by measuring just above the top of your hip bone. Finally, be sure to take all measurements over any clothing you expect to wear underneath the garment.

Coveralls and Jumpsuits

Short-Sleeve Coveralls

Long-Sleeve Coveralls

Long-Sleeve Jumpsuit

Enjoy all-day comfort and protection in these garments. ***Coveralls*** have a roomy design to fit easily over your work clothes. ***Jumpsuits*** can be worn next to the skin for a more fitted appearance.

Monogramming—Personalize our ***all-cotton*** and ***polyester/cotton blend*** coveralls with a custom monogram. Your monogram (max. of 20 characters) will be embroidered on the coveralls in white thread (except on white coveralls the monogram will be in navy thread). Personal name monograms are positioned over the left breast pocket; company name monograms are located over the right breast pocket. **To Order:** Please ask for the McMaster-Carr part number and specify block or script lettering.

Polyester/Cotton Blend Coveralls and Jumpsuits

More durable than all cotton. All have brass two-way front zipper.

Coveralls have six pockets: two chest, two waist, and two rear. **To Order:** Please specify *regular* (for heights 5′-6′) and an even chest size between 34-56 or *long* (for heights 6′1″-6′5″) and an even chest size between 40-56. *Short Sleeve*—Color is navy blue. *Long Sleeve*—Specify color: brown, gray, medium blue, navy blue, or white.

Jumpsuits have five pockets: one chest with pencil slot, two waist, and two rear. They also have a pleated back, elastic waist, and adjustable belt. **To Order:** Please specify color: blue or navy blue. Also specify *regular* (for heights 5′8″-5′11″) or *long* (for heights 6′-6′3″) and chest size: M (38-40), L (42-44), XL (46-48), XXL (50-52), or 3XL (54-56).

	Without Monogram	Each	With Monogram	Each
Coveralls				
Short Sleeve	60725T73	$35.62	60725T84	$46.85
Long Sleeve	10365T71	42.55	10365T92	51.30
Jumpsuits				
Short Sleeve	6636T21	60.95	_____	_____
Long Sleeve	6636T31	72.13	_____	_____

All-Cotton Coveralls

Made of breathable cotton for comfort. These coveralls have brass buttons and six pockets: two chest, two waist, and two rear. **To Order:** Please specify color: blue, green, navy blue, or white. Also specify *regular* (for heights 5′-6′) and an even chest size between 36-56 or *long* (for heights 6′1″-6′5″) and an even chest size between 40-56.

		Each
Long Sleeve	5372T85	$54.05
Long Sleeve with Monogram	5372T11	62.80

Static Control Polyester Long-Sleeve Coveralls

Prevent damage from electrostatic discharge. These navy blue polyester coveralls have a nylon front zipper, elastic waist, and six pockets: two chest, two rear, and two waist. **To Order:** Please specify *regular* (for heights 5′7½″-5′11″) and chest size: S (36-38), M (40-42), L (44-46), XL (48-50), XXL (52-54), or 3XL (56-58) or *long* (for heights 6′1″ and taller) and chest size: M (40-42), L (44-46), XL (48-50), or XXL (52-54).

2373T15 ..... Each $62.02

Flame-Resistant Indura All-Cotton Long-Sleeve Coveralls

The economical choice for heat protection, these comfortable, navy blue Indura cotton coveralls have a flame-resistant Indura finish and are sewn with Nomex threads. They have a two-way brass front zipper and five pockets: two chest, two rear, and one on right leg. They also have two hip slits, snap-closure cuffs, and a pleated back. **To Order:** Please specify *regular* (for heights 5′8″-5′11″) and an even chest size between 38-56 or *long* (for heights 6′-6′3″) and an even chest size between 40-56.

5442T6 ..... Each $113.28

Flame-Resistant Indura Ultra-Soft Long-Sleeve Coveralls

Made of 88% cotton and 12% nylon for wear resistance, these coveralls have a hook-and-loop front closure and six pockets: two chest, two waist, and two rear.

		Navy Blue		Orange	
Size	Chest		Each		Each
S	34″-36″	5442T811	$121.00	5442T817	$121.00
M	38″-40″	5442T812	121.00	5442T818	121.00
L	42″-44″	5442T813	121.00	5442T819	121.00
XL	46″-48″	5442T814	121.00	5442T821	121.00
XXL	50″-52″	5442T815	121.00	5442T822	121.00
3XL	54″-56″	5442T816	121.00	5442T823	121.00

Flame-Resistant Nomex Long-Sleeve Coveralls

For ultimate heat protection in demanding jobs, choose durable Nomex. It will not ignite, melt, or burn. Made of 93% Nomex, 5% Kevlar, and 2% carbon, fabric has 4½ oz. of Nomex per sq. yd. and meets NFPA 1975 work uniform standards for firefighters and NFPA for industrial personnel. Coveralls have a brass two-way front zipper, two hip slits, and six pockets: two chest, two rear, one on left sleeve, and one on right leg. **To Order:** Please specify color: navy blue or orange. Also specify *regular* (for heights 5′8″-5′11″) or *long* (for heights 6′-6′3″) and an even chest size between 36-54.

1051T9 ..... Each $127.64

Cotton Duck Overalls

Pull these 100% cotton bibs right over your work clothes. They have a button fly, elasticized suspenders, and a hammer loop. Color is brown.

Note: For a better fit, order one size larger than your normal size.

Size	Waist	Hips		Each
S	34″	42″	2395T411	$74.51
M	38″	46″	2395T412	74.51
L	42″	50″	2395T413	74.51
XL	46″	54″	2395T414	74.51
XXL	50″	58″	2395T415	74.51
3XL	54″	62″	2395T416	74.51

Safety Light Arm Band

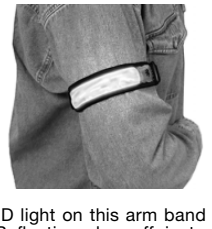

The bright red LED light on this arm band makes you visible from up to a mile away. Reflective when off, just push a button to choose from always on or flashing mode.

Band size adjusts from 11″ to 18″ and secures with buckle. Light operates on one 3-volt lithium battery (included).

		Each
Arm Band	1464T21	$14.67
Repl. 3-Volt Battery	7701K34	1.92

For information about how to select the proper clothing size, see page 1788.

Lab and Shop Clothing

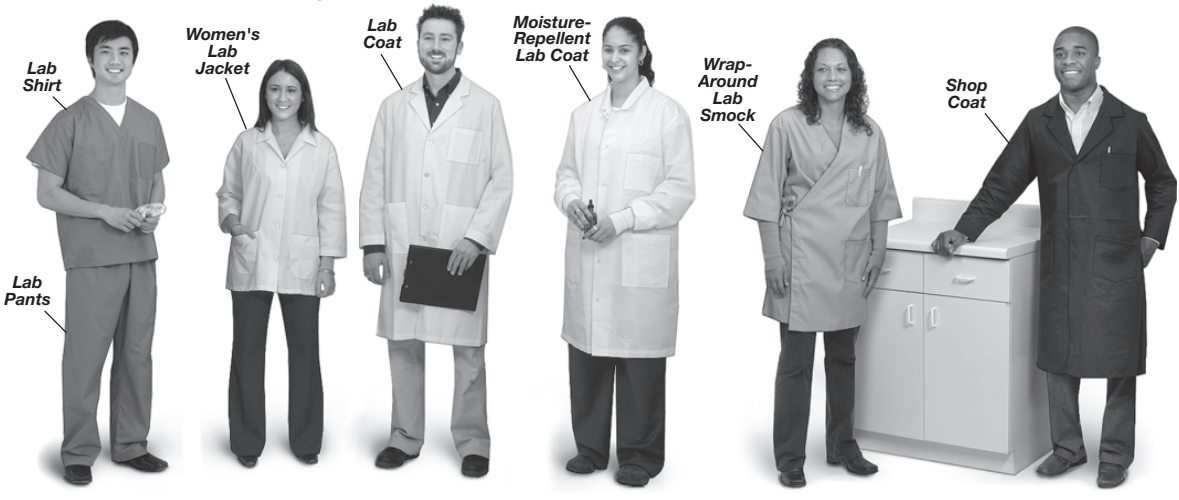

Lab Shirts and Pants

Just like the scrubs worn in hospitals, these reversible garments are soft and comfortable for all-day wear. They're made from 55% cotton and 45% polyester.

Shirts have one chest pocket. **To Order:** Please specify size from chart below.

	XS	S	M	L	XL	XXL
Women's Dress	2-6	8-10	12-14	16-18	20-22	24-26
Men's Chest	30-32	34-36	38-40	42-44	46-48	50-52

Pants have a rear pocket and a drawstring waist. **To Order:** Please specify waist size: XS (24-26), S (28-30), M (32-34), L (36-38), XL (40-42), or XXL (44-46).

		Each
Shirts		
Green	**2027T1**	$10.64
Light Blue	**2027T2**	10.64
Navy Blue	**2027T3**	10.64
Pants		
Green	**2027T4**	12.30
Light Blue	**2027T5**	12.30
Navy Blue	**2027T6**	12.30

Lab Jackets

Easy to slip on, these jackets are made of 65% polyester and 35% cotton. They have a button front, finished cuffs, and two waist pockets. ***Women's*** jacket has ¾ length sleeves. ***Men's*** jacket also has one chest pocket.

To Order: Please specify color: light blue, navy blue, or white. For women's, specify dress size: M (10-12), L (14-16), XL (18-20), XXL (22-24), or 3XL (26-28). For men's, specify even chest size between 34-54.

		Each
Women's Lab Jacket	**5294T1**	$21.55
Men's Lab Jacket	**5294T6**	28.72

Lab Coats

For a more professional look, choose these durable knee-length coats. Made of 65% polyester and 35% cotton, they have a clear-button front, an adjustable belt attached to the back, and three pockets: one chest and two waist. ***Men's lab coat*** also has hip slits for easy access to your pants pockets.

To Order: Please specify color: light blue, navy blue, or white. Also specify women's even chest size between 32-42 or men's even chest size between 32-54.

		Each
Women's Lab Coat	**5296T7**	$49.52
Men's Lab Coat	**5296T5**	49.52

Moisture-Repellent Lab Coat

Commonly known as a barrier coat, this lab coat is made of 99% polyester and 1% carbon fiber. It has stainless steel snaps, knit wrist cuffs, and three pockets: one chest and two waist. Color is white with thin black vertical pinstripes.

To Order: Please specify men's chest size: S (34-36), M (38-40), L (42-44), XL (46-48), XXL (50-52), or 3XL (54-56).

		Each
Lab Coat	**5472T2**	$44.00

Static-Control Jacket and Lab Coats

Prevent damage from electrostatic discharge with our static-control clothing. All garments are a poplin blend of 65% polyester, 34% cotton, and 1% carbon-modified nylon. The surface resistivity for unlaundered fabric is 2.6×10^6 ohms/sq. Both the jacket and the lab coats have front and wrist stainless steel snap closures and three pockets: one chest and two waist. Color is light blue (also known as silica blue in the static-control industry).

To Order: Please specify size from the chart below.

	S	M	L	XL	XXL	3XL
Women's Dress	8-10	12-14	16-18	20-22	24-26	28-30
Men's Chest	34-36	38-40	42-44	46-48	50-52	54-56

		Each
Jacket	**53045T22**	$35.61
Women's Lab Coat	**53045T55**	41.25
Men's Lab Coat	**53045T44**	41.20

Flame-Resistant Lab Coat

Made of Indura all-cotton fabric, this comfortable coat is self-extinguishing. It has four pockets: two chest and two waist, plus hip slits for easy access to your pants pockets. Color is navy blue.

To Order: Please specify men's even chest size between 38-54.

		Each
Lab Coat	**2377T51**	$73.26

Wrap-Around Lab Smock

Made of 65% polyester and 35% cotton, this smock is collarless with ¾ length sleeves and three pockets: one chest and two waist. It also has hip slits for easy access to your pants pockets.

To Order: Please specify color: light blue, navy blue, light green, tan, or white. Also specify size from the chart below.

	S	M	L	XL	XXL
Women's Dress	8-10	12-14	16-18	20-22	24-26
Men's Chest	36-38	40-42	44-46	48	50

		Each
Lab Smock	**5298T44**	$52.88

Shop Coats

Both of our durable shop coats are knee-length with hip slits for easy access to your pants pockets.

Polyester/cotton blend coat is made of 65% polyester and 35% cotton. It has a concealed snap front and four pockets: two chest and two waist. Color is navy blue. **To Order:** Please specify men's even chest size between 36-56.

All-cotton coat is preshrunk and comfortable. It has a clear-button front, an adjustable belt attached to the back, and three pockets: one chest and two waist. **To Order:** Please specify color: navy blue or tan. Also specify men's even chest size between 32-56.

		Each
Polyester/Cotton Blend Coat	**53355T71**	$30.10
All-Cotton Coat	**5290T64**	55.00

Sizing Guidelines for Rainwear and Chemical-Resistant Clothing

The chart at right is a general guideline for sizing. Proper fit varies with individual body shape and underclothing.

	S	M	L	XL	XXL	3XL	4XL	5XL
Chest	36-38	40-42	44-46	48-50	52-54	56-58	60-62	64-68
Waist	32-34	36-38	40-42	44-46	48-50	52-54	54-56	58-60

Rainwear

***PVC (Polyvinyl Chloride)-Coated Polyester*—**Fabric provides strength and durability for long-term use.

Coats are 49″ long and have snap front and wrists. Jacket length varies by size. *Three-piece suit* consists of a jacket with snap front and wrists, a detachable hood, and bib overalls with adjustable elastic suspenders and snap closures on the ankles. *Hooded poncho* is 40″ long.

To Order: Please specify size where necessary. For information about selecting the proper clothing size, see page 1788.

	Color	Available Sizes		Each
Bib Overalls	Yellow	M,L,XL,XXL,3XL, 4XL,5XL	53535T2	$11.24
Jacket w/ Detachable Hood	Yellow	M,L,XL,XXL,3XL	53535T1	13.50
Hooded Poncho	Yellow	One Size	53535T6	16.02
Coat w/ Detachable Hood	Black	S,M,L,XL,XXL,3XL, 4XL,5XL	53535T5	17.38
Coat w/ Detachable Hood	Yellow	S,M,L,XL,XXL,3XL, 4XL,5XL	53535T4	17.50
Three-Piece Suit	Yellow	S,M,L,XL,XXL,3XL,4XL	53535T3	22.45

Light Duty Rainwear

For intermittent exposure to wet weather, choose this single-ply PVC (polyvinyl chloride) clothing.

Hooded poncho is 40″ long and comes with a carrying pouch. **To Order:** Please specify color: clear, orange, or yellow.

Three-piece suit with pants consists of a snap-front jacket, detachable hood, and pants with an elastic waist and snap closures on the ankles. Seams are heat sealed. Color is yellow. **To Order:** Please specify size.

Three-piece suit with overalls consists of a snap-front jacket, detachable hood, and bib overalls with adjustable elastic suspenders and snap closures on the ankles. Seams are heat sealed. Color is yellow. **To Order:** Please specify size.

	Available Sizes		Each
Hooded Poncho	One Size	52115T1	$6.13
Three-Piece Suit with Pants	M,L,XL,XXL	5380T2	8.35
Three-Piece Suit with Overalls	M,L,XL,XXL	5380T3	12.07

Breathable Rainwear

Suit up in clothing that allows perspiration to escape for increased comfort while you work. This rainwear is lighter than most coated clothing and has a layer of Gore-tex between the waterproof nylon shell and nylon lining.

Jacket is 30″ long and has snap front and wrists, plus collar snaps for the ***detachable hood*** (sold separately). ***Pants*** have an elastic waist and snap closures on the ankles. ***Three-piece suit*** consists of the jacket, detachable hood, and pants.

To Order: Please specify color: royal blue or yellow. Also specify size where necessary using the chart below. For information about selecting the proper clothing size, see page 1788.

Size	Chest	Waist
S	38-40	30-32
M	41-43	33-35
L	44-46	36-38
XL	47-49	39-41
XXL	50-52	42-44

	Available Sizes		Each
Jacket	S,M,L,XL,XXL	11975T21	$205.11
Pants	S,M,L,XL,XXL	11975T33	211.46
Detachable Hood	One Size	11975T65	56.52
Three-Piece Suit	S,M,L,XL,XXL	11975T82	446.25

Cooling Vest

Avoid heat stress and improve productivity by keeping workers cool and comfortable. Made of blue flame-resistant cotton, this vest is 20″ long with adjustable shoulder and waist straps. Vest includes a set of two removable multicell cooling packs.

Cool the packs by placing them in ice water or the freezer for 20-30 minutes. They change to a semi-solid state when cool and maintain a temperature of 55° F for approximately 2½ hours. Vest and set of two cooling packs weigh 6.5 lbs.

		Each
Complete Vest	5249T11	$216.11
Replacement Cooling Pack Set	5249T15	193.49
Replacement Vest	5249T18	90.96

For sizing guidelines, see page 1790.

Flame-Resistant Rainwear

Protect yourself from flames as well as the elements with this comfortable, lightweight clothing. ***PVC (polyvinyl chloride)-coated*** rainwear resists some salts, alkalies, alcohols, and acids.

PVC-Coated Nylon

Garments are yellow and have a PVC coating on the inside and out. Seams are heat-sealed (except hooded coveralls, which are double-stitched). Meets ASTM D6413 for flame resistance. **To Order:** Please specify size where necessary.

Jackets and *coat* have a snap front. *Bib overalls* have adjustable suspenders. *Three-piece suit* consists of a jacket, detachable hood, and bib overalls. *Two-piece suit* consists of a hooded jacket and bib overalls.

Nonreflective clothing has taped seams to seal out moisture. *Jackets* are 30″ long. *Coat* is 49″ long. *Hooded coveralls* have a front zipper with snap flap.

Reflective clothing has snap closures. *Jacket* is 32″ long and has reflective striping for visibility and a corduroy collar.

	Available Sizes		Each
Nonreflective Clothing			
Jacket with Detachable Hood	XXL,3XL	**9111T1**	$19.51
Hooded Jacket	XL,XXL,3XL	**9111T7**	17.12
Coat with Detachable Hood	XL,XXL,3XL	**9111T8**	26.12
Bib Overalls	XL,XXL,3XL	**9111T2**	16.60
Hooded Coveralls	S,M,L,XL,XXL,3XL	**9111T9**	47.12
Three-Piece Suit	XL,XXL,3XL	**9111T3**	28.14
Two-Piece Suit	XL,XXL,3XL	**9111T48**	29.56
Reflective Clothing			
Jacket with Detachable Hood	3XL,4XL	**9111T18**	35.35
Bib Overalls	XXL	**9111T265**	26.54

PVC-Coated Polyester

An inner layer of polyester holds in warmth and dissipates moisture. Seams are heat sealed. The material resists tears and meets Motor Vehicle Safety Standard 302 for flame resistance. **To Order:** Please specify size where necessary. Also specify color: green or yellow.

Hooded jacket is 30″ long with a snap front. ***Coat*** is 48″ long with a snap front and snaps on the collar for the ***detachable hood*** (sold separately). ***Bib overalls*** have adjustable elastic suspenders. ***Two-piece suit*** consists of hooded jacket and bib overalls.

	Available Sizes		Each
Hooded Jacket	S,M,L,XL,XXL,3XL,4XL	**5972T16**	$32.16
Coat	S,M,L,XL,XXL,3XL,4XL	**5972T18**	46.24
Detachable Hood	One Size	**5972T9**	6.16
Bib Overalls	S,M,L,XL,XXL,3XL,4XL	**5972T2**	29.73
Two-Piece Suit	S,M,L,XL,XXL,3XL,4XL	**5972T38**	56.84

Polyurethane-Coated Nylon

Double-stitched, tape-sealed seams provide superior protection in wet environments. The coating on this rainwear resists abrasion and snagging. Meets NFPA 701 for flame resistance. Color is yellow.

Hooded jacket is 30″ long. ***Coat*** is 48″ long. Both have a snap front. ***Bib overalls*** have adjustable elastic suspenders. ***Suits*** include hooded jacket.

To Order: Please specify size.

	Available Sizes		Each
Hooded Jacket	S,M,L,XL,XXL	**5364T6**	$36.98
Coat	S,M,L,XL,XXL	**5364T7**	52.89
Bib Overalls	S,M,L,XL,XXL	**5364T3**	33.68
Suit with Pants	S,M,L,XL,XXL	**5364T21**	64.06
Suit with Bib Overalls	S,M,L,XL,XXL	**5364T22**	66.62

Flame-Resistant Heavy Duty Rainwear

A heavyweight PVC shell and backing with an inner layer of nylon make these garments a good choice for protection against the elements. The seams are dielectrically welded for strength. All meet ASTM D6413 for flame resistance. Color is green.

Hooded jacket has snap cuffs and a heavy duty zipper with a snap closure.

Bib overalls have heavy duty elastic shoulder straps with quick-release buckles and snap cuffs.

Two-piece suit consists of the hooded jacket and bib overalls.

To Order: Please specify size. For information about selecting the proper clothing size, see page 1788.

	Available Sizes		Each
Hooded Jacket	XXL,3XL,4XL	**5393T52**	$27.60
Bib Overalls	XL,XXL,3XL,4XL	**5393T54**	26.04
Two-Piece Suit	XXL,3XL,4XL	**5393T56**	60.20

Chemical-Resistant Clothing

The specially formulated PVC (polyvinyl chloride) double-layer coating provides superior protection from acids, chemicals, and solvents. Made of durable polyester, these garments have heat-sealed seams to keep out spills and splashes. Meets FTMS 191A for flame resistance. Color is green.

Both ***jacket*** styles and ***coat*** have a snap front with storm flap. Jackets are 30″ long; coat is 48″ long.

Jacket and ***coat*** also have collar snaps for the ***detachable hood*** (sold separately).

Bib overalls include adjustable elastic suspenders.

Two-piece suit consists of jacket and bib overalls.

Two-piece suit with hood consists of hooded jacket and bib overalls.

To Order: Please specify size where necessary.

Hooded Coveralls

	Available Sizes		Each
Jacket	S,M,L,XL,XXL	**5892T1**	$27.98
Hooded Jacket	S,M,L,XL,XXL	**5892T7**	31.68
Coat	S,M,L,XL,XXL	**5892T9**	44.45
Detachable Hood	One Size	**5892T19**	4.43
Bib Overalls	S,M,L,XL,XXL	**5892T2**	25.17
Hooded Coveralls	S,M,L,XL,XXL	**5892T8**	67.86
Two-Piece Suit	S,M,L,XL,XXL	**5892T3**	53.15
Two-Piece Suit with Hood	S,M,L,XL,XXL	**5892T5**	56.85

Welding & Heat-Protection Clothing

For welding gloves, see page 1777. For welding helmets and eyewear, see pages 1817-1819.

Sizing Guidelines for Welding and Heat-Protection Clothing

The chart at right is a general guideline for sizing. Proper fit varies with individual body shape and underclothing.

	S	M	L	XL	XXL	3XL	4XL
Chest	36-38	40-42	44-46	48-50	52-54	56-58	60-62
Waist	28-30	32-34	36-38	40-42	44-46	48-50	50-52

Lightweight Cotton Welding Clothing

Cotton provides cool, lightweight protection from minor sparks and low heat. This clothing is 9-oz. woven sateen (unless noted) and chemically treated for flame resistance. Color is green, unless noted. **To Order:** Please specify size when necessary.

All ***jackets*** have an inside left chest pocket and snap closures on the front and wrists. ***Extra-weight jacket*** is made from a heavier 12-oz. fabric for added durability. ***Leather-sleeve jacket*** keeps you cooler and more comfortable than all-leather garments. It has a flame-resistant cotton body and side-split cowhide sleeves that are specially tanned to provide superior heat and spark resistance. Sleeve seams are double stitched with Kevlar thread. Color is blue with tan sleeves.

Coat has snap closures on the front and wrists. ***Pants*** have a zipper-fly front, belt loops, two waist pockets, and two rear pockets. ***Coveralls*** have snap closures on the front and wrists, an inside left chest pocket, two waist pockets with side slits, and two rear pockets.

Sleeves protect your wrists and arms. Elastic on both ends provides a secure and snug fit. If you need additional upper body protection, ***cape sleeves*** with collar cover your wrists, arms, and chest. They have snap closures on the front, wrists, and across the chest. For further lower body protection, easily snap our ***cape-sleeve bibs*** (sold separately) across the bottom of the cape sleeves.

All aprons are one size fits all. ***Bib aprons*** cover your chest to your knees and tie at the waist. ***Split-leg bib aprons*** extend the coverage area to just below your knees and allow greater freedom of leg movement. They have a reinforced crotch and leg ties.

	Lg.	Available Sizes		Each
Garments				
Jacket	30″	S,M,L,XL,XXL,3XL,4XL	5367T9	$20.53
Extra-Weight Jacket	30″	M,L,XL,XXL,3XL,4XL	5367T22	26.71
Leather-Sleeve Jacket	30″	S,M,L,XL,XXL,3XL	5730T41	50.43
Coat	50″	S,M,L,XL,XXL	5367T15	45.82
Pants	★	★	5367T81	31.27
Coveralls	—	S,M,L,XL,XXL,3XL	11405T6	56.52
Accessories				**Per Pair**
Sleeves	18″	One Size	5342T16	$12.03
				Each
Cape Sleeves	11″	M,L,XL,XXL	51985T31	$23.64
Cape-Sleeve Bib	14″	One Size	51985T41	5.56
Cape-Sleeve Bib	20″	One Size	51985T42	7.22

★ **To Order:** Please specify an even waist size from 28-46 and an even inseam size from 28-34.

	Wd. × Lg.		Each
Aprons			
Bib	24″ × 36″	5588T1	$12.25
Bib	24″ × 40″	5588T2	13.19
Split-Leg Bib	24″ × 42″	5588T16	13.77
Split-Leg Bib	24″ × 48″	5588T17	15.87

Caps and Beanies

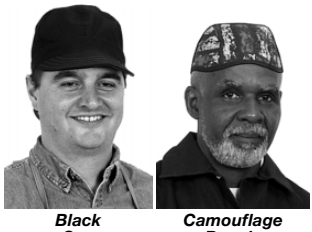

Black Cap ***Camouflage Beanie***

Protect your head from dust and dirt with these comfortable cotton caps and beanies. All are hand washable.

Caps have a bill front, balloon top, and fabric sweatband. **To Order:** Please specify size: S (6⅞), M (7¼), L (7½), or XL (7¾).

Beanies are flame resistant and have a snug fit. **To Order:** Please specify size: M (6⅞-7⅛), L (7¼-7½), or XL (7⅝-7¾).

		Each
Navy Cap with White Polka Dots	59745T1	$8.27
Red Cap with White Polka Dots	59745T2	8.27
Black Cap	59745T3	8.27
Camouflage Cap	59745T5	8.27
Red/White/Blue "USA" Cap	59745T6	8.27
Black Beanie	59745T35	3.67
Camouflage Beanie	59745T45	3.67
Red/White/Blue "USA" Beanie	59745T55	3.67

Flame-Resistant Hoods

Get superior protection from fire and heat. These soft hoods have a tightly woven two-ply top, and the bottom drapes over your shoulders for added protection. All are washable and one size fits all. Meet OSHA and 1971 NFPA standards (rev. 2000).

Nomex offers superior durability.
PBI gives you maximum comfort.
P-84 is the best choice for removing perspiration.
Carbon fiber provides the best flame resistance.

Material	Color		Each
Nomex	White	52655T15	$32.73
PBI	Brown	52655T14	34.49
P-84	Yellow	52655T16	35.56
Carbon Fiber	Black	52655T17	40.19

For sizing guidelines, see page 1792. For additional heat-protection gloves, see pages 1778-1779.

Heavy Duty Leather Welding Clothing

Flexible, durable, and cut resistant, this leather clothing offers superior protection from sparks and slag. The leather is chrome-tanned for improved heat and flame resistance, and clothing is sewn with Kevlar thread. Color is brown, unless noted.

All ***jackets*** have a snap front. ***Heavyweight jacket*** provides added heat and flame resistance. ***Chaps*** have snaps on the legs and an adjustable waistband. Inseam is 29″.

All aprons are 24″ wide. ***Waist aprons*** cover your waist to just below your knees and have leather ties. ***Bib aprons*** cover your chest to your knees. They have a center seam and leather ties at the neck and waist. ***Split-leg bib aprons*** extend the coverage area to just below your knees and allow more leg movement. They have a center seam, reinforced crotch, nylon ties around the neck and waist, and two adjustable nylon straps on each leg except 5239T48, which has three.

Cape sleeves provide upper body protection, covering your wrists, arms, and chest. They have snap closures on the front, wrists, and across the chest. For additional lower body protection, easily snap our ***cape-sleeve bibs*** (sold separately) across the bottom of the cape sleeves. ***Rod holder*** can hold about 5 lbs. of welding rods and has a clip to attach to a belt loop. ***Ankle and foot guards*** have a snap-button closure and adjustable instep strap. ***Shin and foot guards*** have a hook-and-loop closure. ***Sleeves*** protect your wrists and arms. They have snap closures on the wrists and an adjustable strap on the upper arm.

To Order: Please specify size where necessary.

	Lg.	Available Sizes		Each
Jacket	26″	S,M,L,XL,XXL	5263T1	$81.22
Jacket	30″	S,M,L,XL,XXL,3XL	5263T2	87.19
Heavyweight Jacket	30″	S,M,L,XL,XXL,3XL,4XL	5263T6●	134.55
Chaps	39″	One Size	5263T45	45.14
Waist Apron	18″	One Size	5239T21	24.65
Waist Apron	24″	One Size	5239T22	28.56
Bib Apron	36″	One Size	5239T23	38.09
Bib Apron	42″	One Size	5239T24	46.75
Split-Leg Bib Apron	36″	One Size	5239T36	31.82
Split-Leg Bib Apron	42″	One Size	5239T42	35.26

● Color is gray.

	Lg.	Available Sizes		Each
Split-Leg Bib Apron	48″	One Size	5239T48	$39.79
Cape Sleeve	13″	S,M,L,XL,XXL,3XL	5340T61	51.23
Cape-Sleeve Bib	14″	One Size	5340T91	12.38
Cape-Sleeve Bib	19″	One Size	5340T41	14.52
Rod Holder	14″	One Size	55405T11	9.13
				Per Pair
Ankle and Foot Guards	7″	One Size	9680T1●	$22.12
Shin and Foot Guards	14″	One Size	5263T16	41.02
Sleeves	18″	One Size	5342T22	16.83

Heat-Reflective Aluminized Clothing

The outside of this clothing is aluminized to reflect radiant heat—ideal for steel mills, foundries, and glass plants. Clothes have no pockets to trap hot sparks or splashes and are oversized to fit over work clothes.

Rayon is a sturdy 15-oz. fabric that provides good radiant heat and moderate spark protection. ***Kevlar blend*** is a heavyweight 19-oz. fabric that combines the high heat resistance of Nomex fibers with the excellent abrasion and cut resistance of Kevlar. ***Carbon Kevlar*** is a 19-oz. fabric (unless noted) for longer wearing and heavier duty than the Kevlar blend. ***PBI blend*** is a 7-oz. fabric that includes Kevlar fibers for high strength and extremely high heat resistance. It offers high strength and durability like the three materials above, plus it's lightweight.

Jacket, coat, and ***coveralls*** have snaps at the wrist, a flap front with covered snaps and leather pull tabs for easy removal (unless noted), and a stand-up collar that's lined with green flame-resistant cotton. ***Pants*** have a snap fly and leather belt loops. ***Hood with face shield*** covers your head, neck, and shoulders, and uses an adjustable ratchet suspension to fit on your head. There's enough room inside to wear glasses, goggles, or a respirator. The face shield is 7″ × 11″ and made of clear polycarbonate. ***Apron*** is 24″ wide. It has adjustable cotton-web neck and waist straps.

Gloves are aluminized on the back of the cuff, hand, fingers, and thumb. Palm is 22-oz. Kevlar blend; lining is wool with cotton knit. ***Boots*** have a flame-resistant cotton lining, polymer grip soles that are sewn and riveted, and a zipper closure. They are 12″ high and fit up to men's size 13.

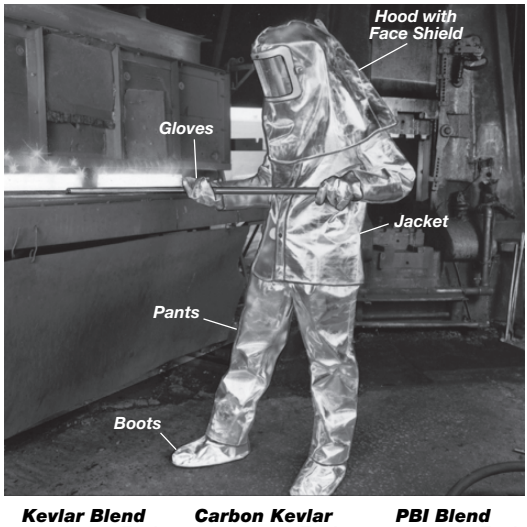

To Order: Please specify size where necessary.

	Lg.	Available Sizes	Rayon	Each	Kevlar Blend	Each	Carbon Kevlar	Each	PBI Blend	Each
Jacket	30″	S,M,L,XL,XXL	9109T7	$174.15	5383T1	$202.11	5519T4	$288.36	1037T2	$292.22
Coat	50″	S,M,L,XL,XXL	9109T6	225.45	5383T3	252.17	5519T1	366.10	1037T9	375.81
Coveralls	32″ ♦	S,M,L,XL,XXL	9109T5	262.27	5383T6	284.61	5519T3■	421.74	1037T4■	440.32
Pants	32″ ♦	S,M,L,XL,XXL	9109T8	175.42	5383T2	233.73	5519T2	276.92	1037T3	302.50
Hood with Face Shield	20″	One Size	9109T1	210.32	5383T31	245.00	5519T8	318.36	1037T6	351.04
Apron	39″	One Size	9109T4	48.39	5383T8	54.44	5519T7	76.61	1037T5	81.13
				Per Pair		Per Pair		Per Pair		Per Pair
Gloves	14″	One Size	9109T3	$35.87	5383T5	$51.00	5519T5♠	$60.17	1037T7	$77.02
Boots	—	One Size	9109T9	132.26	5383T4	191.64	5519T9	229.00	1037T8	270.00
Replacement Face Shield									9109T12	Each $34.75

♦ Inseam. ■ No leather pull tabs. ♠ 14-oz. fabric wt.

Voltage Classifications

When choosing electrical equipment, make sure you pick the right protection for the job. The chart at right identifies the six ASTM voltage classes by their proof test voltages and maximum use voltages.

Class	00	0	1	2	3	4
AC Proof Test Volts	2,500	5,000	10,000	20,000	30,000	40,000
AC Max. Use Volts	500	1,000	7,500	17,000	26,500	36,000

Electrical Protection Gloves, Glove Protectors, and Sleeves

Protect yourself when in contact with live electrical equipment. For glove sizing information, see page 1766.

Gloves are made of seamless dielectric rubber and have a curved-hand design and rolled cuffs. Gloves are manufactured in accordance with ASTM specifications and are inspected, tested, and stamped with inspection date. Color is black. *Wear-indicating gloves* have an orange liner that shows through when the outside layer is worn or damaged.

To Order: For Class 00-Class 3 gloves, please specify size: 8, 9, 10, 11, or 12, unless noted. For Class 4 gloves, specify size: 10, 11, or 12.

Glove protectors are made of leather and worn over gloves for abrasion resistance. *Note:* They should not be used without rubber gloves when working with live electrical equipment. All have a gunn pattern and gauntlet cuff except the 10″ lengths, which have slip-on cuffs. Classes 00 and 0 are made of goatskin. Color is pearl. Classes 1-4 are made of buffed cowhide. Color is red with orange cuffs.

To Order: Please specify size: 8, 9, 10, 11, or 12. *Note:* Protectors should be the same size as the gloves they will be worn over.

Gloves and Glove Protectors

	GLOVES				GLOVE PROTECTORS	
	Standard		Wear Indicating			
Class	Lg.	Per Pair		Per Pair	Lg.	Per Pair
00	11″	5333T41	$44.91	———	———	10″ 13785T31 $33.02
00	14″	5333T42	62.48	———	———	13″ 13785T12 40.58
0	11″	5333T79	58.14	———	———	10″ 13785T11 36.02
0	14″	5333T81	70.95	———	———	13″ 13785T12 40.58
1	14″	5333T82	91.79	5289T82	$99.40	13″ 13785T13 48.30
2	14″	5333T83	112.66	5289T83	132.57	12″ 13785T14 45.96
2	16″	———	———	5289T84★	145.57	14″ 13785T15 47.84
3	16″	5333T86	212.91	5289T86★	244.65	13″ 13785T13 48.30
3	18″	5333T87★	236.29	5289T87★	270.15	15″ 13785T18 51.77
4	18″	5333T88	281.38	5289T88	316.30	14″ 13785T15 47.84

★ Not available in size 8.

Liners

Made of breathable cotton knit, these liners absorb perspiration to keep your hands dry.

Lg.	Color	Size		Per Pair 1-11	Per Pair 12-Up
9¼″	Off-White	M	9729T12	$1.06	$0.99
9¾″	Off-White	L	9729T11	1.06	.99

Sleeves

Protect your arms from accidental contact with energized lines and equipment. All are made of seamless molded rubber and have reinforced wrist and rolled shoulder openings. Sleeves are manufactured in accordance with ASTM specifications and are inspected, tested, and stamped with inspection date. Class 2 are black. Class 3 are maroon.

Class	Lg.	Size		Per Pair
2	26½″	M	5574T25	$284.61
2	27¾″	L	5574T26	354.73
3	26½″	M	5574T45	358.97
3	27¾″	L	5574T46	422.15

Sleeve Accessories

Sleeve straps are worn across your shoulders and have four buttons to hold sleeves in place. They're 15″ long.

5574T31 ..... **Per Pair** $17.08

Sleeve bag is canvas, 30″ long, and holds one pair of sleeves.

5574T41 ..... **Each** $54.64

Electrical Protection Blankets, Sheeting, and Line Cover

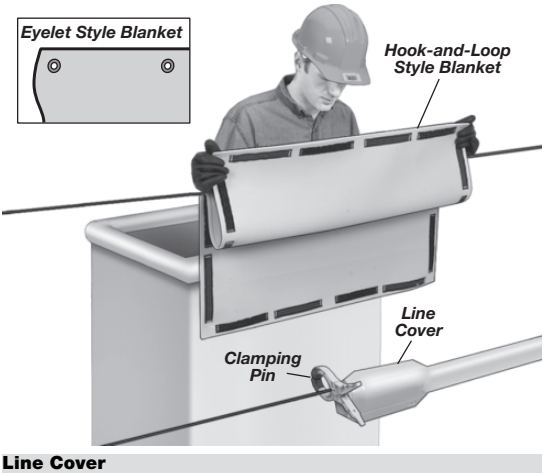

Line Cover

Offering quick, portable protection from contact with a nearby power line, this cover is made of lightweight polyethylene and meets ASTM F712 and F968. Color is yellow with a black lining to indicate wear.

Class	Lg.	ID		Each
3	5 ft.	1.77″	2363T11	$140.40

Blankets

Wrap these rubber blankets over and around irregularly shaped line hardware and equipment to protect against contact with high voltage. Blankets are manufactured in accordance with ASTM specifications and are inspected, tested, and stamped with inspection date. Class 0 blanket is 1/16″ thick; Class 2 and 4 blankets are 1/8″ thick.

Hook-and-loop style blanket is held in place by hook-and-loop strips. *Eyelet* style blankets have six 5/8″ dia. eyelets and can be tied down to easily secure them in place.

Class	Style	Color	Size		Each
0	Hook and Loop	Yellow	36″×36″	5571T14	$170.78
2	Eyelet	Black	36″×36″	5571T12	140.25
4	Eyelet	Orange	36″×36″	5571T15	148.41

Neoprene/SBR Rubber Sheeting

This 1/32″ thick yellow sheeting resists flame, oil, and ozone. It can be easily cut with scissors or a utility knife. Meets ASTM D178, Type II.

Class	Wd.	Full Roll		Per Ft. Partial Roll	Per Ft. Full Roll
0	36″	30 ft.	87195K33	$23.17	$18.54

Accessories

Clamping pin holds line covers and blankets in place. It's made of fiberglass-reinforced nylon and can accommodate diameters up to 5″. ***Canister*** safely stores up to four of your 36″×36″ rubber blankets. It's made of safety-orange polyethylene.

		Each
Clamping Pin	5571T24	$15.82
Canister, 7″ Dia.×37″ Lg.	6129T3	96.49

Electrical-Glove Tester

Don't wait until you're in the middle of a job to find out your gloves have a defect. Use this manually operated air pump to test electrical-protection gloves and other rubber insulated gloves.

It's easy to use—just stretch the glove cuff over the grooved housing, secure it with the hook-and-loop strap, and inflate. Tester includes a red cotton duck storage bag.

9690T11 ..... Each $283.98

Electrical Protection Footwear

For extra heel protection when climbing ladders and poles, slip these dielectric rubber shoes and boots right over your street shoes. They have a deep heel cavity and antiskid sole that makes it easy to lock onto ladder rungs and stair edges. This footwear is waterproof. They meet ASTM F2413-05 and are tested to 20,000 volts AC. Color is yellow and black.

For information about footwear sizing, see page 1781.

Overshoes come in half and full sizes except 12½. ***Boots*** have an adjustable side strap and come in full sizes.

To Order: Please specify men's shoe size.

Overshoe

Boot

	Ht.	Available Sizes		Per Pair
Overshoes	4½″	7-13	**50065T5**	$110.91
Boots	17″	7-15	**50065T3**	130.86

High-Voltage Switch Operating Sticks

Also known as hot sticks, these insulated sticks let you operate high-voltage switches from a safe distance. Rated for 100,000 volts; all meet or exceed ASTM F711 for fiberglass-reinforced plastic rod and tube used in live-line tools.

Standard sticks are 1.25″ dia. They're made of filament fiberglass bonded to a rigid, closed-cell polyurethane foam core.

Telescoping sticks extend to reach switches at multiple heights and the universal head allows 180° of adjustment. They're approximately 2″ dia. at base and 1.15″ at tip. Sticks are made of filament fiberglass; tip has a rigid, closed-cell polyurethane foam core. Lock and release with the push of a button.

Standard

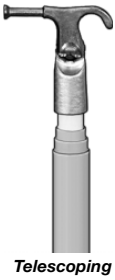

Telescoping

Standard

O'all Lg.	No. of Sections		Each
4 ft.	1	**7541K41**	$105.00
6 ft.	1	**7541K42**	139.29
8 ft.	2	**7541K45**	181.91
10 ft.	2	**7541K47**	226.27
12 ft.	2	**7541K49**	270.00
18 ft.	3	**7541K54**	401.40
24 ft.	3	**7541K55**	532.34

Telescoping

Max. O'all Lg.	Min. Lg.		Each
16 ft.	60″	**7541K61**	$384.75
25 ft.	64″	**7541K62**	597.74
30 ft.	66″	**7541K63**	708.46

Pole and Tree Climbers

Quickly and easily adjust these climbers to give you the perfect fit for climbing poles and trees. All climbers and replacement parts meet ASTM standards. Climbers adjust from 16¼″ to 18¾″ in increments of ½″. All have a steel shank with offset stirrup and conform to the leg for comfort. Max. cap. (including tools and equipment) is 350 lbs.

Pole climbers have a 1¾″ long gaff.

Tree climbers have a 2¾″ long gaff.

		Per Pair
Pole Climbers	**8117T31**	$291.38
Tree Climbers	**8117T32**	299.12
Replacement Parts		
Pole Climber Gaffs	**8117T61**	$91.44
Tree Climber Gaffs	**8117T62**	92.69
Pads	**8117T16**	49.89
Foot Straps	**8117T25**	31.82
Leg Straps	**8117T26**	18.79

Electrical-Glove Bags

Conveniently store and protect your gloves. These white cotton duck bags are double sewn and have ventilation and drainage holes on the bottom. Bags have heavy duty button snaps on the top flap and a nickel-plated steel snap attached to a leather patch for hanging on a belt. Bags ***with goggle pocket*** have a front pocket for storing safety goggles.

For Glove Lg.	O'all Size, Ht. × Wd. × Dp.	Standard	Each	W/ Goggle Pocket	Each
14″	15″ × 8″ × 4″	**9645T11**	$27.34	**9645T14**	$30.94
16″	18″ × 8″ × 4″	**9645T13**	28.87	**9645T15**	32.58
18″	20″ × 8″ × 4″	**9645T12**	30.50	**9645T16**	34.17

Electrical Arc Flash Protection Clothing

Protect yourself from hazardous flames and electrical arcs with these garments. Color is navy blue.

Category 0-2— Made of single-ply Indura Ultra Soft fabric that's 88% cotton and 12% nylon. Meet ASTM standards and NFPA 70E for Category 0-2 protection. *Shirt* has a button front and wrists and two chest pockets with flaps. *Coverall* has a two-way zipper front, snap wrists, and six pockets. *Pants* have a zipper fly, snap waist, and four pockets.

Category 3-4— Made of a 4-ply Nomex and Kevlar construction. Meet OSHA and ASTM standards and NFPA 70E for Category 3-4 protection.

Jacket and *coat* have a covered zipper front and Nomex knit wrists. *Pants* have a zipper fly and a knee-to-ankle zipper on each leg. They also include suspenders. *Hood* includes a hard hat with adjustable ratchet suspension and a polypropionate face shield with an antifog coating.

To Order: Please specify size where necessary using chart below.

Gloves are sold separately on page 1794. Face shield is sold separately on page 1816.

Size	Chest	Waist
S	36-38	30-32
M	40-42	34-36
L	44-46	38-40

Size	Chest	Waist
XL	48-50	42-44
XXL	52-54	46-48
3XL	56-58	_____

Common Tasks

Category 0— Operation of a circuit breaker with panel covers on or off up to 240 volts. ***Category 1—*** Voltage testing or live installation of a circuit breaker in a panel up to 240 volts. ***Category 2—*** Work on control circuits with energized parts greater than 120 volts. ***Category 3—*** Removal of bolted covers, exposing energized parts in 600-volt class switchgear. ***Category 4—*** Work on energized parts, including voltage testing in switchgears greater than 1,000 volts.

	Lg.	Available Sizes		Each
Category 0-2				
8.7 cal/cm² Arc Rating				
Shirt	_____	S,M,L,XL,XXL,3XL	**1956T11**	$58.52
Coverall	_____	■	**1956T13**	103.11
12.4 cal/cm² Arc Rating				
Pants	32″ inseam	▲	**1956T15**	53.44
Category 3-4				
40 cal/cm² Arc Rating				
Jacket	35″	S,M,L,XL,XXL	**1956T21**	322.01
Coat	50″	S,M,L,XL,XXL	**1956T22**	370.97
Pants	32″ inseam	S,M,L,XL,XXL	**1956T23**	293.23
Hood	_____	One Size	**1956T24**	306.78

■ Specify chest size: 36-56. ▲ Specify waist size: 28-52.

Sizing Guidelines for Cold-Protection Clothing

The chart at right is a general guideline for sizing. Proper fit varies with individual body shape and underclothing.

	S	M	L	XL	XXL	3XL	4XL
Chest	34-36	38-40	42-44	46-48	50-52	54-56	58-60
Waist	30-32	34-36	38-40	42-44	46-48	____	____

Insulated Nylon Clothing

Light duty garments have a quilted nylon outer shell, 7.5-oz. polyester fiberfill insulation, polyester lining, and two waist pockets. Color is blue. *Jacket* has a zipper front, knit collar, and knit wrist cuffs. *Coveralls* have a snap front, fleece-lined collar, knit wrist cuffs, and a hip-to-ankle two-way zipper with storm flap on each leg.

Heavy duty garments protect you in bitterly cold conditions. They're also more abrasion resistant than light duty clothing. All except face mask have a tough nylon outer shell, 11.25-oz. polyester fiberfill insulation, and a nylon lining, unless noted. Color is midnight blue. *Coat*, *parka*, and *hooded coveralls* have knit wrist cuffs, three front pockets, and a polyester lining. *Coat* and *parka* have a zipper front and snaps for the detachable hood (sold separately). *Bib overalls* and *hooded coveralls* have a thigh-to-ankle zipper with storm flap on each leg. *Bib overalls* have a high-rise back and adjustable elastic suspenders. *Detachable hood* is lined with polyester and has snaps for attaching to coat or parka. *Face mask* is made of thermal knit and pulls down over the head to cover the entire head and neck. It includes a detachable quilted face piece to protect the mouth.

To Order: Please specify size where necessary.

	Lg.	Available Sizes		Each
Light Duty				
Jacket	28″	S,M,L,XL,XXL	**5538T8**	$51.25
Coveralls	____	S,M,L,XL,XXL	**5538T5**	96.88
Heavy Duty				
Coat	31½″	S,M,L,XL,XXL,3XL	**5529T81**	125.00
Parka	37½″	S,M,L,XL,XXL,3XL	**5529T85**	108.75
Bib Overalls	____	S,M,L,XL,XXL,3XL	**5529T86**	98.13
Hooded Coveralls	____	S,M,L,XL,XXL,3XL	**5529T87**	184.38
Detachable Hood	____	One Size	**5529T89**	17.05
Face Mask	____	One Size	**5529T522**	12.50

Insulated Abrasion-Resistant Cotton Duck Clothing

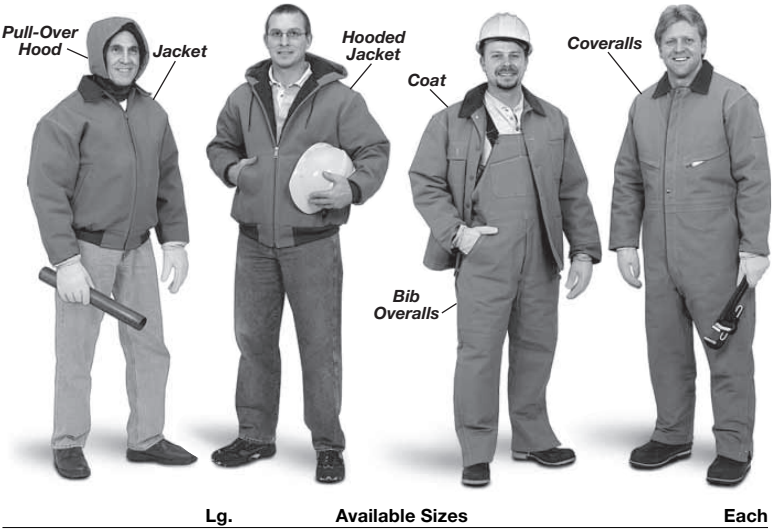

	Lg.	Available Sizes		Each
Jacket	27½″	M,L,XL,XXL	**53215T52**	$63.39
Hooded Jacket	29″	M,L,XL,XXL,3XL	**53215T75**	64.15
Coat	31½″	M,L,XL,XXL,3XL	**53215T44**	64.34
Pull-Over Hood	____	One Size	**53215T61**	22.17
Bib Overalls	____	S,M,L,XL,XXL	**53215T22**	79.09
Coveralls	____	M,L,XL,XXL,3XL,4XL	**53215T24**	127.78

Made of tightly woven 12-oz. cotton duck, these garments are abrasion and tear resistant. All have 5-oz. polyester insulation and quilted nylon lining except 53215T52, which has a quilted lining in the sleeves only and a blanket lining inside the jacket. Color is brown. **To Order:** Please specify size where necessary.

Jacket has a zipper front, corduroy collar, two lower front pockets, inside pocket, knit cuffs, and knit waist.

Hooded jacket has a zipper front, drawstring hood, knit wrist storm cuffs, knit waist, two lower pockets, and one inside pocket.

Coat has button front, corduroy collar, two chest pockets (one pocket has a button closure), one inside pocket, and two waist pockets.

Pull-over hood has an extra-long, thick knit collar and a drawstring.

Both ***bib overalls*** and ***coveralls*** have a snap-over front fly, two waist pockets, two rear pockets, a banded waist, and a hammer loop.

Bib overalls have adjustable elastic suspenders, two chest pockets, and a knee-to-ankle zipper with snap storm flap on each leg. Sizes listed in the table at left are waist sizes. If you plan to wear heavy clothing under overalls, order one size larger than your normal waist size for proper fit.

Coveralls have a corduroy collar, knit wrist cuffs, two zippered chest pockets, a zipper front, pencil pocket, ruler pocket, and hip-to-ankle zipper with snap storm flap on each leg. Sizes listed in the table at left are chest sizes.

For information about selecting the proper clothing size, see page 1796.

Knit Hats and Earmuffs

Hat and ***face mask*** are form-fitting acrylic. ***Earmuffs*** wrap around the back of your head and adjust for a secure fit. They're made of lightweight, double-layer fleece and fold compactly for storage.

	Color	Size		Each
Hat	Black	One Size	56305T221	$10.50
Face Mask	Black	One Size	56305T241	17.50
Earmuffs	Black	One Size	2403T7	17.86

Hooded Sweatshirt Jackets

Get the comfort of a sweatshirt combined with the ruggedness of a jacket. Shell is made of 80% cotton/20% polyester heavyweight fleece for extra warmth. Jackets have a 65% cotton/35% polyester lining, zipper front, and knit bottom and cuffs.

Regular jackets are for heights 5′8″-5′11″; length is 26″. *Tall* jackets are for heights 6′-6′3″; length is 28″.

		Regular		***Tall***	
Size	**Chest**		**Each**		**Each**
Navy					
M	38″-40″	53195T765	$43.34	53195T775	$43.34
L	42″-44″	53195T766	43.34	53195T776	43.34
XL	46″-48″	53195T767	43.34	53195T777	43.34
XXL	50″-52″	53195T768	43.34	53195T778	43.34
Black					
M	38″-40″	53195T761	43.34	53195T181	43.34
L	42″-44″	53195T762	43.34	53195T182	43.34
XL	46″-48″	53195T763	43.34	53195T183	43.34
XXL	50″-52″	53195T764	43.34	53195T184	43.34

Flotation Vests, Jackets, and Life Preserver Ring

Work safely near water with these flotation aids. All are international safety orange with reflective tape panels. Jackets and vests have soft flotation foam for comfort.

Standard vest has a tough nylon shell that covers multiple foam flotation panels. It has a zipper front and buckle closure.

Mesh-top vest has a mesh upper half for ventilation to keep you cool. A tough nylon shell covers the foam construction. Vest has a zipper front with two buckles and two pockets.

Adjustable vest has a PVC-coated, three-piece construction and the shoulder straps adjust for a sure fit. Secure with two front buckles.

Vest with flotation collar provides extra protection. It has a nylon shell, mesh lining, and hinged back. Secure with two buckles.

Jacket is 26″ long. It has a nylon shell, plastic zipper front, and six pockets: two chest, two side, one sleeve, and one inside chest.

Personal flotation device (PFD) inflates automatically when submerged in water, or you can inflate it manually. It has a heavy duty nylon shell, one pocket, and buckle closure.

Life preserver ring is made of molded polyurethane to resist common chemicals, oils, and UV rays. It has a 30″ OD and 18″ ID. The encircling rope is 120″ long and made of ⅜″ dia. polypropylene.

Size	**Chest**	**United States Coast Guard (USCG) Approved**		**Each**
Standard Vest				
L	44″-46″	Type III	5509T302	$58.96
M	40″-42″	Type III	5509T301	58.96
XL	48″-50″	Type III	5509T303	58.96
XXL	———	Type III	5509T304	58.96
Mesh-Top Vest				
L	44″-46″	Type III	5509T502	54.12
M	40″-42″	Type III	5509T501	54.12
XL	48″-50″	Type III	5509T503	54.12
XXL	———	Type III	5509T504	54.12
Adjustable Vest				
One Size	———	Type V	5509T4	59.77
Vest with Flotation Collar				
One Size	———	Type III/V	5509T2	64.20
Jacket				
L	44″-46″	Type III	5509T602	298.74
M	40″-42″	Type III	5509T601	298.74
XL	48″-50″	Type III	5509T603	298.74
XXL	———	Type III	5509T604	298.74
Personal Flotation Device				
One Size	———	Type V	5509T7	171.38
Life Preserver Ring				
———	———	Type IV	5509T9	93.15

Fall-Arrest Harnesses and Lanyards

Fall-arrest equipment limits the amount of force a person is subjected to in the event of a fall. When used properly, these systems help you comply with ANSI standards Z359.1-2007 and A10.32 (unless noted) and applicable OSHA standards. For a complete system you need a harness, a shock-absorbing lanyard or quick-stop retractable lanyard (see pg. 1799; requires a self-locking carabiner hook), and an anchor point connector.

Harnesses

Pullover Style

Vest Style Standard

Vest Style Comfort-Padded Polyester

Vest Style Easy-On Polyester

All harnesses have one or more steel D-rings that serve different functions based on their location. *Back D-rings* are for fall arrest and travel restriction. *Hip D-rings* are for worker positioning and travel restriction. *Chest D-rings* are for ladder climbing and lifting and lowering of workers. *Shoulder D-rings* are also for lifting and lowering.

Nylon is soft and offers some flexibility.

Polyester has good chemical resistance to withstand harsh environments.

Pullover-Style Harnesses— Go on over your head.

Vest-Style Harnesses— Go on like a jacket.

Comfort-stretch polyester harnesses stretch like a bungee cord to move with you for a comfortable fit.

Comfort-padded polyester harness has padded shoulders and a back support.

Easy-on polyester harnesses have a mesh vest to eliminate tangles.

With Slide Thigh Buckle

With Traditional Thigh Buckle

Number of D-Rings: Back	Hip	Chest	Shoulder	Max. Cap., lbs.	Available Sizes (Fits Waist)	With Slide Thigh Buckle	Each	With Traditional Thigh Buckle	Each
Pullover-Style Harnesses									
Standard— **To Order:** *Please specify nylon or polyester except for 8169T68 and 8179T25, which come in polyester only.*									
1	0	1	0	400	One Size (30″-47″)	8169T6	$84.42	8169T68▲	$121.30
1	2	1	0	400	One Size (30″-47″)	—	—	8179T25	113.08
Vest-Style Harnesses									
Standard— **To Order:** *Please specify nylon or polyester except for 7942T52, T192, and T382, which come in polyester only.*									
1	0	0	0	400	One Size (30″-47″)	7942T52	118.43	7942T192	94.18
1	0	0	2	400	One Size (30″-47″)	7942T6	113.07	—	—
1	2	1	0	400	One Size (30″-47″)	—	—	7942T382	115.25
Comfort-Stretch Polyester									
1	0	0	0	400	One Size (38″-50″)	8960T51	134.68	8960T53	140.41
1	2	0	0	400	One Size (38″-50″)	8960T52	147.40	8960T54	152.86
Comfort-Padded Polyester— **To Order:** *Please specify size.*									
1	2	0	0	310 ●	M (32″-36″), L/XL (36″-46″), XXL (46″-52″)	—	—	8053T6■	153.01
Easy-On Polyester									
1	2	0	0	310	S (30″-38″ waist; 27″-35″ chest)	8709T31	221.42	—	—
1	2	0	0	310	M (34″-42″ waist; 34″-42″ chest)	8709T32	221.42	—	—
1	2	0	0	310	L (40″-48″ waist; 38″-46″ chest)	8709T33	221.42	—	—
1	2	0	0	310	XL (55″-63″ waist; 46″-54″ chest)	8709T34	221.42	—	—

▲ Does not have a chest D-ring. ● Max. capacity for XXL size is 400 lbs. ■ Does not meet ANSI A10.32.

Shock-Absorbing Lanyards

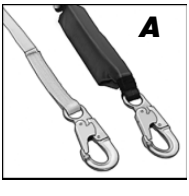

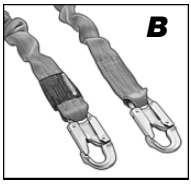

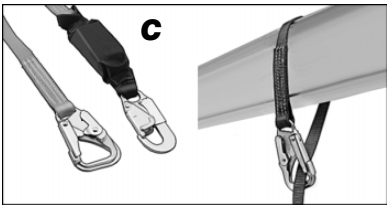

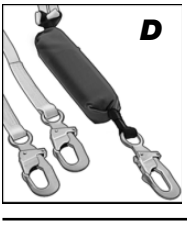

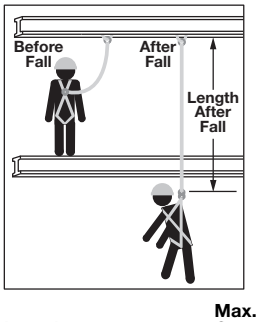

Use shock-absorbing lanyards to connect your harness to an anchor point connector (see page 1799). A built-in shock absorber reduces impact and brings you to a smooth halt. All have double-locking zinc-plated steel snap hooks for a secure hold.

Nylon is soft and offers some flexibility. *Polyester* has good chemical resistance to withstand harsh environments.

(B) Super-stretch webbing lanyards stretch when you need additional reach, then return to their original length.

(C) Tie-back webbing lanyard and anchor strap eliminates the need for a separate tie-off strap anchor point connector. Wrap the lanyard around an anchor point and tie off using the snap hook on the built-in anchor strap.

(D) Twin webbing lanyard has two straps that allow you to remain connected to your anchoring point with one strap while attaching the other strap to a different anchoring point.

Length	Max. Cap., lbs.	Length After Fall	Material	Snap Hook Opening Size		Each
(A) Webbing Lanyards						
6 ft.	310	9½ ft.	Nylon	¾″	8168T18	$82.24
6 ft.	310	9½ ft.	Polyester	¾″ and 2½″	8168T71	116.63
6 ft.	400	9½ ft.	Polyester	¾″	8053T3■	108.11
4½ to 6 ft. (Adjustable)	310	9½ ft.	Nylon	¾″	8168T16	86.18
(B) Super-Stretch Webbing Lanyards						
4 to 6 ft.	310	9½ ft.	Polyester	¾″	8168T72	93.57
4 to 6 ft.	310	9½ ft.	Polyester	¾″ and 2½″	8168T73	132.68
(C) Tie-Back Webbing Lanyard and Anchor Strap						
6 ft.	310	9½ ft.	Polyester	¾″	8168T74	128.78
(D) Twin Webbing Lanyard						
6 ft.	310	9½ ft.	Nylon	¾″	8168T65	114.13
(E) Rope Lanyards						
6 ft.	310	9½ ft.	Nylon	¾″	8168T34	78.97
4½ to 6 ft. (Adjustable)	310	9½ ft.	Nylon	¾″	8168T14	78.97

■ Does not meet ANSI A10.32.

Heat-Resistant Fall-Arrest Harness and Lanyard

Pair up this harness and a lanyard for fall-arrest protection in extreme heat applications such as welding. A complete system also requires an anchor point connector (sold separately on this page). When used properly, system meets ANSI standard Z359.1-2007 and applicable OSHA standards.

Harness has Nomex webbing that resists heat up to 700° F and a polyester inner core. Thigh buckles are slide style.

Shock-absorbing lanyard is made of abrasion-resistant steel wire rope with a clear vinyl coating. It has a built-in shock absorber to reduce impact and bring you to a smooth halt. Double-locking steel snap hooks provide a secure hold.

Harness

Maximum capacity is 310 lbs. Harness has one steel back D-ring.

Fits Waist		Each
One Size (26″-46″)	8263T15	$211.14

Shock-Absorbing Lanyard

Maximum capacity is 310 lbs. Snap hook opening size is 3/4″. For an illustration of length after fall, see page 1798.

Lg.	Lg. After Fall		Each
6 ft.	9 1/2 ft.	8263T2	$101.00

Quick-Stop Retractable Fall-Arrest Lanyards and Carabiner Hooks

Stop your fall in just a few inches with these retractable lanyards. Use in conjunction with a harness, a self-locking carabiner hook, and an anchor point connector (all sold separately). When used properly, system meets ANSI standards Z359.1-2007 and A10.32 and applicable OSHA standards.

In the event of a fall, the internal braking system activates, stopping and limiting the amount of force from the fall. Lanyards enable freedom of movement while working off the ground, extending and retracting as you move. All have stainless steel internal components (unless noted) for corrosion resistance and swivel to reduce twisting and tangling. A self-locking snap hook with 3/4″ opening is located at the end of each lanyard to connect to the back D-ring of a harness.

Webbing lanyards have a thermoplastic housing. *Polyester lanyards* are CSA certified. Increase the maximum capacity of 8091T31 and T32 to 400 lbs. by attaching an *optional shock-absorbing pack*.

Wire rope lanyards resist abrasion. *20-* and *30-ft. lanyards* have a polyethylene and aluminum housing. *50-ft. lanyards* have an aluminum and stainless steel housing that's sealed to protect internal components against dirt and corrosion.

Webbing

Wire Rope

Max. Lg.	Max. Cap., lbs.		Each
Webbing Lanyards			
Polyester			
9 ft.	310	8091T31	$168.40
11 ft.	310	8091T32	240.97
Opt. Shock-Absorbing Pack		8091T8	$72.56
Nylon			
20 ft.	310	8091T9★	615.44
Wire Rope Lanyards			
Galvanized Steel			
20 ft.	310	8091T52	612.19
30 ft.	310	8091T64	825.19
50 ft.	420	8091T56■	1,399.34
Type 302 Stainless Steel			
20 ft.	310	8091T53	634.45
30 ft.	310	8091T65	944.92
Type 304 Stainless Steel			
50 ft.	420	8091T57■	1,569.39

★ Internal components are stainless steel, zinc-plated steel, and aluminum. ■ Internal components are stainless steel, carbon steel, and aluminum.

A ***self-locking carabiner hook*** is required to connect a quick-stop retractable lanyard to an anchor point connector. Connect only one lanyard to a carabiner at any time. Made of steel.

Opening Size (A)		Each
11/16″	8091T21	$43.55
13/16″	8091T22	77.31
2 3/16″	8091T23	84.87

Electrical Arc Flash Protection Fall-Arrest Harness and Lanyard

In addition to meeting ASTM F887-05 arc flash requirements, Kevlar webbing gives this harness and lanyard fire retardance and excellent durability. A complete system also requires an anchor point connector (sold separately). When used properly, system meets ANSI standards Z359.1-2007 and A10.32 and applicable OSHA standards.

For arc flash protection clothing, see page 1795.

Harness has a Nomex lining for comfort and quick-connect thigh buckles. Metal components are leather insulated.

Shock-absorbing lanyards have a built-in shock absorber to reduce impact and bring you to a smooth halt. Double-locking steel snap hooks provide a secure hold.

Harness

Maximum capacity is 400 lbs. Harness has one back D-ring made of Kevlar webbing.

Fits Waist		Each
One Size (32″-56″)	1785T1	$262.71

Shock-Absorbing Lanyards

Lanyards are 6-ft. long and have a 3/4″ snap hook opening. Length after fall is 9 1/2 feet. For an illustration of length after fall, see page 1798.

Min. Capacity	Max. Capacity		Each
130 lbs.	310 lbs.	1785T4	$143.55
310 lbs.	400 lbs.	1785T6	162.82

Anchor Point Connectors

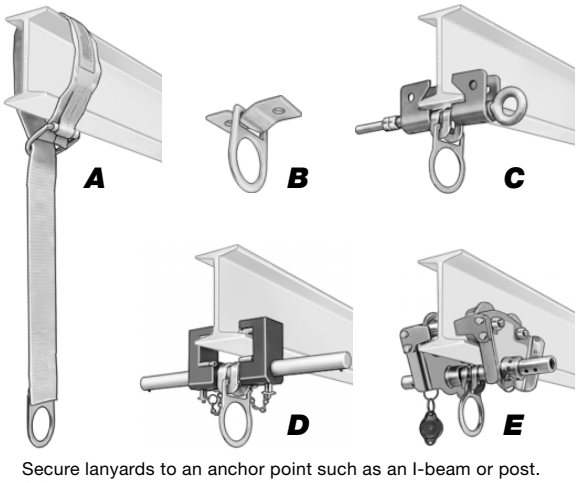

Secure lanyards to an anchor point such as an I-beam or post.

(A) Tie-off straps are good for temporary anchoring. They have a wear pad that protects the webbing from abrasion. Strap is polyester; rings are zinc-plated steel. Maximum capacity is 420 lbs.

(B) D-ring plate is for permanent anchoring. D-ring is alloy steel. Plate is Type 304 stainless steel and has 9/16″ dia. mounting holes (fasteners not included). Maximum capacity is 420 lbs.

(C) I-beam anchor remains stationary for use in vertical and horizontal I-beam applications where movement cannot be tolerated. Made of galvanized steel. Fits I-beams with a flange width of 4″-8″ and maximum thickness of 1/2″. Maximum capacity is 310 lbs.

(D) Rolling I-beam anchor can be used with an overhead I-beam as well as one at your feet, providing an anchor as you walk along the beam. Housing is aluminum. Fits I-beams with a flange width of 4″-12″ and maximum thickness of 1 1/4″. maximum capacity is 310 lbs.

(E) Glide-along trolley provides maximum mobility on I-beams. Wheels have double-shielded, corrosion-resistant wheel bearings for smooth movement. Trolley is steel. Fits I-beams with a flange width of 3″-8″ and maximum thickness of 11/16″. Maximum capacity is 420 lbs.

			Each
A	Tie-Off Strap (fits up to 11″ dia. anchor)	11005T12	$48.67
A	Tie-Off Strap (fits up to 22″ dia. anchor)	11005T13	55.62
B	D-Ring Plate	11005T11	38.86
C	I-Beam Anchor	11005T22	164.38
D	Rolling I-Beam Anchor	11005T21	239.89
E	Glide-Along Trolley	8091T43	328.78

Fall-Arrest Rope Grabs

For Nylon and Polyester Rope

For Wire Rope

In the event of a fall, these rope grabs lock onto the line, halting descent. Use with a vertical rope lifeline and a shock-absorbing lanyard. All are corrosion resistant. When used properly, these grabs help you comply with OSHA standard 1910.66.

Grab ***for nylon and polyester rope*** moves with you as you ascend or descend the line.

Grab ***for wire rope*** must be moved manually.

Grab Material	Max. Cap.	For Rope Dia.		Each
For Nylon and Polyester Rope				
Anodized Aluminum	310 lbs.	5/8″ to 3/4″	**8201T51**	$138.12
For Wire Rope				
Type 304 Stainless Steel	310 lbs.	5/16″ to 3/8″	**8201T68**	170.10

Leg Support Strap

Attach one leg support to each thigh strap of any fall-arrest harness and prevent suspension trauma that can occur from hanging vertically and motionless. In the case of a fall, the strap is easily deployed. Place foot into a looped step so your leg muscles can be flexed to keep blood flowing.

Max. Cap.		Each
400 lbs.	**5695T5**	$20.95

Suspension Seat

Lift workers over and into difficult-to-access areas. This equipment has a foam padded aluminum seat, 1 3/4″ wide adjustable nylon webbing, and two carabiners. Seat is 16 1/2″ Wd. × 5″ Dp. × 3/4″ Thick.

Note: Seat requires a back-up fall-arrest system while in use.

Max. Cap.		Each
310 lbs.	**7936T31**	$195.24

Confined-Space Rescue Systems

Provide fall protection and emergency rescue for workers in tight spots. Brakes lock in place in the event of a fall; use the lifeline's crank handle to lift or lower worker to safety. Furnished with a lifeline, steel snap hook, pulley, carabiner hook, aluminum tripod stand, mounting bracket to attach lifeline to tripod, 3/16″ dia. wire rope, two equipment bags, and an instructional manual and video.

Tripod stand spans openings up to 70″ dia. Systems require use of a harness (see pages 1798-1799). When used properly, they help you comply with ANSI Z359.1-2007 and A10.32.

Rope Lg.	Max. Cap.	***Galv. Steel Wire Rope***	Each	***Type 304 SS Wire Rope***	Each
50 ft.	310 lbs.	**8165T81**	$3,764.32	**8165T78**	$3,842.00
100 ft.	310 lbs.	**8165T96**	4,319.14	**8165T79**	4,487.72

Positioning Belts and Lanyards—*Not for Use as Fall-Arrest Equipment*

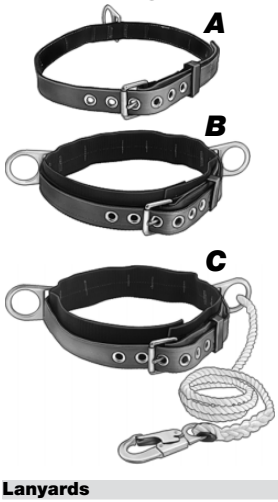

Keep workers away from areas of potential free fall. Combine a belt and a lanyard to restrict an individual's travel within a specific distance from an anchor point. Connect one end of the lanyard to a D-ring on the belt; attach the other end to an anchor point connector. For fall-arrest equipment, see pages 1798-1799.

Polyester webbing has good chemical resistance to withstand harsh environments.

Belts

All belts have a traditional steel buckle, steel D-rings, and polyester webbing. **To Order:** Please specify belt size from chart.

Lined belts offer added comfort and durability. All are lined with synthetic leather.

Polyester-padded belt provides extra support and comfort.

Polyester-padded belt with integral rope lanyard has the benefits of the padded belt above, plus a polyester lanyard that's permanently attached. One end of the lanyard is spliced to a D-ring; the other end has a double-locking steel snap hook for attaching to an anchor point connector.

Max. Cap., lbs.	No. of D-Rings		Each
(A) Lined Belts			
310	1	**8062T333**	$48.76
310	2	**8062T444**	59.61
(B) Polyester-Padded Belt			
310	2	**7920T54**	57.89
(C) Polyester-Padded Belt with Integral Rope Lanyard			
310	2	**8088T9**▲	85.03

▲ Available in one size. Fits waist sizes 36″-46″.

Lined Belts	
Belt Size	**Waist Size**
Small	31″-39″
Medium	34″-42″
Large	38″-46″
Extra Large	42″-50″

Polyester-Padded Belt	
Belt Size	**Waist Size**
Small	32″-40″
Medium	36″-44″
Large	40″-48″
Extra Large	44″-52″

Lanyards

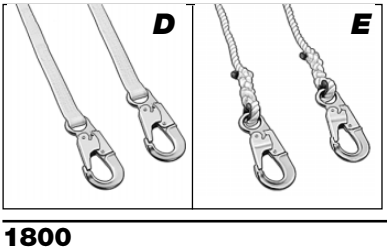

All have double-locking steel snap hooks on each end for added security.

Length	Max. Cap., lbs.	Snap Hook Opening Size		Each
(D) Polyester Webbing Lanyards				
6 ft.	310	5/8″	**8227T34**	$39.82
6 ft. to 10 ft. (Adjustable)	310	5/8″	**8227T44**	49.77
***(E) Rope Lanyards—7941T23** is nylon; **7941T25** is polyester.*				
4 ft. to 6 ft. (Adjustable)	310	5/8″	**7941T23**	58.20
4 ft. to 6 ft. (Adjustable)	310	5/8″	**7941T25**	58.20

Wrist-Strap Rescue Line

Pull workers from a confined space. This rescue line consists of two 3-ply nylon wrist straps attached to a 1/2″ Dia. × 4 1/2 ft. Lg. nylon rope. Each strap has two traditional buckles; rope is threaded through a steel D-ring. Meets OSHA 29 CFR 1910.

Max. Cap.		Each
310 lbs.	8081T1	$113.77

Ladder Climbing Systems

Install these easy-to-adjust systems on ladders of towers, bridges, and shafts using the included hardware. You supply your own harness with chest D-ring and a carabiner hook (sold separately on pages 1798-1799) and a wire rope grab (sold separately below).

Use with ladders that have a 1″ maximum rung dia. The anchor bracket has an adjustable eyebolt so you can control the tension of the 3/8″ dia. galvanized steel wire rope. In the event of a fall, the shock-absorbing brake stops you within inches.

Up to two people (maximum 310 lbs. each) can use a system at a time—the only requirement is that each person has their own fall-arrest equipment. When properly installed, these systems help you comply with ANSI standard A14.3 and OSHA 1910.27.

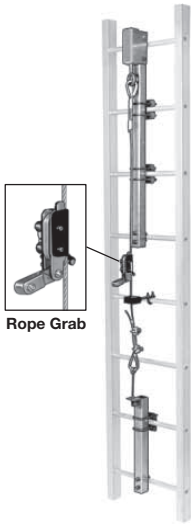

Rope Grab

Rope Lg.		Each
50 ft.	8272T61	$235.00
100 ft.	8272T62	324.64
Wire Rope Grab	8272T73	Each $150.00

Shower Stations

Just pull the handle to flush chemicals and other dangerous materials from your eyes and body. These stations connect to a permanent water source and include an identification sign. Meet ANSI Z358.1.

For an automatic water mixing valve to keep water flowing in case of emergency, see 6208T on page 505.

Choose the pipe material that suits your environment.

Galvanized steel offers some corrosion resistance.

Coated galvanized steel has an orange powder-coated finish for added corrosion resistance.

PVC holds up against caustic chemicals.

Type 304 stainless steel offers superior corrosion resistance.

Showers

All have a 10″ dia. shower head. Valve is chrome-plated brass except showers with a Type 304 stainless steel pipe, which have a Type 304 stainless steel valve.

Wall- and ***ceiling-mount*** showers have a 1″ NPT female supply connection.

Floor-mount showers have a 1 1/4″ NPT female supply connection. All have a mounting flange (fasteners not included). 5201T21 and 5580T24 have 3/8″ dia. holes; 54255T9 has 5/8″ dia. holes.

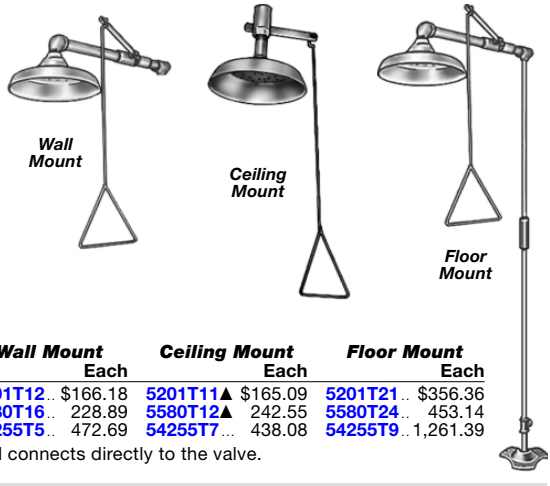

Material		Wall Mount		Ceiling Mount		Floor Mount	
Shower Head	Pipe		Each		Each		Each
ABS Plastic	Galvanized Steel	5201T12	$166.18	5201T11▲	$165.09	5201T21	$356.36
Type 304 SS	Galvanized Steel	5580T16	228.89	5580T12▲	242.55	5580T24	453.14
Type 304 SS	Type 304 SS	54255T5	472.69	54255T7	438.08	54255T9	1,261.39

▲ Does not have a pipe. Shower head connects directly to the valve.

Showers with Eye and Eye/Face Wash

These convenient stations combine a shower with an eye wash or an eye/face wash. All have a 10″ dia. shower head and 1 1/4″ NPT female supply and waste connections except 5627T121 and T123, which have 2″ IPS female socket weld supply and waste connections. Stations have a floor-mounting flange with 3/8″ dia. holes except 5627T121 and T123 and 55525T2 and T8, which have 5/8″ dia. holes (fasteners not included). ***Eye/face washes*** have larger spray heads than eye washes for increased flow.

Covered-bowl stations, ***open-bowl*** stations, and stations ***without bowl*** have dual spray heads for eye and eye/face washes except 55525T8, which has four spray heads. Covered-bowl stations have a Type 304 stainless steel cover.

ADA-compliant open bowl station has four eye/face spray heads, a longer pull handle, and an extended bowl mounted at an accessible height. Meets ANSI 117.1 as a barrier-free station.

ABS plastic bowl is 11 3/4″ dia.; *Type 304 stainless steel* bowl is 11 1/2″ dia.

For accessories, see page 1803.

Material				Showers with Eye Wash		Showers with Eye/Face Wash	
Shower Head	Bowl	Pipe	Valve and Spray Arms		Each		Each
Covered Bowl							
ABS Plastic	Type 304 SS	Galvanized Steel	Chrome-Plated Brass	5557T16	$866.00	55505T15	$867.92
Open Bowl							
ABS Plastic	ABS Plastic	Galvanized Steel	Chrome-Plated Brass	5557T7	590.37	55505T2	674.23
ABS Plastic	ABS Plastic	PVC	PVC-Coated Brass★	5627T121	1,049.07	5627T123	1,073.52
ABS Plastic	Type 304 SS	Galvanized Steel	Chrome-Plated Brass	5557T5	689.60	55505T7	718.27
ABS Plastic	Type 304 SS	Coated Galv. Steel	Chrome-Plated Brass	55515T1	796.85	55515T5	849.63
Type 304 SS	Type 304 SS	Type 304 SS	Type 304 SS■	55525T2	1,787.26	55525T8	1,829.52
ADA-Compliant Open Bowl							
ABS Plastic	Type 304 SS	Galvanized Steel	Chrome-Plated Brass	———	———	53275T21	864.29
Without Bowl— *For use with a floor drain.*							
ABS Plastic	———	Galvanized Steel	Chrome-Plated Brass	5557T1	578.20	55505T9	625.38

★ Spray arms have a gray powder coating. ■ Valve is Type 316 SS.

With Open Bowl Eye/Face Wash

Freeze-Resistant Shower and Eye/Face Wash Stations

Keep water flowing to these stations despite freezing temperatures. Use outdoors or in other areas where your permanent water supply is frequently exposed to cold. Eye/face washes do not have a bowl—the piping automatically drains to prevent freezing. Shower head is ABS plastic. Pipe is galvanized steel.

Through-the-wall station allows the shower head and eye/face wash to be installed in an unheated area, but the valve must be installed in an area not exposed to the cold. For use with walls up to 12″ thick. Shower head is 8⅜″ dia. Valve is chrome-plated bronze; spray arms are ABS plastic. Shower has a 1¼″ NPT female supply connection; eye/face wash has a ½″ NPT female supply connection.

Heated stations supply water in temperatures as low as –50° F. A combination of heating tape and insulation surround the piping to prevent the water from freezing. Housing is ⅛″ thick ABS plastic. The heating tape is controlled by the included thermostat, which has a temperature range of 60° to 70° F. The thermostat is housed in a NEMA 4 junction box with pilot light, operates on 120 VAC, 60 Hz, and must be hardwired. Shower head is 8″ dia. Valve and spray arms are chrome-plated brass. Supply connections are 1″ NPT male. FM approved. UL listed. Floor mounting flange has ½″ dia. holes (fasteners not included).

Hazardous-location station is UL listed for Class I, Division 2, Groups B, C, and D.

		Each
Through-the-Wall Station	9120T58	$1,145.29
Heated Station	9789T45	2,814.38
Hazardous-Location Heated Station	9789T47	3,040.05

Eye and Eye/Face Wash Stations

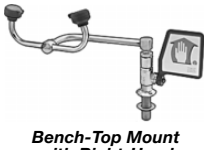

Identification Sign (included with all stations)

Flush away contaminants at one of these stations. They connect to a permanent water source and come with a dust cover (except covered bowl) and identification sign. Meet ANSI Z358.1. ***Eye/face wash*** stations have larger spray heads for increased flow.

Type 304 stainless steel bowl is 11½″ dia.; *ABS plastic bowl* is 11¾″ dia.

Covered bowl stations have a Type 304 stainless steel bowl cover that prevents contamination and lifts when you push the flag handle.

Stations ***without bowl*** are for use with a floor drain.

For accessories, see page 1803.

Pedestal-mount stations have a floor-mounting flange with ⅜″ dia. holes (fasteners not included). *Galvanized steel pipe* offers some corrosion resistance. *Powder-coated galvanized steel pipe* has an orange finish for added corrosion resistance.

Wall-mount stations have a mounting bracket with ⅜″ dia. holes except station without bowl, which has 7⁄16″ dia. holes (fasteners not included). Stations connect to the valve with a chrome-plated brass pipe and elbow.

Bench-mount stations accommodate surfaces ⅛″ to 1½″ thick. They have an extension spray arm and a head that swivels 90°.

Pedestal Mount

Bowl	Material: Valve and Spray Arms	Material: Pipe	Connect., NPT female: Supply	Connect., NPT female: Waste	Eye Wash	Eye Wash Each	Eye/Face Wash	Eye/Face Wash Each
Covered Bowl								
Type 304 SS	Chrome-Plated Brass	Galvanized Steel	½″	1¼″	5568T13	$497.74	5559T8	$638.67
Covered Bowl with Drench Hose								
Type 304 SS	Chrome-Plated Brass	Galvanized Steel	½″	1¼″	—	—	5559T9	804.04
Open Bowl								
ABS Plastic	Chrome-Plated Brass	Galvanized Steel	½″	1¼″	5568T7	249.64	5559T23	334.69
ABS Plastic	Powder-Coated Brass	Powder-Coated Galv. Steel	½″	1¼″	5568T11	297.45	5559T21	412.04
Type 304 SS	Chrome-Plated Brass	Galvanized Steel	½″	1¼″	5568T5	327.65	5559T87	381.22

Wall Mount

Bowl	Material: Valve and Spray Arms	Material: Wall Bracket	Connect., NPT female: Supply	Connect., NPT female: Waste	Eye Wash	Eye Wash Each	Eye/Face Wash	Eye/Face Wash Each
Covered Bowl								
Type 304 SS	Chrome-Plated Brass	Powder-Coated Aluminum	½″	1¼″	5535T37	$403.20	5549T16	$431.80
Open Bowl								
ABS Plastic	Chrome-Plated Brass	Powder-Coated Aluminum	½″	1¼″	5535T11	209.77	5549T11	202.20
Type 304 SS	Chrome-Plated Brass	Powder-Coated Aluminum	½″	1¼″	5535T15	262.44	5549T13	252.60
Type 304 SS	Type 304 SS	Type 304 SS	½″	1¼″	5535T23	718.14	5549T15	848.30
Without Bowl								
—	Chrome-Plated Brass	Powder-Coated Aluminum	½″	—	5535T61	198.49	5549T41	203.82

Bench-Mount without Bowl—Do not have waste connections.

Activation	Valve and Spray Arms Material	Supply Connections	Eye Wash	Eye Wash Each	Eye/Face Wash	Eye/Face Wash Each
Right-Hand	Chrome-Plated Brass	½″ NPT male	9702T11	$261.70	9702T33	$290.00
Left-Hand	Chrome-Plated Brass	½″ NPT male	9702T21	261.70	9702T44	290.00

Faucet-Mount Eye Wash Stations

Transform almost any standard faucet into an eye wash station—just remove the aerator and thread one of these stations onto the faucet.

Note: Not to be used as a substitute for an ANSI-compliant wash station. Use cold water supply only.

Stations have dual chrome-plated brass spray arms and forward-angled heads. The on/off valve has 55/64″-27 female aerator threads. Stations also include adapters for 15/16″-27, 13/16″-27, and 3/8″ NPT as well as a pair of dust covers.

Low Profile

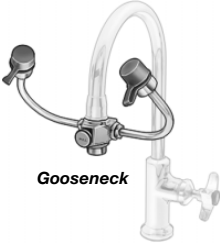

Gooseneck

		Each
Eye Washes		
Low Profile	9792T42	$61.82
Gooseneck	9792T41	67.69
Replacement Parts		
Valve Stem Assembly	9792T51	$32.75
Flow Diverter with O-Rings	9792T53	28.10
Outlet Head Assembly	9792T56	17.00
		Per Pkg.
On/Off Knob (2/Pkg.)	9792T55	$11.27
		Per Pair
Dust Covers	9792T54	$7.11

Drench Hose Sprayers

Bench Mount

Wall Mount

Wall Mount with Coiled Hose

Control the direction of water while flushing contaminants from your eyes, face, and body. These sprayers have two spray heads and meet ANSI Z358.1 standards for eye washes and drench hoses. Valve and arms are chrome-plated brass. Bench-mount sprayer requires a 1 3/8″ dia. cutout. Both wall-mount styles have 1/4″ dia. holes (fasteners not included).

Bench- and ***wall-mount*** sprayers are activated by squeezing the handle. The handle is self-closing and includes locking clip for converting to stay-open operation.

Wall mount with coiled hose sprayer has a stay-open flag handle.

	Hose Material	Hose Lg.	Connection		Each
Bench Mount	PVC	8 ft.	3/8″ NPT Male	5623T41	$296.46
Wall Mount	PVC	8 ft.	3/8″ NPT Male	5623T31	289.38
Wall Mount w/ Coiled Hose	Nylon	12 ft.	3/8″ NPT Female	9721T121	318.04

Portable Eye Wash and Drench Hose Tanks

Pressurized to deliver a continuous flow of water, this tank complies with ANSI Z358.1 by providing a minimum of 0.65 gpm for 15 minutes. A gauge and safety relief valve prevent over-pressurization. Tank is Type 304 stainless steel with a built-in carrying handle and includes 8 oz. of antibacterial additive. Has an eye wash with two spray heads and a stay-open valve. The drench hose lets you direct spray to affected areas and has a self-closing squeeze handle. Hose is 6 ft. long and made of PVC.

Change Cycle	Tank Size, Dia. × Ht.	Capacity, gal.		Each
6 months	16″ × 39″	15	5420T23	$997.72
Antibacterial Additive Refill (8 oz.)			54285T29	12.67

Foot Treadle and Drench Hoses for Eye Wash and Eye/Face Wash Stations

Foot treadle attaches to the base of your stainless steel pedestal-mount wash station (with or without shower station) to provide hands-free operation. Furnished with a pull chain and mounting hardware. Made of Type 304 stainless steel.

55525T7 ..... **Each** $104.44

Drench hoses are intended for use with eye and face wash stations (except bench mount). Hoses have one spray head and a chrome-plated brass valve.

Unmounted and *direct-mount* drench hoses have a self-closing squeeze handle. Use the unmounted hose with your own mounting system or as a replacement unit. Direct-mount hose attaches to a wash station and comes with a mounting bracket and fasteners.

Wall-mount with coiled hose has a stay-open flag handle and a mounting bracket with 1/4″ dia. holes (fasteners not included).

Hose Lg.	Hose Material	Connection		Each
Unmounted				
8 ft.	PVC	3/8″ NPT Male	5623T2	$190.87
Direct Mount				
8 ft.	PVC	1/2″ NPT Female ▲	5535T21	224.89
Wall Mount with Coiled Hose				
12 ft.	Nylon	3/8″ NPT Female	9721T11	292.22

▲ Also has a 1 1/4″ NPT female adapter for use with a shower.

Shower Test Kit and Privacy Curtain

Shower Test Kit

Privacy Curtain

Shower test kit includes a nylon water diverter, three-piece PVC rod, and a 5-gal. catch bucket.

Privacy curtain is yellow nylon. It comes with a gray powder-coated steel rod that assembles into a 52″ dia. hoop. Hardware for mounting to a shower pipe is included.

Shower and eye wash inspection cards are 3 1/8″ Wd. × 6 1/4″ Ht. cardstock. They have a reinforced eyelet and twist wire for hanging.

		Each
Shower Test Kit	9791T36	$48.43
Privacy Curtain	9790T69	243.57
		Per Pkg.
Shower and Eye Wash Inspection Cards (10/Pkg.)	11145T5	$7.14

Self-Contained Eye Wash Stations

A

B

C

Mobile Polyethylene Container for Stations with Concentrate

D

E

Plumbing isn't necessary with these eye wash stations—simply pull to activate flow. All are made of polyethylene.

ANSI Compliant Stations— Meet ANSI Z358.1 by providing a minimum of 0.4 gpm for 15 minutes. All include a wall mounting bracket.

(A) Station without concentrate requires a saline solution concentrate (sold separately) and has a pull tray that covers the wash area to keep out contaminants when not in use. Station is green with a yellow tray and includes a drain hose. Mounting bracket has 3/8″ dia. holes (fasteners not included).

(B) Stations with concentrate include saline solution concentrate and have a lockable fill cap to prevent tampering. All have a pull strap. Color is green. Mounting bracket has 1/4″ dia. holes (fasteners not included).
Heated station has twin 600-watt heaters. Ideal for use in temperatures from –32° to +72°F. Station has lights to indicate power on, heating on, and malfunction. Operates on 110 VAC, 60 Hz and has a 6-ft. cord with three-prong plug.
Mobile polyethylene container and *steel cart with container* let you collect and transport used solution.

(C) Station with sealed cartridges includes saline cartridges that don't require mixing. Cartridges last four times longer than most saline solutions. Pull the tray to break the cartridge safety seal and activate the wash. A built-in reservoir catches used solution. When the reservoir is full, a sign on the inside of the tray drops down to indicate that it's time to empty it. Station color is green. Mounting bracket has 1/4″ dia. holes (fasteners not included).

Supplemental Stations— Get relief when you can't immediately reach a compliant station or where a compliant station won't fit. All have a pull strap. Color is green. Mount stations to a wall or bench top. *Note:* Not be used as a substitute for an ANSI-compliant station.

(D) Station with concentrate has a built-in handle. It includes saline solution concentrate and a wall mounting bracket with 1/4″ dia. holes (fasteners not included).
Mobile polyethylene container lets you collect and transport used solution.

(E) Station with sealed cartridge includes a saline solution cartridge that doesn't require mixing. Pull the strap to break the cartridge safety seal and activate the wash. When cartridge is empty, simply remove and install a new one.
Wire storage rack holds up to four saline solution cartridges.

ANSI Compliant

		Wash Time	Cap., gal.	Change Cycle	Antibacterial Additive Included	Antibacterial Additive Change Cycle	Overall Size, Ht.×Wd.×Dp.		Each
Station without Concentrate									
A	Standard	15 min.	16	6 months	Yes (8 oz.)	6 months	20½″×22″×20″	54285T16	$222.00
Saline Solution Concentrate (1.4 gal.)								5388T47	72.64
Antibacterial Additive Refill for 54285T16 (8 oz.)								54285T29	12.67
Stations with Concentrate									
B	Standard	15 min.	16	6 months	No	4 months	24″×19¾″×19″	5388T75	320.90
B	Heated	15 min.	16	6 months	No	4 months	24″×19¾″×19″	5388T85	1,463.35
Saline Solution Concentrate Refill (1.4 gal.)								5388T47	72.64
Ready-to-Use Saline Solution (1 gal.)								5388T59	21.58
Antibacterial Additive (8 oz.)								5388T95	9.23
Replacement Pull Strap								5388T15	21.94
PVC Bowl Cover								5388T51	29.34
Mobile Polyethylene Container (16 gal. capacity)								5388T86	198.68
Steel Cart with 20-gal. Capacity Container								5388T87	137.49
Station with Sealed Cartridges									
C	Station	15 min.	7.6	24 months	—	—	30″×29″×17¼″	56265T4	558.85
Saline Solution Cartridge Refill (two 3.5 gal. cartridges)								56265T8	167.85
Sterile Saline Solution Cartridge Refill (two 3.8 gal. cartridges)								56265T9	254.49

Supplemental

		Wash Time	Cap., gal.	Change Cycle	Antibacterial Additive Included	Antibacterial Additive Change Cycle	Overall Size, Ht.×Wd.×Dp.		Each
Station with Concentrate									
D	Station	6 min.	6	6 months	No	6 months	22½″×15½″×13½″	5388T65	$211.86
Antibacterial Additive (8 oz.)								5388T95	9.23
Saline Solution Concentrate Refill (70 oz.)								5388T46	37.07
Mobile Polyethylene Container (16 gal. capacity)								5388T86	198.68
Station with Sealed Cartridge									
E	Station	3 min.	1	6 months	—	—	20″×10½″×14″	6210T21	149.87
Saline Solution Cartridge Refill (1 gal.)								6210T26	38.25
Replacement Pull Strap								6210T29	19.95
Wire Storage Rack for Saline Cartridges								6210T27	44.37

Personal Eye Wash Stations—*For Supplemental Use*

One-Bottle Wall-Mount Station

Two-Bottle Wall-Mount Station

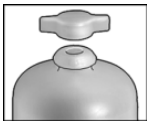

Drench Bottle

Eye Cup/ Directed-Stream Bottle

Portable Station

A source of immediate relief for your eyes, these personal eye wash stations are for supplemental use. *Note:* Not to be used as a substitute for an ANSI-compliant station.

Wall-Mount Stations— Have clear polyethylene squeeze bottles.

Stations with drench bottles are made of green plastic and include mounting fasteners. The drench bottles flood the eye area with solution. Bottles are sealed with a tamper-resistant, twist-off tab.

Stations with eye cup/directed-stream bottles are made of green polystyrene and include a mirror. The directed-stream concentrates flow and eye cup reservoir prevents used liquid from reentering bottle. Solution not included. Eye cup has a cap. Stations have 1/4″ dia. mounting holes (fasteners not included).

Portable Station— Comes in a black vinyl bag with a strap. It includes 12 clear polyethylene squeezable drench bottles to flood the eye area with solution.

Wall-Mount Stations

Bottle Capacity	No. of Bottles	Bottle Contents	Bottle Reusable	O'all Size, Ht. × Wd.	Eye Wash Stations	Each	Replacement Bottles Contents		Each
Station with Drench Bottles									
16 oz.	1	Sterile Saline Filled	No	12 1/4″ × 14″	10955T11	$22.01	Sterile Saline Filled	10955T12	$9.04
32 oz.	1	Sterile Saline Filled	No	12 1/4″ × 14″	10955T13	28.33	Sterile Saline Filled	5345T45	12.55
32 oz.	2	Sterile Saline Filled	No	19″ × 14″	5345T43	50.55	Sterile Saline Filled	5345T45	12.55
Station with Eye Cup/Directed-Stream Bottles									
16 oz.	1	Empty	Yes	17 1/2″ × 15″	5531T14	42.99	Empty	5531T18	14.34
32 oz.	1	Empty	Yes	17 1/2″ × 15″	5531T16	46.56	Empty	5531T19	15.66
32 oz.	2	Empty	Yes	17 1/2″ × 15″	5531T17	56.80	Empty	5531T19	15.66
Ready-to-Use Saline Solution for Eye Cup/Directed-Stream Bottles (1 gal.)								5388T59	Each $21.58

Portable Station

Bottle Capacity (No. of Bottles)	Bottle Contents	Bottle Reusable	Overall Size, Ht. × Wd. × Dp.		Each
1 oz. (6); 4 oz. (6)	Ready-to-Use Saline Filled	No	9″ × 13″ × 4″	55255T11	$51.37
Replacement 1-oz. Bottle of Ready-to-Use Saline				55255T12	3.07
Replacement 4-oz. Bottle of Ready-to-Use Saline				55255T13	4.74

Eye Wash, Eye/Face Wash, and Shower Station Replacement Parts

Eye and Eye/Face Wash Station Replacement Parts

	For Guardian Stations: Guardian Part No.		Each	For Haws Stations: Haws Part No.		Each	For Speakman Stations: Speakman Part No.		Each
Spray Heads									
For Eye Wash	AP470-001	5557T68	$19.11	SP11FC	5590T13	$84.00	RPG38-0379	5603T53	$17.07
For Eye Wash w/ Bowl Cover	AP470-001LDC	5559T85	19.11	SP11FC	5590T13	84.00	RPG38-0379	5603T53	17.07
For Eye/Face Wash	AP470-021	5557T73	27.56	SP21FC	5590T14	84.00	RPG38-0380	5603T54	17.07
For Eye/Face Wash w/ Bowl Cover	AP470-021LDC	5559T74	27.56	SP21FC	5590T14	84.00	RPG38-0380	5603T54	17.07
Spray Head Dust Covers			Per Pair			Per Pair			Per Pair
For Eye Wash	AP470-002ORG-R	5557T69	$7.56	9095	5590T11	$16.20	RPG05-0569	5603T51	$8.57
For Eye/Face Wash	AP470-022ORG-R	5557T74	10.67	—	—	—	RPG05-0647	5603T52	8.57
Polyurethane Filters for Spray Heads			Per Pkg.						
1 1/8″ dia. (6/Pkg.)	470-004R	5557T54	$10.67	—	—	—	—	—	—
1 3/4″ dia. (6/Pkg.)	470-024R	9721T13	14.44	—	—	—	—	—	—
On/Off Valves w/ Flag Handle— *1/2″ NPT female connections.*			Each			Each			Each
Chrome-Plated Brass	AP600-101H	5549T34	$118.67	SP229	5590T19	$147.27	SE-910	5603T59	$122.60
Type 304 SS	AP620-101H	55505T22	207.17	SP232	5590T21	283.64	—	—	—
Bowls									
ABS Plastic	100-009ORG-R	5557T52	68.94	SP93	5590T22	79.20	RPG68-0072	5603T61	67.42
Type 304 SS (for stations with galvanized steel pipe)	100-008R	5557T53	95.53	SP90	5590T23	126.00	RPG68-0043	5603T62	54.91
Chrome-Plated Brass Connection Pipe— *3/8″ NPT male connection.*									
2 1/4″ Lg.	BI136-02-04	5557T4	14.00	—	—	—	—	—	—

Shower Station Replacement Parts

	For NPT Connections	For Guardian Stations: Guardian Part No.		Each	For Haws Stations: Haws Part No.		Each	For Speakman Stations: Speakman Part No.		Each
Shower Heads— *Guardian are 10″ dia.; Haws are 10 5/8″ dia.; Speakman are 8″ dia.*										
ABS Plastic	1″ Female	—	5341T3 ♦ ★	$65.31	SP829	5590T15 ●	$102.00	SE-870	5603T55 ■	$97.69
Type 304 SS	1″ Female	AP450-048	5341T15	169.60	SP829SS	5590T16	226.74	SE-880	5603T56	255.08
Connecting Elbows— *Connect shower head to pipe.*										
ABS Plastic	1″ Female × 1 1/2″ Male	—	5341T4 ♦	32.44	—	—	—	—	—	—
Type 304 SS	1″ Male × 1″ Female	—	4464K41	23.61	—	—	—	—	—	—
On/Off Valves— *1″ NPT female connections.*										
Chrome-Plated Brass	—	AP600-335H	5557T51	130.64	SP260	5590T17	174.55	SE-911	5603T57	163.12

♦ **To Order:** Please specify green, orange, or yellow. ★ For 1″ or 1 1/2″ NPT female connection. ● Color is green. ■ Color is yellow.

Also Available: Other parts not listed above. For Bradley replacement parts, please ask for 5984T1 and specify Bradley part number. For other manufacturers' replacement parts, please ask for 5557T999 and specify manufacturer and manufacturer part number.

First-Aid Supplies

Adhesive Bandages

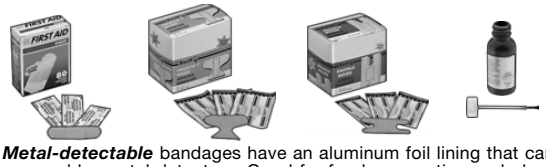

Metal-detectable bandages have an aluminum foil lining that can be sensed by metal detectors. Good for food preparation and pharmaceutical processing areas. Color is blue.

	Pkg. Qty.		Per Pkg.
Sheer Plastic			
3/4″ × 3″	100	54845T69	$4.89
3/4″ × 3″	1,500	54845T71	54.75
1″ × 3″	100	54845T23	5.36
1″ × 3″	1,500	54845T72	61.12
2″ × 3″	100	54845T38	15.83
Assorted Sizes	80	54845T79	4.14
Butterfly Closures, 3/8″ × 1 13/16″	100	54845T76	9.29
Medicated Plastic			
3/4″ × 3″	20	54845T65	5.29
Assorted Sizes	20	54845T66	5.29
Waterproof Plastic			
1″ × 2 1/2″	30	54845T62	4.46
2″ × 3″	10	54845T63	4.46
Assorted Sizes	30	54845T64	4.46
Fabric			
3/4″ × 3″	100	54845T73	5.13
3/4″ × 3″	1,300	54845T74	55.27
1″ × 3″	100	54845T11	7.26
1″ × 3″	1,300	54845T75	66.31
1″ × 3 1/4″	20	54845T58	4.46
1 3/4″ × 4″	10	54845T59	4.46
2″ × 4″	50	54845T82	8.92
Assorted Sizes	20	54845T81	4.25
Fingertip	100	54845T13	12.24
Knuckle	100	54845T12	12.11
Foam Comfort-Flex			
1″ × 3″	30	54845T61	4.46
Metal Detectable			
1″ × 3″	100	54845T86	8.50
Fingertip	25	54845T88	9.97
Knuckle	40	54845T87	9.34
Liquid Bandage			
Brush-On Applicator, 1 oz. Bottle	1	54845T98	7.46
Blister Care			
Gel Strip, 1″ × 2 3/4″	6	54845T47	5.83
Gel Strip for Fingers and Toes	8	54845T49	5.83

Elastic Bandages

Secures with self-closure flap—no tape or clips required.

	Pkg. Qty.		Per Pkg.
2″ × 5 yds.	10	54845T121	$22.36
3″ × 5 yds.	10	54845T112	26.98

Sterile Gauze

	Pkg. Qty.		Per Pkg.
Pads			
2″ × 2″	100	54845T35	$10.95
3″ × 3″	100	54845T36	12.54
4″ × 4″	100	54845T37	20.30
Nonstick Pads			
2″ × 3″	100	54845T26	8.93
3″ × 4″	100	54845T39	11.44
Eye Pad			
2 1/8″ × 2 5/8″	50	54845T77	14.52
Rolls			
2″ × 4 yds.	12	54845T51	9.73
3 1/2″ × 2 yds. w/ 9″ × 5 1/2″ Bloodstop Pad	1	54845T41	4.70

Adhesive Tape

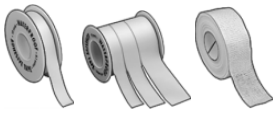

Gauze tape is fabric reinforced. **To Order:** For gauze tape, please specify color: blue, green, red, white, or yellow.

		Per Roll
Waterproof, 1/2″ × 10 yds.	54845T45	$2.32
Waterproof, 1″ × 5 yds.	54845T68	2.38
Tri-Cut, 1/2″, 5/8″, and 7/8″ × 5 yds.	54845T33	3.96
Gauze Tape, 1″ × 15 yds.	54845T97	5.34

Antiseptic

	Pkg. Qty.	Pkg./ Case		Per Pkg. Partial Case	Per Pkg. Full Case
Alcohol Wipes, 1 1/8″ × 2 1/2″	200	10	54845T18	$3.98	$3.62
Alcohol Wipes, 1 3/4″ × 3 1/2″	100	10	54845T27	5.83	5.30
Sterile Alcohol Wipes, 1 1/8″ × 2 5/8″	200	10	54845T29	5.96	5.42
Sterile Alcohol Wipes, 1 3/4″ × 3 1/2″	100	10	54845T25	5.96	5.42
Alcohol Swab Sticks	50	10	54845T281	15.83	14.39
Antiseptic Towelettes, 4 3/4″ × 8″	100	10	54845T19	3.20	2.91
PVP Iodine Wipes, 1 1/2″ × 2 3/4″	100	20	54845T24	7.40	6.85

	Case Qty.		Each Partial Case	Each Full Case
Iodine Prep Solution 1% USP, 16 oz.	12	54845T46	$8.12	$6.37
Hydrogen Peroxide 3% USP, 16 oz.	12	54845T44	1.61	1.44
Isopropyl Alcohol 70% USP, 16 oz.	12	54845T42	2.39	2.19
Isopropyl Alcohol 70% USP, 1 gal.	4	54845T43	18.89	17.00
Antiseptic Spray, 3 oz.	12	54845T48	6.37	5.79

Ointments, Burn Gels, and Sprays

	Pkg. Qty.		Per Pkg.
Triple Antibiotic Ointment (single use)	10	54845T91	$2.42
Neosporin Ointment (single use)	144	54845T21	60.33
Neosporin Ointment, 1 oz. tube	1	54845T32	11.86
Burn Gel (single use)	6	61585T25	5.67
Burn Gel Treated Dressing, 2″ × 6″	1	61585T23	4.81
Burn Gel Treated Dressing, 4″ × 4″	1	61585T24	5.75
Blood-Clotting Powder	2	54845T571	8.70
Blood-Clotting Spray, 3 oz.	1	54845T561	7.94

Cold and Hot Therapy

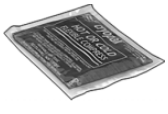

Disposable Packs— Just squeeze to break the inner bag for instant activation.

Reusable— For cold, freeze for two hours. For heat, microwave for one minute or place in hot water for seven minutes.

	Pkg. Qty.		Per Pkg.
Disposable Pack			
Cold, 4 1/2″ × 7″	4	54695T63	$5.30
Cold, 5 1/2″ × 8″	1	54695T65	1.39
Hot, 6″ × 8″	4	56815T3	16.23
Reusable Pack			
Cold/Hot, 7 1/2″ × 10 1/4″	1	54695T73	2.70
Spray— *For sprains and muscle pulls.*			
Cold, 4 oz.	1	54845T55	4.44

Additional Supplies

	Pkg. Qty.		Per Pkg.
Cotton Balls	130	54845T16	$5.70
3″ Single-Tip Cotton Swabs	100	54845T17	2.67
6″ Single-Tip Cotton Swabs	100	54845T78	2.15
3″ Double-Tip Cotton Swabs	300	54845T94	3.11
Tongue Depressors, 11/16″ × 6″	100	54845T672	4.65
Tongue Depressors, 11/16″ × 6″	500	54845T85	10.30
Sterile Tongue Depressors, 3/4″ × 6″	100	54845T96	8.76
Disposable Thermometers	100	54845T83	21.80
Eye Wash Cups	6	54845T54	3.25
Facial Tissues (2 ply)	100	54845T22	2.01
Sterile Splinter Remover	10	54845T52	2.89
Eye Drops, 1/2 oz.	1	54845T53	2.49
Breath Alcohol Detector (indicates alcohol concentration levels at or above 0.08%)	1	54845T923	8.55
Tweezers (Type 410 Stainless Steel)		54845T34	Each $2.22
First-Aid Manual		54845T89	Each $1.57

Packaged Medications

Generic Medications

	Pills per Packet	Packets per Box		Per Box
Electrolyte Heat-Relief Tablets	2	50	54125T57	$7.35
Antacid Tablets	2	125	54125T26	10.92
Cold-Relief Tablets	2	50	54125T21	6.73
Sinus Decongestant Tablets	1	100	54125T22	7.22
Acetaminophen Tablets (325 mg)	2	75	54125T52	7.51

	Brand-Name Medications				Generic-Equivalent Medications			
	Pills per Packet	Packets per Box		Per Box	Pills per Packet	Packets per Box		Per Box
Bayer Aspirin Tablets (325 mg)	2	25	54125T63	$7.48	2	125	54125T19	$13.30
Advil Tablets (Ibuprofen, 200 mg)	2	50	54125T72	18.98	2	100	54125T51	14.33
Aleve Caplets (Naproxen Sodium, 220 mg)	1	50	54125T81	20.69	1	50	54125T82	14.77
Extra-Strength Tylenol Caplets (Acetaminophen, 500 mg)	2	50	54125T17	17.55	2	50	54125T53	8.16
Alka-Seltzer Tablets	2	6	54125T14	5.21	2	18	54125T56	6.96
Pepto-Bismol Chewable Tablets	1	30	54125T15	8.15	2	50	54125T55	12.71
Chloraseptic Throat Lozenges	6	3	54125T78	6.13	—	—	—	—

Outdoor Skin Protection

			1-3		4-Up	
Poison Oak, Ivy, and Sumac						
Single-Use Preventative Towelettes (50/Box)	55645T28	Per Box	1-3	$38.95	4-Up	$34.94
Treatment Lotion, 4 oz. Bottle	55645T2	Each	1-3	$5.89	4-Up	$5.30
Sunscreen						
SPF 30 Lotion, 4 oz. Bottle	55645T8	Each	1-3	$6.40	4-Up	$5.82
SPF 30, Single-Use Towelettes (50/Box)	55645T53	Per Box	1-3	$28.21	4-Up	$25.39
Insect						
100% DEET Repellent Spray, 2 oz. Bottle	55645T4	Each	1-3	$6.33	4-Up	$5.70
30% DEET Repellent, Single-Use Towelettes (50/Box)	55645T29	Per Box	1-3	$38.95	4-Up	$34.94
DEET-Free Repellent Wrist Band (Lasts 120 hrs.)	54095T1	Each	1-3	$4.40	4-Up	$3.91
Bite Relief, 0.47 oz. Tube	55645T5	Each	1-3	$3.71	4-Up	$3.34

First-Aid Kits

Wall-Mount Kit

Portable Kit

Water-Resistant Vehicle Kit

Burn Kit

Trauma Kit

Powder-coated steel cabinets and *cases* are white. *Type 302 stainless steel cabinets* and *cases* provide superior corrosion resistance.

Wall-Mount Kits

Kits have a first-aid logo and 3/16″ dia. mounting holes (fasteners not included). Comply with ANSI Z308.1.

For No. of Persons	Overall Size, Ht.×Wd.×Dp.	Powder-Coated Steel Cabinet	Each	Type 302 SS Cabinet	Each	Complete Refills	Each
Up to 125	16½″×13¾″×5¾″	9501T1	$130.91	9501T3	$256.91	9501T7	$79.25
Up to 200	22¼″×15¼″×5¾″	9501T2	180.18	9501T4	271.21	9501T8	93.00

Portable Kits

Case kits have a first-aid logo and optional mounting brackets with ¼″ dia. holes for powder-coated steel and ⅜″ dia. holes for Type 302 stainless steel (fasteners not included).

Type 302 stainless steel case has a gasketed lid to keep contents dry. Comply with ANSI Z308.1.

Fanny pack kit comes in a nylon pouch with an integral waist belt that adjusts from 28″ to 44″.

For No. of Persons	Powder-Coated Steel Case: Overall Size, Ht.×Wd.×Dp.		Each	Type 302 SS Water-Resistant Case: Overall Size, Ht.×Wd.×Dp.		Each	Complete Refills	Each
Case Kits								
Up to 25	9″ × 9″	×2⅜″	5533T12 $34.08	7½″×10¾″	×2¾″	5533T42 $101.35	5533T26	$20.29
Up to 50	10¼″×10½″	×2½″	5533T13 48.82	10½″×10¾″	×2¾″	5533T43 114.20	5533T27	31.69
Up to 75	10¼″×14¾″	×4⅝″	5533T34 112.51	—		—	5533T35	64.06
Fanny Pack Kit								
Up to 5	4½″× 8½″	×3¼″					14485T18 Each	$34.73

Water-resistant vehicle kits come in a powder-coated steel case with first-aid logo. The gasketed lid keeps contents dry.

Burn kits include packets of burn gel and dressings treated with burn gel. Furnished in a white PVC case. 61585T21 contains contents required by ANSI Z308.1.

Trauma kit includes basic first aid supplies, a foil blanket to prevent shock, bloodstop compress dressings, a CPR mouth shield, and oversized gauze and bandages. Furnished in a red nylon bag.

For No. of Persons	Overall Size, Ht.×Wd.×Dp.			Kits	Each	Complete Refills	Each
Water-Resistant Vehicle Kits							
Up to 3	5″ × 8″	×2½″		9643T13	$28.88	9643T23	$17.02
Up to 10	9¾″×14″	×2¾″		9643T14	51.24	9643T24	40.15
Burn Kits							
Up to 5	6¾″×10″	×3″		61585T21	53.25	—	—
Up to 10	10″ ×14″	×3½″		61585T32	127.42	—	—
Trauma Kit							
Up to 10	7″	×12″	×7″	9614T5	134.04	9614T6	61.60

Color-Coded Water-Resistant First-Aid Kits

Color-coded packaging allows you to organize and quickly find the supplies you need. Antiseptics are blue, bandages are yellow, burn treatment is red, protective equipment is orange, and miscellaneous items are green.

Kits are furnished in a steel case with a gasketed lid to keep contents dry. Case has a white enamel finish and a flange with 1/8″ and 1/2″ dia. holes for wall mounting (fasteners not included).

Refill boxes are also color coded.

Kits

For No. of Persons	Overall Size, Ht. × Wd. × Dp.		Each
Up to 5	5″ × 8″ × 2 5/8″	5630T22	$34.98
Up to 8	6 3/4″ × 9 1/2″ × 2 5/8″	5630T23	49.69
Up to 12	9 1/2″ × 9 1/2″ × 2 5/8″	5630T24	70.00
Up to 18	9″ × 14″ × 2 5/8″	5630T25	103.38

Refill Boxes

	Qty./ Box		Per Box 1-9	10-Up
Adhesive Bandages, 1″ × 3″	16	9128T49	$1.22	$1.10
Adhesive Bandages, 2″ × 4″	6	9128T41	2.20	1.98
Triangular Bandage (temporary sling)	1	9128T13	2.58	2.32
Adhesive Knuckle Bandages	8	9128T51	1.51	1.36
Gauze Pads, 3″ × 3″	4	9128T42	1.69	1.52
Gauze Pad, 24″ × 72″	1	9128T14	2.69	2.42
Gauze Strips, 2″ Wd. × 36″ Lg.	4	9128T11	4.13	3.72
Gauze Strip, 4″ Wd. × 36″ Lg.	1	9128T12	2.38	2.14
Adhesive Tape, 1/2″ × 2 1/2 yds.	2	9128T43	1.47	1.32
Disposable Instant Cold Pack	1	9128T48	1.29	1.16

	Qty./ Box		Per Box 1-9	10-Up
Antiseptic Wipes	10	9128T26	$1.11	$1.00
PVP Iodine Wipes	10	9128T45	1.71	1.54
Sting-Relief Wipes	10	9128T46	2.11	1.90
Burn Ointment, 1/8-oz. packets	6	9128T27	4.80	4.32
Smelling Salts	10	9128T65	5.16	4.64
Eye Pads	4	9128T36	2.31	2.08
Eyewash, 1 oz.	1	9128T47	3.64	3.28
Tourniquet and Tweezers	1	9128T24	4.16	3.74
Wire Splint	1	9128T52	4.13	3.72
Latex Gloves (1 pair) 9128T64	Per Pair	1-9 $0.69	10-Up $0.62	

CPR Mouth Shields

Reduce the risk of contamination with these mouth shields. The one-way valve protects rescuer from victim's breath and fluids. Valve is in a rigid plastic tube surrounded by medical-grade clear vinyl that allows you to view victim's coloring and inspect for airway blockage. *Warning:* Not for use on children under 12.

Shield comes in a vinyl pouch.

Shield with gloves and alcohol wipes includes a pair of latex gloves and four alcohol wipes packed in a cardboard box.

		Each
Shield	55965T54	$9.19
Shield with Gloves and Alcohol Wipes	55965T55	11.39

Portable First-Aid Cases

Steel

Take your supplies anywhere in one of these convenient carrying cases. Cases are white and have 3/8″ dia. keyholes for mounting (fasteners not included). Polypropylene and 20-ga. steel have a gasketed lid to keep contents dry.

Steel cases have a divider.

	Overall Size, Ht. × Wd. × Dp.		Each
Polypropylene	4 9/16″ × 7 11/16″ × 2 3/8″	41035T16	$3.28
20-ga. Steel	9 1/16″ × 6 5/16″ × 2 3/8″	41035T17	17.05
24-ga. Steel	10 1/4″ × 14 3/4″ × 4 5/8″	41035T18	31.80

Bodily Fluid Clean-Up Kit

Safely and effectively clean up infectious material and fluids in compliance with OSHA requirements.

Kit contains a barrier gown, one pair of goggles, one pair of vinyl gloves, one pair of shoe covers, a surgical-style mask, two antimicrobial towelettes, absorbent compound, a scoop, surface disinfectant, two paper towels, an incident report sheet, and a biohazard disposal bag. Furnished in a polypropylene carrying case with 3/8″ dia. mounting holes (fasteners not included).

Overall Size, Ht. × Wd. × Dp.		Each
7″ × 10″ × 3″	14935T21	$23.46

Lockable First-Aid Cabinets

Acrylic Panel

Control access to supplies and medication. These wall-mount cabinets have a lock and two keys. There are three welded shelves, plus a pull-out shelf at the base that can be used as a work area.

Cabinets are 27″ Ht. × 18″ Wd. × 8″ Dp. and made of 23-ga. steel with a white powder-coated finish and 3/8″ dia. keyholes (fasteners not included) for mounting.

Door Style		Each
Acrylic Panel	5573T1	$202.90
Solid Steel	5573T7	210.93

Pop-Up Shelters

With One Door

With Two Doors

Just pop out two fiberglass tension frames and these shelters are ready to protect you from rain, snow, sun, and wind. The shelter fabric is urethane-coated polyester and is flame retardant to meet CPAI-84 (Canvas Products Association International). All have a zippered slit door, 9″x36″ netted window on the rear wall, a 10″ dia. vent port for use with blower or heater hose (not included), and a built-in carrying case. Color is white with high-visibility green lower side walls.

Shelters with two doors also have a zippered roll-up door.

Overall Size, Lg. × Wd. × Peak Ht.	Shelters with One Door	Each	Shelters with Two Doors	Each
6′ × 6′ × 6′8″	6214T11	$614.29	6214T21	$715.87
8′ × 8′ × 7′8″	6214T13	861.90	6214T23	960.32

Safety and First-Aid Posters

Posters are 20″ Ht.×24″ Wd. and made of 0.06″ thick polystyrene. Messages are red and black on a white background. All have 1/8″ dia. mounting holes (fasteners not included).

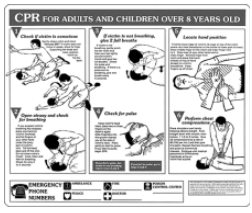

		Each 1-4	Each 5-Up
Safe Lifting	55565T1	$20.64	$17.69
Emergency First Aid	55565T2	20.64	17.69
CPR	55565T3	20.64	17.69

Emergency Oxygen-Supply Cylinders

Disposable

Refillable

Compact cylinders are easy to transport, so you'll have oxygen on hand until trained medical help arrives. Complete units include a filled oxygen cylinder, 7 ft. of tubing, a face mask, and a pressure gauge. Cylinders deliver 6 liters per minute.

Refillable cylinder has a second setting that delivers 12 liters per minute (20 minute oxygen supply). Furnished in a soft carrying bag with a shoulder strap.

Oxygen Supply, minutes	Complete Units	Each	Replacement Cylinder	Each	Replacement Mask	Each
Disposable Cylinder— *3″ Dia.×13½″ Ht.*						
15	5275T3	$174.72	5275T2	$93.24	———	———
Refillable Cylinder— *4⅜″ Dia.×14″ Ht.*						
40	5275T4	254.49	5275T6	143.48	5275T8	$10.42

Flame-Retardant Blankets

A highly visible storage case directs you to these blankets in an emergency. *Wool blend blankets* have an 80% wool/15% polyester/5% nylon blend. *Nomex blankets* are heat and chemical resistant.

Nylon case has a fluorescent red vinyl coating.

Steel case is 24 ga. with a red powder-coated finish. It's 9″ Dia.×19½″ Lg. and has ⅜″ dia. holes for wall mounting (fasteners not included). Pull down lid to release blanket.

Nylon Case

Steel Case

Blanket Material	Blanket Size	Blanket and Case	Each	Blanket Only	Each
Nylon Case					
Wool Blend	66″×84″	6542T21	$71.23	6542T22	$44.88
Steel Case					
Wool Blend	66″×84″	6542T1	102.40	6542T7	41.28
Nomex	60″×80″	6542T4	140.97	6542T9	82.29
Steel Case Only		6542T3	Each		$66.07

Portable Fold-Away Bed

A 1¾″ thick foam-padded mattress makes this bed a comfortable yet practical choice. Frame is aluminum with U-shaped legs. Overall size is 80″ Lg.×30″ Wd.×15″ Ht.; folded size is 40″ Lg.×31″ Wd.×5½″ Ht. Maximum weight capacity is 225 lbs.

		Each
Bed	9105T35	$108.65
Blanket, 60″×90″	9105T27	8.03
Pillow, 17″×23″	9105T29	14.90

Digital Blood-Pressure Monitor

Get precise readings of blood pressure and pulse rates with this automatic monitor. It has a 30-reading memory and displays average of readings. Monitor includes a medium-size cuff (9.4″ to 14.2″) and a four-week pressure log. Operates on 120 VAC power adapter (included) or four AA batteries (not included).

Overall Size, Lg.×Wd.×Ht.		Each
4.3″×5.6″×2.5″	5261T15	$93.67
Optional Large Cuff (14.2″ to 17.7″)	5261T17	36.65
AA Batteries (4/Pkg.)	71455K53	Per Pkg. $2.94

Stretchers

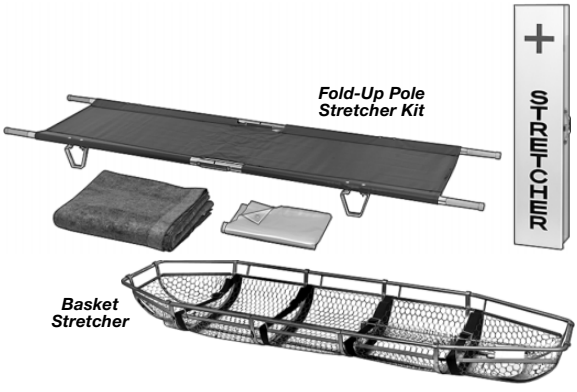

Fold-Up Pole Stretcher Kit

Basket Stretcher

Fold-up pole stretcher folds lengthwise and in half for easy storage. Good for moving injury victims a short distance, it has sturdy aluminum poles and a durable vinyl-coated nylon cover. Overall size is 87″ Lg.×22″ Wd.×4½″ Ht. Maximum weight capacity is 350 lbs.

Fold-up pole stretcher kit includes a pole stretcher, a 62″×82″ wool-blend blanket, and a 54″×75″ vinyl sheet. Kit comes in a white-painted steel storage cabinet with handle. Cabinet is 47¾″ Ht.×8⅝″ Wd.×6½″ Dp. and has ¼″ dia. holes for wall mounting (fasteners not included).

Basket stretcher provides superior comfort and security for transporting injury victims extended distances. It has runners for easy carrying, four restraining straps, and an adjustable footrest. Stretcher is 80½″ Lg.×22½″ Wd.×8″ Ht. and made of steel with a mesh basket. Maximum weight capacity is 1,500 lbs.

		Each
Fold-Up Pole Stretcher	5522T8	$208.00
Fold-Up Pole Stretcher Kit	5522T3	426.00
Cabinet Only	5522T31	158.00
Basket Stretcher	5522T47	264.00

CamelBak Water Backpack

Stay hydrated while working outdoors or in other high-heat environments. These lightweight backpacks have an easy-to-fill insulated reservoir that keeps water cool for hours. A delivery tube connects to the reservoir and supplies water to you.

Cleaning brush set includes a large brush for cleaning the reservoir and a small brush for cleaning the delivery tube.

		Each
50-oz. Capacity	6229T1	$38.40
70-oz. Capacity	6229T3	54.00
Cleaning Brush Set	6229T4	11.00

Back-Support Belts

Belts

Nylon

Elastic Polyester with Shoulder Straps

Belts with Lumbar Support

Polyester

Leather

Nylon w/ Shoulder Straps

Give your back the extra support it needs for lifting and other strenuous activities. Belts with *elastic* contain spandex, a breathable, lightweight material that stretches to conform to your shape. Belts *with shoulder straps* have reinforcements around the waist to retain the belt's shape and maintain comfort.

Warning: Not for fall protection.

To Order: Please specify size based on waist measurement (see chart). Also specify color where necessary.

Belts— 25025T27 has spandex tensioners. 53475T11 has polypropylene reinforcements.

Belts with Lumbar Support— All have a protective pad for lower-back support except 52355T65, which has steel reinforcements. 11155T1 has elastic tensioners. *Leather* belts are cushioned with a soft suede lining.

	XS	S	M	L	XL	XXL	3XL
53475T4	_____	28″-33″	31″-36″	34″-39″	38″-43″	43″-48″	_____
25025T27	_____	24″-33″	29″-38″	35″-44″	42″-52″	46″-56″	_____
53475T11, 52355T65	26″-29″	30″-33″	34″-37″	38″-41″	42″-45″	46″-49″	50″-53″
11155T3	_____	27″-32″	31″-36″	35″-40″	39″-44″	43″-48″	_____
11155T1	_____	24″-33″	29″-38″	35″-44″	42″-52″	46″-56″	_____
5587T2, 5587T6	_____	24″-30″	31″-37″	38″-44″	45″-51″	_____	_____

	Wd.	Closure Style	Available Colors		Each
Belts					
Nylon	4″	Quick-Tight Buckle	Black	**53475T4**	$29.00
Elastic Polyester with Shoulder Straps	5″	Hook and Loop	Black	**25025T27**	18.86
Elastic Nylon with Shoulder Straps	6″	Hook and Loop	Black	**53475T11**	30.51
Belts with Lumbar Support					
Polyester	4″	Hook and Loop	Black, Blue	**11155T3**	31.67
Nylon with Shoulder Straps	5″	Hook and Loop	Black	**11155T1**	33.25
Elastic Nylon with Shoulder Straps	6″	Hook and Loop	Black	**52355T65**	36.23
Leather	4″	Traditional Buckle	Black	**5587T2**	22.07
Leather	6″	Traditional Buckle	Black	**5587T6**	26.57

Wrist Supports

Open, Wrap-On

Thumb Strap, Slip-On

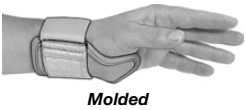

Molded

Limit wrist movement and maintain a safe, neutral position. All supports are ambidextrous.

Flexible supports are made of an elastic rayon/cotton blend fabric for a snug fit. Color is beige. *Thumb-strap* style positions and secures the wrist and hand. ***Wrap-on*** has a hook-and-loop closure.

To Order: Measure around the smallest part of your wrist and specify size (except for 52585T14): S (5½″-6½″), M (6¾″-7½″), L (7¾″-8½″).

Molded supports cradle your wrist to prevent and alleviate the symptoms of carpal tunnel syndrome. They're 5″ long foam with an aluminum core for rigidity. They have a 2″ wide elastic strap with hook-and-loop closure. One size fits all.

		Each 1-9	Each 10-Up
Flexible— *Slip-On*			
Open	**52585T11**	$3.15	$2.93
Thumb Strap	**52585T22**	6.69	6.21
Flexible— *Wrap-On*			
Open (one size fits all)	**52585T14**	4.08	3.79
Thumb Strap	**52585T25**	9.54	8.86
Molded			
Beige	**8153T11**	19.90	17.73
Black	**8153T13**	19.90	17.73

Elbow Supports

Prevent "tennis elbow" injuries caused by overflexing and straining forearm muscles. This adjustable black polyester support is 2″ wide and has a hook-and-loop closure. One size fits all.

52625T1 ..... **Each** 1-4 $5.92 5-Up $5.46

Ankle and Knee Supports

Ankle Support

Open Knee Support

Nylon-covered neoprene retains warmth and braces sore muscles to encourage healing.

Ankle supports are beige. Size is based on your shoe size.

Knee supports are black. For size, measure around your leg at the kneecap. *Open knee supports* limit pressure on the kneecap.

Ankle Supports

Size	Left	Each	Right	Each
XS (Women's 4-6)	**53325T151**	$23.55	**53325T152**	$23.55
S (Women's 7-9, Men's 7-8)	**53325T153**	23.55	**53325T154**	23.55
M (Women's 10-11, Men's 9-10)	**53325T155**	23.55	**53325T156**	23.55
L (Men's 11-12)	**53325T157**	23.55	**53325T158**	23.55
XL (Men's 13-14)	**53325T159**	23.55	**53325T161**	23.55

Knee Supports

Size		Each
Standard		
S (13¼″-14″)	**53325T211**	$10.45
M (14¼″-15″)	**53325T212**	10.45
L (15¼″-17″)	**53325T213**	10.45
XL (17¼″-18″)	**53325T214**	10.45
Open		
S (13¼″-14″)	**53325T231**	11.36
M (14¼″-15″)	**53325T232**	11.36
L (15¼″-17″)	**53325T233**	11.36
XL (17¼″-18″)	**53325T234**	11.36
Padded		
S (13¼″-14″)	**53325T221**	13.64
M (14¼″-15″)	**53325T222**	13.64
L (15¼″-17″)	**53325T223**	13.64
XL (17¼″-18″)	**53325T224**	13.64

About Safety Glasses

The following applies to all of our safety glasses, unless noted:

- Meet ANSI Z87.1-2003 high-impact standards (also known as Z87+)
- Provide 99% or greater UV protection
- Lenses are polycarbonate

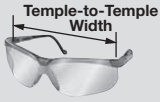

Wraparound Safety Glasses

Indoor/outdoor lens is clear with a slight mirror coating for varying light conditions.

Standard Lenses

- Scratch-resistant lenses
- Adjustable arm length
- 5½″ temple-to-temple width
- Polycarbonate/ABS frame; nylon arms

Lens Color	GLASSES Black Frame	GLASSES Blue Frame	Each 1-9	Each 10-Up	REPL. LENSES	Each 1-9	Each 10-Up
Clear	9741T411	9741T412	$7.31	$6.58	9741T51	$4.88	$4.43
Brown	9741T421	9741T422	7.81	7.08	9741T52	5.58	5.22
Mirror	9741T431	9741T432	11.07	9.96	9741T53	8.11	7.30
Indoor/Outdoor	9741T61	9741T62	9.05	8.30	9741T68	6.64	6.08

Extra-Large Lenses

- Scratch-resistant lenses
- Adjustable arm length
- 5¼″ temple-to-temple width
- Black nylon frame and arms

Lens Color	Glasses	Each 1-9	Each 10-Up	Repl. Lenses	Each 1-9	Each 10-Up
Clear	2404T21	$6.68	$6.07	2404T6	$4.20	$3.78
Clear, Fog-Free	2404T31	7.36	6.69	2404T7	4.93	4.44
Mirror	2404T41	8.96	8.15	2404T8	6.31	5.72
Indoor/Outdoor	2404T61	8.96	8.15	2404T65	6.31	5.72

Wraparound Safety Glasses with Interchangeable Lenses

- Scratch-resistant lenses
- Adjustable arm length
- 5¼″ temple-to-temple width
- Nylon arms
  Standard—Polyurethane frame
  Sport—Nylon frame

Simply switch out lenses to change the look of your glasses. All lenses are interchangeable and replaceable between styles. They also have an adjustable tilt to accommodate a larger range of face sizes.

Standard

Sport

Lens Color	Frame Color	STANDARD LENSES Glasses	Each 1-9	Each 10-Up	Repl. Lenses	Each 1-9	Each 10-Up	SPORT LENSES Glasses	Each 1-9	Each 10-Up	Repl. Lenses	Each 1-9	Each 10-Up
Clear	Black	1696T63	$7.67	$6.94	1696T77	$4.40	$3.94	1696T42	$7.67	$6.94	1696T56	$4.40	$3.94
Clear, Fog-Free	Black	1696T64	8.40	7.60	1696T78	5.16	4.62	1696T43	8.40	7.60	1696T57	5.16	4.62
Gray, Fog-Free	Black	____	____	____	____	____	____	1696T44	9.33	8.45	1696T58	6.23	5.58
Mirror	Black	____	____	____	____	____	____	1696T45	10.04	9.09	1696T59	7.05	6.31

Comfort-Fit Wraparound Safety Glasses

- Scratch-resistant lenses
- Adjustable arm length
- Temple-to-temple width:
  5⅛″ for standard lenses;
  5¼″ for extra-large lenses
- Polycarbonate frame; nylon arms

Cushioned temples, soft molded brow, and nonslip nose bridge make these glasses the ultimate in comfort. They have a ventilation channel between the frame and lens to increase airflow and reduce moisture buildup. Lenses have an adjustable tilt to accommodate a larger range of face sizes.

Indoor/outdoor lenses are clear with a slight mirror coating for varying light conditions.

Lens Color	GLASSES Black Frame	GLASSES Blue Frame	Each 1-9	Each 10-Up	REPL. LENSES	Each 1-9	Each 10-Up
Standard Lenses							
Clear	9210T101	9210T103	$9.33	$8.45	9210T71	$4.40	$3.94
Clear, Fog-Free	9210T601	9210T603	10.71	9.64	9210T76	5.16	4.62
Amber	9210T201	9210T203	10.27	9.30	9210T72	5.44	4.88
Brown	9210T301	9210T303	10.27	9.30	9210T73	5.44	4.88
Mirror	9210T401	9210T403	11.22	10.20	9210T74	6.73	6.06
Indoor/Outdoor	9210T501	9210T503	11.22	10.20	9210T75	6.73	6.06
Extra-Large Lenses							
Clear	3637T17	____	10.04	9.09	3637T44	5.05	4.52
Clear, Fog-Free	3637T22	____	10.75	9.74	3637T46	5.86	5.25
Amber	3637T28	____	10.98	9.94	3637T52	6.12	5.48
Gray	3637T31	____	10.98	9.94	3637T57	6.12	5.48
Mirror	3637T33	____	11.90	10.82	3637T64	7.36	6.62
Indoor/Outdoor	3637T67	____	11.90	10.82	3637T68	7.36	6.62

Standard

Extra Large

Wraparound Safety Glasses with Stainless Steel Frame

- Scratch-resistant lenses
- 5¼″ temple-to-temple width
- Type 302 stainless steel frame and arms
- PVC nosepads; rubber-coated arms

Durable and stylish, these glasses are also comfortable to wear.

Indoor/outdoor lens is clear with a slight mirror coating to handle varying light conditions.

Lens Color		Each 1-11	Each 12-Up
Clear	5734T3	$5.73	$5.06
Gray	5734T5	5.87	5.18
Indoor/Outdoor	5734T7	6.47	5.71

Economy Wraparound Safety Glasses

- Scratch-resistant lenses
- 5¼″ temple-to-temple width
- Polycarbonate frame; black nylon arms

Lens Color	Frame Color		Each 1-9	Each 10-Up
Clear	Clear	7475T42	$4.80	$4.33
Brown	Clear	7475T72	5.80	5.24

For information about safety glasses, see page 1811.

Frameless Fog-Free Wraparound Safety Glasses

- Scratch-resistant lenses
- 5″ temple-to-temple width
- Nickel alloy steel arms
- Gel nosepiece; rubber arm tips

Spring-hinged, nonslip arms keep these glasses comfortably in place.

Lens Color		Each 1-11	Each 12-Up
Clear	7587T1	$13.65	$12.20
Gray	7587T2	14.48	12.94
Light Blue	7587T3	16.36	14.62

Lighted Wraparound Safety Glasses

- Scratch-resistant lenses
- 5⅛″ temple-to-temple width
- Nylon frame; polycarbonate arms
- Nylon nosepiece

Temple-mounted LEDs provide hands-free lighting. These glasses operate on four lithium batteries (included).

Lens Color	Frame Color	Glasses	Each	Repl. Battery	Each
Clear	Black	1426T37	$20.00	7701K11	$2.50

Magnifying Wraparound Safety Glasses

Bottom Magnification
- Scratch-resistant lenses
- 5″ temple-to-temple width
- Polycarbonate frame and arms
- PVC nosepiece; nylon arm tips

Top and Bottom Magnification
- Scratch-resistant lenses
- 5″ temple-to-temple width
- Nylon frame; black nylon arms
- PVC nosepiece

Bring your work into focus while protecting your eyes with these bifocal safety glasses. For information about magnification, see page 2304.

Magnification	Diopters	Frame Color	Clear Lenses	Each	Gray Lenses	Each
Bottom Magnification						
Standard Lenses						
1.25X (25%)	1.0	Gray	2882T11	$13.12	2882T21	$13.13
1.38X (38%)	1.5	Gray	2882T13	13.12	2882T22	13.13
1.50X (50%)	2.0	Gray	2882T15	13.12	2882T23	13.13
1.63X (63%)	2.5	Gray	2882T17	13.12	2882T24	13.13
1.75X (75%)	3.0	Gray	2882T19	13.12	2882T25	13.13
Fog-Free Lenses						
1.38X (38%)	1.5	Gray	2882T31	13.71	2882T34	13.71
1.50X (50%)	2.0	Gray	2882T32	13.71	2882T35	13.71
1.63X (63%)	2.5	Gray	2882T33	13.71	2882T36	13.71
Top and Bottom Magnification						
Standard Lenses						
1.38X (38%)	1.5	Black	5116T11	17.78	———	———
1.50X (50%)	2.0	Black	5116T12	17.78	———	———
1.63X (63%)	2.5	Black	5116T13	17.78	———	———

Traditional-Style Safety Glasses

- Scratch-resistant lenses
- 5½″ temple-to-temple width
- Nylon frame; polycarbonate arms
- Not rated for UV protection

Lens Color	Frame Color	Glasses	Each 1-11	Each 12-Up	Repl. Lenses	Per Pair 1-11	Per Pair 12-Up
Clear	Dark Gray	10635T307	$3.38	$3.00	10635T7	$2.62	$2.33
Clear	Blue	10635T303	3.38	3.00	10635T7	2.62	2.33
Clear	Red	10635T302	3.38	3.00	10635T7	2.62	2.33

Nonconductive Wraparound Safety Glasses

- Scratch-resistant lenses
- 5¼″ temple-to-temple width
- Nylon frame and arms
- Gel arm inserts

With no metal parts to conduct electricity, these glasses reduce the potential for injury in case of accidental exposure to electric hazards.

Lens Color	Frame Color		Each 1-11	Each 12-Up
Clear	Clear	7541T1	$2.32	$2.08
Clear, Fog-Free	Clear	7541T2	3.71	3.32
Gray	Gray	7541T3	2.60	2.32
Gray, Fog-Free	Gray	7541T4	3.43	3.06

Wraparound Safety Glasses with Earplugs

- Scratch-resistant lenses
- Adjustable arm length
- 6″ temple-to-temple width
- Nylon frame and arms

Gel earplugs with a noise reduction rating (NRR) of 25 dB add hearing protection to your safety glasses.

Lens Color	Frame Color	Glasses	Each 1-5	Each 6-Up	Repl. Lenses	Each 1-5	Each 6-Up
Clear	Black	8289T3	$11.91	$10.92	8289T7	$4.70	$4.27
Gray	Black	8289T5	12.29	11.27	8289T9	5.16	4.69
Replacement Earplugs					8289T2	Per Pair	$0.98

Stick-On Magnifiers for Safety Glasses

Make inspection easier with these magnifiers. Made of clear polyurethane, they adhere to the lens of your safety glasses with water. Magnifiers are easy to position and remove. For information about magnification, see page 2304.

Magnification	Diopters		Per Pair
1.31X (31%)	1.25	53635T302	$16.00
1.38X (38%)	1.5	53635T303	16.00
1.44X (44%)	1.75	53635T304	16.00
1.50X (50%)	2.0	53635T305	16.00
1.63X (63%)	2.5	53635T307	16.00
1.75X (75%)	3.0	53635T309	16.00

Laser Safety Glasses

High Visibility, Standard

High Visibility, Fit-Over

Impact Resistant

High Visibility
- Scratch-resistant lenses
- Temple-to-temple width: 5¼″ for *standard*; 5⅝″ for *fit-over*
- Nylon frame and arms
- Meet ANSI Z87 (basic impact)

Impact Resistant
- Scratch-resistant lenses
- Adjustable arm length
- 5¼″ temple-to-temple width
- Plastic composite frame and arms
- Meet ANSI Z87+ (high impact)

Increase safety when working with lasers. These glasses meet ANSI Z136.1-2007. Optical density (OD) > 6.

Fit-over style can be worn with prescription glasses.

High-visibility standard frames are gray. ***High-visibility fit-over*** and ***impact-resistant*** frames are black.

Laser Protection	Visible Light	Lens Material	Wavelength Range, nm		Each
High Visibility—Standard					
C02	92%	Polycarbonate	10,600	5147T13	$39.67
YAG/C02	87%	Glass	1,064-10,600	5147T11▲	197.99
High Visibility—Fit-Over					
C02	92%	Polycarbonate	10,600	5147T14	39.67
YAG/C02	87%	Glass	1,064-10,600	5147T12▲	197.99
Impact Resistant					
C02	89%	Plastic Composite	10,600	5147T16	41.07
YAG/C02	68%	Plastic Composite	1,064	5147T15	207.05

▲ Not rated for UV protection.

For information about safety glasses, see page 1811.

Panoramic Safety Glasses

- Scratch-resistant lenses
- Adjustable arm length
- Nylon frame and arms

Standard lenses have an adjustable tilt to accommodate a larger range of face sizes. ***Fit-over*** style can be worn with prescription glasses.

Standard

Fit-Over

Lens Color	Temple-to-Temple Wd.	GLASSES Black Frame	Blue Frame	Red/White/Blue Frame	Each 1-9	Each 10-Up	REPL. LENSES	Each 1-9	Each 10-Up
Standard									
Clear	5¼″	11105T162	11105T142	11105T182	$7.09	$6.25	11105T712	$2.56	$2.32
Clear	5½″	11105T16	—	11105T18	7.09	6.25	11105T5	2.56	2.32
Clear, Fog-Free	5¼″	11105T321	11105T322	11105T325	7.75	7.09	11105T722	3.27	2.96
Clear, Fog-Free	5½″	11105T301	11105T302	11105T305	7.75	7.09	11105T723	3.27	2.96
Fit-Over									
Clear	6″	55035T101	55035T102	55035T103	8.83	8.07	55035T91	4.48	4.06
Clear, Fog-Free	6″	55035T301	55035T302	55035T303	9.49	8.67	55035T92	5.23	4.74
Gray	6″	55035T501	55035T502	55035T503	9.72	8.88	55035T93	5.48	4.96
Amber	6″	55035T701	—	—	9.72	8.88	55035T94	5.48	4.96

Comfort-Fit Panoramic Safety Glasses

- Scratch-resistant lenses
- Adjustable arm length
- 5⅛″ temple-to-temple width
- Nylon frame and arms

A nosepiece provides added comfort.

Lens Color	Frame Color		Each 1-11	Each 12-Up
Clear	Black	53395T12	$7.14	$6.49
Clear, Fog-Free	Black	53395T801	8.38	7.62
Gray	Black	53395T24	7.66	6.97

Aviator Safety Glasses

Nylon Frame and Arms—5″ temple-to-temple width

Nylon

Lens Color	Frame Color	Glasses	Each 1-11	Each 12-Up	Repl. Lenses	Each 1-11	Each 12-Up
Clear	Black	58545T301	$4.36	$3.96	58545T2	$3.24	$2.95
Clear	Blue	58545T302	4.36	3.96	58545T2	3.24	2.95
Gray	Black	58545T501	5.10	4.64	—	—	—

Metal Frame and Arms

- Brass arms with plastic tips
- Vinyl nose pads

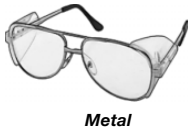

Metal

Lens Color	Frame Color		Each 1-11	Each 12-Up
Nickel Silver Frame—*5⅛″ temple-to-temple width.*				
Clear	Black	5236T31	$8.00	$7.27
Clear	Gold	5236T21	8.00	7.27
Brass Frame—*5⅜″ temple-to-temple width.*				
Clear	Black	5236T116	8.00	7.27
Clear	Gold	5236T115	8.00	7.27
Gray	Black	5236T126	8.70	7.91
Mirror	Black	5236T146	9.60	8.73

Economy Panoramic Safety Glasses

Solid

Vented

- Scratch-resistant lenses
- Adjustable arm length
- Temple-to-temple width: 5¼″ for ***solid***; 5⅝″ for ***vented***
- Polycarbonate frame and arms

With Solid Side Shields

Lenses have an adjustable tilt to accommodate a larger range of face sizes.

Lens Color	Frame Color		Each 1-11	Each 12-Up
Clear	Black	54185T601	$2.60	$2.32
Clear	Blue	54185T602	2.60	2.32
Clear	Red/White/Blue	54185T604	2.60	2.32

With Vented Side Shields

Provide improved air circulation.

Fit-over style can be worn with prescription glasses.

Lens Color	Frame Color		Each 1-9	Each 10-Up
Standard				
Clear	Clear	52755T7	$3.79	$3.48
Clear, Fog-Free	Clear	52755T1	4.37	4.02
Gray	Gray	52755T25	4.58	4.21
Amber	Amber	52755T26	4.58	4.21
Fit-Over				
Clear	Clear	52755T9	5.07	4.66
Clear, Fog-Free	Clear	52755T3	5.68	5.23

Visitors' Safety Glasses

- 6¼″ temple-to-temple width
- Integral frame; polycarbonate arms

Distribute these disposable glasses to protect visitors. They conveniently fit over prescription glasses.

Lens Color	Frame Color			Each 1-19	Each 20-Up
Clear	Clear	62065T32		$2.13	$1.93
Clear (100/Box)	Clear	62065T39	Per Box		$167.71

Sunglasses

Shade your eyes while working outdoors with these durable sunglasses. They have scratch-resistant polycarbonate lenses that provide 99.9% UV protection. Meet ANSI Z87.1-2003 high-impact standards (also known as Z87+). Temple-to-temple width is 5″. Frame and arms are nylon with rubber tips for comfort.

Lens Color	Frame Color		Each 1-11	Each 12-Up
Gray	Black	5087T2	$3.36	$3.07
Mirror	Black	5087T3	4.07	3.72

Eyeglass Repair Kit

You'll get a screwdriver, a magnifier, two standard screws, and four metric screws all furnished in a vinyl pouch.

57485T2 ..... **Each** 1-11 $2.08 12-Up $1.84

Dust- and Splash-Protection Safety Goggles

Standard

Extra Wide

- Polycarbonate lens; provides 99% UV protection
- Adjustable headband
- Meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards

Standard
- Clear vinyl housing
- Elastic headband

Extra Wide
- Black vinyl housing
- Neoprene headband

These goggles are nonvented for applications involving airborne particles and liquid splashes.

Lens Color	Lens Wd.		Each 1-5	Each 6-Up
Standard				
Clear	5¾″	**10435T11**	$3.44	$3.17
Clear, Fog-Free	5¾″	**10435T12**	3.93	3.62
Extra Wide				
Clear, Fog-Free	8″	**5449T5**	16.60	15.09

Ventilated Dust-Protection Safety Goggles

Standard

Extra Wide

Comfort Fit

- Polycarbonate lens
- Vinyl housing
- Adjustable headband
- Meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards

Standard
- *5405T11* and *T12*—Green-tinted housing
  5405T16—Clear housing
- Headband is elastic
- Green lens provides 99% UV protection; clear and clear fog-free are not rated

Extra Wide
- Black housing
- Neoprene headband
- Provides 99% UV protection

Comfort Fit
- Black housing
- Elastic headband
- Acetate inner lens
- Provides 99% UV protection

Vents let air in while keeping dust particles out.
Comfort-fit goggles have a foam-lined face pad for comfort and cold protection.

Lens Color	Lens Wd.		Goggles Each 1-5	Goggles Each 6-Up		Repl. Lenses Each 1-5	Repl. Lenses Each 6-Up		Repl. Headbands Each 1-5	Repl. Headbands Each 6-Up
Standard										
Clear	6″	**5405T11**	$2.09	$1.92	**5405T19**	$1.44	$1.29	**5405T59**	$0.50	$0.44
Clear, Fog-Free	6″	**5405T12**	3.08	2.80	**5405T21**	2.28	2.07	**5405T59**	.50	.44
Green	5¾″	**5405T16**	3.73	3.40	———	——	——	———	——	——
Extra Wide										
Clear, Fog-Free	8″	**5449T4**	16.90	15.36	———	——	——	———	——	——
Comfort Fit			1-2	3-Up						
Clear, Fog-Free	5½″	**55135T1**	44.23	40.41	———	——	——	———	——	——

Ventilated Dust- and Splash-Protection Safety Goggles

Standard

Extra Wide

Fit-Over

Comfort Fit

With Face Shield

Respirator Fit
(Respirator Not Included)

- Clear, fog-free polycarbonate lens; provides 99% UV protection
- Vinyl housing
- Adjustable neoprene headband
- Meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards

Vents allow air circulation while protecting from dust particles and liquid splashes.
Fit-over goggles can be worn with prescription glasses.
Comfort-fit goggles have a foam-lined face pad for comfort and protection from the cold.
Respirator-fit goggles are designed for use with a half-mask respirator (sold separately on pages 1825-1826).

Lens Wd.	Housing Color		Goggles Each 1-5	Goggles Each 6-Up		Repl. Lens Each 1-5	Repl. Lens Each 6-Up
Standard							
6⅛″	Green Tinted	**5422T2**	$9.12	$8.29	———	——	——
Extra Wide							
6½″	Clear Frosted	**10455T1**	8.98	8.21	**10455T2**	$6.23	$5.64
Fit-Over							
6¾″	Bronze Tinted	**5422T75**	10.08	9.16	———	——	——
Comfort Fit							
6⅛″	Green Tinted	**5422T6**	14.22	12.93	———	——	——
With Face Shield							
6⅛″	Green Tinted	**5422T5**	35.82	32.56	———	——	——
Respirator Fit							
6⅛″	Green Tinted	**5422T23**	9.12	8.29	———	——	——
Replacement Headband for Extra-Wide Style		**10455T3**	**Each** 1-5	$2.17	6-Up	$1.96	

Eyeglass Holders

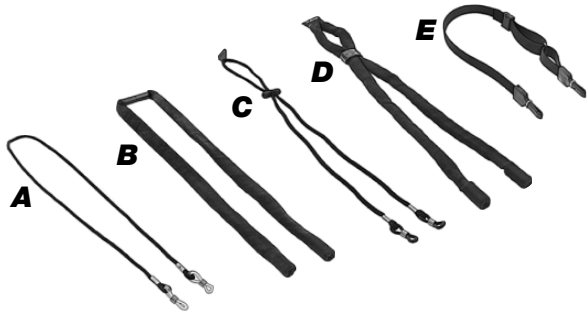

	Cord Lg.	Material	Color		Each 1-24	Each 25-Up
Nonadjustable						
A	24″	Nylon	Black	**9137T71**	$0.88	$0.78
A	24″	Nylon	Orange	**9137T74**	.88	.78
A	24″	Nylon	Red	**9137T72**	.88	.78
A	24″	Nylon	White	**9137T73**	.88	.78
Nonadjustable with Breakaway Cord						
B	24″	Cotton	Black	**9137T41**	3.88	3.44
B	24″	Cotton	Blue	**9137T42**	3.88	3.44
B	24″	Cotton	Red	**9137T45**	3.88	3.44
B	24″	Cotton	Yellow	**9137T43**	3.88	3.44
Adjustable						
C	27″	Polyester	Black	**9137T24**	2.83	2.51
D	28″	Cotton	Black	**9137T501**	3.20	2.84
D	28″	Cotton	Blue	**9137T502**	3.20	2.84
D	28″	Cotton	Red	**9137T503**	3.20	2.84
E	13″	Polyester	Black	**9137T11**	2.50	2.22

Slide-On Protective Side Shields

Just slide the arms of your glasses through the webs on these shields to get the side protection you need. They're made of flexible PVC and provide 100% UV protection. Meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards.

Color		Per Pair
Clear	2571T1	$3.44
Gray	2571T2	3.44
Green	2571T3	3.44

Safety Eyewear Cabinets

Individual compartments provide convenient storage space for your safety eyewear. Made of clear acrylic, cabinets have 1/2″ dia. holes for wall mounting (fasteners not included).

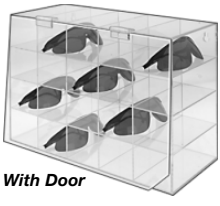

With Door

Overall Size, Ht.×Wd.×Dp.★	Without Door	Each	With Door	Each
Cabinet for 20 Pairs of Glasses				
11 3/4″×15 1/2″×6 3/4″	11055T11	$132.31	11055T24	$127.02
Cabinet for 12 Pairs of Goggles				
11 1/2″×15 1/2″×7 5/8″	11055T12	110.24	11055T25	155.64

★ For cabinets with door, add 1/8″ to depth.

Eyewear Cases

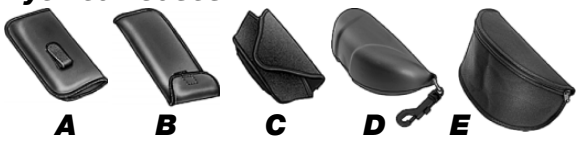

A **B** **C** **D** **E**

	Material	Attachment	Closure		Each
For Glasses					
A	Black Vinyl	Pocket Clip	Open End	5302T11	$2.77
B	Black Vinyl	Pocket Clip	Hook and Loop	5302T12	3.67
C	Black Nylon	Belt Loop	Hook and Loop	5302T16	7.10
D	Black Nylon	Snap Hook	Clip	5302T17	8.38
For Goggles					
E	Black Nylon	Belt Loop	Zipper	5302T24	8.20

Safety Eyewear Dispensers

Keep your safety glasses and goggles accessible as well as organized with these clear acrylic dispensers. They have 3/16″ dia. holes for wall mounting (fasteners not included).

Stack style has a hinged dispensing door.

Tray

Stack

	Overall Size, Ht.×Wd.×Dp.		Each
Tray	3″ ×9″×6″	10845T18	$38.67
Stack	17 1/4″×8″×4″	10845T23	80.62

Lens Cleaning Stations and Wipes

Silicone solutions provide better antifog properties.

Silicone-free solutions are for use in applications where silicone could cause contamination (in auto and paint facilities, for example, where silicone would make it difficult for adhesives and paints to stick to metal).

Disposable Stations

Keep eyewear smudge-free with these economical tissue stations. All include a pump bottle of antifog/antistatic solution and tissues. Stations are designed for wall mounting and don't include fasteners.

Cardboard stations have 5/8″ dia. keyholes.

Plastic stations have 1/2″ dia. keyholes and include tape with adhesive on both sides.

Solution Type	Cap., oz.	No. of Tissues	Station Size, Ht.×Wd.×Dp.		Each 1-3	Each 4-Up
Cardboard Stations						
Silicone	16	1,520	10″ ×7 1/2″×5 1/4″	9106T31	$19.15	$17.31
Silicone-Free	16	1,520	10″ ×7 1/2″×5 1/4″	9106T32	19.15	17.31
Plastic Stations						
Silicone	8	760	11 1/2″×5 3/8″×3″	9106T501	12.68	11.46
Silicone-Free	8	760	11 1/2″×5 3/8″×3″	9106T503	12.68	11.46

Cardboard *Plastic*

Refillable Stations

Built to last, these sturdy steel stations have a drop-open front for easy refilling. All include a waste receptacle, key lock, 16-oz. pump bottle of antifog/antistatic solution, and tissues. Mounting fasteners are also included.

Solution Type	No. of Tissues	Station Size, Ht.×Wd.×Dp.		Each 1-3	Each 4-Up
Stations					
Silicone	1,520	17 1/2″×8 3/4″×3 1/2″	5609T331	$46.00	$41.24
Silicone-Free	1,520	17 1/2″×8 3/4″×3 1/2″	5609T332	46.00	41.24
Refills					
1 gal. Silicone Solution			5609T351	20.36	18.34
1 gal. Silicone-Free Solution			5609T352	20.36	18.34
				1-9	10-Up
16-oz. Bottle of Silicone Solution			5609T361	$3.44	$3.09
16-oz. Bottle of Silicone-Free Solution			5609T362	3.44	3.09
Pack of 760 Tissues			5609T37	3.95	3.61
Replacement Pump Bottle Top			5609T39	1.84	1.67

Wipes

All wipes contain silicone-free solution.

	Wipes/ Box	Boxes/ Case		Per Box Partial Case	Per Box Full Case
Water-Activated Tissue					
Antifog/Antistatic	1,000	12	52465T7	$20.60	$18.82
Towelettes					
Antifog/Antistatic	36	24	10895T36	8.01	7.19
Individually Packaged Towelettes					
Antifog/Antistatic	100	10	10895T21	8.59	7.86
Antifog/Antistatic for Extreme Humidity	100	10	10895T22	9.71	8.93

Tissues

Towelettes

Face Shields

Face Shield

Face Shield with Chin Guard

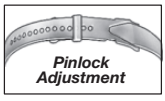

For full-face protection that adjusts for a comfortable fit, choose one of these face shields. They meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards when worn with safety glasses or goggles.

Pinlock adjustment consists of interlocking straps.

Ratchet adjustment has an easy-turn knob.

Polycarbonate window offers greater impact resistance than acetate window. *Green window* reduces glare.

Material	Window Ht. × Wd. × Thick.	Adjustment	Fits Head Sizes	Face Shields Each 1-5	Face Shields Each 6-Up	Replacement Windows Each 1-11	Replacement Windows Each 12-Up
Face Shields							
Clear Acetate	8″ × 12″ × 0.04″	Pinlock	6½ to 8	5481T28	$16.95	$15.36	5481T32	$7.62	$6.97
Clear Acetate	8″ × 16″ × 0.04″	Pinlock	6½ to 8	5481T27	19.21	17.41	5481T31	10.04	9.17
Clear Acetate	8″ × 15½″ × 0.04″	Ratchet	6½ to 8	10335T31	18.92	17.23	10335T34	4.59	4.24
Clear, Fog-Free Acetate	8″ × 12″ × 0.04″	Ratchet	6½ to 8	5481T62	26.65	24.43	5481T56	10.50	9.55
Green Acetate	8″ × 15½″ × 0.04″	Ratchet	6½ to 8	10335T37	19.12	17.41	10335T39	4.98	4.49
Clear Polycarbonate	8½″ × 15″ × 0.06″	Ratchet	6½ to 8	56505T59	19.51	17.98	56505T61	7.61	6.97
Green Polycarbonate	8½″ × 15″ × 0.06″	Ratchet	6½ to 8	56505T63	19.96	18.35	56505T64	9.13	8.33
Face Shields with Chin Guard							
Clear Acetate	6½″ × 19½″ × 0.04″	Ratchet	6½ to 8	5482T23	32.03	29.12	5482T25	11.36	10.42
Clear Acetate	7″ × 16¾″ × 0.04″	Ratchet	6½ to 8	10495T51	29.34	27.13	10495T57	5.54	5.00
Clear, Fog-Free Acetate	6½″ × 19½″ × 0.04″	Ratchet	6½ to 8	5482T47	34.48	31.25	5482T39	12.91	11.79
Green Acetate	6½″ × 19½″ × 0.04″	Ratchet	6½ to 8	5482T24	32.05	29.14	5482T26	11.36	10.42

Face Shields with Protective Coating

Face Shield

Face Shield w/ Chin Guard

The window on these face shields is coated for an added level of protection. All shields have an 8″ Ht. × 14″ Wd. × 0.08″ Thick. polycarbonate window that's oil and grease resistant. They have ratchet adjustment to fit head sizes 6½ to 8—simply turn the knob to adjust. Meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards when worn with safety glasses or goggles.

Scratch-resistant coatings extend window life.

Chemical-resistant coatings resist mild acids and most chemicals and solvents; wet paint wipes off easily.

Heat-reflective coatings reflect radiant heat to keep your face cooler.

Window Coating and Color	Face Shields Each 1-2	Face Shields Each 3-Up	Replacement Windows Each 1-2	Replacement Windows Each 3-Up	Face Shields with Chin Guard Each 1-2	Face Shields with Chin Guard Each 3-Up	Replacement Windows Each 1-2	Replacement Windows Each 3-Up
Standard Coatings								
Scratch-resistant clear	10865T1	$30.47	$27.42	10865T2	$18.60	$16.53	10865T3	$40.40	$36.36	10865T4	$29.77	$26.47
Chemical-resistant clear	10865T43	30.47	27.42	10865T44	18.60	16.53	10865T62	40.40	36.36	10865T63	29.77	26.47
Heat-reflective gold	10865T5	78.53	70.68	10865T6	64.60	58.14	10865T7	88.47	79.62	10865T8	74.53	67.08
Fog-Free Coatings								
Scratch-resistant clear	10865T9	48.13	43.32	10865T11	38.47	34.20	10865T12	58.07	52.26	10865T13	48.44	43.17
Chemical-resistant clear	10865T23	48.13	43.32	10865T24	38.47	34.20	10865T75	58.07	52.26	10865T78	48.44	43.17
Heat-reflective gold	10865T14	99.74	90.06	10865T15	88.09	79.10	10865T16	103.12	95.19	10865T17	90.06	81.57

Face Shields for Hard Hats

Acetate and Polycarbonate

Steel Wire Mesh

A bracket allows you to attach these face shields to the brim of cap-style hard hats (not included; see page 1820) to provide full-face protection. Meet ANSI Z87.1-2003 when worn with safety glasses or goggles (acetate and steel wire meet basic-impact standards; polycarbonate meet high-impact, also known as Z87+, standards).

Polycarbonate and *acetate windows* are 0.04″ thick. *Steel wire mesh window* is the choice for high-heat jobs that require increased ventilation.

Nylon bracket is nonconductive. ***Gasketed nylon bracket*** provides a seal between the window and your hard hat. ***Gold-anodized aluminum bracket*** provides heat and corrosion resistance.

Material	Window Ht. × Wd.	Nylon Bracket Each 1-4	Nylon Bracket Each 5-Up	Gasketed Nylon Bracket Each 1-4	Gasketed Nylon Bracket Each 5-Up	Gold-Anodized Aluminum Bracket Each 1-4	Gold-Anodized Aluminum Bracket Each 5-Up	Replacement Windows Each 1-4	Replacement Windows Each 5-Up
Clear Acetate	8″ × 15″	9630T11	$16.18	$14.59	9630T15	$21.13	$19.05	9630T14	$16.53	$14.90	9630T12	$5.89	$5.31
Clear Polycarbonate	7″ × 15″	9630T23	17.32	15.65	9630T27	22.58	20.36	9630T26	17.98	16.21	9630T24	7.63	6.88
Steel Wire Mesh	8″ × 15″	9630T35	31.05	28.00	9630T32	36.00	32.46	9630T38	31.40	28.31	9630T36	20.94	19.11

Face Shield for Electric Arc Protection

When exposed to low-level electrical hazards and a full hood is not necessary, this face shield provides up to 12 calories/cm^2 of arc flash protection. It has an 8" Ht. × 14" Wd. × 0.1" Thick. green-tinted polycarbonate window with a scratch-resistant, fog-free coating. Shield has ratchet adjustment to fit head sizes 6½ to 8—simply turn the knob to adjust. A chin guard and side shield extenders offer added protection. Meets NFPA 70E, ASTM F-2178, and ANSI Z87.1-2003 high-impact (also known as Z87+) standards when worn with safety glasses or goggles.

		Each 1-2	Each 3-Up
Face Shield	3942T47	$53.75	$47.43
Replacement Window	3942T56	31.25	27.57

Combination Face Shield/Hard Hat/Earmuffs

Get all-in-one face, ear, and head protection. Face shield has an 8″ Ht.×15½″ Wd.×0.040″ Thick. clear polycarbonate window that meets ANSI Z87.1-1989. Hard hat is slotted cap-style and made of orange ABS plastic. It has a ratchet-adjustment suspension to fit head sizes 6 to 9 and meets ANSI Z89.1-1997, Class E. Earmuffs have a noise reduction rating (NRR) of 22 dB and meet ANSI S3.19-1974. Face shield and earmuffs can be lifted when not in use.

Optional steel wire mesh window is 6¾″ Ht.×12″ Wd. and meets ANSI Z87.1-1989.

		Each
Combination Face Shield/Hard Hat/Earmuffs	5191T61	$41.27
Optional Steel Wire Mesh Window	5191T63	7.89
Replacement Parts		
Polycarbonate Window	5191T62	3.97
Bracket for Window	5191T77	8.43
Earmuffs	5191T75	23.03

Air-Circulating Face Shield

A built-in, low-noise fan creates a constant flow of filtered air across your face for protection from harmful dust particles. Meets ANSI Z87.1-2003 basic-impact standards when worn with safety glasses or goggles. Face shield has a 7⅝″ Ht.×15½″ Wd.×0.06″ Thick. clear polycarbonate window and ratchet adjustment to fit head sizes 6⅜ to 7¾—simply turn the knob to adjust. It includes a clear window cover that extends window life; filter; prefilter; rechargeable four-hour NiMH battery; 120 VAC, 60 Hz charger; and a carrying case.

		Each
Face Shield	7049T1	$380.00
Replacement Parts		
Polycarbonate Window	7049T32	44.40
Rechargeable Four-Hour NiMH Battery	7049T4	42.00
		Per Pkg.
Filter (1/Pkg.)	7049T22	$46.80
Prefilters (3/Pkg.)	7049T23	26.40
Window Covers (10/Pkg.)	7049T31	36.01

Disposable Face Shields

Lightweight and comfortable, these shields have a clear acetate wrap-around window, foam padding, and a stretch-to-fit silicone-tubing headband.

Note: Shields do not meet ANSI Z87.1-2003.

Window Size, Ht.×Wd.×Thick.	Case Qty.		Each Partial Case	Each Full Case
7½″×12″ ×0.005″	40	56955T21	$4.57	$3.74
9½″×11¾″×0.005″	40	56955T34	4.97	4.07

About Selecting Welding Shades

The guidelines below are for common welding applications and are based on American National Standards Institute/Accredited Standards Committee (ANSI/ASC) Z49.1-2005.

Arc Current, amps	Minimum Shade No.	Suggested Shade No.
Shielded Metal Arc Welding		
60 to 160	8	10
160 to 250	10	12
Gas Metal Arc Welding (MIG)		
60 to 160	10	11
160 to 250	10	12
Gas Tungsten Arc Welding (TIG)		
Less than 150	8	12
150 to 500	10	14
Torch Brazing		
—	—	3 to 4

Arc Current, amps	Minimum Shade No.	Suggested Shade No.
Air Carbon Arc Cutting		
Less than 500	10	12
Plasma Arc Welding		
Less than 20	6	6 to 8
20-100	8	10
100-400	10	12
Plasma Arc Cutting		
Less than 300	8	9
300 to 400	9	12

Plate Thickness	Minimum Shade No.	Suggested Shade No.
Gas Welding		
Less than ⅛″	—	4 to 5
⅛″ to ½″	—	5 to 6
Greater than ½″	—	6 to 8
Oxygen Cutting		
Less than 1″	—	3 to 4
1″ to 6″	—	4 to 5
Greater than 6″	—	5 to 6

Welding Glasses

Protect your eyes during welding jobs. These glasses have green polycarbonate lenses and a brow guard for added protection. Meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards.

Comfort-fit wraparound glasses have a flexible rubber nosepiece and padded brow guard. Frame is black polycarbonate. Arm length and angle are adjustable.

Panoramic glasses have a black nylon frame. Arm length and angle are adjustable. *Fit-over* can be worn with prescription glasses.

Magnifying glasses add the convenience of bifocals. They have a black nylon frame and rubber nosepad for comfort. For information about magnification, see page 2304.

Shade No.	Temple-to-Temple Wd.	Glasses	Glasses Each	Repl. Lenses	Repl. Lenses Each
Standard					
Comfort-Fit Wraparound					
A 3	5½″	5803T12	$14.98	5803T22	$9.27
A 5	5½″	5803T13	16.27	5803T23	10.53
Comfort-Fit Wraparound—*Extra-Large Lenses*					
A 3	5¼″	5803T31	14.75	5803T41	10.37
A 5	5¼″	5803T32	15.93	5803T42	11.67
Panoramic					
B 3	5⅜″	9313T4	13.49	9313T6	9.71
B 5	5⅜″	9313T5	14.78	9313T7	11.00
Panoramic—*Fit-Over*					
C 3	6″	47515T24	15.56	47515T33	9.96
C 5	6″	47515T25	16.84	47515T38	11.25
Magnifying					
1.38X (38%) Magnification					
D 5	5½″	5783T1	13.96	—	—
1.50X (50%) Magnification					
D 5	5½″	5783T2	18.52	—	—
1.63X (63%) Magnification					
D 5	5½″	5783T3	18.52	—	—

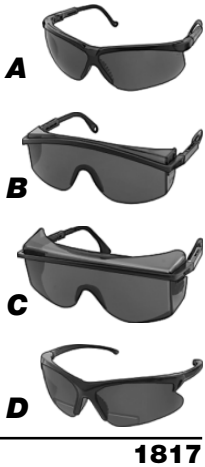

For information about selecting welding shades, see page 1817.

Welding Helmets

Nylon with Fixed Lens

Nylon Slimline with Lift-Up Lens

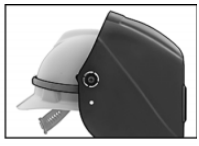

Nylon with Hard-Hat Band

Fiberglass with Fixed Lens

Leather with Lift-Up Lens

Helmets include a polycarbonate filter lens with a clear cover for protection from scratches and molten splashes (except nylon with hard-hat band, which is not scratch-resistant). All have ratchet adjustment with an easy-turn knob except nylon with hard-hat band, which has pinlock adjustment.

To Order: Please specify lens shade number where necessary.

Nylon*—** Lighter weight than fiberglass, these helmets fit head sizes 6½ to 8. ***Slimline style have a narrower width for confined spaces and an extended forehead area for increased overhead protection.

Nylon with hard-hat band helmets are lightweight and can be quickly snapped on and off your slotted hard hat.

Fiberglass helmets provide superior heat resistance and fit head sizes 6¾ to 8.

Leather helmets are flexible, so they're easier to maneuver in tight spots. They fit head sizes 6½ to 8.

	Lens Type	Lens Size, Ht. × Wd.	Available Shade Nos.	Color	Helmet Wd.		Each
Nylon	Fixed	2″ × 4¼″	9, 10, 11, 12	Black	9″	9653T31	$42.19
Nylon	Fixed	4½″ × 5¼″	9, 10, 11, 12	Black	9″	9653T41	46.20
Nylon	Lift-Up	2″ × 4¼″	9, 10, 11, 12	Black	9″	9653T21	52.50
Nylon Slimline	Fixed	2″ × 4¼″	9, 10, 11, 12	Black	8½″	56405T61	36.67
Nylon Slimline	Fixed	4½″ × 5¼″	9, 10, 11, 12	Black	8½″	56405T63	43.33
Nylon Slimline	Fixed	4½″ × 5¼″	9, 10, 11, 12	Red	8½″	56405T53	49.25
Nylon Slimline	Lift-Up	2″ × 4¼″	9, 10, 11, 12	Black	8½″	56405T62	45.29
Nylon Slimline	Lift-Up	2″ × 4¼″	9, 10, 11, 12	Red	8½″	56405T45	50.62
Nylon Slimline	Lift-Up	2″ × 4¼″	9, 10, 11, 12	Silver	8½″	56405T46	50.62
Nylon with Hard-Hat Band	Fixed	2″ × 4¼″	10	Black	9½″	4116T29	35.53
Nylon with Hard-Hat Band	Fixed	4½″ × 5¼″	10	Black	9½″	4116T44	41.71
Nylon with Hard-Hat Band	Lift-Up	2″ × 4¼″	10	Black	9½″	4116T32	49.84
Fiberglass	Fixed	4½″ × 5¼″	10	Gray	9⅛″	5423T612	53.99
Fiberglass	Lift-Up	2″ × 4¼″	10	Gray	9″	5423T23	60.44
Leather	Lift-Up	2″ × 4¼″	9	Rust	8″	5439T5	138.47
Leather	Lift-Up	2″ × 4¼″	10	Rust	8″	5439T3	138.47
Leather	Lift-Up	2″ × 4¼″	11	Rust	8″	5439T6	138.47

Replacement Parts

Ratchet Adjustment for Nylon and Nylon Slimline Helmets	56405T924	Each	$19.00
Ratchet Adjustment for Fiberglass Welding Helmets	5423T92	Each	17.79
Ratchet Adjustment for Leather Welding Helmet	5439T35	Each	14.60
Hard-Hat Band	4116T63	Each	18.44

Auto-Darkening Welding Helmets

It takes just a fraction of a second for the filter lens on these helmets to automatically change from light (Shade No. 3) to dark (see shade Nos. in table below) when sparks are present. Lens changes back when sparks are gone. Helmets have a multishade filter lens that allows you to change shade number without changing lenses. Simply press a button to select. They also have inner and outer lens covers that protect the filter lens. All are made of nylon and have a ratchet adjustment to fit head sizes 6½ to 7¾—simply turn the knob to adjust. Color is black with a silver front panel. Operate on two 3-volt lithium batteries (included).

Lift-up-front helmet has the added benefit of a spring-mounted front panel. Flip it up to expose a 4¾″×3 9/16″ clear viewing lens for face protection during welding preparation work, precision grinding and cleaning, and inspection.

Lift-Up-Front Helmet

Shade No.	1 11/16″ Ht. × 3 9/16″ Wd. Lens: Helmet Wd.		Each	2 1/8″ Ht. × 4″ Wd. Lens: Helmet Wd.		Each
Helmets						
10 to 11	8½″	51885T81	$310.06	—	—	—
9 to 13	8⅛″	51885T66	399.81	8½″	5459T35	$521.49
Replacement Filter Lens for 10 to 11	—	51885T89	328.86	—	—	—
Replacement Filter Lens for 9 to 13	—	51885T68	335.24	—	5459T37	449.22
			Per Pkg.			Per Pkg.
Replacement Inner Lenses (5/Pkg.)	—	51885T72	$9.53	—	5459T43	$10.81
Replacement Outer Lenses (10/Pkg.)	—	51885T55	24.82	—	51885T55	24.82
Lift-Up-Front Helmet			Each			Each
9 to 13	8¾″	51885T54	$462.16	8½″	5459T62	$572.82
Replacement Filter Lens	—	51885T68	335.24	—	5459T37	449.22
Replacement Viewing Lens	—	51885T74	6.27	—	51885T74	6.27

For All Helmets

Replacement Ratchet Adjustment	51885T97	Each	$24.05

For information about selecting welding shades, see page 1817.

Welding Goggles

Protect your eyes from harmful infrared and ultraviolet light. These goggles have a polycarbonate lens and an elastic headband. Meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards.

Styles B&C can be worn with prescription glasses. *Style B* has a wide field of view for improved visibility. *Style C* have a flip-up filter lens. Simply lift to expose a clear lens for protection during inspection.

	Shade No.	Lens Size		Each
A	4	2″ Dia.	5444T5	$8.10
A	5	2″ Dia.	5444T2	8.10
A	6	2″ Dia.	5444T6	8.10
B	5	2¾″ Ht. × 5¾″ Wd.	11655T21	11.47
C	4	2″ Ht. × 4¼″ Wd.	5469T3	$13.90
C	5	2″ Ht. × 4¼″ Wd.	5469T4	13.90
C	6	2″ Ht. × 4¼″ Wd.	5469T5	13.90

Repl. Elastic Headband (12/Pkg.) ..... 5465T1 **Per Pkg.** $13.33

Filter Lenses and Covers

Gold-coated polycarbonate filter lenses reflect radiant heat.

Auto-darkening filter lenses take only a fraction of a second to change from light (shade number 3) to dark (see shade numbers in table below) when sparks are present. Lenses change back when sparks are gone. Operate on solar power, so there are no batteries to change. Meet ANSI Z87.1-2003 basic-impact standards. *Single-shade* lenses have an ABS plastic housing. *Multishade* lens allows you to change shade number without changing lenses. Simply flip a switch to select. Housing is nylon.

Lens Covers— Protect filter lenses from scratches and molten splashes with these clear covers. A *gasket* is required for a proper seal between a 2″ Ht. × 4¼″ Wd. filter lens and a lens cover on helmets with lift-up lenses.

Magnifiers— Fit behind your filter lens to bring your work into focus. Made of clear polycarbonate. *Universal fit* work with most 2″ Ht. × 4¼″ Wd., 4½″ Ht. × 5¼″ Wd., and 5¼″ Ht. × 4½″ Wd. lenses. For information about magnification, see page 2304.

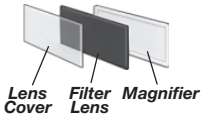

Filter Lenses

SINGLE SHADE

Lens Size, Ht. × Wd.	Shade No.	Polycarbonate Each 1-4	Polycarbonate Each 5-Up	Gold-Coated Polycarbonate Each 1-4	Gold-Coated Polycarbonate Each 5-Up
2″ × 4¼″	4	5424T34 $3.33	$2.81	—	—
2″ × 4¼″	5	5424T35 3.33	2.81	—	—
2″ × 4¼″	6	5424T36 3.33	2.81	—	—
2″ × 4¼″	9	5424T38 3.33	2.81	9716T12 $11.90	$10.82
2″ × 4¼″	10	5424T39 3.33	2.81	9716T14 11.90	10.82
2″ × 4¼″	11	5424T41 3.33	2.81	9716T16 11.90	10.82
2″ × 4¼″	12	5424T42 3.33	2.81	9716T18 11.90	10.82
4½″ × 5¼″	9	5424T61 8.51	6.21	9716T22 21.68	19.71
4½″ × 5¼″	10	5424T62 8.51	6.21	9716T24 21.68	19.71
4½″ × 5¼″	11	5424T63 8.51	6.21	9716T26 21.68	19.71
4½″ × 5¼″	12	5424T64 8.51	6.21	9716T28 21.68	19.71
		Per Pair			
2″ Dia.	4	5424T71 $5.21	$4.08	—	—
2″ Dia.	5	5424T72 5.21	4.08	—	—
2″ Dia.	6	5424T73 5.21	4.08	—	—

AUTO-DARKENING SINGLE SHADE

Lens Size, Ht. × Wd.	Shade No.		Each
2″ × 4¼″	9	51885T341	$116.41
2″ × 4¼″	10	51885T84	116.41
2″ × 4¼″	11	51885T342	116.41
2″ × 4¼″	12	51885T343	116.41
4½″ × 5¼″	9	51885T351	121.16
4½″ × 5¼″	10	51885T85	121.16
4½″ × 5¼″	11	51885T352	121.16
4½″ × 5¼″	12	51885T353	121.16
5¼″ × 4½″	9	51885T361	126.32
5¼″ × 4½″	10	51885T86	126.32
5¼″ × 4½″	11	51885T362	126.32
5¼″ × 4½″	12	51885T363	126.32

AUTO-DARKENING MULTISHADE

Lens Size, Ht. × Wd.	Shade No.		Each
4½″ × 5¼″ and 5¼″ × 4½″	9 to 13	51885T37	$187.48

Lens Covers and Magnifiers

Lens Size, Ht. × Wd.	Plastic Lens Covers Pkg. Qty.		Per Pkg. 1-4	Per Pkg. 5-Up	Glass Lens Covers Pkg. Qty.		Per Pkg. 1-4	Per Pkg. 5-Up
2″ × 4¼″	12	5426T5	$11.42	$10.38	12	5426T1	$16.58	$15.22
4½″ × 5¼″	6	5426T21	12.69	11.65	6	5426T23	16.87	15.49
2″ Dia.	2	5426T22	8.38	7.62	12	5426T24	16.42	14.78

Gasket ..... 5426T8 **Each** 1-23 $0.89 24-Up $0.80

Magnification	2″ Ht. × 4¼″ Wd. Magnifiers	Each	Universal Fit Magnifiers	Each
1.25X (25%)	9663T11	$7.30	9663T36	$9.22
1.38X (38%)	9663T12	7.30	9663T37	9.22
1.50X (50%)	9663T13	7.30	9663T38	9.22
1.63X (63%)	9663T14	7.30	9663T39	9.22

Welding Face Shields

For full-face protection while welding, select one of these shields. All except hand-held shield have ratchet adjustment to fit head sizes 6½ to 8 and meet ANSI Z87.1-2003 high-impact (also known as Z87+) standards when used with safety glasses or goggles.

Lift-up-front face shield has a welding shade that flips up to expose a 8″ Ht. × 12″ Wd. × 0.09″ Thick. clear polycarbonate window for cutting and brazing jobs.

Hand-held face shield allows quick inspection of welding activity—simply hold it up to your face. It's lightweight thermoplastic with a handle and includes a clear lens cover. Meets ANSI Z87.1-2003 basic-impact standards when used with safety glasses or goggles.

Face Shield

Face Shield w/ Chin Guard

Lift-Up-Front Face Shield

Hand-Held Face Shield

Shade No.	Window Material	Window Size, Ht. × Wd. × Thick.	Face Shields	Each	Repl. Windows	Each
Face Shields						
4	Propionate	8½″ × 15″ × 0.06″	13185T341	$27.67	13185T351	$16.37
5	Propionate	8½″ × 15″ × 0.06″	13185T342	27.67	13185T352	16.37
6	Propionate	8½″ × 15″ × 0.06″	13185T343	27.67	13185T353	16.37
Face Shields with Chin Guard						
5	Acetate	6½″ × 19½″ × 0.04″	13185T26	41.52	13185T27	19.83
9	Polycarbonate	8″ × 14″ × 0.10″	3513T4	96.98	—	—
11	Polycarbonate	8″ × 14″ × 0.10″	3513T6	96.98	—	—

Replacement Window Cover for Polycarbonate Windows ..... 3513T8 **Each** $12.40

Lift-Up-Front Face Shield						
5	Polycarbonate	4½″ × 9″ × 0.07″	4263T44	50.33	4263T62▲	13.61

Replacement Clear Polycarbonate Window ..... 4263T57 **Each** $13.15

Hand-Held Face Shield						
10	Polycarbonate	4½″ × 5¼″ × 0.08″	5470T23	38.53	—	—

▲ Flip-up shade only.

About Hard Hats

To provide head protection, hard hats have multipoint suspension systems that distribute the force of impact. This distribution increases with the number of suspension points.

Pinlock adjustment suspension consists of an interlocking strip with holes and a strip with pins.

Ratchet adjustment suspension has an easy-turn knob.

The hard hats below meet impact and penetration resistance requirements of ANSI Z89.1-2003 (unless noted).

Impact and Electrical Insulation Classifications:

Type 1 reduce the force of impact caused by a blow to the top of the head only.
Type 2 reduce the force of impact from an off-center or top-of-head blow.
Class C are not tested for electrical protection.
Class E are proof-tested at 20,000 volts.

Suspension Styles

Pinlock

Ratchet

Hard Hats

With Slots

Imprinted with Slots

Ventilated

With Slots and Rain Trough

Heat-Resistant Thermoplastic

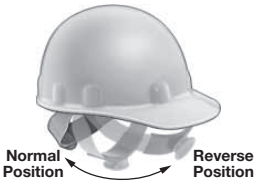

Reversible Suspension

Full-Brim Style

Adjust to fit head sizes 6½ to 8 except large size, which fit sizes 7 to 8½ and 7223T4, which fits sizes 6¾ to 8.

To Order: Please specify hard hat color: blue, green, high-visibility orange, orange, red, white, or yellow (unless noted).

Cap Style— Short tapered sides and back with an extended bill.

Hats *with slots* accommodate welding helmets (see 4116T on page 1818) and earmuffs (see page 1823).

Imprinted hats are white with one of the following logos on the front: U.S. flag (red, white, and blue); Visitor (red); or Safety First (green). **To Order:** Please specify logo.

Ventilated hats have slits on the top for increased air circulation.

Hats *with rain trough* have a rear brim gutter that channels water away from your neck.

Heat-resistant thermoplastic hats are made from a material similar to that used in firefighters' helmets, providing maximum heat protection.

Hat *with reversible suspension* lets you wear your hard hat backward without removing and reinstalling—just swing the suspension to the opposite side.

Full-Brim Style— A wide front-to-back brim provides added protection against sun, glare, splash, and rain.

			PINLOCK ADJUSTMENT						RATCHET ADJUSTMENT					
			Hard Hats Each			Repl. Suspensions Each			Hard Hats Each			Repl. Suspensions Each		
Suspension Points	Type	Class		1-5	6-Up		1-5	6-Up		1-5	6-Up		1-5	6-Up
Cap Style														
Polyethylene with Slots														
4	1	E	52645T43	$8.94	$7.61	52645T561	$7.19	$6.19	52645T47	$14.84	$13.01	52645T641	$11.78	$10.14
6	1	E	52645T25	8.26	7.08	52645T39	6.09	5.22	52645T27	14.47	12.40	52645T42	11.95	10.25
4	2	E	52645T76	25.52	21.60	52645T81	11.64	9.85	52645T77	32.09	27.15	52645T82	16.59	14.04
Large-Size Polyethylene with Slots—To Order: *Please specify color: blue, white, or yellow.*														
4	1	E	52645T45	10.84	10.12	52645T562	7.19	6.19	52645T49	17.81	15.61	52645T642	11.78	10.14
Imprinted Polyethylene with Slots— *Hard hats are available in white only.*														
6	1	E	54035T35	13.17	11.22	54035T68	5.80	4.94	54035T36	19.04	16.22	54035T74	9.61	8.19
Ventilated Polyethylene with Slots														
4	1	C	2130T1	10.98	9.29	5387T47	6.33	5.82	2130T2	17.04	14.42	5387T78	10.95	10.06
Polyethylene with Slots and Rain Trough														
4	1	E	5387T45	7.02	6.45	5387T47	6.33	5.82	5387T76	11.70	10.76	5387T78	10.95	10.06
Heat-Resistant Thermoplastic														
6	1	E	9131T23 ♦	48.41	40.96	9131T51	11.36	9.62	9131T63 ♦	55.11	46.50	9131T52	19.59	16.58
Thermoplastic with Slots and Reversible Suspension														
8	1	E	—	—	—	—	—	—	7223T4	22.76	20.27	7223T5	15.90	14.16
Full-Brim Style														
Polyethylene														
6	1	E	5385T1	13.40	12.13	5385T61	9.77	8.26	5385T15	17.90	16.25	5385T62	16.59	14.04

♦ Not available in green or high-visibility orange.

Hard Hat With Retractable Visor

The fully retractable visor on these hard hats fits easily over prescription glasses. Visor is 4¼″ Ht. × 10¾″ Wd. × 0.04″ Thick. and made of clear polycarbonate. Hard hats are ABS plastic with an extended nape for increased neck protection. They have ratchet suspension with sweat band and fit head sizes 6¾ to 7⅞.

Color	Suspension Points	Type		Each
Blue	6	1	1984T17	$43.20
White	6	1	1984T15	43.20
Yellow	6	1	1984T16	43.20
Replacement Visor			1984T21	11.68
Replacement Suspension			1984T31	19.88

Bump Caps

Just as their name implies, these caps protect your head from minor bumps and scrapes. They have a pinlock-adjustment suspension that consists of an interlocking strip with holes and a strip with pins.

Note: Caps and face shield do not meet ANSI standards.

Traditional

All are polyethylene.

Cap fits head sizes 6½-7¾.

Cap with face shield attachment lets you add a shield (sold separately) to protect your face from spray and dust. It fits head sizes 6½ to 8¼.

Face shield is 6″ Ht.×15½″ Wd.× 0.040″ Thick. clear PETG.

Color	Bump Caps	Each 1-9	Each 10-Up	Repl. Suspensions	Each 1-9	Each 10-Up
Caps						
Blue	9129T8	$5.25	$4.67	9129T15	$4.42	$3.93
Green	9129T7	5.25	4.67	9129T15	4.42	3.93
High-Visibility Orange	9129T9	5.25	4.67	9129T15	4.42	3.93
Orange	9129T3	5.25	4.67	9129T15	4.42	3.93
Red	9129T4	5.25	4.67	9129T15	4.42	3.93
White	9129T1	5.25	4.67	9129T15	4.42	3.93
Yellow	9129T2	5.25	4.67	9129T15	4.42	3.93
Caps with Face Shield Attachment						
Blue	9129T553	9.88	8.98	9129T31	4.50	4.09
White	9129T551	9.88	8.98	9129T31	4.50	4.09
Yellow	9129T552	9.88	8.98	9129T31	4.50	4.09
Face Shield	9129T56	Each 1-9	$3.52	10-Up	$3.13	

Baseball Cap Style

These sporty caps are made of polyester/cotton with a polyethylene shell insert.

Cooling vents and foam padding provide added comfort. Caps fit head sizes 7½ to 7¾.

Color		Each 1-5	Each 6-Up
Black	2759T38	$12.37	$11.16
Navy	2759T34	12.37	11.16
Red	2759T36	12.37	11.16

Sweatbands

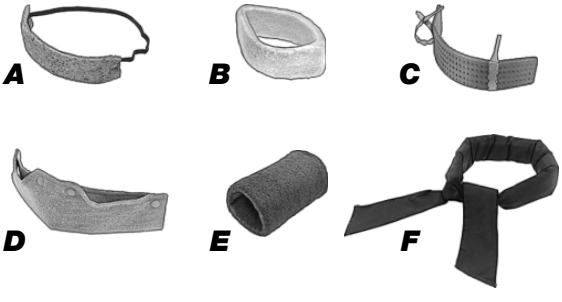

Cellulose bands have an additional absorbent layer for longer wear. Simply throw away after use.

Cotton terry bands absorb perspiration while providing maximum comfort. They're washable for reuse.

Elastic Headbands— Because they're not attached to your hat, you can position these bands where you want them.

Attachable Headbands— Fasten securely to the suspension of your hard hat or welding helmet.

Band and bandanas ***with cooling crystals*** keep you cool all day—just soak in cold water for 20 minutes.

Material	Color	Lg.	Pkg. Qty.		Per Pkg.
Headbands					
Elastic					
A Cellulose	Blue	8¼″	25	5565T11	$15.61
A Cellulose	Blue	8¼″	100	5565T3	45.57
A Cellulose	Blue	8″	25	5565T2★	16.60
B Cotton Terry	White	8″	1	5565T5	3.20
Elastic with Cooling Crystals					
B Cotton Terry	Navy	11″	1	5565T45	7.38
Attachable					
C Cellulose	Blue	8″	25	5565T7	18.72
D Cotton Terry	Beige	11″	1	5565T9	2.99
Wristbands					
Elastic					
E Cotton Terry	Gray	3½″	1	5565T64	2.48
E Cotton Terry	Navy	3½″	1	5565T62	2.48

★ Individually bagged.

Material	Color	Lg.		Each 1-5	Each 6-Up
Bandanas with Cooling Crystals					
F Cotton	Navy	34″	7123T48	$2.29	$2.05
F Cotton	Blue Denim	34″	7123T53	2.29	2.05
F Cotton	Red	34″	7123T55	2.29	2.05

Hard-Hat Cooling Pad

Keep a cool head while you work. This reusable pad is cotton with water-absorbent cooling crystals. Simply soak in cold water for 20 minutes and then fasten to your hard-hat suspension with the hook-and-loop straps. Color is navy.

2564T13 ..... **Each** 1-5 $4.22 6-Up $3.73

Hard-Hat Racks

Store hard hats out of your way. Made of gray powder-coated steel, these wire racks can be shaped to fit any hat.

Vehicle seat-back mount rack hooks over your seat.

Wall-mount rack has 3⁄16″ dia. mounting holes (fasteners not included).

Optional window kit includes three suction cups with fasteners to attach the wall-mount rack to a window.

Wall Mount

Rack Mounting Style		Each
Vehicle Seat-Back Mount	9701T15	$11.33
Wall Mount	9701T16	11.33
Optional Window Kit for Wall-Mount Rack	9701T17	7.54

Hard-Hat and Bump-Cap Decals

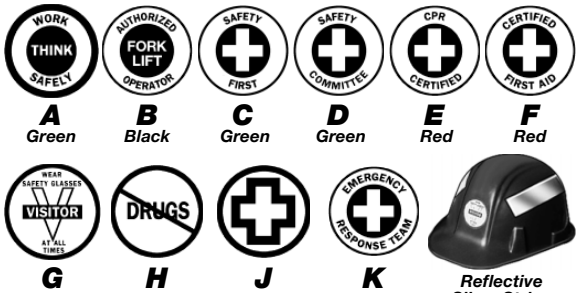

A Green | ***B*** Black | ***C*** Green | ***D*** Green | ***E*** Red | ***F*** Red

G Light Blue | ***H*** Red | ***J*** Green | ***K*** Red | ***Reflective Silver Stripe (Hard Hat Not Included)***

For hard hats, see page 1820.

To Order: For 2″ dia. decals, please specify letter.

	Pkg. Qty.		Per Pkg. 1-9	Per Pkg. 10-Up
2″ Dia. Decal	4	53985T3	$2.84	$2.56
1¼″×5″ Reflective Silver Stripe	5	53985T8	5.39	4.90

Hard-Hat Liners and Windsocks

Liners

Head Coverage

Head/Nape Coverage

Head/Nape/Collar Coverage

Add a layer of warmth to your hard hat. These liners fasten to the suspension of your hat and secure under your chin with hook-and-loop fasteners (unless noted).

Quilted nylon has foam fill and a smooth outer layer that blocks wind.

Outer Layer	Inner Layer		Each 1-11	12-Up
Head Coverage				
Beige Cotton Twill	Cotton Flannel	**9669T15**▲	$3.66	$3.33
Navy Cotton Twill	Acrylic Fleece	**9669T16**	5.38	4.89
Blue Quilted Nylon	Polyester Fleece	**5299T14**	5.04	4.58
Head/Nape Coverage				
Navy Cotton Twill	Acrylic Fleece	**9669T19**	6.24	5.67
Navy Cotton Twill	Cotton/Polyester Sherpa Fleece	**5299T12**■	13.82	12.59
Navy Cotton Twill	Polyester Fleece w/Thinsulate Layer	**7827T35**	8.95	8.10
Head/Nape/Collar Coverage				
Blue Cotton Twill	Polyester Sherpa Fleece	**9669T21**	9.36	8.51
Navy Cotton Twill	Polyester Fleece w/Thinsulate Layer	**7827T34**	14.87	13.45

▲ Ties under the chin. ■ Includes a removable face piece for extra warmth.

Windsocks

Ear Coverage

Ear/Face/Neck Coverage

Easily stretch these form-fitting socks over hard hats to provide warmth and protection from the wind. All are knit polyester and flame resistant until washed.

Fits Hard Hat Style(s)	Color		Each 1-5	6-Up
Ear Coverage				
Cap	Navy	**9102T11**	$4.23	$3.83
Cap	Red	**9102T12**	4.23	3.83
Full Brim	Red	**9102T14**	4.66	4.24
Ear/Face/Neck Coverage				
Cap and Full Brim	Navy	**9102T17**	6.63	5.94
Cap and Full Brim	Red	**9102T18**	6.63	5.94

Hoods

From the shoulders up, you're protected from nonhazardous particles and spray. All hoods have a clear window for easy viewing. They should be worn in ventilated areas and in conjunction with protective eyewear.

Tear-resistant Tyvek hood resists moisture and chemicals and has a reusable suspension. Includes one replacement hood.

Heavy canvas duck hood has an internal bump cap and mesh side/back vents. Perfect for abrasive blasting and grinding jobs.

	Hood Material	Window Size, Ht. × Wd.	Window Material		Each
A	Comfort Cotton Twill	3½″ × 5½″	Acetate	**9676T5**	$29.77
B	Tear-Resistant Tyvek	3⅛″ × 6⅜″	Vinyl	**9676T11**	91.75
C	Heavy Canvas Duck	3″ × 5″	Acrylic with Wire Mesh Screen	**5427T4**	91.00
Replacement Tear-Resistant Tyvek Hood Only				**9676T12**	26.63
Replacement Window for Heavy Canvas Duck Hood				**5427T41**	3.50

Hearing Protection Earmuffs

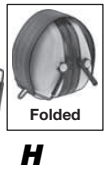

Slip on these earmuffs for quick, comfortable hearing protection. All have an adjustable headband, plastic ear cups, and foam ear cushions. Earmuffs should be worn in the position or positions that have an Noise Reduction Rating (NRR) listed in the table at right. For information about hearing protection, see page 1823.

Push-to-hear earmuffs allow you to safely hear conversation and announcements without removing them. Simply push the button to hear speech and other sounds for 30 seconds. Operate on one AA battery (not included).

	NRR, dB Over Head	Behind Head	Under Chin	Ear Cup Color		Earmuffs Each 1-4	5-Up		Repl. Cushions Per Pair 1-4	5-Up
Earmuffs— *Vinyl-covered spring-wire headband.*										
D	21	—	—	Beige	**9205T1**	$14.63	$13.30	**9205T4**	$12.58	$10.85
D	25	—	—	Yellow	**9205T6**	17.86	16.24	**9205T12**	12.35	10.65
D	27	—	—	Dk. Green	**9159T5**	26.59	22.93	**9159T7**	12.58	10.85
D	30	—	—	Black	**9206T2**	29.26	26.69	**9206T9**	14.35	12.94
D	30	—	—	Gray	**9206T3**	26.06	23.60	—	—	—
E	—	29	—	Black	**9206T6**	26.86	24.51	**9206T9**	14.35	12.94
Three-Position Earmuffs— *Plastic headband.*										
F	23	22	22	Green	**54375T11**	9.17	8.30	**54375T51**	4.18	3.79
G	25	26	25	Burgundy	**53425T21**	26.15	23.78	**53425T18**	8.56	7.61
G	27	25	25	Blue	**54375T35**	17.63	16.14	**54375T45**	10.09	9.06
G	29	27	27	Black	**53295T66**	24.94	22.58	**53295T68**	11.10	8.88
Fold-Up Earmuffs— *Vinyl-covered spring-wire headband.*										
H	21	—	—	Beige	**9205T3**	21.10	18.19	**9205T4**	12.58	10.85
Push-to-Hear Earmuffs— *Padded vinyl-covered steel headband.*										
J	26	—	—	Black	**53285T9**	47.59	44.18	**9159T7**	12.58	10.85
AA Battery								**65605T72**	Each	$0.68

About Hearing Protection

Earmuffs, earplugs, and ear caps are rated by the Noise Reduction Rating (NRR) guidelines, which are enforced by OSHA. The NRR of a hearing protector indicates its noise reduction capabilities measured in decibels (dB). The higher the NRR, the greater the noise reduction capability. The protectors on this and the previous page are tested in accordance with ANSI S3.19-1974.

For sound level meters, see page 1828.
For more information about decibel levels, see page 1840.

Caution: Prolonged exposure at or above 85 dB requires the use of hearing protection. The actual amount of protection depends on proper size and fit, the position in which the protector is worn, as well as your specific work environment.

Choosing a Hearing Protector

OSHA recommends that you choose a hearing protector with an NRR value that is two times the difference between your existing and desired noise level.

For example, if your noise level is 93 dB and you want your exposure to be no higher than 80 dB, the difference is 13 dB. You should choose a protector with an NRR of 26 dB or higher.

Earmuffs for Hard Hats with Slots

Designed to fit on a cap-style hard hat with slots, these earmuffs take just seconds to attach. They have plastic ear cups, spring-wire arms, and liquid-foam ear cushions for a tight seal. Hard hat sold separately.

Polyethylene hard hat with slots has a six-point ratchet suspension. **To Order:** Please specify hard hat color: blue, green, high-visibility orange, orange, red, white, or yellow. For more hard hats, see page 1820.

Hard Hat Sold Separately

NRR, dB	Ear Cup Color	Earmuffs	Per Pair 1-4	Per Pair 5-Up	Repl. Cushions	Per Pair 1-4	Per Pair 5-Up
23	Yellow	55095T13	$20.41	$18.45	9205T12	$12.35	$10.65
27	Black	55095T7	29.44	27.07	9206T9	14.35	12.94
Polyethylene Hard Hat with Slots (Type 1, Class E)		52645T27	Each 1-5	$14.47	6-Up	$12.40	

Earplugs

Our soft, pliable earplugs provide quick, convenient, and comfortable hearing protection. Choose from separate (unattached) pairs and corded (connected with a plastic cord, unless noted) pairs that can be worn around your neck when not in use. Pairs are individually packaged.

Disposable Earplugs— All are made of foam.

Roll-up plugs roll for insertion into your ear and then expand to conform to the shape of your ear canal. *Antimicrobial barrel* plugs protect against the growth of bacteria and mold. *Grip-ring* plugs have rings that keep plugs from backing out of your ear.

No-roll plugs slide right into your ear—no need to roll them up to use them. *Pod* plugs have a flexible plastic grip that makes them easy to insert and remove without touching the actual plug.

Reusable Earplugs— These washable plugs are made of soft plastic.

Metal-detectable plugs have an enclosed ball bearing that can be sensed by metal detectors. Good for food preparation and pharmaceutical processing areas.

Disposable

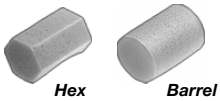

Hex *Barrel*

Grip Ring

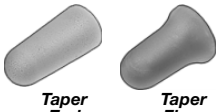

Taper End *Taper Flare*

Pod

Disposable Earplugs

	NRR, dB	Color	Separate Pairs/ Pkg.		Separate Per Pkg. 1-2	Separate Per Pkg. 3-Up	Corded Pairs/ Pkg.		Corded Per Pkg. 1-2	Corded Per Pkg. 3-Up
Roll-Up										
Hex	29	Orange	200	55845T25	$24.95	$22.46	—	—	—	—
Barrel	29	Yellow	25	54315T18	7.63	7.05	25	54315T27	$13.47	$12.35
Barrel	29	Yellow	200	54315T11	33.38	30.68	200	54315T14	66.62	60.98
Barrel	31	Yellow	200	2975T36	34.71	31.82	200	2975T38	65.41	59.96
Antimicrobial Barrel	29	White	200	7440T35	29.27	26.61	100	7440T37	35.79	32.71
Grip Ring	31	Yellow	—	—	—	—	200	3675T46	78.22	71.70
Taper End	33	Green	25	6207T53	8.54	7.76	25	6207T58	13.68	12.44
Taper End	33	Green	200	6207T57	33.93	30.84	100	6207T59	33.46	30.42
Taper Flare	33	Orange	200	54725T32	32.86	29.87	100	54725T34	31.08	28.25
No-Roll										
Pod	28	Yellow	100	53965T3	35.07	32.29	100	53965T6	57.68	53.11
Barrel	29	Orange	200	8074T3	24.42	22.20	100	8074T5	24.90	22.63

Reusable

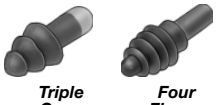

Triple Cone *Four Flange*

Reusable Earplugs

	NRR, dB	Color	Size	Pairs/ Pkg.	Separate Per Pair Partial Pkg.	Separate Per Pair Full Pkg.		Corded Per Pair Partial Pkg.	Corded Per Pair Full Pkg.
Triple Cone	25	Yellow	One Size	100	56135T2	$1.42	$1.26	56135T3	$1.72	$1.55
Triple Cone	27	Purple	One Size	50	56135T6	1.40	1.26	56135T7	1.94	1.75
Metal-Detectable Triple Cone	27	Blue	One Size	50	—	—	—	56135T8	2.31	2.08
Four Flange	27	Blue	One Size	100	54875T6	1.00	.91	54875T7	1.33	1.21
Four Flange	27	Green	Small	100	—	—	—	56105T61★	1.44	1.31
Four Flange	27	Blue	Large	100	—	—	—	56105T62★	1.44	1.31

★ Cord is nylon and detachable.

Banded Ear Caps

Lightweight and economical, these reusable foam ear caps are a great alternative to earplugs. They form a seal over the entrance to your ear canal but don't rest inside so they're a good choice for frequent on/off use. All caps have a flexible plastic band and are worn in the position or positions that have an NRR rating listed (see below).

Pod and ***flared cone*** caps include one pair of replacement caps.

Cone

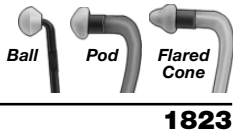

Ball *Pod* *Flared Cone*

	NRR, dB Behind Head	NRR, dB Under Chin	Cap Color	Band Color	Ear Caps	Each 1-9	Each 10-Up	Replacement Caps Pairs/ Pkg.		Per Pkg. 1-9	Per Pkg. 10-Up
Cone	17	20	Yellow	Blue	54975T1	$7.81	$7.19	5	54975T2	$36.06	$32.95
Ball	—	17	Yellow	Blue	55245T8	5.07	4.67	5	55245T9	14.06	12.84
Pod	—	23	Orange	Red	55085T3	5.10	4.62	1	55085T5	2.77	2.44
Flared Cone	—	25	Orange	Orange	53895T8	5.10	4.62	1	53895T9	2.77	2.49

Earplug Dispensers

With Earplugs

Reusable Open Top

Reusable Closed Top

Keep ear plugs accessible to workers as well as visitors.

Dispenser with earplugs is sealed to keep plugs sanitary and is disposable when empty. It dispenses one separate pair at a time, cutting down on waste. Dispenser is recyclable plastic and includes mounting hardware. Plugs are foam roll-up barrel style with an NRR of 33 dB. Color is green. Meet ANSI S3.19-1974. For information about hearing protection, see page 1823.

Reusable dispensers are clear acrylic and have 3/16″ dia. mounting holes (fasteners not included). Fill with the plugs of your choice.

	Overall Size, Ht.×Wd.×Dp.	Ear Plug Capacity		Each
Dispenser with Earplugs				
Sealed	9½″× 6″×6″	250 pairs	5679T1	$41.18
Reusable Dispensers				
Open Top	3″ × 9″×6″	40 pairs	54925T45	35.66
Closed Top	13″ ×12″×8″	200 pairs	54925T55	76.88

Disposable Respirator Masks

A

B

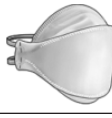

C

D

E

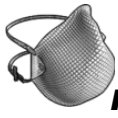

F

G

H

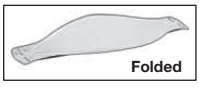

Folded

Breathe easily with these maintenance-free respirator masks, and simply throw them away after use.

Masks with a *mesh shell* hold their shape in heat and humidity. Masks with *exhale valve* reduce breathing resistance and hot air buildup.

Efficiency standards are certified by the National Institute for Occupational Safety and Health (NIOSH).

Style C mask has a large surface area and low breathing resistance, which creates a comfortable fit and extends the life of the mask.

Styles F and ***G*** have a comfort strap. When mask is not in use, just unbuckle the strap and let the mask hang loosely around your neck.

	Filters Out: Airborne Particles	Filters Out: Organic Vapors	Filters Out: Acid Gases	Features	NIOSH Approval	Pkg. Qty.		Per Pkg. 1-4	Per Pkg. 5-Up
N95 Filter—*Filters 95% of airborne particles. Not oil resistant.*									
A	Yes	—	—	Adjustable nosepiece	TC-84A-160	10	5450T18	$12.35	$11.05
A	Yes	—	—	Adjustable nosepiece	TC-84A-0007	20	5450T42	20.74	19.04
B	Yes	—	—	Mesh shell	TC-84A-0327	5	5450T24	9.04	8.13
B	Yes	—	—	Mesh shell	TC-84A-0327	20	5450T12	20.45	18.83
C	Yes	—	—	Adjustable nosepiece, folds flat	TC-84A-2669	20	7795T32	28.50	26.08
D	Yes	—	—	Mesh shell, exhale valve	TC-84A-0328	5	5450T25	16.97	15.37
D	Yes	—	—	Mesh shell, exhale valve	TC-84A-0328	10	5450T23	25.24	23.17
D	Yes	Yes	—	Mesh shell, exhale valve	TC-84A-0883	10	5450T35	41.57	38.17
D	Yes	—	Yes	Mesh shell, exhale valve	TC-84A-2006	10	5450T38	43.19	39.65
E	Yes	—	—	Adjustable nosepiece, exhale valve, face seal	TC-84A-1299	10	5450T16	32.54	30.03
E	Yes	—	Yes	Adjustable nosepiece, exhale valve	TC-84A-1299	10	5450T27	41.37	38.19
F	Yes	—	—	Comfort strap, mesh shell	TC-84A-0013	15	5450T14	24.52	21.97
G	Yes	—	—	Comfort strap, mesh shell, exhale valve	TC-84A-0120	10	5450T15	32.75	29.83
G	Yes	Yes	—	Comfort strap, mesh shell, exhale valve	TC-84A-3002	4	5450T26	22.23	20.21
N99 Filter—*Filters 99% of airborne particles. Not oil resistant.*									
D	Yes	—	—	Mesh shell, exhale valve	TC-84A-1459	10	5450T65	36.60	33.78
N100 Filter—*Filters 99.97% of airborne particles. Not oil resistant.*									
H	Yes	—	—	Adjustable nosepiece, exhale valve, face seal	TC-84A-1298	1	5450T28	9.49	8.76
R95 Filter—*Filters 95% of airborne particles. Oil resistant for up to 8 hours.*									
A	Yes	—	—	Adjustable nosepiece	TC-84A-1350	20	5450T72	32.36	29.87
A	Yes	Yes	—	Adjustable nosepiece	TC-84A-1350	20	5450T45	74.23	68.52
A	Yes	—	Yes	Adjustable nosepiece	TC-84A-1350	20	5450T44	74.23	68.52
G	Yes	—	—	Comfort strap, mesh shell, exhale valve	TC-84A-3331	10	5450T67	32.34	29.69
G	Yes	Yes	—	Comfort strap, mesh shell, exhale valve	TC-84A-3321	10	5450T19	49.09	45.00
G	Yes	—	Yes	Comfort strap, mesh shell, exhale valve	TC-84A-3174	10	5450T22	49.74	46.05
P95 Filter—*Filters 95% of airborne particles. Oil resistant for up to 8 hours.*									
E	Yes	Yes	—	Adjustable nosepiece, exhale valve	TC-84A-1166	10	5450T49	47.51	43.86
E	Yes	—	Yes	Adjustable nosepiece, exhale valve	TC-84A-1166	10	5450T47	47.30	43.66
P100 Filter—*Filters 99.97% of airborne particles. Oil resistant for 8 hours or longer.*									
H	Yes	—	—	Adjustable nosepiece, exhale valve, face seal	TC-84A-2561	1	5450T13	10.72	9.90

Disposable Nuisance Dust Mask

Slip on this mask for relief from dust irritation. Mask conforms to your face and has an adjustable metal nosepiece.

Warning: Designed for use against nuisance dust only. Mask is not NIOSH approved. Do not use for spray painting or for protection against silica, asbestos, or other harmful substances.

	Pkg. Qty.	Per Pkg. 1-11	Per Pkg. 12-Up
55815T61	50	$7.66	$6.96

Disposable-Mask Dispenser

Keep masks clean and ready to use in this clear acrylic dispenser. It stores approximately 30-40 masks, depending on size. Dispenser is 12½″ Ht. ×6″ Wd.×6″ Dp. and has 3/8″ dia. holes for wall mounting (fasteners not included).

11885T14 ..... **Each** $60.63

Low-Profile Respirator Mask

Designed to fit easily under welding helmets, this respirator has a large surface area, which minimizes breathing resistance. Separate intake and outflow channels keep exhaled air from saturating the filter, so air remains cool and dry. Fitted with an N99 filter, mask filters 99% of airborne particles; not oil resistant.

	NIOSH Approval		Each 1-9	Each 10-Up
Respirator	TC-84A-2460	53565T2	$13.89	$12.75
Replacement N99 Filter (2/Pkg.)		53565T5	Per Pkg.	$7.71

Disposable Respirators

No maintenance worries with these respirators—when you're done, simply throw them away. Respirators have a half facepiece made of soft, comfortable thermoplastic. The cradle-suspension head support reduces slippage for a secure fit. **To Order:** Please specify facepiece size: small, medium, or large (unless noted).

R95 respirator filters 95% of airborne particles; oil resistant for up to 8 hours. *P100* respirator filters 99.97% of airborne particles; oil resistant for 8 hours or longer.

	NIOSH Approval		Each 1-4	Each 5-Up
For Organic Vapors	TC-23C-1038	55865T31♣	$21.32	$19.38
For Organic Vapors, Acid Gases	TC-23C-1042	55865T35♣	21.81	19.93
For Organic Vapors; With R95 Filter	TC-84A-4188	55865T71	29.16	26.51
For Organic Vapors, Ammonia, Methylamine, Acid Gases, and Formaldehyde	TC-23C-1733	55865T11	26.73	24.06
For Organic Vapors, Ammonia, Methylamine, Acid Gases, and Formaldehyde; With P100 Filter	TC-84A-0253	55865T52	34.53	31.55

♣ Not available in small.

Lightweight Cartridge Respirators

Made of lightweight silicone, these respirators conform to your face for extended-wear comfort.

Half Facepiece— **To Order:** Please specify size: small, medium, or large (unless noted).

Full Facepiece— Respirators have five-strap headgear and a polycarbonate lens.

N95 respirator filters 95% of airborne particles; not oil resistant. *P100* respirator filters 99.97% of airborne particles; oil resistant for 8 hours or longer.

Half Facepiece

Full Facepiece

	NIOSH Approval, Half/Full Facepiece	Half-Facepiece Respirators	Each	Full-Facepiece Respirators	Each	Repl. Cartridges Pkg. Qty.		Per Pkg.
With N95 Filter	TC-84A-1426/1419	5541T14♣	$31.82	5541T34	$124.76	—	—	—
For Organic Vapors	TC-23C-287/1782	5541T15♣	31.14	5541T35	128.07	6	5541T42	$38.74
For Organic Vapors; With N95 Filter	TC-84A-1427/1420	5541T16	36.40	5541T36	135.87	6	5541T42★	38.74
For Organic Vapors, Acid Gases	TC-23C-0318/1784	5541T17♣	32.71	5541T37	128.07	6	5541T44	39.82
For Organic Vapors, Acid Gases; With P100 Filter	TC-84A-0443/0879	5541T18	40.86	5541T38	140.71	4	5541T45	53.30
For Ammonia, Methylamine	TC-23C-422/1785	5541T19♣	32.71	5541T39	134.56	6	5541T46	43.88

♣ Not available in small. ★ See accessories for replacement N95 filter.

	Pkg. Qty.		Per Pkg.
Accessories			
Disposable Adhesive-Backed Clear Lens Cover for Full-Facepiece Respirators	25	5541T53	$42.91
Replacement N95 Filter	24	5541T47	36.80
Replacement Inhale Valve	6	5541T55	6.84
Replacement Exhale Valve	4	5541T54	19.36
Replacement Filter Cover for 5541T14, T34, T16, and T36	2	5541T56	5.43

Ultrasoft Cartridge Respirators

For the maximum in comfort, these premium respirators have a half facepiece made of ultrasoft silicone. All have a perspiration relief port in the facepiece to reduce moisture buildup and prevent slippage. **To Order:** Please specify size: small, medium, or large.

N95 respirator filters 95% of airborne particles; not oil resistant. Replacement cartridge also requires a replacement filter (sold separately). *P100* respirator filters 99.97% of airborne particles; oil resistant for 8 hours or longer.

	NIOSH Approval	Respirators	Each	Repl. Cartridges Pkg. Qty.		Per Pkg.	Repl. Filters Pkg. Qty.		Per Pkg.
With P100 Filter	TC-84A-236	54445T211	$38.76	—	—	—	10	54445T18	$60.25
For Organic Vapors	TC-23C-737	54445T17	38.65	6	54445T108	$35.25	—	—	—
For Organic Vapors; With N95 Filter	TC-84A-629	54445T171	44.89	6	54445T108	35.25	24	54445T118	37.52
For Organic Vapors; With P100 Filter	TC-84A-238	54445T8	49.91	4	54445T109	48.15	—	—	—
For Organic Vapors, Acid Gases	TC-23C-736	54445T19	39.08	6	54445T115	45.47	—	—	—
For Organic Vapors, Acid Gases; With P100 Filter	TC-84A-242	54445T95	50.42	4	54445T116	49.33	—	—	—
For Ammonia, Methylamine	TC-23C-735	54445T22	40.13	6	54445T117	40.55	—	—	—

Replacement Filter Cover for 54445T171 (2/Pkg.) ..... 54445T81 Per Pkg. $4.76

Tear-Resistant Half-Facepiece Cartridge Respirators

Rubber construction gives these respirators the strength and durability to resist tears yet allows them to remain flexible for a better fit. **To Order:** Please specify facepiece size: small, medium, or large.

N95 respirator filters 95% of airborne particles; not oil resistant. *P100* respirators filter 99.97% of airborne particles; oil resistant for 8 hours or longer.

	NIOSH Approval	Respirators	Each	Repl. Cartridges Pkg. Qty.		Per Pkg.	Repl. Filter Pkg. Qty.		Per Pkg.
With N95 Filter	TC-84A-0290	9100T16	$42.60	—	—	—	10	9100T11	$17.62
For Organic Vapors	TC-23C-0040	9100T54	46.27	10	9100T72	$67.09	—	—	—
For Organic Vapors; With P100 Filter	TC-84A-0162	9100T18	56.31	6	9100T21★	80.05	—	—	—
For Organic Vapors, Acid Gases	TC-23C-0047	9100T55	46.27	10	9100T73	64.93	—	—	—
For Organic Vapors, Acid Gases; With P100 Filter	TC-84A-0164	9100T17	56.31	6	9100T19★	80.05	—	—	—

Replacement Filter Cover for 9100T16 ..... **9100T53** **Each** $3.91

★ Replacement cartridge includes P100 filter.

Replacement Cartridges and Filters for 3M Respirators

These cartridges and filters are for use with 3M respirators only.

N95—Filters 95% of airborne particles; not oil resistant.

P95—Filters 95% of airborne particles; oil resistant for up to 8 hours.

P100—Filters 99.97% of airborne particles; oil resistant for 8 hours or longer.

	3M Part No.	Pkg. Qty.		Per Pkg.
Cartridges				
For Organic Vapors	6001	2	5834T11	$11.23
For Organic Vapors; With P100 Filter	60921	2	5834T22	26.13
For Acid Gases	6002	2	5834T66	12.80
For Organic Vapors, Acid Gases	6003	2	5834T32	12.36
For Organic Vapors, Acid Gases; With P100 Filter	60923	2	5834T73	24.61
For Ammonia, Methylamine; With P100 Filter	60924	2	5834T45	27.23
For Multigases, Vapors	6006	2	5834T86	13.63
For Multigases, Vapors; With P100 Filter	60926	2	5834T55	25.53
Filters				
P95 Filter	2071	2	5834T63	4.57
P100 Filter	2091	2	5834T68	7.84
N95 Prefilter	5N11	10	5834T24	15.63
Accessories				
Filter Retainer	501	1	5834T17	2.25
Filter Adapter	502	1	5834T38	2.74

Respirator Accessories

Wipes

Disposable Hood for Half Facepiece

Fit Test Kit

Wipes quickly clear perspiration from your respirator. You'll get 100 individually wrapped 70% isopropyl alcohol pads.

52735T21 ..... **Per Pkg.** $15.83

Cartridge respirator storage bags are reusable and keep your respirators clean when not in service.

Disposable hoods protect your head, face, and neck from dust, paint, and other chemicals. Hood for *half facepiece* has an 11″×3″ clear PVC window for eye protection. An elastic opening exposes the respirator cartridge and exhalation valve to eliminate fogging. Hood for *full facepiece* has an elasticized face opening that wraps around the respirator lens and underneath the cartridge, covering the user's head.

	For Facepiece Style		Each
Cartridge Respirator Storage Bags			
Clear Polypropylene, 14″×16″	Half and Full	1440T4	$6.62
Black Nylon, 7″×6″	Half	1440T6	9.43
Black Nylon, 9″×6″	Full	1440T8	10.38
Disposable Hoods			
Tyvek	Half	1496T15	4.15
Tyvek	Full	1496T18	4.07

Fit test kit contains banana oil and everything else you need to perform up to 50 OSHA-accepted qualitative fit tests on your respirators.

Note: Respirators must be equipped with an organic vapor cartridge.

		Each
Fit Test Kit	52805T41	$77.57
Replacement Banana Oil (50 tests)	52805T42	42.08

Supplied-Air Respirators

If you can access a breathable air source, you can use these cartridge-free respirators. Because you don't need to draw air through a filter or cartridge, resistance and fatigue are minimized. All respirators require 6-15 cfm of air. To maintain NIOSH approval, respirators must be used with the hoses listed. Maximum hose length allowed is 300 ft.

Respirators ***for air lines*** connect to in-plant breathable air lines. Air connection is a 1/4″ industrial shape quick-disconnect coupling (see page 298 for more information).

Respirators ***for air pumps*** connect to air pumps (sold separately on page 1827) and have a 1/2″ industrial shape quick-disconnect coupling.

Chemical-Resistant Hood Respirators

Hood is poly-coated Tychem QC with a sewn-in 16″×6″ acetate lens and has two layers: an outer bib for overspray protection and an inner bib that tucks into your clothing for extra splash protection. Furnished with a pinlock suspension that fits head sizes 6 1/2 to 8, a breathing tube, an air hose, and a nylon belt. Hood accommodates eye and ear protection. NIOSH approval is TC-19C-154 Type C.

Disposable clear lens cover has an adhesive back.

	For Air Lines Hose Lg., ft.		Each	For Air Pumps Hose Lg., ft.		Each
Respirator	25	9770T7	$199.74	50	9770T8	$258.05
Exten. Hose	25	5370T33	103.13	50	9770T13	172.53
Exten. Hose	50	5370T34	169.07	100	9770T14	280.58

Disposable Clear Lens Cover (5/Pkg.) ..... **54515T26** **Per Pkg.** $7.62

Replacement Parts

Hood	9770T9	**Each**	$40.61
Pinlock Suspension	9770T3	**Each**	$11.15

Heavy Duty Helmet Respirators with Nylon Cape

The high-density polyethylene helmet has an inner and outer 14″×5″ acetate lens. Attached to the helmet is a waist-length polyurethane-coated nylon cape and a tube assembly with a belt for securing breathing tube. Furnished with an inner helmet shell attached to a pinlock suspension that fits head sizes 6 1/2 to 8; disposable adhesive-backed clear outer lens cover; and air hose.

NIOSH approval is TC-19C-293 Type C and CE.

Helmet meets ANSI Z89.1-2003 Class C standards; inner lens meets ANSI Z87.1-1989 impact standards.

	For Air Lines Hose Lg., ft.		Each	For Air Pumps Hose Lg., ft.		Each
Respirator	25	10615T11	$669.66	100	10615T12	$734.09
Exten. Hose	25	5370T33	103.13	50	9770T13	172.53
Exten. Hose	50	5370T34	169.07	100	9770T14	280.58

Replacement Parts

Nylon Cape	10615T24	**Each**	$132.16
Acetate Inner Lens	10615T21	**Each**	$2.26
Breathing Tube	10615T31	**Each**	$81.28
Inner Helmet Shell and Pinlock Suspension	10615T35	**Each**	$28.68
PETG Outer Lens (10/Pkg.)	10615T29	**Per Pkg.**	$5.71
Clear Outer Lens Cover (10/Pkg.)	10615T32	**Per Pkg.**	$13.24

Vortex Cooling Tube for Air Line Respirators

Cool incoming air by as much as 30° F. Tube has a control valve for temperature adjustment and is for use with 9770T7 and 10615T11 only.

9770T75 ..... **Each** $208.55

Supplied-Air Respirator Pumps

With Open Dripproof Motor

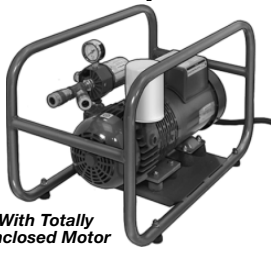

With Totally Enclosed Motor

Connect one of these oil-free portable pumps to your full-hood, helmet, or half- and full-facepiece respirators for a continuous supply of low-pressure breathable air. Air connection is a ½″ industrial shape quick-disconnect coupling (see page 298 for more information).

Maximum supply pressure is 15 psi. Maximum hose length allowed is 300 ft. Motor operates on 115 VAC, 60 Hz and has an 8-ft. cord with three-prong plug.

Airflow @ 5 psi	Amps	Supplies No. of Respirators: Full Hood	Helmet	Half/Full-Facepiece		Each
With Open Dripproof Motor—3/4 hp						
10 cfm	10.8	1 or	1 or	2	56825T66	$1,002.03
With Totally Enclosed Motor—1 1/2 hp						
16 cfm	16	2 or	2 or	3	56825T67	1,904.54
Replacement Inlet Filter					56825T81	20.89
Replacement Outlet Filter Cartridge					56825T82	25.27

Supplied-Air Respirator with Pump

Hood

Full Facepiece

Take fresh air with you. The portable pump on these respirators provides a continuous supply of clean air for one person. Respirators include a 50-ft. air line hose and 25 clear, adhesive-backed disposable lens covers. Pump has an open dripproof, ¾-hp motor that operates on 115 VAC, 60 Hz and has an 8-ft. cord with three-prong plug.

To maintain NIOSH approval, these respirators must be used with the hoses listed. Maximum hose length allowed is 300 ft.

Full-facepiece respirator is silicone with a 7″×10″ polycarbonate lens. NIOSH approval is TC-19C-322.

Hood respirator has a chemical resistant Tychem QC hood with a 6″×16″ acetate lens. Accommodates eye and ear protection. NIOSH approval is TC-19C-154.

Extension hose attaches to the pump's outlet to give the user a wider range of movement.

	Airflow @ 5 psi		Each
Full-Facepiece Respirator	10 cfm	54515T1	$1,018.88
Hood Respirator	10 cfm	54515T2	1,001.67
Accessories			
50-ft. Extension Hose		9770T13	172.53
100-ft. Extension Hose		9770T14	280.58
Repl. Polycarbonate Lens for 54515T1		54515T13	72.78
			Per Pkg.
Repl. Lens Covers for 54515T1 (5/Pkg.)		54515T25	$8.01
Repl. Lens Covers for 54515T2 (5/Pkg.)		54515T26	7.62

Portable Single-Gas Detectors

Detector

Don't be fooled by their size—these compact, portable units can detect hazardous gases in seconds. They have an LCD, an audible alarm with a rating of 95 dB, a high-intensity LED light that brightens when the alarm sounds, and a belt clip. Temperature range is –4° to +122° F. For use in Class 1, Division 1, Groups A, B, C, and D locations.

A calibration check must be performed on the detector before each use to verify that it is working properly. The calibration test for *carbon monoxide* and *hydrogen sulfide* detectors requires a regulator, tubing, and specific gas cylinder (sold separately).

Detectors are 3½″ Ht.×2″ Wd.×1″ Dp. and have a vibration alarm. They operate on one nonreplaceable lithium battery (included) and should be thrown away at the end of their two-year lifespan.

Detectors with replaceable battery are 3½″ Ht.×2″ Wd.×1″ Dp. and operate on one lithium battery (included).

Detects	Detectors: Measuring Range	Each	Detectors with Replaceable Battery: Measuring Range	Each	Gas Cylinder	Each
Oxygen	0-25% Vol.	18995T81 $251.61	0-25% Vol.	18995T92 $407.37	—	—
Carbon Monoxide	0-500 ppm	18995T83 251.61	0-1,500 ppm	18995T94 407.37	18995T923	$220.07
Hydrogen Sulfide	0-100 ppm	18995T85 251.61	0-200 ppm	18995T96 407.37	18995T924	207.00
Replacement Lithium Battery					7821K62	Each $11.00
Calibration Regulator for Carbon Monoxide and Hydrogen Sulfide Detectors					18995T916	Each $207.00
Calibration Tubing for Carbon Monoxide and Hydrogen Sulfide Detectors					18995T935	Each $8.89

Portable Multigas Detectors

Detect the presence of combustible gases (such as acetone, butane, hydrogen, methane, pentane, propane, and toluene), oxygen, carbon monoxide, and hydrogen sulfide. These detectors have an LCD and a rubberized housing. Three types of signals indicate the presence of gases: an audible alarm rated at 95 dB, a visual alarm (flashing light), and a vibration alarm. There is also a motion sensor that sounds an alarm if the user becomes disabled. Detectors are 4⅜″ Ht.×3″ Wd.×1⅜″ Dp. and operate on a rechargeable lithium ion battery (included). Temperature range is –4° to +122° F. ETL listed for Class 1, Div. 1, Groups A, B, C, and D and Class 2, Div. 1, Groups F and G hazardous locations. IP 67 rated.

Detector requires a calibration regulator and cylinder (sold separately).

Detector with sampling probe and tubing allows you to test the air in a hazardous area before entering. Great for confined spaces. Probe operates on two AA batteries (included). Tubing is 25 ft. long.

Calibration regulator and ***calibration cylinder*** maintain the accuracy of the detector. A calibration check must be performed on the detector before each use.

Detects	Measuring Range
Combustible Gases	0-100% LEL ♦
Oxygen	0-30% Vol.
Carbon Monoxide	0-1,999 ppm
Hydrogen Sulfide	0-200 ppm

♦ LEL = lower explosive limit.

		Each
Detector	18995T42	$799.07
Detector with Sampling Probe and Tubing	18995T43	1,323.21
Calibration Regulator	18995T35	303.43
Calibration Cylinder	18995T47	254.00
Repl. AA Battery for Probe (4/Pkg.)	71455K53	Per Pkg. $2.94

Wall-Mount Combustible Gas Detector

An audible alarm alerts you to the presence of combustible gases. Detects propane, methane, hydrogen, and carbon monoxide. Alarm sounds at 420 ppm for propane, 5,000 ppm for methane, 200 ppm for hydrogen, and 150 ppm for carbon monoxide. A built-in programmable timer can be set to sound the alarm as soon as gas is detected or after 4 or 8 minutes of continuous exposure. Reset button suspends the alarm and restarts the cycle for 5 to 8 minutes in case of false alarm. Detector includes a relay for connection to auxiliary sirens and alarm systems. It also has a 6-ft. cord with two-prong plug and a 120 VAC, 60 Hz adapter for a 12 VDC output. Mounting fasteners are not included.

Also Available: Single-gas detectors. Please ask for 6631T4 and specify propane, methane, carbon monoxide, or hydrogen.

Alarm, dB	Ht.×Wd.×Dp.	Temperature Range	Mount. Hole Dia.		Each
85 @ 6 ft.	6¾″×3¼″×1¾″	–20° to +120° F	3/16″	6631T18	$274.65

Hydrogen Gas Detector

Great for lead-acid battery-charging rooms, this detector senses hydrogen gas in the surrounding air. The two relays are normally open and rated for 10 amps @ 250 VAC.

When hydrogen concentration reaches 1% by volume, a yellow "caution" LED illuminates and the first relay closes to trigger a remote exhaust fan and/or alarm. When hydrogen reaches 2%, a red "danger" LED illuminates, an 80 dB @ 1 ft. alarm sounds, and the second relay closes to activate your remote alarm. Operates on 110/220 VAC, 50/60 Hz and has a terminal box for hardwiring. Detector is 7″ Ht. × 4¾″ Wd. × 2½″ Dp. and has 3/16″ dia. holes for wall mounting (fasteners not included). Temperature range is 14° to 104° F.

Optional remote with buzzer and *25-ft. cable for remote* enables you to monitor the detector from a distance. Remote has the same LED indicators as the detector plus a buzzer rated 80 dB @ 4 feet. Has two 3/16″ dia. holes for wall mounting (fasteners not included).

		Each
Detector	71095K71	$590.91
Optional Remote with Buzzer	71095K24	153.85
25-ft. Cable for Optional Remote	5703T411	5.80

Static Charge Detector

Locate and accurately measure static charges. This unit detects field potentials up to 22 kV at 1″; higher voltages may be measured at distances greater than 1″. A hold button freezes the digital display for recording measurements.

Detector is 4⅞″ Ht. × 2⅞″ Wd. × 1″ Dp., operates on one 9-volt battery (included), and comes with a carrying case. Temperature range is 50° to 104° F.

		Each
Detector	6605T63	$592.31
Replacement 9-Volt Battery	71455K56	2.75

Stick-On Carbon Monoxide Indicator

Place this adhesive-backed indicator anywhere you want to monitor carbon monoxide levels. Indicator is a 0.6″ dia. yellow circle that darkens when carbon monoxide levels reach 50 ppm (the OSHA standard for maximum continued exposure). Replace the indicator with a refill every 30 days. Unopened indicator and indicator refill have a shelf life of 6 to 12 months. Overall size is 2⅜″ dia. Temperature range is 50° to 122° F.

		Each 1-5	Each 6-Up
Indicator	1085T61	$5.59	$4.82
Indicator Refill	1085T75	3.26	2.82

Indoor Air-Quality Monitor

Track indoor ventilation quality to prevent "sick building" syndrome. This monitor has an easy-to-read LCD that shows carbon dioxide (CO_2) levels in 10 seconds. It's accurate to ±50 ppm or ±5% of reading (up to 5,000 ppm), whichever is greater. Plus, it measures the temperature between 32° and 122° F (0° to 50° C). Monitor is 6¼″ Ht. × 3″ Wd. × 1½″ Dp. and operates on four AA batteries (not included). It also includes a 120 VAC, 60 Hz (0.05 amp) AC adapter with 6-ft. cord and two-prong plug. Monitor comes calibrated but must be recalibrated every 12 months.

Calibration kit includes instructions, tubing assembly, gas regulator with gauge, and carrying case.

	Measuring Range, ppm		Each
Carbon Dioxide Monitor	0-10,000	39035K69	$568.36
Calibration Kit		39035K83	248.98
AA Battery (4/Pkg.)		71455K53	Per Pkg. $2.94

Sound Level Meters and Monitor

40 to 130 dB Meter

35 to 130 dB Meter

All of these units have selectable A and C scales to adjust the frequency response. The A scale is similar to the response of the human ear and is used by OSHA. The C scale is suitable for measuring the sound level of machinery. Meters and monitor ***with NIST certificate*** include a certificate of calibration traceable to the National Institute of Standards and Technology (NIST).

Calibrator verifies and calibrates meter and monitor operation.

Meters have an easy-to-read LCD and include a microphone. *35 to 130 dB meters* meet ANSI S1.4-1983 and include a carrying case.

Monitors let you keep an eye on noise levels. The large LCD alerts you when levels exceed your programmed setpoint. Monitors have a time stamp and an attached microphone that rotates 180°. When operating the monitors with the included 120 VAC adapter, four LEDs indicate when the sound level either exceeds or falls below the setpoint. Wall mount using the ½″ dia. hole (fastener not included) or bench mount with the attached fold-away stand. Meet ANSI S1.4-1983.

Remote microphone cable allows you to use the microphone up to 15 ft. from the display.

Remote alarm relay allows you to wire a warning light (sold separately on pages 1870-1872) to illuminate when the sound level exceeds the setpoint. Relay has a 9-ft. cable and is rated for 10 amps @ 280 VAC.

Monitor

Calibrator

Range, dB	Accuracy, dB	Ht. × Wd. × Dp.	Batteries	Without NIST Certificate	Each	With NIST Certificate	Each
Meters							
40 to 130	±2	9″ × 2¼″ × 1¾″	Four AAA (Included)	10235T72	$98.17	10235T73	$187.44
35 to 130	±1.5	9½″ × 3″ × 1″	One 9-volt (Included)	55935T39	268.95	55935T4	367.43
Monitors							
30 to 130	±1.5	8¾″ × 7″ × 1¼″	Eight AA (Not included)	6768T15	272.71	6768T16	372.72

		Each
Accessories		
Calibrator for Meters and Monitors (Includes two 9-volt batteries)	55935T46	$320.67
Remote Microphone Cable for Monitors (15 ft.)	6768T37	35.98
Remote Alarm Relay for Monitors	6768T42	114.53
Replacement AAA Battery	65605T71	.79
Replacement 9-Volt Battery	71455K56	2.75
AA Battery (4/Pkg.)	71455K53	Per Pkg. $2.94

Protective Pads

Silica Pad

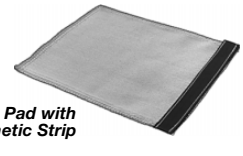

Silica Pad with Magnetic Strip

Take these pads to your spot-welding jobs to protect walls, glass, and fabric from heat and flame. Maximum temperature is 1800° F.

Silica cloth pad has two grommets for tacking pad to a wall.

Attach ***pads with magnetic strip*** to protect metal surfaces.

Material	Ht. × Wd.	Thick., mils	oz./sq. yd.	Color	Pads	Each	Pads with Magnetic Strip	Each
Silica Cloth	10″ × 8″	54	36	Beige	2962K34	$11.25	2962K36	$18.89
Carbon Fiber	18″ × 18″	200	16	Black	2962K49	19.04	2962K51	18.51

See-Through Antistatic Curtains

The lattice-patterned carbon lines on one side of these curtains ground electrical charges to eliminate static. Curtains are clear vinyl, 12 mils thick, 14 oz./sq. yd., and have grommets on 8″ centers along the top. Maximum temperature is 120° F. Surface resistivity is 2×10^7 ohms/sq. in. Meet NFPA (National Fire Protection Association) requirements for recommended safe practice for operating rooms.

Ht. × Wd.		Each	Ht. × Wd.		Each
5 ft. × 6 ft.	52365T52	$82.54	6 ft. × 6 ft.	52365T61	$99.05
5 ft. × 8 ft.	52365T53	110.05	6 ft. × 8 ft.	52365T62	123.81
5 ft. × 10 ft.	52365T54	128.97	6 ft. × 10 ft.	52365T63	148.57

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes—To Order: Please specify height and width.

52365T75 ..... **Per Sq. Ft.** $3.10

Protective Curtains

Moisture-resistant cotton duck curtains are flame, water, and mildew resistant. They're 30 mils thick, 15 oz./sq. yd. Max. temperature is 200° F. Curtains have grommets on 12″ centers along all sides. Color is olive green. Meet Canvas Products Association International CPAI-84.

Oil-resistant polyester curtains are vinyl coated to hold up against oils and alkalies. They're 14 mils thick, 13 oz./sq. yd. Maximum temperature is 150° F. Curtains are washable and have grommets on 12″ centers across the top and 24″ centers along either side. California Fire Marshal approved. ***To Order:*** Please specify color: black, blue, tan, white, or yellow.

Note: The finished size of all curtains will be slightly smaller due to hemming.

Moisture-Resistant Cotton Duck

Ht. × Wd.		Each	Ht. × Wd.		Each
3 ft. × 6 ft.	6725T11	$19.48	6 ft. × 10 ft.	6725T22	$60.42
4 ft. × 4 ft.	6725T12	17.32	8 ft. × 6 ft.	6725T56	51.98
4 ft. × 6 ft.	6725T13	26.00	8 ft. × 8 ft.	6725T23	64.47
4 ft. × 8 ft.	6725T14	34.65	8 ft. × 10 ft.	6725T3	76.98
5 ft. × 6 ft.	6725T15	32.48	10 ft. × 6 ft.	6725T9	60.42
5 ft. × 8 ft.	6725T16	42.83	10 ft. × 10 ft.	6725T4	96.20
5 ft. × 10 ft.	6725T17	53.90	10 ft. × 12 ft.	6725T5	115.44
6 ft. × 5 ft.	6725T54	32.48	12 ft. × 16 ft.	6725T6	164.52
6 ft. × 6 ft.	6725T18	38.95	16 ft. × 20 ft.	6725T2	278.04
6 ft. × 8 ft.	6725T21	55.67			

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes—To Order: Please specify height and width.

6725T29 ..... **Per Sq. Ft.** $1.05

Oil-Resistant Polyester

Ht. × Wd.		Each	Ht. × Wd.		Each
5 ft. × 6 ft.	55335T81	$29.75	10 ft. × 10 ft.	55335T8	85.00
6 ft. × 6 ft.	55335T83	38.25	10 ft. × 20 ft.	55335T1	169.95
6 ft. × 8 ft.	55335T5	40.80	10 ft. × 24 ft.	55335T2	203.95
6 ft. × 10 ft.	55335T82	59.50	12 ft. × 15 ft.	55335T3	152.95
8 ft. × 8 ft.	55335T6	54.38	12 ft. × 24 ft.	55335T4	231.40
8 ft. × 10 ft.	55335T7	68.00			

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes—To Order: Please specify color (black, blue, brown, gray, green, red, tan, white, or yellow), height, and width.

55335T49 ..... **Per Sq. Ft.** $0.89

See-Through Protective Curtains

Shield workers while allowing them to see and be seen through these vinyl curtains. Use around welding areas (except for clear), grinding booths, paint booths, and drafty doors. They're 14 mils thick, 14 oz./sq. yd. Maximum temperature is 120° F. Curtains have grommets on 8″ centers along the top and 16″ centers along either side. California Fire Marshal approved.

Note: Finished size will be slightly smaller due to hemming.

Choose-a-Color—To Order: Please specify color: clear, gold, green, dark green, or orange.

High Visibility— Color is orange with 2″ wide yellow stripes on 12″ centers.

Choose-a-Color

Ht. × Wd.		Each	Ht. × Wd.		Each
4 ft. × 5 ft.	54895T77	$22.63	6 ft. × 10 ft.	54895T87	$67.90
4 ft. × 6 ft.	54895T78	27.17	6 ft. × 12 ft.	54895T88	83.90
4 ft. × 8 ft.	54895T79	36.23	6 ft. × 15 ft.	54895T31	101.91
4 ft. × 10 ft.	54895T15	45.32	8 ft. × 8 ft.	54895T33	72.47
5 ft. × 5 ft.	54895T81	28.30	8 ft. × 10 ft.	54895T35	90.55
5 ft. × 6 ft.	54895T82	33.96	8 ft. × 12 ft.	54895T37	108.71
5 ft. × 8 ft.	54895T83	45.29	8 ft. × 15 ft.	54895T39	135.89
5 ft. × 10 ft.	54895T84	56.62	10 ft. × 7 ft.	54895T17	79.31
6 ft. × 4 ft.	54895T22	27.17	10 ft. × 10 ft.	54895T41	113.22
6 ft. × 6 ft.	54895T85	40.76	10 ft. × 20 ft.	54895T42	226.46
6 ft. × 8 ft.	54895T86	50.94	12 ft. × 12 ft.	54895T43	163.07

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes—To Order: Please specify color (clear, gold, green, dark green, or orange), height, and width.

54895T89 ..... **Per Sq. Ft.** $1.16

Sample Pack— Includes a swatch of each curtain color.

54895T47 ..... **Per Pkg.** $4.53

High Visibility

Ht. × Wd.		Each
6 ft. × 6 ft.	54895T163	$72.13
6 ft. × 8 ft.	54895T164	96.19
6 ft. × 10 ft.	54895T165	120.22

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes—To Order: Please specify height and width.

54895T166 ..... **Per Sq. Ft.** $1.99

See-Through Protective Strip Curtains

You can see and walk through these bronze-colored curtains. They consist of 8″ wide vinyl strips that overlap 50% to filter UV light and protect against welding sparks and splatter. All are 80 mils thick. Maximum temperature is 150° F. California Fire Marshal approved. For clear vinyl strip doors (not for welding), see page 2892.

Ceiling, Wall, and Suspension Mount— Three installation options in one. Suspension mounting requires ½″ threaded rod (not included; see pages 3164-3167. Curtain is 72 oz./sq. yd.

Pipe Hanger Mount— Use the included two-piece hanger clamp with 2″ maximum dia. pipe (not included). Curtain is 60 oz./sq. yd.

Also Available: Custom sizes. Please ask for 55705T999 and specify height, width, and mounting style.

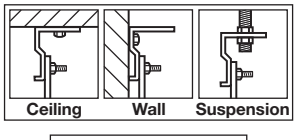

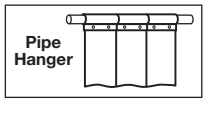

Ht.	6-ft. Width	Each	8-ft. Width	Each	10-ft. Width	Each	12-ft. Width	Each	Replacement Strips	Each
Ceiling, Wall, and Suspension Mount										
6 ft.	55705T111	$221.30	55705T112	$280.28	55705T113	$299.56	55705T114	$359.48	55705T251	$12.09
8 ft.	55705T121	259.12	55705T122	323.35	55705T123	431.85	55705T124	518.21	55705T252	17.66
10 ft.	55705T131	308.00	55705T132	410.63	55705T133	479.73	55705T134	615.97	55705T253	23.60
Pipe Hanger Mount										
6 ft.	55705T211	218.90	55705T212	267.65	55705T213	358.19	55705T214	445.64	55705T261	16.79
8 ft.	55705T221	268.30	55705T222	358.19	55705T223	449.36	55705T224	579.35	55705T262	22.86
10 ft.	55705T231	322.39	55705T232	414.38	55705T233	533.64	55705T234	664.88	55705T263	30.67

Replacement Pipe Hanger Clamp (three required per foot) ..... 55705T271 **Each** $3.49

Protective Curtain Rolls

Create your own custom curtains—simply cut to size with scissors. These rolls have grommets on 12″ centers along the top. All except clear can be used in welding applications. Maximum temperature is 150° F. California Fire Marshal approved.

See-Through Vinyl— 14 mils thick, 13 oz./sq. yd. **To Order:** Please specify color: blue, clear, gray, green, orange, or yellow.

Oil-Resistant Polyester— Material has a vinyl coating and is 13 mils thick, 14 oz./sq. yd. **To Order:** Please specify color: green or yellow.

	Roll Wd.	5-yd. Rolls	Per Roll	25-yd. Rolls	Per Roll
See-Through Vinyl	64″	5685T47	$39.74	5685T53	$170.90
Oil-Resistant Polyester	61″	55345T68	44.10	55345T86	176.40

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

High-Temperature Protective Blankets

Made of lightweight carbon fiber, these blankets offer flexibility as well as resistance to heat, flame, and molten metal. Maximum temperature is 1800° F. Material is 180 mils thick, 16 oz./sq. yd. Color is black.

Roll— Use a utility knife to cut to size.

Wd. × Lg.		Each
Blankets		
4 ft. × 6 ft.	3925T11	$82.23
6 ft. × 5 ft.	3925T12	102.54
8 ft. × 6 ft.	3925T13	160.65
8 ft. × 10 ft.	3925T14	264.81
10 ft. × 10 ft.	3925T15	331.32
Roll		**Per Roll**
4 ft. × 50 ft.	3925T57	$602.32

Custom Sizes— **To Order:** Please specify width and length.

3925T47 ..... **Per Sq. Ft.** $3.53

Protective Curtains and Blankets

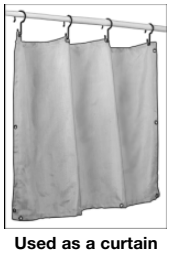

Used as a curtain

Used as a blanket

Hang as a curtain or drape over equipment for protection from welding sparks and other hazards.

Note: Finished size will be slightly smaller due to hemming.

Fiberglass

The economical choice for abrasion resistance. Maximum temperature is 1000° F. Material has grommets on 12″ centers along all sides.

18 oz./sq. yd.— 35 mils thick. Color is tan.

35 oz./sq. yd.— 80 mils thick for extra protection from welding splash. Also useful for heat-treating applications such as wrapping hot metal parts to slow the cooling process. Color is white.

Ht. × Wd.	18 oz./sq. yd.	Each	35 oz./sq. yd.	Each
3 ft. × 8 ft.	6417T42	$38.45	6417T43	$61.95
4 ft. × 5 ft.	6417T21	33.36	6417T1	51.50
4 ft. × 6 ft.	6417T24	38.45	6417T5	61.95
5 ft. × 8 ft.	6417T22	59.86	6417T2	97.28
5 ft. × 10 ft.	6417T23	73.04	6417T3	118.31
6 ft. × 6 ft.	6417T25	48.11	6417T6	79.40
6 ft. × 8 ft.	6417T26	61.02	6417T7	103.83
6 ft. × 10 ft.	6417T27	78.90	6417T8	148.91
8 ft. × 8 ft.	6417T28	87.60	6417T13	153.10
8 ft. × 10 ft.	6417T29	104.83	6417T14	199.01
10 ft. × 10 ft.	6417T31	129.28	6417T15	211.87
12 ft. × 12 ft.	6417T32	198.08	6417T16	341.08

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes— **To Order:** Please specify height and width.

		Per Sq. Ft.
18 oz./sq. yd.	6417T9	$1.72
35 oz./sq. yd.	6417T4	2.55

Rolls— When grommets and hemming aren't necessary, use a utility knife to cut your own blankets. Material is 35 mils thick, 18 oz./sq. yd. Color is tan.

Wd. × Lg.		Per Roll
40″ × 50 yd.	6417T55	$390.13
60″ × 50 yd.	6417T56	518.61

Abrasion-Resistant Acrylic-Coated Fiberglass

Maximum temperature is 600° F. Material is 35 mils thick, 24 oz./sq. yd., and has grommets on 12″ centers along one side. Color is gold.

Ht. × Wd.		Each	Ht. × Wd.		Each
4 ft. × 6 ft.	10545T36	$44.27	6 ft. × 10 ft.	10545T39	$110.67
6 ft. × 6 ft.	10545T21	66.40	8 ft. × 8 ft.	10545T23	120.89
6 ft. × 8 ft.	10545T22	88.53			

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes— **To Order:** Please specify height and width.

10545T28 ..... **Per Sq. Ft.** $1.98

Cut-Resistant Kevlar/Fiberglass Blend

Resists cuts and abrasion and has a latex coating that sheds slag. Maximum temperature is 1000° F. Material is 55 mils thick, 32 oz./sq. yd., and has grommets on 12″ centers along all sides. Color is black.

Ht. × Wd.		Each	Ht. × Wd.		Each
4 ft. × 4 ft.	6213T42	$92.57	6 ft. × 8 ft.	6213T36	$256.47
4 ft. × 6 ft.	6213T43	129.20	8 ft. × 8 ft.	6213T37	350.86
4 ft. × 8 ft.	6213T34	167.75	8 ft. × 10 ft.	6213T38	413.23
6 ft. × 6 ft.	6213T35	194.90	10 ft. × 10 ft.	6213T39	499.59

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes— **To Order:** Please specify height and width.

6213T41 ..... **Per Sq. Ft.** $5.56

Heat-Reflective Aluminized Fiberglass

Reversible for versatile protection. The aluminum foil side reflects heat, shields against molten splatter, and has a maximum temperature of 300° F. The tan-colored fiberglass side resists abrasion and has a maximum temperature of 1000° F. Material is 30 mils thick, 20 oz./sq. yd., and has grommets on 12″ centers along all sides. Meets MIL-C-20079H Type 1 Class 10 and MIL-1-24244.

Ht. × Wd.		Each	Ht. × Wd.		Each
4 ft. × 4 ft.	5640T31	$38.38	6 ft. × 8 ft.	5640T35	$104.00
5 ft. × 6 ft.	5640T32	68.57	6 ft. × 10 ft.	5640T36	122.55
6 ft. × 4 ft.	5640T33	57.07	8 ft. × 10 ft.	5640T37	153.60
6 ft. × 6 ft.	5640T34	78.00	10 ft. × 10 ft.	5640T38	192.00

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes— **To Order:** Please specify height and width.

5640T21 ..... **Per Sq. Ft.** $2.60

High-Temperature Silica Cloth

Rated to 1800° F, silica cloth provides superior heat and chemical resistance. Material is 54 mils thick, 36 oz./sq. yd., and has grommets on 12″ centers along all sides. Color is beige. Meets MIL-1-20244B.

Ht. × Wd.		Each	Ht. × Wd.		Each
2 ft. × 2 ft.	5500T341	$43.74	6 ft. × 6 ft.	5500T151	$151.20
4 ft. × 4 ft.	5500T311	83.16	6 ft. × 8 ft.	5500T161	199.74
4 ft. × 6 ft.	5500T121	110.88			

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Custom Sizes— **To Order:** Please specify height and width.

5500T271 ..... **Per Sq. Ft.** $4.64

Magnetic-Edge Acrylic-Coated Fiberglass

Sewn-in ceramic magnets let you position this material to protect angled and vertical surfaces. The weather-resistant acrylic coating repels spatter. Material is 40 mils thick, 24 oz./sq. yd., and has a maximum temperature of 600° F. It also has a grommet located next to each magnet. Color is gold. Magnets are 1 7/16″ Dia. × 5/16″ Thick. and have a maximum temperature of 300° F.

3 ft. × 3 ft. has a magnet at each corner.

6 ft. × 6 ft. and larger have magnets at 36″ centers along all sides.

Ht. × Wd.		Each	Ht. × Wd.		Each
3 ft. × 3 ft.	5678T11	$50.70	8 ft. × 8 ft.	5678T14	$221.32
6 ft. × 6 ft.	5678T12	124.36	10 ft. × 10 ft.	5678T15	368.80
6 ft. × 8 ft.	5678T13	192.80			

Curtain Hooks (10/Pkg.) ..... 54895T44 **Per Pkg.** $8.32

Modular Protective Screens

Use these screens individually or connect them to create the configuration you need. They have platform legs that can accommodate casters for mobility. Use one set of four casters (sold separately) per screen.

Screens *with slip-on curtains* offer easy assembly and have a 1″ OD tubular steel frame. All include two clips for connecting screens.

Screens *with tie-on curtains* have a ¾″ square tubular steel frame that reduces the slipping and twisting that can occur with round frames. Attach multiple screens using frame connectors (sold separately); one set of two required per connection.

Fire-Retardant Cotton Duck— Color is olive green. Meets Canvas Products Association International CPAI-84. *Slip-on curtain* material is 30 mils thick, 16 oz./sq. yd. Max. temperature is 120° F. *Tie-on curtain* material is 24 mils thick, 12 oz./sq. yd. Max. temperature is 300° F.

See-Through Vinyl— Curtain material is 14 mils thick, 13 oz./sq. yd. Max. temperature is 150° F. California Fire Marshal approved. **To Order:** Please specify color. For slip-on curtains, specify gray or yellow. For tie-on curtains, specify gray, green, orange, or yellow.

Mildew-Resistant Polyester— Resists tears, flame, and most chemicals. Curtain material is 14 mils thick, 14 oz./sq. yd., and has a blue vinyl coating. Max. temperature is 150° F. California Fire Marshal approved.

Abrasion-Resistant Fiberglass— Curtain material is 51 mils thick, 28 oz./sq. yd., and has a black acrylic coating. Max. temp. is 1000° F.

With Slip-On Curtains

Ht. × Wd.	FIRE-RETARDANT COTTON DUCK Complete Screens	Each	FIRE-RETARDANT COTTON DUCK Repl. Curtains	Each	SEE-THROUGH VINYL Complete Screens	Each	SEE-THROUGH VINYL Repl. Curtains	Each
4 ft. × 5 ft.	54655T11	$127.89	54655T15	$42.36	54655T2	$124.44	54655T6	$31.78
5 ft. × 5 ft.	54655T12	133.30	54655T16	50.62	54655T3	125.00	54655T7	38.18
5 ft. × 6 ft.	54655T13	149.56	54655T17	53.17	54655T4	127.80	54655T8	45.11
6 ft. × 6 ft.	54655T14	163.44	54655T18	62.25	54655T5	137.90	54655T9	52.22

Replacement Connector Clips (Set of 2) ..... 54655T99 Per Set $2.12
Optional Casters (Set of 4) ..... 54655T94 Per Set $16.89

Fire-Retardant Cotton Duck

With Tie-On Curtains

Ht. × Wd.	FIRE-RETARDANT COTTON DUCK Complete Screens	Each	FIRE-RETARDANT COTTON DUCK Repl. Curtains	Each	SEE-THROUGH VINYL Complete Screens	Each	SEE-THROUGH VINYL Repl. Curtains	Each
6 ft. × 4 ft.	9145T14	$90.61	9145T414	$33.33	9145T4	$89.45	9145T68	$27.32
6 ft. × 6 ft.	9145T15	104.20	9145T415	42.75	9145T5	104.52	9145T78	39.26
6 ft. × 8 ft.	9145T16	125.54	9145T416	63.87	9145T6	128.94	9145T88	51.86
8 ft. × 8 ft.	9145T27	144.51	9145T417	81.58	9145T7	145.66	9145T97	74.69

Ht. × Wd.	MILDEW-RESISTANT POLYESTER Complete Screens	Each	MILDEW-RESISTANT POLYESTER Repl. Curtains	Each	ABRASION-RESISTANT FIBERGLASS Complete Screens	Each	ABRASION-RESISTANT FIBERGLASS Repl. Curtains	Each
6 ft. × 4 ft.	9145T34	$95.04	9145T47	$38.89	9145T84	$107.83	9145T94	$64.62
6 ft. × 6 ft.	9145T35	107.72	9145T55	58.94	9145T85	139.21	9145T95	89.89
6 ft. × 8 ft.	9145T36	126.70	9145T56	78.57	9145T86	170.84	9145T96	96.28
8 ft. × 8 ft.	9145T37	145.64	9145T69	85.68	9145T87	212.10	9145T79	155.43

Frame Connectors (Set of 2) ..... 9145T51 Per Set $16.88
Optional Casters (Set of 4) ..... 9145T54 Per Set $18.51

See-Through Vinyl (Two Screens)

Multi-Panel Protective Screens

Shield workers and equipment from welding and grinding hazards—simply tie the fire-retardant cotton duck curtains to the frame. These screens have hinged panels for free-standing protection, or add platform legs (sold separately) to position in a straight line. Platform legs include fasteners and can accommodate casters (sold separately). Use one set of two casters per platform leg. Frame is 1″ OD tubular steel. Curtain material is 24 mils thick, 12 oz./sq. yd. Maximum temperature is 200° F. Color is olive green. Meets Canvas Products Association International CPAI-84.

Two Panel

Ht.	Each Panel Wd.	Complete Screens	Each	Repl. Curtains	Each
4 ft.	4 ft.	54385T11	$115.50	54385T21	$32.76
5 ft.	5 ft.	54385T12	172.20	54385T22	51.20
6 ft.	6 ft.	54385T13	210.42	54385T23	75.16
6 ft.	8 ft.	54385T14	262.58	54385T24	99.74

Optional Platform Legs (Set of 3) ..... 54385T37 Per Set $29.32
Optional Casters (Set of 2) ..... 54385T32 Per Set $12.75

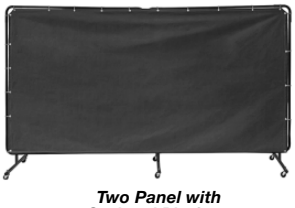

Two Panel with Optional Platform Legs and Casters

Three Panel

Ht.	Panel Wd. Center	Panel Wd. End	Complete Screens	Each	Repl. Curtains	Each
4 ft.	4 ft.	2 ft.	15485T11	$163.10	15485T17	$32.73
4 ft.	4 ft.	4 ft.	15485T12	190.06	15485T18	49.18
5 ft.	4 ft.	3 ft.	15485T13	196.36	15485T19	51.20
5 ft.	6 ft.	3 ft.	15485T14	209.74	15485T21	61.56
5 ft.	5 ft.	5 ft.	15485T15	233.40	15485T22	80.87
6 ft.	6 ft.	6 ft.	15485T16	234.36	15485T23	99.68

Optional Platform Legs (Set of 4) ..... 15485T26 Per Set $34.76
Optional Casters (Set of 2) ..... 54385T32 Per Set $12.75

Three Panel

Roll-Up Protective Screens

Lightweight and flexible enough to roll up and carry under your arm, these free-standing screens provide spark and flash protection in welding, cutting, and brazing areas. Screens have two layers of fabric reinforced with 14-ga. galvanized wire mesh. They're mildew resistant and have a built-in handle and tie strap.

Fire-retardant cotton duck is 30 mils thick, 16 oz./sq. yd. Maximum temperature is 120° F. Color is olive green. Meets Canvas Products Association International CPAI-84.

Oil-resistant polyester has a vinyl coating that resists oils, alkalies, and most acids. Material is 15 mils thick, 11 oz./sq. yd. Maximum temperature is 160° F. Color is yellow-and-black striped on the outside, solid yellow on the inside. California Fire Marshal approved.

Ht. × Wd.	Fire-Retardant Cotton Duck	Each	Oil-Resistant Polyester	Each
3 ft. × 4 ft.	5477T2	$61.67	5477T82	$62.38
4 ft. × 6 ft.	5477T4	87.36	5477T84	105.56
5 ft. × 6 ft.	5477T5	116.56	5477T85	125.56
6 ft. × 9 ft.	5477T6	189.44	5477T86	207.22

Fire-Retardant Cotton Duck

Oil-Resistant Polyester

Heavy Duty See-Through Protective Screens

Single Panel with Platform Legs

Three Panel with Platform Legs

Three Panel with Casters

Designed for demanding environments, these screens have a single vinyl curtain for gap-free coverage that also allows visibility through the material. The frame is made of 1″ square tubular steel that reduces the slipping and twisting that can occur with round frames. Curtain material is 14 mils thick, 14 oz./sq. yd. Maximum temperature is 120° F. California Fire Marshal approved.

Single-panel and ***three-panel screens with platform legs*** have a tie-on curtain. Attach casters (sold separately) to legs for mobility. **To Order:** Please specify curtain color: clear (not for welding), gold, green, or orange.

Three-panel screens with casters roll wherever you need them. Curtain has hemmed pockets that slip over the frame and a 7″ wide blue reinforced-nylon border to prevent tears. Position the panels and turn the wing nut to lock in place. Screens have four casters, two per leg.

Single Panel with Platform Legs

Ht. × Wd.	Complete Screens	Each	Replacement Curtains	Each
4 ft. × 5 ft.	5611T331	$74.92	54895T77	$22.63
5 ft. × 6 ft.	5611T333	95.36	54895T82	33.96
6 ft. × 4 ft.	5611T335	88.88	54895T22	27.17
6 ft. × 6 ft.	5611T336	97.96	54895T85	40.76
6 ft. × 8 ft.	5611T337	109.25	54895T86	50.94
6 ft. × 10 ft.	5611T338	155.71	54895T87	67.90

Optional Casters (Set of 4) ..... 5611T91 Per Set $24.04

Three Panel with Platform Legs

Ht.	Panel Wd. Center	Panel Wd. End	Complete Screens	Each	Replacement Curtains	Each
5 ft.	6 ft.	3 ft.	54585T14	$335.92	54585T54	$73.59
5 ft.	5 ft.	5 ft.	54585T15	318.90	54585T55	91.69
6 ft.	6 ft.	6 ft.	54585T16	368.82	54585T56	116.17

Optional Casters (Set of 10) ..... 5611T93 Per Set $64.93

Three Panel with Casters

Ht.	Panel Wd. Center	Panel Wd. End	Color	Complete Screens	Each	Replacement Curtains	Each
6 ft.	6 ft.	4 ft.	Orange	8480T45	$336.02	8480T33	$127.46
6 ft.	6 ft.	4 ft.	Gold	8480T49	336.02	8480T37	134.51

Protective Partitions

Free-Standing

Build customized, space-efficient partitions for welding or other jobs almost anywhere indoors. A 30″ high gray-tinted window spans the entire partition for visibility. Curtains are gray vinyl that resists tears, fire, oil, mildew, and most acids. Material is 14 mils thick, 13 oz./sq. yd. Simply slide curtains to open and close. All have hook-and-loop fasteners along the vertical edge for joining sections. Maximum temperature is 150° F. California Fire Marshal approved.

Also Available: Free-standing partitions in other sizes and curtain materials and suspended partitions in other materials. Please ask for 5592T999 and specify partition style, size, and material.

Free-Standing Partitions

Everything you need for a four-sided partition, including 7-ft. high curtains, a 16-ga. galvanized steel track, four columns, and four 1 ft. × 1 ft. bases.

Enclosed Area		Each
6 ft. × 8 ft.	5592T31	$848.53
8 ft. × 8 ft.	5592T64	888.25
10 ft. × 10 ft.	5592T33	1,032.10

Suspended Partitions

Suspended

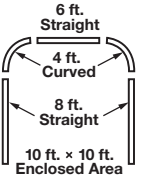

Combine straight and curved sections to build one- to four-sided partitions. Each section includes the curtain, its corresponding 16-ga. galvanized steel track, two-wheel nylon rollers, 1″ swivel hooks for hanging curtains, and assembly hardware. Curtains have grommets along the top and a weighted bottom hem. Install partition by hanging the track from overhead supports using chain or 3/8″ threaded rod (not included; see pages 3164-3167 for threaded rod). Each straight section is hung from two points (if curve is used independently, it is supported from three points). To design your own partition, determine height, overall length, and number of straight and curved sections needed.

Note: Curved sections add 2 ft. to the overall length and width.

Section	8 ft. High	Each	10 ft. High	Each	12 ft. High	Each
6 ft. Straight	5592T41	$132.50	5592T45	$146.50	5592T53	$160.50
8 ft. Straight	5592T42	176.20	5592T46	193.50	5592T54	208.50
10 ft. Straight	5592T43	205.00	5592T47	226.50	5592T55	248.20
4 ft. Curved	5592T44	148.80	5592T48	159.14	5592T56	170.28

Replacement Parts

		Each
Two-Wheel Nylon Roller with Hook for All Partitions	5592T96	$2.73
End Stop for All Partitions	5592T15	3.87
Right-Angle Connector for Free-Standing Partitions	5592T72	40.85
Chain Splice Connector for Suspended Partitions	5592T71	$9.50
Threaded Rod Adapter for Suspended Partitions	5592T73	4.20
Wall-End Mount for Suspended Partitions	5592T74	9.62

Umbrellas

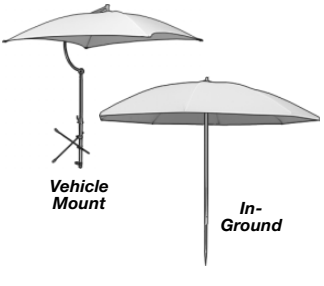

Vehicle Mount *In-Ground*

For on-the-job shelter from sun and rain, pop open one of these umbrellas. Canopy is yellow. Ribs are steel unless otherwise stated.

Vehicle-Mount— The universal mounting bracket fits most equipment (fasteners included). Pole has a tilt hinge.

In-Ground— Has a pointed pole that's easy to push into the ground. Umbrellas with an aluminum pole have a tilt hinge. *Optional steel stand* lets you use in-ground umbrellas 5736T6, T5, and T9 on hard surfaces.

Nonconductive umbrella has fiberglass ribs.

Welding umbrella has a 20 mil thick, 10 oz./sq. yd., canopy with a max. temp. of 140° F. Meets Canvas Products Association International CPAI-84.

Pole Material	Pole Lg.	Canopy Size		Each
Vehicle Mount— *Vinyl and Canvas Canopy*				
Steel	38″	54″ Sq.	5479T4	$119.90
In-Ground— *Vinyl Canopy*				
Wood	84″	78″ Dia.	5736T6	175.00
Aluminum	92″	84″ Dia.	5736T5	199.74
Aluminum	84″	54″ Sq.	5736T9	176.79
Optional Steel Stand			5736T8	164.29
Nonconductive In-Ground— *Vinyl Canopy*				
Wood	84″	78″ Dia.	5736T11	281.13
Welding In-Ground— *Canvas Canopy*				
Aluminum	84″	84″ Dia.	5736T2	108.00

About Mirror Materials

***Acrylic*—**Lightweight and shatter resistant.
***Scratch-Resistant Acrylic*—**A clear, hard coating keeps mirror looking like new.
***Glass*—**Economical and the easiest to clean.
***Shatter-Resistant Glass*—**Laminated to keep mirror in the frame if glass breaks.
***Tempered Glass*—**Shatter resistant and heavier than glass.
***Polycarbonate*—**Offers the highest impact resistance.
Zinc Alloy and ***Steel*—**Unbreakable. Use where vandalism is a concern. ***Chrome plating*** adds corrosion resistance.
***Stainless Steel*—**Provides maximum corrosion resistance and strength.

Safety Mirrors

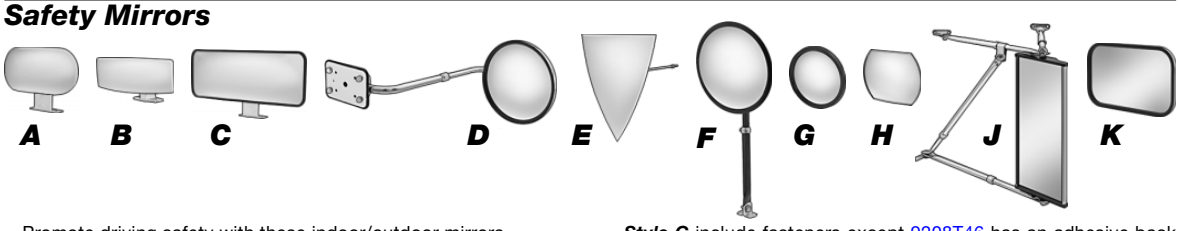

Promote driving safety with these indoor/outdoor mirrors.
Styles A, B, and ***C*** have holes for mounting to a dashboard (fasteners not included). ***Styles A*** and ***C*** have 1/4″ dia. holes; ***Style B*** has 3/16″ dia. holes.
Style D includes mounting fasteners.
Style E mounts through a drilled hole and is secured with the included fasteners.
Style F mount using the 1/4″ dia. holes (fasteners not included).
Style G include fasteners except 9208T46 has an adhesive back for surface mounting.
Style H has an adhesive back for surface mounting.
Style J is also known as a West Coast mirror. It has nickel- and chrome-plated steel arms and includes mounting fasteners.
Style K have a 3/8″ swivel mounting stud for use with the mounting

	Mirror	Backing		Each
Convex				
A 3 1/4″ × 7″ with Adjustable Viewing Angle	Chrome-Plated Zinc Alloy	Chrome-Plated Zinc Alloy	9186T22	$25.93
B 2 1/2″ × 7″ with Adjustable Viewing Angle	Chrome-Plated Steel	Chrome-Plated Steel	9186T12	47.11
C 4″ × 11 3/4″ with Adjustable Viewing Angle	Glass	Black Plastic	9186T35	33.40
D 8″ Dia. with 14″ Arm	Glass	Chrome-Plated Steel	9208T42	78.22
E 10″ × 10″ × 10″ with 8 5/8″ Arm	Type 304 Stainless Steel	Type 304 Stainless Steel	9179T2	66.39
F 8″ Dia. with 15″ to 21″ Telescoping Arm	Glass	Black Enamel Steel	6089T1	22.58
F 8″ Dia. with 15″ to 21″ Telescoping Arm	Acrylic	Black Enamel Steel	6089T5	23.40
G 3 3/4″ Dia.	Glass	Adhesive Foam	9208T46	2.45
G 5″ Dia. with Swivel Bracket	Glass	White Enamel Aluminum	9208T22	14.38
G 5″ Dia. with Swivel Bracket	Glass	Aluminum	9208T23	16.18
G 6″ Dia. with Swivel Bracket	Glass	White Powder-Coated Steel	9208T24	11.85
G 6″ Dia. with Swivel Bracket	Glass	Chrome-Plated Steel	9208T25	14.20
H 4″ × 5 1/2″	Glass	Adhesive Foam	9208T53	4.58
Flat				
J 6 1/4″ × 16″ with 15″ to 22″ Telescoping Arm	Glass	Aluminum	6074T1	74.93
K 5 1/2″ × 8 1/2″ with Swivel Stud	Glass	White Powder-Coated Steel	9208T13	12.60
K 5 1/2″ × 8 1/2″ with Swivel Stud	Glass	Chrome-Plated Steel	9208T15	15.55
K 7 1/2″ × 10 1/2″ with Swivel Stud	Glass	White Powder-Coated Steel	9208T36	18.80
K 7 1/2″ × 10 1/2″ with Swivel Stud	Glass	Chrome-Plated Steel	9208T38	19.22
Replacement Mirror for Style J			6074T5	15.78

Mirror Mounting Brackets

Attach your mirror to one of these brackets for mounting versatility indoors and out. Brackets are black powder-coated steel, except Style P has a nickel-chrome finish.
Style L clamps onto 3/4″ dia. rod or tubing.

		Bracket Hole Dia.	Fits Mirror Stud Size		Each
L	Clamp Mount	—	3/8″	6051T21	$4.38
M	Offset Mount	5/16″	3/8″	6051T22	8.38
N	Telescoping Arm, 9″ to 15″	5/16″	5/16″	6051T23	14.50
P	Telescoping Arm, 14″ to 20″	5/16″	5/16″	6051T27	11.95
Q	Tripod Mount, 22″ to 28″	5/16″	3/8″	6051T24	26.56

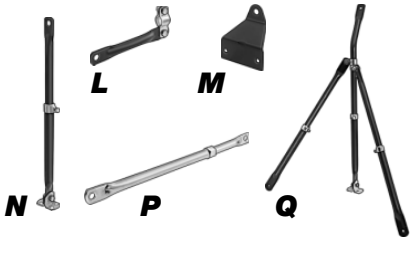

Portable Convex Safety Mirrors

Position these convex mirrors wherever you need improved safety and surveillance. All are for indoor use, except Style U is indoor/outdoor. *Styles R* and *T* have a flexible gooseneck. *Style R* clip has a maximum opening of 2 3/4″.
10825T14 adjusts from 35″ to 57″ high. 10825T22 adjusts from 39″ to 61″ high.

	Size	Mirror	Backing		Each
Clamp Base					
R	7″ Dia.	Acrylic	Plastic	66725T4	$31.25
Magnetic Base					
S	3 3/4″ Dia.	Glass	Aluminum	2511T3	42.86
S	6″ Dia.	Glass	Steel	2511T5	49.38
S	8″ Dia.	Glass	Steel	2511T4	55.00
S	12″ Dia.	Acrylic	Hardboard	2511T6	60.75
S	18″ Dia.	Acrylic	Hardboard	2511T7	72.50
T	7″ Dia.	Acrylic	Plastic	66725T6	44.78
U	6″ × 9″	Glass	Nickel- and Chrome-Plated Steel	2511T8	60.14
Cast Iron Base with Telescoping Arm					
V	18″ Dia.	Acrylic	Hardboard	10825T14	186.05
V	26″ Dia.	Acrylic	Hardboard	10825T22	220.93

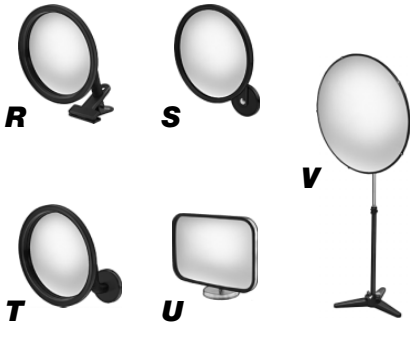

For information about mirror materials, see page 1833.

Convex Safety Mirrors

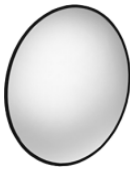

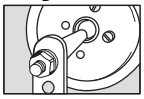

Swivel Mounting Bracket

Prevent accidents and increase security in your facility. These convex mirrors provide a large field of vision for seeing around corners, down aisles, and over counters. All have a swivel mounting bracket for easy adjustment.

Indoor— Hardboard back, unless noted.

Dia.	Acrylic	Each	Scratch-Resistant Acrylic	Each	Glass	Each	Shatter-Resistant Glass	Each	Tempered Glass	Each	Type 304 Stainless Steel	Each
8″	6087T6★	$23.80										
12″	6087T1■	27.55					5999T41	$35.27	6085T1	$62.98		
13″			6020T1	$78.39	6066T9	$29.35						
14″											7427T8	$158.76
18″	6087T2■	35.95	6020T4	104.70	6066T6	40.67	5999T42	56.42	6085T2	90.04		
26″	6087T3■	60.05	6020T5	160.46	6066T2	66.94	5999T43	98.15	6085T4	124.10	7427T11	296.60
30″	6087T4■	79.95	6020T13	222.40	6066T8	83.50	5999T44	124.97	6085T6	159.24		
34″											7427T12	356.72
36″	6087T5■	97.84	6020T8	290.43	6066T4	102.67	5999T45	167.20	6085T8	207.14		
42″											7427T53	464.88
48″	6087T7	204.22	6020T15	393.30								

★ Steel back. ■ Plastic back.

Indoor/Outdoor

Dia.	Acrylic w/ Hardboard Back	Each	Acrylic w/ Plastic Back	Each	Acrylic w/ Steel Back	Each	Acrylic w/ Type 304 SS Back	Each	Scratch-Resist. Acrylic w/ Hardboard Back	Each
8″					9180T13	$25.02				
12″			9180T24	$34.06	52395T33	40.23	52405T12	$91.43		
13″			10715T11	39.16					6020T2	$85.06
18″	9180T15	$43.97	10715T12	63.75	52395T34	64.64	52405T13	136.57	6020T6	111.40
26″	9180T16	76.24	10715T13	85.40	52395T35	99.96	52405T14	201.97	6020T7	174.37
30″	9180T17	94.97	10715T14	107.59	52395T36	132.71	52405T28	287.63	6020T14	255.66
36″	9180T18	118.75	10715T15	157.90	52395T37	163.64	52405T29	372.87	6020T9	307.26
48″	9180T19	232.10	10715T16	278.02			52405T31	582.78	6020T16	434.17

Dia.	Glass w/ Hardboard Back	Each	Glass w/ Steel Back	Each	Shatter-Resistant Glass w/ Hardboard Back	Each	Tempered Glass w/ Hardboard Back	Each	Polycarbonate w/ Hardboard Back	Each	Type 304 SS w/ Type 304 SS Back	Each
5″			5866T32	$13.89								
8″			5866T34	24.69								
12″					5999T31	$49.74	6085T9	$76.67	1769T32	$75.10		
13″	5866T22	$31.69										
14″											7427T9	$208.52
18″	5866T36	44.89			5999T32	74.33	6085T3	106.13	1769T35	93.90		
26″	5866T61	66.58			5999T33	128.82	6085T5	148.24	1769T46	148.58	7427T31	351.40
30″	5866T39	105.84			5999T34	158.12	6085T7	183.80	1769T49	236.40		
34″											7427T32	456.24
36″	5866T42	136.08			5999T35	202.15	6085T11	233.26	1769T54	256.70		
42″											7427T57	570.38

Low-Clearance Convex Safety Mirrors

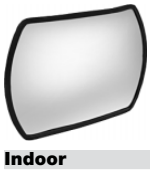

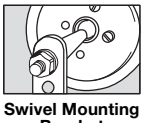

Swivel Mounting Bracket

Achieve high visibility in low-ceiling areas with these rectangular mirrors. The convex design allows you to see around corners, down aisles, and over counters. All have a hardboard back and a swivel mounting bracket for easy adjustment.

Indoor

Size	Acrylic	Each	Glass	Each	Shatter-Resist. Glass	Each
12″×18″	6059T51	$62.20	6012T5	$49.80	6006T24	$126.00
15″×24″			6012T61	67.18	6006T21	132.47
16″×26″	6059T52	83.90				
20″×30″	6059T55	152.72	6012T52	91.52	6006T22	151.51
20″×36″	6059T53	156.40				
24″×36″			6012T53	114.40	6006T23	191.53
26″×36″	6059T56	180.31				

Indoor/Outdoor

Size	Acrylic	Each	Glass	Each	Shatter-Resist. Glass	Each
12″×18″	6059T61	$69.26	6003T31	$65.30	6006T34	$97.37
15″×24″			6003T41	82.22	6006T31	143.40
16″×26″	6059T62	108.00				
20″×30″	6059T65	167.00	6003T42	107.84	6006T32	155.43
20″×36″	6059T63	198.50				
24″×36″			6003T43	140.92	6006T33	235.30
26″×36″	6059T66	194.40				

Drop-In Dome Safety Ceiling Mirror

Simply replace a tile in your drop ceiling with one of these 360° acrylic mirrors.

For Opening Size	Dia.		Each
2 ft.×2 ft.	22″	6057T41	$69.03
2 ft.×4 ft.	22″	6057T51	109.48

For information about mirror materials, see page 1833.

Dome Safety Mirrors

Mount these dome-shaped mirrors for an unobstructed overhead view of blind intersections and corners. All come with mounting hardware except steel mirrors, which have 1/8″ holes, and scratch-resistant acrylic mirrors, which include D-ring clips. Mirrors *with galvanized steel back* have sealed edges to keep out moisture and debris.

360° full dome mirrors mount on the ceiling.
180° half dome mirrors mount where the ceiling and wall meet.
90° quarter dome mirrors are perfect for corners.

360° Full Dome

Dia.	Acrylic	Each	Acrylic w/ Galvanized Steel Back	Each	Scratch-Resistant Acrylic w/ Plastic Back	Each	Scratch-Resistant Acrylic w/ Galv. Steel Back	Each	Polycarbonate	Each	Chrome-Plated Steel	Each
18″	6014T4	$59.45	6014T34	$106.84	52475T44	$111.16	52475T24	$146.69	1792T31	$113.68	6014T6	$222.24
24″											6014T63	327.98
26″	6014T5	88.31	6014T35	177.33	52475T45	185.58	52475T25	238.44	1792T32	170.31		
30″	6014T7	113.31							1792T33	291.36		
32″			6014T93	205.50	52475T59	246.57	52475T62	307.57				
36″	6014T9	140.00	6014T36	250.18	52475T12	320.42	52475T26	357.75	1792T34	302.77		
48″	6014T1	206.45	6014T37	476.11	52475T14★	437.55	52475T27	526.71				

★ Has a wood back.

180° Half Dome

Dia.	Acrylic w/ Foam Back	Each	Acrylic w/ Galvanized Steel Back	Each	Scratch-Resistant Acrylic w/ Plastic Back	Each	Scratch-Resistant Acrylic w/ Galv. Steel Back	Each	Polycarbonate w/ Foam Back	Each	Chrome-Plated Steel	Each
9″											6014T51	$110.32
12″											6014T52	128.70
18″	6014T14	$41.18	6014T44	$57.07	52475T54	$68.39	52475T34	$81.06	1792T35	$84.89	6014T53	158.58
24″											6014T54	207.36
26″	6014T15	60.82	6014T45	92.00	52475T55	111.94	52475T35	126.21	1792T36	144.08		
30″	6014T17	63.16							1792T37	175.05		
32″			6014T92	113.30	52475T58	156.50	52475T61	179.85				
36″	6014T19	87.67	6014T46	129.67	52475T11	175.37	52475T36	198.94	1792T38	213.95		
48″	6014T2	112.87	6014T47	285.67	52475T13★	301.97	52475T37	306.94				

★ Has a wood back.

90° Quarter Dome

Dia.	Acrylic w/ Foam Back	Each	Scratch-Resist Acrylic w/Plastic Back	Each	Polycarbonate w/ Foam Back	Each
18″	6014T81	$23.93	52475T86	$49.69	1792T39	$60.56
26″	6014T82	26.35	52475T87	75.39	1792T41	62.27
30″	6014T83	35.35			1792T42	82.94
32″			52475T88	97.41		
36″	6014T84	47.85	52475T89	123.79	1792T43	149.54
48″	6014T85	63.16	52475T91★	201.88		

★ Has a wood back.

True-View Flat Safety Mirrors

For a more accurate reflection of what's going on in your facility, these flat mirrors provide the depth perception that convex mirrors can't. All have a hardboard back, unless noted. The swivel mounting bracket makes adjustment easy but does not allow flush mounting. For flush-mount styles, see lavatory mirrors on page 2006.

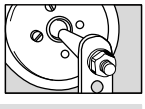

Swivel Mounting Bracket

Round

Dia.	Glass	Each	Dia.	Tempered Glass	Each
Indoor			***Indoor/Outdoor***		
13″	6000T31	$40.57	18″	6001T31	$76.60
18″	6000T32	63.94	26″	6001T32	141.93
26″	6000T33	98.03			

Rectangular

Ht. × Wd.	Acrylic	Each	Glass	Each	Shatter-Resistant Glass	Each	Tempered Glass	Each	Type 430 Stainless Steel	Each
Indoor										
9″×18″			10595T52	$38.95						
10″×14″									6065T21	$47.62
12″×12″	6055T41	$47.56			9194T31	$48.77				
12″×16″	6055T42	55.32			9194T32	55.74			6065T23	57.31
14″×18″									6065T24	74.60
16″×24″	6055T43	88.54	10595T53	53.49	9194T33	79.86	6088T11	$91.28	6065T26	93.71
20″×30″									6065T27	152.17
24″×36″	6055T44	168.83	10595T54	122.73	9194T34	175.67	6088T13	188.26		
Indoor/Outdoor										
9″×18″			10595T12	44.53						
10″×14″									6065T1■	60.30
12″×12″	6055T31	66.24			9194T21	55.12				
12″×16″	6055T32	76.46			9194T12	62.95			6065T4■	72.30
14″×18″									6065T3■	82.10
16″×24″	6055T33	113.68	10595T14	62.22	9194T14	89.19	6088T1	105.58	6065T6■	107.10
20″×30″									6065T7■	174.40
24″×36″	6055T34	184.39	10595T16	146.59	9194T16	197.35	6088T3	214.49		

■ Has a galvanized steel back.

Fire Extinguishers

For fire extinguisher inspection tags, see pages 1880-1881.

About Choosing a Fire Extinguisher

Underwriters Laboratories (UL) classifies fires according to the material that's burning. Extinguishers are rated by which types of fire they can put out. For Class A and B fires, they're also given a number—the higher the number, the greater the fire-fighting capability. Please check local ordinances for inspection requirements.

Class A fires are the most common. They involve ordinary combustibles such as wood, paper, cloth, rubber, and some plastics.

Class B fires are caused by flammable liquids, gases, and grease. Water can spread and splatter these explosive fires when sprayed into the flames.

Class C fires are electrical and require special attention. Water provides a path of conductivity for electricity to follow, endangering personnel.

Class D fires are combustible metal fires. They require an extinguisher that smothers the fire while drawing out the heat from the burning metal.

Class K fires involve combustible greases and oils. A special wet chemical agent extinguishes and suppresses these very hot and reflashable fires.

Class A B C Fire Extinguishers

Be ready to face the three most common classes of fire. These extinguishers have an easy-to-read pressure gauge and safety pin to prevent accidental discharge. They come charged with extinguishing material, are rechargeable, and include an inspection tag and mounting bracket (fasteners not included). Cylinder is red-painted steel.

Halotron extinguishers are residue-free and the perfect replacement for your old ozone-depleting Halon 1211 extinguishers. Halotron absorbs and removes heat from the combustion zone. It's ideal for electrical equipment, computers, vehicles, boats, and aircraft.

UL Rating	Capacity, lbs.★	Discharge Time, secs.	Size, Dia. × Ht.	Mounting Bracket Style	Mounting Bracket Hole Dia. (Qty.)	Extinguishers	Extinguishers Each	Repl. Brackets	Repl. Brackets Each
Dry Chemical									
1-A:10-B:C	2½	9	3 11/32″ × 14¾″	Vehicle	3/16″ (5)	6487T72	$36.70	6487T9	$6.41
3-A:40-B:C	5	14	4¼″ × 16¼″	Wall	¼″ (1)	6430T16	49.02	6487T92	1.02
3-A:40-B:C	5	14	4¼″ × 16¼″	Vehicle	3/16″ (5)	6430T14	58.15	6430T34	7.78
4-A:80-B:C	10	22	5¼″ × 21″	Wall	¼″ (1)	6430T3	93.26	6430T35	1.29
6-A:120-B:C	20	27	7½″ × 21¼″	Wall	¼″ (1)	6430T71	135.28	6430T26	3.04
6-A:160-B:C	30	32	7½″ × 27⅜″	Wall	¼″ (1)	6430T81	289.93	6430T26	3.04
Halotron									
1-A:10-B:C	11	9	7″ × 17¼″	Wall	¼″ (1)	37015T35	354.44	6430T26	3.04
2-A:10-B:C	15½	13	7″ × 17¼″	Wall	¼″ (1)	37015T36	467.54	6430T26	3.04

★ Weight of extinguishing material in unit.

Class B C Fire Extinguishers

Purple K and Halotron

Fight flammable liquid, gas, and electrical fires with these extinguishers. They come charged with extinguishing material, are rechargeable, and include an inspection tag and mounting bracket (fasteners not included). Cylinder has a red-painted finish.

Purple K dry chemical extinguishers are the most effective chemical in fighting class B fires. Commonly used in garages, service bays, boats, and fuel transfer areas, extinguishers have an easy-to-read pressure gauge. Cylinder is steel. U.S. Coast Guard approved.

Halotron extinguishers are residue-free and ideal for use around delicate electrical equipment, computers, vehicles, boats, and aircraft. They have an easy-to-read pressure gauge. Cylinder is steel.

Carbon dioxide extinguishers fight flammable liquid, gas, and electrical fires without leaving harmful residue. They're recommended for indoor fires where drafts won't affect the gas discharge. Cylinder is aluminum. Meet Department of Transportation requirements. *5-lb. capacity* model has a nozzle that connects to the cylinder through a rigid swivel tube. *10-* and *15-lb. capacity* models have the nozzle and cylinder connected by a hose.

10- and 15-lb. Cap. Carbon Dioxide

UL Rating	Capacity, lbs.★	Discharge Time, secs.	Size, Dia. × Ht.	Mounting Bracket Style	Mounting Bracket Hole Dia. (Qty.)	Extinguishers	Extinguishers Each	Repl. Brackets	Repl. Brackets Each
Purple K Dry Chemical									
20-B:C	5	9	4¼″ × 16¼″	Wall	¼″ (1)	6404T11	$66.67	6487T92	$1.02
20-B:C	5	9	4¼″ × 16¼″	Vehicle	3/16″ (5)	6404T12	69.06	6430T34	7.78
80-B:C	10	22	5¼″ × 21″	Wall	¼″ (1)	6404T13	95.20	6430T35	1.29
120-B:C	20	26	7½″ × 21¼″	Wall	¼″ (1)	6404T14	147.86	6430T26	3.04
Halotron									
2-B:C	2½	9	3⅜″ × 13⅜″	Wall	¼″ (1)	37015T31	95.95	6487T92	1.02
5-B:C	5	9	4¼″ × 16⅜″	Wall	¼″ (1)	37015T33	169.06	6487T92	1.02
Carbon Dioxide									
5-B:C	5	8	5¼″ × 17⅜″	Wall	¼″ (1)	6426T22	138.98	6430T35	1.29
10-B:C	10	10	6 15/16″ × 19¾″	Wall	¼″ (1)	6426T23	203.45	6430T26	3.04
10-B:C	15	15	6⅞″ × 26⅜″	Wall	¼″ (1)	6426T24	237.91	6430T26	3.04

★ Weight of extinguishing material in unit.

Class D Fire Extinguisher (Dry Chemical)

Smother flames and dissipate heat from combustible-metal fires involving magnesium, sodium, potassium, uranium, and powdered aluminum. Extinguisher comes charged with extinguishing material and is rechargeable. It has a pressure gauge and includes an inspection tag and wall mounting bracket (fasteners not included) with two 7/32″ dia. holes and one 11/32″ dia. hole. Cylinder is yellow-painted steel.

UL Rating	Cap., lbs.★	Discharge Time, secs.	Size, Dia. × Ht.		Each
D	30	24 (applicator) 13 (nozzle)	8″ × 32″	6435T23	$396.54
Replacement Wall Bracket				6435T25	1.13

★ Weight of extinguishing material in unit.

Class A Fire Extinguisher (Water)

Compressed air expels water to douse fires from common combustibles. Extinguisher is not charged and comes empty. It requires water and a compressed-air source with a pressure capacity of 100 psi for charging.

Extinguisher has a ⅛″-27 NPT male Schrader fitting for pressurizing, an easy-to-read pressure gauge, inspection tag, and a wall mounting bracket (fasteners not included) with two 7/32″ dia. holes and one 11/32″ dia. hole. Cylinder is stainless steel.

UL Rating	Cap., gal.	Discharge Time, secs.	Size, Dia. × Ht.		Each
2-A	2½	50	7″ × 24½″	6423T3	$104.15
Replacement Wall Bracket				6423T4	.96

Class K Fire Extinguisher (Wet Chemical)

Snuff out extremely hot reflashing oil and grease fires. Extinguisher comes charged but should be professionally recharged. It requires water and a compressed-air source with a pressure capacity of 100 psi and a 5/8″-18NS-2 male fitting for pressurizing. Cylinder is made of Type 304L stainless steel. Extinguisher includes an easy-to-read pressure gauge, inspection tag, wall sign, and wall mounting bracket (fasteners not included) with two 7/32″ dia. holes and one 5/16″ dia. hole. UL listed.

For information about choosing a fire extinguisher, see pg. 1822. For inspection tags, see pgs. 1880-1881.

UL Rating	Cap., gal.	Discharge Time, secs.	Size, Dia.×Ht.		Each
K	1.6	55 to 60	7″×19½″	6708T41	$199.74
Replacement Wall Bracket				6708T45	$3.87

Fire Extinguisher Covers

Bright red-orange covers make extinguishers easy to spot in an emergency. These vinyl-coated fabric covers fit over extinguishers (not included), protecting them from dust and damage when not in use. They have nylon fasteners and a clear plastic window that allows you to check the extinguisher's pressure gauge.

For Extinguisher Capacity, lbs.	Size, Dia.×Ht.		Each
5 to 10	8″×18″	6472T13	$10.16
15 to 30	10½″×27″	6472T12	13.84

Fire Extinguisher Cabinets

Steel

Plastic

Protect fire extinguishers from theft, vandalism, and the elements. Cabinets have acrylic windows, an attached breaker bar, and come with cylinder locks that are keyed alike (all open with the same key). Extinguishers and mounting fasteners are not included.

6471T33 and 6457T63 also hold a 2½-gal. pressurized water extinguisher or 1.6-gal. wet chemical extinguisher.

Steel cabinets are 22-ga. with a rust- and corrosion-resistant white baked-enamel finish. They surface mount and have double-strength tops for added durability. For easy access to extinguisher, just unlock cabinet and slide window up. Cabinets have four 3/16″ dia. mounting holes and one key.

Plastic cabinets are made of lightweight, flame-retardant polystyrene. They can be surface or semi-recess mounted and have rounded corners to prevent injuries. Cabinets have four 1/4″ dia. mounting holes and two keys. **To Order:** Please specify color: red or white.

For Extinguisher Cap., lbs. Dry Chemical	CO_2	Inside Size, Ht.×Wd.×Dp.	Cabinets	Each	Repl. Windows	Each
Steel						
2½, 5	—	19 13/16″×8½″×6¼″	6471T31	$64.05	6471T34	$6.58
10	5	25¾″×9½″×6¼″	6471T32	73.65	6471T35	9.21
20	10	29¾″×10½″×8¼″	6471T33	87.82	6471T36	11.84
Plastic						
2½, 5	—	16¾″×6″×5⅜″	6457T61	39.47	6457T11	9.56
10, 20	5, 10	26″×9″×8″	6457T63	81.81	6457T13	16.83

Sprinkler Heads

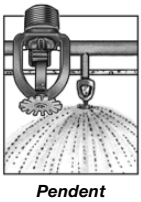

Pendent

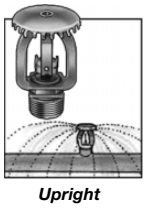

Upright

Choose from pendent and upright sprinkler head styles. Maximum pressure is 175 psi. UL listed and FM approved. *Note:* Sprinkler heads must be installed with wrenches listed on page 1838.

The K factor (discharge coefficient rating) is 5.6, except for 3/4″ NPT brass heads, which have a rating of 8.0. To determine flow in gpm, multiply the K factor by the square root of the water pressure (psi).

Fusible-link sprinkler heads are triggered by a soft metal alloy that melts at the rated temperature.

Glass-bulb sprinkler heads have a liquid-filled bulb that bursts at the rated temperature.

Wax-coated brass is good for use in corrosive environments.

Quick-response glass bulb sprinkler heads react to heat up to five times faster than other sprinkler heads for greater control of fire damage. Heads must be installed and maintained according to NFPA (National Fire Protection Association) standards.

To Order: Please specify pendent style (for finished ceilings) or upright style (for exposed piping), unless noted.

Temperature Rating	Color Code	1/2″ NPT Male Conn. Brass	Each 1-11	Each 12-Up	Chrome-Plated Brass	Each 1-11	Each 12-Up	Wax-Coated Brass	Each 1-11	Each 12-Up	3/4″ NPT Male Conn. Brass	Each 1-11	Each 12-Up
Fusible Link													
165° F	—	6410T12	$29.07	$23.71	6410T31	$37.71	$31.43	6410T83	$75.75	$63.12	6410T24	$52.22	$43.51
212° F	White	6410T14	30.62	25.52	6410T33	37.71	31.43	6410T85	75.75	63.12	6410T25	52.22	43.51
280° F	Blue	6410T16	29.07	23.71	6410T35	37.71	31.43	—	—	—	6410T26	52.22	43.51
Glass Bulb													
155° F	Red	64575T21	21.27	17.73	64575T32	25.14	20.95	64575T73	63.82	53.18	64575T43	24.82	20.68
175° F	Yellow	64575T22	22.56	18.80	64575T33	26.43	22.03	64575T75	63.82	53.18	64575T44	26.11	21.76
200° F	Green	64575T24	21.27	17.73	64575T35	26.43	22.03	64575T77	63.82	53.18	64575T45	24.82	20.68
286° F	Blue	64575T25	21.27	17.73	64575T36	26.43	22.03	64575T79	63.82	53.18	64575T46	24.82	20.68
360° F	Purple	64575T27	26.43	22.03	64575T38	31.59	26.32	—	—	—	64575T47	29.98	24.98
Quick-Response Glass Bulb—*Chrome-plated brass come in pendent style only.*													
155° F	Red	6422T11	31.31	27.22	6422T21	36.16	31.45	—	—	—	6422T53	50.60	42.16
175° F	Yellow	6422T12	31.52	27.40	6422T22	36.38	31.64	—	—	—	6422T55	50.60	42.16
200° F	Green	6422T13	31.31	27.22	6422T23	36.38	31.64	—	—	—	6422T57	50.60	42.16
286° F	Blue	6422T14	31.31	27.22	6422T24	36.38	31.64	—	—	—	6422T59	50.60	42.16

Recessed Sprinkler Heads

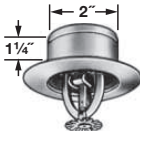

For inconspicuous fire safety, choose these partial-view sprinkler heads. Made of chrome-plated brass, they're pendent style with a 1/2″ NPT male connection. Maximum pressure is 175 psi. UL listed and FM approved. *Note:* Sprinkler heads must be installed with wrenches listed on page 1838.

The K factor (discharge coefficient rating) is 5.6. To determine flow in gpm, multiply the K factor by the square root of the water pressure (psi).

Fusible-link sprinkler heads are triggered by a soft metal alloy that melts at the rated temperature. ***Glass-bulb*** sprinkler heads have a liquid-filled bulb that bursts at the rated temperature.

Temperature Rating	Color Code	Sprinkler Heads	Each 1-11	Each 12-Up	Replacement Cover Plates	Each
Fusible Link						
165° F	—	63945T94	$43.75	$36.47	63945T91	$7.00
212° F	White	63945T95	43.75	36.47	63945T91	7.00
Glass Bulb						
155° F	Red	63945T81	32.94	27.45	63945T91	7.00
175° F	Yellow	63945T83	34.23	28.53	63945T91	7.00
200° F	Green	63945T85	34.23	28.53	63945T91	7.00

Concealed Sprinkler Heads

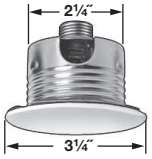

A low-profile cover plate conceals the sprinkler head to make it nearly invisible. When the cover plate temperature rating is reached, the plate falls away to expose the sprinkler head, which has a liquid-filled bulb that bursts at the rated temperature. UL listed.

These sprinkler heads are pendent style and have a 1/2″ NPT male connection. Maximum pressure is 175 psi. The K factor (discharge coefficient rating) is 5.6. To determine flow in gpm, multiply the K factor by the square root of the water pressure (psi).

Note: Sprinkler heads must be installed with wrenches listed on page 1824.

Temp. Rating Head	Plate	Plate Color	Sprinkler Heads	Each 1-11	Each 12-Up	Replacement Cover Plates	Each
155° F	139° F	Chrome	6496T311	$77.68	$64.73	6496T211	$23.13
155° F	139° F	White	6496T312	77.68	64.73	6496T212	23.13
200° F	165° F	Chrome	6496T321	77.68	64.73	6496T221	23.13
200° F	165° F	White	6496T322	77.68	64.73	6496T222	23.13

Sprinkler Head Stopper

Wedge a stopper into your sprinkler head to stop water from spraying without shutting down the sprinkler system. Use stopper when mechanical failure sets off one sprinkler head or to minimize water damage after a fire is extinguished. To reach the sprinkler head, insert any 3/4″ to 1″ pipe or pole (not included) into the stopper base. Stopper fits all sprinkler heads except recessed styles.

6468T16 ..... **Each** $57.14

Sprinkler Head Installation Wrenches

Hand Wrench

Socket Wrench for Recessed Heads

Socket Wrench for Concealed Heads

For Sprinkler Head Type	Material		Each
Hand Wrenches			
Fusible-Link NPT; Recessed	Steel	**6410T52**	$53.18
Glass-Bulb NPT; Recessed	Cast Iron	**6410T62**	59.63
Socket Wrenches			
Recessed	Cast Iron	**64575T88**	48.13
Concealed	Cast Iron	**6496T79**	86.87

Sprinkler Head Storage Box

Keep ready-to-use replacement sprinkler heads handy. Box can hold 12 sprinkler heads and also has room for sprinkler head wrenches. It's 14″ Lg.×5″ Wd.×4″ Ht. and made of 22-ga. steel. Color is red.

6646T28 ..... **Each** $15.74

Sprinkler Head Guard

Protect sprinkler heads from impact and prevent damage. Made of 10-ga. steel, guards are secured by a screw closure bracket surrounding the mounting pipe. They're 4 1/4″ Dia.×2 1/2″ Ht. and have a red epoxy finish.

For NPT Size		Each 1-9	Each 10-Up
1/2″	**6411T25**	$4.85	$3.83
3/4″	**6411T36**	4.85	3.83

Sprinkler Head Cover Plates

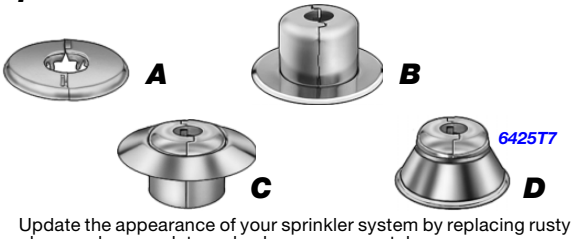

Update the appearance of your sprinkler system by replacing rusty or damaged cover plates, also known as escutcheons.

Plates with a ***split ring*** or ***split cup*** eliminate the work and expense of draining the sprinkler system—just snip off the existing cover plate and snap on the replacement.

ID	OD	Dp.	Fits Sprinkler Head		Each
Fixed Depth					
Split-Ring Flush—*Plastic*					
A	13/16″	3″	5/8″	1/2″ NPT	**6425T1** $1.74
Split-Ring Flush—*Chrome-Plated Steel*					
A	13/16″	3″	1/4″	1/2″ NPT	**6425T3** 1.82
A	1″	3″	1/4″	3/4″ NPT	**6425T4** 1.82
Adjustable Depth—*Chrome-Plated Steel*					
Flush with Split Cup					
B	13/16″	3 51/64″	1/4″-1 5/8″	1/2″ NPT	**6425T5** 4.84
Short with Split Cup					
C	13/16″	3 51/64″	3/4″-1 7/8″	1/2″ NPT	**6425T6** 4.84
Deep with Solid Cup					
D	13/16″	3 1/2″	2″-3″	1/2″ NPT	**6410T4** 6.70
Deep with Split Cup					
D	13/16″	3 1/2″	2″-3″	1/2″ NPT	**6425T7** 4.84
Extra Deep with Split Cup					
D	13/16″	4 1/2″	3″-4″	1/2″ NPT	**6425T8** 6.29

Smoke Detector Panel

Control Panel

Use a central control panel to connect and monitor your smoke detectors and other alarms, as well as to signal personnel that there's an emergency. Control panel requires two 12-VDC rechargeable batteries (sold separately). In case of a power failure, the control panel will operate on the battery backup. Panel is UL listed and meets National Fire Protection Association (NFPA) standard 72.

Control Panel—Comes with all the circuitry needed to power and monitor devices for five "zones." A zone consists of one initiating circuit for an indicating device (smoke/heat detector or fire pull station). Each zone can connect to two signaling circuits for 24 VDC signaling devices (bells, horns, and lights). Combination smoke/heat detectors are sold below; fire pull stations on page 1839; and 24 VDC signaling devices on pages 1841, 1844-1845.

Smoke/heat detectors and signaling devices can be wired as Class A or B (do not exceed a total of 3.5 amps on the two signaling circuits). Panel also has indicators to tell you the status of each zone. Panel is 14 1/4″ Wd.×19 1/2″ Ht.×3 3/4″ Dp. red steel with a locking door (two keys included). It requires hardware connection to 120 VAC, 60 Hz converted to 24 VDC operation.

		Each
Control Panel	**6634T77**	$411.97
12 VDC Rechargeable Battery (2 Required)	**7448K39**	27.00

Combination Smoke/Heat Detectors—For use with the smoke detector panel above. Detectors have a photoelectric sensor for quick and early smoke detection, as well as a 135° F heat detector. They are 6.1″ Dia.×1.85″ Ht. and operate on 12/24 VDC. Temperature range is 32° to 120° F. Color is white. UL listed. Detectors with alarm sound 85 decibels at 10 ft.

	Amp Draw	Alarm		Each
2-Wire	0.06	No	**6634T22**	$43.74
2-Wire	0.06	Yes	**6634T23**	50.89

Photoelectric Smoke Alarms

6668T13 *6668T12*

An optical photoelectric sensor ensures reliable and early warning of the presence of smoke. *Note*: These units are for remote smoke detection only; they're not intended to replace a central smoke detector system.

Multiple alarms can be linked to also warn occupants outside the vicinity of the source of smoke; if one alarm is activated, they're all activated. Up to 12 units of 6668T13 can be connected; 6668T11 and *T12* can have up to six. Alarms can only be connected to other alarms of the same type.

All alarms have a horn that sounds 90 decibels at 10 ft. 6668T11 and *T12* also have a strobe with 177-candela brightness. They help comply with the Americans with Disabilities Act (ADA) when properly installed.

Alarms have 2-wire configuration for 120 VAC, 60 Hz operation (quick-disconnect connection) that draws approximately 0.4 amps. They include a 9-volt backup battery to ensure operation in case of a power failure. Other features include an insect screen to prevent false alarms and a test switch on the face plate. Operating temperature range is 40° to 100° F. Color is off-white. UL listed.

Type	Mount. Style	Size		Each
With Horn	Ceiling	6 1/2″ Dia.×2 5/8″ Ht.	**6668T13**	$75.40
With Horn and Strobe	Ceiling	5 3/4″ Sq.×4 3/4″ Ht.	**6668T11**	186.77
With Horn and Strobe	Wall	5 3/4″ Sq.×4 3/4″ Dp.	**6668T12**	186.77
Replacement 9-Volt Battery			**71455K56**	2.75

Smoke Alarm Guard

Made of 0.14″ thick polyester-coated steel wire, this sturdy octagon-shaped web protects your smoke alarm from tampering and damage. The alarm's LED power indicator remains visible through the guard. Install with four included mounting screws. Size is 8 1/4″ Dia.×2 3/4″ Ht. Color is white. UL listed.

66525T1 ..... **Each** $26.55

Smoke Alarm Tester

Make sure your alarms are working with this spray smoke that simulates fire conditions. Use with photoelectric and ionization smoke detectors. It comes in a 2½-oz. aerosol can that provides 200 tests. UL listed.

		Each 1-11	Each 12-Up
Smoke Alarm Tester	6638T21	$11.76	$10.51

Use the ***extension arm*** for high reaches and the ***add-on arm*** to test ceiling alarms without a ladder. Up to five add-on arms can be connected to the extension arm. Both the extension and add-on arms are aluminum.

	Lg.		Each
Extension Arm	30″	6638T31	$164.29
Add-on Arm	59″	6638T32	164.29

With Optional Extension Arm

Heat Detectors

Detect high heat and fast-rising temperatures. These units send a signal on a hardwire connection to a control panel (not included) when temperatures exceed the temperature rating or rise more than 15° F per minute. Each detector covers a maximum area of 2,500 sq. ft. Add any number of sensors to circuit. Mounting plate included. Size is 5″ Dia. × 2″ Ht. Color is white. UL listed and FM approved.

Temp. Rating	Amp Rating @ 6-125 VAC★	6-28 VDC	125 VDC	250 VDC		Each
135° F	3.0	1.0	0.3	0.01	6651T73	$16.64
194° F	3.0	1.0	0.3	0.01	6651T74	16.64

★ 60 Hz.

Fire Alarm Stations and Covers

Stations

Pull

Lift and Pull

ADA-Compliant Push

Install these stations throughout your facility for quick access in case of a fire. They signal along a hardwire connection to a control panel and have normally-open SPST (single-pole, single-throw) circuitry. For information about SPST contacts, see page 855. UL listed.

Pull station is die cast metal with red finish. ***Lift-and-pull*** station is red polycarbonate. ***ADA-compliant push*** station is push-button activated and helps comply with the Americans with Disabilities Act when properly installed. Reset with included key. Station is made of red polycarbonate.

Overall Size, Ht. × Wd. × Dp.	Stations	Each	Repl. Glass Rods	Each
Pull				
4 9/16″ × 3 1/8″ × 1 15/32″	6652T11	$38.04	6652T12	$1.55
Lift and Pull				
5 3/16″ × 3 9/16″ × 1 3/8″	6652T21	52.94	6652T22	1.91
ADA-Compliant Push				
4 7/8″ × 3 1/4″ × 1 5/8″	6597T18	32.45	—	—

Optional Station Covers

Made of clear polycarbonate, covers protect against tampering and vandalism. They help you comply with the Americans with Disabilities Act when properly installed. UL listed. 1105T25 and *T26* are FM approved.

Choose a cover ***with spacer*** for applications with exposed back boxes and/or conduit. (Spacer adds 2″ to overall depth.)

Covers ***with alarm*** sound a horn (95 decibels at 1 ft.) when cover is lifted. Alarm operates on one 9-volt battery (included).

Indoor/outdoor covers are rated NEMA 3R for light liquid splashes.

With Spacer

Fits Station Up To	Ht. × Wd. × Dp. Overall Size	Flush Mount	Each	With Spacer	Each
Indoor					
5 1/2″ × 4 1/8″ × 2 1/4″	7 3/4″ × 5 3/8″ × 2 3/8″	6597T21	$43.02	6597T22	$55.59
7″ × 5 1/2″ × 2 3/4″	10″ × 7″ × 3 1/2″	1105T11	68.65	1105T12	81.04
Indoor with Alarm					
5″ × 4 1/8″ × 2 1/4″	7 3/4″ × 5 3/8″ × 2 3/8″	6597T23	85.53	6597T24	99.43
6 1/4″ × 5 1/2″ × 2 3/4″	10″ × 7″ × 3 1/2″	1105T25	104.65	1105T26	117.04
Indoor/Outdoor					
5 1/2″ × 4 1/8″ × 2 1/4″	7 3/4″ × 5 3/8″ × 2 3/8″	6597T25	45.98	6597T26	65.22
7″ × 5 1/2″ × 2 3/4″	10″ × 7″ × 3 1/2″	1105T33	75.41	1105T34	94.51
Indoor/Outdoor with Alarm					
6 1/4″ × 5 1/2″ × 2 3/4″	10″ × 7″ × 3 1/2″	1105T47	110.96	1105T48	135.96
Replacement 9-Volt Battery (1/Pkg.)		71455K56	Per Pkg.		$2.75

Fire Stops

Caulk

Shield against the spread of fire through small openings around electrical, piping, heating, and venting systems. Use a caulk gun to dispense from cartridges; use a trowel to apply from containers. Caulk adheres to common building materials and pipes. When used in a system that meets UL requirements, the caulk can have up to a 3-hour fire rating, except for paintable caulk, which can reach up to a 4-hour fire rating (maximum time compound will prevent passage of fire through opening).

Paintable— Dries to a flexible surface that can be sanded and painted. Contains no solvents or halogens.

Expanding Paintable— Dries to a flexible seal that, when exposed to heat, expands up to seven times its original volume to fill voids left by melting PVC, plastic pipe, and insulation. Can be sanded and painted. Contains no solvents or silicones and won't emit gases.

Watertight— When dry, it forms a long-lasting seal that remains flexible from 40° to 110° F. Use on floors and walls where expansion and contraction exist. FM approved.

	UL Standard	Color		Each
Paintable— *Apply at temperatures from 40° to 90° F.*				
10.3-oz. Cartridge	1479, 2079, 723	Red	9339K21	$7.31
31.0-oz. Cartridge	1479, 2079, 723	Red	9339K22	20.87
Expanding Paintable— *Apply at temperatures from 40° to 90° F.*				
10.3-oz. Cartridge	1479, 2079, 723	Red	93465K42	12.52
31.0-oz. Cartridge	1479, 2079, 723	Red	93465K43	32.49
1-gal. Container	1479, 2079, 723	Red	93465K44	99.75
Watertight— *Apply at temperatures from 40° to 110° F.*				
10.1-oz. Cartridge	1479, 2079	Red	93455K51	12.16
28-oz. Cartridge	1479, 2079	Red	93455K47	30.27
2.6-gal. Container	1479, 2079	Red	93455K48	276.42

Putty

This reusable putty expands to seal off burning pipe and cables and inhibit the spread of fire. Does not contain solvents. Install at temperatures from 40° to 90° F. When used in a system that meets UL requirements, the putty can have up to a 3-hour fire rating (maximum time putty will prevent passage of fire through opening).

Putty pad is ideal for sealing openings around electrical boxes.

	UL Standard	Color		Each
7 1/4″ × 7 1/4″ × 1/8″ Putty Pad	1479, 263	Red	9340K22	$5.83
2-lb. Container	1479	Red	9340K11	40.45

Foam Cement

Mix this lightweight powder with water to create a thick foam cement—just the right consistency to seal large openings where other fire stop materials won't work. Apply with a trowel and easily clean up with water. (For trowels, see page 2123.) One container covers a 2 sq. ft., 3″ thick opening. Install at temperatures from 40° to 90° F. When used in a system that meets UL requirements, the cement can have up to a 3-hour fire rating (maximum time cement will prevent passage of fire through opening). FM approved.

	UL Standard	Color		Each
15.5-lb. Container	1479	Dark Gray	93355K21	$71.47

Expandable Bags

When exposed to heat, these bags (also known as pillows) expand to seal out fire, smoke, and toxic gases. Made of tightly woven fiberglass cloth and filled with noncombustible components, they're water and weather resistant and can be bent or folded. Stack them like bricks in openings where pipes and cables pass through floors and walls. They're especially useful under raised floors and where cable configurations are frequently changed.

When used in a system that meets UL requirements, the bags can have up to a 3-hour fire rating (maximum time bags will prevent passage of fire through opening).

Ht. × Wd. × Thick.	UL Standard	Color		Each 1-4	Each 5-Up
7″ × 13 1/2″ × 1/2″	1479	White	9359K61	$24.92	$21.05
7″ × 13 1/2″ × 3/4″	1479	White	9359K62	28.29	23.90
7″ × 13 1/2″ × 1 1/2″	1479	White	9359K63	31.20	26.36

Snug-Fit Strips

These semi-rigid mineral fiber-felt strips fit perfectly into tight spots such as between floor slabs. When used in a system that meets UL requirements, the strips can have up to a 4-hour fire rating (maximum time strips will prevent passage of fire through opening). Maximum temperature is 1200° F. Sold in 25-lb. packages.

Strip Size, Wd. × Dp. × Lg.	UL Standard	Color	Pkg. Qty.		Per Pkg.
2″ × 4″ × 4 ft.	1479, 2079	Brown	24	6481T31	$67.84
4″ × 4″ × 4 ft.	1479, 2079	Brown	12	6481T33	67.84

About Sound Levels

To choose a buzzer, bell, horn, or speaker that's loud enough, first determine the decibel (dB) rating of background noise. The table below lists some common environments and their average dB ratings. For sound meters, see page 1828.

Office	50 dB
Stockroom	60 dB
Shipping Room	70 dB
Heavy Street Noise	80 dB
Light Machine Shop	90 dB
Heavy Machine Shop	110 dB

Your device needs a dB rating higher than the background noise level—but how much higher? Use the table below to determine how loud a device will sound in your setting. For example, in a 60 dB stockroom a bell with a 70 dB rating sounds twice as loud as background noise, but a 63 dB bell is barely audible.

Add 3 dB	Barely Louder than Background Noise
Add 5 dB	Clearly Louder than Background Noise
Add 10 dB	Twice as Loud as Background Noise
Add 20 dB	Four Times as Loud as Background Noise
Add 40 dB	Sixteen Times as Loud as Background Noise

Miniature Buzzers

A

B

C

D

E

F

Small in size and simple to mount, these buzzers are a great choice for machines, panels, and equipment. Housing is plastic. All have a continuous tone, unless noted. For indoor use. Mounting hardware not included, unless otherwise indicated.

Styles A, ***C***, and ***D*** produce a tone similar to an electronic tone. 5670T31 is UL recognized.

Style E buzzers are open coil and have a steel bracket with a 6-32 threaded mounting hole on one side. Mounting screw included.

	Volts	dB @ 1 ft.	Connection Style	O'all Size	Panel Cutout Dia.	Mount. Hole Dia.		Each
Panel-Mount Piezo Tone								
A	30-120 VAC	90	Screw Terminal	1¾″ Dia. × 2⅜″ Dp.	1⅛″	—	56965T26	$11.06
A	1-28 VDC	90	Screw Terminal	1¾″ Dia. × 1¾″ Dp.	1⅛″	—	56965T13	7.06
A	4-28 VDC	80	Screw Terminal	1¾″ Dia. × 1¾″ Dp.	1⅛″	—	56965T14 ♦	9.61
Panel-Mount Electronic Tone—*As voltage increases, dB levels also increase.*								
B	6-28 VDC	73-90	Screw Terminal	1½″ Dia. × 1¾″ Dp.	1⅛″	—	5822T45	33.80
B	6-28 VDC	73-90	Screw Terminal	1½″ Dia. × 1¾″ Dp.	1⅛″	—	5822T47 ♦	61.24
Panel-Mount Electronic Tone with Light—*As voltage increases, dB levels also increase.*								
B	6-28 VDC	73-90	Screw Terminal	1½″ Dia. × 1¾″ Dp.	1⅛″	—	5822T46	35.76
B	6-28 VDC	73-90	Screw Terminal	1½″ Dia. × 1¾″ Dp.	1⅛″	—	5822T48 ♦	63.44
Surface/Panel-Mount Piezo Tone—*As voltage increases, dB levels also increase.*								
C	3-28 VDC	68-100	Two Wire Leads	1½″ Ht. × 1″ Wd. × ¾″ Dp.	¾″	0.13″	5670T31	9.68
C	3-28 VDC	82-104	Two Wire Leads	2½″ Ht. × 1½″ Wd. × 1″ Dp.	1¼″	0.13″	5670T33	12.56
C	3-28 VDC	82-104	Three Wire Leads	2½″ Ht. × 1½″ Wd. × 1″ Dp.	1¼″	0.13″	5670T35 ♣	15.96
Surface-Mount Piezo Tone								
D	3-15 VDC	90	Two Wire Leads	1¾″ Ht. × 1⅛″ Wd. × ⅞″ Dp.	—	0.14″	56965T12	4.00
Surface-Mount Electromechanical Tone								
E	12 VAC	85	0.187″ Quick Disconnects	1⅜″ Ht. × 1″ Wd. × ⅞″ Dp.	—	6-32★	56525T24	8.34
E	24 VAC	85	0.187″ Quick Disconnects	1⅜″ Ht. × 1″ Wd. × ⅞″ Dp.	—	6-32★	56525T25	8.34
E	115 VAC	95	0.187″ Quick Disconnects	2⅜″ Ht. × 1″ Wd. × 1⅛″ Dp.	—	6-32★	56525T22	9.89
E	120 VAC	85	0.187″ Quick Disconnects	1⅜″ Ht. × 1″ Wd. × ⅞″ Dp.	—	6-32★	56525T26	9.38
E	230 VAC	95	0.187″ Quick Disconnects	2⅜″ Ht. × 1″ Wd. × 1⅛″ Dp.	—	6-32★	56525T23	10.23
E	240 VAC	85	0.187″ Quick Disconnects	1⅜″ Ht. × 1″ Wd. × ⅞″ Dp.	—	6-32★	56525T27	9.60
F	9-20 VDC	75	Two Wire Leads	1¼″ Ht. × ⅝″ Wd. × ⅝″ Dp.	—	0.09″	56525T41	2.86
F	10-27 VDC	75	Two Wire Leads	1¼″ Ht. × ⅝″ Wd. × ⅝″ Dp.	—	0.09″	56525T42	3.00

♦ Pulse tone. ♣ Selectable continuous and pulse tone. ★ Thread size.

Buzzers

G

H

J

Style G—Made of steel. Buzzers come with a mounting bracket with a hole for an 8-32 screw (not included). Color is gray. *12 VDC buzzer* has one wire lead; *24 VAC* and *120 VAC buzzers* have two wire leads.

Style H—Made of epoxy-coated alloy steel. To mount, simply wire the buzzer on a single-gang electrical box (each has two screw terminals) and plug into a receptacle on the included mounting plate (hardware included). Color is gray. *24 VAC* and *120 VAC buzzers* are UL listed.

Style J—Made of die cast aluminum with a weatherproof neoprene gasket seal. It has a ½″ NPT female conduit opening and two ⅜″ dia. mounting holes (fasteners not included). Color is gray. UL listed.

	Volts	dB @ 10 ft.	Amps	Dia. × Dp.		Each
Standard						
G	12 VDC	86	0.07	2⅛″ × 1¼″	5801T13	$20.42
G	24 VAC	86	0.20	2⅛″ × 1¼″	5801T14	20.42
G	120 VAC	86	0.04	2⅛″ × 1¼″	5801T15	20.42
H	24 VDC	62	0.15	5⅛″ × 2¼″	56325T53	136.50
H	24 VAC	70	0.25	5⅛″ × 2¼″	56325T511	129.88
H	120 VAC	70	0.05	5⅛″ × 2¼″	56325T512	129.88
Weatherproof						
J	120 VAC	89	0.20	6⅜″ × 5½″ × 3″ ●	56875T752	195.26

● Ht. × Wd. × Dp.

Call Bell

Made of steel with a black base. Size is 3″ Dia. × 2¼″ Ht.

82825T21 ..... **Each** $3.95

Hammer Top Bells

Command attention with these steel bells. They make great doorbells when used with the optional push-button. All have screw terminal connections and are for indoor use. 83125T59 and *T61* have a chrome-plated finish and two 3/16″ dia. mounting holes. All other models have a gray painted finish and three ¼″ dia. mounting holes. Mounting hardware not included.

Transformer converts 120 VAC to 8 or 24 VAC. It has three wire leads.

Push-buttons are 2⅜″ dia., made of brass, and include mounting screws.

Bell Dia.	Volts	dB @ 10 ft.	Amps	O'all Ht.		Each
Bells						
2½″	8 VAC/6 VDC	78	1.2	5¾″	83125T59	$15.02
4″	8 VAC/6 VDC	78	1.2	6⅞″	83125T61	18.95
4″	24 VAC	68	0.2	7⅜″	83125T73	56.83
6″	8 VAC/6 VDC	74	1.0	10⅝″	83125T65	64.22
6″	24 VAC	74	0.2	10⅝″	83125T66	65.22
Accessories						
Transformer					83125T67	14.64
Indoor Push-Button					83125T63	5.47
Weatherproof Push-Button					69755K66	60.72

For information about sound levels, see page 1840.

Bells

The continuous rapid-fire ringing tone from these bells is distinctive, so it's sure to be heard. All are made of steel and have two wire leads. Mounting hardware not included. Color is gray. UL and C-UL listed.

The *indoor bells* have a backplate with 1/4″ dia. mounting holes for standard electrical box installation. The *indoor/outdoor bells* have an electrical box with neoprene blend gasket, a 1/2″ NPT female conduit opening, and two 9/32″ mounting lugs.

Bells with flashing light have a 2 1/4″ dia. polycarbonate lens and a replaceable bulb with a 0.36 candlepower rating (candlepower measures light intensity). Choose amber or red lens.

Bell guard fits over any of the bells listed. Made of zinc-plated steel, it is 17 3/8″ dia. and has four 5/16″ dia. mounting holes (fasteners not included).

Bell

Bell with Flashing Light

Bell Guard

	Amps	4 1/4″ Dia., 90 dB @ 10 ft.	Each	6″ Dia., 92 dB @ 10 ft.	Each	8″ Dia., 94 dB @ 10 ft.	Each	10″ Dia., 96 dB @ 10 ft.	Each
Bells									
Indoor—AC Voltage									
12 VAC	0.80	5684T11	$80.55	5684T19	$83.02	5684T28	$96.05	5684T35	$108.61
24 VAC	0.35	5684T12	81.30	5684T21	85.50	5684T29	98.32	5684T36	111.25
120 VAC	0.09	5684T13	82.93	5684T22	86.18	5684T31	96.05	5684T37	107.68
240 VAC	0.05	5684T16	86.27	5684T24	94.30	5684T32	103.89	5684T38	115.27
Indoor—DC Voltage									
12 VDC	0.45	5684T17	77.18	5684T25	89.34	5684T33	99.74	5684T39	109.64
24 VDC	0.20	5684T18	80.93	5684T26	89.34	5684T34	99.74	5684T45	112.77
Indoor/Outdoor—AC Voltage									
24 VAC	0.35	5658T71	118.83	5658T75	127.97	5658T79	133.63	5658T64	138.99
120 VAC	0.09	5658T72	118.81	5658T76	128.04	5658T61	133.63	5658T65	138.98
Indoor/Outdoor—DC Voltage									
12 VDC	0.45	5658T73	121.07	5658T77	130.72	5658T62	137.10	5658T66	146.37
24 VDC	0.20	5658T74	124.56	5658T78	130.72	5658T63	137.10	5658T67	146.37
Bells with Flashing Light									
Indoor—AC Voltage									
24 VAC (Amber Lens)	0.40	5828T61	146.54	5828T65	148.08	5828T69	160.10	5828T74	168.16
24 VAC (Red Lens)	0.40	5828T62	146.54	5828T66	148.08	5828T71	160.10	5828T75	168.16
120 VAC (Amber Lens)	0.10	5828T51	142.73	5828T55	147.22	5828T59	157.30	5828T45	166.83
120 VAC (Red Lens)	0.10	5828T52	142.73	5828T56	147.22	5828T42	157.30	5828T46	166.83
Indoor/Outdoor—AC Voltage									
24 VAC (Amber Lens)	0.40	5828T63	177.06	5828T67	181.50	5828T72	188.96	5828T76	197.04
24 VAC (Red Lens)	0.40	5828T64	177.06	5828T68	181.50	5828T73	188.96	5828T77	197.04
120 VAC (Amber Lens)	0.10	5828T53	164.90	5828T57	171.13	5828T43	176.88	5828T47	184.43
120 VAC (Red Lens)	0.10	5828T54	164.90	5828T58	171.13	5828T44	176.88	5828T48	184.43
Replacement Bulbs and Accessories									
Replacement Bulb for 24 VAC Bells with Flashing Light								5828T92	8.04
Replacement Bulb for 120 VAC Bells with Flashing Light								5828T91	6.28
Bell Guard								5684T46	36.67

Air- and Steam-Operated Long Distance Whistles

The powerful tone from these whistles blasts over long distances—in every direction—and rises above background noise in loud environments. Signal continues as long as air or steam pressure is applied.

Whistles are made of cast bronze and brass. They operate at 50-200 psi; maximum input pressure is 200 psi @ 550° F. All have NPT female connections.

Whistles without valve operate on air or steam.

Without Valve *With Valve*

Dia.	dB @ 100 psi @ 10 ft.	dB @ 100 psi @ 100 ft.	Pipe Conn.	Air Consumption★	WITHOUT VALVE O'all Lg.		Each	WITH VALVE O'all Lg.	For Air	Each	For Steam	Each
1″	126	96	1/4″	0.93	4 1/2″	5671T21	$132.20	7″	5671T41	$235.59	5671T31	$235.59
1 1/2″	118	88	3/8″	1.37	9″	5671T22	208.47	12″	5671T42	318.64	5671T32	318.64
2″	116	86	1/2″	3.65	11 1/4″	5671T23	276.27	15 1/2″	5671T43	355.00	5671T33	355.00
3″	126	96	3/4″	4.58	13″	5671T25	351.67	17 3/4″	5671T45	490.00	5671T34	490.00
6″	136	106	1 1/2″	13.98	25″	5671T29	1,692.00	29 3/4″	5671T49	2,357.21	5671T36	2,357.21

★ Measured in cfs (cubic feet per second) @ 100 psi.

Motor-Driven Long Distance Sirens

The built-in motor-driven fan in these sirens generates a shrill signal that's audible over long distances. Sirens produce 113 dB @ 10 ft. Their durable, red powder-coated aluminum housing withstands shock and resists corrosion, so they're approved for use on U.S. Navy ships.

Sirens are 15 7/8″ Ht. × 17 3/4″ Wd. × 15 3/8″ Dp. They have two wire leads and a 1/2″ NPT female conduit opening (male threaded conduit fitting is included). Mount them anywhere, indoors and out (no separate mounting box required). Included mounting bracket has two 9/32″ dia. mounting holes (fasteners not included). ***110-120 VAC/VDC siren*** is UL listed.

	Amps		Each
110-120 VAC/VDC	2.50	6392T11	$532.42
220-250 VAC/VDC	1.25	6392T13	781.34

For information about sound levels, see page 1840.

Electronic Sirens

Siren with Strobe

Delivering 120 dB @ 1 ft., these economical sirens signal emergencies effectively. They have a polycarbonate housing and screw terminal connections. Color is beige. Wall mount using included mounting hardware or electrical mounting boxes (sold separately below).

Siren with strobe produces 20-100 flashes per minute. Lens is ABS plastic. **To Order:** Please specify amber, blue, clear, or red lens.

Indoor electrical mounting box is galvanized steel and has 1/2″ and 3/4″ knockouts. ***Outdoor electrical mounting box*** is aluminum and has a 3/4″ NPT female conduit opening.

	Amps	Ht. × Wd. × Dp.		Each
Siren				
6-12 VDC	0.62	5″ × 5 3/4″ × 4 3/8″	56725T44	$47.89
Siren with Strobe				
12 VDC	0.75	7 3/32″ × 5 3/4″ × 4 3/8″	56725T52	74.12
Indoor Electrical Mounting Box			53515T96	1.98
Outdoor Electrical Mounting Box			7219K26	11.11

32-Tone Electronic Sirens

Choose the tone and volume that suits you best with these versatile sirens. First pick from 32 distinct tones, then adjust the decibel level anywhere from 64 to 113 dB @ 10 ft.

Sirens are made of red ABS plastic. They have two wire leads and three 3/4″ knockouts. Mount indoors and out using the included electrical box, which has four 1/4″ dia. mounting holes (hardware not included).

110/220 VAC siren draws 0.015 amps @ 110 VAC and 0.008 amps @ 220 VAC. ***9-30 VDC siren*** draws 0.06 amps @ 12 VDC and 0.03 amps @ 24 VDC.

	Ht. × Wd. × Dp.		Each
110/220 VAC	3 5/8″ × 3 5/8″ × 2 7/8″	32145T682	$522.19
9-30 VDC	3 5/8″ × 3 5/8″ × 2 7/8″	32145T681	522.19

Whistles

A

B

		Each 1-11	Each 12-Up
A ... Nickel-Plated Brass	82845T32	$8.35	$7.69
B ... Heavy Duty Black Plastic	82845T67	7.02	5.83
19″ Black Nylon Neck Strap	82845T34	2.28	1.92

Air-Operated Long Distance Trumpet-Style Horns

Single Horn

Dual Horn

Perfect for sending signals across outdoor areas, these horns operate without electricity and can handle harsh conditions. Use them in large indoor facilities, too. Horns are made of bronze with a brass projector, except 5826T71 is made entirely of die cast aluminum. Mounting hardware is not included.

All have NPT female connections. To operate horns with manual valves (not included) see 4625K on page 456. For solenoid valves (not included), see 4635K on pages 470-471.

dB @ 100 psi @ 10 ft.	@ 100 ft.	Lg. × Wd. × Ht.	Pipe Conn.	Air Consumption★	Operating Range, psi	Mount. Hole Dia. (Qty.)		Each
Single Horns								
120	100	17 1/8″ × 6 3/4″ × 6 7/8″	1/8″	0.15	50-200	9/32″ (2)	5826T51	$298.74
125	105	15 1/2″ × 6 1/4″ × 7″	1/4″	0.24	100-250	9/32″ (2)	5826T41	507.27
133	113	10 1/8″ × 6 3/4″ × 8 5/8″	1/2″	0.50	50-150	17/32″ (4)	5826T71	1,082.03
Dual Horn								
123	103	22 3/4″ × 11 5/8″ × 7 1/4″	1/8″	0.30	50-200	9/32″ (4)	5826T61	516.13

★ Measured in cfs (cubic feet per second) @ 100 psi.

Long Distance Trumpet-Style Horns

Even from 100 ft. away you'll hear the powerful trumpet tone from these horns. Horns produce a continuous signal; for a noncontinuous signal simply interrupt the voltage from the power supply. Maximum continuous cycle is five minutes on, five minutes off. Use indoors and out.

Horns are made of cast aluminum with a brass projector. Color is gray. They measure 19 3/4″ Lg. × 8″ Wd. × 8″ Ht. and include a wall-mount bracket and two 3/8″ dia. mounting holes (fasteners not included). Horns have a 1/2″ NPT female conduit opening. FM approved.

120 VAC horn has three wire leads. It is also UL listed and CSA certified. ***24 VDC horn*** has two wire leads.

	dB @ 10 ft.	dB @ 100 ft.	Amps		Each
120 VAC	105	85	0.75	6391T22	$566.40
24 VDC	106	86	3.00	6391T24	585.86

Stainless Steel Trumpet-Style Horns

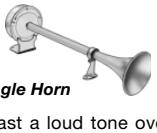

Single Horn

Dual Horn

Blast a loud tone over a short distance with these corrosion-resistant Type 304 stainless steel horns. Use indoors and out. ***Single horns*** have two wire leads and four 1/4″ dia. mounting holes. ***Dual horns*** have four wire leads and three 1/4″ dia. mounting holes. Mounting hardware not included.

	dB @ 3 ft.	Amps	Lg. × Wd. × Ht.		Each
Single Horns					
12 VDC	118	4	16 1/2″ × 4″ × 4 3/4″	8005T14	$121.63
24 VDC	118	2	16 1/2″ × 4″ × 4 3/4″	8005T35	132.17
Dual Horns					
12 VDC	122	8	18 1/2″ × 8″ × 5″	8005T22	237.17
24 VDC	122	4	18 1/2″ × 8″ × 5″	8005T47	250.11

Air Horns

Disposable Horn

Rechargeable Horn and Pump

Refillable Horn

Cabinet

Send an alert (or celebrate a touchdown) with a blast from these small, powerful air horns. All activate with a push-button. Horn canisters are metal; projectors are plastic.

Disposable horns are pocket-sized.

Rechargeable horn can be reused. The included pump lets you recharge the horn by compressing air into the canister.

Refillable horn has a disposable canister that can be replaced when the propellant is gone.

Cabinet for refillable horn is made of 20-ga. steel with an acrylic front cover and tamperproof safety-lock rod (padlock and two keys included). Size is 10 1/4″ Ht. × 5 1/2″ Wd. × 4 1/2″ Dp. Mounting hardware included. Color is high-visibility yellow.

dB @ 10 ft.	Approx. No. of Blasts	Dia. × Lg. × Ht.		Each
Disposable Horns				
100	80	1″ × 2 1/2″ × 4 7/8″	6879T36	$8.49
100	200	1 3/8″ × 2 5/8″ × 5 3/8″	6879T48	10.20
Rechargeable Horn				
120	30	2″ × 6 1/2″ × 9 1/2″	56385T1	33.25
Refillable Horn				
115	200	2 3/4″ × 4 3/8″ × 7 5/8″	5688T61	16.32
Cabinet for Refillable Horn			5688T63	77.66
Replacement Horn Projector for Refillable Horn			5688T54	4.86
Replacement Propellant for Refillable Horn			5688T62	11.61

For information about sound levels, see page 1840.

Lift Truck Horns

Mount these horns on your lift truck and they'll announce your arrival—no need to shout.

Styles A and ***B*** produce a sound that's loud enough to be heard in industrial settings. They're made of steel, and have two screw terminal connections and two 0.25″ wide male quick-disconnect terminals. For indoor use. Color is black. UL listed.

Style C has a built-in compressor (similar to a car horn) and produces a louder sound than other lift truck horns. It's made of black ABS plastic and has two 0.25″ wide male quick-disconnect terminals. Compressor is made of zinc-plated steel. For indoor use.

Style D lasts longer than other horns because it doesn't have moving parts, which tend to wear out. It's made of black nylon and is water resistant. Horn has epoxy-sealed electronic components and two 0.25″ wide male quick-disconnect terminals. UL listed.

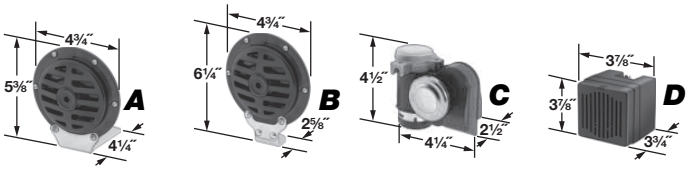

Volts	dB @ 3 ft.	Amps		Each
Standard				
A...12 VDC	115	4	**2580T1**	$34.00
A...24 VDC	115	1.5	**2580T3**	35.20
B...12 VDC	115	4	**2580T2**	35.93
B...24 VDC	115	1.5	**2580T4**	37.09
B...36/48 VDC	115	1	**2580T5**	37.07
Extra Loud				
C...12 VDC	118	14	**2648T1**	51.34
Long Life				
D...12-60 VDC	114	1.1	**2662T1**	64.39

Lift Truck Backup Alarms

Avoid accidents with these weather-resistant electronic alarms. They beep loudly and repeatedly when your truck moves in reverse. To install, wire the alarm between your battery and reverse lights. Alarms are resistant to vibration, dust, and moisture. Each has four 5/16″ wide mounting slots (mounting hardware not included). UL recognized.

Style E alarms are made of glass-filled nylon and have screw terminal connections. ***Style F*** alarms are made of steel and have two wire leads. *Auto-adjust volume* model detects the sound level around your vehicle and sets the alarm volume 5 dB above that level.

Backup alarm switch activates your alarm when you shift into reverse, so you can use the alarm on a vehicle without backup lights. Switch is made of steel and operates on 12 to 80 VDC at a maximum of 10 amps. Mounting bracket and hardware are included.

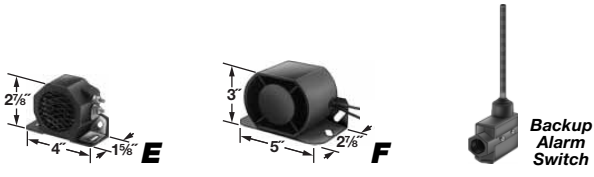

	dB @ 4 ft.	Amps		Each
E...12 VDC Single Volume	97	0.2	**57585T12**	$26.63
F...12-36 VDC Single Volume	107	0.4	**56475T25**	50.80
E...12-48 VDC Single Volume	97	0.1	**57585T13**	35.80
F...12-48 VDC Auto-Adjust Volume	82-102	0.2	**5675T61**	76.40
Backup Alarm Switch			**56515T53**	29.27

Lift Truck Motion Bells

Ditch switches and wires—just mount these bells directly to your vehicle's wheel hub. They're made of zinc-plated steel and can be used indoors and out.

Dual-direction bell sounds when the vehicle moves forward and in reverse. It has two 2″ Lg. × 1/2″ Wd. mounting slots (mounting hardware not included).

Single-direction bell sounds when the vehicle moves in forward or in reverse, depending on how you mount it. It can be mounted to 4, 8, and 12 lug hubs (mounting hardware included). ***Hub adapter for single-direction bell*** adapts 3, 5, 6, and 10 lug hubs for use with a single-direction bell.

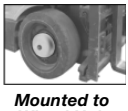

Mounted to Wheel Hub

	dB @ 4 ft.	Dia.		Each
Dual-Direction Bell	80	6″	**5646T14**	$56.87
Single-Direction Bell	93	8″	**5646T19**	83.30
Hub Adapter for Single-Direction Bell			**5646T18**	16.50

Traffic Alert Bell

Just like the bells you hear at service stations, this bell rings when a vehicle drives over the attached hose.

Bell comes complete with 50 ft. of 3/8″ ID black rubber hose, a hose plug, and a 6-ft. power cord with two-prong plug. It operates on 110 VAC and draws 1.5 amps. The bell is 6″ dia. and can be mounted indoors and out using three 3/8″ dia. mounting holes (mounting hardware not included).

Accessories—Add extra hose to span up to 300 ft. Hose splicer connects hose lengths and hose anchor secures hose end.

		Each
Bell	**63965T1**	$129.85
Accessories		
50 ft. of 3/8″ ID Hose	**63965T12**	52.34
Hose Plug	**63965T13**	1.82
Hose Splicer	**63965T14**	1.98
Hose Anchor	**63965T15**	13.19

Door Chimes

Our chimes come complete with a chime box, transformer, and two push-buttons. The chime box strikes two aluminum tone bars to produce 75 dB @ 3 ft.; it's made of ABS plastic and measures 4 3/8″ Ht. × 7 1/4″ Wd. × 2″ Dp. Transformer has three wire leads and converts 120 VAC to 16 VAC. Surface mount using included hardware. Color is white. For indoor use. *Note:* Chimes do not include wire. For wire, see page 807.

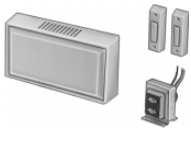

		Each
With Plain Push-Buttons	**56345T71**	$15.19
With Lighted Push-Buttons	**56345T75**	26.16

4-Tone Horn

Even in especially noisy areas this horn provides an audible signal. It has four tones and produces 107 to 111 dB @ 10 ft.

Horn swivels 180° on its mounting base, so you can point it in any direction. It's made of beige thermoplastic and measures 9″ Ht. × 12 1/8″ Wd. × 14 1/2″ Dp. Horn has screw terminal connections and operates on 24 VDC, 120 VAC, or 240 VAC. It draws 0.6 amps @ 24 VDC, 0.21 amps @ 120 VAC, and 0.12 amps @ 240 VAC. Use indoors and out, in temperatures ranging from –31° to +161° F. Surface mount to electrical boxes (sold separately below) using included mounting screws. UL and C-UL listed.

Indoor electrical mounting box is made of galvanized steel and has 1/2″ knockouts. ***Outdoor electrical mounting box*** is made of die cast aluminum and has 1/2″ and 3/4″ NPT female conduit openings. When mounted with the outdoor electrical box, horn meets NEMA 3R for rain protection.

		Each
Horn	**6476T41**	$473.50
Indoor Electrical Mounting Box	**71695K12**	1.91
Outdoor Electrical Mounting Box	**5649T513**	33.10

For information about sound levels, see page 1840.

32-Tone Adjustable-Volume Horns

Standard

Compact

With 32 different tones, these horns let you choose the sound that suits you best. UL listed and California State Fire Marshal (CSFM) approved.

Standard horns produce up to 110 dB @ 10 ft., so they're great for noisy areas. They meet NEMA 3R for protection against rain, so you can use them outdoors. Horns have a die cast aluminum housing and measure 12½″ Ht.×8″ Wd.×8½″ Dp. They have screw terminal connections and a ½″ NPT female conduit opening. Surface mount (no separate mounting box required) using two 13⁄64″ dia. mounting holes (hardware not included). Temperature range is –67° to +150° F. Color is gray.

Compact horns have full-range adjustable output. Horns have a beige thermoplastic housing and measure 4½″ Ht.×4½″ Wd.×3½″ Dp. They have two wire leads. Surface mount to mounting boxes (sold separately below) using included screws. Temperature range is –31° to +161° F. C-UL listed.

Indoor electrical mounting box is made of galvanized steel and has ½″ and ¾″ knockouts. ***Outdoor electrical mounting box*** is made of die cast aluminum. It has ½″ and ¾″ NPT female conduit openings.

Volts	dB @ 10 ft.	Amps		Each
Standard				
120 VAC	0-110	0.30	5682T67	$631.86
24 VAC/VDC	0-110	1.10	5682T65	631.86
Compact				
120 VAC	0-88	0.04	5649T54	331.45
24 VAC/VDC	0-88	0.22/0.07	5649T53	342.88
Indoor Electrical Mounting Box			53515T96	1.98
Outdoor Electrical Mounting Box			5649T513	33.10

27-Tone Hazardous-Location Horns

UL listed for indoor and outdoor use in Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 2, Groups F and G; and Class III hazardous locations.

Horns produce 27 tones. They're gray, made of die cast zinc, and measure 13¾″ Ht.×8″ Wd.×8¾″ Dp. They have three wire leads and three ½″ knockouts. Mount using four 3⁄16″ dia. mounting holes (mounting hardware not included).

Horns operate on any of the following voltages: 120 VAC, 240 VAC, 125 VDC, and 250 VDC. They draw 0.31 amps @ 120 VAC, 0.20 amps @ 240 VAC, 0.20 amps @ 125 VDC, and 0.10 amps @ 250 VDC. Temperature range is 41° to 104° F.

Horn with 4-tone programming lets you select up to four tones, each corresponding to a different warning. If multiple warnings are triggered at once, the first will override the other three and so on.

	dB @ 10 ft.		Each
Horn with 1-Tone Programming	95-110	5823T41	$857.43
Horn with 4-Tone Programming	95-110	5823T42	1,126.88

Single-Tone Hazardous-Location Horns

Sound off, even in hazardous spaces. These horns are UL listed for Class I, Div. 1 and 2, Groups B, C, and D; Class II, Div. 1 and 2, Groups E, F, and G; and Class III hazardous locations. They're rated NEMA 4X for corrosion resistance and washdown protection. Horns are made of die cast zinc and measure 7⅝″ Ht.×7⅜″ Wd.×4¼″ Dp. They include two wall-mount brackets with two ⅜″ dia. mounting holes each (mounting hardware not included). All have three wire leads and a ¾″ NPT female conduit opening. Use indoors and out, in temperatures ranging from 25° to 104° F. Color is gray.

Volts	dB @ 10 ft.	Amps		Each
120 VAC	97	0.13	5650T23	$661.52
24 VDC	97	0.16	5650T32	822.14

Single-Tone Adjustable-Volume Horns

A

B

C

Pump up the volume (or take it down a notch) by adjusting a screw on the grille of these horns. Horns are made of heavy duty die cast zinc. Color is gray. Mounting hardware included. UL listed.

Style A horns have screw terminal connections and a steel backplate. They can be mounted to any standard electrical box. ***Style B*** horns are rated NEMA 4X for corrosion resistance and washdown protection. Furnished with three wire leads. ***Style C*** horns are also rated NEMA 4X for corrosion resistance and washdown protection. They have a built-in electrical box, screw terminal connections, and a ¾″ NPT female conduit opening.

	dB @ 10 ft.	Mount	Enclosure Type	Ht.×Wd.×Dp.	120 VAC Amps	120 VAC	Each	24 VAC Amps	24 VAC	Each	24 VDC Amps	24 VDC	Each
A	78-101	Surface	Indoor	5″ ×5″ ×2⅛″	0.13	3038T14	$92.62	0.63	3038T11	$92.62	0.16	3038T12	$133.71
B	78-101	Panel	NEMA 4X	4⅝″×4⅝″×1⅞″	0.13	3038T22	91.59	0.63	3038T18	91.59	0.16	3038T19	113.05
C	78-101	Surface	NEMA 4X	4⅞″×4⅞″×3⅜″	0.13	3038T39	123.86	0.63	3038T36	123.86	0.16	3038T37	168.89

8-Tone Fire Alarm Horns and Horns with Strobe

D

E

F

G

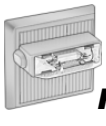

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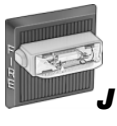

J

Each of these horns offers eight unique alarm sounds to signal a fire. Horns are made of thermoplastic and have screw terminal connections. Wall mount using mounting boxes (sold separately below). Mounting hardware included. UL listed and California State Fire Marshal (CSFM) approved.

Horns have a temperature range of –31° to +150° F.

Horns with strobe flash 60 times per minute to provide a visual signal as well. Red horns have FIRE printed on the strobe lens (*Style G)* or on the side of the horn (*Style J*). *Styles F* and *G* have a 15 candela strobe (candela is a unit of measurement of light intensity) with a white lens. Temperature range is –31° to +150° F. *Styles H* and *J* have a 15/75 candela strobe with a clear lens. For indoor use only.

Indoor electrical mounting box for all horns is made of galvanized steel and has ½″ and ¾″ knockouts. ***Outdoor electrical mounting boxes for VAC horns*** are made of die cast aluminum and have ½″ NPT female threads. ***Outdoor electrical mounting boxes for VDC horns*** are made of thermoplastic and have ½″ knockouts.

	Volts	dB @ 10 ft.	Amps	Ht.×Wd.×Dp.	Color		Each
Horns							
D	115 VAC	75-88	0.05	4⅛″×4⅛″×2⅛″	Red	59835T12	$28.88
D	115 VAC	75-88	0.05	4⅛″×4⅛″×2⅛″	Gray	59835T15	28.88
E	12/24 VDC	76-94	0.18/0.11	5⅛″×5⅛″×2⅛″	White	59835T83	25.38
E	12/24 VDC	76-94	0.18/0.11	5⅛″×5⅛″×2⅛″	Red	59835T86	25.38
Horns with Strobe							
F	115 VAC	73-85	0.07	4⅛″×4⅛″×3½″	Gray	59835T19	59.64
G	115 VAC	73-85	0.07	4⅛″×4⅛″×3½″	Red	59835T17	59.64
H	12 VDC	76-94	0.43	5⅛″×5⅛″×4⅜″	White	59835T41	56.07
J	24 VDC	76-94	0.20	5⅛″×5⅛″×4⅜″	Red	59835T49	56.07
Indoor Electrical Mounting Box for All Horns						71695K13	2.87
Outdoor Electrical Mounting Box for VAC Horns (Gray)						59835T36	13.86
Outdoor Electrical Mounting Box for VAC Horns (Red)						59835T34	13.86
Outdoor Electrical Mounting Box for VDC Horns (Red)						59835T511	12.12
Outdoor Electrical Mounting Box for VDC Horns (White)						59835T512	12.12

For information about sound levels, see page 1840.

Fire Alarm Horns with ADA-Compliant Strobes

Improve your alarm system by sending an alert that's both seen and heard. These thermoplastic horns have two tones, a built-in strobe with a clear polycarbonate lens, and screw terminal connections. Wall mount (mounting hardware included) on an electrical mounting box (sold separately below). UL listed and CSFM (California State Fire Marshal) approved.

Each horn has multiple candela settings (candela is a unit of measurement of light intensity). The Americans with Disabilities Act (ADA) requires 75 candela strobes in indoor public areas.

Indoor horn has a 15/30/75/110 candela strobe. ***Indoor/outdoor horn*** has a 15/35/60/75/95/110 candela strobe. It operates in temperatures ranging from –40° to +151° F. It's also C-UL listed.

To Order: Please specify red or white.

Indoor electrical mounting box is made of galvanized steel and has 1/2″ and 3/4″ knockouts. ***Outdoor electrical mounting boxes*** are made of aluminum and have 1/2″ knockouts.

Indoor

Indoor/ Outdoor

	dB @ 10 ft.	Amps	Ht. × Wd. × Dp.		Each
Indoor Horn					
24 VDC	91	0.33	5 1/8″ × 5 1/8″ × 4 3/8″	83005T2	$64.03
Indoor/Outdoor Horn					
12/24 VDC	100	0.27	6 1/16″ × 5″ × 2 5/16″	2684T3	74.99
Indoor Electrical Mounting Box				71695K13	2.87
Outdoor Electrical Mounting Box (Red)				2684T8	19.85
Outdoor Electrical Mounting Box (White)				2684T9	19.85

Recorded Voice Message Speakers

Record a 20-second message, such as evacuation instructions, that plays repeatedly when triggered. All speakers are white polycarbonate and measure 6 9/16″ Ht. × 5 1/16″ Wd. × 3″ Dp. Mount on one of the electrical mounting boxes sold separately below (mounting hardware included). UL and C-UL listed.

Speakers with strobe flash 60 times per minute. Both have a 110 candela strobe.

Indoor electrical mounting box is made of galvanized steel and has 1/2″ and 3/4″ knockouts. ***Outdoor electrical mounting box*** is made of aluminum and has 3/4″ NPSM female conduit openings.

Speaker with Strobe

	dB @ 10 ft.	Amps		Each
Speakers				
24 VAC/VDC	90	0.16	7621T11	$422.78
120 VAC	90	0.09	7621T12	422.78
Speakers with Strobe				
24 VAC/VDC	90	0.16	7621T13	468.02
120 VAC	90	0.09	7621T14	468.02
Indoor Electrical Mounting Box			71695K13	2.87
Outdoor Electrical Mounting Box			7219K26	11.11

Fire Bells

FM-approved and bright red for visibility, these bells make great fire alarms. Each has an extra set of screw terminal connections for a fire alert signaling system. Bells are made of aluminum. Wall mount (mounting hardware included) indoors and out on an electrical mounting box (sold separately below). UL and C-UL listed.

Indoor electrical mounting box is made of galvanized steel and has 1/2″ and 3/4″ knockouts. ***Outdoor electrical mounting box*** is made of die cast aluminum and has 1/2″ NPT female conduit openings. Color is red.

Bell guard is made of zinc-plated steel. It is 17 3/8″ dia. and has four 5/16″ dia. mounting holes. Mounting hardware not included.

Dia.	Volts	dB @ 10 ft.	Amps		Each
6″	115 VAC	86	0.12	49565T23	$52.89
10″	115 VAC	88	0.12	49565T25	71.58
Indoor Electrical Mounting Box				71695K41	1.98
Outdoor Electrical Mounting Box				59835T34	13.86
Bell Guard				5684T46	36.67

Emergency Communication Speakers

Send an urgent message with these speakers—they're suitable for use with fire alert signaling, emergency evacuation, and mass notification systems.

Speakers operate on 25/70 volts. Mount on an electrical mounting box (sold separately below) using two 1/4″ dia. mounting holes (mounting hardware not included). Use them indoors and out in temperatures ranging from –40° to +150° F. UL 1480 listed for emergency voice and alarm systems.

Speakers are made of steel. Size is 5 9/16″ Ht. × 5 9/16″ Wd. × 3 1/8″ Dp. ***Speakers with strobe*** flash 60 times per minute. They're made of ABS plastic and have a 75/110 candela strobe with a polycarbonate lens (candela is a unit of measurement of light intensity). Size is 5 1/2″ Ht. × 5 1/2″ Wd. × 5 7/16″ Dp.

To Order: Please specify red or white.

Note: Each speaker has several wattage outputs—the higher the watts, the louder your speaker will be. If you're connecting several speakers to one amplifier, the total watts of all speakers should not exceed the maximum wattage of the amplifier.

Indoor electrical mounting box is made of galvanized steel and has 1/2″ and 3/4″ knockouts. ***Outdoor electrical mounting boxes*** are made of ABS plastic and have 1/2″ knockouts.

Without Strobe

With Strobe

Watts	Max. dB @ 10 ft.		Each
Speakers			
0.3, 0.5, 1.0, 2.0	89	7638T1	$19.74
2.0, 4.0, 8.0	94	7638T2	20.18
Speakers with Strobe			
0.3, 0.5, 1.0, 2.0	89	7638T3	56.14
2.0, 4.0, 8.0	94	7638T4	57.89
Indoor Electrical Mounting Box		83005T53	5.87
Outdoor Electrical Mounting Box (Red)		7638T77	10.53
Outdoor Electrical Mounting Box (White)		7638T78	10.53

Ceiling-Mount Speakers

For clear public address announcements and background music, choose these speakers. They operate on 25/70 volts except 56705T37, which operates on 70 volts. All are white and have an epoxy-coated finish. Speakers also have a steel grille and include mounting hardware. For indoor use.

Note: Each speaker has several wattage outputs—the higher the watts, the louder your speaker will be. If you're connecting several speakers to one amplifier, the total watts of all speakers should not exceed the maximum wattage of the amplifier.

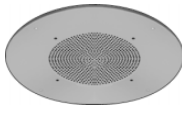

Watts	Max. dB @ 3 ft.	Volume Control	Dia.		Each
0.3, 0.6, 1.3, 2.5, 5.0	104	No	12 7/8″	56705T35	$27.39
0.3, 0.6, 1.3, 2.5, 5.0	104	Yes	12 7/8″	56705T62	38.79
0.6, 1.3, 2.5, 5.0, 10.0	107	No	12 7/8″	56705T37	38.74

Quick-Install Speakers

Here's a no-hassle solution to your sound system needs: these speakers easily install into ceiling tiles or mount onto beams. They're perfect for paging and background music. Both models operate on 25/70 volts and have a white epoxy-coated steel grille. For indoor use.

Ceiling tile lay-in speaker takes the place of a 24″ × 24″ standard ceiling tile—no cutting necessary.

Beam-mount speaker secures to a beam or girder using the two included C-clamps.

Note: Each speaker has several wattage outputs—the higher the watts, the louder your speaker will be. If you're connecting several speakers to one amplifier, the total watts of all speakers should not exceed the maximum wattage of the amplifier.

Ceiling Tile Lay-In

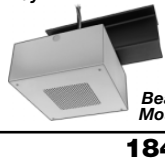

Beam Mount

	Watts	Max. dB @ 3 ft.	Lg. × Wd. × Dp.		Each
Ceiling Tile Lay-In	0.3, 0.6, 1.3, 2.5, 5.0	103	23 3/4″ × 23 3/4″ × 3 1/2″	6576T7	$70.26
Beam Mount	0.3, 0.5, 1.0, 2.0, 4.0	103	11 5/8″ × 11 5/8″ × 5 1/2″	6576T8	63.22

For information about sound levels, see page 1840.

Wall-Mount Speakers

Expect high-quality paging and background music from these speakers. They operate on 25/70 volts and have a knob to adjust volume. Speakers have six 3/8″ dia. and four 1/4″ dia. mounting holes (mounting hardware not included). For indoor use.

Housing is epoxy-coated steel. ***White speaker*** has an epoxy-coated steel grille. ***Black speaker*** has a gray fabric grille.

Note: Each speaker has several wattage outputs—the higher the watts, the louder your speaker will be. If you're connecting several speakers to one amplifier, the total watts of all speakers should not exceed the maximum wattage of the amplifier.

Watts	Max. dB @ 3 ft.	Ht. × Wd. × Dp.	Color		Each
0.3, 0.6, 1.3, 2.5, 5.0	102	11 3/8″ × 11 5/8″ × 5 3/8″	White	57615T33	$55.90
0.3, 0.6, 1.3, 2.5, 5.0	102	11 5/8″ × 11 5/8″ × 5 3/4″	Black/Gray	57615T37	79.90

Premium Wall-Mount Speakers

Boasting the best sound quality of all our speakers, these units are perfect for playing music at a standard volume or softly in the background. You can use them for paging, too. Both have a switch to select either 70 volt or 8 ohm operation. They have an ABS plastic housing and an enamel-coated aluminum grille. Mounting bracket has four 3/16″ dia. mounting holes (fasteners are not included). Speakers can be used outdoors if they are protected by an awning or overhang.

Note: Each speaker has several wattage outputs—the higher the watts, the louder your speaker will be. If you're connecting several speakers to one amplifier, the total watts of all speakers should not exceed the maximum wattage of the amplifier.

Watts	Max. dB @ 3 ft.	Ht. × Wd. × Dp.	***White***	Each	***Black***	Each
1.3, 2.5, 5.0, 10.0, 20.0	101	10 1/4″ × 6 7/8″ × 6 3/4″	6489T4	$85.33	6489T3	$85.33
				Per Pair		**Per Pair**
1.3, 2.5, 5.0, 10.0, 20.0	101	10 1/4″ × 6 7/8″ × 6 3/4″	6489T5	$144.17	6489T6	$144.17

Cable-Hung Speaker

For 360° sound projection, hang this speaker from a ceiling, beam, or girder. It's perfect for high-quality paging and background music in large spaces. Speaker is 10″ dia. and is made of white ABS plastic. It operates on 70 volts and comes with a 9 1/2-ft. braided metal cable. For indoor use.

Note: Each speaker has several wattage outputs—the higher the watts, the louder your speaker will be. If you're connecting several speakers to one amplifier, the total watts of all speakers should not exceed the maximum wattage of the amplifier.

Watts	Max. dB @ 3 ft.		Each
2.5, 5.0, 10.0, 20.0	106	4304T3	$139.20

Vandal-Resistant Speaker

Vandals won't get past the tamper-resistant pin-in-torx screws securing this speaker's cover to its housing. Speaker operates on 25/70 volts and has a white epoxy-coated steel housing with four 1/4″ dia. mounting holes (mounting hardware not included). Size is 11 5/8″ Ht. × 11 5/8″ Wd. × 4 1/8″ Dp. Surface mount indoors and out. A screwdriver bit is included for pin-in-torx screws.

Note: Each speaker has several wattage outputs—the higher the watts, the louder your speaker will be. If you're connecting several speakers to one amplifier, the total watts of all speakers should not exceed the maximum wattage of the amplifier.

Watts	Max. dB @ 3 ft.		Each
1.0, 2.0, 4.0, 8.0, 16.0	121	7695T1	$149.90

Indoor/Outdoor Horn-Shaped Speakers

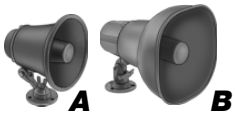

For loud, clear paging indoors and out, choose these powerful speakers. They're made of epoxy-coated aluminum. All include a mounting bracket with three 1/4″ dia. mounting holes. Fasteners are not included.

Style A doesn't have a transformer, so it must be attached to an 8-ohm amplifier output. ***Style B*** operates on 25/70/100 volts. ***Style C*** operates on 25/70 volts.

Note: Each speaker has several wattage outputs—the higher the watts, the louder your speaker will be. If you're connecting several speakers to one amplifier, the total watts of all speakers should not exceed the maximum wattage of the amplifier.

Watts @ 70V	Max. dB @ 3 ft.	Ht. × Wd. × Dp.	Color		Each
A 15.0♠	119	8″ × 6″ × 8″	Gray	5642T94	$48.57
B 1.0, 2.0, 3.8, 7.5, 15.0	120	8 3/4″ × 7 7/8″ × 9 3/8″	Gray	5642T96	115.42
B 2.0, 3.8, 7.5, 15.0, 30.0	126	11″ × 10″ × 10 1/2″	Gray	5642T31	131.25
C 1.8, 3.7, 7.5, 15.0, 30.0	121	9 5/8″ × 15 3/4″ × 12 1/8″	Beige	5642T88	173.24

♠Watts with an 8-ohm amplifier.

Adjustable-Volume Indoor/Outdoor Horn-Shaped Speakers and Power Supplies

The built-in amplifiers in these horns have volume controls, so you can manually adjust output based on background noise. Horns are designed for telephone paging, and are compatible with most Private Automatic Branch Exchange (PABX), Expansion Key Service Unit (EKSU), and other telephone systems with a 600-ohm output. They don't work directly with a telephone.

Speakers— Made of beige epoxy-coated aluminum, speakers come with a mounting bracket with three 3/16″ dia. mounting holes (fasteners not included). They must be externally powered by a 24 VDC power supply (sold separately below).

Power Supplies— Required to operate speakers. They convert 120 VAC to 24 VDC, include a 6-ft. cord, and are UL listed. The *0.6 amp* power supply has a two-prong plug; the *4.0 amp* power supply has a three-prong plug.

Note: The total amps drawn by your speaker must not exceed the power supply's amp rating.

Speakers

Watts	Max. dB @ 3 ft.	Amps	Ht. × Wd. × Dp.		Each
5	114	0.45	9 1/2″ × 9″ × 10″	56685T21	$115.14
15	117	1.4	9 1/2″ × 9″ × 10″	56685T22	119.48

Power Supplies

		Each
0.6 Amp Power Supply	56685T31	$52.16
4.0 Amp Power Supply	56685T32	212.79

Speaker Volume Controls

With Knob Turn

With Key Lock

Wire one of these controls between your speakers and amplifier to adjust the volume. Controls have 10 sound levels and an off position, and are compatible with 25-, 70-, and 100-volt systems. A stainless steel, flush-mount mounting plate and mounting hardware are included. ***Controls with knob*** are UL listed. ***Control with key lock*** prevents tampering.

Watts	Ht. × Wd. × Dp.		Each
With Knob			
25	4 1/2″ × 2 3/4″ × 2 3/4″	59025T3	$23.03
50	4 1/2″ × 2 3/4″ × 2 3/4″	59025T7	26.06
100	4 1/2″ × 2 3/4″ × 3 1/8″	59025T8	32.02
With Key Lock			
100	4 1/2″ × 2 3/4″ × 2″	59025T48	62.98

For information about sound levels, see page 1840.

Public Address System Amplifiers

Bench Top

Wall Mount

Power your 25- or 70-volt public address system with these amplifiers. They support paging and background music (music is automatically muted during paging), and have bass and treble controls. All include inputs for low-impedance microphones and a 600-ohm phone system. (Please make sure your phone system has an output of 600 ohms.) Amplifiers operate on 120 VAC, 60 Hz. Color is black.

Bench-top amplifiers are not fastened to a surface, so they're easily moved. The *15- and 30-watt* models have a 5-ft. cord with a three-prong plug. They can also be wall mounted using the wall-mount bracket (sold separately below). Bracket has two 5/32″ wide mounting slots (mounting hardware not included). The *60- and 125-watt* models have a 6-ft. cord with a three-prong plug. Both include a bracket that has four 9/32″ wide mounting slots to fasten to a standard 19″ electronics rack, as well as fasteners for attaching to the amplifier (but not the rack). ***Wall-mount amplifier*** has a 6-ft. cord with a three-prong plug. It has four 11/32″ dia. mounting holes (mounting hardware not included). UL and C-UL listed. CSA certified.

Watts	Amps	Ht. × Wd. × Dp.		Each
Bench-Top Amplifiers				
15	0.5	3½″ × 8 7/16″ × 11″	**8230T11**	$203.70
30	1	3½″ × 8 7/16″ × 11″	**8230T12**	236.30
60	1.25	3½″ × 17″ × 13½″	**8230T63**	385.18
125	2.5	3½″ × 17″ × 13½″	**8230T64**	447.86
Wall-Mount Bracket for 8230T11 and 8230T12			**8230T13**	$24.00
Wall-Mount Amplifier				
100	2	8⅜″ × 14¼″ × 3⅝″	**8230T111**	565.25

Portable Public Address Systems

Corded System

Weighed down by heavy amps, speakers, and microphones? Switch to these systems—each weighs just 4 lbs. (8 lbs. with batteries). They include a 50-watt amplifier, a 6″ Ht. × 8″ Wd. speaker, plus an input for a CD player, tape player, or projector. Two interface cables (one for a laptop; one for a projector) and a black plastic carrying case with an adjustable shoulder strap are also included. Both systems operate on 10 D batteries or an AC adapter (all sold separately below). Size is 11″ Ht. × 13½″ Wd. × 4½″ Dp. UL and C-UL listed.

Corded system includes a microphone and 15-ft. cord with a 3-pin XLR female plug. ***Wireless system*** provides hands-free talking within 300 ft. It includes a wireless receiver, wireless transmitter (requires one 9-volt battery, sold separately below), and two microphones: one headset model and one low-impedance lapel model.

AC adapter has a 7½-ft. cord with a three-prong plug.

		Each
Corded System	**5986T24**	$444.74
Wireless System	**5986T26**	666.67
AC Adapter	**5986T28**	114.61
9-Volt Battery	**71455K56**	2.75
D Battery (6/Pkg.)	**71455K55** Per Pkg.	$7.32

Microphones, Plugs, and Cords

Microphones

Speak up and be heard with help from these microphones. They're perfect for paging, public address, and dispatching. Compatible with all amplifiers with a low-impedance input.

Hand-held model filters out wind, breathing, and other distracting sounds. It includes a swivel adapter for use with a stand, and has a 3-pin XLR male plug for connecting to a cord (sold separately below). Color is beige.

Hand-held push-to-talk model has a 5-ft. cord with wire leads. It includes a mounting bracket with two 5/32″ dia. mounting holes (fasteners not included). Color is black.

Desktop model can lock "on" for hands-free operation. It has a 7-ft. cord with wire leads. Color is black and silver.

Microphone clip fits all microphones with ¾″ dia. or larger handles. It's made of black plastic and has a 5/8″-27 threaded female connection for mounting to a microphone stand.

Microphone stand extends from 35″ to 63″ high. Made of chrome-colored steel, it has a black 10″ dia. base and a 5/8″-27 threaded male connection on top.

		Each
Hand Held	**56785T111**	$86.21
Hand-Held Push-to-Talk	**55295T125**	90.91
Desktop	**55295T225**	163.64
Microphone Clip for Hand-Held Microphone	**55295T131**	7.27
Microphone Stand for Hand-Held Microphone	**55295T132**	66.53

Plugs

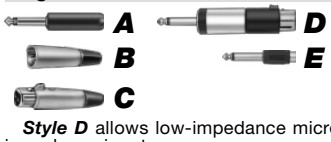

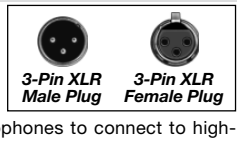

Style D allows low-impedance microphones to connect to high-impedance inputs.

Connections		Each
A ... ¼″ Plug	**58075T31**	$3.78
B ... 3-Pin XLR Male Plug	**58075T33**	4.54
C ... 3-Pin XLR Female Plug	**58075T32**	4.96
D ... ¼″ Plug to 3-Pin XLR Female Plug Adapter	**58075T34**	18.00
E ... ¼″ Plug to RCA Female Jack Adapter	**58075T35**	1.35

Cords

These 22 AWG cords have a 3-pin XLR female plug on one end and a 3-pin XLR male plug on the other end. Cords have a black PVC jacket.

		Each
6 ft.	**6009T1**	$13.88
12 ft.	**6009T2**	18.08
25 ft.	**6009T3**	27.83
50 ft.	**6009T4**	41.79

Megaphones

Our voice-amplifying megaphones provide loud, clear communication even in noisy environments. They're weatherproof, so you can use them outdoors. All have an index finger push-to-talk trigger switch, a volume control knob, and a carrying strap. They're made of ABS plastic. Color is blue and white except for 5645T21, which is gray and red. Batteries sold separately below.

Megaphones with a signal tone have a switch to activate the tone. ***Megaphone with detachable microphone*** has a shoulder strap.

Handle Grip

Pistol Grip

	Signal Tone	Power, watts	Range, yds.	Dia. × Lg.	Batteries Required		Each
Handle Grip	None	2	200	6″ × 11″	6 AA	**5645T11**	$66.68
Pistol Grip	None	5	300	7½″ × 12¾″	8 AA	**5645T12**	95.19
Pistol Grip	Fog Horn	10	600	7″ × 14″	6 C	**5645T13**	133.36
Pistol Grip	Siren	16	266	9⅛″ × 14¼″	8 C	**5645T21**	67.93
Pistol Grip w/Detachable Microphone	Fog Horn	20	1000	9½″ × 15″	8 C	**5645T15**	189.95
AA Battery (4/Pkg.)						**71455K53** Per Pkg.	$2.94
C Battery (6/Pkg.)						**71455K54** Per Pkg.	$6.49

Wired Intercom Stations

Master Station

Wall Flush-Mount Substation

Desktop Substation

Wall Surface-Mount Substation

Bracket-Mount Horn Substation

Ceiling Flush-Mount Substation

Create your own internal communication system. Choose a master station and one or more substations, then connect your system using three-wire cable (sold separately). Maximum cable length is 1000 ft.

All components are made of steel. Mounting hardware is included, unless noted. For indoor use in temperatures ranging from 0° to 100° F, unless noted.

Master stations have a built-in microphone and a volume control knob. Designed for desktop use, they operate on 120 VAC, 50/60 Hz and draw 0.6 amps. Both have a 6-ft. cord with a three-prong plug. 5743T11 has channel select buttons that let you contact a specific substation and an "all call" button that contacts all substations at once.

Substations with call switch enable you to initiate communication. ***Substations without call switch*** must be selected at the master station in order to communicate. *Ceiling flush-mount* model has a volume control knob.

	Watts	Ht. × Wd. × Dp		Each
Master Stations				
For One Substation	—	3⅛″ × 10½″ × 8¾″	**5743T32**	$320.73
For Up to Five Substations	—	3⅛″ × 10½″ × 8¾″	**5743T11**	367.83
Substations with Call Switch				
Wall Flush-Mount	2	7¼″ × 4¾″ × 2″	**5743T33★**	101.54
Desktop	2	2⅞″ × 7½″ × 8¾″	**5743T15**	156.54
Substations without Call Switch				
Wall Surface-Mount	5	12″ × 12″ × 8″	**5743T16●**	148.92
Bracket-Mount Horn	60	9″ Dia. × 9″ Dp.	**5743T17★**	310.96
Ceiling Flush-Mount	5	12⅞″ Dia. × 3″ Dp.	**5743T51**	58.38
Accessories				
Surface-Mount Enclosure for 5743T33			**5743T41★**	27.50
Three-Wire Cable			**5743T34★**	**Per Ft.** $0.39

★ For indoor and outdoor use. Temperature range is –30° to +140° F.
● Has one 3/16″ diameter mounting hole. Mounting hardware not included.

Severe Duty Wired Intercom Stations

Bolstered by their sealed, heavy cast aluminum housing, these intercom stations can handle extreme heat and cold indoors and out. Rated NEMA 4X for corrosion resistance and washdowns. UL and C-UL listed for marine applications.

Stations have a solid-state amplifier, speaker, talk/listen toggle switch, and volume control knob. Connect multiple intercom stations using two-wire cable (sold separately). Any station can communicate with all other stations connected to the same circuit, but cannot have a private conversation with a single station. All operate on 120 VAC, 50/60 Hz and draw 0.24 amps. Stations come with a 7-ft. power cord with a three-prong plug and a 7-ft. connection cable with bare ends. They have two 13/32″ dia. holes for wall mounting (fasteners not included). Size is 9⅞″ Ht. × 6¾″ Wd. × 3⅞″ Dp. Temperature range is –31° to +150° F.

		Each
Intercom Station	**5656T25**	$611.28
Call-Tone Intercom Station	**5656T27**	656.07
Two-Wire Cable	**71335K55**	**Per Ft.** $0.30

Digital Voice Recorder

Record and store up to 280 hours with this pocket-sized recorder. It activates with a push-button and has a built-in 2 GB memory. The recorder displays a time and date stamp for each recording on its screen, plus it has five folders to help you stay organized. Size is 4¼″ Ht. × 1⅜″ Wd. × ¾″ Dp. Color is silver. Operates on two AAA batteries (included).

8700T1 ..... **Each** $58.73

Battery-Operated Wired Communication Set

Get clean, clear voice communication over any pair of wires including coaxial cable, telephone lines, and common copper wiring—no additional cable needed. This set is effective up to 5000 ft. *Note:* Do not use on powered circuits.

This set is ideal in areas where RF (radio frequency) communication is banned or reception is poor. It includes two communication units (each operates on a 9-volt battery, sold separately), two headsets for hands-free communication, cables for hookup, and test leads for wire tracing. Housing is ABS plastic. Size is 5⅛″ Ht. × 1⅞″ Wd. × 1¼″ Dp.

		Each
Communication Set	**2828T7**	$162.51
9-Volt Battery	**71455K56**	2.75

Voice-Powered Wired Handset and Headsets

Handset

Over-Head Headset

Behind-Head Headset

Clip Adapter

Build a communication system that uses your voice as its power source. To create a basic system, you'll need two handsets or headsets and a cable.

Handset has a push-to-talk button and a 4½-ft. cord. Made of ABS plastic.

Headsets have a steel headband, a microphone, and a 2½-ft. cord. Ear cups are made of ABS plastic with vinyl-covered foam cushions. *Over-head* style has a noise reduction rating of 16 dB. *Behind-head* style can be worn under a hard hat. It has a noise reduction rating of 19 dB. For information about noise reduction ratings, see page 1823.

Optional amplifier for headsets boosts the volume level, so it's easier to hear in noisy areas. It operates on one 9-volt battery (included).

Cables have a ¼″ jack at each end. ***Extension cables*** have a ¼″ jack at one end and a ¼″ plug on the other.

Clip adapter lets you temporarily connect to two wires, so you don't have to install a wall plate jack. It has a ¼″ jack at one end and two PVC-insulated alligator clips at the other.

Use the ***wall plate jack*** and ***wall plate cable*** (sold separately) to create a fixed system between locations. Just plug a handset or headset into the wall plate jack and start talking.

		Each
Handset and Headsets		
Handset	**9165T311**	$145.47
Over-Head Headset	**9165T21**	303.12
Behind-Head Headset	**9165T24**	303.12
Optional Amplifier for Headsets	**9165T44**	393.24
Cable and Accessories		
50-ft. Cable	**9165T12**	79.17
100-ft. Cable	**9165T18**	110.83
50-ft. Extension Cable	**9165T13**	79.17
100-ft. Extension Cable	**9165T14**	102.31
Clip Adapter	**9165T61**	37.99
Wall Plate Jack for Fixed System	**9165T45**	37.99
Wall Plate Cable for Fixed System	**71055K76**	**Per Ft.** $0.50

Headset kit includes two behind-head headsets, a 50-ft. cable, and two 17″ clip adapters.

9165T55 ..... **Each** $674.36

Two-Way Radios

All of these two-way radios operate on FCC designated business frequencies and require an FCC license. They are compatible with most brands of two-way radios. Special circuitry eliminates interference so you can communicate clearly.

Radios have a black polycarbonate housing. They come with a belt clip, a rechargeable lithium ion battery, and a charger that has a 6-ft. cord with a two-prong plug.

Optional *six-unit desktop chargers* allow you to charge multiple radios at the same time. *Optional remote speaker/microphone* lets you use the radio without unclipping it from your belt.

	Flat Ground No Obstructions	Steel/Concrete Industrial Buildings	Multi-Level Buildings
UHF—*Offers greater coverage in steel/concrete structures*			
1 Watt	Up to 5 miles	Up to 200,000 sq. ft.	Up to 15 floors
2 Watt	Up to 6 miles	Up to 250,000 sq. ft.	Up to 20 floors
4 Watt	Up to 6 miles	Up to 350,000 sq. ft.	Up to 30 floors
VHF—*Works best in and around wood structures*			
2 Watt	Up to 6 miles	Up to 220,000 sq. ft.	Up to 13 floors
5 Watt	Up to 6 miles	Up to 300,000 sq. ft.	Up to 18 floors

Radios

One-watt radios have an LCD for programming frequencies and codes. They come with a 3-hour charger. Size is 4⅛″ Ht. × 2″ Wd. × 1⅛″ Dp.

Two-watt radios have a voice scramble mode for increased privacy. They come with a 7-hour charger. Size is 4½″ Ht. × 2⅛″ Wd. × 1⅜″ Dp. Meet MIL-STD 810 for resistance to shock, vibration, dust, and moisture. The *8-channel* model has an LCD for programming frequencies.

One-Watt Radio

8-Channel Two-Watt Radio

Frequencies Type	No. of	No. of Channels		Each
One-Watt Radios				
UHF	56	1	1467T71	$175.71
UHF	56	4	1467T72	195.71
Two-Watt Radios				
UHF	89	2	1467T54	233.82
UHF	89	8	1467T55	272.06
VHF	27	2	1467T52	210.29
Accessories for One-Watt Radios				
Six-Unit 3-Hour Desktop Charger			1467T73	181.67
Replacement Battery			1467T74	38.71
Replacement Belt Clip			1467T76	15.38
Accessories for Two-Watt Radios				
Six-Unit 6½-Hour Desktop Charger			1467T63	229.23
1½-Hour Rapid Charger			1467T61	62.90
Leather Holster			1467T64	30.77
Replacement Battery			1467T62	64.62
Replacement Belt Clip			1467T77	15.15

High-Power Radios

For better coverage and clearer transmission, choose these power-packed radios. They transmit with more watts than standard two-way radios. A 12-hour charger is included. Size is 4½″ Ht. × 2⅛″ Wd. × 1½″ Dp. Meet MIL-STD 810 for resistance to shock, vibration, dust, and moisture.

Frequencies Type	No. of	Watts	No. of Channels		Each
UHF	89	4	10	1532T51	$316.65
VHF	27	5	10	1532T52	298.74
Accessories					
Six-Unit 6½-Hour Desktop Charger				1467T63	229.23
1½-Hour Rapid Charger				1467T61	62.90
Leather Holster				1467T64	30.77
Replacement Battery				1532T53	93.50
Replacement Belt Clip				1467T77	15.15

Additional Accessories for All Models

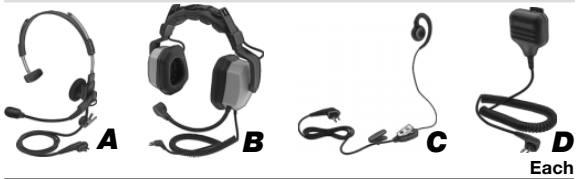

		Each
A... Single-Ear Light Duty Headset	1467T34	$70.00
B... Dual-Ear Muff-Style Heavy Duty Headset	1467T35	162.30
C... Earpiece with Inline Push-to-Talk Button	1467T57	33.33
D... Remote Speaker/Microphone	1467T26	58.33

FRS/GMRS Two-Way Radio

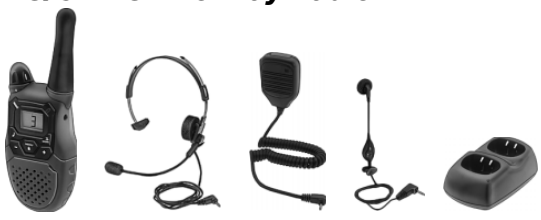

For easy, effective communication, use this FRS (Family Radio Service)/GMRS (General Mobile Radio Service) radio. It has 22 channels and a range of up to 16 miles. Special circuitry eliminates interference. *Note:* Radio requires an FCC license. It won't work on FCC designated business frequencies and is not intended for commercial business use. Do not use with other two-way radios.

Radio has a back-lit LCD, a battery life indicator, a polycarbonate housing, and a removable swivel belt clip. It measures 6½″ Ht. × 2¼″ Wd. × 1⅜″ Dp. Power is ½ watt for FRS; 1 watt for GMRS. It runs on three AA batteries (sold separately).

Optional *remote speaker/microphone* lets you use the radio without unclipping it from your belt. Optional *two-unit desktop charger* charges up to two radios and includes a charging adapter and two rechargeable NiMH batteries.

		Each
E.. Radio	5143T51	$41.50
F.. Single-Ear Light Duty Headset	5143T32	17.74
G.. Remote Speaker/Microphone	5143T29	37.29
H.. Earbud with Inline Push-to-Talk Button	5143T41	16.15
J.. Two-Unit Desktop Charger	5143T52	13.20
Replacement Belt Clip	5143T24	8.47
AA Alkaline Batteries (4/Pkg.)	71455K53	Per Pkg. $2.94

CB Radios

Standard CB Radio

High-Performance CB Radio

Magnetic Mount Antenna

Bar Clamp Mount Antennas

Transmit a loud, clear message using these four-watt 40-channel CB radios up to four miles away. CBs have an LED channel display, on/off volume knob, squelch control, and a microphone with a 2-ft. coiled cord (standard extends to 4½ ft.; high performance extends to 9 ft.). They operate on 12 VDC. CBs use a nonbusiness designated frequency, so an FCC license isn't required.

Standard radio has an ABS plastic housing. Size is 1⅞″ Ht. × 4½″ Wd. × 7⅛″ Dp.

High-performance radio has an illuminated signal strength display, an RF (radio frequency) knob to adjust signal and reception, and a microphone knob to control amplification and volume. It has an aluminum housing. Size is 2⅛″ Ht. × 6¼″ Wd. × 10¼″ Dp.

Antennas have a fiberglass rod and mount on the outside of your vehicle for better reception (mounting hardware included).

		Each
Radios		
Standard CB Radio	56695T37	$40.45
High-Performance CB Radio	56695T56	87.42
Replacement Microphone	56695T76	18.00
Antennas		
36″ Magnetic Mount with 18-ft. Cable	56695T444	38.08
48″ Bar Clamp Mount with 9-ft. Cable	56695T334▲	49.12

▲ Includes two antennas.

Desk and Wall Telephones

A

B

C

D

E

F

G

Here's the trusty, no-fuss solution to your communication needs. All of our phones are made of plastic and have volume control. They include a line cord for connecting the telephone base to the wall jack, except Styles C and D which don't require a cord.

Style E—Has three one-touch emergency buttons.

Style F—*8335T12* and *8335T25* have a hold button. *8335T37* has an answering system with 19 minutes of recording time.

To Order: Please specify color where necessary.

Also Available: Replacement handsets for Styles A-D. Please order 9169T8 and specify color.

	Speed Dial, Nos. Stored	Caller ID	Lg. × Wd. × Ht.	Color		Each
Desk Telephones						
A...Single Line	—	No	8½″ × 8″ × 4¾″	Almond, Black, Red, White	**9169T51**	$46.01
B...Single Line without Keypad	—	No	9″ × 8¼″ × 4¾″	Red	**9169T11**	69.07
Wall Telephones						
C...Single Line	—	No	4″ × 5″ × 9″	Almond, Black, Red, White	**9169T79**	46.01
D...Single Line without Keypad	—	No	5¼″ × 5½″ × 9½″	Red	**9169T12**	69.07
Desk/Wall Telephone						
E...Single Line	10	No	8″ × 3″ × 3½″	White	**9169T613**	11.20
Desk/Wall Telephones with Speakerphone						
F...Single Line	39	Yes	8¾″ × 6¾″ × 3¾″	White	**8335T12**●	33.74
F...Single Line with Answering System	10	Yes	8⅝″ × 8⅛″ × 3½″	White	**8335T37**	49.63
F...Two Line	18	Yes	8″ × 8″ × 4″	Black	**8335T25**	73.51
G...Two Line	24	No	7″ × 8″ × 3½″	Black	**8335T26**●	54.64

● Requires four AA batteries.

Voice Over Internet Protocol (VoIP) Telephones

Stand Alone

Computer-Connected Compact

Rather than racking up a bill, use these telephones to place calls over the Internet. Both are made of plastic and include a cord.

Stand-alone desk telephone plugs into your LAN (local area network) or WAN (wide area network) system—no need to connect to a computer. It works with most common VoIP systems and complies with Session Initiation Protocol (SIP). Program up to 10 speed-dial numbers and 50 phone-book entries. Phone records call history. It is gray and measures 7½″ Lg. × 9″ Wd. × 4¼″ Ht.

Computer-connected compact telephone plugs into a USB port on your computer and works with Skype, MSN Messenger, and Yahoo! Messenger. Phone is compatible with Windows 2000, XP, and Vista operating systems. It is black and measures 6″ Lg. × 1¾″ Wd. × 1″ Ht. Carrying case included.

		Each
Stand-Alone Desk Telephone	**1664T1**	$118.60
Computer-Connected Compact Telephone	**1664T2**	35.49

Cordless Telephones

You'll get portable convenience and reliable performance from these single-line cordless telephones. They're made of plastic and have volume control. Phones are powered by a rechargeable NiCad battery (included). Battery charger operates on 120 VAC, 60 Hz and has a 6-ft. cord with a two-prong plug.

1.9 GHz telephone is a DECT (Digital Enhanced Cordless Telecommunications) phone. It won't experience interference with any devices including wireless computer networks. Use up to 12 handsets with a single phone line. ***2.4 GHz telephone*** can be wall mounted using the included bracket and fasteners.

Frequency	Caller ID	Lg. × Wd. × Ht.	Color		Each
Telephones					
1.9 GHz	Yes	4¾″ × 3½″ × 2″	Silver/Black	**4077T4**	$34.51
2.4 GHz	No	7″ × 2″ × 1¼″	Black	**4077T17**	33.54
Replacement Batteries and Accessories					
Replacement Battery for 4077T4				**4077T42**	15.60
Replacement Battery for 4077T17				**4077T34**	9.52
Additional Handset for 4077T4				**4077T41**	25.07
Headset for 4077T17				**58575T42**	10.33

Conference Telephone

Other speakerphones echo and cut out, but this unit provides free-flowing conversation with off-site colleagues. It receives and transmits signals simultaneously so calls never sound choppy.

Phone features three built-in microphones for 360° room coverage, built-in noise reduction circuitry, and volume control. It also has a jack for an external recording device (not included). The dial pad includes redial, mute, transfer, and hold buttons. Connects to any standard phone line. Size is 14½″ Lg. × 12¼″ Wd. × 2½″ Ht. Housing is black plastic.

5034T11 ..... **Each** $543.34

Heavy Duty Plant Telephones

Indoor with Polyester Cord

Outdoor with Armored Cord

The glass-reinforced polyester surrounding these phones equips them to resist dirt, moisture, extreme temperatures, and corrosives. Phones have volume control, a sealed keypad, and a background noise-canceling device. All have four 0.28″ dia. mounting holes (mounting hardware not included).

Outdoor telephones are rated NEMA 3R for protection against falling liquids and light splashing.

Standard telephones are gray and UL listed. Choose from models with a 6-ft. retractable polyester cord and with a 15″ stainless steel armored cord. Armored cords have a pull strength three times greater than retractable polyester cords to deter vandalism.

Hazardous-location telephone is blue and meets UL and CSA specifications for Class I, Div. 2, Groups A, B, C, and D; Class II, Div. 2, Groups F and G; and Class III. It comes with a 6-ft. retractable polyester cord.

Ht. × Wd. × Dp.	With Polyester Cord	Each	With Stainless Steel Armored Cord	Each
Standard Telephones				
Indoor 9½″ × 8″ × 6⅞″	**5654T16**	$472.03	**5654T13**	$563.83
Outdoor 13¼″ × 9⅜″ × 7⅜″	**5654T49**	627.44	**5654T46**	719.24
Repl. Stainless Steel Armored Cord w/Handset			**5654T1**	191.06
Hazardous-Location Telephone				
Outdoor 13¼″ × 9⅜″ × 7⅜″	**5654T71**	959.96	_____	_____

Call Boxes

Create a line of communication from a remote location such as a parking lot or security gate. Just press the button to automatically call a programmed number over a standard phone line. If the first programmed number is busy, the box calls a second number. Each box has its own phone number, so you can initiate calls to the call box using a regular touch-tone phone.

Boxes have an RJ-11 jack. They are made of stainless steel and have vandal-resistant screws to secure the faceplate to the box. Size is 9 15/16″ Ht. × 6 13/16″ Wd. × 2 7/8″ Dp. Mount indoors and out using four 1/4″ dia. mounting holes (screws not included). Temperature range is –4° to +149° F. Boxes have Braille and cast metal raised lettering to help comply with ADA requirements. CSA certified for outdoor use.

Emergency call box is marked with the word EMERGENCY in red lettering.

		Each
Emergency	56865T1	$634.27
To Call	56865T2	634.27

Background Noise-Canceling Devices

Even if you're calling from a noisy area, these devices ensure you'll be heard clearly. Just unscrew your current voice transmitter and replace it with one of these. Made of plastic.

Color		Each
Black	8400T3	$52.94
Ivory	8400T32	52.94
Beige	8400T34	52.94

Telephone Signal Relay

Connect this easy-to-use relay to your phone and a light (or other signaling device) and it flashes the light on and off when the phone rings. Relay plugs into a two-prong outlet and accepts a two-prong plug. It operates on 120 VAC, 50/60 Hz and draws 0.1 amps. It's made of ABS plastic and includes a 6-ft. phone cord. Color is white. UL listed.

Note: For use with single-line analog phones only.

58015T12 ..... **Each** $32.25

Handset Cord Tangle Preventers

Tangle Preventer

Tangle Preventer with Cord

Attach these tangle preventers to your handset and cord—they allow the handset to rotate freely so the cord won't get tangled. Made of PVC.

Color	Without Cord	Each	With 12-ft. Cord	Each	With 25-ft. Cord	Each
Black	59085T77	$6.16	59085T813	$11.35	59085T823	$12.63
Ivory	59085T76	6.16	59085T812	11.35	59085T822	12.63
White	59085T78	6.16	59085T811	11.35	59085T821	12.63

Telephone Handset Holders

Leave your hands free while you talk. Made of PVC, these adhesive-backed holders adjust for use on either shoulder and provide nonslip support for the handset.

Color		Each
Black	1731T34	$10.44
Ivory	1731T32	10.44
White	1731T33	10.44

Telephone Volume Amplifier

Don't let background noise drown out your conversation. This device allows you to increase and adjust the volume of your telephone receiver. It plugs into your telephone and handset and is compatible with both single and multi-line telephones. Operates on one 9-volt battery (included). Made of plastic. Color is white.

59635T18 ..... **Each** $31.68

Telephone Surge Suppressor

Protect your telephone, answering machine, and other phone equipment from transient voltage surges. This easy-to-install surge suppressor plugs into a three-prong outlet, and comes with a 6-ft cord with an RJ-11 plug on the end to attach to the device you want to protect. Made of plastic. Color is ivory. UL listed.

1716T5 ..... **Each** $39.45

Telephone Signals

Mount these signals up to 25 ft. away from your phone and they'll alert you when it rings. All have RJ-11 jacks. Use a straight-line telephone cord (sold separately on page 1856) to connect the signal to your phone. If you have a single wall jack, add a duplex adapter (sold separately). No other connections necessary, unless noted.

Bell— Produces 95 dB at 3 ft., but has volume control so you can adjust loudness. Bell can be hardwired to your telephone ringer signal. It has two 1/2″ knockouts. Made of aluminum mounted on an aluminum electrical box. For indoor and outdoor use. UL listed.

120 VAC Bell— Decibel level is 98 dB at 10 ft. Bell has a 6-ft. cord with a three-prong plug for connection with a 120 VAC, 60 Hz outlet. It has two 1/4″ dia. mounting holes (screws not included). Made of steel mounted on a die cast aluminum electrical box. For indoor use. UL listed.

Strobe Light— Has a 15 candela strobe that flashes whenever someone calls. Signal has a 6-ft. cord with a two-prong plug for connection with a 115 VAC, 60 Hz outlet. It's made of plastic. For indoor use. Mounting screws included. UL listed.

Multitone Signals— Each offers four tones: bell, horn, vibrating chime, and single chime. Choose a tone and program your signal accordingly. Signals can be hardwired to your telephone ringer signal. Both models have two 1/2″ knockouts and include mounting screws. Made of plastic. For indoor and outdoor use. Not for use with digital phones. UL listed.

Standard Multitone—Decibel levels are 100 dB at 3 ft. for the bell tone, 108 dB for the horn tone, and 96 dB for the vibrating and single chime tones.

Multitone with Strobe Light—Provides a signal you can see and hear. Signal has a 15 candela strobe. It must also be hardwired to a 115 VAC, 60 Hz power supply. Decibel levels are 104 dB at 3 ft. for the bell tone, 109 dB for the horn tone, and 94 dB for the vibrating and single chime tones.

Bell

120 VAC Bell

Strobe Light

Standard Multitone

Multitone with Strobe Light

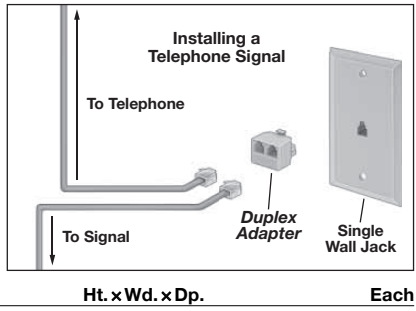

	Ht. × Wd. × Dp.		Each
Signals			
Bell	6″ Dia. × 4 1/4″	5963T681	$105.85
120 VAC Bell	6″ × 4 1/2″ × 4 3/4″	5963T683	212.60
Strobe Light	4 3/4″ × 2 1/2″ × 3 1/8″	5963T211	111.86
Standard Multitone	5 1/2″ × 4 1/8″ × 2 7/8″	5963T751	128.37
Multitone w/Strobe Light	5 1/2″ × 4 1/8″ × 4 3/8″	5963T761	201.51
Adapter			
Duplex Adapter		5963T37	1.28

Weatherproof Telephone Enclosures

Protect your telephones from water, dust, corrosion, and extreme weather with these glass-reinforced polyester enclosures. They're rated NEMA 4X for washdown and corrosion protection.

Inside, enclosures have a mounting plate for a wall telephone (telephone not included). Inside dimensions are 11½″ Ht. × 7¾″ Wd. × 8″ Dp.; outside dimensions are 14⅝″ Ht. × 10⅞″ Wd. × 10½″ Dp. Enclosures have four 7/16″ dia. mounting holes (mounting hardware not included). Color is gray. For indoor and outdoor use.

Enclosure with locking door comes with a lock and key for added security.

Pole-mounting kit lets you mount the enclosure on 2½″ to 15″ dia. poles.

		Each
Enclosure	**5680T21**	$210.59
Enclosure with Locking Door	**5680T27**	258.96
Pole-Mounting Kit	**5680T31**	144.57

Telephone Privacy Booths

Particleboard

Steel

Have a private conversation, protected by these booths. For indoor use.

Particleboard booth can accommodate a pay phone or a handset phone. It has a dark oak woodgrain melamine surface, and directory storage slot. Mounting brackets included.

Steel booth accommodates a handset phone. Made of 16-ga. steel, it has a perforated interior backed with a sound-absorbing material. Booth has a gray enamel finish. Mounting hardware included.

Material	Ht. × Wd. × Dp.		Each
Particleboard	31¾″ × 23¾″ × 11¼″	**4877T2**	$194.06
Steel	30″ × 28″ × 26″	**4877T11**	611.11

Industrial Ethernet Switches

8653T2

8653T3

8653T7

8653T6

A rugged metal housing protects these switches, plus they work in a wide range of temperatures, so they're able to take on demanding industrial applications. Switches let you add new devices and connect existing PCs, printers, and servers for sharing and transferring files. They're unmanaged, so connected devices communicate without any switch programming. Profinet compatible. For use in fast Ethernet networks (100 Mbps), except 8653T2, which has a transmission speed up to 1000 Mbps.

DIN-rail mount switches conveniently mount on 35 mm DIN rail. They have screw clamp terminal block connections for power input and RJ-45 output ports. 8653T3 and T7 are UL listed.

Need to locally control your switch? Choose the *10-port* model—it can be programmed using its USB port to allow simple local management.

Washdown switch is IP67 rated, so it's great in washdown environments where switches can't be mounted inside a cabinet. Switch has single keyway four-pole ports with a 0.3″ face dia. and M12 × 1 threads. Power input port is male with external threads. See 6897K36 on page 775 for a compatible multipole connector with cable. Output ports are female with internal threads and are D-coded. For compatible cord, see 8346T on page 1862.

No. of Ports	Volts, VDC	Ht. × Wd. × Dp.	Temp. Range		Each
DIN-Rail Mount Switches					
5	12-30	4⅛″ × 1¾″ × 1″	+14° to +158° F	**8653T1**	$128.07
5	12-48	4⅛″ × 2¾″ × 1″	+14° to +158° F	**8653T2**	467.29
8	12-30	5⅛″ × 1″ × 4″	+14° to +158° F	**8653T3**	192.06
8	12-30	5⅛″ × 1″ × 4″	–40° to +158° F	**8653T4**	347.40
10	10-36	5¼″ × 2⅜″ × 4⅛″	+32° to +158° F	**8653T7**	678.24
16	12-48	4⅛″ × 4¾″ × 1″	+14° to +158° F	**8653T5**	420.63
Washdown Switch					
5	17-30	4¾″ × 1¾″ × 3½″	–40° to +158° F	**8653T6**	547.62

Ethernet Switches

5 Ports

Expand your network. These switches let you add new devices and connect existing PCs, printers, and servers for sharing and transferring files. Switches are unmanaged, so connected devices communicate without any switch programming. All have RJ-45 ports and a metal housing. CE approved.

Fast Ethernet switches are also UL and C-UL listed. The *5-* and *8-port switches* operate on 60 Hz and have a 5-ft. cord with a two-prong plug (unless noted). The *16-* and *24-port switches* operate on 50/60 Hz and have a 6-ft. cord with a three-prong plug.

Gigabit Ethernet switches operate on 60 Hz and have a 6-ft. cord with a two-prong plug.

No. of Ports	Volts	Ht. × Wd. × Dp.		Each
Fast Ethernet— *100 Mbps*				
5	120 VAC	¼″ × 4⅜″ × 2¾″	**3787T2**	$30.43
8	120 VAC	¾″ × 4 5/16″ × 2¾″	**3787T4**★	48.75
16	100-240 VAC	1½″ × 9⅞″ × 5¼″	**3787T5**	88.83
24	100-240 VAC	1½″ × 9⅞″ × 5¼″	**3787T6**	112.72
Gigabit Ethernet— *1,000 Mbps*				
5	100-240 VAC	1¼″ × 5⅛″ × 5″	**3787T1**	95.59
8	100-240 VAC	1 5/16″ × 5½″ × 5½″	**3787T3**	120.37

★Has a 6-ft. cord.

Rack-Mount Ethernet Switches

16 Ports

If your business is growing, don't let your network hold you back. These switches let you add new devices and connect existing PCs, printers, and servers for sharing and transferring files. Plus, they segregate signals based on speed, which can speed up network access. Mount them on 19″ wide electronics racks using the included brackets and screws.

For use in fast Ethernet networks (100 Mbps). Switches are unmanaged, so connected devices communicate without any switch programming. They have RJ-45 ports and a metal housing. Both have a 6-ft. cord with a three-prong plug and operate on 50/60 Hz. CE approved.

No. of Ports	Volts	Ht. × Wd. × Dp.		Each
16	100-240 VAC	1¾″ × 17⅜″ × 4¾″	**8726T1**	$84.29
24	100-240 VAC	1¾″ × 17⅜″ × 4¾″	**8726T2**	112.86

Industrial Power Over Ethernet (PoE) Switches and Splitter

8634T1

8634T2

8634T4

Switches provide 48 VDC power over a fast Ethernet network (100 Mbps) to run your network components such as cameras, routers, and sensors. These switches also let you add new devices to your network just like our other Ethernet switches. They're unmanaged, so connected devices communicate without any switch programming. Both have a rugged metal housing and a wide operating temperature range, so they can handle demanding industrial applications. Mount on a wall or 35 mm DIN rail for added convenience. Switches have screw clamp terminal block connections for input power and an RJ-45 input port. They send power out through four RJ-45 ports for connections to PoE devices (15.4 watts per port). Switches also have one RJ-45 port without power. CE approved. 8634T2 is also UL and C-UL listed.

Splitter separates voltage from data. Instead of running another power cable, use the splitter to power a nearby 24 VDC device that has separate power and data inputs. For use with a Gigabit Ethernet network (1000 Mbps). Splitter receives data and power through an RJ-45 port; it sends data through an RJ-45 port and has a screw clamp terminal block for power output (output is 24 VDC and 13 watts). It has a metal housing. UL and C-UL listed, CE approved.

No. of Ports	Volts	Ht. × Wd. × Dp.	Temp. Range		Each
Switches					
5	48 VDC	4¼″ × 6½″ × 1⅜″	–4° F to +158° F	**8634T1**	$270.18
5	24/48 VDC	5½″ × 1⅝″ × 3¾″	14° F to 140° F	**8634T2**	400.00
Splitter					
—	48 VAC	5½″ × 1⅝″ × 3¾″	–40° F to +167° F	**8634T4**	145.16

Wireless Transmitters and Receivers for Sensors

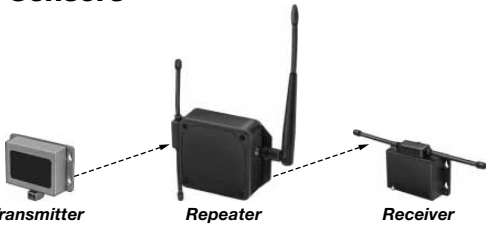

Transmitters

Send data to a wireless receiver using one of our transmitters—just connect it to your sensor output. Transmitters operate at 418 MHz and have a transmission rate of 10 to 17 seconds at a range of up to 600 ft. They have screw clamp terminals for power input, plus a sealed encased battery that lasts up to five years. Up to 100 transmitters can send signals to a single receiver. All have a water-resistant coating and can be used in temperatures ranging from –40° to +185° F.

For Sensor Output		Each
Up to 5 VDC	1193T11	$165.00
Up to 10 VDC	1193T13	165.00
Up to 20 mA	1193T15	165.00

Repeater

Extend the transmission range of your wireless transmitter up to 1300 ft. indoors and up to seven miles outdoors. It receives 418 MHz from up to 600 ft. and transmits at 900 MHz. Works with 1194T16. Repeater operates on 120 VAC and includes a 6-ft. cord with a two-prong plug. Temperature range is 32° to 158° F.

1198T11 ..... Each $464.50

Receivers

Collect data sent by transmitters. These receivers connect to your PC so you can access, display, manipulate, analyze, and store information as you please. They receive at 418 MHz (unless noted) and accept signals from up to 100 transmitters. Receivers operate on 120 VAC, 60 Hz and have a 6-ft. cord with a two-prong plug, unless otherwise indicated. Temperature range is 32° to 158° F.

Standard receivers include computer software compatible with Windows 98, ME, NT, 2000, and XP. 1194T11 is powered by your serial port, so it doesn't come with a cord.

Data-logging/web-enabled receivers store the data and allow you to retrieve it over the Internet. They have internal memory for data storage.

Interface Type	Input Ports	Range		Each
Standard				
RS-232	DB-9	600 ft.	1194T11	$340.33
RS-232/RS-422	DB-9	600 ft.	1194T13	407.26
Data Logging/Web Enabled				
RS-232/Ethernet	DB-9/RJ-45	900 ft.	1194T15	520.00
RS-232/Ethernet	DB-9/RJ-45	3 miles	1194T16●	560.00

● Reception frequency is 900 MHz.

Wireless USB to VGA Transmitter/Receiver

Connect your computer to a display monitor up to 30 ft. away without a tangle of long cables. You'll get a transmitter and receiver that communicate wirelessly and are compatible with Windows XP and Mac OS. Plug the transmitter into your computer's USB port, then connect your display device into the VGA receiver's HD15 female port. Transmission frequency is 6.3-7.9 GHz. Supports video resolutions up to 1680×1050. Receiver operates on 120 VAC, 50/60 Hz and includes a 4-ft. cord with a two-prong plug. Both components have a plastic housing.

8532T4 ..... Each $159.80

USB Extender

Limited by the length of your USB cord? You can stay connected to a USB device up to 150 ft. away from your computer with help from this extender. Made of plastic, it consists of a transmitter and receiver.

To use, connect the transmitter to your computer's USB port. Insert a Category 5E or Category 6 cord (sold separately, see page 1862) into the transmitter and receiver's RJ-45 ports. Finally, plug your device into the receiver's USB Type A female port.

8560T1 ..... Each $48.57

Keyboard, Video, and Mouse (KVM) Switches and Extender

PS/2 Switch

Extender

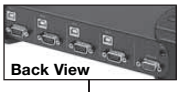

USB Switch (Shown with Combination Cord—Four Included)

Switches—Control up to four computers with a single keyboard, mouse, and monitor by adding one of these switches to your network. Video ports are HD15 female.

8551T3 has PS/2 connections for a computer, keyboard, and mouse. Compatible with Windows ME, NT, 2000, 2003, and XP (no software required). Switch supports video resolutions up to 2048×1536. 8551T1 connects to your computer's USB port and includes four combination cords for all USB and HD15 connections. Compatible with Windows 98, 98SE, ME, 2000, XP, and Vista (software included). Switch supports video resolutions up to 2048×1536. It operates on 100-240 VAC, 50/60 Hz and comes with a 5-ft. cord with a two-prong plug.

Extender—Made up of a transmitter and receiver, this device lets you maintain control of your computer from as far as 230 ft. away. It supports video resolutions up to 1600×1200. Plug the transmitter into your computer's USB port and HD15 port. Then, connect the transmitter to the receiver using a Category 5E or Category 6 cord with RJ-45 plugs (sold separately, see page 1862). Finally, connect your keyboard, mouse, and monitor to the receiver. Receiver operates on 110-240 VAC, 50/60 Hz and has a 6-ft. cord with a two-prong plug.

Keyboard/Mouse Connections	Video Connections	Lg.×Wd.×Ht.		Each
Switches				
PS/2	HD15 Female	7⅛″×4¼″×⅞″	8551T3	$59.42
USB	HD15 Male	14¾″×9½″×3¼″	8551T4	138.94
Extender				
PS/2	HD15 Female	3½″×1¾″×⅞″	8551T2	282.01

Power Over Ethernet (PoE) Injector and Splitter

Injector

Splitter

Use our injector and splitter to transmit power and data over a fast Ethernet network (100 Mbps). Made of plastic. UL and C-UL listed; CE approved.

Injector sends data and power to a PoE device (such as a camera). It has RJ-45 ports, a 6-ft. cord with a three-prong plug, and operates on 100-240 VAC, 50/60 Hz.

Splitter separates power and data for devices (such as an IP telephone or a wireless access point) that have separate power and data inputs. It operates on 48 VDC, and has RJ-45 ports and an adjustable output of 5/7.5/9/12 VDC. Splitter includes two 5½-ft. power output cables. One has a 2 mm plug and the other has a 2.5 mm plug.

		Each
Injector	8595T2	$67.72
Splitter	8595T1	29.44

DIN-Rail Mount Ethernet Surge Suppressor

When voltage spikes, this surge suppressor protects your data network equipment from damage. It easily mounts to 35 mm DIN rail. It has RJ-45 ports. Made of ABS plastic. Temperature range is –40° to +185° F.

8619T1 ..... Each $104.03

Video Signal Splitters/Extenders

Video (8508T1)

Video and Audio

You can't be in two places at once, but your video can. These splitters/extenders distribute video to multiple monitors. Each monitor can be up to 210 ft. from the source of the signal using video monitor cords (sold separately, see page 1868). Splitters/extenders have HD15 female video output ports and work with any system that has an HD15 VGA video card. They operate on 120 VAC, 60 Hz and have a 6-ft. cord with a two-prong plug. Housing is metal.

Video models have an HD15 male video input. They support video resolutions up to 1920×1440.

Video and audio model has an HD15 female video input, and 3.5 mm mini-stereo jacks for audio input and output. It supports video resolutions up to 2048×1536.

No. of Output Ports Video	Audio	Lg.×Wd.×Ht.		Each
Video				
2	–	7¼″×3¼″×¾″	**8508T1**	$48.76
4	–	7¼″×3¼″×¾″	**8508T2**	73.04
Video and Audio				
2	2	5⅛″×3″×1⅝″	**8508T3**	69.71

Coaxial-to-Data Cable Adapters

Video (8447T1)

Video, Power, and Data

Now you can send video signals to a display without adding long coaxial cables. Also known as baluns, these adapters transmit the video signal over your existing data cable network.

You'll need two adapters—connect one to your device (such as a video camera) and the other to the display. Then connect the adapters to each other using the unshielded twisted pair cable (such as Category 5E) in your existing network. Adapters are made of plastic and have a spring clamp terminal for power input. UL listed and CE approved.

Video adapters transmit signals up to 750 ft. They have screw terminal connections for connecting to your data cable.

Video, power, and data adapter transmits signals up to 984 ft. Adapter has an RJ-45 port for connecting to your data cable, and has a 10″ coaxial cable for sending video. It has four spring clamp terminals—two for power and two for data. You can also connect the adapter to a 24-VAC/VDC power transformer to send power over the twisted pair cable to your device.

Coaxial Connector		Each
Video		
BNC Female	**8447T1**	$44.29
BNC Male	**8447T2**	44.29
Video, Power, and Data		
BNC Male	**8447T3**	54.29

HDMI Digital Video/Audio Hubs

If your monitor doesn't have enough input ports to accommodate all your HDMI devices, these hubs can help. Each hub has an HDMI output port that connects to your monitor, plus several HDMI input ports that connect to your devices. Hubs operate on 100-240 VAC, 50/60 Hz and have a 6-ft. cord with a two-prong plug. They support video resolutions up to 1920×1080. Both have a metal housing and come with a remote control.

No. of Input Ports	Lg.×Wd.×Ht.		Each
4	8¾″×2¾″×1¼″	**8497T1**	$93.55
6	8¾″×2¾″×1¼″	**8497T3**	95.34

HDMI Digital Video Signal Amplifier

Display your video on an HDMI screen far away from the video signal's source. This amplifier extends the signal up to 200 ft. It consists of a transmitter and receiver; both components have an HDMI female port to connect to the source and screen. Use two Category 5E unshielded patch cords with RJ-45 plugs (sold separately, see page 1862) to connect the transmitter to the receiver.

Amplifier supports video resolutions of 1280×720 and 1920×1080. Transmitter and receiver have a metal housing. Receiver operates on 100-240 VAC, 50/60 Hz and has a 6-ft. cord with a two-prong plug.

8504T1 ..... **Each** $161.57

Power, Telephone, and Data Service Poles

When you can't work near a wall, these poles bring overhead wiring lines down within reach. Poles are internally divided to accommodate power circuits and receptacles on one side, and telephone and data communication circuits on the other side.

Poles have a variety of knockouts and twistouts to allow easy access for wiring. Each has four NEMA 5-20 style receptacles rated 20 amps @ 120 VAC (see page 787 for information about NEMA receptacles). The center of the bottom duplex receptacle is 16⅞″ from the floor, and the center of the top duplex receptacle is 21⅛″ from the floor. Mount vertically in rooms with ceilings up to 10-ft. high—no floor drilling or carpet cutting necessary. Poles come with carpet/floor grippers, ceiling trim plates, feed fittings, and t-bar mounting hardware. Size is 2¼″ Wd.×2 5/16″ Dp. UL listed.

Steel pole is ivory. *Anodized aluminum* pole is silver.

		Each
Steel	**72135K42**	$171.00
Anodized Aluminum	**72135K44**	250.00

Wi-Fi Antennas

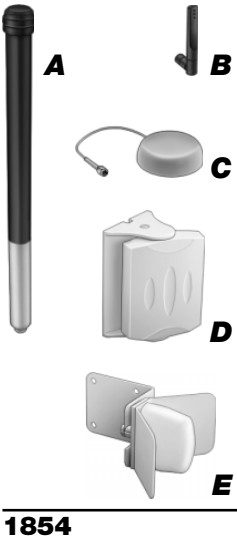

Transmit and receive signals for your 802.11 b/g Wi-Fi applications with these antennas. Impedance is 50 ohms. SMA connections have normal polarity, unless noted.

(A) Omnidirectional antennas work with a variety of wireless systems, including video surveillance applications. Surface mount using the included mounting bracket, which has four ¼″ dia. mounting holes (fasteners not included), or mount on poles up to 2″ OD using included mounting hardware.

(B) Omnidirectional portable device antennas can be bent as much as 90°.

(C) Directional antenna has a 6″ coaxial cord. Surface mount using the included tape with adhesive on both sides.

(D) Directional antenna has two ⅜″ dia. mounting holes for surface mounting (screws not included).

(E) Directional antennas include mounting hardware to mount on poles up to 2″ OD.

	Gain, dBi	Frequency Range	Max. Watts	O'all Size	Connection		Each
Omnidirectional Antennas							
A	6	2400-2485 MHz	25	1¼″ Dia. ×19″ Ht.	N Female	**7464K23**	$140.60
A	9	2400-2485 MHz	25	1¼″ Dia. ×27″ Ht.	N Female	**7464K24**	156.72
Omnidirectional Portable Device Antennas							
B	2.3	2400-2485 MHz/5-6 GHz	10	7/16″ Dia.× 3⅞″ Ht.	SMA Male	**7464K11**	20.20
B	2.3	2400-2485 MHz/5-6 GHz	10	7/16″ Dia.× 3⅞″ Ht.	SMA Male★	**7464K12**	22.60
Directional Antennas							
C	5	2400-2485 MHz	10	2½″ Dia. × ¾″ Ht.	SMA Male	**7464K37**	56.30
D	8	2400-2485 MHz	10	5″ Ht. ×3½″ Wd. ×2¾″ Dp.	SMA Female	**7464K38**	70.59
E	9	2300-2600 MHz	100	5½″ Ht.×3″ Wd. ×4½″ Dp.	N Female	**7464K35**	179.18
E	12	2300-2600 MHz	100	10½″ Ht.×7″ Wd. ×4½″ Dp.	N Female	**7464K36**	193.45
N Male to SMA Female Coupling						**7464K66**	7.38

★ Reverse polarity.

Cellular Phone Antennas

Get better cell phone reception where you need it with these compact antennas. They transmit and receive common U.S. cell phone signals, and easily mount to vehicles, containers, and walls. Impedance is 50 ohms.

Multiband antennas can handle a wide range of frequencies. They work with all U.S. cell phone signals, including Nextel. *Surface-mount* model has a 1-ft. RG-58 coaxial cord. It requires a 5⁄8″ dia. mounting hole (mounting hardware included). *Magnetic-mount* model has a 10-ft. RG-58 coaxial cord.

Dual band/low profile antenna has a sleek design, so it stays out of sight. Surface mount using included clip and screws, or mount directly using included tape with adhesive on both sides. Does not work with Nextel cellular service. It has an 8-ft. RG-174 coaxial cord.

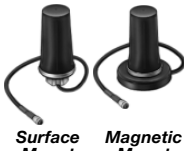

Surface Mount *Magnetic Mount*

Dual Band/ Low Profile

	Gain, dBi	Frequency Range	Max. Watts	O'all Size	Connection		Each
Multiband							
Surface Mount	3/5	750-1250 MHz/1650-2700 MHz	10	3″ Ht. × 1¾″ Dia.	SMA Male	8373K12	$67.92
Magnetic Mount	3/5	750-1250 MHz/1650-2700 MHz	10	3⅝″ Ht. × 2⅝″ Dia.	SMA Male	8373K13	94.34
Dual Band/Low Profile							
Surface Mount	2.5	824-894 MHz	10	⅜″ Ht. × 3¾″ Wd. × 1¼″ Dp.	SMA Male	8373K11	34.06

Cellular Phone Signal Amplifier and Antennas

Improve cellular performance in small office environments. To boost signal, you'll need an amplifier, an outdoor antenna, and an indoor antenna. Amplifier works with your existing antennas as well as the ones sold here. Impedance is 50 ohms.

Amplifier brings you better reception wherever you are. It works with all cellular carriers in the U.S. except Nextel. To use, connect coaxial cords (sold separately) to the amplifier's N female connections, then connect the coaxial cords to your antennas. Amplifier operates on 100-240 VAC; 50/60 Hz and has a 6-ft. cord with a two-prong plug. Surface mount using four ⅜″ dia. mounting holes (hardware not included).

Antennas work with all cellular carriers in the U.S. and are omnidirectional. *Outdoor antenna* mounts to a pole or wall (bracket and hardware included). It has an FME female connection. FME male to N female coupling sold separately. *Indoor antennas* have an N female connection and mount to the ceiling (8367T3 can also be wall mounted). Mounting fasteners included.

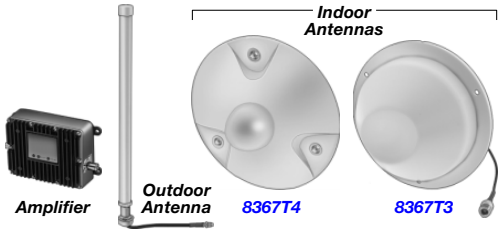

	Gain	Frequency Range	Max. Watts	O'all Size		Each
Amplifier	55 dB/60 dB	824-894 MHz/1850-1990 MHz	3	4¼″ Ht. × 5¾″ Wd. × 1½″ Dp.	8367T1	$333.77
Outdoor Antenna	5.1 dBi/6.1 dBi	806-894 MHz/1850-1990 MHz	25	1″ Dia. × 18″ Ht.	8367T2	83.56
Indoor Antenna	2.5 dBi/2.5 dBi	800-910 MHz/1800-1990 MHz	50	8″ Dia. × 8″ Dp.	8367T4	63.40
Indoor Antenna	5.2 dBi	800-900 MHz	50	7¾″ Dia. × 8″ Dp.	8367T3	63.40
10-ft. N Male to N Male Coaxial Cord					8367T72	39.80
50-ft. N Male to N Male Coaxial Cord					8367T73	89.18
FME Male to N Female Coupling					8367T31	7.34

GPS Antennas

Compact and easy to mount, these antennas receive GPS signals. Impedance is 50 ohms.

Magnetic-mount antenna effortlessly sticks to the roof or trunk of your car. It has a 10-ft. RG-174 coaxial cord.

Surface-mount antenna requires a 5⁄8″ dia. hole for secure mounting (hardware included). It has a 15-ft. RG-174 coaxial cord.

Magnet Mount

Surface Mount

	Gain, dBi	Frequency	O'all Size	Connection	Black Each	White Each
Magnetic Mount	5	1575 MHz	9⁄16″ Ht. × 2″ Wd. × 1¾″ Dp.	SMA Male	8330K11 $51.51	8330K12 $46.51
Surface Mount	5	1575 MHz	2½″ Dia. × ¾″ Ht.	SMA Male	8330K13 65.28	8330K14 65.28

HDTV Antennas

Antenna with 30 Mile Range and Mounting Kit (Sold Separately)

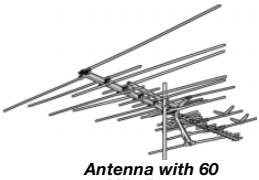

Antenna with 60 Mile Range (Mast Not Included)

Receive both VHF and UHF HDTV signals for channels 2-69 with these antennas. They operate on 54-806 MHz frequencies and have an impedance of 75 ohms. Connect them with RG-6 coaxial cable and F-type connectors (see page 1859). Antennas fit masts up to 2″ dia.

Antenna with 30 mile range mounts to a mast or a flat surface using the included bracket. Gain is 15.5 dBi. Size is 2¾″ Ht. × 6″ Wd. × 46″ Dp. Optional *mounting kit* includes a 22″ long aluminum pipe and mounting hardware for direct mounting on a roof or wall.

Antenna with 60 mile range mounts to a mast using the included hardware (mast not included). Gain is 9.2 dBi for channels 2-6, 13.4 dBi for channels 7-13, and 14.4 dBi for channels 14-69. Size is 2′2″ Ht. × 9′2″ Wd. × 10′11″ Dp. Use the optional *signal amplifier* to boost the signal when there are long runs of coaxial cable (greater than 100 ft.) or when connecting multiple televisions. Amplifier mounts to a mast using the included mounting hardware. Gain is 17 dB for VHF and 19 dB for UHF. Connect using F-type connectors.

		Each
Antenna with 30 Mile Range	7470K1	$63.69
Antenna with 60 Mile Range	7470K2	148.54
Mounting Kit for 30 Mile Range Antenna	7470K4	13.05
Signal Amplifier for 60 Mile Range Antenna	7470K3	52.83

Antenna Mounts

Tripod

Nonpenetrating Tripod with Mast

Wall-Mount Brackets

Use these mounts to hold your antennas in place.

Tripod is 3 ft. high and made of 18-ga., 1¼″ dia. steel tubing. It fits antenna masts up to 1¾″ dia. Legs adjust to fit angled or flat roofs. Each leg has three ⅜″ dia. mounting holes (mounting hardware not included).

Nonpenetrating tripod with mast mounts on a flat roof—no mounting holes required. Standard-sized concrete blocks fit into the frame to anchor it in place. Tripod is 3 ft. high with a 5-ft. metal mast. Tripod and mast are made of 18-ga., 1¼″ dia. steel tubing. Frame is 12-ga. steel.

Mast is 5 ft. high and made of 16-ga., 1¼″ dia. steel tubing.

Tar pads are used under tripod mounting feet to seal against moisture (mounting screws included).

Wall-mount brackets accept masts with diameters up to 1¾″. A mounted mast sits 4″ away from the surface. Mounting hardware is included. Brackets are made of 12-ga. galvanized steel.

		Each
Tripod	9601K1	$29.36
Nonpenetrating Tripod with Mast	9601K2	71.82
Mast	9601K3	11.91
Tar Pads (3/Pkg.)	9601K5	Per Pkg. $2.73
Wall-Mount Brackets (2/Pkg.)	9601K4	Per Pkg. $7.45

About Telecom Plugs and Jacks

RJ Number— Plugs and jacks usually have an RJ (Registered Jack) number that describes the connector and its wiring. RJ numbers represent a standard for connecting telecommunication equipment.

No. of Wires— When referenced with telecom plugs, this identifies how many wires are in the plug. When referenced with connectors, it identifies the number of wires in a plug that will fit into the connector.

Plug Wd.	RJ Number	No. of Wires	Main Application
3/8″	RJ-11	4	Single-line telephone
3/8″	RJ-12/RJ-25	6	Multi-line telephone
7/16″	RJ-45	8	Multi-line telephone; Category rated RJ-45 are used in high-speed data systems.
9/32″	_____	4	Telephone handsets

Telecom Cords

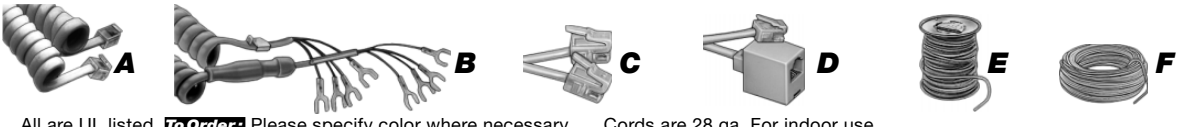

All are UL listed. **To Order:** Please specify color where necessary.

Coiled handset cords connect the handset to the telephone base. Cords are 32 ga. Length listed is the extended length. For indoor use.

Straight-line cords connect the telephone base to the wall jack. Cords are 28 ga. For indoor use.

Indoor/outdoor cords connect the terminal block to the wall jack. Both styles are 22-ga. solid round cord.

Coiled Handset Cords

			Each
4 Wires— *Colors: Almond, Beige, Black, Brown, Red, or White*			
A ... 6-ft. Cord with Plugs	**5703T28**		$2.43
A ... 12-ft. Cord with Plugs	**5703T61**		3.61
A ... 25-ft. Cord with Plugs	**5703T21**		4.78
B ... 15-ft. Cord with Spade Terminals	**5703T51**	▲	5.06
B ... 25-ft. Cord with Spade Terminals	**5703T11**	♣	8.20
Telephone Handset Plugs (25/Pkg.)	**5681T27**		**Per Pkg.** $2.97

Straight-Line Cords

			Each
4 Wires— *Colors: (Style C) Almond, Beige, Black, or White; (Style D) Ivory; (Styles E and F) Silver*			
C ... 14-ft. Cord with RJ-11 Plugs	**5703T71**	♦	3.08
C ... 25-ft. Cord with RJ-11 Plugs	**5703T41**		4.22
D ... 25-ft. Male/Female RJ-11 Extension Cord	**5703T95**		4.24
E ... 500-ft. Spool with Flat Stranded Cord	**5703T91**		73.37
F ... 50-ft. Coil with Flat Stranded Cord	**5703T33**		10.23

▲ Not available in brown or red. ♣ Only available in beige and black.
♦ Not available in almond.

Straight-Line Cords

		Each
6 Wires— *Color: Silver*		
C ... 14-ft. Cord with RJ-12/RJ-25 Plugs	**5703T711**	$4.20
C ... 25-ft. Cord with RJ-12/RJ-25 Plugs	**5703T411**	5.80
E ... 50-ft. Spool with Flat Stranded Cord	**5703T34**	17.44
E ... 500-ft. Spool with Flat Stranded Cord	**5703T911**	106.56
8 Wires— *Color: Silver*		
C ... 14-ft. Cord with RJ-45 Plugs	**5703T712**	5.70
C ... 25-ft. Cord with RJ-45 Plugs	**5703T412**	7.90
E ... 50-ft. Spool with Flat Stranded Cord	**5703T35**	22.19
E ... 500-ft. Spool with Flat Stranded Cord	**5703T912**	171.88

Indoor/Outdoor Cords

4 Wires		
E ... 100-ft. Spool, Beige	**5703T82**	18.33
F ... 500-ft. Coil, Beige	**5703T811**	83.23
F ... 500-ft. Coil, Gray	**5703T813**	83.23
F ... 500-ft. Coil, White	**5703T812**	83.23

Telecom Jacks, Plugs, and Connectors

All styles are made of plastic and include mounting screws where needed. Color is ivory (unless noted). UL listed.

Jacks

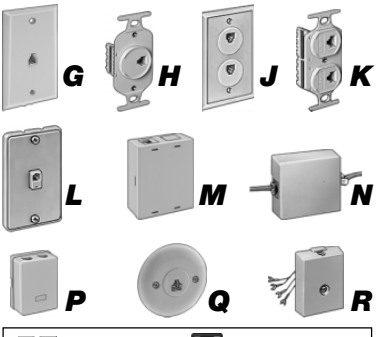

Screw Terminals

110 Punch-Down Terminals

Styles G-L fit a standard electrical box. Style L connects a wall phone into a jack.

Styles M-P connect to the existing connecting block for installation.

Styles Q and ***R*** adapt a connecting block to a surface jack.

Jack Style	Electrical Connection	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
RJ-11— *4 Wires*					
G ... Single Flush Jack	Screw Terminals	5	**5681T654**	$1.97	$1.62
J ... Duplex Flush Jack	Screw Terminals	5	**5681T68**	2.45	2.14
L ... Wall-Phone Jack	Screw Terminals	5	**5681T66**	2.50	2.21
M ... Single Surface Jack	Screw Terminals	5	**5681T673**	1.97	1.67
P ... Duplex Surface Jack	Screw Terminals	5	**5681T72**	3.17	2.71
Q ... Flush-Jack Adapter	110 Punch-Down Terminals	5	**5681T32**	2.61	2.25
R ... Surface-Jack Adapter	Screw Terminals	5	**5681T64**	2.92	2.45
RJ-12/RJ-25— *6 Wires*					
G ... Single Flush Jack	Screw Terminals	5	**5681T651**	2.09	1.88
H ... Single Flush Jack	110 Punch-Down Terminals	5	**5681T46**	4.13	3.67
J ... Duplex Flush Jack	Screw Terminals	5	**5681T681**	2.98	2.55
K ... Duplex Flush Jack	110 Punch-Down Terminals	5	**5681T48**	6.48	5.62
L ... Wall-Phone Jack	Screw Terminals	5	**5681T661**	3.51	3.09
M ... Single Surface Jack	Screw Terminals	5	**5681T671**	2.58	2.18
M ... Single Surface Jack	110 Punch-Down Terminals	5	**5681T11**	6.00	5.19
N ... Duplex Surface Jack	Screw Terminals	5	**5681T721**	3.43	3.02
P ... Duplex Surface Jack	110 Punch-Down Terminals	5	**5681T13**	7.64	6.77
RJ-45— *8 Wires*					
G ... Single Flush Jack	Screw Terminals	5	**5681T653**	3.42	3.05
M ... Single Surface Jack	Screw Terminals	5	**5681T672**	3.50	2.96
M ... Single Surface Jack	110 Punch-Down Terminals	5	**5681T12**	5.00	4.29
P ... Duplex Surface Jack	110 Punch-Down Terminals	5	**5681T14** ★	11.54	10.53

★ Color is white.

Plugs

Made of clear plastic.

RJ No.	No. of Wires	Pkg. Qty.	For Stranded Cord Per Pkg. 1-4	5-Up	For Solid Cord Per Pkg. 1-4	5-Up
RJ-11	4	25	**5681T28** $5.33	$4.53	**5681T43** $8.26	$7.25
RJ-12/RJ-25	6	25	**5681T781** 6.13	5.24	**5681T44** 8.76	7.68
RJ-45	8	25	**5681T752** 10.35	9.12	**5681T45** 10.76	9.44

(Continued on following page)

For information about telecom plugs and jacks, see page 1856.

Telecom Jacks, Plugs, and Connectors *(Continued from previous page)*

All styles are made of plastic and include mounting screws where needed. Color is ivory (unless noted). UL listed.

Cord Connectors

Create a longer cord by inserting one of these connectors between two cords with RJ plugs.

RJ No.	No. of Wires	Pkg. Qty.	For Voice Transmission Per Pkg. 1-4	5-Up	For Data Transmission Per Pkg. 1-4	5-Up
RJ-11	4	5	5681T63 $7.00	$5.68	5681T82★ $9.39	$7.75
RJ-12/RJ-25	6	5	5681T631 8.80	7.72	5681T84 10.63	9.27
RJ-45	8	5	5681T632 13.27	11.82	5681T86■ 10.71	9.38

★ Color is white. ■ Package quantity is 3.

Adapters, Message Stopper, and Extension Adder

Adapter plug converts a four-point jack to a duplex jack. ***Duplex adapters*** convert single jacks to duplex jacks. ***Message stopper*** converts a single jack to a duplex jack and gives one line priority over the other. ***Extension adder*** lets you add up to four extensions to a single-line outlet. Attach the wires from your phone to the terminals in the block. Color is white.

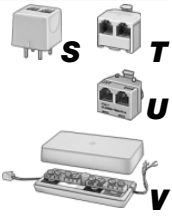

		RJ No.	No. of Wires	Pkg. Qty.		Per Pkg. 1-4	5-Up
S	Adapter Plug	RJ-11	4	5	5681T61	$6.28	$5.27
T	Duplex Adapter	RJ-11	4	5	5681T62	7.32	6.52
T	Duplex Adapter	RJ-12/RJ-25	6	5	5681T621	8.70	7.46
T	Duplex Adapter	RJ-45	8	3	5681T89	12.98	11.64

						Each Partial Pkg.	Full Pkg.
U	Message Stopper	RJ-11	4	5	5681T35	$7.78	$6.73
V	Extension Adder	RJ-11	4	5	5681T69	5.13	4.43

Corrosion-Resistant Telecom Jacks

Surface Mount

Double Floor

Wall

Flush Mount

Reduce the effects humidity, chemicals, water, dirt, and other contaminants have on your plug and jack connections. These jacks have a gel that forms a tight, protective seal around the connection. Jacks are made of ABS plastic. Color is ivory. Mounting screws are included, except for surface-mount models, which have a self-adhesive back. UL and C-UL listed.

Jack Type	RJ No.	No. of Wires		Each
Surface Mount	RJ-11	4	1543T3	$4.57
Surface Mount	RJ-12/RJ-25	6	1543T5	5.14
Double Floor	RJ-11	4	1543T6	11.17
Wall	RJ-11	4	1543T8	5.64
Flush Mount	RJ-11	4	1543T9	5.74
Faceplate for Double Floor Jack			1543T12	.84

DSL Line Conditioners

Filter out interference in DSL service caused by telephone devices such as fax and answering machines. Color is ivory. UL and C-UL listed.

Wall-mount units mount over your existing phone jacks. They have one jack for a DSL connection and two jacks for telephone devices. ***Inline*** units have one jack for a telephone device.

Wall Mount

Inline

	For One-Line Phones	Each	For Two-Line Phones	Each
Wall Mount	1522T12	$6.11	1522T18	$6.96
Inline	1522T23	3.23	1522T26	5.67

Telephone Cable Stripper

Cut and strip flat telephone cable, as well as unshielded and shielded twisted pair (UTP/STP) cable. This stripper has a built-in cable cutter. Made of plastic. Overall length is 4⅜″.

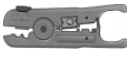

56675T48 ..... **Each** $20.72

Telephone Cable Stripper/Crimper

Use this tool to cut and strip flat telephone cable, and to crimp RJ-11 and RJ-45 plugs. It has a built-in cable cutter. Made of steel. Overall length is 8¼″.

		Each
Stripper/Crimper	56675T29	$65.06
Replacement Blade	56675T3	14.24

Insulation Displacement Wire Connectors for Solid Wire

Skip wire stripping. Instead, use these connectors to quickly connect solid Category 5 cable (crimping pliers, sold separately, are recommended). Rated to 30 volts. Temperature range is −40° to +140° F. 7056K23-K26 are RUS (Rural Utility Service) listed.

Style W— Use for pigtail connections.

Style X— Also known as a bridge connector, use this for tap and run connections. Insert unstripped wires and drive the tap down.

Style Y— Similar to Style W, this connector works for pigtail connections. Use it to remove and replace a faulty connector without interrupting the existing system. Place a wire into each side of the connector, squeeze with fingers and position to desired location, then crimp. Built-in blade cuts out the old connection.

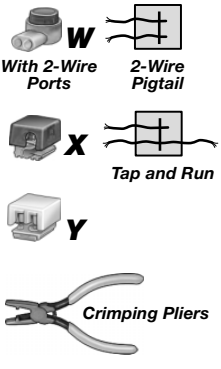

	Wire Size, AWG	No. of Wire Ports	Max. Insulation OD	Pkg. Qty.		Per Pkg.
W	26-22	2	0.060″	25	7056K21	$3.98
W	26-19	3	0.060″	25	7056K22	4.44
W	26-19	2	0.082″	50	7056K23	6.52
W	26-19	3	0.082″	100	7056K24	13.41
X	26-19	2	0.082″	50	7056K25	7.96
Y	26-19	2	0.082″	50	7056K26	12.19

Crimping Pliers ..... 7056K31 **Each** $22.89

Easy-Install Insulation Displacement Connectors for Solid and Stranded Wire

For quick, easy wire connection, choose these connectors. Just insert wire into the connector's funnel-shaped entry and crimp—no stripping required. Crimper sold separately below.

Connectors are made of copper with PVC insulation. For use with Category 5, 5E, and 6 cable. Rated to 50 volts. Maximum temperature is 221° F. UL listed for telecommunications.

Connector

Crimper

No. of Wires (AWG Wire Size) Min.	Max.	Color	Pkg. Qty.		Per Pkg.
Standard					
2 (#24)	3 (#16)	White	100	8414K1	$8.86
2 (#24)	3 (#16)	White	1000	8414K3	81.81
Moisture Resistant					
2 (#24)	3 (#16)	Blue	100	8414K5	10.62
2 (#24)	3 (#16)	Blue	1000	8414K7	100.83

Crimper ..... 8414K9 **Each** $6.25

66 and 110 Wiring Blocks

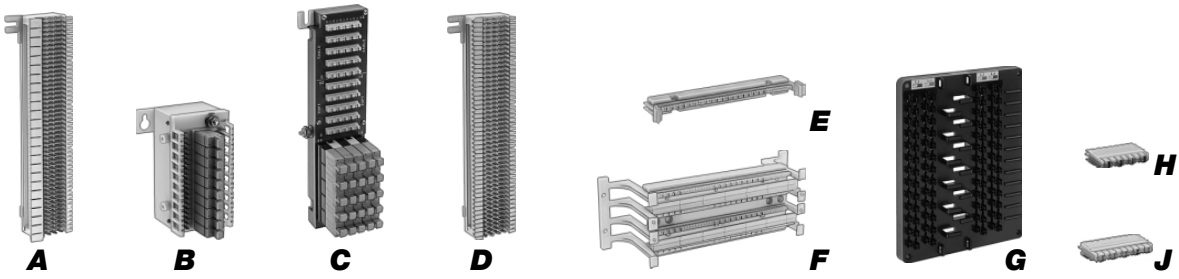

Don't get tangled in a web of wires. These wiring blocks keep incoming and outgoing voice and data cables organized, plus they allow fast, easy termination of incoming cable pairs. Mounting hardware is not included, unless otherwise indicated.

Note: To terminate incoming cables, use a punch-down tool (sold separately on this page).

Wiring blocks with voltage surge suppression protect your telecommunication system from fluctuations in voltage. Blocks have a gas tube suppressor for each pair of wires. After a power surge, simply replace the suppressors as needed.

66 wiring blocks use older style 66 punch-down tools. All can be wall mounted. UL listed. 2304T15 and T16 require the *wall-mounting bracket* (sold separately). They are also C-UL listed.

Bridging clip (sold separately) fits 2304T15 to make a common connection (bridge) across four wires. Size is 1/4″ Ht. × 1/2″ Wd. × 1/8″ Dp.

110 wiring blocks use 110 punch-down tools. All mount to the wall. UL listed, unless noted. 2304T26 and T22 are also C-UL listed.

6599T1 can identify up to four incoming lines (12 locations for each line). It comes with tie down loops and 12 labels. Mounting screws included.

110 connecting blocks provide an electrically charged tight connection between cable wires terminated to a 110 wiring block.

	No. of Pairs	Ht. × Wd. × Dp.	Mount. Hole Dia. (Qty.)		Each
66 Wiring Blocks					
Standard					
A	25	10″ × 3 3/8″ × 1 3/16″	3/16″ (2)	**2304T16**	$11.72
Standard with Voltage Surge Suppression					
B	10	5″ × 4″ × 3 1/2″	7/16″ (2)	**1261T2**	70.72
C	25	10″ × 3 1/2″ × 3″	3/16″ (2)	**1261T4**	193.75
Category 5 Rated					
D	50	10″ × 3 3/8″ × 1 1/4″	3/16″ (2)	**2304T15**	9.23
110 Wiring Blocks					
Standard with Voltage Surge Suppression					
B	10	5″ × 4″ × 3 1/2″	7/16″ (2)	**1261T6**	68.54
C	25	10″ × 3 1/2″ × 3″	3/16″ (2)	**1261T8**	187.78
Category 5E Rated					
E	25	13/16″ × 8 1/2″ × 1 5/8″	1/8″ (4)	**2304T26**	9.09
F	100	3 5/8″ × 10 11/16″ × 3 3/8″	1/8″ (4)	**2304T22**	11.37
Category 5E/6 Rated					
G	48	7 1/4″ × 5 1/2″ × 1″	3/16″ (4)	**6599T1●**	31.87
110 Connecting Blocks					
Category 5E Rated					
H	4	15/16″ × 1 3/16″ × 1/4″	———	**2304T33**	.77
J	5	15/16″ × 1 1/2″ × 1/4″	———	**2304T35**	.82
Replacement Parts and Accessories					
Replacement Gas Tube Suppressor				**1261T13**	3.03
Wall Mounting Bracket for 2304T15 and 2304T16				**2304T17**	1.82
Bridging Clip for 2304T15				**2304T18**	.11

● Not UL listed.

Telephone Socket Wrench

Also known as a can socket wrench, this is a must for every telecommunications tool kit. It has two socket ends—one with a 3/8″ hex socket, and the other with a 7/16″ hex socket. Both sockets have thin walls, so they can work the locking devices on most telephone terminals and cabinets. Wrench has a plastic handle. Overall length is 7″.

36475T63 ..... **Each** $12.26

Punch-Down Tools

Terminate and cut wire on 66 and 110 wiring blocks. Choose high or low punch-down force by turning the dial on these easy-to-use tools. They have a reversible blade—one end cuts, the other punches down without cutting. Overall length is 7 1/4″.

For Wiring Block	*Tools*	Each	*Repl. Blades*	Each
66	**57205T51**	$62.80	**57205T52**	$21.07
110	**57205T41**	62.80	**57205T42**	21.07

Coaxial Cable

Designed for data transmission, broadcast, communication, and computer applications. Cable has copper-covered steel wire, unless noted.

RG-6/U and *RG-59/U* are popular choices for CATV and video applications.

RG-58/U and *RG-174/U* are used in antennas, radio frequency (RF) applications, and computer networks.

Standard Cable— Has a PVC jacket and polyethylene insulation. Meets MIL-C-17, unless noted. **To Order:** Please specify length (25, 50, 100, or 200 ft., or the maximum continuous length of 500 ft.).

Plenum Cable— For use in plenums (the spaces above a suspended ceiling used to circulate air back to the heating or cooling system). Cable has a PVDF (polyvinylidene fluoride) jacket and FEP (fluorinated ethylene propylene) insulation. Meets UL CMP/CL2P. **To Order:** Please specify length (10, 25, or 50 ft., or the maximum continuous length of 100 ft.).

RG No.	Ohms	Wire Size, AWG	OD	Jacket Color	Temp. Range		Per Ft. 1-99	Per Ft. 100-Up
Standard Cable								
6/U	75	18	0.27″	Black	–4° to +167° F	**7032K5**■	$0.22	$0.18
6/U Quad Shield	75	18	0.30″	Black	–4° to +167° F	**7032K72**♦♥	0.25	0.20
58/U	53.5	20	0.20″	Black	–40° to +176° F	**7032K11**♦	0.36	0.30
59/U	75	23	0.24″	Black	–40° to +176° F	**7032K8**	0.35	0.28
62A/U	93	22	0.24″	Black	–40° to +140° F	**7032K6**■	0.92	0.76
174/U	50	26	0.11″	Black	–40° to +176° F	**7032K93**	0.24	0.19
Plenum Cable								
6/U	75	18	0.23″	Clear	–4° to +302° F	**7032K31**♦	2.77	2.31
58/U	50	20	0.17″	Clear	–4° to +302° F	**7032K35**♦	1.49	1.23
59/U	75	20	0.20″	Clear	–4° to +302° F	**7032K32**	1.48	1.23
62A/U	93	22	0.22″	Clear	–4° to +302° F	**7032K33**	1.82	1.52

■ Meets UL CL2. ♦ Wire is copper. ♥ Meets UL CM.

Coaxial Cable Connectors

Connectors

Compression style connectors provide the most reliable connection. They have a one-piece construction that seals out moisture and dirt with a single crimp.

Connector Type	RG No.	Gender	Ohms	Use with Crimper No.▲ (Sold separately)	Pkg. Qty.		Per Pkg.
Crimp-On Style							
A ... BNC	6	Male	75	7424K51	5	**71115K34**	$14.30
A ... BNC	6 Plenum	Male	50	7424K51	10	**71115K28**	14.35
A ... BNC	6 Plenum	Male	75	7424K51	10	**71115K45**	13.76
A ... BNC	58	Male	50	7424K88, 7424K89	10	**71115K14**	13.37
A ... BNC	58 Plenum	Male	50	7424K53	1	**71115K22**	4.90
A ... BNC	59	Male	75	7424K88, 7424K89	5	**71115K31**	12.31
A ... BNC	59, 62	Male	50	7424K88, 7424K89	10	**71115K15**	14.66
A ... BNC	59 Plenum	Male	75	7424K47	5	**71115K23**	12.46
A ... BNC	59 Plenum, 62 Plenum	Male	50	7424K53	10	**71115K27**	12.57
B ... BNC	6	Female	50	7424K51	10	**71115K33**	13.76
B ... BNC	6	Female	75	7424K51	10	**71115K47**	13.76
B ... BNC	58	Female	50	7424K88, 7424K89	10	**71115K29**	13.76
B ... BNC	59, 62	Female	75	7424K51	10	**71115K46**	13.76
B ... BNC	59, 62	Female	50	7424K88, 7424K89	10	**71115K32**	13.76
C ... 90° BNC	6	Male	75	7424K51	1	**71115K44**	3.97
C ... 90° BNC	59, 62	Male	75	7424K88, 7424K89	1	**71115K42**	6.30
D ... F-Type	6	Male	75	7424K64, 7424K85	10	**6024T12**	10.54
D ... F-Type	6 Quad Shield	Male	75	7424K85	10	**6024T13**	12.35
D ... F-Type	59	Male	75	7424K64, 7424K85	10	**6024T11**	10.54
E ... SMA	58	Male	50	7424K14	1	**5467T13**	3.97
E ... SMA	174	Male	50	7424K12	1	**5467T12**	5.18
Screw-On Style							
F ... BNC	58	Male	50	_____	10	**71115K51**	13.75
F ... BNC	59 Plenum, 62 Plenum	Male	50	_____	10	**71115K52**	14.35
G ... F-Type	6	Male	75	_____	10	**6024T15**	10.89
G ... F-Type	59	Male	75	_____	10	**6024T14**	12.72
Compression Style							
H ... BNC	6, 6 Quad Shield	Male	75	7424K11	2	**71115K81**	7.44
H ... BNC	59	Male	75	7424K11	2	**71115K82**	7.44
J ... F-Type	6, 6 Quad Shield	Male	75	7424K11	4	**6024T18**	6.08
J ... F-Type	59	Male	75	7424K11	4	**6024T17**	6.08
K ... RCA	6, 6 Quad Shield	Male	75	7424K11	4	**5432T11**	10.78
K ... RCA	59	Male	75	7424K11	4	**5432T12**	10.78

▲ Crimpers have a cavity that best fits the connector they are listed with.

BNC Crimp-On Style Connectors for Five Cable Types— Use these versatile connectors with a crimper (sold separately) that matches your cable's RG number and hex size requirements.

RG No.	Gender	Ohms	Pkg. Qty.		Per Pkg.
6, 6 Plenum, 58, 59, 59 Plenum	Male	50	10	**71115K74**	$14.35
6, 6 Plenum, 58, 59, 59 Plenum	Male	75	10	**71115K75**	14.35

Couplers

Type	Ohms		Each
L ... BNC Female to BNC Female	50	**71115K25**	$3.51
L ... BNC Female to BNC Female	75	**71115K37**	4.14
M ... BNC Male to RCA Female	75	**71115K12**	2.51
N ... SMA Female to SMA Female	50	**5467T11**	13.83
P ... SMA Male to SMA Female	50	**5467T61**	8.03
			Per Pkg.
Q ... F-Type Female to F-Type Female (10/Pkg.)	75	**6024T16**	$10.28

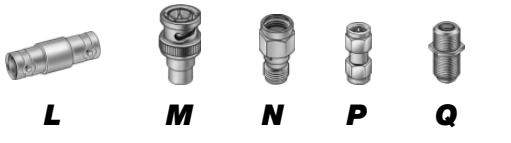

BNC Tees

Type	Ohms		Each
Female × Male × Female	50	**71115K24**	$2.75
Female × Female × Female	75	**71115K11**	2.99

BNC Male Terminators

Ohms		Each
50	**71115K26**	$1.89
75	**71115K36**	5.94

Coaxial Cable Crimpers

Terminate coaxial cable with these crimpers. Select the appropriate tool by multiplying the outside diameter of your ferrule by 0.866. Then choose the tool with the closest matching cavity size.

Styles R, S, and ***U*** have a ratcheting action for a reliable, uniform crimp.

Styles T and ***V*** function like pliers.

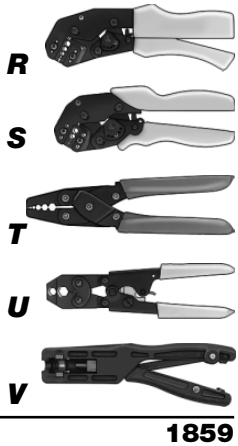

For RG Nos.	Cavity Size	O'all Lg.		Each
Crimpers for BNC Connectors				
R ... 58, 59, 174, 62	0.042″, 0.068″, 0.100″, 0.178″, 0.213″, 0.255″	9¼″	**7424K88**	$90.23
R ... 58, 59	0.044″, 0.050″, 0.206″, 0.238″	9¼″	**7424K47**	90.23
R ... 6, 59, 8281	0.042″, 0.068″, 0.255″, 0.324″	9¼″	**7424K51**	90.23
S ... 58 Plenum, 59 Plenum, 62 Plenum	0.042″, 0.068″, 0.190″, 0.213″	7½″	**7424K53**	90.23
Economy Crimper for BNC Connectors				
T ... 58, 59, 174, 62	0.042″, 0.068″, 0.100″, 0.178″, 0.213″, 0.255″	8¼″	**7424K89**	30.17
Crimpers for F-Type Connectors				
U ... 6, 11, 59	0.360″, 0.470″	9″	**7424K64**	64.45
U ... 6, 59	0.324″, 0.360″	8″	**7424K85**	58.59
Crimpers for SMA Connectors				
S ... 58, 59, 223	0.151″, 0.178″, 0.213″	7½″	**7424K14**	90.23
S ... 174	0.042″, 0.068″, 0.100″, 0.128″, 0.178″	7½″	**7424K12**	90.23
Crimper for BNC, F-Type, and RCA Compression Connectors				
V ... 6, 59	_____	8″	**7424K11**	47.27

Coaxial and Category 5E Cable Strippers

5669K38

4226T1

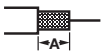

Two-Level Stripping

7141K1

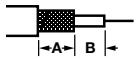

Three-Level Stripping

Stripper for RG-59 and RG-6 coaxial cable comes with a replaceable two-blade snap-in cartridge. Use the storage cavity to keep a spare cartridge close at hand. Overall length is 5¼″.

Stripper for RG-59 and RG-6 coaxial and category 5E cable lets you complete two tasks with one tool. It includes a replaceable two-blade cartridge for two-level stripping of coaxial RG-59 and RG-6 cable, plus a replaceable single-blade cartridge for stripping Category 5E cable. Use the storage cavity to store a spare cartridge. Overall length is 5½″.

Stripper for RG-6 to RG-178 coaxial cable includes a replaceable three-blade cartridge for three-level stripping, four V-blocks, and a hex wrench. Overall size is 3½″.

Strippers

		Each
For RG-59 and RG-6 Coaxial Cable	5669K38	$19.34
For RG-59 and RG-6 Coaxial and Category 5E Cable	4226T1	24.23
For RG-6 to RG-178 Coaxial Cable	7141K1	60.27

Replacement Blade Cartridges

	Blade Spacing (A)	Blade Spacing (B)		Each
For 5669K38	0.25″	—	5669K42	$7.00
For 4226T1—RG-59 and RG-6 Coaxial Cable	0.25″	—	4226T5	6.82
For 4226T1—Category 5E Cable	—	—	4226T6	6.82
For 7141K1	0.24″	0.24″	7141K2	30.85
For 7141K1	0.33″	0.11″	7141K3	32.09

Coaxial Cords

Cords have a black PVC jacket and male connectors on each end.

BNC to BNC—20 AWG. ***F-Type to F-Type***—18 AWG. ***S-Video to S-Video***—28 AWG.

	BNC TO BNC 50 Ohms				BNC TO BNC 75 Ohms				F-TYPE TO F-TYPE 75 Ohms			S-VIDEO TO S-VIDEO 75 Ohms		
Lg., ft.	RG No.	OD		Each	RG No.	OD		Each	RG No.	OD		OD		Each
3	58	0.19″	6641T51	$8.33	59	0.23″	6641T11	$6.33	6	0.27″	6641T25	—	—	—
6	58	0.19″	6641T52	10.23	59	0.23″	6641T12	7.20	6	0.27″	6641T27	0.20″	6641T85	$9.93
12	58	0.19″	6641T53	14.00	59	0.23″	6641T13	9.33	6	0.27″	6641T29	0.20″	6641T86	13.73
25	58	0.19″	6641T54	22.23	59	0.23″	6641T14	13.27	6	0.27″	6641T37	0.20″	6641T87	21.29
50	58	0.19″	6641T55	38.17	59	0.23″	6641T15	21.30	6	0.27″	6641T39	0.20″	6641T88	34.00

BNC to SMA, ***SMA to SMA***, ***SMA to 90° SMA***, and ***90° SMA to 90° SMA***—26 AWG.

		BNC TO SMA 50 Ohms		SMA TO SMA 50 Ohms		SMA TO 90° SMA 50 Ohms		90° SMA TO 90° SMA 50 Ohms	
Lg., ft.	RG No.	OD	Each		Each		Each		Each
1	174/U	0.11″	6641T81	$14.53	6641T66	$19.86	6641T71	$23.69	6641T76	$28.61
2½	174/U	0.11″	6641T82	15.00	6641T67	20.34	6641T72	24.17	6641T77	29.09
5	174/U	0.11″	6641T83	15.77	6641T68	21.17	6641T73	25.00	6641T78	29.92
10	174/U	0.11″	6641T84	17.30	6641T69	22.66	6641T74	31.56	6641T79	31.56

BNC to RCA and ***RCA to RCA***—Rated 75 ohms for audio and video, unless otherwise noted. *BNC-to-RCA* cords are 20 AWG. *RCA-to-RCA* cords *for audio* have red and white connectors and are 27 AWG and rated 3 ohms; those *for video* have red, green, and blue connectors and are 26 AWG; those *for audio or video* have a black connector and are 20 AWG; those *for audio and video with three wires* have red, white, and yellow connectors and are 26 AWG and rated 3 ohms for audio and 75 ohms for video; and those *for audio and video with five wires* have blue, green, white, and two red connectors and are 20 AWG.

	BNC TO RCA For Audio or Video				RCA TO RCA For Audio				RCA TO RCA For Video			
Lg., ft.	RG No.	No. of Wires	OD	Each	No. of Wires	OD		Each	No. of Wires	OD		Each
3	59/U	1	0.24″	6641T22	2	0.22″	6641T16	$3.80	3	0.71″	6641T95	$9.94
6	59/U	1	0.24″	6641T23	2	0.22″	6641T17	4.74	3	0.71″	6641T96	12.26
12	59/U	1	0.24″	6641T24	2	0.22″	6641T18	6.18	3	0.71″	6641T97	19.56
25	59/U	1	0.24″	6641T26	2	0.22″	6641T19	11.90	3	0.71″	6641T98	30.69
50	59/U	1	0.24″	6641T28	2	0.22″	6641T21	19.88	3	0.71″	6641T99	50.87

	RCA TO RCA For Audio or Video				RCA TO RCA For Audio and Video				RCA TO RCA For Audio and Video			
Lg., ft.	RG No.	No. of Wires	OD	Each	No. of Wires	OD		Each	No. of Wires	OD		Each
3	59	1	0.23″	6641T32	3	0.38″	6641T61	$6.56	5	1.18″	6641T89	$15.70
6	59	1	0.23″	6641T34	3	0.38″	6641T62	8.69	5	1.18″	6641T91	22.23
12	59	1	0.23″	6641T36	3	0.38″	6641T63	11.41	5	1.18″	6641T92	32.20
25	59	1	0.23″	6641T42	3	0.38″	6641T64	18.94	5	1.18″	6641T93	52.03
50	59	1	0.23″	6641T44	—	—	—	—	5	1.18″	6641T94	87.38

F-Type Coaxial Cable Splitters

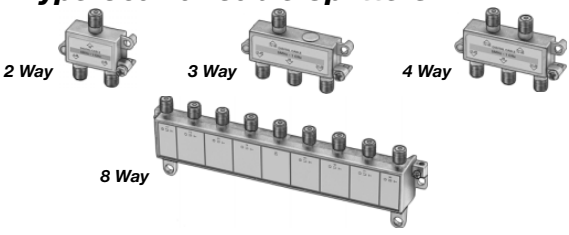

Split one coaxial cable and send the signal to multiple locations. Splitters work within a 5 to 1000 MHz bandwidth, except 8-way model works within a 5 to 2050 MHz bandwidth. All have screw-on F-type connections. Mounting screws included.

		Each
2 Way	4229T17	$6.12
3 Way	4229T18	8.58
4 Way	4229T19	10.04
8 Way	4229T21	19.09

Coaxial Connector Removal Tools

Easily unscrew BNC and F-type connectors, even in high density and hard-to-reach areas. Tools have a plastic handle and a steel blade.

O'all Lg.	Blade Lg.		Each
8″	3″	6287T35	$24.73
12″	8″	6287T34	30.77

HDMI Digital Video Cords

HDMI Male to HDMI Male

HDMI Male to DVI Male

Connect high-definition video with these cords. They have 28 AWG stranded copper wires, except 8357T11-T14, which have 28 AWG solid copper wires. Cords also have a layer of shielding and a black PVC jacket. For connectors, see page 1867.

Cords 16 ft. and shorter are UL listed. Cords 33 ft. and longer have a built-in repeater to extend the signal.

Lg., ft.	OD		Each
HDMI Male to HDMI Male			
3	0.22″	8357T1	$15.02
6	0.22″	8357T2	16.33
10	0.22″	8357T3	18.96
16	0.22″	8357T4	28.11
33	0.32″	8357T11	122.60
39	0.32″	8357T12	134.93
49	0.32″	8357T13	147.20
66	0.32″	8357T14	165.60
HDMI Male to DVI Male			
3	0.28″	8357T5	14.38
6	0.28″	8357T6	15.69
10	0.28″	8357T7	18.31
16	0.28″	8357T8	27.44

Stereo Cords with 3.5 mm Connectors

Extend the distance between stereo audio devices. Cords have two 29 AWG stranded copper wires, a layer of shielding, and a black PVC jacket. Impedance is 3 ohms.

Male to Male

Male to Female

Lg., ft.	OD	Male to Male	Each	Male to Female	Each
1½	0.12″	8317T11	$2.67	8317T21	$2.67
3	0.12″	8317T12	3.30	8317T22	3.30
6	0.12″	8317T13	3.95	8317T23	3.95
12	0.12″	8317T14	5.07	8317T24	5.07
25	0.12″	8317T15	7.60	8317T25	7.60
50	0.12″	8317T16	12.40	8317T26	12.40

Female to Female Coupler ..... 8317T9 Each $4.18

Coaxial/Category 5E Cable

Get two types of cable conveniently bundled together. This RG-6/U quad shield cable has an additional layer of shielding that further reduces electromagnetic interference (EMI) to improve data transmission. Cable has a white PVC jacket and is 0.58″ Wd. × 0.29″ Thick. Impedance is 75 ohms. Temperature range is –4° to +140° F.

The coaxial cable has a solid copper-clad steel 18 AWG wire and a 3 GHz transmission speed. The category 5E cable has stranded copper 24 AWG wires in four twisted pairs and a 350 MHz transmission speed.

To Order: Please specify length (10, 25, 50, 100, 300 ft., or the maximum continuous length of 500 ft.).

	Per Ft. 1-99	Per Ft. 100-Up
6837T51	$0.57	$0.43

Category 3, 5E, and 6 Cable

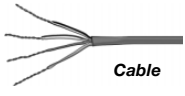

Cable

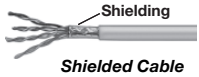

Shielded Cable

Cable has four twisted-pair construction, solid copper wires (unless noted), and a PVC jacket. ***Shielded cable*** insulates your data from interference, providing high-quality transmission. ***Plenum-rated cable*** can be installed directly into air plenums without the need for conduit. Plenums are the spaces above a suspended ceiling used to circulate air back to the heating or cooling system in a building.

Category 3 cable is often used in place of telephone cable. It is a good choice when you don't need the high speed and cost of Category 5E or 6 cable. ETL listed.

Category 5E cable meets the ever-growing demand for faster transmission speeds. It is UL and C-UL listed and CE approved, except *shielded cable*, which is UL listed only.

Category 6 cable provides high transmission speeds while reducing interference in "noisy" environments such as areas where your data transmission cable is close to power cable or transformers. It is UL and C-UL listed, except shielded cable, which is UL listed and CSA certified.

To Order: Please specify length (10, 25, 50, 100, 300, 500 ft., or the maximum continuous length of 1000 ft.).

MHz	OD	Wire Size, AWG	Jacket Color		Per Ft. 1-99	Per Ft. 100-499	Per Ft. 500-Up
Category 3 Cable							
Standard *(14° to 140° F)*							
16	0.18″	24	Gray	3447T2	$0.24	$0.19	$0.15
Plenum Rated *(14° to 140° F)*							
16	0.16″	24	Off-White	3447T5	.33	.26	.21
Category 5E Cable							
Standard *(–4° to +176° F)*							
350	0.20″	24	Blue	7365K14	.49	.39	.31
350	0.20″	24	Gray	7365K17	.49	.39	.31
350	0.20″	24	White	7365K15	.49	.39	.31
350	0.20″	24	Yellow	7365K16	.49	.39	.31
Plenum Rated *(–4° to +167° F)*							
350	0.20″	24	Blue	7365K23	.94	.76	.59
350	0.20″	24	Off-White	7365K28	.94	.76	.59
350	0.20″	24	White	7365K24	.94	.76	.59
350	0.20″	24	Yellow	7365K25	.94	.76	.59
Shielded Category 5E Cable							
Standard *(–40° to +167° F)*							
100	0.22″	26	White	7734T47▲	.64	.51	.45
Category 6 Cable							
Standard *(–4° to +176° F)*							
350	0.37″	23	Blue	8245K15	.61	.49	.40
350	0.37″	23	Gray	8245K14	.61	.49	.40
Plenum Rated *(–4° to +176° F)*							
350	0.37″	23	Blue	8245K23	1.28	1.02	.83
350	0.37″	23	Gray	8245K22	1.28	1.02	.83
350	0.37″	23	Off-White	8245K24	1.28	1.02	.83
Shielded Category 6 Cable							
Standard *(–4° to +140° F)*							
250	0.27″	23.5	Blue	4265T1	.74	.60	.48
250	0.27″	23.5	Gray	4265T2	.74	.60	.48
Plenum Rated *(–4° to +140° F)*							
250	0.28″	23	Gray	4265T3	2.23	1.79	1.46

▲ Wires are stranded.

Heavy Duty Category 5E and 6 Cable

Cable

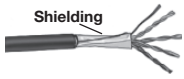

Shielded Cable

The oil-resistant jacket on this heavy duty cable withstands harsh industrial applications. Cable has copper wires in four twisted pairs, unless noted. ***Shielded*** cable insulates your data from interference for high-quality transmission.

Category 5E, ***shielded category 5E***, and ***category 6*** cable is UV resistant and has solid wires. UL and C-UL listed. Available in lengths of 10, 25, 50, 100, 300 ft., and the maximum continuous length of 500 ft.

Continuous-flex shielded category 5E cable is great for robotic applications. It is UV resistant and has stranded wires. UL recognized, CSA certified, and CE approved. Available in lengths of 10, 25, 50, 100 ft., and the maximum continuous length of 150 ft.

Cable-tray rated cable can be extended from a cable tray to your machine or control panel without the need for conduit. It has stranded wires and is UL recognized, CSA certified, and CE approved. Available in lengths of 10, 25, 50, 100 ft., and the maximum continuous length of 300 ft. *Category 5E* cable has four individual copper wires and meets Profinet Type B specifications for networking applications.

To Order: Please choose from available lengths.

MHz	OD	Wire Size, AWG	Jacket Material	Jacket Color	Temperature Range, °F	Plenum Rated		Per Ft. 1-99	Per Ft. 100-Up
Category 5E									
350	0.19″	24	FEP■	Black	–94° to +302°	Yes	9284T5	$2.42	$1.93
350	0.23″	24	PVC	Black	–40° to +167°	No	9284T3	.83	.67
Shielded Category 5E									
100	0.28″	24	PVC	Black	–13° to +167°	No	9284T1	1.08	.88
Continuous-Flex Shielded Category 5E									
200	0.30″	26	PUR▲	Purple	–22° to +176°	No	4250T1	4.72	3.81
Cable-Tray Rated Shielded Category 5E									
100	0.28″	22	PVC	Green	–40° to +158°	No	4232T1	1.17	.93
Category 6									
250	0.21″	23	FEP■	Black	–94° to +302°	Yes	9284T9	3.09	2.47
600	0.34″	23	PVC	Black	–40° to +167°	No	9284T7	1.44	1.15
Cable-Tray Rated Shielded Category 6									
250	0.28″	27	PVC	Yellow	14° to 176°	No	4232T2	2.13	1.71

■ Fluorinated ethylene polypropylene. ▲ Polyurethane.

Category 5E and 6 Cords

Quickly add new terminals to your network or replace old cords. These have eight stranded copper wires in four twisted pairs. Each cord has an RJ-45 plug at both ends. Jacket is PVC.

Category 5E and ***category 6*** cords are ETL listed. **To Order:** Please specify black, blue, gray, red, white, or yellow.

Shielded category 5E cords have a layer of foil to insulate your data from interference, providing high-quality transmission. They are UL and C-UL listed except white cords, which are UL listed only. **To Order:** Please specify blue, gray, or white except 7734T11 and T17, which are only available in white.

Lg., ft.	MHz	OD	Wire Size, AWG		Each
Category 5E *(5° to 167°F)*					
1	350	0.22″	24	9953K21	$2.77
3	350	0.22″	24	9953K22	4.27
5	350	0.22″	24	9953K24	5.50
7	350	0.22″	24	9953K25	6.61
10	350	0.22″	24	9953K63	7.46
14	350	0.22″	24	9953K64	9.88
25	350	0.22″	24	9953K69	14.67
50	350	0.22″	24	9953K28	25.90

Lg., ft.	MHz	OD	Wire Size, AWG		Each
Shielded Category 5E *(–40° to +167°F)*					
1	100	0.22″	26	7734T11	$6.89
3	190	0.25″	24	7734T2♣	7.42
7	190	0.25″	24	7734T3♣	10.23
10	190	0.25″	24	7734T4♣	12.30
14	190	0.25″	24	7734T5♣	16.71
25	190	0.25″	24	7734T6♣	25.31
50	100	0.22″	26	7734T17	44.80

Lg., ft.	MHz	OD	Wire Size, AWG		Each
Category 6 *(5° to 167°F)*					
1	500	0.22″	24	4172T2	$3.00
3	500	0.22″	24	4172T3	4.38
5	500	0.22″	24	4172T4	5.65
7	500	0.22″	24	4172T5	6.74
10	500	0.22″	24	4172T6	7.77
14	500	0.22″	24	4172T7	10.20
25	500	0.22″	24	4172T8	15.65
50	500	0.22″	24	4172T9	27.44

♣ White cord operates at 100 MHz, has a 0.22″ OD, and is 26 AWG.

Heavy Duty Abrasion-Resistant Category 5E and 6 Cords

RJ-45 to RJ-45

M12 to RJ-45

M12 to M12

Protect your data from harsh environments. These cords have a polyurethane jacket over stranded copper wires. All except continuous flex category 5E have a layer of shielding that insulates your data from interference and provides high-quality transmission.

RJ-45 to RJ-45 cords have eight wires in four twisted pairs. *Continuous flex category 5E* cords are ideal for robotic and CNC applications.

M12 to RJ-45 and ***M12 to M12*** cords have four individual wires. *Washdown category 5E* cords are IP67 rated.

Lg., ft.	MHz	OD	Wire Size, AWG	Color		Each
RJ-45 to RJ-45						
Category 5E *(–4° to +140°F)*						
1½	100	0.38″	26	Black	8329T11	$8.49
3	100	0.38″	26	Black	8329T12	9.73
6	100	0.38″	26	Black	8329T13	12.27
10	100	0.38″	26	Black	8329T14	15.45
15	100	0.38″	26	Black	8329T15	20.16
25	100	0.38″	26	Black	8329T16	26.89
Category 6 *(14° to 158°F)*						
5	250	0.25″	28	Yellow	8329T21	40.53
10	250	0.25″	28	Yellow	8329T22	48.63
15	250	0.25″	28	Yellow	8329T23	60.45
33	250	0.25″	28	Yellow	8329T24	89.93
66	250	0.25″	28	Yellow	8329T25	135.15
Continuous Flex Category 5E *(–22° to +176°F)*						
1	200	0.30″	26	Purple	8384T1	76.89
3	200	0.30″	26	Purple	8384T2	83.69
5	200	0.30″	26	Purple	8384T3	90.47
7	200	0.30″	26	Purple	8384T4	97.27

Lg., ft.	MHz	OD	Wire Size, AWG	Color		Each
RJ-45 to RJ-45 (Cont.)						
Continuous Flex Category 5E (Cont.)						
10	200	0.30″	26	Purple	8384T5	$107.45
15	200	0.30″	26	Purple	8384T6	124.42
25	200	0.30″	26	Purple	8384T7	153.27
50	200	0.30″	26	Purple	8384T8	224.54
M12 to RJ-45						
Category 5E *(–13° to +158°F)*						
3	100	0.38″	22	Green	8346T15	60.84
10	100	0.38″	22	Green	8346T16	75.02
16	100	0.38″	22	Green	8346T17	86.02
33	100	0.38″	22	Green	8346T18	112.18
M12 to M12						
Washdown Category 5E *(–13° to +158°F)*						
3	100	0.38″	22	Green	8346T11	81.09
10	100	0.38″	22	Green	8346T12	98.18
16	100	0.38″	22	Green	8346T13	110.53
33	100	0.38″	22	Green	8346T14	138.33

Category 5E and 6 Cable Stripper

Don't risk nicking Category 5E and 6 cable. Unlike regular electrical strippers, this tool has adjustable blades that safely strip cable with ODs from 0.19″ to 0.32″. Made of plastic. Overall length is 3⅜″.

Stripper ..... 4333K26 **Each** $25.11
Replacement Blades (4/Set) ..... 4333K27 **Per Set** $7.85

Category 5E and 6 Cable Stripper/Crimper

Crimp RJ-45 plugs onto Category 5E and 6 cable. It also cuts and strips cable up to 0.22″ OD and has a release lever to prevent faulty crimps. It's made of steel and has a cushion grip. Overall length is 8¼″.

Stripper/Crimper ..... 68995K69 **Each** $113.64

Jacks, Plugs, and Couplers for Category 3, 5E, and 6 Cable

All are type RJ-45 and made of plastic.

Jacks

The insulation displacement connections on these jacks require only a standard tool, such as a pair of pliers, to install. UL listed and CSA certified.

For Category	Color		Each 1-9	Each 10-Up
3	White	3447T14	$4.12	$3.51
3	Almond	3447T15	4.12	3.51
5, 5E	White	1209T18	6.22	5.29
5, 5E	Almond	1209T19	6.22	5.29
6	White	7355T21	8.70	6.96
6	Almond	7355T22	8.70	6.96

Plug

For Category	Color	Pkg. Qty.		Per Pkg.
5, 5E, 6	Clear	10	68995K67	$4.29

Coupler

Coupler has two jacks for joining two plugs. UL listed.

For Category	Color		Each
5E	Beige	3243T22	$6.37

Keystone Style Couplers

Couplers have two jacks for joining two plugs.

For Category	Color		Each
5E	Black	3243T1	$10.28
5E	White	3243T2	10.28
6	Black	3243T6	12.77
6	White	3243T7	12.77

Jack, Plugs, and Coupler for Shielded Category 5E Cable

All components are shielded and type RJ-45.

Jack

Housing is metal.

8849T46 ..... **Each** $4.24

Plug

Housing is metal. Package quantity is 10.

8849T51 ..... **Per Pkg.** $7.80

Heavy Duty Plugs

These plastic plugs have cord grips for a more secure connection when used with high-flex cable.

8849T53

8849T52

For Cable Dia.	For Wire Size, AWG Stranded	Solid	Color		Each
0.18″-0.31″	26-23	26-23	Gray	8849T53	$33.87
0.24″-0.27″	24-22	23-22	Black	8849T52	12.51

Coupler

Extend the length of patch cords. Coupler has two jacks and reduces electromagnetic interference (EMI). Housing is metal. UL listed.

3243T27 ..... **Each** $8.29

Washdown Jack and Plug for Shielded Category 5E Cable

These shielded RJ-45 components are enclosed in a gray metal connector that enables IP67-rated connections for washdown environments.

Jack includes a cover to maintain IP67 rating when plug is not connected. Requires a 7/8″ panel cutout.

Plug has an insulation displacement connection that allows easy installation. Use with 0.24″ to 0.31″ OD cable and 27 to 24 AWG wire.

Jack

Plug

		Each
Jack w/ RJ-45 Connection on Back	8296T2	$43.27
Plug	8296T1	29.13

Washdown Category 5E Jacks, Plugs, and Cords

Jacks and Plugs

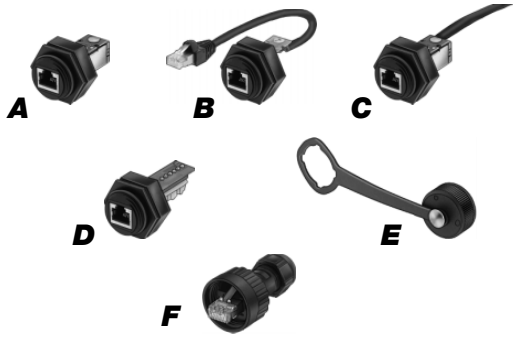

Jacks have male threads that connect to female collared RJ-45 plugs to create an IP67-rated connection for washdown environments. They have a custom nut for panel installation and require a 1″ dia. cutout. Jacks are shielded and have a black plastic housing. When not connected to plug, use a ***jack cover*** (sold separately) to maintain the IP67 rating.

Add one of our ***collared plugs*** to terminate your custom-length cord. Use with 0.10″ to 0.26″ OD cable to make an IP67 connection. Plugs are black plastic.

		Each
Jacks		
A ... With RJ-45 Connection on Back	5697T31	$33.14
B ... With 12″ Category 5E Cord and RJ-45 Plug	5697T34	33.79
C ... With 12″ Wire Leads	5697T37	29.81
D ... With 110 Punchdown Terminals	5697T32	29.86
E ... Jack Cover	5697T44	8.60
Collared Plugs		
F ... For Solid Wire (26-24 AWG)	5697T52	19.88
F ... For Stranded Wire (26-24 AWG)	5697T51	12.69

Cords

IP67 rated to withstand water, dirt, oil, and vibration. Cable is shielded and has a 0.25″ OD. It has a black polyurethane jacket and 24-ga. copper wire. Temperature range is –4° to +176° F.

Lg., ft.	MHz	*Collared RJ-45 Plug on Both Ends*	Each	*Collared RJ-45 Plug to Standard RJ-45 Plug*	Each
6.6	100	5697T13	$49.74	5697T19	$45.97
16.4	100	5697T17	56.10	5697T26	52.00

Harsh Environment M12 Jacks and Plug for Category 5E Cable

G

H

J

Not only are these shielded, four-wire connectors IP67 rated for washdown environments, they resist temperatures up to 185° F and withstand vibration better than RJ-45 connectors. Their insulation displacement connections allow easy field installation without the need for tools. Compatible with other M12 connectors.

Styles G&H have an RJ-45 jack. They include a custom nut for panel installation and require a 21/32″ cutout. Connectors have a black plastic housing.

Style J is for 0.22″ to 0.28″ cable OD and 24 to 22 AWG wire. Connector has a metal housing and UL recognized components.

		Each
G ... Jack with RJ-45 Connection on Back	8256T3	$39.64
H ... 90° Jack with RJ-45 Connection on Side	8256T2	39.64
J ... Plug	8256T1	36.31

Washdown Through-Panel Jacks and Receptacles

A

B

C

D

E

Forget fumbling around in a control cabinet to plug in your computers and data collection devices—simply connect them to one of these interfaces. They mount through a cutout in your panel and have a clear plastic NEMA 4 cover to keep out water when not in use. All have a gasketed aluminum housing and four mounting holes (fasteners not included). UL recognized and CSA certified.

Styles A and *B* have 3/16″ dia. mounting holes; *Styles C,D,* and *E* have 1/4″ dia. holes.

Jacks are type RJ-45 and located in the front and back for connecting Category 5E cords.

	Amps @ 120 VAC	Circuit Breaker	Receptacle Style (Qty.)	Connection Style	O'all Size, Ht.×Wd.×Dp.	Panel Cutout, Ht.×Wd.		Each
Jacks and Receptacles								
A	15	No	NEMA 5-15 (1)	Quick Disconnect	1 3/4″×4 1/2″×1 3/4″	1 7/16″ ×3 7/16″	**8223T1**	$138.16
B	15	Yes	NEMA 5-15 (1)	Screw-Clamp Terminals	1 3/4″×5 1/2″×1 3/4″	1 7/16″ ×4 7/16″	**8223T2**	162.47
Jacks and GFCI Receptacles								
C	20	No	NEMA 5-20 (2)	Quick Disconnect	3 1/2″×5 1/8″×1 3/4″	2 15/16″×3 7/16″	**8223T3**	162.47
D	20	Yes	NEMA 5-20 (2)	Screw-Clamp Terminals	3 1/2″×5 1/8″×1 3/4″	2 15/16″×3 7/16″	**8223T4**	180.16
GFCI Receptacles								
E	20	No	NEMA 5-20 (2)	Screw-Clamp Terminals	3 1/2″×5 1/8″×1 3/4″	2 15/16″×3 7/16″	**8223T5**	120.47

DIN-Rail Mount Connection Blocks

Mount these blocks to 35 mm DIN rail and connect your Category 5E or computer cable. Also known as interface blocks, they're ideal for wiring networking components in control boxes.

For Category 5E Cable with RJ-45 Jacks

F

G

H

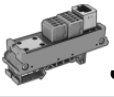
J

Spring-clamp terminal connections. Housing is gray polycarbonate. Temperature range is –4° to +185° F.

		For Wire Size, AWG	Lg.×Wd.×Ht.		Each
F	RJ-45 to RJ-45	—	1.73″×0.83″×3.35″	**8197T3**	$72.10
G	RJ-45 to 4 wires	28-14	1.58″×0.95″×3.35″	**8197T1**	62.01
H	RJ-45 to 4 wires for Shielded Cable	28-14	2.64″×1.18″×3.35″	**8197T4**	63.47
J	RJ-45 to 8 wires	28-14	1.58″×0.95″×3.35″	**8197T2**	62.85

For Computer Cable with DB Connectors

69895K11

Screw-clamp terminal connections. Housing is green polyamide. UL recognized, CSA certified, and CE approved. Temperature range is –4° to +122° F.

	For Wire Size, AWG	Lg.×Wd.×Ht.	*Male Plugs*	Each	*Female Plugs*	Each
DB9 to 9 wires	30-12	3.03″×1.33″×2.3″	**69895K11**	$45.59	**69895K21**	$45.57
DB15 to 15 wires	30-12	3.03″×1.77″×2.3″	**69895K12**	60.61	**69895K22**	60.63
DB25 to 25 wires	30-12	3.03″×3.10″×2.3″	**69895K13**	67.43	**69895K23**	72.29
DB37 to 37 wires	30-12	3.03″×3.99″×2.3″	**69895K14**	92.34	**69895K24**	86.80
DB50 to 50 wires	30-12	3.03″×4.43″×2.3″	**69895K15**	125.23	**69895K25**	120.89

Category 5E and 6 Patch Panels

Vertical Wall Mount

Horizontal Wall Mount

Horizontal Rack Mount

Easily install and reconfigure your RJ-45 jacks in these panels. UL listed.

Vertical wall-mount panels have two mounting slots (fasteners not included). 4163T48 has 1/4″ wide slots; 4163T49 has 3/8″ wide slots.

Horizontal wall-mount panel has a front cover that allows easy access to the wiring block. Mounting fasteners included.

Horizontal rack-mount panels fit 19″ racks and have four 1/4″ wide mounting slots (fasteners not included).

No. of Ports	Ht.×Wd.×Dp.	No. of Rack Spaces		Each
Vertical Wall Mount—*Rear Wiring Block*				
Category 5E				
12	10″×2 1/8″×1 3/8″	—	**4163T48**	$60.69
Category 6				
12	10″×2 1/8″×1 5/8″	—	**4163T49**	78.38
Horizontal Wall Mount—*Front 110 Wiring Block*				
Category 5E				
12	2 3/4″×11 3/8″×3 3/8″	—	**4163T51**	84.50
Horizontal Rack Mount—*Rear Wiring Block*				
Category 5E				
16	1 3/4″×19″×1 3/8″	1	**4163T44**	70.60
24	1 3/4″×19″×1 3/8″	1	**4163T45**	87.58
48	3 3/8″×19″×1 3/8″	2	**4163T46**	159.63
Category 6				
12	1 3/4″×19″×1 3/8″	1	**4163T41**	78.28
24	1 3/4″×19″×1 3/8″	1	**4163T42**	128.90
48	3 1/2″×19″×1 3/8″	2	**4163T43**	221.27

RJ-11/F-Type Connector Jacks

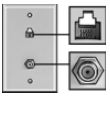

You'll get two connections in one location with these space-saving ABS plastic wall plates. They have an RJ-11 (4-wire) telecom jack on top and an F-type female connector below.

	Ht.×Wd.		Each 1-9	Each 10-Up
White	4 1/2″×2 3/4″	**5304T49**	$3.73	$3.16
Ivory	4 1/2″×2 3/4″	**5304T47**	3.73	3.16

Audio/Video Jacks

RCA and S-Video

4-Jack RCA

Convert RCA video and audio to Category 5E cable and transmit the signal up to 325 ft. away. Jacks are 4 1/2″ Ht. ×2 3/4″ Wd. and made of ABS plastic.

To Order: Please specify color: ivory or white.

No. of Jacks	Jack Type		Each
Audio and Video			
3	RCA (Red, White) and S-Video	**8202T1**	$43.28
4	RCA (Green, Blue, Red, Orange)	**8202T3**	75.00
Video			
3	RCA (Green, Blue, Red)	**8202T2**	50.95

Keystone Style Wall Plates

The versatile configurations of these plates accept Category 3, 5E, and 6 jacks and connectors as well as coaxial cable connectors. Mounting screws are included. *Single-device* plates are 4½″ Ht.×2¾″ wide; *two-device* plates are 4½″×4½″.

Plastic plates are UL listed and C-UL recognized except 3888T11 and T12 are UL listed and CSA certified.

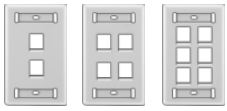

2 Ports *4 Ports* *6 Ports*

No. of Ports	White Each 1-9	White Each 10-Up	Almond	Almond Each 1-9	Almond Each 10-Up
Plastic					
Single Device (1 Gang)					
2	68985K51	$2.29	$1.96	68985K52	$2.29	$1.96
4	68985K61	2.29	1.96	68985K62	2.29	1.96
6	68985K71	2.29	1.96	68985K72	2.29	1.96
Two Device (2 Gang)					
6	68985K11	4.62	3.92	68985K12	4.62	3.92
Plastic with Angled Ports					
Single Device (1 Gang)					
2	3888T11	2.69	2.27	3888T12	2.69	2.27
4	3888T19	3.02	2.55	3888T21	3.02	2.55

No. of Ports	Each 1-9	Each 10-Up
Stainless Steel		
Single Device (1 Gang)		
1	3262T1	$6.44	$5.47
2	3262T2	6.44	5.46
4	3262T3	7.14	6.05
6	3262T4	7.14	6.05
Two Device (2 Gang)		
4	3262T5	10.72	9.08
6	3262T6	11.18	9.47

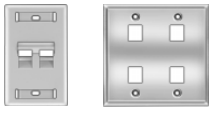

Angled 2 Ports *Stainless Steel Two Device*

Snap-In Coaxial Cord Connectors

Just snap these connectors into one of the wall plates on this page or any keystone-style plate. UL listed.

	BNC (50 Ohms)	Each 1-9	Each 10-Up	F-Type	Each 1-9	Each 10-Up	RCA	Each 1-9	Each 10-Up
White	3888T13	$3.70	$3.12	3888T15	$1.81	$1.53	3888T17	$3.09	$2.61
Beige	3888T14	3.70	3.12	3888T16	1.81	1.53	3888T18	3.09	2.61

BNC *F-Type* *RCA*

Mounting Boxes for Wall Plates

When a recess for your wall plate isn't available, use one of our mounting boxes. They fit 4½″ Ht.×2¾″ Wd. wall plates and are made of ABS plastic. Mounting hardware included.

Extenders provide additional depth when you need more room for cable.

	Mounting Boxes Dp.		Each 1-4	Each 5-Up	Extenders Dp.		Each 1-4	Each 5-Up
White	1⅝″	2105T37	$2.67	$2.28	1″	2105T42	$2.92	$2.49
Beige	1⅝″	2105T38	2.67	2.28	1″	2105T43	2.92	2.49

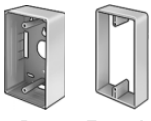

Box *Extender*

Multicord Wall Plates

A large angled opening provides an exit point to run multiple cords behind walls. Plates are ABS plastic and include mounting screws. **To Order:** Please specify color: black, ivory, or white.

	Ht.×Wd.		Each
Single-Device (1 Gang)	4½″×2¾″	8163T1	$3.29
Two-Device (2 Gang)	4½″×4½″	8163T2	5.97

Industrial Networking Cable and Connectors

Cable

This common networking cable is shielded and has twisted-pair construction and stranded copper wires, unless noted. CE approved. All cable is rated at 300 VAC, UL listed, and CSA certified except continuous-flex, which is rated at 30 VAC and UL and C-UL recognized. ***Continuous-flex*** cable is good for robotics, cable carriers, and CNC machines.

To Order: Please choose from the available lengths of 10, 25, 50, 100, 250 ft., and the maximum continuous length of 500 ft.

No. of Wire Pairs	Wire Size, AWG	OD	Jacket Material	Jacket Color	Temperature Range		Per Ft. 1-99	Per Ft. 100-Up
Devicenet								
2	15▲	0.48″	PVC	Gray	–4° to +167°F	8097T1	$3.43	$2.75
2	22♣	0.28″	PVC	Gray	–4° to +167°F	8097T2	1.75	1.39
Continuous-Flex Devicenet								
2	15▲	0.45″	TPE	Purple	–31° to +158°F	8097T3	8.64	7.03
2	22♣	0.30″	TPE	Purple	–31° to +158°F	8097T4	5.18	4.21
Profibus								
1	22	0.31″	PVC	Purple	–22° to +167°F	8463T1■	1.69	1.33
Continuous-Flex Profibus								
2	24	0.33″	TPE	Purple	–31° to +158°F	8463T2	3.94	3.15
Modbus								
1	24	0.25″	PVC	Gray	–22° to +176°F	8128T1	1.37	1.09
2	24	0.34″	PVC	Gray	–22° to +176°F	8128T2	2.24	1.79
Foundation Fieldbus								
1	18	0.29″	PVC	Orange	–22° to +221°F	8203T1	1.20	.95
Hart Bus								
1	22	0.28″	PVC	Black	–4° to +140°F	8312T1	1.38	1.10
1★	22	0.30″	PVC	Black	–4° to +140°F	8312T2	1.53	1.22
Plenum-Rated Hart Bus								
1	24	0.20″	FEP	Red	–94° to +302°F	8312T3	4.17	3.35
2	24	0.31″	FEP	Red	–94° to +302°F	8312T4	6.81	5.45

▲ One pair is 18 AWG. ♣ One pair is 24 AWG. ■ Wires are solid. ★ Also has a single 22 AWG wire.

Connectors

No. of Pins	For Cable Dia.	For Wire Size, AWG	Thread Size	Male	Male Each	Female	Female Each
For Devicenet Cable							
6	0.19″-0.23″	24-22	M12×1	8097T66	$23.31	8097T67	$26.95
5	0.27″-0.49″	18-16	⅞″-16	8097T68	34.51	8097T69	35.36
For Profibus Cable							
3	0.28″-0.34″	24-22	M12×1	8463T35	36.18	8463T34	37.36

For Devicenet Cable, Female

For Profibus Cable, Male

Shielded Data and Communication Cable

Multiconductor Foil Shielded

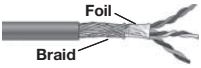

Multiconductor Foil and Braid

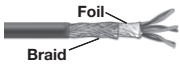

Twisted-Pair Foil and Braid

Plenum Multiconductor Foil Shielded

All of this cable is shielded and meets NEC Article 725-38(b)3.

To Order: Please choose from the available lengths of 10, 25, 50, 100 ft. or the maximum continuous length of 500 ft.

Standard— Protect your valuable data from errors and loss due to electromagnetic interference (EMI). This cable has stranded tinned-copper drain wire and a gray PVC jacket. Suitable for Cable Tray Use Class 2 and Class 3 circuits.

Multiconductor Foil Shielded—For data transmission, control circuits, and RS-232 interfaces. Cable is rated at 300 VAC. Capacitance is 30pF/ft. Temperature range is –4° to +176° F. UL recognized CL2/CM/CMG.

Multiconductor Low-Capacitance Foil and Braid—For high-speed computers, RS-422 interfaces, and other applications requiring low capacitance. Cable is rated at 30 VAC. Capacitance is 12.5 pF/ft. Temperature range is –4° to +167° F. UL recognized CL2/CM.

Twisted-Pair Low-Capacitance Foil and Braid—Provides better signal transmission than other computer cable because it reduces interference that can occur with multiple transmissions on the same line. For high-speed computers, data transmission, and RS-422 interfaces. Cable is rated at 30 VAC. Capacitance is 12.5 pF/ft. Temperature range is –4° to +176° F. UL recognized CL2/CM.

Plenum— You can install this cable directly into air plenums, so you won't need to buy and install conduit. Plenums are the spaces above a suspended ceiling used to circulate air back to the heating or cooling system in a building. Cable has a flame-retardant PVC jacket over a stranded copper wire and is rated at 300 VAC. It also has a stranded tinned-copper drain wire. Temperature range is –22° to +167° F. Jacket is off-white. Suitable for Cable Tray Use Class 2 circuits. UL listed CL3P/CMP.

No. of Wires	Wire Size, AWG	OD		Per Ft. 1-99	Per Ft. 100-Up
Standard					
Multiconductor Foil Shielded					
6	24	0.21″	75985K52	$0.41	$0.33
8	24	0.22″	75985K54	.48	.38
10	24	0.25″	75985K56	.67	.50
25	24	0.37″	75985K58	1.50	1.20
Multiconductor Low-Capacitance Foil and Braid					
4	24	0.23″	75985K62	.47	.39
6	24	0.27″	75985K63	.61	.50
8	24	0.28″	75985K64	.74	.61
10	24	0.31″	75985K65	1.21	.99
15	24	0.35″	75985K66	1.48	1.20
25	24	0.40″	75985K67	2.19	1.79
Twisted-Pair Low-Capacitance Foil and Braid					
2★	24	0.27″	75985K72	.55	.46
3★	24	0.28″	75985K73	.82	.68
5★	24	0.33″	75985K74	1.05	.88
12½★	24	0.46″	75985K76	2.49	2.07
Plenum					
Multiconductor Foil Shielded					
2	22	0.12″	70045K84	.30	.24
2	18	0.15″	70045K86	.46	.36
2	16	0.17″	70045K88	.64	.52
4	22	0.13″	70045K85	.39	.32
4	18	0.18″	70045K87	.67	.54
4	16	0.20″	70045K89	1.14	.91

★ Number of pairs.

Continuous-Flex Shielded Data Cable

Designed for rigorous flexing applications, this cable is great for use in robotics, CNC machines, and other automated equipment. Cable is shielded to prevent electromagnetic interference (EMI). It has stranded copper wire and a twisted-pair construction. Rated at 300 VAC.

To Order: Please choose from the available lengths of 10, 25, 50, 100, 300, 500 ft. or the maximum continuous length of 1000 ft.

Standard— Jacket is oil-resistant gray PVC. Temperature range is 23° to 158° F. UL recognized.

Heavy Duty— Jacket is oil- and UV-resistant blue TPE. Temperature range is –31° to +212° F.

No. of Wire Pairs	Wire Size, AWG	OD		Per Ft. 1-99	Per Ft. 100-Up
Standard					
2	20	0.31″	2099T22	$2.50	$2.03
2	24	0.28″	2099T12	2.24	1.82
3	20	0.35″	2099T23	3.13	2.54
3	24	0.30″	2099T13	2.97	2.43
4	20	0.37″	2099T24	4.34	3.53
4	24	0.31″	2099T14	3.76	3.07
5	20	0.43″	2099T25	5.01	4.07
5	24	0.33″	2099T15	4.34	3.53
6	24	0.37″	2099T16	5.21	4.23
Standard (Cont.)					
8	24	0.45″	2099T17	$6.06	$4.92
10	24	0.51″	2099T18	7.15	5.82
Heavy Duty					
2	24	0.28″	2099T32	3.35	2.72
3	24	0.35″	2099T33	6.44	5.23
4	20	0.39″	2099T37	8.86	7.20
4	24	0.35″	2099T34	5.82	4.74
8	22	0.49″	2099T36	7.31	5.94

Shielded Computer Cords

RS-232 Straight Through
DB25 Male to DB25 Female

DB9

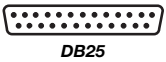

DB25

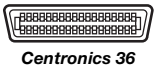

Centronics 36

Hook up your computer equipment with these shielded cords. Color is beige.

RS-232 Straight Through— Provide a serial connection between a computer, terminal, or printer and a modem. All pins are wired.

Hayes Modem— Connect a computer, terminal, or printer and a modem. Not all pins are wired.

Null Modem— Connect two computers, terminals, or printers.

Cable Type	Connections	OD		6-ft. Length Each		10-ft. Length Each
RS-232 Straight Through	DB9 Male to DB9 Male	0.25″	7925K11	$19.00	7925K21	$21.50
RS-232 Straight Through	DB9 Male to DB9 Female	0.25″	7925K12	19.00	7925K22	21.50
RS-232 Straight Through	DB25 Male to DB25 Male	0.28″	7925K61	6.40	7925K62	7.98
RS-232 Straight Through	DB25 Male to DB25 Female	0.28″	7925K63	6.40	7925K64	8.86
Parallel Printer	DB25 Male to Centronics 36 Male	0.31″	7925K51	6.40	7925K52	7.00
Serial Printer	DB25 Male to DB25 Female	0.20″	—	—	7925K59	7.04
Hayes Modem	DB25 Male to DB25 Male	0.20″	7925K56	5.78	7925K57	7.18
Hayes Modem	DB25 Male to DB25 Female	0.20″	7925K54	5.78	7925K55	7.18
Null Modem	DB9 Female to DB9 Female	0.16″	7925K31	4.52	7925K32	5.26

Computer Connectors

DB9

DB15

DB25

DB37

HD15

Replace worn out connectors or convert existing cables for different uses.
Shielded connectors protect against electromagnetic interference (EMI) and radio frequency interference (RFI).

Crimp-On

Shielded

Crimper

Extraction Tool

Crimp-on connectors are faster to install than solter type. *Standard* connectors fit 30 to 20 AWG cable. *Shielded* connectors fit 26 to 22 AWG cable.
Crimper installs wires into the contact. *Extraction tool* lets you take out the contact or put it back once the wire is crimped.

Connector Type	Male Connectors	Each 1-4	Each 5-Up	Female Connectors	Each 1-4	Each 5-Up
Standard						
DB9	94575T62	$4.70	$4.02	94575T61	$4.72	$4.04
DB15	94575T64	4.87	4.16	94575T63	4.89	4.18
DB25	94575T66	5.43	4.64	94575T65	5.49	4.69
DB37	94575T68	6.36	5.44	94575T67	6.36	5.44
Shielded						
DB9	94575T14	4.20	3.94	94575T17	4.20	3.94
DB15	94575T15	5.51	5.25	94575T18	5.51	5.25
DB25	94575T16	7.20	6.94	94575T19	7.20	6.94
DB37	94575T28	9.70	9.31	94575T29	9.70	9.31
Crimper				94575T55	Each	$116.94
Extraction Tool				94575T75	Each	6.10

Solder Type

Shielded Male

Standard Female

Solder-type connectors fit 30 to 20 AWG cable except HD15 fit 30 to 26 AWG cable.

Connector Type	Pkg. Qty.	Male Connectors	Per Pkg. 1-2	Per Pkg. 3-Up	Female Connectors	Per Pkg. 1-2	Per Pkg. 3-Up
Standard							
DB9	6	2146T11	$7.34	$6.27	2146T12	$7.98	$6.82
DB15	6	2146T13	7.98	6.82	2146T14	8.51	7.27
DB25	6	2146T15	8.94	7.64	2146T16	9.57	8.18
DB37	6	2146T17	11.81	10.09	2146T18	12.23	10.45
HD15	6	2146T32	9.89	8.45	2146T33	10.43	8.91

Connector Type	Male Connectors	Each 1-4	Each 5-Up	Female Connectors	Each 1-4	Each 5-Up
Shielded						
DB9	2146T52	$3.83	$3.27	2146T51	$3.83	$3.27
DB15	2146T54	4.40	3.76	2146T53	4.40	3.76
DB25	2146T58	4.40	3.76	2146T57	4.68	4.00
DB37	2146T61	8.19	7.00	2146T59	8.19	7.00
HD15	2146T56	4.68	4.00	2146T55	4.68	4.00

Connector Adapters

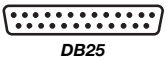
DB25

DB9

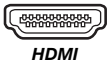
HDMI

HD15

DVI-D

USB

5-Pin DIN

6-Pin DIN

Female-to-Female

DB25 to DB9

Male-to-Male

Mini DB9 to Mini DB9

HDMI to HDMI

DVI-D to HDMI

Male-to-Female

USB Type A to USB Type A

5-Pin DIN to 6-Pin Mini DIN

6-Pin Mini DIN to 5-Pin DIN

Rotating DVI-D to DVI-D

Join two incompatible connectors with one of these adapters.
Rotating adapters let you make connections at various angles and minimize strain on cords. They bend 90° and swivel 360°.

Connections		Each
Female-to-Female Adapters		
DB25 to DB25	7171K34	$4.42
DB25 to DB9	7171K41	5.09
Mini DB25 to Mini DB25	7171K46	4.82
DVI-D to HDMI	7171K65	9.25
HD15 to HD15	7171K11	5.72
HDMI to HDMI	7171K63	10.85
Male-to-Male Adapters		
DB25 to DB25	7171K31	4.18
DB9 to DB25	7171K15	5.95
Mini DB9 to Mini DB9	7171K44	4.09
DVI-D to HDMI	7171K66	9.25
HD15 to HD15	7171K12	5.72
HDMI to HDMI Inline	7171K68	7.90

Connections		Each
Male-to-Female Adapters		
DB25 to DB9	7171K42	$5.43
DB9 to DB25	7171K43	5.53
DVI-D to HDMI	7171K64	9.25
HD15 to HD15	7171K14	5.10
HDMI to HDMI	7171K62	10.85
HDMI to DVI-D	7171K67	9.25
Mini HDMI Inline to HDMI	7171K72	10.50
USB Type A to USB Type A	7171K16	4.25
5-Pin DIN to 6-Pin Mini-DIN (PS/2)	7171K48	4.14
6-Pin Mini-DIN (PS/2) to USB Type A	7171K13	4.60
6-Pin Mini-DIN (PS/2) to 5-Pin DIN	7171K47	3.62
Male-to-Female Rotating Adapters		
DVI-D to DVI-D	7978T1	19.06
HDMI to HDMI	7978T2	19.06

Fiber Optic Cords

Run these duplex, multimode cords through risers (the vertical shafts between floors). They're rated OFNR (optical fiber nonconductive riser) for use in riser applications and have a 62.5 micron core dia. and a 125 micron cladding dia. Cords have a 0.16″ OD and an orange PVC jacket. Temperature range is –40° to +158° F. UL listed.

LC to LC

LC to SC

LC to ST

Lg., ft.	LC to LC	Each	LC to SC	Each	LC to ST	Each
3	2087T1	$22.28	2087T4	$22.94	2087T7	$21.56
10	2087T2	24.19	2087T5	25.54	2087T8	24.06

USB Cords and Hubs

Cords

Double-shielded to guard against electromagnetic interference (EMI), these cords connect your peripheral devices to a personal computer.

Lg., ft.	A-to-A Cords (Male to Female)	Each	A-to-B Cords (Male to Male)	Each	A-to-Mini B Cords (Male to Male)	Each
3	4974T25	$5.00	4974T7	$3.97	4974T31	$7.38
6	4974T26	6.41	4974T15	5.38	4974T32	8.72
10	4974T27	8.97	4974T16	9.14	4974T33	14.90
15	4974T28	12.41	4974T17	13.31	4974T34	21.00

Hubs

4 Ports

7 Ports

All operate on 110/240 VAC, 50-60 Hz and have a 6-ft. power cord with two-prong plug.

4-port hub includes a 1½-ft. Type A male to Type B male cable. Draws 2.5 amps.

7-port hub includes a 3-ft. Type A male to mini Type B male cable. Draws 2 amps.

No. of Ports		Each
4	4974T35	$42.86
7	4974T36	38.26

Waterproof USB Cords

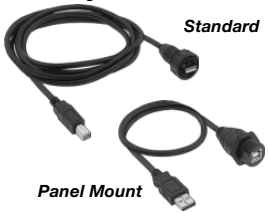
Standard

Panel Mount

For a connection that holds up in wet environments, choose these IP67-rated cords. They're shielded and have a waterproof connection at one end. Cords have a 0.20″ OD and a black PVC jacket. Temperature range is –4° to +158° F.

Lg., ft.	Panel Cutout Dia.		Each
Type A Male to Standard Type B Male			
6	—	8028T1	$19.30
Panel Mount Type A Female to Standard Type A Male			
1½	13/16″	8028T2	17.78
6	13/16″	8028T3	19.30
Panel Mount Type B Female to Standard Type A Male			
1½	13/16″	8028T4	17.78
6	13/16″	8028T5	19.30

USB Adapters

Serial to USB

Parallel to USB

XGA Monitor to USB

Adapt an incompatible connector to plug into your computer's USB port.

Serial-to-USB adapter converts an RS-232 serial device that has a DB9 male connector. Compatible with all RS-232 devices.

Parallel-to-USB adapter converts a DB25 IEEE-1284 parallel printer that has a DB25 female connector.

XGA Monitor-to-USB adapter converts an XGA monitor that has an HD15 male plug. This is a convenient way to add a second monitor to your desktop or laptop. Supports resolutions up to 1440×900 including VGA and SVGA resolutions of 1024×768 and 800×600.

	Lg.		Each
Serial to USB	27″	8761K1	$20.73
Parallel to USB	6 ft.	8761K2	17.50
XGA Monitor to USB	20″	8761K3	83.55

Video Monitor Cords

The HD15 connectors on these shielded cords work with UXGA monitors up to 1600×1200 resolution. Cords are 0.33″ OD with 28 AWG solid copper wire and a black PVC jacket. Temperature range is –13° to +176° F.

Audio and video cords have a 16″ cord with a 3.5 mm stereo plug for sending sound.

Lg., ft.	VIDEO Male to Male	Each	VIDEO Male to Female	Each	AUDIO AND VIDEO Male to Male	Each
3	8041T11	$11.91	8041T21	$11.91	8041T51	$17.52
6	8041T12	12.95	8041T22	12.95	8041T52	19.71
15	8041T13	20.35	8041T23	20.35	8041T53	26.29
100	8041T14	68.80	8041T24	68.80	8041T54	92.41

Y-cable has a splitter for sending the same display to two monitors. Use with 1024×768 resolution monitors. Coaxial cable is 30 AWG; twisted wire pair is 28 AWG stranded copper. Cord is shielded, 0.33″ OD, and has a gray PVC jacket. Temperature range is –4° to +176° F.

Y-Cable (Male to Female) ..... 8041T31 **Each** $11.71

Firewire Cords and Hub

Just what you need to connect peripheral devices, such as external storage and digital cameras, to your computer. Meet IEEE 1394 protocol developed by Apple.

Lg., ft.	6 Pin to 6 Pin (Male to Male)	Each	6 Pin to 4 Pin (Male to Male)	Each
3	1154T4	$12.38	1154T2	$16.06
6	1154T7	21.98	1154T6	29.98
10	1154T5	18.30	1154T3	21.50

Repeater hub extends your connection length by up to 15 ft. and provides two extra ports. It includes a 3-ft. firewire cable and 6-ft. power cord with a two-prong plug. Operates on 120 VAC, 60 Hz.

1154T1 ..... **Each** $67.78

Low-Voltage Cable Identifier

Map up to 20 different low-voltage lines, such as speaker, security, alarm, and coaxial cables. Device has an F-type connector and includes a 24″ cord with an F-type jack on one end and alligator clips on the other, as well as 20 numbered alligator clips for the remote ends of your lines. An LED display shows the number of the line being traced. Operates on one 9-volt battery (not included). UL recognized and CE approved.

7879T1 ..... **Each** $170.42

Lineman's Butt Sets

Bed of Nails Clip

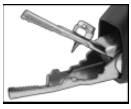
Piercing Clip

Alligator Clip

Standard Set

Deluxe Set

Phone-line testing is easy with these ergonomically designed sets. The LCD displays on-hook voltage, number dialed, battery life, and caller ID. Butt sets include a cordset with bed of nails clips and a headset for hands-free use. The included and accessory cordsets are 4 ft. long and work with both sets. Test units operate on one 9-volt battery (included).

Standard set comes with a quick-release belt clip.

Deluxe set is DSL compatible and has auto line identification. It senses over- and under-voltage conditions and has an amplified speaker that lets you talk while testing.

Note: With piercing clips and bed of nails clips it is not necessary to strip the wire. Alligator clips work with stripped wire only.

		Each
Butt Sets		
Standard	57595T33	$193.95
Deluxe	57595T34	271.64
Accessories		
Cordset with Piercing Clips	57595T41	29.65
Cordset with Alligator Clips	57595T43	27.09
Replacement Cordset with Bed of Nails Clips	57595T42	36.49
Replacement 9-Volt Battery	71455K56	2.75

Tone Testers

Tone Generator with RJ-11 Plug

Tone Generator with RJ-45 Plug

Standard Amplifier

Noise-Filtering Amplifier

Multifunction Tester

Install or troubleshoot telephone lines with our durable testers. They require one 9-volt battery except the multifunction tester, which requires two (sold separately).

Tone Generators— In addition to generating an audio tone (detectable with an amplifier), tone generators also test continuity and polarity. Choose from testers with a four-wire RJ-11 plug and eight-wire RJ-45 plug. Both styles have red and black test leads with alligator clips.

Standard Amplifier— Even in congested bundles of cable, this amplifier lets you identify wire and cable without making direct contact with the conductor. It features volume control, an on/off button, and ports for connecting a butt set or headset.

Noise-Filtering Amplifier— The same features as the standard amplifier, plus a special filtration feature that blocks out annoying power-line hum.

Multifunction Tester— Identifies wires using an alternating tone signal (detectable with an amplifier) and tests polarity. It also indicates whether lines are dead, working, or off the hook and allows you to talk on a dead line. Tester has red and black test leads with alligator clips and a four-wire RJ-11 plug.

	Testers	Each	***Leather Cases***	Each
Tone Generator w/RJ-11 Plug	57175T1	$40.45	57175T15	$9.56
Tone Generator w/RJ-45 Plug	57175T9	77.73	57175T71★	17.24
Standard Amplifier	57175T5	80.32	57175T57	10.00
Noise-Filtering Amplifier	57175T8	121.45	57175T57	10.00
Multifunction Tester	57175T6	103.35	57175T71★	17.24

9-Volt Battery ..... 71455K56 **Each** $2.75

★ Made of woven polyester.

Pocket Size Telephone Line Tester

Trade bulky, expensive test instruments for this compact tool—it conveniently clips right into your pocket. Tester quickly and safely checks one- and two-line analog telephone installations. LED indicators show if sufficient loop current is available for proper operation. Tester also measures DC line voltages and precisely simulates an off-hook status. It has an RJ-11 jack and removable plug. No battery required.

2189T16 ..... **Each** $19.29

Inline Telephone Line Tester

Test your telephone line without interrupting service. Tester has LED indicators that display polarity. You can also use it to test new phone lines for power and to verify line numbers. It has two six-wire jacks for inline testing; both accept RJ-11 plugs. Tester includes a cord with an RJ-11 plug on each end for connecting to your telephone jack. It also includes a belt clip.

9240T3 ..... **Each** $40.35

Data Cable Testing Adapter

Attach a tone generator, butt set, or other testing device to data lines without interrupting service. Tester has two eight-wire RJ-45 Category 5 jacks. It includes a cord with an RJ-45 plug on each end.

9240T2 ..... **Each** $37.17

Data Cable Identifier

Trace data cables and a variety of unenergized wires with this transmitter and receiver. The transmitter sends a signal through your wire using the included RJ-11 plug, coaxial plug, alligator clips, or RJ-45 plug. Audible and visual signals from the handheld receiver help you identify the wire at any other location—its LED gets brighter as the signal gets stronger. The receiver does not pierce insulation. It stores in the transmitter when not in use. Two AAA and four button/coin cell batteries included.

1780T1 ..... **Each** $61.62

Data Cable Tester

This versatile unit tests for shorts, opens, miswires, reversals, and split pair errors for telephone, network, and coaxial cable. The tester has an LCD and an F-type connector, RJ-11 jack, and RJ-45 jack. It includes a 12″ cord with an RJ-45 plug on one end and alligator clips on the other, and a 7½″ cord with an RJ-12 plug on each end that's compatible with RJ-11, RJ-12, and RJ-45 jacks. Operates on one 9-volt battery (included). UL recognized and CE approved.

7931T1 ..... **Each** $87.35

Data Cable Tester with Length Meter

Test for shorts, opens, miswires, reversals, and split pair errors with this tester. It also measures cable length for coaxial, Category 5E, and Category 6 cable. Tester has a two-line, 32-character LCD screen that displays test results in a wiremap format. It comes with a built-in tone generator with selectable tones and pair capability. Unit includes two 1-ft. cords with an RJ-45 plug on each end, a 1-ft. cord with an RJ-45 plug on one end and alligator clips on the other, and a black nylon storage pouch. Operates on a 9-volt battery (sold separately).

		Each
Tester	7662T28	$193.95
9-Volt Battery	71455K56	2.75

Coaxial Cable Tester

Test for open and short circuit conditions and map coaxial lines with this easy-to-use tester. Device includes four F-type jack to BNC jack adapters, one F-type plug to BNC jack adapter, and four terminators for the remote ends of your lines. Operates on one 6-volt battery (included). UL recognized and CE approved.

7901T1 ..... **Each** $51.05

For information about NEMA enclosure ratings, see page 843.

Build-Your-Own Status-Indicating Lights

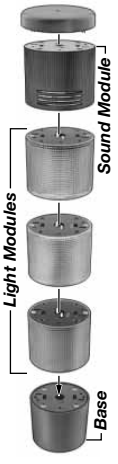

- Indoor use
- Enclosed (NEMA 1)
- UL listed; CSA certified
- 4″ light diameter
- 70 flashes per minute (where applicable)

Design a custom light stack up to five modules high with these snap-together components. Start with a base and light module, then add more light modules and a sound module to suit your needs. Just unsnap them for bulb replacement. Hardwire using the six included 24″ wire leads. Modules are 3¼″ high. *120 VAC* modules operate on 50/60 Hz.

Base is glass-filled polycarbonate and measures 3⅞″ Dia.×3¼″ Ht. It has holes for surface mounting (screws included) and a ¾″ NPT female connection for pipe mounting. It includes a cover for the top of your light stack.

Light modules have polycarbonate lenses and are available with incandescent or LED bulbs. LED bulb life is 100,000 hours. Each *120 VAC* light module can be individually set for flashing or continuous light. Incandescent bulb life is 7,000 hours. *24 VDC* light modules are for continuous light only (flasher sold separately). Incandescent bulb life is 5,000 hours.

Sound module allows you to select from 18 programmable tones to give an audible alert rated 69 dB @ 10 ft. Sound operates independently or can be synchronized with the light. Modules mount on the top of the stack.

To Order: For light modules, replacement lens, and replacement LED bulbs, please specify amber, blue, clear, green, or red.

	120 VAC Amps		Each	24 VDC Amps		Each
Base	—	57035T82	$79.11	—	57035T81	$56.85
Incandescent Light Module	0.23	57035T32	73.28	0.76	57035T31	73.28
LED Light Module	0.05	57035T11	178.92	0.08	57035T12	178.92
Sound Module	0.07	57035T68	127.69	0.18	57035T64	109.78
Optional Flasher	—	—	—	—	57035T71	51.06
Replacement Lens	—	57035T46	15.68	—	57035T46	15.68
Repl. Incandescent Bulb	—	57035T55	14.80	—	57035T94	9.88
Repl. LED Bulb (Amber or Red)	—	57035T48	63.62	—	57035T43	69.48
Repl. LED Bulb (Blue, Clear, or Green)	—	57035T47	126.42	—	57035T42	139.06

Build-Your-Own Status-Indicating Lights with Horn

- Indoor/outdoor use
- UL and C-UL listed
- 3⁵⁄₁₆″ light diameter
- 65 flashes per minute (where applicable)

A horn alerts personnel who can't see the light modules. The horn is built into the aluminum base, so there's no need for a sound module. Horn is rated 85 dB @ 10 ft. and operates independently or can be synchronized with the light. Light modules connect with included screws for a customized light stack. Start with a base and add any combination of the continuous, flashing, and strobe light modules up to five lights high. Lenses are polycarbonate and are 3⅝″ high. *120 VAC* modules operate on 50/60 Hz.

Base is 6″ Dia.×3½″ Ht. and has a terminal block for electrical connections and a cover for the top of your light stack. It has two ⁷⁄₃₂″ dia. holes for surface mounting (screws not included) and a ½″ NPT female connection for pipe mounting.

All light modules have a gasket. ***120 VAC halogen light modules*** have a 25,000-hour bulb life; ***24 VDC*** have a 15,000-hour bulb life. ***120 VAC*** and ***24 VDC LED light modules*** have a 148,000-hour bulb life. ***Strobe light modules*** have a 3,000-hour bulb life.

To Order: For halogen and strobe light modules, please specify amber, blue, clear, green, or red. For LED light modules, please specify amber, blue, green, or red.

	120 VAC Amps		Each	24 VDC Amps		Each
Base	0.05	56765T51	$176.94	0.05	56765T52	$176.94
Halogen Continuous Light Module	0.11	56765T38	102.38	0.32	56765T37	102.38
Halogen Flashing Light Module	0.11	56765T29	122.32	0.32	56765T31	122.32
LED Continuous/Flashing Light Module	0.12	56765T71	210.78	0.22	56765T72	210.78
Strobe Light Module	0.12	56765T73	139.52	0.30	56765T39	139.52
Replacement Halogen Bulb	—	1507T45	26.83	—	1507T9	26.83
Replacement Strobe Bulb	—	56765T68	54.24	—	56765T68	54.24

Build-Your-Own Slim Status-Indicating Lights

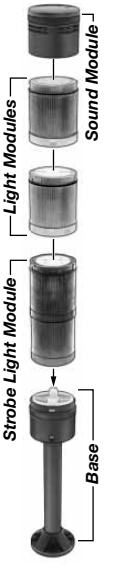

- Indoor/outdoor use (unless noted)
- For washdown environments (NEMA 4X and IP65, unless noted)
- UL and C-UL listed; CE approved
- 2⅝″ lens diameter
- 60 flashes per minute (where applicable)

Design your own slim, space-saving light stack. Start with a base and add up to six modules per stack, unless noted. The strobe light module takes up two positions. Modules plug into each other to eliminate the hassles of tools and wires. Lenses are polycarbonate. *120 VAC* modules operate on 50/60 Hz.

Bases are nylon and 2⅝″ Dia.×2⅜″ Ht. They have a terminal block for electrical connections, a polycarbonate cover for the top of your light stack, and a gasket. Surface mount horizontally or vertically using the two ³⁄₁₆″ dia. mounting holes (screws not included), or pipe mount using the included 6¼″ long aluminum extension pipe and die cast zinc flange with ¾″ NPT connections. The flange has four ³⁄₁₆″ dia. mounting holes (screws not included). Total height of base with pipe and flange is 7¼″. *Incandescent flashing base* allows each light module to be a continuous or flashing light.

Light modules are 2¾″ high and have a diffuser to maximize illumination and light dispersion. Choose from 7,000-hour incandescent bulbs for brightness or 60,000-hour LED bulbs for lower maintenance and energy costs. *Incandescent* modules are also rated for 120 VDC.

Strobe light modules are 5½″ high and can be used with a continuous or flashing light base. Bulb life is 20,000 hours. Module takes up two positions in the stack.

Sound modules are 2⅜″ high and have an intermittent tone that adjusts from 64 to 90 dB @ 10 ft. Modules operate independently or can be synchronized with the light. They lower the light stack rating to NEMA 1 (indoor use only) and IP20 and must be placed in the top position.

Optional ***30″ mounting extension pipe*** is aluminum and has ¾″ NPT male connections.

To Order: For light modules, replacement lens, and replacement LED bulbs, please specify amber, blue, clear, green, red, or yellow.

	120 VAC Amps		Each	24 VAC/VDC Amps		Each
Incandescent						
Base for Continuous Light	—	6366T11	$93.66	—	6366T11	$93.66
Base for Flashing Light	—	6366T13	169.68	—	6366T12★	169.68
Light Module (Continuous/Flashing)	0.05	6366T3	59.17	0.21	6366T2	59.17
Strobe Light Module	0.06	6366T5	199.35	0.32	6366T4	199.35
Sound Module	0.01	6366T16	120.92	0.01	6366T15	120.92
LED						
Base for Continuous/Flashing Light	—	6366T11	93.66	—	6366T11	93.66
Light Module (Continuous)	0.02	6366T14	199.25	0.06	6366T17	199.25
Light Module (Flashing)	0.02	6366T27	217.36	0.06	6366T28	217.36
Strobe Light Module	0.06	6366T5	199.35	0.32	6366T4	199.35
Sound Module	0.01	6366T16	120.92	0.01	6366T15	120.92
Replacement Parts						
Lens	—	6366T6	12.46	—	6366T6	12.46
Incand. Bulb (Continuous/Flashing)	—	6366T19	7.67	—	6366T18	7.66
LED Bulb (Continuous)	—	6366T75	156.18	—	6366T73	156.18
LED Bulb (Flashing)	—	6366T76	156.18	—	6366T74	156.18
30″ Mounting Extension Pipe					6366T7	Each $65.42

★ Maximum number of light modules per stack is four.

For information about NEMA enclosure ratings, see page 843.

Incandescent and LED Status-Indicating Lights

- Indoor use
- For washdown environments (NEMA 4X)
- UL and C-UL listed
- 2¼″ light diameter

Three Light

You'll save time with these assembled lights and you'll still get the convenience of interchangeable lenses. All have a continuous light. The base and lenses are made of polycarbonate. Lenses are 2″ high and the base has a terminal block for electrical connections. Surface mount using the four ½″ dia. mounting holes (mounting hardware not included), or pipe mount using the ¾″ NPT female connection. *120 VAC* lights operate on 60 Hz.

Incandescent lights have a 7,000-hour bulb life. ***LED*** lights have a 100,000-hour bulb life.

Incandescent three-light models come with five lenses: amber, blue, clear, green, and red. *LED three-light* models come with amber, green and red lenses. All *five-light models* have amber, blue, clear, green, and red lenses.

Optional ***31½″ mounting extension pipe*** is aluminum with ¾″ NPT male connections. Optional ***pipe-mounting flange*** is for surface mounting with the optional mounting extension pipe. It is die cast zinc and has a ¾″ NPT female connection. Mounting hardware is included. Optional ***wall-mounting bracket*** is aluminum and has two 7/16″ dia. mounting holes (screws not included).

To Order: For one-light models and replacement lens and bulbs, please specify amber, blue, clear, green, or red.

Lights

	O'all Ht.	Amps	120 VAC	Each	24 VAC/VDC	Each
Incandescent						
One Light	7¾″	0.20	**8654T15**	$68.40	**8654T41**	$68.40
Three Light	12½″	0.60	**8654T16**	140.69	**8654T42**	129.07
Five Light	18½″	1.00	**8654T17**	188.21	**8654T43**	188.21
LED						
One Light (Amber or Red)	7¾″	0.10	**9655K1**	119.09	**9655K5**	119.07
One Light (Blue, Clear, or Green)	7¾″	0.10	**9655K4**	173.12	**9655K8**	173.12
Three Light	12½″	0.10	**9655K2**	355.17	**9655K6**	355.17
Five Light	18½″	0.10	**9655K3**	576.62	**9655K7**	576.62

Replacement Parts and Accessories

		Each
Replacement Parts		
Lens	**8654T9**	$4.46
Incandescent Bulb	**8654T8**	.70
LED Bulb (Amber or Red)	**9655K25**	59.60
LED Bulb (Blue, Clear, or Green)	**9655K26**	101.42
Accessories		
31½″ Mounting Extension Pipe	**8654T11**	57.12
Pipe-Mounting Flange	**8654T12**	13.20
Wall-Mounting Bracket	**8654T1**	25.54

LED Status-Indicating Lights and Lights with Alarm

- Indoor use
- For environments with splashing water (IP54)
- UL recognized
- 2⅜″ light diameter
- 60 flashes per minute (where applicable)

Three Light with Alarm

Assembled with LEDs that have a 100,000-hour life, these lights are ready to install. Lenses are acrylic and base is ABS plastic. Surface mount using the included wall-mount bracket (screws included). They also include an 11¾″ chrome-plated steel mounting pipe with an M22 male connection.

One-light models have a red lens. *Two-light* models have red and green lenses. *Three-light* models have red, yellow, and green lenses.

Lights without alarm have a continuous light. *120 VAC* lights have nine 37.4″ wire leads and operate on 50/60 Hz; *24 VAC/VDC* lights have six 37.4″ wire leads.

Lights with alarm warn personnel without a view of the equipment. They have a two-tone adjustable volume control in the base. Volume is rated 85 dB @ 1 meter. Alarm can operate independently or be synchronized with the light, and each light can be wired for either continuous or flashing light. *120 VAC* lights have twelve 37.4″ wire leads; *24 VAC/VDC* lights have ten 37.4″ wire leads.

	O'all Ht.	Amps	120 VAC	Each	24 VAC/VDC	Each
Without Alarm						
One Light	19⅜″	0.05	**18975T15**	$126.85	**18975T12**	$91.21
Two Light	21″	0.07	**18975T16**	147.82	**18975T13**	113.23
Three Light	22⅝″	0.12	**18975T17**	168.79	**18975T14**	134.19
With Alarm						
One Light	19⅜″	0.09	**18975T34**	168.79	**18975T26**	134.19
Two Light	21″	0.11	**18975T35**	190.81	**18975T27**	156.21
Three Light	22⅝″	0.16	**18975T36**	211.77	**18975T28**	177.18

Stainless Steel LED Status-Indicating Lights

- Indoor/outdoor use
- For washdown environments (IP65)
- CE approved
- 1¾″ light diameter

Two Light

A Type 304 stainless steel housing makes these great for environments with washdowns, corrosion, and food processing. Clear lenses and a continuous light give a clear indication when the light is activated, even in direct sunlight. Plus, you'll never need to replace any bulbs; LED technology provides 50,000 hours of maintenance-free operation.

Lenses are polycarbonate and 1¼″ Dia.×1⅛″ Ht. All have four 6½-ft. long wire leads and operate on 24 VDC. Surface mount into a ⅞″ dia. hole and secure with the included locknut.

Color	O'all Ht.	Amps @ 24 VDC		Each
Two Light, Green, Red	8¾″	0.08	**9661K1**	$450.34
Two Light, Red, Yellow	8¾″	0.08	**9661K2**	444.53
Three Light, Green, Red, Yellow	10″	0.12	**9661K3**	520.08

Ultra-Slim LED Status-Indicating Lights

- Indoor use
- For washdown environments (IP65)
- UL recognized and CE approved
- 1¼″ light diameter

Three-Light Short Stack

At just 1¼″ in diameter and with a 50,000-hour bulb life, these ABS plastic lights will save you space and time. All have a continuous light. Surface mount (mounting locknuts included) or pipe mount using the M22 male connection.

Short stacks have six 39″ wire leads; ***tall stacks*** have six 48″ wire leads.

Two-light models have green and red lenses. ***Three-light*** models have yellow, green, and red lenses. ***Four-light*** models have yellow, blue, green, and red lenses. ***Five-light*** models have blue, clear, green, red, and yellow lenses.

To Order: For one-light models, please specify blue, clear, green, red, or yellow.

One-Light Tall Stack

	O'all Ht.	Amps @ 24 VAC/VDC		Each
Short Stacks				
One Light	3⅝″	0.04	**1577T41**	$86.67
Two Light	5″	0.07	**1577T42**	109.42
Three Light	6⅜″	0.10	**1577T43**	138.67
Four Light	7¾″	0.14	**1577T44**	162.50
Five Light	9⅛″	0.17	**1577T45**	197.17
Tall Stacks				
One Light	10½″	0.04	**1577T31**	91.00
Two Light	11⅞″	0.07	**1577T32**	114.83
Three Light	13¼″	0.10	**1577T33**	144.08
Four Light	14⅝″	0.14	**1577T34**	169.00
Five Light	16″	0.17	**1577T35**	202.58

Portable LED Status-Indicating Light

- Indoor use
- 2″ light diameter

A convenient control box with a power cord means you can easily move this light to another location. LEDs provide a 100,000-hour life.

Continuous lights are amber, green, and red. Housing is ABS plastic and lenses are clear acrylic. Overall height of light is 5½″. It draws 0.05 amps @ 120 VAC, 60 Hz.

The control box is ABS plastic and has three colored buttons. It mounts with two screws or tape with adhesive on both sides (included). There is a 4-ft. cable from the control box to the light and a UL listed 6-ft. long cord with two-prong plug from the control box.

Mount the light to a wall using the two ⅜″ dia. mounting holes (hardware not included) or mount onto a vertical or horizontal surface with a maximum thickness of 2¼″, such as an office partition or workstation, using the included mounting bracket. Also includes 3″ and 12″ chrome-plated steel mounting pipes.

3258T25 ..... **Each** $198.15

For information about NEMA and IP enclosure ratings, see page 843.

Wall-Mount LED Status-Indicating Lights

Three Light

- Indoor use
- For environments with splashing water (IP54)
- UL recognized; CE approved
- 2¾″ light diameter

If you don't have the space for a tower of lights, mount these horizontally or vertically. They have a continuous light and two 3/16″ dia. mounting holes (hardware not included). Lenses are polycarbonate and base is ABS plastic.

Hardwire using the 39″ wire leads provided. LEDs have a 100,000 hour life. *120 VAC* lights operate on 50/60 Hz.

To Order: For replacement module, please specify green, red, or yellow.

	Color	O'all Ht.	90-250 VAC No. of Wires	Amps★		Each	24 VAC/VDC No. of Wires	Amps		Each
Two Light	Green, Red	5¾″	12	0.02	82995T55	$311.37	10	0.04	82995T51	$290.40
Three Light	Green, Red, Yellow	7⅜″	12	0.03	82995T56	431.94	10	0.06	82995T52	402.58

Replacement Module (Red or Yellow) ..... 82995T71 .. Each $75.48
Replacement Module (Green) ..... 82995T721 Each $87.02

★ Amps are rated @ 120 VAC.

DIN-Rail Mount LED Status-Indicating Lights

- Indoor use
- For temporary submersion (IP67)
- 2″ light diameter

Mount these three-color lights at any angle on a DIN rail (mounting bracket sold separately) or surface mount using the included screws. They're great for washdown environments and have LEDs that last 100,000 hours.

Lights are continuous. Base is polycarbonate/ABS plastic and lens is polycarbonate. Overall size is 4 5/16″ Ht. × 3 3/16″ Wd. × 2⅝″ Dp. Lights have a 4-pin single-keyway male plug with a 0.3″ face dia. and external threads. Female plug with cable sold separately. For information about PNP and NPN output, see page 896.

DIN-rail mounting bracket is made of ABS plastic and includes hardware to mount light to bracket.

Colors	Output	Amps @ 18-30 VDC		Each
Green, Red, Yellow	PNP	0.04	9984K1	$101.88
Green, Red, Yellow	NPN	0.04	9984K2	105.24
Blue, Red, Yellow	PNP	0.04	9984K3	101.88
Blue, Red, Yellow	NPN	0.04	9984K4	105.24
Female Plug with 12-ft. Cable			6897K36	32.56
DIN-Rail Mounting Bracket			9984K85	4.48

3-in-1 Compact LED Status-Indicating Lights

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- UL and C-UL listed
- 3¼″ light diameter
- 65 flashes per minute

With an overall height of 3⅞″, these lights are great for providing status alert in areas with low overhead clearance. A single light can cycle between one, two, or three colors and functions as a continuous or flashing light. Plus, the LEDs have a 148,000-hour life, which means there are no bulbs to replace. Lens is polycarbonate and base is glass-filled nylon. *120 VAC* lights operate on 50/60 Hz.

Surface mount using included hardware or pipe mount using the ½″ NPT female connection or the ¾″ NPT male connection. Hardware using the four 18″ wire leads provided.

Colors	120 VAC Amps			24 VDC Amps		
Amber, Green, Red	0.10	5795T57	$273.67	0.15	5795T53	$273.67
Amber, Blue, Red	0.10	5795T59	273.67	0.15	5795T55	273.67

Replacement Lens ..... 1507T42 Each $28.96

About Revolving, Flashing, and Strobe Lights

The light intensity of revolving and flashing lights is measured in candlepower. The higher the candlepower, the greater the light intensity. Candlepower values are for clear lenses; colored lenses reduce the candlepower. We offer lights with incandescent and halogen bulbs, as well as LEDs. Revolving lights are typically brighter than flashing lights.

Strobe lights use Xenon-gas tubes and are typically brighter than revolving and flashing lights. Their brightness is measured in candela seconds. As with revolving and flashing lights, candela second values are for clear lenses; colored lenses reduce these values.

Incandescent Revolving Lights

Pipe Mount

12 VDC Magnetic Mount

- Indoor/outdoor use
- 90 flashes per minute (unless noted)
- 2500-6000 candlepower

Get dependable performance no matter how you need to mount a revolving light. Lenses are polycarbonate and bulb life is 100 hours. *115 VAC* lights operate on 60 Hz.

Pipe-mount light is 5¼″ Dia. × 6⅝″ Ht. Base is ABS plastic. Light has a ½″ trade size compression coupling connection and two 24″ wire leads.

Surface-mount lights are 6″ Dia. × 7⅝″ Ht. Base is aluminum. They include mounting hardware and two 10-ft. wire leads.

115 VAC magnetic-mount light is 5¼″ Dia. × 6⅝″ Ht. with an ABS plastic base. It has a 9-lb. pull magnet and a 6-ft. cord with two-prong plug. ***12 VDC magnetic-mount*** light is 6″ Dia. × 7⅝″ Ht. with an aluminum base. It has a 16-lb. pull magnet and a 10-ft. cord with a cigarette lighter plug.

To Order: For lights and replacement lens, please specify amber, blue, clear, green, or red.

	Amps	Candlepower	Lights	Each	Repl. Bulbs	Each
Pipe Mount						
115 VAC	0.3	2,500	5928T66■	$73.26	11295T92	$3.73
Surface Mount						
12 VDC	2.2	5,000	5928T62	66.70	14335T97	.60
24 VDC	1.0	2,500	5928T63	66.70	1317T13	5.78
36 VDC	1.0	4,000	5928T64	66.70	14335T89	13.70
48 VDC	0.7	2,500	5928T65	66.70	1317T14	2.31
Magnetic Mount						
115 VAC	0.3	2,500	5928T68■	76.30	11295T92	3.73
12 VDC	3.5	6,000	5928T67	78.30	14335T97	.60

Replacement Lens ..... 5928T5 Each $14.45

■ 80 flashes per minute.

Ultra-Bright Sealed-Beam Revolving Lights

Surface Mount

Magnetic Mount Plug

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- UL listed (120 VAC only)
- 90 flashes per minute
- 35,000 candlepower

Two powerful sealed-beam incandescent bulbs like those in car headlights make these the brightest revolving lights we offer. The motor is encased in a Type 304 stainless steel base that resists corrosion. Lens is acrylic. Overall size is 9″ Dia. × 9″ Ht. and bulb life is 250 hours. *120 VAC* lights operate on 60 Hz.

Pipe-mount light has a ¾″ NPT female connection and includes three 18″ wire leads. ***Surface-mount*** lights include mounting hardware. *120 VAC* light has three 18″ wire leads; *12 VDC* and *24 VDC* lights have one 7-ft. wire lead. ***Magnetic-mount*** light has three 110-lb. pull magnets in the base and includes a 15-ft. cord with a cigarette lighter plug.

To Order: For lights and replacement lens, please specify amber, blue, green, or red. For replacement motor, please specify voltage.

	Amps	Lights	Each	Repl. Bulbs	Each
Pipe Mount					
120 VAC	0.5	8332T33	$248.73	8351K161	$10.26
Surface Mount					
120 VAC	0.5	8332T27	227.31	8351K161	10.26
12 VDC	4.5	8332T31	189.14	8351K161	10.26
24 VDC	3.4	8332T32	199.95	8351K271	19.84
Magnetic Mount					
12 VDC	4.5	8332T34	222.55	8351K161	10.26
Replacement Parts					
Lens				8332T11	16.67
Transformer for 120 VAC Lights				8332T21	37.41
Motor				8332T75	63.72

For information about NEMA and IP ratings, see pg. 843. For information about lights on this page, see pg. 1872.

Harsh Environment Incandescent Revolving Lights

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- UL and C-UL listed (pipe mount only); CSA certified (pipe mount only)
- 110 flashes per minute (unless noted)
- 3600 candlepower (unless noted)

Pipe Mount

Wall-Mounting Bracket

Magnetic Mount

Is your equipment subject to washdowns? These lights are ready. Is corrosion a concern? Not anymore—these lights are survivors. *120 VAC* lights operate on 50/60 Hz and have three 18″ wire leads. *12 VDC* and *24 VDC* lights have one 7-ft. wire lead, except the magnetic-mount light, which has a 15-ft. cord with a cigarette lighter plug.

Pipe-mount light is both quiet and durable, thanks to a gearless direct drive connection between the motor and reflector. Overall size is 5⅛″ Dia. × 6¼″ Ht. Lens is polycarbonate and base is zinc. Light has a ½″ NPT female connection. Bulb life is 2000 hours. Optional *wall-mounting bracket* is aluminum with a ½″ NPT male connection. Mounting hardware included. You furnish the pipe that goes from bracket to light.

Surface-mount and ***magnetic-mount*** lights have three lenses for three separate diffused beams of light that are easier on the eyes. Overall size is 5¾″ Dia. × 7¾″ Ht. Lens is acrylic and base is Type 304 stainless steel. Bulb life is 250 hours. *Surface-mount* lights include mounting hardware. *Magnetic-mount* light has a 50-lb. pull magnet.

To Order: For all lights and replacement lenses please specify amber, blue, clear, green, or red.

	Amps	Lights	Each	Repl. Bulbs	Each
Pipe Mount					
120 VAC	0.36	5807T91 ♦	$182.75	5807T16	$22.50
Surface Mount					
120 VAC	0.20	5846T53	89.87	5846T96	9.18
12 VDC	3.00	5846T51	85.11	14335T91	1.15
24 VDC	2.50	5846T52	89.87	5846T57	9.18
Magnetic Mount					
12 VDC	3.00	5846T54	96.62	14335T91	1.15
Replacement Parts and Accessories					
Repl. Lens for Pipe-Mount Light				5807T49	31.51
Repl. Lens for Surface- and Magnetic-Mount Lights				5846T19	15.73
Repl. Motor for Pipe-Mount Light				5807T47	29.46
Wall-Mounting Bracket for Pipe-Mount Light				5853T21	88.47

♦ 60 flashes per minute and 2100 candlepower.

Twin-Beam Lights

Surface-Mount Revolving Light

Magnetic-Mount Strobe Light

- Indoor/outdoor use
- 270 flashes per minute (revolving lights); 160 quad flash (strobe lights)
- 110,000 candlepower (revolving lights)
- 500 candela seconds (strobe lights)

Get their attention with these dual-bulb lights. A popular choice for vehicles, they have an amber polycarbonate lens on a black powder-coated steel base. *Surface-mount* lights include mounting hardware. *Magnetic-mount* lights have four 75-lb. pull magnets and a 15-ft. cord with a cigarette lighter plug.

Revolving lights have halogen bulbs with 1000 hours life. They operate on 12 VDC. Overall size is 23″ Lg. × 8″ Wd. × 5¼″ Ht. *Surface-mount* light has one 7-ft. wire lead. ***Strobe lights*** have Xenon bulbs with 2000 hours life. They flash in a series of four per cycle (quad flash) and operate on 12/24 VDC. Overall size is 23″ Lg. × 9⅜″ Wd. × 5¼″ Ht. *Surface-mount* light has two 7-ft. wire leads.

	Amp Rating		Each
Revolving Lights			
Surface Mount	10 @ 12 VDC	57905T22	$151.31
Magnetic Mount	10 @ 12 VDC	57905T23	189.46
Strobe Lights			
Surface Mount	1.5 @ 12/24 VDC	57905T24	206.26
Magnetic Mount	1.5 @ 12/24 VDC	57905T25	240.62
Replacement Parts			
Lens		57905T28	29.71
Bulb for Revolving Lights		5809T51	11.02

Revolving Lights with Bell

- Indoor use and indoor/outdoor use
- UL listed
- 90 flashes per minute
- 750 candlepower (indoor); 1000 (indoor/outdoor)

Get the impact of both sight and sound with a revolving light and a bell that is rated 93 dB @ 10 ft. Bell can function independently or can be synchronized with light. Lights can be wired with or without bell. They operate on 120 VAC, 50/60 Hz. Bell is 6″ dia. and made of steel. Surface mount using the two ¼″ dia. mounting holes (screws not included). Bulb is incandescent and has a 200-hour life.

Indoor light has an acrylic lens and polycarbonate base. Size of light is 5½″ Dia. × 6½″ Ht. Overall size is 6″ Wd. × 15½″ Ht. Includes four 5″ wire leads.

Indoor/outdoor light has a polycarbonate lens and an aluminum base. Size of light is 5½″ Dia. × 7½″ Ht. Overall size is 6″ Wd. × 15⅜″ Ht. Includes five 5″ wire leads.

To Order: For lights and replacement lenses, please specify amber, blue, or red.

	Amps @ 120 VAC	Lights	Each	Repl. Bulbs	Each
Indoor	0.30	14425T18	$314.39	14425T66	$16.08
Indoor/Outdoor	0.31	14425T19	491.00	14425T67	22.38
Replacement Lens for Indoor Light				14425T47	35.67
Replacement Lens for Indoor/Outdoor Light				14425T26	49.41

Halogen Revolving Lights

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- 135 flashes per minute
- 65,000 candlepower

Surface Mount

12 VDC Magnetic Mount

It's easy to spot these bright halogen lights. They're powerful, durable, and rated NEMA 4X for washdowns and corrosive environments. Lens is polycarbonate and base is neoprene rubber. Overall size is 5½″ Dia. × 5¼″ Ht. Bulb life is 1000 hours.

Surface-mount lights include mounting hardware and one 7-ft. wire lead.

Magnetic-mount lights have a 110-lb. pull magnet and a 15-ft. cord with a cigarette lighter plug.

To Order: For lights and replacement lens, please specify amber, blue, or red.

	12 VDC Amps	12 VDC Each	24 VDC Amps	24 VDC Each
Surface Mount	4.5	5809T46 $80.34	2.8	5809T48 $85.11
Magnetic Mount	4.5	5809T32 99.61	2.8	5809T75 101.36
Replacement Lens	—	5809T83 16.57	—	5809T83 16.57
Replacement Bulb	—	5809T51 11.02	—	5809T94 11.70

LED Revolving/Flashing Lights

- Indoor/outdoor use
- For washdown environments (IP65)
- CE approved
- 90 flashes per minute
- 3 candlepower

Wire Guard

Set these lights to simulate a continuous, revolving, or flashing light. They have LEDs that last up to 100,000 hours, so you may never need to replace bulbs.

Lights are 3 15/16″ Dia. × 5 7/16″ Ht. and have two 7/32″ dia. holes for surface mounting (screws not included). They have a polycarbonate lens, polycarbonate/ABS plastic base, and screw clamp terminal block connections. Both operate on 24 VDC.

Optional ***wire guard*** protects the lights when surface mounted. It is 5¾″ Dia. × 5⅝″ Ht., made of chrome-plated steel, and has three ¼″ dia. mounting holes (screws not included).

Optional ***wall-mounting bracket*** includes screws to attach the bracket to a light. Made of polycarbonate and ABS plastic, it has two 7/32″ dia. mounting holes (screws not included).

Optional ***pipe-mounting adapter*** is 1″ Dia. × 5¼″ Ht. It's made of aluminum and has four 7/32″ dia. mounting holes (screws not included).

To Order: Please specify color from those listed in the table.

Colors	Amps @ 24 VDC		Each
Red, Yellow	0.3	7224K1	$292.22
Blue, Green	0.3	7224K2	479.30
Wire Guard		7224K8	53.76
Wall-Mounting Bracket		7224K7	14.29
Pipe-Mounting Adapter		7224K9	42.11

For information about NEMA and IP ratings, see pg. 843. For information about lights on this page, see pg. 1872.

Incandescent Flashing Lights

Surface Mount w/Cushion Base

Magnetic Mount w/ Type 304 Stainless Steel Base

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- 60-80 flashes per minute
- 70 candlepower (120 VAC); 450 (12, 24, and 36 VDC)

Good for corrosive environments, these lights have a polycarbonate lens and a bulb life of 250 hours.

Lights ***with cushion base*** have a sponge-rubber pad below an ABS plastic base to absorb shock and vibration. Overall size is 4½″ Dia. × 7″ Ht. Mounting hardware included. *120 VAC* light operates on 50/60 Hz and has two 30″ wire leads. *12* and *24 VDC* lights have two 12″ wire leads.

Lights ***with Type 304 stainless steel base*** are durable and have a polished appearance. Overall size is 5¾″ Dia. × 7¾″ Ht. ***Surface-mount*** lights include hardware. *120 VAC* light operates on 60 Hz and has three 18″ wire leads. UL listed. *12 VDC* light has one 7-ft. wire lead. *24* and *36 VDC* lights have two 7-ft. wire leads. ***Magnetic-mount*** light has a 50-lb. pull magnet in the base and a 15-ft. cord with a cigarette lighter plug.

To Order: For all lights and replacement lens, please specify amber, blue, clear, green, or red.

Amps	Flashes Per Minute	Lights	Each	Repl. Bulbs	Each
Surface Mount with Cushion Base					
120 VAC ... 0.2	60	5932T84	$63.89	5846T96	$9.18
12 VDC ... 3.0	70	5932T51	63.89	14335T91	1.15
24 VDC ... 1.2	70	5932T52	63.89	5808T6	9.00
Surface Mount with Type 304 Stainless Steel Base					
120 VAC ... 0.8	70	5808T96	70.76	1728K97♣	7.24
12 VDC ... 3.0	80	5808T92	58.79	14335T91	1.15
24 VDC ... 1.3	70	5808T94	70.76	5808T6	9.00
36 VDC ... 0.9	70	5808T95	70.76	5808T291	9.18
Magnetic Mount with Type 304 Stainless Steel Base					
12 VDC ... 3.0	80	5808T93	73.15	14335T91	1.15

Replacement Lens ..... 5849T57 **Each** $17.97

♣ Sold in packages of two.

Flashing Lights with Horn

- Indoor/outdoor use
- UL listed (120 VAC only)
- 65 flashes per minute
- 2370-5050 candlepower

A horn built into the base of these powerful flashing lights is rated 85 dB @ 10 ft. and synchronized with the flashing of the light. Lens is polycarbonate and base is aluminum. Overall size is 6″ Dia. × 7⅜″ Ht. Surface mount with the included screws or pipe mount using the ½″ NPT female connection. They have two 18″ wire leads.

All lights have incandescent bulbs. ***120 VAC*** light operates on 50/60 Hz and has a bulb with a 3900-hour life. ***12 VDC*** light has a bulb with a 700-hour life. ***24 VDC*** light has a bulb with a 3100-hour life.

To Order: Please specify amber, blue, clear, green, or red.

Amps	Candle-power	Lights	Each	Repl. Bulbs	Each
120 VAC 0.3	3340	5753T83	$278.40	5753T81	$10.13
12 VDC 1	2370	5753T71	278.40	5753T75	1.11
24 VDC 1.1	5050	5753T72	278.40	5753T87	1.46

Replacement Lens ..... 5753T77 **Each** $46.79

Strobe-Style LED Lights

Surface-Mount Round

Side-Mount Oval

- Indoor/outdoor use
- 50 flashes per minute

Lights flash 180° in a series of four per cycle to simulate a quad-flash strobe, but with the benefit of a 100,000-hour life. Each light has 21 LEDs, three of which burn steadily for maintaining visual contact even during the off period of the flash. Lights have a black powder-coated aluminum mounting bracket, a polycarbonate lens, and three 8″ wire leads. They operate on 12-24 VDC.

Side-mount lights have two 9/32″ dia. mounting holes; ***surface-mount*** lights have four 9/32″ dia. mounting holes. Screws not included.

To Order: Please specify amber or red.

	O'all Size, Ht. × Wd. × Dp.	Amps @ 12-24 VDC		Each
Round				
Side Mount	6″ × 6″ × 2″	0.3	8772T1	$70.66
Surface Mount	6″ × 8″ × 2″	0.3	8772T4	73.43
Oval				
Side Mount	8″ × 6″ × 2″	0.3	8772T6	70.66
Surface Mount	8″ × 8″ × 2″	0.3	8772T8	73.43

Compact Halogen and LED Flashing Lights

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- UL and C-UL listed
- 65 flashes per minute
- 653 candlepower (Halogen); 2.2 (LED)

Ideal where corrosion and space may be an issue, these lights measure 3¼″ Dia. × 3⅞″ Ht. Lens is polycarbonate and base is glass-filled nylon. A mounting gasket and locknut let you surface mount these lights, or use the ¾″ NPT male connection for pipe mounting. Hardware using the two 18″ wire leads provided. *24* and *120 VAC* lights operate on 50/60 Hz.

Halogen lights are ideal where bright flashing lights are needed.

LED lights provide years of maintenance-free operation.

To Order: For halogen lights and replacement lens, please specify amber, blue, clear, green, or red. For LED lights, please specify amber, blue, green, or red.

	Amps	Bulb Life, hours		Each
Halogen				
24 VAC	0.77	15,000	1507T2	$145.18
120 VAC	0.20	25,000	1507T3	145.18
24 VDC	0.77	15,000	1507T4	145.18
LED				
120 VAC	0.10	100,000	1507T5	164.52
24 VDC	0.06	100,000	1507T6	164.52
Replacement Parts				
Lens			1507T7	33.56
Halogen 24 VAC/VDC Bulb			1507T9	26.83
Halogen 120 VAC Bulb			1507T45	26.83

Solar-Powered LED Flashing Light

- Outdoor use
- For water submersion (IP68)
- CE approved
- 15 flashes per minute
- 1.5 candlepower

There's no need for external power for this light. It charges itself during the day and flashes all night. Designed to mark buoys, barriers, and floating lights, an automatic switch turns it on at dusk and off at dawn.

LED is amber and may never need replacement. A sealed, encased battery provides maintenance-free operation for approximately five years and a 1 13/16″ built-in spike deters birds from landing on the light. Lens and base are polycarbonate. Overall size is 5⅜″ Wd. × 5 9/16″ Ht. Surface mount using the four 15/32″ dia. mounting holes (screws not included).

8470T1 ..... **Each** $219.30

Replacement Battery Pack ..... 8470T2 **Each** $72.73

Strobe Lights

Surface Mount

Magnetic Mount Plug

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- UL listed (120 and 240 VAC only)
- 60-70 flashes per minute
- 150-300 candela seconds

Xenon bulbs draw attention to these lights, which are good for corrosive environments. For quick and easy bulb replacement, just pop the top then snap back into place—no tools needed. Lens is polycarbonate and base is rubber. Overall size is 5¾″ Dia. × 4½″ Ht. Bulb life is 1000 hours.

Surface-mount lights include mounting hardware. *120 VAC* light has three 18″ wire leads and *240 VAC* light has two 18″ wire leads. *12-48 VDC* light has two 36″ wire leads. ***Double flash surface-mount*** light produces 60 double flashes per minute and has two 36″ wire leads. ***Magnetic-mount*** light has a 90-lb. pull magnet and a 15-ft. cord with a cigarette lighter plug. ***Pipe-mounting adapter for ½″ NPT male pipe*** converts surface-mount lights to pipe mount.

To Order: For lights and replacement lens, please specify amber, blue, clear, green, purple, or red.

	Amps	Flashes Per Minute	Candela Seconds		Each
Surface Mount					
120 VAC	0.2	70	150	5947T35	$78.77
240 VAC	0.1	70	150	5947T36	78.77
12-48 VDC	0.5	65	250	5947T38	90.72
Double Flash Surface Mount					
12-48 VDC	0.75	60	300	5947T28	93.54
Magnetic Mount					
12-24 VDC	0.3	65	250	5947T37	97.87
Replacement Parts and Accessories					
Replacement Lens				5947T96	18.33
Replacement Bulb				5947T95	14.78
Pipe-Mounting Adapter for ½″ NPT Male Pipe				5947T94	19.29

For information about NEMA enclosure ratings, see pg. 843. For information about strobe lights, see pg. 1872.

Compact Strobe Lights

Surface Mount | *Pipe Mount* | *Magnetic Mount* | *Light-Socket Mount* | *Light Guard* | *Pipe-Mounting Bracket*

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- UL listed (120 VAC and all hazardous-location pipe-mount lights); UL recognized (12-80 VDC lights)
- 60 flashes per minute
- 50 candela seconds

Tight spaces and corrosive environments are where these 3″ Dia. × 5″ Ht. lights really shine. Lens and base are polycarbonate. Lens is thread-in style. Bulb life is 10,000 hours. *120 VAC* lights operate on 50/60 Hz and are UL listed. *12-80 VDC* lights have UL recognized components for type E, EE, and ES electric trucks, except the hazardous-location pipe-mount lights.

Surface-mount lights have two ¼″ dia. mounting holes (screws not included). Use the optional *pipe-mounting bracket* to mount these lights on pipe up to 3″ dia. Bracket is yellow and includes two U-bolts. *120 VAC* light has a 6-ft. cord with a two-prong plug. *12-80 VDC* light has two 13″ wire leads.

Pipe-mount lights have two 13″ wire leads. *Hazardous-location pipe-mount* lights are UL listed for Class I and II, Div. 2.

Magnetic-mount light has a 40-lb. pull rating and a 6-ft. cord with a cigarette lighter plug.

Light-socket mount light screws into a standard light socket.

To Order: For lights and replacement lens, please specify amber, blue, clear, green, or red.

	120 VAC Amps		Each	12-80 VDC Amps		Each
Lights						
Surface Mount	0.04	5899T27	$76.36	0.4	5899T26	$73.79
Pipe Mount						
½″ NPT Female	0.04	5899T29	76.36	0.4	5899T28	79.82
½″ NPSL Male	0.04	5899T32	76.36	0.4	5899T31	74.41
Hazardous Loc. ½″ NPT Female	0.04	5899T86	230.27	0.4	5899T88	222.49
Magnetic-Mount	—	—	—	0.4	5899T46	97.59
Light-Socket Mount	0.04	5899T47	76.36	—	—	—
Replacement Parts and Accessories						
Replacement Lens					5899T89	16.70
Replacement Bulb					5899T91	21.74
Light Guard for Surface-Mount Lights					5899T92	41.60
Pipe-Mounting Bracket for Surface-Mount Lights					5899T93	38.32

Programmable Strobe Lights

- Indoor/outdoor use (unless noted)
- UL listed (110 VAC light only)
- 60 flashes per minute (single); 120 (double); 180 (triple); 240 (quad); 300 (five); 360 (six)
- Candela Seconds: Range from 62 for single flash to 240 for six flash

110 VAC Surface Mount

Command attention by adjusting your strobe light's frequency of flashes. Lights are programmable from a single flash per cycle to a series of six flashes per cycle. Programming instructions are included. Lights come programmed for six flashes. Lens is polycarbonate and base is nylon. Overall size is 6 5/16″ Dia. × 4¼″ Ht. Bulb life is 2000 hours.

Surface-mount lights include mounting hardware. You can also mount them to a pipe using the 1″ NPT female connection. *110 VAC* light operates on 50/60 Hz and has a 4-ft. power cord with a two-prong plug. UL listed. *12-48 VDC* light has three 12″ wire leads.

Magnetic-mount light has a 100-lb. pull rating and a 10-ft. cord with a cigarette lighter plug.

To Order: For lights and lens, please specify amber, blue, or red.

	Amps		Each
Surface Mount			
110 VAC	0.7	3302T45★	$155.98
12-48 VDC	1	3302T54	130.33
Magnetic Mount			
12-48 VDC	1	3302T52	142.94
Replacement Parts			
Lens		3302T39	25.00
Bulb		3302T36	43.56

★ For indoor use only.

Heavy Duty Strobe Lights

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- UL listed and CSA certified (die cast zinc base only)
- 70-90 flashes per minute
- 72-200 candela seconds

Die Cast Zinc Base

Type 304 Stainless Steel Base

Harsh conditions, including corrosion, won't stop these lights. All have a polycarbonate lens. *120 VAC* lights operate on 50/60 Hz.

The light with a ***die cast zinc base*** has a finned black base to dissipate heat, allowing it to last longer than most strobes—up to 10,000 hours. Overall size is 4″ Dia. × 5¼″ Ht. Surface mount with the included hardware or pipe mount with the ½″ NPT female connection. Hardwire with the three 18″ wire leads.

Lights with a ***Type 304 stainless steel base*** have a polished look and offer even better corrosion resistance. Overall size is 5¾″ Dia. × 7¾″ Ht. Bulb life is 2000 hours. Surface mount with the included hardware. *120 VAC* light has two 18″ wire leads. *12-24 VDC* light has two 3-ft. wire leads.

To Order: For lights and replacement lenses, please specify amber, blue, clear, green, or red.

	Amps	Flashes Per Minute	Candela Seconds		Each
Die Cast Zinc Base					
120 VAC	0.25	90	72	57785T6	$226.28
Replacement Lens				57785T85	22.73
Replacement Bulb				57785T31	54.09
Type 304 Stainless Steel Base					
120 VAC	0.2	70	125	5849T53	191.78
12-24 VDC	1.5	75	200	5849T52	189.14
Replacement Lens				5849T57	17.97
Replacement Bulb				5849T68	38.19

Extra-Bright Heavy Duty Strobe Lights

- Indoor/outdoor use
- For washdown environments (NEMA 4X) (Type 304 stainless steel base only)
- UL listed (5848T71 only)
- 54-75 flashes per minute
- 900-1200 candela seconds

Aluminum Base

Type 304 Stainless Steel Base

Bright enough to flash through the foggiest conditions. Bulb life is 2000 hours.

Lights with ***aluminum base*** surface mount with included hardware or pipe mount using the 1″ NPT female connection. They have an overall size of 6¼″ Dia. × 7¾″ Ht. Light *with single flash* operates on 120 VAC, 60 Hz and has three 18″ wire leads. Light *with double flash* offers greater visibility. It operates on 12-24 VDC and has two 19″ wire leads.

Lights with ***Type 304 stainless steel base*** are good for corrosive environments and have an overall size of 9″ Dia. × 9″ Ht. An outer dome provides extra protection. Surface mount with included hardware. *120 VAC light* operates on 60 Hz and has three 18″ wire leads. *12-24 VDC* light has two 7-ft. wire leads.

To Order: For lights, replacement lenses (except 5947T965), and replacement outer dome, please specify amber, blue, clear, green, or red.

	Amps	Flashes Per Minute	Candela Seconds		Each
Aluminum Base with Single Flash					
120 VAC	0.5	54	—	5756T72	$179.28
Replacement Lens				5756T35	34.92
Replacement Bulb				5756T29	36.19
Aluminum Base with Double Flash					
12-24 VDC	2.5	72	—	5756T32	167.94
Replacement Lens				5756T33	28.66
Replacement Bulb				5756T19	40.02
Type 304 Stainless Steel Base with Double Flash					
120 VAC	1	60	900	5848T71	271.57
12-24 VDC	3	75	1200	5848T61	271.57
Replacement Clear Lens				5947T965	18.33
Replacement Outer Dome				8332T11	16.67
Replacement Bulb				5849T68	38.19

For information about NEMA and IP enclosure ratings, see pg. 843. For information about lights on this page, see pg. 1872.

Low-Profile Strobe Lights and Strobe Lights with Horn

Light Only

With Horn

- Indoor/outdoor use
- 70 flashes per minute
- 50 candela seconds

You won't need much clearance space for these low-profile surface-mount lights. Mounting hardware is included and lens is polycarbonate. Bulb life is 2000 hours.

Lights only are 4″ Dia.×3″ Ht. Base is ABS plastic. All have two 10″ wire leads.

Lights with horn combine sight and sound for extra impact. Horn is rated 90 dB @ 10 ft. Size is 4″ Dia.×4¼″ Ht. and base is aluminum. Both have three 8½″ wire leads.

To Order: For lights and replacement lens, please specify amber, blue, clear, or red.

	Amps		Each
Lights Only			
120 VAC	0.06	57545T35	$74.82
6 VDC	0.35	57545T36	74.82
12 VDC	0.35	57545T37	74.82
24 VDC	0.18	57545T38	74.82
10-60 VDC	0.07	57545T39	86.46
Lights with Horn			
12 VDC	0.35	5910T61	133.91
24 VDC	0.18	5910T62	133.91
Replacement Parts			
Lens		57545T62	11.40
Bulb		57545T61	10.30

Hazardous-Location Strobe Lights

- Indoor/outdoor use
- For washdown environments (NEMA 4X)
- 60 flashes per minute
- 200 candela seconds (120 VAC light); 300 (24 VDC light)

UL listed for Class I, Div. 2, Groups C and D; Class II, Div. 2, Group G hazardous locations. Lens is polycarbonate and base is aluminum. Overall size is 4¾″ Dia.×8½″ Ht. Pipe mount using the 1″ NPT female connection. Bulb life is 2000 hours. Both have two 18″ wire leads. *120 VAC* light operates on 60 Hz.

To Order: For lights and replacement lens, please specify amber, blue, or red.

	Amps		Each
120 VAC	0.25	57925T22	$352.72
24 VDC	0.35	57925T21	352.72
Replacement Lens		5849T57	17.97
Replacement Bulb		57925T18	40.91

Battery-Operated Strobe Lights

Box Mount

Tripod Mount

- Indoor/outdoor use
- For washdown environments (NEMA 4)
- 60 flashes per minute
- 200 candela seconds

Set up these battery-powered portable lights wherever you need a strobe. They require two 6-volt lantern batteries (included). Batteries last up to 24 hours. Bulb life is 1000 hours. Lens is polycarbonate and base is rubber. Light measures 5½″ Dia.× 4½″ Ht.

Box-mount light has a 9¾″ Ht.×7″ Wd.×5″ Dp. steel mounting box.

Tripod-mount light stands higher for greater visibility. The tripod is steel and adjusts from 42″ to 69″.

To Order: For lights and replacement lens, please specify amber, blue, or red.

		Each
Box Mount	5903T1	$196.13
Tripod Mount	5903T2	271.92
Replacement 6-Volt Battery	7690K13	3.29
Replacement Lens	5947T96	18.33
Replacement Bulb	5947T95	14.78

Mini Strobe Light

Light Guard

- Indoor use
- UL recognized (for lift trucks)
- 60 flashes per minute

When you don't need an overpowering strobe and want to save a little space, this low intensity light is perfect. Lens and base are polycarbonate and overall size is 4¾″ Wd.×3⅞″ Ht. Base has two 3⁄16″ dia. mounting holes for surface mounting (screws not included). Hardwire using the two 6″ wire leads. Bulb life is 1000 hours. UL recognized component for lift trucks.

Optional ***light guard*** is 5⅝″ Ht.×8″ Wd.×4⅜″ Dp. It has two ¼″ dia. mounting holes (screws not included).

To Order: For light and replacement lens, please specify amber, blue, clear, or red.

	Amps		Each
12-80 VDC	0.65	5982T42	$85.25
Replacement Lens		5982T45	19.41
Replacement Bulb		5982T47	21.90
Light Guard		5982T5	41.02

Mini Wall-Mount Strobe Lights

- Indoor/outdoor use
- For washdown environments (NEMA 4X, IP65)
- UL listed
- 80 flashes per minute
- 1 candela second

Small and rectangular, these strobe lights are ideal for mounting in tight spaces on walls or panels. A polypropylene gasket provides a water- and dust-tight seal. Lens and base are polycarbonate and overall size is 2⅝″ Ht.×5¹⁄₁₆″ Wd.×2⁵⁄₁₆″ Dp. Surface mount with the included screws. Base has a terminal block for wiring. Bulb life is 4000 hours.

To Order: For lights and replacement lens, please specify amber, blue, clear, green, or red.

	Amps		Each
120 VAC	0.06	7714T53	$81.00
12 VDC	0.18	7714T51	81.00
24 VDC	0.08	7714T52	81.00
Replacement Lens		7714T67	11.30
Replacement Bulb		7714T62	22.65

Mini Wall-Mount Flashing/Continuous LED Light

- Indoor/outdoor use
- For washdown environments (NEMA 4)
- 360 flashes per minute
- 1200 candela seconds

Program this compact light to switch between flashing or continuous light. LED technology means it can operate for 100,000 hours, so you may never need to replace bulbs. Wall or panel mount.

Light has a polycarbonate base and a clear polycarbonate lens. Overall size is 2″ Ht.×5¾″ Wd.×1″ Dp. Draws 0.3 amps @ 9-28 VDC and has two 8″ wire leads. To install, remove light from base, mount the base to a panel or other flat surface, then secure the light back into the base using the included screws.

To Order: Please specify amber, blue, green, red, or white.

3072T1 ..... **Each** $108.19

Aircraft Warning Lights

Mount these continuous lights to the top of towers to warn low-flying aircraft. Lights have a 1″ NPT female connection and must be hardwired (wire leads not included). Lens is red. Base is orange aluminum. Lights operate on 120 VAC, 50/60 Hz and use 116-watt incandescent bulbs, sold separately below. Bulb life is 8000 hours. All meet FAA specification L810.

Amps @ 120 VAC	O'all Size, Ht.×Wd.×Dp.		Each
One Light			
1	9″ × 5½″×5½″	10315T11	$144.50
Two Light			
2	9¼″×11½″×5½″	10315T12	333.33
Replacement Parts and Accessories			
Replacement Lens		10315T46	32.58
Light Bulb		10315T15	5.50

Heavy Duty Signal Lights

One Light with Optional Guard

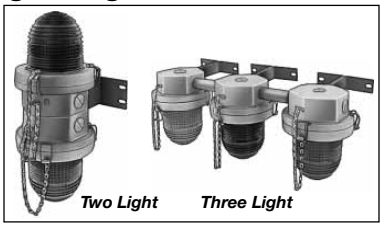

Two Light Three Light

Install these tough lights in a rugged indoor environment. They have a cast aluminum body, glass lens, and a safety chain that keeps the lens attached to the light. Suitable for use up to 250 VAC/VDC, 60 Hz. They have a continuous light and use incandescent bulbs up to 100 watts (100-watt bulb sold separately below). Lights have screw terminals for electrical connections. Commonly used on cranes, they meet OSHA safety color code for marking physical hazards.

One-light model has three 3/4″ NPT female connections for pipe mounting. **To Order:** Please specify amber, green, or red.

Two-light model has a bracket for vertical or horizontal mounting (screws not included). There is a 3/4″ NPT female connection on each light. Light has one green and one red lens.

Three-light model has a bracket on each light for mounting (screws not included). There is a 3/4″ NPT female connection at the top of each light and on the exterior of the two outer lights. Light has an amber, a green, and a red lens.

Optional ***wire lens guard*** fits individual lights in all three styles.

To Order: For replacement lens, please specify amber, green, or red.

	O'all Size, Ht. × Wd. × Dp.		Each
One Light	7 3/8″ × 5 7/16″ × 5 7/16″	5714T11	$136.51
Two Light	14 3/4″ × 5 7/16″ × 8 1/4″	5714T12	333.33
Three Light	7 3/8″ × 18 1/2″ × 8 1/4″	5714T13	561.71
Wire Lens Guard		5714T55	34.13
Replacement Lens		5714T73	46.55
100-Watt Bulb (2/Pkg.)		1241K13	Per Pkg. $6.18

Clearance Lights

Use these dual-bulb fixtures to avoid misjudging clearance. Lights have an acrylic lens and a polypropylene base. All metal parts are tinned brass. Overall size is 2″ Ht. × 4″ Wd. × 1 1/8″ Dp. Each bulb has a 2500-hour life. Surface mount using the two 3/16″ dia. mounting holes (screws not included). They have one 4 1/2″ wire lead.

	Amps @ 12 VDC		Each
Light with Amber Lens	0.67	8720T561	$4.90
Light with Green Lens	0.67	8720T563	4.97
Light with Red Lens	0.67	8720T562	4.90
Replacement Bulb		14335T95	.45

Traffic Signals

One Light

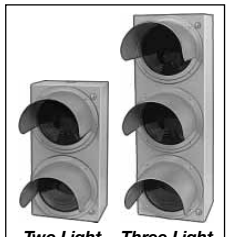

Two Light Three Light

Safeguard dangerous intersections and travel routes indoors and out. Made of black 16-ga. steel, lights operate on 110 VAC, 60 Hz and include a 45-watt halogen bulb with a 2500-hour life. Lenses are glass and 6 3/8″ in dia. Use the two 1″ trade size (1 3/8″ dia.) knockouts on each end to connect conduit, or wall mount (holes are not drilled). Lights come with screw terminals for hardwiring and meet OSHA safety color code for marking physical hazards.

One-light model has either an amber or red lens. **To Order:** Please specify color.

Two-light model has a red top lens and blue-green (also known as railroad green) bottom lens.

Three-light model has a red top, amber middle, and blue-green bottom lens.

Optional ***light flasher*** allows lights to be wired as continuous or flashing in any combination.

	Amps @ 110 VAC	O'all Size, Ht. × Wd. × Dp.		Each
One Light	0.47	8″ × 8″ × 12 3/16″	5733T77	$581.54
Two Light	0.82	16″ × 8″ × 12 3/16″	5733T75	642.65
Three Light	1.23	24″ × 8″ × 12 3/16″	5733T76	871.43
Light Flasher			5733T38	398.46
Amber Replacement Lens			5733T62	116.00
Blue-Green Replacement Lens			5733T63	94.90
Red Replacement Lens			5733T61	94.90
Replacement Bulb			14675K91	20.55

Forklift Tail Lights

Improve safety around forklifts with these multifunctional lights. They have an amber turn light, red stop light, and a clear backup light. Lens is polycarbonate and base is nylon. Overall size is 8 5/16″ Ht. × 2″ Wd. × 2 3/16″ Dp. Surface mount using the two 1/4″ dia. mounting holes (screws not included). UL recognized for lift trucks.

12 VDC light has a continuous red tail light in addition to the lights listed above. It has five 7 1/4″ wire leads. Bulb life is 1000 hours. ***36 VDC*** light has four 7 1/4″ wire leads. Bulb life is 300 hours.

Optional ***light guard*** provides extra protection against breakage.

Also Available: Replacement lenses and bulbs. Please ask for 58065T2 and specify part required.

	Amps		Each
12 VDC	5.6	58065T11	$52.06
36 VDC	1.3	58065T13	60.56
Light Guard		58065T15	33.50

Combination Exit and Emergency Lights

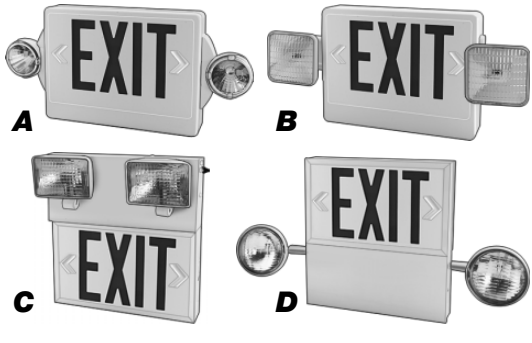

Illuminate the way to exits, even in the event of a power failure. Exit lights have a white housing and snap-out directional arrows. They operate on 120/277 VAC and have a maintenance-free 6-volt sealed lead-calcium battery for 1 1/2 hours of emergency lighting. All lights include mounting hardware and a bracket (also known as a canopy). Emergency lights are adjustable.

Lights with a ***plastic housing*** are impact, scratch, and corrosion resistant and feature snap-together construction. Viewable from one or both sides. End or back mount on wall or top mount on ceiling.

Style A has LEDs to illuminate the exit sign during normal and backup operation. One 5.4-watt krypton emergency light is mounted to each side. Housing is PVC. Meets UL 924. **To Order:** Please specify green or red PVC insert. ***Style B*** has two incandescent bulbs to illuminate the exit sign during normal operation and two 7-watt bulbs during backup operation. One 5.4-watt halogen emergency light is mounted to each side. Includes two green and two red ABS plastic inserts. Housing is ABS plastic. ETL listed.

Lights with a ***steel housing*** have a powder-coated finish for extra durability and are viewable from one side. Inserts are fiberglass. They meet UL 924. **To Order:** Please specify green or red fiberglass insert.

Style C has two incandescent bulbs to illuminate the exit sign during normal operation and two 6-watt bulbs during backup operation. Two 6-watt incandescent emergency lights are mounted to the top. End or back mount on wall or top mount on ceiling. ***Style D*** has two incandescent bulbs to illuminate the exit sign during normal operation and two 6-watt bulbs during backup operation. One 8-watt PAR36 sealed-beam emergency light is mounted to each side. Back mount on wall or top mount on ceiling.

Bulb Type	O'all Size, Ht. × Wd. × Dp.	Lights Watts	Lights Each	Repl. Exit Light Bulbs Watts	Repl. Exit Light Bulbs Each	Repl. Batteries	Repl. Batteries Each
Plastic Housing							
A LED	9 7/8″ × 21 1/4″ × 4 7/8″	3.3	8367K1 $175.45	—	—	8306K31	$43.61
B Incandescent	11″ × 22″ × 5″	18.6	8367K42 129.36	7	16755K9 $1.00	8367K51	22.62
Steel Housing							
C Incandescent	13 1/4″ × 12 1/4″ × 2 1/4″	36	8367K26 165.23	15	1611K26 4.08	7448K34	23.14
D Incandescent	13 1/4″ × 24 3/4″ × 2 1/4″	36	8367K27 191.58	15	1611K26 4.08	7448K34	23.14

Exit Lights

A

B

C

Exit locations should be as clear as day—even at night. Lights have a white housing and include mounting hardware and a bracket (also known as a canopy) for end and back mounting on a wall and top mounting on a ceiling. They also include a backplate. All are UL listed and meet UL 924. *Incandescent* and *fluorescent* lights include two bulbs for normal, non-backup operation. *LED* lights consume the least power and have the longest life, so you may never need to replace the bulbs.

A ***Plastic Housing—*** Lights have an impact-, scratch-, and corrosion-resistant housing. Viewable from one or both sides. All meet UL94V0 for flame resistance.

Incandescent lights have a polycarbonate housing and two green and two red acrylic inserts so you can illuminate "EXIT" in either color. Light *with emergency backup battery* has a 6-volt sealed lead-acid battery and two 5.4-watt backup bulbs.

LED lights have a thermoplastic housing and two polycarbonate inserts. **To Order:** Please specify green or red inserts. Light *with emergency backup battery* has a 1.2-volt nickel-cadmium battery.

B ***Steel Housing—*** Lights have a powder-coated finish for durability and protection against corrosion and flaking. They are viewable from one or both sides and have snap-out directional arrows. All have two fiberglass inserts. **To Order:** Please specify green or red inserts.

Incandescent and fluorescent lights with emergency backup battery have a 6-volt sealed lead-calcium battery and two 6-watt backup bulbs.

LED light with emergency backup battery has a 7.2-volt sealed nickel-cadmium battery.

C ***Steel Housing with Glass Panel (Chicago Approved)—*** Lights have a City of Chicago-approved glass panel with red silk-screened letters and arrows. Housing has a powder-coated finish for durability and protection against corrosion and flaking. They are viewable from one side. **To Order:** Please specify arrow direction: left, right, both, or none.

Light ***with emergency backup battery*** has a 6-volt sealed lead-calcium battery and two 6-watt backup bulbs.

	AC Powered w/Emergency Backup Battery					AC Powered				
	VAC	Watts	O'all Size, Ht. × Wd. × Dp.		Each	VAC	Watts	O'all Size, Ht. × Wd. × Dp.		Each
(A) Plastic Housing										
Incandescent	120/277	28	10″ × 13″ × 2¾″	**16755K12**	$63.74	120	14	7¾″ × 11¾″ × 2¼″	**16755K15**	$29.43
LED	120/277	0.9	7½″ × 12¼″ × 2¼″	**16755K5**	80.28	120/277	0.7	7½″ × 12¼″ × 2¼″	**16755K3**	65.35
(B) Steel Housing										
Incandescent	120/277	30	10½″ × 12¼″ × 2″	**8326K5**	120.73	120	24	7½″ × 12¼″ × 2″	**8326K401**	40.00
Fluorescent	120	20	10½″ × 12¼″ × 2″	**8326K803**	162.43	120	20	7½″ × 12¼″ × 2″	**8326K6**	77.63
LED	120/277	1.7	7½″ × 12¼″ × 2″	**8326K9**	122.17	120/277	1.7	7½″ × 12¼″ × 2″	**8326K1**	90.14
(C) Steel Housing with Glass Panel (Chicago Approved)										
Incandescent	120/277	30	12½″ × 12¼″ × 2″	**1540K2**	141.45	120	24	9½″ × 12¼″ × 2″	**1540K1**	50.85

Replacement Batteries		Each
For Plastic Incandescent	**8367K51**	$22.62
For Plastic LED	**16755K61**	31.71
For Steel Incandescent	**8326K61**	44.90
For Steel Fluorescent	**8326K61**	44.90
For Steel LED	**8326K75**	62.14

Replacement Exit Light Bulbs	Watts		Each
For Plastic Incandescent	7	**16755K9**	$1.00
For Steel Incandescent	15	**1611K26**	4.08
For Steel Fluorescent	7	**1528K49**	4.34

Glow-in-the-Dark Exit Lights

Wall Mount

Multimount with Aluminum Frame

Multimount with Steel Frame

No electricity, batteries, or radioactive tritium. Just expose these photoluminescent lights to at least 54 lux (a measure of visible light—400 lux is typical in the occupied public areas of most buildings) during the day, and they will be clearly visible at night. They're suitable for hazardous locations and have a life expectancy of 25 years. UL 924 listed.

Wall-mount light is made of photoluminescent yellow PVC visible up to 50 ft. away. It includes two adhesive-backed directional arrows. Has four 5/32″ mounting holes (screws not included). **To Order:** Please specify green or red letters.

Multimount lights are ready for wall (flush) mounting and include a bracket for ceiling and end mounting (screws included).

Multimount lights with aluminum frame have a brushed finish and a photoluminescent PVC panel visible up to 75 ft. away. They include two adhesive-backed directional arrows. **To Order:** Please specify green or red letters.

Multimount lights with steel frame have a powder-coated finish for extra protection. They have green photoluminescent letters and two snap-out directional arrows visible up to 50 ft. away. **To Order:** Please specify black or red frame.

	O'all Size, Ht. × Wd. × Dp.		Each
Wall Mount			
Viewable from One Side	7 11/16″ × 13″ × 1/16″	**8347K1**	$81.63
Multimount with Aluminum Frame			
Viewable from One Side	9¼″ × 15¾″ × 5/8″	**8347K2**	139.00
Viewable from Both Sides	9¼″ × 15¾″ × 5/8″	**8347K6**	211.00
Multimount with Steel Frame			
Viewable from One Side	8″ × 15″ × 1/4″	**8347K4**	131.04
Viewable from Both Sides	8″ × 15″ × 1/4″	**8347K8**	173.88

Everglow Exit Lights

ABS Plastic Frame with Optional Ceiling Mounting Bracket

Aluminum Frame with Optional End Mounting Bracket

No electricity needed for these hazardous-location, waterproof lights. They're self-illuminated by a radioactive tritium-filled, phosphor-coated, heat-resistant glass tube behind a protective translucent polycarbonate insert. All have a red stencil with 6″ high letters and snap-out directional arrows. Viewable from one side. Due to radioactive elements, the manufacturer will register the sign location with the Nuclear Regulatory Commission (NRC). Information will be sent to you about the regulations for their proper use and disposal. All meet UL 924.

Optional mounting brackets have two 3/16″ dia. holes (screws not included). *End-mount* bracket mounts one end of the sign to the wall. *Pendant ceiling-mount* bracket suspends exit light 12″ from ceiling.

Lights with an ***ABS plastic frame*** are 8½″ Ht. × 14″ Wd. × 1″ Dp. They have eight ¼″ dia. mounting holes and include a mounting bracket for end and ceiling (flush) mounting (screws not included). All have a black frame and vinyl stencil.

Lights with an ***aluminum frame*** are 8¼″ Ht. × 13″ Wd. × 1½″ Dp. and have four 3/16″ dia. mounting holes (screws not included). Frame has a brushed finish and stencil is aluminum.

Also Available: Black ABS plastic frame with green aluminum stencil. Please ask for 1668K3 and specify life span in years: 10, 15, or 20.

Life Span	***ABS Plastic Frame***	Each	***Aluminum Frame***	Each
Lights				
10 Years	**1668K52**	$207.41	**1668K74**	$226.89
15 Years	**1668K54**	244.44	**1668K76**	252.03
20 Years	**1668K55**	267.27	**1668K77**	269.84
Optional Mounting Brackets				
End	—	—	**1668K87**	9.09
Ceiling (Flush Mount)	—	—	**1668K87**	9.09
Ceiling (Pendant Mount)	**1668K88**	53.33	**1668K78**	21.88

For information about NEMA enclosure ratings, see page 843.

Harsh Environment LED Exit Lights

Moisture, dust, and corrosion aren't a threat to these NEMA 4X and UL 50 Type 4X rated lights. LED bulbs provide long life and evenly illuminate the word EXIT. Housing is gray high-impact glass-filled polycarbonate and cover plate is clear polycarbonate. Lights are single-faced with 6″ high red letters and include snap-out directional arrows. Size is 12⅜″ Ht. × 15¾″ Wd. × 5¼″ Dp. Back mount to a wall using the four ¼″ dia. mounting holes (screws not included). They operate on 120/277 VAC and meet UL 924.

AC powered light is rated 2.7 watts.

AC powered light with emergency backup battery has a 4.8-volt nickel-cadmium battery that provides two hours of service. Rated 3.8 watts.

		Each
AC Powered Light	57425T6	$278.06
AC Powered Light w/Emergency Backup Battery	57425T3	367.18
Replacement 4.8-Volt Battery for 57425T3	57425T21	16.50

Exit Light Wire Guard

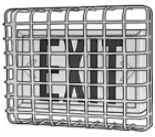

Protect your wall-mounted exit light from damage by enclosing it in this 0.114″ thick steel guard. It has a white polyester finish and fits exit lights up to 10¼″ Ht. × 13½″ Wd. × 2½″ Dp. Includes mounting hardware.

6358T17 ..... **Each** $42.67

Exit Light Testing Clamps

Now it's easy to test your exit lights for compliance with NFPA (National Fire Protection Agency), which requires you to annually test your emergency lighting system for a duration of 1½ hours.

Clamps secure to any exit sign that's 1⅛″ to 3″ deep. An adjustable point slides along the length of the clamp to keep the test button depressed when locked in position. Clamps are polycarbonate with nylon screws.

Optional extension arm gives you the extra reach you need for test buttons located on the face of the light.

		Each
For Ceiling-Mount Lights	9361K74	$8.85
For Wall-Mount Lights	9361K75	8.85
Extension Arm	9361K76	2.22

Exit Signs

The messages printed clearly on one side of these signs help you conform to OSHA 29 CFR 1910.37. All ***8″×8″*** signs also conform to NFPA 170.

Adhesive-backed vinyl are 0.004″ thick.

Glow-in-the-dark adhesive-backed polyester are 0.011″ thick. They meet ASTM E2072-00/ E2073-00 and DIN 67510-1 standards for photoluminescent safety markings. *8″×8″* signs also meet ASTM E2030-00.

Polyethylene are 0.055″ thick with four 3/16″ dia. mounting holes (screws not included).

Aluminum are 0.040″ thick with four 3/16″ dia. mounting holes (screws not included).

14″×10″

To Order: Please specify red letters on a white background or white letters on a red background. Also specify material.

	Each
Adhesive-Backed Vinyl	$7.22
Glow-in-the-Dark Adhesive-Backed Polyester	19.67
Polyethylene	11.92
Aluminum	15.47

62735T41★

62735T44

62735T43

62735T46

62735T83

62735T55

62735T52

62735T53

62735T58

62735T59

★Also available with green letters on a white background.

14″×3½″

62735T82

To Order: Please specify red arrow on a white background or white arrow on a red background. Also specify material.

	Each
Adhesive-Backed Vinyl	$5.03
Glow-in-the-Dark Adhesive-Backed Polyester	8.54
Polyethylene	9.33
Aluminum	8.57

8″×8″

62735T62

62735T61

Printed with a green illustration on a white background.

To Order: Please specify material.

	Each
Adhesive-Backed Vinyl	$5.03
Glow-in-the-Dark Adhesive-Backed Polyester	13.17
Polyethylene	9.33
Aluminum	11.67

7″×10″

Printed with red letters on a white background.

To Order: Please specify material.

62735T85

	Each
Adhesive-Backed Vinyl	$5.50
Glow-in-the-Dark Adhesive-Backed Polyester	10.23
Polyethylene	9.31
Aluminum	9.08

Flange-Mount Exit Signs Printed on Two Sides

Mount these signs to a wall—their message can be viewed from both sides. They have red letters on a white background. Overall size is 10″ Wd. × 8″ Ht. Signs have two ¼″ dia. mounting holes (screws not included). Flange is 2″ Wd. × 8″ Ht.

Aluminum signs are 0.040″ thick. ***Glow-in-the-dark aluminum*** signs are 0.063″ thick.

	Each
Aluminum	$15.93
Glow-in-the-Dark Aluminum	24.12

Aluminum

6765T2 ..... 6765T21 ..... 6765T22 ..... 6765T23 ..... 6765T24

Glow-in-the-Dark Aluminum

6765T25 ..... 6765T26 ..... 6765T27 ..... 6765T28 ..... 6765T29

Keep your workplace safe—alert people to potential hazards with accident prevention signs and labels. Danger, Warning, Caution, and Notice headers meet ANSI Z535 specifications. Danger and Caution headers for signs also meet OSHA 29 CFR 1910.145.

DANGER Indicates imminently hazardous situations that, if not avoided, will result in serious injury or death. This signal word is to be limited to the most extreme situations. Danger headers have white letters surrounded by red with a black border.

WARNING Indicates potentially hazardous situations that, if not avoided, could result in serious injury or death. Warning headers have black letters surrounded by orange with a black border.

CAUTION Indicates potentially hazardous situations that, if not avoided, may result in minor or moderate injury. May also be used to alert against unsafe practices. Caution headers have yellow letters surrounded by black.

NOTICE Indicates statement of company policy directly or indirectly related to the safety of personnel or protection of property. Notice headers have white letters on a blue background.

Accident Prevention Signs

Signs are printed on one side. Message is black on a white background for Danger and Notice signs, black on yellow for Caution, and black on orange for Warning. Mounting screws are not included.

Adhesive-backed vinyl signs are 0.004″ thick. ***Polyethylene*** signs are 0.055″ thick and have four 3/16″ dia. mounting holes. ***Aluminum*** signs are 0.040″ thick and have four 3/16″ dia. mounting holes.

Accident prevention sign prices are listed at right. **To Order:** Please specify part number (listed beneath each sign) and material.

	Adhesive-Backed Vinyl Each		Polyethylene Each		Aluminum Each	
Wd. × Ht.	1-5	6-Up	1-5	6-Up	1-5	6-Up
10″ × 7″	$6.11	$5.19	$8.60	$7.31	$9.07	$7.71
14″ × 10″ and 10″ × 14″	7.03	5.98	12.04	10.23	15.46	13.14
20″ × 14″ and 14″ × 20″	11.74	9.97	18.52	15.75	23.88	20.29

Ear and Eye Protection

10″ × 7″	8355T107	57095T38	57095T36	8355T101	57095T41	57095T43	5052T76
14″ × 10″	8355T108	57095T39	57095T37	8355T102	57095T42	57095T44	5052T77
20″ × 14″	8355T109	57095T81	57095T68	8355T103	57095T83	57095T85	5052T81

Eye Protection

10″ × 14″	8355T91
14″ × 20″	8355T92

Breathing Protection

Head Protection

Fall Protection

10″ × 7″	8355T669	57095T18	8355T64	57095T12	57095T97	57095T1
14″ × 10″	8355T671	57095T19	8355T65	57095T13	57095T98	57095T2
20″ × 14″	8355T672	57095T21	8355T38	57095T14	57095T89	57095T33

Fall Protection

Wash Hands

Electrical Hazards

10″ × 7″	57095T3	57095T5	57095T7	57095T95	5052T78	8355T687	8355T11
14″ × 10″	57095T4	57095T6	57095T8	57095T96	5052T79	8355T693	8355T12

Electrical Hazards

10″ × 7″	8355T66	8355T68	8355T14	75025T21	75025T25	75025T11	57095T69
14″ × 10″	8355T67	8355T69	8355T15	75025T22	75025T26	75025T12	57095T77
20″ × 14″	8355T31	8355T32	8355T16	75025T23	75025T27	75025T13	57095T15

Confined Spaces

Hazardous Chemicals and Materials

10″ × 7″	8355T132	8355T127	8355T123	8355T79	8355T82	8355T121	8355T125
14″ × 10″	8355T133	8355T128	8355T124	8355T81	8355T83	8355T122	8355T126
20″ × 14″	8355T141	8355T106	8355T105	8355T95	8355T96	8355T223	8355T227

Hazardous Chemicals and Materials

10″ × 7″	8355T614	8355T619	8355T129	8355T134	8355T138	8355T633	8355T638
14″ × 10″	8355T615	8355T621	8355T131	8355T135	8355T139	8355T634	8355T639

(Continued on following page)

For information about accident prevention signs, see page 1880.

Accident Prevention Signs *(Continued from previous page)*

Accident prevention sign prices are listed at right.
To Order: Please specify part number (listed beneath each sign) and material.

Wd. × Ht.	Adhesive-Backed Vinyl Each 1-5	Adhesive-Backed Vinyl Each 6-Up	Polyethylene Each 1-5	Polyethylene Each 6-Up	Aluminum Each 1-5	Aluminum Each 6-Up
10″ × 7″	$6.11	$5.19	$8.60	$7.31	$9.07	$7.71
14″ × 10″ and 10″ × 14″	7.03	5.98	12.04	10.23	15.46	13.14
20″ × 14″ and 14″ × 20″	11.74	9.97	18.52	15.75	23.88	20.29

Hazardous Chemicals and Materials (Cont. from previous page)

10″ × 7″	8355T142	8355T146	8355T154	8355T62	8355T158	8355T162	8355T166
14″ × 10″	8355T143	8355T147	8355T155	8355T63	8355T159	8355T163	8355T167

Hazardous Chemicals and Materials

10″ × 7″	8355T168	8355T71	8355T663	8355T77	8355T657	8355T181	8355T84
14″ × 10″	8355T169	8355T72	8355T664	8355T78	8355T658	8355T182	8355T85

Hazardous Chemicals and Materials

10″ × 7″	8355T191	8355T651	57095T27	57095T34	57095T23	57095T47	5052T89
14″ × 10″	8355T192	8355T652	57095T28	57095T82	57095T22	57095T48	5052T84

Hazardous Chemicals / Machine Operation

10″ × 7″	5052T29	8355T172	8355T55	8355T176	8355T178	8355T681	8355T675
14″ × 10″	5052T31	8355T173	8355T56	8355T177	8355T179	8355T682	8355T676

Machine Operation / Security and Admittance

10″ × 7″	57095T9	57095T56	57095T61	57095T93	8355T17	8355T21	8355T48
14″ × 10″	57095T11	57095T57	57095T62	57095T94	8355T18	8355T22	8355T49
20″ × 14″	57095T16	57095T17	57095T29	57095T31	8355T19	8355T23	8355T33

Security and Admittance

10″ × 7″	8355T73	8355T75	8355T86	75025T31	75025T34	75025T37	57095T45
14″ × 10″	8355T74	8355T76	8355T87	75025T32	75025T35	75025T38	57095T46
20″ × 14″	8355T34	8355T35	8355T36	75025T33	75025T36	75025T39	57095T87

Security and Admittance

10″ × 7″	5052T63	5052T11	5052T15	5052T19	5052T51	5052T74	5052T23
14″ × 10″	5052T64	5052T12	5052T16	5052T21	5052T52	5052T75	5052T27
20″ × 14″	5052T55	5052T13	5052T17	5052T22	5052T53	5052T86	5052T28

Equipment and Machinery Lockout

10″ × 7″	8355T88	57095T49
14″ × 10″	8355T89	57095T51
14″ × 20″		5052T56

Pathway and Door Access

10″ × 14″	8355T93	10″ × 7″	75025T42	57095T75	57095T52
14″ × 20″	8355T94	14″ × 10″	75025T43	57095T76	57095T53

(Continued on following page)

For information about accident prevention signs, see page 1880.

Accident Prevention Signs *(Continued from previous page)*

Signs are printed on one side. Message is black on a white background for Danger and Notice signs, black on yellow for Caution, and black on orange for Warning. Mounting screws are not included.

Adhesive-backed vinyl signs are 0.004″ thick. ***Polyethylene*** signs are 0.055″ thick and have four 3/16″ dia. mounting holes. ***Aluminum*** signs are 0.040″ thick and have four 3/16″ dia. mounting holes.

Accident prevention sign prices are listed at right. **To Order:** Please specify part number (listed beneath each sign) and material.

	Adhesive-Backed Vinyl Each		Polyethylene Each		Aluminum Each	
Wd. × Ht.	1-5	6-Up	1-5	6-Up	1-5	6-Up
10″ × 7″	$6.11	$5.19	$8.60	$7.31	$9.07	$7.71
14″ × 10″ and 10″ × 14″	7.03	5.98	12.04	10.23	15.46	13.14
20″ × 14″ and 14″ × 20″	11.74	9.97	18.52	15.75	23.88	20.29

Pathway and Door Access (Cont. from previous page)

10″ × 7″	57095T71	57095T73	57095T58	57095T54	5052T72	5052T65	5052T69
14″ × 10″	57095T72	57095T74	57095T59	57095T55	5052T73	5052T66	5052T71

Pathway and Door Access

10″ × 7″	5052T32
14″ × 10″	5052T33

English/Spanish

10″ × 14″	8355T524	8355T521	8355T625	8355T535	8355T525	8355T528	8355T532
14″ × 20″	8355T527	8355T522	8355T626	8355T536	8355T526	8355T529	8355T533

English/Spanish

10″ × 14″	57095T615	57095T618	57095T78	57095T633	57095T628	5052T82	5052T88
14″ × 20″	57095T616	57095T619	57095T79	57095T634	57095T629	5052T83	5052T87

Write-On Signs

Create your own messages. Signs have a heading with a blank area for you to write in your own wording. *Blank sign* is white.

Use permanent markers such as 1661T on page 1926 or adhesive-backed letters on pages 1920 and 1921.

10″ × 7″	8355T42	75025T52	57095T25	5052T61	6427T71
14″ × 10″	8355T43	75025T53	57095T26	5052T62	6427T22
20″ × 14″	8355T41	75025T54	57095T24	5052T59	6427T54

Accident Prevention Custom Signs

We'll create customized signs for you. **To Order:** Please ask for 60245T25 and specify material, size, header (Notice, Caution, Warning, Danger, or Blank), and message.

Signs are printed on one side. Message is black on a white background for Danger and Notice signs, black on yellow for Caution, and black on orange for Warning. *Blank sign* is white with black letters. Mounting screws are not included.

Adhesive-backed vinyl signs are 0.004″ thick.
Polyethylene signs are 0.055″ thick and have four 3/16″ dia. mounting holes.
Aluminum signs are 0.040″ thick and have four 3/16″ dia. mounting holes.

	Adhesive-Backed Vinyl Each			Polyethylene Each			Aluminum Each		
Wd. × Ht.	1	2-5	6-Up	1	2-5	6-Up	1	2-5	6-Up
10″ × 7″	$30.44	$24.96	$19.97	$31.50	$27.67	$20.75	$37.08	$34.20	$24.94
14″ × 10″ and 10″ × 14″	33.54	30.57	25.01	35.06	31.89	25.48	43.73	40.40	29.48
20″ × 14″	51.03	46.32	36.73	56.50	54.71	43.27	61.24	57.24	44.59

Sign Holders

Sign Not Included

Do you change signs frequently? These holders let you store up to three signs in addition to the one being displayed. All are made of clear acrylic. They include two 3/16″ dia. mounting holes (screws not included).

Maximum Sign Size, Wd. × Ht.		Each 1-5	Each 6-Up
10″ × 7″	1004T23	$11.99	$10.50
14″ × 10″	1004T24	17.43	15.25
20″ × 14″	1004T25	36.48	31.47

For information about accident prevention signs, see page 1880.

Vehicle and Shipping Dock Accident Prevention Signs

Signs are printed on one side. ***Polyethylene*** and ***steel*** signs have four 3/16″ dia. mounting holes (screws not included).

"Caution" headers have yellow letters surrounded by black. Messages are in black letters on a yellow background.

"Warning" headers have black letters surrounded by orange with a black border. Messages are in black letters on an orange background.

"Notice" headers have white letters on a blue background. Messages are in black letters on a white background. *2260T36* and *2260T37* have reversed wording so they can be read when viewed in a rearview mirror.

2260T32 and ***2260T34*** signs have red letters on a white background.

To Order: Please specify part number (listed beneath each sign) and material.

Wd. × Ht.	Adhesive-Backed Vinyl, 0.004″ Thick Each 1-5	6-Up	Polyethylene, 0.055″ Thick Each 1-5	6-Up	Steel, 0.036″ Thick Each 1-5	6-Up
14″ × 10″	$6.53	$5.55	$10.77	$9.16	$12.92	$10.98
20″ × 14″	11.74	9.97	17.15	14.58	21.73	18.47

14″ × 10″	2260T2	2260T5	2260T8	2260T22	2260T18	2260T36	2260T32
20″ × 14″	2260T3	2260T6	2260T9	2260T24	2260T19	2260T37	2260T34

Reflective and Magnetic Accident Prevention Signs

Signs are printed on one side. "Danger" headers have white letters surrounded by red with a black border. Messages are printed in black on a white background.

Reflective adhesive-backed vinyl signs are 0.007″ thick and reflect light for added visibility. ***Magnetic vinyl*** signs are made of magnetic sheeting that is 0.032″ thick.

To Order: Please specify part number (listed beneath each sign) and material.

	Each
Reflective Adhesive-Backed Vinyl	
10″ × 7″	$20.93
14″ × 10″	35.86
Magnetic Vinyl	
10″ × 7″	12.06
14″ × 10″	21.98

10″ × 7″	5501T13	5501T14	5501T18	5501T17	5501T16
14″ × 10″	5501T24	5501T25	5501T29	5501T28	5501T27

10″ × 7″	5501T21	5501T15	5501T19	5501T22
14″ × 10″	5501T32	5501T26	5501T31	5501T33

Illustrated Accident Prevention Signs

Printed on one side, these illustrated signs measure 10″ × 12″. "Danger" headers have white letters surrounded by red with a black border. Illustrations are red, letters are black, and background is white.

Polyethylene signs have four 3/16″ dia. mounting holes (screws not included).

	Thick.	Each
Adhesive-Backed Vinyl	0.004″	$5.62
Polyethylene	0.035″	6.51

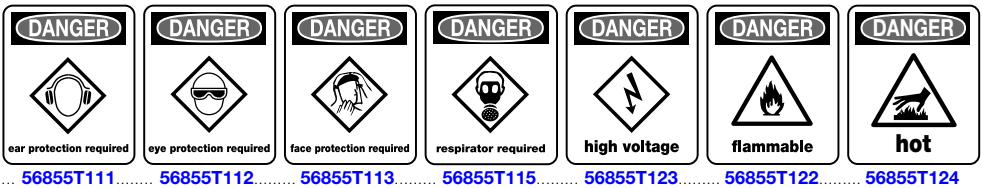

Adhesive-Backed Vinyl	56855T111	56855T112	56855T113	56855T115	56855T123	56855T122	56855T124
Polyethylene	57345T111	57345T112	57345T113	57345T115	57345T123	57345T122	57345T124

Adhesive-Backed Vinyl	56855T125	56855T126	56855T128	56855T132	56855T129	56855T131
Polyethylene	57345T125	57345T126	57345T128	57345T132	57345T129	57345T131

Conveyor Labels

Illustrations are black and messages are in white letters over a black background on these adhesive-backed polyester labels. They're made of an acrylic base and have a protective polyester film. Approved by the Conveyor Equipment Manufacturers Association.

"Warning" headers have black letters on an orange background. ***"Danger"*** headers have white letters on a red background.

	Wd. × Ht.	Thick.	Pkg. Qty.	Per Pkg.
Horizontal	5″ × 2½″	0.005″	10	$6.77
Vertical	3″ × 6″	0.005″	10	10.00

Horiz.	86075T71	86075T61	86075T41	86075T51
Vert.	86075T72	86075T62	86075T42	86075T52

For information about accident prevention labels, see page 1880.

Accident Prevention Labels

Easily post safety reminders with these adhesive-backed labels. Made of flexible 0.004″ thick vinyl. "***Danger***" headers have white letters surrounded by red with a black border. Messages are in black letters on a white background. "***Caution***" headers have yellow letters surrounded by black. Messages are in black letters on a yellow background.

Wd. × Ht.	Pkg. Qty.	Per Pkg.
5″ × 3½″	5	$11.18

Danger..... 7967T1

Danger..... 7967T7

Danger... 7967T15

Danger..... 7967T4

Danger... 7967T11
Caution.. 7967T12

Danger... 7967T18

Danger..... 7967T2
Caution..... 7967T3

Danger..... 7967T8
Caution..... 7967T9

Danger... 7967T16
Caution.. 7967T17

Danger..... 7967T5
Caution..... 7967T6

Danger... 7967T13
Caution.. 7967T14

Danger... 7967T19
Caution.. 7967T21

Illustrated Accident Prevention Labels

Identify hazards quickly—just peel off the back of these flexible 0.005″ thick polyester labels and post them. "***Danger***" label headers have white letters on a red background. Illustrations are black with a yellow triangle, except 5891T95, which is white with a blue background. Messages are in black letters on a white background. "***Caution***" labels have a yellow background, black illustrations, and black letters, except 5948T95, which has a white illustration on a blue background.

To Order: Please specify part number (listed beneath each sign) and label size.

Wd. × Ht.	Pkg. Qty.	Per Pkg.
1¾″ × 2½″	10	$5.59
3½″ × 5″	5	5.56

Danger... 5891T92
Caution.. 5948T83

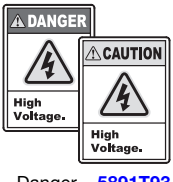

Danger... 5891T93
Caution.. 5948T84

Danger... 5891T94
Caution.. 5948T85

Danger... 5891T98
Caution.. 5948T88

Danger... 5891T99
Caution.. 5948T89

Caution.. 5948T91

Caution.. 5948T92

Caution.. 5948T93

Danger... 5891T91
Caution.. 5948T94

Danger... 5891T95
Caution.. 5948T95

Danger... 5891T96
Caution.. 5948T96

Antislip Adhesive-Backed Floor Signs

Black and Yellow

8308T55

8308T53

8308T59

8308T57

8308T52

8308T63

Stick signs where people won't miss them—on the floor. Adhesive backing will adhere to virtually any floor. Signs are 0.004″ thick vinyl covered with a 0.020″ thick pebbled nonskid surface. Diameter is 17½″.

Each.. 1-3 $24.71 4-Up $21.00

Black, Red, and White

8308T64

8308T58

Red and White

8308T51

8308T61

8308T11

Green and White

8308T54

Easy-View Floor Signs

Orange
11485T31

Orange
11485T34

Yellow
11485T41

People won't miss these three-sided signs … you can see them from any angle. Messages and graphics are black and screen-printed on polyester fabric that is supported with spring-loaded steel legs. Signs are 21″ wide at the bottom and 18″ high. Furnished with a gray 22″ Lg. × 2″ Wd. storage tube that wall mounts using tape with adhesive on both sides (included) or two 1¼″ Lg. × ½″ Wd. slots (screws not included).

Each..... 1-3 $27.10 4-Up $23.04

Floor Signs

Portable yet sturdy, these are the signs to have on hand. They have the same message on both sides and a built-in handle. All are made of 5⁄32″ thick corrugated polypropylene and measure 12″ Wd.×20″ Ht. "Caution" headers have yellow letters surrounded by black. Messages and graphics are black on a yellow background.

English

A 58345T1

B 58345T2

C 58345T4

D 58345T7

E 58345T5

F 58345T6

58345T3

Each $12.86

English Reversible Signs

Signs ***A-F*** above are also available as reversible signs. Reversible signs have the same message on both sides, then fold over to display a second message on both sides.

Message Combination		Each
A and B	58345T21	$20.37
C and D	58345T32	20.37
E and F	58345T43	21.17

English/Spanish

58345T651

58345T652

58345T653

58345T655

58345T656

58345T654

Each $12.86

Heavy Duty Floor Signs

5874T17

5874T23

5874T19

Steel construction gives these signs strength and stability to endure harsh conditions. Made of 0.038″ thick steel with a baked-enamel finish, signs have the same message on both sides. Size is 14″ Wd.×20″ Ht. A handle at the top makes them easy to move. "Danger" headers have white letters surrounded by red. Messages and graphics are black on a white background.

Each $49.39

Extra Tall Easy-View Floor Signs

5967T1

5967T2

5967T3

With three 32″ high panels, it's hard to miss these signs. Each panel is 15″ Wd. and displays the same message. Made of 5⁄32″ thick polypropylene, signs fold flat for easy storage and have a built-in handle. They also have interlocking tabs that allow them to be joined and used as a barricade. "Caution" headers have yellow letters surrounded by black. Messages have black letters on a yellow background.

Each $33.33

Multilingual Safety Cones

Clearly communicate your warning with a multilingual message and an ANSI caution symbol. Cones are stackable and made of yellow polyethylene. Messages and illustrations are black.

Caution message is displayed in English, Spanish, and French. ***Caution/Wet Floor*** message is displayed in English and Spanish.

Ht.	Base Size, sq.	*Caution*	*Caution/ Wet Floor*	Each
25¾″	10½″	5912T41	5912T42	$28.05
36″	12¼″	5912T43	5912T44	38.85

Security and Admittance Signs

Signs are printed on one side and are black on white, except 18″×24″ signs, which are red on white. Mounting screws are not included. ***Steel*** signs have a powder-coated finish.

To Order: Please specify part number (listed beneath each sign) and material.

12″×18″
5763T1

18″×12″
5763T2

18″×24″
5763T3★

20″×14″
5763T4

20″×14″
5763T5

20″×14″
5763T7

20″×14″
5763T6

★ Available in reflective aluminum and PVC only.

Wd.×Ht.	Mounting Hole Dia. (Qty.)	Each
Steel, 0.048″ Thick		
12″×18″ and 18″×12″	3⁄8″ (2)	$17.81
20″×14″	1⁄4″ (4)	21.02
Reflective Aluminum, 0.080″ Thick		
12″×18″ and 18″×12″	3⁄8″ (2)	24.57
18″×24″	3⁄8″ (2)	41.57
20″×14″	3⁄8″ (4)	33.57
PVC, 0.125″ Thick		
12″×18″ and 18″×12″	3⁄8″ (2)	20.00
18″×24″	3⁄8″ (2)	28.33
20″×14″	3⁄8″ (4)	27.50

Smoking Control Signs

Signs are printed on one side and are red and white except 5776T66, which is black and green on white. Symbols are red and black on white. Mounting screws not included. ***Polyethylene*** signs have four 3/16″ dia. mounting holes. ***Steel*** signs have four 1/4″ dia. mounting holes.

To Order: Please specify part number (listed beneath each sign) and material.

For additional Smoking Control Signs, see pages 1880-1883.

	Adhesive-Backed Vinyl, 0.004″ Thick Each		Polyethylene, 0.055″ Thick Each		Steel, 0.019″ Thick Each	
Wd.×Ht.	1-5	6-Up	1-5	6-Up	1-5	6-Up
14″×10″	$6.53	$5.55	$10.28	$8.73	$9.72	$8.26
17″× 7″	7.54	6.41	12.42	10.56	10.39	8.84
20″×14″	14.25	12.11	19.29	16.40	18.29	14.92

14″×10″.. 5776T11
20″×14″.. 5776T12

14″×10″.. 5776T17
20″×14″.. 5776T18

14″×10″.. 5776T14
20″×14″.. 5776T15

14″×10″.. 5776T41
20″×14″.. 5776T42

14″×10″.. 5776T48
20″×14″.. 5776T49

14″×10″.. 5776T74
20″×14″.. 5776T38

14″×10″.. 5776T25
20″×14″.. 5776T26

17″×7″.... 5776T65

17″×7″.... 5776T66

Compact Smoking Control Signs

Signs are printed on one side. "No Smoking" signs are black and white with red circle; "Smoking Permitted" signs are black and white with green circle. ***Polyethylene*** signs have four 3/16″ dia. mounting holes (screws not included).

For additional Smoking Control Signs, see pages 1880-1883.

	Adhesive-Backed Vinyl, 0.004″ Thick Each		Polyethylene, 0.055″ Thick Each	
Wd.×Ht.	1-5	6-Up	1-5	6-Up
5″× 7″	$4.43	$3.77	$5.54	$4.71
7″×10″	5.22	4.43	7.00	5.94

	5″×7″	5″×7″	5″×7″	5″×7″	5″×7″	5″×7″	5″×7″
Adhesive-Backed Vinyl	83305T61	83305T63	83305T65	83305T67	83305T69	83305T72	83305T74
Polyethylene	83305T368	83305T371	83305T373	83305T375	83305T377	83305T379	83305T384
	7″×10″	7″×10″	7″×10″	7″×10″	7″×10″	7″×10″	7″×10″
Adhesive-Backed Vinyl	83305T62	83305T64	83305T66	83305T68	83305T71	83305T73	83305T75
Polyethylene	83305T369	83305T372	83305T374	83305T376	83305T378	83305T381	83305T385

First-Aid Signs

Flat

Signs mount flat on a wall and are green and white. Mounting screws are not included. ***Polyethylene*** signs have four 3/16″ dia. mounting holes. ***Steel*** signs are galvanized and have four 1/4″ dia. mounting holes.

To Order: Please specify part number (listed beneath each sign) and material.

	Adhesive-Backed Vinyl, 0.004″ Thick Each		Polyethylene, 0.055″ Thick Each		Steel, 0.036″ Thick Each	
Wd.×Ht.	1-5	6-Up	1-5	6-Up	1-5	6-Up
7″×17″ and 17″×7″	$7.33	$6.23	$11.69	$9.94	$14.90	$12.42
10″× 7″	4.57	3.89	8.66	7.36	9.86	7.48
14″×10″	6.95	5.91	11.92	10.14	15.38	11.96

7″×17″
5875T42

7″×17″
5875T44

7″×17″
5875T46

10″× 7″.. 5875T64
14″×10″.. 5875T65

10″× 7″.. 5875T51
14″×10″.. 5875T56

10″× 7″.. 5875T54
14″×10″.. 5875T58

10″× 7″.. 5875T71
14″×10″.. 5875T72

17″×7″..... 5875T4

17″×7″..... 5875T6

L-Shape and V-Shape

L-Shape

V-Shape

Looking for a more visible sign? These green and white signs stick out from the rest. They're made of 1/8″ thick acrylic. Mounting tape and screws are included.

L-shape signs are 8″ Wd.×8″ Ht. and are printed on both sides of the panel. Flange is 1″ wide.

V-shape signs have an overall size of 6″ Ht.×8″ Wd.×4″ Dp. and are printed on one side of both flared panels.

		Each 1-5	Each 6-Up
First Aid			
L-Shape	5875T112	$13.03	$11.08
V-Shape	5875T115	12.34	10.49
Eye Wash			
L-Shape	5875T117	13.03	11.08
V-Shape	5875T118	12.34	10.49

Housekeeping Signs

Send a not-so-subtle message to personnel with these signs, which are printed on one side. All have four mounting holes (screws not included). ***Polyethylene*** signs have 3/16″ dia. mounting holes. ***Steel*** signs have 1/4″ dia. mounting holes. **To Order:** Please specify part number (listed beneath each sign) and material.

Wd. × Ht.	Each
Adhesive-Backed Vinyl, 0.004″ Thick	
10″×14″ and 14″×10″	$4.71
14″×20″ and 20″×14″	7.48
Polyethylene, 0.055″ Thick	
10″×14″ and 14″×10″	12.42
14″×20″ and 20″×14″	20.13
Steel, 0.036″ Thick	
10″×14″ and 14″×10″	12.92
14″×20″ and 20″×14″	19.48

Black/Red on White
14″×20″..... 5728T45

Black/Red on White
14″×10″..... 5728T85

Black on White
20″×14″.. 5728T44

Green/Black on White
10″×14″.. 5728T54

Multicolored
10″×14″.. 5728T29

Top: ***White on Blue***
Bottom: ***Black on White***
14″×10″..... 5728T82

Top: ***White on Green***
Bottom: ***Black on White***
10″×14″..... 5728T73

Top: ***Green on Yellow***
Bottom: ***Yellow on Green***
14″×20″..... 5728T43

Black on White
20″×14″.. 5728T46

Motivation Signs

Helpful reminders are printed on one side of these signs. "Think" and "Safety First" headers have white letters on a green background and messages have black letters on a white background. ***Polyethylene*** signs have four 3/16″ dia. mounting holes (screws not included). ***Steel*** signs have four 1/4″ dia. mounting holes (screws not included).

To Order: Please specify part number (listed beneath each sign) and material.

Wd. × Ht.	Each
Adhesive-Backed Vinyl, 0.004″ Thick	
10″×14″ and 14″×10″	$7.03
14″×20″	11.74
Polyethylene, 0.055″ Thick	
10″×14″ and 14″×10″	12.42
14″×20″	20.13
Steel, 0.036″ Thick	
10″×14″ and 14″×10″	12.67
14″×20″	19.48

Black on White
14″×10″.. 56615T2

Black on Yellow
14″×20″.. 56615T6

Multicolored
10″×14″.. 56615T8

14″×10″.. 56615T61

14″×10″.. 56615T63

14″×10″.. 56615T64

14″×10″.. 56615T65

14″×10″.. 56615T66

14″×10″.. 56615T72

14″×10″.. 56615T73

14″×10″.. 56615T74

Safety Scoreboard Signs

Inspire safe work habits and give employees a visual record of accident-free days. Signs are printed on one side and have a green background with white lettering. Size is 20″ Wd. × 28″ Ht. All have four 3/16″ dia. mounting holes (screws not included).

Dry erase models have a panel to write and wipe off with a dry erase marker. See page 1900 for dry erase markers. ***Insert models*** are furnished with a total of 20 numerical inserts (two each of numbers 0-9). Just slide up to four inserts through each holder.

		Each
Dry Erase Models (0.04″ Thick Aluminum)		
"This Department"	5917T21	$38.66
"This Company"	5917T22	38.66
Insert Models (0.036″ Thick Steel)		
"This Department"	5917T14	44.24
"This Plant"	5917T15	44.24
Extra Numbers (one each of 0-9) for Insert Models	5917T18	Per Set $3.82

Dry Erase

Insert

Arrow Signs

These black and white arrow signs are 0.06″ thick powder-coated steel. They are printed on one side. Signs are 14″ Wd. × 6 1/2″ Ht. and have four 1/4″ dia. mounting holes (screws not included).

Each $13.97

8319T62 and 8319T52 are blank for use with letters with a maximum height of 3″ (see pages 1934-1935) or with permanent markers such as 1661T on page 1940.

Arrow Right	8319T11	8319T35	8319T42	8319T19	8319T62
Arrow Left	8319T16	8319T33	8319T44	8319T22	8319T52

L-Shape Door and Aisle Signs

(Characters Sold Separately)

Apply vinyl letters to both sides of these white 0.040″ thick polystyrene signs. All have a 2″ wide flange. The flange for ***adhesive-mount signs*** also has adhesive backing.

Characters (sold separately below) are 6″ high, black adhesive-backed vinyl. For a complete selection of vinyl letters and numbers, see pages 1934-1935. **To Order:** For characters, please specify letters A to Z; numbers 0 to 9.

Sign, Wd. × Ht.	Max. No. of Characters	Magnetic-Mount Signs Each 1-5	Magnetic-Mount Signs Each 6-Up	Adhesive-Mount Signs Each 1-5	Adhesive-Mount Signs Each 6-Up	Characters Each
6″ × 8″	1	1510T3 $5.56	$4.72	1510T7 $4.44	$3.78	1510T12 $3.62
14″ × 8″	3	1510T4 8.62	7.33	1510T8 6.25	5.32	1510T12 3.62

Door and Aisle Signs

2345T3

2345T4

2345T5

2345T9

The black silk-screened characters stand out against the white background. Made of 0.040″ thick aluminum, these signs can be used both indoors and out. Mount using the four 3/16″ dia. holes (screws not included).

To Order: For the single-character sign, please specify individual character (0-9, A-Z). For two-character signs, please specify two characters (0-9, A-Z) in any combination.

Wd. × Ht.	Message		Each
10″ × 14″	Single Character	2345T3	$13.81
10″ × 14″	Two Character	2345T4	28.95
20″ × 14″	Two Character	2345T5	36.84
20″ × 14″	"Dock"	2345T9	20.35

Adhesive-Backed Engraved Door Signs

Just peel off the backing and stick these 0.063″ thick ABS plastic signs where you need them. Beveled edges add a finished appearance. Overall size is 8″ Wd. × 2″ Ht. except for the "Push" and "Pull" signs, which are 2″ Wd. × 8″ Ht.

Each $11.76

White on Black

6034T51

6034T55

6034T59

6034T53

6034T57

6034T61

White on Red

6034T17

6034T18

6034T19

6034T28

6034T37

White on Black, Black on Gold, and Black on Silver

To Order: Please specify color of letters and background.

6034T27

6034T29

6034T41

6034T42

6034T26

6034T43

Door Signs

10″ Wd. × 2½″ Ht. Black on White

5766T13

5766T18

5766T22

5766T19

5766T21

5766T28

Signs are 0.040″ thick powder-coated steel and printed on one side. Ends are rounded and have two 3/8″ dia. mounting holes with brass grommets (screws not included).

Each $6.77

20″ Wd. × 14″ Ht. Blue and White

5766T44

5766T53

These 0.048″ thick powder-coated steel signs are printed on one side and have four 1/4″ dia. mounting holes (screws not included). For 5766T53, use vinyl letters (2″ max. height) on pages 1934-1935 or permanent markers such as 1661T on page 1940.

Each $20.03

24″ Wd. × 4″ Ht. White on Blue

5766T31

5766T41

5766T46

5766T47

5766T45

Signs are 0.048″ thick powder-coated steel. Printed on one side with four 1/4″ dia. mounting holes (screws not included).

Each $11.02

Custom-Engraved Door Signs

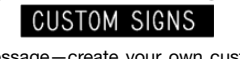

Name, title, or message—create your own custom sign. Signs are 0.063″ thick ABS plastic and size is 10″ Wd. × 2″ Ht. Signs fit a maximum of twenty-seven 5/8″ high characters (including spaces) per line on one or two lines, or twenty 7/8″ high characters (including spaces) on one line. Available with white letters on black, walnut, or red background, and with black letters on brushed silver or gold background.

Signs ***without backing*** can be used with sign holders such as 8629T on page 1953.

To Order: Please specify letter color, background color, and message. *Note:* If two lines are desired, specify line-one and line-two wording.

		Each 1-5	Each 6-Up
Without Backing	5942T41	$17.61	$13.89
With Adhesive Backing	5942T42	19.86	15.69

Restroom Signs

Acrylic

Signs are 0.1″ thick acrylic and flange mount. Symbols and messages are blue on a white background. Furnished with mounting tape and screws.

L-shape signs are 8″ Wd.×8″ Ht. and have images on both sides of the panel. Flange is 1″ wide.

V-shape signs have an overall size of 6″ Ht.×8″ Wd.×4″ Dp. and have images on one side of both flared panels.

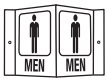

	L-Shape Each 1-5	L-Shape Each 6-Up	V-Shape Each 1-5	V-Shape Each 6-Up
Men	57295T442 $14.94	$12.68	57295T441 $13.40	$11.40
Women	57295T662 14.91	12.68	57295T661 13.40	11.40

Aluminum

Signs are 0.040″ thick and printed on one side with a white symbol on a brown background. They require mounting tape (sold on pages 3451-3453).

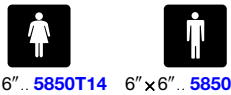

6″×6″.. **5850T14** 6″×6″.. **5850T13**

Each $6.68

L-Shape and V-Shape Fire Equipment Signs

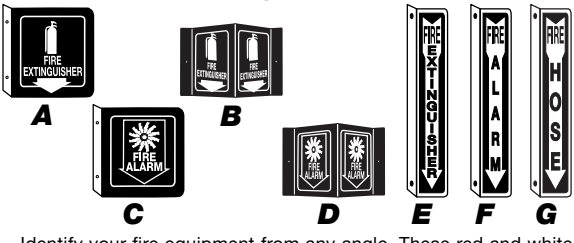

Identify your fire equipment from any angle. These red and white signs flange mount to a wall for viewing from both sides. Signs have images on both sides of the panel, except Styles B and D, which have images on one side of both flared panels.

Acrylic signs are 0.1″ thick. Mounting tape and screws included. ***Steel*** signs are galvanized and 0.044″ thick. They have two 3/16″ dia. mounting holes (screws not included).

Material	O'all Size	Flange Wd.		Each 1-5	Each 6-Up
A.. Acrylic	8″ Wd.×8″ Ht.	1″	**5758T24**	$12.43	$10.57
B.. Acrylic	8″ Wd.×6″ Ht.×4″ Dp.	—	**5758T21**	12.84	10.91
C.. Acrylic	8″ Wd.×8″ Ht.	1″	**5758T29**	12.43	10.57
D.. Acrylic	8″ Wd.×6″ Ht.×4″ Dp.	—	**5758T27**	12.84	10.91
E.. Acrylic	4½″ Wd.×18″ Ht.	1″	**5758T46**	27.12	23.04
E.. Steel	4″ Wd.×24″ Ht.	1½″	**5758T132**	20.07	17.06
F.. Steel	4″ Wd.×24″ Ht.	1½″	**5758T131**	20.07	17.06
G.. Steel	4″ Wd.×24″ Ht.	1½″	**5758T133**	19.71	16.76

ADA-Compliant Signs

Meet federal regulations for the visually impaired and comply with the Americans with Disabilities Act. Grade 2 Braille is located directly below the wording, except for 8390T71, which does not have wording or Braille (the symbol itself is raised) and 8390T31, T32 and T33, which do not have Braille (the symbol and wording are raised). Each sign includes mounting tape and mounting guidelines to help you meet ADA installation requirements. Signs are printed on one side.

8″×8″ Signs

Signs have white symbols and letters. They are 1/8″ thick polystyrene. **To Order:** Please specify black, blue, or brown background.

8390T73, T74, and T76-T79 require one of the corresponding 12″ signs below to meet ADA compliance standards in California.

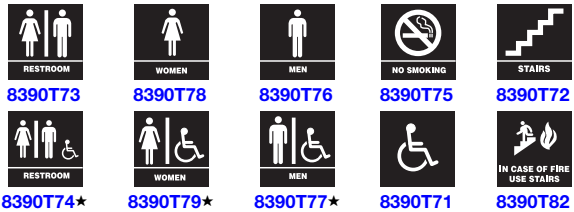

8390T73 **8390T78** **8390T76** **8390T75** **8390T72**

8390T74★ **8390T79**★ **8390T77**★ **8390T71** **8390T82**

★ Also available in English/Spanish with black or blue backgrounds.

Each $16.88

Optional frame is gray polystyrene with four 3/8″ dia. mounting holes (screws not included). Size is 8 3/8″ Ht.×8 3/8″ Wd.×½″ Dp. ***Optional flange-mount bracket*** is for flag-style mounting. Attach signs on one or both sides of the black acrylic panel. Size is 8¾″ Wd.×8″ Ht. with a 2½″ wide aluminum flange. Has four 1/8″ dia. mounting holes (screws not included).

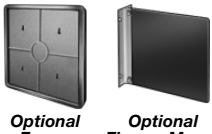

Optional Frame ***Optional Flange-Mount Bracket***

	Each
Optional Frame	**8390T87** $17.51
Optional Flange-Mount Bracket	**8390T88** 37.06

12″ Signs

Signs have white symbols and letters on a blue background. They are ¼″ thick polystyrene (unless noted). These signs require the corresponding 8″×8″ sign above to be ADA compliant.

12″ Dia... **8390T33**■ 12″ Dia... **8390T32** 12″×12″×12″.. **8390T31**

■ Thickness is ½″.

Each $19.92

Sprinkler System Label

Visually identify your sprinkler system with this adhesive-backed label. It has white letters on a red background and is made of 0.003″ thick vinyl. Size is 21″ Wd.×2½″ Ht. Package quantity is 5.

1049T27 ..... **Per Pkg.** 1-4 $9.50 5-Up $8.07

Fire Equipment Signs

Printed in red and white on one side. **To Order:** Please specify material.

Glow-in-the-dark adhesive-backed polyester signs meet ASTM E2072/E2073 and DIN 67510-1 standards for photoluminescent safety markings. ***Polyethylene*** signs have four 3/16″ dia. mounting holes (screws not included). ***Steel*** signs have four ¼″ dia. mounting holes (screws not included).

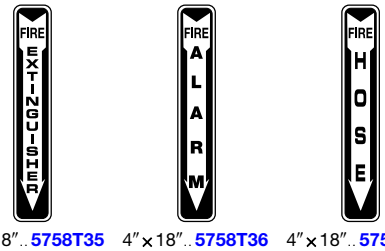

4″×18″.. **5758T35** 4″×18″.. **5758T36** 4″×18″.. **5758T37**

4″×24″.... **5758T2** 4″×24″.... **5758T1** 4″×24″.... **5758T3**

5″×7″.. **5758T8** 10″×14″.. **5758T5**● 5″×7″.. **5758T7** 5″×7″.. **5758T9**♦

10″×14″.. **5758T15**

● Glow-in-the-dark adhesive-backed sign is vinyl.

♦ Not available in glow-in-the-dark adhesive-backed polyester.

Wd.×Ht.	Adhesive-Backed Vinyl, 0.004″ Thick Each 1-5	Adhesive-Backed Vinyl, 0.004″ Thick Each 6-Up	Glow-in-the-Dark Adhesive-Backed Polyester, 0.009″ Thick Each 1-5	Glow-in-the-Dark Adhesive-Backed Polyester, 0.009″ Thick Each 6-Up	Polyethylene, 0.055″ Thick Each 1-5	Polyethylene, 0.055″ Thick Each 6-Up	Steel, 0.019″ Thick Each 1-5	Steel, 0.019″ Thick Each 6-Up
4″×18″..	$3.15	$2.68	—	—	—	—	—	—
4″×24″..	5.85	4.97	$15.16	$12.88	$11.40	$9.69	$9.33	$7.93
5″× 7″..	3.05	2.59	9.55	8.13	7.05	5.99	4.65	3.95
10″×14″..	6.95	5.91	19.80	16.83	12.04	10.23	13.09	11.13

AED Signs

Flat

L-Shape

V-Shape

When seconds count, you'll be glad these signs are there to identify AEDs (Automated External Defibrillators).

Flat sign is made of 0.004″ thick adhesive-backed vinyl. ***L-shape*** and ***V-shape*** signs are made of 0.125″ thick acrylic and include mounting tape and screws. *L-shape* sign has images on both sides of the panel. *V-shape* sign has images on one side of both flared panels.

Shape	Size		Each 1-5	6-Up
Flat	10″ Wd. × 14″ Ht.	4892T62	$6.03	$5.13
L-Shape	8″ Wd. × 8″ Ht.	4892T78	13.03	11.08
V-Shape	9″ Wd. × 6″ Ht. × 4″ Dp.	4892T76	12.34	10.49

Hazardous Material Information Signs

NFPA Diamond

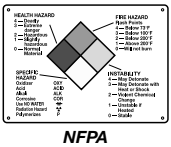

NFPA

Color Stripe

Provide appropriate code numbers for hazards. Post the ***NFPA (National Fire Protection Association) diamond*** and write in the numbers using permanent markers (see 1661T on page 1940) or use 2″ high adhesive-backed numbers for 14035T23, 4″ high for T25 and T22 (see pages 1934-1935). Post the ***NFPA*** and ***color stripe*** signs to explain the code numbers and colors. Color scheme is blue, red, white, and yellow.

Adhesive-backed vinyl signs are 0.005″ thick.

Fiberglass signs are 0.1″ thick and have four 7/32″ dia. mounting holes (screws not included).

Wd. × Ht.	Material		Per Pkg. of 5 1-4	5-Up
NFPA Diamond				
5″ × 5″	Adhesive-Backed Vinyl	14035T23	$11.15	$10.00
			Each 1-4	5-Up
10½″ × 10½″	Adhesive-Backed Vinyl	14035T25	$5.00	$4.20
11″ × 11″	Fiberglass	14035T22	21.03	18.02
NFPA				
14″ × 10″	Fiberglass	14035T16	23.43	20.09
Color Stripe				
14″ × 10″	Fiberglass	14035T18	23.43	20.09

Write-On Hazardous Material Labels and Pictograms

Get the message across about hazardous materials in your workplace. All are made of 0.005″ thick adhesive-backed vinyl.

Labels

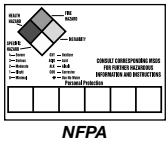

NFPA

Color Stripe

Just write on these labels using permanent markers (see 1661T on page 1940) to post the appropriate code numbers. You can also use pictograms to convey information about personal protection, sold separately below. These labels have a blue, red, white, and yellow color scheme.

Small Labels—*NFPA* (National Fire Protection Association) style is 5″ Wd. × 3″ Ht.; *color stripe* style is 3″ Wd. × 5″ Ht. Package quantity is 10.

Large Labels—*NFPA* style is 10″ Wd. × 7″ Ht.; *color stripe* style is 7″ Wd. × 10″ Ht. Package quantity is 5.

Style	Small Labels	Per Pkg. 1-4	5-Up	Large Labels	Per Pkg. 1-4	5-Up
NFPA	5026T44	$9.16	$7.63	5026T42	$11.92	$9.93
Color Stripe	5026T46	9.16	7.63	5026T45	13.82	11.52

Pictograms

A picture is worth a thousand prevented injuries. These attach easily to the labels above.

Pictograms for small labels have 36 pictograms per card. Each pictogram is ¾″ × ¾″.

Pictograms for large labels have 9 pictograms per card. Each pictogram is 1½″ × 1½″.

To Order: Please specify pictogram and size, small or large.

Blue and White

Goggles

Face Shield

Apron

Dust Mask

Respirator

Gloves

Boots

Red/Black on White

No Smoking

Black and Yellow

Poison

Flammable

Corrosive

5026T82 ..... **Per Card** 1-4 $3.67 5-Up $3.17

Hazardous Chemical/Gas Specification Signs and Labels

Keep personnel informed about the effects and treatment of chemical exposure. Signs and labels are red and white.

Signs are 0.055″ thick polyethylene. Size is 10″ Wd. × 8″ Ht. For tape with adhesive on both sides, see pages 3451-3453.

Labels are 0.005″ thick adhesive-backed vinyl. A clear vinyl coating protects the printing from scratching off. Size is 4½″ Wd. × 3½″ Ht.

To Order: Please specify chemical/gas from list below.

Chemical/Gas	Chemical/Gas	Chemical/Gas
Acetone	Diesel Fuel Oil	Nitric Acid
Acetylene Gas	Gasoline	Nitrogen
Alcohol	Hydrochloric Acid	Oil
Anhydrous Ammonia	Isopropanol	Oxygen Gas
Argon Gas	Kerosene	Propane Gas
Carbon Dioxide	Lacquer Thinner	Sodium Hypochlorite
Caustic	Methanol	Sulfuric Acid
Caustic Soda	Methyl Ethyl Ketone	Trichloroethylene
Chlorine	Mineral Spirits	Xylene

Sign	5961T1	**Each**	$7.63
Labels (5/Pkg.)	1297T4	**Per Pkg.**	$13.18

Write-On Hazardous Material ID Tags with See-Through Covers

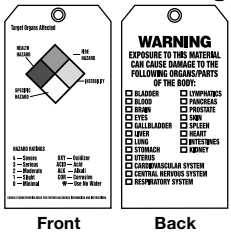

Front **Back**

NFPA

Front **Back**

Color Stripe

An adhesive-backed polyester cover protects the surface of these tags so they last longer. Tags are 0.015″ thick vinyl and have a blue, red, white, and yellow color scheme. They include a 7″ long cable tie and have a ⅜″ dia. grommet. Size is 3″ Wd. × 5¾″ Ht.

Write on these tags using permanent markers such as 1661T on page 1940. ***NFPA*** stands for National Fire Protection Association.

Style	Pkg. Qty.		Per Pkg. 1-4	5-Up
NFPA	5	1290T73	$8.12	$6.90
Color Stripe	5	1290T74	8.12	6.89

Hazardous Material Storage Labels

4″×4″ Hazardous Waste Label

6″×6″ Hazardous Waste Label

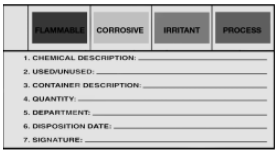

7½″×4″ Chemical Label

Before storing hazardous materials, attach one of these adhesive-backed labels and write in your information. For permanent markers, see 1661T series on page 1940.

4″×4″ and ***7½″×4″*** labels are 0.005″ thick chemical-resistant vinyl. An adhesive-backed laminate cover keeps labels free of dirt and dust. *4″×4″* label is white with a red background. *7½″×4″* label has colored tabs to indicate flammable (red), corrosive (yellow), irritant (blue), store (green), and process (orange).

6″×6″ label is 0.003″ thick vinyl. It is red on a yellow background.

Label, Wd.×Ht.	Pkg. Qty.		Per Pkg. 1-4	5-Up
4″ ×4″ Hazardous Waste	3	5858T42	$9.02	$6.70
6″ ×6″ Hazardous Waste	5	5858T56	4.86	3.09
7½″×4″ Chemical	2	5858T44	13.37	9.34

D.O.T. Vehicle Placards

Individual placards are vinyl and meet the Dept. of Transportation Hazardous Material (HM)-181 requirements (D.O.T. 49 CFR 172.519). Size is 10¾″×10¾″. *Adhesive-backed* placards are flexible. *Rigid* placards fit in a placard holder (sold separately).

Placard holder for rigid placards is 0.032″ thick anodized aluminum with one stainless steel clip. Holder has eight 3⁄16″ dia. mounting holes (screws not included).

Also Available: Placards not shown. Please ask for 59125T888 and specify material and message.

White on Red

Adhesive Backed	59125T213	59125T222	59125T223
Rigid	59125T313	59125T322	59125T323

White on Green **Black on Yellow**

Adhesive Backed	59125T226	59125T832	59125T837
Rigid	59125T326	59125T834	59125T839

Red, Black & White **Black & White**

Adhesive Backed	59125T235	59125T214	59125T211
Rigid	59125T335	59125T314	59125T311

		Each
Individual Placards		
Adhesive Backed, 0.004″ Thick		$1.65
Rigid, 0.02″ Thick		4.23
Placard Holder for Rigid Placards	59125T75	$11.94

Right-to-Know Stations

English Station with Binder

English Station with Binder and Training Booklets

Give all employees access to information according to OSHA's Hazard Communication Standards.

Station with binder has a polystyrene board, binder rack, and Material Safety Data Sheet (MSDS) binder. Colors are red and yellow. Station is 20″ Ht.×14″ Wd.×4½″ Dp. and has four 3⁄16″ dia. mounting holes (screws included). MSDS binder is 10½″ Wd.×11½″ Lg. and has three 1½″ dia. rings. It holds approximately 275 MSDS sheets and stays attached to the station with the included 36″ chain. *English/Spanish* station has an English/Spanish binder, and station lettering is in Spanish.

Station with binder and training booklets comes with an MSDS binder plus 10 "Right-to-Know" booklets. Station is blue acrylic with red letters on a white background. It is 30″ Ht.×24″ Wd.×4½″ Dp. and has four 3⁄16″ dia. mounting holes (screws not included). *English/Spanish* station comes with five "Right-to-Know" booklets in English and five in Spanish. The binder and station lettering are in English/Spanish.

		Each
Station with Binder		
English	9390T58	$68.86
English/Spanish	9390T63	67.53
Station with Binder and Training Booklets		
English	9390T41	125.41
English/Spanish	9390T46	125.41
Replacement Binder		
English	9390T45	18.76
English/Spanish	9390T47	18.76
Replacement Booklets for 9390T41 and 9390T46		
English (10/Pkg.)	9390T32	Per Pkg. $14.91
Spanish (10/Pkg.)	9390T39	Per Pkg. $14.91

Take-a-Number Dispenser

6458T12

Show your commitment to efficient customer service. A sign prompts customers to take a number from the red number dispenser. The sign and dispenser are ABS plastic and mounted on a 1-foot high chrome-plated steel counter stand. You control the included LED display via three push buttons that allow you to increase or decrease the displayed number. The display is black and shows two red 4″ Wd.×5″ Ht. digits. It is powered by a 12-volt transformer with three-prong (NEMA 5-15) plug. Connect the transformer, display, and push buttons with the included 100 feet of wire. Screws are also included.

Optional floor stand is 51″ high and has a chrome pole and iron base. A ***roll of numbers*** is sold separately and has 3000 tickets. It is printed with two black digits on a white background.

						Each
Dispenser	6458T12					$346.85
Optional Floor Stand	6458T41					99.31
Roll of Numbers	6458T33	Per Roll	1-4	$10.48	5-Up	$9.03

Recycling Labels

Easily identify the proper bin for recycling waste. Labels are black and green on a white background. Made of 0.005″ thick adhesive-backed vinyl. Size is 8″ Wd.×2″ Ht. Package quantity is 24.

4055T41

4055T43

4055T44

4055T45

Per Pkg. $7.32

Parking Signs

Make your parking restrictions known. Signs are printed on one side and have 3/8″ dia. mounting holes (screws not included). 12″×18″ signs have two mounting holes, 14″×7″ signs have six mounting holes, and 20″×14″ signs have four mounting holes. For sign posts, see page 1894.

Wd.×Ht.	Galvanized Steel Thick.	Galvanized Steel Each	Reflective Aluminum Thick.	Reflective Aluminum Each	Reflective Fiberglass Thick.	Reflective Fiberglass Each
12″×18″	0.048″	$17.52	0.08″	$27.30	0.09″	$25.86
14″× 7″	0.048″	13.27	0.08″	22.59	0.09″	17.38
20″×14″	0.048″	22.96	0.08″	37.23	0.09″	23.57

12″×18″ Red on White (unless noted)

Galvanized Steel	5794T18	5794T112	5794T131	5794T19	5794T25	5794T22	5794T29
Reflective Aluminum	3481T1	3481T18	3481T38	3481T12	3481T4	3481T7	3481T2
Reflective Fiberglass	97295T51	97295T53	97295T55	97295T56	97295T57	97295T3	97295T61

Galvanized Steel	5794T21	5794T13	5794T134	5794T463	5794T113★	5794T14★	5794T15★
Reflective Aluminum	3481T6	3481T3	3481T5	3481T16	3481T19★	3481T21★	3481T22★
Reflective Fiberglass	97295T2	97295T59	97295T65	97295T92	97295T67★	97295T68★	97295T69★

★ Signs are red and black on white.

12″×18″ Black on White

Galvanized Steel	5794T43	5794T42	5794T33	5794T138	5794T136	5794T135	5794T137	5794T462	5794T461
Reflective Aluminum	3481T26	3481T25	3481T24	3481T14	3481T9	3481T8	3481T11	3481T13	3481T15
Reflective Fiberglass	97295T74	97295T75	97295T76	97295T81	97295T77	97295T78	97295T79	97295T86	97295T89

20″×14″ Black on Yellow

Galvanized Steel	5794T57	5794T27	5794T76	5794T62	5794T66	5794T88	5794T96
Reflective Aluminum	3481T27	3481T23	3481T33	3481T28	3481T29	3481T36	3481T37
Reflective Fiberglass	97295T43	97295T31	97295T44	97295T33	97295T35	97295T41	97295T42

20″×14″ Black on Yellow

14″×7″ Green on White

12″×18″ Blue on White

Galvanized Steel	5794T71	5794T73	5794T79	5794T81	5794T111
Reflective Aluminum	3481T31	3481T32	3481T34	3481T35	3481T17
Reflective Fiberglass	97295T38	97295T39	97295T16	97295T18	97295T84

Stop Signs with Warning Message

1675T41

1675T42

1675T43

1675T44

1675T45

1675T46

Sometimes you need to stop them in their tracks to get your message across. These signs are reflective aluminum and are the same shape and color as a stop sign. Messages are printed on one side. They measure 24″ Ht.×24″ Wd.×0.080″ Thick. and include two 3/8″ dia. mounting holes (screws not included). For sign posts, see page 1894.

Each $59.62

Handicapped Parking Signs

All signs are 0.080″ thick. They are printed on one side and have two 3/8″ dia. mounting holes (screws not included). For sign posts, see page 1894.

Wd. × Ht.	Each
Aluminum	
12″ × 6″	$15.00
12″ × 18″	24.46
18″ × 24″	43.91

Wd. × Ht.	Each
Reflective Aluminum	
12″ × 6″	$16.14
12″ × 18″	26.32
18″ × 24″	45.56

12″ × 6″ White on Blue

	VAN ACCESSIBLE	$200 FINE	$250 FINE
Aluminum	5939T41	5939T53	5939T55
Reflective Aluminum	1550T25	1550T27	1550T29

12″ × 18″ White on Blue

12″ × 18″ Green and Blue on White

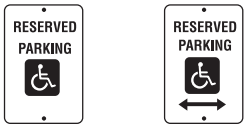

18″ × 24″ White on Blue

	PARKING	HANDICAPPED PARKING	HANDICAPPED PARKING PERMIT REQUIRED	ACCESSIBLE ENTRANCE	VAN ACCESSIBLE	RESERVED PARKING	RESERVED PARKING	HANDICAPPED PARKING ONLY
Aluminum	5939T35	5939T36	5939T38	5939T37	5939T39	5939T31	5939T32	5939T34
Reflective Aluminum	1550T11	1550T12	1550T14	1550T13	1550T15	1550T16	1550T17	1550T28

Traffic Control Signs

Signs are printed on one side and have two 3/8″ dia. mounting holes (screws not included). ***Foldable stop sign*** has two hinges in the middle that allow the top to be folded over the bottom half. For sign posts, see page 1894.

Wd. × Ht.	Material	Thick.	Each
10″ × 30″	Reflective Aluminum	0.080″	$40.47
12″ × 18″	Reflective Aluminum	0.063″■	27.30
18″ × 24″	Reflective Steel	0.048″	27.45
18″ × 24″	Reflective Aluminum	0.080″	46.97
24″ × 18″	Reflective Aluminum	0.080″	46.97
24″ × 24″	Reflective Aluminum	0.080″	58.13

Wd. × Ht.	Material	Thick.	Each
24″ × 24″	Foldable Reflective Aluminum	0.080″	$99.74
30″ × 30″	Reflective Aluminum	0.080″	78.60
30″ Dia.	Reflective Aluminum	0.080″	95.78
30″ × 30″ × 30″	Reflective Aluminum	0.080″	52.50
36″ × 12″	Reflective Aluminum	0.080″	46.97

■ 5940T66 is 0.080″ thick.

Black on White

	SPEED LIMIT	ONE WAY	ONE WAY	ONE WAY DO NOT ENTER	NO THRU TRAFFIC	NO DUMPING ALLOWED
12″ × 18″ Reflective Aluminum	5940T65●	5940T69	5940T73	5940T74	5940T75	5940T76
18″ × 24″ Reflective Aluminum	5940T42●	5940T82	5940T83	5940T47	5940T46	____

● **To Order:** Please specify speed limit in increments of 5, beginning at 5 miles per hour (5, 10, 15, . . . etc.).

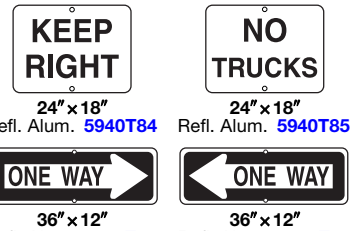

24″ × 18″ Refl. Alum. 5940T84

24″ × 18″ Refl. Alum. 5940T85

36″ × 12″ Refl. Alum. 5940T98

36″ × 12″ Refl. Alum. 5940T97

Black on Yellow

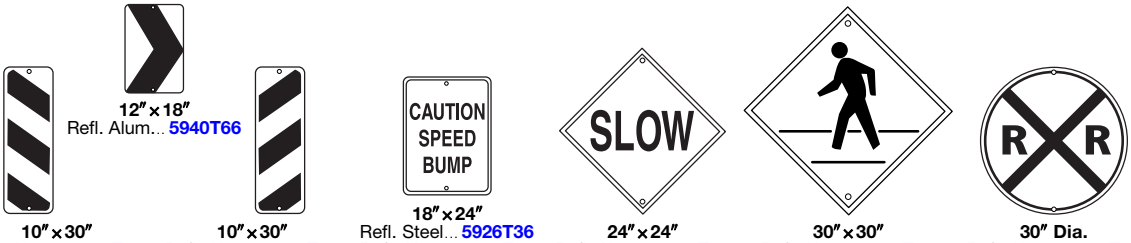

10″ × 30″ Refl. Alum... 5940T43

12″ × 18″ Refl. Alum... 5940T66

10″ × 30″ Refl. Alum... 5940T45

18″ × 24″ Refl. Steel... 5926T36 Refl. Alum... 5940T78

24″ × 24″ Refl. Alum... 5940T91

30″ × 30″ Refl. Alum... 5940T96

30″ Dia. Refl. Alum... 5940T77

Red and White

24″ × 24″ Refl. Alum... 5940T95

24″ × 24″ Refl. Alum... 5940T89
30″ × 30″ Refl. Alum... 5940T72

24″ × 24″ Foldable Refl. Alum... 5940T71

30″ × 30″ × 30″ Refl. Alum... 5940T62

12″ × 18″ Refl. Alum... 5940T67
18″ × 24″ Refl. Alum... 5940T81

Black and Red on White

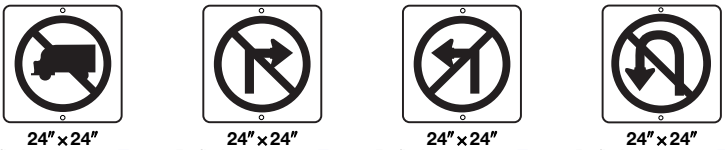

24″ × 24″ Refl. Alum... 5940T92

24″ × 24″ Refl. Alum... 5940T93

24″ × 24″ Refl. Alum... 5940T94

24″ × 24″ Refl. Alum... 5940T79

Green and White

18″ × 24″ Refl. Alum. 5940T49

Custom Parking and Traffic Control Signs

Could have said it better yourself? Create your own message with these 0.080″ thick aluminum custom signs. Printed on one side with two 3/8″ dia. mounting holes (screws not included). Sign posts are sold separately on this page.

To Order: Please specify exact message and letter/background combination: black on white, red on white, white on blue, or white on red. *Reflective aluminum* signs are also available in black on yellow.

Wd. × Ht.	Nonreflective Aluminum	Each 1-2	Each 3-Up	Reflective Aluminum	Each 1-2	Each 3-Up
12″ × 18″	3654T2	$42.33	$36.63	3654T1	$48.56	$42.02
18″ × 12″	3654T4	42.33	36.63	3654T3	48.56	42.02
18″ × 24″	3654T6	65.98	55.20	3654T5	72.74	62.35
24″ × 18″	3654T8	65.98	55.20	3654T7	72.74	62.35
24″ × 24″	3654T11	73.44	64.80	3654T9	81.28	68.53

Sign Posts

Optional Drive Cap

Optional Reflective Marker

You'll get unbeatable durability from these 11-gauge steel channel posts. Holes are 3/8″ dia. on 1″ centers. ***Galvanized steel*** posts have enhanced corrosion resistance.

Optional drive cap prevents damage to the top of the post during installation. ***Optional reflective marker*** converts the sign post into a warning device. Marker is made of reflective aluminum and is black on yellow. Size is 30″ Lg. × 3″ Wd. Mount using the two 3/8″ dia. holes (screws not included).

Overall Height	Inside Width	Overall Width	Green Baked-Enamel Steel	Each	Galvanized Steel	Each
6 ft.	55/64″	2 1/4″	5735T4	$24.26	5735T61	$32.59
7 ft.	55/64″	2 1/4″	5735T36	28.19	5735T62	38.00
8 ft.	1 9/32″	3 1/16″	5735T5	44.01	5735T63	60.33
10 ft.	1 9/32″	3 1/16″	5735T2	55.30	5735T64	75.40
12 ft.	1 9/32″	3 1/16″	5735T3	66.40	5735T65	84.84

Optional Drive Cap (for 8-, 10-, and 12-ft. posts) ..... 5735T7 **Each** $35.60
Optional Reflective Marker (for all posts) ..... 1546T5 **Each** $14.34

Portable Sign Post

Put your sign in a prominent place, then relocate it as you see fit. These indoor/outdoor posts have a 14″ dia. cast iron base and an 11-gauge steel post with a black enamel finish. Post mounts to base with the included hex bolt. Overall height is 48″ and post outer diameter is 1 7/8″. Use for signs with a height of 18″ or 24″.

5788T11 ..... **Each** $90.74

Pole-Mount Sign Brackets

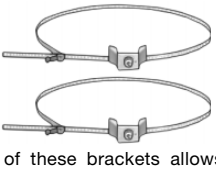

A pair of these brackets allows you to mount a sign to an existing pole. Bracket is galvanized steel; strap is Type 201 stainless steel. Fits 4″ to 12″ dia. poles. For use with signs that have 3/8″ dia. mounting holes.

	Per Pair 1-5	Per Pair 6-Up
1307T21	$16.03	$14.25

Parking-Permit Tags

Hang these 0.023″ thick plastic tags from your vehicle's rearview mirror. Printed on one side, tags have white lettering on a red background with a white border. A 1 1/2″ Wd. × 5/8″ Ht. writing area lets you number and label them as needed. Use permanent markers such as 1661T on page 1940. Overall size is 2 3/4″ Wd. × 4 3/4″ Ht. Package quantity is 5.

	Per Pkg. 1-4	Per Pkg. 5-Up
8587T34	$8.57	$7.29

Railroad Signs

2280T31

2280T32

2280T34

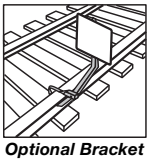

Optional Bracket

Stop them in their railroad tracks. Signs are reflective white on blue with a baked-enamel finish over 0.048″ thick steel. Printed on one side. Size is 15″ Wd. × 12″ Ht. ***Optional bracket*** is zinc-plated steel and attaches to a rail. Signs and bracket have two 5/8″ dia. mounting holes (screws not included).

		Each
Railroad Sign		$20.30
Optional Bracket	2280T35	**Each** $23.83

Cardboard Accident Prevention Tags

Alert workers of hazardous equipment the safe and professional way. These tags are 0.015″ thick tag stock and have one 3/16″ dia. zinc grommet and two 6″ strings to attach to equipment. Each tag has space to write in your signature and the date. Size is 4″ Wd. × 7″ Ht. They help you conform to OSHA 29 CFR 1910.145(f) and ANSI Z535. For blank cardstock tags, see page 1958.

Caution tags have headers with yellow letters on a black background. Messages have black letters on a yellow background.

Fire extinguisher inspection tag has a header with white letters on a red background. The rest of the tag is white with black letters.

Danger tags have headers with white letters surrounded by red with a black border. Messages have black letters on a white background.

Per Pkg. (25/Pkg.) 1-3 $11.25 4-Up $9.56

Caution Tags

5860T11

5860T12

5860T13

Back of Caution Tags

Fire Extinguisher Inspection Tag

5860T51

Back of *5860T51*

Danger Tags

5860T31

5860T32

5860T33

5860T37

5860T35

5860T43

5860T39

5860T41

5860T44

Back of Danger Tags

Laminated Tags

Sealed in plastic, these tags stand up to the harshest environments. Write on them using permanent markers such as 1661T on page 1940. Tags are 3⅛″ Wd. × 5⅝″ Ht. with a ⅜″ dia. zinc grommet. Thickness is 0.025″. They help you conform to OSHA 29 CFR 1910.145(f) and ANSI Z535.2-1991. For blank cardstock tags, see page 1958.

Danger Tags—Headers have white letters surrounded by red with a black border. Messages have black letters on a white background (except 5775T72, which has white letters on a red background). *Lockout/tagout danger tags* also help you conform to OSHA 1910.147 for lockout/tagout applications.

Caution Tags—Headers have yellow letters on a black background. Messages have black letters on a yellow background.

Maintenance Tags—5862T11 is black on orange. 5862T12 is black on yellow. 5862T13 is black on white.

Fire Extinguisher Inspection Tag—Black and red on white.

Cylinder Tags—5862T14 is white on red. 5862T15 is white on green.

Nylon Cable Ties—11″ long.

Nickel-Plated Steel Bead Chains—12″ long.

	Pkg. Qty.	Per Pkg. 1-4	Per Pkg. 5-Up
Tags	10	$12.93	$10.95
Nylon Cable Ties (100/Pkg.)	7130K15	Per Pkg.	$6.87
Nickel-Plated Steel Bead Chains (10/Pkg.)	5775T87	Per Pkg.	$8.25

Lockout/Tagout Danger Tags

5775T11 | 5775T38 | 5775T71 | 5775T37 | 5775T24 | 5775T32 | 5775T13 | Back of Seven Preceding Tags | 5775T72 Front & Back | 5775T42 Front & Back

Lockout/Tagout Danger Tags

5775T54 | Back of 5775T54 | 5775T74 | Back of 5775T74 | 5775T61 | Back of 5775T61 | 5775T49 | Back of 5775T49 | 5775T43 | Back of 5775T43

Lockout/Tagout Danger Tags

5775T73 Front & Back | 5775T57 | Back of 5775T57

English/Spanish Lockout/Tagout Danger Tags

5815T11 | Back of 5815T11 | 5815T12 | Back of 5815T12 | 5815T19 | Back of 5815T19

Danger Tags

5775T21 | 5775T17 | 5775T16 | 5775T77 | Back of Four Preceding Tags | 5775T14 | Back of 5775T14 | 5775T44 | Back of 5775T44 | 5775T48 | Back of 5775T48

Danger Tags

5775T75 | 5775T76 | Back of 5775T75 & T76

English/Spanish Danger Tag

5815T15 | Back of 5815T15

Caution Tags

5813T11 | Back of 5813T11 | 5813T12 | Back of 5813T12 | 5813T13 | Back of 5813T13

Maintenance Tags

5862T11 | 5862T12 | 5862T13 | Back of Three Preceding Tags

Fire Extinguisher Inspection Tag

8286T14 | Back of 8286T14

Cylinder Tags

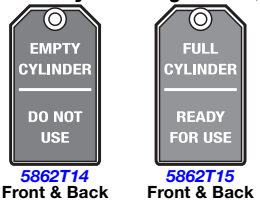

5862T14 Front & Back | 5862T15 Front & Back

Write-On Tags with See-Through Covers

Protect your message from wear—just peel back the clear plastic flap, write your message on the front of the tag, and then permanently cover it with the flap. Made of 0.015″ thick vinyl, these tags are 3⅛″ Wd.×5″ Ht. with a ⅜″ ID brass grommet and 6¾″ long nylon tie. Tags meet ANSI Z535.2-1991 and OSHA 29 CFR 1910.145(f).

For permanent markers, see 1661T on page 1940.

Danger tags have headers with white letters surrounded by red with a black border. Messages have black letters on a white background.

Valve No. tag has black letters on a blue, green, red, or yellow background. **To Order:** For valve tag, please specify background: blue, green, red, or yellow.

Danger Tags | **Valve No. Tag**

5800T43

5800T47

Back of 5800T43 & 5800T47

5800T48

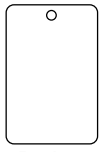
Back of 5800T48

5800T2 Front & Back

Per Pkg. (10/Pkg.) 1-4 $13.75 5-Up $11.67

Lockout Maintenance Tags and Data Sheets

Front of Tag

Back of Tag

LOCKOUT : TAGOUT SYSTEM

LOCKOUT:TAGOUT CHECK LIST

Data Checklist Sheet

Manage your lockout/tagout procedures. Made of white cardstock, tags and sheets have blue lettering and provide space to write information. Hole ID is ⅜″.

Tags are 0.027″ thick and display lockout information for a particular machine. Size is 2⅞″ Wd.×5⅜″ Ht.

Data checklist sheets are 0.017″ thick and allow you to keep detailed lockout records. Size is 8½″ Wd.×11″ Ht.

Nylon cable ties are 11¼″ long.

	Pkg. Qty.		Per Pkg. 1-4	5-Up
Tags	10	8182T45	$3.69	$3.13
Data Checklist Sheets	5	8182T44	5.30	4.18
Nylon Cable Ties (100/Pkg.)		7130K15	Per Pkg.	$6.87

Lockout Stations

12″×9″

12″×19″

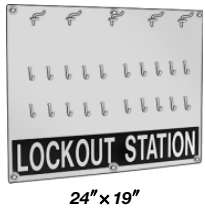

24″×19″

Give your lockout/tagout program the best chance of success with highly visible stations that organize locks, tags, and lockouts. Stations are made of PVC board and have yellow letters surrounded by a black border and a yellow background. Mounting holes are ⅜″ dia. (hardware not included). ***12″×9″*** and ***12″×19″*** stations have four mounting holes. ***24″×19″*** station has six mounting holes.

Wd.×Ht.	Capacity: Padlocks	Tags	Lockouts		Each
12″× 9″	4	25	–	8270T61	$21.40
12″×19″	10	25	3	8270T62	36.50
24″×19″	20	50	6	8270T63	53.00

Lockout Labels

5797T21

5797T23

Remind workers to use lockout devices with these self-adhesive vinyl labels. They're 0.004″ thick and have black letters on a yellow background. Size is 4½″ Wd.×2¼″ Ht.

Per Pkg. (10/Pkg.) 1-4 $7.62 5-Up $6.48

Shatter-Resistant Plastic Sign Holders

Your messages are too important to risk wear and tear. Made of clear acrylic with rubber for added flexibility, these sign holders are shatter resistant for long life. Insert materials from the sides. A mounting hanger is included.

Maximum Sign Size, Wd.×Ht.		Each
5″ × 7″	13325T41	$5.32
8½″×11″	13325T42	7.34
11″ ×14″	13325T43	12.16
18″ ×24″	13325T44	26.82
22″ ×28″	13325T45	43.32
24″ ×36″	13325T46	66.60

Glass-Mount Sign Holders

Put a sign where others won't miss it. Four transparent suction cups allow you to display documents and signs on glass and mirrored surfaces. Use indoors (even where it's sunny, thanks to UV stable clear acrylic construction). Insert materials from the top or sides.

Maximum Sign Size, Wd.×Ht.		Each
8½″×11″	4946T82	$20.14
11″ ×14″	4946T83	26.18

Frame-Style Sign Holders

Sign Not Included

Give your signs authority and distinction in these sturdy, durable holders. A clear plastic cover protects certificates, licenses, and other documents. Simply slide in materials on one of the short sides.

Mount with screws or tape with adhesive on both sides (neither are included). ***Aluminum*** sign holders have six 1/8″ dia. mounting holes.

Maximum Sign Size, Wd.×Ht.	Aluminum	Each	Oak	Each
9″× 6″	5710T5	$24.19	5710T21	$27.72
11″× 8½″	5710T1	27.30	5710T22	33.61
17″×11″	5710T7	33.78	5710T23	42.58
23″×17″	5710T3	40.75	5710T24	47.49

Table-Top Sign Holders

Slant Back

Straight Back

Personnel and visitors may be missing out on important information. These clear acrylic stands are a quick and easy way to prominently display documents and signs on a table or countertop.

Slant-back stands are for one-sided viewing. Insert materials from the sides or bottom.

Straight-back stands allow viewing from both sides. Insert materials from the top or sides.

Maximum Sign Size, Wd.×Ht.	Slant Back	Each	Straight Back	Each
5″ × 7″	13315T23	$3.96	13315T33	$4.90
8½″×11″	13315T25	8.11	13315T35	11.05
11″ ×14″	13315T26	16.34	13315T36	19.57

Snap-Close Frame-Style Sign Holders

A seamless snap-lock closure makes these durable holders even more attractive. Just snap open any edge, slip in your poster or document, and snap shut for easy switching between signs.

Plastic sign holders are black with steel-reinforced corners. A mounting hanger is included.

Plastic covers are clear plastic sheets that can be used in the plastic sign holders (sold separately) to protect documents.

Aluminum sign holders have a silver finish and include a clear plastic cover to protect documents. There are four 1/4″ dia. mounting holes (screws not included). You can also mount these sign holders with tape with adhesive on both sides (not included).

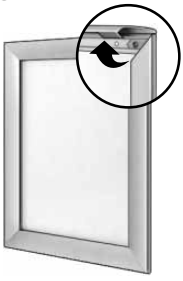

Aluminum

Max. Sign Size, Wd. × Ht.	O'all Size, Wd. × Ht. × Thick.	Sign Holders	Each	Plastic Covers	Each
Plastic					
8½″ × 11″	9¼″ × 11¾″ × ½″	5898T55	$10.18	5898T65	$2.10
11″ × 14″	11¾″ × 14¾″ × ½″	5898T56	13.85	5898T66	3.36
15″ × 20″	15¾″ × 20¾″ × ½″	5898T57	19.65	5898T67	4.60
20″ × 24″	20¾″ × 24¾″ × ½″	5898T45	23.46	5898T68	10.02
24″ × 36″	24¾″ × 36¾″ × ½″	5898T46	30.68	5898T69	11.05
30″ × 40″	30¾″ × 40¾″ × ½″	5898T47	41.55	5898T71	16.54
Aluminum					
8½″ × 11″	10½″ × 13″ × ⅝″	5898T81	44.57	—	—
11″ × 17″	13″ × 19″ × ⅝″	5898T82	52.81	—	—
17″ × 22″	19″ × 24″ × ⅝″	5898T83	64.76	—	—
22″ × 28″	24″ × 30″ × ⅝″	5898T84	77.76	—	—
24″ × 36″	26″ × 38″ × ⅝″	5898T85	92.55	—	—
28″ × 44″	30″ × 46″ × ⅝″	5898T86	108.83	—	—

Table-Top Literature Holders

A

B

C

Don't let your packets and booklets get lost in piles. Made of durable, clear plastic, all of these holders have slanted back walls so your literature can "stand" up and be seen on desks, counters, and tables.

	Pocket Size, Wd. × Ht. × Dp.	O'all Size, Wd. × Ht. × Dp.		Each
A	4″ × 4¼″ × 1½″	4½″ × 7″ × 3″	8145T21	$5.40
B	6¼″ × 4⅜″ × 1¾″	6¾″ × 7⅝″ × 3½″	8145T22	7.50
C	8¾″ × 5¼″ × 1¾″	9¼″ × 9⅝″ × 3¾″	8145T23	9.83

Adhesive-Surface Bulletin Boards

Tired of hunting for tacks and tape? These boards have a long-lasting adhesive surface that securely holds papers in place. To remove papers, simply peel them off.

Boards have a blue surface and black plastic frame. They include tape with adhesive on both sides for wall mounting.

O'all Size, Wd. × Ht.		Each
22″ × 18″	6723T11	$30.27
36″ × 22″	6723T12	58.40

Vandal-Resistant Frame-Style Sign Holders

A durable black powder-coated steel frame locks and unlocks with an included Torx L-key to prevent tampering, and an 1/8″ thick acrylic display area protects your sign from the elements. Hinges are Type 304 stainless steel.

Mount holders to a wall or pole. For wall mounting, there are four 0.26″ dia. holes (screws included). For pole mounting, there are four 1″ long slots for worm-drive hose clamps or steel banding (not included).

Maximum Sign Size, Wd. × Ht.	O'all Size, Wd. × Ht. × Thick.		Each
8½″ × 11″	10¾″ × 13¼″ × ½″	1112T61	$87.75
11″ × 17″	13¼″ × 19¼″ × ½″	1112T71	95.50

Changeable-Letter Boards

Freestanding Board

Wall-Mount Single-Door Board

Wall-Mount Double-Door Board

Gothic Characters

Present messages legibly and professionally. Letter boards have an aluminum frame and a grooved surface for mounting characters. They include a set of 324 Gothic characters that are 3/4″ high.

Note: Helvetica letter sets as well as individual characters are sold separately on this page.

Freestanding boards have a chrome pedestal that adjusts from 49″ to 56″ high. The panel surface is grooved black plastic. *Covered* board has a shatter-resistant acrylic insert. Inside depth is 1/4″.

Wall-mount boards include mounting brackets (screws not included). The panel surface is grooved black felt. *Single-* and *double-door* boards have locking, shatter-resistant acrylic windows that all open with the same key (keyed alike) to safeguard messages from tampering. They include two keys. Inside depth is 15/16″.

O'all Size, Wd. × Ht.		Each
Freestanding Boards		
Open		
18″ × 24″	5907T45	$146.62
Covered		
18″ × 24″	5907T44	199.74
Wall-Mount Boards		
Without Door		
18″ × 24″	5889T22	97.07
36″ × 24″	5889T25	155.18
Single Door		
18″ × 24″	6142T61	213.39
24″ × 36″	6142T62	266.75
30″ × 36″	6142T63	283.58
Double Door		
48″ × 36″	5750T117	492.65

Changeable Letter, Number, and Symbol Sets

If you're using upside-down 3's for E's and 5's for S's, you could probably use additional characters for your grooved-surface changeable-letter board. Our Helvetica characters are white plastic with tabs on the back.

300-piece sets come furnished in a compartmented storage box.

Individual characters come in packages of 10. **To Order:** Please specify character.

Ht.	300-Piece Sets	Per Set	Individual Characters	Per Pkg.
½″	5713T65	$53.49	5713T3	$6.18
3/4″	5713T66	53.49	5713T4	6.18
1″	5713T67	56.26	5713T5	6.18
1½″	5713T68	97.80	5713T19	7.76

CHARACTER BREAKDOWN PER SET

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	1	2	3	4	5	6	7	8	9	0	&	¢	$	.	,
14	8	12	12	20	6	6	10	12	4	4	10	12	12	14	10	6	12	12	10	6	6	8	4	6	10	4	4	4	4	4	4	4	4	4	6	4	2	2	2	2

Bulletin Boards

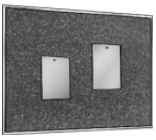

Post the latest info on these boards. All include mounting brackets.

Cork boards have a natural-tan cork surface. Wall-mounting fasteners are not included, unless noted. *Cork boards with deluxe oak frame* have a backing that is sealed to protect against moisture and warping.

Rubber boards have a black and tan speckled surface. They can be easily cleaned with any nontoxic cleaner, so they're great for dirty, harsh environments. Wall-mounting fasteners are also included.

O'all Size, Wd. × Ht.	CORK BOARDS with Aluminum Frame	Each	CORK BOARDS with Standard Oak Frame	Each	CORK BOARDS with Deluxe Oak Frame	Each	RUBBER BOARDS with Aluminum Frame	Each
24″ × 18″	5664T1	$18.33	6092T21	$27.13	15275T51★	$32.38	3507T1	$32.69
36″ × 24″	5664T2	25.74	6092T22	39.65	15275T52★	51.38	3507T2	60.17
48″ × 36″	5664T3	40.77	6092T23	55.36	15275T53★	79.78	3507T3	93.29
60″ × 36″	5664T4	109.71	6092T24	117.85	15275T54★	145.17	3507T4	139.78
60″ × 48″	5664T9	116.70	6092T27	126.09	15275T18	185.60	3507T5	146.48
72″ × 48″	5664T11	133.23	6092T25	135.19	15275T56★	221.46	3507T6	172.62
96″ × 48″	5664T8	173.81	6092T26	161.89	15275T57★	251.96	3507T7	212.92
120″ × 48″	5664T22	174.55	15275T58	219.91	—	—	3507T8	252.85
144″ × 48″	5664T23	194.55	15275T59	249.90	—	—	3507T9	296.43

★ Includes wall-mounting fasteners.

Enclosed Bulletin Boards

Single Door

Double Door

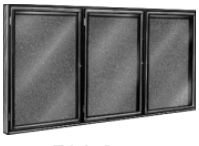

Triple Door

Be confident that what everyone sees is what you posted. Hinged doors with shatter-resistant acrylic windows protect your messages and all lock with the same key (keyed alike). Boards include two keys as well as mounting brackets. Wall-mounting screws are not included. Inside depth is 1 5/16″.

Boards for ***indoor use*** have a natural-tan cork surface. Boards for ***outdoor use*** are vinyl covered fiberboard with a weather-resistant backing.

Illuminated boards have a concealed, 18-watt fluorescent bulb. They operate on 110 VAC and have a 6-ft. long cord with a two-prong plug. UL listed.

O'all Size, Wd. × Ht.	NONILLUMINATED BOARDS with Aluminum Frame (Indoor Use)	Each	with Oak Frame (Indoor Use)	Each	with Walnut Frame (Indoor Use)	Each	with Aluminum Frame (Outdoor Use)	Each	ILLUMINATED BOARDS with Aluminum Frame (Indoor Use)	Each
Single Door										
18″ × 24″	5709T14	$150.69	5709T21	$152.00	5709T13	$160.29	5709T523	$192.11	—	—
24″ × 36″	5709T16	216.71	5709T22	182.79	5709T15	192.76	5709T524	252.96	5707T73	$369.74
Double Door										
48″ × 36″	5709T31	334.28	5709T23	323.68	5709T33	335.67	5709T525	372.84	5707T74	657.33
60″ × 36″	5709T32	405.66	5709T24	358.38	5709T34	371.18	5709T526	416.28	5707T75	710.25
Triple Door										
72″ × 36″	5709T45	491.72	5709T25	548.38	5709T43	558.00	5709T527	485.43	5707T76	886.01
96″ × 48″	5709T46	766.50	5709T26	603.93	5709T44	614.53	5709T528	772.50	5707T77	1,206.27

Replacement 18-watt Fluorescent Bulb for Illuminated Boards ..... 5707T95 Each $18.50

Push Pins and Thumb Tacks

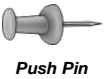

Push Pin

Thumb Tack

Head Material	Pin Material	Pkg. Qty.		Per Pkg.
Push Pins				
Plastic (Assorted Colors)	Steel	100	57115T22	$4.73
Aluminum	Stainless Steel	100	57115T21	11.79
Thumb Tacks				
Nickel-Plated Steel	Nickel-Plated Steel	60	3518T1	1.78

Electronic Moving Message Displays

One-Line 24″ Display

Two-Line 24″ Display

Remote Keypad

Messages get noticed with our brightly lit dot matrix LED displays. Program messages up to 30 ft. away (15 ft. for 5779T28) using the included wireless remote keypad—it has the same characters as a computer keyboard. Program characters to display in uppercase or lowercase and slim or wide. Letters center automatically. Display modes let you manipulate text so it scrolls, flashes, remains constant, and more. Displays also offer built-in animations, complete editing functions, and auto time-of-day message scheduling. Housing is black.

Displays operate on 120 VAC, 50/60 Hz and have an RS-232 computer interface serial port. They're for indoor use only. Operating temperature range is 32° to 120° F. Mounting screws and instructions are included. All are UL listed except 5779T76, which is ETL listed.

5779T28 includes software and a 25-ft. cable so you can program through your PC.

Two-line display shows messages on one or two lines. ***Replacement keypads*** include four AAA batteries, except 5779T23, which requires two AA batteries (not included).

Display Length	Max. No. of Char./Line	Character Height	No. of Colors	Housing Size, Wd. × Ht. × Dp.	Housing Material	Cord Lg./Plug	Amps	Displays	Each	Repl. Keypads	Each
One-Line Displays with 26 Display Modes											
24″	22	2 1/8″	8	25 7/8″ × 3 7/8″ × 2″	Aluminum	10 ft./2 Prong	0.4	5779T28	$307.02	5779T23	$54.00
46″	22	4″	8	49″ × 6 1/4″ × 4 1/4″	ABS	10 ft./3 Prong	0.9	5779T76	879.08	5779T34	54.00
Two-Line Display with 25 Display Modes											
24″	8 or 13	2 1/8″ or 4 7/8″	3	28 1/4″ × 7 3/4″ × 5 1/2″	Aluminum	10 ft./3 Prong	1.25	5779T42	1,476.00	5779T34	54.00

AA Batteries (4/Pkg.) ..... 71455K53 Per Pkg. $2.94

Combination Cork/Dry Erase Boards

Post announcements on the cork side; write messages on the dry erase side. Half of each board is a natural-tan cork surface, while the other half is a white dry erase writing surface. All boards have a full-length marker tray and include mounting brackets. Wall-mounting screws are not included.

Cork/melamine boards with oak frame have a nonmagnetic melamine dry erase surface.

Cork/porcelain boards with aluminum frame have a porcelain-coated magnetic steel dry erase surface.

O'all Size, Wd.×Ht.	Cork/Melamine Boards with Oak Frame	Each	Cork/Porcelain Boards with Aluminum Frame	Each
36″×24″	5950T51	$59.66	5950T34	$97.74
48″×36″	5950T52	99.74	5950T35	138.04
72″×36″	5950T53	146.66	5950T36	264.07

Bulletin Bars

Save space and keep posted items in a neat row. All are natural-tan cork with an aluminum frame. Mount anywhere with included magnetic strips and tape with adhesive on both sides. You can also mount bars with screws (not included).

O'all Lg.	Wd.		Each
18″	1″	8334T11	$11.26
24″	1″	8334T12	13.87
36″	1″	8334T13	15.79
48″	1″	8334T14	18.22

Grip-It Bulletin Bars

Just slip in up to 25 sheets of paper and our space-saving, clear plastic bars will hold them securely. Bars are 1⅛″ wide. All come with tape with adhesive on both sides for mounting (82905T42 also includes magnetic tape). You can also mount bars with screws (not included).

O'all Lg.		Each	O'all Lg.		Each
12″	82905T42	$6.22	48″	82905T46	$16.61
18″	82905T43	8.31	60″	82905T47	20.77
24″	82905T44	9.87	72″	82905T48	29.57
36″	82905T45	12.46	96″	82905T49	39.44

Chalkboards

Draw up your message on the most trusted medium around. All chalkboards have an aluminum frame and a chalk tray. They include mounting brackets. Wall-mounting screws are not included.

O'all Size, Wd.×Ht.	Green Surface	Each	Black Surface	Each
24″×18″	5906T16	$25.98	5906T36	$25.98
36″×24″	5906T17	38.86	5906T37	38.86
48″×36″	5906T18	66.16	5906T38	66.16
60″×36″	5906T19	136.59	5906T39	136.59
72″×48″	5906T25	181.93	5906T45	181.93
96″×48″	5906T23	211.81	5906T43	211.81

Chalkboard Eraser and Chalk

Eraser— Durable felt on a polyester backing. Size is 6″ Lg.×2″ Wd.×1¼″ Ht.

White Chalk— You'll get 144 sticks of white chalk per box.

Chalk Assortment— Each box contains 12 sticks of chalk: two each in blue, green, red, and yellow; one each in brown, orange, violet, and white.

Eraser

Chalk

		Each
Eraser	5724T14	$3.30
		Per Box
White Chalk	1648T7	$8.27
Chalk Assortment	5924T12	5.38

Portable Reversible Boards

Just flip these versatile boards to get the surface you need. They include four casters for easy mobility. Boards are nonmagnetic and have a full-length tray.

Cork/chalkboards have a natural-tan cork surface on one side and a green chalkboard surface on the other. Frame and stand are oak.

Cork/dry erase boards have a white melamine surface on one side and a natural-tan cork surface on the other. Frame and stand are oak.

Dry erase boards have a white melamine surface on both sides. Frame and stand are aluminum. Casters have a locking foot brake.

Board Wd.×Ht.	O'all Ht.		Each
Cork/Chalkboards			
48″×36″	71″	5717T21	$262.65
72″×48″	77″	5717T22	343.27
Cork/Dry Erase Boards			
48″×36″	71″	5854T11	296.48
72″×48″	77″	5854T12	394.96
Dry Erase Boards			
48″×36″	74″	57505T51	451.49
72″×48″	80″	57505T52	548.21

Portable Adjustable Dry Erase Board

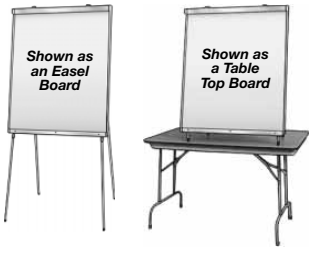

Make sure everyone can see what you're writing—telescopic legs adjust the overall height of this board from 38″ to 69″. The board measures 27″ Wd.×36″ Ht. and has a white, nonmagnetic melamine writing surface. It includes a spring-loaded flip-chart holder (paper pads sold separately on this page) and a full-length marker tray. The frame and legs are made of aluminum.

5960T48 ..... **Each** $192.03

Tripod Easels and Paper Pads

Make effective communication an art with these easels. They have an adjustable board holder except for the plastic model, which has a permanently positioned board holder.

Plastic and ***aluminum*** easels can be adjusted for floor or tabletop use. *Aluminum* easels include a bar for holding flip charts.

Tripod Easels

Material	O'all Ht.		Each
Gray Plastic	37″ or 62″	13535T13	$30.90
Solid Oak	64″	13535T15	48.67
Light Duty Aluminum	36″ to 66″	5930T14	69.96
Heavy Duty Aluminum	42″ to 73″	5930T18	109.33

White Paper Pads

All pads have three holes at the top for mounting to most easels. You'll get two pads per package. Each pad has 50 sheets. Size is 27″ Wd.×34″ Ht.

		Per Pkg.
Plain	13425T102	$34.39
With 1″ Grid	13425T101	34.39

Marker Set for Paper Pads

Colors are bold but won't bleed through. You'll get eight bullet-tip markers (two each in black and one each in blue, brown, green, magenta, orange, and red).

9321T7 ..... **Per Set** $8.87

Dry Erase Boards

Use these easy-to-erase boards to make announcements and presentations. All have a marker tray and include mounting brackets. Wall-mounting screws are not included.

Melamine boards are white and nonmagnetic.

Porcelain boards have a more durable white porcelain-coated magnetic steel surface that resists scratches and wear, even after repeated cleaning.

O'all Size, Wd.×Ht.	MELAMINE BOARDS with Aluminum Frame	Each	MELAMINE BOARDS with Oak Frame	Each	PORCELAIN BOARDS with Aluminum Frame	Each	PORCELAIN BOARDS with Oak Frame	Each
24″×18″	5767T11	$28.37	5767T91	$30.25				
36″×24″	5767T12	40.98	5767T92	40.41	5767T71	$90.05	5767T35	$130.38
48″×36″	5767T13	62.80	5767T93	68.55	5767T72	196.00	5767T82	215.46
72″×48″	5767T14	139.19	5767T94	174.48	5767T73	333.15	5767T83	348.79
96″×48″	5767T16	189.86	5767T95	219.82	5767T74	384.69	5767T84	481.71
120″×48″	5767T37	231.76			5767T76	489.78		

Magnetic-Mount Dry Erase Sheets and Boards

Flexible Sheet

Framed Board with Marker

Mount these magnetic-backed boards vertically or horizontally to virtually any metal surface.

Flexible sheets have a white laminate surface that accepts both dry erase markers (clean with a dry eraser or cloth) as well as damp erase markers (clean with a damp cloth). Sheets have an entirely magnetic back.

Framed boards have a white, nonmagnetic melamine surface that accepts dry erase markers. The boards are rigid and have magnetic strips on the back. Frame is plastic. They include a black, fine-tip dry erase marker with a hook-and-loop strip that can be attached to the board for convenient access.

O'all Size, Wd.×Ht.		Each
Flexible Sheets		
11″× 9″	4148T2	$5.20
24″×18″	4148T3	11.08
36″×24″	4148T5	23.71
Framed Boards		
9″× 6″	4148T4	32.14
12″× 9″	4148T7	39.26

Fine-Tip Dry Erase Markers (12/Pkg.)
4145T9 ..... **Each** Partial Pkg. $3.68 Full Pkg. $3.25

Dry Erase Board Markers, Erasers, and Cleaners

Markers

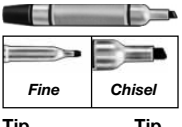

Make smooth, consistent, erasable lines. **To Order:** Please specify black, blue, green, or red.

Assortments include one each in black, blue, green, and red.

Tip Style	Tip Width	Boxes of 12	Per Box	Assortments	Per Set
Standard Markers					
Fine	3/64″	5929T61	$14.89	5929T66	$6.04
Chisel	1/8″	5929T31	18.08	5929T41	7.24
Low-Odor Markers					
Chisel	1/8″	5929T87	17.91	5929T97	6.20

Low-Odor Marker Kit— You'll get eight chisel-tip markers (black, blue, brown, green, orange, purple, red, and yellow), four fine-tip markers (black, blue, green, and red), an eraser, and 8 oz. of cleaner stored in a 12½″ Ht.×9 11/16″ Wd.×2½″ Dp. plastic binder.

5929T95 ..... **Each** $26.45

Erasers and Cleaners

Peel-away eraser has 16 thin, disposable pads. When a pad becomes dirty, peel it away to expose a clean pad. ***Disposable towelette erasers*** are thick and moist to deep-clean boards. ***Eraser with marker holder*** stores three dry erase markers (included in black, blue, and red). ***Dry erase board cleaner*** cleans marker residue. ***Dry erase board conditioner*** cleans, reconditions, and restores boards to their original write-on/wipe-off capability.

		Each
Peel-Away Eraser	5929T52	$9.48
Disposable Towelette Erasers (Canister of 50)	5929T55	9.33
Eraser with Marker Holder	5929T11	11.70
Dry Erase Board Cleaner (16-oz. Pump Spray)	5929T51	9.56
Dry Erase Board Conditioner (8-oz. Bottle)	5929T53	9.56

Invisible-Grid Dry Erase Boards

Draw neat and precise graphs and charts with the help of a grid that's invisible to the audience, but not to anyone standing beside the board. A 2″×2″ light-blue grid pattern is ingrained beneath these boards' magnetic, white painted steel surface. All boards have an aluminum frame and a marker tray. They include mounting brackets. Wall-mounting screws are not included.

O'all Size, Wd.×Ht.		Each
36″×24″	3866T11	$80.56
48″×36″	3866T12	127.87
48″×48″	3866T13	205.24
72″×48″	3866T14	272.73
96″×48″	3866T15	365.82

Rough-Duty Dry Erase Board

Provide announcements and instructions with a board designed to handle your rugged worksite. This board has a tough yellow plastic frame with shock-absorbing black rubber corners and a white, melamine-coated magnetic steel surface. Overall size is 24″ Wd.×18″ Ht. Marker holder, mounting brackets, and mounting screws are included.

6583T5 ..... **Each** $28.24

Dry Erase Wall and Board Covering

Transform walls, chalkboards, and other flat surfaces into a dry erase board. Simply apply vinyl adhesive (required; sold separately below) to this covering and smooth it into place. You can easily cut covering to size with a razor blade. Made of white laminate with a reinforced fabric backing. *Note:* For best results, make sure your mounting surface is sealed or painted before applying adhesive and covering.

Cut-to-length covering is 48″ wide. Maximum continuous length is 100 ft. **To Order:** Please specify length.

Wall and Board Covering

48″ Wd.×36″ Ht. ..... 52265T54 **Each** $91.54
Cut-to-Length ..... 52265T41 **Per Ft.** 1-4 $30.51 5-Up $25.43

Vinyl Adhesive

This adhesive is required for mounting both coverings shown above. It comes in a one-quart container and covers 70 square feet.

52265T43 ..... **Each** $10.78

Fluorescent Marker Boards

Messages glow on our black-surface boards with oak frame. Simply wipe clean with a damp cloth. They include a bullet-point fluorescent marker and mounting brackets. Wall-mounting screws are not included.

Marker set has one bullet-point fluorescent marker in each color: blue, green, pink, white, and yellow.

O'all Size, Wd.×Ht.			Each
24″×18″	52275T91		$57.23
36″×24″	52275T92		74.73
Marker Set	52275T99	**Per Set**	$22.86

Dry Erase Board Planning Kits

Keep an eye on production assignments, job schedules, time allocation, and inventory control. These white, porcelain-coated magnetic steel boards have blue grid lines that form 1″×2″ spaces. Write or type on the color-coded data cards (included in blue, green, orange, white, and yellow), slip them into the 1″×2″ magnetic card holders (included), and place them on the board. Magnetic month, date, and day headings are also included.

All boards have an aluminum frame. The frame has a self-hanging groove that slips over nails or screws for wall mounting. Wall-mounting hardware included.

O'all Size, Wd.×Ht.	No. of Lines Horizontal	No. of Lines Vertical	No. of Card Holders	No. of Data Cards		Each
24″×18″	17	11	75	500	83155T51	$134.10
36″×24″	23	17	100	500	83155T52	219.71
48″×36″	35	23	200	1000	83155T53	336.70
72″×48″	47	35	300	2000	83155T54	596.64

Repl. 1″×2″ Card Holders (25/Pkg.) ..... 83155T67 **Per Pkg.** $12.81
Repl. Data Cards (1000/Pkg.) ..... 83155T68 **Per Pkg.** $11.56

Custom Dry Erase Board Planning Kits

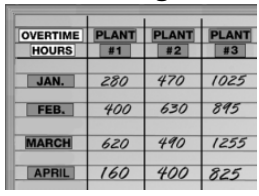

Create the ultimate chart for your needs—and when your needs change, just rearrange the components included in these planning kits.

Kits have a white, porcelain-coated magnetic steel board with blue horizontal lines in 1″ increments and an aluminum frame. In addition to the board, kits include one roll of adhesive-backed vinyl chart tape for clear, straight rows and columns (tape is removable); blue as well as white magnetic ribbon that has a write-on surface so you can move data in seconds; ½″ high press-on black vinyl letters and numbers; dry erase markers in four colors (black, blue, green, and red); a magnet-backed felt eraser; and wall-mounting hardware.

O'all Size, Wd.×Ht.	No. of Horizontal Lines	Magnetic Ribbon (⅞″×30″)	Vinyl Letters and Numbers (1000/set)		Each
24″×18″	17	2 blue, 2 white	1 Set	47825T17	$130.31
36″×24″	23	2 blue, 2 white	1 Set	47825T18	224.06
48″×36″	35	4 blue, 4 white	3 Sets	47825T19	373.29

Repl. Chart Tape (3/32″×648″, Black) ..... 47825T21 ..... 5.52
Repl. Magnetic Ribbon (⅞″×30″, Blue) ..... 47825T35 ..... 3.72
Repl. Magnetic Ribbon (⅞″×30″, White) ..... 47825T33 ..... 3.72

Planning and Scheduling Boards

Front

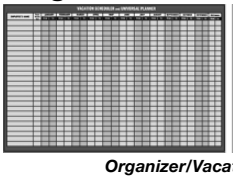

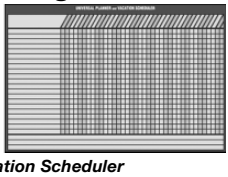

Back

Organizer/Vacation Scheduler

60-Day Organizer

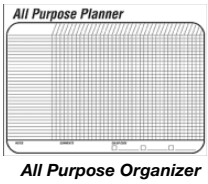

All Purpose Organizer

Keep track of activities, meetings, deadlines, and more. Wall-mounting fasteners are not included.

Laminated plastic marker boards are flexible, yet strong and have a reversible mylar-laminated surface. For use with water-based pens only. Clean with a damp cloth. Overall size is 36″ Wd.×24″ Ht. Includes one black water-based pen.

Framed hardboard dry-erase boards are a melamine-laminated stock mounted to thick, durable hardboard and then framed in aluminum. For use with dry-erase markers only. Clean with a dry eraser or cloth. Overall size is 32″ Wd.×24″ Ht. Includes four dry-erase markers (two black, one blue, and one red) and mounting hoops.

Replacement pen set for marker boards has one black, blue, green, and red water-based pen.

		Each
Laminated Plastic Marker Boards		
30-Day/60-Day Organizer	5715T13	$23.19
Organizer/Vacation Scheduler	5715T91	22.88
Framed Hardboard Dry Erase Boards		
30-Day Organizer	5715T51	63.48
60-Day Organizer	5715T52	63.48
All Purpose Organizer	5715T56	86.30

Replacement Pen Set for Marker Boards .... 5715T36 **Per Set** $5.19

Chart-Maker Components for Dry Erase Boards

Magnetic Ribbon

Month

Day

Number

Adhesive-Backed Vinyl Chart Tape

Circle Magnetic Chart Indicator

Square Magnetic Chart Indicator

Turn any porcelain-coated magnetic steel board into a well-organized chart. **To Order:** Please specify color where necessary.

Magnetic ribbon has a write-on surface (must use markers sold below) and allows you to move data in seconds. ***Adhesive-backed vinyl chart tape*** helps you make straight rows and columns. Tape is removable and can be used on magnetic and nonmagnetic boards. ***Magnetic column headings*** identify days, dates, weeks, and months with white lettering on a black background. ***Magnetic chart indicators*** have write-on surfaces and come in circle and square shapes. ***Water-based markers*** (not for use on dry erase surfaces) can be used to mark the ribbon and chart indicators. Simply wipe clean with a damp cloth.

	Available Colors★		Each
Magnetic Ribbon			
½″ × 30″	BK, BL, G, R, W, Y	5897T11	$3.34
1″ × 30″	BK, BL, G, R, W, Y	5897T12	5.03
Adhesive-Backed Vinyl Chart Tape			
⅛″×324″	BK, BL, G, R, W, Y	5897T21	6.09
¼″×324″	BK, BL, G, R, W, Y	5897T22	7.11
Magnetic Column Headings			
Months (1″×2″) January through December		5897T41	12.25
Days (1″×2″) Sunday through Saturday		5897T42	8.85
Numbers (1″×1″) 1 through 31		5897T44	13.06
Magnetic Chart Indicators (20/Set)			**Per Set**
¾″ Circles	BL, G, R, W	5897T31	$9.83
¾″ Squares	BL, G, R, W	5897T32	11.28
Water-Based Markers (12/Box)			**Per Box**
Fine Tip (1/16″ tip width)	BK	5897T51	$17.25

★ BK=Black, BL=Blue, G=Green, R=Red, W=White, Y=Yellow.

Planning and Scheduling T-Card Racks

Great for color-coded visual planning and scheduling control, these racks are made of 24-ga. steel and have 50 slots in each column. They're designed so the upper ½″ of the T-card is always visible (T-cards sold separately). Racks include wall-mounting hardware. Color is beige.

Blank T-cards have a write-on surface and are similar in weight to index cards. Size is 3⅝″ Wd.×4¾″ Ht. Package quantity is 100. **To Order:** Please specify color (beige, blue, green, orange, pink, white, or yellow).

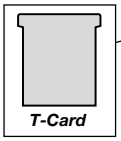

T-Card

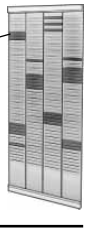

Rack with T-Cards

O'all Size, Wd.×Ht.	Card Capacity	No. of Columns		Each
15″×38″	200	4	8432T14	$152.73
19″×38″	250	5	8432T15	187.27
31″×38″	400	8	8432T16	298.74

Blank T-Cards ..... 8432T2 **Per Pkg.** 1-9 $5.69 10-Up $5.18

United States Flags

Indoor/Outdoor Flag

Indoor Flag Set

Proudly made—and raised—in the United States of America.

Indoor/outdoor United States flags are double-stitched for added strength and have embroidered stars.

Sizes 6 ft.×10 ft. and smaller have brass grommets; sizes 8 ft.×12 ft. and larger have heavy duty chrome-plated D-rings (unless noted).

Two-ply polyester withstands the most demanding weather conditions, especially high winds. Made of highly durable materials that resist sunlight and water. *Nylon* has enhanced fade resistance and flies in the slightest of breezes. Made of highly durable materials that resist sunlight and water. *Two-ply cotton* is made of all-natural fibers.

Indoor United States flag set has a fringed nylon flag with embroidered stars, sewn stripes, and a pole sleeve. Size is 3 ft.×5 ft. Furnished with an 8-ft. long, 1¼″ dia. two-piece oak pole; a gold-tone 8-lb. stand; a 7″ high eagle ornament; and a gold cord with tassels.

Flag Size, Ht.×Wd.	For Flagpole Height (Above Ground)	Two-Ply Polyester	Each	Nylon	Each	Two-Ply Cotton	Each
Indoor/Outdoor United States Flags							
2 ft.× 3 ft.	15 ft.	____	____	7535T12	$22.62	7536T12	$26.67
3 ft.× 5 ft.	20 ft.	13735T11	$37.05	7535T14	30.65	7536T14	39.62
4 ft.× 6 ft.	25 ft.	13735T23	52.19	7535T16	42.31	7536T16	51.92
5 ft.× 8 ft.	30 ft.	13735T35	79.47	7535T18	61.24	7536T18	81.92
5 ft.× 9½ ft.	35 ft.	____	____	7535T22	71.24	7536T22	93.21
6 ft.×10 ft.	35 ft.	13735T47	113.91	7535T24	95.36	7536T24	121.67
8 ft.×12 ft.	40 ft.	13735T59	180.32	7535T26▲	147.54	____	____
10 ft.×15 ft.	50 ft.	13735T63	282.50	7535T55▲	222.29	____	____
12 ft.×18 ft.	60 ft.	13735T76	355.27	7535T63▲	304.98	____	____

Indoor United States Flag Set ..... 74945T1 Each $179.27

▲Have galvanized metal thimbles.

Armed Forces Flags

Navy

Marines

POW/MIA

Indoors or out, these nylon flags stand the test of time. All have brass grommets and screen-dyed images.

	Flag Size, Ht.×Wd.	For Flagpole Ht. (Above Ground)		Each
Navy	3 ft.×5 ft.	20 ft.	83205T14	$46.05
Marines	3 ft.×5 ft.	20 ft.	83205T21	42.68
Army	3 ft.×5 ft.	20 ft.	83205T12	43.75
Air Force	3 ft.×5 ft.	20 ft.	83205T16	44.87
Coast Guard	3 ft.×5 ft.	20 ft.	83205T18	41.67
POW/MIA	3 ft.×5 ft.	20 ft.	83205T31	37.18
POW/MIA	4 ft.×6 ft.	25 ft.	83205T32	48.04

State and Foreign Nation Flags

Choose from the 50 state flags as well as foreign nation flags. Flags have official colors, screen-dyed images, and are suitable for indoor and outdoor use. All are nylon with brass grommets. Choose from the following sizes: 3 ft. Ht.×5 ft. Wd., 4 ft. Ht.×6 ft. Wd., and 5 ft. Ht.×8 ft. Wd. For flagpole height based on flag size, see Indoor/Outdoor United States Flags shown above.

To Order: For state flags, please ask for 7545T711 and specify size. For foreign nation flags, please ask for 7545T811 and specify size.

ISO Registered Flags

Made of nylon with brass grommets, these indoor/outdoor flags are white with blue lettering. Images are screen dyed. Size is 3 ft. Ht.×5 ft. Wd.

		Each
ISO-9001:2000	9357T21	$41.68
ISO-9001:2008	9357T24	41.68
ISO/TS 16949	9357T22	42.68

Aluminum In-Ground Tapered Flagpoles

Raise your flag with confidence. Poles are tapered and are one-piece aluminum construction with a seamless satin finish, unless noted. They come with a gold anodized aluminum ball ornament, a pulley to raise and lower the flag, polypropylene rope, a 9″ cast aluminum rope cleat, an aluminum base collar, and a ground socket.

Standard flagpoles have a stationary pulley cap and two nickel-plated zinc snap hooks, unless noted. 7525T21 is a three-piece pole that can be shipped via UPS.

Heavy duty flagpoles have a revolving pulley with a 1¼″ NPT male connection and two nickel-plated zinc swivel snap hooks with covers. The revolving pulley allows the flag to move with the wind. 7170T7 is a two-piece pole.

For Max. Flag Size, Ht.×Wd.	Height Above Ground	O'all Ht.	Bottom Dia.	Top Dia.	Wall Thick.	Ball Dia.		Each
Standard Flagpoles								
3 ft.× 5 ft.	20 ft.	22 ft.	3″	1⅞″	⅛″	3″	7525T21★	$475.00
4 ft.× 6 ft.	25 ft.	27 ft.	3″	1⅞″	⅛″	3″	7525T12★	427.50
5 ft.× 8 ft.	30 ft.	33 ft.	4″	2⅜″	⅛″	4″	7525T13	627.17
6 ft.×10 ft.	35 ft.	38½ ft.	5″	3″	5/32″	5″	7525T14■	959.50
Heavy Duty Flagpoles								
3 ft.× 5 ft.	20 ft.	23 ft.	5″	3″	3/16″	5″	7170T3	863.64
4 ft.× 6 ft.	25 ft.	27 ft.	5½″	3½″	3/16″	6″	7170T4	1,085.71
5 ft.× 8 ft.	30 ft.	33 ft.	6″	3½″	3/16″	6″	7170T5	1,217.54
6 ft.×10 ft.	35 ft.	38½ ft.	7″	3½″	3/16″	8″	7170T6	1,543.33
8 ft.×12 ft.	40 ft.	44 ft.	8″	3½″	3/16″	8″	7170T7	2,083.33

★Snap hooks are nylon. ■Revolving pulley cap with 1¼″ NPT male connection.

Flagpole Accessories

Gold Anodized Alum. Ball Ornaments

Ball Dia.	Thread		Each
3″	½″-13	7534T4	$18.84
4″	½″-13	7534T5	27.47
5″	½″-13	7534T6	35.83
6″	½″-13	7534T7	46.72
8″	½″-13	7534T8	71.61

Aluminum Base Collars (0.060″ Thick)

Collars are one piece.

To Order: Please specify pole bottom diameter.

Outside Dia.	For Pole Bottom Dia.		Each
12″	3″, 4″, 5″, 5½″, 6″	7525T27	$23.75
16″	7″, 8″	7525T28	30.69

Pulleys, Rope Cleats, and Snap Hooks

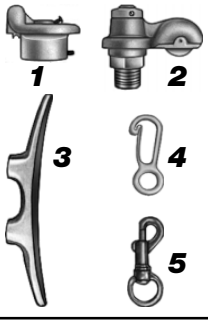

Pulleys allow you to raise and lower the flag. They fit ¼″ and 5/16″ dia. rope (see 3856T on page 1412) and have ½″ female threads on top to accept an ornament. *Stationary aluminum pulley* fits poles with a 1⅞″ top dia. *Revolving aluminum pulley* has a 1¼″ NPT male connection that fits poles with a 3″ or 3½″ top diameter.

			Each
1	Stationary Aluminum Pulley	7534T11	$24.43
2	Revolving Aluminum Pulley	7534T12	58.24
3	9″ Lg. Aluminum Rope Cleat with Screws	7534T24	13.17
4	2¾″ Lg. Nylon Snap Hook	7534T26	.77
5	3¾16″ Lg. Brass Swivel Snap Hook	7534T25	6.13

Solid Color Marking Tape

This general purpose, adhesive-backed PVC tape is 6.8 mils thick and is supplied on a 3″ ID cardboard spool. Meets Fed. Spec. PPP-T-66, Type 1, Class 2. For indoor and outdoor use. **To Order:** Please specify black, blue, green, magenta, orange, red, white, or yellow.

Width	36-yd. Roll	Per Roll	60-yd. Roll	Per Roll
1/2″	6031T893	$2.19	6029T93	$2.84
3/4″	6031T894	3.14	6029T94	4.24
1″	6031T896	4.43	6029T95	5.64
2″	6031T897	8.87	6029T96	11.28
3″	6031T898	13.31	6029T97	16.92
4″	6031T899	16.93	6029T98	22.56

3M #471 Marking Tape

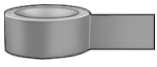

Conforms equally well to curved and uneven surfaces as it does to flat, even surfaces. This high-performance vinyl tape meets OSHA requirements for identifying hazardous areas, fire lanes, and safety equipment. Tape is 5 mils thick, 36 yards long, and is supplied on a 3″ ID cardboard spool. For indoor use.

Solid— **To Order:** Please specify color: black, blue, orange, red, white, or yellow (unless noted).

Striped— Black/white tape has a 2⅝″ stripe width. Yellow/black tape has a 2⅞″ stripe width. **To Order:** Please specify black/white or yellow/black.

Width		Per Roll	Width		Per Roll
Solid			***Solid (Cont.)***		
1/2″	6047T31	$13.55	4″	6047T36★	$83.42
3/4″	6047T32	16.69	***Striped***		
1″	6047T33	20.86	2″	6047T41	58.60
2″	6047T34	41.71	3″	6047T42	87.90
3″	6047T35	62.57			

★ Not available in blue or orange.

Striped and Checkered Marking Tape

Striped

Checkered

Draw attention to areas with this PVC, adhesive-backed tape. Tape is supplied on a 3″ ID cardboard spool. Meets Fed. Spec. PPP-T-66. For indoor and outdoor use.

Striped— Tape is 8 mils thick. Stripe width is 2″.

Conformable Striped— Tape conforms to uneven surfaces for a secure hold. Tape is 6.8 mils thick. Stripe width is 1½″.

Checkered— Tape is 5 mils thick and has 1″ squares.

To Order: Please specify color from the following combinations:

Black/White— Marks traffic and housekeeping areas.

Green/White— Designates safety areas.

Red/White— Marks fire lanes and hazard areas.

Yellow/Black— Identifies physical hazards.

Yellow/Magenta— Signifies radiation hazards.

Width	18-yd. Roll	Per Roll	36-yd. Roll	Per Roll
Striped				
3/4″	6052T73	$2.84	6052T75	$5.04
1″	6052T74	3.76	6052T78	6.68
2″	6052T41	7.52	6052T43	10.44
3″	6052T42	11.28	6052T44	15.66
4″	6052T26	15.04	6052T29	20.88
Conformable Striped				
2″	—	—	59975T51	7.92
3″	—	—	59975T52	11.88
4″	—	—	59975T53	15.84
Checkered				
2″	59965T71	10.40	59965T72	18.80
3″	59965T73	15.60	59965T74	28.20
4″	59965T75	20.80	59965T76	37.60

Extra-Wide Marking Tape

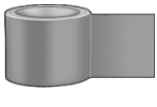

Cover more floor and achieve greater visibility with this extra-wide tape. The one strip application also saves time. Tape is 30 mil thick adhesive-backed PVC, and is durable for use in high traffic areas. Rolls are 50 ft. long and are supplied on a 3″ ID cardboard spool.

Solid— **To Order:** Please specify color: black, blue, green, orange, red, white, or yellow.

Striped— Yellow and black tape identifies hazardous areas. Stripe width is 2″.

Width	Solid	Per Roll	Striped	Per Roll
8″	8390K1	$94.44	8390K6	$110.00
12″	8390K2	138.89	8390K7	187.78
24″	8390K3	261.11	8390K8	332.22
34″	8390K4	370.00	8390K9	462.22

Message Tape

Stick the message right where it's needed—on walls, floors, stairs, just about anywhere you need to identify hazards. Made of 6-mil thick vinyl, tape is adhesive backed and has a black message. Rolls are 3″ wide, 18 yards long, and supplied on a 3″ ID cardboard spool. For indoor use.

Message	Yellow Background	Per Roll	Red Background	Per Roll
Caution	2799T11	$16.27	—	—
Caution Do Not Enter	2799T12	16.27	—	—
Caution Watch Your Step	2799T13	16.27	—	—
Caution Hard Hat Area	2799T15	16.27	—	—
Danger	2799T16	16.27	2799T36	$16.27
Danger Keep Out	2799T17	16.27	2799T37	16.27
Danger High Voltage	2799T18	16.27	2799T38	16.27
Authorized Personnel Only	2799T19	16.27	—	—
Restricted Area	2799T21	16.27	—	—

Fluorescent Marking Tape

Catch everyone's attention with this fluorescent tape. It is adhesive backed, made of 5.5-mil thick polyester-laminated paper, and supplied on a 3″ ID cardboard spool. Roll is 1″ wide and 10 yards long. For indoor use.

To Order: Please specify light orange, lime green, red-orange, or yellow.

3215T2 ..... **Per Roll** $5.24

Reflective Marking Tape

Highlight nighttime hazards with this reflective, adhesive-backed tape. Tape has a peel-off protective paper on the adhesive. Made of metallized polyester with glass beads and aluminum, tape is 6.8 mils thick and is supplied on a 3″ ID cardboard spool. Meets Fed. Spec. LS-300 Class 1. For indoor and outdoor use.

Note: Not for use with applicators sold on this page.

Solid— **To Order:** Please specify blue, green, orange, red, white, or yellow.

Striped— Stripe width is 3¼″. **To Order:** Please specify black/white, red/white, or yellow/black. *Note:* Red/white is not recommended for long-term outdoor use.

Width	5-yd. Roll	Per Roll	10-yd. Roll	Per Roll
Solid				
1″	5997T81	$6.92	5997T82	$12.37
2″	5997T83	12.80	5997T84	26.20
3″	5997T85	22.36	5997T86	36.37
4″	5997T87	25.68	5997T88	48.41
Striped				
1″	9195T64	12.08	9195T41	17.88
2″	9195T71	21.20	9195T42	27.15
3″	9195T76	29.32	9195T43	38.68
4″	9195T82	32.60	9195T89	50.57

Floor Marking Tape Applicators

Standard

Premium

Apply tape neatly and efficiently with these easy-to-load applicators. Made of steel. *Note:* Work with all our tapes on this page and the following page except reflective tapes.

Standard applicator has two rear wheels for stability and applies tape in a straight line. Applicator has a black painted finish.

Premium applicator has two rear wheels that can be locked into position to make curved or straight lines with tape. Wheels can also be adjusted to either side for runs along walls or pallet racks. Applicator has a red painted finish. Handle removes for easy storage.

O'all Ht.	For Spool ID	Max. Roll Dia.	For Tape Width		Each
Standard					
39¾″	3″	12″	¾″ to 4¼″	6032T3	$150.90
Premium					
37″	3″	6½″	2″, 2½″, 3″, 3⅜″, 3⅝″	6032T6	283.80

Super-Life Solid Color Marking Tape

Ideal for high-traffic vehicle areas, this long-life, adhesive-backed PVC tape is scuff resistant, washable, and eliminates downtime required for paint striping. Install on any smooth, clean, dry surface above 35° F. Tape is 4″ wide and 34 mils thick. Rolls are 100 ft. long and supplied on a 3″ ID cardboard spool. For indoor use. **To Order:** Please specify blue, green, orange, red, white, or yellow.

6094T71	Per Roll	$155.35

Clean Room Striped Marking Tape

Designate critical areas of your clean room with this adhesive-backed vinyl tape. Each roll is individually bagged in a Class 100 clean room to protect against contamination. Tape is 9 mils thick and has a 2¾″ wide stripe. Rolls are 18 yards long and supplied on a 3″ ID plastic spool. For indoor use. **To Order:** Please specify green/white, red/white, or yellow/black.

Width		Per Roll
2″	4012T4	$19.98
3″	4012T7	30.03

Glow-in-the-Dark Marking Tape

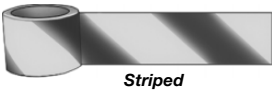

Striped

When the lights go out, this tape glows to identify exits, stairways, and hazards for up to six hours. Tape is activated after 10 to 15 minutes of exposure to natural or artificial light. It is adhesive backed, made of 8-mil thick vinyl, and supplied on a 3″ ID cardboard spool. For indoor use.

Solid—Light green color.

Striped—Has colored stripes on light-green background. Stripe is 3½″ wide. **To Order:** Please specify black or red stripes.

Width	5-yd. Roll	Per Roll	10-yd. Roll	Per Roll
Solid				
1″	6082T7	$11.13	6082T2	$17.77
2″	6082T8	19.70	6082T4	30.74
3″	6082T9	23.31	6082T5	44.26
Striped				
1″	5994T51	10.94	5994T54	17.90
2″	5994T52	19.40	5994T55	33.28
3″	5994T53	26.65	5994T56	45.55

Glow-in-the-Dark Arrow Marking Tape

Point the way out of the dark with this adhesive-backed vinyl tape. Activated after 10 to 15 minutes of exposure to natural or artificial light, this tape remains illuminated for up to six hours. Tape is 8 mils thick and supplied on a 3″ ID cardboard spool. For indoor use.

2″ wide tape has 6″ long green arrows repeated every 10″ on a black background. ***3″ wide tape*** has 8″ long green arrows repeated every 12″ on a black background.

Width	5-yd. Roll	Per Roll	10-yd. Roll	Per Roll
2″	37965T42	$21.28	37965T34	$44.89
3″	37965T48	31.95	37965T37	67.38

Reflective Pavement-Marking Tape

Apply this adhesive-backed tape to clean, dry pavement to redirect traffic around construction sites and to mark driveways and parking lots. It conforms to road surfaces for a firm hold. Made of aluminum foil coated with vinyl paint and glass beads for reflectivity. Tape is 20 mils thick and meets ASTM D4956. Rolls are 4″ wide and are supplied on a 3″ ID cardboard spool. For outdoor use.

Color	10-yd. Roll	Per Roll	50-yd. Roll	Per Roll
Orange	37835T16	$17.84	37835T13	$64.58
White	37835T14	18.12	37835T11	64.16
Yellow	37835T15	18.12	37835T12	64.16

High-Visibility Marking Strips

These eye-catching, 9″×2″ adhesive-backed strips are easy to apply in awkward, hard-to-reach places. For indoor and outdoor use. Package quantity is 5 strips. **To Order:** Please specify reflective red or yellow (both are 8-mil thick polyester) or fluorescent orange (7-mil thick vinyl).

1702T72	Per Pkg.	$12.75

Peel-and-Stick Marking Dots and Arrows

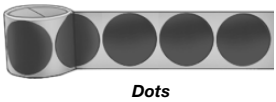

Dots

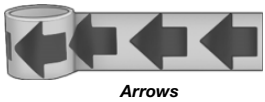

Arrows

Direct traffic in your facility with these adhesive-backed 6.5-mil thick vinyl dots and arrows. They are supplied on a 3″ ID cardboard spool. For indoor and outdoor use. **To Order:** Please specify blue, green, red, white, or yellow.

Size	100 per Roll	Per Roll	500 per Roll	Per Roll
Dots				
2″ Dia.	6058T24	$5.24	6058T21	$27.76
3″ Dia.	6058T28	9.52	6058T22	42.64
4″ Dia.	6058T33	11.70	6058T23	61.63
Arrows				
2″×2″	5993T41	6.32	_____	_____
3″×3″	5993T42	9.68	_____	_____
4″×4″	5993T43	15.16	_____	_____
5″×5″	5993T45 ♦	13.48	_____	_____

♦ 50 per roll.

Reflective Marking Dots

Made of 22-mil thick adhesive-backed vinyl. For indoor and outdoor use. **To Order:** Please specify blue, orange, red, white, yellow, fluorescent orange, or fluorescent red-orange.

Dot Dia.	No. of Dots per Sheet		Per Sheet
1″	64	6042T9	$7.07
1⅞″	16	6042T19	7.07
2½″	9	6042T29	7.07
3¼″	5	6042T39	7.07

Aerosol Marking Paint

Use this paint on its own or with the dispensers sold on this page to mark buried utility lines, designate specific areas at construction sites, and for surveyor marking. Temperature range is 40° to 90° F. Paint is compliant under all state VOC rules in effect on October 1, 2010.

Water-Based Paint—Colors appear brighter than solvent-based paint. Paint will not harm grass or other plant life.

Solvent-Based Paint—Lasts longer than water-based paint.

To Order: Please specify blue, red, white, yellow, fluorescent green, fluorescent orange, fluorescent pink, or fluorescent red-orange.

	Net Wt.	Coverage		Each 1-11	Each 12-Up
Water-Based Paint					
16-oz. Can	13 oz.	300 ft.	6018T53	$4.54	$3.82
20-oz. Can	17 oz.	400 ft.	6018T67	5.14	4.32
Solvent-Based Paint					
20-oz. Can	17 oz.	300 ft.	6018T7	5.14	4.32

Aerosol Paint Dispensers

With a pistol-grip handle and trigger-style spray control, these dispensers make it easy to apply the 16- and 20-oz. marking paint sold separately on this page.

Hand-held dispenser is lightweight and great for freehand marking.

Walk behind dispenser is 34″ high with a guidance wheel to make marking large areas easy.

Measuring wheel walk behind dispenser is 31½″ high and has a five-digit counter for measuring distance. The counter adds when moving forward and subtracts in reverse. Two-wheel design provides stability.

	Stripe Wd.		Each
Hand Held	2″	5990T41	$23.53
Walk Behind	1½″	5990T31	24.46
Measuring Wheel Walk Behind	1½″	5990T51	89.00

Overhead Aerosol Marking Paint

Specially designed nozzle sprays paint in an upward direction for easy overhead marking without clogging. The paint is water-based and highly visible in darkness and from a distance. One 20-oz. (17-oz. net wt.) can will mark 330 feet with a 2″ wide stripe. Temperature range is 32° to 120°F. Paint is compliant under all state VOC rules in effect on October 1, 2010. **To Order:** Please specify fluorescent green, fluorescent orange, or fluorescent red.

6063T61 ..... **Each** 1-11 $4.62 12-Up $4.03

Vanishing Aerosol Markers

Temporarily mark areas with chalk, paint, and sealer. Marks disappear after exposure to the elements. Each comes in a 20-oz. (15-oz. net wt.) can. Temperature range is 60° to 80°F. Markers are compliant under all state VOC rules in effect on October 1, 2010.

Chalk—Disappears in 10 to 20 days when exposed to water, traffic, or abrasion. Can be immediately washed off with a pressure washer. One can will mark 350 feet with a 2″ wide stripe. **To Order:** Please specify blue, green, orange, red, white, or yellow.

Paint—Depending on exposure to sunlight and traffic, UV-sensitive paint fades to clear in 30 to 35 days. One can will mark 350 feet with a 2″ wide stripe. **To Order:** Please specify fluorescent orange, fluorescent pink, fluorescent red, or fluorescent yellow.

Sealer—Clear coating seals and protects chalk and paint for up to 60 days. One can will mark 500 sq. ft. with a 2″ wide stripe.

			1-11	12-Up
Chalk	**5956T41**	**Each**	$5.38	$4.84
Paint	**5956T42**	**Each**	$6.18	$5.56
Sealer	**5956T43**	**Each**	$4.91	$4.42

Traffic and Zone Marking Paint

Perfect for marking traffic lanes, parking lots, and factory floors. Latex paints are compliant under all state VOC rules in effect on October 1, 2009. Oil- and chlorinated rubber-based paints and water-based sealer are compliant under all state VOC rules in effect on June 1, 2011, except in California. Paint thinner is compliant under all state VOC rules in effect on January 1, 2011, except in California.

Latex Paint—Cleans up easily with water.
Oil-Based Paint—Better durability than latex paint on surfaces that are not cleaned prior to application.
Chlorinated Rubber-Based Paint—Lasts longer than latex and oil-based paints.
Water-Based Sealer—Clear coat increases marking paint life.

	LATEX				OIL BASED				CHLORINATED RUBBER BASED			
	1 gallon		5 gallons		1 gallon		5 gallons		1 gallon		5 gallons	
Color		Each		Each		Each		Each		Each		Each
Yellow	**5996T21**	$32.09	**5996T34**	$95.29	**6033T11**	$56.31	**6033T28**	$184.95	**10785T16**	$46.58	**10785T25**	$172.40
White	**5996T22**	31.51	**5996T35**	92.88	**6033T12**	55.17	**6033T29**	180.00	**10785T14**	46.58	**10785T21**	172.40
Handicap Blue	**5996T43**	33.08	**5996T47**	102.58	**6033T45**	55.60	**6033T47**	181.31				
Black	**5996T44**	38.67	**5996T48**	116.91					**10785T18**	44.91	**10785T27**	162.30
Red	**5996T45**	45.96	**5996T49**	146.91	**6033T52**	54.05	**6033T53**	192.14				

Water-Based Sealer, 5 gallons	**6033T31**	**Each**	$213.57
Paint Thinner for Oil-Based and Chlorinated Rubber-Based Paint, 5 gallons	**10785T49**	**Each**	$106.57

Aerosol Striping Paint

Use with stencils or striping machines to produce clean lines and permanently mark areas such as parking lots, facility floors, and athletic fields. Temperature range is 65° to 80°F. Fits most striping machines including those sold on this page. For stencils, see pages 1936-1937.

Paint is compliant under all state VOC rules in effect on October 1, 2010.

Water-based paint will not harm grass or other plant life. **To Order:** Please specify blue, red, white, yellow, or fluorescent orange.

Solvent-based paint is ideal for use on concrete and asphalt and lasts longer than water-based paint. **To Order:** Please specify black, blue, green, orange, red, white, or yellow.

	Net Wt.	Average Coverage♣		Each 1-11	Each 12-Up
Water-Based Paint					
20-oz. Can	18 oz.	400 ft.	**9192T4**	$8.23	$7.11
Solvent-Based Paint					
20-oz. Can	18 oz.	275 ft.	**9192T1**	7.00	6.04

♣ Coverage is based on 2″ stripe width.

Aerosol Paint Dispenser and Stripers

For use with aerosol striping paint only. Dispenser and stripers have a pistol grip with trigger spray control.

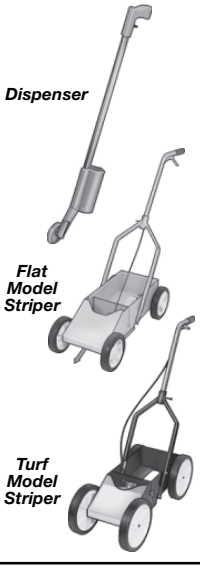

Dispenser

Great for quick lines and smaller jobs. Overall height is 34″. Spray pattern is 2″ wide.

36495T5 ..... **Each** $30.50

Stripers

Made of heavy-gauge black painted steel, these stripers have 1½″ wide rubber-tread wheels. Stripers include a windscreen and hold 12 extra cans. An adjustable spray pattern lets you create 2″ to 4″ wide stripes. Stripers collapse for easy storage.

Flat model has 7″ dia. wheels for use on pavement or concrete. Overall height is 37¾″. *Turf* model has 10″ dia. wheels and is designed for use on turf and other uneven surfaces. Overall height is 36¾″.

		Each
Flat Model	**36495T81**	$88.78
Turf Model	**36495T82**	94.44

Hand-Pump Paint Striper

A few strokes of the self-contained hand pump in the tank lid builds pressure for even, efficient striping. Allows striping next to curbs and walls. It has a 4-gallon, Type 304 stainless steel tank; a brass shutoff valve; and 8″ Dia.×1¾″ Wd. solid rubber wheels. It works with all types of paint, paints a 4″ wide stripe, and will stripe 250 ft. per gallon of paint.

Optional spray-wand attachment lets you paint large arrows and numbers on flat surfaces. Includes 10 ft. of hose, two spray tips, and a 24″ brass extension wand. ***Repair kit*** includes a 2″ OD barrel gasket, rubber diaphragm, and plunger cup and washer.

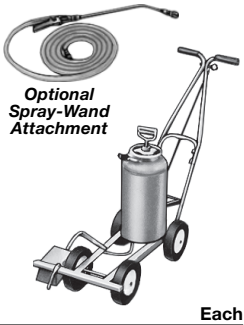

		Each
Striper	**6030T22**	$597.74
Optional Spray-Wand Attachment	**6030T1**	102.74
Repair Kit for Pump Assembly	**6030T4**	14.54
Replacement Parts		
4⅞″ OD Rubber Pump Gasket	**6030T5**	6.64
Spray Tip	**6030T3**	12.59
Mesh Strainer Screen	**6030T8**	9.61
Shutoff Valve	**6030T11**	33.55

Engine-Driven Big-Job Paint Striper

Packed with power to perform big striping jobs, this striper features a 4-hp Honda gas engine that drives a compressor, and 10″ Dia.×4″ Wd. pneumatic wheels. It allows striping next to curbs and walls. Its Type 304 stainless steel tank holds 7 gal. of paint and is mounted to a welded steel frame. Recommended for use with latex paint. A single gallon of paint will stripe approx. 600 ft. with a 4″ wide stripe. Stripe width adjusts from 2″ to 6″. Includes a 10-ft. hose; spray-wand attachment for painting curbs, walls, and stencils; and fine, medium, and coarse spray tips.

		Each
Striper	**6028T2**	$1,896.10
Replacement Parts		
Fine Spray Tip	**6028T21**	20.70
Medium Spray Tip	**6028T22**	20.70
Coarse Spray Tip	**6028T23**	20.70
Ball Check Nozzle	**6028T13**♠	32.89
4⅞″ OD Cover Gasket	**6028T14**	12.59
2¼″ OD Pump Barrel Gasket	**6028T15**	7.51
Striper Strainer Assembly	**6028T16**	47.31
Inline Paint Tank Strainer	**6028T17**	38.90
Pump Check Valve	**6028T18**	6.47

♠ Includes ball, spring, tip, and retainer nut.

Reflectors

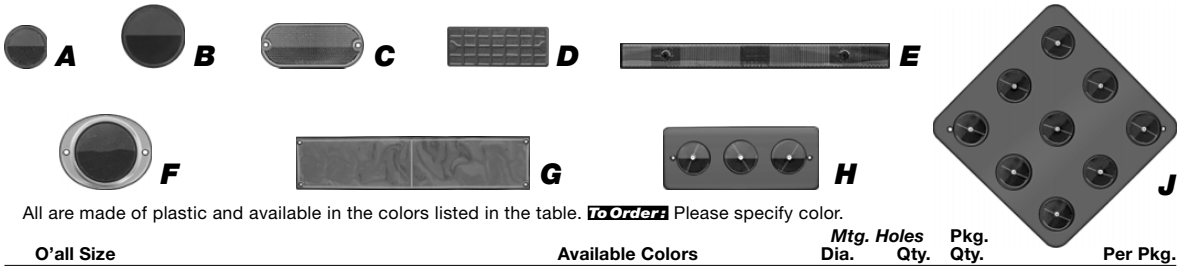

All are made of plastic and available in the colors listed in the table. **To Order:** Please specify color.

O'all Size	Available Colors	Mtg. Holes Dia.	Mtg. Holes Qty.	Pkg. Qty.		Per Pkg.
***Adhesive Backed—** Meet SAE standards (unless noted).*						
A ... 1¼″ Dia.	Amber, Red, White	—	—	25	5953T2●	$10.29
B ... 3¼″ Dia.	Amber, Red, White	—	—	2	5953T24	2.37
C ... 4⅜″ Lg. × 1⅞″ Wd.	Amber, Red	—	—	2	5953T62	2.62
D ... 4⁵⁄₁₆″ Lg. × 1¾″ Wd.	Amber, Red, White	—	—	1	5953T13	1.53
***Adhesive Backed/Nail On—** Meets SAE standards and Federal Motor Vehicle Safety standards for reflectivity.*						
E ... 12″ Lg. × 1″ Wd.	Red, White	⅜″	2	1	5953T29	4.08
***Nail On—** Meet SAE standards. Fasteners are included (unless noted).*						
B ... 3¼″ Dia.	Amber, Red, White	⅛″	1	2	5953T18	2.06
C ... 4⅜″ Lg. × 1⅞″ Wd.	Red	⅛″	2	2	5953T361★	2.37
F ... 3³⁄₁₆″ Dia. Reflector; 4½″ Lg. × 3¹¹⁄₁₆″ Wd. Aluminum Housing	Amber, Red	¼″	2	1	5953T75★	1.97
***Nail On—** Meet MUTCD requirements. Fasteners not included.*						
G ... 18″ Lg. × 4″ Wd. Vinyl-Reinforced	Yellow	¼″	4	1	93965T81	38.78
H ... 3″ Dia. Reflectors; 15″ Lg. × 6″ Wd. Aluminum Panel	Amber on Yellow, Red on Red	⅜″	2	1	5953T8	21.70
J ... 3″ Dia. Reflectors; 18″ Square Aluminum Panel	Amber on Yellow, Red on Red	⅜″	2	1	5953T5	52.26

● Does not meet SAE standards. ★ Fasteners not included.

Adhesive-Backed Assortment— Includes six Style A reflectors: one each of amber, blue, green, and white, plus two red.
5953T92 ..... **Each** $2.37

Standoff Reflectors and Markers

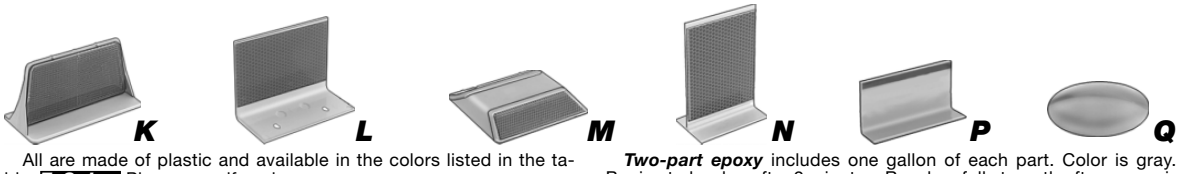

All are made of plastic and available in the colors listed in the table. **To Order:** Please specify color.

Bounce-back reflectors return to the upright position after contact.

Very high bond tape has adhesive on both sides. Comes in 1″ × 4″ rectangles. Temp. range is –40° to +200° F; apply at +60° to +100° F.

Two-part epoxy includes one gallon of each part. Color is gray. Begins to harden after 9 minutes. Reaches full strength after approximately 3½ hours. Epoxy is compliant under all state VOC rules in effect on October 1, 2010. Temperature range is –40° to +150° F.

Overall Size	Available Colors	Standards Met	Mounting Type			Each
Reflectors						
K ... 5¼″ Lg. × 2½″ Wd. × 3″ Ht.	White, Yellow	—	Very High Bond Tape		5953T21	$8.14
L ... 4¼″ Lg. × 2″ Wd. × 3½″ Ht.	White, Yellow	—	Two ³⁄₁₆″ Dia. Mtg. Holes (fasteners not included)		5953T22	7.17
M ... 4″ Lg. × 4″ Wd. × ¹¹⁄₁₆″ Ht.	White, Yellow	D.O.T., ASTM	Two-Part Epoxy		37895T11	3.32
Bounce-Back Reflectors						
N ... 3″ Lg. × 2″ Wd. × 4¾″ Ht.	White, Yellow	—	Very High Bond Tape		5953T23	9.57
P ... 4″ Lg. × 1⅛″ Wd. × 2″ Ht.	White, Yellow	D.O.T.	Adhesive Backed		37895T12	1.24
Nonreflective Markers						
Q ... 4″ Dia.	White, Yellow	D.O.T., ASTM	Two-Part Epoxy		37895T13	1.43
Very High Bond Tape (5/Pkg.)					7170A39	**Per Pkg.** $14.68
Two-Part Epoxy					37895T42	**Each** $235.83

Driveway Reflectors and Equipment Markers

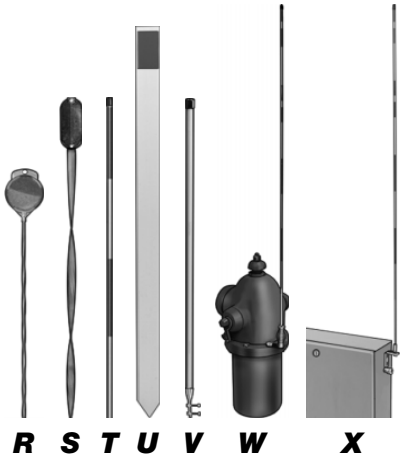

Styles R-T— Available in the colors listed in the table. **To Order:** Please specify color (amber=amb, blue=blu, green=grn, orange=or).

Style U reflectors return to the upright position after contact. **To Order:** Please specify reflector on one side or both sides.

O'all Ht.	Posts Size	Posts Material	Reflectors Size	Reflectors Available Colors		Each
Driveway Reflectors						
R ... 36″	¼″ Dia.	Aluminum	3⅛″ Dia.	Amb, Blu, Red	5879T65	$3.30
S ... 48″	¾″ Dia.	Aluminum	4⅜″ Lg. × 1⅞″ Wd.	Blu, Red	5879T72	8.73
T ... 48″	⁵⁄₁₆″ Dia.	White Plastic	Two 6″ Ht. Bands	Blu, Grn, Or, Red	5879T4	5.48
Bounce-Back Driveway Reflectors						
U ... 66″	3¾″ Wd.	White Plastic	6″ Ht. Band	Yellow	5943T61	23.32
U ... 72″	3¾″ Wd.	White Plastic	6″ Ht. Band	Yellow	5943T62	25.60
U ... 84″	3¾″ Wd.	White Plastic	6″ Ht. Band	Yellow	5943T63	28.74
***Warning Markers—** Mount to vehicles and curbs (fasteners included).*						
V ... 36″	¾″ Dia.	Orange Plastic	—	—	6509T12	13.38
V ... 48″	¾″ Dia.	Orange Plastic	—	—	6509T13	15.11
***Hydrant Markers—** Mount to fire hydrants.*						
W ... 60″	⅜″ Dia.	Fiberglass	6″ Ht. Bands	Red/White	11255T31	33.72
W ... 84″	⅜″ Dia.	Fiberglass	6″ Ht. Bands	Red/White	11255T32	38.37
***Utility Box Markers—** Mount to electrical box knockout holes (fasteners included).*						
X ... 60″	⅜″ Dia.	Plastic	6″ Ht. Bands	Orange/White	11255T41	26.40
X ... 84″	⅜″ Dia.	Plastic	6″ Ht. Bands	Orange/White	11255T42	33.72
Driver for 66″ and 72″ high Style U					5943T92	**Each** $137.31
Driver for 84″ high Style U					5943T91	**Each** $192.31
Post Hole Starter for Style U					5943T42	**Each** $192.65

Safety Flares

Flares have a self-contained ignitor and glow bright red. UL listed.

Style A flares include cardboard stands to raise them off the ground for increased visibility.

Style B flares have an anti-roll cap and are wax coated to resist humidity.

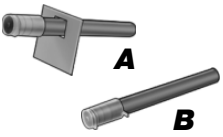

	Burn Time	Pkg. Qty.		Per Pkg.
A	15 minutes	3	**5821T51**	$7.38
B	15 minutes	24	**5821T42**	48.02

Vehicle Safety Kits

Triangles comply with Federal Motor Vehicle Safety Standard No. 125.

Standard kit contains two 20-minute lightsticks, a reflective warning triangle, and a reflective vest. Comes in a waterproof pouch.

83115T11 ..... **Each** $37.50

Deluxe kit contains three 20-minute lightsticks, three reflective warning triangles, a fire extinguisher, and a hold-down strap with mounting brackets. Comes in a metal carrying case.

83115T26 ..... **Each** $151.16

Vehicle Banners

Made of yellow vinyl-coated nylon with black lettering and 5-ft. long rope ties at each corner.

Message	Lg. × Wd.		Each
One Sided			
Wide Load	8′ × 18″	**59005T21**	$21.95
Two Sided			
Oversize Load/Wide Load	8′ × 18″	**59005T23**	24.66

Reflective Vehicle Placards

Signify a slow-moving vehicle. These reflective placards are orange with a red border. Meet ASAE S276.6.

Aluminum placard has two 1/4″ dia. mounting holes (fasteners not included). ***Vinyl*** placard is adhesive backed.

	Ht. × Wd.		Each
Aluminum	14″ × 16″	**59005T11**	$21.98
Vinyl	14″ × 16″	**59005T12**	17.12

Roll-Up Traffic Safety Signs and Folding Stand

Signs are 36″ square bright orange vinyl-coated mesh with black lettering. Just roll up and secure with hook-and-loop tie when not in use.

Optional sign tote bag lets you easily store and carry your sign.

Sign stand is orange powder-coated steel and has telescoping legs. When mounted to the stand, the bottom of the sign is 12″ off the ground.

Optional sign stand extension raises the bottom of the sign to 24″ off the ground.

Sign Shown on Sign Stand

		Each
Construction Ahead Sign	**7646T11**	$57.17
Men Working Sign	**7646T13**	57.17
Road Work Ahead Sign	**7646T14**	57.17
Optional Sign Tote Bag	**7646T39**	21.19
Sign Stand	**7646T32**	169.15
Optional Sign Stand Extension	**7646T41**	23.46

Reflective Vehicle Warning Triangles

Triangles are fluorescent acrylic with red reflectors and a weighted base. Comply with Federal Motor Vehicle Safety Standard No. 125.

Ht. × Wd.	Base Lg.		Each
17 9/16″ × 17 1/4″	17 5/16″	**5966T16**	$12.21

Triangle Kit—Three triangles and bases in a storage case.

5966T14 ..... **Each** $30.44

Reflective Vehicle Marking Tape

Also known as conspicuity tape, this tape is 2″ wide and 0.007″ thick with alternating 11″ long red and 7″ long white stripes. Withstands power washing. Apply at 50° to 100°F. Meets D.O.T. and NHSTA requirements.

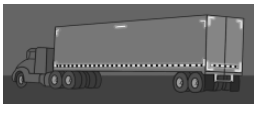

Length		Each
18″ Strip	**15835T58**	$1.83
		Per Roll
25-ft. Roll	**15835T59**	$36.60
50-ft. Roll	**15835T61**	63.15
150-ft. Roll	**15835T71**	148.60

Kit—Includes four 12″ Lg. × 2″ Wd. strips of white tape for marking the rear corners of the vehicle, 31 strips of 18″ Lg. × 2″ Wd. red and white striped tape, an application squeegee, and instructions.

15835T62 ..... **Per Kit** $67.87

Danger and Safety Flags

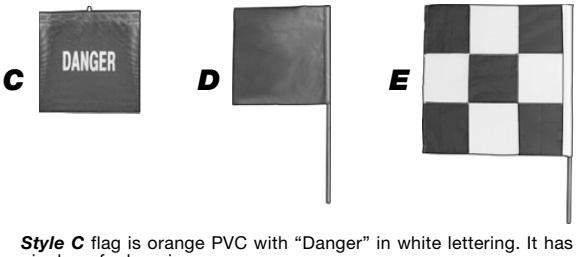

Style C flag is orange PVC with "Danger" in white lettering. It has a wire loop for hanging.

Style D flags are orange vinyl-coated nylon with a diagonal stay for rigidity and a wood rod.

Style E flag is also known as an airport flag. It's orange and white checkered nylon with a wood rod.

	Lg. × Wd.	Rod, Dia. × Lg.		Each
C	18″ × 18″	—	**5859T26**	$6.33
D	18″ × 18″	3/4″ × 36″	**5888T1**	3.74
D	24″ × 24″	3/4″ × 36″	**5888T2**	4.96
E	36″ × 36″	15/16″ × 52″	**58725T321**	28.85

Pennants

Pennants with Message

Pennants with message are polyethylene with black lettering. **To Order:** Please specify color: Red (message repeats Danger Keep Out) or yellow (message changes from pennant to pennant: Be Careful/Safety Always/Danger Keep Out/Safety First/Danger Ahead).

Pennants without message are vinyl. **To Order:** Please specify color: orange, red, yellow, alternating black and yellow, or multicolor (blue/white/red/yellow/green/orange).

OSHA pennants without message are required for marking above-ground construction to meet OSHA regulations. Made of polyethylene. **To Order:** Please specify color: red, yellow, or alternating red and yellow.

Pennants Qty.	Pennants Lg. × Wd.	Lg., ft.	Cord Breaking Strength, lbs.		Each
Pennants with Message					
25	22″ × 13″	60	107	**59925T47**	$8.65
Pennants without Message					
36	11 1/2″ × 8 1/2″	60	107	**59925T34**	6.85
60	11 1/2″ × 8 1/2″	100	107	**59925T62**	12.16
OSHA Pennants without Message					
42	18″ × 12″	105	500	**59925T38**	13.68

Barricade Tape

Striped

Message Tape Shown on Dispensing Handle

Dispenser Box

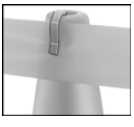

Tape Clip

Tape is nonadhesive and can be used indoors and outdoors. ***Standard duty*** tape is polyethylene; ***heavy duty*** tape is polypropylene.

	STANDARD DUTY 200′ Lg.×3″ Wd. 0.003″ Thick 1⅜″ Core Dia. Per Roll		STANDARD DUTY 500′ Lg.×3″ Wd. 0.003″ Thick 2⅞″ Core Dia. Per Roll		STANDARD DUTY 1,000′ Lg.×3″ Wd. 0.003″ Thick 2⅞″ Core Dia. Per Roll		HEAVY DUTY 200′ Lg.×3″ Wd. 0.006″ Thick 3″ Core Dia. Per Roll	
Solid Color								
Red	8287T52	$5.83	38615T55	$11.10	6041T69	$16.50	15865T421	$13.31
Yellow	8287T51	5.83	38615T54	11.10	6041T68	16.50	15865T419	13.31
Striped								
Black/Yellow	8287T28	5.83	38615T21	11.10	6041T28	16.50	15865T428	13.31
With Caution Message—*Yellow tape with black lettering.*								
Caution	8287T29	5.83	38615T14	11.10	6041T29	16.50	15865T411	13.31
Caution Construction Area	8287T33	5.83	38615T19	11.10	6041T32	16.50	15865T413	13.31
Caution Cuidado	8287T25	5.83	38615T15	11.10	6041T25	16.50	15865T425	13.31
Caution Do Not Enter	8287T32	5.83	38615T17	11.10	6041T31	16.50	15865T412	13.31
Caution Men Working	8287T24	5.83	38615T22	11.10	6041T39	16.50	15865T414	13.31
Caution Men Working Overhead	8287T34	5.83	38615T25	11.10	6041T33	16.50	15865T415	13.31
Caution No Parking	8287T35	5.83	38615T26	11.10	6041T36	16.50	15865T416	13.31
Caution Wet Paint	8287T38	5.83	38615T33	11.10	6041T45	16.50	15865T418	13.31
With Danger Message—*Red tape with black lettering.*								
Danger	8287T26	5.83	38615T16	11.10	6041T26	16.50	15865T426	13.31
Danger Do Not Enter	8287T36	5.83	38615T28	11.10	6041T38	16.50	15865T417	13.31
Danger Peligro	8287T27	5.83	38615T18	11.10	6041T27	16.50	15865T427	13.31

	For Use With	Size		Each
Dispensing Handle	500- and 1,000-ft. Rolls	8¾″ Lg.	6041T93	$6.82
Dispenser Box	500- and 1,000-ft. Rolls	8″ Dia.×3¾″ Dp.	6041T92	24.09
				Per Pkg.
Tape Clip (5/pkg.)	All Tape	_____	6041T91	$4.90

Reusable Woven Barricade Tape

Striped

Message Tape Shown on Rewind Wheel

Long-lasting, woven construction lets you use these nonadhesive tapes again and again indoors and outdoors.

	Thickness	150′ Lg.×¾″ Wd.	Per Roll	200′ Lg.×2″ Wd.	Per Roll	200′ Lg.×3″ Wd.	Per Roll
Polypropylene							
Solid Color							
Red	0.025″	6073T7	$7.57	6073T11	$11.81	_____	____
Yellow	0.025″	6073T13	7.57	6073T14	11.81	_____	____
Striped							
Black/Yellow	0.025″	6073T2	7.57	6073T12	11.81	_____	____
With Message—*Yellow tape with black lettering.*							
Caution	0.025″	_____	____	6073T16	28.67	_____	____
With Message—*Red tape with black lettering.*							
Danger	0.025″	_____	____	6073T18	28.67	_____	____
Cotton							
With Message—*Yellow tape with black lettering.*							
Caution	0.01″	_____	____	6073T41	23.12	6073T43	$29.80
With Message—*Red tape with black lettering.*							
Danger	0.01″	_____	____	6073T42	23.12	6073T44	29.80

Rewind Wheel for up to 200′ of 2″ Wide Tape ..... 6073T21 Each $47.31

Choose-a-Color Cone

Cones are made of rigid polyethylene and are nestable.

To Order: Please specify color: blue, fluorescent green, green, orange, red, white, or yellow.

Ht.	Base Size, sq.		Each 1-9	Each 10-Up
18″	12″	38645T11	$12.26	$10.95

Collapsible Reflective Traffic Cones

28″ High Cone

Collapsed

Cones are high-visibility orange with reflective bands.

16″ high cone is nylon/polyester fabric with two 1″ high reflective yellow bands. Base and tip are polyethylene. The base is filled with sand for stability.

28″ high cone is polyester fabric with one 4″ high and one 6″ high reflective silver band. Base and tip are polypropylene. Meets MUTCD requirements.

Height Extended	Height Collapsed	Base Size, sq.		Each
16″	2″	9½″	5955T1	$15.09
28″	4″	12″	5955T2	27.72

Traffic Cones

18″ Reflective

With Caution Message

Cones are made of flexible PVC and are nestable. Meet MUTCD requirements.

Reflective Cones—*18″ high* cones have one 6″ high reflective white band. The *28″* and *36″ high* cones have one 4″ high and one 6″ high reflective white band.

Cones with Message—Have black lettering.

Ht.	Orange Base Size, sq.		Orange Each 1-9	Orange Each 10-Up	Fluorescent Green Base Size, sq.		Fluorescent Green Each 1-9	Fluorescent Green Each 10-Up
Plain Cones								
12″	8½″	5901T4	$8.08	$7.16	9¼″	5901T11	$8.08	$7.16
18″	11½″	5901T5	8.92	8.23	11″	5901T12	8.92	8.23
28″	15¼″	5901T6	17.39	15.65	14½″	5901T13	17.39	15.65
36″	15¼″	5901T36	23.48	21.18	14½″	5901T14	23.48	21.18
Reflective Cones								
18″	11½″	5901T81	14.11	12.70	11″	5901T27	14.11	12.70
28″	15¼″	5901T82	25.00	22.50	14½″	5901T28	25.00	22.50
36″	15¼″	5901T83	30.01	27.00	14½″	5901T29	30.01	27.00
Cones with Caution Message								
18″	11½″	5901T21	10.00	9.02	11″	5901T15	10.00	9.02
28″	15¼″	5901T31	19.20	17.22	14½″	5901T16	19.20	17.22
36″	15¼″	5901T38	25.52	22.89	14½″	5901T17	25.52	22.89
Cones with Danger Message								
18″	11½″	5901T22	10.00	9.02	11″	5901T18	10.00	9.02
28″	15¼″	5901T32	19.20	17.22	14½″	5901T19	19.20	17.22
36″	15¼″	5901T37	25.52	22.89	14½″	5901T23	25.52	22.89
Cones with No Parking Message								
18″	11½″	5901T71	10.00	9.02	11″	5901T24	10.00	9.02
28″	15¼″	5901T72	19.20	17.22	14½″	5901T25	19.20	17.22
36″	15¼″	5901T73	25.52	22.89	14½″	5901T26	25.52	22.89

Reflective Traffic Posts

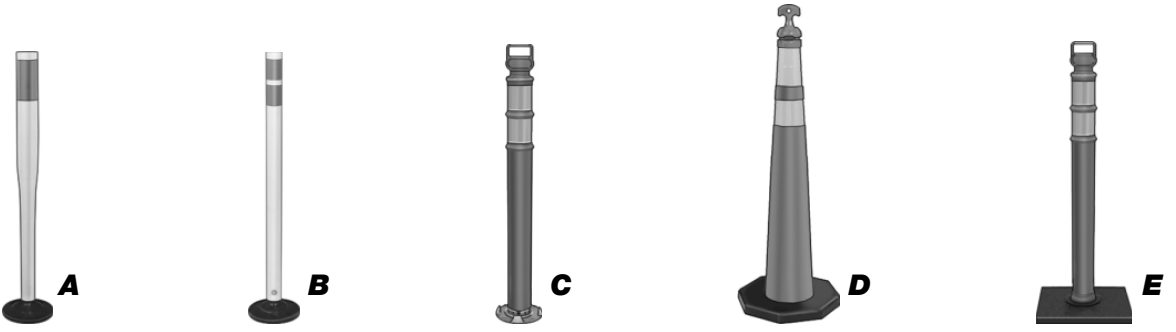

All posts are made of plastic.

Bounce-back posts return to the upright position after contact. *Style A* **To Order:** Please specify reflective band on one side or on both sides. ***Easy-grab posts*** have a convenient handle. *Style C* has four 3/4″ mounting holes (fasteners not included).

	O'all Ht.	Posts Size	Posts Color	Bases Wt., lbs.	Bases Size	Bases Material	Reflective Bands No.	Reflective Bands Ht.	Reflective Bands Color		Each
Bounce Back—*Meet MUTCD requirements.*											
A	42″	3″ Wd.	White	3	7″ Dia.	Black Rubber	1	6″	Yellow	**5943T55**	$35.49
B	42″	2 1/4″ Dia.	White	3	7″ Dia.	Black Rubber	2	3″, 3″	Yellow	**5943T53**	36.89
Easy-Grab with Mountable Base—*Meet NCHRP-350 crash testing requirements.*											
C	45″	3 1/2″ Dia.	Orange	2	8″ Dia.	Aluminum	2	4″, 4″	Silver	**5935T55**	32.79
Easy-Grab with Portable Base—*Meet NCHRP-350 crash testing requirements.*											
D	48″	8 1/2″ Dia.	Orange	11	16 1/2″ Wd.	Black Rubber	2	4″, 6″	White	**6011T21**	46.60
D	48″	8 1/2″ Dia.	Orange	15	16 1/2″ Wd.	Black Rubber	2	4″, 6″	White	**6011T31**	51.92
E	45″	3 1/2″ Dia.	Orange	10	18″ Lg. × 16″ Wd.	Black Rubber	2	4″, 4″	Silver	**5935T34**	34.71

		Each
Optional Adhesive Mounting Pad for Styles A and B	**5943T54**	$7.38
Replacement Post for Style C	**5935T81**	22.62
Replacement Post for Style D	**6011T41**	34.57
Replacement Post for Style E	**5935T67**	22.62

		Each
Replacement Base for Style C	**5935T11**	$24.43
11-lb. Replacement Base for Style D	**6011T51**	15.81
15-lb. Replacement Base for Style D	**6011T52**	21.57
Replacement Base for Style E	**5935T69**	17.56

Cone-Mounted Barricades

Mount these barricades to 28″ and 36″ high traffic cones. For cones, see 5901T on page 1908.

Panel barricades are 4″ high bright yellow PVC with a mounting ring on each end. *Reflective* panels have 3″ wide reflective orange and white stripes and "Caution" in black lettering on one side.

Adjustable bar barricades are retractable so you can adapt the size of your barrier to suit your needs. Bar is 1 1/2″ dia. ABS plastic with 6″ wide reflective stripes and a mounting ring on each end. **To Order:** Please specify black/yellow stripes or orange/white stripes.

Retractable-belt barricade requires one belt unit and one belt receiver unit (sold separately) to create a complete barrier. Both units slide over the tops of cones. The belt is polyester and comes in a polyethylene housing. The belt receiver is polyethylene. **To Order:** For belt, please specify color: orange with orange housing or black/yellow striped with yellow housing. For belt receiver, please specify color: orange or yellow.

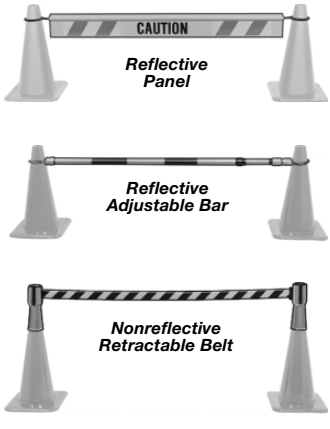

Length	Nonreflective	Each	Reflective	Each
Panel				
4′	**92735T12**	$57.00	**92735T16**	$69.28
6′	**92735T14**	79.34	**92735T19**	95.79
Adjustable Bar				
3 3/4′ to 6′	———	———	**92735T21**	29.20
6′ to 10′	———	———	**92735T24**	43.89
Retractable-Belt Unit				
Up to 13′	**92735T27**	61.02	———	———
Retractable-Belt Receiver Unit			**92735T32**	Each $39.66

Reflective Barrel Barricades

These barrels are made of orange low-density polyethylene, have four alternating reflective orange and white bands, and are nestable. Meet NCHRP-350 crash testing requirements.

High-visibility barrels have higher intensity reflective bands for use in heavy traffic and low-light areas.

O'all Size, Dia. × Ht.	Standard	Each	High Visibility	Each
With 4″ High Reflective Bands				
18″ × 41 1/2″	**6039T72**	$51.37	**6039T82**	$68.28
With 6″ High Reflective Bands				
18″ × 41 1/2″	**6039T73**	58.67	**6039T83**	83.76

Material	Dia. × Ht.		Each
Optional Snap-On Base for Sandbags			
Polyethylene	24″ × 3 1/2″	**6039T62**	$9.60
Optional Snap-On 25-lb. Base			
Rubber	24″ × 2 13/16″	**6039T63**	30.16
Optional Snap-On 40-lb. Base			
Rubber	24″ × 2 13/16″	**6039T61**	47.27

Barricade Lights

Lights have an external on/off switch and come with and without a battery-saving photocell. All lights flash 65 times per minute and include two 6-volt batteries, mounting bolt, socket, and a bulb. Base is yellow polypropylene.

To Order: Please specify lens color: amber, blue, or red.

LED lights last longer than incandescent lights.

Standard *360° View*

	Lens Size	Without Photocell	Each	With Photocell	Each
Incandescent					
Standard	7″ Dia.	**5981T65**	$23.57	**5981T75**	$23.57
360° View	5″ Dia. × 6″ Ht.	**5837T51**	36.11	**5837T61**	36.11
LED					
Standard	7″ Dia.	**5981T92**	38.98	**5981T84**	38.98
360° View	5″ Dia. × 4″ Ht.	**5837T89**	48.98	**5837T74**	48.98

		Per Pkg.
Repl. Incandescent Bulbs (Pkg. of 10)	**1505K76**	$7.48
Repl. 6-Volt Battery	**7690K13**	Each $3.29

Reflective-Panel Barricades

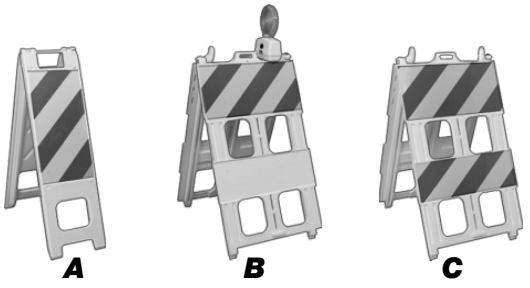

The panels on both sides of these barricades have 4″ wide reflective orange and white stripes. All are made of white polyethylene.

Style A are small and fold flat so they are easier to transport and store.

Styles B&C fold flat, stack easily on top of one another, and have a nesting lug to prevent shifting during transport. Meet NCHRP-350 crash testing requirements.

Style B barricades have stripes on the top panel; *Style C* barricades have stripes on the top and bottom panels.

Incandescent light has a 7″ dia. amber lens, a yellow polypropylene base, and includes two 6-volt batteries. Lights flash 65 times per minute.

	O'all Size, Ht.×Wd.	Panel Height Top	Panel Height Bottom	Without Light	Each	With Incandescent Light	Each
A	36″×13″	24″	—	**5790T13**	$56.50	—	—
A	45″×13″	24″	—	**5790T12**	59.91	—	—
B	45″×24″	12″	8″	**5790T11**	92.35	**5790T54**	$110.49
C	45″×24″	12″	8″	**5790T21**	99.74	**5790T56**	120.24

Replacement Incandescent Bulbs (Pkg. of 10) .. **1505K76** **Per Pkg.** $7.48
Replacement 6-Volt Battery ..... **7690K13** **Each** $3.29

Water-Fill Barricades

Standard Barricade (3783T49) Shown with Chain Link Fence Kit

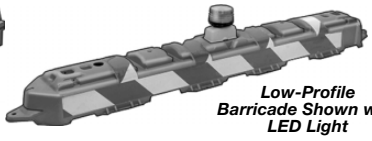

Low-Profile Barricade Shown with LED Light

Fill these heavy duty polyethylene barricades with water for added stability; empty for easy transport. They have drainage plugs on both sides, fork pockets, and holes on top to insert accessories. The included coupler lets you connect barricades side by side.

Standard barricades are orange and meet NCHRP-350 crash testing requirements. ***Low-profile barricade*** is orange with 8½″ wide reflective orange and white stripes. Meets FAA specifications.

LED Light— Fits into the top of the barricades. Light has a 5″ Dia.× 4″ Ht. red polycarbonate lens, a polypropylene base, and two 6-volt batteries. Light flashes 65 times per minute.

Chain Link Fence Kit— Mounts to the top of a standard barricade. Kit includes one 60″ Ht.×72″ Lg., ⅛″ wire dia., hot-dipped galvanized steel fence panel, two posts with stabilizing grommets, and mounting hardware.

Lg.×Wd.×Ht.	Weight, lbs. Empty	Weight, lbs. Full (Approx.)	Fill Hole Dia.		Each
Standard					
72″×12″×18″	38	330	4″	**3783T49**	$215.00
72″×18″×32″	75	900	4″	**3783T47**	455.00
Low Profile					
96″×12″× 8″	22	160	2″	**3783T52**	176.67
LED Light				**5837T77**	48.98
Chain Link Fence Kit				**3783T56**	258.82

Reflective A-Frame Barricades

Pair of A-Frames with One Crossbar

Pair of A-Frames with Two Crossbars

Team a pair of A-frames with one or two crossbars (all sold separately) to create a barrier.

A-Frames— Are 41″ high and made of polypropylene. They are designed to accept one or two crossbars. For increased visibility, add a standard barricade light (sold separately on page 1909).

37855T11 ..... **Per Pair** $55.81

Crossbars— Are made of PVC and have 6″ wide reflective orange and white stripes on both sides.

Lg.×Ht.		Each
4′×10″	**37855T21**	$59.98
6′×10″	**37855T31**	74.10
8′×10″	**37855T41**	92.50
12′×10″	**37855T51**	133.99

Speed Bumps

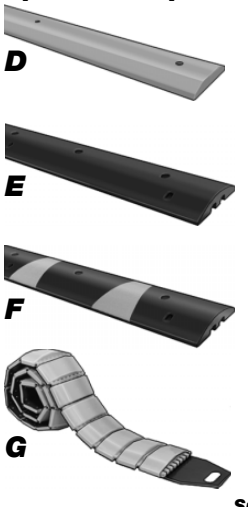

All speed bumps are made of recycled materials except Style G.

Style D speed bump is made of yellow plastic. Hardware for installing on asphalt and concrete is included.

Styles E&F speed bumps are made of black rubber and have two 1″ channels on the bottom that accommodate ¾″ pipe. Hardware for installing on asphalt is included.

Style F has three reflective yellow bands for increased visibility. Bands are 8″ wide tapering to 2″ wide.

Also Available: Hardware for installing Styles E&F on concrete. Please ask for 2806T85.

Style G portable speed bump is made of yellow polypropylene with a textured rubber bottom that firmly grips the road surface. Comes with a canvas carrying bag.

	Lg.×Wd.×Ht.	Speed Bumps	Each	Repl. Hardware	Per Pkg.
D	72″×10″ ×2″	**57955T11**	$85.71	**46985T89**	$8.67
E	72″×12″ ×2⅝″	**2806T72**	196.43	**46985T81**	15.33
F	72″×12″ ×2⅝″	**2806T74**	216.07	**46985T81**	15.33
G	120″× 8¾″×1¾″	**57955T21**	487.77	—	—

Parking Curbs

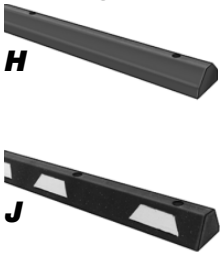

Curbs are made of recycled materials.

Style H curb is made of plastic. Hardware for installing on asphalt and concrete is included. **To Order:** Please specify color: blue, gray, or yellow.

Style J curb is made of black rubber and has eight reflective yellow bands for increased visibility. Bands are 8½″ wide tapering to 5¾″ wide. Hardware for installing on asphalt is included.

Also Available: Hardware for installing Style J on concrete. Please ask for 46985T83.

	Lg.×Wd.×Ht.	Curbs	Each	Repl. Hardware	Per Pkg.
H	72″×6″×4″	**46985T21**	$62.22	**46985T89**	$8.67
J	72″×6″×4¼″	**46985T31**	70.19	**46985T81**	15.33

Plastic Chain Barriers

You can use these lightweight, weather- and UV-resistant barriers indoors and outdoors. Just connect chain between posts to create a barrier that suits your needs. Posts and chain are made of polyethylene. Accessories are made of acetal.

Barrier Kits

Kits contain everything you need to create a barrier.

Standard Duty Starter Kit— Includes three 41″ Ht.×2″ Dia. black posts with white ball top and 14″ dia. base, three black hook connection adapters, and two 8′10″ lengths of yellow chain.

Heavy Duty Starter Kit— Includes three 41″ Ht.×3″ Dia. solid black posts with 16″ dia. base, three black hook connection adapters, and two 6′9″ lengths of yellow chain.

Add-On Kits— Include one of each component in the Starter Kit.

Standard Duty Starter Kit

	Standard Duty	Each	Heavy Duty	Each
Starter Kits	9197T62	$112.25	9197T12	$137.78
Add-On Kits	9197T63	42.41	9197T13	47.47

Barrier Posts

Fill the base with sand or pea gravel for added stability. Slots in the top of the post hold the chain in place.

(A&B) Standard duty round posts are 2″ dia. with a removable ball top.

Style A has a 14″ dia. base. *Style B* has an 8″ long stake end for driving into the ground.

(C) Heavy duty round posts are 3″ dia. with a removable ball top and a 16″ dia. base. Include a hook connection adapter for attaching chain without removing the ball top.

(D) Heavy duty square post is 5″ square with a removable square top and a 14″ dia. base with four 7/16″ dia. mounting holes (fasteners not included). A hole in the top lets chain pass through.

To Order: Solid-color posts are available in the colors listed in the table. Please specify color.

For striped posts, please specify color: black/yellow (B/Y), orange/reflective silver (O/S), or yellow/magenta (Y/M).

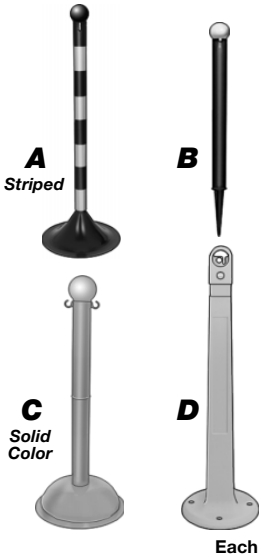

Ht.	Available Colors		Each
Standard Duty Round Solid-Color Posts			
A ... 33″	Black, Orange, Red, White, Yellow	9197T96	$34.97
A ... 41″	Black, Orange, Red, White, Yellow	9197T97	36.09
Standard Duty Round Solid-Color Posts with White Ball Top			
A ... 33″	Black	9197T32	34.97
A ... 41″	Black	9197T31	36.09
B ... 27″★	Black	9197T29	10.85
Standard Duty Round Striped Post			
A ... 41″	B/Y, O/S, Y/M	9197T141	53.81
Heavy Duty Round Solid-Color Post			
C ... 41″	Black, Orange, Red, White, Yellow	9197T28	66.67
Heavy Duty Round Striped Post			
C ... 41″	B/Y, O/S, Y/M	9197T142	72.19
Heavy Duty Square Post			
D ... 48″	Yellow	9197T11	84.35

★ Height above ground after stake is driven in.

Accessories and Replacement Parts for Round Barrier Posts

Sign Holder

Hook Connection Adapter

Sign holders replace the ball top and provide a slot for a sign. Max. sign thickness is 1/16″.

Hook connection adapters have a hook at each end and fit into the slots of the post and ball top so chain can be attached without removing the ball top. Adapters accept all chain.

To Order: For accessories and replacement parts, please specify color: black, orange, red, white, or yellow.

	For Standard Duty Posts	Each	For Heavy Duty Posts	Each
Sign Holder	9197T7	$6.22	9197T23	$9.72
Hook Connection Adapter	9197T15	1.53	9197T18	2.73
Replacement Ball Top	9197T6	4.13	9197T24	5.95
Replacement Base	9197T5	24.61	9197T25	36.15

Barrier Chain

Chain can be cut to suit your application. *Note:* The last length listed is the maximum continuous length. ***Two-color*** chain alternates colors every two feet. ***Replacement links*** join two lengths of chain. ***S-hooks*** let you connect and disconnect two lengths of chain.

To Order: For solid-color chain, replacement links, and S-hooks, please specify color: black, blue, green, orange, red, white, or yellow. For two-color chain, please specify color: black/white, black/yellow, magenta/yellow, or red/white.

Outside Link Size Lg.	Wd.	Link Dia.	Trade Size	Solid-Color Chain Standard Lg., ft.		Per Ft.	Two-Color Chain Standard Lg., ft.		Per Ft.	Repl. Links Pkg. Qty.		Per Pkg.	S-Hooks Pkg. Qty.		Per Pkg.
3/4″	1/2″	1/8″	3	10, 25, 50, 100, 200, 500	8953T9	$0.72	—	—	—	10	8953T65	$2.89	10	8953T75	$2.89
1″	3/4″	5/32″	4	10, 25, 50, 100, 200, 500	8953T8	.82	—	—	—	10	8953T66	3.74	10	8953T76	3.74
1 1/2″	3/4″	3/16″	6	10, 25, 50, 100, 200, 500	8953T1	.90	—	—	—	10	8953T67	4.34	10	8953T77	4.34
2″	1 1/32″	1/4″	8	10, 25, 50, 100, 200, 500	8953T6	1.11	50, 100	8953T4	$1.73	10	8953T68	5.20	10	8953T78	5.20
3″	1 11/16″	3/8″	10	10, 25, 50, 100, 200	8953T3	1.56	—	—	—	10	8953T69	8.86	10	8953T79	8.86

Rope Barriers

The traditional favorite for indoor applications. To set up a barrier, simply hook ropes between posts or wall plates (all sold separately).

Barrier Posts

Made of chrome-plated steel, these posts are 2″ dia. with a concentric ring near the top for attaching the rope. Choose a domed or flat base.

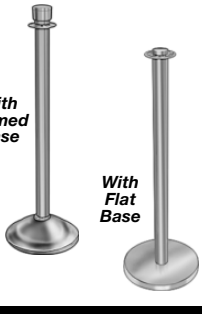

Ht.	Base Dia.		Each
With Domed Base			
36 1/2″	11 1/2″	6060T14	$162.71
With Flat Base			
34 1/2″	13 1/2″	6060T15	116.95

Barrier Wall Plates

Save floor space. Wall plates are chrome-plated steel. Mounting screws are included.

Holds	Ht.×Wd.×Proj.		Each
One Rope	1 5/8″ × 1 1/4″ × 7/8″	6060T71	$13.22
Two Ropes	1 1/2″ × 2″ × 1 1/2″	6060T72	15.25

For One Rope *For Two Ropes*

Barrier Rope

Cotton rope with a bright red velour cover and 1 1/2″ dia. chrome-plated steel snap hook fittings at each end. Lengths listed include end fittings.

Length		Each
4′	6060T523	$67.12
5′	6060T111	72.71
6′	6060T673	82.37

Warning! Chain and rope are not load rated. Do not use for overhead lifting, towing, or similar applications.

Retractable Belt Barriers

Extend the belt when you need a barrier, retract it when you don't. A spring-loaded belt housing maintains proper tension when the belt is extended.

Standard Barriers—Weight is 22 lbs.

Ideal for a variety of applications, these sturdy barriers have a 2″ wide polyester belt, a 2″ Dia.×38″ Ht. steel post, and a 13½″ dia. cast iron base with a nonmarking black plastic cover. Choose from black powder-coated and chrome-plated post finishes. All barriers have three connection points for forming a four-way barrier.

Also Available: Replacement belts. Please ask for 60145T666 and specify McMaster-Carr barrier part number.

Belt	Black Powder-Coated 7½-ft. Belt Lg.	Each	Black Powder-Coated 13-ft. Belt Lg.	Each	Chrome Plated 7½-ft. Belt Lg.	Each	Chrome Plated 13-ft. Belt Lg.	Each
Solid Color								
Black	60145T143	$174.92	60145T102	$239.75	60145T343	$189.97	60145T125	$257.88
Blue	60145T142	174.92	60145T104	239.75	60145T86	189.97	60145T126	257.88
Red	60145T141	174.92	60145T106	239.75	60145T82	189.97	60145T127	257.88
Yellow	60145T144	174.92	60145T108	239.75	60145T344	189.97	60145T128	257.88
Diagonal Stripe								
Black/Yellow	60145T254	189.18	60145T109	239.75	60145T444	210.96	60145T129	257.88
Red/White	60145T255	189.18	60145T122	239.75	60145T445	210.96	60145T131	257.88
Horizontal Stripe								
Black/White	60145T252	189.18	60145T123	239.75	60145T442	210.96	60145T132	257.88
Black/Yellow	60145T251	189.18	60145T124	239.75	60145T441	210.96	60145T133	257.88

Safety Barriers—Weight is 21 lbs.

The yellow post on these barriers increases visibility. They have a 2″ wide polyester belt, a 2″ Dia.×38″ Ht. powder-coated steel post, and a 13½″ dia. steel base with a nonmarking black plastic cover. Barriers have three connection points for forming a four-way barrier.

Also Available: Replacement belts. Please ask for 60145T666 and specify McMaster-Carr barrier part number.

Belt	7½-ft. Belt Lg.	Each	13-ft. Belt Lg.	Each
Solid Color				
Yellow	60145T961	$176.10	60145T137	$243.43
Diagonal Stripe				
Black/Yellow	60145T962	176.10	60145T138	243.43
Message—Belt is yellow with black lettering.				
Caution—Do Not Enter	60145T971	196.27	60145T139	285.76
Danger—Keep Out	60145T974	196.27	60145T207	285.76

All-Weather Barriers—Weight is 23 lbs.

Count on these barriers to stand up to the elements. They have a 2″ wide polyester belt, a 2½″ Dia.×38″ Ht. yellow PVC post, and a 19″ dia. black rubber base. The base can be removed for easy storage. Barriers have three connection points for forming a four-way barrier.

Also Available: Replacement belts. Please ask for 60145T666 and specify McMaster-Carr barrier part number.

Belt	7½-ft. Belt Lg.	Each	13-ft. Belt Lg.	Each
Solid Color				
Black	60145T982	$137.99	60145T171	$157.74
Yellow	60145T981	137.99	60145T172	157.74
Diagonal Stripe				
Black/Yellow	60145T983	137.99	60145T173	157.74
Message—Belt is yellow with black lettering.				
Caution—Do Not Enter	60145T991	162.71	60145T174	203.39
Danger—Keep Out	60145T994	162.71	60145T175	203.39

Fillable-Base All-Weather Barriers—Weight is 30 lbs. (filled).

Fill the base of these barriers with pea gravel, sand, or water for extra stability in your harshest environments. They have a 2″ wide polyester belt, a 2½″ Dia.×37″ Ht. yellow PVC post (unless noted), and a 15″ dia. gray PVC base. Barriers have one connection point for forming a two way barrier.

Also Available: Replacement belts. Please ask for 60145T666 and specify McMaster-Carr barrier part number.

Belt	13-ft. Belt Lg.	Each
Solid Color		
Yellow	60145T178	$157.78
Diagonal Stripe		
Black/Yellow	60145T52	157.79
Red/White	60145T51★	157.79
Message—Belt is yellow with black lettering.		
Caution—Do Not Enter	60145T53	203.39
Danger—Keep Out	60145T179	203.39

★ Post is white.

Barrier Accessories

Wall-Mount Plate

Sign Holder

Universal wall-mount plate connects the belt to a wall.
60145T85 ..... **Each** $11.32

Sign holder sits atop posts and holds 8½″×11″ sheets of paper. Fits all barrier posts.
60145T68 ..... **Each** $65.10

Receiver Post

Receiver posts have connection points only (no belt) to provide an end for your barrier.

	Connection Points		Each
For Standard Barriers			
Black Powder-Coated	4	60145T37	$161.63
Chrome Plated	4	60145T38	179.68
For Safety Barriers			
Yellow	4	60145T218	175.62
For All-Weather Barriers			
Yellow	4	60145T36	127.89
For Fillable-Base All-Weather Barriers			
White	2	60145T42	127.89
Yellow	2	60145T43	127.89

Wall-Mount Barriers

Black Powder-Coated Steel

Black Plastic

The belt housing has a built-in mounting plate (belt-end mounting plate and fasteners are included). All belts are polyester.

Belt	Black Powder-Coated Steel 7½-ft. Belt Lg. 2″ Belt Wd.	Each	Black Plastic 15-ft. Belt Lg. 2″ Belt Wd.	Each	Black Plastic 24-ft. Belt Lg. 2″ Belt Wd.	Each
Solid Color						
Black	60145T543	$81.79	60145T189	$92.59	60145T198	$192.71
Blue	60145T542	81.79	60145T191	92.59	60145T199	192.71
Red	60145T541	81.79	60145T192	92.59	60145T201	192.71
Yellow	60145T544	81.79	60145T193	92.59	60145T202	192.71
Diagonal Stripe						
Black/Yellow	60145T644	102.74	60145T194	92.59	60145T203	192.71
Red/White	60145T645	102.74	60145T195	92.59	60145T204	192.71
Horizontal Stripe						
Black/White	60145T642	102.74	60145T196	92.59	60145T205	192.71
Black/Yellow	60145T641	102.74	60145T197	92.59	60145T206	192.71

Rack-Mount Retractable Belt Barriers

Easily block off aisles. Attach these barriers to upright rack shelving that has holes on 1½″ centers. The spring-loaded belt housing maintains proper tension. When the belt is extended, a universal connecting clip on the end secures it to the shelving holes or you can wrap the belt around a post and hook the clip to the belt. All housings are aluminum with a black finish. All belts are 2″ wide polyester and extend 18 feet.

Quick-attach barriers have mounting hooks that fit into the holes on the rack uprights. Ideal for temporary installation. Overall size is 3½″ Ht.×5″ Wd.×3⅝″ Dp. ***Fixed-mount*** barriers secure to rack holes with the included bolt and nut for permanent installation. Overall size is 4½″ Ht.×3¾″ Wd.×3⅝″ Dp.

Quick Attach

Fixed Mount

Universal Connecting Clip

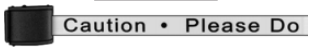

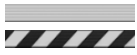

Belt	Quick Attach	Each	Fixed Mount	Each
Solid Color				
Black	96705T13	$103.86	96705T23	$110.54
Blue	96705T12	103.86	96705T22	110.54
Fluorescent Yellow	96705T14	103.86	96705T24	110.54
Green	96705T15	103.86	96705T25	110.54
Red	96705T11	103.86	96705T21	110.54
Diagonal Stripe				
Black/Yellow	96705T16	103.86	96705T26	110.54
Message—Belt is yellow with black lettering.				
Caution—Please Do Not Enter	96705T71	130.74	96705T81	131.90
Please Do Not Enter—Temporarily Closed	96705T19	130.74	96705T82	131.90

Railing Barriers

A hook on each end lets you join multiple barriers to create the length and configuration you need. Barriers have sturdy welded construction. Frame is made of 1¼″ dia. tubing. Bars are ⅝″ dia. and spaced 6⅜″ apart.

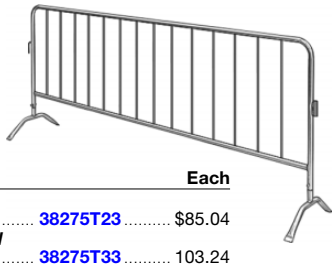

Ht.×Wd.		Each
Zinc-Plated Steel		
40″×8′6″	38275T23	$85.04
Yellow Powder-Coated Steel		
40″×8′6″	38275T33	103.24
Type 304 Stainless Steel		
40″×8′6″	38275T34	235.04

Folding Manhole Barrier

Safeguard open manholes. Barrier is 42″ high and covers a 33″ square area. When not in use, it folds for easy transport and compact storage.

It has a tubular steel frame with a yellow powder-coated finish. The frame accommodates signs and warning flags (not included) that have a shaft dia. up to ¾″.

5900T14 ..... **Each** $246.98

Expandable Barriers

Easy to use, easy to store. To join multiple barriers, slip the built-in handle of one barrier into the end post of another barrier. All are made of aluminum and steel with a high-gloss powder-coated finish.

To Order: Please specify color: black/yellow, black/fluorescent yellow, or black/orange.

Barriers with casters have 2″ dia. swivel casters with gray nonmarking wheels and a side brake.

Locking bar keeps barrier from being folded up so it stays extended.

Wall-mount bracket allows you to permanently attach barriers to a wall. Bracket has two ⅝″ dia. holes (fasteners not included).

Replacement casters **To Order:** Please specify frame color: yellow, fluorescent yellow, or orange.

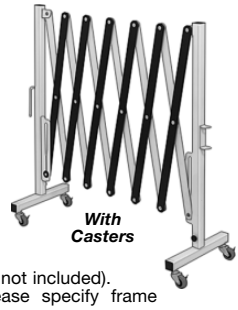
With Casters

Ht.	Width Folded	Width Extended	No. of Posts	No. of Casters		Each
Without Casters						
37″	17″	11′4″	2	—	5428T41	$330.98
37″	20″	15′2″	3	—	5428T45	417.93
48½″	17″	11′4″	2	—	5428T43	363.05
With Casters						
39″	17″	11′4″	2	4	5428T42	353.56
39″	20″	15′2″	3	6	5428T46	445.31
50½″	17″	11′4″	2	4	5428T44	385.75

Locking Bar	5428T11	**Each**	$37.07
Wall-Mount Bracket	5428T12	**Each**	$24.65
Replacement Casters	5428T13	**Per Pair**	$74.14

Folding Panel Barrier

When not in use, the panels of this barrier fold for easy transport and storage. Panels are yellow polyethylene and have a caution symbol on one side. Barrier meets OSHA 1910.23(e)1 standards.

Add-on panel lets you create the length and configuration needed. Connecting hardware included.

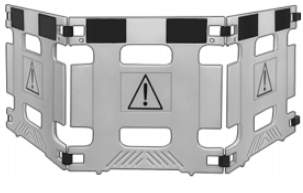

No. of Panels	Each Panel, Ht.×Wd.×Thick.		Per Set
3	36″×38″×1¼″	5434T82	$233.33
Add-On Panel		5434T84 **Each**	$82.29

Plastic Fencing

Opening size is approximate. Fencing is available in the colors listed in the table. **To Order:** Please specify color where shown: black, green, orange, white, or yellow.

Rigid polyethylene fencing is twice as thick as flexible polyethylene so it handles harsher environments.

Square mesh fencing has tight-knit bands at the top, middle, and bottom for extra strength.

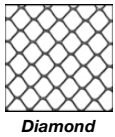
Diamond

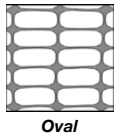
Oval

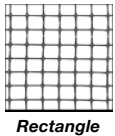
Rectangle and Square

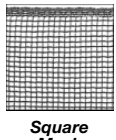
Square Mesh

Ht.	Pattern	Opening Size, Ht.×Wd.	Available Colors	25-ft. Lg.	Each	50-ft. Lg.	Each	100-ft. Lg.	Each
Flexible Polyethylene									
48″	Diamond	2″ ×2″	Green, Orange	59895T73	$28.56	59895T77	$45.45	59895T78	$85.25
48″	Oval	1¼″ ×3⅛″	Green, Orange	60105T59	23.67	60105T61	31.25	60105T62	40.66
48″	Oval	1¾″ ×3¾″	Green, Orange	66935T26	34.91	66935T27	44.62	66935T25♣	57.14
48″	Square	1⅜″ ×1⅜″	Blk, Grn, Or, Wh, Yel	60105T68	28.56	60105T69	44.42	60105T71●	72.77
60″	Square	1⅝″ ×1⅝″	Blk, Grn, Or, Wh, Yel	59895T76	43.91	59895T5	71.30	—	—
72″	Rectangle	1⅝″ ×2″	Blk, Grn, Or, Wh, Yel	59895T74	61.43	59895T7	107.41	—	—
Rigid Polyethylene									
48″	Diamond	2″ ×2″	Blk, Grn, Or, Wh, Yel	59895T72	34.68	59895T1	61.76	59895T75	108.10
Flexible Polypropylene									
48″	Square Mesh	⅜″ × ⅜″	Green, Orange	—	—	60215T1	99.97	60215T3	190.48
72″	Rectangle	1⅜″ ×1¼″	Orange	—	—	—	—	60105T48	141.67

♣ Opening size is 1¾″ Ht.×1¾″ Wd. Not available in green. ● Not available in white.

Welded-Wire Fencing

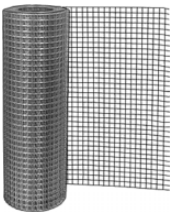

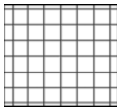

1″×1″ Openings

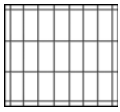

1″×2″ Openings

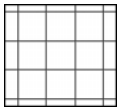

2″×2″ Openings

Rigid construction and large openings make this fencing ideal for a wide variety of applications. The opening size is the distance between parallel wires. All fencing is zinc-plated before welding.

Zinc-plated steel fencing offers some corrosion resistance.

Black PVC-coated zinc-plated steel fencing has a smooth, snag-free surface. The coating provides excellent rust and corrosion resistance and blends into dark backgrounds.

	ZINC-PLATED STEEL						BLACK PVC-COATED ZINC-PLATED STEEL						
	Opening	25-ft. Lg.		50-ft. Lg.		100-ft. Lg.	Opening	25-ft. Lg.		50-ft. Lg.		100-ft. Lg.	
Ht.	Size		Each		Each		Size		Each		Each		Each
0.063″ Wire Diameter													
24″	1″×1″	9214T11	$37.81	9214T32	$48.55	9214T23	1″×1″	9259T11	$74.04	9259T31	$110.82	9259T47	$194.67
36″	1″×1″	9214T12	51.48	9214T33	67.12	9214T25	1″×1″	9259T12	84.91	9259T32	132.80	9259T48	230.84
48″	1″×1″	9214T13	69.42	9214T34	97.10	9214T28	1″×1″	9259T13	113.15	9259T33	177.07	9259T49	307.78
60″	1″×1″	9214T14	77.31	9214T35	109.24	9214T31	____	____	____	____	____	____	____
0.080″ Wire Diameter													
24″	1″×2″	9214T15	38.63	9214T42	49.63	9214T46	2″×2″	9259T14	76.86	9259T41	131.38	9259T56	198.57
36″	1″×2″	9214T16	52.44	9214T43	69.16	9214T48	2″×2″	9259T15	97.55	9259T42	154.22	9259T57	268.07
48″	1″×2″	9214T17	71.71	9214T44	99.38	9214T51	2″×2″	9259T16	127.55	9259T43	205.07	9259T58	356.52
60″	1″×2″	9214T18	81.31	9214T45	113.27	9214T53	____	____	____	____	____	____	____
72″	1″×2″	9214T19	104.28	9214T47	157.90	9214T55	____	____	____	____	____	____	____

Twisted-Wire Fencing

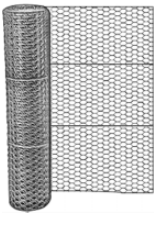

1″ Openings

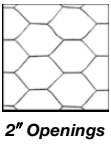

2″ Openings

Also known as chicken wire and poultry netting. The opening size is the distance between parallel wires. Made of hot-dipped galvanized steel. Fencing is hot-dipped galvanized before weaving.

		1″ OPENINGS				2″ OPENINGS	
		25-ft. Lg.		50-ft. Lg.		50-ft. Lg.	
Ht.	Wire Dia.		Each		Each		Each
18″	0.035″	____	____	9234T52	$28.41	____	____
24″	0.035″	9234T11	$11.45	9234T53	33.37	9234T73	$19.83
36″	0.035″	9234T12	18.26	9234T55	49.51	9234T75	29.24
48″	0.035″	9234T13	24.50	9234T56	64.56	9234T76	36.54
60″	0.035″	9234T14	27.81	9234T57	76.69	9234T77	42.65
72″	0.035″	9234T15	33.03	9234T58	90.69	9234T78	49.25

Corrosion-Resistant Mesh Fencing

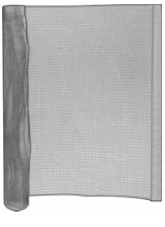

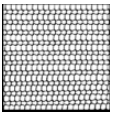

Made of very fine Type 304 stainless steel mesh with 60 openings per square inch, this fencing is a flexible alternative to chicken wire. Mesh has a two-ply construction but can also be cut open and used in single layers. Ideal for securing insulation blankets, covers, and jackets.

Ht.	Wire Dia.	Max. Continuous Length, ft.		Per Ft.
18″	0.011″	150	9235T71	$4.72
30″	0.011″	150	9235T72	8.38
42″	0.011″	100	9235T73	12.12

Drift Fencing

A popular choice for controlling sand and snow drifts. Fencing consists of red-stained wood slats bound by 0.072″ dia. hot-dipped galvanized steel wire. Slats are 1½″ Wd.×⅜″ Thick and spaced every 2¼″.

	25-ft. Lg.		50-ft. Lg.	
Ht.		Each		Each
48″	6005T2	$36.14	6005T1	$64.67

Barbed Wire

Two Point

Four Point

Made of double-twisted galvanized steel wire.

Barbs	Barb Spacing	Wire Dia.	Spool Lg., ft.		Each
Two Point	5″	0.099″	1,320	5989T1	$82.83
Four Point	5″	0.099″	1,320	5989T3	92.12

Fence Posts and Tools

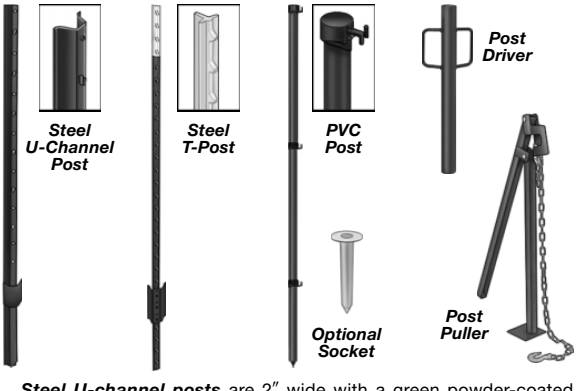

Steel U-channel posts are 2″ wide with a green powder-coated finish, except for the post with an 8′ height, which has a galvanized finish. Use the hooks running from the top of the post to the anchor plate to secure fencing.

Steel T-posts are 1⅛″ wide with a green painted finish and studs along their entire height. Posts include 25 fasteners per bundle (use five per post) to secure fencing. *Optional caps* slip over the top of the post for a smooth top edge. Made of white vinyl.

PVC post is 1⁵⁄₁₆″ dia. hollow black PVC. It has three hooks to secure fencing. *Optional socket* lets you create a removable post. It's 12″ long and has a pointed tip for driving into the ground. Color is white.

Post driver is used with posts up to 2½″ dia.

Post puller is used with posts up to 12″ dia.

		Steel U-Channels		Steel T-Posts		PVC Post	
Ht.	Bundle Qty.		Per Bundle		Per Bundle		Per Bundle
5′	5	6004T42	$32.69	6004T11	$33.65	6013T31★	$9.95
6′	5	6004T44	39.23	6004T13	39.90	____	____
7′	5	6004T47	45.77	6004T16	46.63	____	____
8′	5	6004T48	57.69	6004T19	53.37	____	____

★ Bundle quantity is 1.

Optional Caps for T-Posts (Pkg. of 25)	6004T49	Per Pkg.	$13.75
Optional Socket for PVC Post	6013T32	Each	$2.97
Post Driver	6220T24	Each	$58.74
Post Puller	6220T41	Each	$107.73

Chain Link Fence

Erect a complete fence or repair an existing fence with these components. All are made of hot-dipped galvanized steel (unless noted).

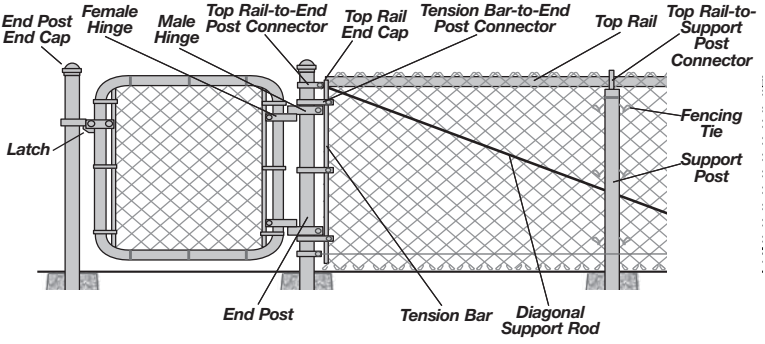

Fencing

Ht.	Wire Dia.	Opening Size		Each
25-ft. Length				
4′	0.113″	2 3/8″	**5991T15**	$74.36
6′	0.113″	2 3/8″	**5991T17**	102.19
8′	0.148″	2″	**5991T21**	196.68
50-ft. Length				
4′	0.113″	2 3/8″	**5991T28**	130.64
6′	0.113″	2 3/8″	**5991T29**	187.84
8′	0.148″	2″	**5991T57**	378.96

Fencing Ties

	Pkg. Qty.		Per Pkg.
Fencing Ties	100	**5991T45** ♦	$14.32

♦ Made of aluminum.

Framing

For Fence Ht.	Top Rails: 10 1/2-ft. Lg. Dia.	Each	Top Rails: 21-ft. Lg.	Each	End Posts Dia.	Lg.	Each	Support Posts Dia.	Lg.	Each	Tension Bars	Each	Diagonal Support Rods	Each
4′	1 3/8″	$25.30	**5991T22**	$49.74	1 7/8″	6 1/2′	$16.52	1 5/8″	6 1/2′	$14.98	**5991T35**	$2.33	**5991T46**	$10.51
6′	1 5/8″	28.98	**5991T55**	54.26	2 3/8″	8 1/2′	30.74	1 7/8″	8 1/2′	34.74	**5991T36**	3.44	**5991T46**	10.51
8′	1 5/8″	28.98	**5991T55**	54.26	2 7/8″	11′	83.74	2 3/8″	11′	58.13	**5991T37**	6.94	**5991T46**	10.51
		5991T55	**5991T25**				**5991T51**			**5991T49**				

Connectors and Fasteners

For Fence Ht.	Top Rail to End Post Each	Top Rail to Support Post Each	Tension Bar to End Post Each	Fasteners Pkg. Qty.	Fasteners Per Pkg.
4′	**5991T592** $0.60	**5991T18** ♦ $1.09	**5991T19** $0.60	100	**5991T44** $13.01
6′	**5991T65** .84	**5991T58** ♦ 1.63	**5991T64** .73	100	**5991T44** 13.01
8′	**5991T72** 2.23	**5991T62** ♦ 2.55	**5991T68** 1.11	100	**5991T44** 13.01

♦ Made of aluminum.

End Caps

For Fence Ht.	For Top Rail Each	For End Post Each
4′	**5991T14** ♦ $0.67	**5991T71** ♦ $1.11
6′	**5991T26** ♦ 1.60	**5991T61** ♦ 1.14
8′	**5991T26** ♦ 1.60	**5991T66** ♦ 1.93

♦ Made of aluminum.

Gates and Gate Hardware

For Fence Ht.	Gates Wd.	Gates Each	Female Hinges Each	Male Hinges Each	Latches Each
4′	4′	**5991T73** $105.80	**5991T76** $1.37	**5991T694** $2.27	**5991T1** $5.94
6′	4′	**5991T74** 136.46	**5991T76** 1.37	**5991T695** 2.33	**5991T2** 5.93
8′	4′	**5991T75** 286.20	**5991T692** 2.07	**5991T696** 4.04	**5991T79** 11.80

Floor-Mount Base Flanges

For Post Dia.	Mtg. Holes No. of	Mtg. Holes Dia.		Each
1 7/8″	4	9/16″	**5991T101**	$32.46
2 3/8″	4	9/16″	**5991T102**	34.72
2 7/8″	4	9/16″	**5991T103**	40.63

Barbed Wire Supports

For Fence Ht.	No. of Wires Held	For End Post Each	For Support Post Each
6′	3	**5991T564** $9.91	**5991T562** $5.09
8′	3	**5991T568** 14.57	**5991T564** 9.91

Installation Tools

Fencing stretcher pulls the tension bar toward the post and holds it in place for easy tie-off.

		Each
Diagonal Support Rod Tightener	**5991T47**	$2.14
Fence-Stretching Pull Chain	**5864T74**	14.78
Fencing Stretcher	**5864T75**	23.73
Barbed Wire Gripper	**5864T72**	14.49

Chain Link Fence Panels

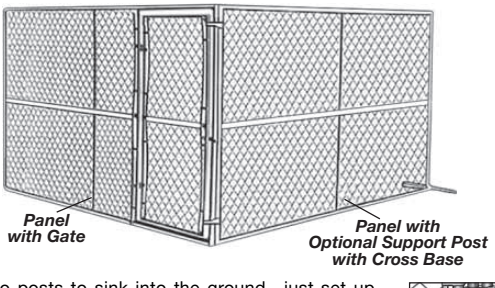

No posts to sink into the ground—just set up as many panels as you need. Panels consist of 1 3/8″ dia. hot-dipped galvanized steel posts and rails with 0.113″ dia. chain link fencing that has 2 3/8″ openings. Connecting clamps for joining panels are included.

Panel with gate includes a 37 1/2″ wide latching gate.

Optional support post with cross base attaches between two panels for additional stability. Post is 68″ high; cross base is 24″ wide.

Panel, Ht. × Wd.	Panel Each	Panel with Gate Each
6′ × 10′	**5977T1** $145.21	**5977T3** $225.71

Optional Support Post with Cross Base	**5977T5**	Each	$34.11
Replacement Connecting Clamps	**5977T6**	Per Pair	$2.98

Privacy Strips and Screens

Privacy strips are 1 1/8″ wide polyethylene and install vertically. Package quantity is 82.

To Order: Please specify color: black, dark red, green, or white.

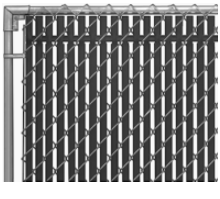

For Fence Ht.	Fence Length Covered		Per Pkg.
4′	10′	**3159T41**	$49.61
6′	10′	**3159T43**	72.12
8′	10′	**3159T45**	94.98

Privacy screens are polyethylene fabric and have grommets for tying the screen to the fence (ties not included).

To Order: Please specify color: black or green.

For Fence Ht.	4-ft. Wide Screen	Each	10-ft. Wide Screen	Each	25-ft. Wide Screen	Each
4′	**3159T31**	$22.27	**3159T51**	$36.82	**3159T11**	$70.98
6′	**3159T32**	24.44	**3159T52**	38.25	**3159T12**	74.40
8′	**3159T33**	28.41	**3159T53**	42.86	**3159T13**	81.82

Spring-Close Safety Gates

A

No need to shut these gates behind you—springs automatically do it. Springs are Type 316 stainless steel (unless noted). All gates mount to the left or right on round railings up to 2″ dia. as well as square and angle iron railings up to 2″ wide. They can be adjusted to swing in either direction. You can also mount *Styles A, B,* and *D* to a wall. Gate arms adjust to fit the range of the opening. Meet OSHA 1910.23a requirements.

Hot-dipped galvanized steel gates provide very good corrosion resistance. ***Yellow powder-coated steel*** gates are easy to see and offer some corrosion resistance. ***Type 316L stainless steel*** gates provide maximum corrosion resistance.

Style A gates have two 4 11/16″ long, flat mounting brackets that are ideal for use where space is tight (fasteners included). The gate arm is made of 1 1/4″ Sq. × 1/8″ Thick tubing and has two slots with bolts for adjusting the arm to fit the opening.

Style B gates have a mounting bracket and plate (fasteners included). The mounting plate is 24″ long and fits railings spaced 10″ to 22″ apart center-to-center. The gate arm is made of 1 1/2″ Wd. × 1/4″ Thick bars and has a slot with bolt for adjusting the arm to fit the opening.

Style C gates have a 24″ long mounting bracket that fits railings spaced 10″ to 24″ apart, center-to-center (fasteners included). The gate arm is 1 1/4″ Dia. × 1/16″ Thick tubing. Removable pins let you adjust the arm in 2″ increments to fit the opening.

Style D gate has a 23 3/4″ long mounting bracket with two 7/16″ dia. mounting holes (fasteners not included). Mounting plate can also be welded in place. Spring tension is adjustable. The gate arm is 1 5/16″ Dia. × 1/8″ Thick tubing. The arm slides to adjust to fit the opening.

B

C

D

Fits Openings	Gate Ht.	Hot-Dipped Galvanized Steel	Each	Yellow Powder-Coated Steel	Each	Type 316L Stainless Steel	Each
Style A							
16 3/4″ to 20 1/2″	22″	**4073K19**	$175.94	**4073K11**	$181.70	**4073K37**	$396.28
19 3/4″ to 23 1/2″	22″	**4073K21**	179.52	**4073K12**	186.69	**4073K38**	405.66
22 3/4″ to 26 1/2″	22″	**4073K22**	183.16	**4073K13**	189.27	**4073K39**	413.86
25 3/4″ to 29 1/2″	22″	**4073K23**	186.86	**4073K14**	193.14	**4073K41**	422.07
28 3/4″ to 32 1/2″	22″	**4073K24**	190.62	**4073K15**	197.08	**4073K42**	430.28
31 3/4″ to 35 1/2″	22″	**4073K25**	194.45	**4073K16**	204.59	**4073K43**	438.48
34 3/4″ to 38 1/2″	22″	**4073K26**	198.33	**4073K17**	208.77	**4073K44**	446.69
38 3/4″ to 42 1/2″	22″	**4073K27**	231.82	**4073K18**	235.38	**4073K45**	542.83
Style B							
17″ to 18 1/2″	12″	**8228T23**	226.15	**8228T43**	276.92	**8228T44**	650.75
19″ to 21 1/2″	12″	**8228T1**	231.25	**8228T3**	279.07	**8228T45**	655.64
22″ to 24 1/2″	12″	**8228T11**	245.67	**8228T31**	293.75	**8228T46**	660.61
25″ to 27 1/2″	12″	**8228T12**	247.62	**8228T32**	296.06	**8228T47**	665.65
28″ to 30 1/2″	12″	**8228T14**	249.60	**8228T34**	298.41	**8228T48**	670.77
31″ to 33 1/2″	12″	**8228T16**	251.61	**8228T36**	299.98	**8228T49**	675.97
34″ to 36 1/2″	12″	**8228T18**	253.66	**8228T38**	303.23	**8228T51**	681.25
37″ to 39 1/2″	12″	**8228T21**	255.74	**8228T41**	305.69	**8228T52**	686.61
Style C							
16″ to 26″	22″	**8109T21**	245.98	**8109T31**	283.29	**8109T12**♦	574.27
24″ to 40″	22″	**8109T22**	256.92	**8109T32**	297.25	**8109T13**♦	616.51
Style D							
22 1/2″ to 36″	18″	———	———	**8109T11**●	169.51	———	———

♦ Made of Type 304 stainless steel. ● Has a red powder-coated finish and Type 304 stainless steel spring.

Hydraulic-Arm Safety Gate

Hydraulic pressure provides smooth closure of this gate—no springs to wear out. Closing tension is adjustable. The gate arm is 1/16″ thick steel with a red powder-coated finish. A set screw adjusts the arm to fit the opening.

Mount to the left only. Mounting plate is 6″ long and has two 3/8″ dia. mounting holes (fasteners not included). Mounting plate can also be welded into place. Meets OSHA 1910.23a requirements.

Fits Openings	Gate Ht.		Each
18″ to 34″	2″	**8147T81**	$242.16

Pivoting Mezzanine Safety Gate

Pivoting from Loading to Unloading Position

Loading Position

Unloading Position

Lifting one side of this gate simultaneously closes the other side for safe loading and unloading of pallets. It accommodates pallets up to 48″ square. Gate is made of 1 1/2″ Sq. × 1/16″ Thick yellow powder-coated tubular steel. Handrails are 42″ high, midrails are 21″ high, and toeboards are 4″ high. Gate also has four 4″ square base plates with four 7/16″ dia. mounting holes (fasteners not included). Meets OSHA 1910.23 requirements.

Overall Ht. × Wd. × Dp.	Usable Loading Area, Ht. × Wd. × Dp.		Each
79 11/16″ × 69 3/4″ × 78 5/16″	66″ × 56″ × 74″	**8244T72**	$910.41

Gravity-Close Safety Gates

Left Mount Shown

Let gravity do the work. Two smooth-swinging, springless hinges automatically close these gates. Gates are corrosion-resistant, 1 1/2″ square yellow tubular fiberglass. Hinges are Type 304 stainless steel and have two 3/8″ dia. mounting holes each (fasteners not included). Meet OSHA 1910.23a requirements.

To Order: Please specify gate mount: left or right.

Gate, Ht. × Wd.		Each	Gate, Ht. × Wd.		Each
16″ × 16″	**8295T81**	$446.54	27″ × 27″	**8295T85**	$470.34
18″ × 18″	**8295T82**	451.85	30″ × 30″	**8295T86**	478.23
21″ × 21″	**8295T83**	459.78	33″ × 33″	**8295T87**	486.12
24″ × 24″	**8295T84**	467.71	36″ × 36″	**8295T88**	494.00

Parking Lot Gates

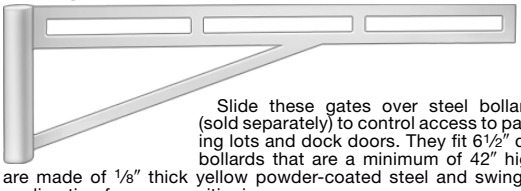

Slide these gates over steel bollards (sold separately) to control access to parking lots and dock doors. They fit 6 1/2″ dia. bollards that are a minimum of 42″ high. All are made of 1/8″ thick yellow powder-coated steel and swing in either direction for easy positioning.

O'all Ht. × Wd.		Each	O'all Ht. × Wd.		Each
42″ × 5′	**5946T1**	$582.80	42″ × 8′	**5946T4**	$670.90
42″ × 6′	**5946T2**	602.05	42″ × 9′	**5946T5**	697.71
42″ × 7′	**5946T3**	635.61	42″ × 10′	**5946T6**	724.75

42″ High Heavy Duty Steel Bollard	**57895T125**	Each	$182.39
84″ High In-Ground Steel Bollard	**57895T131**	Each	$205.77

Electric-Arm Parking Lot Gates

Control traffic in and out of parking lots with these motor-powered gates. They're wired to accept switches, card readers, buried detectors, and remote control stations (see pages 2911-2913). All components are sold separately.

Gate controllers have a 1/2 hp, single-phase motor housed in a weatherproof aluminum cabinet with a white powder-coated finish. ***Gate arms*** break cleanly upon impact at clamp point so they may be reused. Arms are made of plastic-covered wood with black and white stripes.

Reflective vehicle protectors increase visibility and reduce damage to vehicles. Made of nylon with 2″ wide reflective bands and a soft foam core. Attach to the arm with included hook and loop material. **To Order:** Please specify color: black with red bands, black with white bands, yellow with red bands, or yellow with white bands.

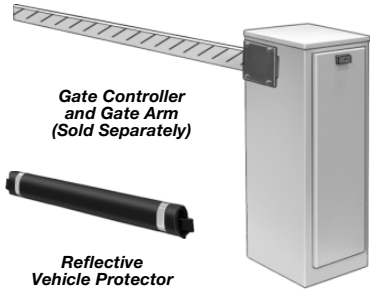

Gate Controllers

Motor	Cabinet, Ht.×Wd.×Dp.		Each
120 VAC	40″×15″×15″	7104T1	$2,941.82
220 VAC	40″×15″×15″	7104T2	2,998.75

Gate Arms

Lg.	Wd.×Thick.		Each
8′	3 1/2″×3/4″	7104T41	$59.85
10′	3 1/2″×3/4″	7104T42	70.53
12′	3 1/2″×3/4″	7104T43	77.89

Reflective Vehicle Protectors

Lg.		Each
4′	7104T11	$81.67
6′	7104T12	98.33
9′	7104T13	114.71

Build-Your-Own Railings

All railings have a 42″ high top rail and a 21″ high midrail.

Modular Post-and-Rail Components

These mix-and-match components allow flexible configurations. To create a complete section, order two posts and two rails.

Note: Sections added with support posts will be 2″ less than the assembled lengths listed.

Rails are 2″ Sq.×1/16″ Thick tubing that can be cut to length. *Steel* railings have a yellow powder-coated finish and include fasteners. *Type 304 stainless steel* railings provide excellent corrosion resistance. Rails have four 7/16″ dia. mounting holes (fasteners sold separately).

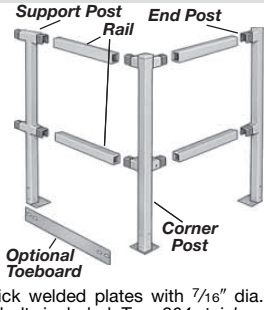

Posts are 2″ Sq.×1/16″ Thick tubing. *Steel* posts have 4″ Sq.×3/8″ Thick welded plates with 7/16″ dia. mounting holes (unless noted). Anchor bolts included. *Type 304 stainless steel* posts have 4″ Sq.×3/16″ Thick mounting plates with four 3/8″ dia. mounting holes. Anchor bolts sold separately.

Optional toeboards are 4″ Ht.×1/16″ Thick. *Steel* toeboards include fasteners. *Type 304 stainless steel* toeboards have four 7/16″ dia. mounting holes (fasteners sold separately).

Lg.	Assembled Lg.	Steel	Each	Type 304 Stainless Steel	Each
Rails					
1′6″	2′2″	59985T23	$23.07	4275T11	$64.13
3′6″	4′2″	59985T22	30.78	4275T12	71.01
7′6″	8′2″	59985T21	41.97	4275T13	129.67

	Steel	Each	Type 304 Stainless Steel	Each
Posts				
End	59985T12★	$80.77	4275T14	$120.35
Corner	59985T13	125.03	4275T15	171.55
Support	59985T11	82.69	4275T16	134.51

5/16″ Dia.×2 1/2″ Lg. Anchor Bolt ..... 92403A160 **Each** $2.79

★ Has a 2″×5″ welded plate.

For Assembled Lg.	Steel	Each	Type 304 Stainless Steel	Each
Optional Toeboards				
2′2″	59985T33	$30.76	4275T17	$47.46
4′2″	59985T32	32.70	4275T18	57.47
8′2″	59985T31	63.46	4275T19	119.09

Welded Railings and Add-On Components

Spend less time assembling. You can use welded railings individually or add on connecting rails to lengthen. All components are yellow powder-coated steel.

Welded railings consist of two rails and two posts made of 1 1/2″ Sq.×1/16″ Thick tubing. Posts have a 4″ Sq.×3/16″ Thick mounting plate (anchor bolts included).

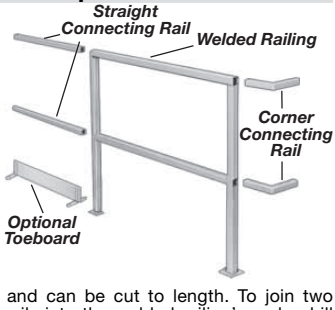

Straight and ***corner connecting rails*** are 1 1/4″ Sq.×1/16″ Thick tubing and can be cut to length. To join two welded railings, insert these rails into the welded railing's ends, drill a 1/8″ dia. starter hole, and secure with the included self-tapping screws. *Note:* When connecting two welded railings with straight connecting rails, the total length is 4″ less than the combination of the overall length of each welded railing plus the connecting rail. When a corner is added to this, the length added to each welded railing is 3 7/8″.

Optional toeboards are 4″ Ht.×1/4″ Thick and have two 4″ Lg.×3/4″ Wd.×1/4″ Thick mounting plates. Each plate has two 7/16″ dia. mounting holes at each end (anchor bolts sold separately). ***Optional wire mesh filler*** is made of 3/16″ dia. hot-dipped galvanized steel. Attach to welded railing with the included hardware. ***Optional sliding gate*** slips onto the welded railing's rails and telescopes up to 5 ft. wide.

Lg.	Welded Railings	Each	CONNECTING RAILS Straight	Per Pair	Corner	Per Pair
4′	6988T45	$156.00	6988T52	$94.55	—	—
6′	6988T46	215.09	6988T53	107.55	—	—
8′	6988T47	283.64	6988T54	120.55	—	—
8 3/4″	—	—	—	—	6988T58	$50.82

For Railing Lg.	Optional Toeboards	Each	Optional Wire Mesh Filler	Each	Optional Sliding Gate	Each
4′	6988T55	$35.45	6988T11	$56.73	6988T14	$171.36
6′	6988T56	46.09	6988T12	65.00	6988T14	171.36
8′	6988T57	59.09	6988T13	81.55	6988T14	171.36

3/8″ Dia.×3″ Lg. Anchor Bolt ..... 92403A201 **Each** $2.74

Railing Sets with Slip-On Fittings

These sets come unassembled so you can cut them to length as needed. Slip-on fittings with set screws allow for quick assembly. Use the straight and corner sets individually or create longer lengths with an add-on set. All are made of 1 7/8″ Dia.×1/8″ Thick steel pipe posts and rails with a yellow powder-coated finish. The posts have a 4 1/2″ dia. mounting plate with four 7/16″ dia. mounting holes (anchor bolts sold separately). All slip-on fittings and post base plates are black aluminum-magnesium alloy.

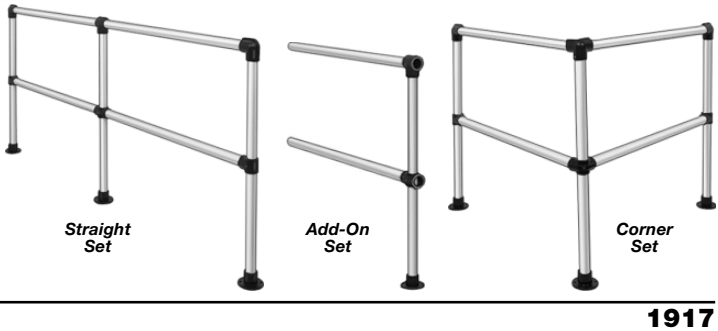

Size		Each
Straight Set ..... 8′ Lg.	5062T17	$345.44
Add-On Set ..... 4′ Lg.	5062T18	178.78
Corner Set ..... 4′ Lg.×4′ Lg.	5062T16	345.44

3/8″ Dia.×3″ Lg. Anchor Bolt .. 92403A201 **Each** $2.74

Quick-Install Railings

A *With Square Corners and Toeboard*

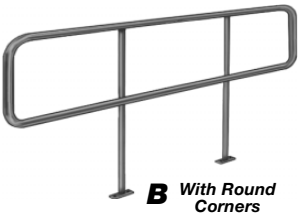

B *With Round Corners*

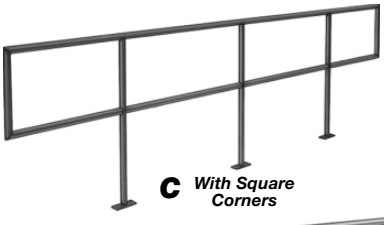

C *With Square Corners*

D *With Toeboard*

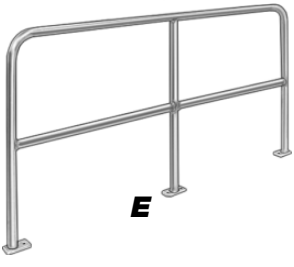

E

One-piece construction means no assembly required. Railings are available with or without a 4″ Ht.×¼″ Thick. toeboard.

Steel railings are made of 1½″ Dia.×⅛″ Thick. welded pipe. They have a 42″ high top rail and a 24″ high midrail. Posts have a 6″ Lg.×2½″ Wd.×⅜″ Thick. mounting plate with two 9/16″ dia. holes (anchor bolts sold separately). Railings have a plain finish and are available with square or round corners. **To Order:** Please specify square or round corners.

Aluminum railings offer corrosion resistance. Made of 1⅞″ Dia.×⅛″ Thick. welded pipe. They have a 42″ high top rail and a 21″ high midrail. Posts have a 5″ Lg.×3″ Wd.×⅜″ Thick. mounting plate. When installed properly, these railings meet OSHA requirements and help you comply with the Americans with Disabilities Act (ADA).

Mounting plate for railings *with two posts* have one 9/16″ dia. hole (anchor bolts sold separately). Mounting plate for railings *with three posts* have two 9/16″ dia. holes on the center post and one 9/16″ hole on the end posts (anchor bolts sold separately).

	Overall Length	Without Toeboard	Each	With Toeboard	Each
Steel					
With Two Posts					
A	3′1⅝″	38255T1	$218.18	38255T2	$272.73
A	5′1⅝″	38255T3	340.00	38255T71	405.45
B	8′1⅝″	38255T5	459.68	38255T4	559.68
B	10′1⅝″	38255T7	585.48	38255T6	685.48
With Three Posts					
C	12′1⅝″	38255T9	664.06	38255T8	782.68
Aluminum					
With Two Posts					
D	2′	3355T12	264.15	3355T26	299.96
D	3′	3355T13	274.10	3355T27	309.96
D	4′	3355T14	284.21	3355T28	316.47
D	5′	3355T15	294.21	3355T29	348.53
With Three Posts					
E	6′	3355T16	379.67	3355T31	426.58
E	7′	3355T17	389.30	3355T32	439.33
E	8′	3355T18	399.98	3355T33	452.07

½″ Dia.×2¾″ Lg. Anchor Bolt ..... 92403A300 **Each** $3.61

Freestanding Safety Railings

Railing Set with Two Add-On Railing Sets and Optional Toeboards

Weighted bases keep you from having to bolt these railings to the floor. Railings are made of 1⅝″ Dia.×1/16″ Thick. yellow powder-coated tubular steel. The top rail is 42″ high and the midrail is 21″ high.

The bases have a built-in carrying handle and two slots for inserting an optional toeboard. They hold up to two railings and allow you to create 90° and 180° angles. Use the included connecting pins to secure the railings to the bases.

Railing meets OSHA 1910.23 and 1926.500-03 requirements when making a U-shape as shown.

Railing sets include one railing, two bases, and two connecting pins.

Add-on sets include one railing, one base, and two connecting pins.

Optional toeboards are 3½″ Ht.×1½″ Thick. and telescope to fit between bases.

Optional gate is 5-ft. wide and can be mounted on the left or right. Mounting hardware is included.

Railing Lg.	Railing Sets	Per Set	Add-On Sets	Per Set
5′	3294T11	$617.27	3294T41	$355.71
7′6″	3294T12	630.22	3294T42	368.52
10′	3294T13	635.97	3294T43	373.07

		Each
Optional Toeboard for 5′ Long Railing	3294T15	$103.88
Optional Toeboard for 7′6″ and 10′ Long Railings	3294T16	131.67
Optional Gate	3294T14	870.77
Replacement 5′ Long Railing	3294T51	150.00
Replacement 7′6″ Long Railing	3294T52	159.09
Replacement 10′ Long Railing	3294T53	169.70
Additional Base	3294T54	265.15
Additional Connecting Pin	3294T55	6.67

Steel Pipe Guards

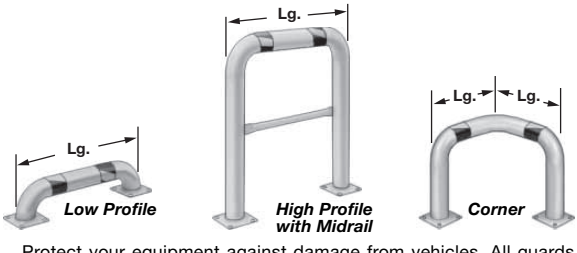

Low Profile — *High Profile with Midrail* — *Corner*

Protect your equipment against damage from vehicles. All guards are made of 4½″ Dia.×⅛″ Thick. yellow powder-coated steel pipe. They are also marked with two 3″ wide bands of black tape for increased visibility. Mounting plates are 8″ Sq.×¼″ Thick. and have four 1¼″ Lg.×⅞″ Wd. mounting slots (anchor bolts sold separately).

High-Profile with Midrail— Midrail is 19¾″ high.

Ht.	Lg.		Each
Low Profile			
9″	36″	57895T21	$153.93
9″	48″	57895T22	168.39
16″	36″	57895T23	164.63
16″	48″	57895T24	187.04
High Profile			
24″	36″	57895T25	160.04
24″	48″	57895T26	191.26
36″	36″	57895T34	203.15
36″	48″	57895T35	218.70

Ht.	Lg.		Each
High Profile with Midrail			
42″	36″	57895T27	$193.62
42″	48″	57895T28	220.69
Corner			
24″	24″×24″	57895T29	282.48
24″	30″×30″	57895T31	298.91
36″	24″×24″	57895T32	305.97
36″	30″×30″	57895T33	338.47

¾″×4¼″ Lg. Anchor Bolt ..... 92403A501 **Each** $9.21

Door-Track Protectors

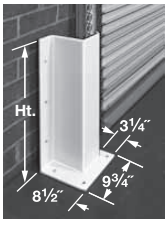

Keep your overhead-door track from being damaged by forklifts. Protectors are made of ¼″ thick yellow powder-coated steel. The L-shaped mounting plate has holes for floor mounting (fasteners are included) as well as four (unless noted) mounting holes on the side with 7/16″ dia. holes for mounting to the wall (fasteners not included).

Height		Per Pair
24″	5780T2★	$155.41
36″	5780T3	170.94
48″	5780T4	196.84

★ Has three holes for mounting to the wall.

Steel Bollards

Standard duty bollards are made of 1/8″ thick powder-coated steel with a 3″ high black-striped band at the top and a removable plastic cap. The base plate is 8″ Sq.×1/4″ Thick with four 1 1/4″ Lg.×7/8″ Wd. mounting slots (anchor bolts sold separately). **To Order:** Please specify color: red or yellow.

Heavy duty bollards are 1/4″ thick powder-coated steel with a 3″ high black-striped band at the top. The base plate is 9″ Sq.×1/2″ Thick with four 3/4″ dia. holes (anchor bolts sold separately). Top is welded. *Heavy duty bollards with eyelet* are the same as the heavy duty bollards above but have a welded eye for attaching chain (not included). **To Order:** Please specify color: red or yellow.

Corrosion-resistant bollards are made of 3/16″ thick Type 304 stainless steel. The base plate is 8″ Sq.×1/2″ Thick with four 3/4″ dia. holes (anchor bolts sold separately). The top is welded.

In-ground bollards get buried 42″ in the ground. They are made of 3/16″ thick powder-coated steel with a 3″ high black-striped band at the top. Top is open. **To Order:** Please specify color: red or yellow.

Heavy Duty with Eyelet

Ht.	Dia.		Each
Standard Duty			
24″	4 1/2″	57895T11	$70.77
24″	5 1/2″	57895T12	84.71
36″	4 1/2″	57895T13	93.94
36″	5 1/2″	57895T14	105.53
42″	4 1/2″	57895T15	106.83
42″	5 1/2″	57895T16	122.74
Heavy Duty			
24″	6 1/2″	57895T17	136.45
36″	6 1/2″	57895T18	159.43
42″	6 1/2″	57895T19	182.39
Heavy Duty with Eyelet			
24″	6 1/2″	57895T42	$143.36
36″	6 1/2″	57895T43	166.34
42″	6 1/2″	57895T44	189.29
Corrosion Resistant			
36″	4 1/2″	57895T36	449.46
42″	4 1/2″	57895T37	492.00
In Ground			
84″	5 1/2″	57895T38	193.80
84″	6 1/2″	57895T39	205.77
84″	8 1/2″	57895T41	265.09

Anchor Bolt for 1 1/4″×7/8″ Mounting Slot	92403A501	Each	$9.21
Anchor Bolt for 3/4″ Dia. Hole	92403A402	Each	$5.98
4 1/2″ Dia. Replacement Plastic Cap	57895T96	Each	$5.52
5 1/2″ Dia. Replacement Plastic Cap	57895T98	Each	$12.08

Bollard Covers

Slip these covers over steel and concrete bollards. They can be cut to desired height. All are made of polyethylene and include installation materials.

Standard duty bollard covers are yellow.

Standard duty bollard covers with reflective bands have two 3/4″ high reflective bands for increased visibility. **To Order:** Please specify color: red with white bands, yellow with red bands, or yellow with white bands.

Heavy duty bollard covers are thicker for better wear. **To Order:** Please specify color: black, blue, gray, red, white, or yellow.

Standard Duty with Reflective Bands

Ht.	Fits Bollard Dia.	Thick.		Each
Standard Duty				
48″	4″ to 5″	1/16″	57895T81	$32.18
48″	6″ to 7″	1/16″	57895T83	36.64
Standard Duty with Reflective Bands				
52″	3 1/2″ to 4 1/2″	1/8″	57895T59	33.68
60″	4 5/8″ to 7″	1/8″	57895T57	42.17
Heavy Duty				
55″	4″ to 4 1/2″	1/4″	57895T71	61.22
55″	5″ to 5 9/16″	1/4″	57895T72	65.31
55″	6″ to 6 5/8″	1/4″	57895T73	67.37

Column Protectors

A two-piece design lets you easily position these protectors around a column (fasteners included). All are yellow polyethylene.

Fits Column Size	Protector, Ht.×OD		Each
3″ Sq.	42″ ×12″	5937T51	$128.33
4″ Sq.	42″ ×12″	5937T52	128.33
5″ Sq.	42″ ×12″	5937T53	128.33
6″ Sq.	24″ ×24″	5937T11	132.73
6″ Sq.	42″ ×12″	5937T54	128.33
6″ Sq.	42″ ×26″	5937T1	220.02
8″ Sq.	24″ ×24″	5937T12	132.73
8″ Sq.	42″ ×26″	5937T2	220.02
10″ Sq.	24″ ×24″	5937T13	132.73
10″ Sq.	42″ ×26″	5937T3	220.02
12″ Sq.	24″ ×24″	5937T14	132.73
12″ Sq.	42″ ×26″	5937T5	220.02
14″ Sq.	42 3/4″×28 1/2″	5937T7	346.03
16″ Sq.	42 3/4″×28 1/2″	5937T55	346.03
18″ Sq.	42 3/4″×28 1/2″	5937T56	346.03
8″×10″ Rec.	42″ ×26″	5937T6	220.02
9″ Round	42″ ×26″	5937T4	220.02

Maintenance-Free Plastic Bollard

Bollard is made of solid recycled plastic that resists moisture, sunlight, oil, road salt, and chemicals. It will not rot, rust, or crack. Bollard is 33″ Ht.×6″ Sq. and has an 8 1/2″ square base with four mounting holes (fasteners included). Color is yellow.

37845T11	Each	$90.33

Steel Guardrails

Combine rails and posts to create single-, double-, or triple-rail guardrails. All components are yellow powder-coated steel. ***Posts*** include mounting hardware. To extend guardrail, order one additional post and the appropriate number of rails.

Bolt-on rails attach directly to the posts.

Lift-out rails include a pair of brackets that attach to the posts. Rails slide in and out of brackets for easy accessibility.

Standard duty guardrails are the economical choice for general purpose use.

Rails are 9 3/4″ Ht.×2 1/2″ Dp.×1/8″ Thick. *Posts* are 3″ Sq.×1/4″ Thick tubing with an 8″ Sq.×5/8″ Thick base plate and snap-on zinc-plated steel cap. *Note:* Length of additional rail section will be 3″ less than the assembled length listed in the table.

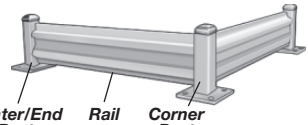

Standard Duty Single-Rail Bolt On

Heavy Duty Double-Rail Lift Out

Heavy duty guardrails are larger for more demanding traffic applications. *Rails* are 14 1/2″ Ht.×2 1/2″ Dp.×1/8″ Thick. *Posts* are 4″ Sq.×1/4″ Thick tubing with a 10″ Sq.×5/8″ Thick base plate and snap-on zinc-plated steel cap. *Note:* Length of additional rail section will be 4″ less than the assembled length listed in the table.

Rails

Lg.	Assembled Lg.	Bolt On	Each	Lift Out	Each
Standard Duty					
1′9″	2′3″	60075T32	$70.00	60075T43	$112.78
2′9″	3′3″	60075T33	80.23	60075T44	122.56
3′9″	4′3″	60075T34	90.35	60075T45	132.22
4′9″	5′3″	60075T35	99.74	60075T46	141.89
5′9″	6′3″	60075T36	110.70	60075T47	151.67
6′9″	7′3″	60075T37	120.47	60075T48	161.11
7′9″	8′3″	60075T38	130.23	60075T49	170.44
8′9″	9′3″	60075T39	139.88	60075T51	179.56
9′9″	10′3″	60075T41	149.42	60075T52	188.64
Heavy Duty					
1′8″	2′4″	60075T26	87.46	60075T63	129.69
2′8″	3′4″	60075T27	98.12	60075T65	141.98
3′8″	4′4″	60075T24	110.42	60075T69	150.73
4′8″	5′4″	60075T28	119.17	60075T66	159.58
5′8″	6′4″	60075T23	127.92	60075T67	169.96
6′8″	7′4″	60075T29	145.62	60075T68	180.62
7′8″	8′4″	60075T22	152.50	60075T64	192.92
8′8″	9′4″	60075T31	159.58	60075T71	199.74
9′8″	10′4″	60075T21	168.44	60075T61	208.33

Repl. Brackets for Standard Duty Lift-Out Rails	60075T16	Per Pair	$41.40
Repl. Brackets for Heavy Duty Lift-Out Rails	60075T84	Per Pair	$61.54

Posts

	For Single Rail Ht.		Each	For Triple Rail Ht.		Each
Standard Duty						
Center/End	12″	60075T17	$99.74	42″	60075T19	$145.70
Corner	12″	60075T18	104.42	42″	60075T25	149.53
Heavy Duty	***For Single Rail***			***For Double Rail***		
Center/End	18″	60075T12	$108.75	42″	60075T14	$148.96
Corner	18″	60075T11	108.75	42″	60075T13	148.96

Repl. Standard Duty Snap-On Post Cap	60075T15	Each	$9.30
Repl. Heavy Duty Snap-On Post Cap	60075T82	Each	$11.54

Highway-Style Steel Guardrails

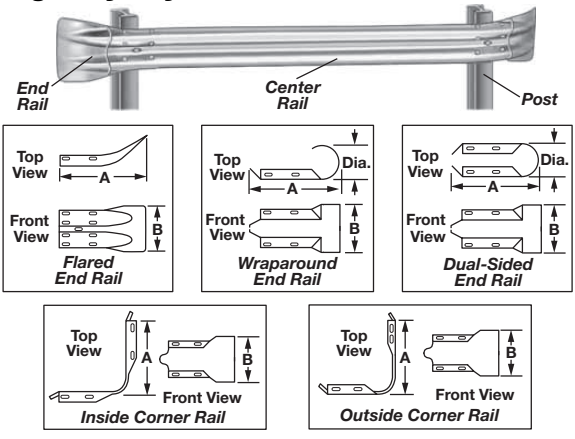

The same guardrails you see along roadways and in parking lots. Mount a center rail to the posts, and choose your end rails. All components are sold separately and include connecting hardware.

Rails are 1/8″ thick hot-dipped galvanized steel. *Corner rails* require two center rails for support.

Posts are I-beams made of 8.5 lbs./ft. hot-dipped galvanized steel. Mounting holes on the flanges let you connect a rail to the post.

Center Rail

Length	Height	Distance Between Mounting Holes		Each
13′6 1/2″	1′1/4″	12′6″	9181T1	$131.30

End and Corner Rails

	Dia.	(A)	(B)		Each
End Rails					
Flared	____	27 1/2″	19″	9181T3	$52.00
Wraparound	4″	23″	16″	9181T12	54.40
Wraparound	12″	24″	16 1/4″	9181T4	54.40
Dual Sided	12 1/2″	24″	16 1/4″	9181T15	92.00
Dual Sided	22 1/4″	31 1/8″	16″	9181T6	112.00
Corner Rails					
Inside	____	31″	16 1/4″	9181T32	92.00
Outside	____	30″	16 1/4″	9181T34	92.00

Posts

Height	Depth	Flange Width		Each
4′	6″	4″	9181T24	$62.22
5′	6″	4″	9181T25	71.11
6′	6″	4″	9181T26	80.56

Chip Guard Panels

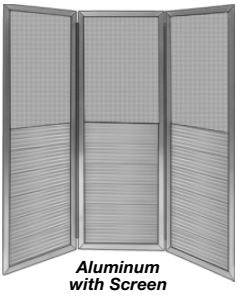

Aluminum with Screen

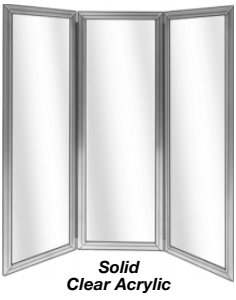

Solid Clear Acrylic

Protect personnel and equipment from flying chips. These portable, adjustable panels consist of three 79 3/4″ Ht. × 29 1/4″ Wd. hinged sections.

Panels with screen and grille have a metal grille over the screen area for added protection.

Material Thick.	Screen Ht.		Each
Aluminum with Screen			
1/32″	9 3/4″	5356T22	$404.65
1/32″	36″	5356T12	337.49
1/16″	33 3/4″	5356T16	335.33
Aluminum with Screen and Grille			
1/32″	36″	5356T14	375.22
1/16″	33 3/4″	5356T18	365.71
Solid Aluminum			
1/16″	____	5356T24	389.47
Solid Clear Acrylic			
1/8″	____	5356T31	521.85

Stackable Steel Guardrails

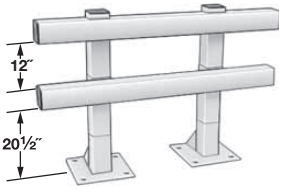

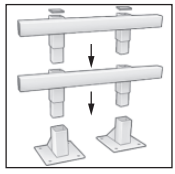

Start with two bases and then stack guardrails to the height you need. All components are sold separately and are made of yellow-painted steel.

Base has a 4″ Sq. × 8″ Ht. tube for inserting the guardrails and a 12″ Sq. × 1/2″ Thick plate with four 7/8″ dia. mounting holes (anchor bolts sold separately).

Guardrails are made of 4″ Sq. × 3/16″ Thick tubing. They consist of a crossbar welded to a pair of posts. Black plastic caps provide a finished look. Guardrail with bases is 20 1/2″ high. Each additional guardrail adds 12″ of height.

		Each
Base (Two Required)	6097T44	$115.85
4′ Long Guardrail	6097T41	219.18
6′ Long Guardrail	6097T42	253.36
8′ Long Guardrail	6097T43	279.51
3/4″ Dia. × 5 1/4″ Lg. Anchor Bolt	92403A502	10.60
Replacement Cap	6097T11	10.60

Chip Guards

Flex-Arm Magnetic Mount

Swing-Away Magnetic/Screw Mount

Swing-Away Screw Mount

Flex-Arm Clamp Mount

Flex-Arm Screw Mount

Position the arms on these guards to provide the best protection from chips. All guards have a 1/8″ thick impact-resistant clear polycarbonate shield.

Magnetic-mount guards are ideal for temporary installation. ***Clamp-mount*** guards mount to benches. ***Screw-mount*** guards include fasteners (unless noted) for permanent installation.

Flex-Arm Guards— Bend and twist in any direction. The arm is 5/8″ dia. coiled spring steel with a vinyl cover. *Clamp-mount* guards have a 2″ max. opening.

Swing-Away Guards— Swing in and out as needed. Guards lock in any vertical position and have winged side panels. *Magnetic/screw-mount* guard has an acetal arm. *Screw-mount* guards have a steel arm. *Clamp kit for screw-mount guards* has a 2 1/4″ max. opening.

Flex-Arm Guards

Shield Size	12″ Arm Lg.	Each	18″ Arm Lg.	Each	Repl. Shields	Each
Magnetic Mount						
6″ × 6″	4362A31	$38.64	4362A35	$41.15	4362A48	$15.98
8″ × 8″	4362A32	43.06	4362A36	45.25	4362A49	21.02
10″ × 10″	4362A33	47.47	4362A37	49.38	4362A51	27.09
12″ × 12″	4362A34	49.74	4362A38	52.03	4362A52	31.18
Clamp Mount						
6″ × 6″	4362A39	49.54	4362A44	51.76	4362A48	15.98
8″ × 8″	4362A41	54.76	4362A45	57.04	4362A49	21.02
10″ × 10″	4362A42	59.39	4362A46	62.33	4362A51	27.09
12″ × 12″	4362A43	62.70	4362A47	65.33	4362A52	31.18
Screw Mount						
6″ × 6″	4362A11	42.14	4362A15	44.54	4362A48	15.98
8″ × 8″	4362A12	47.20	4362A16	49.89	4362A49	21.02
10″ × 10″	4362A13	52.70	4362A17	54.83	4362A51	27.09
12″ × 12″	4362A14	55.41	4362A18	57.76	4362A52	31.18

Swing-Away Guards

Shield Size	Arm Lg.	Guards	Each	Repl. Shields	Each
Magnetic/Screw Mount					
5″ × 9″	14 1/2″	4585A21★	$106.67	4585A22	$23.78
Screw Mount					
9″ × 14″	20″	4392A16	164.49	4392A24	57.75
9″ × 14″	31″	4392A17	173.63	4392A24	57.75

★ Has two 1/4″ dia. mounting holes (fasteners not included).

Clamp Kit for Screw-Mount Guards ..... 4392A18 Each $17.32

Machine Guards

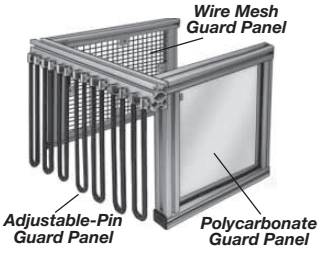

Guard panels are sold separately.

These protective panels are framed in lightweight yet strong aluminum T-slot extrusions. Mount them to machines and flat surfaces. All have four 9/32″ dia. mounting holes (fasteners not included). They can also be mounted to each other with the included connecting hardware. Can help meet OSHA requirements for machine guarding.

Wire mesh guard panels have 1/16″ dia. welded steel wire mesh with a PVC coating and 1/2″ square openings for visibility and ventilation. The frame is 1″ square. **To Order:** Specify PVC coating color: black or yellow.

Polycarbonate guard panels keep chips and splashes contained while providing a clear view of your machinery. Polycarbonate is clear and 3/16″ thick; frame is 1″ square.

Adjustable-pin guard panels allow for custom openings. Ideal for feeding and ejecting material. Pins are 1″ Wd.×1/4″ Dia. black-oxide steel. Max. adjustment is 1″ less than the pin length. The frame is 1″×2″.

Ht.	Pin Lg.	1-ft. Wd.	Each	2-ft. Wd.	Each	3-ft. Wd.	Each
Wire Mesh							
1′	—	5748T11	$338.46	5748T12	$392.31	5748T13	$446.15
1′9″	—	5748T14	378.46	5748T15	437.88	5748T16	499.85
Polycarbonate							
1′	—	5748T17	349.21	5748T18	398.44	5748T19	460.32
1′9″	—	5748T21	390.48	5748T22	451.56	5748T23	518.75
Adjustable Pin							
1′	11″	5748T24	358.18	5748T25	423.33	5748T26	518.33
1′9″	1′8″	5748T27	398.85	5748T28	490.16	5748T29	585.71

11″ Long Replacement Pin	5748T31	Each	$14.55
1′8″ Long Replacement Pin	5748T32	Each	$29.15

Quick-Install Perimeter Guards

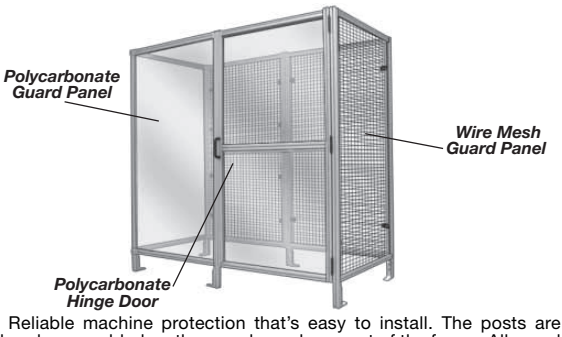

Reliable machine protection that's easy to install. The posts are already assembled on the guard panels as part of the frame. All guard panels are framed in lightweight yet strong 1 1/2″ square aluminum T-slot extrusions. The posts have a 1 1/2″ Sq.×3/8″ Thick. mounting plate with one 1/2″ dia. hole (fasteners not included). Floor clearance is 6″. Hinge doors mount to the right or left and include latch and handle. Can help meet OSHA requirements for machine guarding.

Wire mesh guard panels and ***hinge doors*** are 1/8″ dia. welded steel wire mesh with a PVC coating and 1″ square openings for visibility and ventilation. **To Order:** Specify PVC coating color: black or yellow.

Polycarbonate guard panels and ***hinge doors*** keep chips and splashes contained while providing a clear view of your machinery. Polycarbonate is clear and 1/4″ thick.

Wd.	6-ft. Ht.	Each	7-ft. Ht.	Each
Wire Mesh				
Guard Panels				
1′6″	7435T19	$248.89	7435T24	$266.56
2′	7435T21	265.50	7435T25	283.17
2′6″	7435T22	282.12	7435T26	299.80
3′	7435T23	294.85	7435T27	316.41
Hinge Doors				
3′	7435T86	383.78	7435T88	399.48
4′	7435T87	409.25	7435T89	430.82
Polycarbonate				
Guard Panels				
1′6″	7435T37	274.29	7435T42	309.74
2′	7435T38	318.60	7435T43	349.57
2′6″	7435T39	353.71	7435T44	383.14
3′	7435T41	376.85	7435T45	415.57
Hinge Doors				
3′	7435T95	469.59	7435T97	487.30
4′	7435T96	510.18	7435T98	557.19

Bolt-Together Perimeter Guards

Create a barrier between traffic and machinery. Modular bolted design accommodates custom modifications. Simply unbolt, cut down to size, and bolt back together. You can also mix-and-match widths and materials. Components sold separately and include connecting hardware. Floor clearance is 6″. Can help meet OSHA requirements for machine guarding.

Guard panels and ***doors*** are framed in yellow powder-coated steel.

Wire mesh guard panels have welded black powder-coated steel mesh with 1 7/8″ openings for visibility and ventilation. *Polycarbonate guard panels* are 3/16″ thick clear polycarbonate for good visibility along with splash and chip protection. *Hinge doors* include a slide-bolt latch.

To Order: For all doors, please specify right- or left-hand mount.

Posts are 2″ Sq.×1/8″ Thick. yellow powder-coated steel tubing with a 5 3/4″ Sq.×1/4″ Thick. mounting plate with four 5/8″ dia. mounting holes (fasteners not included). *Door hinge post* and *door latch post* can be used as center posts as well as corner posts.

Guard Panels and Doors

Ht.	Wd.	Wire Mesh	Each	Polycarbonate	Each
Guard Panels					
6′6 3/4″	9 13/16″	5987T51	$66.75	5987T11	$78.58
6′6 3/4″	1′9 5/8″	5987T52	79.96	5987T12	119.51
6′6 3/4″	2′9 7/16″	5987T53	96.37	5987T13	155.64
6′6 3/4″	3′9 1/4″	5987T54	111.70	5987T14	191.50
6′6 3/4″	4′9 1/16″	5987T55	124.47	5987T15	222.55
Hinge Doors					
6′6 3/4″	2′9″	5987T17	208.31	5987T19	267.57
Slide Doors					
6′6 3/4″	3′9 1/4″	5987T18	574.60	5987T21	701.22

Posts

Adjustable center post is hinged to accommodate angles.

	Ht.		Each
End	7′1 7/16″	5987T61	$53.98
Center	7′1 7/16″	5987T62	57.80
Adjustable Center	7′1 7/16″	5987T16	68.86
Corner	7′1 7/16″	5987T63	57.80
Door Hinge	7′1 7/16″	5987T64	65.85
Door Latch	7′1 7/16″	5987T67	67.12

Removable-Panel Perimeter Guards

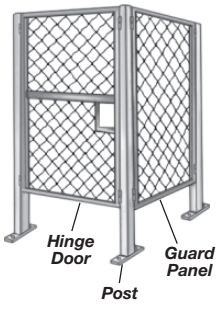

Safeguard your machinery and have quick access for maintenance. These guard panels lift on and off their posts in just seconds. They can also be permanently secured to the posts with the included self-tapping screws.

The guard panels have hook-style fasteners that slip into the slots on the posts. All components have a yellow polyurethane coating. They are sold separately and include connecting hardware. Floor clearance is 12″. Can help meet OSHA requirements for machine guarding.

Guard panels and ***hinge door*** have a steel frame and 1/8″ dia. woven steel wire mesh with 1 1/2″ openings for visibility and ventilation.

Hinge door mounts to the right or the left. It can be locked with a padlock (padlock not included; max. shackle dia. is 3/8″). The door plate size is 8 1/4″ Lg.×5 1/2″ Wd.

Post can be used as a corner or center post. It is 2 1/2″ Sq.×1/16″ Thick. tubular steel with a 7 1/2″ Lg.×2 1/2″ Wd.×3/8″ Thick. mounting plate (fasteners included). Plastic end caps are included.

Guard Panels

Ht.	Wd.		Each
5′	9 1/2″	45695T51	$56.10
5′	1′9 1/2″	45695T52	60.24
5′	2′9 1/2″	45695T53	86.22
5′	3′9 1/2″	45695T54	109.17
5′	4′9 1/2″	45695T55	130.28
5′	5′9 1/2″	45695T56	$150.34
5′	6′9 1/2″	45695T57	167.22
5′	7′9 1/2″	45695T58	177.46
5′	9′9 1/2″	45695T59	199.74

Hinge Door

Ht.	Wd.		Each
5′	4′	45695T89	$215.87

Post

Ht.		Each
6′	45695T87	$70.26

Aluminum T-Slotted Framing

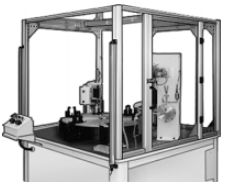

Machine Guard

Cart

If you can design it, you can build it with this versatile "create anything" framing. It's great for making machine guards and frames, carts, workstations, enclosures, and more.

T-slotted extrusions provide attachment points anywhere along the length making all of the components easy to assemble, disassemble, and reconfigure. No welding or painting required. The ultimate in flexibility.

Extrusions

Extrusions are the basic building blocks. Use fasteners to connect other components along the T-slots to create your structure. All are made of aluminum alloy with a clear anodized finish. **To Order:** Please specify 2-, 4-, 6-, or 8-ft. length.

Inch extrusions have a grooved surface which hides scratches. ***Metric extrusions*** have a smooth surface. ***Hollow extrusions*** are strong, yet lighter weight and more economical than solid extrusions. ***Two-slot single corner*** and ***two-slot single inline*** extrusions are ideal for applications where you want a finished look.

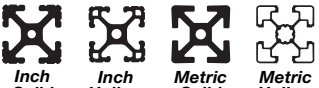

Inch Solid | Inch Hollow | Metric Solid | Metric Hollow

Extrusion Size, sq.	T-Slot Wd.	Hole Dia.	FOUR-SLOT SINGLE Each 2 ft.	4 ft.	6 ft.	8 ft.	SIX-SLOT DOUBLE Each 2 ft.	4 ft.	6 ft.	8 ft.
Inch										
1″ Solid	0.255″	0.205″	47065T101 $8.35	$14.20	$19.79	$26.38	47065T107 $12.85	$22.98	$33.95	$44.64
1½″ Hollow	0.320″	0.262″	47065T102 15.04	26.90	39.31	51.36	47065T108 26.10	48.12	67.30	92.08
1½″ Solid	0.320″	0.262″	47065T103 20.21	30.33	42.58	61.31	47065T109 27.92	50.25	72.51	97.42
Metric										
20 mm Solid	5 mm	4.3 mm	5537T101 7.83	12.24	17.19	21.58	5537T111 11.23	18.29	26.10	32.85
40 mm Solid	8 mm	6.8 mm	5537T102 19.93	35.40	51.03	66.33	5537T112 34.28	59.98	88.57	118.31
45 mm Hollow	10 mm	10 mm	5537T103 14.03	25.80	35.96	48.22	5537T113 24.16	46.45	71.67	90.00

Extrusion Size, sq.	T-Slot Wd.	Hole Dia.	TWO-SLOT SINGLE CORNER Each 2 ft.	4 ft.	6 ft.	8 ft.	TWO-SLOT SINGLE INLINE Each 2 ft.	4 ft.	6 ft.	8 ft.
Inch										
1″ Solid	0.255″	0.205″	47065T113 $8.35	$14.20	$19.79	$26.38	47065T118 $8.35	$14.20	$19.79	$26.38
1½″ Hollow	0.320″	0.262″	47065T114 13.98	25.15	36.82	48.15	47065T119 13.98	25.15	36.82	48.15
Metric										
20 mm Solid	5 mm	4.3 mm	5537T114 7.83	13.09	17.19	21.58	5537T117 7.83	13.09	17.19	21.58
40 mm Solid	8 mm	6.8 mm	5537T115 19.96	35.40	51.03	66.33	5537T118 19.96	34.90	51.03	66.33
45 mm Hollow	10 mm	10 mm	5537T116 14.03	25.80	35.96	48.22	5537T119 14.03	25.80	35.96	48.22

End Caps, T-Slot Covers, and Corner Connectors—Fit solid and hollow extrusions.

Single and ***double end caps*** are black plastic. ***Threaded end caps*** hold leveling feet and casters to double extrusions (fasteners included). Made of black powder-coated zinc. ***T-slot covers*** conceal wires and keep dust out of the T-slot. Made of polypropylene. They are approx. 6-ft. long; can be cut with scissors. *Black* covers can also be turned over to hold a panel. **To Order:** Please specify color: black, gray, or yellow.

Corner connectors provide a finished look. Made of aluminum and include hole covers and fasteners. Tapped holes are required.

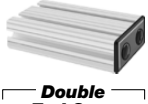

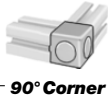

Extrusion Size, sq.	Single End Caps	Each	Double End Caps	Each	Threaded End Caps Thread Size		Each	T-Slot Covers	Each	90° Corner Connectors	Each	3-Way Corner Connectors	Each
Inch													
1″	47065T91	$1.20	47065T92	$1.50	¼″-20	47065T296	$10.54	47065T93	$4.15	47065T242	$6.83	47065T244	$9.86
1½″	47065T87	1.50	47065T16	1.80	⅜″-16	47065T249	11.12	47065T4	4.27	47065T243	7.84	47065T245	10.78
Metric													
20 mm	5537T14	.98	5537T19	1.27	M6	5537T392	10.20	5537T15▲	3.90	5537T286	6.60	5537T289	9.55
40 mm	5537T24	1.73	5537T29	2.34	M8	5537T299	13.40	5537T319	4.30	5537T287	8.47	5537T291	11.18
45 mm	5537T302	1.86	5537T303	2.40	M12	5537T301	15.32	5537T322	4.37	5537T288	9.64	5537T292	11.73

▲ Available in black only.

Screw-On Extrusion-to-Extrusion Brackets, Braces, Plates, and Tees—Fit solid and hollow extrusions.

Connect extrusions without machining. All are made of aluminum. Fasteners sold separately; see page 1924 for other available fasteners.

Extrusion Size, sq.	90° BRACKETS Lg.	Single, 2-Hole	Each	Double, 4-Hole	Each	EXTENDED 90° BRACKETS Lg.	Single, 4-Hole	Each	Double, 8-Hole	Each	Required Fasteners Pkg. Qty.		Per Pkg.
Inch													
1″	1″	47065T223	$3.98	47065T169	$5.58	2″	47065T175	$4.56	47065T176	$5.96	4	47065T139	$1.85
1½″	1½″	47065T224	4.06	47065T222	6.06	3″	47065T51	4.89	47065T19	6.94	4	47065T97	2.71
Metric													
20 mm	20 mm	5537T181	3.88	5537T184	4.98	40 mm	5537T187	4.53	5537T191	5.15	4	5537T154	2.55
40 mm	40 mm	5537T182	4.35	5537T185	5.60	80 mm	5537T188	5.10	5537T192	5.95	4	5537T155	2.98
45 mm	45 mm	5537T183	4.62	5537T186	5.80	90 mm	5537T189	5.25	5537T193	6.64	4	5537T156	3.22

(Continued on following page)

Aluminum T-Slotted Framing *(Continued from previous page)*

Screw-On Extrusion-to-Extrusion Brackets, Braces, Plates, and Tees (Cont.)—Fit solid and hollow extrusions.

Connect extrusions without machining. All are made of aluminum. Fasteners sold separately; see page 1924 for other available fasteners. ***90° braces*** include fasteners.

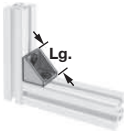

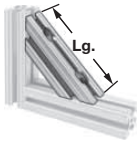

Extrusion Size, sq.	90° BRACES Single, 2-Hole Lg.	Single, 2-Hole Each	Double, 8-Hole Lg.	Double, 8-Hole Each	HEAVY DUTY 90° BRACES Lg.	Single, 2-Hole Each	Double, 4-Hole Each
Inch							
1″	1″	47065T216	2⅝″	47065T218	6″	47065T186	47065T187
1″	—	—	—	—	12″	47065T188	47065T189
1½″	50 mm	5537T51	106 mm	5537T194	6″	47065T12	47065T28
1½″	—	—	—	—	12″	47065T27	47065T25
Metric							
20 mm	25 mm	5537T81	50 mm	5537T197	152 mm	5537T2	5537T203
20 mm	—	—	—	—	304 mm	5537T368	5537T369
40 mm	50 mm	5537T51	106 mm	5537T195	152 mm	5537T201	5537T204
40 mm	—	—	—	—	304 mm	5537T37	5537T371
45 mm	56 mm	5537T196	120 mm	5537T199	152 mm	5537T202	5537T205
45 mm	—	—	—	—	304 mm	5537T372	5537T373

Extrusion Size, sq.	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each
Inch										
1″	$4.51	$19.51	$15.67	$16.85						
1″	—	—	17.15	18.49						
1½″	7.98	16.29	17.86	22.94						
1½″	—	—	23.15	29.70						
Metric										
20 mm	5.39	18.59	16.53	19.17						
20 mm	—	—	17.88	21.17						
40 mm	7.98	16.29	19.66	25.64						
40 mm	—	—	24.27	31.14						
45 mm	8.28	21.24	20.28	26.02						
45 mm	—	—	24.17	32.42						

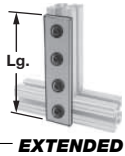

Extrusion Size, sq.	PLATES Single, 2-Hole Lg.	Single, 2-Hole Each	Double, 4-Hole Each	EXTENDED PLATES Single, 4-Hole Lg.	Single, 4-Hole Each	Double, 8-Hole Each	Required Fasteners Pkg. Qty.	Per Pkg.
Inch								
1″	2″	47065T141	47065T211	4″	47065T173	47065T174	4	47065T142
1½″	3″	47065T143	47065T212	6″	47065T42	47065T18	4	47065T97
Metric								
20 mm	40 mm	5537T167	5537T171	80 mm	5537T174	5537T177	4	5537T154
40 mm	80 mm	5537T168	5537T172	160 mm	5537T175	5537T178	4	5537T155
45 mm	90 mm	5537T169	5537T173	180 mm	5537T176	5537T179	4	5537T156

Extrusion Size, sq.	Each	Each	Each	Each	Each	Each
Inch						
1″	4.50	5.74	7.25	2.55		
1½″	5.19	6.41	8.12	2.98		
Metric						
20 mm	5.98	6.61	7.53	3.22		
40 mm	6.77	7.10				
45 mm	8.64	8.53				

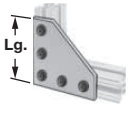

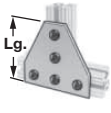

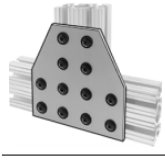

Extrusion Size, sq.	90° PLATES Single, 5-Hole Lg.	Single, 5-Hole Each	Double, 12-Hole Lg.	Double, 12-Hole Each	TEES Single, 5-Hole Lg.	Single, 5-Hole Each	Double, 12-Hole Lg.	Double, 12-Hole Each	Required Fasteners Pkg. Qty.	Per Pkg.
Inch										
1″	3″	47065T177	4″	47065T179	3″	47065T182	4″	47065T184	4	47065T142
1½″	4½″	47065T178	6″	47065T181	4½″	47065T183	6″	47065T185	4	47065T97
Metric										
20 mm	60 mm	5537T206	80 mm	5537T209	60 mm	5537T213	80 mm	5537T216	4	5537T154
40 mm	120 mm	5537T207	160 mm	5537T211	120 mm	5537T214	160 mm	5537T217	4	5537T155
45 mm	135 mm	5537T208	180 mm	5537T212	135 mm	5537T215	180 mm	5537T218	4	5537T156

Extrusion Size, sq.	Each	Each	Each	Each	Each	Each	Each	Each
Inch								
1″	6.70	12.58	7.58	13.95	2.30			
1½″	7.76	14.36	8.64	16.66	2.71			
Metric								
20 mm	6.38	12.19	7.52	13.81	2.55			
40 mm	7.98	14.56	9.97	17.51	2.98			
45 mm	8.10	15.60	10.38	18.67	3.22			

Extrusion-to-Extrusion Connectors—Fit solid and hollow extrusions.

No additional fasteners required. These connectors fit inside T-slots, flush with the extrusion surface for a cleaner look. Tighten with a hex key (sold separately, see pages 2838-2842).

No-drill 90° connectors allow connection without any machining. Made of zinc-plated steel.

Concealed 90° connectors provide a completely hidden connection. One tapped hole to insert and one drilled access hole to tighten are required. Made of zinc-plated steel.

Adjustable 90° connectors allow positioning anywhere along the extrusion. One counterbored hole is required. Made of zinc.

End-to-end connectors require two counterbored holes. Made of zinc.

Recommended Machining Hardware—For end mills for counterboring, see pages 2493-2495. For drill bits for access holes, see pages 2438 and 2445. For taps, see pages 2537-2538.

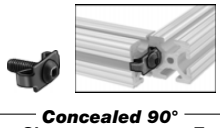

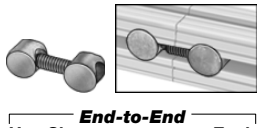

Extrusion Size, sq.	No-Drill 90° Hex Size	Each	Concealed 90° Hex Size	Each	Adjustable 90° Hex Size	Each	End-to-End Hex Size	Each
Inch								
1″	—	—	5/32″	47065T155	5/32″	47065T153	5/32″	47065T235
1½″	5/32″	5537T294	3/16″	47065T156	1/4″	47065T154	5 mm	5537T274
Metric								
20 mm	—	—	3 mm	5537T63	3 mm	5537T64	3 mm	5537T273
40 mm	4 mm	5537T294	5 mm	5537T33	5 mm	5537T34	5 mm	5537T274
45 mm	5 mm	5537T278	8 mm	5537T277	5 mm	5537T276	5 mm	5537T275

Extrusion Size, sq.	No-Drill 90° Each	Concealed 90° Each	Adjustable 90° Each	End-to-End Each
Inch				
1″	—	$1.79	$3.39	$5.66
1½″	$6.30	1.91	3.89	6.36
Metric				
20 mm	—	1.43	3.12	5.52
40 mm	6.30	2.20	3.29	6.36
45 mm	7.50	2.23	3.98	7.24

(Continued on following page)

Aluminum T-Slotted Framing *(Continued from previous page)*

End-Feed Fasteners—Fit solid and hollow extrusions.

Slide these fasteners into the end of the extrusion to secure components to the extrusion. Fasteners consist of a screw and nut. Tighten screw with a hex key (sold separately on pages 2838-2842). All fasteners are black, except stainless steel.

Compact-head fasteners are ideal when space does not allow for a flanged-head screw. Made of zinc-plated steel. ***Double*** fasteners have two fastening points for quicker assembly. Made of zinc-plated steel.

Extrusion Size, sq.	Hex Size	Pkg. Qty.	STANDARD Zinc-Plated Steel	Per Pkg.	STANDARD Type 304 SS	Per Pkg.	Compact Head	Per Pkg.	Double	Per Pkg.
Inch										
1″	5/32″	4	47065T142	$2.30	—	—	47065T139	$1.85	47065T147	$4.29
1 1/2″	3/16″	4	47065T97	2.71	47065T145 ♦	$4.51	47065T215 ★	2.38	47065T149	6.76
Metric										
20 mm	3 mm	4	5537T154	2.55	5537T157	4.15	5537T161	1.99	5537T164	4.36
40 mm	5 mm	4	5537T155	2.98	5537T158	4.89	5537T162	2.49	5537T165	7.10
45 mm	5 mm	4	5537T156	3.22	5537T159	5.25	5537T163	2.71	5537T166	7.80

♦ Made of Type 302 stainless steel. ★ Hex size is 5/32″.

Drop-In Fasteners—Fit solid and hollow extrusions.

Place these fasteners directly into the extrusion to secure components to the extrusion—no need to disassemble your structure. Fasteners consist of a screw and nut. All fasteners are zinc-plated steel.

Fasteners ***with rubber handle*** simplify positioning along the T-slot. Tighten with a hex key (sold separately on pages 2838-2842). Color is black. Fasteners ***with spring-loaded ball*** hold nut in place. Tighten with a hex key (sold separately on pages 2838-2842). Fasteners ***with double-spring tab*** also align the nut flush with the T-slot opening. Tighten with a hex key (sold separately on pages 2838-2842). Fasteners ***with stud*** twist into place for quick attachment of inside braces and other accessories. Tighten with a socket wrench.

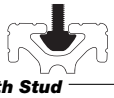

Extrusion Size, sq.	With Rubber Handle Hex Size	Each	With Spring-Loaded Ball Hex Size	Each	With Double-Spring Tab Hex Size	Each	With Stud Socket Size	Each
Inch								
1″	5/32″	47065T151	5/32″	47065T226	—	—	7/16″	47065T233
1 1/2″	3/16″	47065T152	3/16″	47065T327	3/16″	47065T229	1/2″	47065T234
Metric								
20 mm	3 mm	5537T246	3 mm	5537T75	—	—	—	—
40 mm	4 mm	5537T248	4 mm	5537T41	4 mm	5537T262	10 mm	5537T268
40 mm	5 mm	5537T249	5 mm	5537T42	5 mm	5537T263	13 mm	5537T269
45 mm	5 mm	5537T251	—	—	5 mm	5537T264	13 mm	5537T271

Extrusion Size, sq.	Lg.	Single, 4-Hole	Each	Double, 4-Hole	Each	Single, 4-Hole	Each	Double, 4-Hole	Each	Pkg. Qty.	Required Fasteners	Per Pkg.
		180° INLINE PIVOTS				180° PERPENDICULAR PIVOTS				Required Fasteners		
Inch												
1″	3″	47065T191	$16.33	47065T192	$22.25	47065T194	$17.22	47065T192	$22.25	4	47065T139	$1.85
1 1/2″	4 1/2″	47065T13	18.43	47065T193	23.82	47065T14	18.43	47065T193	23.82	4	47065T97	2.71
Metric												
20 mm	60 mm	5537T219	17.73	5537T223	23.39	5537T219	17.73	5537T223	23.39	4	5537T154	2.55
40 mm	120 mm	5537T221	21.07	5537T224	28.25	5537T221	21.07	5537T224	28.25	4	5537T155	2.98
45 mm	135 mm	5537T222	21.70	5537T225	29.98	5537T222	21.70	5537T225	29.98	4	5537T156	3.22

Extrusion Size, sq.	Lg.	Floor Mtg. Hole Dia.	Single, 2-Hole	Each	Double, 4-Hole	Each	Pkg. Qty.	Required Fasteners	Per Pkg.
			LOCKING PIVOTS		FLOOR MOUNTING BRACKETS		Required Fasteners		
Inch									
1″	47065T221	$18.98	—	—	5″	3/8″	47065T65	$8.72	47065T202	$12.93	4	47065T142	$2.30
1 1/2″	47065T225	23.72	47065T227	$37.93	5″	1/2″	47065T201	10.24	47065T26	13.13	4	47065T97	2.71
Metric													
20 mm	5537T82 ♦	18.74	—	—	140 mm	9 mm	5537T239	8.55	5537T243	12.61	4	5537T252	2.68
40 mm	5537T52	27.19	5537T53	40.62	140 mm	14 mm	5537T241	10.53	5537T244	13.46	4	5537T155	2.98
45 mm	5537T235	31.81	5537T238	49.89	140 mm	14 mm	5537T242	11.86	5537T245	14.98	4	5537T156	3.22

♦ Made of aluminum.

(Continued on following page)

Aluminum T-Slotted Framing *(Continued from previous page)*

Hinges, Latches, and Door Handles—Fit solid and hollow extrusions.

Fasteners are included. ***Extrusion hinges*** create a hinged joint between two extrusions. *Inch* hinges are aluminum. *Metric* hinges are black powder-coated zinc (unless noted). ***Panel hinges*** create a hinged joint between a panel up to 1/4″ thick and an extrusion. Made of black plastic. ***Magnetic panel latches*** secure a panel up to 1/4″ thick and an extrusion. *Inch* latches are aluminum. *Metric* latches are black nylon. ***Slide-bolt extrusion latches*** secure two extrusions. *Inch* are aluminum. *Metric* are zinc. ***Door handles*** are made of black plastic.

Inch

Metric

Extrusion Size, sq.	Extrusion Hinges	Each	Panel Hinges	Each	Magnetic Panel Latches	Each	Slide-Bolt Extrusion Latches	Each	Door Handles	Each
Inch										
1″	47065T161	$19.85	47065T162	$9.15	47065T165	$7.26	47065T57	$20.95	47065T164	$6.40
1 1/2″	47065T96	20.94	47065T163	14.59	47065T165	7.26	47065T57	20.95	47065T54	7.52
Metric										
20 mm	5537T85▲	4.76	———	———	5537T86	8.28	5537T337	19.58	5537T84	7.72
40 mm	5537T55	16.58	5537T324	14.62	5537T56	9.20	5537T393	21.21	5537T54	8.38
45 mm	5537T332	17.10	5537T325	14.98	5537T229	9.41	5537T394	21.66	5537T54	8.38

▲ Made of nylon.

Panel Holders, Panel Tracks, and Roller Wheels—Fit solid and hollow extrusions.

Bolt-on panel holders are aluminum and include fasteners. *Holders for mesh panels* also include a backing plate. ***Twist-in holders for solid panels*** require no tools or fasteners. Made of black nylon. ***Sliding tracks for solid panels*** consist of a top and bottom track that accept three panels up to 1/4″ thick, except 47065T166, which accepts two panels. Made of aluminum. ***Roller wheels*** ride in the T-slot. Made of black nylon (fasteners included).

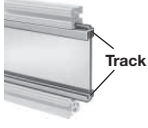

Extrusion Size, sq.	BOLT-ON HOLDERS For Mesh Panels	Each	For Solid Panels	Each	Twist-In Holders for Solid Panels Max. Panel Thick.		Each	Sliding Tracks for Solid Panels Lg.		Each	Roller Wheels	Each
Inch												
1″	47065T197	$5.68	47065T195	$4.95	1/4″	47065T251	$2.35	4′	47065T166	$23.88	47065T204	$15.76
1 1/2″	47065T198	6.68	47065T196	5.66	3/8″	47065T252	2.39	4′	47065T78	28.75	47065T63	26.90
Metric												
20 mm	5537T305	5.87	5537T308	4.88	6 mm	5537T87	2.31	———	———	———	5537T353	9.80
40 mm	5537T306	7.82	5537T309	6.34	9 mm	5537T57	2.54	1.2 m	5537T321	31.20	5537T354	10.05
45 mm	5537T307	8.20	5537T311	6.71	9 mm	5537T312	2.79	———	———	———	5537T355	10.32

Panels

To Order: Please specify panel size: 2′×2′, 2′×4′, 4′×4′, or 4′×8′.

Welded wire mesh panels are made of 0.15″ dia. PVC-coated wire and have 1″×1″ openings. ***Polycarbonate*** and ***acrylic panels*** are clear, solid, and 0.236″/6 mm thick.

		Each 2′×2′	2′×4′	4′×4′	4′×8′
Black Wire Mesh	47065T275	$13.67	$27.35	$54.70	$88.55
Yellow Wire Mesh	47065T276	23.53	35.71	59.53	97.43
Polycarbonate	47065T284	39.36	66.49	122.41	221.63
Acrylic	47065T285	37.51	63.86	114.70	191.20

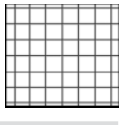
Wire Mesh

Tube Holders—Fit solid and hollow extrusions.

Create additional axes on a structure by placing 1″ OD tubing (sold separately) into these holders. All are aluminum. ***Single*** and ***double*** holders tighten with a hex key (not included, see page 2839).

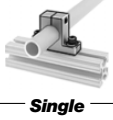

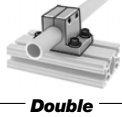

Extrusion Size, sq.	Overall Size, Lg.×Wd.×Ht.	Hex Size	Single	Each	Single with Clamping Handle	Each	Double	Each	Add-On with Clamping Handle	Each
1″	3″×7/8″×2 1/8″	3/16″	47065T205	$34.10	47065T206	$36.12	47065T207■	$51.91	47065T24●	$63.47
1 1/2″	3″×7/8″×2 1/8″	1/4″	47065T37	35.24	47065T41	37.27	47065T44■	53.70	47065T24●	63.47

■ Overall size is 3″ Lg.×2″ Wd.×2 1/8″ Ht. ● Overall size is 3 3/8″ Lg.×1 1/2″ Wd.×1 1/2″ Ht.

1″ OD (3/4″ ID) Aluminum Tubing—4-ft. Length ..... 47065T208 Each $66.50

Accessories—Fit solid and hollow extrusions.

Tool hangers hold up to 100 lbs. Made of black nylon. ***Tool holders*** keep tools close at hand. Made of black nylon and include fasteners. ***Twist-in cable tie holders*** are black nylon and accept ties up to 3/8″ Wd.×1/16″ Thick. ***Leveling feet*** are zinc-plated steel, swivel 15°, and include a nonskid rubber pad. A tapped hole is required. ***Swivel casters*** are zinc-plated steel and have a brake. Tapped hole required.

Extrusion Size, sq.	Tool Hangers	Each	Tool Holders	Each	Twist-In Cable Tie Holders	Each	Leveling Feet Thread Size	Cap., lbs.		Each	Swivel Casters Thread Size	Cap., lbs.	Wheel Dia.		Each
Inch															
1″	47065T203	$8.68	47065T247	$14.95	47065T268	$0.72	1/4″-20	750	6111K82	$5.95	3/8″-16	75	2″	47065T82	$10.42
1 1/2″	47065T22	11.16	47065T273	15.81	47065T217	1.79	3/8″-16	2,800	6111K83	7.56	3/8″-16	125	3″	2834T34	10.65
Metric															
20 mm	5537T362	3.70	5537T226	14.68	5537T356	.69	M6	518	6301K78	5.36	M6	90	50 mm	5537T314	11.80
40 mm	5537T363	4.33	47065T273	15.81	47065T219	1.79	M8	738	6301K79	5.95	M8	90	75 mm	5537T317	13.16
45 mm	5537T364	4.55	47065T273	15.81	5537T357	1.88	M12	3,692	6301K82	11.10	M12	125	100 mm	5537T318	25.18

Aluminum Bolt-Together Framing

Perforated square tube means easy bolt-together assembly without drilling.

Tube

Standard

Single Flange

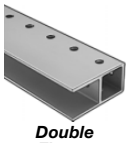
Double Flange

Tube is 1½″ square, 0.125″ thick anodized aluminum with 0.328″ dia. bolt holes on 1½″ centers on all four sides.

Single-flange and ***double-flange tube*** lets you mount accessories such as panels, bins, and conveyor stops. All flanges are ⅛″ Thick. × 1½″ Ht. and run the length of the tube. *Double-flange tube* holds a panel up to 1¼″ thick.

Lg.	Standard	Each	Single Flange	Each	Double Flange	Each
4′	8809T11	$24.44	8809T12	$29.82	8809T13	$33.75
6′	8809T21	33.47	8809T22	42.45	8809T23	49.19
8′	8809T31	43.83	8809T32	55.65	8809T33	64.63

Connectors, Plates, Brackets, and Accessories

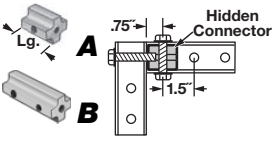

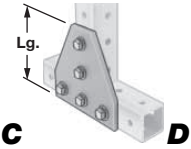

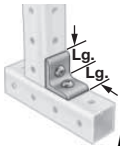

(A-E) Connectors, plates, and ***brackets*** are made of aluminum and include fasteners. The plates and brackets are anodized.

Style A and *Style B hidden connectors* fit inside the tube for a cleaner look. Use Style A connector if you have not cut your tube. Use Style B extended hidden connector if you have cut your tube and no longer have the 0.75″ distance between the end of the tube and the center of the first hole. This allows you to connect at the second bolt hole from the end of the tube.

		Lg.		Each
A	Hidden Connector	1 7/16″	8809T51	$4.07
B	Extended Hidden Connector	2 15/16″	8809T52	7.98
C	End-to-End Connecting Plate	3″	8809T61	6.67
D	Tee Connecting Plate	4½″	8809T63	12.94
E	90° Corner Connecting Bracket	1½″	8809T62	5.19
F	Floor-Mounting Bracket	5″	8809T64	14.79

(F) Floor-mounting bracket has one 0.531″ dia. floor-mounting hole (fastener not included). Made of anodized aluminum.

(G) End cap is made of black polypropylene.

(H) Leveling foot is 1¼″ dia. and swivels 10°-15° in any direction. Thread size is 5/16″-18 × 2″ Lg. Made of nickel-plated steel.

(J) Swivel caster has a 2½″ dia. black rubber wheel and brake. Thread size is 5/16″-18 × 1″ Lg. Frame is nickel-plated steel.

		Cap., lbs.		Each
G	End Cap	—	8809T41	$1.16
H	Leveling Foot	2,500	6111K48★	5.79
J	Swivel Caster	90	2834T64	9.01

★ Requires a Style B extended hidden connector to mount to the end of the tube.

Heavy Duty Telescoping-Tube Framing

Slide one length of this square tube into the next larger size to create railings, support stands, and sign supports.

Tube

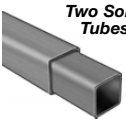
Two Solid Tubes

Two Perforated Tubes with Locking Pin

Tube is 0.105″ thick. Each tube is sold individually. Telescoping framing requires two or more tubes. Fasteners sold separately. Select tube fastener based on the size of the larger tube in the connection. **To Order:** Please specify 4-, 6-, 8-, or 12-ft. length.

Solid tube requires welding or drilling holes and using fasteners to connect. ***Perforated tube*** has 7/16″ dia. holes on 1″ centers on all four sides for connecting.

Steel tube is lightly oiled and can be painted or welded. ***Galvanized steel*** tube offers good corrosion resistance.

Locking pins are zinc-plated steel. Use for quick adjustments. ***Tube fasteners*** are zinc-plated steel. Each package includes 10 curved bolts, 10 nuts, and 10 washers.

Outside Size, sq.	SOLID	Each 4 ft.	6 ft.	8 ft.	12 ft.	PERFORATED	Each 4 ft.	6 ft.	8 ft.	12 ft.	Locking Pins	Each	Tube Fasteners	Per Pkg.
Steel														
1½″	4931T142	$12.12	$26.54	$29.56	$43.48	4931T147	$18.95	$27.84	$33.20	$46.58	4931T109	$5.61	—	—
1¾″	4931T143	18.64	27.37	34.12	50.32	4931T148	20.15	29.11	36.06	52.92	4931T109	5.61	4931T228	$11.84
2″	4931T144	19.97	28.92	37.70	55.61	4931T149	23.80	34.80	42.51	58.71	4931T111	5.85	4931T229	12.04
2¼″	4931T145	21.49	31.62	40.84	60.28	4931T151	24.78	35.73	44.37	64.97	4931T111	5.85	4931T231	12.26
2½″	4931T146	23.81	33.72	46.36	63.72	4931T152	26.72	38.57	48.75	71.71	4931T111	5.85	4931T232	12.48
Galvanized Steel														
1½″	4931T153	22.65	33.17	36.95	54.35	4931T158	23.68	34.80	41.50	58.23	4931T109	5.61	—	—
1¾″	4931T154	23.29	34.21	42.65	62.90	4931T159	25.19	36.39	45.08	66.15	4931T109	5.61	4931T228	11.84
2″	4931T155	24.96	36.16	47.13	69.52	4931T161	29.74	43.50	53.14	73.39	4931T111	5.85	4931T229	12.04
2¼″	4931T156	26.86	39.53	51.06	75.35	4931T162	30.97	44.66	55.46	81.21	4931T111	5.85	4931T231	12.26
2½″	4931T157	29.76	42.15	54.14	79.64	4931T163	33.40	48.21	60.94	89.63	4931T111	5.85	4931T232	12.48

Plates, Brackets, and Floor-Mounting Base

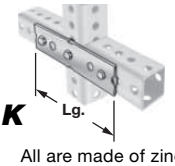

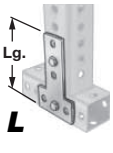

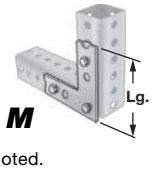

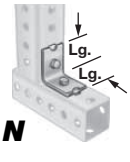

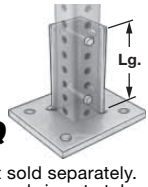

All are made of zinc-plated steel, unless noted.

(K-P) Plates and ***brackets*** fit all tube (tube being connected should be the same size). Fasteners sold separately. ***(Q) Floor-mounting base*** is made of galvanized steel and fits 1¾″ to 2½″ tube. It has four 5/8″ dia. holes for mounting to the floor. Anchor bolt sold separately.

Connecting fasteners connect plates, brackets, and signs to tube. Each package includes 10 bolts, 10 nuts, and 10 metal washers, and 10 plastic washers.

		Lg.		Each
K	Connecting Plate	8″	4931T222	$6.68
L	Tee Connecting Plate	5 5/16″	4931T219	5.74
M	90° Connecting Plate	4¾″	4931T221	8.08
N	90° Inside Connecting Bracket	1 11/16″	4931T223	3.80
P	Crossover Connecting Bracket	2½″	4931T226	4.64
Q	Floor-Mounting Base	6″	4931T224	62.70

Anchor Bolt for Floor-Mounting Base ..... 4931T225 Each $4.62

For Tube Outside Size, sq.		Per Pkg.
Connecting Fasteners for Plates and Brackets		
1½″	4931T333	$6.74
1¾″	4931T334	6.92
2″	4931T335	11.78
2¼″	4931T336	13.30
2½″	4931T337	13.78

Solid Light Duty Telescoping-Tube Framing

Slide the smaller tube into the larger tube to create framing that easily adjusts as your needs change. Requires welding or drilling holes and using fasteners (not included) to connect. ***Inch*** tubing is 0.083″ thick; ***metric*** tubing is 2 mm thick.

To Order: Please specify 2-, 4-, 6-, or 8-ft. length.

Steel tube is lightly oiled and can be painted or welded.
Type 304 stainless steel tube provides excellent corrosion resistance.
Aluminum tube is lightweight yet strong and corrosion resistant.

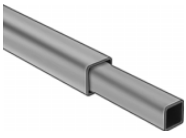

Square					Round				
Outside Size, sq.		Each 2 ft.	4 ft.	6 ft.	8 ft.	Tube OD		Each 2 ft.	4 ft.	6 ft.	8 ft.
Inch											
Steel											
¾″	**1471T51**	$4.53	$8.63	$12.55	$16.00	¾″	**1471T62**	$3.45	$6.68	$9.70	$12.74
1″	**1471T53**	5.91	11.82	17.72	23.63	1″	**1471T64**	4.38	8.48	12.33	16.18
Type 304 Stainless Steel											
¾″	**1471T17**	9.50	19.00	28.51	36.35	¾″	**1471T35**	10.64	20.21	31.91	39.36
1″	**1471T18**	10.26	20.52	29.15	39.28	1″	**1471T36**	12.55	23.98	35.51	46.94
Metric											
Steel											
20mm	**1471T71**	10.25	20.49	30.74	40.98	20mm	**1471T81**	14.34	28.68	43.02	57.35
25mm	**1471T72**	10.71	21.42	32.12	42.83	25mm	**1471T82**	16.74	33.48	49.74	66.95
Type 304 Stainless Steel											
____	____	____	____	____	____	20mm	**1471T85**	49.74	100.08	150.12	200.17
____	____	____	____	____	____	25mm	**1471T86**	56.29	112.57	168.86	225.14
Aluminum											
20mm	**1471T73**	7.88	15.75	23.63	31.51	20mm	**1471T83**	7.11	14.22	21.32	28.43
25mm	**1471T74**	9.94	19.88	29.82	39.75	25mm	**1471T84**	8.98	17.97	26.95	35.94

Perforated Flat and Angle Framing

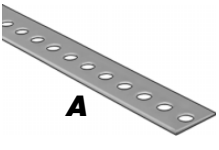

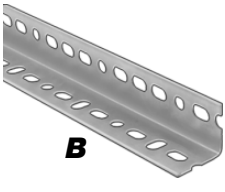

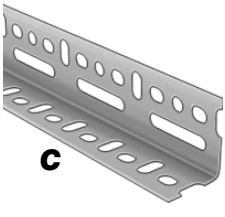

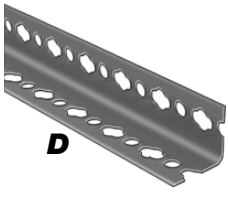

Utilize a variety of slots and holes to bolt this framing together to create guards and tables of any size and shape. All components can be reused. Hardware is sold separately.

Zinc-plated steel framing offers good corrosion resistance in most environments. ***Type 304 stainless steel*** framing offers excellent corrosion resistance. ***Hot-dipped galvanized steel*** framing has very good corrosion resistance. ***Green powder-coated steel*** framing offers strength and some corrosion resistance.

Flats and ***Angles***—**To Order:** Please specify 1-, 3-, 4-, 5-, 6-, or 8-ft. length where available.

Corner plate provides added strength and rigidity. Made of 6″×6″×6″, 0.080″ thick hot-dipped galvanized steel.

Single-stroke cutter makes it easy for one person to cut flats and angles. Overall length is 38″.

Hardware kits include 5/16″×¾″ bolts with nuts and washers to join components.

Size	Thick.	Pkg. Qty.		Each♦ 1 ft.	3 ft.	4 ft.	5 ft.	6 ft.	8 ft.
Flats									
(A) Zinc-Plated Steel									
1⅜″	0.080″	5	**4664T12**	$2.05	$5.51	$7.37	$9.10	$11.06	$15.98
(A) Type 304 Stainless Steel									
1⅜″	0.080″	5	**3414T11**	5.12	13.91	18.43	22.95	27.66	40.93
Angles									
(B) Zinc-Plated Steel									
1½″ ×1½″	0.074″	12	**4664T18**	2.26	6.12	8.05	10.10	11.91	16.32
(B) Type 304 Stainless Steel									
1½″ ×1½″	0.074″	12	**3414T12**	13.30	36.28	48.37	60.47	72.56	96.74
(C) Hot-Dipped Galvanized Steel									
2¼″ ×1½″	0.075″	10	**4664T19**	2.52	6.71	8.78	11.07	13.01	17.35
3″ ×1½″	0.105″	10	**4664T21**	2.62	8.04	10.47	13.09	16.16	20.94
(D) Green Powder-Coated Steel									
1⅝″ ×1⅝″	0.074″	10	**4664T24**	____	____	8.73	____	12.02	____
2⅜″ ×1⅝″	0.074″	10	**4664T25**	____	____	10.64	____	14.89	____
3 3/16″ ×1⅝″	0.105″	10	**4664T26**	____	____	15.84	____	22.86	____

♦ Prices are approximately 15% lower when you buy the package quantity shown.

		Each
Corner Plate	**4664T22**	$2.41
Single-Stroke Cutter	**3713A11**	306.66

Hardware Kits	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel	50	**4664T61**	$7.42
18-8 Stainless Steel	25	**3414T93**	15.83

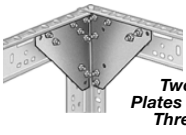

Two Corner Plates Shown with Three Angles

Single-Stroke Cutter

About Measuring Slip-On Fittings

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual measured size. Below are two ways to determine pipe size.

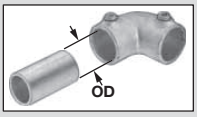

(1) Use a ruler to measure the outside diameter (OD) of the pipe. Round up to the closest actual OD listed in the chart below and select the corresponding pipe size.

For example, if the actual OD measures 1¾″, the next highest OD in the chart is 1⅞″, which makes the correct pipe size 1½″.

Actual OD	1″	1 5/16″	1⅝″	1⅞″	2⅜″
Pipe Size	¾″	1¼″	1¼″	1½″	2″

(2) To determine pipe size place the outside edge of the pipe on the line with the "0". The line that the opposite outside edge of the pipe touches indicates the pipe size.

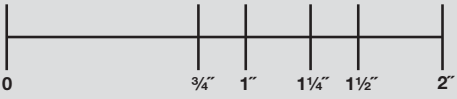

For more information about applications for these fittings, go to mcmaster.com and search for **4698TAC**.

Galvanized Iron and Aluminum Slip-On Rail Fittings

CAD

Making custom railings, guard rails, storage racks, shelving, and framing couldn't be easier. Slip rail fittings (also known as structural fittings) over the appropriate size pipe and tighten the included set screws for a secure fit. All fittings can be easily removed and reused.

Pipe

Pipe is Schedule 40 and can be used with all of our fittings (sold separately).

To Order: Please specify 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, or 10-ft. length.

Hot-dipped galvanized steel pipe has very good corrosion resistance. ***Aluminum*** pipe is lightweight with very good corrosion resistance. ***Yellow painted aluminum*** pipe is lightweight and offers high visibility.

Pipe Size	Actual OD	Wall Thick.	HOT-DIPPED GALVANIZED STEEL Base Price for 2-ft. Lg.	Each	Extra Length Per Ft.	ALUMINUM Base Price for 2-ft. Lg.	Each	Extra Length Per Ft.	YELLOW PAINTED ALUMINUM Base Price for 2-ft. Lg.	Each	Extra Length Per Ft.
¾″	1″	0.113″	4936T101	$8.98	$4.12	4699T27	$7.07	$3.53	4699T33	$8.42	$4.22
1″	1 5/16″	0.133″	4936T102	12.77	5.86	4699T28	10.19	5.10	4699T34	12.31	6.16
1¼″	1⅝″	0.140″	4936T103	15.64	7.18	4699T29	14.20	7.10	4699T35	16.87	8.44
1½″	1⅞″	0.145″	4936T104	18.50	8.49	4699T31	16.45	8.22	4699T36	19.40	9.72
2″	2⅜″	0.154″	4936T105	23.31	10.69	4699T32	21.69	10.84	4699T37	25.71	12.86

Fittings

Fittings are strong and corrosion resistant. They come with recessed set screws that lock the pipe (sold separately) into the fitting. Tighten set screws with a hex key (not included, see page 2839).

Add-on tees and ***crosses*** can be added or removed from existing structures without having to disassemble the entire structure.

Hot-dipped galvanized iron fittings are malleable and conform to ASTM A47, Grade 32510. ***Aluminum*** fittings are a special alloy that can be used with any metal, including steel, without galvanic corrosion.

Fits Pipe Size	Fits Actual OD	90° Elbows	Each	3-Way 90° Elbows	Each	3-Way 90° Elbows w/Through Hole	Each	Adjustable-Angle Elbows w/Through Hole	Each	Adjustable-Angle Elbows	Each	Straight Couplings Lg.	Each
Hot-Dipped Galvanized Iron													
¾″	1″	4936T178	$8.20	4936T179	$11.12	4936T174	$8.78	4936T176	$18.80	—	—	3″	4936T193 $7.80
1″	1 5/16″	4936T17	8.67	4936T27	11.93	4936T31	9.22	4936T41	20.93	—	—	3½″	4936T14 8.27
1¼″	1⅝″	4936T18	11.71	4936T28	17.27	4936T32	13.53	4936T42	26.27	—	—	4″	4936T15 10.93
1½″	1⅞″	4936T19	14.89	4936T29	21.40	4936T33	15.38	4936T435	27.11	4936T921	$25.98	4″	4936T16 12.51
2″	2⅜″	4936T76	22.41	4936T202	29.70	4936T79	27.55	4936T207	45.09	—	—	4⅞″	4936T75 16.96
Aluminum													
¾″	1″	4698T31	7.44	4698T111	10.23	4698T36	8.08	4698T73	16.22	4698T82	14.00	2⅜″	4698T214 6.76
1″	1 5/16″	4698T32	8.75	4698T112	10.89	4698T37	8.56	4698T74	19.22	4698T83	17.57	3½″	4698T217 7.81
1¼″	1⅝″	4698T33	10.22	4698T113	13.96	4698T38	10.33	4698T75	24.00	4698T84	17.92	3½″	4698T11 8.75
1½″	1⅞″	4698T34	13.22	4698T114	15.02	4698T39	11.89	4698T76	24.97	4698T85	21.95	3½″	4698T12 11.03
2″	2⅜″	4698T183	19.26	4698T184	26.91	4698T41	24.85	4698T222	39.96	—	—	4 1/16″	4698T188 16.02

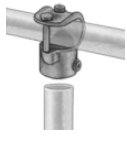

Fits Pipe Size	Fits Actual OD	Tees	Each	Tees w/Through Hole	Each	Adjustable-Angle Tees	Each	Add-On Tees Galv. Iron	Add-On Tees Aluminum	Each	Clamp-On Tees	Each	45° Angle Tees	Each
Hot-Dipped Galvanized Iron														
¾″	1″	4936T172	$10.71	4936T171	$5.93	4936T173	$12.96	—	—	—	4936T175	$16.76	4936T312	$9.31
1″	1 5/16″	4936T34	10.89	4936T11	6.91	4936T54	13.54	—	—	—	4936T21	17.09	4936T314	10.87
1¼″	1⅝″	4936T35	16.96	4936T12	9.60	4936T55	16.47	4936T214		$17.91	4936T22	20.29	4936T316	15.64
1½″	1⅞″	4936T36	18.67	4936T13	11.51	4936T56	18.44	4936T215		19.49	4936T23	23.73	4936T318	18.62
2″	2⅜″	4936T84	26.98	4936T74	21.22	4936T99	36.33	—	—	—	4936T77	29.59	—	—
Aluminum														
¾″	1″	4698T91	7.86	4698T14	5.67	4698T96	12.89	4698T115		15.30	—	—	—	—
1″	1 5/16″	4698T92	10.08	4698T15	6.67	4698T97	13.46	—	—	—	—	—	—	—
1¼″	1⅝″	4698T93	11.97	4698T16	7.94	4698T98	15.86	4698T116		20.35	4698T129	19.00	4698T127	14.63
1½″	1⅞″	4698T94	14.58	4698T17	10.22	4698T99	17.43	4698T119		23.89	4698T141	22.88	4698T128	17.56
2″	2⅜″	4698T219	23.68	4698T109	26.50	4698T221	31.91	—	—	—	—	—	—	—

(Continued on following page)

For more information about applications for these fittings, go to mcmaster.com and search for **4698TAC**.

Galvanized Iron and Aluminum Slip-On Rail Fittings *(Continued from previous page)*

Fittings (Cont.)

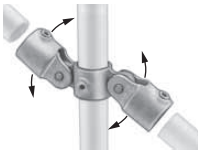

Fits Pipe Size	Fits Actual OD	Swivel Tees	Each	Crosses	Each	Adjustable-Angle Crosses	Each	5-Way Crosses	Each	6-Way Crosses	Each
Hot-Dipped Galvanized Iron											
3/4"	1"	—	—	4936T181	$9.44	4936T183	$25.17	4936T177	$11.72	4936T219	$17.88
1"	1 5/16"	4936T236	$12.11	4936T37	10.80	4936T57	25.82	4936T94	13.22	4936T221	20.07
1 1/4"	1 5/8"	4936T237	16.89	4936T38	13.04	4936T58	29.60	4936T95	19.22	4936T225	28.62
1 1/2"	1 7/8"	4936T238	19.13	4936T39	16.58	4936T59	33.20	4936T96	20.76	4936T226	33.47
2"	2 3/8"	—	—	4936T85	26.20	4936T119	61.37	4936T97	42.80	4936T227	47.07
Aluminum											
3/4"	1"	4698T159	10.87	4698T19	8.38	4698T86	19.14	4698T135	10.35	4698T142	17.28
1"	1 5/16"	4698T167	11.36	4698T21	9.19	4698T87	23.20	4698T136	10.72	4698T143	18.80
1 1/4"	1 5/8"	4698T168	15.41	4698T22	11.28	4698T88	25.98	4698T137	15.61	4698T144	23.20
1 1/2"	1 7/8"	4698T169	17.52	4698T23	12.25	4698T89	27.28	4698T138	16.11	4698T145	28.68
2"	2 3/8"	4698T175	26.39	4698T194	22.00	4698T24	40.05	—	—	—	—

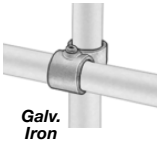
Galv. Iron

Aluminum

Galv. Iron

Aluminum

Fits Pipe Size	Fits Actual OD	Crossovers	Each	Crossovers with Two Through Holes	Each	Add-On Crossovers	Each	Clamp-On Crossovers	Each
Hot-Dipped Galvanized Iron									
3/4"	1"	—	—	4936T189	$8.75	—	—	4936T191	$6.36
1"	1 5/16"	—	—	4936T47	8.98	—	—	4936T24	6.91
1 1/4"	1 5/8"	4936T149	$18.09	4936T48	12.62	4936T216	$19.96	4936T25	9.44
1 1/2"	1 7/8"	—	—	4936T49	14.82	4936T217	22.87	4936T26	12.64
2"	2 3/8"	—	—	4936T89	23.22	—	—	4936T78	21.04
Aluminum									
3/4"	1"	4698T63	12.38	4698T42	9.84	—	—	—	—
1"	1 5/16"	4698T64	16.46	4698T43	12.41	4698T124	21.51	—	—
1 1/4"	1 5/8"	4698T65	17.03	4698T44	13.73	4698T125	22.74	—	—
1 1/2"	1 7/8"	4698T66	18.78	4698T45	15.81	4698T126	26.17	—	—
2"	2 3/8"	4698T226	28.32	—	—	—	—	—	—

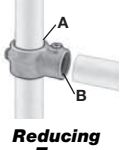

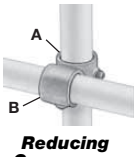

(A) Fits Pipe Size	(A) Fits Actual OD	(B) Fits Pipe Size	(B) Fits Actual OD	Reducing Tees	Each	Reducing Crossovers	Each
Hot-Dipped Galvanized Iron							
1"	1 5/16"	3/4"	1"	4936T721	$9.07	4936T863	$10.16
1 1/4"	1 5/8"	1"	1 5/16"	4936T727	12.13	4936T869	13.84
1 1/2"	1 7/8"	1 1/4"	1 5/8"	4936T734	12.73	4936T878	16.22
2"	2 3/8"	1 1/2"	1 7/8"	4936T738	21.35	4936T882	27.31
Aluminum							
1"	1 5/16"	3/4"	1"	—	—	4698T101	13.12
1 1/4"	1 5/8"	1"	1 5/16"	—	—	4698T102	15.52
1 1/2"	1 7/8"	1 1/4"	1 5/8"	—	—	4698T103	17.45
2"	2 3/8"	1 1/2"	1 7/8"	—	—	4698T104	25.40

Fits Pipe Size	Fits Actual OD	Collars	Each	Panel Connectors Mtg. Hole Dia.	Each
Hot-Dipped Galvanized Iron					
3/4"	1"	4936T195	$4.49	3/8"	$6.06
1"	1 5/16"	4936T134	5.24	3/8"	6.33
1 1/4"	1 5/8"	4936T135	5.96	3/8"	7.82
1 1/2"	1 7/8"	4936T136	6.27	3/8"	8.04
2"	2 3/8"	—	—	3/8"	14.52
Aluminum					
3/4"	1"	—	—	7/16"	5.78
1"	1 5/16"	—	—	7/16"	6.68
1 1/4"	1 5/8"	4698T107	5.86	7/16"	7.06
1 1/2"	1 7/8"	4698T108	6.23	7/16"	7.53
2"	2 3/8"	—	—	7/16"	14.06

Fits Pipe Size	Fits Actual OD	REPLACEMENT SET SCREWS For Galv. Iron Fittings Hex Size	Pkg. Qty.	Per Pkg.	For Aluminum Fittings Hex Size	Pkg. Qty.	Per Pkg.	PIPE PLUGS Iron	Each	Aluminum	Each	Gray Polypropylene	Each
3/4"	1"	1/4"	25	4936T918	$13.14	5/32"	100	90289A575	$14.52	4936T197	$1.18	4698T171	$1.56	4936T196	$1.24
1"	1 5/16"	1/4"	25	4936T918	13.14	3/16"	50	90289A618	13.03	4936T137	2.07	4698T172	1.96	4936T141	1.49
1 1/4"	1 5/8"	5/16"	25	4936T919	16.46	3/16"	50	90289A618	13.03	4936T138	3.50	4698T173	2.53	4936T142	1.63
1 1/2	1 7/8"	5/16"	25	4936T919	16.46	3/16"	50	90289A618	13.03	4936T139	4.18	4698T174	3.00	4936T143	1.69
2"	2 3/8"	5/16"	25	4936T919	16.46	3/16"	50	90289A618	13.03	4936T411	6.17	4698T191	3.82	4936T144	1.73

(Continued on following page)

For information about measuring slip-on rail fittings, see page 1928.

For more information about applications for these fittings, go to mcmaster.com and search for **4698TAC.**

Galvanized Iron and Aluminum Slip-On Rail Fittings *(Continued from previous page)*

Fittings (Cont.)

Fittings are strong and corrosion resistant. They come with recessed set screws that lock the pipe (sold separately) into the fitting. Tighten set screws with a hex key (not included, see page 2839).

Hot-dipped galvanized iron fittings are malleable and conform to ASTM A47, Grade 32510.

Aluminum fittings are made of a special alloy that can be used with any metal, including steel, without galvanic corrosion.

WALL-MOUNT FLANGES

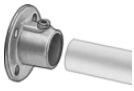

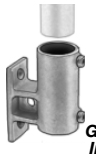

Fits Pipe Size	Fits Actual OD	Round — Four Mounting Holes: Base Dia.	Mtg. Holes	O'all Ht.	Each	Rectangular with Through Hole — Two Mounting Holes: Base Size	Mtg. Holes	O'all Ht.	Each	Rectangular — Two Mounting Holes: Base Size	Mtg. Holes	O'all Ht.	Each
Hot-Dipped Galvanized Iron													
3/4"	1"	3 3/16"	1/4"	1 1/2"	4936T186 $7.13	3 1/16" × 1 13/16"	5/16"	2 7/8"	4936T194 $8.43	—	—	—	—
1"	1 5/16"	3 1/2"	1/4"	1 15/16"	4936T67 7.62	3 7/16" × 1 9/16"	5/16"	3 1/4"	4936T131 8.86	5 5/16" × 1 3/4"	9/16"	3 1/4"	4936T91 $22.24
1 1/4"	1 5/8"	4"	5/16"	2"	4936T68 10.69	4" × 1 13/16"	5/16"	3 5/8"	4936T132 12.80	5 5/8" × 2"	9/16"	3 5/8"	4936T92 29.00
1 1/2"	1 7/8"	4 1/2"	5/16"	2 5/16"	4936T69 13.84	4 1/4" × 2 1/16"	5/16"	4"	4936T133 16.00	5 3/4" × 2 1/4"	9/16"	4"	4936T93 34.67
2"	2 3/8"	5"	3/8"	2 1/2"	4936T122 19.02	—	—	—	—	—	—	—	—
Aluminum													
3/4"	1"	2 1/2"	7/16"	1 3/4"	4698T52★ 8.40	—	—	—	—	—	—	—	—
1"	1 5/16"	3"	15/32"	2 1/8"	4698T53★ 11.50	—	—	—	—	3 13/16" × 2"	9/16"	4 1/8"	4698T72 17.07
1 1/4"	1 5/8"	3 1/2"	17/32"	2 7/16"	4698T54★ 13.43	5 1/2" × 4"	7/16"	2 13/16"	4698T165● 22.62	4 3/8" × 2"	9/16"	5 1/2"	4698T95 23.27
1 1/2"	1 7/8"	3 3/4"	9/16"	2 9/16"	4698T55★ 15.05	5 1/2" × 4 1/4"	7/16"	2 3/4"	4698T166● 23.43	4" × 4"	7/16"	4"	4698T105● 29.02
2"	2 3/8"	—	—	—	—	6" × 5"	9/16"	3 3/8"	4698T225● 23.98	—	—	—	—

★ Has one mounting hole. ● Has four mounting holes.

WALL-MOUNT FLANGES

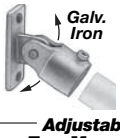

FLOOR-MOUNT FLANGES

Fits Pipe Size	Fits Actual OD	Triangular — Three Mounting Holes: Base Size	Mtg. Holes	O'all Ht.	Each	Adjustable Angle — Two Mounting Holes: Base Size	Mtg. Holes	O'all Ht.	Each	Round — Four Mounting Holes: Base Dia.	Mtg. Holes	O'all Ht.	Each
Hot-Dipped Galvanized Iron													
3/4"	1"	—	—	—	—	4 3/8" × 2"	3/8"	3 3/4"	4936T188 $15.77	5 1/8"	5/16"	2 1/2"	4936T228 $21.22
1"	1 5/16"	3 3/4"	× 3 1/2"	7/16"	1 15/16"	4936T601 $16.74	4 3/8" × 2"	3/8"	3 3/4"	4936T64 16.30	5 1/2"	5/16"	2 1/2"	4936T416 21.89
1 1/4"	1 5/8"	4 1/8"	× 3 13/16"	7/16"	2 5/16"	4936T701 23.09	4 3/8" × 2"	3/8"	4 1/16"	4936T65 17.98	5 7/8"	5/16"	2 1/2"	4936T418 28.98
1 1/2"	1 7/8"	4 7/16"	× 4 1/16"	7/16"	2 1/2"	4936T801 25.58	4 3/8" × 2"	3/8"	4 3/8"	4936T66 19.69	6 3/16"	5/16"	2 1/2"	4936T419 31.31
2"	2 3/8"	—	—	—	—	—	4 3/8" × 2"	3/8"	4 3/4"	4936T121 30.91	—	—	—	—
Aluminum													
3/4"	1"	3 1/4"	× 3 3/16"	5/16"	1 13/16"	4698T213 9.14	2 7/8" Dia.	5/16"	3 1/8"	4698T77♥ 12.45	2 1/2"	3/16"	1 3/4"	4698T25♥ 8.18
1"	1 5/16"	3 7/8"	× 3 3/4"	5/16"	2 1/16"	4698T6 12.33	2 7/8" Dia.	5/16"	3 3/16"	4698T78♥ 12.70	3"	1/4"	2 1/8"	4698T26♥ 10.30
1 1/4"	1 5/8"	3 7/8"	× 4 1/4"	7/16"	2 7/16"	4698T7 11.89	3 3/8" Dia.	7/16"	3 13/16"	4698T79♥ 14.22	4 1/2"	7/16"	2 1/8"	4698T146 11.80
1 1/2"	1 7/8"	4 1/2"	× 4 7/16"	7/16"	2 15/16"	4698T8 14.32	3 3/8" Dia.	7/16"	4 1/8"	4698T81♥ 17.56	4 1/2"	7/16"	2 5/16"	4698T147 13.07

♥ Has three mounting holes.

FLOOR-MOUNT FLANGES

Fits Pipe Size	Fits Actual OD	Oval — Two Mounting Holes: Base Size	Mtg. Holes	O'all Ht.	Each	Rectangular — Four Mounting Holes: Base Size	Mtg. Holes	O'all Ht.	Each	Rectangular for Toeboard — Four 7/16" Mounting Holes: Base Size	O'all Ht.	Each
Hot-Dipped Galvanized Iron												
3/4"	1"	4 9/16"	× 2 9/16"	7/16"	3 1/8"	4936T187 $12.94	—	—	—	—	—	—
1"	1 5/16"	5 1/16"	× 3"	9/16"	3 1/2"	4936T71 13.24	—	—	—	5 1/8" × 2 15/16"	3 1/16"	4936T248■ $36.86
1 1/4"	1 5/8"	5 1/2"	× 3"	9/16"	3 1/2"	4936T72 15.36	—	—	—	5 11/16" × 3 1/8"	3 9/16"	4936T232■ 41.28
1 1/2"	1 7/8"	6 1/8"	× 3 5/16"	9/16"	3 1/2"	4936T73 19.73	—	—	—	6 5/16" × 3 9/16"	3 9/16"	4936T233■ 45.88
2"	2 3/8"	6 1/2"	× 4"	11/16"	5"	4936T123 24.41	—	—	—	—	—	—
Aluminum												
3/4"	1"	—	—	—	—	—	3 1/2" × 1 7/8"	5/16"	1 3/4"	4698T1♦ $7.67	—	—
1"	1 5/16"	5 1/16"	× 3"	9/16"	3 1/2"	4698T133 15.30	3 1/2" × 2 3/8"	5/16"	1 7/8"	4698T2 9.08	—	—
1 1/4"	1 5/8"	5 3/4"	× 2 1/2"	9/16"	2 3/16"	4698T155 13.19	4 1/16" × 2 15/16"	7/16"	2 1/8"	4698T3 10.60	5 11/16" × 3 1/8"	3 1/8"	4698T157▲ 17.76
1 1/2"	1 7/8"	6"	× 2 3/4"	9/16"	3"	4698T156 14.26	4 5/16" × 3 1/8"	7/16"	2 1/2"	4698T4 12.42	6 5/16" × 3 9/16"	3 1/8"	4698T158▲ 24.10
2"	2 3/8"	—	—	—	—	—	5" × 3 3/4"	7/16"	2 7/8"	4698T185 17.60	—	—

♦ Has two mounting holes. ■ Mounting holes for attaching to toeboard are 3/8" dia. ▲ Mounting holes for attaching to toeboard are 7/16" dia.

Polished Type 316 Stainless Steel Slip-On Framing Fittings

Look no further if you need framing that provides maximum corrosion resistance with little to no maintenance. Ideal for marine environments or anywhere corrosion could be a problem. To assemble, simply slip fittings over the tube (both sold separately) and tighten the included 3/16″ set screws (hex key not included, see page 2839).

Tube

Lg.	OD	Thick.		Each
6′	1″	0.065″	4466K41	$75.52

Fittings

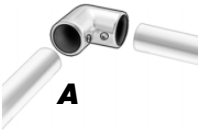

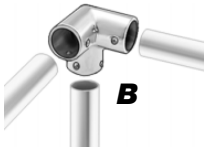

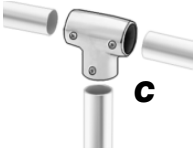

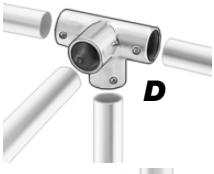

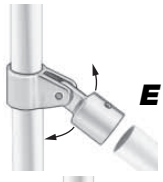

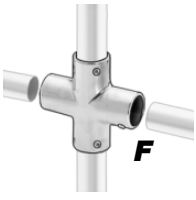

			Each
A	90° Elbow	6040T52	$12.72
B	3-Way 90° Elbow	6040T53	18.00
C	Tee	6040T51	12.20
D	4-Way Tee	6040T62	21.02
E	Adjustable-Angle Tee	6040T65	14.85
F	Cross	6040T63	21.02

		Base Size	O'all Ht.	Mtg. Holes No. of	Mtg. Holes Dia.		Each
Flanges with 60° Support							
G	Center	1 1/16″ × 1 5/16″	1 7/8″	2	1/4″	6040T59	$10.75
H	End	1 1/16″ × 1 5/8″	2 1/4″	2	1/4″	6040T58	11.62
Base Flanges							
J	Round	2 3/4″ Dia.	1 3/4″	3	1/4″	6040T56	13.26
K	Rectangular	3 3/16″ × 1 7/8″	1 11/16″	4	1/4″	6040T57	13.26

Polished-Brass Slip-On Framing Fittings

Highly polished brass tube and fittings are not only visually appealing, but also strong. To assemble, slip fittings over tube (both sold separately) and secure by brazing, welding, or using metal adhesive. You can also use the included self-tapping screws. To keep fittings and tube looking like new, we suggest an occasional polishing. See page 2041 for polish.

Tube

OD	Thick.	4-ft. Lg.	Each	8-ft. Lg.	Each
1 1/2″	0.050″	2113T68	$42.87	2113T58	$95.89
2″	0.050″	2113T69	56.13	2113T59	112.26

Fittings

Flanges have three 3/16″ dia. mounting holes (unless noted).

For Tube OD	90° Elbows	Each	Tees	Each	End Caps	Each
1 1/2″	2113T45	$18.79	2113T41	$18.79	2113T56	$4.23
2″	2113T46	22.54	2113T42	22.54	2113T57	6.58

Base Dia.	O'all Ht.	Center Flanges	Each	End Flanges	Each	Base Flanges	Each
2 5/16″	3 5/16″	2113T52 ♦	$15.04	2113T54	$15.04	2113T49 ✓ ⬢	$9.86
2 1/2″	4 3/8″	2113T53 ♦	16.44	2113T55	16.44	2113T51 ✓ ♠	17.84

♦ Has two mounting holes. ✓ Mounting hole diameter is 1/4″. ⬢ Base dia. is 3″; overall height is 1 1/4″. ♠ Base dia. is 5″; overall height is 1 3/8″.

Aluminum Flush-Fit Framing Fittings

Flush, burr-free connections let you create railings that are easy on the hands as well as pleasing to the eyes. To assemble, slide tube over a fitting (both sold separately) and tighten the set screw with an M4 hex key (not included, see page 2839). By tightening the set screw, the fitting will automatically grip the tube from the inside for a secure hold.

Tube

Lg.	OD	Thick.		Each
4′	40 mm	3 mm	9577T11	$30.25
8′	40 mm	3 mm	9577T12	60.23

Fittings

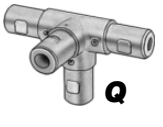

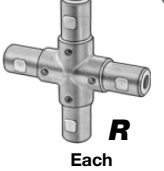

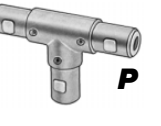

			Each
L	90° Elbow	9577T23	$30.20
M	3-Way 90° Elbow	9577T24	34.59
N	Coupling	9577T26	29.30
P	Tee	9577T21	35.99
Q	4-Way Tee	9577T22	44.34
R	Cross	9577T25	44.81

		Base Size	O'all Ht.	Mtg. Holes No. of	Mtg. Holes Dia.		Each
Flanges							
S	Round	3 15/16″ Dia.	3 5/16″	3	5/16″	9577T41	$36.50
T	Rectangular	3 15/16″ × 2 3/16″	3 5/16″	2	5/16″	9577T42	36.50

Plastic Slip-On Framing Fittings

Pipe

Lg.	Pipe Size	Actual OD	Thick.		Each
5′	1¼″	1.66″	0.109″	4824T11	$7.00
10′	1¼″	1.66″	0.109″	4824T12	14.00

Build lightweight yet strong and corrosion-resistant shelving, carts, furniture, and more with these white PVC fittings. To assemble, press the pipe and fittings (both sold separately) together with PVC cement (not included, see page 3421) for a strong and durable bond. Pipe can be heated with a heat gun (not included, see page 2733) and curved to suit your application. Temperature range is 0° to 150°F.

Fittings and Accessories

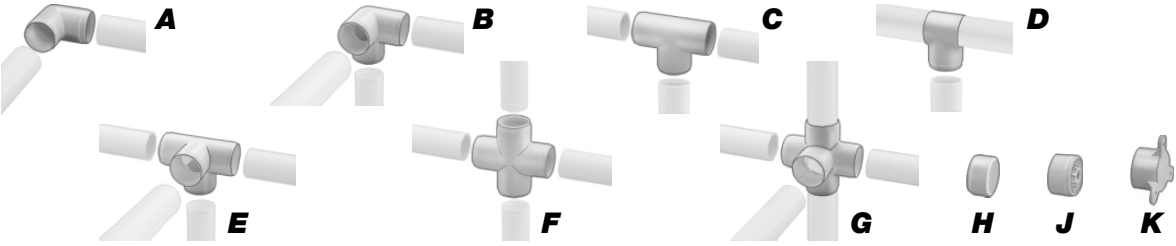

Caster insert cap fits 7/16″ stem size. ***Table cap*** has three 3/16″ dia. holes for mounting to the underside of a table so legs can be added (fasteners not included).

			Each
A	Elbow	4824T21	$1.62
B	3-Way Elbow	4824T24	2.42
C	Tee	4824T22	1.99
D	Tee with Through Hole	4824T23	2.35
E	4-Way Tee	4824T25	2.93
F	Cross	4824T26	$3.16
G	5-Way Cross	4824T27	4.20
H	End Cap	4824T31	1.00
J	Caster Insert Cap	4824T32	.88
K	Table Cap	4824T33	1.20

Steel Clamp-On Framing Fittings

Screw-together fittings allow additions and changes to an existing structure without having to disassemble it. To assemble, clamp fittings onto the tube (both sold separately) and tighten the included M6×25 mm cap screw and nut with a 5 mm hex key (not included, see page 2839). For permanent connections, each fitting has a 4 mm (5/32″) hole (fasteners not included).

Tube

Zinc-plated steel tube offers good corrosion resistance in most environments.

Plastic-coated steel tube increases durability and allows you to color code your structures. **To Order:** Please specify color: black, blue, white, or yellow.

		Zinc-Plated Steel			Plastic-Coated Steel		
Lg.	OD	Thick.		Each	Thick.		Each
4′	1.07″	0.065″	2534T11	$5.82	0.043″	2534T13	$7.10
8′	1.07″	0.065″	2534T12	11.65	0.043″	2534T14	13.52

Fittings and Accessories

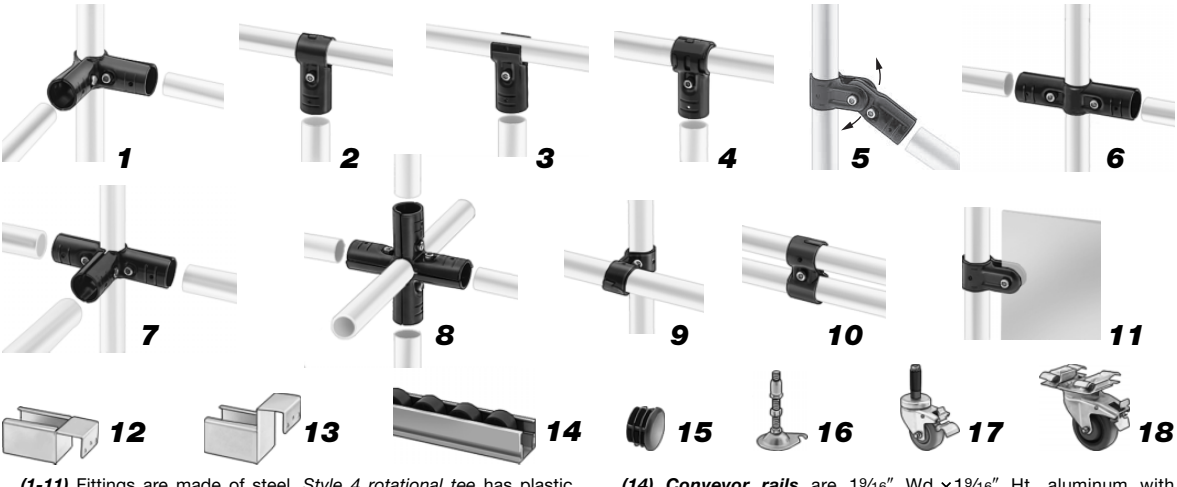

(1-11) Fittings are made of steel. *Style 4 rotational tee* has plastic bushings that allow tube to rotate inside the fitting. Ideal for swing-door applications. *Style 11 panel connector* holds panel up to 1/2″ thick.

(12&13) Conveyor rail mounting brackets are zinc-plated steel. They have two 5/32″ dia. mounting holes for attaching to conveyor rail and tube. Use *Style 12 flow-through bracket* on the loading side of your application; *Style 13 recessed-stop bracket* on the picking side of your application.

(14) Conveyor rails are 1 9/16″ Wd.×1 9/16″ Ht. aluminum with 1 5/16″ Dia.×13/16″ Wd. black nylon wheels. They slide directly into the conveyor rail mounting brackets.

(15) End caps are black PVC.

(16) Leveling foot includes mounting hardware.

(17&18) Casters have a hard rubber wheel and a brake. Mounting hardware is included. *Stem caster* wheel is red; *plate caster* wheel is blue.

			Each
1	3-Way 90° Elbow	2534T24	$4.33
2	Tee	2534T21	2.50
3	Open Tee	2534T22	3.10
4	Rotational Tee	2534T23	3.72
5	Adjustable-Angle Tee	2534T33	4.82
6	Cross	2534T25	3.80
7	5-Way Cross	2534T26	6.43
8	6-Way Cross	2534T27	9.22
9	Crossover	2534T28	2.32
10	Parallel	2534T31	3.27
11	Panel Connector	2534T34	2.27

		Cap., lbs.	Dia.		Each
12	Flow-Through Conveyor Rail Mtg. Bracket	—	—	2534T41	$3.73
13	Recessed-Stop Conveyor Rail Mtg. Bracket	—	—	2534T43	4.03
14	4-ft. Conveyor Rail	225	—	2534T51	16.83
14	6-ft. Conveyor Rail	200	—	2534T52	27.46
14	8-ft. Conveyor Rail	175	—	2534T53	36.39
					Per Pkg.
15	End Caps (Pkg. of 10)	—	1 3/16″	2534T15	$3.72
					Each
16	Leveling Foot	200	3 3/16″	2534T61	$10.35
17	Swivel Stem Caster	150	3″	2534T71	21.59
18	Swivel Plate Caster	350	4″	2534T72	35.78

Heavy Duty Aluminum Clamp-On Framing Fittings

Offering excellent structural stability, this system has a secure clamping mechanism to hold heavy loads—no machining or welding required. To assemble, place tube inside fitting (both sold separately) and tighten with the included bolts to grip tube.

Tube

Lg.	OD	Thick.		Each	Lg.	OD	Thick.		Each
4′	1/2″	0.065″	9578T15	$38.02	4′	1 1/4″	0.120″	9578T52	$49.00
4′	3/4″	0.065″	9578T16	41.21	4′	1 1/2″	0.125″	9578T53	50.75
4′	1″	0.083″	9578T51	47.25	4′	2″	0.125″	9578T54	55.50

Fittings

Adjustable clamping handles (not included, see pages 2224-2227) can be used for quick adjustments. ***Flanges*** have four mounting holes (unless noted). Fasteners not included. ***Add-on flanges*** can be added or removed without having to disassemble the entire structure.

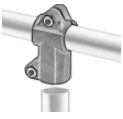
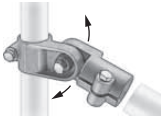

Fits Tube OD	Tees	Each	Adjustable-Angle Tees	Each	Crossovers	Each	Square Flanges: Base Size, sq.	O'all Ht.	Mtg. Holes: No. of	Dia.		Each
1/2″	9578T17	$25.01	9578T19	$35.03	9578T26	$26.65	1 5/8″	1 7/16″	4	3/16″	9578T28	$23.21
3/4″	9578T18	25.92	9578T25	36.43	9578T27	28.51	1 5/8″	1 7/16″	4	3/16″	9578T29	24.93
1″	9578T11	28.80	9578T41	48.97	9578T21	33.73	2 3/8″	2″	4	1/4″	9578T61	27.42
1 1/4″	9578T12	30.69	9578T42	50.81	9578T22	35.03	2 3/8″	2″	4	1/4″	9578T62	27.95
1 1/2″	9578T13	44.00	9578T43	64.80	9578T23	48.40	3 9/16″	2 3/4″	4	5/16″	9578T63	41.07
2″	9578T14	54.27	9578T44	69.12	9578T24	54.27	4 1/8″	3 5/16″	4	7/16″	9578T64	45.47

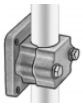
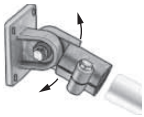

Fits Tube OD	Mtg. Holes: No. of	Dia.	Rectangular Flanges: Base Size	O'all Ht.		Each	Add-On Flanges: Base Size, sq.	O'all Ht.		Each	Adjustable-Angle Flanges: Base Size	O'all Ht.		Each
1/2″	4	3/16″	1 7/16″ × 1 15/16″	1 11/16″	9578T31 ♦	$23.47	—	—	—	—	1 3/8″ × 1 15/16″	2 1/2″	9578T35 ♦	$44.64
3/4″	4	3/16″	1 7/16″ × 1 15/16″	1 11/16″	9578T32 ♦	24.37	—	—	—	—	1 3/8″ × 1 15/16″	2 1/2″	9578T36 ♦	46.32
1″	4	1/4″	2 3/16″ × 3 1/16″	2 3/8″	9578T66 ♦	27.36	2 15/16″	2 1/16″	9578T71	$35.20	2 15/16″ sq.	4 3/16″	9578T76	49.87
1 1/4″	4	1/4″	2 3/16″ × 3 1/16″	2 3/8″	9578T67 ♦	28.39	2 15/16″	2 1/16″	9578T72	35.86	2 15/16″ sq.	4 3/16″	9578T77	50.81
1 1/2″	4	5/16″	3 1/8″ × 4 1/8″	3 7/16″	9578T68	42.53	3 15/16″	2 3/4″	9578T73	45.47	3 15/16″ sq.	5 11/16″	9578T78	64.80
2″	4	5/16″	3 9/16″ × 5″	3 7/8″	9578T69 ★	45.47	—	—	—	—	4 15/16″ sq.	6 9/16″	9578T79	70.40

♦ Has two mounting holes. ★ Mounting hole diameter is 7/16″.

Friction-Grip Framing Fittings

No need for fasteners or special tools—friction holds this framing together. Simply press fittings and accessories into the square tube and hammer into place with a rubber mallet.

Tube

Tube is 1″ square and 0.05″ thick aluminum.

Single flange and ***double flange*** tube lets you use panels up to 1/4″ thick. Flanges run the full length of the tube. For acrylic and polycarbonate panels, see 8560K on page 3569 and 8707K on page 3567.

Tube with single flange requires screws or adhesive (not included) to mount panels. Flange is 0.1″ Thick. × 5/8″ Ht. *Tube with double flange* holds panels between two parallel flanges. Adhesive (not included) is recommended. Flanges are 0.05″ Thick. × 1/4″ Ht.

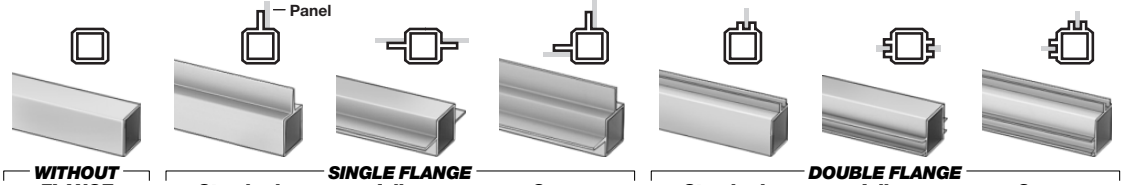

Lg.	Without Flange	Each	Single Flange: Standard	Each	Inline	Each	Corner	Each	Double Flange: Standard	Each	Inline	Each	Corner	Each
4′	47045T51	$14.17	47045T52	$15.13	47045T53	$15.13	47045T54	$15.13	47045T55	$15.13	47045T57	$15.13	47045T58	$15.13
8′	47045T48	27.58	47045T42	29.92	47045T43	29.92	47045T44	29.92	47045T45	29.92	47045T47	29.92	47045T46	29.92

Fittings and Accessories

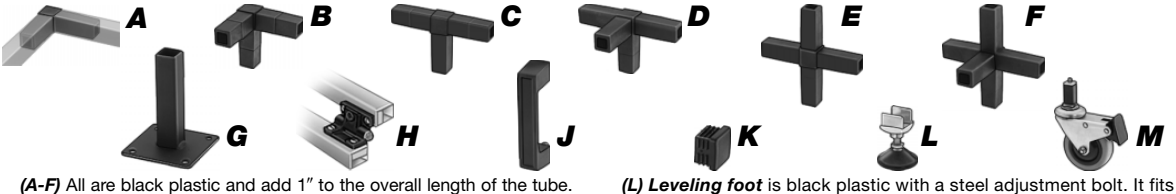

(A-F) All are black plastic and add 1″ to the overall length of the tube.
(G) Base is steel with 1/4″ dia. mtg. holes (fasteners not included).
(H&J) Hinge and ***door handle*** are black plastic (fasteners included).
(K) End cap provides a finished look. Made of black plastic.

(L) Leveling foot is black plastic with a steel adjustment bolt. It fits directly into the end of the tube. Capacity is 400 lbs.
(M) Swivel caster is zinc-plated steel with a gray rubber wheel and a brake. It fits directly into the end of the tube. Cap. is 185 lbs.

			Each			Size		Each
A	Elbow	47045T81	$6.62	*G*	Base Plate	3″ Sq. × 4″ Ht.	47045T66	$10.91
B	3-Way Elbow	47045T82	7.12	*H*	Hinge	1 1/8″ Lg. × 1 7/16″ Wd.	47045T36	26.36
C	Tee	47045T83	7.12	*J*	Door Handle	5 7/8″ Lg.	47045T35	15.45
D	4-Way Tee	47045T84	7.25	*K*	End Cap	—	47045T56	.82
E	Cross	47045T86	8.75	*L*	Leveling Foot	1 1/2″ Dia.	47045T67	10.30
F	5-Way Cross	47045T85	11.88	*M*	Swivel Caster	4″ Dia.	47045T75	28.18

About Character Width

For most characters the width is approximately one-half the height. Narrower characters such as 1, A, or I will be less, and wider characters such as M or W will be more.

Peel-and-Stick Vinyl Characters

1″, 2″-8″ Characters — *1½″ Characters* — *10″ and 12″ Characters*

These durable vinyl characters last for years—indoors and out. They have a pressure-sensitive adhesive backing for easy application. All characters are uppercase with no background.

Standard Vinyl Characters—For 1″-6″ character height, choose from black, blue, orange, red, white, and yellow; 8″-12″ high characters come in black only.

Reflective Vinyl Characters—Call attention to hazardous areas. A special high-visibility material provides the same brilliance in daylight and in artificial light at night. Choose from black, blue, red, and white.

Complete sets include 100 characters (unless noted): six each of E; five each of A,R,S; four each of L,P,T; three each of F,G,H,I,M,N,O,U,W; two each of letters B,C,D,K,V,Y, numbers 0-9, $, and ¢; and one each of J,Q,X,Z.

Number sets include 100 characters: 10 each of 0-9.

Letter sets include 260 characters: 10 each of A-Z.

Individual characters are available in a specified character: 0-9, A-Z, $, ¢, period, comma, or dash.

Also Available: Custom signs designed with standard vinyl characters. Characters are spaced on liner paper. Please ask for 12345T999 and specify height, color, and message.

To Order: Please specify color where necessary. For individual characters, also specify character.

Char. Ht.	Standard Vinyl: Complete Sets	Per Set	Number Sets	Per Set	Letter Sets	Per Set	Individual Char. Pkg. Qty.		Per Pkg.	Reflective Vinyl: Complete Sets	Per Set	Individual Char. Pkg. Qty.		Per Pkg.
1″♣	5752T151★	$36.96	5752T642	$36.34	5752T84	$93.36	10	5752T141	$3.68					
1½″	5752T152	40.04	5752T643	37.55	5752T847	93.47	10	5752T142	3.98	12365T933	$80.40	5	12365T923	$4.43
2″	5752T153	43.36	5752T644	42.00	5752T854	105.88	10	5752T143	4.07	12365T934	93.90	5	12365T924	5.09
3″	5752T154	65.02	5752T645	63.74	5752T861	162.87	10	5752T144	6.60	12365T935	141.80	5	12365T925	7.87
4″	5752T155	99.20	5752T646	96.78	5752T868	217.61	10	5752T145	9.69	12365T936	163.55	5	12365T926	9.38
5″	5752T156	129.57	5752T647	127.10	5752T875	330.45	10	5752T146	12.86					
6″	5752T157	178.85	5752T648	172.79	5752T882	449.88	5	5752T491	9.44					
8″	5752T795	250.02	5752T583	245.54	5752T89	644.82	1	5752T192	3.29					
10″	5752T796	365.20	5752T589	362.66	5752T897	1,179.00	1	5752T193	4.15					
12″	5752T797	462.87	5752T595	470.56	5752T905	1,408.42	1	5752T194	5.10					

♣ The number one looks like this: 1.

★ 107 characters including the characters specified above plus two more of I, one more of O, three more of 1, and one more of 0.

Self-Aligning Peel-and-Stick Vinyl Characters

Notched applicator cards ensure accurate alignment and spacing of these characters. Pressure-sensitive adhesive backing makes them easy to apply. Can be used both indoors and outdoors. Characters are black uppercase with no background.

Complete sets include 650 characters: 20 each of letters A,E,I,L,N,O,R,S,T and numbers 0-9; 10 each of all other letters; 40 periods; 20 each of commas and dashes; five each of $, &, <, and >.

Individual characters are available in a specified character: 0-9, A-Z, $, &, and a punctuation set (period, comma, and dash, plus < and >). Numbers and letters are packaged 10 each of a single character; $ and & are packaged five each. Punctuation set has 40 periods, 20 each commas and dashes, and five each < and >. **To Order:** Please specify character.

Character Ht.	Complete Sets	Per Set	Individual Characters	Per Pkg.
1″	16015T52	$256.94	16015T61	$5.67
2″	16015T53	274.38	16015T62	5.95
3″	16015T54	409.03	16015T63	8.78
4″	16015T55	551.98	16015T64	11.94

Magnetic Characters

Magnetic, raised letters are easy to position and reposition on most metal surfaces. Characters are uppercase with no background.

Complete sets include 100 characters: six each of E; five each of A,R,S; four each of L,P,T; three each of F,G,H,I,M,N,O,U,W; two each of letters B,C,D,K,V,Y, numbers 0-9, $, and ¢; and one each of J,Q,X,Z. ***Individual characters*** are available in a specified character: 0-9, A-Z, $, ¢, period, comma, and dash. **To Order:** Please specify color: black, blue, green, red, or yellow. For individual characters, also specify character.

Character Ht.	Thick.	Complete Sets	Per Set	Individual Characters Pkg. Qty.		Per Pkg.
2″	0.030″	15295T46	$102.44	5	15295T41	$4.62
3″	0.030″	15295T47	195.62	5	15295T42	8.88
4″	0.030″	15295T48	233.14	5	15295T43	10.68

Heavy Duty Aluminum Characters

The baked enamel finish on these characters resists stains and retains color. Mounting fasteners included. Characters are uppercase. **To Order:** Please specify color (black, blue, red, or white) and individual character (0-9, A-Z).

Also Available: Other character sizes. Please ask for 57385T999 and specify height, character, and color.

Character Ht.	Thick.		Each	Character Ht.	Thick.		Each
6″	½″	57385T15	$33.81	8″	⅝″	57385T33	$53.00

Weather-Resistant Plastic Characters

Made of molded acrylic, these large block-style uppercase letters and numbers are easy to read. To mount, apply adhesive (sold separately) to the included anchor pads. The 12″ high characters also include mounting clips with ¼″ dia. holes (fasteners not included). **To Order:** Please specify individual character (0-9, A-Z).

Also Available: 15″, 18″, and 24″ high characters in the colors listed below, plus dark green. Please ask for 5755T999 and specify height, color, and individual character.

Character Ht.	Thick.	Color		Each
4″	⅝″	Black	5755T21	$13.62
4″	⅝″	Blue	5755T22	13.62
4″	⅝″	White	5755T23	13.62
6″	¾″	Black	5755T24	16.82
6″	¾″	Blue	5755T25	16.82
6″	¾″	Red	5755T26	16.82
6″	¾″	White	5755T27	16.82
6″	¾″	Yellow	5755T28	16.82
8″	⅞″	Black	5755T29	21.91
8″	⅞″	Blue	5755T31	21.91
8″	⅞″	Orange	5755T32	21.91
8″	⅞″	Red	5755T33	21.91
8″	⅞″	White	5755T34	21.91
12″	1½″	Black	5755T35	34.02
12″	1½″	Blue	5755T36	34.02
12″	1½″	Red	5755T37	34.02
12″	1½″	White	5755T38	34.02
3.7-oz Tube of Adhesive			86805T47▲	5.12

▲ This product is compliant under all state VOC rules in effect on November 1, 2010, except in California.

Light Duty Stamped Metal Characters

Distinctively mark buildings, mailboxes, and utility poles with these metal characters. All have a polished finish, unless noted. Mounting fasteners included. **To Order:** Please specify individual character (0-9, A-Z).

Character Ht.	Thick.	Brass	Each	Aluminum	Each
1½″	0.016″	1549T17	$4.41	1549T22	$1.46
2″	0.016″	1549T18	5.70	1549T23	1.58
3″	0.016″	1549T19	7.49	1549T24	2.00
4″	0.032″	1549T68♦	7.94	1549T76●	9.36
6″	0.032″			1549T53●	10.21

♦ Available in numbers only. ● Dull finish.

Vinyl-Cloth Peel-and-Stick Characters

Label cables, pipes, storage shelves, panel boxes, and more with these flexible characters. The pressure-sensitive adhesive is ideal for both flat and curved surfaces. Characters are black on an eye-catching yellow background.

Number sets contain 0-9.
Letter sets contain A-Z.
Individual characters are packaged in multiples of a single character: 0-9, A-Z, or dash. **To Order:** Please specify character.

Char. Ht.	Overall Size, Ht.×Wd.	Qty. Each Char.	Number Sets Char./Set		Number Sets Per Set	Letter Sets Char./Set		Letter Sets Per Set	Individual Characters Char./Pkg.		Individual Characters Per Pkg.
5/8″	3/4″×9/16″	32	320	5838T542	$10.62	832	5838T541	$23.62	32	5838T4	$0.96
1″	1 1/2″×7/8″	10	100	5838T514	11.33	260	5838T513	24.99	10	5838T1	1.09
2″	2 1/4″×7/8″	10	100	5838T526	14.38	257	5838T525■	35.47	10	5838T2■	1.33
3″	3 1/2″×1 1/2″	6	60	5838T538	23.24	154	5838T537♠	53.28	6	5838T3♠	2.10
4″	5″×1 3/4″	5	50	5838T571	31.29	127	5838T569▲	64.41	5	5838T6▲	2.74
6″	9″×5″	1	10	5838T583	30.00	26	5838T572	62.57	1	5838T7	2.55

■ Contains seven W's. ♠ Contains four W's. ▲ Contains three W's and four M's.

Pocket Books— Hold 360 5/8″ high characters on 1/2″×3/4″ labels.
Numbers and Letters— Twenty-seven zeros; 15 each of 1-9; 12 each of A-E; nine each of dash and I; and six each of F-H and J-Z.
Numbers Only— Sixty zeros and 30 each of 1-9 and dash.

Pocket Book

Pocket Books		Each
Numbers and Letters	5838T31	$9.60
Numbers Only	5838T32	9.60

Reflective Plastic Peel-and-Stick Characters

Call attention to hazardous areas indoors and out with these reflective characters. A special high-visibility material provides the same brilliance in daylight and in artificial light at night. Characters are bright yellow on a black background and have a pressure-sensitive adhesive backing for easy application.

Number sets include 300 numbers: Fifty each of 0 and 1. Twenty-five each of 2-9.
Letter sets include 338 letters: Twenty-two each of A,E,I,O. Twenty each of L,N,R,S,T. Ten each of B,C,D,F,G,H, J,K,M,P,U,W,Y. Five each of Q,V,X,Z.
Individual characters are packaged in multiples of a single character. **To Order:** Please specify character.

Char. Ht.	Overall Size, Ht.×Wd.	Number Sets	Number Sets Per Set	Letter Sets	Letter Sets Per Set	Individual Characters Char./Pkg.		Individual Characters Per Pkg.
1 1/2″	1 7/8″×1 3/8″	5973T1	$182.57	5973T2	$165.97	25	5973T3	$11.53
2 1/2″	2 7/8″×1 3/4″	5973T11	199.74	5973T12	194.29	25	5973T13	13.97
3 3/4″	4 5/16″×2 7/8″	5973T21	313.64	5973T22	328.57	10	5973T65	11.94

Heavy Duty Laminated Peel-and-Stick Characters

Made of durable polyester-laminated vinyl, these characters hold up in harsh environments. Characters have a pressure-sensitive adhesive backing for easy application. They're black with your choice of a yellow or white background.

Number sets contain 0-9.
Letter sets contain A-Z.
Individual characters are packaged in multiples of a single character (0-9, A-Z).
To Order: Please specify background color: yellow or white. For individual characters, also specify character.

Char. Ht.	Overall Size, Ht.×Wd.	Number Sets Qty. Each 0-9	Number Sets Char./Set		Number Sets Per Set	Letter Sets Qty. Each A-Z	Letter Sets Char./Set		Letter Sets Per Set	Individual Characters Char./Pkg.		Individual Characters Per Pkg.
1″	1 1/2″×7/8″	10	100	14985T52	$15.50	10	260	14985T55	$35.88	50	14985T14	$6.93
2″	2 1/4″×7/8″	10	100	14985T62	23.12	10	260	14985T65	54.65	50	14985T26	11.21
3″	3 1/2″×1 1/2″	6	60	14985T72	35.29	6	156	14985T75	80.79	24	14985T38	13.92

Peel-and-Stick Character Sets

Vinyl *Polyester*

Clearly mark buildings, machines, and trucks with these weather-resistant characters. They stand out on a contrasting background and are furnished on cards. Characters have a pressure-sensitive adhesive backing for easy application. ***Letter*** sets include A-Z; ***number*** sets include 0-9. ***Consecutive numbers*** set includes numbers 0-100.

Vinyl characters and ***reflective vinyl characters*** are black on a white background. ***Polyester characters*** are gold on a black background. ***Reflective characters*** are made of a special high-visibility material that provides the same brilliance in daylight and in artificial light at night.

Note: For sizes with a ●, the overall width of narrower characters such as I and 1 is less than shown in the table.

Char. Ht.	Overall Size, Ht.×Wd.	Char. Type	Char./Set		Per Set
Vinyl Characters					
5/16″	3/8″×3/8″	Numbers/Letters	100	5699T15	$0.83
1/2″	3/4″×13/16″	Consecutive Numbers	104♣	5699T91	2.16
13/16″	1″×9/16″	Numbers/Letters	114	5699T11●	2.16
1 3/4″	2″×1 1/16″	Letters	70★	5699T12●	3.16
1 3/4″	2″×1 1/16″	Numbers	33	5699T13●	2.11
3″	3 1/4″×1 5/8″	Letters	61✔	5699T4●	3.16
3″	3 1/4″×1 5/8″	Numbers	26	5699T5●	2.13
Reflective Vinyl Characters					
13/16″	1″×9/16″	Numbers/Letters	108	5699T61	$4.42
1 3/4″	2″×1″	Numbers	30	5699T62	3.72
3″	3 1/4″×1 1/2″	Numbers	24	5699T63	5.82
Polyester Characters					
7/8″	1″×5/8″	Numbers/Letters	99	5699T1	2.18
1 3/4″	2″×1 1/4″	Letters	63★	5699T2●	3.42
1 3/4″	2″×1 1/4″	Numbers	25	5699T3	2.18
3″	3 1/4″×1 5/8″	Numbers	26	5699T9●	3.71

♣ Includes star and arrow. ★ Includes period, dash, and comma. ✔ Includes period, dash, and ampersand (&).

High-Visibility Magnetic Characters

Contrasting background provides higher visibility than other magnetic characters. These raised black characters are easy to position on most metal surfaces and can be repositioned. Choose a white or yellow background.

To Order: Please specify individual character (0-9, A-Z).

Char. Ht.	Char. Thick.	Overall Size, Ht.×Wd.	Pkg. Qty.	With White Background	Per Pkg.	With Yellow Background	Per Pkg.
2″	0.030″	2 1/4″×2″	5	1594T21	$5.71	1594T25	$5.71
3″	0.030″	3 1/4″×3″	5	1594T31	10.72	1594T35	10.72
4″	0.030″	4 1/4″×3 1/2″	5	1594T41	13.42	1594T45	13.42
6″	0.030″	6 1/2″×5″	4	1594T61	13.88	1594T65	13.88

For information about character width, see page 1934.

PVC Stencils

Message

Curved Arrow Two-Piece Symbol

One-Piece Symbols

Create common messages and symbols quickly and easily with these reusable PVC stencils. They're 0.015″ thick.

	Character/ Symbol Ht.	Overall Stencil Size, Ht. × Wd.		Each
Message				
No Smoking	2″	6″	×18″	**1526T15** $6.87
Caution	2½″	6″	×18″	**1526T13** 6.87
Keep Aisle Clear	3″	7″	×36″	**1526T33** 21.13
No Parking	12″	18″	×75″	**1526T16** 32.34
Reserved	12″	18″	×75″	**1526T18** 32.34
Fire Lane	12″	18″	×75″	**1526T22** 32.34
Visitors	12″	18″	×75″	**1526T87** 32.34
Entrance	12″	18″	×75″	**1526T74** 32.34
One-Piece Symbol				
Handicap	15½″	19½″	×19½″	**1911T31** 20.46
Handicap	43″	51″	×46″	**1911T28** 32.18
No Smoking	15½″	19½″	×19½″	**1911T34** 20.46
No Parking	15½″	19½″	×19½″	**1911T33** 20.46
Two-Piece Symbol				
Straight Arrow	17½″ & 20¼″	39″	×21″ & 33″×21″	**1526T58** 32.34
Curved Arrow	17½″ & 21½″	39″	×21″ & 33″×21″	**1526T63** 32.34

Stencil Board Sets

The wide borders on these stencil boards prevent overspray.

Heavy duty oilboard stencils are more durable than cardstock, plus they're reusable. *Complete sets* include 45 characters (unless noted): two each of letters A,E,O,R,S and one each of remaining letters, 0-9, $, ¢, &, period, comma, and dash. Stencils are 0.015″ thick. The 9″ and 12″ sets include an extra N. *Note:* The stencil width varies depending on the character width.

Cardstock stencils are a more economical way to create messages. *Complete sets* include 47 characters: two each of letters A,E,O,R,S, and one each of remaining letters, 0-9, $, ¢, &, period, comma, and dash. Stencils are 0.011″ thick. *Number sets* include 14 characters: one each of 0-9, $, and ¢, and two spacers. Stencils are 0.015″ thick. *Letter sets* include 30 characters: one each of A-Z, period, and comma, plus two spacers. Stencils are 0.015″ thick.

Character Ht.	Overall Stencil Size, Ht. × Wd.			***Complete Sets*** Per Set
Heavy Duty Oilboard				
1″	2″	×	1½″	**2630T11** $2.44
2″	3″	×	2¼″	**2630T13** 2.81
3″	4″	×	3″	**2630T15** 4.11
4″	5″	×	3⅜″	**2630T17** 5.21
5″	6″	×	4″	**2630T19** 6.39
6″	7″	×	4¾″	**2630T22** 7.72
9″	10⅞″	×	8″	**2630T24** 19.34
12″	14″	×	10″	**2630T26** 30.18
Cardstock				
1″	5⅞″	×	3¾″	**1793T41** 2.07
2″	6⅞″	×	3¾″	**1793T42** 2.37
3″	7⅞″	×	4¾″	**1793T43** 3.50
4″	9⅞″	×	5¾″	**1793T44** 4.38
5″	10⅞″	×	5¾″	**1793T45** 5.37
6″	11⅞″	×	6¾″	**1793T46** 6.53

Character Ht.	Overall Stencil Size, Ht. × Wd.	***Cardstock Number Sets*** Per Set	***Cardstock Letter Sets*** Per Set
8″	10½″×7½″	**1793T12** $6.43	**1793T11** $9.15
10″	12½″×8½″	**1793T22** 8.26	**1793T21** 13.77
12″	14½″×8¼″	**1793T32** 10.48	**1793T31** 18.88

Quick-Align Snap-Together PVC Stencil Sets

Properly align your message with these reusable snap-together PVC stencils. They're flexible for use on curved surfaces and 0.016″ thick.

92-piece sets include four each of A,E,R,S and two each of remaining letters, 0-9, $, &, period, dash, large spacer, and small spacer.

138-piece sets include six each A,E,R,S and three each of remaining letters, 0-9, $, &, period, dash, large spacer, and small spacer.

Character Ht.	Overall Stencil Size, Ht. × Wd.	***92-Piece Sets*** Per Set	***138-Piece Sets*** Per Set
2″	3⅛″×1⅞″	**15755T74** $14.22	**15755T92** $19.32
3″	4⅛″×2½″	**15755T77** 16.53	**15755T93** 22.31

Magnetic Stencils

These reusable stencils cling to metal surfaces, leaving your hands free to paint. Choose from a variety of frequently used messages. Stencils are 0.031″ thick.

To Order: Please specify message: Entrance, Fire Door, No Smoking, Steam, Sprinkler, Visitors, Water, or Waste.

Character Ht.	Overall Stencil Size, Ht. × Wd.	Each
1″	4″×12″	**1271T3** $26.67
2″	6″×17″	**1271T4** 37.89

Quick-Align Slide-Together Brass Stencil Sets

Beginner

Plain Ender

Slide these durable brass stencils together for neatly aligned lettering on almost any surface or stagger for diagonal spacing. Stencils are reusable and 0.007″ thick. *Spacers* are extra-narrow blank stencils used between words in a message. *Beginners* and *plain enders* are extra-wide blank stencils for holding the message in place while you apply paint or ink. *Period enders* serve the same purpose but contain a period.

Sets—Please see stencil set chart below for characters.

Individual Characters—**To Order:** Please specify character: 0-9, A-Z, &, period, comma, dash, spacer, beginner, period ender, or plain ender.

Character Ht.	***13-Piece Sets*** Per Set	***15-Piece Sets*** Per Set	***33-Piece Sets*** Per Set	***77-Piece Sets*** Per Set	***92-Piece Sets*** Per Set	***Individual Characters*** Each
½″	—	**1624T11** $6.48	**1623T11** $12.94	**1625T51** $38.46	**1625T61** $42.14	**1533T61** $0.76
¾″	—	**1624T12** 6.91	**1623T12** 13.71	**1625T52** 38.67	**1625T62** 44.73	**1533T78** .87
1″	—	**1624T13** 7.56	**1623T13** 15.92	**1625T53** 42.85	**1625T63** 49.73	**1533T37** .92
1½″	—	**1624T14** 9.77	**1623T14** 19.24	**1625T54** 52.64	**1625T64** 60.62	**1533T63** 1.18
2″	—	**1624T15** 12.25	**1623T15** 24.13	**1625T55** 64.76	**1625T65** 74.50	**1533T38** 1.52
2½″	—	**1624T16** 14.84	**1623T16** 29.00	**1625T56** 77.07	**1625T66** 89.29	**1533T73** 1.67
3″	—	**1624T17** 19.60	**1623T17** 38.88	**1625T57** 101.73	**1625T67** 120.23	**1533T44** 1.97
4″	—	**1624T18** 29.04	**1623T18** 58.39	**1625T58** 151.31	**1625T68** 176.14	**1533T48** 3.23
5″	—	**1624T19** 35.78	**1623T19** 73.24	**1625T59** 204.43	**1625T69** 230.98	**1533T55** 4.00
6″	—	**1624T21** 43.94	**1623T21** 86.05	**1625T6** 228.27	**1625T7** 261.16	**1533T59** 5.05
8″	**1624T22** $155.68	—	**1623T22** 494.78	—	—	**1533T22** 23.41
10″	**1624T23** 247.70	—	**1623T23** 633.02	—	—	**1533T23** 33.02
12″	**1624T24** 285.65	—	**1623T24** 723.48	—	—	**1533T24** 42.27

STENCIL SET CHARACTER COUNT

No. Pcs.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	&	.	,	-	Spacers
13	1	1	1	1	1	1	1	1	1	1																												1			2●
15	2	1	1	1	1	1	1	1	1	1																												1		1	2●
33											1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3★
77	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	1	2	1	1	1	1	2	1	1	5▲
92	3	3	2	2	2	2	2	2	2	2	3	2	2	2	4	2	2	2	3	2	2	2	2	3	3	2	1	2	3	2	2	2	2	2	2	2	2	2	1	1	6▲

● Includes a beginner and plain ender. ★ Includes a beginner and period ender. ▲ Includes a beginner, plain ender, and period ender.

Stencil Cutters

Create stencils for product identification, shipping, inventory control, coding, and more. These manual-feed machines cut consistent, high-quality stencils from 0.015″ thick stencil board. Quick-read dials help you find and cut the following characters: 0-9, A-Z, &, period, comma, dash, apostrophe, and slash. Cutters are aluminum with a cast iron base and are furnished with ink applicator, black ink cartridge, and 25 stencil board sheets, which are 6½″×20″ and 0.015″ thick. Meet Fed. Spec. GG-S-747.

Also Available: Replacement punch and die sets. Please specify 1993T21, character, and height.

¼″-1″ Character Height

2″ Character Height

Character Ht.	Characters per Ft.	Max. No. Print Lines	Overall Cutter Size, Lg.×Wd.×Ht.		Each
¼″	48	10	21½″×16½″×10½″	1993T15	$1,842.11
½″	22	6	21½″×16½″×10½″	1993T16	1,917.81
¾″	15	4	21½″×16½″×10½″	1993T17	1,917.81
1″	15	4	21½″×16½″×10½″	1993T18	1,971.83
2″	9	4	34″ ×25½″×19″	1993T19	6,634.50

Blank Stencil Board

Feed these boards into your cutting machine to make sharp, reusable stencils. Boards are treated with special oils to resist ink absorption and increase machine's life by lubricating punches and dies. They're 0.015″ thick and flexible to accommodate curved surfaces. Boards are sold by the package and by the carton (quantity per carton is approximate).

Board Size	Boards/ Pkg.		Per Pkg.	Boards/ Carton		Per Ctn.
5″ ×20″	25	1994T31	$7.50	373	1994T32	$81.14
6″ ×20″	25	1994T19	9.78	311	1994T16	81.14
6½″×20″	25	1994T17	10.97	287	1994T14	81.14
6½″×24″	25	1994T28	13.11	239	1994T29	81.14
7″ ×20″	25	1994T15	11.62	266	1994T12	81.14
7″ ×24″	25	1994T26	14.17	222	1994T27	81.14
11″ ×36″	10	1994T24	9.40	204	1994T25	122.50
24″ ×36″	10	1994T13	14.20	94	1994T11	122.50

Stencil Ink Roller Kit

The absorbent neoprene-pad sponge roller can roll several stencils in one inking. Kit includes roller with polyethylene handle and 3½″×7″ tray with sponge ink pad. Use on nonporous surfaces. Use with porous and nonporous surface ink (sold separately, see 1639T on this page).

	1½″ Roller	Each	3″ Roller	Each
Kit	1636T6	$27.69	1636T7	$27.69
Replacement Roller w/ Handle	1636T85	19.14	1636T97	19.14
Replacement Roller Only	1636T8	11.02	1636T9	11.02
Replacement Ink Pad and Tray	1636T55	Each $12.03		

All-in-One Refillable Stencil Ink Roller

Mark porous surfaces in one stroke with this refillable roller. The nylon handle holds 4 oz. of ink, so you don't need a separate pad or tray. Roller assembly is aluminum; roller wheel is neoprene and 3″ wide. Use with porous stencil ink (sold separately on this page).

		Each
Roller	8630T32	$54.61
Replacement Roller Wheel	8630T34	10.30

All-in-One Stencil Ink Roller Kit

The press of a button releases ink from the disposable ink cartridge handle. Ink flows smoothly to the foam roller without the mess of re-inking on a separate pad or tray. Ink is permanent and dries in approx. 15 seconds. Use on porous and nonporous surfaces. Black and white ink meet Fed. Spec. TT-I-1795A and CID A-A-208, Type 4 alcohol-based permanent.

Kit includes a roller assembly and a black-ink cartridge handle. ***Replacement roller assembly*** includes roller, roller cover, and bracket that connects to the cartridge. ***Replacement Ink Cartridges—*** **To Order:** Please specify color: black, green, red, or white.

	1½″ Roller	Each	3″ Roller	Each
Kit	15305T21	$63.07	15305T11	$54.38
Repl. Roller Assembly	15305T22	41.53	15305T12	43.76
Replacement Roller	15305T23	11.73	15305T13	12.73
Replacement Ink Cartridges (4 oz.)	15305T68	Each $5.28		

Corrugated Carton Color-Matching Aerosol Spray

Spray color matches corrugated shipping cartons so you can cover old markings and reuse the cartons. Ink is tan, resists water and weather, and dries to the touch in approximately 1-3 minutes.

		Each
12-oz. (net wt.) Can	1996T14	$6.48

Stencil Ink Brushes

Hog-hair bristles provide a smooth, uniform ink application. Brushes have a hardwood handle and seamless steel ferrule. Use with any stencil ink.

Dia.	Bristle Lg.		Each
1″	1⅜″	7817T3	$7.12
1¼″	1½″	7817T4	8.09
1½″	1⅝″	7817T5	8.68

All-in-One Refillable Stencil Ink Brush

Release ink onto this stencil brush with the push of a button. There's no need for separate pads or trays—the aluminum handle stores 2.5 oz. of ink. Hog-bristle brush tip is tough enough for use with solvent-based inks and on rough, porous surfaces. Brush is 1⅜″ dia.; bristles are 1½″ long.

		Each
Brush	1635T5	$52.32
Replacement Brush Tip	1635T6	15.82

Stencil Inks and Stencil Ink Removers

Porous Surface Ink— Use with a brush or roller to permanently mark boxes, wooden crates, burlap, and paper. Ink dries instantly and can be used with stamp pads.

Porous and Nonporous Surface Ink— Use a roller to apply this permanent ink into porous surfaces as well as metal, plastic, and glass. Ink dries in approximately 15 seconds and can be used with stamp pads. Black and white ink meet Fed. Spec. TT-I-1795A and CID A-A-208, Type 4 alcohol-based permanent.

Color	Quart	Each	Gallon	Each
Porous Surface Ink				
Black	1638T11	$22.29	1638T12	$84.08
Porous and Nonporous Surface Ink				
Black	1639T31	23.50	1639T35	86.28
Blue	1639T71 ♦	27.65	1639T75 ♦	98.72
Green	1639T61 ♦	24.92	1639T65 ♦	95.01
Red	1639T84	27.65	1639T87	98.72
White	1639T33	26.08	1639T37	98.72
Yellow	1639T34 ♦	26.47	1639T38 ♦	98.72

♦ Can also be applied with a brush.

Porous and Nonporous Aerosol Stencil Ink— Apply this permanent stencil ink quickly and easily without a brush or roller. Ink comes in a 12 oz. (net wt.) aerosol can and dries to the touch in approximately 1-3 minutes. Meets MIL-A-A-208B.

Color		Each
Black	1641T11	$6.48
Blue	1641T15	6.48
Green	1641T16	6.48
Orange	1641T18	6.48
Red	1641T12	6.48
White	1641T13	6.48
Yellow	1641T14	6.48

Stencil Ink Removers— Removes all the stencil inks listed above. They can also be used to clean various stencil ink applicators and type. ***Aerosol*** conveniently removes residue from any surface and dries to the touch in approximately 30 seconds. ***1-qt. can*** is good for cleaning brushes and rollers.

		Each
13-oz. (net wt.) Aerosol Can	8626T21	$18.78
1-qt. Can	8626T12	20.00

Paint Markers

For information about paint, see page 2126.

About Paint and Ink Markers

Paint markers work well even on dirty, rusty, wet, and oily surfaces. They leave textured marks you can feel with your hand.
Ink markers work best on a clean, dry surface. Marks dry faster than paint (45-60 seconds) and are smooth instead of raised.

Extra Fine (<0.9 mm) — *Fine (0.9-1.2 mm)* — *Medium (1.3-2.4 mm)* — *Bold (2.5-4.5 mm)* — *Broad (>4.5 mm)*

Paint Markers

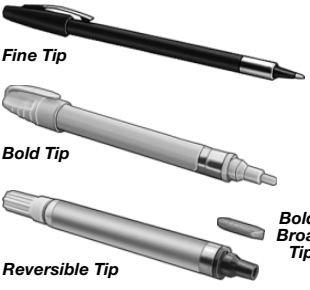

Use these markers on metal, plastic, rubber, wood, and paperboard. Paint is oil-based and permanent; tip is felt.

Fine Tip— Marking temperature range is –20° to +350° F. Paint dries in 25-35 seconds.

Bold Tip— Marking temperature range is –50° to +150° F. Paint dries in 30 seconds. ***Marker set*** includes five markers: black, red, silver, white, and yellow.

Reversible Tip— One end of the tip is bold, the other broad chisel. Simply remove and reinsert to change tips. Marking temperature range is –30° to +150° F. Paint dries in 1.5 minutes.

To Order: For fine tip, please specify color: black, blue, gold, green, orange, red, silver, white, or yellow. For bold tip, you also can specify brown, light blue, or purple. For reversible tip, specify color: black, blue, green, red, white, or yellow.

Tip	Stroke Width	Markers	Each	Marker Set	Per Set	Repl. Felt Tips Pkg. Qty.	Repl. Felt Tips Per Pkg.
Fine	1.2 mm	14295T12	$3.40	—	—	10	1468T42 $4.08
Bold	3.0 mm	16625T27	3.65	16625T28	$18.09	12	16625T51 8.33
Reversible	3.2 mm/4.8 mm	16625T41	3.55	—	—	12	16625T42 6.56

Any-Angle Paint Markers

Bold Tip

Pumping the rubber bulb at the end of these permanent markers creates pressure that allows you to mark at any angle—even upside down. Paint is oil-based; ball tip is stainless steel. Use on metal, plastic, rubber, concrete, wood, and glass. Marking temperature range is –20° to +150° F. Paint dries in 25-35 minutes.

Large-capacity markers last twice as long as standard.

To Order: Please specify color: black, blue, green, orange, red, white, or yellow.

Tip	Stroke Width	Standard	Each	Large Capacity	Each
Fine	1.2 mm	16105T18	$4.51	—	—
Medium	2.4 mm	16105T29	4.51	16105T58	$5.73
Bold	3.2 mm	16105T3	4.51	16105T6	5.73

Nuclear-Grade Paint Markers

Medium Tip

Low in chlorides and halogens, the oil-based paint in these markers won't degrade and contaminate marking surfaces. Paint is permanent and resists mild abrasion and harsh weather conditions. Pumping the rubber bulb at the end of these markers creates pressure that allows you to mark at any angle—even upside down. Ball tip is made of stainless steel. Use on nonporous surfaces such as metal and glass. Marking temperature range is –20° to +150° F. Paint dries in 25-35 minutes.

To Order: Please specify color: black, white, or yellow (unless noted).

Tip	Stroke Width		Each
Fine	1.2 mm	2802T2★	$6.85
Medium	2.4 mm	2802T5	6.85

★ Not available in black.

Dykem Brite-Mark Paint Markers

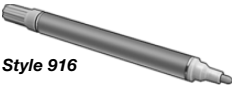
Style 916

The permanent oil-based paint in these markers won't fade or chip. Tip is medium-size felt. Use on metal, rubber, plastic, glass, concrete, leather, wood, paperboard, and vinyl. Marking temperature range is –20° to +350° F. Paint dries in 25-35 seconds. **To Order:** Please specify color: black, blue, gold, green, orange, purple, red, silver, white, or yellow. For style 916, you can also specify light blue or pink.

Style 40 has a heavy duty barrel and screw-on cap with clip.

Style	Stroke Width	Markers	Each 1-11	Each 12-Up	Repl. Felt Tips Pkg. Qty.	Per Pkg.
916	1.9 mm	1597T2	$4.14	$3.48	10 1597T6	$4.17
40	1.9 mm	1597T7	4.21	3.61	10 1468T47	4.08

High-Temperature Paint Markers

Medium Tip

Produce permanent marks that resist extreme temperatures. These markers release oil-based paint that becomes fused when heated. After application, black marks resist temperatures to 2000° F and white and yellow marks resist temperatures to 800° F. Pumping the rubber bulb at the end of these markers creates pressure that allows you to mark at any angle—even upside down. Ball tip is stainless steel. Use on nonporous surfaces such as metal, ceramic, and glass. Marking temperature range is –20° to +150° F. Paint dries in 25-35 min.

To Order: Please specify color: black, white, or yellow.

Tip	Stroke Width		Each
Fine	1.2 mm	2862T51	$6.11
Medium	2.4 mm	2862T61	6.11

Laundry Paint Markers

Medium Tip

Permanently mark cotton, wool, and synthetic blends with these markers. The pigment-based paint withstands scouring, laundering, and dry cleaning. Pumping the rubber bulb at the end of these markers creates pressure that allows you to mark at any angle—even upside down. Ball tip is made of stainless steel. Marking temperature range is –20° to +150° F. Paint dries in 2 minutes. Large-capacity marker lasts twice as long as standard. **To Order:** Please specify color: black, orange, red, white, or yellow.

Tip	Stroke Width	Standard	Each	Large Capacity	Each
Fine	1.2 mm	2792T6	$4.26	—	—
Medium	2.4 mm	2792T7	4.26	2792T2	$5.40

Metallic Color Paint Markers

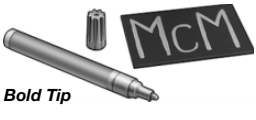

Bold Tip

Distinctive metallic colors stand out, especially on dark surfaces. These permanent markers have a felt tip and the oil-based paint can be used on metal, glass, plastic, and paperboard. Not rated for temperature. Paint dries in 10 seconds.

Tip	Stroke Width	Gold	Each	Silver	Each
Fine	1.2 mm	8667T25	$3.14	8667T26	$3.14
Bold	2.8 mm	—	------	8667T16	3.70

Easy-Clean Paint Markers

Broad Tip

Remove marks from these felt-tip markers with just soap and water. Paint is acrylic-based and dries to a hard finish. Use on glass, metal, plastic, wood, and paperboard. Marking temperature range is –50° to +150° F.

Note: Marks can only be removed while paint is still wet. Once dry, marks are permanent.

Bold Tip— Paint dries in 1 minute. **To Order:** Please specify color: black, red, white, or yellow.

Broad Tip— Extra-wide chisel tip. Paint dries in 3 minutes. **To Order:** Please specify color: black, blue, orange, red, white, or yellow.

Tip	Stroke Width		Each	Tip	Stroke Width		Each
Bold	4.0 mm	15375T5	$5.25	Broad	12.7 mm	15375T4	$7.24

Fast-Drying Paint Markers

It only takes a minute for this permanent oil-based paint to dry. Use on metal, plastic, rubber, glass, wood, paperboard, ceramic, and leather. Marking temperature range is –50° to +150° F.

Metal-Tip Marker— Squeeze the barrel to release paint. Tip is electroplated brass for long life. Grip is nonslip rubber. **To Order:** Please specify color: black, blue, gold, green, red, silver, white, yellow, neon orange, neon red, or neon yellow. ***Felt-Tip Marker—*** Apply pressure to tip to release paint. **To Order:** Please specify color: black, blue, gold, green, red, silver, white, or yellow.

Medium Metal Tip

Medium Felt Tip

				REPLACEMENT TIPS				
				Medium			Bold Chisel	
Tip	Stroke Width	Markers	Each	Pkg. Qty.	Stroke Width	Per Pkg.	Stroke Width	Per Pkg.
Medium Metal	1.4 mm	9356T1	$3.24	2	1.4 mm	9356T18	$3.86	—
Medium Felt	2.3 mm	9356T22	2.79	2	2.3 mm	9356T281	2.45	4.0 mm 9356T282 $2.45

Squeeze-On Paint Markers

You don't need to shake these paint markers prior to use—just squeeze and apply. Ball tip is made of stainless steel. Paint is oil-based, permanent, and comes in a 2-oz. plastic bottle. Use on metal, rubber, glass, and wood. Marking temperature range is 40° to 180° F. Paint dries in 5-10 minutes.

To Order: Please specify color: black, blue, green, orange, red, white, or yellow.

Marker set includes seven markers: black, blue, green, orange, red, white, and yellow.

Tip	Stroke Width	Marker	Each	Marker Set	Per Set
Bold	3.2 mm	8611T6	$5.43	8611T75	$29.72

Abrasion-Resistant Squeeze-On Paint Markers

Just squeeze these markers to apply permanent polyurethane-based paint that resists abrasion and chipping better than oil-based paint. The 2-oz. metal tube has a stainless steel ball tip. Use on metal, rubber, glass, and wood. Marking temp. range is 40° to 180° F. Paint dries in 24 hours. **To Order:** Please specify color: black, blue, green, orange, red, white, or yellow.

Marker sets include seven markers: black, blue, green, orange, red, white, and yellow.

Tip	Stroke Width	Markers	Each	Marker Sets	Per Set
Medium	2 mm	1671T5	$4.98	1671T18	$31.30
Bold	3.2 mm	1671T6	4.98	1671T28	31.30
Broad	4.8 mm	1671T7	4.98	1671T38	31.30

No-Drip Paint Markers

Solid and durable, these permanent markers won't drip or spill. All are wrapped in paper except for the hot-metal markers, which are bare. Max. stroke width is 17.5 mm. Paint dries in 24 hours, unless noted.

General Marking (Types B, F, and FD)— Use on metal, glass, plastic, rubber, and paperboard. *Type B* is weather and fade resistant and marks wet, oily, rusty, and dirty surfaces. *Type F* is fluorescent for high visibility and marks wet and oily surfaces. *Type FD* dries in 5 minutes.

Rough Surface (Type BE)— Weather and fade resistant. Use on concrete, forgings, and castings.

Primer Resistant (Type BL)— Shows through oil- and solvent-based primer coatings. Use on metal.

Hot Metal (Types H and HT)— Dry immediately when applied to hot metal and won't smear, char, discolor, or peel.

Heat Treating and Annealing (Types M and M-10)— For heat-treated and annealed metal, they're able to withstand cooling processes. Use on welds, ingots, castings, and forgings.

Markers—To Order: Please specify color.

Type	Marking Temp. Range	Available Colors	Base	Pkg. Qty.		Per Pkg.
General Marking						
B	–50° to +150° F	Black, Blue, Green, Orange, Purple, Red, White, Yellow	Oil/Wax	12	1660T21	$11.75
F	–50° to +150° F	Blue, Green, Orange, Red, Yellow	Oil/Wax	12	1660T87	20.53
FD	–50° to +150° F	Black, Red, White, Yellow	Oil/Wax	4	1660T36	19.73
Rough Surface						
BE	–50° to +150° F	Black, Red, White, Yellow	Oil/Wax	12	1660T75	17.48
Primer Resistant						
BL	–50° to +150° F	Blue	Oil/Wax	4	1660T93	18.13
Hot Metal						
H	+150° to +1200° F	Black, Blue, Red, White, Yellow	Resin	12	1660T44	17.60
HT	+250° to +1600° F	Black, Blue, Red, White, Yellow	Resin	12	1660T65	17.80
Heat Treating and Annealing						
M	–50° to +1600° F	Black, Red, White, Yellow	Oil/Wax	6	1660T17	9.82
M-10	–50° to +1800° F	White	Oil/Wax	4	1660T79	9.20

Holders

For Marker Type	Material		Each	For Marker Type	Material		Each
B, F, FD, BE, BL, M, M-10	Aluminum	1660T53	$13.95	H, HT	Wood	1660T54	$2.40

No-Drip Twist-Feed Paint Marker

Keep your hands clean—just twist the end of the plastic barrel to advance this solid permanent marker. It has a stroke width of 13 mm and won't drip or spill. Paint is alcohol-based and can be used on metal, plastic, rubber, wood, and paperboard. Marking temperature range is 14° to 212° F. Paint dries in 5 minutes. **To Order:** Please specify color: black, blue, green, orange, purple, red, white, yellow, fluorescent orange, or fluorescent yellow.

1762T26 ..... **Each** $4.69

Fill-In Lacquer Paint Marker

Fill in and brighten stamped and engraved lettering. To apply, rub this marker over surface and wipe off the excess before paint dries. Stroke width is 9.5 mm. The oil- and wax-based lacquer paint is permanent and meets Fed. Spec. TT-F-325a. Marking temperature range is –50° to +150° F. Paint dries in 24 hours. Marker is individually wrapped in paper. **To Order:** Please specify color: black, red, white, or yellow.

Marker (6/Pkg.) ..... **2018T2** **Per Pkg.** $9.69

Ink Markers

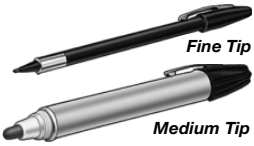

Fine Tip

Medium Tip

Use these long-life permanent markers on metal, glass, wood, paper, and most plastics. Ink is dye-based; tip is felt. Marking temperature range is –20° to +120° F.

To Order: Please specify color: black, blue, green, or red.

Tip	Stroke Width	Markers	Each	Repl. Felt Tips	Pkg. Qty.	Per Pkg.
Fine	0.9 mm	1468T5	$2.44		10	1468T42 $4.08
Medium	1.4 mm	1468T6	3.13		10	1468T45 4.08

High-Temperature Ink Marker

Produce permanent marks that resist extreme temperatures. This felt-tip marker releases pigment-based ink that becomes fused when heated. After application, black and blue marks resist temperatures to 2000° F, green to 1800° F, white to 1550° F, and yellow to 800° F. Use on nonporous surfaces such as metal, ceramic, and glass. Marking temperature range is –20° to +150° F. **To Order:** Please specify color: black, blue, green, white, or yellow.

Tip	Stroke Width	Marker	Each	Repl. Felt Tip	Pkg. Qty.	Per Pkg.
Medium	1.9 mm	16305T41	$5.45		10	1468T47 $4.08

For information about markers, see page 1938.

Nuclear-Grade Ink Markers

Medium Tip

Low in chlorides and halogens, the permanent ink in these felt-tip markers won't degrade or contaminate marking surfaces. Use on nonporous surfaces such as metal and glass. Marking temperature range is –20° to +150° F. **To Order:** Please specify color: black, red, or white. For medium tip, you can also specify blue or yellow.

Tip	Stroke Width	Markers Each	Repl. Felt Tips Pkg. Qty.	Repl. Felt Tips Per Pkg.
Fine	0.9 mm	5941T3 $5.70	10	1468T42 $4.08
Medium	1.9 mm★	5941T4 6.20	10	1468T47 4.08

★ Black is 1.1 mm. For replacement tip, please ask for 1468T69.

Erasable Ink Markers

Easily remove marks with water or detergent. Markers have a medium felt tip. Black, blue, green, and red are dye-based inks; white and yellow are pigment-based. Use on metal. Marking temperature range is –20° to +150° F. **To Order:** Please specify color: black, blue, green, red, white, or yellow.

Marker Style	Stroke Width▲	Each
Markers		
Water Erase	1.4 mm	8580T55 $4.31
Detergent Erase	1.4 mm	8580T56 4.11
Replacement Felt Tips (10/Pkg.)		**Per Pkg.**
Black, Blue, Green, Red	1.4 mm	1468T45 $4.08
White, Yellow	1.9 mm	1468T47 4.08

▲ White and yellow markers have a stroke width of 1.9 mm.

Ultraviolet Ink Marker

Maintain quality control and security with this ultraviolet marker. The dye-based permanent ink is invisible until exposed to black light, turning marks blue. Use on metal, glass, rubber, paperboard, and plastic. Marking temperature range is –20° to +150° F.

Tip	Stroke Width	Marker Each	Repl. Felt Tip Pkg. Qty.	Repl. Felt Tip Per Pkg.
Medium	1.9 mm	8592T75 $4.50	10	1468T53 $4.08

Light-Blocking Ink Markers

Fine Tip

Repair scratches, cuts, and other imperfections on film with these felt-tip markers. Also known as opaquing markers, they are filled with light-blocking, water-resistant permanent ink. Color is black. Marking temperature range is –20° to +120° F.

Tip	Stroke Width	Markers Each	Repl. Felt Tips Pkg. Qty.	Repl. Felt Tips Per Pkg.
Fine	0.9 mm	3794T2 $5.76	10	1468T42 $4.08
Bold	4.0 mm	3794T4 6.60	10	3794T68 4.08

Degreaser-Resistant Ink Marker

The pigment-based permanent ink in this felt-tip marker resists degreasing solvents such as mineral spirits, mineral oil, gasoline, and most alcohols. Use on smooth surfaces such as metal and plastic. Marking temperature range is –20° to +350° F. **To Order:** Please specify color: black, blue, green, red, white, or yellow.

Tip	Stroke Width	Marker Each	Repl. Felt Tip Pkg. Qty.	Repl. Felt Tip Per Pkg.
Medium	1.9 mm	15415T62 $3.55	10	1468T47 $4.08

Refillable Ink Markers

Refillable for longer life, these markers are also color interchangeable. To switch colors, simply change the ink and the tip.

Marker barrel holds 1 oz. of ink (sold separately) and comes with a 7.9 mm round felt tip.

Ink is permanent and comes in a 16-oz. bottle. Marking temperature range is –10° to +100° F. **To Order:** Please specify color: black, blue, green, orange, pink, red, white, or yellow.

	Each	Stroke Width	Repl. Felt Tips Pkg. Qty.	Repl. Felt Tips Per Pkg.
Marker Barrel	1644T1 $16.34	7.9 mm	4	1644T4 $8.93
Ink	1673T8 20.42	12.7 mm	4	1644T3 8.93

Broad-Tip Ink Markers

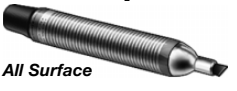

All Surface

Water Based

Large Capacity

The wide, chisel-shaped felt tip produces bold marks. These permanent-ink markers are not rated for temperature, unless noted.

All Surface— Ideal for use on metal and concrete.

Water Based— Marks on paper, plastic, metal, leather, and wood without bleeding. Marking temperature range is 40° to 167° F.

Large Capacity— The oversized barrel and tip provide maximum ink capacity and a large stroke width. They're perfect for use on rough surfaces.

To Order: Please specify color: black, blue, green, or red, unless noted.

Marker Style	Stroke Width	Pkg. Qty.	Per Pkg.
All Surface	7 mm	1	1662T4● $1.56
Water Based	7 mm	12	16335T63 9.14
Large Capacity	18 mm	1	1662T6● 4.04

● Not available in green.

Firm-Tip Ink Markers

The firm plastic tip on these permanent markers provides sharp marks. Ink is fade and water resistant. Use on metal, glass, plastic, wood, and paperboard, plus wet and oily surfaces. **To Order:** Please specify color.

Marker sets include one each of available colors, unless noted.

Medium tip marker has a large barrel with extra ink capacity.

Retractable marker clicks open and closed with one hand, plus there's no cap to misplace. Valve design prevents drying out.

Heavy duty broad tip marker has a durable chisel tip that lasts twice as long as other marker tips. Rubber grip and textured cap make it easier to use when wearing gloves. The oval-shaped barrel won't roll off work surfaces and is reinforced to prevent dents.

High-temperature ink markers hold up in harsh environments. Ink withstands temperatures to 500° F, steam, and most chemical washes.

Laundry fine tip marker is also known as an indelible marker. Ink withstands washing and dry cleaning. Use on natural and synthetic fabrics.

Metallic ink fine tip marker really stands out, especially on dark surfaces.

Tip	Stroke Width	Available Colors	Markers Pkg. Qty.	Markers Per Pkg.	Marker Sets Per Set
Extra Fine	0.4 mm	Black, Blue, Green, Red	12	1661T61 $12.00	1661T52 $4.38
Fine	1.0 mm	Black, Blue, Green, Red	12	1661T11 11.56	1661T5 4.36
Double—Extra Fine and Fine	0.3 mm/1.0 mm	Black, Blue, Green, Red	1	1661T38 1.94	1661T54 7.24
Medium	1.3 mm	Black, Blue, Red	1	1661T27 1.68	1661T53■ 6.31
Double—Medium and Broad	1.3 mm/5.3 mm	Black	1	1661T393 2.16	1661T55♦ 6.22
Retractable Fine	1.0 mm	Black, Blue, Green, Red	1	1661T42 2.22	____ ____
Heavy Duty Broad	5.3 mm	Black	1	1661T452 2.52	____ ____
High-Temperature Ink Extra Fine	0.4 mm	Black	12	1661T32 12.66	____ ____
High-Temperature Ink Fine	1.0 mm	Black	12	1661T31 12.22	____ ____
Laundry Fine	1.0 mm	Black	6	1661T33 6.54	____ ____
Metallic Ink Fine	1.0 mm	Silver	2	1661T47 3.14	____ ____

■ Marker set includes one each: black, blue, green, and red. ♦ Marker set includes one each: black, blue, and red.

Ink Dot Marker

Quickly mark boxes for material identification and inventory control. The easy-to-grip bottle contains 3 oz. of permanent ink. Bottle cap indicates ink color. Stroke width is 16 mm. Not rated for marking temperature. **To Order:** Please specify color: blue, green, magenta, orange, purple, or red.

94925T14 ..... **Each** $1.96

Precision Needle-Point Ink Markers

Achieve pinpoint accuracy with these markers—even when the tip isn't in contact with the marking surface. Just squeeze to dispense water-based ink that won't bleed. Needle tip is 1″ long and made of Type 304 stainless steel. Use on most surfaces, including metal, glass, and plastic. Markers are ideal for electronics, medical, and aerospace applications. Marking temperature range is –55° to +350° F.

Erasable ink can be wiped away with a damp cloth.

To Order: Please specify from the following fluorescent colors: blue, green, orange, red, violet, and yellow. For permanent ink markers, you can also specify black, silver, and white.

Ink	Tip	Orifice Size		Each
Permanent	Extra Fine	0.8 mm	**2410T3**	$7.91
Erasable	Extra Fine	0.8 mm	**2410T7**	7.91

No-Mess Crayons

With Optional Aluminum Holder

Apply marks that won't smear or bleed yet are removable by wiping or sanding.

Light Duty Wax Crayon—Temporarily marks most surfaces. Size is 9/16″ Dia.×5″ Lg. Marking temperature range is 40° to 212° F. **To Order:** Please specify color: black, blue, or red.

Rubber-Marking Crayon—Temporarily marks wet and cold rubber. Size is 1/2″ Dia.×4 5/8″ Lg. Marking temperature range is –20° to +130° F. **To Order:** Please specify color: red, white, or yellow.

Weather-Resistant Crayon—Also known as a lumber crayon, this is great for marking rough surfaces such as lumber, metal, and concrete. Size is 1/2″ Dia.×4 5/8″ Lg. Marking temperature range is –50° to +150° F. **To Order:** Please specify color: black, blue, green, orange, pink, purple, red, white, or yellow.

Fluorescent Weather-Resistant Crayon—Also known as a lumber crayon, this is fluorescent to really stand out. Great for marking rough surfaces such as lumber, metal, and concrete. Size is 1/2″ Dia.×4 5/8″ Lg. Marking temperature range is –50° to +150° F. **To Order:** Please specify color: green, orange, pink, red, or yellow.

Heat- and Weather-Resistant Crayon—Also known as a lumber crayon, this crayon is graphite-based so it won't melt. Use on lumber, concrete, and even hot metal. Size is 1/2″ Dia.×4 1/2″ Lg. Marking temperature range is –50° to +1100° F. Color is black.

	Pkg. Qty.		Per Pkg.
Light Duty Wax	12	**1654T3**	$4.42
Rubber Marking	12	**1654T5**	9.47
Weather Resistant	12	**1654T2**	10.94
Fluorescent Weather Resistant	12	**1654T68**	17.63
Heat and Weather Resistant	12	**1654T71**	10.62
			Each
Optional Aluminum Holder		**8613T21**	$14.97

Lead Holder

Here's what you need to hold 2 mm black lead. The plastic barrel has a knurled metal grip and pocket clip. Push-button action advances the lead. **To Order:** Please specify grade of lead (listed from softest to hardest): 6B, 5B, 4B, 3B, 2B, B, HB (equivalent to No. 2 regular lead), F, H, 2H, 3H, or 4H.

		Each
Lead Holder	**8380T1**	$8.43
Refill Lead (12/Pkg.)	**8380T9** **Per Pkg.**	$11.61

Water-Resistant Grease Pencils

Pull-String Pencil

Mechanical Pencil

Also known as China markers, these water-resistant grease pencils temporarily mark glass, plastic, film, and rubber. To remove, simply wipe off. Not rated for marking temperature.

Pull-String Pencils—Pull string to advance.

Mechanical Pencils—Turn the end to advance.

Color	Pkg. Qty.		Per Pkg.
Pull-String Pencils			
Black	12	**1514T301**	$8.47
Blue	12	**1514T306**	8.47
Green	12	**1514T304**	8.47
Red	12	**1514T303**	8.47
White	12	**1514T305**	8.47
Yellow	12	**1514T307**	8.47
Mechanical Pencils			
Black	12	**86585T11**	$14.49
Red	12	**86585T12**	14.49
Refills for Mechanical Pencils			
Black	72	**86585T21**	8.71
Red	72	**86585T22**	8.71

Heavy Duty Wax Markers

For longer life than soapstone and marks that won't rub off, choose these wax markers. They're excellent for marking metal—even when it's oily, wet, or rusty. Use in welding, metal layout, and fabrication work. Marker size is 5″ Lg.×1/2″ Wd. Furnished with a galvanized steel holder and three refills.

	Markers		Refills		
Color		Each	Pkg. Qty.		Per Pkg.
Red	**5877T7**	$6.79	25	**5877T9**	$10.02
Silver	**5877T3**	6.79	25	**5877T5**	10.02
Replacement Galvanized Steel Holder		**5877T14**	**Each**		$4.24

Chalk and Chalk Holder

Chalk

Tapered Board Chalk

Heavy Duty Marking Chalk

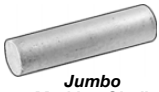

Jumbo Marking Chalk

Heavy Duty Marking Chalk—Also known as railroad chalk. *Blue*, *white*, and *yellow* chalk have an enamel coating that prevents the chalk from rubbing off on your hands.

Color	Size, Dia.×Lg.	Pkg. Qty.		Per Pkg.
Dustless Board Chalk				
White	3/8″ ×3 1/4″	12	**1648T901**	$0.93
Yellow	3/8″ ×3 1/4″	12	**1648T902**	.93
Tapered Board Chalk				
White	7/16″×3 1/4″	144	**1648T7**	8.27
Heavy Duty Marking Chalk				
Blue	1″ ×4″	72	**1648T35**	13.50
Red	1″ ×4″	72	**1648T25**	13.50
White	1″ ×4″	72	**1648T15**	13.50
Yellow	1″ ×4″	72	**1648T45**	13.50
Jumbo Marking Chalk				
Blue	1 1/2″ ×6″	24	**1648T213**	11.50
Red	1 1/2″ ×6″	24	**1648T214**	11.50
White	1 1/2″ ×6″	24	**1648T212**	11.50
Yellow	1 1/2″ ×6″	24	**1648T215**	11.50

Optional Holder for 1″×4″ Marking Chalk

ABS/Acetal Plastic ..... **8613T34** **Each** $2.00

Removable Soapstone

Good for marking metal, this economical white soapstone is often used in welding applications.

Optional holder for round soapstone is made of aluminum; for rectangle soapstone, it's stainless steel.

Sets include five pieces of soapstone and one holder.

Round Soapstone with Optional Holder

Shape	Size	Pkg. Qty.	Soapstone	Per Pkg.	Optional Holders	Each	Sets	Per Set
Round	5″×1/4″	50	**1652T1**	$6.95	**1652T22**	$2.57	**1652T33**	$3.78
Square	5″×1/4″×1/4″	50	**1652T2**	6.95	—	—	—	—
Rectangle	5″×1/2″×3/16″	50	**1652T3**	6.21	**1652T24**	3.14	**1652T35**	3.07

Ink Pens

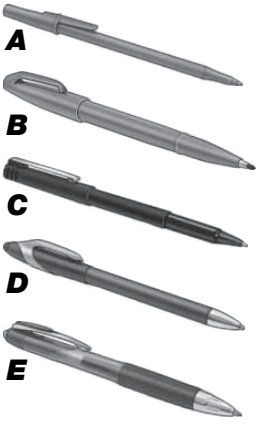

To Order: For pens, please specify medium or fine point (unless noted) and color: black, blue, or red (unless noted). For ink refill for tri-color retractable pen, please specify color: black, blue, or red.

(B) Felt Tip with Cap—Fine point only.

(D) Ball Point Retractable—Black or blue ink only.

(E) All-Angle/All-Weather Retractable—Pressurized to write on wet surfaces, in extreme cold, and at any angle. Medium point only. Black or blue ink only.

Tri-Color—Writes in black, blue, and red ink. Medium point only.

	Pkg. Qty.		Pkg.
(A) Ball Point with Cap	12	16805T4	$1.56
(B) Felt-Tip with Cap	12	16805T1	13.53
(C) Roller Ball with Cap	12	16805T8	11.79
(D) Ball Point Retractable	12	16805T3	12.23
(E) Gel Retractable	1	16805T7	1.92
(E) All-Angle/All-Weather Retractable	1	16805T5	2.26
(E) Tri-Color Retractable	1	3678T1	2.29
Ink Refill for Tri-Color Retractable Pen		3678T2	Each $0.89

Security Chain Ink Pen

This pen won't pull a disappearing act on you—it stays put with an adhesive-backed base and 24″ chain. Pen is medium ball point with black ink.

Replacement pen snaps onto existing chain.

Pen with Base and Chain	14255T11	$3.43
Replacement Pen	14255T15	1.89

Pencils

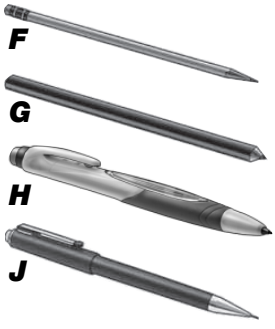

(H) Self-advancing mechanical pencil is click-free to reduce lead breakage. Lead size is 0.7 mm.

(J) Click-advance mechanical pencil advances with a press of the eraser head. Twist the barrel to expose the eraser.

To Order: For click-advance mechanical pencils and lead refills, please specify lead size: 0.5 mm or 0.7 mm.

	Pkg. Qty.		Pkg.
#2 Pencil with Eraser			
F	12	1653T22	$2.80
Red-Colored Pencil with Eraser			
F	12	1653T88	4.98
Carpenters' Pencil			
G	12	1653T44	7.11

Pencils		Eraser Refills Pkg. Qty.		Pkg.
Self-Advancing Mechanical				
H	8656T707 $3.28	5	8656T72	$1.27
Click-Advance Mechanical				
J	8656T4 4.96	2	8656T85	1.13
Lead Refills (12/Pkg.)			8656T25	Pkg. $0.87

Lead Pointers

Paddle

Desktop

Style	Material		
Paddle	Sandpaper	8398T15	$1.27
Desktop	Plastic	8398T11	12.17

Numbering Rubber Stamps

Actual Size

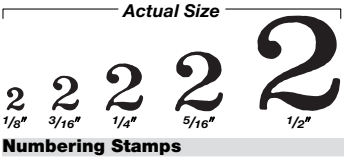

Simply rotate bands to quickly select the character to be stamped. Stamps have rubber bands, a chrome-plated steel frame, and a wood handle.

Optional Wall-Mount Stamp Rack—Keep up to 12 stamps organized and accessible with these steel racks—just slide stamp handles into the spring clips. Overall size is 16 5/16″ Lg. × 1/2″ Ht. × 2 5/8″ Dp. Mounting hardware included.

16245T12 ..... $9.50

Numbering Stamps

0-99999 Number Range

Each band has 0-9 and a space. **Also Available:** Other character heights and number ranges. Please ask for 1235T74 and specify character height and number range. For replacement bands, please ask for 1235T999 and specify character height.

For stamp pads and ink, see page 1944.

Character Ht.	0-99999 O'all Size, Wd. × Ht.			0-999999 O'all Size, Wd. × Ht.			0-9999999 O'all Size, Wd. × Ht.		
1/8″	1″ × 3 1/2″	1235T21	$10.37	1″ × 3 1/2″	1235T22	$10.51	1″ × 3 1/2″	1235T23	$14.98
3/16″	1 1/4″ × 3 1/2″	1235T41	11.98	1 1/4″ × 3 1/2″	1235T42	14.14	1 1/2″ × 3 1/2″	1235T43	19.19
1/4″	1 1/2″ × 4″	1235T51	33.64	1 3/4″ × 4″	1235T52	34.70	2″ × 4″	1235T53	38.56
5/16″	1 3/4″ × 4 1/2″	1235T61	44.62	2″ × 4 1/2″	1235T62	45.90	2 3/16″ × 4 1/2″	1235T63	55.58
1/2″	2 1/2″ × 5 3/16″	1235T71	62.10	3″ × 5 3/16″	1235T72	62.63	3 1/2″ × 5 3/16″	1235T73	74.84

Character Ht.	0-99999999 O'all Size, Wd. × Ht.			0-9999999999 O'all Size, Wd. × Ht.			0-999999999999 O'all Size, Wd. × Ht.		
1/8″	1 3/16″ × 3 1/2″	1235T765	$17.34	1 1/2″ × 3 1/2″	1235T781	$23.60	1 13/16″ × 3 1/2″	1235T791	$32.52
3/16″	1 3/4″ × 3 1/2″	1235T767	20.37	2 1/4″ × 3 1/2″	1235T783	27.43	2 1/2″ × 3 1/2″	1235T787	36.87
1/4″	2 1/4″ × 4″	1235T768	39.46	2 3/4″ × 4″	1235T784	44.68	3 3/16″ × 4″	1235T788	53.39
5/16″	2 11/16″ × 4 1/2″	1235T769	56.59	3 5/16″ × 4 1/2″	1235T785	68.83	4″ × 4 1/2″	1235T795	81.40
1/2″	3 7/8″ × 5 3/16″	1235T771	81.83	4 3/4″ × 5 3/16″	1235T786	108.98			

Self-Inking Numbering Stamps

0-999999 Number Range

A removable ink pad is built into these stamps. Each band has 0-9 and a space. Stamps with 3/16″ and 1/4″ character heights also have a dash. ***Ink*** (sold separately) is water-based and for use on porous surfaces such as paper and paperboard. **To Order:** Please specify ink color: black, blue, green, purple, or red.

Character Ht.	0-999999 O'all Size, Wd. × Ht.			0-99999999 O'all Size, Wd. × Ht.			0-9999999999 O'all Size, Wd. × Ht.		
1/8″	1 5/8″ × 5 1/2″	1575T11	$48.36	2″ × 5 1/2″	1575T82	$56.59	2″ × 5 1/2″	1575T93	$63.53
3/16″	2″ × 6 1/2″	1575T12	57.16	2″ × 6 1/2″	1575T83	62.76	2″ × 6 1/2″	1575T94	70.38
1/4″	2″ × 6 1/2″	1575T13	142.53	2″ × 6 1/2″	1575T84	168.64	2″ × 6 1/2″	1575T95	189.25
5/16″	3″ × 7″	1575T14	159.45	3″ × 7″	1575T85	187.85	3″ × 7″	1575T96	215.82

Ink (0.9-oz. Bottle) 1575T61 $2.22

Numbering and Lettering Rubber Stamps

The most versatile stamps we offer, simply rotate bands to select the character to be stamped. Each rubber band has 0-9, A-Z, a dash, and a space. Stamps have a chrome-plated steel frame and wood handle.

Also Available: Other number ranges. Please ask for 13455T86 and specify character height and number range.

Actual Size: 2B 1/8″, 2B 3/16″, 2B 1/4″, 2B 5/16″

0-99999 Number Range and A-Z

Character Ht.	0-99999 and A-Z O'all Size, Wd. × Ht.			0-999999 and A-Z O'all Size, Wd. × Ht.			0-99999999 and A-Z O'all Size, Wd. × Ht.		
1/8″	1 1/2″ × 5 1/2″	13455T22	$108.39	1 5/8″ × 5 1/2″	13455T32	$120.24	1 5/8″ × 5 1/2″	13455T52	$122.67
3/16″	1 1/2″ × 8 1/2″	13455T23	166.34	1 1/2″ × 8 1/2″	13455T33	181.29	2″ × 8 1/2″	13455T53	204.53
1/4″	1 1/2″ × 9″	13455T24	206.68	1 1/2″ × 9″	13455T34	225.56	2″ × 9″	13455T54	254.77
5/16″	1 1/2″ × 10 1/2″	13455T25	227.26	2″ × 10 1/2″	13455T35	229.22	2 7/16″ × 10 1/2″	13455T55	275.44

Character Ht.	0-9999999999 and A-Z O'all Size, Wd. × Ht.			0-999999999999 and A-Z O'all Size, Wd. × Ht.		
1/8″	1 5/8″ × 5 1/2″	13455T62	$152.31	1 3/4″ × 5 3/4″	13455T72	$170.33
3/16″	2 7/16″ × 9″	13455T63	213.03	2 7/16″ × 9″	13455T73	233.79
1/4″	2 7/16″ × 9″	13455T64	293.31	2 15/16″ × 9″	13455T74	347.60
5/16″	2 15/16″ × 10 1/2″	13455T65	325.39	3 7/16″ × 10 1/2″	13455T75	418.30

Self-Inking Rubber Date Stamps

Rotating bands allow you to select the date to be stamped. These stamps have a removable ink pad built in, rubber bands, a chrome-plated steel frame, and wood handle.

Ink (sold separately) is water-based and for use on porous surfaces such as paper and paperboard.

Stamps

Character Ht.	O'all Size, Wd. × Ht.		
1/8″	2″ × 5 1/2″	4697T3	$38.30
5/32″	2″ × 5 1/2″	4697T5	41.17
3/16″	2″ × 5 1/2″	4697T7	44.07

Ink

Color	Size		
Black	0.9-oz. Bottle	1575T611	$2.22
Blue	0.9-oz. Bottle	1575T612	2.22
Green	0.9-oz. Bottle	1575T613	2.22
Purple	0.9-oz. Bottle	1575T614	2.22
Red	0.9-oz. Bottle	1575T615	2.22

Self-Inking Rubber Stamps w/ Message

Simply press down on these stamps to quickly and clearly imprint your message. You don't need a separate stamp pad—the ink pad is built in. The 1 5/8″ × 1/2″ rubber stamp face is recessed in an ABS plastic body. Overall size is 2″ Wd. × 2 1/4″ Ht. Ink is oil-based and for use on porous surfaces such as paper and paperboard.

Also Available: Custom messages. Please ask for 17075T21 and specify message and ink color.

Stamps with Red Ink

CONFIDENTIAL	RECEIVED	FAXED	FILE COPY
16125T312	16125T424	16125T328	16125T314
POSTED	COPY	RUSH	COMPLETED
16125T319	16125T439	16125T326	16125T327
REVISED	FRAGILE	DRAFT	PAST DUE
16125T434	16125T423	16125T447	16125T318

Stamp $11.85

Stamps with Blue Ink

APPROVED	ORIGINAL	ENTERED	COMPLETED
16125T325	16125T433	16125T324	16125T311
RECEIVED	COPY	PAID	VOID
16125T321	16125T313	16125T317	16125T322

Stamp $11.85

Ink

Color	Size		
Black	10-ml Bottle	16125T412	$5.16
Blue	10-ml Bottle	16125T413	5.16
Green	10-ml Bottle	16125T414	5.16
Purple	10-ml Bottle	16125T415	5.16
Red	10-ml Bottle	16125T411	5.16

Self-Advancing Self-Inking Numbering Stamps

No need to adjust bands for consecutive numbering—just press plunger to advance. If you want multiple same-number imprints, you can adjust stamp to advance after 2nd, 3rd, 4th, 6th, or 12th impression. Stamps have a removable ink pad built in and include black oil-based ink for use on porous surfaces such as paper and paperboard. Each band has 0-9. Bands, typeface, and frame are chrome-plated steel, and handle is black plastic.

Actual Size: 2 3/16″

Number Range	Character Ht.	O'all Size, Wd. × Ht.		
0-999999	3/16″	2 1/4″ × 5 3/4″	8417T74	$107.30
Black Ink Refill (1-oz. Bottle)			8417T891	9.33

Self-Inking Rubber Date Stamp with Message

One stamp prints both the date and a selected message. You don't need a separate stamp pad—a removable two-color ink pad is built in. The date imprint is red and the message is blue; character height for both is 5/32″. Stamp is furnished with eight messages: ATTENTION, FAXED, INSPECTED, POSTED, RECEIVED, SHIPPED, TESTED, and BY _ _ _ _ _.

Ink is water-based and for use on porous surfaces such as paper and paperboard. Stamp has rubber bands, a chrome-plated steel frame, black plastic handle, and black rubber feet.

O'all Size, Wd. × Ht.	Imprint Area, Wd. × Ht.	Stamp		Repl. Ink Pad	
3 1/8″ × 6 3/16″	1 7/8″ × 1 1/8″	8590T15	$57.08	8590T17	$6.00

Self-Inking Changeable Message Rubber Stamp

Place type on the stamp face to customize each message. You don't need a separate stamp pad—a dry removable ink pad is built in. The cloth-covered pad accepts both porous and nonporous inks (sold separately; see page 1944). The stamp face is made of rubber. Stamp has a chrome-plated steel frame and a wood handle with a black finish. It can accommodate more than one character height.

Type sets (sold separately) include: six each of E; 5 each of A, C, I, L, N, O, R, S, and T; four each of B, D, F, G, H, P, period, and comma; three each M, U, W, Y, 0, 1, and hyphen; two each J, K, Q, V, X, Z, 2-9, and apostrophe; and one each $ and &.

1/8″ Actual Size

O'all Size, Wd. × Ht.	Imprint Area, Wd. × Ht.	Stamp		Repl. Ink Pad	
2 7/8″ × 5 7/8″	2 3/8″ × 13/16″	8761T13	$48.16	8761T15	$4.64

Character Ht.	Max. No. of Characters Per Line	Max. No. of Lines	Type Sets	
1/8″	16	3	8761T4	$18.00
1/4″	11	2	8761T5	19.20
1/2″	6	1	8761T6	45.60

Self-Inking Miniature Inspection Rubber Stamps

Compact size lets you stamp hard-to-reach surfaces. Stamps have a built-in ink pad and make up to 2,000 imprints before reinking. Ink is alcohol-based and permanent on porous and nonporous surfaces. Stamps have a polypropylene body and rubber face. **To Order:** Please specify ink color: black or white.

Also Available: Other imprints and ink colors. Please ask for 1119T76 and specify diameter and imprint required. For ink, specify color: blue, green, red, and ultraviolet.

Face Dia.	O'all Size, Dia. × Lg.	
1/4"	0.39" × 4.40"	$35.48
3/8"	0.66" × 2.53"	37.75

Ink Refills—*0.5 oz. Bottle*

Black	1119T32	$12.40
White	1119T33	$11.93

Actual Size

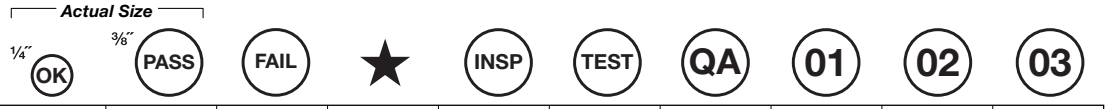

1/4"	1119T36	1119T38	1119T42	1119T44	1119T22	1119T24	1119T26	1119T46	1119T48	1119T62
3/8"	1119T53	1119T55	1119T57	1119T59	—	—	—	1119T71	1119T73	1119T75

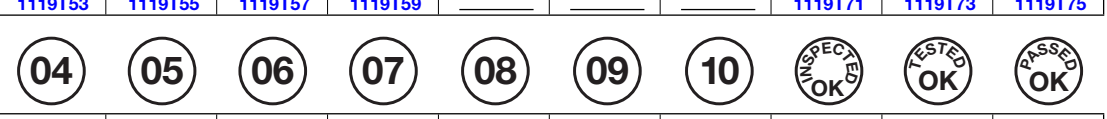

1/4"	1119T64	1119T66	1119T68	1119T82	1119T84	1119T86	1119T88	—	—	—
3/8"	1119T77	1119T79	1119T91	1119T93	1119T95	1119T97	1119T99	1119T37	1119T39	1119T51

Build-a-Message Rubber Stamp Sets

1/8" Actual Size

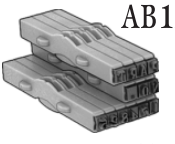

Snap these stamps together to create your own horizontal, vertical, and multi-line messages. Their compact size lets you stamp small surfaces and in tight spaces. Stamps have a rubber face and a plastic shank. Sets are furnished in a plastic compartmented box.

Number sets include two zeros, one each of 1-9, period, comma, dollar sign, and pound sign (#); and two hyphens.

Letter sets include one each of uppercase A-Z, comma, period, colon, apostrophe, hyphen, parentheses, forward slash (/), ampersand (&), and an arrow.

Character Ht.	O'all Size, Wd. × Ht.	Number Sets		Letter Sets	
1/8"	5/16" × 2 3/8"	8474T2	$16.50	8474T3	$23.25
3/16"	5/16" × 2 3/8"	8474T4	17.50	8474T5	25.25
5/16"	1/2" × 2 3/8"	8474T6	30.95	8474T7	52.95

Make-Your-Own Rubber Stamp Kit

Just insert characters into the holders to create your own messages.

Kit contains 1/8" and 3/16" high uppercase and 1/8" high lowercase letters A-Z; 1/8" and 3/16" high numbers 0-9; tweezers; stamp pad with water-based, porous-surface black ink; one- through five-line rectangular holders that are 2 7/8" Wd. × 1/2" Ht.; a 1 3/4" Dia. × 1/2" Ht. round holder; and a 2 1/4" Lg. × 1 1/2" Wd. × 1/2" Ht. oval holder. Characters are rubber and come in plastic storage trays. Holders have a handle and are made of plastic.

ⓘ For a complete listing of kit characters, go to mcmaster.com and search for **8604TAC**.

Character Ht.	No. of Characters		
1/8", 3/16"	559	8604T16	$40.00

Stamp Pads

Inked Foam Stamp Pads

Furnished with water-based ink for permanently stamping porous surfaces such as paper and paperboard.

Ink Color	2 3/4" × 4 1/4" Pad		3 1/4" × 6 1/4" Pad	
Black	13335T44	$2.60	13335T54	$3.87
Blue	13335T42	2.60	13335T52	3.87
Red	13335T43	2.60	13335T53	3.87
No Ink	13335T41	2.60	13335T51	3.87

Uninked Felt Stamp Pads

These felt pads have a longer life than foam pads and can handle solvent-based inks. They're suitable for use with any of the inks offered here. Pads lock air-tight to prevent drying out. Case is plastic and solvent resistant.

Overall Size

2 1/2" × 3 3/4"	13335T28	$21.70
2 7/8" × 4 1/2"	13335T38	25.17

Ultraviolet Nonporous Inked Felt Stamp Pads

These reinkable felt pads have a plastic case. Ink is alcohol-based, permanent, and glows blue under UV light. Use with rubber stamps and felt or cloth stamp pads on nonporous surfaces such as metal and plastic.

2 1/2" × 3 3/4" Inked Pad	13335T29	$28.05
Ink Refill (2-oz. Bottle)	13335T39	$10.28

Food-Grade Porous/Nonporous Inked Felt Stamp Pads

These reinkable felt pads are 2 1/2" × 3 3/4" with a plastic case. Ink is solvent-based and for use with rubber stamps and felt or cloth stamp pads. Permanently marks surfaces such as paper, paperboard, cloth, metal, glass, and plastic. USDA approved.

Ink Color	Inked Pad		Ink Refill (2-oz. Bottle)	
Black	13335T21	$30.11	13335T31	$10.28
Blue	13335T22	30.11	13335T32	10.28
Green	13335T23	30.11	13335T33	10.28
Purple	13335T25	30.11	13335T35	10.28
Red	13335T24	30.11	13335T34	10.28
White	13335T26	30.11	13335T36	10.28
Yellow	13335T27	30.11	13335T37	10.28

Custom Rubber Stamps

Don't limit yourself to preformatted messages—create your own.

Standard stamps have a rubber stamp face on a wood-grain plastic block with wood handle.

Self-inking stamps don't require a separate stamp pad—there's one built in. A replacement ink pad is also built in. Ink is water-based and permanent on porous surfaces. Stamps are steel with a rubber face.

To Order: Please specify wording (characters can be upper or lowercase) and line breaks. Character height is based on available space. For self-inking stamps, also specify ink color: black, blue, or red.

Also Available: Other imprint area sizes. Please ask for 15365T999 and specify standard or self-inking stamp and imprint area size as well as the requirements above.

Min. Character Ht.	Imprint Area, Ht. × Wd.	Max. Characters per Line	Max. No. of Lines		
Standard Stamps					
1/16"	1" × 2 1/4"	33	8	15365T11	$9.88
1/16"	1 1/2" × 3"	43	13	15365T15	12.18
Self-Inking Stamps					
1/16"	1" × 2 3/8"	42	3	16085T41	49.20
1/16"	1 1/2" × 2 3/8"	41	5	16085T42	56.10

Solvent-Resistant Epoxy Stamp Ink

Specially formulated to stand up to solvents and abrasion. Use with rubber stamps on nonporous surfaces. Not for use with stamp pads. Measured packs eliminate guesswork—just mix the contents. Packs contain 10 grams ink and 5 grams catalyst. Dries in approximately 6-8 hours. Meets CID A-A-56032D Type 1, 2, and 3 (formerly MIL-I-43553b).

Use ***thinner*** to obtain your desired ink consistency. Use ***ink cleaner*** to remove fresh and partially cured epoxy ink from stamps, printing machinery, and other substrates. *Note:* Once it cures, epoxy ink is permanent.

Black Ink	85985T51	$15.61
White Ink	85985T52	15.61
Thinner (2-oz. Bottle)	85985T53	15.09
Ink Cleaner (16-oz. Bottle)	85985T54	20.00

Roll-On Self-Inking Rubber Stamp

Just press the type into the stamp wheel and you're ready to roll. This easy-to-use portable stamp is excellent for marking shipping cartons, kraft bags, and other porous surfaces. Stamp, ink roll cartridge, and type sets are sold separately.

Stamp is steel with a plastic and rubber wheel and a comfortable foam-grip handle. It can accommodate more than one character height. Overall size is 11″ Lg. × 4½″ Ht. × 5″ Dp.; stamp wheel is 2⅞″ dia. *Note:* Maximum length of each imprint line is 9″.

Ink roll cartridges (sold separately) contain oil-based, permanent ink and will make thousands of well-defined impressions on porous surfaces.

Type Sets—*Number sets* contain 92 characters: eight each of 0-9 and two each of period, comma, dash, forward slash (/), cent sign, and dollar sign. *Letter sets* contain 114 characters: four each of uppercase A-Z and two each of period, comma, dash, forward slash (/), and ampersand (&).

Stamp

42815T31	$171.43

Ink Roll Cartridges

Black	42815T321	$13.67	Green	42815T324	$13.67
Blue	42815T323	$13.67	Red	42815T322	$13.67

Type Sets

Char. Ht.	Char. per Line	Max. No. of Lines	Number Sets		Letter Sets	
½″	27	3	42815T36	$30.34	42815T35	$38.94
¾″	18	2	42815T38	40.42	42815T37	47.02
1″	9	1	42815T41	68.17	42815T39	86.47

Conveyor-Mount Self-Inking Stamps

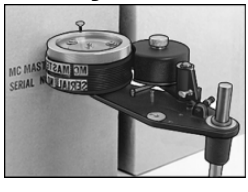

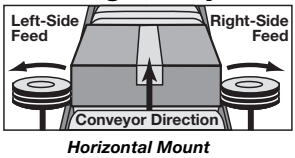

Horizontal Mount

Mount these stamps to your conveyor equipment to make thousands of trouble-free imprints. They can be mounted vertically or horizontally and have four 9/32″ dia. mounting holes (fasteners not included). Stamps and type sets are sold separately.

Stamps are made of aluminum. Choose left- or right-side feed: Face the carton as it moves away from you and select the side you want printed (see illustration).

To create an imprint, insert and lock the rubber characters (stamps can accommodate one or more character heights) into the stamp wheel. *Note:* Maximum length of each imprint line is 17″.

One ink cartridge is included with each stamp. Ink cartridges contain alcohol-based black ink that's suitable for porous surfaces such as paper and paperboard.

Type Sets—*Complete sets* contain 131 characters (letters are uppercase): six each of E; five each of A, C, I, L, N, O, R, S, and T; four each of B, D, F, G, H, P, and period; three each of M, U, W, Y, 0, 1; two each of J, K, Q, V, X, Z, 2, 3, 4, 5, 6, 7, 8, 9, comma, and space; and one each of ampersand (&) and dollar sign. *Number sets* contain 40 characters: four each of 0-9.

Stamps

O'all Ht. of Imprint	Stamp Overall Size, Lg. × Wd. × Ht.	Stamps		Replacement Ink Cartridge	
Left-Side Feed					
1″	14″ × 8″ × 13″	14415T51	$618.33	14415T63	$28.71
3″	14″ × 8″ × 15″	14415T52	750.82	14415T65	68.04
Right-Side Feed					
1″	14″ × 8″ × 13″	14415T53	618.33	14415T63	28.71
3″	14″ × 8″ × 15″	14415T54	750.82	14415T65	68.04

Type Sets

Character Ht.	Characters per Line	Max. No. of Lines For 1″ Stamp	Max. No. of Lines For 3″ Stamp		Set
Complete Sets					
¼″	82	3	10	14415T75	$34.74
½″	59	2	5	14415T76	60.90
¾″	51	1	3	14415T77	84.20
Number Sets					
¼″	82	3	10	14415T45	19.23
½″	59	2	5	14415T46	30.00
¾″	51	1	3	14415T47	29.69

Self-Aligning Stamping Presses

Easily create evenly spaced character impressions on nameplates, tags, keys, and other metal and plastic parts. Spin dial to select character and then press lever to make impression. Material advances automatically. Presses stamp one uppercase character at a time.

Sharp-faced characters are engraved with a sharp edge where the tool comes in contact with the plate. They penetrate materials more easily than flat-faced characters.

Flat-faced characters are engraved with a flat edge that produces a wider impression. Good for aluminum and other soft metals.

For blank plates and tags, see page 1954.

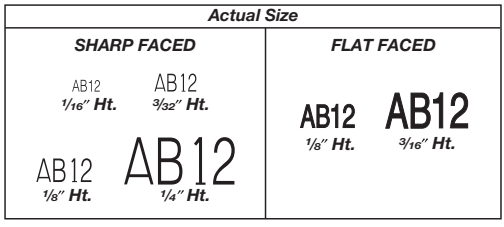

Standard Duty Stamping Presses

Mark plates up to 8″ Wd. × 4″ Dp., 0.012″ to 0.093″ thick, and with a maximum Rockwell hardness of C59. Dial has 40 characters: 0-9, A-Z, period, dash, forward slash (/), and ampersand (&).

Presses are cast iron with steel dials. Imprint area is 8″ Wd. × 3¾″ Dp. The carriage table is 9¾″ × 7¾″.

Also Available: Replacement parts. Please ask for 1596T98 and specify part required.

Character Ht.	Presses		Extra Dial	
Sharp-Faced Characters				
1/16″	1596T18	$1,346.15	1596T57	$532.00
3/32″	1596T19	1,346.15	1596T58	532.00
1/8″	1596T21	1,346.15	1596T59	532.00
1/4″	1596T23★	1,697.74	1596T62	777.07
Flat-Faced Characters				
1/8″	1596T27★	1,521.15	1596T66	658.00
3/16″	1596T28★	1,669.23	1596T67	791.07

★ Not for use with stainless steel.

Heavy Duty Stamping Presses

Mark plates up to 5¾″ Wd. × 8″ Dp., 0.125″ thick, and with a maximum Rockwell hardness of C28. Dial has 42 sharp-faced characters: 0-9, A-Z, lowercase c, period, dash, apostrophe, forward slash (/), and ampersand (&).

Presses are cast iron with steel dials. Imprint area is 5″ Wd. × 4″ Dp. The carriage table is 6″ × 8½″. A spacing rack (included) maintains proper character spacing.

Optional Universal Key Holder—Secures any flat key style.

Char. Ht.	Presses		Extra Dial		Extra Spacing Rack	
3/32″	1595T51	$1,799.40	1595T52	$545.23	1595T53	$96.00
1/8″	1595T17	1,799.40	1595T18	545.23	1595T19	96.00
3/16″	1595T24	1,799.40	1595T25	545.23	1595T26	96.00
Optional Universal Key Holder			1595T81			$317.54

Rotating Wheel Steel Stamps

Single Digit

Multiple Digit

One of these stamps takes the place of a number set. To change character, simply rotate the wheel. Stamps are made of tool steel.

Single Digit—Use on materials with a maximum Rockwell hardness of C30. Wheel has 0-9, dash, and uppercase X. 1567T151 comes in a plastic pouch; 1567T161 comes in a leather pouch.

Multiple Digit—Use on materials with a maximum Rockwell hardness of C40. Each wheel has 0-9 and a space. Stamp frame has a black-oxide finish and the shank is chrome plated.

Number Range	Char. Ht.	O'all Size, Lg. × Wd.			
Single Digit					
0-9	3/16″	3 7/16″ × 1″	1567T151	$106.61
0-9	1/4″	4 1/4″ × 1 1/4″	1567T161	131.10
Multiple Digit				
0-9999	1/8″	6″ × 1 23/32″	15995T12	615.28
0-99999	1/8″	6″ × 1 23/32″	15995T14	669.44
0-999999	1/8″	6″ × 1 23/32″	15995T15	725.86
0-9999999	1/8″	6″ × 1 23/32″	15995T19	829.86

Actual Character Height

Extra-Heavy Duty Steel Stamps

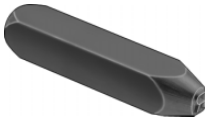

Actual Size 1/4″

AB12

Built tough to handle your demanding jobs, these stamps are for continuous use on materials with a maximum Rockwell hardness of C50. They have extra-thick shanks and are made of tool steel. For easy identification, one side of each stamp is marked with the size and character. Characters are uppercase. All sets are furnished in a compartmented box.

Individual Characters—To Order: Please specify number (0-9) or letter (A-Z). ***Number Sets—***Contain nine stamps, 0-9 (the 6 doubles as the 9). ***Letter Sets—***Contain 26 stamps, A-Z.

Character Ht.	Shank Size, sq.	Shank Lg.	Individual Characters		Number Sets		Letter Sets	
1/8″	1/2″	3 1/2″	8965T4	$8.93	8965T12	$53.33	8965T34	$158.17
3/16″	9/16″	3 1/2″	8965T5	10.83	8965T15	64.65	8965T37	194.04
1/4″	5/8″	3 1/2″	8965T6	13.05	8965T18	78.16	8965T39	233.77
3/8″	3/4″	4″	8965T3	22.92	8965T11	167.29	8965T33	484.08

Heavy Duty Steel Stamps

Actual Size 1/4″

AB12

More economical than the extra-heavy duty steel stamps on this page, these stamps are for continuous use on materials with a maximum Rockwell hardness of C30. Made of tool steel. For easy identification, one side of each stamp is marked with the size and character. Characters are uppercase. All sets are furnished in a compartmented box.

Individual Characters—To Order: Please specify number (0-9), letter (A-Z), ampersand (&), period, or dash. ***Number Sets—***Contain nine stamps, 0-9 (the 6 doubles as the 9). ***Letter Sets—***Contain 27 stamps: A-Z and an ampersand (&). ***Complete Sets—***Contain 36 stamps: 0-9 (the 6 doubles as the 9); A-Z; and an ampersand (&).

Character Ht.	Shank Size, sq.	Shank Lg.	Individual Characters		Number Sets		Letter Sets		Complete Sets	
1/32″	1/4″	2 3/8″	1556T51	$3.77	1556T29	$22.45	1556T11	$66.23	1556T201	$84.79
3/64″	1/4″	2 3/8″	1556T52	4.20	1556T31	24.49	1556T12	74.81	1556T202	94.96
1/16″	5/16″	2 1/2″	1556T61	3.00	1556T33	17.49	1556T14	51.23	1556T203	65.63
3/32″	5/16″	2 1/2″	1556T65	3.00	1556T35	17.49	1556T16	51.23	1556T204	65.63
1/8″	5/16″	2 1/2″	1556T71	3.00	1556T37	17.49	1556T18	51.23	1556T205	65.63
5/32″	3/8″	2 3/4″	1556T74	3.28	1556T38	19.69	1556T19	58.22	1556T206	73.75
3/16″	3/8″	2 3/4″	1556T76	3.66	1556T39	20.91	1556T21	61.70	1556T207	78.13
1/4″	7/16″	3″	1556T8	3.69	1556T42	23.73	1556T23	71.12	1556T208	90.63
5/16″	9/16″	3 1/8″	1556T85	4.59	1556T43	29.44	1556T24	88.80	1556T209	112.67
3/8″	9/16″	3 1/8″	1556T89	5.47	1556T44	34.27	1556T25	102.55	1556T211	129.26
1/2″	3/4″	3 3/4″	1556T94	8.39	1556T46	55.12	1556T27	160.02	1556T212	204.61
5/8″	3/4″	3 3/4″	1556T97	12.86	1556T47	111.91	1556T28	347.90	1556T213	430.42
3/4″	7/8″	3 3/4″	1556T101	19.10	1556T121	156.42	1556T111	469.22	1556T214	606.96
1″	1 1/4″	4 1/2″	1556T103	64.91	1556T123	584.23	1556T113	1,752.58	1556T215	2,267.18

Medium Duty Steel Stamps

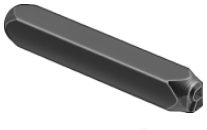

Actual Size 1/4″

AB12

Similar to the heavy duty stamps on this page, except these have a thinner shank and are for continuous use on materials with a maximum Rockwell hardness of C30. Made of tool steel. Characters are uppercase. All sets are furnished in a compartmented box.

Individual Characters—To Order: Please specify number (0-9), letter (A-Z), ampersand (&), period, or dash. ***Number Sets—***Contain nine stamps, 0-9 (the 6 doubles as the 9). ***Letter Sets—***Contain 27 stamps: A-Z and an ampersand (&). ***Complete Sets—***Contain 36 stamps: 0-9 (the 6 doubles as the 9); A-Z; and an ampersand (&).

Character Ht.	Shank Size, sq.	Shank Lg.	Individual Characters		Number Sets		Letter Sets		Complete Sets	
1/16″	1/4″	2 3/8″	1558T54	$2.02	1558T13	$15.24	1558T33	$45.76	1558T101	$57.95
3/32″	1/4″	2 3/8″	1558T61	2.02	1558T15	15.24	1558T35	45.76	1558T102	57.95
1/8″	1/4″	2 3/8″	1558T64	2.02	1558T16	15.24	1558T36	45.76	1558T103	57.95
5/32″	5/16″	2 7/16″	1558T67	2.63	1558T17	19.07	1558T37	62.88	1558T104	72.89
3/16″	5/16″	2 3/8″	1558T71	2.63	1558T18	19.07	1558T38	62.88	1558T105	72.89
1/4″	3/8″	2 5/8″	1558T77	3.16	1558T21	22.76	1558T41	69.91	1558T106	86.78
5/16″	1/2″	2 3/4″	1558T79	3.70	1558T22	29.34	1558T42	89.95	1558T107	112.42
3/8″	1/2″	2 3/4″	1558T84	4.44	1558T23	34.02	1558T43	102.07	1558T108	129.24
1/2″	5/8″	3″	1558T91	5.90	1558T25	49.82	1558T45	149.47	1558T109	188.26

Hand-Saver Steel Stamp Holders and Hammer

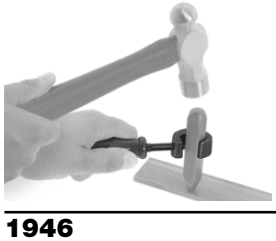

Keep your hands out of the striking area and away from stray blows with these stamp holders. They have an adjustable ball lock attached to a plastic handle to secure stamps (not included) and prevent them from slipping.

Hammer has a 24-oz. steel head and a rubber handle that's reinforced with steel rods to absorb shock and reduce fatigue. Face dia. is 1 1/4″. Overall length is 14″.

Fits Shank Size, sq.	Fits Shank Dia.	O'all Lg.		
1/8″ to 5/8″	3/16″ to 3/4″	5 1/2″	86805T77	$17.55
3/16″ to 13/16″	1/4″ to 1″	9″	86805T81	24.63
Hammer			5518A12	41.67

For actual height of characters, see page 1946.

Standard Duty Steel Stamps

For intermittent use on materials with a maximum Rockwell hardness of C50, these stamps are an economical alternative to the steel stamps on page 1946. They're made of tool steel and one side of each stamp (except period) is notched for easy alignment. Characters are uppercase. All sets are furnished in a compartmented box.

***Individual Characters*—To Order:** Please specify number (0-9), letter (A-Z), or period.

***Individual Fractions*—To Order:** Please specify individual fraction: 1/8", 3/16", 1/4", 3/8", 1/2", 5/8", 3/4", or 7/8".

***Number Sets*—**Contain nine stamps, 0-9 (the 6 doubles as the 9).

***Letter Sets*—**Contain 27 stamps: A-Z and a period.

***Complete Sets*—**Contain 36 stamps: 0-9 (the 6 doubles as the 9); A-Z; and a period.

Character

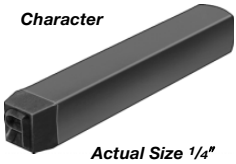

Actual Size 1/4"

AB12

Fraction

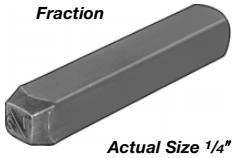

Actual Size 1/4"

1/4

Character Ht.	Shank Size, sq.	Shank Lg.	Individual Characters		Individual Fractions		Number Sets		Letter Sets		Complete Sets	
1/16"	1/4"	2 3/8"	8600T31	$1.97	—	—	8600T11	$13.86	8600T21	$39.80	8600T41	$46.91
1/8"	1/4"	2 3/8"	8600T32	1.97	—	—	8600T12	13.86	8600T22	39.80	8600T42	46.91
1/8"	3/8"	2 3/4"	—	—	5328T8	$14.48	—	—	—	—	—	—
3/16"	5/16"	2 7/16"	8600T33	2.44	—	—	8600T13	17.29	8600T23	49.61	8600T43	59.15
1/4"	3/8"	2 5/8"	8600T34	2.55	—	—	8600T14	19.79	8600T24	59.36	8600T44	68.43
1/4"	1/2"	2 7/8"	—	—	5328T9	27.96	—	—	—	—	—	—
3/8"	1/2"	2 7/8"	8600T35	3.88	—	—	8600T15	28.94	8600T25	84.97	8600T47	106.05
1/2"	5/8"	3 3/8"	8600T36	5.19	—	—	8600T16	42.97	8600T26	126.16	8600T48	157.40

Gentle-Mark Steel Stamps

The rounded faces on these stamps minimize surface stress fractures that can occur with sharp-faced stamps. They're made of tool steel and one side of each stamp is marked with the size and character for easy identification. Characters are uppercase. All sets are furnished in a compartmented box.

Solid-face stamps meet ANSI specification IN45, 2.2A39 for low-stress impressions. They're for continuous use on materials with a maximum Rockwell hardness of C40.

Dotted-face stamps produce even lower stress impressions than the solid-face stamps. Nuclear grade, they meet Nuclear American Society of Mechanical Engineers Code Section 3, Div. 1, Paragraph NA-3766.6 (2). 1/8" and 1/2" character heights are for continuous use on materials with a maximum Rockwell hardness of C35. 3/16"-3/8" character heights are for continuous use on materials with a maximum Rockwell hardness of C50.

***Individual Characters*—To Order:** Please specify number (0-9), letter (A-Z), or ampersand (&).

***Number Sets*—**Contain nine stamps, 0-9 (the 6 doubles as the 9).

***Letter Sets*—**Contain 27 stamps: A-Z and an ampersand (&).

***Complete Sets*—**Contain 36 stamps: 0-9 (the 6 doubles as the 9); A-Z; and an ampersand (&).

Solid Face

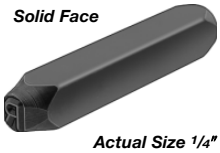

Actual Size 1/4"

AB12

Dotted Face

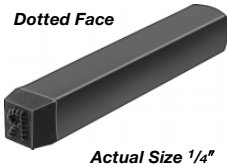

Actual Size 1/4"

AB12

Character Ht.	Shank Size, sq.	Shank Lg.	Individual Characters		Number Sets		Letter Sets		Complete Sets	
Solid Face										
1/16"	5/16"	2 1/2"	1634T31	$3.91	1634T11	$28.15	1634T21	$82.73	1634T4	$105.88
3/32"	5/16"	2 3/4"	1634T41	3.91	1634T12	28.15	1634T22	82.73	1634T42	105.88
1/8"	3/8"	2 3/4"	1634T51	3.98	1634T13	28.54	1634T23	84.49	1634T43	107.70
3/16"	7/16"	2 3/4"	1634T61	4.73	1634T14	33.91	1634T24	97.46	1634T44	125.02
1/4"	1/2"	3"	1634T81	5.91	1634T15	42.75	1634T25	128.27	1634T45	164.57
3/8"	5/8"	3"	1634T91	8.96	1634T16	64.96	1634T26	194.98	—	—
1/2"	3/4"	4"	1634T101	15.66	1634T17	113.38	1634T27	340.17	—	—
Dotted Face										
1/8"	3/8"	2 3/4"	1551T21	6.02	1551T22	43.52	1551T23	125.15	1551T31	160.22
3/16"	3/8"	2 3/4"	1551T64	8.12	1551T71	59.23	1551T83	172.88	1551T32	218.83
1/4"	7/16"	3"	1551T65	10.29	1551T72	74.05	1551T84	219.18	1551T33	281.25
3/8"	9/16"	3 1/8"	1551T67	15.59	1551T74	113.21	1551T86	339.63	1551T34	430.04
1/2"	3/4"	4"	1551T68	24.69	1551T75	176.53	1551T87	516.68	—	—

Custom Steel Stamps

Design stamps to suit your application. Made of tool steel, each stamp has a 3 1/2" long shank and can be used on materials with a maximum Rockwell hardness of C30. Characters are uppercase.

To Order: Please ask for 1560T1 and specify number of lines, characters, and character height. Spaces do not count as characters.

Also Available: Stamps with more than two lines of characters, reverse-face stamps for embossing, and stamps with your own logo design. Please ask for 1560T999 and specify characters, character height, number of lines, and stamp style (regular or reverse face). If ordering a logo design, please provide an illustration.

One Line

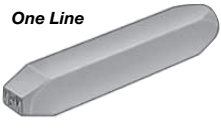

Two Lines

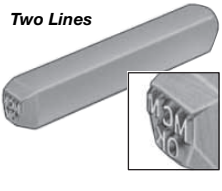

Characters Per Line	CHARACTER HT. 1/16"	3/32"	1/8"	5/32"	3/16"	1/4"
One Line						
2	$43.53	$40.46	$41.92	$43.89	$46.91	$57.49
3	51.80	48.42	52.02	52.98	55.62	68.42
4	59.31	55.29	58.80	59.89	63.09	82.35
5	66.13	61.36	65.22	66.51	74.45	93.42
6	74.55	69.95	73.76	75.11	82.05	99.74
7	85.00	80.87	84.33	94.29	99.27	117.33
Two Lines						
2	61.54	57.69	59.62	63.46	67.31	82.98
3	73.47	69.39	74.47	75.51	79.59	97.83

Two-Digit Steel Stamps

When 0-9 just isn't enough, select one of these stamps. All are made of tool steel and can be used on materials with a maximum Rockwell hardness of C50.

***Number Stamps*—To Order:** Please specify number (00-99).

***Number Sets*—**Include 10 stamps. **To Order:** Please specify series of numbers: 00-09, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89, or 90-99. Furnished in a compartmented box.

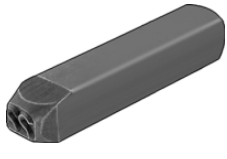

Character Ht.	Shank Size, sq.	Shank Lg.	Number Stamps		Number Sets	
1/8"	3/8"	2 3/4"	8768T22	$16.11	8768T14	$128.59
1/4"	9/16"	3"	8768T35	22.73	8768T17	181.93

Key and Key Tag Marking Steel Stamps

Mark metal keys, plates, and tags with common messages. These heavy duty stamps are made of tool steel and are for continuous use on materials with a maximum Rockwell hardness of C30. All characters are 1/16" high uppercase. Minimum marking surface size is 3/16" Ht. × 1/2" Wd. Stamp shank is 1/2" sq. × 2 7/8" long.

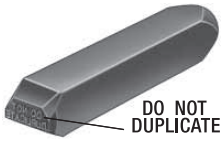

Message	No. of Lines		
Do Not Copy	2	1786T15	$30.24
Do Not Duplicate	2	1786T13	30.24
Master	1	1786T14	30.24

Reverse Face Embossing Steel Stamps

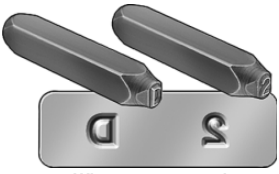

When you stamp the backside of thin metals with reverse-face stamps...

...You get embossed characters on the front of the finished product.

Reverse face characters allow you to stamp the backside of thin metals and create an embossed character on the front, similar to a license plate. Excellent for use on casting molds to raise letters and numbers on molded products.

Stamps are made of tool steel and are for continuous use on materials with a maximum Rockwell hardness of C30. For easy identification, the side of each stamp is marked with the size and character. Characters are uppercase. All sets are furnished in a compartmented box.

***Individual Characters*—To Order:** Please specify number (0-9), letter (A-Z), or ampersand (&).

***Number Sets*—**Contain nine stamps, 0-9 (the 6 doubles as the 9).

***Letter Sets*—**Contain 27 stamps: A-Z and an ampersand (&).

***Complete Sets*—**Contain 36 stamps: 0-9 (the 6 doubles as the 9); A-Z; and an ampersand (&).

Character Ht.	Shank Size, sq.	Shank Lg.	Individual Characters		Number Sets		Letter Sets		Complete Sets	
1/16″	5/16″	2 1/2″	1559T41	$2.96	1559T11	$21.07	1559T24	$62.05	1559T103	$78.56
3/32″	5/16″	2 3/4″	1559T45	2.28	1559T12	21.07	1559T25	62.05	1559T104	78.56
1/8″	3/8″	2 3/4″	1559T51	2.96	1559T13	21.07	1559T26	62.05	1559T105	78.56
5/32″	7/16″	2 3/4″	1559T56	3.37	1559T14	24.11	1559T27	71.02	1559T106	89.92
3/16″	7/16″	2 3/4″	1559T61	3.43	1559T15	24.83	1559T28	72.31	1559T107	91.69
1/4″	1/2″	3″	1559T71	4.14	1559T16	29.44	1559T29	88.46	1559T108	112.34
3/8″	5/8″	3 1/8″	1559T81	7.47	1559T18	52.98	1559T32	158.96	1559T111	201.80
1/2″	3/4″	4″	1559T91	13.90	1559T19	97.13	1559T34	292.84	1559T112	367.20

Security and Inspection Steel Stamps

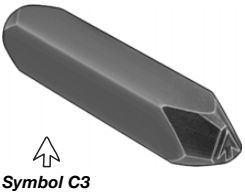

Symbol C3

Mark confidential or inspection coding on materials with a maximum Rockwell hardness of C35. Stamps are made of tool steel and are for continuous use.

To Order: Please specify the letter and number that corresponds to the symbol you require (see chart).

Also Available: Other symbols and sizes. Please ask for 1574T999 and specify symbol and character height.

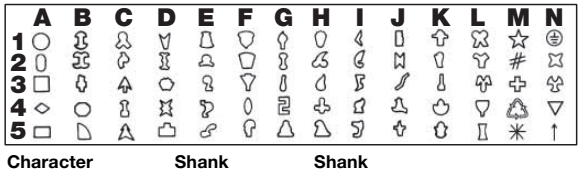

Character Ht.	Shank Size, sq.	Shank Lg.		
1/8″	5/16″	2 1/2″	1574T11	$9.76
3/16″	3/8″	2 7/8″	1574T21	10.55
1/4″	1/2″	3″	1574T31	11.64
5/16″	1/2″	3″	1574T41	17.49
3/8″	5/8″	3″	1574T51	19.00

High-Visibility Steel Stamps

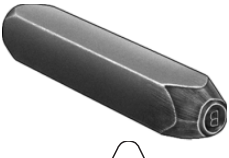

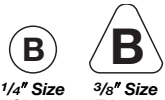

1/4″ Size Circle *3/8″ Size Triangle*

A circle- or triangle-shape border makes these characters stand out. Stamps are made of tool steel and are for continuous use on materials with a maximum Rockwell hardness of C35. Characters are uppercase.

To Order: Please specify individual character: number (0-99), letter (A-Z), and circle or triangle border.

Also Available: Number sets (0-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-99) and letter sets (A-Z). Letter sets are furnished in a compartmented box. Please ask for 1612T95 and specify letters or numbers, 1/4″ or 3/8″ border size, and circle or triangle border.

Also Available: Other border styles and sizes. Please ask for 1612T888 and specify border style, size, and character.

Border Size	Character Ht.	Shank Size, sq.	Shank Lg.		
1/4″	1/8″	1/2″	3″	1612T22	$14.47
3/8″	3/16″	5/8″	3″	1612T23	25.64

Steel Stock Marking Stamps

Stamp

Optional Storage Box

Identify your steel stock with AISI (American Iron and Steel Institute) classifications. Stamps are made of chrome-plated steel and can be used on materials with a maximum Rockwell hardness of C45. They're 1/2″ Wd. × 1/4″ Ht. with a 2 1/2″ long shank. Character height is 1/8″.

Optional storage box holds nine stamps.

Also Available: Other AISI classification symbols. Please ask for 8640T999 and specify symbol.

A-2	D-2	H-13	O-1
8640T11	*8640T17*	*8640T26*	*8640T38*
S-7	**CRS**	**4140**	
8640T51	*8640T62*	*8640T71*	

Hand Stamp		$23.05
Optional Storage Box	8640T91	$16.81

Character Punches

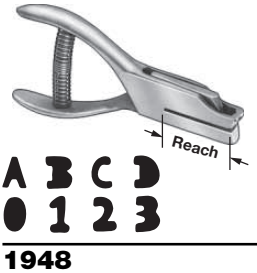

Punch holes, letters, and numbers into material such as 20-lb. copier paper (up to 8-10 sheets), laminated cardstock, and business card cardstock up to 1/32″ thick. Punches are made of polished nickel-plated malleable iron. **To Order:** Please specify hole dia. (1/8″, 3/16″, or 1/4″) or character(s) (0-9, A-Z).

Also Available: Three-character and four-character punches with a 1 1/8″ reach. Please ask for 8645T999 and specify characters and character height (1/8″ or 3/16″).

	Size	1″ Reach		2″ Reach	
Hole	1/8″, 3/16″, or 1/4″ dia.	8645T9	$37.92	8645T11	$40.77
One Letter or Number	1/8″ high	8645T15	51.25	8645T21	61.25
One Letter or Number	3/16″ high	8645T17	44.58	8645T31	55.00
Two Letters or Numbers	3/16″ high	____	____	8645T51	99.17
One Each, Number and Letter	3/16″ high	____	____	8645T71	99.17

Steel Type Holders

Make multiple-character marks on nameplates and other metal parts. Holders and characters (sold separately) are made of steel. Use on materials with a maximum Rockwell hardness of C28.

Type has a notched shank with uppercase characters.

Note: To correctly order type, C and D dimensions must match that of the type you already have.

Individual Characters—To Order: Please specify number (0-9) or letter (A-Z). For *standard holder type*, you can also specify a period, forward slash (/), or dash.

Number Sets— Contain 10 characters, 0-9.

Letter Sets— Contain 26 characters, A-Z.

Blanks— For holders to work properly, unused spaces must be filled with a blank.

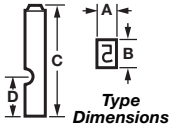

Standard Holders

These durable holders are 5⅜″ long and have a spring pin that securely locks the characters in place for proper alignment. Furnished with an Allen wrench for tightening characters in the holder.

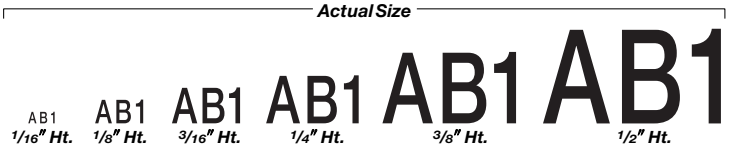

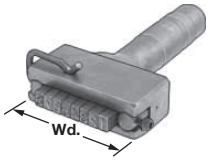

Char. Ht.	Type Dimensions (A)	(B)	(C)	(D)	Type Cap.	Wd.	HOLDER		TYPE: Individual Characters		Blanks		Number Sets		Letter Sets	
1/16″	3/32″	1/4″	1″	1/4″	16	2 1/4″	1570T31	$138.96	1570T16	$6.98	1570T22	$2.30	1570T712	$66.10	1570T612	$163.39
1/8″	1/8″	1/4″	1″	1/4″	8	2 1/4″	1570T41	135.79	1570T18	7.77	1570T24	2.35	1570T713	73.66	1570T613	182.05
1/8″	1/8″	1/4″	1″	1/4″	12	2 1/4″	1570T42	138.96	1570T18	7.77	1570T24	2.35	1570T713	73.66	1570T613	182.05
1/8″	1/8″	1/4″	1″	1/4″	15	2 5/8″	1570T13	144.29	1570T18	7.77	1570T24	2.35	1570T713	73.66	1570T613	182.05
3/16″	3/16″	1/4″	1″	1/4″	10	2 5/8″	1570T43	144.29	1570T19	8.35	1570T25	2.42	1570T714	79.33	1570T614	196.05
3/16″	3/16″	1/4″	1″	1/4″	15	3 1/2″	1570T14	152.54	1570T19	8.35	1570T25	2.42	1570T714	79.33	1570T614	196.05
1/4″	1/4″	3/8″	1″	1/4″	8	3″	1570T1	148.27	1570T5	9.58	1570T8	3.35	1570T715	91.26	1570T615	225.64
1/4″	1/4″	3/8″	1″	1/4″	12	4″	1570T2	155.80	1570T5	9.58	1570T8	3.35	1570T715	91.26	1570T615	225.64
3/8″	3/8″	1/2″	1″	1/4″	6	3″	1570T3	169.76	1570T6	16.86	1570T9	7.14	1570T716	152.31	1570T616	376.56
1/2″	1/2″	5/8″	1″	1/4″	6	3 3/4″	1570T4	242.21	1570T7	28.55	1570T11	10.25	1570T717	270.67	1570T617	669.10

Pocket-Size Holders

These compact holders are only 4⅜″ Lg.×1 1/4″ Wd. A retaining pin holds type securely in place. Shank is plastic coated for shock absorption. Furnished in a leather pouch.

Character/Type Ht. and Capacity 1/16″	3/32″	1/8″	5/32″	Holder	
10	6 ■	5	4	1571T14	$153.24
12	8	6	4▲	1571T15	155.43

■ Requires 1/16″ spacer. ▲ Requires 1/8″ spacer.

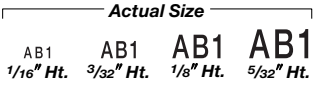

Char. Ht.	Type Dimensions (A)	(B)	(C)	(D)	Individual Characters		Blanks		Number Sets		Letter Sets	
1/16″	1/16″	1/4″	7/8″	5/16″	1571T73	$10.94	1571T83	$6.27	1571T32	$84.10	1571T31	$224.42
3/32″	3/32″	1/4″	7/8″	5/16″	1571T74	10.99	1571T84	6.44	1571T42	90.15	1571T41	224.34
1/8″	1/8″	1/4″	7/8″	5/16″	1571T75	11.19	1571T85	6.57	1571T52	91.52	1571T51	241.60
5/32″	5/32″	1/4″	7/8″	5/16″	1571T76	11.32	1571T86	6.69	1571T62	89.86	1571T61	236.89

Steel Type Sets with Holder

We've combined the holder and type in one convenient set that's furnished in a compartmented box for quick selection.

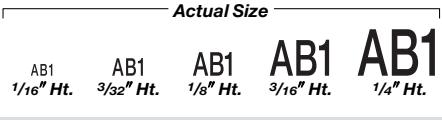

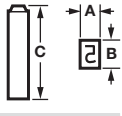

Sets with Standard Duty Holder

Use on materials with a maximum Rockwell hardness of C40. *Note:* For holders to work properly, unused spaces must be filled with a blank.

Individual Characters—To Order: Please specify number (0-9), letter (A-Z), ampersand (&), period, forward slash (/), dash, or blank.

Complete Sets— Contain a nickel-plated steel holder and characters: 0-9, A-Z, ampersand (&), period, forward slash (/), dash, and blanks. Also include an Allen wrench for tightening characters in the holder and tweezers (unless noted).

Char. Ht.	Type Dimensions (A)	(B)	(C)	Holder Type Cap.	Holder Size, Wd.×Lg.	Individual Characters		Complete Sets No. of Pieces		Replacement Holder	
1/16″	1/16″	1/4″	7/8″	18	1 3/4″×3 3/4″	8642T4	$10.72	112	8642T34	$321.92	8642T81	$78.49
3/32″	3/32″	1/4″	7/8″	12	1 3/4″×3 3/4″	8642T5	10.80	112	8642T36	324.14	8642T81	78.49
1/8″	1/8″	1/4″	7/8″	9	1 3/4″×3 3/4″	8642T6	10.88	112	8642T37	326.39	8642T81	78.49
3/16″	3/16″	1/4″	7/8″	8	2 1/4″×3 3/4″	8642T7	12.38	106	8642T39	381.94	8642T82	78.49
1/4″	1/4″	3/8″	3/4″	6	2 5/8″×4 1/2″	8642T86	15.33	106	8642T83●	618.06	8642T85	199.74

● Tweezers not included.

Sets with Heavy Duty Holder

These sets include a larger holder that can absorb more hammer force, providing sharper character images. Use on materials with a maximum Rockwell hardness of C30. *Note:* For holders to work properly, unused spaces must be filled with a blank.

Individual Characters—To Order: Please specify number (0-9), letter (A-Z), ampersand (&), period, forward slash (/), dash, comma, or blank.

Complete Sets— Contain a steel holder and characters: 0-9, A-Z, ampersand (&), period, forward slash (/), dash, comma, and blanks. Also include an Allen wrench for tightening characters in the holder.

Char. Ht.	Type Dimensions (A)	(B)	(C)	Holder Type Cap.	Holder Size, Wd.×Lg.	Individual Characters		Complete Sets No. of Pieces		Replacement Holder	
1/16″	1/16″	1/4″	7/8″	18	2″×6″	8899T4	$4.14	106	8899T21	$362.90	8899T3	$147.54
3/32″	3/32″	1/4″	7/8″	12	2″×6″	8899T5	4.21	106	8899T22	365.85	8899T3	147.54
1/8″	1/8″	1/4″	7/8″	9	2″×6″	8899T6	4.29	106	8899T23	368.85	8899T3	147.54
3/16″	3/16″	1/4″	7/8″	6	2″×6″	8899T7	4.74	106	8899T24	434.52	8899T3	147.54

Miniature Steel Stamps

Shown with Optional Brass Hammer

Complete Set

There's a whole set in these tiny stamps—simply reposition handle to select character. Ideal for identification and quality control, they mark small surfaces and in tight spaces. Use on wood, plastic, and soft metals such as gold, silver, aluminum, brass, and cold-rolled steel. Mark by applying pressure to handle or use the ***optional brass hammer*** (sold separately), which is 5½″ long and has a ¾″ face dia.

Stamps have an aluminum hub with tool steel spokes. Handle is aluminum with a plastic knob. Characters are uppercase. Sets are furnished in a plastic case.

Number sets have one wheel with 0-9.

Complete sets have four wheels with 10 characters each: 0-9; A-J; K-T; and U-Z, period, ampersand (&), forward slash (/), and plus sign (+).

Character Ht.	O'all Size, Wd. × Ht.	Number Sets		Complete Sets	
1/64″	2″ × 3⅝″	2837T1	$150.00	2837T2	$491.67
3/64″	2″ × 3⅝″	2837T3	150.00	2837T4	491.67

Optional Brass Hammer 6024A4 $10.66

Hammerless Steel Stamps

Circle Triangle Diamond Moon Star

No hammer required—simply apply pressure to the stamp to release the striking mechanism. These steel stamps are for use on materials with a maximum Rockwell hardness of C32. They can accommodate both 3/32″ and 1/8″ character heights. Characters are uppercase.

Stamps with Character—To Order: Please specify number (0-9), letter (A-Z), or symbol (circle, triangle, diamond, moon, or star).

Extra Characters— For use with the stamps sold here, they're interchangeable with the furnished characters. ***To Order:*** Please specify number (0-9), letter (A-Z), or symbol (circle, triangle, diamond, moon, or star).

Also Available: Other symbols. Please ask for 1566T888 and specify character height and symbol.

Character Ht.	O'all Size, Dia. × Lg.	Stamps with Character		Extra Characters	
3/32″	11/16″ × 5¼″	1566T2	$114.08	1566T3	$40.20
1/8″	11/16″ × 5¼″	1566T4	114.08	1566T7	40.20

Metal Etching Pen

You don't need electricity for this etching pen. An acid solution flows like ink for smudgeproof black marks on heavy metals including copper, nickel, stainless steel, brass, iron, tin, and lead.

1683T6 ..... 1-4 $16.79 5-Up $14.46

All-in-One Electrochemical Etcher Kits

Deluxe Kit

Make permanent marks on conductive metal in seconds. Just write, type, or draw a design or logo onto the stencil, add electrolyte fluid, and insert the stencil into the pad in the hand marker. Stencils allow you to finalize and align your message before marking, eliminating errors. The grid holds the stencil and pad in place.

Etchers have AC (for dark marks) and DC (for clear and frosted marks) capabilities. Etch impressions from 0.0001″ to 0.003″ deep. *Note:* Not for use on anodized aluminum.

All kits operate on 115 VAC, 50/60 Hz and include a grounding plate and 6-ft. power cord with two-prong plug.

Starter Kit— Includes a hand marker rated 10 volts, 2 amps; DC adapter clip; 10 regular stencils; 2-oz. bottle of general purpose electrolyte; and one pack of neutralizing cleaning powder mix. Furnished in a cardboard box.

8597T14 ..... $73.80

Deluxe Kit— Includes the same hand marker and adapter as the starter kit; 200 regular stencils; 25 medium stencils; 25 large stencils; a regular and medium grid; 10 regular pads; five medium pads; and five large pads. It also has three 8-oz. bottles of electrolyte, one each for general purpose, stainless steel, and brass/copper/bronze; one 4-oz. bottle of electrolyte for aluminum; one 8-oz. bottle of neutralizing cleaner; and one pack of neutralizing cleaning powder mix. Furnished in a plastic carrying case.

8597T11 ..... $186.84

Deluxe Kit with Two Hand Markers— Includes two hand markers (one rated 10 volts, 2 amps; the other rated 15 volts, 10 amps); two DC adapter clips; 200 regular stencils; a regular grid and two pads; 25 large stencils; and a large grid and five pads. It also has two 8-oz. bottles of electrolyte, one each for general purpose and stainless steel; three 4-oz. bottles of electrolyte, one each for aluminum, black oxide, and brass/copper/bronze; an 8-oz. bottle of neutralizing cleaner; and two packs of neutralizing cleaning powder mix. Furnished in a plastic carrying case.

8597T43 ..... $324.54

Replacement Materials

Note: Stencil size listed is the maximum etching area.

	Regular Size	Regular Pkg. Qty.		Regular Pkg.	Medium Size	Medium Pkg. Qty.		Medium Pkg.	Large Size	Large Pkg. Qty.		Large Pkg.
Stencils	3″ × 2¼″	100	8597T45	$11.76	4¼″ × 3½″	50	8597T56	$11.05	4½″ × 4½″	50	8597T67	$13.01
Grids	1¾″ × ⅞″	3	8597T37	9.79	2″ × 2″	1	8597T41■	27.49	4″ × 2¼″	1	8597T25■	29.46
Pads	2¼″ × 1¾″	10	8597T36	9.79	4″ × 2¾″	10	8597T34	9.79	4¼″ × 4″	10	8597T28	10.77

■ Furnished with five pads and 25 stencils.

Electrolyte for Ferrous Metal (General Purpose), 16 oz. ... 8597T16 .. $10.77
Electrolyte for Stainless Steel, 16 oz. ... 8597T21 .. 10.77
Electrolyte for Brass/Copper/Bronze, 16 oz. ... 8597T22 .. 10.77
Electrolyte for Aluminum, 8 oz. ... 8597T23 .. 9.79
Electrolyte for Black Oxide, 8 oz. ... 8597T24 .... $7.82
Neutralizing Cleaner, 16-oz. Liquid ... 8597T18 .... 9.79
Neutralizing Cleaner, Powder Mix (to make 16 oz.) .... 8597T39 .... 6.83

Computer-Generated Stencil Kit

Don't limit yourself to handwriting or typing your stencil messages. Create copy or artwork in your PC's word processing software, print on a sheet of transfer paper, and place it in the UV exposure unit with a stencil to transfer the message. Stencils are made of durable vinyl. They're reusable and ideal for use when etching metal, glass, or ceramic. UV exposure unit has a 120 watt/365 Nm UV bulb; operates on 115 VAC, 50/60 Hz; and includes a 6-ft. power cord with two-prong plug. It's 12″ Ht. × 6″ Wd. × 5″ Dp. and made of aluminum.

Kit also includes an aluminum exposure tray; two steel clips; 16-oz. bottle of stencil developer; plastic developing tray; four developer sponges; a digital timer (includes one AA battery); 10 medium stencils; and six printer transfer sheets: three for inkjet printers and three for laser printers. Furnished in a cardboard box.

2807T17 ..... $167.16

Replacement Materials

Note: Stencil size listed is the maximum etching area.

	Size	Pkg. Qty.		Pkg.
Regular Stencils	2″ × 2½″	10	2807T63	$12.30
Medium Stencils	4″ × 4″	5	2807T65	15.69
Large Stencils	5″ × 6″	5	2807T67	29.46
Inkjet Printer Transfer Sheets	8½″ × 11″	10	2807T68	$9.79
Laser Printer Transfer Sheets	8½″ × 11″	10	2807T69	9.79
Stencil Developer (16-oz. bottle)			2807T61 Each	$9.79

Adjustable-Mark Electric Etchers

Fine tune your etching widths and depths by simply turning the control knob. These etchers use a low-voltage arc to produce permanent markings on conductive metal. They include a 120 VAC, 60 Hz transformer with 6-ft. power cord and three-prong plug; grounding cord with clips; and a pen cord. More heat levels allow more etching control. For heavy-duty jobs, welding goggles with a minimum shade number of 4 are recommended (see page 1819).

Styles A and ***B***—Include a regular tungsten, heavy duty tungsten, and copper tip.

Style C—Powerful enough to etch heavy scale and rust, it includes one regular tungsten tip, one heavy duty tungsten tip, one heavy duty copper tip, and one copper tip.

Tungsten tips have better wear resistance than copper. *Heavy duty tungsten tips* are heavier and have a larger diameter for etching large marks. *Copper tips* are good for fine etching. *Heavy duty copper tips* can be used for fine etching and have better wear resistance than copper.

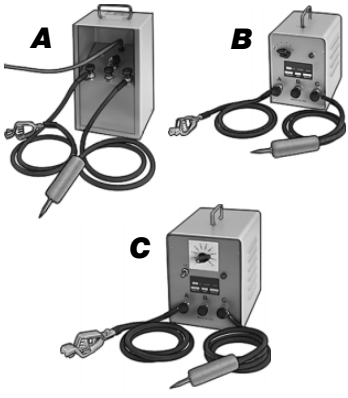

	Watts	Max. Output, volts	Heat Levels	O'all Size, Ht.×Wd.×Dp.	Pen Cord Lg.		
A	1,500	3.0	12	11″×7″× 7″	42″	**1605T3**	$468.75
B	1,500	2.7	15	8″×6″× 8″	42″	**1605T1**	559.09
C	2,500	4.5	30	10″×8″×10″	60″	**1605T11**	892.86

Replacement Parts

Tungsten Tip	**1605T51**	$28.50	42″ Pen Cord for A	**1605T36**	$90.00
Heavy Duty Tungsten Tip	**1605T61**	31.50	42″ Pen Cord for B	**1605T37**	90.00
Copper Tip	**1605T41**	21.00	60″ Pen Cord for C	**1605T39**	112.50
Heavy Duty Copper Tip	**1605T18**	45.00	Cork Handle	**1605T45**	14.25

Accu-Align Tracing Engravers

Also known as pantographs, these engravers enable you to create perfectly aligned messages on plastic and metal. Use one end of the engraving arm to trace a character while at the other end a motor-driven router engraves a smaller character on the material.

The ***carbide cutters*** rout plastic engraving plates, revealing the core color. Use a ***diamond drag cutter*** to engrave metal plates.

Standard Engravers

Engrave material up to 1/8″ thick. Engraver is furnished with carbide cutters, a diamond drag cutter (0.003″-0.005″ tip size), 20° and 34° tracing styluses, two type holder bars, at least two letter locks, arrowhead template, slide rule, and sample material. You'll also receive plastic character sets in a selection of different character type heights (listed below).

1/8″, 3/16″, and ***5/16″ character heights*** contain a selection of 152 characters, including 0-9, A-Z, 18 spacers, and the following punctuation: period, comma, apostrophe, question mark, quotation marks, dash, forward slash (/), cent sign (¢), dollar sign ($), ampersand (&), and pound sign (#). ***9/16″*** and ***1″ character heights*** contain a selection of 147 characters, including 0-9, A-Z, nine spacers, and the following punctuation: period, comma, apostrophe, question mark, quotation marks, dash, forward slash (/), cent sign (¢), dollar sign ($), ampersand (&), exclamation point, colon, semicolon, and parentheses.

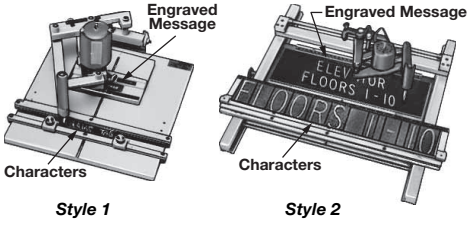

Style 1 *Style 2*

Engravers have an electric motor on an aluminum-frame copy platform with cutting depth control and cutter gauge. All have a 6-ft. cord and two-prong plug. Operate on 115 VAC, 60 Hz and draw a maximum 1.5 amps.

Fixed-height engravers reduce the characters to the engraved heights listed in table. ***Adjustable-height engravers*** reduce the characters from the engraved heights listed in table to half the sizes listed.

Maximum Plate Size	Style	Platform Dimensions	Character Heights Included (Engraved Character Ht.)	Carbide Cutter Tip Sizes		
Fixed-Height Engravers						
3½″ Wd.×Any Length	1	16½″×16½″	1/8″, 3/16″, 5/16″, 9/16″	1/64″, 1/32″, 1/16″	**1604T55**	$1,571.64
10″ Wd. ×18″ Lg.	2	24″ ×25½″	3/16″, 5/16″, 9/16″, 1″	1/64″, 1/32″, 1/16″, 1/8″	**1604T57**	2,054.68
Adjustable-Height Engravers						
3½″ Wd.×Any Length	1	16½″×16½″	3/16″, 5/16″, 9/16″	1/64″, 1/32″, 1/16″	**1604T51**	1,838.81
10″ Wd. ×18″ Lg.	2	24″ ×25½″	5/16″, 9/16″, 1″	1/64″, 1/32″, 1/16″, 1/8″	**1604T53**	2,470.45

Replacement Parts

Cutters—**To Order:** Please specify tip size where necessary. *High-speed steel cutter* is for wood and soft metal.

Cutters		
Diamond Drag Cutter (0.003″-0.005″)	**1604T13**	$16.45
Carbide Cutter (1/64″, 1/32″, 1/16″, or 1/8″)	**1604T15**	16.72
High-Speed Steel Cutter (1/64″, 1/32″, 1/16″, or 1/8″)	**1604T14**	16.72
Tracing Styluses		
20° Angle Stylus	**1604T12**	13.86
34° Angle Stylus	**1604T11**	13.86

Replacement Characters

Individual Characters—**To Order:** Please specify character.

Complete sets contain the same characters furnished with engraver.

Max. Engraved Character Ht.	*Individual Characters*		*Complete Sets*	
1/8″	**1604T91**	$2.60	**1604T82**	$120.34
3/16″	**1604T92**	2.60	**1604T96**	146.01
5/16″	**1604T93**	2.60	**1604T97**	149.06
9/16″	**1604T94**	2.60	**1604T84**	161.73
1″	**1604T95**	4.42	**1604T98**	282.55

Deluxe Adjustable Engraver

In addition to plates, this engraver can cut objects up to 5½″ high, 1¾″ thick, and any length. It has a cutter spindle with bottom micrometer assembly and depth settings. Furnished with two carbide cutters, a diamond drag cutter (0.02″ tip), jigs, wrench, and sample material.

You'll also receive a brass character set that contains a selection of 160 characters, including 0-9, A-Z, 30 spacers, and the following punctuation: period, comma, colon, semicolon, dash, apostrophe, quotation marks, and ampersand (&).

You can select 25 engraved heights from 1/7″ to 1/2″. Engraver has an electric motor that operates on 115 VAC, 60 Hz, draws 1.2 amps, and includes a 4-ft. cord with three-prong plug. It's mounted on a 16″×22″ cast iron-frame base with graduated copy platform.

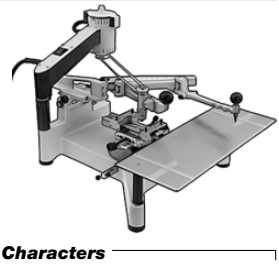

Max. Plate Size	Max. Thick.	Carbide Cutter Tip Sizes		
5½″ Wd.×Any Length	1¾″	0.02″, 0.03″	**86175T41**	$3,088.24

Replacement Cutters

To Order: Please specify tip size where necessary.

Carbide Cutter for Plastic (0.02″, 0.03″, or 0.06″)	**86175T42**●	$23.19
Carbide Cutter for Soft Metal (0.03″ or 0.06″)	**86175T43**	23.19
Diamond Drag Cutter (0.02″)	**86175T44**	33.31

● Do not use with phenolic.

Replacement Characters

Individual Character—**To Order:** Please specify character.

Complete set contains the same characters furnished with engraver.

Also Available: Other replacement characters with engraved heights from 1/2″ to 1″. Please ask for 86175T888 and specify individual character. For complete sets, please ask for 86175T85.

Individual Character	**86175T46**	$9.09
Complete Set	**86175T79**	353.07

Electric Engravers

Economy

Thumb-Wheel Control

Multi-Tip

Use these adjustable-speed engravers on metal, glass, plastic, wood, hard rubber, stone, and ceramic. They have a durable plastic barrel, provide up to 7,200 strokes per minute, and operate on 115 VAC, 60 Hz. *Economy* and *multi-tip* engravers have a two-prong plug. *Thumb-wheel control* engravers have a three-prong plug. Engravers with ***carbide tip*** include one tip. Engravers with ***carbide and diamond tips*** include one of each tip. *Carbide tips* are for general purpose etching; *diamond tips* are for etching extra-hard materials such as stone and ceramic.

Economy— Engravers have a comfort-grip handle and side knob adjustment. UL listed.

Multi-Tip— Resembles a pen and has top screw adjustment. In addition to one carbide and one diamond tip, engraver includes four sharp steel tips and a steel tip for engraving plastic. *Replacement tip set* includes one carbide tip, one diamond tip, and five steel tips (four sharp tips and one tip for plastic).

Thumb-Wheel Control— Wheel on the side of the engraver allows one-hand operation.

	Amp Draw	Cord Lg.	Wt., lbs.	ENGRAVERS: With Carbide Tip		ENGRAVERS: With Carbide and Diamond Tips		REPLACEMENT TIP: Carbide		REPLACEMENT TIP: Diamond	
Economy	0.2	5 ft.	0.8	1613T1	$20.87	1613T2	$32.57	1613T3	$6.46	1613T4	$15.80
Multi-Tip	0.1	4½ ft.	0.4	———	———	1864T12	70.00	1864T17	12.44	1864T18	15.75
Thumb-Wheel Control	0.1	6¾ ft.	0.9	1670T5	88.90	1670T19	102.83	1670T3	12.18	1670T4	16.88

Replacement Tip Set for Multi-Tip Engraver ..... 1864T13 **Set** $22.73

Air-Powered Engravers

Just hook up to a compressed air line and turn the sleeve valve on the barrel to turn the unit on/off as well as regulate air flow. Engravers have a steel barrel and include a hose and carbide tip (for general purpose etching) that's suitable for engraving metal, glass, stone, ceramic, plastic, wood, and hard rubber.

Engravers

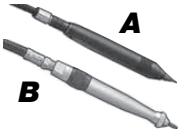

Style A is faster while ***Style B*** consumes less air, conserving your supply. Style B also includes an air filter assembly.

	Strokes/ Minute	Air Press., psi	Air Consump., cfm	Hose Inlet, NPT	Hose ID	Hose Lg.	Wt., lbs.	Engravers		Replacement Carbide Tip	
A	30,000	90	7	¼″ Female	⅛″	6 ft.	0.3	1602T11	$299.84	1602T12	$54.52
B	13,500	90	1.1	¼″ Male	3/16″	8 ft.	0.3	1564T62	384.61	1564T68	23.49

Style B Engraver and Tip Kit & Style B Replacement Parts

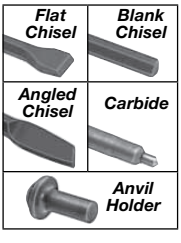

Includes Style B engraver and six interchangeable tips: four steel tips (anvil, flat chisel, angled chisel, blank chisel) for general purpose etching and two carbide tips. Also includes 8-ft. air hose, air filter assembly, and a carrying case. Use *flat chisel* for scaling and deburring. *Angled chisel* is used for cleaning weld beads. *Blank chisel* can be ground to a special shape to suit your application. *Carbide tip* is for writing or marking. *Anvil holder* is required for use with flat, blank, and round chisel tips.

1564T63 ..... $435.07

Replacement Tips— Use with Style B engraver only.

Flat Chisel Tip	1564T65▲	$45.17
Angled Chisel Tip	1564T66▲	42.76
Blank Chisel Tip	1564T74▲	18.48
Carbide Tip	1564T68	23.49
Anvil Holder	1564T64	10.71
8-ft. Air Hose	1564T69	28.34
Air Filter Assembly	1564T72	20.17

▲ Requires anvil holder 1564T64 for operation.

Electric Branding Irons

Single Line

Two Line

All you need is an AC outlet for power and you can burn crisp markings on wood, leather, and rubber. To use, heat the iron for about 15 minutes, then hold down on the surface you're branding for 2 to 6 seconds.

Irons have a hardwood handle, stainless steel housing and shaft, a heating element with ceramic fiber insulation liner, and a rest stand. They operate on 115 VAC, 60 Hz, 400 watts, 3.3 amps and come with a 4½-ft. cord and three-prong plug. *Optional temperature regulator* allows you to adjust the branding temperature between brandings. Required when working with rubber.

Irons include a character holder with a capacity of eighteen 3/16″, twelve ¼″, nine ⅜″, six ½″, four ¾″, or three 1″ characters per line. Holders have one or two slots to insert characters and two movable end locks for each line to hold characters in place, allowing you to vary the number of characters in your message.

All characters are uppercase. ***Individual characters*** are available in a specified character: 0-9, A-Z, period, comma, dash, and ampersand (&). **To Order:** Please specify character. ***Spacers*** are required to fill unused spaces in your message. ***Number sets*** include one each of 0-9. ***Letter sets*** include one each of A-Z and a spacer.

Also Available: One-piece custom branding irons. Please ask for 1581T999 and specify character height, characters, and/or logo design.

Branding Irons and Replacement Parts

For Character Ht.	Single-Line Branding Irons		Two-Line Branding Irons		REPL. CHARACTER HOLDERS: Single-Line		REPL. CHARACTER HOLDERS: Two-Line		Replacement End Lock	
3/16″, ¼″, ⅜″, ½″	1581T47	$352.94	1581T28	$367.98	1581T25	$119.76	1581T27	$139.56	1581T151	$8.92
¾″, 1″	1581T57	346.41	———	———	1581T26	119.76	———	———	1581T155	8.92

Optional Temperature Regulator	1581T11	**Each**	$77.98
Replacement Heating Element for All Sizes	1581T112	**Each**	$122.60
Replacement Ceramic Fiber Insulation (2/Pkg.)	1581T114	**Pkg.**	$6.58

Characters

AB12

Actual Size ¼″

Character Ht.	Individual Characters		Spacers		Number Sets		Letter Sets	
3/16″, ¼″, ⅜″	1581T75 ♦	$8.92	1581T253 ♦	$8.92	1581T67 ♦	$81.55	1581T66 ♦	$198.35
½″, ¾″	1581T73 ♦	13.60	1581T251 ♦	8.92	1581T65 ♦	119.87	1581T64 ♦	278.29
1″	1581T61	16.32	1581T149	8.92	1581T63	149.14	1581T62	354.46

♦ **To Order:** Please specify character height.

Don't see the blank engraving plate you need? Just tell us what you're looking for and we'll get it for you.

Portable Propane Gas Branding Iron

When electricity is not available, just connect this branding iron to a propane gas tank. Lightweight for portability, iron marks wood and rubber and includes a 10-ft. hose for connection to a minimum 20-lb. tank. It has a POL connection (the same kind you use to connect your gas grill to the propane tank). To use, heat iron for about 10 minutes, then hold down on the surface you're branding for 5 to 10 seconds. Iron has a brass housing and rubberized plastic handle. Characters, holders, and spacers sold separately.

Branding Iron 3822T21 $266.91

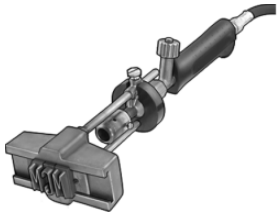

Individual characters are stainless steel. **To Order:** Please specify individual character: A-Z or 0-9. ***Spacers*** are required to fill unused spaces in your message. ***Character holders*** are brass and hold up to five characters. They have two movable brass end locks that hold characters in place, allowing you to vary the number of characters in your message.

For Character Ht.	Individual Characters		Spacer		Character Holder		Replacement End Lock	
1/2"	3822T61	$10.74	3822T52	$10.19	3822T32	$226.62	3822T41	$3.09
1"	3822T65	12.34	3822T53	11.26	3822T34	250.17	3822T43	3.09

Blank Engraving Plates

The micro-thin surface on these plates allows clear fine-line engraving. They have a matte finish, beveled edges (unless noted), and are 1/16" thick. ***Self-adhesive*** plates have a pressure-sensitive adhesive backing for easy peel-and-stick application.

Indoor plates are made of ABS plastic.
Indoor/outdoor plates are made of UV-resistant acrylic.
Aluminum plates are durable, nonconductive, and have an anodized finish.
To Order: Please specify color from list at right.

Plate Size	Indoor Pkg. Qty.		Indoor 1-4	Indoor 5-Up	Indoor/Outdoor Pkg. Qty.		Indoor/Outdoor 1-4	Indoor/Outdoor 5-Up	Aluminum Pkg. Qty.		Aluminum 1-4	Aluminum 5-Up
Standard												
1" × 3"	25	85915T25	$11.72	$9.95	10	7778T31	$7.08	$6.18	10	3817T311	$9.59	$8.36
1" × 6"	10	85915T26	6.60	5.58	5	7778T32	6.25	5.45	5	3817T321	9.06	7.90
1" × 10"	10	85915T27	12.02	10.18	5	7778T33	10.70	9.39	1	3817T331	2.52	2.19
1" × 24"	5	85915T48	13.63	11.56	1	7778T34	4.13	3.59	1	3817T341	6.73	5.87
2" × 4"	10	85915T29	8.23	7.04	5	7778T35	7.93	6.89	1	3817T351	2.02	1.75
2" × 8"	5	85915T23	9.26	7.80	1	7778T36	2.79	2.41	1	3817T361	4.92	4.29
2" × 10"	5	85915T54	10.90	9.25	1	7778T37	3.69	3.21	1	3817T371	5.27	4.60
2" × 24"	1	85915T31	3.84	3.26	1	7778T39	8.86	7.78	1	3817T391	14.48	12.46
3" × 6"	5	85915T62	9.39	7.97	1	7778T38	4.07	3.53	1	3817T381	5.23	4.56
3" × 12"	1	85915T33	3.23	2.75	1	7778T41	6.64	5.72	1	3817T411	13.66	11.93
4" × 10"	1	85915T34	3.48	2.96	1	7778T42	8.37	7.34	1	3817T421	12.19	10.48
5" × 10"	1	85915T35	4.52	3.83	1	7778T43	10.51	9.22	1	3817T431	15.16	13.04
10" × 10"	1	85915T36	8.65	7.34	1	7778T44	22.84	19.80	1	3817T441	30.09	25.88
10" × 18"	1	85915T37	11.77	9.96	1	7778T45	43.28	37.50	1	3817T451	45.40	39.63
12" × 24"	1	85915T22●	13.24	11.25	1	7778T46	28.27	25.55	1	3817T461●	38.56	34.92
24" × 48"	1	85915T21●	47.59	41.45	1	7778T47●	82.00	73.80	—	—	—	—
Self-Adhesive												
1" × 3"	25	4071T11	13.09	11.08	10	7778T11	8.20	7.19	10	3817T111	11.46	10.00
1" × 6"	10	4071T14	9.42	8.00	5	7778T12	7.40	6.42	5	3817T121	10.83	9.45
2" × 4"	10	4071T16	9.44	8.03	5	7778T13	9.12	7.88	1	3817T131	2.54	2.19
2" × 8"	5	4071T19	9.75	8.26	1	7778T14	3.38	2.95	1	3817T141	5.94	5.18
2" × 10"	5	4071T22	11.00	9.33	1	7778T15	4.46	3.87	1	3817T151	6.44	5.62
3" × 6"	5	4071T25	10.16	8.58	1	7778T16	4.58	3.96	1	3817T161	6.33	5.53
12" × 24"	1	4071T27●	16.20	13.68	1	7778T17	21.07	18.32	1	3817T171●	40.56	36.74
24" × 48"	1	4071T38●	62.40	52.66	1	7778T18●	108.87	97.98	—	—	—	—

● Straight edges.

Available Colors

Surface	Core
Indoor and Indoor/Outdoor	
Black	White
Blue	White
Dark Walnut	White★
Green	White
Red	White
White	Black
Yellow	Black
Aluminum	
Black	Silver

★ Indoor standard only.

Holders for Engraved Plates

These aluminum holders accommodate 1/16" thick engraving plates. Holders are 1/16" thick.
Wall-mount holders have two 1/8" dia. mounting holes (fasteners not included).
Desk stand holders have a 1" wide base.

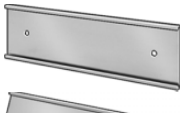

Ht. × Lg.	Finish	Wall Mount Mtg. Holes, Ctr.-to-Ctr.			Desk Stand	
2" × 8"	Gold	6"	8629T71	$2.89	8629T81	$4.71
2" × 8"	Silver	6"	8629T73	2.89	8629T83	4.71
2" × 10"	Gold	8"	8629T72	3.31	8629T82	5.36
2" × 10"	Silver	8"	8629T74	3.31	8629T84	5.36

Blank Plastic Engraving Legend Plates

Slip these plates over control-board buttons to identify system components. Plates are 1/16" thick, ABS plastic and for indoor use. They have a satin finish and straight edges. Package quantity is 10.

To Order: Please specify black surface with white core, red surface with white core, or white surface with black core.

Pkg. 1-4 $11.60 5-Up $10.00

Hole Dia.	1 3/8" × 1 5/8"	1 3/4" × 1 7/8"	1 3/4" × 2"	1 3/4" × 2"	1 3/4" × 2"	1 3/4" × 2"	1 13/16" Sq.
7/8" (22 mm)	15325T63	15325T64	—	—	—	—	—
13/16" (30 mm)	—	—	—	15325T51	15325T57	15325T53	15325T52
17/32" (31 mm)	—	—	15325T54	—	15325T55	15325T56	—

For tag holders, see pages 1960-1961.

Blank Metal Engraving and Stamping Plates

Rounded Rectangle

Rectangle

Cornered Rectangle

Oval

Engrave or stamp your message on these metal plates. Each has two holes for fastening with finishing nails (see page 3372) or screws (see pages 3014-3015).

Shape	Plate Size	Hole Dia.	Holes, Center-to-Center	Aluminum, 18-ga./0.040″ Thick Pkg. Qty.		Per Pkg.	Brass, 18-ga./0.040″ Thick Pkg. Qty.		Per Pkg.	Type 304 Stainless Steel, 20-ga./0.038″ Thick Pkg. Qty.		Per Pkg.
Standard												
Rounded Rectangle	5/8″ × 1 29/32″	1/8″	1 9/16″	50	1632T12	$11.74	50	1632T11	$15.85	25	1632T13	$11.78
Rounded Rectangle	5/8″ × 2 13/16″	5/32″	2 13/32″	50	1632T14★	14.40	25	1632T15★	13.10	10	1632T16	8.28
Rounded Rectangle	3/4″ × 3 1/8″	5/32″	2 25/32″	50	1632T17★	14.75	25	1632T18★	15.44	10	1632T19	9.63
Rounded Rectangle	1″ × 2 1/8″	1/8″	1 13/16″	25	1632T81	8.13	10	1632T82	5.34	10	1632T83	8.25
Rectangle	1/2″ × 1 9/32″	1/8″	1″	50	1632T34	10.17	50	1632T35	15.59	25	1632T36	10.56
Rectangle	5/8″ × 2 1/2″	1/8″	2 1/4″	50	1632T86	13.33	25	1632T87	10.67	25	1632T88	15.28
Rectangle	3/4″ × 1 3/4″	1/8″	1 1/2″	50	1632T37	12.29	25	1632T38	9.85	25	1632T39	13.58
Rectangle	1″ × 2″	1/8″	1 11/16″	50	1632T22	12.27	25	1632T21	10.28	10	1632T23	6.45
Rectangle	1″ × 2 1/2″	1/8″	2 1/4″	25	1632T24	8.54	10	1632T25	10.29	10	1632T26	10.73
Rectangle	1″ × 3″	1/8″	2 1/2″	25	1632T27	9.08	10	1632T28	10.49	10	1632T29	11.42
Rectangle	1 1/2″ × 3″	1/8″	2 5/8″	25	1632T32	9.19	10	1632T31	10.76	10	1632T33	11.36
Rectangle	2″ × 4″	1/8″	3 5/8″	3	1632T71	3.91	3	1632T72	7.53	3	1632T73	7.06
Rectangle	3″ × 5″	1/8″	4 5/8″	3	1632T75	4.81	3	1632T76	9.77	3	1632T77	10.91
Cornered Rectangle	1 7/16″ × 3 1/16″	5/32″	2 19/32″	25	1632T42	9.02	10	1632T41	9.82	10	1632T43	11.08
Oval	3/4″ × 1 11/32″	3/32″	1 3/32″	50	1632T54	8.14	50	1632T55	14.13	25	1632T56	9.27
Oval	1″ × 1 7/8″	1/8″	1 1/2″	50	1632T62	13.03	25	1632T61	12.06	25	1632T63	14.31
Oval	1 5/32″ × 2 1/16″	1/8″	1 3/4″	50	1632T52	13.81	25	1632T51	15.35	25	1632T53	15.40
Self-Adhesive												
Rounded Rectangle	5/8″ × 1 29/32″	1/8″	1 9/16″	5	3965T21	5.71	5	3965T22	8.07	5	3965T23	7.08
Rectangle	1″ × 2″	1/8″	1 11/16″	5	3965T31	6.02	5	3965T32	8.99	5	3965T33	8.13
Rectangle	1 1/2″ × 3″	1/8″	2 5/8″	5	3965T41	7.83	5	3965T42	13.58	5	3965T43	13.16
Cornered Rectangle	1 7/16″ × 3 1/16″	5/32″	2 19/32″	5	3965T51	7.15	5	3965T52	11.81	5	3965T53	11.11

★ 20-ga./0.032″ thick.

Blank Metal Engraving and Stamping Tags

Round

Round w/ Ear

Diamond

Hexagon

Octagon

Square

Each has a hole for fastening with finishing nails (see page 3372) or screws (see pages 3014-3015).

Also Available: Other shapes and tag sizes. Please ask for 1540T999 and specify shape, tag size, and material (from those offered here).

Shape	Tag Size	Hole Dia.	Aluminum, 18-ga./0.040″ Thick Pkg. Qty.		Per Pkg.	Brass, 18-ga./0.040″ Thick Pkg. Qty.		Per Pkg.	Type 304 Stainless Steel, 20-ga./0.038″ Thick Pkg. Qty.		Per Pkg.
Standard											
Round	1″	3/16″	50	1540T32	$5.08	50	1540T13	$8.49	50	1540T48	$11.43
Round	1 1/4″	3/16″	50	1540T33	7.32	50	1540T14	13.00	25	1540T49	9.44
Round	1 3/8″	3/16″	50	1540T34	8.20	25	1540T15	8.30	25	1540T5	10.88
Round	1 1/2″	3/16″	50	1540T35	8.37	25	1540T16	10.08	25	1540T51	11.13
Round	2″	3/16″	50	1540T64	12.02	10	1540T47	8.75	10	1540T52	8.41
Round with Ear	1″	7/64″	50	1540T25	9.70	25	1540T26	9.56	25	1540T27	13.02
Round with Ear	1 1/4″	11/64″	25	1540T23	6.34	25	1540T22	13.45	10	1540T24	7.06
Diamond	1 1/4″	3/16″	50	1540T72	7.57	25	1540T71	10.03	25	1540T73	11.66
Hexagon	1 1/4″	3/16″	50	1540T75	7.47	25	1540T74	9.11	25	1540T76	10.85
Octagon	1 1/8″	3/16″	50	1540T37	7.33	25	1540T18	8.74	25	1540T62	10.37
Octagon	1 1/4″	3/16″	50	1540T38	7.46	25	1540T19	8.88	25	1540T53	10.56
Octagon	1 1/2″	3/16″	50	1540T39	8.22	25	1540T21	11.34	25	1540T63	13.43
Square	1″	3/16″	50	1540T77	7.74	50	1540T78	13.75	25	1540T79	9.72
Square	1 1/4″	3/16″	50	1540T36	7.89	25	1540T17	8.78	25	1540T61	11.00
Square	1 1/2″	3/16″	25	1540T81	6.02	25	1540T82	11.07	10	1540T83	7.30
Square	2″	3/16″	25	1540T84	7.89	10	1540T85	8.89	10	1540T86	10.54
Self-Adhesive											
Round	1 1/4″	3/16″	5	3990T11	5.31	5	3990T12	7.54	5	3990T13	6.78
Round	1 1/2″	3/16″	5	3990T21	5.45	5	3990T22	7.54	5	3990T23	6.78
Round	2″	3/16″	5	3990T31	5.95	5	3990T32	8.43	5	3990T33	8.15
Square	2″	3/16″	5	3990T41	6.00	5	3990T42	8.58	5	3990T43	9.89

Heavy Duty Blank Metal Engraving and Stamping Tags

Also known as miners' checks, these tags are thicker than the other tags on this page. Tag size is 1 3/8″.

Material	Ga./Thick.	Hole Dia.	Pkg. Qty.		Per Pkg.
Aluminum	16/0.051″	3/8″	25	1541T26	$7.39
Brass	16/0.051″	3/8″	25	1541T13	14.65
Type 304 Stainless Steel	18/0.050″	3/8″	10	1541T45	7.57

Choose-a-Color Aluminum Engraving and Stamping Plates and Tags

Round

Square

Color code your applications with these 18-ga./0.040″ thick anodized aluminum tags. Round and square tags have one hole; rectangle plates have two. **to Order:** Please specify color: black, blue, gold, or red.

Shape	Size	Hole Dia.	Holes, Center-to-Center	Pkg. Qty.		Per Pkg.
Round	1 1/2″	3/16″	—	5	6320T2	$8.10
Square	1 1/2″	3/16″	—	5	6320T4	8.10
Rectangle	1″ × 3″	1/8″	2 1/2″	5	6320T7	9.67
Rectangle	3″ × 5″	3/16″	4 1/4″	5	6320T9	14.44

For tag holders, see pages 1960-1961.

Consecutively Numbered Metal Plate and Tag Sets

Consecutively numbered plates and tags let you assign numbers to completed work, storage areas, and lockers. Black enamel-filled numbers are stamped onto the surface. Plates and 1½″ tags have three digits, including preceding zeros (such as 002). Aluminum and brass are 18-ga./0.040″ thick; stainless steel are 20-ga./0.038″ thick.

Plate 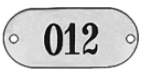

1¼″ Tag

1½″ Tag

Plates

Plate Size	Hole Dia.	Holes, Center-to-Center	Numbers 1-10 Per Set	Numbers 1-25 Per Set	Numbers 26-50 Per Set	Numbers 51-75 Per Set	Numbers 76-100 Per Set
Aluminum							
5/8″ × 1 29/32″	1/8″	1 9/16″	1090T24 $12.62	1090T25 $26.07	1090T26 $26.07	1090T27 $26.07	1090T28 $26.07
1″ × 2 1/8″	1/8″	1 7/8″	1090T3 13.31	1090T4 27.22	1090T5 27.22	1090T6 27.22	1090T7 27.22
Brass							
5/8″ × 1 29/32″	1/8″	1 9/16″	1090T32 14.47	1090T33 33.86	1090T34 33.86	1090T35 33.86	1090T36 33.86
1″ × 2 1/8″	1/8″	1 7/8″	1090T1 17.94	1090T11 38.64	1090T12 38.64	1090T13 38.64	1090T14 38.64
Type 304 Stainless Steel							
5/8″ × 1 29/32″	1/8″	1 9/16″	1090T41 24.82	1090T42 56.04	1090T43 56.04	1090T44 56.04	1090T45 56.04
1″ × 2 1/8″	1/8″	1 7/8″	1090T55 28.31	1090T56 64.78	1090T57 64.78	1090T58 64.78	1090T59 64.78

Tags

Also Available: Other number sequences. Please ask for 1542T888 and specify number sequence, shape, tag size, and material.

Shape	Tag Size	Hole Dia.	Numbers 1-10 Per Set	Numbers 1-25 Per Set	Numbers 1-50 Per Set	Numbers 1-75 Per Set	Numbers 1-100 Per Set	Numbers 1-200 Per Set
Aluminum								
Round	1¼″	3/16″	1542T23 $8.46	1542T24 $16.82	1542T26 $33.66	1542T27 $50.48	1542T28 $67.30	1542T29 $134.62
Brass								
Round	1″	3/16″	1542T4 9.76	1542T5 24.40	1542T6 48.79	1542T7 73.21	1542T8 97.62	1542T9 195.24
Round	1¼″	3/16″	1542T79 13.07	1542T11 27.52	1542T12 55.03	1542T13 82.57	1542T14 110.08	1542T15 220.13
Round	1½″	3/16″	1542T73 13.28	1542T16 30.41	1542T17 60.85	1542T18 91.27	1542T19 121.68	1542T21 243.40
Octagon	1½″	3/16″	1542T71 13.40	1542T36 31.55	1542T37 62.66	1542T38 94.60	1542T39 125.67	1542T41 250.62
Square	1½″	3/16″	1542T75 13.56	1542T31 32.61	1542T32 65.15	1542T33 97.75	1542T34 130.34	1542T35 260.66
Type 304 Stainless Steel								
Round	1¼″	3/16″	1542T77 17.83	1542T64 40.89	1542T65 81.00	1542T66 122.70	1542T67 163.60	1542T68 322.63
Round	1½″	3/16″	1542T43 21.24	1542T44 48.58	1542T45 97.17	1542T46 145.75	1542T47 178.40	1542T48 338.95

Consecutively Numbered Brass Utility Tag Sets

Use these tags to identify valves, pipes, and other utilities in your facility. They have black enamel-filled characters stamped onto the surface. Made of 18-ga./0.040″ thick brass, tags are 1½″ dia. and have a 3/16″ dia. hole. They have three digits including preceding zeros (such as 002). Sold in consecutively numbered sets.

Heading	Numbers 1-25 Per Set	Numbers 26-50 Per Set
HTG (Heating)	1081T22 $39.29	1081T23 $39.29
PLBG (Plumbing)	1081T26 39.29	1081T27 39.29
CW (Cold Water)	1081T34 39.29	1081T35 39.29
HW (Hot Water)	1081T41 39.29	1081T42 39.29
GAS	1081T47 39.29	1081T48 39.29

Custom-Stamped Metal Plates and Tags

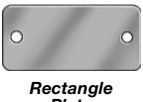
Rectangle Plate

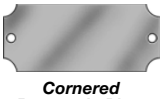
Cornered Rectangle Plate

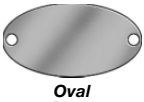
Oval Plate

Available Sizes:

Round Tag 1″, 1¼″, 1½″, 2″

Octagon Tag 1¼″, 1½″

Square Tag 1¼″, 1½″

Oval Tag 1″ × 1 7/16″

These plates and tags have stamped, enamel-filled characters. Choose from identically stamped lettering and/or numbering, consecutive numbering, and consecutive numbering with an identically stamped heading. Character height ranges from 3/32″ to ½″ (the largest possible height will be used).

Plates—Minimum order is 10.

To Order: Please specify characters (three lines maximum) and where necessary, number sequence. **Also Available:** Quantities smaller than 10, and other sizes and shapes. Please ask for 1576T999 and specify quantity, material (from those offered here), plate size, shape (send drawing if possible), hole locations, and lettering and/or numbering as stated previously.

Shape	Plate Size	Holes, Center-to-Center	Hole Dia.	Aluminum, 18-ga./0.040″ Thick Each 10-49	Aluminum 50-Up	Brass, 18-ga./0.040″ Thick Each 10-49	Brass 50-Up	Type 304 SS, 20-ga./0.038″ Thick Each 10-49	Type 304 SS 50-Up
Identically Stamped									
Rectangle	5/8″ × 2 1/2″	2 1/4″	1/8″	1576T126 $5.48	$2.02	1576T226 $6.68	$2.78	1576T326 $6.87	$2.92
Cornered Rectangle	1 7/16″ × 3 1/16″	2 19/32″	5/32″	1576T127 5.86	2.34	1576T227 7.17	3.50	1576T327 7.48	3.65
Oval	1″ × 1 7/8″	1 1/2″	1/8″	1576T129 5.61	2.08	1576T229 6.84	2.65	1576T329 7.06	2.76
Oval	1 5/32″ × 2 1/16″	1 3/4″	1/8″	1576T128 5.72	2.12	1576T228 7.01	2.91	1576T328 7.27	3.01
Consecutively Numbered									
Rectangle	5/8″ × 2 1/2″	2 1/4″	1/8″	1576T121 5.44	1.86	1576T221 6.63	2.33	1576T321 6.81	2.51
Cornered Rectangle	1 7/16″ × 3 1/16″	2 19/32″	5/32″	1576T122 5.81	2.18	1576T222 7.12	2.82	1576T322 7.41	3.00
Oval	1″ × 1 7/8″	1 1/2″	1/8″	1576T124 5.56	1.89	1576T224 6.78	2.39	1576T324 7.00	2.56
Oval	1 5/32″ × 2 1/16″	1 3/4″	1/8″	1576T123 5.68	1.94	1576T223 6.94	2.45	1576T323 7.20	2.75
Consecutively Numbered with Heading									
Rectangle	5/8″ × 2 1/2″	2 1/4″	1/8″	1576T131 5.52	2.82	1576T231 6.73	3.50	1576T331 6.93	3.95
Cornered Rectangle	1 7/16″ × 3 1/16″	2 19/32″	5/32″	1576T132 5.91	3.09	1576T232 7.23	4.46	1576T332 7.56	4.50
Oval	1″ × 1 7/8″	1 1/2″	1/8″	1576T134 5.64	2.82	1576T234 6.89	3.52	1576T334 7.13	3.98
Oval	1 5/32″ × 2 1/16″	1 3/4″	1/8″	1576T133 5.77	2.95	1576T233 7.06	3.70	1576T333 7.34	4.21

Tags—Minimum order is 10.

To Order: Please specify shape and tag size (from those listed above), characters (three lines maximum), and where necessary, number sequence. **Also Available:** Quantities smaller than 10. Please ask for 1538T999 and specify quantity, material, tag size, and shape (from those offered here), and lettering and/or numbering.

Style	Hole Dia.	Aluminum, 18-ga./0.040″ Thick Each 10-49	Aluminum 50-Up	Brass, 18-ga./0.040″ Thick Each 10-49	Brass 50-Up	Type 304 SS, 20-ga./0.038″ Thick Each 10-49	Type 304 SS 50-Up
Identically Stamped	3/16″	1538T4 $4.94	$2.36	1538T1 $6.04	$2.94	1538T7 $6.20	$3.06
Consecutively Numbered	3/16″	1538T5 4.88	2.15	1538T2 5.96	2.70	1538T8 6.10	2.78
Consecutively Numbered with Heading	3/16″	1538T6 5.01	3.09	1538T3 6.12	3.69	1538T11 6.30	3.55

For tag holders, see pages 1960-1961.

Blank Metal Embossing Plates

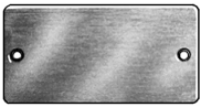

Emboss these plates to produce raised characters similar to a license plate. Good for use in painting and washing applications where engraved or stamped characters can get filled in or washed away.

Plate Size	Hole Dia.	Holes, Center-to-Center	Pkg. Qty.	Aluminum, 32-ga./0.008″ Thick Per Pkg.	Electrogalvanized Steel, 34-ga./0.008″ Thick Per Pkg.
2″ × 4½″	3/16″	3¾″	10	8625T16 $6.58	— —
2½″ × 5½″	3/16″	4¾″	10	8625T17 9.98	8625T13 $10.10
3″ × 5½″	3/16″	4¾″	10	8625T18 11.74	8625T14 11.98
3″ × 7″	3/16″	6¼″	10	8625T19 13.44	— —

Custom-Embossed Metal Plates

Rounded Rectangle

Rectangle

Customize these plates for your needs. Embossing produces raised characters similar to a license plate. These plates are good for painting and washing applications where engraved or stamped characters can get filled in or washed away. Each plate allows up to six characters in heights of either ¼″ or ½″ (largest height possible will be used).

Rounded rectangle plates are offered in ¾″×2½″ (holes are 2⅛″ center-to-center) and 1″×3″ (holes are 2⅝″ center-to-center) plate sizes. ***Rectangle plates*** are 1½″×3″ (holes are 2⅝″ center-to-center).

To Order: Please specify style, plate size, characters, and where necessary, number sequence. Minimum order is 50 plates.

Also Available: Other sizes and shapes. Please ask for 1569T999 and specify characters, plate size, shape, material (aluminum or brass), and hole locations.

Style	Hole Dia.	Aluminum, 24-ga./0.020″ Thick Each 50-199	200-Up	Brass, 24-ga./0.020″ Thick Each 50-199	200-Up
Identically Lettered	⅛″	1569T4 $2.20	$1.44	1569T1 $2.71	$1.82
Consecutively Numbered	⅛″	1569T5 2.82	1.80	1569T2 3.64	2.36
Consecutively Numbered with Heading	⅛″	1569T6 3.71	2.40	1569T3 4.69	3.06

Choose-a-Color Blank Steel Tags

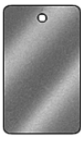

Easy to identify, these steel tags have a color-coated matte finish. Write on them with a marker, or emboss to produce raised characters. Tags are 32-ga./0.008″ thick. The 4½″ long tags have a hole at both ends (holes are 3¾″ center-to-center); all other tags have one hole.

To Order: Please specify blue, red, white, or yellow.

Tag Size	Hole Dia.	Pkg. Qty.	Per Pkg.
4½″ × 7/8″	¼″	50	1517T8 $13.28
4½″ × 2″	¼″	50	1517T71★ 12.61
5½″ × 3″	¼″	25	1517T3 10.58
6½″ × 3″	¼″	10	1517T4 6.09
7½″ × 3″	¼″	10	1517T5 6.54

★ Available in white and yellow only.

Tear-Resistant Blank Vinyl Tags

Without Wire Tie

It's almost impossible to tear these durable vinyl tags, and you can write on them with a permanent marker. Tags are 0.010″ thick and have a 3/16″ dia. brass eyelet. **To Order:** Please specify orange, red, silver, white, or yellow.

Tag Size	Pkg. Qty.	Without Wire Tie Per Pkg.	With 6″ Wire Tie Per Pkg.
2¾″ × 1⅜″	25	1771T14 $6.28	1771T4 $8.43
3¼″ × 1⅝″	25	1771T17 8.06	1771T2 10.17
3¾″ × 1⅞″	25	1771T11 9.46	1771T5 11.77
4¼″ × 2⅛″	25	1771T15 10.61	1771T6 13.00
4¾″ × 2⅜″	25	1771T16 11.57	1771T7 14.40
5¼″ × 2⅝″	25	1771T12 12.75	1771T8 15.20
6¼″ × 3⅛″	25	1771T13 15.67	1771T9 17.57

Dry-Erase Blank Polyethylene Tags

Tag with Optional Marker

Change messages on these tags whenever you want. Just use a dry-erase marker (sold separately) to write your message—tags wipe clean with a cloth. Tags are 7″×4″ and 0.023″ thick. The loop ends lock together, keeping the tag in place; loop is 5½″ long.

Color	Pkg. Qty.	Per Pkg.	Color	Pkg. Qty.	Per Pkg.
Blue	5	1583T413 $13.57	Red	5	1583T411 $13.57
Green	5	1583T414 13.57	Yellow	5	1583T412 13.57
Orange	5	1583T415 13.57			

Black Dry-Erase Markers (12/Box) ..... 5929T81 **Per Box** $18.08

Lockable Blank Vinyl Tags

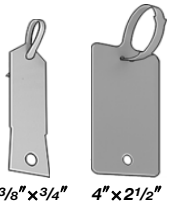

2⅜″×¾″ *4″×2½″*

A notched loop lets you lock these durable vinyl tags in place. They're 0.01″ thick with a ¼″ hole. You can write on them with a pen or permanent marker. Tags with a 2⅜″×¾″ writing surface have a 2⅛″ long loop. Tags with a 4″×2½″ writing surface have a 6″ loop with three barbs for size adjustment.

Color	2⅜″×¾″ Pkg. Qty.	Per Pkg.	4″×2½″ Pkg. Qty.	Per Pkg.
Blue	100	16175T79 $4.75	25	16175T85 $8.00
Red	100	16175T78 4.75	25	16175T84 8.00
Orange	100	16175T77 4.75	25	16175T83 8.00
White	100	16175T76 4.75	25	16175T82 8.00
Yellow	100	16175T75 4.75	25	16175T81 8.00

Erasable Chemical-Resistant Blank Plastic Tags

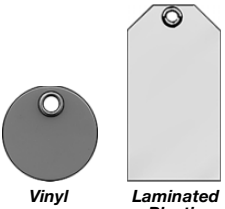

Vinyl *Laminated Plastic*

These tags withstand moisture, oil, mild acids, and chemicals—plus they won't rip or tear. Pencil marks on the matte-finish surface can be erased but won't wash or rub off accidentally.

To Order: Please specify blue, green, orange, pink, red, white, or yellow.

Tag Size	Thick.	Hole Dia.	Hole Style	Pkg. Qty.	Per Pkg.
Vinyl					
1½″ Dia.	0.022″	¼″	Metal Eyelet	10	8176T36 $7.54
Laminated Plastic					
4″ × 2″	0.025″	¼″	Metal Eyelet	10	8176T76 7.67
5⅝″ × 3⅛″	0.025″	⅜″	Zinc Grommet	10	8176T26 11.28
6½″ × 3½″	0.025″	⅜″	Zinc Grommet	5	8176T56 7.67

Blank Acrylic Tags

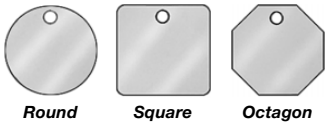

Round *Square* *Octagon*

Write on these thick, durable acrylic tags with a permanent marker.

To Order: Please specify black, green, red, or white.

Tag Size	Thick.	Hole Dia.	Pkg. Qty.	Per Pkg.
Round				
⅞″ Dia.	0.06″	⅛″	10	1579T21 $6.78
1⅛″ Dia.	0.06″	⅛″	10	1579T32 6.96
1¼″ Dia.	0.06″	⅛″	10	1579T43 6.99
Square				
1⅛″	0.06″	⅛″	10	1579T54 5.47
Octagon				
1⅛″	0.06″	⅛″	10	1579T65 5.47

Blank Nylon Tie-Down Plates

Identify your wire and cable bundles with these nylon plates. Simply insert cable ties through holes, secure, and label with a permanent marker. Dual-sided matte finish is virtually smudgeproof. Plates are 0.03″ thick. Color is natural.

For cable ties, see pages 1516-1522.

Plate Size	Writing Area	Hole Dia.	Pkg. Qty.		Per Pkg.
3/4″×1 1/2″	3/4″× 7/8″	0.20″	50	7577K11	$6.76
3/4″×2 1/2″	3/4″×1 7/8″	0.20″	50	7577K12	7.76

Consecutively Numbered Vinyl Security Tags

A security link at the bottom of these tags can be permanently fastened to prevent removal or tampering. Just use the included eyelet riveting tool to close the link. Tags have stamped numbers in contrasting colors. They're 1 1/4″ octagonal, 3/64″ thick, and have a 1/4″ dia. hole. Sold in sets of 100.

Color	Numbers 1-100	Per Set	Numbers 101-200	Per Set
Black	1599T2	$65.29	1599T21	$65.29
Blue	1599T5	65.29	1599T51	65.29
Orange	1599T7	65.29	1599T71	65.29
Red	1599T3	65.29	1599T31	65.29
Yellow	1599T4	65.29	1599T41	65.29

Weather-Resistant Aluminum-Laminated Blank Tags

Made of cardstock with aluminum laminate on both sides, these tags are weather resistant and can be permanently marked using a ballpoint pen, pencil, or any sharp object. All are 25-ga./0.02″ thick and have a 3/16″ dia. hole.

Round and Octagon

Round

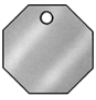

Octagon

Shape	Tag Size	Pkg. Qty.		Per Pkg. 1-4	5-Up
Round	1 1/2″	25	1738T13	$7.86	$6.76
Octagon	1 1/4″	25	1738T16	7.51	6.50

Rectangle

With 6″ Wire Tie

Tag Size	Pkg. Qty.	With Hole	Per Pkg. 1-4	5-Up	With Aluminum Eyelet	Per Pkg. 1-4	5-Up
Rectangle without Wire Tie							
2 3/4″ ×1 3/8″	25	1692T54	$5.37	$4.80	1692T56	$8.30	$7.42
3″ × 3/4″	25	1692T24	5.06	4.47	1692T26	7.44	6.68
3 1/8″ ×1 3/8″	25	1692T14	6.25	5.56	1692T16	9.03	8.03
4″ ×2″	25	1692T34	7.85	6.56	1692T36	10.34	9.25
4 1/4″ ×2 1/8″	25	1692T64	8.01	7.16	1692T66	10.82	9.71
4 3/4″ ×2 3/8″	25	1692T74	9.26	8.32	1692T76	12.23	10.97
5″ ×3″	25	1692T44	11.75	10.57	1692T46	13.39	12.03
6 1/4″ ×3 1/8″	25	1692T84	14.20	12.74	1692T86	16.15	14.49
Rectangle with 6″ Wire Tie							
2 3/4″ ×1 3/8″	25	1692T55	9.63	8.67	1692T57	12.41	11.17
3″ × 3/4″	25	1692T25	8.00	7.16	1692T27	11.04	9.85
3 1/8″ ×1 3/8″	25	1692T15	9.83	8.80	1692T17	12.73	11.40
4″ ×2″	25	1692T35	11.00	9.85	1692T37	14.14	12.62
4 1/4″ ×2 1/8″	25	1692T65	12.50	11.11	1692T67	16.38	14.69
4 3/4″ ×2 3/8″	25	1692T75	12.98	11.52	1692T77	16.82	14.95
5″ ×3″	10	1692T45	8.62	7.69	1692T47	10.00	8.92
6 1/4″ ×3 1/8″	10	1692T85	8.73	7.78	1692T87	11.29	10.14

Acrylic Tags

Round Numbered

Square Numbered

Octagon Custom

Twice as easy to identify, these tags are both color coded and clearly engraved with numbers and/or letters. They're 1 1/8″ wide, unless noted. Choose from black, green, and red with white characters and white with black characters (characters are stamped on one side).

Consecutively Numbered Tags

To Order: Please specify black, green, red, or white, and number sequence (1-100, 101-200, 201-300, 301-400, 401-500).

Shape	Thick.	Hole Dia.		Per Set
Round (1 1/8″ dia.)	0.06″	1/8″	1616T17	$77.50
Square	0.06″	1/8″	1616T121	48.06
Octagon	0.06″	1/8″	1616T131	52.88

Custom Tags

You can get tags numbered, lettered, or a combination of both. Tags can be numbered identically or in any sequence; tags that are lettered are lettered identically. Minimum order is 100 tags.

To Order: Please specify numbers (up to four), letters, color, and where necessary, number sequence.

Shape	Thick.	Hole Dia.		Each 100-299	300-Up
Numbered					
Square	0.06″	1/8″	1616T93	$0.54	$0.45
Octagon	0.06″	1/8″	1616T94	.54	.45
Numbered and Lettered					
Square	0.06″	1/8″	1616T83	.78	.67
Octagon	0.06″	1/8″	1616T84	.78	.67
Numbered and/or Lettered					
Round (1 1/8″ dia.)	0.06″	1/8″	1616T23	.94	.78
Round (1 1/4″ dia.)	0.06″	1/8″	1616T25	.79	.70

Easy-View Numbered Plastic Tags

Contrasting white characters stamped on both sides make these tags highly visible, even at a distance. Made of tough nylon, they resist rust and corrosion. Tags are 3 1/2″×2 1/8″, 1/8″ thick, and have a 7/8″ dia. hole.

To Order: Please specify color from available colors below. For individual numbers, please specify individual numbers.

Also Available: Tags that have letters or letters and numbers. Please ask for 8616T23 and specify characters (five character maximum) and tag color (black, blue, or red).

	Available Colors		Per Set
Number Sequences			
1- 50	Black, Blue, Red	8616T3	$70.65
1-100	Black, Blue, Red	8616T4	141.30
1-500	Black, Blue, Red	8616T5	663.27

			Each 1-49	50-Up
Individual Numbers				
1-3 Digits	Black, Blue, Red	8616T21	$1.81	$1.55
4 Digits	Black, Blue, Red	8616T22	2.05	1.74
Blank (10/Pkg.)	Black, Blue, Red, White, Yellow	8616T71	Per Pkg.	$11.33

Shape-Holding Blank Cardstock Tags

An epoxy-coated aluminum rim prevents these tags from bending.

To Order: For colors, please specify blue, green, red, or yellow.

With String Tie

With Aluminum Split Ring

Tag Dia.	Thick.	Hole Dia.	Pkg. Qty.		Per Pkg.
White with 5″ String Tie					
1 9/16″	0.018″	1/8″	50	1781T19	$7.89
2 1/4″	0.018″	1/8″	50	1781T22	11.73
White with 3/4″ Dia. Fixed Aluminum Split Ring					
1 1/4″	0.018″	3/8″	50	1781T11	8.93
Colors with 6″ String Tie					
1 9/16″	0.015″	1/8″	50	1482T11	9.74
2 1/4″	0.015″	1/8″	50	1482T12	14.50

For tag holders, see pages 1960-1961.

Heavy Duty Cardstock Tags

Without Wire Tie

With Wire Tie

Made of durable cardstock, these blank tags are 0.013″ thick (unless noted) and have a fiber-reinforced eyelet.

Also Available: Other tag sizes, thicknesses, and custom printing. For manila, please ask for 1547T999 and specify tag size, thickness, and design for custom printing. For colors, please ask for 1776T999 and for fluorescent colors, please ask for 8579T999. Specify tag size, thickness, design for custom printing, and tag color.

Tag Size	Standard Industry No.	Eyelet Dia.	Without Wire Tie Pkg. Qty.		Per Pkg.	With 6″ Wire Tie Pkg. Qty.		Per Pkg.
Manila								
2¾″×1⅜″	#1	7/32″	500	1547T31	$8.01	100	1547T21	$6.09
3¼″×1⅝″	#2	7/32″	500	1547T37	9.96	100	1547T27	6.41
3¾″×1⅞″	#3	7/32″	500	1547T12	12.69	100	1547T22	6.92
4¼″×2⅛″	#4	7/32″	500	1547T13	14.73	100	1547T23	7.01
4¾″×2⅜″	#5	7/32″	250	1547T15	9.39	100	1547T45	7.26
5¼″×2⅝″	#6	7/32″	250	1547T14	10.53	100	1547T44	7.68
5¾″×2⅞″	#7	7/32″	250	1547T19	12.16	100	1547T29	8.42
6¼″×3⅛″	#8	7/32″	250	1547T16	13.91	100	1547T26	9.20
7¼″×3⅝″	#10	7/32″	100	1547T68●	9.83	100	1547T76●	13.28
8″ ×4″	#12	7/32″	100	1547T69●	11.80	50	1547T77●	8.64
Colors—To Order: *Please specify blue, green, red, white, or yellow.*								
2¾″×1⅜″	#1	7/32″	500	1776T4	12.18	100	1776T62	5.39
3¼″×1⅝″	#2	7/32″	500	1776T61	14.30	100	1776T68	5.69
3¾″×1⅞″	#3	7/32″	500	1776T17	14.46	100	1776T63	5.91
4¼″×2⅛″	#4	7/32″	250	1776T93	8.60	100	1776T64	6.66
4¾″×2⅜″	#5	7/32″	250	1776T87	9.74	100	1776T65	7.01
5¼″×2⅝″	#6	7/32″	250	1776T2	11.32	100	1776T66	7.43
5¾″×2⅞″	#7	7/32″	250	1776T71	13.63	100	1776T79	8.65
6¼″×3⅛″	#8	7/32″	250	1776T5	15.30	100	1776T67	9.08
7¼″×3⅝″	#10	1/4″	100	1776T83★	12.31	100	1776T91★	13.80
Fluorescent Colors—To Order: *Please specify green, orange, pink, red, or yellow.*								
2¾″×1⅜″	#1	1/4″	100	8579T21	3.15	100	8579T72	6.96
3¼″×1⅝″	#2	1/4″	100	8579T23	3.51	100	8579T74	7.38
3¾″×1⅞″	#3	1/4″	100	8579T25	3.99	100	8579T76	7.86
4¼″×2⅛″	#4	1/4″	100	8579T27	4.56	100	8579T78	8.35
4¾″×2⅜″	#5	7/32″	100	8579T61	4.69	100	8579T43	8.44
5¼″×2⅝″	#6	7/32″	100	8579T65	5.45	100	8579T56	9.08
5¾″×2⅞″	#7	1/4″	100	8579T29	6.76	100	8579T82	10.33
6¼″×3⅛″	#8	7/32″	100	8579T62	7.07	100	8579T64	10.60
7¼″×3⅝″	#10	1/4″	100	8579T31	12.32	100	8579T84	14.47

● 0.015″ thick. ★ White is 0.012″ thick.

Blank Manila Cardstock Tags with Elastic Ties

Elastic ties stretch from 3″ to approximately 6″, allowing you to apply these heavy duty tags almost anywhere. Tags are 0.013″ thick and have a fiber-reinforced eyelet.

Tag Size	Standard Industry No.	Eyelet Dia.	Pkg. Qty.		Per Pkg.
2¾″×1⅜″	#1	3/16″	250	3986T27	$13.52
3¼″×1⅝″	#2	3/16″	250	3986T32	14.49
3¾″×1⅞″	#3	3/16″	250	3986T37	15.99
4¼″×2⅛″	#4	3/16″	250	3986T42	16.98
4¾″×2⅜″	#5	3/16″	100	3986T47	7.19
5¼″×2⅝″	#6	3/16″	100	3986T52	8.12
5¾″×2⅞″	#7	3/16″	100	3986T57	8.89
6¼″×3⅛″	#8	3/16″	100	3986T62	9.68

Blank Cardstock Tags with String Ties

Tags are blank and have a ⅛″ dia. hole and 4¼″ string tie. **To Order:** For colors, please specify blue, green, red, or yellow.

Tag Size	Thick.	Pkg. Qty.		Per Pkg. 1-4	5-Up
White					
1¼″× ⅞″	0.012″	100	16005T15	$1.96	$1.58
1¾″×1⅛″	0.012″	100	16005T12	2.42	1.94
2⅞″×1¾″	0.012″	100	16005T23	3.04	2.45
3¼″×2″	0.012″	100	16005T14	3.83	3.05
Colors					
1¼″× ⅞″	0.013″	100	1709T11	2.44	1.95
1¾″×1⅛″	0.013″	100	1709T12	2.97	2.37
2⅞″×1¾″	0.013″	100	1709T13	3.75	3.00
3¼″×2″	0.013″	100	1709T14	4.77	3.79

Tear- and Chemical-Resistant Blank Tyvek Tags

Without Wire Tie

With Wire Tie

Frequent handling, water, mild acids, and alkalies won't affect these tough Tyvek tags. They're blank, 0.007″ thick, and have a ¼″ dia. metal-reinforced eyelet.

To Order: For colors, please specify blue, green, orange, red, or yellow.

Tag Size	Standard Industry No.	Without Wire Tie Pkg. Qty.		Per Pkg.	With 6″ Wire Tie Pkg. Qty.		Per Pkg.
White							
3¼″×1⅝″	#2	100	15765T11	$6.17	100	15765T21	$8.49
4¼″×2⅛″	#4	100	15765T13	7.43	100	15765T22	9.80
4¾″×2⅜″	#5	100	15765T15	7.78	50	15765T23	5.86
5¼″×2⅝″	#6	100	15765T14	8.87	50	15765T24	6.06
6¼″×3⅛″	#8	50	15765T17	5.37	50	15765T25	6.70
Colors							
3¼″×1⅝″	#2	50	15765T31	6.86	50	15765T36	7.73
4¼″×2⅛″	#4	50	15765T32	6.66	50	15765T37	9.00
4¾″×2⅜″	#5	50	15765T33	7.43	50	15765T38	9.18
5¼″×2⅝″	#6	50	15765T34	8.62	50	15765T39	10.05
6¼″×3⅛″	#8	50	15765T35	9.48	50	15765T41	10.59

Three-Colored Tear-Off Cardstock Tag

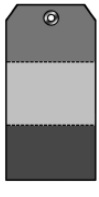

Each tag is perforated between the colors, which visually indicate the status of your project from start to finish. Assign each color to a project status and as the job progresses, tear off a color.

Tags are 5¾″×2⅞″ and made of 0.013″ thick cardstock. The green part has a 3/16″ dia. metal-reinforced eyelet, yellow is the middle part, and red is the stub end. Package quantity is 50.

1626T7 ..... **Per Pkg.** $15.81

Heat-Resistant Blank Nomex Tags

For applications involving high temperatures and flame exposure, choose these Nomex tags. They also resist mild acids, alkalies, solvents, and mold. Temperature range is –320° to +572°F. They're 0.007″ thick with a ¼″ aluminum eyelet. Color is natural.

Tag Size	Standard Industry No.	Pkg. Qty.		Per Pkg.
2¾″×1⅜″	#1	10	4351T27	$4.70
3¼″×1⅝″	#2	10	4351T32	5.20
3¾″×1⅞″	#3	10	4351T37	5.93
4¼″×2⅛″	#4	10	4351T42	6.43
4¾″×2⅜″	#5	10	4351T47	7.17
5¼″×2⅝″	#6	10	4351T52	8.13
5¾″×2⅞″	#7	10	4351T57	9.13
6¼″×3⅛″	#8	10	4351T62	10.13

For tag holders, see pages 1960-1961.

Numbered Tear-Off Tags

Tear off the lower stub and later match it to the tag for easy identification. Reverse side is blank.

Manila Cardstock Tags—RETAIN THIS CHECK is printed on the lower stub in black ink. Both halves are numbered in red ink. Tags are 0.011″ thick manila cardstock with a 7/32″ dia. fiber-reinforced eyelet and a 6″ string tie. Size is 5¼″×2⅝″.

Polypropylene Tags—Great for harsh conditions and outdoor applications, these tags are weather resistant. Both halves are numbered in black ink. Tags are 0.010″ thick with a ⅜″ dia. metal-reinforced eyelet and 6″ wire tie. Size is 3¼″×1⅝″.

Manila Cardstock

Polypropylene

Number Sequence	Pkg. Qty.	Manila Cardstock	Per Pkg.	Polypropylene	Per Pkg.
000-099	100	1794T16	$10.55	—	—
000-249	250	1794T17	25.05	—	—
000-499	500	1794T11	44.71	1794T13	$62.26
500-999	500	1794T12	44.71	1794T14	62.26

Numbered Carbonless Three-Part Cardstock Tags

Write your message on the top white bond sheet and you'll create two paper copies, one on the middle pink bond sheet and one on the cardstock back sheet. All copies are numbered for easy matching; a red number is printed on the original tag and black numbers appear on both copies. The back of the tag is blank. Tags are 6¼″×3⅛″, 0.010″ thick, and have a 3/16″ dia. fiber-reinforced eyelet.

To Order: When ordering a package of 100 tags, specify the starting number (0, 100, 200, 300, 400, or 500). For a package of 500 tags, specify the starting number (0; 500; 1,000; etc., up to 4,500).

Pkg. Qty.		Per Pkg.
100	1103T222	$18.06
500	1103T777	78.43

Inventory Cardstock Tags

Numbered inventory tags allow you to match the original with the cardstock stub to keep an accurate record of your inventory. All tags have black printing and are made of 0.010″ thick manila cardstock, except for carbonless tags, which are made of 0.0075″ thick manila cardstock. Tags are 6¼″×3⅛″ with a 7/32″ dia. fiber-reinforced eyelet.

Tear-Off Tags—Easily tear off the perforated portion to keep with your records. **To Order:** When ordering a package of 250 tags, specify the starting number (0, 250, 500, or 750). For a package of 1,000 tags, specify the starting number (0; 1,000; 2,000; etc., up to 9,000). **Also Available:** Green or orange tear-off tags in a package of 1,000. For green, order 8659T881 and specify number sequence. For orange, order 8659T882 and specify number sequence.

Carbonless Tags—Create two or three copies without the mess of carbons. *Duplicate* tags have a white bond topsheet and a manila cardstock tag. *Triplicate* tags have a pink bond sheet between the white topsheet and manila cardstock. ***Tags with Carbon***—Carbon paper between the white bond topsheet and the manila cardstock creates the duplicate copy. **To Order:** When ordering a package of 100 tags, specify the starting number (0, 100, 200, 300, or 400). For a package of 500 tags, specify the starting number (0; 500; 1,000; etc., up to 14,500 for carbonless and 9,500 for tags with carbon).

(Front) Tear-Off

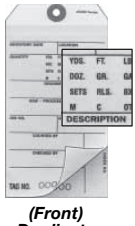

(Front) Duplicate and Triplicate

(Back) All

ⓘ For larger photos of these tags, go to mcmaster.com and search for **8659TAC**.

Tag Type	Pkg. Qty.		Per Pkg.
Tear-Off			
Tear-Off	250	8659T42	$17.26
Tear-Off	1,000	8659T28	63.12
Carbonless			
Duplicate	100	86055T333	15.34
Duplicate	500	86055T888	61.18
Carbonless (Cont.)			
Triplicate	100	86055T444	$18.68
Triplicate	500	86055T777	72.30
With Carbon			
Duplicate	100	85975T333	13.68
Duplicate	500	85975T888	63.03

Color-Coded Material Management Cardstock Tags

You can immediately identify the message on these bright, color-coded tags. Tags have black printing; the reverse side is blank. All tags are 4¾″×2⅜″ and made of 0.013″ thick cardstock with a 7/32″ dia. fiber-reinforced eyelet. ***Style C*** tags are consecutively numbered (15405T49 from 000 to 099; 15405T52 from 000 to 999). ***Style D*** tags are identical except for the heading.

Heading	Tag Color	Pkg. of 100	Per Pkg.	Pkg. of 1,000	Per Pkg.
A...Accepted	Blue	15405T46	$7.55	15405T47	$56.93
B...Rejected	Red	15405T48	7.61	15405T51	56.96
C...Repairable or Rework	Green	15405T49	7.63	15405T52	56.95
D...Scrap	Yellow	15405T61	7.55	15405T64	56.97
D...Return to Stock	Yellow	15405T67	7.54	15405T72	56.97
D...Sample	White	15405T76	7.55	15405T79	56.97
D...Returned Goods	White	15405T82	7.55	15405T85	56.97
D...Inspected (shown)	Green	15405T88	7.55	15405T11	56.97
D...Tested	Green	15405T14	7.54	15405T17	56.97

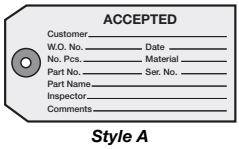

Style A

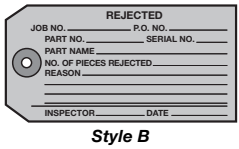

Style B

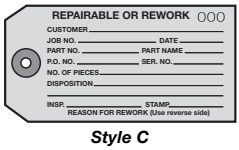

Style C

Style D

Weather-Resistant Inspection Tags

Aluminum-laminated cardstock tags are economical and allow you to record up to 15 dates and initials. Use a ball point pen to permanently mark impressions. The front of the tags have black printing; the back is blank. Tags are 4″×2″, 0.020″ thick, and have a 3/16″ dia. hole.

Plastic-laminated cardstock tags permit recording of up to 14 dates and initials. They resist moisture, oil, mild acids, and chemicals. Use a pencil to write on the matte surface—marks are erasable. Both the front and back have the same spaces for equipment ID, date, status, and signature. 15455T21 has green printing; 15455T22 has black printing. Background is white. Tags are 5⅝″×3⅛″, 0.025″ thick, and have a ⅜″ dia. zinc grommet-reinforced eyelet.

Tag Style	Pkg. Qty.		Per Pkg. 1-4	Per Pkg. 5-Up
Aluminum Laminated without Wire Tie	25	15455T11	$10.94	$9.41
Aluminum Laminated with 6″ Wire Tie	25	15455T12	11.23	9.55
Plastic Laminated "Safety Equipment Inspection"	10	15455T21	11.28	9.56
Plastic Laminated "Equipment Inspection"	10	15455T22	11.28	9.56

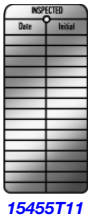

15455T11

15455T21

15455T22

Key Tags

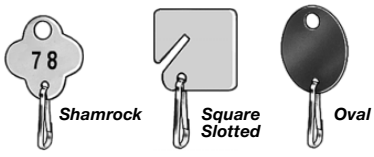

Organize and identify your keys with these tags. They're 1/16″ thick and have a snap hook that holds up to four keys.

Shamrock tags are made of white plastic with a 1/4″ dia. hole. Numbered tags have black lettering. ***Square slotted tags*** are designed for cabinets and panels that have slotted tag holders. Made of white plastic with 3/16″ Wd. × 3/4″ Lg. slot. Numbered tags have black lettering. ***Oval tags*** are made of red plastic with a 1/4″ dia. hole. Numbered tags have white lettering.

Also Available: Individual numbered shamrock tags and oval tags. Please ask for 1333A888 and specify shape and number. Square slotted number sequence tags in multiples of 20 (largest number cannot exceed 999). Please ask for 1333A35 and specify number sequence.

	Shamrock Tags			Square Slotted Tags			Oval Tags		
	Tag Size		Per Set	Tag Size		Per Set	Tag Size		Per Set
Number Sequences									
1- 40	1 1/4″ × 1 1/4″	1333A17	$9.78	1 1/2″ × 1 1/2″	1333A361	$14.80	1 3/8″ × 1 1/8″	1333A15	$13.80
1-100	1 1/4″ × 1 1/4″	1333A5	24.46	1 1/2″ × 1 1/2″	1333A32	37.00	1 3/8″ × 1 1/8″	1333A22	34.49
101-200	1 1/4″ × 1 1/4″	1333A61	24.46	1 1/2″ × 1 1/2″	1333A34	37.00	1 3/8″ × 1 1/8″	1333A23	34.49
201-300	1 1/4″ × 1 1/4″	1333A733	24.46	1 1/2″ × 1 1/2″	1333A365	37.00	1 3/8″ × 1 1/8″	1333A225	34.49
			Per Pkg.			Per Pkg.			Per Pkg.
Blank (20/Pkg.)	1 1/4″ × 1 1/4″	1333A1	$3.62	1 1/2″ × 1 1/2″	1333A31	$6.27	1 3/8″ × 1 1/8″	1333A21	$4.83

Message-Protecting Key Tags

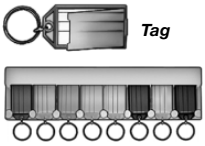

See-through flap keeps the paper inserts smudge-free. Tags are furnished with a 7/8″ dia. tempered steel split ring that holds up to five keys. They are 1 1/8″ × 2 1/4″ and 1/4″ thick. Tags are made of polypropylene and come in assorted colors.

Holder with eight tags includes pressure sensitive foam tape and two mounting screws. Size is 2 1/2″ Ht. × 10″ Wd. × 1/2″ Dp.

			Per Pkg.
Key Tags (25/Pkg.)	15445T42		$14.73
			Each
Holder with Eight Tags	15445T44		$6.82

Tag Ties

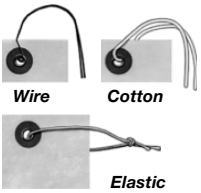

Lg.	Pkg. Qty.		Per Pkg.
0.018″ Dia. Galvanized Steel Wire			
7 1/2″	1,000	2010T14	$7.57
12″	1,000	2010T13	12.60
18″	500	2010T15	8.22
Polished Cotton String			
12″	1,000	2010T17	11.36
Elastic String			
7 3/4″	100	2010T19	4.71

Tag-Fastener Gun

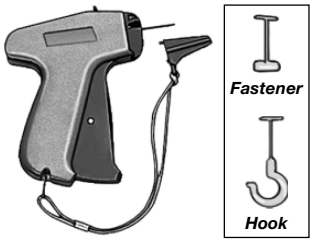

Fasten tags to woven material with this lightweight gun. It's made of high-impact polycarbonate with steel and brass moving parts and a needle guard. Needles are hardened steel. Fasteners and hooks are made of polypropylene. Color is natural.

Heavy duty needle is well-suited for heavier materials such as canvas, leather, and paperboard. Made of nickel-plated hardened steel.

Also Available: Guns, fasteners, and needles for fine fabrics. Please ask for 86005T888 and for fasteners, specify length.

Tag-Fastener Gun		86005T42	Each	$19.44

	Approx. Lg.	Pkg. Qty.		Per Pkg.
Fasteners	1/2″	2,500	86005T71	$5.25
Fasteners	1″	2,500	86005T73	5.55
Fasteners	2″	2,500	86005T75	5.75
Fasteners	3″	2,500	86005T77	5.99
Hooks	2″	1,000	86005T51	9.54
Repl. Needles		4	86005T47	11.60
Heavy Duty Needle			86005T55 Each	$3.75

Tag and Key Holders

A Cable Ties—Made of nylon.

Lg.	Wd.	Thick.	Pkg. Qty.		Per Pkg.
5 9/16″	0.130″	0.048″	100	86805T63	$4.23
8 3/4″	0.130″	0.048″	100	86805T64	5.35
11 1/4″	0.180″	0.052″	100	86805T65	6.87

B Reusable Bead Ties—Made of nylon.

Lg.	Thick.	Pkg. Qty.		Per Pkg.
5″	3/32″	100	86805T61	$5.75
10 3/4″	1/8″	50	86805T62	7.56

C Bead Chains—1/8″ ball diameter. Made of steel.

		Nickel Plated		Brass Plated	
Lg.	Pkg. Qty.		Per Pkg.		Per Pkg.
4 1/2″	100	8612T11	$9.04	8612T12	$9.04
6″	100	8612T14	11.81	8612T13	11.81

D Split Rings—Made of spring-tempered zinc-plated steel.

ID	Wire Dia.	Pkg. Qty.		Per Pkg.
0.428″	0.051″	100	86805T32	$11.23
0.460″	0.064″	100	86805T33	13.63
0.526″	0.064″	100	86805T34	14.43
0.596″	0.064″	50	86805T35	10.14
0.802″	0.072″	50	86805T36	10.67
0.932″	0.072″	50	86805T37	11.52
1.062″	0.082″	50	86805T38	13.79
1.159″	0.092″	25	86805T39	9.60
1.396″	0.105″	25	86805T41	13.50
2.016″	0.105″	10	86805T42	7.23

E Easy-On/Easy-Off Tang End Ring—Made of nickel-plated steel. ID is 1″; wire diameter is 0.062″. Package quantity is 100.

14375T9	Per Pkg.	$9.86

F Diamond Rings—Made of galvanized steel, these rings are available with either a blunt end or with a sharp end. Wire diameter is 0.050″.

	ID	Pkg. Qty.		Per Pkg.
Blunt End (shown)	15/16″ × 9/16″	100	1600T62	$3.16
Sharp End	15/16″ × 9/16″	100	1600T63	3.16

G Lift-Open/Snap-Shut Rings—Made of nickel-plated steel.

ID	Wire Dia.	Pkg. Qty.		Per Pkg.
3/4″	0.093″	50	8596T35	$7.47
1″	0.119″	50	8596T36	7.89
1 1/2″	0.120″	50	8596T38	9.53
2″	0.135″	50	8596T39	13.27
2 1/2″	0.135″	25	8596T25	12.50
3″	0.178″	10	8596T23	6.00

H Corrosion-Resistant Security Rings—Crimp the ends to create a seal. When seal is broken it's destroyed, so tampering is evident. Each ring also has a serial number so it can't be switched without detection. Made of Type 303 stainless steel. Wire diameter is 0.157″. Crimping and closer tools (sold separately) are required to seal the rings.

ID		Each	ID		Each
1″	81425T41	$6.37	3″	81425T44	$8.14
1 5/8″	81425T42	6.80	4″	81425T45	8.94
2″	81425T43	7.43			

Crimping Tool	81425T46	Each	$109.33
Closer Tool	81425T47	Each	$48.79

(Continued on following page)

Tag and Key Holders *(Continued from previous page)*

***J** Rectangle Ring with Threaded Sleeve*—Made of nickel-plated steel. Inside dimensions are 1/2″×1 3/4″. Wire diameter is 0.105″. Package quantity is 10.

1545T7 ..... **Per Pkg.** $7.32

***K** Rectangle Ring with Spring Sleeve*—Made of nickel-plated steel. Inside dimensions are 1/2″×1 3/4″. Wire diameter is 0.105″. Package quantity is 25.

1545T1 ..... **Per Pkg.** $11.28

***L** Twist Locks*—Suitable for reusable or permanent applications. Made from aircraft cable, locks can be twisted open, or permanently locked by crimping the locking clasp with pliers. Twist locks are 5″ long when opened. Package quantity is 5.

Material (Color)	Cable Dia.	ID		Per Pkg.
Stainless Steel	0.0625″	15/16″×15/8″	12625A25	$9.47
Nylon Coated (Black)	0.0975″	15/16″×19/16″	12625A22	10.26
Nylon Coated (Blue)	0.0975″	15/16″×19/16″	12625A23	10.26
Nylon Coated (Red)	0.0975″	15/16″×19/16″	12625A24	10.26
Nylon Coated (Asst.)★	0.0975″	15/16″×19/16″	12625A21	10.26

★ Contains one each of black, blue, green, purple, and red.

***M** Spring-Close Oval Ring*—Made of zinc-plated steel. Inside dimensions are 1 3/8″×2 1/2″. Wire diameter is 0.080″. Package quantity is 100.

86805T85 ..... **Per Pkg.** $9.73

***N** Oval Ring with Threaded Sleeve*—Made of anodized aluminum with a brass screw closure. Inside dimensions are 2 1/8″×1″. Wire diameter is 0.129″. Package quantity is 10.

To Order: Please specify color: blue, green, red, purple, or silver.

2059T15 ..... **Per Pkg.** $12.86

***P** Rings with Threaded Sleeve*—Turn the threaded end piece to open and close ring. Made of nickel-plated steel.

ID	Wire Dia.		Each	ID	Wire Dia.		Each
3″	0.178″	8614T5	$5.12	6″	0.198″	8614T3	$7.06
4″	0.178″	8614T1	5.79	7″	0.215″	8614T4	8.09
5″	0.196″	8614T2	6.45	12″	0.198″	8614T7	9.88

***Q** Spring-Close Safety Pins*—Made of Type 304 stainless steel.

Lg.	Wire Dia.	Pkg. Qty.		Per Pkg.
3 1/4″	0.100″	5	1233T11	$7.32
4 1/4″	0.136″	5	1233T12	8.29
5″	0.127″	5	1233T13	9.19

Slotted Card Holders

Holders have two 5/64″ dia. mounting holes (mounting fasteners not included; see page 3372 for finishing nails). ***Cards*** are blank. Color is white. ***Protectors*** are made of clear polyester and slide over the cards.

Side Feed

Side Feed with Card and Protector

Top Feed

Holder, Ht.×Wd.	Gold-Lacquered Steel Holders Pkg. Qty.		Per Pkg.	Brushed Aluminum Holders Pkg. Qty.		Per Pkg.	Cards Pkg. Qty.		Per Pkg.	Protectors Pkg. Qty.		Per Pkg.
Side Feed												
1/2″ × 2 1/16″	10	1512T11	$10.62	10	8676T41	$14.64	10	1512T111	$3.03	10	1528T321	$6.06
1/2″ × 3 1/16″	10	1512T12	11.18	5	8676T42	7.85	10	1512T112	3.03	10	1528T322	6.06
1/2″ × 4 5/16″	10	1512T13	12.14	5	8676T43	8.05	10	1512T113	3.11	10	1528T323	6.23
9/16″ × 2 13/16″	10	1512T14	12.14	5	8676T44	8.05	10	1512T114	3.11	10	1528T324	6.23
11/16″ × 2 1/2″	10	1512T15	12.15	5	8676T45	8.05	10	1512T115	3.11	10	1528T325	6.41
11/16″ × 4 3/16″	10	1512T16	11.81	5	8676T46	8.05	10	1512T116	3.11	10	1528T326	6.41
13/16″ × 3 13/16″	10	1512T18	12.14	5	8676T48	8.26	10	1512T118	3.21	10	1528T328	6.61
1 1/16″ × 3 13/16″	10	1512T25	12.14	5	8676T54	8.05	10	1512T124	3.30	10	1528T334	6.23
1 9/16″ × 3 7/16″	10	1512T28	12.14	5	8676T56	8.05	10	1512T126	3.30	10	1528T336	6.81
2 1/16″ × 4 15/16″	5	1512T32	6.09	5	8676T58	8.28	5	1512T135	3.11	5	1528T338	2.63
3 1/16″ × 5 7/16″	5	1512T33	10.60	5	8676T59	14.72	5	1512T129	1.57	5	1528T352	3.11
Top Feed												
1″ × 2 1/2″	10	1511T16	14.72	5	1588T51	11.43	10	1512T131	3.11	10	1528T361	6.23
1 3/8″ × 3 1/16″	10	1511T19	14.00	5	1588T69	11.43	10	1512T133	3.11	10	1528T365	6.23
2″ × 4 9/16″	5	1511T23	7.36	5	1588T34	12.63	5	1512T135	3.11	5	1528T338	2.63
2 1/2″ × 3 7/8″	5	1511T24	7.36	5	1588T21	12.63	5	1512T136	1.57	5	1528T374	3.11
3″ × 5 1/16″	5	1511T25	10.90	3	1588T22	9.77	5	1512T129	1.57	5	1528T352	3.11
4″ × 6 1/16″	5	1511T26	13.44	3	1588T57	12.31	5	1512T137	2.34	5	1528T71	4.69
8 1/2″ × 11 3/32″	1	1511T29	6.31	1	1588T25	10.08	5	1512T141	4.69	5	1528T51	13.29

Self-Adhesive Polystyrene Slotted Card Holders

Holders are made of gray plastic and have an adhesive back for easy mounting. ***Cards*** are blank. Color is white.

Holder Ht.	3″ Lg. Holders Pkg. Qty.		Per Pkg.	3″ Lg. Cards Pkg. Qty.		Per Pkg.	6″ Lg. Holders Pkg. Qty.		Per Pkg.	6″ Lg. Cards Pkg. Qty.		Per Pkg.	36″ Lg. Holders■	Each
3/8″	10	1515T21	$1.90	100	1515T314	$3.19	10	1515T34	$3.34	100	1515T315	$4.12	1515T1	$1.56
1/2″	10	1515T28	2.10	100	1515T316	3.49	10	1515T35	3.76	100	1515T317	4.58	1515T2	1.83
3/4″	10	1515T29	2.52	100	1515T318	3.74	10	1515T36	4.66	100	1515T319	5.40	1515T3	2.30
7/8″	10	1515T33	2.70	100	1515T32	4.07	10	1515T37	4.92	100	1515T321	5.70	1515T4	2.52
1″	10	1515T45	3.02	100	1515T322	4.23	10	1515T38	5.45	100	1515T323	6.20	1515T5	2.63
1 1/4″	10	1515T81	3.68	320	1515T334	11.63	10	1515T82	6.70	100	1515T326	7.05	1515T83	3.30
1 1/2″	10	1515T46	4.28	240	1515T335	11.90	10	1515T39	7.95	100	1515T324	7.75	1515T6	3.76
2″	10	1515T47	5.41	200	1515T336	12.20	10	1515T41	10.48	100	1515T325	9.55	1515T7	5.04
3″	10	1515T43	7.80	120	1515T337	12.50	—	—	—	—	—	—	—	—

■ Six 6″ cards are required to fill 36″ holders.

See-Thru Card Holders for Wire Shelving

Made of clear PVC, these card holders simply snap on to wire shelving with a 1 1/4″ face—no fasteners or cable ties required. Holders are 0.060″ thick and compatible with Eagle, Intermetro, and Nexel shelving. Furnished with blank white cardstock cards that easily slide into the holders for protection from dust and dirt.

Replacement cards are white and 6″ long. You can use them in 3″ long holders by cutting them in half.

Holder Size, Ht.×Lg.	Pkg. Qty.		Per Pkg.
1 5/16″×3″	12	1679T33	$10.49
1 5/16″×6″	6	1679T34	10.00
Replacement Cards	104	1679T42	5.97

Magnetic Slotted Card Holders

Made of flexible magnetic rubber, these holders mount on steel surfaces. ***Holders*** are black and 1/8″ thick. ***Cards*** are blank white cardstock. Use ***magnetic rubber rolls*** to make your own holder.

Also Available: Holders up to 50 ft. long. Please ask for 17895T999 and specify 1″, 1 7/8″, or 3 1/4″ height, and the length.

Holder Size, Ht. × Lg.	Holders Pkg. Qty.	Holders Per Pkg.	Cards Pkg. Qty.	Cards Per Pkg.
1″ × 3″	5	17895T11 $1.97	100	17895T111 $2.58
1″ × 4″	5	17895T12 2.63	100	17895T112 3.22
1″ × 6″	5	17895T13 2.84	104	17895T113 4.60
1 7/8″ × 3″	5	17895T15 2.86	100	17895T114 4.67
1 7/8″ × 4″	5	17895T16 3.29	100	17895T115 5.53
1 7/8″ × 6″	5	17895T17 4.61	100	17895T116 8.00

▲ Two cards are required to fill 12″ holder.

Holder Size, Ht. × Lg.	Holders Pkg. Qty.	Holders Per Pkg.	Cards Pkg. Qty.	Cards Per Pkg.
3 1/4″ × 5″	5	17895T21 $5.92	25	17895T118 $2.96
3 1/4″ × 6″	5	17895T22 6.58	25	17895T119 3.33
3 1/4″ × 12″	3	17895T25 7.89	25	17895T119▲ 3.33
				Per Roll
1″ Ht. × 25-ft. Roll of Magnetic Rubber				17895T41 $30.26
1 7/8″ Ht. × 25-ft. Roll of Magnetic Rubber				17895T42 46.05

See-Thru Protective Card Holders

Magnetic Back

Slide cards into these clear butyrate plastic holders for protection from dust and dirt. Matte finish reduces glare. Each pack of holders includes blank white cardstock cards.

Self-adhesive holders are 0.120″ thick; ***magnetic-back*** holders are 0.190″ thick.

Holder Size, Ht. × Lg.	HOLDERS Self-Adhesive Pkg. Qty.	Self-Adhesive Per Pkg.	Magnetic Back Pkg. Qty.	Magnetic Back Per Pkg.	REPL. CARDS Pkg. Qty.	REPL. CARDS Per Pkg.
1/2″ × 6″	6	15355T81 $5.07	6	15355T85 $6.55	104	15355T89 $6.46
1″ × 3″	12	15355T64 7.28	12	15355T62 8.26	100	15355T95 5.42
1″ × 6″	6	15355T13 7.78	6	15355T15 9.17	100	15355T92 7.10
1 1/2″ × 6″	6	15355T11 8.77	6	15355T41 10.73	102	15355T47 9.36
2″ × 6″	4	15355T14 7.63	4	15355T88 9.77	100	15355T93 11.23
2 1/2″ × 6″	4	15355T12 8.89	4	15355T66 10.55	100	15355T94 13.68

Cut-to-Size See-Thru Protective Card Holders

Cut just the length you need to customize these clear PVC holders. Self-adhesive backing lets you stick them almost anywhere. Slide card in the bottom opening for protection from dust and dirt. Protectors are 0.038″ thick. Cards are blank white cardstock (sold separately).

Ht.	HOLDERS 36″ Length Each	HOLDERS 48″ Length Each	Lg.	CARDS Pkg. Qty.	CARDS Per Pkg.
3/4″	1562T2 $6.45	1562T22 $8.38	12″	15	1562T38 $4.69
1″	1562T3 6.83	1562T23 8.70	12″	12	1562T39 5.00
1 1/4″	1562T4 7.02	1562T24 8.97	12″	12	1562T41 5.80
2″	1562T6 8.88	1562T26 11.32	12″	12	1562T45 6.57

Multi-Card Holders

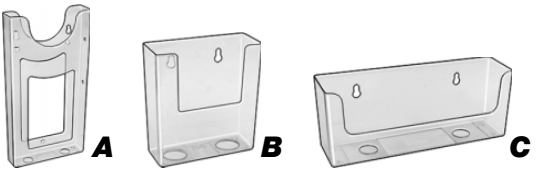

Made of 3/32″ thick clear polystyrene plastic. All have two keyhole mounting slots with 3/8″ dia. mounting holes (fasteners not included), and can also be mounted using the included adhesive tape.

	Overall Size, Ht. × Wd. × Dp.	Holds Material	Each
A	7 1/4″ × 3 5/8″ × 7/8″	Up to 3 1/2″ Wd.	4648T61 $2.82
B	5″ × 4 3/8″ × 1 5/8″	Up to 4 1/4″ Wd.	4648T62 3.53
C	3 1/2″ × 8 7/8″ × 2″	Up to 8 3/4″ Wd.	4648T63 5.87

Multi-Mount Card and Tag Holder

Store multiple cards, tags, ties, and marking pens in this clear acrylic holder. It includes screws, magnetic strips, and adhesive pads for mounting versatility.

Holder is 7 1/2″ Ht. × 4 1/2″ Wd. and 1 1/2″ Dp. Mounting holes are 1/8″ dia.

1259T3 ..... **Each** $17.15

Tag Protectors with Inserts

Ready to use, these clear plastic protectors come with blank white cardstock inserts. Protectors are 0.010″ thick and have a matte finish that reduces glare—great for bar codes.

Max. Tag Size	Holders Pkg. Qty.	Holders Per Pkg.	Repl. Cards Pkg. Qty.	Repl. Cards Per Pkg.
Self-Adhesive				
3″ × 5″	10	9696T1 $6.93	52	9696T5 $10.37
4″ × 6″	10	9696T3 8.36	50	9696T6 13.32
Magnetic				
3″ × 5″	10	9696T2 9.63	52	9696T5 10.37
4″ × 6″	10	9696T4 12.26	50	9696T6 13.32

Hang-Up Tag Protectors

Made of tough, 0.009″ thick clear vinyl, these protectors have a 5/16″ reinforced brass grommeted hole at the top for hanging.

Max. Tag Size, Ht. × Wd.	Standard Industry No.	Pkg. Qty.	Per Pkg.
4″ × 1 3/4″	2	10	1715T11 $6.89
4 3/4″ × 3″	6	10	1715T12 8.36
5 1/2″ × 3″	7	10	1715T13 8.59
6 1/4″ × 3 3/8″	8	10	1715T14 9.36
7 3/8″ × 3 3/8″	9	10	1715T15 9.68
7 1/2″ × 4″	10	10	1715T16 10.66

Two-Pouch Hang-Up Tag Protectors

Display two different size tags in one protector. Made of 0.008″ thick clear vinyl, they have a 1/4″ hole for hanging.

Max. Tag Size Top	Max. Tag Size Bottom	Pkg. Qty.	Per Pkg.
5 5/8″ × 3 1/2″	4 1/2″ × 3 1/2″	10	4430T3 $6.08
2 1/2″ × 3 3/4″	4 3/4″ × 3 3/4″	10	4430T4 5.08
6 1/2″ × 5 1/2″	2″ × 5 1/2″	10	4430T5 5.66

Light Duty Hang-Up Document Protectors

Made of clear polyethylene, these economical protectors are 0.004″ thick and have a 1/4″ dia. hole punched at the top for hanging. A zip press closure makes them weather resistant and resealable.

Max. Document Size	Pkg. Qty.		Per Pkg.
4″ × 6″	50	1257T1	$4.27
6″ × 9″	50	1257T3	6.42
8 1/2″ × 11″	50	1257T4	9.44
13″ × 16 3/4″	25	1257T5	8.83

Medium Duty Hang-Up Document Protectors

Durable with nonrip seams, these clear vinyl protectors are 0.008″ thick and have a 1/4″ dia. hole punched at the top for hanging.

Assortment includes 10 protectors: two each of 4″×6″, 5″×8″, 6″×9″, 8 1/2″×11″, and 9″×12″.

Max. Document Size	Pkg. Qty.		Per Pkg.
4″×6″	25	8395T32	$12.06
4″×6″	50	8395T3	25.20
5″×8″	15	8395T6	8.62
5″×8″	50	8395T5	29.50
6″×9″	15	8395T7	10.79
6″ × 9″	50	8395T4	$37.80
8 1/2″×11″	10	8395T8	8.67
8 1/2″×11″	50	8395T1	44.49
9″ ×12″	10	8395T9	9.62
9″ ×12″	50	8395T2	50.34
Assortment		8395T83	Each $9.77

Seal-Tight Extra-Heavy Duty Document Protectors

A double-fold, snap-close flap provides the ultimate protection for your important papers. Made of 0.012″ thick clear vinyl, these protectors guard documents from weather, dust, and vapors. Each corner is secured with a 1/4″ dia. nickel-plated brass grommet.

Protector with strap has a 20″ permanently attached vinyl strap for hanging.

Max. Document Size		Each
4 1/2″ × 5 1/2″	1734T14	$8.90
9″ × 7″	1734T16	9.10
9″ ×12″	1734T18	9.78
9″ ×12″ with Strap	1734T19	11.09

Magnetic Document Protectors

Apply these protectors to any metal surface. Made of 0.008″ thick clear vinyl, they have durable nonrip seams and a 1/8″ dia. hole punched at the top for hanging (except for the 2″×4″ size, which doesn't have a hole).

Max. Document Size	Pkg. Qty.		Per Pkg.
2″× 4″	5	14115T14	$8.66
3″× 5″	5	14115T17	8.88
4″× 6″	5	14115T19	10.52
4″× 9″	5	14115T22	11.51
5″× 8″	5	14115T25	11.79
6″× 9″	5	14115T28	12.83
9″×12″	3	14115T33	9.48

Permanent-Mount Document Protectors

For long-term posting of posters, evacuation plans, and other important information, choose these extremely durable protectors. They're made of 0.014″ thick rigid clear PVC and have an opening in the top to insert your document. Attach these protectors to walls and other surfaces with a fastener of your choice.

Max. Document Size	Pkg. Qty.		Per Pkg.
4″ × 6″	25	14995T16	$13.74
6″ × 9″	10	14995T17	11.74
8 1/2″ × 11″	5	14995T18	12.67
11″ ×17″	1	14995T19	3.19
18″ ×24″	1	14995T22	9.31
24″ ×36″	1	14995T24	14.26
29″ ×43″	1	14995T25	19.86

Heavy Duty Hang-Up Document Protectors

With taped and stitched edges, these clear protectors can withstand the wear and tear of frequent use. They're made of 0.006″ thick vinyl and have a 1/4″ dia. brass grommeted hole at the top for hanging.

One side clear protectors have a 0.01″ thick black cardboard on the other side.

Max. Document Size	One Side Clear Pkg. Qty.		Per Pkg.	Both Sides Clear Pkg. Qty.		Per Pkg.
4″ × 6″	10	1258T32	$9.95	10	1258T22	$8.40
5″ × 8″	10	1258T13	10.88	10	1258T23	10.08
6″ × 9″	15	1258T43	13.94	15	1258T41	10.72
8 1/2″ ×11″	10	1258T44	12.51	10	1258T28	9.55
8 1/2″ ×11″	25	1258T15	24.61	25	1258T25	23.19
9″ ×12″	10	1258T45	12.19	10	1258T29	11.96
9″ ×12″	25	1258T16	29.55	25	1258T26	27.88
11″ ×14″	5	1258T46	12.65	5	1258T42	9.84
11″ ×14″	25	1258T17	48.37	25	1258T27	46.49
12″ ×15″	—	—	—	1	1258T51	2.59
15″ ×18″	—	—	—	1	1258T55	3.65

Self-Adhesive Document Protectors

Adhesive backing lets you mount these protectors on any clean, dry surface. Made of clear vinyl, they have a 0.008″ thick front and 0.004″ thick back.

Max. Document Size	Pkg. Qty.		Per Pkg.
2″ × 3 1/2″	20	8603T81	$10.85
2″ × 3 1/2″	50	8603T8	23.49
4″ × 6″	15	8603T13	25.50
5″ × 8″	15	8603T9	15.43
8 1/2″ ×11″	10	8603T21	13.07
9″ ×12″	10	8603T22	13.51

Self-Adhesive Right-Angle Document Protectors

You can mount these protectors at a right angle to a wall or storage rack, increasing your document's visibility. Protectors are made of rigid white plastic with a 1″ wide adhesive strip for permanent application. Document slides into the 0.008″ thick clear vinyl sleeve or sleeves.

Max. Document Size, Ht.×Wd.	Single Sided	Each	Double Sided	Each
4″×6″	4837T45	$5.72	4837T47	$7.70
12″×9″	4837T91	11.18	4837T93	16.45

Self-Laminating Document Protectors

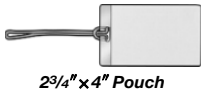

2 3/4″×4″ Pouch

Apply this adhesive polyester laminate directly to documents for permanent protection—simply peel off the backing and stick. Laminate is also acid-free and photo-safe.

Sheets and ***rolls*** can be applied to one or both sides.

Heavy duty pouches protect both sides and are thicker for added rigidity. *2 3/4″×4 1/2″* pouch comes with loops—great for luggage tags. *8 1/2″×11″* pouch is perfect for signs and notices.

Max. Document Size	Finish	Thick.	Pkg. Qty.		Per Pkg.
Sheets					
9″×12″	Clear	0.002″	15	1270T31	$10.92
9″×12″	Clear	0.003″	15	1270T35	12.71
9″×12″	Nonglare Matte	0.002″	15	1270T33	14.98
Heavy Duty Pouches					
2 3/4″× 4″	Clear	0.016″	10	5845T23	8.62
8 1/2″×11″	Clear	0.016″	2	5845T25	7.85
Rolls					Per Roll
24″×25′	Clear	0.002″	—	1270T46	$71.25
24″×25′	Clear	0.003″	—	1270T48	51.43
24″×25′	Nonglare Matte	0.002″	—	1270T47	64.88

Antimicrobial Self-Laminating Document Protector

The polyester laminate contains an additive that prevents the growth of bacteria and other microbes. This self-adhesive protector is permanent, waterproof, and tear resistant. To apply, simply peel off the backing and stick it to your document. Sheet covers one side of document; use two sheets to completely seal.

Max. Document Size	Finish	Thick.	Pkg. Qty.		Per Pkg.
9″×12″	Clear	0.003″	10	1270T37	$11.71

Color-Coding Tape

Bring at-a-glance identification to your shelving and equipment with this durable self-adhesive vinyl tape. Supplied on a 3″ dia. core. ***Standard*** tape is 0.003″ thick. ***Reflective*** tape is 0.006″ thick.

To Order: Please specify black, blue, green, orange, red, white, or yellow (unless noted).

Also Available: Other tape widths up to 12″. Please ask for 8581T55 and specify width, length, color, and standard or reflective style.

Standard

Wd. × Lg.		Per Roll	Wd. × Lg.		Per Roll	Wd. × Lg.		Per Roll
1/8″ × 10 yd.	8581T47	$10.45	1/2″ × 10 yd.	8581T35	$11.29	1 1/2″ × 10 yd.	8581T51	$12.58
1/4″ × 10 yd.	8581T34	10.71	3/4″ × 10 yd.	8581T49	11.56	2″ × 10 yd.	8581T37	13.15
3/8″ × 10 yd.	8581T48	11.02	1″ × 10 yd.	8581T36	11.88	4″ × 5 yd.	8581T38	15.30

Reflective

Wd. × Lg.		Per Roll
1/8″ × 10 yd.	8581T52	$15.44
1/4″ × 10 yd.	8581T41★	15.98
3/8″ × 10 yd.	8581T53	16.39
1/2″ × 10 yd.	8581T42★	16.75

★ Not available in black.

Color-Coding Tape Assortment

You'll have eight different colors of vinyl tape at your fingertips with this assortment. The included storage tray holds eight individual dispensers with rolls of blue, green, light purple, orange, pink, purple, teal, and yellow tape. Dispensers have a built-in cutter. Tape is 1/4″ Wd. × 3 ft. Lg. and 0.003″ thick. Refill tapes and additional tape colors (sold separately) come in 10-ft. long rolls.

Assortment ..... 4839T12 **Each** $50.40

Refill Tape

Color		Each	Color		Each	Color		Each
Blue	4839T31	$11.34	Orange	4839T37	$11.34	Teal	4839T35	$11.34
Green	4839T33	11.34	Pink	4839T51	11.34	Yellow	4839T39	11.34
Light Purple	4839T53	11.34	Purple	4839T38	11.34			

Additional Tape Colors

Color		Each
Beige	4839T71	$11.34
Gray	4839T59	11.34
White	4839T57	11.34

Color-Coding Dot Labels

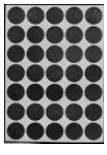

Removable

Permanent 1/4″ to 4″

Just apply these self-adhesive paper dots for a quick visual indicator on inventory and documents.

Removable labels are available in light blue and fluorescent colors: green, red, and yellow. 3/4″ labels also are available in nonfluorescent green, red, and yellow.

Permanent labels are available in dark blue, light blue, green, red, white, fluorescent orange, and fluorescent yellow (unless noted).

To Order: Please specify color.

Dia.	Thick.	Pkg. Qty.		Per Pkg.
Removable				
3/4″	0.007″	1,000	15395T21	$3.88
1 1/4″	0.007″	400	15395T41	6.94
Permanent				
1/4″	0.007″	450	15395T68▲	2.66

▲ Not available in orange.

Dia.	Thick.	Labels/Roll		Per Roll
Permanent (Cont.)				
1/2″	0.004″	100	15395T67	$4.10
3/4″	0.004″	100	15395T66	4.94
1″	0.004″	100	15395T65	6.03
1 1/2″	0.004″	100	15395T64	7.26
2″	0.004″	100	15395T63	8.80
3″	0.004″	100	15395T62	11.32
4″	0.004″	100	15395T61	14.20

Color-Coding Numbered and Days-of-the-Week Dot Labels

Keep track of inventory with these self-adhesive dots. They're made of 0.004″ thick paper and come 100 per roll. **Also Available:** Additional numbers. Please ask for 4643T999 and specify size, color, and number. *Note:* Number of digits may affect character height.

Numbered

White on Blue

Black on Light Green

White on Black

Black on Red

Black on Pink

Black on Yellow

Black on Orange

White on Green

Dia.	White on Blue	Black on Light Green	White on Black	Black on Red	Black on Pink	Black on Yellow	Black on Orange	White on Green
	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll
2″	4643T11 $11.03	4643T12 $11.03	4643T13 $11.03	4643T14 $11.03	4643T15 $11.03	4643T16 $11.03	4643T17 $11.03	4643T18 $11.03
3″	4643T35 14.20	4643T36 14.20	4643T37 14.20	4643T38 14.20	4643T39 14.20	4643T41 14.20	4643T42 14.20	4643T43 14.20

White on Orange

White on Blue

Black on Light Green

White on Black

Black on Red

Black on Pink

Black on Yellow

Black on Orange

Dia.	White on Orange	White on Blue	Black on Light Green	White on Black	Black on Red	Black on Pink	Black on Yellow	Black on Orange
	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll
2″	4643T19 $11.03	4643T21 $11.03	4643T22 $11.03	4643T23 $11.03	4643T24 $11.03	4643T25 $11.03	4643T26 $11.03	4643T27 $11.03
3″	4643T44 14.20	4643T45 14.20	4643T46 14.20	4643T47 14.20	4643T48 14.20	4643T49 14.20	4643T51 14.20	4643T52 14.20

Days of the Week

Black on Yellow

Black on Pink

Black on Orange

Black on Light Green

Black on Red

Black on Blue

Black on White

Dia.	Black on Yellow	Black on Pink	Black on Orange	Black on Light Green	Black on Red	Black on Blue	Black on White
	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll	Per Roll
2″	6717T81 $11.03	6717T82 $11.03	6717T83 $11.03	6717T84 $11.03	6717T85 $11.03	6717T86 $11.03	6717T87 $11.03

Color-Coding Arrow Labels

Mark key areas with these self-adhesive arrows.

Paper Arrows—Nonfluorescent colors are 0.006″ thick; fluorescent colors are 0.007″. **To Order:** Please specify blue, green, orange, red, white, yellow, fluorescent green, fluorescent pink, fluorescent red, or fluorescent yellow.

Vinyl Arrows—0.005″ thick. **To Order:** Please specify black, blue, green, red, or yellow.

Label Size, Wd. × Lg.	Roll Qty.	Paper Per Roll		Vinyl Per Roll	
1/8″ × 3/16″	1,000	16295T11	$3.81	16295T19	$4.13
3/16″ × 1/4″	1,000	16295T13	3.96	16295T21	4.30
1/4″ × 3/8″	1,000	16295T15	4.30	16295T22	4.71
5/16″ × 3/4″	1,000	16295T17	5.21	16295T23	5.82

Magnetic Labels

Position and reposition these magnetic labels on steel pallet racks and shelving. They have a magnetic base laminated to a white vinyl/polypropylene surface that you can write on using most wet and dry erase markers. The surface easily wipes clean. Labels are 0.020″ thick.

Label Size	Pkg. Qty.		Per Pkg.
2″ × 6″	12	1078T4	$8.93
3″ × 8″	12	1078T7	14.07

Protective See-Thru-Cover Labels

Write your message on the self-adhesive paper label with a pen or pencil and seal with the moisture-resistant clear polyester cover.

Label Size	Thick.	Pkg. Qty.	White Per Pkg.		Yellow Per Pkg.	
1 3/4″ × 3 1/4″	0.006″	10	8689T51	$8.79	8689T62	$8.79
3 1/4″ × 5 1/2″	0.006″	10	8689T73	7.65	8689T84	7.65

Thermal Transfer Printer Labels

Smudgeproof and self-adhesive, these paper labels are supplied on a 3″ dia. core with an 8″ OD. Labels are 0.003″ thick. Roll is perforated and 500 ft. long. *Note:* Labels work only with printers that have a ribbon.

Label Size	Labels/ Rolls		Per Roll 1-3	4-Up
3″ × 4″	1,950	1525T16	$22.32	$18.98
3 1/2″ × 8″	750	1525T21	18.06	15.35
4″ × 6″	1,000	1525T22	17.61	14.97
4″ × 6 1/2″	900	1525T35	21.05	17.89

"Made in America" Labels

17105T41 and 17105T46 *17105T42* *17105T43* *17105T44* *17105T45*

Made of red, silver, and blue aluminum foil, these self-adhesive labels are 0.004″ thick.

Label Size	Pkg. Qty.		Per Pkg. 1-4	5-Up
1/2″ × 1″	50	17105T41	$4.31	$3.73
1 3/4″ × 3 1/2″	50	17105T46	8.05	6.97
1″ × 1 1/2″	50	17105T42	4.80	4.15
1 1/4″ × 1 3/4″	50	17105T43	5.67	4.90
1 5/8″ × 1 7/16″	50	17105T44	5.67	4.90
2″ × 2 1/4″	50	17105T45	6.33	5.48

Consecutively Numbered Labels

Numbered 001 to 500, these labels are made of self-adhesive paper. Numbers are black on a color background. Labels are 0.005″ thick and supplied on a roll.

Color	Label Size		Each
Blue	3/4″ × 1 1/8″	1530T22	$15.15
White	3/4″ × 1 1/8″	1530T23	15.15
Yellow	3/4″ × 1 1/8″	1530T21	15.15

Color-Coding Caps

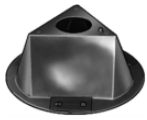

Use these polypropylene caps for quick and easy material identification, inventory control, and pallet staging. They're cone-shaped and 5″ high with a 10″ dia. base. Caps can be labeled using peel-and-stick characters up to 4 3/8″ high (see page 1934).

Color	Without Magnet	Each	With Magnet	Each
Black	55175T217	$3.97	55175T117	$5.36
Blue	55175T211	3.97	55175T111	5.36
Green	55175T213	3.97	55175T113	5.36
Orange	55175T214	3.97	55175T114	5.36
Red	55175T212	3.97	55175T112	5.36
White	55175T216	3.97	55175T116	5.36
Yellow	55175T215	3.97	55175T115	5.36

Removable Labels

Easily peel these self-adhesive paper labels from paper product surfaces if placed incorrectly—they remain intact and leave no residue. Labels are white and 0.007″ thick.

Label Size	Labels/ Sheet	Labels/ Pkg.		Per Pkg.
1/2″ × 1 3/4″	21	840	15905T82	$3.69
1″ × 3″	6	250	15905T83	3.69
1 1/2″ × 3″	4	160	15905T84	3.69
2″ × 4″	3	120	15905T85	3.69
3″ × 5″	1	40	15905T86	3.69

Pin-Feed Printer Labels

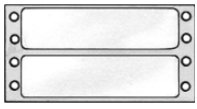

Simplify large-volume addressing and record keeping with these quick-feed, self-adhesive white paper labels. Labels are 0.003″ thick.

Label Size	Pkg. Qty.	Labels Across		Per Pkg. 1-4	5-Up
15/16″ × 3 1/2″	5,000	1	8589T31	$21.14	$17.85
1 7/16″ × 4″	1,000	1	8589T46	16.67	15.24
1 7/16″ × 4″	5,000	1	8589T32	37.25	31.67
2 15/16″ × 4″	500	1	8589T45	9.62	8.18
2 15/16″ × 4″	2,500	1	8589T36	51.71	43.96
2 15/16″ × 5″	300	1	8589T44	5.81	4.94
2 15/16″ × 5″	2,500	1	8589T37	63.43	53.92
3 15/16″ × 5″	300	1	8589T53	5.81	4.92
3 15/16″ × 5″	2,500	1	8589T35	85.86	72.97

Laser and Inkjet Printer Labels

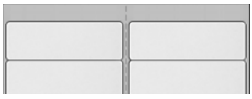

These self-adhesive white paper labels are 0.004″ thick. They are furnished on 8 1/2″ × 11″ sheets, 25 sheets per package.

Label Size	Labels/ Sheet	Labels/ Pkg.		Per Pkg. 1-4	5-Up
1/2″ × 1 3/4″	80	2,000	8102T21	$13.80	$11.82
1″ × 2 5/8″	30	750	8102T23	14.04	12.03
1″ × 4″	20	500	8102T25	14.04	12.03
2″ × 4″	10	250	8102T27	13.80	11.81
3 1/3″ × 4″	6	150	8102T29	14.04	12.03
8 1/2″ × 11″	1	25	8102T32	9.97	8.54

Easy-Peel Label Holders

Relabel racks and containers as often as you want without the scraping and sticky residue. First, apply the self-adhesive holders to surfaces such as metal, cardboard, and plastic. Any self-adhesive labels you apply to the holder will easily peel away when you want to remove them.

Economy holders are for indoor use. They're translucent white and 0.003″ thick.

All-purpose holders are for indoor and outdoor use. They're opaque white and 0.004″ thick.

Label Size	Economy	Each 1-9	10-Up	All Purpose	Each 1-9	10-Up
3″ × 5″	5844T15	$1.29	$1.08	5844T12	$2.79	$2.44
4 1/2″ × 6 1/2″	5844T16	2.25	1.87	5844T13	4.89	4.06
6″ × 8″	5844T17	3.83	3.20	5844T14	8.32	6.96

Material Management Labels

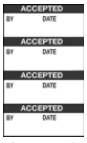

Polypropylene

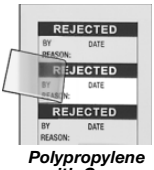

Polypropylene with Cover

Tyvek

Printed messages let you quickly mark and identify items, plus there's space for you to add more information. You can write on these labels with a pen or pencil, then peel and stick to any clean, dry surface. Size is 5/8″×1½″.

Polypropylene labels are 0.004″ thick and are furnished on pocket-size cards.

Polypropylene labels with cover have a clear laminate polyester cover to protect your information from weather and tampering. Labels are 0.006″ thick and are furnished on pocket-size cards.

Tyvek labels are water, chemical, and tear resistant. They are 0.008″ thick and are furnished in pocket-size books.

	ACCEPTED BY DATE	CALIBRATED BY DATE DUE	CERTIFICATION By Date Due	INSPECTED DATE INITIALS	MAINTENANCE BY DATE
	Green/White Per Pkg.	***Black/White*** Per Pkg.	***Black/White*** Per Pkg.	***Black/White*** Per Pkg.	***Black/White*** Per Pkg.
Polypropylene (140/Pkg.)	5886T35 $9.58	5886T31 $9.58	5886T32 $9.58	5886T39 $9.58	5886T33 $9.58
Polypropylene with Cover (70/Pkg.)	5886T72 11.60	5886T73 11.60	5886T74 11.60	5886T75 11.60	5886T76 11.60
	Each	Each	Each	Each	Each
Tyvek (240/Book)	5886T15 $21.43	5886T11 $21.43	5886T12 $21.43	5886T19 $21.43	5886T13 $21.43

	REJECTED BY DATE REASON:	REPAIRED BY INITIALS DATE	TESTED DATE INITIALS	SERIAL NO.	
	Red/White Per Pkg.	***Orange/White*** Per Pkg.	***Green/White*** Per Pkg.	***Black/White*** Per Pkg.	***White*** Per Pkg.
Polypropylene (140/Pkg.)	5886T34 $9.58	5886T41 $9.58	5886T42 $9.58	5886T65 $9.58	5886T66 $9.58
Polypropylene with Cover (70/Pkg.)	5886T77 11.60	5886T78 11.60	5886T79 11.60	5886T81 11.60	5886T82 11.60
	Each	Each	Each	Each	Each
Tyvek (240/Book)	5886T21 $21.43	5886T14 $21.43	5886T22 $21.43	5886T55 $21.43	5886T56 $21.43

Material Management Labels with Dispenser

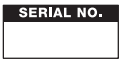

Furnished in a convenient disposable plastic dispenser, these self-adhesive Tyvek labels have printed messages as well as space for additional information—use a pen to write. Labels are 5/8″×1½″ and 0.006″ thick. Dispenser contains 100 labels.

HOLD ***Red/White*** Each	***REWORK*** ***Black/Yellow*** Each	***SCRAPPED*** ***Orange/White*** Each	***REJECTED*** ***Red/White*** Each	***ACCEPTED*** ***Green/White*** Each	***RETURN TO VENDOR*** ***Orange/White*** Each
5839T11 $9.42	5839T12 $9.42	5839T13 $9.42	5839T14 $9.42	5839T15 $9.42	5839T16 $9.42

CALIBRATION ***Green/White*** Each	***INSPECTED*** ***Black/White*** Each	***DUE FOR INSPECTION*** ***Orange/White*** Each	***HOLD FOR INSPECTION*** ***Blue/White*** Each	***TESTED*** ***Green/White*** Each	***CERTIFICATION*** ***Black/White*** Each
5839T21 $9.42	5839T22 $9.42	5839T23 $9.42	5839T24 $9.42	5839T25 $9.42	5839T26 $9.42

SERIAL NO. ***Black/White*** Each	***BIN NO.*** ***Green/White*** Each	***INVENTORY*** ***Black/White*** Each	***TOOL NO.*** ***Blue/White*** Each	***PROPERTY TAG*** ***Black/White*** Each	***STOCK NO.*** ***Green/White*** Each
5839T41 $9.42	5839T42 $9.42	5839T43 $9.42	5839T44 $9.42	5839T45 $9.42	5839T46 $9.42

Property Identification Labels

Write your company name and address or ID number on these self-adhesive labels using a pen.

Standard labels are made of durable aluminum with a vinyl coating.

Tamper-resistant labels are difficult to remove without destroying, so your information will remain intact. Made of vinyl.

Size	Color	Thick.	Pkg. Qty.		Per Pkg. 1-9	10-Up
Standard						
¾″×1½″	Black/Silver	0.002″	30	15195T51	$12.33	$10.82
Tamper Resistant						
¾″×1½″	Black/White	0.002″	10	53955T112	6.88	5.98
¾″×1½″	Red/White	0.002″	10	53955T111	6.88	5.98

Custom Identification Labels

Specify what you want printed on these self-adhesive polyester labels and we'll do it for you. They can be customized with letters and numbered identically or in sequence. Labels are silver with black lettering and 0.003″ thick.

To Order: Please specify letters and/or numbers desired. *Note:* Maximum number of characters per line for 15695T36 is 13 and for 15695T37 is 18. Minimum order is 50.

Label Size		Each 50-299	300-499	500-Up
¾″×1½″	15695T36	$2.14	$1.88	$1.50
1″ ×2½″	15695T37	2.43	2.13	1.70

Self-Adhesive Custom Labels

YOUR MESSAGE HERE

Create a message to suit your needs—including lines of text in different languages. Labels are 0.004″ thick vinyl. Temperature range is −40° to +176° F. Maximum characters include spaces.

To Order: Please specify color combination (black printing on yellow, orange, or white background; red printing on yellow or white background; or white printing on green background), wording for your message, and arrow direction (left or right) if desired.

Label Width	Lines	Maximum Label Length	Character Ht.	Maximum Characters		Each 1-9	10-Up
1″	1	20″	¾″	36	5708T13	$5.78	$4.91
2″	1	24″	1¼″	28	5708T15	8.49	7.21
2″	2	24″	¾″	72	5708T17	8.49	7.21
4″	1	40″	2½″	25	5708T19	11.38	9.66
4″	2	40″	1¼″	68	5708T21	11.38	9.66
4″	3	40″	¾″	120	5708T23	11.38	9.66

Label Dispensers

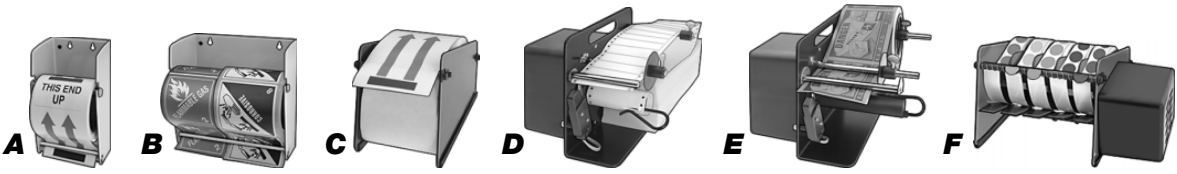

Make the task of labeling quick and easy with these steel paper-label dispensers.

Manual label dispensers are suitable for infrequent labeling or labeling in small quantities. Color is gray except for Style C, which is black. *Style A* has four 3/8″ dia. mounting holes; *Style B* has two. Mounting hardware not included.

Electric label dispensers automatically advance, peel, and release labels from the backing paper. They operate on 115 VAC, 60 Hz, draw 0.6 amps (except Style F, which draws 0.5 amps), and have a 5-ft. cord with three-prong plug. *Styles D* and *E* hold both roll and fan-fold labels. Color is black.

Adapter set for Styles A and B can change a 1″ core dia. into a 3″ core dia.

Style		Max. Label Wd.	Roll Cap.	Max. Roll Dia.	Max. Core Dia.	O'all Size, Ht. × Wd. × Dp.		Each
Manual								
A	Wall-Mount	4½″	★	6½″	1″	8½″ × 5″ × 4¼″	**85925T64**	$62.50
B	Wall-Mount	8½″	★	6½″	1″	8½″ × 9″ × 4¼″	**85925T66**	75.00
C	Desktop	4″	★	5½″	1″, 3″	5¼″ × 4¼″ × 9½″	**85925T57**	65.00
Electric								
D	Desktop	4½″	1	9″	1″, 3″	8″ × 10″ × 10″	**85925T41**	526.94
E	Desktop	6″	1	9″	1″, 3″	8″ × 11½″ × 10″	**85925T42**	589.03
F	Desktop	2″	5	5½″	1″, 3″	5¾″ × 10½″ × 10″	**85925T43**	380.56
Adapter Set for Styles A and B (2/Set)							**85925T92**	**Per Set** $2.91

★ Can vary; the total width can't exceed the max. label width shown.

Bar Code Scanners

Input data into your computer quickly and accurately. These bar code scanners come ready-to-use—just plug in and scan. Data can be scanned directly into any Windows, DOS, or NT application without additional software. Built-in decoders eliminate the need for a separate wedge decoder. They can read the most common bar codes: Code 39, 93, and 128; UPC-A and E; UCC-128 (unless noted); interleaved 2 of 5; Codabar; MSI Plessey; and EAN/JAN-8 and -13. Wired scanners include a 6-ft. cable and connections for USB ports. To adapt to PS/2, use the *optional USB to PS/2 adapter* (sold separately). These scanners can also be connected to laptops with USB capability.

Pen Wand Scanner— This contact scanner is the most economical choice. Simply swipe this scanner across bar codes to scan information.

CCD (Charge Coupled Device) Scanner— Scans bar codes faster than the pen wand. Capable of reading codes up to 1½″ away.

CCD Long-Range Scanner— Reads bar codes up to 12″ away.

Laser Scanner— Offers the longest range at 29″ and includes a USB cable. It also has connections for AT/XT ports.

Wireless CCD Scanner— In addition to codes listed above, this also reads Pharma Code, Industrial 2 of 5, Matrix 2 of 5, and Telepen. Comes with a 30-hour lithium-ion rechargeable battery, Bluetooth radio/recharger base, and a 6-ft. keyboard cable for the base. Scans up to 10″ away and transmits data to the base up to 160 ft. away.

		Each
Pen Wand Scanner	**1735T2**	$199.74
CCD Scanner	**1735T4**♣	243.24
CCD Long-Range Scanner	**1735T6**♣	333.33
Laser Scanner	**1735T7**	433.33
Wireless CCD Scanner	**1735T9**	793.33
Optional USB to PS/2 Adapter	**13555T14**	5.05

♣ Does not read UCC-128 bar codes.

Corrosion-Resistant Pipe and Cable Tags

Long after other tags deteriorate, these tags will still be holding strong.

ID tags are made of Type 304 stainless steel and can be engraved using steel stamps (see pages 1946-1948) or stamping press (see 1595T and 1596T on page 1945).

Lock ties are Type 304 stainless steel and used to permanently attach the tags. Maximum dia. is 2″ for ¼″ × 10″ tie and 4″ dia. for ¼″ × 16½″ tie.

Lock-tie tool is required to fasten lock ties.

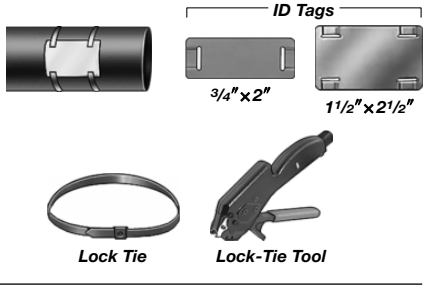

Tag Size	Thick.	Pkg. Qty.	Per Pkg.	
ID Tags				
¾″ × 2″	0.010″	10	**8647T41**	$7.34
1½″ × 2½″	0.015″	10	**8647T42**	10.18
Lock Ties				
¼″ × 10″	0.014″	5	**8647T43**	9.04
¼″ × 16½″	0.014″	5	**8647T44**	10.54
Lock-Tie Tool			**8647T48**	**Each** $349.88

Self-Adhesive Duct Markers

6137T11 *6137T12* *6137T13* *6137T14*

With large, easily visible 1″ letters printed in two directions, you can read these duct markers from any vantage point. They are made of 0.004″ thick vinyl and overall size is 4″ × 10″. Printing is black on a white background. Temperature range is –40° to +176° F. Package quantity is 5.

Per Pkg. $13.49

About Pipe Markers

ANSI/ASME A13.1-1996 pipe identification standard recommends that for a given pipe OD, markers have a minimum letter height, length of color field, color scheme, and flow-direction arrow. The color designations are:

Black on Yellow—Hazardous materials. *White on Blue*—Low-hazard gas.
White on Green—Low-hazard liquid. *White on Red*—Fire-quenching materials.

Our pipe markers with printed message meet or exceed the standard (except 5774T adhesive-backed, which require the addition of a flow-direction arrow). Blank markers as supplied meet the standard for length of color field. Use guidelines listed here to fully comply with the standard.

Pipe OD	Minimum Length of Color Field	Minimum Character Ht.
3/4″-1 1/4″	8″	1/2″
1 1/2″-2″	8″	3/4″
2 1/2″-6″	12″	1 1/4″
8″-10″	24″	2 1/2″
Over 10″	32″	3 1/2″

Pipe Markers

Black Message on Yellow	
Ammonia	Hydrogen
Condensate	Natural Gas
Fuel Oil	Nonpotable Water
Gas	Oxygen
Glycol	Propane Gas
Hot Water	Steam
Hot Water Return	Steam Return
Hot Water Supply	Steam Supply
Waste Water	

White Message on Green	
Chilled Water	Cold Water Supply
Chilled Water Return	Nitrogen
Chilled Water Supply	Potable Water
City Water	Process Water
Cold Water	Return
Cold Water Return	Supply
Vacuum	

White Message on Blue	
Air	Compressed Air
Air Return	Instrument Air
Air Supply	Outside Air

White Message on Red	
Sprinkler Fire	Sprinkler Water
Sprinkler	

Wrap-Around Pipe Markers

For Pipe OD 3/4″ to 5 7/8″

For Pipe OD 6″ and Larger

Easy to apply, even over dirty, rusty, or greasy surfaces. Just wrap markers completely around the pipe. Message is printed multiple times so it's visible from all angles and includes a flow-direction arrow. Write on *blank* markers with a permanent marker. For pipe sizes 6″ and larger, markers come with nylon ties for securing.

Standard markers are made of vinyl. Temperature range is –40° to +140° F. ***High-temperature*** markers are made of polyester laminate and withstand temperatures of –40° to +248° F. They also resist abrasion, humidity, UV exposure, and most chemicals.

To Order: For markers with message, specify message from those listed above. For standard blank markers with arrows, ask for 5774T992 and for high-temperature blank markers with arrows, ask for 6750T777. For both, specify color: blue, green, red, or yellow.

Also Available: Other messages and messages in other languages. Please ask for 5774T996 for standard markers with arrows or 6750T888 for high-temperature markers with arrows, and specify pipe size, message color, background color, and message.

For Pipe OD	Marker Lg.	Character Ht.	Thick.		Each
Standard					
3/4″-1 1/4″	8″	1/2″	0.020″	**5774T61**	$3.71
1 3/8″-2″	8″	3/4″	0.020″	**5774T62**	4.89
2 1/8″-3″	12″	1 1/4″	0.020″	**5774T64**	9.00
3 1/8″-4″	12″	1 1/4″	0.020″	**5774T66**	9.38
4 1/8″-4 1/2″	12″	1 1/4″	0.020″	**5774T67**	18.33
4 5/8″-5 7/8″	12″	1 1/4″	0.020″	**5774T68**	20.33
6″	12″	1 1/4″	0.020″	**5774T69**	20.33

For Pipe OD	Marker Lg.	Character Ht.	Thick.		Each
Standard (Cont.)					
6 1/8″-10″	24″	2 1/2″	0.020″	**5774T71**	$28.50
10 1/8″ and Up	32″	3 1/2″	0.020″	**5774T72**	41.43
High Temperature					
3/4″-2″	8″	3/4″	0.007″	**6750T2**	9.20
2 1/8″-5 7/8″	12″	1 1/4″	0.007″	**6750T4**	16.21
6″-10″	24″	2 1/2″	0.007″	**6750T6**	19.28
10 1/8″ and Up	32″	3 1/2″	0.007″	**6750T8**	20.65

Adhesive-Backed Pipe Markers

With Arrow

Just peel off paper backing and stick these markers to your clean, dry pipe. They're made of vinyl and message is printed once.

Without Arrow—To comply with ANSI/ASME standards, add a flow-direction arrow (sold separately on the following page). Temperature range is –40° to +170° F. **Also Available:** Other messages without arrow and messages in other languages. Please ask for 5774T998 and specify pipe size, message color, background color, and message.

With Arrow—Furnished in an economical roll, these markers come with a detachable arrow you can position at either end. Roll contains 10 identical messages. Temperature range is –65° to +200° F.

To Order: For markers with message, please specify message. For blank markers without arrow, ask for 5774T994 and for blank markers with arrow, ask for 16855T777. For both, specify color: blue, green, red, or yellow.

For Pipe OD	O'all Size	Character Ht.	Thick.	Pkg. Qty.		Per Pkg.
Without Arrow						
3/4″- 2″	2″ × 8″	3/4″	0.003″	10	**5774T65**	$10.18
2 1/8″- 6″	2 1/4″ × 13″	1 1/4″	0.003″	5	**5774T41**	8.86
6 1/8″-10″	4″ × 24″	2 1/2″	0.003″	1	**5774T42**	3.59
10 1/8″ and Up	4″ × 32″	3 1/2″	0.003″	1	**5774T48**	5.25

For Pipe OD	O'all Size	Character Ht.	Thick.		Per Roll
With Arrow					
3/4″-2″	1″ × 8″	3/4″	0.006″	**16855T35**	$4.40
2 1/8″-6″	2″ × 12″	1 1/4″	0.006″	**16855T36**	6.43

Mini Adhesive-Backed Pipe and Tubing Markers

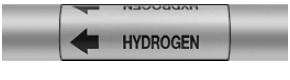

Small size makes these markers easy to apply—even to instrumentation pipes. They're made of vinyl and include a flow-direction arrow. Message is printed multiple times so it's visible from all angles. Temperature range is –40° to +180° F. *Note:* Because of their small size, these markers do not meet pipe marker identification standards.

To Order: For markers with message, specify message. For blank markers with arrows, ask for 6694T777 and specify color: blue, green, red, or yellow.

Also Available: Other messages and messages in other languages. Please ask for 6694T888 and specify message color, background color, and message.

For Pipe OD	O'all Size	Character Ht.	Thick.	Pkg. Qty.		Per Pkg.
1″ and Smaller	3″ × 3″	1/4″	0.003″	5	**6694T5**	$4.08

Self-Adhesive Flow-Direction Arrows

These bold arrows on a contrasting background clearly indicate the direction of flow. Made of 0.004″ thick vinyl. Temperature range is –40° to +180° F.

Arrow Markers

	1 1/8″×7″ Pkg. Qty.		Per Pkg.	2 1/4″×7″ Pkg. Qty.		Per Pkg.
Black on Yellow	20	16055T237	$9.82	10	16055T267	$11.00
White on Green	20	16055T233	9.82	10	16055T263	11.00
White on Blue	20	16055T231	9.82	10	16055T261	11.00
White on Red	20	16055T234	9.82	10	16055T264	11.00

2″ Wd. Banding Tape with Arrows

	10-Yd. Roll	Per Roll	18-Yd. Roll	Per Roll	30-Yd. Roll	Per Roll
Black on Yellow	16055T171	$11.25	16055T551	$19.79	16055T41	$30.89
White on Green	16055T174	11.25	16055T554	19.79	16055T44	30.89
White on Blue	16055T173	11.25	16055T553	19.79	16055T43	30.89
White on Red	16055T172	11.25	16055T552	19.79	16055T42	30.89

Electrical Equipment Markers

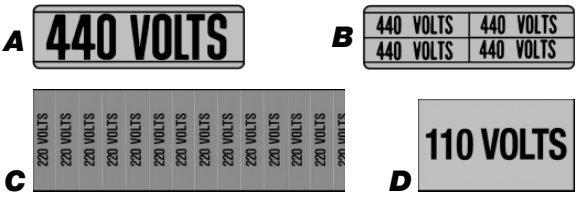

Promote safety by placing these voltage-indicating self-adhesive vinyl markers on power lines, conduit, fuse boxes, switches, and electrical equipment.

Standard markers have an eye-catching orange background with black printing. They're 0.004″ thick.

Reflective markers are highly visible with black printing on a yellow background. They're 0.005″ thick.

To Order: Please specify message from those listed below.

Also Available: Other messages. For standard markers, please ask for 5894T999 and for reflective markers, ask for 4740T999. Specify marker size and message for both.

Messages			
110 Volts	460 Volts	Power	+30 Volts
115 Volts	480 Volts	Lighting	+36 Volts
120 Volts	575 Volts	+0.75 Volts	+48 Volts
120/208 Volts	600 Volts	+1.0 Volts	+96 Volts
208 Volts	4160 Volts	+1.5 Volts	–5 Volts
220 Volts	___ Volts (fill in)	+1.8 Volts	–12 Volts
230 Volts	AC	+2.5 Volts	–15 Volts
240 Volts	DC	+3.3 Volts	–24 Volts
277 Volts	50 Hz	+5 Volts	–28 Volts
277 to 480 Volts	60 Hz	+12 Volts	–30 Volts
277/480 Volts	Single Phase	+15 Volts	–36 Volts
380 Volts	Three Phase	+24 Volts	–48 Volts
440 Volts	Circuit #	+28 Volts	–96 Volts

	Marker Size	Pkg. Qty.		Per Pkg.
Standard				
A	2 1/4″×9″	5	5894T111	$28.33
B	1 1/8″×4 1/2″	20	5894T222	30.00
C	1/2″×2 1/4″	90	5894T333	34.17
Reflective				
D	1 3/8″×1 7/8″	20	4740T77	15.20
D	1 3/4″×2 7/8″	10	4740T66	9.82
D	2 7/8″×4 7/8″	5	4740T55	13.22

Pocket-Size Voltage Marker Books

A convenient book keeps your markers handy. Made of 0.004″ thick vinyl, they have black printing on an orange background.

Message	Marker Size	Markers/ Book		Each
120 Volts	1 1/2″×3 1/4″	15	6115T13	$10.00
208 Volts	1 1/2″×3 1/4″	15	6115T16	10.00
220 Volts	1 1/2″×3 1/4″	15	6115T19	10.00
120, 208, & 220 Volts	1 1/2″×3 1/4″	15●	6115T22	10.00

● Contains six 120 Volt, six 208 Volt, and three 220 Volt markers.

Pocket-Size Safety Switch Marker Book

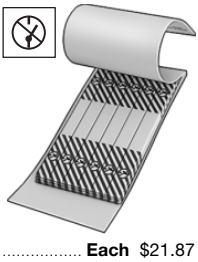

Provide an additional level of safety by sticking these warning markers across breakers or switches to warn users of potential danger. Each marker is printed with the international symbol for "Do not throw switch." They're made of 0.007″ thick vinyl-coated cloth with red and black printing on a white background.

Book contains 10 pages with six 1/2″×4 7/8″ markers per page for a total of 60 markers. It can be conveniently carried in your pocket. Great for use in conjunction with a lockout program.

5921T2 ..... **Each** $21.87

Wrap-On Electrical Wire Marker Dispensers

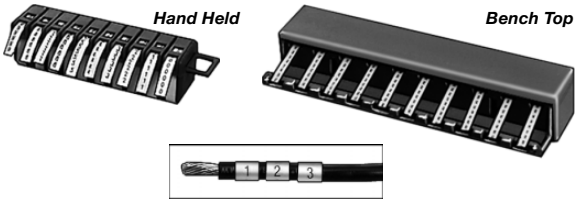

Access 10 rolls of commonly used markers with these convenient dispensers. They're made of blue plastic and are furnished with oil- and water-resistant marker tape.

Hand-held dispensers are 5 3/32″ Lg.×1 1/2″ Wd.×1 11/32″ Ht. (length includes handle), and include 10 rolls. Each roll has 76 already cut 1/4″×1 1/4″ markers. Markers are self-adhesive Tyvek and 0.006″ thick. Choose from white or NEMA color markers.

Bench-top dispenser has a steel cutoff blade and an overall size of 8 1/2″ Lg.×3″ Wd.×1 5/8″ Ht. Each roll is 1/4″×96″. Markers are white with black numbers, self-adhesive vinyl-coated cloth, and 0.012″ thick.

White markers have black characters. They repeat the same characters six or seven times on each marker. *Set* includes 0-9.

NEMA color markers are blank and meet NEMA color-coding standards. Set includes one roll each of the following colors: black, blue, brown, gray, green, orange, purple, red, white, and yellow.

Refill tape comes in either assortment sets or as individual characters. **To Order:** For white individual characters, please specify character (0-9, A-Z). For NEMA, specify color.

Dispensers

	Hand Held	Each	Bench Top	Each
With White Marker Set	8235T24	$30.15	8664T12	$33.49
With NEMA Marker Set	8235T25	30.15	____	____
Empty	8235T52	10.14	8664T11	15.18
Replacement Blade	____	____	8664T81	3.02

Refill Tape

	For Hand Held	Per Set	For Bench Top	Per Set
Assortment				
White 10-Roll	8235T26	$20.32	8664T762	$26.52
10-Color NEMA	8235T27	20.32	____	____
Individual		**Per Roll**		**Per Roll**
White (76/Roll)	8235T888	$2.11	8664T74	$2.75
NEMA Colors (76/Roll)	8235T777	2.11	____	____

Individual Character Wrap-On Wire Markers

Individual Characters

Character Set

Get only the characters you need for wire and machine tool marking. Markers are adhesive-backed and made of durable 0.012″ thick vinyl-coated cloth. They're approximately 1½″ long and the width varies depending on the character. Characters are black on a white background.

To Order: For individual characters 0-100, A-Z, +, and dash, please ask for 24795T1 and specify character. For machine tool characters 1L1, 1L2, 1L3, 2L1, 2L2, 2L3, 3L1, 3L2, 3L3, 1T1, 1T2, 1T3, 2T1, 2T2, 2T3, 3T1, 3T2, and 3T3, please ask for 24795T83 and specify character.

Individual Characters

Characters	Pkg. Qty.		Per Pkg.
0-100, A-Z, +, dash	360■	24795T1	$10.53
Machine Tool	250	24795T83	10.53

■ Character 100 has a package quantity of 250.

Character Sets

Characters	Qty. Each Character	Set Qty.		Per Set
1-33	10	330	24795T41	$10.53
34-66	10	330	24795T52	10.53
67-99	10	330	24795T63	10.53
A-Z	10	260	24795T74	10.53

Wrap-On Wire Marker Books

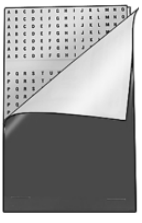

We have the marker selection you need in these convenient pocket-size books. Markers are adhesive-backed and 3/16″ × 1¼″. All except NEMA colors have black characters on a white background.

Vinyl-coated cloth markers are 0.012″ thick. ***Tyvek*** markers are 0.006″ thick and tear resistant.

NEMA color markers include the following colors: black, blue, brown, gray, green, orange, purple, red, white, and yellow.

Style	Characters (Qty.)	Marker Qty.	*Vinyl-Coated Cloth*	Each	*Tyvek*	Each
Numeric	0-9 (45 each)	450	5945T71	$23.13	5945T81	$15.00
Numeric	1-45 (10 each)	450	5945T73	23.13	5945T83	15.00
Numeric	46-90 (10 each)	450	5945T74	23.13	5945T84	15.00
Alphanumeric	A-Z, 0-15, +, –, / (10 each)	450	5945T72	23.13	5945T82	15.00
Telecom	1-3, A-C (45 each); L1, L2, L3, T1, T2, and T3 (30 each)	450	5945T76	23.13	5945T86	15.00
Electrical	+, –, AC, DC, Blank, POS, NEG, GND, NEUT, SPARE (45 each)	450	5945T77	23.13	5945T87	15.00
NEMA Colors	Blank (45 each)	450	5945T75	23.13	5945T85	15.00

Write-and-Wrap Wire Markers

Book

Dispenser

Write your own message on these blank markers using a pen or pencil, then wrap them around wires or cables. Each marker is divided into a writing area and a clear plastic laminate that wraps around the message to protect it. Markers are made of adhesive-backed vinyl.

Markers in pocket-size books are 0.004″ thick. ***Markers in dispensers*** are 0.004″ thick. Dispensers are plastic, disposable, and have an overall size of 4½″ × 1 3/16″ × 2⅛″.

Writing Area	Marker Size	Marker Qty.		Each
Markers in Pocket-Size Books				
1″ × ¾″	1″ × 3″	60	8668T32	$15.47
1″ × 1″	1″ × 6″	30	8668T31	15.62
Markers in Dispensers				
¾″ × ¾″	¾″ × 3″	90	8668T11	19.77
¾″ × ½″	¾″ × 1⅞″	150	8668T13	20.29
¾″ × 5/16″	¾″ × 1¼″	300	8668T12	20.29

Snap-On Wire Markers

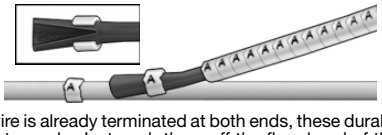

Even if the wire is already terminated at both ends, these durable markers are a snap to apply. Just push them off the flared end of the holder onto the wire. Markers are durable white plastic with easy-to-read black characters. Furnished in holders of 30 markers each. **To Order:** For individual characters, please specify 0-9, A-Z, –, +, or blank. For character sets, please specify gauge (26-24, 22-20, 18, 16-14, or 14-12 AWG).

Individual Characters

For AWG	For OD	Holders Per Pkg.	Pkg. Qty.		Per Pkg.
26-24	0.040″-0.055″	4	120	31475T67	$14.90
22-20	0.055″-0.071″	4	120	31475T78	14.90
18	0.075″-0.104″	4	120	31475T84	14.90
16-14	0.102″-0.138″	4	120	31475T89	14.90
14-12	0.128″-0.177″	4	120	31475T95	14.90

Character Sets

	Qty. Each Character	Set Qty.		Per Set
0-9	30	300	31475T1	$37.98
A-Z	30	780	31475T2	93.75

Slip-On Wire Markers

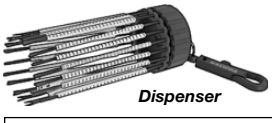

Dispenser

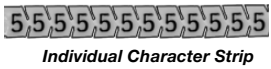

Individual Character Strip

Slide marker off the holder and onto wiring.

Simply slide a marker off the holder and slip it onto a wire before terminating it. Made of durable PVC, they won't peel or fade like adhesive-backed markers can. Range listed below in parentheses is wire OD.

NEMA color markers include the following colors: black, blue, brown, gray, green, orange, purple, red, white, and yellow.

To Order: For white or yellow marker sets, please specify color.

Dispensers with Character Set

Conveniently store 20 holders, each with 25 identical characters. Dispensers have a belt-loop hook for easy access and portability, and are furnished with 20 holders (two sets of 0-9).

Characters	Qty. Each Character	Marker Qty.	*For 22-16 AWG (0.051″-0.118″)*	Each	*For 16-10 AWG (0.059″-0.197″)*	Each
With White or Yellow Markers						
0-9	50	500	12405T2	$45.61	12405T1	$46.32
With NEMA Color Markers						
0-9	50	500	12405T4	53.07	12405T3	53.90

Character Sets

Each set comes with 10 holders, each containing 25 identical characters. Use alone or to refill dispenser.

Characters	Qty. Each Character	Marker Qty.	*For 22-16 AWG (0.051″-0.118″)*	Per Set	*For 16-10 AWG (0.059″-0.197″)*	Per Set
With White or Yellow Markers						
0-9	25	250	12405T61	$15.52	12405T51	$15.81
A-J	25	250	12405T62	15.52	12405T52	15.81
K-T	25	250	12405T63	15.52	12405T53	15.81
U-Z, +, –, /, ⏚	25	250	12405T64	15.52	12405T54	15.81
With NEMA Color Markers						
0-9	25	250	12405T6	17.24	12405T5	17.82

Individual Characters

Choose holders or strips of 25. Holders can be used to refill dispensers; strips can be used to refill holders. **To Order:** Please specify white or yellow and the character (0-9, A-Z, +, –, /, or ⏚).

Characters	Pkg. Qty.	*For 22-16 AWG (0.051″-0.118″)*	Per Pkg.	*For 16-10 AWG (0.059″-0.197″)*	Per Pkg.
Holders	250	12405T28	$15.52	12405T38	$15.81
Strips	250	12405T74	10.61	12405T84	11.34

Manual Label Printers and Tape

Printers

Manual operation means you never have to hunt for batteries or an electrical outlet. Printers emboss 3/16″ high uppercase characters horizontally.

Printer for 3/8″ Wide Vinyl Tape— Made of high-impact ABS plastic with plastic wheels. Use with 3/8″ wide vinyl tape. Includes one roll of 3/8″ Wd. × 0.013″ Thick. × 9′8″ long adhesive-backed black tape. Characters include A-Z, 0-9, period, $, and £ (British currency).

Printer for 1/2″ Wide Metal Tape— Made of cast aluminum with plastic wheels, it has a built-in 3/32″ hole punch. Use with 1/2″ wide metal tape. Includes two rolls of tape: one roll of 1/2″ Wd. × 0.007″ Thick. × 21-ft. long stainless steel tape and one roll of 1/2″ Wd. × 0.007″ Thick. × 16-ft. long aluminum tape. Furnished in a plastic carrying case. Characters include A-Z, 2-9 (letters O and I double as 0 and 1), period, and dash.

For Vinyl Tape

For Vinyl and Metal Tape

		Each
For 3/8″ Wide Vinyl Tape	1617T5	$28.40
For 1/2″ Wide Metal Tape	1598T53	188.14

Tape

Vinyl tape is 0.013″ thick and resists most chemicals and acids. Temp. range is 0° to 248° F. Compatible with 1617T5. Embossed characters are white. **To Order:** Please specify color: black, blue, or red.

Metal tape is 0.007″ thick and has superior resistance to chemicals, moisture, and abrasion. Compatible with 1598T53. *Aluminum* resists temperatures up to 482° F; *stainless steel* resists temperatures up to 2372° F.

	Lg.		Each
Vinyl			
3/8″ Wide Adhesive-Backed Glossy	9′8″	1524T24	$2.53
Metal			
1/2″ Wide Aluminum	16 ft.	1598T41	$3.90
1/2″ Wide Adhesive-Backed Aluminum	12 ft.	1598T61	7.25
1/2″ Wide Stainless Steel	21 ft.	1598T62	6.51

Manual Label Printer/Applicator Guns

Print and apply labels in one swift motion. Just like the printer guns used by grocery store clerks, these guns can print multiple characters at once on adhesive-backed paper labels. Characters are black. Printer guns are plastic and come with one roll of white labels.

Single-line printer prints up to six characters across. Characters include: 0-9 (one band has 10 and 12), period, / (forward slash), $, ¢, +, FOR, TAX, and EA.

Double-line printer prints up to eight characters on each line. Characters include: 0-9 (one band has 10, 11, and 12), period, / (forward slash), $, ¢ , +, FOR, +TX, TX, and EA.

Double-line alphanumeric printer prints up to 10 characters on each line. Top line has A-Z, 0-9, £, dash, and period; bottom line has 0-9, period, / (forward slash), $, ¢, and FOR.

Labels are sold separately and include an ink roller. *Permanent labels* are 0.005″ thick and have a temperature range of –50° to +200° F, unless noted. **To Order:** Please specify color: white or red. *Removable labels* are white, 0.006″ thick, and have a temperature range of –65° to +160° F, unless noted.

Single and Double Line

Double Line Alphanumeric

	Char. Ht. Upper Line	Char. Ht. Lower Line	PRINTER GUNS	Each	LABELS Label Size	Labels Per Roll	Rolls Per Pkg.	Permanent	Per Pkg.	Removable	Per Pkg.
Single Line	1/8″	—	1633T8	$74.06	1/2″ × 3/4″	1,000	10	1633T11	$31.00	1633T3	$31.00
Double Line	5/32″	5/32″	1633T9	115.60	5/8″ × 3/4″	750	10	1633T13	32.25	1633T16★	32.25
Double Line Alphanumeric	1/8″	11/64″	1633T25	183.32	5/8″ × 1″	1,000	12	1633T33★	87.84	—	—

Replacement Ink Roller for Single Line (5/Pkg.)	1633T5	Per Pkg.	$14.86
Replacement Ink Roller for Double Line (5/Pkg.)	1633T7	Per Pkg.	$14.86
Replacement Ink Roller for Double Line Alphanumeric	1633T26	Each	$2.94

★ Temperature range is –65° to +200° F.

Replacement Label Printer Cartridges

Tape Cartridges for Brother Label Printers— 0.004″ thick. Temperature range is –22 to +392° F, unless noted.

Wd.	Print Color	Background Color	Brother Model	Pkg. Qty.		Per Pkg.
TC Laminated Tape— *25 ft.*						
3/8″	Black	White	TC20Z1	1	6785T11	$24.82
3/8″	White	Black	TC34Z	2	6785T13	49.64
3/8″	White	Clear	TC14Z/195	1	6785T15	24.82
1/2″	Black	Clear	TC10	2	6785T12	41.09
1/2″	Black	White	TC20	2	6785T14	41.09
1/2″	Black	Yellow	TC7001	1	6785T16	20.54
M Tape— *26 ft. Not rated for temperature.*						
1/2″	Black	White	M231	1	6785T19	12.68
TZE Laminated Tape— *26 ft.*						
1/4″	Black	Clear	TZE111	1	6785T21	16.26
1/4″	Black	White	TZE211	1	6785T23	16.26
3/8″	Black	Clear	TZE121	1	6785T22	18.20
TZE Laminated Tape— *26 ft. (Cont.)*						
3/8″	Black	White	TZE221	1	6785T24	$18.20
1/2″	Black	Clear	TZE131	1	6785T31	23.12
1/2″	Black	White	TZE231	1	6785T33	23.12
1/2″	Black	Yellow	TZE631	1	6785T39	23.12
1/2″	White	Black	TZE335	1	6785T37	23.12
1/2″	Red	White	TZE232	1	6785T35	23.12
3/4″	Black	Clear	TZE141	1	6785T32	23.54
3/4″	Black	White	TZE241	1	6785T34	23.54
3/4″	Black	Yellow	TZE641	1	6785T36	23.54
1″	Black	Clear	TZE151	1	6785T41	27.68
1″	Black	White	TZE251	1	6785T43	27.68
1″	Black	Yellow	TZE651	1	6785T45	27.68

Tape Cartridges and Shrink Tubing Cartridges for Kroy Model 650— Characters are black.

Tape Cartridges— Tape is 50 ft. long, 0.003″ thick, and has a temperature range of –40° to +320° F. **To Order:** Please specify background color: clear, white, or yellow.

Shrink Tube Cartridges— Tape is 9.2 feet long, 0.020″ thick, and has a shrink temperature of 194° F. **To Order:** Please specify background color: white or yellow.

		Each
1/2″ Tape Cartridge	16065T7	$42.49
1/8″ Shrink Tubing Cartridge	16065T3	38.13
3/16″ Shrink Tubing Cartridge	16065T4	39.22
1/4″ Shrink Tubing Cartridge	16065T9	40.31

Technical Pens

These streamlined pens have a white plastic shell, reservoir cartridge, airtight cap (color-coded and numbered), and Type 303 stainless steel drawing point.

To Order: For pen and point, please specify 3X0/.25 mm, 00/.30 mm, 0/.35 mm, 1/.50 mm, 2/.60 mm, 3/.80 mm, or 4/1.20 mm line width.

7-pen set includes all seven pen widths above, 3/4-oz. bottle of ink, technical brochure, and 2 nib keys in a hinged plastic case.

Ink is waterproof, fast-drying, high-opacity black India ink.

Cleaning kit includes pressure bulb and 2-oz. jar of cleaning solution.

		Each
Technical Pen	13285T5	$22.43
7-Pen Set	13285T7	118.01
3/4-oz. Bottle of Ink	13285T2	4.66
Cleaning Kit	13285T3	18.89
Repl. Stainless Steel Point	13285T6	15.90
Repl. Cleaning Solution, 2-oz. Jar	13285T4	3.88

Battery-Operated Label Printers

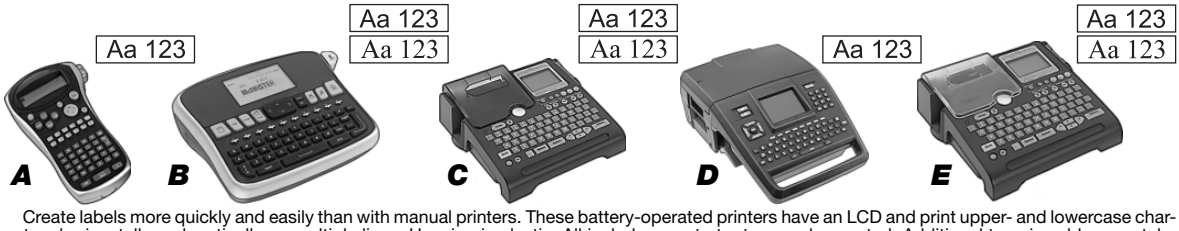

Create labels more quickly and easily than with manual printers. These battery-operated printers have an LCD and print upper- and lowercase characters horizontally and vertically on multiple lines. Housing is plastic. All include one starter tape, unless noted. Additional tape is sold separately.

(A) Label Printer for 1/4″-1/2″ Wide Labels and (B) Label Printer for 1/4″-3/4″ Wide Labels

Operate on a rechargeable battery (charging adapter included).

(A) Label Printer for 1/4″-1/2″ Wide Labels— Prints one line of text on 1/4″ and 3/8″ tape widths and two lines on 1/2″ tape width. Maximum character height is 5/16″. Machine has a two-line viewable display, stores up to nine labels, and includes 1/2″ wide standard tape that prints black characters on a white background.

(B) Label Printer for 1/4″-3/4″ Wide Labels— Prints one line of text on 1/4″ tape width and two lines on 3/8″, 1/2″, and 3/4″ tape widths. Maximum character height is 1/2″. Printer has a two-line viewable display and print preview. It stores up to 9 labels in the memory and recalls the last 10 labels printed. Furnished with one 3/4″ wide standard tape cartridge that prints black characters on a white background.

	Overall Size, Lg. × Wd. × Ht.		Each
A	8 1/2″ × 7 1/2″ × 4″	86085T38	$87.06
B	11 1/2″ × 7 1/2″ × 4″	15385T67	105.50

Standard tape is made of polyester-coated nylon and has a temperature range of 0° to 248° F. **To Order:** For 1/4″ wide tape, specify black characters on a clear or white background; for 3/8″ wide tape, specify black characters on a clear or white background, blue characters on a white background, or red characters on a white background; and for 1/2″ and 3/4″ wide tape, specify black characters on a clear, green, red, white, or yellow background, black characters on a blue background (1/2″ wide tape only), blue or red characters on a white background, red characters on a clear background (1/2″ wide tape only), blue characters on a clear background (1/2″ wide tape only), or white characters on a clear or black background.

High-temperature tape is made of polyester and has a range of 0° to 338° F. It prints black characters on a white background.

For Printer	Tape Size, Wd. × Thick. × Lg.		Each
Standard			
A&B	1/4″ × 0.005″ × 23 ft.	15385T5	$20.00
A&B	3/8″ × 0.005″ × 23 ft.	15385T7	20.00
A&B	1/2″ × 0.005″ × 23 ft.	15385T8	20.00
B	3/4″ × 0.005″ × 23 ft.	15385T9	27.16
High Temperature			
A&B	3/8″ × 0.005″ × 18 ft.	15385T2	19.93
A&B	1/2″ × 0.005″ × 18 ft.	15385T3	19.93
B	3/4″ × 0.005″ × 18 ft.	15385T4	22.31

(C) Label and Bar Code Printer for 1/4″-1″ Wide Labels

Print in five languages and six bar code formats. Unit accommodates five tape widths (1/4″, 3/8″, 1/2″, 3/4″, 1″) and has a four-line viewable display and built-in tape trimmer. It prints and automatically cuts labels, bar codes, and up to eight lines of text on 1″ wide tape; maximum character height is 1/2″. Includes 1″ wide tape that prints black characters on a white background. Operates on six AA batteries (included) and can be used with the optional 110 VAC adapter (sold separately).

	Overall Size, Lg. × Wd. × Ht.		Each
C	8″ × 8″ × 2 1/2″	16225T58	$342.16
Optional 110 VAC Adapter		16225T54	54.21
Plastic Carrying Case		16225T56	54.21
Replacement AA Batteries (4/Pkg.)		71455K53	Per Pkg. $2.94

Tape is made of polyester and has a temperature range of –80° to +302° F. **To Order:** Please specify black characters on blue, clear, green, red, white, or yellow background or white lettering on a black background. 1/2″ to 1″ wide tape is also offered with white characters on a blue, green, or red background.

Tape Size, Wd. × Thick. × Lg.		Each
1/4″ × 0.003″ × 26 ft.	16225T71	$22.67
3/8″ × 0.003″ × 26 ft.	16225T72	22.67
1/2″ × 0.003″ × 26 ft.	16225T73	22.67
3/4″ × 0.003″ × 26 ft.	16225T74	27.02
1″ × 0.003″ × 26 ft.	16225T75	27.02

(D) Label and Bar Code Printer for 1/2″-2″ Wide Labels

Print on three tape widths (1/2″, 1″, 2″) and in three languages. Unit has a full-color viewable display that shows text and graphics. Prints 39 and 128 bar code formats and includes a program for designing and printing custom labels. Comes with a roll of 250 1 1/2″ Wd. × 1″ Ht. white polyester labels, 150 feet of black ribbon, and a plastic carrying case. Starter tape not included (sold separately). Unit also includes a rechargeable battery and 120 VAC adapter. Adapter can also be used to recharge the battery.

	Overall Size, Lg. × Wd. × Ht.		Each
D	13″ × 9 1/2″ × 4 1/2″	5942K14	$1,021.06
Replacement 120 VAC Adapter/Battery Charger		5942K19	65.47
Replacement Rechargeable Battery		5942K13	88.27

Tape is vinyl and has a temperature range of –40° to +180° F. **To Order:** Please specify black, blue, clear, green, orange, red, white, or yellow.

Ribbon can't be the same color as the tape you are using. **To Order:** Please specify black, blue, red, or white.

Tape Size, Wd. × Thick. × Lg.		Per Roll
1/2″ × 0.005″ × 50 ft.	5942K61	$24.24
1″ × 0.005″ × 50 ft.	5942K71	68.69
2″ × 0.005″ × 50 ft.	5942K81	103.09
Ribbon (150 ft. long)	5942K51	66.59

(E) Label Printer for 1/4″-1″ Wide Labels and 1/8″-1/2″ Wide Heat-Shrink Tubing

Produce two types of labels with one machine. Print labels on five tape widths (1/4″, 3/8″, 1/2″, 3/4″, 1″) as well as create messages on five widths of heat-shrink tubing (1/8″, 3/16″, 1/4″, 3/8″, 1/2″) for wire marking. Maximum character height is 1/2″; you can fit eight lines of text on 1″ wide tape. Unit can print in five languages and six bar code formats, plus it automatically cuts labels. It has a four-line viewable display that offers prompts in English and Spanish.

Printer is supplied with one 8-ft. length of 3/16″ wide heat-shrink tubing that prints black characters on a white background and one 26-ft. length of 1″ wide tape that prints black characters on a white background. It has a built-in tape trimmer, operates on six AA batteries (included), and can be used with the included 110 VAC adapter. Comes in a plastic carrying case.

	Overall Size, Lg. × Wd. × Ht.		Each
E	8″ × 8″ × 2 1/2″	4512T6	$380.73
Replacement 110 VAC Adapter		16225T54	54.21
Replacement AA Batteries (4/Pkg.)		71455K53	Per Pkg. $2.94

Tape is made of polyester and has a temperature range of –80° to +302° F. **To Order:** Please specify black characters on blue, clear, green, red, white, or yellow background or white lettering on a black background. 1/2″ to 1″ wide tape is also offered with white characters on a blue, green, or red background.

Heat-shrink tubing is made of polyolefin and has a shrink temperature of 194° F. 3/8″ wide heat-shrink tubing has black characters on a white background. **To Order:** Please specify black characters on a white or yellow background for 1/8″ and 1/4″ wide heat-shrink tubing; or black characters on a white, red, or yellow background for 3/16″ and 1/2″ wide heat-shrink tubing.

	Tape			Heat-Shrink Tubing		
Wd. × Thick.	Lg.		Each	Lg.		Each
1/8″ × 0.003″	___	___	___	8 ft.	4512T11	$29.00
3/16″ × 0.003″	___	___	___	8 ft.	4512T14	32.55
1/4″ × 0.003″	26 ft.	16225T71	$22.67	8 ft.	4512T12	33.56
3/8″ × 0.003″	26 ft.	16225T72	22.67	8 ft.	4512T15	37.18
1/2″ × 0.003″	26 ft.	16225T73	22.67	8 ft.	4512T13	38.58
3/4″ × 0.003″	26 ft.	16225T74	27.02	___	___	___
1″ × 0.003″	26 ft.	16225T75	27.02	___	___	___

PC-Driven Label and Heat-Shrink Tubing Printer

Use with your PC for greater printing versatility than standard label printers. Print on five widths of polyester tape (1/4″, 3/8″, 1/2″, 3/4″, and 1″) for labels and on four widths of heat-shrink tubing (1/8″, 3/16″, 1/4″, and 1/2″) for wire marking.

Create messages with uppercase and lowercase characters in any font on your PC. Printer comes with software that includes 150 templates, 1,000 characters and symbols, and eight bar code formats. Print horizontally and vertically. Maximum character height is 8″ on multiple pieces of tape (for example, an 8″ character would print on eight pieces of 1″ wide tape). Printer automatically cuts labels for you.

Printer includes 3-ft. USB cord, one label cartridge (1″ wide tape with black characters on a white background), and 120 VAC adapter. Size is 7″ Wd. × 2″ Ht. × 5″ Dp. Housing is plastic.

System requirements: Windows 2000, XP, or Vista, 500 MHz, 192 MB of RAM, 30 MB hard drive space, CD-ROM drive, and USB port.

For heat-shrink tubing and tape, see 16225T and 4512T on pg. 1972.

		Each
Printer	6687T2	$486.73
Replacement 120 VAC Adapter	6687T6	42.12

Light Duty Pouch Laminator

For quick, intermittent laminating applications, choose this economical machine. It laminates items up to 9″ wide.

Laminator has an ABS plastic housing and an indicating light that shows when the machine is ready for operation. It includes a 6-ft. cord with a two-prong plug, operates on 120 VAC, 60 Hz, and draws a maximum of 2.5 amps. UL and C-UL listed.

Pouches are made of polyethylene and ethylene vinyl acetate.

Laminator

Overall Size, Wd. × Ht. × Dp.		Each
14 1/2″ × 4 3/4″ × 6 1/2″	38575T61	$126.05

Laminating Pouches

	Overall Size, Wd. × Lg.	Laminated Thick.	Pkg. Qty.		Per Pkg.
Business Card	2 1/4″ × 3 3/4″	0.010″	100	38575T53	$9.83
Luggage Tag w/ Strap	2 1/2″ × 4 1/4″	0.010″	25	38575T67	7.85
Letter	8 3/4″ × 11 1/4″	0.006″	25	38575T51	11.07
Legal	9″ × 14 1/2″	0.006″	15	38575T52	5.49

Heavy Duty Pouch Laminators

A

B

C

Slot Punch

Made of steel and aluminum, these machines handle your most demanding laminating jobs. Silicone rollers resist heat and provide better adhesive release. An adjustable thermostat controls heat output for best results. Include an 8-ft. cord with three-prong plug and operate on 115 VAC, 60 Hz. UL listed. *Style A* draws 3 amps, *Style B* 5 amps, and *Style C* 7 amps.

Kit for Style A laminator comes with 220 2 7/8″ × 5 3/8″ tags with 20 each of blank and 10 different safety messages (Caution, Check Out, Danger, Danger—Do Not Operate, Lockout, Lubrication Instructions, Right-to-Know, Start-Up Instructions, Valve No., and Warning), 100 tag pouches, and two small laminating carriers.

Kits for Style B and C laminators include all of the above, plus ten 8 1/2″ × 14″ signs with messages (Caution, Certificate of Inspection, Danger, Emergency Telephone Numbers, and Reserved Parking For), five sign laminating pouches with four 1/8″ dia. holes, five lockout/tagout forms, one large laminating carrier, and five each of the 5868T26, 5868T31, and 5868T63 pouches.

Pouches are made of acid-free photo-safe polyester with a clear finish except 5868T78, which has a matte finish for scanning. All pouches come with a cardboard carrier that protects the laminator roller from excess pouch adhesive and adds pressure to create a more professional result.

Slot punch can punch one laminated card or tag. Punched slot is 9/64″ × 1/2″.

Laminators

	Accepts Pouch Wd. Up To	Overall Size, Wd. × Ht. × Dp.	*Without Kit*	Each	*With Kit*	Each
A	3 7/16″	8″ × 5″ × 9″	5868T79	$258.88	5868T85	$290.13
B	9 13/16″	15″ × 5″ × 9″	5868T84	371.57	5868T86	420.49
C	12″	16″ × 5″ × 8″	5868T18	466.60	5868T19	517.30

Laminating Pouches

	Overall Size, Wd. × Lg.	Laminated Thick.	Pkg. Qty.		Per Pkg.
Credit Card	2 1/8″ × 3 3/8″	0.014″	25	5868T61	$7.00
Business Card	2 1/4″ × 3 3/4″	0.014″	25	5868T12	8.17
Identification Card	2 5/16″ × 3 1/4″	0.014″	25	5868T47	7.00
Luggage Tag without Strap Slot	2 1/2″ × 4 1/4″	0.014″	25	5868T13	7.89
Luggage Tag with Strap Slot	2 1/2″ × 4 1/4″	0.014″	25	5868T14	7.89
Government Identification Card	2 5/8″ × 3 7/8″	0.014″	25	5868T62	8.72
Identification Tag	3 3/16″ × 5 3/4″	0.020″	10	5868T77	5.29
Identification Tag, Matte Finish	3 3/16″ × 5 3/4″	0.020″	10	5868T78	5.62

Laminating Pouches (Cont.)

	Overall Size, Wd. × Lg.	Laminated Thick.	Pkg. Qty.		Per Pkg.
Index Card	3 1/2″ × 5 1/2″	0.010″	25	5868T21	$12.68
Index Card	3 1/2″ × 5 1/2″	0.014″	25	5868T22	12.00
Letter	9″ × 11 1/2″	0.006″	25	5868T23	15.06
Letter	9″ × 11 1/2″	0.010″	10	5868T24	13.06
Letter, One Side Adhesive	9″ × 11 1/2″	0.006″	5	5868T25	8.24
Letter, Hang-Up	9″ × 12″	0.010″	10	5868T26	15.50
3-Hole Looseleaf	9 1/2″ × 11 3/8″	0.006″	10	5868T48	7.85
3-Hole Looseleaf	9 1/2″ × 11 3/8″	0.010″	5	5868T31	7.94
Legal	9″ × 14 1/2″	0.006″	10	5868T49	8.37
Legal	9″ × 14 1/2″	0.010″	10	5868T38	15.76
Legal, One Side Adhesive	9″ × 14 1/2″	0.006″	5	5868T63	11.51
Chart	12″ × 15″	0.006″	10	5868T39	10.98
Oversize Chart	12″ × 18″	0.006″	10	5868T41	13.84
Oversize Chart	12″ × 18″	0.010″	5	5868T42	14.15

Accessories

Leather Luggage Strap for 5868T14	50	5868T87	11.77
Slot Punch	1742T6	Each	$53.97

Manual Laminator

No electricity or warm-up time necessary—just turn the handle and guide your document through. Laminator has a plastic housing and comes with a 15-ft. two-sided lamination cartridge that applies a 9″ wide clear laminate. All laminates are 0.003″ thick per side and made of polypropylene. A cutting blade trims the laminate to the length you need.

Additional 9″ wide ***laminate*** rolls are sold separately.

Overall Size, Wd. × Ht. × Dp.		Each
15 7/8″ × 8 3/4″ × 8 3/4″	1062T1	$57.83
Laminate		**Per Roll**
Two-Sided, 60 ft. Lg.	1062T5	$30.61
One Side Laminate/One Side Adhesive, 25 ft. Lg.	1062T6	31.91

Roll Laminator

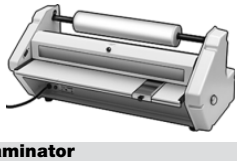

Take on large laminating jobs and wider items than pouch laminators. This machine has a working speed of 5 ft./min. and can laminate items up to 27″ wide. It can hold two supply rolls to laminate the top and bottom at the same time for a finished thickness of 0.003″. Laminator is made of aluminum and plastic and includes a 6-ft. cord with three-prong plug. Operates on 120 VAC, 60 Hz and draws a maximum of 15 amps. UL listed.

Laminate is made of 0.0015″ thick clear polyester and polyethylene and comes on a 3 3/4″ dia. roll with a 1″ dia. core.

Laminator

Overall Size, Wd. × Ht. × Dp.		Each
33″ × 15″ × 21″	1403T37	$1,258.10

Laminate

Wd. × Lg.		Per Roll
18″ × 500 ft.	1403T41	$38.31
25″ × 500 ft.	1403T42	53.20
27″ × 500 ft.	1403T43	57.42

Photo Identification Software and Camera

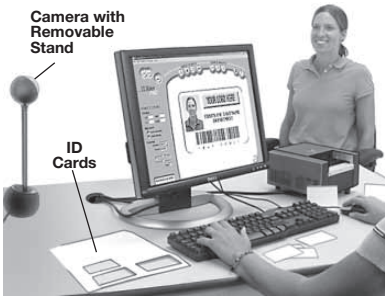

Create custom ID cards quickly and efficiently with your PC. Simply choose a template, import a digital photo, then print on your inkjet or laser printer.

ID software offers 50 templates and supports 13 bar code formats to produce single- and double-sided cards. Background and clip art software with 40 backgrounds and 100 illustrations is included to add detail to your ID cards. Minimum requirements are Windows 98, 64 MB of RAM, 120 MB free hard-drive space, a 400 MHz processor, and a 32-bit display monitor.

Digital camera has an auto focus feature and 2 megapixel resolution. Camera can be placed on any flat surface or raised using the included 9″ high removable stand. Furnished with a 6-ft. USB cable and installation software on CD-ROM.

Blank ID cards are 1⅞″×3⅛″ (furnished on an 8½″×11″ sheet for feeding through a printer) and 0.008″ thick. Each package contains five sheets with eight cards per sheet.

For laminator and laminating pouches, see 5868T79 and 5868T61 on page 1973.

			Each
ID Software with Background and Clip Art Software	1742T82		$570.00
Digital Camera	1742T85		151.69
Blank ID Cards (40/Pkg.)	1742T78	Per Pkg.	$3.17

Badges, Badge Holders, and Accessories

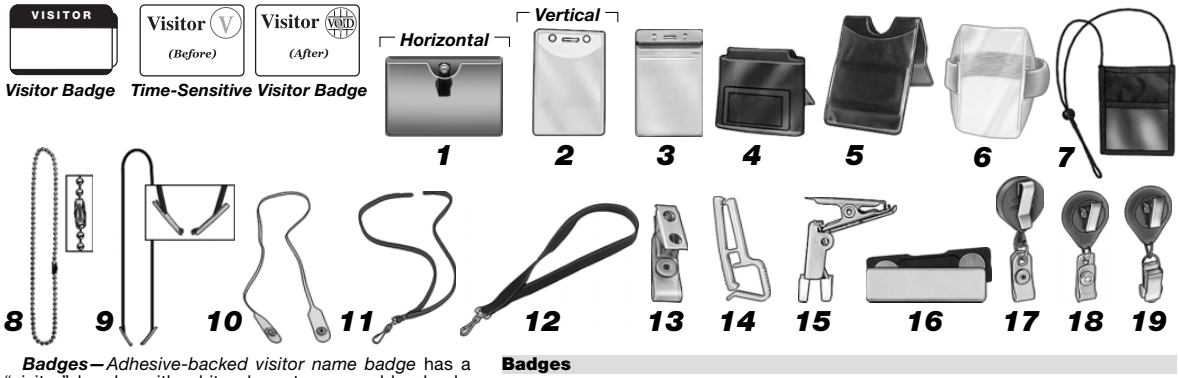

Badges—*Adhesive-backed visitor name badge* has a "visitor" header with white characters on a blue background. It's 2¼″ Ht.×3½″ Wd. and made of 0.003″ thick paper. *Adhesive-backed time-sensitive visitor expiration badge* reveals a red "void" message 24 hours after application that can be seen up to 50 ft. away. It's 2″ Ht.×3″ Wd. and made of 0.004″ thick white paper. Header reads "visitor" in blue lettering. *Blank badge insert* can be used with badge holders. It's 1⅞″ Ht.×3⅛″ Wd. and made of 0.006″ thick white paper. Comes on six perforated sheets with 8 badges per sheet. Use with laser and inkjet printers.

Badge Holders—Conveniently carry and display your identification card with these holders. All are vinyl and come in both a horizontal and vertical badge style, unless noted. **To Order:** Please specify horizontal or vertical.

(3) Sealable holder with strap/chain holes has a zip-press closure to protect your badge.

(4) Magnetic holder has a clear plastic pocket on the front. *(5) Magnetic holder with thumb notch* makes it easy to remove your badge or ID card. It has a clear plastic pocket on the front. *(6) Arm band* is elastic with a hook-and-loop closure.

(7) Badge holder with pouch and 34″ neck cord has a clear plastic pocket on the front and a full-sized pouch on the back. The pouch has a zipper to secure your personal items. The cord is made of nylon and adjusts to fit with the locking slider. Available in horizontal style only.

Cords and Clips—*(9) 30″ elastic neck cord* has metal barbs at each end that quickly attach to badge holders with strap holes. **To Order:** For (9), please specify color: black or white. *(12) 36″ polyester neck cord* is ¾″ wide and lies flat when worn. End fitting is nickel-plated steel. **To Order:** For (12), please specify color: black, blue, green, or red. *(13) Permanent vinyl strap metal clip* cannot be opened once it's snapped. *(15) Metal clip with card clamp* grips badge, eliminating the need to punch holes. *(16) Two-piece magnetic clip* holds badges in place through clothing. Just attach adhesive-backed steel plate to badge.

Retractable straps have a spring-loaded nylon cord that feeds from a plastic case. *(19) No-twist retractable swivel strap clip-on with card clamp* holds swipe cards and cards without slots. **To Order:** For (17&19), please specify color: black or blue. For (18), please specify color: black, blue, or white.

Badges

	Pkg. Qty.		Per Pkg.
Adhesive-Backed Visitor Name Badge	100	2226T13	$3.88
Adhesive-Backed Time-Sensitive Visitor Expiration Badge	24	2226T15	11.33
Blank Badge Insert (Not Shown)	40	2226T14	3.80

Badge Holders

		Color	Holds Badge Size Up To	Pkg. Qty.		Per Pkg.
1	Clip-On	Clear	2⅜″×3⅜″	10	86795T3	$5.19
2	Strap/Chain Holes	Clear	2⅜″×3⅜″	10	86795T2	4.11
3	Sealable with Strap/Chain Holes	Clear	2⅝″×3⅞″	5	86795T5	2.89
4	Magnetic	Black	2⅜″×3⅜″	10	86795T1	12.62
5	Magnetic with Thumb Notch	Black	2⅜″×3⅜″	5	86795T4	9.11
						Each
6	Arm Band	Clear	2⅜″×3⅜″	—	86795T14	$4.23
7	With Pouch and 34″ Neck Cord ♦	Black	4″ ×3″	—	86795T93	4.20

♦ Horizontal badge style only.

Chains, Cords, and Clips

		Pkg. Qty.		Per Pkg.
8	30″ Metal Bead Neck Chain	10	86795T28	$4.09
9	30″ Elastic Neck Cord with Barbs	10	86795T29	5.29
10	27″ Vinyl Break-Away Neck Cord	10	86795T27	6.90
10	37″ Vinyl Break-Away Neck Cord	10	86795T26	8.90
11	34″ Woven Polyester Break-Away Neck Cord	5	92555A100	4.28
12	36″ Flat Polyester Neck Cord with Swivel Hook	5	86795T81	4.28
13	Vinyl Strap Metal Clip	10	86795T25	1.41
13	Permanent Vinyl Strap Metal Clip	5	86795T46	3.79
14	Acetal Clip	10	86795T24	2.54
15	Metal Clip with Card Clamp	10	86795T45	6.22
16	Two-Piece Magnetic Clip	1	86795T6	1.80

Retractable Straps

		Cord Lg.		Each
17	Retractable Strap Clip-On	36″	86795T33	$6.80
18	No-Twist Retractable Swivel Strap Clip-On	34″	86795T76	3.23
19	No-Twist Retractable Swivel Strap Clip-On w/Card Clamp	34″	86795T77	3.60

Tear-Resistant Tyvek Wrist Bands

An adhesive closure ensures visitors keep their wrist bands on—they must be cut to be removed. Made of tough, waterproof Tyvek, they're lightweight and adjust to any size. You can also write on them with a pencil, ball-point pen, or permanent marker. Bands are 10″ Lg.×¾″ Wd. and 0.005″ thick.

To Order: Please specify color: blue, green, orange, pink, purple, red, or yellow.

Wrist Bands (25/Pkg.)	2693T5	Per Pkg.	$8.25

Clocks

All have a white dial with numerals, minute marks, hour and minute hands, and a second hand (unless noted).

Standard clocks 8418T15, 13165T301, and 1339T601 are for outdoor as well as indoor use.

Traceable clocks come with a certificate traceable to NIST (National Institute of Standards and Technology).

With Thermometer—Temperature range is –4° to +104° F.

With Thermometer and Humidity Indicator—Temperature range is –34° to +116° F. Humidity range is 8% to 92%.

Indoor/Outdoor with Thermometer and Humidity Indicator—Temperature range is –30° to +130° F. Humidity range is 0% to 100%.

Atomic clocks synchronize with the NIST atomic clock and automatically adjust for daylight-saving time. When synchronized, they are accurate to the second.

With Thermometer and Humidity Indicator—Temperature range is –10° to +130° F. Humidity range is 1% to 99%.

To Order: Please specify case color where necessary.

A

B

C

D

E

F

Battery Operated—Require one AA battery (not included), unless noted.

	Dial Dia.	O'all Dia.	Available Case Colors		Each
Standard—*Plastic Case and Plastic Lens*					
A	6″	7⅜″	Black	8412T61	$17.21
A	8″	9″	Black, Brown, Gray	8412T18	20.40
A	9½″	11⅜″	Black, White	8412T4	16.43
A	11⅜″	12″	Black, Brown, White	8412T8	16.43
A	11 29/32″	13⅜″	Black, Brown	8412T9	27.50
A	12″	12¾″	Black, White	8418T15	27.27
A	19″	19⅜″	Black	8412T501■	52.22
B	8⅞″	10⅜″	Black	12005T103★	27.03
B	11 29/32″	13⅜″	Black	12005T201★	27.03
Standard—*Plastic Case and Glass Lens*					
A	13⅛″	14″	Black	8412T711	29.03
Standard—*Metal Case and Plastic Lens*					
A	11″	11⅞″	Black	12085T201	77.10
A	14¼″	15¾″	Black	12085T401	106.10
A	15⅜″	16″	Black	13165T301	143.58
Standard—*Metal Case and Glass Lens*					
A	12½″	13¼″	Black	1393T141	59.24
A	15⅜″	16″	Black	1393T81	105.90
Walnut Finish—*Wood Case and Glass Lens*					
C	11 5/16″	16″	Brown	14865T8	$107.83
Traceable with Thermometer—*Plastic Case and Glass Lens*					
D	5″	7″	Gray	1442T66♠	60.26
Traceable with Thermometer and Humidity Indicator—*Plastic Case and Glass Lens*					
E	9″	11″ × 12½″	Gray	2186T77♠	69.91
Indoor/Outdoor with Thermometer and Humidity Indicator—*Metal Case and Glass Lens*					
F	13½″	18″	Black	8418T16	59.18
Auto-Adjust for Daylight Saving Time—*Plastic Case and Plastic Lens*					
A	12″	13⅜″	Black	5771T18✓	27.50
Atomic—*Plastic Case and Plastic Lens*					
A	8″	9¼″	Black	6769T31	34.58
A	12″	12¾″	Black	6769T32	43.27
A	14″	16½″	Black	6769T37	50.99
Atomic with Thermometer and Humidity Indicator—*Metal Case and Glass Lens*					
F	14″	18″	Gray	6769T36■	77.66

■ No second hand. ★ Dial is black. ♠ Includes one AA battery. ✓ Requires three AA batteries.

AA Batteries (4/Pkg.) ..... 71455K53 **Per Pkg.** $2.94

AC Operated—Run on 120 VAC, 60 Hz. All have a cord with two-prong plug.

	Dial Dia.	O'all Dia.	Cord Lg.	Amps	Available Case Colors		Each
Standard—*Plastic Case and Plastic Lens*							
A	8″	9″	6 ft.	0.01	Black, Beige	1291T1	$25.66
A	12″	13″	6 ft.	0.01	Black, Beige	1291T2	31.96
Standard—*Metal Case and Plastic Lens*							
A	15⅜″	16″	5 ft.	0.02	Black	1339T601	168.88
Standard—*Metal Case and Glass Lens*							
A	12½″	13¼″	5 ft.	0.01	Black	8466T231	$72.64
A	12½″	13¼″	5 ft.	0.01	Black	8466T81♥	109.00
A	15⅜″	16″	5 ft.	0.01	Black	8466T11	101.76
A	18½″	19″	5 ft.	0.01	Black	8466T13	154.20

♥ Has bottom stem-adjustment knob.

Safety-Message Clocks

Eye-catching red messages remind employees to adhere to safety practices and policies. Clocks have a white dial with black numerals, minute marks, and hour and minute hands and a red second hand. Case is black.

Battery-operated clocks require one AA battery (not included).

AC-operated clocks run on 120 VAC, 60 Hz and have a 5-ft. long cord with two-prong plug except 13245T2, which has a 6-ft. cord.

To Order: Please specify message from those listed below.

Case/Lens Material	Dial Dia.	O'all Dia.	Available Messages	Battery Operated	Each	AC Operated Amps		Each
Plastic/Plastic	11⅜″	12″	Think Safety, Safety First, No Smoking	12645T1	$21.02	—	—	—
Plastic/Plastic	12″	13″	Think Safety, Safety First	—	—	0.01	13245T2	$31.78
Metal/Glass	12½″	13¼″	Think Safety, Safety First	1310T1	65.94	0.01	1202T3	78.33
Metal/Glass	15⅜″	16″	Think Safety, Safety First	1310T4	105.90	0.02	1202T1	109.90
Metal/Plastic	11″	11⅞″	Think Safety, Safety First	12875T2	81.61	—	—	—
Metal/Plastic	15⅜″	16″	Think Safety, Safety First	12875T4	134.52	—	—	—
Metal/Plastic	18½″	19″	Think Safety, Safety First	12875T6	148.25	0.02	13135T7	163.25

AA Batteries (4/Pkg.) ..... 71455K53 **Per Pkg.** $2.94

24-Hour Clocks

12/24 Hour

24 Hour

These clocks have a white face, black hour and minute hands, and a red second hand.

Battery-operated clocks run on one AA battery (not included).

AC-operated clocks have a 5-ft. long cord with two-prong plug. 9454T141 and *T161* run on 115 VAC, 60 Hz and have a bottom stem adjustment knob. 1315T32 and *T34* run on 110 VAC, 60 Hz. All draw 0.03 amps.

12/24-hour clocks have black 1- to 12-hour numerals and minute marks with an inner ring of red 13- to 24-hour numerals.

24-hour clock has black 00- to 23-hour numerals and minute marks.

Dial Dia.	O'all Dia.	Case Color	Battery Operated	Each	AC Operated	Each
12/24 Hour—*Plastic Case and Lens*						
8″	9″	Black	1211T921	$23.58	9454T141	$45.00
12″	13″	Black	1211T11	27.36	9454T161	46.67
12″	13″	Gray	1211T113	27.36	—	—
12/24 Hour—*Metal Case and Glass Lens*						
12½″	13¼″	Black	1298T5	58.25	1315T32	70.09
15⅜″	16″	Black	1298T23	101.83	1315T34	107.75
24 Hour—*Plastic Case and Lens*						
12″	13″	Black	8422T21	33.70	—	—
AA Batteries (4/Pkg.)			71455K53	**Per Pkg.**		$2.94

Clock Guards

Protect your clock from damage caused by impact. These steel wire guards fit over wall clocks (not included) and have four ¼″ dia. mounting holes. Fasteners not included.

Fits Max. Clock Dia.	O'all Size, Ht.×Wd.×Dp.		Each
12″	15⅝″×15⅝″×4⅞″	12745T2	$49.91
15″	19⅝″×19⅝″×5″	12745T5	57.31
18″	22⅜″×22⅜″×4⅞″	12745T8	62.87

Double-Face Clocks

Wall Mount
Battery Operated

Ceiling Mount

Wall Mount
AC Operated

Back-to-back clock dials make the time visible from two directions. Clocks have a white dial with black numerals, minute marks, and hour and minute hands. Lens is plastic. Case color is black.

Battery-operated clock runs on one AA battery (not included). It has a black second hand and three 7/32″ dia. mounting holes (fasteners not included).

AC-operated clocks run on 110 VAC, 60 Hz (0.02 amp draw) and must be hardwired. They have a bottom stem-adjustment knob and include mounting fasteners.

Dial Dia.	O'all Dia.	Case Material		Each
Wall Mount—*Battery Operated*				
8½″	9¼″	Metal	8462T364	$46.88
Wall Mount—*AC Operated*				
12″	13⅜″	Plastic	8462T572	191.53
Ceiling Mount—*AC Operated*				
12″	13⅜″	Plastic	8462T571	191.53
AA Batteries (4/Pkg.)			71455K53	**Per Pkg.** $2.94

Digital Clocks

A

B

C

The large display on these clocks is easy to read, even from a distance. Choose to display 12-hour or 24-hour military time.

Style A has an LCD and a plastic case and is battery operated. It simultaneously displays time, date (month, day), day of the week, and temperature (selectable for °F or °C). Runs on four AAA batteries (not included).

Styles B and ***C*** run on 115 VAC, 60 Hz (0.12 amp draw) and have a 6-ft. cord with three-prong plug. UL listed. ***Style B*** have a red LED display and 9-volt battery backup (battery not included). Case is plastic. ***Style C*** have a red LED display, aluminum case, and a 7-year lithium battery backup. You can choose time or alternating time/date displays as well as program to update for daylight saving time. Connect multiple clocks using RS-232 cable (sold separately) to create a synchronized system.

	No. of Digits	Digit Ht.	Case Color	Overall Size, Ht.×Wd.×Dp.		Each
A	4	2¼″	Black	9″ × 8½″×1″	7455T8	$56.06
B	4	2½″	Beige	5″ ×11″ ×2¾″	9456T13	112.20
B	4	2½″	Black	5″ ×11″ ×2¾″	9456T12	112.20
B	4	4″	Black	7½″×13½″×3⅝″	9456T21	188.70
C	4	4″	Black	8″ ×15¾″×2⅞″	9456T33	432.69
C	4	6″	Black	10⅛″×24¾″×2⅞″	9456T37	888.89
C	6	2½″	Black	5″ ×16″ ×2⅞″	9456T31	451.70
AAA Batteries (4/Pkg.)					71455K62	**Per Pkg.** $2.82
Optional 9-Volt Battery					71455K56	**Each** $2.75
Optional RS-232 Cable					70045K84	**Per Ft.** $0.30

Desktop Digital Clocks

D

E

F

Keep an eye on the time without leaving your desk. Clocks have a black plastic case, unless noted.

Standard clocks have an alarm, snooze function, and pm indicator. *Style D* runs on two AAA batteries (included). It has an LCD with a backlight button and displays 12-hour or 24-hour military time. *Style E* runs on 120 VAC, 60 Hz and draws 0.15 amps. It has a 5-ft. cord with two-prong plug and 3-volt battery backup (included). Display is a red LED and case is silver.

Traceable atomic clock synchronizes with the NIST (National Institute of Standards and Technology) atomic clock for an accuracy up to 1/10,000 of a second. It has an alarm and displays time to the second as well as the month, date, and day of the week. The LCD has a glow-in-the-dark background. Operates on two AAA batteries (included).

	Operation	No. of Digits	Digit Ht.	O'all Size, Ht.×Wd.×Dp.		Each
Standard						
D	Battery	4	1⅛″	3⅛″×3⅝″×2¼″	6095T32	$18.51
E	AC	4	2″	5½″×9¾″×3⅞″	6095T49	18.81
Traceable Atomic						
F	Battery	6	½″	3⅜″×4″ ×1½″	2020T16	73.92
Replacement AAA Batteries (4/Pkg.)					71455K62	**Per Pkg.** $2.82
Replacement 3-Volt Battery					7701K34	**Each** $1.92

Single-Event Timers

For convenient timing, place these timers just about anywhere. All have black numerals and markings. Case is plastic.

Styles A and ***B*** are spring wound and count down to an alarm. ***Style A*** has a white plastic dial. ***Style B*** have a gold-colored aluminum dial.

Style C operates on one AA battery (included) and counts up. Timer has white plastic face, black minute hand, red second hand with glow-in-the-dark tip, and plastic lens.

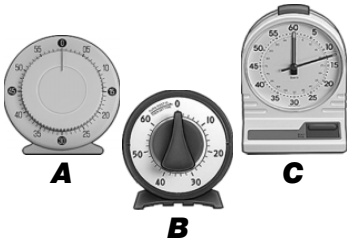

	Max. Time	Increments	Resolution	Max. Alarm Duration	Overall Size, Ht.×Wd.×Dp.	Face Dia.	Case Color		Each
A	60 min.	5 min.	1 min.	5 sec.	3¾″ × 3½″ × 1½″	3½″	White	**8451T11**	$8.00
B	30 min.	5 min.	1 min.	1 sec.	3⅜″ × 3″ × 3½″	2¾″	Black	**1300T2**	35.04
B	60 min.	10 min.	2 min.	1 sec.	3½″ × 3″ × 3″	2¾″	Black	**1300T3**	41.57
C	60 min.	1 sec.	1 sec.	No Alarm	6¾″ × 5¼″ × 3¾″	4½″	White	**8441T26**	124.88

Replacement AA Battery **12195T102** $0.68

Single-Event Digital Timers

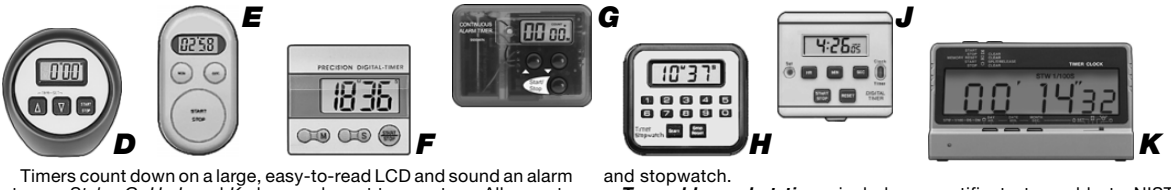

Timers count down on a large, easy-to-read LCD and sound an alarm at zero. *Styles G, H, J,* and *K* also can be set to count up. All operate on the included batteries. Case is plastic.

All ***pocket timers*** have a magnetic back. All except Style E have a built-in stand and pocket clip. *Styles F* and *H* have a hole for a lanyard (not included). *Style H* has a stopwatch. *Style J* has a clock and stopwatch.

Traceable pocket timer includes a certificate traceable to NIST (National Institute of Standards and Technology). Alarm is accompanied by a flashing yellow LED.

Benchtop timer with clock and stopwatch has nonskid rubber feet.

	Max. Time	Resolution	No. of Digits	Digit Ht.	Max. Alarm Duration	Memory Function	Timeout▲ Function	Overall Size, Ht.×Wd.×Dp.	Battery (Qty.)	Case Color		Each
Pocket Timers												
D	24 hr.	1 min.	4	21/64″	1 min.	Yes	Yes	2⅜″ × 2⅜″ × ½″	1.5 volt (1)	Dk. Blue	**12175T15**	$10.38
E	100 min.	1 sec.	4	⅜″	30 sec.	Yes	Yes	3½″ × 1¾″ × ½″	1.5 volt (1)	White	**12315T25**	12.16
F	100 min.	1 sec.	4	¾″	30 sec.	Yes	Yes	3″ × 3″ × ½″	1.5 volt (1)	White	**12475T37**	17.00
G	9,999 min.	1 min.	4	13/32″	Continuous★	Yes	No	2″ × 3″ × 5/8″	AAA (2)	Red	**3879T42**	17.50
H	100 min.	1 sec.	4	⅜″	1 min.	No	Yes	2½″ × 2¼″ × ½″	1.5 volt (1)	Dk. Blue	**8456T12**	22.19
J	24 hr.	1 sec.	6	½″	1 min.	Yes	Yes	2½″ × 2½″ × ½″	1.5 volt (1)	White	**12595T9**	25.16
Traceable Pocket Timer												
G	9,999 min.	1 min.	4	13/32″	Continuous★	Yes	No	2″ × 3″ × 5/8″	AAA (2)	Red	**3879T43**	41.67
Benchtop Timer with Clock and Stopwatch												
K	10 hr.	1/100 sec.	6	1″	1 min.	No	Yes	4½″ × 7 13/64″ × 3″	C (1)	Gray	**1223T8**	55.11

▲ Freezes the timing function when a button is pressed. Press button again to resume time. ★ Alarm will sound until shut off manually.

Repl. 1.5-Volt Battery **7604K74** **Each** $1.44 Repl. AAA Battery... **12195T101** **Each** $0.79 Repl. C Battery ..... **65605T73** **Each** $1.50

Multi-Event Digital Timers

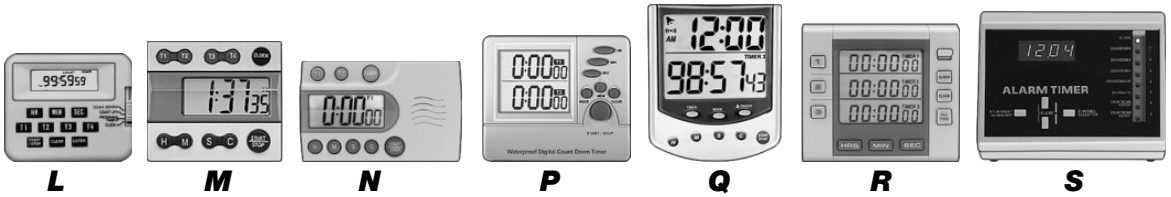

Time several events together or separately. Set timers to count down to an alarm, count up, and display time of day. Case is plastic.

All ***pocket timers*** have an LCD and built-in stand. Operate on included batteries.

Styles L and *M* have a pocket clip and magnet on the back, hole for a lanyard (not included), and run on one 1.5-volt battery.

Traceable pocket timers include a certificate traceable to NIST (National Institute of Standards and Technology). *Style N* has an extra-loud (100 dB) alarm, a magnet on the back, and runs on one 1.5-volt battery and two AAA batteries. *Styles P* and *Q* run on one AAA battery. *Style P* has a pocket clip and magnet on the back. *Style Q* has two 19/64″ mounting slots on the back (fasteners not included).

Benchtop timers have an adjustable alarm volume and rubber feet.

Traceable benchtop timer has an easy-to-read LCD that displays three events simultaneously as well as the date (day, month, year). It includes a certificate traceable to NIST (National Institute of Standards and Technology). Runs on one AAA battery (included).

AC-operated benchtop timer can perform three countdowns; two repeat countdowns (triggers alarm at set intervals); one count up; and one countdown/count up (counts down to alarm and then begins to count up). It also displays 12-hour or 24-hour military time. Operates on 115 VAC, 60 Hz (0.4 amp draw) and has a 5-ft. long cord with two-prong plug. Display is a red LED. The decimal point floats to show seconds when less than 1 hour remains.

	No. of Events	Max. Time	Resolution	No. of Digits	Digit Ht.	Max. Alarm Duration	Memory Function	Timeout▲ Function	Overall Size, Ht.×Wd.×Dp.	Case Color		Each
Pocket Timers—Battery Operated												
L	6	100 hr.	1 sec.	6	21/64″	1 min.	Yes	Yes	2⅜″ × 2¾″ × 5/8″	White	**9608T11**	$22.71
M	4	100 hr.	1 sec.	6	¾″	1 min.	Yes	Yes	2½″ × 2¾″ × ½″	White	**12525T2**	22.95
Traceable Pocket Timers—Battery Operated												
N	2	100 hr.	1 sec.	6	¾″	1 min.	Yes	No	2½″ × 4″ × ½″	White	**3516T44**	30.36
P	2	20 hr.	1 sec.	6	½″	1 min.	Yes	Yes	2½″ × 3″ × ½″	White	**6099T88**	29.05
Q	3	100 hr.	1 sec.	6	1″	1 min.	Yes	Yes	4″ × 4½″ × 13/16″	White	**4548T78**	35.90
Traceable Benchtop Timer—Battery Operated												
R	3	100 hr.	1 sec.	6	⅜″	Continuous●	Yes	No	3¼″ × 3″ × 1″	Beige	**1399T15**	49.80
Benchtop Timer—AC Operated												
S	8	100 hr.	1 sec.	4	½″	Continuous♣	Yes	Yes	4¼″ × 6½″ × 3½″	Beige	**12585T8**	169.62

▲ Freezes the timing function when a button is pressed. Press button again to resume time. ● Alarm will sound until shut off manually or can be set to turn off after 1 minute. ♣ Alarm will sound until shut off manually or can be set to turn off after 7 seconds or 1 minute.

Replacement 1.5-Volt Battery ..... **7604K74** **Each** $1.44 Replacement AAA Battery ..... **12195T101** **Each** $0.79

Multi-Event Digital Scheduling Timer

Timers

Timer

Timer with Built-In Horn

	Max. Signals	No. of Digits	Digit Ht.	Backup Battery Life		Each
Timer	205/day	6	1/4″	7 days	9579T22	$389.58
Timer with Built-In Horn	32/day	4	11/16″	3 hours	9579T11	426.25
Replacement 6-Volt Battery for 9579T22					9579T35	43.75
Replacement 9-Volt Battery for 9579T11					71455K56	2.75

Bells and Horn

Bell

Horn

	Size	Color		Each
Bell	6″ dia.	Gray	9579T32	$52.89
Bell	6″ dia.	Red	49565T23	52.89
Horn	4″ sq.	Gray	9579T34	39.93

Program these timers to trigger an audible signal. Use the keypad to select a 12- or 24-hour clock display and program a schedule for each day of the week. You can also adjust signal duration from one to 99 seconds. Both timers can be wall mounted or set on a benchtop. Operate on 115 VAC, 60 Hz (9.0 amp draw). UL listed. CSA certified.

Timer can be hardwired to a maximum of five signal devices such as bells and horns (sold separately). Display is an easy-to-read LCD. A user-defined security code restricts access to the keypad. Timer must be hardwired and has a 10-amp dry contact relay and 6-volt battery backup (battery included). Housing is 5¼″ Ht. × 9½″ Wd. × 3¼″ Dp., made of black plastic, and has a brushed aluminum face.

Timer with built-in horn has a red LED display. The keypad is located behind a locked cover (two keys included) to restrict access. Horn sounds 90 dB @ 10 ft. Timer has a 6-ft. long cord with three-prong plug and a 9-volt battery backup (battery included). Housing is 5¾″ Ht. × 7″ Wd. × 5¼″ Dp. and made of gray steel.

Bells and ***horn*** are made of aluminum and can be used indoors and outdoors. Mounting hardware included.

Bells sound 86 dB @ 10 ft. and operate on 115 VAC, 60 Hz (0.085 amp draw).

Horn sounds 95 dB @ 10 ft. and operates on 115 VAC, 60 Hz (0.16 amp draw).

About Stopwatch Timing Functions

Single-event timing records one event.

Lap timing displays the elapsed time, from start to finish, of several separate events.

Split timing records the combined time of events. Press button once to display the elapsed time for the first event. Press again to display the combined elapsed time of the first and second events.

Timeout mode freezes the timing function when a button is pressed. Press button again to resume time.

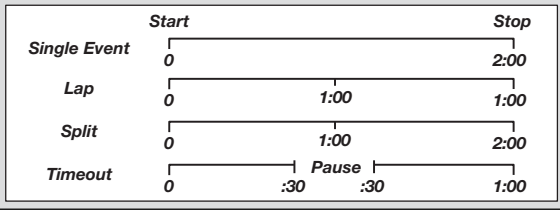

Stopwatches

A

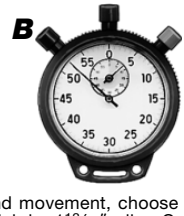
B

C

D

E

For precise spring-wound movement, choose these shock-resistant stopwatches. Dial is 1 13/16″ dia. Color is white. Numerals, markings, and hands are black. Case is 2⅛″ dia. and made of chrome-plated alloy (unless noted); lens is acrylic. Stopwatches also have a 9/16″ dia. inset dial (unless noted) that measures total time.

Style A—Start, stop, and reset with the push of a button.

Style B—Push green button to start, red button to stop, and black button to reset.

Styles C-E—Push the top button to start, stop (for timeout), and continue time. To reset, push the side button after stopping watch. *Styles D* and *E* also include a certificate traceable to NIST (National Institute of Standards and Technology).

	Style	Max. Time	Accuracy		Each
1/5 Second Resolution					
A	One Stop	30 min.	—	1282T18	$95.64
A	One Stop	30 min.	±1.5 sec./hr.	1282T15	183.89
B	Timeout	60 min.	—	1303T11★	125.88
C	Timeout	60 min.	—	1303T12	118.85
C	Timeout	30 min.	±1.5 sec./hr.	1303T13	175.64
1/5 Second Resolution with NIST Certificate					
D	Timeout	60 min.	±0.83 sec./hr.	1303T16▲	276.44
1/5 Second Resolution and 1/100 Minute Resolution with NIST Certificate					
E	Timeout	30 min.	±1.5 sec./hr.	9548T11	169.99

★ Case is black plastic. ▲ Inset dial is 1″ dia.

Digital Stopwatches

F

G

H

Read times quickly and accurately. These stopwatches have an easy-to-read LCD and include a lanyard. All are water resistant. Case and lens are plastic. Case color is black, unless otherwise noted. Stopwatches run on included batteries.

Style G times cumulative and lap splits. Plus, it recalls the last 300 splits instantly and includes a countdown timer.

	Max. Time	Digit Ht.	Backlit Display	Timing Functions: Clock	Lap Timing	Split Timing	Lap Memory	Timeout	Alarm	Accuracy	Overall Size, Ht. × Wd. × Dp.		Each
1/100 Second Resolution													
F	10 hr.	1/2″	No	No	Yes	Yes	No	Yes	Yes	±0.04 sec./hr.	3″ × 2½″ × ¾″	8434T13	$21.80
G	10 hr.	3/16″	Yes	Yes	Yes	Yes	300	Yes	Yes	±0.001 sec./hr.	3¼″ × 2 5/16″ × ⅞″	2504T25	49.74
H	24 hr.	1/4″	No	Yes	No	Yes	No	Yes	Yes	±0.001 sec./hr.	2¾″ × 2⅝″ × 13/16″	2100T27	18.18

(Continued on following page)

For information about stopwatch timing functions, see page 1978.

Digital Stopwatches *(Continued from previous page)*

J

K

L

M

N

P

Style J has a 10-hour countdown timer.

Style K have an octagonal shape that fits comfortably in your hand. They can be used with the *optional aluminum clipboard*, which has a clamp to hold the stopwatch and a low-profile clip to hold paper.

Style L has a 20-hour decimal countdown timer (1/1,000 min. and 1/100,000 hr. resolution).

Style M meets ISO 17025 standards. It has a detachable pocket clip. Case is gray.

Style N meets ISO 17025 standards. Case is yellow.

Style P has a 10,000-minute decimal countdown timer (1/100 min. resolution). Case is gray.

Stopwatches ***with NIST certificate*** come with a certificate traceable to NIST (National Institute of Standards and Technology).

Max. Time	Digit Ht.	Backlit Display	Timing Functions: Clock	Lap Timing	Split Timing	Lap Memory	Timeout	Alarm	Accuracy	Overall Size, Ht. × Wd. × Dp.		Each
1/100 Second Resolution (Cont.)												
J 10 hr.	3/16″	No	Yes	Yes	Yes	7	Yes	No	±0.04 sec./hr.	2 13/16″ × 2 1/2″ × 13/16″	**1234T5**	$42.14
K 10 hr.	3/8″	No	No	Yes	No	No	Yes	No	±0.01 sec./hr.	3″ × 2 7/16″ × 11/16″	**1314T13**	24.25
K 10 hr.	3/8″	No	No	Yes	Yes	No	Yes	No	±0.01 sec./hr.	3″ × 2 7/16″ × 11/16″	**1314T15**	22.23
1/100 Second, 1/1,000 Minute, 1/100,000 Hour Resolution												
L 20 hr.	3/16″	No	Yes	Yes	Yes	500	Yes	Yes	±0.04 sec./hr.	3″ × 2 1/2″ × 3/4″	**8434T11**	36.64
1-Second Resolution with NIST Certificate *(Note: Resolution is 1/100 second for first 30 minutes.)*												
M 24 hr.	1/2″	No	Yes	No	Yes	No	Yes	Yes	±0.04 sec./hr.	3″ × 2 1/2″ × 7/8″	**6327T77**	31.80
1/100 Second Resolution with NIST Certificate												
K 10 hr.	3/8″	No	No	Yes	Yes	16	Yes	No	±0.01 sec./hr.	3″ × 2 7/16″ × 11/16″	**1314T19**	39.41
N 24 hr.	1/4″	No	Yes	No	Yes	No	Yes	Yes	±0.4 sec./hr.	2 3/8″ × 2 1/8″ × 1/2″	**6327T44**	20.43
1/100 Second, 1/100 Minute Resolution with NIST Certificate												
P 10 hr.	1/4″	No	Yes	Yes	Yes	65	Yes	No	±0.01 sec./hr.	3 1/4″ × 2 3/8″ × 1 1/8″	**5770T9**	260.43
Optional Aluminum Clipboard, 9″ Ht. × 12″ Wd. (For Style K Only)											**12495T8**	**Each** $26.73

Combination Wristwatch/Weather Monitor

In addition to time and date, this water-resistant wristwatch displays temperature (+14° to +140° F/–10° to +60° C), barometric pressure, and altitude. Other functions include a stopwatch with a 99-hour maximum time; countdown timer that can be set to 3, 5, 10, 15, or 45 minutes; and a digital compass. Watch has a large LCD, glass lens, and 2″ dia. gray plastic case. Band is black rubber with a Type 304 stainless steel buckle closure. Watch operates on included 3-volt lithium battery.

Face Size	Clock	Resolution	Digit Ht.	Backlit Display	Timing Functions: Lap Timing	Split Timing	Lap Memory	Timeout	Alarm		Each
1 1/8″ dia.	12/24 hr.	1/100 sec.	5/16″	Yes	Yes	No	100	No	Yes	**8431T61**	$81.63
Replacement 3-Volt Lithium Battery										**7701K34**	1.92

Push-to-Punch Time Clocks

For easy time recording, just insert card into front of clock and push lever to print. Housing locks to prevent tampering. (Dial clocks include two keys; digital include one.) Clocks print in blue and red ink and can be wall or benchtop mounted using the included hardware. Time cards are sold separately.

AM/PM clocks print 12 hour time. The PM hour is underlined.

Military clocks print 24 hour time.

AC-operated clocks run on 115 VAC, 60 Hz and have a 6-ft. long cord with three-prong plug. UL listed. CSA certified.

Battery-operated clock runs for six months on four D batteries (not included) and has an audible low-battery indicator. Prints format A (see table below).

Dial clocks have a 4″ Ht. × 6 1/2″ Wd. dial and green plastic housing. Time wheels are rustproof acetal. AC-operated draw 1.5 amps.

Digital clocks have a red LED display with four 9/16″ high digits. Housing is dark gray steel. Time wheels are steel. Draw 3.4 amps.

Dial

Digital

	Print Format Selections	
A	Month, Date, Hour, and Minute	OCT 23 12 54
B	Month, Date, Hour, and 1/10 of Hour	OCT 23 13.9
C	Month, Date, Hour, and 1/100 of Hour	OCT 23 13 09
D	Day of Week, Hour, and Minute	M 12 54

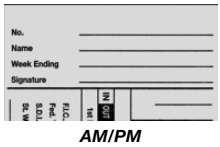

AM/PM

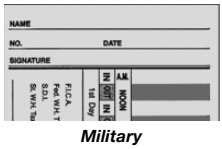

Military

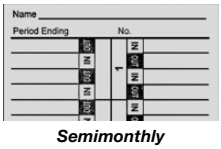

Semimonthly

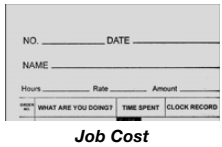

Job Cost

Time Clocks

	Overall Size, Ht. × Wd. × Dp.	*AM/PM* Each	*Military* Each	*Repl. Ribbon* Each
AC Operated— **to Order.** *Please specify print format from the chart.*				
Dial	10″ × 8″ × 6″	**9185T4** $345.45	**9185T6** $345.45	**9185T23** $15.00
Digital	10 1/4″ × 8 1/8″ × 5 1/4″	**9185T5** 410.00	**9185T7** 410.00	**8444T27** 15.00
Battery Operated				
Dial	10″ × 8″ × 6″	**6674T66** 498.28	——— ———	**9185T23** 15.00
D Batteries (6/Pkg.)			**71455K55**	**Per Pkg.** $7.32
Repl. Keys for Dial Clocks (2/Set)			**9185T24**	**Per Set** $15.00
Repl. Key for Digital Clocks			**8444T29**	**Each** $1.18

Time Cards

	Size, Ht. × Wd.	Pkg. Qty.		Per Pkg. 1	2-Up
AM/PM	8 7/8″ × 3 3/8″	250	**8444T51**	$8.17	$7.44
Military	8 7/8″ × 3 3/8″	250	**8444T52**	8.17	7.44
Semimonthly	8 7/8″ × 3 3/8″	250	**8444T53**	8.17	7.44
Job Cost	8 7/8″ × 3 3/8″	250	**8444T54**	8.17	7.44

Auto-Punch Time Clocks

Dial

Digital

Insert a card into the front of these clocks and they print automatically.

All include hardware for wall or benchtop mounting and lock (two keys included) to prevent tampering. Operate on 115 VAC, 60 Hz and have a 6-ft. long cord with three-prong plug. UL listed. CSA certified. Time cards are sold separately (see page 1979 for photos).

AM/PM clocks print 12-hour time. The PM hour is underlined.

Military clocks print 24-hour time.

Dial clocks have a 4″ Ht.×6½″ Wd. dial and draw 1.5 amps. Housing is green plastic. Time wheels are rustproof acetal.

Digital clocks have a red LED display with four 9/16″ high digits. They draw 3 to 4 amps. Housing is dark gray steel. Time wheels are steel.

Digital with auto signal clocks are the same as digital with the added capability of programming up to 32 audible signals per day on a weekly schedule. Use with 110/120 VAC signals sold separately on pages 1842-1845. Program using the internal keypad. In case of power failure, clock can run for up to 15 days on the 9-volt battery backup (battery not included).

Print Format Selections		
A	Month, Date, Hour, and Minute	OCT 23 23 12 54
B	Month, Date, Hour, and 1/10 of Hour	OCT 23 23 13.9
C	Month, Date, Hour, and 1/100 of Hour	OCT 23 23 13 09
D	Day of Week, Hour, and Minute	M 12 54

Time Clocks—To Order: Please specify print format from the chart above.

Overall Size, Ht.×Wd.×Dp.	AM/PM	Each	Military	Each	Repl. Ribbon	Each
Dial						
9″ ×8″ ×6″	8444T67	$398.74	8444T81	$398.74	9185T23	$15.00
Digital						
10¼″×8⅛″×5¼″	8444T68	510.00	8444T82	510.00	8444T27	15.00
Digital with Auto Signal						
10½″×8″ ×5¼″	8444T69	590.00	8444T83	590.00	8444T27	15.00
Repl. Keys for Dial Clocks (2/Set)			9185T24		Per Set	$15.00
Repl. Key for Digital Clocks			8444T29		Each	$1.18
9-Volt Battery			71455K56		Each	$2.75

Time Cards

	Size, Ht.×Wd.	Pkg. Qty.		Per Pkg. 1	2-Up
AM/PM	8⅞″×3⅜″	250	8444T51	$8.17	$7.44
Military	8⅞″×3⅜″	250	8444T52	8.17	7.44
Semimonthly	8⅞″×3⅜″	250	8444T53	8.17	7.44
Job Cost	8⅞″×3⅜″	250	8444T54	8.17	7.44

Auto-Punch Time Clocks with Message Stamp

Standard

Programmable

Clocks print combinations of year, month, date, time (12- or 24-hour time), and minutes (10ths or 100ths of an hour). Insert paper into the front and clocks print automatically. The 6-digit LCD shows the time and date. Clocks self-adjust for daylight-saving time. Housing is plastic and has a lock (one key included) to prevent tampering. UL listed. CSA certified. Job cards are sold separately.

Standard clock also prints 10 different notations (RCV'D, SENT, FAX'D, VOID, PAID, CFM'D, APR'D, CMPL'D, ORIGN, and FILE). Operates on 120 VAC, 60 Hz (0.6 amp draw) and has a 6-ft. long cord with three-prong plug. The lithium battery backup (battery included) retains memory in case of a power failure. LCD digits are ¼″ high. Housing color is black.

Both ***programmable*** clocks let you create your own notation and 3- or 6-digit sequential numbering. Display includes day of the week. Operate on 120 VAC, 60 Hz (0.2 amp draw) and have a 6-ft. long cord with three-prong plug. NiCad battery backup (battery included) lasts up to 72 hours or 400 imprints. Housing color is blue and gray. *Scheduling* clock lets you program up to twenty 110/120 VAC audible signals (sold separately on pages 1842-1845).

	Overall Size, Ht.×Wd.×Dp.		Each
Standard	6″ ×5½″×6½″	12735T32	$307.70
Programmable	6⅞″×5⅞″×6″	12735T34	469.46
Programmable Scheduling	6⅞″×5⅞″×6″	12735T36	572.81
Repl. Ink Ribbon		12735T38	15.52
Repl. Keys for Standard Time Clock		12735T7	Per Pair $5.66
Repl. Keys for Programmable Clocks		12465T9	Per Pair $5.88

	Ht.×Wd.	Pkg. Qty.		Per Pkg.
Job Cards	9″×3½″	250	12735T9	$10.21

Badge-Swipe Time Clock

Swipe the magnetically encoded badges and this clock calculates and records time. It can handle up to 120 employees and is programmable for 12 independent shifts, overtime, and weekly, biweekly, semimonthly, and monthly pay periods. Display is selectable for 12- or 24-hour time and minutes or 100ths of an hour.

Clock automatically adjusts for daylight-saving time. It comes with 50 employee badges (encoded 1-50) and two supervisor badges. Display is a 12-digit, 11/16″ high LCD. Housing is 6⅛″ Ht.×8 11/16″ Wd.×2 5/16″ Dp. and made of gray plastic. Clock runs on 120 VAC, 50/60 Hz (0.15 amps). It has a 6-ft. long cord with two-prong plug and a lithium battery backup. UL listed. Includes hardware for wall or benchtop mounting.

Use the included software and 50-ft. serial cable with 9-pin female adapter to upload data to your PC. Minimum requirements: Windows 95, 4 MB of RAM, 1 MB free hard-drive space, and a Pentium processor.

Time Clock	8425T66	Each	$528.57
Additional Badges Encoded 51-100	8425T83	Per Set	$99.74
Additional Badges Encoded 101-150	8425T84	Per Set	$99.74

Total-the-Hours Auto-Punch Time Clock

No calculations necessary—this time clock does it for you. Clock calculates the time between punches and totals the time in hours and minutes on the card. You can also print a summary of the active time cards with totals for each card in regular and overtime hours. Time cards are sold separately.

Clock is top loading and handles up to 100 employees on a weekly, biweekly, semimonthly, or monthly pay schedule. Select English, Spanish, or French for print language. The LCD is 1 7/16″ Ht.×3½″ Wd.; displays time, date, and day of the week. Clock automatically adjusts for daylight-saving time. Housing is blue plastic with a silver plastic face. Operates on 120 VAC, 50/60 Hz (0.4 amp draw) and has a 6-ft. long cord with three-prong plug. UL listed. Wall mounting hardware is included.

	O'all Size, Ht.×Wd.×Dp.		Each
Time Clock	9½″×7 3/16″×5½″	6838T41	$515.52
Replacement Ink Ribbon		6838T43	20.00
Replacement Keys		6838T44	Per Pair $13.33
Time Cards, 7¼″Ht.×3⅜″Wd. (100/Pkg.)		6838T42	Per Pkg. $17.16

Finger-Scan Time Clock

Scan employee fingerprints to register attendance, eliminating time cards and one employee punching in for another. Time clock is programmable for weekly, biweekly, semimonthly, and monthly pay periods as well as overtime for up to 50 employees.

The 3″ Wd.×1″ Ht. backlit LCD displays 12-hour time and date (month, day, year) when idle and employee name, in/out status, and total pay period hours after each successful scan. Housing is 3 13/16″ Ht.×5⅞″ Wd.×7⅝″ Dp. and made of gray plastic. UL listed.

Use the included software and 5-ft. USB cable (which also powers the clock) to upload data to your PC. Minimum requirements are Windows 2000, 120 MB of RAM, 200 MB free hard-drive space, a 300 MHz Pentium processor, and an 800×600 resolution display.

8008T2 ..... Each $344.26

Auto-Punch Time and Date Stamp

Clearly record times and dates on freight bills, mail, legal papers, and other time-sensitive documents. The aluminum alloy wheels print year, month, date, AM/PM, hour, and minute. Imprint area is 3/16″ Ht.×1⅛″ Wd. A dial on the bottom lets you adjust the stamping impact, allowing you to print on one- to five-part forms.

Stamp has a green LED clock with ⅜″ high digits. Housing is 11″ Lg.×5¼″ Wd.×7″ Ht., made of gray plastic, and has a key lock to prevent tampering. Operates on 115 VAC, 60 Hz (3-4 amp draw) and has a 6-ft. long cord with three-prong plug. UL listed. CSA certified.

		Each
Stamp	8389T14	$573.31
Replacement Ribbon	8389T15	34.80

Time Cards

Cards come in packages of 250 except 12125T9, which is 200 per package.

Card	Compatible with Clocks		Per Pkg.
Microder	Amano MJR 7000/8000/8000EZ	12125T9	$9.51
C3000	Acroprint ATR 200; Amano 6500/6700/6800/ 6900 and CP 3000; Lathem 1100	12465T8	12.00
10-800292	Acroprint 125/150; Amano 3500/3600/3700/ 3800/4100/4200/5300/5400, PIX10/21/3000, and TCX 21/22; Lathem 2100/2200; Pyramid 3500/3700 and PTI 3500	8790T11	10.00
K1400	Acroprint 125/150; Amano 3500/3600/3700/ 3800/4100/4200/5300/5400, PIX10/21/3000, and TCX 21/22; Lathem 2100/2200; Pyramid 3500/3700 and PTI 3500	8790T12	12.00
1900L	Acroprint 125/150; Amano 3500/3600/3700/ 3800/4100/4200/5300/5400, PIX10/21/3000, and TCX 21/22; Lathem 2100/2200; Pyramid 3500/3700 and PTI 3500	8790T13	$10.00
L61	Acroprint 125/150; Amano 3500/3600/3700/ 3800/4100/4200/5300/5400, PIX10/21/3000, and TCX 21/22; Lathem 2100/2200; Pyramid 3500/3700 and PTI 3500	12735T9	10.21
1900L-2	Acroprint 125/150; Amano 3500/3600/3700/ 3800/4100/4200/5300/5400, PIX10/21/3000, and TCX 21/22; Lathem 2100/2200; Pyramid 3500/3700 and PTI 3500	8790T25	10.00

Time Card and Badge Holders

Display time cards and badges for quick identification. Select the holder with pocket dimensions that fit your time cards. All are made of steel except 12705T571, which is molded plastic.

Time Card Holders—6062T7 and 6062T9 hold five cards per pocket; 6062T5 holds 10 per pocket; and 1252T3 and 1252T4 hold 25 per pocket. Two- and three-column holders have a removable divider rod for side-by-side pockets.

Adjustable time card holders have pockets that adjust to accommodate time cards of various sizes. Each pocket holds eight cards.

Time badge holder stores one credit card-sized badge per pocket.

1-Column Time Card Holder

2-Column Time Card Holder

1-Column Adjustable Time Card Holder

1-3 Column Adjustable Time Card Holder

Time Badge Holder

No. of Columns	No. of Pockets	O'all Size, Ht. × Wd. × Dp.	Fits Card Size, Ht. × Wd.	Mounting Holes	Fasteners Included	Color		Each
Time Card Holders								
1	25	30 1/8″ × 5″ × 2″	6″ × 4 1/4″	Keyholes	Yes	Gray	6062T7	$49.74
1	25	30 1/8″ × 5″ × 2″	7″ × 4 1/4″	Keyholes	Yes	Gray	6062T9	49.59
1	25	37″ × 5″ × 2″	9″ × 4 1/8″	Keyholes	Yes	Black	6062T5	46.16
2	24	30″ × 13 5/8″ × 2″	7″ × 6″	Four 11/64″ dia. holes	No	Gray	1252T3	59.88
3	54	30″ × 13 5/8″ × 2″	6″ × 4″	Four 11/64″ dia. holes	No	Gray	1252T4	66.97
Adjustable Time Card Holders								
1	25	31″ × 3 1/4″-4 3/4″ × 2 3/16″	2 1/4″-10″ × 2 1/2″-5″	Round holes	Yes	Gray	12705T571	37.38
1-3	24-72	40 3/16″ × 13 1/2″ × 2″	6 1/4″ × 4 1/8″, 6 1/4″, 12 5/8″	Two 3/8″ keyholes	No	Gray	6062T4	99.74
Time Badge Holder								
2	40	23″ × 8″ × 1/2″	2 1/4″ × 3 1/2″	Two 3/8″ dia. holes	No	Gray	6062T63	62.71

Wall Hooks, Clips, and File Holders for Fabric Panels

Maximize space on your fabric panel walls. Hooks and clips are needle-backed to easily slide in and out of fabric without damage.

(A) Wall hooks let you hang keys, pictures, and calendars.

(B) Wall clips hold notes, messages, and memos. *Small* clip holds up to 40 pages. *Jumbo* clip holds up to 50 pages.

(C) Three-pocket file holders accommodate three letter-size file folders (not included) and hang from two included wall hooks.

A

B

Small

C

		O'all Size, Ht. × Wd.	Color	Pkg. Qty.		Per Pkg.
A	Wall Hooks	1 5/16″ × 1 5/16″	White	5	1659T51	$4.36
B	Small Wall Clips	1 5/16″ × 1 5/16″	White	4	1659T52	4.56
B	Jumbo Wall Clips	1 7/8″ × 1 15/16″	White	10	1659T53	12.70
C	Three-Pocket File Holders	12 3/4″ × 12″	Clear	3	1659T55	22.00

Stay Clean File Holders

The open wire design prevents dirt and dust buildup. Holders are steel with seven pockets and loops for easy wall mounting (fasteners included). Color is black.

O'all Size, Ht. × Wd. × Dp.	Pocket Ht.		Each
23 1/8″ × 13″ × 2 7/8″	7″	8467T12	$12.25
28″ × 17 1/2″ × 2 7/8″	9 5/8″	8467T14	16.18

File Holders

Holders are made of plastic and have a mounting flange on each side.

Single-pocket holders can be used separately or nested in multiples. Wall mounting hardware included.

Single-pocket magnetic back holder mounts to most metal surfaces.

The ***three-pocket*** holder mounts to a wall with the included hardware.

To Order: Please specify color: clear or smoke.

Use the ***optional hanger brackets*** to hang holders from the top of doors and cubicle walls.

O'all Size, Ht. × Wd. × Dp.		Each 1-3	4-Up
Single Pocket—*1/4″ flange*			
6 1/2″ × 14 1/2″ × 3″	1254T2	$11.73	$10.11
6 1/2″ × 17 1/2″ × 3″	1254T3	14.09	12.27
Single-Pocket Magnetic Back—*1″ flange*			
7″ × 13″ × 4″	1254T4	17.78	16.03
Three Pocket—*7″ pocket height; 1″ flange*			
14″ × 13″ × 4″	1254T5	22.74	19.96
Optional Hanger Brackets			
Clear	1254T71	Per Pair	$11.60
Black	1254T72	Per Pair	$11.61

Single Pocket with Optional Hanger Brackets

Three Pocket

Heavy Duty File Holders

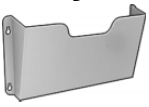

Single Pocket

7-Pocket

4-Pocket with Shelf and Optional Hanger Brackets

Keep your paperwork organized in these sturdy holders.

Use ***single pocket*** holders separately or nested in multiples. Mounting fasteners included. **To Order:** For steel, please specify color: black or beige.

Multi-pocket holders are steel and have two keyholes for wall mounting. *7-* and *9-pocket* have 5/16″ dia. holes; *4-pocket* has 3/8″ dia. holes. (Fasteners not included.) *7-pocket* holder is open on both ends to fit documents of various sizes. Holder *with shelf* allows for storage of office supplies.

Use the *optional hanger brackets* to hang holders from the top of doors and partition walls. They're made of black vinyl-coated steel.

Single Pocket

	O'all Size, Ht.×Wd.×Dp.	Pocket Ht.		Each
Steel	7¼″×14½″×2½″	7″	12255T21	$17.91
Steel	8¼″×17¼″×2½″	8″	12255T31	22.05
Stainless Steel	7¼″×14½″×2½″	7″	1277T41	45.45

Multi-Pocket

	O'all Size, Ht.×Wd.×Dp.	Pocket Ht.	Color		Each
7-Pocket	21⅝″×13⅜″×2″	6¾″	Putty	12565T26	$65.70
9-Pocket	40″ ×13½″×2″	6½″	Putty	12565T47	91.81
4-Pocket w/ Shelf	19¾″×13½″×2″	9″	Black	12565T51	69.70

Optional Hanger Brackets ..... 12565T52 **Per Pair** $22.51

Heavy Duty Document Holders

Mounting Frame with Sheet Protectors

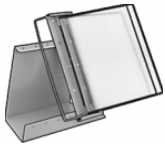

Desk Stand with Mounting Frame and Sheet Protectors

Extension Arm with Mounting Frame and Sheet Protectors

Build durable steel holders to keep your documents clean and organized for easy viewing. Start with a mounting frame and sheet protectors. Add accessories as needed. *Note:* All components are sold separately.

Both ***frames*** are made of gray steel and can also be used with desk stands or arms. *Mounting frame* can be secured to wall (hardware included). *Magnetic mounting frame* mounts to most metal surfaces.

All ***sheet protectors*** have a top opening and accommodate documents up to 8½″×11″. They're made of clear plastic with colored steel edges. Simply snap into mounting frame for free-turning pages.

Sheet Protector and *Sheet Protectors with Index Tabs*—Overall size is 9⅜″ Wd.×11¾″ Lg. **To Order:** Please specify edge color: black, blue, brown, green, red, or yellow. For protectors with index tabs you can also specify assorted edge colors.

High-Capacity Sheet Protector—Holds five times as many sheets as an individual protector. Edge color is blue. Overall size is 9″ Wd.×11⅝″ Lg.

Desk stands secure mounting frames at a 45° angle and are made of gray steel.

Both ***arms*** connect to mounting frames and have a 3″ clamp for securing to a desk or shelf. They're made of gray steel and include hardware for mounting up to two frames. *Telescoping arm* adjusts from 17″ to 27″ above your work surface. *Extension arm* has a 24″ reach.

Index tabs are made of clear plastic and clip onto sheet protectors.

Mounting Frames and Sheet Protectors

	Capacity		Each
Mounting Frame	10 sheet protectors	8396T45	$25.57
Magnetic Mounting Frame	10 sheet protectors	8396T48	36.14
Sheet Protector	2 sheets	8396T8	4.45
High-Capacity Sheet Protector	10 sheets	8396T9	13.40

Sheet Protectors w/ Index Tabs (10/Pkg.) .... 8396T4 **Per Pkg.** $49.72

Accessories

	Capacity		Each
Desk Stand	3 frames/30 sheet protectors	8396T61	$21.17
Desk Stand	6 frames/60 sheet protectors	8396T71	43.25
Telescoping Arm	2 frames/20 sheet protectors	8396T91	83.29
Extension Arm	2 frames/20 sheet protectors	8396T92	144.40

Index Tabs (10/Pkg.) ..... 8396T2 **Per Pkg.** $4.10

Machine-Mount Document Holder

Access your documents right where you're working. This holder mounts to machines, equipment, and walls. It has a 2″ dia. three-ring binder that secures up to 10 sheet protectors. Holder is 15½″ Ht.×24¼″ Wd.×2″ Dp. and made of black ABS plastic. It has six mounting holes (fasteners included).

Sheet protectors (holder includes two) are made of clear nonglare vinyl with a white background. Each can hold two documents up to 8½″×11″.

		Each
Holder	8387T5	$49.07

Additional Sheet Protector .... 8387T7 **Each** 1-9 $3.84 10-Up $3.41

Expandable Document Stands

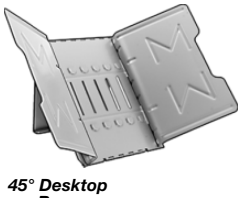

45° Desktop Base

Floor Stand Base

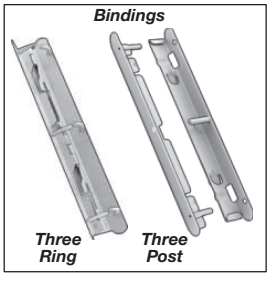

Organize and display literature such as reference books and catalogs in these convenient stands. Start with a base and select the type of binding needed. *Note:* All components are sold separately.

Desktop base is gray steel.

Floor stand base has a 43¾″ high steel support that holds two panels: the lower panel supports your materials and the upper panel has two clips for holding paper. Panels are 13″ Lg.×26″ Wd. and made of yellow polystyrene. Legs are black-painted steel.

Bindings connect to the base with an included slide hook. They're made of gray steel and are for use with three-hole punched sheets. Three-post bindings lock into place when snapped together.

Divider set contains 8¾″×11″ high-density black polyethylene dividers with five holes. Tabs are white with aluminum edges.

Bases

Binding Capacity	30° Viewing Angle	Each	45° Viewing Angle	Each
Desktop				
6″	8433T111	$49.35	8433T112	$49.35
12″	8433T121	63.82	8433T122	63.82
18″	8433T131	89.18	8433T132	89.18
Floor Stand				
12″	8433T17	349.74	_____	_____

Bindings

	1″ Capacity	Each	2″ Capacity	Each
Three Ring	8433T43	$8.54	8433T44	$12.72
Three Post	8433T54	8.43	8433T55	13.74

Divider Set

	Set Qty.		Per Set
Blank Index Tabs	5	8433T28	$13.17

Organizers

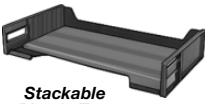
Stackable Plastic Tray

6-Tier Tray

5-Slot File Holder

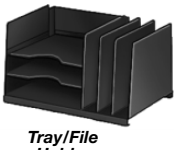
Tray/File Holder

Bookends

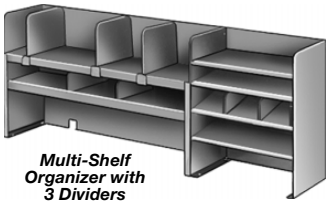
Multi-Shelf Organizer with 3 Dividers

Steel organizers are durable for more demanding environments. *Multi-shelf organizers* have removable dividers on the top shelf. *Bookends* have a nonslip base.

Stackable Plastic Trays

O'all Size, Ht. × Wd. × Dp.	Color		Each
3″ × 13¼″ × 9″	Black	9448T241	$4.15
3″ × 16¼″ × 9″	Black	9448T361	6.95

Steel Organizers

	O'all Size, Ht. × Wd. × Dp.	Color		Each
Trays				
4 Tiers	9¼″ × 12″ × 8¾″	Black	4608T241	$36.52
6 Tiers	14¾″ × 12″ × 8¾″	Black	4608T261	38.68
File Holders				
5 Slots	7¼″ × 11″ × 10¾″	Black	9449T51	28.50
8 Slots	7¼″ × 15¾″ × 10¾″	Black	9449T52	44.42
Tray/File Holder				
3 Trays, 3 Slots	8¾″ × 15″ × 11″	Black	9385T13	41.53
Multi-Shelf Organizers				
3 Shelf Dividers	18⅜″ × 47¼″ × 9½″	Black	4851T601	163.20
4 Shelf Dividers	18⅜″ × 58¼″ × 9½″	Black	4851T801	186.56
Bookends				Per Pair
Short	5″ × 4 11/16″ × 5¼″	Black	12235T121	$4.81
Short	5″ × 4 11/16″ × 5¼″	Gray	12235T122	4.81
Short	5″ × 4 11/16″ × 5¼″	Tan	12235T123	4.81
Tall	9″ × 5 15/16″ × 8¾″	Black	12235T111	7.83
Tall	9″ × 5 15/16″ × 8¾″	Gray	12235T112	7.83
Tall	9″ × 5 15/16″ × 8¾″	Tan	12235T113	7.83

Desk Pads

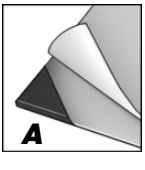
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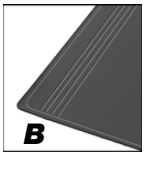
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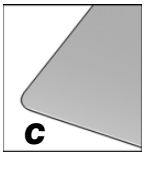
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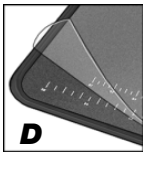
D

These pads protect your desk and provide a smooth writing surface.
Style A includes 50 plain tear-off sheets of white paper.
Style D has a clear lift-up cover to keep your papers secure and visible.

	Material	O'all Size, Wd. × Lg.		Each
A	Brown Cardboard	17″ × 22″	13445T13	$11.26
B	Black Vinyl	19″ × 24″	13445T11	16.90
C	Transparent Nonglare Plastic	19″ × 24″	13445T15	23.92
D	Black Rubber w/ Plastic Cover	19″ × 24″	13445T14	32.13

Copy and Book Stands

Copy Stand

Book Stand

Copy stand has a clip to keep papers in place and a detachable line guide. It's made of light gray plastic.
Book stand has an elastic band to keep your book opened to the right page. Stand is made of black plastic and collapses flat for storage.

	Ht. × Wd. × Dp.		Each
Copy Stand	11¼″ × 10⅛″ × 7⅜″	13985T7	$14.46
Book Stand	6½″ × 11″ × 7″	2699T4	16.25

Clipboards

Hardboard with Top Clip

Side Clips

Low-Profile Clip

O'all Size, Wd. × Lg.	Sized For	Sheet Capacity	Color		Each
Hardboard					
Steel Top Clip					
6″ × 9½″	—	1″	Brown	1268T1	$1.90
7″ × 11″	—	1″	Brown	1268T2	2.00
9″ × 12½″	Letter	1″	Brown	1268T3	2.09
9″ × 15½″	Legal	1″	Brown	1268T4	2.17
15″ × 20″	—	1″	Brown	1268T6	5.46
Replacement Clip for 1268T1				1268T63	1.46
Replacement Clip for 1268T3, T4, T6				1268T67	1.89
Steel Side Clips					
14½″ × 19″	—	1″	Brown	1268T81	11.37
19″ × 19″	—	1″	Brown	1268T82	11.97
23″ × 26″	—	1″	Brown	1268T83	13.14
Plastic					
Steel Top Clip					
8½″ × 12½″	Letter	1″	Blue	12415T13	6.07
8½″ × 12½″	Letter	1″	Red	12415T11	6.07
8½″ × 12½″	Letter	1″	Yellow	12415T12	6.07
Plastic for Clean Room					
Plastic Low-Profile Top Clip					
9″ × 13″	Letter	¼″	White	12415T15	44.18
Aluminum					
Steel Top Clip					
8 15/16″ × 13¼″	Letter	1″	—	1269T3	10.31
8 15/16″ × 15 13/16″	Legal	1″	—	1269T4	11.71
Steel Low-Profile Top Clip					
8 15/16″ × 12⅝″	Letter	½″	—	12415T8	13.26
8 15/16″ × 14 9/16″	Legal	½″	—	12415T9	15.06
Type 304 Stainless Steel					
Stainless Steel Low-Profile Top Clip					
9″ × 12″	Letter	⅜″	—	1269T7	28.25

Clipboards for Top-Punched Sheets

Also known as archboards, these clipboards have two lever-release steel rings to hold top-punched sheets. They're made of brown hardboard.

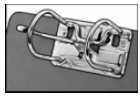

O'all Size, Wd. × Lg.	Rings Capacity	Rings Ctr.-to-Ctr.		Each
9″ × 14½″	2¾″	2¾″	1266T2	$4.93
9″ × 16½″	2¾″	2¾″	1266T3	5.62

Clipboards with Form Holder

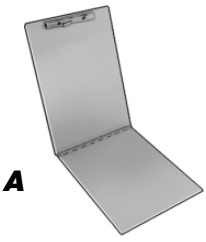
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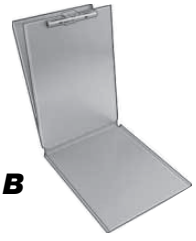
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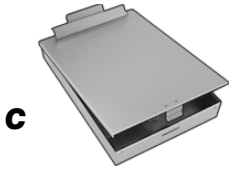
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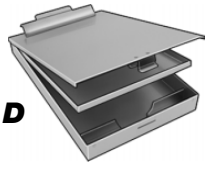
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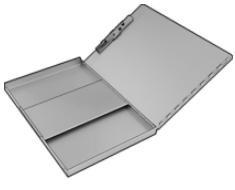
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G

H

(A&B) Aluminum flip-down have a steel clip. Clipboard with *rear storage* has a hinged compartment.

(C-E) Aluminum flip-up have a deep storage compartment with pen and pencil tray. Clip is steel. Clipboard with *hidden compartment* has a removable tray under the main compartment. Clipboard with *calculator* has a calculator on the lid that operates on the included 1.5-volt button-cell battery.

(F) Aluminum flip-side have a hinged writing plate with a steel clip on the right side and a storage compartment with an aluminum strap on the left.

(G) Plastic flip-up has a steel spring clip and a calculator on the lid that operates on the included 1.5-volt button-cell battery. Color is black.

(H) Plastic flip-side has a steel spring clip on the outside as well as a reversible and removable clip on the inside for holding papers, pens, and business cards. Color is dark gray.

Additional Feature	O'all Size, Wd. × Lg. × Dp.	Storage Dp.		Each
Aluminum Flip-Down—8½″ × 12″ Maximum Sheet Size				
A ... ———	9″ × 12½″ × 5/8″	———	**1645T24**	$26.40
B ... Rear Storage	9″ × 12″ × 1″	½″	**1645T14**	36.07
Aluminum Flip-Up—8½″ × 12″ Maximum Sheet Size				
C ... ———	9″ × 13½″ × 2½″	1½″	**1645T11**	35.70
D ... Hidden Compartment	9″ × 14 5/16″ × 2 11/16″	1″	**1645T23**	31.23
E ... Calculator	9″ × 14 3/16″ × 2 13/16″	1½″	**1645T27**	52.77
Aluminum Flip-Side—8½″ × 12″ Maximum Sheet Size				
F ... ———	9″ × 12¼″ × 1″	3/8″	**1645T17**	37.66
Aluminum Flip-Side—8½″ × 14″ Maximum Sheet Size				
F ... ———	9″ × 14″ × 1″	1″	**1645T25**	43.09
Plastic Flip-Up—8½″ × 12″ Maximum Sheet Size				
G ... Calculator	10″ × 16″ × 1¾″	1″	**3122T16**	18.20
Plastic Flip-Side—9½″ × 12″ Maximum Sheet Size				
H ... ———	10¾″ × 13½″ × 2⅛″	1″	**3122T15**	17.20
Replacement 1.5-Volt Battery			**7604K51**	$1.48

Writing Pad Holder

Holder has a pocket on the inside cover and a brass clip to secure a 50-sheet, 8½″ Wd. × 11″ Lg. pad of paper (white pad included). Holder is made of black vinyl.

Pad Refill—**To Order:** Please specify color: white or yellow.

	Wd. × Lg.		Each
Holder	9″ × 12½″	**14185T214**	$6.66
Pad Refill (12/Pkg.)		**12945T21** Per Pkg.	$12.11

3-Ring Binders

Plain Cover

View-Sleeve Cover

Heavy Duty

Organize and protect paperwork up to 8½″ Wd. × 11″ Lg.

Standard binders are polypropylene-covered and have an inner pocket on each side. Binders with *locking D-ring* have a double-trigger lock that keeps rings aligned. *Plain Cover*—**To Order:** Please specify color: black or blue, unless noted. *View-Sleeve Cover*—Front, back, and spine have a clear sleeve. **To Order:** Please specify color: black or white, unless noted.

Heavy duty binders are aluminum with round ring.

Binder inserts are punched for three-ring binders. *Paper dividers* are buff colored. *Polypropylene dividers* come in assorted colors. All *protectors* are made of clear polypropylene. *Side-load protectors* include a black filler sheet. *Top-load protectors* eliminate the need to punch holes in your documents.

Standard Binders

Ring Capacity	*Plain Cover*	Each	*View-Sleeve Cover*	Each
Round Ring				
1″	**12795T11**	$2.74	**12795T16**	$2.75
2″	**12795T12**	5.24	**12795T171** ♦	6.78
3″	**12795T131** ★	9.48	**12795T18**	8.07
D-Ring				
1″	**12795T251** ★	6.17	**12795T42**	7.74
2″	**12795T261** ★	9.95	**12795T45**	11.88
3″	**12795T271** ★	12.33	**12795T46**	16.10
4″	**12795T281** ★	34.43	**12795T47**	34.90
Locking D-Ring				
1″	**12795T31**	9.97	**12795T541** ♣	11.72
2″	**12795T32**	14.56	**12795T55**	16.33
3″	**12795T33**	21.69	**12795T56**	22.28
4″	**12795T34**	29.76	**12795T57**	32.11
5″	**12795T351** ★	50.88	**12795T58**	53.57

♦ Not available in black. ★ Not available in blue.
♣ Not available in white.

Heavy Duty Binders

Ring Capacity		Each
1″	**12795T75**	$25.58
2″	**12795T76**	27.56

Binder Inserts

	Pkg. Qty.		Per Pkg. 1-11	12-Up
Dividers				
Paper with Colored Index Tabs	5	**8666T3**	$1.70	$1.48
Polypropylene with Index Tabs	5	**8666T7**	4.38	3.99
Sheet Protectors			1-4	5-Up
Side Load	50	**8666T15**	8.58	$7.72
Top Load	50	**8666T21**	9.36	8.55
Nonglare Top Load	50	**8666T25**	9.36	8.55
Business Card Protector			1-11	12-Up
20 Card Capacity/Sheet	10	**8666T42**	3.00	$2.70
3½″ × 5″ Photo Protector				
Eight Photo Capacity/Sheet	50	**8666T56**	13.78	12.40

Business Card Files

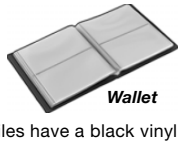
Wallet

Desk

Card files have a black vinyl cover and clear vinyl pouches.

	Capacity	Ht. × Wd.		Each
Wallet	48 cards	5⅛″ × 4⅝″	**20425T21**	$7.13
Desk	96 cards	10⅛″ × 4½″	**20425T23**	11.43

Tray and Rotary Card Files

Keep your business contacts right at your fingertips. These files hold up to 500 cards (2¼″ × 4″) with alphabetical tabs; cards and tabs included. Cards are durable enough that you can write and type on both sides. Files are plastic with a black base.

Flip-Cover Tray—A see-through hinged cover keeps cards dust-free.

Rotary Cover—Roll open the see-through cover for access to cards; roll back to protect them. Just turn the knob to flip through your cards. File has a swivel base.

Open Tray

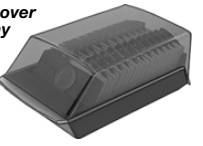
Flip-Cover Tray

Rotary Cover

	O'all Size, Lg. × Wd. × Ht.		Each
Open Tray	9 5/16″ × 4 9/16″ × 3″	1229T421	$23.00
Flip-Cover Tray	8″ × 4½″ × 2¾″	1229T511	31.74
Rotary Cover	8½″ × 6¾″ × 9½″	1229T552	46.86

	Pkg. Qty.		Per Pkg.
Replacement Blank Cards	100	1229T25	$2.98
Replacement Alphabetical Tabs	24	1229T33	2.96

Card Files

Top Opening

Two Drawer

Organize and store hundreds of cards in these black steel files. All have a follower block to keep cards upright.

Top-opening files have a hinged lid with automatic stop. ***Two-drawer*** files have front-opening drawers with a pull handle, label holder, and bail stop to prevent the drawer from falling out.

For Card Size	Card Cap.	Lg. × Wd. × Ht.		Each
Top Opening				
3″ × 5″	900	8½″ × 5½″ × 4″	4601T221	$28.81
5″ × 8″	900	8½″ × 8½″ × 6″	4601T261	38.56
Two Drawer				
3″ × 5″	1,600	16″ × 12 5/8″ × 5 1/8″	4627T16	80.85
5″ × 8″	1,600	16″ × 18 5/8″ × 7 1/8″	4627T18	116.68

File Cards and Card Guides

Index cards are white and ruled on one side. ***Index card guides*** are printed with A-Z. They're made of blue pressboard and have ⅜″ tabs.

Card Size	Index Cards Pkg. Qty.		Per Pkg.	Index Card Guides Pkg. Qty.		Per Pkg.
3″ × 5″	100	13045T41	$0.91	25	8658T61	$5.20
4″ × 6″	100	13045T42	1.74	25	8658T62	7.02
5″ × 8″	100	13045T43	2.88	25	8658T63	10.91

Magnetic Paper Grippers

Quickly post papers and notes. Grippers hold up to 10 sheets of paper between two vinyl-covered magnets. Both have an adhesive back.

Color	Lg. × Wd.		Each
Blue	4″ × 1″	38895T224	$7.24
White	4″ × 1″	38895T221	7.24

Paper Clips

	Lg.	Box Qty.		Per Box
Regular Clip	1¼″	100	12765T41	$0.39
Jumbo Clip	1 15/16″	100	12765T42	.79

		Each
Clip Dispenser	12765T51	$1.66

Clip

Clip Dispenser

Light Duty Plastic Swivel Clips

A

B

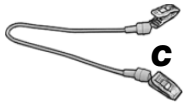
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	O'all Lg.	Clip Wd.	Jaw Open.		Each
A One Clip w/Adhesive Back	2¼″	7/8″	5/16″	5109A4	$1.09
B Two Clips w/Swivel Connection	3½″	7/8″	3/8″	5109A5	1.23
C Two Clips w/Wire Connection	12″	13/32″	5/16″	5109A11	3.19

Binder Clips

Clip Wd.	Jaw Opening	Box Qty.		Per Box
Steel				
½″	¼″	12	12755T71	$0.71
¾″	5/16″	12	12755T72	.81
1¼″	5/8″	12	12755T73	1.74
2″	1 1/16″	12	12755T74	4.26
Stainless Steel				Each
¾″	5/16″	—	12755T81	$2.86
1¼″	9/16″	—	12755T82	3.68
2″	1″	—	12755T83	5.32

Steel

Stainless Steel

Steel Bulldog Clips

Clip Wd.	Jaw Opening	Box. Qty.		Per Box
Standard				
1″	¼″	36	8465T19	$8.62
1¼″	⅜″	36	8465T21	9.12
2″	¾″	36	8465T22	19.20
2½″	1″	12	8465T25	9.00
3″	1″	12	8465T23	14.84
With Magnet				
1¼″	⅜″	24	1320T15	15.08
2″	¾″	12	1320T17	10.48

Standard

With Magnet

Clipboard-Style Steel Clip

This low-profile clip has three holes for wall mounting: one ¼″ dia. and two ⅛″ dia. (fasteners not included).

Lg. × Wd.	Jaw Opening	Pkg. Qty.		Per Pkg.
4¾″ × 1¼″	1¼″	5	1095T5	$13.03

Security Box

Also known as a cash box, this gray steel box has a lock (two keys included) and carrying handle. It is 4⅝″ Ht. × 10″ Wd. × 8½″ Dp.

6583A8 ..... Each $37.30

Rubber Bands

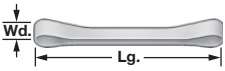

Supplied in 1-lb. packages.

Size No.	Lg. × Wd.	Min. Qty. per Pkg.		Per Pkg. 1-9	10-Up
Latex (Natural Rubber)—Tan					
10	1¼″ × 1/16″	5,300	12205T51	$9.90	$8.79
12	1¾″ × 1/16″	3,850	12205T73	9.90	8.79
14	2″ × 1/16″	3,380	12205T52	9.90	8.79
16	2½″ × 1/16″	2,675	12205T74	9.90	8.79
18	3″ × 1/16″	2,205	12205T75	9.90	8.79
19	3½″ × 1/16″	1,890	12205T53	9.90	8.79
30	2″ × 1/8″	1,770	12205T76	9.90	8.79
31	2½″ × 1/8″	1,330	12205T77	9.90	8.79
32	3″ × 1/8″	1,100	12205T54	9.90	8.79
33	3½″ × 1/8″	970	12205T78	9.90	8.79
64	3½″ × 1/4″	490	12205T55	9.90	8.79
73	3″ × 3/8″	360	12205T79	9.90	8.79
74	3½″ × 3/8″	320	12205T81	9.90	8.79
82	2½″ × 1/2″	320	12205T82	9.90	8.79
84	3½″ × 1/2″	240	12205T83	9.90	8.79
105	5″ × 5/8″	95	12205T84	9.90	8.79
107	7″ × 5/8″	60	12205T85	9.90	8.79
117A	7″ × 1/16″	600	12205T86	9.90	8.79
117B	7″ × 1/8″	300	12205T87	9.90	8.79
Latex (Natural Rubber)—Red					
117B	7″ × 1/8″	180	12205T67	7.85	6.98
142	8½″ × 1/8″	120	12205T68	7.85	6.98
Latex-Free (Synthetic Rubber)—Orange					
19	3½″ × 1/16″	1,440	12205T92	10.47	9.32
33	3½″ × 1/8″	720	12205T94	10.47	9.32
64	3½″ × 1/4″	380	12205T96	10.47	9.32
117B	7″ × 1/8″	250	12205T98	10.47	9.32

Staplers

Standard

Compact

Stand Up

Light Touch

Extra-Long Reach

All have a steel shell except ***compact*** and ***stand up***, which have a plastic shell. All are black except ***light touch***, which is black and gray. Staples sold separately unless otherwise noted.

Light-touch stapler has a spring-action operation that requires significantly less effort than other staplers. It includes one box of staples.

	Sheet Cap.	Reach★	Lg. × Wd. × Ht.		Each
Standard	20	3½″	7¼″ × 1¾″ × 2½″	1242T431	$5.35
Compact	20	2¼″	4⅜″ × 1″ × 2⅜″	1242T55	9.38
Stand Up	10	3¾″	3¼″ × 2″ × 6″	1242T65	12.05
Light Touch	25	4⅜″	6¾″ × 1½″ × 3¼″	1179T2	31.42
Extra-Long Reach	20	12″	17⅜″ × 2¾″ × 2⁵⁄₁₆″	1242T47	26.11

Staples (5,000/Box) 1242T6 **Per Box** 1-4 $1.27 5-Up $1.13

★ Maximum distance of staple from edge of paper.

Paper Hole Punches

1-Hole Standard

2-Hole Standard

3-Hole Standard

3-Hole Heavy Duty Adjustable

3-Hole Heavy Duty Fixed

Cut clean holes through paper while clippings collect in receptacle for quick, neat disposal. Hole punches with an *adjustable* punch setting let you move and change the number of holes according to your needs. All are steel.

Standard— Designed for routine paper-punching jobs.

Heavy Duty— Penetrate large amounts of paper with minimal effort. *Fixed* punch has an adjustable paper guide.

Punch Setting	Sheet Cap.	Hole Dia.	Lg. × Wd. × Ht.		Each
1-Hole Standard—Color is chrome.					
____	10	1/8″	5″ × 1/4″ × 2¼″	12885T35	$2.79
____	10	1/4″	5¼″ × 1/4″ × 2¼″	12885T21	2.10
____	15	1/4″	6¼″ × 3/4″ × 3″	12885T22●	5.59
2-Hole Standard—Color is black.					
Fixed	30	9/32″	5¾″ × 4⅜″ × 2½″	12805T35	7.70
3-Hole Standard—Color is black.					
Adjustable	12	9/32″	11½″ × 2½″ × 1¾″	1232T24	8.35
3-Hole Heavy Duty—Adjustable is black; fixed is gray.					
Adjustable	40	9/32″	10½″ × 5¼″ × 3″	12775T48	35.17
Fixed	75	9/32″	11⅞″ × 7¾″ × 7½″	12775T84	110.13

● Has an ergonomic cushion-grip handle.

Heavy Duty Staplers

Lever-action arm allows you to staple extra-thick stacks. Staplers have an adjustable paper guide and an antimicrobial finish to inhibit bacteria growth. They're made of black steel and have a nonskid base.

Staplers

Sheet Cap.	Reach★	Lg. × Wd. × Ht.	Uses Staple Sizes		Each
130	2¾″	12″ × 3½″ × 5½″	1/4″-5/8″	1725T7	$34.27
215	2¾″	14″ × 3¼″ × 10¾″	1/4″-15/16″	1725T9	74.47

★ Maximum distance of staple from edge of paper.

Staples— 1,000 per box

Lg.	Sheet Cap.		Per Box 1-4	5-Up
1/4″	25	1725T29	$3.54	$3.17
3/8″	55	1725T31	5.47	4.92
1/2″	85	1725T33	4.76	4.29
5/8″	130	1725T35	4.98	4.45
13/16″	165	1725T39	10.50	9.41
15/16″	215	1725T37	10.92	9.79

Automatic Staplers

30-Sheet Cap.

70-Sheet Cap.

For effortless stapling, choose one of these electric staplers. They have a jam-release mechanism to minimize interruptions, an adjustable paper guide for consistent staple positioning, and a box of 5,000 staples. Staplers operate on 115 VAC, 60 Hz and have a 6-ft. long cord with two-prong plug. UL listed.

30-sheet capacity stapler has a gray plastic shell. Draws 0.24 amps.

70-sheet capacity stapler has a safety lock to prevent use when the shell is not in place. Shell is black plastic. Draws 0.35 amps.

Staplers					***Replacement Staples***		
Sheet Cap.	Reach★	Lg. × Wd. × Ht.		Each	Box Qty.	Per Box 1-4	5-Up
30	3/4″	7 11/16″ × 5½″ × 8½″	8401T18	$151.14	5,000 8401T24	$10.98	$9.84
70	1⅛″	10″ × 4½″ × 6⅞″	8401T32	373.03	5,000 8401T36	21.10	18.90

★ Maximum distance of staple from edge of paper.

Staple Removers

Pinch Style

Lever Style

	Lg. × Wd. × Ht.		Each
Pinch Style	2¼″ × 1½″ × 1¾″	12245T21	$1.45
Lever Style	5¼″ × 2 1/16″ × 3½″	12245T41	12.10

Wood Clothespins

Lg.	Wd.	Jaw Opening	Pkg. Qty.		Per Pkg.
3 5/16″	1/2″	9/16″	50	12275T53	$7.42

Pencil Sharpeners

Manual

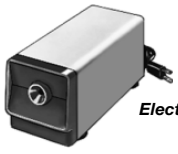
Electric

Battery

Manual sharpener includes mounting fasteners.

Electric sharpeners run on 120 VAC, 60 Hz (2 amp draw) and have a 5-ft. long cord with two-prong plug.

Battery-operated sharpener is portable for use anywhere and runs on four AA batteries (sold separately).

	Shell Material	Color		Each
Manual	Steel	Silver	1225T14	$20.45
Electric	Plastic	Black	8393T23	51.00
Electric	Plastic	Putty	8393T13	51.00
Battery Operated	Plastic	Black	8502T6	16.09
AA Batteries (4/Pkg.)			71455K53	Per Pkg. $2.94

Fax Machine

This plain-paper fax machine/copier has caller ID display, 112-number speed dial, 20-sheet automatic document feed, 64 levels of gray scale for quality reception, and it stores up to 25 pages of incoming or outgoing documents (in case machine runs out of paper). Transmission time is approximately 9 seconds. Machine uses letter- and legal-size plain paper (sold separately); 200-sheet (letter size) capacity.

Operates on 120 VAC, 50/60 Hz and has a 6-ft. long cord with three-prong plug. Machine is 9″ Ht.×15″ Wd.×15″ Dp. with a white plastic housing. UL listed.

			Each
Fax Machine	10675T71		$138.66
Replacement Inkjet Cartridge	10675T85		33.94
Plain Paper, 8 1/2″×11″ (500 Sheets/Pkg.)	12905T31	Per Pkg.	$5.66
Plain Paper, 8 1/2″×14″ (500 Sheets/Pkg.)	12905T32	Per Pkg.	$9.73

Rubber Fingertips

Size	Dia.	Pkg. Qty.		Per Pkg.
12	11/16″	12	12815T13	$2.60
13	3/4″	12	12815T14	2.60
14	7/8″	12	12815T15	2.60

Erasers

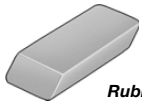
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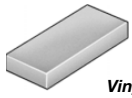
Vinyl

	Lg.×Wd.×Ht.	Color	Box Qty.		Per Box
Rubber	2 5/8″×1″×7/16″	Pink	12	13225T21	$5.95
Vinyl	2 3/4″×1″×1/2″	White	12	13225T23	9.00

Battery-Operated Eraser

Eraser runs on two AAA batteries (not included). Includes ten 1″ long eraser sticks. Housing is plastic.

		Each
Eraser	8662T41	$10.31
		Per Pkg.
Replacement Eraser Sticks (30/Pkg.)	8662T42	$4.14
AAA Batteries (4/Pkg.)	71455K62	2.82

Typewriter

View and edit your work in the 16-character LCD before printing. This typewriter has a 78,000-word dictionary and correction system that erases a word or line with a single keystroke. Overall size is 5.3″ Ht.×15.1″ Wd.×16.4″ Dp. Housing is light gray plastic.

Operates on 120 VAC, 60 Hz (0.31 amp draw) and has a 5-ft. long cord with two-prong plug. UL listed.

		Each
Typewriter	2547T25	$248.36
Replacement Ribbon	2547T26	7.31
		Per Pkg.
Replacement Correction Tape (2/Pkg.)	2547T27	$7.31

Paper Shredders

A

Cross Cut

B

Strip Cut

C

Cross Cut

D

Strip Cut

Protect confidential information by shredding documents before they go into the trash. Insert material and these shredders automatically start and then stop when finished.

In addition to paper, these machines shred credit cards, staples, CDs, and paper clips. They have a safety lock or safety sensor to prevent accidental shredding. Machines operate on 120 VAC, 60 Hz and have a 5-ft. long cord with three-prong plug. Color is black and gray.

Styles A and *C* cross-cut paper into confetti-like pieces; *Styles B* and *D* cut paper into strips.

Intermittent duty have a plastic bin. *Style A* has a maximum run time of 4 minutes on/40 minutes off and draws 2.7 amps. Bin has a lift-off head. UL listed. *Style B* has a maximum run time of 20 minutes on/10 minutes off and draws 2.5 amps. Has a pull-out bin. CSA certified.

Continuous duty have casters for portability and a pull-out wire frame. All are CSA certified. *Style C* draws 4.5 amps. *Style D* is designed for high-volume shredding. It draws 8 amps.

	Max. Document Width	Max. Sheets/ Pass	Recommended Daily Sheet Capacity	Shred Size	Waste-basket Cap., gal.	O'all Size, Ht.×Wd.×Dp.	Shredders	Each	Shredder Bags Box Qty.		Per Box
Intermittent Duty											
A	9″	10	375	1/4″×1 1/2″	5	15″×14″× 9″	9998T71	$132.20	100	9998T61	$50.00
B	9″	20	700	1/4″	8	22″×17″×13″	9998T72	324.00	100	9998T61	50.00
Continuous Duty											
C	10″	18	3,000	1/4″×1 3/4″	13	24″×16″×19″	9998T73	651.00	25	9998T62	22.50
D	10″	32	18,000	1/4″	30	35″×21″×21″	9998T74	1,438.47	25	9998T63	23.92
Shredder Oil (16-oz. bottle)							9998T64	Each	$15.29		

Copier Paper, Pads, and Notebooks

All-weather products have a special coating that sheds water. Write on them using an ordinary pencil or the *all-weather pen*.

Clean room products are for use in Class 100 and higher clean rooms.

Copier Paper

Size	Sheets/Pkg.	Standard Per Pkg.		Recycled Per Pkg.	
Standard—*20-lb. Bond Paper; 92 Brightness*					
8½″×11″	500	12905T31	$5.66	12905T34	$6.34
8½″×14″	500	12905T32	9.73	12905T35	9.69
11″ ×17″	500	12905T33	13.38	12905T36	15.77
All Weather—*20-lb. Bond Paper; 85 Brightness*					
8½″×11″	25	4602T34	11.12	—	—
Clean Room—*22.5-lb. Bond Paper; 89.5 Brightness*					
8½″×11″	100	7842T43	13.28	—	—

Lined Writing Pads

Ruled Paper—**To Order:** Please specify color: white or yellow.
Graph Paper—Color is white.

Size	Sheets/Pad	Pads/Pkg.	Standard Per Pkg.		Recycled Per Pkg.	
Ruled Paper—*Perforated Top*						
8½″×11″	50	12	12945T21	$12.11	12945T26	$19.20
8½″×13¼″	50	12	12945T31	15.54	12945T36	27.59
Ruled Paper—*Gum-End Top*						
8½″×11″	50	12	12945T41	17.31	—	—
Graph Paper—*¼″ Grid Size; Gum-End Top*						
8½″×11″	50	1	2898T51	3.51	—	—

Lined Spiral Notebooks

All are ruled except 7842T35, which has a ¼″ grid size.

Size	Sheets		Each
All-Weather—*Yellow Plastic Cover*			
4″ × 6″	50	4602T31	$6.76
4⅝″× 7″	32	4602T32	7.67
8½″×11″	42	4602T33	16.50
Clean Room			
3″ × 5″	50	7842T39	9.31
5½″× 8½″	50	7842T37	11.88
8½″×11″	50	7842T33	12.96
8½″×11″ Graph	50	7842T35	12.96

All-Weather Pen—Color is black.

Pen (1/Pkg.)	16805T511	**Per Pkg.**	$2.26

Self-Stick Note Pads

Each pad has 100 sheets. Color is yellow.

Size	Standard Pads/Pkg.		Standard Per Pkg.	Recycled Pads/Pkg.		Recycled Per Pkg.
1½″×2″	12	13645T41	$7.81	12	13645T55	$8.78
3″ ×3″	12	13645T42	14.53	—	—	—
3″ ×5″	12	13645T43	19.72	—	—	—

Folders

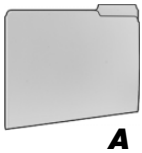
A

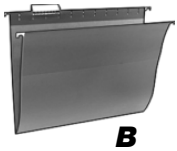
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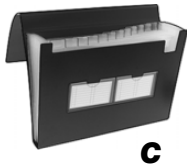
C

(A) Manila Folders

Ht.×Wd.	Box Qty.	Standard Per Box		Recycled Per Box	
Letter 9½″×11¾″	100	13025T11	$17.67	13025T34	$20.39
Legal 9½″×14¾″	100	13025T12	22.98	13025T35	25.15

(B) Hanging Folders

These durable folders are made of dark green heavy stock and include plastic tabs and inserts.

Reinforced folders have plastic strips at the top and bottom for abrasion and tear resistance.

Ht.×Wd.	Standard Per Box		Recycled Per Box	
1″ Capacity—*Box qty. is 25*				
Letter 9⅜″×11¾″	14015T31	$13.39	14015T62	$17.83
Legal 9⅜″×14¾″	14015T45	16.04	14015T63	20.34
Reinforced Letter 9⅜″×11¾″	14015T12	18.22	14015T66	22.69
Reinforced Legal 9⅜″×14¾″	14015T24	21.40	—	—
2″ Capacity—*Box qty. is 25*				
Reinforced Letter 9⅜″×11¾″	14015T14	28.60	—	—
Reinforced Legal 9⅜″×14¾″	14015T26	33.16	—	—
Repl. Plastic Tabs and Inserts (25/Pkg.)	14015T65	**Per Pkg.**	$4.52	

(C) Expandable Folders

Organize your paperwork in these 13-pocket black plastic folders. They include a removable write-on spine label, two clear business card pouches, and blank and alpha index tabs.

Ht.×Wd.		Each
Letter 9½″×13″	84685T13	$9.44
Legal 10″ ×15″	84685T11	12.70

Transparent Drafting Paper

This white 17-lb. vellum paper is made of 100% rag fiber. Meets Federal Specification UU-P-561-H, Type IV.

Size	Plain Sheets/Pkg.		Plain Per Pkg.	⅛″ Grid Sheets/Pkg.		⅛″ Grid Per Pkg.
8½″×11″	10	13095T31	$5.84	10	13095T411	$6.90
11″ ×17″	10	13095T32	7.91	10	13095T421	9.03
18″ ×24″	10	13095T34	14.63	10	13095T441	17.46
24″ ×36″	10	13095T35	29.64	10	13095T451	35.07

Steel Computer Stands

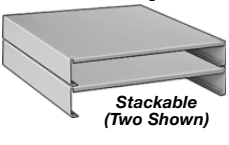
Stackable (Two Shown)

Wide

	Cap., lbs.	Ht.×Wd.×Dp.	Color	Each
Stackable	75	2″ ×11⅞″×11⅞″	Gray 14265T4	$27.90
Wide	50	3⅞″×23⅜″×10⅛″	Gray 14265T6	50.26

Computer Keyboards

D

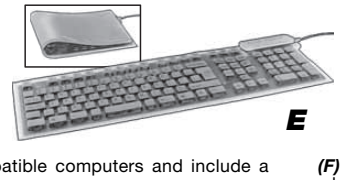
E

F

G

All keyboards plug into PC-compatible computers and include a PS/2 (6-pin mini-DIN) adapter.

(D) Standard keyboard is made of plastic and sealed to resist liquid spills. Also includes a USB adapter. Color is black.

(E) Foldable keyboard is made of flexible plastic that's dust and water resistant. Color is blue with silver keys.

(F) NEMA 12 keyboard resists dirt and light water splashes. It's made of gray and black plastic.

(G) NEMA 4X keyboard is corrosion resistant and waterproof with an integrated pointer system that eliminates the need for a separate mouse. It has a rubber keypad and plastic case with four 8-32 mounting holes (fasteners not included). Color is black.

	Number Keypad	Wd.×Dp.		Each
D Standard	Yes	18″ ×6½″	13555T4	$19.44
E Foldable	Yes	19½″×5⅜″	5416T3	33.82
F NEMA 12	Yes	15½″×8″	13555T9	358.21
G NEMA 4X	No	11¼″×6¼″	13555T11	$423.79
Optional PS/2 to USB Adapter			13555T13	5.75
Optional USB to PS/2 Adapter			13555T14	5.05

Computer Keyboard Drawers

Desktop Mount

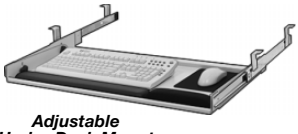

Adjustable Under-Desk Mount

Adjust and Swivel Under-Desk Mount

Drawers have a built-in, padded wrist rest for comfort and support, unless noted.

Desktop Mount—Support and elevate your monitor with this plastic platform. Color is gray.

Under-Desk Mount—For use under a desk, tabletop, or shelf. Mounting hardware is included. *Standard plastic* color is black; *standard steel* color is gray. *Adjustable* has a 2¼″ vertical adjustment and tilts up to 15°. Color is gray. *Adjust and swivel* has a 7″ vertical adjustment, tilts up to 25°, and swivels 360°. Color is black.

Drawer Style	Tray Material	Lg. × Wd. × Ht.		Each
Desktop Mount				
Standard	Plastic	31½″ × 18⅜″ × 3″	13085T21	$78.57
Under-Desk Mount—*13085T66 and T67 have space for a mouse.*				
Standard	Plastic	20½″ × 12″ × 1⅜″	13085T22●	27.69
Standard	Steel	25⁹⁄₁₆″ × 16⅛″ × 3⅛″	13085T65	91.73
Adjustable	Steel	33⅛″ × 16″ × 5″	13085T66	154.79
Adjust & Swivel	Wood	28″ × 17″ × 3½″	13085T67	234.69

● Does not include a padded wrist rest.

Precise Fit See-Through Plastic Keyboard Protectors

Protect your keyboard from dust and spills without hindering your typing. These protectors conform to the key layout and have adhesive-backed edges to seal out contaminants.

Also Available: Keyboard protectors to fit other manufacturers' keyboards. Please ask for 1733T55 and specify manufacturer's name and model number.

Compatible Keyboards		Each
Compaq KB0133, KU3923, 4700P	1733T24	$17.57
Compaq KB9860, RT231BTW, RT235BTW	1733T61	17.57
Compaq SK1688, GYUR84SK	1733T23	17.57
Compaq SK2875, SK2855, KB0316, SML4000, SDL4000, 9109	1733T25	17.57
Dell RT7D00, SK8100, RT7D20	1733T48	17.57
Dell SK8115, RT8D50, L100	1733T46	17.57
Dell SK8135	1733T49	17.57
Dell SK8125	1733T43	17.57
Dell Quietkey SK1000REW, SK2000REW, SK8000	1733T83	17.57
Gateway 2000 Anykey	1733T81	17.57
Hewlett Packard KB9970, C4735-60101	1733T65	17.57
IBM KB0225, SK8820, SK8825	1733T52	17.57
IBM KB8923	1733T11	17.57
Keytronics EO3601QL-C	1733T68	17.57
Mitsumi KFKEA4XA	1733T91	17.57

See-Through Plastic Equipment Covers

Slip these flexible covers over your computer equipment when not in use for protection from dust and other contaminants.

Adjustable keyboard cover has elasticized edges.

Fits	Lg. × Wd. × Ht.		Each
Keyboard			
Medium	19″ × 8½″ × 2″	13595T25	$4.80
Large	21″ × 9″ × 2″	13595T8	5.20
Adjustable	20″ × 8″ × 2″ (max. size)	1733T97	7.20
CRT Monitor			
13″-15″	15¾″ × 17″ × 14″	13595T12	7.80
16″-17″	17″ × 19″ × 16″	13595T9	9.40
19″-22″	20″ × 22″ × 19″	13595T7	10.80
Printer			
Small	18″ × 15¼″ × 7″	13595T5	8.40
Medium	18″ × 20″ × 11″	13595T4	8.80
Large	27″ × 20½″ × 7¾″	13595T11	9.20
CPU/Tower			
Short	9″ × 19″ × 15″	13595T18	7.00
Tall	9″ × 19″ × 27″	13595T19	8.00

Cleaners

Computer screen cleaning pads come in twin packs containing one moistened pad and one drying pad. 14 twin packs/case.

Computer Screen Cleaning Pads	6219T11	Per Case	$7.33
CD/DVD Cleaning Pads (12/pkg.)	70745T11	Per Pkg.	$3.98
Laser Lens Cleaning Disc	62225T15	Each	$11.47

Computer Mice, Mouse Pads, and Wrist Rest

Computer Mice

Laser

NEMA 4X

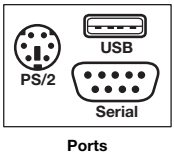

Ports

All are PC compatible for Windows and include a PS/2 adapter and cable cord.

Laser mouse is made of plastic with two buttons, a scroll wheel, and USB connector.

NEMA 4X mouse is corrosion-resistant and waterproof. It has an impact-resistant Type 304 stainless steel housing, rubber backplate, and serial port connector. Also meets NEMA 6P, 12, and 13 to resist dust and oil and coolant splashes.

	Lg. × Wd. × Ht.	Color		Each
Laser	4¼″ × 2¾″ × 1½″	Black	11985T8	$19.72
NEMA 4X	5″ × 4¼″ × 1⅛″	Silver/Black	11985T1	255.71
Optional PS/2 to USB Adapter			13555T13	5.75
Optional USB to PS/2 Adapter			13555T14	5.05

Mouse Pads

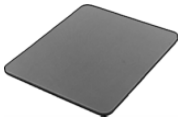

Color	Lg. × Wd. × Ht.		Each
Blue	8″ × 9½″ × ¼″	13405T802	$3.40
Gray	8″ × 9½″ × ¼″	13405T803	3.40
Red	8″ × 9½″ × ¼″	13405T801	3.40

Wrist Rest

Color	Lg. × Wd. × Ht.		Each
Black	19⁵⁄₁₆″ × 2⁵⁄₁₆″ × ¹⁵⁄₁₆″	13015T103	$13.62

Printer Sharing Switch

Two computers can share one parallel printer—simply hook computers up to this automatic switch. It can also be used to hook one computer up to more than one parallel device, including scanners, Zip drives, and most IEEE 1284 parallel devices. Switch has DB25 female ports.

13995T2	Each	$29.85

CDs, DVDs, Flash Drives, and VHS Tapes

CDs and DVDs

	Recording Cap.	Recording Time	Pkg. Qty.		Per Pkg.
CD-R (Recordable)	700 MB	80	10	12075T72	$9.76
CD-RW (Rewritable)	700 MB	80	10	12075T73	12.50
DVD-R (Recordable)	4.7 GB	120	10	12075T85	11.57
DVD-RW (Rewritable)	4.7 GB	120	5	12075T86	10.33

3.5″ Diskette/1.44 MB—PC Formatted

Double sided, high density. Box qty. is 10.

12075T24	Per Box	1-9	$6.76	10-Up	$6.04

USB Flash Drives—PC/Mac Formatted

Secure drive provides software-based security, 256-bit data encryption, and password protection.

	Standard	Each	Secure	Each
2 GB			12075T91	$59.89
4 GB	12075T89	$16.08		
8 GB	12075T6	25.27		
16 GB	12075T7	44.61		
32 GB	12075T8	95.00		

SD Memory Card and 63-in-1 Memory Card Reader

Use the ***reader*** to read from and write to 63 types of digital media memory cards. It's PC/Mac formatted and has a USB connection.

		Each
2 GB SD Memory Card	3077T15	$19.61
63-in-1 Memory Card Reader	12075T81	24.57

VHS Tape—8 Hours

15225T12	1-9	$3.98	10-Up	$3.62

Inkjet Printer Cartridges

New cartridges are original OEM part numbers. ***Remanufactured cartridges*** are recycled and refilled with ink.

HP = Hewlett Packard. *Tricolor* cartridges are cyan, magenta, and yellow.

Mfr./OEM No.	Color	New	Each	Remanufactured	Each
Canon BCI-21BK	Black			14835T51	$6.30
Canon BCI-24BK	Black	14835T92	$9.26	14835T51	6.30
HP15 (C6615DN)	Black	14835T43	38.67	14835T58	7.13
HP17 (C6625AN)	Tricolor	14835T46	41.27	14835T56	14.69
HP23 (C1823D)	Tricolor	14835T79	50.86	14835T75	16.91
HP26 (51626A)	Black	14835T88	46.18	14835T63	27.73
HP29 (51629A)	Black	14835T72	42.33	14835T76	12.89
HP45 (51645A)	Black	14835T91	40.51	14835T65	22.73
HP49 (51649A)	Tricolor	14835T73	46.41	14835T77	18.16
HP56 (C6656AN)	Black	14835T96	27.80	14835T95	9.32
HP57 (C6657AN)	Tricolor	14835T59	43.72	14835T49	21.65
HP78 (C6578DN)	Tricolor	14835T74	44.15	14835T78	18.73

Printing Calculator

Record your calculations with this desktop calculator. It has a 12-digit, angled digital display, memory keys, and a 7-ft. long cord with two-prong plug. Operates on 120 VAC, 60 Hz (0.05 amp draw). Furnished with a 2¼″ wide starter roll of printer paper.

Replacement printer paper roll is 2¼″ Wd.×150-ft. Lg.

	Lg.×Wd.×Ht.					Each
Calculator	13″×9″×3″	1364T53				$66.58
Repl. Red and Black Ink Ribbon		1364T28				4.91
Repl. Printer Paper Roll		1364T16	1-19	$1.28	20-Up	$1.09

CD and DVD Storage Containers

Multimedia Wallet

Multimedia Wallet

Cap.	Ht.×Wd.×Dp.	Material	Color		Each
48	12″×5″×1½″	Vinyl	Blue/Gray	15285T72	$15.24

CD/DVD Jewel Case (20/pkg.)

Cap.	Ht.×Wd.×Dp.	Material	Color		Per Pkg.
1	5″×4⅞″×3/16″	Plastic	Clear	15285T83	$7.26

Computer Screen Antiglare Visor and Protectors

Visor

Protector

Visor is plastic and adjusts to fit most monitors. It's also foldable.

Fits Monitor (Diagonal)		Each
14″-17″	1097T42	$34.00

Protectors cling to screen surface to protect it from dust, smudges, and scratches. They're made of plastic film and are easy to apply, remove, and reapply. Fit standard and wide screens and can be cut to size if necessary.

Fits Monitor (Diagonal)		Each
14″	2955T61	$30.36
15″	2955T63	32.12
17″	2955T64	33.31
19″	2955T65	34.59

Computer Screen Privacy Filters

Visible Straight On

Protected at an Angle

Protect confidential information with these tinted plastic filters. They darken the screen so it's only visible to the user.

Fits Monitor (Diagonal)		Each
12″	2918T21	$53.87
14″	2918T22	57.15
15″	2918T23	59.20
17″	2918T24	87.65
19″	2918T25	98.31

Solar-Powered Calculators

Flat

Angled

	Display	Lg.×Wd.		Each
Flat Pocket Size	8 digits	4⅛″×2½″	1751T31	$4.87
Flat Desktop	8 digits	4½″×2 11/16″	1751T33	7.50
Angled Desktop	8 digits	4⅝″×3⅜″	1751T35	9.45
Replacement Backup Battery for T31 and T33			12195T71	1.48
Replacement Backup Battery for T35			7701K34	1.92

Advanced-Function Calculators

All have memory, except 8471T59. Battery-powered calculators include batteries.

(A) Business—*Profit manager* calculator solves cost-sell-margin equations. Simply enter any two variables to get the third.

(B) Trades—*Metric converter* calculator performs English to metric conversions (and vice versa), including length, area, and volume. *Metric converter with fractions* and *metric converter plus with fractions* convert linear, square, and cubic figures from English to metric (and vice versa). The *metric converter plus with fractions* also provides an additional 400 conversion combinations. *Construction* performs functions for rafters, stairs, material estimation, and more. It also converts fractions. *HVAC* converts pressure to temperature (and vice versa) for many refrigerants. It also converts Fahrenheit to Celsius (and vice versa). *Electrical code* contains the NEC (National Electrical Code) tables and formulas to perform electrical functions.

(C) Scientific—*Statistics* calculators perform trigonometric functions, logarithms, roots, powers, reciprocals, and standard deviations. *Statistics with linear regression* includes the Statistics features above plus two variable statistics for linear regression and trend-line analysis. *Graphing statistics* combines advanced graphing and data analysis with calculus as well as statistical and financial functions. It has an 8-line, 16-character display and is software-upgradable.

A

B
Battery Powered

C
8392T9

Style	No. of Digits	O'all Size, Lg.×Wd.	Power	No. of Batteries	Calculators	Each	Repl. Batteries	Each
(A) Business								
Profit Manager	10	4 11/16″×5″	Solar	—	13625T15	$30.60	—	—
(B) Trades								
Metric Converter	10	4 11/16″×2 11/16″	Solar	1	8471T22	16.72	7604K51	$1.48
Metric Converter with Fractions	7	5 5/8″ ×3″	Battery	2	8471T24	36.73	7604K14	1.44
Metric Converter Plus w/ Fractions	7	5 11/16″×3″	Battery	1	8471T75	43.80	7701K32	1.57
Construction	7	5 5/8″ ×3″	Battery	2	8471T26	70.11	7604K14	1.44
HVAC	8	4 3/4″ ×3 1/4″	Battery	2	8471T59	60.26	7701K32	1.57
Electrical Code	8	5 1/2″ ×3″	Battery	1	8471T61	87.65	7701K34	1.92
(C) Scientific								
Statistics	10	6″ ×3″	Solar	1	8392T2	18.67	7604K14	1.44
Statistics	10	6″ ×3 3/16″	Battery	2	8392T3	18.25	12195T175	1.44
Statistics with Linear Regression	10	6″ ×3 3/16″	Solar	—	8392T9	31.58	—	—
Graphing Statistics	—	7 1/4″ ×3 1/2″	Battery	4	8392T11	129.27	12195T101	.79

Lecterns

All are made of oak laminate and shipped unassembled.

(D) Adjustable-height lectern has an adjustable black enamel steel pole.

(E) Fixed-height lectern has an interior shelf.

(F) Fixed-height lectern with sound system includes two microphones; a 30-watt amplifier; four 8″ dia. built-in speakers; and volume and tone controls. System operates on 117 VAC, 60 Hz (0.26 amp draw) and has a 6-ft. long power cord with three-prong plug.

D E F

	O'all Ht.	Top Surface, Lg.×Wd.		Each
(D) Adjustable Height	30″-44″	20″×16″	52215T36	$111.80
(E) Fixed Height	45″	16″×23″	52215T11	254.65
(F) Fixed Height with Sound System	46″	17″×22″	52215T23	571.36

Projection Screens

Enhance your presentations with these flame-retardant, mildew-resistant white screens that clean easily.

Wall/ceiling screens have two built-in mounting rings (fasteners not included).

Tripod screens have foldable steel legs for quick set up and take down.

Telescoping presentation pointer extends from 5″ to 24 1/2″ long.

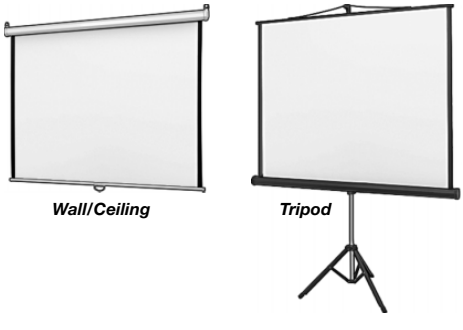
Wall/Ceiling Tripod

Screen Size, Ht.×Wd.	Wall/Ceiling	Each	Tripod	Each
50″×50″	6204T49	$92.50	—	—
60″×60″	6204T51	105.00	6204T41	$155.56
70″×70″	6204T52	112.50	6204T42	162.22
96″×96″	6204T24	217.78	—	—

Telescoping Presentation Pointer	5190T14	Each	$7.44
Transparency Film, 8 1/2″×11″ (50 sheets/pkg.)	6037T6	Per Pkg.	$49.74

Laser Pointers

Press and hold a button to produce a brilliant laser dot.

Style G—Operate on two AAA batteries (included). *Multifunction* pointer also has underline and arrow modes.

Style H—Turn the lower body left for ball point pen and turn the lower body right for PDA stylus. Operates on three LR41 batteries (included).

G

H

	Distance	Laser Color		Each
G.... Standard	1,500 ft.	Red	1513T23	$33.33
G.... Long Range	3,000 ft.	Red	1513T52	59.52
G.... Maximum Range	6,000 ft.	Green	1513T53	93.75
G.... Multifunction	♦	Red	1513T21	47.02
H.... Dot Laser/Pen/PDA Stylus	1,500 ft.	Red	1513T25	30.00

Replacement AAA Battery for Style G	12195T101	.79
Replacement LR41 Battery for Style H	1513T91	1.92

♦ Dot distance is 1,500 ft., underline distance is 45 ft., and arrow distance is 300 ft.

Suggestion Boxes

A

B

With Label (sold separately)

C

(A) Wall-mount plastic box has a see-through sliding panel on the back for retrieving suggestion forms. Mount using the two 1/4″ keyholes on the back (fasteners not included). Color is white.

(B&C) Lockable steel boxes include two keys. Color is gray. *Wall-mount* box has four mounting holes (fasteners included).

Suggestion forms are 8 1/2″ Wd. × 11″ Ht. They're numbered consecutively for easy recording.

Labels are 5″ Wd. × 3″ Ht. and have an adhesive back. Message is black on a white background.

		Opening, Lg. × Wd.	O'all Size, Ht. × Wd. × Dp.		Each
A	Wall-Mount Plastic	5″ × 1/2″	11″ × 8 1/2″ × 4 1/2″	5711T55	$19.33
B	Wall-Mount Lockable Steel	8 1/2″ × 1/2″	7″ × 9 3/4″ × 3″	5711T16	46.30
C	Desktop Lockable Steel	11 1/2″ × 1/2″	11″ × 12 1/2″ × 10″	5711T12	58.09

Suggestion Forms (50/Pkg.)	5711T33	Per Pkg.	$17.22
"Suggestion Box" Label	5711T75	Each	$1.88
"Mailbox" Label	5711T76	Each	$1.56

Plastic Triangles

30° × 60°

45° × 45°

Smear-resistant edge triangles are plastic and have raised edges.

Cutting-edge triangles are plastic with a stainless steel insert on the vertical edge. The other sides have a smear-resistant edge. They also have a grid pattern.

	SMEAR-RESISTANT EDGE						CUTTING EDGE	
	Clear		Smoke		Fluorescent Orange		Clear	
Size		Each		Each		Each		Each
30° × 60°								
8″	1212T11	$2.77	1212T211	$3.15	1212T212	$3.15	———	———
10″	1212T12	3.06	1212T231	3.66	1212T232	3.66	1212T35	$19.37
45° × 45°								
8″	1212T16	3.06	1212T251	3.66	1212T252	3.66	1212T38	15.94
10″	1212T17	4.33	1212T271	3.75	1212T272	3.75	1212T39	22.80

Adjustable Protractor/Triangles

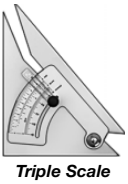

Triple Scale

A protractor and triangle in one, these tools let you quickly set any angle from 0° to 90° in 1/2° increments. All are made of plastic.

Triple scales also measure slope and rise.

	Single Scale		Triple Scale	
Size		Each		Each
8″	1214T13	$29.12	1214T24	$31.50
10″	1214T15	31.50	1214T26	37.29

Clear Plastic Protractors

180°

360°

	180°		360°	
Dia.		Each		Each
6″	1215T2	$2.37	1215T4	$5.21
8″	1215T3	4.50	1215T5	7.23

Flexible Curves

Vinyl-covered with a raised lip for smear resistance, these curves have a minimum radius of 1″.

Graduated curves have one side marked in inches, the other in mm.

Lg.		Each	Lg.		Each
Standard			***Graduated***		
12″	8416T32	$7.71	12″	8416T11	$10.57
30″	8416T35	14.00	24″	8416T14	17.09

Plastic French Curves

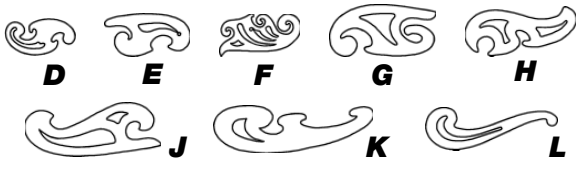

Set	Set Includes		Per Set
3 Piece	D, E, K	1382T2	$17.09
8 Piece	D, E, F, G, H, J, K, L	1382T6	21.31

Architects' and Engineers' Rules

Bevel Flat

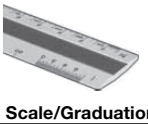

Triangular

	Scale/Graduations		Each
Bevel Flat			
Architects'	1/8″, 1/4″, 3/8″, 1/2″, 3/4″, 1″, 1 1/2″, 3″	1216T11	$11.48
Engineers'	10, 20, 40, 50	1216T2	11.48
Triangular			
Architects'	3/32″, 1/8″, 3/16″, 1/4″, 3/8″, 1/2″, 3/4″, 1″, 1 1/2″, 3″, 16″	1216T5	10.90
Engineers'	10, 20, 30, 40, 50, 60	1216T6	10.90

T-Squares

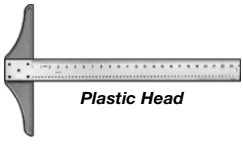

Plastic Head

Blade is aluminum.

Plastic head T-squares have graduations to 1/16″ and 0.5 cm. Head is not graduated.

Aluminum head T-square has graduations to 1/8″. Head is graduated to 1/8″. Also known as a drywall T-square.

Head Material	Blade Size, Lg. × Wd.	Head Size, Lg. × Wd.		Each
Plastic	24″ × 2″	12 1/2″ × 2 3/4″	8464T1	$27.26
Plastic	36″ × 2″	12 1/2″ × 2 3/4″	8464T2	43.27
Plastic	48″ × 2″	12 1/2″ × 2 3/4″	8464T3	57.57
Aluminum	48″ × 2″	22″ × 2″	9444T11	18.02

Rolling Parallel Rule

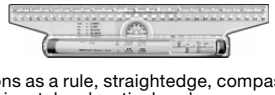

This tool functions as a rule, straightedge, compass, protractor, and template. Both horizontal and vertical scales are graduated to 1/16″ and mm. Length is 12″. Maximum circle dia. is 12″.

1245T7 ..... Each $9.26

Plastic Lettering Guides

These guides include letters A-Z and numbers 0-9 in 1/8″, 3/16″, and 1/4″ heights.

Font	Lg. × Wd. × Thick.		Each
Modern Light	9 3/16″ × 2″ × 0.02″	1299T1	$10.05
Modern Bold	9 7/16″ × 2″ × 0.02″	1299T2	10.05
Helvetica	9 1/2″ × 2″ × 0.03″	1299T5	10.05
Helvetica Medium	12″ × 2 1/2″ × 0.02″	1299T6	10.05

Templates

All are made of 0.03″ thick polypropylene.

	Inch: Size Range	No. of Shapes	Lg. × Wd.		Each	Metric: Size Range	No. of Shapes	Lg. × Wd.		Each
Circles	1/16″-1 3/8″ Dia.	39	7 1/4″ × 4″	1244T41	$7.39	2-34 mm	41	9″ × 4 5/8″	1244T42	$8.66
Large Circles	1 1/4″ -3 1/2″ Dia.	13	11 1/2″ × 8 3/4″	1244T44	10.32	25-85 mm	13	12″ × 8 13/16″	1244T45	10.32
Circle Master	1/16″-3″ Dia.	44	10″ × 7″	1244T47	10.05	2-48 mm	46	10 1/8″ × 7 5/8″	1244T48	10.32
Squares	1/16″-1 1/2″	42	9 3/8″ × 5″	1244T53	8.66	2-34 mm	41	9 3/8″ × 5 3/8″	1244T54	8.66
Triangles and Diamonds	3/32″-1″	33	9 3/8″ × 5 1/4″	1244T75	8.66	3-30 mm	41	8″ × 5 7/8″	1244T76	11.24
General Purpose■	1/16″-1″	56	8″ × 5 7/8″	1244T11	10.32					
Ellipses ♦	1/4″ -1 1/2″	61	11″ × 5″	1244T22	11.24					
Isometric Ellipses●	1/4″ -1 1/2″	60	11″ × 5″	1244T26	11.24					

■ Contains circles, squares, triangles, hexagons, and arrows. ♦ Degree projections of 20°, 30°, 40°, and 50°.
● Degree projections of 25°, 35°, 45°, and 60°.

Specialty Drafting Templates

	Lg. × Wd.		Each
Flow—For pipe and plumbing layout: gas, oil, water, and chemical.	10 1/8″ × 2 3/4″	1218T11	$10.23
Pipe Fitting—Symbols for pipe OD, end bell, flange, and fittings.	8″ × 5″	1218T12	12.21
Sheet-Metal Conduit—Cross sections for heating and air conditioning.	9 3/4″ × 5 1/16″	1218T13	17.07
Heating and Air Conditioning—Symbols conform to ASA Z32.2.3 and 32.2.4.	7″ × 5″	1218T14	12.79
Electrical/Electronic—Symbols, contacts, switches, terminals, etc. Conform to ANSI Y32.2 (Set of 3).	★	1218T15	36.96
Flowcharting—Computer flow symbols conform to ANSI X3.5 and ISO 1028.	10″ × 4″	1218T17	9.61
Arrowheads—Fraction and metric sizes for directional use.	4 5/8″ × 4 3/8″	1218T18	8.05
House and Plumbing—House plan and plumbing fixtures.	5″ × 7″	1218T21	8.00

★ 8″ × 5″, 8″ × 4 3/8″, and 8″ × 3 3/4″.

Compasses

All are made of nickel-plated brass.

Push-button compasses allow quick setting and instant locking of compass legs with the push of a button. 1210T1 and 1210T2 include an extension bar to increase the maximum circle diameter. They also come with a universal adapter that accommodates pens and pencils with a 1/2″ dia.

	Max. Circle Dia.		Each	Max. Circle Dia.		Each
Standard	10 3/8″	1210T4	$18.10	19 5/8″	1210T1	$30.38
Push Button	13 3/4″	1210T6	29.20	23″	1210T2	39.51
Replacement Lead (4/Pkg.)		1210T82				Per Pkg. $2.27
6″ Divider		1210T84				Each $6.13

Light Boxes

Illuminate your drafting work as well as view transparencies, slides, and X-rays.

Battery-operated light box has a plastic work surface, frame, and removable grid. Fluorescent bulb included. Operates on four AA batteries (not included). For AC power, use the optional *adapter* (sold separately).

AC-operated light boxes have a plastic work surface, stainless steel frame, and nonslip rubber feet. Fluorescent bulbs included. Operate on 115 VAC, 60 Hz and have a 6-ft. long cord with three-prong plug. UL listed. All except 1203T12 and 1203T13 have a carrying handle. 1203T12-1203T14 have a built-in tilt stand.

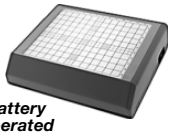

Battery Operated

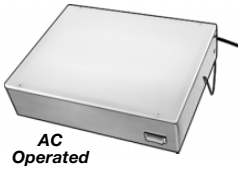

AC Operated

Lighted Surface, Lg. × Wd.	Overall Size, Lg. × Wd. × Ht.	Amp Draw	No. of Bulbs	Watts Per Bulb		Each
Battery Operated						
3 3/4″ × 4 3/4″	5 3/8″ × 6 1/4″ × 1 3/4″	0.6	1	4	4709T38	$194.28
AC Operated						
11″ × 9″	12″ × 10″ × 3″	0.13	1	8	1203T12	64.71
17″ × 11″	18 3/8″ × 11″ × 3″	0.48	2	15	1203T13	152.45
17″ × 15″	18 3/8″ × 16″ × 3″	0.96	4	15	1203T14	269.24
23″ × 17″	24 3/8″ × 18″ × 3″	0.77	4	18	1203T16	406.76
35″ × 23″	36″ × 24 3/8″ × 3″	1.17	6	18	1203T18	499.20
Accessories for Battery-Operated Light Box						
120/240 VAC, 50/60 Hz Adapter					4709T39	53.04
AA Batteries (4/Pkg.)					71455K53	Per Pkg. $2.94

Drafting Accessories

	Lg. × Wd.		Each
Dusting Brush	14″ × 3/8″	12195T65	$5.83
Dry Cleaning Pad	3 5/8″ × 2 3/8″	13295T66	7.55
Erasing Shield	3 5/8″ × 2 3/8″	13295T69	2.00

Pantograph

Trace or dot on inclined and horizontal boards. This tool has 30 different settings and a table clamp for stability. Length is 24″.

6101T14 ..... Each $32.34

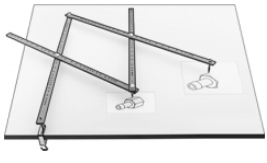

Portable Drafting Boards

These boards have a warp-free, white laminate surface and include a permanently mounted sliding parallel rule.

Lg. × Wd.		Each
24″ × 18″	1204T9	$92.77
36″ × 24″	1204T2	120.83
42″ × 30″	1204T3	145.83

Drafting-Board Covers

Protect new and restore old board surfaces with these vinyl covers. Just cut to size and attach to your drafting board with double-sided tape (not included). Color is green on one side; cream on the other.

Lg. × Wd.		Each	Lg. × Wd.		Each
42″ × 31″	1384T5	$41.70	60″ × 37 1/2″	1384T8	$66.38
48″ × 36″	1384T6	53.62	72″ × 37 1/2″	1384T9	75.74

Drafting Machines

Clamp one of these machines to your drafting board for superior accuracy. They have precision protractor heads and operate on a continuous loop, steel band and pulley system. The disc brakes steady the machine arm. For use on boards inclined up to 15°; 25° for 60″ Lg. × 36″ Wd. size. Each machine requires two ***scales*** (sold separately).

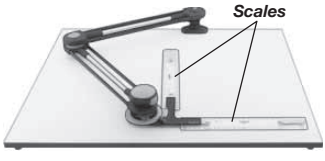

Drafting Machines

For Board Size		Each
36″ Lg. × 24″ Wd.	1220T21	$508.75
60″ Lg. × 36″ Wd.	1220T24	661.25

Scales—To Order: Please specify scale style.

Style	Graduations
Architects'	**Front**—1/8″: 1 ft., 1/4″: 1 ft.; **Back**—1/2″: 1 ft., 1″: 1 ft.
Engineers'	**Front**—1/10 Size: 1/5″, Full Size: 1/50″; **Back**—1/4 Size: 1/10″, Half Size: 1/20″
Combination	**Front**—Full Size: 1/32″; **Back**—Full Size: 1/50″
Inch	**Front**—Full Size: 1/32″; **Back**—Half Size: 1/16″

12″ Scale Length	1220T42	Each	$37.50
18″ Scale Length	1220T48	Each	40.00

Reference Books and Maps

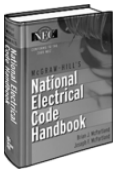

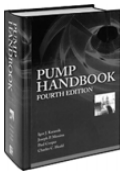

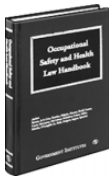

Title	Pages		Each
Machine Reference			
Machinery's Handbook, Toolbox Edition	2,704	**5214T27**	$94.79
Machinery's Handbook, Large Print Edition	2,704	**5214T51**	98.39
Machinery's Handbook (CD-ROM only)	——	**5214T58**	94.79
Machinery's Handbook Guide	280	**5214T26**	15.50
Machine Shop Practice (2-Volume Set)	1,013	**5214T33**	49.95
Machine Shop Training Course (2-Vol. Set)	1,136	**5214T35**	44.95
Standard Handbook of Machine Design	1,200	**5214T47**	148.02
Mechanical Reference			
Mark's Standard Handbook for Mechanical Engineers	1,800	**5213T4**	225.93
Ingenious Mechanisms for Designers and Inventors (4-Volume Set)	2,103	**5213T5**	133.85
Technical Reference			
Blueprint Reading Basics	336	**1682T36**	32.50
Technical Shop Mathematics	561	**5212T45**	49.87
Technical Reference Handbook	297	**5212T43**	41.93
Engineering Formulas	580	**5212T31**	32.97
Pocket Reference	864	**5212T21**	12.70
Handyman In-Your-Pocket	768	**5212T19**	12.95
Handbook of Chemistry and Physics	2,656	**5212T14**	149.95
Basic Hazardous Waste Management	468	**5212T15**	144.95
Electrical Reference			
American Electrician's Handbook	1,856	**1868T12**	101.64
Electrician's Trouble Shooting and Testing Pocket Guide	208	**1868T45**	29.88
Electrical Safety in the Workplace	133	**1868T74**	70.71
Standard Handbook for Electrical Engineers	2,000	**1868T23**	224.86
National Electrical Code			
National Electrical Code	870	**2612T31**	90.67
National Electrical Code Handbook	1,662	**2612T35**	74.38
National Fire Protection			
NFPA 10: Standard for Portable Fire Extinguishers	65	**6430T11**	41.50
Industrial Engineering and Plant Maintenance			
Handbook of Industrial Engineering (3-Volume Set)	2,836	**2573T52**	324.52
Maintenance Engineering Handbook	1,200	**2573T74**	169.49
Millwrights and Mechanics Guide	1,152	**2573T63**	54.91
Industrial Maintenance	423	**2573T44**	81.68
Lubrication for Industry	256	**2573T26**	39.88
Managing Factory Maintenance	320	**2573T29**	47.87
Stationary Engineering	615	**2485T86**	113.68
Steam Plant Operation	736	**2485T88**	111.80
Heating, Ventilation, and Air Conditioning			
HVAC Testing, Adjusting, and Balancing Field Manual	480	**2519T76**	85.29
Modern Refrigeration and Air Conditioning	1,211	**2519T79**	91.85

Title	Pages		Each
Hydraulics, Pneumatics, and Pumps			
Industrial Hydraulic Technology	331	**2549T19**	$52.00
Hydraulic Maintenance Technology	148	**2549T21**	32.75
Industrial Pneumatic Technology	150	**2549T18**	32.50
Fluid Power Circuits and Controls: Fundamentals and Applications	533	**2549T17**	150.72
Pump Handbook	1,632	**2549T16**	166.67
Tool and Die Machining and Metalworking			
Machinery and Metalworking Handbook	1,006	**2628T18**	112.94
Die Design Fundamentals	320	**2628T29**	42.88
Jig and Fixture Design Manual	312	**2628T25**	49.87
Trades and Construction			
Carpentry	868	**5219T52**	96.99
Modern Welding	784	**5219T55**	89.85
Sheet Metal	357	**5219T56**	57.90
Rigging Handbook: The Complete Illustrated Field Reference	232	**5219T18**	14.40
Handbook of Rigging: Construction and Industrial Operations	530	**5219T21**	99.95
National Plumbing Codes Handbook	414	**5219T26**	77.84
Pipefitters Handbook	500	**5219T24**	29.90
Piping Handbook	2,256	**5219T17**	168.36
Plumbing Design and Installation (Includes CD-ROM)	468	**5219T31**	87.85
Instrumentation and Process Control			
Process/Industrial Instruments and Controls Handbook	1,200	**2574T48**	157.50
Motor Controls			
Electrical Motor Controls for Integrated Systems (Includes CD-ROM)	678	**2599T93**	107.82
Occupational Safety and Health			
OSHA Law Handbook	390	**5192T31**	92.87
Materials			
Materials Handbook	1,244	**2651T55**	118.59
Metallurgy	567	**2651T57**	81.86
Fastening			
Inch Fastener Standards	1,050	**1999T31**	472.60
Metric Fastener Standards	1,003	**1999T22**	140.00
Dictionary			
Webster's New World College Dictionary	1,744	**9392T61**	26.77

Maps

These full-color relief wall maps have a laminate surface that you can write on with a water-soluble marker.

Maps	Wd. × Ht.		Each
United States	50″ × 32″	**7669T21**	$12.46
World	50″ × 32″	**7669T23**	12.46

Conversion Charts

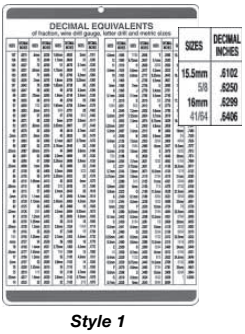

Style 1

All are made of plastic.

Style 1 charts provide decimal equivalents of fractions, wire gauge drill sizes, letter drill sizes, and metric sizes.

Style 2 charts provide decimal equivalents for drill sizes and mm sizes, a tap drill chart, and a pipe tap drill chart.

Wd. × Ht.		Each
Style 1		
3⅜″ × 6″	**3233T11**	$2.32
8½″ × 13″	**3233T15**	3.60
Style 2		
3⅜″ × 6″	**3233T12**	2.32
8½″ × 13″	**3233T16**	3.60

Disposable Plotter Pens

Pens have a stainless steel tip and contain waterproof, fade-resistant ink.

To Order: Please specify ink color (unless noted): black, blue, green, or red.

Line Width		Each
Universal		
Extra Fine (0.25 mm)	**13525T41**	$15.64
Fine (0.35 mm)	**13525T42**	15.64
Medium (0.5 mm)	**13525T431▲**	15.64
Broad (0.7 mm)	**13525T441▲**	15.64
Hewlett Packard (75XX)		
Extra Fine (0.25 mm)	**13525T21**	15.64
Fine (0.35 mm)	**13525T22**	15.64
Medium (0.5 mm)	**13525T23**	15.64
Broad (0.7 mm)	**13525T24**	15.64

▲ Black only.

Plumbing

Privacy Partitions	1996
Toilets & Urinals	1998
Water Coolers	2008
Faucets	2010
Sinks	2017
Soap & Soap Dispensers	2025
Plungers & Drain Cleaners	2029
Test Plugs	2034

Janitorial

Cleaners & Deodorizers	2038
Brushes	2045
Wipes	2049
Brooms	2051
Mops	2055
Spill-Control Sorbents	2060
Vacuums & Accessories	2064
Dust Collectors	2073
Pressure Washers	2075

Building & Grounds

Garden Hose & Accessories	2078
Spray Nozzles	2082
Matting	2089
Grating	2102
Stair Treads	2106
Shovels & Scoops	2108
Landscaping Equipment	2111
Roof Repair	2114
Pest Control	2116
Tarps	2120
Concrete & Asphalt Repair	2123
Paint & Coatings	2126
Paint Brushes & Sprayers	2133
Step Stands & Ladders	2140
Rolling Platform Ladders	2148
Scaffolds	2154
Work Platforms	2159

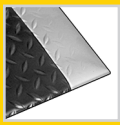

About Privacy Partitions

Materials

***Steel*—**These economical partitions are the industry standard. They have a honeycomb core that's covered by steel with a painted finish.

***Type 304 Stainless Steel*—**Offering good resistance to corrosion and moisture, these partitions have a honeycomb core that's covered by satin-finished Type 304 stainless steel.

***Plastic Laminate*—**Resistant to stains and grease, these partitions are not recommended for wet environments. They have a particleboard core covered with plastic laminate.

***Solid Plastic*—**The choice for harsh environments and wash down areas, these partitions offer the most corrosion and moisture resistance. Made from a solid piece of high-density polyethylene, they are also the most durable—won't easily chip or dent and never need painting.

Customizing

You can custom order complete partitions and components. Please send a drawing that includes dimensions and the direction you want doors to open (show both top and front views). Please specify partition material and color choice.

Color Information

Unsure of the color you want? *Color sample packs* include samples of all the available colors by material type.

		Each
Steel Color Samples	3621K92	$5.86
Plastic-Laminate Color Samples	3769K98	4.96
Solid-Plastic Color Samples	1648K6	4.26

To see available privacy partition colors, go to mcmaster.com and search for **3621KAC**.

Urinal Privacy Partitions

Wall Hung

Floor Braced

Easy to install, these partitions include all of the components and hardware (brackets and fasteners) you'll need for assembly. The hardware is chrome-plated, cast zinc alloy (unless noted). A Torx T25 screwdriver (sold separately) is required for installation.

Note: Actual panel width is slightly smaller than width listed to account for the space that's required for the hardware.

Wall-hung partitions offer easy access to floors for cleaning.

Floor-braced partitions are connected to the floor for added strength and stability. Furnished with a 7″ Wd.×70″ Ht. column.

To Order: For steel and plastic-laminate partitions, please specify color: almond (lighter than beige), beige, blue, gray, or white. For solid-plastic partitions, please specify color: blue, gray, tan, or white. If you're not sure which color to select, see the color information at the top of the page.

Replacement hardware packages include all replacement brackets and fasteners used on the urinal partitions.

Panel Size, Wd.×Ht.×Thick.	Steel	Each	Stainless Steel	Each	Plastic Laminate	Each	Solid Plastic	Each
Partitions								
Wall-Hung Partitions								
18″×42″×1″	3018K91	$95.12	3372K1	$286.04	3954K1	$96.56	1019K11	$142.87
24″×42″×1″	3018K92	99.74	3372K2	299.57	3954K2	109.67	1019K12	173.78
30″×42″×1″	3018K93	107.69	3372K3	342.29	3954K3	122.79	1019K13	204.65
Floor-Braced Partitions								
24″×58″×1″	3018K4	214.28	3372K4	608.25	3954K4	228.88	1019K21●	330.48
36″×58″×1″	3018K5	241.65	3372K5	695.83	3954K5	265.68	1019K22●	411.09
		Per Pkg.		**Per Pkg.**		**Per Pkg.**		**Per Pkg.**
Replacement Hardware Packages								
For Wall-Hung Partitions	3018K98	$12.98	3018K98	$12.98	3954K8	$15.92	1019K43★	$34.57
For Floor-Braced Partitions	3018K9	13.83	3018K9	13.83	3954K9	15.29	1019K44★	57.63
Torx T25 Screwdriver							5756A17	**Each** $7.77

● Height is 55″. ★ Made of aluminum.

Toilet Privacy Partitions

Free-Standing Partition (3) with two Add-On Compartments (4)

Top View of Partitions

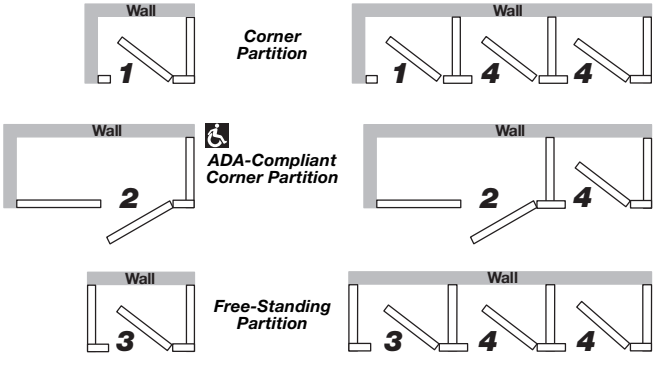

We've eliminated all the guesswork—simply order a partition or partition with add-on compartment(s) to create the toilet partition(s) you need. You'll get all the components and hardware (brackets and fasteners) necessary for assembly.

Note: The number of add-ons you can use is only limited by the amount of space you have.

ADA-compliant corner partition helps you comply with the Americans with Disabilities Act and ANSI 117.1 when properly installed.

To Order: For steel and plastic-laminate partitions, please specify color: almond (lighter than beige), beige, blue, gray, or white. For solid-plastic partitions, specify color: blue, gray, tan, or white. If you're not sure which color to select, see the color information at the top of the page.

Overall Size, Wd.×Dp.×Ht.	Door Width	Steel	Each	Stainless Steel	Each	Plastic Laminate	Each	Solid Plastic	Each
(1) Corner Partition*—Single Compartment*									
37″×60″×84″	24″	3049K85	$455.64	3578K11	$1,231.79	3804K11	$625.71	1648K1	$903.95
(2) ADA-Compliant Corner Partition*—Single Compartment*									
62″×60″×84″	36″	3049K87	534.28	3578K13	1,480.14	3804K13	737.91	1648K3	1,119.07
(3) Free-Standing Partition*—Single Compartment*									
38″×60″×84″	24″	3049K88	645.42	3578K19	1,848.95	3804K15	785.22	1648K5	1,394.23
(4) Add-On Compartment for All Partitions Above									
36″×60″×84″	24″	3049K89	398.73	3578K21	1,159.49	3804K16	471.07	1648K89	829.65

For information about privacy partitions, see page 1996.

Toilet Privacy Partition Components and Hardware

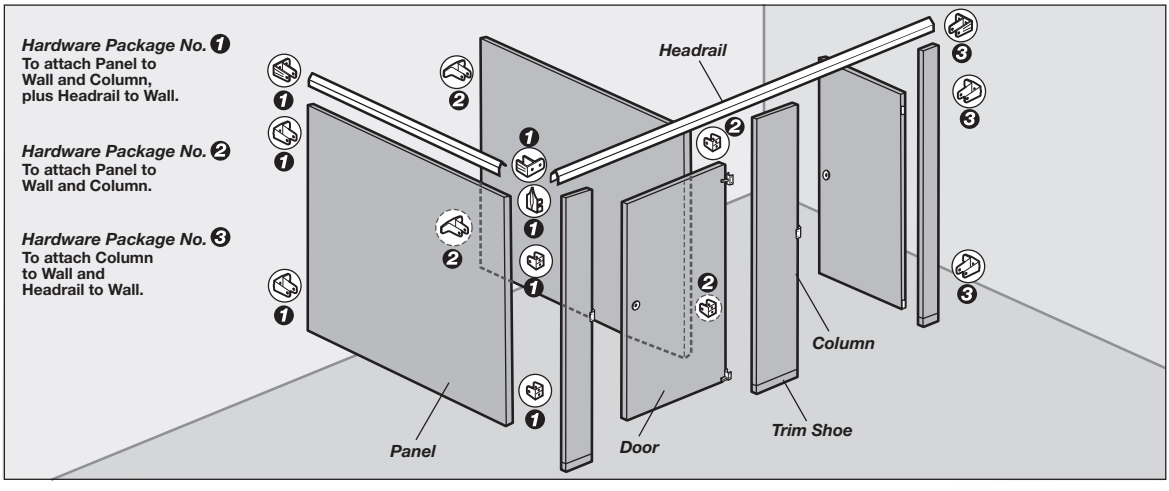

Toilet Partition Components—*Installation hardware not included, except for doors and columns. See hardware packages below.*

Whether you need to create your own custom partition, add on to your existing partition, or just replace some damaged components, we've got all the parts you'll need. *Note:* All components (except doors and columns) require hardware for installation. Hardware packages are sold separately below.

To Order: For steel and plastic-laminate components, specify color: almond (lighter than beige), beige, blue, gray, or white. For solid-plastic components, specify color: blue, gray, tan, or white. If you're not sure which color to select, see the color information at the top of the previous page.

Doors and ***panels*** are slightly smaller than the width listed to account for the space that's required for the hardware.

Doors include all hardware required for installation, a heavy duty latch, and coat hook.

ADA doors, when properly installed, help you comply with the Americans with Disabilities Act and ANSI 117.1. They come furnished with an ADA-style latch.

Columns come with Type 304 stainless steel trim shoes and an anchor kit that attaches the column to the floor.

Headrails are anodized aluminum (not available in colors) and have a satin finish. They can be cut to size with a hacksaw.

Wd.	Steel	Each	Stainless Steel	Each	Plastic Laminate	Each	Solid Plastic	Each
Doors—*58″ Ht.×1″ Thick. (except for Solid Plastic, which are 55″ Ht.×1″ Thick.)*								
24″	3621K14	$143.31	3075K14	$393.89	3769K14	$139.35	1648K12	$196.42
26″	3621K15	147.45	3075K15	407.96	3769K15	144.83	1648K13	205.93
34″ (ADA)	3621K16	172.39	3075K16	465.14	3769K16	175.56	1648K14	269.72
36″ (ADA)	3621K17	176.51	3075K17	487.65	3769K17	181.04	1648K15	282.88
Panels—*58″ Ht.×1″ Thick. (except for Solid Plastic, which are 55″ Ht.×1″ Thick.)*								
48″	3621K18	150.58	3075K18	527.51	3769K18	199.27	1648K21	411.75
55″	3621K19	155.77	3075K19	545.11	3769K19	210.78	1648K22	431.33
58″	3621K21	159.91	3075K21	552.62	3769K21	218.65	1648K23	450.88
60″	3621K22	164.07	3075K22	564.16	3769K22	224.29	1648K24	462.05
70″	3621K23	182.76	3075K23	621.71	3769K23	250.22	1648K25	529.14
Columns—*82″ Ht.×1¼″ Thick. (except for Solid Plastic, which are 82″ Ht.×1″ Thick.)*								
3″	3621K44	66.00	3075K24	114.08	3769K24	60.08	1648K31	67.40
4″	3621K45	68.87	3075K25	126.48	3769K25	69.67	1648K32	78.62
5″	3621K46	70.90	3075K26	138.87	3769K26	79.95	1648K33	89.85
6″	3621K47	75.79	3075K27	151.27	3769K27	87.91	1648K34	101.10
7″	3621K48	80.69	3075K28	163.65	3769K28	98.94	1648K35	112.35
8″	3621K49	85.58	3075K29	176.08	3769K29	104.90	1648K36	123.56
10″	3621K51	95.33	3075K31	199.74	3769K31	116.83	1648K37	146.04
12″	3621K52	105.12	3075K32	225.65	3769K32	128.75	1648K38	168.46
18″	3621K53	133.07	3075K33	298.74	3769K33	164.52	1648K39	235.88
22″	3621K61	150.86	3075K41	324.87	3769K41	188.37	1648K41	275.51
24″	3621K54	163.77	3075K34	330.89	3769K34	196.51	1648K42	298.32
Headrails								
62″	38015K61	25.80	38015K61	25.80	38015K61	25.80	—	—
75″	38015K62	30.95	38015K62	30.95	38015K62	30.95	1019K51	19.42
98″	38015K63	41.27	38015K63	41.27	38015K63	41.27	—	—
120″	38015K64	41.47	38015K64	41.47	38015K64	41.47	1019K52	30.95

Hardware Packages to Install Toilet Partition Panels, Columns, and Headrails

Each package comes with the brackets and fasteners needed to assemble toilet partition components. Hardware package ❶, for example, contains all the brackets that have a ❶ next to them in the photo at the top of the page. All hardware is chrome-plated cast zinc alloy (unless noted). Fasteners are Torx head screws and require a Torx T25 screwdriver (sold separately).

Pkg. No.		For Steel & Stainless Steel Per Pkg.	For Plastic Laminate Per Pkg.	For Solid Plastic Per Pkg.
❶	To Attach Panel to Wall and Column, plus Headrail to Wall (Includes Headrail End Cap)	3621K73 $17.06	3769K63 $27.31	1648K73 ♦ $56.26
❷	To Attach Panel to Wall and Column	3621K2 15.63	3769K2 14.34	1648K72 ♦ 58.78
❸	To Attach Column to Wall and Headrail to Wall	3621K71 12.02	3769K61 13.64	1648K71 ♦ 39.52
—	To Attach Panel to Column (When Installing in a Straight Line; Not Shown)	3621K991 4.22	3769K994 5.18	1648K84 ■ 52.68

Torx T25 Screwdriver ..... 5756A17 **Each** $7.77

♦ Hardware is aluminum. Packages are not exactly as shown above—brackets are longer. ■ Made of Type 304 stainless steel.

Replacement Components

All components are chrome-plated cast zinc alloy (unless noted). Fasteners are included.

	For Steel & Stainless Steel Per Pkg.	For Plastic Laminate Per Pkg.	For Solid Plastic Per Pkg.
Door Hardware (Includes 1 Latch, 2 Hinges, and 1 Coat Hook)	3621K5 $32.19	3769K5 $35.34	1648K82 $47.00
ADA Door Hardware (Includes 1 Latch, 2 Hinges, 1 Coat Hook, and 1 Door Pull Handle)	3621K78 39.61	3769K78 42.70	1648K81 52.34
Door Pull Handle	3621K85 3.70	3621K79★ 6.63	3621K79★ 6.63
Brackets to Attach Headrail to Wall (Includes Headrail End Cap)	3621K74 14.41	3769K64 13.35	1648K74★ 12.82

★ Made of aluminum.

Replacement Type 304 Stainless Steel Trim Shoes

To Order: For steel and stainless steel columns, ask for 3621K82; for plastic-laminate columns, ask for 3769K85; for solid-plastic columns, ask for 1648K86 and please specify column width (see above) in inches.

Privacy Partition Hardware

For toilet partition hinges, see page 2988.

Panel Hanging Brackets

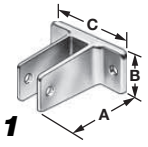

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2

All of these brackets come furnished with mounting screws as well as one-way tamper-resistant screws.

	Max. Panel Thick. ♦	Overall Bracket Size (A)	(B)	(C)	Chrome-Plated Die Cast Zinc	Each	Dull-Finish Type 304 Stainless Steel	Each
1	3/4″	2 1/2″	1 1/2″	3″	1755A31	$12.41	1755A71	$22.43
1	1″	2 1/2″	1 1/2″	4″	1755A32	8.77	1755A72	27.48
1	1 1/4″	2 1/2″	1 1/2″	4″	1755A34	15.78	1755A73	25.79
2	3/4″	2 1/2″	1 1/2″	2″	1755A41	11.42	1755A74	23.89
2	1″	2 1/2″	1 1/2″	2 21/32″	1755A42	11.61	1755A75	21.71
2	1 1/4″	2 1/2″	1 1/2″	2 3/4″	1755A44	10.31	1755A76	22.32

♦ Max. thickness of wall or partition between bracket arms.

Door Slide Bolts

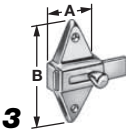

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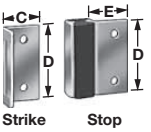

Strike Stop

4

Strike Stop

These bolts are reversible for right- and left-hand mounting. Furnished in a set that includes a slide bolt, strike, door stop, and mounting screws.

	(A)	(B)	(C)	(D)	(E)	Chrome-Plated Die Cast Zinc	Per Set	Dull-Finish Type 304 Stainless Steel	Per Set
3	2″	4 1/32″	1 3/32″	2 1/2″	1 1/4″	12815A13	$28.37	12815A14	$58.02
4	1 7/8″	4 1/2″	1 3/32″	2 1/2″	1 1/4″	12815A15	30.71	12815A16	62.86

Door Latches

5

6

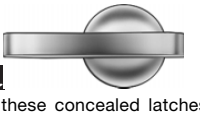

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Designed to fit 1″ thick partition doors, these concealed latches require no mounting hardware. To install, simply snap them together through a 1 1/4″ dia. hole in your door. All are made of chrome-plated die cast zinc and are for right- and left-hand mounting. ***ADA latches***, when properly installed, help you comply with the Americans with Disabilities Act (ADA) and meet ANSI A117.1. *Paddle style latch* is 3 11/16″ long.

	Latch Style	For Steel and Stainless Steel Doors	Each	For Plastic Laminate and Solid Plastic Doors	Each
5	Standard Round	3478A11	$7.02	3478A12	$7.02
6	ADA Round	3478A13	9.42	3478A14	7.40
7	ADA Paddle	3478A15	18.27	3478A16	13.15

Toilet Mounting Flanges

Steel

PVC White Plastic

Securely mount your toilet to the floor.

Steel Flange Ring— Use this ring if you have a damaged or corroded flange. It's 1/8″ thick with six screw-hole tabs that accept 5/16″ dia. screws (not included) for securing ring to wood or concrete subfloors. It also has slots for 1/4″ or 5/16″ toilet bolts (sold separately on this page).

Plastic Flanges with Extension— Need to replace your entire flange? These flanges fit inside 4″ cast iron pipe and Schedule 40 plastic pipe. Install with 3″ stainless steel bolts (included) and tighten from the finished floor. Tightening the bolts expands the compression joint, which allows up to 3″ of adjustment to the riser for a secure fit.

		Each
Steel Flange Ring	29045K59	$6.43
PVC White Plastic Flange with Extension	29045K62	24.20
ABS Black Plastic Flange with Extension	29045K64	34.87

Toilet Mounting Bolts

Connect your toilet bowl to the floor or to the tank. Bolts, washers (unless noted), and hex nuts are brass.

Bowl-to-floor bolts come furnished with a washer and a hex nut.

Bowl-to-tank bolt comes furnished with four washers (two of which are rubber) and two hex nuts.

Connection	Size		Each 1-9	10-Up
Bowl to Floor	1/4″-20 × 2 1/4″	2765K1	$1.32	$1.12
Bowl to Floor	5/16″-18 × 2 1/4″	2765K2	1.60	1.36
Bowl to Tank	5/16″-18 × 3″	2765K5	2.31	1.96

Wall-Mount Urinals

With Bottom Drain

With Back Drain

Consuming just 1 gallon of water per flush, these low-flow urinals conserve water. All are made of white porcelain and, when properly installed, help you comply with the Americans with Disabilities Act (ADA). They have a 3/4″ top inlet connection and 2″ NPT female outlet connection with integral trap (except for model with bottom drain, which requires a 1 1/2″ P-trap that's not included).

Urinals include a wall hanger and have two 5/16″ dia. holes for wall mounting (mounting hardware not included). For model with ***siphon-wash flushing***, water comes from the rim; for ***siphon-jet flushing***, water comes from the rim and a jet at the bottom of the urinal.

Overall Size, Ht. × Wd. × Dp.	Drain Location	Flushing/ Cleaning Method		Each
18 1/2″ × 13 1/2″ × 13 1/4″	Bottom	Siphon Wash	2642K95	$165.45
21 3/4″ × 14″ × 14 3/8″	Back	Siphon Jet	2642K93	222.73
26″ × 18″ × 14 1/4″	Back	Siphon Jet	2642K94	313.18

Toilets

Tankless Wall Mount

Tankless Floor Mount

Gravity Tank Floor Mount

Pressurized Tank Floor Mount

Conserve water with these high quality toilets that only consume 1.6 gallons of water per flush. All are made of white porcelain with elongated bowls and use siphon-jet flushing to clean. With siphon-jet flushing, water comes from the rim and a jet at the bottom of the bowl.

Wall-mount toilet has four 1″ dia. mounting holes, while the *floor-mount toilets* have two 1/2″ × 1″ mounting slots. Bolts not included. *ADA toilets* help you comply with the Americans with Disabilities Act when properly installed.

Tankless Toilets— Have a 1 1/2″ top inlet connection (connector included). Valves are sold separately on page 2000.

Gravity-Tank Floor-Mount Toilets— Have a fill valve, float, and flapper.

Pressurized-Tank Floor-Mount Toilets— Have a pressure tank within the toilet tank that increases the water pressure for a more powerful flush.

	Installation Distance■ (A)	Bowl Ht.	Overall Size, Ht. × Wd. × Dp.		Each
Tankless Toilets					
Wall Mount					
ADA	7 1/4″●	13″	13″ × 14 1/2″ × 25 1/2″	2938K65	$205.17
Floor Mount					
Standard	10″★	14″	14″ × 14 1/2″ × 27 1/2″	2919K54	182.08
ADA	10″★	17″	17″ × 14 1/2″ × 27″	2919K55	205.00
Gravity-Tank Floor-Mount Toilets					
Standard	12″★	15″	29 1/4″ × 18″ × 29 1/4″	2634K36	247.08
ADA	12″★	17 1/4″	31 1/2″ × 18 1/2″ × 29″	2634K37	268.33
Pressurized-Tank Floor-Mount Toilets					
Standard	12″★	14 1/2″	28 1/4″ × 20 1/4″ × 30″	29115K85	448.39
ADA	12″★	17″	30 1/2″ × 20 1/4″ × 28 3/4″	29115K86	487.10

■ Also known as rough-in. ● Measured from floor to center line of waste pipe in the wall. ★ Measured from center line of waste pipe in the floor to the wall.

Toilet Seats

All seats are made of polypropylene. Mounting hardware is included.

Elongated and Round Seats—These seats have Type 430 stainless steel hinges that hold seats at any angle for easy cleaning (unless noted). They also have bumpers underneath to protect your toilet bowl. Seats mount on 5½″ centers. **To Order:** Please specify color: black or white.

Antimicrobial models are treated with an additive that prevents bacteria growth. *White antimicrobial models* also meet UL 94V0 for flame retardancy.

ADA Compliant Seat—Turn a standard-height elongated toilet seat (14″ to 16″ high) into one that's ADA compliant (17″ to 19″ high). Simply install this seat under your new or existing elongated toilet seat. Seat can be used with any elongated toilet seat that has removable bolts, including 2733K5 and 3033K4 (sold separately below). Color is white.

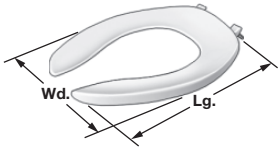

Elongated Seat with Open Front

Round Seat with Closed Front and Cover

ADA Compliant Seat **(For use under 2733K5 and 3033K4, sold separately.)**

Style	Front	With Cover	Standard Lg. × Wd.		Each	Antimicrobial Lg. × Wd.		Each
Elongated	Open	No	18⅜″ × 14⅞″	2733K4	$23.88	18″ × 15″	3033K3	$31.84
Elongated	Closed	Yes	19″ × 14⅜″	2733K5▲	36.06	19″ × 14⅜″	3033K4▲	47.70
Round	Open	No	16″ × 14½″	2733K2	24.50	16″ × 14½″	3033K1	29.47
Round	Closed	Yes	17″ × 14⅜″	2733K3▲	30.88	17″ × 14⅜″	3033K2▲	45.16
ADA Compliant	Closed	No	19½″ × 14¾″	2248K24	74.89			

▲ Hinges do not hold seat at any angle.

Toilet Tank Repair Parts

The parts you need to keep your toilet operating at its best.

Flappers

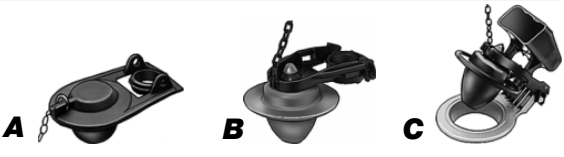

All flappers stop costly leaks.

A Rubber Flapper—Fits in most conventional flush valves.

2360K11 ..... **Each** $3.85

B PVC Flapper with Frame—Fits most plastic flush valves. The rigid plastic frame ensures perfect alignment with every flush.

2769K14 ..... **Each** $3.92

C PVC Flapper with Frame and Drain Seat—Fits most brass and plastic flush valves. You'll get a PVC flapper, rigid polyester frame and drain seat, chain, and sealing ring. Simply mount frame on top of your old flush valve with the included sealing ring.

2795K51 ..... **Each** $7.10

Float-Style Antisiphon Fill Valves

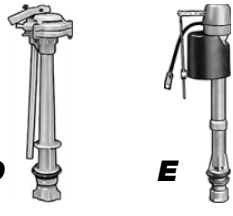

Also known as ball cocks, these fill valves install easily in most gravity tanks and are designed to prevent water backflow. Made of plastic, both valves include a refill tube and locknut.

D Economy—Valve is 10″ high. Includes a brass float rod.

2740K5 ..... **Each** $8.07

E Adjustable—This valve adjusts from 9″ to 14″ high. Furnished with a built-in float assembly.

2740K13 ..... **Each** $10.47

Lever Arm

This single-action lever has a chrome-plated zinc handle. Fits most toilet tanks with a front-mounted handle.

2752K1 ..... **Each** $4.37

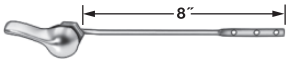

Flush-Valve Assembly

Flush valve is plastic and includes a PVC flapper, kink-resistant lift chain, and a locknut.

2739K18 ..... **Each** $5.37

Floats

Plastic Float

Plastic Float—Has a self-tapping connection. Size is 4″ Dia. × 5½″ Lg. Color is black.

2753K4 ..... **Each** $0.90

Copper Float—Has ¼″-20 threads. Size is 4″ Dia. × 5″ Lg.

2753K2 ..... **Each** $7.38

Brass Float Rods

All rods have ¼″-20 threads on each end to connect a float and a float-style fill valve (ball cock).

Length		Each
8″	2754K1	$1.84
10″	2754K3	2.36
12″	2754K4	2.83

Pressurized-Tank Repair Parts

Keep a pressurized toilet running efficiently with these repair parts. *Note:* ***G-J*** fit most pressurized tanks.

F Complete Tank Kit—You'll get everything you need to replace a pressurized tank. **To Order:** Please specify toilet manufacturer and tank series.

2621K21 ..... **Each** $118.25

G Flush Valve Cartridge—Activates flushing mechanism.

2621K81 ..... **Each** $27.71

H Upper Supply Kit—Connects the main line to the lower supply kit. Furnished with air inducer, vacuum breaker, and clamp.

2621K82 ..... **Each** $8.02

J Lower Supply Kit—Feeds water into the tank. Furnished with hose supply shank, pressure regulator, and relief valve.

2621K83 ..... **Each** $35.10

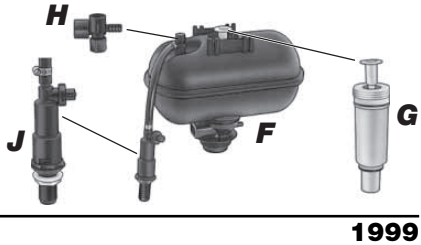

Toilet Bowl-to-Outlet Sealing Rings

Wax

Wax with Flange

PVC

These rings provide a water- and gas-tight seal.

Wax rings are for floor-mount toilets. They're available with and without a PVC flange, which prevents the wax ring from moving.

Sponge rubber rings are for floor- and wall-mount toilets.

PVC rings are for floor- and wall-mount toilets and are reusable.

	For Outlet Pipe Size	Thick.		Each
Wax	3″ and 4″	3/4″	2793K31	$2.67
Wax with Flange	3″ and 4″	3/4″	2793K51	3.51
Wax with Flange	3″ and 4″	1″	2793K63	4.17
Sponge Rubber	3″ and 4″	3/4″	2793K81	5.92
PVC	3″	1″	2793K11	5.85
PVC	4″	1″	2793K12	6.43

Urinal-to-Wall Sealing Ring

This wax ring provides a water- and gas-tight seal for wall-mount urinals. It's for use on 2″ outlet pipe sizes and measures 15/16″ thick.

2793K75 ..... Each $1.91

Toilet Tank-to-Bowl Gaskets

Use these sponge-rubber gaskets as a seal between your toilet tank and toilet bowl.

Fits Tanks	OD	Thick.		Each
American Standard	3 1/2″	1 1/16″	2791 5K83	$1.96
Gerber/Crane	3 1/4″	1 3/16″	2791 5K85	2.46
All Others	3 3/8″	5/8″	2791 5K81	1.43

Tankless Toilet and Urinal Inlet Connectors

Also known as spuds, these connectors connect wall-mounted toilet tanks and urinals to a water-supply pipe. All are made of brass and come furnished with a brass locknut, steel washer, and rubber gasket.

Toilet/Urinal Inlet (A)	Pipe Size (B)		Each
For Toilets			
1 1/4″	1 1/4″	2759K1	$10.39
1 1/2″	1 1/2″	2759K2	11.91
2″	1 1/4″	2759K4	16.35
2″	1 1/2″	2759K5	17.66
2″	2″	2759K3	20.70
For Urinals			
1″	3/4″	2787K12	5.65
1 1/2″	1 1/2″	2787K11	5.78

Stainless Steel Grab Bars

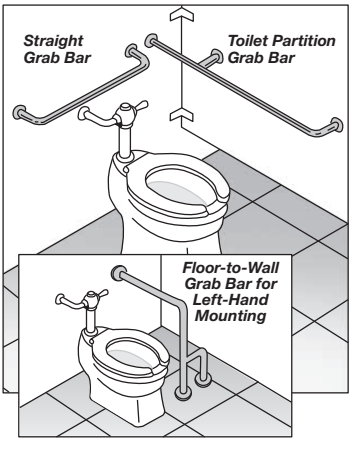

Provide safety and added support for all users, especially those with limited mobility. When properly installed, these bars help you comply with the Americans with Disabilities Act (ADA) and meet ANSI A117.1. All bars are 18-ga. Type 304 stainless steel, while textured-finish bars provide an improved grip. Mounting flanges are 3″ in dia. and wall clearance is 1 1/2″. Mounting hardware is included.

Toilet partition grab bars mount to the toilet partition and back wall. The flanges and mounting holes are exposed. Bars are reversible for right- and left-side mounting.

Straight grab bars can be mounted horizontally and vertically. The flanges and mounting holes are exposed. Bars are reversible for right- and left-side mounting.

Floor-to-wall grab bars have a stabilizer bar that mounts to the floor for extra stability. Furnished with trim plates that conceal the flanges and mounting hardware.

	SMOOTH FINISH				TEXTURED FINISH			
	1 1/4″ Dia.		1 1/2″ Dia.		1 1/4″ Dia.		1 1/2″ Dia.	
Lg.		Each		Each		Each		Each
Toilet Partition Grab Bars								
48″	2823K27	$78.08	3031K21	$90.09	30325K61	$98.96	30325K31	$105.85
Straight Grab Bars★								
12″	2823K32	32.64	3031K11	37.74	30325K63	43.69	30325K33	46.63
16″	2823K33	34.45	3031K12	40.59	30325K64	45.26	30325K34	49.79
18″	2823K34	35.63	3031K13	42.08	30325K65	48.52	30325K35	51.46
24″	2823K35	39.54	3031K14	46.26	30325K66	53.24	30325K36	57.00
36″	2823K47	46.01	3031K27	56.47	30325K67	61.99	30325K37	67.17
42″	2823K48	49.69	3031K28	59.29	30325K68	66.45	30325K38	73.09
48″	2823K49	53.45	3031K29	64.06	30325K69	71.92	30325K39	79.11
Floor-to-Wall Grab Bars—(30″ Lg. × 33″ Ht.)								
Right-Hand Mount	____	____	3031K41	149.51	____	____	30325K87	169.37
Left-Hand Mount	____	____	3031K43	149.51	____	____	30325K89	169.37

★ To determine overall length, add 3″ to account for flanges.

Sloan Toilet and Urinal Flush Valves

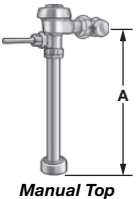

Manual Top Connection

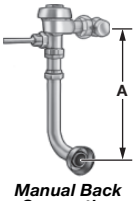

Manual Back Connection

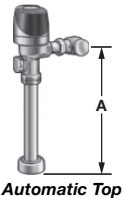

Automatic Top Connection

An integral vacuum breaker stops water from backing up into the main line (back siphoning), while a control stop allows complete shut-off during repairs without turning off the water supply. Installation hardware is included. Valves meet MIL V-29193, ANSI/ASME 112.19.6, and American Society of Sanitary Engineers (ASSE) 1037. They also help you comply with the Americans with Disabilities Act (ADA) and ANSI 117.1 when properly installed. CSA certified.

Automatic valves are activated by an infrared sensor for hands-free operation. They also have a manual override button. Valves are powered by four AA batteries (included) and have a low battery LED indicator. After 24 hours of non-use, they flush automatically to keep toilets fresh. UL listed.

Top Connection—Valve pipe and flange connect to the top of the toilet of urinal.
Back Connection—Valve pipe and flange connect behind the toilet.
Note: Select a valve with the same consumption rate or gpf (gallons per flush) as your toilet or urinal.

Installation Distance■ (A)	Toilet/Urinal Connection	Inlet Pipe Size, Female	1.6 gpf Sloan No.		Each	3.5 gpf Sloan No.		Each
Manual Royal Toilet Valves								
11 1/2″	1 1/2″ Top	1″	111	2757K11	$150.42	110	3085K13	$148.38
11 1/2″	1 1/2″ Back	1″	120-1.6	2757K12	161.38	120	3085K14	158.69
27″	1 1/2″ Top	1″	116-1.6	2757K13	161.70	116	3085K16	159.01
Automatic G2 Optima Plus Toilet Valves								
11 1/2″	1 1/2″ Top	1″	8111	2956K23	439.49	8110	2786K24	418.57

Installation Distance■ (A)	Toilet/Urinal Connection	Inlet Pipe Size, Female	1.0 gpf Sloan No.		Each	1.5 gpf Sloan No.		Each	3.5 gpf Sloan No.		Each
Manual Royal Urinal Valves											
11 1/2″	3/4″ Top	3/4″	186-1	2816K63	$148.38	186	2831K11	$148.38	____	____	____
11 1/2″	1 1/4″ Top	1″	180-1	2816K64	148.38	180-1.5	2831K15	148.38	180	2745K12	$148.38
Automatic G2 Optima Plus Urinal Valves											
11 1/2″	3/4″ Top	3/4″	8186-1	2838K71	425.32	8186	2917K73	418.57	____	____	____
11 1/2″	1 1/4″ Top	1″	8180-1	2838K72	425.32	8180-1.5	2917K74	418.57	8180	2993K75	439.49

■ Also known as rough-in. Measured from center of water inlet to the top of toilet or urinal.

Sloan Flush-Valve Repair Parts

Extend the life of your flush valve with these repair parts. Match your model and, where necessary, consumption rate (gallons per flush) to the parts.

	Sloan Part No.		Each
For Manual Sloan Royal and Regal Flush Valves			
A ... Outside Cover	A-72	**2790K56**	$23.87
B ... Inside Cover	A-71	**2790K57**	7.66
C ... Toilet Relief Valve (White)	A-19-AC	**2790K54**	5.98
C ... Toilet/Urinal Relief Valve (Green)	A-19-ALC	**2790K98**	5.98
C ... Urinal Relief Valve (Black)	A-19-AU	**2790K55**	5.98
D ... Molded Disc	A-15-A	**2790K51**	5.08
E ... Diaphragm	A-156-A	**2790K52**	5.98
F ... Toilet Guide Assembly 1.6 gpf	A-151-A	**2790K59**	11.06
F ... Toilet Guide Assembly 3.5 gpf	A-152-A	**2790K58**	4.88
F ... Toilet Guide Assembly 4.5 gpf	A-163-A	**2790K53**	4.88
F ... Urinal Guide Assembly 1.0 gpf	A-155-A	**2790K71**	11.06
F ... Urinal Guide Assembly 1.5 gpf	A-163-A	**2790K53**	4.88
G ... Toilet Diaphragm Kit 1.6 gpf (Green)	A-41-A	**2655K17**	23.48
G ... Toilet Diaphragm Kit 3.5 gpf (White)	A-38-A	**2655K11**	16.80
G ... Toilet Diaphragm Kit 4.5 gpf (White)	A-36-A	**2655K13**	16.80
G ... Urinal Diaphragm Kit 1.0 gpf (Green)	A-42-A	**2655K19**	23.48
G ... Urinal Diaphragm Kit 1.5 gpf (Black)	A-37-A	**2655K15**	16.80
H ... Locking Ring	H-552	**2790K23**	.73
J ... Adjustable Tailpiece with Locking Ring and O-Ring	H-551-A	**2790K24**	15.08
For Automatic Sloan Optima Plus and G2 Optima Plus Flush Valves			
G ... Toilet Diaphragm Kit 1.6, 3.5, 4.5 gpf	EBV-1020-A	**2796K31**	40.37
G ... Urinal Diaphragm Kit 1.0, 1.5 gpf	EBV-1022-A	**2796K53**	40.37
G ... Urinal Diaphragm Kit 3.5 gpf	EBV-1020-A	**2796K31**	40.37
For Manual Sloan Royal and Regal Flush Valves; Automatic Optima Plus and G2 Optima Plus Flush Valves			
K ... ¾″ Vandal-Resistant Stop Cap	H-1009-A	**3816K51**●	10.82
K ... 1″ Vandal-Resistant Stop Cap	H-1010-A	**3816K52**●	10.82
L ... 1″ Stop Cap	H-622	**2790K75**●	9.05
M ... ¾″ Control Stop Kit	H-543-A	**2830K72**	11.06
M ... 1″ Control Stop Kit	H-541-A	**2830K73**	11.06
N ... Vacuum Breaker Kit	V-551-A	**2760K15**	3.15
P ... ¾″ Coupling Assembly	F-2-AW	**2790K63**	7.80
P ... 1½″ Coupling Assembly	F-2-AT	**2790K64**	8.04
Q ... ADA Handle Kit	B-73-A	**2790K68**	18.96
R ... Handle Repair Kit	B-50-A	**2790K62**	3.70
For Manual Sloan Royal, Regal, and Naval Flush Valves			
Q ... ADA Handle Kit	B-73-A	**2790K68**	18.96
R ... Handle Repair Kit	B-50-A	**2790K62**	3.70
S ... Standard Handle Kit	B-32-A	**2790K61**	14.27
T ... Handle Nut	A-6	**2790K21**	6.12
U ... Locking Coupling	H-550	**2790K22**	6.55
V ... Control Stop O-Ring	H-553	**2790K99**	1.28
Vacuum Breakers and Pipe for Toilet Valves			
W ... 1½″ Pipe Size × 3″ Lg.	V-500-A	**2760K14**	23.72
W ... 1½″ Pipe Size × 9″ Lg.	V-500-AA	**2760K17**	23.72
W ... 1½″ Pipe Size × 24½″ Lg.	V-500-AA	**2760K19**	44.27
Vacuum Breakers and Pipe for Urinal Valves			
W ... ¾″ Pipe Size × 9″ Lg.	V-500-AA	**2760K25**	23.72
W ... 1¼″ Pipe Size × 9″ Lg.	V-500-AA	**2760K23**	23.72
For Manual Sloan Royal and Naval Flush Valves			
X ... ¾″ Spud Coupling Assembly	F-5-A-¾	**2790K81**	14.94
X ... 1¼″ Spud Coupling Assembly	F-5-A-1¼	**2790K82**	14.94
X ... 1½″ Spud Coupling Assembly	F-5-A-1½	**2790K83**	14.94
For Manual Sloan Naval Flush Valves			
Y ... Cover Assembly	CN-86-A	**2790K67**	67.61
Z ... Toilet Piston Kit	CN-1002-A	**2790K65**	41.88
Z ... Urinal Piston Kit	CN-1003-A	**2790K66**	41.89

● Not for use in Sloan Regal flush valves.

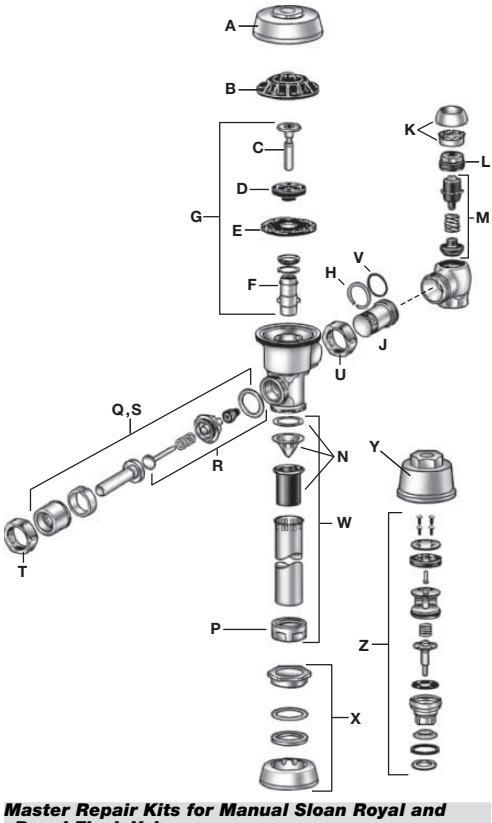

Master Repair Kits for Manual Sloan Royal and Regal Flush Valves

Contain G, N, R, and V.

Filtered Diaphragm— Dual filters stop sediment from reaching the metering bypass hole to ensure clog-free operation. Great for areas with poor water quality.

Style	gpf	Sloan Part No.		Each
With Standard Diaphragm (G)				
Toilet	1.6	R-1004-A	**2899K23**	$27.11
Toilet	3.5	R-1003-A	**2899K22**	22.06
Toilet	4.5	R-1001-A	**2899K21**	22.06
Urinal	1.0	R-1005-A	**2899K25**	27.11
Urinal	1.5	R-1002-A	**2899K24**	22.06
With Filtered Diaphragm (G)				
Toilet	1.6	A-1101-A	**1235K11**	38.66
Toilet	3.5	A-1102-A	**1235K12**	38.66
Urinal	1.0	A-1107-A	**1235K13**	38.66
Urinal	1.5	A-1108-A	**1235K14**	38.66

Zurn Flush-Valve Repair Parts

For illustration of flush-valve repair parts, see top of page.

	Zurn Part No.		Each
For Manual Zurn Aquaflush and AquaVantage Flush Valves			
A ... Outside Cover	P6000-LL-CP	**9975T11**	$28.29
B ... Inside Cover	P6000-L	**9975T12**	2.10
C ... Toilet Relief Valve	P6000-EC13	**9975T13**	3.02
C ... Urinal Relief Valve	P6000-EU13	**9975T14**	3.02
D ... Retainer Disc	P6000-E14	**9975T15**♦	4.95
E ... Diaphragm	P6000-ER15	**9975T16**♦	4.50
F ... Guide Assembly	P6000-EG	**9975T17**♦	5.90
H ... Snap Ring	P6000-C30	**9975T48**	.84
J ... Tailpiece	P6000-J1	**9975T49**	17.37
K ... ¾″ Vandal-Resistant Stop Cap	PS6003-C33	**9975T21**	13.39
K ... 1″ Vandal-Resistant Stop Cap	P6000-VC	**9975T22**	12.81
L ... 1″ Stop Cap	P6000-C34-CP	**9975T33**	13.08
M ... ¾″ Control Stop Kit	PS6003-D-SD	**9975T23**	12.73
M ... 1″ Control Stop Kit	P6000-D-SD	**9975T24**	5.06
N ... Vacuum Breaker Kit	P6000-B	**9975T18**♣	1.95
P ... ¾″ Vacuum Breaker Tube Nut	P6000-AA-CP	**9975T45**	10.83
Q ... ADA Handle Kit	P6000-M-ADA	**9975T28**	12.51
R ... Handle Repair Kit	P6000-MK	**9975T29**	2.55
T ... Handle Nut	P6000-M1-CP	**9975T46**	7.01
U ... Locking Nut	P6000-C32-CP	**9975T47**	7.39

♦ Not for use in Zurn AquaVantage flush valves. ♣ Two-part kit. Does not require washer.

	Zurn Part No.		Each
For Manual Zurn Aquaflush and AquaVantage Flush Valves (Cont.)			
V ... Tailpiece O-Ring	P6000-C31	**9975T43**	$1.34
X ... ¾″ Coupling Assembly	P6003-H	**9975T25**	17.14
X ... 1½″ Coupling Assembly	P6000-H	**9975T26**	17.14
Vacuum Breakers and Pipe for Toilet Valves			
W ... 1½″ Pipe Size × 8½″ Lg.	P6000-A-AA-CP	**9975T31**	21.32
W ... 1½″ Pipe Size × 24½″ Lg.	P6000-3-A-AA-CP	**9975T32**	50.48
Vacuum Breakers and Pipe for Urinal Valves			
W ... ¾″ Pipe Size × 9″ Lg.	P6003-A-AA-CP	**9975T41**	23.16
W ... 1¼″ Pipe Size × 9″ Lg.	P6001-A-AA-CP	**9975T42**	21.32

Zurn Diaphragm Kits and Master Repair Kits

To Order: Please specify 1.6, 3.5, or 4.5 gpf for toilets; 1.0 or 1.5 gpf for urinals.

For Manual Zurn Aquaflush Flush Valves			
G ... Diaphragm Kit		**9975T5**	15.66
— ... Master Repair Kit (Contains C, D, F, R, and V)		**9975T7**	24.87
For Manual Zurn AquaVantage Flush Valves			
G ... Diaphragm Kit		**9975T6**	30.99
— ... Master Repair Kit (Contains G, N, and V)		**9975T8**	41.13

Sloan Manual-to-Automatic Flush-Valve Converters

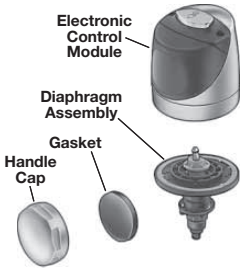

Turn your existing hand-operated Sloan Royal or Regal flush valve into one that's hands-free. You'll get an electronic control module with infrared sensor and manual override button, diaphragm assembly, handle cap, gasket, installation strap wrench, screwdriver, and four AA batteries. These valves, when properly installed, help you comply with the Americans with Disabilities Act (ADA) and ANSI 117.1. UL listed and CSA certified.

Note: Select a valve with the same consumption rate or gpf (gallons per flush) as your toilet or urinal.

gpf	Sloan No.		Each
For Toilet Flush Valves			
1.6, 3.5, 4.5	RESS-C	**2834K51**	$325.41
For Urinal Flush Valves			
1.0, 1.5	RESS-U	**2834K52**	325.41
3.5	RESS-C	**2834K51**	325.41

Quick-Change Manual-to-Automatic Flush-Valve Converters

Quickly go from manual to hands-free flushing. When properly installed, they help you comply with the Americans with Disabilities Act (ADA).

Tankless Toilet and Urinal Converters

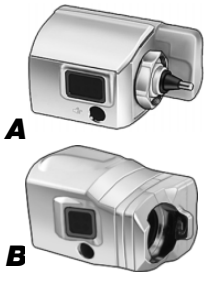

Convert your Sloan and Zurn flush valves to automatic operation. Both styles include a sensor, push-button for manual operation, and four C batteries.

Style A—Replace your existing flush-valve handle with this converter. Furnished with a wrench and Allen key. The ***mounting adapter kit*** lets you position your sensor to detect users in a seated position to prevent unintended flushes. Includes a gasket washer, chrome adapter, plastic push rod, and two sleeves.

Style B—Simply slip this converter over your existing flush-valve handle. Sensor is adjustable. Includes Allen key and wrench.

	Size, Wd. × Ht. × Dp.		Each
A .... Replaces Flush Valve	4¾″ × 2 13/16″ × 3 5/16″	**3747K21**	$226.81
B .... Fits Over Flush Valve	5 5/16″ × 3⅝″ × 3 9/16″	**3747K31**	198.06
Mounting Adapter Kit for Converter 3747K21		**3747K23**	20.68

Toilet Tank Converter

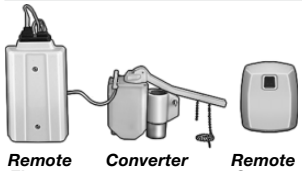

To install, slide the converter onto the overflow pipe inside your toilet tank and attach the chain to the flapper. Then, install the wireless remote sensor and remote flapper lifter to the wall behind your toilet (mounting hardware included). For manual flushing, use your existing flush handle. Includes four AA batteries for the remote sensor and four D batteries for the flapper lifter.

Remote Flapper Lifter Size, Wd. × Ht. × Dp.	Remote Sensor Size, Wd. × Ht. × Dp.		Each
3¼″ × 6¼″ × 1½″	3⅜″ × 4½″ × ¾″	**8306A41**	$168.55

Cartridge-Operated Urinal Flush Valves

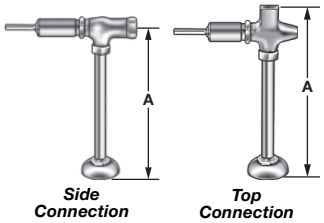

With a metering cartridge to control water flow, remove the valve cap and adjust cartridge flow nut to set amount of water you want to use up to 3.5 gpf. When properly installed, valves help you comply with the Americans with Disabilities Act (ADA). Furnished with flange, washer, and nut. All parts are chrome-plated brass. Inlet size is ½″ NPT female.

Urinal Connection	Installation Distance■ (A)		Each
¾″ Side	8½″	**3016K14**	$153.27
¾″ Top	10¼″	**3016K12**	146.83

■ Also known as rough-in. Measured from center of water inlet to the top of urinal.

Sloan Water-Saving Flush Handle

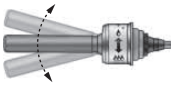

Lift handle up for liquid waste and paper; push handle down for solid waste and paper.

Dual flushing power makes it easy to conserve water. Lift the handle up to eliminate liquid waste and paper with 1.1 gallons of water per flush; push the handle down to eliminate solid waste and paper with 1.6 gallons of water per flush. Handle is brass with a green antimicrobial coating to guard against germs. Use it to modify most existing flush valves. When properly installed, it helps you comply with the Americans with Disabilities Act (ADA). Includes two instructional, adhesive-backed metal plates for attaching to your wall.

9736T1 ..... **Each** $46.50

Lavatory Fixtures

Put these fixtures in your lavatory for function and convenience. All are corrosion resistant and mount to the wall with #10 screws. Mounting hardware not included, unless noted.

Clothes Hooks

Hook Style	Chrome-Plated Zinc Alloy Dp.		Each	Satin-Finish Type 304 Stainless Steel Dp.		Each
Single	2⅛″	**2864K1**	$5.03	2″	**2376K78**	$9.59
Double	1½″	**2864K3**	5.60	2″	**2376K79**	11.19

Utility Shelves, Towel Bars, Towel Rings, and Soap Dishes

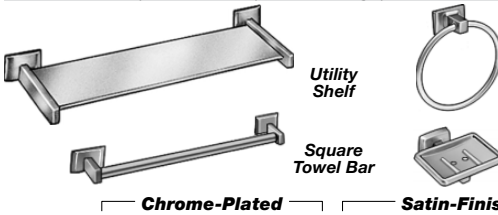

Fixture Wd.	Chrome-Plated Zinc Alloy Dp.		Each	Satin-Finish Type 304 Stainless Steel Dp.		Each
Utility Shelves						
18″	____	_____	------	6⅛″	**2376K6**	$38.56
24″	____	_____	------	6⅛″	**2376K7**	40.98
Square Towel Bars						
18″	3 3/16″	**2868K26**	$12.05	3¼″	**2376K63**	22.91
24″	3 3/16″	**2868K27**	13.93	3¼″	**2376K64**	24.47
36″	3 3/16″	**2868K29**	16.43	____	_____	____
Towel Rings						
6⅜″	1⅝″	**2251K11**▲	11.39	2½″	**2251K12**●	14.02
Soap Dishes with Drain Holes						
4″	3¼″	**2867K14**	5.50	4″	**2376K51**★	12.92

▲ Made of chrome-plated steel.
● Width is 5″ and ring is trapezoid-shaped. ★ Width is 4¼″.

Heavy Duty Type 304 Stainless Steel Shelves

For added strength and stability, these shelves come furnished with brackets and mounting hardware. All shelves and brackets have a satin finish. NSF certified.

Lg.	Dp.	Without Backsplash	Each	With 4″ High Backsplash	Each
16″	5″	**3026K21**	$40.62	**3026K41**	$53.13
18″	5″	**3026K22**	45.28	**3026K42**	58.27
24″	5″	**3026K23**	53.13	**3026K43**	66.25
36″	5″	**3026K24**	62.10	**3026K44**	80.05
48″	5″	**3026K25**	74.15	**3026K45**	95.90

Toilet Partition Folding Storage Shelf

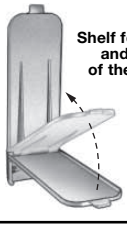

Simply pull down this shelf whenever it's needed—it will automatically fold up when it's not in use. Shelf is made of chrome-plated zinc alloy with a satin finish. Shelf size is 14⅞″ Lg. × 5½″ Wd. Overall height is 17½″. Mounting hardware is included.

2770K12 ..... **Each** $54.50

Toilet Paper Dispensers

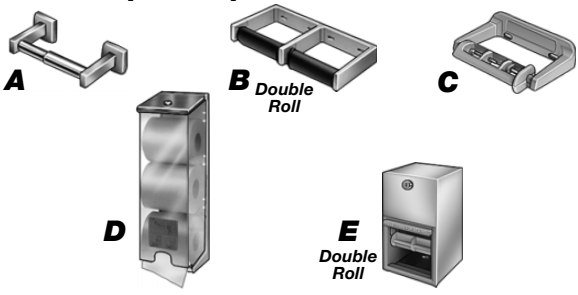

A Standard Dispensers—These single-roll dispensers have plastic spindles and mount with #10 screws (not included).

Chrome-plated zinc dispenser holds rolls up to 5″ in diameter and requires two mounting screws.

Stainless steel dispenser is made of Type 304 stainless steel and holds rolls up to 5½″ in diameter. Requires four mounting screws.

	Ht. × Wd. × Dp.		Each
Chrome-Plated Zinc	7/16″ × 7 15/16″ × 3⅛″	2863K12	$9.41
Stainless Steel	2″ × 7¾″ × 3⅞″	2863K41	18.88
Replacement Spindle		2863K42	2.47

B Theft-Resistant Dispensers—To stop people from stealing your rolls, these dispensers have a plastic spindle that can only be removed with a key (included). Both dispensers are made of heavy duty aluminum and hold rolls up to 6″ in diameter. They have ¾″ Lg. × ⅛″ Wd. mounting slots (mounting hardware not included).

	Ht. × Wd. × Dp.	Mounting Slots		Each
Single Roll	1½″ × 6½″ × 4⅞″	2	2880K52	$21.98
Double Roll	1½″ × 12½″ × 4⅞″	4	2880K51	31.49
Replacement Spindle			2880K57	7.34

C Flow-Control Dispenser—The spindle has a tamper-resistant spring lock and rocking action that limits how much toilet paper is dispensed to prevent waste. Dispenser is aluminum, while the spindle is ABS thermoplastic. Dispenser holds rolls up to 6″ in diameter. It has two ¾″ Lg. × ¼″ Wd. mounting slots (mounting hardware not included).

	Ht. × Wd. × Dp.		Each
Dispenser	1¾″ × 6 9/16″ × 4¾″	2761K84	$15.79
Replacement Spindle		2761K88	6.40

D Easy-to-View Theft-Resistant Dispenser—The transparent housing makes it easy to see when rolls need replacing, while the key-lock cover prevents unwanted entry (key included). Dispenser is made of polycarbonate and holds three rolls up to 4½″ in diameter. Mounting hardware is included. *Note:* Does not use a spindle.

	Ht. × Wd. × Dp.		Each
Dispenser	16 13/16″ × 5⅛″ × 5 9/16″	30825K33	$66.29

E Heavy Duty Theft-Resistant Stainless Steel Dispensers—With Type 304 stainless steel construction for superior corrosion resistance and a key-lock cover to prevent unwanted entry (key included), these dispensers stand up to tough environments. Both hold rolls up to 4½″ in diameter and have four 3/16″ dia. mounting holes (mounting hardware not included).

	Ht. × Wd. × Dp.		Each
Double-Roll Satin Finish	10⅜″ × 5⅝″ × 5¼″	2826K52	$84.92
Triple-Roll Satin Finish	16⅛″ × 5⅝″ × 5¼″	2862K22	139.40
Replacement Spindle		2826K2	6.13

Fold-Up Baby Changing Stations

Changing baby away from home can be a nightmare—that's why we offer these convenient changing stations. They easily open with one hand and have a 35″ long, concave changing surface with safety strap. Both are cream-colored plastic and have a built-in liner dispenser (liners sold below). When properly installed, stations help you comply with the Americans with Disabilities Act. They also meet ASTM standards for antifungal protection. Mounting hardware included.

Vertical-mount station opens out 35″ from the wall and holds up to 100 lbs. ***Horizontal-mount station*** opens out 22″ from the wall and holds up to 200 lbs. ***Disposable liners*** are made of 3-ply white paper and guard against germs.

Vertical Mount

Mount	Ht. × Wd. × Dp.			Each
Vertical	35½″ × 22″ × 5½″	2756K21		$278.35
Horizontal	22″ × 35″ × 4″	2756K31		278.35
Disposable Liners—*500/Pkg.*		2756K22	Per Pkg.	$41.86

Toilet Paper Rolls

Roll Size, Dia. × Wd.	Roll Lg.	No. of Ply	Core Size	Rolls/ Case		Per Case
Standard—*Perforated Rolls*						
4″ × 4″	204 ft.	2	1½″	20	2669K23	$28.21
4″ × 4″	168 ft.	2	1½″	60	2669K24	83.63
Jumbo—*Nonperforated Rolls*						
9″ × 3 9/16″	1,000 ft.	2	3¼″	4	29035K69	33.28
12″ × 3 9/16″	4,000 ft.	1	3¼″	6	2809K25	78.00

Theft-Resistant Toilet Paper Spindle

Keep toilet paper rolls from "walking away" by replacing your old spindle with this theft-resistant model. It's made of plastic and can only be removed with a key (included). Fits standard toilet tissue dispensers.

Overall Length		Each 1-9	10-Up
6″	3095K11	$7.87	$6.64

Large-Capacity Theft-Resistant Toilet Paper Dispensers

Multiroll Dispenser

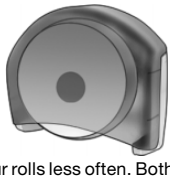

Jumbo Single-Roll Dispenser

Save valuable time by replacing your rolls less often. Both dispensers have a transparent housing that allows you to quickly and easily see when it's time to replace the roll(s).

Dispensers are made of durable plastic and have a key-lock cover to limit entry (key included). Mounting hardware is included.

Multiroll Dispenser

Capable of holding two 1,000-ft. rolls, this dispenser has a transparent blue housing.

Toilet Paper Roll—This 2-ply roll lasts as long as five standard rolls. It has a 9″ diameter, a 3¼″ dia. core, and is 3 9/16″ Wd. × 1,000 ft. Lg.

	Ht. × Wd. × Dp.			Each
Dispenser	11¾″ × 20½″ × 5⅜″	29035K71		$32.58
Toilet Paper Roll—*4-Roll Case*		29035K69	Per Case	$33.28

Jumbo Single-Roll Dispenser

Designed to hold one 4,000-ft. jumbo roll, this dispenser has a transparent gray housing.

Jumbo Toilet Paper Roll—This 1-ply roll lasts as long as 10 standard rolls. It measures 12″ in diameter, has a 3¼″ core, and is 3 9/16″ Wd. × 4,000 ft. Lg.

	Ht. × Wd. × Dp.			Each
Dispenser	14 5/16″ × 16½″ × 4⅞″	2809K21		$31.73
Jumbo Toilet Paper Roll—*6-Roll Case*		2809K25	Per Case	$78.00

Toilet Seat Covers and Dispensers

Easy-Pull Dispenser

Made of Type 304 stainless steel with a satin finish, this dispenser holds 250 single-fold covers. It's 11″ Ht. × 15¾″ Wd. × 2″ Dp. and has two 3/16″ dia. mounting holes. Mounting fasteners not included.

		Each
Dispenser	2825K51	$42.88

Seat covers for Easy-Pull Dispenser only. Packed 1,000 per carton (four inner packages of 250 covers).

		Per Carton 1-4	5-Up
Seat Covers	2825K71	$16.63	$14.42

Push-Tab Dispensers

These dispensers hold 250 unfolded covers. They're 12¼″ Ht. × 16⅝″ Wd. × 1¾″ Dp. and come furnished with mounting fasteners.

		Each
Steel with White Finish	2736K14	$40.00
Type 304 Stainless Steel	2736K18	57.78

Seat covers for Push-Tab Dispensers only. Packed 1,000 per carton (eight inner packages of 125 covers).

		Per Carton 1-4	5-Up
Seat Covers	2736K11	$16.25	$13.00

Sanitary Napkin and Tampon Dispensers

Steel

Stainless Steel

Dispensers

Add these dispensers to your facility for the convenience of your female employees and customers. Both dispensers have separate keys for the cabinet and coin compartments. Coin release amount is one quarter. Coins are rejected when dispensers are empty.

Steel Dispenser— When properly installed, this dispenser helps you comply with the Americans with Disabilities Act. It's made of steel with a white finish and has four 1/4″ dia. slotted mounting holes (fasteners not included).

Stainless Steel Dispenser— Made of Type 304 stainless steel with a satin finish, this dispenser offers excellent corrosion resistance. Furnished with four 1/4″ dia. (two of which are slotted) mounting holes (fasteners not included).

Construction	Overall Size, Ht. × Wd. × Dp.	Capacity #4 Folded Napkins	Capacity Tampons		Each
Steel	31 1/4″ × 10 3/4″ × 5 1/2″	17	26	2521K14	$202.63
Stainless Steel	25 7/8″ × 11 7/8″ × 8″	20	30	2523K3	358.14
Replacement Quarter Coin Mechanism for Steel				2521K614 Each	$82.97
Optional No Charge Coin Mechanism for Steel				2521K611 Each	$82.97

Sanitary Napkins and Tampons

	Box/Tube Size	Case Qty.		Per Case
#4 Folded Napkins	4 1/4″ Lg. × 3″ Wd. × 1 1/8″ Ht.	250	26865K51	$74.74
Tampons—*Flushable*	11/16″ Dia. × 5 1/8″ Lg.	500	26865K25	94.88

Sanitary Napkin Receptacles and Bag Dispensers

A

B

C

D

E

A Steel Wall-Mount Napkin Receptacle— Container has a hinged top and bottom; contents are emptied through the bottom. Furnished with four 1/8″ dia. slotted mounting holes (fasteners not included). Color is white.

B Polypropylene Wall-Mount Napkin Receptacle— All-plastic construction (including a removable rigid liner) makes this receptacle easy to clean. Wall-mounting fasteners are included. Color is white.

C Stainless Steel Wall-Mount Napkin Receptacle— Offering excellent corrosion resistance, this Type 304 stainless steel receptacle has a hinged top. Furnished with two 1/4″ dia. slotted mounting holes (fasteners not included).

D Freestanding Napkin Receptacles— These convenient receptacles don't require mounting—just place them on the floor wherever they're needed. They have two independently operating, self-closing push doors so you can even place them between two stalls. Furnished with a rigid polyethylene liner for easy cleaning.

Steel receptacle is white. *Stainless steel receptacle* is made of corrosion-resistant, Type 430 stainless steel.

E Wall-Mount Bag Dispensers— These push-loading dispensers release one bag at a time for convenient napkin disposal. They mount on the wall or attach to most sanitary napkin receptacles. Furnished with double-sided adhesive strips for mounting.

Steel dispenser is white. *Stainless steel dispenser* is made of corrosion-resistant, Type 430 stainless steel.

	Receptacles and Bag Dispensers: Construction	Overall Size, Ht. × Wd. × Dp.		Each	Waxed Paper Liner Bags: Overall Size, Ht. × Wd. × Dp.	Color	Pkg. Qty.		Per Pkg.
Wall-Mount Napkin Receptacles									
A	Steel	10 1/2″ × 7 1/2″ × 4″	2861K1	$26.11	11″ × 7″ × 3 3/4″	Brown	200	2861K13	$13.30
B	Polypropylene	10 3/4″ × 12 1/2″ × 5 1/4″	2866K51	49.11	9″ × 10″ × 3 1/4″	Brown	250	2866K52	18.06
C	Stainless Steel	9 11/16″ × 7 7/8″ × 4″	3027K12	44.78	10″ × 7 1/2″ × 3″	Brown	500	3027K32	33.10
Freestanding Napkin Receptacles									
D	Steel	11 1/2″ × 9″ × 9″	28935K2	31.67	12″ × 9″ × 7 3/4″	Red	250	28935K11★	10.48
D	Stainless Steel	11 1/2″ × 9″ × 9″	28935K7	48.33	12″ × 9″ × 7 3/4″	Red	250	28935K11★	10.48
Wall-Mount Bag Dispensers									
E	Steel	10 1/8″ × 4 1/4″ × 2″	2820K51	14.81	9 1/4″ × 4″ × 2 1/4″	White	250	2820K56	12.02
E	Stainless Steel	10 1/8″ × 4 1/4″ × 2″	2820K61	28.38	9 1/4″ × 4″ × 2 1/4″	White	250	2820K56	12.02

★ Bags are made of plastic.

Shower Stalls

Steel Stall

Install these freestanding shower stalls anywhere you have a water connection. All have a 2″ center quick-connect drain with strainer, two-handle (hot/cold) valve, shower arm and head, plastic curtain with hooks, and built-in soap dish, unless noted. Flow rate is 2.5 gpm (@ 40 psi for polypropylene and steel stalls; @ 80 psi for stainless steel stall). Shipped unassembled.

Leak-resistant polypropylene stall has a one-piece wall for maximum leak resistance. It's furnished with an aluminum handrail for support. Color is white.

Heavy duty steel stall has reversible 20-ga. galvanized steel walls with a white finish. The floor is reinforced plastic for durability.

Corrosion-resistant stainless steel stall offers the most corrosion resistance. It's made of Type 304 stainless steel with a polished satin finish. It has 18-ga. walls, a 14-ga. floor, a 2″ NPT slip-nut drain connection, and a single-handle valve.

Stall Material	Floor/Drain Material	Overall Size, Ht. × Wd. × Dp.		Each
Leak-Resistant Polypropylene	Plastic	73″ × 32″ × 32″	2791K51	$405.00
Heavy Duty Steel	Reinforced Plastic	74 1/8″ × 32″ × 32″	2703K4	658.40
Corrosion-Resistant Stainless Steel	Stainless Steel/Brass	78″ × 32″ × 32″	3203K11	2,397.74

Shower Drains

These drains are easy to install and don't require caulking, thanks to a ribbed rubber gasket. Just attach a drain to your shower basin with the included nut. Then, push the drain over your 2″ Schedule 40 PVC or cast iron pipe. The strainer is Type 304 stainless steel.

Material	Dia.	O'all Ht.		Each
PVC	4 1/4″	2″	2160K6	$11.61
Brass	4 1/4″	2″	2160K8	39.38

Shower Curtains and Accessories

Shower Curtains

For durability, these curtains have lock-stitched seams, nickel-plated brass grommets, and a 3-ply thick top hem. All are white (except for the translucent vinyl curtains) and measure 72″ long.

Standard— The *nylon curtains* have weights in the bottom hems for added support.

Heavy Duty— These curtains stand up to heavy use. *Cotton duck* and *polyester-coated cotton curtains* are made of bleached fabric that has been treated to minimize shrinkage. *Polyurethane-coated polyester curtains* have weights in the bottom hems for added support. *Vinyl-laminated fiberglass curtains* are flame resistant.

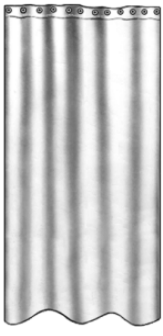

	36″ Wd. with 7 Grommet Openings	Each	48″ Wd. with 9 Grommet Openings	Each	72″ Wd. with 12 Grommet Openings	Each	108″ Wd. with 19 Grommet Openings	Each
Standard								
Translucent Vinyl	3029K1	$10.73	3029K5	$12.83	3029K2	$17.00	3029K4	$23.02
Vinyl	3638K1	10.73	3638K2	12.83	3638K3	17.00	3638K5	23.02
Nylon	3030K5	14.73	3030K1	20.98	3030K2	25.06	3030K4	37.17
Heavy Duty								
Cotton Duck	3028K1	14.42	3028K5	19.06	3028K2	26.80	3028K7	39.52
Polyester-Coated Cotton	2636K1	18.48	2636K4	22.80	2636K2	29.92	2636K3	42.76
Polyurethane-Coated Polyester	2637K11	21.66	2637K13	28.50	2637K15	34.20	2637K18	49.74
Vinyl-Laminated Fiberglass	2501K41	28.66	2501K44	38.50	2501K42	47.70	2501K43	71.92

Shower Curtain Hooks

Style 1 are great for Standard curtains. Hook wire is 0.080″ dia. (except for stainless steel model, which is 0.090″ dia.).

Style 2 is similar to Style 1 with added roller balls to make curtains easier to pull. Hook wire is 0.090″ dia.

Style 3 is the choice for Heavy Duty curtains; it has nylon wheels to make curtains even easier to pull. Hook wire is 0.150″ dia.

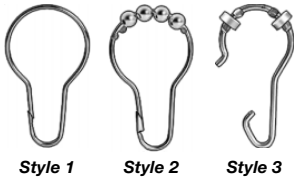

Style 1 ***Style 2*** ***Style 3***

	Max. Curtain Rod Dia.	Lg.	Pkg. Qty.		Per Pkg.
1 ... Steel with Zinc Finish	1¼″	2½″	100	2708K3	$9.73
1 ... Steel with Brass Finish	1¼″	2½″	10	2708K6	5.02
1 ... Stainless Steel	1¼″	2½″	10	2708K9	13.69
2 ... Nickel-Plated Brass with Roller Balls	1″	2¾″	5	2708K8	12.07
3 ... Aluminum with Nylon Wheels	1″	3¼″	5	2708K7	10.43

Shower Curtain Rods

Measuring 1″ in diameter, these curtain rods have flanged ends. ***Chrome-plated brass rods*** include mounting hardware. ***Stainless steel rods*** are Type 304 stainless steel and have three 13⁄64″ dia. mounting holes (mounting hardware not included).

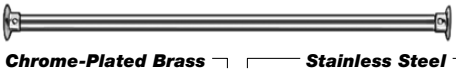

Lg.	Chrome-Plated Brass Flange Dia.		Each	Stainless Steel Flange Dia.		Each
Straight Rods						
36″	2¼″	2707K1	$33.96	3″	3021K11	$22.33
48″	2¼″	2707K3	37.74	3″	3021K13	25.62
60″	2¼″	2707K4	60.38	3″	3021K14	31.31
72″	2¼″	2707K6	74.53	3″	3021K16	35.12
			Per Pair			Per Pair
Replacement Flanges						
—	2¼″	2707K8	$8.86	3″	3021K18	$7.65

Lg. × Dp.	Flange Size		Chrome-Plated Brass Each
Corner Rods			
60″ × 26″	2″ × 5″	2185K11	$83.33
66″ × 26″	2″ × 5″	2185K12	97.62
Replacement Flanges—*2″ × 5″ Size*		2185K21	Per Pair $19.23

Shower Heads

All shower heads have a swivel ball joint, which allows flexible movement.

A On/Off Spray— Turn flow on or off with the push of a button.

B&C Adjustable Spray— Quickly change spray from a solid stream to a wide fan spray pattern.

D Concentrated Spray— For maximum impact, these heads produce a focused spray pattern. The *5.0 gpm model* has a higher-than-average flow rate and is used primarily for decontamination.

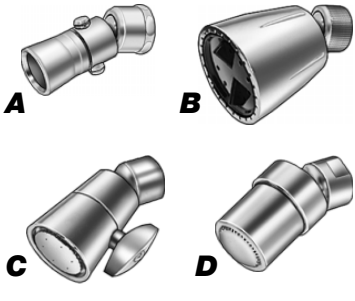

	Flow Rate, gpm	Pipe Head Dia.	Connection, NPT Female	Material		Each
A	2.2 @ 60 psi	1″	½″	Chrome-Plated Brass	3024K11	$17.43
B	2.5 @ 60 psi	2″	½″	Chrome-Plated ABS and Brass	3020K12	9.45
C	2.5 @ 60 psi	1 9⁄16″	½″	Chrome-Plated Brass	2697K7	37.11
C	2.5 @ 60 psi	2 5⁄16″	½″	Chrome-Plated Brass	2697K2	64.00
D	2.0 @ 60 psi	1 5⁄32″	½″	Chrome-Plated Brass	2960K81	30.00
D	5.0 @ 80 psi	1 5⁄32″	½″	Chrome-Plated Brass	2960K51	20.57

Shower Head Pipes

All pipes are constructed of chrome-plated brass. Inlet and outlet connections are ½″ NPT male.

Optional trim plate is chrome-plated zinc and measures 2¼″ in diameter.

With Optional Trim Plate

Overall Length		Each
6″	2706K41	$7.06
8″	2706K11	9.48
10″	2706K81	11.06
Optional Trim Plate	2706K91	.85

Utility Shower

Add a water supply, drain, and soap and this shower is ready for use. It includes a 13⁄16″ dia. galvanized steel gooseneck riser, chrome-plated polypropylene shower head with swivel ball joint, cast brass shower valve, and soap dish. Hot and cold-water connections are ½″ NPT female and mount on 3″ centers. Flow rate is 2.6 gpm @ 80 psi.

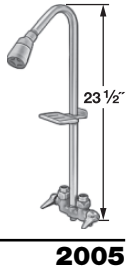

2696K23 ..... **Each** $57.86

Antiscald Shower Valves

Pressure-Balancing Valves

With Optional Trim Plate

Prevent scalding or cold shock by balancing water pressure from your hot/cold water supply pipes. Valves are made of brass, bronze, and stainless steel with an ABS handle. They measure 5½″ in dia. Inlet connection is ½″ ID unthreaded pipe.

Valve with service stop allows you to repair the valve without shutting off your water supply.

Optional trim plate covers holes in walls from existing three-handle valves. It's made of Type 304 stainless steel and measures 7⅜″ Ht. ×13″ Wd. Mounting fasteners are included.

		Each
Valve without Service Stop	27065K41	$139.69
Valve with Service Stop	27065K42	161.52
Optional Trim Plate	27065K43	32.58

Precision Thermostatic Valve

An advanced thermal regulator maintains precise water temperature by automatically adjusting both temperature and pressure fluctuations. Just set the dial from 90° to 110°F and the temperature will remain constant. If the cold water supply fails, hot water flow automatically shuts off. Valve is brass with a chrome-plated brass handle and trim plate. It has two ½″ NPT female inlets (one on each side), one ½″ NPT female outlet on top, and one ½″ NPT male outlet on the bottom. Includes a 3⅛″ Ht.×6 1/16″ Wd. trim plate (fasteners included). Valve has an integral service stop which allows you to repair the valve without shutting off your water supply. Connection is ½″ NPT female. Valve helps you comply with the Americans with Disabilities Act (ADA) when properly installed. It also complies with ASSE 1016 T/P and is CSA certified.

		Each
Valve	4683K61	$457.65

Mirrors

Frameless

Framed

Framed with Shelf

Tapered Tilt Mirror

Adjustable Tilt Mirror

Mirror Holder

All mirrors come furnished with mounting brackets and fasteners for installation in drywall or wood, unless noted.

Damage-Resistant Frameless Plastic Mirrors

You can cut and drill these mirrors without cracking them. All are plastic and weigh half as much as glass. Mounting hardware is not included, see Clear Plastic Mirror Holders at bottom of page.

Acrylic mirrors are economical. ***Polycarbonate mirrors*** are virtually unbreakable—even hitting them with a hammer won't break them.

O'all Size, Wd.×Ht.	Acrylic	Each	Polycarbonate	Each
⅛″ Thick				
12″×12″	3052K19	$12.14	2912K21	$23.96
12″×18″	3052K11	16.86	2912K22	37.96
18″×24″	3052K12	33.57	2912K23	75.96
24″×30″	3052K13	55.71	2912K24	126.18
24″×36″	3052K15	61.00	2912K26	129.60
36″×48″	3052K14	133.52	2912K25	252.66
¼″ Thick				
12″×12″	3052K29	19.38	2912K41	32.58
12″×18″	3052K21	24.38	2912K42	47.16
18″×24″	3052K22	47.65	2912K43	93.76
24″×30″	3052K23	79.38	2912K44	141.30
24″×36″	3052K25	84.34	2912K46	149.25
36″×48″	3052K24	185.54	2912K45	355.10

Adhesive-Backed and Scratch-Resistant Acrylic Mirrors

These mirrors are similar to the acrylic mirrors shown above.

Frameless adhesive-backed mirrors have a pressure-sensitive adhesive backing—just peel off the backing and stick them in place.

Framed scratch-resistant mirrors have a polished, ¼″ thick zinc-plated steel frame and scratch-resistant coating. The coating prolongs mirror life and allows you to use glass cleaners. Mirrors have hooks on the back for wall mounting.

O'all Size, Wd.×Ht.	Thick.	Frameless Adhesive Backed	Each	Framed Scratch Resistant	Each
12″×12″	⅛″	8344T51	$14.28	8541T63	$66.75
18″×24″	⅛″	8344T52	41.14	8541T64	99.74
24″×36″	⅛″	8344T53	83.43	8541T65	185.37

Highly Reflective Glass Mirrors

Offering the most reflectivity, these classic mirrors are ¼″ thick with polished edges.

Framed mirrors have a 22-ga., Type 304 stainless steel frame.

Framed mirrors with shelf have a 20-ga., Type 304 stainless steel frame and 5″ deep shelf. Furnished with four 3/16″ dia. mounting holes (fasteners not included).

O'all Size, Wd.×Ht.	Frameless	Each	Framed	Each	Framed w/Shelf	Each
12″×18″	2875K23	$25.59	2869K1	$88.64	———	———
14″×20″	2875K24	31.98	2869K2	96.08	———	———
16″×22″	2875K25	36.51	2869K3	96.08	2877K3	$63.71
18″×24″	2875K12	41.15	2869K4	99.31	2877K4	68.02
18″×30″	2875K41	49.27	2869K31	102.00	2877K6	80.31
24″×30″	2875K7	72.62	2869K5	120.80	2877K7	101.55
24″×36″	2875K22	81.65	2869K32	121.96	2877K5	112.74
48″×24″	2875K45	115.62	2869K33	185.20	2877K9	185.64

Scratch-Resistant Framed Aluminum Mirrors

Our most scratch-resistant mirrors offer reflectivity similar to glass with durability similar to stainless steel. Measuring 0.02″ thick, they're also theft resistant with no visible mounting screws or clips.

Mirrors have a polished, 18-ga., Type 304 stainless steel frame with welded corners. Furnished with four 3/16″ dia. mounting holes (fasteners not included).

O'all Size, Wd.×Ht.		Each
18″×24″	2808T14	$121.09
24″×30″	2808T16	169.15
24″×36″	2808T18	191.49

Heavy Duty Stainless Steel Mirrors

Our most durable mirrors are made of polished, Type 304 stainless steel.

Frameless mirrors are 5/16″ thick and have four (18″ to 30″ Ht. models) or six (36″ and 60″ Ht. models) 7/32″ dia. mounting holes (fasteners not included).

Framed mirrors are ¼″ thick and have an 18-ga., Type 304 stainless steel frame. Furnished with four 3/16″ dia. mounting holes (fasteners not included).

O'all Size, Wd.×Ht.	Frameless	Each	Framed	Each
14″×18″	2989K42	$62.26	3036K12	$96.62
16″×20″	2989K43	70.46	3036K13	101.24
18″×24″	2989K44	86.16	3036K14	108.49
24″×30″	2989K46	118.86	3036K16	150.19
24″×36″	2989K48	140.74	3036K18	181.01
24″×60″	2989K51	240.10	3036K21	333.97

ADA-Compliant Highly Reflective Framed Glass Tilt Mirrors

When properly installed, these mirrors help you comply with the Americans with Disabilities Act (ADA). All are ¼″ thick and have four 3/16″ dia. mounting holes (fasteners not included).

Tapered-tilt mirrors are tapered from 4″ at top to 1″ at bottom. They have a 20-ga., Type 304 stainless steel frame.

Adjustable-tilt mirrors tilt a full 6″. They have an 18-ga., Type 304 stainless steel frame.

O'all Size, Wd.×Ht.		Each
Tapered Tilt		
16″×30″	2799K21	$143.88
18″×36″	2799K23	185.65
Adjustable Tilt		
16″×24″	2799K51	97.98
18″×24″	2799K53	99.74

Clear Plastic Mirror Holders

Recommended for mounting frameless plastic and glass mirrors.

Holders with Fasteners—Include mounting fasteners.

Holders—Attach with #6×1½″ oval head wood screws (see page 3018) or sheet metal screws (see pages 3022-3023).

	Pkg. Qty.	⅛″ Thick.	Per Pkg.	¼″ Thick.	Per Pkg.
Holders with Fasteners	6	2800K45	$1.63	2800K46	$1.86
Holders	100	2800K51	10.31	2800K52	13.29

Nonrefrigerated Drinking Fountains

No need for electrical connections, these fountains only require a water source to satisfy your thirst. All provide nonrefrigerated water, but can be connected to a remote water chiller if cool water is desired. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

1&2 Made of 18 ga. Type 300 stainless steel with a chrome-plated brass drinking nozzle; automatic flow-regulator valve; and 3″ Ht.×10″ Wd.×6″ Dp. basin with smooth, rolled edges. At the base of the basin, there's a mounting bracket for attaching fountains to your drain. For indoor and outdoor use.

Style 1 includes a 1¼″ Dia.×4″ Lg. tailpiece.

3 This wall-mount fountain has an 18-8 stainless steel basin with flexible polyester drinking nozzle to guard against mouth injuries. It also has a light-gray, vinyl-clad steel cabinet. The front panel can be removed for easy installation. A mounting bracket with five ⅜″ dia. mounting holes is included (mounting fasteners are not included). Overall size is 15″ Ht.×15¾″ Wd.×13″ Dp. For indoor use.

	Water Flow Operation	Connections Inlet	Connections Outlet		
1	Lever Handle	⅜″ NPT Female	1¼″ OD	**2789K74**	$339.34
2	Push Button	⅜″ NPT Male	1¼″ OD	**2789K75**	229.51
3	Push Button	⅜″ OD	1¼″ OD	**2789K76**	340.98

Self-Closing Water Supply Valve

To help conserve water, you operate this valve with a pull chain. Pull the chain to start the flow of water. Release the chain and the flow of water automatically shuts off. NSF 61 certified for use with drinking (potable) water in all states as of July 1, 2010.

The valve is chrome-plated brass. Pull chain is 12¼″ long and has a 1⅛″ ID ring. Inlet and outlet connections are ½″ NPT female.

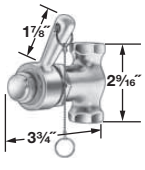

2854K28 ..... $59.88

Paper Cups and Dispensers

Keep cups conveniently located next to your water supply. Dispensers are Type 430 stainless steel with a cutout "window" that allows you to see when refills are needed. Mounting bracket and screws are included.

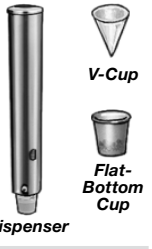

Adjustable-Diameter Dispensers

For Cup Rim Diameter Range	Dispenser Height		
2″-2¾″	15¾″	**2936K32**	$17.46
2⅝″-3⅛″	17¼″	**2936K31**	17.17

Coated Paper Cups

Style	Cup Rim Dia.	Approx. Cap.	Cups/ Pkg.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
V-Cup	2¾″	4½ oz.	200	25	**2713K31**	$4.80	$4.08
Flat Bottom	2¼″	4 oz.	60	40	**2713K32**	3.57	3.04

Nozzles for Water Coolers and Drinking Fountains

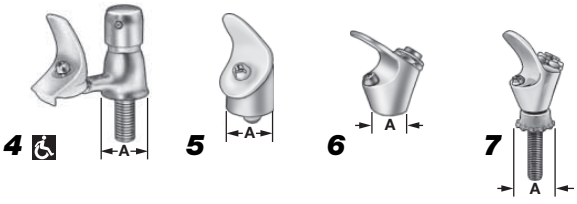

These nozzles are also known as bubblers. They are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

4&5 ***Nozzles with Safety Mouth Guard—*** To prevent mouth injuries, both styles have a beige, flexible polyester guard.

Style 4—Equipped with a push-button valve with flow regulator, this chrome-plated brass nozzle has a 2″ long connection shank. It helps you comply with ADA regulations.

Style 5—Nozzle is chrome-colored plastic. It comes furnished with a ¼″ copper tube for connection to your water supply.

	Size	(A)		
4	½″ NPT Male	2″	**28805K44**	$162.71
5	⅜″ NPT Male	1⁵⁄₈″	**28805K42**	26.44
	Replacement Flow Regulator for Style 4		**30045K61**	13.37

6&7 ***Push-Button Nozzles—*** Equipped with a push-button valve with flow regulator, these bubblers are made of chrome-plated brass.

Style 7—Nozzle has a 4″ long connection shank.

	Size	(A)	Nozzles		Repl. Flow Regulators	
6	⅜″ NPS Female	1⁹⁄₃₂″	**2852K23**	$52.66	**2852K154**	$19.23
7	⅜″ NPS Male	1¾″	**2852K21**	79.22	**2852K154**	19.23

Glass Fillers

Easily fill your glass or cup without having to angle it around a drinking nozzle. Only for use with cold water. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Lever-Activated Filler— Made of lead-free brass with a chrome finish and a black nylon lever, this filler has a self-closing stop and ⅜″ NPS female inlet connection. It requires two hands to operate (one to hold your glass and one to push the lever).

Push-Activated Filler— Made of nickel-plated brass with a blue polycarbonate push arm, this filler has a flow regulator and provides instant shut-off when the arm is released. It only requires one hand to operate. Inlet connection is ½″ NPT male. Connection shank is 2″ long.

Lever Activated ***Push Activated***

Activation Style	(A)	(B)	(C)		
Lever	1¼″	8″	9⅜″	**2942K56**	$46.58
Push	2″	8″	9⁵⁄₁₆″	**2853K4**	145.66

Water Chillers

Turn nonrefrigerated drinking fountains into water coolers by attaching them to these water chillers. You can even attach glass fillers to dispense cool, refreshing water. All chillers are air cooled and provide cool water (factory set at 50° F and adjustable).

Chillers are made of galvanized steel. They have a silent, heavy duty, lifetime-lubricated motor and fan. They also have a thermal overload-protected, permanently lubricated, and hermetically sealed compressor. The 1.5 gph capacity model has stainless steel waterways; all others have copper waterways.

All chillers operate on 115 VAC, 60 Hz and have connections for hardwiring. For proper ventilation, 6″ of clearance is required in the front and 3″ of clearance is required in the back (unless noted). UL listed, CSA certified, and rated in accordance with the ARI (Air Conditioning and Refrigeration Institute). These products are also NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Maximum Cold Water Cap., gph	No. of Fountains/ Glass Fillers Served	O'all Size, Lg.×Wd.×Ht.	Connections Inlet Tube OD	Connections Outlet Tube OD	Motor hp	Amps		
1.5	1	17⅛″× 7⅛″×14″	¼″	¼″	1⁄18	2	**3521K25**	$378.57
2.5	1	13½″×10½″×15¾″	¼″	¼″	1⁄20	2.1	**3521K27**	430.00
9.6	2	19½″× 7⅞″×22″	⅜″	⅜″	¼	6	**3521K32**	635.71
19	3	23″ ×10⅛″×25¾″	⅜″	⅜″	¾	9.7	**3521K36**	1,097.74
29.5	3	33¼″×13¾″×16⅛″	⅜″	⅜″	1	16	**3521K33★**	1,250.00

★ Requires 6″ of clearance in the front as well as the back.

Water Coolers

A&B

C

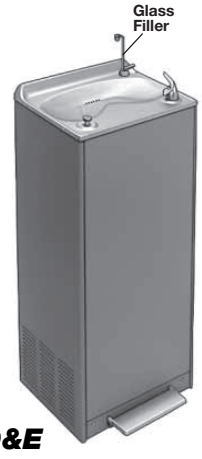

D&E

F

Uses per Hour	Recommended Cold Water Capacity, gph
Less than 50	2 to 4
50 to 90	5 to 9
90 to 150	10 to 15
120 to 150	16 and Up

Quench your thirst with one of our high-quality water coolers. All have an 18-8 stainless steel basin and a removable front panel that allows easy installation and water temperature adjustments (factory set at 50°F). *Styles A* and *B* also have a back panel with cutouts for the condenser. Water inlet connection is an unthreaded 3/8″ OD copper tube that can be connected to a shut-off valve (not included). Drain outlet connection is 1 1/4″ OD.

Water coolers have a 1/4 hp or smaller compressor; operate on 115 VAC, 60 Hz; and include a 4-ft. power cord with three-prong plug. They're UL listed, C-UL listed (unless noted), CSA certified (unless noted), and rated in accordance with the ARI (Air Conditioning and Refrigeration Institute). These products are also NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

A-E ***Compact and Hands-Free Water Coolers—*** All have a flexible polyester drinking nozzle to guard against mouth injuries, a push-button control to regulate water flow, and a vinyl-clad steel cabinet. They're fan cooled.

(A) Compact Water Coolers— These coolers have a compact footprint that only requires one sq. ft. of space for installation.

(B) Ultra-Pure Compact Water Coolers with Filter— Just like coolers (A) above, but with an internal filter to reduce lead and chlorine as well as unpleasant tastes and odors from your drinking water. The filter removes 98% of all particles 10 microns and larger. Change filter cartridge every 1,500 gallons.

(C) Hands-Free Water Coolers— In addition to the push-button control, these coolers boast a foot pedal that allows hands-free operation.

(D) Hands-Free Water Cooler with Cold-Water Glass Filler— Just like coolers (C) above, with the added benefit of an 8 1/8″ high glass filler.

(E) Hands-Free Water Cooler with Hot-Water Glass Filler— Some like it hot, that's why we offer this water cooler that produces up to 40 six-ounce cups of hot water per hour. Cold water is dispensed through the drinking nozzle, while hot water (factory set at 180°F and adjustable) is dispensed through the 6 1/4″ high glass filler. A foot pedal allows hands-free operation.

F ***Extreme Duty Water Cooler—*** Looking to supply cool water in corrosive and/or higher temperature environments? With its Type 316 stainless steel cabinet and acrylic-coated internal components, this is the cooler to choose. It has a chrome-plated brass drinking nozzle, push-button control to regulate water flow, and is water cooled.

Cold Water Cap., gph	O'all Size, Ht. × Wd. × Dp.	Amps	Cabinet Color		Each
(A) Compact Water Coolers					
2.8	38 7/8″ × 12″ × 12″	3.5	Tan	2742K81■	$442.91
5	38 7/8″ × 12″ × 12″	3.5	Tan	2841K31■	465.62
9.8	38 7/8″ × 12″ × 12″	6.8	Tan	2841K33■	503.12
(B) Ultra-Pure Compact Water Coolers with Filter					
2.8	38 7/8″ × 12″ × 12″	3.5	Tan	27005K65	435.09
9.8	38″ × 12″ × 12″	5.8	Tan	27005K71	642.60
Replacement Filter Cartridge for Ultra-Pure Water Coolers				28745K93	74.91
(C) Hands-Free Water Coolers					
4	41 3/8″ × 18″ × 14 1/2″	3.3	Gray	2872K17	543.53
8	41 3/8″ × 18″ × 14 1/2″	5.5	Gray	2872K11	604.09
13.5	41 3/8″ × 18″ × 14 1/2″	8	Gray	2872K12	648.10
19.5	41 3/8″ × 18″ × 14 1/2″	8	Gray	2872K13	746.50
(D) Hands-Free Water Cooler with Cold-Water Glass Filler					
8	41 3/8″ × 18″ × 14 1/2″	5.5	Gray	2872K19	622.11
(E) Hands-Free Water Cooler with Hot-Water Glass Filler					
8	41 3/8″ × 18″ × 14 1/2″	9.5	Gray	2872K32	836.84
(F) Extreme Duty Water Cooler					
16	41 3/8″ × 18″ × 14 1/2″	4.5	Stainless Steel	29025K42●	1,377.14

■ Not C-UL listed. ● Not CSA certified.

Water Dispensers

Inline Dispenser

Get your fill of cool, refreshing water. Made of polycarbonate with a polypropylene drip tray and a removable polyethylene reservoir, all dispensers have a 1/20 hp compressor; operate on 115 VAC, 60 Hz; and include a 6-ft. power cord with three-prong plug. They do not have a back panel so they require a minimum clearance of 4″ on the sides and rear for ventilation. UL listed, C-UL listed, and NSF certified, unless otherwise noted. Dispensers are also ANSI certified for use with drinking (potable) water in all states as of January 1, 2010.

Room temperature/cold water dispensers have a white spout lever for room-temperature water; blue spout lever for cold water. ***Hot/cold water dispensers*** supply up to 45 six-ounce cups of hot water per hour. Spout lever is red for hot water; blue for cold water.

Bottled-Water Dispensers— Provide fresh water without a plumbing hookup. Cabinet color is off-white.

Empty water bottles (sold separately) are translucent polyethylene. *Water bottle caps* (sold separately) are for use with 3- and 5-gallon water bottles. Made of durable polyethylene, caps snap on to bottle necks with minimal force and have a peel-away tab for easy removal.

	Cold Water Cap., gph	O'all Size, Ht. × Wd. × Dp.	Amps		Each
Room Temp./Cold Water Dispenser	0.5	38 3/4″ × 13 1/8″ × 13 1/8″	1.2	2839K31	$283.23
Hot/Cold Water Dispenser	0.5	38 3/4″ × 13 1/8″ × 13 1/8″	5.5	2839K33	435.02
3-gallon Capacity Empty Water Bottle—*7.5″ Sq. × 19.3″ Ht.*				3001K22	17.00
5-gallon Capacity Empty Water Bottle—*10.63″ Dia. × 19.3″ Ht.*				3001K21	19.53
Water Bottle Caps—(*50/Pkg.*)				3001K25	Per Pkg. $11.46

Inline Water Dispensers— No need to change water bottles, these dispensers hook up directly to your water supply. A 1/4″ OD polyethylene inlet connection is included. Cabinet color is off-white.

	Cold Water Cap., gph	O'all Size, Ht. × Wd. × Dp.	Amps		Each
Room Temp./Cold Water Dispenser	0.5	38 3/4″ × 13 1/8″ × 13 1/8″	1.2	28025K3	$404.40
Hot/Cold Water Dispenser	0.5	38 3/4″ × 13 1/8″ × 13 1/8″	5.5	28025K5	472.86

Replacement Spout

Repl. Spouts For Bottled-Water and Inline Water Dispensers—To Order: Please specify manufacturer's Model No.

		Each			Each
White Lever	28025K91	$8.87	Red Lever	28025K93	$10.71
Blue Lever	28025K92	8.62	Spout Seal	28025K94	1.09

Wall-Mount Water Coolers

A&B

C

D

E

F

Uses per Hour	Recommended Cold Water Capacity, gph
Less than 50	2 to 4
50 to 90	5 to 9
90 to 150	10 to 15
120 to 250	16 and up

If floor space is at a premium, choose one of our wall-mount coolers. All have an 18-8 stainless steel basin, a flexible polyester drinking nozzle (unless noted) to guard against mouth injuries, a push-button or bar control to regulate water flow, and a vinyl-clad steel cabinet (unless noted). The front panel is removable for easy installation and water temperature adjustments (factory set at 50° F). Water inlet connection is an unthreaded 3/8″ OD copper tube that can be connected to a shut-off valve (not included). Drain outlet connection is 1 1/4″ OD.

Water coolers are fan cooled; have a 1/4 hp or smaller compressor; operate on 115 VAC, 60 Hz; and include a 1 1/2-ft. (unless noted) power cord with three-prong plug. All come furnished with mounting brackets (see table for number and size of mounting holes; mounting fasteners not included). UL listed, CSA certified (unless noted) and rated in accordance with the ARI (Air-Conditioning and Refrigeration Institute). These products are also NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

(B) Ultra-Pure Water Coolers with Filter— To reduce lead and chlorine as well as unpleasant tastes and odors from your drinking water, these coolers come furnished with an internal filter. The filter removes 98% of all particles 10 microns and larger. Change filter cartridge every 1,500 gallons.

(C) Low-Profile Water Cooler— Measuring just 9 1/2″ deep, this cooler is perfect for narrow hallways and corridors. It's surface mounted, but appears recessed. It also includes a 16 3/4″ high backsplash. Cabinet and backsplash are 18-8 stainless steel.

(D&E) ADA-Compliant Water Coolers— When properly installed, these coolers will help you comply with the Americans with Disabilities Act (ADA). Choose from models with a vinyl-clad steel cabinet and a corrosion-resistant 18-8 stainless steel cabinet.

Style D have a 3′2″ power cord. For installation at adult or child height.

Style E have a 16 3/4″ high, 18-8 stainless steel backsplash. For installation at adult height.

(F) Heavy Duty ADA-Compliant Water Cooler— Similar to the Style D stainless steel model above, except this cooler boasts a vandal-resistant construction and can be used outdoors. The drinking nozzle is chrome-plated steel.

	Cold Water Capacity, gph	O'all Size (Installed), Ht. × Wd. × Dp.	Amps	Mounting Holes, Size (No.)	Cabinet Color		Each
Standard Water Coolers							
A	3	15″ × 15 3/4″ × 13″	3	3/8″ (5)	Tan	3000K73	$456.97
A	8	29 1/2″ × 18″ × 14 1/2″	5.5	5/16″ (6)	Gray	2873K21	527.52
A	13.5	29 1/2″ × 18″ × 14 1/2″	8	5/16″ (6)	Gray	2873K22	572.93
A	15.5	29 1/2″ × 18″ × 14 1/2″	5.6	5/16″ (6)	Gray	2873K23	655.25
Ultra-Pure Water Coolers with Filter							
B	4	22″ × 18″ × 14 1/2″	3.3	5/16″ (6)	Gray	28745K34	672.48
B	8	22″ × 18″ × 14 1/2″	5.5	5/16″ (6)	Gray	28745K36	758.50
Replacement Filter Cartridge for Ultra-Pure Water Coolers						28745K93	74.91
Low-Profile Water Cooler							
C	7.8	37″ × 18″ × 9 1/2″	3.5	1/4″ (8)	Stainless Steel	2741K55	616.31
ADA-Compliant Water Coolers							
D	8	18 13/16″ × 18 3/8″ × 19″	3.7	1/4″ (6) and 7/16″ (3)	Gray	7145K13	550.00
D	8	18 13/16″ × 18 3/8″ × 19″	3.7	1/4″ (6) and 7/16″ (3)	Stainless Steel	7145K15	598.18
E	7	23 7/8″ × 18″ × 18 3/4″	3.5	1/4″ (6)	Gray	2999K91	614.01
E	7	23 7/8″ × 18″ × 18 3/4″	3.5	1/4″ (6)	Stainless Steel	2999K92	720.00
Heavy Duty ADA-Compliant Water Cooler							
F	7.8	19 9/16″ × 18″ × 18 5/8″	5	5/16″ (5)	Stainless Steel	8356T17	790.00

Water Cooler Replacement Parts

Elkay/Halsey-Taylor Replacement Parts

	Elkay/Halsey-Taylor Part No.		Each
Filter Cartridge	51299C	28745K93	$74.91
Flow Regulator	61313C	30045K61	13.37
Flow Regulator	61314C	30045K71	13.37
Regulator Holder	50986C	30045K72	6.65
Regulator Holder	50985C	30045K73	6.56
Thermostat	31513C	30045K99	14.96
Nut Cover	40089C	30045K74	4.76
Button Cap	40048C	30045K75	2.50
Inline Strainer	55996C	30045K76	6.46
Regulator Assembly	60290C	30045K77	22.10
Retainer Nut	15005C	30045K84	.78
Retainer Nut	10031C	30045K82	6.31
Hex Nut	40169C	30045K83	5.61

Haws Replacement Part

	Haws Part No.		Each
Activation Cartridge	VRK5010	8343T21	$61.15

Elkay/ Halsey-Taylor Filter Cartridge

Elkay/ Halsey-Taylor Flow Regulator

Elkay/ Halsey-Taylor Thermostat

Oasis/Sunroc Drinking Nozzle Handle

Oasis/Sunroc Replacement Parts

	Oasis/Sunroc Part No.		Each
Drinking Nozzle Handle	013429	2992K15	$9.04
Activation Cartridge	029967-002	30045K81	39.40
Stem Assembly	013059-005	2992K21	35.47
Thermostat	027040-039	2992K17	28.21
Nozzle Assembly	030029-005	2992K18	28.04
Drinking Nozzle Assembly	030774-006	29025K1	119.59

Lavatory Faucets

A

B

C

D

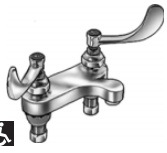
E

F

G

H

For years of reliable, drip-free service, these faucets have replaceable cartridges. All faucets come furnished with aerators and nonswivel spouts. They have a polished finish and require three holes for mounting (unless noted). ***Styles A-E, G,*** and ***H*** faucets are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010. ***Style F*** faucets and replacement cartridges can be used with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012.

ADA faucets (B, D, E, and ***H)*** help you comply with the Americans with Disabilities Act (ADA) when properly installed. ***Wall-mount two-handle faucet (F)*** is for mounting through walls (up to ¾″ thick) or on sinks that require back mounting. ***Adjustable-mount two-handle faucets (G*** and ***H)*** are adjustable-spread faucets for use when mounting holes are not on 4″ centers.

Repl. Cartridges— Order one per handle. Styles A-C work for both hot and cold service.

	gpm @ 60 psi	Connection: Pipe Size, NPT male	Connection: Ctr.-to-Ctr.	Spout Length	Faucet Material	Without Pop-Up Drain	Each	With Pop-Up Drain	Each	Repl. Cartridges: Hot	Repl. Cartridges: Cold	Each
Single-Handle Faucets												
A	2.2	½″	4″	4⅜″	Chrome-Plated Zinc/Brass	3045K61	$95.27	3045K62	$95.27	2941K9	2941K9	$26.18
B	2.2	½″	4″	4½″	Chrome-Plated Brass/Copper	2932K1★	76.36	—	—	2932K5	2932K5	38.66
B	2.2	⅜″♦	4″	4½″	Chrome-Plated Brass/Copper	2932K4●	75.32	2932K3	86.94	2932K5	2932K5	38.66
Two-Handle Faucets												
C	2.2	½″	4″	4¾″	Chrome-Plated Zinc/Brass	3045K71	66.33	3045K72	77.25	2976K23	2976K23	13.63
D	2.2	½″	4″	3¾″	Chrome-Plated Brass	2930K13★	75.55	2930K11	105.02	2930K22	2930K21	26.15
E	2.2	½″	4″	3¾″	Chrome-Plated Brass	2930K17★	97.34	2930K15	135.07	2930K22	2930K21	26.15
Wall-Mount Two-Handle Faucet												
F	2.1	½″	4¾″ to 6″	1⅝″	Chrome-Plated Zinc/Brass	3057K22	97.46	3057K12	131.01	3057K35	3057K36	9.20
Adjustable-Mount Two-Handle Faucets												
G	2.2	½″	up to 8″	5″	Chrome-Plated Brass	2931K14	180.48	2931K16	199.74	2930K22	2930K21	26.15
H	2.2	½″	up to 8″	5″	Chrome-Plated Brass	2931K18	228.09	2931K21	303.43	2930K22	2930K21	26.15

★ Two holes are required for mounting. ♦ Connection is ⅜″ compression. ● A lift rod is included.

Single-Hole Twist-On Lavatory Faucets

Manual Close

Self Close

Marked hot or cold, these faucets have a cross handle, aerator, nonswivel spout, and polished finish. They also include an adapter for ¼″ NPT male connection. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010. ***Self-close faucets*** shut off when you release the handle.

	gpm @ 60 psi	Pipe Size, NPT male	Spout Length	Faucet Material	Hot	Each	Cold	Each
Manual Close	2.2	½″	4⅛″	Chrome-Plated Brass	2933K41	$54.00	2933K42	$54.00
Self Close	2.2	½″	4⅛″	Chrome-Plated Brass	2935K61	80.50	2935K62	80.50

Self-Closing Push-On Lavatory Faucets

Single Handle

Single Handle with Mixing Valve

Two Handle

After pushing these faucets on, they conserve water by automatically shutting off in 10 to 30 seconds—you adjust the dispensing time. Faucets have aerators, nonswivel spouts, and use replaceable cartridges to ensure years of drip-free operation. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Single-handle faucet dispenses either hot or cold water and requires one hole to mount. ***Single-handle faucet with mixing valve*** allows you to mix hot and cold water to maintain a consistent dispensing temperature. It has two connections under the sink and requires one hole to mount. ***Two-handle faucet*** requires two holes to mount.

	gpm @ 60 psi	Connection: Pipe Size, NPT male	Connection: Ctr.-to-Ctr.	Spout Length	Faucet Material	Faucets	Each	Replacement Cartridges	Each
Single Handle	2.2	½″	—	4⅛″	Chrome-Plated Brass	3010K21■	$96.10	3010K51	$73.70
Single Handle with Mixing Valve	1.75	½″	4″	4 1/16″	Chrome-Plated Brass	3010K15■	150.57	3010K51	73.70
Two Handle	2.2	½″	4″	3¾″	Chrome-Plated Brass	2928K22	195.62	3010K51	73.70

■ Includes an adapter for ¼″ NPT male connection.

Hands-Free Lavatory Faucets

J

K

L

No handles to turn or push—an adjustable sensor starts water flow when it detects hands (2″ to 7″ away for battery-operated faucets; 1″ to 8″ away for electronic faucet) and then shuts off when hands are removed. All have aerators and a nonswivel spout. When properly installed, they help you comply with the Americans with Disabilities Act (ADA). UL listed. These products are ANSI certified for use with drinking (potable) water in all states as of October 1, 2010.

Battery-Operated Faucets— These faucets are powered by four AA batteries (included) that last two years based on 8,000 uses per month. *Standard-base model (J)* requires three holes to mount. *Narrow-base model (K)* requires one hole to mount, but can be mounted on a sink with three holes (a 6 3/16″ oval trim plate to cover holes is included). *Replacement control modules* extend the life of your faucet.

Electronic Faucet— This faucet includes and requires you to use the 120 VAC/24 VAC, 50/60 Hz transformer with 10-ft. long cord and two-prong plug. Installation hardware is included. Faucet requires one hole to mount. *Replacement solenoid valve assembly* extends the life of your faucet.

	Base Style	gpm	Connection: Pipe Size, compression	Connection: Ctr.-to-Ctr.	Spout Length	Faucet Material	Faucets	Each	Repl. Control Modules	Each
Battery-Operated Faucets										
J	Standard	0.5	⅜″	4″	4 9/16″	Chrome-Plated Brass	2582K11	$483.59	2582K21	$207.53
K	Narrow	0.5	⅜″	—	4½″	Chrome-Plated Brass	2582K13	443.27	2582K21	207.53
Electronic Faucet									***Repl. Solenoid Valve Assembly***	
L	Standard	0.5	⅜″	—	5⅛″	Chrome-Plated Brass	2582K22	473.59	2582K53	$69.97

Service-Sink Faucets

A

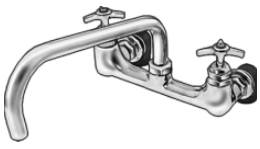
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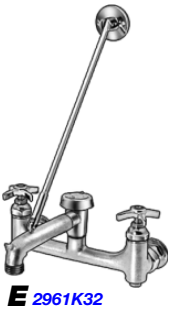
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F 2346K28

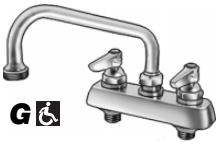
G

B

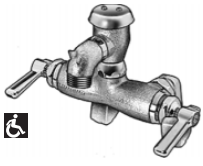
D

H With Optional Faucet Block

Tough service-sink applications are not a problem for these faucets. All are chrome-plated brass with a polished finish (unless noted). They require two holes to mount. ***Styles A, C, F,*** and ***G*** faucets and ***Styles C*** and ***E-G*** replacement cartridges are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

ADA faucets (A, B, D, F, G, and ***H)*** help you comply with the Americans with Disabilities Act (ADA) when properly installed.

Vacuum breakers prevent water from backing into your water supply.

Style A— Furnished with an integral soap dish.

Style B— These jointed faucets make it possible to reach across double- and triple-compartment sinks. Furnished with aerators.

Style C— Quickly fill a bucket or the sink with these high-volume faucets.

Style D— Have an integral pail hook. They also have a rough finish.

Style E— Excellent for use with a mop sink, these faucets have an integral pail hook. *Model* 2961K32 extends 8⅞″ from the wall and includes a wall bracket that provides added support to the spout. *Model* 2961K21 extends only 4 5/16″ from the wall, making it perfect for applications with space constraints. It also has a rough finish.

Style F— With their gooseneck spout, you'll get extra clearance with these faucets. Distance from the base of the faucet to the top of the spout is 11″ high, making it easy to fill a bucket inside your sink.

Model 2346K29 comes furnished with a water supply valve that lets you shut off your water supply at the faucet. Handles are on the side.

Style H— Perfect for laundry sinks, the connections are at the top of this faucet. The faucet has a rough finish. Faucet and replacement cartridges are ANSI certified for use with drinking (potable) water as of January 1, 2010.

The ***optional faucet block*** is made of polypropylene and is designed to support an overhead water supply.

	gpm @ 60 psi	Connection: Pipe Size	Connection: Ctr.-to-Ctr.	Spout Length	Vacuum Breaker	¾″ Garden Hose Thread Outlet on Spout	Faucets	Each	Repl. Cartridges: Hot	Repl. Cartridges: Cold	Each
Wall-Mount Faucets with Swivel Spout											
A	15.5	½″ NPT Female	8″	6″	No	Yes	2944K16	$181.05	2633K48	2633K47	$31.88
A	15.5	½″ NPT Male	8″	6″	No	Yes	2944K18	190.38	2633K48	2633K47	31.88
B	2.2	½″ NPT Female	4″ to 8⅜″	13″	No	No	2924K14	263.68	3081K66	3081K65	22.58
B	2.2	½″ NPT Female	4″ to 8⅜″	17¾″	No	No	2924K19	266.26	3081K66	3081K65	22.58
C	37.4	¾″ NPT Female	7¾″ to 8¼″	12″	No	No	2730K51	366.69	2730K72	2730K72	64.04
C	37.4	¾″ NPT Female	7¾″ to 8¼″	18″	No	No	2730K55	374.77	2730K72	2730K72	64.04
Wall-Mount Faucets with Nonswivel Spout											
D	8	½″ NPT Female	4″ to 8⅜″	2⅜″	Yes	Yes	3081K45	185.71	3081K66	3081K65	22.58
E	17.1	½″ NPT Female	7¾″ to 8¼″	6½″	Yes	Yes	2961K32	138.99	2961K5	2961K6	37.42
E	20.9	½″ NPT Female	7¾″ to 8¼″	11 5/16″	No	Yes	2961K21	120.46	2346K46	2346K46	38.27
F	17.1	½″ NPT Female	2¼″ to 8¼″	5½″	No	No	2346K29	221.70	2346K46	2346K44	38.27
F	20.7	½″ NPT Female	7¾″ to 8¼″	5½″	No	No	2346K28	164.78	2346K46	2346K44	38.27
Deck-Mount Faucet with Swivel Spout											
G	12.1	½″ NPT Male	4″	8″	No	Yes	29015K6	95.63	29015K68	29015K69	31.98
Top-Inlet Connection Faucet with Swivel Spout											
H	2.6	½″ NPSF (Dryseal) Female	3½″	6″	No	Yes	2951K31	85.70	2951K38	2951K39	10.38

Optional Faucet Block for Top-Inlet Connection Faucet with Swivel Spout (H) ..... 2782K6 Each $5.78

Single-Hole Service-Sink Faucets

Faucets made of chrome-plated brass and all replacement cartridges are NSF 61 certified for use with drinking (potable) water in all states as of July 1, 2010.

Manual-close faucets stay on until you shut them off. They are not marked for hot or cold water. ***Self-close faucets*** conserve water by shutting off when handle is released. Faucets are marked for hot or cold water.

T-Handle

Cross

	gpm @ 60 psi	Pipe Size: Inlet	Pipe Size: Outlet	Spout Length	Faucet Material	Handle Style	Faucets	Each	Repl. Cartridges: Hot	Repl. Cartridges: Cold	Each
Manual Close	5.2	½″ NPT Male	¾″ GHT	3⅝″	Rough Brass	T-Handle	2947K4	$7.44	—	—	—
Manual Close	5.85	¾″ NPT Male	¾″ GHT	3⅝″	Rough Brass	T-Handle	2947K5	8.29	—	—	—
Manual Close	12.1	½″ NPT Male	¾″ GHT	3⅞″	Chrome-Plated Brass	Cross	2947K6	58.47	2346K46	2346K46	$38.27
Self Close Hot	10.6	½″ NPT Male	Plain	3⅞″	Chrome-Plated Brass	Cross	2945K1	84.70	2945K22	—	65.00
Self Close Cold	10.6	½″ NPT Male	Plain	3⅞″	Chrome-Plated Brass	Cross	2945K2	84.70	—	2945K11	65.00

Gooseneck Faucets with Oversized Handles

Oversized lever handles allow you to use your wrists or forearms to turn these faucets on and off. All faucets come furnished with aerators. During installation, you get to decide if you want a swivel or nonswivel spout. When properly installed, these faucets help you comply with the American with Disabilities Act (ADA). These products are also ANSI certified for use with drinking (potable) water in all states as of January 1, 2010.

Deck-mount faucet requires two holes for mounting.

Concealed-mount faucet requires three holes for mounting.

Deck Mount

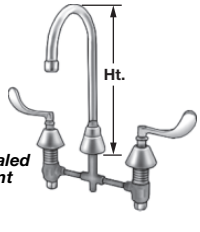

Concealed Mount

	gpm @ 60 psi	Connection: Pipe Size	Connection: Ctr.-to-Ctr.	Spout Length	Spout Ht.	Faucet Material		Each
Deck Mount	2.2	½″ NPS Male	4″	3⅝″	7⅝″	Chrome-Plated Brass	3050K41	$183.34
Concealed Mount	2.2	½″ NPS Male	8″	5¼″	11″	Chrome-Plated Brass	3104K68	226.13

Kitchen Faucets

A

B With Spray Hose

C

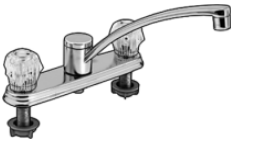
D

With spouts that swivel 360°, these faucets are perfect for use with double-bowl kitchen sinks. All include aerators and are chrome plated with a polished finish. ***ADA faucets (A, B, C)*** help you comply with the Americans with Disabilities Act (ADA) when properly installed. All of the faucets and the ***Style C*** replacement cartridges are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Style A requires one hole to mount. ***Styles B-D*** require three holes to mount. ***Faucets with spray hose*** require an additional mounting hole.

		Connection				Without Spray Hose		With Spray Hose		Replacement Cartridges	
	gpm @ 60 psi	Pipe Size, NPT male	Ctr.-to-Ctr.	Spout Length	Faucet Material		Each		Each		Each
A... Single Handle	2.2	—	—	8″	Brass	**2198K21**	$118.38	**2198K31**	$146.07	**2198K43**	$37.77
B... Single Handle	2.2	1/2″	8″	8″	Brass	**2941K61**	84.37	**2941K62**	98.44	**2941K28**	14.10
C... Two Handle	2.2	1/2″	8″	8″	Brass	**2959K11**	110.25	**2959K12**	196.27	**2959K15**●	31.98
D... Two Handle	2.2	1/2″	8″	9 1/4″	Brass	**2976K11**	78.38	**2976K12**	108.13	**2976K23**	13.63

● **To Order:** Please specify cold or hot water.

Gooseneck Laboratory Faucets

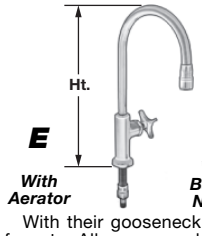

E With Aerator

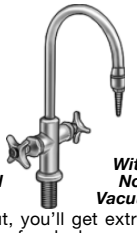
F With Barbed Nozzle

G With Barbed Nozzle and Vacuum Breaker

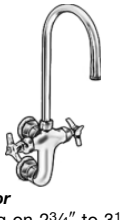
H With Aerator

J

K Without Vacuum Breaker

L

With their gooseneck spout, you'll get extra clearance with these faucets. All are manual close, for deck mounting, and are chrome-plated brass with a polished finish (unless noted).

Vacuum breakers prevent water from backing into your water supply.

Barbed nozzles (where applicable) accept hose and are removable.

Style E are for cold-water dispensing only. ***Style G*** mount on 7 3/4″ to 8 1/4″ centers. ***Style H*** have a hot water supply on top. They are for wall mounting on 2 3/4″ to 3 1/4″ centers. These faucets are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010. ***Style J*** have tin-lined internals. *Model* 2842K61 is self closing (water shuts off when handle is released). ***Style K*** are made entirely of Type 316 stainless steel with a satin finish and offer the most corrosion resistance. ***Style L*** are made of PVC. Color is gray. *Model* 2859K13 has a lever handle and allows you to choose manual or self close.

	gpm @ 60 psi	Pipe Size	Spout Lg.	Spout Ht.	Spout Style	Vacuum Breaker	With Aerator	Each	With Barbed Nozzle Hose ID For Nozzle	With Barbed Nozzle	Each	Replacement Cartridges	Each
Single-Hole Mount													
E... Single Handle	5	1/4″ NPT Male	6″	12 1/4″	Nonswivel	No	**2952K25**	$86.83	5/16″-9/16″	**2952K26**★	$85.10	**2952K42**	$32.82
E... Single Handle	5	1/4″ NPT Male	6″	12 1/4″	Swivel	No	**2952K1**	91.02	5/16″-9/16″	**2952K2**★	86.45	**2952K42**	32.82
F... Two Handle	5	3/8″ Compression	6″	12 1/4″	Nonswivel	No	**2952K5**	149.47	5/16″-9/16″	**2952K14**★	153.36	**2952K42**	32.82
F... Two Handle	5	3/8″ Compression	6″	12 1/4″	Swivel	No	**2952K13**	154.43	5/16″-9/16″	**2952K6**★	134.92	**2952K42**	32.82
F... Two Handle	5	3/8″ Compression	6″	12″	Nonswivel	Yes	**2952K7**	199.74	5/16″-9/16″	**2952K8**★	199.40	**2952K42**	32.82
Double-Hole Mount													
G... Two Handle	2.2	1/2″ NPT Female	5 5/8″	13 1/2″	Nonswivel	No	**2403K63**	234.62	1/4″-1/2″	**2403K64**♠	243.70	**2346K46**	38.27
G... Two Handle	2.2	1/2″ NPT Female	5 7/16″	11 15/16″	Nonswivel	Yes	**2403K65**	283.28	1/4″-1/2″	**2403K66**♠	292.36	**2346K46**	38.27
H... Two Handle	2.2	1/2″ NPT Female	5 1/2″	15 7/16″	Nonswivel	No	**2957K1**	198.71	1/4″-1/2″	**2957K3**♠	208.21	**2346K46**	38.27
H... Two Handle	2.2	1/2″ NPT Female	5 11/16″	16 9/16″	Swivel	No	**2957K2**	207.55	1/4″-1/2″	**2957K4**♠	252.29	**2346K46**	38.27
Single-Hole Mount for Distilled, Deionized, and Demineralized Water													
J... Single Handle	3.6	1/2″ NPT Male	5 5/8″	14 1/8″	Nonswivel	No	—	—	1/4″-5/16″	**2842K51**▲	172.47	**2842K72**	49.60
J... Single Handle	3.6	1/2″ NPT Male	5 5/8″	14 1/8″	Nonswivel	No	—	—	1/4″-5/16″	**2842K61**▲	192.10	**2842K82**	113.71
Single-Hole Mount for Distilled, Deionized, and Demineralized Water													
K... Single Handle	3	3/8″ NPT Male	6″	12 1/4″	Nonswivel	No	—	—	3/8″-9/16″	**9650K11**	498.56	—	—
K... Single Handle	3	3/8″ NPT Male	6″	12″	Nonswivel	Yes	—	—	3/8″-9/16″	**9650K13**	628.12	—	—
L... Single Handle	4.2	3/8″ NPT Female	6 1/4″	12 1/4″	Nonswivel	No	—	—	1/4″-5/16″	**2859K12**	308.31	**2859K14**	49.67
L... Single Handle	4.2	3/8″ NPT Female	6 1/4″	12 1/4″	Nonswivel	No	—	—	1/4″-5/16″	**2859K13**	356.15	**2859K15**	160.74

★ 3 gpm @ 60 psi. ♠ 4.6 gpm @ 60 psi. ▲ Includes an optional 1/4″ NPT male pipe size adapter.

Laboratory Service Fittings

Hose Cocks, Hose Valves, and Hose Nozzles— Made of chrome-plated brass with a polished finish.

M

N

P

Q

R

Hose Cock (M) and ***Needle Valve (N)***—Furnished with three interchangeable, color-coded buttons (orange for air, blue for gas, and yellow for vacuum) that identify specific service.

	O'all Size, Lg.×Ht.	Pipe Size	Max. Pressure	Accepts Hose ID		Each
M.. Hose Cock	3 13/16″ × 2 1/2″	3/8″ NPT Male	■	1/4″-5/16″	**2359K11**	$30.07
N.. Needle Valve	3 13/16″ × 2 15/16″	3/8″ NPT Male	■	1/4″-5/16″	**2359K31**	45.49
P... Cold Water Valve	5″ × 3 7/16″	3/8″ NPT Male	120 psi	1/4″-5/16″	**2359K22**	61.46
Q.. Straight Hose Nozzle	2 5/8″ × 1 3/16″	3/8″ NPT Male	125 psi	1/4″-5/16″	**2359K71**	11.62
R.. Angled Hose Nozzle (24°)	2 13/16″ × 1 3/16″	3/8″ NPT Male	125 psi	1/4″-5/16″	**2359K72**	12.44

■ 30 psi for air, 0.5 psi for gas, and 30 psi for vacuum.

Flanges and Turrets— Made of chrome-plated brass with a polished finish.

S

T

U Two Outlets at 90°

Attach to your supply pipe to provide a connection for hose cocks, needle valves, and nozzles.

	O'all Size, Dia.×Ht.	Pipe Size		Each
S... Single Flange	2″ × 1 1/16″	3/8″ NPT Female	**2359K94**	$15.47
T... Double Flange	1 13/16″ × 1 3/4″	3/8″ NPT Female	**2359K98**	18.80
U... Turret (One Outlet)	2″ × 2 9/16″	3/8″ NPT Female	**2359K61**	25.09
U... Turret (Two Outlets at 90°)	2″ × 2 9/16″	3/8″ NPT Female	**2359K62**	26.04
U... Turret (Two Outlets at 180°)	2″ × 2 9/16″	3/8″ NPT Female	**2359K63**	30.66

Washdown Sprayers

Clean everything from plates to parts with these chrome-plated sprayers that provide a concentrated spray. ***Washdown sprayers, add-on faucets, replacement spray head/hose,*** and ***replacement spray head*** are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

(A-C) Washdown Sprayers— All include a brass mixing faucet with riser; a flexible, spring-action, rubber hose with reinforced polyurethane liner and Type 302 stainless steel cover; and a 1.42 gpm @ 60 psi brass spray head. Sprayers overhang 15″ from the center of the faucet.

Style A requires a single hole to mount. It allows hot and cold water connections. *Styles B* and *C* require two holes to mount.

Add-On Faucets— Made of chrome-plated brass with 3/8″ NPT female connections on top and 3/8″ NPT male connections on the bottom.

Wall Bracket— Secures the riser to your wall to stabilize the sprayers. Made of chrome-plated brass, it extends 6″ from the wall. Mounting fasteners are included.

Replacement Spray Head/Hose— Has a 1.42 gpm brass spray head and 44″ stainless steel hose. Inlet connection is 1/2″ NPT male. Overall length is 48″.

Spray Head Maintenance Kit— Includes everything you need to repair the 1.42 gpm spray head.

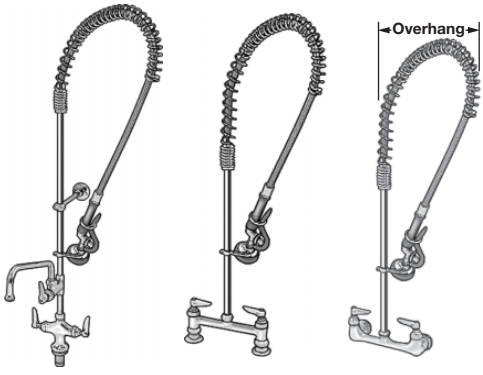

A *With Optional Add-On Faucet and Wall Bracket* **B** **C**

Washdown Sprayers

	Connection Pipe Size	Connection Ctr. to Ctr.	O'all Ht.		
A Deck Mount	5/8″ Compression	—	45″	**2963K1**	$335.19
B Deck Mount	1/2″ NPT Female	8″	44 13/16″	**2963K2**	375.17
C Wall Mount	1/2″ NPT Female	8″	35 1/2″	**2963K3**	357.40

Accessories and Replacement Parts

Add-On Faucet with 12″ Long Spout	**3065K12**	$91.35
Add-On Faucet with 18″ Long Spout	**3065K13**	99.22
44″ Stainless Steel Hose	**2686K15**	60.12
Wall Bracket	**2686K23**	43.63
Replacement Spray Head/Hose	**2686K13**	$129.96
Replacement 1.42 gpm Spray Head	**2686K17**	67.98
1.42 gpm Spray Head Maintenance Kit	**2686K21**	16.93

Hot Water Dispensers

Get steaming-hot tap water instantly and be able to serve up to 60 to 100 (see below) cups of hot water an hour. Dispensers have a chrome-finish plastic spout and a 300-series stainless steel tank. The spout mounts on your sink and stays cool to the touch, while the tank mounts below the sink. Heating element is thermostatically controlled. Inlet water tube is 1/4″ copper tube. A thermal fuse prevents tank damage if it becomes dry. UL listed. These products are also ANSI certified for use with drinking (potable) water in all states as of January 1, 2010.

60 8-oz. Cups per Hour— Comes set at 190° F, but can be adjusted down to 140° F. Requires one 1 1/4″-1 3/8″ hole to mount and includes a 37 1/2″ power cord with three-prong plug.

100 8-oz. Cups per Hour— Comes set at 200° F, but can be adjusted down to 160° F. Requires one 1 1/4″ hole to mount and includes a 32 1/2″ power cord with three-prong plug.

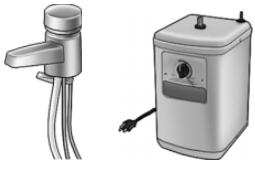

Spout (Above Sink) ***Tank (Below Sink)***

60 8-oz. Cups per Hour

8-oz. Cups Per Hour	Fluid Ounces Per Hour	Tank Cap., oz.	Tank Size, Ht.×Wd.×Dp.	Max. Ht. Above Sink	Amps	VAC/Hz		
60	480	80	11 1/8″×6 13/16″×8 1/8″	4″	6.5	120/60	**3048K21**	$212.70
100	800	85	10″ ×5 3/4″ ×7 1/4″	8 3/8″	11.3	120/60	**3048K13**	498.91

Faucet Washers

SBR— Made of styrene-butadiene rubber. Temperature range is –50° to +200° F. Package quantity is 100. **to Order:** Please specify 1/8″ thick flat or 1/4″ thick beveled washers.

PTFE— These washers absorb little or no water and last longer than SBR rubber washers. They're flat and 1/8″ thick. Temperature range is –100° to +500° F. Color is white. Package quantity is 25.

Individual Washers

Size	Outer Dia.	SBR Color	SBR	SBR Pkg.	PTFE	PTFE Pkg.
00 Small	1/2″	Brown	**2801K1**	$12.37	**2807K11**	$8.99
0 Medium	17/32″	Blue	**2801K2**	12.37	**2807K12**	9.12
1/4″ Regular	9/16″	Green	**2801K3**	12.37	**2807K14**	10.55
1/4″ Large	19/32″	Purple	**2801K4**	12.37	**2807K15**	11.72
3/8″ Regular	5/8″	Gray	**2801K5**	13.37	**2807K16**	12.55
3/8″ Large	11/16″	Orchid	**2801K6**	15.17	**2807K18**	15.79
1/2″ Regular	3/4″	Pink	**2801K7**	15.29	**2807K19**	15.99

Assortments

200-Piece SBR Assortments— Each contains seven sizes: 00, 0, 1/4″ regular, 1/4″ large, 3/8″ regular, 3/8″ large, and 1/2″. Furnished in a 11 1/4″ Ht.×7″ Wd.×3 1/2″ Dp. plastic case.

Flat Assortment	**2801K61**	$34.66
Beveled Assortment	**2801K62**	34.66

240-Piece PTFE Assortment— Contains nine sizes: 000, 00, 0, 1/4″ regular, 1/4″ large, 3/8″ regular, 3/8″ medium, 3/8″ large, and 1/2″. Furnished in a 11 1/4″ Ht.×7″ Wd.×3 1/2″ Dp. plastic case.

2807K21 ..... $95.22

Faucet-Seat Wrenches

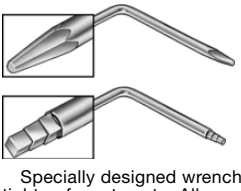

Tapered

Six-Step

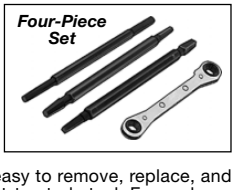

Four-Piece Set

Specially designed wrenches make it easy to remove, replace, and tighten faucet seats. All are made of heat-treated steel. For replacement faucet seats, see page 2014.

Tapered and ***six-step wrenches*** are 6″ long from each end to bend.

Four-piece wrench set has three 7 3/4″ long reversible combination wrenches (hex end, square end, and an Eljer square end for long and short seats) and a 3/8″×7/16″ closed-end ratchet wrench that is 5 1/4″ long. Furnished in a clear vinyl pouch.

Tapered Wrench	**3087K12**	$5.40
Six-Step Wrench	**3087K14**	5.48
Four-Piece Wrench Set	**2689K61**	28.63

Plumbers' O-Ring Assortment

You'll get 12 sizes and 200 pieces of the most popular O-ring sizes. All are made of Buna-N (nitrile rubber). Temperature range is –30° to +250° F. Furnished in a 1 1/2″ Ht.×7″ Wd.×3 1/2″ Dp. plastic case.

9486K63 ..... $8.36

Self-Aligning Faucet Reseater

Reseat flat faucet seats in perfect alignment to extend faucet life. Use the bonnet nut or guide cone (included) to center the cutter while refacing seat. Furnished with six cutters to cover faucet seats from 1/4″ to 1″. Cutter sizes are 1/2″ to 1″ OD.

2812K3 ..... $36.94

Faucet Stems and Seats

Faucet Stem American Standard Model No. 50729-07

Faucet Stem Central Brass Model No. SU-353-C

Stem and Seat Kit American Standard Stem Model No. 72951-17

Why replace an entire faucet when you can just replace the worn faucet parts instead? Choose from our listing of common stems and seats.

Also Available: Stems and seats not listed. Please ask for 2633K999 and specify manufacturer's name and model number.

Manufacturer	Stem Model No.	Stem Lg.	Service	Faucet Stems Each		Stem and Seat Kits Each
American Standard	50729-07	4 5/16"	Hot/Cold	2633K107	$17.50	2633K111 $19.06
American Standard	72951-17	1 3/4"	Cold	2633K16	8.39	2633K102 10.17
American Standard	72950-17	1 3/4"	Hot	2633K14	8.39	2633K113 10.17
Central Brass	SU-353-C	1 3/16"	Cold	2633K56	6.60	2633K118 7.67
Central Brass	SU-353-H	1 3/16"	Hot	2633K55	6.60	2633K119 7.67
Chicago Faucet	1-99	2 3/16"	Cold	2633K5	21.00	— —
Chicago Faucet	1-100	2 3/16"	Hot	2633K6	21.00	— —
Crane	FB8552	2 1/8"	Cold	2633K7	8.40	— —
Crane	FB8553	2 1/8"	Hot	2633K8	8.40	— —
Delta	RP1745	1 5/16"	Hot/Cold	2633K9	4.11	2633K125 5.88
Kohler	22917	1 11/16"	Cold	2633K58	9.82	2633K137 11.62
Kohler	22932	1 11/16"	Hot	2633K57	9.82	2633K138 11.62
T & S Brass	2713-40	2 13/16"	Cold	2633K47	31.88	— —
T & S Brass	2714-40	2 13/16"	Hot	2633K48	31.88	— —

Faucet Seats

Manufacturer	Model No.	Service	Pkg. Qty.	Per Pkg.
American Standard	862-14	Hot/Cold	10	2633K62 $9.69
American Standard	57281-07	Hot/Cold	10	2633K64 7.82
Central Brass	263-B	Hot/Cold	10	2633K72 7.82

22-Piece Faucet Repair Kit

Manufacturer	Model No.	Service	Each
Chicago Faucet	1277D	Hot/Cold	2500K24 $15.04

Faucet Cartridges

Moen 1225

Extend the life of your faucet by replacing the cartridges.

Manufacturer	Model No.	Service	Each
Delta	RP1740	Hot/Cold	9342T21 $9.11
Delta	RP24096	Hot/Cold	9342T22 16.55
Moen	1200	Hot/Cold	9342T4 42.00
Moen	1222	Hot/Cold	9342T5 43.80
Moen	1224	Hot/Cold	2976K23 13.63
Moen	1225	Hot/Cold	2941K9 26.18
Price Pfister	910-031	Hot	9342T8 5.39
Price Pfister	910-032	Cold	9342T9 5.39
Price Pfister	974-291	Hot/Cold	9342T7 21.84
Price Pfister	974-292	Hot/Cold	9342T1 18.20
Price Pfister	974-505	Hot/Cold	9342T2 29.30

Moen Faucet Cartridge Puller

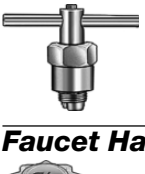

You can use this tool to remove Moen Model No. 1200, 1222, and 1225 cartridges. Made of steel.

Manufacturer	Model No.	Each
Moen	104421	2941K8 $37.00

Faucet Handles

Knob

Cross

Lever

Canopy

ADA

These universal handles fit most stems. Include one faucet handle labeled hot, one labeled cold (unless noted), and all installation hardware.

Style	Finish	Per Pair
Knob	Clear Acrylic	2910K4 $14.12
Cross	Chrome-Plated Metal	2910K1 8.62
Lever	Chrome-Plated Metal	2910K2 8.62
Canopy	Chrome-Plated Metal	2910K3 ♦ 14.75
ADA	Chrome-Plated Metal	2910K5 25.44

♦ Faucet handles are not labeled.

Faucet Handle Puller

Puller removes all lever and cross handles, as well as most canopy handles. Made of steel.

2818K31 ..... Each $10.17

Faucet Sprayer

Pull sprayer down for a shower of water; push up for a stream of water. Sprayer is made of plastic and swivels 360°. It has a 55/64"-27 female connection with an adapter for a 15/16"-27 male connection. Flow rate is 2.2 gpm @ 60 psi. This product is NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

2755K11 ..... Each $6.37

Faucet Aerators

All are chrome-plated brass with a polished finish. These products are NSF 61 certified for use with drinking (potable) water in all states as of September 1, 2011.

	Connection		Each
2.2 gpm @ 60 psi Flow Rate			
A	Standard	55/64"-27 Female	2675K42 $1.79
A	Standard	15/16"-27 Male	2675K44 1.79
A	Standard	55/64"-27 Female; 15/16"-27 Male	2675K38 1.86
A	Standard	3/4"-27 Female	2675K48 2.10
A	Standard	13/16"-27 Male	2675K52 2.10
B	Swivel	55/64"-27 Female; 15/16"-27 Male	2675K39 6.21
C	Pipe Connection	3/8" NPS Male	2675K34 4.93
D	Chicago Faucet	13/16"-24 Female	2675K32 4.03
D	Chicago Faucet	11/16"-27 Male	2675K33 5.60
E	Hose Connection	3/4" GHT Female	2675K36 5.42
F	Universal Adapter	Unthreaded■	2675K31 5.85
1.5 gpm @ 60 psi Flow Rate			
A	Water Saver	55/64"-27 Female; 15/16"-27 Male	2675K64 1.86
0.5 gpm @ 60 psi Flow Rate			
A	Ultra Water Saver	55/64"-27 Female; 15/16"-27 Male	2675K94 3.08

■ Has three different size rubber sleeves that expand to fit faucet.

Faucet-Mount Water Filter

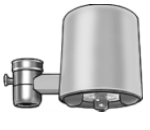

Just unscrew your existing aerator and replace it with this water filter. It filters down to .5 microns to remove rust, sediment, chlorine, and other suspended particles that can give your water unpleasant tastes and odors. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Filter cartridge (included) lasts approximately two months or for 200 gallons of water. Filter has 55/64"-27 female threads and includes two adapters (one with 13/16"-27 male threads; the other with 15/16"-27 male threads) and two washers. *Note:* Filtered operation not recommended for hot water.

Water Filter	2518K12	Each	$25.60
Replacement Filter Cartridge	2518K21	Each	$15.54

Quick and Easy Faucet Controls

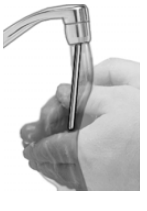

Simply push the rod to turn water on; release the rod and the water automatically shuts off. Designed to fit most North American faucets, both controls have a Type 302 stainless steel rod with a polished finish. Just thread them on to your existing faucet. When properly installed, controls help you comply with the Americans with Disabilities Act (ADA). These products are also ANSI certified for use with drinking (potable) water in all states as of January 1, 2010.

Rod Length	For Faucet Style	Each
3"	Standard	2252K2 $31.63
5"	Tall/Gooseneck	2252K3 33.16

Faucet Spouts

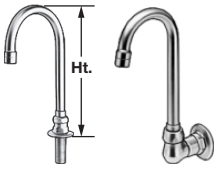

Deck Mount Wall Mount

Made of chrome-plated brass with a polished finish, these spouts are perfect for use with the Hands-Free Flow Control Foot Valves shown on this page. They require one hole to mount.

Deck-mount spout has an aerator. Spout is 5¼″ long and is adjustable for both swivel and nonswivel operation. This product is ANSI certified for use with drinking (potable) water in all states as of January 1, 2010.

Wall-mount spout is 5 11/16″ long and swivels. This product is NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

	gpm @ 60 psi	Connection	Height		Each
Deck Mount	2.2	½″ NPT Male	10¾″	3046K26	$75.24
Wall Mount	10.7	⅜″ NPT Female	9 1/16″	3046K37	63.21

Hands-Free Flow Control Foot Valves

Single Pedal Wall Mount

Double Pedal Floor Mount

Just press down with your foot to start water flow and lift up to stop, leaving your hands free for other work. All valves are chrome-plated brass with polished finish. Distance from floor or wall to center of inlet is 1″. Mounting hardware is included. When properly installed, valves will help you comply with the Americans with Disabilities Act (ADA). These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Single-pedal valves control either hot or cold water. Connections are ½″ NPT female. ***Double-pedal valves*** have closely set hot and cold pedals to operate separately or together to mix hot and cold water. Connections are ½″ NPT female on 2 7/16″ centers. ***Repair kit*** includes all parts needed to rebuild valves including valve stems, springs, washers, and packing stems.

	Pedal Length	Single Pedal	Each	Double Pedal	Each
Floor Mount	3¼″	2683K3	$125.30	2683K1	$186.43
Wall Mount	11⅛″	2685K1	179.16	2685K3	248.06
Repair Kit for All Valves Above				2683K9	15.83
Replacement Cartridge				2683K7	29.13

Four-Way Valve Stem Key

No need for four separate stem keys—this one fits ¼″, 9/32″, 5/16″, and 11/32″ stems. Use it to open and close stopcocks, sillcocks, and valves when the handles have been removed. Key is made of nickel-plated steel.

2661K51 ..... **Each** $7.47

Combination Sink Drain/Toilet Inlet Connector Wrench

Adjustable from 1″ to 4″ in diameter, this unique wrench installs and removes sink strainers, pop-up plugs, overflows, and toilet inlet connectors (spuds). It's made of hardened steel with a black-oxide finish.

2811K14 ..... **Each** $27.92

Sink Drain Wrench

Install and repair various drain fittings including P-traps and sink strainers with this one tool. Made of nickel-plated steel, it works on 6-, 8-, and 12-sided drain nuts. Overall length is 8¾″.

2377K4 ..... **Each** $11.89

Basin Wrenches

Standard

Adjustable

Quickly tighten and loosen faucet shank nuts in tight areas to install and remove faucets, drains, water supply stops, and faucet connectors. Both wrenches have a spring-tension jaw. The tension spring holds the head in any position (both left and right) up to a 90° angle.

Standard wrench is made of cadmium-plated steel.

Adjustable wrench has a telescoping handle and a swivel jaw. It's made of steel with a black-oxide finish on the jaw teeth.

	Nut Capacity	Length		Each
Standard	⅜″ to 1¼″	11″	2813K12	$11.26
Adjustable	⅜″ to 1¼″	9″ to 16″	3064K11	34.73

Extendable Faucet Sprayer

Complete Sprayer

Convenient sprayer gets water right where you need it. These products are ANSI certified for use with drinking (potable) water in all states as of January 1, 2010.

Complete sprayer has a black plastic spray head with chrome-plated nosepiece and 48″ long reinforced, translucent gray vinyl hose. Connection is ⅛″ NPT male and includes a ¼″ NPT female adapter.

Spray head is black plastic with chrome-plated nosepiece.

		Each
Complete Sprayer	2895K12	$12.22
Spray Head	2895K14	10.18

Floor, Wall, and Ceiling Plates

Polypropylene

Steel

Also known as escutcheons, these plates add a finishing touch to the area around protruding pipe.

Polypropylene plates are rust-proof. Twist them open and then fit them around your pipe.

Steel plates have a concealed catch plus a spring to close tightly around your pipe.

Polypropylene

Fits Pipe Size	ID	OD	White Finish	Each	Chrome Finish	Each
⅜″	0.61″	2.57″	3040K9	$0.58	3040K8	$1.00
½″	0.83″	2.79″	3040K21	.61	3040K11	1.05
¾″	1.04″	3.0″	3040K22	.70	3040K12	1.12
1″	1.3″	3.21″	3040K23	.88	3040K13	1.23
1¼″	1.64″	3.58″	3040K24	.89	3040K14	1.87
1½″	1.9″	3.9″	3040K25	.92	3040K15	2.00
2″	2.38″	4.45″	3040K26	.98	3040K16	2.02
3″	3.54″	5.93″	3040K27	2.30	3040K17	6.07
4″	4.58″	6.94″	3040K29	2.48	3040K19	6.49

Steel

Fits Pipe Size	ID	OD	Finish		Each
⅜″	0.75″	2.42″	Nickel Plated	4567K11	$2.73
½″	1.0″	2.75″	Chrome Plated	4567K12	2.48
¾″	1.19″	2.88″	Chrome Plated	4567K13	2.64
1″	1.5″	3.38″	Chrome Plated	4567K14	2.71
1¼″	1.81″	3.69″	Nickel Plated	4567K15	2.69
1½″	2.0″	3.75″	Chrome Plated	4567K16	3.60
2″	2.5″	4.38″	Chrome Plated	4567K17	5.16
3″	3.56″	5.93″	Nickel Plated	4567K18	4.90
4″	4.68″	7.18″	Nickel Plated	4567K19	6.51

Porcelain Repair

Restore good looks to your white porcelain fixtures and appliances.

Filler—Repairs large chips, gouges, and cracks. Sand and finish with glaze (sold separately).

Glaze—Touches up small chips and scratches as well as finishes larger repairs (see Filler above).

	Size		Each
Filler	2 oz.	7824T11	$4.48
Glaze for American Standard Fixtures	½ oz.	7824T21	4.48
Glaze for Kohler Fixtures	½ oz.	7824T22	4.48
Glaze for Appliances	½ oz.	7824T23	4.48

Plumbers' Putty

Size		Each
14-oz. Container	3008K11	$2.17
5-lbs. Container	3008K51	10.08

Water Overflow Alarm

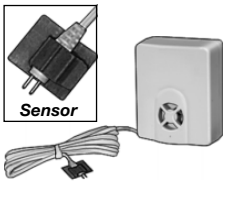
Sensor

To alert you of a leak or overflow hazard, a loud (103 dB) pulsating alarm sounds when water contacts the two stainless steel probes on this alarm's sensor. The sensor is connected to the alarm by a 5-ft. long flexible lead wire and can be mounted in any location.

Great for monitoring sinks, pipe lines, tubs, and sump pumps, the alarm is 3¼″ Ht.×2¼″ Wd.×¾″ Dp. It's powered by three AAA batteries (sold separately) and includes hook-and-loop tape for mounting to walls.

		Each
Alarm	1377T63	$31.95
AAA Battery (3 required)	65605T71	.79

Water Supply Hose with Fittings

PVC-Reinforced Toilet Tank Hose

Hose is flexible and includes fittings with female connections, unless noted.

Note: Comp. = Compression Fitting.

PVC-reinforced hose has a max. temp. of 140° F. These products are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Braided Type 304 stainless steel hose has an inner, nontoxic polymer tube. Max. temp. is 180° F. *Faucet, ice-maker,* and *water heater hose* are NSF 61 certified for use with drinking (potable) water in all states as of March 1, 2010.

Hose ID	12″ Length	Each	20″ Length	Each
Faucet Hose				
PVC Reinforced—*Zinc-Plated Brass Fittings*				
½″ NPS × ½″ NPS	5/16″	26335K11	$3.17	26335K13	$3.46
½″ NPS × ⅜″ Comp.	5/16″	26335K21	3.00	26335K23	3.33
PVC Reinforced—*Nickel-Plated Brass Fittings*					
½″ NPS × ½″ Comp.	5/16″	26335K31	4.65	26335K33	5.35
Braided Type 304 Stainless Steel—*Chrome-Plated Brass Fittings*					
½″ NPS × ½″ NPS	5/16″	2857K54	4.12	2857K55	4.99
½″ NPS × ⅜″ Comp.	5/16″	2857K66	3.93	2857K53	4.82
½″ NPS × ½″ Comp.	5/16″	2857K58	4.54	2857K59	5.42
⅜″ Comp. × ⅜″ Comp.	5/16″	2857K56	3.78	2857K57	4.63
⅜″ Comp. × ⅜″ OD Copper Tubing	5/16″	2857K91	4.58	2857K92	5.26
Toilet Tank Hose					
PVC Reinforced—*One Zinc-Plated Brass Fitting; One Plastic Fitting*					
⅞″ NPS Nut × ½″ NPS	5/16″	26335K61	3.04	26335K63	3.90
⅞″ NPS Nut × ⅜″ Comp.	5/16″	26335K71	2.64	26335K73	3.33
Braided Type 304 Stainless Steel—*One Chrome-Plated Brass Fitting; One Plastic Fitting*					
⅞″ NPS Nut × ½″ NPS	5/16″	2857K73	7.87	2857K77	10.11
⅞″ NPS Nut × ⅜″ Comp.	5/16″	2857K72	7.04	2857K75	6.38
⅞″ NPS Nut × ½″ Comp.	5/16″	2857K74	6.04	2857K76	7.74

Hose ID	48″ Length	Each	60″ Length	Each
Dishwasher Hose				
Braided Type 304 Stainless Steel—*Chrome-Plated Brass Fittings*				
½″ NPS × ⅜″ Comp.	5/16″	2857K78●	$16.16	2857K81●	$16.41
⅜″ Comp. × ⅜″ Comp.	5/16″	2857K79●	15.77	2857K82●	18.14

Hose ID	Length	Each
Ice-Maker Hose		
Braided Type 304 Stainless Steel—*Chrome-Plated Brass Fittings*		
¼″ Comp. × ¼″ Comp.	¼″	2857K87	11.58	2857K88	13.05

● Has a ⅜″ NPT male brass 90° elbow and a ⅜″ Comp. female fitting.

Hose ID	Length	Each
Water Heater Hose		
Braided Type 304 Stainless Steel—*Brass Fittings*		
¾″ NPS × ¾″ NPS	½″	12″	2857K83	$9.31
¾″ NPS × ¾″ NPS	½″	18″	2857K84	10.65
¾″ NPS × ¾″ NPS	½″	24″	2857K85	12.27
Washing Machine Hose				
Braided Type 304 Stainless Steel—*Chrome-Plated Brass Fittings*				
¾″ GHT × ¾″ GHT	⅜″	60″	2857K86	22.53
¾″ GHT × ¾″ GHT	⅜″	60″	2857K89★	22.16

★ Has a 90° elbow.

Water Supply Tubes

Polyethylene Faucet Tube

Polyethylene Toilet Tank Tube

Also known as riser tubes, these tubes connect water supply shut-off valves (stops) to faucets or toilet tanks.

Faucet tubes are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

OD	O'all Lg.	Faucet	Each	Toilet Tank	Each
Polyethylene					
⅜″	12″	27015K71	$2.66	27015K75	$2.76
⅜″	20″	27015K72	2.82	27015K76	2.86
Chrome-Plated Copper					
⅜″	12″	2392K21	7.99	2392K41	7.34
⅜″	20″	2392K22	11.37	2392K42	12.17

Water Hammer Eliminators

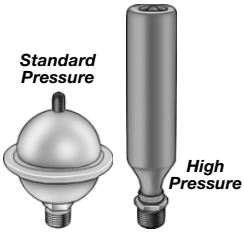

Eliminate irritating knocking noises in your hot- and cold-water pipes. These eliminators can be installed at any angle. For best results, install them close to your shut-off valves. ASSE (American Society of Sanitary Engineers) 1010 certified.

Standard Pressure— Pressurized to 22 psi and has a max. temp. of 200° F. Made of steel with a white painted finish.

High Pressure— Pressurized to 60 psi and have a max. temp. of 250° F. Made of copper.

Connection	Max. Pressure	Dia. × Ht.		Each
Standard Pressure				
½″ NPT Male	125 psi	3⅜″ × 4½″	2635K21	$42.17
High Pressure				
½″ NPT Male	350 psi	1⅜″ × 6½″	2522K14	14.80
¾″ NPT Male	350 psi	1⅜″ × 8¾″	2522K16	17.45

Water Supply Shut-Off Valve Tools

Wrench

Position this wrench over the handle on your water supply shut-off valve to easily turn corroded and/or hard-to-reach valves without over-torquing. Made of black ABS plastic.

O'all Lg.	Each
12 1/16″	2409K3	$10.65

Compression-Sleeve Puller

Screw this tool directly into your compression nut to quickly and easily remove leaking compression sleeves. Made of steel with a black-oxide finish.

O'all Lg.	Each
8″	2409K5	$17.35

Water Supply Shut-Off Valves

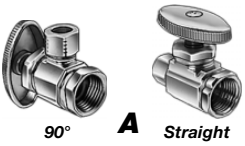

90° **A** Straight

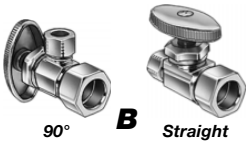

90° **B** Straight

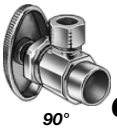

90° **C**

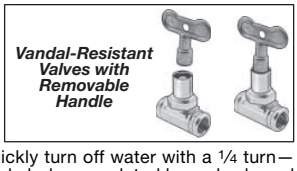

Vandal-Resistant Valves with Removable Handle

Also known as water supply stops, these valves make it easy to shut off water to your faucets, toilets, and more. All have a chrome-plated brass body, unless noted.

Standard Valves—*Styles A & B* have a plastic stem and chrome-plated polycarbonate handle, unless noted. *Style C* has a brass stem and chrome-plated polycarbonate handle, unless noted.

¼-Turn Standard Valves— Quickly turn off water with a ¼ turn—great for tight spots. All have a nickel-chrome-plated brass body and stem and a chrome-plated zinc handle.

Vandal-Resistant Valves— To prevent unauthorized use, you can remove the key handle. Valves and handles are sold separately. Valves are brass and key handles are chrome-plated zinc.

	Inlet Connection	Outlet Connection	STANDARD 90°	Each	STANDARD Straight	Each	¼-TURN STANDARD 90°	Each	VANDAL RESISTANT Straight	Each
A	⅜″ NPT Female	⅜″ NPT Female	2664K44■	$7.13	2664K46■	$8.42	—	—	2354K46■	$10.74
A	½″ NPT Female	½″ NPT Female	2664K45■	12.47	2664K47■	12.92	—	—	2354K47■	14.32
A	⅜″ NPT Female	⅜″ Compression	2664K39♣♥	7.63	2664K42■♦	6.68	—	—	2354K42■	8.92
A	½″ NPT Female	⅜″ Compression	2664K41♣♥	7.63	2664K43♣♥	8.23	9123T52♣	$12.22	2354K48♣	10.95
B	½″ Compression	⅜″ Compression	2664K31♣♥	8.32	2664K33♣♥	8.83	9123T53♣	13.35	2354K39♣	11.77
B	½″ Compression	½″ Compression	2664K32♣♥	8.83	2664K34♣♥	10.62	9123T54♣	14.06	2354K49■	14.18
C	½″ Solder	⅜″ Compression	2664K35♣♥	8.10	—	—	—	—	2354K44■	9.25

Key Handle for Vandal-Resistant Valves ..... 2354K98 **Each** $2.02

■ This product can be used with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012.

♣ This product is NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

♥ Has a nickel-chrome-plated brass body and stem and a nickel-chrome-plated ABS plastic handle. ♦ Has a chrome-plated zinc handle.

Drop-In Sinks

Type 304 Stainless Steel Single Bowl w/out Faucet Ledge

Type 304 Stainless Steel Single Bowl with Faucet

Type 304 Stainless Steel Double Bowl with Faucet Ledge

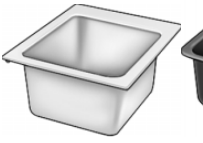

High-Impact Fiberglass

Chemical-Resistant Polyethylene

Sinks are seamless with rounded inside corners, which makes cleaning easy as well. Installation hardware is included, unless noted.

Type 304 Stainless Steel Sinks— Made of 18-gauge stainless steel (unless noted), these sinks offer corrosion, acid, and chemical resistance. The exposed surfaces have a satin finish (unless noted), while the undersides are coated to reduce noise and condensation.

ADA-compliant models have the smallest bowl depths and help you comply with the Americans with Disabilities Act when properly installed.

Models with faucet come furnished with a chrome-plated brass faucet with aerator and 1/2″ NPT male connections. Flow rate is 2.2 gpm @ 60 psi. All except model 3080K11 have a 3 9/16″ high (unless noted) swivel faucet with lever handles. Model 3080K11 has a 4 3/4″ high gooseneck faucet with basket strainer and knob handles. This product is also NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

High-Impact Fiberglass Sinks— These one-piece molded sinks are made of high-impact fiberglass for strength and durability. They're 5/32″ thick and have a stain-resistant surface. Color is white.

Model 2716K51 has an ABS drain, a self-draining soap tray, and a ribbed underbody for added strength. It also has 1″ dia. knockouts for faucet holes on 4″ or 8″ centers.

Chemical-Resistant Polyethylene Sinks— One-piece molded polyethylene construction gives you an economical sink with excellent resistance to chemicals. To install, apply sealant (not included) to rim and drop sink into the countertop. All sinks are 3/16″ thick. They have a waste drain in the corner that has a 3″ long molded tailpiece with a 1 1/2″ NPT male connection, a removable strainer, and a stopper. Color is black.

Overall Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Countertop Cutout Lg.×Wd.	Drain Opening Dia.	Faucet Holes No.	Dia.	Ctr.-to-Ctr.	Without Faucet	Each	With Faucet	Each
Type 304 Stainless Steel													
Single Bowl without Faucet Ledge													
13″	13″	7 5/8″	10″ × 10″	7 5/8″	12 3/8″ × 12 3/8″	3 1/2″	—	—	—	23605K12	$227.12	—	—
15″	15″	8 3/8″	12″ × 12″	7 5/8″	14 3/8″ × 14 3/8″	3 1/2″	—	—	—	3078K11	234.50	—	—
18″	19″	7 5/8″	13 1/2″ × 16″	7 5/8″	17 3/8″ × 18 3/8″	3 1/2″	—	—	—	23605K72	296.20	—	—
19 1/2″	25″	8 3/8″	15 3/4″ × 21″	7 5/8″	18 7/8″ × 24 3/8″	3 1/2″	—	—	—	3078K15	321.67	—	—
19 1/2″	25″	10″	15 3/4″ × 21″	10″	18 7/8″ × 24 3/8″	3 1/2″	—	—	—	23605K46	452.43	—	—
Single Bowl with Faucet Ledge													
15″	15″	6 3/16″	12″ × 10″	6″	14 3/8″ × 14 3/8″	2″	2	1 1/4″	4″	3080K41■	118.33	3080K11■	$190.00
16″	17″	7 5/8″	10″ × 14″	7 5/8″	15 3/8″ × 16 3/8″	3 1/2″	3	1 1/2″	4″	23605K54	314.05	3640K7	351.28
18″	19″	8 3/8″	11 1/2″ × 16″	7 5/8″	17 3/8″ × 18 3/8″	3 1/2″	3	1 1/2″	4″	3076K11	242.19	3640K1	322.59
19″	19 1/2″	7 1/2″	13 1/2″ × 16″	7 1/2″	18 3/8″ × 18 7/8″	3 1/2″	3	1 1/2″	4″	23605K76	317.49	3640K8	361.11
19″	19 1/2″	10 7/8″	13 1/2″ × 16″	10 1/8″	18 3/8″ × 18 7/8″	3 1/2″	3	1 1/2″	4″	3079K31	329.23	3640K4	408.57
19 1/2″	22″	8 3/8″	14″ × 18″	7 5/8″	18 7/8″ × 21 3/8″	3 1/2″	4	1 1/2″	4″	3076K31	311.67	3640K21★	444.71
22″	17″	10 7/8″	16″ × 13 1/2″	10 1/8″	21 3/8″ × 16 3/8″	3 1/2″	3	1 1/2″	4″	3079K21	318.46	3640K3	398.74
22″	19 1/2″	8 3/8″	16″ × 16″	7 5/8″	21 3/8″ × 18 7/8″	3 1/2″	3	1 1/2″	4″	3076K21	311.67	3640K2	371.89
22″	19 1/2″	10 1/8″	16″ × 16″	10 1/8″	21 3/8″ × 18 7/8″	3 1/2″	3	1 1/2″	4″	23605K63	425.23	3640K9	447.47
22″	25″	8 7/8″	15 3/4″ × 21″	8 1/8″	21 3/8″ × 24 3/8″	3 1/2″	4	1 1/2″	4″	3076K42	307.81	3640K22★	455.33
22″	25″	10 7/8″	15 3/4″ × 21″	10 1/8″	21 3/8″ × 24 3/8″	3 1/2″	3	1 1/2″	4″	3079K41	366.15	3640K5	452.06
22″	25″	12 7/8″	15 3/4″ × 21″	12 1/8″	21 3/8″ × 24 3/8″	3 1/2″	3	1 1/2″	4″	3079K51	389.39	3640K6	478.94
22″	33″	10 1/8″	16″ × 28″	10 1/8″	21 3/8″ × 32 3/8″	3 1/2″	3	1 1/2″	4″	23605K65	562.56	3640K11	591.65
Double Bowl with Faucet Ledge													
18″	29″	8 3/8″	12″ × 12″	7 5/8″	17 3/8″ × 28 3/8″	3 1/2″	4	1 1/2″	4″	3076K51	446.67	3640K23★	560.70
22″	33″	10 7/8″	16″ × 13 1/2″	10 1/8″	21 3/8″ × 32 3/8″	3 1/2″	3	1 1/2″	4″	3079K13	566.15	3640K12	654.56
ADA-Compliant Type 304 Stainless Steel													
Single Bowl with Faucet Ledge													
21 1/4″	25″	5 7/8″	15 3/4″ × 21″	5 1/2″	20 5/8″ × 24 3/8″	3 1/2″	4	1 1/4″	4″	9062T2	327.42	9062T4★	492.03
22″	31″	5 7/8″	16″ × 28″	5 1/2″	21 3/8″ × 30 3/8″	3 1/2″	4	1 1/4″	4″	9062T3	429.03	9062T5★	593.65
High-Impact Fiberglass													
Single Bowl with Faucet Ledge													
20″	17″	10″	15″ × 14″	9 1/2″	18 1/2″ × 15 1/2″	3 1/2″	—	—	—	2716K61	92.41	—	—
22″	25″	13 3/4″	15″ × 20″	13 1/4″	21″ × 24″	1 1/2″	—	—	—	2716K51	100.80	—	—
Chemical-Resistant Polyethylene													
Single Bowl without Faucet Ledge													
14 1/2″	14 1/2″	8″	12″ × 12″	7 13/16″	13 1/2″ × 13 1/2″	1 1/2″	—	—	—	3071K12	165.25	—	—
18 1/2″	18 1/2″	8″	16″ × 16″	7 13/16″	17 1/2″ × 17 1/2″	1 1/2″	—	—	—	3071K18	266.92	—	—
23 1/2″	20 1/2″	10″	21″ × 18″	9 13/16″	22 1/2″ × 19 1/2″	1 1/2″	—	—	—	3071K25	284.63	—	—
25 1/2″	20 1/2″	12″	23″ × 18″	11 13/16″	24 1/2″ × 19 1/2″	1 1/2″	—	—	—	3071K27	313.49	—	—
27 1/2″	17 1/2″	10″	25″ × 15″	9 13/16″	26 1/2″ × 16 1/2″	1 1/2″	—	—	—	3071K32	330.99	—	—

■ 20-gauge stainless steel. Exposed surfaces have a bright finish. ★ Faucet is 4 1/4″ high. Furnished with spray hose.

Storage Cabinets with Sink

Perfect for kitchens and breakrooms. The sinks are 300 series, 22- to 20-gauge stainless steel. Each sink includes a ledge-mounted, chrome-plated brass swivel faucet with lever handles, an aerator, and 1/2″ NPT male connections. Flow rate is 2.2 gpm at 60 psi. The drain opening is 3 1/2″ dia. with a P-trap, strainer, and 8 7/16″ long chrome-plated brass tailpipe. The counter and backsplash (which measures 3″ high) are plastic laminate with a neutral limestone finish. The cabinet is 23-gauge welded steel with a 4″ high recessed toe kick and white finish. Cabinet doors have semiconcealed hinges and plastic pulls. Shipped unassembled.

Single-Bowl Sinks— Have a 25″ Lg.x22″ Wd.x6″ Dp. inner bowl size. ***Double-Bowl Sink—*** Has two bowls with a 16″ Lg.x14″ Wd.x6″ Dp. inner bowl size.

Sinks with spray hose do not include a hole for the spray hose. To drill a hole in the counter, use a 1″ dia. hole saw (see 4066A18 on page 2404) with an arbor (see 4066A76 on page 2405).

Single Bowl, Countertop Right and Left without Spray

Bowl Style	Overall Size, Ht.×Wd.×Dp.	No. of Doors	No. of Drawers	No. of Shelves	Countertop Position	w/out Spray Hose	Each	w/ Spray Hose	Each
Single	36″×42″×25″	2	1	—	Right	2737K311	$665.57	2737K313	$744.37
Single	36″×42″×25″	2	1	—	Left	2737K312	665.57	2737K314	744.37
Single	36″×54″×25″	3	2	1	Right & Left	2737K21	743.31	2737K24	793.08
Double	36″×60″×25″	4	2	2	Right & Left	2737K41	826.31	2737K44	906.48

Type 304 Stainless Steel Deep-Bowl Service Sinks

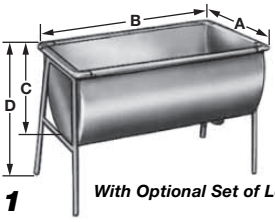

1 With Optional Set of Legs

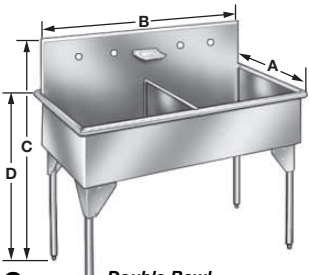

2 Double Bowl

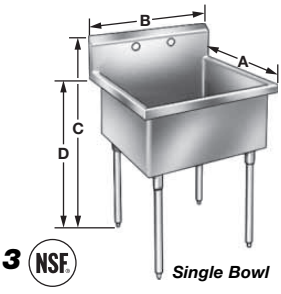

3 NSF Single Bowl

3 NSF Triple Bowl with Faucet and Shelf

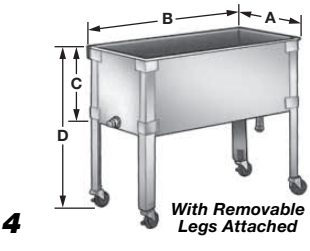

4 With Removable Legs Attached

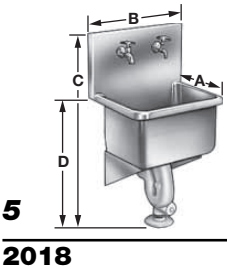

5

Count on deep-bowl sinks to hold more water and splash less than standard sinks. All are made of corrosion-resistant Type 304 stainless steel.

1 *Economy Stainless Steel*— These 22-gauge stainless steel sinks narrow at the top for added splash protection. All are welded with a bright finish. They can be mounted to the wall with optional wall-mount brackets (mounting hardware included) or mounted on the optional legs (mounting hardware included).

Optional angle iron wall-mount brackets and *angle iron legs* are furnished with a blue plastic coating.

2 *Standard Stainless Steel*— These welded sinks are made of 14-gauge stainless steel. The front, bottom, and back of the sinks are formed from a single sheet with a 1½″ rolled rim on the front and the sides. All have a screw-in soap dish, squared corners, and detachable legs. Exposed surfaces have a satin finish.

Optional drain boards are 14-gauge Type 304 stainless steel and mount on either side of the sink.

3 *NSF Certified Stainless Steel*— Manufactured in accordance with National Sanitation Foundation standards, these sinks meet the highest standards for food safety. All sink bowls have rounded corners to resist grime and bacteria buildup. Sinks have a satin finish.

Single-bowl models are made of 14-gauge stainless steel. The *optional drain board* is 14-gauge Type 304 stainless steel and mounts on either side of the single-bowl sink. The drain board is not NSF certified.

Double-bowl model is made of 16-gauge stainless steel. It has a built-in 26¼″ Lg. × 18″ Wd. drain board on each side of the double bowl. The sink bowls and drain boards are undercoated to reduce noise and to prevent condensation buildup.

Triple-bowl models have three sink bowls with strainers for extra flexibility, yet are still small enough to fit into tight spaces. Sinks are made of 16-gauge stainless steel. They include a 4½″ high, chrome-plated brass swivel faucet with lever handles, ½″ NPS male connections, and a flow rate of 2.2 gpm at 45 psi. Choose a sink with or without a stainless steel shelf underneath.

4 *Mobile Stainless Steel*— Moving this sink where it's needed is easy—its removable legs have swivel casters with 3″ dia. rubber wheels (two with brakes). Sink is made of welded, 20-gauge stainless steel with a bright finish. It has a 1½″ NPT male threaded drain in the bottom at one end and a 1″ NPT female threaded opening with a removable plug in the side wall at the opposite end.

5 *Wall-Mount Stainless Steel with Faucet and P-Trap*— Designed for heavy duty use, these wall-mount sinks are made of 14-gauge stainless steel. They have a 1½″ rolled rim, rounded corners, and a satin finish. Sinks include two chrome-plated brass faucets with cross handles, ½″ NPT female connections, and a flow rate of 2.2 gpm @ 60 psi. They also include a cast-iron P-trap with strainer and a cleanout plug. Furnished with a wall hanger that has four ¼″ × 1″ mounting slots and a wall bracket that has four 7/16″ dia. mounting holes (mounting hardware not included).

Overall Size (A)	(B)	(C)	(D)	Inner Bowl Size	Bowl Depth	Back-splash Ht.	Drain Opening Dia.	Faucet Holes Dia.	Faucet Holes Ctr.-to-Ctr.		Each
(1) Economy Stainless Steel											
Single Bowl											
21″	25½″	14″	34″	18″	×23″	13½″	—	2″	—	—	$275.23
21″	31½″	14″	34″	18″	×29″	13½″	—	2″	—	—	298.74
21″	39½″	14″	34″	18″	×37″	13½″	—	2″	—	—	305.26
21″	51½″	14″	34″	18″	×49″	13½″	—	2″	—	—	361.11
21″	63½″	14″	34″	18″	×61″	13½″	—	2″	—	—	470.37
Brackets and Legs											**Per Set**
Angle Iron Wall-Mount Brackets (Set of 2)											$66.04
Angle Iron Legs (Set of 2)											73.58
Type 304 Stainless Steel Legs (Set of 2)											166.67
											Each
(2) Standard Stainless Steel											
Single Bowl											
27″	27″	48″	36″	24″	×24″	12″	12″	3 11/16″	1¼″	8″	$1,345.00
27″	33″	48″	36″	24″	×30″	12″	12″	3 11/16″	1¼″	8″	1,405.00
27″	39″	48″	36″	24″	×36″	12″	12″	3 11/16″	1¼″	8″	1,492.56
Double Bowl											
27″	51″	48″	36″	24″	×24″	12″	12″	3 11/16″	1¼″	8″	2,143.33
27″	63″	48″	36″	24″	×30″	12″	12″	3 11/16″	1¼″	8″	2,441.67
Drain Boards for Both Single- and Double-Bowl Models											
24″ Wd. × 24″ Lg. Drain Board											497.74
24″ Wd. × 30″ Lg. Drain Board											583.33
24″ Wd. × 36″ Lg. Drain Board											625.00
(3) NSF Certified Stainless Steel											
Single Bowl											
27½″	27″	44″	36″	24″	×24″	14″	8″	3½″	1½″	8″	1,576.58
27½″	39″	44″	36″	24″	×36″	14″	8″	3½″	1½″	8″	1,818.18
Drain Board for Single-Bowl Models											
24″ Lg. × 24″ Wd. Drain Board											551.40
Double Bowl											
29¾″	77¼″	42½″	36″	24″	×18″	12¾″	6¼″	3½″	1½″	8″	2,898.31
Triple Bowl with Faucet											
23″	58″	38⅞″	32½″	15″	×11″	11″	4⅞″	3½″	1½″	4″	1,459.13
Triple Bowl with Faucet and Shelf											
23″	58″	38⅞″	32½″	15″	×11″	11″	4⅞″	3½″	1½″	4″	1,612.17
(4) Mobile Stainless Steel											
Single Bowl											
18″	36″	14″	32″	17¾″	×35¾″	14″	—	■	—	—	620.37
(5) Wall-Mount Stainless Steel with Faucet and P-Trap											
Single Bowl											
17½″	21″	39¾″	27¾″	14″	×18″	12″	12″	3½″	1½″	8″	1,169.35
19½″	25″	39¾″	27¾″	16″	×22″	12″	12″	3½″	1½″	8″	1,222.22

■ 1½″ dia. for the bottom drain; 1″ dia. for the side drain.

Thermoplastic and Concrete Deep-Bowl Service Sinks

With their deep bowls, these sinks hold more water and splash less than standard sinks.

1&2 ***Thermoplastic*** and ***Wall-Mount Thermoplastic—*** Don't let their light weight fool you, these sinks stand up to heavy use. Each bowl has a molded-in, self-draining soap dish. *Single-bowl sinks* are 5/32″ thick, while *double-bowl sinks* are 3/32″ thick.

Sinks with faucet have a 2¼″ high, chrome-plated brass swivel faucet with lever handles and ½″ NPT male connections. Flow rate is 2.2 gpm @ 60 psi. ***Optional polypropylene faucet block*** supports overhead water supplies.

Style 1 include four 20-gauge steel legs that are easy to attach (no fasteners required). Legs come furnished with leveling feet that can be adjusted up to 1″. If the feet are not used, you can secure these sinks to the floor using the ¼″ dia. hole in the bottom of each leg (fasteners not included).

Style 2 include brackets (one for single-bowl sinks; two for double-bowl sinks) and all the mounting fasteners required for wall mounting.

3 ***Rough Duty Concrete—*** Our tough sink is built to handle your rough service. The sink is 1⅛″ thick concrete and has a galvanized metal rim with rounded edges. The stand is 1″×1″ steel for strength with an enameled finish for rust resistance. Includes a brass strainer and threaded, 1½″ plastic coupling for tailpiece connection.

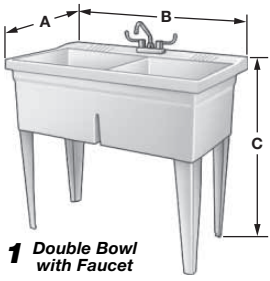

1 ***Double Bowl with Faucet***

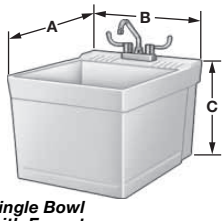

2 ***Single Bowl with Faucet***

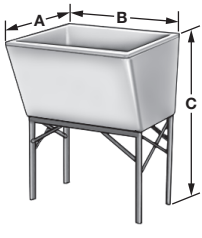

3

Overall Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Drain Opening Dia.	Faucet Holes Dia.	Ctr.-to-Ctr.		Each
(1) Thermoplastic									
Single Bowl									
23⅞″	20″	33 11/16″	19⅝″×19½″	13″	1½″	1″	4″	2782K3	$79.33
Single Bowl with Faucet									
23⅞″	20″	33 11/16″	19⅝″×19½″	13″	1½″	1″	4″	2782K4	122.00
Double Bowl									
24″	40″	33¾″	18⅝″×18⅞″	12½″	1½″	1¼″	4″ and 8″	2915K13	198.92
Double Bowl with Faucet									
24″	40″	33¾″	18⅝″×18⅞″	12½″	1½″	1¼″	4″ and 8″	2915K11	278.49
Optional Polypropylene Faucet Block									
For All Thermoplastic Sinks								2782K6	5.78
(2) Wall-Mount Thermoplastic									
Single Bowl									
23⅞″	20″	14⅜″	19⅝″×19½″	13″	1½″	1″	4″	2782K1	79.33
Single Bowl with Faucet									
23⅞″	20″	14⅜″	19⅝″×19½″	13″	1½″	1″	4″	2782K2	159.23
Double Bowl									
24″	40″	13⅞″	18⅝″×18⅞″	12½″	1½″	1¼″	4″ and 8″	2915K14	198.92
Double Bowl with Faucet									
24″	40″	13⅞″	18⅝″×18⅞″	12½″	1½″	1¼″	4″ and 8″	2915K21	278.49
Optional Polypropylene Faucet Block									
For All Wall-Mount Thermoplastic Sinks								2782K6	5.78
(3) Rough Duty Concrete									
Single Bowl									
23½″	25″	34″	21¼″×22¾″	14″	1½″	—	—	2913K1	360.29

Extreme Duty Stainless Steel Processing Sinks

Most highly corrosive chemicals won't eat away these sinks. All sinks are made from one piece of 18-gauge (except for 2836K72, which is 20-gauge) low-carbon Type 316 stainless steel. They have a 1½″ rounded top ledge, corner drain, and are undercoated to reduce noise as well as prevent condensation buildup. The stand is black vinyl-clad steel. The legs have leveling feet that can be adjusted up to 1″.

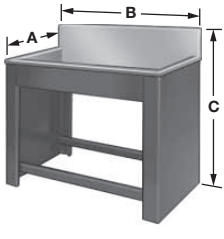

Overall Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Backsplash Ht.	Drain Opening Dia.		Each
20″	39″	46″	17″×36″	9″	8″	1½″	2836K72	$1,367.74
27″	51″	46″	24″×48″	5″	8″	1½″	2836K73	1,463.41
32″	75″	46″	29″×72″	7″	8″	1½″	2836K76	2,080.00
37″	51″	46″	34″×48″	11″	8″	1½″	2836K78	2,193.44

Floor Service Sinks

Also known as mop sinks, these sinks are the perfect choice for maintenance rooms. Mounted on the floor, their low-profile design means you won't have to lift heavy, bulky items too far for emptying and cleaning.

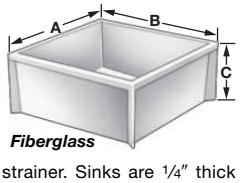

Fiberglass

Fiberglass— Tough yet economical, these solid one-piece sinks have an integral, unthreaded drain connection and 16-gauge Type 302 stainless steel strainer. Sinks are ¼″ thick with a 1″ thick rim.

Terrazzo— Long lasting and repairable, these sinks are made of compressed black and white marble chips and cement that's polished and sealed. Each has a 1″ wide, 22-gauge Type 304 stainless steel edge cap on one side; an integral cast-brass drain; and a 22-gauge Type 316 stainless steel strainer.

Overall Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Drain Opening Dia.		Each
Fiberglass							
24″	24″	10″	22″×22″	9½″	3″	2180K1	$217.43
24″	36″	10″	22″×34″	9½″	3″	2180K3	234.15
Terrazzo							
24″	24″	6″	20″×20″	4″	3″	2717K51	353.18
24″	24″	12″	20″×20″	10″	3″	2717K54	490.80
24″	36″	6″	20″×32″	4″	3″	2717K52	397.95
24″	36″	12″	20″×32″	10″	3″	2717K56	583.56

Miniature Service Sinks

4

5

6

7

Also known as cup sinks, these sinks are for disposing small amounts of liquids. Drains have a strainer and 1½″ NPT male tailpiece.

4&5 ***Chemical-Resistant Polypropylene—*** Made of seamless, 3/16″ thick, molded black polypropylene. *Optional mounting bracket for Style 4 sinks* holds sinks in place on 1″ to 1¼″ thick countertops.

6&7 ***Corrosion-Resistant Stainless Steel—*** Made of 18-gauge Type 316 stainless steel, the lip and inside bowl have a satin finish. *Style 7* is an easy-to-install drop-in sink.

Overall Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Drain Opening Dia.		Each
Chemical-Resistant Polypropylene							
4 3¾″	7″	8 7/16″	21 11/16″×5⅞″	4⅛″	1½″	2690K51	$42.29
4 4⅜″	10¼″	9¼″	3″ ×9″	5″	1½″	2690K52	65.74
5 —	6 9/16″	6½″	5½″ Dia.	4″	1½″	2690K56	44.40
Optional Mounting Bracket for Style 4 Sinks						2690K55	15.88
Corrosion-Resistant Stainless Steel							
6 3¾″	6¾″	6¾″	3″ ×6″	5″	1½″	2748K22	359.09
7 4½″	7½″	6¾″	3″ ×6″	5″	1½″	2748K32	392.42

Lavatory Sinks

China

Stainless Steel (3059K21)

China Sink— This sink helps you comply with the Americans with Disabilities Act (ADA) and ANSI 117.1 when properly installed. It has three faucet holes, a front overflow hole, two self-draining soap dishes, and a bracket for wall mounting (bracket has six 5/16″ dia. mounting holes, fasteners not included). Color is white.

Type 304 Stainless Steel Sinks— Both have three faucet holes and include a chrome-plated bronze strainer.

Model 3059K21 is made of 16-gauge stainless steel. It has an integral bar-soap holder, 1¼″ Dia.×4″ Lg. tailpiece, and a mounting bracket with three ¼″×¾″ mounting slots (fasteners not included).

Model 3059K22 helps you comply with the Americans with Disabilities Act (ADA) when properly installed. Made of 18-gauge stainless steel, it has sound deadeners, an offset 8⅞″ long tailpiece, integral angle braces, and a wall hanger with four ¼″×1″ mounting slots (fasteners not included). It also has four ⅜″ dia. mounting holes on the sink (fasteners not included).

Overall Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Drain Opening Dia.	Faucet Holes Dia.	Ctr.-to-Ctr.		Each
China									
18″	20″	10½″	10⅜″×15¼″	8¼″	1¼″	1¼″	4″	2724K42	$109.19
Type 304 Stainless Steel									
15″	18″	9″	14½″× 9½″	6″	1⅝″	1 5/16″	4″	3059K21	718.08
23″	19″	9″	16″ ×13½″	4″	1⅝″	1½″	8″	3059K22	614.17

Stainless Steel Wash Sinks with Faucet

NSF Certified Wash Sinks

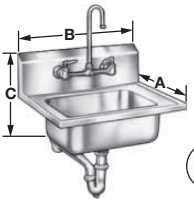

An integral, 8⅛″ high backsplash that's sloped 45° at the top for water runoff keeps splashing messes to a minimum. Sinks are 20-gauge Type 304 stainless steel with a one-piece bowl. They include a chrome-plated brass gooseneck faucet with aerator, two handles, and ½″ NPS male connections. Flow rate is 2 gpm @ 60 psi. Sinks also include a strainer, 3″ long chrome-plated brass tailpiece, P-trap, and wall-mount bracket (bracket has four ⅜″ dia. mounting holes). Mounting fasteners are included.

Overall Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Drain Opening Dia.	Handle Style		Each
15¼″	17″	13⅝″	10″×13¾″	5½″	1⅞″	Canopy	2719K12	$380.94
22″	24¾″	14 7/16″	16″×20″	6¼″	3½″	Lever	2719K13	572.80

NSF Certified Hands-Free Wash Sinks

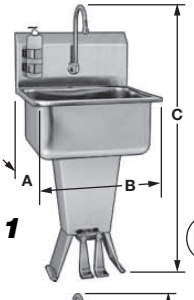

1

Control water flow without touching a faucet. Sinks are 18-gauge Type 304 stainless steel with an electro-polished finish. They have a 9½″ high backsplash and (where noted) side splash guards. All include a chrome-plated brass gooseneck faucet with aerator and ⅜″ NPT female connections. Flow rate is 2 gpm @ 60 psi. They also include a 16-oz., pump-style liquid-soap dispenser. USDA approved.

1 ***Foot-Operated Pedestal Sinks—*** These sinks run as long as you press the foot pedals, which are Type 304 stainless steel. For indoor and outdoor use.

O'all Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Drain Opening Dia.		Each
18″	19″	46″	14″×17″	7″	2″	2771K24	$688.30
18″	19″	46″	14″×17″	7″	2″	23665K37 ♦	786.36
20″	21″	46″	16″×19″	10″	2″	2771K34	722.47

♦ With side splash guards.

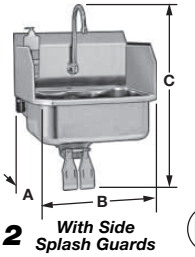

2 *With Side Splash Guards*

2&3 ***Wall-Mount Sinks—*** Mount flush with wall using included mounting bracket. Bracket has three 7/32″ dia. mounting holes (fasteners not included).

(2) Knee-operated models run as long as you press the pedal, which is Type 304 stainless steel. For indoor and outdoor use.

(3) Sensor-operated models run as long as hands are detected. They have an adjustable sensor range of 6″ to 24″. Sensors have a transformer and 9-ft. power cord with two-prong plug. Input is 120 VAC, 60 Hz; output is 12 VDC, 0.8 amps. For indoor use only. UL listed.

Inner Bowl Size	Bowl Depth	Drain Opening Dia.	(2) Knee Operated O'all Size (A)	(B)	(C)		Each	(3) Sensor Operated O'all Size (A)	(B)	(C)		Each
14″×17″	7″	2″	18″	19″	21″	2771K26	$620.00	18″	19″	21″	28645K46	$939.71
14″×17″	7″	2″	18″	19″	21″	23665K57 ♦	724.24	18″	19″	21″	28645K87 ♦	1,111.94
16″×19″	10″	2″	20″	21″	24″	2771K36	669.80	20″	21″	24″	28645K56	1,038.24

♦ With side splash guards.

3

Replacement Parts— For hands-free wash sinks above.

		Each
Mixing Valve Repair Kit for Foot-Operated Pedestal and Knee-Operated Wall-Mount Sinks	2771K81	$34.04
Foot Valve with Pedals	2771K71	135.71
Knee Valve with Pedals	2771K73	135.71
Faucet with Aerator for Foot-Operated Pedestal and Knee-Operated Wall-Mount Sinks	2771K91	58.64
Mixing/Check Valve for Sensor-Operated Wall-Mount Sinks	2771K15	37.20

Retrofit Sensor Kit— You'll get everything you need to convert a foot- or knee-operated sink into a sensor-operated sink with an adjustable sensor range of 6″ to 24″. Sensors have a transformer and 9-ft. power cord with two-prong plug. Input is 120 VAC, 60 Hz; output is 12 VDC, 0.8 amps.

28645K51 ..... **Each** $457.14

Multistation Sinks

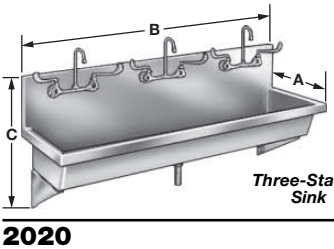

Three-Station Sink

Depending on the model you choose, two or three people can use these sinks at the same time. Both are made of welded, 14-gauge, Type 304 stainless steel with a 10″ high backsplash; support brackets; and concealed wall hanger with ¼″×1″ mounting slots (six for two-station sink and seven for three-station sink; fasteners not included). Sinks include chrome-plated brass gooseneck faucets (two for two-station sink; three for three-station sink) with aerator, wrist-blade handles, and ½″ NPT female connections. Flow rate is 2.2 gpm @ 60 psi. They also include a stainless steel strainer and 4″ long stainless steel tailpiece.

No. of Stations	Overall Size (A)	(B)	(C)	Inner Bowl Size	Bowl Depth	Drain Opening Dia.		Each
Two	20″	48″	25¾″	16½″×45″	8″	1½″	2856K32	$2,356.87
Three	20″	60″	25¾″	16½″×57″	8″	1½″	2856K34	2,712.96

Wash Fountains

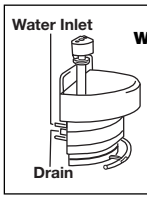

WATER INLET/ DRAIN STYLE A

Vent through floor or wall.

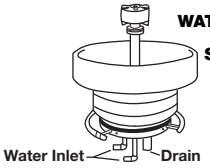

WATER INLET/ DRAIN STYLE B

Vent off drain.

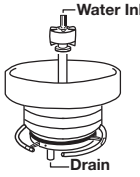

WATER INLET/ DRAIN STYLE C

Centrally rising vent.

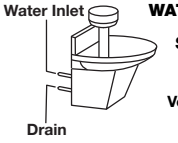

WATER INLET/ DRAIN STYLE D

Vent through wall.

Easy Hook-Up Wash Fountains

Compact Foot Operated

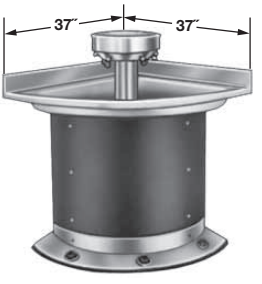

Corner Foot Operated

Semicircular Foot Operated

Circular Sensor Operated (Water Inlet/Drain Style B)

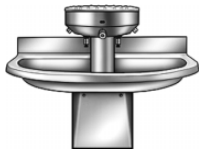

ADA Compliant Semicircular

Shipped assembled and ready for water hook-up, these rugged fountains have vandal-resistant spray heads. Bowl is made of 14-gauge Type 304 stainless steel with a satin finish. Pedestals are black, vinyl-clad galvanized steel with Type 304 stainless steel bases. All operate on 30-100 psi. They have 1/2″ NPS female flexible hose inlets, a 1 1/2″ unthreaded drain outlet, and a liquid soap dispenser (except for the compact models, which have a self-draining bar soap holder).

Foot-operated models have spray heads that run as long as you hold down the push-button. ***Sensor-operated models*** have spray heads that run as long as hands are detected. Sensors operate at 24 VAC and include a step-down transformer with 120 VAC, 3 amp input and 24 VAC output. Sensor and transformer are UL listed.

Standard Fountains— Have 9/16″ dia. holes (three on compact and corner models; four on semicircular and circular models) for floor mounting. Compact, corner, and semicircular models also have four 9/32″ × 3/4″ slots for wall mounting. Fasteners not included.

ADA-Compliant Fountains— Help you comply with the Americans with Disabilities Act (ADA) when properly installed. They have four 1/2″ dia. holes and two 9/32″ × 3/4″ slots for wall mounting. Fasteners not included.

Sink Style	Mount	No. of Users	Bowl Dia.	Bowl Dp.	Fountain Ht. Floor to Rim	Fountain Dp. Front to Back	Flow Rate, gpm @ 45 psi	Water Inlet/ Drain Style	Foot Operated	Each	Sensor Operated	Each
Standard												
Compact	Floor/Wall	2	27 3/4″	4 1/2″	34″	17″	0.5	A	2629K27	$1,897.24	29805K51	$2,113.53
Corner	Floor/Wall	3	52 3/8″	4 1/2″	34″	41 1/8″	0.5	A	2629K42	3,251.17	29805K52	3,777.47
Semicircular	Floor/Wall	3	38″	4 1/2″	34″	32″	0.5	A	2629K37	3,031.88	29805K53	3,544.99
Semicircular	Floor/Wall	4	38″	4 1/2″	34″	32″	0.5	A	2629K47	3,194.91	29805K54	3,657.45
Circular	Floor	6	38 1/4″	4 1/2″	34″	38 1/4″	0.5	B or C●	2629K52	3,452.17	29805K55	4,330.62
Circular	Floor	8	54″	4 1/2″	34″	54″	0.5	B or C●	2629K54	3,997.74	29805K56	4,794.46
ADA Compliant												
Semicircular	Wall	3	38″	5 3/4″	28″■	32″	0.5	D	———	———	29805K71	3,944.58
Semicircular	Wall	4	38″	5 3/4″	28″■	32″	0.5	D	———	———	29805K72	4,398.48

● **To Order:** Please specify water inlet/drain style B or C. *Style C* also includes a trap. ■ From bottom of housing to top of spray head.

Heavy Duty Deep-Bowl Wash Fountains

Resistant to diluted chemicals, abrasion, and corrosion, these fountains stand up to harsh environments. All have deep bowls to allow multiple users to wash their hands and arms without making a mess. Foot operated on 20-80 psi, they have spray heads that run as long as you hold down the foot rail. They also have 1/2″ NPT female inlets, 2″ NPT male drain outlet, and a liquid soap dispenser. Shipped unassembled.

Semicircular models have six 1/2″ dia. holes and two 5/16″ dia. holes for floor mounting. They also have a bracket with two 1/4″ dia. holes for wall mounting the spray head. Fasteners not included.

Circular models have eight 1/2″ dia. holes for floor mounting. Fasteners not included. *Water inlet/drain style C* also includes a trap.

Thermoset Polyester— Lightweight and durable, these fountains have a thermoset polyester bowl with ABS plastic side panels and base. They won't chip, flake, or peel and are an economical alternative to metal bowls. Color is beige.

Stainless Steel— Fountains have a 14-gauge, 300 series stainless steel bowl and base with polished finish.

Thermoset Polyester Semicircular Fountain

Thermoset Polyester Circular Fountain

				SEMICIRCULAR				CIRCULAR					
Bowl Dia.	Bowl Dp.	Fountain Ht. Floor to Rim	Fountain Dp. Front to Back	No. of Users	Flow Rate, gpm @ 45 psi	Water Inlet/ Drain Style A	Each	No. of Users	Flow Rate, gpm @ 45 psi	Water Inlet/ Drain Style B	Each	Water Inlet/ Drain Style C	Each
Thermoset Polyester													
36″	9″	29″	25 3/4″	3	1.25	2984K241	$2,758.41	5	2	2985K151	$2,989.58	2985K152	$2,989.58
54″	9″	29″	35 1/4″	4	3	2984K121	3,343.60	8	5	2985K661	3,457.61	2985K662	3,457.61
Stainless Steel													
36″	9″	28″	25 3/4″	3	1.25	2984K231	3,575.18	5	2	2985K161	4,074.16	2985K162	4,074.16
54″	9″	28″	35 1/4″	4	3	2984K131	4,536.18	8	5	2985K131	5,241.19	2985K132	5,241.19

Bradley Wash Fountain Repair Parts

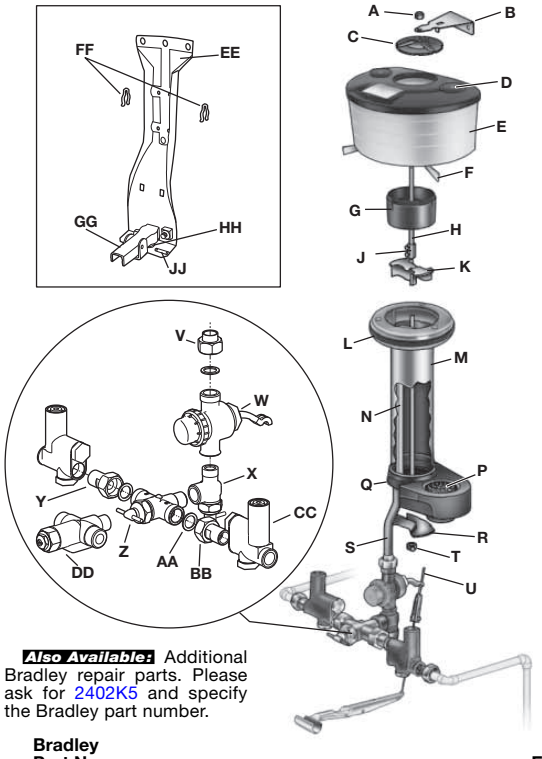

Also Available: Additional Bradley repair parts. Please ask for 2402K5 and specify the Bradley part number.

	Bradley Part No.			Each
A	S66-002	Locking Cap Nut	**2402K107**	$16.44
B	140-124	Bracket for 54″ Bradstone; S.S. Bowl	**2402K77**	123.00
B	140-196	Bracket for 36″ Bradstone; S.S. Bowl	**2402K76**	118.80
C	107-099	Soap Dispenser Cover–Type A	**2402K2**	38.16
D	S10-004	Soap Filler Cap	**2402K65**	17.61
E	S52-070A	Liquid Soap Dispenser for Circular Models	**2402K64**	392.04
E	S52-071	Powdered Soap Dispenser for Circular Models	**2402K62**	351.38
E	S52-074A	Liquid Soap Dispenser for Semicircular Models	**2402K63**	270.23
E	S52-075	Powdered Soap Dispenser for Semicircular Models	**2402K61**	282.36
F	S09-010A	Powdered Soap Valve	**2402K46**	44.76
G	113-155A	Soap Dispenser Tube Spacer	**2402K88**	14.40
H	176-010	Upper Tie Rod	**2402K33**	7.08
J	S66-001	Locking Coupling Nut	**2402K37**	10.69
K	159-009A	Upper Tie Bar	**2402K26**	13.68
L	S05-054	Spray Head for Circular Models	**2402K83**	391.68
L	S05-054B	Spray Head for Semicircular Models	**2402K84**	391.68
L	S05-054C	Spray Head for Corner Model	**2402K85**	391.68
M	S57-005	Support Tube for 54″ Dia. Bowl	**2402K54**	$179.09
M	S57-006	Support Tube for 36″ Dia. Bowl	**2402K55**	185.32
N	176-008	18⅛″ Lower Tie Rod	**2402K103**	14.52
N	176-008A	21⅝″ Lower Tie Rod	**2402K104**	16.68
P	173-002	Strainer	**2402K32**	7.68
Q	125-008	Support Tube Gasket for Stainless Steel Bowl	**2402K44**	14.99
Q	125-011	Support Tube Gasket for Terrazzo and Thermoset Polyester Bowl	**2402K43**	14.99
R	159-009	Lower Tie Bar	**2402K105**	12.12
S	113-122A	Supply Pipe for Bradstone; S.S. Bowl	**2402K112**	75.20
S	113-123A	Supply Pipe for Stainless Steel Bowl	**2402K113**	89.40
S	113-125A	Supply Pipe for 54″ Dia. Terrazzo and Terreon Bowl	**2402K115**	95.40
S	113-124A	Supply Pipe for 36″ Dia. Terrazzo and Terreon Bowl	**2402K114**	85.00
S	113-245	Supply Pipe for Bradstone Bowl	**2402K116**	89.60
T	S66-003	Locking Hex Nut	**2402K106**	9.00
U	S14-007	Operating Rod	**2402K53**	49.25
V	129-009	Foot Valve Tailpiece	**2402K89**	9.40
W	S07-066	Foot Valve	**2402K58**	241.09
X	S02-045	Volume Control Valve	**2402K51**	68.20
Y	129-007	Tailpiece (Unplated)	**2402K47**	16.71
Z	S01-038S	Manual Mixing Valve	**2402K52**	171.96
AA	124-001AF	Tailpiece Washer (Fiber)	**2402K109**	4.92
BB	110-005	Tailpiece Nut	**2402K108**	17.28
CC	S60-003S	Stop/Strainer/Check Valve	**2402K49**	251.42
DD	S01-525S	Thermostatic Mixing Valve	**2402K45**	132.40
EE	193-002	Pedestal Leg	**2402K1**	60.36
FF	166-004	Hair Pin Cotters for Foot Lever	**2402K31**	2.40
GG	143-025	Foot Lever for 54″ Dia. Semicircular and Circular Models	**2402K73**	28.00
GG	143-027	Foot Lever for 36″ Dia. Semicircular and Circular Models	**2402K72**	24.40
HH	135-001W	Foot Lever Spring	**2402K74**	5.50
JJ	152-026	Pivot Pin for Foot Lever	**2402K87**	4.80
___	124-020C	Spray Head Grommet for Circular Models	**2402K68**	29.30
___	124-020D	Spray Head Grommet for Semicircular Models	**2402K67**	27.00
___	125-001DE	Neoprene Top Washer	**2402K24**	4.08
___	125-001DF	Neoprene Bottom Washer	**2402K25**	3.36
___	125-001Y	Diaphragm for Foot Valve	**2402K86**	6.40
___	159-019	Operating Cross	**2402K102**	25.56
___	S09-007S	Liquid Soap Valve	**2402K57**	47.25
___	S09-057S	Lotion Soap Valve	**2402K91**	215.02
___	S21-014	Stop Valve Assembly (Celcon)	**2402K34**	14.04
___	S45-049	Thermostatic Mixing Valve Repair Kit	**2402K75**	85.08
___	S45-050	Stop/Strainer/Check Valve Repair Kit	**2402K79**	27.50
___	S45-051	Spray Head Repair Kit	**2402K56**	16.79
___	S45-060	Tailpiece Package	**2402K69**	46.41
___	S45-197	Manual Mixing Valve Repair Kit	**2402K82**	19.80
___	S45-198	Volume Control Valve Repair Kit	**2402K81**	19.80
___	S65-001A	Foot Valve Repair Kit (White Cover for Nov. 1973 to Jan. 2003)	**2402K222**	98.20
___	S65-084	Cartridge Repair Kit	**2402K35**	118.68
___	S65-230	Foot Valve Repair Kit (Blue Cover for Jan. 2003 to Present)	**2402K212**	98.20

Acorn Wash Fountain Repair Parts

Acorn Part No.			Each
0711-410-001	9V Plug-In Transformer	**9144T21**	$83.60
2423-000-001	Safti-Trol Valve Assembly	**9144T22**	174.60
2563-010-001	Water Diaphragm Assembly	**9144T24**	10.05
2563-305-001	24V Solenoid Assembly (Metal Bonnet)	**9144T26**	43.79
2563-305-002	24V Solenoid Assembly (Plastic Bonnet)	**9144T27**	59.53
2566-010-001	Push-Button Assembly	**9144T28**	44.78
2566-101-199	Foot-Button and Nozzle Wrench	**9144T29**	$13.96
2570-000-001	Plastic Strainer Check Stop	**9144T31**	133.29
2570-001-199	Elbow	**9144T32**	10.06
2998-200-001	Nozzle Assembly (Straight)	**9144T33**	53.16
2998-212-001	Nozzle Assembly (20°)	**9144T34**	53.13
4921-001-299	Strainer	**9144T35**	55.50

Sink Drains with Lever-Control Handle and Strainer

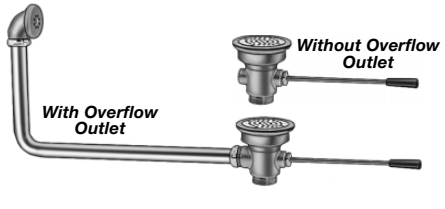

You can operate these drains from under the sink. Simply lift handle up to fill sink; push handle down to drain sink. The flange and strainer are Type 304 stainless steel, while the body is nickel-plated bronze. ***Drains with overflow outlet*** accommodate most sink sizes—just use a hacksaw to trim the overflow outlet pipe to size.

Fits Sink Drain Opening Dia.	Drain Top Dia.	Drain O'all Ht.	Pipe Size, NPS Male	*Without Overflow Outlet*	Each	*With Overflow Outlet*	Each
3″	4″	4½″	1½″	**2907K41**	$84.80	**2907K51**	$113.70
3½″	4½″	4½″	1½″	**2907K42**	65.83	**2907K52**	85.56
3″	4″	4½″	2″	**2907K43**	86.55	**2907K53**	121.78
3½″	4½″	4½″	2″	**2907K44**	65.63	**2907K54**	101.32

Lavatory Sink Drains

1-3 ***Drains—*** All are 17-gauge, chrome-plated brass except for Style 1, which are 22 gauge. Furnished with an overflow cutout.

(1) Drain with Rubber Stopper—These drains include a stopper with pull chain.

(2) Drain with Strainer—Model 2347K64 has an offset tailpiece for additional clearance under the sink.

(3) Pop-Up Drain—Opens and closes from an integrated lever. Assembly and strap included.

4 ***Pop-Up Assembly Strap—*** Connects pop-up rod to pop-up assembly. Made of steel, it's 8⅜″ Lg. × ½″ Wd.

Fits Sink Drain Opening Dia.	Top Drain Dia.	Tailpiece Dia.	Tailpiece Lg.		Each
(1) Drain with Rubber Stopper					
1⅜″	2 1/16″	1¼″	5″	2662K1	$11.15
1⅜″	2 1/16″	1¼″	8″	2662K3	12.58
1⅜″	2 1/16″	1¼″	12″	2662K4	15.03
(2) Drain with Strainer					
1½″	2¼″	1¼″	6″	2347K63	14.83
1½″	2¼″	1¼″	8¾″	2347K64	32.09
(3) Pop-Up Drain					
1½″	2″	1¼″	6″	2404K53	15.72
(4) Pop-Up Assembly Strap				2404K55	4.09

Stainless Steel Sink Drains with Strainers

Drains with Basket Strainers

All of these drains include a lift-out basket strainer, die cast zinc slip-joint nut, and rubber washer.

Style A— Made of Type 430 stainless steel.

Style B— Made of Type 430 stainless steel with a 1½″ Dia. × 4″ Lg. chrome-plated brass tailpiece.

Style C— Great for use on thick sinks, this drain has a longer threaded length under the sink cup than Styles A and B. It's made of Type 304 stainless steel with a 1½″ Dia. × 4″ Lg. chrome-plated brass tailpiece.

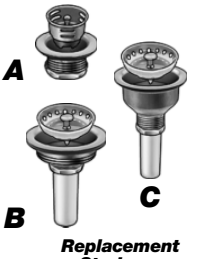

	Fits Sink Drain Opening Dia.	Drain Top Dia.	Drain O'all Ht.	Drains	Each	Replacement Strainers	Each
A	2″-2½″	2 13/16″	1½″	2650K51	$8.93	2650K52	$3.84
B	3½″-4″	4⅜″	2½″	2672K13	16.97	2672K15	4.20
C	3½″-4″	4½″	3⅝″	2659K51	27.13	2659K53	4.30

Drains with Perforated Strainers

All drains are made of Type 430 stainless steel and have a removable, drop-in strainer. The tailpiece (where applicable) is made of 22-gauge chrome-plated brass.

Without Tailpiece— Drain overall height is 1 7/16″ for model 2674K31 and 1⅞″ for model 2673K6.

Fits Sink Drain Opening Dia.	Top Drain Dia.	Tailpiece Dia.	Tailpiece Lg.		Each
Without Tailpiece					
2″-2½″	2 13/16″	—	—	2674K31	$5.14
3½″-4″	4 5/16″	—	—	2673K6	7.55
With Tailpiece					
2″-2½″	2 13/16″	1¼″	4″	2674K21	8.91
2″-2½″	2 13/16″	1½″	4″	2674K5	9.25
2″-2½″	2 13/16″	1¼″	6″	2674K22	10.35
2″-2½″	2 13/16″	1½″	6″	2674K6	10.81
2″-2½″	2 13/16″	1¼″	8″	2674K23	12.19
2″-2½″	2 13/16″	1½″	8″	2674K7	12.53
2″-2½″	2 13/16″	1¼″	12″	2674K24	12.62
2″-2½″	2 13/16″	1½″	12″	2674K8	12.95
3½″-4″	4 5/16″	1½″	3 15/16″	2673K1	13.21

Sink Drain Traps and Outlets

Sink Drain P-Traps and S-Traps

All of these traps swivel and adjust vertically for easy connections. Use *P-traps* for wall connections and *S-traps* for floor connections.

Chrome-plated tubular brass traps have a 17-gauge construction, unless noted. They include die cast nuts and washers. *Models with clean-out plug* provide easier access.

White tubular polypropylene traps fit both 1¼″ and 1½″ dia. drains. They include polypropylene nuts and polyethylene washers.

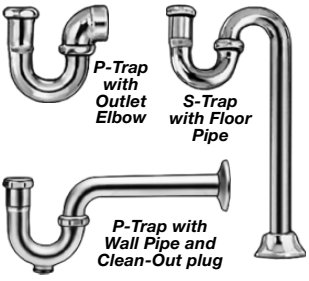

Dia.	P-Trap with Outlet Elbow	Each	P-Trap with Wall Pipe	Each	S-Trap with Floor Pipe	Each
Chrome-Plated Tubular Brass						
1¼″	2964K1★	$16.63	2965K22	$17.81	2967K33	$37.44
1½″	2964K3	21.14	2965K26	20.73	2967K37	48.40
Chrome-Plated Tubular Brass with Clean-Out Plug						
1¼″	2964K8●	42.00	2965K24	25.56	2967K35	45.31
1½″	2964K9●	46.05	2965K27	29.53	2967K36	58.39
White Tubular Polypropylene						
1¼″, 1½″	27055K81■	1.61	27055K83	1.95	27055K82	6.73

★ 22 gauge. ● 5/32″ thick cast brass. ■ Does not have an outlet elbow.

Replacement Traps

Made of 17-gauge (unless noted) chrome-plated brass with die cast nuts and washers.

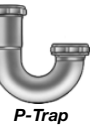

Dia.	P-Trap	Each	S-Trap	Each
1¼″	2965K41	$9.10	2965K43★	$6.78
1½″	2965K42	10.46	2965K44	9.72

★ 22 gauge.

Extension Tubing

Chrome-Plated Brass

Chrome-Plated Brass— Has a 17-gauge construction and NPS male threads on one end. ***White Polypropylene—*** Include polypropylene nuts and polyethylene washers.

		Each
Chrome-Plated Brass (1¼″ Dia. × 6″ Lg.)	2965K51	$4.58
White Polypropylene (1¼″ Dia. × 12″ Lg.)	2965K52	2.20
White Polypropylene (1½″ Dia. × 12″ Lg.)	2965K53	2.40

Two-Bowl Sink Drain Outlets

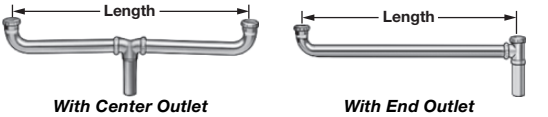

With Center Outlet *With End Outlet*

Connect two sinks to a single 1½″ dia. drain outlet. These outlets attach easily to P-traps and S-traps.

With Center Outlet Lg.	Each	With End Outlet Lg.	Each
Satin-Finish Tubular Brass— *17 gauge, unless noted.*			
15½″	2677K7 $51.83	16″	2677K11 $37.16
25″	2677K9♠ 53.52	25″	2677K13 57.42
White Tubular Polypropylene			
16″	28555K31 5.38	16″	28555K33 5.92

♠ Chrome-plated, 20-gauge brass.

Adjustable-Neck Sink Drain Trap

The neck on this P-trap is adjustable so you can easily connect drains that are up to 1″ out of line. Made of white polypropylene, this trap includes washers and slip joint nuts for both 1¼″ and 1½″ diameter drains.

3097K5 ..... Each $7.21

Polypropylene Sink Drain with Recessed Strainer and Plug

Furnished with an integral strainer and plug, these drains are made of black polypropylene.

Fits Sink Drain Opening Dia.	Drain Top Dia.	O'all Ht.		Each
1½″	3⅜″	3¾″	2701K61	$56.95
Replacement Plug			2701K65	6.07

Easy-to-Access Sink Drain Trap

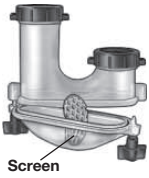

Simply loosen the two T-knobs to clean out this P-trap without removing it from your pipe system. Trap is clear ABS plastic with a large removable screen. The screen allows a continuous flow of water while stopping foreign objects from entering your pipe system. Trap has 1½″ NPT male connections and includes a reducer for 1¼″ NPT male connections.

2972K53 ..... **Each** $9.55

Adjustable-Riser Sink Drain Trap

The riser adjusts 5¼″ up or down so you can use this P-trap on a variety of sink thicknesses from 16-ga. metal to 2¼″ thick ceramic. Trap is made of white polypropylene with a black polypropylene tailpiece. It has a drain for 1½″ dia. openings and a drain strainer with a 3⅜″ dia. flange. Inlet is 1½″ NPS female, outlet is 1½″ NPT male, and tailpiece is 1½″ NPS male. Meets ASTM F1412-92 for chemical resistance.

2978K14 ..... **Each** $107.72

Sink Drain Collection Traps

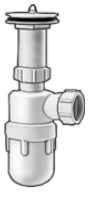

A

Removable containers collect solids before they create unwanted clogs and stoppages. All fit standard 1½″ dia. sink openings and have a drain strainer with a 3⅜″ dia. flange.

A ***ABS Plastic P-Trap—*** Withstands frost, boiling water, detergents, and chemicals. Inlet and outlet are 1½″ NPS male. Includes plug, waste fitting, backnut, waste body, sealing cup, and compression ring for copper tubing. Color is white.

Adapter allows trap to be used with PVC tubing.

	Capacity	Overall Ht. × Dia.		Each
P-Trap	8 oz.	10⅝″ × 3¼″	**2981K1**	$93.74
Adapter	—	—	**2981K3**	18.59

B

B ***Polyethylene Traps—*** Inlet is 1½″ NPT female; outlet is 1½″ NPT male. Include a sink tailpiece assembly with plug, backnut, gasket, and translucent jar. Color is white with black tailpiece. Meets ASTM F1412-92 for chemical resistance.

Capacity	Overall Ht. × Dia.		Each
1 gal.	10¾″ × 7½″	**2694K51**	$250.67
2 gal.	17″ × 7½″	**2694K52**	261.79

Sink Trap Fittings

Chrome-Plated Brass Tubing

Furnished in 3-ft. lengths.

OD	Gauge		Each
1¼″	17	**2665K34**	$47.85
1½″	17	**2665K35**	55.80
2″	22	**2665K36**	62.78

Sink Trap Nuts

Chrome-Plated Cast Brass

White Tubular Polypropylene

Pipe Size, NPT Female	OD	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Chrome-Plated Cast Brass with Rubber Washer (unless noted)					
1¼″	1¼″	10	**2666K33**	$2.39	$1.93
1½″	1¼″	10	**2666K34★**	2.70	2.19
1½″	1½″	10	**2666K35**	2.88	2.34
2″	2″	10	**2666K36**	3.76	3.05
White Tubular Polypropylene with Polyethylene Washer					
1¼″	1¼″	10	**25945K61**	.61	.52
1½″	1½″	10	**25945K62**	.64	.54

★ Washer is polyethylene.

Brass Pipe-to-Tubing Compression Connectors

Pipe Size, NPT	OD	*Male*	Each	*Female*	Each
1¼″	1¼″	**2667K1**	$6.22	**2667K2**	$6.64
1½″	1¼″	**2667K3**	6.72	**2667K4**	6.64
1½″	1½″	**2667K7**	6.52	**2667K8**	6.82

Sink Trap Replacement Washers

Size	Pkg. Qty.	*Polyethylene*	Per Pkg.	*Rubber*	Per Pkg.
1¼″	100	**2610K61**	$9.74	**2610K64**	$10.45
1½″	100	**2610K62**	10.86	**2610K65**	10.71
1½″ OD × 1¼″ ID	100	**2610K63**	11.38	**2610K66**	14.49

ADA-Compliant Under-the-Sink Lavatory Pipe Insulation

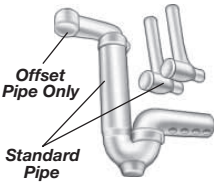

To reduce the risk of burns from touching hot pipes under your sink, simply install this pipe insulation. It's made of molded, flexible, ⅛″ thick antimicrobial vinyl and is so easy to install that you won't need any tools.

Insulation complies with Americans with Disabilities Act regulations when properly installed. It's adaptable to any 1¼″ or 1½″ P-trap/tailpiece assembly, as well as any ⅜″ or ½″ angle stop valve assembly. Color is white.

For Standard Pipe— Includes insulation for P-trap, hot- and cold-water angle stop valves, and water supply.

For Offset Pipe Only— Fits 5″ offset strainer for wheelchair accessible sink.

		Each
For Standard Pipe	**23685K72**	$49.84
For Offset Pipe Only	**23685K73**	13.35

Tailpieces

Use these flanged tailpieces with sink strainers. ***Polypropylene tailpieces*** are white.

Lg.	*CHROME-PLATED BRASS 1¼″ Dia.*	Each	*CHROME-PLATED BRASS 1½″ Dia.*	Each	*TYPE 304 STAINLESS STEEL 1½″ Dia.*	Each	*POLYPROPYLENE 1½″ Dia.*	Each
4″	**2668K11**	$4.28	**2668K15**	$3.99	**2648K44**	$3.40	—	—
6″	**2668K12**	4.52	**2668K16**	6.44	**2648K46**	5.64	—	—
8″	**2668K13**	5.79	**2668K17**	7.39	**2648K51**	7.32	**8924T61**	$1.37
12″	**2668K14**	6.37	**2668K18**	7.25	**2648K52**	10.23	**8924T62**	1.71

Rubber Sink Stoppers

White with a stainless steel pull ring.

Fits Drain Dia.	Pkg. Qty.		Per Pkg.
1″-1⅜″	10	**2810K53**	$11.24
1½″-2″	10	**2810K54**	13.94

Garbage Disposals

Mount these easy-to-install disposals under your sink to pulverize and dispose of food waste. Both have a removable splash guard and cushion-mount ring, noise-damping shell, corrosion proof high-impact plastic grinding chamber, reset button, and 3-ft. power cord with three-prong plug. Grinding elements are stainless steel with two 180° blades. For use on sinks with 3½″ dia. drain opening. Motor is 115 VAC, 60 Hz.

hp	Amps	Overall Ht. × Body Dia.		Each
½	4.5	13 7/16″ × 7⅝″	**2955K42**	$123.64
¾	6.0	14½″ × 8½″	**2955K43**	216.91

Nail Brush

Clean the hard-to-reach dirt and germs from under your nails. Brush has 11/16″ long, nonabsorbent polypropylene bristles that are securely set in a wood block. Brush face size is 4⅜″ × ⅞″.

7247T3 ... **Each** 1-11 $1.86 12-Up $1.53

Bar Soap

Safeguard is an antibacterial and deodorant soap. ***Ivory*** is more than 99% pure soap. ***Lava*** has volcanic pumice to remove grease, tar, and ink.

	Bar Size, oz.	Pkg. Qty.	Pkgs. per Case		Per Pkg. Partial Case	Per Pkg. Full Case
Safeguard	4.3	4	12	**73845T29**	$5.15	$4.35
Ivory	4.5	4	18	**7385T14**	5.15	4.37
Lava	5.75	2	12	**7379T63**	3.58	3.04

Powdered Soap and Dispensers

Powdered Soap

Made with Borax, this soap is noncaking and quick-sudsing to wash away grease and grime. USDA authorized C2.

Case Qty.		Each Partial Case	Each Full Case
1-lb. Can 12	**6371T65**	$5.49	$4.75
5-lb. Box 10	**6371T64**	9.59	8.21

Dispensers

Use these dispensers with powdered and granulated soap. Both are made of Type 304 stainless steel and have a metering mechanism that controls the soap flow. Their covers have a keyed lock (key included). Mounting fasteners included.

Oval

Rectangular

	Cap., oz.	Ht. × Wd. × Dp.		Each
Oval	32	7⅛″ × 4½″ × 4⅝″	**27825K32**	$34.40
Rectangular	32	8³⁄₁₆″ × 4⅞″ × 2⅞″	**27825K42**	44.00

Waterless Gel Soap

No need for water—simply apply soap, scrub, and then wipe off to remove dirt, grease, ink, tar, and heavy duty soils. Soap has aloe and lanolin to moisturize your skin. *Note:* This soap is water soluble and can be rinsed with water.

Soap with Scrubbing Grit— The grit allows more aggressive cleaning. Great for embedded grime, dried putty, and adhesives. Soap also has a mint scent.

Dispenser— For use with 4.5-lb. cans of soap shown below. Made of black plastic, it mounts to the wall (fasteners included). Front-to-back length is 8¹¹⁄₁₆″.

14-oz. Can

4.5-lb. Can Shown with Dispenser

Case Qty.		Each Partial Case	Each Full Case
Soap			
14-oz. Can 12	**7478T24**	$3.71	$3.31
4.5-lb. Can 6	**7478T33**	17.51	15.77
Soap with Scrubbing Grit			
14-oz. Can 12	**7070T21**	3.79	3.39
4.5-lb. Can 6	**7070T22**	20.46	18.27
Dispenser for 7478T33 ***and*** 7070T22	**7070T14**	**Each**	$18.50

Protective Hand Foam

Create an invisible shield to protect your hands from dirt, oils, dyes, paints, tar, and more. Just apply foam to your hands before work to make cleaning your hands after work easier. This foam also protects your hands from latex and can even be used under gloves to reduce perspiration.

Case Qty.		Each Partial Case	Each Full Case
17.5-oz. Aerosol Can 12	**7413T19**	$17.66	$15.36

Liquid and Lotion Soap

Scented Liquid Soap

Pleasantly floral scented, this free-flowing soap is a blend of synthetic detergents and skin conditioners. It forms a heavy lather and is not as thick as lotion soap—great for use in gravity-flow dispensers.

	Case Qty.		Each Partial Case	Each Full Case
1-gal. Pour Bottle	6	**7376T12**	$10.62	$9.60
5-gal. Pail	1	**7376T14**	_____	46.03

Scented Antiseptic Lotion Soap

Wash away germs with this thick, antiseptic soap. It has a floral scent and is perfect for use in pump dispensers in restrooms.

Pump Dispenser— Use with 1-gal. flat-top bottle of soap below. Made of plastic, it has a beige body, brown handle, and mounts to the wall (fasteners included). Size is 5¾″ Ht. × 8½″ Wd. × 7¼″ Dp.

	Case Qty.		Each Partial Case	Each Full Case
1-gal. Pour Bottle	4	**7113T21**	$11.04	$9.95
1-gal. Flat-Top Bottle	4	**7113T15**	12.59	11.35
Pump Dispenser for 7113T15		**71275T61**	**Each**	$47.94

Antibacterial Lotion Soap with Moisturizers

In addition to containing PCMX to kill germs and prevent cross-contamination, this soap is enriched with conditioners and vitamin E to maintain your skin's moisture. It also contains a degreasing agent, which makes it great for food-service areas. Perfect for frequent hand washing.

	Case Qty.		Each Partial Case	Each Full Case
12-oz. Pump Bottle	12	**6330T85**	$5.67	$4.82
1-gal. Pour Bottle	4	**6330T76**	20.04	17.99

Heavy Duty Lotion Soap with Scrubbing Grit

The grit helps you scrub away grease, tar, light adhesives, sealants, and water- and oil-soluble cutting fluids. This heavy duty soap even contains aloe to condition your hands.

	Case Qty.		Each Partial Case	Each Full Case
14-oz. Squeeze Bottle	12	**7026T11**	$6.19	$5.55
1.89-liter Pump Bottle	4	**7026T12**	19.16	17.11

Heavy Metal-Removing Liquid Soap

Reduce contamination from toxic metals by washing away lead, nickel, cadmium, cobalt, mercury, zinc, copper, and silver. This soap cleans without irritating your skin.

	Case Qty.		Each Partial Case	Each Full Case
8-oz. Squeeze Bottle	24	**7724T24**	$4.27	$3.79
32-oz. Pour Bottle	12	**7724T25**	8.33	7.40
1-gal. Pour Bottle	4	**7724T26**	20.94	18.61

Paint and Resin Removing Soap

A safe alternative to thinners and solvents, this nontoxic soap contains grit to scrub away urethane- and oil-based paints, varnish, lacquer, urethane, adhesives, enamels, silicones, and grease.

	Case Qty.		Each Partial Case	Each Full Case
5-oz. Squeeze Tube	12	**69875T11**	$6.68	$6.00
22-oz. Squeeze Bottle	6	**69875T13**	22.44	20.16

Citrus Orange Lotion Soap

Natural orange oil removes tough grease and grime while aloe, jojoba, and vitamin E condition your hands. Soap has an orange citrus scent.

Soap with Scrubbing Grit— Soap contains grit for more aggressive cleaning.

Wire Bracket Holder— For use with the 1-gal. pump bottles of soap shown below. Made of black steel wire, it mounts to the wall (fasteners included).

Pump Dispenser— For use with the 1-gal. flat-top container of soap shown below. Made of plastic and metal, it has a blue body and handle and mounts to the wall (fasteners included).

	Case Qty.	*Soap*	*Soap* Each Partial Case	*Soap* Each Full Case	*Soap with Scrubbing Grit*	*Soap with Scrubbing Grit* Each Partial Case	*Soap with Scrubbing Grit* Each Full Case
14-oz. Squeeze Bottle	12	**71235T72**	$4.29	$3.79	**63275T22**	$4.52	$4.00
½-gal. Pump Bottle	4	**71235T74**	14.78	13.16	**63275T54**	15.51	13.75
1-gal. Pump Bottle	4	**71235T73**	23.58	20.80	**63275T33**●	24.98	22.13
1-gal. Flat-Top Container	4	_____	_____	_____	**63275T56**	22.96	19.86

Wire Bracket Holder for 71235T73 and 63275T33—*Size is 6″ Ht. × 9″ Wd. × 6″ Dp.* **71275T71** **Each** $26.61

Pump Dispenser for 63275T56—*Size is 17¼″ Ht. × 4″ Wd. × 9½″ Dp.* **71275T62** **Each** $56.34

● Case quantity is 2.

1-gal. Pump Bottle with Optional Wire Bracket Holder

1-gal. Flat-Top Container with Optional Pump Dispenser

Gojo and Kimberly-Clark Soap Cartridges and Dispensers

800-ml Gojo Cartridge

800-ml Gojo Dispenser

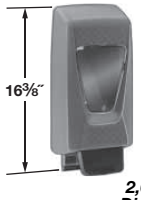

2,000-ml Dispenser

5,000-ml Dispenser

Combine a cartridge with a dispenser (each sold separately) for low-waste, no-mess dispensing.

Cartridges—Sealed to prevent mess and contamination, all cartridges empty completely and have a drip-free, no-clog valve. Replacement is clean and easy.

Sanitizing soap is NSF listed E2 for use in USDA-regulated food processing environments. *Hand moisturizing cream* conditions hands and restores moisture. *Instant hand sanitizer* kills 99.99% of common germs in as little as 15 seconds—no water or rinsing required.

Dispensers—Made of ABS plastic, all include double-faced tape for wall mounting.

Gojo dispensers help you comply with the Americans with Disabilities Act when properly installed. The *2,000-ml* and *5,000-ml Gojo dispensers* also come with liquid adhesive for a stronger bond.

800-ml/27-oz. Soap, Hand Cream, and Hand Sanitizer Cartridges and Dispensers

	Case Qty.	Gojo	Each ♦	Kimberly-Clark	Each ♦
Cartridges					
Enriched Lotion Soap	12	7143T11	$10.91	8882T12	$4.56
Antibacterial Lotion Soap	12	7143T29	10.95	8882T13	8.42
Shower Lotion Soap	12	7143T18	10.58	8882T14	7.89
E2 Food Service Sanitizing Soap	12	7143T19	11.67	—	—
Lotion Soap with Scrubbing Grit	12	7143T27	13.28	—	—
Hand Moisturizing Cream	6	7143T79★	19.21	—	—
Instant Hand Sanitizer	12	7143T32	14.11	8882T23★●	11.90

Dispensers		Each
For 800-ml/27-oz. and 500-ml/17-oz. Gojo Cartridges—*11 3/16″×5 11/16″×5 3/32″; Color is Black*	7143T161	$15.16
For 800-ml/27-oz. and 500-ml/17-oz. Gojo Cartridges—*11 3/16″×5 11/16″×5 3/32″; Color is White*	7143T16	15.16
For 800-ml/27-oz. and 500-ml/17-oz. Kimberly-Clark Cartridges—*10 7/16″×6 1/8″×4 7/8″; Color is White*	8882T19	18.77

♦ Prices are 10% less when you order a full case. ★ Cartridge is 500 ml. ● Case quantity is 6.

Gojo 2,000-ml/67-oz. and 5,000-ml/169-ml. Soap Cartridges and Dispensers

	Gojo 2,000 ml/67 oz. Case Qty.		Each ♦	Gojo 5,000 ml/169 oz. Case Qty.		Each ♦
Cartridges						
Antibacterial Lotion Soap	4	71755T49	$15.22	2	7532T87	$28.70
Shower Lotion Soap	4	71755T48	18.63	2	7532T83	36.29
E2 Food Service Sanitizing Soap	4	71755T39	27.11	2	7532T82	51.13
Lotion Soap with Scrubbing Grit	4	71755T47	27.55	2	7532T81	51.99
Citrus Orange Lotion Soap with Scrubbing Grit	4	71755T67	24.03	2	7532T85	45.34
Heavy Duty Lotion Soap with Scrubbing Grit	4	7667T21	26.69	2	7667T22	53.39
Extra-Heavy-Duty Soap with Scrubbing Grit	4	71755T75	28.33	2	7532T93	53.45

Dispensers		Each
For 2,000-ml/ 67-oz. Cartridges—*16 3/8″×6 3/4″×5 5/8″; Color is Gray*	71755T212	$17.00
For 5,000-ml/169-oz. Cartridges—*20 5/8″×9″×5 3/32″; Color is Gray*	7532T51	18.42

♦ Prices are 10% less when you order a full case.

Citrus Orange Hand-Cleaning Wipes

Pack

Pail

Keep these convenient, disposable wipes on hand to remove tough grease and oil without soap and water. All are moistened with natural orange oil to remove your tough grime and are fortified with aloe so they won't irritate your hands. Wipe size is 9″×10″, unless noted.

	Case Qty.		Each Partial Case	Each Full Case
Pack of 60	6	1418T21	$13.50	$11.68
Pail of 72	6	1418T24●	17.51	15.15
Pail of 130	4	1418T22	30.50	26.40
Pail of 225	2	1418T43	43.44	37.60

● Wipe size is 10 1/2″×12 1/4″.

Instant Hand Sanitizers

Kill 99.99% of harmful germs and bacteria in as little as 15 seconds—and you don't even need water. Rub sanitizer onto hands and air dry. It's alcohol based, but has moisturizers and vitamin E to condition skin. Recommended by the Centers for Disease Control (CDC) as an effective means of killing germs and bacteria.

Wipes—Each moistened wipe is individually wrapped. Size is 5″×7″.

	Case Qty.		Each Partial Case	Each Full Case
4-oz. Flip-Top Bottle	24	64235T31	$3.38	$2.96
12-oz. Pump Bottle	12	64235T33	8.65	7.57
Package of Wipes (40/Package)	12	6195T22	7.19	6.47

Antistatic Hand Lotion

Prevent static buildup and improve contact with grounding devices such as wrist and heel straps. This noncontaminating, nongreasy lotion contains aloe and vitamins A and E to condition your skin. It's free of silicone and lanolin.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
8-oz. Bottle with Finger Pump	24	7382T2	$8.34	$7.24
1-gal. Bottle	1	7382T3	—	65.88
Hand Pump for 1-gal. Bottle	1	4249K32	—	3.55
Wire Bracket Holder for 1-gal. Bottle	1	71275T72	—	23.76

Foam Soap

Soap

Pump Bottle Cartridge

Compared to liquid soap, foam soap offers significantly more hand washes. It provides an instant, rich lather.

Pump bottles are ready for use. ***Cartridges*** are designed for use with the dispenser sold separately below.

Antibacterial Soap—This soap has germ-killing power and an orange citrus scent.

Sanitizing Soap—NSF listed E2 for use in USDA-regulated food processing environments.

	Pump Bottles 535 ml (18 oz.) Case Qty.		Each■	Cartridges 2,000 ml (67 oz.) Case Qty.		Each■
Standard	—	—	—	2	4681T31	$33.06
Antibacterial	4	4681T22	$10.93	2	4681T32	36.39
Sanitizing	—	—	—	2	4681T54	49.71

■ Prices are 10% less when you order in full case quantities.

Dispenser for 2,000-ml (67-oz.) Cartridges

Made of plastic, this convenient dispenser is gray with a clear window. It's 11 3/4″ Ht.×7″ Wd.×5″ Dp. and includes two-sided tape for wall mounting. Dispenser helps you comply with the Americans with Disabilities Act when properly installed.

4681T41 ..... Each $7.14

Hand Moisturizer

Creamy, moisturizing lotion absorbs quickly with no greasy residue to keep your hands soft and protected against dryness. It's made with aloe and vitamin E to condition your skin.

	Case Qty.		Each Partial Case	Each Full Case
5-oz. Tube	24	7149T41	$4.21	$3.68
16-oz. Pump Bottle	12	7149T42	13.19	11.51

Liquid and Lotion Soap Dispensers

When installed properly, these dispensers help you comply with the Americans with Disabilities Act (ADA). Mounting hardware is included.

(A-F) Wall-Mount Dispensers

Style A—Has a chrome-plated steel body and integral mounting bracket.

Style B—Body is chrome-plated ABS plastic.

Style C—Metal parts contacting soap are stainless steel and chrome-plated brass. Bodies are chrome-plated brass. Internal check valves prevent drips.

Styles D & E—Push the button to dispense soap. Reservoirs lock to resist tampering (one key included). Bodies are chrome-plated brass; internal parts are stainless steel and plastic. Integral check valves prevent drips, while clear plastic windows show soap levels.

Style F—Push the cover to dispense soap. A plastic window shows the soap level. Bodies are ABS plastic with a key lock cover (one key included) and no-drip spout.

	Cap., oz.	For Use with Soap Type: Liquid	Lotion	Antiseptic	Ht. × Wd. × Dp.●	Reservoir Material		Each
A	16	Yes	No	Yes	6½″ × 3⅞″ × 5³⁄₁₆″	Polyethylene	3042K12	$12.34
B	24	Yes	No	No	7⅝″ × 4″ × 4⅛″	Translucent Polyethylene	2886K41	20.46
C	16	Yes	Yes■	Yes	6½″ × 3⅜″ × 5⅛″	Polyethylene	2950K61	25.08
C	32	Yes	Yes■	Yes	9¹⁄₁₆″ × 3⅜″ × 5⅛″	Polyethylene	2950K62	27.45
D	40	Yes	Yes	No	8³⁄₁₆″ × 4¹³⁄₁₆″ × 3¹⁵⁄₁₆″	Type 304 Stainless Steel	2777K1	50.82
E	40	Yes	Yes	No	4¹³⁄₁₆″ × 8³⁄₁₆″ × 3¹⁵⁄₁₆″	Type 304 Stainless Steel	2777K3	50.82
F	30	Yes	Yes	Yes	9¾″ × 4½″ × 4½″	Opaque Polypropylene	70365T6	34.80
F	67	Yes	Yes	Yes	12³⁄₁₆″ × 5½″ × 5¹¹⁄₁₆″	Opaque Polypropylene	70365T4	64.00

● Height and depth include dispensing valve. ■ A low-viscosity lotion soap.

(G) Deck-Mount Dispensers

Free up more counter space—mount your reservoir underneath it. Dispensers have a Type 304 stainless steel spout and polyethylene reservoir. A keyed lock secures the reservoir in place and prevents tampering (one key included). To install, model 2773K1 requires a ⅞″ dia. opening, while model 2528K15 requires a 1″ dia. opening.

	Cap., oz.	For Use with Soap Type: Liquid	Lotion	Antiseptic	Size Above Countertop, Ht. × Wd. × Dp.	Max. Countertop Thick.	Reservoir Dia. × Ht.		Each
G	20	Yes	Yes	No	2²⁵⁄₃₂″ × 2″ × 5″	3½″	2¾″ × 7½″	2773K1	$41.02
G	34	Yes	Yes	Yes	3″ × 2¹⁄₁₆″ × 5″	4″	3⁵⁄₁₆″ × 14⅝″	2528K15	42.57

Hands-Free Liquid and Lotion Soap Dispensers

No need to touch a thing—as soon as the sensors detect your hands, you'll get one shot of soap. Excellent for preventing cross-contamination. When installed properly, these dispensers help you comply with the Americans with Disabilities Act.

Wall Mount

Wall Mount

Dispenser is made entirely of plastic and has a key-lock cover (furnished with one key). When the cover is opened, power is shut off to prevent dispensing. Requires three C batteries (not included). Mounting fasteners included.

Cap., oz.	For Use with Soap Type: Liquid	Lotion	Antiseptic	Ht. × Wd. × Dp.		Each
33.8	Yes	Yes	Yes	10¹⁹⁄₃₂″ × 4²¹⁄₆₄″ × 4½″	8961T14	$63.95
C Batteries—(*6/Pkg.*)					71455K54 Per Pkg.	$6.49

Deck Mount

Deck Mount

Free up more counter space—mount your reservoir underneath it. Dispenser has a chrome-plated polyethylene spout and polyethylene reservoir. It requires four D batteries (included). Lighted indicators alert you when soap level and battery level are low. A 1″ dia. opening is required for installation. Furnished with a bottle of moisturizing lotion soap.

Soap refills include a pump and delivery tube. Each bottle provides approximately 1,000 hand washes. *Moisturizing lotion soap* contains glycerin, aloe, and vitamin E. *Antibacterial liquid soap* is effective against potentially harmful bacteria.

Cap., oz.	Size Above Countertop, Ht. × Wd. × Dp.	Max. Countertop Thick.	Reservoir Dia. × Ht.		Each
27	4⁵⁄₆₄″ × 2″ × 5⅜″	2″	3¼″ × 7⅛″	8429K11	$106.69
27-oz. Moisturizing Lotion Soap Refill				8429K21	8.17
27-oz. Antibacterial Liquid Soap Refill				8429K22	8.55

Replacement Soap Dispenser Valves

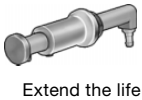

Pump Valve

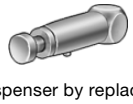

Gravity-Flow Valve with Female Connection

Extend the life of your soap dispenser by replacing the valve. Valve body is chrome-plated brass.

Pump valve for dispensers is made for dispensers that use liquid and lotion soaps.

Gravity-flow valves for reservoirs are for use with gravity-feed systems that use liquid soap and consist of a separate reservoir tank with piping that feeds soap to each dispenser valve.

Connection	Lg.		Each
Pump Valve for Dispensers			
¾″-28 UNEF Male	4¼″	2777K8	$17.28
Gravity-Flow Valves for Reservoirs			
⅜″ NPT Female	3½″	2783K24	36.09
⅜″ NPT Male	3½″	2783K26	33.73

Wash Cloths and Towels

All are made of white terrycloth.

	Size	Pkg. Qty.		Per Pkg.
Wash Cloths	12″ × 12″	10	2576K36	$11.92
Hand Towels	16″ × 30″	4	2576K35	14.33
Bath Towels	27″ × 50″	3	2576K33	22.70

Facial Tissue and Dispenser

Dispenser holds one box of 100 two-ply tissues (sold below). The cover is 24-ga. chrome-plated steel; wall plate is 20-ga. galvanized steel. Surface mount horizontally or vertically (fasteners included).

Facial tissue is two-ply, white. 100 per pkg.

	Ht. × Wd. × Dp.		Each
Dispenser	5½″ × 10¾″ × 2¹⁄₁₄″	2193K11	$15.64
Facial Tissue		54845T22 Per Pkg.	$2.01

Paper Towel Dispensers

Dispensers for Perforated Paper-Towel Rolls

Standard

Bench Top

Standard Holder—This holder accommodates 11″ wide paper-towel rolls (our Household rolls on this page) and has spring-action ends to hold the rolls in place. Made of steel with a white enamel finish, it has 1/4″ × 3/4″ mounting slots (fasteners not included).

Bench-Top Holder—Able to accommodate paper-towel rolls up to 11″ wide (our Household and Heavy Duty rolls on this page), this portable holder can be placed on any flat surface. It's made of 400 series stainless steel with a nonskid weighted base and center spring to keep rolls in place.

Size		Each
Standard	2 7/8″ Ht. × 13 1/4″ Wd. × 4 5/8″ Dp.	4501T2 ... $16.20
Bench Top	7 7/16″ Dia. × 13 3/4″ Ht.	4501T4 ... 20.00

Dispensers for Nonperforated Paper-Towel Rolls

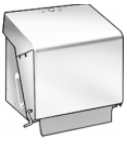

Crank Handle

Push Bar

Hands Free

The backs of these dispensers are steel for more secure mounting, unless noted. All have a key-lockable cover and come furnished with one key (keyed alike). They accommodate 8″ wide paper-towel rolls (except where noted) up to 8″ in dia. Mounting hardware included.

Crank Handle—Turn the handle to dispense as much paper as you need. Adjusts to hold 8″, 8 1/2″, 9″, or 9 1/2″ wide paper-towel rolls. Cover and back are 22-ga. steel.

Push Bar—Just push the bar to dispense paper. Load the next roll of paper before the dispenser is empty—it will automatically use the next roll. When installed properly, this dispenser helps you comply with the Americans with Disabilities Act (ADA). Covers are translucent; backs are 22-ga. steel.

Hands Free—No handles to turn or bars to push—dispenser automatically provides one 8″ wide towel when hands are detected. Sheet length is adjustable. When installed properly, it helps you comply with the Americans with Disabilities Act (ADA). Cover is translucent; back is ABS plastic. Four D batteries (not included) are required.

Ht. × Wd. × Dp.	Cover Material	Each
Crank Handle		
11 7/8″ × 11 3/4″ × 8 5/8″	Steel w/White Enamel Finish	37095K64 ... $53.31
Push Bar		
15 3/4″ × 10 1/2″ × 8 3/4″	White ABS Plastic	3633K48 ... 58.44
15 3/4″ × 10 1/2″ × 8 3/4″	Blue Acrylic	3633K47 ... 58.44
Hands Free		
15″ × 11 1/4″ × 9 1/4″	Dark Blue Plastic	3500K13 ... 114.83
D Batteries (Pkg. of 6)		71455K55 Per Pkg. $7.32

Dispensers for Center-Pull Paper-Towel Rolls

Standard

Jumbo

Simply pull the exposed towel—dispensers provide one towel at a time. When installed properly, they help you comply with the Americans with Disabilities Act (ADA). Dispensers are made of ABS plastic. Both have a locking, opaque cover and are furnished with one key (keyed alike). Mounting equipment is included.

	Ht. × Wd. × Dp.	Color	Each
Standard	14 3/8″ × 9 7/16″ × 8 15/16″	Black	2278K19 ... $28.02
Jumbo	17 5/8″ × 12 29/32″ × 11 7/8″	Black/Red	2278K21 ... 30.00

Dispensers for Folded Paper Towels

Single Fold

Multifold/C-Fold

Distributing one towel at a time means less waste. Dispensers are 20-ga. steel (except stainless steel models, which are 22-ga. steel). All have a lock and come furnished with one key (keyed alike). Mounting fasteners are included, unless noted.

Single-Fold Dispensers—Capacity is 400 single-fold towels. ***Multifold/C-Fold Dispensers***—Capacity is 500 multifold towels or 400 C-fold towels.

	Single-Fold Dispensers Ht. × Wd. × Dp.	Each	*Multifold/C-Fold Dispensers* Ht. × Wd. × Dp.	Each
White Enamel				
	7 1/2″ × 12 1/4″ × 6 1/2″	3009K3 ... $30.11	15 3/8″ × 11 1/4″ × 4″	3012K1 ... $32.38
Polished Chrome				
	7 1/2″ × 12 1/4″ × 6 1/2″	3009K4 ... 39.01	15 3/8″ × 11 1/4″ × 4″	3012K2 ... 50.71
Type 304 Stainless Steel				
	7 1/2″ × 12 1/4″ × 6″	3009K5■ 98.58	14″ × 10 3/4″ × 4″	3012K4★ 49.89

■ Requires six #8 × 1 1/4″ screws for mounting (screws not included).
★ Requires four #10 × 1 1/4″ screws for mounting (screws not included).

Combo Waste Receptacle/Dispensers for Multifold Paper Towels

All-in-one units place the waste receptacle where it's most useful—right under the towel dispenser. Both styles are 22-ga. Type 304 stainless steel with a satin finish. The dispenser holds 800 multifold paper towels, while the receptacle has a 12-gallon capacity and is removable. The dispenser and receptacle each have a lock and come furnished with one key (keyed alike). There are six 7/32″ dia. mounting holes (fasteners not included). When installed properly, these units help you comply with the Americans with Disabilities Act (ADA) and meet ANSI 117.1. ***Recessed model*** requires a 54 3/4″ Ht. × 16″ Wd. × 4″ Dp. wall opening to mount.

	Ht. × Wd. × Dp. (Installed)	Each
Recessed	56″ × 17 3/16″ × 4 1/8″	2688K32 ... $327.56
Surface Mount	56 1/4″ × 17 7/16″ × 8 1/16″	2688K42 ... 496.30

Paper Towels

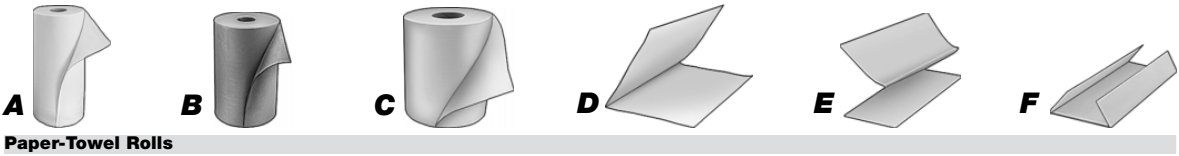

Paper-Towel Rolls

	Ply	Roll Wd.	Roll Size, Dia. × Lg.	Sheet Size, Wd. × Lg.	Sheets per Roll	Core ID	Available Colors•	Rolls per Case	Per Case
Perforated Rolls									
A ... Household	1	11″	4 7/8″ × 93′	11″ × 8 3/4″	128	1 1/2″	White	20	4501T24 ... $42.47
A ... Heavy Duty	4	9 13/16″	5″ × 145′	9 13/16″ × 13 3/8″	130	1 1/2″	Blue	12	9125T17 ... 176.20
Nonperforated Rolls									
B ... Standard	1	8″	5 5/16″ × 350′	—	—	2″	Tan, White	12	30005K3 ... 47.78
B ... Standard	1	8″	5 13/32″ × 400′	—	—	1 1/2″	Tan, White	12	30005K4 ... 45.72
B ... Standard	1	8″	7 3/4″ × 800′	—	—	2″	Tan, White	6	30005K5 ... 49.41
Center-Pull Rolls									
C ... Standard	2	9″	7 11/16″ × 590′	9″ × 11 3/4″	600	2 7/8″	White	6	2278K15 ... 79.67
C ... Jumbo	2	9″	11 1/4″ × 1,050′	9″ × 15 3/4″	800	3 3/32″	White	2	2278K29 ... 85.92

• **To Order:** Where applicable, please specify color.

Folded Paper Towels

	Ply	Folded Sheet Size, Wd. × Lg.	Open Sheet Size, Wd. × Lg.	Sheets per Pack	Color	Packs per Case	Per Case
D ... Single Fold	1	9 5/16″ × 5 3/8″	9 5/16″ × 10 1/2″	250	White	16	2679K15 ... $64.94
E ... Multifold	1	9 3/16″ × 3 3/16″	9 3/16″ × 9 3/8″	250	White	16	2679K13 ... 57.56
F ... C-Fold	1	10 1/8″ × 3 1/2″	10 1/8″ × 13 1/8″	200	White	12	2679K23 ... 47.20

Electric Hand Dryers

Tired of wasting paper? Dry your hands with hot air. These wall-mount dryers have a maintenance-free motor as well as a circuit breaker that offers overload protection and resets automatically. They also have a nozzle that swivels 360° (except for the ABS and Fast-Dry models, which have a molded-in, nonswivel nozzle). All dryers are designed to be hardwired. They have four 5/16″ mounting holes (fasteners not included). When installed properly, these dryers help you comply with the Americans with Disabilities Act (ADA) and meet ANSI 117.1. They are UL and C-UL listed.

Hands-Free Dryers—Activated when hands are detected and shut off when hands are removed.
Manual Dryers—Push-button activated and have a 30-second drying cycle.
Fast-Dry Dryer—Up to three times faster than standard dryers, it dries hands completely in 10-15 seconds.
ABS are economical, lightweight, and have a one-piece, flame retardant cover. Color is white.
Steel have a white finish.
Stainless steel are excellent for most sanitary environments.

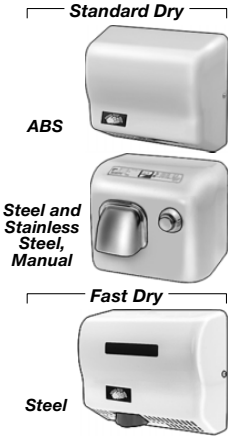

Cover Material	VAC	hp	Hz	Amps	O'all Size, Ht. × Wd. × Dp.	Hands-Free	Each	Manual	Each
Standard Dry									
ABS	110-120	1/12	50/60	12	9 3/8″ × 10 1/8″ × 5 5/8″	3019K64	$176.67	———	———
ABS	208-240	1/12	50/60	6	9 3/8″ × 10 1/8″ × 5 5/8″	3019K65	176.67	———	———
Steel	110-120	1/10	60	20	9 1/4″ × 11″ × 6 5/8″	2537K41	298.74	2367K12	$315.00
Steel	208-240	1/10	50/60	10	9 1/4″ × 11″ × 6 5/8″	2537K42	298.74	2367K14	315.00
Stainless Steel	110-120	1/10	60	20	9 1/4″ × 11″ × 6 5/8″	2526K73	377.42	———	———
Stainless Steel	208-240	1/10	50/60	10	9 1/4″ × 11″ × 6 5/8″	2526K74	377.42	———	———
Fast Dry									
Steel	100-240	5/8	50/60	12.5	9 3/8″ × 10 1/8″ × 5 5/8″	3284K38	416.67	———	———

Electric Hair Dryers

These wall-mount dryers operate on 120 VAC, 60 Hz, 10 amps and have two speeds. Both dryers have a white polycarbonate housing and include a flexible hose that delivers warm air to the nozzle. They also have a built-in appliance leakage circuit interrupter (ALCI) and a 6-foot coiled cord that stretches to 8 feet. Mounting hardware is included. When installed properly, these dryers help you comply with the Americans with Disabilities Act. UL listed and CSA certified.

Plug-in dryer has a tamper-resistant lever to prevent removal from the wall. It also has a 36″ long power cord with two-prong plug.

	O'all Size, Ht. × Wd. × Dp.		Each
Hardwire	8″ × 3 1/2″ × 3 1/2″	2804K42	$39.94
Plug In	7 3/4″ × 5 15/16″ × 3 7/16″	2804K43	39.45

Liquid and Granular Drain Openers

Drain Openers—Using sodium hydroxide, these odorless openers cut through grease and organic matter.

Liquid opener can be poured through standing water. *Granular openers* are activated by hot water.

Organic Waste Digesters—Highly concentrated digesters eat through organic waste to keep drains open and eliminate odors. For use in drains, grease traps, and sewage systems.

Liquid digesters contain bacteria. *Granular digesters* contain enzymes and bacteria.

Drain Openers

Size		Each
Liquid		
1 qt.	7387T15	$6.10
Granular		
1 lb.	73065T41	9.61
2 lb.	73065T42	18.15
6 lb.	73065T43	51.60

Organic Waste Digesters

Size		Each
Liquid		
1 qt.	9425T52	$14.28
1 gal.	9425T53	53.12
Granular		
1 lb.	63785T11	12.11
25 lb.	63785T12	263.89

Plungers

Bellows-style polyethylene plungers deliver more force to your clog.

Plunger	Bottom Dia.	Handle Lg.		Each
Rubber Plungers with Wood Handle				
A....Toilet	6″	19″	2608K1	$4.17
B....Toilet	3″	21″	2643K1	7.35
Rubber Plunger with Plastic Handle				
C....Heavy Duty Toilet/Drain	4 1/4″	24″	2609K1	16.52
Bellows-Style Polyethylene Plungers with Polyethylene Handle				
D....Sink/Tub/Floor Drain	4 7/8″	7″	2436K7	4.11
E....Sink/Toilet	3 1/4″	12 1/2″	2436K6	7.01
F....1.6-gal. Toilet	1 1/2″	12 1/2″	2436K5	7.43
G...Tub/Floor Drain	6″	12 1/2″	2436K8	7.43

Gas-Powered Plunger

Compressed gas expands when released and uses the existing water in your drains, garbage disposals, toilets, and urinals to power through clogs. Each canister contains 24 applications.

Plunger kit includes a pressurized canister, plastic handle, and 6 1/4″ dia. plastic base adapter.

		Each
Plunger Kit	27405K27	$40.91
Refill Canister	27405K28	22.73

Water-Powered Drain Cleaners

Just hook these drain cleaners up to your garden hose, insert them into your drain, and let water power (instead of harsh chemicals) eliminate your clogs. Once water is on, the cleaners expand to form a seal, while the water flushes your drain. All have 3/4″ female garden hose threads.

Semirigid Drain Cleaners—A rubber cylinder grips the inside of your pipe.

Crossbar drain adapter for 2425K71 and 2425K72 *drain cleaners* allow you to use these cleaners with drains that have crossbars.

Semirigid drain cleaner kit includes drain cleaners 2425K71, 2425K72, and 2425K73; a crossbar drain adapter; a 10-ft. hose with 3/4″ brass GHT male and female connectors; a chrome-plated brass faucet adapter that allows your faucet to accept a 3/4″ GHT female connector; and a carrying case.

Flexible Drain Cleaners—These bag-style cleaners flex around pipe bends and elbows. All have a backflow preventer, except 2623K5 has a 3/8″ NPT threaded nipple on the jet nozzle. The nipple accepts a cap (not included), so the cleaner can be used as a stopper.

Hose—Has 3/4″ brass GHT male and female connectors and a chrome-plated brass faucet adapter.

Faucet Adapter—This plastic adapter allows your faucet to accept a 3/4″ GHT female connector.

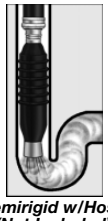

Semirigid w/Hose (Not Included) Attached

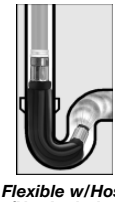

Flexible w/Hose (Not Included) Attached

For Pipe ID	Pressure Range, psi	Deflated Lg.		Each
Semirigid Drain Cleaners				
1″ to 2″	30 to 80	4 3/4″	2425K71	$17.45
1 1/2″ to 3″	30 to 80	6 1/2″	2425K72	18.83
3″ to 6″	30 to 80	8 3/4″	2425K73	36.32
6″ to 10″	35 to 150	15″	2425K75	223.61
Crossbar Drain Adapter for 2425K71 and 2425K72			2425K55	6.07
Semirigid Drain Cleaner Kit			2425K76	94.21
Flexible Drain Cleaners				
General Purpose—*Nylon-reinforced vinyl*				
1 3/8″ to 4″	30 to 95	10 3/4″	23595K51	21.46
3″ to 6″	30 to 95	13″	23595K52	36.81
Medium Duty—*Polyurethane with canvas cover*				
1 3/8″ to 1 1/2″	30 to 100	8 3/4″	2623K21	41.21
1 1/2″ to 2 1/2″	30 to 100	9 1/4″	2623K22	48.25
Heavy Duty—*Polyurethane with canvas cover*				
2 1/2″ to 3″	30 to 100	13″	2623K33	70.57
3″ to 4″	30 to 100	14 3/4″	2623K44	78.81
4″ to 6″	30 to 100	20 1/4″	2623K5	117.76
Accessories for Semirigid and Flexible Drain Cleaners				
Hose (10 ft.)			2425K65	19.82
Faucet Adapter			2425K54	3.40

Air/Water-Powered Pipe-Cleaning Pigs

Use air or water pressure to rotate these pigs through your pipes. Made of flexible polyurethane foam with a red polyurethane elastomer coating, they travel through 90° turns, tees, and pipe-diameter changes.

For Pipe ID	Pressure Range, psi: To Start Pig	Pressure Range, psi: To Keep Pig Moving		Each
1½″	150-200	60-100	2601K31	$38.84
2″	100-200	40-100	2601K32	39.91
3″	100-150	35- 85	2601K35	45.00
4″	75-125	30- 80	2601K38	47.73

Hand-Pump-Powered Drain Cleaners

Simply pump to pressurize the cleaner, insert it into your drain, and then pull the trigger to blast away blockages in your pipes up to 200 ft. away. The sudden impact creates a shock wave to dislodge blockages without using high pressure that can damage pipes. A tire valve that requires a ¼″ NPT female air inlet chuck is included so you can also use an air compressor to fill these cleaners.

Standard Cleaners—Have a 4″ dia. rubber cone, 11″ rubber hose, and a set of five drain adapters that range from 1¼″ to 4″ in diameter.

Deluxe Cleaner—Has a 6″ dia. rubber cone; 4-ft. rubber hose; 22″ rubber extension hose; check valve, which prevents water from backing up into the hose; universal and threaded adapters for water connection; four drain-opening plugs that range from 1½″ to 4″ in diameter; five drain adapters that range from 1¼″ to 4″ in diameter; and a carrying case.

Drain-Opening Plug Set—Includes 1½″, 2″, 3″, and 4″ dia. plugs.

Maintenance Kit—Contains 13 frequently requested parts for making minor repairs including O-rings, washers, springs, and a bottle of oil.

Also Available: Individual repair parts. Please ask for 2624K888 and specify part.

		Each
Standard Cleaner	2624K11	$285.09
Standard Cleaner with Carrying Case	2624K12	346.82
Deluxe Cleaner with Carrying Case	2624K13	480.46
Accessories and Replacement Parts		
Drain-Opening Plug Set	2624K31	59.18
Maintenance Kit	2624K32	28.53
Replacement Pressure Gauge	2624K38	27.02

Hand-Powered Drain Cleaners

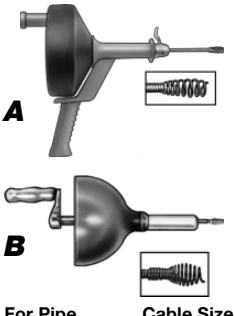

A

B

Crank the handle to move these cleaners through your drains. All have an enclosed drum to keep the cable organized.

A Economy Drain Cleaners—The molded-plastic, pistol-style handle ensures a secure grip. Drum and knob are plastic. Both cleaners have a steel wire cable with corkscrew head and thumbscrew to lock the cable in place. *Note:* Not for use with toilets.

B Standard Drain Cleaners—The offset handle provides balance. Drum is high-impact plastic to resist rust and heat and prevents damage to sinks. All have a steel wire cable with bulb head.

For Pipe ID	Cable Size, Dia.×Lg.	O'all Size, Ht.×Wd.×Dp.		Each
(A) Economy Drain Cleaners				
1″ to 2″	¼″×15 ft.	11″×7″ ×7″	2513K41	$25.68
1″ to 2″	¼″×25 ft.	11″×7″ ×7″	2513K51	27.75
(B) Standard Drain Cleaners				
1¼″ to 2½″	¼″×15 ft.	18″×8″ ×8″	2422K1	88.45
1¼″ to 2½″	¼″×25 ft.	18″×8″ ×8″	2422K2	97.07
1½″ to 2½″	⅜″×25 ft.	20″×8¾″×8¾″	2422K3	102.25
1½″ to 2½″	⅜″×35 ft.	20″×8¾″×8¾″	2422K4	115.88

Replacement Cable for Hand- and Drill-Powered Drain Cleaners

Cable Size, Dia.×Lg.	Corkscrew Head	Each	Drop Head	Each
¼″ ×15 ft.	2586K1	$26.60	2586K51	$33.02
¼″ ×25 ft.	2586K2	37.16	2586K52	42.85
¼″ ×50 ft.	2586K4	70.46	2586K53	73.85
5/16″ ×25 ft.	2586K22	45.55	2586K54	50.66
5/16″ ×50 ft.	2586K23	84.55	2586K55	86.97
⅜″ ×25 ft.	2586K32	53.73	2586K56	63.44
⅜″ ×35 ft.	2586K33	73.04	2586K57	82.76
⅜″ ×50 ft.	2586K34	101.02	2586K58	110.67

Toilet and Drain Augers

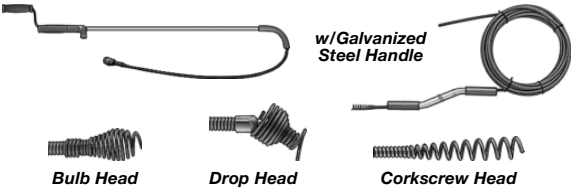

(C) Toilet Augers

A plastic shield on the end of the steel rod prevents damage to your toilet. Cable is made of steel wire.

Extendable model has a cable that extends from 3 ft. to 6 ft. long.

Head Style	Cable Size, Dia.×Lg.		Each
Standard			
Bulb	15/32″×3 ft.	2593K31	$33.39
Drop	15/32″×3 ft.	2593K32	40.19
Extendable			
Bulb	½″ ×3 ft. to 6 ft.	2845K11	73.65

(D) Drain Augers

1¼″ to 2″ Pipe ID—Has a hollow-core cable for maximum flexibility.

1½″ to 3″ Pipe ID—Has a solid-core cable for your tough clogs.

Optional ***galvanized steel handle*** has plastic grips and lets you easily maneuver the steel wire cable through pipe traps and bends.

For Pipe ID	Head Style	Cable Size, Dia.×Lg.		Each
1¼″ to 2″	Corkscrew	¼″×25 ft.	2638K12	$25.20
1½″ to 3″	Corkscrew	⅜″×25 ft.	2638K41	50.90
Galvanized Steel Handle			2638K31	10.67

Flat-Rod Drain Cleaners

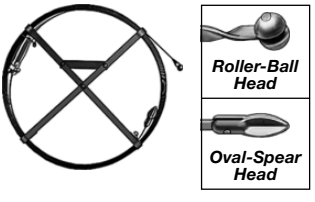

Made of flat, spring steel wire that resists kinking. Just push rods through your drains to remove blockages. Cleaners have a zinc-plated steel handle, malleable iron heads (a roller-ball head at one end; oval-spear head at the other end), and steel storage frame. *Note:* Not for sink drains, toilets, or roots.

For Pipe ID	Rod Size, Wd.×Thick.	50-ft. Rod Lg.	Each	100-ft. Rod Lg.	Each
Drain Cleaners					
1½″ to 3″	½″×1/16″	2594K11	$42.57	2594K31	$73.03
2″ to 4″	¾″×1/16″	2594K12	57.02	2594K32	93.47
4″ to 6″	¾″×⅛″	2594K13	97.42	2594K33	169.38
Replacement Roller-Ball Heads					Each
For ½″ Wide Rods				2594K61	$7.98
For ¾″ Wide Rods				2594K62	9.73
Replacement Oval-Spear Head					
For ½″ & ¾″ Wide Rods				2594K72	11.48

Drill-Powered Drain Cleaners

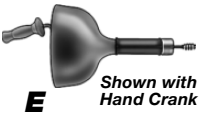

E

Shown with Hand Crank

F

For 1¼″-2″ ID Pipes

E Add-a-Drill Drain Cleaners—We'll provide the drain cleaner, you provide the drill. Operate with any ⅜″ or ½″ drill at variable speeds up to 1,300 rpm. Drum is polyethylene; cable is steel wire. Hand crank is included for use when a power source is not available.

F Included-Drill Drain Cleaners—No need to add a drill, it's included for you. The drill operates on 115 VAC, 50/60 Hz and has a maximum rpm of 500. Drum is aluminum; cable is steel wire. A 12-ft. power cord with two-prong plug is included. UL listed.

Model for 1¼″-2″ ID pipes is an economical cleaner with a variable-speed motor.

Model for 1¼″-3″ ID pipes is heavy duty with a reversible variable-speed motor. Includes flexible and standard arrow heads, 1¼″ side cutter blade, ⅜″ drop head fitting, standard bulb auger, and carrying case.

For Pipe ID	Cable Size, Dia.×Lg.	O'all Size, Ht.×Wd.×Dp.		Each
(E) Add-a-Drill Drain Cleaners				
1½″	¼″×25 ft.	13″× 8½″×8½″	2620K11	$88.71
1½″ to 2½″	⅜″×35 ft.	13″× 8½″×8½″	2620K14	118.97
(F) Included-Drill Drain Cleaners				
1¼″ to 2″	¼″×25 ft.	20″×12″ ×8″	2530K53	254.79
1¼″ to 3″	●	20″×12″ ×8″	2541K71	508.72
Repl. Parts for Included-Drill Model for 1¼″ to 3″ ID Pipes				
Standard Arrow Head			2541K23	5.93
⅜″ Drop Head Fitting			2541K54	10.58

● ¼″ Dia.×50 ft. for 1¼″-2″ ID pipe; ⅜″ Dia.×35 ft. for 2″-3″ ID pipe.

Heavy Duty Drum-Style Drain Cleaners

No need to piece individual lengths of cable together—these cleaners have a drum that not only stores one continuous piece of cable, but also has inner guides to prevent the cable from tangling. Cleaners have an air-actuated foot switch to control torque, a ground fault circuit interrupter, and a forward/off/reverse switch. Motor operates on 115 VAC, 60 Hz. Protective leather gloves and a power cord (10 ft. long on manual-feed models; 20 ft. long on rolling automatic-feed models) with three-prong plug are included.

Manual Feed—These are the smallest, lightest drum-style cleaners we offer. All have a removable drum, which makes it easy to load the cable. Furnished with a cutter set that includes a 2″ side cutter, a 1½″ U-cutter, an arrow head, and a bulb auger.

Rolling Automatic Feed—These cleaners automatically feed cable to cut and grind through stoppages. Both have two rubber wheels (see listing for size) with a locking brake for easy maneuvering. They also have a 6″ dia. rubber loading wheel on the frame.

For 3″-4″ ID Pipes—Furnished with a cutter set that includes a 13″ flexible leader; an arrow head; a 1½″ U-cutter; 2″, 3″, and 4″ side cutters; a 3″ rotary saw blade; and a retrieving tool. Cleaner also includes a folding handle.

For 2″-10″ ID Pipes—Versatile cleaner includes two sizes of cable and a stair climber that makes it easier to move it up and down stairs. Furnished with a cutter set that includes 13″ and 33″ flexible leaders; an arrow head; a spear head; 2″, 3″, and 4″ two-piece side cutters; 1½″ and 2″ U-cutters; a 3″ saw blade; a 4″ rotary saw blade; and two retrieving tools. Cleaner also includes a removable handle and tool box.

Manual Feed

Rolling Automatic Feed

For Pipe ID	Cable Size, Dia. × Lg.	O'all Size, Ht. × Wd. × Dp.	hp	rpm	Wheel Dia.	Drain Cleaners	Each	Replacement Cutter Sets	Each
Manual Feed									
2″ to 3″	⅜″ × 50 ft.	19″ × 12″ × 18″	⅓	165	—	2563K11	$535.91	2563K16	$36.41
2″ to 3″	⅜″ × 75 ft.	19″ × 12″ × 18″	⅓	165	—	2563K12	559.84	2563K16	36.41
3″ to 4″★	½″ × 50 ft.	19″ × 12″ × 18″	⅓	165	—	2563K13	587.87	2563K16	36.41
3″ to 4″★	½″ × 75 ft.	19″ × 12″ × 18″	⅓	165	—	2563K14	624.47	2563K16	36.41
Rolling Automatic Feed									
3″ to 4″★	½″ × 100 ft.	41″ × 24″ × 20″	⅓	167	8″	2536K64	1,410.75	2536K66	93.10
2″ to 10″	■	41″ × 22″ × 26″	½	170	10″	2540K63	2,553.79	2540K71	187.76

★ Not for tree roots in 4″ ID pipes. ■ ½″ Dia. × 100 ft. for 2″ to 3″ ID pipe; ¾″ Dia. × 100 ft. for 4″ to 10″ ID pipe.

High-Powered Sectional-Cable Drain Cleaners

High rpm motors provide the power, while sectional cables allow you to add just the right amount of cable you need to tackle difficult drain blockages. Motors come furnished with a ground fault circuit interrupter.

Cleaner for 1¼″ to 4″ ID Pipes

This cleaner has a 400-rpm, ⅙-hp motor that operates on 115 VAC, 50/60 Hz. It also has an on/off switch and 15-ft. long power cord with three-prong plug. Furnished with a straight auger, bulb auger, 1⅜″ U-cutter, spade cutter, cable carrier, and protective leather glove.

Cable Size, Dia. × Lg.	No. of Cables	O'all Size, Ht. × Wd. × Dp.		Each
⅝″ × 7½ ft.	6	16″ × 13″ × 13″	2508K11	$1,308.18
Replacement and Optional Parts				
Sectional Cable, ⅝″ Dia. × 7½ ft. Lg.			2508K21	28.37
Straight Auger			2508K31	15.90
Bulb Auger			2508K32	15.32
Spade Cutter			2508K33	16.64
Adapter with Continuous 5/16″ Dia. × 25 ft. Lg. Cable			2508K41	196.95
Adapter with Continuous ⅜″ Dia. × 35 ft. Lg. Cable			2508K42	264.19

Rolling Cleaner for 3″ to 10″ ID Pipes

Mounted to a cart with a folding handle, two 10″ dia. rubber wheels, and a front swivel caster with a 6″ dia. rubber wheel, you can roll this cleaner right to your job site. It has a 500-rpm, ¾-hp motor that operates on 115 VAC, 60 Hz. It also has an adjustable safety clutch to prevent torque buildup, a forward/off/reverse switch, and a 20-ft. long power cord with three-prong plug. Furnished with parts listed in replacement cutter set below.

Replacement cutter set includes a spear head, hook auger, 2″ U-cutter, 3″ side cutter, 3″ and 4″ saw blades, retrieving tool, and a wrench.

Cable Size, Dia. × Lg.	No. of Cables	O'all Size, Ht. × Wd. × Dp.		Each
1¼″ × 8 ft.	13	37″ × 21″ × 40″	2550K42	$2,097.31
Replacement Parts				
Sectional Cable, 1¼″ Dia. × 8 ft. Lg.			2550K55	58.92
Cutter Set			2550K62	197.65

Replacement Cable and Heads for Drum-Style Drain Cleaners

General Pipe Cable—One end has a male coupling to connect heads. The other end has a female coupling so you can connect same-diameter General Pipe cable to create any length you need.

Ridgid/Kollmann Cable—Has a male coupling at one end to connect heads. The other end is plain and connects directly to your drain cleaner. *Note:* Additional cable lengths can't be added to Ridgid/Kollmann cable.

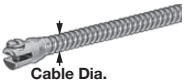

Cable Dia.

General Pipe Cable, Female End

Cable Dia.

Ridgid/Kollmann ⅜″ and ½″ Cable, Male End

Cable Dia.

Ridgid/Kollmann ⅝″ and ¾″ Cable, Male End

General Pipe Arrowhead

Ridgid/Kollmann Arrowhead

Bulb Auger

Corkscrew

General Pipe 3″ U-Cutter

Ridgid/Kollmann 3″ U-Cutter

Cable Lg.	General Pipe	Each	Ridgid/ Kollmann	Each
Replacement Cable				
⅜″ Dia. Cable				
25 ft.	2631K12	$63.91	—	—
50 ft.	2631K13	109.99	9942K31	$113.97
75 ft.	2631K45	161.21	9942K32	157.41
100 ft.	2631K14	201.56	9942K33	197.01
½″ Dia. Cable				
50 ft.	2631K17	147.36	9942K34	152.57
75 ft.	2631K41	215.44	9942K35	212.58
100 ft.	2631K18	296.15	9942K36●	243.87
⅝″ Dia. Cable				
50 ft.	2631K52	170.50	9942K38	175.14
75 ft.	2631K53	244.00	9942K72	250.22
100 ft.	2631K24	312.45	9942K39	317.18
¾″ Dia. Cable				
50 ft.	2631K55	222.83	9942K42	229.96
100 ft.	2631K28	389.01	9942K43	405.81
Replacement Heads				
For ⅜″ Dia. Cable				
Arrowhead	2631K61	6.03	9942K11	15.87
Bulb Auger	2631K64	8.12	9942K14	14.61
Corkscrew	2631K65	9.47	9942K17	15.17
1½″ U-Cutter	2631K67	14.43	9942K21▲	12.75
13″ Flexible Leader	2631K73	22.66	—	—
For ½″ Dia. Cable				
Arrowhead	2631K61	6.03	9942K12	20.91
Bulb Auger	2631K64	8.12	—	—
Corkscrew	2631K65	9.47	9942K18	22.52
1½″ U-Cutter	2631K67	14.43	9942K22	33.00
2″ U-Cutter	2631K68	16.91	—	—
13″ Flexible Leader	2631K73	22.66	—	—
For ⅝″ and ¾″ Dia. Cable (Unless Noted)				
Arrowhead	2631K63	11.55	9942K13	19.10
Bulb Auger	—	—	9942K16	26.65
Corkscrew	2631K66	20.74	9942K19	30.90
2″ U-Cutter	2631K68	16.91	9942K23	20.31
3″ U-Cutter	2631K69	18.82	9942K24	22.52
4″ U-Cutter	2631K71	20.85	9942K25	26.05
33″ Flexible Leader	2631K74	41.87	9942K28♦	39.62

● Length is 90 ft. ▲ 1″ U-Cutter.

♦ **To Order:** Please specify cable dia.: ⅝″ or ¾″.

Tube Scrapers and Handles

When ordinary brushes just won't cut it, count on these tube scrapers to break up deposits.

Coiled Flat-Wire and Flat-Wire Tube Scrapers

Coiled Flat Wire—Remove soft as well as hard deposits without scratching your tubes.

Flat Wire—Remove your heavy hard deposits.

Scraper Dia.	Scraper Lg.	O'all Lg.	Coiled Flat Wire, 1/8" NPT Male	Each	Flat Wire, 1/4" NPT Male	Each
3/4"	4 1/2"	7 1/2"	7085T37	$14.62	7085T11	$17.32
7/8"	4 1/2"	7 1/2"	7085T38	14.74	7085T12	17.32
1"	4 1/2"	7 1/2"	7085T39	14.96	7085T13	17.32
1 1/8"	4 1/2"	7 1/2"	7085T41	14.96	7085T14	17.55
1 1/4"	4 1/2"	7 1/2"	7085T42	15.30	7085T15	17.55
1 3/8"	4 1/2"	7 1/2"	7085T43	15.30	7085T16	17.55
1 3/4"	4 1/2"	7 1/2"	7085T46	16.31	7085T19	17.66

Spiral Blade and Round Wire Tube Scrapers

Spiral Blade—These self-sharpening scrapers use spring tension to exert pressure on your tube to remove soft as well as hard deposits without scratching.

Round Wire—Remove your toughest deposits.

Scraper Dia.	Scraper Lg.	O'all Lg.	Connection Size		Each
Spiral Blade					
1 1/2"	3 3/4"	7"	1/4" NPT Female	3653K14	$32.96
1 3/4"	3 3/4"	7"	1/4" NPT Female	3653K15	34.20
2"	3 3/4"	7"	1/4" NPT Female	3653K16	36.23
2 1/2"	4 3/4"	7"	1/4" NPT Female	3653K18	40.50
2 3/4"	6"	9"	1/2" NPT Female	3653K19	42.86
3 1/4"	6 1/2"	9"	1/2" NPT Female	3653K22	44.77
Round Wire					
1 1/4"	5 1/2"	9"	5/8"-11 Male	7111T12	37.80
1 1/2"	5 1/2"	9"	5/8"-11 Male	7111T13	38.14
1 3/4"	5 1/2"	9"	5/8"-11 Male	7111T14	38.92
2"	5 1/2"	9"	5/8"-11 Male	7111T15	39.26
2 1/2"	5 1/2"	9"	5/8"-11 Male	7111T17	40.27
2 3/4"	5 1/2"	9"	5/8"-11 Male	7111T18	40.50
3"	5 1/2"	9"	5/8"-11 Male	7111T19	41.29
3 1/4"	5 1/2"	9"	5/8"-11 Male	7111T21	41.62

Handles

Made of steel, these rigid T-handles are 60" long. For more handle sizes and styles, please see page 2706.

Thread Size	For Scraper Connection Size		Each
1/8" NPT Female	1/8" NPT Male	7215T31	$33.52
1/4" NPT Female	1/4" NPT Male	7215T71	33.52
1/4" NPT Male	1/4" NPT Female	7215T12	26.82
1/2" NPT Male	1/2" NPT Female	7215T41	33.52
5/8"-11 Female	5/8"-11 Male	7215T21	37.80

Tube Plugs for Condensers and Heat Exchangers

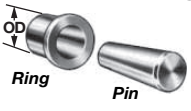

Plugging leaky tubes in condensers and heat exchangers takes only minutes with these two-piece brass ring and pin sets. Simply insert the ring into your tube and then drive the pin into the ring with a hammer to form the plug. You can remove the plug with a pipe wrench.

To Order: If you do not know the OD or gauge of your tube, measure the ID of your tube and select a ring and pin set with the closest ring OD measurement.

For Tube Size★ OD	Ga.	Ring OD		Per Set
1/2"	20	0.435"	3507K115	$16.53
1/2"	19	0.418"	3507K114	16.53
1/2"	18	0.407"	3507K111	16.53
1/2"	17	0.390"	3507K113	16.53
1/2"	16	0.377"	3507K112	16.53
5/8"	20	0.571"	3507K525	13.50
5/8"	19	0.551"	3507K524	13.50
5/8"	18	0.537"	3507K521	13.50
5/8"	17	0.519"	3507K523	13.50
5/8"	16	0.505"	3507K522	13.50
5/8"	15	0.491"	3507K711	13.83
5/8"	14	0.469"	3507K713	13.83

★ Ga. is the tube wall thickness.

For Tube Size★ OD	Ga.	Ring OD		Per Set
3/4"	18	0.662"	3507K551	$13.50
3/4"	17	0.644"	3507K558	13.50
3/4"	16	0.630"	3507K552	13.50
3/4"	15	0.616"	3507K557	13.50
3/4"	14	0.594"	3507K556	13.50
3/4"	13	0.571"	3507K525	13.50
3/4"	12	0.537"	3507K554	13.50
3/4"	11	0.522"	3507K553	13.50
3/4"	10	0.495"	3507K132	16.53
3/4"	9	0.467"	3507K131	16.53

★ Ga. is the tube wall thickness.

Powered Tube Cleaners

Clearing tough blockages in your tubes can be an easy, one-person operation. To begin, select a ***tube cleaner*** and then attach a ***flexible shaft*** that you have paired with a ***scraper*** or ***brush*** (all sold separately). Water flows around the shaft and flushes out deposits as they are loosened. *Note:* For use in straight (nonspiral) tubes.

Tube Cleaners

Electric-Powered Cleaner with Flexible Shaft (Shaft sold separately)

Electric-Powered Tube Cleaner—Has a variable-speed, reversible motor that operates on 115 VAC, 60 Hz. It includes an on/off foot switch, a water inlet with 3/4" garden hose connection, and a recessed male receptacle for a three-prong NEMA 5-15 connector (power cord is not included).

Air-Powered Tube Cleaner—To operate this cleaner, you'll need air pressure of 60 psi @ 15 cfm as well as water pressure of 25 psi. It includes an on/off foot switch, an adjustable speed/torque control, a 1/4" male quick-disconnect air inlet, and a 1/4" male quick-disconnect water inlet.

	hp	rpm		Each
Electric Powered	1/2	0 to 1,800	3627K13	$1,511.81
Air Powered	1 1/2	500 to 3,000	3627K21	1,797.74

Flexible Shafts

For Tube ID	Thread Size	12-ft. Lengths	Each	25-ft. Lengths	Each
1/4" to 3/8"	8-32 Female	3627K57♣	$185.45	3627K37♣	$229.09
7/16" to 1/2"	1/4"-28 Female	3627K53	201.82	3627K33	256.36
9/16" to 1"	1/4"-28 Female	3627K52	219.64	3627K35	283.64

♣ Not for use with the scrapers shown below; includes an adapter to connect brushes with 8-32 female threads.

Scrapers

Remove light to medium deposits in carbon steel, stainless steel, copper, and brass tubes.

For Tube ID	Scraper Lg.	O'all Lg.	Thread Size		Each
1/2" to 9/16"	2"	6"	1/4"-28 Male	3627K44	$21.87
5/8" to 1"	2 1/4"	6 1/2"	1/4"-28 Male	3627K45	21.87

Brushes

All have 1/4"-28 male threads (except the 1/4" and 5/16" dia. brushes, which have 8-32 female threads and the 3/8" dia. brushes, which have 12-24 female threads). *Note:* Brush diameter should be the same as your tube ID.

Nylon and Brass—Remove soft and light scale deposits in copper, brass, and plastic tubes. *Nylon brushes* are blue.

Type 304 Stainless Steel—Remove soft and light scale deposits in carbon steel and stainless steel tubes.

To Order: For all brushes, please specify brush diameter: 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", or 1".

		Each
Nylon	3627K67	$5.20
Brass	3627K71	7.10
Type 304 Stainless Steel	3627K68	7.48

Tube Expanders

Tube expanders build and maintain heat exchangers, boilers, condensers, and other equipment with tubular openings. They have rollers with gradually tapered noses that ensure uniform tube tightness. They also have a 3/8" square drive for connecting a motorized device, such as a torque-controlled rolling motor.

For Tube Size★ OD	Ga.	Fits Min. Tube ID	Max. Tube Expansion Dia.	Max. Tube Sheet Thick.		Each
1/2"	18	0.392"	0.447"	1 1/2"	3628K13	$328.87
5/8"	16	0.485"	0.550"	1 1/2"	3628K16	328.87
5/8"	18	0.517"	0.572"	1 1/2"	3628K57	328.87
3/4"	15	0.596"	0.661"	1 1/2"	3628K63	332.63
3/4"	17-18	0.619"	0.699"	1 1/2"	3628K64	332.63
7/8"	14	0.685"	0.774"	2 1/4"	3628K65	343.00
1"	14	0.810"	0.909"	2 1/4"	3628K66	343.00

★ Ga. is the tube wall thickness.

Hand-Powered Hydrostatic Test Pumps

A

B

C

D

Simply pump the handle to generate the pressure you need to conduct tests in the field. These economical, easy-to-transport pumps are great for fluid pressure testing other pumps as well as valves, hose, sprinkler lines, plant piping, process piping systems, boilers, condensers, heat exchangers, and pressure vessels.

Note: Perform pressure tests with water, unless noted.

(A) Bench Mount— Have four 29/64″ mounting holes (except for 4229K1, which has two) for bench mounting. Fasteners not included.

(B) Bench Top— The attached baseplate provides improved leverage as well as stability. Furnished with a carrying case.

(C) Channel Mounted— This lightweight pump is mounted on a channel base for improved leverage.

(D) Freestanding— You don't need to connect these test pumps to a water supply—they have a reservoir that stores the water you'll need. You can also use hydraulic oil to perform your pressure tests.

Max. psi Generated	O'all Size, Lg. × Wd. × Ht.	Handle Lg.	Hydraulic Hose Lg.	Water Connection Size (Female) Inlet	Outlet	Stroke Lg.	Body Material		
(A) Bench Mount									
750	12¼″ × 6″ × 13″	20″	—	¾″ NPT	¾″ NPT	4″	Cast Iron	4229K1	$448.28
2,000	13½″ × 6″ × 13¾″	20″	—	¾″ NPT	¾″ NPT	4″	Bronze	4229K5	844.26
3,000	11½″ × 7″ × 14¾″	22″	—	½″ NPT	½″ NPT	3½″	Bronze	4229K9	1,067.74
(B) Bench Top with Pressure Gauge									
1,000	18″ × 7″ × 9″	14″	—	¾″ GHT	¼″ NPT	1″	Aluminum	8084K1	604.69
(C) Channel Mounted									
6,000	24¾″ × 4½″ × 13″	24″	48″	¾″ GHT	¼″ NPT	4″, 2″●	Brass	4160K16	380.21
(D) Freestanding with Reservoir and Pressure Gauge									
363	17⅜″ × 7⅞″ × 9½″	12½″	36″	—	½″ NPT	2″	Galvanized Steel	9108T2	298.74
860	28½″ × 6⅝″ × 10¼″	23″	46″	—	½″ NPT	2½″	Galvanized Steel	9108T3	498.00

● Stroke length is adjustable.

Electric Hydrostatic Test Pumps

A totally enclosed fan cooled (TEFC) motor provides your hydrostatic testing power. Motor is capacitor start and operates on 115 VAC, 60 Hz. All pumps have an aluminum body and include a pressure gauge, pressure-regulator bypass, ball valve, and unloader valve. They come furnished with an 8-ft. power cord with three-prong plug. *Note:* Perform pressure tests with water.

Style E is light enough to easily carry from job to job.

	Max. psi Generated	O'all Size, Lg. × Wd. × Ht.	hp	Amps	Hose Lg.	Water Connection Size (Female) Inlet	Outlet		
E	300	14″ × 10″ × 12″	½	8.8	10 ft.	¾″ GHT	⅜″ NPT	43405K16	$741.29
F	500	16″ × 22″ × 18″	1	14	10 ft.	¾″ GHT	½″ NPT	4247K33	1,261.16
F	1,000	16″ × 22″ × 18″	1	14	10 ft.	¾″ GHT	½″ NPT	4276K65	1,493.33

E

F

Air-Powered Hydrostatic Test Pumps

Requiring 100 psi of air pressure to operate, these pumps offer the highest generated pressure ratings of all our hydrostatic test pumps. Just set the air pressure regulator and these pumps automatically shut off at the set pressure and restart when pressure drops. All pumps include pressure gauges and have a Type 303 stainless steel body. Air inlet is ⅜″ NPT female. *Note:* Perform pressure tests with water or hydraulic oil. **To Order:** Please specify max. psi generated: 1,000; 3,000; 6,000; or 10,000.

(G) Bench Top— Pump is attached to a baseplate and has removable roll bars. It has a manifold and one pressure gauge with quick-disconnect fitting.

(H) Portable— Easy-to-carry pump is mounted on a tubular-steel frame. It has a manifold and two pressure gauges with quick-disconnect fittings.

(J) Mobile— With two 5″ dia. polyurethane wheels, you can roll this pump right to the job site. It's mounted on a tubular-steel frame and has two pressure gauges.

		O'all Size, Lg. × Wd. × Ht.	Water Connection Size (Female) Inlet	Outlet		
G	Bench Top	23″ × 12″ × 12″	¾″ GHT	⅜″ NPT	41455K8	$2,135.16
H	Portable	15″ × 15″ × 15″	¾″ GHT	⅜″ NPT	41465K7	2,731.64
J	Mobile	15″ × 15″ × 36″	¾″ GHT	¼″ NPT	41485K9	3,385.85

G

J

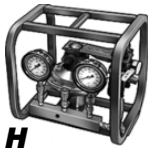

H

Easy-Twist High-Pressure Test Fittings

Looking for fast, leak-tight connections for testing, filling, flushing, venting, and plugging jobs? Just turn these threaded fittings to tighten—no need for tools, tape, or sealant. Air, gas, or hydraulic pressure in the system presses the seal against the face of the threads. Great for vacuum and pressure testing of hydraulic and air-powered components, assemblies, and systems. Body is stainless steel and main seals are polyurethane, so fittings are compatible with most petroleum-based fluids. Temperature range is –40° to +200° F. Connectors have a back port that allows you to add media.

Note: Not for extended use with water above 180° F, steam, fire-resistant synthetic fluids, or brake fluids.

Male Connector

Male Swivel Connector

Fitting and Port Size, NPT	Max. psi	Male Connectors		Male Swivel Connectors		Female Connectors		Male Plugs	
⅛″	5,000	2438K21	$46.68	2438K31	$74.25	2438K71	$50.94	2438K11	$33.73
¼″	5,000	2438K22	51.94	2438K32	76.09	2438K72	53.01	2438K12	38.83
⅜″	4,000	2438K23	58.33	2438K33	86.57	2438K73	77.94	2438K13	40.57
½″	4,000	2438K24	64.55	2438K34	99.74	2438K74	93.41	2438K14	60.29
¾″	4,000	2438K25	131.85	2438K35	222.82	2438K75	156.92	2438K15	131.85
1″	4,000	2438K26	147.09	2438K36	349.86	2438K81	374.94	2438K16	147.09

Female Connector

Male Plug

About Test Plugs

Test plugs make sealing a pipe quick and easy. All are for use at the end of a pipe, unless noted.

Test Plugs— These plugs have a sealing ring that's positioned between two plates. As you tighten the plug, the plates squeeze the ring and force it to expand against the inside of the pipe, creating a seal. *Note:* These plugs may not seal pipes that aren't perfectly round.

Inflatable Test Plugs— Inflate these plugs with air so they will expand and create a seal. They have a high expansion range and can be used to tightly seal out-of-round pipes. *Note:* They can lose air pressure over long periods of time.

Test Plugs with Bypass— There's a tube in the middle of these plugs, which allows you to add media and relieve back pressure in the pipeline.

Pipe Size and Actual Pipe ID Range— Match your pipe to the corresponding pipe size. If you are unsure of the pipe size, use the actual pipe ID range. If your pipe's ID is within the range listed, you've chosen the right size. *Note:* For more information about pipe size, see pages 2-3.

Pipe ID

Maximum Back Pressure— The amount of pressure a plug can withstand without moving. *Air back pressure* is measured in psi. *Water back pressure* is measured in feet of head (height of the water above the plug's centerline) or psi.

Required Inflation Pressure— The amount of air pressure (measured in psi) that's needed to expand inflatable test plugs.

Low-Pressure Test Plugs

Our most economical plugs are great for your low-pressure applications. *Note:* Not recommended for use in pressure tests.

Tin and Steel

For 1½"-4" Pipe Size

For 5"-6" Pipe Size

- Plate: Tin
- Stem: Zinc-plated steel
- Nut: Zinc-plated steel
- Seal: Natural rubber
- Temperature Range: 0° to 125° F

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
1½"	1.44"	1.65"	2⁹⁄₁₆"	2	5	2613K21	$1.59
2"	1.96"	2.25"	2⁵⁄₈"	2	5	2613K23	1.74
3"	2.86"	3.25"	2⁴¹⁄₆₄"	2	5	2613K25	2.81
4"	3.78"	4.50"	3¼"	2	5	2613K27	3.50
5"	4.62"	5.30"	3³⁵⁄₆₄"	1	2	2613K29	6.58
6"	5.62"	6.40"	3³⁄₁₆"	1	2	2613K31	7.70

Stainless Steel

- Plate: Stainless steel
- Stem: Stainless steel
- Nut: Stainless steel
- Seal: Chemical-resistant nitrile
- Temperature Range: 0° to 175° F

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
1½"	1.44"	1.75"	2⁹⁄₁₆"	2	5	2613K51	$8.78
2"	1.96"	2.25"	2⁵⁄₈"	2	5	2613K52	9.64
3"	2.86"	3.25"	2⁴¹⁄₆₄"	2	5	2613K53	15.50
4"	3.78"	4.30"	3¼"	2	5	2613K54	19.25
5"	4.62"	5.30"	3³⁵⁄₆₄"	1	2	2613K55	30.37
6"	5.62"	6.30"	3³⁄₁₆"	1	2	2613K56	33.79

All-Plastic Test Plugs

Solid Stem

Bypass Stem

- Plate: Nylon
- Stem: Nylon
- Nut: Nylon
- Seal: Natural rubber
- Temperature Range: –40° to +180° F

Economical test plugs for your higher pressure applications.

Plugs with bypass stem have a removable nylon cap. To use the bypass, plugs for ½" to 1¼" pipe sizes require a ³⁄₈" ID hose or tube, and a worm-drive clamp (for clamp, see 5407K57 on page 275). Just slide the hose or tube over the bypass stem, and clamp in place.

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head	By-pass, NPT Male		
With Solid Stem								
½"	0.49"	0.60"	2⅜"	150	346	—	2439K41	$6.59
¾"	0.74"	0.90"	2½"	150	346	—	2439K42	6.77
1"	0.98"	1.20"	2½"	130	300	—	2439K43	7.24
1¼"	1.23"	1.45"	2½"	70	161	—	2439K64	9.86
1½"	1.48"	1.75"	2½"	60	138	—	2439K65	10.56
With Bypass Stem								
½"	0.49"	0.60"	2¹⁵⁄₁₆"	150	346	♠	2566K11	17.56
¾"	0.74"	0.90"	2¹⁵⁄₁₆"	150	346	♠	2566K12	18.32
1"	0.98"	1.20"	2¹⁵⁄₁₆"	130	300	♠	2566K13	18.84
1¼"	1.23"	1.45"	2¹⁵⁄₁₆"	70	161	♠	2566K14	19.89
1½"	1.42"	1.93"	4½"	44	101	½"	2566K35	20.32
2"	1.93"	2.36"	4½"	50	115	½"	2566K36	20.94
2½"	2.40"	2.76"	4½"	34	79	½"	2566K37	22.11
3"	2.87"	3.31"	4½"	15	34	½"	2566K38	22.63
4"	3.54"	4.25"	4½"	15	34	½"	2566K39	24.80
5"	4.72"	5.37"	4½"	12	27	½"	2566K41	37.80
6"	5.50"	6.29"	4½"	10	23	½"	2566K42	39.08

♠ Bypass stem has a custom thread

Mini Low-Pressure Test Plugs

- Plate: Type 304 stainless steel
- Stem: Type 302 stainless steel
- Nut: Aluminum
- Seal: Neoprene
- Temperature Range: –50° to +250° F

Our smallest low-pressure test plugs have a low-profile coupling nut that you tighten to create the seal.

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
3⁄₁₆"	0.19"	0.22"	1⅜"	10	24	2599K21	$4.58
¼"	0.22"	0.27"	1²³⁄₆₄"	10	24	2599K23	4.66
5⁄₁₆"	0.29"	0.36"	1²³⁄₆₄"	10	24	2599K26	4.84
⅜"	0.37"	0.39"	1½"	10	24	2599K29	5.12
7⁄₁₆"	0.41"	0.48"	1⅜"	10	24	2599K27	5.66
½"	0.47"	0.55"	1¹³⁄₃₂"	10	24	2599K28	6.72
9⁄₁₆"	0.55"	0.61"	1¹¹⁄₁₆"	10	24	2599K31	7.57

Plastic Low-Pressure Test Plugs

End-of-Pipe Use

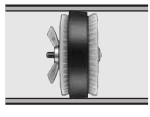

Inside-Pipe Use

- Plate: ABS Thermoplastic
- Stem: Zinc-plated steel
- Nut: Zinc
- Seal: Natural rubber
- Temp. Range: 0° to 125° F

All have a tough, impact-resistant plastic plate. ***Plugs for end-of-pipe use*** are only used to seal the end of a pipe. ***Plugs for inside-pipe use*** can be inserted into the pipe (as far as needed) to seal the pipe.

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
For End-of-Pipe Use							
1½"	1.48"	1.65"	1¾"	17	40	2645K41	$3.41
2"	1.90"	2.17"	1⅞"	17	40	2645K42	3.91
3"	2.80"	3.10"	2½"	17	40	2645K43	5.23
4"	3.78"	4.06"	2½"	17	40	2645K44	6.70
6"	5.77"	6.08"	3¾"	17	40	2645K45	19.10
8"	7.70"	8.30"	3¾"	17	40	2645K48	32.62
For Inside-Pipe Use							
4"	3.80"	4.06"	2½"	17	40	2645K51	6.45
6"	5.77"	6.08"	3¾"	17	40	2645K52	17.68
8"	7.70"	8.03"	3¾"	17	40	2645K46	32.62

Lockable Plastic Low-Pressure Test Plugs

Padlock Not Included

- Plate: Reinforced polyurethane
- Stem: Stainless steel
- Nut: Zinc chromate
- Seal: Chemical-resistant nitrile
- Temperature Range: 0° to 125° F

Lock plugs with a padlock to limit access (padlock not included; max. shackle dia. of ³⁄₁₆").

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
1"-1¼"	1.00"	1.38"	2½"	6	15	24395K69	$16.11
2"	1.90"	2.31"	2³¹⁄₆₄"	6	15	24395K73	17.87
3"	2.80"	3.10"	2³⁹⁄₆₄"	6	15	24395K71	19.51
4"	3.80"	4.38"	3¼"	6	15	24395K75	20.61
6"	5.77"	6.08"	3⁶³⁄₆₄"	6	15	24395K77	40.92

For information about test plugs, see page 2034.

Low-Pressure Test Plugs with Easy-Grip Handle

The easy-to-grip, T-style handle makes tightening and loosening these plugs a breeze.

***Plugs with Bypass Tube Connection*—**A vented, barbed, bypass tube connection accepts 1/4″ ID tubing for attaching your air supply.

Steel
- Plate: Zinc-plated steel
- Stem: Zinc-plated steel
- Handle: Brass
- Seal: Neoprene
- Temp. Range: –50° to +250° F

Stainless Steel
- Plate: Type 302 stainless steel
- Stem: Type 302 stainless steel
- Handle: Type 302 stainless steel
- Seal: Neoprene
- Temp. Range: –50° to +250° F

With Solid Stem

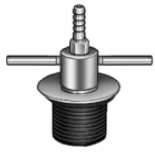

With Bypass Tube Connection

For Pipe Size	For Actual Pipe ID Range Min.	Max.	Maximum Back Pressure Air, psi	Water, ft. of head	WITH SOLID STEM O'all Ht.	Steel		Stainless Steel		WITH BYPASS TUBE CONNECTION O'all Ht.	Steel		Stainless Steel	
1/2″	0.48″	0.55″	10	24	1 45/64″	2527K11	$12.00	2908K11	$12.07	3 1/2″	—	—	2516K31	$56.38
5/8″	0.57″	0.67″	10	24	1 57/64″	2527K12	12.46	2908K12	18.37	3 1/2″	—	—	2516K32	57.79
3/4″	0.72″	0.80″	10	24	1 59/64″	2527K13	13.19	2908K13	19.83	3 1/2″	—	—	2516K33	59.08
7/8″	0.82″	0.92″	10	24	1 15/16″	2527K14	14.34	2908K14	20.53	3 1/2″	—	—	2516K34	60.21
1″	0.94″	1.05″	5	12	2 19/32″	2527K15	14.30	2908K15	21.72	4″	—	—	2516K35★	61.35
1 1/8″	1.06″	1.22″	5	12	2 19/32″	2527K31	14.66	2908K16	22.67	4″	—	—	2516K36	62.50
1 1/4″	1.21″	1.36″	5	12	2 41/64″	2527K16	15.05	2908K17	24.31	4″	—	—	2516K37	63.67
1 3/8″	1.32″	1.47″	5	12	2 5/8″	2527K32	15.32	2908K18	25.38	4″	—	—	2516K38	65.18
1 1/2″	1.44″	1.55″	5	12	2 11/16″	2527K17	15.58	2908K19	25.73	4″	—	—	2516K39	66.25
1 5/8″	1.55″	1.72″	5	12	2 19/32″	2527K33	16.02	2908K21	26.49	4″	—	—	2516K41	67.21
1 3/4″	1.70″	1.80″	5	12	2 43/64″	2527K18	16.23	2908K22	27.70	4″	—	—	2516K42	68.13
1 7/8″	1.81″	1.97″	5	12	2 5/8″	2527K34	16.45	2908K23	28.61	4″	—	—	2516K43	69.19
2″	1.93″	2.10″	5	12	2 25/32″	2527K19	16.68	2908K24	29.83	4″	—	—	2516K44	70.03
2 1/4″	2.22″	2.35″	5	12	3 23/32″	2527K21	23.73	2908K25	31.30	4 1/2″	2516K47	$58.36	—	—
2 1/2″	2.44″	2.60″	5	12	3 21/32″	2527K22	26.26	2908K26	31.81	4 1/2″	2516K48	60.04	—	—
2 3/4″	2.63″	2.85″	5	12	3 23/32″	2527K23	27.28	2908K27	32.54	4 1/2″	2516K49	69.30	—	—
3″	2.92″	3.10″	5	12	3 41/64″	2527K24	28.76	2908K28	33.54	4 1/2″	2516K51	77.91	—	—
3 1/4″	3.13″	3.35″	5	12	3 43/64″	2527K25	29.52	2908K29	34.44	5″	2516K52	89.24	—	—
3 1/2″	3.44″	3.60″	5	12	3 23/32″	2527K26	31.63	2908K31	35.56	5″	2516K53	89.43	—	—
3 3/4″	3.69″	3.85″	5	12	3 23/32″	2527K27	32.32	2908K32	36.38	5″	2516K54	91.33	—	—
4″	3.97″	4.10″	5	12	3 21/32″	2527K28	35.27	2908K33	37.43	5″	2516K55	97.37	—	—
4 1/2″	4.48″	4.73″	4	9	4 1/4″	2527K37	143.51	2908K43	208.36	5 1/8″	2516K62	379.03	—	—
4 3/4″	4.73″	4.99″	3	7	4 1/2″	2527K38	152.17	2908K44	212.04	5 1/4″	2516K63	398.74	—	—
5″	4.98″	5.25″	3	7	4 1/2″	2527K39	154.83	2908K45	217.27	5 1/4″	2516K64	407.69	—	—

★ Maximum air back pressure is 10 psi. Maximum water back pressure is 24 ft. of head.

Quick-Snap Low-Pressure Test Plugs

Sealing pipes is a snap—simply turn the cam handle to expand the sides against the opening and then snap the handle down to seal. No finger tightening required.

Steel
- Plate: Pipe Sizes 3/8″-31/32″: Type 302 stainless steel
  Pipe Sizes 1″-4″: Zinc-plated steel
- Handle: Brass
- Seal: Neoprene
- Temp. Range: –50° to +250° F

Stainless Steel
- Plate: Type 302 stainless steel
- Handle: Type 302 stainless steel
- Seal: Neoprene
- Temp. Range: –50° to +250° F

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head	Steel		Stainless Steel	
3/8″	0.38″	0.42″	1 11/32″	10	24	2598K21	$4.67	9191T31	$8.70
7/16″	0.41″	0.48″	1 3/8″	10	24	2598K22	5.23	9191T32	8.91
1/2″	0.47″	0.55″	1 3/8″	10	24	2598K23	4.94	9191T33	9.16
9/16″	0.55″	0.61″	1 3/8″	10	24	2598K24	5.08	9191T34	9.40
5/8″	0.62″	0.67″	1 11/32″	10	24	2598K25	5.21	9191T35	9.67
11/16″	0.66″	0.73″	1 3/8″	10	24	2598K26	5.39	9191T36	9.91
3/4″	0.72″	0.80″	1 3/8″	10	24	2598K27	5.50	9191T37	10.14
13/16″	0.79″	0.86″	1 3/8″	10	24	2598K28	5.78	9191T38	10.37
7/8″	0.85″	0.92″	1 3/8″	10	24	2598K29	6.13	9191T39	10.68
31/32″	0.91″	1.01″	1 13/32″	10	24	2598K31	6.24	9191T42	10.90
1″	0.97″	1.05″	2 7/16″	5	12	2598K32	16.48	9191T43	24.40
1 1/8″	1.05″	1.17″	2 3/8″	5	12	2598K51	18.02	9191T44	25.04
1 1/4″	1.19″	1.30″	2 3/8″	5	12	2598K44	18.49	9191T45	25.69
1 3/8″	1.30″	1.42″	2 21/64″	5	12	2598K52	19.16	9191T46	26.36
1 1/2″	1.38″	1.55″	2 3/8″	5	12	2598K33	19.65	9191T47	27.08
1 5/8″	1.53″	1.67″	2 5/8″	5	12	2598K53	20.00	9191T48	27.65
1 3/4″	1.63″	1.80″	2 17/64″	5	12	2598K46	20.25	9191T49	28.30
1 7/8″	1.75″	1.92″	2 21/64″	5	12	2598K54	20.11	9191T51	28.96
2″	1.95″	2.05″	2 17/64″	5	12	2598K34	20.50	9191T52	29.58
2 1/8″	2.06″	2.17″	2 7/32″	5	12	2598K55	24.03	9191T53	30.74
2 1/4″	2.25″	2.30″	2 7/32″	5	12	2598K47	25.58	9191T54	31.16
2 3/8″	2.31″	2.42″	2 17/64″	5	12	2598K56	24.98	9191T55	32.41
2 1/2″	2.47″	2.55″	2 17/64″	5	12	2598K35	26.47	9191T56	32.90
2 5/8″	2.53″	2.72″	2 17/64″	5	12	2598K57	26.58	9191T57	33.69
2 3/4″	2.69″	2.85″	2 17/64″	5	12	2598K48	29.23	9191T58	46.30
2 7/8″	2.86″	2.97″	2 1/4″	5	12	2598K58	29.60	9191T59	47.11
3″	2.94″	3.10″	2 1/4″	5	12	2598K36	28.89	9191T61	47.50
3 1/2″	3.38″	3.60″	2 7/32″	5	12	2598K37	60.09	9191T63	68.02
4″	3.94″	4.10″	2 19/64″	5	12	2598K38	37.38	9191T64	71.14

For information about test plugs, see page 2034.

Long-Stem Test Plugs with Bypass

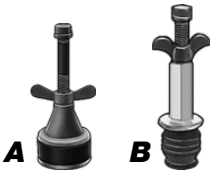

These plugs can be inserted further into your pipe end than standard plugs. Their long stems provide easy access to add media and relieve back pressure. All plugs have a removable cast iron bypass cap, unless noted.

(A) Economical Plugs— Not rated for use with air pressure.

(A) Economical Test Plugs

- Plate: Cast iron
- Stem: Cast iron (unless noted)
- Nut: Cast iron
- Seal: Natural rubber
- Temp. Range: 30° to 150° F

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Max. Back Pressure: Water, ft. of head	Bypass, NPT Male		
1/2"	0.47"	0.71"	4 1/4"	163	1/4"	2644K15■	$9.52
3/4"	0.72"	0.94"	4 3/4"	163	1/8"	2644K16	10.72
1"	0.97"	1.15"	4 3/4"	163	3/8"	2644K18	11.01
2"	1.75"	2.25"	10"	70	1/2"	2644K21	11.82
3"	2.75"	3.25"	10"	70	1/2"	2644K22	15.38
4"	3.63"	4.50"	10"	52	1/2"	2644K23	20.71
5"	4.50"	5.50"	13"	52	1/2"	2644K24	32.30
6"	5.50"	6.25"	13"	47	1/2"	2644K25	35.08
8"	7.50"	8.25"	15"	28	1/2"	2644K26	64.89
10"	9.50"	10.25"	15"	24	1/2"	2644K31	101.74
12"	11.50"	12.25"	15"	7	1"	2644K32	174.96

■ Stem is brass and bypass cap is steel.

(B) Standard Test Plugs

1 1/2"-4" Pipe Sizes

- Plate: Cast aluminum
- Stem: Steel
- Nut: Cast iron
- Seal: Natural rubber
- Temp. Range: –20° to +170° F

6" Pipe Size

- Plate: Steel
- Stem: Steel
- Nut: Steel
- Seal: Natural rubber
- Temp. Range: 32° to 212° F

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head	By-pass, NPT Male		
1 1/2"	1.53"	2.25"	8 1/4"	125	288	3/8"	2602K21	$13.75
2"	1.79"	2.38"	8 1/4"	125	288	3/8"	2602K22	16.12
3"	2.77"	3.25"	8 1/4"	125	288	3/8"	2602K24	19.31
4"	3.85"	4.25"	8 1/4"	35	81	1/2"	2602K25	24.51
6"	5.80"	6.50"	12"	20	46	1/2"	2602K16★	80.14

★ Bypass cap is steel.

Long-Stem Inside-Pipe Test Plugs with Bypass

- Plate: Zinc-plated steel
- Stem: Zinc-plated steel
- Nut: Zinc-plated steel
- Seal: Neoprene
- Temp. Range: –20° to +225° F

Insert these plugs into your pipe as far as needed. Their long stems provide easy access to add media and relieve back pressure. All fit Schedule 40 pipe and have a bolt-style tightening nut.

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head	By-pass, NPT Male		
1/2"	0.62"	0.64"	4 3/8"	250	577	1/8"	2564K31	$94.95
3/4"	0.81"	0.82"	4 3/8"	175	403	1/8"	2564K32	99.08
1"	1.03"	1.05"	6 3/8"	175	403	1/8"	2564K33	105.96
1 1/4"	1.37"	1.39"	6 3/8"	175	403	1/8"	2564K34	116.97
1 1/2"	1.58"	1.61"	6 3/8"	75	173	1/8"	2564K35	130.73
2"	2.03"	2.07"	6 3/8"	75	173	1/8"	2564K36	137.02
3"	3.03"	3.13"	4 3/8"	50	115	1/4"	2564K48	169.27

Clamp-Tight Pipe-End Caps

Cap off your pipe ends. All are neoprene rubber with a series 300 stainless steel band that clamps over the outside wall of your pipe and tightens with a screwdriver. *Note:* Not rated for temperature or for use with air pressure.

For Pipe Size	For Actual Pipe OD Min.	Max.	O'all Ht.	Maximum Back Pressure: Water, ft. of head		
1 1/2"	1.78"	1.90"	1 1/2"	30	2394K11	$4.19
2"	2.25"	2.37"	1 1/2"	30	2394K12	4.66
3"	3.31"	3.50"	1 1/2"	23	2394K13	5.97
4"	4.31"	4.50"	1 1/2"	16	2394K14	6.73
6"	6.44"	6.62"	1 1/2"	10	2394K16	13.60
8"	8.44"	8.62"	1 1/2"	7	2394K17	22.91

Eyebolt-Style Test Plugs

- Plate: Zinc-plated steel
- Stem: Zinc-plated steel
- Nut: Zinc-plated steel
- Seal: Neoprene
- Temperature Range: –20° to +225° F

An eyebolt allows you to tether as well as hang these test plugs so you won't misplace them.

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
1/2"	0.51"	0.60"	4"	35	80	2565K21	$25.00
3/4"	0.71"	0.80"	4"	35	80	2565K22	28.12
1"	0.91"	1.10"	4"	35	80	2565K23	31.25
1 1/4"	1.11"	1.30"	6"	15	34	2565K24	35.94
1 1/2"	1.31"	1.70"	6"	15	34	2565K25	39.06
2"	1.71"	2.10"	6"	15	34	2565K26	42.19
2 1/2"	2.11"	2.73"	7 1/2"	15	34	2565K27	84.38
3"	2.74"	3.25"	7 1/2"	15	34	2565K28	103.12

Mini High-Pressure Test Plugs

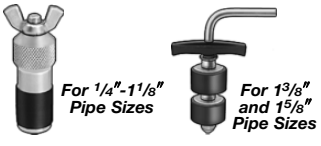

- Plate: Zinc-plated steel
- Stem: Zinc-plated steel
- Nut: Zinc-plated steel, unless noted
- Seal: Neoprene
- Temp. Range: 0° to 150° F

These small plugs will hold their seal in high pressures.

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
1/4"	0.17"	0.19"	1 9/32"	100	230	2552K51	$8.42
3/8"	0.27"	0.31"	1 9/16"	100	230	2552K52◆	9.23
1/2"	0.39"	0.43"	1 5/8"	100	230	2552K53◆	9.54
5/8"	0.52"	0.54"	2"	100	230	2552K54	11.43
3/4"	0.64"	0.74"	2 1/4"	100	230	2552K55	11.86
7/8"	0.74"	0.99"	2 63/64"	100	230	2552K56	17.27
1 1/8"	0.98"	1.24"	2 63/64"	100	230	2552K57	19.33
1 3/8"	1.22"	1.27"	4 1/2"	100	230	2552K58▲	40.28
1 5/8"	1.46"	1.50"	4 1/2"	100	230	2552K59▲	41.20

◆ Has a chrome-plated steel nut. ▲ Has a two-piece handle made of zinc-plated steel and black die cast zinc, instead of a nut.

Bolt-Tight High-Pressure Test Plugs

- Plate: Zinc-plated steel
- Stem: Zinc-plated steel
- Nut: Zinc-plated steel
- Seal: Neoprene
- Temperature Range: –20° to +225° F

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
3/4"	0.73"	0.82"	2"	100	230	2554K71	$18.12
1"	0.93"	1.05"	2 1/4"	100	230	2554K72	21.60
1 1/4"	1.13"	1.38"	2 1/4"	100	230	2554K73	27.07
1 1/2"	1.33"	1.61"	2 1/2"	100	230	2554K74	31.07
2"	1.73"	2.07"	2 1/2"	75	173	2554K75	33.64
3"	2.73"	3.07"	3 1/2"	50	115	2554K76	85.07

Combination Cleanout/Test Plugs

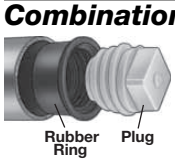

Get the advantages of a cleanout plug and test plug all in one. You can even use these plugs as replacements for cleanouts with damaged threads. Made of rust-resistant ABS thermoplastic, these plugs can be used with plastic, cast iron, and copper pipe. The threaded end has a thick rubber ring that creates a positive seal. Temperature range is 32° to 212° F.

For Pipe Size	For Actual Pipe ID Range Min.	Max.	O'all Ht.	Maximum Back Pressure Air, psi	Water, ft. of head		
1 1/2"	1.61"	1.71"	2"	21	50	25655K71	$2.65
2"	2.06"	2.16"	2"	21	50	25655K72	2.83
3"	3.06"	3.16"	2"	21	50	25655K73	3.87
4"	4.02"	4.12"	2"	21	50	25655K74	6.15
6"	6.06"	6.16"	2"	13	30	25655K75	8.58
8"	8.00"	8.10"	2"	8	20	25655K76	21.02

For information about test plugs, see page 2034.

Air-Inflatable Test Plugs

More flexible than mechanical test plugs, these plugs seal both round and out-of-round pipe. They're easy to inflate, deflate, and remove, making them perfect for temporary seals. *Note:* They can lose air pressure over long periods of time.

All are made of natural rubber. Temp. range is 0° to 125° F. To inflate, we recommend you use a hand pump (not included; see 61505A22 on this page). *Note:* An air compressor may overinflate the plug and create a dangerous situation.

Without Bypass, With Zinc-Plated Steel Chain and Ring

With Bypass, With Zinc-Plated Steel Eyebolt

For Pipe Size	For Actual Pipe ID Range Min.	Max.	Deflated Dia.	Lg.	Max. Back Pressure Air, psi	Water, ft. of head	Required Inflation Pressure, psi	Bypass Size, NPT female		
Without Bypass										
With Zinc-Plated Steel Chain and Ring for Retrieval										
3/4"-1 1/4"	0.75"	1.31"	0.73"	3.75"	17	40	45	—	3058K11	$22.76
1 1/4"-1 1/2"	1.17"	1.75"	1.12"	5.56"	13	30	40	—	3058K2	25.30
2"	1.9"	2.25"	1.78"	3.34"	13	30	40	—	3058K3	27.19
2 1/2"	2.34"	2.75"	2.31"	4.5"	13	30	35	—	3058K1	29.31
3"	2.77"	3.25"	2.64"	5.18"	13	30	35	—	3058K4	30.53
4"	3.41"	4.25"	3.28"	6.41"	13	30	30	—	3058K5	34.02
5"	4.6"	5.25"	4.48"	7.88"	13	30	30	—	3058K13	70.99
6"	5.44"	6.25"	5.32"	9.05"	13	30	30	—	3058K6	85.11
With Zinc-Plated Steel Eyebolt to Attach Your Own Cable or Rope										
8"	7"	8.25"	6.75"	10.11"	17	40	25	—	3058K7	159.53
10"	9"	10.25"	8.7"	11.74"	17	40	25	—	3058K8	259.59
12"	10.5"	12.25"	10.3"	13.83"	17	40	25	—	3058K9	320.06
12"-18"	10.75"	18.25"	10.5"	24"	17	40	25	—	3058K12	720.72
With Bypass—*Furnished with an ABS thermoplastic threaded cap.*										
With Zinc-Plated Steel Chain and Ring for Retrieval										
1 1/2"	1.49"	1.88"	1.4"	3.8"	22	50	40	1/8"	2580K23 ♦	118.12
2"	1.88"	2.25"	1.75"	6"	22	50	40	1/8"	2580K25	125.36
3"	2.62"	3.25"	2.5"	8"	22	50	40	3/4"	2580K27	131.90
With Zinc-Plated Steel Eyebolt to Attach Your Own Cable or Rope										
4"	3.25"	4.25"	3.13"	8"	22	50	40	3/4"	2580K21	136.23
6"	4.5"	6.25"	4.4"	7"	13	30	35	1 1/2"	2580K11	160.87
8"	7"	8.25"	6.71"	10"	13	30	35	3"	2580K12	204.35
10"	9"	10.25"	8.75"	11.75"	13	30	35	3"	2580K13	266.66
12"	10.5"	12.25"	10.25"	13.75"	13	30	35	3"	2580K14	359.67
15"-16"	14"	16.25"	13.62"	19.75"	13	30	35	3"	2580K29	516.69
18"	17.5"	19.85"	16.9"	24.75"	13	30	25	4"	2580K33	745.70
21"	18.85"	21.38"	18.2"	26"	13	30	25	4"	2580K34	860.97
24"	21.95"	24.9"	21.19"	28.75"	13	30	25	4"	2580K35	927.52

♦ Bypass is NPT male.

Air- and Water-Inflatable Test Plugs

Use air or water to expand these plugs—a built-in pressure relief valve prevents overexpanding. Plugs are made of natural rubber with solid brass fittings. All have a tire thread inflation valve. To inflate with air, we recommend you use a hand pump (not included; see 61505A22 on this page). To inflate with water, remove the air valve to expose the 3/4" garden hose connection. Temp. range is 32° to 95° F.

Standard test plugs from 1 1/4"-4" dia. include a strap and handle for plug retrieval. Plugs from 5"-18" dia. include a retrieval ring. Plugs from 10"-18" dia. also come with an air gauge and 4-ft. extension hose.

Two-stage-deflation test plugs are longer than standard plugs and deflate in two stages. Access pipe stays sealed to prevent back splash as water clears the drain line. A strap, handle, and 4-ft. extension hose are included.

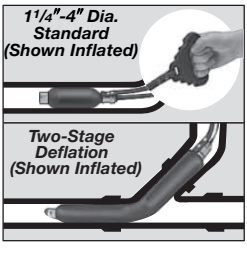

For Pipe Size	For Actual Pipe ID Range Min.	Max.	Deflated Dia.	Lg.	Maximum Back Pressure Air, psi	Water, ft. of head	Required Inflation Pressure, psi		
Standard									
1 1/4"-2"	1.25"	2"	1 3/16"	7 5/8"	30	30	57	2437K51	$25.65
3"-4"	2.75"	4.25"	2 2/3"	9"	30	30	57	2437K53	30.30
4"-6"	3.75"	6.25"	3 1/2"	11"	30	30	53	2437K57	80.48
5"-8"	4.75"	8.25"	4 1/2"	14 1/2"	30	30	34	2437K55	144.42
10"-12"	9.75"	12.25"	6 7/8"	20"	25	25	30	2437K58	276.33
14"-16"	13.75"	16.25"	8 3/4"	22"	25	25	27	2437K59	540.19
18"-24"	17.75"	24.25"	12 3/4"	29"	40	40	19	2437K61	982.37
Two-Stage Deflation									
2"-3"	2"	3.10"	1 3/4"	19 1/2"	30	30	76	2437K52	64.65
3"-4"	2.75"	4.25"	2 1/2"	23 1/2"	30	30	63	2437K54	75.29
5"-6"	4.75"	6.25"	4 1/2"	30"	30	30	84	2437K56	164.33

Hand Pump for Air-Inflatable Test Plugs

Count on this pump to inflate and deflate your air-inflatable test plugs. The pump is rated to 160 psi. It includes a 2" dia. pressure gauge, 19" long reinforced-rubber hose, and quick-disconnect coupling that fits Schrader and Presta valves.

Extension hoses attach to the hand pump to inflate and deflate test plugs at a safe distance. All are reinforced rubber (unless noted) and come furnished with a tire thread inflation valve.

Polypropylene hose also has snap hooks for a secure connection to plugs with eyebolts.

Hand Pump

5-ft. Extension Hose

Hand Pump	61505A22	$25.86
Extension Hoses		
3-ft. Rubber Hose	61505A23	12.07
5-ft. Rubber Hose	61505A24	17.00
10-ft. Rubber Hose	61505A25	21.90
20-ft. Polypropylene Hose	61505A31	108.83

Cleanout Plugs

All of these plugs fit NPT threaded cleanout fittings. When selecting a plug, if you do not know your pipe size, you can measure the OD of your existing cleanout plug or the ID of your cleanout fitting. Then, match the measurement with the cleanout plug OD/fitting ID listed.

Also Available: Wrench for installing and removing the recessed square-head plugs shown (except for 2400K62). Please ask for 2400K1.

For Pipe Size	Cleanout Plug OD/ Fitting ID	BRASS Recessed Square Head		BRASS Raised Square Head		BLACK ABS Recessed Square Head	
1 1/2"	1 7/8"	2400K52	$6.14	2400K72	$6.82	9359T21	$1.26
2"	2 23/64"	2400K53	7.21	2400K73	8.77	9359T22	1.36
2 1/2"	2 27/32"	2400K54	9.45	2400K74	12.42	9359T23	1.56
3"	3 15/32"	2400K55	10.63	2400K75	13.69	9359T24	2.06
3 1/2"	3 31/32"	2400K56	13.94	2400K76	16.98	9359T25	2.94
4"	4 15/32"	2400K57	20.01	2400K77	22.53	9359T26	3.87
4 1/2"	4 31/32"	2400K58	23.29	2400K78	24.40	9359T27	3.36
5"	5 17/32"	2400K59	27.97	2400K79	31.73	—	—
5 1/2"	6"	2400K61	44.02	2400K81	47.72	9359T28	6.94
6"	6 19/32"	2400K62	49.33	2400K82	56.82	9359T29	9.52

Use these dimensions to choose a plug.

Cleanout Plug OD

Cleanout Fitting ID

Recessed Brass Square Head

Raised Brass Square Head

Industrial Chemicals

All items are technical (industrial) grade, unless otherwise indicated as USP (United States Pharmaceutical) grade, fuel grade, or food grade. These products are compliant under all state VOC rules in effect on January 1, 2010, unless noted.

Liquid Chemicals—Cans are steel; bottles and pails are plastic. Box has a plastic bag inside.

	Size		
Acetone—99.5%	1-qt. Can	3190K16	$17.36
	1-gal. Can	3190K21	31.48
	5-gal. Can	3190K22	127.13
Denatured Ethanol, Sterile Formula (USP Grade)—70%♣	1-pt. Bottle	3190K31 ♦	19.39
	1-gal. Bottle	3190K32 ♦	99.57
Denatured Ethyl Alcohol—99%	1-qt. Can	3190K94 ♦	16.96
	1-gal. Can	3190K93 ♦	36.05
	5-gal. Can	3190K95 ♦	112.28
Ethylene Glycol—99%	1-qt. Bottle	3190K236 ♦	18.47
	1-gal. Bottle	3190K245 ♦	38.24
	5-gal. Pail	3190K246 ♦	146.69
Glycerin—99%	1-pt. Bottle	3190K816	8.02
	1-gal. Bottle	3190K711	43.18
	5-gal. Pail	3190K293	168.86
Hexane—99.8%	1-gal. Can	3190K902 ♦	23.15
Isopropyl Alcohol—99%	1-pt. Can	3190K809 ♦	11.74
	1-qt. Can	3190K811 ♦	16.74
	1-gal. Can	3190K812 ♦	40.55
	5-gal. Can	3190K822 ♦	127.02
Kerosene (Fuel Grade)	1-qt. Can	3190K481 ♦	6.36
Methanol—99%	1-qt. Can	3190K322 ♦	13.12
	1-gal. Can	3190K323 ♦	21.20
	5-gal. Can	3190K324 ♦	57.53
Methyl Ethyl Ketone (MEK)—99.5%	1-qt. Can	3190K429 ♦	14.54
	1-gal. Can	3190K431 ♦	47.57
Mineral Oil, Light Viscosity—100%	1-pt. Bottle	3190K291 ♦	13.09
	1-gal. Bottle	3190K628 ♦	43.65
	5-gal. Pail	3190K629 ♦	165.95

	Size		
Mineral Oil, Heavy Viscosity—100%	1-pt. Bottle	3190K292	$13.03
	1-gal. Bottle	3190K631	46.11
	5-gal. Pail	3190K632	181.47
Mineral Seal Oil—100%	1-pt. Can	3190K281 ♦	9.91
	1-gal. Can	3190K282 ♦	39.86
Mineral Spirits—99%	1-qt. Can	3190K751 ♦	5.76
	1-gal. Can	3190K752 ♦	16.44
	5-gal. Can	3190K753 ♦	78.82
Naphtha—99%	1-qt. Can	3190K11 ♦	6.52
	1-gal. Can	3190K12 ♦	19.08
Propylene Glycol—99.8%	1-gal. Bottle	3190K391	42.24
	5-gal. Pail	3190K491	156.69
Sodium Silicate—40%	1-gal. Bottle	3190K251	15.46
	5-gal. Pail	3190K261	69.92
Toluene—100%	1-qt. Can	3190K653 ♦	14.23
Water, Deionized—100%	1-qt. Bottle	3190K729	2.51
	1-gal. Bottle	3190K731	4.51
	5-gal. Pail	3190K741	23.23
Water, Distilled—100%	1-gal. Bottle	3190K901	5.33
	5-gal. Pail	3190K908	24.96
White Vinegar—5% Acidity (Food Grade)	1-gal. Bottle	3190K104	4.55
	5-gal. Box	3190K105	19.74
Xylene—99%	1-pt. Can	3190K289 ♦	6.68
	1-gal. Can	3190K343 ♦	23.30
	5-gal. Can	3190K344 ♦	114.68

♣ Containers are double bagged and can be used in Class 100 clean rooms. Pint bottles include trigger sprayers.
♦ This product is compliant under all state VOC rules in effect on January 1, 2011, except in California.

Dry Chemicals—Items packaged in a box or drum include a plastic liner. Pails and bottles are plastic.

	Size		
Aluminum Sulfate Crystal	25-lb. Pail	3190K831	$37.05
Bentonite	25-lb. Pail	3190K204	50.93
	50-lb. Pail	3190K205	86.39
Boric Acid, Fine Granular	5-lb. Pail	3190K319	16.97
Calcium Chloride	25-lb. Pail	3190K36	39.93
	50-lb. Pail	3190K38	64.16
Calcium Silicate	25-lb. Pail	3190K771	191.81
	50-lb. Pail	3190K772	332.02
Charcoal, Granular (Activated Carbon)	1-lb. Pail	3190K288	24.13
	5-lb. Pail	3190K522	58.82
	25-lb. Drum	3190K523	246.73
Citric Acid, Granular	5-lb. Pail	3190K624	37.87
	25-lb. Pail	3190K625	161.47
Copper Sulfate Crystal (Pentahydrate)	5-lb. Box	3190K284	36.30
	25-lb. Pail	3190K441	146.85
Hydrated Lime	25-lb. Pail	3190K507	53.89
	50-lb. Pail	3190K508	87.31
Hydrous Magnesium Silicate (White Talc)	25-lb. Pail	3190K179	28.10
	50-lb. Drum	3190K181	46.12

	Size		
Magnesium Silicate Pigment (Superfine White Talc)	25-lb. Drum	3190K177	$54.06
	50-lb. Drum	3190K178	87.38
Magnesium Sulfate (Epsom Salt)	5-lb. Pail	3190K833	15.26
	25-lb. Pail	3190K834	49.74
Pumice, Fine Powder	5-lb. Pail	3190K846	16.14
	25-lb. Pail	3190K847	42.50
Rosin, Powder	8-oz. Bottle	3190K98	25.84
Sodium Bicarbonate Powder (Bicarbonate of Soda; Baking Soda)	5-lb. Pail	3190K285	22.92
	25-lb. Pail	3190K341	52.12
	50-lb. Pail	3190K286	74.57
	100-lb. Drum	3190K351	140.39
Sodium Borate, Powder (Borax)	5-lb. Pail	3190K851	12.79
	25-lb. Pail	3190K852	42.33
Sodium Carbonate, Granular (Soda Ash)	10-lb. Box	3190K459	19.63
	25-lb. Pail	3190K461	42.89
	100-lb. Drum	3190K471	88.51
Sodium Chloride Crystal	50-lb. Pail	3190K857	44.62
Sulfur (Commercial Flour)	25-lb. Pail	3190K67	72.93
	50-lb. Pail	3190K61	136.94

Industrial Chemical Wet Wipes

Get convenient, one-step cleaning with these saturated wipes. Wipes are 6% isopropyl alcohol and also contain 94% water, deionized. They come in a resealable bag. This product is compliant under all state VOC rules in effect on October 1, 2009.

Wipe Size	Wipes/ Pkg.		Pkg.
9″ × 11″	300	7813T12	$40.95

Industrial Chemical Wet Swabs

Solution releases directly from swab. Package quantity is 10.

Small capacity swabs have a polyurethane foam tip that is 9/16″ Dia. × 1 1/16″ Lg. Overall length is 4 1/8″.

Large capacity swabs have a polyurethane foam tip that is 5/8″ Dia. × 1 1/4″ Lg. Overall length is 5 13/16″.

	Small Capacity 1.4 mL	Pkg.	Large Capacity 4.0 mL	Pkg.
Denatured Ethyl Alcohol—99%	1249T44	$6.35	1249T48	$10.46
Isopropyl Alcohol—91%	1249T54	5.83	1249T58	8.47
Water, Deionized	1249T74	5.76	1249T78	7.30

No-Residue Sensitive Equipment Cleaners

Standard 4-lb. Powder

Ideal for cleaning healthcare, lab, electronic, and pharmaceutical equipment, these water-based cleaners rinse away without leaving a residue. Suitable for manual and ultrasonic cleaning on hard, nonporous surfaces. These products are compliant under all state VOC rules in effect on October 1, 2008.

Low Foaming— Formulated to rinse and drain easily in tank and piping systems, as well as for use in spray cleaning equipment such as PC board washers. Perfect for cleaning printed circuit boards and electronic parts.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Standard				
32-oz. Liquid	12	70555T83	$16.82	$15.13
1-gal. Liquid	4	70555T84	58.21	52.34
4-lb. Powder	9	70555T81	30.28	27.23
Low Foaming				
1-gal. Liquid	4	70555T91	91.31	82.11

Credit Card Reader Cleaner

Remove dirt, magnetic oxides, and other contaminants from credit card readers with these one-time-use cards. This product is compliant under all state VOC rules in effect on October 1, 2008. Package quantity is 50.

98615T14 ..... **Each** Partial Pkg. $2.44 Full Pkg. $1.47

Multipurpose Cleaners

These products are compliant under all state VOC rules in effect on October 1, 2008.

All-Purpose Cleaners

All cleaners are water based and can be used on most surfaces.

Mint Scented— Great for washrooms, this thick cleaner deodorizes and removes soap scum and mineral deposits.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
1-gal. Lemon Scented	6	7389T14	$11.06	$9.89
5-gal. Lemon Scented	1	7389T15	———	42.48
1-gal. Unscented	4	6351T81	19.68	16.91
5-gal. Unscented	1	6351T82	———	96.02
32-oz. Mint Scented	12	6734T1	4.10	3.69
1-gal. Mint Scented	4	6734T2	13.80	12.41

Foaming Multipurpose Cleaners

Water-based foam clings to vertical surfaces for maximum cleaning and deodorizing action. For use on hard, nonporous surfaces.

32-oz. Trigger Spray— Uses phosphoric acid to quickly and effectively remove soap scum, rust, and other discolorations from acid-resistant surfaces.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
19-oz. (net wt.) Aerosol	12	6315T61	$5.02	$4.48
32-oz. Trigger Spray	12	6587T1	6.72	6.00

Bleach

Six 96-oz. bottles per package. For use on hard, nonporous surfaces.

63645T21 ..... **Each** Partial Pkg. $3.33 Full Pkg. $2.98

Ammonia

Also known as aqua ammonia, it consists of a water-based 4% ammonium hydroxide solution. For use on hard, nonporous surfaces. Four 1-gal. containers per package. *Note:* Not for use on metal surfaces.

63735T53 ..... **Each** Partial Pkg. $6.63 Full Pkg. $5.93

Rust-Stain Remover

Apply this powder to a wet or damp surface, lightly scrub, and rinse away ugly rust stains. For use on most surfaces. Twelve 24-oz. bottles per package.

7544T51 ..... **Each** Partial Pkg. $5.72 Full Pkg. $5.14

Glass Cleaners

Quickly clean hard, nonporous surfaces such as glass and mirrors with this water-based cleaner.

Concentrate— 32 ounces makes 5 gallons of cleaning solution.

Wipes— Supplied in a pop-up dispenser, wipes are 6″ × 10½″.

19-oz. Aerosol

32-oz. Trigger Spray

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Ready-to-Use				
19-oz. (net wt.) Aerosol	12	7390T23	$3.83	$3.43
32-oz. Trigger Spray	12	7390T12	4.02	3.61
1 gal.	4	7390T44	8.19	7.37
Concentrate				
32 oz.	12	7390T45	7.23	6.46
1 gal.	4	7390T46	14.34	12.89

	Pkgs./ Case		Pkg. Partial Case	Full Case
Wipes (90/Pkg.)	6	7390T51	$9.06	$8.12

Scouring Cleanser

Power out tough stains from hard, nonporous surfaces. *Powder* is abrasive. *Cream* is mildly abrasive and water based.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
21-oz. Powder	24	7419T3	$2.10	$1.88
32-oz. Cream	12	7419T5	5.20	4.68

Descaler/Delimer

Remove lime and hard-water stains with this nonfoaming, 35% phosphoric acid, water-based cleaner. Can be used on most surfaces, including metal and plastic. Four 1-gal. containers per package.

98045T25 ..... **Each** Partial Pkg. $14.57 Full Pkg. $12.86

Scale Removers

		Each
Liquid		
1 gal.	3385K14	$25.71
5 gal.	3385K16	84.06
Powder		
10 lb.	3677K1	$56.75
50 lb.	3677K2	261.57

Mold and Mildew Stain Remover

Clinging gel eliminates mold stains and can be used on most surfaces, including grout, concrete, and brick. Twelve 32-oz. trigger spray bottles per package.

7989T5 ..... **Each** Partial Pkg. $7.36 Full Pkg. $6.65

Disinfectants

For use on hard, nonporous surfaces. These products are compliant under all state VOC rules in effect on October 1, 2008.

Lysol Disinfectant Spray

Original scent. Twelve 19-oz. (net wt.) aerosol cans per package.

71155T34 ..... **Each** Partial Pkg. $8.75 Full Pkg. $7.80

Lemon-Scented Cleaner/Disinfectant/Deodorizer

Effective against dirt, grease, and oils, this water-based cleaner also kills bacteria and controls odors. Four 1-gal. bottles per package.

7406T6 ..... **Each** Partial Pkg. $12.55 Full Pkg. $11.29

Fast-Acting and Long-Lasting Disinfectant

This safe and odorless formula kills germs in as little as 30 seconds and provides 24-hour residual protection.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
32-oz. Trigger Spray	12	6543T5	$14.96	$13.60
1 gal.	4	6543T6	37.15	34.29

Foaming Cleaner/Disinfectant/Deodorizer

Water-based formula clings to surfaces, killing germs and controlling the growth of mold and mildew. Twelve 17-oz. (net wt.) aerosol cans per package.

7450T25 ..... **Each** Partial Pkg. $4.84 Full Pkg. $4.36

Simple Green d Pro 3 Cleaner/Disinfectant

Clean and disinfect with this water-based formula.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
1 gal.	6	7345T11	$20.05	$18.00
5 gal.	1	7345T12	———	87.13

Disinfectant Wipes

Wipes are packaged in a pop-up dispenser.

	Pkgs./ Case		Pkg. Partial Case	Full Case
7″ × 7⅞″ Wipes (35/Pkg.)	12	7198K12	$6.21	$5.53

Static Neutralizers and Cleaners

All are water based. These products are compliant under all state VOC rules in effect on October 1, 2008.

Static Neutralizer— Prevents dust and dirt buildup caused by static charges while protecting electronic equipment from damage. Neutralizer is nonstaining and for use on most surfaces such as carpet, fabric, plastic, glass, and floors.

Antistatic Cleaner— Wards off static buildup by leaving an antistatic agent behind when you clean. This cleaner removes oils, grease, and dirt. Safe on plastics and other hard, nonporous surfaces.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Static Neutralizer				
32-oz. Trigger Spray	12	7090T37	$9.82	$8.78
1 gal.	4	7090T38	23.48	21.00
Antistatic Cleaner				
32-oz. Trigger Spray	12	98265T72	15.26	13.73
1 gal.	1	98265T73	———	36.05

Cleaners and Degreasers

These products are compliant under all state VOC rules in effect on October 1, 2009.

Multipurpose Cleaner/Degreaser

Safe for most surfaces, it's water based and includes a rust inhibitor.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
28 oz. Trigger Spray	12	34645K83	$12.55	$11.23
1 gal.	4	34645K85	38.74	34.80
5 gal.	1	34645K87	____	151.80

Citrus-Based Cleaner/Degreasers

Cleaners/degreasers are formulated with orange citrus solvents and are water based. For use on most surfaces, unless otherwise indicated.

Aerosol is for use on hard, nonporous surfaces.

Wipes cut through oil and grease. Each wipe measures 10½″×12¼″ and one side is slightly abrasive. For use on hard, nonporous surfaces.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
19-oz. (net wt.) Aerosol	12	74135T6	$5.56	$4.97
32 oz. Trigger Spray	12	7429T51	12.76	11.49
1 gal.	4	7429T13	35.44	31.90
5 gal.	1	7429T14	____	139.53
55 gal.	1	7429T15	____	1,075.70
Wipes (30/Pkg.)	6	70265T61	12.00	10.73

Citrus-Based Cleaner/Degreasers with Hydrogen Peroxide

Our most powerful water-based cleaner combines the natural cleaning ability of orange oil with the strength of hydrogen peroxide. Can be used on most surfaces.

Wipes are supplied in a center-pull dispenser and measure 7″×9″.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32 oz. Trigger Spray	6	6691T1	$6.50	$5.81
1 gal.	4	6691T2	26.17	23.45
Wipes (35/Pkg.)	6	6691T5	10.91	9.83

Foaming Citrus-Scented Cleaner/Degreaser

Water-based foam clings to vertical surfaces for maximum cleaning and deodorizing action. For use on hard, nonporous surfaces. Twelve 16-oz. (net wt.) aerosol cans per package. *Note:* Not for use on drywall or latex-painted surfaces.

3259K84 ..... **Each** Partial Pkg. $9.04 Full Pkg. $8.09

Steam Cleaner and Pressure-Washer Cleaner/Degreaser

Cut quickly through grease, oil, and heavy dirt. Cleaner is water based and has built-in corrosion inhibitors. Rinses clean without leaving a residue. For use on hard, nonporous surfaces.

		Each
5 gal.	3219K21	$51.87
55 gal.	3219K23	399.29

Fast Dry Cleaner/Degreaser

Heavy duty formula evaporates fast with minimal residue and is solvent based. For use on hard, nonporous surfaces.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
14-oz. (net wt.) Aerosol	12	3223K5	$13.12	$11.74
1 gal.	4	3223K6	63.80	57.09

Simple Green Cleaner/Degreasers

24 oz. *1 gal.*

Simple Green is translucent green with a sassafras fragrance.

Simple Green Crystal is clear and fragrance-free. *Wipes* are supplied in a pop-up dispenser; 75 wipes per dispenser. Each wipe measures 10″×12″ and one side is slightly abrasive.

Note: Not for use on wood, glass, or mirrors.

	Pkg. Qty.	Simple Green	Each Partial Pkg.	Each Full Pkg.	Simple Green Crystal	Each Partial Pkg.	Each Full Pkg.
24 oz.■	12	7428T11	$5.52	$5.23	7360T11	$7.05	$6.30
1 gal.	6	7428T12	14.13	13.37	7360T12	17.98	16.09
5 gal.	1	7428T13	____	63.71	7360T13	____	74.96
15 gal.	1	7428T14	____	179.60	7360T14	____	214.46
55 gal.	1	7428T15	____	497.29	7360T15	____	598.04
Wipes	6	____	____	____	7360T17	15.55	13.12

■ Trigger spray.

Soybean-Based Cleaner/Degreaser

All-natural soybean-based cleaner leaves a rust-preventing coating. Safe for most surfaces.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1 gal.	6	7403T2	$23.79	$21.39

Microbial Grease Digester

Microbes consume and destroy grease and oil. Water based. For use on hard, nonporous surfaces.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32 oz. Trigger Spray	12	6530T3	$14.90	$13.42
1 gal.	6	6530T5	27.90	25.14

Trisodium Phosphate Cleaner

Also known as TSP, this heavy duty, powdered cleaner/degreaser removes heavy soils, dirt, and grease from almost all surfaces.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1 lb.	12	4604T528	$5.31	$4.78
5 lb.	6	4604T529	22.54	20.28
25 lb.	1	4604T531	____	79.80
100 lb.	1	4604T554	____	199.74

Brake Cleaner

This solvent-based cleaner removes brake fluid, grease, and oil. Dries fast without leaving a residue. Works best on hard, nonporous surfaces.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
14-oz. (net wt.) Aerosol	12	3131K1	$4.72	$4.20
1 gal.	6	3131K2	33.48	29.95

Carburetor Cleaner

Solvent-based formula removes dirt, gum, and varnish deposits that build up on carburetors, heat valves, and automatic chokes. Twelve 14-oz. (net wt.) aerosol cans per package. *Note:* Use on metal surfaces only.

8139T5 ..... **Each** Partial Pkg. $6.55 Full Pkg. $5.88

Graffiti Removers and Barriers

Graffiti removers are for use on most surfaces. These products are compliant under all state VOC rules in effect on October 1, 2008.

Aerosol is solvent based and clings to vertical surfaces for maximum penetration. *Note:* May remove paint and varnish from the original surface.

Trigger spray is water based. *Note:* May remove latex paint from the original surface. **To Order:** Please specify pen, ink, and marker remover or spray paint remover.

Wipes are nonscratching and solvent based for wiping away graffiti in one step without damaging the original surface. Wipes are supplied in a center-pull dispenser and measure 10½″×12¼″.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
13-oz. (net wt.) Aerosol	12	6360T21	$6.74	$6.05
22-oz. Trigger Spray	6	6360T24	9.23	8.30
Wipes (30/Pkg.)	6	6360T27	14.00	12.60

Graffiti barrier coating sprays or brushes onto most surfaces to form an invisible, water-based barrier against graffiti. When graffiti appears, simply remove with a high-pressure or hot-water pressure washer, leaving the original surface untouched. Reapply coating after cleaning.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32 oz.	12	7404T1	$13.11	$11.80
1 gal.	4	7404T2	34.81	31.11

Metal and Plastic Polishes and Cleaners

These products are compliant under all state VOC rules in effect on October 1, 2009.

All-Surface Polishes/Cleaners/Protectants

Clean, polish, and protect aluminum, brass, copper, chrome, stainless steel, fiberglass, and plexiglass with these polishes. They remove oxidation, tarnish, and surface rust without scratching or dulling.

Solvent-based creams not for use on painted surfaces.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Solvent-Based Creams				
4-oz. Tube	12	70995T4	$6.75	$6.05
1.15-lb. Can	6	70995T6	29.99	26.99
Water-Based Paste				
16-oz. Can	6	7398T24	22.37	19.89

Metal Polishing/Cleaning Wipes

Avoid messy polishing creams and liquids with these moistened wipes. Nonscratching and solvent based, these wipes clean and polish aluminum, brass, copper, chrome, bronze, stainless steel, and plexiglass. Wipes measure 8″×11″.

	Pkg./ Case		Pkg. Partial Case	Pkg. Full Case
Wipes (18/Pkg.)	12	6852T1	$11.05	$9.87

Metal Polish Wadding

Treated cotton wadding cloth is solvent based, nonscratching, and cleans and shines all metals. Twelve 5-oz. cans per package.

63325T42 ..... **Each** Partial Pkg. $6.08 Full Pkg. $5.46

Aluminum Brightener/Cleaner

Quickly brighten and clean dull aluminum finishes with this foaming, water-based product. Good for any acid-resistant surface. Product can be sprayed or mopped and requires no scrubbing. Four 1-gal. containers per package.

7986T1 ..... **Each** Partial Pkg. $22.76 Full Pkg. $20.32

Vinyl, Leather, and Rubber Protectant

This silicone-based protectant prevents UV damage and cracking, repels dirt and grime, restores, and provides long-term protection for vinyl, leather, and rubber. Twelve 32-oz. trigger spray bottles per package.

6531T2 ..... **Each** Partial Pkg. $10.21 Full Pkg. $9.15

Stainless Steel Polishes/Cleaners

Citrus-based polish/cleaner contains d-limonene to preserve the high luster of stainless steel. It forms a finish that resists dirt, oil, and water spots. Water based.

Foaming polish/cleaner clings to vertical surfaces for maximum penetration and is water based.

Polishing wipes clean, polish, and brighten. They also prevent water marks and corrosion. Wipes are solvent based, supplied in a center-pull dispenser, and measure 9¾″×10½″.

Heavy duty cleaners fully restore the corrosion resistance of stainless steel. Powerful, acid-based products remove rust, stains, slag, scale, and tarnish.

Sterile clean room polish/cleaner is for use in Class 100 clean rooms and leaves a residue-free finish. Made with United States Pharmaceutical grade mineral oil.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Citrus-Based Polish/Cleaner				
18-oz. (net wt.) Aerosol	12	6781T5	$7.07	$6.32
Foaming Polish/Cleaner				
16-oz. (net wt.) Aerosol	12	7203T11	6.35	5.71
Polishing Wipes (30/Pkg.)	6	6878T31	13.55	12.13
Heavy Duty Cleaners				
1-gal. Liquid	1	3373K11	____	66.95
1-gal. Paste	1	3373K21	____	112.12
Sterile Clean Room Polish/Cleaner				
8-oz. (net wt.) Aerosol	24	7456T1	25.63	22.92

Plastic Polish/Cleaner/Restorer

Make plastics such as acrylic and fiberglass look new again with these water-based products.

Polish/cleaner cleans, shines, and protects plastics without scratching. Also repels dust and eliminates static. Comes in a pump spray bottle. Not for use on plastics that have an anti-glare coating.

Scratch removers come in a squeeze bottle. *Fine scratch remover* removes fine scratches, haziness, and abrasions from all plastic surfaces. *Heavy scratch remover* repairs deep scratches and abrasions. Requires fine scratch remover for final finishing. Not for use on coated plastics, polycarbonate, or eyeglass lenses.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
8-oz. Polish/Cleaner	24	6335T91	$4.83	$4.34
8-oz. Fine Scratch Remover	24	6335T92	7.03	6.31
8-oz. Heavy Scratch Remover	24	6335T93	8.41	7.54

Paint Polishing and Refinishing System

Ideal for cars, machines, and equipment, this three-part system makes faded, painted metal surfaces look like new. These products are compliant under all state VOC rules in effect on October 1, 2008.

First, apply the ***rubbing compound*** to remove minor scratches, imperfections, and oxidation. Then use the ***glaze*** to eliminate any swirl marks made by the rubbing compound (glaze can be used with all paint colors). Finally, apply a clear coat of ***wax*** for a durable, protective, high-gloss finish.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32-oz. Rubbing Compound	12	95805T11	$28.68	$25.64
32-oz. Glaze	12	95805T32	43.84	39.21
32-oz. Liquid Wax	12	95805T51	22.00	19.68

Floor Strippers, Finishes, and Cleaners

For use on hard, nonporous surfaces, unless otherwise indicated. These products are compliant under all state VOC rules in effect on October 1, 2008.

Floor Finish Stripper

Quickly strip multiple layers of acrylic and urethane floor finish. Formula is water based.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1 gal.	4	7093T22	$14.16	$12.46
5 gal.	1	7093T26	____	59.09

Baseboard Stripper

Clings to baseboards and wall tile to remove soil and wax buildup. Stripper is water based and does not leave a residue. Not for use on painted surfaces. Twelve 16-oz. (net wt.) aerosol cans per package.

32975K9 ..... **Each** Partial Pkg. $5.80 Full Pkg. $5.31

Acrylic Floor Finish and Finish/Sealer

These tough finishes have excellent detergent resistance. They are water based and dry to a clear, hard, high gloss film. Recommended for vinyl, linoleum, terrazzo, and sealed wood surfaces. Coverage is up to 2,000 sq. ft. per gallon.

Finish/sealer provides one-step finishing and sealing. It can be used on concrete and dries to a slightly thicker coating.

	Pkg. Qty.	***Finish***	***Finish*** Each	***Finish/Sealer***	***Finish/Sealer*** Each
1 gal.	6	7108T11★	$24.14	7108T21★	$22.33
5 gal.	1	7108T12	112.65	7108T22	99.22
55 gal.	1	7108T13	1,030.53	7108T23	941.44

★ Prices are 10% lower when you buy in quantities of six.

Lemon-Scented Floor Cleaner

This water-based, neutral pH cleaner won't dull or damage your floor's finish. No rinsing required.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1 gal.	4	6625T5	$11.88	$10.69
5 gal.	1	6625T7	____	39.76

Buffing Spray

Remove scuffs and restore your floor's high gloss acrylic finish with this water-based buffing spray. Can also be used with high-speed equipment such as burnishers.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32-oz. Trigger Spray	12	3704T63	$5.21	$4.69
1 gal.	4	3704T64	14.79	13.31

Floor Mastic/Adhesive Remover

This soybean-based adhesive remover is safe, easy to use, and virtually odorless. Remover evaporates slowly, allowing it to work for up to 24 hours. Coverage is up to 200 sq. ft. per gallon.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32 oz.	12	7663T11	$16.85	$14.27
1 gal.	6	7663T2	36.34	30.80

Adhesive and Silicone Removers

All are solvent based. These products are compliant under all state VOC rules in effect on October 1, 2009.

Adhesive, Tape, and Gum Remover— Works on oil-based residue on all hard surfaces, painted surfaces, vinyl, carpet, and fabric.

Citrus-Based Adhesive, Label, and Gum Remover— Utilizes the power of citrus to remove stickers, labels, tape residue, and gum from metal, plastic, cement, and wood. It even works on carpets, upholstery, and painted surfaces. For oil- and solvent-based residue.

Heavy Duty Specialty Adhesive Remover— The choice for difficult substances such as silicones and uncured epoxies and urethanes. Remove these stubborn adhesives from hard, nonporous surfaces such as metal, plastic, and glass.

Silicone Remover— Removes silicone sealants, adhesives, and silicone-based greases, protectants, and mold release agents. Safe for use on plastics, fiberglass, metals, and painted surfaces.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Adhesive, Tape, and Gum Remover				
9.5-oz. (net wt.) Aerosol	6	74025T81	$8.07	$7.24
22-oz. Trigger Spray	6	74025T82	11.32	10.16
Citrus-Based Adhesive, Label, and Gum Remover				
8-oz. Bottle	12	7984T11	5.08	4.52
32-oz. Bottle	6	7984T13	9.77	8.70
1-gal. Bottle	4	7984T15	39.60	35.54
Heavy Duty Specialty Adhesive Remover				
32-oz. Trigger Spray	12	6365T11	29.10	26.11
Silicone Remover				
10-oz. (net wt.) Aerosol	12	8460T3	15.12	13.60

Dishwashing Liquid and Powder

All are phosphorus free and compliant under all state VOC rules in effect on October 1, 2008.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Manual Dishwashing Liquid— *Lemon scented*				
32 oz.	12	98365T89	$6.01	$5.36
1 gal.	4	98365T91	15.45	13.96
Automatic Dishwashing Powder				
1.4-oz. Packet	50	98365T93	**Pkg.**	$16.34

Asphalt Remover

Easily remove asphalt, top coatings, and sealers from tools and equipment with this soybean-based cleaner. Rinses easily with water. For use on hard, nonporous surfaces. These products are compliant under all state VOC rules in effect on October 1, 2008.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32-oz. Trigger Spray	12	6474T5	$16.85	$15.17
1 gal.	6	6474T6	35.04	31.57

Oven Cleaner

Water-based cleaner clings to surfaces to dissolve baked-on grease and food deposits. For use on hard, nonporous surfaces such as ovens and grills. This product is compliant under all state VOC rules in effect on October 1, 2008. Twelve 18-oz. (net wt.) aerosol cans per package.

7141T41 ..... **Each** Partial Pkg. $5.34 Full Pkg. $4.82

Lemon-Scented Furniture Polish

This water-based polish cleans furniture surfaces, repels dust, and fills in fine scratches. For use on hard, nonporous surfaces. This product is compliant under all state VOC rules in effect on October 1, 2008. Twelve 17-oz. (net wt.) aerosol cans per package.

7275T32 ..... **Each** Partial Pkg. $5.08 Full Pkg. $4.56

Liquid Laundry Detergent

Use 3-4 oz. for 50 lbs. of laundry. Four 1-gal. bottles per package. This product is compliant under all state VOC rules in effect on October 1, 2008.

7738T1 ..... **Each** Partial Pkg. $20.39 Full Pkg. $18.20

Toilet Bowl and Urinal Deodorizers and Neutralizers

These products are compliant under all state VOC rules in effect on October 1, 2008.

Automatic Toilet Bowl Cleaner

Clean and deodorize with every flush with this in-tank, water-based cleaner; bluing agent is released with every flush. Comes in a 9-oz. container that lasts for approximately 2,000 flushes. Twelve containers per package.

7072T11 ..... **Each** Partial Pkg. $2.83 Full Pkg. $2.55

Toilet Bowl and Urinal Cleaners

Keep toilet bowls and urinals free of rust, lime, and uric acid buildup with these deodorizing cleaners. For use on hard, nonporous surfaces.

Standard Cleaner— Environmentally friendly, water-based cleaner contains citric acid and cedar oil.

Heavy Duty Cleaner— Contains 24% hydrochloric acid to handle your toughest jobs. Cleaner is water based and has a wintergreen scent. *Note:* Use on acid-resistant surfaces only.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard Cleaner				
24 oz.	12	98575T89	$3.62	$3.23
1 gal.	4	98575T92	13.05	11.66
Heavy Duty Cleaner				
32 oz.	12	7518T11	3.84	3.45

Toilet and Urinal Odor-Neutralizing Drip System

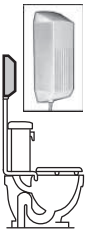

Mount the plastic dispenser above your toilet or urinal and let the continuous, controlled flow of odor neutralizer keep them smelling fresh.

Dispenser includes a dispenser bottle, 4 ft. of 3/8″ dia. plastic tubing, wicking to control flow of neutralizer, and mounting hardware. It measures 12″ Ht. × 4 1/2″ Wd. × 3 1/2″ Dp. Color is white.

Liquid (sold separately) is water based and provides one year of odor control. Comes with 13 replacement wicks. **To Order:** Please specify fragrance: cherry, citrus-mint, or orange.

		1-3	4-Up
Dispenser	70525T56	$25.95	$23.07
Liquid	70525T55	34.33	30.90
Repl. Dispenser Bottle	70525T61	3.15	2.80

Toilet Bowl Odor-Control Blocks

Cleaner/ Deodorizer

Hang over toilet rim to keep toilets fresh for an average of 30 days.

Deodorizer block has a cherry fragrance.

Cleaner/deodorizer block releases detergent when water flows through it and has a spice fragrance.

	Lg. × Wd.	Pkg. Qty.		Pkg.
Deodorizer Block	3 1/4″ × 3″	12	7560T14	$24.00
Cleaner/Deodorizer Block	5 1/2″ × 2 1/2″	12	7560T16	32.53

Urinal Odor-Control Blocks and Tablets

Deodorizer block lasts up to 30 days. Has an evergreen fragrance.

Odor-neutralizing tablets contain enzymes designed to eliminate odor and keep your drain lines flowing freely. Tablets are odorless. Use one per week or two per week in high traffic areas and automatic flush systems.

	Dia. × Ht.	Pkg. Qty.		Pkg.
Deodorizer Block	2 3/4″ × 1/2″	12	7411T12	$14.69
Odor-Neutralizing Tablet	1 1/2″ × 1/2″	24	70285T61	12.37
Odor-Neutralizing Tablet	1 1/2″ × 1/2″	100	70285T62	40.43

Urinal Screens

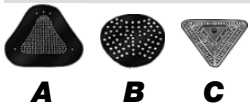

A ***B*** ***C***

Prevent debris from getting into your plumbing.

Style A is blue vinyl and is the largest size screen we offer; each screen comes with two removal tools.

Style B is blue vinyl with a built-in deodorizing floral fragrance that lasts an average of 30 days.

Style C is clear plastic. It has an integral spice-scented odor-neutralizing block that releases detergent when water flows through it. Freshens an average of 30 days.

	Lg. × Wd.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
A Standard	11 3/8″ × 10 3/4″	10	2767K3	$5.21	$4.66
B Deodorizer	8″ × 7 1/2″	12	3055K12	1.83	1.62
C Odor Neutralizing	7″ × 7″	12	3055K14	3.05	2.71

Deodorizers and Neutralizers

These products are compliant under all state VOC rules in effect on October 1, 2008.

Deodorizers

***Clinging Deodorizer Gel*—**Clings to horizontal and vertical surfaces to freshen air in small areas for 24 to 36 hours. Gel evaporates over that period of time. Eighteen 8-oz. pump spray bottles per package.

To Order: Please specify fragrance: apple or fresh.

6414T1 ..... **Each** Partial Pkg. $7.25 Full Pkg. $6.44

***Table-Top Wick Deodorizer*—**Simply remove the cap and pull up the wick to freshen areas with this solvent-based deodorizer. The 1.5-oz. bottle freshens 150-300 sq. feet and lasts up to 45 days; the 4-oz. bottle freshens 400-800 sq. ft. and lasts up to 90 days.

To Order: Please specify fragrance: cherry (except for the 4-oz. bottle), citrus, or fruit.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
1.5 oz.	12	**63315T51**	$2.55	$2.27
4 oz.	12	**63315T61**	4.82	4.30

***Wall-Mount Wick Deodorizer*—**Open the top of the fragrance cartridge and depress a tab to begin filling the wick with liquid and the air with freshness. Provides 625 sq. ft. of coverage.

Dispenser is 7″ Ht.×2¾″ Wd.×2½″ Dp. and is made of white, ABS plastic. Mounting hardware is included. *Fragrance cartridge* (sold separately) lasts up to 60 days. **To Order:** Please specify fragrance: citrus, fresh, or floral.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Dispenser	1	**6398T51**	____	$6.13
Fragrance Cartridge	12	**6398T41**	$12.32	11.00

Stick-Up Deodorizer

Simply stick this 2⅝″ dia. deodorizer in a small, confined area such as a bathroom or closet and have fresh smelling air for up to four weeks. Deodorizer has a plastic case with a self-adhesive back and has a citrus fragrance. Package quantity is 12.

71005T73 ..... **Each** Partial Pkg. $3.39 Full Pkg. $3.01

Spray Odor Neutralizers

Don't just mask odors, destroy them at their source.

Pump spray is available in two fragrances. **To Order:** Please specify fragrance: citrus or orange.

Aerosol is a solvent-based spray that is effective for hours. **To Order:** Please specify fragrance: apple or cinnamon.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
7-oz. Pump Spray	12	**62885T1**	$8.34	$7.47
10-oz. (net wt.) Aerosol	12	**6131T6**	5.79	5.19

Aerosol-Neutralizing Sanitizer

Attack and reduce airborne bacteria with this water-based air sanitizer. Also deodorizes and leaves a fresh fragrance. Twelve 10-oz. (net wt.) aerosol cans per package.

6753T2 ..... **Each** Partial Pkg. $9.69 Full Pkg. $8.67

Odor-Neutralizing Sponge

Just remove the lid to start absorbing and eliminating odors with this paste-like sponge. Sponge has a slight soap fragrance that quickly dissipates.

	Coverage, sq. ft.	Life Span, weeks	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
½ lb.	200-300	4-6	24	**65215T1**	$6.30	$5.63
1 lb.	200-300	12	12	**65215T2**	11.40	10.17
4 lbs.	2,400	16-24	4	**65215T3**	35.50	31.70

Powered Deodorizers and Neutralizers

These products are compliant under all state VOC rules in effect on October 1, 2008.

Table-Top Fan-Flow Deodorizer

Effectively deodorizes areas from 150-200 sq. ft.

Dispenser is 3¾″ Ht.×4½″ Wd.×3″ Dp. and is made of white plastic. Requires one D-cell battery (sold separately).

Fragrance cartridge (sold separately) lasts up to 30 days. **To Order:** Please specify fragrance: apple or citrus.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Dispenser	1	**6388T1**	____	$24.98
Fragrance Cartridge	24	**6388T2**	$6.80	6.12
D-Cell Battery	1	**65605T74**	____	1.59

Light-Activated Wall-Mount Fan-Flow Deodorizer

This wall-mounted deodorizer runs when the room light is on. Made of plastic, it operates on two D-cell batteries (sold separately). Color is white.

Dispenser provides 400-500 sq. ft. of coverage and is 9⅝″ Ht.×3⅜″ Wd.×3¾″ Dp. Mounting hardware included.

Fragrance cartridge (sold separately) lasts approximately 30 days. **To Order:** Please specify fragrance: apple, cinnamon, or citrus.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Dispenser	1	**7194T3**	____	$39.54
Fragrance Cartridge	12	**7194T5**	$5.68	5.09
D-Cell Battery	1	**65605T74**	____	1.59

Automatic Wall-Mount Aerosol Neutralizer for Smaller Rooms

Automatically neutralize odor with a periodic, fine aerosol mist.

Dispenser is programmable and recommended for areas up to 200 sq. ft. It is 7″ Ht.×2½″ Wd.×3″ Dp., made of white plastic, and requires two C-cell batteries (sold separately). Fragrance can be released at 15, 30, or 45 minute intervals. Also includes LED low-battery and low-cartridge indicators. Mounting hardware included.

Fragrance cartridge (sold separately) lasts up to 45 days. **To Order:** Please specify fragrance: cinnamon, citrus, or mango.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Dispenser	1	**6363T1**	____	$43.73
Fragrance Cartridge	12	**6363T2**	$6.86	6.15
C-Cell Battery	1	**65605T73**	____	1.50

Automatic Wall-Mount Aerosol Neutralizers for Larger Rooms

A periodic, fine aerosol mist automatically neutralizes odor.

Dispensers are recommended for areas from 600-750 sq. ft. They are 9¼″ Ht.×4″ Wd.×3″ Dp., made of white plastic, and require two C-cell batteries (sold separately). Mounting hardware included.

Nonprogrammable dispenser releases fragrance every 15 minutes. *Programmable dispenser* can be set to release fragrance every 7½, 15, or 30 minutes. Also has start/stop settings and LED low-battery and low-cartridge indicators.

Cartridges last up to 30 days. *Fragrance cartridges* come in four fragrances. **To Order:** Please specify fragrance: cherry, citrus, floral, or mango.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Dispensers				
Nonprogrammable	1	**6363T12**	____	$37.16
Programmable	1	**6363T44**	____	42.74
Cartridges				
Fragrance	12	**6363T65**	$6.61	5.92
Spray Sanitizer	12	**6363T41**	5.16	4.73
Insecticide	6	**6363T29**	17.89	16.10
C-Cell Battery	1	**65605T73**	____	1.50

Carpet and Upholstery Cleaners and Neutralizers

These products are compliant under all state VOC rules in effect on October 1, 2008.

***Carpet and Upholstery Stain Remover*—**This water-based cleaner and deodorizer lifts stains on contact without leaving a soapy residue.

***Odor-Neutralizing Carpet and Fabric Spray*—**Eliminate odors from carpet and fabric with this water-based spray; has a fresh fragrance.

***3M Scotchgard Aerosol Protectors*—**Repel spills and block stains without changing the look of your rugs, carpeting, fabric, or upholstery.

Rug and carpet protector is water based.

Fabric and upholstery protector is solvent based.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Carpet and Upholstery Stain Remover				
16 oz.	12	**7106T1**	$6.08	$5.48
32 oz.	12	**7106T2**	8.81	7.93
Odor-Neutralizing Carpet and Fabric Spray				
32-oz. Trigger Spray	6	**6512T21**	11.28	10.12
3M Scotchgard Rug and Carpet Protector				
14-oz. (net wt.) Aerosol	6	**71315K51**	$10.99	$9.87
3M Scotchgard Fabric and Upholstery Protector				
10-oz. (net wt.) Aerosol	12	**71315K11**	10.60	9.54

Sponges and Scouring Pads

Choose-a-Color Sponges

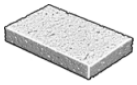

Reduce the possibility of cross contamination by designating a different color sponge for specific jobs or locations in your facility. **To Order:** Please specify color: blue, green, pink, or yellow.

Size	Sponges/ Pkg.		Pkg. 1-11	Pkg. 12-Up
3½″×6″×1″	6	7356T1	$10.11	$9.08
4¼″×6″×1½″	6	7356T21	20.91	18.77
4¼″×7″×2″	3	7356T31	15.13	13.73

Mildew-Resistant Sponges

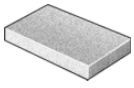

Always soft, pliable, and absorbent, these sponges won't dry out or mildew. Color is yellow.

Size	Sponges/ Pkg.		Pkg. 1-11	Pkg. 12-Up
3½″×6″×1″	6	7309T1	$4.76	$4.25
4¼″×6″×1½″	6	7309T2	7.03	6.31
4¼″×7″×1½″	6	7309T3	9.83	8.84

Lint-Free Sponge

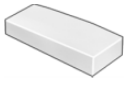

This completely lint-free sponge can hold up to 10 times more liquid than standard sponges. It resists mildew, grease, oil, detergents, and most solvents. Color is white. Each sponge is individually wrapped.

Size		Each 1-5	Each 6-Up
3″×6¾″×1⅜″	7271T32	$5.57	$5.00

Natural Sponges

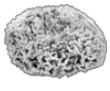

Nature's original sponge has excellent water absorption. Sponges are sized when wet. Color is tan.

Approx. Dia.		Each 1-11	Each 12-Up
7″	7362T16	$15.14	$13.49
8″	7362T15	20.14	17.95
9″	7362T14	24.05	21.45

Eraser Sponge

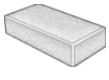

No need for special cleaners—just add water and these sponges are ready to remove ground-in dirt from walls, doors, floors, and more. Clean with simple rubbing action. Sponges are reusable; rinse after each use and let air dry. Color is white.

Size	Sponges/ Pkg.		Pkg. 1-6	Pkg. 7-Up
2⅜″×4 11/16″×1″	6	9361T11	$7.32	$6.57

Scratch-Free Scouring Block

Aggressive cleaning without scratching, this scouring block is made of a chemical-resistant foam block with a 10″ long wood handle. Color is yellow.

Size		Each 1-23	Each 24-Up
2″×3″×4″	7278T11	$3.14	$2.86

Mesh Scrubbing and Scouring Sponge

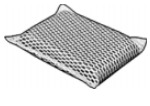

Covered in durable mesh, this foam sponge scrubs and scours without scratching. Mesh is white and sponge is blue.

Size	Sponges/ Pkg.		Pkg. 1-5	Pkg. 6-Up
5½″×3¼″×1″	6	73055T25	$7.71	$6.92

Scouring Sponges

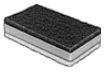

Double Faced

Combine the aggressive cleaning action of a scouring pad with the absorbency of a sponge.

Single-faced sponges consist of a scouring pad on one side and a sponge on the other. *Light-abrasion* sponges have a yellow, nonscratching pad with a beige sponge. *Medium-abrasion* sponges have a white pad with a yellow sponge. *Heavy-abrasion* sponges have a green pad with a yellow sponge.

Double-faced sponge has a yellow foam sponge between a light-abrasive, nonscratching, white scouring pad on one side and a heavy-abrasive, green pad on the other.

Abrasion	Size	Sponges/ Pkg.	Pkgs./ Case		Pkg. ♦
Single-Faced Sponges					
Light	3″ ×5″×1¾″	5	8	7288T11	$6.59
Medium	3½″×6″× ⅞″	5	8	7288T12	8.95
Heavy	3½″×6″× ⅞″	5	8	7288T13	9.37
Double-Faced Sponge					
Light/Heavy	3″ ×5″×1″	2	24	7272T11	2.09

♦ Prices are 10% lower when purchased in full-case quantities.

Scouring Pads

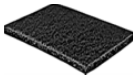

Scrub away heavy grease and grime. *Light-abrasion* pads are white. *Medium-* and *heavy-abrasion* pads are green.

Abrasion	Size	Pads/ Pkg.		Pkg. 1-5	Pkg. 6-Up
Light	6″×9″×⅜″	10	6377T6	$4.76	$4.28
Medium	6″×9″×¼″	10	6377T12	4.80	4.28
Heavy	6″×9″×¼″	10	6377T14	7.19	6.46

Scouring Pads with Choose-a-Color Holders

Hand Held

With 59″ Swivel Handle

Easily scrub any area with these pads. Pads attach to the holder and measure 4½″×10″×13/16″. *Scrubber with swivel handle* has a 360° swivel handle socket with threaded 59″ fiberglass handle. **To Order:** Please specify pad abrasion (light, medium, or heavy) and holder color (blue, green, red, white, or yellow).

		Each
Complete Scrubbers (Pad and Holder)		
Hand Held	71025T21	$27.23
With 59″ Swivel Handle	71025T22	59.77
Replacement Parts		
Pad	71025T43▲	2.62
Hand-Held Pad Holder	71025T26	23.73
59″ Swivel Handle and Pad Holder	71025T27	57.67

▲ Prices are 10% lower when purchased in quantities of 10.

Steel Wool Soap Pad

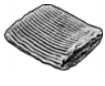

Get heavy scrubbing action with these soap-saturated scouring pads. Color is gray and pink.

Size	Pads/ Pkg.		Pkg. 1-11	Pkg. 12-Up
3½″×3¾″×½″	10	7078T14	$6.38	$5.58

Metal Scouring Scrubbers

Metal scrubbers are flexible and corrosion resistant for your toughest cleaning jobs. Scrubbers are 4½″ Dia.×2¼″ Thick.

Abrasion	Material	Scrubbers/ Pkg.		Pkg. 1-11	Pkg. 12-Up
Light	Brass	6	7361T11	$13.42	$12.00
Heavy	Stainless Steel	6	7361T13	7.26	6.49

Pipe Brush

With Optional Pole

Uniquely shaped brush wraps around overhead pipes and other curved surfaces to remove dust and dirt. Bristles are a soft horsehair and medium-firm, chemical-resistant plastic combination. Brush length is 11″; overall length is 16″.

For extended reach, simply attach one of the optional telescoping poles. The *2- to 4-ft.* model is aluminum, and the *6- to 11-ft.* model has a fiberglass outer handle and an adjustable aluminum inner extension pole.

Brush	73115T1	$22.01
2- to 4-ft. Telescoping Pole	73115T2	27.72
6- to 11-ft. Telescoping Pole	7743T63	31.18

High-Temperature Scrub Brushes

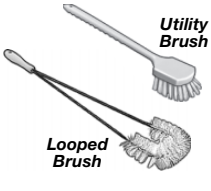

Utility Brush

Looped Brush

Bristles are smooth, medium-firm, friction-resistant PFA and withstand temperatures up to 500°F. *Looped brush* has a twisted metal stem with a plastic handle; *utility brush* has a plastic block and handle.

	Brush Size	Bristle Lg.	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Looped Brush	4¼″×5″	1″	24″	6	9209T4	$13.42	$48.43
Utility Brush	4″ ×4″	1½″	20″	12	9209T6	86.89	77.96

Scrub Brushes

Our most economical scrub brushes. Block material is plastic, unless noted. ***Styles 3, 6, 7,*** and ***9*** have a scraper on one end. You can hold ***Style 9*** in your hand or attach the optional fiberglass handle.

Brush Size	Bristle Lg.	O'all Lg.	Bristle Firmness		1-11	12-Up
Scratch-Resistant Brass Bristles						
1 .. 3/4″×2 7/8″	9/16″	3 1/4″	Medium	71605T36■	$2.46	$2.21
Chemical- and Temperature-Resistant Natural Bristles						
1 .. 1″×4 1/4″	3/4″	5″	Medium	71605T37■	2.70	2.41
2 .. 2 1/2″×9″	1 1/8″	9″	Stiff	7198T1■	4.37	3.95
Chemical-Resistant Plastic Bristles						
2 .. 2 1/2″×8 3/4″	1″	8 3/4″	Stiff	7175T14	2.98	2.55
3 .. 2″×9″	1 1/4″	9 1/2″	Stiff	7175T16	4.40	3.94
4 .. 2 3/8″×5 1/2″	1″	6″	Medium	7293T11	2.77	2.36
5 .. 5″×5″	2″	20″	Medium	7177T2	8.08	7.19
6 .. 3 1/2″×3″	1 1/2″	11″	Stiff	7177T4	7.45	6.62
7 .. 4″×5″	2″	19″	Stiff	7177T5	9.58	8.51
Chemical- and Temperature-Resistant Plastic Bristles						
8 .. 3 3/4″×4″	5/8″	9 1/2″	Medium	71605T12	14.48	13.03
9 .. 1/2″×8″	1″	9″	Stiff	6906T1	6.33	5.63
Optional 48″ Fiberglass Handle for Style 9				6906T2	12.00	10.67
Durable Natural Bristles						
5 .. 3 1/2″×4 1/2″	2″	8 1/2″	Stiff	7205T1■	5.29	4.76
5 .. 5″×5″	1 3/4″	20″	Stiff	7205T2■	7.52	6.75
Durable Plastic Bristles						
5 .. 4 1/4″×4 3/4″	1 5/8″	9 1/4″	Stiff	7178T14	5.40	4.81

■ Block material is wood.

Flexible Hygienic Scrub Brush

Handy brush curls around countertop edges and pipes for thorough cleaning. It has chemical-resistant plastic bristles fused to a gray plastic block. Bristles are medium firm.

Brush Size	Bristle Lg.	O'all Lg.		1-11	12-Up
3 1/4″×8 1/2″	1 1/8″	9″	15235T11	$10.85	$9.62

Mini Hygienic Scrub Brushes

Single

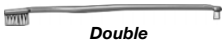
Double

Brushes are good for cleaning small, narrow areas. They have chemical-resistant plastic bristles that are medium firm. Handle is colored plastic. **To Order:** Please specify handle color: blue, red, or yellow.

Brush Style	Brush Size	Bristle Lg.	O'all Lg.		1-11	12-Up
Single	1/4″×1/2″	7/8″	3 1/4″	7243T21	$2.82	$2.51
Double	1/4″×3/4″♠	3/8″	7 3/4″	7243T22	2.45	2.19

♠ Brush on opposite end is 1/4″ dia.

Narrow-Width Hygienic Scrub Brush

This extra-slim, extra-long brush gets at hard-to-clean places such as fan blades, conveyor surfaces, and equipment coils. It has soft, chemical- and temperature-resistant plastic bristles and a white plastic handle.

To Order: Please specify bristle color: blue, red, white, or yellow.

Brush Size	Bristle Lg.	O'all Lg.		1-11	12-Up
1″×12″	2 1/4″	24″	6623T5	$6.62	$5.89

Hygienic Scrub Brushes

Curb bacterial cross-contamination by designating different brush colors for specific jobs or areas of your facility. Brushes have chemical- and temperature-resistant plastic bristles and a plastic block, unless noted. **To Order:** Please specify bristle color: blue, red, white, or yellow, unless noted.

Brush Size	Bristle/ Brush Lg.	O'all Lg.	Bristle Firm-ness	Pkg. Qty.		Each ♦
Choose-a-Color Bristles (Blocks are white)						
10 ... 2″×5 1/4″	1 1/2″	6″	Stiff	10	63935T11★	$7.66
11 ... 2″×6 3/4″	1″	7 1/2″	Stiff	12	63935T31★	4.94
12 ... 2″×5 1/2″	1″	6″	Stiff	12	63935T32★	4.71
13 ... 4″×4 3/4″	1 3/4″	20″	Stiff	12	63935T15	10.34
14 ... 1 1/2″ Dia.	7 1/2″	15″	Stiff	12	63935T18	4.15
15 ... 1 1/2″ Dia.	7 1/2″	15″	Stiff	12	63935T35	7.26
15 ... 2 1/2″ Dia.	7 1/2″	15″	Stiff	12	63935T24	8.62
16 ... 1 1/2″ Dia.	7 1/2″	15″	Stiff	12	63935T23	7.14
16 ... 3″ Dia.	7 1/2″	15″	Stiff	12	63935T36	9.58
17 ... 2 3/4″ Dia.	4″	12″	Stiff	12	63935T16	8.49
17 ... 3 1/4″ Dia.	6 1/2″	16″	Stiff	12	63935T17	10.03
18 ... 2 1/2″, 4″ Dia.	3″, 4″	19″	Stiff	6	63935T25♣	31.10
19 ... 5 1/2″×9 1/2″	1 3/4″	42″	Stiff	12	63935T13▲	31.58
20 ... 5″ Dia.	1 1/2″	30″	Soft	10	70505T23●	42.57
21 ... 4″×6 1/2″	1 1/2″	13 1/2″	Stiff	6	70505T22	24.98
21 ... 4″×6 1/2″	2″	13 1/2″	Soft	6	70505T13	26.49
22 ... 3″×4″	1 5/8″	8 1/2″	Stiff	12	70505T24★	7.66
22 ... 3″×4″	1 5/8″	20″	Stiff	6	70505T25★	9.06
23 ... 3 1/4″×4″	1 5/8″	9″	Stiff	10	70505T26★	13.55
23 ... 3 1/4″×4″	1 5/8″	20″	Stiff	6	70505T27★	15.09
Repl. 60″ Fiberglass Handle for Style 19				12	63935T28	12.12
Choose-a-Color Bristles (Blocks match bristle color)						
24 ... 3 1/2″×4″	1 1/4″	10″	Stiff	10	63935T41	13.27
25 ... 5″ Dia.	1 1/2″	5″	Stiff	15	63935T43	17.89
26 ... 1″×3 1/2″	1″	11 1/2″	Stiff	20	63935T51	4.09
26 ... 2″×3″	1″	11″	Stiff	20	63935T52	6.70
27 ... 1 3/4″×4 1/4″	11/16″	4 5/8″	Stiff	10	63935T27	8.21
28 ... 2 3/4″×8 7/8″	1 1/4″	8 7/8″	Stiff	15	63935T42	14.78
29 ... 4 3/4″×10″	1 1/4″	10″	Stiff	15	70505T12	24.44
30 ... 2″×5 1/2″	1 5/16″	16 1/2″	Stiff	10	63935T26	15.00

♦ Prices are 10% lower when purchased in full-package quantities.
★ Chemical-resistant plastic bristles only.
♣ Double-ended brush; smaller end has a 1 1/2″-2 1/2″ dia. brush size.
▲ Not available in yellow. ● Handle is aluminum.

Scrub Brushes with Long-Reach Handles

Standard

Also known as deck brushes, these are our most economical long-handled scrub brushes. Brushes have one tapered handle hole and one threaded hole. They are 2⅞″×10″ and include a 60″ tapered wood handle, except 7199T75, which is 2½″×10″ and includes a 60″ threaded wood handle. All have approximately 2″ long bristles. Bristles are stiff. Block is wood.

Durable Natural Bristles	7199T75	$15.45
Chemical- and Temperature-Resistant Natural Bristles	7199T74	14.97
Chemical-Resistant Plastic Bristles	7199T76	14.49

Multi Angle

With Squeegee

The only brush you need to scrub floors and clean under counters and equipment. Bristles remain on the floor whether you're standing or bending. Both come with a plastic block, chemical-resistant plastic bristles, and a 60″ threaded wood handle.

Brush Size	Bristle Lg.	Bristle Firmness		
Without Squeegee				
4½″×10″	2″	Stiff	7242T83	$16.66
With Squeegee				
4″ ×10″	2″	Stiff	7242T85	19.07

Corner

Cone-shaped bristles make this brush ideal for reaching into corners and crevices. It has chemical-resistant plastic bristles and a 60″ wood handle (with threaded metal tip). Length without handle is 12″; block is plastic.

Brush Dia.	Bristle Lg.	Bristle Firmness		
2¼″	1½″	Soft	72215T21	$16.49

Heavy Duty Swivel Block

Tackle any tough cleaning job with this scrub brush. Bristles are highly durable plastic enhanced with abrasive grit for aggressive cleaning. Block is plastic and swivels 360°. Comes with a 60″ threaded wood handle.

Brush Size	Bristle Lg.	Bristle Firmness		
3¾″×8″	¾″	Stiff	7426T59	$45.16

Choose-a-Color with Swivel Head

With a round brush face and 180° swivel head, this brush hugs curved surfaces. It has chemical- and temperature-resistant plastic bristles and a 42″ fiberglass handle. Block material is plastic.

To Order: Please specify bristle color: blue, green, red, white, or yellow.

Brush Size	Bristle Lg.	Bristle Firmness		
7½″ Dia.	2″	Medium	6706T81	$39.56

Floor Drain

Scrub the gunk out of floor drains and mop sinks. Brush has nonabsorbent, chemical-resistant plastic bristles for deep cleaning action. Also has a 36″ plastic handle imprinted with the words "Use for floor drain only."

Brush Size	Bristle Firmness		
4″ Dia.×5¾″ Lg.	Stiff	70375T5	$25.98

Baseboard

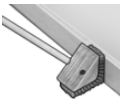

Triangular block keeps bristles snug against baseboards for thorough cleaning. The stiff, chemical-resistant, plastic bristles are set in a 3″ Wd.×4½″ Ht. wood block that has two threaded handle holes. Bristle length is 1″. Includes a 54″ threaded wood handle.

74435T21 ..... $36.80

Hygienic Scrub Brushes with Long-Reach Handles

General Purpose

Also known as deck brushes, these brushes are made from FDA-compliant materials and include a 51″ fiberglass handle. Bristles are chemical- and temperature-resistant plastic; block is plastic. Color is white.

Swivel block has angled bristles for easy cleaning in hard-to-reach areas.

Block Style	Brush Size	Bristle Lg.	Bristle Firmness		
Fixed	2½″×11″	1″	Stiff	71135T51	$51.74
Swivel	3″ × 8″	1½″	Soft	71135T61	79.69
Replacement Handle				71135T91	26.69

Choose-a-Color

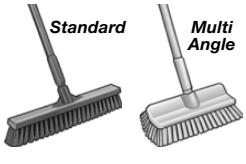

Assign a different color brush to each task to prevent cross-contamination. Brushes have matching block, bristles, and handle color. All bristles are medium firm and made of chemical- and temperature-resistant plastic. Block is plastic. Both include a 51″ fiberglass handle. **To Order:** Please specify color: blue, green, red, white, or yellow.

Multi angle allows bristles to remain on the floor whether you're standing or bending.

	Brush Size	Bristle Lg.		
Standard	2″×16″	2″	8469T2	$74.21
Multi Angle	5″×10″	1½″	8469T1	60.50
Replacement Handle			8469T81	26.69

Cylindrical Choose-a-Color

Clean inside pipes and other objects. Bristles are stiff, chemical- and temperature-resistant plastic in a plastic block. Brushes include a 59″ fiberglass handle. **To Order:** For brushes and handles, please specify color: blue, green, red, white, or yellow.

Brush Dia.	Brush Lg.			Brush Dia.	Brush Lg.		
2″	5¾″	98035T21	$51.13	3½″	6¼″	98035T24	$53.45
2½″	6″	98035T22	52.46	4″	6½″	98035T25	54.20
3″	6″	98035T23	52.60	Repl. Handle		70485T1	35.53

Window- and Vehicle-Washing Scrub Brushes

These soft-bristle brushes are durable enough to remove dirt and grime, yet gentle enough so they won't scratch most surfaces.

Soft Scrub Brushes

Plastic Bristles—Bristles are soft plastic to provide a soft washing surface. Block is plastic and has one threaded handle hole.

Natural Bristles—Good for highly polished surfaces. Bristles are chemical and temperature resistant. Hardwood brush block has a wrap-around bumper to protect surfaces and two handle holes: one tapered and one threaded.

Bristle Material	Brush Size	Bristle Lg.	Handle Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Plastic	2½″× 8″	2½″	60″	12	7452T33	$21.89	$19.60
Plastic	2½″×10″	2½″	60″	12	7452T34	23.87	21.37
Natural	2⅞″×12″	2½″	54″	12	7452T35	29.03	25.99

Flow-Through Fountain Brushes

Telescoping Handle

Water flows through these brushes for one-step scrubbing and washdown. All have a ¾″ female garden hose (GHT) connection, a plastic block, an aluminum handle, and a bumper guard on the block to protect surfaces.

Telescoping Handle—Bristles are natural and resist chemicals and temperatures.

Telescoping Handle with Flow Control Valve—You can use the flow control valve to vary or shut off water flow. Bristles are soft plastic to provide a soft washing surface. Handle has a foam covering.

Bristle Material	Brush Size	Bristle Lg.	Handle Lg.		
Telescoping Handle					
Natural	4″ ×10½″	2½″	4-6 ft.	6381T18	$37.70
Replacement Natural Brush				6381T12	13.32
Telescoping Handle with Flow Control Valve					
Plastic	3½″×10″	2½″	3½-6 ft.	6140T41	49.74
Plastic	3½″×10″	2½″	4½-8 ft.	6140T42	57.36
Plastic	3½″×10″	2½″	6½-12 ft.	6140T43	68.00
Replacement Plastic Brush				6140T44	13.50

Laboratory Brushes

Brushes with Foam Bristles

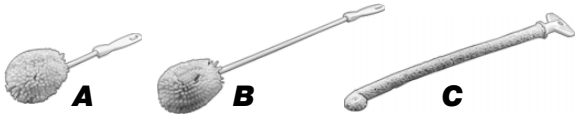

Soft, nonabsorbent, thick, chemical-resistant plastic foam bristles clean without scratching, chipping, or marring glass and plastic surfaces. ***Styles A*** and ***B*** have rigid, vinyl-covered galvanized steel brush stems. ***Style C*** bends to fit a variety of openings.

	Brush Dia.	Brush Lg.	O'all Lg.		1-11	12-Up
A	3″	3″	10″	**4912T31**	$6.00	$5.33
B	3″	3″	18″	**4912T32**	6.88	6.11
C	1″	14″	16″	**4912T33**	7.50	6.67

Hygienic Brushes with Plastic Bristles

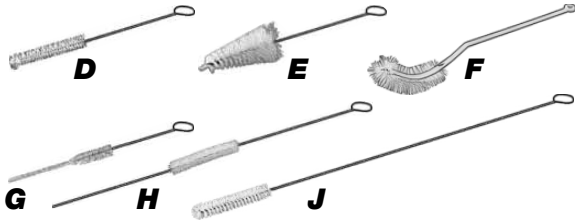

Brushes feature nonabsorbent, nonabrasive, and chemical- and temperature-resistant plastic bristles that can be sterilized. They have corrosion-resistant stainless steel stems and looped wire handles (unless noted). All bristles are medium firm.

	Brush Dia.	Brush Lg.	O'all Lg.		1-11	12-Up
D	1/2″	3″	8″	**9756T22**	$2.58	$2.30
D	3/4″	3 1/2″	9″	**9756T23**	3.45	3.08
D	1 3/8″	4″	11 1/2″	**9756T24**	4.21	3.75
D	2″	5″	11″	**9756T25**	6.39	5.69
D	2″	5″	13″	**9756T26**	6.76	6.02
D	2 3/8″	6″	20″	**9756T27**	10.14	9.05
E	1/4″- 1/2″	3″	7″	**9756T21**	2.51	2.24
E	3/8″-1 1/2″	3 1/2″	9″	**9756T11**	3.34	2.97
E	3/4″-1 1/2″	4 1/2″	12″	**9756T13**	5.61	4.99
E	1″ -1 3/4″	3″	9″	**9756T12**	4.80	4.28
F	1 1/2″	4″	14″	**9756T32**★	8.00	7.14
F	1 3/8″	3 1/2″	12″	**9756T31**★	7.17	6.40
F	1 3/4″	5″	17″	**9756T33**★	9.00	8.02
G	3/16″-3/4″	7 1/2″	17″	**9756T43**	5.46	4.86
H	1/2″	3″	24″	**9756T48**	3.66	3.25
J	1/2″	3 1/4″	30″	**9756T51**	4.97	4.43
J	3/4″	3 5/8″	36″	**9756T52**	5.11	4.55
J	1 1/4″	5 1/4″	36″	**9756T53**	5.65	5.03

★ Handle is plastic.

Hygienic Tube Brushes

Perfect for cleaning long lengths of tubing, these brushes can also be sterilized. Bristles are chemical- and temperature-resistant plastic; stems are corrosion-resistant stainless steel with plastic handles.

Standard Brushes— Have white handles.

Choose-a-Color Brushes— All have colored handles and matching bristles. **To Order:** Please specify color: blue, green, red, white, or yellow.

Brush Dia.	Brush Lg.	O'all Lg.	Bristle Firmness	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard							
1″	6″	36″	Stiff	20	**70615T31**	$23.64	$21.13
1″	6 1/4″	60″	Stiff	20	**70615T34**	29.55	26.42
2″	6″	36″	Soft	10	**70615T32**	23.64	21.13
2″	6 1/4″	60″	Soft	10	**70615T35**	29.55	26.42
3″	6″	36″	Soft	4	**70615T33**	23.64	21.13
3″	6 1/4″	60″	Soft	4	**70615T36**	29.55	26.42
Choose-a-Color							
3/8″	5 5/8″	19 5/8″	Stiff	15	**70615T41**	6.67	5.97
3/4″	4 5/8″	19 5/8″	Stiff	15	**70615T42**	7.04	6.29
1 5/8″	4 5/8″	19 5/8″	Stiff	15	**70615T43**	7.71	6.90
2″	4 5/8″	19 5/8″	Soft	15	**70615T44**	8.40	7.47
2 3/8″	6″	19 5/8″	Soft	15	**70615T45**	8.69	7.78

Bottle Brushes

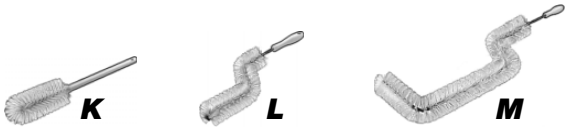

Designed for washing bottlenecks and irregularly shaped bottles. Bristles are chemical- and temperature-resistant plastic and have medium firmness; handles are plastic.

Brush Dia.	Brush Lg.	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
With Tapered Head						
K 2″ -2 1/2″	4 1/2″	12″	12	**72405T721**	$14.61	$12.98
K 2 3/4″-3 1/4″	6 1/2″	16″	12	**72405T731**	10.03	9.02
K 2 3/4″-3 3/8″	7″	24″	12	**72405T741**	32.13	28.56
With Twisted Wire Stem						
L 2 1/2″	12″	17″	6	**72405T751**	15.46	13.75
M 2 1/2″	22″	28″	6	**72405T761**	47.01	41.79

Flexible Micro-Brushes

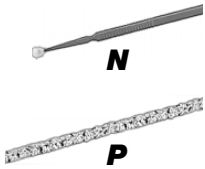

(N) Precision Brushes— Soft plastic bristled tip is nonlinting, and the plastic handle bends to any angle. Overall length is 3 1/4″.

(P) Pipe Cleaners— These fully bristled brushes are ideal for cleaning small pin holes and screw holes. Center stem is flexible wire. Overall length is 6″.

Cotton with plastic has plastic bristles to clean and scrape.

	Bristle Material	Brush Dia.	Brush Lg.	Pkg. Qty.		Pkg. 1-11	Pkg. 12-Up
N	Plastic	1/8″	1/8″	25	**6393T2**	$11.35	$10.22
P	Cotton	5/32″	6″	100	**7549T4**	3.06	2.74
P	Cotton w/Plastic	5/32″	6″	60	**7549T6**	3.00	2.69

Drill-Operated Brush and Pad

Let your drill do the scrubbing and scouring for you. Brush and scouring pad attach to any drill with a 3/8″ chuck.

Hygienic Brush— Brush has 1″ long, chemical-resistant plastic bristles fused to a plastic block. **To Order:** Please specify bristle firmness: soft (white), medium (yellow), or stiff (red).

Scouring Pad— Use this nylon pad for more aggressive scrubbing and cleaning. Requires a pad holder (sold separately below). **To Order:** Please specify abrasion: light (white), medium (red), or heavy (black).

Pad Holder— Has a plastic block.

	Dia.		1-11	12-Up
Hygienic Brush	5″	**14455T1**	$14.84	$13.17
Scouring Pad	6″	**14455T4**	6.18	5.49
Pad Holder (required for pads)	—	**14455T31**	11.08	9.90

Specialty Cleaning Brushes

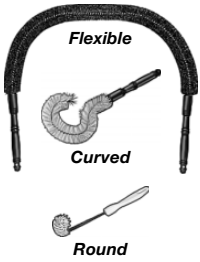

Not like your ordinary brushes, these take on special cleaning tasks. Handle and bristles are made of chemical-resistant plastic; stem is galvanized steel.

Flexible— Slips around pipes and faucets. Bristles are medium firm.

Curved— Fits inside curved-neck tanks, vessels, and bottles. Bristles are medium firm.

Round— Reaches deep into recessed areas such as sliding door and window tracks. Bristles are stiff.

Brush Style	Brush Dia.	Brush Lg.	O'all Lg.		1-11	12-Up
Flexible	2″	28″	48″	**7415T2**	$11.43	$10.00
Curved	1 3/4″	8″	18″	**7415T1**	7.14	6.25
Round	1/2″	2″	8 1/2″	**7415T3**	5.71	5.00

Toilet Bowl Brushes

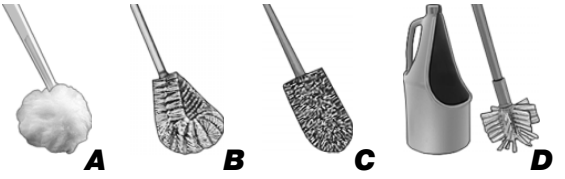

Style A—This economical brush has soft, chemical-resistant plastic fiber bristles and a plastic handle. Brush size is 5¾″ Dia.

Style B—Has stiff, chemical-resistant plastic bristles in a twisted wire frame that angles to reach under bowl rims. Brush size is 6″ Wd.×4½″ Lg. Handle is plastic.

Style C—Has stiff, chemical- and temperature-resistant plastic bristles attached with stainless steel wire to a wood handle. Brush size is 3½″ Dia.×6½″ Lg.

Style D—Releases cleaner/deodorizer embedded in brush head each time brush is used. Cleaner/deodorizer lasts for approximately 1,500 uses. Includes caddy for convenient storage. Bristles are stiff, chemical-resistant plastic. Brush size is 4⅞″ Dia.×3½″ Lg.

Style	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
A.. Mop	13½″	100	13585T51	$1.62	$1.41
B.. Angled Brush	21″	24	7212T16	4.13	3.61
C.. Straight Brush	24″	12	7209T4	15.67	14.03
D.. Cleaner/Deodorizer Brush	21½″	12	7212T18	17.15	14.74
Repl. Cleaner/Deodorizer Brush Head		12	7212T19	12.88	11.10

Swabs

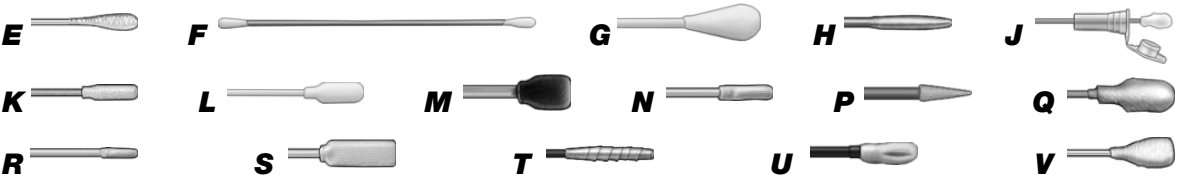

Cotton—Offer excellent absorption. *Low-lint* swabs resist tearing. *Sterile with protective cap* allows you to protect collected samples.

Polyurethane Foam—Shred and lint resistant. *Antistatic* swabs dissipate static electricity. *Clean room* swabs are adhesive and lint free and are suitable for Class 1000 clean rooms. They have excellent particle entrapment and the best solvent-holding ability of any swab.

Polyurethane Foam Over Cotton—Combine the strengths of cotton and polyurethane foam. *Chemical-resistant* swabs withstand most cleaning chemicals and solutions.

Polyester—Generate less lint than cotton or foam swabs, making them perfect for sensitive equipment. All are soft, nonscratching, and have excellent chemical resistance. *Clean room* swabs are our cleanest swabs. They are adhesive and lint free and are suitable for use in Class 100 clean rooms.

Microfiber—Offer effective particle entrapment and are chemical resistant.

Rayon—Highly absorbent and lint free.

Tip Dia.	Tip Lg.	O'all Lg.	Swabs/ Pkg.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
Cotton Swabs							
Wood Handle							
E.. 1/8″	1/2″	6″	100	10	7074T3	$2.26	$1.94
E.. 3/16″	5/8″	3″	100	10	7074T1	2.07	1.77
E.. 3/16″	5/8″	6″	100	10	7074T11	2.15	1.85
E.. 7/32″	11/16″	3″	100	5	7074T2	2.24	1.87
E.. 7/32″	11/16″	6″	100	5	7074T15	2.51	2.15
Plastic Handle							
E.. 3/16″	11/16″	3″	100	10	7074T33	2.83	2.42
E.. 3/16″	11/16″	6″	100	10	7074T4	3.64	3.11
E.. 1/4″	11/16″	3″	50	5	7074T35	2.33	1.99
E.. 1/4″	11/16″	6″	100	5	7074T36	3.73	3.18
Low Lint—*Wood Handle*							
E.. 1/8″	7/16″	6″	100	10	7074T62	2.26	1.94
E.. 5/32″	5/8″	3″	100	10	7074T61	2.21	1.90
E.. 3/16″	5/8″	3″	100	10	7074T63	2.30	1.97
E.. 3/16″	5/8″	6″	100	10	7074T64	2.54	2.18
Sterile—*Wood Handle*							
E.. 3/16″	5/8″	6″	200	10	7074T67★	14.01	11.91
Tips on Each End—*Wood Handle*							
F... 3/16″	5/8″	6″	100	5	7074T12	3.36	2.88
Tips on Each End—*Plastic Handle*							
F... 3/16″	11/16″	6″	100	5	7074T13	4.11	3.52
Large Diameter with Long Handle—*Paper Handle*							
G.. 1/2″	1 1/8″	8″	50	10	7074T97	13.71	11.81
Tapered Tip—*Wood Handle*							
H.. 1/8″-1/16″	1/2″	3″	100	10	71035T51	2.40	2.06
H.. 1/8″-1/16″	1/2″	6″	100	10	71035T53	2.52	2.16
Tapered Tips on Each End—*Wood Handle*							
H.. 1/8″-1/16″	1/2″	6″	100	10	71035T54	2.93	2.51
H.. 3/16″-3/32″♥	5/8″	6″	100	5	71035T55	3.84	3.29
Low-Lint Tapered Tip—*Wood Handle*							
H.. 1/8″-1/16″	1/2″	3″	100	10	71035T31	2.38	2.04
H.. 1/8″-1/16″	1/2″	6″	100	10	71035T32	2.57	2.20
Low-Lint Tapered Tips on Each End—*Paper Handle*							
H.. 3/32″■	11/32″	3″	25	100	71035T61	1.95	1.65
H.. 3/16″■	7/16″	3 1/4″	25	50	71035T62	2.05	1.73
Sterile with Protective Cap—*Wood Handle*							
J... 3/16″	5/8″	6″	50	10	7074T68▲	31.44	26.60
Polyurethane Foam Swabs							
Wood Handle							
K... 5/32″	15/32″	3″	50	20	7074T88	9.71	8.32
K... 3/16″	11/16″	6″	50	20	7074T7	12.35	10.58

Tip Dia.	Tip Lg.	O'all Lg.	Swabs/ Pkg.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
Polyurethane Foam Swabs (Cont.)							
Plastic Handle							
K... 3/16″	5/8″	6″	50	20	7074T6	$11.28	$9.67
K... 1/4″	7/8″	6″	50	20	7074T53	17.96	15.26
L... 3/8″	1″	6″	50	20	7074T51	13.46	11.54
L... 11/16″	7/8″	5″	50	20	7074T52	19.89	17.06
Antistatic—*Plastic Handle*							
M.. 11/16″	1″	5″	50	20	7074T23	25.31	21.50
Clean Room—*Plastic Handle*							
N... 1/8″	13/32″	2 13/16″	500	5	6111T2	53.16	45.13
Clean Room Tapered Tip—*Plastic Handle*							
P... 1/8″-1/32″	13/32″	3 3/16″	500	5	6111T3	60.22	51.13
Polyurethane Foam Over Cotton Swabs							
Wood Handle							
K... 1/4″	13/16″	6″	50	20	7074T55	12.35	10.58
Q... 3/8″	1″	6″	50	20	7074T56	12.78	10.74
Antistatic—*Wood Handle*							
M... 3/8″	13/16″	6″	50	20	7074T21	15.37	13.79
Antistatic—*Plastic Handle*							
N... 5/32″	5/8″	6″	50	20	7074T22	21.38	18.32
Chemical Resistant—*Wood Handle*							
Q... 3/8″	13/16″	6″	50	20	7074T47	21.33	18.29
Chemical Resistant—*Plastic Handle*							
Q... 3/8″	15/16″	6″	50	20	7074T48	20.70	17.75
Polyester Swabs							
Plastic Handle							
N... 3/32″	13/32″	3″	100	10	7074T84	32.14	27.55
N... 3/16″	25/32″	6″	100	10	7074T82	49.32	42.27
R... 1/8″	19/32″	3″	100	10	7074T81	33.75	28.93
S... 3/8″	1″	6″	50	20	7074T83	40.29	34.53
Clean Room—*Plastic Handle*							
T... 5/32″	25/32″	2 13/16″	100	10	63105T1	55.24	46.91
U... 1/4″	13/32″	6 5/16″	25	15	63105T32	16.38	13.88
Microfiber Swabs							
Polypropylene Handle							
N... 1/8″	3/8″	2 3/4″	100	10	7074T92	28.01	24.01
V... 1/4″	21/32″	6″	100	10	7074T93	67.30	57.69
Rayon Swabs with Long Handle							
Paper Handle							
V... 1/2″	1″	8″	100	12	7074T24	25.83	22.14
Plastic Handle							
V... 1/2″	1″	16″	100	12	7074T25	32.67	28.00

★ Wrapped in pairs; 100 pairs/pkg. ♥ Tapered-tip size shown in table; second tip is nontapered (3/16″ Dia.). ■ Tip tapers to a point.
▲ Each swab wrapped individually.

Paper Towels

Soft and absorbent, these are our most economical wipes. Rolls are perforated every 8¾″. Color is white.

Wall-mount dispenser is made of steel with a white finish.

With Wall-Mount Dispenser

	Size	No. of Sheets	Rolls/ Case		Case
Roll	11″×93′	128	20	4501T24	$42.47
Wall-Mount Dispenser				4501T2 Each	$16.20

Light Duty Wipes

Great for single-use applications.

General Purpose

These paper-based wipes are stronger and more absorbent than paper towels. Color is white, unless noted.

Absorbent—Denser paper material for greater strength and absorption.

Textured—More abrasive than standard wipes for extra cleaning power.

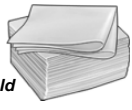
¼ Fold

	Size	Wipes/ Pkg.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
Standard						
¼ Fold	12″ ×13½″	50	16	7036T11	$5.98	$5.20
Pop-Up Box	9″ ×16½″	126	8	7036T21	16.41	14.75
Absorbent						
¼ Fold	12″ ×13½″	50	18	7036T12	7.69	6.69
Textured						
Pop-Up Box	9⅛″×16 13/16″	88	10	7036T16●	13.56	12.19

● Color is brown.

Nylon-Reinforced Paper

These nylon-reinforced wipes are stronger, more tear resistant, and provide better scrubbing power than paper towels. Color is white. *Rolls* are nonperforated.

	Size	No. of Sheets	Boxes/ Rolls per Case		Box Partial Case	Box Full Case
Pop-Up Box	9½″×16¼″	150	6	98075T61	$15.43	$13.89
					Roll	
Roll	9¾″× 275′	—	6	98075T35	$28.26	$24.99
Roll	9¾″×1,475′	—	1	98075T31	—	119.44

Super Absorbent

These paper-based wipes are stronger than paper towels and excellent for drying; all maintain their strength when wet. Color is white.

Size	Wipes/ Box		Box 1-11	Box 12-Up
12″×23″	45	6362T15	$18.13	$16.15

Nonscratching Tissue Paper

Also known as Kimwipes, these low-lint wipes are soft, gentle, and absorbent. Ideal for delicate cleaning tasks. Color is white.

Ply	Size	Wipes/ Box	Boxes/ Case		Box Partial Case	Box Full Case
One	4⅜″ × 8⅜″	280	60	7367T38	$3.39	$3.02
One	14 11/16″×16⅝″	140	15	7367T43	9.38	8.35
Two	14 11/16″×16⅝″	90	15	7367T41	13.08	11.65
Three	11 13/16″×11 13/16″	119	15	7367T56	10.40	9.27

Roll Dispenser

Easily store and unroll just the amount of wipes you need—works with all the wipe rolls we carry. Dispenser measures 33″ Ht.×16¾″ Wd.×18½″ Dp. and is made of steel. Color is black.

9852T12 ..... $41.96

Roll not Included

Chamois

Dry, polish, and clean without streaking or smearing.

Natural—Made of oil-tanned sheepskin. Sizes are approximate. Color is tan.

Synthetic—This nylon-reinforced cloth outlasts natural chamois, yet absorbs just as well. Color is yellow.

	Size		
Natural	3 sq. ft.	7359T12	$14.00
Natural	4½ sq. ft.	7359T16	21.10
Synthetic	27″×17″	7286T1	10.10

Heavy Duty Wipes

All are low linting.

General Purpose

An economical alternative to cloth, these paper-based wipes are as strong and durable as cloth, plus soft as tissue. They resist solvents and are nonscratching. They can be washed up to five times. Color is blue. *Roll* is perforated.

Pop-Up Box

Bucket

	Size	Wipes/ Pkg.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
¼ Fold	12″ ×13 3/16″	50	18	70585T1	$8.28	$7.44
Pop-Up Box	9″ ×16½″	100	8	70585T2	17.66	15.86
Pop-Up Box	12″ ×16½″	250	1	70585T4	—	57.36
Crumpled	14⅜″×13″	250	1	70585T3	—	54.30

	Size	Wipes/ Roll		Roll
Roll	12½″×13⅜″	475	70585T7	$73.03

Same as the cloth-like wipes above, except bucket wipes come in a center-pull dispenser that is crush resistant and easy to carry. Color is white.

	Size	No. of Wipes		Each
Bucket	10″×13″	220	70585T5	$27.10
Refill Wipes	10″×13″	220	70585T6	22.02

Oil and Solvent

Soak up oils and solvents with these 100% polypropylene wipes. Roll is perforated. Color is blue.

	Size	Wipes/ Pkg.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
¼ Fold	12″ ×14⅜″	66	8	6383T25	$14.19	$12.65
Pop-Up Box	8¾″×16¾″	100	5	6383T46	25.78	22.97

	Size	Wipes/ Roll	Rolls/ Case		Roll
Roll	9⅝″×13⅜″	717	1	6383T37	$108.62

Microfiber Cleaning Wipes

You can wash and reuse these wipes more than 300 times. They clean without the use of chemicals and polishes. Wipes are virtually lint free.

Cleaning—Draws grease and oil deep into the fibers so it cleans without streaking or spreading dirt. Use damp for best results. Color is blue.

Polishing—Super soft suede-like cloth polishes surfaces without scratching and removes fine dirt. Color is purple.

	Size		Each 1-11	Each 12-Up
Cleaning	16″×16″	7716T1	$3.49	$3.13
Polishing	16″×16″	7716T3	3.49	3.13

Mini Wipes and Cleaning Rods

Also known as cleaning patches, these mini wipes can be used alone or with cleaning rods (sold separately).

Mini Wipes—Made of white cotton. *Textured wipes* are abrasive for more aggressive cleaning.

Cleaning Rods—Perfect for cleaning inside small or narrow openings. Simply fold a mini wipe through the tip on the end of the rod. All have a looped tip and plastic handle.

Mini Wipe with Cleaning Rod

Mini Wipes

Size	Wipes/ Pkg.		Pkg. 1-23	Pkg. 24-Up
Standard				
1½″×1½″	200	7492T1	$5.47	$4.87
2½″×2½″	125	7492T2	4.47	3.98
Textured				
3″ ×3″	80	7492T3	4.47	3.98

Cleaning Rods

O'all Lg.	FOR HOLE OPENING SIZE (DIA.) ¼″ to ⅜″ Stainless Steel Rod		⅜″ to 1½″ Aluminum Rod	
15″	7492T31	$21.88	—	—
27″	7492T32	23.44	7492T42	$23.44
39″	7492T33	24.81	7492T43	24.81

Clean Room Wipes

Eliminate impurities in pharmaceutical, medical, and clean room areas. All wipes are white and suitable for use in Class 100 clean rooms, unless otherwise indicated.

Wet wipes come in a resealable pouch. All are moistened with a 6% isopropyl alcohol/94% deionized water mixture. These products are compliant under all state VOC rules in effect on October 1, 2009.

Standard

Our most cost-effective clean room wipes combine the strength of polyester with the absorbency of cellulose.

Size	Wipes/ Pkg.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
Dry Wipes					
4″× 4″	300	40	7089T31	$11.36	$10.09
9″× 9″	100	24	7089T12	12.56	11.16
12″×12″	100	24	7089T13	22.56	20.05
Wet Wipes					
9″× 9″	75	12	6616T13	23.33	20.88
Sterile Dry Wipes					
12″×12″	20	25	6558T11	13.65	12.13

Super Absorbent

More absorbent than any other clean room wipe, these 100% rayon, low-linting wipes absorb eight times their own weight. Wipes are heat resistant and have low static discharge. Color is off-white.

Size	Wipes/ Pkg.		Pkg. 1-29	Pkg. 30-Up
10″×10″	100	6209T1	$15.01	$13.37

Chemical Resistant

These chemical-resistant polypropylene wipes won't break down in the presence of most solvents and acids.

	Size	Wipes/ Pkg.	Pkgs./ Case		Pkg. ♦
Dry Wipes	12″×12″	100	12	6369T31	$33.64

♦ Prices are 10% lower when purchased in full-case quantities.

Heavy Duty

Our most durable clean room wipes, they're made of polyester. *Ultra soft dry wipes* are ideal for cleaning sensitive surfaces, such as optical equipment and fiber optics. *Ultra durable dry wipes* are tear resistant. *Ultra clean and durable wet wipes* are our cleanest and strongest wipes. They have a double knitted construction, sealed edges, and are extremely low linting.

Size	Wipes/ Pkg.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
Dry Wipes					
Ultra Soft—*Class 100 Clean Room*					
4″× 4″	300	4	98465T61	$21.41	$19.15
9″× 9″	150	2	98465T62	34.50	31.05
Ultra Durable—*Class 10 Clean Room*					
9″× 9″	150	14	98465T63	37.20	33.27
12″×12″	75	14	98465T64	49.27	44.35
Wet Wipes					
Ultra Clean and Durable—*Class 1 Clean Room*					
9″× 9″	50	12	6611T13	27.19	24.32

Cheesecloth

Cheesecloth

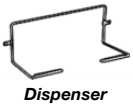

Dispenser

Loosely woven from 100% purified cotton, this silicone-free cloth is low linting and won't scratch.

Sheet rolls are individual sheets rolled together.

Unbleached—Perfect for cleaning up particles, this three-ply, off-white cloth is woven to be softer, less abrasive, and lower linting than bleached cloth.

Bleached—Four-ply weave means there's more cloth for better straining, filtering, and polishing than unbleached cloth. Color is white.

Dispenser—Mount to wall or bench for easy dispensing of sheet rolls. Made of steel with a white finish and is 11⅜″ Wd.×6½″ Dp.×5″ Ht. Has two ⅛″ dia. mounting holes (mounting fasteners not included).

	Sheet Size	No. of Sheets		Roll
Sheet Rolls				
Unbleached	9½″×20″	100	7340T22	$20.54
Bleached	9″ ×24″	120	7340T12	37.67
Dispenser for Sheet Rolls			7340T35	Each $7.40
Continuous Roll				Pkg.
Bleached	3 ft. ×15 ft.	1	7340T17	$2.69

Cloth Rags

Reuse these rags over and over again. *Recycled rags* are more prone to having inconsistent rag assortments. All have been washed and *surgical towels* have been washed and sanitized. *New rags* have never been used. Rag size is random and ranges from approximately 12″×12″ to 18″×18″.

To Order: Please specify 5-, 25-, or 50-lb. carton.

	Approx. Rags/lb.		5-lb. Carton	25-lb. Carton	50-lb. Carton
Mixed Blend—*Absorbent.*					
Recycled Colored	6-10	7366T11	$5.60	$22.93	$41.35
Recycled White	7-10	7366T12	6.99	29.98	53.78
Corduroy—*Durable.*					
Recycled Colored	6-10	7366T29	5.84	23.15	39.58
Denim—*100% cotton blue jean material. Excellent for oil and grease.*					
Recycled Colored	6-10	7366T14	4.29	16.55	29.70
T-Shirt—*Soft, cotton-blend material.*					
Recycled Colored	7-12	7366T15	6.16	26.04	44.55
Recycled White	7-10	7366T16	11.25	48.03	86.19
New Colored	7-12	7366T27	8.03	34.72	62.82
New Washed White	10-12	7366T28■	13.47	55.56	105.93
Flannel—*Highly absorbent cotton-blend material.*					
Recycled Colored	7-10	7366T34	7.76	31.52	56.56
Terry Cloth—*Medium soft texture and absorbent cotton material.*					
Recycled Colored	6- 8	7366T13	9.90	42.82	76.84
New White	10-12	7366T19	23.80	97.51	173.80
Surgical Towels—*Very strong and absorbent, 100% cotton towel.*					
Recycled Colored	7- 8	7366T35■	20.56	88.92	174.41
Diaper Cloth—*Very absorbent, soft, cotton blend; sewn on all sides.*					
New White	4- 5	7366T33■	38.98	143.90	264.83
Sweatshirt—*Use for polishing.*					
Recycled White	6-10	7366T31	9.00	35.63	67.66
New Washed White	8-10	7366T32	12.44	53.82	94.80

■ Low-linting rags.

Exact Sized Cloth Rags

No more wondering if your rag will be too large or small. These quality-consistent, new T-shirt cloth rags are always the same size. All are soft, absorbent 100% cotton. Color is white.

Size	Pkg. Qty.	Case Qty.		Pkg. Partial Case	Pkg. Full Case
14″×17″	10	14	7857T11	$4.38	$3.89
14″×17″	30	8	7857T12	12.69	11.28
14″×17″	60	4	7857T13	24.21	21.69

Cloth Shop Towels

Woven from 100% cotton and hemmed for extra strength. All towels are washable, reusable, and absorbent. Color is red.

Size	Pkg. Qty.		Pkg. 1-19	Pkg. 20-Up
13″×14″	12	63485T94	$6.21	$5.56

Towel Wringer

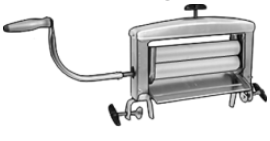

Easily squeeze liquid out of towels, rags, and wipes with this zinc-plated steel wringer. Rollers have a rubber coating and adjust to open up to ½″. Mounts on a 25- to 55-gal. drum and includes a drainboard to direct liquid into your container. Overall size (excluding handle and top adjustment pressure screw) is 11¼″ Ht.×14⅜″ Wd. Handle length is 10½″.

7135T16 ..... $154.41

Forklift-Mount Push Brooms

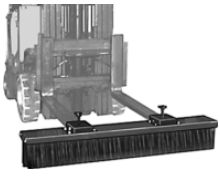

Efficiently sweep large areas such as parking lots and factory floors. Broom has black, chemical-resistant, plastic bristles attached to a plastic base. Frame is red aluminum with black steel mounting brackets. Broom attaches to forklift (mounting hardware included). Fork openings are 5¹⁄₁₆″ Wd.×1½″ Ht. on 18¼″ centers.

Broom Wd.	Bristle Lg.	O'all Dp.	Complete Brooms	Each	Replacement Bristle Kits	Kit
48″	8″	9″	7531T5	$526.31	7531T7	$141.66
60″	8″	9″	7531T6	572.01	7531T8	199.99

About Brooms

Smooth-surface brooms sweep away fine to medium dust and dirt on nonporous surfaces such as tile, wood, linoleum, and smooth concrete.

Semi-smooth-surface brooms handle heavier debris on surfaces such as sidewalks and driveways.

Rough-surface brooms move heavy, wet, and hard-to-move debris on asphalt and rough concrete such as street pavement.

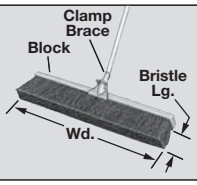

Push Brooms

All brooms include a 60″ long handle. Those 24″ and wider include a clamp-style brace for handle support, unless noted.

Smooth-Surface Push Brooms

Brooms have a threaded handle.

Plastic Bristles—Come in two styles. *Standard* have a wood handle, wood block, and blue bristles. *Chemical-resistant* have a black, plastic-coated steel handle with an aluminum tip, plastic block, and gray bristles.

Horsehair Bristles—All bristles are soft for fine sweeping. They have a wood handle, wood block, and black bristles.

Broom Wd.	Plastic Bristles Bristle Lg.			Horsehair Bristles Bristle Lg.		
With Standard Bristles						
14″	2¾″	7313T14	$16.49	3″	7167T2	$24.74
16″	2¾″	7313T13	18.06	3″	7167T6	26.24
18″	2¾″	7313T16	18.51	3″	7167T4	27.88
24″	2¾″	7313T17	24.00	3″	7167T5	36.07
30″	2¾″	7313T18	34.47	3″	7167T7	45.95
36″	2¾″	7313T19	40.49	3″	7167T8	61.78
With Chemical-Resistant Bristles						
18″	3″	7502T21	24.32	—	—	—
24″	3″	7502T22★	26.56	—	—	—

★ Does not include a clamp-style brace.

Semi-Smooth-Surface Push Brooms

Brooms have a threaded wood handle, a wood block, and black bristles.

Natural Bristles—Resist solvents and heat.

Blended Bristles—All are made of blended soft horsehair and plastic bristles. The 14″ through 24″ wide brooms also have a natural bristle center to dislodge heavier dirt.

Broom Wd.	Natural Bristles Bristle Lg.			Blended Bristles Bristle Lg.		
14″	—	—	—	2¾″	7168T2	$21.66
16″	—	—	—	2¾″	7168T3	23.66
18″	—	—	—	2¾″	7168T4	24.20
24″	3″	7169T15	$30.26	2¾″	7168T5	27.83
30″	3″	7169T16	38.87	2¾″	7168T6	40.77
36″	3″	7169T17	46.49	2¾″	7168T7	45.69

Rough-Surface Push Brooms

All have a wood handle and a wood block.

Natural Bristles—Color is reddish brown.

Plastic Bristles—Resist solvents, acids, and chemicals. Color is black.

Brooms *with standard bristles*, also known as garage brooms, sweep heavy soils and debris. All have a threaded handle.

Brooms *with long bristles* are also known as street brooms. These stand up to the heaviest debris and move large, bulky trash. Handle is tapered.

Broom *with heavy duty long bristles* is the same as the long-bristled brooms above, except it has stiffer and thicker bristles.

Broom Wd.	Natural Bristles Bristle Lg.			Plastic Bristles Bristle Lg.		
With Standard Bristles						
18″	4″	7172T62	$18.83	2⅞″	7174T14	$22.38
24″	4″	7172T63★	21.63	2⅞″	7174T15	26.06
30″	4″	7172T64	28.02	2⅞″	7174T16	33.05
36″	4″	7172T65★	30.00	2⅞″	7174T17	35.77
With Long Bristles						
16″	6¼″	7179T4	18.80	—	—	—
18″	6¼″	7179T41	19.94	6″	7152T45	25.77
24″	6¼″	7179T42★	23.72	6″	7152T46★	29.32
With Heavy Duty Long Bristles						
16″	6¼″	7155T16	21.09	—	—	—

★ Does not include a clamp-style brace.

Adjustable-Angle Push Brooms

Reach tight and confined areas—simply adjust the handle to the angle you need. Handle attaches to a steel swivel socket, and the angle is secured with a threaded bolt. Brooms have a 59″ long, two-piece steel and wood handle. Block is plastic with a steel back. Bristles are made of chemical-resistant plastic.

Semi-Smooth Surface—Bristles are black.

Rough Surface—Bristles are brown.

Broom Wd.	Semi-Smooth Surface Bristle Lg.			Rough Surface Bristle Lg.		
14″	3″	72085T41	$27.58	3⅜″	70695T61	$28.77
18″	3″	72085T42	29.28	3⅜″	70695T62	30.14
24″	3″	72085T43	32.88	3⅜″	70695T63	33.84
Replacement Handle					72085T5	$12.74

Dura-Block Push Brooms

A durable, rust-resistant steel strip locks in bristles without the added weight of wood and plastic blocks. All brooms have a 60″ long black steel handle with a bolt and wing nut connector. Bristles are made of chemical-resistant plastic.

Smooth-Surface—Bristles are maroon.

Semi-Smooth Surface—Bristles are green.

Rough Surface—Bristles are black.

Broom Wd.	Bristle Lg.	Smooth Surface	Semi-Smooth Surface	Rough Surface	
18″	3″	7357T221	7352T221	7339T11	$20.82
24″	3″	7357T222	7352T222	7339T12	23.10
30″	3″	7357T223	7352T223	7339T13	34.46
36″	3″	7357T224	7352T224	7339T14	37.42
Repl. Handle for 18″ and 24″ Brooms				7357T17	$9.67
Repl. Handle for 30″ and 36″ Brooms				7357T18	14.05

Twist-Resistant Handle Push Brooms

A zinc-plated steel, clamp-style brace locks the handle into the wood block, preventing damage from unnecessary handle twisting. All have a 60″ long wood handle. Bristles are made of chemical-resistant plastic. Bristle color is orange, except *semi-smooth-surface* bristles, which are orange and black.

Broom Wd.	Bristle Lg.	Smooth Surface	Semi-Smooth Surface	Rough Surface	
18″	3″	6378T442	6378T413	6378T418	$26.64
24″	3″	6378T443	6378T414	6378T419	30.48
30″	3″	6378T444	6378T415	6378T422	34.67
36″	3″	6378T445	6378T416	6378T421	40.43
Replacement Handle (Without Brace)				6378T31	$5.58
Replacement Anchor Brace				6378T32	4.13

Multisurface Twist-Resistant Handle Push Brooms

Effective on all floor surfaces, these brooms have rough-surface bristles in the front for heavy and wet debris, and smooth-surface bristles in back for finer debris. Bristles are made of chemical-resistant plastic. Front bristles are black; rear bristles are blue. Brooms have a 60″ long wood handle with a clamp-style brace for added support. Block is made of wood.

Broom Wd.	Bristle Lg.		
18″	2″-2¼″	7736T11	$23.93
24″	2″-2¼″	7736T12	28.83
36″	2″-2¼″	7736T13	39.06
Replacement Handle (Without Brace)		6378T31	5.58
Replacement Anchor Brace		6378T32	4.13

For information about brooms, see page 2051. For replacement handles, see page 2053.

Heavy Duty Push Brooms

An all-steel handle welded to a steel brace and mounted on a wood block makes these our most durable push brooms. Handle is 58″ long and black. Bristles are natural.

Semi-Smooth Surface— Bristles are chemical and temperature resistant. Color is black.

Rough Surface— Bristles are extra stiff. Color is brown.

Broom Wd.	Semi-Smooth Surface Bristle Lg.			Rough Surface Bristle Lg.		
18″	3″	7723T11	$48.82	4″	7723T21	$39.10
24″	3″	7723T12	51.83	4″	7723T22	42.41
30″	3″	7723T13	61.97	4″	7723T23	53.63
36″	3″	7723T14	70.73	4″	7723T24	59.51
Replacement Handle					7723T1	$24.78

Choose-a-Color Hygienic Block Push Brooms

Assign specific bristle colors to particular tasks or areas. Bristles are fused to the block so contaminants have nowhere to hide. Block and bristles are chemical-resistant plastic. Block is white.

All handles are threaded. Choose a 60″ wood handle or a white, hygienic, telescoping, fiberglass handle.

To Order: Please specify bristle color: blue, red, or white.

Broom Wd.	Bristle Lg.	Handle Lg.	Smooth and Semi-Smooth Surface		Rough Surface	
With Wood Handle						
18″	2¾″	60″	7504T1	$39.63	7504T3	$37.83
24″	2¾″	60″	7504T2	43.89	7504T4	42.09
With Telescoping Fiberglass Handle						
18″	2¾″	34″-62″	7504T5	57.48	7504T7	55.69
24″	2¾″	34″-62″	7504T6	61.74	7504T8	59.93
Replacement Wood Handle					7504T11	$9.47
Replacement Telescoping Fiberglass Handle					7505T13	26.67

Corn Brooms

Miniature ***Full Size***

Due to their durability, natural corn brooms are a favorite.

Miniature— All are 100% corn. *Light duty* broom, also known as a toy broom, has a red, 24″ long wood handle. *Heavy duty* broom, also known as a lobby broom, has longer bristles and a 30″ long wood handle.

Full Size— *Standard duty* broom is a corn and synthetic fiber blend with a green, 42″ long wood handle. *Heavy duty* broom is 100% corn with a 42″ long wood handle.

	Broom Wd.	Bristle Lg.	O'all Lg.		
Miniature					
Light Duty	7″	10″	32″	7067T11	$5.50
Heavy Duty	7½″	11″	39″	7067T12	6.00
Full Size					
Standard Duty	10″	14″	54″	7146T3	9.52
Heavy Duty	13″	18″	57″	7146T2	15.72

Heavy Duty Brooms

Broom

Scraper

Strong and secure—bristles are housed in a steel cap and held with a wire band, making these brooms ideal for sweeping heavy debris. Bristles are plastic and resist most acids, oil, and chemicals. Handle is wood, 39½″ long, and has a protective steel sleeve at its base.

Broom with scraper, also known as a railroad track broom, has a steel scraper on one end for removing snow, ice, and caked-on debris.

	Broom Wd.	Bristle Lg.	O'all Lg.		
Broom	9″	8″	51¾″	7151T11	$18.75
Broom with Scraper	9″	8″	55¾″	7147T4	27.09

Steel-Wire Push Broom

Our best broom for dislodging heavy accumulations on rough, irregular surfaces such as concrete, stone, and brick. Broom has a tapered wood handle, a wood block with one handle hole, and flat steel wire bristles.

Broom Wd.	Bristle Lg.	Handle Lg.		
16″	5″	60″	7156T73	$43.48

Angle Brooms

Dual Angle

Extra Wide

Choose-a-Color

Perfect for accessing corners. All handles are threaded.

Dual Angle— Both brooms have two threaded holes in the block that let you select the best sweeping angle for your job. Block is black plastic. All bristles are plastic and resist acids, solvents, and chemicals. *Smooth-surface* bristles are designed for fine sweeping. Handles are black; bristles are blue. *Semi-smooth-surface* handles and bristles are black.

Extra Wide— Our widest angle broom. Handle is red steel. Block is black plastic. Bristles are black chemical-resistant plastic and are designed for fine sweeping. Can also be used on semi-smooth surfaces.

Choose-a-Color with Hygienic Block— Assign specific bristle colors to different tasks and areas. Bristles are fused to the white block, giving contaminants nowhere to hide. Block and bristles are made of chemical-resistant plastic, and they won't absorb liquids or odors. They are also unaffected by detergents and solvents.

Choose an economical wood handle or a white, hygienic, telescoping, fiberglass handle.

To Order: Please specify bristle color: blue, red, or white.

Handle Type	Broom Wd.	Bristle Lg.	Handle Lg.	Smooth Surface		Semi-Smooth Surface	
Miniature Dual Angle							
Plastic-Coated Steel	7½″	4″	30″	7634T11	$6.06	7634T12★	$6.06
Full Size Dual Angle							
Plastic-Coated Steel	9″	7″	48″	7634T21	14.44	7634T22	14.44
Extra Wide							
Steel	15″	6″	48″	4030T8	16.11	—	—
Choose-a-Color with Hygienic Block							
Wood	10″	6″	48″	7393T3	27.72	7393T4	27.72
Fiberglass	10″	6″	34″-62″	7393T1	45.74	7393T2	45.74
Replacement Wood Handle						7393T6	$7.47
Replacement Telescoping Fiberglass Handle						7393T5	30.01

★ Bristle length is 5″.

Sweeping Compounds

Sprinkle these dust-absorbing compounds over floors before sweeping.

Oil Based— Compounds contain wood fiber with oil and sand. Use on wood, concrete, and metal floors. *Petroleum* compounds are red. *Soybean-oil* compounds are nontoxic and tan.

Wax Based— Contains wood fiber and wax. Use on resilient floors such as rubber and cork tile, as well as on fine finishes such as linoleum, marble, and waxed floors. Color is green.

Oil Based

	Petroleum		Soybean Oil	
50-lb. Carton	7264T11	$21.74	63635T61	$21.21
100-lb. Carton	7264T13	35.91	63635T62	33.68
300-lb. Drum	7264T14	95.56	63635T64	87.78

Wax Based

50-lb. Carton	7264T15	$41.44

Handles

(C) Wood with Metal Tip— Tip is cast zinc to strengthen threads.

(D) Wood with Abrasive-Coated Metal Tip— Tip is coated with aluminum oxide to lock handle tightly into your broom's block.

(E) Wood with Metal Tip and Foam Grip— Tip is cast zinc to strengthen threads while the foam grip adds comfort.

(F) Wood with Flexible Metal Tip— An adapter between the aluminum tip and handle flexes when an object is struck to prevent handle from breaking.

(G) Fiberglass with Flexible Plastic Tip— Tip is plastic and absorbs shock to extend the life of the handle. Handle is white.

(H) Plastic-Coated Steel— Tip is die cast aluminum. Handle is black.

(J) Steel— This is our strongest handle. Handle is green.

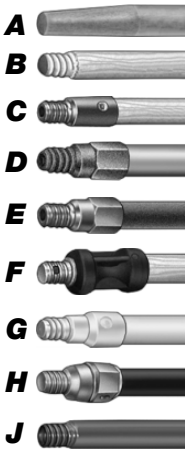

Handle Material	O'all Lg.	Handle Dia.		1-11	12-Up
Tapered Handles					
A.. Wood	54″	1 1/8″	7349T14	$6.26	$5.53
A.. Wood	60″	1 1/8″	7349T15	7.13	6.31
Threaded Handles					
B.. Wood	14″	15/16″	7255T14	1.76	1.56
B.. Wood	54″	15/16″	7255T1	4.66	4.12
B.. Wood	60″	15/16″	7255T2	5.06	4.47
B.. Wood	72″	1 1/8″	7255T3	5.96	5.27
C.. Wood	60″	15/16″	7255T4	6.16	5.44
C.. Wood	60″	1 1/8″	7255T61	8.27	7.30
D.. Wood	60″	15/16″	7255T87	9.11	8.06
E.. Wood with Foam Grip	60″	15/16″	7255T5	9.61	8.49
F.. Wood	58″	15/16″	7255T54	11.38	9.70
G.. Fiberglass	60″	1″	7255T16	12.82	11.36
H.. Plastic-Coated Steel	60″	15/16″	7255T89	5.26	4.65
J.. Steel	60″	15/16″	7255T88	7.76	6.86

Handle Adapters

Threaded-to-Tapered

Aluminum Threaded

Nylon Threaded

Don't waste your money on a new handle—convert or replace your handle tips.

Threaded-to-Tapered Tip— Convert your threaded handle to a tapered handle by screwing on this tip.

Threaded Tips— Convert tapered handles to threaded handles or replace damaged threads by sawing off the old tip and attaching a converter. Use on any 15/16″ dia. handle. *Aluminum* model clamps tight with screw (included). *Nylon* model has internal ribs that grip the handle.

Adapter Style	Material		1-11	12-Up
Threaded-to-Tapered Tip	Black Plastic	7555T76	$3.56	$3.17
Threaded Tip	Aluminum	7555T77	4.41	3.92
Threaded Tip	White Nylon	7555T78	1.68	1.50

Handle Braces

Clamp Brace

Angle Brace

Strengthen your push broom handles and prevent damage with these braces.

Clamp Brace— Brace is aluminum and locks the handle to the block with the included U-bolt. Works with all blocks.

Angle Brace— Brace is made of steel and has legs that screw onto the block and clamp around the handle for extra stability and durability (mounting hardware included). Center-to-center leg spread is 16 1/4″.

		1-11	12-Up
Clamp Brace	7182T8	$4.10	$3.56
Angle Brace	7182T9	4.16	3.70

Dust Pans

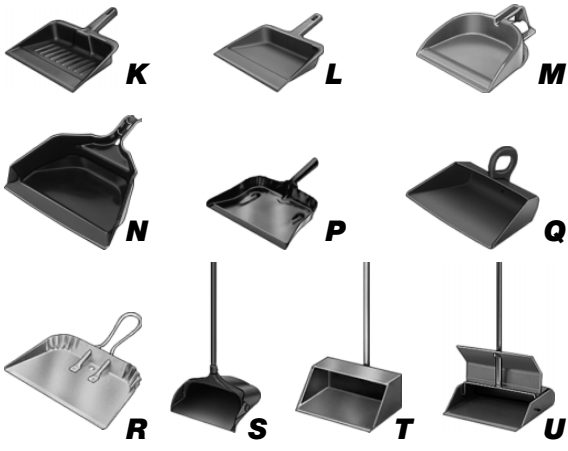

(K) Economy Plastic— Handle has a hole for hanging. Color is black.

(L) Choose-a-Color Hygienic— Avoid cross-contamination by using different colored dust pans for specific areas. Handle has a hole for hanging. **To Order:** Please specify color: blue, red, or white.

(M) Foot Controlled— Step on the convenient foothold to keep this dust pan in place without bending over. For easy storage, pan snaps onto a 7/8″ or 15/16″ dia. broom handle. Color is blue.

(N) Large Capacity— Our largest plastic dust pan scoops up all the dirt you can push its way. Color is black.

(P) Economy Steel— Handle has a hole for hanging. Color is black.

(Q) Wet and Dry— Thin, tapered edge forms a seal to pick up anything from liquids to sawdust. Includes a hoop for hanging and has a painted, corrosion-resistant finish.

(R) Big Grip— Pan is lightweight, corrosion resistant, and has a large looped handle.

(S) No Spill— To prevent spills, enclosed pan snaps into upright position when lifted. Rear wheels won't scratch floors. Color is black.

(T) Stand Up— No need to hold onto this enclosed dust pan when sweeping—it stands on its own. Color is tan.

(U) Self Closing— Lid opens automatically when you place these pans on the floor and shuts when lifted. *Steel* pan has a tan finish.

Pan Material	Wd.	Dp.	Ht.	Handle Lg.		
K.. Plastic	12 1/4″	8 1/4″	2 5/8″	—	7250T13	$4.98
L.. Plastic	12 1/4″	12″	2 1/2″	—	7256T1	9.80
M.. Plastic	13″	16″	4″	—	72015T46	4.73
N.. Plastic	14″	8 1/2″	4 1/4″	—	72805T81	6.34
P.. Steel	12 3/4″	7 1/2″	2″	—	7252T4	8.15
Q.. Steel	14″	10″	3 1/2″	—	7257T11	18.11
R.. Aluminum	16″	10″	2 1/2″	—	63235T25	14.76
S.. Plastic	12 3/4″	11 1/4″	5″	28″ Plastic	7395T11	22.15
T.. Steel	14″	9 1/2″	5 3/4″	26 1/2″ Wood	7109T14	36.56
U.. Steel	12″	10″	3″	28″ Steel	7253T3	42.80
U.. Stain. Steel	12″	10″	3″	28″ Steel	7253T13	74.46

Tacky-Surface Dust Roller

Pick up fine dust and dirt particles with the tacky surface and then peel it away to expose a clean surface. Handle is threaded for use with an extension handle. Both the roller and the refills are 9″ wide and have 20 peel-away layers. Overall size is 9 1/4″ Wd. × 12 1/2″ Lg.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Roller with Handle	1	72305T67	—	$39.80
Refill	4	72305T68	$22.96	20.41

Spray Duster

Blast away dirt, dust, and lint with high-pressure bursts of compressed gas. Duster has a reusable valve with a tapered-tip nozzle for precision positioning that screws onto the CO_2 cylinder. Cylinder is steel, disposable, and recyclable. It has a capacity of approximately 725 one-second bursts.

2.6-oz. Duster	8431K13	**1-11**	$63.53	**12-Up**	$54.46
Replacement CO_2 Cylinder	8431K22	**1-23**	$15.44	**24-Up**	$13.11

Dust Brushes

(A) Dust Brushes— Handle and block are black plastic, unless noted.

(B) Choose-a-Color Hygienic Dust Brushes— Reduce the possibility of cross-contamination by designating colors to certain areas of your facility. Handle and block are white plastic. Bristles are fused to the block to seal out dirt and bacteria.

(C&D) Narrow-Width Dust Brushes— Clean tight areas that other dust brushes can't reach. Brushes have a wood handle and block, unless noted.

(E) Combination Dust Brush/Squeegee— This multifunctional tool cleans up dust, dirt, and liquid spills. One side has bristles that are soft for fine sweeping while the other side has a rubber squeegee. Handle and block are gray plastic.

Brush Lg.	Bristle Lg.	Block Wd.	O'all Lg.	Bristle Firmness	Bristle Color		
(A) Dust Brushes							
Fine-Sweeping Horsehair Bristles							
9″	3″	1¾″	14⅜″	Soft	Black	7159T13	$15.57
Chemical- and Temperature-Resistant Natural Bristles							
8″	2½″	1¾″	13¼″	Medium	Black	7160T12	7.50
Chemical-Resistant Plastic Bristles							
8″	2½″	1¾″	13¼″	Stiff	Black	7158T14	7.83
Fine-Sweeping Chemical-Resistant Plastic Bristles							
8″	2½″	1¾″	13¼″	Soft	Gray	7351T14	6.13
8″	2½″	1¾″	13¼″	Soft	Orange	7351T16	6.13
Blended Horsehair/Plastic Bristles							
8″	3″	1¾″	13¼″	Soft	Black	7159T14★	12.88
(B) Choose-a-Color Hygienic Dust Brushes							
Chemical-Resistant and Hygienic Plastic Bristles							
7¾″	2¼″	1⅝″	14″	Stiff	Red	7260T11	10.48
7¾″	2¼″	1⅝″	14″	Stiff	White	7260T12	10.48
7¾″	2¼″	1⅝″	14″	Stiff	Blue	7260T13	10.48
(C) Narrow-Width Dust Brush							
Fine-Sweeping Horsehair Bristles							
8″	2″	⅜″	14″	Medium	Black	7348T14	5.83
(D) Long-Reach Narrow-Width Dust Brushes							
Blended Horsehair/Plastic Bristles							
9″	2″	½″	24″	Soft	Black	7208T2★	6.04
Fine-Sweeping High-Durability Plastic Bristles							
8″	1¾″	½″	36″	Soft	Black	7208T1	9.95
(E) Combination Dust Brush/Squeegee							
Fine-Sweeping Chemical-Resistant Plastic Bristles							
8″	2¾″	1¾″	14″	Soft	Blue	7468T5	9.90

★ Has a beige plastic handle and block.

Compact Dust Mops

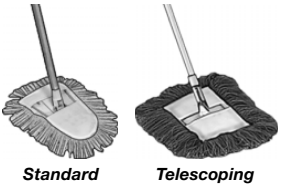

Designed for use in hard-to-reach places such as corners and under equipment. Both dust mops are washable.

Standard— Also known as a wedge mop, it has a 54″ long wood handle. Mop head is off-white cotton.

Telescoping— Handle is steel and extends from 44″ to 78″. Mop head is red or blue nylon yarn.

	Frame Size	O'all Mop Size	Complete Mops		Mop Head Refill	
Standard	4″×8½″	12″×17″	7319T3	$14.35	7319T4	$4.94
Telescoping	6″×8″	12″×15″	9828T39	19.26	9828T38	9.43

Dust Mitt

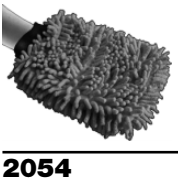

Replace your old rags and cloths with this secure-fitting glove that's perfect for dusting rounded surfaces. Specially treated layers of washable, blue microfiber attract and hold dust like a magnet. Size is 7″ Wd.×9″ Lg.

7713T11 ..... $9.26

Whisk Brooms

Plastic— Flexible, narrow, chemical-resistant bristles fit easily into tight spaces. Handle is white plastic; bristles are blue.

Corn— Stiffer than plastic bristles.

Heavy Duty Natural— Has the stiffest bristles. Handle is wood; bristles are black.

Bristle Material	Broom Wd.	Bristle Lg.	O'all Lg.		
Plastic	3″	2⅛″	6½″	7380T11	$1.50
Corn	7″	10½″	12″	7148T1	4.72
Heavy Duty Natural	4″	6″	9½″	7148T3	8.00

Dusters

(F&G) Lambswool Dusters— Dusters polish while they dust. All are washable, have a plastic handle, and are beige. *Style G* has an adjustable head to reach the most inaccessible areas.

(H) Feather Dusters— Made of brown ostrich feathers. Handle is wood.

(J) Disposable Dust Sleeves— Slip over both lambswool and feather dusters to prolong their life while attracting and holding dust. They are 7″ Wd.×18″ Lg. Color is yellow.

Handle Style	Duster Lg.	O'all Lg.		Each
Lambswool Dusters				
F ... Fixed	12″	28″	7493T14	$6.50
F ... Telescoping	10″	30″-42″	7493T11	10.53
G ... Flexible/Telescoping	12″	33″-58″	7493T13	11.44
Feather Dusters				
H ... Fixed	7″	13″	7246T2	12.68
H ... Fixed	16″	31″	7246T1	23.71
J ... Disposable Dust Sleeves (50/Pkg.)			7493T37	**Pkg.** $33.97

Dust Cloths

These mineral-oil treated cloths pick up dust and leave a polished finish that protects with no waxy buildup. Just stretch cloths to release oil. Color is orange.

Size	Pkg. Qty.		Pkg. 1-4	Pkg. 5-Up
12″×24″	40	7124T12	$15.70	$14.00

Mini Dust and Dirt Brushes

Ideal for confined areas. Handles are wood.

Whisk Style— Handle is 4¾″ long. Bristles are ⅞″ wide.

Toothbrush Style— Handle is 6″ long. Bristles are 1½″ wide.

Plastic bristles are durable and temperature resistant. Bristles are black. *Horsehair* bristles are soft for fine cleaning. Bristles are black. *Steel* bristles are the most aggressive, and *brass* bristles are the softest metal. *Stainless steel* bristles are corrosion resistant.

Bristle Material	Whisk Style Bristle Lg.			Toothbrush Style Bristle Lg.		
Plastic	½″	63285T11	$2.09	9/16″	70305T51	$2.46
Horsehair	½″	63285T12	2.21	9/16″	70305T52	2.53
Steel	½″	63285T15	2.22	⅝″	70305T55	2.74
Brass	½″	63285T13	2.40	9/16″	70305T53	2.82
Stainless Steel	½″	63285T14	2.43	½″	70305T54	2.97

Dust Mops

Keep your floors sparkling with these dust- and dirt-removing mops. Backing is tightly secured to the frame with two or more tie straps, yet still allows for easy mop changes.

Cotton Mop Heads— The industry standard and our most economical. Color is off-white. *Washable refills* are 4-ply cotton with excellent dust retention and will withstand multiple launderings. *Disposable refills* are cotton with a dust mop treatment that stops dust and debris from scattering during shakeout.

Nylon Mop Heads— Act as a dust magnet, picking up and holding dust without using a dust mop treatment. Nylon is extremely durable and won't lint or fray, even after multiple launderings. Color is blue.

Complete Mops— Include a steel frame, a 54″ long swivel wood handle, and a washable mop head. Mops with 48″, 60″, and 72″ wide frames have brace bars for added strength.

Also Available: Replacement mop frames. Please ask for 7305T65 and specify depth (3¼″ or 5″) and width (18″ to 72″ in sizes below).

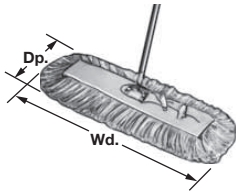

Dust Mops and Refills

Wd.	3¼″ Dp. COTTON Complete Mops		3¼″ Dp. COTTON Washable Mop Head Refill		5″ Dp. COTTON Complete Mops		5″ Dp. COTTON Washable Mop Head Refill		5″ Dp. COTTON Disposable Mop Head Refill		5″ Dp. NYLON Complete Mops		5″ Dp. NYLON Washable Mop Head Refill	
18″	7321T14	$27.22	7321T26	$11.19	7305T15	$28.92	7305T25	$12.05	7305T35	$7.35	7310T15	$32.64	7310T25	$14.76
24″	7321T15	31.50	7321T27	13.65	7305T16	30.96	7305T26	15.03	7305T36	7.57	7310T16	35.28	7310T26	16.92
30″	7321T16	33.10	7321T28	15.30	7305T17	34.02	7305T27	16.51	7305T37	9.05	7310T17	38.06	7310T27	19.65
36″	7321T17	35.08	7321T29	16.89	7305T18	36.34	7305T28	18.32	7305T38	9.81	7310T18	42.80	7310T28	23.84
48″	7321T19	49.02	7321T32	22.54	7305T19	48.44	7305T29	24.38	7305T39	15.38	7310T19	54.54	7310T29	29.46
60″	7321T22	53.34	7321T34	26.86	7305T21	56.52	7305T31	29.43	7305T41	18.49	7310T21	61.06	7310T31	35.00
72″	7321T23	60.40	7321T35	30.84	7305T22	62.98	7305T32	32.89	7305T42	22.51	7310T22	70.78	7310T32	39.97

Replacement Mop Handles

	Wood		Fiberglass	
54″ Lg. Handle	7321T41	$11.36	7321T71	$15.62
60″ Lg. Handle	7321T42	12.62	7321T72	16.54

Microfiber Dust Mop Conversion Kits

Convert your standard dust mop into a highly absorbent microfiber dust mop. Kits work with any standard wire mop frame up to 5″ deep. Simply slide the adapter over your existing mop frame and attach the microfiber mop head with the hook and loop backing. Mop head is blue, holds dust and dirt without a dust mop treatment, and can be washed and reused up to 300 times.

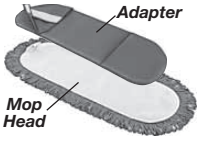

Wd.	Adapter with Mop Head		Mop Head Refill	
24″	8522T62	$31.28	8522T35	$15.63
36″	8522T63	40.95	8522T45	21.12
48″	8522T64	49.16	8522T55	25.47

Dust Mop Treatment

Maximize your dust mop's cleaning power with this dust- and dirt-grabbing treatment. It's water-based and stops dust and debris from scattering during shakeout.

The ***1-gal. liquid*** is UL listed for slip resistance.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
18-oz. (net wt.) Aerosol	12	7418T22	$6.58	$5.90
1-gal. Liquid	6	7418T11	14.38	12.94

Bucketless Microfiber Wet Mop

A built-in 52-oz. plastic reservoir dispenses cleaning solution directly onto the mop head. Mop head is made of blue washable microfiber, and it attaches to the frame with hook and loop backing. Frame is plastic and has a 57½″ long aluminum handle.

Wd.	Dp.	Complete Mop		Mop Head Refill 1-9	Mop Head Refill 10-Up
21″	5½″	8523T16	$149.91	8523T26	$6.70	$5.92

Floor-Finish Applicators

The perfect touch for applying wax, varnish, oils, and sealers to floors. Applicators include a washable lambswool pad held securely by two wood blocks. Both have a 54″ long coated steel handle with a threaded nylon tip.

Size, Wd.×Dp.	Applicators		Refill Pad 1-11	Refill Pad 12-Up
10″×5 9/16″	7322T1	$13.58	7322T3	$4.84	$4.08
16″×5 9/16″	7322T2	17.78	7322T4	7.54	6.36

Quick-Change Cotton Dust/Damp Mops

Use one mop to satisfy your dust- and damp-mopping needs. Hook and loop backing on the plastic frame makes for easy mop head changeout.

Mop head has 4-ply, off-white cotton loops that won't fray or lint and will withstand multiple launderings. Handle is 54″ long wood and swivels.

Size, Wd.×Dp.	Complete Mops		Mop Head Refill	
18″×6½″	6913T11	$39.32	6913T21	$11.07
24″×6½″	6913T12	41.94	6913T22	13.00
36″×6½″	6913T13	52.48	6913T23	17.50

Wall Washer Mop

Clean high, hard-to-reach areas. This mop has a 60″ long aluminum handle and a plastic pivoting head. Includes two washable, 9″×5″ off-white cotton pads. Use with both sideward- and downward-pressure mop wringers.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Wall Washer	1	20045T11	—	$54.33
Repl. Cotton Pad	12	20045T22	$13.79	10.79

Clean Room Wall Washer Mop

This one-time use, abrasion-resistant foam mop head is disposable. Handle is anodized aluminum; frame is stainless steel. (Handle and frame sold separately.) Mop head is white and measures 12¾″×4¼″. Handle telescopes from 50″ to 86″.

	Pkg. Qty.		Pkg.
Mop Head Only	4	5548T11	$41.82
Mop Handle and Frame		5548T31	Each $142.46

Ready-to-Use Mop Heads with Handle

Also known as deck mops, these mops come with a wood handle already attached. Mop head is off-white, 4-ply cotton with cut ends.

Approx. Weight	Approx. Lg.×Dia.	Handle Lg.		1-5	6-Up
12 oz.	14″×2½″	48″	7386T21	$5.46	$4.90
16 oz.	15″×3″	48″	7386T22	6.92	6.22
20 oz.	17″×3¼″	54″	7386T23	9.34	8.41
24 oz.	19″×3½″	54″	7386T24	10.64	9.58
32 oz.	21″×3½″	60″	7386T25	12.70	11.43

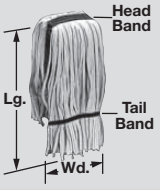

About Wet Mops

Ply—The number of yarn threads twisted together to make a single strand in a mop head. The greater the ply, the more durable the mop.

Weight—Sometimes referred to as a mop's size, this is the actual weight of the dry mop head. The heavier the mop head, the more liquid it can hold.

Headband—Located at the top of the mop head, this strip of fabric holds the mop strands together and is used to attach the mop head to the handle.

Tailband—Located at the bottom of the mop head, this strip of fabric secures the mop head strands to prevent them from tangling and allows the strands to lay flat for wide, even mop coverage.

Wet Mop Heads

The economical choice for wet-mop heads. They can't be laundered; just toss them out when worn.

Cotton Cut-End Mop Heads

Our most popular cut-end mop heads, these are off-white and offer good absorption. Headband is 1¼″ deep. Handle sold separately; see styles A-C on page 2057.

Approx. Weight	4 Ply Approx. Lg.×Wd.		Each ♦	8 Ply Approx. Lg.×Wd.		Each ♦
12 oz.	14″×5½″	7317T16	$3.23	14″×5½″	7317T11	$3.51
16 oz.	16″×5½″	7317T17	4.25	16″×5½″	7317T12	4.64
20 oz.	18″×6″	7317T18	5.12	18″×6″	7317T13	5.65
24 oz.	20″×6″	7317T19	6.03	20″×6″	7317T14	6.66
32 oz.	22″×6½″	7317T21	8.00	22″×6½″	7317T15	8.83
	16 Ply			**32 Ply**		
12 oz.	14″×5½″	7317T31	$3.82	14″×5½″	7317T34	$4.61
16 oz.	16″×5½″	7317T22	5.08	16″×5½″	7317T25	6.02
20 oz.	18″×6″	7317T35	6.10	18″×6″	7317T38	7.49
24 oz.	20″×6″	7317T23	7.39	20″×6″	7317T26	8.82
32 oz.	22″×6½″	7317T24	9.59	22″×6½″	7317T27	11.70

♦ Prices are approximately 10% lower when you purchase 12 or more.

Rough-Surface Cotton-Blend Cut-End Mop Heads

With Tailband

The strongest and most shed-resistant cut-end mop heads we carry. All are white and work well on rough flooring such as stone and concrete. Made of a blend of recycled cotton and synthetic tubular strands. Headband is 1¼″ deep. Handle sold separately; see styles A-C on page 2057.

Approx. Weight	Approx. Lg.×Wd.		1-11	12-Up
Without Tailband				
16–20 oz.	19½″×6½″	6505T33	$11.11	$9.88
24–32 oz.	21½″×6½″	6505T34	12.81	11.41
With Tailband				
16–20 oz.	19½″×6½″	6505T37	12.56	11.18
24–32 oz.	21½″×6½″	6505T38	14.32	12.74

Highly Absorbent Rayon Cut-End Mop Heads

These mop heads absorb more liquid and dry faster than cotton mop heads. They are white, 8 ply, low linting, and are excellent for applying floor finishes and disinfectants. Headband is 1¼″ deep. Handle sold separately; see styles A-C on page 2057.

Approx. Weight	Approx. Lg.×Wd.		1-11	12-Up
16 oz.	14″×6½″	6329T32	$4.84	$4.36
20 oz.	16″×6½″	6329T37	5.82	5.24
24 oz.	18″×6½″	6329T34	6.82	6.14
32 oz.	20″×6½″	6329T36	8.89	8.00

Highly Absorbent Rayon Cut-End Mop Heads w/Scrub Pad

Mop heads are white, 8 ply, and come with a 6″×4½″ nylon/polyester scrub pad at the base of the headband for more difficult cleaning jobs. Headband is 1¼″ deep. Handle sold separately; see styles A-C on page 2057.

Approx. Weight	Approx. Lg.×Wd.		1-11	12-Up
16 oz.	15½″×6″	6386T16	$8.10	$7.28
20 oz.	17″ ×6″	6386T13	9.13	8.21
24 oz.	18½″×6″	6386T14	10.11	9.08
32 oz.	21″ ×6″	6386T17	12.21	10.97

Durable Cotton-Blend Cut-End Mop Heads

A blend of cotton and synthetic yarns makes these off-white, 4-ply mop heads more absorbent than standard cotton. Headband is 1½″ deep. Handle sold separately; see styles A-C on page 2057.

Approx. Weight	Approx. Lg.×Wd.		1-11	12-Up
16 oz.	16″×7″	7407T11	$6.11	$5.52
20 oz.	17″×7″	7407T12	7.18	6.50
24 oz.	19″×7¼″	7407T13	8.34	7.55
32 oz.	22″×7½″	7407T14	10.76	9.74

Wet Mop Heads with Threaded Handle Holder

"Closed" ends form small circles to avoid fraying and offer more durability. Mops are 4 ply. Handle sold separately; for additional threaded handles, see 7255T on page 2053.

Cotton—Color is off-white.

Synthetic—More durable and absorb more than cotton. Color is white.

Approx. Weight	Cotton Approx. Lg.×Wd.		Each ♦	Synthetic Approx. Lg.×Wd.		Each ♦
20 oz.	18½″×7¼″	64035T52	$7.84	19″ ×7¼″	64035T55	$8.00
24 oz.	20½″×7½″	64035T53	8.68	21″ ×7½″	64035T56	9.18
28 oz.	21″ ×7¾″	64035T54	9.63	21½″×7¾″	64035T57	9.89

60″ Threaded Wood Handle ..... 7255T4 **Each** $6.16

♦ Prices are approximately 10% lower when you purchase 12 or more.

Washable Wet Mop Heads

All mop heads have a tailband and come with looped ends—no cut ends to fray or unravel. They are lower linting than cut-end mop heads and can be laundered and reused.

Choose-a-Color Cotton-Blend Mop Heads

Assign different colored mops to different areas to eliminate cross contamination. Made of a 4-ply blend of cotton and synthetic material for durability. They have a 5″ deep headband. Handle sold separately; see style D on page 2057. **To Order:** Where necessary, please specify color: blue or green.

Approx. Weight	Approx. Lg.×Wd.		*Off-White* Each ♦		*Choose-a-Color* Each ♦
11 oz.	17″ ×6¼″	7458T11	$7.90	7458T25	$9.11
17 oz.	19½″ ×6¼″	7458T12	10.07	7458T26	11.70
22 oz.	21½″ ×6¼″	7458T13	11.80	7458T27	14.75
26 oz.	22″ ×6¼″	7458T14	15.30	7458T28	18.95

♦ Prices are approximately 10% lower when you purchase 12 or more.

Clean Room Polyester Mop Head

You can use this mop head in Class 1 clean rooms. Mop head is white, weighs 16 oz., measures 15¼″ Lg.×7½″ Wd., and has tubular strands. Headband is 3″ deep. Handle sold separately; see style E on page 2057.

63695T71 ..... 1-11 $29.13 12-Up $24.97

Choose-a-Color Microfiber Mop Heads

Assign different-colored mops to different jobs and areas to help eliminate cross contamination. These microfiber mop heads provide excellent liquid and dirt pick-up, dry floors faster, and are washable. Headband is 3½″ deep. Handle sold separately; see style B on page 2057. **To Order:** Please specify color: blue, green, red, or yellow.

Approx. Weight	Approx. Lg.×Dia.		1-4	5-Up
11 oz.	14″×6″	3636T11	$15.84	$14.23
16 oz.	14″×6″	3636T12	21.44	19.26

High-Performance Cotton-Blend Mop Heads

These white, 4-ply mop heads are made of a blend of cotton and synthetic material to withstand heavy use. Headband is 5″ deep. Handle sold separately; see style D on page 2057.

Approx. Weight	Approx. Lg.×Wd.		1-5	6-Up
16 oz.	14″×6″	8199T44	$11.75	$10.36
23 oz.	17″×6″	8199T45	14.10	12.43
29 oz.	17″×6″	8199T46	17.35	15.29

Wet-Mop Handles

(A) Spring Head with Clamp— Lift the easy-opening spring latch, insert the mop head, and snap the latch down.

(B) Swing-Away Bar— Loosen the nut, swing the bar away, insert the mop head, swing the bar back into place, and retighten the nut.

(C) Adjustable Bar— Loosen the nut, slide the center bar up, insert mop head between the bar and the handle end, and retighten the nut.

(D) Clamp Jaw— Plastic jaws clamp down on wide headbands for a secure hold. Turn the adjustment sleeve to loosen the jaws, insert the mop's headband between the jaws, and retighten the sleeve.

(E) Snap Bar— Unhook the bar, insert the mop head, then swing the bar back and snap it in place.

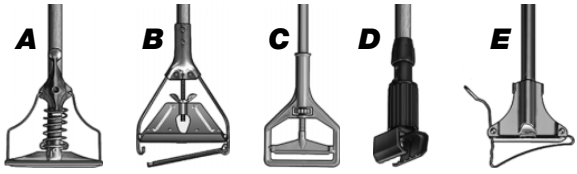

Plated Steel Head *Plastic Head*

	Style	Handle Material	Head Material	O'all Wd.	O'all Lg.	Handle Dia.		
A	Spring Head with Clamp	Wood	Plated Steel	7″	54″	1⅛″	**7323T1**	$5.63
B	Swing-Away Bar	Wood	Plated Steel	7¼″	60″	1⅛″	**7323T4**	8.67
B	Swing-Away Bar	Vinyl-Coated Steel	Plated Steel	7″	62″	1″	**7228T87**	10.23
B	Swing-Away Bar	Vinyl-Coated Steel	Plated Steel	7″	68″	1″	**7228T88**	11.16
B	Swing-Away Bar	Fiberglass	Plastic	7⅝″	64″	1″	**7408T12**	17.02
C	Adjustable Bar	Vinyl-Coated Steel	Plated Steel	7″	62½″	1⅛″	**7441T3**	11.59
C	Adjustable Bar	Fiberglass	Plastic	7⅝″	64″	1″	**7408T11**	15.71
D	Clamp Jaw	Vinyl-Coated Steel	Plastic	3″	60″	15/16″	**7228T86**	12.14
D	Clamp Jaw	Fiberglass	Plastic	3½″	60″	1″	**7408T13**	16.69
E	Snap Bar	Stainless Steel	Stainless Steel	5¾″	60″	1″	**6190T48**	153.30

Plastic Mop Buckets and Wringers

Bucket/Wringer Combinations and ***Buckets—*** All buckets have a handle, pour spout, measuring graduations, a universal "Caution" warning on the outside wall, and casters with nonmarring wheels. **To Order:** Where necessary, please specify color: blue or yellow.

Easy-empty styles let you drain water from the bottom of the bucket. The 35-qt. bucket has a self-draining spigot and a sediment screen to trap dirt. The 44-qt. bucket has a foot-operated lever.

One-piece bucket/wringer has a molded, one-piece bucket and wringer so the wringer will not move or lift off the bucket when in use. It also has a self-draining spigot and a sediment screen to trap dirt.

Wringers are compatible with all buckets listed. *Sideward-pressure wringer* has a side-mounted handle that moves an inner wringer plate forward against the wet mop. *Downward-pressure wringer* has an off-center-mounted handle that moves two wringer plates downward against the mop to squeeze out more water than the sideward-pressure wringer. **To Order:** Please specify color with capacity: blue (26 or 35 qt.) or yellow (26, 35, or 44 qt.).

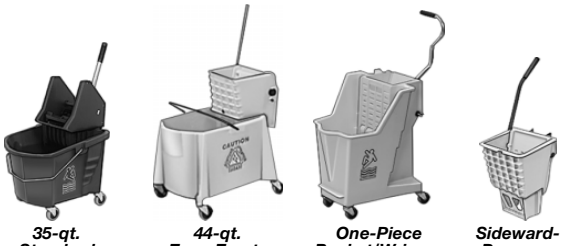

35-qt. Standard Bucket/Wringer Combination *44-qt. Easy-Empty Bucket/Wringer Combination* *One-Piece Bucket/Wringer Combination* *Sideward-Pressure Wringer*

Bucket Style	Cap., qt.	Inside Bucket Size, Wd.×Lg.×Ht.	Available Colors	Bucket/Wringer Combinations: Wringer Style	For Mop Weight			Bucket Only	
Standard	26	12⅛″×15 11/16″× 8⅜″	Blue, Yellow	Sideward	12-32 oz.	**9837T7**	$71.08	**6348T26**	$41.67
Standard	35	12⅛″×17½″ ×10 15/16″	Blue, Yellow	Downward	16-32 oz.	**9837T8**	106.89	**6348T36**	48.33
Easy Empty	35	12⅛″×17½″ ×10 15/16″	Yellow	Sideward	12-32 oz.	**27035T4**	108.26	**27035T7**	77.70
Easy Empty	44	15″ ×22″ ×14¼″	Yellow	Sideward	12-32 oz.	**27035T2**	155.60	———	———
One Piece	35	10⅞″× 9¾″ ×14 3/16″	Blue, Yellow	Sideward	12-32 oz.	**6318T2**	115.68	———	———
Sideward-Pressure Wringer for 12-32 oz. Mops								**7037T1**	$60.21
Downward-Pressure Wringer for 16-32 oz. Mops								**7037T6**	80.37

Downward-Pressure Wringer

Galvanized Steel and Stainless Steel Mop Buckets and Wringers

The heavy duty favorites. *Galvanized steel* models resist corrosion, while *stainless steel* models provide maximum corrosion resistance.

Buckets— All have a handle, measuring graduations, and casters.

Wringers— *Sideward-pressure wringer* has a side-mounted handle that moves an inner wringer plate forward to wring out the mop. *Downward-pressure wringers* have a center-mounted handle that moves two inner wringer plates downward to wring out more water than sideward-pressure wringers. Use *galvanized steel wringers* with galvanized steel buckets, and use the *stainless steel wringer* with the stainless steel bucket.

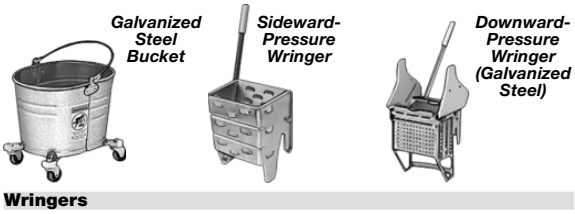

Galvanized Steel Bucket *Sideward-Pressure Wringer* *Downward-Pressure Wringer (Galvanized Steel)*

Buckets

Material	Cap., qt.	Inside Size, Wd.×Lg.×Ht.		
Galvanized Steel	26	12″×16½″×10¾″	**7306T16**	$86.91
Galvanized Steel	35	12″×17½″×14″	**7306T17**	104.23
Stainless Steel	20	12⅛″ Dia. ×13½″ Ht.	**7331T16**	311.17

Wringers

Style	Material	For Mop Weight		
Sideward	Galvanized Steel	12-32 oz.	**7303T26**	$78.25
Downward	Galvanized Steel	16-24 oz.	**70255T42**	126.73
Downward	Galvanized Steel	24-36 oz.	**70255T43**	155.31
Downward	Stainless Steel	16-24 oz.	**3622T72**	321.50

Self-Wringing Sponge Mops

Simply pull on the lever handle to squeeze out excess dirt and water from the mop head.

Polyurethane Sponge Mops— Good resistance to cleaning solutions and bacteria buildup. Sponge remains soft whether wet or dry. A single wringer on each side of the mop head forces out water. Mops with stainless steel handles are autoclavable.

PVA (Polyvinyl Alcohol) Sponge Mops— Both are lint free, highly absorbent, and have high chemical resistance. Soft when wet, but hard when dry. Two wringers on each side of the mop head squeeze out more water than polyurethane sponge mops.

Mop Head, Wd.×Dp.	Complete Sponge Mops: Handle Lg.			Repl. Sponge 1-11	12-Up
Polyurethane Sponge Mops with Galvanized Steel Handles					
10″×3¼″	48″	**7332T2**	$20.13	**7332T5** $9.23	$8.29
14″×3¼″	48″	**7332T3**	23.77	**7332T6** 12.06	10.85
Polyurethane Sponge Mops with Stainless Steel Handles					
10″×3¼″	48″	**7332T11**	127.50	**7332T13** 14.34	12.80
14″×3¼″	48″	**7332T12**	131.19	**7332T14** 15.76	14.07
PVA Sponge Mops with Telescopic Aluminum Handles					
11″×2⅜″	39″-52″	**7332T46**	21.49	**7332T48** 5.33	4.73
16″×2⅜″	39″-52″	**7332T47**	26.87	**7332T49** 7.00	6.20

Polyurethane

Economy Floor Squeegees

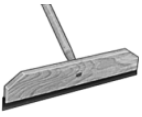

These light duty squeegees have a single-ply, black SBR/neoprene blade and a 60″ long tapered wood handle.

Blade Wd. × Ht.		
18″ × 1½″	7344T22	$14.79
24″ × 1½″	7344T23	16.36

Floor Squeegees

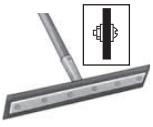

Straight Blade, Single-Ply, Double-Sided

Straight Blade, Single-Ply w/Scraper

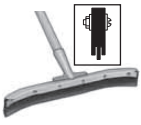

Curved Blade, Triple-Ply

Frames are steel and include a 60″ long tapered wood handle.
Curved Blade— Collect more liquid within the width of the blade.
Double-sided blades double the service life.
Neoprene resists oil, grease, and chemicals. Blade is black.
Nonmarking rubber is safe for light-colored floors. Blade is gray.

Blade Wd. × Ht.	with Straight Blade		with Curved Blade		Repl. Blade	
Single-Ply Blades for Smooth Surfaces						
Double-Sided Neoprene Blades						
18″ × 3¼″	9829T11	$28.86	9830T21	$34.80	9829T5	$11.67
24″ × 3¼″	9829T12	34.25	9830T22	38.00	9829T6	13.31
30″ × 3¼″	9829T13	39.37	9830T23	42.86	9829T7	17.00
36″ × 3¼″	9829T14	45.90	9830T24	48.82	9829T8	19.64
Neoprene Blades with Scraper						
18″ × 2¼″	7343T22	20.70	—	—	7343T17	6.18
24″ × 2¼″	7343T23	25.00	—	—	7343T18	7.96
30″ × 2¼″	7343T24	27.91	—	—	7343T19	9.43
36″ × 2¼″	7343T25	30.51	—	—	7343T21	11.70
Nonmarking Rubber Blades						
18″ × 2″	7342T21	26.24	7342T31	30.86	7342T41	6.76
24″ × 2″	7342T22	30.67	7342T32	32.80	7342T42	8.66
30″ × 2″	7342T23	32.56	7342T33	36.66	7342T43	10.90
36″ × 2″	7342T24	38.38	7342T34	39.20	7342T44	12.90
Triple-Ply Blades for Uneven Surfaces						
Neoprene Blades						
18″ × 2″	9844T71	30.55	9844T75	37.22	9844T83	15.57
24″ × 2″	9844T72	34.95	9844T76	39.02	9844T84	20.30
30″ × 2″	9844T73	39.89	9844T77	42.00	9844T85	25.71
36″ × 2″	9844T74	44.35	9844T78	47.59	9844T86	30.50
Nonmarking Rubber Blades						
18″ × 2″	7417T11	29.52	7417T15	35.61	7417T51	11.54
24″ × 2″	7417T12	33.44	7417T16	37.92	7417T52	14.80
30″ × 2″	7417T13	38.00	7417T17	42.63	7417T53	18.95
36″ × 2″	7417T14	42.05	7417T18	45.79	7417T54	22.00

Spark-Resistant Floor Squeegees

Straight

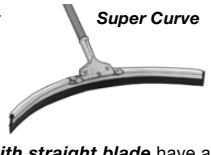

Super Curve

Spark-resistant aluminum frames allow you to safely move volatile liquids. Blades are black and resist oil, gasoline, and most chemicals. All come with a 60″ long tapered wood handle.

Squeegees ***with straight blade*** have a single-ply, neoprene blade. Squeegee ***with super-curve blade*** has a rubber blade. Curved blade collects more liquid within the width of the blade, and the handle flips for pushing or pulling.

Blade Wd. × Ht.	Squeegees		Repl. Blade	
With Straight Blade				
18″ × 2″	7337T51	$25.10	7337T61	$6.30
24″ × 2″	7337T52	26.44	7337T62	8.39
36″ × 2″	7337T54	34.12	7337T64	12.08
With Super-Curve Blade				
30″ × 2⅛″	7068T24	42.52	7068T37	12.34

Combination Sweeper/Squeegee

Made of one-piece molded rubber, this sweeper/squeegee is 18″ wide and has soft 1⅜″ long bristles. Blade and bristles are black. Handle is steel and extends from 33″ to 60″.

Sweeper/Squeegee	8814T2	$17.39
Replacement Handle	8814T4	4.00

Fast-Dry Floor Squeegees

Blades are double foam-rubber, making them ideal for uneven surfaces and for moving more liquid so floors dry quickly. All blades are black, unless otherwise indicated. Neoprene resists oil, grease, and chemicals.

Standard

All have a galvanized steel frame. Choose a 60″ long tapered wood handle or 54″ long aluminum handle.
Rubber with neoprene blade is red.

Blade Material	Blade Wd. × Ht.	with Wood Handle		with Aluminum Handle	
Rubber	30″ × 2″	7482T21	$37.20	7482T24	$45.12
Rubber w/Neoprene	30″ × 2″	7482T22	43.40	7482T25	65.35
Replacement Aluminum Handle				7482T13	$14.85

Hygienic with Choose-a-Color Brush

The FDA-compliant, white plastic frame resists chemicals and has 1″ long plastic bristles for scrubbing. Handle is 60″ long white fiberglass. **To Order:** Please specify bristle color: black, red, or yellow.

Blade Material	Blade Wd. × Ht.		
Neoprene	22″ × 1⅝″	9183T42	$63.40
Repl. Fiberglass Handle		9183T43	24.04

Hygienic with Scraper and Choose-a-Color Frame

Scraper edge removes tough debris. All have colored frames and matching 59″ long fiberglass handles. **To Order:** Please specify color: blue, red, white, or yellow.

Blade Material	Blade Wd. × Ht.	Squeegees		Repl. Blade	
Rubber	16″ × 1½″	70485T5	$52.44	70485T31	$10.68
Rubber	20″ × 1½″	70485T6	54.90	70485T32	13.14
Rubber	24″ × 1½″	70485T7	56.11	70485T33	15.27
Rubber	28″ × 1½″	70485T8	58.23	70485T34	17.51
Replacement Fiberglass Handle				70485T1	$35.53

Food-Grade Floor Squeegees

Made of FDA-compliant materials.

Standard

Perfect for use in food service applications and hospitals. Frames are stainless steel. Blades are nonmarking, single ply, and made of white nitrile rubber. Include a 60″ long threaded, white, fiberglass handle.

Blade Wd. × Ht.	Squeegees		Repl. Blade	
18″ × 2″	7047T11	$51.82	7047T21	$9.97
24″ × 2″	7047T12	58.78	7047T22	12.53
30″ × 2″	7047T13	69.16	7047T23	15.18
36″ × 2″	7047T14	75.55	7047T24	17.75

Choose-a-Color Ultra Hygienic with Scraper

One-piece design keeps food from sticking between the blade and frame. Frame is made of reinforced plastic with a single-ply rubber blade and molded-in scraper/splash guard. All have a 51″ long fiberglass handle. Frame, handle, and blade are the same color. **To Order:** Please specify color: blue, green, red, white, or yellow.

Blade Wd. × Ht.			Blade Wd. × Ht.		
16″ × 1⅜″	8481T1	$60.15	24″ × 1⅜″	8481T3	$65.87
20″ × 1⅜″	8481T2	62.39	28″ × 1⅜″	8481T4	69.36

Chemical-Resistant Floor Squeegees

Twin white PVC blades resist oils, greases, and solvents. The second blade doubles the life of the squeegee and acts as a splash guard. All have a fiberglass handle that extends from 37″ to 64¾″ long.

Blade Wd. × Ht.		
18″ × 1″	7505T41	$50.72
24″ × 1″	7505T42	54.35
30″ × 1″	7505T43	59.24
Replacement Handle	7505T13	26.67

Window Squeegees

Use these metal-frame squeegees alone or with tapered handles (sold separately on this page).

Steel Frame— Have double-ply blades (one flexible blade that stays in constant contact with the surface and one cushion blade for support). Frame is zinc-plated steel. Squeegees ***with standard blade*** have two red rubber blades. Squeegees ***with chemical-resistant blade*** resist ink, oils, coolants, and most solvents. The wiping blade is neoprene and is supported by a cushioned vinyl blade. Both blades are white.

Stainless Steel Frame— Blade is single ply and made of flexible black rubber. Frame is corrosion-resistant stainless steel. *Replacement blades* include a stainless steel channel.

Steel Frame

STEEL FRAME WITH STANDARD BLADE				STEEL FRAME WITH CHEMICAL-RESISTANT BLADE				STAINLESS STEEL FRAME			
Blade Wd.	Blade Ht.	Squeegees	Repl. Blade	Blade Ht.	Squeegees	Repl. Blade		Blade Ht.	Squeegees	Repl. Blade	
6″	1″	7334T31	$5.31	7334T38	$2.13	1¼″	7333T61	$10.50	7333T68	$3.15	¾″	3590T81	$12.11	3590T71	$5.96
8″	1″	7334T32	5.60	7334T39	2.58	1¼″	7333T62	11.34	7333T69	3.73	¾″	3590T62	14.96	3590T72	6.81
10″	1″	7334T33	6.28	7334T41	2.97	1¼″	7333T63	12.15	7333T71	4.35	¾″	3590T63	15.30	3590T73	7.50
12″	1″	7334T34	6.95	7334T42	3.38	1¼″	7333T64	12.75	7333T72	4.70	¾″	3590T64	15.74	3590T74	8.09
14″	1″	7334T35	7.68	7334T43	3.85	1¼″	7333T65	14.10	7333T73	5.35	¾″	3590T65	16.01	3590T75	8.78
18″	1″	7334T37	9.07	7334T45	4.62	1¼″	7333T67	16.08	7333T75	6.24	¾″	3590T67	17.67	3590T77	10.45
22″	—	—	—	—	—	—	—	—	—	—	¾″	3590T68	19.11	3590T78	11.90

Food-Grade Window Squeegees

Bacteria can't hide in these hygienic, channel-free squeegees. All blades are tapered.

Squeegees without handle are low-profile, lightweight, nonscratching, and dishwasher safe. Blade is single-ply, white PVC. Gripping portion is blue, 1¼″ high, and plastic.

Choose-a-color squeegee with handle helps avoid cross contamination between areas. Blade is single-ply rubber and has a splash guard. Handle is 6½″ long and plastic. Blade and handle are the same color. **To Order:** Please specify color: blue, green, red, white, or yellow.

Without Handle

With Handle

Blade Wd. × Ht.		
Squeegees without Handle		
8″ × ⅝″	3598T11	$3.80
12″ × ⅝″	3598T12	4.90
18″ × ⅝″	3598T13	7.08
Choose-a-Color Squeegee with Handle		
11″ × 1⅛″	5279T1	17.69

Conformable-Blade Window Squeegee

Wipe irregular and rounded surfaces. This squeegee has a nonscratching, silicone blade. Blade is clear and is 11″ wide.

4137T51 ..... $15.61

Combination Sponge/Squeegee

Clean with the sponge and then wipe dry with the attached squeegee. One side has a sponge with nylon mesh; the other has a soft, black rubber squeegee with a zinc-plated steel frame. Blades are single ply.

Telescoping aluminum handle locks at the desired length.

With Wood Handle

Blade Wd. × Ht.	Sponge Wd. × Ht. × Thick.	Handle Lg.		
With Wood Handle				
8″ × 1″	7¾″ × 1½″ × 1¼″	16″	6385T15	$5.88
8″ × 1″	7¾″ × 1½″ × 1¼″	24″	6385T16	6.35
10″ × 1″	9⅞″ × 1¼″ × 1″	16″	6385T25	5.38
10″ × 1″	9⅞″ × 1¼″ × 1″	24″	6385T26	5.66
With Telescoping Aluminum Handle				
10″ × 1″	9⅞″ × 1¼″ × 1″	4′ to 7′	7508T35	17.60
Replacement Sponge/Squeegee				
10″ × 1″	9⅞″ × 1¼″ × 1″	—	7508T36 ♦	4.09

♦ Price is 15% lower when purchased in full-package quantities of 12.

Windshield Wipers

A

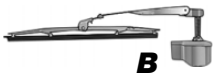

B

(A) Hand-operated wiper has a 2½″ chrome-plated brass handle that you move from side to side to operate. The stainless steel wiper arm adjusts from 7½″ to 12″ and has an 11″ long rubber blade. Use on flat surfaces only, indoors and outdoors. Mounting hardware included.

(B) Motorized kits include a ⅝″ Dia. × 2½″ Lg. motor shaft. Motor operates at 12 volts, 5 amps; motor housing is water-resistant plastic. The stainless steel wiper arm adjusts from 10″ to 14″ and has a 14″ long rubber blade with plastic holder. Use on flat and curved surfaces, indoors and outdoors.

	Wipers		Repl. Blade	
(A) Hand-Operated Wiper				
With 360° Sweep	6515T21	$47.70	6515T81	$16.84
(B) Motorized Kits				
With 80° Sweep	6515T24	147.47	6515T83	19.21
With 110° Sweep	6515T25	148.29	6515T83	19.21

Quick-Change Adjustable Window Squeegees

A quick-release thumb lever allows you to move the channel off-center. All have a single-ply, black rubber blade. Frame is brass. Squeegees also can be used with tapered handles (sold separately on this page). *Replacement blades* include a brass channel.

Blade Wd. × Ht.	Squeegees		Repl. Blade	
6″ × ¾″	7335T41	$19.44	7335T46	$6.10
12″ × ¾″	7335T43	23.67	7335T48	9.46
18″ × ¾″	7335T44	26.43	7335T49	12.19

Window Washers

All can be used with tapered handles (sold separately on this page). Frame and handle are green plastic, unless noted.

Standard washers have a soft white pad that is 2½″ high.

Standard

With Scrubbing Pad

Washers with scrubbing pad have a soft white pad on one side and a textured, nonabrasive, green strip on the other side for tough cleaning. Pad is 2½″ high.

Blade Wd. × Ht.	Handle Lg.	Complete Washers		Replacement Pad 1-9	10-Up
Standard Washers					
14″ × 2″	4¾″	7481T42★	$13.39	7481T44 $8.46	$7.48
18″ × 2½″	5″	7481T43	19.24	7481T45 10.07	8.91
Washers with Scrubbing Pad					
14″ × 2½″	5″	7402T11	24.60	7402T21 18.37	16.26
18″ × 2½″	5″	7402T12	26.76	7402T22 21.20	18.76

★ Handle is black.

Tapered Handles

Wood handles have a lacquered finish.

Telescoping handles have a fiberglass outer handle, aluminum inner sliding tube, and a plastic tapered adapter.

Wood

Telescoping

Lg.	Dia.			Lg.	Dia.		
Wood Handles				***Telescoping Handles (Cont.)***			
14″	15/16″	7349T16	$2.86	6′-12′	1⅛″	58905T87	$38.11
54″	1⅛″	7349T14	6.26	6′-18′	1¼″	58905T85	64.78
60″	1⅛″	7349T15	7.13	8′-15′	1⅛″	58905T84	53.26
Telescoping Handles				8′-23′	1¼″	58905T86	73.33
2′-4′	1⅛″	58905T81	20.68				
4′-8′	1⅛″	58905T82	29.99				

About Sorbents

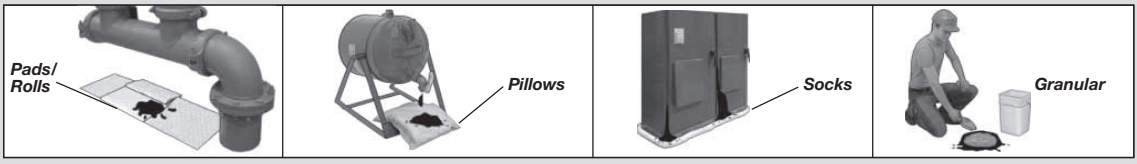

As their name implies, sorbents absorb spilled liquids and keep them from spreading. Depending on the type of spill, you can choose from two categories of sorbents: oil only and universal.

Oil-only sorbents absorb oils, fuels, and any other petroleum-based product. They repel water, making them effective on both land and water.

Universal sorbents absorb oils, chemicals, coolants, and water. Recommended for land spills only.

Sorbents come in different shapes for different uses.

Pads— Pads absorb small spills and can be used to wipe off equipment.

Rolls— Rolls allow you to choose the amount you need. Some have perforations, while others can be cut to length. Perfect for large floor spills and leaks around equipment.

Pillows— Thicker than pads, pillows soak up more liquid. Ideal for positioning under drips and in corners.

Socks— A narrow diameter and long length let you wrap them around irregular surfaces, corners, and machines.

Granular— Simply pour or sprinkle sorbent onto the spill, work it into the spill with a broom, and let it it absorb. Then pick up the soaked sorbent.

Polypropylene Sorbents

Regarded as the industry standard, polypropylene sorbents handle all your general absorption needs.

Standard with Perforations— Perforations make it easy to tear off what you need. Pads are perforated up the center and rolls are perforated every 12″ and up the center.

Heavy Duty— Can be washed or wrung hundreds of times.

Oil-Only Sorbents

Size	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard					
Pad 32″ Wd.× 32″ Lg.	25	25	7516T18	$4.23	$3.80
Pad 32″ Wd.× 39″ Lg.	35	25	7516T48	5.03	4.49
Roll 16″ Wd.×150′ Lg.	30	1	7516T51	____	80.99
Roll 38″ Wd.×100′ Lg.	50	1	7516T26	____	103.71
Pillow 8″ Wd.× 16″ Lg.	35	10	7516T35	14.25	12.79
Pillow 16″ Wd.× 20″ Lg.	45	10	7516T16	14.57	13.02
Sock 3″ Dia.× 48″ Lg.	12	12	7516T38	4.81	4.31
Sock 3″ Dia.× 84″ Lg.	13	7	7516T29	10.89	9.76
Sock 3″ Dia.× 24′ Lg.	12	2	7516T42	28.87	25.88
Sock★ 5″ Dia.×120″ Lg.	32	4	7516T23	28.25	25.33
Standard with Perforations					
Pad 16″ Wd.× 18″ Lg.	10	50	7516T47	1.22	.91
Pad 16″ Wd.× 18″ Lg.	16	50	7516T17	2.01	1.53
Roll 16″ Wd.×150′ Lg.	25	1	7516T52	____	72.19
Roll 16″ Wd.×150′ Lg.	30	1	7516T53	____	87.99
Roll 32″ Wd.×150′ Lg.	50	1	7516T24	____	115.97
Roll 32″ Wd.×150′ Lg.	60	1	7516T21	____	133.13

★ Has clips to link multiple socks together.

Universal Sorbents

Note: Not for use with aggressive liquids, such as hydrochloric acid.

Size	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard					
Pad 32″ Wd.× 32″ Lg.	20	25	7193T11	$4.64	$4.17
Sock 3″ Dia.× 48″ Lg.	12	12	7193T65	5.77	5.16
Sock 3″ Dia.× 84″ Lg.	12	7	7193T67	11.32	10.11
Standard with Perforations					
Pad 16″ Wd.× 18″ Lg.	13	50	7193T13	.99	.75
Pad 16″ Wd.× 18″ Lg.	17	50	7193T83	1.14	.86
Roll 16″ Wd.×150′ Lg.	22	1	7193T14	____	78.86
Roll 16″ Wd.×150′ Lg.	25	1	7193T84	____	102.72
Roll 32″ Wd.×150′ Lg.	40	1	7193T15	____	124.58
Roll 32″ Wd.×150′ Lg.	52	1	7193T88	____	149.94
Heavy Duty					
Pad 18″ Wd.× 18″ Lg.	34	100	7291T812	1.71	1.23
Roll 36″ Wd.×150′ Lg.	69	1	7291T832	____	215.91
Pillow 18″ Wd.× 20″ Lg.	36	10	7291T842	19.65	17.66
Sock 5″ Dia.× 72″ Lg.	14	4	7291T867	44.38	39.89
Sock 5″ Dia.×120″ Lg.	23	4	7291T852	68.28	61.37

Multi-Shape Polypropylene Sorbents

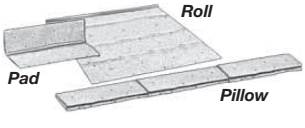

No need to stock several sorbent sizes—these unfold for use as a pad, roll, or pillow. Sorbents are approximately 5″ Wd.×50′ Lg. when folded (20″ wide unfolded) and are perforated every 16″. Supplied in a dispenser box.

	Color	Absorption Cap., gal./pkg.		1-2	3-Up
Oil Only	White	10	29595T11	$40.95	$36.69
Oil and Water Only	Gray	10	29595T22	46.97	41.76
Universal	Yellow	10	29595T33	56.26	50.80

Camouflage Universal Polypropylene Sorbents

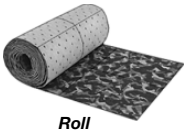

The camouflage top layer masks ugly spills and draws moisture to the gray bottom layer. These universal sorbents are durable and abrasion resistant. Pad is perforated up the center, the 15″ Wd.×150′ Lg. roll is perforated every 12″ and up the center, and the 30″ Wd.×150′ Lg. roll is perforated every 15″ and up the center.

Size	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Pad 15″ Wd.× 19″ Lg.	13¾	50	7628T31	$1.58	$1.19
Roll 15″ Wd.×150′ Lg.	28	1	7628T32	____	82.18
Roll 30″ Wd.×150′ Lg.	57	1	7628T34	____	148.48

Recycled Universal Sorbents

Made from recycled newsprint and cellulose, these sorbents are more environmentally friendly and more absorbent than polypropylene sorbents. They are also Class A fire retardant. Color is gray.

Pads and rolls have a reinforced top for durability. Pads are perforated up the center. Rolls are perforated every 15″ and up the center.

Note: Not for use with aggressive liquids, such as hydrochloric acid.

Size	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Pad 15″ Wd.× 19″ Lg.	12	50	7186T31	$1.34	$1.01
Pad 15″ Wd.× 19″ Lg.	20	50	7186T38	1.53	1.15
Roll 14″ Wd.×150′ Lg.	27	1	7186T32	____	70.64
Roll 14″ Wd.×150′ Lg.	30	1	7186T41	____	93.10
Roll 28″ Wd.×150′ Lg.	53	1	7186T42	____	122.81
Roll 28″ Wd.×150′ Lg.	62	1	7186T37	____	$154.50
Sock 3″ Dia.× 48″ Lg.	12	12	7186T34	$4.50	4.05
Sock 3″ Dia.× 96″ Lg.	12	6	7186T35	9.24	8.31
Sock 3″ Dia.×144″ Lg.	12	4	7186T39	13.57	12.16

For information about sorbents, see page 2060.

Harsh-Chemical Universal Sorbents

Pick up virtually any spill, even fuming acids and strong oxidizers. These universal sorbents have a polypropylene covering. Color is white. *Note:* Not for use with hydrofluoric acid.

Size	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Pillow 4″ Wd. × 11″ Lg.	5	40	6314T65	$1.40	$1.25
Pillow 8″ Wd. × 18″ Lg.	3	12	6314T63	3.33	2.98
Pillow 18″ Wd. × 24″ Lg.	20	20	6314T61	6.00	5.36
Sock 3″ Dia. × 48″ Lg.	20	20	6314T64	3.30	2.95

Work Surface Leak-Resistant Universal Sorbent Pads

These pads combine a paper surface with a coated underside to protect work surfaces from stains and harsh chemicals. They measure 19¼″ Wd. × 23⅝″ Lg. Color is white.

High-Capacity Pads— Offer twice the absorbency of standard pads.

Standard Pads Pkg. Qty.	Absorption Cap., gal./pkg.		Pkg.	High-Capacity Pads Absorption Cap., gal./pkg.		Pkg.
10	5/16	41205T25	$19.58	⅝	41205T27	$21.60
50	1½	41205T22	74.50	3	41205T24	85.22

Granular Universal Sorbents

General Purpose

Sorbents are low-dust clay that reduces slipping and won't break down, cake, or mat under heavy traffic. They are nonflammable and absorb oil, grease, and water. Color is reddish-gray. Package quantity is 10.

20-lb. Pail— Specially formulated, smaller granules offer higher absorbency per container.

	Absorption Cap., gal./pkg.		Each Partial Pkg.	Each Full Pkg.
20-lb. Pail	40	7266T1	$13.12	$11.76
50-lb. Bag	40	7266T2	10.84	9.71

Easy-Clean

Made of a blended compound, these reusable sorbents completely encapsulate most liquids for easy cleanup. Color is gray. Not rated for absorption capacity. *Note:* Not for use with hydrofluoric acid.

Sifting screen separates the used, encapsulated sorbent from the unused sorbent so there's no wasted product.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
10-lb. Bucket	10	62895T11	$17.70	$15.80
40-lb. Bag	10	62895T13	20.90	18.66
65-lb. Drum	1	62895T15	____	114.22
Sifting Screen	1	62895T34	____	7.18

Slip-Resistant

This dust-free, powder-like blend of minerals provides traction on slippery surfaces. Sorbents are nonflammable and absorb water, oil, solvents, and most chemicals. Color is gray. *Note:* Not for use with hydrofluoric acid.

	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
2½-lb. Carton	4	12	6311T71	$2.10	$1.81
25-lb. Box	3	1	6311T73	____	15.38
40-lb. Box	5	1	6311T78	____	27.86

Highly Absorbent

This corn-cob sorbent quickly absorbs more cutting oils, grease, water, and similar liquids than other granular sorbents. Color is brown. *Note:* Not for use with aggressive liquids, such as hydrochloric acid.

	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
40-lb. Bag	85	10	63655T76	$14.99	$12.97

Multipurpose Vermiculite

These lightweight sorbents do more than just absorb and hold water, oil, and solvents. You can also use them as insulation, filling, chemical packaging, or packing material for fragile items. Both resist heat and fire and are supplied in a 4-cu. ft. bag. Color is brown. *Grade #3* is similar in size to a grain of rice; *grade #4* is similar to a grain of sand.

Grade	Texture	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
#3	Medium	190	10	63415T64	$25.58	$22.69
#4	Fine	230	10	63415T74	20.17	17.88

Specialty Sorbents

Corn-Cob Universal Sorbent Sock

This extremely flexible, universal sock molds easily around corners and conforms to uneven surfaces to soak up spills. Color is gray.

Note: Not for use with aggressive liquids, such as hydrochloric acid.

Size	Absorption Cap., gal./pkg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
3″ Dia. × 42″ Lg.	22	40	7201T11	$1.74	$1.55

Polypropylene Universal Sorbent Drip Pan

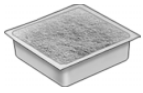

Place this sorbent-filled pan under any drip to collect water, oil, coolants, and other nonaggressive liquids. Pan is polyethylene and comes with a cover to prevent liquids from splashing. Color is yellow. Package quantity is 12.

Size	Absorption Cap., gal./pkg.		Each Partial Pkg.	Each Full Pkg.
10½″ Lg. × 10½″ Wd. × 3″ Ht.	12	42005T55	$6.53	$5.86

Drum-Top Polypropylene Sorbent Pads

Place on 55-gallon drum tops to eliminate messy leaks and drips. Pads are 22″ dia. and have two perforated bung hole cutouts. ***Oil-only*** pads are white; ***universal*** pads are gray. Package quantity is 25.

	Absorption Cap., gal./pkg.		Each Partial Pkg.	Each Full Pkg.
Oil Only	9	43955T12	$3.33	$2.90
Universal	9	43955T13	3.38	2.97

Spill-Control Sorbent Kits

11-Gallon Absorption-Capacity Kit

Mercury Kit

Everything you need when a spill occurs, even bags for disposal.

5-Gallon Absorption-Capacity Kit

Packed in a plastic bag. Includes:

- (10) 15″ × 19″ pads
- (1) Pair nitrile gloves
- (2) 3″ × 48″ socks
- (1) Disposal bag

Oil Only	71305T12	$37.33
Universal	71305T15	38.83

11-Gallon Absorption-Capacity Kit

Packed in a 20-gallon plastic drum with a resealable lid. *Note:* Not for use with hydrofluoric acid. Includes:

- (5) 15″ × 19″ pads
- (7) 10″ × 10″ pillows
- (2) 1¾-lb. cartons of granular sorbent
- (6) 4″ × 48″ socks
- (3) Disposable bags

Universal	71305T14	$153.13

38-Gallon Absorption-Capacity Kit

Packed in a 55-gallon plastic drum with a resealable lid. Includes:

- (50) 15″ × 19″ pads
- (1) Pair nitrile gloves
- (1) Emergency response handbook
- (4) 3″ × 144″ socks
- (5) Disposal bags
- (8) 18″ × 18″ pillows
- (1) Pair goggles

Oil Only	71305T13	$363.58
Universal	71305T16	378.13

Mercury Kit

Prevent toxic vapor contamination by properly cleaning up mercury spills. Packed in a corrugated box. Includes:

- (1) 250-ml cleaning solution
- (1) 250-ml vapor-reducing spray
- (1) Pair safety gloves
- (1) Disposal container
- (1) Mercury aspirator
- (1) Pair goggles
- (2) Hazardous waste bags

71435T68 ..... $150.00

Acid and Base Spill Neutralizers

Now cleaning up acids—even battery acids—and bases is safer. Just place these neutralizers on the spill, and they will change color when the neutralization is complete.

Liquid *for acids* is purple; liquid *for bases* is red.

Powder neutralizers are concentrated and neutralize approximately twice as much as liquid neutralizers. Powder *for acids* is white; powder *for bases* is purple.

Pad is pink and should not be exposed to water. *Note:* Not for use with hydrofluoric acid.

	Size	For Acids	Each	For Bases	Each
Liquid	32 oz.	4235T12	$11.27	4235T21	$11.69
Liquid	1 gal.	4235T13	33.81	4235T22	35.49
Powder	2 lbs.	4235T14	13.21	4235T23	13.50
Powder	10 lbs.	4235T15	47.11	4235T24	75.67
			Pkg.		
Pad (10/Pkg.)	11″×12″	4235T16	$22.50	———	———

Sewer Drain Grate Guard

Catch oil, sediment, and other pollutants with this durable polypropylene guard. Simply remove the grate, place guard over the opening, and put grate back in place. Guard has filter strips to absorb incoming pollutants and can hold up to 1⅜ gal. of oil. Overall size is 48″ Lg.×36″ Wd.×18″ Dp. Can be used with grates up to 44″ Lg.×32″ Wd.

8261T25 ..... $75.00

Spill-Control Drain Plugs, Covers, and Dike

Drain Plug

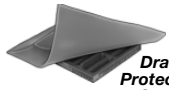

Drain Protective Cover

Dike with Optional Connector

Prevent spills from spreading or going down your drain with these flexible polyurethane spill-control products. They resist oil, water, and most chemicals, and are nonabsorbent, washable, and reusable.

Drain Plugs

All have a zinc-plated steel eyebolt, making it easy to insert and remove the plug. Color is yellow.

For Drain	Plug Ht.	O'all Ht.		
2″ Dia.	4¼″	5″	2014K22	$41.82
3″ Dia.	4½″	5¼″	2014K23	50.90
4″ Dia.	4⅞″	5⅝″	2014K21	63.64

Drain Protective Covers

Keep spills from going down floor drains, grates, and manholes. Covers are ¼″ thick and are reversible. Color is red.

Size		
12″ Dia.	4205T91	$49.09
18″×18″	4205T92	80.00
24″×24″	4205T93	107.27
36″×36″	4205T94	225.45
48″×48″	4205T95	341.82

Dike

Create a barrier to stop spills from spreading. Dike bends to form almost any shape you need. You can cut it, or use the optional connectors (sold separately below) to create longer lengths. Size is 10′ Lg.×4″ Wd.×2¼″ Ht. Color is orange.

Dike	4287T21	$457.14
Optional Connector	4287T22	33.50

Magnetic Floor Sweepers

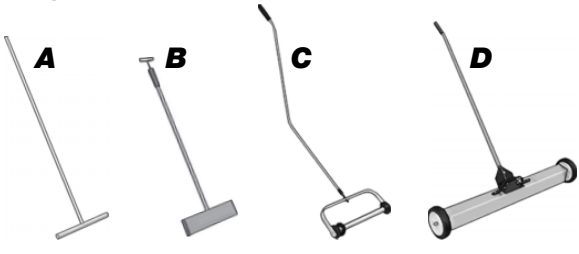

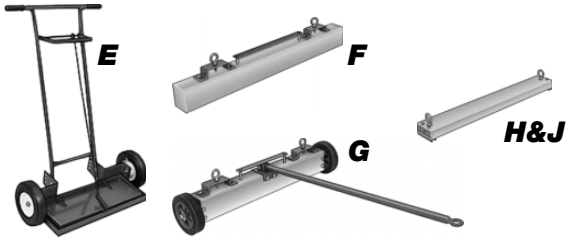

Keep shop floors, parking lots, and other surfaces free of metal debris. All have an aluminum housing, unless otherwise indicated.

A ***Hand-Held Sweepers***—Compact sweepers slip into places mobile sweepers can't. To clean, wipe debris off with a rag or gloved hand. Housing is stainless steel. Handle is 40″ long.

B ***Self-Cleaning Hand-Held Sweepers***—Pull release on top to clean sweeper without touching the debris. Handle is 31″ long.

C ***Low-Profile Mobile Sweepers***—These lightweight sweepers are easy to maneuver and have an offset handle to reduce bending and reaching, making them ideal for tight areas under machinery and work stations. Wheels are 2⅝″ dia. and made of rubber. To clean, slide rubber ring (included) along tube. Handle is 46″ long.

D&E ***Self-Cleaning Mobile Sweepers***—Quick-release feature lets you clean sweepers without touching the debris.

Style D has a pull-handle release and 7″ dia. rubber wheels. Handle is 43″ long. *Style E* have a lever release near the handgrip so you don't have to bend and 10″ dia. cushioned rubber wheels. Housing is stainless steel and steel. Handle is 42″ long.

F-J Sweep larger areas by attaching these sweepers to your forklift or vehicle with a chain (chain sold separately on page 1397).

(F) Self-Cleaning Forklift-Mounted Sweeper—To attach, simply slide forks into sweeper's fork pockets and tighten the 1¼″ ID eyebolts. Fork openings are 5″ Wd.×1⅛″ Ht. on 30″ centers. For easy cleaning, lift the top hand lever to release debris.

(G) Self-Cleaning Tow-Behind Sweepers—Attach to vehicles with the 1³⁄₁₆″ ID tow ring at the handle end. Maximum towing speed is 3 to 8 mph. All have 8″ dia. cushioned rubber wheels, a 46″ long removable handle, and 1⅛″ ID eyebolts. To clean, simply lift the top hand lever to release the debris.

(H&J) Vehicle-Mounted Sweepers—Bottom-mounted plastic wear bars protect the sweeper bottom. Also come with 1⅛″ ID eyebolts. Pick up operating speed should not exceed 10 mph. To clean *Style H*, wipe off debris with a rag or gloved hand. To clean *Style J*, press the toe plate to release the debris.

	O'all Base Size, Wd.×Ht.×Dp.	Max. Pickup Ht. from Floor	Approx. Pull, lbs.		
Hand-Held Sweepers					
A	6″ Wd.×1″ Dia.	1″	5	7329T16	$75.64
A	12″ Wd.×1″ Dia.	1″	5	7329T18	108.62
Self-Cleaning Hand-Held Sweepers					
B	11″×3″×1½″	2″	20	7329T31	93.02
B	20″×3″×1½″	2″	30	7329T32	117.50
Low-Profile Mobile Sweepers					
C	11⅜″ Wd.×1⅛″ Dia.	1″	20	7284T11	80.81
C	16¼″ Wd.×1⅛″ Dia.	1″	35	7284T12	97.89
C	21⅛″ Wd.×1⅛″ Dia.	1″	36	7284T13	121.79
C	26″ Wd. ×1⅛″ Dia.	1″	39	7284T14	135.45
C	35¾″ Wd.×1⅛″ Dia.	1″	41	7284T15	161.63
Self-Cleaning Mobile Sweepers					
D	42″ ×4″ × 3″	1½″	60	62255T36	253.33
E	32¼″×5½″×16³⁄₁₆″	2½″	75	7496T11	614.63
E	44¼″×5½″×16³⁄₁₆″	2½″	75	7496T12	657.02
Self-Cleaning Forklift-Mounted Sweeper					
F	48″ ×5″ × 4″	5″	250	7240T83	498.33
Self-Cleaning Tow-Behind Sweepers					
G	43″ ×5″ × 4″	5″	225	6322T71	603.33
G	55″ ×5″ × 4″	5″	250	6322T72	680.00
G	67″ ×5″ × 4″	5″	300	6322T73	733.33
G	79″ ×5″ × 4″	5″	350	6322T74	796.67
G	91″ ×5″ × 4″	5″	400	6322T75	933.33
Vehicle-Mounted Sweepers					
H	36″ ×2″ × 5″	5″	200	6322T51	240.00
H	48″ ×2″ × 5″	5″	275	6322T52	324.59
H	60″ ×2″ × 5″	5″	325	6322T53	398.74
H	72″ ×2″ × 5″	5″	400	6322T54	483.33
H	84″ ×2″ × 5″	5″	450	6322T55	558.33
Self-Cleaning Vehicle-Mounted Sweepers					
J	36″ ×2″ × 5″	4″	175	6322T91	341.67
J	48″ ×2″ × 5″	4″	250	6322T92	426.23
J	60″ ×2″ × 5″	4″	310	6322T93	516.67
J	72″ ×2″ × 5″	4″	375	6322T94	591.67
J	84″ ×2″ × 5″	4″	425	6322T95	675.00

Floor and Baseboard Cleaning Machines

Floor Cleaning Machines

Make your floors look like new again. These machines have triggers on their handles to ensure safe operation—machine stops when the triggers are released. All have nonmarking wrap-around bumpers and 50-ft. power cords with three-prong plugs. Operate on 115 VAC, 60 Hz.

Note: Machines do not include brushes, pads, or pad holders (unless otherwise indicated), which are all sold separately on this page.

General Purpose

General Purpose— Scrub, strip, and buff floors. Great for wet and dry applications on hard floors and carpet. Have an aluminum apron, a steel motor housing, and two 5″ dia. rubber wheels. Handle is steel, 43″ long, and can be adjusted to different angles for comfort. Optional *4-gal. solution tank* is plastic.

High Speed

High-Speed Burnisher— Polishes hard floors to a high-gloss finish. It has an aluminum apron, a steel motor housing, two 4″ dia. rubber transport wheels, and two 5″ dia. rubber operating wheels. Handle is steel and is 43″ long. Also includes a flexible pad holder that conforms to uneven floors.

Note: Burnisher can only be used with pads, not with brushes.

Base Dia.	rpm	Amps	hp		
General Purpose					
17″	175	15	1½	7279T52	$749.35
17″	300	15	1½	7279T53	1,236.59
20″	300	15	1½	7279T54	1,279.35
Optional 4-gal. Solution Tank				7279T55	274.69
High-Speed Burnisher					
20″	1,500	15	1½	7424T3	1,264.63

Mini Floor/Baseboard Cleaning Machine

This compact cleaner gets into tight spots, such as corners and behind toilets. It can also be used to clean baseboards and stairs.

Includes a 6″ dia. pad holder with plastic block, a 6″ dia. baseboard brush that has durable plastic bristles coated with an abrasive grit for aggressive cleaning, and a 6″ power cord with three-prong plug. Housing is cast aluminum. Handle is 42″ long and plastic. Motor operates on 115 VAC, 60 Hz.

Optional floor pad is 6½″ dia. **To Order:** Please specify pad style: stripping, buffing, or polishing.

Optional floor brush is 8″ dia. and has soft bristles.

Mini Cleaning Machine

Optional Floor Brush

	Base Dia.	rpm	Amps	hp		
Mini Cleaning Machine	6″	765	1.7	⅛	73905T41	$348.33
Optional Floor Pad					73905T5	3.50
Optional Floor Brush					73905T47	93.75

Pads and Pad Holders for Floor Cleaning Machines

Pad

Pad Holder

Pads strip, scrub, and buff floors. They are 1″ thick, and both sides are usable. *Note:* A pad holder is required when using a pad.

General Purpose Pads— For use on hard surfaces and for machines operating at 175-350 rpm.

To Order: Please specify pad color from choices below:

- Black—For aggressive wet stripping of finish and sealer.
- Blue—For moderate wet scrubbing.
- Brown—Use for wet or dry stripping.
- Green—Use wet for heavy duty scrubbing to remove dirt and scuff marks.
- Red—Use wet or dry to buff, restore shine, and remove scuff marks.
- White—Mildly abrasive for polishing clean floors to a high-gloss finish. Use on dry or lightly misted floors.

High-Speed Burnishing Pad— Soft for polishing hard surfaces to a high-gloss finish. For machines operating at 1,000-3,000 rpm. Color is off-white.

Pad Holders— Also called pad drivers, these hold pads in place with ½″ plastic bristles. Holders are plastic and are 1″ thick at the center and taper to ¾″ thick at the outer edge. They have a 1 7/16″ riser block, 5″ center hole, and a clutch plate that attaches to most machines.

Also Available: Pad holders with other clutch plates. Please ask for 7561T999 and specify machine make, model, and base diameter.

Pads and Pad Holders

For Machine Base Dia.	Pad Dia.	Pads 1-4 Each	Pads 5-Up Each	Pad Holders ♦ Holder Dia.		Each
General Purpose Pads						
13″	13″	7312T1	$3.18	$2.83	12″	7561T12	$43.28
14″	14″	7312T2	3.60	3.21	13″	7561T13	45.09
15″	15″	7312T3	3.96	3.52	14″	7561T14	58.84
16″	16″	7312T4	4.29	3.83	15″	7561T15	61.87
17″	17″	7312T5	4.75	4.27	16″	7561T16	62.22
18″	18″	7312T6	5.05	4.46	17″	7561T17	66.33
19″	19″	7312T7	5.56	4.96	18″	7561T18	73.98
20″	20″	7312T8	5.48	4.92	19″	7561T19	81.02
High-Speed Burnishing Pad							
20″	20″	7312T89	5.99	5.37	19″	7561T19	81.02

♦ Choose a pad holder that is 1″ smaller than your machine base diameter.

Pad Centering Device

This plastic 6⅛″ dia. device has two halves with spikes to sandwich the cleaning pad and keep it from slipping off center. Bottom half has stainless steel clips to keep it in place. Mounts to any pad holder (hardware included).

7022T1 ..... $20.04

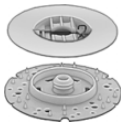

Brushes for Floor and Carpet Cleaning Machines

Significantly more durable than pads, brushes are the perfect choice if your floor is uneven or contains grout lines. All have a plastic block, 5″ center hole, and universal clutch plate that attaches to most floor machines. All brushes can be used on hard surfaces.

Steel Wire— For stripping and scrubbing concrete. Bristles are 1 9/16″ long.

Natural Fiber— Perfect for heavy duty scrubbing. Bristles are 1¾″ long.

Plastic— Economical yet durable, this brush is good for general scrubbing. Bristles are 1¾″ long.

Nylon— More flexible and will last longer than plastic. Can also be used on carpet. Bristles are 1¾″ long. Brushes for 15″ dia. machines and larger have holes for use with solution tanks. *Note:* Before using on carpet, break in brush by briefly running machine over a rough, dry surface.

Nylon with Aggressive Grit— This nylon brush is very aggressive and contains silicone carbide. It strips finishes from tile and linoleum and is excellent for heavy buildups. For wet applications only. Bristles are 1½″ long.

Also Available: Brushes with other clutch plates and base diameters and in different materials. Please ask for 7258T999 and specify machine make and model, machine base diameter, and brush material.

Brush Block Dia.	For Machine Base Dia.	Steel Wire		Natural Fiber		Plastic		Nylon		Nylon with Aggressive Grit	
11″	13″	7258T52	$47.76	7258T12	$41.27	7258T23	$51.59	7258T43	$81.71	7258T63	$147.61
12″	14″	7258T53	53.61	7258T13	41.90	7258T24	55.58	7258T44	88.87	7258T64	175.04
13″	15″	7258T54	59.78	7258T14	46.18	7258T25	60.60	7258T45	106.32	7258T65	189.20
14″	16″	7258T55	78.26	7258T15	60.04	7258T26	67.60	7258T46	115.09	7258T66	220.83
15″	17″	7258T56	76.67	7258T16	61.42	7258T27	79.62	7258T47	136.50	7258T67	239.82
16″	18″	7258T57	87.54	7258T17	62.82	7258T28	82.79	7258T48	145.89	7258T68	259.85
17″	19″	7258T58	96.67	7258T18	68.56	7258T29	89.63	7258T49	163.92	7258T69	289.90
18″	20″	7258T59	107.02	7258T19	71.64	7258T41	99.74	7258T5	183.93	7258T7	314.93

Carpet and Upholstery Cleaner

This cleaner sprays cleaning solution onto carpet and upholstery and then recovers the dirty solution into a removable 1½-gal. recovery tank. Cleaner is made of reinforced plastic with two rigid rear wheels and two swivel front casters.

Comes with a 1¼″ Dia.×10-ft. Lg. plastic hose, 56″ wand, floor tool, and a 15-ft. power cord with three-prong plug. Also includes a carrying handle. Operates on 100/120 VAC, 50/60 Hz.

Solution Tank Cap.	Ht.×Wd.×Dp.	hp	Amps		
1½ gal.	17″×15″×21″	1½	10	7066T6	$737.54
Optional Cleaning Solution (1 gal.)				7066T21	21.08

Floor Sweeper and Scrubber Brushes

Scrubber Brush

Sweeper Brush

We offer different sweeper and scrubber brushes for your floor-cleaning machine. **To Order:** Please ask for 7114T888 and specify manufacturer (such as Tennant, American Lincoln, Power Boss, etc.), machine or brush model number, type of brush (scrubber or sweeper), and bristle material.

Vacuum Accessories

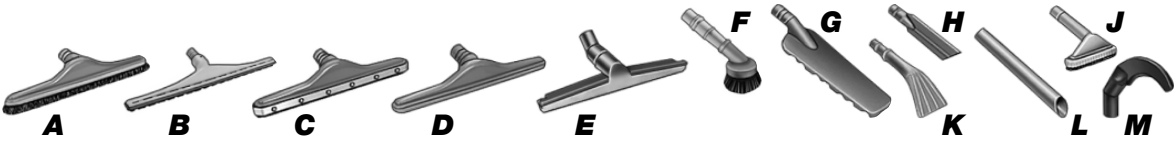

Use with 1½″ dia. or 2″ dia. vacuum hose or compatible extension wand (sold separately), unless noted. Accessories are plastic or aluminum, unless noted. Plastic accessories are economical and lightweight. Aluminum accessories are more durable and withstand heavier use. For compatible wand, match the number in the "Use with Wand No. Below" column to the wand number listed under "Extension Wands."

Tool Style	Size	Use with Wand No. Below		
1½″ Dia. Plastic Accessories				
A Brush	14″ Wd.×2¼″ Dp.	(1)	63815T23	$27.24
B Brush	20″ Wd.×1¾″ Dp.	(1)	63815T16	39.44
C Squeegee	14″ Wd.×1½″ Dp.	(1)	63815T25	33.08
C Squeegee	20″ Wd.×1½″ Dp.	(1)	63815T21	84.43
D Carpet	14″ Wd.×1¾″ Dp.	(1)	63815T24	20.51
F Round Brush	2¾″ Dia.	(1)	63815T72	15.41
G Cleaning Paddle	14″ Wd.×4½″ Dp.	(1)	63815T71	27.24
H Crevice	11″ Lg.	♦	63815T26	6.30
H Crevice	24″ Lg.	♦	63815T73	17.24
J Upholstery	5″ Wd.×¾″ Dp.	(1)	63815T74	12.32
K Utility Nozzle	4½″ Wd.×9/16″ Dp.	♦	63815T75	6.68
L Pickup/Blower	23″ Lg.	♦	63815T13	6.27
M Pipe Cleaning	1″ to 4″ OD	(3)	63815T11	36.76
M Pipe Cleaning	4″ to 8″ OD	(3)	63815T12	48.21
1½″ Dia. Aluminum Accessories				
A Brush	14″ Wd.×2″ Dp.	(1)	63815T61	42.08
C Squeegee	14″ Wd.×2¼″ Dp.	(1)	63815T62	46.86
D Carpet	14″ Wd.×2¼″ Dp.	(1)	63815T63	46.86
E Brush/Squeegee	18″ Wd.×2¼″ Dp.	(1)	63815T76	111.11
1½″ Dia. Aluminum Accessories (Cont.)				
F Round Brush	3″ Dia.	(1)	63815T53	$29.30
F Round Brush	4⅛″ Dia.	(1)	63815T77	42.78
H Crevice	11″ Lg.	♦	63815T54	13.08
H Crevice	24″ Lg.	♦	63815T78	24.26
J Upholstery	6¾″ Wd.×1¼″ Dp.	(1)	63815T56	20.65
K Utility Nozzle	6″ Wd.×1½″ Dp.	♦	63815T19	36.35
L Pickup/Blower	18″ Lg.	♦	63815T55	18.84
M Overhead Pipe	1″ to 3″ OD	(1)	63815T57	95.81
M Overhead Pipe	4″ to 6″ OD	(1)	63815T58	114.41
2″ Dia. Aluminum Accessories				
A Brush	22″ Wd.×1¾″ Dp.	(2)	63815T17	206.96
C Squeegee	22″ Wd.×1¼″ Dp.	(2)	63815T79	218.32
E Brush/Squeegee	20″ Wd.×3½″ Dp.	■	63815T68	229.27
F Round Brush	3¼″ Dia.	▲	63815T22	55.40
F Round Brush	4″ Dia.	●	63815T36	97.94
H Crevice	15″ Lg.	♦	63815T66	27.88
H Crevice	24″ Lg.	♦	63815T18★	28.39
J Upholstery	6″ Wd.×1¼″ Dp.	♦	63815T32	75.50
L Pickup/Blower	18″ Lg.	♦	63815T67	34.43

♦ Connects to vacuum hose only. ■ Includes a 45″ curved steel extension wand. ▲ Includes a 13½″ steel extension wand.
● Includes a 15″ steel extension wand. ★ Steel.

Extension Wands

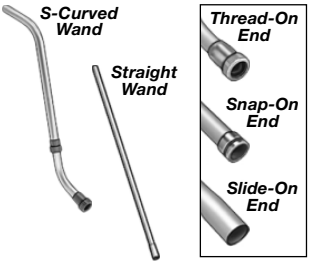

Use with the compatible vacuum accessories above. All wands, except for wands with slide-on ends, allow accessories to swivel once they are attached.

Thread-on end has a threaded opening that screws onto the accessory.

Snap-on end has a grooved end to snap on the accessory.

Slide-on end slides onto the tool for a tight friction fit.

Wand No.	Size	Wand End	Material	Lg.		
S-Curved Wands						
(1)	1½″ Dia.	Thread On	Aluminum	54″	63815T52	$43.43
(1)	1½″ Dia.	Thread On	Plastic	54″	63815T39	35.24
(1)	1½″ Dia.	Thread On	Steel	54″	63815T43	40.78
(1)	1½″ Dia.	Thread On	Aluminum	42″-59″	63815T15	58.01
(2)	2″ Dia.	Snap On	Aluminum	56″	63815T86	104.93
Straight Wands						
(1)	1½″ Dia.	Thread On	Aluminum	54″	63815T49	44.76
(3)	1½″ Dia.	Slide On	Aluminum	54″	63815T51	30.68
(4)	2″ Dia.	Slide On	Aluminum	54″	63815T65	71.08

Connectors and Reducers

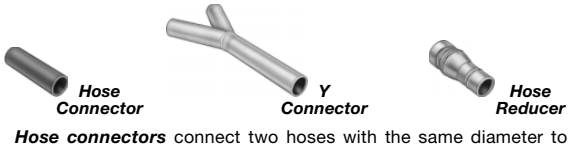

Hose connectors connect two hoses with the same diameter to extend hose. *Swivel* connectors prevent hoses from twisting.

Y connectors connect two hoses to vacuum inlet or hose end.

Hose reducers connect 2″ dia. hose to 1½″ dia. hose so you can use 1½″ dia. accessories. *Swivel* reducer prevents hose from twisting.

Dia.	Type	Material	Lg.		
Hose Connectors					
1½″	Rigid	Plastic	5″	63815T14	$2.16
1½″	Swivel	Plastic	3¼″	63815T81	11.22
1½″	Rigid	Steel	8″	63815T64	13.50
2″	Swivel	Plastic	5″	63815T82	11.46
2″	Rigid	Steel	8″	63815T69	17.15
Y Connectors					
1½″	Rigid	Steel	13½″	63815T31	104.62
2″	Rigid	Steel	13½″	63815T41	114.06
2″×1½″♣	Rigid	Steel	13½″	63815T85	114.29
Hose Reducers					
2″×1½″	Swivel	Plastic	4⅜″	63815T33	11.63
2″×1½″	Rigid	Steel	4⅝″	63815T38	17.75

♣ Connects two 1½″ dia. hoses to a 2″ dia. inlet or hose end.

Shop-Vac® Vacuum Accessories

You can use the Shop-Vac® accessories listed below with other vacuums that have hoses with the same diameter.

	Shop-Vac Part No.		
1¼″ Dia. Plastic Accessories			
A ... 10″ Floor Nozzle	906-21	**7494T32**	$13.32
B ... 10″ Swivel Floor Nozzle	906-03	**7494T63**	15.54
C ... 10″ Rug Attachment for 7494T63	906-06	**7494T65**	11.64
C ... 10″ Squeegee Attachment for 7494T63	906-05	**7494T73**	13.04
C ... 10″ Brush Attachment for 7494T63	906-04	**7494T64**	11.64
D ... 10¾″ Dual Surface Nozzle	906-12	**7494T12**	42.54
E ... 5¼″ Utility Nozzle	906-19	**7494T57**	6.82
F ... 4¾″ Claw Utility Nozzle	919-61	**7494T11**	16.41
G ... 7½″ Crevice Tool	906-16	**7494T66**	6.68
H ... 42″ Three-Piece Extension Wand	906-14	**7494T62**	15.54
J ... 1¾″ Dia. Brush	906-15	**7494T84**	8.83
K ... Reducer (2½″ Dia. to 1¼″ Dia.)	906-85	**7494T86**	7.59
L ... 6¾″ Universal Tool Adapter	906-87	**6931T14**	13.46
1½″ Dia. Plastic Accessories			
B ... 14″ Swivel Floor Nozzle	906-54	**7494T25**	24.44
C ... 14″ Squeegee Attachment for 7494T25	906-55	**7494T26**	23.34
C ... 14″ Brush Attachment for 7494T25	906-56	**7494T27**	23.34
G ... 9″ Crevice Tool	906-45	**7494T41**	13.83

	Shop-Vac Part No.		
1½″ Dia. Plastic Accessories (Cont.)			
J ... 2″ Dia. Brush	906-44	**7494T42**	$20.12
1½″ Dia. Die Cast Aluminum Alloy Accessories			
B .. 14″ Floor Nozzle	903-15	**7494T44**	56.85
J ... 2¼″ Dia. Brush	905-38	**7494T46**	44.98
N .. 6″ Utility Nozzle	901-74	**7494T47**	39.18
1½″ Dia. Steel Accessories			
C .. 14″ Squeegee Attachment for 7494T44	903-16	**7494T45**	35.07
G .. 15″ Crevice Tool	901-76	**7494T43**	20.09
2½″ Dia. Plastic Accessories			
A .. 14″ Floor Nozzle with Brush	906-77	**7494T71**	16.61
E ... 8″ Utility Nozzle	906-75	**7494T69**	11.64
G .. 11″ Crevice Tool	906-78	**7494T72**	11.51
H .. 40″ Two-Piece Extension Wand	906-84	**7494T68**	18.02
K .. Reducer (2½″ Dia. to 1¼″ Dia.)	906-85	**7494T86**	7.59
M .. 3″ Dia. Brush	906-79	**7494T85**	14.74
P ... 4″ Blower Nozzle	906-74	**7494T79**	9.63
Q .. 15″ Blower Nozzle	906-83	**7494T77**	10.59
R .. Hose Coupling (Joins two 2½″ Dia. Hoses)	906-86	**7494T74**	8.19

Vacuum Hose

Dia. × Lg.	Mfr. Part No.		
Shop-Vac® Plastic Vacuum Hose			
Hose with Cuffs			
1¼″ × 8 ft.	905-12	**7494T13**	$26.65
1¼″ × 18 ft.	903-24	**7494T54**	69.12
2½″ × 8 ft.	905-03	**7494T81**	27.63
2½″ × 10 ft.	901-34	**7494T59**	34.05
Crush-Resistant Hose with Cuffs			
1¼″ × 7 ft.	905-01	**7494T61**	42.56
1½″ × 12 ft.	905-66	**7494T55**	74.80
1½″ × 18 ft.	903-25	**7494T14**	82.46
1½″ × 25 ft.	905-13	**7494T56**	110.88
Retractable Hose with Cuffs (Retracts from 12 ft. to 3 ft.)			
1¼″ × 12 ft.	905-71	**7494T82**	61.61
1½″ × 12 ft.	905-73	**7494T83**	72.73
2½″ × 12 ft.	905-72	**7494T87**	77.93

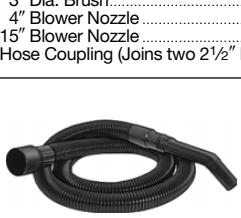

Shop-Vac® Vacuum Hose

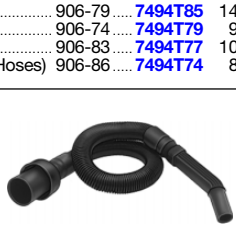

Retractable Shop-Vac® Vacuum Hose

Dia. × Lg.	Mfr. Part No.		
Ridgid Plastic Vacuum Hose with Cuffs			
1⅞″ × 7 ft.	VT1720	**8716T41**	$17.08
2½″ × 7 ft.	VT2520	**8716T42**	22.06

Vacuum Bags and Filters

Shop-Vac® vacuum bags and filters can be used with Dayton brand wet/dry vacuums.

HEPA filters virtually eliminate exhaust dust. They are 99.97% efficient for particles 0.3 microns and larger.

Collection Bag

Dry Pickup Filter

Cartridge Filter

Foam Sleeve

	Fits Tank Size, gal.	Mfr. Part No.	Pkg. Qty.		Pkg.
Shop-Vac® Vacuum Bags and Filters					
Collection Bags for Dry-Only Pickup					
Standard	1½	906-67	3	**6679T16**	$6.69
Standard	2	906-68	3	**6679T26**	7.54
Standard	3	906-69	3	**6679T18**	8.18
Standard	5, 6, 8	906-61	3	**6679T62**	8.89
Standard	10, 12, 14	906-62	3	**6679T51**	12.12
Standard	15-22	906-63	3	**6679T53**	13.49
Standard	25	919-45	3	**6679T54**	13.49
High Efficiency	4	919-64	2	**6679T19**	10.93
High Efficiency	5, 6, 8	906-71	2	**6679T64**	13.06
High Efficiency	10, 12, 14	906-72	2	**6679T65**	17.69
High Efficiency	15-22	906-73	2	**6679T67**	17.87
High Efficiency	25	919-46	2	**6679T68**	17.65
Filters for Dry-Only Pickup					
Cartridge Pre-Filter	5 and up	903-49	5	**6679T23**	7.76
Cloth w/Mounting Ring	All	901-07	3	**6679T48**	5.20
					Each
Cloth w/Elastic Band	All	901-15	—	**6679T12**	$8.49
Cloth w/Mounting Ring	All	901-13	—	**6679T61**	10.89
Cartridge Filters for Wet/Dry Pickup					
Standard	1½ to 5	903-98	—	**6679T28**	11.69
Standard	5 and up	903-04	—	**6679T25**	14.55
Fine Dust	1½ to 5	903-97	—	**6679T24**	15.83
Fine Dust	5 and up	903-50	—	**6679T27**	21.71
Long-Life Fine Dust	5 and up	903-90	—	**6679T22**	32.57
Mold Resistant	5 and up	903-33	—	**6679T31**	26.13
HEPA	5 and up	903-40	—	**6679T17**	39.27
Long-Life HEPA	5 and up	903-80	—	**6679T21**	60.87

	Fits Tank Size, gal.	Mfr. Part No.	Pkg. Qty.		Each
Shop-Vac® Foam Sleeves for Wet Pickup					
Foam Sleeve	1	905-25	—	**6679T69**	$3.31
Foam Sleeve	1½ to 5	905-26	—	**6679T29**	4.02
Foam Sleeve	5 and up	905-85	—	**6679T11**	5.09
Ridgid Vacuum Filters					
					Pkg.
Disposable Filter Bag	4, 4½	VF3501	2	**14125T21**	$12.58
Disposable Filter Bag	14, 16	VF3502	2	**14125T22**	17.54
					Each
Fine Dust Cartridge	4, 4½	VF3500	—	**14125T23**	$27.56
Standard Cartridge	6 and up	VF4000RT	—	**14125T24**	18.34
Fine Dust Cartridge	6 and up	VF5000RT	—	**14125T25**	25.69
HEPA Cartridge	6 and up	VF6000	—	**14125T9**	37.26
Sears Craftsman Vacuum Filters (with red stripe)					
Fine Dust Cartridge	6 and up	9-17907	—	**14125T51**	$20.75
HEPA Cartridge	6 and up	9-17912	—	**14125T9**	37.26
Nortech Vacuum Filters					
Cloth Filter w/Gasket	8	N8221	—	**7498T18**	46.13
Cloth Filter w/Gasket	15, 20	N6022	—	**7498T61**	54.38
Cloth Pre-Filter Bag	30, 55	N635B	—	**6352T28**	30.52
Standard Cartridge	30, 55	N635	—	**6352T26**	51.90
HEPA Cartridge	15, 20	N612H	—	**7498T51**	356.08
HEPA Cartridge	30, 55	N635H	—	**6352T81**	356.08

Vacuum Accessory Kits

Kits for Hard-to-Reach Areas

Miniature Kit

Low-Profile Expandable Kit

Both kits are for 1¼″ dia. hose. All accessories are plastic.

Miniature kit includes 3-ft. hose, hose adapters, round brush, oval brush, crevice tool, straight extension, and curved extension
70075T34 ..... $8.54

Low-profile expandable kit has a crevice tool that includes a brush. Snap together any of the three expansion pieces to make a 12″ to 40″ extension that fits under equipment. Each piece is only ⅜″ thick.
70075T41 ..... $9.64

Pickup Kits

Standard Dry Pickup Kit

Both kits attach to 1½″ dia. hose. All accessories are plastic, except the handles and wands are chrome-plated steel. Both include square dust brush, crevice tool, carpet/hard floor tool, and upholstery tool.

Standard dry pickup kit also comes with a 19¼″ extension wand and a telescoping wand that adjusts from 24¾″ to 38½″.
4178T21 ..... $46.98

Wet/dry pickup kit also includes a two-piece 52½″ wand and a floor squeegee.
4178T41 ..... $74.56

Magnets for Upright Vacuums

Prevent metal objects from entering your upright vacuum and causing damage. Magnets mount easily to the front of your vacuum (screws included).

Magnet Wd.	Fits Vacuum Wd.		
11½″	12″	**8207T52**	$10.72
13¾″	15″	**8207T54**	16.57
16½″	18″	**8207T55**	19.09

Floor and Carpet Sweeper

This galvanized steel and plastic sweeper has a bumper to protect walls and furniture. Base is 2½″ Ht. × 9¾″ Wd. × 11¼″ Dp.
Includes a 40″ steel handle, brushes for fine to heavy debris, and dual dirt collection pans. Capacity is 36.8 cu. in.
7038T46 ..... $71.63

Central-Vacuum-System Accessories

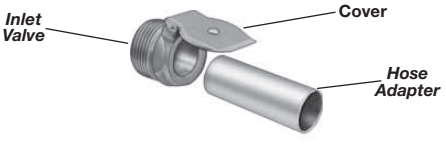

Use these accessories to hook your 1½″ dia. or 2″ dia. hose to your central vacuum system.

Inlet valves have a 2″ NPT male connection and self-closing cover. Both are made of cast zinc with a zinc-plated steel cover. For more information about NPT pipe size and threads, see pages 2-3.
Note: Hose adapter (sold separately) is required to connect a hose to this valve.

Hose adapters are made of zinc-plated steel.

	1½″ Dia.		2″ Dia.	
Inlet Valve	**4935K152**	$20.20	**4935K154**	$23.40
Hose Adapter	**6841T2**	5.90	**6841T5**	9.45

Upright and Canister Vacuum Bags, Filters, and Belts

Vacuum Bags

	Replaces Mfr. Part No.	Pkg. Qty.		Pkg.
Bissell				
Upright 4 & 7	3082	3	**2136T11**	$3.31
Dirt Devil/Royal				
Upright D	3-670075-001	3	**2136T66**	4.93
Upright U	3-920750-001	10	**2136T67**	13.63
Eureka				
Canister MM	60432A	3	**2136T47**	4.37
Upright AA	58623	3	**2136T45**	3.57
Upright F & G	57695A-12	3	**2136T46**	3.79
Upright RR	61115A	3	**2136T12**	7.36
Upright U	57802A	10	**2136T48**	9.57
Hoover				
Upright A	4010001A	3	**2136T54**	3.48
Upright Y	43655-109	3	**2136T55**	3.70
Upright Z	4010100Z	10	**2136T56**	10.89
Kenmore				
Canister 5055, 50557, 50558	5055	3	**2136T57**	3.14
Upright 5068	609757	3	**2136T13**	4.14
Panasonic				
Upright U, U3 & U6	MC-115PT	3	**2136T62**	3.34

Vacuum Filters

	Replaces Mfr. Part No.		Each
Bissell			
Upright 7 & 9 HEPA	32076	**2136T21**	$10.12
Upright 8 HEPA	3091	**2136T22**	11.19
Dirt Devil/Royal			
Upright F1 HEPA	3JC0280000	**2136T23**	20.36
Upright F2 HEPA	3SFA11500X	**2136T24**	11.00
Eureka			
Upright DCF-14	62396	**2136T26**	5.95
Upright J HEPA	61850B	**2136T27**	8.93
Upright Whirlwind	61940A	**2136T28**★	4.64
Hoover			
Upright Fold Away	40130050	**2136T29**	11.79
Upright Widepath	40110008	**2136T31**	10.36
Upright Universal HEPA	40140201	**2136T33**	26.07

★ Sold per package of two.

Vacuum Belts

	Replaces Mfr. Part No.	Pkg. Qty.		Pkg.
Upright Bissell 7, 9 & 10	32074	2	**20105T42**	$2.62
Upright Dirt Devil/Royal 4 & 5	3720310001	2	**20105T43**	2.62
Upright Eureka F & G	52100B	2	**20105T44**	2.62
Upright Eureka U	54312C	2	**20105T45**	2.62
Upright Hoover Elite	40201190	2	**20105T51**	3.57
Upright Hoover Type Y	40201160	2	**20105T52**	2.62

Hand-Held Cordless Vacuums

Wet/Dry Pickup

Heavy Duty Dry Pickup

The ultimate in mobility, these plastic vacuums have an easy-to-empty dust cup and a 120 VAC, 60 Hz battery charger. UL listed.
Note: Not rated for hp.

Wet/dry pickup vacuum runs for 15 minutes on a 16-hour charge. Battery charger has a 6-ft. power cord with two-prong plug and draws 300 mA. A wall-mount bracket for the battery charger is also included.

Heavy duty dry pickup vacuum has an 8-position pivoting nozzle and a crevice tool. Runs up to 30 minutes on a 24-hour charge. Battery charger has a 5½-ft. power cord with two-prong plug. *Note:* Charger not rated for amps.

	Cap., oz.	Ht. × Wd. × Dp.		
Wet/Dry Pickup	8	8″ × 5″ × 16″	**7045T47**	$34.70
Heavy Duty Dry Pickup	16	5½″ × 5½″ × 16″	**7045T56**	86.38

Hand-Held Micro Vacuum

Clean small, hard-to-reach areas with this lightweight (8 oz.) plastic vacuum. Vacuum is 9¾″ Ht. × 2″ Wd. × 4″ Dp. and has a 3 cu. in. capacity dust cup. Also comes with two dust brushes, a crevice tool, two filters, and a 6-ft. power cord with two-prong plug. Operates on 115 VAC, 50 Hz at 0.42 amps. UL listed.
Note: Not rated for hp.

Micro Vacuum	**64205T2**	**Each**	$25.48
Replacement Filters (5/Pkg.)	**64205T3**	**Pkg.**	$3.57

Upright Vacuum Cleaners

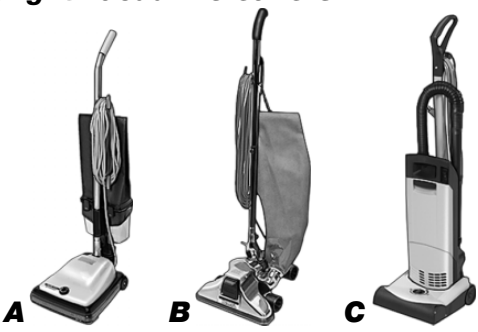

(A) Light duty vacuum cleans a 12″ wide path. Base is plastic with a vinyl bumper. Handle is chrome-plated steel and 44″ long. Has a reusable plastic dirt collection cup—no replacement bags needed. Also has a 30-ft. power cord with three-prong plug and four wheels. Vacuum operates on 120 VAC, 50/60 Hz. UL listed.

Attachment kit (sold separately) includes: 1¼″ Dia.×6-ft. Lg. vinyl hose with adapter, two 19″ extension wands, round dusting brush, crevice tool, and upholstery tool.

(B) Heavy duty vacuum has an aluminum base with a vinyl bumper and cleans a 14″ wide path. Handle is chrome-plated steel and 37″ long. Includes a 50-ft. power cord with three-prong plug and four wheels. Vacuum operates on 120 VAC, 60 Hz. UL listed.

Attachment kit (sold separately) includes: 1¼″ Dia.×7-ft. Lg. vinyl hose with adapter, two 20″ extension wands, floor brush, round dusting brush, crevice tool, and upholstery tool.

(C) Fine-filtration vacuum has a HEPA filter that is 99.97% efficient at 0.3 microns. Vacuum cleans a 12″ wide path. Housing is plastic. Handle is aluminum with a plastic grip and adjusts from 45″ to 48″. Includes a built-in 1″ Dia.×3-ft. Lg. plastic hose, 25″ wand, crevice tool, upholstery tool, a 40-ft. power cord with three-prong plug, and two wheels. Vacuum operates on 120 VAC, 60 Hz. UL listed.

Cap., gal.	Base Size, Ht.×Wd.×Dp.	hp	Amps		Each
(A) Light-Duty Vacuum					
2.75	3″×15¼″×21½″	—	5	7166T42	$244.00
Attachment Kit				7166T15	32.50
Replacement Belts (2/Pkg.)				7166T22 Pkg.	$2.34
(B) Heavy Duty Vacuum					
2.62	7″×14″×15″	—	10	7166T44	320.56
Attachment Kit				7166T12	90.45
Replacement Belt				7166T53	1.61
Replacement Outer Bag				7166T54	77.91
Replacement Inner Collection Bags (3/Pkg.)				7166T52 Pkg.	$9.66
(C) Fine-Filtration Vacuum					
1.32	4½″×12″×12¾″	1.4	9	7098T1	414.40
Replacement Intake Filter				7098T14	16.45
Replacement HEPA Filter				7098T15	32.89
Replacement Belts (2/Pkg.)				7098T12 Pkg.	$31.37
Replacement Collection Bags (10/Pkg.)				7098T13 Pkg.	$31.78

Air-Powered Hand-Held Vacuums

These hand-held vacuums make it easy to clean workstations, machinery, and much more. Air inlet connection is ¼″ NPT female.

Wet/Dry Vacuum

Switch from dry to wet pickup by replacing the collection bag with the optional discharge hose (sold separately). Vacuum body is aluminum. Comes with utility nozzle, swivel brush, and reusable collection bag with zipper opening for easy emptying.

Note: Vacuum accepts 1¼″ dia. accessories.

Inlet Air, cfm @ psi	Cap., qt.	Lg.×Ht. (without bag)		
29 @ 100	1	9″×7½″	7276T7	$103.51
Replacement Reusable Collection Bag			7276T21	26.08
Optional Discharge Hose (1¼″ Dia.×7-ft. Lg.)			7276T5	15.47

Nook-n-Cranny Vacuum for Dry Pickup

The flexible 1 5/16″ Dia.×18″ Lg. steel hose gives you access to blind holes in tanks, bins, and barrels. Hose stays put in any position. Vacuum has an aluminum body and reusable collection bag with zipper opening for easy emptying.

Inlet Air, cfm @ psi	Cap., qt.	Lg.×Ht. (without bag and nozzle)		
29 @ 100	1	7″×7½″	7491T2	$114.87
Replacement Reusable Collection Bag			7276T21	26.08

Vacuum/Blowguns for Dry Pickup

Vacuum/Blowgun with Blowout Tube

Use these units as either a vacuum or a blowgun—just change the airflow direction to switch functions. Ideal for cleaning up dirt, dust, metal chips, glass, and more. Made of plastic, each has a 1¼″ dia. nozzle. Vacuuming requires the use of the reusable collection bag with clamp or the discharge hose (both sold separately).

Vacuum/blowgun with blowout tube simultaneously dislodges and vacuums debris such as metal chips.

Attachment kit comes with a brush nozzle, upholstery nozzle with brush attachment, two 19″ extension tubes, and a crevice tool.

Inlet Air, cfm @ psi	Cap., cu. ft.	Lg.×Ht		
Vacuum/Blowgun				
14 @ 85	0.7	6″ ×5¼″	70195T62	$79.77
Vacuum/Blowgun with Blowout Tube				
14 @ 85	0.7	8⅝″×5¼″	70195T63	111.98
Accessories				
Attachment Kit			70195T64	25.71
Reusable Collection Bag with Clamp			70195T65	29.47
Discharge Hose (1¼″ Dia.×10-ft. Lg.)			70195T66	41.93

Hand-Held Vacuum/Blowers

Vacuum/blowers include a shoulder strap and are UL listed. Styles D and F include a micro tool kit consisting of an adapter, 6⅜″ flexible extension wand, dust brush, and crevice tool.

(D) Light duty vacuum/blower gets into narrow openings. Made of steel. Includes a 1¼″ Dia.×19″ Lg. plastic hose, mini blower nozzle, round brush, crevice tool, and a 12-ft. power cord with three-prong plug. Operates on 110 VAC, 60 Hz.

(E) Standard duty vacuum/blower tackles larger jobs than Style D. Made of plastic. Includes a 1¼″ Dia.×6-ft. Lg. plastic hose, 20″ extension wand, utility nozzle, reducer to attach accessories directly to unit, round brush, crevice tool, and 35-ft. power cord with three-prong plug. Operates on 120 VAC, 60 Hz.

(F) Fine-filtration vacuum/blower is 99.97% efficient at 0.3 microns and is more powerful than the above units. It is made of steel and can pick up printing toner. Its two-speed motor provides low power for cleaning intricate areas and maximum power for heavy duty cleanups. Comes with a 1¼″ Dia.×6-ft. Lg. plastic hose, two 20″ extension wands, two tapered nozzles, dust brush, crevice tool, utility tool, and 12-ft. power cord with three-prong plug. Also includes a permanent cloth bag. Operates on 115 VAC, 60 Hz.

	Cap., qt.	Ht.×Wd.×Dp.	hp	Amps		Each
Vacuum/Blowers						
D	0.50	4″×4″ ×16″	0.5	1.73	6364T66	$86.11
E	1	8″×7¼″×14½″	1.5	6.8	6310T14	139.58
F	1	7″ Dia.×17½″ Lg.	1.7	7.25	9848T521	248.53

Replacement Bags and Accessories

Collection Bags for Style D (5/Pkg.)	6364T68	Pkg.	$4.88
Collection Bags for Style E (5/Pkg.)	6310T16	Pkg.	$15.37
Filter Kit for Style F (1 Filter, 2 Collection Bags)	9848T56	Each	$17.89
Optional Nylon Carrying Case for Style F	9848T61	Each	$65.00

Fine-Filtration Canister Vacuum

When you need a vacuum with a greater capacity than hand-held vacuums, choose this canister vacuum that has a HEPA filter that is 99.97% efficient at 0.3 microns. Vacuum is made of plastic. Includes a 1 11/32″ Dia. × 6-ft. Lg. vinyl hose, telescoping wand (23 1/2″ to 39 1/2″), carpet/hard floor nozzle, combination brush nozzle, crevice tool, built-in carrying handle, a 20-ft. power cord with two-prong plug, two rear wheels, and one front swivel caster. Operates on 120 VAC, 60 Hz. UL listed.

Note: Not rated for hp.

Cap., qt.	Ht. × Wd. × Dp.	Amps		Each
2.6	11 1/4″ × 9″ × 17 1/2″	12	63115T23	$145.71
Replacement HEPA Filter			63115T27	22.30
Replacement Collection Bags (3/Pkg.)			63115T25	Pkg. $4.09

No-Mess Static-Control Vacuums

A&B

C

No need to worry about touching dirty filters—the filters in these vacuums are self-contained in a canister, eliminating messy changes. Simply pull the canister out and replace with a new one. Vacuums are grounded and ESD- (electrostatic discharge) safe, meaning they can be used around sensitive electronic equipment. All have a 1 1/4″ dia. retractable thermoplastic rubber hose, 16″ wand, crevice tool, crevice tool brush, and a 10-ft. power cord with three-prong plug. Operate on 110 VAC, 50/60 Hz.

(A&B) Hand-Held Vacuums

Both include a retractable hose (stretches from 2 1/2 ft. to 6 ft.) and a molded plastic case.

Style A also comes with a round dust brush and a standard filter that is 99.865% efficient at 5 microns. The optional HEPA filter is 99.97% efficient at 0.3 microns.

Style B has a standard filter that is 99.865% efficient at 0.3 microns. Optional HEPA filter is 99.97% efficient at 0.3 microns. Optional ULPA filter is 99.99% efficient at 0.12 microns. UL listed.

Cap.	Ht. × Wd. × Dp.	hp	Amps		Each
(A) Fine-Filtration Vacuum					
1 qt.	6 1/2″ × 7 1/2″ × 12 1/4″	0.5	3.7	9808T25	$163.60
Replacement Standard Filter (2/Pkg.)				9808T26	Pkg. $30.78
Optional HEPA Filter (2/Pkg.)				9808T27	Pkg. $51.37
(B) Extra-Fine-Filtration Vacuum					
1 gal.	9 5/16″ × 7 3/8″ × 19 1/4″	1	5.2	9808T63	256.00
Replacement Standard Filter				9808T62	16.34
Optional HEPA Filter				9808T41	37.80
Optional ULPA Filter				9808T31	88.80

(C) Mobile Large-Capacity Vacuum

It has a plastic drum and base with four swivel casters. A foot switch provides convenient operation. Includes a retractable hose (stretches from 3 1/2 ft. to 10 ft.). Standard filter is 94.756% efficient at 0.5 microns. The optional HEPA filter is 99.97% efficient at 0.3 microns.

Cap.	Ht. × Dia.	hp	Amps		
(C) Mobile Large-Capacity Vacuum					
5 gal.	26 3/4″ × 14″	1	5.2	9808T94	$556.00
Replacement Standard Filter				9808T46	83.54
Optional HEPA Filter				9808T47	94.22

Air-Powered Mini-Tank Wet/Dry Vacuum

Experience air-powered suction in a compact design. Tank is steel and motor housing is aluminum. Comes with a liquid overflow shut-off valve for wet pickup and a 1 1/2″ Dia. × 10-ft. Lg. vinyl hose. Air inlet connection is 3/8″ NPT female.

Inlet Air, cfm @ psi	Cap., gal.	Ht. × Dia.		
5.5 @ 90	6	18 3/4″ × 11 1/4″	6433T73	$684.89
Repl. Cartridge Filter			6433T62	27.50
Repl. Hose (1 1/2″ Dia. × 10-ft. Lg.)			6433T59	102.50

Backpack Vacuums

Vacuum

Fine-Filtration Vacuum

Stop dragging a vacuum around. Get the ultimate in cleaning maneuverability with these lightweight vacuums you wear on your back. All have a plastic housing and padded harness.

Vacuum and Vacuum/Blower

Both include a 1 1/2″ Dia. × 4-ft. Lg. plastic hose, 56″ extension wand, floor nozzle, round dust brush, crevice tool, and a 50-ft. power cord with three-prong plug. Operate on 120 VAC, 60 Hz.

Note: Not rated for hp.

Vacuum also includes an upholstery nozzle. Vacuum/blower easily converts to a blower and provides more power than the vacuum. It includes a blower nozzle.

Cap., qt.	Ht. × Dia.	Amps		Each
Vacuum				
6	22 1/2″ × 7 1/2″	6.2	98005T51	$477.53
Repl. Cloth Filter Bag			98005T813	30.76
Repl. Collection Bags (10/Pkg.)			98005T811	Pkg. $25.94
Vacuum/Blower				
10	26 1/2″ × 9″	9.9	98005T52	505.14
Repl. Cloth Filter Bag			98005T814	38.33
Repl. Collection Bags (10/Pkg.)			98005T812	Pkg. $21.03

Fine-Filtration Vacuum

Has a HEPA filter that is 99.99% efficient at 0.3 microns. Vacuum comes with a 1 1/4″ Dia. × 6-ft. Lg. plastic hose, telescoping wand (24″ to 37 1/2″), floor nozzle, round dust brush, crevice tool, and a 50-ft. power cord with three-prong plug. Operates on 120 VAC, 60 Hz. ETL listed.

Cap., qt.	Ht. × Dia.	hp	Amps		Each
7.2	23″ × 9 1/2″	1.75	9.5	7543T53	$678.67
Replacement HEPA Filter				7543T57	94.33
Replacement Collection Bags (5/Pkg.)				7543T55	Pkg. $22.01

Mini-Tank Wet/Dry Vacuums

Perfect for small jobs. Tank and motor housing are plastic. Both vacuums have a liquid overflow shut-off valve. Also come with a 1 1/4″ Dia. × 4-ft. Lg. plastic hose, utility nozzle, crevice tool, tool holder, wall bracket (mounting hardware included), and a 6-ft. power cord with three-prong plug. Operate on 120 VAC, 60 Hz. UL listed.

Note: Vacuums accept any 1 1/4″ dia. accessory, but they only accept the hoses below.

Cap., gal.	Ht. × Wd. × Dp.	hp	Amps		Each
1	9 1/2″ × 8″ × 9 1/2″	1	6	9801T2	$45.83
2 1/2	14″ × 9″ × 11 1/4″	2.5	8	9801T5	53.34
Replacement Accessories					
Foam Filter Sleeve for 9801T2				6679T69	3.31
Foam Filter Sleeve for 9801T5				6679T11	5.09
Hose (1 1/4″ Dia. × 4-ft.)				9801T6	12.15
Cloth Filter w/Mounting Ring for 9801T5 (3/Pkg.)				6679T48	Pkg. $5.20
Collection Bags for 9801T2 (3/Pkg.)				6679T16	Pkg. $6.69

Cordless Mini-Tank Wet/Dry Vacuum

Get the power of an electric wet/dry vacuum without the hassle of a cord. Vacuum is battery powered and runs up to 45 minutes on a full 60-minute charge (battery and charger sold separately). Also operates on 120 VAC using the included 6-ft. power cord with two-prong plug. Tank and motor housing are plastic. Vacuum includes a 1 1/4″ Dia. × 5-ft. Lg. heavy duty rubber hose, utility nozzle, and crevice tool.

Note: Not rated for hp.

Cap., gal.	Ht. × Wd. × Dp.		
2	14 1/2″ × 12 3/4″ × 16″	7439T22	$128.67
18-Volt Battery		29835A13	95.29
Battery Charger		29835A631	81.82
Replacement Hose (1 1/4″ Dia. × 5-ft. Lg.)		7439T24	14.84
Replacement Wet/Dry Filter		7439T25	31.10

Wall-Mount Wet/Dry Vacuum

Keep your vacuum out of the way, yet close at hand. Tank and motor housing are plastic. Vacuum comes with a liquid overflow shut-off valve. Also includes a 1½″ Dia. × 18-ft. Lg. plastic hose, two 20″ wands, an adapter, claw utility nozzle, nozzle with brush and squeegee, dusting brush, crevice tool, and an 18-ft. power cord with three-prong plug. Also has a wall-mount bracket with mounting hardware. Operates on 120 VAC, 60 Hz. UL listed.

Cap., gal.	Ht. × Dia.	hp	Amps		
5	25½″ × 10½″	5	8.9	6306T12	$119.27
Replacement Cartridge Filter				6306T22	14.83

Wet/Dry Vacuums

6 Gallon with Plastic Tank

The economical choice for larger jobs. Motor housing is plastic, and all vacuums have a liquid overflow shut-off valve. Also have four swivel casters. Operate on 120 VAC, 60 Hz.

Vacuum with Plastic Tank with 1¼″ Dia. Accessories— Has an 8-ft. plastic hose, two 20″ extension wands, combination floor nozzle for wet/dry pickup, crevice tool, collection bag, and a 12-ft. power cord with three-prong plug.

Vacuums with Plastic Tank with 1½″ Dia. Accessories— Vacuums have a 12-ft plastic hose, two 20″ extension wands, a floor nozzle with squeegee and brush, utility nozzle, crevice tool, tool holder, and an 18-ft. power cord with three-prong plug.

Vacuum with Plastic Tank with 2½″ Dia. Accessories— Has an 8-ft. plastic hose, two 20″ extension wands, a floor nozzle with squeegee and brush, crevice tool, tool holder, and a 12-ft. power cord with three-prong plug.

Vacuums with Epoxy-Coated Steel Tank with 1¼″ and 2½″ Dia. Accessories— They include these 1¼″ dia. accessories: 7-ft. plastic hose, two 20″ extension wands, floor nozzle with squeegee and brush, utility nozzle, round brush, and crevice tool. They also include these 2½″ dia. accessories: 6-ft. plastic hose, two 20″ extension wands, and a utility nozzle. Both vacuums have an 18-ft. power cord with three-prong plug.

Cap., gal.	Ht. × Wd. × Dp.	hp	Amps		Each
With Plastic Tank and 1¼″ Dia. Accessories					
6	22″ × 15½″ × 15½″	3.0	8.4	63205T24	$84.60
Repl. Cartridge Filter				6679T27	21.71
Repl. Hose (1¼″ Dia. × 7-ft. Lg.)				7494T61	42.56
Repl. Collection Bags (2/Pkg.)				6679T64	Pkg. $13.06
With Plastic Tank and 1½″ Dia. Accessories					
10	28″ × 17½″ × 17½″	4.0	9.6	63205T37	142.24
22	33″ × 19″ × 19″	6.5	12.0	63205T63	212.73
Repl. Cartridge Filter				6679T27	21.71
Repl. Hose (1½″ Dia.x12-ft. Lg.)				7494T39	29.08
Repl. Collection Bags for 63205T37 (2/Pkg.)				6679T65	Pkg. $17.69
Repl. Collection Bags for 63205T63 (2/Pkg.)				6679T67	Pkg. $17.87
With Plastic Tank and 2½″ Dia. Accessories					
20	29″ × 18″ × 18″	6.5	12.0	63205T61	212.13
Repl. Cartridge Filter				6679T25	14.55
Repl. Hose (2½″ Dia. × 8-ft. Lg.)				7494T81	27.63
With Epoxy-Coated Steel Tank and 1¼″ and 2½″ Dia. Accessories					
6	24″ × 13″ × 13″	4.5	9.0	70215T31	189.39
10	27″ × 17½″ × 17¼″	4.5	9.0	70215T32	224.62
Repl. Foam Filter Sleeve				6679T11	5.09
Repl. Cartridge Filter				6679T25	14.55
Repl. Hose (1¼″ Dia. × 7-ft. Lg.)				7494T61	42.56
Repl. Hose (2½″ Dia. × 8-ft. Lg.)				7494T81	27.63

No-Filter-Change Wet/Dry Vacuum

Switch from wet to dry pickup without stopping to change the filter. You can even clean the filter without removing the vacuum lid—just shake the cleaning rod to dislodge dirt from filter.

Tank and motor housing are plastic, and tank has a drain. Vacuum has a liquid overflow shut-off valve. Also comes with a 1½″ Dia. × 12-ft. Lg. plastic hose, two 19″ extension wands, floor nozzle with brush, crevice tool, tool tray, two washable filters, a 15-ft. power cord with three-prong plug, and four swivel casters. Operates on 120 VAC, 60 Hz. UL listed.

Cap., gal.	Ht. × Wd. × Dp.	hp	Amps		Each
16	24″ × 25″ × 18″	2.5	11.5	7034T11	$338.28
Hose Coupler (Connects Two Hoses)				7034T19	6.96
Replacement Hose (1½″ Dia. × 12-ft. Lg.)				7034T18	38.42
Replacement Filters (2/Pkg.)				7034T15	Pkg. $47.06
Replacement Collection Bags (2/Pkg.)				7034T17	Pkg. $26.87

Whisper Quiet Wet/Dry Vacuums

9 Gallon

Quiet enough for office areas, yet powerful enough for demanding jobs. Tank and motor housing are plastic, and all vacuums have a liquid overflow shut-off valve. Vacuums also have a 1¼″ Dia. × 16-ft. Lg. plastic hose, two 19½″ extension wands, carpet/floor nozzle with squeegee, utility nozzle, round brush, crevice tool, wet vacuum antifoam sleeve, 16-ft. power cord with three-prong plug, and six swivel casters. Operate on 120 VAC, 60 Hz.

A universal neoprene adapter sleeve is also included so you can attach the vacuum hose to a power tool's dust port. Vacuum head has a power outlet that accepts a power tool with a three-prong plug. An automatic on/off switch allows the vacuum to turn on when you turn your power tool on. Use with tools and accessories up to 19 amps.

Vacuums ***with HEPA filter*** come with a HEPA filter that is 99.97% efficient at 0.3 microns.

Vacuums

hp	Amps	With Standard Filter		With HEPA Filter	
6-Gallon Capacity— *21⅛″ Ht. × 17 3/16″ Wd. × 17¼″ Dp.*					
1.4	9.4	70355T73	$454.17	70355T83	$509.12
9-Gallon Capacity— *23½″ Ht. × 17 3/16″ Wd. × 17¼″ Dp.*					
1.4	9.4	70355T72	556.77	70355T82	590.10

Replacement Accessories

	For 6-gal. Cap.	Each	For 9-gal. Cap.	Each
Standard Filter	70355T731	$40.63	70355T731	$40.63
HEPA Filter	70355T811	126.38	70355T811	126.38
Collection Bags (3/Pkg.)	70355T812	Pkg. $17.22	70355T813	Pkg. $18.04
Hose (1¼″ Dia. × 16-ft. Lg.)	70355T831	Each $73.70		

Wet/Dry Vacuums with Corrosion-Resistant Tank

Tanks are stainless steel and provide superior corrosion resistance. Motor housing is plastic, unless noted. Vacuums have a liquid overflow shut-off valve. Operate on 120 VAC, 60 Hz. UL listed.

Vacuum with 1¼″ Dia. Accessories— Comes with an 8-ft. plastic hose, two 20″ extension wands, a combination floor nozzle for wet/dry pickup, floor/carpet selector nozzle, utility nozzle, round brush, crevice tool, and 18-ft. power cord with three-prong plug. It has four swivel casters.

Vacuums with 1½″ Dia. Accessories— All have two-stage motors to allow easier pickup of heavy and wet debris. Vacuums come with a 12-ft. plastic hose, two 25″ extension wands, floor nozzle (with rug, brush, and squeegee inserts), and a 35-ft. power cord with three-prong plug. All have two rear wheels and two front swivel casters.

The *10-* and *20-gallon vacuums* also have a utility nozzle, round brush, and crevice tool.

Cap., gal.	Ht. × Wd. × Dp.	hp	Amps		Each
Vacuum with 1¼″ Dia. Accessories					
6	24″ × 17½″ × 17¼″	6.5	9.7	7081T74	$269.74
Repl. Cartridge Filter				6679T25	14.55
Repl. Hose (1¼″ Dia. × 8-ft. Lg.)				7494T13	26.65
Repl. Collection Bags (2/Pkg.)				6679T64	Pkg. $13.06
Vacuums with 1½″ Dia. Accessories					
10	36½″ × 19″ × 24½″	3	11	6389T26	661.41
15	36½″ × 21″ × 21″	4	11.5	6389T41★	958.32
20	38½″ × 21″ × 25¾″	3	11	6389T28	791.04
Repl. Foam Filter Sleeve				6679T11	5.09
Repl. Cartridge Filter				6679T21	60.87
Repl. Hose (1½″ Dia. × 12-ft. Lg.)				7494T55	74.80
Repl. Collection Bags for 10-gal. Vacuum (2/Pkg.)				6679T65	Pkg. $17.69
Repl. Collection Bags for 15- & 20-gal. Vacs (2/Pkg.)				6679T67	17.87

★ Motor housing is steel.

20 Gallon

Heavy-Suction Wet/Dry Vacuums

12 Gallon

The two-stage motor in these vacuums allows easier pickup of heavy and wet debris. Tank and motor housing are plastic, and tank has a drain. Vacuums have a liquid overflow shut-off valve. They also have a tool caddy and a 35-ft. power cord with three-prong plug. Operate on 120 VAC, 60 Hz.

Both come with 1¼″ dia. accessories: 7-ft. plastic hose, two 20″ extension wands, floor nozzle with squeegee and brush, utility nozzle, round brush, and crevice tool. They also include 2½″ dia. accessories: 6-ft. plastic hose, two 20″ extension wands, and a utility nozzle.

12-gal. vacuum has four swivel casters.

16-gal. vacuum has two rear wheels, two front swivel casters, and a steel push handle. Overall height with handle is 43″.

Cap., gal.	Ht.×Wd.×Dp.	hp	Amps		Each
12	24″×15½″×19½″	2.5	9.5	7487T21	$333.31
16	29″×18¾″×25″	2.5	9.5	7487T22	373.47
Replacement Accessories					
Foam Filter Sleeve				6679T11	5.09
Pleated Cartridge Filter				6679T22	32.57
Hose (1¼″ Dia.×7-ft. Lg.)				7494T61	42.56
Hose (2½″ Dia.×8-ft. Lg.)				7494T81	27.63
Collection Bags (2/Pkg.) for 7487T21				6679T65	Pkg. $17.69
Collection Bags (2/Pkg.) for 7487T22				6679T67	Pkg. $17.87

Wet/Dry Vacuum with Detachable Blower

Blower

To convert this vacuum into a hand-held blower, just remove the motor housing and add the included 2½″ Dia.×20″ Lg. plastic blower. Tank and motor housing are plastic, and tank has a drain. Vacuum also has a liquid overflow shut-off valve.

Includes a 1¼″ Dia.×7-ft. Lg. plastic hose, three 14″ extension wands, blower nozzle, floor nozzle, tool holder, 18-ft. power cord with three-prong plug, and four swivel casters. Operates on 120 VAC, 60 Hz. UL listed.

Cap., gal.	Ht.×Wd.×Dp.	hp	Amps		
12	25″×22″×23″	4.5	9.5	63305T36	$150.37
Replacement Foam Filter Sleeve				6679T11	5.09
Replacement Pleated Cartridge Filter				6679T25	14.55

Air-Powered Heavy-Suction Wet/Dry Vacuums

15 Gallon

Pick up the heaviest debris with these continuous-duty vacuums—they have the highest suction power of any wet/dry vacuums we offer. All have an aluminum venturi head. They include two 24″ extension wands, floor nozzle, crevice tool, filter, a 20-ft. rubber air supply hose with universal couplings, and a wheeled steel dolly. Tank is steel, unless noted.

Note: Liquid overflow shut-off valve (sold separately below) is recommended for wet pickup.

15-Gallon and ***20-Gallon Capacity***—Both vacuums have a 1½″ Dia.×20-ft. Lg. plastic hose, ½″ ID air supply hose, two rear wheels, and two front swivel casters.

30-Gallon and ***55-Gallon Capacity***—Have a 2″ Dia.×20-ft. Lg. plastic hose (unless noted), ¾″ ID air supply hose, and four swivel casters.

Accessories—The *filter bag* extends filter life. The *HEPA filter* is 99.97% efficient at 0.3 microns. The *extra-silent muffler* reduces vacuum noise without reducing performance.

Vacuums

Inlet Air, cfm @ psi	Ht.×Dia.	Hose Dia.		
15-Gallon Capacity				
20 @ 100	37″×16″	1½″	7498T11	$1,164.71
20-Gallon Capacity				
20 @ 100	37″×16″	1½″	7498T22■	1,481.03
30-Gallon Capacity				
47 @ 100	40″×19″	1½″	7498T13●	1,188.35
68 @ 100	40″×19″	2″	7498T14	1,273.58
55-Gallon Capacity				
68 @ 100	45″×23″	2″	7498T16	1,307.48

■ Stainless steel tank with drain.
● Vacuum has a 1½″ Dia.×20-ft. Lg. plastic hose.

Accessories

	For 15- & 20-gal. Cap.		For 30- & 55-gal. Cap.	
Liquid Overflow Shut-Off Valve	7498T32	$188.93	6352T41	$60.02
Filter Bag		—	6352T28	30.52
HEPA Filter	7498T51	356.08	6352T81	356.08
Extra-Silent Muffler	6352T83	419.03	6352T83	419.03
Repl. Filter	7498T61	54.38	6352T26	51.90
Repl. Silencer Foam Insert	6352T29	22.38	6352T29	22.38
Repl. Vacuum Hose (1½″ Dia.×20-ft. Lg.)			7498T1	67.15
Repl. Vacuum Hose (2″ Dia.×20-ft. Lg.)			7498T2	96.65

Extra-Fine-Filtration Wet/Dry Vacuums

15 Gallon

A multistage filtration system ensures that virtually all the particles you vacuum stay contained in the vacuum tank. Vacuums have an ULPA filter that is 99.99% efficient at 0.12 microns. Tank and motor housing are plastic. Vacuums have a liquid overflow shut-off valve.

Both have a 1½″ Dia.×10-ft. Lg. plastic hose, one 4½-ft. extension wand, carpet/floor nozzle, utility nozzle, squeegee nozzle, floor brush, round brush, crevice tool, and a 50-ft. power cord with three-prong plug. They have two rear tires and two front swivel casters. Operate on 115 VAC, 60 Hz.

Vacuums

Cap., gal.	Ht.×Wd.×Dp.	hp	Amps		
6	38½″×17″×15″	1.25	7.1	6297T55	$1,099.15
15	49″ ×10″×23″	2.3	11.3	6297T53	1,438.79

Replacement Accessories

	For 6-Gal. Cap. Pkg. Qty.		Pkg.	For 15-Gal. Cap. Pkg. Qty.		Pkg.
Paper Filter Protectors	10	6297T49	$39.54	12	6297T37	$42.90
Plastic Collection Bags	12	6297T45	29.56	12	6297T46	61.98
Cloth Filter	1	63395T38	71.13	1	6297T38	92.38
Impact Filters	6	63395T39	23.36	6	63395T39	23.36
ULPA Filter for Both Vacuums					6297T39	Each $281.20
Hose (1½″ Dia.×10-ft. Lg.)					6297T43	Each $97.29

Clean Room Fine-Filtration Dry-Pickup Vacuums

HEPA Dry-Pickup Vacuum

A micro filter protects the HEPA filter, which is 99.97% efficient at 0.3 microns. Can be used in Class 100 clean rooms. Vacuum is 16″ Ht.×12″ Wd.×14″ Dp. Tank is aluminum, and motor housing is plastic.

Vacuum comes with a 1¼″ Dia.×6½-ft. Lg. plastic hose, two 22″ extension wands, carpet/floor nozzle, upholstery nozzle, round brush, crevice tool, 30-ft. power cord with three-prong plug, two rear wheels, and a front swivel caster. Operates on 120 VAC, 60 Hz. UL listed.

Cap., gal.	hp	Amps		Each
3¼	1.5	9	6373T72	$1,309.40
Replacement Accessories				
Micro Filter			6373T71	142.07
Cotton Filter			6373T74	93.37
HEPA Filter Cartridge			6373T73	268.53
Hose (1¼″ Dia.×6½-ft. Lg.)			6373T81	77.56
				Pkg.
Collection Bags (5/Pkg.)			6373T77	$22.94

Economy ULPA Dry-Pickup Vacuum

More efficient than a HEPA filter, the ULPA filter in this vacuum is 99.99% efficient at 0.12 microns. Can be used in Class 10 clean rooms. Vacuum is 22″ Ht×16″ Wd.×16″ Dp. Tank and motor housing are plastic.

Comes with a 1¼″ Dia.×8-ft. Lg. plastic hose, telescoping extension wand (23″ to 38″), floor nozzle, upholstery nozzle, round brush, crevice tool, 33-ft. power cord with two-prong plug, and four swivel casters. Operates on 120 VAC, 60 Hz.

Cap., gal.	hp	Amps		Each
4	1	8.3	7007T3	$725.56
Replacement Accessories				
Cloth Filter			7007T32	69.49
ULPA Filter			7007T33	206.18
Hose (1¼″ Dia.×8-ft. Lg.)			7007T34	62.62
				Pkg.
Collection Bags (5/Pkg.)			7007T31	$15.02

Fine-Filtration Dry-Pickup Vacuum

Clean confidently using this HEPA-filter vacuum—the filter is 99.97% efficient at 0.3 microns. Tank and motor housing are plastic. Vacuum has a 1¼″ Dia.×8-ft. Lg. plastic hose, two 39″ extension wands, carpet/floor nozzle, round brush, crevice tool, and a 40-ft. power cord with three-prong plug. Operates on 115 VAC, 50/60 Hz.

Optional filter bag adds an extra stage of filtration and extends the life of the HEPA filter.

Cap., gal.	Ht.×Wd.×Dp.	hp	Amps		Each
4	24½″×16½″×16¾″	1.25	8	63455T62	$509.73
Optional Filter Bag				63455T64	71.13
Replacement HEPA Filter				63455T65	229.02
Replacement Hose (1¼″ Dia.×8-ft. Lg.)				63395T41	59.71
Replacement Impact Filters (6/Pkg.)				63455T36	Pkg. $18.87
Replacement Collection Bags (10/Pkg.)				63395T37	Pkg. $34.67

Extra-Fine-Filtration Dry-Pickup Vacuums

6 Gallon

The ULPA filter in these vacuums is 99.999% efficient at 0.12 microns. Vacuums include a 48″ extension wand, carpet/floor nozzle, utility nozzle, round brush, crevice tool, and 50-ft. power cord with three-prong plug. Operate on 115 VAC, 60 Hz.

6-gal. vacuum has a 1¼″ Dia.×8-ft. Lg. plastic hose and four swivel casters. Tank and motor housing are plastic. UL listed.

15-gal. vacuum has a 1½″ Dia.×10-ft. Lg. plastic hose, two rigid rear wheels, and two front swivel casters. Tank is steel; motor housing is plastic.

Vacuums

Cap., gal.	Ht.×Wd.×Dp.	hp	Amps		
6	27″×15″×14″	1.25	7.9	63395T34	$779.72
15	35″×21″×23″	2.3	11.3	6297T51	1,247.23

Replacement Accessories

	Pkg. Qty.	For 6-gal. Cap.	Pkg.	For 15-gal. Cap.	Pkg.
Collection Bags	10	63395T37	$34.67	6297T14	$59.42
Filter Protectors	10	6297T49	39.54	6297T37★	42.90
Cloth Filter	1	63395T38	71.13	6297T38	92.38
Impact Filters	6	63395T39	23.36	63395T39	23.36
ULPA Filter for Both Vacuums		6297T39	Each		$281.20
Hose for 6-gal. Vacuum (1¼″ Dia.×8-ft. Lg.)		63395T41	Each		$59.71
Hose for 15-gal. Vacuum (1½″ Dia.×10-ft. Lg.)		6297T43	Each		$97.29

★ Package quantity is 12.

Continuous-Duty Dry-Pickup Vacuum

This vacuum can run 24 hours a day, 7 days a week. Made of cast aluminum with a steel base for stability. Vacuum comes with a 1½″ Dia.×15-ft. Lg. static-control urethane hose, 60″ extension wand, floor nozzle, utility nozzle with brush insert, crevice tool, dust collection bucket, and 15-ft. power cord with three-prong plug. Operates on 115 VAC, 50/60 Hz.

Cap., gal.	Ht.×Wd.×Dp.	hp	Amps		
4	28″×18″×24″	1	12	6295T71	$2,389.63
Replacement Filter				6295T91	82.50
Replacement Hose (1½″ Dia.×15-ft. Lg.)				9020T63	111.56

Indoor/Outdoor Dry-Pickup Vacuum

Made of stainless steel, this tank is corrosion resistant so it can be used both indoors and outdoors. Vacuum has two motors that operate on 110-120 VAC, 60 Hz with a recommended 20-amp circuit (must be hardwired). Mount using the four ¾″ dia. bolt holes on the base. Comes with a 2″ Dia.×15-ft. Lg. plastic hose with swivel cuff, and claw nozzle. ETL listed.

Cap., gal.	Dia.×Ht.	hp	Amps		
8	19″×54½″	1.6	16	7388T11	$1,282.14
Repl. Filter (1/Motor Required)				7388T12	14.40
Repl. Reusable Collection Bag				7388T13	45.83
Repl. Hose (2″ Dia.×15-ft. Lg.)				7388T14	34.34

Wet-Pickup Vacuums with Automatic Pump-Out

No need to manually empty the water from these vacuum tanks—these vacuums pump the water out for you. All have three modes: vacuum only, pump only, and vacuum and pump simultaneously.

Economy Wet/Dry-Pickup Automatic Pump-Out Vacuums

22 Gallon

Vacuums can pick up and pump out liquids at a rate of 6 gpm. Motor housing is plastic. Both vacuums have a tool holder, collection bag, and an 18-ft. power cord with three-prong plug. Also have a liquid overflow shut-off valve, standard ¾″ garden hose thread (GHT) male connection for attaching a drainage hose, and drain for manual emptying. Operate on 120 VAC, 60 Hz. UL listed.

Note: For dry pickup, remove the pump unit.

Both come with 1¼″ dia. accessories: 8-ft. plastic hose, two 20″ extension wands, and combination floor nozzle for wet/dry pickup. They also include 2½″ dia. accessories: 6-ft. plastic hose, two 20″ extension wands, combination floor nozzle for wet/dry pickup, utility nozzle, and crevice tool.

Stainless Steel Tank—Vacuum has two rear wheels and a front caster.

Plastic Tank—Vacuum has four swivel casters.

Cap., gal.	Ht.×Wd.×Dp.	hp	Amps		Each
Stainless Steel Tank					
14	36″×18″×21″	6.5	12	7924T5	$347.86
Plastic Tank					
22	30″×21″×24½″	6.5	12	7924T3	265.33
Replacement Accessories					
Foam Filter Sleeve				6679T11	5.09
Cartridge Filter				6679T25	14.55
					Pkg.
Collection Bags for 14-gal. Tank (2/Pkg.)				6679T65	$17.69
Collection Bags for 22-gal. Tank (2/Pkg.)				6679T67	17.87

High-Volume Wet-Pickup Automatic Pump-Out Vacuum

Pick up large amounts of liquid quickly. This vacuum suctions up to 53 gpm and its pump discharges up to 80 gpm—perfect for flood applications. Vacuum has a stainless steel tank, two front swivel casters, and two rigid rear wheels. Also has a liquid overflow shut-off valve. *Note:* For wet pickup only.

Includes a 1½″ Dia.×13-ft. Lg. plastic suction hose, two 20″ extension wands, 15″ curved wand, squeegee nozzle, and a 25-ft. power cord with three-prong GFCI plug. Discharge connection is a 1½″ quick-disconnect coupling. Operates on 110-120 VAC, 60 Hz.

Cap., gal.	Ht.×Wd.×Dp.	hp	Amps		
19	38″×23″×24″	1.6	12	71065T68	$3,013.91
Optional Discharge Hose (1½″ Dia.×25-ft. Lg.)				71065T71	156.00
Repl. Suction Hose (1½″ Dia.×13-ft. Lg.)				71065T72	90.00

Large Debris Outdoor Vacuum

Easily clean up littered areas by picking up large debris such as cans, paper, and leaves. Vacuum has a 30″ wide sweeping path. Engine is gasoline powered. Frame, handles, and motor housing are steel. Height adjusts from ¼″ to 3½″ above ground level, so this vacuum goes from flat surfaces to turf. Comes with a 10-ft. plastic vacuum hose, 10-cu. ft. zippered cloth collection bag, and four tires. *Note:* Not recommended for fine dust pickup.

Ht.×Wd.×Dp.	hp		
39″×30″×68″	6.75	7307T58	$1,558.89
Replacement Cloth Collection Bag		7307T97	141.93
Optional Canvas Collection Bag (10 cu. ft.)		7307T98	160.71

Drum-Top Vacuums

Economy Wet/Dry Vacuum

This economical vacuum attaches to an open-top 55-gallon drum (sold separately on page 1712; minimum 24-ga. drum required). Vacuum has a plastic housing and a liquid overflow shut-off valve. Includes a 1½″ Dia.×12-ft. Lg. plastic hose, claw nozzle, and a 35-ft. power cord with three-prong plug. Operates on 120 VAC, 60 Hz.

Dia.×Ht.	hp	Amps		
24″×18″	3	11	6305T41	$411.19
Repl. Lid Gasket			6305T81	15.01
Repl. Cartridge Filter			6679T22	32.57
Repl. Hose (1½″ Dia.×12-ft. Lg.)			7494T55	74.80
Repl. Nozzle			7494T11	16.41

Heavy Duty Vacuums

An indicator light tells you when the filters are losing efficiency and should be cleaned or replaced. Vacuums attach to an open-top 55-gallon drum (sold separately on page 1712; minimum 18-ga. drum required). Both have a steel housing. Come with a 1½″ Dia.×10-ft. Lg. plastic hose, 53″ extension wand, crevice tool, and 50-ft. power cord with three-prong plug. Operates on 115/120 VAC, 50/60 Hz.

Also Available: Replacement parts. Please ask for 74805T888 and specify part.

Heavy duty wet/dry vacuum has a squeegee tool and a liquid overflow shut-off valve.

Heavy duty fine-filtration dry-pickup vacuum has a HEPA filter that is 99.97% efficient at 0.3 microns. Includes a round brush, upholstery nozzle, and floor brush.

Dia.×Ht.	hp	Amps		Each
Heavy Duty Wet/Dry Vacuum				
24″×20″	2.3	11	74805T82	$1,120.73
Heavy Duty Fine-Filtration Dry-Pickup Vacuum				
24″×20″	2.3	10	74805T84	1,667.21
Replacement Accessories (for both vacuums)				
Lid Gasket			74805T36	17.48
Filter			74805T41	59.21
Hose (1½″ Dia.×10-ft. Lg.)			74805T91	107.02
Replacement Accessories (for 74805T84 only)				
HEPA Filter			74805T23	574.40
Pre-Filters (6/Pkg.)			74805T22	Pkg. $60.00
Filter Protectors (12/Pkg.)			74805T21	Pkg. $51.60

Air-Powered Drum-Top Vacuums

Mini Wet-Pickup Vacuum

Our smallest drum-top vacuum is great for cleaning up minor liquid spills—just attach it to a 5-gallon pail (sold separately). This continuous-duty vacuum has a steel housing. Also has a liquid overflow shut-off valve. Air inlet connection is ⅜″ NPT female. Comes with a 1¼″ Dia.×6½-ft. Lg. plastic vacuum hose, round suction nozzle, and crevice tool.

Inlet Air, cfm @ psi	Dia.×Ht.		
12.7 @ 85	12″×15″	63605T27	$378.99
5-gallon Steel Pail		4211T333	14.66
Repl. Lid Gasket		63605T51	78.00
Repl. Vacuum Hose (1¼″ Dia.×6½-ft. Lg.)		63605T61	134.55

Heavy-Suction Wet/Dry Vacuums

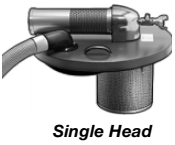

Single Head

These have the most suction power of any drum-top vacuum we offer—great for picking up heavy debris. Attach these continuous-duty vacuums to an open-top 30- or 55-gallon drum (sold separately on page 1712; minimum 22-ga. drum required). Vacuum housing is steel. Air inlet connection is a ¾″ universal coupling. Vacuums come with a 48″ extension wand, nozzle, and crevice tool.

Optional liquid overflow shut-off valve is recommended for wet pickup.

Optional filter bag extends the life of the cartridge filter.

Optional HEPA cartridge filter is 99.97% efficient at 0.3 microns.

Optional extra-silent muffler reduces vacuum noise without reducing vacuum performance.

Inlet Air, cfm @ psi	20″ Dia.×6″ Ht. Vacuum for 30-gal. Drum		24″ Dia.×6″ Ht. Vacuum for 55-gal. Drum	
Single Head—1½″ Dia.×20-ft. Lg. Vacuum Hose				
47 @ 100	6352T91	$899.88	6352T92	$911.23
Single Head—2″ Dia.×20-ft. Lg. Vacuum Hose				
68 @ 100	6352T93	977.64	6352T94	1,005.22
Double Head—2″ Dia.×20-ft. Lg. Vacuum Hose				
110 @ 100	—	—	6352T95●	1,670.10
Accessories				
Optional Liquid Overflow Shut-Off Valve			6352T41	60.02
Optional Filter Bag			6352T28	30.52
Optional HEPA Cartridge Filter			6352T81	356.08
Optional Extra-Silent Muffler			6352T83	419.03
Replacement Lid Gasket for 30-gallon Drum			6352T73	18.32
Replacement Lid Gasket for 55-gallon Drum			6352T77	22.38
Replacement Cartridge Filter			6352T26	51.90
Replacement 1½″ Dia.×20-ft. Lg. Hose			7498T1	67.15
Replacement 2″ Dia.×20-ft. Lg. Hose			7498T2	96.65
Replacement Silencer Foam Insert			6352T29	22.38

● 25″ dia.

Dry-Pickup Vacuum for Chips and Powders

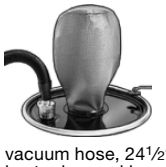

Pick up wet or dry chips, powders, and other light particles that create problems in other vacuums. This continuous-duty vacuum attaches to an open-top 55-gallon drum (sold separately on page 1712; minimum 16-ga. drum required). Housing is aluminum. Air inlet connection is ⅜″ NPT female.

Furnished with a 1½″ Dia.×10-ft. Lg. plastic vacuum hose, 24½″ extension wand, two 19″ extension wands, crevice tool, round brush, squeegee nozzle, and utility nozzle. The filter is external and measures 10″ Dia.×22″ Ht.

Inlet Air, cfm @ psi	Dia.×Ht.		
40 @ 80	23⅝″×41½″	7789T11	$595.87
Replacement Filter		7789T21	59.06
Replacement Vacuum Hose (1½″ Dia.×10-ft. Lg.)		7789T22	59.06

Wet-Pickup Sump Type Vacuums

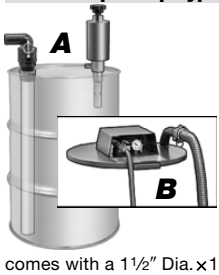

Remove coolant, sludge, slurries, and metal chips from sumps and other liquid reservoirs with these wet-pickup continuous-duty vacuums. All have a liquid overflow shut-off valve.

(A) Bung-Hole Wet-Pickup and Pump-Out— Mount in the two openings of a 55-gallon drum with cover (sold separately on page 1712; minimum 16-ga. drum required). Vacuum pumps both in and out at 30 gpm; simply turn the knob to change mode from filling to emptying. Housing is stainless steel. Air inlet connection is ¼″ NPT male. Vacuum comes with a 1½″ Dia.×10-ft. Lg. plastic vacuum hose, 24½″ extension wand, and 90° quick-disconnect elbow.

(B) Standard Wet-Pickup—Mounts to an open-top 55-gallon drum (sold separately on page 1712; minimum 16-ga. drum required). Pumps in at 40 gpm. Housing is steel. Air inlet connection is ½″ NPT male. Comes with a 1½″ Dia.×10-ft. Lg. plastic vacuum hose, utility nozzle, round flexible nozzle, round crevice tool, and a 20-ft. oil-resistant rubber air-supply hose.

Inlet Air, cfm @ psi	Dia.×Ht.		
(A) Bung-Hole Wet-Pickup and Pump-Out Vacuum			
19 @ 80	3″×11⅜″	9798T56	$440.73
Replacement Vacuum Hose (1½″ Dia.×10-ft. Lg.)		7789T22	59.06
(B) Standard Wet-Pickup Vacuum			
23 @ 100	24″× 9″	7290T4	1,292.31
Replacement Vacuum Hose (1½″ Dia.×10-ft. Lg.)		7290T7	142.91
Replacement Lid Gasket		7290T6	32.04

Heavy Duty Mobile 55-Gallon Collection Drum for Drum-Top Vacuums

Works with open-top 55-gallon drum-top vacuums that have a minimum diameter of 23½″ (not compatible with 6305T41 or 7789T11 drum-top vacuums sold separately above). Made of 12-ga. steel, drum has a valve for draining liquid, an 8″×10″ bottom door for removing debris, and 7″ Wd.×2½″ Ht. forklift pockets that are 19½″ center-to-center. Four casters (two rigid and two swivel) provide mobility. For more 55-gallon open-top steel drums, see page 1712.

Ht.×Wd.×Dp.		
46″×27″×31″	7119T5	$1,063.60

For information about static pressure (SP), see page 656.

Mobile Single-Stage Dust Collectors

Here's a great combination of simple operation and effective performance in one flexible system designed for wood dust collection. The base has wheels, so you can move the unit around the shop for connection to different systems. All wood dust particles collect in cotton/polyester filter bags (included) that are 95% efficient for wood dust particles 25 microns and larger. Collectors are 15- to 24-ga. steel. Motors are totally-enclosed, fan-cooled (TEFC).

696 cfm collector has a two-bag system and includes a 3-ft. cord with three-prong plug.

1,400 cfm collectors have a two-bag system and include an adapter to connect to multiple runs of duct, allowing you to easily use one collector for several pieces of equipment. 2168K56 includes a 6-ft. cord with three-prong plug. 2168K32 has four 6-ft. wire leads for hardwiring.

2,431 cfm collector has a four-bag system and includes an adapter to connect to multiple runs of duct, allowing you to easily use one collector for several pieces of equipment. Comes with four 3-ft. wire leads for hardwiring.

Also Available: Additional replacement parts. Please ask for 2168K888 and specify the McMaster-Carr part number of the dust collector and the replacement part needed.

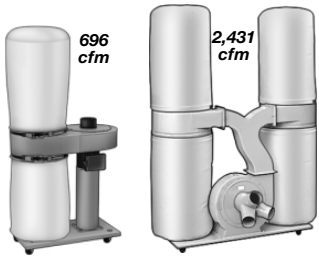

cfm @ 0″ SP	hp	VAC, 60 Hz	Ph.	Amps	Inlet Dia. Single	Inlet Dia. w/Adapter	Bag Volume, cu. ft.	Filter Area★, sq. ft.	O'all Size, Ht.×Wd.×Dp.	dB @ 3 ft.	Collectors	Each	Repl. Filter Bags	Per Set
696	1	110	1	14	4″	—	2.5	14	69″×33″×16″	55-65	2168K25	$302.68	2168K23	$99.74
1,400	2	110	1	15	5″	2×4″	7.4	18	70″×34″×18″	65-70	2168K56	464.41	2168K51	97.33
1,400	2	220/440	3	5.6/2.8	5″	2×4″	7.4	18	70″×34″×18″	65-70	2168K32	476.79	2168K51	97.33
2,431	3	220/440	3	6/5	6″	3×4″	10.5	52	79″×57″×22″	70-80	2168K41	688.51	2168K43	207.96

★ Filter area is the number of square feet of fabric area of an inflated filter bag.

Drum-Mount Two-Stage Dust Collectors

Often called cyclone dust collectors, these powerful units mount on drums for two-stage dust collection (drums not included; use steel drums sold separately on page 1712). In the first stage, larger particles fall into the drum. In the second stage, smaller particles go into the filter bag. Since the larger particles don't pass through the blower, there is less wear on the blower and filter bag. Blowers have a 14-ga. steel housing and a cast aluminum blower wheel. Inlet hose is 5 feet long. *Note:* Not for use with combustible metal dust, including aluminum, magnesium, and titanium. All motors are totally-enclosed, fan-cooled (TEFC). 115 VAC units have an 8-ft. cord with three-prong plug, unless noted. 230/460 VAC units have nine wire leads.

450 cfm collectors come with a cotton filter bag that is 99% efficient for particles 10 microns and larger. ***700 cfm*** and ***1,100 cfm collectors*** come with a polyester filter bag that is 99% efficient for particles 5 microns and larger. ***1,300 cfm collector*** uses the 2133K16 Large-Capacity Dust Bag Kit (sold separately).

Optional ***wheeled dollies*** (sold separately) provide easy movement from job-to-job.

Also Available: Drum-Mount Two-Stage Dust Collectors with a three-phase hazardous location motor. Operate on 230/460 VAC, 60 Hz. Please ask for 2114K66 and specify horsepower.

Dust Collector with Optional Wheeled Dolly (Drum Not Included)

Dust Collectors

cfm @ 0″ SP	hp	Inlet Dia.	Filter Area★, sq. ft.	Fits Drum gal.	Fits Drum Dia.	dB @ 5 ft.	115 VAC, 60 Hz Single-Phase Collectors Amps		Each	230/460 VAC, 60 Hz Three-Phase Collectors Amps		Each	Replacement Filter Bags	Each
450	½	4″	12½	30✓	19½″-20½″	78	6.8	2114K7	$623.44	1.9/0.95	2114K74	$574.31	2114K9	$66.04
700	1	6″	18	55	23″-24″	83	11.2	2114K1	793.34	3.2/1.6	2114K75	810.47	2114K4	114.15
1,100	2	6″	18	55	23″-24″	85	20/10	2114K2■	930.24	5.6/2.8	2114K76	858.46	2114K4	114.15
1,300	3	6″	—	55	23″-24″	84	—	—	—	7.6/3.8	2114K78	933.33	—	—

Wheeled Dolly for use with 2114K7, K74 ..... 2114K8 Each $155.49
Wheeled Dolly for use with 2114K1, K2, K75, K76 ..... 2114K3 Each $175.93
★ Filter area is the number of square feet of fabric area of an inflated filter bag. ✓ Also compatible with most 20/24-gal. drums.
■ Operates on 115/230 VAC, 60 Hz and has nine wire leads for hardwiring.

Large-Capacity Filter Bag Kits

These polyester fabric bags are 99% efficient for particles 5 microns and larger. Furnished with a mounting kit that includes 5 feet of 6″ diameter hose to attach the bag to the dust collector outlet. 450 cfm dust collectors require the adapter kit (sold separately).

Drum-mount bag kits attach to a 55-gal. drum (not included). They're supported by a hook at the top of the bag; the bottom of the bag tightens around the top of the drum with a belt and quick-release buckle for easy emptying.

Ceiling-mount bag kit includes a suspension ring and hooks. Bag empties from a zipper at bottom.

Mount Type	Bag Size, Dia.×Ht.	Filter Area★, sq. ft.	Kits	Each	Repl. Filter Bags	Each
Drum	2 ft.×6 ft.	45	2133K16	$256.36	2133K26	$183.64
Drum	4 ft.×6 ft.	100	2133K18	614.55	2133K28	513.82
Ceiling	2 ft.×6 ft.	48	2133K12	398.74	2133K22	243.64

Adapter Kit to attach Large-Capacity Filter Bags (for 450 cfm Dust Collectors) ... 2133K41 Each $104.21
★ Filter area is the number of square feet of fabric area of an inflated filter bag.

Drum-Mount Filter Bag Kit

Ceiling-Mount Filter Bag Kit

High-Volume Two-Stage Dust Collectors

Move large quantities of air, dust, and debris through long runs of pipe at higher static pressures than the Drum-Mount Two-Stage Dust Collectors on this page. Also known as cyclone dust collectors, these powerful units separate most waste material in the airflow and deposit it into a dust storage barrel (sold separately). Because less dust passes through the blower, there is less wear on it. Collectors are made of airtight, welded 16-ga. steel with steel braces and supports. Motors are totally-enclosed, fan-cooled (TEFC) and have nine 6″ wire leads for hardwiring. Motor and fan assemblies are easily detached for maintenance. If you wish to recycle the air, an optional ***filter assembly*** should be used to collect fine particles not separated by the collector. They have an attached drum to eliminate extra handling of waste material. Filter bags are made of polyester and are 99% efficient for particles 5 microns and larger.

cfm @ 5″ SP	hp	VAC, 60 Hz	Ph.	Amps	Inlet Dia.	Filter Area★, sq. ft.	Size♦, Ht.×Wd.×Dp.	dB @ 10 ft.		Each
1,830	5	208/240/480	3	13/12/6	9″	108	143″×36″×36″	82	2119K31	$4,095.00
2,600	10	208/240/480	3	25/24/12	10″	228	151″×36″×36″	85	2119K32	4,786.88

Accessories

55-gal. Dust Storage Barrel (with removable cover) ..... 4115T68 Each $92.59
Filter Assembly for 2119K31 Collector ..... 2119K24 Each $1,985.62
Replacement Filter Bags for 2119K24 Filter Assembly (two bags required) ..... 2119K74 Each $96.62
Filter Assembly for 2119K32 Collector ..... 2119K23 Each $2,475.00
Replacement Filter Bags for 2119K23 Filter Assembly (four bags required) ..... 2119K72 Each $93.27
★ Filter area is the number of square feet of fabric area of an inflated filter bag. ♦ Does not include filter assembly.

Collector with Optional Filter Assembly

For information about static pressure (SP), see page 656.

Fine-Filtration Cartridge Dust Collectors

Maximize dust collection. The cartridges in these collectors are 99.99% efficient for particles 0.5 microns and larger—great for picking up fine dust such as graphite and talc. Cartridges are cleaned automatically each time the dust collector shuts off and are enclosed to minimize contamination from particles that pass through the collector. The 550 cfm and 1,243 cfm collectors are made of 16-ga. steel; 3,000 cfm collector is 14-ga. steel. All have a three-phase, totally-enclosed, fan-cooled (TEFC) motor with nine 6″ wire leads for hardwiring. Operate on 208-230/460 VAC, 60 Hz. Units have three inlet adapters for connection to multiple machines.

An automatic shaker mechanism cleans the filter media and drops particles into a drawer for easy collection and disposal. The shaker motor is 1/8-hp, single phase, and operates on 115 VAC, 60 Hz, 3.5 amps.

cfm	SP	hp	Amps	Inlet Dia.	Filter Area, sq. ft.	Ht.×Wd.×Dp.	dB @ 3 ft.	Collectors	Each	Replacement Filter Cartridges	Each
550	4.45″	1	4.6/4.2/2.1	4″	65	52¼″×24¾″×30¾″	71	21125K62	$3,525.84	21125K81	$385.31
1,243	4.80″	3	10.6/9.6/4.8	6″	135	62¼″×24¾″×30¾″	74	21125K63	4,919.09	21125K82	495.69
3,000	5.20″	7½	24.2/22/11	10″	354	75¼″×51⅜″×33″	83	21125K66	9,683.85	21125K83▲	565.31

▲ Two required.

Dust Collector Duct System

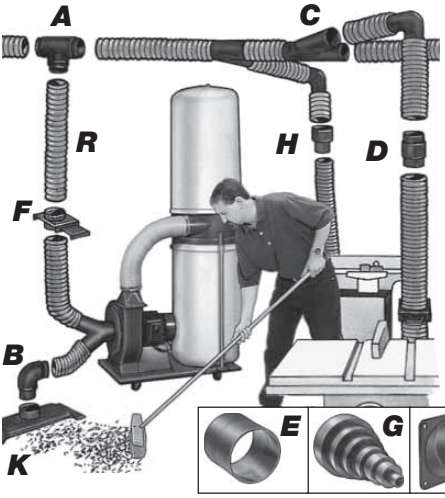

We've got everything you need to put together a system to collect sawdust, chips, shavings, and granular material from wood-working operations. The system shown features our Single-Stage Dust Collector (2168K56 sold separately on page 2073); however, the components of this system are compatible with all of our dust collectors.

All components are sold separately—order the parts you need to create a custom system. For hose clamps, see 5415K on page 274. For maximum safety and to avoid a dangerous buildup of static electricity, you must use the ***grounding kit*** (sold separately).

If you need more information on designing and installing a dust collection system, order our book "Dust Collection Basics" (sold separately).

(E) Quick-Disconnect Duct Fitting— Use in place of a hose clamp. Attach to the end of a 4″ dia. hose and then press on to any dust hood for a quick and easy friction fit.

(G) Universal Duct Reducer— This adapter has seven outside dia. step sizes: 1″, 2″, 2½″, 3″, 4″, 5, and 6″. Cut away unneeded steps with a hacksaw.

(J) Duct Reducer with Mounting Flange— Fits over a 3″ dia. hole and is angled upward for easy connection between the machine and a shop vacuum. Has four ¼″ dia. mounting holes (fasteners not included).

(Q) Adjustable Nozzle with Steel Stand— Position the nozzle exactly where you need it. Ideal for use with table saws, lathes, drill presses, and portable power tools. Nozzle is cast aluminum, rotates 360°, and can be angled 180° in any position between straight up and straight down. Stand adjusts from 24″ to 43½″ high.

(S) Remote Control— Allows you to turn your dust collector on and off from up to 75 feet away. The receiver has a 5-ft. cord with three-prong plug. Includes two transmitters and two 9-volt batteries. For use on 110 VAC dust collectors with a maximum 1½ hp.

	3″ Diameter	Each	4″ Diameter	Each
Duct Fittings— *Made of ABS Plastic*				
A ... T-Fitting	2221K41	$5.16	2221K42	$8.53
B ... 90° Elbow	2221K61	4.99	2221K62	7.36
C ... Y-Fitting	2221K51	7.00	2221K52	7.97
D ... Splice Connector	2221K71	3.41	2221K72	5.65
E ... Quick Disconnect	____	____	2221K44	9.00
F ... Blast Gate	2221K91	5.07	2221K92	5.88
	5″ Diameter		**6″ Diameter**	
F ... Blast Gate	2221K97	$10.98	2221K98	$13.28
Duct Reducers— *Made of ABS Plastic*				
G ... Universal Reducer	____	____	2221K45■	16.75
	3″ Diameter		**4″ Diameter**	
H ... Reduces to 2″ Dia.	2221K31	$3.44	____	____
H ... Reduces to 2½″ Dia.	2221K34	3.62	2221K33	$4.16
H ... Reduces to 3″ Dia.	____	____	2221K32	3.82
J ... Reduces to 2½″ Dia. with Mounting Flange	2221K46	9.25	____	____
Floor Sweep— *Made of ABS Plastic*				
K ... 24″ Lg.×7″ Wd.×3½″ Ht.	____	____	2221K21	10.20
Dust Hoods— *Made of ABS Plastic*				
L ... 12¼″ Sq.×2½″ Dp.	____	____	2221K11	8.64

■ Has the following outside dia. step sizes: 1″, 2″, 2½″, 3″, 4″, 5″, 6″.

	3″ Diameter	Each	4″ Diameter	Each
Dust Hoods— *Made of ABS Plastic (Cont.)*				
L ... 14 1/16″ Sq.×2½″ Dp.	____	____	2221K12	$9.20
M ... 8¼″ Sq.×2½″ Dp.	____	____	2221K13	6.57
M ... 10¼″ Ht.×8 7/16″ Wd.×2½″ Dp.	____	____	2221K14	8.13
N ... 6¼″ Sq.×2½″ Dp.	____	____	2221K15	5.00
Cyclone Separator Lid— *Made of ABS Plastic*				
P ... Fits 30-gal. Steel Garbage Can	____	____	2221K35	43.36
Adjustable Nozzle with Steel Stand				
Q ... 1⅛″ Ht. Nozzle×12½″ Wd.	____	____	2221K43	114.90
	Black		**Clear**	
Hose— *Made of High-Density Polyethylene (HDPE)*				
R ... 2″ Dia. ×10 ft. Lg.	2221K81	$13.64	2221K17	$16.02
R ... 2½″ Dia. ×10 ft. Lg.	2221K86	14.33	2221K96	18.95
R ... 3″ Dia. ×10 ft. Lg.	2221K82	15.87	2221K18	20.48
R ... 3″ Dia. ×20 ft. Lg.	2221K83	28.78	2221K93	42.55
R ... 4″ Dia. ×10 ft. Lg.	2221K84	23.19	2221K94	27.56
R ... 4″ Dia. ×20 ft. Lg.	2221K85	44.22	2221K95	53.30
Remote Control				
S ... Receiver, Two Transmitters, and Batteries	2221K47	Each	$103.33	
Replacement 9-volt Battery for 2221K47	71455K56	Each	$2.75	
Grounding Kit	2221K36	Each	$20.89	
"Dust Collection Basics" Book	2221K37	Each	$6.67	

Dust Collector Filter Bags and Cartridges

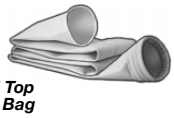

Band Top Filter Bag

Filter Cartridge, Open on Both Ends

Need to replace your dust collector's bag or cartridge? Just match the specs to one that we have here.

Filter bags are polyester. Choose from unfinished top (also known as a raw top) or a Type 301 stainless steel band top. ***Filter cartridges*** are offered open on both ends, or open on one end and closed on the other. The closed end has a ½″ dia. mounting hole (hardware not included).

Filter Bags

Dia.	Unfinished Top Lg.	Unfinished Top Each	Band Top Lg.	Band Top Each
4⅝″	100″	3636K11 $13.86	____	____
4⅝″	120″	3636K15 14.79	____	____
5⅞″	102″	3636K17 15.03	100″	3636K24 $18.55
5⅞″	120″	3636K22 18.14	120″	3636K28 19.38

Filter Cartridges

Dia.	Lg.	Open Both Ends Each	Open/Closed End Each
Cellulose Filter Media			
12¾″	26″	3636K53 $68.60	3636K46 $68.60
Cellulose/Synthetic Blend Filter Media			
12¾″	26″	3636K55 71.53	3636K49 71.53

Pressure Washers

Turn ordinary garden-hose water into pressurized water to power away dirt and grime. All pressure washers have the following:

- High-pressure wire-reinforced rubber hose
- ¾″ garden hose thread (GHT) connection
- Thermal relief valve to protect pump from overheating
- Adjustable pressure (psi), unless otherwise indicated
- Low-pressure soap injector

Electric Pressure Washers

The choice for indoor use, these pressure washers are quieter than gasoline-powered models. All have a 3-ft. wand with trigger gun. They also have a power cord with three-prong plug and ground fault circuit interrupter (GFCI), unless noted.

(A&B) Carry Style— A built-in handle makes these pressure washers easy to carry. They include a high/low pressure nozzle with 0° to 60° adjustable spray angle. CSA certified.

Style A is light duty. It has a rust-, corrosion-, and impact-resistant plastic housing.

Style B is heavy duty. It has a steel mounting plate with rubber feet.

(C) Cart Style— This self-contained pressure washer is made of rust-, corrosion-, and impact-resistant plastic to protect the pump and motor. Cart has two wheels to provide mobility plus convenient storage areas for hoses and a 1-gal. soap container (not included). Comes with a high/low pressure nozzle with 0° to 60° adjustable spray angle.

(D) Wall-Mount Style— To save valuable floor space and provide a permanent location for cleaning in your plant, mount these stainless steel pressure washers on a wall. They require 30″ Ht.×27″ Wd.×21″ Dp. of space and come with brackets with four 7/16″ dia. mounting holes (fasteners not included). Ideal for food-processing plants.

Both pressure washers include 0°, 15°, 25°, and 40° spray angle high-pressure nozzles and a low-pressure soap nozzle. All nozzles are quick-disconnect.

Also Available: Replacement parts. Please ask for part number listed below and specify nozzle, pressure washer hose, trigger gun, wand, valve repair kit, or seal repair kit.

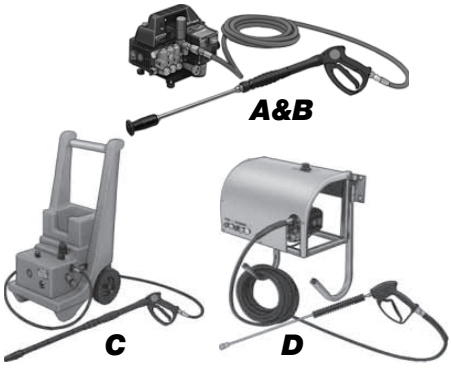

Max. Continuous Usage, hrs.	Max. psi	gpm	hp	Max. Inlet Water Temp.	O'all Size, Ht.×Wd.×Dp.	Volts @ 60 Hz	Amps	Power Cord Lg.	Pressure Hose Lg.	Siphon Hose Lg.	Pressure Washers Each	Replacement Parts
(A) Light Duty Carry Style												
4	1,400	1.5	1.5	125°F	10″ ×11″ ×14″	120 VAC	13.5	35 ft.	25 ft.	4 ft.	3114K71 $459.83	3114K86
(B) Heavy Duty Carry Style												
8	1,500	2	2	125°F	14″ ×11½″×20″	120 VAC	17	35 ft.	25 ft.	4 ft.	3114K73 964.94	3114K87
(C) Cart Style												
4	1,000	2	1.5	140°F	36″ ×16″ ×21″	120 VAC	15	35 ft.	25 ft.	4 ft.	3375K54 886.85	3375K11
(D) Wall-Mount Style												
8	1,000	2.2	1.5	180°F	13½″×22″ ×15″	120 VAC	15	35 ft.	50 ft.	10 ft.	3279K64 1,648.33	3279K27
8	2,000	4	5	180°F	16″ ×27″ ×21″	208/230 VAC	15	10 ft.	50 ft.	10 ft.	3279K67● 2,556.67	3279K28

● Pressure washer has a three-phase motor. Plug sold separately, see pages 784-789.

Gasoline-Powered Pressure Washers

With more cleaning power than our electric washers and no power cord to tie you down, these washers are perfect for heavy duty outdoor jobs. All have a Honda engine with pull-cord starter, 3-ft. wand with trigger gun, low-pressure soap nozzle, heavy duty steel frame, and two pneumatic wheels.

2,500-psi Model— Has fixed pressure and 15° and 25° spray angle high-pressure quick-disconnect nozzles.

2,700-psi Model— Has fixed pressure and 0°, 15°, 25°, and 40° spray angle high-pressure quick-disconnect nozzles.

3,500-psi Model— Has 0°, 15°, 25°, and 40° spray angle high-pressure quick-disconnect nozzles. Also has a steel roll cage for extra protection.

Also Available: Replacement parts. Please ask for part number listed below and specify nozzle, pressure washer hose, trigger gun, wand, valve repair kit, or seal repair kit.

Max. Continuous Usage, hrs.	Max. psi	gpm	hp	Max. Inlet Water Temp.	O'all Size, Ht.×Wd.×Dp.	Gas Tank Cap., gal.	Pressure Hose Lg.	Siphon Hose Lg.	Pressure Washers Each	Replacement Parts
2	2,500	2.3	5	140°F	24½″×21″×37″	0.5	25 ft.	4 ft.	3209K3 $678.57	3209K41
8	2,700	2.5	6.5	140°F	24″ ×21″×35″	0.82	50 ft.	6 ft.	3138K21 1,220.23	3138K44
8	3,500	3.7	13	140°F	30″ ×26″×42″	1.7	50 ft.	6 ft.	3138K26 2,355.28	3138K48

Hot-Water Pressure Washers

Great for sanitizing jobs, all of these washers have a burner system that heats water up to 180°F to blast away your toughest grease, oil, dirt, and grime. The burner system has a corrosion-resistant, plastic fuel tank that uses fuel oil, #2 diesel fuel, or kerosene. An on/off heater switch lets you switch between hot and cold water. Washers come with a 3-ft. wand with trigger gun, one low-pressure soap nozzle, and 0°, 15°, 25°, and 40° spray angle high-pressure quick-disconnect nozzles. All have a heavy duty steel frame. For use in well-ventilated areas.

(E) Electric-Powered/Fuel-Heated— These pressure washers run quieter than gas models. Both include a 36-ft. long power cord with three-prong plug and ground fault circuit interrupter (GFCI), and four pneumatic wheels.

(F) Gasoline-Powered/Fuel-Heated— This pressure washer doesn't require an outlet, so it's easier to move around. A Honda engine with pull-cord starter supplies power to the pump and runs the burner system that heats the water. Includes an adjustable thermostat for applications that require lower-temperature hot water, an hour meter for preventative maintenance, a 1.4-gal. capacity gas tank for the engine, a low-oil shut-off feature, and four pneumatic wheels.

Also Available: Replacement parts. Please ask for part number listed below and specify nozzle, pressure washer hose, trigger gun, wand, or seal repair kit.

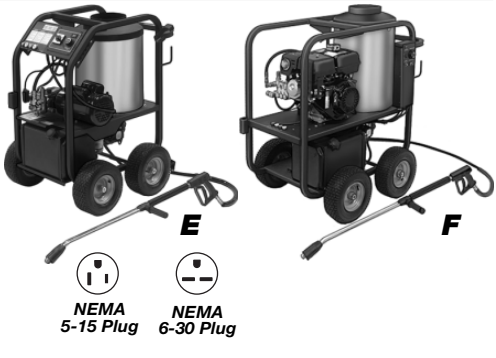

Max. Continuous Usage, hrs.	Max. psi	gpm	hp	Max. Inlet Water Temp.	O'all Size, Ht.×Wd.×Dp.	Fuel Tank Cap., gal.	Volts @ 60 Hz	Amps	NEMA Plug Style	Pressure Hose Lg.	Siphon Hose Lg.	Pressure Washers Each	Replacement Parts
(E) Electric-Powered/Fuel-Heated													
8	1,000	2	1.5	180°F	44″×27″×39″	6	120 VAC	15	5-15	50 ft.	6 ft.	3801K65 $2,850.72	3801K56
8	2,000	3.5	5.0	180°F	44″×27″×39″	6	230 VAC	22	6-30	50 ft.	6 ft.	3801K67 3,383.19	3801K56
(F) Gasoline-Powered/Fuel-Heated													
8	3,000	2.6	9.0	140°F	44″×28″×46″	6	_____	_____	_____	50 ft.	6 ft.	32025K28 4,387.72	32025K71

Steam Cleaner and Pressure-Washer Cleaner/Degreaser

Cuts quickly through grease, oil, and heavy dirt on hard, nonporous surfaces, then rinses clean without leaving a residue. Cleaner is water based and has built-in corrosion inhibitors.

		Each
5 gal.	3219K21	$51.87
55 gal.	3219K23	399.29

Pressure-Washer Replacement Hose

Hose is made of wire-reinforced rubber and has plated-steel fittings with 3/8″ NPT thread connections (rigid male on one end; swivel male on the other end). Hose diameter is 3/8″.

Standard hose is black. ***Nonmarring*** hose is blue.

Hose Lg.	Max. Pressure	Max. Temp.	*Standard*	Each	*Nonmarring*	Each
30 ft.	3,000 psi	200° F	53115K61	$103.70	53115K81	$92.70
50 ft.	3,000 psi	200° F	53115K62	162.50	53115K82	172.81
100 ft.	3,000 psi	200° F	53115K63	253.50	53115K83	250.90

Pressure-Washer Extension Wand

To clean hard-to-reach areas, attach this wand to your pressure washer, extend it to your desired height, and lock it in place. Wand has a 3/8″ female quick-disconnect connection to fit most pressure washers and a 1/4″ female quick-disconnect nozzle connection. It is made of aluminum and has a fiberglass handle with trigger spray gun. Maximum pressure rating is 3,000 psi. For nozzle (not included), see 31905K on page 2086.

Retracted Lg.	Extended Lg.		Each
6 ft.	18 ft.	32075K84	$163.83

Water Broom

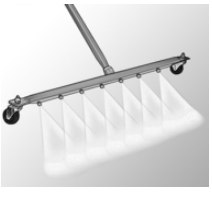

Attach this broom to a garden hose to sweep away dirt and dust—its brass water jets turn your hose water into pressurized water for quick, easy cleaning. Also has a brass ball valve with shut-off lever, two swivel casters, and a 3/4″ garden hose thread (GHT) female connection. Broom is 36″ wide with a 48″ handle. Maximum temperature is 100° F. Made of steel.

Max. Flow	Max. Pressure		Each
3 gpm	180 psi	7041T11	$219.76

Steam Cleaning Systems

Drum Not Included

Connect these systems to existing 60- to 125-psi steam lines to remove dirt, grease, and heavy oils from most surfaces in your plant. No electrical connections required—connect to a 3/4″ NPT female steam outlet with a maximum steam temperature of 350° F and siphon detergent from a drum (not included).

Both steam cleaning systems have an 8 1/2″ Ht. × 7″ Wd. × 3 1/2″ Dp. steel control panel with pressure gauge. Use the control panel to regulate the steam/detergent mixture and change the temperature and velocity of the solution being discharged. Discharge capacity is 2 to 3.2 gpm.

Systems come with a steam gun with 45″ steel wand and swivel handle, two spray nozzles, a 1/2″ dia. wire-reinforced rubber steam hose, and a 5-ft. detergent siphon hose. *Note:* The steam gun must be within inches of your surface for effective cleaning.

		Each
Steam Cleaning System with 25-ft. Hose	3157K2	$1,488.18
Steam Cleaning System with 50-ft. Hose	3157K4	1,604.15

Steam Guns for Inline Steam Systems

Standard Pressure

High Pressure

Standard Pressure— Guns have a 3-ft. stainless steel wand with plastic trigger handle, a brass nozzle with 40° flat spray angle, a 1/2″ dia. wire-reinforced rubber steam hose, two hose clamps, and two barbed hose fittings.

High Pressure— The choice for heavy duty cleaning, these guns have a 3-ft. steel wand with zinc-plated steel lever handle, stainless steel valve, a 45° angled nozzle holder (nozzle not included; sold separately), and 1/2″ NPT female inlet connections.

	Max. Pressure	Max. Temp.		Each
Standard Pressure				
With 25-ft. Hose	250 psi	320° F	35195K42	$556.55
With 50-ft. Hose	250 psi	320° F	35195K44	688.15
High Pressure				
With Rigid Handle	1,500 psi	450° F	9450T55	493.33
With Swivel Handle	1,500 psi	450° F	9450T56	727.78
Nozzle for High-Pressure Guns			9450T57	Each $88.18

High-Pressure Wash Guns

A-C

With Optional Extension

D&E

Add one of these guns to your pressure washer or high-pressure spray system. All guns have a front trigger, impact-resistant nylon housing, high-pressure 25° angle spray nozzle, and a trigger guard that protects the trigger from damage.

(A-C) Wash Guns with Front Inlet Connection— All guns have a trigger lock that prevents accidental discharge. *Styles A* and *B* have an internal brass valve body. *Style C* has an internal stainless steel valve body for added durability and corrosion resistance.

(D&E) Wash Guns with Rear Inlet Connection— Have an internal brass valve body. *Style E* has a brass swivel inlet connector for easier gun handling and to prevent hose from kinking.

Maintenance Kits— Include replacements for parts prone to wear.

Optional Extensions— Get into those hard-to-reach areas with these 18″ and 36″ long extensions. Extensions are nickel-plated steel and include a 25° angle spray nozzle.

Optional Swivel Inlet Connectors— Provide easier gun handling and prevent hose from kinking. Connectors are brass.

Replacement Spray Nozzles— For use with wash guns. Nozzles will not fit optional extensions.

Wash Guns and Maintenance Kits

	Max. Flow	Max. Pressure	Max. Temp.	Connections: Inlet	Connections: Outlet	*Wash Guns*	Each	*Maintenance Kits*	Each
A	5 gpm	1,500 psi	200° F	1/4″ NPT Female	11/16″-16 UN■ Male	3364K71	$53.06	3364K75	$17.54
B	6 gpm	2,500 psi	300° F	3/8″ NPT Female	11/16″-16 UN■ Male	3364K72	70.71	3364K76	33.31
C	6 gpm	2,500 psi	300° F	3/8″ NPT Female	11/16″-16 UN■ Male	3602K84	185.96	3602K85	36.67
D	10 gpm	1,500 psi	300° F	3/8″ NPT Female	1/4″ NPT Female	34075K7	64.81	34075K12	25.25
E	10 gpm	4,000 psi	300° F	3/8″ NPT Female	1/4″ NPT Female	34075K8	219.04	34075K29	22.73

■ Unified National pipe thread.

Optional Accessories and Replacement Parts

For Gun			Each
A, B, C	Optional 18″ Lg. Extension	3364K77	$41.74
A, B, C	Optional 36″ Lg. Extension	3364K78	49.62
D, E	Optional 18″ Lg. Extension	34075K3	43.45
D, E	Optional 36″ Lg. Extension	34075K4	52.80

For Gun			Each
A	Optional Swivel Inlet Connector	3364K89	$31.73
B, C, D	Optional Swivel Inlet Connector	3364K91	55.55
A, B, C	Replacement Spray Nozzle	3364K85 ♦	16.75
D, E	Replacement Spray Nozzle	3234K6 ♣	7.80

♦ **To Order:** Please specify spray angle: 0°, 15°, or 25°. ♣ **To Order:** Pipe size is 1/4″. Please specify spray angle: 0°, 15°, 25°, 40°, or 65°.

High-Flow Wash Guns

Use these wash guns for washdown, rinsing, and general cleanup. *Note:* These guns should not be connected to steam lines.

Swivel inlet connector provides easier gun handling and prevents hose from kinking.

Bronze body wash guns are the economical choice. *Aluminum body* wash guns are lightweight and durable. *Stainless steel body* wash guns are corrosion resistant and more durable than bronze and aluminum.

(A) Miniature— Half the weight of Style B models, these smaller guns have a rubber cover that protects you from exposure to high water temperatures and minimizes damage to the gun if dropped. Both have a ¾″ ID barbed hose inlet connection.

(B) Standard— Have the same rubber cover design as the miniature guns. All have a ¾″ ID barbed hose inlet connection, except the *25 gpm bronze* models, which have a ½″ NPT female inlet connection.

(C) Adjustable Flow— Change out the spray cap to switch the water flow. Trigger adjusts the spray from a solid stream to a broad cone. All have a rear trigger and a rubber cover to protect you from exposure to high water temperatures. Guns come with a ¾″ garden hose thread (GHT) female swivel inlet connector with a ring to hold the trigger in place for continuous spraying. If connector is not used, inlet connection is ½″ NPT female.

(D) Insulated with Trigger Guard— Insulated handle keeps your hand cool, even when spraying hot solutions. Guns have a trigger guard to protect trigger from damage. Trigger changes the spray from solid stream to broad cone and can be locked into place. The *15.5 gpm* model has a ⅜″ NPT female connection. The *21 gpm* model has a ½″ NPT female connection and a safety sleeve to cover hot, exposed fittings.

Maintenance Kits— Have replacements for parts that are prone to wear.

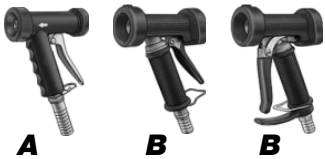

A **B** with Rear Trigger **B** with Front Trigger

C **D**

Gun Body Material	Max. Flow	Max. Pressure	Max. Temp.	Trigger Style	Swivel Inlet Connector (Material)	Wash Guns	Each	Maintenance Kits	Each
(A) Miniature									
Bronze	8.1 gpm	150 psi	200° F	Rear	Yes (Stainless Steel, Brass)	3673T11	$64.13	3673T14	$21.25
Stainless Steel	8.1 gpm	150 psi	200° F	Rear	Yes (Stainless Steel)	3673T12	106.69	3673T15	36.06
(B) Standard									
Bronze	12.5 gpm	150 psi	200° F	Rear	Yes (Stainless Steel, Brass)	6451T57	101.26	6451T59	24.55
Bronze	25 gpm	200 psi	200° F	Rear	Yes (Bronze)	6451T81	115.64	6451T93	36.38
Bronze	25 gpm	200 psi	200° F	Front	Yes (Bronze)	6451T82	120.00	6451T94	55.23
Aluminum	12.5 gpm	150 psi	200° F	Rear	Yes (Stainless Steel, Brass)	33505K67	109.13	6451T59	24.55
Stainless Steel	7 gpm	200 psi	180° F	Rear	No	3346K82	176.52	3346K91	43.80
Stainless Steel	7 gpm	200 psi	180° F	Front	No	3346K62	176.52	3346K92	27.64
Stainless Steel	12.5 gpm	150 psi	200° F	Rear	Yes (Stainless Steel)	33455K71	196.47	33455K78	42.08
Stainless Steel	15 gpm	200 psi	180° F	Rear	No	3346K84	181.66	3346K91	43.80
Stainless Steel	15 gpm	200 psi	180° F	Front	No	3346K64	181.66	3346K92	27.64
Stainless Steel	24 gpm	200 psi	200° F	Rear	No	3346K76	156.84	3346K95	45.08
Stainless Steel	24 gpm	200 psi	200° F	Front	No	3346K66	156.84	3346K96	34.23
(C) Adjustable Flow									
Aluminum	10 or 16 gpm	150 psi	200° F	Rear	Yes (Brass)	3589K43	175.40	3589K46	30.19
Aluminum	10, 16, or 22 gpm	150 psi	200° F	Rear	Yes (Brass)	3589K522	211.09	3589K46	30.19
Brass	10 or 16 gpm	150 psi	200° F	Rear	Yes (Brass)	3589K42	175.40	3589K46	30.19
Brass	10, 16, or 22 gpm	150 psi	200° F	Rear	Yes (Brass)	3589K521	211.09	3589K46	30.19
(D) Insulated with Trigger Guard									
Plastic	15.5 gpm	750 psi	180° F	Front	Yes (Stainless Steel)	31855K41	182.05	31855K48	30.77
Plastic	21 gpm	300 psi	180° F	Front	Yes (Stainless Steel)	31855K21	182.05	31855K47	21.15

Extended Reach Wash Guns with Trigger Guard

Access hard-to-reach areas with the brass extension. Guns have a trigger guard to protect trigger from damage. *Nylon body* wash guns are impact resistant and have a ¼″ NPT female inlet connection. *Aluminum body* wash guns are lightweight and durable. They have a ¼″ National Pipe Straight (NPS) thread male inlet connection.

Maintenance Kits— Have replacements for parts that are prone to wear.

Gun Body Material	Max. Flow	Max. Pressure	Max. Temp.	Trigger Style	Wash Guns	Each	Maintenance Kits	Each
Nylon with 18″ Extension	5 gpm	250 psi	200° F	Front	3237K65	$91.84	—	—
Nylon with 24″ Extension	5 gpm	250 psi	200° F	Front	3237K66	97.35	—	—
Aluminum with 18″ Extension	5 gpm	250 psi	200° F	Front	3237K55	94.75	3237K57	$19.10
Aluminum with 24″ Extension	5 gpm	250 psi	200° F	Front	3237K56	99.74	3237K57	19.10

Economy Wash Gun with Trigger Guard

Gun has a trigger lock to prevent accidental discharge, a trigger guard to protect trigger from damage, and a 25° angle spray nozzle. Has a ¼″ NPT female inlet connection and an 11/16″-16 Unified National (UN) pipe thread male outlet connection.

Maintenance Kits— Have replacements for parts that are prone to wear.

Gun Body Material	Max. Flow	Max. Pressure	Max. Temp.	Trigger Style	Wash Gun	Each	Maintenance Kits	Each
Plastic	5 gpm	150 psi	120° F	Front	6835T11	$52.41	6835T12	$16.10

Air- and Water-Powered Wash Guns

The powerful combination of air and water creates a high-velocity, atomized spray. These guns also can be used to siphon. All have a ¼″ NPT female air inlet and ¾″ garden hose thread (GHT) female connections.

Standard— Air and water controls adjust individually. Made of chrome-plated zinc with a rubber pistol grip. *Knob control* lets you set and maintain desired force.

Accessory kit includes 9″ and 17″ nozzle extension tubes, 6-ft. vinyl siphon hose with quick-disconnect couplings, and an adapter that makes a seal-tight connection to any round opening that is ¾″ dia. to 2½″ dia.

Extended Reach— The 12″ stainless steel nozzle gets to hard-to-reach places. Guns have a cast aluminum head assembly, an insulated handle, and a shut-off valve that lets you control water flow.

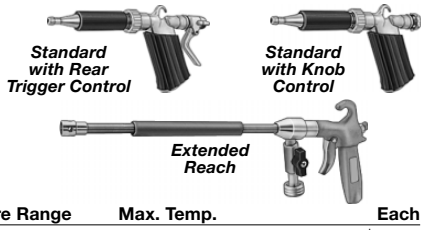

Standard with Rear Trigger Control **Standard with Knob Control** **Extended Reach**

	Inlet Air, cfm @ psi	Max. Flow	Pressure Range	Max. Temp.	Each
Standard with Rear Trigger Control	4 @ 75	4 gpm	75-250 psi	190° F	5448K15 $90.11
Standard with Knob Control	4 @ 75	4 gpm	75-250 psi	190° F	5448K14 77.10
Extended Reach	15 @ 100	0.36 gpm	0-120 psi	150° F	3306K86 98.05
Accessory Kit for Standard Wash Guns					5448K31 34.46

Air-Powered Siphon Wash Guns

Guns can be used to clean as well as apply chemicals and solvents.

Squeeze-Grip Wash Guns

Squeeze the handle to spray. All have a rubber grip, and you can remove the 8-ft. siphon hose to operate in air-only mode. **To Order:** Please specify 1/4″, 3/8″, or 1/2″ NPT female air inlet connection.

Styles A and ***B*** are made of nickel-plated brass with an oil-resistant rubber siphon hose. *Style A* has a straight extension. *Style B* has an angled extension.

Style C delivers more solvent than the other siphon wash guns. It is made of brass and has a heavy duty reinforced rubber siphon hose.

	Inlet Air, cfm @ psi	Nozzle Lg.	Max. Flow	Pressure Range	Max. Temp.		Each
With Brass Nozzle							
A	11 @ 80	6 1/4″	0.16 gpm	35-175 psi	140° F	**5447K11**	$86.31
B	11 @ 80	9 5/8″	0.16 gpm	35-175 psi	140° F	**5447K12**	99.74
C	16 @ 80	21/4″	0.50 gpm	35-175 psi	140° F	**5447K13**	106.44
With Stainless Steel Nozzle							
A	11 @ 80	6 1/4″	0.16 gpm	35-175 psi	140° F	**5447K14**	103.06
B	11 @ 80	9 5/8″	0.16 gpm	35-175 psi	140° F	**5447K15**	117.62

Trigger-Grip Wash Gun

Pull the trigger to blast away dirt or to spray insecticides and coatings. Comes with a 12″ brass and aluminum extension nozzle, 6-ft. plastic siphon hose, and 1/4″ NPT female air inlet connection. Gun is aluminum. *Note:* Do not use in air-only mode.

Inlet Air, cfm @ psi	Max. Flow	Max. Pressure	Max. Temp.		Each
9 @ 100	0.26 gpm	150 psi	♣	**31125K61**	$64.49

♣ For cold water use. Not temperature rated.

Wash/Foam Guns with Dispenser

Wash Gun

Connect these guns to your garden hose and automatically dispense solution without dragging around a siphon hose. The nozzle has a 3/4″ garden hose thread (GHT) female connection and insulated handle. Use the attachment to adjust the spray pattern from mist to solid stream. Both have a brass mixing head and 1-qt. plastic bottle.

Wash Gun— The rinse lever allows you to instantly change from using the wash solution to rinsing with clean water. Set to mix 2 oz. of cleaner per gallon of water.

Foam Gun— Creates a thick foam. Gun mixes up to 12 oz. of foaming chemicals per gallon of water.

	Max. Flow	Pressure Range	Max. Temp.		Each
Wash Gun	3 gpm	40-90 psi	160° F	**3154K11**	$49.74
Foam Gun	1.5 gpm	40-90 psi	160° F	**3239K12**	65.02

Underwater Vacuum

Easily remove muck, debris, and sediment (even small pebbles and leaves) from underwater surfaces. This vacuum uses water pressure from your garden hose (not included) to create suction for vacuuming. Debris enters through the handle and exits through the discharge hose.

Vacuum has a 3/4″ garden hose thread (GHT) female connection and requires a minimum pressure of 50 psi. Comes with a 1 1/4″ Dia. × 10 ft. Lg. plastic discharge hose, 36″-72″ long aluminum telescoping handle, on/off switch, brush, and hose adapter to connect additional discharge hose.

		Each
Vacuum	**7153T11**	$102.08
Repl. Discharge Hose	**7153T12**	15.00

Garden Hose Nozzles

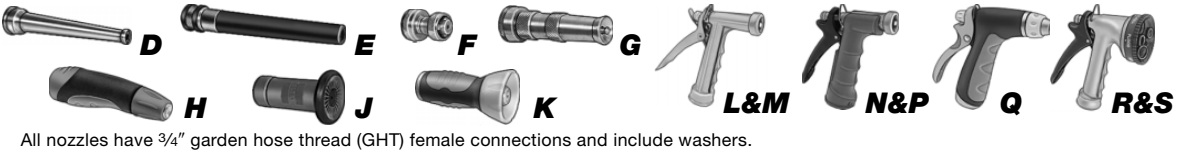

All nozzles have 3/4″ garden hose thread (GHT) female connections and include washers.

(D&E) Continuous-Flow Nozzles

These nozzles provide a constant, fixed stream of water.

D Full Force— Made of brass. Use if a shut-off valve isn't needed.

Nozzle Lg.	Max. Flow	Max. Pressure	Max. Temp.		Each
2″	4.5 gpm	100 psi	195° F	**7678T1**	$3.19
6″	4.5 gpm	100 psi	195° F	**7678T2**	15.45

E Water Saver— Squeeze the nozzle end to start water flow; release the nozzle to stop flow. Neoprene nozzles are chemical resistant.

Standard-flow nozzles provide full water flow.

Jet-flow nozzles offer a concentrated stream while using less water.

Nozzle Lg.	Max. Flow	Max. Pressure	Max. Temp.	Nozzle Material		Each
Standard Flow						
8 7/8″	6.5 gpm	125 psi	150° F	Rubber	**3880T21**	$28.25
8 7/8″	7 gpm	125 psi	150° F	Neoprene	**3880T24**	36.87
Jet Flow						
8 7/8″	4.5 gpm	80 psi	150° F	Rubber	**3880T22**	29.56
8 7/8″	5 gpm	125 psi	150° F	Neoprene	**3880T25**	40.62

(F-K) Adjustable-Flow Nozzles

Twist the barrel to adjust spray pattern from mist to full stream.

F Mini— Solid brass body with integrated rubber washer.

G Standard— Have a solid brass body that's rugged and reliable.

H Insulated— An insulated thermoplastic rubber cover protects you from high water temperatures. Body is die cast zinc with a brass tip.

J&K With Protective Guard— *Style J* has a plastic body and a protective plastic guard at the nozzle end. *Style K* has a plastic body with a zinc coupling and an insulated rubber handle. It also has a protective rubber guard at the nozzle end.

	Nozzle Lg.	Max. Flow	Max. Pressure	Max. Temp.		Each
F	1 3/4″	5.5 gpm	400 psi	175° F	**7261T12**	$8.81
G	4″	12 gpm	150 psi	200° F	**7484T1**	9.90
G	6″	12 gpm	150 psi	200° F	**7484T5**	18.25
H	6 3/8″	10 gpm	200 psi	100° F	**7484T8**	9.82
J	4 3/4″	8 gpm	100 psi	♣	**7641T34**	10.40
K	5″	10 gpm	60 psi	♣	**7641T44**	11.43

♣ For cold water use. Not temperature rated.

(L-S) Lever-Activated Nozzles

The squeeze lever controls both the flow and the spray pattern, unless otherwise indicated. All have a locking clip to hold nozzle open for continuous spraying.

L Economy— Body is die cast zinc.

M Marine Grade— Specially designed for use around salt water, this nozzle has a shatterproof plastic body and a stainless steel internal spring for corrosion resistance. Has a 3/4″ garden hose thread (GHT) male connection at the spray end for attaching hose-end accessories.

N&P Insulated— Grip is insulated to protect your hands from extreme water temperatures. Body is die cast zinc.

Style N has a plastic molded contour grip.

Style P has a cushioned vinyl molded contour grip and 3/4″ garden hose thread (GHT) male connection at the spray end for attaching hose-end accessories. It includes a protective thread cover. Water flow is controlled by the lever; spray pattern is controlled by the brass nozzle.

Q Insulated with Adjustable Spray Pattern— Simply twist the spray head to adjust the spray pattern. Body is plastic, and tip is zinc. Nozzle has a zinc coupling and an insulated nylon handle.

R&S Dial Select— Turn the dial to select a spray pattern. Both nozzles have a five-position dial with seven spray patterns: shower, jet, cone, mist, stream, full, and flood. Body is die cast zinc.

Style S has a cushioned vinyl grip to protect hands from extreme water temperatures.

	Max. Flow	Max. Pressure	Max. Temp.		Each
L	8.8 gpm	100 psi	140° F	**7445T12**	$4.39
M	8.8 gpm	100 psi	100° F	**7488T16**	3.39
N	8.8 gpm	100 psi	140° F	**7239T11**	7.97
P	6 gpm	120 psi	160° F	**7433T53**	11.09
Q	6.3 gpm	60 psi	♣	**7557T62**	5.88
R	8.8 gpm	100 psi	100° F	**7447T11**	14.03
S	8.8 gpm	100 psi	150° F	**7447T12**	13.37

♣ For cold water use. Not temperature rated.

For faucets with garden hose threads (GHT), see page 462.

Garden Hose

Hose has threaded brass couplings on each end (one male and one female) with washer, unless noted. All have 3/4″ garden hose threads (GHT) except the 1″ ID hose (72195T36), which has National Pipe Straight Hose (NPSH) threads.

Note: Not recommended for high-pressure applications.

Vinyl Hose— This economical hose is lightweight and nonmarring. Color is green.

Duraflex Vinyl/Rubber Hose— Combines the flexibility of vinyl with the durability and abrasion resistance of rubber. Hose is lightweight and nonmarring. Color is green, unless noted.

Heavy Duty Rubber Hose— This extremely durable EPDM rubber hose has excellent weather resistance and good chemical resistance. Color is black.

Continuous-Flow Vinyl Hose— Internal grooves in this hose ensure a continuous flow of water even when the hose is kinked. Hose has brass-coated anodized aluminum couplings on each end. Color is black with a yellow stripe.

Extreme-Duty Polyurethane Hose— An excellent alternative to heavier, bulkier rubber hoses. Extremely lightweight and tough, hose resists cracking and remains flexible in subzero temperatures. Color is light brown.

Hot-Water Rubber Hose— This all-weather reinforced rubber hose handles hot water and resists abrasion. Color is red.

Drinking-Water Vinyl Hose— Made of FDA-compliant materials, these products can be used with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012, unless noted. Color is white with a blue stripe.

Hose ID	Hose Lg.	Max. Working Pressure	Max. Temp.		Each
Vinyl Hose					
5/8″	5 ft.	90 psi	110° F	**7454T11**	$9.20
5/8″	10 ft.	90 psi	110° F	**7454T12**	11.60
5/8″	25 ft.	90 psi	110° F	**7454T15**	12.33
5/8″	50 ft.	90 psi	110° F	**7454T16**	19.23
5/8″	75 ft.	90 psi	110° F	**7454T17**	27.25
5/8″	100 ft.	90 psi	110° F	**7454T18**	37.09
3/4″	5 ft.	90 psi	110° F	**7454T13**	12.28
3/4″	10 ft.	90 psi	110° F	**7454T19**	16.63
3/4″	25 ft.	90 psi	110° F	**7454T21**	29.73
3/4″	50 ft.	90 psi	110° F	**7454T22**	35.75
3/4″	75 ft.	90 psi	110° F	**7454T23**	57.94
3/4″	100 ft.	90 psi	110° F	**7454T24**	72.44
Duraflex Vinyl/Rubber Hose					
5/8″	5 ft.	125 psi	110° F	**7110T18**	10.50
5/8″	10 ft.	125 psi	110° F	**7110T19**	14.56
5/8″	25 ft.	90 psi	♣	**7110T27**	15.16
5/8″	50 ft.	100 psi	120° F	**7110T24**	28.00
5/8″	75 ft.	100 psi	120° F	**7110T25**	38.79
5/8″	100 ft.	100 psi	120° F	**7110T26**	49.48
3/4″	5 ft.	125 psi	110° F	**7110T29**	13.18
3/4″	10 ft.	125 psi	110° F	**7110T31**	18.45
3/4″	25 ft.	125 psi	♣	**7110T21★**	19.01
3/4″	50 ft.	100 psi	120° F	**7110T22**	45.73
3/4″	75 ft.	100 psi	120° F	**7110T23**	56.40
3/4″	100 ft.	125 psi	♣	**7110T28★**	69.05
Heavy Duty Rubber Hose					
5/8″	5 ft.	125 psi	160° F	**7453T3**	12.09
5/8″	10 ft.	125 psi	160° F	**7453T4**	16.90
5/8″	25 ft.	125 psi	160° F	**7453T14**	21.80
5/8″	50 ft.	125 psi	160° F	**7453T15**	33.95
5/8″	75 ft.	125 psi	160° F	**7453T19**	51.76
5/8″	100 ft.	125 psi	160° F	**7453T2**	74.69
3/4″	5 ft.	125 psi	160° F	**7453T12**	13.89
Heavy Duty Rubber Hose (Cont.)					
3/4″	10 ft.	125 psi	160° F	**7453T13**	19.17
3/4″	25 ft.	150 psi	160° F	**7453T17**	25.17
3/4″	50 ft.	150 psi	160° F	**7453T18**	45.73
3/4″	75 ft.	150 psi	160° F	**7453T21**	63.94
3/4″	100 ft.	150 psi	160° F	**7453T22**	81.74
1″	50 ft.	125 psi	160° F	**72195T36**	104.21
Continuous-Flow Vinyl Hose					
5/8″	50 ft.	125 psi	100° F	**6758T11**	31.77
5/8″	75 ft.	125 psi	100° F	**6758T13**	43.80
5/8″	100 ft.	125 psi	100° F	**6758T15**	60.35
Extreme-Duty Polyurethane Hose					
1/2″	50 ft.	100 psi	110° F	**6345T11**	57.07
1/2″	75 ft.	100 psi	110° F	**6345T21**	68.02
5/8″	50 ft.	100 psi	110° F	**6345T12**	78.69
5/8″	75 ft.	100 psi	110° F	**6345T22**	89.38
Hot-Water Rubber Hose					
5/8″	5 ft.	125 psi	180° F	**6285T24**	14.31
5/8″	10 ft.	125 psi	180° F	**6285T25**	20.79
5/8″	25 ft.	167 psi	180° F	**6285T26**	23.68
5/8″	50 ft.	167 psi	180° F	**6285T27**	34.65
3/4″	5 ft.	125 psi	180° F	**6285T28**	15.70
3/4″	10 ft.	125 psi	180° F	**6285T29**	22.70
3/4″	25 ft.	125 psi	180° F	**6285T33**	43.70
3/4″	50 ft.	125 psi	200° F	**6285T31**	57.24
Drinking-Water Vinyl Hose					
1/2″	5 ft.	Not Rated	♣	**6226T8**	14.60
1/2″	10 ft.	Not Rated	♣	**6226T9**	19.45
1/2″	25 ft.	Not Rated	♣	**6226T11♦**	21.18
1/2″	50 ft.	Not Rated	♣	**6226T12♦**	32.50
5/8″	5 ft.	Not Rated	♣	**6226T13**	13.37
5/8″	10 ft.	Not Rated	♣	**6226T16**	19.04
5/8″	50 ft.	Not Rated	♣	**6226T15♦**	34.52

♣ For cold water use. Not temperature rated. ★ Color is red.

♦ This product is ANSI certified for use with drinking (potable) water in all states as of March 1, 2010.

Self-Retracting Garden Hose

No need for a hose reel—this polyurethane hose retracts on its own. It's nonmarring, resists abrasion, and remains flexible in subzero temperatures. Couplings are nickel-plated brass and have 3/4″ garden hose threads (GHT) on each end (one male and one female). Female end includes a washer. Hose coil is 4 1/8″ dia. Color is yellow.

Note: For full hose retraction, be sure to drain all water from hose.

Hose ID	Extended Hose Lg.	Retracted Hose Lg.	Max. Working Pressure	Max. Temp		Each
3/8″	25 ft.	15″	135 psi	165° F	**7118T4**	$56.58
3/8″	50 ft.	30″	135 psi	165° F	**7118T6**	86.42

Easy-to-Carry Garden Hose with Reel

A top handle makes it easy to move this garden hose with reel from place to place.

Hose is green vinyl. It has a 3/4″ garden hose thread (GHT) male brass coupling on one end and a 54″ faucet-connection hose with a 3/4″ GHT female plastic quick-connect coupling on the other end. Washers are included. For cold water use. Hose is not temperature rated.

Reel is made of light gray plastic and has a hand crank for winding the hose. Comes with three 1/4″ slotted holes for wall mounting (fasteners not included).

Reel Size, Ht. × Wd. × Dp.	Hose ID	Hose Lg.	Max. Working Pressure		Each
18 1/2″ × 16″ × 8 3/4″	1/2″	65 ft.	75 psi	**7671T1**	$61.81

Auto-Rewind Garden Hose with Reel

A quick tug on the garden hose allows it to rewind automatically without the hand winding effort required with other hose reels. When pulled out slowly, hose catches at 3-ft. intervals, so you only unwind the length you need.

Hose is white vinyl and has a 60″ faucet-connection hose with 3/4″ garden hose thread (GHT) connection. Washers included.

Reel is made of UV-stabilized, light gray plastic. It sits level on the ground or can be wall mounted with the included bracket. Bracket has four 9/32″ dia. mounting holes (fasteners not included) and allows reel to swivel 138°.

Reel Size, Ht. × Wd. × Dp.	Hose ID	Hose Lg.	Max. Working Pressure	Max. Temp.		Each
18 1/2″ × 11″ × 19 1/2″	5/8″	50 ft.	140 psi	140° F	**7138T12**	$180.82

For faucets with garden hose threads, see page 462.

Garden Hose Holders and Reels

(A-C) Garden Hose Holders

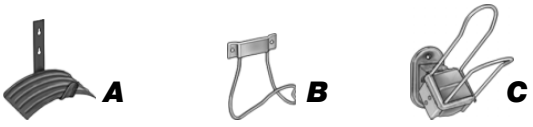

Drape your hose over these holders to keep it out of your way. Hose capacity is based on 5/8″ ID hose (not included).

(A) Wall-Mount Steel Holder— An economical choice. Has two 1/2″ dia. mounting holes (fasteners not included). Color is green.

(B) Wall-Mount Heavy Duty Stainless Steel Holder— Made of stainless steel for corrosion resistance. Has two 5/16″ dia. mounting holes (fasteners included).

(C) Wall-Mount High-Capacity Stainless Steel Holder— As corrosion resistant as Style B, but this model holds more hose and can tilt and swivel for easier hose removal. Has four 5/16″ dia. mounting holes (fasteners included).

	Ht. × Wd. × Dp.	Hose Cap.		Each
A	8 1/4″ × 9 1/4″ × 8″	100 ft.	**53325K35**	$6.53
B	8 1/2″ × 8″ × 8″	150 ft.	**53325K33**	31.44
C	13″ × 5″ × 5″	200 ft.	**53325K36**	71.46

(D-G) Garden Hose Reels

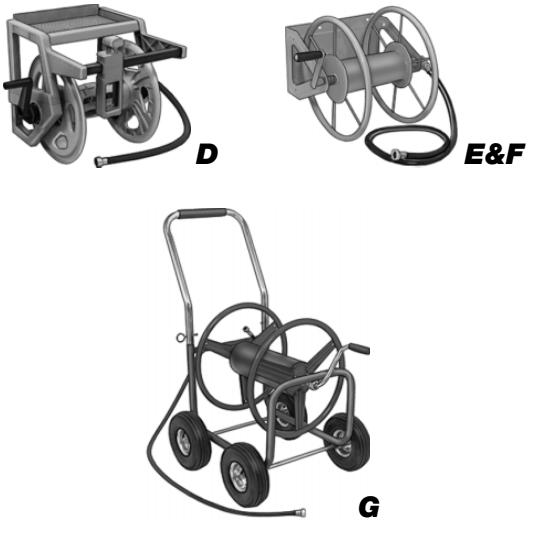

Wind your garden hose around these reels to keep it neat and organized. Reels include a faucet-connection hose that has a 3/4″ garden hose thread (GHT) connector with a washer to attach directly to your water source. Hose capacity is based on 5/8″ ID hose (not included).

(D) Wall-Mount Plastic Reel— An economical choice, this reel includes a hose guide, top storage tray, mounting fasteners, and a 36″ long, 5/8″ ID vinyl faucet-connection hose. Garden hose is wound perpendicular to the wall. Color is dark beige.

(E) Wall-Mount Heavy Duty Steel Reel— Reel comes with a 60″ long, 5/8″ ID rubber faucet-connection hose. Garden hose is wound perpendicular to the wall. Reel has eight 1/2″ dia. mounting holes (fasteners not included). Color is tan.

(F) Wall-Mount Heavy Duty Stainless Steel Reel— The same as the Wall-Mount Heavy Duty Steel Reel (Style E) but with stainless steel construction for corrosion resistance.

(G) Mobile Steel Reel— Take your garden hose wherever you need it—this reel has four pneumatic tires for mobility. Includes a 72″ long, 5/8″ ID vinyl faucet-connection hose and a washer. Color is green.

	Ht. × Wd. × Dp.	Hose Cap.		Each
D	19″ × 21″ × 19″	225 ft.	**63165T36**	$52.27
E	18″ × 17 1/2″ × 16 1/2″	200 ft.	**7079T18**	109.52
F	18″ × 17 1/2″ × 16 1/2″	200 ft.	**7079T28**	227.27
G	44 1/2″ × 24 1/2″ × 40″	400 ft.	**75225T21**	186.76

Garden Hose/Faucet Fittings

Garden Hose Shut-Off Valves

Save trips to the faucet to shut off the water by attaching these fittings to the end of your garden hose. Valves have 3/4″ garden hose thread (GHT) connections on each end (one male and one female) and include washers.

Material	Max. Pressure	Max. Temp.		Each
Plastic	100 psi	110° F	**7082T24**	$2.47
Zinc	125 psi	♣	**7082T14**	4.50
Brass	120 psi	120° F	**7082T34**	7.17

♣ For cold water use. Not temperature rated.

Garden Hose Multi-Faucet Fittings with Shut-Off Valves

Two-Outlet Brass Fitting

Convert one faucet into two or four convenient outlets. Each outlet has individually operated shut-off valves.

Fittings have 3/4″ garden hose thread (GHT) male and female connections. Washers are included.

Material	Max. Pressure	Max. Temp.		Each
Two Outlets				
Plastic	100 psi	100° F	**6308T12**	$3.17
Zinc	110 psi	110° F	**6308T13**	5.02
Brass	120 psi	120° F	**7459T11**	10.47
Four Outlets				
Brass	120 psi	120° F	**7459T21**	22.04

Garden Hose Savers

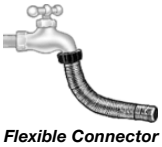

Flexible Connector

Gooseneck Swivel

Connect these fittings between your hose and faucet to extend the life of your garden hose and eliminate kinks. Connections are 3/4″ garden hose thread (GHT) on each end (one male and one female). Washers are included.

Flexible Connector— Has a reinforced-vinyl connector hose, brass ends with a female plastic coupling, and a flexible steel outer liner.

Gooseneck Swivel— Has a solid brass fitting that swivels 360° to prevent the hose from kinking at the faucet. Fitting has a shut-off valve.

	Lg.		Each
Flexible Connector	6 1/4″	**6221T11**	$6.36
Gooseneck Swivel	3″	**73935T74**	6.06

Quick-Disconnect Garden Hose Fittings

Plastic

Brass

Fittings have 3/4″ garden hose thread (GHT) connections, one male plug, and one female socket with washer. Choose fittings with a shut-off valve to stop water at the hose end.

Plastic with shut-off valve comes with an extra male plug.

Brass with shut-off valve has an internal shut-off valve. To stop water at the hose end, disengage the male plug from the female socket.

Material		Per Set
Plastic with Shut-Off Valve	**7470T25**	$5.09
Brass without Shut-Off Valve	**71095T9**	9.79
Brass with Shut-Off Valve	**71095T11**	9.83

Garden Hose End Caps

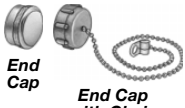

End Cap

End Cap with Chain

These caps have 3/4″ garden hose thread (GHT) female connections. Both caps include a washer.

End cap is made of brass.

End cap with chain prevents cap from being misplaced. Cap is die cast zinc and includes a 12″ brass chain with one 1/4″ dia. mounting hole (fastener not included).

End Cap (2/Pkg.)	**63745T92**	**Per Pkg.**	$4.02
End Cap with Chain	**63745T94**	**Each**	$4.10

Garden Hose Washers

Washer w/Screen

Washers are rubber and fit any 1/2″, 5/8″, or 3/4″ ID garden hose that has 3/4″ garden hose threads (GHT).

	OD × ID × Thick.	Pkg. Qty.		Per Pkg.
Washer	1″ × 5/8″ × 1/8″	10	**62215T78**	$1.34
Washer with Screen	1″ × 9/16″ × 1/8″	3	**62215T88**	1.75

For faucets with garden hose threads, see page 462.

Garden Hose Couplings

To replace a damaged or worn hose coupling, simply cut off the current coupling and secure a new, compatible coupling to the hose. Couplings have ¾″ garden hose threads (GHT). All except the barbed couplings include washers.

Clamp-Down Couplings

Clamp these impact-resistant couplings to your hose and tighten with the included stainless steel screws.

Male *Female*

	For ½″ ID Hose	Each	For ⅝″-¾″ ID Hose	Each
Nylon				
Male	6222T23	$1.74	6222T13	$1.74
Female	6222T24	1.94	6222T14	1.94
Zinc				
Male	—	—	6222T33	6.35
Female	—	—	6222T34	7.14

Barbed Couplings

Barbed shanks grip the hose while hose clamps (required and sold separately) secure the hose to the coupling. Made of brass. The male/female set includes one male and one female coupling.

Male *Female*

Hose clamps are worm-drive style and made of stainless steel with a stainless steel screw.

	For ½″ ID Hose	Each	For ⅝″ ID Hose	Each	For ¾″ ID Hose	Each
Male	7461T54	$4.04	7461T55	$3.96	7461T56	$3.40
Female	7461T44	5.05	7461T45	4.77	7461T46	5.98
		Per Set		Per Set		Per Set
Male/Female Set	7461T72	$6.67	7461T73	$6.40	7461T74	$6.65

	Pkg. Qty.		Per Pkg.
Hose Clamps for ½″ ID Hose	10	5416K11	$9.27
Hose Clamps for ⅝″ and ¾″ ID Hose	10	5416K33	9.27

Gripper Couplings

Crimp the steel gripping tabs to your hose with pliers. Each set includes one male and one female coupling. Made of brass.

Male *Female*

For Hose ID		Per Set
½″	7462T11	$7.64
⅝″	7462T12	7.64
¾″	7462T13	6.68

Garden Hose Menders

Clamp Down

Gripper

Barbed

Clamp

It's easy to economically repair damaged garden hose. Cut out the damaged section of hose and join the two remaining pieces by securing them to each end of the mender.

Clamp-Down Menders— Clamp these impact-resistant menders to each hose end and tighten with the included stainless steel screws.

Gripper Menders— Crimp the steel gripping tabs to your hose with pliers.

Barbed Menders— Barbed shanks grip the hose while hose clamps (required and sold separately) secure the hose to the coupling. ***Hose clamps*** are worm-drive style and made of stainless steel.

Material	For Hose ID	Pkg. Qty.		Each
Clamp-Down Menders				
Nylon	⅝″ to ¾″	—	6375T24	$2.62
Zinc	⅝″ to ¾″	—	6375T28	9.86
Gripper Menders				
Brass	⅝″	—	7463T22	4.31
Brass	¾″	—	7463T23	4.85
Barbed Menders				Per Pkg.
Brass	½″	5	91355K85	$9.40
Brass	⅝″	5	91355K86	11.36
Brass	¾″	5	91355K87	6.83

	Pkg. Qty.		Per Pkg.
Hose Clamps for ½″ ID Hose	10	5416K11	$9.27
Hose Clamps for ⅝″ and ¾″ ID Hose	10	5416K33	9.27

Garden Hose Fittings and Adapters

All have ¾″ garden hose threads (GHT). Female hose ends include rubber washers.

Garden Hose-to-Garden Hose Fittings

Male connections are rigid; female are swivel. Made of brass. The male/female set includes one male and one female coupling.

Male *Female*

GHT (on both ends)	Max. Pressure	Max. Temp.	Pkg. Qty.		Per Pkg.
Male	250 psi	195°F	2	72105T89	$7.90
Female	250 psi	195°F	2	72105T88	10.31
Male/Female Set	250 psi	195°F	1	72105T87	7.96

Garden Hose-to-Pipe Adapters

A ***B*** ***C*** ***D*** ***E*** ***F***

Swivel adapters allow hose to twist without kinking.

GHT	Pipe Size, NPT	Max. Pressure	Max. Temp.	Pkg. Qty.		Per Pkg.
Brass Rigid						
A Female	⅛″ Female	250 psi	195°F	1	73605T64	$4.01
A Female	¼″ Female	250 psi	195°F	1	73605T65	4.42
A Female	⅜″ Female	250 psi	195°F	1	73605T66	4.48
A Female	½″ Female	250 psi	195°F	1	73605T82	4.28
A Female	¾″ Female	250 psi	195°F	1	73605T83	4.93
B Female	⅜″ Male	250 psi	195°F	1	73605T67	3.20
B Female	½″ Male	250 psi	195°F	1	73605T84	3.30
B Female	¾″ Male●	250 psi	195°F	1	73605T85	3.86
C Male	¼″ Female	250 psi	195°F	2	73605T59	7.63
C Male	⅜″ Female	250 psi	195°F	2	73605T61	8.28
C Male	½″ Female	250 psi	195°F	2	73605T74	9.21
C Male	¾″ Female	250 psi	195°F	1	73605T93	4.08
D Male	⅜″ Male	250 psi	195°F	2	73605T56	10.21
D Male	½″ Male	250 psi	195°F	1	73605T87	3.16
D Male	¾″ Male●	250 psi	195°F	1	73605T92	3.18
D Male	1″ Male	250 psi	195°F	2	73605T98	14.08
Stainless Steel Rigid						
A Female	½″ Female	250 psi	195°F	1	6224T11	26.44
A Female	¾″ Female	250 psi	195°F	1	6224T12	26.44
B Female	½″ Male	250 psi	195°F	1	6224T13	26.44
B Female	¾″ Male●	250 psi	195°F	1	6224T14	26.44
C Male	½″ Female	250 psi	195°F	1	6224T15	14.52
C Male	¾″ Female	250 psi	195°F	1	6224T16	25.80
D Male	½″ Male	250 psi	195°F	1	6224T17	17.75
D Male	¾″ Male	250 psi	195°F	1	6224T18	20.86
Brass Swivel						
E Female	½″ Female	250 psi	195°F	2	70815T43	7.77
E Female	¾″ Female	250 psi	195°F	2	70815T44	9.46
F Female	¼″ Male	250 psi	195°F	2	70815T41	7.42
F Female	⅜″ Male	250 psi	195°F	2	70815T42	7.73
F Female	½″ Male	250 psi	195°F	2	70815T45	7.47
F Female	¾″ Male	250 psi	195°F	2	70815T47	10.68
Stainless Steel Swivel						
E Female	½″ Female	250 psi	195°F	1	7476T51	39.55
E Female	¾″ Female	250 psi	195°F	1	7476T52	42.56
F Female	½″ Male	250 psi	195°F	1	7476T53	44.49
F Female	¾″ Male	250 psi	195°F	1	7476T54	48.14

● Pipe size is ¾″ NPT male and ½″ NPT female.

Garden Hose-to-Tube Adapters

Join hose to slip-on tube. Male connections are rigid; female are swivel. Connectors require hose clamps (sold separately). ***Hose clamps*** are worm-drive style and made of stainless steel.

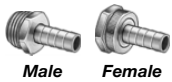

Male *Female*

For Tube ID	Max. Pressure	Max. Temp.	Male Pkg. Qty.	Male	Per Pkg.	Female Pkg. Qty.	Female	Per Pkg.
Brass								
⅜″	250 psi	195°F	4	70705T71	$13.51	2	70705T73	$8.19
½″	250 psi	195°F	4	70705T81	14.05	2	70705T63	8.30
⅝″	250 psi	195°F	2	70705T82	8.06	2	70705T64	10.52
¾″	250 psi	195°F	2	70705T83	8.24	2	70705T65	12.23
1″	250 psi	195°F	1	70705T72	8.70	2	70705T74	15.72
Stainless Steel								
½″	250 psi	195°F	1	7712T84	32.35	1	7712T87	51.71
⅝″	250 psi	195°F	1	7712T85	32.35	1	7712T88	52.76
¾″	250 psi	195°F	1	7712T86	33.30	1	7712T89	52.76

	Pkg. Qty.		Per Pkg.
Hose Clamps for ⅜″ Tube ID	10	5321K14	$6.99
Hose Clamps for ½″ Tube ID	10	5416K11	9.27
Hose Clamps for ⅝″ and ¾″ Tube ID	10	5416K33	9.27
Hose Clamps for 1″ Tube ID	10	5416K14	9.43

Spray Nozzles

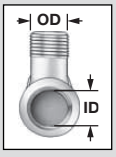

Please Read Before Ordering: Pipe size is the accepted industry designation, not the actual size. To determine pipe size, measure the inside diameter (ID) or outside diameter (OD), as shown at left. Then, round up to the closest fitting ID or OD listed in the chart and select the corresponding pipe size. For example, if your fitting ID or OD measures 1 3/16″, the next highest ID or OD in the chart is 1 3/8″, and its corresponding pipe size is 1″.

Fitting ID or OD	3/8″	1/2″	5/8″	3/4″	1″	1 3/8″	1 5/8″	1 7/8″	2 3/8″
Pipe Size	1/8″	1/4″	3/8″	1/2″	3/4″	1″	1 1/4″	1 1/2″	2″

About Spray Nozzles

Spray nozzles are used for jobs such as cleaning, cooling, rinsing, controlling dust, applying coatings, humidification, pressure washing, and air drying. Use the chart at the top of the page to determine the proper pipe size.

Brass offers good corrosion resistance. ***Copper-nickel*** is more corrosion and rust resistant than brass. ***Stainless steel*** has better corrosion, abrasion, and chemical resistance than brass. It also has good internal abrasion resistance. ***PVC*** offers very good corrosion and chemical resistance. ***PVDF*** offers excellent chemical and corrosion resistance. ***PFA*** and ***PTFE*** are chemical resistant and the most corrosion-resistant materials we offer.

Spray Patterns

Flat *Full Cone* *Hollow Cone* *Square* *Solid Stream*

Spray Angles

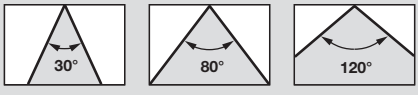

Flat Spray Nozzles

All nozzles produce a flat, thin spray pattern. Good for washing parts and jobs that involve products moving on a conveyor.

Flat Spray Nozzles

Flat

Great for general cleaning, washing asphalt and concrete, air drying, etching, foam control, and applying coatings. Maximum pressure is 1,000 psi. All have an NPT male connection.

Brass nozzles have a maximum temperature of 450° F. ***Type 303 stainless steel nozzles*** have a maximum temperature of 800° F.

To Order: For all nozzles, please specify spray angle: 30°, 50°, 65°, 80°, or 120°.

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi	1,000 psi	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg.	Brass Each 1-9	10-Up	Stainless Steel Each 1-9	10-Up
1/8″	0.3	0.5	0.7	2.5	0.05″	7/16″	7/8″	3404K73	$4.23	$3.78	3404K78	$10.52	$9.40
1/8″	0.5	0.8	1.2	4.0	0.07″	7/16″	7/8″	3404K11	4.23	3.78	3404K26	10.52	9.40
1/8″	0.7	1.0	1.5	5.0	0.08″	7/16″	7/8″	3404K74	4.23	3.78	3404K79	10.52	9.40
1/8″	1.4	2.0	3.1	10.0	0.10″	7/16″	7/8″	3404K12	4.23	3.78	3404K27	10.52	9.40
1/8″	2.1	3.0	4.7	15.0	0.14″	7/16″	7/8″	3404K13	4.23	3.78	3404K28	10.52	9.40
1/4″	0.3	0.5	0.7	2.5	0.05″	9/16″	1 1/16″	3404K75	4.52	4.07	3404K64	11.11	9.94
1/4″	1.0	1.5	2.3	7.5	0.09″	9/16″	1 1/16″	3404K14	4.52	4.07	3404K29	11.11	9.94
1/4″	2.1	3.0	4.7	15.0	0.14″	9/16″	1 1/16″	3404K15	4.52	4.07	3404K34	11.11	9.94
1/4″	2.8	4.0	6.3	20.0	0.15″	9/16″	1 1/16″	3404K16	4.52	4.07	3404K35	11.11	9.94
1/4″	3.5	5.0	7.9	25.0	0.17″	9/16″	1 1/16″	3404K17	4.52	4.07	3404K36	11.11	9.94
3/8″	2.8	4.0	6.3	20.0	0.15″	11/16″	1 1/4″	3404K18	4.57	4.07	3404K37	15.18	13.64
3/8″	4.9	7.0	11.1	35.0	0.20″	11/16″	1 1/4″	3404K19	4.57	4.07	3404K38	15.18	13.64
3/8″	7.0	10.0	15.8	50.0	0.25″	11/16″	1 1/4″	3404K76	4.57	4.07	3404K65	15.18	13.64
1/2″	4.2	6.0	9.4	30.0	0.18″	7/8″	1 1/2″	3404K77	6.08	5.46	3404K66	19.98	17.95
1/2″	5.6	8.0	12.6	40.0	0.21″	7/8″	1 1/2″	3404K43	6.08	5.46	3404K54	19.98	17.95
1/2″	7.0	10.0	15.8	50.0	0.25″	7/8″	1 1/2″	3404K24	6.08	5.46	3404K39	19.98	17.95
1/2″	8.4	12.0	19.0	60.0	0.26″	7/8″	1 1/2″	3404K44	6.08	5.46	3404K55	19.98	17.95
1/2″	10.6	15.0	23.7	75.0	0.29″	7/8″	1 1/2″	3404K45	6.08	5.46	3404K56	19.98	17.95
1/2″	14.1	20.0	31.6	100.0	0.34″	7/8″	1 1/2″	3404K46	6.08	5.46	3404K57	19.98	17.95
3/4″	21.2	30.0	47.4	150.0	0.42″	1 1/8″	1 3/4″	3404K47	14.48	12.95	3404K58	49.74	44.73
3/4″	28.3	40.0	63.2	200.0	0.50″	1 1/8″	1 3/4″	3404K25	14.48	12.95	3404K42	49.74	44.73
1″	28.3	40.0	63.2	200.0	0.50″	1 3/8″	2 3/16″	3404K48	29.65	26.68	3404K59	102.73	91.67
1″	53.0	75.0	119.0	375.0	0.68″	1 3/8″	2 3/16″	3404K49	29.65	26.68	3404K67	102.73	91.67

Wide-Angle Deflected Flat Spray Nozzles

Flat

An extra-wide spray angle is deflected 75°, producing a low-impact spray for maximum coverage. The angle makes these nozzles a good choice for rinsing and cooling jobs as well as for foam control and applying coatings. Maximum pressure is 60 psi. All have an NPT male connection.

Brass nozzles have a maximum temperature of 800° F. ***Type 303 stainless steel nozzles*** have a maximum temperature of 1400° F.

Pipe Size	Flow Rate, gpm 20 psi	40 psi	60 psi	Spray Angle	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg.	Brass Each 1-9	10-Up	Stainless Steel Each 1-9	10-Up
1/8″	0.1	0.1	0.1	120°	0.02″	7/16″	9/16″	30995K31	$4.43	$3.98	30995K21	$16.76	$15.09
1/8″	0.1	0.2	0.2	148°	0.03″	7/16″	13/16″	30995K32	4.43	3.98	30995K22	16.76	15.09
1/8″	0.7	1.0	1.2	132°	0.07″	7/16″	15/16″	30995K1	4.47	4.00	30995K11	17.73	15.83
1/8″	1.4	2.0	2.4	150°	0.11″	7/16″	15/16″	30995K3	4.47	4.00	30995K13	17.73	15.83
1/4″	2.1	3.0	3.7	144°	0.12″	9/16″	1 5/16″	30995K5	6.02	5.37	30995K15	21.49	19.20
1/4″	2.8	4.0	4.9	144°	0.15″	9/16″	1 5/16″	30995K7	6.02	5.37	30995K17	21.49	19.20
3/8″	4.2	6.0	7.3	138°	0.18″	11/16″	1 1/2″	30995K9	7.09	6.35	30995K19	25.22	22.68
3/8″	5.7	8.0	9.8	136°	0.20″	11/16″	1 1/2″	30995K33	7.09	6.35	30995K23	25.22	22.68
3/8″	6.4	9.0	11.0	144°	0.22″	11/16″	1 1/2″	30995K34	7.09	6.35	30995K24	25.22	22.68
1/2″	7.1	10.0	12.2	141°	0.24″	7/8″	1 11/16″	30995K35	7.77	6.94	30995K25	29.76	26.58
1/2″	9.9	14.0	17.1	130°	0.29″	7/8″	2″	30995K36	7.77	6.94	30995K26	29.76	26.58
3/4″	17.0	24.0	29.0	135°	0.37″	1 1/16″	2 3/8″	30995K37	12.50	11.15	30995K27	46.50	41.45
3/4″	25.0	36.0	44.0	136°	0.46″	1 1/2″	2 5/8″	30995K38	20.91	18.63	30995K28	76.39	68.64

(Continued on following page)

For information about spray nozzles and pipe size, see page 2082.

Flat Spray Nozzles *(Continued from previous page)*

High-Impact Deflected Flat Spray Nozzles

Spray is deflected off the face of the nozzle at a narrow angle to create the highest impact of all our flat spray nozzles. Use them for foam control and for washing vehicles, gravel, asphalt, and concrete. Spray angle is 50°. Maximum pressure is 500 psi. All have an NPT male connection.

Brass nozzles have a maximum temperature of 450° F. ***Type 303 stainless steel nozzles*** have a maximum temperature of 800° F.

Flat

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi	500 psi	Deflection Angle	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg.	Brass Each ♦		Stainless Steel Each ♦	
1/4"	0.7	1.0	1.5	3.5	55°	0.07"	7/8"	2"	32535K21	$11.92	32535K51	$32.69
1/4"	1.4	2.0	3.1	7.0	45°	0.10"	7/8"	2"	32535K22	11.92	32535K52	32.69
1/4"	2.8	4.0	6.3	14.1	45°	0.15"	7/8"	2"	32535K24	11.92	32535K54	32.69
3/8"	4.2	6.0	9.4	21.2	35°	0.18"	1 1/8"	3"	32535K31	13.35	32535K61	37.97
3/8"	5.6	8.0	12.6	28.1	35°	0.20"	1 1/8"	3"	32535K33	13.35	32535K63	37.97
3/8"	7.1	10.0	15.8	35.3	40°	0.23"	1 1/8"	3"	32535K35	13.35	32535K65	37.97
1/2"	11.3	16.0	25.2	56.5	40°	0.31"	1 3/8"	4 1/2"	32535K43	29.71	32535K73	75.22

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Food-Grade Chemical- and Corrosion-Resistant Plastic Flat Spray Nozzles

Not only do these nozzles offer excellent abrasion, chemical, and corrosion resistance, they are also made of FDA-compliant PVDF for use in many food and pharmaceutical applications. All nozzles are good for washing asphalt and concrete as well as for foam control and applying coatings. Spray angle is 80°. Maximum pressure is 150 psi. Maximum temperature is 200° F. All nozzles have an NPT male connection.

Flat

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi	150 psi	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg.		Each 1-9	10-Up
1/8"	0.1	0.2	0.3	0.4	0.03"	9/16"	7/8"	34845K29	$8.36	$7.50
1/8"	0.3	0.5	0.7	1.0	0.05"	9/16"	7/8"	34845K31	8.36	7.50
1/8"	0.6	0.9	1.5	1.9	0.08"	9/16"	7/8"	34845K32	8.36	7.50
1/4"	0.4	0.5	0.9	1.1	0.06"	9/16"	7/8"	34845K34	8.69	7.80
1/4"	0.5	0.7	1.2	1.5	0.07"	9/16"	7/8"	34845K41	8.69	7.80
1/4"	1.0	1.4	2.3	2.9	0.10"	9/16"	7/8"	34845K43	8.69	7.80
1/4"	2.1	3.1	4.9	6.0	0.15"	9/16"	7/8"	34845K45	8.69	7.80
1/4"	3.5	4.9	7.8	9.6	0.19"	9/16"	7/8"	34845K46	8.69	7.80

Maximum Chemical- and Corrosion-Resistant Plastic Flat Spray Nozzles

Caustics, organic solvents, acids, and ultrapure liquids (such as deionized water) are no problem for these nozzles. They are clog resistant and are good for washing asphalt and concrete as well as for applying coatings. Choose one that projects spray from the side or straight out. Made of PFA. Maximum pressure is 40 psi. Maximum temperature is 75° F. All nozzles have an NPT male connection.

Flat

Side Spray

Pipe Size	Flow Rate, gpm 5 psi	20 psi	40 psi	Orifice Dia.	Spray Direction	Spray Angle	O'all Wd. (Hex Size)	O'all Lg.		Each ♦
1/8"	0.1	0.1	0.2	0.03"	Side–65°●	140°	5/8"	7/8"	32815K51	$17.34
1/8"	0.1	0.3	0.5	0.02"	Side–68°●	177°	5/8"	1"	32815K53	21.06
1/8"	0.1	0.1	0.1	0.05"	Straight	16°	5/8"	5/8"	32815K61	17.02
1/8"	0.1	0.2	0.3	0.02"	Straight	43°	5/8"	5/8"	32815K52	17.02
1/4"-28■	0.1	0.1	0.1	0.04"	Straight	79°	5/16"	1"	32815K71	17.02
1/4"-28■	0.1	0.3	0.4	0.06"	Straight	104°	5/16"	9/16"	32815K73	17.02

♦ Prices are 10% lower when you buy in quantities of 10 or more.
● Deflection angle.
■ Connection is 1/4"-28 UNF straight thread.

Quick-Change No-Drip Brass Flat Spray Nozzles

These multipiece nozzles make it quick and easy to remove and replace spray tips. Good for washing asphalt and concrete as well as for foam control and applying coatings.

Each nozzle consists of a nozzle body, cap, ball check valve, and spray tip. Simply unscrew the cap to clean or replace the spray tip. The ball check valve eliminates dripping when nozzle has been turned off and has a filter with a strainer (100×100 mesh strainer for 1/8" pipe size; 50×50 mesh strainer for 1/4" pipe size). Maximum pressure is 500 psi. Maximum temperature is 500° F. All nozzles have an NPT male connection. **To Order:** Please specify spray angle: 40°, 80°, or 110°.

Flat

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi	500 psi	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg.	Nozzles Each ♦		Replacement Tips Each ♦	
1/8"	0.1	0.1	0.1	0.3	0.02"	13/16"	1 5/8"	4846T11	$34.64	4846T21	$5.90
1/8"	0.1	0.1	0.2	0.5	0.03"	13/16"	1 5/8"	4846T12	34.64	4846T22	5.90
1/4"	0.2	0.3	0.4	1.1	0.04"	13/16"	1 11/16"	4846T13	34.64	4846T23	5.90
1/4"	0.3	0.5	0.7	1.8	0.05"	13/16"	1 11/16"	4846T15	34.64	4846T25	5.90

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Quick-Mount Swivel Flat Spray Nozzles

Just drill a 9/16" hole anywhere along a pipe and snap on these nozzles. They make it quick and easy to remove and replace spray tips. Made of reinforced plastic, all have a 300 Series stainless steel clamp that grips the pipe and an EPDM rubber gasket that prevents leaks. All nozzles are good for foam control. Nozzles swivel 52° for directional spraying. Spray angle is 65°, unless noted. Maximum pressure is 100 psi. Maximum temperature is 175° F.

With Quick-Change Tips— These nozzles have replaceable tips (simply give them a 1/4 turn to remove) that maintain spray pattern alignment. All tips have two O-rings to prevent leaks.

Flat

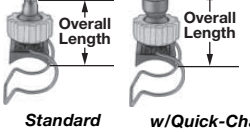

Standard *w/Quick-Change Tips*

To Order: For all nozzles, please specify pipe size from those available below.

Available Pipe Sizes	Flow Rate, gpm 20 psi	40 psi	100 psi	Orifice Dia.	O'all Dia.	STANDARD O'all Lg.	Nozzles	Each ♦	WITH QUICK-CHANGE TIPS O'all Lg.	Nozzles	Each ♦	Replacement Tips	Each ♦
1", 1 1/4"	0.7	1.0	1.5	0.07"	1 13/16"	2 1/2"	32925K71♣	$6.68	3"	6312K11♣	$12.06	6312K51♣	$5.92
1", 1 1/4"	1.4	2.0	3.2	0.10"	1 13/16"	2 1/2"	32925K72	6.68	3"	6312K12	12.06	6312K52	5.92
1", 1 1/4", 1 1/2"	2.1	3.0	4.7	0.12"	1 13/16"	2 1/2"	32925K73	6.68	3"	6312K13	12.06	6312K53	5.92
1", 1 1/4", 1 1/2"	2.8	4.0	6.3	0.14"	1 13/16"	2 1/2"	32925K74	6.68	3"	6312K14	12.06	6312K54	5.92
1", 1 1/4", 1 1/2"	3.5	5.0	7.9	0.16"	1 13/16"	2 1/2"	32925K75	6.68	3"	6312K15	12.06	6312K55	5.92
1 1/4", 1 1/2", 2"	4.9	7.0	11.1	0.19"	1 13/16"	2 1/2"	32925K77	6.68	3"	6312K16	12.06	6312K56	5.92

♦ Prices are 10% lower when you buy in quantities of 10 or more. ♣ Spray angle is 80°.

For information about spray nozzles and pipe size, see page 2082.

Full Cone, Hollow Cone, and Square-Pattern Spray Nozzles

An excellent choice for cooling as well as dust- and foam-control applications. ***Full cone*** and ***square-pattern spray nozzles*** provide a uniform distribution of droplets. ***Hollow cone spray nozzles*** produce a fine, more atomized droplet.

Full Cone Spray Nozzles

Full Cone

Male

Female

The full cone spray pattern and low flow rates of these nozzles make them good for distributing fluids, cooling, washing, and rinsing. Maximum pressure is 400 psi. ***Brass nozzles*** have a maximum temperature of 450° F. ***Type 303 stainless steel nozzles*** have a maximum temperature of 800° F.

To Order: For all nozzles, please specify spray angle (60°, 90°, or 120°) and NPT connection (male or female).

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi	400 psi	Orifice Dia.	Male O'all Wd. (Hex Size)	Male O'all Lg.	Female O'all Wd. (Hex Size)	Female O'all Lg.	Brass	Brass Each ♦	Stainless Steel	Stainless Steel Each ♦
1/8"	0.1	0.2	0.3	0.7	0.04"	7/16"	7/8"	9/16"	1 1/8"	32885K11	$8.90	32885K51	$27.38
1/8"	0.3	0.5	0.7	1.4	0.05"	7/16"	7/8"	9/16"	1 1/8"	32885K12	8.90	32885K52	27.38
1/8"	0.5	0.7	1.1	2.2	0.07"	7/16"	7/8"	9/16"	1 1/8"	32885K13	8.90	32885K53	27.38
1/4"	0.7	1.0	1.5	2.9	0.08"	9/16"	1 1/16"	11/16"	1 3/8"	32885K14	9.54	32885K54	29.74
1/4"	1.0	1.5	2.3	4.4	0.10"	9/16"	1 1/16"	11/16"	1 3/8"	32885K15	9.54	32885K55	29.74
3/8"	1.4	2.0	3.0	5.9	0.12"	11/16"	1 1/4"	7/8"	1 1/2"	32885K16	12.20	32885K56	34.68
3/8"	2.1	3.0	4.6	8.8	0.15"	11/16"	1 1/4"	7/8"	1 1/2"	32885K17	12.20	32885K57	34.68
3/8"	2.8	4.0	6.1	11.8	0.18"	11/16"	1 1/4"	7/8"	1 1/2"	32885K18	12.20	32885K58	34.68
1/2"	3.6	5.0	7.6	14.8	0.20"	7/8"	1 1/2"	1 1/8"	2"	32885K19	14.16	32885K59	39.24
1/2"	4.3	6.0	9.2	17.7	0.21"	7/8"	1 1/2"	1 1/8"	2"	32885K21	14.16	32885K61	39.24
1/2"	5.0	7.0	10.8	20.7	0.22"	7/8"	1 1/2"	1 1/8"	2"	32885K22	14.16	32885K62	39.24
3/4"	5.7	8.0	12.3	23.6	0.23"	1 1/8"	1 3/4"	1 3/8"	2 1/8"	32885K23	29.71	32885K63	71.38
3/4"	8.6	12.0	18.5	35.4	0.31"	1 1/8"	1 3/4"	1 3/8"	2 1/8"	32885K25	29.71	32885K65	71.38
1"	10.8	15.0	23.1	44.3	0.32"	1 3/8"	2 3/16"	1 5/8"	2 3/8"	32885K26	37.35	32885K66	86.55
1"	14.4	20.0	30.8	59.0	0.37"	1 3/8"	2 3/16"	1 5/8"	2 3/8"	32885K27	37.35	32885K67	86.55

♦ Prices are 10% lower when you buy in quantities of 10 or more.

High-Volume Clog-Resistant Full Cone and Hollow Cone Spray Nozzles

Full Cone

Hollow Cone

With a unique spiral design, these nozzles produce higher flow rates and have a fine, atomized spray. They're great for dust control, cooling, and humidification applications. Connection is NPT male. ***Brass nozzles*** have a maximum pressure of 400 psi. Maximum temperature is 450° F. ***Type 316 stainless steel nozzles*** have a maximum pressure of 400 psi. Maximum temperature is 800° F. ***PTFE nozzles*** have a maximum pressure of 60 psi. Maximum temperature is 300° F.

To Order: Please specify spray angle: 60°, 90°, or 120° for full cone; 50° or 120° for hollow cone.

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi ▲	400 psi ▲	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg. ♠	Brass	Brass Each ♦	Stainless Steel	Stainless Steel Each ♦	PTFE	PTFE Each ♦
Full Cone													
1/4"	0.9	1.4	2.2	4.4	0.09"	9/16"	1 7/8"	3282K161	$12.57	3282K316	$52.48	3282K971	$21.96
1/4"	1.8	2.6	4.1	8.2	0.13"	9/16"	1 7/8"	3282K54	12.57	3282K49	52.48	3282K58	21.96
1/4"	2.8	4.0	6.3	12.6	0.16"	9/16"	1 7/8"	3282K171	12.57	3282K416	52.48	3282K221	21.96
3/8"	4.2	6.0	9.4	19.0	0.19"	11/16"	1 7/8"	3282K55	16.01	3282K84	57.90	3282K59	24.34
3/8"	5.7	8.1	12.8	25.6	0.22"	11/16"	1 7/8"	3282K181	16.01	3282K516	57.90	3282K311	24.34
3/8"	7.5	10.6	16.8	33.5	0.25"	11/16"	1 7/8"	3282K56	16.01	3282K85	57.90	3282K19	24.34
3/8"	11.7	16.5	26.1	52.2	0.31"	11/16"	1 7/8"	3282K57	16.01	3282K86	57.90	3282K39	24.34
1/2"	17.0	24.1	38.1	76.2	0.38"	7/8"	2 1/2"	3282K981	18.72	3282K616	57.90	3282K411	27.57
1/2"	23.3	33.0	52.2	104.0	0.44"	7/8"	2 1/2"	3282K991	18.72	3282K716	57.90	3282K511	27.57
3/4"	29.7	42.0	66.4	133.0	0.50"	1 1/8"	2 3/4"	3282K69	33.01	3282K94	87.03	3282K96	64.06
1"	47.4	67.0	106.0	212.0	0.63"	1 3/8"	3 5/8"	3282K97	50.24	3282K98	110.43	3282K99	82.03
1"	67.2	95.0	150.0	300.0	0.75"	1 3/8"	3 5/8"	3282K114	50.24	3282K115	110.43	3282K116	82.03
Hollow Cone													
1/4"	0.9	1.4	2.2	4.4	0.09"	9/16"	1 7/8"	3282K111	8.96	3282K611	48.48	3282K87	19.05
1/4"	1.8	2.6	4.1	8.2	0.13"	9/16"	1 7/8"	3282K21	8.96	3282K29	48.48	3282K25	19.05
1/4"	2.8	4.0	6.3	12.6	0.16"	9/16"	1 7/8"	3282K121	8.96	3282K711	48.48	3282K88	19.05
3/8"	7.5	10.6	16.8	33.5	0.25"	11/16"	1 7/8"	3282K23	11.98	3282K52	56.37	3282K27	20.92
1/2"	17.0	24.1	38.1	76.2	0.38"	7/8"	2 1/2"	3282K141	14.41	3282K911	56.37	3282K941	24.37
1/2"	23.3	33.0	52.2	104.0	0.44"	7/8"	2 1/2"	3282K151	14.41	3282K216	56.37	3282K961	24.37
3/4"	29.7	42.0	66.4	133.0	0.50"	1 1/8"	2 3/4"	3282K124	29.03	3282K125	98.15	3282K126	65.25

▲ Ratings are for brass and stainless steel only. ♠ Nozzles with a 60° spray angle may be up to 3/4" longer than the length listed.
♦ Prices are 10% lower when you buy in quantities of 10 or more.

Food-Grade Chemical- and Corrosion-Resistant Full Cone Plastic Spray Nozzles

Full Cone

In addition to offering excellent abrasion, chemical, and corrosion resistance, the nozzle material is FDA compliant for use in many food and pharmaceutical applications. Made of PVDF. Maximum pressure is 150 psi. Maximum temperature is 200° F. Connection is NPT male. **To Order:** Please specify spray angle: 90° or 120°.

Pipe Size	Flow Rate, gpm 10 psi	40 psi	100 psi	150 psi	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg.		Each 1-9	Each 10-Up
1/8"	0.1	0.3	0.4	0.5	0.04"	9/16"	7/8"	4814T81	$14.90	$13.41
1/8"	0.3	0.6	0.8	1.0	0.05"	9/16"	7/8"	4814T82	14.90	13.41
1/8"	0.5	0.9	1.3	1.6	0.07"	9/16"	7/8"	4814T83	14.90	13.41
1/4"	0.6	1.2	1.7	2.0	0.08"	9/16"	7/8"	4814T84	16.42	14.63
3/8"	1.3	2.4	3.4	4.0	0.14"	11/16"	1 3/16"	4814T85	17.97	16.01
3/8"	2.1	3.7	5.4	6.3	0.16"	11/16"	1 3/16"	4814T87	17.97	16.01

Square-Pattern Spray Nozzles

Square Pattern

The large square coverage area makes these nozzles ideal for chemical processing as well as for cooling applications. Maximum pressure is 150 psi. Connection is NPT male. ***Brass nozzles*** have a maximum temperature of 800° F. ***Type 303 stainless steel nozzles*** have a maximum temperature of 1400° F.

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi	150 psi	Orifice Dia.	Spray Angle	O'all Wd. (Hex Size)	O'all Lg.	Brass	Brass Each ♦	Stainless Steel	Stainless Steel Each ♦
1/8"	0.5	0.7	1.1	1.3	0.05"	55°	7/16"	13/16"	33925K51	$8.60	33925K61	$24.29
1/8"	0.6	0.9	1.5	1.8	0.06"	65°	7/16"	13/16"	33925K74	8.60	33925K94	24.29
1/8"	0.8	1.2	1.9	2.3	0.08"	65°	7/16"	13/16"	33925K52	8.60	33925K62	24.29
1/4"	1.4	2.0	3.2	3.9	0.09"	67°	9/16"	15/16"	33925K75	10.93	33925K95	26.83
1/4"	1.7	2.4	3.8	4.6	0.09"	76°	9/16"	15/16"	33925K53	9.88	33925K63	26.83
1/4"	1.9	2.8	4.4	5.4	0.09"	85°	9/16"	15/16"	33925K76	9.88	33925K96	26.91
3/8"	2.5	3.6	5.7	7.0	0.10"	75°	11/16"	1 1/16"	33925K54	11.72	33925K64	31.21
1/2"	4.1	5.8	9.2	11.2	0.14"	75°	7/8"	1 1/4"	33925K77	14.25	33925K97	37.47
1/2"	5.1	7.2	11.4	13.9	0.14"	85°	7/8"	1 1/4"	33925K55	14.25	33925K65	37.47

♦ Prices are 10% lower when you buy in quantities of 10 or more.

For information about spray nozzles and pipe size, see page 2082.

Right-Angle Full Cone and Hollow Cone Spray Nozzles

Made of brass, these nozzles project their spray at a right angle from their threaded connection. Excellent for cooling as well as dust- and foam-control applications. Maximum pressure is 100 psi. Maximum temperature is 450° F. Connection is NPT male.

Full cone provide a uniform distribution of droplets. Spray angle is 90°. ***Hollow cone*** produce a fine atomized droplet. Spray angle is 70°.

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi	Orifice Dia.	O'all Wd.	O'all Lg.		Each ♦
Full Cone								
1/4"	0.3	0.5	0.7	0.07"	13/16"	15/16"	31975K12	$37.62
1/4"	0.5	0.7	1.2	0.09"	13/16"	15/16"	31975K14	37.62
Hollow Cone								
1/8"	0.1	0.1	0.1	0.05"	5/8"	1 1/8"	3405K49	8.30
1/8"	0.2	0.4	0.6	0.09"	5/8"	1 1/8"	3405K33	8.30

Pipe Size	Flow Rate, gpm 20 psi	40 psi	100 psi	Orifice Dia.	O'all Wd.	O'all Lg.		Each ♦
Hollow Cone (Cont.)								
1/8"	0.7	1.0	1.5	0.13"	5/8"	1 1/8"	3405K35	$8.30
1/4"	0.1	0.2	0.3	0.06"	13/16"	15/16"	3405K72	8.72
1/4"	0.4	0.6	0.9	0.11"	13/16"	15/16"	3405K37	8.72
1/4"	0.7	1.0	1.5	0.14"	13/16"	15/16"	3405K38	8.72

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Quick-Mount Swivel Full Cone Spray Nozzles with Quick-Change Tips

Just drill a 9/16" hole anywhere along a pipe and snap on these nozzles. They make it quick and easy to remove and replace spray tips while maintaining spray pattern alignment. Made of reinforced plastic, all have a Series 300 stainless steel clamp that grips the pipe and an EPDM rubber gasket that prevents leaks. Nozzles swivel 52° for directional spraying and have replaceable tips (simply give them a 1/4 turn to remove). The tips also have two O-rings to prevent leaks. Excellent for cooling as well as dust- and foam-control applications, these nozzles provide a uniform distribution of droplets. Maximum pressure is 100 psi. Maximum temperature is 175° F.

Full Cone

To Order: For all nozzles, please specify pipe size from those available below.

Available Pipe Sizes	Flow Rate, gpm 20 psi	40 psi	100 psi	Spray Angle	Orifice Dia.	O'all Wd.	O'all Lg.	Nozzles	Each ♦	Replacement Tips	Each ♦
1", 1 1/4"	0.1	0.2	0.3	55°	0.03"	1 13/16"	3"	6312K21	$15.03	6312K61	$8.77
1", 1 1/4"	0.4	0.6	0.9	53°	0.05"	1 13/16"	3"	6312K22	15.03	6312K62	8.77
1", 1 1/4", 1 1/2"	0.7	1.0	1.5	75°	0.06"	1 13/16"	3"	6312K23	15.03	6312K63	8.77
1", 1 1/4"	0.4	0.5	0.8	105°	0.05"	1 13/16"	3"	6312K31	15.03	6312K71	8.77
1", 1 1/4", 1 1/2"	2.8	4.0	6.3	120°	0.10"	1 13/16"	3"	6312K34	15.03	6312K74	8.77

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Solid Stream Spray Nozzles

The precise, concentrated, high-velocity spray pattern of these nozzles reaches longer distances than our other spray patterns. Use them to handle tough cleaning and paper trimming applications. Spray angle is 0°. Maximum pressure is 100 psi. Maximum temperature is 200° F. Connection is NPT male.

Type 303 stainless steel nozzles offer better corrosion, abrasion, and chemical resistance than brass.

Solid Stream

Pipe Size	Flow Rate, gpm 10 psi	40 psi	100 psi	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg.	Brass	Each ♦	Stainless Steel	Each ♦
1/4"	0.2	0.5	0.78	0.05"	9/16"	7/8"	7611T41	$18.29	7611T51	$20.90
1/4"	0.4	0.9	1.54	0.07"	9/16"	7/8"	7611T42	18.29	7611T52	20.90
1/4"	0.7	1.5	2.45	0.09"	9/16"	7/8"	7611T43	18.29	7611T53	20.90
1/4"	0.9	1.9	3.09	0.10"	9/16"	7/8"	7611T44	18.29	7611T54	20.90
1/4"	1.5	3.1	4.90	0.13"	9/16"	7/8"	7611T45	18.29	7611T55	20.90
1/4"	2.4	4.9	7.85	0.16"	9/16"	7/8"	7611T46	18.29	7611T56	20.90

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Swivel Fittings for Spray Nozzles

Want your spray nozzle to swivel 360° and tilt on a 45° range? Simply attach it to one of these swivel fittings. All fittings have an NPT female outlet for connecting your nozzle and an NPT male inlet for attaching to your piping system. Both the inlet and outlet are the same size. Maximum pressure is 300 psi.

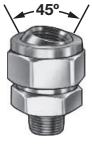

Brass nozzles have a maximum temperature of 800° F.

Type 303 stainless steel nozzles have a maximum temperature of 1400° F.

Pipe Size	O'all Wd. (Hex Size)	O'all Lg.	Brass	Each ♦	Stainless Steel	Each ♦
1/8"	15/16"	1 3/8"	34615K71	$13.89	34615K75	$32.90
1/4"	1 1/8"	1 5/8"	34615K72	18.96	34615K76	39.87
3/8"	1 3/8"	1 13/16"	34615K73	19.82	34615K77	41.30
1/2"	1 11/16"	2 3/16"	34615K74	35.01	34615K78	68.00

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Quick-Mount Fittings for Spray Nozzles

No need for threaded pipe connections—just drill a 9/32" hole in your pipe, connect one of these fittings, and then thread your nozzle into the fitting. Made of Type 303 stainless steel with zinc-plated steel clamps and bolts. Also has a Buna-N gasket for a leakproof seal. Maximum pressure is 250 psi. Maximum temperature is 180° F.

Fits Pipe Size	O'all Lg.	1/8" NPT Female Outlet Connection Size	Each 1-9	10-Up	1/4" NPT Female Outlet Connection Size	Each 1-9	10-Up
1/2"	2 1/4"	3351K531	$25.56	$22.97	3351K561	$25.56	$22.97
3/4"	2 1/4"	3351K541	25.56	22.97	3351K571	25.56	22.97
1"	2 1/4"	3351K551	25.57	22.97	3351K581	25.57	22.97

Stainless Steel Spray Manifolds

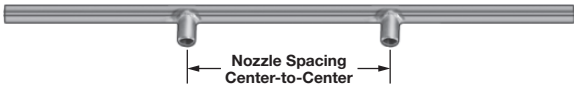

24" Spray Manifold with Two Nozzle Positions

Build your spray system by adding your own nozzles to these nozzle-ready spray manifolds. They accept stainless steel or brass nozzles. Maximum pressure is 2,500 psi. Maximum temperature is 200°F.

Manifolds for 1/8" NPT male nozzles are made of 1/2" OD Type 316 stainless steel tubing. Use 1/2" OD Type 316 stainless steel compression tube fittings to connect an inlet pipe to the manifold tubing and to cap the ends (fittings not included, see 5182K on page 175).

Manifolds for 1/4" NPT male nozzles are made of 5/8" OD Type 316 stainless steel tubing. Use 5/8" OD Type 316 stainless steel compression tube fittings to connect an inlet pipe to the manifold tubing and to cap the ends (fittings not included, see 5182K on page 175).

No. of Nozzle Positions	Nozzle Spacing, ctr.-to-ctr.	Manifolds for 1/8" NPT Male Nozzles	Each	Manifolds for 1/4" NPT Male Nozzles	Each
24" Tubing Length					
2	7.5"	2491K21	$179.59	2491K51	$212.37
4	4.3"	2491K22	267.35	2491K52	312.00
6	3.0"	2491K23	355.10	2491K53	426.53
8	2.3"	2491K24	419.23	2491K54	531.31
48" Tubing Length					
2	15.1"	2491K31	206.12	2491K61	247.92
4	9.1"	2491K32	289.80	2491K62	360.42
6	6.5"	2491K33	379.59	2491K63	472.92
8	5.0"	2491K34	425.93	2491K64	528.30

For information about spray nozzles and pipe size, see page 2082.

Misting and Fogging Nozzles

Providing the smallest atomized spray droplets of all of our spray nozzles, these nozzles are recommended for cooling, moistening, and humidifying applications. They're also a good choice for applying coatings and controlling dust.

Standard and No-Drip Misting Nozzles

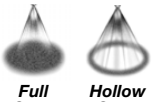

Full Cone — Hollow Cone

These economical misting nozzles have a strainer. Maximum pressure is 500 psi. Maximum temperature is 180° F.

Standard— All nozzles are easy to clean. Strainer has a brass body with stainless steel 120 × 120 mesh. Spray angle is 80° for full cone spray nozzles; 160° for hollow cone spray nozzles. Connection is NPT male.

No-Drip— A built-in check valve closes at 70 psi and eliminates dripping once nozzle is turned off. Spray angle is 70°. Base is brass and includes a 31-40 micron bronze filter. Connection is NPT female.

Standard

Full Cone — No Drip

Pipe Size	Flow Rate, gph 40 psi	100 psi	500 psi	Orifice Dia.	O'all Wd. (Hex Size)	O'all Lg.	Brass Each ♦	Copper-Nickel Each ♦	Stainless Steel Each ♦
Standard Full Cone									
1/8″	0.63	1.00	2.24	0.01″	7/16″	1 1/8″	3178K61 $6.79	3178K81 $11.97	3178K41 $8.55
1/8″	1.26	2.00	4.47	0.01″	7/16″	1 1/8″	3178K62 6.79	3178K82 11.97	3178K42 8.55
1/8″	1.90	3.00	6.71	0.02″	7/16″	1 1/8″	3178K63 6.79	3178K83 11.97	3178K43 8.55
1/8″	2.53	4.00	8.94	0.02″	7/16″	1 1/8″	3178K74 8.06	3178K84 14.88	3178K44 10.30
1/8″	3.16	5.00	11.18	0.02″	7/16″	1 1/8″	3178K75 8.06	3178K85 14.88	3178K45 10.30
1/8″	6.32	10.00	22.36	0.03″	7/16″	1 1/8″	3178K76 8.34	3178K86 15.41	3178K46 10.66
1/8″	9.49	15.00	33.54	0.04″	7/16″	1 1/8″	3178K77 8.34	3178K87 15.41	3178K47 10.66
Standard Hollow Cone									
1/8″	3.16	5.00	11.18	0.03″	7/16″	1 1/8″	3178K64 11.84	3178K94 20.79	3178K51 15.58
1/8″	4.43	7.00	15.65	0.04″	7/16″	1 1/8″	3178K65 11.84	3178K95 20.79	3178K52 15.58
1/8″	6.96	11.00	24.60	0.07″	7/16″	1 1/8″	3178K66 11.84	3178K96 20.79	3178K53 15.58
1/8″	9.49	15.00	33.54	0.08″	7/16″	1 1/8″	3178K67 11.84	3178K97 20.79	3178K54 15.58
No-Drip Full Cone									
1/8″	—	0.75●	1.33	0.01″	3/4″	2″	— —	32215K21 22.64	32215K11 14.54
1/4″	—	0.75●	1.33	0.01″	3/4″	2″	— —	32215K22 22.64	32215K12 14.54

♦ Prices are 10% lower when you buy in quantities of 10 or more. ● Minimum of 160 psi is required.

High-Volume Clog-Resistant Misting Nozzles

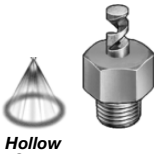

Hollow Cone

With a unique spiral tip, these nozzles produce higher flow rates than our other misting nozzles, making them ideal for washing applications. All nozzles are made of brass and produce a hollow cone spray pattern. Spray angle is 90°. Maximum pressure is 100 psi. Maximum temperature is 450° F. Connection is NPT male.

Flow Rate, gph 10 psi	40 psi	100 psi	Orifice Dia.	O'all Wd. (Hex Size)	1/8″ Pipe Size O'all Lg.	Each ♦	1/4″ Pipe Size O'all Lg.	Each ♦
8.4	16.8	26.4	0.04″	9/16″	1 1/8″	33685K111 $23.79	1 5/16″	33685K112 $23.79
16.2	31.8	50.4	0.05″	9/16″	1 1/8″	33685K311 23.79	1 5/16″	33685K312 23.79
22.8	45.0	71.4	0.06″	9/16″	1 1/8″	33685K411 23.79	1 5/16″	33685K412 23.79
73.2	145.8	230.4	0.12″	9/16″	1 1/8″	33685K611 23.79	1 5/16″	33685K612 23.79

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Fogging Nozzles

Full Cone

You'll get the smallest, most atomized spray droplets with these nozzles. All are made of brass and produce a full cone spray pattern. Spray angle is 90°. Maximum pressure is 3,000 psi. Maximum temperature is 450° F. Connection is NPT male.

Flow Rate, gph 40 psi	100 psi	1,000 psi	3,000 psi	Orifice Dia.	1/8″ Pipe Size O'all Wd. (Hex Size)	O'all Lg.	Each ♦	1/4″ Pipe Size O'all Wd. (Hex Size)	O'all Lg.	Each ♦
1.02	1.62	5.1	8.8	0.01″	7/16″	3/4″	4759T11 $46.86	9/16″	15/16″	4759T21 $46.86
2.22	3.54	11.1	19.2	0.01″	7/16″	3/4″	4759T12 29.31	9/16″	15/16″	4759T22 29.31
4.02	6.60	20.1	34.8	0.02″	7/16″	3/4″	4759T13 25.12	9/16″	15/16″	4759T23 25.12
7.80	12.60	39.0	67.8	0.02″	7/16″	3/4″	4759T14 25.12	9/16″	15/16″	4759T24 25.12
16.80	26.40	84.0	145.8	0.04″	7/16″	3/4″	4759T15 25.12	9/16″	15/16″	4759T25 25.12

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Ultra-Fine Air-Powered Misting and Fogging Nozzles

Hollow Cone

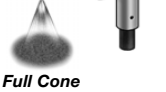

Full Cone

To create an ultra-fine spray, these nozzles mix compressed air from 70 to 100 psi and pressurized liquids up to 20 psi. All nozzles are made of brass and have a knob to control the flow rate. They have a 5-micron air filter and a bronze 40 × 40 mesh liquid strainer. Maximum temperature is 200° F. Both air and liquid connections are 1/4″ NPT female.

Humidifying— Great for mist coating, evaporative cooling, moisturizing, and spray drying.

Fogging— For moisturizing, coating, evaporative cooling, and dust suppression.

Atomizing— For washing and applying lubricants.

Nozzle Style	Spray Pattern	Flow Rate, gph	Spray Angle	Orifice Dia.	O'all Wd.	O'all Lg.		Each
Humidifying	Hollow Cone	6-15	103°–147°	0.03″	25/16″	4 3/4″	3117K27	$283.19
Fogging	Full Cone	6-30	10°– 21°	0.04″	25/16″	4 3/4″	3117K21	283.19
Atomizing	Full Cone	6-30	10°– 21°	0.08″	25/16″	4 3/4″	3117K24	283.19

Quick-Disconnect High-Pressure Spray Nozzles

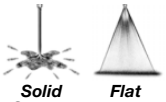

Solid Stream — Flat

To quickly change spray angles, remove the nozzle and snap on a new one. All have a 1/4″ connection and are for use primarily with pressure washers. The 0° spray angle produces a solid stream spray pattern; all other angles produce a flat spray pattern. Not rated for maximum temperature.

Liquid Nozzles— Made of Type 416 stainless steel with color-coded nylon guards for easy identification. Maximum pressure is 4,000 psi. **To Order:** Please specify spray angle: 0° (red), 15° (yellow), 25° (green), or 40° (white).

Soap Nozzle— Made of brass with a black nylon cover. Maximum pressure is 500 psi. **To Order:** Please specify spray angle: 25° or 65°.

Liquid Nozzles

Flow Rate, gpm 300 psi	1,000 psi	2,000 psi	3,000 psi	4,000 psi	Orifice Dia.	O'all Wd.	O'all Lg.		Each 1-9	10-Up
0.8	1.5	2.1	2.6	3.0	0.04″	15/16″	1 3/16″	31905K11	$8.28	$7.40
1.1	2.0	2.8	3.5	4.0	0.05″	15/16″	1 3/16″	31905K13	8.28	7.40
1.4	2.5	3.5	4.3	5.0	0.05″	15/16″	1 3/16″	31905K15	8.28	7.40
1.6	3.0	4.2	5.2	6.0	0.06″	15/16″	1 3/16″	31905K17	8.28	7.40
1.9	3.5	4.9	6.1	7.0	0.06″	15/16″	1 3/16″	31905K26	8.28	7.40
2.2	4.0	5.7	6.9	8.0	0.07″	15/16″	1 3/16″	31905K22	8.28	7.40
2.7	5.0	7.1	8.7	10.0	0.07″	15/16″	1 3/16″	31905K24	8.28	7.40
3.3	6.0	8.5	10.4	12.0	0.08″	15/16″	1 3/16″	31905K29	8.28	7.40

Soap Nozzle

Flow Rate, gpm 5 psi	20 psi	40 psi	100 psi	500 psi	Orifice Dia.	O'all Wd.	O'all Lg.		Each 1-9	10-Up
1.4	2.8	4.0	6.3	14.2	0.15″	15/16″	1 3/16″	31905K51	$5.85	$5.23

For information about spray nozzles and pipe size, see page 2082.

High-Pressure Spray Nozzles

Use primarily with your pressure washers. A 0° spray angle produces a solid stream spray pattern; all other angles produce a flat spray pattern.

Standard High-Pressure Spray Nozzles

Good for cleaning parts as well as for washing vehicles. Made of Type 416 stainless steel. Maximum pressure is 4,000 psi. Maximum temperature is 1250° F. Connection is NPT male.

All nozzles with a 1/8″ pipe size have an overall width (hex size) of 1/2″, except those with a 0° spray angle, which have an overall width (hex size) of 9/16″.

All nozzles with a 1/4″ pipe size have an overall width (hex size) of 9/16″.

To Order: Please specify spray angle: 0°, 15°, 25°, 40°, or 65° (unless noted). Where applicable, please specify pipe size: 1/8″ or 1/4″.

Available Pipe Sizes	Flow Rate, gpm 300 psi	1,000 psi	2,000 psi	3,000 psi	4,000 psi	Orifice Dia.	O'all Lg.		Each 1-9	10-Up
1/8″, 1/4″	0.55	1.0	1.4	1.7	2.0	0.03″	7/8″	3234K1★	$7.80	$6.94
1/8″, 1/4″	0.82	1.5	2.1	2.6	3.0	0.04″	7/8″	3234K13★	7.80	6.94
1/8″, 1/4″	1.10	2.0	2.8	3.5	4.0	0.05″	7/8″	3234K2	7.80	6.94
1/8″, 1/4″	1.40	2.5	3.5	4.3	5.0	0.05″	7/8″	3234K24	7.80	6.94
1/8″, 1/4″	1.60	3.0	4.2	5.2	6.0	0.06″	7/8″	3234K3	7.80	6.94
1/8″, 1/4″	1.90	3.5	4.9	6.1	7.0	0.06″	7/8″	3234K4	7.80	6.94
1/8″, 1/4″	2.20	4.0	5.7	6.9	8.0	0.07″	7/8″	3234K5	7.80	6.94
1/8″, 1/4″	2.50	4.5	6.4	7.8	9.0	0.07″	7/8″	3234K57	7.80	6.94
1/8″, 1/4″	2.70	5.0	7.1	8.7	10.0	0.07″	7/8″	3234K6	7.80	6.94
1/4″	3.30	6.0	8.5	10.4	12.0	0.08″	1 1/16″	3234K7	7.79	6.93
1/4″	4.10	7.5	10.6	13.0	15.0	0.09″	1 1/16″	3234K8	7.79	6.93
1/4″	5.50	10.0	14.1	17.3	20.0	0.11″	1 1/16″	3234K9	7.79	6.93
1/4″	8.20	15.0	21.0	26.0	30.0	0.13″	1 1/16″	3234K96	7.79	6.93
1/4″	11.00	20.0	28.0	35.0	40.0	0.15″	1 1/16″	3234K97★	7.79	6.93
1/4″	13.70	25.0	35.0	43.0	50.0	0.17″	1 1/16″	3234K99★	7.79	6.93

★ A 65° spray angle is not available.

Solid Stream

Flat

Adjustable Spray Angle High-Pressure Spray Nozzles

No need to juggle different spray-angle nozzles. Simply turn the cover to adjust the spray angle from 0° to 80°. All nozzles have a brass body with a Type 416 stainless steel insert and a black nylon cover. Maximum pressure is 3,000 psi. Max. temperature is 300° F. Connection is NPT female.

To Order: Please specify pipe size: 1/8″ or 1/4″.

Flow Rate, gpm 300 psi	1,000 psi	2,000 psi	3,000 psi	Orifice Dia.	Hex Size	O'all Wd.	O'all Lg.		Each 1-9	10-Up
0.55	1.0	1.4	1.7	0.03″	7/8″	1 3/16″	1 7/8″	3480K21	$30.84	$27.72
0.82	1.5	2.1	2.6	0.04″	7/8″	1 3/16″	1 7/8″	3480K47	30.84	27.72
1.10	2.0	2.8	3.5	0.05″	7/8″	1 3/16″	1 7/8″	3480K22	30.84	27.72
1.40	2.5	3.5	4.3	0.05″	7/8″	1 3/16″	1 7/8″	3480K48	30.84	27.72
1.60	3.0	4.2	5.2	0.06″	7/8″	1 3/16″	1 7/8″	3480K23	30.84	27.72
1.90	3.5	4.9	6.1	0.06″	7/8″	1 3/16″	1 7/8″	3480K24	30.84	27.72
2.20	4.0	5.7	6.9	0.07″	7/8″	1 3/16″	1 7/8″	3480K25	30.84	27.72
2.70	5.0	7.1	8.7	0.07″	7/8″	1 3/16″	1 7/8″	3480K26	30.84	27.72

Solid Stream

Flat

Adjustable Flow and Spray Angle High-Pressure Spray Nozzles

Push the nozzle out for higher pressures and pull it back for lower pressures. Turn the cover to adjust the spray angle from 0° to 25° or 75°. Nozzles are brass; covers are black plastic. Overall width is 1 3/4″. Overall length is 4 1/2″. Maximum pressure is 4,050 psi. Maximum temperature is 195° F. Connection is 1/4″ female BSPP (British Standard Parallel Pipe).

Flow Rate, gpm 500 psi	1,000 psi	2,500 psi	4,050 psi	Orifice Dia.		Each
0.88	1.25	1.98	2.5	0.04″	32005K41	$21.55
1.06	1.50	2.37	3.0	0.04″	32005K43	21.55
1.41	2.00	3.16	4.0	0.05″	32005K45	21.55
2.47	3.50	5.53	7.0	0.07″	32005K47	21.55

Solid Stream

Flat

Rotating High-Pressure Solid Stream Spray Nozzles

The superior cleaning ability of a solid stream has been combined with rotating spray action for excellent coverage. Nozzle is brass; cover is black plastic. Overall width is 1 1/2″. Overall length is 3 7/8″. Maximum pressure is 3,500 psi. Maximum temperature is 200° F. Connection is 1/4″ female BSPP (British Standard Parallel Pipe).

Flow Rate, gpm 500 psi	1,000 psi	2,000 psi	3,500 psi	Orifice Dia.		Each
1.52	2.15	3.05	4.02	0.04″	33235K11	$85.30
1.72	2.43	3.44	4.55	0.05″	33235K12	85.30
2.06	2.92	4.12	5.46	0.06″	33235K13	85.30

Solid Stream

Bottle-, Drum-, and Tank-Washing Nozzles

A

B

C

D

E

F

Spray Angle

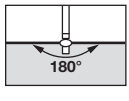

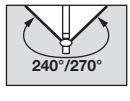

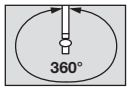

A&B Stationary Nozzles—Multiple spray streams provide cost-effective rinsing and cleaning.

Style A—Use with bottles and drums. Maximum pressure is 400 psi. Maximum temperature is 450° F. Connection is NPT male.

Style B—These ball-shaped nozzles provide a wider spray angle for better coverage. Use with drums. Maximum pressure is 150 psi. Maximum temperature is 400° F. Connection is NPT female.

C-F Rotating Nozzles—Multiple spray streams combine with rotating spray action for superior cleaning power.

Style C—Use with bottles and drums. Maximum pressure is 70 psi. Maximum temperature is 250° F. Connection is NPT male.

Style D—Made of FDA-compliant PVDF for food and pharmaceutical applications. Use with drums. Maximum pressure is 70 psi. Maximum temperature is 190° F. Connection is female BSPP (British Standard Pipe Parallel).

Style E—Maximum corrosion resistance with minimum weight. Made of PTFE. Use with large-diameter tanks. Maximum pressure is 90 psi. Max. temperature is 200° F. Connection is NPT female.

Style F—Use with tanks. Maximum pressure is 80 psi. Maximum temperature is 250° F. Connection is NPT female.

Pipe Size	Max. Tank Dia.	Flow Rate, gpm 20 psi	40 psi	60 psi	400 psi	Spray Angle	Orifice Dia.	O'all Wd.	O'all Lg.		Each
Stationary											
(A) Brass Nozzles for Small-Diameter Openings											
3/8″	2.5 ft.	4.2	6.0	7.3	19.0	180°	0.19″	3/4″	2 15/16″	4728T31	$65.86
3/8″	5 ft.	7.5	10.6	13.0	33.5	180°	0.25″	3/4″	2 15/16″	4728T32	65.86
3/8″	7 ft.	11.7	16.5	20.2	52.2	180°	0.31″	3/4″	2 15/16″	4728T33	65.86
(B) Brass Nozzles											
1/2″	5-10 ft.	4.0	5.6	6.8	—	240°	0.03″	1 5/16″	1 13/16″	32225K11	69.09
1/2″	5-10 ft.	12.1	17.2	21.1	—	240°	0.06″	1 5/16″	1 13/16″	32225K21	69.09
(B) Type 303 Stainless Steel Nozzles											
1/2″	5-10 ft.	4.0	5.6	6.8	—	240°	0.03″	1 5/16″	1 13/16″	32225K31	103.61
1/2″	5-10 ft.	12.1	17.2	21.1	—	240°	0.06″	1 5/16″	1 13/16″	32225K41	103.61
Rotating											
(C) Type 316 Stainless Steel Nozzle for Small-Diameter Openings											
3/8″	3-5 ft.	4.6	6.5	8.0	—	360°	0.03″	13/16″	2″	7064T1	177.34
(D) Plastic Drum-Washing Nozzle											
1/2″	3-5 ft.	4.5	6.3	7.8	—	360°	0.03″	1 3/16″	3″	71445T84	49.62
(E) Plastic Tank-Washing Nozzles											
3/4″	18 ft.	32.0	45.0	55.0	—	180°	0.03″	2″	3″	3377K52	225.23
3/4″	18 ft.	32.0	45.0	55.0	—	360°	0.18″	2″	3″	3377K72	232.45
1″	18 ft.	49.0	70.0	85.0	—	180°	0.28″	3″	4″	3377K54	323.02
1″	18 ft.	49.0	70.0	85.0	—	360°	0.21″	3″	4″	3377K74	340.64
(F) Type 316 Stainless Steel Tank-Washing Nozzles											
3/4″	15 ft.	11.0	15.0	19.0	—	270°	0.14″	2 1/4″	4 1/16″	3180K3	242.03
3/4″	15 ft.	32.0	45.0	55.0	—	360°	0.28″	2 1/4″	4 1/16″	3180K2	255.12

Floor Sweeper

Sweep dust and dirt from your facility with this push-type floor sweeper. Rotary side brush sweeps dirt and dust from walls and corners into the path of the wide main brush. (Sweeping width is 26″.) Main brush then deposits the dirt into the sweeper's 9-gal. plastic hopper.

Base is 15⅜″ Ht. × 31″ Wd. × 40½″ Dp. Frame is steel and brushes are nylon. Sweeper includes two side wheels, one center swivel caster, and height-adjustment knobs. Handle is steel, 36″ long, and folds for easy storage.

7425T15 ..... $628.78

Washer and Dryer

Washer

Dryer

Washer—This top-loading washer has eight cycle selections and a two-speed motor. The tub is porcelain for rust and corrosion resistance. Self-leveling rear legs and a drain are included. Cabinet is galvanized steel with a white finish. Cord is 6 feet long with a three-prong plug. UL listed and CSA certified.

Electric Dryer—This front-loading dryer has three cycle selections (high, medium, and low heat), an overload protector, and a steel drum. Cabinet is steel with a white finish. Cord is 4 feet long with a three-prong plug. UL listed.

Cap., cu. ft.	O'all Size, Ht. × Wd. × Dp.	Motor, hp	VAC@ 60 Hz	Amps		
Washer						
3.2	43″ × 27″ × 25½″	½	120	9.8	**2407K34**	$646.75
Electric Dryer						
7.0	42⅞″ × 29″ × 27¾″	⅓	240/208	27.4	**2407K43**	467.50

Catch Basin Cleaner

Remove sludge and debris from your basins and sewers. Made of 18-ga. steel, cleaner has holes on all sides to drain liquid. It also has a ¾″ NPT female connection for attaching an iron pipe handle (not included).

Cleaner—6″ Ht. × 6″ Wd. × 8⅜″ Dp. **2585K3** $24.80

Tree- and Lumber-Marking Spray Paint

Solvent-based aerosol paint provides bright visual identification at a distance, yet will not soak into wood. One can covers 56 sq. ft. at 1 mil thick. Application temp. is 30° to 100° F. Furnished in a 12-oz. net wt. can. **To Order:** Please specify color: nonfluorescent light blue, orange, or yellow; fluorescent pink or red.

		Each Partial Pkg.	Each Full Pkg.
Paint (12/Pkg.)	**58495T71**	$4.45	$3.97

Ground Probing Rods

Before you dig, use these rods to locate sewer and water mains, drain tile, and other underground installations.

Steel rods have a ⅜″ diameter shaft with replaceable ½″ pointed stainless steel tip. Handles are 10½″ long and have vinyl ribs. *3-ft. extension* includes a coupling nut and threads directly onto the steel rod.

Fiberglass rods are excellent for areas where electrical components are buried. They have a ⅝″ diameter shaft with a nonreplaceable 1⅝″ pointed steel tip. Handles are 13¼″ long and have polyethylene end caps.

	Steel		***Fiberglass***	
4-ft. Rod	**1070T11**	$33.19	**1070T21**	$31.79
5-ft. Rod	**1070T12**	36.89	**1070T22**	33.20
3-ft. Extension	**1070T18**	23.12	———	——
Repl. Tip	**1070T15**	6.22	———	——

Metal Detectors

Compact

This hand-held detector finds metallic objects through most nonmetallic construction materials (including concrete) up to 6″ deep. An LCD display and audible signal pinpoint both the location and the depth of your target. Made of water-resistant polystyrene, detector is only 9″ Lg. × 4″ Wd. × 2″ Ht. Uses one 9V battery (sold separately).

Detector	**1379T62**	$156.39
9V Battery	**71455K56**	2.75

Deep Reach

Speaker sound and needle movement alert you when buried ferrous and nonferrous metal objects are present in soil, asphalt, and concrete. Detector has a submersible, 8″ dia., ABS plastic search coil that resists false readings from wet foliage, wet pavement, and mineralized soil. It can locate a manhole cover buried approximately 3 feet deep. Handle adjusts from 38″ to 50″ long. Battery check system and two 9-volt batteries are included.

Stereo headphones screen noisy distractions.

Hard-shell carrying case provides protection during storage and transport.

Detector	**1166T1**	$629.23
Stereo Headphones	**1166T2**	83.64
Hard-Shell Carrying Case	**1166T4**	156.92

Magnetic Stud Finders

Economy Magnetic Finder

Standard Electronic Finder

Locate studs before starting your project. For use on most surfaces including drywall, plywood, paneling, and concrete.

Economy Magnetic Finder—Emits a click when metal fasteners in studs are sensed. No batteries required.

Electronic Finders—Measure changes in wall density to locate studs. An audible signal sounds when a stud is located. Both use one 9V battery (sold separately).

Standard model has four LEDs that also signal stud location. *Multipurpose model* has an LCD scanner that also locates metal pipes, conduit, rebar, and unshielded "hot" wires. It can also locate ½″ dia. rebar in concrete up to 3″ deep.

	Max. Wall Depth Scanned	O'all Size, Ht. × Wd. × Dp.		
Economy Magnetic	½″	3½″ × 2½″ × 1¼″	**1009T11**	$4.83
Standard Electronic	¾″	5 9/16″ × 2 5/16″ × 1 3/16″	**8524T11**	13.44
Multipurpose Electronic	1½″	6⅜″ × 3 1/16″ × 1 5/16″	**8524T13**	43.55
9V Battery for Electronic Models			**71455K56**	2.75

Underground Cable and Pipe Warning Tape

To prevent damage, bury this tape above piping and cable to warn excavators. The tape combines a continuous CAUTION message with one of the messages below.

Polyethylene tape is highly visible. ***Aluminum*** tape can be located using nonferrous metal detectors.

Message	Tape Color	***POLYETHYLENE, 6″ WD. × .003″ THICK.*** 300-ft. Roll		1,000-ft. Roll		Tape Color	***ALUMINUM, 2″ WD. × .005″ THICK.*** 250-ft. Roll		1,000-ft. Roll	
Electrical Line Buried Below	Red	**8288T31**	$14.66	**8288T14**	$37.20	Red	**60005T35**	$9.88	**60005T13**	$28.41
Gas Line Buried Below	Yellow	**8288T27**	14.66	**8288T12**	37.20	Yellow	**60005T29**	9.88	**60005T11**	28.41
Water Line Buried Below	Yellow	**8288T37**	14.66	**8288T19**	37.20	Blue	**60005T31**	9.88	**60005T12**	28.41
Telephone Line Buried Below	Yellow	**8288T34**	14.66	**8288T15**	37.20	Orange	**60005T37**	9.88	**60005T14**	28.41
Buried Sewer Line Below	Yellow	**8288T24**	14.66	**8288T11**	37.20	Green	**60005T39**	9.88	**60005T15**	28.41

Scraping Mats

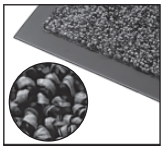

Polypropylene Loop

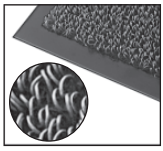

Vinyl Loop

Small plastic loops create an excellent scraping surface and keep dirt and mud away from your shoes. Mats have black edging on all four sides and are easy to clean. For indoor and outdoor use.

Polypropylene Loop Mats— Polypropylene loops provide a better scraping surface than vinyl loops. Backing is vinyl. Color is dark gray.

Vinyl Loop Mats— Offering better wear resistance than polypropylene loop mats, these rugged mats have vinyl-coated nylon loops. Backing is vinyl. Color is light gray.

Wd. × Lg.	Polypropylene Loop Thick.			Vinyl Loop Thick.		
24″ × 36″	5/16″	6832T292	$15.46	3/8″	6809T511	$20.78
36″ × 48″	5/16″	6832T213	30.94	3/8″	6809T521	41.55
36″ × 60″	5/16″	6832T223	38.67	3/8″	6809T15	51.94
36″ × 72″	5/16″	6832T233	46.40	3/8″	6809T531	62.33
36″ × 96″	5/16″	6832T295	61.87	3/8″	6809T611	83.10
36″ × 120″	5/16″	6832T298	77.33	3/8″	6809T621	103.88
48″ × 72″	5/16″	6832T243	61.87	3/8″	6809T25	83.10
48″ × 96″	5/16″	6832T253	82.49	3/8″	6809T631	110.85

Ultra-Scraping Steel Mats

Easily scrape off stubborn mud, dirt, and snow. These rugged, rust-resistant mats are made of 3/8″ high, flat galvanized steel strips that are crimped with steel rods for durability. Mats have a 1″ × 1″ mesh pattern and roll up for easy floor cleaning. For indoor and outdoor use.

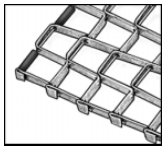

Wd. × Lg.	Thick.			Wd. × Lg.	Thick.		
18″ × 30″	3/8″	6875T12	$50.89	36″ × 48″	3/8″	6875T22	$123.00
22″ × 36″	3/8″	6875T13	74.64	36″ × 60″	3/8″	6875T17	153.75
24″ × 42″	3/8″	6875T14	95.00	36″ × 72″	3/8″	6875T18	184.50
24″ × 96″	3/8″	6875T31	217.14	48″ × 72″	3/8″	6875T33	246.00
30″ × 48″	3/8″	6875T15	117.14	48″ × 96″	3/8″	6875T34	323.40

Shoe and Boot Brush/Scrapers

Remove tough material from your shoes and boots. This combination brush/scraper has two brushes with stiff polypropylene bristles that form a V-shaped cleaning surface.

For stubborn material, simply flip up the brushes to reveal a steel scraper bar. Frame is chrome-plated steel with four 11/32″ dia. holes for floor mounting (fasteners not included). Overall size is 16 1/2″ Lg. × 14 3/4″ Wd. × 7″ Ht.

Flipped Down

Flipped Up

Brush	6255T14	$54.91
Repl. Brush (two required)	6255T15	13.54

High-Traffic Scraping Mats

These durable mats withstand heavy indoor and outdoor use.

Rubber Mats— Elevated edges on all four sides hold dirt and moisture away from shoes and keep floors clean. The edges are tapered to prevent tripping. Mats are slip resistant and flexible, even in cold and wet weather. Color is black.

Finger mats have flat-topped rubber bristles to scrape and brush dirt away. *Raised-surface mats* have oblong, molded rubber projections to scrape dirt away.

Nylon Mats— A nylon fiber surface scrapes dirt and moisture from shoes while the rubber backing provides durability. Mats have edging on all four sides. Color is black.

Rubber Finger Mat

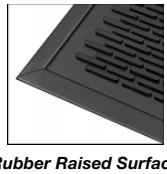

Rubber Raised Surface

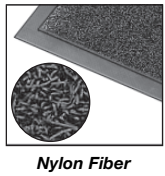

Nylon Fiber

Wd. × Lg.	Thick.		
Rubber Finger Mats			
24″ × 32″	5/8″	6997T1	$30.55
28″ × 46″	5/8″	6997T3	45.66
36″ × 60″	5/8″	6997T6	75.07
36″ × 72″	5/8″	6997T4	90.09
Rubber Raised-Surface Mats			
36″ × 60″	1/4″	7347T11	49.68
36″ × 120″	1/4″	7347T12	99.40
48″ × 72″	1/4″	7347T13	82.58

Wd. × Lg.	Thick.		
Nylon Fiber Mats			
24″ × 35″	1/2″	4798T31	$49.77
35″ × 47″	1/2″	4798T32	93.00
35″ × 59″	1/2″	4798T33	116.27
35″ × 69″	1/2″	4798T34	139.53
35″ × 118″	1/2″	4798T35	232.53
45″ × 69″	1/2″	4798T36	186.03
45″ × 95″	1/2″	4798T37	248.04
45″ × 118″	1/2″	4798T38	310.04

Scraping and Drying Mats

Keep your floors clean and dry. The surface of these mats scrapes your shoes and absorbs moisture. Mats have a vinyl backing and black edging on all four sides. For indoor use.

Ribbed and Multidirection Ribbed Mats— The ribbed polypropylene surface aggressively scrapes shoes and absorbs moisture, while the channels trap dust, moisture, and dirt. Mats are quick drying and easy to clean. **To Order:** Please specify blue, brown, or dark gray.

Ribbed mats have a straight rib design that runs from one end of the mat to the other. *Multidirection ribbed mats* have a zig-zag rib design for scraping in multiple directions.

Dual-Surface Mats— A two-in-one surface cleans and dries shoes. Mats have polypropylene loop for scraping and olefin for quick-drying. **To Order:** Please specify blue or dark gray.

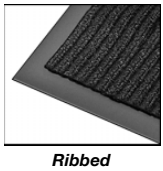

Ribbed

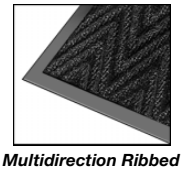

Multidirection Ribbed

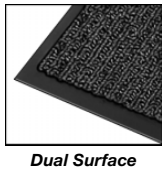

Dual Surface

Standard Size Mats

Wd. × Lg.	Ribbed Thick.		Each	Multidirection Ribbed Thick.		Each	Dual Surface Thick.		Each
24″ × 36″	3/8″	6957T16	$12.53	3/8″	62315T69	$14.40	5/16″	6803T41	$15.47
36″ × 48″	3/8″	6957T1	25.07	3/8″	62315T71	28.80	5/16″	6803T42	30.93
36″ × 60″	3/8″	6957T2	31.33	3/8″	62315T72	36.00	5/16″	6803T43	38.67
36″ × 72″	3/8″	6957T3	37.60	3/8″	62315T73	43.20	5/16″	6803T44	46.40
36″ × 96″	3/8″	6957T17	49.74	3/8″	62315T78	57.60	5/16″	6803T37	61.87
36″ × 120″	3/8″	6957T18	62.67	3/8″	62315T79	72.00	5/16″	6803T38	77.33
48″ × 72″	3/8″	6957T4	49.74	3/8″	62315T74	57.60	5/16″	6803T45	61.87
48″ × 96″	3/8″	6957T5	66.84	3/8″	62315T75	76.80	5/16″	6803T46	82.49

Custom Length Mats

Wd.	Full Roll	Ribbed Thick.		Per Ft.	Multidirection Ribbed Thick.		Per Ft.	Dual Surface Thick.		Per Ft.
36″	60 ft.	3/8″	6957T26	$7.83	3/8″	62315T46	$9.00	5/16″	6803T66	$9.67
48″	60 ft.	3/8″	6957T27	10.44	3/8″	62315T47	12.00	5/16″	6803T67	12.89
72″	60 ft.	3/8″	6957T28	14.10	3/8″	62315T48	16.20	___	_____	____

High-Traffic Scraping and Drying Mats

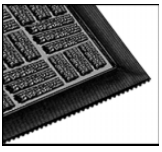

Dry floors are safer floors. These durable, rubber-backed mats hold up to 1½ gallons of water per square yard and have elevated rubber edges on all four sides to contain moisture. Plus they have polypropylene-topped rubber ribs to scrape and provide traction. Grippers on the back prevent movement. For indoor use.

To Order: Please specify blue or dark gray.

Wd.×Lg.	Thick.			Wd.×Lg.	Thick.		
24″×36″	11/32″	6808T11	$33.48	36″×10 ft.	11/32″	6808T17	$167.40
36″×48″	11/32″	6808T13	66.96	48″×72″	11/32″	6808T19	117.12
36″×60″	11/32″	6808T15	83.70	48″×10 ft.	11/32″	6808T21	195.20

Scraping and Drying Coco Mats

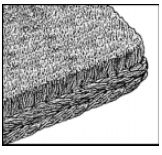

A traditional favorite, these mats are made of coconut husk fibers that clean grit from your shoes and absorb moisture. The fibers retain a bristle-like stiffness and are uniformly cut. There's a border on all sides. Color is natural tan. For indoor and outdoor use.

Wd.×Lg.	Thick.			Wd.×Lg.	Thick.		
14″×24″	1¾″	6883T11	$12.28	26″×42″	1¾″	6883T17	$39.36
16″×27″	1¾″	6883T12	15.91	30″×48″	1¾″	6883T19	49.57
18″×30″	1¾″	6883T13	19.20	36″×48″	1¾″	6883T21	61.97
22″×36″	1¾″	6883T15	28.56	36″×60″	1¾″	6883T22	77.77
24″×39″	1¾″	6883T16	33.94	36″×72″	1¾″	6883T23	93.30

Drying Mats

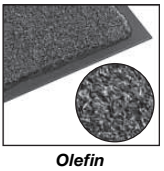

Olefin

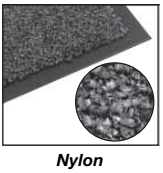

Nylon

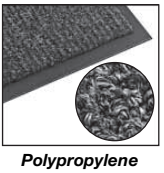

Polypropylene

Topped with carpet, these mats provide excellent moisture absorption while reducing the amount of dirt being tracked into your facility. They work well in conjunction with scraping mats. All have a vinyl backing and black edging on all four sides. For indoor use. **To Order:** Please specify brown, dark gray, or red/black (more red than black).

Quick-Drying Olefin Mats—Compared to nylon, olefin mats dry faster.

Wear-Resistant Nylon Mats—Resist crushing for better wear resistance than olefin mats as well as better water absorption.

High-Performance Polypropylene Mats—Combine the quick drying of olefin with the wear resistance and absorption of nylon.

Sample Packs—Include small swatches of each color available.

		Each
Quick-Drying Olefin	6845T99	$1.25
Wear-Resistant Nylon	6998T99	1.25
High-Performance Polypropylene	9297T99	1.25

Standard Size Mats

Wd.×Lg.	*Quick-Drying Olefin 3/8″ Thick.*	Each	*Wear-Resistant Nylon 1/4″ Thick.*	Each	*High-Performance Polypropylene 3/8″ Thick.*	Each
24″×36″	6845T81	$13.20	6998T21	$21.61	9297T41	$31.99
36″×48″	6845T71	26.40	6998T31	39.69	9297T42	64.00
36″×60″	6845T72	33.00	6998T36	49.63	9297T43	80.00
36″×72″	6845T83	39.60	6998T45	58.37	9297T44	96.00
36″×96″	6845T84	52.80	6998T48	79.36	9297T45	127.70
36″×10 ft.	6845T85	66.00	6998T75	99.19	9297T46	160.00
36″×12 ft.	6845T86	79.20	6998T77	119.03	9297T47	191.56
48″×72″	6845T73	52.80	6998T56	77.81	9297T48	120.00
48″×96″	6845T74	70.40	6998T63	103.68	9297T49	160.00
48″×12 ft.	6845T87	105.60	6998T98	155.52	9297T51	241.96

Custom Length Mats

Wd.	Full Roll	*Quick-Drying Olefin 3/8″ Thick.*	Per Ft.	*Wear-Resistant Nylon 1/4″ Thick.*	Per Ft.	*High-Performance Polypropylene 3/8″ Thick.*	Per Ft.
36″	60 ft.	6845T411	$8.25	6998T511	$12.40	9297T711	$20.03
48″	60 ft.	6845T421	11.00	6998T521	16.20	9297T721	24.95

Three-In-One Entrance Mats

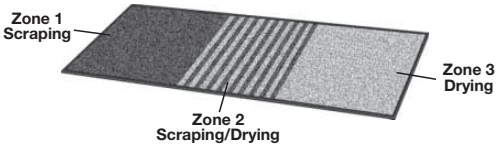

Get three zones of cleaning power in one convenient mat. Zone one is for aggressive scraping, zone two alternates stripes of scraping and drying, and zone three is for drying. Mats are polypropylene with a vinyl backing. For indoor use.

To Order: Please specify black, brown, or dark gray.

Wd.×Lg.	Thick.			Wd.×Lg.	Thick.		
36″×10 ft.	3/8″	6951T1	$144.81	48″×10 ft.	3/8″	6951T3	$193.08
36″×12 ft.	3/8″	6951T2	173.77	48″×12 ft.	3/8″	6951T4	231.69

Edging for Vinyl-Backed Mats

Give your mats a finished look. Edging is vinyl and 1″ wide and can be used with vinyl-backed mats from 1/4″ to 3/8″ thick. Color is black. For indoor and outdoor use.

Complete kit includes a 25-ft. long piece of edging, a 4-oz. brush-top can of adhesive, and an application roller. For additional adhesive, see 7507A on page 3420.

		Per Ft. Partial Roll	Per Ft. Full Roll
Edging (full roll is 150 ft.)	68005T46	$1.15	$0.94
Complete Kit	68005T43	Each	$50.99

Sticky-Surface Mats

Dirt, dust, and other contaminants from shoes and wheels stick to the tacky surface instead of getting tracked into your facility. Ideal for contamination control.

Peel-Off Disposable Sticky-Surface Frameless Mats

Always have a clean mat. When the top sheet gets dirty, pull the numbered corner tab to remove it and expose the next clean sheet. Made up of layers of adhesive-coated polyethylene sheets with an adhesive backing. Plus, mats have a nonleeching, nontoxic, FDA-compliant antimicrobial agent to inhibit the growth of bacteria, mold, and mildew. Apply to any clean, dry surface. For indoor use. **To Order:** Please specify blue, light gray, or white.

Wd.×Lg.	*30-Layer Mats* Thick.		Each★	*60-Layer Mats* Thick.		Each★
18″×36″	0.05″	6896T61	$25.40	0.09″	6896T65	$47.01
18″×45″	0.05″	6896T62	31.72	0.09″	6896T66	59.00
25″×45″	0.05″	6896T63	44.03	0.09″	6896T67	82.06
36″×45″	0.05″	6896T68	64.62	0.09″	6896T71	116.17
36″×60″	0.05″	6896T69	81.85	0.09″	6896T72	132.87

★ Prices are 10% less when you order in quantities of 4.

Peel-Off Disposable Sticky-Surface Framed Mats

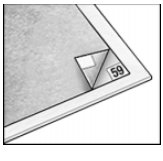

A one-piece, washable polystyrene frame holds one blended polyolefin multilayer mat. Frame has a nonskid backing for use on any clean, dry surface. When the top sheet gets dirty, pull the numbered corner tab to remove it and expose the next clean sheet. Mats have a nonleeching, nontoxic, FDA-compliant antimicrobial agent to inhibit the growth of bacteria, mold, and mildew. For indoor use.

The *25½″ Wd.×31½″ Lg. frame* comes in two colors. **To Order:** Please specify white frame with white mat or black frame with light gray mat.

The *36″ Wd.×46″ Lg. frame* is black with a light gray mat.

Frame Size, Wd.×Lg.	O'all Thick.	No. of Mat Layers	*Framed Mats*		*Refill Mats*	
25½″×31½″	0.24″	60	34975T3	$94.12	34975T5●	$65.85
36″ ×46″	0.21″	30	34975T6	157.61	34975T7	65.73

● **To Order:** Please specify mat color: white or light gray.

Reusable Sticky-Surface Mats

Never run out of clean mats. When these sticky mats get dirty use the cleaner (sold below) to restore the surface's original dirt- and dust-grabbing characteristics. Made of cut- and scratch-resistant cushioned vinyl, mats are not affected by heat, cold, or humidity. They have an adhesive backing to keep them in place. For indoor use. Color is blue.

Wd.×Lg.	Thick.		
24″×24″	1/8″	6233T24	$76.44
24″×48″	1/8″	6233T25	150.00
Cleaner—1-qt. Container		6233T27	28.33

V-Rib Antislip Traction Mats

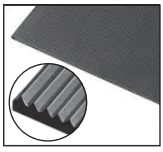

Get slip resistance and dirt scraping with lengthwise-running ribs. Color is black. For indoor use.

Vinyl Mats—Resist grease and chemicals.

Rubber Mats—More durable with greater slip and abrasion resistance than vinyl. Remain flexible at low temperatures.

Standard Size Mats

Wd. × Lg.	VINYL 1/8" Thick	Each	RUBBER 1/8" Thick	Each	RUBBER 1/4" Thick	Each
24" × 48"	6895T711	$18.66	6897T511	$37.94	6973T711	$107.50
24" × 60"	6895T712	23.35	6897T641	47.41		
24" × 72"					6973T728	161.26
24" × 96"	6895T714	37.34	6897T512	75.92	6973T712	214.94
24" × 10 ft.	6895T715	46.66	6897T643	94.79	6973T853	258.79
24" × 12 ft.	6895T716	56.01	6897T513	113.84		
24" × 20 ft.	6895T717	93.37	6897T514	189.74		
24" × 30 ft.	6895T721	140.04	6897T644	284.40		
24" × 50 ft.	6895T724	233.39	6897T515	474.00		
36" × 48"	6895T718	28.00	6897T516	52.74	6973T716	142.67
36" × 60"	6895T719	34.98	6897T645	65.96		
36" × 72"					6973T729	207.65
36" × 96"	6895T722	56.01	6897T517	105.52	6973T717	285.24
36" × 10 ft.	6895T723	70.01	6897T647	131.98	6973T857	346.04
36" × 12 ft.	6895T735	84.03	6897T518	158.28		
36" × 20 ft.	6895T725	140.02	6897T519	264.65		
36" × 30 ft.	6895T732	210.04	6897T648	395.92		
36" × 50 ft.	6895T734	336.02	6897T521	659.50		
48" × 48"	6895T726	34.24	6897T522	72.67		
48" × 96"	6895T729	68.61	6897T523	145.33		
48" × 10 ft.	6895T731	85.54	6897T652	181.93		
48" × 20 ft.	6895T733	171.13	6897T525	363.29		
48" × 50 ft.	6895T728	410.59	6897T526	908.17		
72" × 72"			6897T654	173.28		
72" × 96"			6897T655	231.01		

Custom Length Mats

Wd.	Thick.	Vinyl Full Roll	Vinyl Per Ft.	Rubber Full Roll	Rubber Per Ft.
24"	1/8"	105 ft.	6895T11	150 ft.	6897T11	$10.29
24"	1/4"			75 ft.	6973T12	27.54
36"	1/8"	105 ft.	6895T12	150 ft.	6897T13	14.31
36"	1/4"			75 ft.	6973T13	35.10
48"	1/8"	105 ft.	6895T15	150 ft.	6897T15	19.82
48"	1/4"			75 ft.	6973T14	47.10
72"	1/8"			75 ft.	6897T17	31.44
72"	1/4"			36 ft.	6973T15	75.78

Diamond-Tread Antislip Traction Mats

With Borders

The diamond-tread pattern provides multi-directional slip resistance. Mats are vinyl to resist grease and chemicals. For indoor use.

To Order: Please specify black or light gray.

Mats with borders have yellow borders on the two length edges to define safe traffic areas.

Standard Size Mats

Wd. × Lg.	Thick.	Without Borders	Each	With Borders	Each
24" × 48"	5/32"	6815T23	$36.54	6815T33	$44.44
24" × 96"	5/32"	6815T24	73.04	6815T34	88.97
24" × 12 ft.	5/32"	6815T25	104.52	6815T35	133.45
24" × 20 ft.	5/32"	6815T26	174.18	6815T36	218.75
24" × 50 ft.	5/32"	6815T27	417.88	6815T37	524.87
36" × 48"	5/32"	6815T65	55.36	6815T61	68.49
36" × 96"	5/32"	6815T66	110.72	6815T62	136.94
36" × 10 ft.	5/32"	6815T41	133.06	6815T42	168.74
36" × 12 ft.	5/32"	6815T67	166.08	6815T63	197.49
36" × 20 ft.	5/32"	6815T68	264.39	6815T64	312.31
48" × 48"	5/32"	6815T85	73.04	6815T81	88.85
48" × 96"	5/32"	6815T86	146.06	6815T82	177.95
48" × 10 ft.	5/32"	6815T43	177.15	6815T44	222.32
48" × 12 ft.	5/32"	6815T87	209.00	6815T83	266.95
48" × 20 ft.	5/32"	6815T88	334.30	6815T84	419.87

Custom Length Mats

Wd.	Thick.	Full Roll	Without Borders	Per Ft.	With Borders	Per Ft.
24"	5/32"	75 ft.	6815T8	$10.89	6815T9	$13.68
36"	5/32"	75 ft.	6815T11	16.57	6815T14	20.32
48"	5/32"	75 ft.	6815T12	21.77	6815T15	27.14

Round- and Flat-Rib Antislip Traction Mats

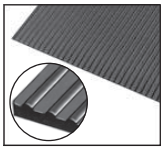

Vinyl Round Rib

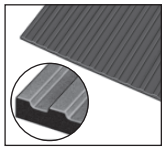

Rubber Flat Rib

Round- and flat-rib mats are easier to clean than V-rib mats, yet still give you sure footing while scraping dirt off your shoes. Ribs run lengthwise. For indoor and outdoor use. Color is black.

Vinyl Round-Rib Mats—Resist grease and chemicals.

Rubber Flat-Rib Mats—More durable with greater slip and abrasion resistance than the vinyl mats. They absorb shock, resist impact, and remain flexible at low temperatures.

Standard Size Mats

Wd. × Lg.	Thick.	Vinyl Round Rib	Each	Rubber Flat Rib	Each
24" × 48"	1/8"	6252T611	$18.66	6972T61	$25.46
24" × 72"	1/8"	6252T631	28.00	6972T51	38.21
24" × 96"	1/8"	6252T641	37.34	6972T62	51.00
24" × 10 ft.	1/8"	6252T651	46.66	6972T52	63.71
24" × 20 ft.	1/8"	6252T671	93.37	6972T64	127.46
36" × 48"	1/8"	6252T681	28.00	6972T65	32.63
36" × 72"	1/8"	6252T711	42.02	6972T53	49.10
36" × 96"	1/8"	6252T721	56.01	6972T66	65.27
36" × 10 ft.	1/8"	6252T731	70.01	6972T54	81.59
36" × 20 ft.	1/8"	6252T751	139.82	6972T68	163.25

Custom Length Mats

Wd.	Thick.	Vinyl Round Rib Full Roll	Vinyl Round Rib Per Ft.	Rubber Flat Rib Full Roll	Rubber Flat Rib Per Ft.
24"	1/8"	105 ft.	6252T15	$5.85	120 ft.	6972T3	$7.96
36"	1/8"	105 ft.	6252T16	8.74	120 ft.	6972T1	10.19
48"	1/8"	105 ft.	6252T22	11.61			

High-Traffic Traction Mats

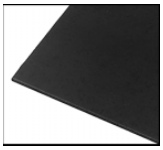

Smooth

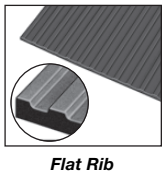

Flat Rib

Nylon reinforcement gives these rubber mats exceptional strength and durability. Plus, they remain flexible at low temperatures. For indoor use. Color is black.

Smooth Mats—Resist damage from spikes, cleats, and even fork-lift traffic. They're easier to clean than flat-rib mats. Use where high traction is not essential.

Flat-Rib Mats—Get abrasion and slip resistance. Mats resist punctures and impact and absorb shock. Ribs run lengthwise.

Standard Size Mats

Wd. × Lg.	Smooth Thick.	Smooth Each	Flat Rib Thick.	Flat Rib Each
24" × 48"	1/8"	6821T711	$27.72	1/4"	6974T71	$49.82
24" × 72"	1/8"	6821T712	41.64	1/4"	6974T68	74.70
24" × 96"	1/8"	6821T713	55.50	1/4"	6974T72	99.57
24" × 10 ft.	1/8"	6821T714	69.38	1/4"	6974T69	124.55
36" × 48"	1/4"	6821T811	77.35	1/4"	6974T75	65.06
36" × 72"	1/4"	6821T812	117.62	1/4"	6974T81	97.60
36" × 96"	1/4"	6821T813	145.99	1/4"	6974T76	130.20
36" × 10 ft.	1/4"	6821T814	193.37	1/4"	6974T82	162.65
48" × 48"	3/16"	6821T821	95.62			
48" × 72"	3/16"	6821T822	143.44			
48" × 96"	3/16"	6821T823	191.24			
48" × 10 ft.	3/16"	6821T824	226.44			

Custom Length Mats

Wd.	Thick.	Smooth Full Roll	Smooth Per Ft.	Flat Rib Full Roll	Flat Rib Per Ft.
24"	1/8"	22 ft.	6821T68	$8.63		
24"	1/4"			48 ft.	6974T3	$15.56
36"	1/4"	22 ft.	6821T64	24.10	48 ft.	6974T4	20.88
48"	3/16"	22 ft.	6821T66	29.90		

Textured-Surface Antislip Traction Mats

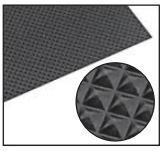

Vinyl Pyramid Top

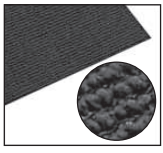

Rubber Pebbled Top

Get multidirectional slip resistance and traction. Color is black.

Vinyl Pyramid-Top Mats— Tiny pyramid-shaped projections scrape dirt off your shoes. Mats resist grease and chemicals. For indoor use.

Rubber Pebbled-Top Mats— More durable with greater abrasion resistance than vinyl mats and remain flexible at low temperatures. For indoor and outdoor use.

Standard Size Mats

	Vinyl Pyramid Top			*Rubber Pebbled Top*		
Wd. × Lg.	Thick.		Each	Thick.		Each
36″ × 48″	1/8″	6962T41	$49.88	3/32″	6968T61	$23.58
36″ × 60″	1/8″	6962T42	62.37	3/32″	6968T62	29.45
36″ × 72″	1/8″	6962T43	74.84	3/32″	6968T63	35.38
36″ × 96″	—	—	—	3/32″	6968T64	47.13
36″ × 10 ft.	1/8″	6962T44	124.72	3/32″	6968T65	58.98
36″ × 12 ft.	—	—	—	3/32″	6968T66	70.76
36″ × 20 ft.	—	—	—	3/32″	6968T67	117.90
48″ × 60″	1/8″	6962T52	82.33	—	—	—
48″ × 72″	1/8″	6962T53	98.75	—	—	—
48″ × 10 ft.	1/8″	6962T54	164.55	—	—	—

Custom Length Mats

Wd.	Thick.	Full Roll		Per Ft.
Vinyl Pyramid Top				
36″	1/8″	105 ft.	6962T11	$11.99
48″	1/8″	105 ft.	6962T13	15.81
Rubber Pebbled Top				
36″	3/32″	108 ft.	6968T11	8.11

Raised-Disc Antislip Traction Mats and Floor Tiles

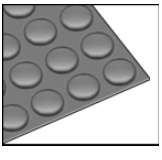

The raised-disc surface provides traction and is easy to clean. For indoor use. **To Order:** Please specify black or light gray.

Vinyl Mats— Resist grease and chemicals.

Rubber Floor Tile— More durable with greater slip and abrasion resistance than vinyl mats. Plus, tile remains flexible at low temperatures. Install with the adhesive sold separately. *Adhesive* is a two-part solvent-free epoxy. Application time, after mixing, is 40 to 50 minutes. Fully dry in 72 hours. One gallon covers approximately 125-150 sq. ft.

Standard Size Vinyl Mats

Wd. × Lg.	Thick.	Disc Dia.		Each
36″ × 48″	3/32″	3/4″	70035T61	$61.44
36″ × 96″	3/32″	3/4″	70035T62	122.30
48″ × 48″	3/32″	3/4″	70035T63	81.43
48″ × 96″	3/32″	3/4″	70035T64	162.85

Custom Length Vinyl Mats

Wd.	Thick.	Disc Dia.	Full Roll		Per Ft.
36″	3/32″	3/4″	50 ft.	70035T81	$19.11
48″	3/32″	3/4″	50 ft.	70035T82	25.46

Rubber Floor Tile

Wd. × Lg.	Thick.	Disc Dia.		Each
24″ × 24″	5/32″	1 1/4″	6292T28	$30.25
Adhesive (1 gallon)			6292T61	92.52

Bath Mats

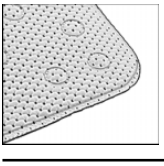

Suction cups keep this antibacterial and mildew-resistant PVC mat in place in wet environments. Color is white.

Wd. × Lg.	Thick.		
21″ × 21″	7/16″	7008T25	$9.40

Clear Mats for Carpets and Floors

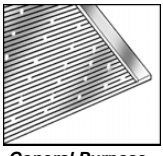

General Purpose for Carpets

Protect your carpets and floors from dirt and wear. Plus, these vinyl mats provide good traction. For indoor use.

Mats for Carpets— A gripper bottom holds them in place. *General purpose mats* have a ribbed pattern. *High-traffic mat* has a textured pattern.

Mat for Floors— Has a ribbed pattern.

Wd.	Thick.	Full Roll		Per Ft.
Mats for Carpets— *General Purpose*				
27″	0.05″	80 ft.	6839T4	$4.45
36″	0.05″	60 ft.	6839T12	9.12
48″	0.05″	60 ft.	6839T13	11.79
Mat for Carpets— *High Traffic*				
48″	0.12″	50 ft.	6839T55	19.22
Mat for Floors				
27″	0.04″	100 ft.	62405T171	3.03

Temporary Carpet and Floor Protectors

Film with Optional Applicator

Cover your carpets and floors during painting and remodeling work. Protectors withstand high traffic. For indoor use.

Adhesive-Backed Polyethylene Film

Made of tear-resistant polyethylene film, these protectors have a pressure-sensitive adhesive backing. The adhesive keeps the protectors in place, but does not permanently bond to the floor. You can leave them in place for up to 30 days without harming floors or carpets. *Optional applicators* (sold separately below) reduce installation time; applicators only work with 200-ft. and 500-ft. long protectors.

Protectors for Carpets— Not for use on wool or other natural fiber carpets. Color is clear.

Protectors for Floors— Great for linoleum and ceramic tile. Not for use on hardwood floors. Color is a green tint.

	For Carpets			*For Floors*		
Wd. × Lg.	Thick.		Roll	Thick.		Roll
21″ × 35 ft.	2.5 mils	70005T61	$11.54	3 mils	70005T57	$11.58
24″ × 15 ft.	2.5 mils	70005T54	8.42	3 mils	70005T43	8.42
24″ × 200 ft.	2.5 mils	70005T62	52.02	3 mils	70005T65	50.50
30″ × 200 ft.	2.5 mils	70005T24	84.88	3 mils	70005T29	84.88
36″ × 200 ft.	2.5 mils	70005T47	94.35	3 mils	70005T68	91.58
36″ × 500 ft.	2.5 mils	70005T48	195.04	3 mils	70005T66	189.35
48″ × 200 ft.	2.5 mils	70005T32	151.48	3 mils	70005T34	151.48
48″ × 500 ft.	2.5 mils	70005T64	260.04	3 mils	70005T67	252.48

Applicator for 24″, 30″, and 36″ wide Rolls	70005T73	$156.14
Applicator for 36″ and 48″ wide Rolls	70005T74	243.86

Paper Floor Protector

Similar to heavy kraft paper, this temporary floor protector is made of recycled paper and offers moisture resistance. Keep in place with masking tape. For use on most floors. Color is tan. Size is 35″ Wd. × 166 ft. Lg. × 8 mils Thick.

2848T12 ..... **Roll** $13.11

Nonskid Matting Tape and Underlay

Bunching, creeping, and sliding mats and rugs can be as dangerous as they are annoying. Keep them in place with this tape or underlay. Both can be cut to size with scissors. For indoor use.

Tape

Mesh-lined tape has an odorless, nontoxic, pressure-sensitive adhesive on both sides. For carpets and floors. Color is off-white.

Wd. × Lg.		Roll
2 1/2″ × 25 ft.	76375A76	$11.25
6″ × 25 ft.	76375A61	19.38

Underlay

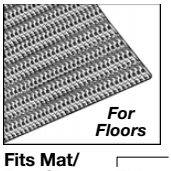

For Floors

Underlay for Carpet— Made of an adhesive-coated polyester fabric, this underlay is reusable. Color is off-white.

Underlay for Floors— Made of PVC-coated woven polyester and treated to inhibit odor, bacteria, mold, and mildew. It contains no adhesives. Color is tan.

Fits Mat/ Rug Size	*For Carpet*			*For Floors*		
	Thick.		Each	Thick.		Each
24″ × 48″	0.06″	69275T54	$6.37	0.09″	69275T24	$5.37
48″ × 72″	0.06″	69275T55	17.60	0.09″	69275T25	13.43

Antifatigue Sponge Mats

Thousands of tiny air bubbles embedded inside the mats create a soft, comfortable cushion. Mats are vinyl and resist grease, oil, and chemicals, but should be cleaned immediately after spills. They have tapered edges on all four sides, except 1/4″ thick custom length mats, which have tapered edges on the two length sides. Color is black. For indoor use.

Smooth Mats—Have an easy-to-clean surface. Use where high traction is not essential.

Ribbed Mats—For scraping and moderate traction.

Textured Mats—Have good traction. **To Order:** Please specify with or without yellow borders on the two length sides.

Diamond-Tread Mats—Have a multidirectional surface pattern for the best traction. **To Order:** Please specify with or without yellow borders on the two length sides.

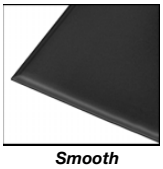
Smooth

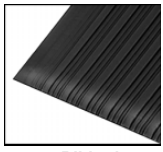
Ribbed

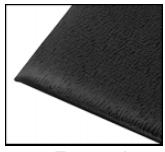
Textured without Borders

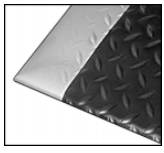
Diamond Tread with Borders

Standard Size Mats

Wd. × Lg.	SMOOTH 1/4″ Thick	Each	SMOOTH 3/8″ Thick	Each	RIBBED 1/4″ Thick	Each	RIBBED 3/8″ Thick	Each	TEXTURED 3/8″ Thick	Each	DIAMOND TREAD 1/2″ Thick	Each
24″ × 36″	6915T441	$11.03	6915T551	$14.07	6240T27	$11.85	6240T71	$18.45	77935T21	$17.95	74465T11	$13.32
24″ × 72″	6915T121	22.08	6915T131	28.51	6240T161	24.67	6240T171	38.12	77935T22	36.60	74465T12	26.64
24″ × 96″	6915T141	29.44	6915T151	38.02	6240T212	32.84	6240T231	50.75	77935T23	48.80	74465T19	34.22
24″ × 20 ft.	6915T251	73.60	6915T761	93.80	6240T261	82.15	6240T491	126.86	77935T24	120.61	74465T17	80.56
24″ × 30 ft.	6915T261	110.40	6915T771	142.50	6240T281	123.23	6240T511	182.74	77935T25	180.92	74465T34	120.84
27″ × 36″	6915T421	12.28	6915T531	14.88	6240T351	13.20	6240T521	21.67	—	—	—	—
27″ × 60″	6915T431	20.49	6915T541	23.86	6240T361	22.00	6240T29	36.11	—	—	—	—
36″ × 48″	6915T211	22.58	6915T212	27.10	6240T68	23.70	6240T471	34.97	77935T28	35.12	74465T14	26.64
36″ × 60″	6915T451	28.20	6915T561	33.90	6240T69	29.65	6240T73	43.70	77935T29	43.93	74465T15	33.30
36″ × 72″	6915T161	33.88	6915T171	40.66	6240T241	36.97	6240T251	52.42	77935T34	52.68	74465T16	39.96
36″ × 96″	6915T271	45.12	6915T781	54.24	6240T371	49.29	6240T531	69.96	77935T61	73.05	74465T23	53.28
36″ × 12 ft.	6915T461	67.68	6915T571	81.36	6240T381	73.95	6240T541	105.06	77935T62	105.44	74465T18	79.92
36″ × 20 ft.	6915T281	112.80	6915T791	135.60	6240T391	123.32	6240T551	174.67	77935T63	175.60	74465T29	120.84
36″ × 30 ft.	6915T291	167.84	6915T811	203.40	6240T411	174.74	6240T561	262.08	77935T64	261.82	74465T39	181.27
48″ × 96″	6915T691	58.08	6915T821	69.82	6240T431	68.23	6240T581	91.33	77935T66	80.93	74465T35	64.94
48″ × 12 ft.	6915T711	77.96	6915T831	104.73	6240T441	102.55	6240T591	136.95	77935T67	121.44	74465T36	96.87
48″ × 20 ft.	6915T721	145.25	6915T841	174.55	6240T451	170.59	6240T611	229.04	77935T68	202.40	74465T37	154.18
48″ × 30 ft.	6915T731	217.80	6915T851	261.90	6240T461	255.56	6240T671	342.58	77935T69	298.74	74465T38	231.27

Custom Length Mats

Wd.	Full Roll	SMOOTH 1/4″ Thick	Per Ft.	SMOOTH 3/8″ Thick	Per Ft.	RIBBED 1/4″ Thick	Per Ft.	RIBBED 3/8″ Thick	Per Ft.	TEXTURED 3/8″ Thick	Per Ft.	DIAMOND TREAD 1/2″ Thick	Per Ft.
24″	60 ft.	6915T471	$4.59	6915T861	$5.86	7018T12	$4.93	7018T511	$7.60	77935T811	$7.60	74465T911	$4.86
36″	60 ft.	6915T481	7.04	6915T871	8.47	7018T13	7.41	7018T721	10.49	77935T821	10.97	74465T921	7.30
48″	60 ft.	6915T491	9.04	6915T881	10.88	7018T14	10.25	7018T731	13.72	77935T831	12.63	74465T931	9.21
72″	60 ft.	6915T521	11.55	6915T891	13.88	7018T15	13.00	7018T541	17.44	77935T841	16.59	—	—

Super-Soft Antifatigue Sponge Mats

Thicker than other antifatigue sponge mats for extra cushioning and comfort. Thousands of tiny air bubbles embedded in mats create a soft cushion. Mats are vinyl and resist grease, oil, and chemicals, but should be cleaned immediately after spills. They have tapered edges on all four sides. For indoor use. **To Order:** Please specify black or light gray.

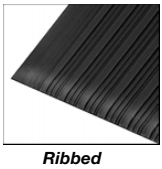
Ribbed

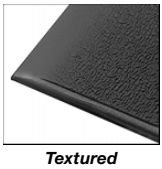
Textured

Ribbed Mats—For traction and scraping.

Textured Mats—For traction.

Standard Size Mats

Wd. × Lg.	Thick.	Ribbed	Each	Textured	Each
24″ × 36″	5/8″	68085T51	$26.25	69265T11	$27.02
24″ × 96″	5/8″	68085T72	64.37	69265T13	69.20
36″ × 60″	5/8″	68085T73	63.90	69265T14	68.38
36″ × 96″	5/8″	68085T74	102.85	69265T15	109.41
36″ × 144″	5/8″	68085T75	154.15	69265T16	164.10

Custom Length Mats

Wd.	Thick.	Full Roll	Ribbed	Per Ft.	Textured	Per Ft.
24″	5/8″	60 ft.	68085T41	$10.50	69265T51	$10.83
36″	5/8″	60 ft.	68085T42	16.02	69265T52	16.32
48″	5/8″	60 ft.	68085T43	19.43	69265T53	19.92

Ultra-Soft Antifatigue Sponge Mats

Our thickest antifatigue sponge mats provide the most comfort. Mats are ribbed vinyl for traction. They resist chemicals, but should be cleaned immediately after spills. All four edges are tapered. Color is light gray. For indoor use.

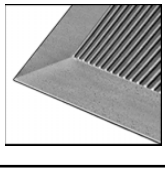

Wd. × Lg.	Thick.		
30″ × 36″	1 1/4″	6914T35	$93.30
36″ × 48″	1 1/4″	6914T36	144.93

Wear-Resistant Coated Antifatigue Sponge Mats

Textured without Borders

Diamond Tread with Borders

Mats have a protective coating for extra wear, abrasion, and chemical resistance while thousands of tiny embedded air bubbles create a soft, comfortable cushion. Mats are vinyl and have tapered edges on all four sides. Color is black. For indoor use. **To Order:** Please specify with or without yellow borders on the two length sides.

Textured Mats—Have good traction.

Diamond-Tread Mats—Have a multidirectional surface pattern for the best traction.

Standard Size Mats

Wd. × Lg.	Textured Thick.	Each	Diamond Tread Thick.	Each
24″ × 36″	3/8″	6262T28	$29.94	1/2″	7512T21	$17.50
24″ × 72″	3/8″	6262T15	59.90	1/2″	7512T22	35.00
24″ × 96″	3/8″	6262T29	79.84	1/2″	7512T51	46.20
36″ × 48″	3/8″	6262T31	69.01	1/2″	7512T24	33.60
36″ × 60″	3/8″	6262T32	86.33	1/2″	7512T25	42.00
36″ × 72″	3/8″	6262T33	103.46	1/2″	7512T26	50.40
36″ × 96″	3/8″	6262T34	138.06	1/2″	7512T52	67.20
36″ × 144″	3/8″	6262T35	207.08	1/2″	7512T28	99.74
48″ × 72″	3/8″	6262T36	138.06	1/2″	7512T53	67.20
48″ × 96″	3/8″	6262T37	183.96	1/2″	7512T54	89.60

Custom Length Mats

Wd.	Full Roll	Textured Thick.	Per Ft.	Diamond Tread Thick.	Per Ft.
24″	60 ft.	3/8″	6262T4	$12.00	1/2″	7512T1	$7.33
36″	60 ft.	3/8″	6262T5	20.52	1/2″	7512T2	10.48
48″	60 ft.	3/8″	6262T6	27.37	1/2″	7512T3	14.00

Wear-Resistant Antifatigue Sponge Mats

Durable and cushioned, mats are made of nitrile rubber, which doesn't absorb liquids so they're ideal in wet environments. They have a textured surface for traction and tapered edges on all four sides. For indoor use.

Standard Mats

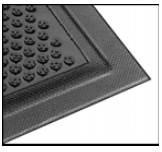

Without Borders

A cushioned sponge is sealed between hard top and bottom layers of nitrile rubber for cushioned comfort and wear resistance. Resist oil, grease, and chemicals. Color is black.

Mats with borders have yellow and black striped borders on the two length sides for safety and visibility.

Wd. × Lg.	Thick.	Without Borders		With Borders	
22¾″ × 34¼″	½″	4875T1	$54.98	4875T4	$60.79
34¼″ × 59″	½″	4875T2	137.46	4875T5	151.94
34¼″ × 116½″	½″	4875T3	274.94	4875T6	303.90

Super-Soft Mats

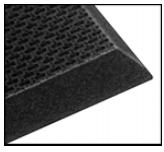

Thicker and softer than the standard mats, these have an antimicrobial additive to inhibit the growth of mold, mildew, and bacteria. They also resist acids, chemicals, and bleach as well as stand up to steam and high-pressure cleaning. **To Order:** Please specify black or light gray.

Wd. × Lg.	Thick.			Wd. × Lg.	Thick.		
20″ × 24″	¾″	7050T1	$42.00	30″ × 36″	¾″	7050T7	$82.00
20″ × 33″	¾″	7050T2	58.00	36″ × 36″	¾″	7050T8	98.40
22″ × 48″	¾″	7050T3	91.50	36″ × 42″	¾″	7050T9	114.80
22″ × 72″	¾″	7050T4	137.25	36″ × 60″	¾″	7050T11	164.00
24″ × 36″	¾″	7050T5	66.00	40″ × 48″	¾″	7050T12	154.50
24″ × 42″	¾″	7050T6	77.00	42″ × 72″	¾″	7050T13	212.00

Ribbed Wear-Resistant Antifatigue Sponge Mats

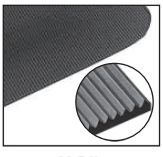

V-Rib

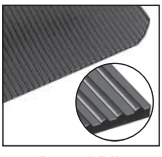

Round Rib

The ribbed top gives you traction and a durable surface for scraping while the sponge backing provides soft cushioning. Made of vinyl, mats resist chemicals. They have tapered edges on all four sides, and the ribs run lengthwise. Color is black. For indoor use.

⅞″ thick mats have more cushioning and comfort.

V-Rib Mats— For aggressive dirt scraping and slip resistance.

Round Rib Mats— Easier to clean than the V-rib mats, but don't provide as much scraping and slip resistance.

Standard Size Mats

Wd. × Lg.	V-Rib	Each	Round Rib	Each
½″ Thick				
24″ × 36″	6984T118	$39.45	6234T43	$39.45
36″ × 48″	6984T119	81.43	6234T44	81.43
36″ × 60″	6984T121	101.78	6234T45	101.78
36″ × 10 ft.	6984T123	203.59	6234T47	203.59
48″ × 96″	6984T124	217.16	6234T48	217.16
48″ × 12 ft.	6984T125	310.88	6234T49	310.88
⅞″ Thick				
24″ × 36″	6787T11	50.45	6787T51	50.45
36″ × 48″	6787T12	101.42	6787T52	101.42
36″ × 60″	6787T13	126.98	6787T53	126.98
36″ × 10 ft.	6787T14	253.56	6787T54	253.56
48″ × 96″	6787T15	283.26	6787T55	283.26
48″ × 12 ft.	6787T16	424.88	6787T56	424.88

Custom Length Mats

Wd.	Full Roll	V-Rib	Per Ft.	Round Rib	Per Ft.
½″ Thick					
24″	75 ft.	6984T41	$15.69	6234T51	$15.69
36″	75 ft.	6984T46	24.34	6234T52	24.34
48″	75 ft.	6984T47	30.93	6234T53	30.93
⅞″ Thick					
24″	75 ft.	6787T81	21.00	6787T91	21.00
36″	75 ft.	6787T82	31.50	6787T92	31.50
48″	75 ft.	6787T83	44.21	6787T93	44.21

Diamond-Tread Wear-Resistant Antifatigue Sponge Mats

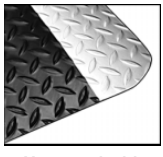

Uncoated with Solid Borders

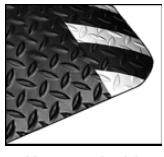

Uncoated with Striped Borders

Grit Coated without Borders

The comfort of an antifatigue sponge mat is combined with a durable top layer of vinyl that protects the sponge from wear. Mats also have a diamond-tread surface pattern for excellent traction. Resist grease, oil, and chemicals. Mats have tapered edges on all four sides. Color is black. For indoor use.

Mats with borders have borders on the two length sides for safety and visibility. **To Order:** Please specify border color: solid yellow or yellow and black striped.

Grit-Coated Mats— An abrasive coating is added to the surface for even better traction and durability.

Standard Size Mats

Wd. × Lg.	UNCOATED 9/16″ Thick	Each	UNCOATED 15/16″ Thick	Each	GRIT COATED 9/16″ Thick	Each
Without Borders						
24″ × 36″	6999T411	$44.77	6912T111	$60.15	6999T11	$63.25
36″ × 60″	6999T421	108.66	6912T121	137.44	6999T12	146.73
36″ × 10 ft.	6999T491	217.27	6912T131	274.86	6999T13	293.48
With Borders						
24″ × 36″	6999T75	53.20	6912T21	65.67	———	———
36″ × 60″	6999T76	128.90	6912T22	151.46	———	———
36″ × 10 ft.	6999T87	257.77	6912T23	302.91	———	———

Custom Length Mats

Wd.	Full Roll	UNCOATED 9/16″ Thick	Per Ft.	UNCOATED 15/16″ Thick	Per Ft.	GRIT COATED 9/16″ Thick	Per Ft.
Without Borders							
24″	75 ft.	6999T511	$17.98	6912T711	$24.21	6999T911	$25.52
36″	75 ft.	6999T521	26.11	6912T721	32.93	6999T921	35.28
48″	75 ft.	6999T531	34.81	6912T731	43.91	6999T931	47.20
60″	75 ft.	6999T541	46.44	6912T741	58.33	6999T941	63.44
72″	75 ft.	6999T551	52.93	6912T751	66.94	6999T951	76.13
With Borders							
24″	75 ft.	6999T611	21.30	6912T811	26.72	———	———
36″	75 ft.	6999T621	30.83	6912T821	36.35	———	———
48″	75 ft.	6999T631	41.60	6912T831	48.47	———	———
60″	75 ft.	6999T641	53.44	6912T841	65.20	———	———
72″	75 ft.	6999T651	61.47	6912T851	69.56	———	———

Welding-Safe Wear-Resistant Antifatigue Sponge Mats

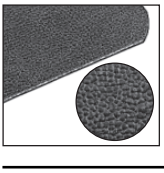

Designed to repel sparks and hot metal shards, mats are perfect in welding applications. Plus, the textured top layer of rubber offers good traction and durability, while the sponge backing cushions your feet. Mats have tapered edges on all four sides. Color is black. For indoor use.

Standard Size Mats

Wd. × Lg.	Thick.		Each
24″ × 36″	9/16″	7906T11	$53.76
36″ × 60″	9/16″	7906T21	131.63

Custom Length Mats

Wd.	Thick.	Full Roll		Per Ft.
36″	9/16″	75 ft.	7906T41	$31.29

Smooth Wear-Resistant Antifatigue Sponge Mats

The wear-resistant vinyl or rubber tops create a durable and easy-to-clean surface while the inner sponge reduces fatigue. Use where high traction is not essential. Mats have tapered edges on all four sides. For indoor use.

***Vinyl Mats*—**Resist grease, oil, and chemicals. **To Order:** Please specify black or dark gray.

***Marbled Rubber and Marbled Vinyl Mats*—**The mat surface has a marbled pattern. *Rubber mats* are more durable and abrasion resistant than vinyl. *Vinyl mats* are thicker for extra cushioning and comfort; and they resist grease, oil, and chemicals. **To Order:** Please specify pattern color. For rubber choose black or light gray. For vinyl choose black, dark gray, or light gray.

***Reinforced-Rubber Mats*—**For exceptional strength and durability, the mat surface is reinforced with nylon. Mats resist damage from spikes, cleats, and blades—they even withstand forklift traffic. Excellent for use in high traffic areas. Color is black.

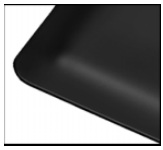
Vinyl

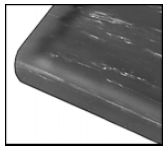
Marbled Rubber and Marbled Vinyl

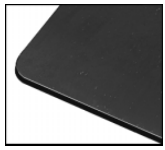
Reinforced Rubber

Standard Size Mats

Wd. × Lg.	Vinyl Thick.		Vinyl Each	Marbled Rubber Thick.		Marbled Rubber Each	Marbled Vinyl Thick.		Marbled Vinyl Each	Reinforced Rubber Thick.		Reinforced Rubber Each
24″ × 36″	1/2″	76945T31	$35.66	1/2″	6965T13	$47.14	7/8″	6316T41	$52.14	3/4″	67985T21	$108.69
24″ × 72″	1/2″	76945T14	71.33	1/2″	6965T34	94.29	7/8″	6316T42	105.00	3/4″	67985T22	217.39
36″ × 48″	1/2″	76945T15	71.33	1/2″	6965T14	94.29	7/8″	6316T43	105.00	3/4″	67985T23	217.42
36″ × 60″	1/2″	76945T32	83.08	1/2″	6965T15	117.86	7/8″	6316T44	131.25	3/4″	67985T41	265.22
36″ × 72″	1/2″	76945T16	99.71	1/2″	6965T17	141.34	7/8″	6316T11	157.50	3/4″	67985T42	299.74
36″ × 10 ft.	1/2″	76945T17	166.19	1/2″	6965T36	235.71	7/8″	6316T45	262.50	3/4″	67985T24	530.37
36″ × 12 ft.	1/2″	76945T33	199.34	1/2″	6965T18	282.68	7/8″	6316T12	315.00	3/4″	67985T25	636.55
48″ × 60″	1/2″	76945T18	132.85	1/2″	6965T37	159.26	7/8″	6316T46	175.00	3/4″	67985T26	309.42
48″ × 72″	1/2″	76945T19	153.19	1/2″	6965T19	190.98	7/8″	6316T13	210.00	3/4″	67985T61	371.32

Custom Length Mats

Wd.	Vinyl Thick.	Vinyl Full Roll Lg.		Vinyl Per Ft.	Marbled Rubber Thick.	Marbled Rubber Full Roll Lg.		Marbled Rubber Per Ft.	Marbled Vinyl Thick.	Marbled Vinyl Full Roll Lg.		Marbled Vinyl Per Ft.	Reinforced Rubber Thick.	Reinforced Rubber Full Roll Lg.		Reinforced Rubber Per Ft.
24″	1/2″	60 ft.	76945T211	$14.29	1/2″	75 ft.	6965T511	$18.23	7/8″	60 ft.	6316T711	$21.67	3/4″	22 ft.	67985T912	$43.41
36″	1/2″	60 ft.	76945T221	19.95	1/2″	75 ft.	6965T521	27.50	7/8″	60 ft.	6316T721	32.75	3/4″	22 ft.	67985T921	63.39
48″	1/2″	60 ft.	76945T231	31.91	1/2″	75 ft.	6965T531	37.18	7/8″	60 ft.	6316T731	43.75	3/4″	22 ft.	67985T931	74.16

Dome-Top Antifatigue Mats

Soft, yet durable rubber domes form a cushioned surface to prevent fatigue. Mats are for indoor use.

Solid-Dome-Top Mats

Both sides of the mats have firm, yet cushioned solid domes for long-lasting comfort and durability. Mat edges are tapered on all four sides, unless noted. Color is black.

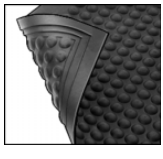

Wd. × Lg.	Thick.		
18″ × 24″	3/8″	7005T1	$22.25
24″ × 36″	3/8″	7005T2	36.46
30″ × 30″	3/8″	7005T21♠	39.27
30″ × 60″	3/8″	7005T3	73.82
30″ × 10 ft.	3/8″	7005T4	154.52
30″ × 20 ft.	3/8″	7005T5	323.05

♠ Tapered edges on three sides.

Hollow-Dome-Top Mats

Hollow domes cushion your feet with air for excellent fatigue relief. Durable and resilient, the domes compress as you step on them and then return to their original position when you step off. All mats have finished edges on all four sides.

Carpeted mats with rubber backing have a polypropylene carpet surface. **To Order:** Please specify black or dark gray.

All-rubber mats have superior grease and oil resistance. Color is black.

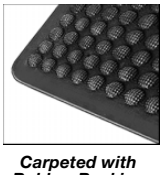
Carpeted with Rubber Backing

Wd. × Lg.	Thick.	Carpeted with Rubber Backing		All Rubber	
22″ × 34 1/4″	7/16″	6640T41	$33.71	6640T43	$33.71
34 1/4″ × 56 1/2″	7/16″	6640T42	84.25	6640T44	84.25

High-Traffic Recycled Rubber Antifatigue Mats

Made of recycled tires bonded with polyurethane for a strong, yet cushioned surface. Mats are also impact resistant. Color is black. For indoor use.

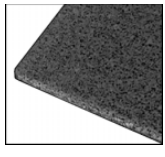

Standard Size Mats

Wd. × Lg.	Thick.		
24″ × 48″	3/8″	62425T61	$46.30
24″ × 72″	3/8″	62425T62	58.16
24″ × 96″	3/8″	62425T63	70.00
24″ × 10 ft.	3/8″	62425T64	81.84
24″ × 12 ft.	3/8″	62425T65	93.70
24″ × 20 ft.	3/8″	62425T66	150.08
36″ × 48″	3/8″	62425T71	59.64
36″ × 72″	3/8″	62425T72	77.42
36″ × 96″	3/8″	62425T73	95.18
36″ × 10 ft.	3/8″	62425T74	112.96
36″ × 12 ft.	3/8″	62425T75	130.72
36″ × 20 ft.	3/8″	62425T76	202.18
48″ × 48″	3/8″	62425T81	70.08
48″ × 72″	3/8″	62425T82	92.50
48″ × 96″	3/8″	62425T83	114.90
48″ × 10 ft.	3/8″	62425T84	137.32
48″ × 12 ft.	3/8″	62425T85	159.72
48″ × 20 ft.	3/8″	62425T86	261.02

Custom Length Mats

Wd.	Thick.	Full Roll		Per Ft.
24″	3/8″	100 ft.	62425T51	$11.14
36″	3/8″	100 ft.	62425T52	14.83
48″	3/8″	100 ft.	62425T53	17.72

Extended-Life Antifatigue Mats

Designed to endure years of continuous use, these polyurethane mats are the ultimate in durability and comfort. Plus, unlike rubber and vinyl, polyurethane mats won't lose their elasticity. They resist chemicals and have tapered edges on all four sides. For indoor use.

***Sponge Mats*—**A cushioning sponge is sealed between top and bottom layers of durable polyurethane. Plus, a textured surface provides slip resistance. Color is black.

***Solid Mats*—**Made from solid polyurethane with firm, yet cushioned domes. Color is dark gray. Rated for use in Class 100 clean rooms.

Wd. × Lg.	Thick.		
Sponge Mats			
24″ × 36″	5/8″	7542T31	$101.09
36″ × 60″	5/8″	7542T32	247.20
Solid Mats			
24″ × 36″	5/8″	68865T11	132.28
24″ × 48″	5/8″	68865T13	176.38
24″ × 72″	5/8″	68865T15	264.57
36″ × 48″	5/8″	68865T19	264.57
36″ × 60″	5/8″	68865T21	330.71
36″ × 96″	5/8″	68865T23	529.13

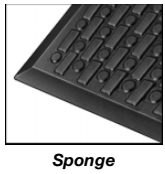
Sponge

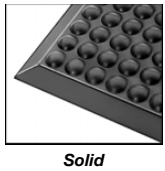
Solid

Textured Antifatigue Mats

Interlocking End

Interlocking Center

Individual

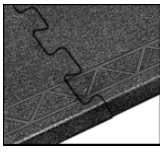

A waffle-shaped backing cushions your feet and absorbs shock while a textured surface provides traction. Color is black. For indoor and outdoor use. *Grease- and chemical-resistant mats* resist oil, grease, chemicals, and acids.

Interlocking Mats— Have integrated connectors to link multiple mats together. Connect two end sections or combine end sections with one or more center sections to create the length you need. All exposed edges are tapered.

Individual Mats— All edges are tapered. *Note:* Not compatible with interlocking mats.

Wd.×Lg.	Thick.	Interlocking End Mats	Interlocking Center Mats	Individual Mats	
Textured Mats					
28″×36″	½″	6892T31	6892T32	6892T36	$33.57
36″×24″	½″	6892T33	6892T34	—	33.57
Grease- and Chemical-Resistant Textured Mats					
28″×36″	½″	6892T41	6892T42	6892T45	40.00
36″×24″	½″	6892T43	6892T44	—	40.00

Interlocking Drainage Floor Tiles

Create a custom floor layout by interlocking tiles in any direction. Arrange them to fit around corners and machinery—just trim to size with a utility knife. Tiles are cushioned vinyl for comfort and have an open-grid design to drain liquids. They resist grease, oil, and chemicals. For indoor and outdoor use. *Optional tapered edging* prevents tripping.

Flexible Tiles

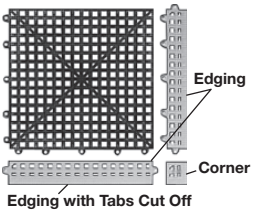

Flexible tiles easily roll up and out of the way for cleaning the floor underneath. Drainage openings are ⅜″×⅜″.

Optional tapered edging has male tabs and female slots for installation along any side of the tile. Cut off tabs on the edging when installing on the male edge of the tile.

To Order: For tiles and edging, please specify black, blue, dark gray, or yellow.

Size	Thick.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Tiles 12″×12″	9/16″	50	6813T1	$5.39	$4.58

	Size		Each
Optional Tapered Edging	12″×2″	6813T2★	$2.89
Optional Tapered Corner	2″×2″	6813T3	1.11

★ Fits both the male and female edges of the tile.

Rigid Tiles

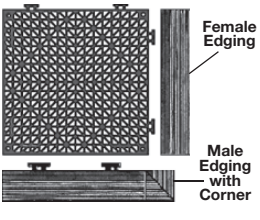

Rigid tile is more durable than flexible tile, withstanding heavy loads and rough use. Tiles have 7/16″×7/16″×9/16″ triangular drainage openings. Color is black. *Grit-coated tile* has an abrasive coating for additional traction.

Tiles have two sides with male tabs and two sides with female slots. *Optional male tapered edging* fits in the female slots. *Optional female tapered edging* fits on the male tabs.

Tiles	Size	Thick.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Uncoated	12″×12″	¾″	36	69025T12	$6.06	$5.15
Grit Coated	12″×12″	¾″	36	69025T32	10.11	8.59

Optional Tapered Edging	Size	Black	Each	Yellow	Each
Male	12″×2½″	69025T16	$4.60	69025T22	$6.28
Male with Corner	14″×2½″	69025T26	6.30	69025T27	8.02
Female	12″×2½″	69025T18	4.60	69025T24	6.28
Female with Corner	14″×2½″	69025T28	6.30	69025T29	8.02

Diamond-Tread Interlocking Antifatigue Mats

Create the mat size you need. Mats have integrated connectors to join them in any direction. Cut connectors off for a finished look. Both are rubber with a diamond-tread surface for exceptional traction. Color is black. For indoor and outdoor use.

General Purpose Mat— For dry areas.

Grease-Resistant Mat— Stands up to occasional contact with grease and chemicals.

	Size	Thick.		
General Purpose Mat	36″×36″	½″	8018T13	$66.33
Grease-Resistant Mat	36″×36″	½″	8018T14	94.63

High-Traffic Interlocking Antifatigue Tiles

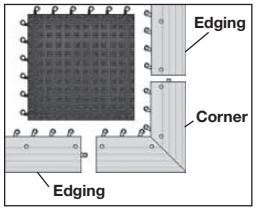

Get a custom floor layout that withstands heavy use and cart traffic. Tiles interlock with each other in any direction—simply add or remove tiles as needed. They're cushioned for comfort and have a textured surface for good traction. Plus, these vinyl tiles resist grease, oil, and chemicals. Color is black. For indoor use.

Grit-coated tile has an abrasive coating for increased traction and durability.

Optional Tapered Edging— Prevents tripping and has four ¾″ dia. mounting holes (fasteners not included) for permanent installation. Color is yellow.

Size	Thick.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Tiles					
Uncoated 18″×18″	⅞″	10	4541T81	$24.46	$21.93
Grit Coated 18″×18″	⅞″	10	4541T82	40.06	35.93
Optional Tapered Edging					
Edging 18″x6″	⅞″	10	4541T83	9.68	8.68
Corner 15″x6″	⅞″	4	4541T84	28.50	25.55

NSF-Certified Flexible Drainage Mats

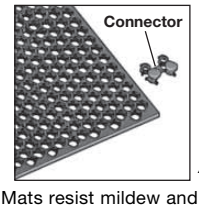

A

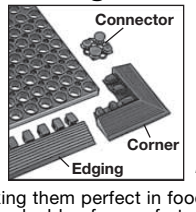

B

Mats resist mildew and bacteria making them perfect in food applications. Plus, they're flexible, cushioned rubber for comfort and to easily roll up and out of the way for cleaning underneath. For indoor use. *Style A* has ¾″ dia. drainage holes. *Style B* has ⅞″ dia. holes. *Optional connectors* (sold individually) join two or more mats. Use one connector every 12″.

Grease-Resistant Mats— For occasional contact with grease. Color is brown.

Greaseproof Mats— For constant contact with grease and oil. Color is red.

Wd.×Lg.	Thick.	Grease Resistant		Greaseproof	
(A) NSF-Certified Mats					
36″ ×24″	½″	6684T21	$40.35	6842T31	$51.96
36″ ×36″	½″	6684T22	60.54	6842T32	77.93
36″ ×48″	½″	6684T23	80.72	6842T33	103.91
36″ ×72″	½″	6684T24	121.09	6842T34	155.89
(B) Heavy Duty NSF-Certified Mats					
19½″×39″	⅞″	6158T12	60.46	6865T19	82.63
29¼″×39″	⅞″	6158T22	85.17	6865T29	106.93
39″ ×39″	⅞″	6158T32	109.22	6865T39	135.81
39″ ×58½″	⅞″	6158T42	149.00	6865T58	188.04
Optional Connectors for (A) NSF-Certified Mats					
For 36″ wide sides		6684T43	1.75	6842T43	1.89
For 24″, 36″, 48″, 72″ long sides		6684T44	1.75	6842T53	1.89
Accessories for (B) Heavy Duty NSF-Certified Mats					
Optional Connector		6158T51	1.95	6865T71	2.06
39″ longTapered Edging		6158T61	12.71	6865T72	15.52
58½″ longTapered Edging		6158T62	21.50	6865T73	23.69
Tapered Corner		6158T63	11.18	6865T74	11.30

Modular Rigid Drainage Mats

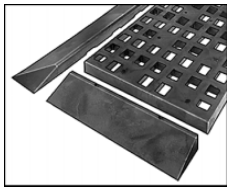

With Tapered Edging

Design a custom floor layout. Rigid and lightweight, these corrosion-resistant polyethylene mats also resist acids, salt, gasoline, solvents, and chemicals. Drainage openings are 2½″×1¾″ to let liquid, dirt, and small debris pass through. Cut to size with a circular saw or handsaw. Color is black.

Optional tapered edging minimizes tripping. Attaches with connectors (sold separately) and can be cut to size with a handsaw. The *60″ wide tapered edging* includes tapered corners.

Connectors join flooring and edging. Use at least two for 24″ and 48″ edges; four for 96″ edges.

Rubber feet keep flooring in place. Use 15 rubber feet with 6273T41; 25 with 6273T21.

Wd.×Lg.	Thick.		
24″×48″	1¾″	6273T41	$74.21
24″×96″	1¾″	6273T21	139.12
24″×6″ Optional Tapered Edging (for Wd. side)		6273T42	28.48
60″×6″ Optional Tapered Edging (for Lg. side)		6273T39	55.64
Connectors (Set of 4)		6273T43	7.39
Rubber Feet (Set of 5)		6273T44	3.79

Antislip Drainage Mats

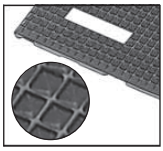

Pyramid-shaped projections provide multidirectional traction, while 1⅞″×½″ slotted openings permit drainage. Mats are vinyl and resist grease, oil, and chemicals. The cushioned backing reduces fatigue. Color is black. For indoor use.

Standard Size Mats

Wd.×Lg.	Thick.		Each
24″× 36″	7/16″	6918T23	$38.06
24″× 72″	7/16″	6918T25	76.12
36″× 48″	7/16″	6918T34	76.12
36″× 72″	7/16″	6918T36	114.18
36″×120″	7/16″	6918T38	190.30

Custom Length Mats

Wd.	Thick.	Full Roll		Per Ft.
24″	7/16″	30 ft.	6918T51	$15.86
36″	7/16″	30 ft.	6918T52	23.78

Reversible Antislip Drainage Mats

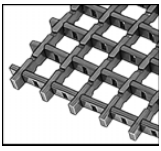

Vinyl

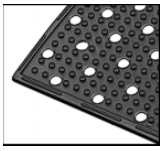

Rubber

Raised projections on the front and back provide sure footing and a secure grip on the floor. Color is black.

Vinyl Mats—Have ⅞″×⅞″ drainage openings. Mats resist grease, oil, and chemicals. For indoor and outdoor use.

Rubber Mats—Have ½″ dia. drainage holes. They're more durable with greater abrasion resistance than vinyl and remain flexible at low temperatures. For indoor use.

Standard Size Mats

Wd.×Lg.	Vinyl Thick.		Vinyl Each	Rubber Thick.		Rubber Each
24″× 36″	—	—	—	3/8″	62345T11	$33.48
24″× 48″	1/2″	6889T509	$114.94	—	—	—
24″× 60″	1/2″	6889T511	143.68	—	—	—
24″×120″	1/2″	6889T521	287.36	—	—	—
36″× 48″	1/2″	6889T523	172.41	3/8″	62345T22	62.08
36″× 72″	1/2″	6889T525	258.62	—	—	—
36″× 96″	1/2″	6889T531	344.83	3/8″	62345T33	124.03

Custom Length Mats

Vinyl Wd.	Thick.	Full Roll		Per Ft.	Rubber Thick.	Full Roll		Per Ft.
24″	1/2″	50 ft.	6889T71	$35.71	3/8″	30 ft.	62345T81	$13.00
36″	1/2″	50 ft.	6889T72	53.57	3/8″	32 ft.	62345T82	18.06

Antislip Drainage Mats with Yellow Safety Borders

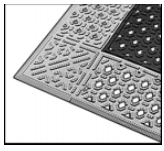

For safety and visibility, mats have a high-traction surface and tapered yellow safety borders on three edges. The fourth edge can be fitted flush against machinery. Mats are made of heavy duty cushioned vinyl that withstands heavy loads and resists grease, oil, and chemicals. Drainage holes are ⅝″ dia. Color is black with 6″ wide yellow borders. For indoor use.

Grit-coated mats have an abrasive coating for exceptional traction.

Wd.×Lg.	Thick.	Uncoated Mats		Grit-Coated Mats	
30″× 36″	7/8″	6884T11	$54.16	6884T81	$57.04
30″× 48″	7/8″	6884T13	69.88	6884T82	73.95
30″× 60″	7/8″	6884T15	77.13	6884T83	93.36
30″× 72″	7/8″	6884T17	89.69	6884T84	105.69
30″× 96″	7/8″	6884T18	111.99	6884T85	141.15
42″× 72″	7/8″	6884T21	118.73	6884T86	146.47
42″× 96″	7/8″	6884T23	146.91	6884T87	181.84
42″×120″	7/8″	6884T25	181.57	6884T88	228.00

Cushioned Drainage Mats

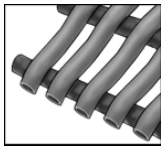

Air-Cushioned

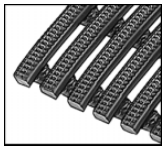

Antislip Cushioned

A cushioned surface comfortably supports your feet while ¼″×1″ drainage openings keep them dry. Made of vinyl, these mats resist grease, oil, and chemicals. For indoor and outdoor use.

Air-Cushioned Mats—Hollow tubes form a flexible, cushioned surface. Bottom tubes are black. **To Order:** Please specify surface tube color: black or light gray.

Antislip Cushioned Mats—Have solid tubes with a grooved surface for sure footing. Bottom tubes are black. **To Order:** Please specify surface tube color: black, blue, or red.

Wd.	Thick.	Full Roll	Air-Cushioned Mats	Per Ft.	Antislip Cushioned Mats	Per Ft.
24″	1/2″	40 ft.	6904T2	$11.34	6278T11	$18.37
36″	1/2″	40 ft.	6904T3	16.82	6278T19	26.97
48″	1/2″	40 ft.	6904T4	22.39	6278T14	35.96

Heavy Duty Reinforced Drainage Mats

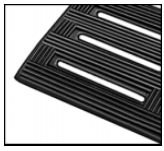

For added strength and durability, mats are rubber reinforced with nylon fibers. They're also abrasion resistant and remain flexible at low temperatures. Surface has squeegee-like ridges that provide traction while scraping dirt and liquids off shoes. Bottom is dimpled for air flow under the mat to prevent mildew. Drainage slots are 4½″×½″. Color is black. For indoor and outdoor use.

Standard Size Mats

Wd.×Lg.	Thick.		Each	Wd.×Lg.	Thick.		Each
24″×36″	1/2″	6894T21	$54.85	36″×48″	1/2″	6894T31	$103.32
24″×72″	1/2″	6894T22	111.37	36″×72″	1/2″	6894T33	155.58
24″×96″	1/2″	6894T23	146.26	48″×72″	1/2″	6894T41	206.92

Custom Length Mats

Wd.	Thick.	Full Roll		Per Ft.
24″	1/2″	22 ft.	6894T71	$21.62
36″	1/2″	22 ft.	6894T72	30.48
48″	1/2″	22 ft.	6894T73	39.15

Reversible Rubber-Tire Drainage Mats

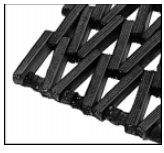

Made from recycled rubber tires reinforced with nylon fibers and woven together with galvanized wire rods, mats are strong enough to handle harsh environments. They're also abrasion resistant and remain flexible at low temperatures. Roll up easily. Openings between rubber links are approximately ½″ wide for drainage. Color is black. For indoor and outdoor use.

Wd.×Lg.	Thick.			Wd.×Lg.	Thick.		
24″×36″	5/8″	6874T34	$40.98	36″×60″	5/8″	6874T39	$105.13
24″×48″	5/8″	6874T35	55.97	36″×72″	5/8″	6874T41	129.91
24″×72″	5/8″	6874T37	85.21	36″×96″	5/8″	6874T44	190.80
30″×60″	5/8″	6874T38	88.81	36″×10 ft.	5/8″	6874T45	238.50
36″×48″	5/8″	6874T43	90.62	36″×12 ft.	5/8″	6874T46	286.20

Flexible Grease-Resistant and Greaseproof Drainage Mats

A&B

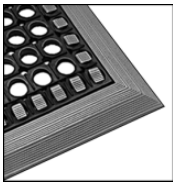

C

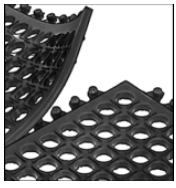

D

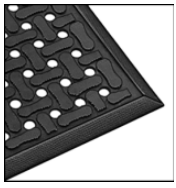

E

Get the benefits of a drainage mat combined with a comfortable, cushioned surface. Mats are flexible rubber so they roll up for access to clean the floor underneath. Color is black. Use *grease-resistant mats* for occasional contact with grease;use *greaseproof mats* where grease and oil are constantly present.

(A) Grease-Resistant Mats— Have 1″ dia. drainage holes and tapered edges. For indoor and outdoor use.

(B) Heavy Duty Grease-Resistant Mats— Thicker than our other grease-resistant mats for added durability. All have 7/8″ dia. drainage holes. For indoor and outdoor use. *Optional connector* lets you join two or more mats. Use two for 18″ wide sides, three for 24″ wide sides, and four for 36″ wide sides. *Optional tapered edging* prevents tripping; it's 2″ wide and can be cut to size.

(C) Heavy Duty Grease-Resistant Mats with Colored Border— Have 1 1/8″ dia. drainage holes. For indoor use. *Mats with three-sided border* have a tapered border along three edges. Fourth edge is not tapered so it can fit flush against machinery. *Mats with four-sided border* have a tapered border on all four edges. **To Order:** Please specify border color: orange or yellow.

(D) Grease-Resistant and Greaseproof Interlocking Mats— Have built-in connectors to link multiple mats together in any direction. Connectors can easily be cut off for a finished look. Mats have 7/8″ dia. drainage holes. For indoor and outdoor use.

(E) Nitrile Rubber Greaseproof Mats— They're antimicrobial to prevent odors. They also resist oil and cutting fluid and are safe for welding applications. All have 3/4″ dia. drainage holes and tapered edges. For indoor and outdoor use.

(A) Grease-Resistant Mats

Wd. × Lg.	Thick.		Each
36″ × 60″	1/2″	6823T5	$80.08
36″ × 10 ft.	1/2″	6823T1	181.86
36″ × 20 ft.	1/2″	6823T2	375.89

(B) Heavy Duty Grease-Resistant Mats

Wd. × Lg.	Thick.		Each
18″ × 24″	7/8″	6851T11	$34.25
18″ × 48″	7/8″	6851T12	66.39
24″ × 36″	7/8″	6851T13	66.39
36″ × 48″	7/8″	6851T14	104.50
36″ × 60″	7/8″	6851T15	127.78
Optional Connector		6851T33	6.83
Optional Tapered Edging		6851T31	Per Ft. $4.39

(C) Heavy Duty Grease-Resistant Mats with Colored Border

Wd. × Lg.	Thick		Each	Wd. × Lg.	Thick		Each
Three-Sided Border				***Four-Sided Border***			
26″ × 40″	7/8″	64605T11	$84.15	28″ × 40″	7/8″	6989T14	$88.07
38″ × 40″	7/8″	64605T22	131.85	40″ × 40″	7/8″	6989T16	136.15
38″ × 64″	7/8″	64605T33	160.36	40″ × 64″	7/8″	6989T18	173.65
38″ × 124″	7/8″	64605T44	312.06	40″ × 124″	7/8″	6989T21	330.62

(D) Grease-Resistant and Greaseproof Interlocking Mats

Wd. × Lg.	Thick.	Grease Resistant	Each	Greaseproof	Each
36″ × 36″	1/2″	7603T29	$59.70	7603T32	$85.17

(E) Nitrile Rubber Greaseproof Mats

Wd. × Lg.	Thick.		Each
23″ × 34″	3/8″	4534T41	$43.56
34″ × 56″	3/8″	4534T42	98.15
34″ × 109″	3/8″	4534T43	196.29
42″ × 68″	3/8″	4534T44	156.93

Clear Chair Mats

Chair Mat with Lip

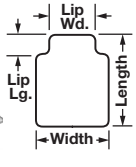

Chair Mat without Lip

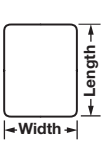

Protect your carpets and floors from the wear of constant foot traffic and chair casters. Mats are vinyl with a slip-resistant textured surface. Color is clear. For indoor use.

Mats for Carpets— Have a gripper backing to keep them firmly in place. *Antistatic mats* dissipate static electricity.

Mats for Hard Floors— Have a smooth backing.

O'all Size, Wd. × Lg.	Lip Size, Wd. × Lg.	For Carpets Up to 3/8″ Thick: Mat Thick.			For Carpets Up to 3/4″ Thick: Mat Thick.			Antistatic For Carpets Up to 3/8″ Thick: Mat Thick.			For Hard Floors: Mat Thick.		
Chair Mats with Lip													
36″ × 48″	20″ × 10″	0.11″	68645T71	$50.31	0.13″	6840T17	$61.83	—	—	—	0.09″	6814T71■	$47.45
45″ × 53″	25″ × 12″	0.11″	68645T72	55.81	0.13″	6840T18	67.49	0.11″	60705T52	$135.84	0.09″	6814T72	58.57
46″ × 60″	25″ × 12″	0.11″	68645T73	78.06	0.13″	6840T19	86.06	—	—	—	0.09″	6814T73	64.76
Chair Mats without Lip													
45″ × 53″	—	0.11″	68645T75	75.36	0.13″	6840T16	86.24	—	—	—	0.09″	6814T78	67.77
46″ × 60″	—	0.11″	68645T76	76.99	0.13″	6840T13	87.67	0.11″	60705T54	161.86	0.09″	6814T75	76.75

■ Lip size is 19″ Wd. × 10″ Lg.

Foot-Warming Mats

Rubber Mat

Keep feet warm in cold, drafty rooms. Mats can be used on any dry surface, even carpet. All have a 6-ft. power cord with two-prong plug. For indoor use.

Rubber Mats— Made of flexible, corrugated rubber and thermostatically controlled to maintain a constant temperature. Color is black.

Carpet Mat— Made of polyester with a carpet top and a felt-padded bottom. Mat includes a high/low heat switch with 8-ft. cord. Color is light gray. UL and C-UL listed.

Wd. × Lg.	Thick.	VAC	Hz	Amps		
Rubber Mats						
14″ × 21″	3/8″	120	50/60	0.75	6280T12	$63.89
16″ × 36″	3/8″	120	50/60	1.13	6280T13	90.22
Carpet Mat						
18″ × 19″	1/2″	115	60	0.4/0.6	6280T14	80.77

About Static Control Mats

Static electricity discharge (also known as electrostatic discharge or ESD) is one of the most common causes of electrical equipment damage and malfunction. Walking on a static control mat drains the electrical charge from you before it causes problems. Some static control mats require ground cords for best performance (see individual presentations).

For additional static control products, see page 929.

Effectiveness in Draining a Static Charge

The three types of static control mats are classified by their surface resistivity range (see chart). Expressed in ohms, surface resistivity measures how much a mat resists draining a static charge. The lower the surface resistivity (the lower the resistance), the faster and more effectively the mats drain the electrical charge.

Type of Mat	Draining Rate	Surface Resistivity
Antistatic	Slowest	10^9-10^{11} ohms
Static Draining	↓	10^6-10^9 ohms
Conductive	Fastest	10^3-10^6 ohms

Antistatic Antifatigue Sponge Mats

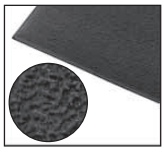

Get static control and comfort. Mats have a surface resistivity of 10^9 ohms for draining static electricity without a ground cord. Plus they're made of cushioned vinyl sponge to reduce fatigue. A textured surface provides traction. Mats resist stains and chemicals, but should be cleaned immediately after spills. Have tapered edges on all four sides. For indoor use.

To Order: Please specify black, brown, or light gray.

Standard Size Mats

Wd. × Lg.	Thick.		Each
24″×36″	3/8″	6930T21	$29.49
36″×48″	3/8″	6930T22	61.37
36″×60″	3/8″	6930T23	76.90
36″×72″	3/8″	6930T24	92.06
36″×96″	3/8″	6930T11	122.74
36″×10 ft.	3/8″	6930T25	153.80
36″×12 ft.	3/8″	6930T12	184.11
36″×30 ft.	3/8″	6930T26	460.29
48″×60″	3/8″	6930T13	94.21
48″×72″	3/8″	6930T41	111.54
48″×96″	3/8″	6930T42	150.66
48″×10 ft.	3/8″	6930T14	188.42

Custom Length Mats

Wd.	Thick.	Full Roll		Per Ft.
36″	3/8″	60 ft.	6930T51	$18.00
48″	3/8″	60 ft.	6930T52	22.21

Conductive Antifatigue Mats

With surface resistivity of 10^6 ohms, these mats offer the fastest, most effective draining of static electricity. All require a ground cord (sold separately) that plugs directly into the grounding snap located on one corner of each mat. Color is black. For indoor use.

Wear-Resistant Antifatigue Sponge Mats

Mats have a hard layer of diamond-tread vinyl to provide excellent traction and durability, along with a vinyl sponge backing to reduce fatigue. They have tapered edges on all four sides.

Wd. × Lg.	Thick.		
18″×36″	9/16″	69065T2	$75.55
24″×36″	9/16″	69065T4	90.03
36″×48″	9/16″	69065T6	176.51
36″×60″	9/16″	69065T8	220.63
36″×72″	9/16″	69065T9	264.82
36″×10 ft.	9/16″	69065T11	441.36
36″×30 ft.	9/16″	69065T14	1,227.78
15-ft. Ground Cord		69065T21	12.25

Interlocking Antifatigue Mats

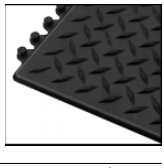

A diamond-tread surface gives this rubber mat excellent traction. It has interlocking connectors to link multiple mats together for any size or shape you need. You can cut connectors off with a utility knife for a finished look.

Wd. × Lg.	Thick.		
36″×36″	1/2″	7585T25	$77.39
15-ft. Ground Cord		69065T21	12.25

Static-Draining Mats

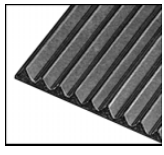

V-Rib

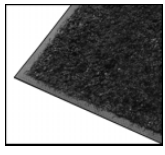

Carpet Top

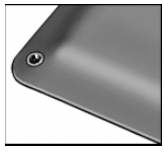

Wear-Resistant Antifatigue Sponge

***V-Rib Mats*—**Have a surface resistivity of 10^8-10^9 ohms for good static draining without a ground cord. Plus, the V-ribs provide more traction than the carpet-top and wear-resistant mats. Mats are vinyl and resist grease, oil, and chemicals. Color is light gray. For indoor and outdoor use.

***Carpet-Top Mats*—**With a surface resistivity of 10^7-10^8 ohms, they provide better static control than the V-rib mats and still don't need a ground cord. They have a nylon carpet top that removes dirt and moisture from your shoes and a rubber backing that keeps mats in place. Mats also have tapered edges on all four sides. Color is black. For indoor use.

***Wear-Resistant Antifatigue Sponge Mats*—**Have a surface resistivity of 10^7 ohms and require a ground cord (sold separately). Cord plugs directly into the grounding snap located on one corner of each mat. The top and bottom of these mats are smooth, hard vinyl for durability, with a vinyl sponge center for cushioning. They have tapered edges on all four sides. Color is dark gray. For indoor use.

Standard Size Mats

Wd. × Lg.	Thick.		Each
V-Rib Mats			
36″×48″	1/8″	68165T61	$54.24
36″×72″	1/8″	68165T62	81.36
36″×10 ft.	1/8″	68165T63	135.61
48″×60″	1/8″	68165T64	89.73
48″×10 ft.	1/8″	68165T65	179.45
Carpet-Top Mats			
24″×35″	3/8″	6848T212	26.45
35″×47″	3/8″	6848T213	52.88
35″×59″	3/8″	6848T223	66.10
35″×69″	3/8″	6848T233	79.30
35″×118″	3/8″	6848T235	132.18
45″×69″	3/8″	6848T243	105.72
45″×95″	3/8″	6848T253	141.00
Wear-Resistant Antifatigue Sponge Mats			
18″×36″	1/2″	8531T1	75.84
24″×36″	1/2″	8531T3	88.90
36″×48″	1/2″	8531T5	175.42
36″×60″	1/2″	8531T7	221.83
36″×72″	1/2″	8531T8	284.50
36″×10 ft.	1/2″	8531T9	474.16
36″×30 ft.	1/2″	8531T11	1,422.48
48″×72″	1/2″	8531T12	379.33
48″×96″	1/2″	8531T14	505.77
15-ft. Ground Cord		69065T21	12.25

Custom Length Mats

Wd.	Thick.	Full Roll		Per Ft.
V-Rib Mats				
36″	1/8″	60 ft.	68165T67	$17.15
48″	1/8″	60 ft.	68165T68	22.57
Carpet-Top Mats				
35″	3/8″	40 ft.	6848T51	16.89
45″	3/8″	40 ft.	6848T52	21.92

Switchboard Mats

Tested to withstand the stated dielectric test voltage, mats protect workers from electrical shock when working around high-voltage equipment.

Mil. Spec. Vinyl Switchboard Mats

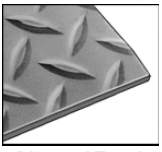

Diamond Tread

Mats meet Mil. Spec. DTL-15562G. Made of vinyl, they're UV resistant and also resist grease, oil, and chemicals. Mats have a textured backing to prevent skidding. For indoor and outdoor use.

Smooth, Type II mat is easy to clean. It's for use where high traction is not crucial. Color is black.

Diamond tread, Type III mat has a diamond-tread surface for excellent traction. Color is light gray.

Wd.	Maximum Recommended Use Voltage	Mil. Dielectric Test Voltage	Full Roll		Per Ft.
Smooth, Type II (1/8″ Thick.)					
36″	3,000	30,000	75 ft.	6825T11	$13.04
Diamond Tread, Type III (3/16″ Thick.)					
36″	3,000	30,000	75 ft.	6873T72	34.79

V-Rib Rubber Switchboard Mats

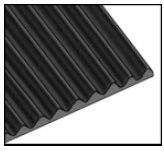

Meet ASTM D178. Class 1 mats are a rubber/thermoplastic blend; Class 2 mats are rubber. Both have a V-rib surface for dirt scraping and slip resistance. Color is black. For indoor use.

Wd.	Max. Recom'd Use Voltage	ASTM Dielectric Test Voltage	Full Roll		Per Ft.
Type I, Class 1 (3/16″ Thick.)					
24″	7,500	20,000	75 ft.	6893T11	$17.28
30″	7,500	20,000	75 ft.	6893T12	18.97
36″	7,500	20,000	75 ft.	6893T13	20.97
Type I, Class 2 (1/4″ Thick.)					
24″	17,000	30,000	75 ft.	6893T35	22.14
30″	17,000	30,000	75 ft.	6893T36	22.90
36″	17,000	30,000	75 ft.	6893T37	25.17
48″	17,000	30,000	75 ft.	6893T38	44.29

Antislip Tape

Abrasive Antislip Tape

Roll

Disc

Strip with Conformable Backing

Tape has an adhesive back. For indoor and outdoor use.

Abrasive Antislip— Tape has a high-traction surface. You can walk on it immediately after installation. *Strips, squares, and discs* are sold in packages of 10, unless noted. **To Order:** For Choose-a-Color, please specify clear, light gray, red, or yellow.

Extreme-Traction Abrasive Antislip— Has an extra-coarse surface for excellent traction. Great for muddy and greasy areas and also for occasional contact with water. You can walk on tape immediately after installation. Color is black.

Abrasive Antislip with Conformable Backing— An aluminum backing conforms to corners and uneven surfaces, making tape perfect for ladder rungs and diamond tread plates. After installation, wait one hour before walking on this tape. Color is black.

Wd.	Lg.	ABRASIVE ANTISLIP Black	Each	Choose-a-Color	Each
Rolls					
3/4″	60 ft.	6970T64	$9.44	6970T22	$13.07
1″	60 ft.	6970T63	12.59	6970T23	17.42
2″	30 ft.	6970T13	12.59	6970T331	17.42
2″	60 ft.	6970T65	25.15	6970T24	34.83
4″	30 ft.	6970T151	25.15	6970T191	34.83
4″	60 ft.	6970T51	48.76	6970T25	63.33
6″	30 ft.	6970T142	34.43	6970T261	41.94
6″	60 ft.	6970T53	67.83	6970T26	89.57
12″	15 ft.	6970T201	35.43	6970T11	43.14
18″	15 ft.	6970T171	53.14	6970T12	64.71
24″	15 ft.	6970T183	70.86	6970T14	86.29
36″	15 ft.	6970T161	191.27	—	—
48″	15 ft.	6970T121	258.24	—	—
Strips			Pkg.		Pkg.
3/4″	24″	6970T35	$3.93	6970T54	$5.27
6″	24″	6970T34♣	16.53	6970T39♣	23.87
Squares					
5 1/2″	5 1/2″	6970T36	6.61	6970T66	8.86
Discs					
5 1/2″ Dia.	—	6970T37	6.61	6970T68	8.86

♣ Sold in packages of 5.

Wd.	Extreme-Traction Abrasive Antislip Lg.		Each	Abrasive Antislip with Conformable Backing Lg.		Each
Rolls						
1″	60 ft.	7781T11	$14.90	—	—	—
2″	30 ft.	7781T12	14.89	15 ft.	6244T51	$22.97
4″	30 ft.	7781T13	32.73	15 ft.	6244T52	41.76
6″	30 ft.	7781T14	49.10	15 ft.	6244T53	62.63
12″	15 ft.	7781T15	49.12	15 ft.	6244T54	125.26
18″	15 ft.	7781T16	66.87	—	—	—
24″	15 ft.	7781T17	89.18	—	—	—
Strips						
1″	24″	7781T34	.77	—	—	—
6″	24″	7781T35	3.82	24″	6244T22	7.85
Squares						
5 1/2″	5 1/2″	7781T36	.87	—	—	—

High-Visibility Abrasive Antislip Tape

Black/Yellow Striped Roll

Black Strip with Single Yellow Stripe

Black/Yellow Striped Strip with Caution Message

Make stairs, ramps, and walkways safer with this eye-catching, high-traction tape. It has an adhesive backing and can be walked on immediately after installation. For indoor and outdoor use.

Glow-in-the-dark rolls glow a solid yellow-green color; they do not have a stripe. Recharge by exposing to light; tape provides up to six hours of illumination in total darkness.

Wd.	Lg.	Black/Yellow Striped	Each	Glow-in-the-Dark	Each
Rolls					
3/4″	60 ft.	68205T42	$15.67	6970T461	$17.46
1″	60 ft.	68205T43	20.88	6970T462	23.97
2″	30 ft.	68205T441	25.33	6970T712	23.97
4″	30 ft.	68205T451	46.81	6970T762	47.97
6″	30 ft.	68205T461	70.15	6970T792	71.94
12″	30 ft.	68205T471	140.35	6970T842	143.88

Strips—6″ Wd. × 24″ Lg.		Each
Black with Single Yellow Striped	6108T31	$5.35
Black with Single Glow-in-the-Dark Stripe	6108T41	5.35
Black/Yellow Striped with Caution Message	68205T68	5.63
Black/Yellow Striped with Watch Your Step Message	68205T69	5.63

Nonabrasive Antislip Tape

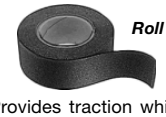

Roll

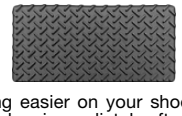

Strip with Multidirectional Pattern

Provides traction while being easier on your shoes. Tape has an adhesive back. It can be walked on immediately after installation. For indoor and outdoor use. ***Strips*** have an extra-durable rubber surface. ***Patterned strips*** are not for use on concrete. Sold in packages of 2.

Wd.	Lg.	Black	Each	Light Gray	Each
Rolls					
2″	15 ft.	6243T721	$19.56	6243T722	$19.56
4″	15 ft.	6243T731	39.12	6243T732	39.12
6″	15 ft.	6243T741	64.55	6243T742	64.55
12″	15 ft.	6243T751	117.35	6243T752	117.35
24″	15 ft.	6243T761	234.71	6243T762	234.71
Strips					
6″	24″	6243T471	7.60	—	—
Strips with Multidirectional Pattern			Pkg.		
6″	12″	6289T2	$13.38	—	—
Strips with Raised-Disc Pattern					
6″	12″	6289T1	13.38	—	—

Primer and End Sealer

Primer— Improves tape adhesion on porous surfaces. Comes in a 1-qt. can to cover 35 sq. ft. Color is tan. Primer is compliant under all state VOC rules in effect on September 1, 2011.

6969T55 ..... **Each** $37.71

End Sealer— Protects tape edges from exposure to moisture. Comes in a 5-oz. tube to seal 75 to 100 ft. of tape. Color is clear.

6969T45 ..... **Each** $14.17

Antislip Floor Coatings

Antislip coatings contain grit and also are designed to last longer than antislip tape. These coatings meet OSHA standards and ASTM requirements for durability, slip resistance, and impact resistance. Also, they help comply with ADA when properly applied. Use indoors and outdoors on concrete, wood, and metal.

Ready-to-Use Antislip Floor Coatings

Aerosol Epoxy— Can also be used on fiberglass. Good for areas with pedestrian traffic. Not tested for compliance with OSHA and ASTM standards. This epoxy is compliant under all state VOC rules in effect on September 1, 2011.

One-Part Epoxy— Offers greater durability and slip resistance than aerosol epoxy. It requires no mixing and is good for areas with pedestrian traffic. Apply over a primer, using the phenolic roller cover (sold separately). This epoxy is compliant under all state VOC rules in effect on September 1, 2011.

Water-Based Acrylic— Has low VOCs and quick and easy cleanup. Great for pedestrian traffic. Apply over a primer, using the nylon-bristle roller cover (sold separately). This acrylic is compliant under all state VOC rules in effect on September 1, 2011.

High-Traction Two-Part Antislip Floor Coatings

Heavy Duty Epoxy— Perfect for heavy vehicular traffic areas. They must be mixed before use. Apply with a roller. Epoxy is compliant under all state VOC rules in effect on September 1, 2011, except in the Los Angeles area.

Low-Odor Chemical-Resistant Epoxy— Has zero VOCs and a low-odor formula yet can withstand pedestrian, cart, and hand-truck traffic. Apply with a roller. Primer is not required. This epoxy is compliant under all state VOC rules in effect on September 1, 2011.

Extreme-Traction Two-Part Antislip Floor Coatings

Provide the highest traction and impact resistance. Apply with a roller over a primer. Not tested for compliance with OSHA, ASTM, and ADA standards. Epoxy is compliant under all state VOC rules in effect on September 1, 2011, except in the Los Angeles area.

Mil. Spec. Standard Epoxy— Meets MIL-PRF 24667C Types 2 and 4, Composition G.

Mil. Spec Heavy Duty Epoxy— Provides even more wear and impact resistance. Meets MIL-PRF 24667C Types 1 and 2, Composition G.

Two-Part Epoxy Primers

These do not contain grit. They must be mixed before use. Epoxies are compliant under all state VOC rules in effect on September 1, 2011, except in the Los Angeles area.

	Size	Dry Time To the Touch	Dry Time Overall	Coverage, sq. ft.	Application Temperature Range	Application Time After Mixing	Max. Temp.		
Ready-to-Use Antislip Floor Coatings— To Order: *Please specify black, dark gray, red, or yellow. 63825T74 also comes in clear.*									
Aerosol Epoxy	12 oz.	20 mins.	24 hrs.	15	50° to 90°F	—	250°F	63825T74	$16.17
One-Part Epoxy	1 gal.	12 hrs.	3 days	50	50° to 120°F	—	160°F	63045T36	91.55
Water-Based Acrylic	1 gal.	4 hrs.	24 hrs.	70	50° to 130°F	—	160°F	6135T37	80.69
High-Traction Two-Part Antislip Floor Coatings— To Order: *Please specify black, dark gray, red, or yellow.*									
Heavy Duty Epoxy	1 gal.	12 hrs.	3 days	40	50° to 130°F	4 hrs.	160°F	7887T21	132.58
Heavy Duty Epoxy	5 gal.	12 hrs.	3 days	200	50° to 130°F	4 hrs.	160°F	7887T22	623.08
Low-Odor Chemical-Resistant Epoxy	½ gal.	12 hrs.	48 hrs.	25	50° to 100°F	45 mins.	300°F	6454T31	54.15
Low-Odor Chemical-Resistant Epoxy	1 gal.	12 hrs.	48 hrs.	50	50° to 100°F	45 mins.	300°F	6454T32	90.89
Extreme-Traction Two-Part Antislip Floor Coatings— *Color is dark gray.*									
Mil. Spec. Standard Epoxy	1 gal.	24 hrs.	4 days	25	40° to 100°F	8 hrs.	160°F	6506T51	126.00
Mil. Spec. Standard Epoxy	5 gal.	24 hrs.	4 days	125	40° to 100°F	8 hrs.	160°F	6506T53	470.00
Mil. Spec. Heavy Duty Epoxy	5 gal.	24 hrs.	4 days	125	40° to 100°F	4 hrs.	160°F	6506T55	577.30
Two-Part Epoxy Primers									
Water-Based for Nonmetallic Surfaces (Clear)	1 gal.	6 hrs.	24 hrs.	300	55° to 90°F	2 hrs.	160°F	6198T34	138.27
Corrosion Inhibiting for Metallic Surfaces (Gray)	1 gal.	1 hr.	12 hrs.	270	40° to 100°F	4 hrs.	160°F	6506T67	78.76
Roller Covers									
9″ Lg. Nylon-Bristle Roller Cover for Water-Based Acrylic Antislip Floor Coatings								6439T74	9.38
9″ Lg. Phenolic Roller Cover for Epoxy Antislip Floor Coatings								6439T73	1.40

Antislip Floor Plates and Drainage Floor Plates

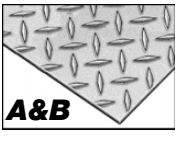

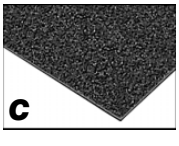

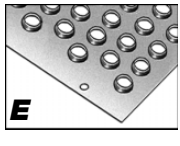

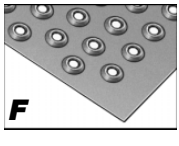

Add slip resistance to floors, ramps, stairs, and dock areas.

(A-D) Antislip Floor Plates

(A) Adhesive-Backed Diamond-Tread Aluminum Plates— Quick and easy to install; peel off the backing and stick plates on smooth, clean surfaces. They have a raised diamond-tread pattern for slip resistance that's easy on your hands, knees, and shoes.

(B) Diamond-Tread Aluminum Plates— Have a raised diamond-tread pattern for slip resistance that's easy on your hands, knees, and shoes.

(C) Abrasive Steel Plates— A unique grit-like metal coating provides a long-lasting, aggressive slip-resistant surface. Color is black.

(D) Abrasive Plastic Plates— Virtually maintenance free, these corrosion- and UV-resistant plates have an embedded abrasive-grit coating on both sides for slip resistance. They can be cut to size using a circular saw with carbide-tipped blade. Color is black.

(E-G) Antislip Drainage Floor Plates

(E) Galvanized Steel Plates— Excellent traction at an economical price. Drainage holes are 5/16″ dia. Plates have 1/8″ dia. mounting holes (fasteners not included).

(F) Carbon Steel Plates— Have 1/8″ dia. drainage buttonholes for traction without rough edges.

(G) Ultra-Antislip Serrated Galvanized Steel Plates— Serrated diamond-shaped openings provide superior traction while allowing liquids to drain and debris to pass through. Openings are 1 7/8″ × 11/16″.

Wd. × Lg.	Thick.		
Antislip Floor Plates			
(A) Adhesive-Backed Diamond-Tread Alum.			
24″ × 24″	1/16″	4917T11	$48.33
24″ × 48″	1/16″	4917T21	81.67
48″ × 48″	1/16″	4917T31	146.67
(B) Diamond-Tread Aluminum			
48″ × 48″	1/8″	6245T19	299.62
48″ × 48″	1/4″	6245T41	520.56
48″ × 96″	1/8″	6245T22	584.66
48″ × 96″	1/4″	6245T42	843.41
48″ × 12 ft.	1/8″	6245T23	757.46
(C) Abrasive Steel			
24″ × 24″	1/4″	4374T51	99.74
24″ × 48″	1/4″	4374T52	199.74
48″ × 48″	1/4″	4374T53	398.74
48″ × 96″	1/4″	4374T54	797.74

Wd. × Lg.	Thick.		
Antislip Floor Plates (Cont.)			
(D) Abrasive Plastic			
24″ × 60″	3/8″	4456T5	$199.74
30″ × 48″	3/8″	4456T6	199.74
48″ × 60″	3/8″	4456T7	401.54
Antislip Drainage Floor Plates			
(E) Galvanized Steel			
6″ × 12″	18 ga.	6979T11	3.31
12″ × 36″	18 ga.	6979T41	31.85
12″ × 48″	18 ga.	6979T42	36.99
(F) Carbon Steel			
36″ × 60″	16 ga.	6860T11	170.60
36″ × 60″	14 ga.	6860T12	185.73
36″ × 60″	12 ga.	6860T13	224.46
36″ × 10 ft.	16 ga.	6860T24	249.56

Wd. × Lg.	Thick.		
Antislip Drainage Floor Plates (Cont.)			
(F) Carbon Steel (Cont.)			
36″ × 10 ft.	14 ga.	6860T31	$278.62
36″ × 10 ft.	12 ga.	6860T32	334.42
(G) Ultra-Antislip Serrated Galvanized Steel			
8 9/16″ × 60″	14 ga.	6908T512	50.29
8 9/16″ × 60″	12 ga.	6908T612	55.96
10 7/8″ × 60″	14 ga.	6908T513	54.41
10 7/8″ × 60″	12 ga.	6908T613	60.07
10 7/8″ × 10 ft.	14 ga.	6908T113	104.41
24 3/4″ × 60″	14 ga.	6908T516	81.10
24 3/4″ × 60″	12 ga.	6908T616	96.62
24 3/4″ × 10 ft.	14 ga.	6908T116	157.06
24 3/4″ × 10 ft.	12 ga.	6908T316	188.09
24 3/4″ × 12 ft.	14 ga.	6908T216	187.06
24 3/4″ × 12 ft.	12 ga.	6908T416	225.71

Metal Plank Grating

Ideal for platforms, stair treads, ramps, and decks. For indoor and outdoor use.
To Order: Please specify length from those listed.

Antislip Plank Grating

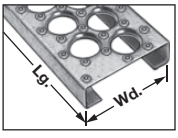

Raised projections provide traction, while 1⅜″ dia. drainage holes let light and liquid pass through and prevent debris buildup. The surface is not serrated so it's easier on your hands, knees, and shoes. Cut to size with a band saw, hack saw, circular saw, or shears.

ⓘ For information about load ratings and deflection, go to mcmaster.com and search for **64935TAC.**

Wd.	Ht.	Gauge	2-, 3-, 4-, 6-, and 8-ft. Lengths Per Ft.	10- and 12-ft. Lengths Per Ft.
Galvanized Steel				
5″	1½″	13	64935T22 $11.22	64935T81 $9.00
5″	2″	13	64935T23 11.78	64935T82 9.45
7″	1½″	13	64935T24 12.80	64935T83 10.31
7″	2″	13	64935T25 13.44	64935T84 10.82
10″	1½″	13	64935T26 15.68	64935T85 12.60
10″	2″	13	64935T27 16.47	64935T86 13.24
12″	1½″	13	64935T42 17.20	64935T87 13.84
12″	2″	13	64935T43 18.06	64935T88 14.53
18″	1½″	13	64935T44 23.01	64935T89 17.49
18″	2″	13	64935T45 24.16	64935T91 18.45

Wd.	Ht.	Gauge	2-, 3-, 4-, 6-, and 8-ft. Lengths Per Ft.	10- and 12-ft. Lengths Per Ft.
Aluminum				
5″	2″	8	8618T52 $21.56	8618T53 $17.25
7″	2″	8	8618T54 23.86	8618T55 19.09
10″	2″	8	8618T56 27.47	8618T57 21.98
12″	2″	8	8618T64 29.41	8618T65 23.53
18″	2″	8	8618T67 38.86	8618T68 31.09

Ultra-Antislip Serrated Plank Grating

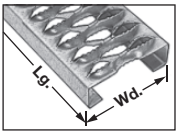

Serrated diamond-shaped openings provide superior traction. Openings are 1⅞″ × 11/16″ to let light and liquids pass through and prevent debris buildup. Cut to size with a band saw.

ⓘ For information about load ratings and deflection, go to mcmaster.com and search for **6855TAC.**

Wd.	Ht.	Gauge	2-, 3-, 4-, 5-, 6-, and 8-ft. Lengths Per Ft.	10- and 12-ft. Lengths Per Ft.
Galvanized Steel				
4¾″	1½″	14	6855T11 $8.70	6855T71 $6.96
4¾″	1½″	12	6855T12 10.17	6855T72 8.14
4¾″	2″	14	6855T13 9.28	6855T73 7.42
4¾″	2″	12	6855T6 10.57	6855T74 8.46
7″	1½″	14	6855T4 9.93	6855T75 7.94
7″	1½″	12	6855T27 11.85	6855T76 9.48
7″	2″	14	6855T7 10.38	6855T77 8.30
7″	2″	12	6855T29 12.90	6855T78 10.32
7″	3″	12	6855T98 14.72	6855T99 11.78
9½″	1½″	14	6855T39 10.24	6855T79 8.19
9½″	1½″	12	6855T43 13.27	6855T81 10.62
9½″	2″	14	6855T44 10.80	6855T82 8.64
9½″	2″	12	6855T45 14.50	6855T83 11.60
9½″	3″	12	6855T1 16.05	6855T2 12.84
11¾″	1½″	14	6855T5 12.20	6855T84 9.76
11¾″	1½″	12	6855T9 15.55	6855T85 12.44
11¾″	2″	14	6855T53 13.20	6855T86 10.56
11¾″	2″	12	6855T54 16.30	6855T87 13.04
11¾″	3″	12	6855T55 17.98	6855T88 14.38

Wd.	Ht.	Gauge	2-, 3-, 4-, 5-, 6-, and 8-ft. Lengths Per Ft.	10- and 12-ft. Lengths Per Ft.
Galvanized Steel (Cont.)				
18¾″	1½″	14	6855T56 $15.62	6855T89 $12.50
18¾″	1½″	12	6855T57 21.45	6855T91 17.16
18¾″	2″	14	6855T58 17.32	6855T92 13.86
18¾″	2″	12	6855T59 22.20	6855T93 17.76
18¾″	3″	12	6855T64 23.07	6855T94 18.46
24″	2″	14	6855T65 21.18	6855T95 16.94
24″	2″	12	6855T66 26.45	6855T96 21.16
24″	3″	12	6855T67 26.85	6855T97 21.48
Aluminum				
4¾″	2″	10	6246T27 26.69	6246T33 21.35
7″	2″	10	6246T31 28.59	6246T34 22.87
9½″	2″	10	6246T28 33.94	6246T36 27.15
11¾″	2″	10	6246T29 53.77	6246T37 43.02
18¾″	2″	10	6246T32 65.83	6246T38 52.66
Type 304 Stainless Steel				
4¾″	2″	16	6247T15 47.09	6247T19 37.67
7″	2″	16	6247T16 53.83	6247T21 43.06
9½″	2″	16	6247T17 60.68	6247T22 50.53
11¾″	2″	16	6247T18 64.89	6247T24 54.26

Ultra-Antislip Serrated Walkway Plank Grating

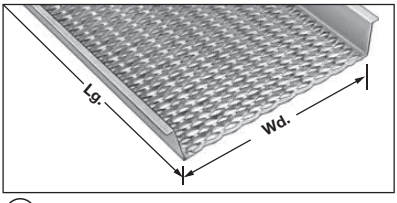

ⓘ For information about load ratings and deflection, go to mcmaster.com and search for **6286TAC.**

Diamond-shaped openings provide excellent traction while edge guards prevent tools and parts from falling over the side. Grating is galvanized steel and can be cut with a cutting torch, circular saw, or reciprocating saw. The diamond-shaped openings are 1⅞″ × 11/16″ for *24″ wide* grating, 3⅞″ × 1¼″ for *30″* and *36″ wide* grating. All meet OSHA requirement 1910.23 for elevated walkways. For indoor and outdoor use.
To Order: Please specify length from those listed.

Wd.	Ht.	Gauge	2-, 3-, 4-, 5-, 6-, 8-ft. Lengths Per Ft.	10-, 12-ft. Lengths Per Ft.
24″	4½″	12	6286T61 $31.57	6286T71 $25.26
30″	5″	10	6286T62 57.16	6286T72 45.73
36″	5″	10	6286T63 65.21	6286T73 52.17

Plank Grating Fasteners

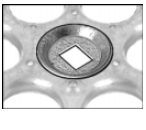
A

B

Secure plank grating to your support structure. Installation requires a hole in your support structure, as well as a square-neck carriage screw (sold separately, see pages 3020-3021).

(A) Antislip Plank Grating Anchor— Made of galvanized steel, this fits into the 1⅜″ dia. drainage holes of our Antislip Plank Grating. Requires a ½″ dia. screw.

(B) Ultra-Antislip Serrated Plank Grating Anchor— Designed to fit our Ultra-Antislip Serrated Plank Grating. 7012T5 is galvanized steel and fits grating with an 1⅞″ × 11/16″ diamond-shaped opening. Requires a 5/16″ dia. screw. 7012T6 is Type 304 stainless steel and fits grating with a 3⅞″ × 1¼″ diamond-shaped opening. Requires a ⅜″ dia. screw.

	Grating Height	Pkg. Qty.	Pkg.
A	Any	10	7012T23 $7.69
B	Any	20	7012T5 13.75
B	5″	1	7012T6 4.33

For load ratings and deflection for the bar grating on this page, go to mcmaster.com and search for **6849TAC**.

Metal Bar Grating

Able to support heavier loads than plank grating, bar grating is good for trenches, mezzanines, walkways, work platforms, and floors. This grating has an open design that allows air, light, and debris to flow through. Cross bars hold the bearing bars in place; they are spaced 40 apart center-to-center. Bearing bars provide uniform weight distribution. Fasteners are required for installation (not included, see page 2105).

Grating *with narrow openings* provides a higher load bearing surface and reduces the chance of something falling through. *Serrated* grating provides better traction.

Black-Finish Steel Bar Grating— Great for dry, noncorrosive areas. For indoor use only.

Galvanzied Steel Bar Grating— Corrosion resistant. For indoor and outdoor use.

Stainless Steel Bar Grating— Better corrosion resistance than galvanized steel. Has a matte finish. For indoor and outdoor use.

Aluminum Bar Grating— Lightweight and rustproof, it's also nonmagnetic and nosparking. For indoor and outdoor use.

To Order: Please specify length from those listed.

To Order: For custom sizes, please specify width and length. Steel and stainless steel bar grating has a max. width of 3 ft. and a max. length of 24 ft. Aluminum bar grating has a max. width of 4 ft. and a max. length of 20 ft. *Note:* Grating less than 17″ long is reinforced with banding.

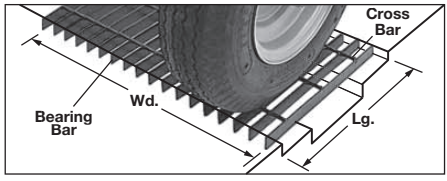

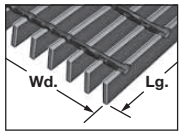

Smooth Steel

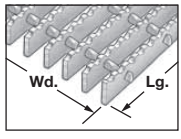

Serrated Aluminum

Steel and Stainless Steel Bar Grating

Bearing Bar Ht.	Bearing Bar Wd.	Bearing Bar Spacing, Ctr.-to-Ctr.	Available in 2-, 3-, 4-, 6-, 8-, and 10-ft. Lengths: 1-Ft. Width	Per Ft.	2-Ft. Width	Per Ft.	3-Ft. Width	Per Ft.	Custom Widths and Lengths	Per Sq. Ft.
Smooth Black-Finish Steel										
3/4″	1/8″	13/16″	6849T34	$12.27	6849T43	$24.54	6849T46	$36.81	6849T11	$14.72
1″	1/8″	13/16″	6849T35	12.87	6849T36	25.75	6849T47	38.61	6849T13	15.44
1″	3/16″	13/16″	6849T87	16.90	6849T52	33.79	6849T81	50.70	6849T14	20.28
1″	1/4″	13/16″	6857T19	20.63	6857T22	41.25	6857T23	61.88	6857T31	24.76
1 1/4″	3/16″	13/16″	6849T22	18.25	6849T54	35.77	6849T97	54.75	6849T16	21.90
1 1/2″	3/16″	13/16″	6849T24	18.42	6849T39	36.83	6849T98	55.26	6849T18	22.10
1 1/2″	1/4″	13/16″	6857T27	27.11	6857T52	44.22	6857T24	66.33	6857T33	32.53
Smooth Black-Finish Steel with Narrow Openings										
1″	3/16″	15/16″	6849T57	19.93	6849T66	39.86	6849T74	59.79	6849T63	23.92
1 1/4″	3/16″	15/16″	6849T58	23.00	6849T681	46.00	6849T76	69.00	6849T65	27.60
1 1/2″	3/16″	15/16″	6849T59	25.34	6849T691	50.67	6849T78	76.02	6849T67	30.41
Serrated Black-Finish Steel										
1″	1/8″	13/16″	6867T13	12.72	6867T36	25.44	6867T49	38.16	6867T11	15.26
1″	3/16″	13/16″	6867T17	17.25	6867T38	34.50	6867T51	51.75	6867T12	20.70
1 1/4″	3/16″	13/16″	6867T18	19.40	6867T39	38.80	6867T52	58.20	6867T14	23.28
1 1/2″	3/16″	13/16″	6867T19	22.42	6867T43	44.84	6867T53	67.26	6867T15	26.90
Smooth Galvanized Steel										
3/4″	1/8″	13/16″	6849T361	13.42	6849T373	26.83	6849T384	40.26	6849T23	16.10
1″	1/8″	13/16″	6849T362	14.61	6849T374	29.21	6849T385	43.83	6849T25	17.53
1″	3/16″	13/16″	6849T363	18.47	6849T375	36.94	6849T386	55.41	6849T26	22.16
1″	1/4″	13/16″	6857T121	29.90	6857T125	59.81	6857T129	75.56	6857T41	35.88
1 1/4″	3/16″	13/16″	6849T364	19.31	6849T376	38.62	6849T387	57.93	6849T28	23.17
1 1/2″	3/16″	13/16″	6849T365	21.82	6849T377	43.63	6849T388	65.46	6849T31	24.74
1 1/2″	1/4″	13/16″	6857T122	33.07	6857T126	66.15	6857T131	99.22	6857T43	39.68
Smooth Galvanized Steel with Narrow Openings										
1″	3/16″	15/16″	6849T441	27.58	6849T447	58.83	6849T454	88.27	6849T75	32.08
1 1/4″	3/16″	15/16″	6849T442	33.25	6849T448	66.50	6849T455	99.75	6849T77	36.20
1 1/2″	3/16″	15/16″	6849T443	38.16	6849T449	76.30	6849T456	114.47	6849T79	41.54
Serrated Galvanized Steel										
1″	1/8″	13/16″	6867T58	14.36	6867T67	28.72	6867T76	43.08	6867T21	17.23
1″	3/16″	13/16″	6867T59	19.18	6867T68	38.36	6867T77	57.54	6867T22	23.02
1 1/4″	3/16″	13/16″	6867T61	22.74	6867T69	45.48	6867T78	68.22	6867T24	27.29
1 1/2″	3/16″	13/16″	6867T62	26.50	6867T71	53.00	6867T79	79.50	6867T25	31.80
Smooth Stainless Steel										
1″	3/16″	13/16″	5870T11	71.98	5870T14	125.97	5870T17	188.95	5870T21	86.38
1 1/4″	3/16″	13/16″	5870T12	80.85	5870T15	141.51	5870T18	212.28	5870T22	97.02
1 1/2″	3/16″	13/16″	5870T13	88.97	5870T16	155.70	5870T19	233.53	5870T23	106.76
Serrated Stainless Steel										
1″	3/16″	13/16″	4234T71	73.42	4234T74	128.48	4234T77	192.71	4234T81	88.10
1 1/4″	3/16″	13/16″	4234T72	82.22	4234T75	143.89	4234T78	215.84	4234T82	98.66
1 1/2″	3/16″	13/16″	4234T73	90.26	4234T76	157.96	4234T79	236.93	4234T83	108.31

Aluminum Bar Grating

Bearing Bar Ht.	Bearing Bar Wd.	Bearing Bar Spacing, Ctr.-to-Ctr.	Available in 2-, 3-, 4-, 8-, and 10-ft. Lengths: 2-Ft. Width	Per Ft.	3-Ft. Width	Per Ft.	4-Ft. Width	Per Ft.	Custom Widths and Lengths	Per Sq. Ft.
Smooth										
1″	1/8″	13/16″	6498T17	$24.19	6498T37	$36.29	—	—	6498T21■	$29.03
1″	3/16″	13/16″	6498T18	30.14	6498T38	45.21	6498T52	$60.28	6498T22	36.17
1 1/4″	1/8″	13/16″	6498T19	28.33	6498T39	42.50	—	—	6498T23■	34.00
1 1/4″	3/16″	13/16″	6498T27	35.80	6498T41	53.70	6498T54	71.60	6498T24	42.96
1 1/2″	1/8″	13/16″	6498T28	31.74	6498T42	47.61	—	—	6498T25■	38.09
1 1/2″	3/16″	13/16″	6498T29	39.27	6498T43	58.91	6498T56	78.54	6498T26	47.12
Serrated										
1″	1/8″	13/16″	6250T51	25.22	6250T64	37.83	—	—	6250T16■	30.26
1″	3/16″	13/16″	6250T52	33.20	6250T65	47.78	6250T78	66.40	6250T11	39.84
1 1/4″	1/8″	13/16″	6250T53	27.42	6250T66	41.13	—	—	6250T12■	32.90
1 1/4″	3/16″	13/16″	6250T54	38.13	6250T67	57.20	6250T81	76.26	6250T13	45.76
1 1/2″	1/8″	13/16″	6250T55	31.50	6250T68	47.25	—	—	6250T14■	37.80
1 1/2″	3/16″	13/16″	6250T56	42.18	6250T69	63.27	6250T83	84.36	6250T15	50.62

■ Maximum width is 3 ft.

For load ratings and deflection for the grating on this page, go to mcmaster.com and search for **6919TAC**.

Grit-Top Corrosion-Resistant Fiberglass Grating

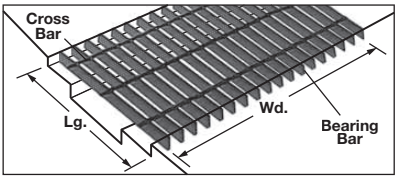

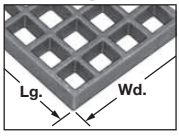

A&B

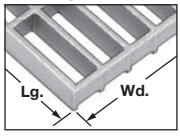

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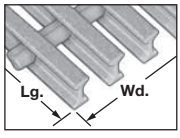

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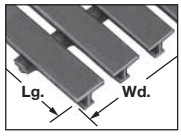

E

In addition to corrosion resistance, get better traction than our Steel, Stainless Steel, and Aluminum Bar Grating. This fiberglass grating has an abrasive grit surface and is lightweight, nonconductive, and nonmagnetic. Use it on trenches, walkways, catwalks, work platforms, ramps, and floors in washdown areas. To cut, use a circular saw with diamond-tipped blade. Cut ends need to be sealed with a resin sealer (sold separately). For fasteners, see page 2105. For indoor and outdoor use.

(A&B) Maximum Corrosion-Resistant Grating

Layers of resin and fiberglass strands are molded to form this grating—this construction provides maximum corrosion resistance and excellent impact resistance. It has an abrasive grit surface for added traction.

(A) Standard grating is green.

(B) Antimicrobial grating is formulated to inhibit the growth of bacteria, fungus, and mildew. Color is light gray. USDA accepted.

Also Available: Custom sizes; please ask for 6919T888 (Style A) or 7075T888 (Style B) and specify height, opening size, width, and length.

Ht.	Opening Size	Half Sheet Wd.	Half Sheet Lg.		Each	Full Sheet Wd.	Full Sheet Lg.		Each
(A) Standard									
1″	1″ × 4″	4 ft.	4 ft.	6919T73	$262.12	8 ft.	4 ft.	6919T74	$502.40
1″	1″ × 4″	5 ft.	3 ft.	6919T71	238.73	10 ft.	3 ft.	6919T72	457.56
1″	1½″ × 1½″	3 ft.	5 ft.	6919T23	229.04	3 ft.	10 ft.	6919T13	439.00
1″	1½″ × 1½″	4 ft.	4 ft.	6919T24	244.37	4 ft.	8 ft.	6919T14	468.38
1½″	1½″ × 1½″	3 ft.	5 ft.	6919T66	310.51	3 ft.	10 ft.	6919T56	595.15
1½″	1½″ × 1½″	4 ft.	4 ft.	6919T67	328.25	4 ft.	8 ft.	6919T57	629.15
1½″	1½″ × 1½″	4 ft.	6 ft.	6919T68	464.55	4 ft.	12 ft.	6919T58	890.40
2″	2″ × 2″	4 ft.	6 ft.	6919T69	520.21	4 ft.	12 ft.	6919T59	997.06
(B) Antimicrobial									
1″	1″ × 4″	4 ft.	4 ft.	7075T83	295.80	8 ft.	4 ft.	7075T84	573.86
1″	1″ × 4″	5 ft.	3 ft.	7075T81	276.52	10 ft.	3 ft.	7075T82	545.66
1″	1½″ × 1½″	3 ft.	5 ft.	7075T85	274.35	3 ft.	10 ft.	7075T86	523.77
1″	1½″ × 1½″	4 ft.	4 ft.	7075T87	283.63	4 ft.	8 ft.	7075T88	559.68
1½″	1½″ × 1½″	3 ft.	5 ft.	7075T89	324.46	3 ft.	10 ft.	7075T91	640.26
1½″	1½″ × 1½″	4 ft.	4 ft.	7075T92	347.11	4 ft.	8 ft.	7075T93	684.93
1½″	1½″ × 1½″	4 ft.	6 ft.	7075T94	519.78	4 ft.	12 ft.	7075T95	1,026.25
2″	2″ × 2″	4 ft.	6 ft.	7075T96	578.81	4 ft.	12 ft.	7075T97	1,142.15
Resin Sealer (½-pt. can)								6253T97	Each $23.69

(C-E) High Load Bearing Bar Grating

Grating is made from a higher percentage of fiberglass strands to handle heavy loads while spanning greater distances than the Maximum Corrosion-Resistant Grating. Bearing bars provide uniform weight distribution. Cross bars hold the bearing bars in place. **To Order:** Please specify length from those listed.

(C) Standard grating has a one-piece molded design. Color is light gray.

(D) High-strength grating has exceptional strength. It has bearing bars that are held in place with cross bars every 6″ to form a bonded interlocking assembly. Color is yellow.

(E) Narrow-opening grating has a smaller gap between bearing bars to prevent items from falling through, as well as to make it easier for carts to roll across. It has bearing bars that are held in place with cross bars every 6″ to form a bonded interlocking assembly. Grating, except 66035T57, T58, and T59, helps comply with ADA when properly installed. Color is dark gray, except 66035T57, T58, and T59 are yellow.

Also Available: Custom lengths; please ask for 6780T888 (Style C), 6228T888 (Style D), or 66035T888 (Style E) and specify bearing bar height, grating length, and grating width.

Bearing Bar Ht.	Bearing Bar Wd.	Bearing Bar Spacing, Ctr.-to-Ctr.	Available Lengths, ft.	2-Ft. Width	Per Ft.	3-Ft. Width	Per Ft.	4-Ft. Width	Per Ft.
(C) Standard									
1½″	¼″	1½″	3, 4, 6	6780T11	$27.68	6780T12	$43.97	6780T13	$49.72
(D) High Strength									
1″	19/32″	1½″	3, 4, 5, 6, 8, 10	6228T41	30.01	6228T42	48.77	6228T43	60.03
1½″	19/32″	1½″	3, 4, 5, 6, 8, 10	6228T44	34.30	6228T45	51.41	6228T46	68.69
(E) Narrow Opening									
1″	1½″	2″	3, 4, 5, 6, 8, 10	66035T51	32.48	66035T52	48.73	66035T53	64.96
1½″	1½″	2″	3, 4, 5, 6, 8, 10	66035T54	35.61	66035T55	53.51	66035T56	71.20
2″	1″	2″	3, 4, 5, 6, 8, 10	66035T57	36.99	66035T58	55.52	66035T59	73.97
Resin Sealer (½-pt. can)								6253T97	Each $23.69

Solid Surface Grit-Top Corrosion-Resistant Fiberglass Grating

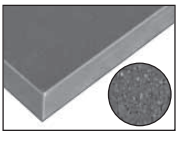

When open-surface grating won't do, choose this solid-surface grating—it is ideal for areas with wheel traffic and anywhere you would not want small items and debris to fall through. Grating has a grit-embedded top surface that provides good traction. It is nonconductive and nonmagnetic. To cut, use a circular saw with a diamond-tipped blade; cut ends need to be sealed with resin sealer (sold separately). Color is green. For indoor and outdoor use.

Installation requires drilling through the grating as well as your structural support; fasteners are included.

Also Available: Custom sizes; please ask for 4638T888 and specify height, width, and length.

Ht.	Half Sheet Wd.	Half Sheet Lg.			Full Sheet Wd.	Full Sheet Lg.		
1⅛″	3 ft.	5 ft.	4638T11	$477.91	3 ft.	10 ft.	4638T41	$923.97
1⅛″	4 ft.	4 ft.	4638T12	493.45	4 ft.	8 ft.	4638T42	954.00
1⅝″	3 ft.	5 ft.	4638T13	503.50	3 ft.	10 ft.	4638T43	973.43
1⅝″	4 ft.	4 ft.	4638T14	530.00	4 ft.	8 ft.	4638T44	1,024.67
1⅝″	4 ft.	6 ft.	4638T15	755.71	4 ft.	12 ft.	4638T45	1,461.03
2⅛″	4 ft.	6 ft.	4638T16	801.40	4 ft.	12 ft.	4638T46	1,549.37
Resin Sealer (½-pt. can)							6253T97	$23.69

Bar Grating Fasteners

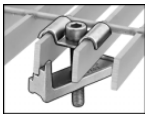
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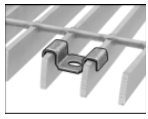
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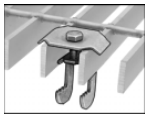
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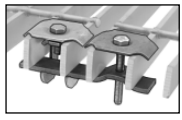
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Secure bar grating, such as our Steel, Stainless Steel, and Aluminum Bar Grating on page 2103, to your support structure.

(1) Swivel-Lock Fasteners— Just tighten the bolt and the fastener swivels into place for easy installation, adjustment, and removal. Bottom flange is cast iron.

(2) Flat-Head J-Bolt Fasteners— A J-bolt wraps around the bearing bar and a plate secures the bearing bar to the support structure.

(3) Saddle Clip Fasteners— Bridge two bearing bars. Fasteners require a hole in the support structure as well as a threaded stud and hex nut (see pages 3164-3178 and pages 3184-3193). Overall height of the saddle plate is 1/2″. Mounting slot is 3/8″×9/32″.

(4) C-Clip Fasteners— These fasteners hook onto the support structure and are connected by a bolt to the plate on top of the grating. They tighten from above the grating for easy installation.

(5) Grating Connector— Use a connector to tie two sheets of bar grating together. It lessens trip hazards by holding edges of sheets together as you walk on them.

To Order: For Styles 4 and 5, please specify bearing bar height in 1/4″ increments from 1″ to 2″.

	Material	Fits Bearing Bar Ht.	Fits Bearing Bar Wd.	Fits Bearing Bar Spacing, Ctr.-to-Ctr.	Fits Support Structure Thick.	Bolt Included	Pkg. Qty.		Pkg.
1	Galvanized Steel	1″-2 1/8″	1/8″-1/4″	1 1/16″-1 1/2″	1/8″-3/4″	Yes	1	62285T61	$8.79
1	Galvanized Steel	2″-3″	1/8″-1/4″	1 1/16″-1 1/2″	1/8″-3/4″	Yes	1	62285T62	11.62
1	Type 304 Stainless Steel	1 3/4″	1/8″-1/4″	5/8″-1 3/8″	1/8″-3/4″	Yes	1	62285T63	14.68
2	Galvanized Steel	3/4″-2 1/4″	1/8″-3/8″	_____	■	Yes	1	6268T31	4.55
2	Galvanized Steel	2 1/2″-3 1/4″	1/8″-3/8″	_____	■	Yes	1	6268T35	4.52
3	Galvanized Steel	Any	Up to 5/16″	1 3/16″	Any	No	25	6268T26	9.45
3	Type 304 Stainless Steel	Any	Up to 5/16″	1 3/16″	Any	No	10	6268T41	10.43
4	Galvanized Steel	1″-2″	Up to 1/4″	1 3/16″	1/4″-3/4″	Yes	1	6268T55	3.07
4	Type 316 Stainless Steel	1″-2″	Up to 1/4″	1 3/16″	1/4″-3/4″	Yes	1	6268T56	6.52
5	Galvanized Steel	1″-2″	Up to 1/4″	1 3/16″	_____	Yes	1	6268T61	9.37

■ To calculate the maximum thickness, take the J-bolt length (2 1/2″ for 6268T31; 3 1/2″ for 6268T35) and then subtract the bearing bar height. You must also subtract 1/4″ for the nut clearance.

Fiberglass Grating Fasteners

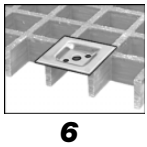
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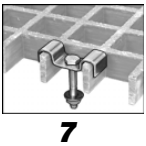
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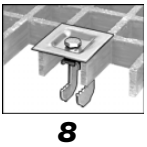
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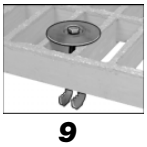
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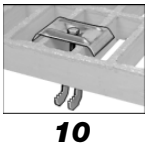
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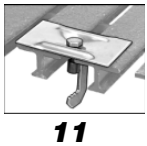
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12

Made of Type 316 stainless steel, these fasteners are specifically designed for use with the Grit-Top Corrosion-Resistant Fiberglass Grating and the Solid Surface Grit-Top Corrosion-Resistant Fiberglass Grating on page 2104.

(6) Standard Fastener— Requires a hole in the support structure and secures to the structure with a 1/4″-20 hex head cap screw (not included, see page 3146).

(7) Saddle Clip Fasteners— Bridge two bearing bars and require a hole in the support structure. Overall height of the saddle plate is 1/2″.

(8-11) Fasteners with C-Clip and Bolt— Hook onto the support structure and are connected by a bolt to the plate on top of the grating. They tighten from above the grating for easy installation.

To Order: For Styles 8-11, please specify grating height, except for 7010T52.

(12) Solid-Surface Grating Fastener— Requires a hole in the support structure as well as in the grating top (mounting hardware included).

	Fits Grating/ Bearing Bar Ht.	Fits Grating Opening Size	Fits Support Structure Thick.		
For Grating A&B					
6	Depends on fastener lg.	1 1/2″×1 1/2″	Any	7010T21	$2.85
7	1″	1″×4″	1/2″	7010T22	5.98
7	1″	1 1/2″ max. ctr.-to-ctr. between bearing bars	1/2″	7010T71	3.23
7	1 1/2″	1 1/2″ max. ctr.-to-ctr. between bearing bars	1/2″	7010T72	3.95
7	2″	2″ max. ctr.-to-ctr. between bearing bars	1/2″	7010T73	6.60
8	1″, 1 1/2″	1 1/2″×1 1/2″	1/4″-3/4″	7010T41	8.71
8	2″	2″×2″	1/4″-3/4″	7010T52	9.53
For Bar Grating C&D					
9	1″, 1 1/2″	1″×2″, 1″×4″, 1″×6″	1/4″-3/4″	7010T63	6.53
10	1″, 1 1/2″	2 1/4″ from left edge to right edge of bearing bars	1/4″-3/4″	7010T74	8.40
For Bar Grating D					
7	1″, 1 1/2″	1 1/2″ max. ctr.-to-ctr. between bearing bars	1/2″	7010T23	6.86
For Bar Grating E					
11	1″, 1 1/2″, 2″	2 1/4″ max. ctr.-to-ctr. between bearing bars	1/4″-3/4″	7010T85	9.72
For Solid Surface Grit-Top Grating					
12	1 1/8″	_____	1/2″	7010T91	6.36
12	1 5/8″	_____	1/2″	7010T92	6.62
12	2 1/8″	_____	1/2″	7010T93	8.06

Elevated Steel Flooring

Create an elevated floor system. The floor panels lift out for easy access to wiring, telephone lines, and piping—great for computer rooms. Measuring 24″×24″×1″ Thick., floor panels have a wooden core encased in galvanized steel with a marbled gray and white laminated surface. Uniform load rating is 300 lbs. per sq. ft. (Uniform load rating is the maximum evenly distributed load the floor can support.) Clean with a broom, vacuum, or damp mop only (do not use cleaning agents or wet mopping).

Pedestals adjust 3/4″ up or down to accommodate uneven floors. They have a 4″ square base plate with steel lugs to provide stability and support a corner of up to four panels. Secure pedestal to floors with the two 1/4″ dia. mounting holes (mounting hardware not included).

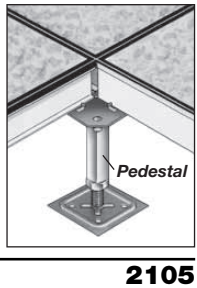

Floor Panel with 1/16″ Laminate	68025T61	$40.05
Floor Panel with 1/8″ Laminate	68025T62	45.22
Pedestal (For 8″ Floor Ht.)	68025T66	8.76
Pedestal (For 12″ Floor Ht.)	68025T65	9.42

Stair Treads

Plank-Grating Style

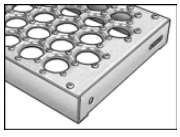

Antislip

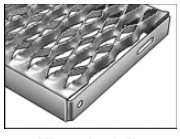

Ultra-Antislip Serrated

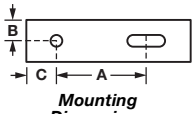

Mounting Dimensions

Made of galvanized steel for corrosion resistance, these are the most economical stair treads we offer. Treads have two mounting holes on each depth side; one 7/16″ round and one 7/16″ × 1 3/4″ slotted. For indoor and outdoor use.

Antislip Surface—Small projections are combined with large, 1 3/8″ dia. drainage holes for a high-traction surface.

Ultra-Antislip Serrated Surface—Serrated openings provide superior traction while allowing drainage.

Tread Size Lg.	Dp.	Ht.	Material Thick.	Mounting Dimensions (A)	(B)	(C)	Plain Finish		Yellow Finish	
Antislip Surface										
24″	10″	2″	13 ga.	7″	1″	1 1/8″	70135T61	$30.32	70135T71	$41.21
24″	12″	2″	13 ga.	9″	1″	1 1/8″	70135T81	33.81	70135T72	44.01
30″	10″	2″	13 ga.	7″	1″	1 1/8″	70135T62	36.55	70135T73	46.75
36″	10″	2″	13 ga.	7″	1″	1 1/8″	70135T63	38.06	70135T74	48.95
36″	12″	2″	13 ga.	9″	1″	1 1/8″	70135T83	43.71	70135T75	59.60
48″	12″	2″	13 ga.	9″	1″	1 1/8″	70135T84	48.39	70135T76	62.43
Ultra-Antislip Serrated Surface										
18″	7″	1 1/2″	14 ga.	3 3/8″	3/4″	27/32″	6869T341	30.41	6869T21	32.50
18″	9 1/2″	1 1/2″	14 ga.	5 7/8″	3/4″	27/32″	6869T541	37.11	6869T22	39.38
18″	11 3/4″	1 1/2″	14 ga.	8 1/8″	3/4″	27/32″	6869T741	40.83	6869T23	43.77
24″	7″	1 1/2″	14 ga.	3 3/8″	3/4″	27/32″	6869T351	35.79	6869T24	35.67
24″	9 1/2″	1 1/2″	14 ga.	5 7/8″	3/4″	27/32″	6869T551	38.23	6869T25	41.42
24″	11 3/4″	1 1/2″	14 ga.	8 1/8″	3/4″	27/32″	6869T751	43.65	6869T26	46.75
30″	7″	1 1/2″	14 ga.	3 3/8″	3/4″	27/32″	6869T361	41.11	6869T27	41.58
30″	9 1/2″	1 1/2″	14 ga.	5 7/8″	3/4″	27/32″	6869T561	45.79	6869T28	47.83
30″	11 3/4″	1 1/2″	14 ga.	8 1/8″	3/4″	27/32″	6869T761	52.88	6869T29	54.58
36″	7″	1 1/2″	14 ga.	3 3/8″	3/4″	27/32″	6869T371	43.37	6869T31	44.25
36″	9 1/2″	1 1/2″	14 ga.	5 7/8″	3/4″	27/32″	6869T571	47.64	6869T32	45.84
36″	11 3/4″	1 1/2″	14 ga.	8 1/8″	3/4″	27/32″	6869T771	53.70	6869T33	57.25
36″	9 1/2″	2″	14 ga.	5 7/8″	1″	27/32″	6869T841	53.77	—	—
36″	11 3/4″	2″	14 ga.	8 1/8″	1″	27/32″	6869T861	60.06	—	—
48″	9 1/2″	2″	14 ga.	5 7/8″	1″	27/32″	6869T591	60.76	6869T34	62.08
48″	11 3/4″	2″	14 ga.	8 1/8″	1″	27/32″	6869T791	67.22	6869T35	69.42

Heavy Duty Bar-Grating Style

Smooth-Surface High-Strength Steel

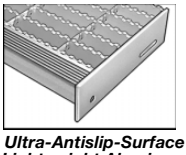

Ultra-Antislip-Surface Lightweight Aluminum

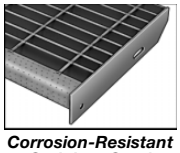

Corrosion-Resistant Stainless Steel

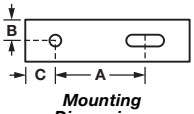

Mounting Dimensions

Choose these stair treads for durability. The *ultra-antislip surface* is serrated to provide superior traction.

High-Strength Steel—An open bar-grid pattern prevents debris from accumulating and a diamond-tread nosing provides traction. *Black-finish treads* have two mounting holes on each depth side; one 7/16″ round and one 7/16″ × 1 7/16″ slotted. They are for indoor use in dry, noncorrosive areas. *Galvanized treads* have two mounting holes on each depth side; one 7/16″ round and one 7/16″ × 7/8″ slotted. They offer better corrosion resistance than black-finish treads and are for indoor and outdoor use.

Lightweight Aluminum—Have better corrosion resistance than the galvanized steel treads. Plus, they're nonsparking and nonmagnetic. All have a ribbed nosing for traction. Treads have two mounting holes on each depth side; one 7/16″ round and one 7/16″ × 1 15/16″ slotted. For indoor and outdoor use.

Corrosion-Resistant Stainless Steel—Made of Type 304 stainless steel, these treads have better corrosion resistance than the steel or aluminum treads. They have a matte finish and a gritted nose for traction. Treads have two mounting holes on each depth side; one 7/16″ round and one 7/16″ × 1 7/16″ slotted. For indoor and outdoor use.

Tread Size Lg.	Dp.	Ht.	Bearing Bar Ht.	Material Thick.	Mounting Dimensions (A)	(B)	(C)	SMOOTH SURFACE Black Finish		SMOOTH SURFACE Galvanized		ULTRA-ANTISLIP SURFACE Black Finish		ULTRA-ANTISLIP SURFACE Galvanized	
High-Strength Steel															
24″	8 9/16″	2 1/2″	1″	3/16″	4 1/2″	1 3/4″	1 1/8″	67905T21	$32.81	67905T51	$46.84	6856T11	$33.96	6856T31	$48.26
24″	9 3/4″	2 1/2″	1″	3/16″	7″	1 3/4″	1 1/8″	67905T22	36.01	67905T52	52.70	6856T12	37.16	6856T32	52.95
30″	8 9/16″	2 1/2″	1″	3/16″	4 1/2″	1 3/4″	1 1/8″	67905T23	38.34	67905T53	55.30	6856T13	39.96	6856T33	57.30
30″	9 3/4″	2 1/2″	1″	3/16″	7″	1 3/4″	1 1/8″	67905T24	41.75	67905T54	60.45	6856T14	43.38	6856T34	62.45
30″	10 15/16″	2 1/2″	1″	3/16″	7″	1 3/4″	1 1/8″	67905T25	44.33	67905T55	61.30	6856T15	45.95	6856T35	66.80
36″	9 3/4″	2 1/2″	1 1/4″	3/16″	7″	1 3/4″	1 1/8″	67905T26	49.74	67905T56	74.43	6856T16	52.53	6856T36	77.42
36″	10 15/16″	2 1/2″	1 1/4″	3/16″	7″	1 3/4″	1 1/8″	67905T27	53.62	67905T57	80.35	6856T17	56.08	6856T37	83.38
42″	10 15/16″	2 1/2″	1 1/4″	3/16″	7″	1 3/4″	1 1/8″	67905T29	58.82	67905T59	88.33	6856T19	61.97	6856T39	92.17
48″	10 15/16″	2 1/2″	1 1/4″	3/16″	7″	1 3/4″	1 1/8″	67905T74	63.98	67905T62	96.18	6856T72	68.23	6856T42	101.50
Lightweight Aluminum								Plain Finish				Plain Finish			
18″	8 13/16″	2 1/2″	1 1/4″	3/16″	5 9/16″	1 3/4″	1 1/4″	4342T71	$55.87	—	—	69105T82	$56.47	—	—
24″	7 5/8″	2 1/2″	1 1/4″	3/16″	4 3/8″	1 3/4″	1 1/4″	4342T72	60.58	—	—	69105T83	62.40	—	—
24″	8 13/16″	2 1/2″	1 1/4″	3/16″	5 9/16″	1 3/4″	1 1/4″	4342T73	63.21	—	—	69105T84	64.36	—	—
30″	8 13/16″	2 1/2″	1 1/4″	3/16″	5 9/16″	1 3/4″	1 1/4″	4342T74	69.52	—	—	69105T86	71.90	—	—
Corrosion-Resistant Stainless Steel								Plain Finish							
36″	9 3/4″	2 1/2″	1 1/4″	3/16″	7″	1 3/4″	1 1/8″	5820T3	$206.67	—	—	—	—	—	—
36″	10 15/16″	2 1/2″	1 1/4″	3/16″	7″	1 3/4″	1 1/8″	5820T2	233.33	—	—	—	—	—	—
36″	12 1/8″	2 1/2″	1 1/4″	3/16″	7″	1 3/4″	1 1/8″	5820T1	255.00	—	—	—	—	—	—
36″	12 1/8″	2 1/2″	1″	3/16″	7″	1 3/4″	1 1/8″	5820T4	216.67	—	—	—	—	—	—

Lightweight Corrosion-Resistant Bar-Grating Style

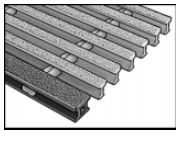

These lightweight fiberglass treads are corrosion resistant, nonconductive, and nonmagnetic. They're yellow with gray nosing and have a grit-impregnated surface for traction. They do not have mounting holes. Cut treads with a circular saw using a diamond-grit blade and seal the cut end with a resin sealer (sold separately). For indoor and outdoor use.

Tread Dp.	Bearing Bar Ht.	Material Thick.	24″ Lg.		30″ Lg.		36″ Lg.	
10 1/2″	1″	1/8″	6128T51	$52.37	6128T52	$71.40	6128T53	$78.54
10 1/2″	1 1/2″	1/8″	6128T55	57.20	6128T56	78.00	6128T57	85.79

Grating Fastener	7010T23 6.86
Resin Sealer (1/2-pt. can)	6253T97 23.69

About Stair Tread Covers and Nosing

Stair tread covers and nosing not only protect worn stairs, they also provide a slip-resistant surface.

Covers protect the entire stair surface. On worn stairs, they provide a new stair surface. ***Nosing*** protects the front portion of the stair.

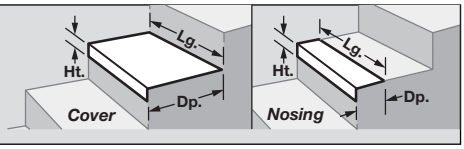

Stair Tread Covers

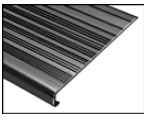
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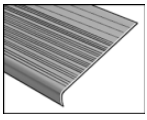
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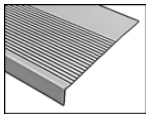
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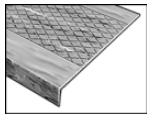
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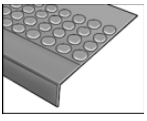
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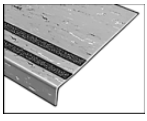
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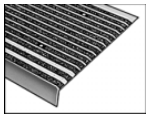
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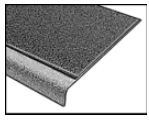
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(A&B) Oil- and Chemical-Resistant Vinyl Covers— Fit square-nose concrete and wood stairs. To install, use stair tread adhesive sold separately. For indoor use.

(C-F) High-Traffic Rubber Covers— Fit square-nose concrete and wood stairs. To install, use stair tread adhesive sold separately. *Style F* comes with two 1″ wide abrasive strips for added traction. For indoor use.

(G) Corrosion-Resistant Aluminum Covers with Grit— A grit top gives these covers excellent traction in high-traffic areas. The color in the table below refers to grit. Covers have 1/4″ dia. countersunk mounting holes. To install, use construction adhesive sold separately on page 3420, or screw in place; see pg. 3317 for concrete screws or see 90031A on page 3017 for #10 wood screws. For indoor and outdoor use.

(H) Corrosion-Resistant Plastic Covers with Grit— Made of fiberglass reinforced plastic (FRP) for superior corrosion resistance in harsh environments. Cover has a yellow glow-in-the-dark nose for high visibility. To install use construction adhesive sold separately on page 3420, or drill and screw in place; see pages 3025 and 3054 for stainless steel truss-head screws. For indoor and outdoor use.

Stair tread adhesive for Styles A-F covers 125-150 sq. ft./gal. Color is white. For indoor use.

To Order: For all stair tread covers, please specify color and length from the available choices listed in the table.

	Dp.	Ht.	Thick.	Available Colors		36″ Lg.	42″ Lg.	48″ Lg.	54″ Lg.	60″ Lg.	72″ Lg.
Oil- and Chemical-Resistant Vinyl											
A	9 5/8″	7/8″	1/8″	Black, Brown	6843T11	$15.35	$17.95	$20.50	____	____	$30.45
B	12″	1 1/4″	3/16″	Black, Brown, Lt. Gray	6864T12	27.92	32.41	37.08	$41.68	$46.34	54.95
High-Traffic Rubber											
C	12 1/4″	1 9/16″	1/8″	Black, Brown, Lt. Gray	6929T29	39.00	45.50	51.97	58.47	64.97	77.94
D	13″	1 7/8″	1/4″	Black, Marbled Brown, Marbled Lt. Gray	6910T13	56.55	65.97	75.40	84.83	94.25	113.10
E	12″	2″	7/32″	Black, Brown, Lt. Gray	6291T15	56.48	65.89	75.31	84.72	94.13	112.96
F	13″	1 5/8″	3/16″	Black, Marbled Brown, Marbled Lt. Gray	6249T17	52.50	61.25	70.00	78.75	87.50	105.00
Corrosion-Resistant Aluminum with Grit											
G	8 7/8″	1 1/8″	9/32″	Black, Black with Yellow, Lt. Gray	6847T12	65.94	76.93	87.91	98.90	109.89	131.87
G	10 7/8″	1 1/8″	9/32″	Black, Black with Yellow, Lt. Gray	6847T13	88.47	103.21	117.96	132.70	147.45	176.94
Corrosion-Resistant Plastic with Grit											
H	12″	1 1/2″	1/8″	Dark Gray with Yellow	6127T59	65.52	76.44	87.34	98.26	109.39	131.05
Stair Tread Adhesive for Styles A-F (1 gal. can)					62695T82	$47.67					

Stair Tread Nosing

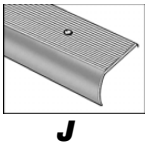
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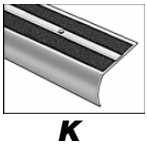
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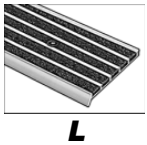
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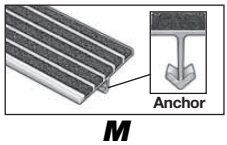

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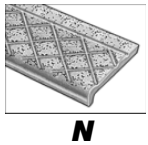
N

(J&K) Aluminum Nosing— An etched and anodized finish provides a slip-resistant surface. Simple to install, just screw nosing into place. For wood stairs, use #4 wood screws (see 90031A on page 3016). For indoor and outdoor use.

Style J has a ribbed surface. *Style K* has two abrasive strips for added traction.

(L&M) Aluminum Nosing with Grit— Five channels embedded with grit provide excellent traction and slip resistance. For indoor and outdoor use.

Style L can be installed in fresh concrete as well as on existing stairs. It has 1/4″ dia. countersunk holes for concrete screws (see page 3317). *Style M* has an integral anchor for installation in fresh concrete; no fasteners required.

(N) Cast Aluminum and Cast Iron Nosing with Grit— Embedded with abrasive grit for traction, this durable nosing can handle heavy traffic and rough environments. Ideal for concrete-filled, steel framed stairs. Mounting hardware included.

Cast aluminum is for indoor and outdoor use. *Cast iron* is for indoor use.

Nosing epoxy compound is for use between nosing and front edge of a stair to prevent cracks. Covers 75 lin. ft./qt. For indoor and outdoor use.

To Order: Please specify length.

	Dp.	Ht.	Thick.		36″ Lg.	42″ Lg.	48″ Lg.	60″ Lg.	72″ Lg.	144″ Lg.
Aluminum										
J	2 1/2″	1 1/2″	1/8″	6282T23	$13.36	$15.58	$17.83	$22.25	$26.30	$53.40
K	3″	1 1/16″	3/32″	6282T24	32.91	38.32	43.81	54.85	65.82	105.52
Aluminum with Grit— **To Order:** *Please specify grit color: black or yellow.*										
L	2 7/8″	1/4″	1/4″	6846T14	31.11	36.29	41.48	51.85	62.22	124.44
M	2 7/8″	1/4″	1/4″	7745T59	26.56	30.98	35.40	44.26	53.10	106.20
Cast Aluminum with Black Grit										
N	2 11/16″	3/8″	5/16″	6952T11	39.26	45.82	52.34	65.40	78.47	____
N	3 11/16″	3/8″	5/16″	6952T12	49.24	57.40	65.62	82.03	98.45	____
Cast Iron with Black Grit										
N	2 11/16″	3/8″	5/16″	6861T16	41.24	48.12	54.96	68.67	82.40	____
N	3 11/16″	3/8″	5/16″	6861T17	51.71	60.27	68.90	86.12	103.38	____
Nosing Epoxy Compound for Styles J-N (1 qt. can)					62695T86	$36.86				

About Shovels, Spades, and Scoops

Open-back blades have a hollow handle socket where the handle attaches to the blade. This design provides strength with less weight.

Closed-back blades have a solid handle socket that is formed into the blade. In addition to providing strength, this design prevents mud and debris from collecting on the back of the blade.

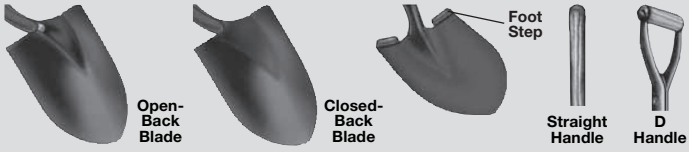

Shovels and Spades

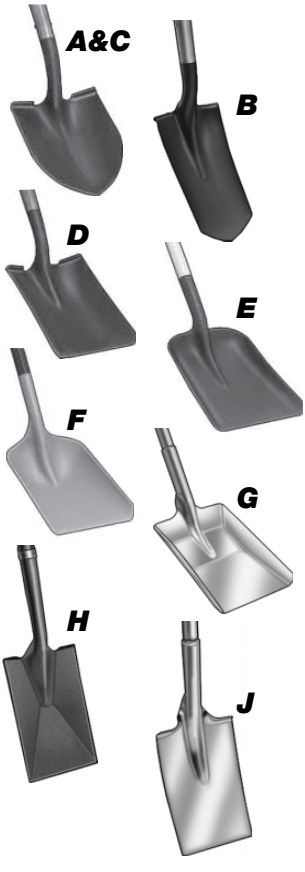

Style B— The choice for digging narrow openings such as trenches. They're also good for clearing mud and debris off of construction equipment.

Style F— In addition to being nonsparking, the polypropylene blade is lighter in weight than steel and aluminum blades. The blade is green; handle is black.

Styles G&J— Made entirely of corrosion-resistant Type 304 stainless steel, the shovel and spade meet USDA standards for use in food-processing, meat-packing, and dairy plants.

Blade				Handle					
Wd.	Ht.	Back	Foot Step	Style	Material	Lg.	Dia.		
Rounded Digging Shovels									
(A) Standard with Steel Blade									
8¾″	11½″	Open	Yes	Straight	Steel	48″	1¼″	**6070A23**	$38.90
8¾″	11½″	Closed	Yes	Straight	Wood	47″	1½″	**6229A65**	45.00
8¾″	11½″	Closed	Yes	Straight	Fiberglass	48″	1¼″	**6229A61**	47.88
9½″	12″	Open	Yes	D	Wood	30″	1″	**6229A52**	25.53
9½″	12″	Open	Yes	Straight	Wood	48″	1½″	**6229A55**	25.97
(B) Narrow Width with Steel Blade									
3″	11″	Closed	Yes	Straight	Wood	44″	1½″	**6291A13**	21.73
5″	11½″	Open	Yes	Straight	Wood	48″	1½″	**6291A11**	33.26
(C) Ceremonial with Chrome-Plated Steel Blade									
9″	11½″	Open	Yes	D	Wood	27″	1 7/16″	**6230A11**	99.74
Squared Scooping Shovels									
(D) Standard with Steel Blade									
9¼″	11½″	Open	Yes	D	Wood	28″	1½″	**6218A29**	25.88
9½″	11″	Open	Yes	Straight	Steel	48″	1¼″	**6070A21**	40.44
9½″	11½″	Open	Yes	D	Fiberglass	27″	1¼″	**6251A21**	33.62
9½″	11½″	Open	Yes	Straight	Fiberglass	48″	1¼″	**6251A22**	33.62
9½″	12″	Open	Yes	Straight	Wood	48″	1½″	**6218A33**	28.71
(E) Standard with Oversized Steel Blade									
11½″	14½″	Open	No	D	Wood	34″	1½″	**6348A14**	29.78
11½″	14½″	Open	No	Straight	Wood	46″	1½″	**6348A15**	26.76
(E) Standard with Oversized Aluminum Blade									
11″	13½″	Open	No	Straight	Wood	46″	1½″	**6280A45**	37.84
(F) Standard with Nonsparking Polypropylene Blade									
10½″	14″	Open	No	D	Polypropylene	24½″	1½″	**6214A13**	44.41
(G) Standard with Stainless Steel Blade									
9½″	12½″	Closed	No	D	Stainless Steel	26½″	1″	**6020A12**	180.69
(D) Heavy Duty with Steel Blade									
9¾″	12″	Closed	Yes	D	Wood	27″	1½″	**6225A12**	66.56
9¾″	12″	Closed	Yes	Straight	Wood	47″	1½″	**6225A13**	59.44
Edging Spades									
(H) Standard with Steel Blade									
6 7/8″	11″	Open	Yes	Straight	Steel	48″	1¼″	**6070A22**	39.94
7″	11″	Open	Yes	D	Fiberglass	27″	1¼″	**6276A41**	38.61
7″	11″	Open	Yes	Straight	Fiberglass	48″	1¼″	**6276A42**	38.61
(J) Standard with Stainless Steel Blade									
7″	11″	Closed	Yes	D	Stainless Steel	28″	1″	**6020A11**	173.24

Mini and Collapsible Shovels

Mini shovels (K-M) are excellent in confined areas and are easy to store. ***Collapsible shovel (N)*** is a full-size, nonsparking, chemical- and corrosion-resistant shovel with a handle that collapses for compact storage.

Shovel Style	Blade Wd.	Blade Ht.	Blade Back	Blade Foot Step	Handle Style	Handle Lg.	Handle Dia.	O'all Lg.		
Mini Shovels with Steel Blade and Wood Handle										
K Rounded Digging	3¼″	6″	Open	No	Straight	5⅝″	1¼″	12¼″	**6192A8**	$9.75
L Rounded Digging	5¾″	8¼″	Open	Yes	D	18″	1½″	27″	**6192A6**	17.14
M Squared Scooping	6″	8¼″	Open	Yes	D	18″	1½″	27″	**6192A4**	17.13
Collapsible Shovel with Nonsparking Polypropylene Blade and Handle										
N Squared Scooping	10″	12″	Open	No	T	24″	1⅜″	36″	**3602A3**	29.36

Picks and Mattocks

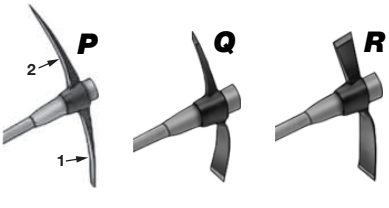

Break up soil, tree roots, rocks, and more. All tools have forged steel blades and a 36″ long slip-on, straight wood handle.

	Blade (1) Wd.	Blade (1) Lg.	Blade (2) Wd.	Blade (2) Lg.	O'all Blade Lg.		
P Pick	1″	9½″	1″	9½″	22½″	**6274A22**	$33.69
P Pick	1″	13½″	1″	13″	30″	**6258A22**	86.96
Q Pick/Mattock	3¼″	7″	1″	7½″	18⅞″	**6282A3**	31.98
R Mattock	3″	8″	½″	4¾″	15¾″	**6221A12**	34.15

Replacement Handle (36″ Long) for 6274A22, 6282A3, and 6221A12 ..... **62715A17** 18.96
Replacement Handle (36″ Long) for 6258A22 ..... **62715A18** 14.46

For information about scoops, see page 2108.

Scoops

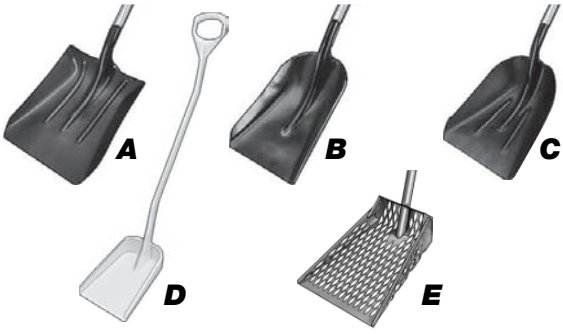

Compared to squared shovels, these scoops boast larger blades to move material quickly and efficiently. All scoops have an open-back blade, unless noted.

Smooth-blade scoops (also known as Eastern-pattern scoops) have smooth, flat bottoms. *Ribbed-blade scoops* (also known as Western-pattern scoops) have a ribbed bottom and are stronger than smooth-blade scoops.

Shallow-Blade Scoops— Have low sides, which allow you to disperse materials over wide areas.

Deep-Blade Scoops— Have high bowl-shaped sides to contain more material.

Hygienic Deep-Blade Scoops— These food-grade scoops meet USDA standards for use in food-processing, meat-packing, and dairy plants. All have a closed-back blade.

Model with smooth stainless steel blade is made of corrosion-resistant Type 304 stainless steel.

Models with smooth polypropylene blade are made of one-piece molded polypropylene. They're lightweight, nonsparking, and resistant to chemicals and corrosion. Use the *color-coded models* to avoid cross-contamination in specific areas. Use the *ergonomic models* with their angled-handle design to reduce back strain when lifting.

Sifting Scoop— This lightweight scoop has 1/2″ wide mesh openings that cause unsifted material to roll to the center for easy removal or disposal. Blade is made of galvanized steel to increase tool life.

Blade Wd.	Blade Ht.	Handle Style	Handle Material	Handle Lg.	Handle Dia.		
Shallow-Blade Scoops							
(A) With Ribbed Steel Blade							
13 1/2″	14 1/2″	D	Wood	27″	1 1/2″	**6208A11**	$46.53
13 1/2″	14 1/2″	Straight	Wood	48″	1 1/2″	**6208A12**	46.18
Deep-Blade Scoops							
(B) With Smooth Steel Blade							
9 1/2″	14″	D	Wood	29″	1 1/2″	**6211A23**	45.00
11″	15″	Straight	Fiberglass	48″	1 1/4″	**6227A11**	51.49
11″	15″	D	Wood	27″	1 3/4″	**6211A11**	43.54
12″	17″	D	Wood	27″	1 1/2″	**6211A15**	47.46
14 1/2″	17″	D	Wood	27″	1 1/2″	**6211A25**	55.64
(B) With Smooth Aluminum Blade							
11″	14 1/2″	D	Wood	31″	1 1/2″	**6206A15**	72.25
11″	14 1/2″	Straight	Wood	48″	1 1/2″	**6206A16**	63.35
(C) With Ribbed Economical Polyethylene Blade— *Color is red.*							
10 1/2″	13″	D	Wood	23″	1 1/8″	**6318A11**	18.22
13 1/2″	16 1/2″	D	Wood	30 1/2″	1 1/4″	**6319A11**	24.14
(C) With Ribbed ABS Plastic Blade— *Color is black.*							
15″	19″	D	Wood	30″	1 1/2″	**6287A21**	32.53
15″	19″	Straight	Wood	48″	1 1/2″	**6287A23**	28.87
(C) With Ribbed Steel Blade							
14″	17″	D	Wood	27″	1 1/2″	**6210A11**	52.36
15″	19″	D	Wood	27″	1 1/2″	**6210A15**	54.54
15″	19″	Straight	Wood	48″	1 3/8″	**6210A16**	71.75
(C) With Ribbed Aluminum Blade							
14 1/2″	17 3/4″	D	Fiberglass	27″	1 1/4″	**6269A13**	61.64
14 3/4″	18 3/4″	D	Wood	31″	1 1/2″	**6269A15**	57.10
14 3/4″	20″	Straight	Wood	46″	1 1/8″	**6269A45**	69.00
15″	22 1/2″	D	Fiberglass	27″	1 1/4″	**6269A19**	65.27
15 1/4″	19 3/4″	D	Wood	31″	1 1/2″	**6269A17**	57.67
Hygienic Deep-Blade Scoops							
(B) With Smooth Stainless Steel Blade							
12″	15″	D	Stain. Steel	29″	1 1/2″	**6252A16**	175.89
(B) Color Coded with Smooth Polypropylene Blade— **To Order:** *Please specify color: blue, red, white, or yellow.*							
11″	14″	D	Polypropylene	24″	1 1/2″	**6254A3**	38.79
14″	17″	D	Polypropylene	25″	1 1/2″	**6254A4**	41.21
(D) Ergonomic with Smooth Polypropylene Blade— *Color is white.*							
10 1/4″	11″	D	Polypropylene	39″	1 1/4″	**6357A1**	62.76
13 1/2″	12 1/2″	D	Polypropylene	38 1/2″	1 1/4″	**6357A2**	66.47
Sifting Scoop							
(E) With Steel Mesh Blade							
15″	16″	D	Steel	42″	1 1/8″	**6327A11**	38.64

Hole-Digging Equipment

Narrow Shovels

With their long, narrow blades, these shovels are sized just right for digging trenches, drains, and post holes. Both shovels have a steel blade with foot step.

Model 6220A15 has a closed-back blade that is 4 3/4″ Wd. × 16″ Ht. ***Model*** 6277A43 has an open-back blade that is 4 3/4″ Wd. × 16 1/4″ Ht.

Handle Style	Handle Material	Handle Lg.	Handle Dia.		
D	Wood	29″	1 1/2″	**6220A15**	$40.82
Straight	Fiberglass	48″	1 1/4″	**6277A43**	42.01

Long-Handle Shovels and Scoops

To make it easier to dig and clear deep holes, these shovels and scoops have a straight, extra-long wood handle. The handle measures 1 7/8″ in diameter and has marks up to 5 ft. to indicate hole depth. Blade is steel with a closed back.

Digging shovels loosen soil. Blade is 9 1/4″ Wd. × 12 1/4″ Ht.

Small scoops remove hard, clay-like soil. Blade is 9 3/4″ Wd. × 8 3/4″ Ht.

Large scoops remove light, sandier soil. Blade is 9 1/2″ Wd. × 10 1/2″ Ht.

	8-ft. Handle		10-ft. Handle		12-ft. Handle	
Digging Shovel	**6219A2**	$117.87	**6219A4**	$131.30	**6219A6**	$145.83
Small Scoop	**6219A1**	117.87	**6219A3**	131.30	**6219A5**	145.83
Large Scoop	**6219A7**	117.87	**6219A8**	131.30	**6219A9**	145.83

Post-Hole Diggers

Need to dig a post hole? Simply push blades into the soil, spread the handles apart to grab the soil, and then lift the blades out to bring the soil to the surface. All of these post-hole diggers have straight handles and are for use on hard, rocky, and clay-filled soils.

Blade Wd.	Blade Ht.	Handle Material	Handle Lg.	Handle Dia.		
4 3/4″	10″	Fiberglass	4 ft.	1 1/4″	**6257A12**	$65.41
6 1/4″	9″	Wood	4 ft.	1 3/16″	**6257A7**	46.43
6 1/4″	9″	Wood	6 ft.	1 3/16″	**6257A8**	78.14
6 1/4″	9″	Wood	8 ft.	1 3/16″	**6257A9**	88.53

Easy-Dig Powered Auger

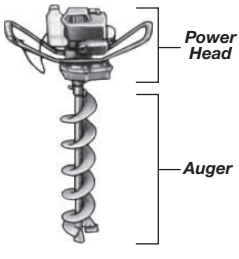

Powered by a four-cycle gasoline engine, this auger makes it quicker and easier to dig holes. For a complete unit, you need to order one power head and one auger.

Power head is designed to be operated by one person. The handle is PVC-coated alloy steel. A throttle lets you control speed without releasing your grip.

Augers work in a wide variety of soils. All are made of alloy steel.

An ***auger extension*** increases your digging depth. It does not have spirals. Only one can be used at a time.

A ***screw bit*** is found on the tip of an auger. It is replaceable.

Power Head

hp	Maximum Auger Dia.		
1.6	8″	**6260A31**	$703.77

Augers (30″ Digging Depth)

Auger Dia.	Hole Dia.			Auger Dia.	Hole Dia.		
2 1/4″	2 1/2″	**6260A13**	$110.36	6″	7 1/2″	**6260A15**	$121.07
4″	5 1/4″	**6260A14**	115.71	8″	9 1/2″	**6260A16**	126.43

Accessories

Auger Extension (15″ Long)	**6260A19**	$74.00
Replacement Screw Bit for All Augers	**6260A49**	15.12

Digging Bar

Made of one-piece steel with a blade end for digging and a flat end for tamping.

Blade End Wd.	Blade End Ht.	Tamping End Dia.	Handle Dia.	Overall Lg.		
2 5/8″	8″	2 1/2″	1″	69″	**6295A11**	$40.54

Snow Shovels and Pushers

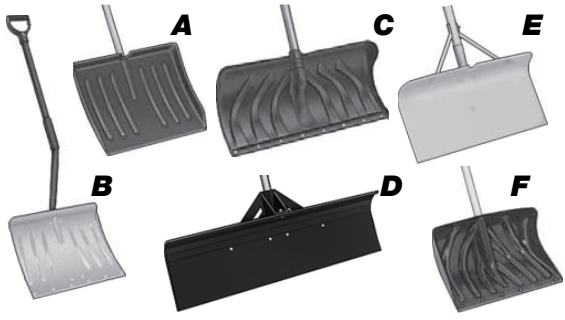

A&B Snow Shovels—For light to heavy snow falls, these shovels are designed to lift and move snow out of the way.

Style A—All have a wood handle. *Polypropylene blade* is lightweight and black. *Steel blade* is durable and has a nonstick coating. *Aluminum blade* is lightweight with a steel wear strip to extend blade life.

Style B—Has an ergonomic steel handle to reduce back strain. Blade is lightweight aluminum with a steel wear strip to extend blade life.

C-E Snow Pushers—For light snow falls, these tools have wider, deeper blades than snow shovels and push snow out of the way.

Style C—Both are lightweight, ribbed for added strength, and have a steel wear strip to extend blade life. *Polyethylene blade* is black and has a yellow fiberglass handle. *Aluminum blade* has a nonstick coating and a wood handle.

Style D—The widest pusher we offer. Blade is lightweight black polyethylene; handle is fiberglass. Braces ensure blade stability.

Style E—Durable steel blade flexes to maintain its shape. Blade has a nonstick coating and braces to ensure blade stability. Handle is wood.

F Combination Snow Shovel/Pusher—Two tools in one, the blade is sized just right for lifting snow and deep enough to act as a snow pusher. Blade is lightweight, black polyethylene with a galvanized steel wear strip to extend blade life. Handle is fiberglass.

	Blade			Handle				
	Material	Wd.	Ht.	Style	Lg.	Dia.		
Snow Shovels								
A	Polypropylene	18″	15″	D	36″	1⅛″	**6306A21**	$19.65
A	Steel	18″	15″	D	36″	1⅛″	**6350A17**	22.22
A	Aluminum	18″	15″	D	36″	1⅛″	**6349A14**	26.78
B	Aluminum	18″	16″	D	36″	1¼″	**6364A12**	32.49
Snow Pushers								
C	Polyethylene	24″	12″	D	57″	1¼″	**6302A13**	27.54
C	Aluminum	24″	12″	Straight	48″	1¼″	**6352A18**	29.21
D	Polyethylene	36″	12″	D	48″	1¼″	**6302A14**	62.79
E	Steel	18″	12″	D	42″	1¼″	**6331A35**	34.94
E	Steel	24″	12″	Straight	48″	1¼″	**6331A36**	38.12
E	Steel	30″	12″	Straight	48″	1¼″	**6331A37**	44.01
Combination Snow Shovel/Pusher								
F	Polyethylene	20″	13″	D	38″	1¼″	**6185A2**	28.77

Ice and Snow Melters

Remove snow and ice from walkways and parking lots. *Note:* Not for use on concrete less than one year old, exposed aggregate, or brick.

Rock Salt—Made from sodium chloride, this melter is effective in temperatures above 20° F.

De-Icer—Made from calcium, magnesium, potassium, and sodium chlorides, this melter is effective in temperatures as low as –12° F. It inhibits refreezing and is nontoxic to humans, grass, plants, and trees.

Rock Salt (50-lb. Bag)	**6235A65**	**1-9**	$9.95	**10-Up**	$8.92
De-Icer (50-lb. Box)	**6320A12**	**1-5**	18.89	**6-Up**	17.00
De-Icer (100-lb. Box)	**6320A14**	**1-4**	36.40	**5-Up**	32.65

Glass and Window De-Icer

Spray this de-icer on your glass and windows to melt frost, ice, and snow on contact. It keeps ice from forming. It also releases frozen doors, handles, and locks. Twelve 12-oz. net wt. aerosol cans per case.

6189A11 ..... **Each** Partial Case $5.62 Full Case $5.11

Roof Snow Rake

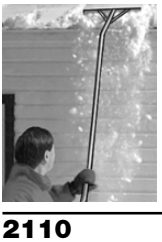

Remove snow from your rooftop with your feet planted safely on the ground. This lightweight aluminum snow rake has a blade that is attached and braced to a three-piece, quick-connect handle. The section of the handle closest to the blade is angled to provide easy access to rooftops. Blade is 22″ Wd.×4⅝″ Ht. Handle is 1⅛″ in diameter and measures 16 feet long when assembled.

Rake	**6293A4**	$49.74
Opt. 4-ft. Extension Handle	**6293A21**	15.12

Broadcast Spreaders

Easily spread ice-melting products, fertilizer, and more (unless noted). *Note:* Only *Style L* can be used with rock salt.

G Hand-Held Spreader—Hand-crank design has a spread pattern of 6 to 12 feet.

H-L Push Spreaders—All models have a steel frame and fingertip controls on the handle.

Style H has a spread pattern of 4 to 12 feet. It also has a corrosion-resistant, Type 304 stainless steel hopper and 10″ dia. pneumatic tires.

Style J has a spread pattern of 10 to 12 feet. It also has 10″ dia. solid rubber wheels.

Style K has a spread pattern of 5 to 12 feet. It also has 10″ dia. pneumatic tires.

Style L is the only spreader we offer that can be used with rock salt. You can't, however, use it for fertilizer. Spreader has a 5 to 12 feet spread pattern and 13″ dia. pneumatic tires.

Optional hopper cover for Styles K and L is clear vinyl and keeps contents dry.

Optional three-sided deflector kits for Styles K and L attach to the bottom of the hopper and limit the spread pattern to 22″—excellent for narrow spots and walkways. Mounting hardware is included.

	Cap., lbs.	Hopper Size, Ht.×Wd.×Dp.	Hopper Material		
G	6	9″ × 9″ × 6″	Polypropylene	**7032T6**	$11.40
H	40	12½″ Ht. × 10″ Dia.	Stainless Steel	**7032T15**	193.53
J	75	12″ × 21″ × 16″	Polypropylene	**7032T17**	70.95
K	80	11″ × 20¾″ × 16″	Polyethylene	**7032T35**	118.04
L	65	12″ × 20″ × 17″	Polypropylene	**7032T44**	287.68
Optional Hopper Cover for Styles K and L				**7032T36**	23.41
Optional Deflector Kit for Style K				**7032T38**	67.61
Optional Deflector Kit for Style L				**7032T39**	67.61

Ice and Snow Scraper/Brush

Made of polyethylene with a 10″ long handle, 4″ wide scraper, and 7″ Lg.×2″ Ht. brush.

70425T67 ..... $2.31

Replacement Wood Handles

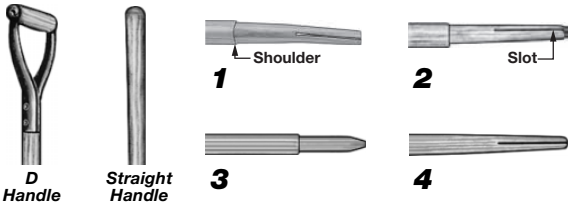

All handles come with a rivet for secure installation to your blade.

Shoulders act as a stopping point for the blade socket.

Slots compress to make it easy to insert handles into blade sockets. They also fit extensions that are found in some blade sockets.

	Handle Lg.	Handle Dia.	Handle Tip	D Handle Grip Material		
Replacement D Handles						
1	30″	1½″	Curved	Steel/Polypropylene	**6309A14**	$13.12
2	30″	1½″	Straight	Steel/Polypropylene	**6315A11**	12.87
Replacement Straight Handles						
1	48″	1½″	Curved	—	**6312A11**	12.17
3	48″	1½″	Straight	—	**6316A15**	10.76
4	48″	1½″	Straight	—	**6312A14**	10.90

Hooks and Forks

Style A—The bent tines are perfect for cultivating as well as handling garbage.
Styles B and ***E***—These food-grade tools meet USDA and FDA standards for use in food-processing, meat-packing, and dairy plants. They're lightweight, nonsparking, and resistant to chemicals and corrosion. Color is white.
Style C—Furnished with thick, pointed tines for digging.
Style D—The choice for lifting and pitching, these forks have long, thin tines.

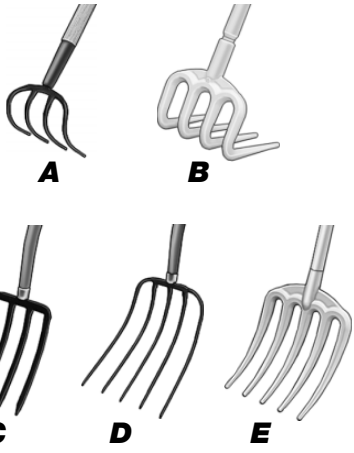

	Tine			Handle				
No.	Lg.	Spacing	O'all Wd.	Style	Material	Lg.	Dia.	
(A) Cultivating/Refuse Hooks with Steel Tines								
4	5″	1½″	5″	Straight	Wood	54″	1 5/16″	6246A13 $41.38
4	6½″	1¾″	6″	Straight	Wood	54″	1 5/16″	6246A12 34.78
4	9″	2½″	8½″	Straight	Wood	60″	1 5/16″	6246A11 65.92
(B) Hygienic Hook with Polypropylene Tines								
4	7″●	1⅝″	7½″	Straight	Fiberglass	51″	1 5/16″	4506T41 66.20
(C) Digging Fork with Steel Tines								
4	11½″	2¼″	7⅜″	D	Wood	30″	1½″	6363A12 44.55
(D) Bulk-Material Forks with Steel Tines								
4	12½″	3″	9″	Straight	Wood	48″	1½″	6231A1 47.80
5	12½″	2¼″	10″	Straight	Wood	54″	1½″	6231A5 51.54
6	12½″	2″	10″	Straight	Wood	48″	1½″	6231A7 60.22
10	13½″	1″	10″	D	Wood	30″	1½″	6236A3 90.28
10	16″	1¼″	14½″	D	Wood	30″	1½″	6234A2 155.78
(E) Hygienic Fork with Polypropylene Tines								
5	10½″	1⅝″	10½″	D	Polypropylene	38″	1¼″	4506T42 98.19

● Length listed is after the bend. Length before the bend is 4″.

Rakes

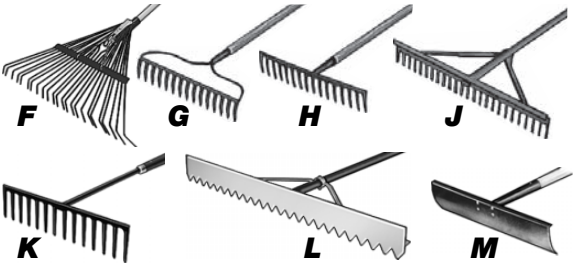

F Lawn/Leaf Rakes—Flexible steel tines make it easy to collect light-weight materials such as leaves and lawn clippings.

G Bow Rake—This traditional garden rake has curved tines.

H Straight Rake—In addition to the slightly curved tines, this rake has a straight top grading edge for spreading and leveling materials.

J Landscape Rakes—These sturdy, lightweight rakes have an angled grading edge on one side and rounded tines on the other for smooth raking action.

K Asphalt Rake with Steel Tines—To protect the wood handle from hot tar, this asphalt rake has an 18″ long steel shank that connects the blade to the handle.

L Asphalt Rake with Aluminum Tines—Also known as a lute rake, this rake has one serrated edge and one smooth edge for leveling and finishing asphalt.

M Concrete Rake—With its solid blade, this rake is designed for spreading and leveling freshly poured concrete.

	Blade				Handle			
	Material	Wd.	Ht.	Tines (No.)	Material	Lg.	Dia.	
F	Steel	8″	12″	9	Steel	48″	1⅛″	7142T16 $9.45
F	Steel	24″	17½″	24	Wood	54″	1 5/16″	7142T14 18.57
G	Steel	16″	3¼″	15	Wood	60″	1 5/16″	7500T2 29.25
H	Steel	17″	3¼″	16	Wood	66″	1 5/16″	7500T4 47.78
J	Alum.	24″	4 5/16″	24	Alum.	66″	1⅛″	7058T1 49.92
J	Alum.	36″	4 5/16″	36	Alum.	66″	1⅛″	7058T3 58.27
J	Alum.	48″	4 5/16″	48	Alum.	66″	1⅛″	7058T5 66.69
K	Steel	16″	4″	14	Wood	60″	1½″	6245A1 81.81
L	Alum.	36″	3⅞″	24	Alum.	82″	1⅛″	6323A19 62.45
M	Steel	20″	4″	—	Wood	60″	1½″	6324A21 28.54

Tampers

Use these tools to flatten or firmly pack down soil, sand, asphalt, and more. Both have a steel base and straight handle.

With Steel Handle

Base Size	Handle Lg.	Handle Dia.		
With Wood Handle				
10″×10″	42″	1½″	6301A2	$48.59
With Steel Handle				
10″×10″	44″	1¼″	6263A22	53.88

Hoes

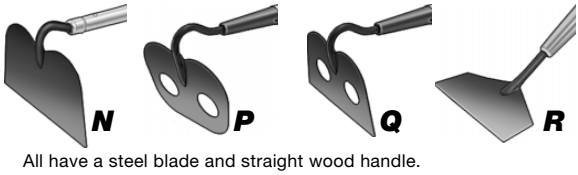

All have a steel blade and straight wood handle.

N Standard Hoe—Furnished with a solid blade.

P&Q Mixing Hoes—Holes in the blade allow materials to flow through making it easy to mix mortar, concrete, plaster, and other similar products. *Style P* has a short handle for use in tight spaces.

R Scraper/Hoe—Also known as a scuffle hoe, this hoe has a solid, angled blade that you push or pull along a flat surface for cutting and scraping.

	Blade Wd.	Blade Ht.	Handle Lg.	Handle Dia.		
N	10″	6″	66″	1½″	6267A5	$63.00
P	7″	4½″	18″	1 5/16″	6267A3	25.24
Q	7″	4½″	54″	1 5/16″	6267A4	37.44
Q	10″	6″	66″	1½″	6267A6	66.32
R	7″	4″	60″	1¼″	6268A11	44.91

Weed Control Landscape Fabric

Keep nasty weeds out of sight with this black polyethylene fabric. It prevents weed growth, yet allows water, air, and gases to flow through.
Anchoring pegs secure the fabric in place. They're made of black plastic and measure 4½″ long.

Roll Width	25-ft. Lg. Roll	Each	50-ft. Lg. Roll	Each	100-ft. Lg. Roll	Each
3 ft.	63255T1	$12.96	63255T2	$19.21	63255T3	$37.17
4 ft.	—	—	63255T4	25.75	63255T5	49.88
6 ft.	—	—	63255T6	38.94	63255T7	75.35

Anchoring Pegs (Pkg. of 10) 63255T23 Pkg. $2.87

Weed, Grass, and Total Vegetation Killers

Need to clear your soil of unwanted plants and weeds? Then choose one of these nonselective herbicides.

Weed and Grass Killer

This herbicide is designed for spot treatment. It kills all green plants, including the roots within 1 to 2 weeks. The soil can be reseeded 2 to 3 weeks after treatment.
Concentrate makes 32 gallons of solution.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32-oz. Pump Spray (Ready-To-Use)	12	75575T14	$7.12	$6.42
32-oz. Concentrate	1	75575T19	—	35.24

Heavy Duty Total Vegetation Killer

Designed for long-term control, this liquid herbicide clears all vegetation within 7 to 14 days. The soil can be reseeded one year after treatment.

Size		
1-gallon Pail	7530T5	$91.94
5-gallon Pail	7530T7	215.15

Landscaping Equipment

Hedge Trimmers

Manual

Electric

***Manual*—**The cutting blades are steel (top blade is serrated) and the handles are wood.

***Electric*—**A 3.8-amp motor powers the dual-edge, rust-resistant, steel cutting blades. A lock-on switch allows continuous operation. Housing is double-insulated, high-impact ABS plastic. Trimmer operates on 120 VAC, 60 Hz and has a receptacle for a standard two-prong plug. UL listed.

	Blade Lg.	O'all Lg.		
Manual	9″	21″	9803T12	$29.45
Electric	22″	34⅜″	7202T34	66.86

Weed, Grass, and Brush Trimmer

Powered by a two-cycle, 33-cc, air-cooled gasoline engine, this trimmer has a 17″ wide cutting path to clear grass, weeds, and brush. It also has a pull-cord starter, adjustable handlebar, 10-oz. fuel tank, 52″ straight shaft, debris shield, spark arrester, and shoulder harness. Includes one 8″ dia. weed/brush blade and one 0.115″ Dia.×18″ Lg. cutting-line insert. UL listed.

		Each
Trimmer	7474T81	$287.58
Replacement Parts		
8″ Dia. Weed/Brush Blade	7474T87	24.85
		Pkg.
0.115″ Dia.×18″ Lg. Cutting-Line Inserts—*12/Pkg.*	7474T86	$7.20

Weed and Grass Trimmer Line

This bulk trimmer line has five cutting edges. The line is color coded for easy diameter identification.

Line Dia.	Color	Spool Lg.		Spool
0.065″	Blue	300 ft.	6792T11	$7.84
0.080″	Green	200 ft.	6792T12	8.56
0.095″	Orange	285 ft.	6792T13	12.34
0.105″	Red	235 ft.	6792T14	13.66

Pruner, Lopper, and Saws

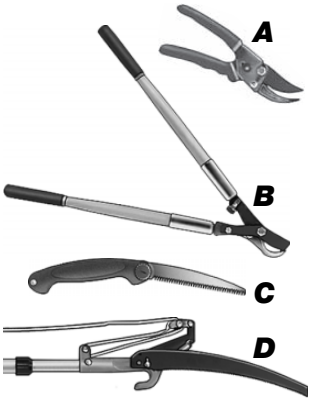

***A* Pruner—**For cutting small branches, bushes, and hedges. It has PTFE-coated steel blades.

***B* Lopper—**For cutting thicker branches and brush. It has PTFE-coated steel blades and fiberglass handles.

***C* Folding Saw—**Excellent for cutting limbs larger than 2″ in diameter, saw has a hardened steel blade and nonslip-grip handle.

***D* Telescopic Lopper/Saw—**Use the small blade for cutting branches; saw blade for cutting larger limbs. Both blades are steel. The handle is fiberglass, measures 1⅛″ in diameter, and adjusts up to 14 ft. long to give you an extra-long reach.

		Max. Cutting Dia.	Blade Lg.	Handle Lg.	O'all Lg.		
A	Pruner	⅝″	2¼″	4″	8½″	9805T15	$15.31
B	Lopper	2″	2½″	23″	30″	7507T17	37.38
C	Folding Saw	Any	7″	8¾″	15½″	9857T9	15.65
D	Telescopic Lopper/Saw	1⅛″/Any	15″	6 ft.	14 ft.	9857T11	58.19

Hand-Held Blower/Vacuums

Gasoline

Power away or vacuum up debris without breaking a sweat. Both models have a reinforced plastic housing and include a vacuum kit with vacuum tubes as well as a zippered cloth bag with an adjustable shoulder strap. UL listed.

***Electric*—**This lightweight, two-speed tool has a 12-amp motor that provides 360 cfm at 215 mph. Operates on 120 VAC, 60 Hz and has a two-prong plug socket.

6300T28 ..... $73.55

***Gasoline*—**With its two-cycle, 25-cc gasoline engine, this tool provides variable airflow up to 430 cfm at 200 mph. It has a pull-cord starter and operates for approximately 45 minutes on one tank of fuel.

6300T17 ..... $176.79

Ground Markers

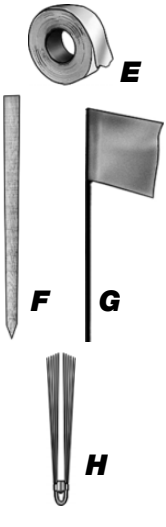

Make it easy to spot boundaries, underground cables and pipes, plus more. All markers are weather resistant. **To Order:** Please specify color: nonfluorescent blue, green, orange, red, white, or yellow; fluorescent orange, pink, or red (unless noted).

***E* Tape—**This flexible, nonadhesive tape is 1³⁄₁₆″ wide. *Nonfluorescent colors* are made of polyethylene and are 300 ft. long. *Fluorescent colors* are made of PVC film and are 150 ft. long.

***F* Wood Marking Stakes—**Made of oak, these stakes are 36″ Lg.×1⅝″ Wd.×¾″ Thick.

***G* Flags—**Made of PVC film, flags are 4″×5″ with 30″ long steel wire stakes.

***H* Bounce-Back Flags—**Constructed of 6″ long polypropylene bristles, these durable flags bounce back to their upright position when stepped on or run over by equipment. Use the nails (required and sold below) to secure in place. *Note:* Not available in fluorescent red color.

		Roll 1-11	12-Up
E ... Tape	56605T26	$1.71	$1.54
F ... Wood Marking Stakes (10/Pkg.)	5660T3	**Pkg.**	$8.17
G ... Flags (100/Pkg.)	57015T4	**Pkg.**	$10.73
H ... Bounce-Back Flags (25/Pkg.)	2592T8	**Pkg.**	$4.39
Steel Nails for H (55/Pkg.)	2592T9	**Pkg.**	$7.65

Landscape Edging

Keep stones, mulch, and other landscaping materials in place with this black polyethylene barrier. Edging is 4¾″ high with a 1″ dia. round top. Each 20-ft. length comes with four 9″×1″ steel anchoring stakes and one plug that connects lengths.

63495T81 ..... $17.12

Erosion Control Fence

Specially designed fence prevents sediment, top soil, and other debris from washing away while allowing water to flow through. The black polypropylene fabric is attached to 48″ high wood posts at 8-ft. intervals. Overall size is 3′ Ht.×100′ Lg.

66955T45 ..... $35.35

Ground-Marking Spray Paint

Wand with Paint

Nonpermanent, water-based aerosol paint sprays upside-down. One can covers up to 664 linear ft. at 1″ wide. Application temp. is 50° to 90° F. Furnished in a 17-oz. net wt. can. **To Order:** Please specify color: nonfluorescent white or yellow; fluorescent blue, green, orange, pink, red, or red/orange.

Applicator wand (sold separately) makes 1″-1½″ wide marks and is made of polyethylene with a steel shaft. Wheel size is 3″ Dia.×½″ Wd. Overall size is 34″ long.

		Each Partial Pkg.	Full Pkg.
Paint (12/Pkg.)	1584T1	$4.73	$4.22
Applicator Wand	1584T2	**Each**	$24.46

Spray Heads for Underground Sprinkler Systems

Once connected to the riser of your sprinkler system, these heads are ready to water.

Styles A&B— Provide a continuous, uninterrupted stream of water.

Style A heads stay flush with the ground and are made of plastic.

Style B heads rise when water flow starts and retract when the water flow stops. They are made of plastic.

Style C— Heads have an arm that strikes the outgoing water stream to create a pulsating spray of water. The heads remain above ground at all times, are typically mounted to a riser pipe, and are made of brass.

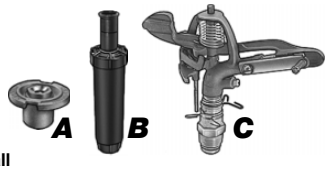

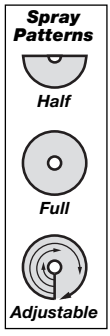

	Spray Pattern	Spray Radius	Pressure, psi	Flow Rate, gpm	Pipe Connection, NPT	O'all Body Ht.	Extended Head Ht.		
A	Flush	Half	12-15 ft.	15- 30	1.6- 2.2	½″ Female	1⅛″	___	**7466T25** $2.17
A	Flush	Full	12-15 ft.	15- 30	3.2- 4.0	½″ Female	1⅛″	___	**7466T24** 2.17
B	Pop-Up	Half	11-15 ft.	15- 30	1.3- 1.8	½″ Female	6″	4″	**7466T32** 4.02
B	Pop-Up	Adjustable	12-15 ft.	15- 30	0.8- 3.1	½″ Female	6″	4″	**7466T34** 4.34
B	Pop-Up	Adjustable	22-45 ft.	25- 60	1.6- 8.4	¾″ Female	9″	3½″	**63725T87** 32.71
C	Impulse	Adjustable	20-41 ft.	25- 50	3.4- 5.0	½″ Male	4″	___	**7559T16** 22.13
C	Impulse	Adjustable	55-78 ft.	35-100	15.4-26.2	1″ Male	8″	___	**7559T18** 79.78

Sprinkler Timers

Garden Hose Timers

To install, simply attach one end of a timer to your water spigot and the other end to your garden hose. Furnished with one male and one female threaded fitting with ¾″ garden hose connections (GHT), unless noted.

Economy— Turn the dial to the amount of water (gallons or liters) you want to dispense. Timer automatically shuts off when that amount of water is delivered. Time markings let you estimate how long it will take. This timer also has a constant-on setting. Housing is polypropylene.

Programmable— Program up to 4 cycles per day (from 1 minute to 6 hours per cycle). Includes two male ¾″ GHT fittings, one for programmed and one for manual use. LCD display shows current time. Housing is ABS plastic. Requires two 9-volt batteries (sold below).

Economy

Programmable

	Size		
Economy Timer	4″ Dia. × 3¼″ Ht.	**6298T1**	$12.56
Programmable Timer	8¼″ Wd. × 2¾″ Dp. × 9½″ Ht.	**70965K7**	54.56
9-Volt Battery		**71455K56**	2.75

Multizone Timer for Sprinkler Systems

Designed for use with all 24-VAC automatic sprinkler valves, you can program this timer to water up to six different zones (from 1 minute to 12 hours) four times a day or use the custom manual-control option. An LCD panel displays precise start times. Housing is ABS plastic. Size is 9½″ Wd. × 3⅜″ Dp. × 8″ Ht.

Mount indoors and outdoors. Operates on 110-120 VAC, 50/60 Hz, 0.8 amps and has an output voltage of 24 VAC. Includes a 6-ft. power cord with three-prong plug, screw terminal connection, and a 1″ dia. unthreaded conduit entry connection on the bottom. UL listed.

76675T34 ..... $97.36

Sprinklers

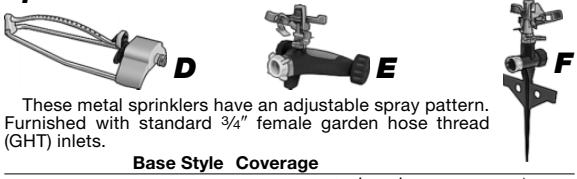

These metal sprinklers have an adjustable spray pattern. Furnished with standard ¾″ female garden hose thread (GHT) inlets.

	Base Style		Coverage		
D	Oscillating	Flat	3,500 sq. ft. (53′ × 66′)	**70145T6**	$34.80
E	Impulse	Flat	5,675 sq. ft. (85′ dia.)	**63225T37**	24.53
F	Impulse	Spike	5,675 sq. ft. (85′ dia.)	**63225T38**	13.78

Galvanized Steel Sprinkling Cans

Cap., qts.			Cap., qts.		
8	**4302T2**	$28.98	12	**4302T4**	$35.54
10	**4302T3**	30.58			

Flexible Downspout Extensions

Keep water away from buildings. These polyethylene extensions adjust from 25″ to 55″ long; fit 3″ and 4″ wide downspouts. Connect them for longer runs.

Brown	**68125T23**	$12.69
White	**68125T21**	12.69

Gutters

Aluminum— Gutters and components are lightweight aluminum with a white painted finish (unless noted). *Gutters* are 6″ wide and are for use with 4″ components. *Downspouts* are rectangular. *Polypropylene supports* keep the polypropylene gutter guard in place (for aluminum gutters only). Use one package per 20-ft. roll of gutter guard.

Galvanized Steel— Gutters and components are rust-resistant, unpainted galvanized steel. *Gutters* are 5″ wide half-round and are for use with 3″ or 4″ components. *Downspouts* are round.

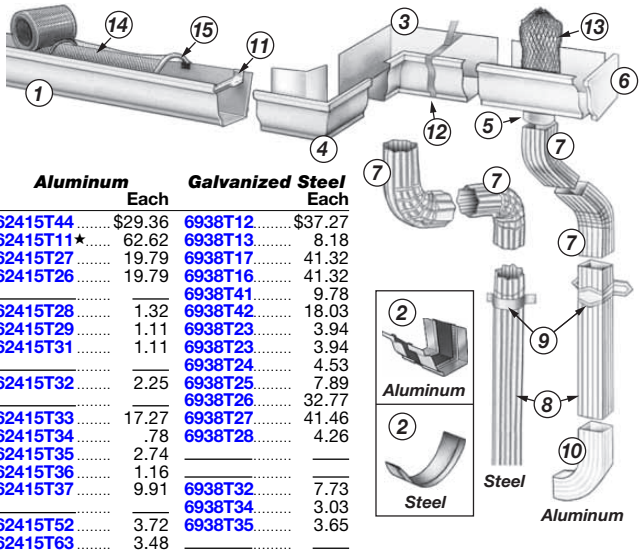

		Aluminum	Each	Galvanized Steel	Each
1	Gutter (10′ long)	**62415T44**	$29.36	**6938T12**	$37.27
2	Gutter Connectors	**62415T11★**	62.62	**6938T13**	8.18
3	Inside Corners	**62415T27**	19.79	**6938T17**	41.32
4	Outside Corners	**62415T26**	19.79	**6938T16**	41.32
5	Drop Outlets (unpainted) for 3″ wide Downspout	___	___	**6938T41**	9.78
5	Drop Outlets (unpainted) for 4″ wide Downspout	**62415T28**	1.32	**6938T42**	18.03
6	End Caps, Right	**62415T29**	1.11	**6938T23**	3.94
6	End Caps, Left	**62415T31**	1.11	**6938T23**	3.94
7	Regular Elbows for 3″ wide Downspout	___	___	**6938T24**	4.53
7	Regular Elbows for 4″ wide Downspout	**62415T32**	2.25	**6938T25**	7.89
8	Downspouts (10′ long × 3″ wide)	___	___	**6938T26**	32.77
8	Downspouts (10′ long × 4″ wide)	**62415T33**	17.27	**6938T27**	41.46
9	Downspout Bands	**62415T34**	.78	**6938T28**	4.26
10	Side Elbows for 4″ wide Downspout	**62415T35**	2.74	___	___
11	Fascia Gutter Hangers (unpainted)	**62415T36**	1.16	___	___
12	Wraparound Gutter Hangers	**62415T37**	9.91	**6938T32**	7.73
13	Strainers for 3″ wide Downspout (unpainted)	___	___	**6938T34**	3.03
13	Strainers for 4″ wide Downspout (unpainted)	**62415T52**	3.72	**6938T35**	3.65
14	Polypropylene Gutter Guard (20′ long × 6″ wide; unpainted)	**62415T63**	3.48	___	___
			Pkg.		
15	Polypropylene Supports for Gutter Guard (8/pkg.)	**62415T39**	$8.15	___	___

★ Unpainted, with rubber middle piece. Also serves as an expansion joint.

Roof-Repair Patches

Plastic Roof-Repair Patch

This reinforced, petroleum-asphalt-based patch repairs holes and gaps in roofing, joints, and gutters. It also provides a water-repellent seal. Patch can be applied on wet (unless noted) and dry surfaces. One gallon covers 12 sq. ft. at 1/8″ thick. Apply with a trowel between 40° and 122° F. Meets ASTM D4586. Color is black. *Note:* Not for use on tar roofs.

Size		
11-oz. Cartridge	7746T1■	$4.68
1-gal. Can	7746T3	16.12
5-gal. Can	7746T4	76.27

■ Do not apply on wet surfaces.

Heavy Duty Flexible Rubberized Roof-Repair Patch

Significantly more flexible than the Plastic Roof-Repair Patch above, this high-performance neoprene rubber patch seals cracks, holes, and tears in roofing. Patch can be applied on wet surfaces; the *10-oz. cartridge* can be applied in standing water. It remains flexible and watertight for many years.

One gallon covers 6 sq. ft. at 1/4″ thick. Apply with a trowel between 40° and 120° F. Color is black.

Size		
10-oz. Cartridge	7568T51	$6.38
1-gal. Can	7568T53	36.51

Reflective Roof-Repair Patch

This elastic, water-based patch repairs and seals cracks, holes, and tears on metal, aluminum, concrete, and foam roofs. It's white to reflect the sun's rays. One gallon covers 25 sq. ft. at 1/16″ thick. Apply with a trowel, brush, or roller on dry surfaces at a minimum temperature of 50° F.

Size		
0.9-gal. Can	76405T16	$37.66
5-gal. Can	76405T21	147.77

Roof-Repair Mesh Fabric

Repair most roofing materials with this flexible fabric. You can use it with both hot- and cold-applied asphalt patches and coatings. When used with patches and coatings, it acts as a reinforcement.

Asphalt-Coated Glass Fabric—Meets ASTM D1668-86, Type 1.

	Color	Roll Size		
Polyester Fabric	White	4″× 50 ft.	76405T28	$9.22
Asphalt-Coated Glass Fabric	Black	6″×150 ft.	7574T1	13.69
Asphalt-Coated Glass Fabric	Black	36″×150 ft.	7574T4	78.88

Roof Coatings

Bring new life to your old roof with these coatings. They not only make your roof look like new, but also act like new by restoring properties to protect your roof from the elements.

Reinforced Roof Coatings

These petroleum-asphalt-based coatings are reinforced with fiber for strength. Use them on metal, composition, built-up, and other roof materials. Apply on dry surfaces with a sprayer or brush at 40° to 104° F.

Black coating can also be used to dampproof foundation walls. One gallon covers 25 sq. ft. at 1/16″ thick. Meets ASTM D4479. These items are compliant under all state VOC rules in effect on June 1, 2011, except in California. ***Reflective-aluminum coating*** cuts cooling costs by reflecting the sun's rays. One gallon covers 50 sq. ft. at 1/32″ thick. Meets ASTM D2824, Type 3. These items are compliant under all state VOC rules in effect on June 1, 2011, except in the Los Angeles area.

	Black		*Reflective Aluminum*	
1-gal. Can	7747T28	$14.42	7747T29	$28.69
4.7-gal. Can	7747T31	68.03	7747T32	114.09

Heavy Duty Flexible Roof Coating and Primer

Our flexible, water-based coating and primer provide long-lasting protection. Use them on metal, concrete, and foam roofs. One gallon covers 80 sq. ft. Apply with a brush or roller on dry surfaces only at a minimum temperature of 50° F.

Coating—Color is blue (dries white).

Primer—To extend coating life, use this light gray primer.

	0.9-gal. Cans		*4.75-gal. Cans*	
Coating	7687T75	$39.24	7687T85	$144.03
Primer	7687T3	42.38	7687T4	164.44

Temporary Roof-Leak Sealant

In just minutes you can make a temporary patch to quickly seal roof leaks. It works in standing water and rain—simply pour it on.

Sealant is a powder that expands into a gel on contact with water to repair cracks up to 1″ wide in any flat roof. It lasts as long as the patch is kept wet and can be used in any temperature where liquid is present. One 25-lb. pail covers 50 sq. ft. at 1/2″ thick. Color is gray.

25-lb. Pail 7635T15 $36.86

All-In-One Adhesive-Backed Roof-Repair Rolls

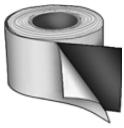

Peel off the backing and then stick in place to quickly and easily repair leaky roofs, gutters, and more. No additional coatings are required. All rolls have a rubberized, asphalt adhesive back. Choose from models with a laminated, reflective aluminum surface or a laminated, white-coated aluminum surface.

Rolls are lightweight; puncture, abrasion, and leak resistant; and reflect heat. They conform to a variety of clean, smooth, dry surfaces such as wood, metal, masonry, and existing asphalt roofs.

Rolls are 33 1/2 ft. Lg.×3/64″ Thick. and can be easily cut to size. Apply in temperatures above 60° F.

Width	*Reflective Aluminum Surface*	Roll	*White-Coated Aluminum Surface*	Roll
4″	9640T1	$14.81	9640T4	$16.03
6″	9640T2	22.23	9640T5	24.05
36″	9640T3	121.08	9640T6	131.37

Roof Flashing for Pipes

To prevent roof leaks before they start, this flashing allows pipes that penetrate your roof to expand, contract, and vibrate without disturbing the watertight seal.

1-3 For Single-Ply, Built-Up, and Corrugated-Metal Roofs—Use this flashing for air conditioning, heating, and exhaust-system pipes. All styles have a rubber cap and an aluminum base. The rubber portion can be cut to fit each pipe OD size listed below. Each includes one stainless steel clamp (unless noted). Temperature range is –60° to +270° F.

(1&2) Flashing for single-ply and built-up roofs has a black EPDM rubber cap with a double-groove connection that mates to the round aluminum base.

(3) Flashing for corrugated-metal roofs is made of one-piece EPDM molded gray rubber with a 1″ wide aluminum flanged base that bends to any contour.

4 For Shingle Roofs—Use this flashing for plumbing vent pipes as well as two-walled, air-insulated vent pipes (also known as Type B roof vents). It has a black elastomeric collar that easily slides over pipes and a 24-gauge, galvanized steel base. This flashing fits 40° pitched roofs and is rated for 180° F continuous heat.

For No. of Pipes	Fits Pipe OD Range	Flange Size	O'all Ht.		
For Single-Ply and Built-Up Roofs					
1 .. 1	2″-6″	14″ Dia.	8″	7503T1	$102.21
2 .. 4	(2) 3/8″-1″; (2) 1″-2″	14″ Dia.	6 1/2″	7503T2★	102.21
For Corrugated-Metal Roofs					
3 .. 1	1/4″-4″	7 5/8″× 7 5/8″	5 1/2″	7503T3	37.51
3 .. 1	4″- 7″	12 1/4″×12 1/4″	4″	7503T4	47.22
3 .. 1	7″-13″	18 1/8″×18 1/8″	6 1/4″	7503T5	115.85
For Shingle Roofs					
4 .. 1	1 1/4″-1 1/2″	8 1/2″×12 1/2″	2 1/2″	2390K41	7.44
4 .. 1	2″	8 1/2″×12 1/2″	2 1/2″	2390K42	7.86
4 .. 1	3″	10 3/4″×14 1/2″	2 1/2″	2390K43	8.57
4 .. 1	4″	12″ ×15 3/8″	3 1/4″	2390K44	11.10

★ Includes four clamps.

Roof-Coating Brush

Applying roof-repair patches and coatings is not a problem for this heavy duty brush. It has 3 1/4″ long tampico fiber bristles securely attached to a 6 1/4″×1 3/4″ hardwood block and a 1 1/8″ dia., 54″ long, tapered wood handle.

7233T3 ..... $14.98

Roof-Shingle Remover

Made of steel, the blade is notched and has a heavy duty pivoting point welded on the back for excellent shingle-lifting leverage. The blade measures 6 7/8″ Wd.×12″ Ht. and has a 1 1/2″ dia., 48″ long, straight wood handle.

6321A12 ..... $36.28

Flat-Roof Drains

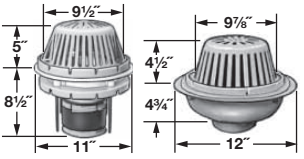

Unthreaded PVC Drains— These lightweight drains have a UV-stabilized PVC body, a rustproof cast-aluminum dome, and an EPDM connector to attach the drain to a drainage pipe. They include an installation kit with an underdeck clamping ring; 6″ long, unthreaded, Schedule 40 pipe extension; rubber expansion coupling; and two stainless steel clamps.

Threaded Cast Iron Drains— Our heavy duty cast iron drains have a flanged collar to hold flashing and roofing material without puncturing. Body and dome are painted gray. Connections are NPT female.

For Pipe Size	DRAINS		REPLACEMENT DOMES Polyethylene		Cast Aluminum	
Unthreaded PVC Drains						
3″	7868K11	$201.67	7868K22	$24.51	7868K21	$49.50
4″	7868K12	204.53	7868K22	24.51	7868K21	49.50
Threaded Cast Iron Drains						
3″	2418K2	237.62	2418K21♣	69.82	—	—
4″	2418K3	237.62	2418K21♣	69.82	—	—

♣ Replacement dome is cast iron.

Floor Drains

Lightweight Plastic

Our most economical floor drains have a capacity of 300 lbs. To install, attach drain outlet with solvent welds over or inside your Schedule 40 drainage, waste, and vent pipe. All drains have a plastic housing and Type 430 stainless steel strainer. Grate dia. is 4⅜″.

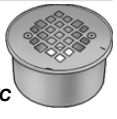
PVC

Ht.	Connection ID	OD	White PVC		Black ABS	
Fits over 2″ pipe; fits inside 3″ pipe						
2¼″	2⅜″	3″	23715K11	$5.62	23715K21	$5.62
Fits over 3″ pipe; fits inside 4″ pipe						
2¼″	3½″	3 15/16″	23715K31	8.30	23715K41	8.30

Cast Iron

Standard w/ Threaded Connection
Standard w/ Unthreaded Connection
Hinged w/ Inside-Caulk Connection

Standard Style— All have a two-piece design that clamps together with included screws. Capacity is 5,000 lbs., unless noted.

Models with threaded connection have NPT female threads that connect drains to drainage pipe. Grate surface is 2″ above flange. Grate dia. is 8⅛″.

Models with unthreaded connection (also known as a no-hub connection) use a pipe coupling (not included, see page 104) to secure drains to drainage pipe. Choose pipe-joining clamp 6820K23 for 3″ pipe size; 6820K24 for 4″ pipe size. Both drains have an adjustable-height, threaded drain grate—for positioning, screw the grate up or down from a min. of ¾″ to a max. of 2⅛″ above flange. Grate dia. is 5″.

Models with inside-caulk connection allow drains to fit over drainage pipe and attach with lead caulk (see 9031K on page 3631). Grate surface is 2″ above flange. Grate dia. is 8⅛″.

Hinged Style— Drains lift open for cleaning. Capacity is 750 lbs. All have inside-caulk connections that allow drains to fit over drainage pipe and attach with lead caulk (see 9031K on pg. 3631). Grate dia. is 7½″.

For Pipe Size	Ht. Below Flange	Standard Flange Dia.			Hinged Flange Size		
With Threaded Connection							
3″	4½″	12⅝″	2411K43	$294.71	—	—	—
4″	4½″	12⅝″	2411K44	294.71	—	—	—
With Unthreaded Connection♥							
3″	3″	9¼″	2411K61	241.61	—	—	—
4″	3″	9¼″	2411K62	241.61	—	—	—
With Inside-Caulk Connection							
2″	■	—	—	—	10″×10″	2383K71	$117.60
3″	■	12⅝″	2411K33	255.12	10″×10″	2383K73	155.60
4″	■	12⅝″	2411K34	255.12	10″×10″	2383K75	267.17

♥ Cap. is 2,000 lbs. ■ 2¾″ for standard style; 5⅛″ for hinged style.

Drain Grates

Lightweight Nylon

Raised Square

Domed Square

For improved weatherability, these grates contain additives that block UV rays. Both are for use on roofs. Mounting fasteners included. Color is gray. Not rated for capacity.

	Overall Size			
Raised Square	9″ Lg. × 9″ Wd. × 4¾″ Ht.	2412K37	$21.75
Domed Square	9″ Lg. × 9″ Wd. × 4½″ Ht.	2412K31	24.18

Cast Iron

Light Duty Round

Heavy Duty Round

Heavy Duty Square

Note: Illustrations shown are approximate—actual designs may vary.

Light duty grates provide firm support in areas where there is light pedestrian traffic. Color is black. Not rated for capacity.

Heavy duty grates are a higher strength cast iron to handle rough traffic on pavement, sidewalks, and plant floors. Color is rust.

Overall Size, Dia. × Thick.			Overall Size, Lg. × Wd. × Thick.		
Light Duty—Round			***Heavy Duty—Round; 19,800 lb. Cap.***		
2 13/16″	× ⅜″	2413K5 $6.18	5¾″ × 1½″●	2462K11	$78.26
3⅞″	× ⅜″	2413K1 6.18	8″ × 2″●	2462K12	43.48
5″	× ⅜″	2413K2 9.05	***Heavy Duty—Square; 5,200 lb. Cap.***		
5⅞″	× ⅜″	2413K3 14.62	12″ × 12″ × 1″	2467K17	97.83
8″	× ½″	2413K4 31.25	***Heavy Duty—Rectangular***		
10″	× ⅝″	2413K6 58.80	24″ × 12″ × 1¾″	2467K32♦	184.78
12⅛″	× ¾″	2413K7 91.14	24″ × 14″ × 2″	2467K33▲	215.22

● Dia. × Thick. ♦ 19,500 lb. capacity. ▲ 33,160 lb. capacity.

Adjustable, Corrosion-Resistant Type 430 Stainless Steel

Replace old cast iron strainers and bar grates with these easy-to-install, corrosion-resistant grates that adjust to fit different size drain openings. Grates fit flush to the floor and are for floor use only. Capacity is 800 lbs. Include four screw-down clips.

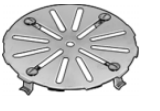

Overall Size, Dia. × Thick.	Fits Hole Diameters		
7¼″ × 5/64″	3¼″ to 6¾″	2128K21	$25.59
9¼″ × 7/64″	5¼″ to 8¾″	2128K31	53.57

Adjustable Polypropylene Floor Hole Cover

Measuring 14″ Dia. × ⅜″ Thick., this easy-to-spot orange cover adjusts to fit 3″ to 12″ dia. holes. It withstands 2,900 lbs. over a 6″ hole; 1,300 lbs. over a 12″ hole. Furnished with three wedges and bolts that you tighten against the inside wall of the hole diameter.

2009T1 ..... $8.81

Drain Cleanout Hole Covers

Conceal drain cleanout holes with these beveled-edge covers.

Wall covers are Type 430 stainless steel. They include a 6″ long screw and a behind-the-wall bar.

Floor covers are made of nickel alloy. Capacity is 2,400 lbs. They include a 1½″ long bolt.

Floor Cover

Wall Covers Dia. × Thick.			Floor Covers Dia. × Thick.		
3″ × 1/32″	2043K21	$8.57	5 1/8″ × 3/16″	2043K42	$54.00
4″ × 1/32″	2043K22	9.11	6⅛″ × 3/16″	2043K45	70.20
5″ × 1/32″	2043K23	12.86	8⅜″ × 3/16″	2043K46	87.24
6″ × 1/32″	2043K24	14.46			
8″ × 1/32″	2043K25	17.68			

Floor Drain Backflow Preventers

Put an end to water damage from backed-up sewers. All have a rubber collar, rubber float, and aluminum (2495K12) or galvanized steel (2495K13 and K14) metal parts. To install, place a preventer into your floor drain and tighten the screws (included)—the rubber collar will expand for proper fit. When water backs up, the rubber float will rise to seal off the drain. When water recedes, the float will drop for normal drainage.

Fits Drain ID		
2″	2495K12	$14.25
3″	2495K13	14.38
4″	2495K14	15.39

Insect Control

Crawling Insect Glue Trap and Ant Bait Station

Both traps are designed for indoor use.
Crawling Insect Glue Trap— Baited, non-toxic, and ready to use—just peel off the protective paper to expose the glue. When insects crawl into this tent-shaped cardboard trap, they'll stick to the glue.
Ant Bait Station— Wipe out colonies of ants when a few take bait back to the rest. EPA registered.

	O'all Size, Ht.×Wd.×Dp.	Pkg. Qty.		Pkg.
Crawling Insect Glue Trap	2¼″×4″ ×3″	4	98285T35	$2.74
Ant Bait Station	½″×2½″×2½″	6	67705T49	4.42

Fly Swatter

Measuring 21″ long, this fly swatter has a wire handle and 5″×5″ plastic blade. 12 per case.

1359T83 ..... **Each** 1-11 $1.23 12-Up $1.01

Sticky Fly Paper

Catch flying insects with sticky, nontoxic, environmentally safe traps.
Ribbons— Suspend these ribbons from the ceiling or ledge. They are sticky on both sides.
Sheets— Apply these clear sheets to windows and other flat surfaces. They are sticky on one side with an adhesive strip on the other side.

	O'all Size, Lg.×Wd.	Pkg. Qty.	Pkgs./ Case		Pkg. Partial Case	Pkg. Full Case
Ribbons	36″×1¾″	4	12	9239T33	$1.95	$1.73
Sheets	8″×2½″	4	24	7912T57	3.75	3.28

Yellow Jacket Trap

Insecticide-free trap includes bait to lure and contain yellow jackets. When it gets full, simply throw it away. Trap is plastic, can be hung using the 3/16″ dia. eyelet, or set on a flat surface. Overall size is 3¾″ Dia.×9¼″ Ht. 12 per case.

9683T14 ..... **Each** 1-11 $5.89 12-Up $5.29

Insecticide Sprays

In addition to killing insects on the spot, these sprays leave a residual coating to exterminate returning insects. EPA registered.
Crawling and ***Flying Insects—*** Spray is water based. Not rated for application temperature.
Wasps and Hornets— Hit your target from up to 20 feet away with this solvent-based spray. Not rated for application temperature.

For Insects	Net Wt.	Cans/ Case		Each Partial Case	Each Full Case
Crawling Insects	17.5 oz.	12	9826T28	$7.86	$7.14
Flying Insects	19 oz.	6	9826T27	13.17	11.80
Wasps and Hornets	12 oz.	12	9825T32	6.36	5.77

Insect Foggers

Great for treating large areas. EPA registered.
Indoor aerosol fogger is effective up to 625 square feet and leaves a residual coating that continues to kill insects for weeks. Spray to apply—separate fogging equipment not required. Leaves no wet, messy residue. Twelve packs of three, 1.5-oz. net weight aerosol cans per case.

9788T12 ..... **Pkg.** 1-11 $11.90 12-Up $10.66

Outdoor aerosol fogger is effective over a 20-ft.×25-ft. space and leaves a residual coating that continues to kill mosquitoes for 8 hours. Twelve 16-oz. net weight aerosol cans per case.

9788T13 ..... **Each** 1-11 $4.78 12-Up $4.28

Propane Fogger with Propane Fuel Cylinder

Propane fogger has a 40-oz. tank. It is made of ABS plastic and is for outdoor use only. A ***propane fuel cylinder*** (sold separately below) is required for operation.

Size		Each
Propane Fogger 14″ Lg.×6¾″ Wd.×10¼″ Ht.	6328T54	$83.32
Propane Fuel Cylinder 14.1 oz.	8003A14	7.00

Insecticide is for use with the propane fogger above. It covers 1,000 cu. ft. per oz.

Container Size	Case Qty.		Each Partial Case	Each Full Case
32 oz.	6	9821T41	$11.27	$10.13
64 oz.	6	9821T42	19.34	17.38

Ultra-Quiet Lighted Bug Glue Trap

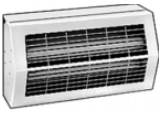

Cleaner and quieter than bug zappers, this trap lures flying insects with two 40-watt UV light bulbs and then traps them with two sticky boards. Trap is steel, has a white housing, and is for indoor use. It operates on 115/120 VAC, 60 Hz and has a 6-ft. power cord with three-prong plug. Mounting fasteners are included. USDA accepted, FDA compliant, and UL listed.

Coverage, sq. ft.	Mount Style	No. of Bulbs	O'all Size, Ht.×Wd.×Dp.	Amps	*Glue Trap*		*Repl. Bulb*	
1,800	Wall	2	10″×19″×6″	1.4	98195T71	$270.34	6995T33	$14.09
Replacement Bottom Sticky Board (4″×17″)							98195T75	$2.56
Replacement Back Sticky Board (9″×16″)							98195T77	5.01

Bug Zappers

Aluminum and Steel Indoor Wall Mount

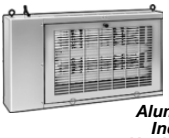

Aluminum Indoor Hook Mount

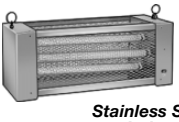

Stainless Steel Indoor Hook Mount

Polycarbonate Outdoor Hook Mount

Stainless Steel Outdoor Hook Mount

Lured by 40-watt UV light bulbs, flying insects and bugs are killed when they come in contact with the zappers' electrified metal grid. All of these bug zappers operate on 110-120 VAC, 60 Hz and are furnished with a power cord with three-prong plug. USDA accepted (except for the economy polycarbonate models) and UL listed.

Indoor bug zappers come furnished with a bug collection tray.

Coverage, sq. ft.	Mount Style	No. of Bulbs	O'all Size, Ht.×Wd.×Dp.	Amps	Cord Lg.	Hook ID	*Bug Zappers*		*Repl. Bulb*	
Indoor Bug Zappers										
Lightweight Aluminum— *Wall-mount models have ½″×7/32″ four-way mounting slots.*										
2,500	Wall	2	57″ ×14″ × 5½″	0.73	6 ft.	—	6995T25	$479.17	6995T32	$13.67
2,500	Hook	2	14″ ×26″ × 5½″	1.4	6 ft.	⅝″	6995T21	370.83	6995T33	14.09
3,500	Wall	3	30″ ×19¼″× 5¾″	2.1	6 ft.	—	6995T16	387.10	6995T33	14.09
3,500	Hook	2	16½″×55″ × 5″	0.73	6 ft.	⅝″	6995T23	508.33	6995T32	13.67
Rugged Steel— *Housing is white. Furnished with ½″×7/32″ four-way mounting slots.*										
1,800	Wall	2	26″ ×15″ × 5″	1.4	6 ft.	—	6995T14	270.16	6995T33	14.09
2,500	Corner	2	57″ ×14″ × 5½″	0.73	6 ft.	—	6995T28	298.74	6995T32	13.67
Corrosion-Resistant Type 304 Stainless Steel— *Wall-mount model has keyhole mounting slots for bolts up to 3/16″ in dia.*										
1,000	Wall	2	31¼″×13¼″× 6½″	1.5	5.5 ft.	—	9820T11	514.46	9820T36	44.78
2,000	Hook	2	11½″×31″ ×12″	1.5	5.5 ft.	1½″	9820T12	545.74	9820T36	44.78
Outdoor Bug Zappers										
Economy Polycarbonate— *Housing is black.*										
1,000	Hook	1	16½″× 9¾″× 9¾″	0.8	6″	1¼″	6994T41	61.76	6994T45	21.25
1,600	Hook	2	18½″×11″ ×11″	1.5	6″	1¼″	6994T42	86.12	6994T43	21.03
Corrosion-Resistant Type 304 Stainless Steel										
6,000	Hook	2	29″ ×11½″×11½″	1.5	5.5 ft.	1½″	9820T33	478.88	9820T36	44.78

Mouse and Rat Control

Mouse and Rat Bait Stations

Mice and rats have easy access to the block of poison bait in these stations. Both are for indoor and outdoor use and have a window to check the poison. Poisons are EPA registered.

Refillable mouse bait station is made of nylon. It holds one 1-oz. poison block that can be replaced as needed. Each station includes eight 1-oz. poison blocks.

Disposable mouse and rat bait station is made of plastic. It includes one 4-oz. poison block that is sealed inside the station. Once the poison is gone, dispose of the station.

Refillable Station

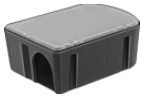

Disposable Station

	O'all Size, Ht.×Wd.×Dp.	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Refillable Mouse Bait Station	1⅜″×4⅛″×4¼″	8	9802T21	$8.53	$7.68
Disposable Mouse and Rat Bait Station	3″ ×5⅜″×7⅝″	4	9802T22	10.98	9.88

Mouse and Rat Traps

Spring-Loaded Traps—The original wood-base traps. For indoor and outdoor use. All require bait except the *scented mouse trap,* which has an aroma to attract mice.

Glue Traps—These baited, nonpoisonous traps are ready to use. For indoor use.

Spring-Loaded Trap

Mouse Glue Trap

	O'all Size, Wd.×Dp.	Pkg. Qty.	Pkgs./ Case		Pkg. Partial Case	Full Case
Spring-Loaded Traps						
Mouse	1 13/16″× 3⅞″	2	12	7552T44	$1.70	$1.49
Scented Mouse	1 13/16″× 3⅞″	2	12	7552T66	1.81	1.59
Rat	3¼″ × 6 15/16″	1	12	7552T2	2.62	2.29
Glue Traps						
Mouse	2 7/16″×2⅞″×5″★	2	18	75365T46	2.41	2.11
Rat	5″ ×10½″	2	12	75365T48	6.65	5.76

★ Ht.×Wd.×Dp.

Multicatch Mouse Trap

Bait these traps once and you'll be able to catch up to 30 mice. The mice crawl in but can't escape. Trap is galvanized steel with a hinged lid so it's easy to dispose or release mice elsewhere. For indoor use.

O'all Size, Ht.×Wd.×Dp.		
1 13/16″×6⅛″×10⅜″	9836T1	$16.71

Rat Trap

A spring-loaded door allows a rat to crawl in, but not leave until you release it. Trap is made of heavy, galvanized steel wire mesh with a galvanized steel handle. Mesh size is 1″×1″. For indoor and outdoor use.

O'all Size, Ht.×Wd.×Dp.		
7″×7″×17″	7128T16	$32.27

Mouse and Rat Zappers

When mice and rats go for your bait, these zappers will electrocute them instantly and cleanly. When you dispose of the rodents, you'll never have to touch them. Zappers operate on four AA alkaline batteries (sold separately). All are for indoor use and require bait.

Rat Zapper

Mouse Zapper—Provides up to 50 kills per set of batteries. Made of polystyrene.

Rat Zapper—Provides up to 30 kills per set of batteries. Made of ABS plastic.

Optional Remote Monitor for Rat Zapper—An LED signals when a rodent is captured. Monitor plugs into zapper and has a 12-ft. long cord.

	O'all Size, Ht.×Wd.×Dp.		Each
Mouse Zapper	1½″ ×3¼″× 6¼″	7499T61	$28.04
Rat Zapper	4″ ×4″ ×10″	7499T31	57.11
Optional Remote Monitor for Rat Zapper	2″ ×1½″× 1″	7499T32	18.93
AA Batteries (4/Pkg.)		71455K53	Pkg. $2.94

Rodent Repellent

Ward off mice, rats, squirrels, voles, shrews, and chipmunks with granules made from predator urine. Shake lightly over areas in need of protection, and pests will instinctively avoid the perceived threat. Not for indoor use.

28½-oz. Container 9541T1 $15.00

Bird Control

Bird Roosting Prevention Paste

All-weather, nonpoisonous repellent discourages pigeons, starlings, and English sparrows from roosting. It adheres to many surfaces including roof lines, window sills, gutters, and ledges. Color is clear.

The ***10-oz. cartridge*** is for use with a standard caulking gun (not included). 1 oz. will produce a ¼″ line that measures 1 ft. long.

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
10-oz. Cartridge	12	7127T2	$9.05	$8.04
4½-lb. Pail	4	7127T4	46.48	41.31

Bird Roosting Preventers

Strips—No messy pastes, just nail, screw, or glue these flexible strips on straight or curved surfaces.

Economical *polycarbonate strips* have snap-off notches every 5″ or can be cut with a knife. They also have ten ¼″ dia. mounting holes. Color is clear. Each box includes two 2-ft. strips.

Durable *Type 316 stainless steel strips* have a polycarbonate base and can be cut with a hack saw. They also have thirty-two ¼″ dia. mounting holes. Each box includes four 2-ft. strips.

(A)	(B)	(C)	Strip Lg.		Box 1-3	4-Up
Polycarbonate 1⅛″	4½″	7″	24″	6200T51	$16.00	$14.29
Stainless Steel 2″	4½″	5″	24″	6200T47	40.00	35.71

Flexible Wire Arms—Perfect for street lights, roof tops, and more, arms move to prevent birds from roosting. Arms are Type 316 stainless steel and have a 5½″ high gray polycarbonate base that includes two mounting plates. The 3″ round plate has three ¼″ dia. holes. The 4″ square plate has four ¼″ dia. holes.

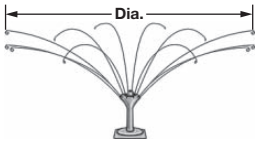

Dia.		
2 ft.	6200T32	$36.00
4 ft.	6200T44	40.00
8 ft.	6200T68	44.00

Bird Control Netting

Keep birds out of your facility with this black polypropylene netting. Simply attach it to existing structures with staples, adhesives, or the fastening clips sold below. Netting is strong, lightweight, UV stabilized, and can be cut to size with scissors.

Standard Netting—17 ft. wide; ⅝″×¾″ mesh size.

Heavy Duty Netting—Stronger than standard netting. 14 ft. wide; ½″×½″ mesh size.

Fastening Clips for Netting—Use nails or screws to attach these black polypropylene clips to netting. To attach netting to suspended wire, snap the clips over the wire. We recommend you use one clip every 1 to 3 feet. Mounting hole dia. is ¼″.

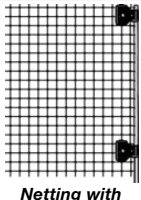

Netting with Fastening Clips

Length, ft.	Standard	Each	Heavy Duty	Each
10	9428T425	$26.67	9428T436	$39.56
25	9428T424	43.33	9428T438	73.56
50	9428T423	73.33	9428T439	133.78
100	9428T421	113.78	9428T431	262.22
250	9428T422	280.67	9428T432	648.00
500	9428T426	535.78	9428T433	1,275.56

Fastening Clips for Netting (25/Pkg.) ..... 9428T44 Pkg. $11.15

Bird Trap

Bait trap with corn or bird food (not included). Has a funnel entrance that lets birds enter, but not escape. Use the hinged door to release birds. Trap is 16-ga. galvanized steel. Mesh size is 1″×1″. Overall size is 9″ Ht.× 36″ Wd.×19″ Dp. Almond finish.

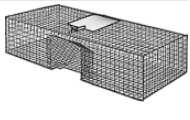

71265T61 ..... $64.77

Animal Traps

A spring-loaded door allows animals to enter, but not leave until you release them. Traps are galvanized steel wire mesh with a handle on top. Mesh size is 1″×1″. Baiting instructions included.

Small trap captures skunks, squirrels, and rabbits. ***Medium trap*** nabs raccoons, stray cats, and woodchucks. ***Large trap*** holds large raccoons and small dogs.

	O'all Size, Ht.×Wd.×Dp.		
Small	7″×24″× 7″	9819T13	$50.48
Medium	12″×32″×10″	9819T14	70.50
Large	15″×42″×15″	9819T15	119.96

Wall Patching Compounds

Apply with trowel or broad knife. Color is white.
Spackling compound is ready to use.
Plaster of Paris needs to be mixed with water.

	Size		
Spackling Compound	½-pt. Tub	7632T33	$2.15
Spackling Compound	1-qt. Tub	7632T44	5.24
Plaster of Paris	25-lb. Bag	7577T13	16.56

Textured Wall and Ceiling Patch Sprays

Quickly cover stains, repairs, and damage to textured walls and ceilings with very little mess. Furnished in easy-to-use aerosol cans, these patch sprays are water based. Application temp. is 65° to 75° F. For indoor use only. Color is flat white.

Drywall Patch Spray— Has an adjustable nozzle that varies the dense, orange-peel-like texture from light to heavy.

Ceiling Patch Spray— Has a popcorn-like texture.

	Dry to Touch	Fully Dry	Net Wt., oz.	Coverage, sq. ft.		
Drywall Patch	30 min.	30 min.	10	50	72945T3	$10.74
Ceiling Patch	30 min.	24 hrs.	14	6	72945T5	13.82

Drywall Joint Tape and Compound

Hide seams and smooth corners with this tape. Both styles require joint compound for a finished look. Color is white.

Paper tape bonds with joint compound. ***Fiberglass mesh tape*** is self-adhesive and can also be used to repair damaged walls. ***Joint compound*** is ready to use. One tub covers 25 to 35 sq. ft.

	Roll Wd.	Roll Lg.		Roll
Paper Tape	2 1/16″	250 ft.	76585A51	$3.27
Fiberglass Mesh Tape	1 7/8″	50 ft.	76585A66	3.02
Fiberglass Mesh Tape	1 7/8″	300 ft.	76585A67	7.62
Joint Compound (12-lb.Tub)			7609T23	Each $8.40

Self-Adhesive Drywall Patches

Just peel off the backing, stick in place, cover with spackling compound, sand, and then paint. Made of fiberglass-reinforced aluminum, these patches are suitable for drywall and plaster.

Assortment includes two 4″×4″ and one 6″×6″ patches.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4″×4″	25 patches	76185T32	$2.28	$1.94
6″×6″	25 patches	76185T36	2.62	2.24
Assortment	12 assortments	76185T38	6.42	5.79

Drywall and Wall-Covering Tools

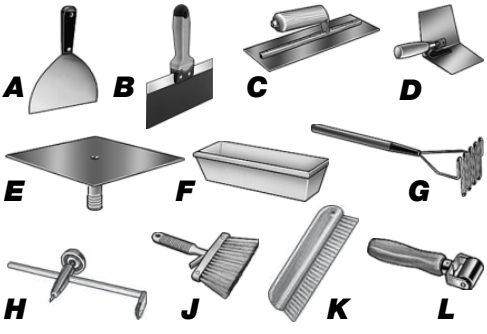

	Work-Surface Material	Work-Surface Size		
Drywall Tools				
A Joint Knife	Steel	6″ Wd.×4½″ Lg.	7609T4	$9.51
B Taping Knife	Steel	6″ Wd.×3″ Lg.	7609T11	9.28
B Taping Knife	Steel	8″ Wd.×3″ Lg.	7609T12	9.93
B Taping Knife	Steel	10″ Wd.×3″ Lg.	7609T13	10.81
C Finishing Trowel	Steel	4½″ Wd.×11″ Lg.	7609T1	8.43
D Inside Corner Trowel	Stainless Steel	3½″ Wd.×4½″ Lg.	7609T14	12.99
E Hawk	Aluminum	12″ Wd.×12″ Lg.	7609T15	17.06
F Mud Pan	Plastic	3⅜″ Ht.×14″ Wd.×4½″ Dp.	7609T21	3.60
G Mud Masher	Steel	5⅝″ Wd.×5″ Lg.	7609T17	15.27
H Circle Cutter	Steel	Up to 16″ Dia.	7609T18	13.56
Wall-Covering Tools				
J Paste Brush	Tampico Fiber	6″ Wd.×3½″ Lg.	62395T45	6.05
K Smoothing Brush	Tampico Fiber	12″ Wd.×2″ Lg.	62395T88	5.55
L Seam Roller	Plastic	1½″ Wd.	62395T69	8.30

Indoor Fiberglass-Laminate Wall Panel

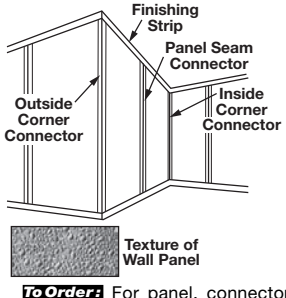

Cover wallboard, masonry, and studs with this durable, washable, mildew-resistant panel. Measuring 0.090″ thick with a pebbled texture, it can be cut with a fine-tooth carbide-tipped power saw. To install, use a trowelable construction-grade adhesive, nylon drive rivets, or a combination of the two (sold separately). Temp. range of panel is –65° to +135° F. Panel meets USDA regulations for incidental food contact and is Class C fire rated.

Connectors and ***finishing strip*** are 8 ft. long and made of polypropylene.

To Order: For panel, connectors, finishing strip, and nylon drive rivets, please specify color: almond or white, unless noted.

		Each
4 ft.×8 ft. Panel	62445T71★	$56.83
Accessories		
Panel Seam Connector	62445T72	3.56
Inside Corner Connector	62445T73	3.39
Outside Corner Connector	62445T74	3.73
Finishing Strip	62445T75	3.01
Adhesive (1-gal. can; covers 50-70 sq. ft.)	7534A28♦	24.18
		Pkg.
¾″ Nylon Drive Rivets (50/Pkg.)	62445T76	$10.59

★ Also available in gray. ♦ This product is compliant under all state VOC rules in effect on April 1, 2010.

Steel Stud and Base

Use a stud with a base to create nonload-bearing interior partitions and wall framing. Both are made of 25-gauge, corrosion-resistant, galvanized steel.

Stud has knockouts approximately 12″ from each end to accommodate conduit and pipe. ***Base*** aligns and anchors stud to floors and ceilings.

	Wd.×Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Stud	3⅝″×10 ft.	10	77095T42	$9.37	$7.96
Base	3⅝″×10 ft.	10	77095T43	9.04	7.68

Indoor/Outdoor Polycarbonate Wall and Roof Panels

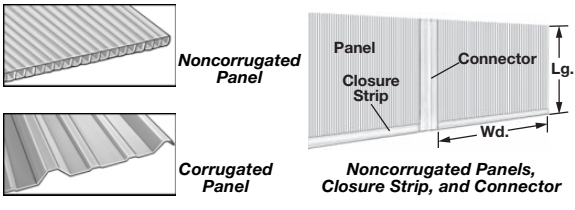

Virtually unbreakable, these polycarbonate panels are impact, heat, chemical, and weather resistant. To cut panels to size, use a circular saw with a fine-tooth blade. ***Closure strips*** keep the top and bottom ends clear of dirt and dust. ***Connectors*** join two panels side by side.

Noncorrugated Panels— These ¼″ thick panels consist of two polycarbonate layers (one of which has a UV stabilizer) separated by stiffening ribs. Roofing applications require a minimum 5° slope. Temp. range is –40° to +250° F. Color is clear. Panels meet UL-723 for flammability and have an ASTM flame spread rating of 5.

Closure strips and *connectors* are made of polycarbonate.

Corrugated Panels— These 1/16″ thick panels have 3″ Wd.×1¼″ Ht. corrugations. Temp. range is –30° to +260° F. Color is white. Panels have an FM flame spread rating of 6.

Closure strips are polyethylene foam. **To Order:** Please specify top or bottom end. *Connectors* are a Type 304 stainless steel screw with grommet, nut, and neoprene washer. Use one connector for every foot of panel length.

Lg.	Wd.	Panel		Closure Strip		Connector	
Noncorrugated							
12″	24″	84825K81	$5.96	84825K31	$2.51	84825K51	$2.60
24″	24″	84825K83	11.21	84825K31	2.51	84825K52	5.21
24″	36″	84825K85	16.49	84825K32	3.75	84825K52	5.21
36″	48″	84825K87	30.38	84825K33	5.00	84825K53	7.81
48″	48″	84825K89	38.77	84825K33	5.00	84825K54	10.42
Corrugated							
48″	38″	85795K227	43.25	85795K5	2.66	85795K1	.85
72″	38″	85795K224	64.87	85795K5	2.66	85795K1	.85
96″	38″	85795K226	86.49	85795K5	2.66	85795K1	.85

Suspended Ceiling Tiles and Framing

Create a new drop ceiling that allows access to piping and wiring, expand your existing drop ceiling, or just replace old ceiling tiles. All tiles and framing are for indoor use. Color is white, unless noted.

Suspended Ceiling Tiles

To install, simply lay tiles directly on framing (sold below). Unless noted, these tiles fit flush with the framing and can be trimmed with a utility knife. All have a Class A fire rating. They meet ASTM E84 surface burning characteristics with a flame spread rating of 25 or less.

(A-C) Medium Duty Tiles— All offer good sound absorption. UL classified.

(B) Tiles with additional fire resistance are specially constructed for use in various UL fire-rated ceiling assemblies.

(C) Recessed-edge tiles have indented edges on all four sides so the face of the tile extends below the framing when installed.

(D) Heavy Duty Tiles with Additional Sound Absorption— In addition to being thicker and more durable than our Medium Duty tiles, these tiles provide excellent sound absorption and are treated for good humidity resistance. UL classified.

(E) Specialty Tiles for Superior Sound Absorption— These tiles offer more sound absorption than *Style D* tiles above. They're also laminated with fleece to prevent degradation. Color is white on one side and black on the other.

(F) Specialty Tiles for Food Processing Areas— These tiles are washable and have a greater tolerance for humidity than our Medium and Heavy Duty tiles. UL classified.

(G) Specialty Tiles for Clean Rooms— For use in clean rooms up to Class 100, these tiles also offer additional fire resistance and good humidity resistance. They are specially constructed for use in various UL fire-rated ceiling assemblies. UL classified.

(H) Specialty Tiles for High-Humidity and Food Processing Areas— Made of fiberglass-reinforced plastic, these washable tiles have a greater tolerance for humidity than our other tiles. They won't rot, stain, or dent. Trim with sheet metal shears or a circular carbide-tipped blade.

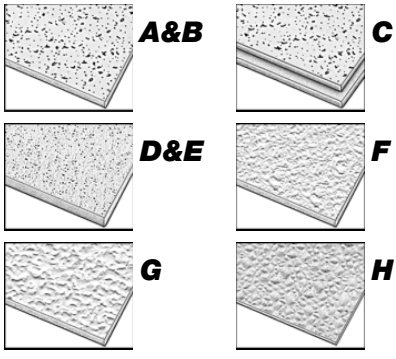

	Material	Thick.	24″×24″ Tiles Case Qty.		Case	24″×48″ Tiles Case Qty.		Case
Medium Duty Tiles								
A .. Standard	Mineral Fiber	5/8″	16	62545T42	$49.54	12	62545T44	$72.44
B .. With Additional Fire Resistance	Mineral Fiber	5/8″	16	62545T25	76.92	8	62545T26	75.54
C .. Recessed Edge	Mineral Fiber	5/8″	16	62545T37	70.52	10	62545T38	86.55
Heavy Duty Tiles								
D .. With Additional Sound Absorption	Mineral Fiber	3/4″	12	6671T29	132.00	6	6671T31	129.60
Specialty Tiles								
E .. For Superior Sound Absorption	Melamine Foam	5/8″	8	9216T1	69.30	5	9216T2	76.23
F .. For Food Processing Areas	Drywall w/Vinyl Face	1/2″	2	7653T48	12.15	2	7653T49	23.85
G .. For Clean Rooms	Mineral Fiber	5/8″	12	7384T81	175.11	8	7384T83	204.80
H .. For High-Humidity and Food Processing Areas	Fiberglass/Plastic	3/32″	1	62545T53	11.36	1	62545T54	22.75

Framing for Suspended Ceiling Tiles

Use these components to design your own frame to support ceiling tiles (sold above). For indoor use. Color is white.

Main and ***cross tees*** snap together. ***Wall molding*** secures the frame you've made to the wall. ***Hanger rods*** are made of 12-gauge steel, measure 12 ft. long, and are used to suspend and secure your frame from the ceiling.

Steel— The main and cross tees are approved for use in various UL fire-rated ceiling assemblies. The wall molding and hanger rod aren't required to be fire rated and won't reduce the overall fire protection of the ceiling system.

Corrosion-Resistant Aluminum— These components withstand higher humidity than our steel components, but are not fire rated. They can be used in food processing areas.

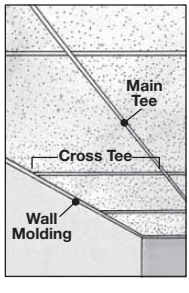

	Wd.	Steel Lg.		Each	Corrosion-Resistant Aluminum Lg.		Each
Main Tee	15/16″	12 ft.	62765T31	$9.30	12 ft.	8014T51	$22.26
Cross Tee	15/16″	4 ft.	62765T32	3.09	4 ft.	8014T52	7.42
Cross Tee	15/16″	2 ft.	62765T33	1.55	2 ft.	8014T53	3.70
Wall Molding	7/8″	12 ft.	62765T34	5.89	10 ft.	8014T54	10.46

Hanger Rods (10/Pkg.) ..... 62765T65 **Pkg.** $11.04

Ceiling Tile Spray Paint

Why buy new tiles if you don't have to? Restore existing water- and smoke-stained ceiling tiles to their original appearance with this easy-to-apply spray paint. It will not warp or sag tiles. Choose from "new white" for a bright, new-tile look and "old white" when you need to match older, aged white tiles.

Furnished in an aerosol can, this paint is water based. Application temp. is 70° to 90° F. Maximum temp. is 250° F. Coverage is 15 sq. ft. per can. For indoor use only. Finish is flat.

Color	Dry to Touch	Fully Dry	Net Wt., oz.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
New White	15 min.	1 hr.	16	12	9556T11	$11.76	$10.50
Old White	15 min.	1 hr.	16	12	9556T12	11.76	10.50

Suspended Ceiling Drainage Tiles

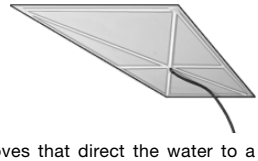

Stop struggling with unsightly, makeshift solutions for leaky ceilings. These white polystyrene drainage tiles temporarily replace existing 2 ft.×2 ft. or 2 ft.×4 ft. suspended ceiling tiles to trap and divert 1 quart of water per minute at ambient temperatures. Measuring 1/16″ thick, tiles have grooves that direct the water to a center drain which has a barbed fitting. To drain the water, attach the included 25-ft. long drain tube and route it to a collection receptacle. Furnished with six ceiling-grid clips to attach tile to ceiling tee framing and nine adjustable tube hangers to route drain tube.

2 ft.×2 ft. Tile ..... 7575T4 ..... $139.09
2 ft.×4 ft. Tile ..... 7575T6 ..... 156.52

Suspended Ceiling Hangers

No hammering or special tools required—just slide these hangers on to your ceiling tile framing to hang signs, plants, and more. All hangers can be used again and again.

Style J— Designed for mounting items flush with the wall. Just lift a ceiling tile, press the hanger on to the frame wall molding, and let the ceiling tile fall back into place. Universal size fits all framing.

Style K— This hanger is made up of two pieces that slide together to form a closed or open hook (see illustration). It fits 15/16″ wide main and cross framing tees.

Style L— The hook on this hanger swivels 360° for versatility. To install, just flex the base slightly and clip it on to the ceiling frame. It fits 15/16″ wide main and cross framing tees.

Style M— For secure installation, simply twist and lock this hanger on to your ceiling frame. It fits 15/16″ wide main and cross framing tees.

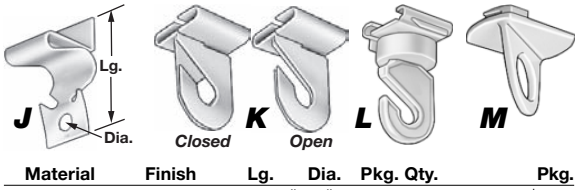

	Material	Finish	Lg.	Dia.	Pkg. Qty.		Pkg.
J	Steel	Zinc Plated	1 13/16″	1/4″	6	12295A41	$6.75
K	Aluminum	White	1 1/2″	1/4″	6	12295A44	11.05
L	Polypropylene	Natural	2 1/8″	11/32″	6	1374A23	6.79
M	Polystyrene	White	1 3/4″	7/8″	10	12295A51	5.85

Breathable Canvas Tarps

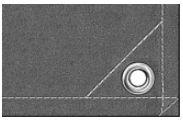

Standard Tarp with Reinforced Corner

To prevent condensation buildup, these breathable, water- and mildew-resistant tarps are made of canvas. They stay flexible in low temperatures. For strength, all four sides have double-stitched seams. Each side also has 3/8″ ID brass grommets (unless noted) spaced 2 feet apart. **To Order:** For custom sizes, please specify size.

Standard Tarps with Reinforced Corners—A triangular canvas patch is sewn on to each corner of these tarps. The patches provide four additional layers of canvas fabric for increased corner strength. Grommets are 1/2″ ID.

Flame-Resistant Tarps—These tarps will not support combustion. They meet California Fire Marshal requirements.

Size	STANDARD 10 oz./sq. yd.; 20 mils Thick (Brown or Green■)	Each	STANDARD 15 oz./sq. yd.; 30 mils Thick (Olive Green)	Each	STANDARD WITH REINFORCED CORNERS 12 oz./sq. yd.; 24 mils Thick (Olive Green)	Each	FLAME RESISTANT 10 oz./sq. yd.; 20 mils Thick (Green)	Each	FLAME RESISTANT 15 oz./sq. yd.; 30 mils Thick (Olive Green)	Each
3′ × 3′	7882T31	$6.10	7882T213	$10.36	1891T11	$9.23	7902T287	$8.18	7902T211	$12.80
3′ × 6′	7882T32	10.68	7882T211	15.91	1891T12	14.96	7902T264	12.08	7902T221	21.97
4′ × 4′	7882T33	8.98	7882T129	14.14	1891T13	12.63	7902T111	10.73	7902T141	19.53
4′ × 6′	7882T34	13.34	7882T219	21.21	1891T14	18.95	7902T312	16.11	7902T182	29.29
4′ × 8′	7882T35	16.11	7882T172	28.28	1891T15	25.27	7902T161	21.49	7902T162	39.05
4′ × 12′	7882T36	24.80	7882T222	42.42	1891T16	37.90	7902T336	32.21	7902T184	58.58
5′ × 5′	7882T61	12.59	7882T131	22.08	1891T21	19.74	7902T112	16.78	7902T142	30.51
6′ × 6′	7882T63	18.13	7882T132	31.81	1891T22	27.69	7902T113	24.15	7902T143	43.94
6′ × 8′	7882T65	24.17	7882T133	42.42	1891T23	37.90	7902T114	32.21	7902T144	58.58
6′ × 10′	7882T67	30.19	7882T83	53.02	1891T24	47.38	7902T115	40.25	7902T145	73.23
8′ × 8′	7882T78	32.22	7882T913	56.55	1891T41	50.54	7902T911	42.96	7902T913	78.11
8′ × 10′	7882T95	40.27	7882T916	70.69	1891T42	63.17	7902T914	53.66	7902T916	97.64
8′ × 12′	7882T96	48.32	7882T84	84.83	1891T43	75.81	7902T116	64.41	7902T146	117.16
8′ × 16′	7882T97	64.44	7882T174	112.89	1891T44	101.08	7902T163	85.87	7902T164	156.22
8′ × 20′	7882T41	80.54	7882T311	139.90	1891T45	126.35	7902T423	105.65	7902T197	195.27
10′ × 10′	7882T43	50.34	7882T313	88.37	1891T52	78.97	7902T471	67.10	7902T213	122.04
10′ × 12′	7882T45	60.41	7882T85	106.04	1891T54	94.76	7902T117	80.51	7902T147	146.45
10′ × 20′	7882T47	99.74	7882T314	176.43	1891T55	157.94	7902T506	134.18	7902T421	244.09
12′ × 12′	7882T49	72.50	7882T318	127.25	1891T56	113.71	7902T514	96.62	7902T385	175.74
12′ × 16′	7882T52	96.66	7882T86	169.66	1891T57	151.62	7902T118	128.80	7902T148	234.32
12′ × 24′	7882T54	144.98	7882T919	254.49	1891T58	227.43	7902T917	193.23	7902T919	351.49
14′ × 20′	7882T72	140.95	7882T87	247.42	1891T72	221.11	7902T119	187.85	7902T149	341.72
16′ × 16′	7882T74	128.87	7882T88	226.22	1891T73	202.16	7902T121	171.77	7902T151	312.43
16′ × 24′	7882T76	193.30	7882T89	339.32	1891T74	303.24	7902T122	257.64	7902T152	468.65
20′ × 20′	7882T94	201.36	7882T91	353.46	1891T75	315.87	7902T123	268.39	7902T153	488.18
20′ × 30′	7882T56	302.03	7882T92	530.19	1891T76	473.81	7902T124	402.51	7902T154	732.27
24′ × 36′	7882T58	434.94	7882T93	793.74	1891T77	682.28	7902T125	579.61	7902T155	1,054.46
		Per Sq. Ft.		Per Sq. Ft.		Per Sq. Ft.		Per Sq. Ft.		Per Sq. Ft.
Custom	7878T41	$0.58	7878T43	$1.08	1891T99	$0.94	7877T1	$0.81	7877T3	$1.41

■ **To Order:** Please specify color: brown or green.

General Purpose Polyethylene Tarps

Reflective Silver/Black Tarp with Reinforced Corner

With the security of rope-reinforced hems and heat-sealed seams (unless noted), these economical tarps are water, rot, tear, and UV resistant.

Color-Coded Tarps—Each side has 1/2″ ID aluminum grommets that are spaced 3 feet apart.

Reflective Silver/Black Tarps with Reinforced Corners—Offer a higher tear strength than the color-coded tarps. Molded-plastic corners add even more strength. Tarps are black on one side for better UV resistance and silver on the other for reflectivity. Each side has 1/2″ ID aluminum grommets that are spaced 2 feet apart.

Flame-Resistant Tarps—These tarps will not support combustion; meet California Fire Marshal requirements. Polyethylene patches on the corners add strength. Each side has 1/2″ ID aluminum grommets that are spaced 2 feet apart.

Heavy Duty Reflective Silver/Black Tarps—These heavy duty tarps are black on one side for better UV resistance and silver on the other for reflectivity. Each side has 3/8″ ID brass grommets that are spaced 2 feet apart. **To Order:** For custom sizes, please specify size.

Heavy Duty Clear Tarps—Clear and seamless, these tarps keep covered items visible. All have 3/8″ ID brass grommets that are spaced 2 feet apart. **To Order:** For custom sizes, please specify size.

COLOR CODED ♦ — 5 oz./sq. yd.; 6 mils Thick

Size		Each
4′4″ × 6′6″	7770T12	$2.98
5′6″ × 7′6″	7770T31	4.08
7′4″ × 9′6″	7770T35	6.80
7′6″ × 14′6″	7770T36	10.20
8′4″ × 11′6″	7770T37	9.18
9′4″ × 11′6″	7770T51	10.20
11′4″ × 15′6″	7770T52	16.32
11′4″ × 19′6″	7770T54	20.40
11′4″ × 24′6″	7770T55	25.50
14′2″ × 19′8″	7770T61	25.50
14′2″ × 29′4″	7770T62	38.25
15′2″ × 19′6″	7770T68	27.20
17′2″ × 23′6″	7770T64	36.72
19′ × 19′6″	7770T65	32.30
19′ × 24′6″	7770T67	40.38
19′ × 29′6″	7770T69	48.45
19′ × 39′6″	7770T72	64.60
23′ × 35′4″	7770T74	73.44
28′10″ × 39′6″	7770T81	98.60
28′10″ × 49′6″	7770T82	123.25
38′6″ × 39′4″	7770T83	132.60
38′6″ × 59′6″	7770T84	198.90

♦ **To Order:** Please specify color: blue, brown, or green.

REFLECTIVE SILVER/BLACK W/ REINFORCED CORNERS — 6 oz./sq. yd.; 11 mils Thick

Size		Each
6′ × 8′	4454T11	$11.56
8′ × 10′	4454T21	19.26
10′ × 12′	4454T31	28.91
10′ × 20′	4454T41	48.16
12′ × 16′	4454T51	46.26
12′ × 20′	4454T61	57.81
12′ × 25′	4454T71	72.25
15′ × 30′	4454T81	109.41
16′ × 20′	4454T91	77.07
20′ × 20′	4454T12	96.33
20′ × 30′	4454T13	104.37
25′ × 33′	4454T14	143.50
30′ × 40′	4454T15	208.74
30′ × 60′	4454T32	304.19
40′ × 40′	4454T16	270.39

FLAME-RESISTANT WHITE W/ REINFORCED CORNERS — 4 oz./sq. yd.; 7.5 mils Thick

Size		Each
9′5″ × 19′2″	7375T11	$39.71
9′8″ × 11′8″	7375T51	23.73
14′2″ × 19′5″	7375T21	59.27
19′2″ × 29′6″	7375T41	117.61
20′ × 21′	7375T31	82.99

HEAVY DUTY REFLECTIVE SILVER/BLACK — 7 oz./sq. yd.; 12 mils Thick

Size		Each
4′ × 4′	87995T11	$5.76
6′ × 6′	87995T32	7.56
6′ × 8′	87995T41	10.08
8′ × 10′	87995T56	16.80
8′ × 16′	87995T57	26.88
10′ × 12′	87995T42	25.20
10′ × 20′	87995T43	42.00
12′ × 15′	87995T44	37.80
12′ × 20′	87995T45	50.40
12′ × 24′	87995T46	60.48
14′ × 14′	87995T38	41.16
16′ × 20′	87995T47	64.00
20′ × 20′	87995T48	80.00
20′ × 30′	87995T49	120.00
20′ × 40′	87995T61	160.00
24′ × 24′	87995T51	115.20
24′ × 30′	87995T52	144.00
30′ × 30′	87995T53	180.00
40′ × 40′	87995T54	320.00
50′ × 50′	87995T55	479.74
		Per Sq. Ft.
Custom	87995T1	$0.23

HEAVY DUTY CLEAR — 6 oz./sq. yd.; 4 mils Thick

Size		Each
6′ × 8′	7885T53	$8.78
9′ × 12′	7885T23	19.78
10′ × 12′	7885T56	21.97
12′ × 16′	7885T57	35.07
16′ × 16′	7885T24	46.84
16′ × 24′	7885T25	70.29
24′ × 24′	7885T26	105.44
28′ × 32′	7885T27	164.22
		Per Sq. Ft.
Custom	7885T11	$0.23

HEAVY DUTY CLEAR — 9 oz./sq. yd.; 6 mils Thick

Size		Each
6′ × 8′	7885T83	$14.06
9′ × 12′	7885T28	31.67
10′ × 12′	7885T86	35.13
12′ × 16′	7885T87	56.12
16′ × 16′	7885T88	76.00
16′ × 24′	7885T89	114.00
24′ × 24′	7885T29	171.00
28′ × 32′	7885T93	229.85
		Per Sq. Ft.
Custom	7885T33	$0.36

Color-Coded Vinyl-Laminated and Vinyl-Coated Nylon Tarps

These durable tarps provide water, UV, and tear resistance as well as remain flexible in extremely low temperatures. **To Order:** Please specify color: black, blue, green, or tan (unless noted). For custom sizes, please specify size.

Flame-Resistant Vinyl-Laminated Nylon Tarps— These tarps will not support combustion, meet MIL-C-43006B, and are California Fire Marshal approved. Each side has 3/8″ ID brass grommets that are spaced approximately 2 feet apart.

Heavy Duty Vinyl-Coated Nylon Tarps— Here are our most abrasion-, tear-, and puncture-resistant tarps. Great for outdoor and mobile (truck) applications. Each side has 1/2″ ID brass grommets that are spaced approximately 2 feet apart.

18 oz./sq. yd. tarps meet MIL-C-20696.

22 oz./sq. yd. tarps (listed sizes as well as custom sizes) are not available in tan.

Size	FLAME-RESISTANT VINYL LAMINATED 13 oz./sq. yd.; 15 mils Thick	Each	HEAVY DUTY VINYL COATED 18 oz./sq. yd.; 20 mils Thick	Each	HEAVY DUTY VINYL COATED 22 oz./sq. yd.; 23 mils Thick	Each
3′× 6′	7886T51	$26.25	78925T38	$30.23	8010T21	$34.62
4′× 4′	7886T52	18.75	78925T39	21.59	8010T22	25.00
6′× 8′	7886T61	34.84	78925T41	43.25	8010T23	54.55
6′×10′	7886T62	43.55	78925T42	54.07	8010T24	68.18
8′×10′	7886T53	67.50	78925T37	84.24	8010T25	95.24
10′×10′	7886T63	70.18	78925T43	87.16	8010T31	102.04
10′×12′	7886T64	78.20	78925T44	99.86	8010T32	122.45
12′×15′	7886T65	117.29	78925T45	143.78	8010T33	183.67
12′×24′	7886T66	176.85	78925T46	231.75	8010T34	276.92
14′×20′	7886T67	171.92	78925T47	215.40	—	—
14′×25′	—	—	78925T48	269.27	8010T35	336.54
16′×20′	7886T69	196.50	78925T49	245.12	8010T36	307.69
20′×30′	7886T72	368.42	78925T52	456.83	8010T37	576.92
		Per Sq. Ft.		Per Sq. Ft.		Per Sq. Ft.
Custom	7886T99	$0.78	78925T99	$0.94	8010T77	$1.21

Heavy Duty Vinyl-Coated Nylon Tarps with D-Rings

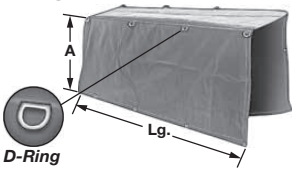

If you need a high degree of tensioning combined with superior protection, then look no further. These extra-durable tarps have one row of equally spaced, 1 1/4″ Ht.×1 1/4″ Wd. steel D-rings that are sewn into the two length sides.

These tarps are abrasion, tear, puncture, water, and UV resistant. They remain flexible in extremely low temperatures. Each side has 3/8″ ID brass grommets that are spaced approximately 2 feet apart. Color is black. Meet MIL-C-20696.

To Order: For custom sizes, please specify size.

Size, Lg.×Wd.	D-Ring Distance From the Edge (A)	18 oz./sq. yd.; 20 mils Thick	Each
12′× 8′	▲	7776T811	$119.40
20′×12′	2′	7776T121	212.83
20′×14′	3′	7776T111	240.98
25′×12′	2′	7776T321	266.04
25′×14′	3′	7776T311	298.74
			Per Sq. Ft.
Custom		7776T99	$1.15

▲ D-rings are sewn along the edge of the two length sides.

Breathable Covers with Magnets

Keep moisture, dust, and dirt out while allowing air to pass through with these specially treated cotton covers. They contain a natural rust inhibitor and have a magnet sewn into each corner to keep them in place on your equipment.

Covers do not have grommets. Color is light gray.

Size	8 oz./sq. yd.; 10 mils Thick♣	
27″× 36″	9325T1	$15.70
36″× 56″	9325T2	23.03
56″× 72″	9325T3	35.92
72″×112″	9325T4	49.11

♣ Prior to treatment.

Chemical-Resistant Neoprene-Coated Nylon Tarps

Chemicals such as gasoline, methanol, sodium chloride, ammonium sulfate, lubricating oils, and petroleum oils are no problem for these tarps. They also offer mildew, UV, and grease resistance. Each side has 3/8″ ID brass grommets that are spaced approximately 2 feet apart.

Choose from tarps that are black on both sides and tarps that are black on one side and silver on the other for reflectivity.

To Order: For custom sizes, please specify size.

Size	BLACK 16 oz./sq. yd.; 20 mils Thick	Each	BLACK/SILVER 16 oz./sq. yd.; 20 mils Thick	Each
6′× 8′	94935T11	$123.43	94935T23	$126.92
6′×10′	94935T12	154.29	94935T24	158.57
8′×10′	94935T13	205.71	94935T25	211.55
9′×12′	94935T14	234.14	94935T26	285.67
9′×16′	94935T15	346.90	94935T27	358.96
12′×15′	94935T16	426.15	94935T28	440.28
		Per Sq. Ft.		Per Sq. Ft.
Custom	94935T1	$2.57	94935T2	$2.66

Five-Sided Snug-Fitting Tarps

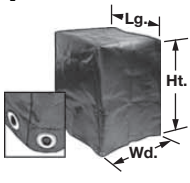

Designed to fit over machinery and other objects, these tarps provide snug-fitting protection. On the corners and center bottom edges there are 3/8″ ID brass grommets. **To Order:** For custom sizes, please specify size.

Polyethylene— These tarps are water, rot, tear, and UV resistant. They are black on one side for UV resistance and silver on the other for reflectivity.

Vinyl-Coated Nylon— These extra-durable tarps offer high tear strength, good abrasion resistance, and are waterproof. They remain flexible in extremely low temperatures. **To Order:** Please specify color: black, blue, green, or yellow.

Size, Lg.×Wd.×Ht.	POLYETHYLENE 7 oz./sq. yd.; 12 mils Thick	Each	VINYL-COATED NYLON 18 oz./sq. yd.; 20 mils Thick	Each
18″×18″×24″	8033T2	$13.26	8033T34	$40.06
24″×24″×24″	8033T25	16.20	8033T21	42.14
24″×24″×36″	8033T3	18.51	8033T46	56.06
24″×36″×36″	8033T33	21.06	8033T22	54.77
24″×48″×24″	8033T37	25.91	8033T23	67.40
36″×36″×36″	8033T4	29.77	8033T62	120.14
36″×48″×36″	8033T42	43.74	8033T24	113.74
36″×48″×48″	8033T48	55.08	8033T29	143.23
48″×48″×36″	8033T5	52.91	8033T57	128.14
48″×48″×60″	8033T52	77.77	8033T26	202.17
60″×60″×36″	8033T6	56.20	8033T82	170.19
		Per Sq. Ft.		Per Sq. Ft.
Custom	8033T9★	$0.73	8033T99★	$2.12

★ For pricing, total sq. ft. is calculated by rounding up to nearest foot.

Ventilating Mesh Tarps

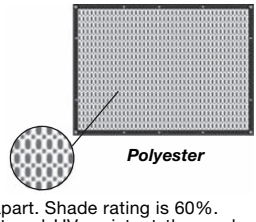

When maximum airflow is a concern, but water resistance is not, these are the tarps to choose. They're UV resistant and can be used as truck/flatbed covers, shade covers, cargo netting, and wind screens. For durability, all have a 2″ wide, web-reinforced hem that's made of black polypropylene.

Polyethylene— Tarps are black with a mesh opening size of 1/16″×1/16″. Each side has 5/8″ ID brass grommets that are spaced approximately 2 feet apart. Shade rating is 60%.

Polyester— Stronger and more heat and UV resistant than polyethylene. Tarps are white with a mesh opening size of 1/4″×1/4″. Each side has 3/8″ ID brass grommets that are spaced approximately 2 feet apart. Shade rating is 40%.

Size	Polyethylene		Size	Polyester	
5′8″× 7′8″	4463T21	$25.57	3′× 6′	7871T22	$14.65
7′8″× 9′8″	4463T31	42.59	4′× 4′	7871T27	13.02
9′8″×11′8″	4463T41	63.88	4′× 8′	7871T29	26.05
9′8″×15′8″	4463T51	85.18	6′× 8′	7871T51	39.08
9′8″×17′8″	4463T61	95.83	8′×10′	7871T33	65.12
11′8″×15′8″	4463T22	102.20	8′×12′	7871T52	78.16
11′8″×17′8″	4463T32	114.99	10′×12′	7871T53	97.68
11′8″×19′8″	4463T42	127.77	10′×16′	7871T54	130.26
11′8″×25′8″	4463T52	144.40	10′×20′	7871T55	162.82
11′8″×51′8″	4463T62	280.80	12′×16′	7871T57	156.32
13′8″×15′8″	4463T72	119.26	12′×24′	7871T59	234.46
15′6″×23′8″	4463T82	177.74	20′×20′	7871T63	319.25

Drainage Tarps

Flame-Resistant Vinyl-Coated Nylon

Protect your work areas and equipment from overhead leaks with these rot- and mildew-resistant tarps. Hang tarps by the welded, nickel-plated steel D-rings that are sewn into each corner. D-rings measure 1″ across and 7/8″ high. To drain, connect the threaded drain spout to any 3/4″ female garden hose (GHT) fitting.

Polyethylene—One side is silver and the other side is black. When installed, the black side is shown.

Flame-Resistant Vinyl-Coated Nylon—These tarps will not support combustion and meet California Fire Marshal requirements. They remain flexible in extremely low temperatures. Color is translucent white.

Size	POLYETHYLENE 6 oz./sq. yd.; 12 mils Thick		FLAME-RESISTANT VINYL-COATED NYLON 14 oz./sq. yd.; 15 mils Thick	
3′× 3′	6942T48	$31.25	6942T37	$39.38
4′× 4′	6942T51	33.90	6942T39	44.65
5′× 5′	6942T61	37.35	6942T71	48.92
7′× 7′	6942T62	52.15	6942T72	72.10
10′×10′	6942T63	62.96	6942T73	115.35
12′×12′	6942T64♥	85.84	6942T74♥	124.76
15′×15′	6942T65♥	113.31	6942T75♥	199.74
20′×20′	6942T66♥	180.82	6942T76♥	337.62

♥ Furnished with additional D-rings at centers of each side.

Tarp Accessories

For bungee cords, see pages 1512. For rope, see pages 1410-1414. For metal grommets, see pages 3774 and 3775.

Tarp Fasteners

A

A Grommets—In addition to replacing broken grommets, these grommets can be added to your canvas and synthetic tarps to create a custom fit. Simply place tarp between grommet halves and tap on with a hammer for permanent installation. Grommets are made from recycled polymers. Opening size is 1/2″ ID. Color is black.

78905T91 (4/Pkg.) ..... **Pkg.** $3.38

B

B Light Duty Tie Down Buttons—Secure lightweight synthetic tarps with these reusable, nonpiercing polyethylene fittings. The opening size is 11/16″ ID. Color is white.

9565T7 (10/Pkg.) ..... **Pkg.** $4.76

C

C Heavy Duty Tie Down Buttons—The choice for securing heavier canvas and synthetic tarps. Made from copolymers, they're reusable, nonpiercing, and can even be used to join tarps. Maximum opening size is 3″. Color is white.

9565T4 (2/Pkg.) ..... **Pkg.** $7.02

Tarp Protectors

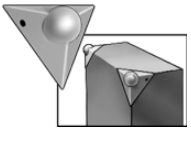

Don't tear your tarps on sharp corners—protect them with these reusable polypropylene corner covers. Place protectors on sharp corners and then cover them with your tarp to hold them in place. Protectors are 8″ long on each side. Color is yellow.

7830T76 (4/Pkg.) ..... **Pkg.** $13.44

Digital Moisture Detector

With 3 1/4″ Insulated Pins

Check the moisture content of wood and other moisture-absorbing building materials. Detector uses two 5/16″ noninsulated integral electrode pins that are mounted directly to the meter (two replacement pins are also included). For deeper penetration, two 3 1/4″ insulated electrode pins attach to the meter with a 3-ft. cord (pins and cord included).

Detector has three scales. The wood scale measures moisture from 6% to 40% in lumber, studs, and flooring. A comparative reference scale reads from 0 to 100 and is used in nonwood materials such as concrete, insulation, and roofing. The gypsum scale measures moisture from 0.2% to 50% in sheetrock (drywall). Detector also accumulates up to 100 readings and gives you an average. An alarm alerts you when a selected moisture content is detected. Furnished with a plastic carrying case and one 9V battery.

Detector—8″ Lg.×3″ Wd.×2″ Ht.	1094T19	Each	$630.83
Repl. 3 1/4″ Insulated Pin	1094T16	Each	$17.16
Repl. 5/16″ Noninsulated Pins (4/pkg.)	1094T15	Pkg.	$6.83

Tarp Repair Tape and Kits

Quickly and easily fix rips and tears as well as reinforce stress points in your tarps.

Polyethylene-Tarp Repair Tape

This polyethylene tape is waterproof and UV resistant—perfect for outdoor jobs. It can even be used to join tarps. Tape is supplied on a 1 1/2″ diameter core. **To Order:** Please specify color: black, blue, brown, clear, green, silver, or white.

Lg.	Wd.	Thick.		Roll
35′	2″	9.5 mils	77485A31	$5.21

Vinyl-Laminated and Vinyl-Coated Tarp Repair Kits

You'll get a 2′7″×2′7″ tarp patch along with an 8-oz. can of adhesive for easy tarp repairs. The adhesive can is furnished with a brush top. Simply brush adhesive onto the tarp patch and position it on your tarp.

To Order: Please specify tarp patch color: black (only for vinyl-coated patches), blue, green, red, white, or yellow.

Vinyl Laminated (13 oz./sq. yd.)	3661T2	$23.72
Vinyl Coated (18 oz./sq. yd.)	3661T4	24.38
Vinyl Coated (22 oz./sq. yd.)	3661T6	25.78

Water-Repellent Restorer

Apply this solvent-based refinishing compound to all types of fabric to restore or create waterproofing. Prevents water damage and fading colors, while keeping fabric soft and pliable. Apply with a sprayer. Begins to dry in 4 hours; reaches full strength in 72 hours. One quart covers 375 sq. ft. One gallon covers 1,500 sq. ft.

1 quart with Trigger Sprayer	78915T34	$27.42
1 gallon	78915T38	75.32

Ground Anchors

When used with ropes or wires, these anchors provide secure gripping and holding power to stabilize tarps, tents, trees, and more. Made of black-painted steel, simply screw them into the ground and secure your ropes or wires to the anchor eye.

O'all Lg.	Blade Dia.	Rod Dia.	Eye ID	Holding Power, lbs.★	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
15″	3″	1/2″	1″	200	12	6300A25	$3.28	$2.93
30″	3″	1/2″	1″	1,400	12	6300A26	5.26	4.70
48″	4″	5/8″	1 1/2″	3,500	8	6300A27	8.76	7.83
48″	6″	3/4″	1 1/2″	4,000	8	6300A28	10.06	8.98

★ Based on firm, dense soil.

Ground Stakes

Minimize tripping hazards by driving these ground stakes flush with ground level. There's no need to worry about how you'll remove them—just put another stake or rod through the hook of the buried stake and pull. Made of steel.

O'all Lg.	Dia.		
12″	5/8″	6400T1	$6.87
18″	5/8″	6400T2	7.55
24″	5/8″	6400T3	8.45

Telescoping Temporary Wall-Support Pole

To create a sturdy, temporary wall to control dust and debris, use these poles with tarps, drop cloths, and plastic sheeting up to 8 mils thick. Pole is heavy duty aluminum with a rubber foot and spring-loaded, 7″ Lg.×4″ Wd. polycarbonate head plate. The foot keeps the pole snug to the floor, while the head plate (which contacts your ceiling) has a non-skid pad to protect your ceiling.

Pole is reusable and adjusts from 5 ft. to 12 ft. long. Extend pole to desired length and twist clockwise to lock; twist counterclockwise to unlock.

Optional Dust Seal—For added dust control, attach this accessory to a support pole (sold separately) to provide a tight seal on ceilings without the need for tape. Just snap the head plate off of the support pole and snap on the dust seal (connector included). Dust seal is aluminum with a polyurethane foam edge. It measures 5 feet long.

Support Pole with Head Plate	7926T11	$81.15
Optional Dust Seal	7926T35	19.84

Concrete and Masonry Tools

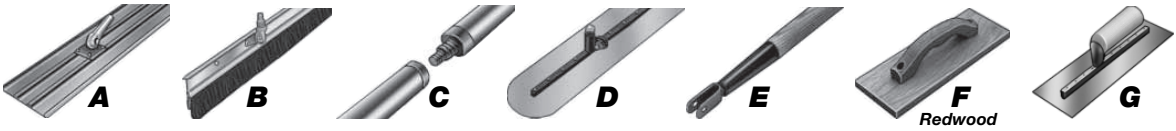

		Work-Surface Material	Size, Lg. × Wd.		
Concrete Tools					
A	Bull Float without Handle	Magnesium	48″ × 8″	**78065T11**	$93.37
B	Finishing Broom without Handle	Aluminum	36″ Wd. × 3¼″ Ht.	**79055T19**	64.87
C	Handle for A & B	Aluminum	1¾″ Dia. × 72″ Lg.	**78065T12** ♦	25.41
D	Long-Reach Finishing Trowel without Handle	Steel	36″ × 5″	**7607T21**	33.38
E	Handle for D	Wood	1 1/16″ Dia. × 54″ Lg.	**7607T23**	32.74
F	Float	Redwood	12″ × 5″	**7619T14**	8.61
F	Float	Magnesium	16″ × 3″	**7619T16**	18.62
G	Finishing Trowel	Steel	12″ × 4″	**7607T1**	25.26
G	Finishing Trowel	Steel	16″ × 4″	**7607T3**	29.69
H	Groover (Cuts ½″ Dp.)	Aluminum	5¾″ × 2½″	**7597T1**	6.99
J	Edger (⅜″ Radius)	Aluminum	5⅞″ × 2⅝″	**7618T1**	7.52
Masonry Tools					
K	Brick Jointer for ½″ & ⅝″ Joints	Steel	10½″ Long	**75825T9**	4.60
L	Brick Trowel	Steel	11″ × 4⅞″	**7605T4**	21.15
M	Pointing Trowel	Steel	5″ × 2½″	**7604T1**	9.93
N	Tuck-Pointing Trowel	Steel	6¾″ × ½″	**7608T3**	9.70
P	Margin Trowel	Steel	5″ × 2″	**7606T1**	9.93
Q	Mason's Water Brush	Wood	6½″ × 4″	**8133T57**	8.19

♦ One end is male and the other end is female to connect handles for longer reach.

Concrete Curing Vibrator

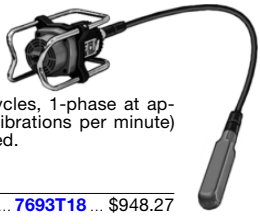

For faster cure rates, count on this lightweight, portable vibrator. It has a flexible shaft, heavy duty tubular steel frame, and 18″ long power cord with three-prong plug. Operates on 115 VAC/VDC, 25-60 cycles, 1-phase at approximately 10,000 to 12,000 vpm (vibrations per minute) with a load. UL listed and CSA certified.

Shaft Lg.	Head Size	Motor hp	Amps		
7 ft.	1″ Square	2	12	**7693T18**	$948.27

Crack-Filler Applicator

The 3″ Wd. × 9½″ Dp. U-shaped cavity makes it easy to hold and distribute crack fillers into cracks up to 2″ wide. Applicator has a durable steel frame with 2¼″ Ht. × 5/16″ Thick. neoprene rubber blade. It comes furnished with a 1⅛″ Dia. × 60″ Lg. wood handle.

Applicator	**8032T4**	$75.10
Replacement Blade	**8032T5**	31.51

Sealant- and Floor-Coating Applicators

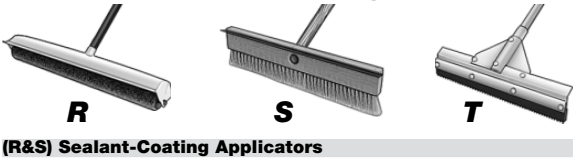

(R&S) Sealant-Coating Applicators

Specially designed tools make it easy to apply concrete and asphalt sealants as well as floor coatings. Both include a squeegee.

Style R is a roller applicator. The roller has a polypropylene frame.

Style S is a brush applicator. It has polypropylene bristles secured to a hardwood frame. Applicator can be used to apply roof coatings.

	Roller/ Brush Size	Handle Dia. × Lg.	Handle Material		
R	2½″ Dia. × 18″ Wd.	13/16″ × 48″	Steel	**63175T43**	$20.91
S	18″ Wd. × 2″ Ht.	15/16″ × 60″	Wood	**7414T14**	17.77

(T) Floor-Coating Applicators

The choice for applying thin layers of coatings as well as tough epoxies to your floors. These tools have an aluminum frame and a reversible neoprene blade with 3/16″ notches on both sides for twice the wear.

Blade Wd. × Ht.	Handle Dia. × Lg.	Handle Material	*Applicators*		*Repl. Blade*	
16″ × 15/16″	1⅛″ × 66″	Aluminum	**8479T1**	$41.02	**8479T5**	$5.61
24″ × 15/16″	1⅛″ × 66″	Aluminum	**8479T2**	44.82	**8479T6**	7.78

Concrete Mixing Boxes

With a durable one-piece construction, these polyethylene boxes have no seams or welds to crack and leak.

Cap., gal.	Size, Lg. × Wd. × Ht.		
9	26″ × 20″ × 6″	**7578T52**	$7.60
23	36″ × 24″ × 8″	**7578T54**	17.50

Concrete Form-Board Stakes

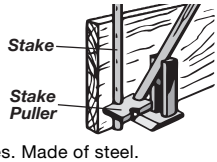

Our steel stakes provide a firm anchor for form boards. They have spirally arranged, 3/16″ dia. nailing holes on 1″ centers.

Size, Dia. × Lg.		
¾″ × 18″	**9415T16**	$3.06
¾″ × 24″	**9415T17**	3.45
¾″ × 30″	**9415T4**	5.56

Stake Puller—For ¾″ and ⅞″ dia. stakes. Made of steel.
9415T51 ..... $85.55

Wood Touch-Up and Repair

Wood Touch-Up Marker

No need for messy stains, simply use this felt-tip marker to touch-up nicks and scratches on wood. It has a 3/16″ stroke width, 45° to 105° F application temp., and dries in seconds. For indoor use. **To Order:** Please specify color: dark walnut, dark maple, light oak, or red mahogany.
2022T6 ..... $3.58

Wood Repair Fillers

Filling cracks and holes up to ⅛″ thick is easy. Press these fillers in place with a putty knife or gloved fingers; let dry for two hours; and then sand, saw, drill, paint, stain, or varnish. Color is natural wood.

Epoxy-based filler is nontoxic. Twist or cut off from the roll and knead by hand to activate. Application time, after kneading, is 15-25 minutes.

Size	Application Temp.		
Solvent Based—*For indoor use.*			
4-oz. Can	40° to 90° F	**7590T1**	$3.03
16-oz. Can	40° to 90° F	**7590T2**	6.40
Epoxy Based—*For indoor and outdoor use.*			
⅞″ Dia. × 7″ Lg. Roll	40° to 110° F	**70835T7**	7.89

Epoxy Wood Restorer

Fix damaged wood as well as build up and replace missing wood. This 12-oz., two-part, nonshrinking, putty-like restorer fills any size hole. Designed for indoor and outdoor use, it can be sawed, planed, drilled, sanded, and painted. Just mix and apply with a knife, trowel, or by hand.

Restorer resists chemicals and can also be used on concrete, metal, fiberglass, and glass. Application temp. is 60° to 100° F. Application time, after mixing, is 50 minutes; fully dry in 24 hours. Color is tan.
6257T3 ..... $26.25

Concrete Surface Preparers

Concrete Cleaner and Surface Prep

In just one step, you can prepare concrete floors for coatings and patching compounds. Simply pour this solution on your floor and scrub with a stiff-bristle brush or broom. Solution removes dirt and leaves a rough etched finish for strong coating adhesion. Application temp. is 32° to 100° F. Coverage is 400 sq. ft. per gallon. For indoor and outdoor use. Color is pink.

1-gal. Jug ..... **94315T6** ... $30.66

Concrete Bonding Epoxy

Bond new concrete to existing concrete with this two-part epoxy compound. First, apply epoxy with a brush, roller, or sprayer. Then, pour new concrete over the wet epoxy to ensure absorption and a strong bond. Application temp. is 50° to 100° F. Application time, after mixing, is 30 to 45 minutes. Fully hardened in 8 to 12 hours. Coverage is 100 sq. ft. per ¾ gallon. For indoor and outdoor use. Color is amber.

¾-gal. Can ..... **9432T57** ... $60.89

Concrete and Cement Mixes

To use these mixes, just add water and mix. All are for indoor and outdoor use. Color is gray.

Sand, Concrete, and Mortar Mixes

Application temp. is 50° to 90° F. Mixes are ready for foot traffic in 24 hours, unless noted. Furnished in 60-lb. bags, unless noted.

Sand mix consists of cement and sand. Use this mix when thickness will be less than 2″.

Concrete mix and ***fast-set concrete mix*** consist of cement, sand, and gravel. Use when thickness will be more than 2″. *Fast-set* is ready for foot traffic in 8 hours.

Mortar mix consists of fine sand and masonry cement. Use for brick, block, and stone laying as well as for repairing existing masonry.

	Coverage per Bag		
Sand Mix	2.3 sq. ft. × 1″ Dp.	**76805T92**	$6.43
Concrete Mix	1.7 sq. ft. × 2″ Dp.	**76805T91**	5.55
Fast-Set Concrete Mix	1.5 sq. ft. × 2″ Dp.■	**76805T93**	10.07
Mortar Mix	Lays 45 Bricks●	**76805T94**	6.43

■ 50-lb. bag. ● Based on a ⅜″ mortar joint.

Leak-Stopping Hydraulic Cement Mix

Stop leaks even as water is running through. After adding water, just mix this cement into a stiff putty and apply to holes and cracks with a trowel. It begins to harden in 5 minutes; fully hardens in 2 hours. Application temp. is 40° to 95° F. You can fill 2½ ft. of a ¾″ Wd. × ¾″ Dp. crack with 1 lb. of mix.

12-lb. Pail ..... **7685T42** .. $20.27

Anchoring and Patching Cement Mix

Able to bond firmly to surrounding concrete, this nonshrinking cement is perfect for anchoring bolts, railings, and posts as well as for patching floors, stairs, and walls. After mixing, just pour or trowel in place. This cement begins to harden in 15 minutes; fully hardens in 1 hour. Application temp. is 26° to 90° F. A 50-lb. pail yields approx. ½ cu. ft. of cement. *Note:* When used outdoors, apply a sealer or exterior paint for best results.

Size		
5-lb. Box	**7569T92**	$8.17
10-lb. Pail	**7569T97**	16.34
25-lb. Box	**7569T93**	33.03
50-lb. Pail	**7569T94**	$66.03
125-lb. Drum	**7569T96**	156.37

Concrete Hardener and Sealer

Reduce maintenance and cleaning costs by protecting concrete from stains, mild chemicals, salts, soaps and detergents with this water-based coating. It's ready to use—just apply with a brush, roller, or sprayer. For indoor and outdoor use. Color is clear. These products are compliant under all state VOC rules in effect on September 1, 2011.

1-gal. Can— Use on concrete that's at least 30 days old. Application temperature is 50° to 90° F. Dries to the touch in 1 hour; fully dries in 3 days. Coverage is 150 to 500 sq. ft. per gallon.

5-gal. Pail— Can be used on freshly finished concrete. Application temperature is 40° to 90° F. Dries to the touch in 2 to 3 hours; fully dries in 12 hours. Coverage is 300 sq. ft. per gallon.

Size		
1-gal. Can	**7572T71**	$29.97
5-gal. Pail	**7572T49**	136.27

Heavy Duty Epoxy Concrete Sealer

Protect concrete as well as wood surfaces from heavy traffic with this abrasion- and chemical-resistant sealer. It's a two-component, 100% solids, epoxy sealer that provides an easy-to-clean, high-gloss finish. Apply with a brush, roller, or squeegee. Application time, after mixing, is 30 to 40 minutes. Application temp. is 50° to 100° F. Sealer dries to the touch in 4 hours; fully dries in 4 days. Coverage is 180 sq. ft. per gallon at 10 mils thick. For indoor and outdoor use. Color is clear.

Size		
¾-gal. Can	**7551T11**	$61.19
3-gal. Can	**7551T12**	211.86

Concrete Crack Repair

What you need to fill and seal those unwanted cracks in your concrete. All are for indoor and outdoor use. Color is gray, unless noted.

Ready-to-Use Pourable Crack Filler

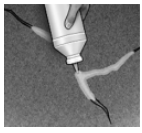

So simple to use, just pour this filler into cracks up to ½″ Wd. × ¼″ Dp. Application temp. is 50° to 90° F. Filler fully hardens in 24 to 48 hours. A 1-qt. bottle fills 35 ft. of a ½″ Wd. × ¼″ Dp. crack.

1-qt. Bottle ..... **75855T45** ... $10.39

Flexible Polyurethane Crack Filler

Our most flexible crack filler will flex as concrete expands and contracts with temperature changes. Use a standard caulking gun (not included) to apply filler into cracks up to 1″ Wd. × ½″ Dp. Application temp. is 40° to 110° F. Filler fully hardens in 24 hours. A 10-oz. cartridge fills 15 ft. of a ½″ Wd. × ½″ Dp. crack.

10-oz. Cartridge ..... **1589T2** $8.42

Epoxy Deep-Crack-Repair Cartridges

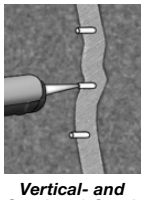

Vertical- and Overhead-Crack Repair Kit with Sealer and Ports

Floor and Sidewalk Repair Cartridges— A neat and easy way to repair 4″ to 6″ deep cracks in concrete floors, sidewalks, foundations, and stoops. They can even be used on wood, fiberglass, and metal surfaces. Cartridges contain 10 oz. of two-part epoxy that is fully mixed and ready to use. Epoxy contains no solvents and is shrink, impact, and chemical resistant. Apply with a standard caulking gun (not included). Application temp. is 40° to 90° F. Application time, after mixing, is 20 minutes at 77° F. Epoxy fully hardens in 24 hours. Color is light amber.

Vertical- and Overhead-Crack Repair Kit— For repairing vertical and overhead cracks up to 10″ deep in concrete. Kit includes two 10-oz. epoxy cartridges for cracks up to ⅛″ wide (epoxy described above), two 17-oz. containers of epoxy crack sealer, and seven injection ports. To use, simply use crack sealer to secure ports to a crack. Then, spread sealer over crack. Finally, inject epoxy from the 10-oz. cartridges into the ports. Application temp. for sealer is 50° to 95° F. Application time for sealer, after mixing, is 20 minutes. Sealer fully hardens in 12 hours. One kit fills an 8′ Lg. × 1/16″ Wd. × 10″ Dp. crack.

For	Coverage, lin. ft.★		Each
Floor and Sidewalk Repair Cartridges			
Cracks Up to 1/16″ Wide	16-20	**76005T84**	$20.09
Cracks Up to ⅛″ Wide	8-10	**76005T83**	19.53
Cracks Up to ¼″ Wide	4- 5	**76005T85**	20.20
Vertical- and Overhead-Crack Repair Kit		**75095T11**	**Kit** $70.91

★ Based on 4″ deep cracks.

Concrete Epoxy Repair Putty and Paste

Quickly repair indoor and outdoor concrete surfaces. Color is gray.

Putty

Hand-kneadable epoxy begins to harden in 10 minutes and then fully hardens in 1 hour to quickly patch virtually any size crack or hole in concrete floors, stairs, and walls. It can also be used to anchor bolts. Apply with a putty knife or press in place with your fingers. It can be drilled, tapped, sanded, or painted. Application temp. is 40° to 110° F. Application time, after kneading, is 4 minutes. Coverage is 4 cu. in. per roll.

⅞″ Dia. × 7″ Lg. Roll **75895T1** $8.19

Paste

Perfect for horizontal, vertical, and overhead surfaces, this nonsagging easy-to-spread paste bonds to concrete as well as metal, wood, brick, and fiberglass surfaces. It resists oil, grease, water, alkalies, and chemicals. Apply this two-part epoxy with a putty knife or trowel. Application temp. is 50° to 100° F. Application time, after mixing, is 1 hour. Paste begins to harden in 1 to 6 hours at room temp.; fully hardens in 24 hours. Coverage is 231 cu. in. per gallon.

Size		
½-gal. Jar	**6230T1**	$69.62
2-gal. Jar	**6230T2**	185.48

Concrete Epoxy Joint Sealant

This sealant not only reinforces joints in concrete, but also protects joint and sawcut edges from chipping. It's a two-component, self-leveling, elastic sealant that is made from a shrink- and corrosion-resistant epoxy. To use, just mix, pour into joint, and allow sealant to settle. Application time, after mixing, is 1 hour. Sealant begins to harden in 6 to 8 hours; fully hardens in 24 hours. Coverage is 200 linear ft. per gallon for a ⅛″ Wd. × ¾″ Dp. joint. For indoor and outdoor use. Color is gray.

Standard Sealant— Application temp. is 50° to 100° F.

Low-Temperature Sealant— Application temp. is 34° to 100° F.

	1-gal. Can		2-gal. Can	
Standard	**75735T4**	$66.47	**75735T6**	$126.33
Low Temperature	**75735T7**	75.76	**75735T8**	138.69

Concrete Repair Patch

Patch holes and build up worn/uneven spots in concrete. All are for indoor and outdoor use. Apply with a trowel.

Epoxy Concrete Repair Patch

You can use this three-part epoxy patch in federally inspected food processing plants. It resists oil, gas, water, chemicals, and impact.

When mixed, the *10-lb. pails* produce 1 gallon of patch and cover 4.5 sq. ft. at 1/4″ thick; *50-lb. pails* produce 4 gallons of patch and cover 20 sq. ft. at 1/4″ thick. All fully harden in 12 to 24 hours. **To Order:** Please specify color: beige, gray, or red.

Standard Patch— Application temp. is 50° to 100° F. Application time, after mixing, is 30 to 45 minutes. Ready for foot traffic in 8 hours.

Low-Temperature Patch— Application temp. is 34° to 90° F. Application time, after mixing, is 30 minutes at temperatures below 50°; 15 minutes at temperatures above 75°. Ready for foot traffic in 5 hours.

	10-lb. Pails		50-lb. Pails	
Standard Patch	7579T12	$47.65	7579T13	$91.75
Low-Temperature Patch	7579T34	52.72	7579T45	97.98

Quick-Set Epoxy Concrete Repair Patch

Ready for heavy traffic (including forklifts) in just two hours, this tough three-part epoxy patch resists chemicals, impact, and steel wheels.

Standard Patch— Application temp. is 50° to 80° F (*Note:* Hardening time is longer when applied below 70° F). Application time, after mixing, is 15 minutes. **To Order:** Please specify color: beige, black, gray, or red.

Freezer Patch— Excellent for use on freezer floors and indoor cold storage areas. It can also be used in federally inspected meat and poultry plants. Application temp. is –20° to +20° F. Application time, after mixing, is 10 to 20 minutes. Color is beige.

	Size	Coverage @ 1/8″ Thick		
Standard Patch	2-gal. Pail	10 sq. ft.	7689T49	$68.00
Standard Patch	5-gal. Pail	30 sq. ft.	7689T51	130.20
Freezer Patch	2-gal. Pail	15 sq. ft.	75795T3	107.35

Super-Fast-Set Polyurethane Concrete Repair Patch

At 70° F, it only takes 10 minutes for this two-part epoxy patch to fully harden. At –20° F, fully hardened time is up to 12 hours. This patch withstands heavy traffic (including forklifts) and steel wheels. You can use it in federally inspected meat and poultry plants.

Application temp. is –20° to +100° F. Application time, after mixing, is 10 minutes. Coverage is 200 lin. ft. of 1/2″ Wd. × 1/2″ Dp. cracks. Color is gray.

2-gal. Pail 7570T11 $244.90

Concrete Floor Resurfacers

Give new life to damaged and worn concrete floors as well as fill minor depressions and cracks. For indoor and outdoor use.

Latex— Just add water, mix, and spread using a trowel. This resurfacer can be used in federally inspected meat and poultry plants. Application temp. is 45° to 85° F. Ready for foot traffic in 2 hours. Fully hardens in 4 hours. Color is gray.

Epoxy— The choice for heavier traffic applications. Apply this three-part epoxy with a notched applicator or squeegee. Application temp. is 50° to 80° F. Application time, after mixing, is 20 to 30 minutes. Ready for foot traffic in 8 hours. Fully hardens in 24 hours. **To Order:** Please specify color: gray or red.

Heavy Duty Epoxy— Able to stand up to severe abrasion, wear, and impact, this resurfacer withstands heavy steel-wheel traffic as well as heavy blows without cracking. It can be used in federally inspected meat and poultry plants. Apply this three-part epoxy with a trowel. Application temp. is 50° to 100° F. Application time, after mixing, is 30 minutes. Ready for foot traffic in 8 hours. Fully hardens in 12 to 24 hours. **To Order:** Please specify color: gray or red.

Acid- and Chemical-Resistant Epoxy— Acid and chemical spills won't harm this resurfacer—choose it for corrosive environments. It even withstands steel-wheel traffic and heavy impact. Apply this three-part epoxy with a trowel. Application temp. is a minimum of 50° F. Application time, after mixing, is 25 to 30 minutes at 70° F. Ready for foot traffic in 8 hours. Fully hardens in 12 to 24 hours at 70° F. **To Order:** Please specify color: gray or red.

Size	Coverage		
Latex			
40-lb. Bag	40 sq. ft. @ 1/8″ thick	7576T6	$27.11
Epoxy			
2-gal. Pail	10 sq. ft. @ 1/16″ thick	94275T61	84.70
5-gal. Pail	50 sq. ft. @ 1/16″ thick	94275T5	181.55
Heavy Duty Epoxy			
2-gal. Pail	10 sq. ft. @ 1/8″ thick	9426T17	84.63
5-gal. Pail	50 sq. ft. @ 1/8″ thick	9426T18	198.50
Acid- and Chemical-Resistant Epoxy			
2-gal. Pail	10 sq. ft. @ 1/8″ thick	2775T2	91.79
5-gal. Pail	50 sq. ft. @ 1/8″ thick	2775T21	214.99

Concrete Floor Coatings

These stain-resistant, high-gloss finishes not only look good, but also protect your floors from moisture, chemicals, foot traffic, hand carts, and forklifts. Application temp. is 60° to 100° F, unless noted. For indoor and outdoor use, unless noted. These products are compliant under all state VOC rules in effect on September 1, 2010, unless noted. *Note:* Repair cracks and holes prior to application. **To Order:** Please specify color: clear, gray, or red (unless noted).

Ready-to-Use Acrylic— This low-odor, water-based coating requires no mixing and is for use in pedestrian-traffic areas. Apply with a brush or roller. It's ready for foot traffic in 8 hours; fully hardened in 18 hours.

Water-Based Epoxy— This low-odor, two-part epoxy is more durable than our Ready-to-Use Acrylic coating above. Apply with a brush, roller, or sprayer. Application time, after mixing, is 6 to 8 hours. It's ready for foot traffic in 16 hours; fully hardened in 72 hours. For indoor use only.

Heavy Duty Epoxy— Even more durable than our Water-Based Epoxy, this two-part epoxy goes on thick and contains no solvents. Apply with a brush, roller, or sprayer. Application time, after mixing, is 20 to 30 minutes. It's ready for foot traffic in 24 hours; fully hardened in 72 to 96 hours.

High-Performance Polyurea— Our best coating succeeds where others have failed. It's a two-part coating that offers fast dry times; excellent heat, chemical, abrasion, and UV resistance; and low hardening temps. Apply with a roller, sprayer, or squeegee. Application temp. is –20° to +100° F. Application time, after mixing, is 1 hour. It's ready for foot traffic in 6 hours; fully hardened in 48 hours.

Size	Coverage		
Ready-to-Use Acrylic			
1-gal. Can	345 to 460 sq. ft. @ 2 mils thick	2177T11★▲	$64.91
Water-Based Epoxy			
1-gal. Can	200 to 350 sq. ft. @ 1 1/2 to 2 1/2 mils thick	7844T6★	88.36
Heavy Duty Epoxy			
3/4-gal. Can	180 to 200 sq. ft. @ 10 mils thick	7682T25	88.50
High-Performance Polyurea			
1-gal. Pail	200 to 250 sq. ft. @ 5 mils thick	2747T2	310.88

★ This product is compliant under all state VOC rules in effect on September 1, 2010, except in the Los Angeles areas.
▲ Only available in gray.

Asphalt Repair

All are ready to use—no mixing required. Color is black.

Asphalt Crack Fillers

Liquid Filler— Furnished in an easy-to-pour 1-gal. dispenser for filling cracks up to 1/2″ wide. Application temp. is 50° to 90° F. Ready for traffic in 2 to 5 days.

Flexible Rope Filler— Measuring 1/2″ Dia. × 75 ft. Lg., this rope filler is furnished in a 1-gal. pail. Cut the length you need, pack it in the crack, and heat with a propane torch (not included; see pages 3390-3391). It's self-leveling and fills cracks from 1/4″ to 1″ wide. Application temp. is a minimum of 40° F. Ready for traffic in 20 minutes.

	Coverage, lin. ft.		
Liquid	160 (1/4″ Wd. × 1/2″ Dp. Cracks)	7686T32	$10.84
Flexible Rope	75 (1/2″ Wd. × 1/2″ Dp. Cracks)	7686T34	36.00

Asphalt Hole Patch

Can't afford downtime? Simply apply this patch to dry, wet, and even water-filled holes and then compress with a tamper or shovel. It's immediately ready for traffic. Application temp. is –20° to +140° F.

Size	Coverage @ 1″ Thick		
5-gal. Pail	5.17 sq. ft.	9412T61	$22.88
55-gal. Drum	58.33 sq. ft.	9412T62	189.04

Asphalt Sealers

Protect as well as revitalize your asphalt surfaces with this tar-free emulsion that forms a weather- and water-resistant seal. Apply with a brush or squeegee. Application temp. is 70° to 90° F. Ready for traffic in 24 hours. Coverage is 350 to 450 sq. ft.

Sealer with filler has grit for better traction and filling hairline cracks.

	Size		
Sealer without Filler	5-gal. Pail	75775T21	$22.08
Sealer with Filler	5-gal. Pail	75775T23	23.36

Tile Grout Repair

Grout Float

Tile Grout— Suitable for floor and wall tiles, both indoors and out. Simply mix with water and apply with a rubber grout float (sold separately). This grout dries in 3 to 5 hours. Coverage is 144 (12″ × 12″) tiles per lb. Color is white.

Grout Float— Use this tool to smooth and spread grout between tiles. Float has a 5/8″ thick rubber pad with aluminum backing and polypropylene handle.

Grout Sealer— Spray this water-based sealer on grout to form a barrier against dirt, water, mildew, and discoloration.

Grout Whitener— Restore discolored grout with this water-based coating. It also seals and waterproofs. Apply with a sponge.

	Size		
Tile Grout	5-lb. Tub	77105T64	$11.40
Grout Float	9″ Lg. × 4″ Wd.	9067T35	10.35
Grout Sealer	22-oz. Trigger Spray	7219T22	5.23
Grout Whitener	8-oz. Bottle	7134T12	6.91

About Paint and Coatings

Water-Based Paint— Often called latex paint, this low-odor paint dries quickly and cleans up with soap and water.

Solvent-Based Paint— Includes both alkyd- and oil-based paint. This paint has a longer drying time than water-based paint, and requires mineral spirits or turpentine for cleanup.

Epoxy Coatings— Have good chemical resistance and excellent resistance to heavy abrasion and severe moisture.

Polyurethane Coatings— Have excellent abrasion, weather, and chemical resistance. Retain color and gloss in sunlight.

Finish— The sheen of fully dried paint and coatings. Generally, the higher the shine, the more washable it is.

Flat—This finish is nonreflective and less durable than gloss.

Satin—Also known as eggshell, this finish is not as shiny or as durable as a semi-gloss.

Semi-Gloss—Less shiny and slightly less durable than gloss.

Gloss—This shiny, reflective finish is the most durable. Gloss colors black, blue, green, orange, purple, red, white, and yellow are sometimes referred to as safety colors and can be used to identify workplace hazards and safety devices.

Volatile Organic Compounds (VOCs)— Emit vapor/gas into the atmosphere under normal circumstances; when the container is opened they begin to vaporize. VOCs are regulated at the federal, state, and local level. VOCs lead to poor air quality and are most strictly regulated in areas of poor air quality like Los Angeles, CA. The VOC information we have provided for each item is current as of October 1, 2008.

Aerosol Paint

All paint and primer is solvent based (unless noted) and is compliant under all state VOC rules in effect on October 1, 2008. For use indoors and out (unless otherwise stated). Full package quantity is 6. ***Primer*** should be used for best long-term results. **To Order:** Please specify finish and color from the table.

Standard Paint

General Purpose— Use on metal, wood, concrete, and masonry.

Any Angle— Can be applied at any angle, even upside down, without clogging. Use on iron, steel, wood, and masonry.

Low Odor— Perfect for use in enclosed spaces. Use on metal, wood, masonry, and plaster.

Rust-Stopper Paint

Hard Shell— Stops rust from starting and prevents existing rust from spreading. Use on metal, wood, concrete, and masonry.

Self-Priming— Apply directly to firm, rusty surfaces, except galvanized steel and aluminum, which must be primed—see 77025T65 (1-qt. can of water-based primer) below. Paint forms a barrier, which seals out moisture to prevent future rust from starting. Use on steel and most metal.

Flaw Hiding— Similar to Self-Priming Rust-Stopper Paint, but with a textured look to hide surface flaws; paint is smooth to the touch.

Specialty Paint

Plastic Surface— Use on plastic surfaces (including PVC, hard vinyl, and fiberglass) without sanding or priming.

Chalkboard— Creates a washable surface that can be used as a chalkboard. Use on glass, metal, plastic, and wood.

Textured Finish— Creates a textured finish to hide surface blemishes. Use on metal, wood, and concrete.

Fluorescent— Use on steel, wood, and concrete.

Reflective— Reflects flashlight and headlight beams, making items visible under emergency lighting and in the dark. Excellent for signs and emergency equipment. It's clear so it won't obscure the color of your item. Use on metal, wood, and plastic.

Glow-in-the-Dark— Illuminate emergency exit routes, ramps, and doors in case of power outages. Requires minimum 2-hour exposure to a light source. Both colors of the paint glow luminescent green.

Metallic Finish— With its bright finish, this paint highlights parts on machinery, piping systems, and equipment. It can be used on metal, wood, and masonry. Outdoor exposure can result in accelerated weathering.

Equipment— Matches manufacturers' equipment colors.

Engine— Matches manufacturers' engine colors.

	Size, net wt.	Dry Time: To the Touch	Dry Time: Overall		Each: Partial Pkg.	Each: Full Pkg.
Standard Paint						
General Purpose—*Flat:* Black, White; *Gloss:* Aluminum, Black, Blue, Dark Gray, Green, Light Gray, Orange, Red, White, Yellow						
Paint	12 oz.	12 min.	24 hrs.	7719T11	$5.54	$4.97
Gray Primer	12 oz.	12 min.	24 hrs.	7719T16	4.18	3.75
Any Angle—*Flat:* Black, White; *Semi-Gloss:* Aluminum; *Gloss:* Black, Blue, Dark Gray, Light Gray, Orange, Red, White, Yellow						
Paint	11 oz.	10 min.	48 hrs.♣	78025T37	7.79	6.96
Gray Primer	11 oz.	10 min.	30 min.	78025T38	7.79	6.96
Low Odor—*Flat:* Black, White; *Satin:* Dark Gray; *Gloss:* Black, Blue, Clear, Green, Orange, Red, White, Yellow						
Paint	12 oz.	20 min.	3 hrs.	75035T41	5.17	4.64
Gray Primer	12 oz.	20 min.	3 hrs.	75035T44	5.17	4.64
Rust-Stopper Paint						
Hard Shell—*Flat:* Black, White; *Semi-Gloss:* Black; *Gloss:* Aluminum, Black, Blue, Bright Red, Brown, Dark Gray, Dark Green, Deep Blue, Green, Light Gray, Orange, Purple, Red, Tan, White, Yellow						
Paint	15 oz.●	20 min.	24 hrs.	7891T3	7.11	6.38
Gray Primer	15 oz.	20 min.	24 hrs.	7891T22	6.91	6.22
Red Primer	15 oz.	20 min.	24 hrs.	7891T21	6.91	6.22
Self-Priming—*Gloss:* Black, Dark Blue, Dark Gray, Light Blue, Red, White, Yellow						
Paint	12 oz.	15 min.	1 hr.	77025T73	9.65	8.85
Gray Primer	1 qt.★	2 hrs.	24 hrs.	77025T65	26.02	22.30
Flaw Hiding—*Gloss:* Black, Dark Blue, Dark Green, Light Blue, Red, Silver-Gray						
Paint	12 oz.	15 min.	1 hr.	77025T74	9.65	8.85
Gray Primer	1 qt.★	2 hrs.	24 hrs.	77025T65	26.02	22.30
Specialty Paint						
Plastic Surface—*Gloss:* Black, Royal Blue, Green, Orange, Red, Tan, White, Yellow						
Paint	12 oz.	1 hr.	24 hrs.	7975T74	5.62	5.06
Chalkboard—*Flat:* Black						
Paint	11 oz.	20 min.	24 hrs.	7704T162	5.96	5.37
Textured Finish—*Flat:* Black, Dark Green, White						
Paint	12 oz.	15 min.	48 hrs.	7739T6	8.00	7.15
Fluorescent—*Flat:* Light Blue, Light Green, Orange, Red, Yellow						
Paint	12 oz.	15 min.	4 hrs.	7833T2♠	5.70	5.14
White Primer	12 oz.	5 min.	30 min.	7833T4	5.44	4.90
Reflective—*Satin:* Clear						
Paint	9 oz.	15 min.	1 hr.	8116T71	15.09	13.25
Glow-in-the-Dark—*Flat:* Green, Yellow						
Paint	15 oz.	30 min.	24 hrs.	9157T11	26.75	24.32
Metallic Finish—*Semi-Gloss:* Aluminum, Brass, Gold, Silver						
Paint	12 oz.■	15 min.	2 hrs.	7596T4	6.52	5.86
Gray Primer	12 oz.	15 min.	1 hr.	7659T4	4.87	4.38
Equipment—*Gloss:* International Harvester Red, John Deere Case Green, John Deere Yellow, New Caterpillar Yellow, Old Caterpillar Yellow, School Bus Yellow						
Paint	12 oz.	15 min.	1 hr.	7659T3	4.99	4.48
Gray Primer	12 oz.	15 min.	1 hr.	7659T4	4.87	4.38
Engine—*Gloss:* Engine Gold, Ford Dark Blue, Ford Green, Ford Light Blue, Ford Red, GM Blue, Universal Black, Universal Dark Gray						
Paint	11 oz.	1 hr.	2 hrs.	7614T7	7.36	6.69

♣ Aluminum color dries in 30 minutes. ● Aluminum color is 14-oz. net wt. ★ Not an aerosol; comes in 1-qt. can.
♠ Water based. ■ Aluminum and silver colors are 11-oz. net wt.

For information about paint and coatings, see page 2126.

Paint Thinners

Solvent-Based Thinners

Use to thin oil-based paint for spray applications or for oil-based paint cleanup. These products are compliant under all state VOC rules in effect on January 1, 2011, except in California.

	Size		Each
Pure Gum Turpentine	1 qt.	7760T2	$10.74
Pure Gum Turpentine	1 gal.	7760T1	30.57
Odorless	1 gal.	7741T21	24.24
Epoxy	1 gal.	7741T31	32.12
Polyurethane	1 gal.	7741T41	36.71
Mineral Spirits	1 gal.	3190K752	16.44

Water-Based Thinners

Use to thin most oil-based and latex paints. These products are compliant under all state VOC rules in effect on May 1, 2011.

	Size		Each
General Purpose	1 qt.	7741T51	$6.77
General Purpose	1 gal.	7741T61	15.93

Aerosol-Can Trigger Adapter

Quickly and easily turn your spray can into a spray gun for better paint control with less finger fatigue. Made of plastic, this reusable adapter quickly and easily snaps onto most aerosol cans.

7699T11 ..... **Each** 1-11 $2.54 12-Up $2.27

Paint

Apply with a brush, roller, or sprayer (unless otherwise stated). These products are compliant under all state VOC rules in effect on October 1, 2008, unless otherwise stated. For use both indoors and out (unless otherwise stated). For best long-term results use the ***primer***. **To Order:** Please specify finish and color from the table.

Low-Odor General Purpose— This water-based paint is perfect for use in enclosed spaces. Resists weather and mild chemicals. Use on concrete, masonry, steel, and wood. Paint and primers are compliant under all state VOC rules in effect on October 1, 2008, except in the Los Angeles area.

Rust Stopper— Stop rust from starting and prevent existing rust from spreading. This low-odor water-based paint also resists mild chemicals. Use on aluminum, concrete, masonry, steel, galvanized steel, and wood. Apply directly to metal surfaces, except for abrasive-blasted steel and aluminum, which require a primer. Paint and primer are compliant under all state VOC rules in effect on October 1, 2008, except in the Los Angeles area.

Fast-Dry Corrosion Resistant— Prevent corrosion and cut downtime with this low-odor water-based paint. Use on aluminum, concrete, steel, galvanized steel, iron, and wood.

Environmentally Friendly— This water-based paint emits no odor and no VOCs. Use on concrete, masonry, metal, tile, and wood (use the white primer for metal; gray primer for all other surfaces).

Indoor Drywall— For indoor use only, this durable water-based paint hides surface flaws on ceilings and walls. Use on new or previously painted drywall, masonry, and plaster. Also use on primed metal or wood.

Thermal Insulating— Reflecting up to 90% of heat from the sun and other radiant sources, this low-odor water-based paint acts as a thermal barrier. It also waterproofs your surfaces and provides insulating properties equal to 4″ to 6″ of polyurethane foam. Use on aluminum, brick, cinder block, concrete, fiberglass, galvanized steel, roof shingles, tile, and wood. Two coats are recommended. *Note:* Not compatible with any surfaces containing silicone.

Magnetic Undercoat— This water-based undercoat creates a magnetic surface; simply apply and cover with any water-based paint. Use on any surface.

Magnetic Chalkboard— This water-based paint creates a magnetic surface that can be used as a chalkboard. Use on any surface.

Magnetic Chalkboard Paint

EMI/RFI Shielding— Protect your electronic equipment from electromagnetic interference (EMI) and radio frequency interference (RFI) with this nontoxic, low-odor water-based paint. It contains silver for excellent conductivity and adheres to almost every plastic found in electronic enclosures. *Note:* Paint can only be applied with a sprayer.

Conductive and Static Dissipative— Prevent electrostatic discharge (ESD). This low-odor water-based paint is durable enough to be used as a floor coating in high-traffic areas and resists most chemicals and solvents. Use on cement, ceramic, metal, tile, and wood. *Conductive paint* has a surface resistivity of 10^5 to 10^6 ohms sq. It's a two-part paint that must be mixed before use. Application time after mixing is 5 days. Comes with a 2″ dia. mixing tool that attaches to a drill. *Static-dissipative paint* has a surface resistivity of 10^7 to 10^9 ohms sq.

Fluorescent— Vibrant color makes this water-based paint easy to see. Use on concrete, metal, and wood. Primer enhances the brightness of the paint.

	Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Coverage, sq. ft. @ Thickness	Maximum Temperature		Each
Low-Odor General Purpose— *Gloss:* Black, Blue, Gray, Green, Light Blue, Orange, Red, White, Yellow							
Paint	1 gal.	2 hrs.	4 hrs.	260 @ 2 mils	200° F	7855T2	$44.09
Gray Primer	1 gal.	2 hrs.	4 hrs.	350 @ 2 mils	200° F	7855T72	38.75
Red Primer	1 gal.	2 hrs.	4 hrs.	350 @ 2 mils	200° F	7855T71	38.75
Rust Stopper— *Flat:* Black; *Gloss:* Black, Blue, Green, Orange, Red, Silver-Gray, White, Yellow							
Paint	1 gal.	2 hrs.	4 hrs.	270 @ 2 mils	200° F	4639T7	49.39
Gray Primer	1 gal.	2 hrs.	4 hrs.	300 @ 2 mils	200° F	4639T8	47.15
Fast-Dry Corrosion Resistant— *Flat:* Black; *Gloss:* Black, Blue, Dark Gray, Green, Light Gray, Orange, Red, White, Yellow							
Paint	1 gal.	30 min.	4 hrs.	218 @ 2.5 mils	Not Rated	7907T1	43.49
Gray Primer	1 gal.	30 min.	4 hrs.	218 @ 2.5 mils	Not Rated	7907T3	25.36
Environmentally Friendly— *Satin:* Black, White; *Gloss:* Black, Blue, Gray, Red, White, Yellow							
Paint	1 gal.	30 min.	4 hrs.	290 @ 2 mils	200° F	7709T1	61.53
Gray Primer	1 gal.	30 min.	4 hrs.	320 @ 2 mils	200° F	7709T31	32.23
White Primer	1 gal.	30 min.	4 hrs.	320 @ 2 mils	200° F	7709T32	58.66
Indoor Drywall— *Flat:* White; *Semi-Gloss:* White							
Paint	1 gal.	1 hrs.	4 hrs.	400 @ 4 mils	150° F	77015T7	34.54
Thermal Insulating— *Flat:* White							
Paint	1 gal.	50 min.	24 hrs.	100 @ 20 mils	375° F	7873T4	42.20
Magnetic Undercoat— Gray							
Undercoat	1 qt.	1 hrs.	2 hrs.	25 @ 6 mils	300° F	8885T11	30.00
Undercoat	1 gal.	1 hrs.	2 hrs.	100 @ 6 mils	300° F	8885T12	90.00
Magnetic Chalkboard— *Flat:* Black							
Paint	1 qt.	1 hrs.	2 hrs.	25 @ 6 mils	300° F	8885T21	45.38
Paint	1 gal.	1 hrs.	2 hrs.	100 @ 6 mils	300° F	8885T22	99.38
EMI/RFI Shielding— *Flat:* Light Tan							
Paint	1 qt.	20 min.	24 hrs.	120 @ 2 mils	200° F	77075T37	298.74
Conductive— *Flat:* Black, Gray, White							
Paint	1 gal.	90 min.	2 hrs.	200 @ 15 mils	240° F	7823T1	199.74
Static Dissipative— *Flat:* Black, Gray, White							
Paint	1 gal.	90 min.	2 hrs.	200 @ 15 mils	240° F	7823T2	173.00
Fluorescent— *Flat:* Orange							
Paint	1 qt.	30-60 min.	6 hrs.	75 @ 1 mils	120° F	7718T43	17.15
White Primer	1 qt.	30-60 min.	6 hrs.	100 @ 4 mils	125° F	7718T5	12.42

For information about paint and coatings, see page 2126.

High-Temperature Paint

High-Temperature Paint and ***Primer***—Stop corrosion from forming on carbon steel and stainless steel exposed to high temperatures. This heat-resistant, solvent-based silicone-resin paint can be used on firm rusty surfaces and is great for smokestacks, incinerators, heaters, and heat exchangers. Use indoors or out. Paint and primer are compliant under all state VOC rules in effect on October 1, 2008. **To Order:** Please specify color from the table.

Aerosol Paint—Allow to air dry; then raise temperature to 450°-650° F two to three times, allowing surface to cool between firings. Primer is not required; areas exposed to rust should be scraped clean.

Paint—Apply with a brush, roller, or sprayer and allow to air dry. Use the primer for best results with all colors except the aluminum, which cannot be used with the primer.

Primer—Can be applied to surfaces with tightly adhered rust to prevent further corrosion. It's also great for preventing corrosion under insulation. Apply with a brush, roller, or sprayer and allow to air dry.

Ultra-High-Temperature Paint—Withstanding temperatures up to 2500° F, this water-based, ceramic-filled paint can be used on ceramic and other nonmetallic heat-resistant surfaces in heaters, furnaces, and ovens; not for use on metal. Apply paint with a brush or sprayer. For best results, let air dry. For indoor use. These products are compliant under all state VOC rules in effect on October 1, 2008.

	Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Coverage, sq. ft @ Thickness	Max. Temp.	Application Temp. Range	Available Colors		Each
High Temperature—*Flat finish*									
Aerosol Paint	11 oz.	30 min.	2 hrs.	20 @ 1 mil	1200° F	50° to 95° F	Aluminum, Black, Gray, White	7832T1	$5.04
Paint	1 qt.	90 min.♣	24 hrs.	136 @ 1 mil	1000° F▲	50° to 120° F	Aluminum, Black, Cream, Light Gray, White	7702T3	62.86
Paint	1 gal.	90 min.♣	24 hrs.	547 @ 1 mil	1000° F▲	50° to 120° F	Aluminum, Black, Cream, Light Gray, White	7702T6	143.41
Primer	1 qt.	2 hrs.	24 hrs.	197 @ 1 mil	1200° F	50° to 500° F	Black, Gray	7702T7	62.50
Primer	1 gal.	2 hrs.	24 hrs.	788 @ 1 mil	1200° F	50° to 500° F	Black, Gray	7702T16	218.35
Ultra-High Temperature—*Flat finish*									
Paint	1 qt.	20 min.	3 hrs.	180 @ 1 mil	2500° F	50° to 90° F	Black	7820T1	85.21
Paint	1 gal.	20 min.	3 hrs.	722 @ 1 mil	2500° F	50° to 90° F	Black	7820T2	215.42

♣ Aluminum color dries to the touch in 30 minutes. ▲ Aluminum and black colors have a maximum temperature of 1200° F.

Epoxy Coatings

Compared with standard paint, these two-part epoxy coatings provide better moisture, chemical, and abrasion resistance. All except the aerosol and porcelain-finish epoxy coatings must be mixed and can be used both indoors and out; when used outdoors in sunlight, however, surface may form a powdery residue (chalk). All coatings are solvent based and can be applied with a brush, roller, or sprayer (unless otherwise stated). These products are compliant under all state VOC rules in effect on October 1, 2009, unless noted. **To Order:** Please specify color from the table.

Aerosol—No mixing required. Simply spray on a hard, durable finish that resists cracking, chipping, peeling, staining, and chemicals. Use on drywall, metal, plaster, and sealed wood. For indoor use.

General Purpose—Provides outstanding durability, as well as excellent chemical, wear, and weather resistance. Application time after mixing is 2 hours. Use on concrete, metal (except for aluminum), and wood. *Primer* is 61% zinc for extra corrosion resistance. Application time after mixing is 2 hours. Recommended for metal.

Self-Priming—Apply directly to metal surfaces—even those with firm rust. It provides excellent corrosion and chemical resistance for metal, concrete, and masonry. Application time after mixing is 2½ to 3 hours. Thinner is compliant under all state VOC rules in effect on June 1, 2011. Coating is compliant under all state VOC rules in effect on October 1, 2009, except in the Los Angeles area.

Severe Environment—Also known as coal tar epoxy, it's the most rugged coating we offer. Withstands severe abrasion, strong chemicals, and immersion into salt water and fresh water (do not immerse in drinking water). Application time after mixing is 3 hours. Use on concrete and steel. Thinner is compliant under all state VOC rules in effect on June 1, 2011. Coating is compliant under all state VOC rules in effect on October 1, 2009, except in the Los Angeles area.

Low Temperature—Below-freezing environments are no problem for this coating; apply in temperatures as low as 20° F. Resists corrosion and withstands immersion into salt water and fresh water (do not immerse in drinking water). Application time after mixing is 1 hour. Use on aluminum, concrete, galvanized steel, steel, and iron.

Low Odor—Water based, this corrosion-inhibiting coating emits very low odor and easily cleans up with soap and water. Application time after mixing is 6 to 8 hours. Works well on aluminum, concrete, steel, and previously painted surfaces. USDA accepted for indirect contact with dry food. Use *primer* on rusted metal or where long-term protection in harsh environments is required. Application time after mixing is 8 hours. Coating and primer are compliant under all state VOC rules in effect on October 1, 2009, except in the Los Angeles area.

Underwater—Not only can you use this coating under water, but you can even apply it under water. Bonds to damp or submerged steel and concrete. Use in salt water and fresh water (do not immerse in drinking water). In addition to long-term protection from corrosion, this thick, solvent-free coating contains Kevlar for impact, abrasion, and wear resistance. Application time after mixing is 40 minutes. Apply with a brush, mitt, or spatula.

Low-Friction Ceramic—Reinforced with ceramic, this 100% polymer coating creates a very smooth, low-friction surface that protects against abrasion. Recommended for repairing heat exchangers, condensers, valves, and pumps. Use on aluminum, carbon steel, iron, and stainless steel. Application time after mixing is 30 minutes. Apply only with a brush.

Porcelain Finish—No need to mix. Just brush on to renew and refinish your porcelain tubs, tile, and vitreous china. It even produces a high-gloss, porcelain-like finish on laminates and primed wood. Apply with a brush, this coating goes on smooth—will not show brush marks. For indoor use.

	Size, net wt.★	Mix Ratio	Dry Time: To the Touch	Dry Time: Overall	Coverage, sq. ft. @ Thickness	Max. Temp.	Application Temp. Range		Each
Aerosol—*Gloss:* Black, White									
Coating	12 oz.	—	20 min.	24 hrs.	6 @ 0.5 mils	150° F	65° F to 90° F	7633T4	$6.34
General Purpose—*Gloss:* Dark Gray, Green, Light Blue, Red, White, Yellow									
Coating	½ gal.	1:1	4 hrs.	48 hrs.	100 @ 10 mils	250° F	60° F to 100° F	7829T1	39.93
Coating	1 gal.	1:1	4 hrs.	48 hrs.	200 @ 10 mils	250° F	60° F to 100° F	7829T3	62.00
Gray Primer	1 gal.	—	4 hrs.	48 hrs.	200 @ 10 mils	250° F	60° F to 100° F	7829T12	124.14
Self-Priming—*Gloss:* Aluminum, Black, Blue, Dark Gray, Red, White, Yellow									
Coating	2 gal.	1:1	6 to 8 hrs.	6 to 12 hrs.	220 @ 5 mils	300° F	50° F to 100° F	7903T1	157.66
Thinner	1 gal.	—	—	—	—	—	—	7903T59	33.82
Severe Environment—*Semi-Gloss:* Black									
Coating	1¼ gal.	4:1	3 to 4 hrs.	18 to 36 hrs.	100 @ 8 to 10 mils	350° F●	50° F to 100° F	7953T12	75.18
Thinner	1 gal.	—	—	—	—	—	—	7903T59	33.82
Low Temperature—*Semi-Gloss:* Light Gray, White									
Coating	2 gal.	1:1	2 hrs.	4½ hrs.	444 @ 3 mils	200° F♠	20° F to 120° F	7965T7	139.89
Thinner	1 gal.	—	—	—	—	—	—	7965T71	77.46
Low Odor—*Gloss:* Black, Light Blue, Red, Silver-Gray, White, Yellow									
Coating	1 gal.	7:1	1 hr.	5 hrs.	350 @ 1.5 mils	300° F	60° F to 100° F	7892T23	98.09
Gray Primer	1 gal.	3:1	1 hr.	5 hrs.	350 @ 1.5 mils	300° F	60° F to 100° F	7892T78	84.11
Underwater—*Gloss:* White									
Coating	1 qt.	1:1	90 min.	12 hrs.	13 @ 30 mils	175° F	45° F to 105° F	7617T5	54.17
Coating	1 gal.	1:1	90 min.	12 hrs.	53 @ 30 mils	175° F	45° F to 105° F	7617T6	174.17
Low-Friction Ceramic—*Gloss:* Dark Gray									
Coating	2 lbs.	2¾:1	30 min.	6 hrs.	12 @ 20 mils	200° F	55° F to 110° F	9775T4	134.69
Porcelain Finish—*Gloss:* White									
Coating	26 oz.	—	90 min.	72 hrs.	45 @ 2 mils	250° F	72° F to 90° F	9532T35	36.71

★ Combined amount of both parts when mixed. ● Max. temp. is 125° F when immersed in water. ♠ Max. temp. is 100° F when immersed in water.

For information about paint and coatings, see page 2126.

Polyurethane Coatings

With better UV-resistance than epoxy coatings, polyurethane coatings are ideal for outdoor use. These solvent-based coatings provide excellent color retention and can be used indoors and out (unless otherwise stated). Apply with a brush, roller, or sprayer (unless otherwise stated). These products are compliant under all state VOC rules in effect on October 1, 2009, unless noted. **To Order:** Please specify color from table.

General Purpose Polyurethane Coating— This rust-inhibiting coating resists mars, chips, and weather, making it good for marine applications and on frequently cleaned surfaces. For use on metal. Coating is compliant under all state VOC rules in effect on October 1, 2009, except in California. Primer is compliant under all state VOC rules in effect on March 1, 2011, except in the Los Angeles area.

Self-Priming Polyurethane Coating— Apply this coating directly to metal surfaces; it provides excellent corrosion, abrasion, and impact resistance on metal and concrete. It comes in two parts; mix ratio is 4:1. Application time after mixing is 2½ hours.

Thinner is compliant under all state VOC rules in effect on January 1, 2011, except in California.

High-Performance Polyurethane Coatings— Using moisture in the air as a drying agent, these coatings are perfect in high-humidity situations. Resist impact, abrasion, corrosion, and weather. Use on aluminum, concrete, galvanized steel, and steel.

Colored and clear coatings have excellent color retention on primed concrete and metal. Resist chemicals, yellowing, and chalking (forming a powdery residue). Use the clear coating over the colored coating for maximum gloss and color retention.

Black tar coating offers superior resistance to corrosion and extreme environments. Use on concrete and steel in immersion, underground, and waste-water treatment applications; can be immersed one hour after application. Grit blast surfaces before applying. For best performance on steel, use the green zinc-filled primer below.

Aluminum-colored penetrating primer reaches deep into rusted steel surfaces that have been lightly cleaned.

Green zinc-filled primer provides the corrosion resistance of galvanizing; designed for use on grit-blasted or power tool-cleaned surfaces. Not recommended for concrete.

Thinner is compliant under all state VOC rules in effect on January 1, 2011, except in California.

Super Abrasion-Resistant Polyurethane Coating— Guard against severe abrasion, impact, and wear with this ultra-thick two-part coating; in just one application it forms a protective layer that's 50 mils thick. Use on concrete, fiberglass, metal, rubber, and wood; excellent for hoppers, chutes, and pumps. Mix ratio is 4:1; application time after mixing is 45 minutes. Apply with a brush. Use primer for best adhesion. Not recommended for outdoor use.

	Size, net wt.	Dry Time: To Touch	Dry Time: Overall	Coverage, sq. ft. @ Thickness	Max. Temp.	Application Temp. Range		Each
General Purpose Polyurethane Coating— *Gloss:* Black, Blue, Dark Gray, Green, Light Gray, Orange, Red, White, Yellow								
Coating	1 gal.	3 hrs.	16 hrs.	457 @ 2 mils	300° F	50° to 90° F	7925T1	$57.26
Gray Primer	1 gal.	1 hr.	8 hrs.	261 @ 4 mils	275° F	40° to 100° F	7925T4	81.71
Self-Priming Polyurethane Coating— *Gloss:* Black, Clear, Gray, Orange, Red, White, Yellow								
Coating	1 gal.	2½ hrs.	8 hrs.	234 @ 5 mils	200° F	40° to 120° F	70325T21	118.50
Thinner	1 gal.	—	—	—	—	—	70325T22	35.63
High-Performance Polyurethane Coatings— *Semi-Gloss:* Black, Blue, Light Gray, Red, White, Yellow								
Colored Coating	1 gal.	1½ hrs.	8 hrs.	300 @ 4 mils	250° F	20° to 100° F	7615T21	133.31
Clear Coating	1 gal.	6 hrs.	8 hrs.	678 @ 1.5 mils	250° F	20° to 100° F	7615T47	128.69
Black Tar Coating	1 gal.	2 hrs.	6 hrs.	218 @ 5 mils	150° F	20° to 100° F	7615T48	89.16
Aluminum-Colored Penetrating Primer	1 gal.	30 min.	4 hrs.	513 @ 2 mils	250° F	20° to 100° F	7615T31	74.25
Green Zinc-Filled Primer	1 gal.	30 min.	4 hrs.	390 @ 3 mils	250° F	20° to 100° F	7615T32	135.49
Thinner	1 gal.	—	—	—	—	—	7615T25	30.88
Super Abrasion-Resistant Polyurethane Coating— *Semi-Gloss:* Black								
Coating	1 lb.	2 hrs.	24 hrs.	3.6 @ 50 mils	180° F	65° to 85° F	9582T23	67.14
Blue Primer for Metal Surfaces	4 oz.	30 min.	30 min.	10 @ 5 mils	180° F	65° to 85° F	9582T24	20.77
Red Primer for Nonmetal Surfaces	4 oz.	30 min.	30 min.	10 @ 5 mils	180° F	65° to 85° F	9582T25	20.76

Stainless Steel Coatings

With Type 316L stainless steel flakes for durability, these coatings provide superior corrosion and chemical resistance. Apply with a brush, roller, or sprayer. All coatings and primers are compliant under all state VOC rules in effect on October 1, 2008, unless noted. For best long-term results use ***primer***.

Stainless Steel Coating— This nontoxic, solvent-based coating also resists solvents. It comes in two parts; mix ratio is 1:1. Application time after mixing is 6 hours. Use indoors on metals and other nonporous surfaces.

Fast-Dry Low-Odor Stainless Steel Coating— Keep downtime to a minimum with this water-based coating. It has excellent UV resistance and is for use indoors and out. Use on concrete, masonry, metal, and wood (only indoors).

Heavy Duty Stainless Steel Polyurethane Coatings— Withstanding high-pressure washdowns, these rugged, solvent-based coatings provide excellent abrasion and weather resistance. For use indoors and out. Use on metal and nonporous surfaces.

High-Temperature Stainless Steel Coatings— Use these solvent-based coatings for boilers, stacks, piping, and similar indoor applications. After the coating has completely dried, the surface requires heating at 400° F for 30 minutes to fully protect. Self priming. *Aerosol* is compliant under all state VOC rules in effect on February 1, 2011.

	Size, net wt.	Dry Time: To Touch	Dry Time: Overall	Coverage, sq. ft. @ Thick.	Max. Temp.	Application Temp. Range	Finish: Color		Each
Stainless Steel Coating									
Coating	2 qt.	4 hrs.	36 hrs.	182 @ 3 mils	250° F	50° to 100° F	*Satin*: Metallic Silver	7904T1	$127.24
Primer	2 qt.	3 hrs.	36 hrs.	190 @ 3 mils	250° F	50° to 100° F	*Satin*: Red	7904T2	113.34
Fast-Dry Low-Odor Stainless Steel Coating									
Coating	1 qt.	30 min.	2 hrs.	42 @ 2 mils	350° F	50° to 95° F	*Satin*: Metallic Silver	7949T11	38.48
Coating	1 gal.	30 min.	2 hrs.	170 @ 2 mils	350° F	50° to 95° F	*Satin*: Metallic Silver	7949T12	128.18
Primer	1 qt.	30 min.	2 hrs.	56 @ 2 mils	400° F	50° to 95° F	*Flat*: Red	7949T31	28.27
Heavy Duty Stainless Steel Polyurethane Coatings									
Aerosol	14 oz.	2 hrs.	24 hrs.	—	200° F	50° to 90° F	*Satin*: Metallic Silver	7703T65	26.01
Coating	1 qt.	2 hrs.	24 hrs.	37 @ 3 mils	200° F	50° to 90° F	*Satin*: Metallic Silver	7703T67	51.18
Coating	1 gal.	2 hrs.	24 hrs.	150 @ 3 mils	200° F	50° to 90° F	*Satin*: Metallic Silver	7703T66	186.12
Primer	1 qt.	1 hr.	4 hrs.	50 @ 3 mils	200° F	50° to 90° F	*Satin*: Red	7703T71	46.04
Primer	1 gal.	1 hr.	4 hrs.	200 @ 3 mils	200° F	50° to 90° F	*Satin*: Red	7703T72	167.41
High-Temperature Stainless Steel Coatings									
Aerosol	7 oz.	1 hr.	24 hrs.	—	1200° F	50° to 90° F	*Satin*: Metallic Silver	7721T37	16.01
Coating	1 qt.	1 hr.	24 hrs.	25 @ 3 mils	1200° F	50° to 90° F	*Satin*: Metallic Silver	7721T35	65.14
Coating	1 gal.	1 hr.	24 hrs.	100 @ 3 mils	1200° F	50° to 90° F	*Satin*: Metallic Silver	7721T38	236.88

Tool-Blackening Kits

Also known as tool black, these kits are a fast, economical alternative to black oxide. They put a dull, black, protective finish on metal. Blackener is water based, dries quickly, and is for indoor use. Simply dip or swab tool at room temperature. Once applied maximum temperature is 350° F. These products are compliant under all state VOC rules in effect on October 1, 2008.

Kit for Ferrous Metals— For steel and iron. Includes 1 qt. of tool blackener (covers 50 to 75 sq. ft.), 1 qt. of cleaner/degreaser, and 11 oz. (net wt.) of aerosol sealer.

Kit for Nonferrous Metals— For aluminum, copper, and brass. Includes 1 qt. of tool blackener (covers 30 to 40 sq. ft.) and 1 qt. of sealer.

	For Ferrous Metals	Each	For Nonferrous Metals	Each
Complete Kit	3435K11	$89.71	3435K12	$99.74
Replacement Components				
Tool Blackener	3435K51	56.35	3435K52	62.16
Cleaner/Degreaser	3435K71	22.55	—	—
Sealer	3435K95	16.84	3435K82	52.14

For information about paint and coatings, see page 2126.

Galvanizing Coatings For Rust Prevention

Get the protection of hot-dip galvanizing with these zinc-rich solvent-based coatings; they keep iron and steel free of rust and corrosion. Use outdoors and in well-ventilated indoor areas. Apply with a brush, roller, or sprayer; or dip parts. These products are compliant under all state VOC rules in effect on October 1, 2008, unless noted.

Cold Galvanizing— Contain 93% of pure zinc. Meet MIL-P-21035.

High-Temperature Cold Galvanizing— Withstand temperatures up to 750° F and contain 99% of pure zinc. Meet MIL-P-21035.

Bright Galvanizing— Protect and restore the shiny gray finish of hot-dip galvanizing or use as a topcoat for the cold-galvanizing coatings. Contain 65% of pure zinc.

Chrome Galvanizing— Use to protect and restore the shiny gray finish of hot-dip galvanizing with a chrome finish or as a topcoat for the cold-galvanizing coatings. Contains 10% of pure zinc.

Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Coverage, sq. ft. @ Thickness	Max. Temp.	Application Temp. Range	Finish: Color	Pkg. Qty.		Each: Partial Pkg.	Each: Full Pkg.
Cold Galvanizing										
Aerosol 13 oz.	15 min.	24 hrs.	24 @ 1 mil	150° F	64° to 86° F	*Metallic*: Gray	12	7725T3	$9.07	$8.28
Coating ½ pt.	20 min.	48 hrs.	54 @ 1 mil	150° F	64° to 86° F	*Metallic*: Gray	12	7725T13	17.64	15.83
Coating 1 qt.	20 min.	48 hrs.	218 @ 1 mil	150° F	64° to 86° F	*Metallic*: Gray	4	7725T14	44.61	40.09
Coating 1 gal.	20 min.	48 hrs.	870 @ 1 mil	150° F	64° to 86° F	*Metallic*: Gray	1	7725T15♣	—	151.95
High-Temperature Cold Galvanizing										
Aerosol 14 oz.	5 min.	24 hrs.	50 @ 1.5 mils	750° F	60° to 90° F	*Flat*: Light Gray	12	7725T4	28.76	26.26
Coating 1 gal.	5 min.	24 hrs.	1,067 @ 1.5 mils	750° F	60° to 90° F	*Flat*: Light Gray	1	7725T12■	—	449.52
Bright Galvanizing										
Aerosol 13 oz.	15 min.	24 hrs.	13 @ 1 mil	400° F	60° to 80° F	*Metallic*: Gray	12	7725T7	13.29	11.81
Coating 1 qt.	30 min.	24 hrs.	102 @ 1 mil	350° F	60° to 80° F	*Metallic*: Gray	4	7725T8	46.04	40.90
Chrome Galvanizing										
Aerosol 12 oz.	10 min.	72 hrs.	19 @ 1 mil	400° F	60° to 80° F	*Metallic*: Chrome	12	7725T11	7.92	7.12

♣ This product is compliant under all state VOC rules in effect on October 1, 2008, except in the Los Angeles area.
■ This product is compliant under all state VOC rules in effect on October 1, 2008, except in California.

Heavy Duty Acid-Resistant Coatings

Don't let splashed or spilled acids, alkalies, and water damage your surfaces—protect them with one of these heavy duty solvent-based coatings. Use indoors and out on concrete, metal, and wood. Apply with a brush, roller, or sprayer. **To Order:** Please specify color from the table.

Phenolic— Ideal for applications involving inorganic salts. Coating is compliant under all state VOC rules in effect on October 1, 2009, except in California. Thinner is compliant under all state VOC rules in effect on January 1, 2011, except in California.

Extra-Thick Polyester— This two-part coating withstands immersion into salt water and fresh water (do not immerse in drinking water). Mix ratio is 98½:1; application time after mixing is 2 hours. For best results use the primer. Coating and primer are compliant under all state VOC rules in effect on October 1, 2009. Thinner is compliant under all state VOC rules in effect on January 1, 2011, except in California.

Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Coverage, sq. ft. @ Thick.	Max. Temp.	Application Temp. Range	Each
Phenolic—*Gloss:* Light Gray, Off-White						
Coating 1 gal.	3 hrs.	3 days	166 @ 5 mils	200° F	60° to 90° F	7610T2 $53.52
Thinner 1 gal.	—	—	—	—	—	7610T3 22.31
Extra-Thick Polyester—*Satin:* White						
Coating 1 gal.▲	6 hrs.	3 days	34 @ 35 mils	220° F	60° to 80° F	7571T2 84.30
Red Primer 1 gal.▲	6 hrs.	3 days	34 @ 35 mils	220° F	60° to 80° F	7571T1 84.30
Thinner 1 gal.	—	—	—	—	—	7571T3 31.15

▲ Combined amount of both parts when mixed.

Rubber Coatings

Multi-Purpose

Seal out moisture and protect your surfaces with these flexible coatings. Use indoors and out. These products are compliant under all state VOC rules in effect on October 1, 2009, unless noted.

To Order: Please specify color from table.

Multipurpose Slip-Resistant— Great for insulating, providing a nonslip grip, and color coding, these solvent-based coatings resist acids, detergents, and salts. They won't chip, crack, or peel. Dip, brush, or spray on fabric, metal, paper, plastic, rope, wire, and wood; clear primer is required for use on metal.

Multipurpose Low-Odor— Similar to the coatings above, except this water-based coating emits very low odor and cleans up with soap and water. Use on metal, plastic, and wood.

Rubberized Sealant and Undercoating— This petroleum-asphalt based coating seals leaks, deadens sound, and won't sag in undercoating applications. Resists rust, salts, and acids. Spray on metal and wood.

Chemical-Resistant Extreme Temperature— This solvent-based coating resists oils, fuels, chemicals, solvents, acids, and UV light in temperatures from –40° to +400° F; intermittent to 500° F. Spray on ceramic, fabric, metal, rubber, and wood.

Water Repellent— Superior at repelling water, this petroleum-based coating also resists chemicals and UV light and can encapsulate lead paint. Withstands temperatures from –30° to +320° F. Brush, roll, or spray on fiberglass, metal, and wood.

Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Coverage, sq. ft @ Thickness	Max. Temp.	Application Temp. Range	Pkg. Qty.		Each: Partial Pkg.	Each: Full Pkg.
Multipurpose Slip-Resistant— Black, Blue, Clear, Red, White, Yellow									
Aerosol 11 oz.	40 min.	24 hrs.	6 @ 5 mils	200° F	68° to 70° F	6	9560T4♥	$9.91	$8.88
Coating 7¼ oz.	40 min.	24 hrs.	1.6 @ 15 mils	200° F	68° to 70° F	6	9560T8●	9.94	8.90
Coating 14½ oz.	40 min.	24 hrs.	3.3 @ 15 mils	200° F	68° to 70° F	12	9560T7♠	11.47	10.27
Coating 1 gal.	40 min.	24 hrs.	30 @ 15 mils	200° F	68° to 70° F	4	9560T52♦	95.72	85.69
Coating (UV Resistant) 1 gal.	40 min.	24 hrs.	30 @ 15 mils	200° F	68° to 70° F	4	9560T6♦	—	381.64
Coating 5 gal.	40 min.	24 hrs.	150 @ 15 mils	200° F	68° to 70° F	1	9560T9♦	94.88	84.94
Thinner 1 qt.	—	—	—	—	—	4	9560T36✓	16.49	14.76
Thinner 1 gal.	—	—	—	—	—	4	9560T25✓	42.62	38.15
Clear Primer 1 qt.	40 min.	24 hrs.	12.5 @ 1 mil	200° F	68° to 70° F	4	9560T81	24.94	22.32
Multipurpose Low-Odor— Black, Blue, Dark Green, Orange, Red, White, Yellow									
Coating 1 gal.	40 min.	24 hrs.	100 @ 5 mils	250° F	68° to 70° F	4	7854T43★	90.56	81.25
Clear Primer 1 qt.	40 min.	24 hrs.	12.5 @ 1 mil	200° F	68° to 70° F	4	9560T81	24.94	22.32
Rubberized Sealant and Undercoating— Black									
Aerosol 18 oz.	10 min.	6 hrs.	15 @ 1.5 mils	300° F	50° to 100° F	12	9695T15	7.35	6.68
Chemical-Resistant Extreme-Temperature— Black									
Aerosol 12 oz.	5 min.	48 hrs.	5 @ 1 mil	400° F	50° to 100° F	1	7270T2	—	66.67
Water Repellent— Light Gray, White									
Coating 1 gal.	60 min.	24 hrs.	182 @ 10 mils	320° F	40° to 120° F	1	7825T2	—	116.25

♥ Not available in blue or yellow. ● Not available in blue, white or yellow. ♠ Not available in clear or white. ♦ Also available in green.
✓ This product is compliant under all state VOC rules in effect on January 1, 2011, except in California.
★ This product is compliant under all state VOC rules in effect on October 1, 2009, except in the Los Angeles area.

For information about paint and coatings, see page 2126.

Clear Protective Aerosol Coatings

Add a tough, long-lasting protective coating to your surfaces. All coatings are solvent based. Apply between 60° and 80° F. These products are compliant under all state VOC rules in effect on October 1, 2009.

General Purpose Acrylic Coatings—Protect surfaces from rust and corrosion. Use on metal, paper, and wood. For use indoors and out.

General Purpose Acrylic Coating with UV Inhibitors—Similar to the coatings above, but with inhibitors for protection from ultraviolet light. For use indoors and out.

Heavy Duty Waterproof Polyurethane Coating—More durable, it protects against rust and corrosion and weatherproofs and waterproofs. Use on metal, paper, and wood. For use indoors and out.

Low-Odor Latex-Based Coating—Perfect for use in enclosed spaces. It seals porous surfaces. Use on masonry, metal, plaster, and wood. For use indoors and out.

Multipurpose Shellac—Designed for indoor use only, this alcohol-based shellac seals, primes, finishes, and protects brass, ceramic, copper, glass, metal, tile, and wood.

Lacquers for Metals—Protect your nonferrous metal surfaces such as brass, bronze, copper, and silver from moisture, chemicals, oxidation, and abrasion. *Interior lacquer* resists damage caused by handling. *Exterior lacquer* provides UV protection.

Lacquers for Wood—Protect wood surfaces from wear. Lacquers are scuff, water, and oil resistant. For use indoors.

	Finish	Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Max. Temp.	Pkg. Qty.		Each: Partial Pkg.	Each: Full Pkg.
General Purpose Acrylic Coating	Flat	12 oz.	5 min.	24 hrs.	150° F	12	7850T5	$4.76	$4.28
General Purpose Acrylic Coating	Gloss	12 oz.	5 min.	24 hrs.	150° F	12	7850T4	4.76	4.28
General Purpose Acrylic Coating with UV Inhibitors	Gloss	11 oz.	15 min.	24 hrs.	120° F	6	7850T8	6.33	5.70
Heavy Duty Waterproof Polyurethane Coating	Gloss	11 oz.	30 min.	24 hrs.	120° F	6	7961T5	5.36	4.82
Low-Odor Latex-Based Coating	Gloss	12 oz.	20 min.	3 hrs.	150° F	6	75035T417	5.17	4.64
Multipurpose Shellac	Gloss	12 oz.	15 min.	2 hrs.	160° F	6	7655T1	10.81	9.68
Interior Lacquer for Metal	Gloss	12 oz.	5 min.	24 hrs.	150° F	12	76885T73	12.96	10.79
Exterior Lacquer for Metal	Gloss	12 oz.	5 min.	24 hrs.	160° F	12	76885T75	13.88	11.56
Lacquer for Wood	Flat	12 oz.	15 min.	6 hrs.	250° F	12	20035T56	9.85	9.05
Lacquer for Wood	Gloss	12 oz.	15 min.	6 hrs.	250° F	12	20035T57	9.85	9.05

Dow Corning Protective Coatings

Metal Protective Aerosol Coating—This wax-based coating forms a thin, wax-like film for corrosion protection. Color is clear. This product is compliant under all state VOC rules in effect on October 1, 2008, except in California.

236 Dispersion Coating—Prevent surfaces from sticking to each other with this silicone-rubber coating. It also protects from corrosion and weathering. Dip, brush, roll, or spray coating onto surfaces. Color is white. This product is compliant under all state VOC rules in effect on October 1, 2008.

1890 Protective Coating—This silicone-rubber coating provides excellent moisture resistance as well as electrical-insulating properties. Dip, brush, roll, or spray coating onto surfaces. Color is gray. FDA compliant for food contact. This product is compliant under all state VOC rules in effect on October 1, 2008, except in the Los Angeles area.

Dow Corning Product	Size, net wt.		Each
Metal Protective Aerosol Coating	10 oz.	1350K15	$16.81
236 Dispersion Coating	1 pt.	1350K42	38.21
1890 Protective Coating	1 gal.	1350K26	170.59

Glare-Reducing Aerosol Coating

Put a temporary dull finish on plastic, glass, and other glossy surfaces to remove unwanted glare or reflection. Coating is solvent based. Maximum temperature is 120° F; apply between 55° and 90° F. For use indoors. This product is compliant under all state VOC rules in effect on October 1, 2008.

Finish	Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Pkg. Qty.		Each: Partial Pkg.	Each: Full Pkg.
Flat	11 oz.	15 min.	24 hrs.	6	7972T7	$7.15	$6.39

Hot-Melt Reusable Peel-Away Protective Coatings

Heat these coatings to the temperature listed below and dip metal objects for a tough, transparent coating that dries in just 1 to 2 minutes. Coatings can be remelted and reused again many times. Use for temporary and long-term protection from rust (unless noted), abrasion, and moisture. For indoor use only, except Styles E and F, which can be used indoors and out. These products are compliant under all state VOC rules in effect on October 1, 2008.

To Order Please specify 1-, 5-, or 10-lb. blocks.

(A&B) General Purpose—These mineral oil-based coatings leave an oily film for superior corrosion protection. *Style A* is transparent amber. *Style B* is clear and resists darkening over time.

(C) Heavy Duty—This oil-based coating is our most durable hot-melt coating, providing maximum abrasion protection with a fast drying time. Emits a strong odor. Finish is clear.

(D) Flexible—Soft and flexible, this oil- and rubber-based coating absorbs shock. Does not provide long-term rust protection. Finish is clear.

(E&F) Long-Term Storage—These resin-based coatings won't dry out so they're ideal when you need to store over a long time. Do not contain oils or solvents. Finish is clear. *Style E* adheres well and meets MIL-P-23242B. *Style F* is soft, pliable, and odorless.

	Dipping Temp.	Coverage for 1 lb., sq. in @ Thick.		1 lb. Each	5 lbs. Each	10 lbs. Each
A	360° F	500 @ 100 mils	7762T72	$7.47	$35.41	$67.23
B	360° F	500 @ 100 mils	7762T73	7.66	36.38	68.94
C	350° F	500 @ 100 mils	7762T74	8.51	40.42	76.59
D	300° F	500 @ 100 mils	7762T75	5.07	24.08	45.63
E	350° F	500 @ 62.5 mils	7762T76	6.30	29.93	56.70
F	360° F	500 @ 62.5 mils	7762T77	4.14	19.66	37.26

Underwater Surface Coating

Also known as boat bottom or antifouling paint, this solvent-based coating prevents the build-up of barnacles, mussels, algae, and other marine growth on underwater surfaces. Use in both fresh- and saltwater applications. For fiberglass, metal (not for use on aluminum), and wood. These products are compliant under all state VOC rules in effect on October 1, 2008.

Dries to the touch in 1-2 hours; overall in 24 hours. Max. temperature is 125° F; apply at 40° to 90° F. Covers 85 sq. ft. at 2 mils thick.

Size, net wt.	Finish: Color		Each
1 qt.	*Flat:* Black	8027T111	$48.76
1 qt.	*Flat:* Dark Blue	8027T112	48.76

Peel-Away Protective Coatings

Perfect for safeguarding tools and parts while they're being shipped or stored, our easy-to-remove coatings can be used for temporary and long-term protection from rust, abrasion, and moisture.

Aerosol Peel-Away Coating—Simply spray this solvent-based coating onto nonporous surfaces such as anodized aluminum, castings, dies, glass, mirrors, and unpainted metal. Max. temperature is 150° F; apply between 60° and 80° F. For indoor use. Has an aluminum-colored finish. This product is compliant under all state VOC rules in effect on October 1, 2008, except in California.

Low-Odor Peel-Away Coating—This water-based coating has almost no smell and cleans up with water. Brush, roll, or spray it onto aluminum, ceramic, glass, hard plastic, and steel. Maximum temperature is 150° F; apply between 50° and 100° F. Use indoors and out, but not in direct sunlight. Finish is clear. This product is compliant under all state VOC rules in effect on October 1, 2008.

Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Coverage, sq. ft. @ Thickness	Pkg. Qty.		Each: Partial Pkg.	Each: Full Pkg.
Aerosol Peel-Away Coating							
12 oz.	30 sec.	1 hr.	16 @ 1 mil	12	9505T14	$7.39	$6.65
Low-Odor Peel-Away Coating							
1 gal.	1 hr.	24 hrs.	250 @ 3 mil	4	7888T42	39.88	35.15

Rust- and Corrosion-Inhibiting Coatings

Unlike paints and coatings, these inhibitors can be dipped, brushed, or sprayed onto surfaces for long-lasting protection, and then removed. These products are compliant under all state VOC rules in effect on October 1, 2008, unless noted.

Aerosol Rust and Corrosion Inhibitor— Solvent based, this inhibitor forms a greasy, elastic film that won't harden or crack—perfect for tool and die storage. Protects for 12 to 24 months indoors; 6 to 12 months outdoors. Maximum temperature is 110° F. Color is light amber. Remove with mineral spirits or a solvent-based cleaner.

General Purpose Rust and Corrosion Inhibitors— Get up to 2 years protection with these petroleum-based inhibitors.

Indoor inhibitor forms a very thin, nondrying film. It's USDA H2 approved as a lubricant with no food contact. Maximum temperature is 250° F. Color is amber. To remove, use a degreaser.

Indoor/outdoor inhibitor forms a waxy film that resists heat, humidity, and severely corrosive environments. Maximum temp. is 175° F. Color is dark amber. Remove with mineral spirits. Meets MIL-C-16173, Grade 4.

LPS #3 Heavy Duty Rust Inhibitor— Oil based, this inhibitor produces a self-healing waxy film that dries slightly tacky and protects for 2 years indoors; 3-6 months outdoors. Maximum temperature is 175° F. Color is amber. Remove with mineral spirits or a cleaner/degreaser. Meets MIL-C-16173D, Grade 2.

Heavy Duty Rust and Corrosion Inhibitor— Producing a hard, transparent film, this oil-based inhibitor protects for over 3 years indoors; can be used outdoors, but is not rated. Resists acid; rated for 1,500 hours of salt-spray resistance. Maximum temp. is 175° F. Color is dark brown. Remove with a solvent or stripping agent. Meets Boeing BMS-3-29.

Low-Odor Rust and Corrosion Inhibitor— Odorless, this water-based inhibitor forms a waxy film that's compatible with lube oil, so it doesn't need to be removed from parts before assembly. Protects for up to 2 years indoors; 1 year outdoors. Maximum temperature is 160° F. Color is translucent brown. To remove, use an alkaline cleaner.

Heavy Duty Low-Odor Rust and Corrosion Inhibitor— Odorless, this water-based inhibitor forms a hard, dry waxy film and withstands temperatures up to 185° F. Protects for up to 2 years indoors; 1 year outdoors. Color is translucent brown. Meets MIL-C-16173, Grade 1.

Food-Grade Rust and Corrosion Inhibitor— This petroleum-based, white mineral oil inhibitor is USDA H1 approved for incidental food contact. It forms a nondrying, tacky film that protects for up to 1 year indoors; 3 months outdoors. Max. temp. is 180° F. To remove, use an alkaline cleaner.

Size, net wt.	Coverage, sq. ft. @ Thickness	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Aerosol Rust and Corrosion Inhibitor					
11 oz.	20 @ 0.5 mils	12	10245K52	$6.68	$6.02
General Purpose Indoor Rust and Corrosion Inhibitor					
11 oz.■	Not Rated	12	10505K17	10.20	9.18
5 gal.	10,000 @ 0.3 mils	1	10505K14	—	191.91
General Purpose Indoor/Outdoor Rust and Corrosion Inhibitor					
10 oz.■	Not Rated	12	10505K31★	10.38	9.34
5 gal.	5,000 @ 1 mil	1	10505K32★	—	244.42
LPS #3 Heavy Duty Rust Inhibitor					
11 oz.■	32 @ 1.25 mils	12	1370K34★	17.45	15.55
1 gal.	320 @ 1.25 mils	4	1370K78★	73.26	65.81
Heavy Duty Rust and Corrosion Inhibitor					
1 gal.	327 @ 2.7 mils	4	7973T11★	145.42	132.00
Low-Odor Rust and Corrosion Inhibitor					
1 gal.	650 @ 2.5 mils	4	9555T68	29.12	26.89
Heavy Duty Low-Odor Rust and Corrosion Inhibitor					
1 gal.	650 @ 2 mils	4	9555T58	29.12	26.89
5 gal.	3,250 @ 2 mils	1	9555T59	—	96.87
Food-Grade Rust and Corrosion Inhibitor					
1 gal.	Not Rated	4	10455K11	22.98	19.35

■ Aerosol. ★ This product is compliant under all state VOC rules in effect on January 1, 2010, except in the Los Angeles area.

Small Enclosed-Area Corrosion Inhibitors and Corrosive-Gas Absorber

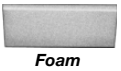

Foam

Plastic Cup

Keep metal components in electrical enclosures, tool boxes, and cabinets free from corrosion for up to 2 years. All have an adhesive back. These products are compliant under all state VOC rules in effect on October 1, 2008.

Corrosion Inhibitors— Emit a vapor that coats metal components and absorb airborne moisture.

Foam fits into very tight spots. Maximum temperature is 180° F. Meets MIL-PRF-81705D.

The *plastic cup* includes a membrane that slowly releases the inhibitor. It won't break apart, as can happen with the foam. Max. temperature is 185° F. Meets MIL-I-22110C.

Corrosive-Gas Absorber— This plastic cup absorbs corrosive gases such as hydrogen sulfide and changes color to indicate when it's time to be replaced. Maximum temperature is 140° F.

Style	Size	Area Protected		Each
Corrosion Inhibitors				
Foam	3″ Lg.×1¼″ Wd.×¼″ Ht.	1 cu. ft.	78125T24	$3.35
Plastic Cup	2¼″ Dia.×1¼″ Ht.	11 cu. ft.	78125T26	13.68
Corrosive-Gas Absorber				
Plastic Cup	2¼″ Dia.×1¼″ Ht.	10 cu. ft.	78125T31	13.43

Rust Removers

Get rid of rust. Use all removers indoors and out. These products are compliant under all state VOC rules in effect on October 1, 2008.

Naval Jelly Rust Remover— This acid-based jelly removes rust from iron, steel, and other metals; not for use on aluminum, chrome, or marble. Apply with a brush or sprayer, leave it on for 10 to 15 minutes (longer for heavily rusted surfaces), and then rinse it off with water. Color is pink. *Note:* Remover does not prevent rust from returning.

Environmentally Friendly Liquid Rust Remover— This nontoxic, noncorrosive liquid quickly removes rust. Dip steel and other metals (not for aluminum, brass, or copper); items must be immersed in liquid. Remove from liquid and rinse; submerge again, remove, and let dry to use as a temporary rust inhibitor. Color is light green.

Liquid Rust Remover and Inhibitor— This nonflammable, water-based coating dissolves rust and prevents it from returning. Dip, brush, or spray coating onto aluminum, chrome, iron, and steel. Then wipe off excess and let dry. Color is translucent green.

Rust Converter and Inhibitors— Apply directly over rusty surfaces to convert old rust into a layer of protection to prevent new rust from starting. Act as a primer and can be painted over if desired.

Aerosol—Solvent based. Sprays on clear and turns black. Use on metal.

Liquid—Water based. Brush, roll, or spray onto steel, aluminum, cast iron, and galvanized metal. Color is red.

Size, net wt.	Coverage, sq. ft.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Naval Jelly Rust Remover					
16 oz.	75 sq. ft.	12	7732T22	$7.08	$6.37
Environmentally Friendly Liquid Rust Remover					
1 qt.	75 lbs. of steel	4	7645T43	10.38	9.22
1 gal.	300 lbs. of steel	4	7645T44	25.11	22.60
Liquid Rust Remover and Inhibitor					
8 oz.	12 sq. ft.	24	72115T31	6.45	5.73
32 oz.	50 sq. ft.	12	72115T33	12.88	11.44
1 gal.	200 sq. ft.	6	72115T11	41.23	37.00
5 gal.	1,000 sq. ft.	1	72115T12	—	139.68
Aerosol Rust Converter and Inhibitor					
10¼ oz.	10 to 15 sq. ft.	6	7792T11	7.92	7.07
Liquid Rust Converter and Inhibitor					
8 oz.	12 to 15 sq. ft.	6	7705T51	12.52	11.30
32 oz.	50 to 62 sq. ft.	6	7705T52	35.58	32.52
1 gal.	200 to 250 sq. ft.	4	7705T53	104.44	95.73

Paint and Coating Removers

Remove paint and coatings from brick, concrete, glass, metal, and wood (unless noted). Use indoors and out. These products are compliant under all state VOC rules in effect on October 1, 2008.

Aerosol Paint Remover— Spray on to remove paint, varnish, shellac, lacquer, and urethane. Solvent based.

Liquid Paint and Coating Removers— Take off several layers of paint, varnish, urethane, and epoxy coatings with one application. Cling to vertical surfaces for maximum surface penetration.

Standard is solvent based and nonflammable. Also takes off marine coatings. Apply with a brush or roller. *Note:* May stain wood.

Environmentally friendly is an all-natural soybean-based remover with low odor. Apply this gel-like remover with a brush, roller, or sprayer. *Note:* Do not use on plastic, rubber, or drywall.

Heavy Duty Paint and Coating Removal Kits— Remove several layers of paint and coatings with just one application. Kits include paste and a cloth. Apply paste and then cover with the cloth; the paste dissolves the paint or coating and the cloth absorbs it. Peel the cloth from your surface and dispose.

Paint-removal kit removes 32 layers of paint at once. Water based with low odor, it's good for oil-based paint. Apply with a trowel (included) or sprayer. Apply the neutralizer (included) afterwards so future paint will not be affected. *Note:* Will not remove epoxy, polyurethane, or baked coatings. Do not use on aluminum or wood.

Coating-removal kit removes 10 layers of paint, epoxy, polyurethane, or marine coatings at once. Solvent based. Apply with a brush, roller, or sprayer. A neutralizer is not required.

Size, net wt.	Coverage, sq. ft.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Aerosol Paint Remover					
15 oz.	20 to 25	12	7764T21	$6.63	$5.96
Standard Liquid Paint and Coating Remover					
1 qt.	4 to 15	12	7735T4	11.04	10.09
1 gal.	15 to 60	1	7735T3	—	31.67
Environmentally Friendly Liquid Paint and Coating Remover					
1 qt.	30 to 50	1	7688T1	—	25.14
1 gal.	130 to 200	1	7688T2	—	77.94
Heavy Duty Paint-Removal Kit					
1¼ gal.	20	1	77925T21	—	34.15
Heavy Duty Coating-Removal Kit					
1 gal.	40	1	77925T41	—	83.40

Primers

Make your topcoat look better and last longer. Use primers with both solvent- and water-based topcoats (unless noted). All have a flat finish (unless noted). These products are compliant under all state VOC rules in effect on October 1, 2008. **To Order:** Please specify color from table.

Aerosol Primers

Stain Blocker and Sealer/Primer— Cover smoke, water, fire, and ink stains and prevent them from bleeding through. Use on concrete, drywall, tile, and wood. Solvent based. For use indoors and out.

Rough-Surface Primer/Filler— This primer provides a smooth, rust-resistant basecoat that fills surface cracks and is sandable. Use on fiberglass, metal, and wood. Solvent based. For use indoors and out. Use the gray primer for light-color topcoats, the red for medium-color topcoats, or the black for dark-color topcoats.

Plastic-Surface Primer— Solvent based. For use indoors and out.

Liquid Primers

Stain Blocker and Sealer/Primer— Cover smoke, water, fire, ink, and grease stains; prevent bleed through; and seal out odors. Use on aluminum, brick, concrete, drywall, PVC, tile, and wood. Apply with a brush, roller, or sprayer. Solvent based. For use indoors only.

Bare-Steel Primer— Also known as shopcoat primer, it provides long-term corrosion protection on bare steel. Apply with a brush or sprayer. Water based. For use indoors and out. Use the gray primer for light- to medium-color topcoats or the red for dark-color topcoats.

Porous-Surface Primer/Filler— Also known as block filler, it fills in cracks and smoothes out irregularities on surfaces. Use on cinder block, concrete block, and masonry. Apply with a brush, roller, or sprayer. Water based. For use indoors and out.

	Size, net wt.	Dry Time: To the Touch	Dry Time: Overall	Maximum Temperature	Available Colors	Pkg. Qty.		Each: Partial Pkg.	Each: Full Pkg.
Aerosol Primers									
Stain Blocker and Sealer	12 oz.	5 min.	2 hrs.	250° F	White	12	77525T4	$5.36	$4.81
Rough-Surface Filler	12 oz.	10 min.	1 hr.	200° F	Black, Gray, Red	6	7929T1	6.92	6.15
Plastic Surface	12 oz.	4 hrs.	9 hrs.★	200° F	White	6	7937T6	5.37	4.82
Liquid Primers									
Stain Blocker and Sealer	1 qt.	20 min.	45 min.	185° F	White	6	7897T7	13.91	12.63
Stain Blocker and Sealer	1 gal.	20 min.	45 min.	185° F	White	4	7897T8	44.41	40.69
Bare Steel	1 gal.	30 min.	4 hrs.	Not Rated	Gray, Red	4	4850T6♣	25.36	21.74
Porous-Surface Filler	1 gal.	1 hr.	3 hrs.	150° F	White	4	7943T14	14.02	12.50

★ Allow for a longer drying time when applying a lacquer aerosol paint as a topcoat. ♣ Gloss finish. For use with water-based paint only.

About Paint Brushes

Natural-Bristle Brushes— Bristles are animal hair (typically hog). They're the best choice for applying oil-based and solvent-based paints and coatings, but can also be used to apply water-based paints and coatings.

Synthetic-Bristle Brushes— Bristles are nylon, polyester, a nylon/polyester blend, or polyolefin. They're the best choice for applying water-based paints and coatings, but can also be used to apply oil-based and solvent-based paints and coatings.

Chip/Touch-Up Brushes

Brush away wood and metal chips and handle light touch-up jobs.

Natural-bristle brushes have a tin-plated steel bristle holder. The *plastic handle* brushes have black bristles; the *wood handle* brushes have beige.

Synthetic-bristle brushes have black bristles and a tin-plated steel bristle holder.

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
With Natural Bristles and a Plastic Handle						
1/2"	1 3/8"	1/4"	7"	36	7798T1	$0.64
1"	1 5/8"	5/16"	7 1/4"	36	7798T2	.86
1 1/2"	1 5/8"	5/16"	7 1/2"	36	7798T3	1.07
2"	1 5/8"	5/16"	7 1/2"	24	7798T4	1.25
2 1/2"	1 5/8"	3/8"	7 3/4"	12	7798T5	1.68
3"	1 5/8"	3/8"	8"	12	7798T6	2.11
With Natural Bristles and a Wood Handle						
1/2"	1 1/2"	1/4"	7"	36	7737T32	.88
1"	1 1/2"	5/16"	7 1/4"	36	7737T11	1.20
1 1/2"	1 1/2"	5/16"	7 1/2"	36	7737T12	1.47
2"	1 1/2"	5/16"	8"	24	7737T13	1.73
With Natural Bristles and a Wood Handle (Cont.)						
2 1/2"	1 1/2"	3/8"	8"	12	7737T14	$2.35
3"	1 1/2"	3/8"	8 1/4"	12	7737T15	2.39
4"	2"	11/16"	9"	12	7737T16	3.76
With Synthetic Bristles and a Plastic Handle						
1/2"	1 3/4"	1/4"	7"	36	78015T51	.68
1"	1 3/4"	5/16"	7 1/4"	36	78015T52	1.08
1 1/2"	1 3/4"	5/16"	7 1/2"	36	78015T53	1.24
2"	1 3/4"	5/16"	7 1/2"	36	78015T54	1.27
2 1/2"	1 3/4"	5/16"	7 3/4"	12	78015T55	1.52
3"	1 3/4"	5/16"	7 7/8"	12	78015T56	1.84
4"	2 3/4"	11/16"	9 7/8"	12	78015T57	3.00

♦ Prices are 10% less when you order full package quantities.

Paint Brushes

Economy— Have black bristles, a tin-plated steel bristle holder, and a plastic handle.

General Purpose— All have a wood handle. *Natural-bristle* brushes have tan bristles and a nickel-plated brass bristle holder. *Synthetic-bristle* brushes have dark brown bristles and a brass-plated steel bristle holder.

Professional— Our highest-quality paint brushes, these provide better coverage and hold more paint. All have a wood handle. *Natural-bristle* brushes have black bristles and a stainless steel bristle holder. *Synthetic-bristle* brushes have dark brown bristles and a copper bristle holder.

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
Economy with Natural Bristles						
1"	2"	3/8"	8"	12	9521T21	$2.90
1 1/2"	2"	7/16"	8 1/8"	12	9521T22	3.62
2"	2"	7/16"	8 1/2"	12	9521T23	4.45
2 1/2"	2 1/4"	1/2"	9 1/4"	12	9521T25	5.82
3"	2 1/4"	1/2"	9"	12	9521T24	7.28
3"	2 1/2"	11/16"	9 5/8"	12	9521T26	9.16
4"	2 1/2"	11/16"	10"	12	9521T27	11.78
Economy with Synthetic Bristles						
1"	2"	3/8"	7 3/4"	12	9526T11	1.13
1 1/2"	2"	7/16"	7 3/4"	12	9526T12	1.52
2"	2"	7/16"	8"	12	9526T13	1.90
2 1/2"	2 1/4"	1/2"	8 3/4"	12	9526T15	2.59
3"	2 1/4"	1/2"	8 5/8"	12	9526T19	3.28
3"	2 1/2"	11/16"	9 1/2"	12	9526T17	3.34
4"	3 1/2"	7/8"	10 3/4"	12	9526T21	4.76
General Purpose with Natural Bristles						
1"	2 1/4"	7/16"	8 1/2"	12	7799T1	2.87
General Purpose with Natural Bristles (Cont.)						
2"	2 3/4"	9/16"	9 1/2"	12	7799T3	$4.25
3"	3"	11/16"	10 1/4"	6	7799T5	6.92
4"	3"	11/16"	10 3/4"	6	7799T7	9.75
General Purpose with Synthetic Bristles						
1"	2 1/4"	7/16"	8 1/2"	12	7811T1	3.53
1 1/2"	2 1/2"	1/2"	9"	12	7811T2	4.47
2"	2 3/4"	9/16"	9 5/8"	12	7811T3	5.47
3"	3 1/4"	11/16"	10 7/8"	6	7811T7	8.50
4"	3 3/4"	7/8"	11"	6	7811T5	9.97
Professional with Natural Bristles						
2"	3"	9/16"	11 3/4"	6	7800T33	11.75
3"	3 3/8"	7/8"	10 7/8"	6	7800T35	20.08
4"	3 7/8"	7/8"	11 1/2"	6	7800T37	27.46
Professional with Synthetic Bristles						
2"	2 15/16"	11/16"	10 1/8"	6	7858T41	15.98
3"	3 7/16"	7/8"	10 7/8"	6	7858T43	22.47
4"	3 15/16"	7/8"	11 3/8"	6	7858T45	30.10

♦ Prices are 10% less when you order full package quantities.

For information about paint brushes, see page 2133.

Long-Handle Sash Paint Brushes

Angled General Purpose

Long, thin handles provide extra control and tapered bristles allow for edging and corners. All brushes have wood handles. *Natural bristles* are black; *synthetic bristles* are brown.

General Purpose—*Natural-bristle* brushes have a tin-plated steel bristle holder. *Synthetic-bristle* brushes have a nickel-plated steel bristle holder.

Angled General Purpose—Angled bristles make trim work easy. All have a nickel-plated steel bristle holder.

Professional—Our highest-quality sash brushes, these provide better coverage and hold more paint. All have a stainless steel bristle holder.

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
General Purpose with Natural Bristles						
1″	2¼″	7/16″	10¼″	12	4921T11	$6.50
1½″	2½″	½″	10¾″	12	4921T12	7.78
2″	2¾″	9/16″	11⅜″	12	4921T13	10.90
2½″	3″	⅝″	11⅞″	12	4921T14	14.85
3″	3¼″	11/16″	12¼″	12	4921T15	17.72
General Purpose with Synthetic Bristles						
1″	2½″	7/16″	10½″	12	5104T52	7.03
1½″	2¾″	½″	11⅜″	12	5104T53	7.91
2″	3″	9/16″	11¾″	12	5104T54	10.58
2½″	3″	⅝″	12″	12	5104T55	13.85
3″	3¼″	11/16″	12¼″	12	5104T56	16.82

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
Angled General Purpose w/Natural Bristles						
1″	2¼″	7/16″	10½″	12	7807T1	$6.11
1½″	2½″	½″	11⅛″	12	7807T2	8.05
2″	2¾″	9/16″	11⅝″	12	7807T3	10.62
2½″	3″	⅝″	12¼″	12	7807T4	14.31
3″	3¼″	11/16″	12½″	12	7807T5	18.81
Angled General Purpose w/Synthetic Bristles						
1″	2¼″	7/16″	10½″	12	76105T21	5.90
1½″	2½″	½″	11¼″	12	76105T22	7.12
2″	2¾″	9/16″	11⅝″	12	76105T23	9.68
2½″	3″	⅝″	12¼″	12	76105T24	12.62
3″	3¼″	11/16″	12⅝″	12	76105T25	15.12

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
Professional with Natural Bristles						
2″	2⅞″	9/16″	11⅞″	6	7808T3	$12.78
2½″	2⅞″	⅝″	12¼″	6	7808T4	15.12
3″	3⅛″	⅝″	12½″	6	7808T5	17.24
Professional with Synthetic Bristles						
2″	2 11/16″	9/16″	11¾″	6	77045T44	14.81
2½″	2 15/16″	⅝″	12⅜″	6	77045T45	17.24
3″	3 3/16″	⅝″	12½″	6	77045T46	19.47

Sure-Grip Paint Brushes

Mini Handle

A coated handle ensures a comfortable sure grip. Bristles are tan. ***Standard handle*** brushes have a Teflon®-coated wood handle and a stainless steel bristle holder. ***Mini handle*** brushes have a short, flexible handle for better control in tight spots. Handle is rubber-coated plastic and bristle holder is brass-plated steel.

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
Standard Handle with Teflon®-Coated Synthetic Bristles						
1½″	2½″	½″	11″	6	7268T1	$9.56
2″	2½″	½″	6¾″	6	7268T2	10.38
3″	3″	¾″	12¼″	6	7268T3	16.00
Mini Handle with Synthetic Bristles						
2″	2 3/16″	½″	6¼″	12	7086T12	6.20
Mini Handle with Natural Bristles						
2″	2 7/16″	½″	6¼″	12	7086T11	6.16

Brushes for Thick Coatings

Short, stiff bristles make applying epoxies and thick materials fast and easy. Brushes have a tin-plated steel bristle holder and a plastic handle. 9221T21 has tan/black bristles; 9221T22 has black.

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
1½″	½″	5/16″	6½″	12	9221T21	$2.16
1½″	1″	7/16″	7¼″	12	9221T22	3.53

Smooth-Finish Foam Paint Brushes

These brushes have black polyurethane foam for a smooth paint finish. They also have a chisel tip for detail work. Handles are wood. *Note:* Not for use with shellacs or lacquers.

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.	Pkgs. per Case		Per Pkg. ♦
1″	2″	½″	5¾″	12	5	7754T41	$4.80
2″	2½″	½″	6½″	12	5	7754T42	6.90
3″	2½″	½″	6½″	12	5	7754T43	8.10
4″	2½″	½″	6½″	12	5	7754T44	10.50

Long-Handle Paint Brushes

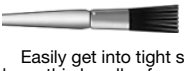

Flat Tip

Dome Tip

Easily get into tight spots and handle detail work. These brushes have long, thin handles for extra control and tapered bristles to cut in or edge. Brushes have black natural bristles and an aluminum bristle holder. *Flat-tip brushes* have wood handles; *dome-tip brushes* have plastic.

Tip	Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
Flat	½″	1¾″	½″	8½″	24	7806T1	$3.53
Flat	¾″	2″	¾″	9⅞″	12	7806T2	4.42
Flat	⅞″	2¼″	⅞″	10⅛″	12	7806T3	5.50
Flat	1″	2¼″	1″	11″	12	7806T4	6.69
Flat	1⅛″	2½″	1″	11½″	12	7806T5	11.77
Dome	⅝″	2″	11/16″	9½″	12	7805T1	10.05
Dome	¾″	2¼″	13/16″	10″	12	7805T2	12.20
Dome	⅞″	2¼″	15/16″	10¼″	12	7805T3	13.27
Dome	1″	2½″	1″	10¾″	12	7805T4	15.12

Fast Applying Paint Brushes

With PTFE-coated bristles, these brushes are ideal for fast-drying water-based paint. Plus, they clean up quickly and easily. They have synthetic bristles, a wood handle, and a nickel-plated steel bristle holder. Bristles are black.

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
1½″	2½″	7/16″	11½″	6	8495T22	$8.74
2″	2½″	7/16″	11½″	6	8495T24	10.23
2½″	3″	⅝″	12⅞″	6	8495T26	11.69
3″	3″	⅝″	12⅞″	4	8495T28	14.63

Extended-Reach Paint Brushes

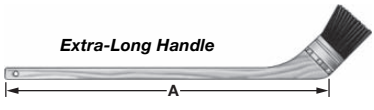

Also known as radiator brushes, these have long, bent handles to get into hard-to-reach areas. All have black bristles and a wood handle. ***Standard handle*** brushes have a tin bristle holder; ***extra-long handle*** brushes have a nickel-coated steel bristle holder.

Wd.	Bristle Lg.	Bristle Thick.	(A)	Pkg. Qty.		Each ♦
Standard Handle with Natural Bristles						
2″	2½″	9/16″	14″	12	7729T12	$11.56
3″	2¾″	11/16″	15″	12	7729T14	16.44
Standard Handle with Synthetic Bristles						
2″	2½″	9/16″	14″	12	7729T22	12.16
3″	3″	11/16″	15″	12	7729T24	17.06
Extra-Long Handle with Natural Bristles						
3″	3½″	11/16″	29½″	12	7729T32	26.58
Extra-Long Handle with Synthetic Bristles						
3″	3½″	11/16″	29½″	12	7729T34	26.58

Hygienic Coating Brushes

Flat Tip

Round Tip

Great for food-service applications, as well as for applying coatings, these brushes have white synthetic bristles and a plastic handle.

The *3″* and *4″ width bristles* come in three colors to reduce cross-contamination. **To Order:** Please specify bristle color: blue, red, or white.

Flat-Tip Brushes

Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
1½″	2″	5/16″	7″	12	9283T212	$7.84
2″	2″	5/16″	7½″	12	9283T222	8.38
3″	2″	5/16″	8¼″	12	9283T23	9.43
4″	2¼″	5/16″	8½″	12	9283T24	10.92

Round-Tip Brush

Bristle Dia.	Bristle Lg.	O'all Lg.	Pkg. Qty.		Each ♦
1″	2″	10″	12	9283T112	$9.70

♦ Prices are 10% less when you order full package or case quantities.

For information about paint brushes, see page 2133.

Detail Paint Brushes

Also known as artist brushes, these are the smallest paint brushes we sell. Use them for precise applications. All have a wood handle except *Style 4*, which has a plastic handle.

(1-4) Flat-Tip Bristle Brushes

Bristle Wd.	Bristle Lg.	Bristle Thick.	O'all Lg.	Pkg. Qty.		Each ♦
(1) Dark-Brown Camel Hair Bristles for Thin Paint						
1/4″	9/16″	5/64″	7″	12	7816T1	$1.59
3/8″	11/16″	1/8″	7″	12	7816T2	1.97
1/2″	3/4″	9/64″	7″	12	7816T3	2.52
(2) Soft, Gold Synthetic Bristles						
5/32″	5/16″	3/32″	7″	6	7664T1	1.55
3/16″	3/8″	7/64″	7 1/8″	6	7664T2	1.93
1/4″	1/2″	1/8″	7 1/4″	6	7664T3	2.03
5/16″	5/8″	1/8″	7 1/2″	6	7664T4	2.24
3/8″	11/16″	9/64″	7 5/8″	6	7664T5	2.66
(3) Black Natural Bristles for Thick Paint						
1/4″	7/8″	5/32″	10 3/4″	12	7809T1	2.17
1/2″	1 1/8″	1/4″	11 1/4″	12	7809T2	3.03
3/4″	1 1/2″	3/8″	11 3/4″	12	7809T3	5.76
1″	1 7/8″	1/2″	12 1/2″	12	7809T4	6.69
1 1/4″	2″	9/16″	12 3/4″	12	7809T6	8.07
						Per Pkg.●
(4) Short Handle w/Brown Pony Hair Bristles						
1/8″	3/8″	1/8″	3 3/8″	25	9602T95	$7.07

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4

♦ Prices are 10% less when you order full-package quantities.

● Price is 10% less when you buy 5 packages.

(5-8) Round-Tip Bristle Brushes

Bristle Dia.	Bristle Lg.	O'all Lg.	Size	Pkg. Qty.		Each ♦
(5) Soft, White Synthetic Bristles						
5/64″	5/16″	7 1/2″	#0	6	7652T11	$1.76
3/32″	3/8″	7 1/2″	#1	6	7652T12	1.90
3/32″	7/16″	7 1/2″	#2	6	7652T13	1.97
1/8″	9/16″	7 1/2″	#4	6	7652T14	2.38
3/16″	11/16″	7 1/2″	#6	6	7652T15	3.07
7/32″	7/8″	7 1/2″	#8	6	7652T16	4.31
1/4″	15/16″	7 1/2″	#10	6	7652T17	5.34
(6) Super Soft, Red Sable Bristles						
5/64″	9/32″	7 1/2″	#0	12	7861T52	1.93
5/64″	5/16″	7 1/2″	#1	12	7861T53	2.00
3/32″	3/8″	7 1/2″	#2	12	7861T54	2.07
7/64″	7/16″	7 1/2″	#3	12	7861T55	2.11
1/8″	1/2″	7 1/2″	#4	12	7861T56	2.25
9/64″	9/16″	7 1/2″	#5	12	7861T57	2.43
5/32″	21/32″	7 1/2″	#6	12	7861T58	2.57
(7) White Natural Bristles for Thick Paint						
3/32″	1/2″	11 5/16″	#0	12	7810T7	1.55
1/8″	11/16″	11 9/16″	#1	12	7810T1	1.83
5/32″	3/4″	11 3/4″	#2	12	7810T2	2.00
3/16″	7/8″	12 3/32″	#3	12	7810T3	2.17
7/32″	1″	12 5/16″	#4	12	7810T4	2.62
9/32″	1 1/16″	12 1/2″	#5	12	7810T5	2.97
5/16″	1 1/8″	12 11/16″	#6	12	7810T6	3.38
(8) Stiff, White Natural Bristles for Stenciling						
3/16″	1/2″	5 1/2″	#1	6	7254T1	1.63
7/32″	9/16″	5 5/8″	#2	6	7254T2	1.87
9/32″	11/16″	6″	#4	6	7254T3	2.17
3/8″	7/8″	6 1/4″	#6	6	7254T4	2.61
7/16″	15/16″	6 1/2″	#8	6	7254T5	3.20

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♦ Prices are 10% less when you order full-package quantities.

Painting Mitt

Slip this mitt onto your hand to easily paint poles, railings, pipes, and fences. Made of washable, 7/8″ thick polyester. Comes with two plastic liners. Package quantity is 12.

♦ Price is 10% less when you order full package quantity.

Mitt ..... 9525T14 Each ♦ $5.23
Liners (100/Box) ..... 9737T253 Per Box 1.76

Paint Brush and Roller-Cover Cleaner

Attach your paint brush or roller cover to this stainless steel cleaner and then pump the handle—paint spins right off. Holds brushes with handles up to 6″ wide and 1/2″ thick and roller covers up to 18″ long. It's 14 1/2″ long.

9065T11 ..... Each $21.54

Paint Roller Covers and Frames

Pair a roller cover with a frame to get your paint job rolling.

Roller Covers

Textured Finish (Carpet Fabric)

Textured Finish (Plastic Loop)

Covers have 1 1/2″ diameter, solvent-resistant cores.

General Purpose— All have a polypropylene core.

Lint Proof— Excellent for high-quality finishes. All have a polypropylene core. *Foam nap covers* are not for use with shellacs or lacquers. *PTFE-coated nap covers* are nonstick so they apply more paint faster and clean up easily.

Textured— Create a textured finish. *Carpet-fabric nap covers* have a phenolic core. *Plastic-loop nap covers* are good for applying anti-slip floor coatings and have a polypropylene core.

Epoxy/Adhesive— Thick coatings go on textured with this cover. It has a very short nap and a polypropylene core.

Cover Lg.	Nap Lg.	For Surface Type	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
General Purpose with Polyester Nap						
4″	3/8″	Semismooth	12	7744T2	$2.11	$1.87
7″	1/2″	Semismooth	12	9542T63	4.37	3.87
9″	3/8″	Smooth	16	9542T52	5.70	4.93
9″	1/2″	Semismooth	12	9542T53	5.70	5.10
9″	3/4″	Semirough	9	9542T54	6.50	5.77
9″	1″	Rough	6	9542T55	6.62	5.98
9″	1″	Rough	9	9542T56	7.76	6.85
18″	3/8″	Semismooth	12	7875T13	7.70	6.86
18″	1/2″	Semismooth	10	7875T14	9.09	8.11
Lint Proof with Foam Nap						
9″	1/2″	Smooth	24	95535T93	4.18	3.76
9″	3/4″	Semirough	24	95535T94	5.27	4.74
Lint Proof with Fabric Nap						
4″	3/16″	Smooth	24	7755T2	2.29	2.05
4″	3/8″	Semismooth	24	7755T1	2.72	2.43
4″	1/2″	Semirough	24	7755T41	3.05	2.73
9″	3/16″	Smooth	12	7755T3	5.24	4.68
9″	1/4″	Smooth	12	9542T51	5.70	4.93
9″	3/8″	Semismooth	12	7755T4	5.67	5.06
9″	1/2″	Semirough	12	7755T5	6.03	5.39
9″	3/4″	Rough	12	7755T43	6.53	5.87
18″	3/16″	Smooth	6	7755T6	13.26	11.85
18″	3/8″	Semismooth	6	7755T7	13.69	12.23
Lint Proof with PTFE-Coated Fabric Nap						
9″	3/8″	Semismooth	24	9542T65	5.22	4.71
9″	1/2″	Semismooth	15	9542T66	5.92	5.34
9″	3/4″	Semirough	8	9542T67	6.24	5.63
Textured with Carpet-Fabric Nap						
9″	3/8″	Rough	12	9151T21	6.57	5.90
Textured with Plastic-Loop Nap						
9″	1/4″	Semirough	12	9151T22	6.66	5.98
Epoxy/Adhesive with Nylon Nap						
9″	1/8″	Any	12	9151T31	3.97	3.56

Roller Frames

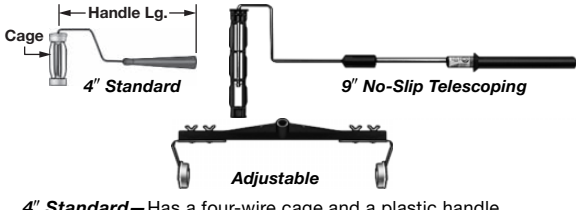

4″ Standard— Has a four-wire cage and a plastic handle.

7″ and 9″ Standard— Have a five-wire cage and a plastic handle.

7″ and 9″ No-Slip— Have a plastic cage with no-slip tabs to hold roller cover in place. *7″ no-slip standard* has a plastic handle. *9″ no-slip standard* has a plastic handle with a rubber-coated grip for comfort. *9″ no-slip telescoping* has a ribbed, rubber handle that telescopes from 18″ to 34″.

18″ Adjustable— Frame is high-impact plastic with steel brackets and includes two sets of end caps for 1 1/2″ and 2 1/4″ dia. covers. Has a 3/4″ Acme female threaded hole for a handle; does not include handle.

For Roller Cover Lg.	Handle Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4″ Standard	12″	12	7744T3	$2.28	$2.03
7″ Standard	15″	12	7812T23	6.78	6.07
9″ Standard	12 7/8″	12	7812T21	4.88	4.38
7″ No-Slip Standard	15″	6	7023T6	12.48	11.20
9″ No-Slip Standard	12 3/4″	3	7023T1	7.80	7.03
9″ No-Slip Telescoping	18″-34″	10	7812T28	16.75	15.07
18″ Adjustable	_____	12	7812T25	18.96	17.05

For paint stirrers, see page 509.

Miniature Paint Rollers

Trayless

Long Reach

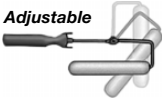

Adjustable

Paint in tight spots that standard size rollers could never get into. All rollers have a single steel-rod frame (unless otherwise stated) and a plastic handle with a 3/4″ Acme female threaded hole for an extension (not included).

Trayless— No need for a paint tray, this roller fits into a 1-gal. paint can. Cover is 4″ long with a 3/8″ long polyester nap and a 1/4″ dia. plastic core. Use on smooth and semismooth surfaces. Handle is 16″ long. Package quantity is 10.

Long Reach— A long handle lets you get into hard-to-reach spots. Cover is 6 1/2″ long with a 1/2″ long polyester nap and a 1/4″ dia. polypropylene core. Use on semismooth surfaces. Frame is chrome-plated steel. Handle is 25 5/8″ long. Package quantity is 6.

Adjustable— To get into and around odd-shaped spaces, this roller easily adjusts position. Cover is 6″ long with a 3/8″ long nylon nap and a 17/64″ dia. PVC core. Use on smooth and semismooth surfaces. Handle is 14″ long (10 1/2″ to pivot point). Package quantity is 12.

Prices are 10% less when you order full package quantities.

Trayless Roller	94915T45	Each	$5.19
Long-Reach Roller	7751T6	Each	7.43
Adjustable Roller	7913T21	Each	9.13
Repl. Cover for Trayless Roller (2/Set)	94915T46	Per Set	4.62
Repl. Cover for Long-Reach Roller	7751T8	Each	4.55
Repl. Cover for Adjustable Roller	7913T22	Each	2.50

Paint Strainers

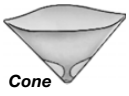

Cone

Bag

Remove impurities from paints and coatings before you apply them. ***Cone strainer*** is cotton mesh with a medium (400 micron) opening size and has a 6 1/2″ dia. top. ***Bag strainers*** are polyester mesh with a medium (530 micron) opening size and have an elastic top that fits over a 1-gal. or 5-gal. container.

Strainer Style	Pkg. Qty.	Pkgs./ Case		Per Pkg. Partial Case	Per Pkg. Full Case
Cone	4	25	95495T38	$1.26	$1.10
Bag (1 gal.)	2	12	95495T42	2.89	2.52
Bag (5 gal.)	2	12	95495T45	3.53	3.10

Paint Trays, Tray Liners, and Grids

Paint Trays and Tray Liners

4″ Roller Tray

9″ Metal Roller Tray, 1-qt. Capacity

9″ Roller Bucket

Cap.	Material	Trays Pkg. Qty.	Trays Each ♦	Plastic Liners Pkg. Qty.	Plastic Liners Each ♦
4″ Roller Tray					
12 oz.	Plastic	48	7818T7	—	—
9″ Roller Tray					
1 qt.	Metal	24	7818T15	144	7818T16 $0.78
2 qt.	Plastic	24	7818T13	50	7818T18 1.12
2 qt.	Metal	10	7818T12	—	—
3 qt.	Plastic	12	7818T14	50	7818T24 1.29
9″ Slick-Surface/Easy-Clean Roller Tray					
1 1/2 qt.	Metal	8	7818T38	—	—
9″ Roller Bucket					
4 gal.	Plastic	6	7818T4	—	—
18″ Roller Tray					
1 gal.	Plastic	10	7818T37	—	—

♦ Prices are 10% less when you order full package quantities.

Paint Can Grids

Put one of these steel grids into your paint can to remove excess paint from your roller while painting right from the can.

For Can Size	Maximum Paint Roller Cover Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1 gal.	4″	24	7893T15	$2.20	$1.88
2 gal.	7″	24	7893T16	2.37	2.09
5 gal.	9″	12	7893T14	2.62	2.30

Paint Roller for Round Surfaces

A spring-steel frame flexes around surfaces, making it easy to paint pipes and columns. Cover is 7″ long with a 3/4″ long polyester nap (made of five 1 1/2″-wide strips) and a 1 1/2″ dia. phenolic core. For use on semismooth and semirough surfaces. Has a 11 1/2″ long wood handle with a 3/4″ Acme female threaded hole for extensions (not included). Package quantity is 6.

♦ Price is 10% less when you order full package quantity.

Roller	7814T12	Each ♦	$25.30
Repl. Cover (5/Set)	7814T14	Per Set	16.24

Disposable Paint Rollers

Touch-Up Paint Roller Kit— In addition to the roller, you get a mini plastic paint tray. Cover is 1″ Dia. × 3″ Lg. with a 1/4″ long mohair nap on a polypropylene core. Use on smooth and semismooth surfaces. Frame is a single plastic rod. Roller has a 5″ long plastic handle.

Paint Roller for Round Surfaces— This concave roller paints round surfaces up to 2 1/2″ dia. Cover is 3 3/4″ dia. with a polyester foam nap and a polypropylene core. Use on any surface. Frame is a single steel rod. Roller has a 11 3/4″ long plastic handle with a 3/4″ Acme female threaded hole for an extension (not included).

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Roller Kit	6	77845T84	$4.72	$4.25
Roller for Round Surfaces	12	10355T35	7.04	5.96

Easy-Pour One-Gallon-Can Lid

Pop this reusable plastic lid onto your 1-gal. can for controlled, no-drip pouring. Color is red.

8047T2 ..... Each $3.53

Paint Pails

Just fill and carry these pails where you need paint. ***2 1/2-*** and ***5-qt. pails*** have graduations.

Cap.	Pail Material	Handle Material	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
8 oz.	Paper	—	50	77505T21	$0.14	$0.12
2 1/2 qt.	Paper	—	50	77505T23	2.28	2.04
5 qt.	Paper	—	50	77505T22	3.04	2.72
5 qt.	Polyethylene	Steel	24	77505T24★	3.53	3.16
5 qt.	Steel	Steel	24	77505T25	5.66	5.05

★ Spring-steel reinforced rims.

Telescoping Extension Handles

Twist Lock *Push-Button Lock*

Roller too short? Add length with one of these extension handles. All have 3/4″ Acme male threaded ends, a fiberglass outer handle with a ribbed grip, and an adjustable aluminum inner extension pole.

Standard— Have a twist-lock handle. Outer handle is 1 1/16″ dia. and inner pole is 7/8″ dia. (unless noted).

Heavy Duty— Have sturdier construction for excellent stability when extended. Outer handle is 1 1/4″ dia. and inner pole is 1″ dia. (unless noted). ***Push-button lock*** handles are faster to adjust; inner pole adjusts in 6″ increments (3″ for 77305T62) with the push of a button.

Approx. Lg., ft.	Standard Twist Lock	Each	Heavy Duty Twist Lock	Each	Heavy Duty Push Button	Each
2 to 4	7743T61	$19.40	78005T41	$20.35	77305T62	$31.66
3 to 5	—	—	—	—	77305T63	36.11
4 to 7	7743T62	24.08	78005T42	27.58	77305T64	42.68
6 to 11	7743T63	31.18	78005T43	35.16	77305T65	52.95
6 to 18	7743T64●	53.98	78005T44●	58.82	—	—
8 to 15	7743T65	44.53	78005T45	49.74	77305T66	63.68
8 to 23	7743T66●	64.99	—	—	—	—

● Three-piece poles: 1 1/4″ outer handle with 1″ and 7/8″ inner poles.

Tack Cloths

Use these soft, tacky cloths to remove dirt, lint, and dust from your surfaces before you paint. Available in packages of twelve 18″ × 36″ cloths or a 36″ × 150 yd. roll (comes folded to 4-ply with a 9″ width).

Cloths	9507T12	Per Pkg.	1-11 $11.66	12-Up	$10.46
Roll	9507T15	Each	$115.86		

Drop Cloths

Canvas—Absorb paint and minimize tracking. All are 8 oz./sq. yd. canvas except 7884T17, which is 12 oz./sq. yd. canvas. Edges are finished with mildew-resistant thread. Color is off-white. *Note:* Other floor protection can be found on page 2092.

Polyethylene—An economic alternative to canvas drop cloths. They are seamless and 4 mils thick. Color is clear.

Nonskid Recycled Fabric—Made of recycled fabric with a skid-resistant polyethylene backing that also prevents spills from leaking through. Cloths are 1/16″ thick. Color is gray.

Size	Pkg. Qty.		Each ♦
Canvas			
5′× 5′	12	7884T17	$11.73
4′×15′	12	7884T19	16.80
9′×12′	6	7884T25	24.89
12′×15′	6	7884T26	41.64
14′×16′	4	7884T27	51.73
20′×20′	4	7884T28	93.70

Size	Pkg. Qty.		Each ♦
Polyethylene			
9′× 12′	12	3546T62	$5.51
12′× 15′	6	3546T69	8.88
Nonskid Recycled Fabric			
40″× 12′	10	8362T31	18.55
			Each
40″×100′	1	8362T32	$99.90

♦ Prices are 10% less when you order full package quantities.

Air Brushes

Air-Brush Kits

These siphon-feed kits require 0.259 cfm of air at 30 psi to operate; paint and air mix inside the nozzle. **Also Available:** Replacement parts not listed below. Please ask for 9546T88 and specify part required.

Dual-Control Kit—Separate controls adjust air and paint. Includes an air brush (makes 1/32″ to 2 1/2″ wide paint lines), a 7-oz. (net wt.) aerosol air can as the air source, an aerosol air-can regulator, a 4-ft. long vinyl air hose, a 3/4-oz. glass siphon jar, two 3/4-oz. plastic siphon jars. To use sprayer with an air compressor, instead of the aerosol air can, you need an ***air compressor adapter*** (sold separately) with a 1/4″ NPSM female connection.

Easy-Control Kit—One control adjusts air and paint. Includes an air brush (makes 1/32″ to 2 1/2″ wide paint lines), an additional spray head (makes 1/16″ to 3″ wide paint lines), a 5-ft. long braided air hose, a 1/4-oz. nickel-plated-brass siphon jar, a 3/4-oz. glass siphon jar, a 2-oz. glass siphon jar, a 1/4″ NPSM female fitting for connection to an air compressor, a wrench, and a storage case. As an alternative to an air compressor, you can hook an ***aerosol air can*** to the air brush with an ***aerosol air-can adapter*** (both sold separately).

Replacement spray heads come in the following spray patterns: pencil line to 2″ wide line and 1/16″ to 3″ wide line (for Easy-Control Kit); 1/32″ to 2 1/2″ wide line (for both kits). **To Order:** Please specify spray pattern. ***Replacement jar set*** includes 3/4-oz. and 2-oz. glass siphon jars with covers and two siphon tubes. The ***aerosol air-can adapter*** includes an air regulator and 8-ft. long vinyl air hose.

Dual-Control Kit	9546T13	**Each**	$75.51
Air Compressor Adapter for Dual-Control Kit	9546T52	**Each**	$4.61
Easy-Control Kit	9546T11	**Each**	$114.47
Replacement Spray Heads	9546T15	**Each**	$23.99
Replacement Jar Set	9546T17	**Per Set**	$7.21
Aerosol Air Can (13 oz. net wt.)	9546T73	**Each**	$14.66
Aerosol Air-Can Adapter	9546T12	**Each**	$19.15

Easy-Control Kit

Combination Kit

Combination Air-Brush Kit

Includes three air brushes (one for thin lines, one for medium lines, and one for thick), one 3-oz. plastic siphon jar, and one 6-ft. long braided air hose with 1/4″ NPS female fittings.

Thin-line air brush, also known as gravity-feed, is nickel-plated brass and makes a 1/32″ wide paint line. Includes a 1 1/2-oz. aluminum cup.

Medium-line air brush, also known as siphon feed, is nickel-plated brass and makes a 1/32″ to 1 1/4″ wide paint line. Requires 0.5 cfm of air at 20 psi to operate. Paint and air mix outside nozzle. You can adjust paint flow while painting.

Thick-line air brush, also known as siphon feed, is plastic and makes a 1″ to 3 1/2″ wide paint line. Requires 1 cfm of air at 20 psi to operate. Paint and air mix inside nozzle.

Combination Kit	7856T79	**Each**	$115.64
3-oz. Glass Siphon Jar and Cover	7856T75	**Each**	$5.52

Water-Based Air-Brush Paint

Comes in 1-oz. plastic bottles. Package quantity is 6. **To Order:** Please specify color: black, blue, green, red, yellow, or white.

7867T5 ..... **Each** Partial Pkg. $4.46 Full Pkg. $3.79

Electric Paint Sprayers

Also known as airless paint sprayers, these sprayers atomize paint and apply a thin, even coat. Include a fluid hose (unless noted), suction tube to draw paint from a container, and paint sprayer with tip.

Carry-style sprayers have a handle; ***cart-style sprayers*** have a hose holder and wheels for easy mobility. ***Maintenance kits*** include paint-sprayer parts that are prone to wear.

Replacement Tips—Choose small tips for thin coatings; large tips for thicker coatings and faster spray speeds. **To Order:** Please specify tip size: 0.023″ or 0.039″ for *Style 1*; 0.011″, 0.013″, 0.015″, or 0.017″ for *Style 2*; and 0.011″, 0.013″, 0.015″, 0.017″, 0.019″, 0.021″, or 0.023″ for *Style 3*.

(1) Economy—Includes a 1 1/2-qt. plastic cup, a 1-gal. backpack container (9 5/8″ Ht.×9 5/8″ Wd.×5 1/8″ Dp.) with disposable plastic liner, and a piston pump with two speeds. For occasional use with thin and thick coatings. Operates on 110 VAC, 60 Hz. Includes 16″ cord with three-prong plug.

(2) Medium Duty—Both have a diaphragm pump for constant pressure, an adjustable control spray and working pressure, a tubular-steel frame, and a 2-ft. cord with three-prong plug. Operate on 110/115 VAC, 60 Hz. For continuous use with thin and thick coatings. *Cart style* can spray very thick coatings and includes 10″ dia. polyurethane and rubber wheels. **Also Available:** Replacement parts not listed below. Please ask for 78505T21 and specify part required.

(3) Heavy Duty—Both have a piston pump, a tubular-steel frame, and a tip guard. For continuous use with thin to very thick coatings. Motor shuts off and turns on with changes in pressure. Operate on 120 VAC, 60 Hz. *Carry style* has an 8-ft. cord with three-prong plug. *Cart style* has two 10″ dia. rubber wheels and a 15-ft. cord with three-prong plug. **Also Available:** Replacement parts not listed below. Please ask for 74485T24 and specify part required.

(4) High Volume/Low Pressure (HVLP)—Reduce overspray and provide superior control by consuming higher volumes of air at lower pressures. Use with thin coatings. Operate on 120 VAC, 60 Hz. Include a 6-ft. cord with three-prong plug. 7180T64 includes a 1 1/2-qt. plastic cup attached directly to the sprayer; 7180T65 includes a 1-qt. metal cup.

Style	O'all Size, Ht.×Wd.×Dp.	Paint Output, gpm	Max. psi	Tip Size Included	Tip Size Max.	Fluid Hose Lg.	hp	Amps	Spray Systems	Each	Maintenance Kits	Each	Replacement Tips	Each
(1) Economy														
Carry	9 1/2″× 2 7/8″ × 8 5/8″	0.11★	2,400	0.039″	0.039″	5 ft.	—	2.7	9461T1	$153.90	9461T8	$21.46	9461T5	$21.06
(2) Medium Duty														
Carry	22″ ×20″ ×18″	0.28●	3,000	0.013″	0.015″	25 ft.	1/2	7.1	78505T61	447.60	78505T82	23.84	78505T56	31.39
Cart	37″ ×17″ ×20″	0.34●	3,000	0.015″	0.017″	25 ft.	3/4	7.1	78505T62	498.88	78505T59	23.83	78505T56	31.39
(3) Heavy Duty														
Carry	16 3/8″×14 5/16″×17 3/16″	0.54★	3,300	0.017″	0.023″	50 ft.	7/8	8.7	74485T22	1,047.06	74485T96	81.56	74485T7	26.55
Cart	31″ ×19″ ×24″	0.70★	3,300	0.017″	0.027″	50 ft.	1.55	11	74485T25	2,121.43	74485T96	81.56	74485T7	26.55
(4) High Volume/Low Pressure (HVLP)														
Carry	11 1/2″×14″ × 7″	0.085★	1.75	0.125″	0.125″	♣	—	2.5	7180T64	108.33	—	—	—	—
Carry	15 3/4″×18 1/4″ ×17 1/4″	0.10★	4	0.047″	0.047″	20 ft.	—	5	7180T65	556.46	—	—	—	—

★ At maximum psi. ● At 2,000 psi. ♣ Does not include a hose.

Replacement Parts and Accessories

Repl. Backpack Liners for Style 1 (5/pkg.)	9461T6	**Per Pkg.**	$4.58
Repl. Alum. Spray Gun w/0.015″ Tip for Style 2	78505T63	**Each**	$152.10
Repl. Alum. Spray Gun w/0.017″ Tip for Style 3	74485T9	**Each**	$151.22
Adjustable (0.004″ to 0.020″) Tip for Style 3	74485T39	**Each**	$53.29

Air-Powered Paint Sprayers

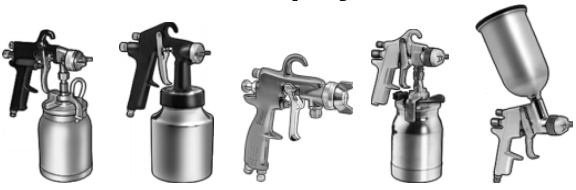

1&2 3 4&5 6 7

Compared to brushing and rolling, these paint sprayers save time and produce superior finishes. As you pull the trigger, air passes through the sprayers to atomize your paint or coatings into a fine spray for easy, even application. The trigger controls air flow, and air flow controls paint flow. Sprayers mix air and paint externally from the nozzle (making them great for fast-drying coatings) and have an adjustable spray pattern. Spray guns have a 1/4″ NPS male air inlet connection and a 3/8″ NPS male fluid inlet connection (unless noted). See page 240 for hose.

Not for use with pesticides, insecticides, gasoline, ethanol, acetone, alcohol, harsh chemicals, or caustic solutions.

Maintenance kits include various O-rings, seals, washers, gaskets, valves, and packing and installation tools.

(1-3) Conventional

These sprayers provide the best finish, but create a significant amount of overspray. Include a 32-oz. aluminum cup.

(1) General Purpose— Also known as siphon feed. It has a die cast aluminum spray gun body with a black painted finish.

(2) For Latex— Also known as siphon/pressure feed. Designed to spray latex paint as well as other thick coatings without thinning. Spray-gun body is die cast zinc with a black painted finish.

(3) Adjustable— Also known as siphon/pressure feed. Air flow can either be continuous or activated by the trigger and the air and coatings can either be mixed internally or externally from the nozzle. Spray-gun body is die cast aluminum with a black painted finish.

(4&5) Heavy Duty

Made of drop-forged aluminum with an anodized finish, these sprayers are built to last. Not for use with thick road-marking paint, adhesives, wrinkle paints, or concrete curing compounds.

Also Available: Replacement parts. Please ask for 7841T88 and specify part required.

(4) General Purpose— Also known as siphon/pressure feed. Includes a 32-oz. cup. Has a silver finish.

(5) Corrosion Resistant— Also known as siphon or pressure feed. All fluid passages are stainless steel for water-based as well as solvent-based coatings. Does not include a cup. Finish is black.

(6&7) Low-Overspray HVLP (High Volume, Low Pressure)

Spray-gun bodies are drop-forged aluminum with a nickel-plated finish. Not for use with thick fluids. **Also Available:** Replacement parts. Please ask for 77745T66 for siphon-feed sprayer parts and 77745T77 for gravity-feed sprayer parts.

(6) General Purpose— Also known as siphon feed. Includes a 32-oz. aluminum cup.

(7) High Output— Also known as gravity feed. Better, more efficient coating atomization for faster application than siphon feed. Includes a 23-oz. aluminum cup.

Feed	cfm @ psi	Fluid Thickness for Spraying	Tip Size	Nozzle Material	Paint Sprayers	Each	Maintenance Kits	Each
Conventional Paint Sprayers								
1 Siphon	7.0 @ 40	Low to Medium	0.07″	Stainless Steel	7896T3	$81.49	7896T51	$24.95
2 Siphon/Pressure	7.5 @ 40	Low to Heavy	0.07″	Brass	7548T9 ♦	120.00	7548T91	22.51
3 Siphon/Pressure	4.3 @ 40	Low to Heavy	0.05″	Black-Oxide Steel	7872T16	115.75	7872T26	46.98
Heavy Duty Paint Sprayers								
4 Siphon/Pressure	7.9 @ 30	Low to Heavy	0.07″	Stainless Steel	9531T6	277.29	9531T41	15.21
5 Siphon/Pressure	11.0 @ 30	Low to Medium	0.07″	Stainless Steel	7841T1	233.73	7841T3	27.43
Low-Overspray HVLP (High Volume, Low Pressure) Paint Sprayers								
6 Siphon	11.2 @ 30	Low to Medium	0.09″	Stainless Steel	77745T71	440.85	77745T63	45.78
7 Gravity	14.4 @ 29	Low to Medium	0.06″	Stainless Steel	9383T9 ■	440.85	77745T63	45.78

♦ Has 1/4″ NPT male air and fluid inlet connections. ■ The fluid inlet connection is 5/8″-11 UNC female.

Pressurized Paint Tanks for Air-Powered Paint Sprayers

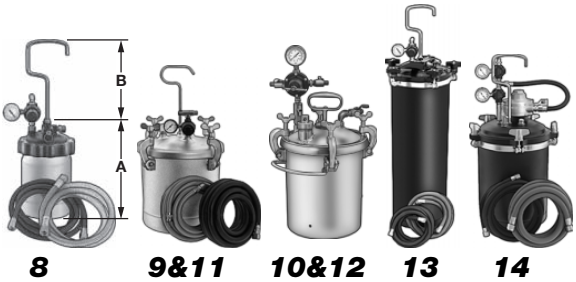

8 9&11 10&12 13 14

5 gal.

Attach a tank to your paint sprayer to quickly and easily apply thick coatings on large projects. Operate up to a maximum pressure of 50 psi (unless noted). Include a pressure regulator with a gauge, a safety relief valve, and a gasketed cover; a PVC air hose with 1/4″ NPS female connection (unless noted); and a PVC fluid hose with 3/8″ NPS female connection (unless noted). Carrying handle doubles as a ladder/scaffold hanger. See page 240 for replacement hose.

Also Available: Replacement parts. Please ask for 7853T5 for aluminum and coated-steel tank parts or 9590T5 for stainless steel and zinc-plated steel tank parts.

Tank liners are polypropylene (unless noted) and minimize cleanup.

(8) Aluminum Tank— Lightweight for easier portability.

(9&10) Stainless Steel Tanks— Made of Type 304 stainless steel for superior corrosion resistance. *Style 10* is ASME certified.

(11&12) Zinc-Plated Steel Tanks— Tank is zinc plated inside and out for corrosion resistance. *Style 12* is ASME certified.

(13&14) Coated-Steel Tanks— Coated with black PTFE, inside and out, for corrosion resistance and easy cleaning. *Style 14* has a 3/4-hp air motor with stainless steel propeller to keep thick and textured coatings mixed while being applied.

Tank Cap.	Inside Tank Size, Dia.×Ht.	Outside Tank Ht. (A)	Handle Lg. (B)	Air/Fluid Hose Lg.	Tanks	Each	Tank Liners Pkg. Qty.		Per Pkg.	Repl. Cover Gaskets Pkg. Qty.		Per Pkg.
Aluminum Tank												
8 2.5 qt.	6″ × 7 1/2″	10 1/4″	7 3/4″	5 ft.	7853T12 ♠	$135.59	—	—	—	3	7853T26	$25.61
Stainless Steel Tanks												
9 2.5 gal.	8 1/2″×10 1/2″	10 3/4″	7 3/8″	15 ft.	1380T3 ▲	282.19	3	7853T31 ♣	$13.33	1	7853T32	12.00
10 2.8 gal.	9 1/2″× 9 1/2	13 13/16″	9 1/4″	—	7819T27 ●	1,011.50	1	7819T32 ♣	4.82	1	7819T34	47.87
Zinc-Plated Steel Tanks												
11 2.5 gal.	9 3/8″× 9 1/4″	11″	8″	15 ft.	9590T11 ▲	152.26	6	9590T15 ♣	15.82	1	9590T23	7.40
12 2.8 gal.	9 1/2″× 9 9/16″	10 1/2″	9 1/4″	—	7819T26 ■	435.45	1	7819T32 ♣	4.82	1	7819T36	26.26
Coated Steel Tanks												
13 2.5 gal.	8 1/2″×10 1/2″	13 1/2″	7 3/4″	10 ft.	7853T14 ♠	205.43	3	7853T17	22.86	3	7853T25	28.57
13 5 gal.	8 1/2″×24″	26″	7 3/4″	10 ft.	7853T24 ♠	356.15	5	7853T33	18.78	3	7853T25	28.57
Coated Steel Tank with Agitator												
14 2.5 gal.	8 1/2″×10 1/2″	12 1/2″	7 3/4″	10 ft.	7853T34 ♠	793.78	3	7853T17	22.86	3	7853T25	28.57

Hose Set for Tank Styles 10 and 12

25-ft. Rubber Air Hose w/ 1/4″ NPS Female Connection; 25-ft. Rubber Fluid Hose w/ 3/8″ NPS Female Connection .... 7819T14 **Each** $151.62

♠ Air hose has 1/4″ NPT female connection; fluid hose has 3/8″ NPT female connection. NPT threads are compatible with NPS threads.

▲ Fluid hose is rubber. ♣ Liner is polyethylene.

● Operates up to a maximum pressure of 110 psi and does not include air and fluid hoses; hose set sold separately.

■ Operates up to a maximum pressure of 80 psi and does not include air and fluid hoses; hose set sold separately.

Paint Sprayer Air Filter/Dryer/Regulator

Regulate air pressure and keep the air supplied to your paint sprayer dry and dust free. Includes a gauge, bracket, 5½-ft. air hose, filter/dryer that changes color when it needs to be replaced, and belt clip. Maximum pressure is 125 psi. Inlet connection is ¼″ NPT female; air hose outlet is ¼″ NPT male. Size is 1 11/16″ Dia. × 3¾″ Lg.

Replacement filter/dryers come in packages of 2.

Air Filter/Dryer/Regulator	77035T65	Each	$61.56
Repl. Filter/Dryers	77035T66	Per Pkg.	$17.58

Spray-Booth Filters

Collect paint overspray inside spray booths to prevent paint buildup on fans, fan motors, and vent stacks. UL listed Class 2 (unless otherwise stated).

***Fiberglass Filters*—**The most economical, these provide moderate filter density/efficiency. The density of the filter fibers increases from the front to the back. *20″ wide filters* are 2″ thick; *24″, 48″, and 60″ wide filters* are 2½″ thick.

***Fiberglass Filters with Backing*—**Similar to the filters above, but with a polyester backing for superior filter density/efficiency. All are 3″ thick.

***Expanded-Paper Filters*—**More efficient than fiberglass filters, these are made of layers of paper joined by thread. All are ½″ thick. Not UL listed.

***Polyester Filters*—**Have the highest filter density/efficiency. All are moisture resistant and ⅝″ thick.

Wd. × Lg.	Pkg. Qty.		Per Pkg.
Fiberglass			
20″ × 20″	25	78435T38	$20.18
20″ × 25″	25	78435T39	24.59
24″ × 200′	1	78435T21	99.74
48″ × 200′	1	78435T22	201.33
60″ × 300′	1	78435T41	377.51
Fiberglass with Backing			
20″ × 20″	20	5486T11	30.20
20″ × 25″	20	5486T12	37.22
24″ × 200′	1	5486T21	174.55
48″ × 200′	1	5486T22	341.42

Wd. × Lg.	Pkg. Qty.		Per Pkg.
Expanded Paper			
20″ × 20″	70	78435T51	$70.56
20″ × 25″	70	78435T52	85.56
45″ × 40′	1	78435T53	52.39
Polyester			
20″ × 20″	25	21715K14	48.12
20″ × 25″	25	21715K15	56.00
20″ × 90′	1	21715K42	84.26
45″ × 90′	1	21715K43	176.55
50″ × 90′	1	21715K44	195.27
72″ × 90′	1	21715K46	281.22

Bench-Top Spray Booth

Small enough to fit on bench and table tops, this spray booth is perfect for containing paint overspray on small jobs. Fumes are discharged through the 4″ dryer duct connection.

Collector is 20-ga. galvanized steel and has two 8″ × 17″ filters (one polyester; one carbon), an exhaust motor, and a 6-ft. long power cord with three-prong plug. Size is 18½″ Ht. × 22″ Wd. × 20″ Dp. Exhaust motor is 0.43 amps, 115 VAC, 60 Hz and provides 270 cfm of air flow.

See page 240 for flexible duct; page 625 for rigid duct.

		Each
Overspray Collector	9559T51	$275.42
Replacement Polyester Filter	9559T52	2.22
Replacement Carbon Filter	9559T53	6.78

Replacement Parts for Binks Air-Powered Paint Sprayers

Needle

Air Cap

Fluid Nozzle

Binks Part No.	For Sprayer Model		Each
Needles			
54-3941	Mach 1	7220T21	$20.77
54-4382	Mach 1SL	7220T22	19.62
563A	2001	7220T23	19.04
565	2001	7220T24	19.04
665	95	7220T26	19.04
Air Caps			
94P	Mach 1, Mach 1SL	7220T12	52.79
63PB	2001, 95	7220T13	55.96
66SD	2001, 95	7220T14	55.96
Fluid Nozzle			
66SS	2001, 95	7220T19	47.88
Repair Kits*—*Include springs, gaskets, air valves, & seals.			
54-3605/54-3577	Mach 1, 95	7220T27	30.76
54-4278/54-4367	Mach 1SL	7220T28	35.38
6-229	2001	7220T29	19.48

Replacement Paint-Sprayer Cups

Siphon *Gravity*

***For Siphon-Feed Sprayers*—**This polished aluminum cup has ⅜″ NPSM female fluid inlet threads and a locking cap with gasket. Capacity is 32 oz. Size is 4¼″ Dia. × 8¾″ Ht.

Cup	7911T14	Each	$55.45
Repl. Gasket (1/Pkg.)	7911T24	Per Pkg.	$3.43

***For Gravity-Feed Sprayers*—**This aluminum cup has a ⅜″ NPSM male fluid outlet and a gasket-free lid. Capacity is 23 oz. Size is 3½″ Dia. × 6¼″ Ht.

Cup	77745T811	Each	$55.23

Spray-Booth Peel-Away Coatings

Just brush, roll, or spray on and then peel off when covered with paint. These water-based coatings have very low odor and dry in an hour. For indoor use only. Apply between 65° and 70° F. Meet OSHA requirements. These products are compliant under all state VOC rules in effect on October 1, 2008.

One gallon of clear covers 275-300 sq. ft. at 2 mils thick; one gallon of white covers 250-275 sq. ft. at 2 mils thick.

Size	Clear	Each	White	Each
1 gal.	7874T67	$31.00	7874T65	$31.00
5 gal.	7874T68	153.88	7874T66	153.88

Spray-Booth Masking Paper

Keep floors in spray booths free of paint overspray and spills. Paper is flame retardant, absorbent, and 9.5 mils thick. Color is white. Meets OSHA requirements.

Roll Width	100-ft. Lengths	Each	300-ft. Lengths	Each
36″	95005T44	$48.25	95005T64	$92.07
42″	95005T45	53.47	95005T65	107.08
60″	95005T46	64.72	95005T66	144.95

Spray Booths

Contain paint overspray on large projects with these three-sided, 18-ga. galvanized steel spray booths. All include 20″ × 20″ UL listed Class 2 filters, galvanized steel filter frames, a gauge that indicates when filters need to be changed, interchangeable top or rear exhaust discharge connections, and a motor that must be hardwired. All except 7866T83 and 7866T85 include light fixtures. Light fixtures are vapor resistant and ETL listed (U.S. and Canada) Class 1, Division 2, Groups A, B, C, and D. Each fixture accepts four 32-watt, 48″ long bi-pin fluorescent bulbs (included).

Motors are 3-phase (208/230/460 VAC), 60 Hz and UL listed. They provide 125 fpm (feet per minute) of air flow for exhausting when used with up to 25 ft. of straight exhaust duct (not included). *Standard motor* is totally enclosed fan cooled (TEFC). *Hazardous-location motor* is for UL listed Class 1, Group D, and UL listed Class 2, Groups F and G environments.

Spray booths are shipped unassembled (hardware included). Conform to OSHA and NFPA (National Fire Protection Association) regulations.

See page 240 for flexible duct; page 625 for rigid duct.

Spray Booth with Workbench

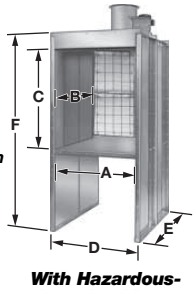

Working Area, Wd. × Dp. × Ht. (A × B × C)	Overall Size, Wd. × Dp. × Ht. (D × E × F)	Workbench Ht.	No. of Filters	No. of Light Fixtures	Fan Motor hp	Amps @ 230 VAC	Air Flow, cfm	Exhaust Fan Duct Dia.	With Standard Motor	Each	With Hazardous-Location Motor	Each
Spray Booths with Workbench												
36″ × 24″ × 48″★	40″ × 50″ × 86″	36″	2	0	⅓	1.5	1,200	12″	7866T83	$2,338.98	7866T85	$2,644.07
60″ × 36″ × 48″★	64″ × 62″ × 86″	36″	6	1	½	2.4	2,000	18″	7866T84	2,906.22	7866T86	3,361.02
Extra-Deep Spray Booths without Workbench												
72″ × 72″ × 84″	76″ × 110″ × 86″	—	12	1	1	3.0	5,250	24″	7899T91	3,562.71	7899T92	3,737.29
96″ × 72″ × 84″	100″ × 110″ × 86″	—	16	1	2	5.4	7,000	24″	7899T93	3,786.44	7899T94	3,949.15
120″ × 72″ × 96″	124″ × 110″ × 98″	—	20	2	3	8.4	10,000	30″	7899T95	4,885.29	7899T96	5,772.88

★ Working area is measured from the top of the workbench.

Step Stools

1

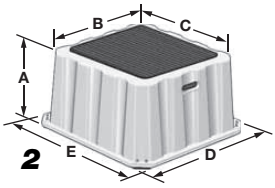

2

3

4

5

6 80135T46

7

8

9

Get a secure and stable step up. All stools have nonskid rubber feet and slip-resistant tops.

Style 1 has a 10¾″ Ht. × 16″ Lg. storage space, a removable 1 7/16″ Ht. × 16″ Lg. three-compartment tray, an extension cord holder, and a recessed handle that folds flat when not in use. Top surface has a diamond pattern. Color is gray.

Style 2 is stackable. Top surface is urethane and vinyl. Color is yellow.

Style 3 has an abrasive top surface.

Style 4 has a serrated top surface. Meets OSHA requirements.

Style 5 has three spring-loaded swivel casters. Top surface is grooved. Meets OSHA requirements.

Style 6 have cross bracing. 80135T46 has a perforated top surface; *T48* has a vinyl top surface. Both meet OSHA requirements.

Style 7 moves on spring-loaded swivel casters. Top surface is ribbed vinyl. Some assembly is required. **To Order:** Please specify color: beige, black, blue, gray, or red.

Style 8 has cross bracing and a handrail for extra stability. Overall height with handrail is 36″. Top surface is rubber. Some assembly required.

Style 9 are corrosion resistant. They have a reinforced platform. Top surface is vinyl.

	Cap., lbs.	Ht. (A)	Top Wd. (B)	Top Dp. (C)	Base Wd. (D)	Base Dp. (E)		
Plastic								
1	300	13¼″	18¼″	12⅜″	18½″	12½″	**46865T11**	$39.57
2	350	15″	19″	21″	23½″	25″	**8040T61**	87.67
Aluminum								
3	300	12″	18″	12″	23″	17″	**8024T76**	158.82
4	500	10″	28⅛″	11¾″	30⅜″	16″	**8255T12**	114.42
Aluminum with Retractable Casters								
5	300	9″	16″	15″	20″	22″	**5804T51**	122.45
Steel								
6	350	10½″	16″	14″	18½″	16½″	**80135T46**	67.33
6	350	10½″	16″	14″	18½″	16½″	**80135T48**	71.14
Steel with Retractable Casters								
7	500	14″	11″ Dia.	—	16″ Dia.	—	**8124T11**	70.33
Heavy Duty Steel with Handrail								
8	600	9″	17¼″	12¼″	19½″	15″	**80135T27**	113.81
Type 304 Stainless Steel								
9	400	7¾″	18″	12″	17¾″	13¼″	**7927T61**	231.30
9	400	7¾″	30″	12″	30¼″	13¼″	**7927T63**	266.90

Step Stands

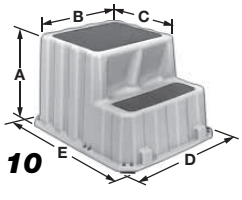

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11&12

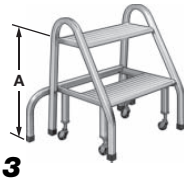

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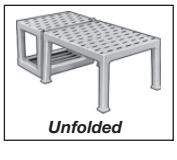

17

18

Stands have nonskid rubber or vinyl feet. *Styles 11-17* meet OSHA requirements.

Style 10 are durable, yellow polyethylene with a nonskid base. *Two-step stand* has urethane-coated steps and a 20″ Wd. × 5″ Dp. lower step. *Three-step stand* has abrasive strips on the steps and a 18″ Wd. × 8½″ Dp. middle step and a 19″ Wd. × 8½″ Dp. lower step.

Styles 11 and ***12*** have 3″ deep ribbed aluminum lower steps and molded plastic top steps. *Style 11* is orange and meets ANSI A14.5 Type 1A. *Style 12* meets ANSI A14.2 Type 1A.

Style 13 has four spring-loaded swivel casters. Steps have a grooved surface. Lower step is 16″ Wd. × 7½″ Dp. Includes an optional outrigger for added stability (assembly required).

Style 14 have serrated steps. Lower steps are 9½″ deep. *8255T16* requires some assembly.

Style 15 has a hinged top step so it can be folded down to create a 12″ Ht. × 19″ Wd. × 32¾″ Dp. one-step stand. Steps are serrated. Color is yellow.

Styles 16 and ***17*** have serrated steps. Lower steps are 9½″ deep. *8126T5* and *T2* require some assembly. *Style 17* has four spring-loaded swivel casters.

Style 18 is corrosion-resistant stainless steel with vinyl steps. Lower step is 18″ Wd. × 11½″ Dp. Does not meet OSHA requirements.

Note: Number of steps listed in table includes top step.

	Cap., lbs.	Steps	Top Step Ht. (A)	Top Step Wd. (B)	Top Step Dp. (C)	Base Wd. (D)	Base Dp. (E)		
Plastic									
10	350	2	20″	21″	19″	26″	32½″	**8040T64**	$141.68
10	500	3	28½″	17″	11½″	20″	33½″	**8040T25**	164.50
Fiberglass with Plastic Top									
11	300	3	24″	12⅜″	5⅝″	17¼″	19½″	**8157T11**	72.26
Aluminum with Plastic Top									
12	300	3	24″	12⅜″	6″	17″	19″	**8120T24**	43.09
Aluminum with Retractable Casters									
13	300	2	19″	16″	7½″	26″	16″	**5804T53**	145.78
Extra-Heavy Duty Aluminum									
14	500	2	20″	20¼″	9½″	22½″	22″	**8255T15**	175.36
14	500	3	30″	22½″	9½″	25¾″	33″	**8255T16**	273.71
14	500	3	30″	30⅜″	9½″	32⅝″	32″	**8255T21**	328.99
Extra-Heavy Duty Aluminum Bifold									
15	600	2	24″	16½″	10⅝″	19″	20¾″	**8255T45**	454.55
Extra-Heavy Duty Steel									
16	500	2	20″	20¼″	9½″	22⅝″	23″	**8126T3**	207.55
16	500	3	30″	22½″	9½″	25¾″	33″	**8126T5**	283.32
16	500	3	30″	28½″	9½″	31⅜″	33″	**8126T2**	337.70
Extra-Heavy Duty Steel with Retractable Casters									
17	500	2	20″	20¼″	9½″	22⅝″	23″	**8126T4**	290.76
Type 304 Stainless Steel									
18	400	2	15⅝″	18″	11½″	18″	25″	**7927T67**	532.17

Step Stands with Handrails

Handrails give these step stands extra stability. They also have slip-resistant tops and rubber feet.

Steel-Frame Step Stands— Have polypropylene steps. Lower steps are 15″ Wd.×8″ Dp. Fold for storage. Meet OSHA requirements.

Deep-Step Steel-Frame Step Stand— Has rubber covered steps. Lower step is 17¼″ Wd.×12¼″ Dp. Some assembly required.

Steel-Frame Step Stands with Casters— Two rigid casters on the front provide easy mobility. Stands have perforated steps. Lower steps are 16″ Wd.×7″ Dp. Fold for storage. Meet OSHA requirements; 9754T77 does not meet CAL-OSHA requirements and is not available in California.

Aluminum-Frame Step Stands with Casters— Two tilt-to-roll casters on the back allow you to roll stands anywhere. Stands have rubber treads on the steps and plastic feet. Lower steps are 14″ Wd.×9″ Dp. Fold for storage. *Three-* and *four-step stands* have a tool tray mounted on the handrail. Meet OSHA requirements.

Note: Number of steps listed in table includes top step.

Cap., lbs.	Steps	Top Step Ht. (A)	Top Step Wd. (B)	Top Step Dp. (C)	Base Wd. (D)	Base Dp. (E)	O'all Ht. (F)		
Steel Frame— *ANSI A14.2 Type II*									
225	2	20¼″	15″	9½″	18½″	20¾″	34⅛″	**8254T41**	$47.32
225	3	28″	15″	9½″	18½″	25⅝″	42⅞″	**8254T42**	63.46
Deep-Step Steel Frame									
600	2	17¼″	17¼″	12¼″	17¾″	27¼″	43″	**4336T81**	171.74
Steel Frame with Casters— *ANSI A14.2 Type 1A*									
300	2	20″	16″	10″	21″	20″	44″	**9754T75**	230.00
300	3	30″	16″	10″	21″	27″	54″	**9754T76**	249.02
300	4	40″	16″	10″	21″	34″	64″	**9754T77**	269.23
Aluminum Frame with Casters— *ANSI A14.2 Type 1A*									
300	2	18″	14″	9″	21″	21¾″	33½″	**8131T67**	125.32
300	3	26½″	14″	9″	22″	33″	50½″	**8131T64**	142.13
300	4	35″	14″	9″	22″	46″	59″	**8131T65**	187.12

Two-Side Access Step Stands

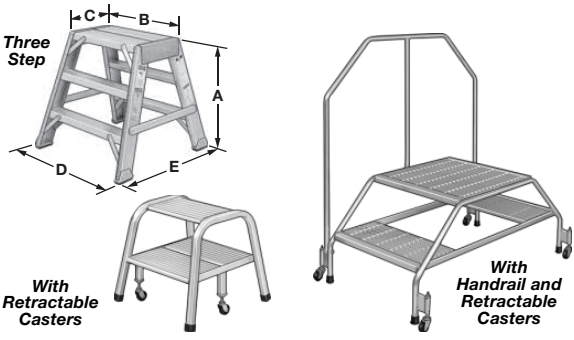

Climb up either side of these nonfolding aluminum step stands. All have slip-resistant tops and rubber feet.

Step Stands— Have ribbed steps. Lower steps are 3″ deep.

Step Stand with Retractable Casters— Moves on three spring-loaded swivel casters. Steps have a grooved surface. Lower step is 15″ deep.

Step Stands with Handrail and Retractable Casters— A handrail provides extra stability while four spring-loaded swivel casters let you roll the stand. Overall height with handrail is 50″. Lower step is 11⅛″ deep.

Note: Number of steps listed in table includes top step.

Cap., lbs.	Steps	Top Step Ht. (A)	Top Step Wd. (B)	Top Step Dp. (C)	Base Wd. (D)	Base Dp. (E)		
Step Stands— *ANSI A14.2 Type 1A*								
300	2	15¼″	18″	10¾″	21⅞″	20¼″	**8076T21**	$132.65
300	3	23″	18″	10¾″	23⅜″	25¼″	**8076T22**	172.28
300	4	30½″	18″	10¾″	25″	30⅛″	**8076T23**	196.23
Step Stand with Retractable Casters— *ANSI A14.2 Type 1A*								
300	2	15″	12″	7½″	17″	18″	**5804T52**	99.88
Step Stands with Handrail and Retractable Casters								
500	2	20″	24½″	24″	34⅜″	48¼″	**8561T1**	517.13
500	2	20″	40″	24″	34⅜″	62½″	**8561T2**	597.74

Rolling Stairs with Handrails

Rugged enough for a warehouse, yet light enough to easily roll where needed. Stairs are polyethylene with 30½″ high fiberglass handrails and two rigid tilt-to-roll casters on the back. Steps have nonskid abrasive strips. The lowest step is 22″ Wd.×8¾″ Dp.; middle steps are 19¾″ Wd.×8¾″ Dp. and 18½″ Wd.×8¾″ Dp. Color is yellow.

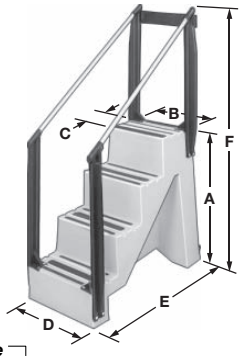

Cap., lbs.	Steps	Top Step Ht. (A)	Top Step Wd. (B)	Top Step Dp. (C)	Base Wd. (D)	Base Dp. (E)	O'all Ht. (F)		
500	4	39″	17″	11⅜″	22½″	43″	66″	**1898T27**	$307.35

Deep-Step Low-Height Step Ladders

These step ladders have ribbed aluminum lower steps that are about twice the depth of other step ladders so they're more comfortable for prolonged standing. Top step is molded plastic with a slip-resistant diamond tread. Fold for storage. Meet OSHA requirements. *Step ladders with handrail and casters* have a handrail and two tilt-to-roll casters on the rear legs to easily move the ladder. ***Fiberglass ladders*** have orange nonconductive fiberglass rails. ***Aluminum ladders*** have aluminum rails.

Note: Number of steps listed in table includes top step.

Cap., lbs.	Steps	Top Step Ht. (A)	Top Step Wd. (B)	Top Step Dp. (C)	Base Wd. (D)	Base Dp. (E)	Step Ladders without Handrail and Casters		Step Ladders with Handrail and Casters Ht. (F)	
Fiberglass										
300	1	13″	14″	9¼″	15″	15⅝″	**79945T61**	$141.96	—	—
300	2	23″	14″	9¼″	17¾″	20⅝″	**79945T62**	172.96	52¼″	**79945T72** $204.58
300	3	34⅜″	14″	9¼″	19¾″	26½″	**79945T63**	209.95	63⅝″	**79945T73** 241.56
300	4	45¾″	14″	9¼″	21¾″	32⅜″	**79945T64**	243.35	75″	**79945T74** 275.55
Aluminum										
300	1	13″	14″	9¼″	15″	15⅝″	**8122T11**	92.42	—	—
300	2	23″	14″	9¼″	17¾″	20⅝″	**8122T12**	122.27	52¼″	**8122T22** 154.45
300	3	34⅜″	14″	9¼″	19¾″	26½″	**8122T13**	150.91	63⅝″	**8122T23** 183.07
300	4	45¾″	14″	9¼″	21¾″	32⅜″	**8122T14**	176.67	75″	**8122T24** 208.78

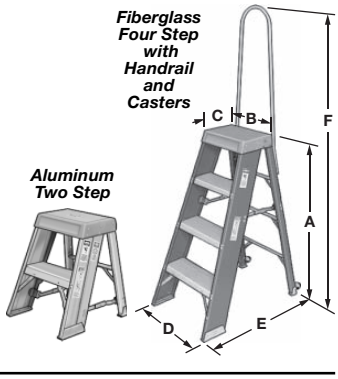

Fiberglass Step Ladders

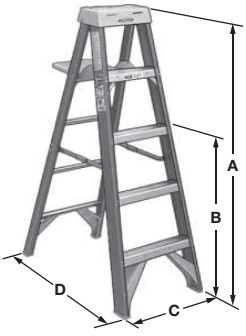

Standard Ladder with Shelf

Big Foot Ladder without Shelf

Rails are nonconductive fiberglass. Ladders fold for storage and have slots in the top to hold your tools. Meet OSHA requirements. ***Big foot ladders*** provide firmer footing than standard ladders on open flooring such as grating.

300-lb. Capacity Step Ladders— Rails are orange. Steps are ribbed aluminum; top is molded plastic.

375-lb. Capacity Step Ladders— Rails are yellow. Steps and top are ribbed aluminum.

500-lb. Capacity Step Ladders— Rails are yellow. Steps and top are aluminum.

Optional Black Pail Shelf— Attaches to all 300- and 375-lb. capacity ladders without a shelf. Hardware is included.

O'all Ht. (A)	Max. Climbing Ht. (B)	Base Wd. (C)	Base Dp. (D)	STANDARD LADDERS Without Shelf		STANDARD LADDERS With Shelf		BIG FOOT LADDERS Without Shelf	
300-lb. Capacity—ANSI A14.5 Type 1A									
3′	1′	18 1/8″	23 1/8″	8136T38	$83.29	8136T17	$103.70	8057T71	$108.57
4′	1′11″	19 7/8″	29″	8136T31	95.06	8136T12	111.29	8057T72	126.72
5′	2′10″	21 5/8″	35 1/8″	8136T32	107.46	8136T22	126.71	8057T73	137.84
6′	3′10″	23 3/8″	41 1/4″	8136T33	113.18	8136T13	135.55	8057T74	157.02
7′	4′9″	25 1/8″	47 1/2″	8136T34	138.48	8136T23	169.00	8057T75	182.54
8′	5′9″	26 7/8″	53 5/8″	8136T35	152.47	8136T14	186.40	8057T76	199.50
10′	7′8″	30 3/8″	65 7/8″	8136T36	226.48	8136T15	251.65	8057T77	276.17
12′	9′7″	33 7/8″	78 1/4″	8136T37	283.23	8136T16	304.51	8057T78	340.32
375-lb. Capacity—ANSI A14.5 Type 1AA									
3′	1′	19 3/4″	23 1/2″	8141T11	99.74	8141T21	112.45	8144T11	129.78
4′	1′11″	21 1/2″	29 3/4″	8141T12	116.34	8141T22	141.18	8144T12	150.18
5′	2′10″	23 1/4″	35 7/8″	8141T13	136.23	8141T23	157.82	8144T13	169.61
6′	3′10″	25″	42″	8141T14	152.76	8141T24	164.49	8144T14	185.86
8′	5′9″	28 1/2″	54 3/4″	8141T15	199.74	8141T25	219.59	8144T15	240.91
10′	7′8″	32″	66 5/8″	8141T16	276.31	8141T26	285.85	8144T16	304.43
12′	9′7″	35 1/2″	79″	8141T17	335.32	8141T27	345.00	8144T17	384.05
Optional Black Pail Shelf								8112T31	$14.62
500-lb. Capacity									
4′	1′11″	22″	31″	7706T31	540.63				
6′	3′10″	25″	42″	7706T32	621.11				
8′	5′9″	28″	55″	7706T33	754.21				
10′	7′7″	31″	66″	7706T34	927.10				
12′	9′6″	34″	79″	7706T35	1,111.32				

Aluminum Step Ladders

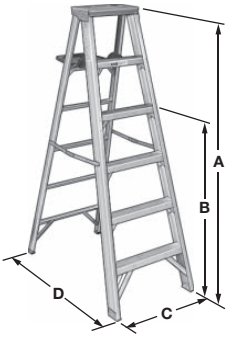

Light and easy to carry, these ladders have a black plastic shelf and slots on the top to hold your tools. Steps are ribbed for slip resistance. Fold for storage. Meet OSHA requirements.

300-lb. Capacity Step Ladders— 3-ft. to 10-ft. ladders have a plastic top; 14-ft. and 16-ft. ladders have an aluminum top.

375-lb. Capacity Step Ladders— Top is aluminum.

O'all Ht. (A)	Max. Climbing Ht. (B)	Base Wd. (C)	Base Dp. (D)		
300-lb. Capacity—ANSI A14.2 Type 1A					
3′	1′	17 3/4″	23 3/8″	8114T1	$77.19
4′	1′11″	19 1/2″	29 1/2″	8114T2	90.38
5′	2′10″	21 1/4″	35 3/4″	8114T3	104.22
6′	3′10″	23″	41 7/8″	8114T4	113.43
8′	5′9″	26 1/2″	54 1/4″	8114T5	160.24
10′	7′8″	30″	66 1/2″	8114T9	211.20
14′	11′6″	38 5/8″	91 3/4″	8112T8	444.18
16′	13′5″	42 1/8″	104″	8112T9	566.89
375-lb. Capacity—ANSI A14.2 Type 1AA					
4′	1′11″	21 1/4″	30 1/8″	8112T2	144.03
6′	3′10″	24 3/4″	42 1/2″	8112T4	180.93
8′	5′9″	28 1/4″	54 3/4″	8112T5	234.81
10′	7′8″	31 3/4″	67″	8112T6	296.61
12′	9′7″	35 1/4″	79 3/8″	8112T7	365.11

Wood Step Ladders

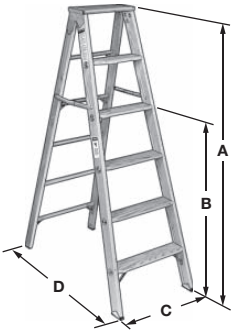

Ladders are solid pine with zinc-plated hardware for corrosion resistance. Steps are grooved and reinforced with a steel rod for strength. Fold for storage. Meet OSHA requirements.

O'all Ht. (A)	Max. Climbing Ht. (B)	Base Wd. (C)	Base Dp. (D)		
300-lb. Capacity—ANSI A14.1 Type 1A					
3′	10 1/4″	17 1/4″	25 1/2″	7968T21	$82.06
4′	1′9″	18 3/4″	32 3/4″	7968T22	89.28
5′	2′8″	20″	40″	7968T23	104.60
6′	3′7″	21 1/2″	46 1/4″	7968T24	114.65
8′	5′6″	24″	58 3/4″	7968T26	145.17
10′	7′4″	26 1/2″	72 1/2″	7968T27	181.29

Two-Side Access Step Ladders

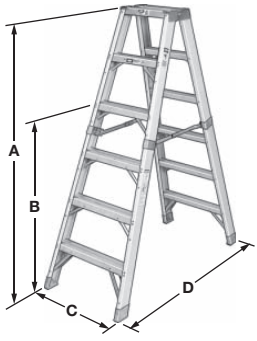

With steps on both sides, you can climb from either side or have one person on each side. Steps and top are ribbed aluminum. Ladders fold for storage. Meet OSHA requirements.

Fiberglass Step Ladders— Rails are nonconductive fiberglass. *300-lb. capacity per side* ladders have yellow rails; *375-lb. capacity per side* ladders have orange rails.

Aluminum Step Ladders— Rails are aluminum.

O'all Ht. (A)	Max. Climbing Ht. (B)	Base Wd. (C)	Base Dp. (D)		
Fiberglass					
300-lb. Capacity per Side—*ANSI A14.5 Type 1A*					
4′	2′0″	19⅞″	36⅛″	**8089T31**	$149.56
5′	3′0″	21⅝″	43⅛″	**8089T32**	174.32
6′	4′0″	23⅜″	50⅛″	**8089T33**	202.84
7′	4′9″	23¾″	60½″	**8089T34**	227.18
8′	6′0″	26⅞″	64⅛″	**8089T35**	267.03
10′	8′0″	30⅜″	78⅛″	**8089T36**	335.98
12′	10′0″	33⅞″	92⅛″	**8089T37**	392.30
375-lb. Capacity per Side—*ANSI A14.5 Type 1AA*					
4′	1′11″	19⅝″	37½″	**8164T12**	162.45
5′	2′10″	21⅛″	44⅞″	**8164T22**	187.13
6′	3′9″	22⅝″	52⅜″	**8164T14**	215.92
7′	4′9″	24⅛″	59¾″	**8164T23**	246.92
8′	5′8″	25⅝″	67⅛″	**8164T16**	282.81
10′	7′7″	28⅝″	82″	**8164T17**	353.67
12′	9′6″	31⅝″	96¾″	**8164T18**	413.94
14′	11′5″	34⅝″	112″	**8164T24**	556.04
16′	13′4″	37⅝″	127″	**8164T25**	641.84
Aluminum					
300-lb. Capacity per Side—*ANSI A14.2 Type 1A*					
4′	1′11″	20″	37⅝″	**7957T12**	109.09
5′	2′10″	21½″	45″	**7957T13**	131.48
6′	3′9″	23″	52⅜″	**7957T14**	152.73
8′	5′8″	26″	67¼″	**7957T16**	196.61
10′	7′7″	29″	82″	**7957T17**	267.80
12′	9′6″	31″	98″	**7957T18**	310.98
14′	11′5″	34″	112″	**7957T19**	412.77

Platform Step Ladders

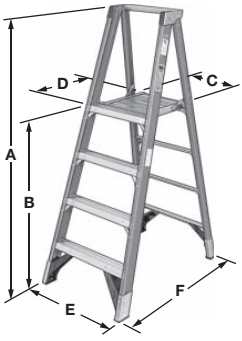

Perfect for prolonged standing, these ladders have a large ribbed aluminum platform that's more comfortable than a step. Steps are also ribbed aluminum. Ladders fold for storage. Meet OSHA requirements.

Fiberglass Step Ladders— Rails are orange nonconductive fiberglass, except rails on 8895T21 and T22 are yellow.

Aluminum Step Ladders— Rails are aluminum.

O'all Ht. (A)	Platform Ht. (B)	Platform Wd. (C)	Platform Dp. (D)	Base Wd. (E)	Base Dp. (F)		
Fiberglass							
300-lb. Capacity—*ANSI A14.5 Type 1A*							
4′	2′	14⅝″	15″	23⅜″	29¾″	**8119T18**	$148.25
5′	3′	15″	17″	23⅜″	34¼″	**8119T11**	156.47
6′	4′	14⅝″	15″	26⅞″	42″	**8119T12**	181.13
7′	5′	15″	17″	26¼″	45¾″	**8119T13**	197.88
8′	6′	14⅝″	15″	30⅜″	54¾″	**8119T14**	227.69
10′	8′	14⅝″	15″	33⅞″	66⅝″	**8119T15**	326.67
12′	10′	14⅝″	15″	37⅜″	79″	**8119T16**	365.59
14′	12′	15″	17″	36⅞″	86⅝″	**8119T17**	439.81
375-lb. Capacity—*ANSI A14.5 Type 1AA*							
5′	3′	15″	17″	23⅜″	34¼″	**8895T31**	172.79
6′	4′	14⅝″	15″	27″	42″	**8895T14**	206.65
7′	5′	15″	17″	26⅜″	45¾″	**8895T32**	221.83
8′	6′	14⅝″	15″	30½″	54⅜″	**8895T16**	271.23
10′	8′	14⅝″	15″	34″	66⅝″	**8895T18**	344.48
12′	10′	15″	17″	33⅜″	75½″	**8895T21**	386.84
14′	12′	15″	17″	36¼″	87½″	**8895T22**	482.63
Aluminum							
300-lb. Capacity—*ANSI A14.2 Type 1A*							
4′	2′	12⅝″	18″	21¼″	30″	**7928T71**	117.75
5′	3′	12⅝″	18″	23″	36¼″	**7928T72**	131.05
12′	10′	12⅝″	15″	35¼″	79⅜″	**8105T9**	414.41
14′	12′	12⅝″	15″	38¾″	91¾″	**8105T6**	544.81
16′	14′	12⅝″	15″	42¼″	104″	**8105T7**	623.44
375-lb. Capacity—*ANSI A14.2 Type 1AA*							
6′	4′	12⅝″	15″	24¾″	42⅛″	**8105T2**	195.88
8′	6′	12⅝″	15″	28¼″	54¾″	**8105T3**	253.03
10′	8′	12⅝″	15″	31¾″	79½″	**8105T4**	332.15

Two-Side Access Platform Step Ladders

Two-side access lets you climb on either side or have one person on each side. Platform and steps are ribbed aluminum. Ladders fold for storage. Meet OSHA requirements.

Ladders with casters have four spring-loaded swivel casters.

Fiberglass Step Ladders—*250-lb. capacity per side* have blue nonconductive fiberglass rails; *300-lb. capacity per side* have orange nonconductive fiberglass rails.

Aluminum Step Ladders— Rails are aluminum.

O'all Ht. (A)	Platform Ht. (B)	Platform Wd. (C)	Platform Dp. (D)	Base Wd. (E)	Base Dp. (F)	***Step Ladders without Casters***		***Step Ladders with Casters***	
Fiberglass									
250-lb. Capacity per Side—*ANSI A14.5 Type 1*									
4′	2′	12¾″	22″	20″	36½″	**80285T51**	$199.52	**80285T57**	$276.42
5′	3′	12¾″	22″	21½″	48¾″	**80285T52**	220.48	**80285T58**	298.29
300-lb. Capacity per Side—*ANSI A14.5 Type 1A*									
6′	4′	12¾″	22″	25¼″	50″	**80285T21**	276.88	**80285T31**	337.28
8′	6′	12¾″	22″	28¾″	64″	**80285T22**	345.65	**80285T32**	404.46
10′	8′	12¾″	22″	32¼″	78¼″	**80285T23**	406.26	**80285T33**	473.92
12′	10′	12¾″	22″	35¾″	92¼″	**80285T65**	451.33	**80285T66**	551.28
Aluminum									
300-lb. Capacity per Side—*ANSI A14.2 Type 1A*									
6′	4′	12¾″	22″	24¾″	50½″	**79905T33**	234.55	**79905T39**	310.26
8′	6′	12¾″	22″	28¼″	65¼″	**79905T34**	274.71	**79905T41**	355.47
10′	8′	12¾″	22″	31¾″	81½″	**79905T35**	371.65	**79905T42**	452.79
12′	10′	12¾″	22″	34¼″	96″	**79905T36**	429.24	**79905T43**	517.61

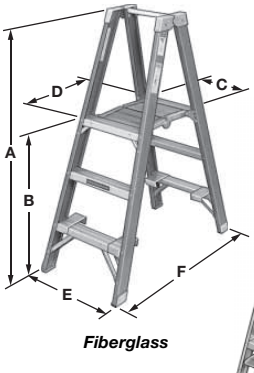

Fiberglass

Aluminum with Casters

Ladder Shoes

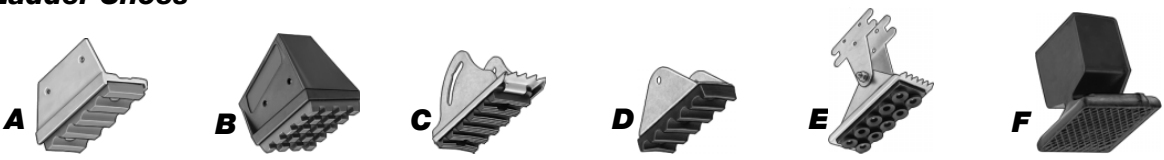

All include mounting hardware where needed. ***Shoes for step ladders*** include four shoes per set; ***shoes for straight and extension ladders*** include two shoes per set. Style D shoes for the back rail fit 2⅜″ deep rails. **Also Available:** More shoes for fiberglass and aluminum ladders. Please ask for 7717T888 and specify ladder manufacturer's model/series number.

Shoes for Fiberglass and Aluminum Ladders

Mfr.	Mfr. No.	For Fiberglass Ladders	Set	For Aluminum Ladders	Set
For Step Ladders					
A Werner	21-7	7717T21	$34.49	7717T21	$34.49
A Werner	21-8	7717T22	28.51	—	—
A Werner	21-10	7717T23	19.82	7717T23	19.82
B Louisville	PK136A	7717T37	33.33	7717T37	33.33
For Straight and Extension Ladders					
C Werner	26-2	—	—	7717T25	37.47
C Werner	26-5	7717T27	39.09	7717T27	39.09

Shoes for Wood Ladders

	Fits Rail Size Wd.	Fits Rail Size Dp.		Set
For Step Ladders				
D	⅞″	3½″	8186T12	$8.49
D	1⅛″	3½″	8186T16	8.49
For Straight and Extension Ladders				
D	⅞″	2¼″	8232T12	9.61
D	1″	2¼″	8232T14	9.61
D	1⅛″	3¼″	8232T16	9.61
D	1⅜″	3″	8016T1	12.22
E	1⅜″	3″	8013T1	36.44
F	1⅜″	2¾″	8012T18	19.48

Ladder Levelers and Stabilizers

Ladder Levelers

Keep your ladder level even when the surface isn't. Levelers adjusts one or both sides of most fiberglass and aluminum straight and extension ladders by up to 15″. Levelers are steel with a safety guard to protect against accidental release. They have swivel ladder shoes with slip-resistant rubber pads.

7948T75 ..... **Pair** $80.57

Rolling Roof Hooks

Roll your ladder to a roof's peak. Then flip the ladder over and the steel hooks hold it in place. Use with straight and extension ladders with round and D-rungs.

8204T73 ..... **Pair** $58.48

Ladder Cable Hooks

Attach these hooks to keep your ladder stable on cable and wire rope. Hooks are aluminum and work with extension and straight ladders.

For Aluminum Ladders... **80205T75** **Pair** $59.42
For Fiberglass Ladders... **80205T77** **Pair** 42.55

Ladder Safety Tie-Off

Secure your ladder to any diameter pole to keep it stable. Made of nylon, tie-off is 23 ft. long and has buckles to tighten it securely to the pole and your ladder. Use with straight and extension ladders up to 40 ft. high.

2209T71 ..... **Each** $74.31

Ladder Accessories

Ladder Standoffs

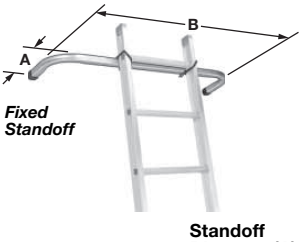

Secure straight and extension ladders at a comfortable distance from the supporting surface. Made of aluminum, standoffs have protective tips to prevent scuffs and scrapes.

Fixed and ***adjustable*** standoffs are for use on flat surfaces. *Adjustable standoff* adjusts in 2″ increments.

Corner standoff is for corner, angled, and rounded surfaces.

	Standoff Distance (A)	Span (B)		Each
Fixed Standoff	12″	48″	7970T63	$32.83
Adjustable Standoff	13″ to 25″	48″	7970T64	59.05
Corner Standoff	18″	29″	78455T11	35.62

Ladder Rail Caps

Protect supporting surfaces from damage with these PVC caps. Use with straight and extension ladders. Fit rail ends approximately 3″ to 3¼″ × 1″ to 1¼″.

80195T6 ..... **Pair** $11.19

Ladder Dolly

Easily roll ladders anywhere. Dolly secures temporarily through a rung of most aluminum and fiberglass extension ladders up to 40 ft. Can be used on rugged terrain. Wheels are polypropylene.

7740T59 ..... **Each** $85.61

Sectional Fiberglass Ladders

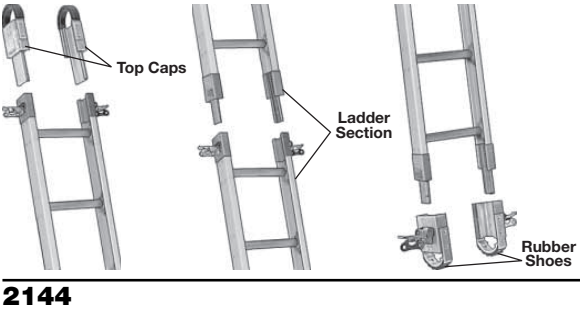

Add or remove sections to make a ladder up to 18 ft. high. Each ladder section is 6 ft. high and you can join up to three sections. Insert the bottom rails into the top rails and secure them with the included tension clamps. Quick assembly and disassembly makes the ladders easier to transport and store than other straight ladders. Rungs are round, ribbed aluminum; rails are yellow nonconductive fiberglass. Meet OSHA requirements.

Note: Two top caps and two shoes are required to complete each ladder.

Ht.	Base Wd.		
250-lb. Capacity— *ANSI A14.5 Type 1*			
6′ Section	12″	7951T35	$149.12
Top Cap (Two Required)		7951T31	30.50
Rubber Shoe (Two Required)		7951T32	30.92

Ladders

Always ready for use without unfolding or adjusting, these straight ladders meet OSHA requirements.

Fiberglass Ladders— Have nonconductive fiberglass rails. *300-lb. capacity* ladders have orange rails and flat, ribbed aluminum rungs. *375-lb. capacity* ladders have yellow rails and round, ribbed aluminum rungs.

Aluminum Ladders— Have aluminum rails and flat, ribbed aluminum rungs.

Wood Ladders— Have wood rails and round steel-reinforced wood rungs.

Fiberglass Ladders with Flared Base— All have a wider base for increased stability. Rails are red nonconductive fiberglass. Rungs are flat, ribbed aluminum.

O'all Ht.	Base Wd.		
Fiberglass			
300-lb. Capacity— *ANSI A14.5 Type 1A*			
8′	19″	**8011T72**	$142.51
10′	19″	**8011T73**	172.18
12′	19″	**8011T74**	190.16
14′	19″	**8011T75**	216.51
16′	19″	**8011T76**	252.76
20′	19″	**8011T78**	310.78
375-lb. Capacity— *ANSI A14.5 Type 1AA*			
8′	19″	**7742T51**	184.48
10′	19″	**7742T52**	217.05
12′	19″	**7742T53**	254.89
14′	19″	**7742T54**	273.54
16′	19″	**7742T55**	311.04
Aluminum			
300-lb. Capacity— *ANSI A14.2 Type 1A*			
8′	18 1/8″	**8007T21**	120.11
10′	18 1/8″	**8007T22**	131.57
12′	18 1/8″	**8007T23**	159.20
14′	18 1/8″	**8007T24**	202.90
16′	18 1/8″	**8007T25**	250.43
18′	18 1/8″	**8007T26**	285.10

O'all Ht.	Base Wd.		
Aluminum (Cont.)			
300-lb. Capacity— *ANSI A14.2 Type 1A (Cont.)*			
20′	18 1/8″	**8007T27**	$345.85
24′	20 5/8″	**8007T8**	454.32
Wood			
300-lb. Capacity— *ANSI A14.1 Type 1A*			
6′	15 3/4″	**8167T21**	104.79
8′	15 3/4″	**8167T22**	143.84
10′	15 3/4″	**8167T23**	185.22
12′	15 3/4″	**8167T24**	234.08
14′	15 3/4″	**8167T25**	267.81
16′	15 3/4″	**8167T26**	311.89
20′	15 3/4″	**8167T28**	590.05
Fiberglass with Flared Base			
300-lb. Capacity— *ANSI A14.5 Type 1A*			
8′	23″	**8000T34**	264.00
10′	23″	**8000T36**	308.00
12′	25 1/2″	**8000T38**	364.00
14′	25 1/2″	**8000T42**	404.00
16′	25 1/2″	**8000T44**	445.33
18′	25 1/2″	**8000T46**	488.00
20′	28 1/2″	**8000T48**	614.00

Aluminum ***Fiberglass with Flared Base***

Narrow-Width Ladders

Fiberglass

Aluminum

Ideal for getting in and out of tight, narrow places, these ladders are also known as manhole ladders. Rungs are round, ribbed aluminum. Meet OSHA requirements.

Fiberglass Ladders— Ladders have 3-ft. long plastic rail sleeves at the top to prevent damage to rails. They also have plastic hoop ends to easily pull ladder up. Rails are yellow nonconductive fiberglass.

Aluminum Ladders— Have aluminum rails.

O'all Ht.	Base Wd.		
Fiberglass			
375-lb. Capacity— *ANSI A14.5 Type 1AA*			
8′	12 3/8″	**7540T41**	$183.73
10′	12 3/8″	**7540T43**	209.88
12′	12 3/8″	**7540T45**	239.54
14′	12 3/8″	**7540T47**	260.66
16′	12 3/8″	**7540T49**	308.97
Aluminum			
300-lb. Capacity— *ANSI A14.2 Type 1A*			
6′	12″	**5458T41**	104.83
8′	12″	**5458T42**	140.00
10′	12″	**5458T43**	175.00
12′	12″	**5458T44**	209.65
14′	12″	**5458T45**	245.00
16′	12″	**5458T46**	277.69
20′	12″	**5458T47**	347.11

Ladders with Rubber Bumpers

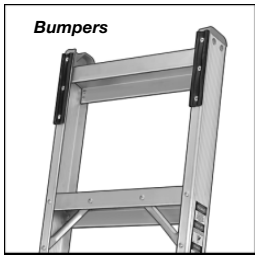

Aluminum

Also known as shelf ladders, these have rubber bumpers that extend 6″ down from the top of the rails to protect surfaces from scrapes and damage. Rungs are flat, ribbed aluminum. Meet OSHA requirements.

Fiberglass Ladders— Rails are orange nonconductive fiberglass.

Aluminum Ladders— Rails are aluminum.

O'all Ht.	Base Wd.		
Fiberglass			
300-lb. Capacity— *ANSI A14.5 Type 1A*			
4′	15 1/4″	**7987T11**	$82.36
5′	15 1/4″	**7987T12**	99.81
6′	15 1/4″	**7987T13**	110.98
7′	15 1/4″	**7987T14**	131.28
8′	15 1/4″	**7987T15**	145.15
10′	15 1/4″	**7987T17**	177.12
12′	15 1/4″	**7987T18**	210.58
Aluminum			
300-lb. Capacity— *ANSI A14.2 Type 1A*			
4′	15 1/4″	**8129T11**	73.35
5′	15 1/4″	**8129T12**	86.06
6′	15 1/4″	**8129T13**	98.43
7′	15 1/4″	**8129T14**	117.12
8′	15 1/4″	**8129T15**	131.23
10′	15 1/4″	**8129T17**	147.62
12′	15 1/4″	**8129T18**	173.86

Fiberglass Extension Ladders

Adjust these ladders to the height you need. They have two equal-length, movable sections and spring-loaded locks to keep the raised section securely in place after adjustment. Ladders have yellow nonconductive fiberglass rails, except the 300-lb. capacity ladders with aluminum rungs which are orange. Meet OSHA requirements.

Fiberglass rungs are yellow, round, and ribbed.
Aluminum rungs are flat and ribbed.

O'all Ht.	Max. Extended Ht.	Base Wd.		
With Fiberglass Rungs				
300-lb. Capacity—ANSI A14.5 Type 1A				
16′	13′	18⅜″	**8086T11**	$489.60
20′	17′	18⅜″	**8086T12**	609.66
24′	21′	18⅜″	**8086T13**	732.83
28′	25′	18⅜″	**8086T14**	855.23
32′	29′	18⅜″	**8086T16**	977.63
With Aluminum Rungs				
300-lb. Capacity—ANSI A14.5 Type 1A				
16′	13′	19″	**8269T12**	243.31
20′	17′	19″	**8269T14**	277.48
24′	21′	19″	**8269T16**	320.81
28′	25′	19″	**8269T18**	394.72
32′	29′	19″	**8269T24**	468.57
36′	32′	19″	**8269T26**	543.50
40′	35′	19″	**8269T28**	639.63
375-lb. Capacity—ANSI A14.5 Type 1AA				
16′	13′	19″	**8574T12**	298.74
20′	17′	19″	**8574T14**	356.21
24′	21′	19″	**8574T16**	436.70
28′	25′	19″	**8574T18**	482.64
32′	29′	19″	**8574T21**	604.13

Aluminum Extension Ladders

Lighter in weight than fiberglass extension ladders, aluminum ladders are easier to carry. Ladders have two equal-length, movable sections that adjust to create the ladder height you need. Spring-loaded locks keep the raised section securely in place after adjustment. All have flat, ribbed rungs. Meet OSHA requirements.

O'all Ht.	Max. Extended Ht.	Base Wd.		
300-lb. Capacity—ANSI A14.2 Type 1A				
16′	13′	18⅛″	**7954T41**	$224.08
20′	17′	18⅛″	**7954T42**	250.85
24′	21′	18⅛″	**7954T43**	303.10
28′	25′	18⅛″	**7954T44**	354.94
32′	29′	18⅛″	**7954T45**	434.56
36′	32′	18⅛″	**7954T46**	552.42
40′	35′	18⅛″	**7954T47**	624.33

Telescoping Extension Ladders

Get multiple heights in one ladder. Ladders extend and lock in 1-ft. increments to give you the exact height you need. To close the ladder, pull rings on the second rung to release the locking mechanism and then slide each section down one by one. When closed, these aluminum ladders are smaller and easier to carry and store than ordinary extension ladders.

Rungs are grooved and have a stainless steel spring-loaded pin that automatically locks ladder in place. Nonskid feet and top bumpers protect against scratches.

Extended Ht.	Closed Ht.	Base Wd.		
250-lb. Capacity—ANSI A14.2 Type 1				
10′6″	2′4″	18″	**8148T7**	$228.33
300-lb. Capacity—ANSI A14.2 Type 1A				
12′6″	2′6″	18″	**8148T9**	313.39

Multifunction Ladders

Plank not included.

Plank not included.

Get multiple ladders in one. Locking hinges let these ladders adjust into a step ladder, a straight ladder, a stairwell ladder, or a scaffold. Use with 2″ Thick. × 12″ Wd. planks (not included) when in scaffold position. Meet OSHA requirements.

Fiberglass Ladders— Have orange nonconductive fiberglass rails and round, ribbed aluminum rungs.

Aluminum Ladders— Have aluminum rails and square, ribbed rungs.

Overall Height: Step Ladder	Straight Ladder	Scaffold	Base Wd.		
300-lb. Capacity Fiberglass—ANSI A14.5 Type 1A					
6′5″	13′	3′10″	28″	**8152T91**	$263.16
7′5″	15′	4′1″	28″	**8152T95**	298.77
300-lb. Capacity Aluminum—ANSI A14.2 Type 1A					
6′	12′6″	3′5¾″	31½″	**8152T69**	225.26
8′	16′6″	4′5¾″	31½″	**8152T72**	268.50

Telescoping Multifunction Ladders

375-lb. capacity ladder pictured.

Plank not included.

Easily configure these ladders into a step ladder, a straight ladder, a stairwell ladder, or two scaffolding stands. Ladders consist of a straight inner ladder and a flared-base outer ladder, connected with hinge locks. When used as scaffolding stands, use with 13″ wide planks placed at 3 ft. from the ladder base. Meet OSHA requirements. *300-lb. capacity* ladders include two wheels for mobility.

Fiberglass Ladders— Have yellow nonconductive fiberglass rails and ribbed aluminum rungs. 8034T71 does not have wheels.

Aluminum Ladders— Have aluminum rails and ribbed aluminum rungs.

Overall Height: Step Ladder	Straight Ladder	Scaffold	Base Wd.		
300-lb. Capacity Fiberglass—A14.5 Type 1A					
3′- 5′	6′-10′	Up to 3′	22″	**8034T71**	$409.53
4′- 7′	8′-14′	Up to 4′	24″	**8034T72**	488.97
5′- 9′	10′-18′	Up to 5′	26″	**8034T73**	563.11
300-lb. Capacity Aluminum—ANSI A14.2 Type 1A					
6′-11′	12′-22′	Up to 6′	31″	**8034T59**	485.22
375-lb. Capacity Aluminum—ANSI A14.2 Type 1AA					
3′- 5′	6′-10′	Up to 3′	24″	**8034T74**	405.84
4′- 7′	8′-14′	Up to 4′	24″	**8034T57**	445.17
5′- 9′	10′-18′	Up to 5′	27″	**8034T58**	484.50

Steel Hook-Top Sectional Ladders

Ladders consist of multiple 3-ft. sections that slide apart for use. Pull the cord and slide sections back together for easy carrying and storage. Ladders must be fully extended for use.

All are tubular steel with a gray finish. They have flat, perforated rungs. Ladders hang from two 6¾″ deep hooks at the top. Standoffs on each section provide 3⅜″ of toe room. Capacity is 250 lbs.

Extended Height	No. of Sections	Base Wd.		
6′	2	14¾″	8192T61■	$343.10
9′	3	14¾″	8192T62	497.44
12′	4	14¾″	8192T63	668.97
15′	5	14¾″	8192T64	813.33

■ Due to shorter length, ladder does not have a retrieval cord.

Steel Hook-Top Ladders

Shown with Optional Safety Shoes

Double side rails give these hanging ladders stability and 3⅜″ of toe room. Ladders are tubular steel with a gray finish. A 5¼″ deep hook along the top holds ladders in place. Rungs are flat and perforated. Capacity is 300 lbs. Meet OSHA requirements.

Optional swivel safety shoes are recommended when using ladders on floors. Mounting hardware is included.

O'all Ht.	Base Wd.		Each
7′	14¾″	8100T31	$224.70
10′	14¾″	8100T32	328.33
12′	14¾″	8100T33	383.33
15′	14¾″	8100T34	442.98
Optional Swivel Safety Shoes		8100T41 Pair	$116.92

Aluminum Hook-Top Ladders

Shown with Optional Safety Shoes

These ladders have two 8″ deep hooks at the top to hold them in place; hooks fold inward for storage. They have aluminum channel rails and ribbed, round rungs. Aluminum offset brackets provide 2½″ of toe room at the top and 6¾″ of toe room at the bottom. Capacity is 500 lbs. Meet OSHA requirements.

Optional swivel safety shoes are recommended when using ladders on floors. Mounting hardware is included.

O'all Ht.	Base Wd.		Each
6′	18½″	7955T36	$281.67
10′	18½″	7955T38	393.31
12′	18½″	7955T42	461.84
14′	18½″	7955T44	517.72
20′	18½″	7955T51	697.74
Optional Swivel Safety Shoes		7955T53 Pair	$40.08

Nylon Rope Ladders with Wood Rungs

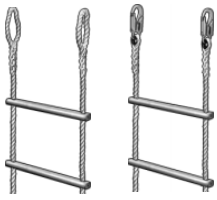

Ladder with Loop Ends *Ladder with Snap Hooks*

Attach one of these ladders to a fixed object and drop it into a tank, manhole, pit, or temporary work area. They're lightweight so you can easily carry them anywhere.

Ladders consist of ⅝″ diameter nylon rope connected to 15″ wide hardwood oval rungs. The ladder top has either two 3″ ID loop ends or two 1″ ID×5¾″ Ht. locking snap hooks. Overall width is 15″. Capacity is 300 lbs.

Lg.	With Loop Ends		With Snap Hooks	
10′	8195T51	$117.76	8195T91	$154.33
12′	8195T52	138.15	8195T92	176.40
15′	8195T53	168.75	8195T93	210.07
20′	8195T54	219.73	8195T94	264.72
25′	8195T55	270.71	8195T95	319.91
30′	8195T56	321.71	8195T96	375.12
40′	8195T57	423.63	8195T97	485.50
50′	8195T58	525.66	8195T98	595.91

Dual-Rung Chain Ladders

Tough and portable, ladders have steps made of two rungs with a space between and ¾″ Thick.× 3″ ID rings on the top and bottom. Overall step depth is 4⅞″. Ladders are made with nonkinking, lock-link chain. Capacity is 500 lbs.

Steel Ladders—Rungs are zinc-plated steel; chains and fittings are galvanized steel. Overall width is 15½″.

Aluminum Ladders—Rungs, chains, and fittings are aluminum. Overall width is 19¼″.

Lg.	Steel		Aluminum	
15′	7999T322	$917.75	7999T11	$1,124.10
20′	7999T321	1,223.67	7999T1	1,642.20
25′	7999T323	1,421.32	7999T13	2,052.75
40′	7999T326	2,274.11	7999T4	3,284.40

Emergency Escape Permanent-Mount Chain Ladders

In case of emergency, have your escape ladder ready. Ladders bolt to the floor near a window and store inside the included 13″ Wd.×7″ Dp.×12″ Ht. metal box. They are made of steel with galvanized double-loop chain, standoffs, and round rungs. Standoffs provide 4⅜″ of toe room. Overall width is 14″. Mounting hardware is included. Capacity is 250 lbs.

Note: For emergency use only.

Lg.	Building Stories		
15′	2	8067T1	$123.33
25′	3	8067T2	141.67
35′	4	8067T3	165.00

Unassembled Fiberglass Rolling Platform Ladders

Mobility is combined with the nonconductive, noncorrosive benefits of fiberglass. Ladders have a yellow fiberglass platform and side rails, 1″ OD steel handrails and bracing bars, ribbed aluminum steps, and a steel base. Platform has a nonskid coating and a 4″ high toeboard on three sides. Handrails are coated with a nonconductive plastic.

Ladder with six steps has two locking swivel casters in front and two rigid casters in back; all other ladders have two locking swivel casters in front, two rigid casters in the center, and two rigid casters in back. Assembly required. Capacity is 300 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

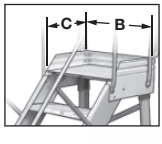

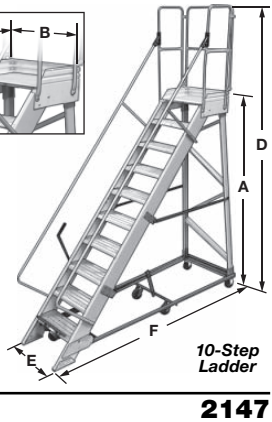

10-Step Ladder

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
4′9½″	24″	17″	6	8′4″	33″	72″	80785T12	$2,085.02
6′4½″	24″	17″	8	9′11″	33″	89″	80785T14	2,697.74
7′11½″	24″	17″	10	11′6″	33″	107″	80785T16	2,823.66
9′6½″	24″	17″	12	13′	37″	124″	80785T18	2,997.97

Steel Rolling Platform Ladders with Perforated Steps

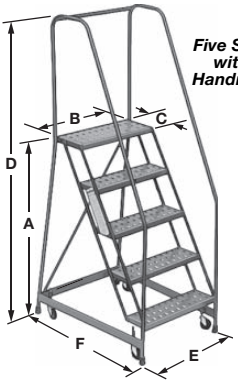

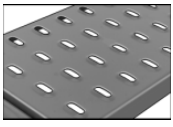
Perforated

Platform and steps are perforated for good slip resistance. Ladders have a gray finish. Ladders *with spring-loaded retractable casters* include four swivel casters; *step-lock* ladders include two swivel and two rigid casters. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements, unless noted.

To Order: For replacement retractable casters, please specify platform width and number of steps.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
With Handrails								
With Spring-Loaded Retractable Casters—Assembled								
1′8″	24″	9½″	2	3′8″	27″	19″	8039T37	$173.95
2′6″	24″	9½″	3	4′6″	29″	27″	8039T38	211.47
3′4″	24″	9½″	4	5′10″	29″	33″	8039T39	240.29
4′2″	24″	9½″	5	7′10″	29″	40″	8039T41	314.66
4′2″	30″	9½″	5	7′10″	33″	40″	8039T42	415.69
5′	24″	9½″	6	8′8″	29″	47″	8039T43	351.67
5′	30″	9½″	6	8′8″	33″	47″	8039T44	457.17
5′10″	24″	9½″	7	9′6″	29″	54″	8039T45	386.07
Replacement Retractable Casters (Set of Four)							80105T32	56.47
Step-Lock with Casters—Assembled								
6′8″	24″	9½″	8	10′4″	33″	56″	8039T47	506.95
7′6″	24″	9½″	9	11′2″	33″	63″	8039T49	601.63
Replacement Casters (Set of Four)							80105T11	69.51
Step-Lock with Casters—Unassembled								
8′4″	24″	9½″	10	11′	33″	69″	8039T52	676.83
10′	24″	9½″	12	13′7″	33″	82″	8039T56	802.84
11′8″	30″	9½″	14	14′9″	39″	94″	8039T62	1,197.06
13′4″	30″	9½″	16	16′5″	41″	113″	8039T66	1,421.46
Replacement Casters (Set of Four)							80105T11	69.51
Without Handrails								
With Spring-Loaded Retractable Casters—Assembled								
1′8″	16″	9½″	2	1′8″	21″	19″	8039T31	116.32
1′8″	24″	9½″	2	1′8″	27″	19″	8039T32	143.00
2′6″	16″	9½″	3	2′6″	21″	27″	8039T33	138.05
2′6″	24″	9½″	3	2′6″	29″	27″	8039T34	191.35
3′4″	16″	9½″	4	3′4″	21″	36″	8039T35★	199.40
3′4″	24″	9½″	4	3′4″	29″	36″	8039T36★	221.55
Replacement Retractable Casters (Set of Four)							80105T32	56.47

★ Does not meet CAL-OSHA requirements. Not available in California.

Steel Rolling Platform Ladders with Expanded Metal Steps

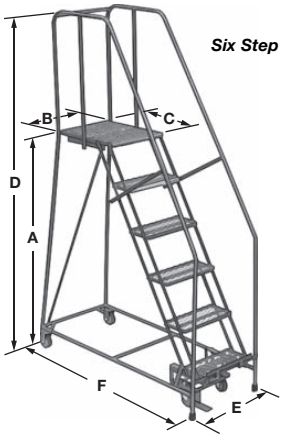

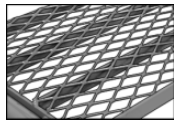
Expanded Metal

An expanded metal platform and steps provide good slip resistance and an open-grid design for drainage. Ladders have a gray finish. Ladders *with spring-loaded retractable casters* include four swivel casters; *step-lock* ladders include two swivel and two rigid casters. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
With Spring-Loaded Retractable Casters—Assembled								
1′8″	24″	20″	2	4′2″	26″	29″	8188T44	$234.10
2′6″	16″	10″	3	5′	20″	26″	8188T83	192.26
2′6″	24″	20″	3	5′	30″	36″	8188T45	256.17
3′4″	24″	20″	4	5′10″	30″	41″	8188T46	298.04
3′4″	24″	30″	4	5′10″	30″	51″	8188T24	342.53
Replacement Retractable Caster							80105T72	19.84
Step-Lock with Casters—Assembled								
4′2″	16″	10″	5	7′8″	20″	40″	8188T87	325.55
4′2″	24″	20″	5	7′8″	30″	50″	8188T14	368.08
4′2″	24″	30″	5	7′8″	30″	60″	8188T15	418.61
5′	16″	20″	6	8′6″	24″	56″	8188T31	459.25
5′	24″	20″	6	8′6″	30″	56″	8188T33	546.18
5′	24″	30″	6	8′6″	30″	66″	8188T34	597.74
5′10″	16″	20″	7	9′4″	24″	63″	8188T35	480.22
5′10″	24″	20″	7	9′4″	30″	63″	8188T37	532.85
5′10″	24″	30″	7	9′4″	30″	73″	8188T38	588.30
6′8″	24″	20″	8	10′2″	32″	68″	8188T52	697.74
6′8″	24″	30″	8	10′2″	32″	78″	8188T53	777.65
7′6″	24″	20″	9	11′	32″	75″	8188T56	679.81
7′6″	24″	30″	9	11′	32″	85″	8188T57	768.47
Replacement Swivel Caster							80105T63	16.16
Replacement Wheel for Rigid Caster							80105T62	22.39
Step-Lock with Casters—Unassembled								
8′4″	24″	20″	10	10′10″	32″	84″	8188T92	867.48
8′4″	24″	30″	10	10′10″	32″	92″	8188T93	971.89
10′	24″	20″	12	13′6″	32″	98″	8188T94	1,084.83
10′	24″	30″	12	13′6″	32″	108″	8188T95	1,145.13
Replacement Swivel Caster							80105T63	16.16
Replacement Wheel for Rigid Caster							80105T62	22.39

Steel Rolling Platform Ladders with Rubber-Covered Steps

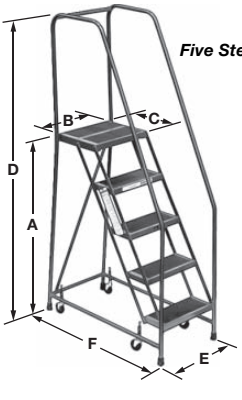

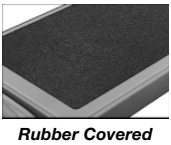
Rubber Covered

Get comfort and slip resistance with rubber-covered platform and steps. Ladders have a gray finish. Ladders *with spring-loaded retractable casters* include four swivel casters; *step-lock* ladders include two swivel and two rigid casters. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

To Order: For replacement retractable casters, please specify platform width and number of steps.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
With Spring-Loaded Retractable Casters—Assembled								
1′8″	24″	14″	2	3′8″	27″	24″	8103T43	$194.81
2′6″	16″	14″	3	4′6″	21″	33″	8103T47	215.83
2′6″	24″	14″	3	4′6″	29″	32″	8103T49	227.53
3′4″	16″	14″	4	5′10″	21″	38″	8103T53	257.22
3′4″	24″	14″	4	5′10″	29″	38″	8103T55	303.67
4′2″	17″	14″	5	7′10″	21″	45″	8103T58	335.09
4′2″	24″	14″	5	7′10″	29″	45″	8103T61	392.20
Repl. Retractable Casters (Set of Four)							80105T32	56.47
Step-Lock with Casters—Assembled								
5′	17″	14″	6	8′8″	23″	51″	8103T64	367.45
5′	24″	14″	6	8′8″	29″	51″	8103T66	437.89
5′10″	17″	14″	7	9′6″	24″	57″	8103T69	418.68
5′10″	24″	14″	7	9′6″	29″	57″	8103T72	481.69
6′8″	24″	14″	8	10′4″	33″	61″	8103T73	597.82
Repl. Casters (Set of Four)							80105T11	69.51
Step-Lock with Casters—Unassembled								
8′4″	24″	14″	10	11′	33″	74″	8103T77	797.74
10′	24″	14″	12	13′1″	33″	87″	8103T79	937.53
Repl. Casters (Set of Four)							80105T11	69.51

Steel Rolling Platform Ladders with Serrated Steps

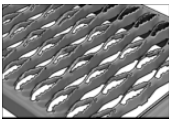

Serrated

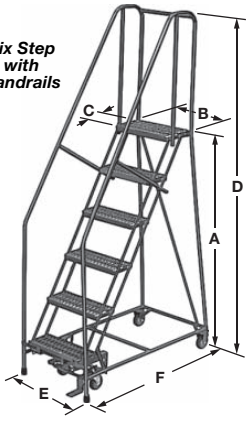

For maximum slip resistance, the platform and steps are serrated. Ladders have a gray finish. Ladders *with spring-loaded retractable casters* include four swivel casters; *step-lock* ladders lock in place and include two swivel and two rigid casters.

Shipped assembled. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
With Handrails								
With Spring-Loaded Retractable Casters								
1′8″	16″	10″	2	4′2″	18″	18″	**8106T81**	$178.51
1′8″	24″	10″	2	4′2″	26″	18″	**8106T82**	199.74
2′6″	16″	10″	3	5′	20″	26″	**8106T83**	229.67
2′6″	24″	10″	3	5′	30″	26″	**8106T84**	255.98
2′6″	24″	20″	3	5′	30″	36″	**8106T318**	363.24
2′6″	24″	30″	3	5′	30″	46″	**8106T35**	412.33
3′4″	16″	10″	4	5′10″	20″	31″	**8106T85**	266.09
3′4″	24″	10″	4	5′10″	30″	31″	**8106T86**	328.84
3′4″	24″	20″	4	5′10″	30″	41″	**8106T319**	422.66
3′4″	24″	30″	4	5′10″	30″	51″	**8106T36**	475.05
Replacement Retractable Caster							**80105T72**	19.84
Step-Lock with Casters								
4′2″	16″	10″	5	7′8″	20″	40″	**8106T587**	343.37
4′2″	24″	10″	5	7′8″	30″	40″	**8106T588**	511.47
4′2″	24″	20″	5	7′8″	30″	50″	**8106T321**	501.12
4′2″	24″	30″	5	7′8″	30″	60″	**8106T537**	546.75
5′	16″	10″	6	8′6″	24″	46″	**8106T22**	446.69
5′	24″	10″	6	8′6″	30″	46″	**8106T23**	503.08
5′	24″	20″	6	8′6″	30″	56″	**8106T412**	592.85
5′	24″	30″	6	8′6″	30″	66″	**8106T38**	727.16
5′10″	16″	10″	7	9′4″	24″	53″	**8106T24**	491.39
5′10″	24″	10″	7	9′4″	30″	53″	**8106T25**	555.08
5′10″	24″	20″	7	9′4″	30″	63″	**8106T413**	652.00
5′10″	24″	30″	7	9′4″	30″	73″	**8106T39**	782.29
6′8″	16″	10″	8	9′2″	24″	58″	**8106T49**★	647.05
6′8″	24″	10″	8	10′2″	32″	58″	**8106T26**	744.20
6′8″	24″	20″	8	10′2″	32″	68″	**8106T414**	830.39
6′8″	24″	30″	8	10′2″	32″	78″	**8106T311**	852.44
7′6″	16″	10″	9	10′	24″	65″	**8106T71**★	680.23
7′6″	24″	10″	9	11′	32″	65″	**8106T27**	727.57
7′6″	24″	20″	9	11′	32″	75″	**8106T415**	880.79
7′6″	24″	30″	9	11′	32″	85″	**8106T312**	930.11
8′4″	24″	10″	10	10′10″	32″	72″	**8106T28**	791.76
8′4″	30″	10″	10	10′10″	32″	72″	**8106T78**	989.15
9′2″	24″	10″	11	11′8″	32″	78″	**8106T29**	842.35
9′2″	30″	10″	11	11′8″	32″	78″	**8106T79**	1,053.38
Replacement Swivel Caster							**80105T63**	16.16
Replacement Wheel for Rigid Caster							**80105T62**	22.39
Without Handrails								
With Spring-Loaded Retractable Casters								
1′	24″	10″	1	1′	26″	16″	**8106T62**	148.73
1′8″	16″	10″	2	1′8″	18″	18″	**8106T63**	156.82
1′8″	24″	10″	2	1′8″	26″	18″	**8106T64**	177.05
1′8″	24″	20″	2	1′8″	26″	28″	**8106T313**	288.36
2′6″	16″	10″	3	2′6″	20″	26″	**8106T65**	197.29
2′6″	24″	10″	3	2′6″	30″	26″	**8106T66**	228.97
2′6″	24″	20″	3	2′6″	30″	36″	**8106T314**	336.93
2′6″	24″	30″	3	2′6″	30″	46″	**8106T32**	392.09
3′4″	24″	20″	4	3′4″	30″	41″	**8106T315**★	377.40
Replacement Retractable Caster							**80105T72**	19.84

★ Does not meet CAL-OSHA requirements. Not available in California.

Tight-Turning Steel Rolling Platform Ladders

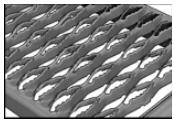

Serrated

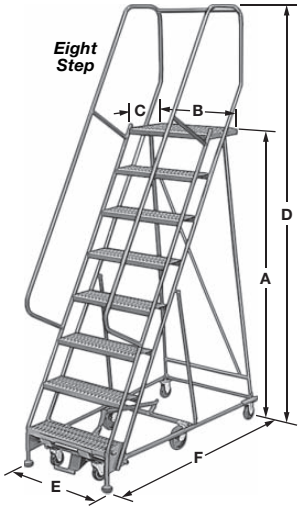

Two rigid casters in the center allow these ladders to easily turn in narrow aisles and tight spaces. Ladders also have two swivel casters and two rigid casters. All ladders lock in place.

Ladders have a gray finish. Platform and steps are serrated for maximum slip resistance. Shipped unassembled. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
6′8″	24″	14″	8	10′2″	32″	68″	**81925T31**	$610.47
8′4″	24″	14″	10	11′2″	32″	82″	**81925T32**	719.40
10′	24″	14″	12	12′10″	32″	96″	**81925T33**	808.82
11′8″	30″	14″	14	15′6″	40″	108″	**81925T34**	906.72

Steel Rolling Platform Ladders with Shelves

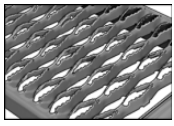

Serrated

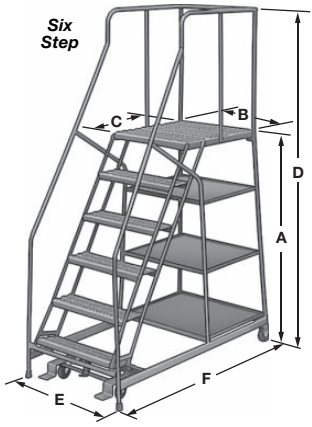

Picking and putting away material just got easier. Ladders have three 20″×24″ shelves with raised edges that each hold 70 lbs. All lock in place and have two swivel and two rigid casters.

Ladders have a gray finish. Platform and steps are serrated for maximum slip resistance. Shipped assembled. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
5′	24″	28½″	6	8′8″	32″	62″	**8118T91**	$747.63
5′10″	24″	19″	7	9′6″	32″	60″	**8118T92**	795.43
6′8″	24″	19″	8	10′4″	32″	65″	**8118T93**	860.95
7′6″	24″	19″	9	11′2″	32″	72″	**8118T94**	899.30
8′4″	24″	19″	10	10′10″	32″	78″	**8118T95**	987.75
9′2″	24″	19″	11	11′8″	32″	84″	**8118T96**	1,027.41
Replacement Casters (Set of Four)							**80105T29**	69.51

Extra-Rugged Steel Rolling Platform Ladders

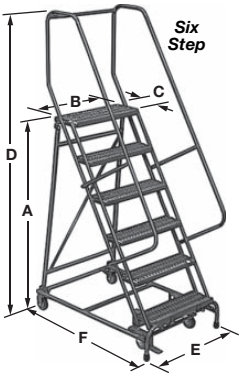

Serrated

Heavy duty tubing and extra bracing in the base and back make these ladders tough enough to handle harsh environments. Platform and steps are serrated for maximum slip resistance. Ladders have a gray finish. All lock in place and have two swivel and two rigid casters. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

80055T21 has a 4″ high toeboard on three sides of the platform.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
Assembled								
5′	24″	10″	6	8′6″	30″	46″	**80055T12**	$520.54
6′8″	24″	10″	8	10′2″	32″	58″	**80055T14**	666.56
8′4″	24″	10″	10	10′10″	32″	72″	**80055T16**	785.15
Unassembled								
10′	24″	20″	12	13′6″	32″	98″	**80055T18**	1,209.63
11′8″	24″	20″	14	15′2″	42″	121″	**80055T21**	1,434.83
Replacement Swivel Caster							**80105T63**	16.16
Replacement Wheel for Rigid Caster							**80105T62**	22.39

Folding Steel Rolling Platform Ladders

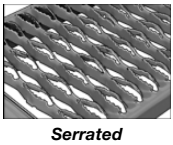
Serrated

Fold these ladders for easy transport and compact storage. When ready to use, unfold and secure with two bolts and hex nuts (ladders with 13 or more steps have four bolts and hex nuts). They have large rugged wheels on the rear for rolling. Ladders with five to nine steps are tilt-to-roll; those with ten or more steps lock in place and have two swivel and two rigid casters. All have a gray finish. Platform and steps are serrated for maximum slip resistance. Capacity is 300 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements. Shipped assembled except the handrails require assembly.

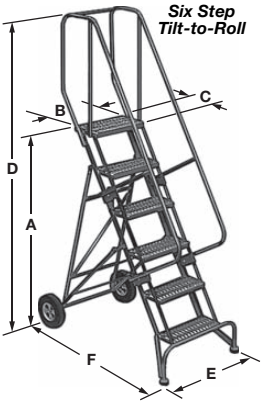

Folded

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
4′2″	16″	10″	5	7′8″	30″	46″	**8172T11**	$366.48
4′2″	16″	20″	5	7′8″	30″	56″	**8172T51**	503.48
5′	16″	10″	6	8′6″	30″	53″	**8172T12**	406.89
5′	16″	20″	6	8′6″	30″	63″	**8172T52**	536.55
5′10″	16″	10″	7	9′4″	30″	58″	**8172T14**	452.10
5′10″	16″	20″	7	9′4″	30″	68″	**8172T54**	582.49
6′8″	16″	10″	8	10′2″	30″	65″	**8172T16**	507.48
6′8″	16″	20″	8	10′2″	30″	75″	**8172T56**	627.63
7′6″	16″	10″	9	11′	30″	72″	**8172T18**	567.79
7′6″	16″	20″	9	11′	30″	82″	**8172T58**	672.52
8′4″	16″	10″	10	10′10″	30″	78″	**8172T21**	780.02
8′4″	16″	20″	10	10′10″	30″	88″	**8172T61**	861.63
9′2″	16″	10″	11	11′8″	30″	86″	**8172T23**	824.53
9′2″	16″	20″	11	11′8″	30″	96″	**8172T63**	897.74
10′	16″	10″	12	13′6″	30″	92″	**8172T25**	878.33
10′	16″	20″	12	13′6″	30″	102″	**8172T65**	1,006.33
10′10″	16″	10″	13	14′4″	40″	99″	**8172T27**	1,165.87
11′8″	16″	10″	14	15′2″	40″	106″	**8172T28**	1,203.45
13′4″	16″	10″	16	16′10″	40″	119″	**8172T31**	1,386.60
13′4″	16″	20″	16	16′10″	40″	129″	**8172T71**	1,455.23
Replacement Wheel							**8172T91**	51.39

Unassembled Steel Rolling Platform Ladders

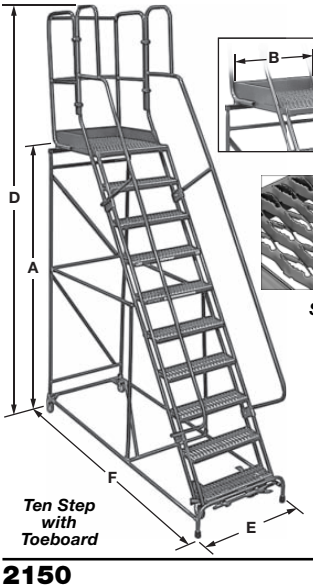

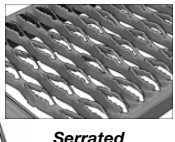
Serrated

Ten Step with Toeboard

Ladders are shipped unassembled to save on freight costs. Platform and steps are serrated for maximum slip resistance. Ladders have a gray finish. All lock in place and have two swivel and two rigid casters. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platforms with toeboard have a 4″ high toeboard on three sides.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
Platforms with Toeboard								
5′10″	24″	30″	7	9′4″	32″	73″	**8229T1**	$951.37
6′8″	24″	30″	8	10′2″	32″	78″	**8229T11**	992.13
7′6″	24″	30″	9	11′	32″	85″	**8229T12**	1,047.63
8′4″	24″	30″	10	11′10″	32″	92″	**8229T13**	1,181.19
9′2″	24″	30″	11	12′8″	32″	98″	**8229T14**	1,260.97
10′	24″	30″	12	13′6″	32″	108″	**8229T15**	1,339.73
10′10″	24″	30″	13	14′4″	42″	115″	**8229T17**	1,408.37
11′8″	24″	30″	14	15′2″	42″	121″	**8229T16**	1,570.04
12′6″	30″	30″	15	16′	42″	125″	**8229T37**	1,822.52
13′4″	30″	30″	16	16′10″	42″	134″	**8229T18**	1,965.08
14′2″	30″	30″	17	17′8″	48″	138″	**8229T38**	2,109.87
15′10″	30″	30″	19	19′4″	48″	154″	**8229T39**	2,386.68
Platforms without Toeboard								
8′4″	24″	10″	10	10′10″	32″	72″	**8229T76**	713.65
10′	24″	10″	12	13′6″	32″	88″	**8229T71**	818.20
Replacement Caster and Wheel								
Swivel Caster							**80105T63**	16.16
Wheel for Rigid Caster							**80105T62**	22.39

Gradual-Incline Steel Rolling Platform Ladders

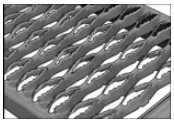

Serrated

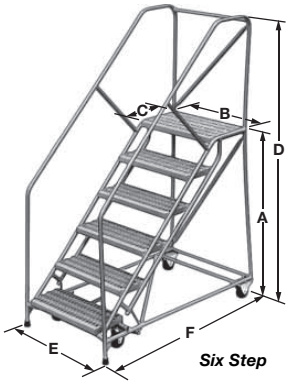

Six Step

A gradual 50° incline makes these ladders easier to climb than standard ladders and allows for a forward descent. All ladders have a gray finish. Platform and steps are serrated for maximum slip resistance. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Ladders *with spring-loaded retractable casters* have four swivel casters. *Step-lock ladders* have two swivel and two rigid casters.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
Assembled								
With Spring-Loaded Retractable Casters								
2′6″	24″	14″	3	5′	28″	34″	**8191T21**	$295.40
2′6″	30″	14″	3	5′	34″	34″	**8191T22**	336.14
3′4″	24″	14″	4	5′10″	28″	44″	**8191T23**	389.62
3′4″	30″	14″	4	5′10″	34″	44″	**8191T24**	485.12
Replacement Retractable Casters (Set of Four)							**80105T87**	56.47
Step-Lock with Casters								
4′2″	24″	14″	5	7′8″	29″	54″	**8191T25**	473.32
4′2″	30″	14″	5	7′8″	35″	54″	**8191T26**	566.45
5′	24″	14″	6	8′6″	30″	63″	**8191T27**	613.98
5′	30″	14″	6	8′6″	36″	63″	**8191T28**	701.42
Replacement Casters (Set of Four)							**80105T11**	69.51
Unassembled								
Step-Lock with Casters								
5′	24″	14″	6	8′6″	32″	68″	**80815T41**	541.59
5′10″	24″	14″	7	9′4″	32″	76″	**80815T42**	596.11
6′8″	24″	14″	8	10′2″	32″	90″	**80815T43**	668.42
8′4″	24″	14″	10	11′2″	32″	103″	**80815T44**	748.30
10′	24″	14″	12	12′10″	32″	121″	**80815T45**	820.80
Replacement Swivel Caster							**80815T71**	14.60
Replacement Wheels for Rigid Casters (Set of Two)							**80815T72**	16.88

Steel Rolling Ladders with Extra-Large Platform

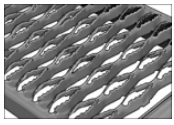

Serrated

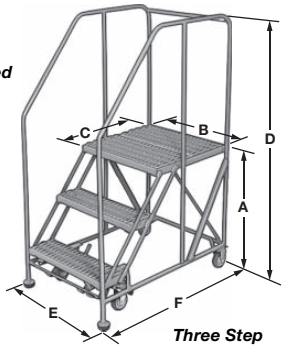

Three Step

With an oversized platform two people can easily work side by side. Plus, ladders have a high load capacity to handle extra boxes and tools. They also have a 50° incline for an easy forward descent.

Ladders have a gray finish. Platform and steps are serrated for maximum slip resistance. All lock in place and have two swivel and two rigid casters. Shipped assembled. Capacity is 800 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
2′6″	24″	24″	3	5′	28″	43″	**8175T62**	$526.20
2′6″	24″	36″	3	5′	28″	55″	**8175T66**	573.65
2′6″	24″	48″	3	5′	28″	66″	**8175T71**	633.66
2′6″	36″	24″	3	5′	40″	43″	**8175T63**	584.13
2′6″	36″	36″	3	5′	40″	55″	**8175T67**	653.64
2′6″	36″	48″	3	5′	40″	66″	**8175T72**	775.22
3′4″	24″	24″	4	5′10″	28″	51″	**8175T64**	553.89
3′4″	24″	36″	4	5′10″	28″	63″	**8175T68**	633.60
3′4″	24″	48″	4	5′10″	28″	75″	**8175T73**	704.45
3′4″	36″	24″	4	5′10″	40″	51″	**8175T65**	654.38
3′4″	36″	36″	4	5′10″	40″	63″	**8175T69**	727.13
3′4″	36″	48″	4	5′10″	40″	75″	**8175T74**	872.74
4′2″	24″	24″	5	7′8″	28″	58″	**8175T26**	651.44
4′2″	24″	36″	5	7′8″	28″	70″	**8175T15**	728.61
4′2″	24″	48″	5	7′8″	28″	82″	**8175T33**	759.36
4′2″	36″	24″	5	7′8″	40″	58″	**8175T27**	734.98
4′2″	36″	36″	5	7′8″	40″	70″	**8175T16**	811.81
4′2″	36″	48″	5	7′8″	40″	82″	**8175T34**	938.58
5′	24″	24″	6	8′6″	28″	67″	**8175T52**	868.64
5′	24″	36″	6	8′6″	28″	78″	**8175T53**	919.36
5′	24″	48″	6	8′6″	28″	90″	**8175T54**	1,106.78
5′	36″	24″	6	8′6″	40″	67″	**8175T81**	1,079.56
5′	36″	36″	6	8′6″	40″	78″	**8175T82**	1,184.42
5′	36″	48″	6	8′6″	40″	90″	**8175T83**	1,252.78
5′10″	24″	24″	7	9′4″	28″	75″	**8175T91**	988.53
5′10″	24″	36″	7	9′4″	28″	87″	**8175T92**	1,037.78
5′10″	24″	48″	7	9′4″	28″	99″	**8175T93**	1,188.23
5′10″	36″	24″	7	9′4″	40″	75″	**8175T101**	1,171.95
5′10″	36″	36″	7	9′4″	40″	87″	**8175T102**	1,289.57
5′10″	36″	48″	7	9′4″	40″	99″	**8175T103**	1,384.35
Replacement Swivel Caster							**80105T63**	16.16
Replacement Wheel for Rigid Caster							**80105T62**	22.39

Two-Side Access Steel Rolling Platform Ladders

Climb on either side; two people can use the oversized platform simultaneously. Finish is gray. Platform and steps are serrated for maximum slip resistance. All lock in place and have four swivel casters. Shipped assembled except the handrails require assembly. Capacity is 800 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

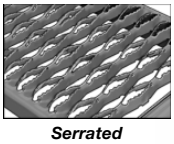

Serrated

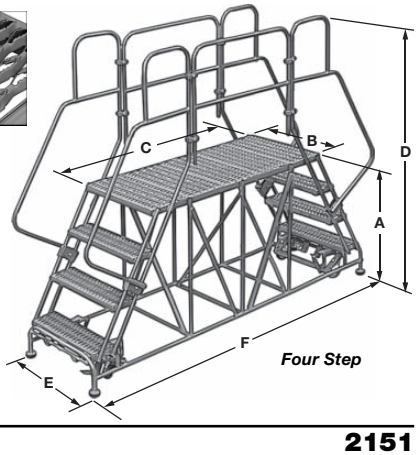

Four Step

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
3′4″	24″	48″	4	6′4″	28″	87″	**8185T11**	$1,052.34
3′4″	24″	60″	4	6′4″	28″	99″	**8185T19**	1,110.57
3′4″	36″	60″	4	6′4″	40″	99″	**8185T21**	1,344.99
4′2″	24″	48″	5	7′8″	28″	99″	**8185T13**	1,248.64
4′2″	36″	72″	5	7′8″	40″	123″	**8185T32**	1,673.70
5′	24″	48″	6	8′6″	28″	111″	**8185T15**	1,359.56
5′	36″	72″	6	8′6″	40″	135″	**8185T34**	1,840.86
5′10″	24″	48″	7	9′4″	28″	123″	**8185T17**	1,467.24
5′10″	36″	72″	7	9′4″	40″	147″	**8185T36**	1,970.39
Replacement Swivel Caster							**80105T63**	16.16

Tilt-to-Roll Platform Ladders

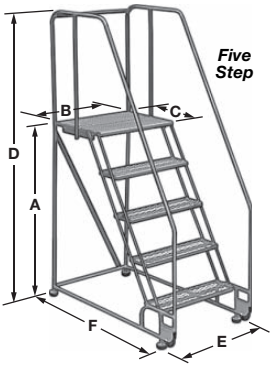

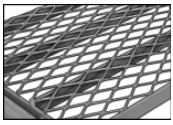

Expanded Metal

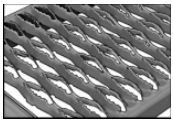

Serrated

Tilt and roll these ladders to where you need them. When tilted, ladders roll on two wheels. When stationary, four rubber pads keep ladders in place. Shipped assembled. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Expanded metal steps provide good slip resistance and are more comfortable than serrated steps. *Serrated steps* are more slip resistant than expanded metal.

Steel Ladders— Capacity is 450 lbs. **To Order:** Please specify color: gray or safety yellow.

Aluminum Ladders— Lighter weight than steel or stainless steel. Capacity is 350 lbs.

Stainless Steel Ladders— Made of corrosion-resistant Type 304 stainless steel with a matte finish. Capacity is 450 lbs.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
Steel with Expanded Metal Platform and Steps								
1′8″	24″	10″	2	4′2″	28″	24″	**14155T11**	$172.45
1′8″	24″	20″	2	4′2″	28″	34″	**14155T15**	288.45
2′6″	24″	10″	3	5′	28″	30″	**14155T12**	205.46
2′6″	24″	20″	3	5′	28″	41″	**14155T16**	312.57
3′4″	24″	10″	4	5′10″	28″	37″	**14155T13**	239.09
3′4″	24″	20″	4	5′10″	28″	47″	**14155T17**	355.70
4′2″	24″	20″	5	7′8″	28″	54″	**14155T18**	407.45
Steel with Serrated Platform and Steps								
1′8″	24″	10″	2	4′2″	28″	24″	**14155T21**	236.50
1′8″	24″	20″	2	4′2″	28″	34″	**14155T25**	344.10
2′6″	24″	10″	3	5′	28″	30″	**14155T22**	268.03
2′6″	24″	20″	3	5′	28″	41″	**14155T26**	377.48
3′4″	24″	10″	4	5′10″	28″	37″	**14155T23**	312.57
3′4″	24″	20″	4	5′10″	28″	47″	**14155T27**	429.76
4′2″	24″	20″	5	7′8″	28″	54″	**14155T28**	490.43
Aluminum with Serrated Platform and Steps								
2′6″	24″	10″	3	5′	28″	30″	**79965T32**	611.54
2′6″	24″	20″	3	5′	28″	40″	**79965T36**	741.06
3′4″	24″	10″	4	5′10″	28″	37″	**79965T33**	720.83
3′4″	24″	20″	4	5′10″	28″	46″	**79965T37**	852.43
4′2″	24″	20″	5	7′8″	28″	54″	**79965T38**	976.70
Stainless Steel with Expanded Metal Platform and Steps								
2′6″	24″	10″	3	5′	28″	30″	**8250T42**	820.18
2′6″	24″	20″	3	5′	28″	40″	**8250T46**	1,099.35
3′4″	24″	10″	4	5′10″	28″	37″	**8250T43**	998.32
3′4″	24″	20″	4	5′10″	28″	46″	**8250T47**	1,272.97
4′2″	24″	20″	5	7′8″	28″	54″	**8250T48**	1,334.03

Straddle Base Tilt-to-Roll Steel Platform Ladders

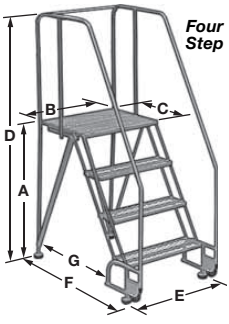

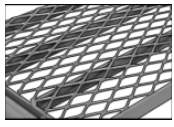

Expanded Metal

Get close to your work even when pipes or other objects are in the way. With no horizontal braces, these ladders can straddle obstructions. Tilt ladders to roll on two wheels. When stationary, four rubber pads keep ladders in place.

Ladders have a gray finish. Platform and steps are expanded metal for good slip resistance. Shipped assembled. Capacity is 350 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)	(G)		
2′6″	24″	20″	3	5′	28″	41″	24½″	**79885T11**	$351.41
3′4″	24″	20″	4	5′10″	28″	47″	31″	**79885T12**	405.54
4′2″	24″	20″	5	7′8″	28″	54″	36″	**79885T13**	461.83
5′	24″	20″	6	8′6″	28″	60″	46½″	**79885T14**	524.62

All-Stainless Steel Rolling Platform Ladders

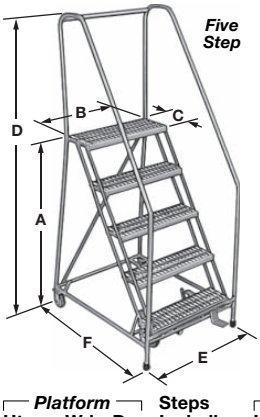

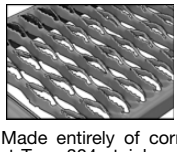

Serrated

Made entirely of corrosion-resistant Type 304 stainless steel, these ladders withstand repeated washdowns, making them perfect for use in food-service and pharmaceutical applications. Ladders have a matte finish. Platform and steps are serrated for maximum slip resistance. Ladders lock in place and have two swivel and two rigid casters. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
Assembled								
4′2″	24″	10″	5	7′8″	30″	40″	**80575T65**	$1,789.11
5′10″	24″	10″	7	9′4″	30″	53″	**80575T66**	2,349.98
8′4″	24″	10″	10	10′10″	32″	72″	**80575T68**	3,566.97
Unassembled								
10′	24″	10″	12	13′6″	32″	88″	**80575T69**	3,962.25

Trailer-Unloading Steel Rolling Platform Ladders

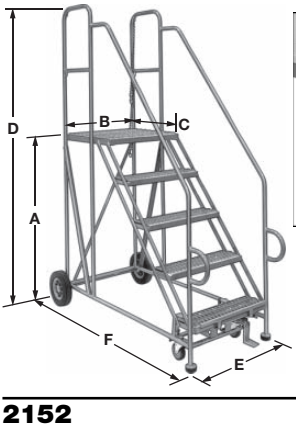

Serrated

With a walk-through platform, you can easily unload and load trailers. Plus, a gradual 50° incline makes this ladder easier to climb than standard ladders and allows for a forward descent. Ladder locks in place and has two swivel and two rigid casters. It also has a removable chain across the back of the platform.

Platform and steps are serrated for maximum slip resistance. Finish is gray. Shipped assembled. Capacity is 800 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
4′2″	24″	24″	5	7′8″	33″	63″	**8569T1**	$875.50

Aluminum Rolling Platform Ladders

Easily roll these lightweight, corrosion-resistant ladders where you need them. All have four spring-loaded retractable swivel casters. Shipped assembled. Capacity is 350 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements, unless noted.

Ribbed— Platform and steps are grooved for some slip resistance and are more comfortable than serrated steps.

Serrated— Platform and steps provide maximum slip resistance.

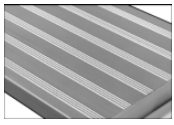

Ribbed

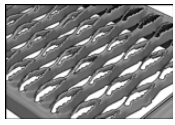

Serrated

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)	Ribbed Platform and Steps		Serrated Platform and Steps	
With Handrails										
1′8″	16″	14″	2	4′2″	20″	23″	—	—	**8125T49**	$295.87
1′8″	24″	14″	2	4′2″	26″	23″	—	—	**8125T51**	342.23
2′6″	16″	14″	3	5′	22″	29″	**7993T42**	$433.33	**8125T52**	384.90
2′6″	24″	14″	3	5′	30″	29″	**7993T43**	504.49	**8125T53**	418.30
3′4″	16″	14″	4	5′10″	22″	36″	**7993T44**	511.79	**8125T54**	451.68
3′4″	24″	14″	4	5′10″	30″	36″	**7993T45**	599.38	**8125T55**	514.75
4′2″	16″	14″	5	7′8″	22″	43″	**7993T46**	596.89	**8125T45**	551.20
4′2″	24″	14″	5	7′8″	30″	43″	**7993T47**	698.97	**8125T56**	628.25
5′	16″	14″	6	8′6″	24″	50″	**7993T48**	673.13	**8125T57**	655.54
5′	24″	14″	6	8′6″	30″	50″	**7993T49**	797.16	**8125T46**	743.74
5′10″	24″	14″	7	9′4″	30″	57″	**7993T52**	1,003.00	**8125T47**	991.00
6′8″	24″	14″	8	10′2″	30″	63″	**7993T53**	1,151.57	**8125T48**	1,139.52
Without Handrails										
1′8″	16″	14″	2	1′8″	20″	23″	**7993T31**	296.49	**8125T42**	258.77
2′6″	16″	14″	3	2′6″	22″	29″	**7993T35**	405.97	**8125T43**	338.53
3′4″	16″	14″	4	3′4″	22″	36″	**7993T37**★	482.59	**8125T44**★	423.87

Replacement Retractable Caster **80105T72** $19.84

★ Does not meet CAL-OSHA requirements. Not available in California.

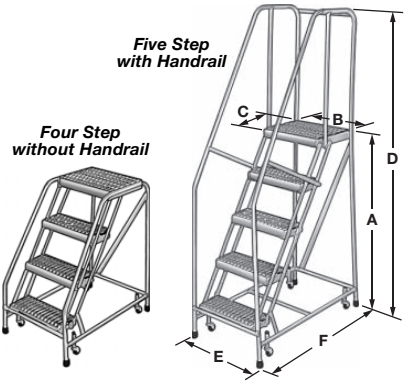

Steel Rolling Platform Ladders with Cup Shoes

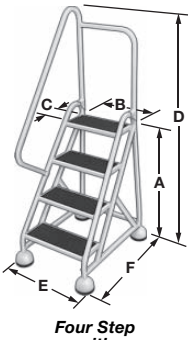

Four Step with Handrail on Left

Four Step with Double Handrails

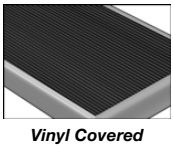

Vinyl Covered

Three Step without Handrails

Cup shoes rest on the floor for stability; four spring-loaded retractable swivel casters let you roll ladders anywhere. Ladders have a gray finish. Platform and steps are vinyl covered for good slip resistance and comfort. Shipped assembled except the handrails require assembly. Capacity is 450 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements, unless noted.

Also Available: Replacement casters, please specify 8181T7 and the McMaster-Carr part number of your ladder.

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
With Handrail on the Left Side								
3′	16″	8″	4	5′6″	25″	34″	**8181T441**★	$494.67
3′9″	16″	8″	5	6′3″	26″	40″	**8181T451**★	574.17
With Handrail on the Right Side								
3′9″	16″	8″	5	6′3″	26″	40″	**8181T461**★	574.17
With Double Handrails								
2′3″	16″	14″	3	4′9″	24″	32″	**8181T611**	505.27
3′	16″	14″	4	5′6″	25″	39″	**8181T621**	556.51
3′9″	16″	14″	5	6′3″	26″	46″	**8181T631**	623.63
4′6″	16″	14″	6	8′	27″	53″	**8181T641**	699.45
Without Handrails								
1′6″	16″	8″	2	1′11″	22″	20″	**8181T411**	327.84
2′3″	16″	8″	3	2′8″	24″	27″	**8181T421**	374.38
2′3″	16″	14″	3	2′8″	24″	32″	**8181T571**	449.25
Replacement Parts								
Rubber Rings for Cup Shoes (Set of Four)							**8181T91**	17.02

★ Does not meet CAL-OSHA requirements. Not available in California.

Heavy Duty Aluminum Rolling Platform Ladders

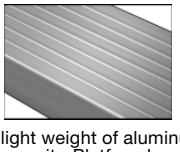

Ribbed

Get the light weight of aluminum with a high load capacity. Platform has a nonskid surface and steps are ribbed for slip resistance. Ladders lock in place and have one swivel caster in front and two rigid casters in back. Shipped unassembled.

Capacity is 500 lbs. Meet ANSI A14.7 and OSHA requirements; those sold in California meet CAL-OSHA requirements.

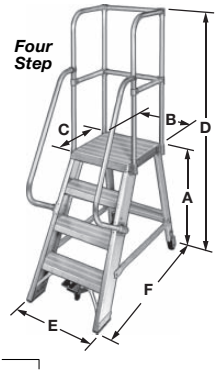

Platform Ht. (A)	Platform Wd. (B)	Platform Dp. (C)	Steps Including Platform	Overall Ht. (D)	Overall Wd. (E)	Overall Dp. (F)		
3′0″	20″	20″	4	6′6″	24″	43″	**8159T14**	$895.89
3′9″	20″	20″	5	7′3″	25″	49″	**8159T16**	956.06
4′6″	20″	20″	6	8′	26″	55″	**8159T31**	1,047.69
5′3″	20″	20″	7	8′9″	27″	61″	**8159T32**	1,115.38
6′0″	20″	20″	8	9′6″	28″	67″	**8159T18**	1,190.77
6′9″	20″	20″	9	10′3″	29″	73″	**8159T21**	1,261.54
7′6″	20″	20″	10	11′	30″	79″	**8159T33**	1,332.31
9′0″	20″	20″	12	12′6″	32″	91″	**8159T23**	1,751.06
9′9″	20″	20″	13	13′3″	33″	97″	**8159T35**	1,831.16
12′0″	20″	20″	16	15′6″	36″	115″	**8159T27**	2,087.90

Accessories and Replacement Parts for Rolling Platform Ladders

Slip-Resistant Handrail Tape— Sticks to ladder handrails for a solid grip. Made of self-adhesive textured vinyl blend. Roll is 2″ Wd.×8′ Lg.

5484T79 ..... $13.94

Replacement Rubber Pad— Provides slip resistance. Pad is 2½″ dia. and has a ⅜″ Dia.×1″ Lg. mounting bolt that threads into a ladder's front legs.

79975T88 ..... $7.46

Replacement Rubber Tips— A washer in these tips extends wear. Fit 1″ OD tubing.

79975T99 (Pkg. of 4) $5.95

Steel Fold-Away Mobile Work Platforms

Folded

Height adjusts in 12″ increments for multiple uses. Lock work platform in place by tightening the back brace's bolts. Then fold it up for convenient and portable storage. Work platform has a yellow finish and comes with two 10″ wide steel planks that have a non-slip surface. Has four locking swivel casters. Capacity is 400 lbs.

Note: Before erecting work platform, check federal, state, and local codes.

Platform Ht. Min.	Platform Ht. Max.	O'all Extended Lg.	O'all Extended Wd.	O'all Extended Ht.	O'all Folded Lg.	O'all Folded Wd.	O'all Folded Ht.		
12″	48″	48″	24″	51″	4″	24″	51″	8064T52	$346.77

Steel Telescoping Mobile Work Platforms

Work at the height you need. Use the winch to manually adjust the platform height in 6″ increments. Spring-loaded pins lock it in place. Tools are not needed for assembly.

The frame is steel with a yellow finish and has built-in outriggers that extend the base from 31½″ wide to 72″ wide. Work platform is 6′4½″ long overall and rolls on four locking swivel casters. Plank is 5′8″ Lg.×19″ Wd. and has a perforated surface with 4″ high toeboards. Guardrails are 43″ high with midrails and safety chains. Capacity is 550 lbs. Meet ANSI and OSHA requirements.

Optional Add-On Height Section— Adjusts in 6″ increments to increase the platform height from 12′6″ to 17′6″.

Note: Before erecting work platforms, check federal, state, and local codes.

Platform Height (A) Min.	Platform Height (A) Max.	O'all Height (B) Min.	O'all Height (B) Max.		
2′	11′	9′10¼″	14′8″	8004T11	$2,889.05
Optional Add-On Height Section				8004T12	728.47

Ladder Scaffolding Supports

Also known as ladder jacks, these supports convert two extension or straight ladders into a scaffold. Use on ladders with round or D-rungs. Supports attach to three rungs and accept planks up to 18″ wide. Eight adjustment notches let you choose the angle. Capacity is 500 lbs. per pair.

Note: Ladders and planks must have a minimum 250-lb. capacity.

8162T24 ..... **Pair** $164.80

Aluminum Extension Planks

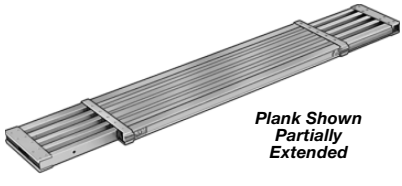

Plank Shown Partially Extended

Ideal for use with ladder jacks, trestle ladders, and walkways, adjust the length of these planks in 12″ increments. Made of aluminum with a ribbed surface for slip resistance. They have a spring-set lock to secure plank when extended. Automatic stops prevent overextending, and end flanges maintain rigidity. Capacity is 250 lbs.

Min. Lg.	Max. Lg.	Ht.	Wd.		
6′	9′	2″	14″	7947T41	$217.15
8′	13′	2″	14″	7947T42	245.12
10′	17′	2″	14″	7947T43	357.74

Steel Adjustable End-Frame Scaffolds

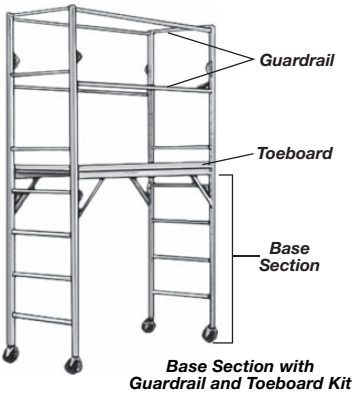

Base Section with Guardrail and Toeboard Kit

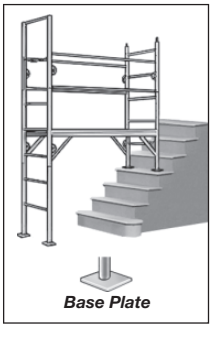

Even if your surface isn't level, your scaffold can be. The end frames adjust independently so each side can be a different height. Scaffolds are steel with a yellow finish and have spring-loaded pins to change the height in 4″ increments. Meet ANSI A10.8 and OSHA requirements.

Base Sections— Base sections include a 28½″ wide plywood plank. Positioning guides hold the plank within the frame. Maximum plank height is 6′4″. Sections roll on four locking swivel casters; install base plates (sold separately) when used on stairs. Capacity is 1,000 lbs.; add-on height sections decrease capacity.

Add-On Height Sections— One add-on plus a base section has a capacity of 850 lbs.; two add-ons plus a base section has a capacity of 700 lbs. Do not stack more than two add-ons per base section. ***Guardrail/toeboard kits*** are required by OSHA when add-on height sections are used. Kits include 40″ high guardrails and 4″ high toeboards. ***Outriggers*** are required by OSHA when add-on height sections are used. They extend the base by 20″ per side. Come with four additional locking swivel casters.

Base Plate— When scaffold is used on stairs, casters should be replaced with 4⅝″×4⅝″ base plates (sold individually).

Note: Before erecting scaffolds, check federal, state, and local codes.

Plank Lg.	Base Wd.	Base Sections O'all Ht.		Add-On Height Sections Add'l Ht.		Guardrail/Toeboard Kits Add'l Ht.	
6′	29½″	78″	8069T12	72″	8069T17	40″	8069T14	$258.81
8′	29½″	78″	8069T19	72″	8069T21	40″	8069T22	282.44

Outriggers (Set of Four)	8069T18	$332.03
Base Plate (for use on stairs)	8069T31	18.75
Replacement Caster	8069T25	42.20

Steel Scaffolds

These scaffolds will securely get you up to your job. Each scaffold requires three planks (sold separately). Capacity is 75 lbs. per sq. ft. of plank area when used with 8180T planks. Meet ANSI A10.8 and OSHA requirements.

5′ Wd.×5′9″ Ht. scaffolds include two end frames, two cross braces, one bottom diagonal brace, and four locking swivel casters

5′ Wd.×10′10″ Ht. scaffolds include four end frames, four cross braces, one bottom diagonal brace, and four locking swivel casters. They also include guardrail posts, guardrail/midrails, top and midside rails, and 4″ high toeboards.

Note: Before erecting scaffolds, check federal, state, and local codes.

Scaffolds

Lg.	5′ Wd.×5′9″ Ht.		5′ Wd.×10′10″ Ht.	
7′	8187T19	$565.15	8187T45	$1,235.36
10′	8187T37	589.69	8187T68	1,279.41

Planks

Lg.	Material	Wd.	Side Rail Ht.		
7′	Aluminum	19 1/16″	3″	8180T24	$193.25
7′	Plywood	19 1/16″	3 1/2″	8180T14	173.47
10′	Aluminum	19 1/16″	4″	8180T25	302.82
10′	Plywood	19 1/16″	4 1/2″	8180T15	261.82

Components

Cross Brace for 7′ Scaffold	8187T64	$26.11
Cross Brace for 10′ Scaffold	8187T65	31.43
Bottom Diagonal Brace for 7′ Scaffold	8187T96	44.35
Bottom Diagonal Brace for 10′ Scaffold	8187T98	52.39
End Frame	8187T15	120.89
Toggle Pin	8187T46	1.76
Coupling Pin	8187T77	2.63
Spring Clip	8187T78	1.46
Locking Swivel Caster	8187T56	62.79
Optional 5″×5″ Base Plate	8187T48	14.18
Optional Adjusting Screw	8187T49	45.29

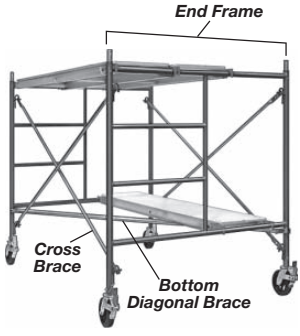

5′9″ High Scaffold with Three Planks (Sold Separately)

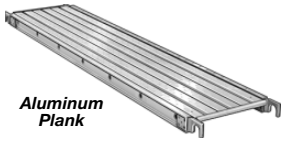

Aluminum Plank

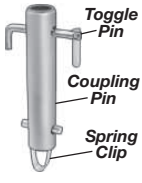

Base Plate

Adjusting Screw

Caster

Planks for Steel Scaffolds

Hooks with a 2″ opening at each end secure planks to end frames. Rungs on the underside are for use as hand grips. Capacity is 75 lbs. per sq. ft. of plank area. Meet ANSI A10.8 and OSHA requirements.

Aluminum planks have a perforated surface for slip resistance and to reduce debris buildup. End hooks are offset to allow for continuous planking on large scaffolds.

Plywood planks have a 1/2″ thick plywood deck with an aluminum frame.

Lg. (A)▲	Wd. (B)	Side Rail Ht. (C)		
Aluminum				
7′	19 1/16″	3″	8180T24	$193.25
8′	19 1/16″	4″	8180T23	241.02
10′	19 1/16″	4″	8180T25	302.82
Plywood				
7′	19 1/16″	3 1/2″	8180T14	173.47
8′	19 1/16″	4 1/2″	8180T13	189.02
10′	19 1/16″	4 1/2″	8180T15	261.82

▲Measured from center-to-center of plank hooks.

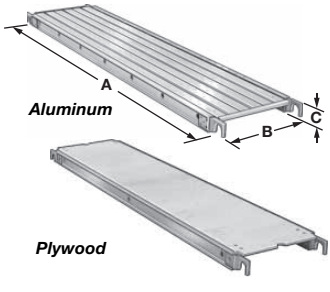

Aluminum Scaffolds

Reach the height you need with these lightweight, corrosion-resistant scaffolds. All hardware is included. Each plank is rated at 25 lbs. per sq. ft.; the maximum scaffold capacity is 500 lbs. Meet ANSI A10.8 and OSHA requirements.

Base Sections— Consist of two end frames with threaded adjustable legs, horizontal and diagonal braces, and one plywood plank with aluminum I-beam side rails. Sections fold for storage and roll on four locking swivel casters.

Add-On Height Sections— Stack on base sections for additional height. They do not fold. You can stack up to two add-on sections on each base section. *Guardrails, toeboards,* and *outriggers* are required by OSHA when add-on sections are used. ***Guardrail kits*** include a 42″ high guardrail with midrail. ***Toeboard kits*** provide a 4″ high toeboard on all four sides. ***Adjustable outrigger*** fits both scaffold base sections listed. Legs have swivel shoes and adjust from 12″ to 66″ to extend the overall base width for stability.

Note: Before erecting scaffolds or adding additional sections, check federal, state, and local codes.

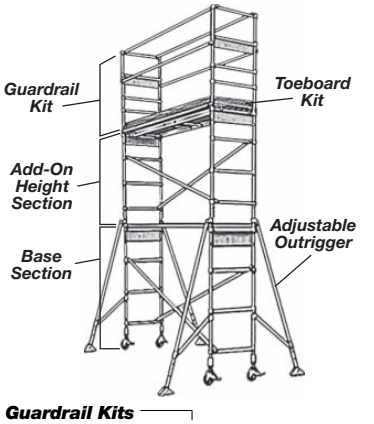

Plank Lg.	Base Wd.	Base Sections: O'all Ht.			Add-On Height Sections: Additional Ht.			Guardrail Kits: Additional Ht.			Toeboard Kits	
6′	29″	6′6″-7′6″	8079T17	$1,310.83	5′5″	8079T24	$516.17	3′5″	8079T34	$486.83	8079T44	$148.20
8′	29″	6′6″-7′6″	8079T18	1,388.98	5′6″	8079T25	579.56	3′5″	8079T35	551.47	8079T45	173.04

Adjustable Outrigger	8037T41	$205.85

Aluminum Stages, Guardrails, and Toeboards

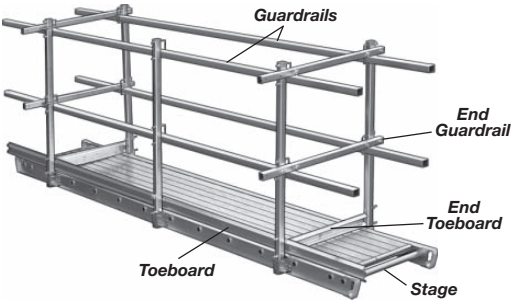

Create catwalks, bridges, gangways, and mezzanines by combining these stages, guardrails, and toeboards. They also work well between trestles, ladder jacks, and ladder scaffolding supports. All hardware is included. Meet ANSI A10.8 and OSHA requirements.

Stages— Have heavy duty aluminum construction and a slip-resistant surface for sure footing. Vinyl caps on the ends eliminate sharp edges and act as hand grips when moving the stages.

Guardrails and ***Toeboards—*** Mount to either side of the stage. Guardrails are made of aluminum tubing and come with midrails and vertical posts. You can mount them so the upper rails are 38″ to 42″ above the stage surface. Toeboards are 3½″ high and clamp to guardrail posts.

Note: Before erecting stages and guardrails, check federal, state, and local codes.

Stages

		Two Person (500 lb. Capacity)								Three Person (750 lb. Capacity)	
Lg.	Ht.	14″ Wide		20″ Wide		24″ Wide		28″ Wide		28″ Wide	
8′	4″	7962T63	$214.17	7962T41	$253.91	7962T51	$306.09	7962T31	$341.33	8265T11	$426.07
12′	4″	7962T65	283.21	7962T42	355.10	7962T52	376.00	7962T32	479.43	8265T12	602.41
16′	5″	7962T67	408.08	7962T43	536.03	7962T53	552.66	7962T33	661.88	8265T14	781.41
20′	6″	7962T73	701.02	7962T44	747.54	7962T54	756.56	7962T34	910.47	8265T16★	998.47
24′	6″	7962T75	789.85	7962T45	909.58	7962T55	911.84	7962T35	1,101.64	8265T17	1,241.64

★ Stage height is 5″.

Guardrails

For Stage Lg.		
8′	8266T81	$174.90
12′	8266T82	261.92
16′	8266T13	293.14
20′	8266T83	356.71
24′	8266T15	491.57

Toeboards

For Stage Lg.		
8′	8266T21	$41.23
12′	8266T22	61.03
16′	8266T23	81.77
20′	8266T24	102.23
24′	8266T25	141.11

End Guardrails and Toeboards

For Both Ends of		
14″ Wide Stages	8266T26	$236.78

For Both Ends of		
20″, 24″, 28″ Wide Stages	8266T27	$269.27

Forklift Cages

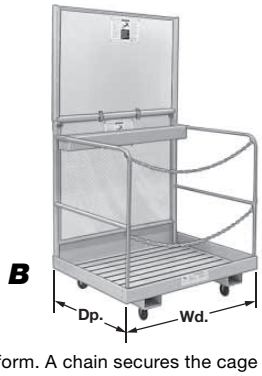

Transform your forklift into an elevated work platform. A chain secures the cage to the mast of your forklift and a backguard protects you from moving parts. Meet ANSI B56.1.

(A) Plastic Cage with Chain Gate— Made of nonconductive polyethylene, so it's perfect for electrical tasks. Cage has two chains on the front that form the gate, a nonskid platform, 42″ high solid plastic walls, and a molded-in tool tray. Color is yellow. Cage also has an 84″ high backguard to meet CAL-OSHA requirements. Fasteners included.

(B) Steel Cage with Chain Gate and Casters— Has two chains on the front that form the gate and four swivel casters for mobility. Cage has an 84″ high backguard to meet CAL-OSHA requirements and a platform with antiskid strips for slip resistance. Includes 42″ high steel tubing guardrails with midrails, 4″ high toeboards, and a tool tray. Cage has a yellow finish. Shipped unassembled (fasteners included).

(C) Steel Cages with Swing Gate— Gate opens inward and outward. Platforms have a diamond plate surface for slip resistance. Cages have a 66″ high backguard; those sold in California have an 84″ high backguard to meet CAL-OSHA requirements. Include 42″ high steel tubing guardrails with midrails, 4″ high toeboards, and a fork lock to secure cage. They also have two attachment points for fall restraints. Cages have a gray finish. Shipped assembled. *Optional swivel casters* (sold individually) can be added for mobility.

Cap., lbs.	Platform Wd.	Platform Dp.	Fork Centers	Fork Openings Wd.	Fork Openings Ht.	Cages		Optional Tool Trays		Optional Fluorescent Bulb Caddies	
(A) Plastic Cage with Chain Gate											
1,000	36″	40″	23″	7″	2¾″	9742T85	$785.01	—	—	9742T86	$85.45
(B) Steel Cage with Chain Gate and Casters											
850	48″	40″	30″	5¾″	2⅞″	7990T38	760.48	—	—	—	—
(C) Steel Cages with Swing Gate											
1,000	36″	36″	26″	7½″	3¾″	7952T61	538.14	7952T35	$37.46	7952T41	40.11
1,000	36″	48″	26″	7½″	3¾″	7952T62	635.06	7952T35	37.46	7952T41	40.11
1,000	48″	48″	30″	7½″	3¾″	7952T63	704.90	7952T36	37.46	7952T41	40.11

Optional Swivel Caster for Style C ..... 80105T63 ..... 16.16

Mini Fold-Up Steps

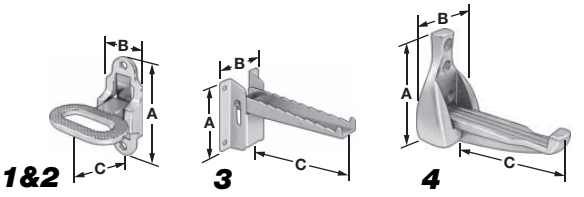

Flip these steps down when you need them and fold them up out of the way when you don't. Fasteners not included. *Note:* Steps are not rated for capacity.

(1) Chrome-plated brass step has two 7/32″ dia. mounting holes spaced 3⅝″ center-to-center.

(2) Type 316 stainless steel step has two 5/16″ dia. mounting holes spaced 3⅝″ center-to-center.

(3) Side-step Type 304 stainless steel step has four 3/16″ dia. mounting holes. Center-to-center distance is 1¾″ side-to-side and 2⅝″ top-to-bottom.

(4) Side-step cast aluminum step has four ¼″ dia. mounting holes. The two side-to-side are ¾″ center-to-center; the two top-to-bottom are 1″ center-to-center.

Step Size Wd.	Dp.	Ht. (A)	Wd. (B)	Projection (C)		
(1) Chrome-Plated Brass						
3¼″	2″	4 5/16″	1 13/16″	3 7/16″	7963T32	$25.75
(2) Type 316 Stainless Steel						
3⅜″	2″	4⅜″	1⅞″	3 7/16″	7963T34	36.80
(3) Side-Step Type 304 Stainless Steel						
4¼″	1″	3⅜″	2⅜″	5⅝″	7963T36	18.88
(4) Side-Step Cast Aluminum						
5″	1 5/16″	4¾″	3⅛″	6¼″	7963T35	26.28

Steel Fold-Up Steps

There when you need a step; then fold it up out of the way when you don't. Step is steel with a serrated surface for slip resistance. Finish is gray. Has two 7/16″ diameter mounting holes (fasteners not included). Capacity is 350 lbs.

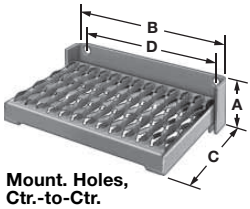

Step Size Ht.	Wd.	Dp.	Overall Ht. (A)	Wd. (B)	Dp. (C)	Mount. Holes, Ctr.-to-Ctr. (D)		
2″	14¼″	9½″	4″	15¼″	10⅛″	13″	8035T52	$99.22

Aluminum Wall-Mount Steps

Stop dragging a step ladder to the same place again and again. Permanently mount these steps where you need them. Steps are corrosion-resistant aluminum with a serrated surface for slip resistance. They have four ¾″ diameter mounting holes (fasteners not included). Capacity is 300 lbs.

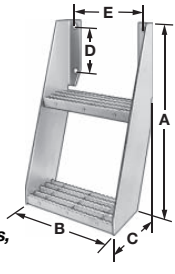

Step Size Wd.	Dp.	Overall Ht. (A)	Wd. (B)	Dp. (C)	Mount. Holes, Ctr.-to-Ctr. (D)	(E)		
12″	4⅞″	23″	12 5/16″	9 11/16″	6¼″	9 13/16″	79925T36	$176.59
18″	4⅞″	23″	18½″	9 11/16″	6¼″	16″	79925T38	187.68

Antislip Step Bars

Ideal for use as ladder rungs, these step bars have a serrated surface for slip resistance. Cut bars to size with a metal-cutting saw; maximum cut length is 24″.

Bars up to 18″ long have a 540-lb. capacity; bars 18″ to 24″ have a 250-lb. capacity. All step bar lengths must be welded at each end with welds able to support the rated capacity.

Step Size Ht.	Dp.	17″ Length		7-ft. Length		20-ft. Length	
Steel							
1¼″	1 11/16″	6926T1	$22.96	6926T14	$92.09	6926T3	$173.96
1¼″	1⅞″	6926T2	23.59	6926T9	99.74	6926T4	191.80
Type 304 Stainless Steel							
1¼″	1 11/16″	6926T15	44.11	6926T7	192.29	—	—
Aluminum							
1½″	2″	6926T11	39.03	6926T12	167.45	6926T13	285.80

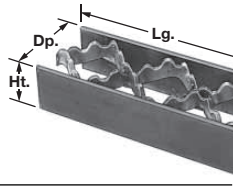

Telescoping Ladder Support Posts

Add safety and convenience to your wall and tank ladders. Posts are 1½″ square, extend 42″ above the ladder top, and lock in place to guide you and provide stability. A release lever lets you lower the post when it's not in use. Posts fit ¾″ to 1¼″ diameter rungs on ladders with up to 14″ center-to-center rung spacing. They mount to the top two rungs (hardware included).

Safety Yellow Steel	8135T31	$362.05
Hot-Dipped Galvanized Steel	8135T32	497.05
Aluminum	8135T33	472.50
Type 304 Stainless Steel	8135T34	1,121.63

Antislip Ladder Rung Covers

Weld these covers to the rungs of your wall and tank ladders for excellent slip resistance. Covers are galvanized steel with an aluminum oxide grit surface. Fit square and round rungs. Can be cut with a hand grinder or miter saw using a masonry blade.

For Rung Dp./Dia.	16″ Length		4-ft. Length		10-ft. Length	
¾″	8115T91	$19.09	8115T96	$41.11	8115T94	$96.11
1″	8115T92	21.65	8115T97	47.89	8115T95	112.96

Wall-Mount Walk-Through Steel Dock Ladders

Our highest capacity dock ladders—they're made of steel pipe with a yellow finish. Walk-through is 18″ wide, and the handrails have 4½″ long vinyl handgrips. Rungs have a smooth surface. Ladders are offset 8″ for toe clearance.

They mount to the wall with brackets. Brackets have one 3/8″ dia. mounting hole (fasteners not included). Ladders with 2′2″ to 4′2″ top rung height have four mounting brackets; 5′2″ to 8′2″ height to top rung have six mounting brackets; and 9′2″ height to top rung have eight mounting brackets. Capacity is 500 lbs. Meet OSHA requirements.

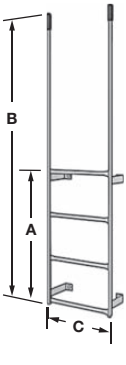

Top Rung Ht. (A)	O'all Ht. (B)	O'all Wd. (C)		
2′2″	5′8″	20″	8248T11	$127.83
3′2″	6′8″	20″	8248T12	164.04
4′2″	7′8″	20″	8248T13	195.98
5′2″	8′8″	20″	8248T14	221.56
6′2″	9′8″	20″	8248T15	253.50
7′2″	10′8″	20″	8248T16	289.71
8′2″	11′8″	20″	8248T17	314.38
9′2″	12′8″	20″	8248T18	372.21

Wall-Mount Side-Step Steel Dock Ladders

Ladders have serrated rungs for slip resistance and four smooth rungs at the top for hand grips. Ladders are offset 6″ for toe clearance. They mount to the wall with welded-on brackets. Brackets have one 3/8″ dia. mounting hole (fasteners not included). Ladders with a maximum climbing height of 1′5″ to 4′5″ have four mounting brackets; all others have six brackets. Color is gray. Capacity is 300 lbs. Meet OSHA requirements.

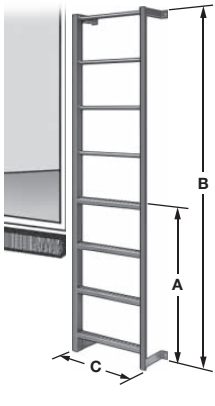

Max. Climbing Ht. (A)	O'all Ht. (B)	O'all Wd. (C)		
1′5″	5′6″	23½″	8177T11	$169.85
2′5″	6′6″	23½″	8177T12	182.78
3′5″	7′6″	23½″	8177T13	206.78
4′5″	8′6″	23½″	8177T14	221.55
5′5″	9′6″	23½″	8177T15	245.55
6′5″	10′6″	23½″	8177T16	258.48
7′5″	11′6″	23½″	8177T17	282.48
8′5″	12′6″	23½″	8177T18	302.78
9′5″	13′6″	23½″	8177T19	328.33

Dock-Mount Walk-Through Ladders

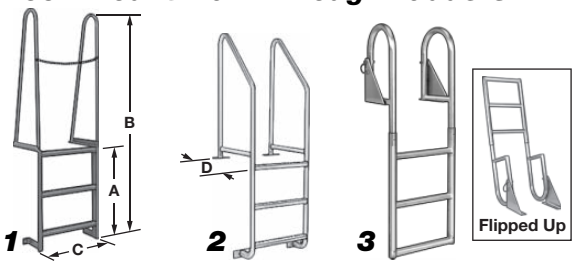

(1) Steel Ladders— Have serrated rungs for maximum slip resistance and are offset 6″ for toe clearance. Walk-through is 19″ wide. Ladders have welded-on mounting brackets; the two at the top have two 3/8″ dia. mounting holes and the two at the bottom have one 3/8″ dia. mounting hole (fasteners not included). Capacity is 300 lbs. Meet OSHA requirements. Optional safety chain stretches across ladder to deter access.

(2) Aluminum Ladders— Have serrated rungs for maximum slip resistance and are offset 7″ for toe clearance. Walk-through is 18″ wide. All have welded-on mounting brackets with two 9/16″ dia. mounting holes (fasteners not included). Ladders up to 5′6″ height to top rung have four mounting brackets; all others have six mounting brackets. Capacity is 300 lbs. Meet OSHA requirements.

(3) Flip-Up Aluminum Ladders— Flip up or down in seconds and easily secure with a retainer pin (included). They have ribbed rungs for slip resistance. Walk-through is 15 1/4″ wide. Ladders have two mounting brackets each with two 1/2″ dia. mounting holes (fasteners not included). Capacity is 400 lbs.

Top Rung Ht. (A)	O'all Ht. (B)	O'all Wd. (C)	Dp. (D)		
(1) Steel					
2′6″	6′	24″	16″	**8190T12**	$196.72
3′6″	7′	24″	16″	**8190T13**	217.72
4′6″	8′	24″	16″	**8190T14**	242.55
5′6″	9′	24″	16″	**8190T15**	257.84
6′6″	10′	24″	16″	**8190T16**	267.40
7′6″	11′	24″	16″	**8190T17**	292.22
8′6″	12′	24″	16″	**8190T18**	313.22
9′6″	13′	24″	16″	**8190T19**	349.59
Optional Safety Chain for Steel Ladders				**8190T51**	54.38
(2) Aluminum					
2′6″	6′	26″	24″	**79435T61**	458.70
3′6″	7′	26″	24″	**79435T71**	508.90
4′6″	8′	26″	24″	**79435T81**	598.00
5′6″	9′	26″	24″	**79435T82**	672.48
6′6″	10′	26″	24″	**79435T83**	783.70
7′6″	11′	26″	24″	**79435T84**	833.92
8′6″	12′	26″	24″	**79435T85**	884.12
9′6″	13′	26″	24″	**79435T86**	896.93
(3) Flip-Up Aluminum					
2′1″	5′	18 3/4″	14″	**7295T11**	221.55
3′1″	6′	18 3/4″	14″	**7295T12**	246.73
4′1″	7′	18 3/4″	14″	**7295T13**	271.90

Offset-Rung Wall-Mount Steel Ladders

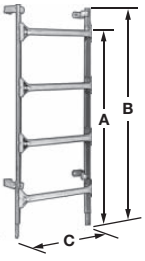

Rungs are offset and when used with the included mounting brackets you get 7″ of toe clearance to meet OSHA requirements. Made of galvanized steel, these ladders have dimpled rungs for slip resistance.

Mounting brackets have one 13/32″ × 3/4″ slotted hole (fasteners not included). The 4-ft. ladder has four mounting brackets; all others have six mounting brackets. Ladders have built-in connectors so they can be connected to each other to create the ladder height you need. Capacity is 250 lbs.

Note: The first rung of the ladder cannot be more than 12″ from the floor.

Top Rung Ht. (A)	O'all Ht. (B)	O'all Wd. (C)		
3′6″	4′	19 3/8″	**7983T73**	$80.05
4′6″	5′	19 3/8″	**7983T74**	102.07
7′6″	8′	19 3/8″	**7983T75**	141.69

Versatile-Mount Steel Ladders

Ladder with Mounting Bracket

Mount these galvanized steel ladders to walls, tanks, and pipes or connect multiple ladders for more height. They have knurled rungs for slip resistance. Ladders can be mounted or connected to another ladder with a mounting bracket (sold separately). Capacity is 300 lbs. Meet ANSI A14.3.

Mounting bracket provides 7″ for toe clearance to meet OSHA requirements. It must be drilled to the desired bolt hole size for mounting to a surface (fasteners not included) so you can adapt it to your needs. For instance, use U-bolts (not included) to connect ladder to pipes. Hardware is included to mount the bracket to the ladder. Bracket is galvanized steel. Each ladder requires two brackets (one for the top and one for the bottom). If connecting multiple ladders, one mounting bracket is required for each additional ladder section.

Top Rung Ht.	O'all Ht.	O'all Wd.		
7′6″	8′	19 1/4″	**8142T63**	$191.68
9′6″	10′	19 1/4″	**8142T64**	239.77
Mounting Bracket			**8073T5**	54.16

Wall-Mount Ladders

With Walk-Through Extension

Metal ladders have welded construction; fiberglass are constructed of high-strength fiberglass. All have wall-mounting brackets that offset the ladder 7″ for toe clearance and two floor-mounting brackets. Mounting brackets have one 7/16″ dia. hole (fasteners not included). The first rung is 9″ off the floor. Meet OSHA requirements.

Steel and ***Type 304 Stainless Steel Ladders—*** Have serrated rungs for slip resistance. The 8- and 10-ft. ladders come with two wall-mounting brackets; all others come with four. Steel ladders have a gray finish. Capacity is 350 lbs. *Ladders with walk-through extension* have a 21″ wide walk-through with handrails that extend 42″.

Aluminum Ladders— Have serrated rungs for slip resistance. The 8-ft. ladder comes with two wall-mounting brackets; the 10- and 12-ft. come with four; and the 14- and 16-ft. come with six. Capacity is 350 lbs. *Ladders with walk-through extension* have a 21″ wide walk-through with handrails that extend 42″.

Fiberglass Ladders— Have rungs embedded with grit for slip resistance. The 8-, 10-, and 12-ft. ladders come with four wall-mounting brackets; all others come with six. Color is yellow. Capacity is 500 lbs. *Ladders with walk-through extension* have an 18″ wide walk-through with handrails that extend 42″.

		Steel			Type 304 Stainless Steel			Aluminum			Fiberglass		
Top Rung Ht. (A)	O'all Ht.	O'all Wd.			O'all Wd.			O'all Wd.			O'all Wd.		
Without Extension													
7′9″	8′	16 3/4″	**7981T11**	$306.91	16 3/4″	**80015T51**	$769.68	17″	**79135T21**	$419.61	22″	**4326T71**	$566.42
9′9″	10′	16 3/4″	**7981T12**	350.07	16 3/4″	**80015T52**	932.73	17″	**79135T22**	493.93	22″	**4326T72**	681.97
11′9″	12′	16 3/4″	**7981T21**	405.23	16 3/4″	**80015T61**	1,122.14	17″	**79135T23**	577.86	22″	**4326T73**	797.53
13′9″	14′	16 3/4″	**7981T13**	453.18	16 3/4″	**80015T53**	1,282.80	17″	**79135T24**	654.59	22″	**4326T74**	913.08
15′9″	16′	16 3/4″	**7981T14**	498.73	16 3/4″	**80015T54**	1,445.84	17″	**79135T25**	728.91	22″	**4326T75**	1,028.64
With Walk-Through Extension													
7′9″	11′3″	21 3/4″	**7981T41**	383.64	21 3/4″	**80015T55**	1,004.66	22″	**79135T31**	529.91	22″	**4326T76**	665.72
9′9″	13′3″	21 3/4″	**7981T42**	426.80	21 3/4″	**80015T56**	1,167.70	22″	**79135T32**	604.23	22″	**4326T77**	781.28
11′9″	15′3″	21 3/4″	**7981T51**	481.95	21 3/4″	**80015T62**	1,354.73	22″	**79135T33**	688.16	22″	**4326T78**	896.83
13′9″	17′3″	21 3/4″	**7981T43**	529.91	21 3/4″	**80015T57**	1,517.77	22″	**79135T34**	764.89	22″	**4326T79**	1,012.39
15′9″	19′3″	21 3/4″	**7981T44**	575.45	21 3/4″	**80015T58**	1,678.41	22″	**79135T35**	839.20	22″	**4326T81**	1,127.94

Steel Ladders with Welded-On Cage

A cage is already welded to these ladders for quick assembly. Plus, ladders come in sections no longer than 7 feet for easy handling. Bolt ladder sections together end-to-end (fasteners included). Cages start 7 feet above the bottom of the ladder and extend beyond the top rung by 42″. Walk-through is 24″ wide and has a 42″ high handrail. Inside dimensions of the cage are 30″ Wd.×27″ Dp.; the flared bottom is 36½″ Wd.×30″ Dp.

Ladders have ribbed rungs and a gray finish. They also include welded-on mounting brackets with one 9/16″ dia. hole (fasteners not included). Mounting brackets offset the ladder 7″ for toe clearance. Capacity is 300 lbs. Meet ANSI A14.3 and OSHA requirements.

Optional security cover prevents unauthorized access to ladders. Can be welded or bolted on (holes must be drilled) to open from either side (fasteners not included). Cover is made of steel with a gray finish and is 6′ Ht.×19½″ Wd.×6½″ Dp. The hasp accepts a padlock (not included) with a 3/8″ or smaller shackle diameter.

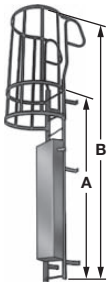

With Optional Security Cover

Top Rung Ht. (A)	O'all Ht. with Cage (B)	Ladder Wd.		
12′1½″	15′7½″	20″	80265T21	$1,050.83
16′1½″	19′7½″	20″	80265T25	1,438.80
20′1½″	23′7½″	20″	80265T29	1,724.15
24′1½″	27′7½″	20″	80265T34	2,097.74
27′1½″	30′7½″	20″	80265T37	2,260.42
Optional Security Cover			79745T36	392.19

Steel Modular Cages

Create the cage you need. OSHA requires a ladder cage when ladder heights are greater than 20 feet from the floor to the top rung. Meet ANSI A14.3 and OSHA requirements.

Each section is fully welded and mounts to the side rails of stationary ladders (not to walls or other cages) that have an overall width of 16″ to 20″. Inside dimensions for the top section and mid/top sections are 30″ Wd.×30″ Dp.; the flared bottom section is 38″×34″ with a 38″ Wd.×38″ Dp. base. All sections have a gray finish and attach with included clamps that accommodate side rails 2″ wide or less. OSHA requires cages to start between 7 and 8 feet from the ground.

Top section is required for walk-through applications and should extend 42″ above the top rung. ***Mid/top sections*** extend the length of the cage, or can act as a top section for hatch opening use. ***Bottom section*** flares out for entry and exit.

Note: At least one top or mid/top section and one flared bottom section are required for a complete assembly.

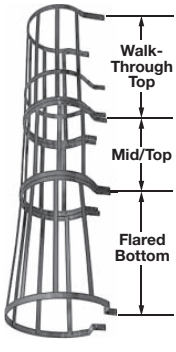

5′ Top Section for Walk-Through	8271T11	$248.20
2′ Mid/Top Section	8271T14	191.44
3′ Mid/Top Section	8271T16	199.74
4′ Mid/Top Section	8271T18	215.92
7′ Mid/Top Section	8271T12	340.58
4′ Flared Bottom Section	8271T21	220.38

Fold-and-Carry Work Platforms

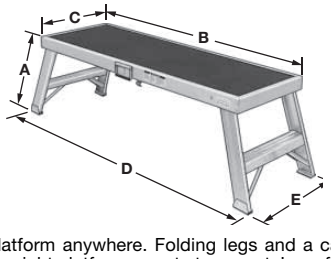

Take your platform anywhere. Folding legs and a carrying handle make this lightweight platform easy to transport. Legs fold up and under the platform and lock in place with safety clips. Frame is aluminum; deck is plywood with a slip-resistant coating. One 2⅛″ Dp. step at each end lets you climb up from either side. Shipped assembled.

Cap., lbs.	Ht. (A)	Top Wd. (B)	Top Dp. (C)	Base Wd. (D)	Base Dp. (E)		
500	21″	60¼″	22¾″	69″	22½″	81635T47	$315.31

Steel Ladders

Ladders with Cage

Made of galvanized steel, these ladders include a cage for added safety. Cage is unassembled (assembly hardware, connecting kit, and mounting brackets are included) for flexibility in mounting and lower freight costs.

Cages start between 7 and 8 feet from the ground and extend beyond the highest rung by 42″ with a walk-through exit. Inside dimensions of cage are 27″ Wd.×28½″ Dp.; flared bottom is 35″ Wd.×32½″ Dp. Ladders resist corrosion and weather. They have knurled rungs. Capacity is 300 lbs. Meet ANSI A14.3 and OSHA requirements. OSHA requires a cage when the distance from the floor to the top rung is more than 20 feet.

Optional security cover prevents unauthorized access. It covers five rungs and is secured by two hooks at the top and a U-clamp at the bottom. It is galvanized steel and is 5′6″ Ht.×19½″ Wd.×2″ Dp. Hasp accepts a padlock (not included) with a 3/8″ or smaller shackle diameter.

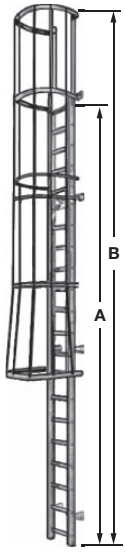

Top Rung Ht. (A)	O'all Ladder Ht.	O'all Ht. with Cage (B)	Ladder Wd.		
10′6″	11′	14′1″	19¼″	8140T68	$803.61
11′6″	12′	15′1″	19¼″	8140T59	831.16
12′6″	13′	16′1″	19¼″	8140T69	857.61
13′6″	14′	17′1″	19¼″	8140T52	937.26
14′6″	15′	18′1″	19¼″	8140T67	1,001.13
15′6″	16′	19′1″	19¼″	8140T53	1,019.05
16′6″	17′	20′1″	19¼″	8140T71	1,047.57
17′6″	18′	21′1″	19¼″	8140T54	1,114.11
18′6″	19′	22′1″	19¼″	8140T55	1,182.63
20′6″	21′	24′1″	19¼″	8140T66	1,333.96
22′6″	23′	26′1″	19¼″	8140T56	1,360.37
24′6″	25′	28′1″	19¼″	8140T72	1,461.87
26′6″	27′	30′1″	19¼″	8140T57	1,563.50
28′6″	29′	32′1″	19¼″	8140T58	1,667.90
29′6″	30′	33′1″	19¼″	8140T86	1,729.55
Optional Security Cover				8140T78	160.71

Ladders without Cage

Connect different sized ladders for the perfect height. Use the connecting kit (sold separately) to connect ladders with no drilling required. Mount to the wall with the mounting bracket kit (sold separately). Ladders are galvanized steel to resist corrosion and weathering. They have knurled rungs. Capacity is 300 lbs. Meet ANSI A14.3 and OSHA requirements. OSHA requires a cage when the distance from the floor to the top rung is more than 20 feet.

Connecting kit includes splice plates and fasteners. Order one connecting kit for each additional ladder section.

Mounting bracket kit comes with wall-mounting brackets that offset the ladder 7″ for toe clearance (fasteners for mounting the brackets to the ladder are included). The brackets have two 13/32″×¾″ slots for mounting to the wall (fasteners not included). Two kits are recommended for 4- to 8-ft. ladders; three kits are recommended for the 10-ft. ladder.

Optional walk-through extension is 24″ wide with handrails that extend 42″.

Top Rung Ht. (A)	O'all Ht.	O'all Wd.		
3′6″	4′	19¼″	8142T61	$98.65
4′6″	5′	19¼″	8142T62	120.23
7′6″	8′	19¼″	8142T63	191.68
9′6″	10′	19¼″	8142T64	239.77
Connecting Kit			8142T67	17.68
Mounting Bracket Kit			8142T66	18.82
Optional Walk-Through Extension			8142T68	109.67

Fixed-Height Fiberglass Work Platforms

Nonconductive and noncorrosive, these lightweight fiberglass platforms cushion your movements to ease strain on your feet, legs, and back. Top has a slip-resistant grit surface. Platforms have rubber feet and are easy to clean and move. Capacity is 750 lbs.

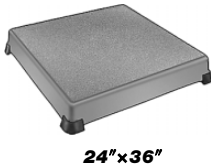

Ht.	24″×24″		24″×36″	
4″	81845T12	$235.13	81845T22	$272.57
6″	81845T13	248.62	81845T23	291.50
8″	81845T14	267.89	81845T24	310.41
10″	81845T15	273.47	81845T25	331.23

Adjustable-Height Steel Work Platforms

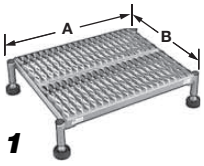

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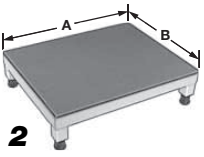

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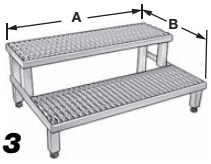

3

4

Adjustable leg screws raise and lower platform height.

(1) One-Step Platforms with Serrated Surface— Legs have 2½″ dia. rubber pads and are on the outside of the platform. Have a gray finish. Capacity is 800 lbs. Meet OSHA requirements.

(2) One-Step Platforms with Matting Surface— A vinyl sponge matting covers the solid surface of the platform to provide comfort and reduce fatigue. Legs have rubber tips. All have a safety-yellow finish and blue matting. Capacity is 500 lbs.

(3&4) Two-Step Platforms with Serrated Surface— Gain more height with these two-step platforms.

Style 3 has a bottom step that adjusts from 6″ to 10½″ when the overall height is adjusted, making the space between the floor and the first step greater than the space between the two steps. Steps are 12″ deep. Legs have rubber tips. Platforms have a safety yellow finish. Capacity is 500 lbs.

Style 4 allows you to maintain equal rise between steps when overall height is adjusted. Therefore, the distance between the floor and the first step is always the same as the distance between the first step and the second step to meet OSHA requirements. Bottom step is 19″ deep; top step is 12″ deep. Platforms have a gray finish. Capacity is 800 lbs.

(1&2) One-Step Platforms

	Wd. (A)	Dp. (B)	6″ to 9″ O'all Ht.		10″ to 15″ O'all Ht.	
1	27¾″	19″	8127T11	$236.22	8127T31	$245.31
1	27¾″	24″	8127T12	240.78	8127T41	252.12
1	39¾″	19″	8127T13	249.86	8127T32	261.22
1	39¾″	24″	8127T22	258.94	8127T42	265.76
1	51¾″	19″	8127T14	272.57	8127T33	288.47
1	51¾″	24″	8127T15	283.94	8127T43	295.29
1	75¾″	27¾″	8127T16	406.59	8127T45	422.49

	Wd. (A)	Dp. (B)	5″ to 8″ O'all Ht.		9″ to 14″ O'all Ht.	
2	24″	19″	8341T11	$174.07	8341T31	$202.78
2	24″	24″	8341T12	190.74	8341T41	214.81
2	36″	19″	8341T13	212.96	8341T32	226.85
2	36″	24″	8341T22	233.33	8341T42	244.44
2	48″	19″	8341T14	247.22	8341T33	255.56
2	48″	24″	8341T15	272.22	8341T43	279.63
2	72″	24″	8341T16	381.48	8341T45	394.44

(3&4) Two-Step Platforms

	Wd. (A)	Dp. (B)	13″ to 17½″ O'all Ht.	
3	24″	24″	8143T11	$238.95
3	36″	24″	8143T12	252.41
3	48″	24″	8143T13	267.20

	Wd. (A)	Dp. (B)	13″ to 21″ O'all Ht.	
4	26″	23″ to 31″	8610T51	$284.99
4	38″	23″ to 31″	8610T52	336.94
4	50″	23″ to 31″	8610T53	518.33

Adjustable-Height Multi-Step Steel Work Platforms

Style 1
3 Step

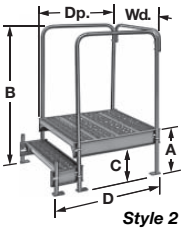

Style 2

Style 3

Style 4

Style 5

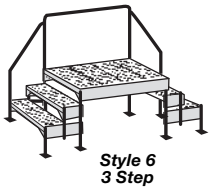

Style 6
3 Step

Style 7
3 Step

Style 8

Style 9

Get easy access to elevated areas. Plus, a large platform allows plenty of space for working. Platform and steps are serrated for maximum slip resistance and to allow dirt and debris to fall through. Steps are 33⅛″ Wd.×9½″ Dp. and adjust for equal vertical spacing. Legs and handrails are made of 1¼″ dia. tubing. Platforms have a gray finish. Shipped unassembled. Capacity is 500 lbs. Meet OSHA requirements.

Styles 3, 4, 6, and *7* have side handrails that mount on either side.

Also Available: Other platform sizes. Please ask for 8031T999 and specify style number, platform size, and platform height.

Style	Max. Platform Ht. (A)	Height with Handrails (B)	Clearance Ht. (C)	Steps Including Platform	36″ Wd.×36″ Dp. Platforms O'all Depth with Steps (D)			36″ Wd.×72″ Dp. Platforms O'all Depth with Steps (D)		
1	1′9″	—	1′3¼″	2	4′1″	8031T8	$476.33	7′4″	8031T18	$802.80
1	2′9″	—	2′3¼″	3	4′10″	8031T9	620.33	8′1″	8031T19	1,004.70
2	1′9″	5′	1′3¼″	2	4′1″	8031T13	581.57	7′4″	8031T23	1,047.63
3	1′9″	5′	1′3¼″	2	4′1″	8031T14	640.65	7′4″	8031T24	1,034.39
4	1′9″	5′	1′3¼″	2	4′1″	8031T12	548.43	7′4″	8031T52	941.12
5	2′3″	5′6″	1′9¼″	3	4′10″	8031T21	795.73	8′1″	8031T11	1,280.06
5	2′9″	6′	2′3¼″	3	4′10″	8031T22	801.27	8′1″	8031T62	1,315.24
6	2′9″	6′	2′3¼″	3	6′5″	8031T31	940.67	9′8″	8031T61	1,420.73
6	3′9″	7′	3′3¼″	4	7′11″	8031T32	1,206.22	11′2″	8031T63	1,724.92
7	2′3″	5′6″	1′9¼″	3	4′10″	8031T41	738.50	8′1″	8031T68	1,148.19
7	2′9″	6′	2′3¼″	3	4′10″	8031T42	760.65	8′1″	8031T65	1,241.38
7	3′9″	7′	3′3¼″	4	5′7″	8031T43	891.73	8′10″	8031T44	1,262.48
8	3′3″	6′6″	2′9¼″	4	5′7″	8031T51	906.18	8′10″	8031T67	1,471.65
8	3′9″	7′	3′3¼″	4	5′7″	8031T58	919.16	8′10″	8031T53	1,488.60
9	2′9″	6′	2′3¼″	3	6′5″	8031T54	1,097.74	9′8″	8031T64	1,598.32

Modular Stackable Work Platforms

Stack platforms vertically and connect them horizontally to create various sizes and configurations. No tools required. Made of chemical-resistant, high-density black polyethylene. Platforms and antifatigue mats have an open-grid design that allows liquids to drain and debris to fall through.

Base platforms are 2⅞″ high and have rubber feet to keep them stable. To connect multiple platforms side-by-side or end-to-end, use two horizontal connectors (sold separately) on each joining side.

Additional height platforms are 2⅝″ high. You can stack up to five additional height platforms on top of a base platform for a total height of 16″. Additional height platforms come with vertical connectors—four for the 3- and 5½-ft. long platforms; eight for the 8-ft. long platforms.

Antifatigue mats enhance comfort and safety. Made of rubber, they fit snugly on top of the platform and stay in place with the included lock plugs. *Black mats* are ½″ thick. *Black mats with yellow border* are ⅞″ thick and comply with OSHA 29 CFR.

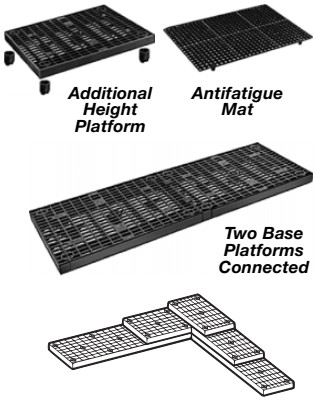

Lg.	Wd.	Rated Cap., lbs.	Base Platforms		Additional Height Platforms		ANTIFATIGUE MATS Black		ANTIFATIGUE MATS Black with Yellow Border	
3′	2′	250	81905T91	$50.29	81905T92	$50.29	81905T31	$60.04	81905T51	$127.91
5½′	2′	350	81905T93	93.42	81905T94	93.42	81905T32	127.46	81905T52	239.55
8′	2′	500	81905T95	108.52	81905T96	108.52	81905T33	174.81	81905T53	317.28
8′	3′	750	81905T97	140.14	81905T98	140.14	81905T34	228.97	81905T54	398.50

Horizontal Connectors for Base Platforms (Pkg. of Four)	81905T82	$6.31
Replacement Rubber Foot for Base Platforms	81905T79	2.73
Replacement Vertical Connector for Additional Height Platforms	81905T81	3.25
Replacement Lock Plugs for Antifatigue Mats (Set of Four)	81905T39	6.08

Build-Your-Own Work Platforms

Configure the work platform you need. All work platforms should be secured to a supporting surface. Meet OSHA requirements.

First, determine how high your work platform needs to be and choose the stairs that accommodate that height. Then, choose a platform based on the desired length. Next, choose platform supports that correspond to the height of your stairs—each end of the platform must be supported by one end support (or stairs for aluminum). Finally, choose handrails for the stairs and platform.

Aluminum— Lightweight and corrosion resistant, they're made of aluminum and assemble with included stainless steel fasteners. Capacity is 50 lbs. per sq. ft. ***Stairs*** are 28½″ wide and have a 45° climbing angle. Steps are 27″ Wd.×9½″ Dp. and are serrated for slip resistance. All units have one 9⁄16″ dia. hole on each side for securing to the floor (fasteners not included). ***Stair handrails*** are 32″ high. ***Platforms*** are drilled for assembly and perforated for slip resistance. ***Platform handrails*** are 42″ high and have 5″ high built-in toeboards. ***Platform supports*** are required to support each end of a platform when not using stairs. They have one 9⁄16″ dia. hole in each leg for securing to the floor (fasteners not included). ***T- and L-adapter*** attaches one platform to the side of another platform to create a "T" or "L" shape. ***Stair adapter*** connects the stairs to the platform when using a handrail on only one side of the stairs.

Fiberglass— Nonconductive with better corrosion resistance than aluminum, they're made of fiberglass and assemble with included stainless steel fasteners. Capacity is 60 lbs. per sq. ft. ***Stairs*** are 30″ wide and have a 45° climbing angle. Steps are 25¾″ Wd.×10½″ Dp. and have a grit surface for slip resistance. All units have one 9⁄16″ dia. hole on each side for securing to the floor (fasteners not included). ***Stair handrails*** are 32″ high. ***Platforms*** are drilled for assembly and perforated for slip resistance. ***Platform handrails*** are 42″ high and have 4″ high built-in toeboards. ***Platform supports*** are required to support each end of a platform. They have one 9⁄16″ dia. hole in each leg for securing to the floor (fasteners not included).

Note: Before erecting platforms, check federal, state, and local codes.

Stairs and Stair Handrails

Platform Ht.	Steps	ALUMINUM Clearance Ht.	Stairs		Stair Handrails		FIBERGLASS Clearance Ht.	Stairs		Stair Handrails	
18″	1	12″	4929T41	$198.48	4929T61	$138.27	11″	6339T21	$396.60	6339T31	$249.21
27″	2	21″	4929T42	306.09	4929T62	156.00	20″	6339T22	546.80	6339T32	364.62
36″	3	30″	4929T43	393.55	4929T63	165.45	29″	6339T23	711.39	6339T33	465.60
45″	4	39″	4929T44	481.00	4929T64	173.73	38″	6339T24	890.40	6339T34	476.36
54″	5	48″	4929T45	566.09	4929T65	211.55	47″	6339T25	1,040.57	6339T35	569.73
63″	6	57″	4929T46	661.82	4929T66	250.55	56″	6339T26	1,190.73	6339T36	651.44
72″	7	66″	4929T47	750.45	4929T67	283.64	65″	6339T27	1,340.90	6339T72	733.14
81″	8	75″	4929T48	836.73	4929T68	317.91	74″	6339T28	1,505.39	6339T81	826.52

SAMPLE CONFIGURATIONS

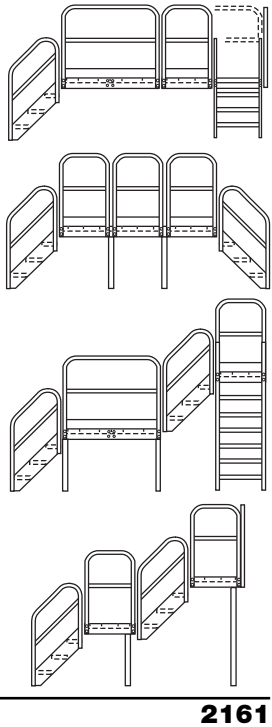

Platforms and Platform Handrails

Lg.	Wd.	ALUMINUM Platforms		Platform Handrails		FIBERGLASS Platforms		Platform Handrails	
30″	30″	4929T71	$455.00	4929T81	$198.48	6339T41	$623.81	6339T44	$234.13
60″	30″	4929T72	722.09	4929T82	234.00	6339T42	1,007.49	6339T45	357.40
120″	30″	4929T73	1,196.00	4929T82★	234.00	6339T43	1,444.45	6339T46	714.81

★ Need two handrails for 120″ Lg. platform.

Platform Supports

For Platform Ht.	Aluminum		Fiberglass	
18″	4929T51	$191.45	6339T89	$119.45
27″	4929T52	226.91	6339T82	135.19
36″	4929T53	242.27	6339T83	163.55
45″	4929T54	283.64	6339T84	179.29
54″	4929T55	397.09	6339T85	243.24
63″	4929T56	423.09	6339T86	278.88
72″	4929T57	449.09	6339T87	301.75
81″	4929T58	475.09	6339T88	327.14

Adapters

	Aluminum	
T- and L-Adapter	4929T92	$89.82
Stair Adapter	4929T91	42.55

Crossover Bridges

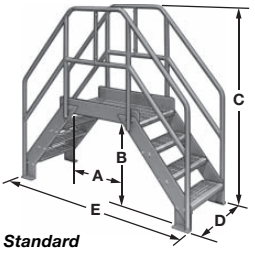

Standard *Space Saver*

Easily walk over conveyors, machines, and pipes. Bridges have 24″ wide steps and 42″ high handrails. Platforms have a 5″ high toeboard on each side. Legs each have one 5/8″ dia. hole for floor mounting (fasteners not included). Shipped unassembled. Capacity is 500 lbs. Meet OSHA requirements. To calculate the platform height add 1″ to the clearance height (B).

Steel bridges are gray.

Standard Crossover Bridges— Have a 50° climbing angle and 7 3/8″ deep steps.

Space-Saver Crossover Bridges— Have a steeper stairway than standard crossover bridges, so they don't extend as far. Climbing angle is 70° and steps are 4″ deep.

Note: Before erecting crossover bridges, check federal, state, and local codes.

To Order: Please specify serrated or diamond plate steps and platforms. *Serrated* offer excellent slip resistance and an open-grid design that allows dirt and liquids to fall through. *Diamond-plate* also provide slip resistance, but do not allow anything to fall through.

Clearance Lg. (A)	Ht. (B)	O'all Ht. (C)	O'all Wd. (D)	Steps★	STANDARD CROSSOVER BRIDGES O'all Lg. (E)	Steel		Aluminum		SPACE-SAVER CROSSOVER BRIDGES O'all Lg. (E)	Steel		Aluminum	
					37 1/2″ Dp. × 24″ Wd. Platform					31 1/2″ Dp. × 24″ Wd. Platform				
24″	2′7″	6′2″	27 3/4″	4	6′6″	8198T1	$1,550.62	8198T5	$1,344.91	4′5″	79865T1	$1,436.37	79865T5	$1,195.02
24″	3′3″	6′10″	27 3/4″	5	7′7″	8198T2	1,756.60	8198T6	1,548.28	4′11″	79865T2	1,497.74	79865T6	1,298.15
24″	3′11″	7′6″	27 3/4″	6	8′8″	8198T3	1,967.80	8198T7	1,747.05	5′5″	79865T3	1,664.88	79865T7	1,370.75
24″	4′7″	8′2″	27 3/4″	7	9′10″	8198T4	2,038.80	8198T8	1,797.46	5′11″	79865T4	1,781.02	79865T8	1,469.09
					49 1/2″ Dp. × 24″ Wd. Platform					43 1/2″ Dp. × 24″ Wd. Platform				
36″	2′7″	6′2″	27 3/4″	4	7′6″	8198T11	$1,823.21	8198T15	$1,498.59	5′5″	79865T71	$1,697.74	79865T81	$1,422.83
36″	3′3″	6′10″	27 3/4″	5	8′7″	8198T12	2,042.05	8198T16	1,669.54	5′11″	79865T72	1,778.68	79865T82	1,451.47
36″	3′11″	7′6″	27 3/4″	6	9′8″	8198T13	2,297.15	8198T17	1,985.66	6′5″	79865T73	1,897.88	79865T83	1,590.27
36″	4′7″	8′2″	27 3/4″	7	10′10″	8198T14	2,573.81	8198T18	2,076.81	6′11″	79865T74	1,997.74	79865T84	1,694.91

★ On each side including platform.

Steel Adjustable-Height Stairways

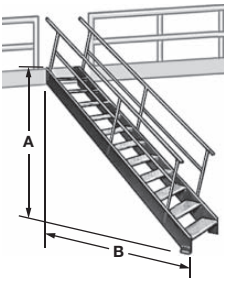

Adjustable mounting brackets allow these stairways to accommodate slight differences in landing heights. Mount from 36° to 42°.

Stairways are galvanized steel with 33 1/2″ high steel handrails. Handrails have a safety-yellow finish. Steps are 8 3/4″ deep and perforated for slip resistance. Stairways include two floor mounting brackets, each with two 1/2″ dia. holes. They also include two landing mounting brackets, each with four 11/32″ dia. holes, two 11/32″ × 3/4″ slots, and two 11/32″ × 1/2″ slots (fasteners not included).

Shipped unassembled. Meet OSHA requirements for fixed stairways.

Note: Before erecting stairways, check federal, state, and local codes.

Landing Ht. (A) Min.	Max.	Dp. (B) Min.	Max.	O'all Wd.	No. of Steps		
30″ Wide Steps							
3′0″	3′5″	3′0″	3′4″	33″	4	8234T12	$717.07
3′6″	4′0″	3′9″	4′2″	33″	5	8234T14	803.17
4′1″	4′8″	4′5″	5′0″	33″	6	8234T16	890.49
4′9″	5′4″	5′2″	5′9″	33″	7	8234T19	996.27
5′5″	5′11″	5′11″	6′6″	33″	8	8234T21	1,083.55
6′0″	6′6″	6′8″	7′4″	33″	9	8234T22	1,157.69
6′7″	7′3″	7′5″	8′1″	33″	10	8234T23	1,218.39
7′4″	8′2″	8′2″	8′9″	33″	11	8234T27	1,428.19
8′3″	8′9″	8′10″	9′4″	33″	12	8234T26	1,697.74
8′10″	10′2″	10′4″	11′5″	33″	14	8234T28	2,175.67
36″ Wide Steps							
3′0″	3′5″	3′0″	3′4″	39″	4	8234T51	728.13
3′6″	4′0″	3′9″	4′2″	39″	5	8234T52	819.15
4′9″	5′4″	5′2″	5′9″	39″	7	8234T53	1,019.64
7′4″	8′2″	8′2″	8′9″	39″	11	8234T47	1,485.02
8′10″	10′2″	10′4″	11′5″	39″	14	8234T48	2,178.33

Offset-Step Space-Saver Stairways

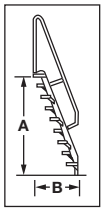

Taking up only as much space as a ladder, these stairways have a 68° climbing angle and offset steps for a comfortable forward descent.

Stairways are steel with a safety-yellow finish. Steps are 9″ Wd. × 10 1/2″ Dp. and are perforated for slip resistance. Handrails are 42″ high. Stairways have one floor mounting plate and one landing mounting plate; each has one 9/16″ dia. hole and one 9/16″ × 1″ slot (fasteners not included). Shipped assembled, except handrails (fasteners included). Meet OSHA requirement 1910.25 for offset steps.

Note: Before erecting stairways, check federal, state, and local codes.

Also Available: Landing heights (dimension A) up to 20 feet. Please ask for 7946T9 and specify height.

Landing Ht. (A)	Dp. (B)	O'all Wd.	No. of Steps		
4′	26″	23″	6	7946T91	$1,004.76
5′	31″	23″	7	7946T92	1,187.64
6′	36″	23″	9	7946T93	1,370.52
7′	40″	23″	10	7946T94	1,553.40
8′	45″	23″	12	7946T95	1,723.03
9′	50″	23″	13	7946T96	1,919.16
10′	55″	23″	15	7946T97	2,097.74
11′	60″	23″	16	7946T98	2,216.71
12′	65″	23″	18	7946T99	2,394.13
13′	70″	23″	19	7946T11	2,533.74
14′	74″	23″	20	7946T12	2,697.74

Steel Space-Saver Stairways

Get access to pits, trenches, wells, and other tight spaces. Also known as ship's ladders, these galvanized steel stairways have a 75° climbing angle to fit in spaces others won't. Steps are perforated for slip resistance. The top step is 24″ Wd. × 11 7/8″ Dp.; lower steps are 24″ Wd. × 7 1/4″ Dp. Handrails are steel with a safety-yellow finish and extend 42″ beyond the top landing for a walk-through exit. Stairways have two floor mounting brackets, each with one 5/8″ dia. hole; also have two landing mounting brackets, each with four 13/32″ × 3/4″ slots (fasteners not included). Shipped unassembled. Meet OSHA requirements for fixed ladders.

Note: Before erecting stairways, check federal, state, and local codes.

Landing Ht. (A) Min.	Max.	Dp. (B)	O'all Wd.	No. of Steps		
3′8″	4′7 1/2″	23″	27″	4	8058T21	$473.74
4′7 1/2″	5′7″	26″	27″	5	8058T22	534.91
5′7″	6′6″	29″	27″	6	8058T23	599.36
8′6″	9′5″	38″	27″	9	8058T26	865.47
10′5″	11′5″	44″	27″	11	8058T28	999.20

Lubricating

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About Lubricants, Grease, and Oil

	Features/Applications	Pages
Multipurpose Lubricants	Easy to apply, these lubricants penetrate tight spots that grease and oil can't reach. Use them to free and lubricate moving parts and equipment.	2164-2166
Coating Lubricants	Select Petroleum Jelly to protect metal parts and equipment surfaces, O-Ring Lubricants to reduce friction between mating parts, and Mold-Release Lubricants to protect and free molded parts.	2167-2168
Antiseize Lubricants	A combination of solid lubricants, grease, and anticorrosion additives, these lubricants prevent the sticking or jamming as well as corrosion that can occur in metal-to-metal contact.	2168-2170
Grease	Compared to penetrating lubricants and oil, grease adheres better and lasts longer so you don't have to apply it as often. Additives such as PTFE and molybdenum disulfide improve performance.	2170-2175
Oil	Oil is typically used where it can be circulated through a piece of equipment or machinery. Choose oil when spraying or splashing are contained, as in a gearbox or engine compartment.	2174-2180

Lubricants

These products are compliant under all state VOC rules in effect on October 1, 2010.

LPS, CRC 3-36, 3-in-1, Sprayon Rust Breaker Penetrant, and ***Starrett M1*** are NSF registered H2 for applications with no possibility of food contact. ***Aerosols*** have a male stem except for Dow Corning Molykote and Loctite Silicone, which have a female stem.

WD-40 (–10° to +200° F)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
0.26-oz. No-Mess Pen	12	1347K25	$1.25	$1.12
3-oz. Aerosol	12	1347K21	2.78	2.49
8-oz. Flip-Up Straw Aerosol	12	1347K28	5.64	5.07
11-oz. Flip-Up Straw Aerosol	12	1347K16	6.25	5.60
12-oz. Flip-Up Straw Aerosol	12	1347K18	6.60	5.91
16-oz. Aerosol	12	1347K17	6.45	5.78
18-oz. Big-Blast Aerosol	12	1347K19	7.23	6.48
20-oz. Spray Trigger Nonaerosol	12	1347K23	13.92	12.46
1-gal. Container	4	1347K12	22.72	20.34
5-gal. Container	1	1347K13	____	96.56
55-gal. Drum	1	1347K14	____	995.60
Empty 16-oz. Spray Bottle	4	1347K31	3.48	3.12

LPS (–50° to +300° F)

#1 Greaseless—Meet MIL-C-23411A.
#2 Industrial Strength—Meet MIL-C-16173D, Grade 3, Class I and MIL-C-81309D, Type III.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
#1 Greaseless				
11-oz. Aerosol	12	1200K21	$11.07	$9.91
20-oz. Spray Pump	12	1200K22	20.73	18.29
1-gal. Container	4	1200K71	51.68	47.85
5-gal. Container	1	1200K23	____	232.56
55-gal. Drum	1	1200K24	____	2,022.65
#2 Industrial Strength				
11-oz. Aerosol	12	1200K33	10.98	9.84
20-oz. Spray Pump	12	1200K34	22.84	20.16
1-gal. Container	4	1200K73	51.33	46.47
5-gal. Container	1	1200K74	____	230.98

CRC 3-36

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
For Metals *(–50° to +250° F)*				
5-oz. Aerosol	12	1420K12	$4.56	$4.26
11-oz. Aerosol	12	1420K14	5.46	5.09
1-gal. Container	4	1420K16	33.17	30.96
5-gal. Container	1	1420K18	____	140.97
For Plastics *(Max. temp. is +250° F)*				
11-oz. Aerosol	12	1420K15	6.53	6.09
Ultra-Lite Dry Film *(–40° to +300° F)*				
11-oz. Aerosol	12	1420K31	7.36	6.87
1-gal. Container	4	1420K33	45.88	42.82
5-gal. Container	1	1420K35	____	194.99

3-in-1 (–25° to +300° F)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
3-oz. Squirt Spout	24	1271K1	$2.48	$2.25
8-oz. Squirt Spout	12	1271K6	4.14	3.76

Sprayon Rust Breaker Penetrant (–20° to +550° F)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
10-oz. Aerosol	12	10615K23	$7.18	$6.46
14-oz. Spray Pump	12	10615K24	10.96	9.86
1-gal. Container	4	10615K25	47.48	43.16

Liquid Wrench L1 (0° to +320° F)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4-oz. Squirt Spout	12	1233K21	$3.45	$3.07
11-oz. Aerosol	12	1233K22	5.58	4.96
16-oz. Squirt Spout	12	1233K23	7.47	6.64
1-gal. Container	4	1233K24	19.63	18.56
5-gal. Container	1	1233K25	____	114.00

Dow Corning Molykote

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
L-0501 *(–20° to +120° F)*				
12-oz. Aerosol	12	4328T52	$8.41	$7.63
Silicone 314 Fabriglide *(–20° to +390° F)*				
10-oz. Aerosol	12	4328T55	11.88	10.78
Silicone 557 *(–40° to +110° F)*				
11-oz. Aerosol	12	1254K12	22.59	20.51

Loctite Silicone (–58° to +400° F)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
5.3-oz. Tube	12	10255K63	$15.52	$13.91
13-oz. Aerosol	12	10255K65	6.46	5.79

Starrett M1 (–40° to +120° F)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
12-oz. Aerosol	12	1007K21	$9.64	$8.61
1-gal. Container	4	1007K12	51.25	45.45

Break-Free Industrial PCL (–65° to +400° F)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
12-oz. Aerosol	12	1172K81	$9.38	$8.27
16-oz. Spray Pump	12	1172K82	13.14	11.58
1-gal. Container	4	1172K83	79.33	69.92

Break-Free CLP (–65° to +400° F)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4-oz. Squeeze Bottle	10	1172K84	$6.45	$5.69
12-oz. Aerosol	12	1172K85	11.82	10.42
16-oz. Spray Pump	10	1172K86	21.18	18.67
1-gal. Container	4	1172K87	94.66	83.43

Wipes (20/Box) **1172K91** **Box** 1-5 $5.73 6-Up $5.05

Boeshield T-9 (–30° to +300° F)

Meet MIL-C-16173D.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4-oz. Aerosol	12	10215K13	$9.28	$8.29
12-oz. Aerosol	12	10215K15	18.33	16.38
1-gal. Container	4	10215K17	128.57	114.89

Kroil (Not rated for temperature.)

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
16-oz. Aerosol	12	1463K13	$17.42	$14.84
8-oz. Container	12	1463K11	8.06	7.19

For information about lubricants, grease, and oil, see page 2164.

Lubricants with PTFE

The PTFE nonstick coating reduces friction as it lubricates. The pen-like ***micro-drop tubes*** allow precise application. Aerosols have a male stem, except for 1130K15, which has a female stem. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Tri-Flow *(–60° to +475°F)*				
0.25-oz. Micro-Drop Tube	12	1202K41	$2.07	$1.86
2-oz. Squeeze Bottle	12	1202K43	3.54	3.20
12-oz. Aerosol	12	1202K44	13.04	11.76
18-oz. Spray Bottle	6	1202K46	18.96	17.10
1-gal. Container	2	1202K45	75.78	69.02
Empty 18-oz. Spray Bottle for Tri-Flow	6	1202K48	4.61	5.11
Slick 50 One Lube *(–30° to +180°F)*				
12-oz. Aerosol	12	11785K11	6.09	5.48
LPS Magnum *(–50° to +450°F)*				
11-oz. Aerosol	12	1200K51	11.80	10.57
5-gal. Container	1	1200K53	——	503.80

Biodegradable Lubricants

Environmentally nontoxic, these lubricants boast a natural lubricity that outperforms petroleum-based oils. Use them anywhere you need a thin, protective film. Temperature range is –22° to +295°F. The aerosol has a female stem.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
11-oz. Aerosol	12	1475K41	$15.71	$14.04
1-gal. Container	4	1475K43	42.87	38.66
5-gal. Container	1	1475K45	——	184.34

Graphite Lubricants

Made with graphite, these lubricants are capable of conducting heat and electricity. ***Dry film*** quickly evaporates, leaving a dry coating that won't attract dirt. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dry Film— Aerosol has a male stem.

High-Temperature Dry Film— NSF registered H2 for applications with no possibility of food contact. Aerosol stem is female.

Brush-On Dry Film— This extremely durable lubricant resists moisture. Apply with a brush.

Sprayable Dry Film— Thin enough to be applied with a spray gun, this lubricant can cover a large area quickly. For HVLP spray guns, see 77745T and 9383T on page 2138.

No-Drip Stick— No drips or spills. Just apply to a hot surface and let it melt. Size is 2" Dia. x 10" Lg.

Powdered— Small particles fit into hard-to-reach spots. Use 1291K51 dry. Use 1285K11, 1285K25, and 1285K13 dry or mixed with oil or grease.

Flaked— Large particles conduct more heat and electricity than powders. Use dry or mixed with oil or grease.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dry Film *(–20° to +175°F)*				
3.4-oz. Squeeze Bottle	12	13725K11	$3.29	$2.98
3-oz. Aerosol	12	13725K12	3.97	3.59
High-Temperature Dry Film *(–40° to +850°F)*				
10-oz. Aerosol	12	1289K17	5.96	5.32
Brush-On Dry Film *(–75° to +450°F)*				
32-oz. Container	6	1289K14	21.48	19.66
1-gal. Container	4	1289K16	56.30	51.97
Sprayable Dry Film *(–75° to +450°F)*				
1-gal. Container	4	1289K22	55.08	50.84
No-Drip Stick *(+150° to +450°F)*				
1-lb.	5	3735K13	23.72	21.35
Powdered *(–300° to +700°F)*				
0.21-oz. Tube	12	1291K51♠	2.02	1.83
1-lb. Container	12	1285K11	11.06	10.05
5-lb. Container	4	1285K25	50.50	45.91
50-lb. Drum	1	1285K13	——	173.25
Flaked *(–300° to +700°F)*				
1-lb. Container	12	1290K1	12.68	11.53
5-lb. Container	4	1290K3	50.50	45.91

♠ Temperature range is –75° to +700°F.

Tri-Flow, LPS Magnum, and ***DuPont Lubricants*** (except for 8710T44) are NSF registered H2 for applications with no possibility of food contact.

Dry film quickly evaporates, leaving a dry coating that won't attract dirt.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
DuPont Teflon® Multi-Use Lubricant *(–30° to +300°F)*				
4-oz. Squeeze Bottle	12	8710T11	$5.49	$4.91
14-oz. Aerosol	6	8710T13	10.00	8.95
DuPont Teflon® Silicone Lubricant *(–40° to +400°F)*				
14-oz. Aerosol	6	8710T22	8.82	7.89
DuPont Teflon® Dry-Film Lubricant *(–100° to +480°F)*				
14-oz. Aerosol	6	8710T44	8.98	8.03
Dry Film *(–40° to +572°F)*				
10-oz. Aerosol	12	1130K15	6.52	5.82
Standard *(–60° to +500°F)*				
0.5-oz. Micro-Drop Tube	12	1076K16	5.75	4.93

Food-Grade Lubricants

Choose these lubricants for food-processing and food-handling applications. They're NSF registered H1 (except for 3M, which complies with FDA specification 21 CFR 178.3570) for applications with incidental food contact. The aerosols have a male stem except for 4328T58, 1155K24, and 8740T11, which have a female stem. These products are compliant under all state VOC rules in effect on October 1, 2010.

Silicone Lubricants— These lubricants retain their consistency and thickness to reduce friction as they lubricate. ***3M*** is also moisture resistant and can be used as an effective mold release.

Lubricants with PTFE— The PTFE nonstick coating reduces friction as it lubricates. ***Dry film*** quickly evaporates, leaving a dry coating that won't attract dirt.

Equipment Wipe-Down Lubricants— Great for lubricating equipment between processes, these lubricants resist rust and corrosion without solvent odors. Temperature range is 10° to 150°F for 8740T11; 0° to 370°F for 8740T33.

Biodegradable Lubricants— Environmentally nontoxic, these lubricants boast a natural lubricity that outperforms petroleum-based oils.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Lubricants				
Sprayon *(+20° to +450°F)*				
10-oz. Aerosol	12	1155K12	$7.40	$6.66
Dow Corning Molykote *(+14° to +248°F)*				
13.5-oz. Aerosol	12	4328T58	22.90	20.78
Silicone Lubricants				
3M *(–28° to +350°F)*				
13.4-oz. Aerosol	12	31155K36	13.63	12.24
LPS *(–40° to +500°F)*				
13-oz. Aerosol	12	13805K53	12.12	10.86
5-gal. Container	1	13805K54	——	272.35
Standard *(–40° to +500°F)*				
11-oz. Aerosol	12	1408K34	7.73	6.96
Lubricants with PTFE				
Dry Film *(–40° to +500°F)*				
11-oz. Aerosol	12	1155K24	8.72	7.85
Standard *(–45° to +450°F)*				
0.25-oz. Micro-Drop Tube	12	1155K31	3.49	3.14
4-oz. Squeeze Bottle	6	1155K33	4.98	4.48
1-gal. Container	4	1155K35	65.11	58.60
Equipment Wipe-Down Lubricants				
17-oz. Aerosol	12	8740T11	11.07	9.96
1-gal. Container	6	8740T33	23.38	21.04
Biodegradable Lubricants				
Soy Oil *(+40° to +382°F)*				
8-oz. Aerosol	12	1485K21	7.18	6.53
Wipes (24/Box)	1485K23	Box	1-5 $11.98	6-Up $10.89

Moisture-Free Lanolin Lubricant

Pure Grade AAA lanolin, this clean, odorless, moisture-free lubricant stops rust. Use it to coat gauges and heat-treated parts, which are prone to rusting. It's also good for lubricating while tapping metals and plastics, and can even be used as an antiseize. Furnished in a 2-oz. tube. Package quantity is 12.

This product is compliant under all state VOC rules in effect on October 1, 2010. *Note:* Not rated for temperature.

10135K11 ..... **Each** Partial Pkg. $7.55 Full Pkg. $6.84

For information about lubricants, grease, and oil, see page 2164.

Extreme-Pressure Moly Lubricants

Containing moly (molybdenum disulfide), these lubricants are formulated to handle your high pressure applications. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dri Slide— A combination of moly and graphite, these lubricants dry to a gray film that resists rust and corrosion. They repel dirt and dust, and won't harm steel, paint, or plastic. Aerosols have a male stem.

Dow Corning Molykote 321— This moly and graphite lubricant dries to a dark gray film that won't attract dirt. Use on tools, gears, taps, drills, and splines. Aerosol stem is female.

Dow Corning Molykote Z Moly-Powder— Rub this dry lubricant on metal surfaces to prevent corrosion, galling, and seizing. Color is black. Meets MIL-M-7866.

Dry Film— Quickly evaporates, leaving a dark gray coating that won't attract dirt. Use it on slides and hinges, and as a thread lubricant. Aerosol stem is female.

Marine Grade— Reduce the effects of water and salt spray with these water-resistant lubricants. They form a black shield that prevents corrosion, galling, and heat freeze on open gears, open spur gears, marine transmission gears, and other exposed metal parts. Aerosol has a male stem.

Size	Max. psi	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dri Slide *(–20° to +1000°F)*					
4-oz. Squeeze Bottle	100,000	12	**1163K25**	$9.38	$8.53
5.25-oz. Aerosol	100,000	12	**1163K12**	10.74	9.60
8-oz. Aerosol	100,000	12	**1163K18**	14.96	13.52
32-oz. Container	100,000	12	**1163K32**	25.45	23.23
1-gal. Container	100,000	4	**1163K44**	90.36	82.51
Dow Corning Molykote 321 *(–290° to +840°F)*					
11-oz. Aerosol	50,000	6	**1254K14**	39.84	36.38
Dow Corning Molykote Z Moly-Powder *(–375° to +750°F)*					
10-oz. Squeeze Bottle	500,000	6	**4328T62**	85.56	77.66
Dry Film *(–100° to +650°F)*					
12-oz. Aerosol	4,000	12	**1436K61**	8.12	7.43
Marine Grade *(–300° to +750°F)*					
12-oz. Aerosol	300,000	12	**10625K15**	20.92	18.98
1-lb. Container	300,000	12	**10625K11**	18.06	15.92

Extreme-Temperature Ceramic Lubricants

In applications where graphite and molybdenum disulfide can't take the heat, choose these ceramic lubricants, which withstand a maximum temperature of 1562° F in oxidizing environments and 3272° F in vacuum environments. Made of white, high-purity boron nitride crystals, they also form an electrical insulating barrier and are effective as a mold release agent. Aerosol has a male stem. 1-gal. container is water based. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
13-oz. Aerosol	4	**10515K35**	$34.94	$31.86
1-gal. Container	1	**10515K68**	____	111.72

Nonstaining Powder Lubricant

This mica lubricant leaves behind a thin, stain-free white coating that is barely visible compared to other lubricants such as graphite and molybdenum disulfide. Use it on metal, plastic, rubber, and wood surfaces. Temperature range is –75° to +700° F. This product is compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1/8-oz. Tube	12	**1667K12**	$2.92	$2.60

Open Gear, Wire Rope, and Cable Lubricant

Guard against rust and displace moisture with this black molybdenum disulfide lubricant. It penetrates the pores of metal surfaces and adheres under high speeds. Stem is female. Temp. range is 14° to 240° F. This product is compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
12-oz. Aerosol	12	**1073K74**	$9.85	$8.89

Chain Lubricants

Protect your chains and moving metal parts, such as assembly lines, to avoid costly downtime. Aerosols have a male stem, unless noted. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning Molykote C-40— Lubricates in high-temperature applications, including oven chains. This low-viscosity fluid evaporates to leave a dry, black graphite film. Apply at temperatures up to 250° F. NSF registered H2 for applications with no possibility of food contact.

DuPont Teflon® Lubricant with Moly— Goes on wet to penetrate, then dries to a white fluoropolymer wax film. It contains molybdenum disulfide, provides rust and corrosion protection, repels dirt, and is safe for use with O-rings.

Standard— This amber-colored, oil-like film repels dirt.

With Moly— Reduce stress of startups with this lubricant, that contains molybdenum disulfide. It also provides protection against corrosion. Color is dark gray.

Water Resistant— Highly viscous, these lubricants cling to wet surfaces and displace water for excellent rust and corrosion protection. Color is amber. NSF registered H2 for applications with no possibility of food contact.

For Ovens— Formulated with heat-resistant graphite, these lubricants protect oven-chain pins and bushings from baking heat. Use in kilns, bakery ovens, and industrial ovens. Color is gray/black. NSF registered H2 for applications with no possibility of food contact. *Oil Based—* Apply at temperatures up to 140° F. *Water Based—* No need to cool down the oven, this lubricant contains no combustible oils so it can be applied at temperatures up to 450° F.

Food Grade— These lubricants contain additives that resist oxidation. NSF registered H1 for applications with incidental food contact. 6159K75 and K77 are amber; 2923K27 and K29 are white.

Water-Resistant Food Grade— Highly viscous, this lubricant clings to wet surfaces and displaces water for excellent rust and corrosion protection. Color is amber. NSF registered H1 and FDA compliant with specification 21 CFR 178.3570 for applications with incidental food contact.

Direct-Contact Food Grade— NSF registered H3 for direct food-contact applications. Color is clear.

Extra-Thick Food Grade— Formulated extra thick to stay on the chain longer even as it moves, this amber-colored lubricant contains additives that resist oxidation. NSF registered H1 for applications with incidental food contact.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning Molykote C-40 *(+350° to +1000°F)*				
32-oz. Bottle	4	**4328T46**▲	$55.61	$50.48
DuPont Teflon® Lubricant With Moly *(–30° to +300°F)*				
14-oz. Aerosol	6	**8710T35**	10.43	9.33
Standard *(–10° to +260°F)*				
17-oz. Aerosol	12	**6159K11**	16.37	13.80
1-gal. Container	6	**6159K41**	57.87	52.49
5-gal. Container	1	**6159K61**	____	250.76
With Moly *(–20° to +300°F)*				
12-oz. Aerosol	12	**1451K7**	6.82	6.14
Water-Resistant *(0° to +400°F)*				
12.25-oz. Aerosol	12	**1579K2**	13.71	11.47
1-gal. Container	4	**1579K4**	50.39	44.93
For Ovens, Oil-Based *(–75° to +450°F)*				
5-gal. Container	1	**1443K2**	____	179.80

▲ Has a female stem. ★ Temperature range is +10° to +150° F.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
For Ovens, Water-Based *(–75° to +450°F)*				
1-gal. Container	4	**1443K3**	$37.69	$33.87
5-gal. Container	1	**1443K4**	____	166.69
Food Grade *(–15° to +410°F)*				
11-oz. Aerosol	12	**6159K75**▲★	12.42	10.87
32-oz. Container	12	**6159K77**★	9.50	8.48
1-gal. Container	4	**2923K27**	43.61	39.85
5-gal. Container	1	**2923K29**	____	154.86
Water-Resistant Food Grade *(+20° to +160°F)*				
11-oz. Aerosol	12	**1579K6**	16.14	13.54
Direct-Contact Food Grade *(–40° to +500°F)*				
4-oz. Squeeze Bottle	12	**9983T2**	3.49	3.10
16-oz. Squeeze Bottle	12	**9983T3**	7.47	6.64
32-oz. Container	12	**9983T4**	13.63	12.12
1-gal. Container	4	**9983T5**	58.40	52.56
Extra-Thick Food Grade *(–15° to +464°F)*				
5-gal. Container	1	**2923K34**	____	222.00

For information about lubricants, grease, and oil, see page 2164.

Control Cable Lubricating Kit

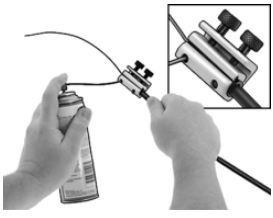

Lubricate your 3/16″ to 3/8″ dia. shrouded control cables without removing them. This kit includes 6.25-oz. of lubricant and a unique tool that displaces moisture to clean and lubricate in seconds.

To use, attach tool to either end of your cable and then tighten it around the cable. Insert the aerosol extension tube into the tool and spray. Temperature range is –20° to +250°F. This product is compliant under all state VOC rules in effect on October 1, 2010.

Lubricating Kit	1437K1	$22.20
Replacement 6.25-oz. Aerosol	1437K3	7.33

Woodworking Lubricants

The absence of silicone ensures that these lubricants won't stain or affect the paint or finishes you apply to wood. Both are 10.75-oz. aerosol with a female stem. These products are compliant under all state VOC rules in effect on October 1, 2010.

Blade and Bit Lubricant— Reduces cutting friction and resin buildup on saw blades, drill bits, and knives. Temperature range is –67° to +475°F.

Table- and Tool-Surface Lubricant— Reduces sliding friction on metal, laminate, and plastic surfaces. Temperature range is –40° to +135°F.

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Blade and Bit	12	11615K44	$17.65	$14.96
Table and Tool Surface	12	11615K66	17.28	14.64

O-Ring Lubricants

Apply directly to O-rings to prevent drying and cracking, which will extend O-ring service life. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning Molykote 55— For use on most rubbers. Not recommended for use on silicone rubber, polycarbonate, or ABS thermoplastic.

Food Grade— Compatible with most O-rings and seals. NSF registered H1 for applications with incidental food contact.

Barium Based— Use with silicone rubber O-rings and seals in open systems.

Silicone— Use with virtually any rubber polymer including Buna-N and neoprene.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning Molykote 55 *(–85° to +350°F)*				
5.3-oz. Tube	12	1325K54	$24.97	$22.66
8-lb. Container	1	1325K58	—	392.55
Food Grade *(–40° to +350°F)*				
4-oz. Tube	12	9463K41	6.76	5.92
Barium Based *(0° to +300°F)*				
4-oz. Tube	24	9463K23	15.71	13.75
Silicone *(–65° to +400°F)*				
2-oz. Tube	12	9463K33	20.52	17.96

Dow Corning Molykote Assembly Lubricants

Choose these lubricants to reduce torque on metal parts, such as threaded fasteners, during assembly work. They also reduce friction while breaking in new or rebuilt equipment, such as gears and bearings. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning Molykote G-n— Mineral oil and molybdenum disulfide are blended with white solid lubricants. Color is dark gray. Aerosol has a female stem.

Dow Corning Molykote D— Mineral oil is blended with white solid lubricants. Color is white, which provides a clean appearance where thin-film applications are not possible.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning Molykote G-n *(0° to +750°F)*				
2.8-oz. Tube	12	1204K33	$9.95	$9.03
11-oz. Aerosol	12	1204K13	27.66	25.11
1-lb. Container	6	1204K36	43.12	39.14
Dow Corning Molykote D *(–15° to +480°F)*				
1-lb. Container	6	4328T37	44.51	40.40

Wire and Cable Pulling Lubricants

Get a smooth, consistent pull while decreasing the chance of damage to your insulation. These products are compliant under all state VOC rules in effect on October 1, 2010. They are also UL listed.

Standard— Good for most surfaces except composite rubber, these lubricants are easy to clean up. They're specially formulated to reduce tension in high-stress electrical and communications applications.

With PTFE— The superior lubricity of PTFE handles the most difficult pull.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard *(28° to 180°F)*				
32-oz. Squeeze Bottle	12	7431K36	$8.29	$7.37
1-gal. Container	4	7431K37	19.71	17.52
With PTFE *(30° to 190°F)*				
32-oz. Squeeze Bottle	12	7431K41	10.45	9.29
1-gal. Container	4	7431K42	22.66	20.14

Leather Lubricant and Conditioners

These products are compliant under all state VOC rules in effect on October 1, 2010.

Lubricant— Also known as castor oil, this nondrying oil lubricates and preserves leather.

Conditioners— Also known as neatsfoot oil, these oils recondition, waterproof, and preserve leather.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Lubricant *(0° to 200°F)*				
1-gal. Container	6	1025K11	$36.28	$32.50
Conditioners *(Not rated for temperature)*				
32-oz. Bottle	12	1022K11	11.57	10.52
1-gal. Container	4	1022K12	42.23	38.07

Petroleum Jelly

Nondrying and nonhardening, these lubricants won't dissolve in water. Use them to coat and protect your metal surfaces. Not rated for temperature. These products are compliant under all state VOC rules in effect on October 1, 2010.

Pharmaceutical Grade— Color is white.

Technical Grade— Meets Military Specification VV-P-236. Color is amber.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Pharmaceutical Grade				
1-lb. Container	12	1215K12	$9.78	$8.30
7-lb. Container	1	1215K32	—	41.10
35-lb. Container	1	1215K33	—	156.60
Technical Grade				
1-lb. Container	12	1215K41	11.11	9.43
7-lb. Container	1	1215K42	—	60.00
35-lb. Container	1	1215K43	—	250.00

Mold Maintenance Products

These products are compliant under all state VOC rules in effect on October 1, 2010.

Cleaner— Spray this cleaner on all types of metal molds to eliminate moisture, dirt, oils, and release agents. Stem is male.

Corrosion Inhibitor— Apply a thin coat for protection against rust and corrosion. Stem is female.

Silicone Remover— Simply mix with water to clear all traces of silicone from molded parts.

Polish— Removes oxidation, stains, and residual materials, leaving a high luster on tooling surfaces.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Cleaner *(0° to 400°F)*				
16-oz. Aerosol	12	3311K15	$5.84	$5.26
Corrosion Inhibitor *(Not rated for temperature)*				
10-oz. Aerosol	12	3311K52	8.56	7.70
Silicone Remover *(0° to 200°F)*				
16-oz. Container	12	3311K61	13.11	11.80
Polish *(40° to 120°F)*				
3-oz. Tube	12	15535K21	9.52	8.65
1-lb. Container	12	15535K22	24.00	21.82
5-lb. Container	4	15535K23	87.12	79.20

For information about lubricants, grease, and oil, see page 2164.

Mold-Release Lubricants

Apply these lubricants prior to molding to facilitate removal. Aerosols have a male stem, unless noted. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning Molykote 316— Suitable for use on metal food and beverage equipment, this lubricant is NSF registered H1 for applications with incidental food contact. Stem is female.

Dow Corning Molykote 7— An excellent release agent for plastic and metal surfaces, these lubricants also work well as a mold break-in treatment. NSF Standard 51 certified for use in food processing equipment and Standard 61 for use in drinking (potable) water applications. FDA compliant with specification 21 CFR 175.300 for applications with incidental food contact.

Multipurpose— Use these water-based lubricants on acrylic, cellulose, ABS resin, polystyrene, rubber, melamine, and metal.

For Urethane and Styrene— This lubricant protects ultra-sensitive materials such as urethane and styrene from chemicals.

For Rubber— This hydrocarbon-based lubricant forms a semipermanent bond with molds so you can apply it less frequently. It's suitable for all types of elastomers (synthetic rubbers) including EPDM, nitrile, and neoprene. Stem is female.

Dry Film with Moly— Containing moly (molybdenum disulfide), this lubricant provides excellent rust protection. It quickly evaporates, leaving a dry coating that won't attract dirt.

Food Grade— For all plastic molding operations, including injection and compression molding. FDA compliant with specification 21 CFR 121.101 for applications with incidental food contact.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning Molykote 316 *(–40° to +390°F)*				
10-oz. Aerosol	12	**4328T57**	$13.02	$11.82
Dow Corning Molykote 7 *(–40° to +400°F)*				
5.3-oz. Tube	12	**1344K22**	14.58	13.23
8-lb. Container	1	**1344K28**	—	266.56
Multipurpose *(+34° to +500°F)*				
16-oz. Spray Bottle	12	**2343K37**	12.03	10.91
1-gal. Container	4	**2343K41**	45.31	39.93
For Urethane and Styrene *(–40° to +550°F)*				
12-oz. Aerosol	12	**1409K34**	11.32	10.16
For Rubber *(+40° to +500°F)*				
10-oz. Aerosol	12	**1409K29**	10.02	9.23
Dry Film with Moly *(0° to +650°F)*				
11-oz. Aerosol	12	**1409K66**	18.88	17.07
Food Grade *(0° to +600°F)*				
12-oz. Aerosol	12	**1409K32**	10.62	9.64

Paintable Mold-Release Lubricants

Post-finishing painting is possible when you use these lubricants. Apply prior to molding to facilitate removal and protect mold surface. Aerosols have a male stem, unless noted. These products are compliant under all state VOC rules in effect on October 1, 2010.

Honey Wax— This carnauba wax compound lets you release a mold several times before it needs to be reapplied. To apply, spread an even layer on the surface using the included sponge applicator or a clean cloth. Commonly used in the fiberglass industry.

For Epoxy— Synthetic and wax-based, this lubricant works well for epoxy, polyester, and phenolic molds.

For Thermosets— Release thermoset parts quickly and easily with this wax-based lubricant. Stem is female.

Dry Powder Zinc Stearate— Resists dust, making it good for thermoplastic parts.

Dry Film with PTFE— This PTFE lubricant won't transfer to finished parts and gives multiple releases per application. Suitable for most resins, elastomers (synthetic rubbers), urethane, and styrene.

Silicone— This nonstick lubricant is compatible with plastic, rubber, wax, moldable resins, and elastomers (synthetic rubbers).

Soybean Fluid— Also known as lecithin, this clear soybean fluid quickly and cleanly releases thermoplastic parts. NSF registered H2 for applications with no possibility of food contact.

Food Grade— These hydrocarbon-based lubricants comply with FDA specification 21 CFR 184.1400 (c) for incidental food contact. *With Lubricant for Ejector Pin* acts as a mold release agent and reduces friction in ejector pins and other moving parts. Complies with FDA specification 21 CFR 178.357 for incidental food contact.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Honey Wax *(+40° to +170°F)*				
14-oz. Container	6	**2386K78**	$18.90	$17.01
For Epoxy *(0° to +450°F)*				
16-oz. Aerosol	12	**1409K61**	7.02	6.38
For Thermosets *(+40° to +400°F)*				
11-oz. Aerosol	12	**1409K44**	5.08	4.69
Dry Powder Zinc Stearate *(–40° to +450°F)*				
12-oz. Aerosol	12	**1409K38**	10.57	9.56
Dry Film with PTFE *(–50° to +575°F)*				
12-oz. Aerosol	12	**1409K42**	11.36	10.27
Silicone *(–40° to +550°F)*				
12-oz. Aerosol	12	**1409K33**	10.43	9.37
Soybean Fluid *(–40° to +350°F)*				
12-oz. Aerosol	12	**1409K58**	9.64	8.71
Food Grade *(+40° to +250°F)*				
12-oz. Aerosol	12	**1409K51**	6.10	5.55
Food Grade with Lubricant for Ejector Pin *(+40° to +400°F)*				
12-oz. Aerosol	12	**1409K52**	5.80	5.34

Aerosol Spray Extensions

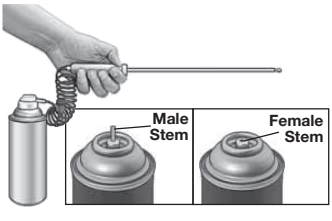

Extend the reach of your aerosol can by popping off the spray button and snapping on this extension. Both consist of a 16″ long steel probe with brass tip attached to a 24″ long nylon recoil hose. Compatible with all of the aerosol lubricants we offer.

For Aerosols with Male Stem	**1428K1**	$10.23
For Aerosols with Female Stem	**1428K2**	10.23

Antiseize Lubricants

Made of copper, graphite, and other additives, pick these lubricants for your general-purpose antiseize applications. These products are compliant under all state VOC rules in effect on October 1, 2010.

Bostik Never-Seez— Protects parts in high-pressure and corrosive environments. Meet MIL-A-907.

Dow Corning Molykote 1000— Resists corrosion and won't dry out.

Standard— Meet MIL-A-907E. *Aerosol* has a female stem. *Stick* allows no-mess application and measures 1⅜″ Dia. × 4¾″ Lg.

Marine Grade— Prevent corrosion in harsh marine environments. Meet MIL-PRF-907E.

Size	Color	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Bostik Never-Seez *(–297° to +1800°F)*					
4-oz. Brush-Top Can	Silver	12	**1820K22**	$12.44	$11.31
8-oz. Brush-Top Can	Silver	12	**1820K23**	15.26	13.87
Dow Corning Molykote 1000 *(–20° to +1202°F)*					
1-lb. Brush-Top Can	Brown	10	**1352K61**	25.41	23.06
Standard *(–65° to +2000°F)*					
4-oz. Brush-Top Can	Copper	24	**1367K91**	10.21	9.23
8-oz. Brush-Top Can	Copper	12	**1367K11**	14.29	12.90
12-oz. Aerosol	Copper	12	**1367K21**	23.46	21.38
Cartridge for Grease Gun (16 oz.)	Copper	12	**1367K51**	21.57	19.48
1-lb. Brush-Top Can	Copper	12	**1367K81**	21.57	19.48
2-lb. Container	Copper	6	**1367K71**	43.25	39.06
10-lb. Container	Copper	4	**1367K31**	160.88	143.95
2.25-oz. Stick	Copper	24	**1984K11**●	10.08	8.70
Marine Grade *(–65° to +2000°F)*					
8-oz. Brush-Top Can	Silver	12	**10045K23**	10.74	9.62
1-lb. Brush-Top Can	Silver	12	**10045K25**	17.47	15.65

●Temperature range is –50° to +1800°F.

Water-Resistant Antiseize Lubricants

High-moisture environments are no problem for these mineral oil-based antiseize lubricants, which also provide corrosion protection. These products are compliant under all state VOC rules in effect on October 1, 2010.

Food Grade— NSF registered H1 for applications with incidental food contact. Meets MIL-A-907E.

Aircraft Grade— Formulated to meet aircraft-grade military specification CID-A-A-59313, these lubricants are especially effective on aluminum.

Size	Color	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Food Grade *(–10° to +2300°F)*					
1-lb. Brush-Top Can	White	6	**9438K1**	$24.05	$21.43
Aircraft Grade *(–65° to +788°F)*					
8-oz. Brush-Top Can	Gray	6	**10105K41**	13.95	12.50
1-lb. Container	Gray	6	**10105K43**	22.09	19.79

For information about lubricants, grease, and oil, see page 2164.

Corrosion-Resistant Antiseize Lubricants

These products are compliant under all state VOC rules in effect on October 1, 2010.

Aluminum lubricants contain aluminum and graphite for good corrosion resistance.

Loctite— Meet MIL-PRF-907E. Aerosol has a female stem.

Standard— Also contain copper. Meet MIL-A-907E. NSF registered H2 for applications with no possibility of food contact.

Stainless steel lubricants contain stainless steel, graphite, and aluminum for use in extremely corrosive environments.

Bostik Never-Seez— Meet MIL-A-907E.

Bostik Never-Seez Nuclear Grade— Specially formulated to meet the purity and performance requirements of the nuclear industry. Meets MIL-A-907.

Size	Color	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Aluminum					
Loctite *(–65° to +1600°F)*					
8-oz. Brush-Top Can	Silver	12	1287K51	$14.90	$13.36
12-oz. Aerosol	Silver	12	1287K61	15.12	13.55
Standard *(–65° to +2000°F)*					
0.04-oz. Packet	Silver	25	1288K19	1.50	1.35
1-oz. Tube	Silver	25	1288K12	7.32	6.61
8-oz. Brush-Top Can	Silver	12	1288K13	15.68	14.16
Cartridge for Grease Gun (16 oz.)	Silver	12	1288K97	21.86	19.74
1-lb. Brush-Top Can	Silver	12	1288K11	24.93	22.52
2.5-lb. Can	Silver	6	1288K17	47.29	42.71
Stainless Steel					
Bostik Never-Seez *(–297° to +2200°F)*					
8-oz. Brush-Top Can	Silver	12	1820K1	18.89	16.96
1-lb. Brush-Top Can	Silver	12	1820K3	32.72	29.08
Bostik Never-Seez Nuclear Grade *(–297° to +2200°F)*					
1-lb. Can	Silver	6	1820K52	62.12	56.47

High-Temperature Antiseize Lubricants

Able to withstand temperatures from –350° to +2987°F, these are the highest temperature antiseize lubricants we offer. All are made of a pure metallic lead powder combined with a petroleum lubricant. Great for sealing as well as high-pressure applications. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Color	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
2.75-oz. Tube	Dk. Gray	12	1280K41	$8.89	$8.00
1-lb. Brush-Top Can	Dk. Gray	12	1280K42	26.67	24.00
5-lb. Container	Dk. Gray	4	1280K43	98.56	88.70

Extreme-Pressure Moly Antiseize Lubricants

Formulated to take on your extreme-pressure applications, these lubricants contain moly (molybdenum disulfide). These products are compliant under all state VOC rules in effect on October 1, 2010.

Bostik Never-Seez Blue Moly— Also contain corrosion inhibitors to handle harsh environments.

Standard— Also contain graphite. Meet MIL-M-7866C.

Aircraft Grade— Great for stainless steel. Meets MIL-PRF-83483.

Marine Grade— Prevent corrosion in wet environments—even under water.

Size	Color	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Bostik Never-Seez Blue Moly *(–150° to +1500°F)*					
8-oz. Brush-Top Can	Blue	6	1820K62	$26.42	$24.01
1-lb. Brush-Top Can	Blue	6	1820K63	46.04	41.85
Standard *(–65° to +650°F)*					
3-oz. Tube	Black	12	1279K31	14.39	13.00
10-oz. Brush-Top Can	Black	12	1279K32	23.74	21.87
Cartridge for Grease Gun (16 oz.)	Black	12	1279K35	29.79	26.06
1-lb. Container	Black	12	1279K33	30.56	27.84
Aircraft Grade *(–20° to +748°F)*					
1-lb. Container	Gray	6	10105K21	47.07	43.83
Marine Grade *(0° to +750°F)*					
8-oz. Container	Gray	12	9456K6	34.84	32.26
1-lb. Container	Gray	6	9456K7	60.46	55.98
2-lb. Container	Gray	6	9456K8	117.40	108.70

Copper-Free Antiseize Lubricants

Copper can act as a catalyst in some chemical reactions—that's why we offer copper-free lubricants, which contain nickel, aluminum, and graphite. The presence of nickel makes these lubricants excellent for applications where dissimilar metals such as brass and steel are used together. These products are compliant under all state VOC rules in effect on October 1, 2010.

Standard— NSF registered H2 for applications with no possibility of food contact. Aerosol has a female stem. Meet MIL-A-907E.

Bostik Never-Seez Pure Nickel— Meet MIL-A-907.

Premium— Exceptionally smooth and easy to spread, this lubricant has finer nickel particles to fill and protect even the smallest imperfections in your metals. Meet MIL-A-907E.

Bostik Never-Seez Nuclear Grade— Specially formulated to meet the purity and performance requirements of the nuclear industry. Furnished with certified test reports. Meet MIL-A-907.

Nuclear Grade— Specially formulated to meet the purity and performance requirements of the nuclear industry. Furnished with certified test reports. NSF registered H2 for applications with no possibility of food contact. Meet MIL-PRF-907E.

Size	Color	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard *(–65° to +2600°F)*					
4-oz. Brush-Top Can	Silver	24	1028K63	$13.69	$12.28
8-oz. Brush-Top Can	Silver	12	1028K65	22.66	20.33
12-oz. Aerosol	Silver	12	1028K86	29.43	26.41
1-lb. Brush-Top Can	Silver	6	1028K66	38.49	34.54
2-lb. Container	Silver	6	1028K67	65.33	58.07
8-lb. Container	Silver	4	1028K68	213.60	189.87
Bostik Never-Seez Pure Nickel *(–297° to +2400°F)*					
8-oz. Brush-Top Can	Silver	6	1820K32	24.90	22.64
1-lb. Brush-Top Can	Silver	6	1820K33	40.42	36.75
Premium *(–65° to +2600°F)*					
0.25-oz. Tube	Silver	50	10295K29	5.57	5.00
8-oz. Brush-Top Can	Silver	6	10295K31	30.91	27.74
Cartridge for Grease Gun (16 oz.)	Silver	6	10295K33	49.97	44.85
1-lb. Brush-Top Can	Silver	6	10295K35	49.97	44.85
Bostik Never-Seez Nuclear Grade *(–297° to +2400°F)*					
8-oz. Brush-Top Can	Silver	6	1820K42	49.50	45.00
1-lb. Brush-Top Can	Silver	6	1820K43	75.40	68.55
Nuclear Grade *(–65° to +2600°F)*					
4-oz. Brush-Top Can	Silver	6	1027K33	27.11	25.03
8-oz. Brush-Top Can	Silver	6	1027K31	42.38	38.00
1-lb. Brush-Top Can	Silver	6	1027K32	63.65	57.07

Metal-Free Antiseize Lubricants

Free of metal particles, these lubricants prevent galling in stainless steel and other sensitive alloys. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning Molykote P37— Consists of molybdenum disulfide, zirconium, graphite, and other solids in an ultra-pure synthetic oil.

Standard— Made of graphite blended with high-temperature lubricating solids, extreme-pressure additives, and corrosion preventatives. Meet MIL-PRF-907E.

Aircraft Grade— Made with graphite and petrolatum, this lubricant meets MIL-T-5544.

Loctite Food Grade— These nonstaining lubricants work particularly well on stainless steel parts. NSF registered H1 for applications with incidental food contact.

Food Grade with PTFE— These nonstaining lubricants contain nonstick PTFE as well as corrosion inhibitors. They work particularly well on stainless steel parts. NSF registered H1 for applications with incidental food contact.

Size	Color	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning Molykote P37 *(-22° to +2550° F)*					
1-lb. Brush-Top Can	Black	4	1352K51	$65.08	$59.08
Standard *(-297° to +2400° F)*					
8-oz. Brush-Top Can	Black	12	1084K11	14.51	12.66
1-lb. Brush-Top Can	Black	12	1084K12	22.56	19.68
Aircraft Grade *(-65° to +840° F)*					
1-lb. Container	Black	12	10105K28	19.84	17.57
Loctite Food Grade *(-20° to +750° F)*					
8-oz. Brush-Top Can	White	12	1287K31	19.50	17.48
2-lb. Can	White	12	1287K33	50.54	45.31
Food Grade with PTFE *(-65° to +250° F)*					
8-oz. Brush-Top Can	White	12	1404K21	20.81	18.66
Cartridge for Grease Gun (14 oz.)	White	12	1404K22	24.76	22.44
14-oz. Container	White	12	1404K24	23.93	21.76
2-lb. Container	White	6	1404K25	54.76	49.62
7-lb. Container	White	4	1404K26	148.44	135.71
High-Temperature Food Grade with PTFE *(-35° to +1800° F)*					
9-oz. Brush-Top Can	White	12	1718T2	23.58	21.05

For information about lubricants, grease, and oil, see page 2164.

Antiseize Lubricating Tapes

Allowing easy, no-mess assembly and disassembly, these lubricants won't run or rub off your threaded connections—just wrap tape tightly around threads. Size is ½″ Wd. x 50 ft. Lg. These products are compliant under all state VOC rules in effect on October 1, 2010.

Copper—Made of copper and PTFE. Not recommended for stainless steel.

Nickel—Made of nickel and PTFE. Excellent for metals, especially stainless steel and aluminum. Color is silver.

	Temperature Range		Roll 1-4	Roll 5-Up
Copper	–450° to +2200°F	2290K1	$10.30	$9.25
Nickel	–450° to +2400°F	2290K2	15.43	13.86

Clean-Hands Antiseize Dispenser

Neatly, quickly, and efficiently apply antiseize to parts with this trigger-gun dispenser. It threads directly to the top of most 8-oz. and 1-lb. brush-top antiseize lubricant cans. Dispenser is made of steel and comes furnished with a brush tip.

1800K8 ..... $49.92

About Grease

There are several reasons to use grease as a lubricant: It adheres better than oil; it tends not to leak or run; and it can be formulated for conditions such as high temperatures, extreme pressure, and varying loads and speeds. It also resists moisture to prevent corrosion.

Grease Components—Grease is a semisolid made of base oil, thickener, and additives.

Base oils do the lubricating. Petroleum oil is the most economical. Synthetic oil (nonpetroleum) lasts longer and can generally withstand higher temperatures. Semisynthetic oil (a blend of petroleum and synthetic) balances lower cost with longer-lasting performance.

Thickeners are solid particles that hold the base oil in place. The chart below is a guide for comparing the relative properties of the most common thickeners.

Thickener	Heat Resistance	Moisture Resistance	Oxidation Resistance★
Aluminum	Fair	Good	Excellent
Calcium Sulfonate	Good	Excellent	Excellent
Carbon Black	Excellent	Fair	Good
Clay	Excellent	Fair	Good
Elastomer	Excellent	Good	Good
Lithium	Good	Good	Fair
High-Performance Lithium	Excellent	Excellent	Fair
PTFE	Good	Good	Good
Silica	Excellent	Excellent	Good
Silicone	Excellent	Excellent	Good
Sodium	Excellent	Poor	Poor

★ Oxidation of lubricants can produce sludge, varnish, gum, and acid.

Grease Consistency—The NLGI (National Lubricating Grease Institute) rates grease by its consistency on a numeric scale. The most common NLGI number is 2. Lower numbers are softer and flow better, while higher numbers are firmer, tend to stay in place, and are a good choice when leakage is a concern.

The table below compares the most common NLGI grades with household products that have similar consistencies.

NLGI No.	Consistency Comparison
0	Brown Mustard
1	Tomato Paste
2	Peanut Butter
3	Vegetable Shortening

Lithium-Thickened Grease

These multipurpose lubricants offer good heat and moisture resistance. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobilux EP 111—Made of oil and molybdenum disulfide, these black greases are wear resistant and suitable for high-speed rotating couplings as well as low-speed open gears and plain bearings.

Mobilux EP 1 and ***EP 2***—This brown multipurpose grease offers rust and corrosion resistance for use in moist or wet conditions.

Dow Corning Molykote BR-2 Plus—Contain molybdenum disulfide to withstand extreme pressures. These black greases are suitable for moderate- to high-speed ball and roller bearings, conveyors, and shop equipment.

Dow Corning Molykote 44 with Silicone—Use these off-white silicone-based synthetic greases for antifriction bearings; plastic and rubber parts under light loads; and moderate- to high-speed applications.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Mobilux EP 111 *(+14° to +248°F)*					
Cartridge for Grease Gun (14 oz.)	1	10	1416K17	$3.53	$3.16
35-lb. Container	1	1	1416K15	____	118.64
Mobilux EP 1 *(–4° to +266°F)*					
Cartridge for Grease Gun (14 oz.)	1	10	1416K41	6.40	5.74
Mobilux EP 2 *(–4° to +266°F)*					
Cartridge for Grease Gun (14 oz.)	2	10	1416K43	3.87	3.47
Dow Corning Molykote BR-2 Plus *(–20° to +265°F)*					
Cartridge for Grease Gun (14.1 oz.)	2	10	10605K42	9.42	8.55
35-lb. Container	2	1	10605K43	____	199.29
Dow Corning Molykote 44 with Silicone *(–40° to +400°F)*					
5.3-oz. Tube	2	12	1252K23	25.78	23.40
Cartridge for Grease Gun (14.1 oz.)	2	10	1252K25	65.37	59.34
8-lb. Container	2	1	1252K27	____	421.23
Shell Alvania CG *(+20° to +250°F)*					
Cartridge for Grease Gun (14.1 oz.)	0-1	10	8670T6	5.31	4.83

■ Temperature range is –22° to +350°F.

Shell Alvania CG—Suitable for low speeds and heavy loads, use this dark brown grease on geared and flexible chain couplings.

Shell Alvania EP—Fortified with extreme-pressure additives, this brown grease can handle heavy, suddenly applied (shock) loads in bearing applications.

Shell Alvania RL—This is a low-noise grease. Color is amber.

White Lithium—This grease is for general lubrication. Stem is male.

White Lithium with PTFE—PTFE additive provides protection from friction. Aerosol has a female stem.

Marine Grade—These purple greases cling to surfaces, so they won't be washed away by water or salt.

Synthetic—Long-lasting with a wide temperature range, this light gray grease is great for bearings and gears as well as most plastics.

Bio-Based—This vegetable oil-based grease resists water and protects from rust. It also contains extreme-pressure additives for heavy duty applications. Color is brown.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Shell Alvania EP *(–13° to +275°F)*					
Cartridge for Grease Gun (14.1 oz.)	2	10	8670T7	$3.03	$2.75
Shell Alvania RL *(–30° to +275°F)*					
Cartridge for Grease Gun (14.1 oz.)	2	10	8670T8	3.08	2.80
White Lithium *(0° to +335°F)*					
10.25-oz. Aerosol	2	12	1380K29	5.06	4.52
White Lithium with PTFE *(–10° to +300°F)*					
10-oz. Aerosol	2	12	1284K75■	11.00	10.05
Cartridge for Grease Gun (14 oz.)	2.5	10	1380K22	5.68	5.06
1-lb. Container	2.5	16	1380K35	6.49	5.78
35-lb. Container	2.5	1	1380K23	____	132.39
Marine Grade *(0° to +325°F)*					
Cartridge for Grease Gun (14 oz.)	2	10	10175K15	4.47	3.78
35-lb. Container	2	1	10175K19	____	111.12
Synthetic *(–50° to +400°F)*					
Cartridge for Grease Gun (14 oz.)	1	10	1431K1	13.08	11.10
Bio-Based *(0° to +350°F)*					
Cartridge for Grease Gun (14 oz.)	2	10	3246K32	12.67	11.40

For information about lubricants, grease, and oil, see page 2164. For more on grease, see page 2170.

High-Performance Lithium-Thickened Grease

Additives improve performance in severe operating conditions. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobilgrease XHP 222—The choice for marine applications, this blue grease offers excellent adhesion plus rust and corrosion resistance.

Mobilgrease XHP 222 Special—Contains moly (molybdenum disulfide) for extreme-pressure applications. Color is dark gray.

Shell Albida EP—Formulated for extreme-pressure applications, these red greases are also suitable for heavy loads and wet conditions.

Dow Corning Molykote G-4700—This black synthetic grease contains moly (molybdenum disulfide) for extreme-pressure applications.

DuPont Teflon®—Teflon® fluoropolymers give these white greases nonstick and chemical-resistant properties. They are also corrosion resistant. Aerosol has a male stem.

DuPont Teflon® with Moly—In addition to Teflon® fluoropolymers for nonstick and chemical-resistant properties, these black greases have moly (molybdenum disulfide) to withstand extreme pressures.

Standard—Contains extreme-pressure additives. Color is dark red. Aerosol has a female stem.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Mobilgrease XHP 222 *(Maximum temperature is +284°F)*					
Cartridge for Grease Gun (14.1 oz.)	2	10	1416K22	$3.85	$3.45
35-lb. Container	2	1	1416K23	—	124.24
Mobilgrease XHP 222 Special *(Max. temperature is +284°F)*					
Cartridge for Grease Gun (14.1 oz.)	2	10	1416K14	4.46	4.00
Shell Albida EP *(–4° to +375°F)*					
Cartridge for Grease Gun (14.1 oz.)	1	10	8670T3●	3.31	3.01
Cartridge for Grease Gun (14.1 oz.)	2	10	8670T4	3.31	3.01
Dow Corning Molykote G-4700 *(–40° to +350°F)*					
Cartridge for Grease Gun (14.1 oz.)	2	10	4328T26	17.15	15.57

● Minimum temperature is –22° F.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
DuPont Teflon® *(–10° to +350°F)*					
14-oz. Aerosol	2	6	8708T11	$8.82	$7.63
Cartridge for Grease Gun (14 oz.)	2	6	8708T13	6.93	6.00
16-oz. Container	2	6	8708T15	8.23	7.12
DuPont Teflon® with Moly *(–10° to +350°F)*					
Cartridge for Grease Gun (14 oz.)	2	6	8708T22	8.32	7.19
16-oz. Container	2	6	8708T24	9.71	8.39
Standard *(0° to +300°F)*					
11.75-oz. Aerosol	2	12	1337K88	17.24	14.64
Cartridge for Grease Gun (14 oz.)	2	10	1337K13	4.42	3.75
1-lb. Container	2	16	1337K15	7.63	6.48
35-lb. Container	2	1	1337K14	—	133.70

Aluminum-Thickened Grease

Thickened with aluminum, these greases offer excellent oxidation resistance for long lubricant life. These products are compliant under all state VOC rules in effect on October 1, 2010.

With Moly—Contains moly (molybdenum disulfide) for extreme-pressure applications. Color is black.

Water Resistant—Lubricate and protect surfaces from corrosion in wet environments. Color is red.

Super Adhesive—Clings to surfaces, including vertical, for long-lasting protection. Stem is female. Color is red.

High Temperature—In addition to high temperatures, these greases also resist water. Color is green.

All ***food-grade greases*** are NSF registered H1 for incidental food contact.

Dow Corning Molykote—All greases are white. Aerosol has a female stem. *Molykote G-4500* and *4501* are synthetic.

Standard—Color is clear.

With PTFE—PTFE additive provides protection from friction. Color is white.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Grease					
With Moly *(+10° to +350° F)*					
Cartridge for Grease Gun (14 oz.)	0	12	1208K1	$5.96	$5.55
Cartridge for Grease Gun (14 oz.)	1	12	1208K11	5.96	5.55
Cartridge for Grease Gun (14 oz.)	2	12	1208K22	5.96	5.55
Water Resistant *(+10° to +350° F)*					
Cartridge for Grease Gun (14 oz.)	0	12	1372K12	5.66	5.19
Cartridge for Grease Gun (14 oz.)	1	12	1372K14	5.66	5.19
Cartridge for Grease Gun (14 oz.)	2	12	1372K16	5.66	5.19
Super Adhesive *(0° to +400° F)*					
12-oz. Aerosol	2	12	1062K67	7.88	7.09
High Temperature *(0° to +500° F)*					
Cartridge for Grease Gun (14 oz.)	2	10	1423K12	6.45	5.46
35-lb. Container	2	1	1423K14	—	148.20
Food-Grade Grease					
Dow Corning Molykote G-0050FG *(0° to +302° F)*					
Cartridge for Grease Gun (13.4 oz.)	0	10	1445K41	10.24	9.29

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Food-Grade Grease (Cont.)					
Dow Corning Molykote G-0051FG *(0° to +302°F)*					
Cartridge for Grease Gun (13.4 oz.)	1	10	1445K43	$10.24	$9.29
Dow Corning Molykote G-0052FG *(0° to +302°F)*					
Cartridge for Grease Gun (13.4 oz.)	2	10	1445K45	10.24	9.29
Dow Corning Molykote G-4500 *(–40° to +325°F)*					
10.5-oz. Aerosol	2	12	4328T23	13.54	12.29
Cartridge for Grease Gun (14.1 oz)	2	10	4328T24	15.76	14.31
Dow Corning Molykote G-4501 *(–40° to +302°F)*					
Cartridge for Grease Gun (14.1 oz)	1	10	4328T25	16.02	14.54
Standard *(–4° to +350°F)*					
Cartridge for Grease Gun (14 oz.)	2	12	1242K11	8.94	7.82
7-lb. Container	2	2	1242K13	59.00	51.35
35-lb. Container	2	1	1242K12	—	243.21
With PTFE *(+15° to +350°F)*					
Cartridge for Grease Gun (14 oz.)	2	12	1402K31	8.58	7.72
7-lb. Container	2	2	1402K33	69.62	62.66
35-lb. Container	2	1	1402K35	—	243.27

Dow Corning Molykote G-0010 Grease

This elastomer-thickened grease provides excellent heat and corrosion resistance, which makes it great for high-speed bearing applications. Temperature range is –20° to +340°F. Color is green.

This product is compliant under all state VOC rules in effect on October 1, 2010.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Cartridge for Grease Gun (14.1 oz.)	2	10	4328T74	$5.53	$5.02

Dow Corning Molykote 1122 Chain and Open Gear Grease

Formulated for extreme-pressure applications involving chains and open gears, these black greases with moly (molybdenum disulfide) also resist wear. NSF registered H2 for applications with no possibility of food contact. Temperature range is 32° to 320°F. Aerosol has a female stem. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
11-oz. Aerosol	2-3	12	4328T31	$27.61	$25.06
14-oz. Container	2-3	12	4328T28	44.39	40.29

For information about lubricants, grease, and oil, see page 2164. For more on grease, see page 2170.

Clay-Thickened Grease

Even at their highest temperatures, these greases maintain their consistency. These products are compliant under all state VOC rules in effect on October 1, 2010.

Extreme Pressure— These black greases contain moly (molybdenum disulfide) to withstand extreme pressures. Apply *cartridge for caulk gun* with a standard caulk gun (see page 3428).

Antispatter— An additive holds this green grease in place and protects it from spattering or pounding out, a common occurrence in heavy duty applications.

Semisynthetic— A blend of synthetic and petroleum-based oils, these amber greases last longer than petroleum-based grease.

High-Temperature Standard— Adheres to metal. Color is amber.

High-Temperature Acid Neutralizing— These white greases contain lead-free zinc oxide to neutralize acid.

High-Temperature Extreme Pressure— These black greases contain moly (molybdenum disulfide) to withstand extreme pressures.

High-Temperature Semisynthetic— A blend of synthetic and petroleum-based oils, these silver greases contain moly (molybdenum disulfide) and aluminum for increased wear resistance.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Grease					
Extreme Pressure *(+10° to +400°F)*					
Cartridge for Caulk Gun (10 oz.)	2	25	1335K45	$7.64	$6.88
Antispatter *(+10° to +400°F)*					
Cartridge for Grease Gun (14 oz.)	2.5	24	1391K1	7.92	7.13
Semisynthetic *(–20° to +400°F)*					
Cartridge for Grease Gun (14 oz.)	2	10	1295K11	10.39	8.82
1-lb. Container	2	16	1295K63	10.29	8.74
35-lb. Container	2	1	1295K12	—	267.40
High-Temperature Grease					
Standard *(0° to +550°F)*					
Cartridge for Grease Gun (14 oz.)	2	30	1062K87	5.46	4.68
1-lb. Container	2	12	1062K85	7.50	6.43
5-lb. Container	2	4	1062K88	26.07	22.35
35-lb. Container	2	1	1062K89	—	128.64
Acid Neutralizing *(–20° to +550°F)*					
Cartridge for Grease Gun (14 oz.)	2	30	1062K61	5.75	4.93
1-lb. Container	2	12	1062K63	7.68	6.58
5-lb. Container	2	4	1062K64	28.02	24.02
35-lb. Container	2	1	1062K65	—	127.87
Extreme Pressure *(0° to +550°F)*					
Cartridge for Grease Gun (14 oz.)	2	30	1062K97	6.45	5.87
1-lb. Container	2	12	1062K95	8.29	7.10
5-lb. Container	2	4	1062K98	32.17	27.57
35-lb. Container	2	1	1062K99	—	146.27
Semisynthetic *(0° to +450°F)*					
Cartridge for Grease Gun (14 oz.)	2	12	1417K48	14.18	12.76
45-lb. Container	2	1	1417K51	—	439.27

Ultra High-Temperature Food-Grade Grease

With a temperature range of –40° to +800°F, this tan grease can take the heat. It's thickened with calcium sulfonate, which makes it great for wet, extreme-pressure applications. NSF registered H1 for incidental food contact. This product is compliant under all state VOC rules in effect on October 1, 2010.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Cartridge for Grease Gun (16 oz.)	2	4	2136K11	$31.02	$27.87

DuPont Grease with Teflon®

Teflon® fluoropolymers give these multipurpose greases nonstick and chemical-resistant properties. They are thickened with calcium sulfonate, which makes them great for wet, dirty applications. Temperature range is –40° to +350°F. Color is red. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Cartridge for Grease Gun (14 oz.)	2	6	8708T44	$9.71	$8.39
16-oz. Container	2	6	8708T46	10.59	9.15

High-Temperature Grease with PTFE

The PTFE additive in these elastomer-thickened greases reduces friction and waterproofs metal surfaces, preventing rust and corrosion. They are NSF registered H2 for applications with no possibility of food contact. Temperature range is –35° to +458°F. Color is green. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
0.75-oz. Tube	2	24	1243K31	$5.00	$4.44
Cartridge for Grease Gun (14.5 oz.)	2	16	1243K11	12.00	10.72
1-lb. Container	2	6	1243K12	10.96	9.83
5-lb. Container	2	6	1243K13	45.06	40.40
35-lb. Container	2	1	1243K14	—	256.57

Dow Corning Molykote Chemical-Resistant Grease

A fluorosilicone base means these greases have excellent chemical resistance. They're also synthetic, which means they are long lasting. These products are compliant under all state VOC rules in effect on October 1, 2010.

1292— Thickened with elastomer. Color is off-white.

3451— Thickened with fluorocarbon. NSF registered H2 for applications with no possibility of food contact. Color is white.

Dow Corning No.	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1292 *(–40° to +400°F)*					
5.3-oz. Tube	1-2	12	4328T33	$61.76	$56.06
3451 *(–40° to +450°F)*					
3-oz. Tube	2	12	1252K61	55.03	49.95
Cartridge for Grease Gun (19.4 oz.)	2	1	1252K62	—	285.35

Long-Lasting Synthetic Grease

Synthetic base oils allow these greases to last longer than petroleum-based grease. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobilith SHC 100— Meets the requirements of most electric motor manufacturers for grease-lubricated bearings. Color is red.

Mobilith SHC 220— Use this red grease in extreme-pressure applications.

Mobilith SHC PM 460— Resists rust and corrosion. It's suitable for bearings under heavy loads at low speeds. Color is off-white.

Mobiltemp SHC 32— This red grease offers excellent wear resistance for long service life.

Mobilgrease 28— Offers excellent wear and corrosion resistance for extreme-pressure applications in a wide range of temperatures. Meets MIL-PRF-81322G. Color is red.

Silica-Thickened— Dry to a long-lasting, water-resistant white film.

Silicone-Thickened Food Grade— These clear greases are NSF registered H1 for applications with incidental food contact.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Mobilith SHC 100 *(–40° to +302°F)*					
Cartridge for Grease Gun (13.7 oz.)	2	10	1394K3	$11.41	$10.39
Mobilith SHC 220 *(–40° to +302°F)*					
Cartridge for Grease Gun (13.7 oz.)	2	10	1394K4	11.24	10.23
Mobilith SHC PM 460 *(–40° to +356°F)*					
Cartridge for Grease Gun (13.7 oz.)	1.5	10	1394K2	11.43	10.41
Mobiltemp SHC 32 *(–58° to +356°F)*					
Cartridge for Grease Gun (12.5 oz.)	1.5	10	1394K5	6.20	5.64
Mobilgrease 28 *(–65° to +350°F)*					
Cartridge for Grease Gun (13.7 oz.)	1.5	5	1394K6	35.92	32.71
Silica-Thickened *(–20° to +400°F)*					
1.5-oz. Tube	2	12	1286K82	3.34	3.01
4-oz. Tube	2	12	1286K84	5.79	5.16
8-oz. Tube	2	12	1286K11	8.93	8.08
8-lb. Container	2	1	1286K85	—	92.75
Silicone-Thickened Food Grade *(–40° to +400°F)*					
Cartridge for Grease Gun (14 oz.)	1	12	1213K71	15.03	13.53
Cartridge for Grease Gun (14 oz.)	2	12	1213K73	14.78	13.30

For information about lubricants, grease, and oil, see page 2164. For more on grease, see page 2170.

High-Temperature Synthetic Grease

Increase the time between applications with these synthetic greases that handle your high-temperature applications. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning Molykote 41— Thickened with carbon for excellent heat resistance. Color is black.

Dow Corning Molykote 3451— Fluorocarbon thickener adds chemical resistance to these white greases. NSF registered H2 for applications with no possibility of food contact.

Standard— Thickened with silicone, grease is blue.

Food Grade with PTFE— These silica-thickened greases have a PTFE additive that reduces friction and waterproofs metal surfaces. NSF registered H1 for applications with incidental food contact. Color is white. Aerosols have a female stem.

With Moly— As temperature increases, so does the performance of this gray grease. It is thickened with sodium and contains molybdenum disulfide to withstand extreme pressures.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning Molykote 41 *(0° to +550°F)*					
5.3-oz. Tube	2	6	1252K32	$30.58	$27.75
Cartridge for Grease Gun (14.1 oz.)	2	4	1252K34	65.75	59.68
Dow Corning Molykote 3451 *(–40° to +450°F)*					
3-oz. Tube	2	6	1252K61	55.03	49.95
Cartridge for Grease Gun (19.4 oz.)	2	1	1252K62	—	285.35
Standard *(0° to +500°F)*					
Cartridge for Grease Gun (14 oz.)	2	12	1359K1	16.40	14.76
Food Grade with PTFE *(–45° to +450°F)*					
0.5-oz. Tube	2	12	1378K27	3.84	3.36
3-oz. Tube	2	12	1378K31	6.55	5.73
11-oz. Aerosol	2	12	1378K32	7.58	6.82
Cartridge for Grease Gun (14.1 oz.)	2	12	1378K33	10.88	9.79
14.1-oz. Container	2	12	1378K34	11.21	10.09
5-lb. Container	2	4	1378K35	57.55	52.02
30-lb. Container	2	1	1378K36	—	298.92
With Moly *(0° to +600°F)*					
Cartridge for Grease Gun (14 oz.)	1	12	1446K1	43.62	39.47

Low-Temperature Synthetic Grease

Low temperatures won't affect the lubricity of these greases. All have synthetic base oils, which increase the time between applications. Greases are white. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning Molykote 33— These greases are NSF registered H2 for applications with no possibility of food contact.

Food Grade— Thickened with aluminum, these greases are NSF registered H1 for applications with incidental food contact.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning Molykote 33 *(–100° to +400°F)*					
5.3-oz. Tube	2	6	1252K12	$25.61	$23.25
Cartridge for Grease Gun (14.1 oz.)	2	4	1252K14	65.37	59.34
8-lb. Container	2	1	1252K16	—	385.78
Food Grade *(–90° to +350°F)*					
Cartridge for Grease Gun (14 oz.)	1	12	10115K51	12.30	11.27

Electrically and Thermally Conductive Grease

Take on heat and electricity transfer applications with these nonsilicone greases—a high silver content (80-90%) gives them excellent conductivity. These greases are suitable for ESD (electrostatic discharge) and EMI (electromagnetic interference) shielding applications. Their volume electrical resistivity, a measure of how well a material opposes the flow of electricity, is less than 0.005 ohm-cm. Thermal conductivity, a measure of a material's ability to transfer heat, is 60 Btu-in./hr.-sq. ft. °F. Resistivity is the opposite of conductivity, so a low resistivity number means high conductivity.

These silver-colored greases have a temperature range of –40° to +302° F. NSF registered H2 for applications with no possibility of food contact. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	NLGI No.		
0.5-oz. Container	3	1219K57	$74.90
1-oz. Container	3	1219K59	149.90

Water-Safe Synthetic Grease

NSF 61 certified for use with drinking (potable) water, this silica-thickened grease holds up in harsh, wet environments. Synthetic oil base increases the time between applications. Temperature range is –40° to +400° F. This product is compliant under all state VOC rules in effect on October 1, 2010.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
8-oz. Tube	2	12	2982K22	$22.91	$21.04

High-Vacuum Grease

The firm consistency of these white synthetic greases is excellent for high-vacuum applications. The synthetic oil base increases the time between applications. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning— Made of silicone with silica thickener, these greases are suitable for clean room use.

With PTFE— Also known as Fomblin grease, this grease is thickened with PTFE to reduce friction and resist chemicals.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning *(–40° to +400°F)*					
5.3-oz. Tube	3-4	6	2966K52	$25.34	$23.16
8-lb. Container	3-4	1	2966K58	—	545.05
With PTFE *(–4° to +482°F)*					
3.5-oz. Tube	3	1	1326K59	—	97.90

Electrical Contact Grease

Lubricate, clean, deoxidize, and prevent corrosion all with one performance-enhancing grease, which is designed to improve the performance of your electrical contacts. Temperature range is –40° to +500° F. These products are compliant under all state VOC rules in effect on October 1, 2010.

Standard— Particle free. Color is amber.

Aluminum— Has aluminum particles and is for use on aluminum parts that won't come in contact with each other. Color is gray.

Copper— Has copper particles to assist oxide breakup and resist abrasion on surfaces that require conductivity. Color is red.

Graphite— Has graphite particles to absorb and dissipate heat. Color is gray.

	Size	NLGI No.		
Standard	8-oz. Container	2	9050T2	$31.53
Aluminum	8-oz. Container	2	9050T6	31.53
Copper	8-oz. Container	2	9050T4	31.53
Graphite	8-oz. Container	2	9050T8	36.79

Electrical Insulating Grease

Also known as dielectric grease, these insulating silicone greases lubricate electrical devices and systems. Synthetic oil base increases the time between applications. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning 4— These translucent white greases act as a moisture barrier. NSF 51 certified for use with food and NSF 61 certified for use with drinking (potable) water. Meet FDA 21 CFR 175.300 and SAE-AS8660.

Dow Corning 5— Use this translucent gray grease on insulators, bushings, and high-current switches.

Standard— These translucent white greases are corrosion resistant and contain a silica thickener that won't react with rubber. Suitable for use on O-rings, gaskets, and seals in vacuum systems.

Food Grade— These clear greases are NSF registered H1 for applications with incidental food contact.

Size	Dielectric Strength, volts/mil	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning 4 *(–40° to +400°F)*						
5.3-oz. Tube	450	2-3	12	1204K12	$16.41	$14.89
8-lb. Container	450	2-3	1	1204K18	—	311.06
Dow Corning 5 *(–65° to +450°F)*						
5.3-oz. Tube	545	3	12	4328T11	24.75	22.46
Standard *(–50° to +400°F)*						
5.3-oz. Tube	385	1	12	1418K31	15.09	13.64
Cartridge for Grease Gun (14 oz.)	385	1	4	1418K32	29.78	27.65
1-lb. Container	385	1	4	1418K33	30.00	27.86
8-lb. Container	385	1	4	1418K34	220.10	198.45
5-gram Packet	830	2	20	1418K29♠	.65	.55
5.3-oz. Tube	830	2	12	1418K35♠	12.94	12.02
Cartridge for Grease Gun (14 oz.)	830	2	4	1418K36♠	29.78	27.65
Food Grade *(–40° to +400°F)*						
1-oz. Tube	350	1	25	1418K51	4.31	3.93
4-oz. Tube	350	1	12	1418K53	10.17	9.21

♠ Temperature range is –40° to +400° F.

For information about lubricants, grease, and oil, see page 2164. For more on grease, see page 2170.

Valve and Packing Grease

Lubricate and seal valves and pump packings. These products are compliant under all state VOC rules in effect on October 1, 2010.

Dow Corning 111 and ***112***—Made of silicone fluids and silica fillers, these translucent white greases act as moisture barriers.

Dow Corning Molykote 3452—Fluorocarbon thickeners add chemical resistance. Color is white.

Standard—Good for tight tolerance plug valves and high-pressure seals. Color is amber.

PTFE Gel—Thickened with silica, this nonstick grease reduces friction and includes a detergent additive that cleans while it lubricates. Color is amber.

Size	NLGI No.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Dow Corning 111 *(–40° to +400°F)*					
5.3-oz. Tube	3-4	12	1204K32	$15.29	$13.88
Cartridge for Grease Gun (14.1 oz.)	3-4	10	1204K35	39.46	35.82
8-lb. Container	3-4	1	1204K38	—	256.30
Dow Corning 112 *(–40° to +450°F)*					
5.3-oz. Tube	3	12	1204K42	17.76	16.12
Dow Corning Molykote 3452 *(–20° to +450°F)*					
2-oz. Tube	2-3	6	1252K64	55.44	50.32
Dow Corning Molykote 3452 (Cont.) *(–20° to +450°F)*					
Cartridge for Grease Gun (19.4 oz.)	2-3	1	1252K66	—	$289.42
Standard *(0° to +400°F)*					
Cartridge for Grease Gun (14 oz.)	3	10	8150T13	$16.74	15.00
PTFE Gel *(–10° to +400°F)*					
Cartridge for Grease Gun (14 oz.)	00	10	8150T33	21.65	19.40

DuPont Krytox Grease and Oil

Extreme temperature swings are no problem for these Krytox greases and oils. They also resist aggressive chemicals and are long lasting. These products are compliant under all state VOC rules in effect on October 1, 2010.

Food-grade greases and ***oils*** are NSF registered H1 for applications with incidental food contact.

Grease

Greases are thickened with PTFE to reduce friction except for ***High-Temperature XHT-BDX greases***, which are thickened with boron nitride for added thermal stability. Color is white, unless otherwise indicated.

Corrosion Resistant—Sodium nitrite additives give these greases better resistance to moisture and oxygen than standard grease.

Extreme Pressure—Made with molybdenum disulfide, this grease is effective on highly loaded gears and bearings. Color is black.

High Temperature—Does not evaporate under high temperatures.

High Vacuum—This insoluble grease has a low vapor pressure and gives superior performance in vacuum systems.

Electronics Grade—High purity for use in clean rooms and electronic assembly. They are not conductive.

Aerospace Grade—Meet MIL-PRF-27617 specifications.

DuPont Krytox No.	Temperature Range	NLGI No.	*0.5-oz. Tube*	Each ♦	*2-oz. Tube*	Each ♦	*8-oz. Tube*	Each ♦	*Cartridge for Grease Gun (14.1 oz.)*	Each ♦
Standard										
GPL 205	–33° to +400°F	2	10195K19	$14.72	10195K29	$43.07	10195K49	$132.27	10195K69	$333.83
GPL 206	–33° to +500°F	2	10195K11	14.72	10195K31	43.08	10195K51	132.27	10195K33	333.83
GPL 207	–22° to +550°F	2	10195K34	14.72	10195K36	43.07	10195K38	132.27	10195K42	333.83
Corrosion Resistant										
GPL 224	–60° to +355°F	2	10195K47	14.72	10195K45	43.07	10195K53	132.27	10195K54	333.83
GPL 225	–33° to +400°F	2	10195K74	14.72	10195K76	43.07	10195K78	132.27	10195K79	333.83
GPL 226	–33° to +500°F	2	10195K15	14.72	10195K35	43.07	10195K55	132.27	10195K75	333.83
GPL 227	–22° to +550°F	2	10195K17	14.72	10195K37	43.07	10195K57	132.27	10195K77	333.83
Extreme Pressure										
GPL 215	–33° to +400°F	2	10195K13	14.72	10195K32	43.07	10195K52	132.27	10195K72	333.83
Low Temperature										
GPL 202	–81° to +270°F	2	—	—	10195K26	43.07	10195K46	132.27	10195K66	333.83
GPL 203	–76° to +310°F	2	—	—	10195K23	43.07	10195K43	132.27	10195K73	333.83
GPL 204	–60° to +355°F	2	—	—	10195K28	43.07	10195K48	132.27	10195K68	333.83
High Temperature										
XHT-AC	–4° to +572°F	2	—	—	10195K25	46.16	10195K27	161.70	10195K39	448.80
XHT-BDX	+5° to +662°F	2	—	—	10195K22	94.86	10195K24	315.33	10195K44	951.24
High Vacuum										
LVP	+5° to +572°F	2	—	—	10195K41	95.65	10195K71	316.10	10195K92	1,015.57
Electronics Grade										
EG 2000	–30° to +550°F	2	—	—	10195K67	95.65	10195K87	316.10	10195K97	1,015.57
Aerospace Grade										
240AZ Type I	–70° to +300°F	1	10195K18	34.98	10195K61	179.38	10195K81	609.90	10195K91	1,742.57
240AB Type II	–40° to +450°F	2	10195K21	34.98	10195K63	179.38	10195K83	609.90	10195K93	1,742.57
240AC Type III	–30° to +550°F	2	—	—	10195K65	179.38	10195K85	609.90	10195K95	1,742.57
Food Grade										
FG 24	–22° to +500°F	2	—	—	10195K56	58.93	10195K86	178.24	10195K96	428.49
Corrosion-Resistant Food Grade										
FG 34	–22° to +500°F	2	—	—	10195K58	58.93	10195K88	178.24	10195K98	428.49
High-Temperature Food Grade										
FG 36	+14° to +572°F	2	—	—	10195K59	104.17	10195K89	333.39	10195K99	833.50

♦ Prices are approximately 10% less when you order in quantities of four or more.

Oil

Use these clear oils when temperatures are consistently high and oil flow is needed to remove heat, or when you want to remove debris from your system using oil and a filter. Container size is 9 fl. oz.

Vacuum Pump—Low vapor pressure makes these the choice for vacuum pumps and compressors.

DuPont Krytox No.	Temperature Range	ISO Grade	SAE Grade	SSU @ 100°F		Each ♦
Standard						
GPL 105	–33° to +400°F	150	40	825	10195K1	$214.79
GPL 106	–33° to +500°F	220	50	1,250	10195K2	214.79
GPL 107	–22° to +550°F	460	—	2,320	10195K3	214.79
Vacuum Pump						
1506	+14° to +212°F	22	—	125	10195K7	113.35
Vacuum Pump (Cont.)						
1514	+32° to +248°F	46	—	250	10195K8	$113.35
1525	+50° to +284°F	68	—	425	10195K9	113.35
Food Grade						
FG 40	–33° to +399°F	150	40	825	10195K12	218.28

♦ Prices are approximately 10% less when you order in quantities of four or more.

For information about lubricants, grease, and oil, see page 2164. For more on grease, see page 2170.

Extreme-Pressure Grease and Oil

Able to withstand pressures up to 50,000 psi, these lubricants also repel water and resist corrosion. Use them on lathes, machine ways, cams, and bearings. Grease is thickened with petroleum wax and is green; oil is black. These products are compliant under all state VOC rules in effect on October 1, 2010. *Note:* Not rated for temperature.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Grease				
4-oz. Tube	24	1392K31	$6.75	$5.95
Cartridge for Grease Gun (14 oz.)	10	1392K58	16.75	14.75
1-gal. Container	2	1392K32	139.66	123.04
Oil				
4-oz. Tube	24	1392K34	6.75	5.95
1-gal. Container	2	1392K35	123.04	109.95

No-Spill Fluid Containers

Even when turned upside down, these containers keep fluids inside. Use them to hold lubricants, cutting fluids, and many other liquids without worrying about spills. Containers are made of polyethylene. They include an applicator brush as well as a plug for storing liquids. Size is 3″ Dia. × 2½″ Ht.

Color of Container Top	Capacity		
Red	3.9 oz.	1023K111	$5.96
White	3.9 oz.	1023K112	5.96
Blue	3.9 oz.	1023K113	5.96

About Oil

Viscosity is the thickness, or resistance to flow, of an oil. Various organizations have different scales on which oil viscosity is measured. The *International Organization for Standardization (ISO) and Society of Automotive Engineers (SAE)* each assign a grade number. Oils with higher numbers are thicker than those with lower numbers. The *Saybolt Seconds Universal (SSU)* viscosity test measures the number of seconds it takes for 60 cc (cubic centimeters) of oil to flow through a specified diameter hole. The *American Gear Manufacturers Association (AGMA)* has its own grading system specific to industrial gear oil.

Additives improve specific characteristics of an oil, such as load capacity and corrosion resistance. *Detergent additives* prevent sludge and other engine deposits by keeping unwanted particles suspended in the oil. These suspended particles are later removed when the oil passes through a filter. Detergents are most commonly found in engine oils. *Nondetergent oils* are suitable for applications in which the formation of sludge and other deposits is not a problem and no filter is present.

Oil Brand Name Cross Reference

	ExxonMobil	ChevronTexaco	Shell	McMaster-Carr Equivalent	Page
Machine Oil	DTE Light, Medium, Heavy	Regal R&O	Vitrea/Turbo T	**3025K**	2175
Gear Oil	Mobilgear 600 Series	Meropa	Omala	**2284K**	2176
Hydraulic Oil	DTE 20 Series/Excel ISO	Rando HD	Tellus Plus	**1016K**	2176
Way Oil	Vactra	Way Lubricant	Tonna V	**1017K**	2177
Spindle Oil	Velocite	Spindura	Spindle Oil	**13595K**	2177

Machine Oil

Meet your general purpose needs with these nondetergent oils. Suitable for machine tools, circulating systems, and reciprocating equipment, they all resist rust and oxidation. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobil DTE— Color is amber.

Standard— Also known as turbine oil. ISO grade 22 and 32 are yellow; ISO grade 46-150 are amber.

Food Grade— NSF registered H1 for applications with incidental food contact. These oils inhibit the growth of bacteria, yeast, and mold. Color is clear.

Extendable-Spout Oiler— Filled with standard machine oil, this oiler telescopes to 7″ and flexes to reach lubrication points. Oil is yellow.

ISO Grade	SAE Grade	SSU @ 100° F	1 Gallon Pkg. Qty.		1 Gallon Each Partial Pkg.	1 Gallon Each Full Pkg.	5 Gallon	5 Gallon Each
Mobil DTE								
32	10	158	6	2158K14	$21.11	$19.35	2158K34	$104.64
68	20	325	6	2158K15	25.24	22.76	2158K35	104.64
100	30	495	6	2158K16	25.24	22.76	2158K36	104.64
150	40	840	6	2158K17	25.70	23.18	2158K37	108.82
Standard								
22	5W	100	6	3025K21	17.30	15.77	3025K23	72.93
32	10W	150	6	3025K25	17.29	15.77	3025K27	72.93
46	10	225	6	3025K29	17.29	15.77	3025K32	72.93
68	20	335	6	3025K34	17.29	15.77	3025K36	72.93
100	30	500	6	3025K38	17.58	16.16	3025K41	74.72
150	40	750	6	3025K43	17.93	16.47	3025K45	76.16
Food Grade								
46	20	237	4	1400K11	39.40	35.46	1400K15	157.67
68	20	348	4	1400K21	39.40	35.46	1400K25	157.67
100	30	542	4	1400K31	39.40	35.46	1400K35	157.67
150	40	791	4	1400K41	39.40	35.46	1400K45	157.67
Extendable-Spout Oiler— *4-oz. Squeeze Bottle*								
32	10W	155	12	1244K14	Each Partial Pkg. $2.70	Full Pkg. $2.43		

Extendable-Spout Oiler

Air Compressor Oil

Designed for most major manufacturers' compressors, these nondetergent oils reduce wear on rings, cylinders, and other moving parts. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobil Rarus 427— Color is amber.

Standard— ISO grade 32 and 46 are yellow. ISO grade 68, 100, and 150 are amber.

Food Grade— NSF registered H1 for applications with incidental food contact. Color is clear.

Synthetic— Change your oil less often with these long-lasting synthetic oils. ISO grade 32, 68, and 100 are yellow. ISO grade 46, 150, and 220 are amber.

ISO Grade	SAE Grade	SSU @ 100° F	1 Gallon Pkg. Qty.		1 Gallon Each Partial Pkg.	1 Gallon Each Full Pkg.	5 Gallon	5 Gallon Each
Mobil Rarus 427								
100	30	530	6	2158K25	$32.17	$28.60	2158K45	$122.79
Standard								
32	10W	150	6	14015K23	20.93	18.00	14015K26	84.31
46	10	225	6	14015K33	21.86	18.80	14015K36	87.76
68	20	300	6	14015K43	27.91	24.00	14015K46	101.45
100	30	500	6	14015K73	22.79	19.60	14015K76	92.51
150	40	750	6	14015K83	22.92	19.72	14015K86	93.16
Food Grade								
32	10W	150	6	8763T32	58.75	52.29	8763T37	230.77
46	____	225	6	8763T42	58.75	52.29	8763T47	230.77
Food Grade (Cont.)								
68	20	330	6	8763T52	$58.75	$52.29	8763T57	$230.77
100	30	500	6	8763T62	58.75	52.29	8763T67	230.77
150	40	750	6	8763T72	59.66	53.80	8763T77	233.85
Synthetic								
32	10W	150	6	1411K11	60.00	53.33	1411K15	230.00
46	20	209	6	1411K41	80.69	71.72	1411K45	293.80
68	20	300	6	1411K21	60.00	53.33	1411K25	230.00
100	30	500	6	1411K31	60.00	53.33	1411K35	230.00
150	40	666	6	1411K51	89.04	79.15	1411K55	327.20
220	50	1,009	6	1411K61	89.38	79.44	1411K65	327.80

For information about lubricants, grease, and oil, see page 2164. For more about oil, see page 2175.

Gear Oil

Extreme pressure additives strengthen these nondetergent oils to withstand heavy loads found in gears and gear-drive systems. These products are compliant under all state VOC rules in effect on October 1, 2010.

For open gear lubricants, see page 2166. For chain and open gear grease, see page 2171.

Mobilgear—The choice for industrial as well as marine applications. Color is amber.

Mobil SHC—These oils are synthetic, which means less frequent oil changes. Color is orange.

Standard—NSF registered H2 for applications with no possibility of food contact. Color is amber.

Food Grade—NSF registered H1 for applications with incidental food contact. They inhibit the growth of bacteria, yeast, and mold. Color is clear.

Semisynthetic—A blend of synthetic and petroleum oils, these oils are more economical than synthetic oils. Color is yellow.

Synthetic—Change oil less often with these long-lasting synthetic oils. Color is yellow.

ISO Grade	SAE Grade	AGMA Grade	SSU @ 100° F	32 oz.	Each ♦	1 Gallon	Each ♦	5 Gallon	Each
Mobilgear 600 XP 150									
150	90	4EP	796	—	—	2158K81	$25.88	2158K82	$113.38
Mobilgear 600 XP 460									
460	140	7EP	2,493	—	—	2158K83	27.11	2158K84	113.38
Mobil SHC 630									
220	90	5	1,122	2158K65	$14.30	—	—	2158K67	258.00
Mobil SHC 634									
460	140	7	2,236	2158K66	16.31	—	—	2158K68	264.91
Standard									
68	80W	2EP	330	2284K13	9.33	2284K11	20.52	2284K15	93.72
100	85W	3EP	540	2284K23	10.00	2284K21	21.20	2284K25	96.86
150	90	4EP	750	2284K33	10.11	2284K31	21.59	2284K35	98.56
220	90	5EP	1,100	2284K43	10.17	2284K41	22.07	2284K45	101.25
320	90	6EP	1,700	2284K53	10.28	2284K51	22.39	2284K55	102.29
460	140	7EP	2,500	2284K63	10.35	2284K61	22.82	2284K65	104.29
680	140	8EP	3,628	2284K73	10.66	2284K71	27.54	2284K75	114.21
Food Grade									
100	85	3	542	—	—	1401K21	43.78	1401K25	189.51
150	90	4	791	—	—	1401K61	42.74	1401K65	185.02
220	90	5	1,194	—	—	1401K31	43.78	1401K35	189.53
320	140	6	1,681	—	—	1401K41	43.78	1401K45	189.53
460	140	7	2,392	—	—	1401K51	43.78	1401K55	189.53
1000	250	8A	5,234	—	—	1401K71	43.78	1401K75	189.53
Semisynthetic									
68	75W	2EP	315	3512K61	10.00	3512K11	20.00	3512K41	85.00
100	80W	3EP	463	3512K63	10.00	3512K13	20.00	3512K43	85.00
150	85W	4EP	695	3512K65	10.00	3512K15	20.00	3512K45	85.00
220	90	5EP	1,020	3512K67	10.00	3512K17	20.00	3512K47	85.00
320	140	6EP	1,483	3512K69	10.11	3512K19	20.22	3512K49	86.00
460	140	7EP	2,132	3512K72	10.11	3512K22	20.22	3512K52	85.00
Synthetic									
68	80W	2EP	325	13665K26	13.33	13665K21	27.27	13665K25	123.33
100	85W	3EP	500	13665K36	13.33	13665K31	29.09	13665K35	131.67
150	90	4EP	750	13665K46	13.33	13665K41	32.73	13665K45	146.67
220	90	5EP	1,000	13665K56	13.33	13665K51	36.36	13665K55	158.33
320	140	6EP	1,650	13665K66	13.33	13665K61	36.36	13665K65	158.33
460	140	7EP	2,250	13665K76	13.33	13665K71	36.36	13665K75	158.33

♦ Prices are approximately 10% less when you buy in multiples of 6.

Hydraulic Oil

Antiwear additives make these nondetergent oils the best choice for hydraulic systems and equipment. These products are compliant under all state VOC rules in effect on October 1, 2010.

Zinc-Free—Use where zinc waste disposal can be a problem. Color is amber.

All Weather—Great for outdoor equipment, these oils withstand harsh weather conditions. Color is amber.

Food Grade—NSF registered H1 for applications with incidental food contact. Color is white.

Biodegradable Food Grade—An environmentally friendly alternative to petroleum-based oil, this vegetable oil is NSF registered H1 for applications with incidental food contact. Color is yellow.

ISO Grade	SAE Grade	SSU @ 100° F	1 Gallon Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.	5 Gallon	Each	55 Gallon	Each
Mobil DTE 24										
32	10W	165	6	2158K11	$24.50	$22.10	2158K31	$94.66	—	—
Mobil DTE 25										
46	20	238	6	2158K12	24.50	22.10	2158K32	94.66	—	—
Mobil DTE 26										
68	20	335	6	2158K13	24.50	22.10	2158K33	101.67	—	—
Mobil Zinc-Free DTE Excel										
46	20	230		—	—	—	2158K72	103.67	—	—
Standard										
32	10W	155	6	1016K11	18.22	16.40	1016K12	72.06	1016K82	$569.90
46	10	215	6	1016K21	18.32	16.48	1016K22	72.94	1016K83	569.90
68	20	325	6	1016K31	18.31	16.48	1016K32	73.04	1016K84	569.90
100	30	525	6	1016K41	25.31	22.78	1016K52	92.94	1016K85	569.90
Zinc-Free										
32	10W	150	6	3504K32	22.57	20.17	3504K34	98.91	—	—
All Weather										
32	10W	150	6	1849K11	20.48	18.68	1849K12	87.44	—	—
46	10W-20	225	6	1849K21	19.23	17.54	1849K22	86.37	—	—
68	20	325	6	1849K31	19.23	17.54	1849K32	89.23	—	—
Food Grade										
32	10	150	4	2023K33	32.43	29.19	2023K44	144.00	—	—
46	20W	212	4	2023K35	32.43	29.19	2023K45	146.00	—	—
68	20	311	4	2023K37	32.43	29.19	2023K47	146.00	—	—
Biodegradable Food Grade										
32/46	20	175	6	3499K22	22.31	20.06	3499K24	90.36	—	—

Vacuum Pump Oil

Low vapor pressure allows you to use these nondetergent oils in high-vacuum applications with little evaporation. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobil—Color is amber.

Standard—Color is yellow.

Size	ISO Grade	SAE Grade	SSU @ 100° F	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Mobil							
32 oz.	68	20	330	6	2158K71	$8.12	$7.22
5 gal.	68	20	330	1	2158K89	—	238.50
Standard							
32 oz.	68	20	325	6	1385K21	6.66	6.01
1 gal.	68	20	325	6	1385K22	25.82	22.79
5 gal.	68	20	325	1	1385K23	—	102.87

For information about lubricants, grease, and oil, see page 2164. For more about oil, see page 2175.

Air Tool Oil

Keep air-powered equipment running longer and cleaner for greater power and less downtime. These nondetergent oils absorb water to reduce potential condensation problems and keep gum and sludge from forming. They contain corrosion inhibitors as well as antiwear and extreme-pressure additives.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobil Almo 525— Color is amber.

Standard— Color is clear.

Food Grade— NSF registered H1 for applications with incidental food contact. Color is clear.

Winter Grade— Resists temperatures as low as –50° F. Color is green.

Synthetic— This oil reduces the frequency of oil changes. It's highly compatible with most rubber and plastics. Color is clear.

Cleaner— Removes rust, dirt, and varnish from air tools. Just apply to the inlet of your air tool and connect tool to air line. Color is yellow.

				16 oz.			32 oz.			1 Gallon			5 Gallon
	ISO Grade	SAE Grade	SSU @ 100° F	Pkg. Qty.	Each Partial Pkg.	Each Full Pkg.	Pkg. Qty.	Each Partial Pkg.	Each Full Pkg.	Pkg. Qty.	Each Partial Pkg.	Each Full Pkg.	Each
Mobil Almo 525	46	20	230	—	—	—	12	2158K46	$7.67	$6.82	—	—	—	—	—
Standard	22	10W	126	24	1298K51	$9.04	$8.03	12	1298K52	16.78	14.63	6	1298K53	$33.58	$30.22	1298K48	$116.20
Food Grade	22	10W	100	24	1298K57	9.94	8.84	12	1298K58	18.75	16.67	6	1298K59	40.25	36.23	1298K49	186.19
Winter Grade	15	—	—	24	1298K54	9.42	8.37	12	1298K55	17.35	15.42	6	1298K56	45.22	40.70	1298K36	204.06
Synthetic	32	10W	163	24	1298K71	12.96	11.52	12	1298K72	24.47	21.75	6	1298K73	64.71	58.24	—	—
Cleaner	—	—	—	24	1298K61	10.34	9.20	12	1298K62	16.77	14.91	6	1298K63	36.54	32.89	—	—

Engine Oil

Primarily for use in automotive applications, these oils also work well with machinery. These products are compliant under all state VOC rules in effect on October 1, 2010.

Single-Grade Gasoline Engine Oil— Good for heavy duty jobs, these single-grade oils are detergent oils that neutralize acids and prevent sludge and varnish deposits. Color is amber.

Multigrade Gasoline Engine Oil— These all-climate, multiviscosity oils protect engines in warm and cold environments. They are also detergent oils that neutralize acids and prevent sludge and varnish deposits. Color is amber.

Mobil Delvac 1230 Diesel Engine Oil— In addition to excellent oxidation and thermal stability, this oil prevents rust and corrosion to keep engines clean and extend oil life. Color is brown.

Mobil Delvac MX Diesel Engine Oil— The choice for high-performance diesel applications, this oil provides outstanding rust protection and thermal stability, which prevents sludge and deposits to extend engine life. Color is brown.

Mobil Delvac 1300 Super Diesel Engine Oil— Use this extra-high-performance diesel engine oil in your most severe applications. It controls soot to improve engine efficiency and extend engine life. Color is brown.

Diesel Engine Oil— This heavy duty oil works with all diesel engines to protect against wear and deposits. Color is amber.

Synthetic Oil for Gasoline and Diesel Engines— Even in severe conditions, this long-lasting oil extends engine life as well as the time between oil changes. Compatible with petroleum-based oils, you can add it without draining your existing oil first. Color is amber.

	32 oz.			5 Gallon
SAE Grade	Pkg. Qty.	Each Partial Pkg.	Each Full Pkg.	Each
Single-Grade Gasoline Engine Oil				
10W	12	1361K24	$4.73	$4.33	1361K36	$80.00
20	12	1361K25	4.73	4.33	1361K37	80.00
30	12	1361K26	4.73	4.33	1361K38	80.00
40	12	1361K27	4.73	4.33	1361K39	80.00
Multigrade Gasoline Engine Oil				
5W-30	12	1360K17	4.91	4.50	1360K27	73.37
10W-30	12	1360K15	4.91	4.50	1360K25	73.37
10W-40	12	1360K16	4.91	4.50	1360K26	73.37
Mobil Delvac 1230 Diesel Engine Oil				
30	12	2158K93	7.68	6.92	2158K49	226.33
Mobil Delvac MX Diesel Engine Oil				
15W-40	12	2158K92	7.62	6.86	2158K48	214.22
Mobil Delvac 1300 Super Diesel Engine Oil				
15W-40	12	2158K91	9.02	8.12	2158K47	227.67
Diesel Engine Oil				
15W-40	12	1887K31	6.00	5.40	1887K32	103.00
Synthetic Oil for Gasoline and Diesel Engines				
5W-40	12	2276K51	11.66	10.27	2276K52	177.17

Slick 50 Engine Treatment

Protect your gasoline engine from friction and heat with this treatment. Color is amber. This product is compliant under all state VOC rules in effect on October 1, 2010.

Note: Not for vehicles used in heavy duty industrial or commercial applications.

Size	SAE Grade	Pkg. Qty.	Each Partial Pkg.	Each Full Pkg.
32 oz.	10W-30	6	2206K21	$23.76	$21.38

Way Oil

Formulated to reduce friction and wear, these nondetergent oils ensure smooth, uniform motion of ways and slides. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobil Vactra— Color is brown.

Standard— Color is amber.

			1 Gallon			5 Gallon
ISO Grade	SAE Grade	SSU @ 100° F	Pkg. Qty.	Each Partial Pkg.	Each Full Pkg.	Each
Mobil Vactra No. 2						
68	20	355	6	2158K21	$25.98	$23.43	2158K41	$109.72
Mobil Vactra No. 4						
220	50	1,170	6	2158K22	25.98	23.43	2158K42	107.73
Standard						
68	20	300	6	1017K11	22.89	20.23	1017K12	83.38
220	50	1,050	6	1017K21	31.11	27.49	1017K22	99.14

Spindle Oil

Low viscosity to penetrate tight tolerances, these nondetergent oils lubricate high-speed spindles in machine tools. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobil Velocite— No. 3 and 10 are amber. No. 6 is yellow.

Standard— Color is yellow.

			1 Gallon			5 Gallon
ISO Grade	SAE Grade	SSU @ 100° F	Pkg. Qty.	Each Partial Pkg.	Each Full Pkg.	Each
Mobil Velocite No. 3						
2	—	35	—	—	—	2158K52	$111.34
Mobil Velocite No. 6						
10	—	59	6	2158K23	$23.50	$21.36	2158K43	117.24
Mobil Velocite No. 10						
22	5W	107	6	2158K24	25.54	23.04	2158K44	104.45
Standard						
10	—	60	6	13595K51	20.29	18.35	13595K55	84.85
15	—	75	6	13595K61	17.45	15.77	13595K65	78.71
22	5W	100	6	13595K71	19.13	17.29	13595K75	79.94

Automatic Transmission Fluids

Improve the performance of your automatic transmissions with these nondetergent fluids, which also work as power steering fluid and compressor fluid. Meet Ford and General Motors (Dexron III) specifications for automatic transmission fluids. Color is red.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Synthetic— Compatible with petroleum-based oils, you can add these long-lasting fluids without draining your existing oil first.

Size	ISO Grade	SAE Grade	SSU @ 100° F	Pkg. Qty.	Each Partial Pkg.	Each Full Pkg.
Standard						
32 oz.	32	10W	150	12	2183K11	$7.43	$6.69
Synthetic						
1 gal.	46	20	220	6	2183K21	46.84	42.22
5 gal.	46	20	220	1	2183K31	—	207.71

For information about lubricants, grease, and oil, see page 2164.

Cutting and Tapping Fluids and Compounds

Use full strength while machining for easier and faster tapping, drilling, and milling. These fluids also improve surface finishes, extend tool life, and help you meet closer tolerances. These products are compliant under all state VOC rules in effect on October 1, 2010 (unless noted).

Standard fluids are for use on all metals. ***Water-based*** fluids are for use on all metals except magnesium.

Tap Magic—Aerosols have a female stem.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard				
4-oz. Container	24	1413K31	$3.36	$2.94
12-oz. Aerosol	12	1413K39	11.73	10.26
16-oz. Container	12	1413K33	10.71	9.37
1-gal. Container	4	1413K35	58.33	52.50
5-gal. Container	1	1413K37	____	245.37
For Aluminum				
4-oz. Container	24	1413K42	3.36	2.94
12-oz. Aerosol	12	1413K43	11.73	10.26
16-oz. Container	12	1413K44	10.71	9.37
1-gal. Container	4	1413K46	58.33	52.50
5-gal. Container	1	1413K48	____	245.37
Extra Thick				
16-oz. Container	12	8705T63	13.46	11.78
1-gal. Container	4	8705T65	80.82	70.71
5-gal. Container	1	8705T66	____	313.41
Protap				
4-oz. Container	24	10015K14	3.36	2.94
12-oz. Aerosol	12	10015K15	11.73	10.26
16-oz. Container	12	10015K16	10.71	9.37
1-gal. Container	4	10015K18	58.33	53.39
5-gal. Container	1	10015K22	____	245.37
Formula 1 Aqueous Water-Based				
12-oz. Aerosol	12	1043K59	11.73	10.26
16-oz. Container	12	1043K52	10.71	9.37
1-gal. Container	4	1043K53	64.29	56.25
5-gal. Container	1	1043K54	____	250.26

Cool Tool II—Aerosol has a male stem.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4-oz. Container	24	10075K23	$2.95	$2.66
12.5-oz. Aerosol	12	10075K24★	15.96	14.40
16-oz. Container	12	10075K25	10.64	9.60
1-gal. Container	4	10075K27	63.85	57.62
5-gal. Container	1	10075K29	____	237.51

★ This product is compliant under all state VOC rules in effect on October 1, 2010 except in the Los Angeles area.

Tap Magic—*Extra Thick* is for hard metals such as titanium and stainless steel. *Protap* is for all metals.

Cool Tool II—For use on all metals.

LPS Tapmatic Edge—*Cream* works especially well for vertical applications and is also good for forming and bending. *Stick* is perfect for use on rotating and stationary cutting tools and grinding belts. It's 2 3/16″ Dia. × 9 9/16″ long.

LPS—Aerosol has a male stem.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Tapmatic #1 Gold Standard				
11-oz. Aerosol	12	2008K12	$14.63	$13.35
16-oz. Container	12	2008K13	14.34	13.01
1-gal. Container	4	2008K14	74.71	68.16
5-gal. Container	1	2008K15	____	274.14
Tapmatic Natural				
16-oz. Container	12	1146K61	13.82	12.57
1-gal. Container	4	1146K62	72.27	65.93
5-gal. Container	1	1146K63	____	270.43
Tapmatic Aquacut Water-Based				
16-oz. Container	12	1450K32	12.52	11.36
1-gal. Container	4	1450K33	53.42	48.74
5-gal. Container	1	1450K34	____	205.48
Tapmatic Edge				
10-oz. Cream	10	1398K13	23.48	21.05
13-oz. Stick	10	1398K14	17.63	16.09

Rapid Tap Standard

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4-oz. Container	24	1858K75	$2.79	$2.50
16-oz. Container	12	1858K76	9.02	8.10
1-gal. Container	4	1858K77	53.14	47.69
5-gal. Container	1	1858K78	____	223.19

SafeTap Plus Water-Based

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4-oz. Container	24	10235K43	$3.72	$3.25
16-oz. Container	12	10235K45	8.02	7.00
1-gal. Container	4	10235K47	49.27	43.00
5-gal. Container	1	10235K49	____	176.42

Anchorlube Water-Based

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4-oz. Container	24	10705K48	$4.07	$3.64
16-oz. Container	12	10705K49	9.53	8.54
1-gal. Container	4	10705K54	26.86	24.06
5-gal. Container	1	10705K55	____	104.16

Easy-Coat Cutting and Tapping Stick Waxes

Pocket Size

Push-Up

Prevent mess and waste in machining operations with these easy-to-apply, nonstaining lubricants. They are chlorine free and sulfur free. These products are compliant under all state VOC rules in effect on October 1, 2010.

Pocket Size—This crayon-like stick is 1/2″ Dia. × 4 1/2″ long. Color is tan.

Push-Up—Advance the stick by pushing the bottom of the cartridge. Size is 2″ Dia. × 10 3/4″ long. Color is green.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
0.43-oz. Pocket Size	24	1009K22	$2.92	$2.62
16-oz. Push-Up	12	1379K63	10.83	9.82

Micro-Drop Coolants

Developed for use in droplet coolant dispensers (sold separately on page 2205), only a small amount of these coolants is needed for machining purposes. They're chlorine free, sulfur free, nonflammable, and nontoxic. Suitable for all metals. Use at full strength.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	*Synthetic*		*Vegetable*	
1-gal. Container	10305K16	$101.72	10305K26	$104.21

Marvel Mystery Gasoline and Oil Additive

Simply add these additives directly to gasoline and oil to improve your engine performance. In gas it cleans fuel injectors, prevents sticky rings and valves, and limits the buildup of varnish and gum. In oil it eases start-up in cold temperatures, extends oil life, and prevents the formation of acid and sludge. It can also be used with marine and diesel engines. Color is red.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
16-oz. Container	6	1272K5	$4.31	$3.93
32-oz. Container	6	1272K1	6.35	5.79
1-gal. Container	4	1272K2	24.33	22.19
5-gal. Container	1	1272K3	____	106.93

Cutting and Tapping Fluid and Coolant

Perform multiple jobs at once with this cutting fluid that also acts as a coolant and rust inhibitor. Use on all metals for tapping as well as light to medium duty drilling and pipe threading applications. Fluid is nonstaining. Stem is male.

This product is compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
13-oz. Aerosol	12	1387K24	$12.56	$11.51

For information about lubricants and oil, see page 2164. For more about oil, see page 2175.

Two- and Four-Cycle Engine Oil

Take care of your two- and four-cycle engines. These oils reduce engine wear and provide superior rust protection. Two-cycle oil is blue. Four-cycle oil is brown. These products are compliant under all state VOC rules in effect on October 1, 2010.

	Container Size	SSU @ 100° F	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Two-Cycle Oil	8 oz.	250	24	1274K15	$2.77	$2.54
Two-Cycle Oil	32 oz.	250	12	1274K17	5.68	5.21
Four-Cycle Oil	32 oz.	478	12	1274K21	6.24	5.72

Gas Stabilizer

Just add to the gas tank of your two- or four-cycle engines and you can store your engine without draining the gas. One ounce of stabilizer treats 2.5 gallons of gasoline. Color is blue. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
32-oz. Container	4	10385K47	$20.62	$18.33

Cutting and Threading Oil

The choice for a variety of cutting, pipe threading, and broaching operations. Use full strength except for Mobil Mobilcut, which must be diluted. These products are compliant under all state VOC rules in effect on October 1, 2010.

Mobil Mobilmet— *426* is for light to moderate duty use. It is chlorine free, sulfur free, and nonstaining. *766* is for heavy duty use on difficult-to-machine steels.

Mobil Mobilcut— Offers excellent rust protection. It forms a milky emulsion when mixed with water.

Heavy Duty— These sulfur-based oils are designed for use with ferrous metals; they can stain nonferrous metals. Use alone or blended with other oils. *Light-colored oil* allows you to see your workpiece and is chlorine free. *Dark-colored oil* is a high-lubricity oil that allows increased speeds and is especially effective for machining tough ferrous metals.

Nonstaining— Also known as plumber's lard oil, this oil provides excellent lubricity for fine surface finishes and extended tool life. It's chlorine free and sulfur free.

Food Grade— NSF registered H1 for applications where there is incidental food contact. It contains anticorrosion additives.

	1 Gallon Pkg. Qty.		1 Gallon Each Partial Pkg.	1 Gallon Each Full Pkg.	5 Gallon	5 Gallon Each
Mobil Mobilmet						
426	6	2507K16	$21.10	$18.99	2507K6	$111.75
766	6	2507K11	22.00	19.80	2507K12	99.74
Mobil Mobilcut						
102	6	2507K17	28.59	25.73	2507K18	127.25
Heavy Duty						
Light Colored	6	2307K26	19.29	17.36	2307K28	89.11
Dark Colored	6	1011K11	20.75	18.68	1011K12	86.44
Nonstaining						
Light Colored	6	1308K4	21.56	19.40	1308K2	89.90
Food Grade						
Light Colored	6	2084K1	16.51	14.86	2084K2	73.47

Stamping and Drawing Vanishing Oil

Shortly after application, this oil evaporates to leave only a thin residue to protect your machined parts. Evaporation time is 15 minutes to 2 hours, depending on factors such as humidity and temperature. Oil is nonstaining, chlorine free, and sulfur free. Use it full strength on all metals up to 0.025" thick.

Standard — These products are compliant under all state VOC rules in effect on October 1, 2010 except in the Los Angeles area.

Food Grade— Complies with FDA specification 21 CFR 178.3910 for applications with incidental food contact. These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard				
1-gal. Container	4	1842K11	$24.50	$21.89
5-gal. Container	1	1842K12	____	94.53
55-gal. Container	1	1842K13	____	698.40
Food Grade				
1-gal. Container	4	1515K11	37.91	34.12
5-gal. Container	1	1515K22	____	164.83

Misting Coolant Concentrates

These synthetic coolants are fortified with rust inhibitors and prevent foul odors. Dilute them with water to suit your drilling, milling, tapping, sawing, turning, and grinding operations on all types of metal. They can even be used for flooding applications. These products are compliant under all state VOC rules in effect on October 1, 2010.

For coolant dispensers, see pages 2204-2205.

Kool Mist— Sulfide free. *Formula 78* is for light duty applications. *Formula 77* provides greater lubricity for tougher machining jobs.

Tri-Cool— Contain extreme-pressure additives that reduce heat buildup and extend tool life. Chlorine free and sulfur free.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Kool Mist Formula 78				
1-gal. Container	4	11365K63	$34.90	$31.29
5-gal. Container	1	11365K67	____	157.05
Kool Mist Formula 77				
1-gal. Container	4	11365K61	36.23	32.48
5-gal. Container	1	11365K65	____	163.03
Tri-Cool				
1-gal. Container	4	1455K25	41.77	37.33
5-gal. Container	1	1455K28	____	176.97

Coolants for Near-Dry Machining

Only a minimal amount of coolant is needed, which means you'll have near-dry workpieces that require little to no cleanup and disposal costs. Apply these coolants to your tool's cutting edge to reduce friction between the tool and the workpiece. Great for shallow drilling, reaming, and tapping operations as well as on band saws and circular saws.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1.6-oz. Stick	12	1503K1	$2.24	$2.05
4-oz. Liquid	12	1503K5	8.56	7.78
12-oz. Paste	6	1503K3	15.72	14.41

Sawing Fluid Concentrates

Able to take the heat off of tough metalworking jobs, these fluids cool while they lubricate, preventing metal distortion and corrosion in sawing applications. Use them with power hacksaws, circular saws, and band saws. All fluids are chlorine free and sulfur free. *Synthetic* and *Nonstaining* are odorless. Dilute them with water to suit your application. These products are compliant under all state VOC rules in effect on October 1, 2010.

Semisynthetic— A blend of synthetic and mineral oils for extra lubricity. Use them on all metals, including yellow metals.

Synthetic— Use this oil with all metals except aluminum, brass, bronze, and copper.

Nonstaining— You can use this synthetic oil on all metals except brass, bronze, and copper.

	1 Gallon Pkg. Qty.		1 Gallon Each Partial Pkg.	1 Gallon Each Full Pkg.	5 Gallon	5 Gallon Each
Semisynthetic	4	1197K8	$16.98	$15.13	1197K9	$73.72
Synthetic	4	1197K4	18.32	16.32	1197K5	77.76
Nonstaining	4	1197K6	19.08	16.99	1197K7	80.84

Stamping and Drawing Concentrate

Replace the multiple oils you're using with just one. These water-soluble synthetic oil concentrates are designed to handle all of your light to heavy duty stamping and drawing applications. They're nonstaining, chlorine free, and sulfur free. Suitable for all metals. Dilute with water to suit your application.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1-gal. Container	4	1077K2	$50.56	$45.50
5-gal. Container	1	1077K5	____	210.00

For information about lubricants and oil, see page 2164. For more about oil, see page 2175.

Machining and Grinding Concentrates

Dilute these nonstaining, water-soluble concentrates with water to meet your specific machining and grinding applications. They are for use with most metals. These products are compliant under all state VOC rules in effect on October 1, 2010.

Light Duty—This economical, general purpose concentrate is formulated for intermittent service.

Medium Duty—Increases tool life and is designed for more demanding applications.

Heavy Duty—Tough enough to handle difficult-to-machine alloys as well as the most severe applications, this concentrate is the best product for extending tool life.

Semisynthetic and ***Synthetic***—All are chlorine free and sulfur free. *Long-lasting semisynthetic* provides excellent cooling and is for use where traditional soluble oils can't adequately cool.

	1 Gallon				5 Gallon
	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.	Each
Light Duty	6	1310K1	$21.98	$19.78	1310K2 $91.54
Medium Duty	6	1020K11	24.44	22.00	1020K12 109.00
Heavy Duty	6	1021K17	26.71	24.04	1021K19 113.56
Semisynthetic	6	1216K13	22.78	20.50	1216K14 98.00
Long-Lasting Semisynthetic	4	1216K21	37.13	33.29	1216K22 156.69
Synthetic	6	1216K15	22.18	19.96	1216K16 92.44

Quenching Oil

To minimize cracking and distortion, these nonstaining oils cool parts uniformly and more slowly than water. Use them to harden production parts, taps, dies, and forming tools. Chlorine and sulfur free. Use full strength.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	28-Second Quench Time		11-Second Quench Time	
1-gal. Container	3202K5	$18.29	3202K4	$19.13
5-gal. Container	3202K1	76.50	3202K7	79.94
30-gal. Container	3202K2	423.21	3202K9	449.23

Polishing Oil

Apply these oils to abrasive belts and wheels for extended life and improved surface finishes. They increase production by allowing belts and wheels to handle more workpieces. They also work well as general purpose grinding oils. Suitable for use on all metals as well as glass. These oils are nonstaining, chlorine free, and sulfur free. Use full strength. Aerosol has a female stem.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
11-oz. Aerosol	12	1165K26	$5.24	$4.72
1-gal. Container	6	1165K28	36.27	32.64

Honing Oil

In addition to producing a smooth finish on internal cylindrical surfaces, these oils also keep abrasive surfaces clean. They're nonstaining and chlorine free. Contain sulfur. Suitable for use on all metals. Use full strength.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1-gal. Container	4	1823K1	$28.33	$25.32
5-gal. Container	1	1823K2	———	110.00

Tool-Sharpening Oil

Formulated for general tool sharpening, these highly refined oils are also ideal for many lubricating applications. They're nonstaining, chlorine free, and sulfur free. Use full strength.

These products are compliant under all state VOC rules in effect on October 1, 2010. Meet U.S. Pharmacopeia standards for mineral oil purity.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4.5-oz. Container	10	1386K41	$6.40	$5.72
16-oz. Container	10	1386K42	12.03	10.75
32-oz. Container	5	1386K43	19.67	18.09

Machining and Grinding Concentrate for Carbide

To keep the leaching of cobalt from carbide to a minimum, use these synthetic concentrates that are specially formulated for carbide applications. They provide excellent lubricity, cooling, and corrosion protection for use on carbide, carbon steel, cast iron, high alloy steels, and stainless steels. They are also free of mineral oil, chlorine, and sulfur. Dilute with water.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1-gal. Container	4	1537K1	$53.11	$47.80
5-gal. Container	1	1537K2	———	230.92

Electric Discharge Machining Fluid

Demanding EDM (electric discharge machining) applications are no problem for these fluids. They are low viscosity, which means they allow faster machining speeds for fine surface finishes. They are also long lasting and extend tool life. Use them on a variety of hard metals. Use full strength.

These products are compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1-gal. Container	4	1496K1	$18.41	$16.69
5-gal. Container	1	1496K2	———	83.25

Pipe and Tube Bending Lubricant

Make bending and forming pipe and tube easier with this lubricant. It's a pourable gel that produces a high-strength lubricating film on your metal surface. Great for use on ferrous metals as well as high-strength alloys.

Lubricant offers excellent rust protection. It is chlorine, sulfur, and phosphorous free. Use full strength.

This product is compliant under all state VOC rules in effect on October 1, 2010.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1-gal. Container	4	1529K1	$40.10	$35.85

Cutting Fluid and Coolant Deodorizers

Neutralize and eliminate acidic and alkaline gases, including hydrogen sulfide and ammonia. These nontoxic deodorizers dissolve odors from recycled water-soluble coolant and cutting fluids. They're also suitable for wastewater and trash collection areas. Use full strength or dilute and use as a spray. These products are compliant under all state VOC rules in effect on October 1, 2010.

Standard—Until it reacts completely with odorous gases, this neutralizer emits a fresh scent.

Extra Strength—Strong enough for use in sludge treatment.

	Container Size		
Standard	70 oz.	63545T22	$54.76
Extra Strength	77 oz.	63545T21	83.72

Reservoir Cleaner and Anti-Foaming Liquid

Clean and defoam your coolant systems to keep them running in tiptop shape. Dilute with water. These products are compliant under all state VOC rules in effect on October 1, 2010.

Reservoir Cleaner—Removes oily residue, soap deposits, and heavy soils from your reservoir without harming paints, coatings, seals, and hoses.

Anti-Foaming Liquid—Simply add this liquid to your reservoir to reduce foam in your coolants.

	Container Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Reservoir Cleaner	1 gal.	4	2147K1	$37.33	$32.74
Anti-Foaming Liquid	64 oz.	4	2147K3	44.22	38.12

For grease gun nozzles, see page 2183.

Grease Guns

Apply your grease to the precise lubrication point desired with these steel-barreled grease guns. All guns have a 1/8″ NPT female connection for attaching nozzles and a nozzle with coupler for standard grease fittings, unless noted. Fill in one of three ways (unless otherwise stated): insert a cartridge of grease, draw grease from a container using the bottom handle to suction load, or bulk load using a filler pump or by scooping grease into the gun barrel.

Pistol Grip—Designed for one-hand operation, these grease guns allow you to access hard-to-reach areas. Filler nipple (sold separately) is required for bulk loading with a filler pump.

High Pressure Lever Grip—Put yourself in complete control of your grease output. When you're using a thick grease or need to force the grease through clogged fittings, use short, quick strokes. Use longer strokes to dispense larger amounts at lower pressures. Guns include a 1/8″ NPT male filler nipple for bulk loading.

Lever Grip for Grease and Oil—Similar to the grease gun shown above, with the additional ability to dispense both grease and oil. Bulk load only by pouring in oil or scooping in grease.

Dual Output—Switch the latch pin to toggle between low-pressure and high-pressure settings. Use the low-pressure setting to dispense more grease with each stroke. Make use of the high-pressure setting when you're dispensing thicker grease or need to force grease through clogged fittings. Include a 1/8″ NPT male filler nipple for bulk loading.

High Output—Dispense large quantities of grease quickly with little effort. Includes a 1/8″ NPT male filler nipple for bulk loading.

Extreme Pressure—Easily dispense even the thickest grease with the highest-pressure-rated gun we offer. Screw the T-handle into the barrel to prime the gun and produce 20 or more strokes without priming or screwing down the handle again. Has a 1/4″ NPT female connection for attaching nozzles. Includes a coupler for button-head grease fittings, 1/8″ NPT male filler nipple for bulk loading, pressure gauge, relief valve, and carrying strap.

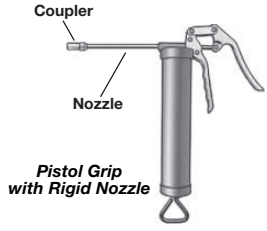

Pistol Grip with Rigid Nozzle

High Pressure Lever Grip with Rigid Nozzle

Lever Grip for Grease and Oil with Flexible Nozzle

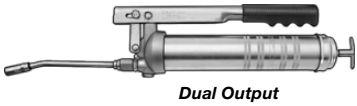
Dual Output

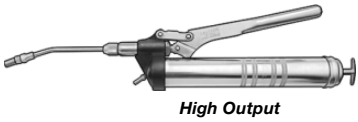
High Output

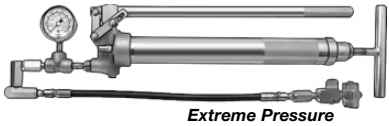
Extreme Pressure

Nozzle Type	Strokes per oz.	Max. psi	Load Cap., oz.		
Pistol Grip					
6″ Rigid	40	5,400	16	**1190K35**	$20.43
12″ Flexible	40	5,400	16	**1190K37**	23.78
Filler Nipple (1/8″ NPT male connection)				**1014K31**	6.53
High Pressure Lever Grip					
5″ Rigid	22	10,000	14	**1363K27**	27.92
6″ Rigid	21	10,000	24	**1891K3**	39.02
18″ Flexible	21	10,000	16	**1891K5**	30.21
Lever Grip for Grease and Oil					
7″ Rigid	21	5,800	17	**1811K1**	68.62
12″ Flexible	21	5,800	17	**1811K2**	83.45
Dual Output					
6″ Rigid	18 or 33	4,000 or 7,000	16	**1053K43**	41.86
6″ Rigid	18 or 33	4,000 or 7,000	21	**1053K44**	54.35
High Output					
6″ Rigid	9	3,000	21	**1048K3**	149.00
Extreme Pressure					
18″ Flexible	24	15,000	12	**1059K2**	819.36

Battery-Powered Grease Guns

Powered by a rechargeable battery, these guns require less work than a manual gun. Plus, with no air hose to tie you down, they offer more freedom than air-powered guns. Hold the trigger for a continuous flow of grease, or deliver 1 oz. of grease per 50 strokes.

Guns have a steel barrel plus a 7/16″ female UNEF connection for attaching nozzles, and a 30″ long flexible nozzle that has both a coupler for standard grease fittings and a steel spring guard to prevent kinking. A rechargeable battery, battery charger, and a carrying case are also included. Fill in one of three ways: insert a cartridge of grease, draw grease from a container using the bottom handle to suction load, or use a filler nipple and filler pump to bulk load. Load capacity is 16 oz.

Standard—Delivers a continuous flow of 2.9 oz. of grease per minute. Maximum pressure is 6,000 psi. Requires a 12-volt NiCad battery (included).

High Output—Delivers a continuous flow of 8.5 oz. of grease per minute. Maximum pressure is 7,500 psi. Requires a 14.4-volt NiCad battery (included).

	Grease Guns		***Repl. Batteries***		***Repl. Battery Chargers***	
Standard	**1524K2**	$215.62	**1524K7**	$86.13	**1524K81**	$49.02
High Output	**1524K3**	266.92	**1524K8**	90.45	**1524K91**	51.47
Replacement 30″ Flexible Nozzle					**1524K82**	32.25

Air-Powered Grease Guns

Use air power to dispense grease without the effort that manual grease guns require. One-hand operation allows you to access hard-to-reach areas. Both guns have a steel barrel and a coupler for standard grease fittings. Fill in one of three ways: insert a cartridge of grease, draw grease from a container using the bottom handle to suction load, or use a filler nipple and filler pump to bulk load.

Single Shot—Deliver a single shot of grease with each pull of the trigger. Gun has a 1/8″ NPT female connection for attaching nozzles, and includes a 6″ angled rigid nozzle, as well as a 12″ flexible nozzle. It requires a 30-150 psi air supply. Air inlet connection is 1/4″ NPT female.

Continuous Flow—As long as the trigger is engaged, grease flows continuously at 10 oz. per minute. Gun has a 7/16″ UNEF female connection for attaching nozzles and includes a 30″ flexible nozzle. It requires a 40-150 psi air supply. Air inlet connection is 1/4″ NPS female.

Single Shot

Continuous Flow

	Strokes per oz.	Max. psi	Load Cap., oz.		
Single Shot	26	6,000	16	**1406K25**	$58.00
Continuous Flow	29	6,000	16	**1454K38**	88.95
Replacement 30″ Flexible Nozzle for Continuous-Flow Gun				**1524K82**	32.25

Grease Guns & Grease Injector Needles

For information about grease, see page 2170. For grease gun nozzles, see page 2183.

Compact Grease Guns

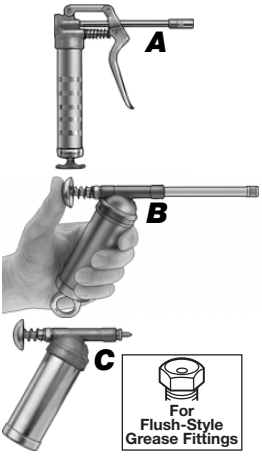

Designed for one-hand operation, these grease guns allow you to access hard-to-reach areas that larger guns can't. Guns have a steel barrel.

Style A—Includes a 1/8″ NPT female connection for attaching nozzles and a nozzle with coupler for standard grease fittings. Use the included 3-oz. black NLGI No. 1.5 lithium grease cartridge or suction load. *Replacement grease gun cartridges* have a temperature range of 0° to 280° F. Grease is compliant under all state VOC rules in effect on October 1, 2010.

Styles B & C—The palm and finger-grip design of these guns allows for easy operation. Push the plunger with your thumb to dispense grease. Include a 1/8″ NPT female connection for attaching nozzles.

Style B also includes a nozzle with coupler for standard grease fittings. Suction load or bulk load only.

Style C also includes a nozzle with coupler for flush-style fittings. Bulk load only.

Nozzle Type	Strokes per oz.	Max. psi	Load Cap., oz.		
For Standard Grease Fittings					
A ... 6″ Rigid	80	4,500	3	**1060K52**	$15.82
B ... 4″ Rigid	150	3,000	3	**10225K93**	17.32
B ... 4″ Rigid	150	3,000	5	**10225K95**	18.51
For Flush-Style Grease Fittings					
C ... 13/16″ Needle	150	3,000	3	**10225K97**	16.35
Replacement 3-oz. Grease Gun Cartridges for Style A					
Black NLGI No. 1.5 Lithium Grease (4/Pkg.)				**1060K31**	$13.05
White NLGI No. 2 Lithium Grease (4/Pkg.)				**1060K63**	13.18

Compact Light Duty Grease Guns

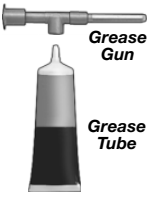

Thread this handy 6″ gun directly onto a tube of multipurpose lithium grease (sold separately), and push the plunger to dispense.

Grease is rated NLGI No. 2 and has a temperature range of –25° to +280° F. Grease is compliant under all state VOC rules in effect on October 1, 2010.

Grease Gun ..... **1348K22** $7.55

8-oz. Tube White Lithium Grease ..... **1348K13** 5.85

Ready-to-Use Grease Guns

Eliminate the time and mess of manual filling. This 6 5/16″ long gun comes loaded with 2 oz. of blue NLGI No. 2 lithium grease. When the gun is empty, simply throw it away. Push-action allows easy one-hand operation. It has a transparent body for a clear view of the grease level and a universal nozzle that fits standard grease fittings. Maximum pressure is 3,700 psi. Grease temperature range is –31° to +302° F. Grease is compliant under all state VOC rules in effect on October 1, 2010.

8648K5 ..... $10.54

Grease Gun Holders

Keep your grease guns close at hand. Holder is steel and mounts to walls, vehicles, and other machinery. The center latch secures any standard 2 1/4″ dia. grease gun. Holder has two 1/4″ dia. mounting holes.

Compatible with the grease guns on page 2181 (except 1059K).

1275K33 ..... $7.73

Pinpoint Grease Injector Needles

Perfect for dispensing precise amounts of grease, these needles lubricate sealed bearings and allow pinpoint penetration of boots and gaskets in hard-to-reach areas.

Snap-In Needles

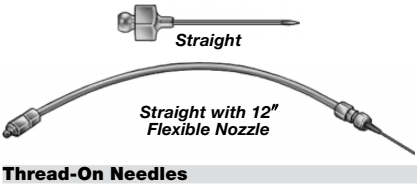

Snap directly into the coupler of your grease gun for speed and convenience. Made of Type 304 stainless steel.

Needle Style	Ga.	OD	Needle Lg.	O'all Lg.		
Straight	18	0.050″	1 1/4″	2″	**1187K14**	$3.60
Straight	16	0.065″	1 1/2″	2 1/4″	**1187K11**	3.50
Straight	16	0.065″	1 1/2″	2 3/4″	**1078K85**	3.62
Straight with 12″ Flexible Nozzle	16	0.065″	1 1/2″	16 1/2″	**1078K83**	8.85

Thread-On Needles

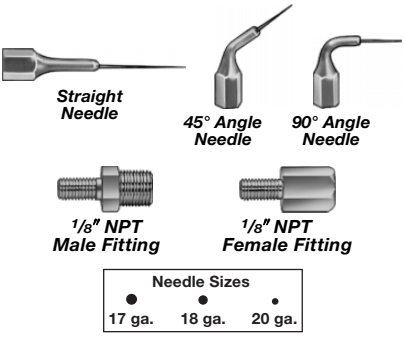

Choose from straight, 45° angle, and 90° angle needles. Threads are 1/4″-28 female. Needles are made of Type 304 stainless steel; fittings are brass.

Needles with 1/8″ NPT male fitting thread directly into your grease gun barrel.

Needles with 1/8″ NPT female fitting thread into your grease gun nozzle.

Replacement needles have 1/4″-28 female threads.

To Order: Please specify needle size: 17 ga. (0.058″ OD), 18 ga. (0.050″ OD), or 20 ga. (0.035″ OD).

Needle Style	Needle Lg.	O'all Lg.	***Needles with 1/8″ NPT Male Fitting***		***Needles with 1/8″ NPT Female Fitting***		***Replacement Needles***	
Straight	1/2″	19/16″	**10475K61**	$7.36	**10475K81**	$7.43	**10475K11**	$5.75
Straight	3/4″	1 13/16″	**10475K62**	7.36	**10475K82**	7.43	**10475K12**	5.75
Straight	1″	2 1/16″	**10475K63**	7.36	**10475K83**	7.43	**10475K13**	5.88
Straight	2″	3 1/16″	**10475K64**	7.46	**10475K84**	7.54	**10475K14**	6.00
45° Angle	1/2″	19/16″	**10475K71**	8.53	**10475K91**	8.53	**10475K21**	7.50
90° Angle	1/2″	19/16″	**10475K72**	8.53	**10475K92**	8.53	**10475K31**	7.63

Replacement 1/8″ NPT Male Fitting ..... **10475K51** $2.85

Replacement 1/8″ NPT Female Fitting ..... **10475K52** 2.95

Tube Fittings for Thread-On Needles

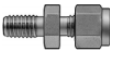

Use these fittings to attach the above thread-on needles to tubing. Threads are 1/4″-28 male. Made of Type 316 Stainless Steel.

For Tube OD		
1/8″	**8829T2**	$31.84
3/16″	**8829T3**	32.58
1/4″	**8829T4**	32.87

Grease Gun Filler Pumps

Simplify bulk loading your grease guns. Insert the grease gun's filler nipple into the socket located on top of the unit, then pump the lever handle.

Pump for ***35-lb. containers*** delivers 1 oz. of grease per stroke; pump for ***120-lb. containers*** delivers 2.6 oz. of grease per stroke.

Pumps are steel and include a 1/8″ NPT male steel filler nipple, steel drum cover, and follower plate for pumping extra-thick grease. Pail and drum are not included.

Fits Container	Max. Container Size Dia.	Max. Container Size Ht.		
35 lb. (5 gal.) Container	12″	13 1/4″	1014K21	$78.14
120 lb. (16 gal.) Drum	15″	27″	1008K25	259.14
Repl. Filler Nipple (1/8″ NPT male connection)			1014K31	6.53

Lincoln Grease Gun Filler Nipples

Attach this steel nipple to a manual grease gun so you can load the gun using a Lincoln brand filler pump. Size is 11/32″ Dia. × 3/4″ Lg. Connection is 1/8″ NPT male.

1099K11 ..... $4.89

Grease Fitting Cleaning Tools

Easily open clogged grease fittings. To use, fill the tool with a light oil, place the tool's coupler on the grease fitting, and tap it with a light hammer. This tapping action forces oil through the fitting and quickly removes contamination from its bearings, joints, and other mechanical parts. Tool is steel with a corrosion-resistant coating. Includes a flexible rubber, nylon reinforced extension hose for hard-to-reach fittings. Furnished in a plastic case.

5059K1 ..... $58.98

Rigid Grease Gun Nozzles

One end has a 1/8″ NPT male connection that threads into your grease gun barrel, while the other end has a coupler for standard grease fittings. Use with manual grease guns, unless noted.

(A) Rigid Nozzle with Coupler—Combination nozzle/coupler fits standard grease fittings.

(B) Rigid Nozzle with High-Pressure Coupler—Same as Style A but built for heavy duty use.

(C) Rigid Nozzle with 180° Swivel Coupler—A sliding, spring-loaded sleeve locks coupler in place for straight applications and at any angle up to 90°.

(D) Rigid-to-Flexible Nozzle with Coupler—Slide the sleeve along this nozzle to shift from a rigid to a flexible nozzle. For use with both manual grease guns and air-powered grease guns.

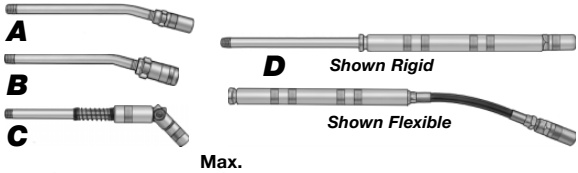

	Lg.	Max. psi		
A	6″	6,000	1090K39	$9.91
B	5 1/2″	10,000	1090K22	14.56
B	6 1/2″	10,000	1090K13	21.24
B	12″	10,000	1090K15	23.40
B	21″	10,000	1090K11	63.00
C	8″	7,000	1090K47	16.26
D	13″	5,000	1351K11	34.21

Flexible Grease Gun Nozzles

Nozzles without coupler have 1/8″ NPT male connections on each end to allow you to connect your own coupler.

Nozzles with coupler have a steel coupler on one end and a 1/8″ NPT male connection on the other. Coupler fits standard grease fittings, unless noted.

Polyethylene Nozzles

Without Coupler

With Coupler for Standard Grease Fittings

Use with manual grease guns.

Lg.	Without Coupler Max. psi			With Coupler Max. psi		
12″	4,500	1195K51	$4.42	4,000	1195K52	$7.45
18″	4,500	1195K57	4.53	4,000	1195K58	7.05
24″	4,500	1195K61	10.25	4,000	1195K62	9.68
36″	4,500	1195K67	10.62	4,000	1195K68	10.90

Kink-Free Thermoplastic Nozzles

Without Coupler

With Coupler for Standard Grease Fittings

A steel spring guard prevents kinking. Nozzles are for use with both manual grease guns and air-powered grease guns, except 1083K13 and 1083K14, which are for use with manual grease guns only.

Lg.	Without Coupler Max. psi			With Coupler Max. psi		
12″	5,000	1082K7	$20.58	4,500	1083K11	$36.85
18″	5,000	1082K8	24.06	4,500	1083K12	44.44
24″	5,000	1082K2	26.59	3,000	1083K13	11.56
36″	5,000	1082K3	31.45	3,000	1083K14	15.08

Reinforced Nitrile Nozzles

Without Coupler

With Coupler for Standard Grease Fittings

Nozzles are made of nitrile rubber with a single wire-braid reinforcement to protect the inner hose. Use with manual grease guns.

Lg.	Max. psi	Without Coupler		With Coupler	
12″	3,000	2044K41	$6.72	2044K61	$10.22
18″	3,000	2044K42	8.50	2044K62	11.38
24″	3,000	2044K43	12.05	2044K63	15.28
36″	3,000	2044K44	12.72	2044K64	18.73

Nozzles with Coupler for Pin-Style Grease Fittings

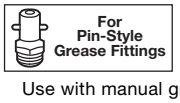

Use with manual grease guns. Nozzles are rubber.

Lg.	Max. psi		
12″	4,800	2162K13	$27.53
18″	4,800	2162K14	31.41

Nozzles with Coupler for Button-Head Grease Fittings

Nozzles ***without spring guard*** are for use with manual grease guns and are made of polyamide.

Nozzles ***with spring guard*** have a steel spring guard that prevents kinking. Use with manual and air-powered grease guns. Nozzles are polyethylene.

Lg.	Max. psi	5/8″ Coupler Head Diameter		7/8″ Coupler Head Diameter	
Without Spring Guard					
12″	4,500	2162K41	$17.68	2162K43	$22.60
20″	4,500	2162K42	19.85	2162K44	23.95
With Spring Guard					
12″	4,000	2162K15	99.17	2162K31	$105.77
36″	4,000	2162K51	97.13	2162K52	102.82

Grease Gun Couplers

Medium Pressure

High Pressure

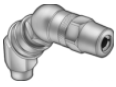
360° Swivel

Slide On

Pin Style, Male

Pin Style, Female

Flush Style

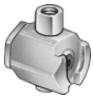
Button Head

Bare Lubrication Points

Form a positive, leakproof seal between grease guns and compatible grease fittings with these steel couplers. Use with both manual grease guns and air-powered grease systems, unless noted.

360° Swivel Coupler— Built-in swivel and 45° body allow 360° movement. Coupler locks in place at any 45° angle.

Slide-On Coupler— Lubricate your hard-to-reach standard grease fittings from the side with this slide-on coupler.

Coupler for Bare Lubrication Points— Use when your lubrication point doesn't have a grease fitting. Use with manual grease guns only.

Inlet Thread Size	Max. psi		
For Standard Grease Fittings			
Medium Pressure			
1/8″ NPT Female	6,000	1091K2	$5.29
High Pressure			
1/8″ NPT Female	10,000	1091K5	12.24
360° Swivel			
1/8″ NPT Female	7,500	1091K3	44.00
Slide On			
1/8″ NPT Female	1,000	1091K61	7.88
For Pin-Style Grease Fittings			
1/8″ NPT Male	10,000	1091K16	33.50
1/8″ NPT Female	10,000	1091K17	37.34
For Flush-Style Grease Fittings			
1/8″ NPT Female	10,000	1091K9	4.90

Inlet Thread Size	Max. psi		
For Button-Head Grease Fittings			
5/8″ Head Dia.			
1/8″ NPT Female	10,000	1091K42	$31.04
7/16″-27 NS-2 Female	10,000	1091K41	30.42
7/8″ Head Dia.			
1/8″ NPT Female	15,000	1091K44	37.22
1/4″ PTF Female	15,000	1091K88	47.04
7/16″-27 NS-2 Female	15,000	1091K43	33.70
16 mm Head Dia.			
1/8″ NPT Female	10,000	2443K77	23.00
For Bare Lubrication Points			
1/8″ NPT Female	3,000	1091K63	3.65

Grease Gun Snap-In Coupler Extensions

Snap into the coupler of your grease gun to access hard-to-reach lubrication points.

Straight

A

B

C

D

E

F

(A) Coupler for Recessed Lubrication Points— For use with standard grease fittings. 6″ long. Max. pressure is 4,000 psi.
2906K94 ..... $15.00

(B) Needlepoint Coupler— For use with flush-style grease fittings and bare lubrication points. 5 1/4″ long. Max. pressure is 4,000 psi.
2906K92 ..... $13.22

(C) Injector Needle— For precise applications. Needle is 14-ga. (0.08″ OD) and 1 1/2″ long. Overall length is 5 1/4″. Max. pressure is 4,000 psi.
2906K91 ..... $9.89

(D) Coupler for Bare Lubrication Points— 4″ long. Max. pressure is 4,000 psi.
2906K82 ..... $9.00

(E) Slide-On Coupler— For use with standard grease fittings. 3 1/2″ long. Max. pressure is 4,000 psi.
2906K81 ..... $20.30

(F) Locking Sleeve— Has a 1/8″ NPT female connection to connect any 1/8″ NPT male nozzle to a coupler. 2 1/2″ long. Max. pressure is 7,500 psi.
1090K65 ..... $19.85

90° Right Angle

K

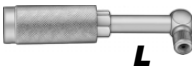
L

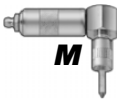
M

N

P&Q

(K) 90° Coupler— For use with standard grease fittings. 2 13/16″ long. Max. pressure is 4,000 psi.
2906K96 ..... $11.61

(L) 90° Coupler for Recessed Lubrication Points— For use with standard grease fittings. 4 3/4″ long. Max. pressure is 7,500 psi.
1090K52 ..... $25.58

(M) 90° Needlepoint Coupler— For use with flush-style grease fittings and bare lubrication points. 2 1/4″ long. Max. pressure is 4,000 psi.
2906K95 ..... $16.06

(N) 90° Needlepoint Coupler— For use with flush-style grease fittings and bare lubrication points. 4 1/2″ long. Max. pressure is 4,000 psi.
2906K93 ..... $12.98

(P) 90° Coupler for 5/8″ Head Dia. Button-Head Fittings— 3 5/8″ long. Max. pressure is 4,000 psi.
2906K97 ..... $12.50

(Q) 90° Coupler for 7/8″ Head Dia. Button-Head Fittings— 3 5/8″ long. Max. pressure is 4,000 psi.
2906K83 ..... $16.77

360° Swivel Coupler

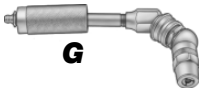
G

(G) 360° Swivel Coupler— Includes a 2″ long steel nozzle with a coupler for standard grease fittings. Overall length is 7 1/2″. Max. pressure is 7,500 psi.
1090K44 ..... $55.67

Flexible Nozzle

R

(R) Flexible Nozzle— This rubber nozzle is 18″ long and has a steel spring guard to prevent kinking. Max. pressure is 3,000 psi.
2906K89 ..... $15.74

Grease Fitting Tools

H&J

(H) Easy-Out Grease Fitting Tool— Use this tool to remove and retap 1/4″-28 grease fittings.
2906K98 ..... $7.31

(J) Easy-Out Grease Fitting Tool— Use this tool to remove and retap 1/8″ NPT grease fittings.
2906K99 ..... $7.37

10-Piece Grease Gun Accessory Kit

Contains: Three straight extensions (Styles A-C), two grease fitting tools (Styles H and J), four 90° right angle extensions (Styles K, M, N, and P), and a flexible nozzle (Style R).
2906K7 ..... $132.87

For information about grease, see page 2170.

Grease Lubricators

Efficient and easy to use, these hand-operated lubricators are made of steel. All include a grease pump plunger system, container cover, and delivery hose.

Maximum pressure is 10,000 psi. Use with NLGI Nos. 0-2 grease.

For grease containers, see page 1708.

Styles A and ***B*** have a gun with 6″ rigid nozzle, ⅛″ BSPT female coupler for standard grease fittings, and follower plate. The gun has a switch for moving between low-pressure or high-pressure settings. The low-pressure setting dispenses more grease with each stroke. Make use of the high-pressure setting when you're dispensing thicker grease or need to force grease through clogged fittings.

Style C dispenses over 50% more grease per stroke than the other manual lubricators we offer. It has a ¼″ NPT female coupler for standard grease fittings.

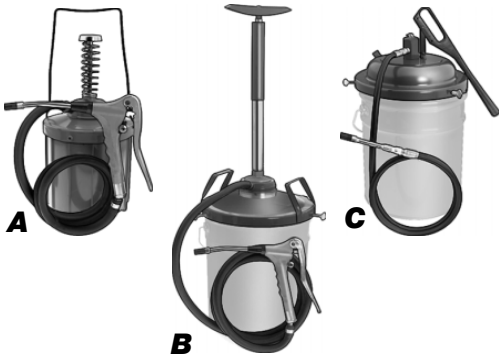

Fits Container	Strokes per oz.	Container Included	Delivery Hose Lg.		
Dual-Output Lubricators					
A 7 lb. (1 gal.)	23 or 63	No	5 ft.	1368K16	$209.06
A 11 lb.	23 or 63	Yes	5 ft.	1368K19	234.48
B 35 lb. (5 gal.)	23 or 63	No	10 ft.	1368K24	328.88
13″ Flexible Nozzle				1368K22	29.38
High-Output Lubricator					
C 35 lb. (5 gal.)	7.5	No	5 ft.	10465K31	423.87

Battery-Powered Grease Lubricator

Attach this lubricator to a battery for go-anywhere convenience. Battery sold separately. Lubricator dispenses 5 oz. of NLGI Nos. 0-2 grease per minute. It has a steel housing and includes a grease pump, cover assembly, delivery hose, universal z-swivel fitting for connecting the delivery hose to your gun, and a gun with coupler for standard grease fittings. Container is not included. For containers, see page 1708.

Optional steel cart holds grease pump and 35-lb. container. It has two pneumatic tires and a plastic box to hold the battery.

Lubricator with Battery and Optional Steel Cart (Container Not Included)

Fits Container	Max. psi	Delivery Hose Lg.		
35 lb. (5 gal.)	5,000	25 ft.	1412K42	$1,350.00
Battery (12 VDC)			71805K82	114.47
Optional Steel Cart			1412K43	427.82

Air-Powered Grease Lubricators

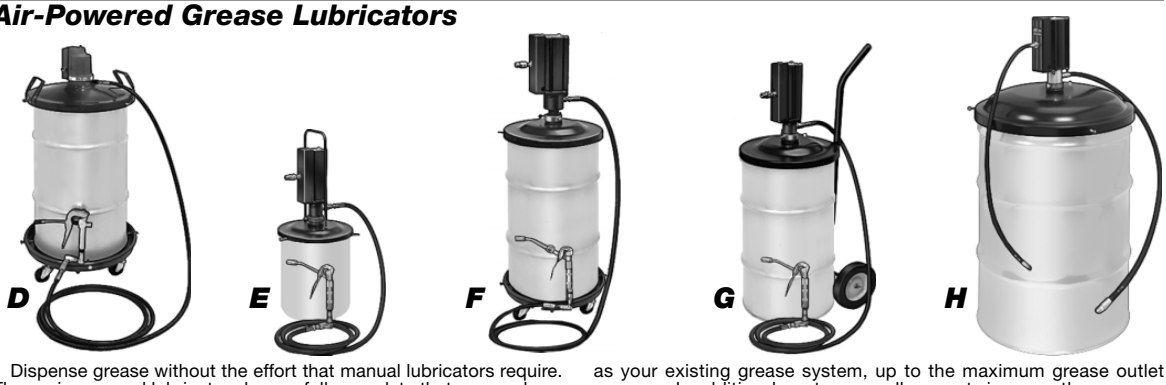

Dispense grease without the effort that manual lubricators require. These air-powered lubricators have a follower plate that moves down the inside of the container as the grease level drops; this compresses the grease and prevents vapor pockets from forming as the grease is dispensed. Lubricators are steel and include a grease pump, cover assembly, delivery hose, and a coupler for standard grease fittings. Air inlet connection is ¼″ NPT female for low- and high-volume lubricators and ¼″ NPTF female for medium-volume lubricators.

Styles D-G also have a universal z-swivel fitting for connecting the delivery hose to your gun, and either a standard gun or a booster gun (see table below). Guns dispense grease at the same pressure as your existing grease system, up to the maximum grease outlet pressure. In addition, booster guns allow you to increase the pressure up to the maximum gun pressure. *Note:* Do not use flexible nozzles with these booster guns. *Styles D* and *F* include a four-caster dolly; *Style G* includes a two-wheel hand truck.

Style H has a ⅜″ NPT male connection and can be used with standard gun 1306K13 on page 2186. Includes a 3-ft. long air inlet hose.

Containers and drums are not included. For containers, see page 1708; for drums, see pages 1712-1713.

Fits Container	Max. Grease Outlet psi	Gun Type	Max. Gun psi	Max. Air Inlet psi	Delivery Hose Lg.		
Low-Volume Lubricators—*Dispense 16 oz. of NLGI Nos. 0-2 grease per minute.*							
D 35-lb. (5-gal.) Container	7,500	Booster	10,000	150	13 ft.	1384K11	$692.12
D 120-lb. (16-gal.) Drum	7,500	Booster	10,000	150	13 ft.	1384K13	827.72
Medium-Volume Lubricators—*Dispense 32 oz. of NLGI Nos. 0-2 grease per minute.*							
E 35-lb. (5-gal.) Container	7,500	Standard	7,500	150	10 ft.	1033K52	965.37
F 120-lb. (16-gal.) Drum	7,500	Standard	7,500	150	10 ft.	1033K53	1,223.22
G 120-lb. (16-gal.) Drum	7,500	Standard	7,500	150	10 ft.	1033K54	1,355.71
High-Volume Lubricators—*Dispense 64 oz. of NLGI Nos. 0-2 grease per minute.*							
E 35-lb. (5-gal.) Container	7,500	Booster	10,000	150	10 ft.	13585K51	1,194.74
F 120-lb. (16-gal.) Drum	7,500	Booster	10,000	150	10 ft.	13585K52	1,444.68
G 120-lb. (16-gal.) Drum	7,500	Booster	10,000	150	10 ft.	13585K53	1,656.56
H 400-lb. (55-gal.) Drum	7,500	_____	_____	150	4 ft.	13585K54	1,789.56

For information about pipe size, see pages 2-3. For information about grease, see page 2170.

Guns for Powered Grease Lubricators

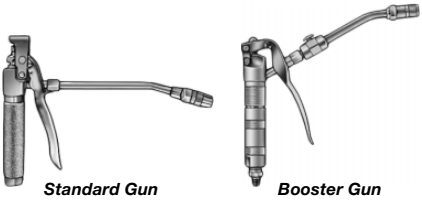

Standard Gun *Booster Gun*

Team these guns with any air-powered or electric grease system. All are made of steel; nozzle extensions include a coupler for standard grease fittings.

Standard Guns— Dispense grease at the same pressure as your existing grease system, up to 7,500 psi.

Booster Guns— Increase the pressure of your existing grease system to deliver greater pressure when you need it. *Note:* Do not use flexible extension hoses with these booster guns.

Thread Size	Nozzle Type	Max. psi		
Standard Guns				
1/4″ NPTF Female	6″ Rigid	7,500	1306K11	$115.40
3/8″ NPT Female	6″ Rigid	7,500	1306K13	132.75
Booster Guns				
1/8″ NPT Male	8″ Rigid	10,000	14195K66	181.51
1/8″ NPT Female	6″ Rigid	12,000	14195K25	125.47

No-Kink Grease Hose Swivels

Straight, Male × Female ***90° Angle, Male × Female*** ***Universal, Male × Male***

Make handling your manual or air-powered grease dispensing system easier while preventing damage to hoses. These steel fittings connect the delivery hose to the gun and swivel 360° to keep hoses from twisting.

Thread Size	Max. psi		
Straight			
1/8″ NPT Male × 1/8″ NPT Female	4,500	1092K21	$17.29
1/8″ NPT Male × 1/8″ NPT Male	4,500	1092K19	43.92
1/2″-27 Male × 1/4″ NPT Male	7,500	1092K18	34.02
90° Angle			
1/8″ NPT Male × 1/8″ NPT Female	7,500	1092K27	79.63
1/8″ NPT Male × 1/8″ NPT Male	7,500	1092K16	69.79
1/2″-27 Male × 1/4″ NPT Male	5,000	1092K31	72.17
Universal			
1/8″ NPT Male × 1/8″ NPT Male	7,500	1092K12	84.08
1/4″ NPT Male × 1/4″ NPT Male	7,500	1092K24	73.50
1/2″ NPT Male × 3/8″ NPT Male	5,000	1092K25	154.81
1/2″ NPT Male × 1/2″ NPT Male	5,000	1092K26	139.56
1/2″-27 Male × 1/4″ NPT Male	7,500	1092K11	71.00

Metering Grease Dispensing Nozzles

Rigid Nozzle

An LCD display allows you to precisely monitor the grease you dispense. These nozzles are great when you need to dispense a specific amount of grease or when you can't see how much grease you're dispensing. Measure batch total in oz. (resettable) and cumulative total in lb. (nonresettable).

Nozzles have a universal z-swivel fitting for connecting the inlet to your grease supply, and a coupler for standard grease fittings. Operate on two AA batteries (included). Inlet connection is 1/4″ NPT female; outlet connection is 1/8″ NPT female.

Nozzle Type	Max. psi		
6″ Rigid	7,250	2446K14	$515.42
12″ Flexible	7,250	2446K22	531.02

Grease Cups

Turn the lid clockwise to force grease down into the bearing. As grease is dispensed, cups compress slightly. Made of steel. Temperature range is 32° to 150° F. Use with NLGI Nos. 1-3 grease.

Cap., oz.	Thread Size, NPT male	Dia.	O'all Ht.		
0.25	1/8″	15/16″	1 5/8″	1112K41	$5.69
0.5	1/4″	1 3/16″	1 7/8″	1112K42	11.44
1	1/4″	1 3/4″	2 5/16″	1112K44	15.25
2	3/8″	2 1/4″	2 9/16″	1112K45	21.87
3.5	1/2″	2 11/16″	2 15/16″	1112K46	22.59

See-Through Automatic Grease Cups

With a transparent polycarbonate dome, these grease cups won't leave you wondering how much grease you have left. Cups come with three interchangeable springs, each with a different wire diameter. To achieve your desired flow rate, choose the most appropriate spring for the thickness of your grease.

Furnished with a 1/4″-28 straight thread grease fitting for refilling. Pipe size is 1/8″ NPT male. Temperature range is –10° to +250° F. Use with NLGI Nos. 0-4 grease.

Polycarbonate Base— An economical choice when there's minimal vibration, shock, or impact.

Aluminum Base— Strong enough to withstand vibration, shock, or impact.

Double-Plated Aluminum Base— Nickel and chrome plated for corrosion resistance.

	1-oz. Capacity					2-oz. Capacity					6-oz. Capacity				
Base	Dia.	O'all Ht.		1-5	6-Up	Dia.	O'all Ht.		1-5	6-Up	Dia.	O'all Ht.		1-5	6-Up
Polycarbonate	1 3/4″	3 5/8″	1303K11	$23.77	$21.83	2 3/8″	4 5/8″	1303K12	$30.64	$27.67	3″	6″	1303K19	$41.34	$39.92
Aluminum	1 3/4″	3 5/8″	1303K13	40.61	37.91	2 3/8″	4 5/8″	1303K14	52.35	48.06	3″	6″	1303K15	81.24	78.44
Double-Plated Aluminum	1 3/4″	3 5/8″	1303K16	57.38	54.46	2 3/8″	4 5/8″	1303K17	70.42	66.84	3″	6″	1303K18	112.67	108.78

Heavy Duty Automatic Grease Cups

Made of steel to perform under rugged conditions. Cups are designed to feed slowly and to work with close- or tight-fitting bearings. They have a metering pin you can adjust to increase or decrease the feed rate. A stem at the top of the cup descends to show when it needs refilling.

Furnished with a 1/4″ NPT grease fitting for refilling, except 1110K22 has a 1/8″ NPT fitting. Temperature range is 32° to 180° F. Use with NLGI Nos. 1-3 grease.

Cap., oz.	Thread Size, NPTF male	Dia.	O'all Ht.		1-2	3-Up
0.5	1/8″	1 1/4″	4 3/16″	1110K22	$59.55	$53.39
1.75	3/8″	2 1/2″	4 5/16″	1110K23	85.47	76.78
3.5	3/8″	2 1/2″	6 3/16″	1110K24	94.56	84.94
8	3/4″	3 1/4″	9 3/4″	1110K25	205.04	184.19

For information about grease, see page 2170.

Ready-to-Use Automatic Grease Cups

Grease Cups

Whether you need a large quantity of grease or just a few drops, these automatic grease cups adapt to your application. They have a 4.25-oz. capacity and dispense a precise amount of grease over a set period of time (1 to 12 months). They're filled with NLGI No. 2 grease, eliminating the time and mess of filling. When the unit is empty, replace with a new one.

To use, screw the grease cup directly into the point of lubrication; no tubing or other connectors are needed. Grease cups are made of transparent polyamide and allow easy viewing of the grease level. Pipe size is 1/4″ BSPT male with a plastic fitting. Units are 2 1/8″ Dia. × 4 5/8″ Ht.

Time-Set Dial

Type of Grease	Type of Thickener	Temperature Range	Grease Color		1-2	3-Up
Multipurpose	High-Performance Lithium	–22° to +284° F	Amber	3176K4	$53.88	$45.84
Multipurpose with Moly	Lithium	–4° to +250° F	Black	3176K7	56.47	48.04
High Temperature	Calcium Sulfonate	–4° to +300° F	Brown	3176K9	57.60	49.00
Food Grade	Aluminum	–4° to +230° F	Clear	3176K28	69.89	59.46

Steel Connectors and Adapters

	Connections: BSPP Male	Connections: BSPP Female		
45° Angle Connector	1/4″	1/4″	3176K61	$18.88
90° Angle Connector	1/4″	1/4″	3176K62	8.07
3/8″ Adapter	3/8″	1/4″	3176K63	7.21
1/2″ Adapter	1/2″	1/4″	3176K64	12.60

45° Connector

90° Connector

Adapter

Remote Grease Cup Filler Kit

No more climbing and reaching to fill your remote grease cups. This filler kit delivers grease to cups up to 10 ft. away. Kit includes 10 ft. of 1/4″ dia. nylon tubing, a 1/4″-28 grease fitting and adapter, two 1/8″ NPT male connectors, and a 1/8″ NPT female bulkhead nut and fitting. Temperature range is –10° to +180° F.

Optional adapter has a straight connection that is 1/8″ NPT female × 1/4″-28 male.

		1-5	6-Up
Kit	1395K25	$40.21	$36.25
Optional Adapter	1303K21	$3.45	

Pressure-Relief Vents

When pressure climbs into and beyond the ranges shown in the table, vents open to reduce pressure. They close as pressure drops within and below the pressure-relief range. All are made of steel. 1/8″ PTF vents meet Mil. Spec. 35670.

Pressure-Relief Range, psi	O'all Ht.	Hex Size	Pkg. Qty.		Each: Partial Pkg.	Each: Full Pkg.
1/8″ Pipe Thread Size (PTF)						
1/4 to 1	1/2″	7/16″	10	1093K11	$1.23	$1.05
1 to 5	1/2″	7/16″	10	1093K1	1.29	1.09
7 1/2 to 15	1/2″	7/16″	10	1093K2	1.31	1.09
15 to 25	1/2″	7/16″	10	1093K3	1.34	1.14
45 to 80	1/2″	7/16″	10	1093K4	1.49	1.25
80 to 140	1/2″	7/16″	10	1093K53	7.42	6.51
100 to 200	1/2″	7/16″	10	1093K52	1.47	1.22
400 to 650	1/2″	7/16″	10	1093K51	2.97	2.47
1/4″ Pipe Thread Size (PTF)						
1 to 5	1 1/8″	5/8″	10	1093K21	8.50	7.43
7 1/2 to 15	1 1/8″	5/8″	10	1093K22	8.50	7.43
15 to 25	1 1/8″	5/8″	10	1093K23	8.50	7.43
3/8″ Pipe Thread Size (PTF)						
1 to 5	1 3/16″	3/4″	10	1093K31	8.44	7.58
7 1/2 to 15	1 3/16″	3/4″	10	1093K32	10.89	9.53
1/2″ Pipe Thread Size (PTF)						
1 to 5	1 3/8″	7/8″	10	1093K41	12.01	10.51
7 1/2 to 15	1 3/8″	7/8″	10	1093K42	12.73	11.14
1/8″ BSPT						
1/4 to 1	1/2″	7/16″	10	1093K61	3.64	3.04
1 to 5	1/2″	7/16″	10	1093K62	5.90	4.92
45 to 80	1/2″	7/16″	10	1093K63	3.87	3.22

Flow-Stop Grease Fittings

Stop grease flow to prevent over-lubrication and damage to bearing seals. These steel fittings positively shut off within the pressure ranges listed. As the pressure drops below its closing pressure the fitting reopens and grease flow can resume. Fittings have a 60° angle and a 1/8″ PTF male pipe thread.

Shut-Off Pressure, psi	O'all Ht.	Hex Size	Pkg. Qty.		Each: Partial Pkg.	Each: Full Pkg.
5 to 20	1″	5/8″	10	10425K15	$5.71	$5.00
60 to 110	1″	5/8″	10	10425K17	5.51	4.82

Bearing Grease Packers

Efficiently lubricate bearings without the mess of hand packing. These packers force out the old grease and replace it with your new grease. Include a dust cover.

Portable bearing packer is small enough for hand-held operation and strong enough to be used in a vise for more demanding applications. Made of polycarbonate and glass-filled polypropylene. Fill with bulk grease. Use with NLGI No. 2 grease.

Bench-mount bearing packer has a built-in fitting for connecting to your grease gun's coupler. Grease gun must have a 1/8″ NPT female connection. For larger bearing applications, mount directly to your workbench. The base plate is 6 1/2″ dia. and has three 1/4″ dia. mounting holes (mounting hardware not included). Made of steel. Use with NLGI Nos. 0-2 grease.

Portable

Bench Mount

	Bearing Size Range: Min. ID	Bearing Size Range: Max. OD		
Portable	3/4″	3 1/2″	8434K7	$26.88
Bench Mount	3/4″	6″	1074K9	119.45

Continuous Pressure-Relief Vents

Continuously vent excessive pressure from your bearing housings, gear boxes, and reservoirs. Vents are steel and have a 40-micron filter that prevents contamination.

Vents with deflector prevent fluid from splashing out of the vent hole.

Vent

Vent with Deflector

Thread Size, NPT male	Hex Size	Vents: O'all Ht.			Vents w/ Deflector: O'all Ht.		
1/8″	11/16″	1″	2257K11	$9.05	1 3/16″	2257K31	$19.28
1/4″	11/16″	1″	2257K12	9.58	1 3/16″	2257K32	21.84
3/8″	3/4″	1 1/16″	2257K13	9.99	1 1/4″	2257K33	22.74
1/2″	15/16″	1 3/16″	2257K14	11.46	1 5/16″	2257K34	23.63
3/4″	1 1/16″	1 1/4″	2257K15	19.45	1 3/8″	2257K35	24.55

Hydraulic Bleeder System

Perform multiple maintenance tasks without compressed air or electricity. This hand-operated system lets you flush hydraulic fluid using pressure or vacuum; bleed clutches and brakes; bench bleed any master or slave cylinder; and meter and inject liquids. Maximum hydraulic injection pressure is 125 psi. Maximum vacuum is 30″ Hg. Injection stroke is 12.5 ml.

System comes furnished in a plastic case with fittings, adapters, and an instructional DVD. For use with D.O.T. (Department of Transportation) 3, 4, and 5 fluids.

6944A81 ..... $139.44

For information about pipe size, see pages 2-3.

About Grease Fitting Threads

In general, grease fitting threads follow pipe thread conventions and are either tapered or straight.

Tapered Pipe Threads

PTF and NPTF— Also known as Dryseal, these threads are tapered for leakproof installations. Compatible with NPT threads, but some leak-free characteristics are lost.

Metric and British Pipe Threads— Tapered in accordance with DIN standards established by the German Institute for Standardization and adopted by ISO (International Organization for Standardization).

Straight Threads

1/4"-28 Taper— Threads are tapered but they are designed to be installed into a 1/4"-28 straight threaded hole. Also known as SAE-LT threads (Society of Automotive Engineers Lubrication Threads).

UNF and UNEF— Similar to threads on a machine screw or bolt. They require a sealant, such as an O-ring, to minimize leakage.

Grease Fittings

Satisfy most general purpose lubrication requirements. All have a ball check to keep out dirt and other contaminants, unless noted. Max. pressure is 10,000 psi, unless noted. Threads are male, unless noted.

Steel fittings are zinc plated. ***Stainless steel***, ***brass***, and ***Monel*** fittings withstand corrosive conditions. Stainless steel is more corrosion resistant than brass; Monel is the most corrosion resistant.

Metric, BSPT, and ***BSF*** fittings meet DIN 71412 standards.

Straight Fittings

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
1/8" Pipe Thread (PTF)						
Steel	9/16"	7/16"	10	1095K65	$3.72	$3.10
Steel	11/16"	7/16"	10	1095K11	3.48	2.94
Steel	1 1/4"	7/16"	10	1095K12	10.00	8.57
Steel	1 3/4"	7/16"	5	1095K13	9.07	7.66
Steel	2 5/8"	3/8"	5	1095K14	14.30	12.26
Steel w/ Cap	31/32"	7/16"	1	1095K16	3.27	2.96
Stainless	3/4"	7/16"	5	1293K11	12.46	10.38
Brass	19/32"	7/16"	5	3088K16	9.21	7.89
Brass	11/16"	7/16"	5	3088K18	10.53	8.78
Monel	5/8"	7/16"	1	1292K31	7.74	6.78
Monel	3/4"	7/16"	1	1292K32	8.97	8.03
1/8" Female Pipe Thread (NPTF)						
Steel	1"	1/2"	10	1095K15	11.80	10.12
1/4" Pipe Thread (PTF)						
Steel	7/8"	9/16"	10	1095K31	11.36	9.58
Stainless	53/64"	9/16"	3	1293K32●	26.71	22.26
Stainless	7/8"	19/32"	1	1293K36	10.64	9.12
3/8" Pipe Thread (NPTF)						
Steel	51/64"	43/64"	5	1095K54	11.39	9.77
1/4"-28 Taper (for straight thread UNF holes)						
Steel	35/64"	5/16"	10	1095K41	2.61	2.14
Steel	11/16"	5/16"	10	1095K42	4.40	3.67
Steel	31/32"	5/16"	10	1095K43	6.38	5.36
Steel	1 1/8"	5/16"	10	1095K68	9.50	8.14
Steel	1 5/8"	5/16"	5	1095K69	9.44	7.97
Stainless	17/32"	5/16"	5	1293K21	12.46	10.38
Stainless	19/32"	9/32"	3	1293K42	8.84	7.37
Monel	17/32"	5/16"	1	1292K41	5.86	5.12
6-40 Straight Thread (UNF)						
Steel	1/2"	1/4"	10	1095K86▲	9.17	7.73
10-32 Straight Thread (UNF)						
Steel	15/32"	1/4"	10	1095K87▲	4.01	3.34
Steel	1/2"	1/4"	10	1095K88▲	7.07	5.89
1/4"-28 Straight Thread (UNF)						
Steel	33/64"	9/32"	10	1095K44	3.20	2.67
Brass	17/32"	9/32"	5	3088K3	7.66	6.48
Brass	19/32"	9/32"	5	3088K5	8.02	6.74
3/8"-24 Straight Thread (UNF)						
Steel	5/8"	7/16"	10	1095K96●	6.72	5.60
Stainless	19/32"	7/16"	3	1293K47	12.63	10.53
Brass	19/32"	7/16"	5	3088K14	9.21	7.89
5/16"-24 Straight Thread (UNF)						
Steel	21/32"	3/8"	10	1095K51	5.98	5.04
Steel	2 61/64"	11/32"	3	1095K83	8.95	7.67

●Max. psi is 8,000. ▲No ball check.

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
5/16"-24 Straight Thread (UNF) (Cont.)						
Stainless	19/32"	11/32"	3	1293K44	$10.74	$8.95
Brass	19/32"	11/32"	5	3088K11	8.38	7.09
5/16"-32 Straight Thread (UNEF)						
Steel	21/32"	3/8"	10	1095K61	5.40	4.50
M5×0.8						
Steel	15 mm	7 mm	10	1105K13	9.95	8.39
M6×0.75						
Steel	15 mm	7 mm	10	1105K16	4.32	3.40
M6×1						
Steel	14 mm	7 mm	10	1105K71●	3.46	2.92
Steel	24 mm	7 mm	10	1105K11	13.77	11.80
Steel	29 mm	7 mm	10	1105K21	15.50	13.56
Steel	41 mm	7 mm	5	1105K31	15.72	13.47
Stainless	13 mm	7 mm	3	2250K11●	6.03	5.03
Brass	14 mm	7 mm	5	3088K21	7.18	6.08
M8×1						
Steel	15 mm	9 mm	10	1105K72●	4.81	4.07
Stainless	15 mm	9 mm	1	2250K14●	3.08	2.57
Brass	15 mm	9 mm	5	3088K26	7.02	6.02
M8×1.25						
Steel	15 mm	9 mm	10	1105K81●	5.01	4.24
Stainless	15 mm	9 mm	5	2250K21●	17.98	14.98
Brass	15 mm	9 mm	5	3088K27	7.33	6.24
M10×1						
Steel	15 mm	11 mm	10	1105K73●	5.69	4.82
Stainless	15 mm	11 mm	5	2250K17●	18.83	15.69
Brass	15 mm	11 mm	5	3088K45	9.57	8.10
M10×1.5						
Steel	15 mm	11 mm	10	1105K82●	8.46	7.16
M12×1						
Steel	18 mm	14 mm	10	1105K41	14.27	12.23
M12×1.5						
Steel	18 mm	14 mm	10	1105K51	15.52	13.30
M14×1.5						
Steel	18 mm	14 mm	5	1105K61	7.96	6.73
1/8"-28 BSPT						
Steel	15 mm	11 mm	10	2408K11	4.43	3.69
Stainless	15 mm	11 mm	5	9276K11●	15.34	13.53
1/4"-19 BSPT						
Steel	20 mm	14 mm	10	2408K17●	9.03	7.61
Stainless	20 mm	14 mm	1	9276K14●	8.90	6.55
5/16"-22 BSF (British Standard Fine)						
Steel	15 mm	9 mm	10	2408K31	6.01	5.01

90° Angle Fittings

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
1/8" Pipe Thread (PTF)						
Steel	27/32"	7/16"	10	1095K27	$8.15	$6.74
Steel	1 13/16"	7/16"	3	1095K67	10.06	8.62
Stainless	7/8"	7/16"	1	1293K12	6.39	5.48
Monel	7/8"	7/16"	1	1292K33	18.70	16.37
1/4" Pipe Thread (PTF)						
Steel	15/16"	9/16"	10	1095K95●	11.20	9.60
Stainless	15/16"	9/16"	1	1293K34●	14.80	12.69
3/8" Pipe Thread (PTF)						
Steel	51/64"	43/64"	3	1095K55	11.15	9.56
1/4"-28 Taper (for straight thread UNF holes)						
Steel	3/4"	3/8"	10	1095K47	7.66	6.44

●Max. psi is 8,000.

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
1/4"-28 Taper (for straight thread UNF holes) (Cont.)						
Steel	51/64"	3/8"	10	1095K93●	$8.33	$7.14
Stainless	3/4"	3/8"	1	1293K22	5.75	4.79
Monel	3/4"	3/8"	1	1292K42	16.00	14.12
1/4"-28 Straight Thread (UNF)						
Brass	45/64"	11/32"	3	3088K9	10.77	9.11
M6×0.75						
Steel	18 mm	9 mm	10	1105K18	12.59	10.79
M6×1						
Steel	18 mm	9 mm	10	1105K76●	8.56	7.29
Stainless	18 mm	9 mm	3	2250K13●	14.49	12.18
Brass	18 mm	9 mm	5	3088K24	15.79	13.54

(Continued on following page)

For information about pipe size, see pages 2-3. For information about grease fitting threads, see page 2188.

Grease Fittings *(Continued from previous page)*

90° Angle Fittings (Cont.)

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
M8×1						
Steel	18 mm	9 mm	10	1105K77 ●	$9.38	$7.88
Stainless	18 mm	9 mm	3	2250K16 ●	14.63	12.36
Brass	18 mm	9 mm	1	3088K35	3.30	2.81
M8×1.25						
Steel	18 mm	9 mm	10	1105K85 ●	9.83	8.29
Stainless	18 mm	9 mm	3	2250K23 ●	15.70	13.23
Brass	18 mm	9 mm	3	3088K39	10.34	8.75
M10×1						
Steel	19 mm	11 mm	10	1105K79 ●	10.92	9.49
Stainless	19 mm	11 mm	3	2250K19 ●	15.52	12.94
Brass	20 mm	11 mm	3	3088K49	11.92	10.08
M10×1.5						
Steel	21 mm	11 mm	10	1105K86 ●	$12.23	$10.42
M12×1						
Steel	22 mm	14 mm	5	1105K43	7.96	6.73
M12×1.5						
Steel	22 mm	14 mm	5	1105K53	10.50	9.00
1/8"-28 BSPT						
Steel	20 mm	11 mm	10	2408K13	7.99	6.74
Stainless	19 mm	11 mm	1	9276K13 ●	7.40	6.61
1/4"-19 BSPT						
Steel	22 mm	14 mm	5	2408K23	9.32	7.87

● Max. psi is 8,000.

65° Angle Fittings

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
1/8" Pipe Thread (PTF)						
Steel	27/32"	7/16"	10	1095K24	$8.33	$7.03
Steel	29/32"	7/16"	10	1095K84	10.81	9.27
Steel	1 7/32"	7/16"	5	1095K25	10.17	8.71
Steel	2 3/4"	3/8"	3	1095K36	10.50	9.00
Stainless	61/64"	7/16"	1	1293K13	6.71	5.75
Monel	61/64"	7/16"	1	1292K34	19.40	16.98
1/4" Pipe Thread (PTF)						
Steel	31/32"	9/16"	10	1095K32	13.78	11.48
1/4"-28 Taper (for straight thread UNF holes)						
Steel	49/64"	3/8"	10	1095K92 ●	$6.99	$5.99
Steel	25/32"	3/8"	10	1095K73	7.63	6.36
5/16"-32 Straight Thread (UNEF)						
Steel	51/64"	3/8"	10	1095K63	11.53	9.88
1/8"-28 BSPT						
Steel	21 mm	11 mm	10	2408K14 ●	9.49	8.13
1/4"-19 BSPT						
Steel	25 mm	14 mm	10	2408K15 ●	15.45	13.36

● Max. psi is 8,000.

45° Angle Fittings

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
1/8" Pipe Thread (PTF)						
Steel	57/64"	7/16"	10	1095K23	$7.27	$6.06
Stainless	63/64"	7/16"	5	1293K31 ●	34.24	28.53
1/8" Female Pipe Thread (PTF)						
Steel	1 1/8"	7/16" ■	5	1095K66	16.98	14.56
1/4" Pipe Thread (PTF)						
Steel	1 7/64"	9/16"	10	1095K94 ●	11.20	9.60
Stainless	1 7/64"	9/16"	1	1293K33 ●	13.88	12.00
3/8" Pipe Thread (NPT)						
Steel	1"	43/64"	3	1095K53	11.15	9.56
1/4"-28 Taper (for straight thread UNF holes)						
Steel	13/16"	3/8"	10	1095K45	7.41	6.25
Steel	63/64"	3/8"	10	1095K91 ●	8.30	7.12
Stainless	13/16"	3/8"	3	1293K23	13.80	11.47
1/4"-28 Straight Thread (UNF)						
Steel	39/64"	3/8"	10	1095K74	11.13	9.39
Brass	59/64"	11/32"	1	3088K7	3.29	2.77
5/16"-24 Straight Thread (UNF)						
Stainless	59/64"	11/32"	1	1293K45	7.02	6.02
Brass	59/64"	11/32"	3	3088K12	10.30	8.77
M5×0.8						
Steel	24 mm	9 mm	10	1105K14	10.86	9.16
M6×0.75						
Steel	24 mm	9 mm	10	1105K17	13.99	11.80
M6×1						
Steel	23 mm	9 mm	10	1105K74 ●	8.26	7.12
M6×1 (Cont.)						
Stainless	23 mm	9 mm	3	2250K12 ●	$14.41	$12.12
Brass	24 mm	9 mm	5	3088K23	15.16	13.07
M8×1						
Steel	23 mm	9 mm	10	1105K75 ●	8.56	7.29
Stainless	22 mm	9 mm	3	2250K15 ●	14.49	12.18
Brass	24 mm	9 mm	5	3088K28	15.79	13.54
M8×1.25						
Steel	23 mm	9 mm	10	1105K83 ●	8.95	7.57
Stainless	22 mm	9 mm	3	2250K22 ●	15.70	13.23
Brass	24 mm	9 mm	1	3088K34	3.30	2.81
M10×1						
Steel	24 mm	11 mm	10	1105K78 ●	9.49	8.09
Stainless	23 mm	11 mm	3	2250K18 ●	15.39	12.89
Brass	25 mm	11 mm	3	3088K48	11.40	9.71
M10×1.5						
Steel	26 mm	11 mm	10	1105K84 ●	11.26	9.70
M12×1.5						
Steel	23 mm	14 mm	5	1105K52	7.96	6.73
1/8"-28 BSPT						
Steel	25 mm	11 mm	10	2408K12	7.99	6.74
Stainless	23 mm	11 mm	1	9276K12 ●	7.40	6.61
1/4"-19 BSPT						
Steel	23 mm	14 mm	5	2408K22	9.24	7.79

● Max. psi is 8,000. ■ Square face vs. hex.

30° Angle Fittings

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
1/8" Pipe Thread (PTF)						
Steel	29/32"	7/16"	10	1095K21	$10.45	$8.82
Steel	2 3/32"	7/16"	5	1095K22	22.27	19.09
1/8" Pipe Thread (PTF) (Cont.)						
Stainless	29/32"	7/16"	1	1293K14	$7.67	$6.39
Monel	1 1/4"	7/16"	1	1292K37	19.20	16.80

Double 70° Angle Fittings

Material	O'all Ht.	Hex Size	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
1/8" Pipe Thread (PTF)						
Steel	27/32"	1/2"	3	1095K85	$8.40	$7.20

Leakproof Grease and Oil Fittings

A specially shaped Buna-N seal, instead of a ball check, allows these fittings to handle light oils and fluids without leaking. Fittings are zinc-plated steel. Hex size is 7/16".

Style	Thread Size, male	O'all Ht.	Max. psi	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
Straight	1/8" PTF	29/32"	5,000	5	2309K91	$9.57	$8.38
Straight	1/8" PTF	1"	10,000	5	2309K98	11.01	9.63
90° Angle	1/8" NPTF	31/32"	5,000	5	2309K95	13.63	12.07
30° Angle	1/8" NPTF	1 7/32"	5,000	5	2309K92	12.56	10.99

30° Angle

For information about pipe size, see pages 2-3. For information about grease fitting threads, see page 2188.

Grease Fitting Assortments

50-Piece Set

100-Piece Set

Furnished in a case, except 2330K7, which comes in a plastic bag.

No. of Pieces	Included Fittings: Thread Size, male	Included Fittings: Style (Quantity)	Max. psi	Zinc-Plated Steel		Stainless Steel	
Inch Assortments							
8	¼″-28 Taper	Straight (4), 45° angle (2), 90° angle (2)	7,000	2330K3	$3.54	____	____
8	⅛″ NPT	Straight (4), 45° angle (2), 90° angle (2)	7,000	2330K7	5.16	____	____
48	¼″-28 Taper ⅛″ PTF	Straight (12), 45° angle (6), 90° angle (6) Straight (12), 45° angle (6), 90° angle (6)	10,000	2543K4	24.90	____	____
50	¼″-28 Taper	Straight (30), 45° angle (10), 90° angle (10)	10,000	1124K11	31.43	1124K22	$122.00
50	⅛″ PTF	Straight (30), 45° angle (10), 90° angle (10)	10,000	1123K11	34.29	1123K22	142.00
136	¼″-28 Taper ⅛″ PTF	Straight (60), 45° angle (10), 90° angle (10) Straight (40), 45° angle (8), 90° angle (8)	10,000	1154K11	48.48	1154K22	263.64
375	¼″-28 Taper ⅛″ PTF ¼″ PTF	Straight (120), 45° angle (25), 90° angle (25) Straight (55), 30° angle (25), 45° angle (25), 65° angle (25), 90° angle (25) Straight (25), 67.5° angle (25)	10,000	1207K74	142.86	____	____
Metric Assortments							
44	M6×1 M8×1 M10×1	Straight (10), 45° angle (6), 90° angle (6) Straight (6), 90° angle (6) Straight (10)	10,000	13085K44	35.80	13085K66	125.45
100	M6×1 M8×1 M8×1.25 M10×1 M10×1.5	Straight (10), 45° angle (5), 90° angle (5) Straight (10), 45° angle (5), 90° angle (5) Straight (10), 45° angle (5), 90° angle (5) Straight (10), 45° angle (5), 90° angle (5) Straight (10), 45° angle (5), 90° angle (5)	8,000	1315K14	67.80	____	____

Self-Threading Leakproof Grease Fittings

Straight

90° Angle

65° Angle

45° Angle

Metric 90° Angle

Metric 45° Angle

Create a leakproof seal in untapped holes with these zinc-plated steel fittings, which form threads as you install them. Use a power or hand wrench to spin in fittings. If spun in, fittings have a maximum pressure of 10,000 psi, unless noted. You can also drive them in, but they aren't pressure rated under this installation method. Connections are male.

Metric 90° angle and 45° angle fittings have a square face; straight fittings have a hex face.

Style	O'all Ht.	Hex Size	(L)	Pkg. Qty.		1-9	Pkg. 10-Up
Inch							
¼″-28 Taper—*For 0.230″-0.235″ hole dia.*							
Straight	½″	9/32″	0.08″	10	1103K31	$3.25	$2.44
Straight	37/64″	5/16″	13/64″	10	1103K21	2.46	2.05
90° Angle	¾″	⅜″	13/64″	10	1103K23	7.45	4.79
45° Angle	13/16″	⅜″	13/64″	10	1103K22	7.10	5.99
⅛″ PTF—*For 0.373″-0.380″ hole dia.*							
Straight	⅝″	7/16″	15/64″	10	1103K24	4.07	3.39
90° Angle	49/64″	7/16″	13/64″	10	1103K27	8.23	7.06
65° Angle	¾″	7/16″	13/64″	10	1103K26	8.19	7.02
Metric							
M6×1—*For 5.6-5.7 mm hole dia. Dimensions in mm.*							
Straight	14	7	5.5	10	8742T31●	4.15	3.57
Straight	15	7	5.5	10	8742T11	5.71	4.93
90° Angle	18	9	5.5	10	8742T17	16.37	13.84
45° Angle	20	9	5.5	10	8742T14	15.89	13.33
M8×1—*For 7.6-7.7 mm hole dia. Dimensions in mm.*							
Straight	15	9	5.5	10	8742T12	6.22	5.37
90° Angle	18	9	5.5	5	8742T18	8.57	7.20
45° Angle	20	9	5.5	5	8742T15	8.26	7.12
M10×1—*For 9.6-9.7 mm hole dia. Dimensions in mm.*							
Straight	15	11	5.5	10	8742T13	6.85	5.90
90° Angle	18	11	5.5	5	8742T19	9.52	8.15
45° Angle	20	11	5.5	5	8742T16	9.09	7.83

● Max. pressure is 8,000 psi.

Drive-In Grease Fittings

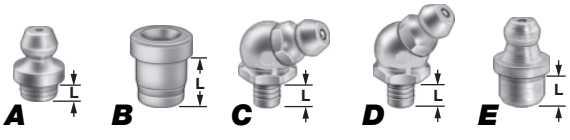

Drive these fittings into an untapped hole to speed production and reduce threading costs. All have a ball check, unless noted. Not rated for pressure.

Inch fittings have a serrated shank that forms a tight seal and prevents leaks, except 1102K82 and K83, which have a plain shank. ***Metric*** fittings have a plain shank.

Style	Hole Dia.	O'all Ht.	(L)	Pkg. Qty.		1-9	Pkg. 10-Up
Inch Zinc-Plated Steel							
A...Straight	⅛″	15/32″	5/32″	10	1102K52★	$2.32	$2.00
A...Straight	⅛″	9/16″	¼″	10	1102K51★	3.60	3.10
A...Straight	3/16″	25/64″	3/32″	10	1102K53★	2.08	1.79
A...Straight	3/16″	15/32″	11/64″	10	1102K54★	2.38	2.05
A...Straight	3/16″	31/64″	7/32″	10	1102K55★	2.54	2.19
A...Straight	3/16″	33/64″	¼″	10	1102K34	3.01	2.59
A...Straight	3/16″	⅝″	¼″	10	1102K31★	2.99	2.58
A...Straight	¼″	15/32″	⅛″	10	1102K61★	2.50	2.15
A...Straight	¼″	35/64″	¼″	10	1102K32	3.32	2.86
A...Straight	¼″	9/16″	17/64″	10	1102K36★	4.05	3.37
A...Straight	5/16″	35/64″	¼″	10	1102K33	4.32	3.72
A...Straight	5/16″	⅝″	7/32″	10	1102K62★	5.45	4.70
A...Straight	⅜″	⅝″	¼″	10	1102K35	10.00	9.20
B..Straight-Flush	⅛″	11/64″	⅛″	5	1102K82	11.98	10.27
B..Straight-Flush	3/16″	⅜″	5/16″	5	1102K81	8.01	6.68
B..Straight-Flush	¼″	9/32″	15/64″	5	1102K83	11.98	10.27
C..65° Angle	3/16″	45/64″	7/32″	10	1102K44	9.77	8.37
C..65° Angle	¼″	49/64″	9/32″	10	1102K41	12.23	10.48
C..65° Angle	5/16″	45/64″	7/32″	10	1102K72	11.67	10.00
D..45° Angle	3/16″	53/64″	7/32″	10	1102K71	9.37	8.03
Inch Stainless Steel							
A...Straight	3/16″	½″	7/32″	10	2304K21	17.64	15.44
A...Straight	¼″	½″	7/32″	10	2304K22	17.64	15.44
Metric Zinc-Plated Steel—*Dimensions in mm.*							
E...Straight	6	15	5.5	10	2417K21	4.00	3.45
E...Straight	8	15	5.5	10	2417K22	4.85	4.18
E...Straight	10	15	5.5	10	2417K23	6.53	5.63

★ No ball check.

Tools

For Straight Fittings

Tap these tools once or twice with a hammer to install fittings.

		Each
For Straight Fittings	2318K19	$22.91
For Angle Fittings	2318K29	24.62

For information about pipe size, see pages 2-3. For information about grease fitting threads, see page 2188.

Button-Head Grease Fittings

For a quick, positive grip, choose these rugged button-head fittings.

Inch zinc-plated steel fittings have a plunger-style check valve to allow for greater grease flow than other fittings. ***Inch stainless steel*** fittings have a ball check.

Metric and ***BSPP*** fittings meet DIN 3404 standards.

Thread Size, male	O'all Ht.	Hex Size		1-9	10-Up
Zinc-Plated Steel					
5/8" Head Dia.—*6,000 maximum psi*					
1/8" PTF	3/4"	5/8"	1094K49	$2.32	$1.93
1/8" NPTF♣	31/32"	5/8"	1094K51	3.14	2.61
1/4" NPTF	53/64"	5/8"	1094K43	2.74	2.29
3/8" NPTF	61/64"	3/4"	1094K44	3.42	2.89
1/2" NPTF	1 1/16"	7/8"	1094K53	5.29	4.49
7/8" Head Dia.—*15,000 maximum psi*					
1/4" NPTF	1 1/4"	7/8"	1094K26	4.61	3.91
3/8" NPTF	1 5/16"	7/8"	1094K17	5.17	4.38
1/2" NPTF	1 1/16"	7/8"	1094K28	4.94	4.19
16 mm Head Dia.—*10,000 maximum psi*					
M6×1	17 mm	17 mm	2443K39	1.66	1.42
M8×1	17 mm	17 mm	2443K41	1.18	1.02
M10×1	17 mm	17 mm	2443K42	1.18	1.02
M12×1.5	17 mm	17 mm	2443K43	1.90	1.64
M14×1.5	17 mm	17 mm	2443K44	1.98	1.71
M16×1.5	18 mm	17 mm	2443K45	2.06	1.77
1/8" BSPP	17 mm	17 mm	1094K61	1.66	1.42
1/4" BSPP	17 mm	17 mm	1094K62	1.66	1.42
3/8" BSPP	18 mm	17 mm	1094K71	1.42	1.21
Stainless Steel					
5/8" Head Dia.—*10,000 maximum psi*					
1/8" NPTF	45/64"	43/64"	8900T11	16.71	14.92
1/4" NPTF	53/64"	43/64"	8900T12	20.63	18.42
3/8" NPTF	59/64"	3/4"	8900T13	35.60	31.78
16 mm Head Dia.—*10,000 maximum psi*					
M6×1	17 mm	17 mm	2443K56	10.58	9.13
M8×1	17 mm	17 mm	2443K57	13.79	11.81
M10×1	17 mm	17 mm	2443K58	14.34	12.29
M12×1.5	17 mm	17 mm	2443K59	16.58	14.28
1/8" BSPP	17 mm	17 mm	1094K63	11.03	9.45
1/4" BSPP	17 mm	17 mm	1094K64	11.48	9.83

♣Female thread.

Flush-Style Grease Fittings

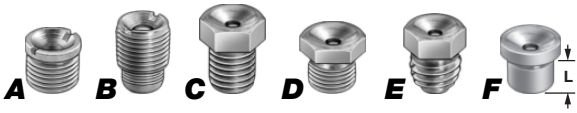

Where protruding fittings won't work, choose these zinc-plated steel flush-style fittings. Maximum pressure is 10,000 psi.

Install *Styles A* and *B* with a slotted screwdriver; *Styles C, D,* and *E* with a hex wrench. Tap in *Style F.*

Metric fittings meet DIN 3405 standards.

Thread Size, male	O'all Ht.	Hex Size	Pkg. Qty.		1-9	Pkg. 10-Up
Inch						
A.. 1/8" NPTF	23/64"	—	5	10595K11	$6.33	$5.27
A.. 10-32 UNF	3/8"	—	5	10595K31	2.18	1.82
B.. 1/8" NPTF	17/32"	—	3	10595K12	4.72	3.93
B.. 1/4" NPTF	9/16"	—	3	10595K13	15.85	13.58
C.. 1/4"-28 UNF	13/32"	5/16"	5	10595K14	2.69	2.24
C.. 3/8" NPTF	49/64"	3/4"	1	10595K21	12.23	10.19
C.. 1/2" NPT	55/64"	7/8"	1	10595K22	12.74	10.61
C.. 3/4" NPTF	7/8"	1 1/8"	1	10595K23	23.65	20.70
Metric						
D.. M6×1	8.5 mm	7 mm	5	2421K31	5.30	4.82
D.. M8×1	9.5 mm	9 mm	5	2421K32	5.41	4.92
D.. M10×1	9.5 mm	11 mm	5	2421K33	5.74	5.22
Metric Self-Threading						
E.. M6×1	8.5 mm	7 mm	5	2421K37	8.35	7.59
E.. M8×1	8.5 mm	9 mm	3	2421K38	5.01	4.55
E.. M10×1	8.5 mm	11 mm	1	2421K39	1.81	1.64

Hole Dia.	O'all Ht.	(L)	Pkg. Qty.		1-9	Pkg. 10-Up
Metric Drive-In						
F.. 6 mm	7.5 mm	5.5 mm	5	2421K34	$8.26	$7.51
F.. 8 mm	9.5 mm	6.5 mm	5	2421K35	8.26	7.51
F.. 10 mm	9.5 mm	6.5 mm	3	2421K36	5.22	4.75

Grease Fitting Adapters

When the size of your fitting doesn't match the opening, use these adapters to make the connection.

Straight ***90° Angle*** ***45° Angle***

Thread Size Male	Female	Zinc-Plated Steel		Stainless Steel	
Straight					
1/4"-28 Taper	1/8" NPTF	9006T11	$3.11	9006T31	$19.24
M6×1	1/4"-28 UNF	9006T21	7.28	—	—
M8×1	1/4"-28 UNF	9006T22	8.08	—	—
M10×1	1/4"-28 UNF	9006T23	8.40	—	—
90° Angle					
1/8" PTF	1/8" PTF	9006T16	12.74	9006T36●	21.84
1/4"-28 Taper	1/8" NPTF	9006T13	7.67	9006T33	21.84
45° Angle					
1/8" PTF	1/8" PTF	9006T15	15.91	9006T35●	34.64
1/4"-28 Taper	1/8" NPTF	9006T12	9.23	9006T32	34.64

●Threads are NPTF.

Pin-Style Grease Fittings

The cross pins on these fittings lock positively with your pin-style coupler to create a leakproof seal. Fittings are made of brass and steel, except 1089K11, which is brass. Maximum pressure is 8,000 psi.

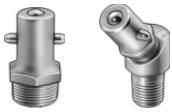

Straight ***45° Angle***

	Thread Size, male	O'all Ht.	Hex Size		1-9	10-Up
Straight	1/8" PTF	31/32"	7/16"	1089K12	$3.70	$3.08
Straight	1/8" PTF	31/32"	7/16"	1089K11	5.07	4.30
Straight	1/4" NPTF	1 3/32"	17/32"	1089K13	5.55	4.71
45° Angle	1/8" NPTF	1 23/32"	7/16"	1089K14	5.62	4.76

Grease Fitting Blocks for Hard-to-Reach Areas

Attach tubing to these blocks for easier lubrication of hard-to-reach and remote machine bearings. One side of each block has 3, 6, or 10 grease fittings, and the opposite side has compression-fitting connections for 1/4" OD tubing (not included). Overall block depth is 3/4". Use with grease up to NLGI No. 2.

Maximum pressure is 10,000 psi for zinc-plated steel blocks; 9,000 psi for stainless steel blocks.

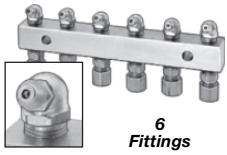

6 Fittings

No. of Fittings	O'all Wd.	Zinc-Plated Steel O'all Ht.			Stainless Steel O'all Ht.		
3	2 3/4"	2 3/4"	1693K1	$60.40	2 3/8"	1693K3	$131.71
6	5 3/4"	2 3/4"	1693K2	98.27	2 3/8"	1693K4	199.74
10	9 3/4"	2 3/8"	1693K6	137.60	2 3/8"	1693K5	277.00

Grease Fitting Dust Caps

Keep your fittings free of dirt and moisture. Caps are polyethylene and fit the standard grease fittings found on pages 2188 and 2189.

	Pkg. Qty.	With 1" Long Strap	1-9	Pkg. 10-Up	With 2" Long Strap	1-9	Pkg. 10-Up
Black	50	1098K12	$5.19	$4.33	1087K12	$9.10	$7.59
Blue	50	1098K17	5.19	4.33	1087K16	9.10	7.59
Green	50	1098K15	5.19	4.33	1087K15	9.10	7.59
Red	50	1098K14	5.19	4.33	1087K14	9.10	7.59
White	50	1098K13	5.19	4.33	1087K13	9.10	7.59
Yellow	50	1098K16	5.19	4.33	1087K11	9.10	7.59

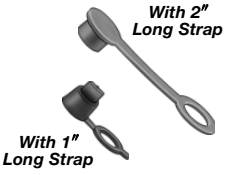

Oilers

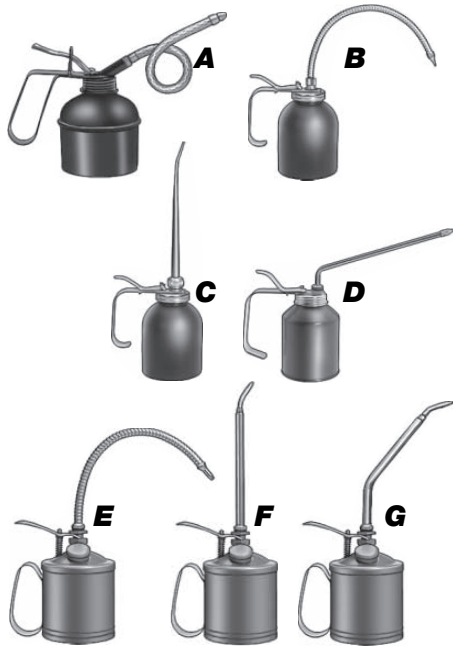

Whether you need a steady stream or just a drop of oil, these versatile oilers meet your lubricating needs. Squeeze the lever to dispense oil. Oiler bodies are steel.

Standard—*Super-flexible spouts* are made of wire-reinforced polypropylene and bend to deliver oil in any direction. They have a brass tip and M6 male threads. *Flexible spouts* are steel with a zinc tip and have 1/4″-28 male threads. *Straight-rigid* and *angled-rigid spouts* are steel with an aluminum tip. Threads are 1/4″-28 male.

Easy Fill— A separate filler cap makes refilling these oilers fast, clean, and easy. All spouts are steel and have 13/32″-24 male threads. *Flexible spouts* have a zinc tip. *Straight-rigid* and *angled-rigid spouts* have a brass tip.

	Cap., oz.	Spout	Oilers		Extra Spout	
Standard						
A	12	8″ Super Flexible	1037K21	$7.14	—	—
A	16	8″ Super Flexible	1037K24	7.00	—	—
A	24	8″ Super Flexible	1037K25	9.64	—	—
B	12	8″ Flexible	10085K26	13.58	10085K76	$3.83
B	16	8″ Flexible	10085K36	16.91	10085K76	3.83
B	32	8″ Flexible	10085K46	22.04	10085K76	3.83
C	12	8″ Straight Rigid	10085K22	13.58	10085K72	3.95
C	16	8″ Straight Rigid	10085K32	16.91	10085K72	3.95
C	32	8″ Straight Rigid	10085K42	22.04	10085K72	3.95
D	12	8″ Angled Rigid	10085K24	13.58	10085K74	4.15
D	16	8″ Angled Rigid	10085K34	16.91	10085K74	4.15
D	32	8″ Angled Rigid	10085K44	22.04	10085K74	4.15
Easy Fill						
E	16	10″ Flexible	1251K73	25.28	1251K81	3.84
E	24	12″ Flexible	1251K72	25.96	1251K82	4.09
E	32	15″ Flexible	1251K71	27.20	1251K83	4.24
F	16	7½″ Straight Rigid	1251K53	25.28	1251K84	5.16
F	24	9½″ Straight Rigid	1251K52	25.96	1251K85	5.33
F	32	11″ Straight Rigid	1251K51	27.20	1251K86	5.53
G	16	7½″ Angled Rigid	1251K63	25.28	1251K87	5.24
G	24	9½″ Angled Rigid	1251K62	25.96	1251K88	5.47
G	32	11″ Angled Rigid	1251K61	27.20	1251K89	5.67

Large-Capacity Oilers

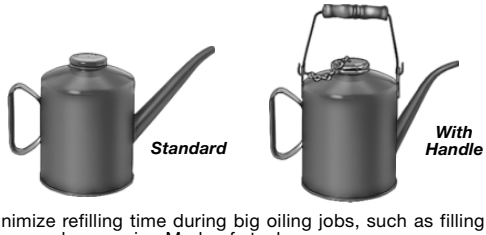

Minimize refilling time during big oiling jobs, such as filling large oil cups and reservoirs. Made of steel.

	Cap., oz.	Spout		
Standard	64	6¼″ Angled Rigid	1390K11	$49.71
With Handle	64	6¼″ Angled Rigid	1390K12	67.80

Air-Powered Easy-Lube Oilers

Connect to your shop air supply and pull the trigger to effortlessly deliver oil. Adjust the spout tip to modify the spray volume. A brass knob on the handle adjusts the spray pattern from medium to fine mist.

Made of aluminum with a brass tip. Air inlet connection is 1/4″ NPT female. Operates on 80 to 120 psi.

Cap., oz.	Spout		
32	12″ Straight Rigid	13945K41	$92.11

Economy Oilers

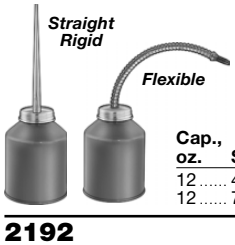

Push the bottom of these simple oilers to dispense oil with ease. Body is steel; spout is zinc-plated steel.

Flexible spout has a zinc tip.

Cap., oz.	Spout		
12	4½″ Straight Rigid	1258K71	$5.91
12	7″ Flexible	1258K72	6.09

Easy-Lube Oilers

6-oz. with Super-Flexible Spout ***6-oz. with Angled-Rigid Spout*** ***16-oz. with Flexible Spout*** ***10-oz. with Angled-Rigid Spout***

Simply squeeze the trigger to operate these oilers. Made of steel.

Standard— Deliver a single drop or solid stream of oil.

Adjustable Spray— Tighten the aluminum tip for a fine mist of oil; loosen it to deliver a solid stream.

Super-flexible spout is made of wire-reinforced polypropylene and bends in any direction. *Angled-rigid spouts* are steel. *Flexible spouts* are zinc-plated steel.

Cap., oz.	Spout		1-5	6-Up
Standard				
6	6″ Super Flexible	1245K22	$6.78	$6.16
6	6″ Flexible	1245K24	11.12	10.14
6	6″ Angled Rigid	1245K15	9.57	8.74
16	6″ Flexible	1245K26	16.70	15.29
32	6″ Angled Rigid	1245K18	19.89	18.29
Adjustable Spray				
6	5″ Angled Rigid	1238K11	14.18	13.12
10	5″ Angled Rigid	1238K12	15.16	14.04
20	6″ Angled Rigid	1238K13	20.33	18.86
Replacement Adjustable Spray Tip		1238K51	4.22	3.92

Precision Oilers

Apply lubricant in tight spaces with the push of a button. This all-aluminum oiler has a needle-like spout, convenient pocket clip, and cap. Overall length is 5⅝″.

Cap., oz.	Spout Lg.		
1.5	1½″	9044T7	$10.31

Sheet Stock Oilers

Oilers lubricate both sides of metal sheet stock before stamping or forming to extend die life and ensure high quality. Made of steel.

Oilers for up to 2½″ Wide and 4″ Wide Sheet Stock

Oiler for up to 2½″ Wide Stock

Clip these oilers directly to sheet stock; their two felt pads spread lubricant evenly. Use for sheet stock up to 0.104″ thick as well as wire. Mount either horizontally or vertically.

Oiler for sheet stock up to 2½″ wide has four 0.1″ ID tube connections.

Oiler for sheet stock up to 4″ wide has eight 0.1″ ID tube connections.

Optional reservoir is polyethylene and has eight feed points and eight 6-ft. polyurethane feed tubes with adjustable flow. Capacity is 1 gal.

Max. Sheet Stock Width	Overall Size Lg.	Wd.	Dp.		Each
2½″	5″	¾″	3″	2277K1	$23.33
4″	6½″	¾″	3″	2277K2	26.38
Optional Reservoir				2277K3	116.67

Oilers for up to 8″ Wide Sheet Stock

Two carpet-covered rollers lubricate sheet stock up to ¼″ thick. Top roller is fed by a 32-oz. reservoir with a drip tube; bottom roller picks up lubricant from a pan below.

Oiler with valve has an overflow valve in the bottom pan to prevent excess lubricant from spilling.

Optional stand extends from 24″ to 42″ high.

Replacement rollers handle oils, soluble oils, and low pH (acidic) lubricants. *Optional heavy duty rollers* work well with high pH (alkaline) lubricants. *Optional vinyl rollers* can be used to apply a very thin coating, such as vanishing oil.

Optional wipers control the amount of lubricant on sheet stock.

Overall Size Lg.	Wd.	Ht.	Oiler	Each	Oiler with Valve	Each
10½″	4½″	13¾″	1354K11	$181.59	1354K51	$212.03

Optional Stand	1354K85	Each	$176.91
Replacement Rollers	1354K41	Pair	$33.09
Optional Heavy Duty Rollers	1354K71	Pair	48.36
Optional Vinyl Rollers	1354K81	Pair	66.18
Optional Wipers	1354K31	Pair	21.64

Oil-Dispensing Guns

18 oz.

26 oz.

When you need to use oil to lubricate bearings or fittings, these guns work just like grease guns. They have a steel barrel and lever and include a coupler for standard grease fittings.

Cap., oz.	Strokes per oz.	Max. psi	Nozzle Type		
18	15	5,800	6¾″ Rigid	1879K48	$81.20
26	7	1,800	6⅝″ Rigid	1879K21	164.33
Replacement Coupler				1879K23	6.98

No-Drip Oil-Dispensing Nozzles

Without Meter Angled-Rigid Nozzle

With Meter Flexible Nozzle

A safety lock on the handle prevents spills and accidental dispensing. Use these nozzles with motor oil, gear oil, and transmission fluid. Each has a ½″ NPT female swivel inlet connection that attaches to your bulk oil delivery system. Outlet connection is ¼″ NPT female.

Nozzles with meter have an LCD that registers in pints, quarts, gallons, or liters and totalizes in gallons or liters (up to 999.99). Meter is powered by a 3.6-volt ½ AA lithium battery (included).

Nozzle Type	Without Meter Max. psi			With Meter Max. psi		
11″ Angled Rigid	2,000	2254K21	$102.00	1,000	2254K23	$489.46
14″ Flexible	2,000	2254K22	112.14	1,000	2254K24	487.24

Replacement Nozzle Tip	2254K31	$12.02
Replacement ½ AA Lithium Battery	6951K59	5.19

Oil-Removal Guns

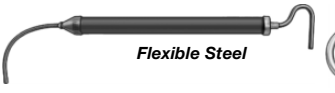

Flexible Steel

Super-Flexible Vinyl

Produce a strong suction to remove old lubricant from gear cases, transmissions, and differentials. You can also use these steel guns for transferring and adding fluid lubricants.

Cap., oz.	Nozzle Type		
12	10″ Flexible Steel	1050K11	$21.22
16	12″ Super-Flexible Vinyl	1061K11	10.25

Oil-Dispensing Pumps

Cover Pump (Container Not Included)

Self-Contained Pump

Dispense lubricants right at your job site with these mobile, easy-to-fill pumps. Pumps are perfect for neat and fast refilling of transmissions, differentials, and gear cases. All components are steel. Pump head and lid are red powder-coated; handle is zinc plated.

Cover pump dispenses oil and clamps directly onto a 5-gal. container (not included). It includes a cover assembly with a 5-ft. rubber delivery hose with a curved nozzle. For grease containers, see pages 1707-1708.

Self-contained pump dispenses grease rated up to NLGI No. 3 and oil. Includes a 3.7-gal. capacity steel container and a 5½-ft. nitrile delivery hose with a curved nozzle. It is 17⅛″ high and has a 7⁵⁄₁₆″ wide base.

Pump Style	Output, oz./stroke	Container		
Cover	2.6	No	1318K16	$63.76
Self Contained	1.0	Yes	1002K11	479.60

Air-Powered Oil-Dispensing Pumps

Drum Not Included

Pneumatic power lets you quickly and conveniently dispense motor oil, gear oil, and transmission fluid from 55-gal. drums (not included). Pump is made of cast aluminum and polyurethane. It includes an air regulator and gauge, 6-ft. long Buna-N rubber air hose with ⅜″ NPT male connection, 6-ft. long nitrile oil hose with ½″ NPT male connection, and a bung adapter with a 2″ NPT male connection for mounting on a drum.

Air inlet: ⅜″ NPT female. Air inlet pressure: 40-180 psi. Air volume @ 100 psi: 8.5 scfm. Oil outlet: ½″ NPT female. Maximum oil pressure: 540 psi. Flow rate: 2 gpm.

For drums, see pages 1712-1713.

Fits Container		
55-gal. Drum	2332K5	$952.36

Lubrication Manifolds

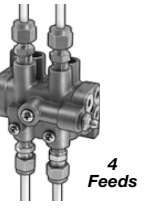

4 Feeds

Simultaneously deliver equal lubrication to multiple points. Connect the included tubing to the lubrication points for access to remote and hard-to-reach areas. Manifolds work with grease rated up to NLGI No. 2 and oil.

Inlet and outlet feeds are ⅛″ NPT female. Tube fittings are ¼″ and made of brass. Manifolds are corrosion-resistant die cast aluminum alloy. Furnished with 6 ft. of nylon tubing and steel tube clamps with self-tapping mounting screws.

No. of Feeds	Overall Size Ht.	Wd.	Dp.	Max. psi		
4	1.9″	3.1″	2.3″	2,500	9024T1	$103.28
6	1.9″	3.3″	2.3″	2,500	9024T2	120.68
8	1.9″	3.3″	2.3″	2,500	9024T3	138.10
12	2.4″	3.3″	2.4″	2,500	9024T4	205.80

About Oil-Hole Covers and Oil Cups

Oil-hole covers and oil cups are convenient and dependable ways to apply oil to parts in hard-to-reach areas. Install them on machinery, motors, bearings, blocks, and all kinds of moving parts. They have a self-closing hinged cover (unless noted) that keeps contaminants out of your oil and equipment. ***Oil-hole covers*** do not hold oil. Any oil poured in the cover passes into the part to be lubricated. ***Oil cups*** have a reservoir that holds oil. Oil that is poured in the cup is held in the reservoir and passes through gradually. For this reason, we list a capacity for all of our oil cups. The advantage of oil cups is that they decrease the frequency of manual lubrication.

Choose from drive-in and threaded styles. ***Drive-in*** covers have plain walls and are designed to be lightly tapped into a hole. ***Threaded*** covers and cups provide a more secure fit. There are several different thread types: NPT is National Pipe Taper; UNF is Unified National Fine; and UNEF is Unified National Extra Fine.

Installation clearance is a measurement that represents the overall diameter of the path of a cover or cup as you rotate it into place on your machinery.

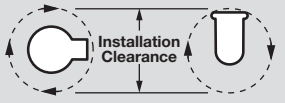

Straight (Top View) *Elbow (Front View)*

Oil-Hole Covers

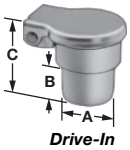

Drive-In

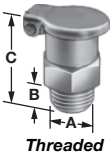

Threaded

Made of zinc-plated steel, unless noted. Connections are male.
Drive-in covers have a tapered shank that controls insertion depth.

(A)	(B)	(C)	Installation Clearance		1-9	10-Up
Drive-In						
3/16″	7/32″	15/32″	3/4″	1232K31	$1.69	$1.52
1/4″	5/32″	13/32″	11/16″	1231K1	4.04	3.64
1/4″	1/4″	7/16″	3/4″	1232K12	3.71	3.34
5/16″	7/32″	1/2″	3/4″	1231K2	4.00	3.60
3/8″	7/32″	17/32″	25/32″	1231K3	5.00	4.50
7/16″	5/16″	11/16″	29/32″	1231K4	6.67	6.00
1/2″	3/8″	13/16″	17/32″	1232K15	4.96	4.46
3/4″	9/16″	13/16″	113/16″	1232K17	8.22	7.40
7/8″	1/2″	11/16″	113/16″	1232K18	7.69	6.92
1″	19/32″	15/16″	23/32″	1232K19	10.91	9.82
11/4″	13/16″	111/16″	27/16″	1232K21	21.67	19.50
6 mm	6 mm	12 mm	16 mm	1357K41●	3.49	3.14
7 mm	6 mm	14 mm	19 mm	1357K42●	3.60	3.24
Threaded						
10-32 UNF	3/16″	9/16″	3/4″	1229K12	5.04	4.54
1/8″-27 NPT	1/4″	13/16″	13/16″	1229K18	6.78	6.10
1/8″-27 NPT	9/32″	7/8″	29/32″	1229K19	7.29	6.56
1/8″-27 NPT	13/32″	15/32″	17/32″	1229K22	6.53	5.88
1/4″-32 UNEF	5/32″	9/16″	11/16″	1229K11	4.91	4.42
1/4″-32 UNEF	3/16″	9/16″	3/4″	1229K13	8.02	7.22
1/4″-32 UNEF	1/4″	3/4″	3/4″	1229K15	5.42	4.88
1/4″-18 NPT	13/32″	15/32″	17/32″	1229K23	7.89	7.10
5/16″-32 UNEF	1/4″	27/32″	13/16″	1229K28	6.29	5.66
3/8″-18 NPT	3/8″	19/32″	17/32″	1229K26	7.60	6.84
1/2″-14 NPT	9/16″	17/16″	17/16″	1229K27	8.11	7.30
M5×0.8	4 mm	15 mm	16 mm	1319K51■	7.47	6.72
M6×1	5 mm	15 mm	19 mm	1319K52■	8.93	8.04
M8×1.25	5 mm	16.5 mm	19 mm	1319K53■	8.91	8.02

●Nickel-plated steel. ■Nickel-plated brass.

Easy-Fill Oil-Hole Covers

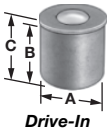

Drive-In

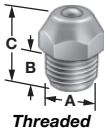

Threaded

Fill your equipment with oil without lifting a hinged cover. These low-profile covers have a self-closing ball valve. When you're ready to fill, the pressure of your oil container easily depresses the ball.

Drive-in covers are zinc-plated steel. ***Threaded*** cover is zinc-plated brass. Connection is male.

(A)	(B)	(C)	Installation Clearance		1-9	10-Up
Drive-In						
3/16″	1/4″	9/32″	7/32″	1214K1	$1.64	$1.48
1/4″	9/32″	5/16″	9/32″	1214K2	1.58	1.42
5/16″	5/16″	3/8″	11/32″	1214K3	2.11	1.90
3/8″	3/8″	15/32″	13/32″	1214K4	3.42	3.08
7/16″	15/32″	17/32″	15/32″	1214K5	3.98	3.58
1/2″	17/32″	9/16″	17/32″	1214K6	5.38	4.84
Threaded						
1/4″-32 UNEF	7/32″	7/16″	3/8″	1211K1	2.73	2.46

Elbow-Style Oil-Hole Covers

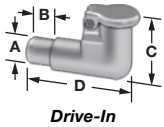

Drive-In

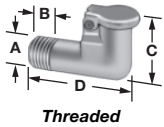

Threaded

Choose elbow-style covers for side-mounted applications and for lubricating equipment where you don't have enough vertical clearance for straight covers. All covers are die cast zinc.

Threaded covers have male connections.

(A)	(B)	(C)	(D)	Install. Clear.		1-9	10-Up
Drive-In							
3/16″	5/32″	19/32″	3/4″	1/4″	1239K17	$12.84	$11.56
1/4″	1/4″	111/16″	1″	5/16″	1239K11	8.67	7.80
5/16″	1/4″	25/32″	7/8″	13/32″	1239K15	11.29	10.16
3/8″	9/32″	25/32″	13/32″	13/32″	1239K19	19.07	17.16
Threaded							
10-32 UNF	5/32″	19/32″	3/4″	11/16″	1227K11	9.16	8.24
1/8″-27 NPT	1/4″	25/32″	13/32″	15/16″	1227K16	12.07	10.86
1/4″-32 UNEF	3/16″	19/32″	3/4″	11/16″	1227K12	7.80	7.02
5/16″-32 UNEF	3/16″	25/32″	13/32″	15/16″	1227K21	14.40	12.96
3/8″-24 UNF	1/4″	25/32″	13/32″	15/16″	1227K15	15.91	14.32

Oil Cups

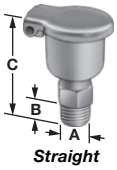

Straight

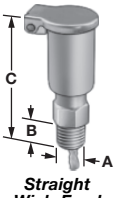

Straight Wick-Feed

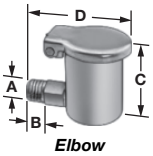

Elbow

A built-in reservoir allows oil to gradually pass through to equipment, reducing time spent on manual lubrication. Cups are zinc-plated steel and have NPT male connections.

Straight wick-feed oil cups protect bearings from dust and foreign matter. The wick extends through the threaded connection of the cup and keeps the bearing moist, even after the oil cup is drained.

Elbow style is for side-mounted applications and where vertical space is limited.

(A)	(B)	(C)	(D)	Install. Clear.	Cap., oz.		1-9	10-Up
Straight								
1/8″-27	5/16″	1 1/2″	—	17/32″	1/16	1230K11	$8.58	$7.72
1/8″-27	5/16″	121/32″	—	17/16″	1/8	1230K12	7.73	6.96
1/8″-27	5/16″	129/32″	—	113/16″	5/16	1230K13	8.20	7.38
1/4″-18	3/8″	2″	—	113/16″	5/16	1230K14	13.82	12.44
3/8″-18	3/8″	29/16″	—	27/16″	15/16	1230K16	27.91	25.12
Straight Wick-Feed								
1/8″-27	11/32″	25/32″	—	17/16″	1/8	1221K13	31.42	28.28
1/8″-27	3/8″	2″	—	17/32″	1/16	1221K12	13.16	11.84
1/8″-27	3/8″	213/32″	—	2″	5/8	1221K26	19.68	17.71
1/4″-18	3/8″	215/32″	—	2″	5/8	1221K15	21.18	19.06
Elbow								
1/8″-27	5/16″	15/16″	111/32″	119/32″	1/8	1237K11	9.96	8.96
1/8″-27	5/16″	17/16″	111/16″	25/8″	1/2	1237K13	11.18	10.06
1/4″-18	7/16″	17/16″	115/16″	21/2″	1/2	1237K14	10.42	9.38
3/8″-18	7/16″	21/16″	213/32″	4″	1 7/8	1237K17	33.73	30.36
1/2″-14	9/16″	21/16″	3 1/2″	4″	3 3/4	1237K18	64.27	57.84

About Oil Reservoirs

Oil reservoirs serve as a central dispenser for lubrication systems.

Adjustable-Flow Oil Reservoirs— Adjust the oil flow from a drop to a steady stream. Some of these oil reservoirs have special features such as multiple outlets, brushes for chain lubrication, and a solenoid to start oil flow when equipment starts running and to stop oil flow when equipment stops.

Constant-Level Oil Reservoirs— Used primarily on equipment that requires a constant supply or bath of oil.

Outlet Connections— Many of our reservoirs and sight-flow needle valves have outlets with NPTF or PTF pipe threads (also known as Dryseal). Connections prevent leaks and ensure pressure-tight joints without a lubricant or sealer. They connect to NPT threads but may lose some of their leakproof qualities.

Oil Reservoirs

Reservoirs have aluminum top and bottom plates around a clear plastic bowl and a self-closing fill cap. When using these reservoirs in flow-regulating applications, they require a sight-flow needle valve (sold separately on page 2198). Maximum temperature is 140° F.

Cap., oz.	Bowl Dia.	1/8" NPTF Male Outlet O'all Ht.			1/4" NPTF Male Outlet O'all Ht.		
1	1 1/2"	3"	1169K11	$16.72	3 3/16"	1169K13	$17.78
1 3/8	1 3/4"	2 15/16"	1169K14	18.58	2 15/16"	1169K15	20.79
1 3/4	2"	3 1/8"	1169K16	19.75	3 3/8"	1169K12	21.99
2 1/2	2"	3 1/2"	1169K17	21.92	3 3/4"	1169K18	22.83
5	2 1/2"	4 1/8"	1169K19	23.24	4 5/16"	1169K21	23.24
8	2 1/2"	5 3/16"	1169K23	41.77	5 3/8"	1169K24	36.69
9	3"	5 3/8"	1169K27	48.22	5 1/2"	1169K28	44.33

Cap., oz.	Bowl Dia.	3/8" NPTF Male Outlet O'all Ht.			1/2" NPTF Male Outlet O'all Ht.		
12	3"	6 7/16"	1169K31	$43.36	6 5/8"	1169K32	$43.92
16	3 1/2"	6 9/16"	1169K35	52.12	6 5/8"	1169K36	52.12
32	4 1/4"	7 15/16"	1169K41	61.53	8 1/16"	1169K42	61.53
64	5 1/2"	9 15/16"	1169K43	81.07	10 1/8"	1169K44	82.27
128	5 1/2"	14 15/16"	1169K45	119.04	15 1/4"	1169K46	120.33

Pressure-Equalizing Oil Reservoirs

A venting tube equalizes pressure between the reservoir and bearing so you can lubricate non-vented, closed, and sealed bearing housings while keeping out contaminants. A ball check valve below the sight chamber prevents sudden back pressure from affecting flow. Turn on and off using the toggle switch on top of the unit.

Reservoirs have aluminum top and bottom plates around a clear acrylic bowl and include a fill cap. When using them in flow-regulating applications, they require a sight-flow needle valve (sold separately on page 2198). Maximum temperature is 160° F.

Cap., oz.	Bowl Dia.	O'all Ht.	Outlet, NPTF male		
1 1/2	1 3/4"	5 5/8"	1/4"	1157K21	$66.04
2 1/2	2"	5 15/16"	3/8"	1157K22	72.29
5	2 1/2"	6 9/16"	3/8"	1157K24	74.92
9	3"	7 13/16"	1/2"	1157K25	94.19
16	3 1/2"	8 13/16"	1/2"	1157K26	104.12

High-Temperature Oil Reservoirs

Made of polycarbonate, these reservoirs withstand temperatures up to 225° F. They include a self-closing fill cap. When used in flow-regulating applications, they require a sight-flow needle valve (sold separately on page 2198).

Reservoirs ***with filter*** have an aluminum filter with Type 304 stainless steel wire cloth. Filter is 100 mesh (100 openings per linear inch of mesh) and removable. For information about mesh openings and particle filtration, see page 390.

Cap., oz.	Bowl Dia.	O'all Ht.	Outlet, NPT male	Without Filter		With Filter	
2 1/2	2"	4 7/16"	3/8"	1358K21	$24.60	1358K11	$36.71
5	2 7/8"	4 1/2"	1/2"	1358K22	24.81	1358K12	37.46
9	2 7/8"	5 3/4"	1/2"	1358K23	29.52	1358K13	41.58
16	3 5/8"	6 13/16"	1/2"	1358K24	35.63	1358K14	42.34
32	3 5/8"	10 3/16"	1/2"	1358K25	51.98	1358K15	69.66
64	5"	11 1/16"	1/2"	1358K26	57.97	1358K16	54.29

High-Temperature Large-Capacity Oil Reservoirs

5-Gallon Capacity

A high maximum temperature of 250° F combined with large capacity makes these reservoirs suitable for circulating oil systems and hydraulic power units.

Reservoirs are heavy duty steel. They have a 40-micron filter built into their removable fill/breather cap and include a liquid-level gauge. When using them in flow-regulating applications, they require a sight-flow needle valve (sold separately on page 2198). Outlet is 1/2" NPT female. Mounting fasteners not included.

1- and ***2-gallon reservoirs*** have four 11/32" dia. mounting holes. ***5-*** and ***10-gallon reservoirs*** contain a baffle that prevents surging or sloshing of return fluid. They have four 17/32" dia. mounting holes.

Cap., gal.	Overall Size Ht.	Wd.	Dp.	No. of Outlets/ Return Lines	Return, NPT female		
1	10"	6"	7 1/2"	1/_	—	1149K11	$278.26
2	10"	10"	7 1/2"	1/1	1/2"	1149K14	332.86
5	11 11/16"	16"	10"	2/2	1"	1149K16	413.95
10	15 3/16"	20"	12"	2/2	1"	1149K18	477.90

Adjustable-Flow Oil Reservoirs

The precision needle valve on top of these reservoirs allows you to adjust the flow rate using the attached toggle switch. Reservoirs have aluminum top and bottom plates around either a clear plastic or glass bowl and include a vented fill cap. A sight glass allows you to view the flow. Maximum temperature is 160° F for the plastic bowl and 250° F for the glass bowl.

Direct Mount— Thread directly into bearing housings, pumps, and other machinery.

Remote Mount— Connect a pipe or tube fitting to reach remote or isolated equipment. Furnished with a nut and washer for mounting.

Direct Mount

Cap., oz.	Bowl Dia.	O'all Ht.	Outlet, NPTF male	Plastic Bowl		Glass Bowl	
5/8	1 1/2"	4 9/16"	1/8"	1167K91	$22.82	1167K51	$29.62
1	1 1/2"	5 3/16"	1/4"	1167K92	24.87	1167K52	30.42
1 1/2	1 3/4"	5 3/8"	1/4"	1167K94	25.06	1167K53	34.05
2 1/2	2"	5 3/4"	3/8"	1167K96	27.93	1167K54	36.66
5	2 1/2"	6 3/8"	3/8"	1167K98	30.31	1167K56	43.58
9	3"	7 5/8"	3/8"	1167K11	45.89	1167K21	62.15
9	3"	7 13/16"	1/2"	1167K12	46.25	1167K22	62.15
12	3"	8 15/16"	3/8"	1167K13	47.14	—	—
12	3"	9 1/8"	1/2"	1167K14	50.56	—	—
16	3 1/2"	8 15/16"	3/8"	1167K15	51.01	1167K23	81.59
16	3 1/2"	9 1/8"	1/2"	1167K16	52.00	1167K24	83.14
32	4 1/4"	10 1/8"	1/2"	1167K17	75.84	1167K25	123.73
64	5 1/2"	12 1/16"	1/2"	1167K18	107.30	1167K26	169.12
128	5 1/2"	17 1/16"	1/2"	1167K19	143.86	—	—

Replacement Sight Glass 1167K1 1.82

Remote Mount

Cap., oz.	Bowl Dia.	O'all Ht.	Outlet, NPTF female	Mounting Threads, UNF male	Plastic Bowl	
5/8	1 1/2"	4 3/16"	1/8"	9/16"-18	1175K41	$34.30
1	1 1/2"	5 5/16"	1/8"	9/16"-18	1175K42	33.17
1 1/2	1 3/4"	5 7/16"	1/8"	9/16"-18	1175K43	36.04
2 1/2	2"	5 3/4"	1/8"	9/16"-18	1175K44	38.30
5	2 1/2"	6 3/8"	1/8"	9/16"-18	1175K45	42.59
9	3"	7"	1/8"	5/8"-18	1175K11	54.68
12	3"	8 3/8"	1/8"	5/8"-18	1175K49	59.28
16	3 1/2"	8 15/16"	1/8"	5/8"-18	1175K12	58.06
32	4 1/4"	9 3/8"	1/8"	5/8"-18	1175K13	83.90
64	5 1/2"	12 3/16"	1/8"	5/8"-18	1175K14	114.66
128	5 1/2"	16 5/16"	1/8"	5/8"-18	1175K15	159.86

For information about oil reservoirs and threaded connections, see page 2195.

Electric Adjustable-Flow Oil Reservoirs

A solenoid valve is closed unless energized (normally closed) and dispenses lubricant only while equipment is running so there's no need to manually control flow. The sight-flow needle valve controls flow rate. Reservoirs have aluminum top and bottom plates around a clear plastic bowl, and a vented cap. Valve has a 1/4″ OD tube outlet. Mounting threads are 5/8″-18 UNF male. Maximum temperature is 160° F.

120 VAC reservoirs draw 0.1 amps.

24 VDC reservoirs draw 0.4 amps.

Cap., oz.	Bowl Dia.	O'all Ht.	120 VAC		24 VDC	
2 1/2	2″	5 9/16″	1070K21	$144.64	1070K41	$144.64
5	2 1/2″	6 1/16″	1070K22	140.70	1070K42	140.70
9	3″	6 7/8″	1070K23	141.84	1070K43	141.84
12	3″	7 7/8″	1070K26	144.90	1070K46	144.90
16	3 1/2″	7 7/8″	1070K24	147.72	1070K44	147.72
32	4 1/4″	9 5/16″	1070K25	165.52	1070K45	165.52
64	5 1/2″	11 5/16″	1070K27	188.55	1070K47	188.55
128	5 1/2″	16 5/16″	1070K28	265.49	1070K48	265.49

Add-On Multiple-Outlet Adjustable-Flow Oil Reservoirs

Additional Valve

Customize these reservoirs to the number of outlets you need. Each includes two adjustable sight-flow needle valves to control flow rate, and will accommodate up to 22 additional valves (sold separately). Sight-flow valves interlock and seal with one another to form a multiple-outlet lubrication system. Reservoirs include a fill cap, vented sight, and clear plastic bowl. Turn flow on and off with the manual toggle switch at the bottom of the reservoir. Each valve has a 1/4″ OD tube outlet. Mounting threads are 5/8″-18 UNF male. Maximum temperature is 225° F.

Cap., oz.	Bowl Dia.	O'all Ht.		
9	2 7/8″	9 1/16″	1328K42	$88.45
16	3 5/8″	10 1/16″	1328K45	97.80
32	3 5/8″	13 7/16″	1328K46	110.62
64	5″	14 1/8″	1328K47	142.15
Additional Valve			1328K57	18.96

Multiple-Outlet Adjustable-Flow Oil Reservoirs

Manual Toggle Switch with 2 Outlets

Electric with 4 Outlets

Serve multiple lubrication points from a single location with these reservoirs. They have aluminum top and bottom plates around a clear plastic bowl, a vented fill cap, and an adjustable sight-flow needle valve to control flow rate. Needle valve has a 1/4″ OD tube outlet. Mounting threads are 5/8″-18 UNF male. Maximum temperature is 140° F.

Manual Toggle Switch— Turn on and off with the switch on top of the reservoir. **To Order:** Please specify number of outlets. **Also Available:** Reservoirs with up to 30 outlets. Please ask for 1067K999 and specify number of outlets and capacity.

Electric— A solenoid valve is closed unless energized (normally closed) and dispenses lubricant only while equipment is running so there's no need to manually control flow. **To Order:** Please specify number of outlets and 120 VAC or 24 VDC (except 1065K5 with three outlets, which is AC only). 120 VAC reservoirs draw 0.1 amps; 24 VDC reservoirs draw 0.4 amps. **Also Available:** Reservoirs with up to 30 outlets and other voltages. Please ask for 1065K999 and specify number of outlets, capacity, and voltage.

			MANUAL TOGGLE SWITCH					ELECTRIC				
Cap., oz.	Bowl Dia.	O'all Ht.		2 Outlets (4 3/8″ Wd.)	3 Outlets (5″ Wd.)	4 Outlets (5 7/8″ Wd.)	6 Outlets (7 3/8″ Wd.)	O'all Ht.		2 Outlets (4 3/8″ Wd.)	3 Outlets (5″ Wd.)	4 Outlets (5 7/8″ Wd.)	6 Outlets (7 3/8″ Wd.)
9	3″	9 13/16″	1067K1	$129.71	$158.89	$175.27	$236.77	7 5/16″	1065K1	$196.77	———	———	$316.50
16	3 1/2″	10 13/16″	1067K3	139.44	168.81	172.30	253.69	8 5/16″	1065K3	198.10	$223.80	$238.23	289.61
32	4 1/4″	12″	1067K4	157.66	179.99	194.73	268.18	9 3/4″	1065K4	222.05	251.75	266.99	328.42
64	5 1/2″	14 1/16″	1067K5	196.05	———	239.36	269.49	11 3/4″	1065K5	265.02	292.29	———	365.08
128	5 1/2″	19 1/16″	1067K6	240.69	268.85	———	315.22	16 3/4″	1065K6	315.94	338.15	344.39	399.26

Even-Coat Adjustable-Flow Oil Reservoirs

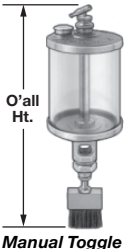

Manual Toggle Switch

Electric

The flat nylon brush attached to these reservoirs ensures even oil application. Reservoirs have aluminum top and bottom plates around a clear plastic bowl, and a vented fill cap. Brush is 1 1/2″ wide with 1 5/32″ long bristles. Mounting threads are 5/8″-18 UNF male, unless noted. Max. temperature is 140° F.

Manual Toggle Switch— Turn on and off with the switch on top of the reservoir. A sight glass allows you to view the flow.

Electric— Flow is controlled by a solenoid valve that is closed unless energized (normally closed), eliminating the need to manually control flow. Flow rate is adjusted with a sight-flow needle valve. 120 VAC draws 0.1 amps; 24 VDC draws 0.4 amps.

Cap., oz.	Bowl Dia.	Manual Toggle Switch O'all Ht.			Electric O'all Ht.	120 VAC		24 VDC	
2 1/2	2″	8 3/8″	1164K19●	$49.41	8″	1161K29	$153.84	1161K49	$153.84
5	2 1/2″	8 15/16″	1164K17●	52.32	8 1/2″	1161K27	150.86	1161K47	150.86
9	3″	10 3/16″	1164K11	56.50	9 5/16″	1161K21	152.72	1161K41	152.72
12	3″	11 9/16″	1164K12	62.35	10 5/16″	1161K22	164.28	1161K42	164.28
16	3 1/2″	11 9/16″	1164K13	63.82	10 5/16″	1161K23	153.25	1161K43	153.25
32	4 1/4″	12 9/16″	1164K14	93.03	11 3/4″	1161K24	175.68	1161K44	175.68

● 1/2″-20 male mounting threads.

Constant-Level Oil Reservoirs

Vented System With Optional Wire Guard

Closed System

When oil falls below the set level, these reservoirs replenish the supply for proper lubrication. Great for use in a pump bearing housing, gearbox, and other oil sump applications. Body is die cast zinc. Connections are 1/4″ NPT female. Max. temperature is 250° F for the glass bowl and 165° F for the clear plastic bowl.

Vented-system reservoirs have multiple air vents for pressure balancing. ***Closed-system*** reservoirs don't require venting, reducing exposure to contaminants.

Cap., oz.	Bowl Dia.	O'all Ht.	Reservoirs		Replacement Bowls		Optional Wire Guards	
Vented System with Glass Bowl								
2 1/2	2 1/2″	4 1/4″	1181K11	$37.56	1181K51	$24.71	1181K41	$21.44
4	2 11/16″	5 3/4″	1181K12	47.08	1181K52	24.23	1181K42	22.76
8	3 3/16″	6 11/16″	1181K13	51.66	1181K53	28.49	1181K43	25.04
16	4 1/8″	7 9/16″	1181K14	59.67	1181K54	38.16	1181K44	25.74
Vented System with Plastic Bowl								
4	2 5/16″	6 3/16″	1182K11	43.98	1182K61	31.31	———	———
8	2 5/8″	7 5/16″	1182K12	47.08	1182K62	34.56	———	———
Closed System with Glass Bowl								
4	2 11/16″	7 13/16″	1181K21	87.96	1181K71	46.45	1181K42	22.76
8	3 3/16″	8 3/4″	1181K22	92.66	1181K72	46.45	1181K43	25.04
16	4 1/8″	9 5/8″	1181K23	97.24	1181K73	49.84	1181K44	25.74

For information about oil reservoirs and threaded connections, see page 2195.

Air-Powered Oil Reservoirs

Quickly and conveniently apply oil without the work that manual pumps require. These air-powered reservoirs dispense lubricant through a spray valve (sold separately). Air pressurizes the lubricant and atomizes the spray.

Reservoirs have dual regulators that control the pressure of the lubricant and the atomized spray. They have a clear acrylic bowl with aluminum top and bottom plates, and include a 40-micron filter to prevent valve blockage. Air inlet and outlets are 1/4″-18 NPTF female. Outlet is 1/8″-27 NPTF female. Maximum inlet air pressure is 125 psi, and maximum regulated air and fluid pressure is 30 psi. Maximum temperature is 140° F. Tubing and tube fittings are not included.

Reservoirs

Cap., oz.	O'all Size Ht.	Wd.	Dp.		
64	14 1/4″	5 13/16″	5 13/16″	12745K52	$353.12
128	19 1/4″	5 13/16″	5 13/16″	12745K54	377.92
256	32 1/4″	5 13/16″	5 13/16″	12745K56	488.89
Replacement 40-Micron Filter				12745K74	9.35

Spray Valves

Flat Pattern

Round Pattern

Valves have an aluminum body and a brass nozzle. Air and liquid inlets are 1/8″-27 NPTF female.

	Flat Pattern		Round Pattern	
Spray Valve	12745K71	$85.22	12745K72	$85.22

Lubrication and Coating Brushes

In addition to lubricants, these brushes can also apply paint, sealers, and coatings. They include a feed tube that extends into the 1″ long bristles. Maximum temperature is 400° F for brushes with horsehair bristles and 250° F for brushes with nylon bristles. Brushes have a 1/8″-27 NPS female connection.

Standard—Brush coats wide surfaces uniformly.

Precision—Tube extends farther into the brush for a more controlled, precise application.

Brush Dia.	O'all Ht.	Bristle Material		
Standard				
5/8″	1 7/8″	Horsehair	7412T32	$5.63
5/8″	1 7/8″	Nylon	7412T33	5.63
1 1/8″	1 7/8″	Horsehair	7412T41	15.13
1 1/8″	1 7/8″	Nylon	7412T42	15.36
Precision				
1/2″	1 7/8″	Horsehair	7412T12	6.97
1/2″	1 7/8″	Nylon	7412T14	7.00

Rotating Lubrication Brushes

Without Valve

With Valve

As chain or equipment moves, these brushes rotate to lubricate and clean at the same speed.

Brushes have a steel bracket with a 5/16″ dia. hole for mounting (brushes with valve include mounting fasteners). Oil flows to the brush via a 1/4″ OD tube inlet connection. Maximum temperature is 250° F for nylon brushes and 400° F for Type 304 stainless steel brushes.

Without Valve—Inlet connection is on top.

With Valve—Fine tune flow. Valve is brass with a 5/16″-18 UNC male mounting stud and a side inlet connection.

Replacement brush inserts come in packs of 2.

Bristle Material	Brush Dia.	Wd.	O'all Ht.	Brushes	Each	Repl. Brush Inserts	Pkg.
Without Valve							
Nylon	3″	3/4″	4 3/4″	1178K1	$118.18	1178K11	$38.24
Stainless Steel	3″	3/4″	4 3/4″	1178K2	146.56	1178K25	77.98
With Valve							
Nylon	3″	3/4″	5″	1178K3	157.22	1178K11	38.24
Stainless Steel	3″	3/4″	5″	1178K4	193.72	1178K25	77.98

Lubrication Brushes

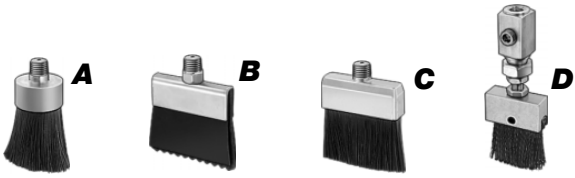

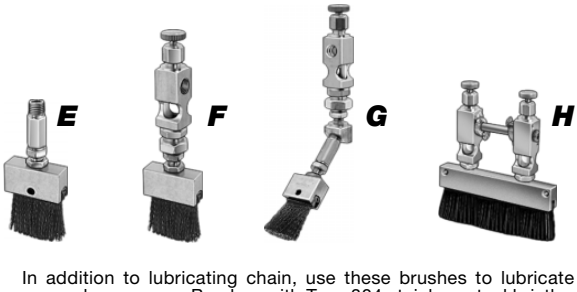

In addition to lubricating chain, use these brushes to lubricate gears and conveyors. Brushes with Type 304 stainless steel bristles provide excellent cleaning capability in harsh environments and longer life.

(A) Standard Brushes—Bristles are 1 5/16″ long. Housing is zinc. Maximum temperature is 160° F.

(B) Brushes with No-Drip Pad—A neoprene cover over a 5/8″ long felt pad provides even lubrication coverage without dripping. Housing is zinc. Maximum temperature is 200° F.

(C) Brushes with Internal Reservoir—An internal reservoir directs lubricant flow to the interior of the brush for even distribution. Bristles are 1 1/4″ long. Housing is zinc. Maximum temperature is 160° F.

(D&E) Brushes for Remote Installation—Designed for applications where flow can't be adjusted at the point of lubrication. To adjust flow, use with an adjustable oil reservoir or with a sight-flow needle valve. Brushes have 1/2″-20 UNF male mounting threads (unless noted) and 1 1/8″ long bristles. Housing is aluminum. Maximum temperature is 250° F. *Replacement brush inserts* are a strip of bristles that fit in your existing brush housing.

(F-H) Brushes with Sight-Flow Valve—Turn the valve wheel to adjust flow. Choose straight for chains and equipment travelling horizontally and 45° angle for chains and equipment travelling vertically. Brushes have 1/2″-20 UNF male mounting threads (unless noted) and 1 1/8″ long bristles. Housing and valves are aluminum. Maximum temperature is 250° F. *Replacement brush inserts* are a strip of bristles that fit in your existing brush housing.

Brush Wd.	O'all Ht.	Bristle Material	Brushes		Repl. Brush Insert	
Standard Brushes						
(A) Straight with 1/8″ NPT Male Oil Connection						
5/8″	2 5/16″	Nylon	1166K11	$19.82	____	____
1″	2 5/16″	Nylon	1166K21	28.99	____	____
1″	2 5/16″	Stainless Steel	1166K22	54.74	____	____
Brushes with No-Drip Pad						
(B) Straight with 1/8″ NPT Male Oil Connection						
1 1/4″	2 5/16″	Neoprene Pad	1184K1	26.65	____	____
2″	2 5/16″	Neoprene Pad	1184K2	30.24	____	____
Brushes with Internal Reservoir						
(C) Straight with 1/8″ NPT Male Oil Connection						
2″	2 5/16″	Nylon	1171K21	33.71	____	____
2″	2 5/16″	Stainless Steel	1171K22	74.07	____	____
Brushes for Remote Installation						
(D) Straight with 1/8″ PTF Female Oil Connection						
1/2″	4 1/4″	Nylon	1151K51	28.30	____	____
1 1/2″	4 1/4″	Nylon	1151K54	26.36	1153K14	$7.04
2 1/4″	4 1/4″	Nylon	1151K55	26.94	1153K15	8.36
(E) Straight with 1/8″ NPTF Male Oil Connection						
1 1/2″	3 5/8″	Nylon	1151K64▲	25.59	1153K14	7.04
2 1/4″	3 5/8″	Nylon	1151K65▲	27.51	1153K15	8.36
Brushes with Sight-Flow Valve						
(F) Straight with 1/8″ NPTF Female Oil Connection						
1″	5 3/4″	Nylon	1151K13	39.21	1153K13	5.50
1 1/2″	5 3/4″	Nylon	1151K14	41.59	1153K14	7.04
2 1/4″	5 5/16″	Nylon	1151K16★	46.16	1153K15	8.36
(G) 45° Angle with 1/8″ NPTF Female Oil Connection						
1″	7 11/16″	Nylon	1151K33	54.17	1153K13	5.50
(H) Straight with 1/8″ PTF Female Oil Connection						
4 1/2″	5 5/16″	Nylon	1151K17▲	92.70	1153K15■	8.36

▲ Do not have mounting threads.
★ PTF female oil connection. Does not have mounting threads.
■ Two required.

Sight-Flow Needle Valves

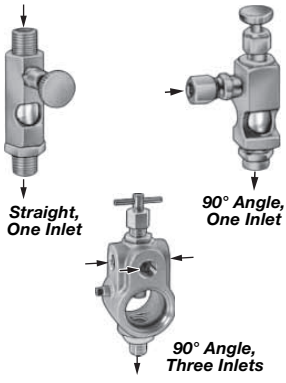

Install these gravity-flow valves inline so you can check and adjust flow rate. A glass window allows you to view the flow. Maximum pressure is 125 psi.

One- and ***two-inlet*** valves have a knurled knob that enables smooth, accurate flow adjustment. Temperature range is –30° to +250° F. *Straight* valves are brass. *90° angle* valves are aluminum.

Three-inlet valves have a T-handle that adjusts flow rate. Temperature range is –15° to +225° F. Made of gold-anodized aluminum.

Inlet	Outlet	O'all Ht.		
Straight with One Inlet— *NPTF threads*				
1/8″ Female	1/8″ Female	2 23/32″	**1143K13**	$28.82
1/8″ Male	1/8″ Male	3 1/32″	**1143K11**	27.44
1/4″ Female	1/4″ Female	2 31/32″	**1143K14**	26.11
1/4″ Male	1/4″ Male	3 13/32″	**1143K12**	28.82
3/8″ Female	3/8″ Female	3 1/4″	**1143K16**	42.35
3/8″ Male	3/8″ Male	3 9/16″	**1143K15**	40.85
1/2″ Female	1/2″ Female	4 5/8″	**1143K18**	55.69
1/2″ Male	1/2″ Male	3 15/16″	**1143K17**	50.52
90° Angle with One Inlet— *PTF threads*				
1/8″ Male	1/8″ Female	2 15/16″	**1137K3**	21.78
1/8″ Female	1/8″ Female	2 15/16″	**1137K22**	21.57

Inlet	Outlet	O'all Ht.		
90° Angle with One Inlet— *NPTF threads*				
1/4″ Male	1/4″ Tube	3 3/8″	**1137K29**	$28.76
1/4″ Tube	1/8″ Male	3 1/8″	**1137K5**	21.90
90° Angle with Two Inlets— *PTF threads*				
1/8″ Female	1/8″ Female	2 15/16″	**1137K4**	21.57
90° Angle with Two Inlets— *NPTF threads*				
1/4″ Female	1/4″ Female	3 21/32″	**1137K12**	40.35
90° Angle with Three Inlets— *NPT threads*				
3/8″ Female	3/8″ Male	6 11/32″	**1317K63**	62.85
1/2″ Female	1/2″ Male	6 11/32″	**1317K64**	72.14

Electric Sight-Flow Needle Valves

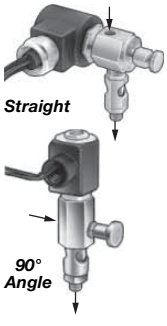

A built-in solenoid in these brass valves is closed unless energized (normally closed), so it dispenses lubricant only while equipment is running. A knurled knob allows you to adjust the flow rate.

Valves are designed for use with oil reservoirs. They operate on 120 VAC; motor draws 0.1 amps. Temperature range is –30° to +250° F. Not rated for pressure.

Inlet, female	Outlet, male	O'all Ht.		
Straight				
1/8″ PTF	1/8″ NPTF	3 9/32″	**1120K35**	$120.80
90° Angle				
1/4″ PTF	1/4″ NPTF	5 15/16″	**1120K12**	120.80

Sight-Flow Needle-Valve Manifolds

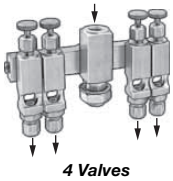
4 Valves

There's no need for each machine to have an individual oil reservoir. Just attach these valves to your reservoir and lubricate multiple sites from a single location. Each valve has an adjustable flow and can be removed for cleaning without disturbing the rest of the system.

Valves are made of aluminum. Inlet is 1/4″ NPTF female. Outlet is 1/4″ OD tube. Mounting threads are 5/8″-18 male. Temperature range is –30° to +250° F.

For Vented Oil Reservoirs— Not rated for pressure.

For Closed Systems— Maximum pressure is 125 psi.

No. of Valves	O'all Size Ht.	Wd.	Dp.	For Vented Oil Reservoirs		For Closed Systems	
2	3 13/16″	4 3/16″	1 11/16″	**1069K21**	$62.34	**1069K11**	$63.38
3	3 13/16″	4 15/16″	1 11/16″	**1069K22**	82.54	**1069K12**	83.64
4	3 13/16″	5 11/16″	1 11/16″	**1069K23**	99.74	**1069K13**	98.28

Precision Lubrication Systems

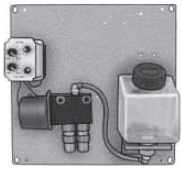
2 Pump Electric

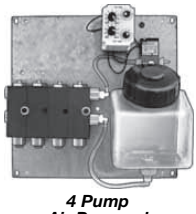
4 Pump Air Powered

Ready to install, these complete systems have an adjustable flow rate for precise lubrication. They're for use with oil and include a pump, timer, and a reservoir with plastic bowl between top and bottom plates.

Components are mounted on a 10 3/4″ Ht. × 10 7/8″ Wd. galvanized steel panel that has four 3/16″ dia. holes with standoffs and four 1/4″ × 3/8″ slots for mounting (fasteners not included). If your application requires additional protection for this panel, you can mount it in a NEMA enclosure (not included; see pages 843-852). All systems require a 120 VAC power supply and have screw terminals for electrical connections. Lubrication outlet is 1/8″ NPT female. Systems draw 0.06 amps.

Electric systems cycle from 1 to 1,440 times per day. Pump output is adjustable from 0 to 0.005 oz. per cycle. Set pump flow rate using a spanner wrench. Temperature range is –15° to +120° F.

Air-powered systems have a solenoid valve and 1/8″ barbed tube fittings for 1/4″ OD air inlet tube. Required air pressure is 40 to 120 psi. Systems cycle from 1 to 72,000 times per day. Pump output is adjustable from 0 to 0.007 oz. per cycle. Set pump flow rate using a screwdriver. Temperature range is –15° to +180° F.

No. of Pumps	Cap., oz.	Max. psi		
Electric				
2	16	250	**2420K5**	$382.24
4	32	100	**2420K6**	462.79
Air Powered				
2	16	1,080	**2420K1**	474.51
4	32	1,080	**2420K2**	517.65

Air-Powered Modular Lubrication Pumps

Two Pumps with Spray Nozzle

Add-On Pump with Spray Nozzle

Modular design allows you to easily add pumps as your lubrication requirements change. Each pump has an adjustable flow from 0 to 0.007 oz. per cycle. Set the flow rate using a screwdriver. *Note:* For proper operation, pumps require a three-way solenoid valve (sold separately on page 473). The solenoid can be controlled by a timer or PLC (programmable logic controller). Pumps are made of aluminum and have brass fittings. Pump size is 4″ Ht. × 1 1/8″ Dp. Required air pressure is 40 to 120 psi. Maximum outlet pressure is 1,080 psi. Lubrication inlet, air inlet, and lubrication outlet are 1/8″ NPT female. Each pump has 9/32″ dia. mounting holes (fasteners not included). Temperature range is –15° to +180° F. Pumps ***with spray nozzle*** provide a broader dispensing pattern. Nozzle flexes and stays in position. It's made of zinc-plated steel and includes an 8″ long copper hose.

Oil/grease pumps are for use with oil and grease up to NLGI No. 2.

Grease pumps are for use with grease up to NLGI No. 2. Pumps have a 1.5-oz. capacity reservoir with a clear plastic bowl between aluminum top and bottom plates. Reservoir is 4″ high.

No. of Pumps	Oil/Grease Pumps without Spray Nozzle Wd.			Oil/Grease Pumps with Spray Nozzle Wd.			Grease Pumps without Spray Nozzle Wd.		
1	2″	**2279K51**	$71.11	2″	**2279K41**	$140.51	3 1/4″	**2279K21**	$144.42
2	3 1/4″	**2279K52**	142.22	3 1/4″	**2279K42**	272.03	4 1/2″	**2279K22**	210.52
4	5 3/4″	**2279K53**	252.85	5 3/4″	**2279K43**	435.24	7″	**2279K23**	304.54
6	8 1/4″	**2279K54**	370.11	—	—	—	9 1/2″	**2279K24**	384.62
Add-On Pump	1 1/4″	**2279K31**	81.27	1 1/4″	**2279K33**	167.94	1 1/4″	**2279K31**	81.27

Central Lubrication Pumps

Dispense a fixed amount of lubricant with these pumps, which deliver 0.27 oz. of lubricant to single or multiple lubrication points. Reservoir is aluminum and includes a plastic liquid-level gauge. Outlet is 5/16″-24 female. Temperature range is 32° to 120° F. Use with oil. To control flow to each lubrication point, use a metering valve (sold separately on this page).

Vertical pump dispenses lubricant when you pull the handle. Reservoir requires 56 pulls to empty. Pump has four 15/64″ dia. mounting holes (fasteners not included).

Horizontal pumps dispense lubricant when you release the handle. Reservoir requires 69 handle releases to empty. Pumps have three 15/64″ dia. mounting holes (fasteners not included). Pumps come with a handle on the left or right side.

Vertical

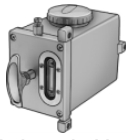

Horizontal with Left Side Handle

Handle Position	Cap., oz.	Max. psi	Size Ht.	Size Wd.	Size Dp.		
Vertical							
Bottom	15	200	7 7/8″	3 15/16″	5 29/32″	2287K1	$233.96
Horizontal							
Left Side	19	50	4 31/32″	3 5/32″	9 1/4″	2287K8	233.96
Right Side	19	50	4 31/32″	3 5/32″	9 1/4″	2287K9	233.96

Metering Valves for Central Lubrication Pumps

For precise distribution of lubricant to all of your lubrication points, choose these metering valves. Valves are 1″ long with a 7/16″ hex size and are made of brass. Temperature range is 32° to 120° F.

Each flow rate listed allows about twice the flow of the next smaller size. For example, 0 has twice the flow rate of 00. In addition, the amount of lubricant that's delivered to each point depends on the total number of lubrication points and the flow rate of the metering valves used. **To Order:** Please specify flow rate.

Inlet, male	Outlet, male	Available flow rates	Max. psi		
5/16″-24	5/16″-24	00, 0, 1, 2, 3, 4, 5	200	2293K11	$11.64
5/16″-24	1/8″ NPT	00, 0, 1, 2, 3, 4, 5	200	2293K12	11.64
1/8″ NPT	1/8″ NPT	00, 0, 1, 2, 3, 4, 5	200	2293K13	11.64

Electric Central Lubrication Pumps

Automatically dispense a variable amount of lubricant at a specified time with these pumps. They have transparent plastic reservoirs and a low-level switch that triggers an audible alarm. The switch also can be wired to additional alarms. Pumps operate on 110 VAC and have screw terminals for wiring. Outlet is 5/16″-24 female. Motor draws 0.03 amps. Temperature range is 32° to 120° F. Pumps have two 15/64″ dia. mounting holes (fasteners not included). Use with oil. To control flow to each lubrication point, use a metering valve (sold separately on this page).

Fixed interval pump dispenses lubricant at set increments of time. You can adjust the amount that's dispensed each interval from 0.1 to 0.2 oz. per cycle.

To Order: Please specify one of the following dispensing intervals: 3, 5, 10, 15, 30, or 60 minutes.

Variable interval pump lets you digitally control the time period over which the amount of lubricant is dispensed (adjusts from 1-180 seconds) and the interval time between cycles (adjusts from 3-999 minutes). Maximum dispensing rate is 0.11 oz. per second.

Fixed

Variable

Interval	Cap., oz.	Max. psi	Size Ht.	Size Wd.	Size Dp.		
Fixed	68	40	8 27/32″	7 7/8″	5 1/8″	2287K2	$567.42
Variable	101	100	10 1/32″	8 27/32″	6 11/16″	2287K4	1,183.37

Antifreeze/Coolant Testers

Check your freeze protection with these testers. Choose 1/8″ dia. floating balls or easy-view 5/8″ dia. discs to provide visual indication.

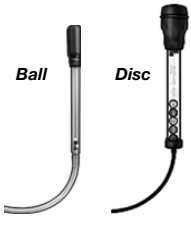

	Temp. Range		
Ethylene Glycol			
Ball	–34° to +20° F	6142A43	$9.55
Propylene Glycol			
Ball	–50° to +20° F	6142A45	10.18
Disc	–50° to +20° F	6142A47	16.62

Coolant Reservoir Deodorizers

Inject air directly into your coolant to prevent bacterial growth, keeping your coolant odor free and extending its service life. Each air port includes PVC tubing with a bronze air diffuser. Operate on 110 VAC and have a 2 1/2-ft. power cord with two-prong plug. Housing is plastic.

Max. Reservoir Cap., gal.	Flow Rate, cc/min.	No. of Air Ports	Tubing Lg., ft.	Amps		
25	1,000	1	3 1/2	0.014	2000K2	$25.00
50	3,000	2	3 1/2	0.032	2000K4	49.74
100	5,000	1	10	0.041	2000K6	99.00

Stay-Put Flexible Metal Coolant Hose

Made of high-tensile-strength spring steel, these rugged hoses bend easily to any position and stay there. Hoses have a brass NPT male fitting on one end and a standard nozzle on the other. Connection, hose ID, and nozzle ID are the same size, except the 3/8″ NPT hose which has a 5/16″ nozzle ID. Not rated for pressure or temperature.

Lg.	1/8″ NPT, 5/16″ Hose OD		1/4″ NPT, 1/2″ Hose OD		3/8″ NPT, 5/8″ Hose OD		1/2″ NPT, 13/16″ Hose OD		3/4″ NPT, 1 1/16″ Hose OD	
6″	5258K21	$10.70	5258K41	$12.12	5258K62	$15.28	5258K91	$26.15	5258K111	$36.40
9″	5258K22	10.90	5258K42	12.57	5258K63	15.78	5258K92	26.70	5258K112	38.95
12″	5258K23	11.10	5258K43	14.15	5258K64	16.75	5258K93	27.15	5258K113	41.62
15″	5258K24	12.18	5258K44	14.90	5258K65	18.43	5258K94	28.27	5258K114	44.27
18″	5258K25	12.60	5258K45	15.35	5258K66	19.40	5258K95	31.73	5258K115	46.90
21″	5258K26	13.50	5258K46	17.18	5258K67	21.10	5258K96	32.48	5258K116	50.62
24″	5258K27	14.50	5258K47	19.00	5258K68	22.35	5258K97	33.25	5258K117	53.25
30″	5258K28	16.73	5258K48	20.18	5258K69	24.10	5258K98	37.25	5258K118	59.65
36″	5258K29	17.52	5258K61	21.75	5258K79	26.23	5258K99	40.48	5258K119	66.45

Corrosion-Resistant Stay-Put Flexible PVC Coolant Hose

Bend, twist, and set these hoses to stay where you want. Made of one-piece flexible black PVC with a zinc-plated steel rod along the inside wall for rigidity, they're impervious to sulfur-based cutting oils. Hoses come with a brass NPT male fitting on one end and a Type 304 stainless steel nozzle on the other. Maximum pressure is 55 psi. Maximum operating temperature is 180° F.

Lg.	1/8″ NPT, 3/8″ Hose OD Nozzle ID			1/4″ NPT, 17/32″ Hose OD Nozzle ID		
6″	1/4″	5259K91	$13.66	3/8″	5259K92	$14.63
9″	1/4″	5259K11	14.00	3/8″	5259K12	15.00
12″	1/4″	5259K16	15.00	3/8″	5259K17	17.30
15″	1/4″	5259K22	16.30	3/8″	5259K23	18.50
18″	1/4″	5259K27	17.30	3/8″	5259K28	19.20
24″	1/4″	5259K38	19.20	3/8″	5259K39	21.50

Coolant Hose

For coolants, see page 2178.

About Any-Which-Way Coolant Hose

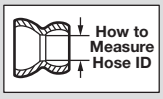

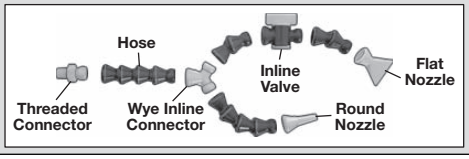

Assemble and disassemble Any-Which-Way coolant hose by snapping components together or pulling them apart. This can be done by hand, but ***assembly pliers*** and ***separation tools*** (sold separately) make the task easier.

Note: To ensure compatibility, select the hose and component color that matches your current system.

Loc-Line Any-Which-Way Coolant Hose

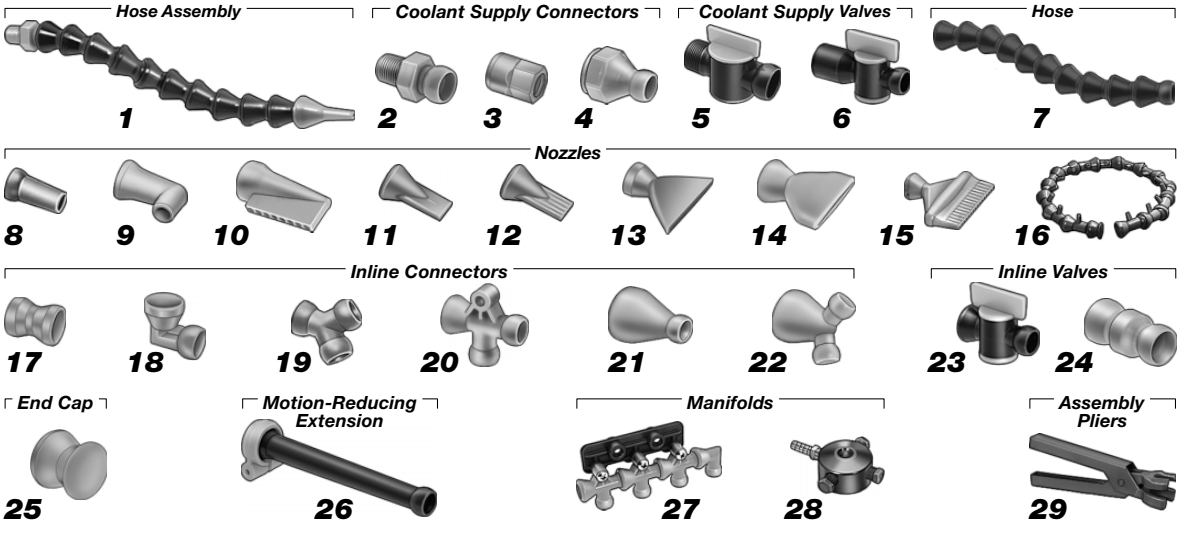

Custom build your own system to deliver coolant, cutting oils, water, and air in almost any direction. Once in position, hose stays put—there's no spring back or wandering caused by vibration. Made of acetal. Maximum operating temperature is 170° F.

(1) Hose assemblies have a hose, connectors, and round nozzles.

(16) Circular nozzle assemblies surround your cutting tool with 15 nozzles that can be precisely aimed to remove chips and debris.

(26) Motion-reducing extensions not only reduce motion at higher pressures, but also reduce sagging in longer lines.

(27) Bracket-mount manifolds have one inlet, four outlets, and two 1/4″ dia. mounting holes (fasteners included). Expand with ***(20) tee inline connectors*** (sold separately).

(28) Magnetic-base manifold has one inlet, four outlets, and a 25-lb. holding force. It also has 1/4″ NPT female connections and comes with three 1/4″ plugs and one 3/8″ barbed connector. Expand with ***(19) wye inline connectors*** (sold separately).

(29) Assembly pliers make it easier to connect your Any-Which-Way coolant hose to the components.

1/4″ ID (0.64″ OD)—Max. pressure is 30 psi. Max. flow rate is 250 gph.

	Connectors, NPT Male	Nozzles, Orifice Dia.		Each
Hose Assembly—*Color is blue and orange.*				
(1) 13″ Lg.	1/8″, 1/4″	1/16″, 1/8″, 1/4″	**10095K11**	$8.08

	Pkg. Qty.		Pkg.
Coolant Supply Connectors—*Color is orange.*			
(2) 1/8″ NPT Male	4	**10095K29**	$4.02
(2) 1/4″ NPT Male	4	**10095K31**	4.02
(2) 1/4″ BSPT Male	4	**10095K111**	4.02
(3) 1/8″ NPT Female	4	**10095K64**	5.10
(4) 1/4″ Flare Nut, 7/16″-20 SAE Female	4	**10095K88**	6.08
(4) 3/8″ Flare Nut, 5/8″-18 SAE Female	4	**10095K87**	6.08
Coolant Supply Valves—*Color is blue and orange.*			
(5) 1/4″ NPT Male	2	**10095K51**	10.13
(6) 1/4″ NPT Female	2	**10095K93**	10.13
Hose—*Color is blue.*			
(7) 1 ft. Lg.	1	**10095K42**	6.08
(7) 5 ft. Lg.	1	**10095K97**	28.66
(7) 25 ft. Lg.	1	**10095K14**	133.81
(7) 50 ft. Lg.	1	**10095K55**	267.61

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is orange.*				
(8) Round	1/16″ Dia.	4	**10095K17**	$4.02
(8) Round	1/8″ Dia.	4	**10095K21**	4.02
(8) Round	1/4″ Dia.	4	**10095K24**	4.02
(9) 90° Round	1/16″ Dia.	4	**10095K112**	5.61
(9) 90° Round	1/8″ Dia.	4	**10095K57**	5.61
(9) 90° Round	1/4″ Dia.	4	**10095K58**	5.61
(10) 3/4″ 90° Spray Bar	3/32″ Dia. (6 holes)	2	**10095K1**	6.08
(11) 7/16″ Flat	1/16″ Ht. × 7/16″ Wd.	4	**10095K83**	6.43
(12) 7/16″ Flat	1/16″ Dia. (5 holes)	4	**10095K84**	6.43
(12) 1″ Flat	3/64″ Dia. (7 holes)	4	**10095K114**	6.43

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is orange. (Cont.)*				
(13) 1″ Flat	1/32″ Ht. × 61/64″ Wd.	2	**10095K26**	$6.08
(14) 1″ Flat	3/64″ Ht. × 1″ Wd.	2	**10095K77**	6.08
(15) 1 1/2″ Swivel	3/64″ Dia. (16 holes)	2	**10095K59**	9.01
(15) 1 17/32″ Swivel	1/16″ Dia. (16 holes)	2	**10095K61**	9.01
(15) 2 1/2″ Swivel	5/64″ Dia. (20 holes)	2	**10095K66**	9.52
Circular Nozzle Assembly—*Color is orange.*				
(16) 3 5/8″ Dia.	5/64″ Dia.	1	**10095K71**	18.06

	Pkg. Qty.		Pkg.
Inline Connectors—*Color is orange.*			
(17) Double Socket Inline	4	**10095K43**	$4.47
(18) 90° Elbow Inline	2	**10095K48**	5.61
(19) Wye Inline	2	**10095K35**	6.08
(20) Tee Inline	2	**10095K91**	6.74
Inline Valves—*Style 23 is blue and orange; Style 24 is orange.*			
(23) Inline	2	**10095K52**	10.13
(24) Inline Check	2	**10095K69**	10.13
End Cap—*Color is orange.*			
(25) End Cap	4	**10095K113**	4.02
Motion-Reducing Extension—*Color is blue and orange.*			
(26) 3 11/16″ Lg.	4	**10095K85**	13.54

	Overall Size, Ht. × Wd. × Dp.		Each
Manifolds—*Style 27 is blue and orange; Style 28 is blue.*			
(27) Bracket Mount	1 13/16″ Ht. × 4 1/4″ × 1″	**10095K62**	$13.54
(28) Magnetic Base	1 3/16″ Ht. × 2 1/8″ Dia.	**10095K49**	29.64

		Each
Assembly Pliers—*Color is blue.*		
(29) Assembly Pliers	**10095K41**	$11.27

(Continued on following page)

For coolants, see page 2178. For information about Any-Which-Way coolant hose, see page 2200.

Loc-Line Any-Which-Way Coolant Hose *(Continued from previous page)*

1/2″ ID (0.98″ OD)—Max. pressure is 20 psi. Max. flow rate is 478 gph.

	Connectors, NPT Male	Nozzles, Orifice Dia.	Each
Hose Assembly—*Color is blue and orange.*			
(1) 13″ Lg.	3/8″, 1/2″	1/4″, 3/8″, 1/2″	10095K12 $9.11

	Pkg. Qty.	Pkg.
Coolant Supply Connectors—*Color is orange.*		
(2) 3/8″ NPT Male	4	10095K32 $4.58
(2) 3/8″ BSPT Male	4	10095K132 4.58
(2) 1/2″ NPT Male	4	10095K33 4.58
(2) 1/2″ BSPT Male	4	10095K115 4.58
(4) 3/8″ Flare Nut, 5/8″-18 SAE Female	4	10095K89 6.27
Coolant Supply Valves—*Color is blue and orange.*		
(5) 1/2″ NPT Male	2	10095K53 12.40
(6) 1/2″ NPT Female	2	10095K94 12.40
Hose—*Color is blue.*		
(7) 1 ft. Lg.	1	10095K45 6.85
(7) 5 ft. Lg.	1	10095K98 37.67
(7) 25 ft. Lg.	1	10095K15 158.51
(7) 50 ft. Lg.	1	10095K56 317.02

Orifice Size	Pkg. Qty.	Pkg.
Nozzles—*Color is orange.*		
(8) Round 1/4″ Dia.	4	10095K18 $4.58
(8) Round 3/8″ Dia.	4	10095K22 4.58
(8) Round 1/2″ Dia.	4	10095K25 4.58
(9) 90° Round 1/4″ Dia.	4	10095K131 6.38
(9) 90° Round 3/8″ Dia.	4	10095K4 6.38
(9) 90° Round 1/2″ Dia.	4	10095K5 6.38
(10) 1 3/4″ 90° Spray Bar 11/64″ Dia. (8 holes)	2	10095K3 6.85
(11) 45/64″ Flat 5/64″ Ht. × 45/64″ Wd.	4	10095K6 7.20
(11) 45/64″ Flat 1/8″ Ht. × 45/64″ Wd.	4	10095K116 7.20
(12) 45/64″ Flat 1/16″ Dia. (7 holes)	4	10095K134 7.20
(12) 45/64″ Flat 1/8″ Dia. (5 holes)	4	10095K7 7.20

Orifice Size	Pkg. Qty.	Pkg.
Nozzles—*Color is orange. (Cont.)*		
(13) 1 1/4″ Flat 11/64″ Ht. × 1 1/4″ Wd.	2	10095K67 $6.85
(13) 2 1/2″ Flat 7/64″ Ht. × 2 29/64″ Wd.	2	10095K27 7.88
(14) 1 1/4″ Flat 3/16″ Ht. × 1 1/8″ Wd.	2	10095K78 6.85
(14) 1 5/8″ Flat 1/8″ Ht. × 1 5/8″ Wd.	2	10095K79 7.88
(15) 2 1/2″ Swivel 5/64″ Dia. (20 holes)	2	10095K68 10.04
Circular Nozzle Assembly—*Color is orange.*		
(16) 4 1/2″ Dia. 9/64″ Dia.	1	10095K72 20.33

	Pkg. Qty.	Pkg.
Inline Connectors—*Color is orange.*		
(17) Double Socket Inline	4	10095K46 $5.10
(18) 90° Elbow Inline	2	10095K47 6.38
(19) Wye Inline	2	10095K36 6.85
(20) Tee Inline	2	10095K92 7.51
(21) 1/2″ × 1/4″ Inline Reducer	2	10095K38 5.05
(22) 1/2″ × 1/4″ Wye Inline Reducer	2	10095K96 6.85
Inline Valves—*Style 23 is blue and orange; Style 24 is orange.*		
(23) Inline	2	10095K54 12.40
(24) Inline Check	2	10095K2 12.40
End Cap—*Color is orange.*		
(25) End Cap	4	10095K133 4.58
Motion Reducing Extension—*Color is blue and orange.*		
(26) 3 11/16″ Lg.	4	10095K86 15.80

	Overall Size Ht.	Wd.	Dp.		Each
Manifold—*Color is blue and orange.*					
(27) Bracket Mount	2 1/8″	6″	1 1/4″	10095K63	$14.67
Assembly Pliers—*Color is blue.*					
(29) Assembly Pliers				10095K44	$11.27

3/4″ ID (1.23″ OD)—Max. pressure is 10 psi. Max. flow rate is 1,140 gph.

	Connector, NPT Male	Nozzles, Orifice Dia.	Each
Hose Assembly—*Color is blue and orange.*			
(1) 14″ Lg.	3/4″	5/8″, 3/4″	10095K13 $11.27

	Pkg. Qty.	Pkg.
Coolant Supply Connectors—*Color is orange.*		
(2) 3/4″ NPT Male	4	10095K34 $5.61
(2) 3/4″ BSPT Male	4	10095K135 5.61
Coolant Supply Valves—*Color is blue and orange.*		
(5) 3/4″ NPT Male	1	10095K73 6.84
(6) 3/4″ NPT Female	1	10095K74 6.84
Hose—*Color is blue.*		
(7) 1 ft. Lg.	1	10095K81 8.54
(7) 5 ft. Lg.	1	10095K99 40.14
(7) 25 ft. Lg.	1	10095K16 185.27

Orifice Size	Pkg. Qty.	Pkg.
Nozzles—*Color is orange.*		
(8) Round 5/8″ Dia.	4	10095K19 $5.61
(8) Round 3/4″ Dia.	4	10095K23 5.61
(13) 3″ Flat 3/16″ Ht. × 3″ Wd.	2	10095K28 9.01

	Pkg. Qty.	Pkg.
Inline Connectors—*Color is orange.*		
(17) Double Socket Inline	4	10095K82 $6.23
(18) 90° Elbow Inline	2	10095K76 7.30
(19) Wye Inline	2	10095K37 9.01
(21) 3/4″ × 1/2″ Inline Reducer	2	10095K39 6.18
(22) 3/4″ × 1/2″ Wye Inline Reducer	2	10095K95 9.01
Inline Valves—*Color is blue and orange.*		
(23) Inline	1	10095K75 6.84

	Each
Assembly Pliers—*Color is blue.*	
(29) Assembly Pliers	10095K65 $14.36

Cold-Air Coolant Guns

Replace messy mist systems and eliminate the need to clean coolant off your parts. Cold-air guns convert your filtered shop air into a stream of cold air using a vortex tube. Guns have no moving parts and need no electricity to provide a continuous cold air supply. All have a magnetic base. Guns require 80 to 100 psi air pressure and use 15 scfm @ 100 psi.

Standard guns produce air 50° F below the shop air you're using. Vortex tube is stainless steel with an aluminum housing. Any-Which-Way flexible acetal hose, cone nozzle, flat fan nozzle, and filter separator are included. Air inlet connection is 1/4″ NPT male.

With the *dual-hose model*, you will get an additional cone nozzle and flat fan nozzle.

Adjustable guns produce air as cold as 100° F below the shop air you're using. Adjust cooling temperature using the knob on the back of the unit. Vortex tube and housing are aluminum. Any-Which-Way flexible acetal hose, cone nozzle, and 5-micron auto-drain filter are included. Air inlet connection is 1/4″ NPT female.

With the *dual-hose model*, you will get an additional cone nozzle.

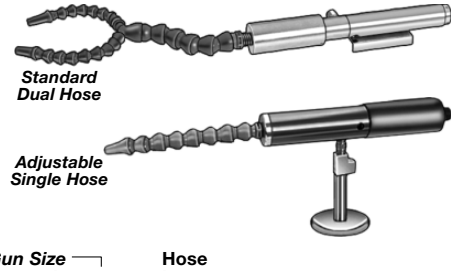

	Gun Size Dia.	Lg.	Hose Lg.		
Standard					
Single Hose	1 1/2″	10″	11″	1382K12	$292.14
Dual Hose	1 1/2″	10″	11″	1382K22	306.22
Adjustable					
Single Hose	1 3/4″	10 5/8″	8 1/2″	11215K42	383.16
Dual Hose	1 3/4″	10 5/8″	9″	11215K52	393.68

For coolants, see page 2178. For information about Any-Which-Way coolant hose, see page 2200.

Snap-Loc Any-Which-Way Coolant Hose

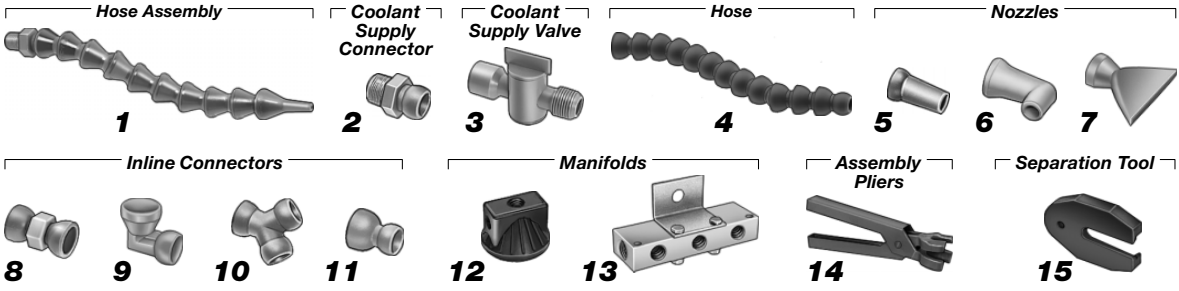

Custom build your own system to deliver coolant, cutting oils, water, and air in almost any direction. Once in position, hose stays put—there's no spring back or wandering caused by vibration. Made of acetal, unless otherwise indicated or noted. Maximum operating temperature is 200° F.

(1) Hose assemblies have a hose, connectors, and round nozzles.

(12) Magnetic-base manifold has one inlet, one outlet, and a 38-lb. holding force. It also has ¼″ NPT female connections. Expand with ***(10) wye inline connectors*** (sold separately).

(13) Bracket-mount manifold has ports for two ½″ NPT male and three ⅜″ NPT male connectors. Bracket is zinc-plated steel and has four ¼″ mounting holes (fasteners included).

(14) Assembly pliers make it easier to connect your Any-Which-Way coolant hose to the components.

(15) Separation tool makes it easier to disconnect the components from your Any-Which-Way coolant hose.

¼″ ID (0.63″ OD)—Max. pressure is 39 psi. Max. flow rate is 240 gph. Components indicated with a ▲ are made of polypropylene.

	Connectors, NPT Male	Nozzles, Orifice Dia.		Each
Hose Assembly—*Color is gray.*				
(1) 13″ Lg.	⅛″, ¼″	1/16″, ⅛″, ¼″	5307K76	$9.60

	Pkg. Qty.		Pkg.
Coolant Supply Connectors—*Color is gray.*			
(2) ⅛″ NPT Male	4	5307K37	$5.35
(2) ¼″ NPT Male	4	5307K38	5.35
Coolant Supply Valve—*Color is black.*			
(3) ¼″ NPT Female × ¼″ NPT Male	1	5307K19	8.54
Hose—*Color is gray.*			
(4) 1 ft. Lg.	1	5307K49	7.85
(4) 5 ft. Lg.	1	5307K61	32.20
(4) 25 ft. Lg.	1	5307K14	161.00

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is gray.*				
(5) Round	1/16″ Dia.	4	5307K21▲	$5.35
(5) Round	⅛″ Dia.	4	5307K22▲	5.35
(5) Round	¼″ Dia.	4	5307K23▲	5.35

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is gray. (Cont.)*				
(6) 90° Round	⅛″ Dia.	2	5307K13▲	$5.60
(6) 90° Round	¼″ Dia.	2	5307K17▲	5.55
(7) 1″ Flat	3/64″ Ht. × 15/16″ Wd.	2	5307K77▲	7.85

	Pkg. Qty.		Pkg.
Inline Connectors—*Color is gray.*			
(8) Double Socket Inline	2	5307K42	$9.10
(9) 90° Elbow Inline	2	5307K43	6.75
(10) Wye Inline	2	5307K62	8.05

	Overall Size Dia.	Ht.		Each
Manifold—*Color is black.*				
(12) Magnetic Base	2½″	1¾″	5307K51▲	$34.45

		Each
Accessories—*Color is black.*		
(14) Assembly Pliers	5307K41	$15.81
(15) Separation Tool	5307K65	7.79

½″ ID (1.04″ OD)—Max. pressure is 19 psi. Max. flow rate is 480 gph. Components indicated with a ▲ are made of polypropylene.

	Connectors, NPT Male	Nozzles, Orifice Dia.		Each
Hose Assembly—*Color is gray.*				
(1) 13″ Lg.	⅜″, ½″	¼″, ⅜″, ½″	5307K86	$11.00

	Pkg. Qty.		Pkg.
Coolant Supply Connectors—*Color is gray.*			
(2) ⅜″ NPT Male	4	5307K47	$5.55
(2) ½″ NPT Male	4	5307K48	5.55
Coolant Supply Valve—*Color is black.*			
(3) ½″ NPT Female × ½″ NPT Male	1	5307K25	9.97
Hose—*Color is gray.*			
(4) 1 ft. Lg.	1	5307K46	9.30
(4) 5 ft. Lg.	1	5307K66	37.75
(4) 25 ft. Lg.	1	5307K15	188.90

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is gray.*				
(5) Round	¼″ Dia.	4	5307K27▲	$5.55
(5) Round	⅜″ Dia.	4	5307K28▲	5.55

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is gray. (Cont.)*				
(5) Round	½″ Dia.	4	5307K29▲	$5.55
(7) 2″ Flat	⅛″ Ht. × 23/32″ Wd.	2	5307K87▲	9.30

	Pkg. Qty.		Pkg.
Inline Connectors—*Color is gray.*			
(8) Double Socket Inline	2	5307K45	$9.10
(9) 90° Elbow Inline	2	5307K52	7.55
(10) Wye Inline	2	5307K63	9.30
(11) ½″ × ¼″ Inline Reducer	2	5307K91	6.25

	Overall Size Ht.	Wd.	Dp.		Each
Manifold—*Color is white.*					
(13) Bracket Mount	1¾″	5½″	1″	5307K57	$26.98

		Each
Accessories—*Color is black.*		
(14) Assembly Pliers	5307K44	$15.81
(15) Separation Tool	5307K67	10.37

¾″ ID (1.23″ OD)—Max. pressure is 9 psi. Max. flow rate is 1,080 gph. Components indicated with a ▲ are made of polypropylene.

	Connector, NPT Male	Nozzle, Orifice Dia.		Each
Hose Assembly—*Color is gray.*				
(1) 12″ Lg.	¾″	⅝″	5307K96	$11.60

	Pkg. Qty.		Pkg.
Coolant Supply Connectors—*Color is gray.*			
(2) ¾″ NPT Male	4	5307K53	$5.80
Hose—*Color is gray.*			
(4) 1 ft. Lg.	1	5307K78	8.80
(4) 5 ft. Lg.	1	5307K68	38.05

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is gray.*				
(5) Round	⅝″ Dia.	4	5307K34	$5.80
(7) 3″ Flat	⅛″ Ht. × 2 29/32″ Wd.	2	5307K88▲	9.30

	Pkg. Qty.		Pkg.
Inline Connectors—*Color is gray.*			
(10) Wye Inline	2	5307K64	$9.30
(11) ¾″ × ½″ Inline Reducer	2	5307K92	6.35

		Each
Accessory—*Color is black.*		
(15) Separation Tool	5307K69	$12.95

For coolants, see page 2178. For information about Any-Which-Way coolant hose, see page 2200.

Loc-Line Acid-Resistant Any-Which-Way Coolant Hose

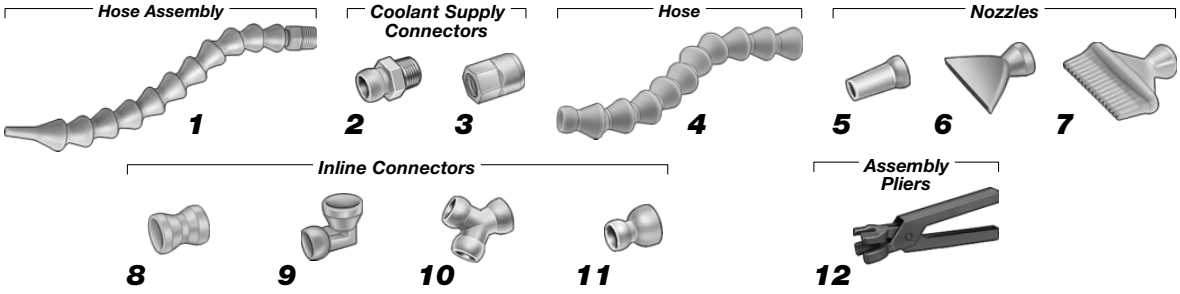

Alcohols, aromatic solvents, gasoline, grease, hydrocarbons, oil, salt solutions, and acids are no problem for this polyester hose. Custom build your own system to deliver coolant, cutting oils, water, and air in almost any direction. Once in position, hose stays put—there's no spring back or wandering caused by vibration. Maximum operating temperature is 180° F.

(1) Hose assemblies have a hose, connectors, and round nozzles.

(12) Assembly pliers make it easier to connect your Any-Which-Way coolant hose to the components.

¼″ ID (0.64″ OD)—Max. pressure is 30 psi. Max. flow rate is 250 gph.

	Connectors, NPT Male	Nozzles, Orifice Dia.		Each
Hose Assembly—*Color is yellow.*				
(1) 13″ Lg.	⅛″, ¼″	1/16″, ⅛″, ¼″	**1261K11**	$10.24

	Pkg. Qty.		Pkg.
Coolant Supply Connectors—*Color is yellow.*			
(2) ⅛″ NPT Male	4	**1261K29**	$5.10
(2) ¼″ NPT Male	4	**1261K31**	5.10
(3) ⅛″ NPT Female	4	**1261K61**	6.45
Hose—*Color is yellow.*			
(4) 1 ft. Lg.	1	**1261K42**	7.64
(4) 5 ft. Lg.	1	**1261K65**	36.76
(4) 25 ft. Lg.	1	**1261K14**	168.48

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is yellow.*				
(5) Round	1/16″ Dia.	4	**1261K17**	$5.10
(5) Round	⅛″ Dia.	4	**1261K21**	5.10
(5) Round	¼″ Dia.	4	**1261K24**	5.10

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is yellow. (Cont.)*				
(6) 1″ Flat	3/64″ Ht. × 1″ Wd.	2	**1261K26**	$7.64
(7) 1⅝″ Swivel	3/64″ Dia. (16 holes)	2	**1261K63**	10.92
(7) 1⅝″ Swivel	1/16″ Dia. (16 holes)	2	**1261K64**	10.92

	Pkg. Qty.		Pkg.
Inline Connectors—*Color is yellow.*			
(8) Double Socket Inline	4	**1261K43**	$5.41
(9) 90° Elbow Inline	2	**1261K48**	7.07
(10) Wye Inline	2	**1261K35**	7.64

		Each
Assembly Pliers—*Color is blue.*		
(12) Assembly Pliers	**10095K41**	$11.27

½″ ID (0.98″ OD)—Max. pressure is 20 psi. Max. flow rate is 478 gph.

	Connectors, NPT Male	Nozzles, Orifice Dia.		Each
Hose Assembly—*Color is yellow.*				
(1) 13″ Lg.	⅜″, ½″	¼″, ⅜″, ½″	**1261K12**	$11.49

	Pkg. Qty.		Pkg.
Coolant Supply Connectors—*Color is yellow.*			
(2) ⅜″ NPT Male	4	**1261K32**	$5.77
(2) ½″ NPT Male	4	**1261K33**	5.77
Hose—*Color is yellow.*			
(4) 1 ft. Lg.	1	**1261K45**	8.63
(4) 5 ft. Lg.	1	**1261K68**	44.41
(4) 25 ft. Lg.	1	**1261K15**	201.75
(4) 50 ft. Lg.	1	**1261K56**	402.75

	Orifice Size	Pkg. Qty.		Pkg.
Nozzles—*Color is yellow.*				
(5) Round	¼″ Dia.	4	**1261K18**	$5.77
(5) Round	⅜″ Dia.	4	**1261K22**	5.77
(5) Round	½″ Dia.	4	**1261K25**	5.77
(6) 1¼″ Flat	11/64″ Ht. × 1¼″ Wd.	2	**1261K27**	8.63

	Pkg. Qty.		Pkg.
Inline Connectors—*Color is yellow.*			
(9) 90° Elbow Inline	2	**1261K47**	$7.07
(10) Wye Inline	2	**1261K36**	8.32
(11) ½″ × ¼″ Inline Reducer	2	**1261K38**	6.14

		Each
Assembly Pliers—*Color is blue.*		
(12) Assembly Pliers	**10095K44**	$11.27

Mist Coolant Dispensers and Dust Removers

You get two air-powered tools in one—a mist coolant dispenser to dissipate heat from short and intermittent machine cycles, plus a dust and shavings remover. Press the lever to stop the coolant flow and start a high-velocity stream of air. Designed for use with oil- and water-based coolants, dispensers include a 6-ft. long siphon line, a flexible plastic coolant hose with medium-spray aluminum nozzle, and a magnetic mounting base. Coolant reservoirs are not included. Air inlet is ¼″ NPT female. Pressure range is 12 to 100 psi.

Dispenser with 12″ Hose Assembly	**1333K11**	$126.42
Dispenser with 20″ Hose Assembly	**1333K12**	133.96
Replacement 12″ Hose Assembly	**1333K24**	29.73
Replacement 20″ Hose Assembly	**1333K26**	33.79
Replacement Medium-Spray Aluminum Nozzle	**1333K43**	44.85
Optional Fine-Spray Aluminum Nozzle	**1333K41**	44.88
Optional Coarse-Spray Aluminum Nozzle	**1333K45**	44.88

Reservoir Fluid Extractors

To make it easy to empty reservoirs and tanks, pair your compressed air with the powerful venturi vacuum of this extractor. It's made of durable, chemical-resistant polyethylene to handle a variety of coolants, gear oil, engine oil, and brake fluids. Extractor has an automatic shut-off to prevent overfilling, a separate air shut-off valve, and a quick-drain pour spout.

Furnished with 0.23″ OD × 5-ft. long, 0.26″ OD × 5-ft. long, and 0.41″ OD × 5-ft. long tubing with tubing adapters. You'll also get a brake/clutch bleeding kit to vacuum bleed hydraulic braking systems. Reservoir capacity is 2.3 gallons. Overall size is 25½″ Ht. × 13″ Wd. × 9½″ Dp. Air inlet is ¼″ NPT female. Pressure range is 60 to 120 psi. Maximum operating temperature is 175° F.

3391T1 ..... $149.22

For coolants, see page 2178.

Adjustable Coolant Nozzles

Position these nozzles in a variety of ways for flexibility as your coolant-placement needs change.

Ball Socket Connection

Designed to fit into the sockets found on CNC (computer numerical control) machines.

Nozzles with Bendable Extension Tube— Made of brass, these nozzles have a 6″ long copper extension tube that can be cut to any length and bent in any direction. Temperature range is –40° to +300° F. Maximum pressure is 500 psi.

Extended Nozzles— Body is plastic; ball is stainless steel. Temperature range is –40° to +160° F. Maximum pressure is 150 psi.

Adapters— Install these plastic adapters in an open socket in your machine. They allow you to use Loc-Line coolant hose or threaded coolant nozzles with your machine. Temperature range is –40° to +160° F. Maximum pressure is 150 psi.

Nozzles with Bendable Extension Tube					Extended Nozzles				1/4″ Loc-Line Adapters				1/8″ NPT/BSPT Adapters			
Socket Dia.	Orifice Dia.	Lg.		Each ♦	Orifice Dia.	Lg.		Each ♦	Orifice Dia.	Lg.		Each ♦	Orifice Dia.	Lg.		Each ♦
10 mm	0.12″	6″	2851K25	$11.65	—	—	—	—	—	—	—	—	—	—	—	—
12 mm	0.18″	6″	2851K27	12.23	0.11″	1.1″	2851K21	$13.43	0.25″	0.67″	2851K52	$7.27	0.25″	0.91″	2851K54	$7.56
14 mm	0.18″	6″	2851K11	12.43	0.16″	1.2″	2851K22	13.43	0.25″	0.76″	2851K32	8.05	0.25″	0.38″	2851K55	7.27
15 mm	0.18″	6″	2851K13	12.43	0.16″	1.2″	2851K24	13.43	0.25″	0.81″	2851K33	8.24	0.25″	0.43″	2851K34	7.66
1/2″	0.18″	6″	2851K16	12.43	0.16″	1.1″	2851K51	13.44	0.25″	0.71″	2851K53	7.27	0.25″	0.94″	2851K56	7.56

♦ Prices are 10% less when you order in quantities of five or more.

Press-In

Nozzles— Just press these nozzles into a hole that has been drilled and reamed. Body is plastic; ball is stainless steel. Temperature range is –40° to +160° F. Maximum pressure is 150 psi.

Fits Hole Size Dia.	Dp.	Orifice Dia.	Extension Threads		Each ♦
12 mm	10.5 mm	5 mm	M5×0.8	9027T1	$10.24
15 mm	9 mm	6 mm	M6×1.0	9027T3	11.42

♦ Prices are 10% less when you order in quantities of five or more.

Optional Extension Tubes— Use these brass tubes to extend the reach of press-in nozzles.

Thread	Lg.	ID		1-4	5-Up
M5×0.8	40 mm	3 mm	9027T4	$5.18	$4.75
M6×1.0	50 mm	4 mm	9027T5	5.50	5.05

Pipe Thread Connection

Standard

Adjustable Flow with Extension Tube

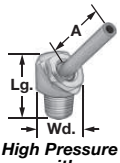

High Pressure with Extension Tube

Nozzles rotate 360°. Threads are male and fit NPT and BSPT pipe threads. Temperature range is –40° to +160° F.

Standard— Body is plastic; ball is stainless steel.

Adjustable Flow— Twist to adjust from shutoff to a fine mist or to a direct stream. Made of plastic.

High Pressure— Produce a high-velocity stream of coolant for your high-pressure systems. Body is brass with a stainless steel tip.

Pipe Size	Orifice Dia.	Lg.	Wd.	Extension Tube Lg. (A)		Each ♦
Standard— *Max. pressure is 150 psi.*						
1/8″	0.11″	0.82″	0.63″	—	3177K1	$11.75
1/4″	0.16″	0.94″	0.75″	—	3177K2	12.43
3/8″	0.22″	1.13″	0.88″	—	3177K3	13.76
Standard with Extension Tube— *Max. pressure is 150 psi.*						
1/8″	0.16″	0.82″	0.63″	0.50″	3177K12	16.68
1/8″	0.16″	0.82″	0.63″	1.25″	3177K14	18.68
1/4″	0.16″	0.94″	0.75″	1.25″	3177K22	19.36
Adjustable Flow with Extension Tube— *Max. pressure is 100 psi.*						
1/8″	0.16″	1.50″	0.87″	1.70″	3177K4	34.39
1/4″	0.16″	1.50″	0.87″	1.70″	3177K5	34.39
High Pressure with Extension Tube— *Max. pressure is 1,500 psi.*						
1/8″	0.09″	0.81″	0.56″	0.25″	3177K25	34.03
1/8″	0.12″	0.81″	0.56″	1.25″	3177K34	36.88

♦ Prices are 10% less when you order in quantities of five or more.

Air-Powered Mist Coolant Dispensers

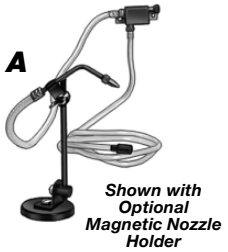

Shown with Optional Magnetic Nozzle Holder

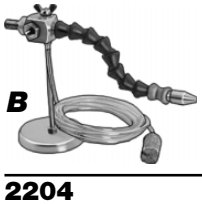

When you need to cool short or intermittent machine cycles efficiently, use a mist of coolant. Coolant reservoirs are not included.

(A&B) For Water-Based Coolants— *Style A* includes a 4-ft. long siphon line and 2-ft. long plastic coolant hose with 4″ long brass nozzle. Air inlet is 1/8″ NPT female. Mount dispenser to your equipment by using the two 3/32″ dia. mounting holes (fasteners not included) or by using the *optional magnetic nozzle holder* (sold separately).

Style B has a 7-ft. long siphon line and magnetic base for easy mounting. Nozzle is 7″ long flexible plastic and stays in place once positioned. Air inlet is 1/8″ NPT female.

(C) For Water- and Oil-Based Coolants— Separate air and liquid controls plus a built-in regulator allow more accurate mixtures. Dispenser has a 10-ft. long siphon line and magnetic base for easy mounting. Nozzle is 13″ long flexible plastic and stays in place once positioned. Air inlet is 1/4″ NPT male quick-disconnect.

For Coolant Type	Nozzle Style	Required Air Pressure		
A Water Based	45°	30 to 120 psi	1186K17	$64.65
B Water Based	Any-Which-Way	50 to 100 psi	1046K18	82.48
C Water Based and Oil Based	Any-Which-Way	10 to 50 psi	10445K34	154.35
Replacement 2-ft. Hose Assembly for Style A			1186K52	33.00
Replacement Brass Nozzle Tip and O-Ring for Style A			1186K56	13.20
Optional Magnetic Nozzle Holder for Style A			1131K23	30.80
Optional 4-ft. Hose Assembly for Style A			1186K54	36.30

For coolants, see page 2178.

Air-Powered Mist Coolant Dispensers with Reservoir

Disperse heat from short machine cycles and avoid waste with a mist of coolant. These dispensers include hose, nozzles, and adjustable air and coolant controls.

(A) Plastic Reservoir— Use with water-based coolants. These dispensers have a 5-ft. long brass coolant hose with 6″ long straight brass nozzle, unless noted. Inlet is 1/4″ NPT female. Required air pressure is 50 to 100 psi. All include a mounting bracket with two 5/16″ dia. mounting holes (fasteners not included).

1-qt. reservoirs have a sight gauge. *1-gal. reservoirs* have a liquid level gauge.

Also Available: Repl. parts. Please ask for 1324K83 and specify parts needed.

(B&C) Steel Reservoir— Use with water- and oil-based coolants. These dispensers have a 4-ft. long plastic coolant hose encased in a stainless steel braid. Inlet is 1/8″ NPT female. Required air pressure is 30 to 125 psi. All include a mounting bracket with two 3/16″ dia. mounting holes (fasteners not included).

Style B reservoirs have a 12″ long Any-Which-Way flexible plastic nozzle with 3″ long stainless steel tip. *Style C reservoirs* have a low-coolant indicator, a 3″ long stainless steel straight nozzle and a magnetic nozzle base.

Also Available: Repl. parts. Please ask for 1199K92 and specify parts needed.

(D) Stainless Steel Reservoir— Use with water-based coolants. These dispensers have a 4-ft. long plastic coolant hose with 6″ long, 45° brass nozzle (unless noted) and a magnetic nozzle base. Inlet is 1/8″ NPT female. Required air pressure is 30 to 120 psi.

Install the *optional on/off air switch* in your air-supply line to save energy and reduce waste.

Also Available: Repl. parts. Please ask for 1131K93 and specify parts needed.

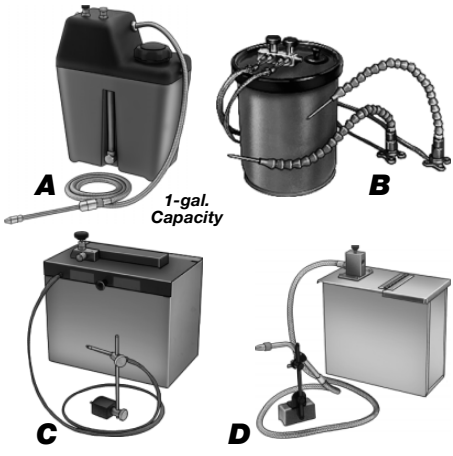

Cap.	No. of Coolant Hoses	Nozzle Lg.	Overall Size, Ht. × Wd. × Dp.		
Plastic Reservoir					
A.. 1 qt.	1	6″	8½″ × 5¼″ × 4″	**1324K52**	$147.10
A.. 1 qt.	1	6″	8½″ × 5¼″ × 4″	**1324K73**	163.95
A.. 1 gal.	1	6″	12¼″ × 10″ × 5¼″	**1324K86**	267.66
A.. 1 gal.	2	6″	12¼″ × 10″ × 5¼″	**1324K34**	275.77
Steel Reservoir					
B.. 1 gal.	1	3″	10″ × 7″ Dia.	**1199K31**	140.97
B.. 1 gal.	2	3″	10″ × 7″ Dia.	**1199K32**	209.44
C.. 2 gal.	1	3″	8″ × 10″ × 6″	**1199K1**	237.64
C.. 2 gal.	2	3″	8″ × 10″ × 6″	**1199K2**	294.03
C.. 2 gal.	4	3″	8″ × 10″ × 6″	**1199K4**	394.72

▲ Has an Any-Which-Way flexible plastic nozzle with 1¼″ long brass tip.

Cap.	No. of Coolant Hoses	Nozzle Lg.	Overall Size, Ht. × Wd. × Dp.		
Stainless Steel Reservoir					
D.. 1 gal.	1	6″	10¾″ × 7¾″ × 3½″	**1131K14**	$161.14
D.. 1 gal.	1	12″	10¾″ × 7¾″ × 3½″	**1131K16**▲	187.19
D.. 1 gal.	2	6″	10¾″ × 7¾″ × 3½″	**1131K18**	227.10
D.. 3 gal.	2	6″	13¾″ × 8⅝″ × 6″	**1131K19**	240.00
Accessories					
45° Stainless Steel Nozzle (3″ long) for Styles B & C				**1199K61**	34.50
On/Off Air Switch for Style D				**1131K21**	44.00

Precision-Control Air-Powered Droplet Coolant Dispenser with Reservoir

Deliver a small, controlled amount of coolant, reducing disposal costs while improving the finish of your work. Use with synthetic and vegetable-based coolants (each sold separately).

Dispenser comes with two 6-ft. plastic delivery hoses and two 18″ long, Any-Which-Way flexible plastic nozzles, each with a brass tip and magnetic base. Reservoir is plastic and has a capacity of 16 oz. Easy-to-set knobs give you precise control of both the air flow and the number of droplets per minute (2 to 16) for each coolant hose.

Dispenser measures 7 1/16″ Ht. × 10 1/16″ Wd. × 7 1/16″ Dp.; operates on 120 VAC, 60 Hz (0.06 amp draw); and has a 6-ft. power cord with three-prong plug. Mount using the two 11/32″ dia. holes (fasteners not included) or the *optional magnetic mounting kit*, which is the choice if you will be moving the unit from one machine to another. Inlet is 1/4″ NPT female. Required air pressure is 60 to 125 psi.

Dispenser	**10835K23**	$816.73
Optional Magnetic Mounting Kit	**10835K48**	35.15
Synthetic Coolant (1-gal. Container)	**10305K16**	101.72
Vegetable Coolant (1-gal. Container)	**10305K26**	104.21

Flooding Coolant Pumps with Reservoir

When longer machine cycles create more heat than a mist can handle, provide a continuous stream of coolant to disperse heat and extend tool life. The reservoir includes a chip collector and baffle (unless noted) to keep fluid clean. All pumps are powered by a 115 VAC, 60 Hz, single-phase motor.

(E) For Low- to Medium-Viscosity Liquids— *1-gallon pump* has 6 ft. of plastic tubing, an adjustable 6″ plastic nozzle, and a 4-ft. power cord with three-prong plug.

5-gallon pumps have 6 ft. of plastic tubing, a flexible 12″ plastic nozzle, a brass control valve, and a 6-ft. power cord with three-prong plug.

10-gallon pump has 4 ft. of rubber tubing, a flexible 12″ plastic nozzle, a brass control valve, and a 6-ft. power cord with three-prong plug.

(F) For High-Viscosity Liquids— Pumps have 4 ft. of rubber tubing, a flexible 15″ steel nozzle, a brass control valve, and an 8-ft. power cord with three-prong plug. They also have a 3/8″ NPT female outlet.

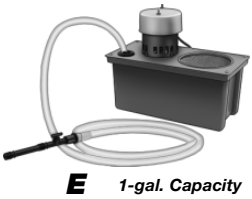

E *1-gal. Capacity*

Cap., gal.	Max. Viscosity, SSU	hp	Amps	Overall Size Ht.	Wd.	Dp.	Reservoir Material	Water-Soluble Oil Max. gph @ 1 ft. Head	Shutoff ■		
(E) For Low- to Medium-Viscosity Liquids											
1	300	1/50	1.0	9⅜″	12″	6″	Plastic	108	11.5 ft.	**43085K21**●	$128.77
5	300	1/150	1.1	8½″	16⅞″	11¼″	Plastic	70	10.2 ft.	**43085K31**	213.59
5	300	1/40	1.7	8½″	16⅞″	11¼″	Plastic	82	12.3 ft.	**43085K32**	228.17
5	300	1/15	3.2	8½″	16⅞″	11¼″	Plastic	500	17.3 ft.	**43085K33**	269.06
10	300	1/15	3.2	12″	25″	10″	Steel	500	17.3 ft.	**43085K41**	485.06
(F) For High-Viscosity Liquids											
6	500	1/8	0.7	15″	18″	9½″	Steel	600	14 ft.	**4339K14**	345.99
10	500	1/8	0.7	16½″	24″	9¾″	Steel	600	14 ft.	**4339K15**●	475.68

■ Max. height that water-soluble oil can be pumped. ● No baffle.

F

About Knobs

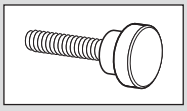
Threaded Stud

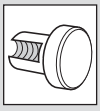
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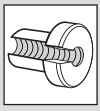
Threaded Through Hole

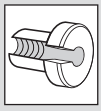
Through Hole with Threaded Insert

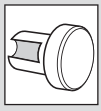
Unthreaded

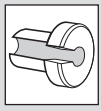
Unthreaded Through Hole

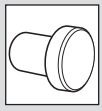
Solid Hub

Knobs provide excellent gripping action for positioning, tightening, and holding fixtures, equipment, and machinery. Because knobs require no tools for adjusting, they're a good alternative to fasteners.

Knobs with Threaded Stud— Ready to install. See pages 2206-2210.

Knobs with Threaded or Unthreaded Hole— Mount to your rod, shaft, or fastener. See pages 2211-2219.

Knobs with Solid Hub— Ready for you to machine to your own specifications. See page 2220.

Knobs with Threaded Stud

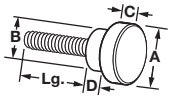

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Easy Clean— One-piece construction eliminates joints that can collect dirt and debris. Excellent for medical and food-processing applications.

Size	Thread Lg.	(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim							
(1) Zinc-Plated Cast Iron with Steel Stud							
1/4″-20	1 3/4″	1 3/8″	5/8″	3/8″	1/2″	6042K85	$6.24
1/4″-20	3″	1 3/8″	5/8″	3/8″	1/2″	6042K86	7.30
5/16″-18	1 3/4″	1 7/8″	3/4″	3/8″	1/2″	6042K87	6.80
5/16″-18	3″	1 7/8″	3/4″	3/8″	1/2″	6042K88	7.60
3/8″-16	1 3/4″	1 7/8″	3/4″	3/8″	1/2″	6042K89	7.50
3/8″-16	3″	1 7/8″	3/4″	3/8″	1/2″	6042K9	8.34
1/2″-13	1 3/4″	2 1/4″	1 1/8″	1/2″	1″	6042K91	13.30
1/2″-13	3″	2 1/4″	1 1/8″	1/2″	1″	6042K92	14.30
5/8″-11	1 3/4″	2 1/4″	1 1/8″	1/2″	1″	6042K93	14.30
5/8″-11	3″	2 1/4″	1 1/8″	1/2″	1″	6042K94	14.60
(1) Black-Oxide Steel with Steel Stud							
10-24	1/2″	3/4″	1/2″	1/4″	3/8″	6079K11	3.95
10-24	1″	3/4″	1/2″	1/4″	3/8″	6079K12	4.10
1/4″-20	3/4″	3/4″	1/2″	1/4″	3/8″	6079K13	4.05
1/4″-20	1 1/4″	3/4″	1/2″	1/4″	3/8″	6079K14	4.13
1/4″-20	1 3/4″	1″	5/8″	1/4″	1/2″	6079K15	4.72
1/4″-28	1 3/4″	1″	5/8″	1/4″	1/2″	6079K32	4.74
5/16″-18	1 3/4″	1″	5/8″	1/4″	1/2″	6079K17	4.72
5/16″-18	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	6079K19	5.72
5/16″-18	3″	1″	5/8″	1/4″	1/2″	6079K18	5.03
5/16″-18	3″	1 1/2″	3/4″	5/16″	11/16″	6079K21	5.90
5/16″-24	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	6079K33	5.44
3/8″-16	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	6079K22	5.72
3/8″-16	1 3/4″	2″	1″	3/8″	3/4″	6079K24	6.95
3/8″-16	3″	1 1/2″	3/4″	5/16″	11/16″	6079K23	5.90
3/8″-16	3″	2″	1″	3/8″	3/4″	6079K25	7.13
3/8″-24	1 3/4″	2″	1″	3/8″	3/4″	6079K34	6.62
1/2″-13	1 3/4″	2″	1″	3/8″	3/4″	6079K26	6.95
1/2″-13	1 3/4″	2 1/2″	1 1/2″	9/16″	15/16″	6079K28	11.77
1/2″-13	3″	2 1/2″	1 1/2″	9/16″	15/16″	6079K29	12.21
1/2″-20	1 3/4″	2 1/2″	1 1/2″	9/16″	15/16″	6079K35	11.21
5/8″-11	1 3/4″	2 1/2″	1 1/2″	9/16″	15/16″	6079K31	12.41
(1) Brass with Type 303 Stainless Steel Stud							
10-24	1″	3/4″	1/2″	1/4″	3/8″	5125K61	5.66
1/4″-20	1 1/4″	3/4″	1/2″	1/4″	3/8″	5125K62	6.06
1/4″-20	1 3/4″	1″	5/8″	1/4″	1/2″	5125K63	8.23
1/4″-28	1 3/4″	1″	5/8″	1/4″	1/2″	5125K64	8.23
5/16″-18	3″	1″	5/8″	1/4″	1/2″	5125K65	10.54
5/16″-18	3″	1 1/2″	3/4″	5/16″	11/16″	5125K66	19.94
5/16″-24	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	5125K67	17.57
3/8″-16	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	5125K68	19.00
3/8″-16	3″	1 1/2″	3/4″	5/16″	11/16″	5125K69	20.60
3/8″-24	1 3/4″	2″	1″	3/8″	3/4″	5125K71	28.51
1/2″-13	1 3/4″	2″	1″	3/8″	3/4″	5125K72	29.26
(1) Type 303 Stainless Steel with Type 303 SS Stud							
10-24	1/2″	3/4″	1/2″	1/4″	3/8″	6091K41	9.25
10-24	1″	3/4″	1/2″	1/4″	3/8″	6091K42	9.25
1/4″-20	3/4″	3/4″	1/2″	1/4″	3/8″	6091K43	8.95
1/4″-20	1 1/4″	3/4″	1/2″	1/4″	3/8″	6091K44	9.67
1/4″-20	1 3/4″	1″	5/8″	1/4″	1/2″	6091K45	11.06
1/4″-28	1 3/4″	1″	5/8″	1/4″	1/2″	6091K61	11.06
5/16″-18	1 3/4″	1″	5/8″	1/4″	1/2″	6091K46	10.47

Size	Thread Lg.	(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim (Cont.)							
(1) Type 303 Stainless Steel with Type 303 SS Stud (Cont.)							
5/16″-18	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	6091K48	$12.61
5/16″-18	3″	1″	5/8″	1/4″	1/2″	6091K47	11.13
5/16″-18	3″	1 1/2″	3/4″	5/16″	11/16″	6091K49	13.08
5/16″-24	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	6091K62	12.63
3/8″-16	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	6091K51	13.31
3/8″-16	1 3/4″	2″	1″	3/8″	3/4″	6091K53	16.25
3/8″-16	3″	1 1/2″	3/4″	5/16″	11/16″	6091K52	13.81
3/8″-16	3″	2″	1″	3/8″	3/4″	6091K54	16.64
3/8″-24	1 3/4″	2″	1″	3/8″	3/4″	6091K63	16.25
1/2″-13	1 3/4″	2″	1″	3/8″	3/4″	6091K55	16.25
1/2″-13	1 3/4″	2 1/2″	1 1/2″	9/16″	15/16″	6091K56	27.47
1/2″-13	3″	2 1/2″	1 1/2″	9/16″	15/16″	6091K57	27.47
1/2″-20	1 3/4″	2 1/2″	1 1/2″	9/16″	15/16″	6091K64	27.47
5/8″-11	1 3/4″	2 1/2″	1 1/2″	9/16″	15/16″	6091K58	28.97
(1) Easy-Clean Type 303 Stainless Steel with Type 303 SS Stud							
1/4″-20	1 3/4″	1″	5/8″	1/4″	1/2″	6890K1	14.16
5/16″-18	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	6890K2	17.05
3/8″-16	1 3/4″	2″	1″	3/8″	3/4″	6890K3	20.79
1/2″-13	1 3/4″	2″	1″	3/8″	3/4″	6890K4	20.79
(2) Domed Aluminum with Steel Stud							
1/4″-20	1 3/4″	1″	5/8″	1/2″	7/16″	7762K14	10.81
5/16″-18	1 3/4″	1″	5/8″	1/2″	7/16″	7762K17	11.05
3/8″-16	1 3/4″	2″	1″	11/16″	1/2″	7762K23	15.88
1/2″-13	1 3/4″	2 1/4″	1 1/4″	3/4″	5/8″	7762K26	18.26
(3) Black Nylon w/ Type 302 Stainless Steel Stud *(–15° to +150° F)*							
1/4″-20	3/4″	1″	5/8″	1/4″	1/2″	1373T51	2.50
5/16″-18	3/4″	1 3/4″	1″	5/8″	7/16″	1373T52	5.58
(3) Black Phenolic w/ Type 302 Stainless Steel Stud *(–30° to +400° F)*							
10-32	1/2″	1″	5/8″	3/8″	1/8″	1373T11	3.35
10-32	1/2″	1 1/4″	3/4″	1/2″	1/4″	1373T21	3.55
10-32	1/2″	1 3/4″	1″	1/2″	7/16″	1373T31	3.83
10-32	1″	1″	5/8″	3/8″	1/8″	1373T12	5.10
10-32	1″	1 1/4″	3/4″	1/2″	1/4″	1373T22	5.35
10-32	1″	1 3/4″	1″	1/2″	7/16″	1373T32	5.65
1/4″-20	3/4″	1″	5/8″	3/8″	1/8″	1373T57	2.30
1/4″-20	3/4″	1 1/4″	3/4″	1/2″	1/4″	1373T55	2.37
1/4″-20	3/4″	1 3/4″	1″	1/2″	7/16″	1373T53	2.52
1/4″-20	1 3/8″	1 1/4″	3/4″	1/2″	1/4″	1373T56	2.48
1/4″-20	1 1/2″	1″	5/8″	3/8″	1/8″	1373T58	2.17
5/16″-18	1/2″	1″	5/8″	3/8″	1/8″	1373T15	4.65
5/16″-18	1/2″	1 1/4″	3/4″	1/2″	1/4″	1373T25	4.95
5/16″-18	1/2″	1 3/4″	1″	1/2″	7/16″	1373T35	5.22
5/16″-18	3/4″	1 3/4″	1″	1/2″	7/16″	1373T54	5.80
5/16″-18	1″	1″	5/8″	3/8″	1/8″	1373T16	5.40
5/16″-18	1″	1 1/4″	3/4″	1/2″	1/4″	1373T26	5.67
5/16″-18	1″	1 3/4″	1″	1/2″	7/16″	1373T36	6.05
(4) Black Polypropylene with Steel Stud *(+30° to +190° F)*							
1/4″-20	3/4″	1 1/4″	9/16″	1/2″	3/8″	63625K31	3.38
1/4″-20	3/4″	1 9/16″	11/16″	1/2″	7/16″	63625K32	3.55
5/16″-18	3/4″	1 9/16″	11/16″	1/2″	7/16″	63625K33	3.19
3/8″-16	1″	2″	13/16″	5/8″	1/2″	63625K34	4.93
3/8″-16	1″	2 3/8″	15/16″	13/16″	9/16″	63625K35	5.48

(Continued on following page)

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Knobs with Threaded Stud *(Continued from previous page)*

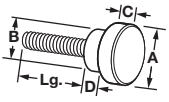

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Size	Thread Lg.	(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim							
(5) Black Polyamide with Steel Stud *(–30° to +200°F)*							
1/4″-20	13/16″	1″	1/2″	7/8″	1/8″	**3503K61**	$8.64
5/16″-18	19/16″	1 1/4″	5/8″	13/16″	1/8″	**3503K62**	9.74
3/8″-16	19/16″	19/16″	3/4″	1 1/2″	3/16″	**3503K63**	11.85
1/2″-13	13/16″	2″	15/16″	1 13/16″	3/16″	**3503K64**	24.92
1/2″-13	2 3/8″	2″	15/16″	1 13/16″	3/16″	**3503K65**	24.92
(5) Black Polyamide with Type 303 SS Stud *(–30° to +200°F)*							
1/4″-20	13/16″	1″	1/2″	7/8″	1/8″	**3503K58**	13.54
5/16″-18	19/16″	1 1/4″	5/8″	13/16″	1/8″	**3503K59**	16.62
3/8″-16	19/16″	19/16″	3/4″	1 1/2″	3/16″	**3503K71**	19.15
(6) Black Comfort-Grip Polypropylene w/ Steel Stud *(–60° to +210°F)*							
1/4″-20	1 1/4″	19/16″	3/4″	5/16″	5/16″	**6214K44**	1.92
1/4″-20	1 1/4″	2″	3/4″	7/16″	3/16″	**6214K46**	2.10
5/16″-18	1 7/16″	19/16″	3/4″	5/16″	5/16″	**6214K52**	2.08
5/16″-18	1 7/16″	2″	3/4″	7/16″	3/16″	**6214K56**	2.28
3/8″-16	1 7/16″	19/16″	3/4″	5/16″	5/16″	**6214K65**	2.13
3/8″-16	1 7/16″	2″	3/4″	7/16″	3/16″	**6214K72**	2.37
3/8″-16	1 3/4″	19/16″	3/4″	5/16″	5/16″	**6214K67**	2.16
3/8″-16	1 3/4″	2″	3/4″	7/16″	3/16″	**6214K73**	2.33
Round with Fluted Rim							
(7) Black Phenolic with Steel Stud *(–30° to +400°F)*							
10-24	1/2″	7/8″	5/8″	3/8″	1/8″	**6479K71**	.92
10-32	3/8″	7/8″	5/8″	3/8″	1/8″	**6479K69**	.82
10-32	1/2″	7/8″	5/8″	3/8″	1/8″	**6479K32**	.70
10-32	3/4″	7/8″	5/8″	3/8″	3/8″	**6479K68**	.82
10-32	1″	7/8″	5/8″	3/8″	1/4″	**6479K79**	.98
1/4″-20	1/2″	1 1/4″	5/8″	3/8″	3/8″	**6479K88**	1.07
1/4″-20	1/2″	1 3/4″	3/4″	3/8″	3/8″	**6479K83**	1.40
1/4″-20	9/16″	7/8″	5/8″	3/8″	1/8″	**6479K33**	.70
1/4″-20	9/16″	1 1/2″	11/16″	3/8″	3/8″	**6479K35**	1.25
1/4″-20	3/4″	1 1/4″	5/8″	3/8″	3/8″	**6479K34**	.95
1/4″-20	1″	7/8″	5/8″	3/8″	3/8″	**6479K81**	.98
1/4″-20	1″	1 1/4″	5/8″	3/8″	3/8″	**6479K86**	1.15
1/4″-20	1″	1 1/2″	11/16″	3/8″	3/8″	**6479K92**	1.20
1/4″-20	1″	2″	5/8″	11/16″	▲	**6479K44**	2.10
5/16″-18	1/2″	1 1/4″	5/8″	3/8″	3/8″	**6479K91**	1.12
5/16″-18	1/2″	1 1/2″	11/16″	3/8″	3/8″	**6479K36**	1.05
5/16″-18	3/4″	1 3/4″	3/4″	3/8″	3/8″	**6479K37**	1.27
5/16″-18	1″	7/8″	5/8″	3/8″	1/4″	**6479K74**	.95
5/16″-18	1″	2″	5/8″	11/16″	▲	**6479K39**	2.17
5/16″-18	1″	2 1/2″	1 1/4″	11/16″	5/8″	**6479K93**	2.80
5/16″-18	1 1/2″	1 3/4″	3/4″	3/8″	3/8″	**6479K38**	1.32
3/8″-16	1/2″	1 1/4″	5/8″	3/8″	3/8″	**6479K89**	1.30
3/8″-16	3/4″	2 3/8″	1 3/4″	3/8″	7/16″	**6479K23**	2.97
3/8″-16	1″	1 1/4″	5/8″	3/8″	3/8″	**6479K87**	1.32
3/8″-16	1″	2″	5/8″	11/16″	▲	**6479K41**	2.10
3/8″-16	1″	2 1/2″	1 1/4″	11/16″	5/8″	**6479K42**	2.97
3/8″-16	1″	3″	1 1/4″	9/16″	5/8″	**6479K43**	4.40
1/2″-13	1″	2 1/2″	1 1/4″	11/16″	5/8″	**6479K22**	3.15
1/2″-13	1″	3″	1 1/4″	13/16″	11/16″	**6479K24**	4.95
(7) Black Phenolic with Type 302 SS Stud *(–30° to +450°F)*							
10-32	1/2″	1 3/4″	3/4″	3/8″	3/8″	**6479K26**	3.77
10-32	1″	1 3/4″	3/4″	3/8″	3/8″	**6479K27**	5.60
1/4″-20	3/4″	1 3/4″	3/4″	3/8″	5/8″	**6479K72**	2.55
5/16″-18	1/2″	1 3/4″	3/4″	3/8″	3/8″	**6479K45**	5.20
5/16″-18	1″	1 3/4″	3/4″	3/8″	3/8″	**6479K46**	6.05
(8) Black Comfort-Grip Polypropylene w/ Steel Stud *(–15° to +200°F)*							
5/16″-18	1 3/4″	2 1/2″	1 1/4″	11/16″	9/16″	**5532T55**	4.31
3/8″-16	2″	2 1/2″	1 1/4″	11/16″	9/16″	**5532T57**	4.62
1/2″-13	1 1/2″	2 1/2″	1 1/4″	11/16″	9/16″	**5532T59**	4.92
Round High Profile							
(9) Black Comfort-Grip Polypropylene w/ Steel Stud *(–60° to +210°F)*							
1/4″-20	1″	1 11/16″	15/16″	2″	3/16″	**6185K54**	2.48
1/4″-20	1″	1 7/8″	1 1/2″	2 1/4″	1/4″	**6185K65**	4.13
5/16″-18	1 1/2″	1 7/8″	1 1/2″	2 1/4″	1/4″	**6185K72**	4.47
3/8″-16	1 1/2″	1 11/16″	15/16″	2″	3/16″	**6185K59**	3.02
Round High Profile							
(9) Black Comfort-Grip Polypropylene w/ Steel Stud (Cont.)							
3/8″-16	1 1/2″	1 7/8″	1 1/2″	2 1/4″	1/4″	**6185K74**	$4.38
3/8″-16	1 3/4″	1 7/8″	1 1/2″	2 1/4″	1/4″	**6185K76**	4.30
Two Arm							
(10) Black Nylon with Steel Stud *(–15° to +150°F)*							
1/4″-20	1″	1 1/8″	1/2″	9/16″	1/8″	**65035K14**	1.27
5/16″-18	1/2″	2 1/2″	3/4″	5/8″	1/2″	**65035K73**	1.80
5/16″-18	1″	2 1/2″	3/4″	5/8″	1/2″	**65035K16**	1.70
5/16″-18	1″	3 1/2″	15/16″	7/8″	1/4″	**65035K75**	2.70
3/8″-16	1/2″	2 1/2″	3/4″	5/8″	1/2″	**65035K74**	2.27
3/8″-16	1″	2 1/2″	3/4″	5/8″	1/2″	**65035K18**	1.85
3/8″-16	1″	3 1/2″	15/16″	7/8″	1/4″	**65035K76**	2.80
(10) Black Nylon with Type 302 SS Stud *(–15° to +150°F)*							
5/16″-18	1/2″	2 1/2″	3/4″	5/8″	1/2″	**65035K52**	5.40
5/16″-18	1″	2 1/2″	3/4″	5/8″	1/2″	**65035K55**	6.15
3/8″-16	1″	2 1/2″	3/4″	5/8″	1/2″	**65035K22**	4.38
(10) Black Phenolic with Steel Stud *(–30° to +400°F)*							
1/4″-20	9/16″	2″	3/4″	5/8″	1/2″	**65035K71**	1.48
1/4″-20	1″	2″	3/4″	5/8″	1/2″	**65035K31**	1.45
1/4″-20	1″	2 1/2″	3/4″	5/8″	1/2″	**65035K34**	1.43
5/16″-18	3/4″	2″	3/4″	5/8″	1/2″	**65035K72**	1.52
3/8″-16	1″	2″	3/4″	5/8″	1/2″	**65035K78**	1.73
(10) Black Phenolic with Type 302 SS Stud *(–30° to +400°F)*							
1/4″-20	3/4″	2″	3/4″	5/8″	1/2″	**65035K23**	2.60
5/16″-18	1/2″	2″	3/4″	5/8″	1/2″	**65035K49**	5.35
5/16″-18	1″	2″	3/4″	5/8″	1/2″	**65035K53**	6.20
3/8″-16	1″	2″	3/4″	5/8″	1/2″	**65035K24**	4.10
(10) Black Polypropylene with Steel Stud *(–15° to +125°F)*							
5/16″-18	1/2″	1 1/2″	3/4″	5/8″	1/8″	**3708T15**	2.30
1/2″-13	1″	3 1/2″	15/16″	7/8″	1/4″	**65035K77**	3.42
(11) Black Nylon with Steel Stud *(–15° to +150°F)*							
1/4″-20	1/2″	3″	3/4″	3/8″	13/16″	**65035K36**	1.65
5/16″-18	1″	3″	3/4″	3/8″	13/16″	**65035K37**	1.70
(12) Black Polypropylene with Steel Stud *(–15° to +125°F)*							
1/4″-20	1/2″	2 1/4″	3/4″	3/4″	11/16″	**65035K11**	3.77
(12) Black Polypropylene with Type 302 SS Stud *(–15° to +125°F)*							
5/16″-18	1/2″	2 1/4″	3/4″	3/4″	11/16″	**65035K51**	6.25
5/16″-18	1″	2 1/4″	3/4″	3/4″	11/16″	**65035K54**	6.97
3/8″-16	1 1/2″	2 1/4″	3/4″	3/4″	11/16″	**65035K48**	3.67
(13) Black Polypropylene with Steel Stud *(–15° to +125°F)*							
10-32	3/4″	1 1/4″	1/2″	3/4″	1/8″	**65035K47**	1.23
1/4″-20	1/2″	1 1/4″	1/2″	3/4″	1/8″	**65035K39**	1.23
(14) Black Phenolic with Steel Stud *(–30° to +400°F)*							
1/4″-20	1/2″	1 1/8″	1/2″	5/8″	1/8″	**6477K32**	.98
Three Arm							
(15) Black Phenolic with Steel Stud *(–30° to +400°F)*							
8-32	1/2″	7/8″	1/2″	3/8″	3/8″	**57715K36**	.80
10-32	7/16″	1 1/8″	1/2″	1/2″	1/4″	**57715K28**	.78
10-32	1/2″	7/8″	1/2″	3/8″	3/8″	**57715K39**	.88
10-32	3/4″	7/8″	1/2″	3/8″	3/8″	**57715K37**	.82
10-32	1″	1 1/8″	1/2″	1/2″	1/4″	**57715K46**	1.02
1/4″-20	1/2″	7/8″	1/2″	3/8″	3/8″	**57715K38**	.90
1/4″-20	1/2″	1 1/8″	1/2″	1/2″	1/4″	**57715K16**	.95
1/4″-20	9/16″	1 1/2″	5/8″	5/8″	1/4″	**57715K29**	.98
1/4″-20	3/4″	1 1/8″	1/2″	1/2″	1/4″	**57715K44**	.92
1/4″-20	3/4″	1 1/2″	5/8″	5/8″	1/4″	**57715K47**	1.27
1/4″-20	1″	1 1/8″	1/2″	1/2″	1/4″	**57715K45**	.95
1/4″-20	1″	1 1/2″	5/8″	5/8″	1/4″	**57715K49**	1.37
1/4″-20	1″	2″	3/4″	5/8″	3/8″	**57715K78**	1.75
1/4″-20	1 1/2″	1 1/8″	1/2″	1/2″	1/4″	**57715K84**	1.02
5/16″-18	1/2″	1 1/2″	5/8″	5/8″	1/4″	**57715K68**	1.43
5/16″-18	3/4″	1 1/2″	5/8″	5/8″	1/4″	**57715K31**	1.05
5/16″-18	3/4″	2″	3/4″	5/8″	3/8″	**57715K17**	1.65
5/16″-18	1″	1 1/2″	5/8″	5/8″	1/4″	**57715K67**	1.20
5/16″-18	1″	2″	3/4″	5/8″	3/8″	**57715K81**	1.85
3/8″-16	1/2″	2″	3/4″	5/8″	3/8″	**57715K83**	1.98
3/8″-16	3/4″	2″	3/4″	5/8″	5/8″	**57715K32**	1.85
3/8″-16	1″	2″	3/4″	5/8″	3/8″	**57715K79**	2.00

▲ No hub projection.

(Continued on following page)

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Knobs with Threaded Stud *(Continued from previous page)*

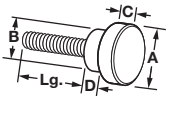

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Thread Size	Lg.	(A)	(B)	(C)	(D)		Each ♦
Three Arm (Cont.)							
(15) Black Phenolic with Type 302 SS Stud *(–30° to +400°F)*							
10-32	1″	1½″	⅝″	⅝″	⅛″	**57715K51**	$5.50
¼″-20	¾″	1½″	⅝″	⅝″	¼″	**57715K55**	2.42
¼″-20	¾″	2″	¾″	⅝″	⅜″	**57715K53**	2.65
¼″-20	1½″	1½″	⅝″	⅝″	¼″	**57715K56**	2.58
5/16″-18	½″	1½″	⅝″	⅝″	⅛″	**57715K58**	5.10
5/16″-18	½″	2″	¾″	⅝″	⅜″	**57715K59**	5.67
5/16″-18	1″	1½″	⅝″	⅝″	¼″	**57715K61**	5.85
5/16″-18	1″	2″	¾″	⅝″	⅜″	**57715K62**	6.40
⅜″-16	1½″	1½″	⅝″	⅝″	¼″	**57715K57**	3.60
⅜″-16	1½″	2″	¾″	⅝″	⅜″	**57715K54**	4.08
(15) Black Polypropylene with Steel Stud *(–15° to +125°F)*							
¼″-20	9/16″	1½″	⅝″	⅝″	¼″	**57715K71**	.85
5/16″-18	½″	1½″	⅝″	⅝″	¼″	**57715K72**	.88
⅜″-16	1″	1½″	⅝″	⅝″	¼″	**57715K73**	1.07
(16) Black Phenolic with Type 302 SS Stud *(–30° to +400°F)*							
¼″-20	½″	1¼″	¾″	7/16″	7/16″	**57715K42**	2.88
¼″-20	¾″	1¼″	¾″	7/16″	7/16″	**57715K43**	2.42
5/16″-18	½″	1¼″	¾″	7/16″	7/16″	**57715K63**	4.92
5/16″-18	½″	2⅛″	1″	11/16″	3/16″	**57715K87**	6.22
5/16″-18	¾″	2⅛″	1″	11/16″	3/16″	**57715K41**	6.85
5/16″-18	1″	1¼″	¾″	7/16″	7/16″	**57715K64**	5.65
5/16″-18	1″	2⅛″	1″	11/16″	3/16″	**57715K88**	6.95
(17) Black Comfort-Grip Polypropylene w/ Steel Stud *(–60° to +210°F)*							
10-32	½″	13/16″	½″	½″	⅛″	**2776K14**	1.94
¼″-20	½″	13/16″	½″	½″	⅛″	**2776K16**	2.11
¼″-20	½″	1¾″	¾″	¾″	⅛″	**2776K19**	2.14
¼″-20	1″	1¾″	¾″	¾″	⅛″	**2776K22**	2.14
5/16″-18	1″	1¾″	¾″	¾″	⅛″	**2776K25**	2.28
⅜″-16	1″	2 3/16″	13/16″	15/16″	⅛″	**2776K27**	2.69
Four Arm							
(18) Cast Iron with Steel Stud							
¼″-20	1¾″	1½″	⅝″	⅜″	½″	**62215K51**	6.58
¼″-20	3″	1½″	⅝″	⅜″	½″	**62215K52**	7.88
5/16″-18	1¾″	2″	¾″	⅜″	⅝″	**62215K53**	7.16
5/16″-18	3″	2″	¾″	⅜″	⅝″	**62215K54**	7.98
⅜″-16	1¾″	2″	¾″	⅜″	⅝″	**62215K55**	6.81
⅜″-16	3″	2″	¾″	⅜″	⅝″	**62215K56**	7.71
½″-13	1¾″	2½″	1⅛″	½″	1″	**62215K57**	9.22
½″-13	3″	2½″	1⅛″	½″	1″	**62215K58**	9.26
⅝″-11	1¾″	2½″	1⅛″	½″	1″	**62215K59**	10.35
⅝″-11	3″	2½″	1⅛″	½″	1″	**62215K61**	11.63
(18) Aluminum with Steel Stud							
¼″-20	1¾″	1½″	⅝″	⅜″	½″	**6085K31**	6.51
¼″-20	3″	1½″	⅝″	⅜″	½″	**6085K12**	7.64
5/16″-18	1¾″	2″	¾″	⅜″	⅝″	**6085K13**	6.98
5/16″-18	3″	2″	¾″	⅜″	⅝″	**6085K14**	7.89
⅜″-16	1¾″	2″	¾″	⅜″	⅝″	**6085K15**	7.51
⅜″-16	3″	2″	¾″	⅜″	⅝″	**6085K16**	8.44
½″-13	1¾″	2½″	1⅛″	½″	1″	**6085K17**	9.60
½″-13	3″	2½″	1⅛″	½″	1″	**6085K18**	10.62
⅝″-11	1¾″	2½″	1⅛″	½″	1″	**6085K19**	10.11
⅝″-11	3″	2½″	1⅛″	½″	1″	**6085K21**	11.56
(19) Steel with Steel Stud							
¼″-20	1¾″	1½″	⅝″	½″	⅜″	**3992T21**	10.23
5/16″-18	1¾″	2″	13/16″	½″	½″	**3992T22**	14.66
⅜″-16	1¾″	2½″	1″	9/16″	9/16″	**3992T23**	23.80
½″-13	1¾″	2½″	1½″	9/16″	9/16″	**3992T24**	23.80
(19) Brass with Type 303 Stainless Steel Stud							
¼″-20	1¾″	1½″	⅝″	½″	⅜″	**5125K85**	18.06
5/16″-18	1¾″	2″	13/16″	½″	½″	**5125K86**	31.00
⅜″-16	1¾″	2½″	1″	9/16″	9/16″	**5125K87**	58.51
⅜″-16	3″	2½″	1″	9/16″	9/16″	**5125K88**	61.43
½″-13	1¾″	2½″	1″	9/16″	9/16″	**5125K89**	59.97
½″-13	3″	2½″	1″	9/16″	9/16″	**5125K91**	62.97
(19) Aluminum with Steel Stud							
¼″-20	1¾″	1½″	⅝″	½″	⅜″	**60965K31**	8.62
¼″-20	3″	1½″	⅝″	½″	⅜″	**60965K32**	8.88
5/16″-18	1¾″	2″	13/16″	½″	½″	**60965K33**	9.30
5/16″-18	3″	2″	13/16″	½″	½″	**60965K34**	10.35
Four Arm (Cont.)							
(19) Aluminum with Steel Stud (Cont.)							
⅜″-16	1¾″	2½″	1″	9/16″	9/16″	**60965K351**	$11.00
⅜″-16	3″	2½″	1″	9/16″	9/16″	**60965K361**	11.80
½″-13	1¾″	2½″	1″	9/16″	9/16″	**60965K352**	12.32
½″-13	3″	2½″	1″	9/16″	9/16″	**60965K362**	12.50
⅝″-11	1¾″	3″	1¼″	⅝″	⅝″	**60965K37**	13.65
⅝″-11	3″	3″	1¼″	⅝″	⅝″	**60965K38**	14.25
(19) Type 303 Stainless Steel with Type 303 SS Stud							
5/16″-18	1 3/16″	1 9/16″	9/16″	½″	½″	**4384K51**	13.83
5/16″-18	1 9/16″	1 9/16″	9/16″	½″	½″	**4384K52**	14.02
⅜″-16	1 9/16″	1 9/16″	9/16″	½″	½″	**4384K54**	14.39
⅜″-16	1 15/16″	1 9/16″	9/16″	½″	½″	**4384K55**	14.75
½″-13	1 9/16″	1 15/16″	11/16″	9/16″	¾″	**4384K57**	18.68
½″-13	1 15/16″	1 15/16″	11/16″	9/16″	¾″	**4384K58**	19.03
(20) Black Nylon with Steel Stud *(–15° to +150°F)*							
10-32	7/16″	1″	7/16″	⅜″	⅜″	**5993K16**	1.32
¼″-20	½″	1¾″	¾″	9/16″	⅜″	**5993K51**	1.57
¼″-20	½″	2¼″	1″	9/16″	7/16″	**5993K79**	1.76
5/16″-18	½″	1¾″	¾″	9/16″	⅜″	**5993K52**	1.68
5/16″-18	1″	2¼″	1″	9/16″	7/16″	**5993K88**	1.95
⅜″-16	½″	1¾″	¾″	9/16″	⅜″	**5993K53**	1.68
⅜″-16	½″	2¼″	1″	9/16″	7/16″	**5993K82**	1.84
⅜″-16	1″	2¼″	1″	9/16″	7/16″	**5993K89**	2.00
⅜″-16	1½″	2¼″	1″	9/16″	7/16″	**5993K86**	1.95
(20) Black Nylon with Type 302 SS Stud *(–15° to +150°F)*							
¼″-20	1″	2¼″	1″	9/16″	7/16″	**5993K87**	3.05
(20) Black Phenolic with Steel Stud *(–30° to +400°F)*							
¼″-20	½″	1½″	⅝″	½″	½″	**5993K24**	1.41
¼″-20	½″	2″	⅞″	½″	½″	**5993K61**	1.95
¼″-20	1″	1½″	⅝″	½″	½″	**5993K67**	1.24
¼″-20	1″	2″	⅞″	½″	½″	**5993K75**	2.03
5/16″-18	½″	2″	⅞″	½″	½″	**5993K71**	1.70
5/16″-18	1″	1½″	⅝″	½″	½″	**5993K68**	1.32
5/16″-18	1″	2″	⅞″	½″	½″	**5993K62**	2.11
5/16″-18	1¼″	1½″	⅝″	½″	½″	**5993K25**	1.54
5/16″-18	1¾″	1½″	⅝″	½″	½″	**5993K26**	1.59
⅜″-16	½″	2″	⅞″	½″	½″	**5993K58**	2.30
⅜″-16	1″	2″	⅞″	½″	½″	**5993K41**	1.81
⅜″-16	1½″	2″	⅞″	½″	½″	**5993K42**	1.92
⅜″-16	2″	2″	⅞″	½″	½″	**5993K43**	1.95
⅜″-16	2½″	2″	⅞″	½″	½″	**5993K59**	2.30
½″-13	¾″	2″	⅞″	½″	½″	**5993K72**	2.65
(20) Black Phenolic with Type 302 SS Stud *(–30° to +400°F)*							
¼″-20	¾″	1½″	⅝″	½″	½″	**5993K12**	2.70
¼″-20	¾″	2″	⅞″	½″	½″	**5993K18**	2.76
(20) Black Phenolic with Type 302 SS Stud *(–20° to +350°F)*							
8-32	9/16″	1½″	⅝″	½″	½″	**5993K47**	4.22
8-32	1″	1½″	⅝″	½″	½″	**5993K48**	5.00
10-32	½″	1½″	⅝″	½″	½″	**5993K73**	4.11
10-32	1″	1½″	⅝″	½″	½″	**5993K74**	6.11
5/16″-18	½″	2″	⅞″	½″	½″	**5993K94**	6.19
5/16″-18	1″	2″	⅞″	½″	½″	**5993K95**	7.03
(20) Black Polypropylene with Steel Stud *(–15° to +125°F)*							
5/16″-18	½″	2¼″	1″	9/16″	7/16″	**5993K81**	1.68
(21) Black Comfort-Grip Polypropylene w/ Steel Stud *(–60° to +210°F)*							
10-32	1″	1⅜″	9/16″	½″	3/16″	**2454K59**	2.93
10-32	1″	1¾″	11/16″	⅝″	⅛″	**2454K64**	3.30
¼″-20	1″	2″	15/16″	11/16″	3/16″	**2454K71**	2.28
¼″-20	1¼″	1⅜″	9/16″	½″	3/16″	**2454K62**	2.18
¼″-20	1¼″	1¾″	11/16″	⅝″	⅛″	**2454K66**	2.21
¼″-20	1¼″	2½″	1¼″	15/16″	3/16″	**2454K52**	2.38
¼″-20	1¼″	3″	1½″	11/16″	¼″	**2454K56**	3.76
5/16″-18	1½″	1¾″	11/16″	⅝″	⅛″	**2454K67**	2.48
5/16″-18	1½″	2″	15/16″	11/16″	3/16″	**2454K72**	2.55
5/16″-18	1½″	2½″	1¼″	15/16″	3/16″	**2454K53**	2.65
5/16″-18	1½″	3″	1½″	11/16″	¼″	**2454K57**	3.66
⅜″-16	1¾″	1¾″	11/16″	⅝″	⅛″	**2454K68**	2.55
⅜″-16	1¾″	2″	15/16″	11/16″	3/16″	**2454K73**	2.62
⅜″-16	1¾″	2½″	1¼″	15/16″	3/16″	**2454K54**	2.72
⅜″-16	1¾″	3″	1½″	11/16″	¼″	**2454K58**	3.68

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♦ Prices are 10% lower when you buy in quantities of 10 or more.

Knobs with Threaded Stud *(Continued from previous page)*

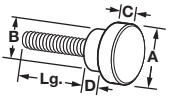

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(Style 22) Choose-a-Color—To Order: Please specify knob color: black, blue, green, orange, red, or white.
(Style 28) Choose-a-Color— Knobs are black with a colored cap. ***To Order:*** Please specify cap color: black, gray, red, or yellow.

Size	Thread Lg.	(A)	(B)	(C)	(D)		Each ♦
Four Arm (Cont.)							
(22) Choose-a-Color Nylon with Steel Stud *(+14° to +248°F)*							
1/4″-20	1″	1 9/16″	5/8″	7/16″	1/2″	7921K21	$2.67
5/16″-18	1″	2″	13/16″	9/16″	9/16″	7921K22	3.27
3/8″-16	1″	2 3/8″	15/16″	9/16″	11/16″	7921K23	3.85
1/2″-13	1″	2 3/8″	15/16″	9/16″	11/16″	7921K24	3.98
Five Arm							
(23) Black Nylon with Steel Stud *(–15° to +150°F)*							
1/4″-20	1″	2 1/4″	7/8″	1/2″	1/4″	59625K77	1.27
(23) Black Polypropylene with Steel Stud *(–15° to +125°F)*							
5/16″-18	3/4″	2 1/4″	7/8″	1/2″	1/4″	59625K78	1.09
3/8″-16	1″	2 1/4″	7/8″	1/2″	1/4″	59625K79	1.30
(23) Black Polypropylene with Steel Stud *(–15° to +200°F)*							
1/4″-20	1″	1 3/8″	7/8″	7/16″	3/4″	59625K39	.56
1/4″-20	1 1/2″	1 3/4″	7/8″	1/2″	3/4″	59625K42	.71
5/16″-18	1 1/2″	1 3/8″	7/8″	7/16″	3/4″	59625K41	.67
5/16″-18	2″	1 3/4″	7/8″	1/2″	3/4″	59625K43	.75
(24) Black Phenolic with Type 302 SS Stud *(–30° to +400°F)*							
1/4″-20	1/2″	1 3/16″	13/16″	7/16″	3/8″	7129T33	1.90
1/4″-20	1/2″	1 5/8″	1 3/16″	5/8″	1/4″	7129T34	2.43
5/16″-18	1/2″	1 3/16″	13/16″	7/16″	3/8″	7129T21	6.19
5/16″-18	1/2″	1 5/8″	1 3/16″	5/8″	1/4″	7129T27	5.78
5/16″-18	1″	1 3/16″	13/16″	7/16″	3/8″	7129T22	5.49
5/16″-18	1″	1 5/8″	1 3/16″	5/8″	1/4″	7129T28	6.68
(25) Black Comfort-Grip Polypropylene w/ Steel Stud *(–60° to +210°F)*							
1/4″-20	3/4″	1 1/2″	11/16″	15/16″	3/16″	61125K34	1.95
1/4″-20	1″	1 1/2″	11/16″	15/16″	3/16″	61125K43	1.95
1/4″-20	1″	1 7/8″	15/16″	15/16″	3/16″	61125K52	2.16
1/4″-20	1″	2 1/4″	1 1/4″	15/16″	3/16″	61125K61	2.63
1/4″-20	1 1/4″	1 1/2″	11/16″	15/16″	3/16″	61125K45	1.98
1/4″-20	1 1/4″	1 7/8″	15/16″	15/16″	3/16″	61125K54	2.27
1/4″-20	1 1/4″	2 1/4″	1 1/4″	15/16″	3/16″	61125K63	2.63
5/16″-18	1″	1 7/8″	15/16″	15/16″	3/16″	61125K35	2.32
5/16″-18	1 1/2″	1 1/2″	11/16″	15/16″	3/16″	61125K47	2.33
5/16″-18	1 1/2″	1 7/8″	15/16″	15/16″	3/16″	61125K71	2.91
5/16″-18	1 1/2″	2 1/4″	1 1/4″	15/16″	3/16″	61125K65	2.78
Five Arm (Cont.)							
(25) Black Comfort-Grip Polypropylene with Steel Stud (Cont.)							
3/8″-16	1″	2 1/4″	1 1/4″	15/16″	3/16″	61125K36	$2.62
3/8″-16	1 1/2″	1 1/2″	11/16″	15/16″	3/16″	61125K48	2.25
3/8″-16	1 1/2″	1 7/8″	15/16″	15/16″	3/16″	61125K56	2.63
3/8″-16	1 1/2″	2 1/4″	1 1/4″	15/16″	3/16″	61125K67	2.71
3/8″-16	1 3/4″	1 1/2″	11/16″	15/16″	3/16″	61125K49	2.29
3/8″-16	1 3/4″	1 7/8″	15/16″	15/16″	3/16″	61125K58	2.60
3/8″-16	1 3/4″	2 1/4″	1 1/4″	15/16″	3/16″	61125K69	2.74
Seven Lobe							
(26) Black Nylon with Type 303 SS Stud *(–40° to +200°F)*							
1/4″-20	9/16″	1″	1/2″	5/16″	5/16″	6092K41	2.51
1/4″-20	1 1/8″	1″	1/2″	5/16″	5/16″	6092K43	3.23
1/4″-20	15/16″	1″	1/2″	5/16″	5/16″	6092K45	3.66
5/16″-18	11/16″	1 9/16″	11/16″	1/2″	1/2″	6092K47	4.43
5/16″-18	15/16″	1 9/16″	11/16″	1/2″	1/2″	6092K48	4.91
5/16″-18	17/16″	1 9/16″	11/16″	1/2″	1/2″	6092K52	5.14
3/8″-16	11/16″	2″	7/8″	9/16″	11/16″	6092K54	6.05
3/8″-16	13/16″	2″	7/8″	9/16″	11/16″	6092K56	6.30
3/8″-16	1 11/16″	2″	7/8″	9/16″	11/16″	6092K58	6.92
1/2″-13	13/16″	2 1/2″	1″	3/4″	13/16″	6092K63	11.00
(27) Type 303 Stainless Steel with Type 303 SS Stud							
5/16″-18	13/16″	1 9/16″	1/2″	1/2″	1/2″	8558K61	15.37
5/16″-18	1 9/16″	1 9/16″	1/2″	1/2″	1/2″	8558K62	15.54
3/8″-16	1 9/16″	1 9/16″	1/2″	1/2″	1/2″	8558K64	15.88
3/8″-16	1 15/16″	1 9/16″	1/2″	1/2″	1/2″	8558K65	16.21
1/2″-13	1 15/16″	1 15/16″	11/16″	5/8″	11/16″	8558K67	20.78
1/2″-13	2 3/8″	1 15/16″	11/16″	5/8″	11/16″	8558K68	21.15
(28) Choose-a-Color Nylon with Type 303 SS Stud *(–30° to +200°F)*							
10-32	3/8″	1″	1/2″	5/16″	5/16″	3855K21	2.17
10-32	13/16″	1″	1/2″	5/16″	5/16″	3855K22	2.20
1/4″-20	13/16″	1 1/4″	9/16″	3/8″	3/8″	3855K23	2.91
1/4″-20	13/16″	1 1/4″	9/16″	3/8″	3/8″	3855K24	3.06
5/16″-18	13/16″	1 9/16″	11/16″	1/2″	1/2″	3855K25	4.51
5/16″-18	1 9/16″	1 9/16″	11/16″	1/2″	1/2″	3855K26	4.74
3/8″-16	13/16″	2″	7/8″	5/8″	11/16″	3855K27	5.66
3/8″-16	1 9/16″	2″	7/8″	5/8″	11/16″	3855K28	6.29

Metric Knobs with Threaded Stud

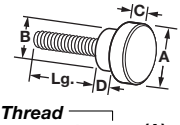

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Size	Thread Lg., mm	(A) mm	(B) mm	(C) mm	(D) mm		Each ♦
Round with Knurled Rim							
(1) Black-Oxide Steel with Steel Stud							
M5×0.8	25	19	13	6	10	61165K71	$4.57
M6×1	19	19	13	6	10	61165K73	4.57
M6×1	44	25	16	6	13	61165K75	5.29
M8×1.25	44	25	16	6	13	61165K76	5.29
M8×1.25	76	38	19	8	17	61165K78	6.63
M10×1.5	44	51	25	10	19	61165K83	7.74
M10×1.5	76	38	19	8	17	61165K81	6.63
M12×1.75	44	51	25	10	19	61165K85	7.75
(1) Brass with Type 303 Stainless Steel Stud							
M5×0.8	25	19	13	6	10	5125K75	5.80
M6×1	44	25	16	6	13	5125K76	9.34
M8×1.25	76	38	19	8	17	5125K77	19.43
M10×1.5	44	51	25	10	19	5125K78	29.94
M12×1.75	44	51	25	10	19	5125K79	30.74
(1) Type 303 Stainless Steel with Type 303 SS Stud							
M5×0.8	25	19	13	6	10	63165K91	9.56
M6×1	19	19	13	6	10	63165K92	9.44
M6×1	44	25	16	6	13	63165K93	11.06
M8×1.25	44	25	16	6	13	63165K94	11.06
M8×1.25	76	38	19	8	17	63165K95	13.81
M10×1.5	76	38	19	8	17	63165K96	13.81
Round with Fluted Rim							
(2) Black Nylon with Steel Stud *(–20° to +270°F)*							
M4×0.7	10	16	11	8	5	62935K11	$1.91
M5×0.8	16	20	12	10	6	62935K12	2.03
M6×1	16	25	16	11	8	62935K13	2.03
M8×1.25	16	32	17	13	9	62935K14	2.51
Three Arm							
(3) Black Comfort-Grip Polypropylene w/ Steel Stud *(–60° to +210°F)*							
M6×1	25	30	13	13	4	2776K51	2.40
M6×1	25	45	19	20	3	2776K52	2.57
M6×1	25	55	21	24	4	2776K55	2.80
M8×1.25	25	45	19	20	3	2776K53	3.57
M8×1.25	25	55	21	24	4	2776K56	3.77
M10×1.5	30	45	19	20	3	2776K54	3.13
M10×1.5	30	55	21	24	4	2776K57	3.30
Four Arm							
(4) Brass with Type 303 Stainless Steel Stud							
M6×1	44	38	16	13	10	5125K94	18.06
M8×1.25	44	51	21	13	13	5125K95	31.00
M10×1.5	44	64	25	14	14	5125K96	58.51
M10×1.5	76	64	25	14	14	5125K97	61.43
M12×1.75	44	64	25	14	14	5125K98	59.97
M12×1.75	76	64	25	14	14	5125K99	62.97

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♦ Prices are 10% lower when you buy in quantities of 10 or more.

Metric Knobs with Threaded Stud *(Continued from previous page)*

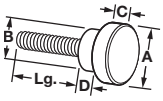

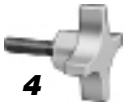
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(Style 9) Choose-a-Color— Knobs are black with a colored cap. **To Order:** Please specify cap color: black, gray, red, or yellow.

Size	Thread Lg., mm	(A) mm	(B) mm	(C) mm	(D) mm		Each ♦
Four Arm (Cont.)							
(4) Aluminum with Black-Oxide Steel Stud							
M6×1	45	38	16	12	10	**60965K51**	$8.95
M6×1	76	38	16	12	10	**60965K52**	9.22
M8×1.25	45	51	21	12	13	**60965K53**	9.62
M8×1.25	76	51	21	12	13	**60965K54**	10.72
M10×1.5	45	64	25	15	14	**60965K55**	11.43
M10×1.5	76	64	25	15	14	**60965K56**	12.25
M12×1.75	45	64	25	15	14	**60965K57**	12.80
M12×1.75	76	64	25	15	14	**60965K58**	13.07
(4) Type 303 Stainless Steel with Type 303 SS Stud							
M8×1.25	30	40	14	12	13	**4384K61**	13.83
M8×1.25	40	40	14	12	13	**4384K62**	14.02
M10×1.5	30	40	14	12	13	**4384K64**	14.14
M10×1.5	40	40	14	12	13	**4384K65**	14.39
M12×1.75	40	50	18	14	19	**4384K67**	18.68
M12×1.75	50	50	18	14	19	**4384K68**	19.03
(5) Black Phenolic with Zinc-Plated Steel Stud *(–40° to +165°F)*							
M5×0.8	15	25	11	8	9	**6390K51**	1.77
M6×1	30	32	14	11	10	**6390K52**	1.89
M8×1.25	30	40	18	12	14	**6390K53**	2.54
M10×1.5	35	50	22	14	18	**6390K54**	3.42
M12×1.75	40	63	26	17	25	**6390K55**	4.88
Five Arm							
(6) Black Comfort-Grip Polypropylene with Zinc-Plated Steel Stud *(–60° to +210°F)*							
M6×1	25	39	17	23	5	**61125K75**	2.18
M6×1	25	48	24	23	4	**61125K78**	2.57
M6×1	25	57	32	24	4	**61125K82**	2.47
M8×1.25	25	39	17	23	5	**61125K76**	3.33
M8×1.25	25	48	24	23	4	**61125K79**	3.71
M8×1.25	25	57	32	24	4	**61125K83**	3.74
M10×1.5	30	39	17	23	5	**61125K77**	2.85
M10×1.5	30	48	24	23	4	**61125K81**	2.91
M10×1.5	30	57	32	24	4	**61125K84**	3.43
Seven Lobe							
(7) Type 303 Stainless Steel with Type 303 SS Stud							
M8×1.25	30	40	14	12	13	**8558K71**	15.37
M8×1.25	40	40	14	12	13	**8558K72**	15.54
M10×1.5	30	40	14	12	13	**8558K74**	15.65

Size	Thread Lg., mm	(A) mm	(B) mm	(C) mm	(D) mm		Each ♦
Seven Lobe (Cont.)							
(7) Type 303 Stainless Steel with Type 303 SS Stud (Cont.)							
M10×1.5	40	40	14	12	13	**8558K75**	$15.88
M12×1.75	40	50	18	16	17	**8558K77**	20.45
M12×1.75	50	50	18	16	17	**8558K78**	20.78
(8) Black Nylon with Zinc-Plated Steel Stud *(–40° to +200°F)*							
M5×0.8	25	25	12	8	8	**60795K31**	1.91
M6×1	21	32	14	10	10	**60795K32**	1.83
M8×1.25	25	40	18	12	13	**60795K33**	2.20
M10×1.5	50	50	22	15	17	**60795K34**	3.80
M12×1.75	40	63	26	19	21	**60795K35**	6.40
(8) Black Nylon with Zinc-Plated Steel Stud *(–22° to +230°F)*							
M6×1	20	32	12	10	10	**2907T22**	5.86
M6×1	35	32	12	10	10	**2907T25**	7.20
M8×1.25	20	40	14	13	13	**2907T27**	7.63
M8×1.25	40	40	14	13	13	**2907T31**	8.23
M10×1.5	30	50	18	15	17	**2907T33**	10.37
M10×1.5	55	50	18	15	17	**2907T36**	12.49
M12×1.75	35	63	20	19	21	**2907T38**	14.51
M12×1.75	60	63	20	19	21	**2907T42**	16.97
(8) Black Nylon with Type 316 SS Stud *(–22° to +230°F)*							
M5×0.8	15	25	12	8	8	**2907T52**	5.74
M5×0.8	25	25	12	8	8	**2907T54**	6.49
M6×1	16	32	14	10	10	**2907T56**	6.80
M6×1	30	32	14	10	10	**2907T59**	7.40
M8×1.25	25	40	18	12	13	**2907T62**	8.23
M8×1.25	40	40	18	12	13	**2907T64**	8.77
M10×1.5	25	50	22	15	17	**2907T66**	9.86
M10×1.5	55	50	22	15	17	**2907T69**	12.71
(8) Black Nylon with Type 303 SS Stud *(–22° to +230°F)*							
M12×1.75	30	63	26	19	21	**2907T71**	18.83
M12×1.75	50	63	26	19	21	**2907T73**	20.77
(9) Choose-a-Color Nylon with Type 303 SS Stud *(–30° to +200°F)*							
M6×1	20	32	14	10	10	**3855K63**	2.91
M6×1	30	32	14	10	10	**3855K64**	3.06
M8×1.25	30	40	18	12	13	**3855K68**	4.63
M8×1.25	40	40	18	12	13	**3855K69**	4.74
M10×1.5	40	50	22	15	17	**3855K73**	6.29
M10×1.5	50	50	22	15	17	**3855K74**	6.46

Knobs with Left-Hand Threaded Stud

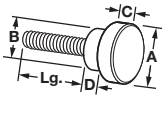

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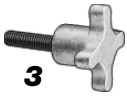
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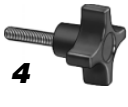
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Size	Thread Lg.	(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim							
(1) Black-Oxide Steel with Black-Oxide Steel Stud							
1/4″-20	1 3/4″	1″	5/8″	1/4″	1/2″	**7222K51**	$6.57
5/16″-18	1 3/4″	1″	5/8″	1/4″	1/2″	**7222K53**	6.57
3/8″-16	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	**7222K55**	7.97
1/2″-13	1 3/4″	2″	1″	3/8″	3/4″	**7222K57**	10.46
(1) Type 303 Stainless Steel with Type 303 SS Stud							
1/4″-20	1 3/4″	1″	5/8″	1/4″	1/2″	**7222K61**	14.23
5/16″-18	1 3/4″	1″	5/8″	1/4″	1/2″	**7222K63**	14.23
3/8″-16	1 3/4″	1 1/2″	3/4″	5/16″	11/16″	**7222K65**	17.11
1/2″-13	1 3/4″	2″	1″	3/8″	3/4″	**7222K67**	20.89
Round with Fluted Rim							
(2) Black Phenolic with Zinc-Plated Steel Stud *(–30° to +400°F)*							
10-32	1/2″	7/8″	5/8″	3/8″	1/8″	**7222K21**	4.60
1/4″-20	9/16″	7/8″	5/8″	3/8″	1/8″	**7222K23**	5.03
1/4″-20	9/16″	1 1/2″	11/16″	3/8″	3/8″	**7222K27**	5.40

Size	Thread Lg.	(A)	(B)	(C)	(D)		Each ♦
Round with Fluted Rim (Cont.)							
(2) Black Phenolic with Zinc-Plated Steel Stud (Cont.)							
1/4″-20	3/4″	1 1/4″	5/8″	3/8″	3/8″	**7222K25**	$5.34
5/16″-18	3/4″	1 3/4″	3/4″	3/8″	3/8″	**7222K29**	6.65
Four Arm							
(3) Aluminum with Black-Oxide Steel Stud							
1/4″-20	1 3/4″	1 1/2″	5/8″	3/8″	1/2″	**7222K11**	8.72
5/16″-18	1 3/4″	2″	3/4″	3/8″	5/8″	**7222K13**	9.29
3/8″-16	1 3/4″	2″	3/4″	3/8″	5/8″	**7222K15**	9.99
1/2″-13	1 3/4″	2 1/2″	1 1/8″	1/2″	1″	**7222K17**	12.66
5/8″-11	1 3/4″	2 1/2″	1 1/8″	1/2″	1″	**7222K19**	13.37
(4) Black Phenolic with Zinc-Plated Steel Stud *(–30° to +400°F)*							
1/4″-20	1″	1 1/2″	5/8″	1/2″	1/2″	**7222K41**	5.95
5/16″-18	1″	1 1/2″	5/8″	1/2″	1/2″	**7222K43**	7.83
3/8″-16	1″	2″	7/8″	1/2″	1/2″	**7222K45**	9.00
1/2″-13	3/4″	2″	7/8″	1/2″	1/2″	**7222K47**	10.75

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Threaded Knobs

Size	Thread Dp.	(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim							
(1) Aluminum							
1/4″-20	1/2″	1″	5/8″	1/2″	7/16″	**7762K2**	$7.79
5/16″-18	1/2″	2″	1″	11/16″	1/2″	**7762K5**	11.86
3/8″-16	1″	21/4″	11/4″	3/4″	5/8″	**7762K8**	14.07
1/2″-13	1″	3″	11/2″	7/8″	3/4″	**7762K11**	16.58
(2) Brass							
10-24	3/8″	3/4″	1/2″	1/4″	3/8″	**5125K31**	2.83
1/4″-20	1/2″	1″	5/8″	1/4″	1/2″	**5125K32**	5.94
1/4″-28	1/2″	1″	5/8″	1/4″	1/2″	**5125K33**	5.94
5/16″-18	1/2″	1″	5/8″	1/4″	1/2″	**5125K34**	5.94
5/16″-24	5/8″	11/2″	3/4″	5/16″	11/16″	**5125K35**	12.31
3/8″-16	5/8″	2″	1″	3/8″	3/4″	**5125K36**	23.51
3/8″-24	5/8″	2″	1″	3/8″	3/4″	**5125K37**	23.51
1/2″-13	5/8″	2″	1″	3/8″	3/4″	**5125K38**	23.51
(2) Aluminum							
1/4″-20	5/8″	1″	1/2″	3/8″	7/16″	**6077K22**	6.03
5/16″-18	5/8″	1″	1/2″	3/8″	7/16″	**6077K23**	6.03
3/8″-16	7/8″	2″	13/16″	9/16″	9/16″	**6077K24**	15.03
1/2″-13	7/8″	2″	13/16″	9/16″	9/16″	**6077K25**	15.03
(2) Type 303 Stainless Steel							
1/4″-20	5/8″	1″	1/2″	3/8″	7/16″	**6399K52**	7.39
5/16″-18	5/8″	1″	1/2″	3/8″	7/16″	**6399K53**	7.39
3/8″-16	7/8″	2″	13/16″	9/16″	9/16″	**6399K54**	12.50
1/2″-13	7/8″	2″	13/16″	9/16″	9/16″	**6399K55**	12.50
(3) Black Polyamide with Zinc-Plated Steel Insert *(–30° to +200°F)*							
1/4″-20	3/8″	1″	1/2″	7/8″	1/8″	**3503K66**	9.95
5/16″-18	9/16″	11/4″	5/8″	13/16″	1/8″	**3503K67**	11.23
3/8″-16	9/16″	19/16″	3/4″	11/2″	3/16″	**3503K68**	13.08
1/2″-13	11/16″	2″	15/16″	113/16″	3/16″	**3503K69**	20.13
(4) Black Comfort-Grip Polypropylene w/ Zinc-Plated Brass Insert *(–60° to +210°F)*							
1/4″-20	1/2″	19/16″	3/4″	5/16″	5/16″	**6214K26**	1.81
1/4″-20	1/2″	2″	3/4″	7/16″	3/16″	**6214K28**	1.98
5/16″-18	1/2″	19/16″	3/4″	5/16″	5/16″	**6214K33**	1.84
5/16″-18	1/2″	2″	3/4″	7/16″	3/16″	**6214K35**	2.01
3/8″-16	1/2″	19/16″	3/4″	5/16″	5/16″	**6214K37**	1.92
3/8″-16	1/2″	2″	3/4″	7/16″	3/16″	**6214K39**	2.10
(5) Black-Oxide Steel							
10-24	3/8″	3/4″	1/2″	1/4″	3/8″	**6121K21**	3.02
1/4″-20	3/8″	3/4″	1/2″	1/4″	3/8″	**6121K22**	3.02
1/4″-20	1/2″	1″	5/8″	1/4″	1/2″	**6121K23**	3.44
1/4″-28	1/2″	1″	5/8″	1/4″	1/2″	**6121K14**	3.44
5/16″-18	1/2″	1″	5/8″	1/4″	1/2″	**6121K24**	3.44
5/16″-18	5/8″	11/2″	3/4″	5/16″	11/16″	**6121K25**	4.19
5/16″-24	5/8″	11/2″	3/4″	5/16″	11/16″	**6121K15**	4.19
3/8″-16	5/8″	11/2″	3/4″	5/16″	11/16″	**6121K26**	4.19
3/8″-16	5/8″	2″	1″	3/8″	3/4″	**6121K27**	5.47
3/8″-24	5/8″	2″	1″	3/8″	3/4″	**6121K16**	5.50
1/2″-13	5/8″	2″	1″	3/8″	3/4″	**6121K28**	5.69
1/2″-13	3/4″	21/2″	11/2″	9/16″	15/16″	**6121K29**	10.67
1/2″-20	3/4″	21/2″	11/2″	9/16″	15/16″	**6121K17**	10.50
5/8″-11	3/4″	21/2″	11/2″	9/16″	15/16″	**6121K31**	10.51
5/8″-11	1″	3″	13/4″	5/8″	11/8″	**6121K32**	14.44
3/4″-10	1″	3″	13/4″	5/8″	11/8″	**6121K33**	14.44
(5) Type 303 Stainless Steel							
10-24	3/8″	3/4″	1/2″	1/4″	3/8″	**60205K64**	5.83
1/4″-20	3/8″	3/4″	1/2″	1/4″	3/8″	**60205K65**	5.83
1/4″-20	1/2″	1″	5/8″	1/4″	1/2″	**60205K66**	6.62
1/4″-28	1/2″	1″	5/8″	1/4″	1/2″	**60205K46**	6.65
5/16″-18	1/2″	1″	5/8″	1/4″	1/2″	**60205K67**	6.62
5/16″-18	5/8″	11/2″	3/4″	5/16″	11/16″	**60205K68**	8.10
5/16″-24	5/8″	11/2″	3/4″	5/16″	11/16″	**60205K47**	8.10
3/8″-16	5/8″	11/2″	3/4″	5/16″	11/16″	**60205K69**	8.10
3/8″-16	5/8″	2″	1″	3/8″	3/4″	**60205K71**	10.65
3/8″-24	5/8″	2″	1″	3/8″	3/4″	**60205K48**	10.65
1/2″-13	5/8″	2″	1″	3/8″	3/4″	**60205K72**	12.28
1/2″-13	3/4″	21/2″	11/2″	9/16″	15/16″	**60205K73**	22.67
1/2″-20	3/4″	21/2″	11/2″	9/16″	15/16″	**60205K49**	22.67
5/8″-11	3/4″	21/2″	11/2″	9/16″	15/16″	**60205K74**	22.67
5/8″-11	1″	3″	13/4″	5/8″	11/8″	**60205K75**	27.98
3/4″-10	1″	3″	13/4″	5/8″	11/8″	**60205K76**	27.98

Size	Thread Dp.	(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim (Cont.)							
(6) Black Polypropylene with Brass Insert *(+30° to +190°F)*							
1/4″-20	1/2″	11/4″	9/16″	1/2″	3/8″	**63625K21**	$3.40
1/4″-20	1/2″	19/16″	11/16″	1/2″	7/16″	**63625K22**	3.74
5/16″-18	1/2″	19/16″	11/16″	1/2″	7/16″	**63625K23**	3.95
3/8″-16	11/16″	2″	13/16″	5/8″	1/2″	**63625K24**	5.48
3/8″-16	13/16″	23/8″	15/16″	13/16″	9/16″	**63625K25**	6.64
Round with Fluted Rim							
(7) Black Phenolic with Brass Insert *(–30° to +400°F)*							
8-32	1/4″	7/8″	5/8″	3/8″	1/8″	**6479K73**	.90
10-32	5/16″	7/8″	5/8″	3/8″	1/8″	**6479K52**	.82
1/4″-20	3/8″	7/8″	5/8″	3/8″	1/4″	**6479K53**	.85
1/4″-20	3/8″	11/4″	5/8″	3/8″	3/8″	**6479K54**	1.07
1/4″-20	3/8″	11/2″	11/16″	3/8″	3/8″	**6479K55**	1.27
1/4″-20	3/8″	13/4″	3/4″	5/8″	3/8″	**6479K17**	1.32
5/16″-18	1/2″	11/4″	5/8″	3/8″	3/8″	**6479K85**	1.38
5/16″-18	1/2″	11/2″	11/16″	3/8″	5/8″	**6479K21**	1.48
5/16″-18	1/2″	13/4″	3/4″	3/8″	3/8″	**6479K57**	1.95
5/16″-18	1/2″	21/2″	11/4″	11/16″	5/8″	**6479K94**	2.98
5/16″-18	1/2″	3″	11/4″	5/8″	13/16″	**6479K96**	3.83
3/8″-16	1/2″	13/4″	3/4″	3/8″	5/8″	**6479K82**	1.75
3/8″-16	1/2″	23/8″	13/4″	3/8″	7/16″	**6479K19**	2.92
3/8″-16	1/2″	21/2″	11/4″	11/16″	5/8″	**6479K62**	3.37
3/8″-16	1/2″	3″	11/4″	9/16″	11/16″	**6479K63**	3.60
1/2″-13	5/8″	21/2″	11/4″	11/16″	5/8″	**6479K65**	3.60
1/2″-13	5/8″	3″	11/4″	13/16″	11/16″	**6479K66**	4.70
(8) Black Comfort-Grip Polypropylene w/ Zinc-Plated Steel Insert *(–15° to +200°F)*							
5/16″-18	1/2″	23/8″	11/4″	5/8″	5/8″	**5532T42**	3.08
3/8″-16	1/2″	21/2″	11/4″	11/16″	9/16″	**5532T44**	3.18
1/2″-13	1/2″	21/2″	11/4″	11/16″	9/16″	**5532T46**	3.59
Round High Profile							
(9) Black Comfort-Grip Polypropylene w/ Zinc-Plated Brass Insert *(–60° to +210°F)*							
1/4″-20	1/2″	111/16″	15/16″	2″	3/16″	**6185K21**	2.31
1/4″-20	1/2″	17/8″	11/2″	21/4″	1/4″	**6185K36**	4.12
5/16″-18	1/2″	17/8″	11/2″	21/4″	1/4″	**6185K39**	3.80
3/8″-16	1/2″	111/16″	15/16″	2″	3/16″	**6185K28**	2.62
3/8″-16	1/2″	17/8″	11/2″	21/4″	1/4″	**6185K43**	4.05
1/2″-13	1/2″	17/8″	11/2″	21/4″	1/4″	**6185K47**	4.43
Single Arm							
(10) Black Polyamide with Brass Insert *(–20° to +270°F)*							
1/4″-20	11/16″	13/8″	5/8″	13/16″	1/4″	**1904T35**	4.10
5/16″-18	11/16″	13/8″	5/8″	13/16″	1/4″	**1904T36**	4.20
5/16″-18	13/16″	13/4″	13/16″	11/8″	5/16″	**1904T37**	5.55
3/8″-16	13/16″	13/4″	13/16″	11/8″	5/16″	**1904T38**	5.70
Two Arm							
(11) Type 303 Stainless Steel							
10-24	3/8″	2″	9/16″	1/2″	7/16″	**4276T43**	13.83
1/4″-20	3/8″	2″	9/16″	1/2″	7/16″	**4276T44**	13.83
5/16″-18	9/16″	215/16″	13/16″	3/4″	5/8″	**4276T45**	21.80
3/8″-16	9/16″	215/16″	13/16″	3/4″	5/8″	**4276T46**	21.80
(12) Black Polypropylene with Brass Insert *(–15° to +125°F)*							
10-32	3/8″	11/2″	3/4″	5/8″	1/8″	**3708T17**	2.33
1/4″-20	1/2″	11/2″	3/4″	5/8″	1/8″	**3708T11**	2.50
3/8″-16	1/2″	11/2″	3/4″	5/8″	1/8″	**3708T13**	2.60
3/8″-16	1/2″	21/2″	3/4″	5/8″	1/2″	**65035K63**	1.90
3/8″-16	1/2″	31/2″	15/16″	7/8″	1/4″	**65035K65**	2.27
(12) Black Nylon with Zinc-Plated Steel Insert *(–15° to +150°F)*							
1/2″-13	5/8″	31/2″	15/16″	7/8″	1/4″	**65035K66**	3.15
(12) Black Nylon with Aluminum Insert *(–15° to +150°F)*							
5/16″-18	3/4″	21/2″	3/4″	5/8″	1/2″	**65035K62**	1.80
5/16″-18	3/4″	31/2″	15/16″	7/8″	1/4″	**65035K64**	2.48
(12) Black Nylon with Brass Insert *(–15° to +150°F)*							
1/4″-20	1/2″	21/2″	3/4″	5/8″	1/2″	**65035K15**	1.77
5/16″-18	1/2″	21/2″	3/4″	5/8″	1/2″	**65035K17**	1.90
(12) Black Phenolic with Brass Insert *(–30° to +400°F)*							
1/4″-20	3/8″	2″	3/4″	5/8″	1/2″	**65035K59**	1.55
1/4″-20	3/8″	21/2″	3/4″	5/8″	1/2″	**65035K32**	1.57
5/16″-18	1/2″	2″	3/4″	5/8″	1/2″	**65035K61**	2.00
5/16″-18	1/2″	21/2″	3/4″	5/8″	1/2″	**65035K33**	1.68
3/8″-16	1/2″	2″	3/4″	5/8″	1/2″	**65035K67**	1.95

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♦ Prices are 10% lower when you buy in quantities of 10 or more.

Threaded Knobs *(Continued from previous page)*

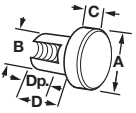

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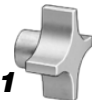
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(Style 24) Choose-a-Color—To Order: Please specify knob color: black, blue, green, orange, red, or white.

Size	Thread Dp.	(A)	(B)	(C)	(D)		Each ♦
Two Arm (Cont.)							
(13) Black Phenolic with Brass Insert *(–25° to +300°F)*							
5/16″-18	7/16″	2 1/4″	9/16″	9/16″	11/16″	**6477K53**	$1.79
(14) Black Phenolic with Brass Insert *(–30° to +400°F)*							
1/4″-20	3/8″	1 1/8″	1/2″	5/8″	1/8″	**6477K57**	1.05
(15) Black Polypropylene with Brass Insert *(–15° to +125°F)*							
1/4″-20	1/2″	2 1/4″	3/4″	3/4″	11/16″	**6477K69**	1.84
5/16″-18	1/2″	2 1/4″	3/4″	3/4″	11/16″	**6477K71**	2.02
3/8″-16	1/2″	2 1/4″	3/4″	3/4″	11/16″	**6477K72**	2.10
(16) Black ABS with Brass Insert *(–15° to +125°F)*							
10-24	3/8″	1 1/4″	5/8″	11/16″	1/2″	**6477K33**	1.98
10-32	3/8″	1 1/4″	5/8″	13/16″	1/2″	**6477K68**	1.50
1/4″-20	3/8″	1 1/4″	5/8″	13/16″	1/2″	**6477K67**	1.60
(17) Black Polypropylene with Brass Insert *(–15° to +125°F)*							
1/4″-20	1/2″	3″	13/16″	3/8″	13/16″	**6477K73**	1.55
5/16″-18	1/2″	3″	13/16″	3/8″	13/16″	**6477K74**	1.65
3/8″-16	1/2″	3″	13/16″	3/8″	13/16″	**6477K75**	1.77
Three Arm							
(18) Black Phenolic with Brass Insert *(–30° to +400°F)*							
8-32	3/8″	7/8″	1/2″	3/8″	3/8″	**57715K33**	.90
8-32	3/8″	1 1/8″	1/2″	1/2″	1/4″	**57715K85**	.95
10-24	3/8″	1 1/8″	1/2″	1/2″	1/4″	**57715K86**	1.00
10-32	3/8″	7/8″	1/2″	3/8″	3/8″	**57715K34**	.95
10-32	3/8″	1 1/8″	1/2″	1/2″	1/4″	**57715K13**	.90
10-32	3/8″	1 1/2″	5/8″	5/8″	1/4″	**57715K48**	1.43
1/4″-20	3/8″	1 1/8″	1/2″	1/2″	1/4″	**57715K11**	.98
1/4″-20	3/8″	1 1/2″	5/8″	5/8″	1/4″	**57715K12**	1.27
1/4″-20	3/8″	2″	3/4″	5/8″	3/8″	**57715K77**	1.87
5/16″-18	1/2″	1 1/2″	5/8″	5/8″	1/4″	**57715K14**	1.30
5/16″-18	1/2″	2″	3/4″	5/8″	3/8″	**57715K21**	1.85
3/8″-16	1/2″	2″	3/4″	5/8″	3/8″	**57715K15**	2.00
3/8″-24	5/8″	2″	3/4″	5/8″	3/8″	**57715K82**	1.95
(19) Black Comfort-Grip Polypropylene w/ Zinc-Plated Brass Insert *(–60° to +210°F)*							
10-32	1/2″	13/16″	1/2″	1/2″	1/8″	**2776K2**	1.97
1/4″-20	1/2″	13/16″	1/2″	1/2″	1/8″	**2776K5**	1.90
1/4″-20	1/2″	1 3/4″	3/4″	3/4″	1/8″	**2776K7**	2.04
5/16″-18	1/2″	1 3/4″	3/4″	3/4″	1/8″	**2776K9**	2.07
3/8″-16	1/2″	2 3/16″	13/16″	15/16″	1/8″	**2776K11**	2.41
Four Arm							
(20) Aluminum							
1/4″-20	1/2″	1 1/4″	9/16″	5/16″	9/16″	**6047K31**	3.51
5/16″-18	1/2″	1 1/4″	9/16″	5/16″	9/16″	**6047K22**	3.51
5/16″-18	5/8″	1 1/2″	11/16″	3/8″	11/16″	**6047K35**	4.65
3/8″-16	5/8″	1 1/2″	11/16″	3/8″	11/16″	**6047K16**	4.65
3/8″-16	7/8″	2 1/8″	7/8″	1/2″	15/16″	**6047K17**	5.13
1/2″-13	7/8″	2 1/8″	7/8″	1/2″	15/16″	**6047K32**	5.13
1/2″-13	1 1/4″	3″	1 3/8″	11/16″	1 1/4″	**6047K33**	7.93
5/8″-11	1 1/4″	3″	1 3/8″	11/16″	1 1/4″	**6047K23**	7.93
3/4″-10	1 1/4″	3″	1 3/8″	11/16″	1 1/4″	**6047K34**	7.93
(21) Steel							
1/4″-20	1/2″	1 1/2″	1/2″	3/8″	1/2″	**3992T25**	6.31
5/16″-18	1/2″	2″	5/8″	1/2″	1/2″	**3992T26**	10.11
3/8″-16	1/2″	2 1/2″	13/16″	9/16″	9/16″	**3992T27**	18.91
1/2″-13	9/16″	2 1/2″	1″	9/16″	9/16″	**3992T28**	18.91
(21) Aluminum							
1/4″-20	1/2″	1″	1/2″	3/8″	1/2″	**61135K212**	5.67
5/16″-18	5/8″	1 1/2″	5/8″	1/2″	3/8″	**61135K222**	6.00
3/8″-16	5/8″	2″	13/16″	1/2″	1/2″	**61135K232**	7.21
1/2″-13	3/4″	2 1/2″	1″	9/16″	9/16″	**61135K242**	8.97
5/8″-11	3/4″	3″	1 1/4″	5/8″	5/8″	**61135K252**	11.44
(22) Type 303 Stainless Steel							
1/4″-20	1/2″	1 1/4″	1/2″	3/8″	3/8″	**4384K5**	12.13
5/16″-18	9/16″	1 9/16″	9/16″	1/2″	1/2″	**4384K6**	13.53
Four Arm (Cont.)							
(22) Type 303 Stainless Steel (Cont.)							
3/8″-16	11/16″	1 15/16″	11/16″	9/16″	11/16″	**4384K7**	$18.09
1/2″-13	13/16″	2 1/2″	13/16″	13/16″	13/16″	**4384K8**	23.64
(23) Black Polypropylene with Brass Insert *(–15° to +125°F)*							
1/4″-20	1/2″	1 3/4″	3/4″	9/16″	7/16″	**5993K27**	1.78
1/4″-20	1/2″	2 1/4″	1″	9/16″	7/16″	**5993K76**	1.81
5/16″-18	1/2″	2 1/4″	1″	9/16″	7/16″	**5993K77**	1.86
3/8″-16	1/2″	2 1/4″	1″	9/16″	7/16″	**5993K78**	1.97
(23) Black Nylon with Brass Insert *(–15° to +150°F)*							
8-32	3/8″	1″	7/16″	5/16″	7/16″	**5993K11**	1.35
10-24	3/8″	1″	7/16″	3/8″	3/8″	**5993K13**	1.46
10-32	3/8″	1″	7/16″	3/8″	3/8″	**5993K15**	1.46
10-32	3/8″	1 1/4″	1/2″	3/8″	1/2″	**5993K17**	1.54
1/4″-20	3/8″	1″	7/16″	3/8″	3/8″	**5993K14**	1.54
1/4″-20	3/8″	1 1/4″	1/2″	3/8″	1/2″	**5993K19**	1.54
5/16″-18	1/2″	1 1/4″	1/2″	3/8″	1/2″	**5993K21**	1.65
5/16″-18	1/2″	1 3/4″	3/4″	9/16″	7/16″	**5993K28**	1.73
3/8″-16	1/2″	1 3/4″	3/4″	9/16″	7/16″	**5993K29**	1.84
(23) Black Phenolic with Zinc-Plated Steel Insert *(–30° to +400°F)*							
1/2″-13	5/8″	2″	7/8″	1/2″	5/8″	**5993K38**	2.95
1/2″-13	5/8″	3″	7/8″	9/16″	9/16″	**5993K93**	4.03
(23) Black Phenolic with Brass Insert *(–30° to +400°F)*							
1/4″-20	3/8″	1 1/2″	5/8″	1/2″	1/2″	**5993K45**	1.35
1/4″-20	3/8″	2″	7/8″	1/2″	1/2″	**5993K57**	1.92
5/16″-18	1/2″	1 1/2″	5/8″	1/2″	1/2″	**5993K46**	1.41
5/16″-18	1/2″	2″	7/8″	1/2″	1/2″	**5993K35**	1.73
5/16″-18	1/2″	3″	7/8″	9/16″	9/16″	**5993K91**	3.32
3/8″-16	1/2″	1 1/2″	5/8″	1/2″	1/2″	**5993K23**	1.76
3/8″-16	1/2″	2″	7/8″	1/2″	1/2″	**5993K36**	1.89
3/8″-16	1/2″	3″	7/8″	9/16″	9/16″	**5993K92**	3.41
3/8″-24	5/8″	2″	7/8″	1/2″	1/2″	**5993K37**	2.03
1/2″-20	5/8″	2″	7/8″	1/2″	5/8″	**5993K44**	3.62
(24) Choose-a-Color Nylon with Brass Insert *(+14° to +248°F)*							
1/4″-20	1/2″	19/16″	5/8″	7/16″	1/2″	**7921K41**	2.42
5/16″-18	9/16″	2″	13/16″	9/16″	9/16″	**7921K42**	3.00
3/8″-16	11/16″	2 3/8″	15/16″	9/16″	11/16″	**7921K43**	3.73
1/2″-13	11/16″	2 3/8″	15/16″	9/16″	11/16″	**7921K44**	3.73
(25) Black Comfort-Grip Polypropylene w/ Zinc-Plated Brass Insert *(–60° to +210°F)*							
10-32	1/2″	1 3/8″	9/16″	1/2″	3/16″	**2454K19**	2.62
10-32	1/2″	1 3/4″	11/16″	5/8″	1/8″	**2454K23**	2.65
1/4″-20	1/2″	1 3/8″	9/16″	1/2″	3/16″	**2454K21**	1.97
1/4″-20	1/2″	1 3/4″	11/16″	5/8″	1/8″	**2454K24**	2.04
1/4″-20	1/2″	2″	15/16″	11/16″	3/16″	**2454K28**	2.11
1/4″-20	1/2″	3″	1 1/2″	1 1/16″	1/4″	**2454K15**	3.52
5/16″-18	1/2″	1 3/4″	11/16″	5/8″	1/8″	**2454K25**	2.24
5/16″-18	1/2″	2″	15/16″	11/16″	3/16″	**2454K29**	2.31
5/16″-18	1/2″	2 1/2″	1 1/4″	15/16″	3/16″	**2454K12**	2.41
5/16″-18	1/2″	3″	1 1/2″	1 1/16″	1/4″	**2454K16**	3.25
3/8″-16	1/2″	2″	15/16″	11/16″	3/16″	**2454K31**	2.45
3/8″-16	1/2″	2 1/2″	1 1/4″	15/16″	3/16″	**2454K13**	2.55
3/8″-16	1/2″	3″	1 1/2″	1 1/16″	1/4″	**2454K17**	3.21
1/2″-13	1/2″	2 1/2″	1 1/4″	15/16″	3/16″	**2454K14**	2.65
1/2″-13	1/2″	3″	1 1/2″	1 1/16″	1/4″	**2454K18**	4.13
Five Arm							
(26) Black Polypropylene with Brass Insert *(–15° to +125°F)*							
1/4″-20	3/8″	2 1/4″	7/8″	1/2″	1/4″	**59625K71**	1.43
5/16″-18	1/2″	2 1/4″	7/8″	1/2″	1/4″	**59625K72**	1.57
3/8″-16	1/2″	2 1/4″	7/8″	1/2″	1/4″	**59625K73**	1.81
(26) Black Polypropylene w/ Zinc-Plated Steel Insert *(–15° to +200°F)*							
1/4″-20	1/2″	15/16″	7/8″	7/16″	3/4″	**59625K35**	.64
1/4″-20	1/2″	1 3/4″	7/8″	1/2″	3/4″	**59625K37**	.71
5/16″-18	1/2″	15/16″	7/8″	1/2″	11/16″	**59625K36**	.64
5/16″-18	1/2″	1 3/4″	7/8″	1/2″	3/4″	**59625K38**	.71

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♦ Prices are 10% lower when you buy in quantities of 10 or more.

Threaded Knobs *(Continued from previous page)*

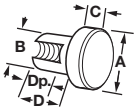

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(Style 30) Choose-a-Color— Knobs are black with a colored cap. **To Order:** Please specify cap color: black, gray, red, or yellow.

Size	Thread Dp.	(A)	(B)	(C)	(D)		Each ♦
Five Arm (Cont.)							
(27) Black Comfort-Grip Polypropylene w/ Zinc-Plated Brass Insert *(–60° to +210°F)*							
1/4"-20	1/2"	1 1/2"	11/16"	15/16"	3/16"	**61125K11**	$1.80
5/16"-18	1/2"	1 7/8"	15/16"	15/16"	3/16"	**61125K12**	2.19
3/8"-16	1/2"	2 1/4"	1 1/4"	15/16"	3/16"	**61125K13**	2.57
Six Lobe							
(28) Aluminum							
1/4"-20	3/4"	1 1/2"	7/8"	7/16"	7/8"	**61515K212**	4.51
3/8"-16	3/4"	2"	1"	5/8"	7/8"	**61515K222**	5.55
1/2"-13	1 1/4"	3 1/2"	1 1/4"	3/4"	1"	**61515K242★**	8.41

★ Has eight lobes.

Size	Thread Dp.	(A)	(B)	(C)	(D)		Each ♦
Seven Lobe							
(29) Type 303 Stainless Steel							
1/4"-20	1/2"	1 1/4"	1/2"	3/8"	3/8"	**8558K5**	$11.49
5/16"-18	9/16"	1 9/16"	9/16"	1/2"	1/2"	**8558K6**	14.65
3/8"-16	11/16"	1 15/16"	11/16"	5/8"	11/16"	**8558K7**	17.12
1/2"-13	7/8"	2 1/2"	3/4"	3/4"	13/16"	**8558K8**	21.02
(30) Choose-a-Color Nylon with Type 303 SS Insert *(–30° to +200°F)*							
10-32	3/8"	1"	1/2"	5/16"	5/16"	**3855K11**	2.91
1/4"-20	3/8"	1 1/4"	9/16"	3/8"	3/8"	**3855K12**	2.94
5/16"-18	9/16"	1 9/16"	11/16"	1/2"	1/2"	**3855K13**	3.49
3/8"-16	9/16"	2"	7/8"	9/16"	11/16"	**3855K14**	5.17
1/2"-13	11/16"	2 1/2"	1"	3/4"	13/16"	**3855K15**	9.43

Metric Threaded Knobs

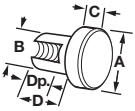

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(Style 10) Choose-a-Color— Knobs are black with a colored cap. **To Order:** Please specify cap color: black, gray, red, or yellow.

Size	Thread Dp., mm	(A) mm	(B) mm	(C) mm	(D) mm		Each ♦
Round with Knurled Rim							
(1) Black-Oxide Steel							
M5×0.8	10	19	13	6	10	**60765K312**	$2.77
M6×1	10	19	13	6	10	**60765K322**	2.77
M6×1	13	25	16	6	13	**60765K332**	3.18
M8×1.25	13	25	16	6	13	**60765K342**	3.18
M8×1.25	16	38	19	8	17	**60765K352**	3.87
(1) Brass							
M5×0.8	10	19	13	6	10	**5125K39**	2.97
M6×1	13	25	16	6	13	**5125K41**	6.23
M8×1.25	16	38	19	8	17	**5125K42**	12.94
(1) Type 303 Stainless Steel							
M5×0.8	10	19	13	6	10	**62265K512**	6.44
M6×1	10	19	13	6	10	**62265K522**	6.44
M6×1	13	25	16	6	13	**62265K532**	7.60
M8×1.25	16	38	19	8	17	**62265K552**	9.00
Round with Fluted Rim							
(2) Black Nylon with Zinc-Plated Steel Insert *(–20° to +270°F)*							
M4×0.7	5	16	11	8	5	**62935K15**	1.86
M5×0.8	5	20	12	10	6	**62935K16**	1.91
M6×1	8	25	16	11	8	**62935K17**	2.09
M8×1.25	10	32	17	13	9	**62935K18**	2.69
Three Arm							
(3) Black Comfort-Grip Polypropylene w/ Zinc-Plated Brass Insert *(–60° to +210°F)*							
M5×0.8	13	30	13	13	4	**2776K61**	4.87
M6×1	13	30	13	13	4	**2776K62**	2.03
M6×1	13	45	19	20	3	**2776K63**	2.20
M6×1	13	55	21	24	4	**2776K66**	2.43
M8×1.25	13	45	19	20	3	**2776K64**	2.07
M8×1.25	13	55	21	24	4	**2776K67**	2.53
M10×1.5	13	45	19	20	3	**2776K65**	2.60
M10×1.5	13	55	21	24	4	**2776K68**	2.70
M12×1.75	13	55	21	24	4	**2776K69**	3.20
Four Arm							
(4) Brass							
M6×1	13	25	13	10	13	**5125K16**	6.77
M8×1.25	13	38	16	10	10	**5125K17**	13.69
M10×1.5	13	51	21	13	13	**5125K18**	25.91
M12×1.75	14	64	25	14	14	**5125K19**	53.91
(4) Aluminum							
M6×1	12	25	13	10	12	**61135K51**	5.90
M8×1.25	16	38	16	12	10	**61135K54**	6.36
M10×1.5	16	51	30	12	12	**61135K57**	7.49
M12×1.75	20	64	25	14	14	**61135K61**	9.31

Size	Thread Dp., mm	(A) mm	(B) mm	(C) mm	(D) mm		Each ♦
Four Arm							
(5) Black Phenolic with Zinc-Plated Steel Insert *(–40° to +200°F)*							
M5×0.8	11	25	11	8	9	**6390K21**	$1.63
M6×1	12	32	14	11	10	**6390K22**	1.83
M8×1.25	14	40	18	12	14	**6390K23**	2.08
M10×1.5	18	50	22	14	18	**6390K24**	2.92
M12×1.75	22	63	26	17	25	**6390K25**	4.61
Five Arm							
(6) Aluminum							
M6×1	15	40	14	13	13	**62015K1**	11.57
M8×1.25	15	40	14	13	13	**62015K212**	11.85
M10×1.5	18	50	19	16	16	**62015K312**	15.05
M12×1.75	22	60	21	20	20	**62015K412**	20.86
M16×2	28	70	26	23	23	**62015K512**	29.21
(7) Black Comfort-Grip Polypropylene w/ Zinc-Plated Brass Insert *(–60° to +210°F)*							
M6×1	13	39	17	23	5	**61125K85**	2.06
M6×1	13	48	24	23	4	**61125K88**	2.21
M6×1	13	57	32	24	4	**61125K92**	2.39
M8×1.25	13	39	17	23	5	**61125K86**	2.15
M8×1.25	13	48	24	23	4	**61125K89**	2.45
M8×1.25	13	57	32	24	4	**61125K93**	2.55
M10×1.5	13	39	17	23	5	**61125K87**	2.36
M10×1.5	13	48	24	23	4	**61125K91**	2.61
M10×1.5	13	57	32	24	4	**61125K94**	2.97
Seven Lobe							
(8) Black Nylon with Zinc-Plated Steel Insert *(–40° to +200°F)*							
M5×0.8	9	25	12	8	8	**60795K11**	1.83
M6×1	9	32	14	10	10	**60795K12**	1.83
M8×1.25	14	40	18	12	13	**60795K13**	2.20
M10×1.5	21	50	22	15	17	**60795K14**	3.26
M12×1.75	23	63	26	19	21	**60795K15**	5.20
(9) Black Nylon with Zinc-Plated Steel Hub *(–40° to +230°F)*							
M6×1	12	32	12	10	10	**6720K211**	2.47
M8×1.25	14	40	14	13	13	**6720K221**	3.10
M10×1.5	18	50	18	15	17	**6720K231**	5.25
M12×1.75	22	63	20	19	21	**6720K241**	9.50
(10) Choose-a-Color Nylon w/ Type 303 SS Insert *(–30° to +200°F)*							
M5×0.8	10	25	12	8	8	**3855K51**	2.91
M6×1	10	32	14	10	10	**3855K52**	2.94
M8×1.25	14	40	18	12	13	**3855K53**	3.49
M10×1.5	14	50	22	15	17	**3855K54**	5.17
M12×1.75	18	63	26	19	21	**3855K55**	9.43

♦ Prices are 10% lower when you buy in quantities of 10 or more.

For information about knobs, see page 2206.

Plastic Threaded Ball Knobs

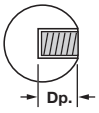

Phenolic

Polypropylene

Phenolic is shiny, scratch resistant, and very hard. Temperature range is –30° to +400° F, unless noted.

Polypropylene has greater impact resistance than phenolic, plus a textured finish for a better grip. *Black* knobs have a temperature range of –15° to +225° F. *Red* knobs have a temperature range of –15° to +125° F.

Thread Size	Dp.	Black with Brass Insert	Each ♦	Red with Brass Insert	Each ♦
Phenolic—Inch					
11/16″ Diameter					
10-32	3/8″	6046K11	$1.07	6146K11	$1.27
3/4″ Diameter					
1/4″-20	3/8″	—	—	6146K31▲	2.96
13/16″ Diameter					
1/4″-20	3/8″	6046K31	1.20	—	—
1″ Diameter					
10-32	3/8″	6046K12	1.20	6146K12	1.58
1/4″-20	3/8″	6046K13	1.07	6146K13	1.65
1/4″-28	7/16″	6046K32	1.30	6146K32	1.54
5/16″-18	1/2″	6046K14	1.49	6146K14	1.54
5/16″-24	1/2″	6046K15	1.54	6146K15	1.56
3/8″-16	1/2″	6046K33	1.63	6146K33	1.73
3/8″-24	1/2″	6046K45	1.92	—	—
1 1/4″ Diameter					
1/4″-20	3/8″	6046K34	1.55	6146K34	1.95
1/4″-20	5/8″	6046K44■	1.48	—	—
5/16″-18	1/2″	6046K35	1.52	6146K35	2.19
3/8″-16	1/2″	6046K51	1.67	—	—
3/8″-24	1/2″	6046K52	1.84	—	—
1/2″-13	5/8″	6046K53	2.69	—	—
1/2″-20	5/8″	6046K54	3.40	—	—
1 3/8″ Diameter					
1/4″-20	3/8″	6046K16	1.43	6146K16	1.98
5/16″-18	1/2″	6046K17	1.48	6146K17	2.05
5/16″-24	1/2″	6046K18	1.75	6146K18	2.07
3/8″-16	1/2″	6046K19	1.65	6146K19	2.55
3/8″-24	5/8″	6046K21	1.68	6146K21	2.53
7/16″-20	3/4″	6046K22	2.65	6146K22	2.95
1/2″-13	7/8″	6046K23■	1.45	6146K23■	1.87
1/2″-20	5/8″	6046K24★	2.52	6146K24★	2.95
17/16″ Diameter					
5/16″-18	1/2″	6046K55	1.97	—	—
3/8″-16	1/2″	6046K56	2.12	—	—
1/2″-13	5/8″	6046K57	3.55	—	—
1 1/2″ Diameter					
3/8″-16	1/2″	6046K49	2.12	—	—
1/2″-13	7/8″	6046K48■	1.82	—	—
1 5/8″ Diameter					
3/8″-16	1/2″	6046K37	2.00	6146K37	3.25
1 15/16″ Diameter					
3/8″-16	1 1/4″	6046K25■	2.98	6146K25■	3.85
3/8″-24	7/8″	6046K26★	3.89	6146K26★	4.42
1/2″-13	1″	6046K27■	3.35	6146K27■	3.92
1/2″-20	1 1/8″	6046K28	4.46	6146K28	5.57
5/8″-18	1 3/16″	6046K29■	2.64	6146K29■	3.96
2″ Diameter					
3/8″-16	1/2″	6046K58	3.14	—	—
3/8″-24	7/8″	6046K59★	3.10	—	—
1/2″-13	3/4″	6046K61	3.82	—	—
5/8″-18	3/4″	6046K62	4.62	—	—
Phenolic—Metric					
25 mm Diameter					
M6×1	13 mm	62195K12	1.69	63075K12	2.55
M8×1.25	13 mm	62195K13	1.65	63075K13	2.60
M10×1.5	15 mm	62195K14	2.05	63075K14	2.65
35 mm Diameter					
M8×1.25	13 mm	62195K16	1.97	63075K16	3.05
M10×1.5	15 mm	62195K17	2.07	63075K17	3.30
M12×1.75	18 mm	62195K18	3.11	63075K18	4.20
49 mm Diameter					
M12×1.75	18 mm	62195K21	4.47	63075K21	6.22
M16×2	21 mm	62195K22	4.78	63075K22	6.15

Thread Size	Dp.	Black with Zinc-Plated Steel Insert	Each ♦	Red with Brass Insert	Each ♦
Polypropylene—Inch					
3/4″ Diameter					
8-32	7/16″	61095K21	$1.14	—	—
10-24	7/16″	61095K22♠	1.14	—	—
1/4″-20	1/2″	61095K23	1.14	—	—
1″ Diameter					
10-24	1/2″	61095K31	.96	—	—
1/4″-20	1/2″	61095K32	.96	—	—
5/16″-18	1/2″	61095K33	1.03	—	—
3/8″-16	1/2″	61095K34	1.18	—	—
1 1/4″ Diameter					
10-24	5/16″	—	—	7386K21	$1.45
10-24	1/2″	61095K41	.95	—	—
1/4″-20	1/2″	61095K42	.95	7386K22	1.55
5/16″-18	1/2″	61095K43	.95	7386K23	1.52
3/8″-16	1/2″	61095K44	1.01	7386K24	1.71
1/2″-13	3/8″	61095K45	1.29	—	—
1/2″-13	1/2″	—	—	7386K25	2.07
1 3/8″ Diameter					
1/4″-20	1/2″	61095K46	1.30	7386K26	2.02
5/16″-18	1/2″	61095K47	1.34	7386K27	2.05
3/8″-16	1/2″	61095K48	1.39	7386K28	2.26
1/2″-13	1/2″	61095K49	1.77	—	—
1/2″-13	5/8″	—	—	7386K29	2.89
1 1/2″ Diameter					
1/4″-20	1/2″	61095K51	1.62	7386K31	2.07
5/16″-18	1/2″	61095K52	1.71	7386K32	2.17
3/8″-16	1/2″	61095K53	1.80	7386K33	2.40
1/2″-13	1/2″	61095K54	2.19	—	—
1/2″-13	5/8″	—	—	7386K34	3.07
1 5/8″ Diameter					
1/4″-20	1/2″	61095K71	1.63	—	—
5/16″-18	1/2″	61095K72	1.63	—	—
3/8″-16	1/2″	61095K73	1.83	—	—
5/8″-11	1/2″	61095K74	2.22	—	—
1 7/8″ Diameter					
5/16″-18	1/2″	61095K55	2.57	7386K35	3.17
3/8″-16	1/2″	61095K56	2.62	7386K36	3.36
1/2″-13	1/2″	61095K57	3.01	—	—
1/2″-13	5/8″	—	—	7386K37	3.86
5/8″-11	3/4″	61095K58	3.15	—	—
5/8″-11	7/8″	—	—	7386K38	6.08
Polypropylene—Metric					
32 mm Diameter					
M6×1	13 mm	6630T21	1.11	—	—
M8×1.25	13 mm	6630T22	1.11	—	—
M10×1.5	15 mm	6630T23	1.23	—	—
35 mm Diameter					
M6×1	13 mm	6630T25	1.39	—	—
M8×1.25	13 mm	6630T26	1.39	—	—
M10×1.5	13 mm	6630T27	1.55	—	—
38 mm Diameter					
M6×1	13 mm	6630T31	1.80	—	—
M8×1.25	13 mm	6630T32	1.89	—	—
M10×1.5	15 mm	6630T33	2.08	—	—
41 mm Diameter					
M6×1	13 mm	6630T35	1.97	—	—
M8×1.25	13 mm	6630T36	2.05	—	—
M10×1.5	13 mm	6630T37	2.30	—	—
48 mm Diameter					
M6×1	13 mm	6630T41	2.95	—	—
M8×1.25	13 mm	6630T42	3.04	—	—
M10×1.5	13 mm	6630T43	3.28	—	—

▲ Temperature range is –4° to +300° F. ■ No metal insert; threads are molded into plastic. ★ Insert is zinc-plated steel. ♠ Insert is brass.

Threaded Ball Knobs for Tight Spaces

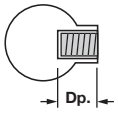

The long shank on these phenolic knobs allows easier access in tight spots. All have a brass insert. Temperature range is –30° to +400° F.

Thread Size	Dp.	Black	Each ♦	Red	Each ♦
11/16″ Diameter					
10-32	3/8″	6046K42	$1.14	6146K42	$1.62
1 1/4″ Diameter					
1/4″-20	3/8″	6046K43	1.71	6146K43	1.89

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Threaded Oval Knobs

Made of scratch-resistant black phenolic, these knobs have a temperature range of –30° to +400° F.

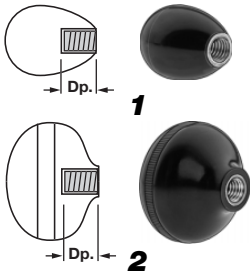

Size	Thread Dp.	Dia. × Ht.		Each ♦
(1) With Brass Insert				
1/4″-20	1/2″	1 1/8″ × 1 1/2″	6050K13	$1.20
5/16″-18	1/2″	1 1/8″ × 1 1/2″	6050K14	1.22
5/16″-24	1/2″	1 1/8″ × 1 1/2″	6050K15	1.38
3/8″-16	1/2″	1 1/8″ × 1 1/2″	6050K16	1.47
3/8″-24	5/8″	1 1/8″ × 1 1/2″	6050K17	1.53
(2) With Zinc-Plated Steel Insert				
3/8″-24	5/8″	2″ × 1 9/16″	6050K35	3.00
1/2″-13	1 1/16″	2″ × 1 9/16″	6050K36	7.18
(2) With Brass Insert				
3/8″-16	1/2″	2″ × 1 9/16″	6050K34	2.82

Comfort-Grip Threaded Ball Knobs

A textured thermoplastic shell improves grip. Knobs have a polypropylene core and a zinc-plated steel insert, unless noted. Color is black. Temperature range is –15° to +225° F.

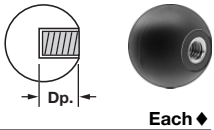

Size	Thread Dp.		Each ♦
1″ Diameter			
8-32	3/8″	60975K51	$1.84
10-24	3/8″	60975K52★	2.31
1/4″-20	1/2″	60975K53	2.31
1 1/4″ Diameter			
10-24	1/4″	60975K55	2.31
1/4″-20	1/2″	60975K56	2.31
5/16″-18	1/2″	60975K57	2.02
3/8″-16	1/2″	60975K58	2.02
1 3/8″ Diameter			
1/4″-20	1/2″	60975K71	1.81
5/16″-18	1/2″	60975K72	1.81
3/8″-16	1/2″	60975K73	1.85
1/2″-13	3/8″	60975K74	1.98
1 1/2″ Diameter			
1/4″-20	1/2″	60975K75	$2.00
5/16″-18	1/2″	60975K76	2.00
3/8″-16	1/2″	60975K77	2.02
1/2″-13	1/2″	60975K78	2.15
1 5/8″ Diameter			
5/16″-18	1/2″	60975K82	2.53
3/8″-16	1/2″	60975K83	2.53
1/2″-13	1/2″	60975K84	2.53
1 7/8″ Diameter			
3/8″-16	1/2″	60975K86	3.96
1/2″-13	5/8″	60975K87	3.96
5/8″-11	5/8″	60975K89	3.96

★ Insert is brass.

Metal Threaded Ball Knobs

These knobs have a highly polished finish.

Size	Thread Dp.	Steel Each ♦		Brass Each ♦		Aluminum Each ♦		Type 303 Stainless Steel Each ♦	
3/4″ Diameter									
10-24	3/8″	6045K31	$3.50	60215K51	$6.00	6940K11	$4.12	6954K12	$9.16
10-32	3/8″	6045K32	3.50	60215K52	6.00	6940K13	4.12	6954K14	9.16
1″ Diameter									
10-32	3/8″	6045K34	3.82	60215K54	6.55	6940K16	4.50	6954K15	9.97
1/4″-20	1/2″	6045K35	3.82	60215K55	6.55	6940K18	4.50	6954K17	9.97
1/4″-28	1/2″	6045K36	3.82	60215K56	6.55	—	—	—	—
5/16″-18	1/2″	6045K37	3.82	60215K57	6.55	6940K21	4.50	6954K19	9.97
5/16″-24	1/2″	6045K38	3.82	60215K58	6.55	—	—	—	—
3/8″-16	1/2″	6045K56	3.82	60215K59	6.55	6940K24	4.50	6954K22	9.97
1 3/8″ Diameter									
1/4″-20	5/8″	6045K57	5.21	60215K61	8.95	6940K27	6.16	6954K23	12.82
5/16″-18	5/8″	6045K42	5.21	60215K63	8.95	6940K33	6.16	6954K25	12.82
5/16″-24	5/8″	6045K43	4.97	60215K64	8.95	6940K35	6.16	6954K26	12.82
3/8″-16	5/8″	6045K44	5.21	60215K65	8.96	6940K41	6.16	6954K28	12.82
3/8″-24	5/8″	6045K45	5.21	60215K66	8.95	6940K43	6.16	6954K29	12.82
7/16″-20	5/8″	6045K46	5.21	60215K67	8.95	6940K46	6.16	6954K31	12.82
1/2″-13	5/8″	6045K47	5.21	60215K68	8.95	6940K47	6.16	6954K32	12.82
1/2″-20	5/8″	6045K48	5.21	60215K69	8.95	6940K48	6.16	6954K34	12.82
1 7/8″ Diameter									
3/8″-16	3/4″	6045K49	8.68	60215K71	14.17	6940K52	10.22	6954K37	20.71
3/8″-24	3/4″	6045K51	8.68	60215K72	14.17	6940K54	10.22	6954K39	20.71
1/2″-13	3/4″	6045K52	8.68	60215K73	14.17	6940K57	10.22	6954K42	20.71
5/8″-11	3/4″	6045K54	8.68	60215K75	14.17	—	—	—	—
5/8″-18	3/4″	6045K55	8.68	60215K76	14.17	6940K59	10.22	6954K44	20.71

Adjustable-Torque Threaded Knobs

Set torque with a hex key to prevent overtightening that can damage sensitive equipment. Once the torque limit is reached, the knob head disengages and turns freely. Knobs are steel with a black-oxide finish. Use a 3/32″ hex key (sold separately).

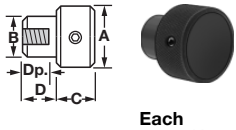

Size	Thread Dp.	(A)	(B)	(C)	(D)	Torque Range		Each 1-4	Each 5-Up
5/16″-18	1/2″	1 3/16″	3/4″	5/8″	9/16″	3 to 6 in.-lbs.	6463K211	$22.36	$20.33
3/8″-16	1/2″	1 3/16″	3/4″	5/8″	9/16″	3 to 6 in.-lbs.	6463K212	25.71	23.38
1/2″-13	1/2″	1 3/16″	3/4″	5/8″	9/16″	3 to 6 in.-lbs.	6463K213	25.71	23.38

3/32″ Hex Key ..... 7122A16 Each $0.16

♦ Prices are 10% lower when you buy in quantities of 10 or more.

For information about knobs, see page 2206.

Vibration-Absorbing Knobs

Threaded Stud

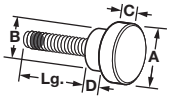

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Stud has a nylon patch that prevents loosening due to vibration.

Thread Size	Lg.	(A)	(B)	(C)	(D)		Each ♦
Round with Fluted Rim							
(1) Black Phenolic with Zinc-Plated Steel Stud *(–30° to +200°F)*							
10-32	1/2"	7/8"	5/8"	3/8"	1/8"	7639K13	$2.42
1/4"-20	9/16"	7/8"	5/8"	3/8"	1/8"	7639K15	2.54
1/4"-20	9/16"	1 1/2"	11/16"	3/8"	3/8"	7639K17	2.88
1/4"-20	3/4"	1 1/4"	5/8"	3/8"	3/8"	7639K19	2.80
5/16"-18	3/4"	1 3/4"	3/4"	3/8"	3/8"	7639K21	3.17
Four Arm							
(2) Black Phenolic with Zinc-Plated Steel Stud *(–30° to +200°F)*							
1/4"-20	1"	1 1/2"	5/8"	1/2"	1/2"	7639K43	3.23
5/16"-18	1"	1 1/2"	5/8"	1/2"	1/2"	7639K45	3.31
3/8"-16	1"	2"	7/8"	1/2"	1/2"	7639K47	4.06
1/2"-13	3/4"	2"	7/8"	1/2"	1/2"	7639K49	9.57

Threaded Through Hole

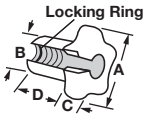

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A nylon locking ring secures the knob and reduces movement.

Thread Size	(A)	(B)	(C)	(D)		Each ♦
Two Arm						
(3) Black Polypropylene w/ Zinc-Plated Steel Insert *(–15° to +125°F)*						
1/4"-20	2"	3/4"	5/8"	1/2"	65035K41	$0.98
5/16"-18	2"	3/4"	5/8"	1/2"	65035K42	.98
5/16"-18	2 1/2"	3/4"	5/8"	1/2"	65035K43	1.52
3/8"-16	2"	3/4"	5/8"	1/2"	65035K45	1.02
3/8"-16	2 1/2"	3/4"	5/8"	1/2"	65035K44	1.62
Five Arm						
(4) Black Polypropylene w/ Zinc-Plated Steel Insert *(–15° to +125°F)*						
1/4"-20	1 3/8"	13/16"	7/16"	11/16"	59625K31	.67
1/4"-20	1 3/4"	7/8"	1/2"	3/4"	59625K33	.67
1/4"-20	2 1/4"	7/8"	1/2"	1/4"	59625K74	1.10
5/16"-18	1 3/8"	13/16"	1/2"	11/16"	59625K32	.83
5/16"-18	1 3/4"	7/8"	1/4"	3/4"	59625K34	.83
5/16"-18	2 1/4"	7/8"	1/2"	1/4"	59625K75	1.14
3/8"-16	2 1/4"	7/8"	1/2"	1/4"	59625K76	1.32

Unthreaded Knobs

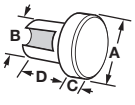

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Hole Dia.	Hole Dp.	(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim							
(5) Black-Oxide Steel							
3/16"	3/8"	3/4"	1/2"	1/4"	3/8"	6121K41	$3.03
1/4"	3/8"	3/4"	1/2"	1/4"	3/8"	6121K42	3.03
1/4"	1/2"	1"	5/8"	1/4"	1/2"	6121K43	3.46
5/16"	1/2"	1"	5/8"	1/4"	1/2"	6121K44	3.46
5/16"	5/8"	1 1/2"	3/4"	5/16"	11/16"	6121K45	4.19
3/8"	5/8"	1 1/2"	3/4"	5/16"	11/16"	6121K46	4.19
3/8"	5/8"	2"	1"	3/8"	3/4"	6121K47	5.48
1/2"	5/8"	2"	1"	3/8"	3/4"	6121K48	5.69
1/2"	3/4"	2 1/2"	1 1/2"	9/16"	15/16"	6121K49	10.50
5/8"	3/4"	2 1/2"	1 1/2"	9/16"	15/16"	6121K51	10.50
5/8"	1"	3"	1 3/4"	5/8"	1 1/8"	6121K52	14.45
3/4"	1"	3"	1 3/4"	5/8"	1 1/8"	6121K53	14.45
(5) Type 303 Stainless Steel							
3/16"	3/8"	3/4"	1/2"	1/4"	3/8"	60205K51	6.25
1/4"	3/8"	3/4"	1/2"	1/4"	3/8"	60205K52	6.25
1/4"	1/2"	1"	5/8"	1/4"	1/2"	60205K53	7.25
5/16"	1/2"	1"	5/8"	1/4"	1/2"	60205K54	7.25
5/16"	5/8"	1 1/2"	3/4"	5/16"	11/16"	60205K55	8.92
3/8"	5/8"	1 1/2"	3/4"	5/16"	11/16"	60205K56	8.92
3/8"	5/8"	2"	1"	3/8"	3/4"	60205K57	11.64
1/2"	5/8"	2"	1"	3/8"	3/4"	60205K58	11.64
1/2"	3/4"	2 1/2"	1 1/2"	9/16"	15/16"	60205K59	22.89
5/8"	3/4"	2 1/2"	1 1/2"	9/16"	15/16"	60205K61	22.89
5/8"	1"	3"	1 3/4"	5/8"	1 1/8"	60205K62	28.05
3/4"	1"	3"	1 3/4"	5/8"	1 1/8"	60205K63	28.05
(6) Aluminum							
1/4"	5/8"	1"	1/2"	3/8"	7/16"	6077K11	5.26
3/8"	7/8"	2"	13/16"	9/16"	9/16"	6077K13	12.47
5/8"	7/8"	3"	1 1/4"	11/16"	9/16"	6077K15	23.62
(7) Aluminum with Chrome-Plated Brass Handle							
3/8"	7/8"	2"	13/16"	9/16"	9/16"	6077K17	19.23
5/8"	7/8"	3"	1 1/4"	9/16"	11/16"	6077K19	28.18
(7) Type 303 Stainless Steel with Chrome-Plated Brass Handle							
3/8"	7/8"	2"	13/16"	9/16"	9/16"	6399K49	43.80
5/8"	7/8"	3"	1 1/4"	9/16"	11/16"	6399K51	62.17

▲ No hub projection. ★ Has eight lobes.

Hole Dia.	Hole Dp.	(A)	(B)	(C)	(D)		Each ♦
Round with Smooth Rim							
(8) Black Nylon *(–20° to +175°F)*							
1/4"	3/4"	1"	1/2"	15/16"	▲	60865K72	$1.15
3/8"	7/8"	1 3/16"	11/16"	1 1/16"	▲	60865K73	2.17
1/2"	1 5/16"	1 9/16"	3/4"	1 7/16"	▲	60865K74	2.50
Two Arm							
(9) Black Nylon *(–15° to +150°F)*							
1/4"	1/8"	1 1/8"	1/2"	9/16"	1/8"	65035K81	.90
Four Arm							
(10) Aluminum							
1/4"	1/2"	1 1/4"	9/16"	5/16"	9/16"	6047K41	3.51
3/8"	5/8"	1 1/2"	11/16"	3/8"	11/16"	6047K42	4.65
3/8"	7/8"	2 1/8"	7/8"	1/2"	15/16"	6047K43	5.13
1/2"	7/8"	2 1/8"	7/8"	1/2"	15/16"	6047K44	5.13
5/8"	1 1/4"	3"	1 3/8"	11/16"	1 1/4"	6047K45	7.93
3/4"	1 1/4"	3"	1 3/8"	11/16"	1 1/4"	6047K46	7.93
(11) Aluminum							
1/4"	1/2"	1"	1/2"	3/8"	1/2"	61135K211	5.67
5/16"	5/8"	1 1/2"	5/8"	1/2"	3/8"	61135K221	6.13
3/8"	5/8"	2"	13/16"	1/2"	1/2"	61135K231	7.21
1/2"	3/4"	2 1/2"	1"	9/16"	9/16"	61135K241	8.97
5/8"	3/4"	3"	1 1/4"	5/8"	5/8"	61135K251	11.44
(12) Type 303 Stainless Steel							
1/4"	1/2"	1 1/4"	1/2"	3/8"	3/8"	4384K31	11.80
5/16"	9/16"	1 9/16"	9/16"	1/2"	1/2"	4384K32	13.04
3/8"	11/16"	1 15/16"	11/16"	9/16"	11/16"	4384K33	27.69
1/2"	13/16"	2 1/2"	13/16"	13/16"	13/16"	4384K34	23.16
Six Lobe							
(13) Aluminum							
1/4"	3/4"	1 1/2"	7/8"	7/16"	7/8"	61515K211	4.51
3/8"	3/4"	2"	1"	5/8"	7/8"	61515K221	5.55
1/2"	1 1/4"	3 1/2"	1 1/4"	3/4"	1"	61515K241★	8.41
Seven Lobe							
(14) Type 303 Stainless Steel							
1/4"	1/2"	1 1/4"	1/2"	3/8"	3/8"	8558K56	11.86
5/16"	9/16"	1 9/16"	9/16"	1/2"	1/2"	8558K57	14.96
3/8"	3/4"	1 15/16"	11/16"	5/8"	11/16"	8558K58	19.43
1/2"	13/16"	2 1/2"	3/4"	3/4"	13/16"	8558K59	25.47

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Unthreaded Knobs with Set Screw

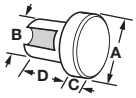

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The set screw allows you to tighten these knobs to a shaft.

Hole Dia.	Hole Dp.	(A)	(B)	(C)	(D)	Set Screw Size		Each ♦
Round with Knurled Rim								
(1) Steel								
1/4"	1/2"	1"	5/8"	1/4"	1/2"	10-32	6333K2	$3.92
5/16"	5/8"	1 1/2"	3/4"	5/16"	11/16"	1/4"-20	6333K5	4.63
3/8"	5/8"	2"	1"	3/8"	3/4"	5/16"-18	6333K8	5.84
1/2"	3/4"	2 1/2"	1 1/2"	9/16"	15/16"	5/16"-18	6333K11	10.82
(1) Brass								
1/4"	1/2"	1"	5/8"	1/4"	1/2"	10-32	5125K1	9.11
5/16"	5/8"	1 1/2"	3/4"	5/16"	11/16"	1/4"-20	5125K2	15.49
3/8"	5/8"	2"	1"	3/8"	3/4"	5/16"-18	5125K3	26.71
1/2"	3/4"	2 1/2"	1 1/2"	9/16"	15/16"	5/16"-18	5125K4	51.37
(1) Type 303 Stainless Steel								
1/4"	1/2"	1"	5/8"	1/4"	1/2"	10-32	2577K21	7.55
5/16"	5/8"	1 1/2"	3/4"	5/16"	11/16"	1/4"-20	2577K51	9.16
3/8"	5/8"	2"	1"	3/8"	3/4"	5/16"-18	2577K81	11.76
1/2"	3/4"	2 1/2"	1 1/2"	9/16"	15/16"	5/16"-18	2577K12	22.39
(2) Black Phenolic (–30° to +400°F)								
1/4"	1/2"	1 1/4"	3/4"	1/2"	1/4"	8-32	1373T66	3.05
1/4"	1/2"	1 3/4"	1"	1/2"	7/16"	8-32	1373T65	3.20
Round with Fluted Rim								
(3) Black Phenolic (–30° to +400°F)								
1/4"	7/16"	7/8"	5/8"	3/8"	1/8"	8-32	6479K67	1.88
3/8"	13/16"	2 1/2"	1 1/4"	11/16"	5/8"	10-32	6479K75	4.67
1/2"	1"	2 1/2"	1 1/4"	11/16"	5/8"	10-32	6479K76	4.67
(3) Black Phenolic with Brass Insert (–30° to +400°F)								
1/4"	1/2"	1 3/4"	3/4"	3/8"	5/8"	8-32	6479K25	2.65
5/16"	1/2"	1 3/4"	3/4"	3/8"	3/8"	8-32	6479K78	4.67
3/8"	9/16"	3"	1 1/4"	5/8"	7/8"	10-32	6479K98	6.20
1/2"	9/16"	3"	1 1/4"	5/8"	7/8"	10-32	6479K99	6.10
Three Arm								
(4) Black Phenolic with Brass Insert (–30° to +400°F)								
1/4"	7/16"	1 1/2"	5/8"	5/8"	1/4"	8-32	57715K66	3.58
Five Arm								
(5) Black Phenolic with Brass Insert (–30° to +450°F)								
1/4"	7/16"	1 5/8"	1 3/16"	5/8"	1/4"	10-32	7129T46	4.54

Metric Unthreaded Knobs

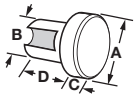

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Hole Dia., mm	Hole Dp., mm	(A) mm	(B) mm	(C) mm	(D) mm		Each ♦
Four Arm							
(6) Aluminum							
6	12	25	13	9	13	61135K52	$5.90
8	16	38	16	12	10	61135K55	6.36
10	16	51	30	12	13	61135K58	7.49
12	20	64	25	14	14	61135K62	9.31
Five Arm							
(7) Aluminum							
8	15	40	14	13	13	62015K211	11.57
10	18	50	19	16	16	62015K311	15.05
12	22	60	21	20	20	62015K411	20.86
16	28	70	26	23	23	62015K511	29.21
Seven Lobe							
(8) Black Nylon with Zinc-Plated Steel Hub (–40° to +230°F)							
6	12	32	12	10	10	6720K212	2.47
8	14	40	14	13	13	6720K222	3.10
10	18	50	18	15	17	6720K232	5.25
12	22	63	20	19	21	6720K242	9.50

Knobs with Unthreaded Through Hole

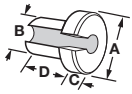

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Knobs ***with set screw*** allow you to tighten them to a shaft.

Hole Dia.	(A)	(B)	(C)	(D)	Set Screw Size		Each ♦
Round with Knurled Rim							
(9) Black-Oxide Steel							
1/4"	1"	5/8"	1/4"	1/2"	—	6121K34	$3.39
5/16"	1 1/2"	3/4"	5/16"	11/16"	—	6121K35	4.14
3/8"	2"	1"	3/8"	3/4"	—	6121K36	5.42
1/2"	2 1/2"	1 1/2"	9/16"	15/16"	—	6121K37	10.61
5/8"	3"	1 3/4"	5/8"	1 1/8"	—	6121K38	14.47
(9) Type 303 Stainless Steel							
1/4"	1"	5/8"	1/4"	1/2"	—	60205K41	7.46
5/16"	1 1/2"	3/4"	5/16"	11/16"	—	60205K42	9.17
3/8"	2"	1"	3/8"	3/4"	—	60205K43	11.97
1/2"	2 1/2"	1 1/2"	9/16"	15/16"	—	60205K44	23.54
5/8"	3"	1 3/4"	5/8"	1 1/8"	—	60205K45	28.87
(10) Steel with Set Screw							
1/4"	1"	5/8"	1/4"	1/2"	10-32	6333K17	3.92
5/16"	1 1/2"	3/4"	5/16"	11/16"	1/4"-20	6333K22	4.63
3/8"	2"	1"	3/8"	3/4"	5/16"-18	6333K25	5.84
1/2"	2 1/2"	1 1/2"	9/16"	15/16"	5/16"-18	6333K28	10.82
(10) Type 303 Stainless Steel with Set Screw							
1/4"	1"	5/8"	1/4"	1/2"	10-32	2577K18	7.55
5/16"	1 1/2"	3/4"	5/16"	11/16"	1/4"-20	2577K23	9.16
3/8"	2"	1"	3/8"	3/4"	5/16"-18	2577K26	11.76
1/2"	2 1/2"	1 1/2"	9/16"	15/16"	5/16"-18	2577K29	22.39
Round with Fluted Rim							
(11) Die Cast Zinc							
1/4"	2"	3/4"	5/16"	5/16"	—	6048K27	4.03
5/16"	2"	3/4"	5/16"	5/16"	—	6048K28	4.03
3/8"	2"	3/4"	5/16"	5/16"	—	6048K29	4.03
3/8"	2 1/2"	1 1/8"	7/16"	7/16"	—	6048K31	5.89
1/2"	2 1/2"	1 1/8"	7/16"	7/16"	—	6048K32	5.89
5/8"	2 1/2"	1 1/8"	7/16"	7/16"	—	6048K33	5.89
(12) Black Phenolic (–30° to +450°F)							
1/4"	1 1/4"	5/8"	3/8"	3/8"	—	6479K11	2.27
5/16"	1 1/4"	5/8"	3/8"	3/8"	—	6479K12	2.27
5/16"	1 3/4"	3/4"	3/8"	3/8"	—	6479K28	2.62
3/8"	1 3/4"	3/4"	3/8"	3/8"	—	6479K29	2.62
Four Arm							
(13) Cast Iron							
1/4"	1 1/8"	9/16"	5/16"	3/8"	—	6042K57	5.72
5/16"	1 1/2"	5/8"	7/16"	9/16"	—	6042K58	6.04
3/8"	2"	3/4"	7/16"	9/16"	—	6042K59	6.84
5/8"	2 1/2"	1"	1/2"	1 3/4"	—	6042K62	8.98
1/2"	2 9/16"	1 1/8"	1/2"	1"	—	6042K61	8.32
(14) Type 303 Stainless Steel							
1/4"	1 1/4"	1/2"	3/8"	3/8"	—	4384K35	11.31
5/16"	1 9/16"	9/16"	1/2"	1/2"	—	4384K36	12.56
3/8"	1 15/16"	11/16"	9/16"	11/16"	—	4384K37	16.47
1/2"	2 1/2"	13/16"	13/16"	13/16"	—	4384K38	22.18
Five Arm							
(15) Black Nylon (–15° to +150°F)							
1/4"	2 1/4"	13/16"	1/2"	5/16"	—	59625K21	3.10
5/16"	2 1/4"	13/16"	1/2"	5/16"	—	59625K22	3.10
3/8"	2 1/4"	13/16"	1/2"	5/16"	—	59625K23	3.10
Six Lobe							
(16) Cast Iron							
3/8"	1 1/2"	7/8"	1/2"	1 1/2"	—	6042K51	8.02
3/8"	2"	7/8"	1/2"	1/2"	—	6042K162	8.20
3/8"	2"	7/8"	1/2"	1 1/2"	—	6042K52	8.76
1/2"	2 3/4"	1 1/4"	1/2"	3/4"	—	6042K53	10.68
1/2"	2 3/4"	1 1/4"	1/2"	1 1/2"	—	6042K54	12.30
3/4"	3 1/2"	1 5/8"	5/8"	7/8"	—	6042K55	14.00

♦ Prices are 10% lower when you buy in quantities of 10 or more.

For information about knobs, see page 2206.

Knobs with Threaded Through Hole

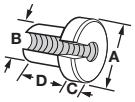

Threaded Hole

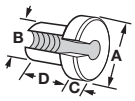

Threaded Insert

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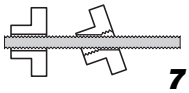

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Knobs ***with set screw*** allow you to tighten them to a shaft. Set screw size is 1/4″-20.

(Style 7) Fast Lock— The angled through hole lets you quickly slide the knob along a threaded shaft. To engage threads, straighten knob and tighten. *Note:* Not recommended for use where vibration is a concern.

Thread Size	(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim						
(1) Black-Oxide Steel						
10-24	3/4″	1/2″	1/4″	3/8″	**6121K111**	$3.00
1/4″-20	3/4″	1/2″	1/4″	3/8″	**6121K211**	3.00
1/4″-20	1″	5/8″	1/4″	1/2″	**6121K311**	3.44
1/4″-28	1″	5/8″	1/4″	1/2″	**6121K54**	3.44
5/16″-18	1″	5/8″	1/4″	1/2″	**6121K411**	3.44
5/16″-18	1 1/2″	3/4″	5/16″	11/16″	**6121K511**	4.18
5/16″-24	1 1/2″	3/4″	5/16″	11/16″	**6121K55**	4.19
3/8″-16	1 1/2″	3/4″	5/16″	11/16″	**6121K611**	4.18
3/8″-16	2″	1″	3/8″	3/4″	**6121K711**	5.48
3/8″-24	2″	1″	3/8″	3/4″	**6121K56**	5.50
1/2″-13	2″	1″	3/8″	3/4″	**6121K811**	5.69
1/2″-13	2 1/2″	1 1/2″	9/16″	15/16″	**6121K911**	10.49
1/2″-20	2 1/2″	1 1/2″	9/16″	15/16″	**6121K57**	10.50
5/8″-11	2 1/2″	1 1/2″	9/16″	15/16″	**6121K112**	10.50
5/8″-11	3″	1 3/4″	5/8″	1 1/8″	**6121K122**	14.44
3/4″-10	3″	1 3/4″	5/8″	1 1/8″	**6121K132**	14.44
(1) Brass						
1/4″-20	3/4″	1/2″	1/4″	3/8″	**5125K21**	2.83
1/4″-20	1″	5/8″	1/4″	1/2″	**5125K22**	5.94
5/16″-18	1″	5/8″	1/4″	1/2″	**5125K23**	5.94
5/16″-18	1 1/2″	3/4″	5/16″	11/16″	**5125K24**	12.31
3/8″-16	1 1/2″	3/4″	5/16″	11/16″	**5125K25**	12.31
1/2″-13	2″	1″	3/8″	3/4″	**5125K26**	23.51
(1) Aluminum						
5/16″-18	1″	1/2″	3/8″	7/16″	**6077K31**	6.34
3/8″-16	2″	13/16″	9/16″	9/16″	**6077K32**	15.77
(1) Type 303 Stainless Steel						
10-24	3/4″	1/2″	1/4″	3/8″	**60205K211**	5.95
1/4″-20	3/4″	1/2″	1/4″	3/8″	**60205K221**	5.95
1/4″-20	1″	5/8″	1/4″	1/2″	**60205K231**	6.82
1/4″-28	1″	5/8″	1/4″	1/2″	**60205K81**	6.82
5/16″-18	1″	5/8″	1/4″	1/2″	**60205K241**	6.82
5/16″-18	1 1/2″	3/4″	5/16″	11/16″	**60205K251**	8.31
5/16″-24	1 1/2″	3/4″	5/16″	11/16″	**60205K82**	8.31
3/8″-16	1 1/2″	3/4″	5/16″	11/16″	**60205K261**	8.31
3/8″-16	2″	1″	3/8″	3/4″	**60205K271**	10.92
3/8″-24	2″	1″	3/8″	3/4″	**60205K83**	10.92
1/2″-13	2″	1″	3/8″	3/4″	**60205K281**	10.92
1/2″-13	2 1/2″	1 1/2″	9/16″	15/16″	**60205K291**	20.92
1/2″-20	2 1/2″	1 1/2″	9/16″	15/16″	**60205K84**	20.92
5/8″-11	2 1/2″	1 1/2″	9/16″	15/16″	**60205K311**	20.92
5/8″-11	3″	1 3/4″	5/8″	1 1/8″	**60205K321**	28.07
3/4″-10	3″	1 3/4″	5/8″	1 1/8″	**60205K331**	28.07
Round with Fluted Rim						
(2) Black Comfort-Grip Polypropylene w/ Steel Insert *(–15° to +200°F)*						
5/16″-18	2 1/2″	1 1/4″	11/16″	9/16″	**5532T33**	2.57
3/8″-16	2 1/2″	1 1/4″	11/16″	9/16″	**5532T35**	2.67
1/2″-13	2 1/2″	1 1/4″	11/16″	9/16″	**5532T37**	2.77
Two Arm						
(3) Black Nylon with Brass Insert *(–15° to +150°F)*						
1/4″-20	1 1/8″	1/2″	9/16″	1/8″	**6477K58**	1.02
Three Arm						
(4) Black Polypropylene with Brass Insert *(–15° to +125°F)*						
1/4″-20	1 1/2″	5/8″	5/8″	1/4″	**57715K75**	1.05
5/16″-18	1 1/2″	5/8″	5/8″	1/4″	**57715K74**	1.12
3/8″-16	1 1/2″	5/8″	5/8″	1/4″	**57715K76**	1.45
(4) Black Phenolic with Brass Insert *(–30° to +400°F)*						
10-32	1 1/8″	1/2″	1/2″	1/4″	**57715K22**	1.43
1/4″-20	1 1/8″	1/2″	1/2″	1/4″	**57715K23**	1.43

Thread Size	(A)	(B)	(C)	(D)		Each ♦
Three Arm (Cont.)						
(4) Black Phenolic with Brass Insert (Cont.)						
1/4″-20	1 1/2″	5/8″	5/8″	1/4″	**57715K24**	$1.68
5/16″-18	1 1/2″	5/8″	5/8″	1/4″	**57715K25**	1.68
5/16″-18	2″	3/4″	5/8″	3/8″	**57715K26**	2.23
3/8″-16	2″	3/4″	5/8″	3/8″	**57715K27**	2.48
Four Arm						
(5) Cast Iron						
1/4″-20	1 1/8″	9/16″	5/16″	3/8″	**6042K77**	5.72
5/16″-18	1 1/2″	5/8″	7/16″	9/16″	**6042K78**	6.04
3/8″-16	2″	3/4″	7/16″	9/16″	**6042K79**	6.84
1/2″-13	2 9/16″	1 1/8″	1/2″	1″	**6042K81**	8.32
5/8″-11	2 1/2″	1″	1/2″	1 3/4″	**6042K82**	8.98
(5) Cast Iron with Set Screw						
3/8″-16	2″	3/4″	7/16″	9/16″	**3948T25**	10.05
1/2″-13	2 9/16″	1 1/8″	1/2″	1″	**3948T26**	11.82
5/8″-11	2 1/2″	1″	1/2″	1 3/4″	**3948T27**	12.72
(6) Steel						
1/4″-20	1 1/2″	1/2″	3/8″	1/2″	**3992T29**	6.31
5/16″-18	2″	5/8″	1/2″	1/2″	**3992T31**	10.11
3/8″-16	2 1/2″	13/16″	9/16″	9/16″	**3992T32**	18.91
1/2″-13	2 1/2″	1″	9/16″	9/16″	**3992T33**	18.91
(6) Brass						
1/4″-20	1″	1/2″	3/8″	1/2″	**5125K46**	6.77
5/16″-18	1 1/2″	5/8″	3/8″	3/8″	**5125K47**	13.69
3/8″-16	2″	13/16″	1/2″	1/2″	**5125K48**	25.91
1/2″-13	2 1/2″	1″	9/16″	9/16″	**5125K49**	53.91
(6) Aluminum						
1/4″-20	1″	1/2″	3/8″	1/2″	**61135K31**	5.95
5/16″-18	1 1/2″	5/8″	3/8″	3/8″	**61135K33**	6.31
3/8″-16	2″	13/16″	1/2″	1/2″	**61135K35**	7.46
1/2″-13	2 1/2″	1″	9/16″	9/16″	**61135K37**	9.00
(7) Fast-Lock Steel						
1/4″-20	1 1/8″	9/16″	5/16″	5/16″	**6032K11**	5.08
5/16″-18	1 1/2″	11/16″	3/8″	1/2″	**6032K12**	5.95
3/8″-16	2″	13/16″	1/2″	1/2″	**6032K13**	6.82
1/2″-13	2 1/2″	1″	9/16″	9/16″	**6032K14**	8.34
5/8″-11	3″	1 1/4″	5/8″	5/8″	**6032K15**	10.50
3/4″-10	3″	1 1/4″	5/8″	5/8″	**6032K16**	17.48
(8) Type 303 Stainless Steel						
1/4″-20	1 1/4″	1/2″	3/8″	3/8″	**4384K1**	11.64
5/16″-18	1 9/16″	9/16″	1/2″	1/2″	**4384K2**	13.04
3/8″-16	1 15/16″	11/16″	9/16″	11/16″	**4384K3**	17.11
1/2″-13	2 1/2″	13/16″	13/16″	13/16″	**4384K4**	22.82
(9) Black Polypropylene with Brass Insert *(–15° to +125°F)*						
1/4″-20	1 3/4″	3/4″	9/16″	7/16″	**5993K54**	1.68
5/16″-18	1 3/4″	3/4″	9/16″	7/16″	**5993K55**	1.73
5/16″-18	2 1/4″	1″	9/16″	7/16″	**5993K84**	2.03
3/8″-16	1 3/4″	3/4″	9/16″	7/16″	**5993K56**	2.03
3/8″-16	2 1/4″	1″	9/16″	7/16″	**5993K85**	2.27
(9) Black Nylon with Brass Insert *(–15° to +150°F)*						
1/4″-20	1 1/4″	1/2″	3/8″	1/2″	**5993K22**	1.65
1/4″-20	2 1/4″	1″	9/16″	7/16″	**5993K83**	1.89
(9) Black Phenolic with Brass Insert *(–30° to +400°F)*						
1/4″-20	1 1/2″	5/8″	1/2″	1/2″	**5993K63**	1.78
5/16″-18	1 1/2″	5/8″	1/2″	1/2″	**5993K64**	1.81
5/16″-18	2″	7/8″	1/2″	1/2″	**5993K66**	2.41
3/8″-16	2″	7/8″	1/2″	1/2″	**5993K31**	2.65
3/8″-24	2″	7/8″	1/2″	1/2″	**5993K32**	2.62
1/2″-13	2″	7/8″	1/2″	11/16″	**5993K33**	3.76
1/2″-20	2″	7/8″	1/2″	5/8″	**5993K34**	3.89

(Continued on following page)

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Knobs with Threaded Through Hole *(Continued from previous page)*

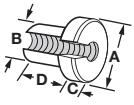

Threaded Hole

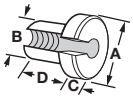

Threaded Insert

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Knobs ***with set screw*** allow you to tighten them to a shaft. Set screw size is ¼″-20.
(Style 10) Choose-a-Color—To Order: Please specify knob color: black, blue, green, orange, red, or white.

Thread Size	(A)	(B)	(C)	(D)		Each ♦
Four Arm (Cont.)						
(10) Choose-a-Color Nylon with Brass Insert *(+14° to +248°F)*						
¼″-20	1 9/16″	5/8″	7/16″	1/2″	7921K61	$2.58
5/16″-18	2″	1 3/16″	9/16″	9/16″	7921K62	3.15
3/8″-16	2 3/8″	15/16″	9/16″	11/16″	7921K63	3.73
1/2″-13	2 3/8″	15/16″	9/16″	11/16″	7921K64	3.73
Five Arm						
(11) Cast Iron						
5/8″-11	3″	1 1/4″	1/2″	1 1/4″	6042K83	11.94
3/4″-10	3 1/4″	1 1/2″	1/2″	1 1/4″	6042K84	13.08
(11) Cast Iron with Set Screw						
5/8″-11	3″	1 1/4″	1/2″	1 1/4″	3948T28	16.32
3/4″-10	3 1/4″	1 1/2″	1/2″	1 1/4″	3948T29	17.80
Six Lobe						
(12) Cast Iron						
3/8″-16	1 1/2″	7/8″	1/2″	1 1/2″	6042K71	8.02
3/8″-16	2″	7/8″	1/2″	1/2″	6042K161	8.20
3/8″-16	2″	7/8″	1/2″	1 1/2″	6042K72	8.76
1/2″-13	2 3/4″	1 1/4″	1/2″	3/4″	6042K73	10.68
1/2″-13	2 3/4″	1 1/4″	1/2″	1 1/2″	6042K74	12.30
3/4″-10	3 1/2″	1 5/8″	5/8″	7/8″	6042K75	14.00

Thread Size	(A)	(B)	(C)	(D)		Each ♦
Six Lobe (Cont.)						
(12) Cast Iron with Set Screw						
3/8″-16	2″	7/8″	1/2″	1 1/2″	3948T21	$12.38
1/2″-13	2 3/4″	1 1/4″	1/2″	3/4″	3948T22	14.78
1/2″-13	2 3/4″	1 1/4″	1/2″	1 1/2″	3948T23	16.82
3/4″-10	3 1/2″	1 5/8″	5/8″	7/8″	3948T24	18.95
Seven Lobe						
(13) Type 303 Stainless Steel						
¼″-20	1 1/4″	1/2″	7/16″	7/16″	8558K1	11.49
5/16″-18	1 9/16″	9/16″	1/2″	1/2″	8558K2	14.51
3/8″-16	1 15/16″	11/16″	5/8″	11/16″	8558K3	17.12
1/2″-13	2 1/2″	3/4″	3/4″	13/16″	8558K4	21.02
(14) Black Nylon with Steel Insert *(–40° to +200°F)*						
¼″-20	1 1/4″	9/16″	7/16″	3/8″	6092K11	2.06
5/16″-18	1 9/16″	11/16″	1/2″	1/2″	6092K13	2.77
3/8″-16	2″	7/8″	5/8″	11/16″	6092K15	3.83
1/2″-13	2 1/2″	1″	3/4″	13/16″	6092K17	5.43

Metric Knobs with Threaded Through Hole

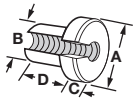

Threaded Hole

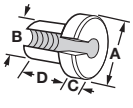

Threaded Insert

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Thread Size	(A) mm	(B) mm	(C) mm	(D) mm		Each ♦
Round with Knurled Rim						
(1) Steel						
M5×0.8	19	13	6	10	60765K313	$2.77
M6×1	19	13	6	10	60765K323	2.77
M6×1	25	16	6	13	60765K333	3.18
M8×1.25	25	16	6	13	60765K343	3.18
M8×1.25	38	19	8	17	60765K353	3.87
M10×1.5	38	19	8	17	60765K363	3.87
M10×1.5	51	25	10	19	60765K373	5.08
M12×1.75	51	25	10	19	60765K383	5.26
(1) Type 303 Stainless Steel						
M5×0.8	19	13	6	10	62265K513	6.44
M6×1	19	13	6	10	62265K523	6.44
M6×1	25	16	6	13	62265K533	6.65
M8×1.25	25	16	6	13	62265K543	7.39
M8×1.25	38	19	8	17	62265K553	9.00
M10×1.5	38	19	8	17	62265K563	9.00
M10×1.5	51	25	10	19	62265K573	10.65
M12×1.75	51	25	10	19	62265K583	10.65

Thread Size	(A) mm	(B) mm	(C) mm	(D) mm		Each ♦
Six Lobe						
(2) Phenolic with Brass Insert *(–4° to +240°F)*						
M6×1	40	21	15	13	4273T81	$5.67
M8×1.25	40	21	15	13	4273T82	5.86
M8×1.25	50	24	17	15	4273T84	7.21
M10×1.5	40	21	15	13	4273T83	5.86
M10×1.5	50	24	17	15	4273T85	7.31
M12×1.75	50	24	17	15	4273T86	7.31
M12×1.75	60	28	20	15	4273T87	9.07
M16×2	60	28	20	15	4273T88	9.55
M16×2	70	32	21	21	4273T89	12.17
Seven Lobe						
(3) Black Nylon with Zinc-Plated Steel Insert *(–40° to +200°F)*						
M6×1	32	14	10	10	6092K21	2.06
M8×1.25	40	18	12	13	6092K23	2.77
M10×1.5	50	22	15	17	6092K25	3.83
M12×1.75	63	26	19	21	6092K27	5.43

Pry-to-Tighten Knobs

When hand-tightening isn't possible, insert a metal bar between the pins of these knobs for the leverage you need. Turn the bar (sold separately on page 3671) to tighten. Knobs are made of zinc-plated ductile iron.

Thread Size	(A)	(B)	(C)	(D)	(E)		Each ♦
With Threaded Through Hole							
3/8″-16	2″	1 1/4″	2 1/8″	1 1/4″	7/16″	6145K14	$9.21
1/2″-13	2″	1 1/4″	2 1/8″	1 1/4″	7/16″	6145K15	9.21
1/2″-13	2 1/2″	1 1/2″	2 3/8″	1 7/16″	11/16″	6145K22	12.88
5/8″-11	2″	1 1/4″	2 1/8″	1 1/4″	7/16″	6145K16	9.21
5/8″-11	2 1/2″	1 1/2″	2 3/8″	1 7/16″	11/16″	6145K23	12.88
3/4″-10	2 1/2″	1 1/2″	2 3/8″	1 7/16″	11/16″	6145K24	12.88
With Solid Hub							
———	2″	1 1/4″	2 1/8″	1 1/4″	7/16″	6145K1	7.00
———	2 1/2″	1 1/2″	2 3/8″	1 7/16″	11/16″	6145K2	10.56

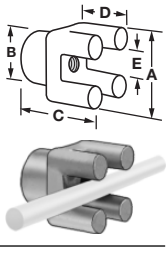

♦ Prices are 10% lower when you buy in quantities of 10 or more.

For information about knobs, see page 2206.

Knobs with Solid Hub

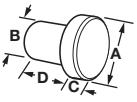

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(A)	(B)	(C)	(D)		Each ♦
Round with Knurled Rim					
(1) Black-Oxide Steel					
3/4"	1/2"	1/4"	3/8"	**6121K91**	$3.00
1"	5/8"	1/4"	1/2"	**6121K92**	3.44
1 1/2"	3/4"	5/16"	11/16"	**6121K93**	4.19
2"	1"	3/8"	3/4"	**6121K94**	5.69
2 1/2"	1 1/2"	9/16"	15/16"	**6121K95**	10.50
3"	1 3/4"	5/8"	1 1/8"	**6121K96**	14.44
(1) Brass					
3/4"	1/2"	1/4"	3/8"	**5125K51**	2.51
1"	5/8"	1/4"	1/2"	**5125K52**	5.49
1 1/2"	3/4"	5/16"	11/16"	**5125K53**	11.71
2"	1"	3/8"	3/4"	**5125K54**	22.80
(1) Type 303 Stainless Steel					
3/4"	1/2"	1/4"	3/8"	**60205K34**	6.80
1"	5/8"	1/4"	1/2"	**60205K35**	7.60
1 1/2"	3/4"	5/16"	11/16"	**60205K36**	9.26
2"	1"	3/8"	3/4"	**60205K37**	12.17
2 1/2"	1 1/2"	9/16"	15/16"	**60205K38**	23.31
3"	1 3/4"	5/8"	1 1/8"	**60205K39**	32.09
(2) Domed Aluminum					
1"	5/8"	1/2"	7/16"	**7762K61**	7.16
2"	1"	11/16"	1/2"	**7762K62**	10.91
2 1/4"	1 1/4"	3/4"	5/8"	**7762K63**	12.88
(3) Aluminum					
1"	1/2"	3/8"	7/16"	**6077K12**	4.50
2"	13/16"	9/16"	9/16"	**6077K14**	12.50
3"	1 1/4"	11/16"	9/16"	**6077K16**	22.45
(3) Type 303 Stainless Steel					
1"	1/2"	3/8"	7/16"	**6399K41**	8.31
2"	13/16"	9/16"	9/16"	**6399K42**	12.50
3"	1 1/4"	11/16"	9/16"	**6399K43**	34.72
(4) Aluminum with Chrome-Plated Brass Handle					
2"	13/16"	9/16"	9/16"	**6077K18**	18.52
3"	1 1/4"	9/16"	11/16"	**6077K21**	28.15
(4) Type 303 Stainless Steel with Chrome-Plated Brass Handle					
2"	13/16"	9/16"	9/16"	**6399K47**	42.67
3"	1 1/4"	9/16"	11/16"	**6399K48**	59.81
Round with Fluted Rim					
(5) Black Phenolic *(–30° to +450° F)*					
1 1/4"	5/8"	3/8"	3/8"	**6479K13**	1.40
1 3/4"	3/4"	3/8"	3/8"	**6479K31**	1.73

(A)	(B)	(C)	(D)		Each ♦
Four Arm					
(6) Cast Iron					
1 1/8"	9/16"	5/16"	3/8"	**6042K37**	$3.10
1 1/2"	5/8"	7/16"	9/16"	**6042K38**	3.50
2"	3/4"	7/16"	9/16"	**6042K39**	3.96
2 1/2"	1"	1/2"	1 3/4"	**6042K42**	6.34
2 9/16"	1 1/8"	1/2"	1"	**6042K41**	4.90
(7) Aluminum					
1 1/4"	9/16"	5/16"	9/16"	**6047K11**	2.03
1 1/2"	11/16"	3/8"	11/16"	**6047K12**	3.00
2 1/8"	7/8"	1/2"	15/16"	**6047K13**	3.58
3"	1 3/8"	11/16"	1 1/4"	**6047K14**	5.89
(8) Brass					
1"	1/2"	3/8"	1/2"	**5125K55**	6.06
1 1/2"	5/8"	1/2"	3/8"	**5125K56**	12.97
2"	13/16"	1/2"	1/2"	**5125K57**	25.20
2 1/2"	1"	9/16"	9/16"	**5125K58**	53.17
(8) Aluminum					
1"	1/2"	3/8"	1/2"	**61135K11**	3.28
1 1/2"	5/8"	1/2"	3/8"	**61135K12**	4.10
2"	13/16"	1/2"	1/2"	**61135K13**	4.74
2 1/2"	1"	9/16"	9/16"	**61135K14**	6.13
3"	1 1/4"	5/8"	5/8"	**61135K15**	8.72
Five Arm					
(9) Cast Iron					
3"	1 1/4"	1/2"	1 1/4"	**6042K43**	7.84
3 1/4"	1 1/2"	1/2"	1 1/4"	**6042K44**	8.74
Six Lobe					
(10) Cast Iron					
1 1/2"	7/8"	1/2"	1 1/2"	**6042K31**	4.22
2"	7/8"	1/2"	1/2"	**6042K36**	4.52
2"	7/8"	1/2"	1 1/2"	**6042K32**	4.88
2 3/4"	1 1/4"	1/2"	3/4"	**6042K33**	6.68
2 3/4"	1 1/4"	1/2"	1 1/2"	**6042K34**	7.52
3 1/2"	1 5/8"	5/8"	7/8"	**6042K35**	9.22
(11) Aluminum					
1 1/2"	7/8"	1/2"	7/8"	**61515K11**	2.61
2"	1"	3/4"	7/8"	**61515K12**	3.72
3 1/2"	1 1/4"	13/16"	1"	**61515K14★**	5.89

★ Has eight lobes.

Push-Pull Knobs

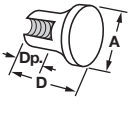

12

13

14

Easy to grip, these knobs are made of scratch-resistant black phenolic and have a brass threaded insert, unless noted. Temperature range is –30° to +400° F.

	Thread Size	Thread Dp.	(A)	(D)		Each ♦
12	6-32	1/4"	5/8"	3/4"	**6044K51**	$0.91
12	8-32	3/8"	5/8"	3/4"	**6044K52**	.91
12	8-32	3/8"	13/16"	3/4"	**6044K58**	.69
12	8-32	3/8"	7/8"	7/8"	**6044K61**	.73
12	8-32	3/8"	1 1/16"	1 1/16"	**6044K64**	.78
12	10-32	5/16"	5/8"	9/16"	**6044K53**	.96
12	10-32	3/8"	13/16"	3/4"	**6044K59**	.73
12	10-32	3/8"	7/8"	7/8"	**6044K62**	.69
12	10-32	3/8"	1 1/16"	1 1/16"	**6044K65**	.80
12	1/4"-20	3/8"	7/8"	7/8"	**6044K63**	.76
13	8-32	3/8"	13/16"	5/8"	**6044K77**	$0.69
13	8-32	3/8"	1 1/16"	3/4"	**6044K78**	.89
13	10-32	3/8"	13/16"	5/8"	**6044K84**	.76
13	10-32	3/8"	13/16"	13/16"	**6044K83■**	.80
14	8-32	3/8"	1 1/2"	7/8"	**6044K71**	1.18
14	10-32	3/8"	1 1/2"	7/8"	**6044K72**	1.27
14	1/4"-20	7/16"	1 1/2"	7/8"	**6044K73■**	1.00

■ No metal insert. Threads are molded into phenolic.

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Indicating Knobs

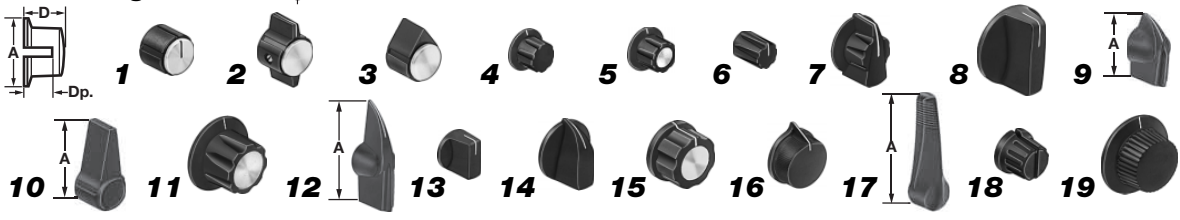

Be sure of your settings with these knobs. They're made of scratch-resistant black phenolic and have an unthreaded hole. Temperature range is –30° to +400° F. *Styles 1, 2, 3, 5, 11,* and *15* have a silver-colored cap.

Knobs ***for round shafts*** have a set screw for tightening.
Knobs ***for D-shaped shafts*** have a spring except for 6094K33 and 6094K96, which have a set screw for tightening.

	Fits Shaft Dia.	(A)	(D)	Hole Dp.	Set Screw Size		Each ♦
For Round Shafts							
1	1/4"	9/16"	5/8"	7/16"	6-32	**6094K21**	$3.14
1	1/4"	13/16"	5/8"	9/16"	8-32	**6094K22**	3.24
1	1/4"	1 11/16"	11/16"	9/16"	8-32	**6094K23**	3.75
2	1/4"	1 5/16"	5/8"	9/16"	8-32	**6094K25**	4.50
3	1/4"	1 11/16"	5/8"	1/2"	8-32	**6094K24**	3.38
4	1/4"	3/4"	1/2"	7/16"	8-32	**6094K72**	1.60
4	1/4"	1 1/8"	5/8"	1/2"	8-32	**6094K74**	1.65
5	1/4"	3/4"	1/2"	7/16"	8-32	**6094K73**	2.59
5	1/4"	1 1/8"	5/8"	1/2"	8-32	**6094K75**	3.08
6	1/4"	1/2"	5/8"	1/2"	6-32	**6094K71**	2.55
7	1/4"	1 1/4"	5/8"	1/2"	8-32	**6094K15**	3.98
8	1/4"	1 1/2"	3/4"	5/8"	8-32	**6094K13**	3.57
9	1/4"	1 1/4"	5/8"	1/2"	8-32	**6094K17**	2.02
10	1/4"	1 11/16"	5/8"	9/16"	8-32	**6094K12**	4.08
11	1/4"	1 1/2"	7/8"	3/4"	8-32	**6094K42**	4.50
11	1/4"	2 1/16"	7/8"	13/16"	8-32	**6094K31**	7.58
12	1/4"	2"	5/8"	1/2"	8-32	**6094K46**	2.40
13	1/4"	3/4"	9/16"	7/16"	8-32	**6094K88**	2.42
14	1/4"	1 1/8"	5/8"	7/16"	8-32	**6094K89**	2.60
For Round Shafts— *Hole has a brass insert.*							
5	1/4"	3/4"	1/2"	7/16"	6-32	**6094K18**	4.25
7	1/4"	1 1/4"	5/8"	1/2"	8-32	**6094K28**	3.00
8	1/4"	1 1/2"	3/4"	5/8"	8-32	**6094K27**	3.10
9	1/4"	1 1/4"	5/8"	1/2"	8-32	**6094K54**	2.40

	Fits Shaft Dia.	(A)	(D)	Hole Dp.	Set Screw Size		Each ♦
For Round Shafts— *Hole has a brass insert. (Cont.)*							
10	1/4"	1 11/16"	5/8"	9/16"	8-32	**6094K14**	$3.40
11	1/4"	1 1/2"	7/8"	3/4"	8-32	**6094K29**	4.67
11	1/4"	2 1/16"	7/8"	13/16"	8-32	**6094K32**	6.33
15	1/4"	13/16"	1/2"	7/16"	M3 × 0.5	**6094K81**	1.14
15	1/4"	1"	9/16"	1/2"	M4 × 0.7	**6094K82**	1.45
15	1/4"	1 5/16"	11/16"	1/2"	M4 × 0.7	**6094K83**	1.50
15	1/4"	1 3/4"	13/16"	11/16"	M4 × 0.7	**6094K84**	2.07
16	1/4"	1 1/8"	1/2"	7/16"	8-32	**6094K26**	2.60
17	1/4"	2 1/2"	5/8"	5/16"	8-32	**6094K16**	2.40
18	1/4"	5/8"	9/16"	7/16"	M3 × 0.5	**6094K85**	1.40
18	1/4"	13/16"	5/8"	1/2"	M4 × 0.7	**6094K86**	1.52
18	1/4"	15/16"	13/16"	5/8"	M4 × 0.7	**6094K37**	2.05
18	1/4"	1 3/8"	11/16"	5/8"	M4 × 0.7	**6094K87**	1.58
19	1/4"	1 1/2"	11/16"	1/2"	8-32	**6094K57**	2.50
For D-Shaped Shafts							
3	1/4" flat	1 1/16"	5/8"	1/2"	—	**6094K11**	3.83
4	1/4" flat	3/4"	1/2"	7/16"	—	**6094K91**	1.85
4	1/4" flat	1 1/8"	5/8"	1/2"	—	**6094K92**	2.20
4	1/4" flat	1 1/4"	3/4"	5/8"	—	**6094K93**	2.50
8	1/4" flat	1 1/2"	3/4"	5/8"	—	**6094K95**	2.15
11	1/4" flat	1 1/2"	7/8"	3/4"	—	**6094K19**	3.52
11	1/4" flat	2 1/16"	7/8"	13/16"	8-32	**6094K33**	5.02
12	1/4" flat	2"	5/8"	1/2"	8-32	**6094K96**	3.69
19	1/4" flat	1 1/2"	11/16"	1/2"	—	**6094K94**	2.25

Comfort-Grip Indicating Knobs

The black thermoplastic elastomer shell on these knobs is soft to the touch and improves grip. They have a polypropylene core, an unthreaded hole, and a set screw for tightening onto the shaft. All except Style 20 have a gray position indicator. Temperature range is –60° to +210° F.

	Fits Shaft Dia.	(A)	(D)	Hole Dp.	Set Screw Size		Each ♦
20	1/4"	5/8"	9/16"	1/2"	4-40	**60955K61**	$2.52
21	1/4"	3/4"	11/16"	5/8"	4-40	**60955K62**	2.47
22	1/4"	3/4"	3/8"	5/16"	6-32	**60955K63**	2.52
23	1/4"	1 3/8"	7/8"	11/16"	6-32	**60955K64**	2.45
24	1/4"	1 1/2"	11/16"	7/16"	8-32	**7354K11**	3.56
24	1/4"	2"	11/16"	7/16"	8-32	**7354K13**	4.51
24	1/4"	2 1/2"	11/16"	7/16"	8-32	**7354K15**	5.59

Turn-Counting Knobs

Simple to set and reset, these dial knobs have easy-to-read scales for monitoring the number of shaft turns. Use the included 4-40 set screw and hex key to tighten to the shaft. Flip the locking switch to prevent slipping and ensure long-term precision. Knobs are black.

Choose a knob with a maximum knob turn value that is equal to or greater than the number of turns required.

Styles 25&26 have two scales and a temperature range of 35° to 400° F. *Style 25* is plastic. *Style 26* is aluminum. ***Styles 27&28*** have one scale and are made of plastic. Temperature range is –22° to +185° F. *Style 28* has a 1 3/4" Ht. × 1" Wd. aluminum housing.

For installation instructions, go to mcmaster.com and search for 3148KAC.

	Fits Shaft Dia.	(A)	(D)	Hole Dp.	Max. Knob Turns		Each 1-2	Each 3-Up
25	1/4"	7/8"	1"	15/16"	20	**3148K46**	$19.42	$17.52
26	1/4"	1"	1"	13/16"	10	**3148K44**	23.85	21.52
27	1/4"	1 1/16"	1 1/4"	11/16"	10	**3148K17**	53.87	48.60
28	1/4"	9/16"	1"	1"	10	**3148K33**	74.20	66.95

Heavy Duty Indicating Knobs

Made of anodized aluminum, these knobs have an unthreaded hole. All have a set screw for tightening onto a shaft; 6332K36 and K44 have two set screws.

Knurled Rim ***Ribbed Rim***

Fits Shaft Dia.	(A)	(D)	Hole Dp.	Set Screw Size	***Knurled Rim***	Each ♦	***Ribbed Rim***	Each ♦
1/8"	1/2"	5/8"	1/2"	6-32	**6332K32**	$5.64	**6332K38**	$5.64
1/4"	1/2"	5/8"	1/2"	6-32	**6332K34**	5.64	**6332K42**	5.64
1/4"	15/16"	5/8"	1/2"	6-32	**6332K36**	6.58	**6332K44**	6.57

Steering Wheel Knobs

Attach one of these knobs to pallet and lift truck steering wheels for one-hand operation. Also known as spinner knobs, all include fasteners.

2800T11 has a steel base, ***T12*** a stainless steel base, and ***T13*** a plastic base.

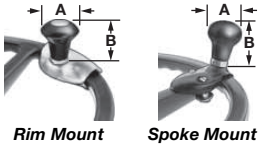

Rim Mount ***Spoke Mount***

	Knob Material	(A)	(B)		
Rim Mount	Plastic	1 7/8"	2 1/4"	**2800T11**	$14.20
Rim Mount	Type 316 Stainless Steel	1 1/2"	1 7/8"	**2800T12**	26.83
Spoke Mount	Plastic	2"	2 3/4"	**2800T13**	34.80

♦ Prices are 10% lower when you buy in quantities of 10.

Lever Shafts

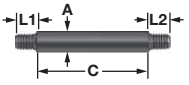

Attach a knob to create your own handle. Thread size is the same at both ends.

Inch

Size	Thread (L1)	Thread (L2)	(A)	(C)	Black-Oxide Steel	Each ♦	Type 303 Stainless Steel	Each ♦
10-24	3/8″	1/4″	1/4″	3/4″	8384K38	$5.56	8384K51	$8.38
10-24	3/8″	1/4″	1/4″	2 1/4″	8384K39	6.52	8384K52	9.93
10-32	3/8″	1/4″	1/4″	3/4″	8384K22	5.88	8384K53	9.10
10-32	3/8″	1/4″	1/4″	2 1/4″	8384K23	6.80	8384K54	10.57
1/4″-20	3/8″	1/4″	3/8″	1 3/4″	—	—	8384K55	10.47
1/4″-20	1/2″	3/8″	3/8″	1 1/2″	8384K24	6.80	—	—
1/4″-20	1/2″	3/8″	3/8″	5″	8384K25	8.36	8384K56	13.28
1/4″-28	3/8″	1/4″	3/8″	1 3/4″	8384K41	6.88	8384K57	10.57
1/4″-28	1/2″	3/8″	3/8″	5″	8384K42	8.64	8384K58	13.28
5/16″-18	1/2″	3/8″	3/8″	1 1/2″	8384K26	7.48	8384K59	11.75
5/16″-18	1/2″	3/8″	3/8″	5″	8384K27	8.52	8384K61	13.62
5/16″-24	1/2″	3/8″	3/8″	1 1/2″	8384K43	7.64	8384K62	11.75
5/16″-24	1/2″	3/8″	3/8″	5″	8384K44	8.88	8384K63	13.62
3/8″-16	1/2″	1/2″	1/2″	1 1/8″	8384K28	9.08	8384K64	14.38
3/8″-16	1/2″	1/2″	1/2″	2 5/8″	8384K29	9.64	8384K65	15.12
3/8″-16	1/2″	1/2″	1/2″	6 5/8″	8384K31	10.80	8384K66	17.00
3/8″-24	1/2″	1/2″	1/2″	2 5/8″	8384K46	9.88	8384K68	15.12
3/8″-24	1/2″	1/2″	1/2″	6 5/8″	8384K47	11.12	8384K69	17.00
1/2″-13	5/8″	5/8″	5/8″	4 1/8″	8384K32	12.80	8384K71	19.65
1/2″-13	5/8″	5/8″	5/8″	6 1/8″	8384K33	13.20	8384K72	20.48
1/2″-13	5/8″	5/8″	5/8″	8 1/8″	8384K34	14.60	8384K73	22.68
1/2″-20	5/8″	5/8″	5/8″	4 1/8″	8384K48	12.84	8384K74	19.65
1/2″-20	5/8″	5/8″	5/8″	6 1/8″	8384K49	13.36	8384K75	20.48
5/8″-11	3/4″	5/8″	3/4″	8″	8384K14	17.76	8384K79	27.23
5/8″-18	3/4″	3/4″	3/4″	7 7/8″	8384K17	17.76	8384K83	27.23

Metric

Size	Thread (L1) mm	Thread (L2) mm	(A) mm	(C) mm	Black-Oxide Steel	Each ♦	Type 303 Stainless Steel	Each ♦
M6×1	9.5	6.4	10	44	8384K85	$6.88	8384K91	$10.57
M8×1.25	12.7	9.5	10	38	8384K86	7.64	8384K92	11.75
M10×1.5	12.7	12.7	13	29	8384K87	9.40	8384K93	14.38
M12×1.75	15.9	15.9	16	105	8384K89	12.84	8384K94	19.65

Lever Handles

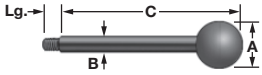

Handles ***with fixed ball knob*** are an ideal replacement for gear levers. Knob is black phenolic with a temperature range of −70° to +200° F. Shaft is black-oxide steel.

Handles ***with revolving ball knob*** provide a friction-free grip—perfect for hand wheels and cranks. Knob is black phenolic with a temperature range of −4° to +300° F. Shaft is zinc-plated steel.

Size	Thread Lg.	(A)	(B)	(C)		Each ♦
With Fixed Ball Knob—Inch						
10-32	3/8″	3/4″	1/4″	1 1/2″	6303K8	$4.28
10-32	3/8″	3/4″	1/4″	3″	6303K1	4.74
1/4″-20	3/8″	3/4″	1/4″	2 1/2″	6303K23	4.36
1/4″-20	3/8″	3/4″	1/4″	3 1/2″	6303K2	4.58
1/4″-20	1/2″	1″	3/8″	6″	6303K3	5.79
5/16″-18	1/2″	1″	3/8″	2 1/2″	6303K44	5.04
5/16″-18	1/2″	1″	3/8″	4″	6303K45	5.15
5/16″-18	1/2″	1″	3/8″	6″	6303K4	6.00
3/8″-16	1/2″	1 3/8″	1/2″	2 1/2″	6303K56	6.70
3/8″-16	1/2″	1 3/8″	1/2″	4″	6303K57	6.64
3/8″-16	1/2″	1 3/8″	1/2″	8″	6303K5	7.36
1/2″-13	5/8″	1 7/8″	5/8″	6″	6303K68	10.11
1/2″-13	5/8″	1 7/8″	5/8″	8″	6303K69	10.32
1/2″-13	5/8″	1 7/8″	5/8″	10″	6303K6	11.91
With Fixed Ball Knob—Metric						
M6×1	9.5 mm	19 mm	7 mm	76 mm	6402K12	4.83
M8×1.25	12.5 mm	26 mm	10 mm	152 mm	6402K14	6.00
M10×1.5	12.5 mm	35 mm	13 mm	203 mm	6402K16	7.72
M12×1.75	16 mm	48 mm	16 mm	254 mm	6402K18	11.49
With Revolving Ball Knob—Inch						
1/4″-20	7/16″	1″	3/8″	1 1/2″	6178T31	8.84
5/16″-18	1/2″	1 1/4″	1/2″	1 7/8″	6178T32	10.07
3/8″-16	9/16″	1 9/16″	5/8″	2 3/8″	6178T33	12.40
1/2″-13	13/16″	2″	13/16″	3 1/16″	6178T34	17.87
With Revolving Ball Knob—Metric						
M6×1	11 mm	25 mm	10 mm	38 mm	62125K31	7.34
M8×1.25	13 mm	32 mm	13 mm	48 mm	62125K32	8.84
M10×1.5	14 mm	40 mm	16 mm	61 mm	62125K33	11.18
M12×1.75	21 mm	50 mm	20 mm	78 mm	62125K34	16.06

Push-On Handles

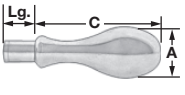

Simply press fit the unthreaded shaft to use in your application. All handles are made of polished steel.

Shaft Dia.	Shaft Lg.	(A)	(C)		Each ♦
Fixed					
1/4″	7/16″	7/16″	1 5/16″	6037K11	$9.06
1/4″	7/16″	5/8″	1 1/2″	6037K12	13.02
5/16″	7/16″	3/4″	1 3/4″	6037K28	12.72
3/8″	9/16″	7/8″	2 1/8″	6037K15	15.80
7/16″	11/16″	1 1/8″	2 3/4″	6037K29	18.48
7/16″	11/16″	1 3/16″	3 1/4″	6037K43	20.49
1/2″	15/16″	1 3/8″	4 1/16″	6037K32	41.67
5/8″	1 3/16″	1 1/2″	4 9/16″	6037K23	43.37

Shaft Dia.	Shaft Lg.	(A)	(C)		Each ♦
Revolving					
5/16″	9/16″	7/8″	2 1/16″	6037K24	$34.48
3/8″	3/4″	1 1/8″	3″	6037K25	37.55
7/16″	3/4″	1 3/16″	3 5/16″	6037K26	46.65
1/2″	15/16″	1 3/8″	4 3/16″	6037K27	47.84

Vise Handles

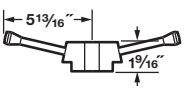

Primarily used for opening and closing milling vises, these handles have extended arms for quick turning. Hub is aluminum and has an unthreaded through hole. Arms are black-oxide steel with a zinc-plated steel knob.

Hole Size	For Vise Jaw Width		Each
9/16″ Hex	4″	5609K11	$32.14
3/4″ Hex	6″	5609K12	32.14
5/8″ Square	(fits many imported vises)	5609K13	36.49

Impact-Resistant Three-Arm Handles

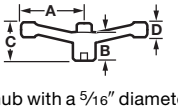

A steel hub with a 5/16″ diameter unthreaded starter hole allows you to drill to your required size. Handles are made of black glass-filled nylon and have a temperature range of 14° to 248° F.

(A)	(B)	(C)	(D)		Each ♦
2 3/4″	1 9/16″	1 3/4″	15/16″	3132K43	$9.74
3 9/16″	1 11/16″	2 1/8″	15/16″	3132K49	12.34
4 5/16″	1 13/16″	2 5/16″	1 1/8″	3132K52	13.71

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Threaded Tapered Handles

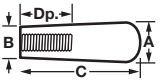

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Phenolic handles withstand higher temperatures. ***Polypropylene*** handles have greater impact resistance and a hollow core.

Inch

Thread Size	Thread Dp.	(A)	(B)	(C)		Each ♦
Black Phenolic with Brass Insert *(–30° to +400°F)*						
1	3/8"-16	5/8"	1"	5/8"	57455K61	$4.15
1	3/8"-16	2"	1"	5/8"	57455K64	6.97
1	3/8"-24	5/8"	1"	5/8"	57455K63	3.72
1	3/8"-24	2"	1"	5/8"	57455K65	7.56
2	1/4"-20	3/8"	7/8"	5/8"	57455K51	1.86
2	5/16"-18	3/4"	7/8"	5/8"	57455K54	2.08
Fluted Black Phenolic with Brass Insert *(–30° to +400°F)*						
3	1/4"-20	1/2"	1 1/8"	5/8"	57455K44	3.28
3	1/4"-20	1/2"	1 1/8"	3/4"	57455K71	3.49
3	3/8"-16	3/4"	1 3/8"	1"	57455K47	5.38
3	1/2"-13	1"	1 3/8"	1"	57455K76	6.54

Inch (Cont.)

Thread Size	Thread Dp.	(A)	(B)	(C)		Each ♦
Fluted Black Polypropylene with Brass Insert *(–15° to +125°F)*						
4	1/4"-20	1/2"	7/8"	5/8"	57455K45	$3.08
4	3/8"-16	1/2"	7/8"	5/8"	57455K46	3.08

Metric

Thread Size	Thread Dp.	(A)	(B)	(C)		Each ♦
Black Phenolic *(–4° to +300°F)*						
5	M5×0.8	14 mm	13 mm	11 mm	3701T21	3.31
5	M6×1	25 mm	21 mm	17 mm	3701T22	3.31
5	M8×1.25	25 mm	21 mm	17 mm	3701T23	4.09
5	M8×1.25	30 mm	25 mm	20 mm	3701T24	4.80
5	M10×1.5	30 mm	25 mm	20 mm	3701T25	4.80
5	M12×1.75	30 mm	25 mm	20 mm	3701T26	4.80
5	M12×1.75	40 mm	29 mm	22 mm	3701T27	10.43

Tapered Handles with Threaded Stud

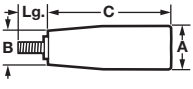

6

7

8

9

10

All have a zinc-plated steel stud except Style 7 is steel. ***Phenolic*** handles withstand higher temperatures than nylon.

Inch

Thread Size	Thread Lg.	(A)	(B)	(C)		Each ♦
Aluminum Revolving						
6	10-24	3/8"	7/16"	3/8"	64425K71	$6.73
6	1/4"-20	7/16"	5/8"	1/2"	64425K72	8.81
6	5/16"-18	1/2"	7/8"	9/16"	64425K73	11.02
6	3/8"-16	1/2"	1"	3/4"	64425K74	13.17
6	1/2"-13	1/2"	1 1/8"	15/16"	64425K75	15.25
6	1/2"-13	1/2"	1 1/4"	15/16"	64425K76	17.46
Black Nylon Fold-Away Revolving *(–50° to +200°F)*						
7	3/8"-16	1/2"	15/16"	3/4"	62705K41	25.00
7	1/2"-13	9/16"	1"	1"	62705K42	33.80
7	5/8"-11	13/16"	1 1/8"	15/16"	62705K43	33.80
Black Phenolic Fixed *(–30° to +450°F)*						
8	5/16"-18	1/2"	1"	5/8"	62385K67	4.23
8	3/8"-16	1/2"	1"	5/8"	62385K65	4.23
Fluted Black Phenolic Fixed *(–30° to +400°F)*						
9	1/4"-20	3/8"	1 1/8"	3/4"	62385K32	3.07
9	5/16"-18	3/8"	1 1/8"	3/4"	62385K21	3.38
9	3/8"-16	1/2"	1 1/8"	3/4"	62385K61	4.23
9	3/8"-16	3/4"	1 3/8"	1"	62385K43	4.71
Black Phenolic Revolving *(–30° to +325°F)*						
10	1/4"-20	1/2"	11/16"	9/16"	6308K41	7.50
10	1/4"-20	1/2"	13/16"	11/16"	6308K42	8.33
10	5/16"-18	9/16"	15/16"	3/4"	6308K43	8.17
10	3/8"-16	5/8"	1"	13/16"	6308K44	8.67
10	3/8"-16	5/8"	1 1/8"	13/16"	6308K45	10.33
10	1/2"-13	13/16"	1 1/4"	1"	6308K46	16.83

Metric

Thread Size	Thread Lg., mm	(A) mm	(B) mm	(C) mm		Each ♦
Aluminum Revolving						
6	M5×0.8	9	11	9	64425K81	$8.45
6	M6×1	11	16	13	64425K82	11.02
6	M8×1.25	13	22	14	64425K83	13.79
6	M10×1.5	13	25	19	64425K84	16.53
6	M12×1.75	13	28	23	64425K85	19.07
6	M12×1.75	13	31	23	64425K86	21.82
Black Nylon Fold-Away Revolving *(–50° to +200°F)*						
7	M8×1.25	13	23	19	62705K44	25.00
7	M10×1.5	14	26	21	62705K46	33.80
7	M12×1.75	20	28	23	62705K47	33.80
Black Phenolic Fixed *(–4° to +300°F)*						
8	M5×0.8	7	15	11	6540T41	5.40
8	M6×1	10	21	15	6540T42	8.31
8	M8×1.25	10	25	17	6540T43	9.11
8	M10×1.5	12	26	20	6540T44	14.29
8	M12×1.75	14	33	25	6540T45	23.32
Black Phenolic Revolving *(–30° to +325°F)*						
10	M6×1	13	18	15	6308K47	7.50
10	M6×1	13	21	17	6308K48	7.50
10	M8×1.25	15	23	19	6308K49	8.33
10	M10×1.5	17	26	21	6308K51	8.17
10	M10×1.5	17	28	22	6308K52	12.40
10	M12×1.75	20	31	25	6308K53	12.25

Quick-Positioning Cam Handles

For fast installation without ratcheting, simply clamp down on these handles. All have a threaded stud with a screwdriver slot at the top for fine-tune adjustment when clamping space is limited.

Aluminum handles have a black powder-coated finish.

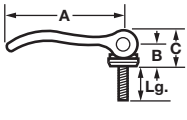

Aluminum

Stainless Steel

Inch

Thread Lg.	(A)	(B)	(C)	Aluminum w/ Steel Stud		Type 303 SS w/ Type 303 SS Stud	
1/4"-20 Thread Size							
13/16"	2 3/4"	9/16"	7/8"	5720K11	$11.51	5720K51	$38.75
1 3/16"	2 3/4"	9/16"	7/8"	5720K12	11.51	5720K52	38.75
1 9/16"	2 3/4"	9/16"	7/8"	5720K13	12.30	5720K53	40.17
5/16"-18 Thread Size							
1"	3 3/4"	11/16"	1 1/8"	5720K15	12.70	5720K55	52.58
1 3/16"	3 3/4"	11/16"	1 1/8"	5720K16	12.70	5720K56	52.58
1 9/16"	3 3/4"	11/16"	1 1/8"	5720K17	13.19	5720K57	54.15
3/8"-16 Thread Size							
1"	3 3/4"	11/16"	1 1/8"	5720K19	12.70	5720K59	52.58
1 3/16"	3 3/4"	11/16"	1 1/8"	5720K21	12.70	5720K61	52.58
1 9/16"	3 3/4"	11/16"	1 1/8"	5720K22	13.19	5720K62	54.15

Metric

Thread Lg., mm	(A) mm	(B) mm	(C) mm	Aluminum w/ Steel Stud		Type 303 SS w/ Type 303 SS Stud	
M6×1 Thread Size							
20	70	15	22	5720K31	$11.51	5720K71	$38.75
30	70	15	22	5720K32	11.51	5720K72	38.75
40	70	15	22	5720K33	12.30	5720K73	40.17
M8×1.25 Thread Size							
25	96	18	29	5720K35	12.70	5720K75	52.58
30	96	18	29	5720K36	12.70	5720K76	52.58
40	96	18	29	5720K37	13.19	5720K77	54.15
M10×1.5 Thread Size							
25	96	18	29	5720K39	12.70	5720K79	52.58
30	96	18	29	5720K41	12.70	5720K81	52.58
40	96	18	29	5720K42	13.19	5720K82	54.15

♦ Prices are 10% lower when you buy in quantities of 10 or more.

Adjustable Handles

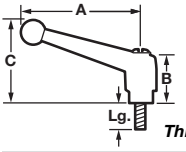

With Threaded Stud

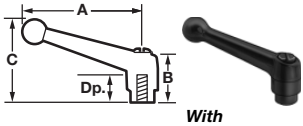

With Threaded Hole

Lift the handle to disengage and rotate freely for adjustment; release to engage gear teeth and tighten. These handles are ideal for confined work areas as well as applications requiring quick setups and frequent adjustments.

Die cast zinc handles have a black powder-coated finish and a steel stud or insert.

Type 303 stainless steel handles have a Type 303 stud or insert.

With Threaded Stud—Inch

Thread Lg.	(A)	(B)	(C)	Die Cast Zinc		Type 303 SS	
10-24 Thread Size							
9/16"	19/16"	15/16"	15/16"	6271K12	$6.40	6522K33	$16.77
3/4"	19/16"	15/16"	15/16"	6271K17	6.65	6522K3	17.27
13/16"	19/16"	15/16"	15/16"	6271K18	6.65	6522K31	17.93
10-32 Thread Size							
9/16"	19/16"	15/16"	15/16"	6271K11	6.40	6522K32	29.00
3/4"	19/16"	15/16"	15/16"	6271K19	6.65	6522K26	17.27
13/16"	19/16"	15/16"	15/16"	6271K65	4.79	6522K28	17.93
1/4"-20 Thread Size							
9/16"	19/16"	15/16"	15/16"	6271K67	4.79	6522K34	16.82
3/4"	19/16"	15/16"	15/16"	6271K13	6.40	6522K36	17.27
13/16"	19/16"	15/16"	15/16"	6271K14	6.40	6522K38	17.93
19/16"	19/16"	15/16"	15/16"	6271K15	7.21	6522K51	18.80
13/4"	19/16"	15/16"	15/16"	6271K16	6.65	6522K52	19.25
5/16"-18 Thread Size							
3/4"	29/16"	1 1/8"	1 13/16"	6271K21	8.19	6522K12	27.40
13/16"	29/16"	1 1/8"	1 13/16"	6271K22	8.26	6522K53	28.50
19/16"	29/16"	1 1/8"	1 13/16"	6271K23	8.56	6522K14	29.48
13/4"	29/16"	1 1/8"	1 13/16"	6271K37	9.05	6522K15	30.02
1 15/16"	29/16"	1 1/8"	1 13/16"	6271K38	9.09	6522K16	30.48
2 3/8"	29/16"	1 1/8"	1 13/16"	6271K24	8.56	6522K17	31.45
3/8"-16 Thread Size							
3/4"	29/16"	1 1/8"	1 13/16"	6271K26	8.19	6522K81	27.35
3/4"	3 1/8"	1 1/2"	2 1/4"	6271K31	8.86	6522K19	37.50
13/16"	29/16"	1 1/8"	1 13/16"	6271K62	8.26	6522K82	28.45
3/8"-16 Thread Size (Cont.)							
13/16"	3 1/8"	1 1/2"	2 1/4"	6271K32	8.86	6522K55	$38.83
13/16"	3 3/4"	1 11/16"	2 5/8"	6271K41	9.81	6522K85	48.42
19/16"	29/16"	1 1/8"	1 13/16"	6271K27	8.56	6522K83	29.45
19/16"	3 1/8"	1 1/2"	2 1/4"	6271K33	9.30	6522K97	40.15
19/16"	3 3/4"	1 11/16"	2 5/8"	6271K69	7.65	6522K86	49.22
13/4"	3 1/8"	1 1/2"	2 1/4"	6271K34	10.05	6522K98	41.02
13/4"	3 3/4"	1 11/16"	2 5/8"	6271K43	10.35	6522K87	49.74
1 15/16"	3 1/8"	1 1/2"	2 1/4"	6271K35	10.72	6522K99	41.48
2 3/8"	29/16"	1 1/8"	1 13/16"	6271K29	8.56	6522K84	31.52
2 3/8"	3 1/8"	1 1/2"	2 1/4"	6271K36	9.30	6522K25	42.80
2 3/8"	3 3/4"	1 11/16"	2 5/8"	6271K71	8.40	6522K88	52.53
1/2"-13 Thread Size							
3/4"	3 3/4"	1 11/16"	2 5/8"	6271K45	9.81	6522K57	46.53
13/16"	3 3/4"	1 11/16"	2 5/8"	6271K46	9.81	6522K89	48.40
1 3/8"	3 3/4"	1 11/16"	2 5/8"	6271K47	10.35	6522K59	48.80
19/16"	3 3/4"	1 11/16"	2 5/8"	6271K48	11.07	6522K62	49.29
19/16"	4 5/16"	2"	3 1/8"	6271K51	13.33	6522K91	59.24
13/4"	3 3/4"	1 11/16"	2 5/8"	6271K63	10.35	6522K63	49.74
1 15/16"	3 3/4"	1 11/16"	2 5/8"	6271K55	11.16	6522K65	50.84
2 3/8"	3 3/4"	1 11/16"	2 5/8"	6271K49	10.35	6522K64	52.51
2 3/8"	4 5/16"	2"	3 1/8"	6271K52	13.33	6522K92	63.53
5/8"-11 Thread Size							
1 9/16"	4 5/16"	2"	3 1/8"	6271K53	13.33	6522K93	59.24
2 3/8"	4 5/16"	2"	3 1/8"	6271K54	13.33	6522K94	63.53

With Threaded Stud—Metric

Thread Lg., mm	(A) mm	(B) mm	(C) mm	Die Cast Zinc		Type 303 SS	
M5×0.8 Thread Size							
15	40	24	33	6848K53	$5.17	6608K51	$16.77
M6×1 Thread Size							
15	40	24	33	6848K35	5.98	6608K52	16.77
20	40	24	33	6848K36	5.91	6608K53	17.27
25	40	24	33	6848K37	5.98	6608K54	17.65
30	40	24	33	6848K38	5.91	6608K55	18.05
35	40	24	33	6848K55	4.85	6608K56	18.37
40	40	24	33	6848K41	6.67	6608K57	18.80
45	40	24	33	6848K42	6.74	6608K58	19.20
M8×1.25 Thread Size							
20	65	29	46	6848K44	8.00	6608K13	27.40
25	65	29	46	6848K45	8.07	6608K14	27.90
30	65	29	46	6848K46	8.00	6608K15	28.50
35	65	29	46	6848K47	8.36	6608K16	28.95
40	65	29	46	6848K48	8.27	6608K17	29.48
45	65	29	46	6848K49	8.36	6608K18	30.00
50	65	29	46	6848K51	8.30	6608K59	30.48
M8×1.25 Thread Size (Cont.)							
60	65	29	46	6848K52	8.36	6608K19	$31.52
M10×1.5 Thread Size							
20	80	38	58	6848K64	8.84	6608K22	37.50
30	80	38	58	6848K66	8.84	6608K24	38.83
35	80	38	58	6848K67	9.30	6608K25	39.47
40	80	38	58	6848K68	9.30	6608K26	40.15
50	80	38	58	6848K71	9.30	6608K28	41.47
60	80	38	58	6848K72	9.30	6608K29	42.80
M12×1.75 Thread Size							
20	95	43	67	6848K81	7.86	6608K31	46.91
30	95	43	67	6848K83	9.81	6608K33	48.40
40	95	43	67	6848K85	10.33	6608K34	49.22
50	95	43	67	6848K87	10.33	6608K35	63.49
60	95	43	67	6848K57	7.44	6608K36	52.53
M16×2 Thread Size							
50	110	51	79	6848K59	12.70	6608K38	61.20
60	110	51	79	6848K61	12.70	6608K39	63.53

With Threaded Hole—Inch

Thread Dp.	(A)	(B)	(C)	Die Cast Zinc		Type 303 SS	
10-24 Thread Size							
3/8"	19/16"	15/16"	15/16"	6270K13	$5.93	6522K69	$16.18
10-32 Thread Size							
3/8"	19/16"	15/16"	15/16"	6270K12	5.93	6522K66	16.18
1/4"-20 Thread Size							
3/8"	19/16"	15/16"	15/16"	6270K14	5.93	6522K68	16.18
1/2"	29/16"	1 1/8"	1 13/16"	6270K22	7.21	6522K41	25.75
5/16"-18 Thread Size							
1/2"	29/16"	1 1/8"	1 13/16"	6270K23	7.21	6522K42	25.75
9/16"	3 1/8"	1 1/2"	2 1/4"	6270K32	8.26	6522K45	35.85
3/8"-16 Thread Size							
9/16"	3 1/8"	1 1/2"	2 1/4"	6270K34	8.26	6522K46	35.85
11/16"	3 3/4"	1 11/16"	2 5/8"	6270K42	8.84	6522K76	44.49
1/2"-13 Thread Size							
11/16"	3 3/4"	1 11/16"	2 5/8"	6270K43	8.84	6522K71	49.74
7/8"	4 5/16"	2"	3 1/8"	6270K52	10.86	6522K95	53.62
5/8"-11 Thread Size							
7/8"	4 5/16"	2"	3 1/8"	6270K53	10.86	6522K96	53.62

With Threaded Hole—Metric

Thread Dp., mm	(A) mm	(B) mm	(C) mm	Die Cast Zinc		Type 303 SS	
M5×0.8 Thread Size							
9	40	24	33	6848K11	$5.73	6608K61	$16.12
M6×1 Thread Size							
9	40	24	33	6848K12	5.73	6608K41	16.12
12	65	29	46	6848K13	6.98	6608K42	25.75
M8×1.25 Thread Size							
12	65	29	46	6848K14	6.98	6608K43	25.75
M10×1.5 Thread Size							
14	80	38	58	6848K16	8.07	6608K47	35.85
M12×1.75 Thread Size							
17	95	43	67	6848K18	8.66	6608K48	44.49
M16×2 Thread Size							
23	110	51	79	6848K21	10.61	6608K49	53.62

With Unthreaded Hole—Inch

Hole Dia.	Hole Dp.	(A)	(B)	(C)	Die Cast Zinc	
1/8"	3/8"	19/16"	15/16"	15/16"	6271K73	$4.80
3/16"	1/2"	29/16"	1 1/8"	1 13/16"	6271K75	6.51
1/4"	9/16"	3 1/8"	1 1/2"	2 1/4"	6271K77	6.69
1/4"	11/16"	3 3/4"	1 11/16"	2 5/8"	6271K79	$8.03
1/4"	7/8"	4 5/16"	2"	3 1/8"	6271K81	10.00

Contemporary Style Adjustable Handles with Threaded Stud

Lift the handle to disengage and rotate freely for adjustment; release to engage gear teeth and tighten. These handles are ideal for confined work areas as well as applications requiring quick setups and frequent adjustments. **To Order:** Please specify color: black or orange.

Die cast zinc handles have a powder-coated finish.

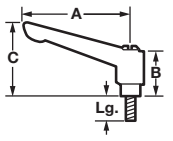

Inch

Thread Lg.	(A)	(B)	(C)	Steel Stud		Type 303 SS Stud	
Die Cast Zinc							
8-32 Thread Size							
9/16"	1 3/16"	15/16"	1 3/16"	64835K11	$9.35	60655K21	$11.82
13/16"	1 3/16"	15/16"	1 3/16"	64835K12	9.35	60655K22	11.82
1"	1 3/16"	15/16"	1 3/16"	64835K13	9.35	60655K23	11.82
10-24 Thread Size							
5/8"	1 5/8"	15/16"	1 5/16"	64835K21	6.22	60655K47	11.90
10-32 Thread Size							
9/16"	1 3/16"	15/16"	1 3/16"	64835K14	9.59	60655K24	12.12
5/8"	1 5/8"	15/16"	1 5/16"	64835K22	6.35	60655K48	11.90
13/16"	1 3/16"	15/16"	1 3/16"	64835K15	9.59	60655K25	12.12
1"	1 3/16"	15/16"	1 3/16"	64835K16	9.59	60655K26	12.12
1 1/4"	1 5/8"	15/16"	1 5/16"	64835K23	6.35	60655K49	11.90
1/4"-20 Thread Size							
3/4"	1 5/8"	15/16"	1 5/16"	64835K65	6.35	60655K53	12.00
13/16"	1 3/16"	15/16"	1 3/16"	64835K17	9.59	60655K27	12.12
1"	1 5/8"	15/16"	1 5/16"	64835K25	6.35	60655K54	12.00
1"	2 9/16"	1 1/4"	1 3/4"	64835K27	8.68	60655K55	14.90
1 3/16"	1 3/16"	15/16"	1 3/16"	64835K18	9.59	60655K28	12.12
1 1/4"	1 5/8"	15/16"	1 5/16"	64835K29	6.84	60655K56	12.10
1 9/16"	1 3/16"	15/16"	1 3/16"	64835K19	10.43	60655K29	13.06
1 9/16"	1 5/8"	15/16"	1 5/16"	64835K31	6.84	60655K57	12.36
1 3/4"	1 5/8"	15/16"	1 5/16"	64835K38	8.68	60655K58	12.86
5/16"-18 Thread Size							
3/4"	2 9/16"	1 1/4"	1 3/4"	64835K69	8.68	60655K59	14.90
1 9/16"	2 9/16"	1 1/4"	1 3/4"	64835K71	8.65	60655K61	15.60
2"	2 9/16"	1 1/4"	1 3/4"	64835K48	8.65	60655K62	15.90
2"	3 1/16"	1 7/16"	2 1/8"	64835K49	10.14	60655K63	18.30
2 1/2"	2 9/16"	1 1/4"	1 3/4"	64835K51	8.65	60655K64	16.06
3/8"-16 Thread Size							
3/4"	2 9/16"	1 1/4"	1 3/4"	64835K52	8.65	60655K65	14.90
1 1/4"	2 9/16"	1 1/4"	1 3/4"	64835K53	8.65	60655K66	15.10
1 9/16"	2 9/16"	1 1/4"	1 3/4"	64835K54	8.65	60655K67	15.60
1 9/16"	3 1/16"	1 7/16"	2 1/8"	64835K77	10.14	60655K68	17.90
1 9/16"	3 5/8"	1 11/16"	2 1/2"	64835K55	11.76	60655K69	23.30
2"	3 1/16"	1 7/16"	2 1/8"	64835K78	10.14	60655K71	18.30
2"	3 5/8"	1 11/16"	2 1/2"	64835K56	11.76	60655K72	24.10
1/2"-13 Thread Size							
1 1/4"	3 5/8"	1 11/16"	2 1/2"	64835K82	11.00	60655K73	23.30
1 9/16"	3 5/8"	1 11/16"	2 1/2"	64835K57	11.76	60655K74	24.50

Thread Lg.	(A)	(B)	(C)	Steel Stud		Type 303 SS Stud	
Die Cast Zinc (Cont.)							
1/2"-13 Thread Size (Cont.)							
1 9/16"	4 1/4"	2"	2 15/16"	64835K58	17.84	—	—
2"	3 5/8"	1 11/16"	2 1/2"	64835K59	11.76	60655K75	$25.20
2 1/2"	4 1/4"	2"	2 15/16"	64835K61	18.24	—	—
5/8"-11 Thread Size							
1 9/16"	4 1/4"	2"	2 15/16"	64835K91	17.84	—	—
2 1/2"	4 1/4"	2"	2 15/16"	64835K92	18.24	—	—
Nylon *(–22° to +230° F)*							
10-24 Thread Size							
5/8"	1 3/4"	15/16"	1 3/8"	6305K11	4.38	6320K11	8.83
10-32 Thread Size							
5/8"	1 3/4"	15/16"	1 3/8"	6305K12	4.38	6320K12	8.83
1 1/4"	1 3/4"	15/16"	1 3/8"	6305K14	4.71	6320K13	9.20
1/4"-20 Thread Size							
3/4"	1 3/4"	15/16"	1 3/8"	6305K54	4.87	6320K14	9.20
1"	1 3/4"	15/16"	1 3/8"	6305K16	4.59	6320K15	9.50
1"	2 1/2"	1 1/4"	1 3/4"	6305K18	5.91	6320K16	9.43
1 1/4"	1 3/4"	15/16"	1 3/8"	6305K51	4.71	6320K17	10.00
1 9/16"	1 3/4"	15/16"	1 3/8"	6305K52	4.88	6320K18	9.24
5/16"-18 Thread Size							
3/4"	2 1/2"	1 1/4"	1 3/4"	6305K58	5.62	6320K19	10.29
1 1/4"	2 1/2"	1 1/4"	1 3/4"	6305K65	5.94	6320K21	12.97
1 9/16"	2 1/2"	1 1/4"	1 3/4"	6305K59	6.06	6320K22	11.44
2"	3 1/16"	1 7/16"	2 3/16"	6305K21	7.71	6320K23	17.17
2 1/2"	2 1/2"	1 1/4"	1 3/4"	6305K22	6.79	6320K24	16.10
3/8"-16 Thread Size							
3/4"	2 1/2"	1 1/4"	1 3/4"	6305K23	5.62	6320K25	11.67
1 1/4"	2 1/2"	1 1/4"	1 3/4"	6305K24	5.77	6320K26	13.00
1 9/16"	2 1/2"	1 1/4"	1 3/4"	6305K25	6.06	6320K27	13.93
1 9/16"	3 1/16"	1 7/16"	2 3/16"	6305K66	7.00	6320K28	16.13
1 9/16"	3 5/8"	1 11/16"	2 9/16"	6305K26	8.82	6320K29	21.93
2"	3 1/16"	1 7/16"	2 3/16"	6305K67	7.35	6320K83	17.17
2"	3 5/8"	1 11/16"	2 9/16"	6305K27	8.88	6320K31	22.07
2 1/2"	3 1/16"	1 7/16"	2 3/16"	6305K28	6.60	6320K34	22.37
1/2"-13 Thread Size							
1 1/4"	3 5/8"	1 11/16"	2 9/16"	6305K71	8.82	6320K35	22.53
1 9/16"	3 5/8"	1 11/16"	2 9/16"	6305K73	8.82	6320K36	23.10
2"	3 5/8"	1 11/16"	2 9/16"	6305K74	8.88	6320K37	24.13
2 1/2"	3 5/8"	1 11/16"	2 9/16"	6305K75	9.79	6320K38	25.57

Metric

Thread Lg., mm	(A) mm	(B) mm	(C) mm	Steel Stud		Type 303 SS Stud	
Die Cast Zinc							
M4×0.7 Thread Size							
15	30	25	30	60235K73	$8.88	60655K41	$12.12
20	30	25	30	60235K74	8.88	60655K42	12.12
25	30	25	30	60235K75	8.88	60655K43	12.12
M5×0.8 Thread Size							
15	30	25	30	60235K78	8.88	60655K44	12.12
20	30	25	30	60235K79	8.88	60655K45	12.12
20	42	24	33	60235K17	6.71	60655K76	12.00
25	30	25	30	60235K81	8.88	60655K46	12.12
40	42	24	33	60235K18	7.71	60655K77	12.80
M6×1 Thread Size							
20	42	24	33	60235K72	6.71	60655K78	12.00
25	42	24	33	60235K63	6.71	60655K79	12.10
32	42	24	33	60235K65	6.71	60655K81	12.30
40	42	24	33	60235K67	6.90	60655K82	12.84
M8×1.25 Thread Size							
20	65	31	45	60235K76	8.40	60655K83	14.80
25	65	31	45	60235K77	8.40	60655K84	14.90
32	65	31	45	60235K69	8.40	60655K85	15.10
40	65	31	45	60235K82	9.86	60655K86	15.60
50	65	31	45	60235K84	9.86	60655K87	16.00
63	65	31	45	60235K85	9.86	60655K88	16.50
M10×1.5 Thread Size							
25	78	36	54	60235K88	8.62	60655K89	16.30
32	78	36	54	60235K89	8.62	60655K91	16.70
40	78	36	54	60235K91	9.30	60655K92	17.90
50	78	36	54	60235K86	9.30	60655K93	18.30
63	92	43	64	60235K92	11.88	60655K94	25.20
M12×1.75 Thread Size							
32	92	43	64	60235K93	9.80	60655K95	23.20
40	92	43	64	60235K94	11.88	60655K96	24.00

Thread Lg., mm	(A) mm	(B) mm	(C) mm	Steel Stud		Type 303 SS Stud	
Die Cast Zinc (Cont.)							
M12×1.75 Thread Size (Cont.)							
50	92	43	64	60235K97	11.88	60655K97	$24.40
63	108	50	75	60235K98	13.12	—	—
Nylon *(–22° to +230° F)*							
M5×0.8 Thread Size							
16	45	25	35	6324K11	4.81	6267T41	7.93
32	45	25	35	6324K12	5.16	6267T42	8.32
M6×1 Thread Size							
16	45	25	35	6324K13	4.81	6267T43	7.94
20	45	25	35	6324K31	4.87	6267T44	8.32
25	45	25	35	6324K14	5.10	6267T45	8.60
32	45	25	35	6324K15	5.16	6267T46	9.00
40	45	25	35	6324K16	5.35	6267T47	9.44
M8×1.25 Thread Size							
20	63	31	45	6324K35	6.16	6267T48	10.53
25	63	31	45	—	—	6267T49	11.25
25	63	31	46	6324K36	6.46	—	—
32	63	31	45	6324K37	6.51	6267T51	11.53
40	63	31	45	6324K38	6.65	6267T52	11.65
50	63	31	45	6324K41	7.07	6267T53	13.82
63	63	31	45	6324K42	7.42	6267T54	15.09
M10×1.5 Thread Size							
20	78	36	55	6324K51	7.26	6267T55	14.25
32	78	36	55	6324K43	7.58	6267T56	14.41
40	78	36	55	6324K44	7.91	6267T57	14.53
50	78	36	55	6324K54	8.06	6267T58	15.44
63	78	36	55	6324K55	8.58	6267T59	20.96
M12×1.75 Thread Size							
32	92	43	65	6324K76	10.07	6267T61	21.12
50	92	43	65	6324K77	10.36	6267T62	21.74
63	92	43	65	6324K79	11.66	6267T63	25.97

Contemporary Style Adjustable Handles with Threaded Hole

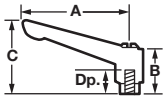

Lift the handle to disengage and rotate freely for adjustment; release to engage gear teeth and tighten. These handles are ideal for confined work areas as well as applications requiring quick setups and frequent adjustments. **To Order:** Please specify color: black or orange.

Die cast zinc handles have a powder-coated finish.

Inch

Thread Dp.	(A)	(B)	(C)	Steel Insert		Type 303 SS Insert	
Die Cast Zinc							
8-32 Thread Size							
3/8"	1 3/16"	15/16"	1 3/16"	64835K45	$8.95	60655K37	$11.16
10-24 Thread Size							
5/16"	1 5/8"	15/16"	1 5/16"	64835K93	5.89	60655K713	10.20
10-32 Thread Size							
5/16"	1 5/8"	15/16"	1 5/16"	64835K94	6.08	60655K723	10.20
3/8"	1 3/16"	15/16"	1 3/16"	64835K46	8.95	60655K38	11.44
1/4"-20 Thread Size							
5/16"	1 5/8"	15/16"	1 5/16"	64835K34	6.08	60655K733	10.20
3/8"	1 3/16"	15/16"	1 3/16"	64835K47	8.95	60655K39	11.44
3/8"	2 9/16"	1 1/4"	1 3/4"	64835K95	7.30	60655K743	12.50
5/16"-18 Thread Size							
3/8"	2 9/16"	1 1/4"	1 3/4"	64835K36	7.30	60655K753	12.50
9/16"	3 1/16"	1 7/16"	2 1/8"	64835K96	8.65	60655K763	15.60
3/8"-16 Thread Size							
9/16"	3 1/16"	1 7/16"	2 1/8"	64835K39	8.65	60655K773	15.60
11/16"	3 5/8"	1 11/16"	2 1/2"	64835K97	10.16	60655K783	20.20
1/2"-13 Thread Size							
11/16"	3 5/8"	1 11/16"	2 1/2"	64835K42	10.19	60655K793	20.20
7/8"	4 1/4"	2"	3"	64835K98	12.97	—	—

Thread Dp.	(A)	(B)	(C)	Steel Insert		Type 303 SS Insert	
Die Cast Zinc (Cont.)							
5/8"-11 Thread Size							
7/8"	4 1/4"	2"	3"	64835K89	$12.97	—	—
Nylon *(–22° to +230° F)*							
10-24 Thread Size							
5/16"	1 3/4"	15/16"	1 3/8"	6305K91	3.70	6320K73	$8.37
10-32 Thread Size							
5/16"	1 3/4"	15/16"	1 3/8"	6305K92	3.70	6320K74	8.37
1/4"-20 Thread Size							
5/16"	1 3/4"	15/16"	1 3/8"	—	—	6320K75	8.37
3/8"	1 3/4"	15/16"	1 3/8"	6305K13	3.70	—	—
3/8"	2 1/2"	1 1/4"	1 3/4"	6305K93	4.42	6320K76	10.43
5/16"-18 Thread Size							
3/8"	2 1/2"	1 1/4"	1 3/4"	—	—	6320K77	10.43
7/16"	2 1/2"	1 1/4"	1 3/4"	6305K15	5.21	—	—
9/16"	3 1/16"	1 7/16"	2 3/16"	6305K94	6.41	6320K78	12.17
3/8"-16 Thread Size							
9/16"	3 1/16"	1 7/16"	2 3/16"	6305K17	6.41	6320K79	12.17
11/16"	3 5/8"	1 11/16"	2 9/16"	6305K95	7.76	6320K81	16.43
1/2"-13 Thread Size							
11/16"	3 5/8"	1 11/16"	2 9/16"	6305K19	7.76	6320K82	16.43

Metric

Thread Dp., mm	(A) mm	(B) mm	(C) mm	Steel Insert		Type 303 SS Insert	
Die Cast Zinc							
M4×0.7 Thread Size							
9	30	25	30	60235K14	$8.28	60655K51	$11.44
M5×0.8 Thread Size							
8	42	24	33	60235K54	5.62	60655K913	10.20
9	30	25	30	60235K15	8.28	60655K52	11.44
M6×1 Thread Size							
8	42	24	33	60235K62	5.62	60655K923	10.20
M8×1.25 Thread Size							
10	65	31	45	60235K64	6.75	60655K933	12.56
M10×1.5 Thread Size							
14	78	36	54	60235K66	8.00	60655K943	15.70
17	92	43	64	60235K57	9.40	60655K953	20.20

Thread Dp., mm	(A) mm	(B) mm	(C) mm	Steel Insert		Type 303 SS Insert	
Die Cast Zinc (Cont.)							
M12×1.75 Thread Size							
17	92	43	64	60235K68	$9.40	60655K963	$20.20
Nylon *(–22° to +230° F)*							
M5×0.8 Thread Size							
9	45	25	35	6324K19	4.78	6267T11	7.54
M6×1 Thread Size							
9	45	25	35	6324K22	4.78	6267T12	7.54
M8×1.25 Thread Size							
11	63	31	45	6324K24	5.71	6267T13	9.41
M10×1.5 Thread Size							
14	78	36	55	6324K26	7.04	6267T14	10.94
M12×1.75 Thread Size							
17	92	43	65	6324K27	8.51	6267T15	14.78

Contemporary Style Type 303 Stainless Steel Adjustable Handles

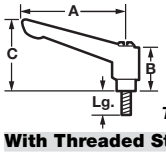

With Threaded Stud

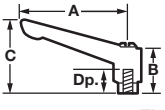

With Threaded Hole

Lift the handle to disengage and rotate freely for adjustment; release to engage gear teeth and tighten. These handles are ideal for confined work areas as well as applications requiring quick setups and frequent adjustments.

With Threaded Stud

Thread Size	Thread Lg.	(A)	(B)	(C)		
Inch						
10-32	9/16"	1 9/16"	15/16"	1 1/4"	5580K11	$22.75
10-32	13/16"	1 9/16"	15/16"	1 1/4"	5580K12	22.75
10-32	1"	1 9/16"	15/16"	1 1/4"	5580K13	22.75
1/4"-20	13/16"	1 9/16"	15/16"	1 1/4"	5580K14	22.75
1/4"-20	13/16"	2 9/16"	1 1/8"	1 11/16"	5580K16	30.53
1/4"-20	1 3/16"	1 9/16"	15/16"	1 1/4"	5580K15	22.75
1/4"-20	1 3/16"	2 9/16"	1 1/8"	1 11/16"	5580K17	30.53
1/4"-20	1 9/16"	2 9/16"	1 1/8"	1 11/16"	5580K18	31.62
5/16"-18	13/16"	2 9/16"	1 1/8"	1 11/16"	5580K19	30.53
5/16"-18	1 3/16"	2 9/16"	1 1/8"	1 11/16"	5580K21	30.53
5/16"-18	1 3/16"	3 1/8"	1 7/16"	2 1/8"	5580K22	36.88
5/16"-18	1 9/16"	3 1/8"	1 7/16"	2 1/8"	5580K23	37.97
5/16"-18	2"	3 1/8"	1 7/16"	2 1/8"	5580K24	37.97
3/8"-16	1 3/16"	2 9/16"	1 1/8"	1 11/16"	5580K25	30.53
3/8"-16	1 9/16"	2 9/16"	1 1/8"	1 11/16"	5580K26	31.62
3/8"-16	1 9/16"	3 1/8"	1 7/16"	2 1/8"	5580K27	37.97
3/8"-16	2"	3 1/8"	1 7/16"	2 1/8"	5580K28	37.97

Thread Size	Thread Lg.	(A)	(B)	(C)		
Inch (Cont.)						
1/2"-13	1 3/16"	3 3/4"	1 11/16"	2 1/2"	5580K29	$43.22
1/2"-13	1 9/16"	3 3/4"	1 11/16"	2 1/2"	5580K31	44.53
1/2"-13	2"	3 3/4"	1 11/16"	2 1/2"	5580K32	44.53
Metric						
M6×1	20 mm	40 mm	25 mm	31 mm	5580K51	24.82
M6×1	30 mm	40 mm	25 mm	31 mm	5580K52	24.82
M6×1	40 mm	40 mm	25 mm	31 mm	5580K53	25.76
M8×1.25	20 mm	65 mm	29 mm	43 mm	5580K54	33.31
M8×1.25	30 mm	65 mm	29 mm	43 mm	5580K55	33.31
M8×1.25	40 mm	65 mm	29 mm	43 mm	5580K56	34.49
M10×1.5	30 mm	80 mm	37 mm	55 mm	5580K57	36.88
M10×1.5	40 mm	80 mm	37 mm	55 mm	5580K58	41.42
M10×1.5	50 mm	80 mm	37 mm	55 mm	5580K59	41.42
M12×1.75	30 mm	95 mm	43 mm	63 mm	5580K61	47.15
M12×1.75	40 mm	95 mm	43 mm	63 mm	5580K62	48.58
M12×1.75	50 mm	95 mm	43 mm	63 mm	5580K63	48.58

With Threaded Hole

Thread Size	Thread Dp.	(A)	(B)	(C)		
Inch						
10-32	3/8"	1 9/16"	15/16"	1 1/4"	5580K41	$22.10
1/4"-20	3/8"	1 9/16"	15/16"	1 1/4"	5580K42	22.10
1/4"-20	1/2"	2 9/16"	1 1/8"	1 11/16"	5580K43	29.78
5/16"-18	1/2"	2 9/16"	1 1/8"	1 11/16"	5580K44	29.78
3/8"-16	9/16"	3 1/8"	1 7/16"	2 1/8"	5580K45	35.85
1/2"-13	11/16"	3 3/4"	1 11/16"	2 1/2"	5580K46	41.98

Thread Size	Thread Dp.	(A)	(B)	(C)		
Metric						
M6×1	9 mm	40 mm	25 mm	31 mm	5580K71	$24.11
M6×1	12 mm	65 mm	29 mm	43 mm	5580K72	32.49
M8×1.25	12 mm	65 mm	29 mm	43 mm	5580K73	32.49
M10×1.5	17 mm	95 mm	43 mm	63 mm	5580K74	45.80
M12×1.75	17 mm	95 mm	43 mm	63 mm	5580K75	45.80

Choose-a-Color Adjustable Handles

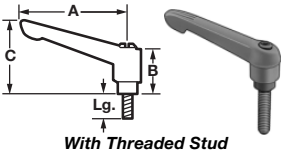

With Threaded Stud

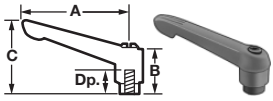

With Threaded Hole

Lift the handle to disengage and rotate freely for adjustment; release to engage gear teeth and tighten. These handles are ideal for confined work areas as well as applications requiring quick setups and frequent adjustments. All handles are nylon and have a temperature range of –40° to +200° F.

To Order: Please specify color: blue, green, red, or yellow.

With Threaded Stud—Steel Stud

Size (Thread)	Lg.	(A)	(B)	(C)		
Inch						
1/4″-20	13/16″	1 9/16″	15/16″	1 3/16″	5101K15	$5.56
1/4″-20	1″	1 9/16″	15/16″	1 3/16″	5101K16	5.56
1/4″-20	1 3/16″	2 9/16″	1 1/8″	1 5/8″	5101K17	6.62
1/4″-20	1 9/16″	2 9/16″	1 1/8″	1 5/8″	5101K18	7.29
5/16″-18	1 3/16″	3 1/8″	1 7/16″	2 1/8″	5101K24	8.09
5/16″-18	1 9/16″	3 1/8″	1 7/16″	2 1/8″	5101K25	8.87
3/8″-16	1 9/16″	3 1/8″	1 7/16″	2 1/8″	5101K26	8.87
3/8″-16	2″	3 1/8″	1 7/16″	2 1/8″	5101K27	8.87
1/2″-13	1 9/16″	3 3/4″	1 11/16″	2 3/8″	5101K31	10.93
1/2″-13	2″	3 3/4″	1 11/16″	2 3/8″	5101K32	10.93
Metric						
M5×0.8	20 mm	40 mm	25 mm	30 mm	5101K61	5.56
M5×0.8	25 mm	40 mm	25 mm	30 mm	5101K62	5.56
M6×1	30 mm	65 mm	29 mm	42 mm	5101K65	6.62
M6×1	40 mm	65 mm	29 mm	42 mm	5101K66	7.18
M8×1.25	30 mm	80 mm	37 mm	54 mm	5101K72	8.09
M8×1.25	40 mm	80 mm	37 mm	54 mm	5101K73	8.87
M10×1.5	40 mm	80 mm	37 mm	54 mm	5101K74	8.87
M10×1.5	50 mm	80 mm	37 mm	54 mm	5101K75	8.87
M12×1.75	40 mm	95 mm	43 mm	61 mm	5101K78	10.93
M12×1.75	50 mm	95 mm	43 mm	61 mm	5101K79	10.93

With Threaded Hole—Steel Insert

Size (Thread)	Dp.	(A)	(B)	(C)		
Inch						
1/4″-20	3/8″	1 9/16″	15/16″	1 3/16″	5101K44	$5.07
1/4″-20	1/2″	2 9/16″	1 1/8″	1 5/8″	5101K45	6.04
5/16″-18	9/16″	3 1/8″	1 7/16″	2 1/8″	5101K47	7.42
3/8″-16	9/16″	3 1/8″	1 7/16″	2 1/8″	5101K48	7.42
1/2″-13	11/16″	3 3/4″	1 11/16″	2 3/8″	5101K51	9.42
Metric						
M5×0.8	9 mm	40 mm	25 mm	30 mm	5101K91	5.07
M6×1	12 mm	65 mm	29 mm	42 mm	5101K92	6.04
M8×1.25	14 mm	80 mm	37 mm	54 mm	5101K93	7.42
M10×1.5	14 mm	80 mm	37 mm	54 mm	5101K94	7.42
M12×1.75	17 mm	95 mm	43 mm	61 mm	5101K95	9.42

Quick-Clamp Adjustable Handles

Easily clamp anywhere along a threaded rod. Press the button on the side of the handle to release the threads; release the button to engage. All handles have a steel insert.

Nylon handles are black and have a temperature range of –50° to +225° F.

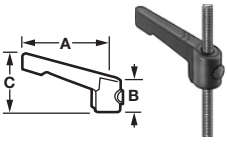

Thread Size	(A)	(B)	(C)	*Nylon*		*Die Cast Zinc*	
1/4″-20	2 9/16″	1″	1 3/4″	6385K11	$6.28	6385K21	$7.70
3/8″-16	3 1/16″	1 1/8″	2 3/16″	6385K13	7.98	6385K23	9.20
1/2″-13	4 1/4″	1 1/2″	2 15/16″	6385K14	10.00	6385K24	13.50

Milling Machine Handles

Unlike ordinary feed handles, these heavy duty handles engage and disengage with a simple flick of the wrist. Also known as quill-feed handles, they speed operations—especially when drilling deep holes. Install using the included 5/16″-18 set screw.

All are 9 1/4″ long with a 1″ dia. unthreaded hole. Shaft is black-oxide steel and has a black phenolic knob with a maximum temperature of 384° F.

For Bridgeport Series 1 and 2 Mills ..... 2839A71 .. $47.50
For Lagun Mills ..... 2839A72 .. 47.50

Safety Adjustable Handles

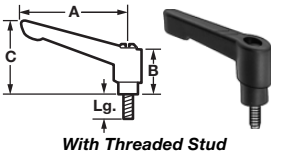

With Threaded Stud

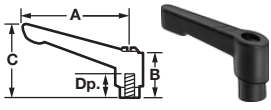

With Threaded Hole

The gear teeth on these handles engage only after pushing down on the handle. To move handle along the stud, just push down and turn. Once you release the handle, it will spin freely if accidentally bumped. Handles are black nylon and have a temperature range of –50° to +200° F.

With Threaded Stud—Zinc-Plated Steel Stud

Size (Thread)	Lg.	(A)	(B)	(C)		
Inch						
10-32	3/8″	1 5/8″	1 1/16″	1 3/8″	6506K11	$7.14
1/4″-20	9/16″	1 5/8″	1 1/16″	1 3/8″	6506K13	7.71
1/4″-20	13/16″	1 5/8″	1 1/16″	1 3/8″	6506K14	7.71
5/16″-18	13/16″	2 9/16″	1 7/16″	2″	6506K18	8.00
3/8″-16	13/16″	3 1/8″	1 13/16″	2 1/2″	6506K22	8.71
3/8″-16	1 3/16″	3 1/8″	1 13/16″	2 1/2″	6506K23	8.86
1/2″-13	2″	3 1/8″	1 13/16″	2 1/2″	6506K27	9.57
Metric						
M6×1	10 mm	42 mm	27 mm	35 mm	6610K32	7.14
M6×1	20 mm	42 mm	27 mm	35 mm	6610K33	7.51
M8×1.25	15 mm	65 mm	36 mm	50 mm	6610K35	8.00
M8×1.25	20 mm	65 mm	36 mm	50 mm	6610K36	8.14
M10×1.5	30 mm	80 mm	46 mm	63 mm	6610K39	8.83
M12×1.75	40 mm	80 mm	46 mm	63 mm	6610K43	9.57

With Threaded Hole—Zinc-Plated Steel Insert

Size (Thread)	Dp.	(A)	(B)	(C)		
Inch						
10-32	3/8″	1 5/8″	1 1/16″	1 3/8″	6506K41	$6.57
1/4″-20	3/8″	1 5/8″	1 1/16″	1 3/8″	6506K42	6.57
5/16″-18	1/2″	2 9/16″	1 7/16″	2″	6506K44	7.14
3/8″-16	11/16″	3 1/8″	1 13/16″	2 1/2″	6506K45	7.14
1/2″-13	11/16″	3 1/8″	1 13/16″	2 1/2″	6506K46	8.00
Metric						
M6×1	9 mm	42 mm	27 mm	35 mm	6610K52	6.57
M8×1.25	12 mm	65 mm	36 mm	50 mm	6610K54	7.14
M10×1.5	17 mm	80 mm	46 mm	63 mm	6610K55	7.86
M12×1.75	17 mm	80 mm	46 mm	63 mm	6610K56	7.86

Comfort-Grip Adjustable Handles

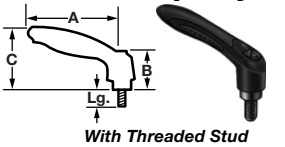

With Threaded Stud

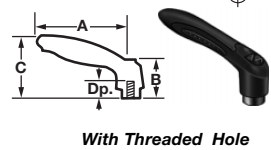

With Threaded Hole

The soft thermoplastic elastomer surface improves grip. Lift the handle to disengage and rotate freely for adjustment; release to engage gear teeth and tighten. These handles are ideal for confined work areas as well as applications requiring quick setups and frequent adjustments. All have a polypropylene core and temp. range of –60° to +210° F. Color is black.

With Threaded Stud—Black-Oxide Steel Stud

Size (Thread)	Lg.	(A)	(B)	(C)		
1/4″-20	3/4″	1 9/16″	15/16″	1 7/16″	5634K22	$7.60
5/16″-18	3/4″	2 9/16″	1 1/8″	2″	5634K24	8.46
5/16″-18	1 9/16″	2 9/16″	1 1/8″	2″	5634K26	9.83
3/8″-16	1 9/16″	3 1/8″	1 7/16″	2 9/16″	5634K28	9.31
3/8″-16	1 15/16″	3 1/8″	1 7/16″	2 9/16″	5634K31	9.36

With Threaded Hole—Black-Oxide Steel Insert

Size (Thread)	Dp.	(A)	(B)	(C)		
1/4″-20	3/8″	1 9/16″	15/16″	1 7/16″	5634K51	$7.47
1/4″-20	5/8″	2 9/16″	1 1/8″	2″	5634K53	8.41
5/16″-18	5/8″	2 9/16″	1 1/8″	2″	5634K55	8.41
5/16″-18	11/16″	3 1/8″	1 7/16″	2 9/16″	5634K57	9.26
3/8″-16	11/16″	3 1/8″	1 7/16″	2 9/16″	5634K59	9.26

Miniature Handles

Also called finger handles, these are made of black-oxide steel.

Size (Thread)	Lg.	(A)	(B)		Each 1-9	Each 10-Up
10-24	1/8″	1/4″	7/16″	60395K56	$1.55	$1.39
10-32	1/8″	1/4″	7/16″	60395K57	1.55	1.39
5/16″-18	3/16″	3/8″	7/8″	60395K58	2.00	1.80

Steel Adjustable Handles with Phenolic Ball Knob

Handle with Threaded Stud

Handle with Threaded Insert

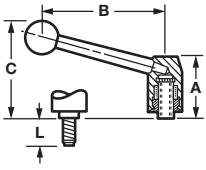

To operate, lift the handle to disengage from internal gear teeth, rotate to desired position, and release the handle to engage gear teeth.

Handles are steel with a black-oxide finish. Ball knob is made of black phenolic and has a temperature range of –22° to +230° F for inch sizes and 0° to 230° F for metric sizes.

With Threaded Stud

Thread	(L)	(A)	(B)	(C)		
Inch						
5/16″-18	1.18″	1.73″	2.36″	3.0″	6272K22	$20.49
5/16″-18	2.36″	1.73″	2.36″	3.0″	6272K41	20.63
3/8″-16	1.18″	1.73″	3.19″	3.0″	6272K21	20.91
3/8″-16	1.77″	1.73″	3.19″	3.0″	6272K42	21.14
3/8″-16	2.36″	1.73″	3.19″	3.0″	6272K44	23.84
1/2″-13	1.18″	2.23″	3.90″	4.01″	6272K23	24.97
1/2″-13	1.77″	2.23″	3.90″	4.01″	6272K46	25.93
1/2″-13	2.17″	2.63″	4.65″	4.57″	6272K25	31.77
1/2″-13	2.36″	2.23″	3.90″	4.01″	6272K24	27.14
5/8″-11	1.57″	2.63″	4.65″	4.57″	6272K48	32.97
5/8″-11	2.17″	2.63″	4.65″	4.57″	6272K27	33.71
5/8″-11	2.36″	2.63″	5.35″	4.62″	6272K28	43.56
3/4″-10	2.36″	2.63″	5.35″	4.62″	6272K32	45.17
Metric—Dimensions in millimeters.						
M10×1.5	30	44	81	82	65015K21	22.35
M10×1.5	60	44	81	82	65015K22	22.41
M12×1.75	40	51	98	97	65015K23	26.75
M12×1.75	50	57	118	109	65015K25	32.61
M16×2	50	67	136	116	65015K26	37.47

With Threaded Insert

Thread	Thread Dp.	(A)	(B)	(C)		
Inch						
1/4″-20	0.90″	1.73″	2.36″	3.0″	6272K12	$20.58
5/16″-18	0.90″	1.73″	2.36″	3.0″	6272K13	20.97
3/8″-16	0.90″	1.73″	3.19″	3.0″	6272K14	21.24
1/2″-13	1.15″	2.23″	4.65″	4.06″	6272K16	31.44
5/8″-11	1.15″	2.23″	4.65″	4.06″	6272K17	31.44
3/4″-10	1.37″	2.63″	5.35″	4.62″	6272K31	34.50
Metric—Dimensions in millimeters.						
M10×1.5	23	44	81	82	65015K11	20.58
M12×1.75	26	51	98	97	65015K12	22.94
M16×2	30	57	118	109	65015K13	30.89

Low-Profile Steel Adjustable Handles with Phenolic Ball Knob

Straight Handle with Threaded Stud

Angled Handle with Threaded Insert

Low-profile design makes these handles ideal for tight spaces. To operate, lift the handle to disengage from internal gear teeth, rotate to desired position, and release the handle to engage gear teeth.

Handles are steel with a black-oxide finish. Ball knob is made of black phenolic and has a temperature range of –22° to +230° F.

With Threaded Stud

Thread	(L)	(A)	(B)	(C)		
Straight Handle						
5/16″-18	0.78″	0.67″	4.00″	0.94″	6875K311	$18.72
5/16″-18	1.57″	0.67″	4.00″	0.94″	6875K331	19.31
3/8″-16	0.98″	0.79″	5.16″	1.06″	6875K361	23.09
3/8″-16	2.38″	0.79″	5.16″	1.06″	6875K381	24.24
1/2″-13	1.18″	0.79″	5.16″	1.06″	6875K411	23.53
1/2″-13	1.57″	0.79″	5.16″	1.06″	6875K421	24.24
1/2″-13	2.36″	0.79″	5.16″	1.06″	6875K441	24.70
Angled Handle						
5/16″-18	0.78″	0.67″	4.00″	1.65″	6875K312	18.72
5/16″-18	1.57″	0.67″	4.00″	1.65″	6875K332	19.31
3/8″-16	0.98″	0.79″	5.16″	2.12″	6875K362	23.09
3/8″-16	2.38″	0.79″	5.16″	2.12″	6875K382	24.24
1/2″-13	1.18″	0.79″	5.16″	2.12″	6875K412	23.53
1/2″-13	1.57″	0.79″	5.16″	2.12″	6875K422	24.24
1/2″-13	2.36″	0.79″	5.16″	2.12″	6875K442	24.70

With Threaded Insert

Thread	Thread Dp.	(A)	(B)	(C)		
Straight Handle						
5/16″-18	0.71″	0.67″	4.00″	0.94″	6875K111	$17.87
3/8″-16	0.83″	0.79″	5.16″	1.06″	6875K121	22.04
1/2″-13	0.83″	0.79″	5.16″	1.06″	6875K131	22.04
Angled Handle						
5/16″-18	0.71″	0.67″	4.00″	1.65″	6875K112	17.87
3/8″-16	0.83″	0.79″	5.16″	2.12″	6875K122	22.04
1/2″-13	0.83″	0.79″	5.16″	2.12″	6875K132	22.04

Steel Handles with Nylon Ball Knobs

Single Offset

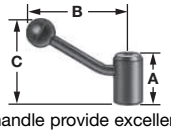

Double Offset

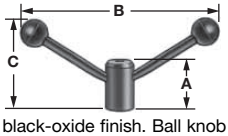

Double Straight

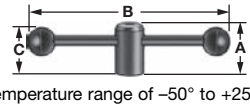

Steel hub and handle provide excellent strength and have a black-oxide finish. Ball knob is nylon and has a temperature range of –50° to +250° F.

With Solid Hub

Hub Dia.	(A)	(B)	(C)		
Single Offset					
7/8″	1 1/2″	2 3/8″	2″	6049K17	$9.40
1 1/8″	1 3/4″	3 1/2″	3″	6049K18	11.26
1 3/8″	2 1/4″	4 11/16″	3 7/8″	6049K19	13.65
Double Offset					
7/8″	1 1/2″	4 3/4″	2 3/8″	6049K14	12.26
1 1/8″	1 3/4″	7″	3 1/4″	6049K15	14.27
1 3/8″	2 1/4″	9 3/8″	4 1/2″	6049K16	17.25
Double Straight					
1 3/8″	2 1/4″	9 3/8″	2 3/8″	6049K13	17.15

With Threaded Hole

Thread	Hole Dp.	(A)	(B)	(C)		
Double Offset						
1/4″-20	1/2″	1 1/2″	4 3/4″	2 3/8″	6049K31	$13.43
3/8″-16	1/2″	1 1/2″	4 3/4″	2 3/8″	6049K32	13.43
1/2″-13	3/4″	1 3/4″	7″	3 1/4″	6049K34	15.59
5/8″-11	1″	2 1/4″	9 3/8″	4 1/2″	6049K35	17.84
3/4″-10	1″	2 1/4″	9 3/8″	4 1/2″	6049K36	17.84

Cast Iron and Aluminum Handles

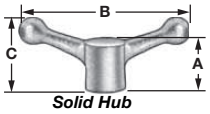

Solid Hub

Easy to grab, these one-piece double-offset handles have ball knob end pieces that provide a sure grip.

(A)	(B)	(C)	With Solid Hub: Hub Dia.		With Unthreaded Through Hole: Hole Dia.		With Threaded Through Hole: Thread	
Cast Iron with Zinc-Plated Finish								
1 3/8″	4 3/4″	2 1/4″	1 1/8″	6422K41	1/2″	6422K42	1/2″-13	6422K43
1 5/8″	6″	2 1/2″	1 3/8″	6422K44	5/8″	6422K45	5/8″-11	6422K46
1 3/4″	8″	2 15/16″	1 5/8″	6422K47	3/4″	6422K48	3/4″-10	6422K49
Aluminum								
1″	4 1/2″	1 27/32″	1 1/8″	65115K31	—	—	3/8″-16	65115K32
1″	4 1/2″	1 27/32″	—	—	—	—	1/2″-13	65115K33
1 1/2″	6″	2 19/32″	1 1/2″	65115K41	—	—	1/2″-13	65115K42
1 1/2″	6″	2 19/32″	—	—	—	—	5/8″-11	65115K43

1/2″-13	6422K43	$13.57
5/8″-11	6422K46	16.00
3/4″-10	6422K49	22.89
3/8″-16	65115K32	9.09
1/2″-13	65115K33	9.34
1/2″-13	65115K42	10.15
5/8″-11	65115K43	10.36

Glass-Filled Nylon Adjustable Crank Handles

Made of glass-filled nylon for impact resistance, these crank handles also feature adjustability. To operate, lift the handle to disengage from internal gear teeth, rotate to desired position, and release handle to engage gear teeth. All have a threaded hole. Handles are black and have a temperature range of 14° to 248° F.

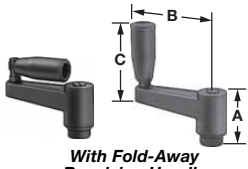

With Fold-Away Revolving Handle

Thread	Hole Dp.	(A)	(B)	With Revolving Handle (C)			With Fold-Away Revolving Handle (C)		
5/16"-18	0.70"	1.77"	3"	2.68"	6129K1	$11.71	2.68"	6129K4	$22.30
3/8"-16	0.67"	1.77"	3"	2.68"	6129K2	12.29	2.68"	6129K5	22.30
1/2"-13	0.78"	2.05"	4.84"	3.15"	6129K3	15.73	3.54"	6129K6	32.38

Steel Crank Handles

Providing the ultimate in strength and durability, these one-piece forged steel handles are unfinished. Choose from a solid hub and a hub with a square through hole.

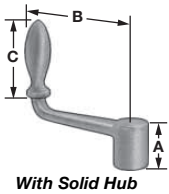

With Solid Hub

Hub Dia.	(A)	(B)	(C)	With Solid Hub		With Unthreaded Through Hole Hole Size, sq.		
1"	1 1/4"	2 5/8"	2 7/8"	6040K42	$28.67	1/2"	6040K12	$50.31
1 1/16"	1 5/16"	4"	3 1/4"	6040K44	33.23	1/2"	6040K14	51.13
1 1/4"	1 3/8"	4 1/2"	3 7/16"	6040K45	37.14	9/16"	6040K15	58.67
1 1/4"	1 13/16"	5 1/2"	3 9/16"	6040K46	45.88	5/8"	6040K16	67.80
1 1/4"	1 15/16"	6 1/2"	3 3/4"	6040K47	60.90	11/16"	6040K17	84.94
1 3/8"	2 1/16"	8"	3 3/4"	6040K48	77.72	3/4"	6040K18	104.47
1 9/16"	2 7/16"	9"	3 15/16"	6040K49	97.14	7/8"	6040K19	127.27
1 3/4"	3"	11"	4 1/2"	6040K52	143.31	1"	6040K22	178.39

Steel Ratchet Crank Handles

Combination ratchet arm and revolving crank handles make machinery adjustment faster, easier, and safer. Reversing control allows you to quickly reverse cranking direction. Ratchet arm is steel with a black powder-coated finish. The revolving handle is black phenolic and has a maximum temperature of 300° F.

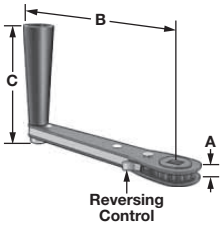

Hole Size	(A)	(B)	(C)	With Unthreaded Square Through Hole		With Unthreaded Hex Through Hole		With Unthreaded Round Through Hole★	
3/8"	19/32"	7"	4 17/32"	6393K11	$55.40	—	—	—	—
1/2"	19/32"	7"	4 17/32"	6393K12	55.40	6393K13	$55.40	6393K14	$55.40
1/2"	7/8"	10"	4 13/16"	6393K51	110.22	—	—	—	—
5/8"	19/32"	7"	4 17/32"	6393K15	55.40	6393K16	55.40	6393K17	55.40
5/8"	7/8"	10"	4 13/16"	6393K52	110.22	—	—	—	—
3/4"	7/8"	10"	4 13/16"	6393K53	110.22	6393K55	110.22	6393K57	112.46
3/4"	7/8"	12"	4 13/16"	6393K42	113.31	—	—	—	—
1"	7/8"	10"	4 13/16"	—	—	6393K56	112.46	6393K58	112.46
1"	7/8"	12"	4 13/16"	6393K45	113.31	—	—	—	—
1 1/4"	7/8"	12"	4 13/16"	—	—	6393K48	113.31	—	—

★ Have ANSI standard keyways (see page 1174).

Aluminum Crank Handles

The black powder-coated finish on these handles prevents oxidation. All have unthreaded through holes. The revolving handle is black phenolic with a temperature range of –4° to +212° F.

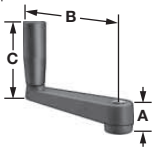

With Fold-Away Revolving Handle

Hole Dia.	(A)	(B)	(C)		
With Revolving Handle					
3/8"	0.94"	3.49"	2.50"	6473K76	$19.38
1/2"	1.10"	4.38"	3.14"	6473K77	20.38
5/8"	1.34"	5.47"	3.77"	6473K78	22.75
3/4"	1.50"	6.85"	3.90"	6473K55	29.00
With Fold-Away Revolving Handle					
1/2"	1.10"	4.28"	3.73"	6473K91	31.29
5/8"	1.34"	5.47"	4.54"	6473K92	32.23
3/4"	1.50"	6.85"	4.67"	6473K56	45.57

Malleable Iron Crank Handles

For maximum leverage and holding power, choose these extra-rugged handles. Hub and arm have a gray powder-coated finish; the revolving handle is chrome-plated steel. Hub has an unthreaded square through hole.

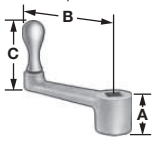

Hole Size, sq.	(A)	(B)	(C)		
9/16"	1 3/8"	4 7/16"	2 7/8"	6089K15	$91.20
5/8"	1 13/16"	5 9/16"	3 31/32"	6089K16	116.04
3/4"	2 1/16"	7 19/32"	4 7/32"	6089K18	101.98

Steel Balanced Crank Handles

Even weight distribution keeps these handles in position after you release them. They're machined from solid steel and polished to a high luster. The center ball is used to mount the handle and has a 1/4" dia. starter hole so you can customize for your mounting requirement.

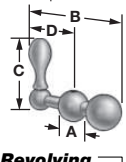

(A)	(B)	(D)	With Stationary Handle (C)			With Revolving Handle (C)		
7/8"	3"	1 1/2"	2 1/8"	6035K11	$49.79	—	—	—
1"	3 1/2"	1 3/4"	2 15/32"	6035K12	55.01	2 13/16"	6036K11	$79.66
1 3/8"	6"	3"	3 3/4"	6035K17	125.70	4 1/32"	6036K16	154.39

Type 302 Stainless Steel Crank Handles

Made of one-piece solid stainless steel, these highly polished handles don't have any seams or joints to trap dirt and contaminants so they're ideal for medical and food processing applications. All have unthreaded through holes, plus a starter hole in one side of the hub for a set screw or pin.

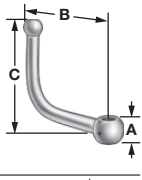

Hole Dia.	Starter Hole Dia.	(A)	(B)	(C)		
1/2"	1/8"	3/4"	3 5/16"	3"	6336K4	$34.84
5/8"	3/16"	7/8"	4 7/8"	3 1/2"	6336K7	49.49

Pull Cord Starter Handle

Replace broken or worn pull cords on machinery and tools. Handle is sturdy black PVC and attached to 80" of 1/8" dia. nylon cord. Handle is 3/4" Ht. × 2 1/2" Wd. × 2 1/2" Dp.

92865K1 ..... $5.20

Crank Handles with Set Screws

Two set screws and an unthreaded through hole allow positive locking. These unfinished handles are commonly used for controlling dampers. They are made of a die cast metal composite. Slot opening is 2" Lg. × 1/4" Wd. Set screws are 1/4" × 1".

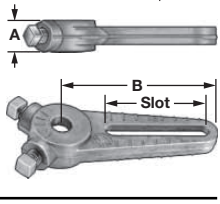

Hole Dia.	(A)	(B)		
3/8"	5/8"	3 1/16"	6149K2	$13.85
7/16"	5/8"	3 1/16"	6149K5	17.33
1/2"	5/8"	3 1/16"	6149K7	13.44

Easy-Grip Handles

Malleable Iron with Zinc-Plated Finish

Forged Steel

Stainless Steel

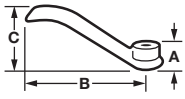

Also known as handle nuts, these handles with threaded through hole are great for quick assembly and disassembly.

	MALLEABLE IRON					FORGED STEEL				TYPE 302 STAINLESS STEEL			
Thread	(A)	(B)	(C)	Plain Finish	Zinc-Plated Finish	(A)	(B)	(C)		(A)	(B)	(C)	
1/4"-20	9/16"	3 3/16"	1 9/16"	91043A029	$2.17	—	—	—	—	—	—	—	—
5/16"-18	9/16"	3 3/16"	1 9/16"	91043A030	2.35	91044A030	2.80	—	—	—	—	—	—
3/8"-16	5/8"	3 3/4"	1 13/16"	91043A031	2.74	91044A031	3.27	19/32"	3 3/4"	1 11/16"	91038A031	$12.85	7/16"	2 17/32"	1 1/4"	3577K3	$12.86
1/2"-13	5/8"	3 15/16"	1 7/8"	91043A033	3.05	91044A033	3.59	21/32"	4"	1 11/16"	91038A033	14.67	9/16"	3 1/16"	1 17/32"	3577K6	16.83
5/8"-11	3/4"	4 1/8"	1 5/8"	91043A035	3.67	91044A035	4.42	1/2"	4 3/8"	1 3/4"	91038A035	17.86	3/4"	4 1/32"	2"	3577K9	22.98
3/4"-10	3/4"	4 1/8"	1 5/8"	91043A036	3.81	91044A036	4.53	11/16"	5 7/16"	1 13/16"	91038A036	22.03	7/8"	5 1/16"	2 1/2"	3577K12	34.29
										1 1/8"	6 5/32"	3 1/16"	3577K15	48.49

About Hand Wheels

Use hand wheels to manually adjust valves, presses, and a variety of machine components. To rotate the wheel, simply grasp the wheel rim or the handle and turn.

Spoked hand wheels allow a better grip on the rim. ***Solid*** hand wheels are safer, lacking openings that can catch your hands.

Dished (also known as offset) hand wheels keep your hands away from machinery. ***Straight*** hand wheels are better for tight spaces.

Some hand wheels include ***handles***. Choose from *stationary handles*, *revolving handles* for reduced friction, and *fold-away revolving handles*, which reduce friction and allow you to safely store the handle out of the way.

Spoked Plastic Dished Hand Wheels

Two Spoke with Unthreaded Hole and Revolving Handle

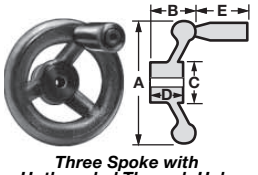

Three Spoke with Unthreaded Through Hole and Revolving Handle

These hand wheels are made of corrosion-resistant plastic with steel hubs. Color is black.

Two Spoke— Hand wheels are thermoplastic. Temperature range is 32° to 195° F.

Three Spoke— Hand wheels are nylon. Temperature range is –50° to +250° F.

Two Spoke with Unthreaded Hole

Hole Dia.	Hole Dp.	(A)	(B)	(C)	(D)	WITHOUT HANDLE		WITH HANDLE (E)	Revolving		Fold-Away Revolving	
5/16"	21/32"	3 5/32"	1 3/8"	29/32"	3/4"	6335K81	$15.72	1 31/32"	6335K87 ♦	$23.54	6335K94	$64.28
3/8"	21/32"	3 29/32"	1 15/32"	31/32"	3/4"	6335K82	17.03	2 3/16"	6335K88	25.08	6335K95	67.18
3/8"	7/8"	4 7/8"	1 23/32"	17/32"	31/32"	6335K83	19.23	2 9/16"	6335K89	28.38	6335K96	69.54
1/2"	1 1/16"	6 5/16"	2"	1 9/16"	1 1/8"	6335K84	25.02	2 9/16"	6335K91	35.05	6335K97	74.75
5/8"	1 11/32"	7 7/8"	2 13/32"	1 31/32"	1 13/32"	6335K85	39.70	3 5/32"	6335K92	49.39	6335K98	87.80
5/8"	1 1/2"	9 27/32"	2 3/4"	2 5/16"	1 9/16"	6335K86	56.81	3 17/32"	6335K93	70.34	6335K99	115.65

♦ Dimension E (handle length) is 1 9/16".

Three Spoke with Unthreaded Through Hole

Hole Dia.	(A)	(B)	(C)	(D)	Without Handle		With Revolving Handle (E)		
3/16"	3 5/32"	1 9/16"	31/32"	1"	6243K28	$14.00	1 31/32"	6243K48	$21.70
3/16"	3 15/16"	1 23/32"	1 3/32"	1"	6243K29	15.90	1 31/32"	6243K49	23.60
3/16"	4 29/32"	1 29/32"	1 3/16"	1 5/32"	6243K32	18.70	2 9/16"	6243K52	28.90
13/32"	6 5/16"	2 15/32"	1 3/8"	1 1/4"	6243K33	25.20	3 5/32"	6243K53	35.10
13/32"	7 7/8"	2 15/32"	1 3/8"	1 7/16"	6243K34	35.52	3 5/32"	6243K54	47.29

Spoked Die Cast Zinc Dished Hand Wheels

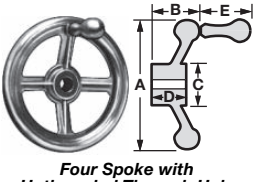

Four Spoke with Unthreaded Through Hole and Revolving Handle

Perfect for light duty service, these die cast zinc hand wheels have a smooth, polished finish and an unthreaded hole with a 5/16"-18 × 3/8" set screw in the hub for easy installation.

Hole Dia.	Hole Dp.	(A)	(B)	(C)	(D)	Without Handle		With Revolving Handle (E)		
Three Spoke with Unthreaded Hole										
1/2"	7/8"	6"	2 3/16"	1 3/8"	1 1/32"	6033K84	$27.62	2 1/8"	6033K74	$29.95
5/8"	7/8"	6"	2 3/16"	1 3/8"	1 1/32"	6033K85	27.62	2 1/8"	6033K75	29.95
3/4"	7/8"	6"	2 3/16"	1 3/8"	1 1/32"	6033K86	27.62	2 1/8"	6033K76	29.95
1"	7/8"	6"	2 3/16"	1 3/8"	1 1/32"	6033K87	27.62	2 1/8"	6033K77	29.95
Four Spoke with Unthreaded Through Hole										
3/8"	—	4 1/2"	1 1/4"	1"	7/8"	6033K88	15.94	2"	6033K78	18.40
1/2"	—	4 1/2"	1 1/4"	1"	7/8"	6033K81	15.94	2"	6033K71	18.40
5/8"	—	4 1/2"	1 1/4"	1"	7/8"	6033K82	15.94	2"	6033K72	18.40
3/4"	—	4 1/2"	1 1/4"	1"	7/8"	6033K83	15.94	2"	6033K73	18.40

Spoked Type 304 Stainless Steel Dished Hand Wheels

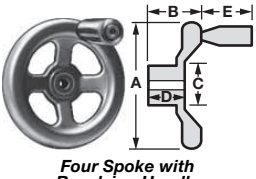

Four Spoke with Revolving Handle

Made of corrosion-resistant Type 304 stainless steel, these hand wheels have a satin finish and an unthreaded through hole. Handle is black phenolic with a temperature range of –40° to +300° F.

Hole Dia.	(A)	(B)	(C)	(D)	No. of Spokes	Without Handle		With Revolving Handle (E)		
1/2"	6 5/16"	1 17/32"	1 3/16"	25/32"	4	6328K52	$135.27	3 5/32"	6328K55	$166.22
5/8"	7 7/8"	1 23/32"	1 9/16"	15/16"	4	6328K53	185.81	3 5/32"	6328K56	218.12
3/4"	9 27/32"	2 1/16"	1 25/32"	1 3/32"	5	6328K54	236.94	3 17/32"	6328K57	274.59

For information about hand wheels, see page 2230.

Spoked Aluminum Hand Wheels

Made of lightweight, corrosion-resistant aluminum, these hand wheels have an unthreaded through hole.

Two Spoke— These dished hand wheels have a black powder-coated finish that prevents oxidation and won't leave residue on your hands. *Revolving handles* are black phenolic with a temperature range of –4° to +212° F.

Three Spoke— The outer rim is machine-polished to a smooth, high-gloss finish. Hand wheels ***with set screw and keyway*** allow easy installation onto a shaft. *Stationary handles* are polished steel. *Revolving handles* are polished aluminum.

Two Spoke w/ Revolving Handle

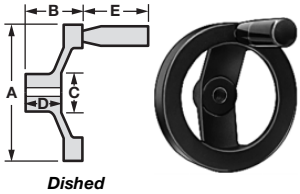

Dished

Three Spoke w/ Stationary Handle

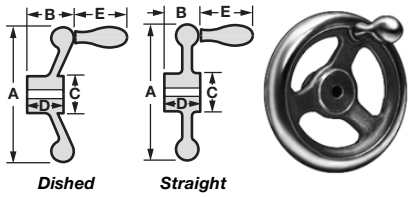

Dished *Straight*

Two Spoke

Hole Dia.	(A)	(B)	(C)	(D)	Without Handle		With Revolving Handle (E)		With Fold-Away Revolving Handle (E)	
Dished										
3/8"	4"	1 49/64"	1 1/4"	13/16"	60265K41	$27.00	2 13/64"	60265K21	$42.40	2 13/64"	60265K71	$73.70
3/8"	5"	1 15/16"	1 5/16"	7/8"	60265K43	36.80	2 9/16"	60265K23	47.60	2 9/16"	60265K73	79.00
1/2"	4"	1 49/64"	1 1/4"	13/16"	60265K42	27.00	2 13/64"	60265K22	42.40	2 13/64"	60265K72	73.70
1/2"	5"	1 15/16"	1 5/16"	7/8"	60265K44	36.80	2 9/16"	60265K24	47.60	2 9/16"	60265K74	79.00
1/2"	6"	2 3/64"	1 7/16"	1"	60265K45	39.17	2 9/16"	60265K25	47.50	2 9/16"	60265K75	89.00
1/2"	8"	2 47/64"	1 15/16"	1 3/8"	60265K47	65.45	3 5/32"	60265K27	75.56	3 5/32"	60265K77	102.22
5/8"	6"	2 3/64"	1 7/16"	1"	60265K46	39.17	2 9/16"	60265K26	47.50	2 9/16"	60265K76	89.00
5/8"	8"	2 47/64"	1 15/16"	1 3/8"	60265K48	65.45	3 5/32"	60265K28	75.56	3 5/32"	60265K78	102.22
5/8"	10"	2 51/64"	1 15/16"	1 3/8"	60265K49	76.36	3 5/32"	60265K29	99.00	3 5/32"	60265K79	127.00
3/4"	10"	2 51/64"	1 15/16"	1 3/8"	60265K51	76.36	3 5/32"	60265K31	99.00	3 5/32"	60265K81	127.00

Three Spoke

Hole Dia.	(A)	(B)	(C)	(D)	Without Handle		With Stationary Handle (E)		With Revolving Handle (E)	
Dished										
3/8"	4"	1 1/2"	1"	1"	6022K12	$20.18	2"	6022K24	$27.93	2 1/16"	6022K36	$38.21
3/8"	5"	1 43/64"	1 1/4"	1 1/8"	6022K13	26.50	2 1/8"	6022K25	32.12	2 1/16"	6022K37	41.82
1/2"	6"	2"	1 1/2"	1 1/4"	6022K14	30.24	2 3/4"	6022K26	39.92	3 1/32"	6022K38	49.74
1/2"	7"	2 1/4"	1 1/2"	1 1/2"	6022K15	40.29	3 7/32"	6022K27	49.74	3 1/32"	6022K39	67.12
5/8"	8"	2 3/8"	1 3/4"	1 1/2"	6022K16	40.83	3 7/32"	6022K28	55.60	3 9/32"	6022K41	68.37
5/8"	10"	3"	2 1/4"	2 1/8"	6022K18	61.62	3 7/16"	6022K31	77.97	3 9/32"	6022K43	86.71
3/4"	12"	3 1/4"	2 1/2"	2 1/4"	6022K19	75.85	4 1/16"	6022K32	98.11	4 1/8"	6022K44	106.09
3/4"	14"	3 3/4"	2 3/4"	2 1/2"	6022K21	111.31	4 1/16"	6022K33	141.88	4 1/8"	6022K45	158.29
1"	16"	4 1/8"	2 3/4"	2 3/4"	6022K22	143.83	4 1/16"	6022K34	173.82	4 1/8"	6022K46	180.86
Straight										
3/8"	4"	1 1/8"	1 1/4"	1 1/8"	6021K12	20.54	1 23/32"	6021K26	25.80	2 1/16"	6021K41	38.54
3/8"	5"	1 1/8"	1 1/2"	1 1/8"	6021K13	26.93	2 1/8"	6021K27	32.68	2 1/16"	6021K42	43.28
1/2"	6"	1 1/4"	1 5/8"	1 1/4"	6021K14	31.04	2 3/4"	6021K28	40.97	3 1/32"	6021K43	52.52
5/8"	8"	1 1/2"	1 7/8"	1 1/2"	6021K16	39.09	3 7/32"	6021K31	54.85	3 9/32"	6021K45	67.65
5/8"	10"	2"	2 1/4"	2"	6021K18	61.20	3 7/32"	6021K33	77.46	3 9/32"	6021K47	86.12
3/4"	12"	2 1/4"	2 1/2"	2 1/4"	6021K19	75.68	4 1/16"	6021K34	98.09	4 3/16"	6021K48	106.08
3/4"	14"	2 1/2"	2 3/4"	2 1/2"	6021K21	111.34	4 1/16"	6021K35	125.15	4 3/16"	6021K49	132.05
1"	16"	2 3/4"	3"	2 3/4"	6021K22	147.34	4 1/16"	6021K36	178.02	4 3/16"	6021K51	185.22

Three Spoke with Set Screw and Keyway

Hole Dia.	(A)	(B)	(C)	(D)	Set Screw Size	Keyway Size	Without Handle		With Revolving Handle (E)	
Dished										
3/8"	4"	1 1/2"	1"	1"	10-24	3/32" × 3/64"	3724T49	$40.60	2 1/16"	3724T57	$58.62
3/8"	5"	1 11/16"	1 1/4"	1 1/8"	10-24	3/32" × 3/64"	3724T51	46.92	2 1/16"	3724T58	62.23
1/2"	6"	2"	1 1/2"	1 1/4"	10-24	1/8" × 1/16"	3724T52	49.74	3 1/32"	3724T59	75.79
1/2"	7"	2 1/4"	1 1/2"	1 1/2"	10-24	1/8" × 1/16"	3724T53	65.15	3 1/32"	3724T61	101.25
5/8"	8"	2 3/8"	1 3/4"	1 1/2"	1/4"-20	3/16" × 3/32"	3724T54	65.75	3 1/4"	3724T62	103.07
5/8"	10"	3"	2 1/4"	2 1/8"	1/4"-20	3/16" × 3/32"	3724T55	91.75	3 1/4"	3724T63	129.45
3/4"	12"	3 1/4"	2 1/2"	2 1/4"	1/4"-20	3/16" × 3/32"	3724T56	113.98	4 1/8"	3724T64	159.24
Straight										
3/8"	4"	1 1/8"	1 1/4"	1 1/8"	10-24	3/32" × 3/64"	3724T41	40.62	2 1/16"	3724T45	59.63
1/2"	6"	1 1/4"	1 5/8"	1 1/4"	10-24	1/8" × 1/16"	3724T42	50.93	3 1/32"	3724T46	72.39
5/8"	8"	1 1/2"	1 7/8"	1 1/2"	1/4"-20	3/16" × 3/32"	3724T43	57.95	3 9/32"	3724T47	102.22
3/4"	12"	2 1/4"	2 1/2"	2 1/4"	1/4"-20	3/16" × 3/32"	3724T44	113.78	4 3/16"	3724T48	159.22

Spoked Unfinished Aluminum Hand Wheels

More economical than the finished aluminum hand wheels on this page, these unpolished hand wheels are lightweight and corrosion resistant. All have four spokes and a solid hub. ***Stationary handles*** are polished steel.

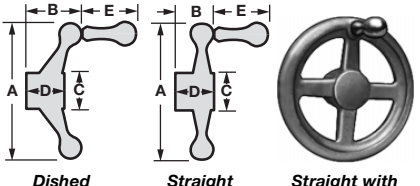

Dished *Straight* *Straight with Stationary Handle*

(A)	(B)	(C)	(D)	Without Handle		With Stationary Handle (E)	
Dished							
4"	1 11/16"	1 1/4"	1 1/8"	6020K24	$13.04	1 23/32"	6020K34	$27.46
6"	2"	1 5/8"	1 1/4"	6020K25	22.25	2 1/8"	6020K35	39.71
8"	2 3/16"	1 7/8"	1 3/8"	6020K26	40.11	3 1/4"	6020K36	60.64
10"	3 1/4"	2 1/4"	2 1/4"	6020K27	68.63	3 1/4"	6020K37	90.00
Straight							
4"	1 1/8"	1 1/4"	1 1/8"	6020K16	12.31	1 23/32"	6020K11	26.96
6"	1 1/4"	1 5/8"	1 1/4"	6020K17	21.53	2 1/8"	6020K12	39.22
8"	1 3/8"	1 7/8"	1 3/8"	6020K18	38.37	3 1/4"	6020K13	58.45
10"	2 1/4"	2 1/4"	2 1/4"	6020K19	62.50	3 1/4"	6020K23	87.21
12"	3"	3"	3"	6020K21	113.70	4 1/16"	6020K14	160.10
14"	3 1/2"	3"	3 1/2"	6020K22	134.81	4 1/16"	6020K15	186.06

Spoked Cast Iron Hand Wheels

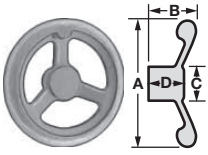

Dished Unfinished Three Spoke without Handle

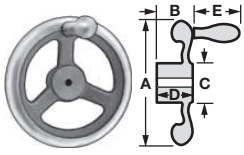

Straight Polished Three Spoke with Handle

These hand wheels are made of rugged, durable cast iron.

Unfinished— Hubs are solid.

Polished— Hubs have an unthreaded through hole. Handles are polished steel.

(A)	(B)	(C)	(D)	No. of Spokes	UNFINISHED Without Handle		Hole Dia.	POLISHED Without Handle		(E)	POLISHED w/ Stationary Handle		(E)	POLISHED w/ Revolving Handle	
Dished															
4″	1½″	1⅛″	1″	2	6025K37	$13.57	¼″	6026K109	$31.84	2³⁄₁₆″	6026K131	$42.25	2³⁄₁₆″	6026K152	$59.22
5″	1¾″	1¼″	1¼″	3	6025K38	16.24	⁵⁄₁₆″	6026K111	37.61	2³⁄₁₆″	6026K132	48.17	2³⁄₁₆″	6026K153	64.95
6″	1⅞″	1⅜″	1¼″	3	6025K16	19.18	⁵⁄₁₆″	6026K112	44.18	3¹⁄₃₂″	6026K133	58.42	3¹⁄₃₂″	6026K154	76.56
7″	2¼″	1⁵⁄₈″	1½″	3	6025K17	24.91	⅜″	6026K113	50.96	3¹⁄₃₂″	6026K134	65.82	3¹⁄₃₂″	6026K155	83.42
8″	2½″	1¾″	1¾″	3	6025K18	26.58	⅜″	6026K114	52.95	3⁹⁄₃₂″	6026K135	66.62	3⁹⁄₃₂″	6026K156	86.52
9″	2¾″	2″	2″	3	6025K19	31.81	½″	6026K115	69.98	3⁹⁄₃₂″	6026K136	83.67	3⁹⁄₃₂″	6026K157	103.58
10″	3″	2⅛″	2⅛″	3	6025K21	42.87	½″	6026K116	88.27	3⁹⁄₃₂″	6026K137	101.97	3⁹⁄₃₂″	6026K158	123.60
12″	3¼″	2½″	1⁷⁄₈″	4	6025K22	49.88	⅝″	6026K117	110.83	4³⁄₁₆″	6026K138	138.52	4³⁄₁₆″	6026K159	150.23
Straight															
4″	1⅛″	1¼″	1⅛″	2	6025K11	14.21	¼″	6026K101	31.68	2³⁄₁₆″	6026K122	42.27	2³⁄₁₆″	6026K143	59.00
5″	1⅛″	1½″	1⅛″	3	6025K23	18.84	⁵⁄₁₆″	6026K102	37.57	2³⁄₁₆″	6026K123	48.20	2³⁄₁₆″	6026K144	64.95
6″	1¼″	1⁵⁄₈″	1¼″	3	6025K12	21.62	⁵⁄₁₆″	6026K103	43.59	3¹⁄₃₂″	6026K124	57.58	3¹⁄₃₂″	6026K145	75.95
8″	1½″	1⅞″	1½″	3	6025K13	23.95	⅜″	6026K104	52.93	3⁹⁄₃₂″	6026K125	66.65	3⁹⁄₃₂″	6026K146	86.53
10″	2¼″	2¼″	2¼″	3	6025K14	43.27	½″	6026K105	88.50	3⁹⁄₃₂″	6026K126	102.20	3⁹⁄₃₂″	6026K147	122.08
12″	3″	3″	3″	4	6025K15	70.28	⅝″	6026K106	110.65	4³⁄₁₆″	6026K127	138.33	4³⁄₁₆″	6026K148	150.05

Dial-Indicating Aluminum Hand Wheels

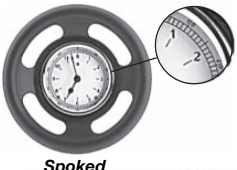

Spoked

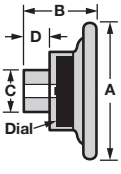

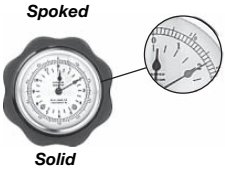

Solid

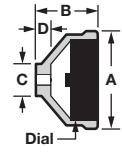

An easy-to-read dial in the center of the dished wheel gives you accurate settings for precision applications. The dials have an impact-resistant acrylic face and two pointers. The small pointer is geared so that 12 turns of the hand wheel equal one rotation of the pointer, while the large pointer is geared so that one turn of the hand wheel equals one rotation of the pointer. Pointers rotate clockwise.

Hand wheels have a black powder-coated finish. All have an unthreaded through hole with a ¼″-20 set screw and operate on horizontal shafts at angles up to 45°.

Hole Dia.	(A)	(B)	(C)	(D)		
Spoked						
½″	7³⁄₁₆″	3¹⁵⁄₁₆″	2¼″	1⅜″	6193K45	$230.46
⅝″	7³⁄₁₆″	3¹⁵⁄₁₆″	2¼″	1⅜″	6193K46	230.46
¾″	7³⁄₁₆″	3¹⁵⁄₁₆″	2¼″	1⅜″	6193K47	230.46
1″	7³⁄₁₆″	3¹⁵⁄₁₆″	2¼″	1⅜″	6193K48	230.46
Solid						
⅜″	3½″	2⅜″	1⅛″	½″	6189K31	142.71
½″	3½″	2⅜″	1⅛″	½″	6189K32	142.71
⅝″	3½″	2⅜″	1⅛″	½″	6189K33	142.71

Solid Phenolic Dished Hand Wheels

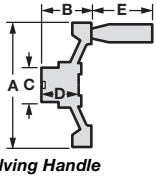

With Revolving Handle

These hand wheels are corrosion-resistant phenolic with a zinc-plated steel hub. An unthreaded starter hole allows you to machine a customized hole to suit your mounting requirements. Temperature range is –40° to +300° F. Color is black.

Starter Hole Dia.	(A)	(B)	(C)	(D)	Without Handle		With Revolving Handle (E)	
0.157″	3.15″	1.22″	0.79″	1.06″	61405K61	$12.83	1.57″	61405K71 $21.08
0.157″	3.94″	1.38″	0.94″	1.14″	61405K62	17.57	1.97″	61405K72 25.79
0.236″	4.92″	1.73″	1.26″	1.38″	61405K63	22.89	2.17″	61405K73 31.24
0.236″	5.91″	1.89″	1.26″	1.46″	61405K64	27.60	2.56″	61405K74 28.67
0.236″	7.87″	2.28″	1.57″	1.73″	61405K65	48.96	3.35″	61405K75 60.72
0.236″	9.84″	2.60″	1.89″	1.93″	61405K66	74.37	3.35″	61405K76 85.74

Solid Die Cast Zinc Dished Hand Wheels

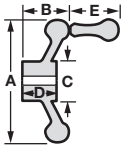

An unthreaded through hole with a ¼″-20 set screw in the hub permits easy installation. Hand wheels are made of unpolished die cast zinc and have a revolving handle.

Hole Dia.	(A)	(B)	(C)	(D)	(E)		
⅜″	2¼″	1″	⅝″	⅝″	1¼″	6403K41	$9.23
⅜″	2¾″	1¼″	¹³⁄₁₆″	⁹⁄₁₆″	1½″	6403K42	10.20
⅜″	3¼″	1¼″	¹³⁄₁₆″	⅞″	1½″	6403K44	10.57
½″	2¾″	1¼″	¹³⁄₁₆″	⁹⁄₁₆″	1½″	6403K43	10.20
½″	3¼″	1¼″	¹³⁄₁₆″	⅞″	1½″	6403K45	10.57

Solid Type 303 Stainless Steel Dished Hand Wheels

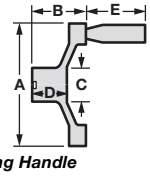

With Revolving Handle

For excellent corrosion resistance, choose these Type 303 stainless steel hand wheels. Rim has a satin finish. An unthreaded starter hole allows you to machine a customized hole to suit your mounting needs.

Starter Hole Dia.	(A)	(B)	(C)	(D)	Without Handle		With Revolving Handle (E)	
0.12″	3″	1.10″	0.87″	0.67″	8499T13	$61.44	1.49″	8499T23 $67.08
0.12″	4″	1.25″	1.02″	0.71″	8499T14	80.54	1.57″	8499T24 89.44
0.12″	6″	1.50″	1.50″	0.87″	8499T16	114.31	2.50″	8499T26 122.16

For information about hand wheels, see page 2230.

Solid Polished Aluminum Hand Wheels

Lightweight and economical, these aluminum hand wheels have a polished rim and an unthreaded through hole. Hand wheels ***with set screw and keyway*** allow easy installation onto a shaft.

Stationary handles are polished steel; *revolving handles* are polished aluminum.

Dished with Handle

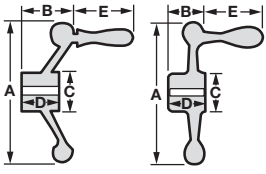

Dished *Straight*

Solid

Hole Dia.	(A)	(B)	(C)	(D)	Without Handle	With Stationary Handle (E)		With Revolving Handle (E)	
Dished									
3/8"	3"	1 1/16"	7/8"	3/4"	8515K7	$18.11	1 15/32"	8515K8	$25.50	1 15/32"	8515K9	$32.76
3/8"	4"	1 1/2"	1"	1"	8515K22	29.58	1 23/32"	8515K24	34.91	2 1/16"	8515K26	42.72
1/2"	6"	2"	1 1/2"	1 1/4"	8515K31	40.79	2 3/4"	8515K33	49.38	3 1/32"	8515K35	56.28
5/8"	8"	2 3/8"	1 3/4"	1 1/2"	8515K47	47.95	3 7/32"	8515K48	57.72	3 9/32"	8515K49	64.29
5/8"	10"	3"	2 1/4"	2 1/8"	8515K53	73.12	3 7/32"	8515K54	84.40	3 9/32"	8515K55	95.45
Straight									
3/8"	3"	1 1/4"	1"	1 1/4"	8515K4	18.13	1 15/32"	8515K5	25.51	1 15/32"	8515K6	32.78
3/8"	4"	1 5/16"	1 1/4"	1 5/16"	8515K11	28.61	1 23/32"	8515K12	33.96	2 1/16"	8515K13	41.63
1/2"	6"	1 7/16"	1 5/8"	1 7/16"	8515K37	39.19	2 3/4"	8515K38	47.90	3 1/32"	8515K39	54.90
5/8"	8"	1 3/4"	1 7/8"	1 3/4"	8515K42	46.55	3 7/32"	8515K44	56.23	3 9/32"	8515K45	63.18

Solid with Set Screw and Keyway

Hole Dia.	(A)	(B)	(C)	(D)	Set Screw Size	Keyway Size	Without Handle		With Revolving Handle (E)	
Dished										
3/8"	3"	1 1/16"	7/8"	3/4"	10-24	3/32" × 3/64"	3739T27	$45.33	1 15/32"	3739T31	$53.18
1/2"	6"	2"	1 1/2"	1 1/4"	10-24	1/8" × 1/16"	3739T28	66.78	3 1/32"	3739T32	85.22
5/8"	8"	2 3/8"	1 3/4"	1 1/2"	1/4"-20	3/16" × 3/32"	3739T29	77.54	3 9/32"	3739T33	96.50
Straight										
3/8"	3"	1 1/4"	1"	1 1/4"	10-24	3/32" × 3/64"	3739T21	42.83	1 15/32"	3739T24	61.38
1/2"	6"	1 7/16"	1 5/8"	1 7/16"	10-24	1/8" × 1/16"	3739T22	59.62	3 1/32"	3739T25	75.32
5/8"	8"	1 3/4"	1 7/8"	1 3/4"	1/4"-20	3/16" × 3/32"	3739T23	69.69	3 9/32"	3739T26	87.41

Solid Enamel-Coated Aluminum Dished Hand Wheels

Black enamel coating provides a good gripping surface along with a clean appearance. Hub has an unthreaded through hole. ***Fold-away revolving handles*** are polished aluminum.

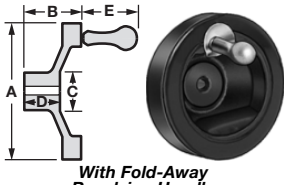

With Fold-Away Revolving Handle

Hole Dia.	(A)	(B)	(C)	(D)	Without Handle		With Fold-Away Revolving Handle (E)	
3/8"	5"	2.13"	1.50"	1.00"	6096K312	$88.59	2.13"	6096K12	$206.65
1/2"	6"	2.38"	1.75"	1.13"	6096K313	92.56	3.06"	6096K13	171.29
5/8"	8"	2.50"	2.13"	1.25"	6096K315	107.54	3.06"	6096K15	222.50

Solid Cast Iron Hand Wheels

Rugged and durable, these hand wheels are made of heavy duty cast iron. All have a polished rim, polished steel handle, and an unthreaded through hole.

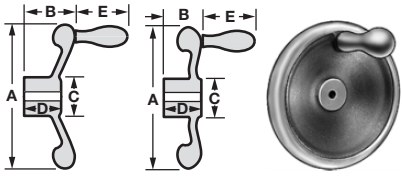

Dished *Straight* *Dished with Revolving Handle*

Hole Dia.	(A)	(B)	(C)	(D)	Without Handle		With Revolving Handle (E)	
Dished								
1/4"	3"	1"	3/4"	5/8"	6024K81	$30.55	1 7/16"	6024K107	$53.38
1/4"	4"	1 1/2"	1"	3/4"	6024K82	37.45	2 3/16"	6024K108	64.84
5/16"	6"	1 7/8"	1 1/4"	1"	6024K84	50.98	3 1/32"	6024K111	83.33
3/8"	8"	2 1/8"	1 5/8"	1 1/8"	6024K85	65.18	3 9/32"	6024K112	98.62
1/2"	9"	2 7/8"	2"	2 1/8"	6024K86	79.67	3 9/32"	6024K113	112.22
Straight								
1/4"	4"	1 1/8"	1 1/4"	1 1/8"	6024K75	36.69	2 3/16"	6024K102	64.09
5/16"	6"	1 1/4"	1 5/8"	1 1/4"	6024K77	59.67	3 1/32"	6024K104	92.04
1/2"	10"	2 1/4"	2 1/4"	2 1/4"	6024K79	83.35	3 9/32"	6024K106	116.92

Metric Safety Clutch Aluminum Dished Hand Wheels

Increase operator safety while performing applications with high shaft speeds. A clutch in the hand wheel lets the shaft rotate while keeping the wheel stationary. Wheel is manually adjustable by pulling on it; just release to return it to its stationary position. A fitting in the hand wheel hub lubricates the unthreaded through hole with keyway. Hand wheel is solid aluminum with a polished rim. Clutch is steel.

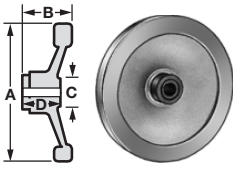

Hole Dia., mm	(A), mm	(B), mm	(C), mm	(D), mm	Keyway Size, mm		
12	125	45	28	42	4	6714K11	$191.52
12	140	48	28	42	4	6714K13	199.74
14	140	48	32	48	5	6714K15	211.73
14	160	53	32	48	5	6714K19	222.72
18	200	58	38	50	6	6714K22	255.90
22	250	64	45	54	6	6714K24	294.34

Valve Hand Wheels

Although primarily used on valves, these hand wheels fit any application that has a square shaft. Choose from aluminum and zinc.

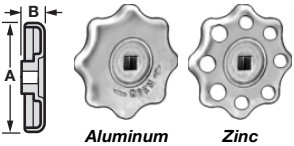

Aluminum *Zinc*

Hole Size, sq.	Hole Dp.	(A)	(B)		
Aluminum					
0.250"	0.375"	2.50"	0.500"	63155K31	$2.33
0.281"	0.375"	2.75"	0.500"	63155K32	2.38
0.375"	0.375"	2.75"	0.500"	63155K33	2.38
0.438"	0.438"	3.50"	0.563"	63155K34	2.67
0.500"	0.438"	3.50"	0.563"	63155K35	2.67
Zinc					
0.250"	0.375"	2.50"	0.500"	6055K41	1.11
0.281"	0.375"	2.50"	0.500"	6055K42	1.11
0.375"	0.375"	2.50"	0.500"	6055K43	1.11
0.438"	0.438"	3.50"	0.563"	6055K44	2.07
0.500"	0.438"	3.50"	0.563"	6055K45	2.07

Leak-Detecting Pipe Flange Covers

With pH Patch

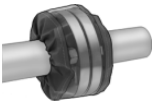

See Through

The wrap-around design of these chemical-resistant covers contains acid and caustic pipe leaks, protecting personnel and equipment. All are UV resistant, can be used indoors and out, and are made for 150 psi pipe flanges.

Covers with pH patch have a pH detecting patch that's orange when neutral. When a tiny amount of liquid makes contact with the patch, it changes color to indicate a leak. *Red, white,* and *brown* covers are plastic and have a maximum temperature of 140° F. *Chemical-resistant tan* covers are PTFE-coated fiberglass that's highly resistant to acids, alkalies, and most chemicals except hydrofluoric acid. Maximum temperature is 450° F.

See-through covers have a clear plastic center. Maximum temperature is 300° F.

Pipe Size	Actual Pipe OD	WITH pH PATCH: Red		White		Brown		Chemical-Resistant Tan		SEE THROUGH: Orange	
1/2″	27/32″	9169K33	$8.96	9169K13	$8.96	9169K53	$8.96	6811K24	$27.55	45125K48	$31.57
3/4″	1 3/64″	9169K34	9.97	9169K14	9.97	9169K54	9.97	6811K25	30.15	45125K49	34.67
1″	1 5/16″	9169K35	10.13	9169K15	10.13	9169K55	10.13	6811K26	32.08	45125K51	36.68
1 1/2″	1 29/32″	9169K37	10.55	9169K17	10.55	9169K57	10.55	6811K28	34.67	45125K52	39.70
2″	2 3/8″	9169K38	11.31	9169K18	11.31	9169K58	11.31	6811K29	36.52	45125K53	41.88
3″	3 1/2″	9169K39	12.56	9169K19	12.56	9169K59	12.56	6811K32	44.47	45125K54	51.09
4″	4 1/2″	9169K41	13.90	9169K21	13.90	9169K61	13.90	6811K34	53.18	45125K55	61.14
6″	6 5/8″	9169K42	17.17	9169K22	17.17	9169K62	17.17	6811K36	65.58	45125K56	75.12

Replacement pH Patches (Pkg. of 10) 9169K77 $7.50

Quick-Spot Leak Detectors

Squeeze Bottle

Bubbling action at the source of leaks provides a quick and reliable leak detection method, saving time and energy costs. These noncorrosive, nonflammable detectors find leaks in pipes, tubes, fittings, tanks, and cylinders. They wash off with water.

These products are compliant under all state VOC rules in effect on September 1, 2011.

Foam detector bubbles over pressure leaks and forms a crater over vacuum leaks.

Compressed gas (oxygen-compatible) detectors meet MIL-PRF-25567E and nuclear industry and ASTM standards for halogen and chloride content.

High-visibility detectors are fluorescent green and adhere to vertical surfaces. Use the *optional UV leak detection flashlight* for enhanced viewing.

Dispenser

Foam

Standard *(+35° to +170° F)*
14-oz. Aerosol Can ..... 6563T31 .... $17.11

Compressed Gas (Not Oxygen-Compatible)

Standard *(+35° to +160° F)*
4-oz. Squeeze Bottle ..... 1012T16 .... 4.23
8-oz. Bottle with Applicator ..... 1012T22 .... 5.21
8-oz. Squeeze Bottle ..... 1012T18 .... 5.28
1 Gallon Refill ..... 1012T24 .... 35.56

Compressed Gas (Oxygen-Compatible)

Standard *(+27° to +200° F)*
8-oz. Bottle with Applicator ..... 10875T16 .. 3.78
8-oz. Squeeze Bottle ..... 10875T11 .. 4.18
1 Gallon Refill ..... 10875T12 .. 36.51

Low Temperature *(–65° to +200° F)*
8-oz. Bottle with Applicator ..... 10875T23 .. 4.88
8-oz. Squeeze Bottle ..... 10875T22 .. 4.95
1 Gallon Refill ..... 10875T24 .. 47.20

High Visibility *(+15° to +200° F)*
8-oz. Bottle with Applicator ..... 6628T41 .... 6.10
1 Gallon Refill ..... 6628T42 ... 36.55

Low Temperature High Visibility *(–55° to +200° F)*
16-oz. Spray Bottle ..... 6628T53 .... 13.02
1 Gallon Refill ..... 6628T55 .... 46.25

Optional UV Leak Detection Flashlight for High-Visibility Detectors ..... 65195T25 .. 41.67

Viscosity Testers

Also known as Zahn cups, these testers determine the viscosity of liquids with just a quick dip. They also have a thermometer to simultaneously measure temperatures from 0° to 220° F. Testing cups are made of stainless steel. Overall size is 14.4″ Lg.×1.8″ Wd.×1.4″ Dp. Conform to ASTM D4212.

Choose from testers for: ***(1)*** solvents and very thin oils; ***(2)*** thin oils, mixed paints, and lacquers; ***(3)*** medium oils and mixed paints; ***(4)*** heavy liquids; and ***(5)*** very heavy liquids and mixtures.

Type	Viscosity	Range, centistokes		
1	Very Thin	20-115	8547T21	$130.70
2	Thin	45-305	8547T22	130.70
3	Medium	200-875	8547T23	130.70
4	Heavy	365-1,180	8547T24	130.70
5	Very Heavy	500-1,850	8547T25	130.70

Leak-Detecting Dyes

Easy-to-see colors enable you to visually inspect for leaks without ultraviolet light. For enhanced viewing, you can use the *optional UV leak detection flashlight*.

These products are compliant under all state VOC rules in effect on September 1, 2011.

For Water Systems

Tablets are clean and easy to use.

Liquid is a good choice for larger volumes of water. One gallon of water occupies 0.1337 cubic ft. Calculate the number of gallons a tank holds by dividing the tank volume by 0.1337. Certified to ANSI/NSF standard 60.

Size	Color	Max. Water Treated, gal.		
200 Tablets	Red	12,000	1400T43	$47.40
200 Tablets	Yellow/Green	12,000	1400T12	39.08
1-pt. Liquid	Red	3,125	1400T44	19.40
1-pt. Liquid	Yellow/Green	12,500	1400T45	19.40
1-gal. Liquid	Red	25,000	1400T46	91.73
1-gal. Liquid	Yellow/Green	100,000	1400T49	91.73

Optional UV Leak Detection Flashlight 65195T25 41.67

For Hydraulic Systems

Use 1 oz. of dye for every 5 gallons of oil, solvent, wax, or other industrial fluid you're inspecting.

Size	Color		
4-oz. Liquid	Red	1400T23	$20.30
4-oz. Liquid	Fluorescent Red	1400T22	58.38
4-oz. Liquid	Blue	1400T21	31.15

Optional UV Leak Detection Flashlight 65195T25 41.67

Stethoscopes

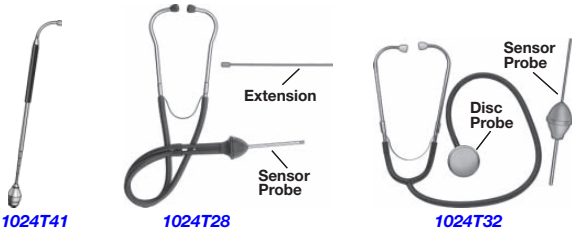

1024T41 *1024T28* *1024T32*

Single-Ear Telescoping with Sensor Probe ..... 1024T41 .. $26.19
Two-Ear with Sensor Probe and Extension ..... 1024T28 .. 13.84
Two-Ear with Disc Probe and Sensor Probe ..... 1024T32 .. 46.15

Noise-Filtering Stethoscopes

Reduce background noise so you can isolate individual sounds to detect mechanical problems and leaks. Stethoscope has a 9″ flexible probe, a 5″ sensor probe extension, and headphones that shut out surrounding noise. Operates on one 9-volt battery (included) and comes with a plastic carrying case.

Stethoscope ..... 85465T53 .. $146.32
Replacement 9-Volt Battery (Pkg. of 1) ..... 71455K56 .. 2.75

Early Warning Ultrasonic Leak Detectors

Sensing inaudible sound waves, this detector converts ultrasonic waves to an audible sound so you can find leaks. An LED display indicates when a leak is identified. Unlike typical leak detectors, this unit doesn't rely only on the presence of a gas to work, making it suitable for a wider range of applications. In addition to gas leaks, it identifies ultrasonic leaks caused by failing solenoids, valves, and bearings. Detector includes a 10″ tube extension, 3½″ dia. reflector dish for sound amplification, and plastic carrying case.

For low-pressure systems, use the *ultrasonic sound generator for systems under 10 psi*.

Detector and ultrasonic sound generator each operate on one 9-volt battery (included).

Detector	**8402T55**	$307.44
Optional Ultrasonic Sound Generator for Systems Under 10 psi	**8402T57**	133.52
Replacement 9-volt Battery (Pkg. of 1)	**71455K56**	2.75

Combustible Gas Leak Detectors

Identify gas leaks economically with this compact leak detector. Detects leaks in pipes, valves, storage tanks, and other gas system components. Detector signals with both a red light and a continuous beeping sound. Operates on two AA batteries (sold separately).

Gases Detected	Min. ppm
Methane (natural gas)	5,000
Hydrogen	3,000
Butane	2,400
Propane	2,000

Detector	**1076T8**	$38.29
AA Batteries (Pkg. of 4)	**71455K53**	2.94

Combustion Efficiency Meters

Measure boiler and furnace combustion efficiency with this hand-held meter, which works with most fossil fuels including natural gas, oil, propane, and kerosene. Accuracy is ±0.3% of oxygen content. Meter automatically calibrates to normal atmospheric oxygen and has an LCD, 5½-ft. hose, and 11″ long probe. Operates on four AA batteries (included) and comes with a storage bag.

Measurement Ranges	
Combustion Efficiency of System	0.1 to 99.9%
Carbon Dioxide Content of Heated Air	0 to 15%
Excess Air Produced by System	0 to 400%
Flue Gas Oxygen Content	0 to 20.9%
Flue Gas Temperature	0 to 999° F

Meter	**3937K21**	$543.92
Replacement Oxygen Sensor	**3937K29**	164.06
Replacement AA Batteries (Pkg. of 4)	**71455K53**	2.94

Speed-Monitoring Switches

Set switch to a specified speed to detect unwanted machinery slowdown that can cause damage and downtime. The activation point is adjustable between 5 and 100 rpm. Applications include drive trains, power-driven components, and conveyors. Switch has an SPDT relay contact rated 5 amps @ 115 volts AC. Input voltage is 115 AC, 60 Hz. Conduit connection is 1″ NPT female.

Switch has an aluminum housing and mounting plate with two 0.32″ dia. slots. Rated NEMA 7 (Class I, Group D) and NEMA 9 (Class II, Groups E, F, and G) for indoor hazardous locations, and NEMA 4X for washdown and corrosion protection. UL and C-UL listed.

6177K11 ..... $403.64

Refrigerant Leak Detectors

An LED display and audible signal alert you to leaks as small as 0.1 oz. per year in air conditioning and refrigeration systems. The audible signal also increases in intensity as you approach the leak. Unit detects halogenated refrigerants such as hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), R-22 (freon), R-134a, and 410A. Meet SAE J1627. Detector includes a 14″ flexible sensor probe for hard-to-reach areas and a plastic carrying case. Operates on two C batteries (included). UL classified. CE approved.

Detector	**1130T61**	$193.82
Replacement Tips (Pkg. of 3)	**1130T62**	36.80
Replacement C Batteries (Pkg. of 6)	**71455K54**	6.49

High-Sensitivity Combustible Gas Leak Detectors

Identify a variety of small leaks quickly and access hard-to-reach areas with the 15″ flexible probe. Detector has an LED indicator and an audible signal that increases in intensity the closer you get to the leak. It includes two rechargeable NiCad batteries, a battery charger, and plastic carrying case. UL listed Class 1, Groups A, B, C, and D for hazardous locations and MSHA (Mine Safety and Health Administration) approved.

Gases Detected	Min. ppm	Gases Detected	Min. ppm
Methane (natural gas)	500	Acetone	50
Hydrogen	500	Methanol	50
Butane	500	Ammonia	20
Propane	500	Gasoline	1
		Chlorine	1

Detector	**1140T12**	$199.31
Replacement Tip	**1140T21**	29.60
Replacement NiCad Battery	**1140T22**	7.00

Speed Guns

Point and shoot for instant speed readings in mph. Measuring range is 6 to 110 mph for small objects such as a baseball and 6 to 200 mph for large objects such as a car. Maximum measuring distance is 1,300 ft. Accuracy is ±1 mph. Gun has a three-digit LCD and a plastic housing. Operates on two C batteries (sold separately) and comes with a storage bag.

Speed Gun	**7790T5**	$122.64
C Batteries (Pkg. of 6)	**71455K54**	6.49

Surface Contact Tachometers

- Range: 1,000 to 4,000 rpm
- Accuracy Range: ±0.5% of reading

Also known as a reed tachometer, this unit is compact for portability. Place it against enclosures of rotating equipment to measure speed. The reeds are precision calibrated and arranged in two easy-to-read rows. Tachometer is 3″ Ht. × 2″ Wd. × 2½″ Dp. and has an aluminum case. It operates mechanically, so batteries aren't required.

1419T3 ..... $355.38

Dial Contact Tachometers

- Range: 0 to 4,000 rpm
- Accuracy: ±5% of reading

Housed in steel for durability, this tachometer can measure both clockwise and counterclockwise rotation. It includes a tip for measuring shafts with a center hole and a tip for measuring flat end surfaces.

Optional 12″ extension shaft accesses hard-to-reach areas.

			Each
Tachometer	**1416T1**		$124.88
Optional 12″ Extension Shaft	**1416T2**		20.15
Replacement Tips (One for Shafts with Center Hole, One for Flat End Surfaces)	**1416T3**	**Set**	$4.96

About Tachometers

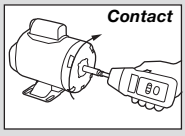

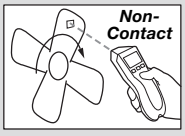

Tachometers measure the speed of rotating parts on machines such as shafts, gears, and belts.

Contact tachometers come in direct contact with an object and are an excellent choice for dirty and dusty environments.

Noncontact tachometers have a beam of light or laser that reflects off a piece of reflective tape attached to the rotating point.

Contact Tachometers

- Range: 0.5 to 19,999 rpm
- Accuracy: ±0.05% of reading

Units of Measure
Revolutions/min.
Feet/min.
Meters/min.

Measure speed in three different units with one tachometer. These units include a tip for measuring shafts with a center hole, tip for measuring flat end surfaces, 4″ circumference speed wheel, and a case. They have an LCD and plastic housing. Operate on four AA batteries (included). Choose with or without a certificate of calibration traceable to NIST.

Tachometer	8714T11	$196.41
Tachometer with NIST Certificate	8714T22	296.86
Tip for Shafts with Center Hole	8714T41	12.92
Tip for Flat End Surfaces	8714T45	12.25
4″ Circumference Speed Wheel	8714T46	12.92
Replacement AA Batteries (Pkg. of 4)	71455K53	2.94

High-Accuracy Contact Tachometers

- Range: 0.1 to 25,000 rpm
- Accuracy: ±0.006% of reading

Units of Measure	
Revolutions/min., hr.	Yards/min., hr.
Inches/min.	Meters/min., hr.
Feet/min., hr	Miles/hr.
Total Revolutions	Length—m, cm, in., ft., yd.

The most accurate tachometers we offer. Units include two tips for measuring shafts with a center hole, one tip for measuring flat end surfaces, speed wheel, 3½″ extension shaft, and a case. They have an aluminum housing and come with a certificate of calibration traceable to NIST. Operate on two AA batteries (included).

Choose an ***LCD display*** for use in bright light or ***LED display*** for dimly lit areas.

Note: Units are calibrated to work with either a 6″ or 12″ circumference speed wheel but not both.

Display	Speed Wheel		
LCD	6″ Circumference	11995T71	$292.50
LED	6″ Circumference	11995T72	292.50
LED	12″ Circumference	11995T73	335.83
3½″ Extension Shaft		11995T56	14.00
Tip for Shafts with Center Hole		11995T53	8.27
Tip for Flat End Surfaces		11995T54	8.27
6″ Circumference Speed Wheel		11995T55	34.36
12″ Circumference Speed Wheel		11995T75	57.27
Replacement AA Batteries (Pkg. of 4)		71455K53	2.94

High-Accuracy Noncontact Tachometers

- Range: 5 to 99,999 rpm
- Measuring Distance: Up to 3 ft.
- Accuracy: ±0.01% of reading
- Unit of Measure: Revolutions/Minute

Take precise measurements from a distance. This tachometer has an LCD and plastic housing. It includes 12″ of reflective tape and a ¼″-20 female threaded bushing for tripod mounting. Operates on two AA batteries (included).

Tachometer	11765T58	$162.96
Plastic Carrying Case	11765T61	27.78
Reflective Tape Roll (5 ft. Lg. × ½″ Wd.)	7178A12	10.59
Reflective ½″ Sq. Tape Tabs (Sheet of 35)	15975T21	5.25
Replacement AA Batteries (Pkg. of 4)	71455K53	2.94

Noncontact Tachometers

- Range: 2 to 99,999 rpm
- Measuring Distance: Up to 20″
- Accuracy: ±0.05% of reading
- Unit of Measure: Revolutions/Minute

Get an accurate measurement while keeping clear of moving equipment. Tachometers have an LCD and plastic housing. They include 2 ft. of reflective tape and operate on one 9-volt battery (included). Choose with or without certificate of calibration traceable to NIST.

Tachometer	1905T22	$147.52
Tachometer with NIST Certificate	1905T42	239.74
Reflective Tape Roll (5 ft. Lg. × ½″ Wd.)	7178A12	10.59
Reflective ½″ Sq. Tape Tabs (Sheet of 35)	15975T21	5.25
Replacement 9-Volt Battery (Pkg. of 1)	71455K56	2.75

Contact/Noncontact Tachometers

- Range: Contact: 0.5 to 20,000 rpm; Noncontact: 5 to 200,000 rpm
- Measuring Distance: Up to 25 ft.
- Accuracy: Contact: ±0.05% of reading; Noncontact: ±0.01% of reading

Units of Measure	
Revs./sec., min., hr.	Yards/sec., min., hr.
Inches/sec., min., hr.	Centimeters/sec., min., hr.
Feet/sec., min., hr.	Meters/sec., min., hr.

Capture high speed readings from a distance in noncontact mode, or use the included 4″ speed wheel to switch to contact mode. It includes one tip for measuring shafts with a center hole, one tip for measuring flat end surfaces, 5 ft. of reflective tape, ¼″-20 female threaded bushing for tripod mounting, and a case. Unit has an LCD and plastic housing and comes with a certificate of calibration traceable to NIST. Operates on two AA batteries (included).

BNC cable sends signals from the tachometer to a vibration data collector.

Tachometer with NIST Certificate	11765T75	$304.54
BNC Cable	11765T91	52.50
Reflective Tape Roll (5 ft. Lg. × ½″ Wd.)	7178A12	10.59
Reflective ½″ Sq. Tape Tabs (Sheet of 35)	15975T21	5.25
Replacement AA Batteries (Pkg. of 4)	71455K53	2.94

High-Accuracy Contact/Noncontact Tachometers

- Range: 6 to 99,999 rpm
- Measuring Distance: Up to 20 ft.
- Accuracy: ±0.006% of reading

Units of Measure	
Revolutions/min.	Inches/min.
Feet/min.	Yards/min.
Meters/min.	Length—m, in., ft., yd.

Switching from contact to noncontact mode is as easy as attaching the included adapter. Tachometers include one tip for measuring shafts with a center hole, one tip for measuring flat end surfaces, speed wheel, 7″ of reflective tape, ¼″-20 female threaded bushing for tripod mounting, and a case. They have an aluminum housing and come with a certificate of calibration traceable to NIST. Operate on two AA batteries (included). Choose an ***LCD display*** for use in bright light or ***LED display*** for dimly lit areas.

Display	Speed Wheel		
LCD	6″ Circumference	11835T71	$309.27
LCD	12″ Circumference	11835T81	351.21
LED	6″ Circumference	11835T51	309.27
LED	12″ Circumference	11835T61	351.21
3½″ Extension Shaft		11995T56	14.00
Tip for Shafts with Center Holes		11995T53	8.27
Tip for Flat End Surfaces		11995T54	8.27
6″ Circumference Speed Wheel		11995T55	34.36
12″ Circumference Speed Wheel		11995T75	57.27
Reflective Tape Roll (5 ft. Lg. × ½″ Wd.)		7178A12	10.59
Reflective ½″ Sq. Tape Tabs (Sheet of 35)		15975T21	5.25
Replacement AA Batteries (Pkg. of 4)		71455K53	2.94

For information about tachometers, see page 2236.

Panel-Mount Tachometers

Tachometer

Proximity Sensor

Photoelectric Sensor

- Range: 5 to 99,990 rpm
- Accuracy: ±0.05% of reading

Install this tachometer and measure rpm remotely using a proximity or photoelectric sensor (sold separately). Unit has an LED display housed in a 1/8 DIN enclosure with cutout size of 1.8″ Ht.×3.6″ Wd.×3.5″ Dp. Mounting hardware included. Operates on 115/230 volts AC, 50/60 Hz and has screw terminal connections.

Sensors have a 6-ft. cable and two mounting holes. Temperature range is 0° to 130° F.

Proximity sensor magnetically detects moving metal objects, such as gear teeth and fan blades. Range is up to 36,000 rpm. Maximum measuring distance is 0.1″. Size is 1.4″ Ht.×0.71″ Wd.×0.71″ Dp.

Photoelectric sensor generates light beams across a 0.8″ wide gap. When a rotating object enters this gap, the beam is broken. Range is up to 6,000 rpm. Maximum measuring distance is 0.4″. Size is 2.5″ Ht.×2″ Wd.×0.8″ Dp.

Tachometer	14215T11	$199.98
Proximity Sensor	14215T22	56.23
Photoelectric Sensor	14215T33	149.98
Reflective Tape Roll (5 ft. Lg.×1/2″ Wd.)	7178A12	10.59
Reflective 1/2″ Sq. Tape Tabs (Sheet of 35)	15975T21	5.25

High-Accuracy Panel-Mount Tachometers

- Range: Standard: 5 to 99,999 rpm; Programmable and Deluxe Programmable: 5 to 999,990 rpm
- Accuracy: Standard: ±0.005% of reading; Programmable and Deluxe Programmable: ±0.001% of reading

Combine any of these tachometers and sensors to create the most accurate tachometer system we offer. Install a tachometer in a convenient location and measure speed remotely using a sensor. Mounting hardware included.

Tachometers

They have an LED display housed in a plastic 1/8 DIN enclosure with cutout size of 1.8″ Ht.×3.6″ Wd.×4.5″ Dp. Operate on 115 volts AC, 50/60 Hz and have screw terminal connections.

Standard— Display reads down to one unit. It updates twice per second when the reading exceeds 120 rpm.

Programmable— Has minimum and maximum reading recall and totalizes from 1 to 99,999. It comes with a certificate of calibration traceable to NIST.

Deluxe Programmable— Have the same features as the programmable plus two internal alarms and a USB output. Tachometer *with current output* has a range of 4 to 20 mA. Tachometer *with voltage output* has a range of 0 to 5 volts DC.

Standard	8518T61	$244.55
Programmable	8518T62	293.66
Deluxe Programmable with Current Output	8518T632	471.16
Deluxe Programmable with Voltage Output	8518T631	471.16
Reflective Tape Roll (5 ft. Lg.×1/2″ Wd.)	7178A12	10.59
Reflective 1/2″ Sq. Tape Tabs (Sheet of 35)	15975T21	5.25

Sensors

Proximity Sensor

Magnetic Sensor

Optical Sensor

Proximity sensor can be used in dirty and wet environments. Maximum measuring distance is 0.2″ from a 1/2″ minimum size metal target. Size is 0.43″ Dia.×1.3″ Lg.

Magnetic sensor has a maximum measuring distance of 0.005″ from a 0.1″ minimum size ferrous metal target. Size is 0.63″ Dia.×2″ Lg.

Optical sensor performs best in clean environments and works at up to a 45° angle from reflective tape. Maximum measuring distance is 36″. Size is 0.63″ Dia.×2.9″ Lg.

	rpm Range	Operating Temp. Range, °F	Cable Lg., ft.		
Proximity	1-60,000	−4° to +140°	6	8518T92	$112.50
Magnetic	1-99,999	−100° to +225°	8	8518T91	123.21
Optical	1-250,000	−14° to +158°	8	8518T96	150.00

Contact/Noncontact Tachometers/ Thermometers

- Accuracy: ±0.05% of reading
- Measuring Distance: Up to 6 1/2 ft.
- Range: Contact: 0.5 to 20,000 rpm; Noncontact: 10 to 99,999 rpm

Units of Measure
Revolutions/min.
Feet/min.
Meters/min.

Easily switch modes—these tachometers have a contact tip on one end and a noncontact sensor on the other. They also measure temperatures from −4° to +600° F. Units include one tip for measuring shafts with a center hole, one tip for flat end surfaces, 4″ circumference speed wheel, 24″ of reflective tape, and a case. They have an LCD and plastic housing. Operate on four AA batteries (included). Choose with or without a certificate of calibration traceable to NIST.

Tachometer	8430T22	$324.57
Tachometer with NIST Certificate	8430T77	545.89
Tip for Shafts with Center Hole	8714T41	12.92
Tip for Flat End Surfaces	8714T45	12.25
4″ Circumference Speed Wheel	8714T46	12.92
Reflective Tape Roll (5 ft. Lg.×1/2″ Wd.)	7178A12	10.59
Reflective 1/2″ Sq. Tape Tabs (Sheet of 35)	15975T21	5.25
Replacement AA Batteries (Pkg. of 4)	71455K53	2.94

Stroboscopes

- rpm and Flashes per Minute: Stroboscope: 30 to 10,000; Stroboscope with NIST Certificate: 30 to 20,000
- Accuracy: ±0.002% of reading

Inspect rotating equipment and measure rpm. Stroboscopes have a flash duration of 20 to 50 microseconds and a flash power of 13 watts. Display is a backlit LCD. Units have a plastic housing and 1/4″-20 female threaded bushing for tripod mounting.

AC-powered stroboscopes run on 115 volts AC, 50-400 Hz. They have a 5-ft. cord with three-prong plug.

Battery-powered stroboscopes have an internal battery and include a 115/230-volt AC charger.

	Stroboscopes		Stroboscopes w/ NIST Certificate	
AC Powered	1177T52	$293.66	1177T71	$466.52
Battery Powered	1177T53	407.59	1177T92	520.54
Optional Plastic Carrying Case			1177T73	$93.60
Replacement Flash Bulb			1177T74	67.50
Replacement Battery Charger			1177T95	45.00

Heavy Duty Stroboscopes

- rpm and Flashes per Minute: 40 to 35,000
- Accuracy: ±0.01% of reading

AC Powered

Battery Powered

An aluminum housing makes these our strongest, most durable stroboscopes. Used to inspect rotating equipment and measure rpm, units have an automatic brightness control, LED display, and a 1/4″-20 female threaded bushing for tripod mounting. Flash duration is 10 to 40 microseconds and flash power is 10 watts. Choose with or without a certificate of calibration traceable to NIST.

AC-powered stroboscopes run on 115 volts AC, 50/60 Hz. They have an 8-ft. cord with three-prong plug.

Battery-powered stroboscopes have an internal battery and include a 100/240-volt AC charger.

	Stroboscopes		Stroboscopes w/ NIST Certificate	
AC Powered	15015T1	$622.92	15015T5	$685.55
Battery Powered	15015T2	749.60	15015T6	827.73
Optional Plastic Carrying Case			15015T21	$82.73
Replacement Flash Bulb			15015T23	59.82
Replacement Battery Charger			15015T88	137.88

Noncontact Tachometers/Stroboscopes

- Range: Tachometer: 5 to 99,999 rpm; Stroboscope: 100 to 99,999 rpm and flashes per min.
- Measuring Distance: Up to 12″
- Accuracy: ±0.1% of reading

Measure rpm and inspect moving equipment with one compact instrument. Tachometers/stroboscopes have an LCD that shows 0.1 to 1 rpm/flashes per minute and a plastic housing. Flash duration is 60 to 1,000 microseconds. Units include 2 ft. of reflective tape and a case. Operate on four AA batteries (included).

Tachometer/Stroboscope	1412T1	$357.88
Tachometer/Stroboscope with NIST Certificate	1412T2	476.65
Reflective Tape Roll (5 ft. Lg. × 1/2″ Wd.)	7178A12	10.59
Reflective 1/2″ Sq. Tape Tabs (Sheet of 35)	15975T21	5.25
Replacement AA Batteries (Pkg. of 4)	71455K53	2.94

Combination Vibration Meters/ Stethoscopes

- Acceleration Range: 0.01 to 19.99 g
- Frequency Range: 10 to 10,000 Hz
- Velocity Range: 0.01 to 19.99 in./sec.
- Accuracy: ±2% of reading

Listen to and record machine performance. In addition to vibration, this meter measures acceleration and velocity.

Meter has an LCD, padded headphones, and a 4 1/2″ long sensor probe for locating problem areas. Housing is plastic. The magnetic base allows you to mount the probe on a machine for constant readings. Enter recorded data into the monitoring software (included) and you can predict when machine maintenance is required. Operating temperature range is –14° to +122° F. Operates on two AA batteries (included) and comes with a case.

Meter	8738T1	$1,230.36
Replacement AA Batteries (Pkg. of 4)	71455K53	2.94

Tamper and Vibration Detection Paint

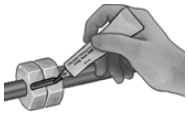

Apply directly to equipment for easy and economical detection. When paint dries it becomes brittle and cracks from any movement caused by tampering or vibration. It's noncorrosive and adheres to most surfaces, including all types of metals. Temperature range is 20° to 450° F.

General-purpose paint is excellent for use on small parts.

To Order: Please specify color.

Aircraft industry paint resists aircraft hydraulic fluid.

Fast-drying paint is for large jobs such as machinery bolts.

Color		
General Purpose— *1/2 oz.*		
Black, Blue, Brown, Gray, Purple, White, Yellow	1476T31	$3.04
Fluorescent General Purpose — *1/2 oz.*		
Green, Orange, Pink, Red, Yellow, Yellow/Orange	1476T31	3.04
Aircraft Industry— *1/2 oz.*		
Pink	1476T122	4.38
Yellow	1476T12	4.38
Fast Drying— *1 oz.*		
Blue	1476T21	6.30

Hazardous-Location Vibration-Monitoring Switches

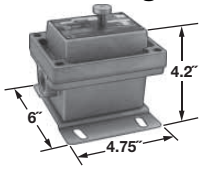

Get NEMA 4 and IP66 protection from dirt and water. Switch is rated for hazardous locations for Class I, Groups C and D, Div. 1; Class II, Groups E, F, and G, Div. 1. If vibration or shock exceeds a set point, the contacts actuate to either shut down your machine or activate an alarm. Reset switch with the push of a button. The activation point is adjustable between 0 to 5 gravity units (g's) at 0 to 60 Hz. Switch is SPDT and rated 15 amps @ 125 or 480 volts AC. Conduit connection is 3/4″ NPT female. Housing is cast aluminum with 3/8″ mounting slots (fasteners not included). UL and C-UL listed. CE approved.

1188T31 ..... $641.67

Vibration Meters

- Acceleration Range: 0.02 to 199.9 g
- Frequency Range: 3 to 1,000 Hz
- Velocity Range: 0.02 to 199.9 in./sec.
- Displacement Range: 0.2 to 199.9 mils
- Accuracy Range: ±5% of measuring range

In addition to vibration, this meter measures acceleration, velocity, and displacement. Use to monitor the performance of rotating machines such as fans and pumps. Meter has an LCD that holds the reading for one minute and a plastic housing. It comes with a 1 1/2″ long probe, case, and certificate of calibration traceable to NIST. Operating temperature range is 32° to 122° F. Operates on one 9-volt battery (included).

Meter	8721T1	$744.89
Replacement 9-Volt Battery (Pkg. of 1)	71455K56	2.75

Pocket-Size Vibration Meters

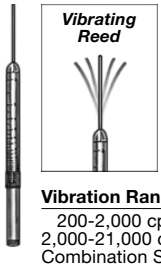

Quickly detect and measure machine vibration with these pen-size tools. A flexible steel wire reed detects vibration while the scale on the side of the meter indicates the machine vibration in cycles per minute (cpm). A simple calculation determines motor speed in rpm for engines with multiple cycles. Meters have an aluminum housing and come with a case.

Combination set contains one of each meter and a case.

Vibration Range	Accuracy		
200-2,000 cpm	±15% of Reading	1353T15	$64.33
2,000-21,000 cpm	±10% of Reading	1353T11	47.53
Combination Set		1353T13	$107.73

Vibration-Monitoring Switches

Two easy-to-set dials allow you to adjust set points for vibration and time delay and detect vibration when it first occurs. A 4 to 20 milliamp output signals an alarm if the set point is exceeded. Set a time delay for after normal speed has been reached to avoid false triggering from start-up vibration. Switches don't require a separate power source—plug the included 16-ft. cable with four-wire M12 connector into your data collector or PLC (programmable logic controller). They're normally closed and have a supply voltage of 18 to 32 DC. Housing is 2.9″ high, stainless steel, and rated IP67 for protection from dust and water. Switches have an M8 threaded mounting stud and include a plastic cover. Temperature range is –13° to +176° F.

For temporary mounting, use a ***magnetic base***.

Activation Point		
0-1″	1161T11	$270.91
0-2″	1161T12	270.91
Optional Magnetic Base for Flat Surfaces	1161T22	66.67
Optional Magnetic Base for Curved Surfaces	1161T23	126.67
Optional Glue-On Base	1161T21	22.67
Adhesive for Glue-On Base	7560A54	33.73

Corrosion-Resistant Washdown Vibration Monitors

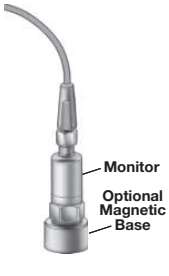

Continuously monitor vibration in harsh environments. Constructed entirely of stainless steel, this monitor meets IP69K standards for high-pressure washdown service. Plug the included 16-ft. cable with two-wire M12 connector into your data collector or PLC (programmable logic controller) to monitor vibration from 0-1 in./sec. Output is 4 to 20 mA. Supply voltage is 9.6 to 32 DC.

Housing is 2 1/2″ high. Monitor mounts to equipment with an M8 thread and includes a 1/4″-28 adapter. Temperature range is –20° to +220° F.

Use a ***magnetic base*** for temporary mounting.

Monitor	3738T1	$280.00
Optional Magnetic Base for Flat Surfaces	1161T22	66.67
Optional Magnetic Base for Curved Surfaces	1161T23	126.67
Optional Glue-On Base	1161T21	22.67
Adhesive for Glue-On Base	7560A54	33.73

Borescopes

Also known as fiberscopes, these instruments let you clearly view spaces that would otherwise be inaccessible. Look through the scope to see what is at the other end of the flexible plastic-covered cable. Borescopes have a high resolution lens and a light with a 2.5-volt halogen bulb. They provide a 40° field of view. Maximum viewing distance from end of cable is 0.8″. Cable and lens are water resistant. Housing is plastic. Operate on two AA batteries (sold separately) and come with a case.

0.23″ dia. cable accesses extremely small openings.

0.4″ dia. cable stays where you position it.

Use the *optional camera mount* to connect a digital or video camera to your scope.

	0.23″ Dia. Cable		0.4″ Dia. Cable	
Borescope w/ 18″ Cable	6589T3	$166.02	6589T1	$166.02
Borescope w/ 36″ Cable	6589T9	199.74	6589T2	199.07
Optional Magnetic Tip	6589T51	13.18	6589T5	13.18
Optional 45° Mirror	6589T61	13.18	6589T6	13.18
Optional Camera Mount	6589T71	49.02	6589T71	49.02
Repl. Halogen Bulb	6589T4	22.73	6589T4	22.73
AA Batteries (Pkg. of 4)			71455K53	2.94

Video Display Borescopes

Borescope with LCD

Borescope

View hard-to-reach areas on a color LCD or PC monitor up to 32 ft. away. Borescopes have a 39″ long cable and provide a 60° field of view. Maximum viewing distance from end of cable is 12″. Cable includes three attachments: a magnetic tool for picking up small metal objects, a hook tool for grabbing, and a mirror for viewing at a 90° angle. Housing is plastic. All include a case. *Optional cables* allow access to smaller openings.

Borescopes with LCD— Scopes with *0.47″ dia. cable* have a live display and operate on one 9-volt battery (included). Scope with *0.36″ dia. cable* has a detachable display for wireless use and USB and video connections and cables for transferring images to a PC or TV monitor. Operates on a rechargeable lithium ion battery (charger included).

The *optional wireless receiver* allows you to display images and video from the borescope with 0.36″ dia. cable on your PC. It has a USB connection.

Borescope— Includes a wireless receiver with USB connection for viewing images and video on a PC. Operates on a rechargeable lithium ion battery (charger included).

Borescopes

	0.47″ Dia. Cable		0.36″ Dia. Cable	
Borescopes with LCD				
2.4″ Display	2114T15	$147.77	—	—
3.5″ Display	2114T13	197.36	2114T11	$346.12
Borescope				
Wireless USB	2114T17	198.34	—	—

Accessories

Dia.	Lg.		
Optional Cables			
0.36″	118″	2114T23	173.83
0.22″	39″	2114T31	232.17
0.22″	118″	2114T33	348.83
Optional Wireless Receiver for 2114T11		2114T51	115.69
Replacement 9-Volt Battery (Pkg. of 1)		71455K56	2.75

Inspection Mirrors

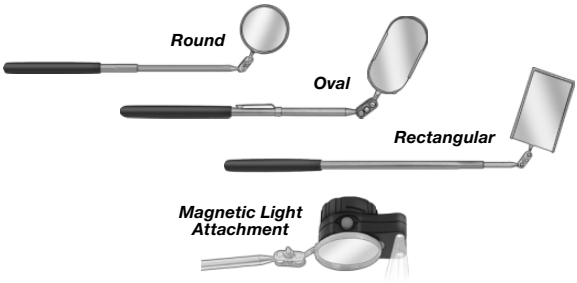

Position these mirrors to your exact requirements—they're 360° adjustable and have a telescoping handle (except 6″ long handles) with plastic grip. Round 7/8″ and 1 1/4″ dia. mirrors have a pocket clip.

Glass mirrors provide a clearer reflection; ***plastic*** mirrors are break resistant.

Magnetic light attachment has two high-intensity LEDs. Attach to any inspection mirror for convenient illumination. Operates on two lithium batteries (included).

Size	Handle Lg.	Complete Mirrors		Repl. Mirror and Frame	
Glass Mirrors with Steel Handle					
Round					
7/8″ Dia.	4″-17″▲	1017T27★	$7.58	1017T311	$2.93
7/8″ Dia.	6″	1017T11	5.96	1017T311	2.93
1 1/4″ Dia.	6″	1017T12	6.25	1017T312	3.30
2 1/4″ Dia.	7″-11″	1017T13	9.13	1017T313	3.71
2 1/4″ Dia.	13″-23″	1017T14	12.59	1017T313	3.71
3 1/4″ Dia.	7″-11″	1017T15	11.17	1017T314	5.87
3 1/4″ Dia.	13″-23″	1017T16	14.96	1017T314	5.87
Oval					
1″×2″	6″	1017T17	6.25	1017T315	3.30
Rectangular					
2 1/8″×3 1/2″	7″-11″	1017T18	9.14	1017T316	3.71
2 1/8″×3 1/2″	13″-23″	1017T19	12.59	1017T316	3.71
2X Magnification Glass Mirrors with Steel Handle					
Round					
7/8″ Dia.	6″	1017T21	9.01	1017T317	5.20
1 1/4″ Dia.	6″	1017T22	9.91	1017T318	6.75
2 1/4″ Dia.	7″-11″	1017T23	14.35	1017T319	8.78
Rectangular					
2 1/8″×3 1/2″	7″-11″	1017T24	14.47	1017T321	9.36
Glass Mirrors with Stainless Steel Handle					
Round					
1 1/4″ Dia.	6″-33″	1017T25	11.24	1017T312	3.30
2 1/4″ Dia.	6″-33″	1017T26	11.88	1017T313	3.71
3 1/4″ Dia.	6″-25″	1017T29	13.74	1017T314	5.87
Plastic Mirrors with Steel Handle					
Round					
7/8″ Dia.	4″-17″	70175T72★	7.58	70175T81	2.73
7/8″ Dia.	6″	70175T71	5.96	70175T81	2.73
1 1/4″ Dia.	6″	70175T73	6.25	70175T82	3.08
2 1/4″ Dia.	7″-11″	70175T78	9.13	70175T85	3.47
2 1/4″ Dia.	13″-23″	70175T79	12.59	70175T85	3.47
Oval					
1″×2″	6″	70175T74	6.25	70175T83	3.08
Rectangular					
2 1/8″×3 1/2″	7″-11″	70175T76	9.14	70175T84	3.47
2 1/8″×3 1/2″	13″-23″	70175T77	12.59	70175T84	3.47
Plastic Mirrors with Stainless Steel Handle					
Round					
1 1/4″ Dia.	6″-33″	70175T26	10.12	70175T82	3.08
2 1/4″ Dia.	6″-33″	70175T28	13.74	70175T85	3.47
Rectangular					
2″×3″	9″-30″	70175T91	13.42	—	—

Accessories

Magnetic Light Attachment	1017T51	14.30
Replacement Lithium Battery	7701K34	1.92

▲Chrome-plated brass handle. ★Does not have a plastic grip.

Inspection Mirrors with Pickup Magnet

Pick up nuts, bolts, and other small parts with the magnet at the end of the mirror handle. Magnet pull is 1.5 lbs. Mirrors are glass, 360° adjustable, and have a telescoping chrome-plated brass handle with pocket clip.

Size		Handle Lg.	Complete Mirrors		Repl. Mirror and Frame	
Round	7/8″ Dia.	6″-27″	6756T21	$9.94	1017T311	$2.93
Round	1 1/4″ Dia.	6″-27″	6756T23	10.20	1017T312	3.30
Oval	1″×2″	6″-28″	6756T22	10.20	1017T315	3.30

Illuminated Inspection Mirrors

Incandescent

LED

Inspect dim or dark areas with these illuminated mirrors. They have a glass mirror and operate on included batteries.

Incandescent mirrors have a thumb wheel on the handle to adjust the mirror angle up to 90°. Shaft is rubber-coated brass.

LED mirrors have a stainless steel handle with rubber grip.

Optional 4″×4″ direct reflection mirror snaps onto incandescent mirrors for a wider field of view.

Handle	Size	Complete Mirrors		Replacement Bulb	
Incandescent					
15″ Rigid	1½″×2½″	10215T56	$26.57	10215T58	$4.80
Incandescent with 4X Magnification					
15″ Flexible	1½″×2½″	10215T59	32.41	10215T58	4.80
21″ Flexible	1½″×2½″	10215T57	37.96	10215T58	4.80
39″ Flexible	1½″×2½″	10215T53	43.52	10215T54	
LED					
7″-29″ Rigid	3⅜″ Dia.	10215T33	18.11	———	——
7″-35″ Rigid	1⅜″ Dia.	10215T31	14.30	———	——
7″-36″ Rigid	2⅜″ Dia.	10215T32	15.26	———	——
7″-30″ Rigid	3½″×2¼″	10215T34	16.20	———	——

Optional 4″×4″ Direct Reflection Mirror	10215T62	$5.72
Replacement 4X Magnification Mirror	10215T61	2.22

Tilt-and-Lock Inspection Mirrors

Slip these mirrors flat into narrow spaces. Press the spring-loaded plunger at the end of the handle to position the mirror at any angle up to 90° and then lock into place. Mirror is glass.

Size Lg.	Size Wd.	Handle Lg.	Complete Mirrors		Replacement Mirror	
1¼″	1½″	9″	1023T1	$14.58	1023T41	$1.74
1 11/16″	2 9/16″	13″	1023T2	15.28	1023T42	1.92

Nonconductive Inspection Mirrors

Reduce the risk of shock when inspecting electrical equipment. This plastic mirror has a black plastic-covered stainless steel backing and handle. It swivels 180°.

Size Lg.	Size Wd.	Handle Lg.		
2½″	¾″	6″	6591T2	$7.23

Nonreversed Image Inspection Mirrors

Unlike other inspection mirrors, this adjustable mirror reflects a nonreversed image. It allows you to read hard-to-reach labels, part numbers, and serial numbers. Mirror is glass and 360° adjustable. It has a shock-resistant plastic housing and chrome-plated steel telescoping handle with pocket clip.

Size Lg.	Size Wd.	Handle Lg.		
1⅛″	1¼″	6″-16″	1059T12	$23.33

Long-Reach Inspection Mirrors

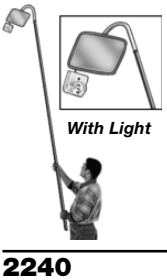

With Light

Get a clear, wide-angle view of remote areas without using a ladder. Mirrors have an aluminum handle that telescopes from approximately 4 ft. to 12 ft. Mirror is 8″×8″ glass.

Mirror with light operates on four AA batteries (included).

Mirror	1015T5	$243.50
Mirror with Light	1015T6	288.38
Repl. Mirror and Frame	1015T35	59.96
Repl. AA Batteries (Pkg. of 4)	71455K53	2.94

Inspection Mirrors with Magnetic Base

Round

Rectangular

The magnetic base on these mirrors allows hands-free inspection. They have a 1⅞″ long steel arm and 360° adjustable glass mirror.

Round mirrors have a steel base.

Rectangular mirror has a plastic base.

Mirror	Size	Complete Mirrors		Repl. Mirror and Frame	
Round	2¼″ Dia.	1018T21	$15.80	1017T313	$3.71
Round	3¼″ Dia.	1018T22	17.24	1017T314	5.87
Rectangular	2⅛″×3½″	1018T15	35.81	1018T17▲	2.30

▲Mirror only.

Flexible Inspection Mirrors

Bend and snake this mirror into any position for easy inspections. Mirror is plastic and 360° adjustable. Handle has a plastic grip.

Size Lg.	Size Wd.	Handle Lg.		
2½″	1¾″	20″	1981T4	$17.16

Build-Your-Own Inspection Mirrors

Change the features of your inspection mirror to suit your application with this versatile kit. It has a telescoping stainless steel handle with a plastic grip and a built-in light. Handle has a quick-connect end so it's easy to switch attachments. Kit includes three 360° adjustable plastic mirrors (¾″×2½″, 1¾″×2½″, and 2¼″×3½″), two magnets for retrieving objects (3-lb. and 14-lb. magnet pull), one 2X magnification lens, and a case. Light operates on two AA batteries (included).

	Handle Lg.		
Kit	8″-33″	9188T1	$118.86
Replacement AA Batteries (Pkg. of 4)		71455K53	2.94

Stainless Steel Inspection Mirrors

A

B

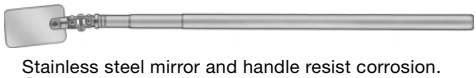

C

Stainless steel mirror and handle resist corrosion.

Compact mirrors are round and access tight spaces such as circuit boards. *Style B* can be autoclaved for sterile applications.

High-temperature mirrors let you inspect pilot lights and other areas up to 900° F. They have a telescoping handle and 360° adjustable mirror with cover.

	Size	Handle Lg.		
Compact				
A	⅜″ Dia.	7″	8723T2	$18.42
A	9/16″ Dia.	7″	8723T3	18.42
A	11/16″ Dia.	7″	8723T4	18.42
B	¾″ Dia.	4″	8722T2	25.98
B	⅞″ Dia.	4″	8722T3	26.94
B	15/16″ Dia.	4″	8722T4	26.45
High Temperature				
A	3¾″ Dia.	10″-26″	1016T4	15.58
C	1¼″×2″	10″-26″	1016T5	12.74
C	2″ ×3¾″	11″-26″	1016T6	15.00

Rolling Inspection Mirrors

Mounted on casters, this mirror maneuvers under and around machinery, vehicles, and other hard-to-reach areas. Handle is aluminum, telescopes from 33″ to 42″, and includes a bracket to hold the included flashlight (D batteries included). Mirror is 12″ dia. convex plastic; casters are 2″ dia.

Mirror	6116T11	$101.64
Repl. D Batteries (Pkg. of 6)	71455K55	7.32

Air Pressure Gauges

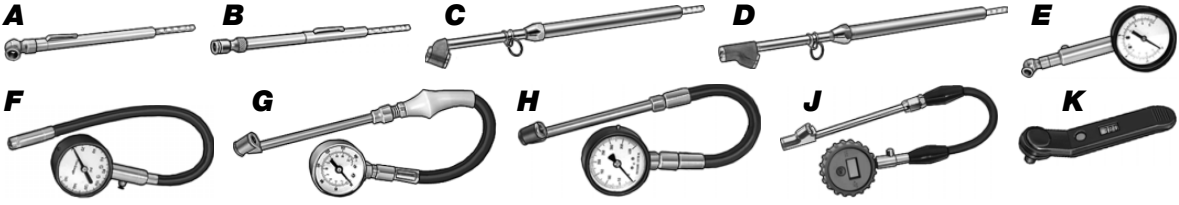

A-D ***Pencil Style—*** Have nickel-plated brass bodies and chucks with nylon indicator bar. *Styles A* and *B* have a pocket clip.

E-H ***Analog Dial-Gauge Style—*** *Style E* have a nickel-plated brass chuck, a 2″ dia. dial housed in black plastic, and a stop hand that holds and shows reading until valve is depressed. *Style F* has an 11½″ nylon braided hose and 2⅛″ dia. red-painted steel dial. A stop hand holds and displays reading and a push-button bleeder valve releases excess air. *Style G* has a 5½″ chrome-plated brass extension and chuck, 8″ flexible nitrile rubber hose with vinyl hand grip, and 2″ dia. chrome-plated steel dial. *Style H* has a chrome-plated brass chuck, an 8″ flexible rubber hose, and 2½″ dia. black-painted steel dial. Meets MIL-DTL-8348J Class B Size 1. Comes with a yellow-painted steel carrying case.

J&K ***Digital LCD Style—*** Each has a battery that lasts approximately five years and an on/off button. *Style J* has a chrome-plated brass chuck, 5¼″ nylon braided hose, and an air bleed valve. *Style K* holds display for 13 seconds so you have enough time to view it when readings are taken in low light or a confined space. Body and chuck are black ABS plastic.

	Range psi	Increments	Accuracy	Range kPa	Increments	O'all Lg.	Chuck		
Pencil Style									
A	5- 50	1 psi	±2 lbs.	40- 350	10 kPa	6″	Angled, Single Head	6723A92	$6.04
A	10- 70	2 psi	±2 lbs.	60- 500	10 kPa	6″	Angled, Single Head w/ Tread Depth Gauge	6637A18	7.66
A	20-120	2 psi	±2 lbs.	120- 820	20 kPa	6″	Angled, Single Head	6637A22	6.66
B	5- 50	1 psi	±2 lbs.	40- 350	10 kPa	6″	Straight, Single Head	6638A26	6.46
C	10-160	2 psi	±2 lbs.	80-1,100	20 kPa	13½″	Angled, Dual Head	6637A24	21.67
D	10-160	2 psi	±2 lbs.	80-1,100	20 kPa	13½″	Straight and Angled, Dual Head	6637A66	25.78
Analog Dial-Gauge Style									
E	0- 15	0.5 psi	±3% of reading	0- 100	2 kPa	5¾″	Angled, Single Head	6654A13	23.75
E	0- 60	1 psi	±3% of reading	0- 400	10 kPa	5¾″	Angled, Single Head	6654A11	23.75
E	0-160	2 psi	±3% of reading	0-1,050	25 kPa	5¾″	Angled, Single Head	6654A12	23.75
F	5-160	1 psi	±3% of reading	—	—	16½″	Straight, Single Head	6646A22	16.67
G	5-300	5 psi	±3% of reading	—	—	17½″	Angled, Dual Head	6643A23	37.48
H	0-400	5 psi	±2% of reading	—	—	17″	Angled, Dual Head	73395A69	117.70
Digital LCD Style									
J	3-160	1 psi	±1% of reading	—	—	19¾″	Straight and Angled, Dual Head	6091A73	34.84
K	1-100	0.5 psi	±1% of reading	—	—	5½″	Straight, Single Head	6091A71	12.33

Air Chucks

Made of brass with a die cast zinc head, these chucks have a maximum pressure of 150 psi.

Style P have a gripping mechanism that holds the valve stem, enabling hands-free airflow and reducing the chance of blow-off.

For air hose, see pages 240-246. For barbed fittings, see pages 286-290.

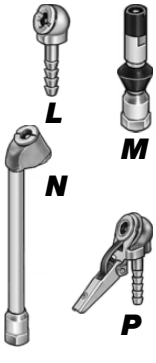

Air Inlet Connection

(L) Angled, Single-Head Chucks		
¼″ NPT Female	6146A23	$2.42
¼″ Barbed Male	6146A21	3.46
⅜″ Barbed Male	6146A22	3.75
(M) Straight, Single-Head Chuck		
¼″ NPT Female	6146A25	8.66
(N) Angled, Dual-Head Chuck		
¼″ NPT Female	6701A41	7.25
(P) Angled, Locking-Head Chucks		
¼″ NPT Female	6140A62	8.60
¼″ Barbed Male	6140A61	10.05

Tire-Valve Repair Tools

Repair Tool— In addition to rethreading the inside and outside of valve stems and inserts, this zinc-plated steel tool tightens and removes valve cores.

Repair Tool

6115A11 ..... $2.37

Stem Tool— Made with flexible steel cable, this tool aligns and seals valve stems through the rim hole. Includes tube deflator and core remover.

Stem Tool

6115A12 ..... $4.62

Patch Kit— Includes six 1″×1″ peel-and-stick patches, sandpaper, and a plastic carrying case.

4991T93 ..... $3.43

Tire Inflator/Sealant

Inflate tires and temporarily seal most punctures in an instant. Inflator/sealant has a 7″ long applicator hose with threaded valve stem fitting. Net wt. is 16 oz.

7345A29 ..... $10.12

Tire Inflator Gauges

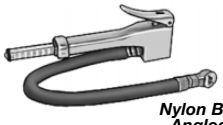
Nylon Bar, Angled, Single-Head Chuck

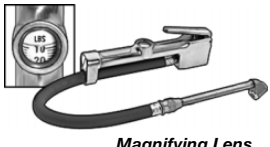
Magnifying Lens Angled, Dual-Head Chuck

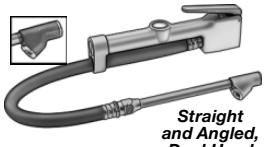
Straight and Angled, Dual Head

With a die cast aluminum body and a rubber hose, these lever-action gauges are strong enough to stand up to constant use. Gauges have a ¼″ NPT female air inlet connection.

The ***straight and angled, dual-head chuck with extra-long hose*** places you 15 ft. out of harms way, allowing you to inflate your truck tires remotely. It also has a deflator button to easily relieve excess pressure.

	Range psi	Increments	Range kPa	Increments	Hose Lg.		
Nylon Bar Indicator							
Angled, Single-Head Chuck							
	10-120	2 psi	80-840	20 kPa	12″	6113A11	$42.98
Angled, Dual-Head Chuck							
	10-120	2 psi	80-840	20 kPa	12″	6113A12	47.45
Magnifying Lens Indicator							
Angled, Single-Head Chuck							
	10-120	2 psi	—	—	15″	6647A32	49.38
Angled, Dual-Head Chuck							
	10-120	2 psi	—	—	15″	6647A34	49.48
Straight, Single-Head Chuck							
	10-120	2 psi	—	—	15″	6647A55	49.89
Straight and Angled, Dual-Head Chuck							
	10-120	2 psi	—	—	15″	6647A68	55.52
Straight and Angled, Dual-Head Chuck with Extra-Long Hose							
	10-160	2 psi	—	—	15 ft.	6647A72★	96.46

★ Meets OSHA regulation No. 1910.177 for sidewall truck tires.

Air Pumps

For emergency tire inflation and other applications, these portable air sources travel with you. All fit both Presta and Schrader valves.

A Pump is manual and lightweight.

B Suitable for high-pressure applications, this manual pump has a 2″ dia. dial gauge and 3-ft. long rubber hose.

C This pump fits most 12-volt lighter outlets and has an 11-ft., 12-volt power cord and 27″ long rubber air hose with black nylon cover. Pump also includes a locking tire-valve connector, three inflation fittings, a built-in light, and pressure gauge. Size is 9⅝″ Lg.×4″ Wd.

	Capacity	Construction	O'all Ht.		
Manual Pumps					
A	90 psi	Aluminum	11½″	**6028A17**	$24.98
B	160 psi	Aluminum	27¼″	**6028A23**	87.48
12-Volt DC Pump					
C	140 psi	Plastic	7″	**4251K31**	37.45

Piston Ring Expanders

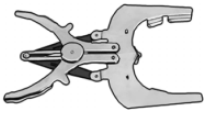

Use these spring-action tools to expand step-out or diagonal-cut piston rings for easy installation and removal.

Ring Dia. Range		
1¼″ to 2¼″	**6674A11**	$12.95
2¾″ to 4¼″	**6674A14**	14.57
4½″ to 7″	**6674A16**	17.10

Oil- and Grease-Seal Puller

With a different size hook on each side of the double-hook end, this pry bar can remove most oil and grease seals. Overall length is 12½″.

6887A11 ..... $11.91

Piston Ring Compressors

Compress piston rings to easily install them into cylinders.

Single-Band Style—Has a flared end to keep band from following piston into cylinder. *Take-apart spring-clutch style* has a quick-release that makes it easy to remove.

Spring-Clutch Style—Assures proper fit and positive locking action.

Wrinkle-Band Style—This low-friction tool is cam operated—set the adjustment screw once to install a set of pistons.

Dia. Range	O'all Ht.		
Single-Band Style			
1¾″ to 3½″	2″	**6728A12**	$7.58
Single-Band, Take-Apart Spring-Clutch Style			
2⅛″ to 5″	1½″	**6686A9**	18.09
Two-Band Spring-Clutch Style			
2⅛″ to 5″	3½″	**6686A1**	15.16
3½″ to 7″	3½″	**6686A2**	17.58
Four-Band Spring-Clutch Style			
3½″ to 7″	7″	**6686A6**	34.20
7″ to 10″	7″	**6686A7**	42.02
Wrinkle-Band Style			
3″ to 5″	1½″	**6686A11**	17.58

Dent Puller

An economical way to make minor repairs, this tool pulls dents out of sheet metal panels from the front side. It has a ½″-20 threaded shaft and comes with nosepiece, "L" puller with two screws, and a door edge tool with two nuts.

6873A11 ..... $47.93

Solar-Powered Digital Pressure Gauges —±0.5% Full-Scale Accuracy

- Use with air, water, hydraulic oil, deionized water, and ethyl alcohol
- Sensor Material: Phosphor bronze
- Connection: Type 316 stainless steel NPT male
- Case Material: Polybutylene terephthalate (PBT)
- Lens Material: Acrylic
- Temperature Ranges: Ambient: 0° to 150° F Process: 0° to 150° F

Operating on indoor light, there are no batteries to replace on these digital gauges. Enclosure is rated IP65 for protection from dust and splashing water. Set the 4-digit LCD display to show pressure in psi, kPa, kg/cm^2, or bar.

Available Pressure Ranges (psi)

Pressure Range	Resolution	Pressure Range	Resolution
0- 15	0.2	0- 200	0.5
0- 60	0.2	0- 400	1
0-100	0.25	0-1,000	2.5

To Order: Please specify pressure range from the listing above.

Dial Size	Pipe Size	LCD Ht.	Bottom Connection	
4½″	¼″	⅝″	**2397T11**	$242.00
4½″	½″	⅝″	**2397T12**	242.00

Compression Testers

Check engine compression to maintain top performance. Testers have a quick-release coupler for easy connection and include adapters to fit the openings listed below.

Analog style has a 3″ dia. dial that reads 0 to 21 kg/cm^2, 0 to 21 bars, 0 to 300 psi, and 0 to 2,100 kPa. Includes a 15″ long neoprene braided hose and replacement valve core.

Digital style has a 3″ dia. dial that reads 0 to 300 psi. Accuracy is ±1%. Includes an 18″ long rubber hose, automatic shut-off, and electronic hold and reset function that holds reading for reference.

	Engine Type	Fits Opening Dia., mm		
Analog	Gasoline	14, 14 long-reach	**6136A24**	$46.18
Digital	Gasoline, Diesel	12, 14, 14 long-reach, 18	**6136A26**	69.73

Filter Wrenches

Band Style

Socket-Drive Style (Socket Wrench Not Included)

Plier Style

Band Style—Have a vinyl-covered swivel handle and 1″ wide stainless steel band except 6880A14, which has a ½″ wide band for tight spots.

Socket-Drive Style—These require a ⅜″ square drive socket wrench for use as the handle. Ideal for tight spots since they work from the top of the filter.

Plier Style—Have a two-position, slip-joint, cushioned handle to cover a large range.

Filter Dia. Range		
Band Style		
2⅜″-2⅝″/60.3-66.7 mm	**6880A14**	$9.02
2⅞″-3¼″/73-82.5 mm	**6880A12**	8.57
3½″-3⅞″/88.9-98.4 mm	**6880A11**	8.57
4⅛″-4½″/104.7-114.3 mm	**6880A13**	9.93
Socket-Drive Style		
2½″-3⅛″/63.5-79.3 mm	**6880A15**	10.83
3⅛″-3⅞″/79.3-98.4 mm	**6880A16**	11.94
Plier Style		
2¼″-4″/57.1-101.6 mm	**6880A17**	32.15
3⅝″-6″/92-152.4 mm	**6880A18**	45.28

Coil Spring Compressor

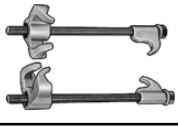

Steel jaws securely hook onto coil springs for easy installation and removal. This two-piece compressor set also has Acme rod turning screws for strength and accurate adjustments. Overall length is 12″.

6241A77 ..... **Set** $42.78

Measuring

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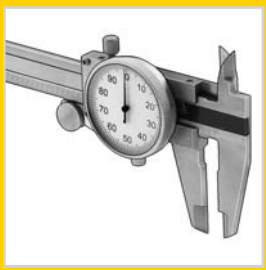
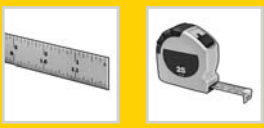

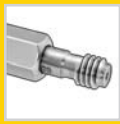

Starrett Satin-Chrome Steel Precision Rules

Quick Reading

Standard Reading

Also known as machinists' rules, these precision rules have a nonglare satin chrome finish for rust and wear resistance and easy-to-read black etched graduations. Meet Fed. Spec. GGG-R-791H for accuracy. *6″ and 150 mm rules* include a protective plastic sleeve.

Quick-reading rules have numbered subdivisions for easy measuring.

Rule Length	Rule Accuracy
3″ and 6″	+0.004″ to –0.0035″
12″	+0.005″ to –0.0035″
18″	+0.006″ to –0.0035″
24″ and 36″	+0.007″ to –0.0035″
48″	+0.010″ to –0.005″
72″	+0.012″ to –0.007″

Rule Length	Rule Accuracy
150 mm	+0.102 mm to –0.0889 mm
300 mm	+0.127 mm to –0.0889 mm
500 mm	+0.178 mm to –0.0889 mm
1,000 mm	+0.254 mm to –0.127 mm

Rigid Rules—*Made of spring-tempered tool steel.*

Length	Width	Thick.	Starrett No.		Each
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*					
3″	9/16″	0.047″	C604R-3	2117A17	$17.50
6″	3/4″	0.047″	C604R-6	2117A11	21.50
6″	3/4″	0.047″	C604RE-6	2117A27★	23.01
12″	1″	0.047″	C604R-12	2117A12	35.50
12″	1″	0.047″	C604RE-12	2117A33★	43.01
18″	1 1/8″	0.047″	C604R-18	2117A13	69.01
24″	1 1/4″	0.047″	C604R-24	2117A14	89.01
36″	1 1/4″	0.047″	C604R-36	2117A15	164.00
48″	1 1/4″	0.047″	C604R-48	2117A16	215.01
72″	1 1/2″	0.100″	C404R-72	2117A43	568.00
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*					
6″	3/4″	0.047″	C616R-6	2117A21	25.01
12″	1″	0.047″	C616R-12	2117A22	48.50
72″	1 1/2″	0.100″	C416R-72	2117A19	722.00
Decimal Inch: *Quick-reading 10ths front; 50ths back.*					
6″	3/4″	0.047″	C606R-6	2117A31	21.50
Inch/Metric: *Quick-reading inches to 32nds and standard-reading 1/2 mm front; quick-reading and standard-reading mm back.*					
5 3/4″/150 mm	3/4″	0.047″	C636ME-150	2117A51	23.01
11 3/4″/300 mm	1″	0.047″	C636-300	2117A52	47.50
19 1/2″/500 mm	1 1/8″	0.047″	C636-500	2117A53	85.01
39 1/4″/1,000 mm	1 1/4″	0.047″	C636-1000	2117A54	212.00
Metric: *Standard-reading mm and 1/2 mm front and back.*					
150 mm	3/4″	0.047″	C635E-150	2117A56★	25.01
300 mm	1″	0.047″	C635-300	2117A55	47.50

★ On the back, left and right ends are also graduated.

Semiflexible Rules—*Made of steel.*

Length	Width	Thick.	Starrett No.		Each
Inch: *Quick-reading inches to 64ths front; standard-reading inches to 16ths and quick-reading inches to 32nds back.*					
6″	1/2″	0.016″	C309R-6	2285A21	$20.00
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 10ths and 50ths back.*					
6″	1/2″	0.016″	C303R-6	2285A25	23.39
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 10ths and 100ths back.*					
6″	1/2″	0.016″	C305R-6	2285A5	21.50
12″	1/2″	0.016″	C305R-12	2285A6	43.01
18″	3/4″	0.020″	C305R-18	2285A7	67.01
24″	3/4″	0.020″	C305R-24	2285A8	95.01
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*					
6″	1/2″	0.016″	C316R-6	2285A35	22.00
12″	1/2″	0.016″	C316R-12	2285A36	45.00
Inch/Metric: *Quick-reading inches to 32nds and 64ths front; standard-reading mm and 1/2 mm back.*					
5 3/4″/150 mm	1/2″	0.016″	C331-150	2285A55	22.50
11 3/4″/300 mm	1/2″	0.016″	C331-300	2285A56	43.01
Decimal Inch/Metric: *Quick-reading 10ths and 50ths front; standard-reading mm and 1/2 mm back.*					
5 3/4″/150 mm	1/2″	0.016″	C334-150	2285A45	23.50
Metric: *Standard-reading 1/2 mm front; mm and 1/2 mm back.*					
150 mm	1/2″	0.016″	C330-150	2285A65	20.00

Pro-Value Satin-Chrome Steel Precision Rules

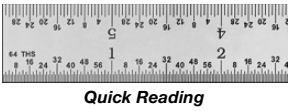

Quick Reading

Standard Reading

Rule Length	Rule Accuracy
6″	+0.004″ to –0.0035″
12″	+0.005″ to –0.0035″
18″	+0.006″ to –0.0035″
24″, 36″	+0.007″ to –0.0035″
48″	+0.008″ to –0.0035″
150 mm	+0.102 mm to –0.102 mm
300 mm	+0.127 mm to –0.102 mm
450 mm	+0.152 mm to –0.102 mm
600 mm	+0.178 mm to –0.102 mm

Pro-value rules offer an economical alternative to the Starrett rules above. Also known as machinists' rules, these precision rules are made in the U.S.A. of hardened and tempered steel for stability and durability; a nonglare satin chrome finish provides rust and wear resistance. They have easy-to-read black etched graduations and meet Fed. Spec. GGG-R-791H for accuracy.

Quick-reading rules have numbered subdivisions for easy measuring.

	Rigid Rules				Semiflexible Rules			
Length	Width	Thick.		Each	Width	Thick.		Each
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*								
6″	3/4″	0.040″	2042A72	$8.90	1/2″	0.015″	2042A55	$7.40
12″	1″	0.040″	2042A73	17.18	1/2″	0.015″	2042A56	14.36
18″	1 1/8″	0.040″	2042A74	24.55	3/4″	0.020″	2042A57	22.42
24″	1 1/8″	0.040″	2042A75	34.61	3/4″	0.020″	2042A58	29.89
36″	1 3/16″	0.040″	2042A91	67.99	—	—	—	—
48″	1 1/4″	0.040″	2042A92	132.85	—	—	—	—
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 10ths and 50ths back.*								
6″	3/4″	0.040″	2042A85	8.37	1/2″	0.015″	2042A68	7.40
12″	1″	0.040″	2042A86	16.75	1/2″	0.015″	2042A69	14.20
18″	1 1/8″	0.040″	2042A87	24.22	3/4″	0.020″	2042A71	21.24
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 10ths and 100ths back.*								
6″	3/4″	0.040″	2042A76	8.37	1/2″	0.015″	2042A61	7.40
12″	1″	0.040″	2042A77	16.75	1/2″	0.015″	2042A62	14.20
18″	1 1/8″	0.040″	2042A78	24.22	3/4″	0.020″	2042A63	21.46
24″	1 1/8″	0.040″	2042A79	34.17	3/4″	0.020″	2042A64	29.89
36″	1 3/16″	0.040″	2042A93	84.57	3/4″	0.020″	2042A95	78.19
48″	1 1/4″	0.040″	2042A94	132.85	3/4″	0.020″	2042A96	122.59
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*								
6″	3/4″	0.040″	2042A81	8.37	1/2″	0.015″	2042A65	7.40
12″	1″	0.040″	2042A82	16.75	1/2″	0.015″	2042A66	14.20
18″	1 1/8″	0.040″	2042A83	24.22	3/4″	0.020″	2042A67	21.46
24″	1 1/8″	0.040″	2042A84	34.17	3/4″	0.020″	2042A88	29.89
48″	1 1/4″	0.040″	2042A47	132.85	—	—	—	—
Inch/Metric: *Quick-reading inches to 32nds and 64ths front; standard-reading mm and 1/2 mm back.*								
6″/150 mm	3/4″	0.040″	6823A5	9.03	1/2″	0.015″	6823A7	8.65
12″/300 mm	1″	0.040″	6823A6	18.11	1/2″	0.015″	6823A8	16.82
18″/450 mm	1 1/8″	0.040″	6823A61	29.40	3/4″	0.020″	6823A51	26.97
24″/600 mm	1 1/8″	0.040″	6823A62	39.06	3/4″	0.020″	6823A52	37.01
Metric: *Standard-reading mm and 1/2 mm front and back.*								
150 mm	3/4″	0.040″	6823A1	9.03	1/2″	0.015″	6823A3	8.65
300 mm	1″	0.040″	6823A2	18.11	1/2″	0.015″	6823A4	16.82
450 mm	1 1/8″	0.040″	6823A41	29.40	3/4″	0.020″	6823A31	26.97
600 mm	1 1/8″	0.040″	6823A42	39.06	3/4″	0.020″	6823A32	37.01

Steel Certified Precision Rules

Rule Lg.	Rule Accuracy
Starrett	
12″	+0.005″ to –0.0035″
19½″, 36″	+0.007″ to –0.0035″
39¼″, 48″	+0.010″ to –0.005″
72″	+0.012″ to –0.007″
Pro-Value	
6″	+0.004″ to –0.004″
12″	+0.005″ to –0.004″
18″	+0.006″ to –0.004″
24″, 36″	+0.007″ to –0.004″
48″	+0.008″ to –0.004″

Quick Reading

Stop wasting time getting your rules certified. These rules include a certificate traceable to NIST (National Institute of Standards and Technology). Also known as machinists' rules, they're made in the U.S.A. and include a nonglare satin chrome finish that resists rust and wear. All have easy-to-read black etched graduations and meet Fed. Spec. GGG-R-791H for accuracy.

Quick-reading rules have numbered subdivisions for even easier measuring.

Starrett are spring-tempered tool steel. ***Pro-value*** provide an economical alternative to Starrett rules and are hardened, tempered steel.

Length	Wd.	Thick.		Rigid Each	Flexible Each
Starrett					
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*					
12″	1″	0.047″	2117A28	$59.87	———
36″	1¼″	0.047″	2117A29	199.53	———
72″	1½″	0.100″	2117A44	622.33	———
Inch/Metric: *Quick-reading inches to 32nds, standard-reading ½ mm front; quick-reading inches to 64ths, standard-reading mm back.*					
19½″/500 mm	1⅛″	0.047″	2117A67	116.87	———
39¼″/1,000 mm	1¼″	0.047″	2117A68	271.26	———
Pro-Value					
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*					
6″	¾″	0.040″	2056A11	32.40	———
12″	1″	0.040″	2056A12	54.44	———
24″	1⅛″	0.040″	2056A13	90.91	———
36″	1¼″	0.040″	2056A14	178.07	———
48″	1¼″	0.040″	2056A15	258.42	———
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 10ths and 100ths back.*					
6″	¾″	0.040″	2056A16	32.40	2056A32■ $32.39
12″	1″	0.040″	2056A17	54.44	2056A33■ 54.44
24″	1⅛″	0.040″	2056A18	90.91	2056A34● 90.91
36″	1¼″	0.040″	2056A19	178.07	2056A35● 178.07
48″	1¼″	0.040″	2056A21	258.42	———
Inch/Metric: *Quick-reading inches to 32nds and 64ths front; standard-reading mm and ½ mm back.*					
6″/150 mm	¾″	0.040″	2056A22	32.40	———
12″/300 mm	1″	0.040″	2056A23	54.44	———
24″/600 mm	1⅛″	0.040″	2056A24	90.91	———
36″/900 mm	1¼″	0.040″	2056A25	178.07	———
48″/1,200 mm	1¼″	0.040″	2056A26	258.42	———

■ ½″ width, 0.015″ thick. ● ¾″ width, 0.020″ thick.

Stainless Steel Rules

Built to last, these stainless steel rules are corrosion-resistant and semi-flexible. All have black etched graduations and a ¼″ dia. hang-up hole.

Certified rules include a serial number and a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

Certified Rule

300 Series S.S. Rules

Lg.	Wd.	Thick.		Each
Inches to 16ths top and bottom.				
12″	1¼″	1/32″	2120A11	$9.88
18″	1¼″	1/32″	2120A12	12.21
24″	1¼″	1/32″	2120A13	14.53
36″	1¼″	1/32″	2120A14	29.65
48″	1¼″	1/32″	2120A15	39.56

Certified Type 301 S.S. Rules

Lg.	Wd.	Thick.		Each
Inches to 32nds top; mm bottom.				
6″	1″	1/32″	20265A6	$24.89
12″	1″	1/32″	20265A12	27.53
24″	1″	1/32″	20265A24	51.49
36″	1″	1/32″	20265A36	94.44
48″	1″	1/32″	20265A38	126.76

Steel Rules with Bold Markings

Stop squinting at your rule. Large black numbers and graduations are deeply etched for bold visibility. Rules are semiflexible and have a ¼″ dia. hang-up hole. Both sides are graduated in inches to 8ths on top; inches to 16ths bottom.

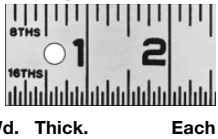

Lg.	Wd.	Thick.		Each
12″	1¼″	1/16″	2013A1	$27.69
24″	1¼″	1/16″	2013A2	42.98
36″	1¼″	1/16″	2013A3	65.13
48″	1¼″	1/16″	2013A4	$78.93
72″	1¼″	1/16″	2013A6	149.11

Magnetic Steel Precision Rules

Rule Lg.	Rule Accuracy
6″	+0.004″ to –0.004″
12″	+0.005″ to –0.004″
24″ and 36″	+0.007″ to –0.004″

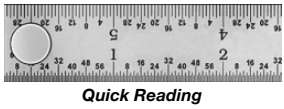

Quick Reading

Embedded high-powered magnets allow hands-free measuring. Also known as machinists' rules, these precision rules are made in the U.S.A. of hardened, tempered spring steel with a nonglare satin chrome finish that resists rust and wear. They're rigid with easy-to-read, black etched graduations and meet Fed. Spec. GGG-R-791H for accuracy. *Quick-reading rules* have numbered subdivisions for even easier measuring.

Length	Width	Thick.		Each
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*				
6″	¾″	0.051″	2077A21	$14.80
12″	1″	0.051″	2077A22	27.61
24″	1⅛″	0.051″	2077A23	51.30
36″	1 3/16″	0.051″	2077A24	98.07
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 10ths and 100ths back.*				
6″	¾″	0.051″	2077A26	14.80
12″	1″	0.051″	2077A27	27.61
24″	1⅛″	0.051″	2077A28	51.30
36″	1 3/16″	0.051″	2077A29	98.07
Inch/Metric: *Quick-reading inches to 32nds and 64ths front; standard-reading mm and ½ mm back.*				
6″/150 mm	¾″	0.051″	2077A32	14.80
12″/300 mm	1″	0.051″	2077A33	27.61
24″/600 mm	1⅛″	0.051″	2077A34	51.30

Titanium-Coated Steel Precision Rules

Quick Reading

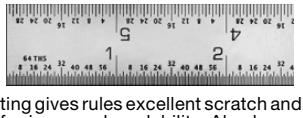

A titanium coating gives rules excellent scratch and wear resistance and is nonglare for improved readability. Also known as machinists' rules, they're gold with black etched graduations; graduations are quick-reading with numbered subdivisions for easy measuring.

Length	Rigid Rules 0.042″ Thick. Width	Each	Semiflexible Rules 0.015″ Thick. Width	Each
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*				
6″	¾″	19845A15 $21.03	½″	19845A11 $20.71
12″	1″	19845A16 40.36	½″	19845A12 37.17
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 10ths and 100ths back.*				
6″	¾″	19845A17 21.03	½″	19845A13 20.71
12″	1″	19845A18 40.36	½″	19845A14 37.17
Inch/Metric: *Quick-reading inches to 32nds and 64ths front; standard-reading mm and ½ mm back.*				
6″/150 mm	¾″	19845A21 21.03	½″	19845A19 20.71
12″/300 mm	1″	19845A22 40.36	½″	19845A2 37.17

Starrett Steel Rules with Hook

A hook grabs edges for easy alignment and an accurate stop—it can be reversed or removed. Rules are rigid spring-tempered tool steel with a nonglare satin chrome finish and black etched graduations. Quick-reading side has numbered subdivisions for easy measuring. Meet Fed. Spec. GGG-R-791H for accuracy.

Quick-Reading Side

Length	Width	Thick.		Each
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading; inches to 8ths and 16ths back.*				
6″	¾″	0.047″	2113A21	$26.50
12″	1″	0.047″	2113A22	46.50
18″	1⅛″	0.047″	2113A23	78.00
24″	1¼″	0.047″	2113A24	95.01
36″	1¼″	0.047″	2113A25	180.00
48″	1½″	0.100″	2113A26	458.00

Starrett Tapered-End Steel Rule

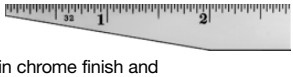

Measure in tight places. A tapered end means this rule can get into spots other rules can't. Rule is flexible tempered steel with a satin chrome finish and black etched graduations. Includes a protective sleeve.

Length	Width	Thick.		Each
Inch: *Inches to 32nds front; 64ths back.*				
6″	½″ to ⅛″	1/64″	2286A12	$22.50

Stainless Steel Pocket Rules

Square End, Standard Reading, No Clip

Round End, Quick Reading, Pocket Clip

Made of 300 series stainless steel, rules have excellent corrosion resistance and are semiflexible (unless noted) with sharp, finely etched black graduations. *Rules with pocket clip* can be used as a depth gauge, with the clip as the base.

Quick-reading rules have numbered subdivisions for easy measuring.

Length	Width	Thick.	End Style	Pocket Clip		Each
Inch: *Standard-reading inches to 8ths and 16ths front.*						
6″	3/4″	0.02″	Square	No	2388A52	$3.32
Inch: *Quick-reading inches to 32nds and 64ths front.*						
6″	1/2″	0.02″	Round	Yes	6813A61	2.50
6″	3/4″	0.02″	Square	No	2388A53	4.00
Inch: *Standard-reading inches to 32nds and quick-reading 64ths front.*						
6″	1/4″	0.02″	Square	Yes	6813A63	2.62
Rigid Inch: *Standard-reading inches to 8ths and 16ths front; quick-reading 32nds and 64ths back.*						
6″	3/4″	0.035″	Square	No	2388A72	6.59
12″	1″	0.035″	Square	No	2388A74	13.04
Inch/Decimal Inch: *Quick-reading inches to 10ths and 100ths front; 32nds and 64ths back.*						
6″	15/32″	0.02″	Square	No	2388A71	5.50
12″	15/32″	0.02″	Square	No	2388A73	9.29
Inch/Metric: *Standard-reading inches to 16ths and mm front.*						
6″/150 mm	1/4″	0.02″	Square	Yes	6813A64	2.62
6″/150 mm	1/2″	0.02″	Round	No	2388A51	2.19
Inch/Metric: *Quick-reading inches to 32nds and standard-reading mm front.*						
6″/150 mm	3/4″	0.02″	Square	No	2388A55	3.32
Inch/Metric: *Standard-reading inches to 64ths and mm front.*						
6″/150 mm	1/2″	0.02″	Round	Yes	2388A57	2.54
Metric: *Standard-reading mm and 1/2 mm front.*						
150 mm	1/2″	0.02″	Round	Yes	6813A62	2.62

Stainless Steel Center-Finding Rules

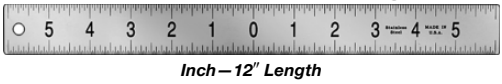

Inch—12″ Length

Forget the math—locating exact centers is easy with one of these Type 301 stainless steel rules. Simply position rule so the same reading is shown on the right and left edge of the object you are measuring. The center will be located at 0. All rules are semiflexible with black etched graduations and a 1/4″ dia. hang-up hole.

Length	Width	Thick.		Each
Inch: *Inches to 16ths zero-centered top; 32nds zero-centered bottom.*				
12″	1 1/4″	1/32″	2346A23	$6.63
18″	1 1/4″	1/32″	2346A28	8.70
24″	1 1/4″	1/32″	2346A25	8.98
36″	1 1/4″	1/32″	2346A26	25.50
48″	1 1/4″	1/32″	2346A27	34.02
Inch/Metric: *Inches to 16ths zero-centered top and 16ths bottom on front; cm to mm zero-centered top and cm to mm bottom on back.*				
18″	1 1/4″	1/32″	2346A31	9.96
24″	1 1/4″	1/32″	2346A32	12.92
36″	1 1/4″	1/32″	2346A33	34.58

Stainless Steel Hook Rules

Hook end grabs edges for easier aligning. Made of Type 301 stainless steel, rules are semiflexible and have black etched graduations and a 1/4″ dia. hang-up hole.

Length	Width★	Thick.		Each
Inch/Metric: *Inches to 32nds top and cm to mm bottom on both sides.*				
12″	13/16″	1/32″	20155A41	$15.06
18″	13/16″	1/32″	20155A42	22.03
24″	13/16″	1/32″	20155A43	29.74

★ Does not include the hook.

Stainless Steel Printers' Pica Rules

A must for work with type. Rules are corrosion-resistant Type 301 stainless steel and semiflexible. They have black etched graduations and a 1/4″ dia. hang-up hole.

Length	Width★	Thick.		Each
Inch/Pica: *Inches to 16ths and picas to 6 and 12 points front; picas to 8 and 10 points back.*				
12″	13/16″	1/32″	2270A11	$9.68
18″	13/16″	1/32″	2270A12	12.79
24″	13/16″	1/32″	2270A13	17.14

★ Does not include the hook.

Stainless Steel Cork-Backed Rules

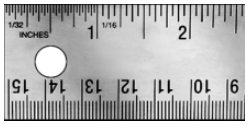

A nonslip cork back protects delicate work while you measure. Rules have black etched graduations.

Length	Width	O'all Thick.	Hole Dia.		Each
Rigid Rules— *Type 420 Stainless Steel*					
Inch/Metric: *Inches to 32nds (first inch) and 16ths (thereafter) top; cm to mm bottom.*					
6″/ 150 mm	1 1/4″	0.060″	5/16″	1943A31	$4.17
12″/ 300 mm	1 1/4″	0.060″	5/16″	1943A32	5.40
18″/ 450 mm	1 1/4″	0.060″	5/16″	1943A33	6.60
Semiflexible Rules— *Type 301 Stainless Steel*					
Inch: *Inches to 32nds (first inch) and 16ths (thereafter) top and bottom.*					
6″	1 1/8″	0.051″	1/4″	1943A21	5.42
12″	1 1/8″	0.051″	1/4″	1943A22	6.25
18″	1 1/8″	0.051″	1/4″	1943A23	7.50
24″	1 1/8″	0.051″	1/4″	1943A24	9.55
Inch: *Inches to 16ths top and bottom.*					
36″	1 1/8″	0.051″	1/4″	1943A25	15.28
Inch/Metric: *Inches to 16ths top; cm to mm bottom.*					
24″/ 610 mm	1 1/8″	0.051″	1/4″	1943A34	9.55
36″/ 910 mm	1 1/4″	0.051″	1/4″	1943A35	15.28
48″/1,210 mm	1 1/8″	0.065″	1/4″	1943A36	42.16

Easy-to-Read Rules

See your measurements at a glance. Rules are black with engraved, high-contrast silver graduations for legibility.

Stainless steel rules provide more corrosion resistance and are quick-reading with numbered subdivisions for even easier measuring.

Aluminum Rigid Rules

Length	Width	Thick.	*Left to Right*	*Right to Left*	Each
Inch: *Standard-reading inches to 16ths top.*					
12″	1″	0.09″	1970A31	1970A311	$7.90
24″	1″	0.09″	1970A32	1970A321	15.95
36″	1″	0.09″	1970A33	1970A331	23.77
48″	1″	0.09″	1970A34	1970A341	31.70
60″	1″	0.09″	1970A35	1970A351	39.64
72″	1″	0.09″	1970A36	1970A361	47.54
96″	1″	0.09″	1970A37	1970A371	76.42
144″	1″	0.09″	1970A38	1970A381	133.94
Inch: *Standard-reading inches to 16ths bottom.*					
12″	1″	0.09″	1970A41	1970A411	7.90
24″	1″	0.09″	1970A42	1970A421	15.95
36″	1″	0.09″	1970A43	1970A431	23.77
48″	1″	0.09″	1970A44	1970A441	31.70
60″	1″	0.09″	1970A45	1970A451	39.64
72″	1″	0.09″	1970A46	1970A461	47.54
96″	1″	0.09″	1970A47	1970A471	76.42
144″	1″	0.09″	1970A48	1970A481	133.94
Inch/Metric: *Standard-reading cm to mm top; inches to 16ths bottom.*					
20″/ 50 cm	1″	0.09″	1970A71	_____	14.97
40″/101 cm	1″	0.09″	1970A72	_____	29.95
60″/152 cm	1″	0.09″	1970A73	_____	44.66
80″/203 cm	1″	0.09″	1970A74	_____	59.65
100″/254 cm	1″	0.09″	1970A75	_____	81.25
Metric: *Standard-reading cm to mm top.*					
50 cm	1″	0.09″	1970A52	1970A521	11.58
100 cm	1″	0.09″	1970A53	1970A531	23.85
150 cm	1″	0.09″	1970A54	1970A541	39.68
200 cm	1″	0.09″	1970A55	1970A551	49.99

Type 301 Stainless Steel Rules— *Left to Right*

Length	Width	*Rigid Rules 0.035″ Thick.*	Each	Width	*Flexible Rules 0.020″ Thick.*	Each
Inch: *Quick-reading inches to 32nds and 64ths front; 8ths and 16ths back.*						
6″	3/4″	21215A9	$9.63	1/2″	21215A1♣	$9.02
12″	1″	21215A11	15.06	1/2″	21215A2	13.87
18″	1 3/16″	21215A12	24.10	3/4″	21215A3	26.50
24″	1 3/16″	21215A13	35.54	3/4″	21215A4	35.54
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 10ths and 100ths back.*						
6″	3/4″	21215A14	9.63	1/2″	21215A5♣	9.04
12″	1″	21215A15	15.06	1/2″	21215A6	13.87
18″	1 3/16″	21215A16	26.50	3/4″	21215A7	26.50
24″	1 3/16″	21215A17	35.54	3/4″	21215A8	35.54

♣ Rule is semiflexible.

Aluminum Rules

Rules are lightweight, rust resistant, and rigid with black printed graduations (unless noted). ***Rules with certificate*** include a certificate of calibration traceable to NIST (Nat'l. Institute of Standards and Technology).

Length	Width	Thick.	Hole Dia.		Each
Left to Right Graduations on Top; Right to Left on Bottom					
Inch: *Inches to 8ths top; 16ths bottom.*					
12″	7/8″	0.040″	1/4″	2014A11	$2.69
18″	2″	0.109″	3/8″	2014A12▲	3.18
24″	2″	0.109″	3/8″	2014A1▲	3.71
36″	2″	0.109″	3/8″	2014A2▲	5.29
48″	2″	0.109″	3/8″	2014A3▲	7.57
60″	2″	0.125″	3/8″	2014A4▲	12.12
72″	2″	0.125″	3/8″	2014A5▲	13.97
144″	2″	0.094″	1/4″	2014A7	88.11
Inch with Certificate: *Inches to 8ths top; 16ths bottom.*					
12″	7/8″	0.040″	1/4″	2363A12	6.17
18″	1 1/4″	0.040″	3/8″	2363A13	9.17
24″	1 1/4″	0.063″	3/8″	2363A14	10.84
36″	1 1/2″	0.063″	3/8″	2363A15	14.76
Metric: *cm top; cm to mm bottom.*					
100 cm	2″	0.125″	5/16″	1971A56	10.36
150 cm	2″	0.125″	5/16″	1971A57	17.04
200 cm	2″	0.125″	5/16″	1971A58	21.66
Left to Right Graduations on the Top and Bottom					
Inch: *Inches to 32nds top; 16ths bottom.*					
6″	3/4″	0.040″	—	2014A9♣	2.34
Inch with Certificate: *Inches to 32nds top; 16ths bottom.*					
6″	3/4″	0.040″	—	2363A11♣	5.09
Inch: *Inches to 8ths top; 16ths bottom.*					
96″	2″	0.125″	3/8″	2014A6▲	23.19
Inch/Metric: *cm to mm top; inches to 16ths bottom.*					
12″/ 30 cm	1″	0.040″	1/4″	1971A42	3.11
18″/ 45 cm	1 3/8″	0.040″	1/4″	1971A43	5.46
24″/ 61 cm	1 3/8″	0.040″	1/4″	1971A44	7.21
39″/100 cm	1 3/8″	0.063″	1/4″	1971A21	10.71
59″/150 cm	1 1/2″	0.063″	1/4″	1971A46	19.40
78″/200 cm	1 1/2″	0.063″	1/4″	1971A47	31.23
Inch/Metric: *Inches to 16ths top; cm to mm bottom.*					
48″/122 cm	2″	0.125″	3/8″	1971A45	13.00
Metric: *cm to mm top; cm bottom.*					
30 cm	1 3/8″	0.040″	1/4″	1971A52	3.28
45 cm	1 3/8″	0.040″	1/4″	1971A53	5.53
60 cm	1 3/8″	0.063″	1/4″	1971A54	7.21
75 cm	1 3/8″	0.063″	1/4″	1971A55	9.37

▲ Graduations are painted. ♣ Does not have a hang-up hole.

Transparent Rules

Don't lose sight of your measuring.

***A*—**Rules are rigid PVC with red printed graduations, a 1/8″ × 1/8″ graph grid, a centering scale, and slightly beveled edges.

***B*—**These rigid acrylic rules have dark gray printed graduations, a 1/8″ × 1/2″ graph grid, a centering scale, a 1/4″ dia. hang-up hole, one beveled edge, and one stainless steel edge.

***C*—**Made of flexible polyester film, rule has fine black photographically printed graduations.

***D*—**Rules are rigid PVC with red printed graduations, a 1/8″ × 1/8″ graph grid, and a centering scale.

A

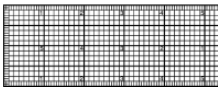

B

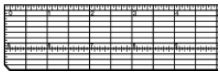

C

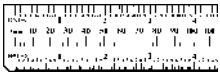

D

	Length	Width	Thick.		Each
Inch: *Inches to 16ths.*					
A	12″	2″	0.040″	20345A25	$2.79
A	18″	2″	0.050″	20345A28	4.16
B	12 1/2″	1 1/2″	0.120″	20345A21	6.26
B	18 1/2″	1 1/2″	0.120″	20345A22	10.47
Inch/Decimal Inch/Metric: *Inches to 32nds and 100ths; mm to 1/2 mm.*					
C	6″	1 1/2″	0.007″	89715A65	4.26
Inch/Metric: *Inches to 16ths; cm to mm.*					
D	12″	1″	0.030″	20345A35	1.71

Steel Circumference Rules

Also known as tinners' rules. On the front, these semiflexible steel rules have a full-inch diameter scale on top and corresponding circumference scale on bottom. The back has tables for laying out measures and formulas for calculating circumference, diameter, and area. Rules have deeply etched black graduations and a 1/4″ dia. hang-up hole. Diameter graduations in inches to 16ths on the top; circumference in inches to 8ths on the bottom. Rules are 1 1/4″ Wd. × 0.063″ Thick.

36″ Dia./113″ Circumference	2132A1	Each	$63.42
48″ Dia./150″ Circumference	2132A2	Each	$80.75

Aluminum Tenth-Reading Rules

Aluminum construction means rules are lightweight and rust-resistant. They're rigid with black printed graduations. All have quick-reading numbered subdivisions on the bottom for easy measuring.

Length	Width	Thick.		Each
Inch/Decimal Inch: *Inches to 10ths top; quick-reading 10ths bottom.*				
12″	1″	0.040″	1933A51	$10.16
24″	1″	0.040″	1933A52	13.42
36″	1″	0.040″	1933A53	20.16
48″	1″	0.063″	1933A54	29.43
60″	1″	0.063″	1933A55	43.10
72″	1″	0.063″	1933A56	54.18
96″	1″	0.063″	1933A57	87.07
120″	1″	0.063″	1933A58	110.30

Folding Rules

Outside Reading with Extension

Inside Reading

Bend the rules . . . or rather fold them. Rules fold up for convenient storage and transport. All are 5/8″ wide with brass-plated joints (unless noted) and black and red printed graduations (unless noted).

Outside-reading rules have graduations that start on the top slat.

Inside-reading rules have graduations that start on the bottom slat.

Extensions (where available) are 6″ long and make it easier to measure closed-in areas between doors, windows, etc. Wood rule has a brass extension; fiberglass rule has a black plastic extension.

Length	Material	Color	Reading	Extension		Each
Inch: *Inches to 16ths top and bottom.*						
6 ft.	Wood	White	Outside	No	19365A28	$15.07
6 ft.	Wood	White	Inside	No	19365A29	15.07
6 ft.	Wood	Yellow	Both	Yes	19365A21▲	20.21
6 ft.	Fiberglass	Yellow	Outside	No	19365A33♠	27.07
6 ft.	Fiberglass	Yellow	Outside	Yes	19365A31♠	28.70
6 ft.	Fiberglass	Yellow	Inside	No	19365A32♠	27.07
Inch/Decimal Inch: *Inches to 16ths top and bottom on outside; feet to 10ths and 100ths top and bottom on inside.*						
6 ft.	Wood	White	Both	No	1989A1	15.81
Inch/Metric: *Inches to 16ths top and bottom on inside; cm to mm top and bottom on outside.*						
6.5 ft./2 m	Wood	White	Both	No	19365A27	13.87
Vertical Inch/45° Scale: *Inches to 16ths top and bottom on outside; scaled to 45° in inches to 16ths on inside.*						
6 ft.	Wood	White	Both	No	19275A11▲	19.04

▲ Graduations are painted. ♠ Plastic joints.

Yardsticks and Metersticks

All have a convenient hang-up hole and black graduations.

Wood Yardstick

Length	Material	Width	Thick.	Hole Dia.		Each
Inch: *Inches to 8ths top; 16ths bottom.*						
36″	Aluminum	1 1/8″	0.063″	3/8″	1908A13	$3.06
Inch: *Inches to 8ths top and fractions of a yard bottom on both sides.*						
36″	Wood	1 1/8″	0.250″	7/32″	1908A15	3.37
Inch/Metric: *Inches to 8ths top; cm to mm bottom.*						
1 meter	Aluminum	1 1/8″	0.063″	3/8″	6826A11	4.11

Electronic Map and Plan Measurer

Quickly and easily read distances on maps, plans, and blueprints—simply use the measurer's wheel to trace lines on plans and then get measurements in 111 different scales. Measures in miles, yards, feet, inches, kilometers, meters, and centimeters. Measurer has two user-defined scales, a 7-digit display, and an automatic shut-off. It calculates areas and volumes and can be used as a counter. Operates on two AAA batteries (included).

Optional computer interface kit allows data transmission to a PC. ***Optional carrying case*** is hard plastic.

		Each
Measurer	19895A75	$79.15
Optional Computer Interface Kit	19895A22	63.69
Optional Carrying Case	19895A23	9.92
Replacement AAA Battery	65605T71	.79

Mitutoyo Electronic Scales

Get quick, easy, and precise measurements. Simply mount these scales to almost any surface and slide the encoder/display unit to take measurements; LCD displays to 0.0005″ (0.01 mm). Accuracy is 0.001″/0.03 mm (unless noted). All have a stainless steel blade; zero-set button; ABS (absolute) position, which retains the measuring position even when turned off; an SPC data output port; and a low battery warning. Include one 1.5-volt silver oxide battery and two mounting brackets with 17/64″ dia. holes. ***SPC cable*** transfers data output to SPC processors (SPC processors not included; see 1825A on page 2270).

Range	Overall Length	Scale Width	Mitutoyo No.		Each
0″- 4″/0-100 mm	8¼″	5/8″	572-210-20	20735A71	$221.00
0″- 4″/0-100 mm	8¼″	5/8″	572-613	20735A83 ♦	268.00
0″- 6″/0-150 mm	10³⁄₁₆″	5/8″	572-211-20	20735A72	235.00
0″- 6″/0-150 mm	10³⁄₁₆″	5/8″	572-614	20735A84 ♦	291.00
0″-12″/0-300 mm	17³¹⁄₆₄″	5/8″	572-213-10	20735A73 ♣	527.00
0″-18″/0-450 mm	23⅜″	25/32″	572-474	20735A58 ♣	737.00
0″-24″/0-600 mm	30³¹⁄₆₄″	25/32″	572-475	20735A59 ♣	817.00
SPC Cable for 20735A71, A72, A73, A58, A59				20395A67	36.75
SPC Cable for 20735A83, A84				20395A81	86.30
Replacement 1.5-volt Silver Oxide Battery				21105A201	2.34

♦ Has a sealed IP66-rated housing. Accuracy is ±0.01″/0.25 mm.
♣ Accuracy is 0.002″/0.04 mm.

Electronic Scales with Digital Display

Taking quick and accurate measurements couldn't be easier. Simply attach the scale and encoder to almost any surface, and then position the display control panel up to 10 ft. away. Slide the encoder along the scale to take measurements. Accuracy is ±0.008″/0.20 mm (unless noted).

All scales have a push-button control that allows you to measure fractions (16ths, 32nds, and 64ths), decimal inches (0.0001″), and millimeters (0.01 mm). They include an aluminum blade; an easy-to-read LCD; a 10 ft. long remote cable for the display panel; a zero-set button (set the zero-point at any position); ABS (absolute) positioning, which retains the measuring position even when turned off; and a low-battery indicator. 8971A71 and *A72* mount with a #10 screw; 8971A73, *A74, and A75* with #8 screws. Operate on two AA batteries (not included) or 24 VDC power.

Range	Scale Lg.	Scale Wd.	No. of Mtg. Holes		Each
0- 10″/250 mm	14¼″	¾″	1	8971A71★	$497.54
0- 18″/450 mm	22¼″	¾″	1	8971A72♥	508.85
0- 52″/1.3 m	56″	2″	10	8971A73	701.07
0- 96″/2.4 m	100″	2″	14	8971A74	927.23
0-120″/3 m	124″	2″	16	8971A75	1,163.08
AA Battery				65605T72	.68

★ Accuracy is ±0.002″/0.04 mm. ♥ Accuracy is ±0.003″/0.08 mm.

Adhesive-Backed Half-Measure Scales

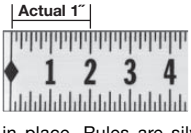

Rules have graduations that are half the distance of what is shown; thus, a 1″ graduation is actually only ½″, a 2″ graduation is actually only 1″, and so on. Great for finding diameters and centering applications. Permanently mount scales for hands-free use—just peel off the backing and stick them in place. Rules are silver polyester and 1″ Wd.×0.004″ Thick. with black screen-printed graduations.

To Order: For vertical rules, please specify top to bottom or bottom to top.

Actual Lg. (Grads.)	Left to Right	Each	Right to Left	Each	Vertical	Each
Inch: *Half-measure inches to 8ths top and bottom.*						
18″ (36″)	19425A41	$2.95	19425A44	$2.95	19425A71	$2.95
36″ (72″)	19425A42	6.04	19425A45	6.04	19425A72	5.89
72″ (144″)	19425A43	10.76	19425A46	12.07		
90″ (180″)	19425A61	15.09	19425A62	15.09		
135″ (270″)	19425A63	22.67	19425A64	22.67		

Wood Bench Rules

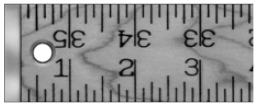

Work from either side of your bench with scales you can read from left to right on both sides. Rules are hard maple with a clear protective coating and have brass end caps, black etched graduations, and a hang-up hole.

Length	Width	Thick.	Hole Dia.		Each
Inch: *Inches to 16ths top and bottom front; 8ths top and bottom back.*					
36″	1½″	¼″	3/8″	2002A1	$26.00
48″	1½″	¼″	3/8″	2002A2	28.87
60″	1½″	¼″	3/8″	2002A3	34.44
72″	1½″	¼″	3/8″	2002A4	37.73

Flexible Magnetic-Backed Tape Scales

Get hands-free measurements without permanently mounting your scale. A magnetic back lets you easily attach scales to any steel surface. Scales have screen-printed graduations.

Lg.	Wd.	Thick.	Rule Color	Graduation Color		Each
Inch: *Inches to 16ths top; cm to mm bottom.*						
12″	¾″	0.050″	Red	White	19785A31	$5.41
24″	¾″	0.050″	Blue	White	19785A32	8.15
36″	¾″	0.050″	White	Black	19785A33	10.41
Set (One of each rule)					19785A41	Per Set $29.37

Continuous Horizontal Scales

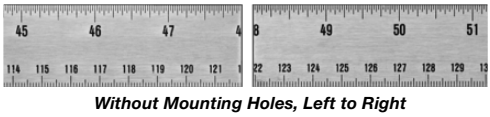

Without Mounting Holes, Left to Right

With flush ends, each scale continues seamlessly into the next, so you can create the length you need. Great for mounting on machinery and tables. Scales are Type 301 stainless steel and 1⅛″ Wd.×1/32″ Thick. with black etched graduations. ***Scales with mounting holes*** have two ¼″ dia. holes, each located 1″ from the end of the scale (fasteners not included).

Range	Without Mtg. Holes: Left to Right	Right to Left	With Mtg. Holes: Left to Right	Each
Inch/Metric: *Inches to 32nds top; cm to mm bottom.*				
0″- 48″/ 0-120 cm	89665A65	89665A69	89665A81	$42.29
48″- 96″/120-240 cm	89665A66	89665A7	89665A82	42.29
96″-144″/240-360 cm	89665A67	89665A71	89665A83	42.29
144″-192″/360-480 cm	89665A68	89665A72	89665A84	42.29

Vertical Rules

Inch/ Metric

Tired of reading sideways when measuring heights and depths? Rules read vertically from top to bottom. All are aluminum with black screen-printed graduations and a ¼″ dia. hang-up hole.

Length	Width	Thick.		Each
Inch: *Inches to 8ths left side; 16ths right side.*				
36″	1″	1/16″	1932A65	$11.83
Inch/Metric: *Inches to 16ths left side; cm to mm right side.*				
40″/1,000 mm	1 1/16″	1/16″	1932A66	15.44

Continuous Vertical Scales

Bottom to Top

Flush ends allow you to form a continuous scale. Plus, they read vertically so they're great for measuring heights and tank levels. Scales are Type 301 stainless steel and 1⅛″ Wd.×1/32″ Thick. with black etched graduations.

Range, Inches/cm	Bottom to Top	Each	Top to Bottom	Each
Inch/Metric: *Inches to 32nds right side; cm to mm left side.*				
0- 48/ 0-120	89665A73	$42.29	89665A77	$42.29
48- 96/120-240	89665A74	42.29	89665A78	42.29
96-144/240-360	89665A75	42.29	89665A79	42.29
144-192/360-480	89665A76	42.29		

Adhesive-Backed Extra-Thick Vertical Floor Scales

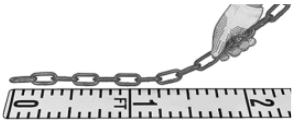

Measuring materials on your floor is no longer a problem—simply adhere these scales to your floor and roll out your material. Scales are extra thick for durability and have a polycarbonate coating for abrasion and chemical resistance. They read vertically, have screen-printed black one-inch graduations on a yellow background, and are 0.012″ thick.

Length	2″ Wide Scales	Each	4″ Wide Scales	Each
12½ ft.	2403A31	$15.00	2403A11	$30.00
25 ft.	2403A33	30.25	2403A13	60.00
50 ft.	2403A34	60.00	2403A14	120.00
75 ft.	2403A35	90.00	2403A15	180.00
100 ft.	2403A36	120.00	2403A16	240.00

Adhesive-Backed Horizontal Scales

Scales permanently mount to any clean, smooth surface—simply peel off the backing and stick them in place. All have black screen-printed graduations that show continuous inches and/or mm, unless stated otherwise. They can be cut to size with scissors or a utility knife. ***Polyester*** scales are water resistant and 0.004″ thick. Scales longer than 1½ ft. come in 3-ft. long segments. ***Vinyl*** scales are water resistant, 0.006″ thick, and come in 7½-ft. long segments. ***Steel*** scales are durable, 0.0075″ thick (unless noted), and come in one full-length segment. ***Paper*** scales are paper stock that you can write on. Scales are 0.007″ thick. The *inch scales* have inches that are continuous from 1″ to 36″ and then repeat every three feet. The *metric scale* has continuous mm that repeat every meter.

Polyester Metric

Steel Inch

Length	Width	Rule Color	Left to Right	Left to Right Each	Right to Left	Right to Left Each
Polyester						
Inch: *Inches to 16ths top.*						
1 ft.	½″	Clear	19325A42	$2.03	19325A31	$2.03
1 ft.	½″	Silver	1910A52	1.87	1910A62	1.87
3 ft.	½″	Clear	19325A43	6.10	19325A32	6.10
3 ft.	½″	Silver	1910A53	5.61	1910A63	5.61
6 ft.	½″	Clear	19325A44	12.20	19325A33	12.20
6 ft.	½″	Silver	1910A54	11.22	1910A64	11.22
9 ft.	½″	Clear	19325A45	18.30	19325A34	18.30
9 ft.	½″	Silver	1910A55	16.83	1910A65	16.83
12 ft.	½″	Clear	19325A46	20.98	19325A35	20.98
12 ft.	½″	Silver	1910A56	19.29	1910A66	19.29
24 ft.	½″	Silver	1910A12	44.88	1910A15	44.88
30 ft.	½″	Silver	1910A13	56.10	1910A16	56.10
Inch: *Inches to 16ths top and bottom.*						
1 ft.	1¼″	Clear	19325A47	1.67	19325A36	1.67
1 ft.	1¼″	Silver	1910A41	1.54	1910A21	1.54
1½ ft.	1¼″	Silver	1910A42	2.31	1910A22	2.31
3 ft.	1¼″	Clear	19325A48	5.02	19325A37	5.02
3 ft.	1¼″	Silver	1910A43	4.62	1910A23	4.62
6 ft.	1¼″	Clear	19325A49	9.02	19325A38	10.04
6 ft.	1¼″	Silver	1910A44	9.24	1910A24	9.24
9 ft.	1¼″	Clear	19325A51	15.07	19325A39	15.07
9 ft.	1¼″	Silver	1910A45	13.86	1910A25	13.86
12 ft.	1¼″	Clear	19325A52	20.09	19325A41	20.09
12 ft.	1¼″	Silver	1910A46	18.48	1910A26	18.48
18 ft.	1″	Silver	1910A71	29.70	1910A76	29.70
24 ft.	1″	Silver	1910A72	39.60	1910A77	39.60
36 ft.	1″	Silver	1910A73	59.40	1910A78	59.40
48 ft.	1″	Silver	1910A74	79.20	1910A79	79.20
60 ft.	1″	Silver	1910A75	92.32	1910A81	92.32
Inch: *Inches to 32nds top.*						
1 ft.	½″	Silver	1910A11	1.87	1910A14	1.87
3 ft.	½″	Silver	1910A47	5.61	1910A27	5.61
6 ft.	½″	Silver	1910A48	11.22	1910A28	11.22
9 ft.	½″	Silver	1910A49	16.83	1910A29	16.83
12 ft.	½″	Silver	1910A51	19.29	1910A31	19.29
Metric: *cm to mm top.*						
1 m	½″	White	8965A61	6.76	8965A65	6.76
2 m	½″	White	8965A62	13.60	8965A66	13.60
3 m	½″	White	8965A63	20.26	8965A67	20.26
4 m	½″	White	8965A64	27.02	8965A68	27.02
Metric: *cm to mm top and bottom.*						
1 m	¾″	White	8965A31	6.37	8965A35	6.37
1 m	1″	White	8965A41	5.98	8965A45	5.98
2 m	¾″	White	8965A32	12.74	8965A36	12.74
2 m	1″	White	8965A42	11.96	8965A46	11.96
Metric: *mm top and bottom.*						
1 m	½″	White	8965A21	6.75	8965A25	6.75
2 m	½″	White	8965A22	13.51	8965A26	13.51

Length	Width	Rule Color	Left to Right	Left to Right Each	Right to Left	Right to Left Each
Vinyl						
Inch: *Inches to 4ths top and bottom.*						
7½ ft.	3″	Yellow	19415A11	$16.14	19415A17	$16.14
15 ft.	3″	Yellow	19415A12	32.28	19415A18	32.28
22½ ft.	3″	Yellow	19415A13	48.42	—	—
30 ft.	3″	Yellow	19415A14	64.57	—	—
45 ft.	3″	Yellow	19415A15	92.70	—	—
60 ft.	3″	Yellow	19415A16	124.85	—	—
Steel						
Inch: *Inches to 8ths bottom.*						
25 ft.	⅜″	Yellow	1909A55✓	26.74	1909A24✓	26.74
50 ft.	⅜″	Yellow	1909A45✓	39.56	1909A25✓	39.56
100 ft.	⅜″	Yellow	1909A46✓	58.83	—	—
Inch: *Inches to 8ths top; 32nds (first foot) and 16ths (thereafter) bottom.*						
6 ft.	¼″	Yellow	1909A12	5.30	—	—
10 ft.	¼″	Yellow	1909A13	7.47	—	—
Inch: *Inches to 16ths bottom.*						
25 ft.	⅜″	Yellow	1909A21	26.74	1909A18	26.74
50 ft.	⅜″	Yellow	1909A22	39.56	1909A19	39.56
Inch: *Inches to 16ths top; 32nds (first foot) and 16ths (thereafter) bottom.*						
4 ft.	½″	White	1909A41▲	5.20	—	—
6 ft.	½″	White	—	—	1909A42▲	8.38
6 ft.	¾″	White	1909A71▲	9.21	—	—
12 ft.	½″	White	1909A43▲	8.20	1909A44▲	8.20
Inch: *Inches to 32nds (first foot) and 16ths (thereafter) top and bottom.*						
16 ft.	¾″	Yellow	1909A17●	17.11	1909A17●	17.11
Inch/Metric: *Inches to 8ths top; mm bottom.*						
26 ft./ 7.9 m	⅜″	Yellow	1909A29	26.74	—	—
50 ft./15.2 m	⅜″	Yellow	1909A31	39.56	—	—
Inch/Metric: *Inches to 32nds (first foot) and 16ths (thereafter) top; mm bottom.*						
4 ft./1.2 m	½″	White	1909A52▲	7.64	—	—
6 ft./1.8 m	¾″	White	1909A53▲	9.21	—	—
12 ft./3.6 m	½″	White	1909A54▲	8.20	1909A56▲	8.20
Metric: *mm top and bottom.*						
3 m	½″	Yellow	1909A72	13.55	1909A73	13.55
8 m	¾″	Yellow	1909A26	27.80	—	—
Metric: *cm to mm bottom.*						
3 m	¼″	Yellow	1909A59	7.47	—	—
8 m	⅜″	Yellow	1909A27■	26.74	—	—
15 m	⅜″	Yellow	1909A28■	39.56	—	—
Paper						
Inch: *Inches to 8ths bottom.*						
60 ft.	⅝″	Orange	—	—	1937A31	13.96
60 ft.	⅝″	Yellow	1937A21	13.96	—	—
Metric: *cm to mm bottom.*						
20 m	⅝″	Yellow	1937A22	13.96	—	—

✓ Continuous inches that repeat every foot. ▲ 0.012″ thick. ● Graduations are right to left and left to right. ■ Continuous cm that repeat every meter.

Adhesive-Backed Vertical Scales

Scales permanently mount to most clean, smooth surfaces—simply peel off the backing and stick them in place. All are water resistant with black screen-printed graduations that show continuous inches and can be cut to size with scissors or a utility knife. *Note:* Scales longer than 3 ft. come in 3-ft. long + remaining ft. segments (unless noted).

Clear, silver, and ***white scales*** are 0.005″ thick polyester. ***Yellow scales*** are 0.007″ thick vinyl.

Top to Bottom

Lg.	Wd.	Color	Bottom to Top	Bottom to Top Each	Top to Bottom	Top to Bottom Each
Inch: *Inches to 16ths.*						
1 ft.	½″	Clear	19395A21	$2.03	19395A32	$2.03
1 ft.	1¼″	Clear	19395A26	1.67	19395A37	1.67
1 ft.	1¼″	Silver	20325A16	1.67	20325A17	1.67
1½ ft.	1¼″	Silver	20325A11	2.26	20325A18	2.26
3 ft.	½″	Clear	19395A22	5.29	19395A33	5.29
3 ft.	1¼″	Clear	19395A27	4.62	19395A38	4.62
3 ft.	1¼″	Silver	20325A12	4.62	20325A31	4.62
6 ft.	½″	Clear	19395A23	11.00	19395A34	11.00
6 ft.	1¼″	Clear	19395A28	9.06	19395A39	9.06
6 ft.	1¼″	Silver	20325A13	9.06	20325A32	9.06
9 ft.	½″	Clear	19395A24	15.58	19395A35	15.58
9 ft.	1¼″	Clear	19395A29	14.44	19395A41	14.44
9 ft.	1¼″	Silver	20325A14	14.44	20325A33	14.44
12 ft.	½″	Clear	19395A25	17.86	19395A36	17.86
12 ft.	1¼″	Clear	19395A31	19.45	19395A42	19.45
12 ft.	1¼″	Silver	20325A15	19.45	20325A34	19.45

Lg.	Wd.	Color	Bottom to Top	Bottom to Top Each	Top to Bottom	Top to Bottom Each
Inch: *Inches to 4ths.*						
4 ft.	3″	Yellow	20335A71	$8.72	—	—
6 ft.	3″	Yellow	20335A72♠	13.26	—	—
8 ft.	3″	Yellow	20335A73♠	17.21	—	—
12 ft.	3″	Yellow	20335A65♠	25.28	—	—
20 ft.	3″	Yellow	20335A66♠	36.67	—	—
24 ft.	3″	Yellow	20335A67♠	48.49	—	—
32 ft.	3″	Yellow	20335A68♠	67.40	—	—
36 ft.	3″	Yellow	20335A69♠	77.48	—	—
Decimal Inch: *Inches to 10ths.*						
3 ft.	½″	White	1919A71	5.29	1919A75	$5.29
6 ft.	½″	White	1919A72	11.00	1919A76	11.00
9 ft.	½″	White	1919A73	15.58	1919A77	15.58
12 ft.	½″	White	1919A74	17.86	1919A78	17.86

♠ Comes in one 4-ft. long segment + remaining ft. segments.

Nonlocking Tape Rules

Pocket Tape Rule

Chrome-Plated-Blade Tape Rule

Pocket Tape Rules—Slip into your pocket for comfortable, go-anywhere convenience. Blade is yellow steel with red and black painted graduations (unless noted) and automatic return. Case is ABS plastic and only 2″ Lg.×1⅞″ Ht.×½″ Thick.

Tape Rules with Belt Clip—Have a chrome-plated ABS plastic case with belt clip. Blade is yellow steel with red and black painted graduations and automatic return.

Chrome-Plated-Blade Tape Rules—Have a chrome-plated steel blade with black painted graduations and automatic return. Rules resist chemicals, solvents, and heat. Case is chrome-plated ABS plastic.

Blade Length	Blade Width	Case Color		Each
Pocket Tape Rules				
Inch: *Inches to 32nds (first foot) and 16ths (thereafter) bottom.*				
6 ft.	¼″	Black	20105A14	$6.30
6 ft.	¼″	Orange	20105A65	6.30
10 ft.	¼″	Black	20105A18	6.60
Inch/Metric: *Inches to 16ths top; cm to mm bottom.*				
10 ft./3 m	¼″	Black	20105A22★	8.32
Tape Rules with Belt Clip				
Inch: *Inches to 16ths top; 32nds (first foot) and 16ths (thereafter) bottom.*				
8 ft.	½″	Chrome	1978A12	12.20
10 ft.	½″	Chrome	1978A13	12.40
12 ft.	½″	Chrome	1978A14	14.29
12 ft.	¾″	Chrome	1978A4	18.76
Inch/Metric: *Inches to 32nds (first foot) and 16ths (thereafter) top; mm bottom.*				
10 ft./3 m	½″	Chrome	1978A34	13.09
Chrome-Plated-Blade Tape Rules				
Inch: *Inches to 32nds (first 6″) and 16ths (thereafter) top; inches to 16ths bottom.*				
12 ft.	½″	Chrome	1968A54	23.11
Decimal Inch: *Inches to 10ths top and bottom.*				
12 ft.	½″	Chrome	1968A67	25.75

★ Black painted graduations.

Stainless Steel Tape Rules

All internal parts, including the blade, are made from corrosion-resistant 300 and 400 series stainless steels. Rules can be washed without harm and resist rust regardless of the environment.

Blade has black graduations on both sides and two end hooks—one facing down and one up. Blade is silver with a nonglare nylon coating that resists abrasion and wear. Case is gray ABS plastic with a blue rubber edge for a sure grip and impact resistance.

Blade Length	Blade Width		Each
Inch: *Inches to 16ths top and bottom on both sides of the blade.*			
16 ft.	1″	6366A34	$16.61
25 ft.	1″	6366A36	19.94
30 ft.	1″	6366A38	22.17

Quick-Read Tape Rules

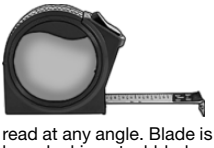

Never calculate a fraction of an inch again. Unlike other tape rules, quick-read rules include the fraction and decimal (unless noted) on every ⅛″ graduation. Plus, their large vertical numbers (unless noted) make them easy to read at any angle. Blade is yellow with black painted graduations. Rules have locking steel blades, an automatic return with a shock-absorbing stop, and a durable ABS plastic case with a removable belt clip.

Blade Length	Blade Width	Case Color		Each
Inch: *Inches to 16ths top and bottom.*				
12 ft.	¾″	Blue	6830A11	$10.45
16 ft.	¾″	Blue	6830A12	12.37
25 ft.	1″	Blue	6830A13	16.02
30 ft.	1″	Yellow	6830A14♣	16.09
35 ft.	1″	Yellow	6830A15♣	16.32

♣ Blade does not have decimals. Numbers are horizontal.

Lufkin Tape Rules

Series 2000 with Chrome-Finish Case

High-Visibility Series with Bright Orange Case

Rules fit nicely in your hand for comfortable measuring. They have an ABS plastic case with belt clip, a locking steel blade, and automatic return that's cushioned by a PVC bumper. Blade is yellow with black and red painted graduations, unless noted.

Blade Length	Blade Width	Lufkin No.	Tape Rule	Each	Repl. Blade	Each
Series 2000 with Chrome-Finish Case						
Inch: *Inches to 16ths top; 32nds (first foot) and 16ths (thereafter) bottom.*						
10 ft.	½″	2210	19805A64	$10.08	19805A84	$5.69
12 ft.	½″	2212	19805A65	11.40	19805A85	7.96
12 ft.	¾″	2312	19805A66	12.38	19805A86	9.69
16 ft.	¾″	2316	19805A67	15.36	19805A87	10.85
25 ft.	¾″	2325	19805A68	16.10	19805A88	12.50
Inch: *Inches to 16ths top and bottom.*						
25 ft.	1″	2125	19805A69	17.09	19805A89	14.65
30 ft.	1″	2130	19805A71	17.79	19805A91	14.65
33 ft.	1″	2133	19805A31	18.45		
Inch/Decimal Foot: *Feet to 10ths and 100ths top; inches to 16ths bottom.*						
12 ft.	¾″	2312D	19805A76★	13.10		
25 ft.	¾″	2325D	19805A77★	16.98		
33 ft.	1″	2133D	19805A32	18.45		
Inch/Metric: *Inches to 16ths top; cm to mm bottom.*						
10 ft./ 3 m	¾″	2333ME	19805A73	11.43		
16 ft./ 5 m	¾″	2335ME	19805A74	15.36		
Inch/Metric: *Inches to 32nds (first foot) and 16ths (thereafter) top; cm to mm bottom.*						
10 ft./ 3 m	½″	2223CME	19805A72	10.30		
13 ft./ 4 m	½″	2024CME	19805A28	9.75		
16 ft./ 5 m	¾″	2035CME	19805A34	15.24	19805A94	10.18
26 ft./ 8 m	¾″	2338CME	19805A75	16.98		
33 ft./10 m	1″	2410CME	19805A33	18.45		
Decimal Inch: *Inches to 10ths top; 50ths (first 6″) and 10ths (thereafter) bottom.*						
12 ft.	½″	2212X	19805A78★	11.17		
Decimal Inch/Metric: *cm to mm top; inches to 50ths (first foot) and 10ths (thereafter) bottom.*						
10 ft./ 3 m	½″	2210MEX	19805A83	12.60		
High-Visibility Series with Bright Orange Case						
Inch: *Inches to 16ths top; 32nds (first foot) and 16ths (thereafter) bottom.*						
10 ft.	½″	HV1010	68025A31	7.14	19805A84	5.69
12 ft.	½″	HV1012	68025A32	8.12	19805A85	7.96
12 ft.	¾″	HV1312	68025A34	10.35	19805A86	9.69
16 ft.	¾″	HV1316	68025A36	13.27	19805A87	10.85
25 ft.	¾″	HV1325	68025A39	15.92	19805A88	12.50
Inch: *Inches to 16ths top and bottom.*						
25 ft.	1″	HV1425	68025A42	15.85	19805A89	14.65
30 ft.	1″	HV1430	68025A45	16.82	19805A91	14.65
33 ft.	1″	HV1433	68025A62	17.75		
Inch/Decimal Foot: *Feet to 10ths and 100ths top; inches to 16ths bottom.*						
12 ft.	¾″	HV1312D	68025A58★	11.13		
25 ft.	¾″	HV1325D	68025A59★	15.92		
25 ft.	1″	HV1425D	68025A61	17.22		
Inch/Metric: *Inches to 32nds (first foot) and 16ths (thereafter) top; cm to mm bottom.*						
10 ft./ 3 m	½″	HV1023CME	68025A55	7.14		
16 ft./ 5 m	¾″	HV1035CME	68025A48	13.27	19805A94	10.18
26 ft./ 8 m	1″	HV1048CME	68025A52	15.85		
30 ft./ 9 m	1″	HV1049CME	68025A1	16.85		
33 ft./10 m	1″	HV1410CME	68025A12	17.58		
Metric: *cm to mm top and bottom.*						
3 m	13 mm	HV1023CM	68025A77	7.07		
5 m	19 mm	HV1035CM	68025A76	13.15		
8 m	25 mm	HV1048CM	68025A73	15.85		
Magnetic Tip with Bright Orange Case						
Inch: *Inches to 16ths top and bottom.*						
25 ft.	1″	L725MAG	68025A21	10.96		
25 ft.	1″	AL725MAG	68025A23◆	11.79		
Inch/Metric: *Inches to 32nds (first foot) and 16ths (thereafter) top; cm to mm bottom.*						
26 ft./ 8 m	1″	L748MAG	68025A22	10.96		

★ Black painted graduations. ◆ Has an auto-lock.

Starrett Certified Tape Rules

Measure with confidence—rules include a serial number and a certificate of calibration traceable to NIST (National Institute of Standards and Technology). They have a chrome-plated ABS plastic case, a belt clip, and a locking steel blade. Blade is yellow with black and red painted graduations.

Blade Length	Blade Width		Each
Inch: *Inches to 16ths top; 32nds (first foot) and 16ths (thereafter) bottom.*			
12 ft.	½″	1936A1	$35.17
Inch: *Inches to 16ths top and bottom.*			
25 ft.	1″	1936A2	38.41

Stanley Tape Rules

PowerLock

PowerLock w/Blade Armor

Max

FatMax

LeverLock

Rules all have locking blades for easier measuring and a yellow, polyester-coated steel blade with black and red painted graduations (unless noted). All except *LeverLock* rules have an automatic return.

PowerLock— Have a chrome-finish ABS plastic case (unless noted) with belt clip. *Model* 6802A63 has an attached key ring.

PowerLock with Blade Armor— A thermoplastic coating on the first 3″ provides longer blade life and prevents breaking. Blade is designed to remain rigid up to 8 ft. Case is ABS plastic with a chrome finish.

Heavy Duty— Have a chrome-finish cast metal case for added durability.

Stanley— Has a yellow ABS plastic case for high visibility and ridges for a nonslip grip. Blade is plastic-coated steel. Case has a belt clip.

Max— Have fast recoil and a rubber slide lock for increased hook life. Case is yellow ABS plastic with a nonslip rubber grip and belt clip.

Max with Blade Armor— Similar to Max rules, but they also have a thermoplastic coating on the first 3″ that provides longer blade life and prevents breaking. Blade remains rigid up to 8 ft.

FatMax— Have a durable extra-wide blade that remains rigid up to 11 ft. and a hook designed to grab from the top, side, and bottom. They also have fast recoil and an extra-large bumper for increased hook life. Case is yellow ABS plastic with a nonslip rubber grip and belt clip.

FatMax Extreme— Have a durable extra-wide blade that remains rigid up to 13 ft. Plus, a thermoplastic coating (blade armor) on the first 6″ provides extra durability. They also have fast recoil and an extra-large bumper for increased hook life. Case is yellow ABS plastic with a nonslip rubber grip and belt clip.

LeverLock— Have a plastic-coated steel blade that automatically locks when extended and stays locked until you squeeze the bottom release lever. All rules have a yellow ABS plastic case with a belt clip.

Blade Lg.	Blade Wd.	Stanley No.		Each
PowerLock				
Inch: *Inches to 32nds (first foot) and 16ths (thereafter) bottom.*				
3 ft.	1/4″	39-130	6802A63▲	$3.62
Inch: *Inches to 32nds (first foot) and 16ths (thereafter) top and bottom.*				
16 ft.	3/4″	33-116	6802A36	12.71
Inch: *Inches to 16ths top; inches to 32nds (first foot) and 16ths (thereafter) bottom.*				
12 ft.	1/2″	33-212	6802A33●	11.12
Inch: *Inches to 16ths top and bottom.*				
25 ft.	1″	33-425	6802A16	17.62
30 ft.	1″	33-430	6802A18	19.65
35 ft.	1″	33-835	6802A93	23.66
Inch/Metric: *Inches to 32nds (first foot) and 16ths (thereafter) top; cm to mm bottom.*				
12 ft./3.5 m	1/2″	33-215	6802A23●	11.54
16 ft./5 m	3/4″	33-158	6802A51	16.41
26 ft./8 m	1″	33-428	6802A57	20.27
PowerLock with Blade Armor				
Inch: *Inches to 32nds (first foot) and 16ths (thereafter) top.*				
16 ft.	1″	33-516	6802A72	14.65
Inch: *Inches to 16ths top and bottom.*				
25 ft.	1″	33-525	6802A73	17.83
Heavy Duty				
Inch: *Inches to 32nds (first foot) and 16ths (thereafter) top and bottom.*				
12 ft.	3/4″	33-312	6802A12	13.08
Inch/Decimal Inch: *Inches to 32nds (first 6″) and 16ths (thereafter) top; inches to 50ths (first 6″) and 10ths (thereafter) bottom.*				
12 ft.	1/2″	33-272	6802A77	12.51
Stanley				
Inch: *Inches to 16ths top; inches to 32nds (first foot) and 16ths (thereafter) bottom.*				
12 ft.	1/2″	30-485	20175A22	6.06
Inch/Fractions: *Inches to 16ths top; 1/8″ fractions on the bottom.*				
25 ft.	1″	30-454	20175A14	10.78
Max				
Inch: *Inches to 32nds (first foot) and 16ths (thereafter) top and bottom.*				
16 ft.	3/4″	33-692	6814A2	17.43

Blade Lg.	Blade Wd.	Stanley No.		Each
Max (Cont.)				
Inch: *Inches to 16ths top and bottom.*				
25 ft.	1 1/8″	33-279	6814A18	$12.46
Max with Blade Armor				
Inch: *Inches to 16ths top and bottom.*				
30 ft.	1″	33-800	6814A4	26.79
Inch/Metric: *Inches to 16ths top; cm to mm bottom.*				
26 ft./8 m	1″	33-948	6814A32	26.83
FatMax				
Inch: *Inches to 16ths top and bottom.*				
16 ft.	1 1/4″	33-716	6817A1	25.12
25 ft.	1 1/4″	33-725	6817A2	28.89
30 ft.	1 1/4″	33-730	6817A7	33.49
35 ft.	1 1/4″	33-735	6817A8	40.17
Inch/Metric: *Inches to 32nds (first foot) and 16ths (thereafter) top; cm to mm bottom.*				
26 ft./8 m	1 1/4″	33-726	6817A4	28.89
FatMax Extreme				
Inch: *Inches to 16ths top and bottom.*				
16 ft.	1 1/4″	33-885	6817A31	27.03
25 ft.	1 1/4″	33-890	6817A32	31.87
30 ft.	1 1/4″	33-895	6817A33	39.93
35 ft.	1 1/4″	33-900	6817A34	41.57
LeverLock				
Inch: *Inches to 16ths top; 32nds (first foot) and 16ths (thereafter) bottom.*				
12 ft.	1/2″	30-810	19175A61	7.14
16 ft.	3/4″	30-812	19175A62	9.67
Inch: *Inches to 16ths top and bottom.*				
25 ft.	1″	30-825	19175A63	13.89
30 ft.	1″	30-830	19175A22	16.87
Inch/Metric: *Inches to 32nds (first foot) and 16ths (thereafter) top; cm to mm bottom.*				
26 ft./8 m	1″	30-824L	19175A47	15.00
Inch/Fractions: *Inches to 16ths top and bottom; 1/8″ fractions bottom.*				
25 ft.	1″	33-281	19175A67♥	10.54

▲ Blade is lacquer-coated steel with black painted graduations. ● Case is zinc-plated steel. ♥ Blade has a magnetic tip.

Center-Finding Tape Rules

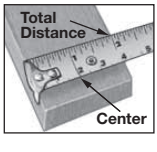

Quickly find the exact center of your work. Measure the total distance with the upper scale; then find the same number on the bottom scale—that's your center point. Tape rules have a yellow ABS plastic case with a rubber grip and a belt clip; a locking, lacquer-coated steel blade; and automatic return. Blade is yellow with black printed graduations.

Blade Length	Blade Width		Each
Inch: *Inches to 16ths top; half-measure scale on bottom.*			
16 ft.	3/4″	6807A16	$12.59
25 ft.	1″	6807A18	13.89

Special-Purpose Tape Rules

Multifeature

Multifeature— Need to do more than measure? Rule has a top window that allows you to read inside measurements and also includes a compass and level. Plus, it has a folding center point that allows you to turn the rule on the point creating arcs and circles. Case is black ABS plastic. Blade is yellow steel with black and red graduations. It locks and has automatic return.

ADA Code— For convenience, 88 of the most common ADA (Americans with Disabilities Act) specifications are printed on the blade. So at the 6″ graduation, you'll see the specification "6″ max ramp rise w/o handrails" and at the 4-ft. mark you'll see "48″ max (H) of accessible door hardware." Case is yellow plastic with a belt clip. Blade is yellow steel with black and red graduations. It locks and has automatic return.

	Blade Length	Blade Width		Each
Inch/Metric: *Inches to 16ths top; cm to mm bottom.*				
Multifeature	10 ft./3 m	1/2″	2184A12	$22.40
Inch: *Inches to 8ths top and bottom.*				
ADA Code	25 ft.	1″	23655A1	20.64

Narrow-Grip Tape Rules

A narrow shape and molded rubber grip give you a comfortable and secure hold when measuring. Rules have a locking steel blade with automatic return and a yellow ABS plastic case. Blade is yellow with red and black printed graduations.

Blade Length	Blade Width		Each
Inch: *Inches to 16ths top; inches to 32nds bottom.*			
25 ft.	1″	6887T11	$18.17
Inch/Metric: *Inches to 16ths top; cm to mm bottom.*			
25 ft.	1″	6887T12	18.17

Magnetic Holder for Tape Rules

No more fumbling as you try to clip your tape rule to your belt. Simply attach the metal adapter to your tape rule and then clip the magnetic holder to your belt. Tape rule "clicks" onto the magnet then snaps off when you need it. Fits most standard tape rules.

19685A2 ..... Each $14.22

Leather Tape-Rule Holder

Protect your tape rule. This leather holder has a rivet-reinforced pocket with safety strap that snaps in place to securely hold rule. It also has belt loops to fit belts up to 3″ wide.

For Tape Rules		Each
20 to 30 ft. Long	6774A15	$6.04

Magnetic Tip for Tape Rules

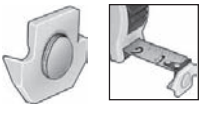

Don't wait for help—easily measure long distances by yourself with a magnetic tip that snaps onto the end of most 3/4″ and 1″ wide tape rules. Also provides up to 4 lbs. of magnetic pull for picking up metal objects. Color is yellow.

6887T31 ..... Each $2.31

Certified Precision Diameter Tapes

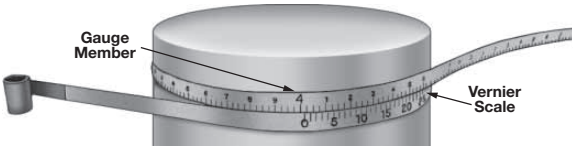

Get precise and accurate diameter measurements easily. Tapes are accurate to ±0.001″ and ±0.03 mm and include a certificate of accuracy traceable to NIST (National Institute of Standards and Technology). They're flexible metal with engraved and acid-etched black graduations that convert circumference distance into diameters. Tapes have a silver finish and include an aluminum canister. To use, simply wrap a tape around your object and match the graduations on the vernier scale and the gauge member to get the diameter value. ***Type 716 stainless steel*** tapes are for corrosive environments.

Also Available: Blue tape with white graduations and white tape with black graduations. For blue tape, please ask for 1982A61 and specify tape diameter range. For white tape, please ask for 1982A81 and specify tape diameter range. Prices for both tapes are approximately 50% higher than the Type 1095 spring steel tapes.

Tape Diameter Range	Tape Width	Type 1095 Spring Steel	Each	Type 716 Stainless Steel	Each
Inch: *Inches to 0.001″ diameter.*					
0.75″ to 7″	1/2″	1982A21	$92.20	1982A41	$130.54
2″ to 12″	1/2″	1982A22	92.20	1982A42	118.24
2″ to 24″	1/2″	1982A23	143.65	1982A44	171.22
12″ to 24″	1/2″	1982A24	98.00	1982A43	122.97
12″ to 36″	1/2″	1982A25	153.02	1982A45	182.57
24″ to 36″	1/2″	1982A26	108.13	1982A451	135.27
24″ to 48″	1/2″	1982A27	160.75	1982A46	202.43
36″ to 48″	1/2″	1982A28	116.48	1982A461	142.84
48″ to 60″	1/2″	1982A29	129.97	1982A47	158.92
60″ to 72″	1/2″	1982A31	143.65	1982A48	176.89
72″ to 84″	1/2″	1982A32	154.16	1982A49	192.97
84″ to 96″	1/2″	1982A33	170.15	1982A51	210.00
96″ to 108″	1/2″	1982A34	180.13	1982A52	219.46
108″ to 120″	1/2″	1982A35	196.09	1982A53	235.54
Metric: *mm to 0.01 mm diameter.*					
100 mm to 300 mm	1/2″	1982A11	110.59	_____	_____
300 mm to 600 mm	1/2″	1982A12	118.76	_____	_____

Flexible Tape Measures

Need flexible measuring? Try fiberglass-cloth with a vinyl-coating. Tapes are durable but flexible enough to wrap around curved objects. They're flat with brass end caps to prevent fraying and have easy-to-read black graduations.

Length	Width	Thick.	White Each	Yellow Each
Inch/Metric: *Inches to 16ths front; inches to 16ths and cm to mm back.*				
60″	5/8″	0.020″	3519A11 $1.75	3519A12 $1.75
Inch/Metric: *Inches to 8ths front; inches to 8ths and cm to mm back.*				
120″	5/8″	0.020″	_____ ____	3519A32 3.50

Diameter Tape Rules

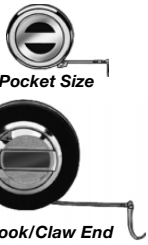

Easily find diameter and linear circumference. ***Pocket size*** measure up to 23″ in diameter and have a yellow steel blade with black painted graduations, automatic return, and a 1 3/4″ Dia. × 3/8″ Thick. chrome-plated steel case. Inch blades are 6 ft. Lg. × 1/4″ Wd.; metric are 2 m Lg. × 1/4″ Wd.

Hook/claw end and ***loop end*** rules, also known as tree tapes, measure up to 6′4″ in diameter and have a 20 ft. Lg. × 3/8″ Wd. steel blade, a manual-wind return, and a 3 3/8″ Dia. × 1 1/8″ Thick. vinyl-covered steel case. *Hook/claw end* rule has a chrome-plated blade with black painted graduations and a pointed end to grab the edge of objects or drive into wood. *Loop end* rule has a black blade with white graduations and a loop on the end. On the circumference side of the rule are diameter inches—each graduation equals 3.14″.

Graduations: Diameter (Front)	Circumference (Back)		Each
Pocket Size			
Inches to 64ths	Inches to 32nds (first foot) and 16ths (thereafter)	6822A17	$17.00
Inches to 100ths	Inches to 32nds (first foot) and 16ths (thereafter)	6822A12	17.00
cm to mm	cm to mm	6822A13	17.00
Hook/Claw End			
Inches to 10ths	Tenths and 100ths of a foot	6832A62	84.98
Loop End			
Inches to 16ths	3.14″ graduations	6832A64	95.35

Pocket Diameter Gauge

Measure the outside diameter of small round- and hex-shaped objects such as rods, drill bits, bolts, and tubing. Measures diameters from 3/32″ to 1 1/8″ and can be clipped to your pocket. To use, slide the thumb rest until the strap tightens on the item, then read the measurement at the thumb rest position. It has laser-etched graduations in inches and millimeters, an aluminum body, and a carbon fiber strap. Overall length is 5 1/2″.

6821A1 ..... Each $14.29

High-Visibility Long Measuring Tapes

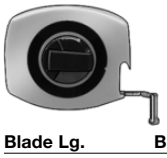

You can't miss these tapes—they have a bright yellow or neon orange case. They also have yellow steel blades with black and red painted graduations, easy-wind manual return, and an end hook ring that neatly stores in the contoured mouth of the case. Case is plastic with a belt clip (unless noted).

Blade Lg.	Blade Wd.	Case Color		Each
Inch: *Inches to 8ths.*				
50 ft.	3/8″	Neon Orange	6839A48	$13.80
50 ft.	3/8″	Yellow	6839A68♣	12.09
100 ft.	3/8″	Neon Orange	6839A49	20.34
100 ft.	3/8″	Yellow	6839A69♣	18.59
Inch/Metric: *Inches to 8ths front; cm to mm back.*				
50 ft./15 m	3/8″	Neon Orange	6839A75	14.41
100 ft./30 m	3/8″	Neon Orange	6839A76	21.22

♣ Case is ABS plastic and does not have a belt clip.

Starrett Certified Long Measuring Tapes

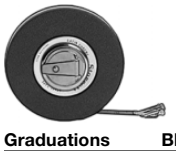

Accurately measure long lengths with tapes that include a certificate of calibration traceable to NIST (National Institute of Standards and Technology). Tapes have an extra-long, yellow enamel-coated steel blade with black and red painted graduations and smooth manual rewind. Include a steel case with red vinyl covering.

Graduations	Blade Length	Blade Width		Each
Inches to 8ths	100 ft.	3/8″	1936A3	$56.80
cm to mm	30 m	3/8″	1936A4	67.26

Long Measuring Tapes

Tapes have a manual rewind. ***Fast-winding*** tapes rewind in less time with a specially designed take-up reel and have a center-cutout hand hold.

Fiberglass Blade— Nonconductive, so they're perfect for work near electricity. They have an end hook and a black PVC-coated steel case. Blade is corrosion resistant, washable, and white with black and red graduations.

Yellow and ***Chrome-Plated Steel Blades—*** All of these tapes have a folding hook ring and vinyl-covered steel case (unless noted). *Yellow steel blades* have black and red graduations (unless noted); *chrome-plated steel blades* have black graduations.

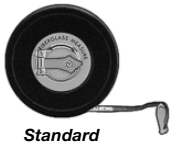

Standard

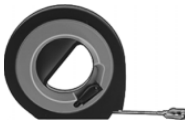

Fast Winding

Blade Length	Fiberglass Blade: Blade Width	Fiberglass Blade: Each	Yellow Steel Blade: Blade Width	Yellow Steel Blade: Each	Chrome-Plated Steel Blade: Blade Width	Chrome-Plated Steel Blade: Each
Standard						
Inch: *Inches to 8ths front.*						
50 ft.	1/2″	6806A31 $16.05	3/8″	1965A2 $35.57	3/8″	19435A31 $39.91
100 ft.	1/2″	6806A32 23.05	3/8″	1965A4 54.05	3/8″	19435A32 57.71
Inch: *Inches and 16ths front.*						
50 ft.	—	—	—	—	3/8″	19435A41 78.16
Inch/Metric: *Inches to 8ths front; cm to 2 mm back.*						
50 ft./15 m	1/2″	6806A38 17.13	3/8″	1965A52 36.61	—	—
100 ft./30 m	1/2″	6806A39 24.35	3/8″	1965A53 55.64	—	—
Decimal Foot: *Feet to 100ths front.*						
50 ft.	1/2″	6806A35 16.02	3/8″	1965A56 ♦ 36.61	3/8″	19435A53 71.76
100 ft.	1/2″	6806A36 23.07	3/8″	1965A57 ♦ 55.64	3/8″	19435A54 119.34
Fast Winding						
Inch: *Inches to 8ths front.*						
50 ft.	—	—	3/8″	2050A11★ 27.73	—	—
100 ft.	—	—	3/8″	2050A12★ 34.73	—	—

♦ Graduations are black. ★ Case is black and orange nylon.

Open-Reel Long Measuring Tapes

An open-reel design allows dirt, sand, and other debris to fall away from the case and blade, so tapes are perfect for outdoor measuring jobs. Plus, they have a manual, 3-to-1 rewind for fast take up (unless noted).

The blade is corrosion resistant, washable, and white on the front and yellow on the back with black and red graduations (unless noted) and it has an end hook.

Fiberglass Blade— Nonconductive, so they're great for work near electricity. Case is orange plastic.

Nylon-Coated Steel Blade— Need a more durable tape? A wear-resistant, nonglare, permanently bonded nylon coating makes these flexible steel blades break resistant and they won't stretch or shrink. Case is black plastic (unless noted).

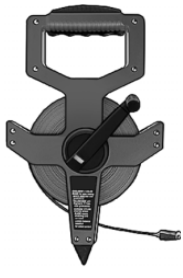

Blade Length	Blade Width	Fiberglass Blade	Fiberglass Blade: Each	Nylon-Coated Steel Blade	Nylon-Coated Steel Blade: Each
Inch: *Inches to 8ths front.*					
50 ft.	1/2″	6806A13♠■	$16.78	—	—
300 ft.	3/8″	—	—	1930A33■●	$141.55
Inch/Decimal Inch: *Inches to 8ths front; feet to 10ths and 100ths back.*					
100 ft.	1/2″	6806A41	24.26	1930A31♠	39.19
200 ft.	1/2″	6806A42	40.44	1930A32♠	65.29
330 ft.	1/2″	6806A43	56.64	—	—
Inch/Metric: *Inches to 8ths front; cm to 2 mm back.*					
50 ft./15 m	1/2″	6806A11♠	17.72	—	—
Inch/Metric: *Inches to 8ths front; 2 mm back.*					
100 ft./30 m	1/2″	6806A45	24.26	1930A35▲	51.55
200 ft./60 m	1/2″	6806A46	40.44	1930A36▲	89.24

♠ 1-to-1 manual rewind. ■ Front is white; no graduation markings on back of blade.
● Case is orange. ▲ Case is blue.

Distance Measuring Wheels

Take one of these wheels for a spin to quickly and easily record distance measurements. Use them on any flat surface both indoors and out. All have rotary counters with a zero reset.

A&B Use for vertical, overhead, curve, and contour measuring. All have a telescoping aluminum handle, plastic wheels, and counters that add as well as subtract.

Style B has dual wheels for increased traction and stability.

C&D Have a steel wheel with a rubber tire, which makes them good for fast, long-run measuring jobs. They also have a folding aluminum handle and kickstand.

Style C have counters that add as well as subtract. *Style D* can handle longer runs and has heavier duty construction.

E&F Designed for extra-long distance measuring over most terrain. They have a steel wheel with rubber tread, a folding aluminum handle, a built-in stand, and an automatic brake that prevents accidental backtracking.

Style F boasts a solid steel hub for easy maneuvering through brush and undergrowth.

G Has a counter on the handle for easy reading and a PVC wheel with chemical- and acid-resistant rubber tread. It also includes a pistol-grip handle, a hold button to stop the counter, a telescoping aluminum handle, a counter reset button, and a kickstand. The counter adds as well as subtracts. Packaged in an impact-resistant black plastic carrying case.

Carrying cases (sold separately below) are made of machine-washable and tear-resistant fabric. Color is black.

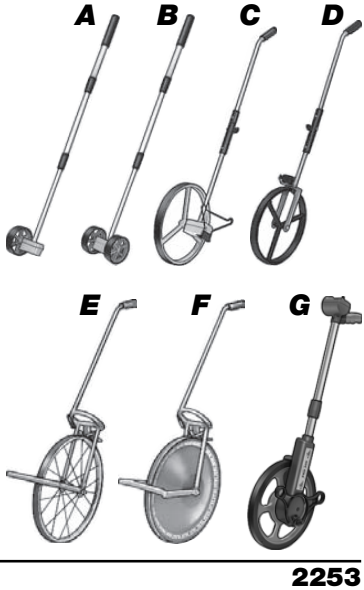

	Unit of Measure	Maximum Counter Reading	Wheel Circumference	Overall Length Extended	Overall Length Folded	Measuring Wheels	Measuring Wheels: Each	Carrying Cases	Carrying Cases: Each
A	ft. and in.	10,000 ft.	1 ft.	36 1/2″	18″	1969A11	$60.45	—	—
B	ft. and in.	10,000 ft.	1 ft.	36 1/2″	18″	1969A13	58.78	—	—
C	ft. and in.	10,000 ft.	3 ft.	40″	22 1/4″	1969A24	91.71	2017A95	$28.61
C	m and dm	10,000 m	1 m.	40″	22 1/4″	1969A25	149.01	2017A95	28.61
D	ft.	100,000 ft.	3 ft.	41″	22 1/4″	1969A26	148.05	2017A7	34.21
E	ft.	100,000 ft.	4 ft.	45 3/4″	17″	1969A27	214.74	2017A7	34.21
F	ft., in., and 10ths	100,000 ft.	4 ft.	45 3/4″	17″	1969A28	223.51	2017A7	34.21
G	m and dm	10,000 m	1 m.	37 1/2″	25 1/4″	1969A38	168.75	—	—

Digital Distance Measuring Wheels

Standard

Wheels have a large backlit digital LCD for easier readings. They also have a kick-stand.

Standard— Displays feet, yards, and meters up to 9,999.99. Has a plastic wheel with a rubber tire (39⅜″ circumference). Also has an aluminum handle with a plastic grip. Unit is 26″ long; 41″ when handle is fully extended. Operates on a nonreplaceable battery with a minimum 5 year life.

Deluxe— Displays feet-inches, decimal feet, and meters up to 99,999.9. It also offers a calculation function for area and has permanent memory. Has a steel wheel with a rubber tire (48″ circumference) and a steel handle with a rubber grip. Unit is 42″ long and folds to 21″ for storage. Operates on two AA batteries (not included).

			Each
Standard	2253A37		$68.89
Deluxe	2253A41		196.53
AA Batteries for Deluxe Wheel (4/Pkg)	71455K53	Per Pkg.	2.94

Ultrasonic Distance Finders

Standard

Use sound waves bouncing off solid objects to quickly and easily measure distances in inches, feet, meters, and centimeters. These tools add measurements, plus they compute areas and volumes. Operate on 9-volt batteries (not included). Include an automatic shutoff and a low-battery warning.

Standard tool also measures in decimal feet and yards. Includes an electronic target with LED and a protective pouch. Tool also subtracts measurements and stores up to seven measurements in memory. Accuracy is ±15″ at 250 ft. Use indoors and out. ***Tool with laser targeting*** has a high-visibility laser to indicate where you are aiming. It stores two measurements to add together, or three measurements for computing area and volume. Accuracy is ±½″ at 50 ft. Use indoors.

	Max. Dist.	Batteries Req'd.		Each
Standard	250 ft.	2	68105A15	$114.49
W/Laser Targeting	50 ft.	1	68105A16	47.79
9-Volt Battery			71455K56	2.75

Digital Pedometer

Record distances from 0.01 to 1,000 miles while you walk or run. This pedometer has a 1- to 6-ft. stride adjustment and belt clip. 1.5-volt battery included.

Pedometer	8458T9	Each	$13.50
Repl. 1.5-Volt Battery	7604K3	Each	1.90

Laser Distance Finders

1

2&3

4&5

Stay where you are and let a laser do the work. These distance finders send a pulse of laser light at an object and then digitally display distance.

(1) Laser Distance Finder— Look through the viewfinder and press the power button—the distance to the viewed object will appear in your view. Includes a carrying case.

(2-5) Multi-Function Laser Distance Finders— Include a holster, wrist strap, batteries, and a manual. All styles have addition and subtraction keys, square and cubic feet calculations, and an illuminated display. They perform single distance measuring as well as indirect measuring, which is useful when the distance to be measured is difficult or dangerous to access. *Style 2* has a continuous measurement function and can store up to 10 values. *Style 3* has an inclination sensor that measures tilts between ±45°. Can display horizontal distance and has a room corner angle function. Finder can store up to 20 values. *Style 4* has a color TV screen with crosshairs that make it easy to view outdoors when the laser is difficult to see. Also takes horizontal measurements. Stores up to 20 values. *Style 5* has a digital color viewfinder with up to 4X magnification for aiming at distance targets. It can store up to 30 values. Also includes bluetooth data transfer to transmit measured values to a pocket PC or laptop without wires; software included. *Note:* For targets over 150-200 ft. or irregular, transparent, and mirrored surfaces, a target plate (sold separately, unless noted) is needed for Styles 2, 3, 4, and 5.

	Maximum Distance	Unit of Measure	Accuracy	Battery Size	Battery Included	Finders	Each	Batteries	Each
1	999 yd.	yd., m	±1 yd.	9 volt	No	19205A11	$198.74	71455K56	$2.75
2	197 ft.	in., ft., mm, cm, m	±0.06″	AAA	Yes	19205A18	193.30	65605T71	.79
3	325 ft.	in., ft., m	±0.06″	AA	Yes	19205A22	344.92	65605T72	.68
4	650 ft.	in., ft., mm, m	±0.06″	AA	Yes	19205A21	518.94	65605T72	.68
5	650 ft.	in., ft., yd., m	±0.04″	AA	Yes	19205A23★	694.63	65605T72	.68

Target Plate for Styles 2, 3, 4, and 5 ..... 19205A16 Each $38.50

★ Target plate is included.

Material Length Counters

Single Wheel

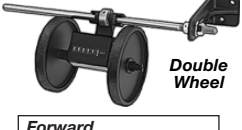

Double Wheel

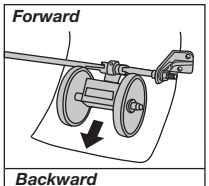

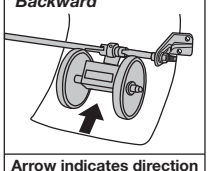

Arrow indicates direction material travels.

Accurately measure cloth and paper as well as other sheet, roll, and strip materials. All counters add as well as subtract and have a zero reset. They also have an 18″ long support arm, and a mounting bracket with two ⅜″ mounting holes (fasteners not included). Maximum rpm is 3,000.

Solid aluminum wheels are for coarse and high-temperature materials. Surface is knurled for good contact. *12″ circumference wheels* have a ⅝″ wide tread. *18″ circumference wheels* have a ¾″ wide tread.

Plastic wheels with rubber tread are for paper, cloth, and other smooth materials. Wheels have a ¾″ wide tread.

Plastic wheels with polyurethane tread are for textured, coarse, and abrasive materials. They're also good for jobs with pressure rollers. Wheels have a ⅝″ wide tread.

Counters

Material Travel	Unit of Measure	Maximum Counter Reading	Max. Ft./Min.	Solid Aluminum Wheels	Each	Plastic Wheels w/Rubber Tread	Each	Plastic Wheels w/Polyurethane Tread	Each
Single 12″ Circumference Wheels— *Overall size is 3 13/16″ Lg. × 20″ Wd. × 6 5/16″ Ht.*									
Forward	in., ft.	99,999 ft.	3,000	1674T13	$428.57	1674T14	$409.52	1674T15	$428.57
Forward	ft.	999,999 ft.	3,000	1674T62	428.57	1674T65	409.52	1674T68	428.57
Forward	yd.	999,999 yd.	3,000	1674T26	428.57	1674T27	409.52	1674T28	428.57
Backward	in., ft.	99,999 ft.	3,000	1674T31	428.57	1674T32	409.52	1674T33	428.57
Backward	ft.	999,999 ft.	3,000	1674T61	428.57	1674T64	409.52	1674T67	428.57
Backward	yd.	999,999 yd.	3,000	1674T63	428.57	1674T66	409.52	1674T69	428.57
Double 18″ Circumference Wheels— *Overall size is 5 3/4″ Lg. × 20″ Wd. × 6 5/16″ Ht.*									
Forward	ft.	999,999 ft.	4,500	8677T31	520.00	8677T93	450.00	8677T35	497.74
Forward	yd.	999,999 yd.	4,500	8677T45	520.00	8677T46	450.00	8677T47	498.74
Backward	ft.	999,999 ft.	4,500	8677T32	520.00	8677T94	450.00	8677T36	497.74
Backward	yd.	999,999 yd.	4,500	8677T33	520.00	8677T95	450.00	8677T37	497.74

Replacement 12″ Wheels (¼″ Bore)

		Each
Solid Aluminum	1674T97	$85.71
Plastic with Rubber Tread	1674T98	36.51
Plastic with Polyurethane Tread	1674T99	60.95

Replacement 18″ Wheels (¼″ Bore)

		Each
Solid Aluminum	8677T72	$117.11
Plastic with Rubber Tread	8677T73	51.57
Plastic with Polyurethane Tread	8677T74	80.27

Remote-Reading Length Measurer

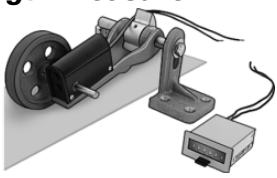

Measurer with Electromechanical Counter

Accurately and easily take length measurements on paper and printing machinery, conveyors, and more. Measurer includes a rotary contactor, a wheel, and a mounting bracket; connects to a remote counter (sold separately). When the wheel makes one complete revolution over the material you're measuring, the rotary contactor sends a signal to the counter to add one. Size is 8 9/32″ Lg. × 7 9/32″ Wd. × 3 13/16″ Ht.

The contactor has a 5/16″ dia. shaft and two 12″ wire leads for connecting to your counter. It's 3 3/16″ Lg. × 2″ Wd. × 2″ Ht. and operates up to 2,400 rpm (or 2,400 feet/minute). The wheel is 12″ in circumference and moves 12″ per revolution. It's aluminum with a 1/2″ wide rubber tread and a 5/16″ dia. center hole. The mounting bracket is cast iron and has four 0.221″ dia. mounting holes (fasteners not included). Holes are 1 1/2″ center-to-center. Bracket is 7″ Lg. × 7 9/32″ Wd. × 3 1/2″ Ht.

Electromechanical counters include a reset button, display six digits, and make 600 counts/minute. Size is 1.14″ Ht. × 3.1″ Wd. × 2.3″ Dp.

Digital counter includes a reset button, displays six digits, and can make 2,400 counts/minute. Size is 1.75″ Ht. × 3.81″ Wd. × 2.97″ Dp.

		Each
Length Measurer	8690T23	$406.68
Electromechanical Counter (24 VDC)	1806T42	52.45
Electromechanical Counter (115 VAC)	8686T45	53.77
Digital Counter (6-240 VAC/VDC)	1874T81	164.92
Replacement Rotary Contactor	8690T16	237.87
Replacement Wheel	8690T17	73.17
Replacement Mounting Bracket	8690T15	120.95

Liquid-Level Scales

Built to take environmental abuse, these scales are iron with a white porcelain-enamel finish for rust resistance. Scales are 2 1/2″ Wd. × 0.075″ Thick. and have holes (use No. 8 round head screws; not included) for mounting to walls, piers, and other wood structures. They have black painted graduations that read vertically bottom to top.

Range		Each	Range		Each
Decimal Foot: *Feet to 100ths.*			***Inch:*** *Inches to 1/2 inch.*		
0 - 1 ft.	1975A11	$32.69	0-14″	1975A21	$48.38
0 - 2 ft.	1975A13	39.23	0-24″	1975A22	54.92
0 - 3.33 ft.	1975A14	45.77	0-36″	1975A24	60.15
3.33- 6.66 ft.	1975A15	45.77	0-48″	1975A25	65.38
6.66-10 ft.	1975A16	45.77			

Tank-Level Scales

Always know the level of your tank—just stick a tank-level measuring scale directly to the outside of your tank. They're bright-yellow, weather-resistant vinyl with black screen-printed graduations in inches with numerals at every 5″ interval. They have an acrylic adhesive back for adhering to most surfaces. Use scissors or a utility knife to cut to the size needed.

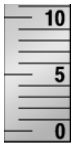

Bottom to Top

	3 1/2″ WIDE			5 1/4″ WIDE		
Range	Bottom to Top	Top to Bottom	Each	Bottom to Top	Top to Bottom	Each
0- 50″	3720K3	3720K4	$23.25	3720K5	3720K6	$27.35
0-100″	3720K31	3720K41	46.50	3720K51	3720K61	54.71
0-150″	3720K32	3720K42	69.75	3720K52	3720K62	82.06
0-200″	3720K33	3720K43	93.00	3720K53	3720K63	109.41
0-250″	3720K34	3720K44	116.25	3720K54	3720K64	136.76
0-300″	3720K35	3720K45	139.50	3720K55	3720K65	164.12
0-350″	3720K36	3720K46	162.75	3720K56	3720K66	191.47

Wire, Cable, and Cord Length Measuring Units

Quickly and accurately measure lengths of wire, cable, cord, rope, hose, tubing, and similar materials. To make handling your material even easier, add a feeder or coiler reel (sold separately) to one of the length measuring units. Or get a complete measuring kit, which includes everything you'll need.

Length Measuring Units

Feed material through the two pressure wheels inside the length measuring units and a 6-digit counter records length up to 10,000 ft. (unless noted). Units add and subtract. Meet National Bureau of Standards specifications. ***Units with urethane-coated wheel*** are for PTFE-coated wire and fiber-optic cable.

	Material OD Range	With Steel Wheel	Each	With Urethane-Coated Wheel	Each
For Wire	1/64″-1/2″	1686T15	$321.79	1686T77	$487.22
For Wire	1/64″-1/2″	1686T31 ♦	398.78	1686T78 ♦	564.50
For Cord and Rope	1/4″-3/4″	1686T22	252.97	—	—
For Wire, Cable, and Hose	1/2″-2″	1686T37 ■	1,124.85	1686T79 ■	1,449.52

Optional 14″ High Bench-Mount Pedestal	1686T17 ●	41.63
Optional 22 1/2″ High Floor Stand (Use with Pedestals)	1686T96	394.68
Optional 36″-43″ High Adjustable Floor Stand for 1686T37 and 1686T79 Only	1686T32	267.02

♦ Unit includes a cutter; cutter not for steel wire or armored cable.
■ Counter records lengths up to 100,000 ft. ● Not for use with 1686T37 and 1686T79.

Length Measuring Unit (1686T15)

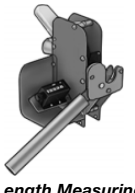

Length Measuring Unit (1686T31)

Length Measuring Unit (1686T22)

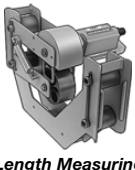

Length Measuring Unit (1686T37)

Bench-Mount Feeder Reels

Smoothly feed your materials into the length measuring units (sold separately above) with a feeder reel. They have a friction disc to prevent free spinning; remove disc for free rotation. Reels also have a 1/2″ dia. post for material on a spool and four adjustable pins for materials not on a spool. Pins adjust for inside coil diameters. Include a bench-mount pedestal.

Max. Coil OD	Coil ID Range	Coil Weight Capacity		Each
15″	6 1/2″-10 1/2″	75 lbs.	1686T5	$177.51
24″	6 1/2″-18 1/2″	150 lbs.	1686T65	221.27

Bench-Mount Collapsible Coiler Reels

Use a coiler reel to pull your material out of the measuring units (sold separately above) and bundle it into coils. Reels have a hand crank and collapse for storage. Include a bench-mount pedestal.

Coil ID	Coil Weight Capacity	Maximum Reel Capacity		Each
8″	50 lbs.	150 ft. of 3/8″ Dia. Materials and Up to 10″ Wide Spools with 1/2″ Dia. Hole	1686T4	$333.57
8″	50 lbs.	125 ft. of 1/2″ Dia. Materials; 550 ft. of 1/4″ Dia. Materials	1686T12	298.74
12″	125 lbs.	800 ft. of 1/2″ Dia. Lightweight Materials (Nylon Rope or Hose)	1686T24	374.32
12″	125 lbs.	250 ft. of 3/4″ Dia. Materials; 500 ft. of 1/2″ Dia. Materials	1686T66	356.51
15″	125 lbs.	300 ft. of 1″ Dia. Materials; 550 ft. of 3/4″ Dia. Materials	1686T25	442.93

Optional 22 1/2″ High Floor Stand

Optional Adjustable Floor Stand

Complete Length Measuring Kits

Everything you'll need to create a complete length measuring system. Each kit contains a length measuring unit for wire (1/64″-1/2″ OD), a feeder reel, and a coiler reel with 12″ maximum coil ID (500 ft. capacity of 1/2″ dia. materials). *Bench-mount kits* include two 14″ high bench-mount pedestals (one for each reel) for bench-top mounting. *Floor-mount kits* include the two pedestals and a 22 1/2″ high floor stand.

Units with urethane-coated wheel are for use with PTFE-coated wire and fiber-optic cable.

	Feeder Reel Dia.	With Steel Wheel	Each	With Urethane-Coated Wheel	Each
Bench-Mount Kit	15″	1686T71	$856.68	1686T76	$989.63
Bench-Mount Kit	24″	1686T41	883.57	1686T92	1,026.90
Floor-Mount Kit	24″	1686T11	1,238.21	1686T94	1,362.58

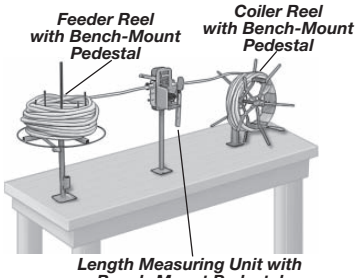

Length Measuring Unit with Bench-Mount Pedestal

Liquid-Level Tapes

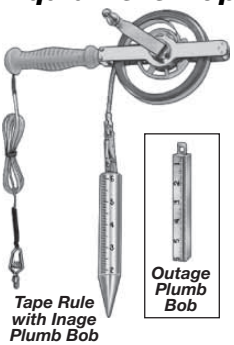

Tape Rule with Inage Plumb Bob

Also known as oil-gauging tapes, these tapes check the level of heavy or light oil and other fluids in deep, large containers such as tanks and vats. All tapes have a zinc-plated steel reel with double rollers, a safety-yellow plastic handle with grounding wire, and a 1/2″ wide blade that locks in place when you flip the handle. Include a brass plumb bob with etched inch graduations. *Note:* For metric measurements, you need to order a metric brass plumb bob sold separately below.

Inage tapes determine depth of liquid inside a tank. They do not require you to know the height of your tank. All inage tapes have a cylindrical plumb bob, which is attached to the end of the tape and is used to find the bottom of the tank. The tape then measures the height of the liquid from the bottom of the tank to the liquid surface.

Outage tapes determine how much liquid has been removed from a tank. They require you to know the height of your tank. All outage tapes have a rectangular plumb bob, which must be in contact with the liquid surface. Add the number from the tape reading to the number from the bob reading to determine how far the liquid surface is located from the top of the tank. Then subtract this number from the overall tank height to determine the liquid level.

Chrome-Plated Steel Tapes— The choice for measuring dark oils and fluids.

Combination Chrome-Plated and Black-Finish Steel Tapes— Excellent for light as well as dark oils and fluids.

Etched Black-Finish Steel Tapes— Great for measuring clear oils and fluids.

Etched Stainless Steel Tapes— Rustproof and noncorrosive, they're good for clear and dark oils and fluids.

Note: A stainless steel inage plumb bob is sold separately.

Replacement Blades— Do not include plumb bobs.

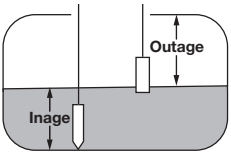

Blade Length	INAGE TAPES Tapes	Each	INAGE TAPES Repl. Blades	Each	OUTAGE TAPES Tapes	Each	OUTAGE TAPES Repl. Blades	Each
Inch: *Inches to 8ths front.*								
Chrome-Plated Steel								
25 ft.	1957A31	$137.08	1957A41	$54.59	2290A31	$140.64	2290A41	$54.09
50 ft.	1957A33	155.38	1957A43	74.83	2290A33	160.07	2290A43	74.18
75 ft.	1957A35	195.41	1957A45	120.22	2290A35	199.75	2290A45	119.13
100 ft.	1957A36	211.39	1957A46	150.42	2290A36	215.00	2290A46	149.05
Combination Chrome-Plated and Black-Finish Steel								
25 ft.	20125A54	125.76	20125A74	45.28	20125A58	131.93	20125A78	45.28
50 ft.	20125A55	144.04	20125A75	60.55	20125A59	150.20	20125A79	60.55
75 ft.	20125A56	179.17	20125A76	97.91	20125A61	185.34	20125A81	97.91
Inch/Metric: *Inches to 8ths front; cm to mm back.*								
Etched Black-Finish Steel								
33 ft./10 m	2012A11	123.77	2012A15	71.36	2343A11	129.01	2343A15	70.71
50 ft./15 m	2012A12	142.17	2012A16	83.36	2343A12	146.98	2343A16	82.60
100 ft./30 m	2012A14	229.01	2012A18	171.67	2343A24	233.04	2343A25	170.11
Etched Stainless Steel								
33 ft./10 m	2291A41	159.06	2291A51	96.28	2294A41	163.73	2294A51	95.40
50 ft./15 m	2291A42	210.09	2291A52	129.93	2294A42	214.29	2294A52	128.75
100 ft./30 m	2291A45	385.28	2291A55	262.57	2294A45	387.89	2294A55	260.18

Replacement Plumb Bobs

Use inage plumb bobs only with inage tapes; use outage plumb bobs only with outage tapes. Graduations are etched.

Material	Wt.	Size		Each
Inage with Inch Graduations: *Inches to 8ths.*				
Brass	20 oz.	1″ Dia. × 6 3/4″ Lg.	1957A97	$35.48
Inage without Graduations				
Stainless Steel	20 oz.	1″ Dia. × 6 3/4″ Lg.	2291A97	65.15
Outage with Inch Graduations: *Inches to 16ths.*				
Brass	16 oz.	3/4″ × 3/4″ × 6″ Lg.	2290A97	41.24
Inage with Metric Graduations: *cm to mm.*				
Brass	20 oz.	1″ Dia. × 6 3/4″ Lg.	20125A67	49.72
Outage with Metric Graduations: *cm to mm.*				
Brass	15 oz.	7/8″ × 7/8″ × 6 1/8″ Lg.	2343A97	55.42

Tape Wiper Attachments

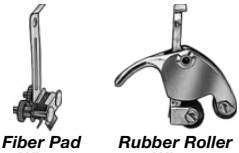

Fiber Pad Wiper Rubber Roller Wiper

Wiper attachments strip excess oil off tape as it is reeled in. Fit all gauging tapes.

Fiber Pad Wiper	20655A21	Each	$13.76
Repl. Fiber Pads	20655A22	Per Pair	$4.50
Rubber Roller Wiper	20655A11	Each	$17.55
Repl. Rubber Rollers	20655A12	Per Pair	$5.81

Water and Gasoline Finder Paste

Quickly and easily determine water or gasoline levels in your tanks. Apply a thin layer of finder paste to a gauging tape or stick (not included) and insert the tape or stick into your tank for 30 seconds. Remove the tape or stick—the paste changes color to indicate fluid level.

Water Finder Paste (3-oz. Jar)	89775A15	Each	$3.05
Gasoline Finder Paste (3-oz. Jar)	89775A17	Each	$3.90

Fiberglass Depth-Measuring Ropes

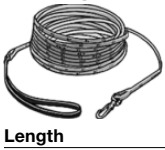

Measuring depths doesn't get easier—simply attach a plumb bob or weight (not included) to the rope's end-hook snap ring and you're ready. Ropes are lightweight fiberglass with a nonglare, textured vinyl coating for abrasion resistance. They have black and red printed graduations.

Length	Width		Each
Inch/Foot: *Feet to inches front and back.*			
50 ft.	1/4″	1931A51	$16.65
100 ft.	1/4″	1931A52	24.89
200 ft.	1/4″	1931A53	36.52

Depth Gauges

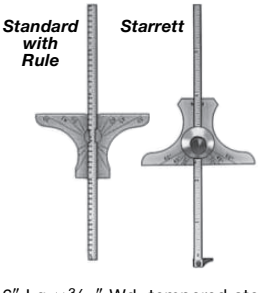

Standard with Rule Starrett

Gauges take precise depth measurements in small holes and slots and measure 30°, 45°, and 60° angles with a protractor. All have black etched graduations in 32nds and 64ths. *Rods* measure the depth of recesses where blades won't fit.

Standard Gauge with Rule— Has a 6″ Lg. × 1/4″ Wd. stainless steel rule with a 2 1/2″ wide steel base.

Standard Gauge with Rule and Rod— Has a 6″ Lg. × 7/32″ Wd. steel rule, a 2 1/2″ Wd. base, and a 6″ Lg. × 3/32″ Wd. steel rod.

Starrett No. 236HB Gauge with Hook Rule and Rod— Includes a 6″ Lg. × 3/16″ Wd. tempered steel hook rule, a 2 5/8″ wide base, and a 6″ Lg. × 5/64″ Dia. rod.

		Each
Standard Gauge with Rule	20445A41	$18.12
Standard Gauge with Rule and Rod	20445A46	17.90
Starrett No. 236HB Gauge with Hook Rule and Rod	2090A2	76.00

Drum- and Tank-Level Measuring Sticks

Sticks fold up for storing and are made of wood with a clear varnish coating that's resistant to gasoline, diesel fuel, and oil. They are 7/8″ Wd. × 5/8″ Thick. (1 1/4″ thick at folding joint) and have black painted graduations that read vertically bottom to top.

Measuring Length	Overall Length	Folded Length		Each
Gallon: *Gallons front and back.*				
4 ft.	4 ft.	4 ft. ♣	1923A53	$4.28
Inch/Foot: *Feet to inches front.*				
8 ft.	9.5 ft.	3.7 ft.	1923A54	13.24
10 ft.	12.5 ft.	4.7 ft.	1923A55	16.42
14 ft.	15.5 ft.	5.7 ft.	1923A56	20.18
15 ft.	16.5 ft.	4.7 ft.	1923A57	22.20

♣ Full length; stick does not fold.

Starrett Precision Combination Squares

Replace your try square, miter square, depth gauge, height gauge, center-point finder, and level with just one tool.

Heads have a reversible lockbolt. *Forged steel heads* are hardened and last much longer than cast iron heads, especially in abrasive applications. *Square heads* also include a level vial and steel scriber (except heads for 4″ long blades). ***Blades*** are steel with a nonglare finish (unless noted). They have black etched graduations and meet Fed. Spec. GGG-R-791G for accuracy.

Quick-reading rules have numbered subdivisions.

Two-Piece Sets— Square head and steel blade.

Three-Piece Sets— Square head, center head, and steel blade.

Four-Piece Sets— Square head, center head, steel blade, and protractor head with a direct-reading double 180° scale and a level vial.

Blade Lg.	Blade Accuracy
4″ and 6″	+0.0065″ to –0.006″
12″	+0.0075″ to –0.006″
18″	+0.0085″ to –0.006″
24″ and 36″	+0.0095″ to –0.006″
300 mm	+0.15″ mm to –0.09″ mm
600 mm	+0.2″ mm to –0.09″ mm

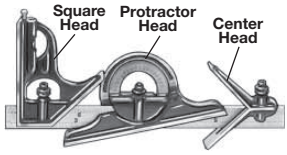

Four-Piece Set

Combination Square Sets

Blade Length	Cast Iron Head	Each	Forged Steel Head★	Each
Two-Piece Sets				
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*				
4″	2108A21	$70.00	2107A21	$99.43
6″	2108A22	82.00	2107A22	113.44
6″	2108A44 ♦	69.01	2107A44 ♦	86.00
12″	2108A23	86.00	2107A23	121.27
12″	2108A45 ♦	71.01	2107A45 ♦	91.01
18″	2108A24	132.00	2107A24	153.01
24″	2108A25	149.01	2107A25	170.00
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*				
6″	2108A28	87.01	2107A28	104.00
12″	2108A29	103.69	2107A29	149.71
18″	2108A31	139.01	2107A31	162.00
24″	2108A32	162.00	2107A32	185.01
Inch/Metric: *Quick-reading inches to 32nds and cm to ½ mm front; 64ths and cm to mm back.*				
11¾″/300 mm	2108A26	111.01	2107A26	131.01
23½″/600 mm	2108A27	162.00	2107A27	185.01
Three-Piece Sets				
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*				
4″	2108A11	99.74	2107A11	135.01
6″	2108A12	114.00	2107A12	149.01
12″	2108A13	104.00	2107A13	182.46
18″	2108A14	164.00	2107A14	212.00
24″	2108A15	185.01	2107A15	228.00
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*				
6″	2108A36	120.00	2107A36	158.00
12″	2108A37	137.01	2107A37	186.00
18″	2108A38	171.01	2107A38	219.01
24″	2108A39	195.01	2107A39	242.00
Four-Piece Sets with Reversible Protractor Head				
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*				
12″	2108A51 ♦	212.00	2107A51	269.01
18″	2108A52 ♦	239.01	2107A52	307.01
24″	2108A53 ♦	254.00	2107A53	323.01
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*				
12″	2108A54 ♦	218.00	2107A54	282.00
18″	_____	_____	2107A55	314.00
24″	_____	_____	2107A56	337.01
Inch/Metric: *Quick-reading inches to 32nds and cm to ½ mm front; 64ths and cm to mm back.*				
11¾″/300 mm	2108A55 ♦	218.00	2107A57	277.01
23½″/600 mm	2108A56 ♦	269.01	2107A58	337.01

★ Protractor heads are cast iron. ♦ Plain steel blades.

Combination Square Sets (Cont.)

Blade Length	Cast Iron Head	Each
Four-Piece Sets with Nonreversible Protractor Head		
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading inches to 8ths and 16ths back.*		
12″	2108A57 ♦	$193.01
18″	2108A58 ♦	232.00
24″	2108A59 ♦	246.43
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*		
12″	2108A61 ♦	208.67

♦ Plain steel blades.

Heads

For Blade Length	Head Style	Cast Iron	Each	Forged Steel	Each
4″	Square	1955A11	$33.01	1955A14	$48.50
4″	Center	1955A17	30.50	1955A21	49.74
6″	Square	1955A12	37.01	1955A15	57.01
6″	Center	1955A18	31.50	1955A22	54.00
12″-48″	Square	1955A13	47.50	1955A16	67.01
12″-48″	Center	1955A19	33.01	1955A23	59.01
12″-48″	Reversible Protractor	1955A25	91.01	_____	_____
12″-48″	Nonreversible Protractor	1955A29	75.01	_____	_____

Blades

Length	Each
Inch: *Quick-reading inches to 32nds and 64ths front; standard-reading; inches to 8ths and 16ths back.*	
4″ 1955A32	$34.50
6″ 1955A34	35.50
12″ 1955A46 ♦	41.50
12″ 1955A36	43.50
18″ 1955A38	85.01
24″ 1955A41	105.01
36″ 1955A51	276.00

♦ Plain steel blades.

Length	Each
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*	
4″ 1955A33	$49.01
6″ 1955A35	37.01
12″ 1955A47 ♦	49.50
12″ 1955A37	61.01
18″ 1955A39	97.01
24″ 1955A42	118.00
36″ 1955A52	293.01

Length	Each
Inch/Metric: *Quick-reading inches to 32nds and cm to ½ mm front; 64ths and cm to mm back.*	
11¾″/300 mm 1955A44	$61.68
23½″/600 mm 1955A45	118.00

Replacement Lockbolts

Furnished with a spring and washer.

For Head Style(s)	For Blade Length(s)	Each
Center, Square	4″ 1955A81	$7.43
Center	6″ 1955A85	11.18
Center, Square	6″ 1955A82	8.33
Center, Square, Protractor	12″-24″, 300-600 mm 1955A83	7.35

Pro-Value Precision Combination Squares

An economical alternative to the Starrett combination squares above.

Heads have a reversible lockbolt. *Hardened cast iron heads* last much longer than cast iron heads, especially in abrasive applications. *Square heads* also include a level vial and stainless steel scriber.

Blades are steel with a nonglare finish and black etched graduations. Blade accuracy: 12″ Lg. (0.002″ to 0.005″), 18″ Lg. (0.002″ to 0.006″), and 24″ Lg. (0.002″ to 0.007″).

Quick-reading rules have numbered subdivisions.

Two-Piece Sets— Square head and steel blade.

Three-Piece Sets— Square head, center head, and steel blade.

Four-Piece Sets— Square head, center head, reversible protractor head, and steel blade.

Blades

Length	Each
Inch: *Standard-reading inches to 8ths and 16ths front; quick-reading inches to 32nds and 64ths back.*	
12″ 21115A21	$28.69
18″ 21115A23	41.80
24″ 21115A25	54.39

Length	Each
Inch/Decimal Inch: *Quick-reading inches to 32nds and 64ths front; 50ths and 100ths back.*	
12″ 21115A22	$32.20
18″ 21115A24	46.23
24″ 21115A26	58.72

Heads

For Blade Length	Head Style	Cast Iron	Each	Hard. Cast Iron	Each
12″-24″	Square	21115A27	$26.39	21115A28	$32.64
12″-24″	Center	21115A29	18.46	21115A31	23.91
12″-24″	Reversible Protractor	21115A32	49.12	_____	_____

Combination Square Sets

Blade Length	Cast Iron Head	Each	Hard. Cast Iron Head	Each
Inch: *Standard-reading inches to 8ths and 16ths front; quick-reading inches to 32nds and 64ths back.*				
2-Piece Sets 12″	21115A14	$56.34	21115A18	$67.37
3-Piece Sets 12″	21115A13	80.87	21115A17	102.70
4-Piece Sets 12″	21115A11	111.33	21115A15	137.82

Replacement Lockbolt 21115A36 Each $2.72

Titanium-Coated Combination Squares

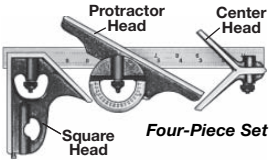

Thanks to a protective titanium nitride coating you won't have to worry about scratches or corrosion on the blade.

Two-Piece Set— Includes a cast iron square head with a level vial and a stainless steel scriber. It also has a 12″ long steel blade with white etched graduations in inches to 8ths and 16ths on front; quick-reading inches to 32nds and 64ths on back. Includes a plastic case.

Four-Piece Set— Includes everything in the two-piece set plus a cast iron center head and a cast iron reversible protractor head. The protractor head is graduated from 0°–180° in both directions.

Two-Piece Set	21155A34	Each	$99.74
Four-Piece Set	21155A36	Each	$175.41

Carpenters' Combination Squares

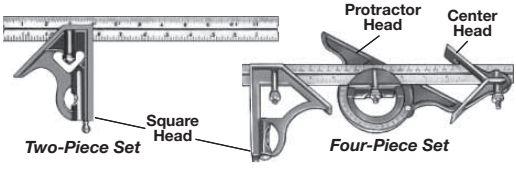

Why settle for just a square when you can get a try square, a miter square, a depth gauge, a marking gauge, a 90° level, a rule, and a scriber all in one tool?

Two-Piece Sets— Include a cast-zinc square head (unless noted) with level vial, steel scriber, and reversible lockbolt. Also have a stainless steel blade (unless noted) with black etched graduations. Head is black.

Four-Piece Set— Includes an aluminum square head with level vial, steel scriber, and reversible lockbolt; a reversible cast-iron protractor head with double 180° scale, level vial, and reversible lockbolt; an aluminum center head with reversible lockbolt; and a steel blade with black etched graduations. Heads are black.

Blade Lg.		Each
Two-Piece Sets		
Inch: *Inches to 32nds front; inches to 16ths back.*		
6″	2007A5	$8.80
12″	2007A2●	9.06
12″	2007A9	11.13
16″	2007A6	15.50
Inch/Metric: *Inches to 32nds and cm to mm front; inches to 16ths and cm to mm back.*		
12″/300 mm	2007A3●■	8.21
Metric: *cm to mm front and back.*		
150 mm	2007A31	8.80
300 mm	2007A4●■	8.21
300 mm	2007A41	11.68
400 mm	2007A51	15.50
Four-Piece Set		
Inch/Metric: *Inches to 16ths and cm to mm front; inches to 32nds and cm to mm back.*		
12″/300 mm	2007A8	33.23

● Steel blade. ■ Square head is aluminum.

Magnetic Combination Squares

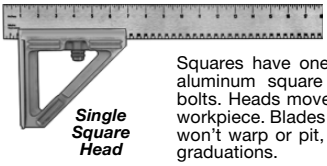

Three 20-lb. magnets per head hold this square on any ferrous metals. Squares have one or two (see below) die cast aluminum square heads with reversible lockbolts. Heads move in and out to butt up to your workpiece. Blades are heat and splatter resistant, won't warp or pit, and have black silk-screened graduations.

Blade Length	No. of Heads	W/Aluminum Blade	Each	W/Brass Blade	Each
Inch/Metric: *Inches to 8ths on top; cm to ½ cm on bottom.*					
18″	1	8995A12	$87.92	8995A11	$99.58
48″	1	8995A14	104.58	—	—
48″	2	8995A13	154.58	8995A15	187.92

Rafter Angle Squares

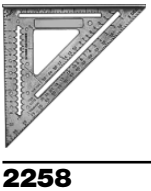

Squares have a saw guide, a 0° to 90° scale for measuring angles, and rafter scales; all are stamped. *Polystyrene* squares also have a molded-in conversion guide.

Size	Polystyrene	Each	Aluminum	Each
7″× 7″	1960A65	$3.83	1960A17	$7.36
12″×12″	1960A68	12.18	1960A19	16.18

Double Squares

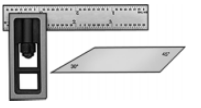

With Graduated and Beveled Blades

Get more versatility. An adjustable, sliding blade lets these squares handle a variety of tasks for machinists, toolmakers, and pattern makers. Blade is hardened steel. ***Graduated blade*** has black etched graduations in inches to 8ths, 16ths, 32nds, and 64ths. ***Beveled blade*** has a 45° octagon angle at one end and a 30° hexagon angle at the other end.

		Each
Square with 4″ Lg. Graduated Blade	8606A54	$28.23
Square with 4″ Lg. Graduated and Beveled Blades	8606A55	33.98
Square with 6″ Lg. Graduated Blade	8606A56	30.70
Square with 6″ Lg. Graduated and Beveled Blades	8606A57	36.38

Master Precision Squares

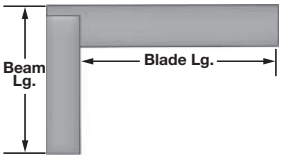

When tolerances are critical, choose a master precision square. The blades are high-quality, hardened and ground tool steel without graduations. Made in the U.S.A.

Starrett Squares— Blade accuracy meets Fed. Spec. GGG-S-656-E. Include a wood case.

Blade Lg.	Beam Lg.	Starrett No.	Square Accuracy		Each
Starrett Squares					
1½″	1½″	20-1½	0.0001″	2275A12	$202.98
3″	2⅜″	20-3	0.0001″	2275A14	215.67
4½″	3½″	20-4½	0.0001″	2275A16	231.56
6″	4⁵⁄₁₆″	20-6	0.0001″	2275A18	330.40
12″	7″	20-12	0.0001″	2275A24	651.01
Pro-Value Squares					
2″	1½″	—	0.0006″	2278A25	9.82
3″	2½″	—	0.0006″	2278A22	10.28
4″	3″	—	0.0006″	2278A11	12.38
6″	4″	—	0.0006″	2278A14	14.44
9″	6″	—	0.0008″	2278A17	29.89
12″	8″	—	0.001″	2278A21	45.02
18″	10″	—	0.0012″	2278A23	190.15
24″	12″	—	0.0015″	2278A24	313.26
Pro-Value 4-Piece Square Sets in Plastic Case					
2″, 3″, 4″, and 6″ blades				2278A31	40.83
4″, 6″, 9″, and 12″ blades				2278A32	89.92

Carpenters' and Rafter Squares

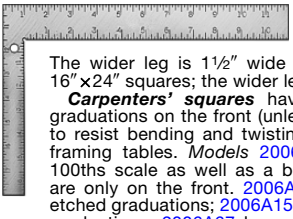

Also known as framing squares, these have one leg that's ½″ wider than the other. The wider leg is 1½″ wide for 8″×12″ squares; 2″ wide for 16″×24″ squares; the wider leg is also the longer leg.

Carpenters' squares have a silver finish with stamped graduations on the front (unless noted). 2364A48 is extra thick to resist bending and twisting. ***Rafter squares*** include rafter framing tables. *Models* 2006A14 and 2006A15 also have a 100ths scale as well as a brace measure table. Graduations are only on the front. 2006A14 has a silver finish with black etched graduations; 2006A15 has a blue finish with gray etched graduations; 2006A67 has a silver finish with black stamped graduations; 2006A21 has a blue finish with white graduations.

Blade Lg.	Blade Thick.	Material	Graduations		Each
Carpenters'					
8″×12″	1⁄16″	Steel	1⁄8″	2364A76	$3.19
8″×12″	3⁄32″	Steel	1⁄16″	2364A75★	5.49
16″×24″	1⁄16″	Steel	1⁄8″	2364A65	7.53
16″×24″	3⁄16″	Aluminum	1⁄8″, 1⁄10″, 1⁄12″, 1⁄16″	2364A48	16.60
Rafter					
16″×24″	3⁄32″	Steel	1⁄8″, 1⁄10″, 1⁄12″, 1⁄16″	2006A14	13.80
16″×24″	3⁄32″	Steel	1⁄8″, 1⁄10″, 1⁄12″, 1⁄16″	2006A15	14.64
16″×24″	1⁄8″	Aluminum	1⁄8″, 1⁄10″, 1⁄16″	2006A67	12.63
16″×24″	1⁄8″	Aluminum	1⁄8″, 1⁄10″, 1⁄12″, 1⁄16″	2006A21	20.93

★ Embossed graduations on the front and back.

Combination Square with Angle Finder

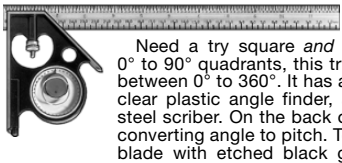

Need a try square *and* an angle finder? With four 0° to 90° quadrants, this try square can find any angle between 0° to 360°. It has a cast iron head with built-in clear plastic angle finder, a reversing lockbolt, and a steel scriber. On the back of the angle finder is a chart converting angle to pitch. Tool also has a 12″ long steel blade with etched black graduations on the front in inches to 16ths and quick-reading 32nds, plus mm.

2004A11 ..... **Each** $18.67

Pipefitters' Square

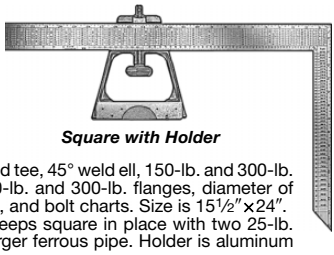
Square with Holder

The name might say "pipefitters" but boilermakers and welders also find this versatile square useful. Square is Type 314 stainless steel with black etched graduations that show pipe fitting sizes, pipe cuts, inches, and mm. It also has 22 printed charts including weld tee, 45° weld ell, 150-lb. and 300-lb. weld neck flanges, OD of 150-lb. and 300-lb. flanges, diameter of 150-lb. and 300-lb. slip blinds, and bolt charts. Size is 15½″×24″.

Optional magnetic holder keeps square in place with two 25-lb. magnets. Use on 1″ dia. or larger ferrous pipe. Holder is aluminum and 7″ Lg.×½″ Wd.×10″ Ht.

Square ..... **1946A25** **Each** $120.00
Optional Magnetic Holder ..... **8990A61** **Each** $117.73

Sliding T-Bevel

T-bevel slides to adjust to any angle; then it locks in place to duplicate or transfer the angle. It has a 5½″ long wood handle with an inlaid brass tip and an 8″ long stainless steel blade with a corrosion-resistant finish.

2020A2 ..... **Each** $13.24

Square Holding Clamps

Get uniform results in repetitive layout work. Attach clamps to any carpenters' or rafter square to fix a position for repeat marking. Clamps are solid brass.

8985A51 ..... **Per Pair** $4.19

Folding Layout Squares

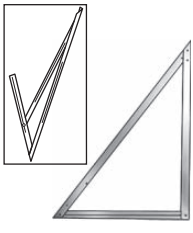

Unfold and lock in place to use, and then fold into the profile of a rule for easy storage. Squares are aircraft-quality aluminum.

Standard square is 2″ Wd.×⅛″ Thick. and measures 90° angles. Unfolded size is 3 ft.×4 ft.×5 ft.

2200A1 ..... **Each** $62.61

Mini square is 1½″ Wd.×3/16″ Thick. and measures 45° and 90° angles. It has etched graduations in inches to 32nds. Unfolded size is 16″×16″×22⅝″.

2200A2 ..... **Each** $42.23

Precision Bevel Protractors

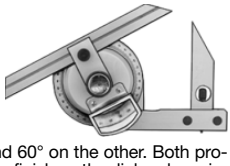

Take precise angle measurements of machines, molds, jigs, and more. Protractors have a dial with 360° graduations (in 0° to 90° sectors) and a vernier scale for readings to 5 minutes. The dial also rotates in a full circle and slides up and down the full length of the blade, locking in place with a knurled thumb lock. Blade is beveled at 45° on one side and 60° on the other. Both protractors are stainless steel with a satin chrome finish on the dial and vernier scale for easy reading. Include a protractor head with magnifier in a case.

Pro-value protractor kit includes 6″ and 12″ long blades, plus an acute-angle attachment. ***Mitutoyo protractor*** includes a 6″ long blade.

	Mitutoyo No.		Each
Pro-Value Protractor Kit	———	**2288A1**	$81.17
Mitutoyo Protractor	187-904	**2076A1**	314.00
12″ Blade for 2076A1	187-103	**2076A2**	49.73
Acute-Angle Attachment for 2076A1	187-105	**2076A3**	96.54

Adhesive-Backed Protractor Dials

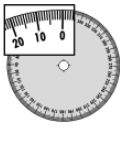
360° Counter-clockwise

Stop hunting for your protractor dial. With an adhesive back, these dials permanently mount to any clean, smooth surface and measure angles in 1° increments. All are white vinyl with black screen-printed graduations and have a polyester coating for abrasion and chemical resistance.

Dia.	Center Hole Dia.	Thick.	360° Clockwise	360° Counter-clockwise	180° Dual Direction	Each
3″	¼″	0.014″	**20045A31**	**20045A41**	**20045A51**	$10.17
4″	¼″	0.014″	**20045A32**	**20045A42**	**20045A52**	10.76
5″	¼″	0.014″	**20045A33**	**20045A43**	**20045A53**	11.42
6″	¼″	0.014″	**20045A34**	**20045A44**	**20045A54**	12.68
8″	¼″	0.014″	**20045A35**	**20045A45**	**20045A55**	13.93

Try Squares

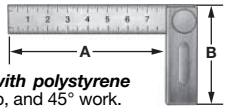

Mark angles, test angle accuracy, and check work being planed square. Squares are stainless steel with stamped graduations (unless noted). Blades are square both inside and out. ***Squares with polystyrene handle*** include an acrylic vial for level, plumb, and 45° work.

Blade Lg. (A)	Handle Lg. (B)	Handle Material		Each
Inch: *Inches to 8ths and 16ths on both sides.*				
8″	5″	Wood	**8994A64**♣	$15.51
Inch: *Inches to 8ths on both sides.*				
8″	5¼″	Polystyrene	**8994A82**	7.71
Metric: *mm on both sides.*				
200 mm	133.4 mm	Polystyrene	**8994A85**	7.71

♣ Etched black graduations.

Protractors

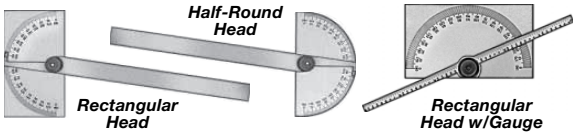

Easily set bevels and transfer angles. Protractors have black etched graduations from 0° to 180° in both directions and a 6″ long adjustable blade; knurled locking nut adjusts blade. Head is 3⅜″ Wd.×2″ Ht. Protractors with gauges have black etched graduations in inches to 32nds and 64ths for use as a depth gauge. ***Starrett*** are steel with a satin-chrome finish. ***Stainless steel*** are Type 410 stainless steel with a plain finish (unless noted).

Head Style	Starrett No.	Starrett	Each	Stainless Steel	Each
Half Round	C19	**2197A12**	$69.01	**8517A59**	$13.91
Rectangular	C183	**2197A11**	72.00	**8517A58**	12.94
Rectangular w/Gauge	C493B	**19265A21**	72.00	**8516A51**♦	17.82

♦ Type 301 stainless steel.

Extra-Large Protractors

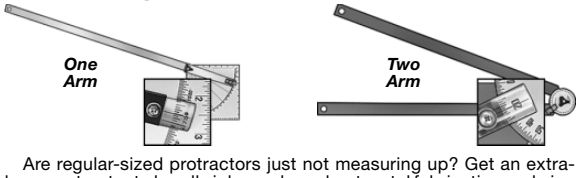

Are regular-sized protractors just not measuring up? Get an extra-large protractor to handle jobs such as sheet metal fabricating and pipe bending with accuracy. They have an adjustable pointer to zero the tool and aluminum arms that lock into position. Markings are black.

One-arm protractor projects 0° to 90° angles within ¼°. The head is 9″ square with graduations in inches to 16ths and in centimeters on the edges for linear measuring. ***Two-arm protractors*** rotate 270° in ½° increments to measure and create inside and outside angles.

No. of Arms	Arm Length		Each
One	37½″	**8518A2**	$104.95
Two	18″	**8518A5**	97.50
Two	36″	**8518A3**	157.95

Six-Way Gauge and Rule

Made of Type 301 stainless steel, this pocket-sized tool is 5¾″ long and does the work of the following tools:

Bevel Protractor—For measuring and laying out angles.
Circle Divider—Divides circles in up to nine equal parts.
Center Finder—Locates centers on shafts and circles.
59° Point Gauge—For checking drill point angles.
Square—Position arm at 90° to check right angles.
4¾″ Rule—Graduated in quick-reading inches to 64ths and mm.

2106A11 ..... **Each** $10.93

Adjustable Angle Indicators/Rules

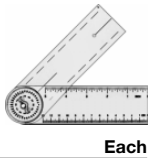

Like a portable drafting table, indicators/rules define, measure, and make any angle in seconds with ±0.005° accuracy or 1/16″ per length of tool. Simply rotate the blades to the desired angle, tighten the screw, and then read the dial. Blades rotate 360° in either direction. Tools are plastic with a locking brass screw head.

Closed Size, Lg.×Wd.×Thick.		Each
7″ ×1⅞″ ×0.030″	**20055A11**	$8.33
12″ ×1⅞″ ×0.040″	**20055A12**	13.55
18″ ×2″ ×0.080″	**20055A13**	17.66
23⅝″ ×2″ ×0.080″	**20055A14**	22.89

Layout and Staining Fluids

Layout Fluids— Fast-drying, see-through fluids have a deep, uniform color. Use them to scribe sharp, precise lines on dies, templates, tools, and machine parts.

Staining Fluids— Get instant visual identification by staining bearings, springs, nuts, and other components. Fluids repel oil, adhere without flaking and scaling, and won't interfere with part performance. *Opaque* fluids conceal the color of the part. *Transparent* fluids allow the color of the part to show through and are slightly thinner and faster drying than opaque.

To Order: Please specify color.

Size	Available Colors		Each
Layout Fluids			
2-oz. Fluid with Felt Tip Applicator	Blue, Red	2131A74	$5.65
4-oz. Fluid with Brush in Cap	Blue, Red	2131A61	6.80
8-oz. Fluid with Brush in Cap	Blue, Red	2131A62	9.45
16-oz. Aerosol Spray (Net 12 oz.)	Blue, Red	2131A64	11.40
1-qt. (930 ml) Fluid	Blue, Red	2131A65	16.87
Opaque Staining Fluids			
2-oz. Fluid with Felt Tip Applicator	Black, Dark Blue, Dark Green, Light Blue, Light Green, Red, White, Yellow	2131A18	6.59
8-oz. Fluid with Brush in Cap	Black, Dark Blue, Dark Green, Light Blue, Light Green, Red, White, Yellow	2131A68	12.38
1-gal. Fluid	Black, Dark Blue, Dark Green, Light Blue, Light Green, Red, White, Yellow	2131A73	61.85
Transparent Staining Fluids			
8-oz. Fluid with Brush in Cap	Black, Green, Purple, Red, Yellow	2131A1	15.04
1-gal. Fluid	Black, Dark Blue, Green, Purple, Red, Yellow	2131A2	75.13

High Spot Blue Marking Paste

Also known as Prussian blue, this paste marks high surfaces and interference spots on precision fittings such as bearings, gears, and valves. Coat the parts and assemble them into working position. Any improper fit will show up as a blue streak.

Paste won't dry up and works even after extended periods of time. Remove paste with soap and water or with the 19215A series cleaners on this page. Comes in a 0.75-oz. tube.

6165K11 ..... **Each** $5.45

Layout and Staining Fluid Remover and Cleaner

Removes and thins the layout and staining fluids sold on this page. Aerosol spray also cleans surfaces in preparation for fluid application.

Size		Each
16-oz. Aerosol Spray (Net 12 oz.)	19215A21	$10.75
1-qt. (930 ml) Can	19215A79	10.92
1-gal. Bottle	19215A18	30.23
Optional Empty 5-oz. Bottle with Applicator Brush	19215A251	13.43

Scribers

Steel Tipped Scribers— For marking steel and plastics; also good as a general purpose pick for cleaning and probing.
Carbide Tipped Scribers— For marking hardened steel, stainless steel, and ceramics. Outlasts steel in similar applications.
Diamond Tipped Scribers— For marking virtually any surface, even glass and the hardest tool steels. Outlasts carbide.

Steel Tipped

90° Hook and Straight Point Steel Tipped Scriber— Has a 90° hook point on one end, a straight point on the other end, and a knurled aluminum body. Length is 8″.

6808A12 ..... **Each** $3.53

90° Hook and Straight Point Steel Tipped Scriber with Adjustable Handle— Same as 6808A12, except handle has a knurled sleeve that can be positioned anywhere between the two ends. Length is 8¼″.

Scriber ..... 6808A11 **Each** $5.53
Repl. Steel Point ..... 6808A31 **Each** $3.51

Combination Scriber and Scraper— Has a needle-sharp hardened steel scriber on one end and an angled chisel scraper on the other. The body is knurled steel. Length is 6½″.

19375A11 ..... **Each** $4.12

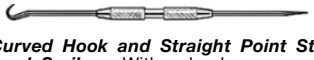

Curved Hook and Straight Point Steel Tipped Scriber— With a hook on one end and a steel-point scriber on the other, this tool is particularly good for oil seal removal and spring adjustments. Has a knurled aluminum body. Length is 8″.

6808A13 ..... **Each** $3.65

Compact Steel Tipped Scriber— Has a solid-locking, chuck-style knurled aluminum handle. Point reverses for storage. Head is hex shaped to prevent rolling. Length is 3¾″.

Scriber ..... 6808A14 **Each** $3.86
Repl. Steel Point ..... 6808A32 **Each** $0.63

Carbide Tipped

Carbide Tipped Scribers— Have a knurled aluminum body, a chuck-style nose that holds the point, and a pocket clip. Available with or without a magnet at one end for retrieving ferrous particles from hard-to-reach places. Length is 5½″.

		Each
Scriber	2157A11	$5.79
Scriber with Magnet	2157A12	7.45
Repl. Carbide Point	2157A14	3.52

Retractable Point Carbide Tipped Scriber— Point retracts just like a ball-point pen to protect it when not in use. Scriber has an aluminum body, a knurled grip, and a pocket clip. Length is 6½″.

Scriber ..... 1981A51 **Each** $23.36
Repl. Carbide Point ..... 1981A81 **Each** $10.70

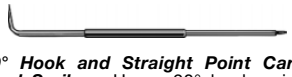

90° Hook and Straight Point Carbide Tipped Scriber— Has a 90° hook point on one end, a straight point on the other end, and a smooth hexagonal aluminum grip. Length is 6″.

68085A65 ..... **Each** $15.61

Compact Carbide Tipped Scriber— Has a solid-locking, chuck-style knurled aluminum handle. Point reverses for storage. Head is hex shaped to prevent rolling. Length is 3¾″.

Scriber ..... 6808A15 **Each** $7.22
Repl. Carbide Point ..... 2157A14 **Each** $3.52

Diamond Tipped

Retractable Point Diamond Tipped Scriber— The point retracts into the black-coated brass body to protect it when not in use. Includes a pocket clip. Length is 5¼″.

		Each
Scriber	1984A16	$20.10
Repl. Diamond Point	1984A17	9.04

Fixed-Point Diamond-Tipped Scriber— Has a plastic body with a cap to protect the point when not in use. Point is not replaceable. Length is 5⅜″.

2018A51 ..... **Each** $9.39

Combination Tipped

Combination Diamond and Carbide Tipped Scriber— Twist the scriber once for a polished, cone-point diamond; twist again to retract diamond point and get a carbide point. Body is plastic with a rubber comfort grip. Includes a pocket clip. Length is 4½″.

		Each
Scriber	2344A11	$22.04
Repl. Diamond Point	2344A42	8.89
Repl. Carbide Point	2344A52	9.67

Interchangeable 5-Piece Scriber Sets

Why settle for one scriber when you can get four? These versatile sets include a knurled aluminum hexagon handle with four interchangeable steel points: straight, 90°, hook, and double angle. Come in a vinyl pouch.

Magnetic set has a magnetic tip on the handle to retrieve ferrous particles.

	Longest Assembled Length		Each
Standard	7½″	68095A69	$6.89
Magnetic	7⅝″	68095A68	8.09

Scriber, Punch, Magnet, and Rule Set

Get four popular tools in a vinyl pocket case for go-anywhere convenience. Each tool has a pocket clip.

Set includes:

Scriber— 5 5/16″ long scriber with a carbide point that reverses for storage and a knurled aluminum handle.

Punch— 5¾″ long adjustable-force center punch with a steel point and an aluminum handle.

Magnet— Magnetic-tipped retriever that extends from 5½″ to 23½″ and has a nickel-plated steel handle.

Rule— 6″ long flexible stainless steel rule that's graduated in inches to 32nds and 64ths.

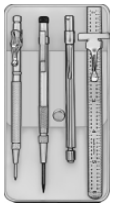

3458A11 ..... **Each** $31.18

Scribing Gauge

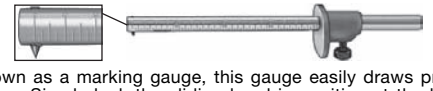

Also known as a marking gauge, this gauge easily draws precise straight lines. Simply lock the sliding head in position at the length desired on the 5/16″ Dia.×6¼″ Lg. bar; then drag the gauge along the edge of your surface to scribe a straight line. Includes a needle point that scribes on wood, metal, and plastic. Bar is made of nickel-plated steel and is graduated in inches to 16ths up to 5″.

		Each
Scribing Gauge	2011A1	$16.37
Replacement Needle Point	2011A22	.86

Awls

Scribe lines in metal and wood and punch soft materials.

Wood-Handle Awl— Handle is contoured for a comfortable grip. Blade is alloy steel; it runs through the handle and is attached to a steel ferrule and cap.

Plastic-Handle Awl— Has a chrome-plated alloy steel blade that's anchored in a tough, screwdriver-style handle.

All-Steel Awl— Constructed from one piece of carbon steel, this rugged awl has a flat head that withstands hammer blows.

	Blade Lg.	O'all Lg.		Each
Wood Handle	3¾″	6½″	19195A21	$6.29
Plastic Handle	4″	7 13/16″	19195A22	7.15
All Steel	3¼″	7″	19195A23	7.13

Marking Compasses

Compass and Scriber— Has a full-length, hardened steel scribing pin and a wing nut for tension adjustment. Made of brass-plated steel. Pencil not included.

Standard Compass— Attach the included pencil and you're ready to draw. It has spring-tension adjustment and a scribe guide for edge marking. Made of die cast, rust-resistant zinc.

Precision Compass— Has a knurled center wheel for micro-setting. Made of nickel-plated brass. Includes three leads for scribing and two needle points.

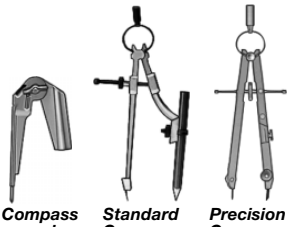

	Max. Circle Dia.		Each
Compass and Scriber	8″	19755A43	$3.33
Standard Compass	9″	89675A65	5.58
Precision Compass	10⅜″	1210T4	18.10

Precision Straightedges

Straightedges make scribing straight lines, making straight cuts, and checking surfaces for straightness a snap. All include a hang-up hole, except the tool steel edges.

Beveled Edge— Allows clearance for marking.

Lg.×Wd.×Thick.	Accuracy▲	Beveled Edge	Each	Square Edge	Each
Tool Steel					
12″×1 13/32″×1 1/64″	0.0005″	2265A11	$46.16	2265A18	$39.99
24″×1 13/32″×1 1/64″	0.001″	2265A13	115.00	2265A21	64.00
36″×2 13/32″×7/32″	0.0015″	2265A14	164.00	2265A22	145.98
48″×2 13/32″×7/32″	0.002″	2265A1	250.71	2265A23	205.51
72″×3 5/32″	0.003″	2265A17	439.39	2265A25	374.21
96″×3¼″	×5/16″ 0.004″	2265A2	614.10	—	—
120″×3¼″	×5/16″ 0.005″	2265A3	713.46	—	—
Aluminum					
24″×2″	×¼″ 0.005″	—	—	1935A72	40.02
36″×2″	×¼″ 0.005″	—	—	1935A73	62.90
48″×2″	×¼″ 0.005″	—	—	1935A74	89.22
60″×2″	×¼″ 0.005″	—	—	1935A75	126.20
72″×2″	×¼″ 0.005″	—	—	1935A76	151.86
96″×2″	×¼″ 0.005″	—	—	1935A77	187.52
120″×2″	×¼″ 0.005″	—	—	1935A78	243.04
Semiflexible Stainless Steel					
24″×2″	×3/32″ 0.005″	19295A18	28.95	19295A2	28.95
36″×2″	×3/32″ 0.005″	19295A15	39.93	19295A28	39.93
48″×2″	×3/32″ 0.005″	19295A17	54.90	19295A31	54.90
60″×2″	×3/32″ 0.005″	19295A61	64.88	19295A62	64.88
72″×2″	×3/32″ 0.005″	19295A22	77.86	19295A32	77.86
Rigid Stainless Steel					
24″×2″	×¼″ 0.001″	19295A39	218.47	19295A49	196.84
36″×2″	×¼″ 0.0015″	19295A41	327.70	19295A51	294.18
48″×2½″	×¼″ 0.002″	19295A42	478.04	19295A52	428.29
60″×3″	×¼″ 0.0025″	19295A43	651.08	19295A53	599.17
72″×3″	×¼″ 0.003″	19295A44	781.95	19295A54	704.08
96″×3¼″	×5/16″ 0.004″	19295A46	1,191.85	19295A56	1,065.31

▲ Tolerance of straightness (+/–) over entire length of straightedge.

Beam Compass

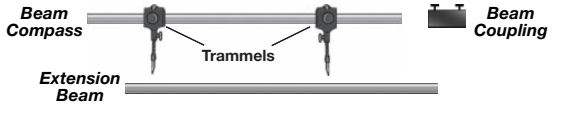

Draw up to 48″ dia. circles with this rigid, lightweight compass. Create even larger circles by connecting additional extension beams (sold separately); one beam coupling is required for each additional extension beam. Compass includes two 13″ long beams, one beam coupling, a set of trammels with needle points, a ruling pen, lead tips, and a protective plastic case. All beams are made of extruded aluminum.

			Each
Beam Compass	89645A65		$33.08
13″ Extension Beam	89645A67		9.96
26″ Extension Beam	89645A68		21.00
Beam Coupling	89645A66		6.50
Replacement Lead (4/Pkg.)	1210T82	**Per Pkg.**	$2.27

Tape Rule Marking Compass

Drawing large circles couldn't be easier—simply pull tape out to desired distance; a lock holds the tape in position. Includes a steel pin for securing the compass and a 2 mm lead point for marking. Compass has a 3½″ to 72″ radius range and 144″ maximum circle diameter. Graduated in inches to 32nds top and mm bottom. Size is 4½″ Lg.×2″ Wd.

2127A12 ..... **Each** $32.78

Extra Large Marking Compasses

Spring tension joints allow compasses to stay rigid for accurate circles, and then fold for easy storage. Holder accepts the included soapstone crayon as well as any round or flat soapstone or pencil. Made of lightweight, rustproof aluminum.

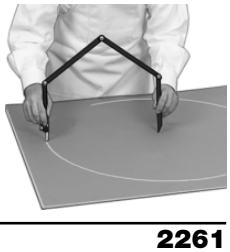

Max. Circle Dia.		Each
22″	8989A69	$23.80
50″	8989A71	41.57
100″	8989A73	66.81

Trammels

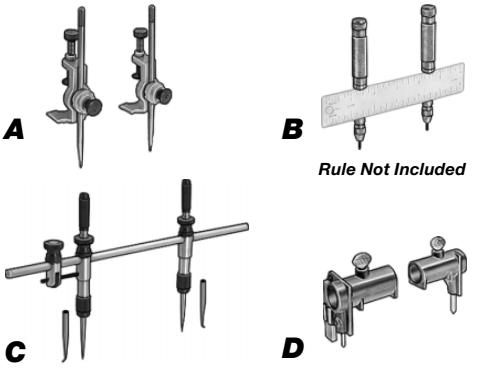

When you need to accurately transfer measurements, scribe arcs, and lay out circles that are too large for ordinary compasses and dividers, these trammels get the job done.

***A** Trammels with 6″ Points*—Clamp these adjustable trammels onto any 5/8″ to 1 1/2″ thick beam (beam is not included). Set includes two 6″ long steel points that are off-center to allow fine adjustments. The points may be replaced with a pencil, pen, or soapstone. Trammels are zinc.

2023A24 ..... **Per Set** $35.63

***B** Trammels for Machinists' Rule*—Attach to your graduated rule for precision measurements. Trammels fit on any rule from 1/2″ to 1 1/8″ wide (rule is not included). Set includes two steel scribe points and two lead points; the points reverse into the body for storage. Trammels are aluminum.

19355A52 ..... **Per Set** $16.62

***C** Starrett Steel Beam Trammels*—Include a beam that has a flattened top; when clamped on the beam, trammels won't turn from pressure on points. Points are adjustable and may be replaced with the included caliper legs. Trammels are steel with a knurled swivel grip; one per set has a screw for fine adjustment of the point.

Beam Lg.	Max. Circle Dia.	Starrett No.		Per Set
10 1/2″	18″	C251A	**2124A11**	$149.01
14 1/2″	26″	C251B	**2124A12**	169.01
20″	36″	C251C	**2124A13**	172.00

***D** Pipe Bar Trammels*—Clamp trammels onto 6″ or longer 1/2″ pipe size (0.84″ OD) to mark circles 1 1/2″ dia. and larger. Set includes two aluminum heads; one head is stationary with a hardened-steel center point and the other is movable and holds a marking tool. A steel scribe, a soapstone, and an Allen wrench are included.

1920A42 ..... **Per Set** $47.54

Wing Joint Dividers

Transfer and scribe perfect circles and arcs for your layouts. Made from forged and polished steel, dividers have hardened points plus a knurled nut and tempered spring for fine adjustments.

Leg Lg.	Max. Circle Dia.		Each
6″	15 7/8″	**2022A1**	$41.25
8″	22 1/2″	**2022A3**	42.44
10″	24″	**2022A4**	45.35
12″	29 5/8″	**2022A5**	45.50

Pipe Flange Aligner Pins

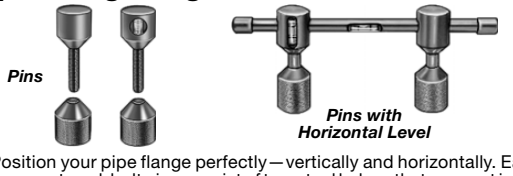

Position your pipe flange perfectly—vertically and horizontally. Each of these nut-and-bolt pins consist of two steel halves that connect in the center. Just insert a pair of pins into adjacent flange holes and tighten; one pin in each pair has a bubble level for vertical alignment.

Pins—Use with your level to align flange horizontally.

Pins with Horizontal Level—Include a pair of pins and a steel rod with a built-in level for fast horizontal alignment.

For Flange Hole Dia.	Pin Connection	*Pins*	Per Pair	*Pins with Horizontal Level*	Each
1/2″ to 1 7/16″	Press-Fit	**2298A13**	$82.75	**2745A24**	$102.10
1/2″ to 1 7/16″	Threaded	**2298A14**	82.75	**2745A241**	102.10
1/2″ to 1 15/16″	Threaded	**2298A15**	99.21	**2745A242**	126.31

Spring Calipers and Dividers

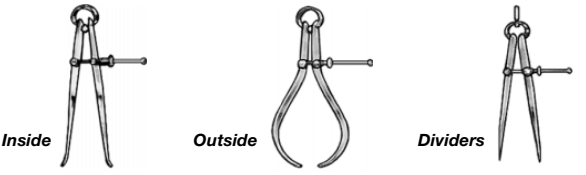

Get accurate readings every time. These tools have a strong, flexible bow spring to ensure accuracy. They're carbon steel and have a screw with knurled nut in the legs for fine adjustment.

Leg Lg.	Approx. Max. Opening	*Inside*	*Outside*	Each	*Dividers*	Each
Pro-Value with Flat Legs						
3″	3″	**2060A58**	**2060A56**	$11.48	**2060A29**	$11.48
4″	4″	**2060A22**	**2060A13**	11.92	**2060A31**	11.92
6″	6″	**2060A24**	**2060A15**	13.34	**2060A33**	13.34
8″	8″	**2060A25**	**2060A16**	14.50	**2060A34**	14.50
10″	10″	**2060A6**	**2060A62**	16.20	**2060A66**	16.20
12″	12″	**2060A27**	**2060A18**	17.96	**2060A36**	17.96
Starrett with Round Legs						
3″	3 1/2″	**2059A22**	**2059A12**	44.72	**2059A32**	49.74
6″	6 1/2″	**2059A24**	**2059A14**	52.78	**2059A34**	58.00

Friction Joint Calipers

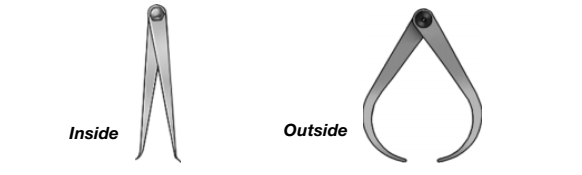

A friction joint offers rigidity without play to hold the caliper in position.
Pro-Value calipers are polished tool steel.
Starrett calipers are high-grade steel.

Leg Lg.	Approximate Maximum Opening	*Inside*	Each	*Outside*	Each
Pro-Value					
6″	8″	**1962A31**	$13.44	**1962A36**	$14.28
8″	10 1/2″	**1962A32**	15.82	**1962A37**	19.78
12″	16″	**1962A33**	33.36	**1962A38**	47.12
Starrett					
18″	24″	**1962A34**	99.74	**1962A39**	105.01
24″	32″	**1962A35**	142.00	**1962A41**	149.01

Combination Calipers and Dividers

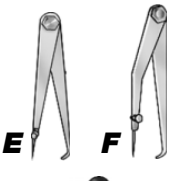

Perfect for layout work, locating and testing centers, and marking distances from an edge. All are high-grade steel with one caliper leg and one divider leg with an adjustable point.

Style E has a straight divider leg.
Style F has an offset divider leg.
Style G has a straight divider leg and a knurled nut for fine adjustments.

	Leg. Lg.	Approximate Maximum Opening		Each
E	6″	8″	**1963A32**	$47.50
F	6″	8″	**1963A36**	47.50
G	6″	8″	**1963A33**	90.00
G	8″	10 5/8″	**1963A34**	114.00

Pipe Flange Aligner with Protractor

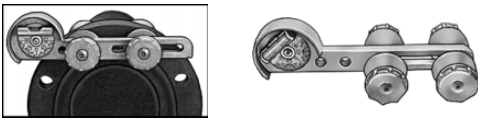

Use as a level—or attach the included conical nut-and-bolt pins for two-hole flange alignment.

Aligner is made of aluminum and has an adjustable-dial protractor with a bubble level that reads to 90° in 2 1/2° increments. Nut and bolt pins fit any pipe-flange holes spaced from 2″ to 5 1/2″ apart.

2342A11 ..... **Each** $107.46

Centering Heads

Find centerlines, lay out keyways, and establish angles and marks for butt connections. Heads are aluminum with a steel centering rod. They also have an adjustable-dial protractor with a bubble level that reads to 90° in 2½° increments.

Manual Punch—To mark a spot, gently strike the centering rod with a hammer.

Spring-Loaded Punch—No need for a hammer. Just press the trigger to release the spring-loaded centering rod.

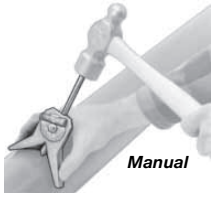

Manual

	For Pipe OD		Each
Manual Punch	½″-Up	2195A1	$76.47
Spring-Loaded Punch	1″-Up	2195A2	119.14
Replacement Dial/Level Assembly		2195A11	31.43

Pipe Contour Layout Markers

Lay out pipe and structural steel joints with ease. Markers handle any type or size of joint—elbows, tees, and laterals at all angles. They have a lightweight anodized-aluminum frame with a magnetic base, calibrated protractor dials, a triple-jointed marking arm, a holder for the included soapstone crayon, and a built-in bubble level in the base.

Also include a structural adapter that simplifies layout of I-beams, angles, and channels. Protractor reads to 90° in 2½° increments. Hold markers by hand or use any type of elastic cord or strap on nonmagnetic surfaces.

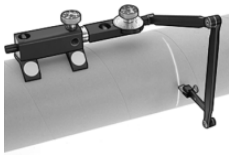

For Pipe OD		Each
1½″ to 18″	7981A1	$159.92
8″ to 48″	7981A3	325.32

Pipe Measuring Tape

Take the guesswork out of sizing pipe. Just wrap this fiberglass tape rule around pipes and fittings to find the size. It measures PVC, galvanized, and iron pipe sizes ⅛″ to 12″, as well as CPVC and copper pipe sizes ¼″ to 12″. Tape locks in place; push button to retract.

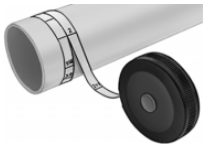

2219A21 ..... **Each** $10.91

Pipe-Sizing Tools with Ruler

Measure ⅛″ to 16″ pipe size (1/16″ to 16″ pipe OD) with these pocket-size tools that also unfold into a 14″ ruler. Plus, they have a pipe size/pipe OD conversion chart and a fractional/decimal conversion chart. Size is 7⅝″ Lg.×3½″ Wd. (when folded).

Styrene—A good economical choice; it's white with black markings.

Polycarbonate (Lexan)—Provides high impact resistance and is clear with black markings.

Aluminum—Tool is strong, durable, and glare resistant. It has a black anodized finish with white markings.

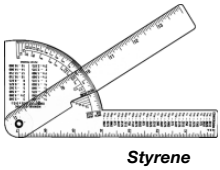

Styrene

	Thickness		Each
Styrene	0.04″	1902A8	$8.15
Polycarbonate (Lexan)	0.06″	1902A1	18.10
Aluminum	0.06″	1902A4	34.92

Pipe Wrap Layout Rules

Measure pipe OD and mark straight lines around pipe. Rules are graduated in inches to 16ths and in centimeters. They have a conversion chart with pipe OD and ¼-, ½-, and ¾-circumference measurements. Made of a nitrile-bound material with reinforcing fibers, rules withstand heat up to 360°F and resist grease, oil, gasoline, and salt water. They're gray with white markings.

For Pipe OD	Rule Lg.	O'all Size, Lg.×Wd.×Thick.		Each
1″ to 6″	28″	30″×2⅝″×0.031″	8991A71	$11.50
2″ to 16″	36″	60″×3⅞″×0.031″	8991A73	17.23
6″ to 30″	36″	120″×5¼″×0.031″	8991A75	34.19

Pipe Contour Gauges

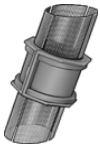

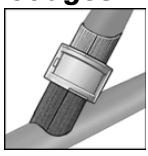

Push Down

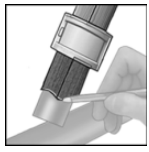

Slide Up and Mark

Transferring the exact outline of a pipe joint couldn't be easier. Simply slide the gauge over the pipe to be cut, hold pipe in joint position, and push the gauge probes down until they take the shape of the pipe joint. Slide the gauge up and you're ready to mark the pipe. Probes are stainless steel, the inner band is aluminum, and the outer band is yellow ABS plastic.

For Pipe Size	For Pipe OD		Each
1″	1 5/16″	7317A71	$46.31
1¼″	1⅝″	7317A72	52.77
1½″	1⅞″	7317A73	60.31
2″	2⅜″	7317A74	61.38
2½″	2⅞″	7317A75	118.46

Contour Gauges

A series of narrow probes slide within these gauges to duplicate any shape. Excellent for pattern and mold making, imaging parts, and transferring prototype contours. Gauges are also great for fitting floor tiles, linoleum, and carpet against door casings and pipe.

Stainless Steel

Probe Material	O'all Lg.	For Duplicating Contours		Each
Stainless Steel	6″	5¼″ Wd. ×2″ Ht.	2181A12	$7.92
Orange Plastic	11⅛″	10″ Wd. ×1¼″ Ht.	19065A32	19.79

Precision Radius Gauge Sets

Holder with Gauge

Find precise convex and concave radii of tools, patterns, and dies. Each gauge is marked with radius and has five different gauging surfaces for checking all types of radii. Include a vinyl case.

Mitutoyo are Type 304 stainless steel.
Starrett are Type 430 stainless steel.
Pro-Value 2204A41 is Type 301 stainless steel and 2204A55 is Type 304 stainless steel.

No. of Gauges	Radii		Each
Mitutoyo Precision Gauge Sets			
8	9/16″ to 1″ (1/16″ increments)	2204A36	$362.39
26	0.010″ to 0.030″ (0.005″ increments); 0.04″ to 0.10″ (0.01″ increments); 0.12″ to 0.30″ (0.02″ increments); 0.35″ to 0.50″ (0.05″ increments)	2204A65	143.99
Starrett Precision Gauge Sets			
8	9/32″ to ½″ (1/32″ increments)	2204A2	66.00
16	1/32″ to 17/64″ (1/64″ increments)	2204A1	74.00
16	1/32″ to ½″ (1/32″ increments)	2204A4	91.01
21	1 to 7 mm (0.5 mm increments); 8 to 15 mm (1 mm increments)	2204A54	135.01
25	1/64″ to 17/64″ (1/64″ increments); 9/32″ to ½″ (1/32″ increments)	2204A3 ♦	156.00
Starrett Precision Gauge Sets with Standard Letter of Certification			
16	1/32″ to ½″ (1/32″ increments)	2204A47	117.67
25	1/64″ to 17/64″ (1/64″ increments); 9/32″ to ½″ (1/32″ increments)	2204A46 ♦	160.38
Pro-Value Precision Gauge Sets			
8	9/16″ to 1″ (1/16″ increments)	2204A41	259.60
25	1/64″ to 17/64″ (1/64″ increments); 9/32″ to ½″ (1/32″ increments)	2204A55 ♦	32.06
Optional 4″ Lg. Steel Gauge Holder		2204A6	20.00

♦ Comes with a gauge holder.

Fold-Out Radius Gauge Sets

Sets have male and female steel gauges that fold into a compact case for go-anywhere convenience. Each blade is marked with radius and locks into position with a thumbscrew. Gauges check both convex and concave radii of tools, patterns, and dies. Folded size of 8625A58 is 2¾″ Lg.×½″ Wd.; 8625A68 is 3½″ Lg.×¾″ Wd.; 8625A78 is 2¾″ Lg.×⅝″ Wd.

No. of Gauges	Radii		Each
30	1/32″ to 1/4″ (1/64″ increments)	8625A58	$13.01
32	17/64″ to 1/2″ (1/64″ increments)	8625A68	13.91
34	1 to 3 mm (0.25 mm increments); 3 to 7 mm (0.5 mm increments)	8625A78	33.32

Gear Tooth Pitch Gauges

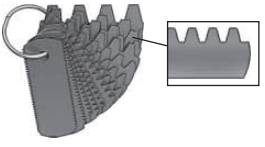

Each blade is marked with pitch value.

14½° Pressure Angle—Use for most types of gears, including spur. Not for use on miter, bevel, and helical configurations.

14½° and 20° Pressure Angle—Can be used for most types of gears, including spur, miter, bevel, and helical configurations.

Style	No. of Pitches	Pitch Range		Each
14½° Pressure Angle—*Steel*				
Inch	22	6, 7, 8, 9, 10, 11, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36, 40, 48, 64, 80	2069A67	$51.95
Metric	16	0.5, 0.75, 1.0, 1.25, 1.5, 1.75, 2.0, 2.5, 2.75, 3.0, 3.25, 3.5, 3.75, 4.0, 4.5, 5.0	2069A68	53.20
14½° and 20° Pressure Angles—*Stainless Steel*				
Inch	22	3, 4, 5, 6, 8, 10, 12, 16, 20, 24, 32	2069A12	167.71
Metric	26	1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 7.0, 8.0	2069A13	188.50

Thread Pitch Diameter Wire Set

Measure the pitch diameter of all 60° V, American (NPT), and unified (UN/UNF) threads from 3 to 48 threads per inch and 60° V metric threads from 0.5 mm to 6 mm. Set includes three wires for each of the 16 different pitch diameters and a laminated conversion chart. Simply select the wire size that best fits in the threads; then calculate the pitch diameter with the equations provided. Wires are stainless steel and 3″ long. Set comes in a vinyl pouch.

2082A1 ..... **Each** $29.95

Starrett No. 22C Drill Point Gauge

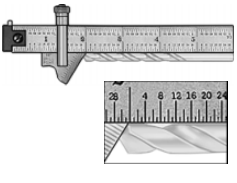

Get precise verification of 118° drill point angles and determine cutting edge length on right- and left-hand drills. Gauge slides along a 6″ Lg.×¾″ Wd. hook rule; rule is graduated in inches to 64ths. Gauge is steel and locks in place with a thumb nut. Overall length is 6¼″.

8609A51 ..... **Each** $54.00

Tap and Drill Size Gauges

Gauges have tap and drill sizes, and their decimal equivalents, stamped on them to easily determine the right size. They're heavy-gauge steel and are machined and ground.

Fractional gauge sizes are in 1/64″ increments.

Metric gauge sizes are in 0.5 mm increments.

Gauge Style	Wd.×Ht.		Each
Fractional 1/16″-1/2″	2½″×6 7/16″	8986A67	$11.46
Wire 1-60	2½″×6 7/16″	8986A68	11.46
Wire 61-80	1″ ×3″	8986A66	13.41
Letter A-Z	2½″×6 7/16″	8986A65	11.46
Metric 1.5-12.5 mm	2½″×6 7/16″	8986A64	19.23

Screw Pitch Gauge Sets

2071A1

2071A24

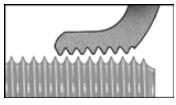

Quickly determine the pitch of internal and external screw threads. Gauges have the number of threads per inch (pitch) clearly marked on each blade. Tighten thumbscrew to hold individual blades in place. All are steel, except 2071A69 and 2071A4 which are stainless steel.

No. of Blades	Pitch Range		Each
For 60° V, Unified, American National Threads			
22	9-40	2071A1	$15.72
30	4-42	2071A25	13.90
30	6-60	2071A3	17.22
51	4-84	2071A24	26.25
For 60° V, Unified, American National, and Metric Threads			
28	4-56/0.5-6 mm	2071A26	16.04
51	4-42/0.4-7 mm	2071A68	32.50
For 55° Whitworth Threads			
28	4-60	2071A4	36.90
28	1/16″-2½″	2071A19	10.26
For 60° Metric Threads			
20	0.4-7 mm	2071A18	9.54
28	0.25-2.5 mm	2071A67	16.04
Starrett Set For 60° Metric Threads			
28	0.25-2.5 mm	2071A65	39.01
For 29° Acme Threads			
16	1-12	2071A69	81.27

Acme Screw Thread Gauge

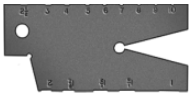

Use gauge to check Acme threads or as a guide while grinding and cutting Acme threads to a 29° included angle. It works on both round and cut threads and has a pitch range of 1-10. Made of steel. Overall size is 3⅜″ Wd.×1⅝″ Ht.

8615A69 ..... **Each** $16.49

NPT, British, and Metric Thread Measuring Set

Identify the pitch of American (NPT), unified (UN/UNF), British (BSPT/BSPP), and metric threads. Set includes two steel gauges, two steel angle gauges, a steel caliper, and an instruction book. Comes in a folding plastic case.

7863K1 ..... **Each** $42.44

Tap and Drill Reference Rule

One side of this stainless steel rule lists tap and drill sizes for UNF, UNC, metric ISO, and American standard pipe threads; the other side has a decimal equivalent table for sizes 1/64″ to 63/64″ and an easy-to-read 6″ rule graduated in inches to 64ths. Overall size is 7″ Lg.×1¼″ Wd.

2119A21 ..... **Each** $6.15

Starrett No. C391 Center Gauge

Set grinding and cutting tools before machine thread cutting. Plus, this American National and U.S. Standard 60° gauge determines threads per inch. Scale is graduated in 14ths, 20ths, 24ths, and 32nds. An additional table gives double depths of threads, so you can determine the size of tap drills. Gauge is spring-tempered steel with a satin chrome finish. Edges and angles are hardened and ground. Overall size is 2¼″ Lg.×¾″ Wd.

2072A11 ..... **Each** $21.50

Screw Checkers

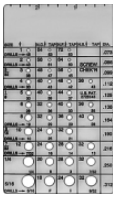

Get complete screw information at your fingertips—diameter, length, threads per inch, hole size, and tap drill size.

***Inch Checkers*—**Check machine screws, bolts, rivets, and most cotter pins. They also measure diameter and length of wood and sheet metal screws. Threaded for NC, NF, and NS threads.

***Metric Checkers*—**Check screws and bolts. Threaded for coarse and fine threads.

Material	For Screw Sizes	Wd. × Ht. × Thick.		Each
Inch Screw Checkers				
Plastic	No. 1 to 5/16″	3″ × 5 1/8″ × 0.125″	98728A111	$10.08
Steel	No. 1 to 5/16″	3″ × 5 1/8″ × 0.08″	98728A112	14.25
Metric Screw Checkers				
Steel	2-7 mm	3″ × 5 3/8″ × 0.07″	98728A114	15.19
Steel	8-14 mm	5 1/8″ × 5 3/8″ × 0.10″	98728A116	16.47

Thread-It Nut and Bolt Gauges

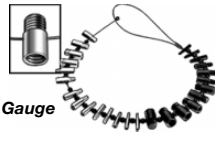

Gauge

Wall-Mount Gauge

Quickly and accurately determine bolt, screw, and nut sizes. Bolts and screws thread into holes; nuts thread onto plugs. All plugs and holes are stamped with the size and come on a cable with a hanging loop except for the wall-mount model, which has labeled plugs and holes mounted on a 3″ Wd. × 39″ Ht. board. Gauges are carbon steel and threaded for both coarse and fine threads. Inch sizes are zinc plated; metric sizes have a black-oxide coating.

***Inch Gauge*—**Sizes: #6, #8-32 (no fine thread), #10, and 1/4″ to 1″ (23 sizes total).

***Metric Gauge*—**Sizes: M3 × 0.5, M4 × 0.7, M5 × 0.8, M6 × 1.0, M7 × 1.0, M8 × 1.0, M8 × 1.25, M10 × 1.0, M10 × 1.25, M10 × 1.5, M12 × 1.25, M12 × 1.5, M12 × 1.75, M14 × 1.5, M14 × 2.0, M16 × 1.5, M16 × 2.0, M20 × 1.5, M20 × 2.5, M24 × 2.0, M24 × 3.0.

***Inch/Metric Gauge*—**Inch sizes: #6, #8, #10, and 1/4″ to 1/2″ (16 sizes total); and metric sizes: M4 × 0.7, M5 × 0.8, M6 × 1.0, M7 × 1.0, M8 × 1.0, M8 × 1.25, M10 × 1.0, M10 × 1.25, M10 × 1.5, M12 × 1.25, M12 × 1.5, and M12 × 1.75.

***Inch/Metric Wall-Mount Gauge*—**Inch sizes: #6, #8, #10, and 1/4″ to 1/2″ (16 sizes total); and metric sizes: M4 × 0.7, M5 × 0.8, M6 × 1.0, M7 × 1.0, M8 × 1.0, M8 × 1.25, M10 × 1.0, M10 × 1.25, M10 × 1.5, M12 × 1.25, M12 × 1.5, and M12 × 1.75. Gauge has two 5/16″ dia. holes for mounting (fasteners not included).

		Each
Inch Gauge	20375A14	$29.33
Metric Gauge	20375A17	29.33
Inch/Metric Gauge	20375A21	30.35
Inch/Metric Wall-Mount Gauge	20375A27	44.10

Wire and Sheet Metal Gauges

Gauges have gauge numbers on one side, decimal equivalents on the other. All are hardened steel and approximately 3 1/4″ dia.

***U.S. Steel Wire Gauge*—**The same as W & M (Washburn & Moen) and American Steel and Wire Co. gauges, it measures steel wire and steel wire rod.

***American Wire Gauge*—**The same as Brown & Sharpe gauges, it measures copper and aluminum wire and sheet.

***U.S. Standard Iron and Steel Plate and Sheet Gauge*—**Designates sizes of iron and steel plates and sheets based on the weight per square foot per inch thickness.

Gauge Type	Gauge Range	Decimal Equivalent		Each
U.S. Steel Wire Gauge	36-0	0.009″-0.3065″	19305A34	$63.01
American Wire Gauge	36-0	0.005″-0.3249″	19305A33	18.97
U.S. Standard Iron and Steel Gauge	36-0	0.007″-0.3125″	8622A53	19.19

Metric Screw Pitch and Bolt Gauge

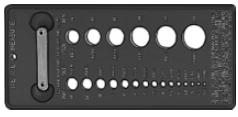

Measure the outside diameter of threads from 2.3 mm to 24 mm. Gauge is high-impact styrene and includes a removable carbon steel screw pitch gauge for measuring metric thread pitches from 0.35 mm to 3 mm. Overall size is 9 1/2″ Wd. × 4″ Ht.

8567A11 ..... **Each** $11.79

Bolt and Nut Gauges

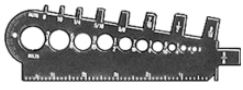

Inch Gauge

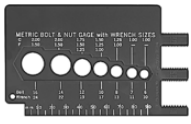

Metric Gauge

Gauges are high-impact polystyrene.

***Inch Gauge*—**Measures #8 to 3/4″ bolt sizes and #8 to 5/8″ nut sizes.

***Inch/Metric Gauge*—**Measures #6 to 1″ and M6 to M22 bolt sizes; #8 to 5/8″ nut sizes.

***Metric Gauge*—**Measures M6 to M16 bolt sizes, M10 to M24 nut sizes, plus 1.00 to 2.00 thread pitch.

	Wd. × Ht.		Each
Inch Gauge	7 1/2″ × 2 3/8″	98845A650	$3.71
Inch/Metric Gauge	9″ × 3 3/4″	98845A670	5.14
Metric Gauge	5 1/4″ × 3 3/16″	98845A660	3.71

All-in-One Gauges

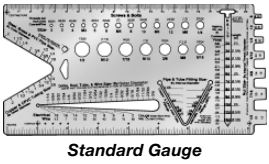

Standard Gauge

Stop limiting yourself. Get one gauge to measure screw, bolt, nut, and nail sizes; steel, brass, and PVC pipe size by OD; copper and CPVC tubing size by OD; drill, rod, tube, and wire size by OD; copper and CPVC joint tube fittings by ID; and internally threaded pipe fittings by ID. Plus, they have rules graduated in inches and cm, an electrical wire gauge, and conversion formulas for converting measurements to other scales. Gauges are PVC.

Deluxe gauge measures more sizes than the standard gauge.

	Wd. × Ht.		Each
Standard Gauge	8 11/16″ × 4 1/4″	20165A33	$2.43
Deluxe Gauge	10 1/2″ × 3 1/2″	20165A34	4.93

Pipe and Tubing Gauges

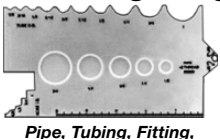

Pipe, Tubing, Fitting, and Hose Gauge

Hose and Fitting Gauge

***Pipe, Tubing, Fitting, and Hose Gauge*—**Measures pipe thread sizes to 3/4″; tubing OD and hose ID up to 1″. Also has a pipe and compression fitting chart. Made of high-impact polystyrene. Overall size is 9″ Wd. × 3 3/4″ Ht.

***Stainless Steel Hose and Fitting Gauge*—**Corrosion-resistant gauge measures hose ID up to 1 1/4″ as well as male and female NPT threads to 2″. Overall size is 3 3/4″ Wd. × 4 1/2″ Ht.

		Each
Pipe, Tubing, Fitting, and Hose Gauge	1976A22	$4.50
Stainless Steel Hose and Fitting Gauge	20195A34	15.91

Pipe Thread and Taper Checker

Make sure you have the right pipe thread and taper. Use checker on 1/16″, 1/8″, 1/4″, 3/8″, and 1/2″ pipe with NPT threads. Frame is anodized aluminum; overall size is 2″ Wd. × 3″ Ht. × 1/4″ Thick.

1980A1 ..... **Each** $17.27

Mitutoyo Electronic Calipers

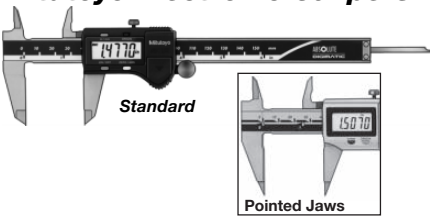

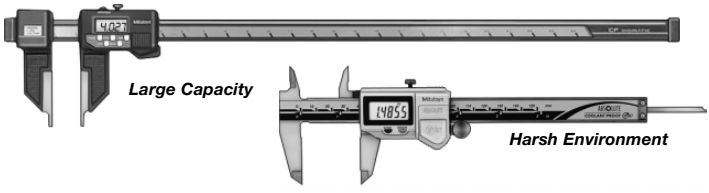

An LCD gives you a clear view of your measurements. Calipers take inside, outside, and depth measurements in 0.0005″ and 0.01 mm increments. They are made of stainless steel and have zero-position memory, also known as absolute (ABS) positioning. Batteries (where required) are included. A case is also included, except for economy calipers.

Standard Calipers with Pointed Jaws and SPC Data Output— Measure small holes and grooves.

Large-Capacity Calipers— A deep jaw makes measuring large and hard-to-reach material easier, and a carbon fiber beam makes these lighter to use than other large-capacity calipers. Minimum inside measuring length is ½″ for 24″ caliper and 1″ for 40″ and 60″ calipers.

Harsh Environment Calipers— IP67 rated for dust and temporary water submersion.

Accessories— *Depth base attachments* secure the caliper on a base for easier depth measurements. *Display freeze adapter* keeps a measurement displayed even if the jaw is repositioned. *SPC data output cables* connect calipers with SPC data output to a Mitutoyo miniprocessor (sold separately on page 2269) or to your PC also using an input tool (sold separately on page 2270).

Certificates of calibration are traceable to NIST.

Calipers

Range Inch	Range mm	Jaw Dp.	Accuracy Inch	Accuracy mm	Mitutoyo No.	Without Certificate of Calibration		With Certificate of Calibration	
Standard									
0- 4	0- 100	1½″	±0.001	±0.025	500-195-20	**8647A51**	$115.59	**8647A82**	$155.89
0- 6	0- 150	1½″	±0.001	±0.025	500-196-20	**8647A42**	124.52	**8647A43**	164.82
0- 8	0- 200	1⅞″	±0.001	±0.025	500-197-20	**8647A22**	179.34	**8647A81**	219.64
0-12	0- 300	2½″	±0.0015	±0.04	500-193	**8647A32**	351.88	**8647A44**	392.18
Standard with SPC Data Output									
0- 4	0- 100	1½″	±0.001	±0.025	500-170-20	**20925A76**	162.00	**20925A75**	202.30
0- 6	0- 150	1½″	±0.001	±0.025	500-171-20	**20925A77**	173.00	**20925A82**	213.30
0- 8	0- 200	1⅞″	±0.001	±0.025	500-172-20	**20925A78**	227.00	**20925A41**	227.00
0-12	0- 300	2½″	±0.0015	±0.04	500-173	**20925A81**	483.00	**20925A83**	523.30
0-18	0- 450	3½″	±0.002	±0.05	500-505-10	**20925A91**♠	701.07	**20925A94**♠	741.37
0-24	0- 600	3½″	±0.002	±0.05	500-506-10	**20925A92**♠	769.97	**20925A42**♠	810.27
0-40	0-1,000	5⅛″	±0.003	±0.08	500-507-10	**20925A93**♠	1,489.66	**20925A95**♠	1,529.96
Standard with Pointed Jaws and SPC Data Output									
0- 6	0- 150	1½″	±0.001	±0.025	573-721	**2338A3**	374.00	**2338A4**	414.30
Standard with Abrasion-Resistant Carbide Jaws									
0- 6	0- 150	1½″	±0.001	±0.025	500-733-10	**8647A41**	299.19	**8647A61**	339.49
0- 8	0- 200	1⅞″	±0.001	±0.025	500-734-10	**8647A21**	344.24	**8647A62**	384.54
Standard Solar Powered									
0- 4	0- 100	1½″	±0.001	±0.025	500-473	**2086A75**	141.41	**2086A71**	181.71
0- 6	0- 150	1½″	±0.001	±0.025	500-474	**2086A21**	152.48	**2086A22**	192.78
0- 8	0- 200	1⅞″	±0.001	±0.025	500-475	**2086A77**	199.33	**2086A81**	239.63
Economy									
0- 6	0- 150	1½″	±0.005	±0.2	700-113-10	**19645A65**♦	93.70	—	—
0- 8	0- 200	1½″	±0.005	±0.2	700-123-10	**19645A75**♦	143.96	—	—
Economy Plastic									
0- 6	0- 150	1½″	±0.008	±0.2	700-126	**19645A71**♠♦	41.06	—	—
Large Capacity with SPC Data Output									
0-24	0- 600	3⅞″	±0.002	±0.05	552-313-10	**20575A76**♠	901.24	—	—
0-40	0-1,000	5⅞″	±0.002	±0.05	552-314-10	**20575A77**♠	1,620.00	—	—
0-60	0-1,500	5⅞″	±0.004	±0.1	552-315-10	**20575A78**♠	1,936.55	—	—
Harsh Environment									
0- 6	0- 150	1½″	±0.001	±0.025	500-752-10	**2340A11**	163.56	**2340A14**	203.86
0- 8	0- 200	2″	±0.001	±0.025	500-753-10	**2340A12**	218.93	**2340A15**	259.23
0-12	0- 300	2½″	±0.0015	±0.04	500-754-10	**2340A13**	379.07	**2340A16**	419.37
Harsh Environment with SPC Data Output									
0- 6	0- 150	1½″	±0.001	±0.025	500-762-10	**2340A25**	228.00	**2340A28**	268.30
0- 8	0- 200	2″	±0.001	±0.025	500-763-10	**2340A26**	286.00	**2340A29**	326.30
0-12	0- 300	2½″	±0.0015	±0.04	500-764-10	**2340A27**	494.00	**2340A31**	534.30
Harsh Environment Solar Powered									
0- 6	0- 150	1½″	±0.001	±0.025	500-784	**2086A85**	184.00	**2086A86**	224.30
0- 8	0- 200	1⅞″	±0.001	±0.025	500-785	**2086A87**	240.22	**2086A88**	280.52

♠ Only takes inside and outside measurements. ♦ Measures in 0.001″ and 0.1 mm increments. Does not have zero-position memory.

Accessories and Replacement Battery

	Mitutoyo No.		
Depth Base Attachment for All 4″, 6″, 8″ Standard Calipers	050083-10	**2325A45**	$53.26
Depth Base Attachment for All 12″ Standard Calipers	050085-10	**2325A47**	62.42
Display Freeze Adapter for Standard Calipers with SPC Data Output	959143	**20925A71**	24.12
40″ SPC Data Output Cable for Standard Calipers with SPC Data Output	959149	**20395A7**	46.40
80″ SPC Data Output Cable for Standard Calipers with SPC Data Output	959150	**20395A75**	51.95
40″ SPC Data Output Cable for Large-Capacity Calipers with SPC Data Output	905338	**20395A67**	36.75
40″ SPC Data Output Cable for Harsh Environment Calipers with SPC Data Output	05CZA624	**20395A81**	86.30
Replacement Battery		**21105A201**	2.34

Caliper Depth Base Attachments

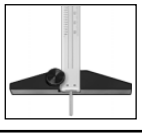

Improve depth measuring capabilities—clamp these attachments to your electronic, dial, or vernier caliper to stabilize it over wide holes. All are steel and include a screw-locking clamp. Size is ¾″ Ht. × ½″ Wd.

Fits Calipers	Base Lg.	Slot Wd.		
4″, 6″	3″	0.700″	**8136A22**	$30.82
4″, 6″	4″	0.700″	**8136A24**	37.67
12″	5″	0.865″	**8136A26**	51.09

Starrett Electronic Calipers

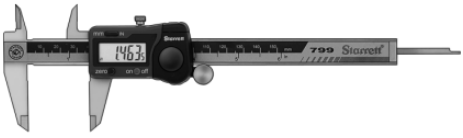

Your precision measurements stand out on the LCD. Calipers take inside, outside, and depth measurements in 0.0005″ and 0.01 mm increments. All are stainless steel and have zero-position memory, also known as absolute (ABS) positioning. A case and batteries are included.

Standard Calipers— 21335A124 only takes inside and outside measurements and does not have top jaws. Instead, it has notches on the bottom jaws to take inside measurements.

Harsh Environment Calipers— IP67 rated for dust and temporary water submersion. They have SPC data output and can be connected to a PC using an SPC data output cable (sold separately below) and interface adapter 23175A81 (sold separately on page 2278).

Depth base attachment secures caliper on a base for easier depth measurements. ***Certificates of calibration*** are traceable to NIST.

Range Inch	Range mm	Jaw Dp.	Accuracy Inch	Accuracy mm	Starrett No.		
Standard							
0- 6	0-150	1½″	±0.001	±0.025	799A-6/150	23175A92	$140.00
0- 8	0-200	2″	±0.0015	±0.04	799A-8/200	23175A93	208.00
0-12	0-300	2½″	±0.0015	±0.04	799A-12/300	23175A94	310.00
Standard with Certificate of Calibration							
0- 6	0-150	1½″	±0.001	±0.025	799A-6/150	23175A95	166.67
0- 8	0-200	2″	±0.0015	±0.04	799A-8/200	23175A96	234.67
0-24	0-600	4″	±0.002	±0.05	799AZ-24/600	21335A124	646.81
Harsh Environment with SPC Data Output							
0- 6	0-150	1½″	±0.001	±0.025	798B-6/150	2368A11	232.00
0- 8	0-200	1⅞″	±0.0015	±0.04	798B-8/200	2368A12	281.00
0-12	0-300	2½″	±0.0015	±0.04	798B-12/300	2368A13	417.00
Harsh Environment with SPC Data Output and Certificate of Calibration							
0- 6	0-150	1½″	±0.001	±0.025	798B-6/150	2368A41	256.00
0- 8	0-200	1⅞″	±0.0015	±0.04	798B-8/200	2368A42	305.00
0-12	0-300	2½″	±0.0015	±0.04	798B-12/300	2368A43	441.00
Accessories and Replacement Batteries							
Depth Base Attachment					PT22431	23175A33♥	49.51
SPC Data Output Cable (9.8 ft.)					PT63329	2368A72	99.00
Replacement Battery						21105A186	1.92

♥ Not for use with 23175A94, 21335A124, 2368A13, and 2368A43.

Brown & Sharpe Electronic Calipers

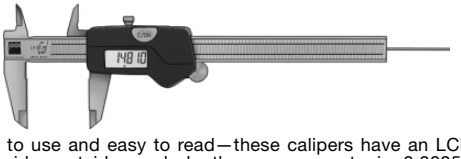

Easy to use and easy to read—these calipers have an LCD and take inside, outside, and depth measurements in 0.0005″ and 0.01 mm increments. Accuracy is ±0.001″ and ±0.025 mm. All are made of stainless steel and have zero-position memory, also known as absolute (ABS) positioning. A case and battery are included.

Harsh Environment Calipers— IP67 rated for dust and temporary water submersion.

Depth base attachment secures caliper on a base for easier depth measurements. ***Certificates of calibration*** are traceable to NIST.

Range Inch	Range mm	Jaw Dp.	Brown & Sharpe No.		
Standard					
0-6	0-150	1½″	005-900-91	20705A61	$153.24
Standard with Certificate of Calibration					
0-6	0-150	1½″	005-900-91LC	20705A63	193.24
Harsh Environment					
0-6	0-150	1½″	005-903-01	20705A65	216.71
Harsh Environment with Certificate of Calibration					
0-6	0-150	1½″	005-903-01LC	20705A67	256.71
Accessory and Replacement Battery					
Depth Base Attachment			05.60013	20615A75	51.00
Replacement Battery				21105A186	1.92

Caliper Tip Assortment

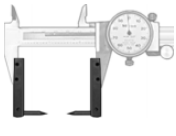

Attach these tips to your 4″, 6″, or 8″ electronic, dial, or vernier caliper for the added versatility of measuring slots, inside pockets, shoulders, and holes. All are made of steel. Assortment contains two tip bodies, four pairs of tips (flat, conical, stem, and ball end), set screws, hex key wrench, instructions, and case.

20095A31 ..... $36.67

Economy Electronic Calipers

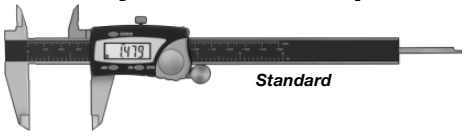

Standard

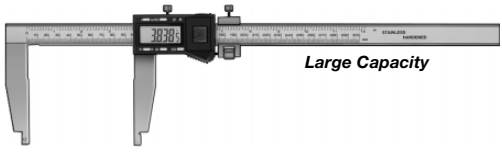

Large Capacity

Take accurate measurements at a fraction of the price of other electronic calipers. Calipers have an LCD and take inside, outside, and depth measurements in 0.0005″ and 0.01 mm increments. All are made of stainless steel. Include a case and two batteries (unless noted).

Fraction Calipers— Also display 1/64″ increments.

Water-Resistant Caliper— IP54 rated for dust and splashing water.

Large-Capacity Calipers— A deep jaw makes measuring large and hard-to-reach materials easier.

Range Inch	Range mm	Jaw Dp.	Accuracy Inch	Accuracy mm			
Standard							
0- 4	0- 100	1⅛″	±0.001	±0.025	4996A11 ✓		$77.94
0- 6	0- 150	1½″	±0.001	±0.025	4996A12		84.28
0- 8	0- 200	1⅞″	±0.0015	±0.04	4996A13		108.75
0-12	0- 300	2¼″	±0.0015	±0.04	4996A14		135.94
Fraction							
0- 6	0- 150	1½″	±0.001	±0.025	4996A16		21.11
0-12	0- 300	2¼″	±0.0015	±0.04	4996A18		72.64
Ultra-Economy Plastic							
0- 6	0- 150	1½″	±0.003	±0.08	4996A21	♠★	14.18
Water Resistant							
0- 6	0- 150	1½″	±0.001	±0.025	4996A15		97.66
Large Capacity							
0-12	0- 300	3½″	±0.002	±0.05	2099A1	♠	192.78
0-24	0- 600	4″	±0.003	±0.08	2099A11	♠	272.27
0-40	0-1,000	4⅞″	±0.004	±0.1	2099A12	♠	627.63
Replacement Batteries							
For 4996A11, A12, A13, A14, and A15					21105A201		2.34
For 4996A16 and A18					7604K57		2.03
For 4996A21 and 2099A1, A11, and A12					7701K34		1.92

✓ Includes a pouch with belt clip. ♠ Only takes inside and outside measurements. ★ Case not included. Comes with one battery.

Caliper Range Extenders

Expand your 6″ electronic, dial, or vernier caliper to measure larger items. Extenders are aluminum and come with a 6″ calibration rod. They have two pins that project ½″ when installed and act as jaws for the extension (longer pins sold separately).

If you need to drill holes in the item you are measuring, use ***centerline gauge pins*** (sold separately) to determine the center-to-center distance between holes. They are 0.620″ dia. and taper to a sharp point. Include an end block, set screw, and instructions.

Length		
26″	85635A11	$169.66
36″	85635A12	229.54
51″	85635A13	259.48
71″	85635A17	325.35
91″	85635A18	452.36
1½″ Projection Length Pins (Set of 2)	85635A16	29.93
Centerline Gauge Pins (Set of 2)	85635A2	49.90

Centerline Gauges for Calipers

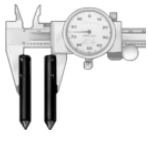

Measure the center-to-center distance between two holes. Gauges attach to the jaws of your electronic, dial, or vernier caliper. They have a 60° cone shape and fit snugly into the holes. Include two steel gauges, set screws, and a hex key wrench.

Fits Caliper Sizes	Slot Width	Dia.	Lg.		
4″, 6″, 8″	0.127″	0.375″	2 5/16″	20415A51	$21.11
12″	0.144″	0.500″	2¾″	20415A52	45.66

Dial Calipers

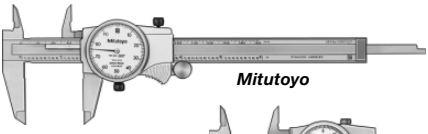
Mitutoyo

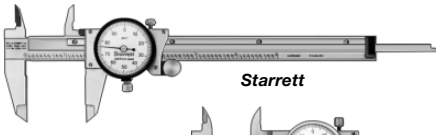
Starrett

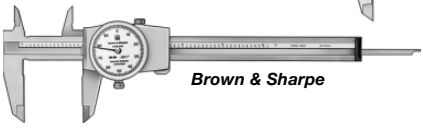
Brown & Sharpe

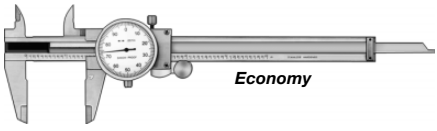
Economy

A dial lets you check your measurements at a glance. Calipers take inside, outside, depth, and step measurements, unless otherwise stated. All have dials with built-in backlash control to prevent the needle from deviating (unless noted). Inch calipers have a white dial face; metric calipers have a yellow dial face. Made of stainless steel and include a case.

Mitutoyo Calipers—Inch calipers measure in 0.001″ increments; metric in 0.025 mm increments. Accuracy is ±0.001″ for 4″ and 6″, ±0.002″ for 8″ and 12″, and ±0.03 mm for 150 mm and 200 mm.

Starrett Calipers—Inch calipers measure in 0.001″ increments; metric in 0.025 mm increments. Accuracy is ±0.001″ for 6″, ±0.0015″ for 9″ and 12″, and ±0.03 mm for 150 mm. 8586A13 *and A18* require a *depth rod* (sold separately) to take depth measurements.

Brown & Sharpe Calipers—Measure in 0.001″ increments. Accuracy is ±0.001″. *Optional mahogany case* (sold separately) holds a caliper and one depth base attachment.

Economy Calipers—Inch calipers measure in 0.001″ increments. 2289A76 *and A78* also measure in 0.025 mm increments. 2289A46 measures in 0.02 mm increments. *Fraction caliper* measures in 1/64″ and 0.01″ increments and has a blue and white dial face.

Accuracy is ±0.001″ for 4″, 6″ and 8″, ±0.002″ for 12″, and ±0.03 mm for 150 mm.

2289A22 does not take step measurements.

Depth base attachments secure caliper on a base for easier depth measurements. ***Certificates of calibration*** are traceable to NIST.

Range	Range per Dial Rev.	Jaw Dp.	Mfr. No.		
Mitutoyo Calipers					
Standard					
0- 4″	0.100″	1½″	505-674	2325A84	$84.62
0- 4″	0.200″	1½″	505-716	2325A65	78.57
0- 6″	0.100″	1½″	505-675	2325A21	99.85
0- 6″	0.100″	1½″	505-675-66	2325A36■	107.46
0- 6″	0.200″	1½″	505-717	2325A66	91.38
0- 8″	0.100″	1⅞″	505-676	2325A25	146.38
0- 8″	0.200″	1⅞″	505-719	2325A67	136.23
0-12″	0.100″	2½″	505-677	2325A23	218.31
0-12″	0.200″	2½″	505-720	2325A68	203.92
0-150 mm	2 mm	1½″	505-671	2325A22	107.46
0-200 mm	2 mm	1⅞″	505-672	2325A75	145.54
Standard with Extra-Smooth Movement					
0- 6″	0.100″	1½″	505-689	2325A81	119.31
0- 8″	0.100″	1⅞″	505-690	2325A82	156.54
Standard with Choose-a-Color Dial Face—To Order: Please specify black, blue, green, orange, purple, or red.					
0- 6″	0.100″	1½″	505-675	2325A51	99.85
Standard with Certificate of Calibration					
0- 4″	0.100″	1½″	505-674	2325A85	124.92
0- 6″	0.100″	1½″	505-675	2325A28	140.15
0- 8″	0.100″	1⅞″	505-676	2325A37	186.68
0-12″	0.100″	2½″	505-677	2325A29	258.61
Standard with Abrasion-Resistant Carbide-Tipped Jaws					
0- 6″	0.100″	1½″	505-712	2325A26	160.77
0- 8″	0.100″	1⅞″	505-709	2325A83	197.15
Starrett Calipers					
Standard					
0- 9″	0.100″	1½″	120AZ-9	8586A14	317.01
0-12″	0.100″	2½″	120Z-12	8586A13	358.00
0-150 mm	2 mm	1½″	120AM-150	8586A12	186.00

Range	Range per Dial Rev.	Jaw Dp.	Mfr. No.		
Starrett Calipers (Cont.)					
Standard with Choose-a-Color Dial Face—To Order: Please specify black, red, or white.					
0- 6″	0.100″	1½″	120A-6	8586A23	$175.01
Standard with Certificate of Calibration					
0- 6″	0.100″	1½″	120A-6	8586A17	201.68
0-12″	0.100″	2½″	120Z-12	8586A18	384.67
Standard with Abrasion-Resistant Carbide Jaws					
0- 6″	0.100″	1½″	120X-6	8586A15	272.00
Brown & Sharpe Calipers					
Standard					
0- 6″	0.100″	1½″	599-579-4	20615A66	150.28
0- 6″	0.100″	1½″	599-579-5	20615A68■	150.28
Standard with Certificate of Calibration					
0- 6″	0.100″	1½″	599-579-4LC	20615A46	190.28
Economy Calipers					
Standard					
0- 4″	0.100″	1⅛″	—	2289A39 ♦	29.30
0- 4″	0.100″	1⅛″	—	2289A36■ ♦	27.50
0- 6″	0.100″	1½″	—	2289A22	40.99
0- 6″	0.100″	1½″	—	2289A45 ♦	31.30
0- 6″	0.100″	1½″	—	2289A42■ ♦	31.30
0- 6″ (0-150 mm)	0.100″	1½″	—	2289A76	47.33
0- 8″	0.100″	1⅞″	—	2289A91 ♦	49.05
0-12″	0.100″	2⅜″	—	2289A49	71.34
0-12″	0.100″	2⅜″	—	2289A23■	80.51
0-12″ (0-300 mm)	0.100″	2⅜″	—	2289A78	78.54
0-150 mm	2 mm	1½″	—	2289A46 ♠ ♦	34.20
Standard with Abrasion-Resistant Carbide-Tipped Jaws					
0- 6″	0.100″	1½″	—	2289A51 ♦	63.45
Fraction					
0- 6″	0.100″	1½″	—	2289A11	34.19

■ Dial face is black. ♦ Does not have built-in backlash control. ♠ Dial face is white.

Accessories

	Mfr. No.		
Depth Base Attachment for 4″, 6″, 8″, 150 mm, and 200 mm Mitutoyo Calipers	050083-10	2325A45	$53.26
Depth Base Attachment for 12″ Mitutoyo Calipers	050085-10	2325A47	62.42
Depth Base Attachment for 6″, 9″, and 150 mm Starrett Calipers	PT22431	23175A33	49.51
Depth Base Attachment for Brown & Sharpe Calipers	05.60013	20615A75	51.00
Depth Rod for 12″ Starrett Calipers	PT26091	8586A95	74.44
Optional Mahogany Case for Brown & Sharpe Calipers	599-578-9999	20615A69	30.68

Plastic Dial Calipers

Lightweight yet durable. Calipers take inside, outside, depth, and step measurements, unless otherwise stated.

Standard caliper measures in 0.001″ increments. Color is gray with a white dial face. ***Metric*** caliper does not take step measurements. It measures in 0.1 mm increments. Color and dial face are white. ***Fraction*** caliper measures in 0.01″ and 1/64″ increments. Color is orange with a yellow and white dial face.

Type	Range	Range per Dial Rev.	Jaw Dp.	Accuracy		
Standard	0-6″	0.100″	1½″	±0.0005″	8588A12	$23.86
Metric	0-150 mm	10 mm	1½″	±0.0127 mm	8588A11	23.86
Fraction	0-6″	1.000″	1½″	±0.0005″	8588A13	23.86

Holster for Dial Calipers

Keep your caliper protected and within reach. Holster is leather and includes a belt loop. Fits 6″ and 150 mm dial calipers.

3278A41 ..... $15.83

Vernier Calipers

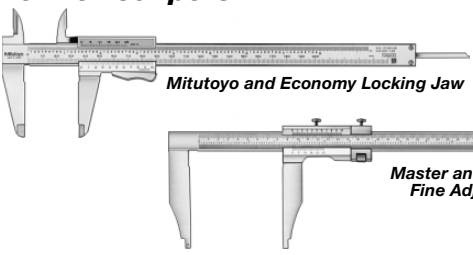

Mitutoyo and Economy Locking Jaw

Master and Economy Fine Adjustment

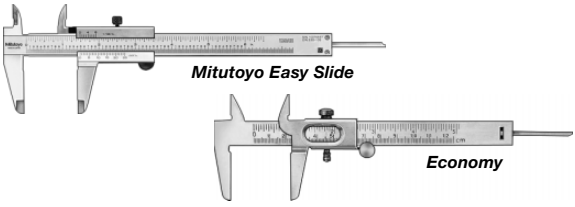

Mitutoyo Easy Slide

Economy

Graduations on the sliding vernier scale coupled with graduations on the main scale allow you to take precise inside, outside, and depth measurements. Calipers are graduated in 0.001″ and 0.02 mm increments. Made of stainless steel, except 2192A21 is steel.

Locking-jaw calipers move only when the thumb lock is depressed.

Easy-slide calipers have a slider knob to move the jaws.

Fine-adjustment calipers have an additional screw for finer adjustments. *Master fine-adjustment caliper* 8619A53 and *economy fine-adjustment calipers* have top and bottom jaws; *master fine-adjustment calipers* 8618A61, *A71, and A75* have bottom jaws only.

Range Inch	Range mm	Jaw Dp.	Accuracy Inch	Accuracy mm	Mfr. No.		
Mitutoyo Locking Jaw							
0- 8	0-200	1⅞″	±0.0012	±0.03	531-129	**2064A31**	$110.51
Mitutoyo Easy Slide							
0- 6	—	1½″	±0.0015	—	530-105	**8619A68** ♣	85.98
0- 6	0-150	1½″	±0.0012	±0.03	530-312	**8619A67**	85.98
0-12	0-300	2½″	±0.0015	±0.04	530-119	**8619A52**	191.37
Master Fine Adjustment							
0- 6	0-150	1⅝″	±0.001	±0.025	—	**8619A53**	45.31
0-12	0-300	3⅞″	±0.002	±0.05	—	**8619A61** ●	163.53
0-24	0-600	4″	±0.003	±0.076	—	**8619A71** ●	334.51
Master Fine Adjustment (Cont.)							
0-40	0-1,000	5½″	±0.004	±0.101	—	**8619A75** ●	$774.93
Economy							
0- 4¾	0- 120	1⅜″	±0.0625	±0.1	—	**2192A21** ★	10.71
Economy Locking Jaw							
0- 6	0- 150	1½″	±0.0015	±0.04	—	**2272A21**	28.03
Economy Fine Adjustment							
0- 8	0- 200	1⅞″	±0.0015	±0.04	—	**2272A23**	35.97
0-12	0- 300	2⅜″	±0.0015	±0.04	—	**2272A24**	53.47

♣Graduated in 1/128″ and 0.001″ increments. ●Only takes inside and outside measurements. ★ Graduated in 1/16″ and 0.1 mm increments.

Slide Calipers

Move the jaw along the scale to take inside and outside measurements.

Starrett Caliper— Has a thumb grip to open and close the jaw and a stop to prevent slide detachment. Scale is graduated in 1/32″ and 1/64″ increments on the front and 1/32″ on the back. Made of stainless steel.

Economy Calipers— Made of stainless steel. 2287A17 is graduated in 1/32″ and 1 mm increments; 2287A21 is graduated in 1/32″ increments; 2287A22 is graduated in 1/16″ and 1 mm increments.

Economy Plastic Caliper— Scale is graduated in 1/32″ and 1 mm increments.

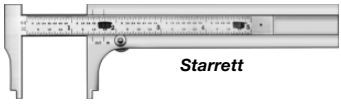

Starrett

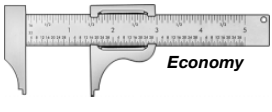

Economy

Outside Range Inch	Outside Range mm	Inside Range Inch	Inside Range mm	Jaw Dp.	Accuracy Inch	Accuracy mm	O'all Lg.	Mfr. No.		
Starrett										
0-4¾	—	1/4-5	—	1⅜″	±0.006	—	6″	1025	**2062A3**	$192.00
Economy										
0-3	0- 76	3/16-3	5- 76	¾″	±0.0312	±0.8	4⅝″	—	**2287A17**	10.42
0-4	—	3/16-4	—	1″	±0.0312	—	6″	—	**2287A21**	12.46
0-4	0-101	3/16-4	5-101	1″	±0.0625	±1.6	6″	—	**2287A22**	13.28
Economy Plastic										
0-3	0- 76	3/16-3	5- 76	⅞″	±0.0312	±0.8	4½″	—	**23445A33**	6.02

Large-Capacity Slide Calipers

Deep jaws are just what you need to measure pipes, poles, logs, and other items with large diameters. They take outside measurements and are made of aluminum.

Inch calipers are graduated in 0.10″ increments; metric caliper is graduated in 1 mm increments.

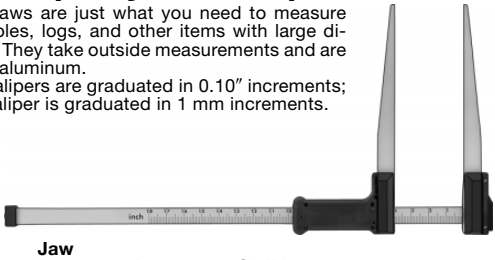

Outside Range	Jaw Dp.	Accuracy	O'all Lg.		
0-18″	11½″	±0.10″	28″	**19185A21**	$144.00
0-24″	14½″	±0.10″	34″	**19185A26**	170.12
0-30″	18″	±0.10″	40″	**19185A22**	184.83
0-50″	27½″	±0.10″	58″	**19185A24**	262.08
0-50 cm	11½″	±1 mm	28″	**19185A41**	144.00

Caliper Calibration Masters

Check your caliper's inside and outside measurements. Calibration masters work with electronic, dial, and vernier calipers. They are made of steel and come with a certificate of calibration traceable to NIST. A case is included.

Inch master is graduated in 1″ increments; metric master is graduated in 25 mm increments.

Inside Range	Outside Range	Accuracy		
½″-4½″	1″-6″	±0.0002″	**2415A33**	$499.37
12.5-112.5 mm	25-150 mm	±0.005 mm	**2415A36**	499.37

Mitutoyo SPC Miniprocessor

Process data from your Mitutoyo electronic tool with SPC data output—just connect it to this compact unit with a Mitutoyo data output cable (sold separately on page 2270).

Miniprocessor performs the following functions and prints results: Maximum and minimum values; range (R); mean ($\bar{x}$); standard deviations (σn and σn-1); number and percentage defective (±NG, P); process capability index (Cp and Cpk); histograms; displacement charts; and Go/No-Go discrimination via green and red LEDs.

In print mode, the miniprocessor will print up to 100,000 measurements; in statistical calculation mode, it'll perform and print statistical calculations on up to 9,999 measurements. Operates with included AC adapter or on four AA alkaline or rechargeable batteries (sold separately). Comes with a 157-ft. roll of printer paper. Size is 7.9″ Lg.×3.7″ Wd.×2.9″ Ht.

		Each
SPC Miniprocessor (DP-1VR)	**20815A85**	$466.00
Replacement Printer Paper (157-ft. Roll)	**20815A88**	13.94

		Pkg.
AA Alkaline Batteries (Pkg. of 4)	**6959K31**	$5.47
AA Rechargeable Batteries (Pkg. of 2)	**7685K1**	5.31

Mitutoyo Electronic Micrometers

An LCD allows quick and clear measurement readings. Micrometers measure in 0.00005″ and 0.001 mm increments. They have a cast iron frame with carbide spindle and anvil faces. Spindle and anvil are 0.250″ dia. A case and battery are included.

Standard Micrometers— Accuracy is ±0.0001″ and ±0.0025 mm.

Harsh Environment Micrometers— IP65 rated for dust and spraying water. Accuracy is ±0.00005″ and ±0.001 mm. They have zero-position memory, also known as absolute (ABS) positioning. *Micrometers with SPC data output* can be connected to a Mitutoyo miniprocessor using a data output cable (sold separately below) or to your PC using a data output cable and an input tool (sold separately on this page).

Certificates of calibration are traceable to NIST.

Range Inch	Range mm	Throat Dp.	Thimble Style	Mitutoyo No.		
Standard						
0-1	0- 25	1″	Ratchet	293-831	**2097A11**	$104.55
0-1	0- 25	1″	Friction	293-832	**2097A12**	107.95
Standard with Certificate of Calibration						
0-1	0- 25	1″	Ratchet	293-831	**2097A13**	144.85
0-1	0- 25	1″	Friction	293-832	**2097A14**	148.25
Harsh Environment						
0-1	0- 25	1″	Ratchet	293-340	**2054A53**	138.54
0-1	0- 25	1″	Ratchet	293-344	**2054A55**	138.54
0-1	0- 25	1″	Friction	293-348	**2054A54**	138.54
0-1	0- 25	1″	Friction	293-349	**2054A65**■●	138.54
1-2	25- 50	1¼″	Ratchet	293-345	**2054A52**	188.69
2-3	50- 75	1⅞″	Ratchet	293-346	**2054A56**	247.34
Harsh Environment with Certificate of Calibration						
0-1	0- 25	1″	Ratchet	293-340	**2054A59**	178.84
0-1	0- 25	1″	Ratchet	293-344	**2054A75**	178.84
0-1	0- 25	1″	Friction	293-348	**2054A74**	178.84
1-2	25- 50	1¼″	Ratchet	293-345	**2054A67**	228.99
2-3	50- 75	1⅞″	Ratchet	293-346	**2054A68**	287.64
Harsh Environment with SPC Data Output						
0-1	0- 25	1″	Ratchet	293-330	**2295A5**	219.00
0-1	0- 25	1″	Friction	293-335	**2295A1**	219.00
1-2	25- 50	1¼″	Ratchet	293-331	**2295A6**	259.00
1-2	25- 50	1¼″	Friction	293-336	**2295A2**	259.00
2-3	50- 75	1⅞″	Ratchet	293-332	**2295A3**	319.00
3-4	75-100	2⅜″	Ratchet	293-333	**2295A14**●	344.00
4-5	100-125	3″	Ratchet	293-350-10	**2295A15**■●	425.00
5-6	125-150	3½″	Ratchet	293-351-10	**2295A16**■●	443.00
Harsh Environment with SPC Data Output and Certificate of Calibration						
0-1	0- 25	1″	Ratchet	293-330	**2295A51**	259.30
0-1	0- 25	1″	Friction	293-335	**2295A21**	259.30
Accessory and Replacement Battery						
SPC Data Output Cable (40″)				05CZA662	**20395A83**	77.01
Replacement Battery					**21105A201**	2.34

■ Measures in 0.0001″ and 0.001 mm increments.
● Accuracy is ±0.0001″ and ±0.0025 mm.

Starrett Electronic Micrometers

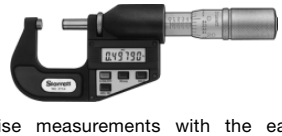

Capture precise measurements with the ease of an LCD. Micrometers measure in 0.00005″ and 0.001 mm increments and have zero-position memory, also known as absolute (ABS) positioning. Accuracy is ±0.0001″ and ±0.002 mm. They have a steel frame with carbide spindle and anvil faces. Spindle and anvil are 0.250″ dia. A case and batteries are included.

Harsh Environment Micrometers— IP67 rated for dust and temporary water submersion.

Certificate of calibration is traceable to NIST.

Range Inch	Range mm	Throat Dp.	Thimble Style	Starrett No.		
Standard						
0-1	0-25	1″	Friction	3732XFL-1	**85965A85**	$135.00
Standard with Certificate of Calibration						
0-1	0-25	1″	Friction	3732XFL-1	**85965A95**	159.00
Harsh Environment						
0-1	0-25	1″	Ratchet	796XRL-1	**85965A84**	143.57
0-1	0-25	1″	Friction	796XFL-1	**85965A81**	143.57
Replacement Battery					**7701K34**	1.92

Economy Micrometers

Electronic

Nonelectronic

Electronic Micrometers— Measure in 0.00005″ and 0.001 mm increments. Spindle and anvil faces are carbide and 0.250″ dia. A case and battery are included.

Standard micrometer has a steel frame.

Harsh environment micrometers are IP54 rated for dust and splashing water. Frame is cast iron.

Nonelectronic Micrometers— Thimble is graduated in 0.0001″ increments. They have a steel frame with carbide spindle and anvil faces. Spindle and anvil are 0.250″ dia. A case is included.

Nonelectronic Sets— Case is included. *3-piece set* contains one each of 0-3″ range micrometers; *6-piece set* contains one each of all the nonelectronic micrometers.

Range Inch	Range mm	Throat Dp.	Thimble Style	Accuracy		
Electronic						
Standard						
0-1	0-25	¾″	Friction	±0.00016″	**2091A11**	$86.80
Harsh Environment						
0-1	0-25	¾″	Friction	±0.00016″	**2091A5**	113.69
1-2	25-50	1⅝″	Friction	±0.00016″	**2091A6**	135.28
Replacement Battery					**7604K57**	2.03
Nonelectronic						
Standard						
0-1	—	1″	Ratchet	±0.00016″	**2114A41**	$23.07
1-2	—	1¼″	Ratchet	±0.00016″	**2114A42**	26.77
2-3	—	1¾″	Ratchet	±0.00020″	**2114A43**	37.00
3-4	—	2¼″	Ratchet	±0.00020″	**2114A44**	39.20
4-5	—	2¾″	Ratchet	±0.00024″	**2114A45**	45.57
5-6	—	3¼″	Ratchet	±0.00024″	**2114A46**	57.73
3-Piece Nonelectronic Set					**2114A47**	73.08
6-Piece Nonelectronic Set					**2114A48**	179.95

Mitutoyo Data Input Tools

With PS/2 Connector

With USB Connector

With RS-232C Connector

Transmit data from your Mitutoyo electronic tool with SPC data output to your PC. A data output cable (sold separately on this page) is required to connect your Mitutoyo measuring tool to the input tool.

Data input tools with PS/2 or ***USB connector*** allow you to import data into spreadsheet programs such as Microsoft Excel.

Data input tool with RS-232C connector lets you import data into SPC software such as MeasurLink. Has a D-subminiature 9-pin female connector for PCs with RS-232C interface.

Data Input Tool with PS/2 Connector	**1825A11**	$127.00
Data Input Tool with USB Connector	**1825A14**	181.00
Data Input Tool with RS-232C Connector	**1825A12**	255.00

Mitutoyo and Starrett Data Output Cables

Mitutoyo— Cables connect Mitutoyo electronic tools with SPC data output to Mitutoyo SPC data output miniprocessors and Pocket PCs.

40″ Length Mitutoyo No.			80″ Length Mitutoyo No.		
905338	**20395A67**	$36.75	905409	**20395A71**	$43.80
905689	**20395A41**	35.60	905690	**20395A47**	42.65
936937	**20395A66**	43.90	959150	**20395A75**	51.95
937387	**20395A68**	46.70	965013	**20395A74**	55.15
959149	**20395A7**	46.40	965014	**20395A72**	51.35
05CZA624	**20395A81**★	86.30	05CZA625	**20395A82**★	87.60
05CZA662	**20395A83**★	77.01			

★ For use with harsh environment tools only.

Starrett— Cable connects Starrett electronic tools with SPC data output to 761/772 series Starrett modules and PT61768 interface data processors.

Starrett No.	10-ft. Length	
PT22938	**8602A68**	$47.51

Starrett Micrometers

Series 436 with Ratchet Thimble

Series 230 with Friction Thimble

Micrometers have a steel frame with carbide spindle and anvil faces. A case is included, except for 21075A263.

Series 436 Micrometers— Spindle and anvil are 0.250″ dia. **Also Available:** Starrett No. T436XRL micrometers with ranges up to 12″. Frame is cast iron. Spindle and anvil are 0.300″ dia. They do not include case. To order, please ask for 2044A8 and specify range: 6-7″, 7-8″, 8-9″, 9-10″, 10-11″, or 11-12″.

Series 232 and 230 Micrometers— Spindle and anvil are 0.235″ dia., except 21075A263, which is 0.200″ dia. All 1″ micrometers also have decimal equivalents on the frame.

Micrometer Sets— Include Series 436 micrometers with ratchet thimble and a case.

Certificates of calibration are traceable to NIST.

Range	Graduations	Throat Dp.	Accuracy	Starrett No.		
Series 436 Micrometers						
With Ratchet Thimble						
0-1″	0.001″	1″	±0.001″	436.1XRL-1	2044A44	$120.00
0-1″	0.0001″	1″	±0.00005″	T436.1XRL-1	2044A88	123.01
1-2″	0.001″	1½″	±0.001″	436.1XRL-2	2044A45	139.01
1-2″	0.0001″	1½″	±0.00005″	T436.1XRL-2	2044A89	145.01
2-3″	0.001″	2″	±0.001″	436.1XRL-3	2044A46	174.00
2-3″	0.0001″	2″	±0.00005″	T436.1XRL-3	2044A91	180.00
3-4″	0.001″	2½″	±0.00015″	436.1XRL-4	2044A47	192.00
4-5″	0.001″	3″	±0.00015″	436.1XRL-5	2044A48	209.01
5-6″	0.001″	3½″	±0.00015″	436.1XRL-6	2044A49	227.01
With Ratchet Thimble and Certificate of Calibration						
0-1″	0.001″	1″	±0.00005″	436.1XRL-1	2044A141	146.67
0-1″	0.0001″	1″	±0.00005″	T436.1XRL-1	2044A361	149.68
1-2″	0.0001″	1½″	±0.00005″	T436.1XRL-2	2044A371	149.68
2-3″	0.0001″	2″	±0.00005″	T436.1XRL-3	2044A152	206.67
With Friction Thimble						
0-1″	0.0001″	1″	±0.00005″	T436.1XFL-1	2044A991	123.01
1-2″	0.0001″	1½″	±0.00005″	T436.1XFL-2	2044A992	145.01
2-3″	0.0001″	2″	±0.00005″	T436.1XFL-3	2044A993	180.00
With Friction Thimble and Certificate of Calibration						
0-1″	0.0001″	1″	±0.00005″	T436.1XFL-1	2044A362	149.68
1-2″	0.0001″	1½″	±0.00005″	T436.1XFL-2	2044A372	149.68
2-3″	0.0001″	2″	±0.00005″	T436.1XFL-3	2044A151	206.67
Series 232 and 230 Micrometers						
With Ratchet Thimble						
0-½″	0.0001″	⅝″	±0.00005″	T232XRL	21075A263	180.00
0-1″	0.0001″	1″	±0.00005″	T230XRL	8601A13	194.00
With Ratchet Thimble and Certificate of Calibration						
0-1″	0.0001″	1″	±0.00005″	T230XRL	8601A512	220.67
With Friction Thimble						
0-1″	0.0001″	1″	±0.00005″	T230XFL	8601A21	194.00
With Friction Thimble and Certificate of Calibration						
0-1″	0.0001″	1″	±0.00005″	T230XFL	8601A511	220.67

Micrometer Sets

Range	No. of Micrometers	Graduations	Starrett No.		
0- 3″	3	0.0001″	ST436.1AXRLZ	2044A424	$517.01
0- 6″	6	0.0001″	ST436.1CXRLZ	2044A425	1,258.00
0-12″	12	0.0001″	ST436EXRLZ	2044A426	3,470.00

Holster for Micrometers

Keep your micrometer protected and close at hand. Holster is leather and has a belt loop. Fits 1″ and 25 mm micrometers.

21145A21 ..... $14.31

Micrometer Stand

Put your micrometer in a stand to make inspection easier. Position and angle are adjustable. Clamp holds a micrometer up to ¾″ thick and has a rubber face to prevent marring. Made of cast iron with a rubber bottom to prevent movement.

2312A16 ..... $23.86

Brown & Sharpe Micrometers

Two thimble styles in one tool—reversible thimble sleeves let you convert these micrometers from plain thimble to friction thimble. Frame is chrome and has decimal equivalents. Spindle and anvil have carbide faces and are 0.250″ dia.

2053A1 also has slanted graduations that remain visible through a complete revolution of the thimble.

Range	Graduations	Throat Dp.	Accuracy	Brown & Sharpe No.		
0-1″	0.0001″	1″	±0.00016″	599-1-31	2053A1	$152.31
0-1″	0.0001″	1″	±0.00016″	599-1-32	2053A4	152.31

Micrometers with Counter

Mitutoyo Series 193

Starrett Series 216 with Ratchet Thimble

Economy

A mechanical digital counter simplifies measurement readings. The counter displays in 0.001″ and 0.01 mm increments. Spindle and anvil have carbide faces and are 0.250″ dia., except 8585A13, which has steel faces. A case is included.

Mitutoyo Series 193 Micrometers— Frame is cast iron.

Starrett Series 216 Micrometers— Frame is steel.

Economy Micrometers— Frame is steel.

Certificates of calibration are traceable to NIST.

Range	Graduations	Throat Dp.	Accuracy	Mfr. No.		
Mitutoyo Series 193 Micrometers						
With Friction Thimble						
0-1″	0.0001″	1″	±0.0001″	193-211	2041A12	$153.63
1-2″	0.0001″	1¼″	±0.0001″	193-212	2041A14	181.48
With Friction Thimble and Certificate of Calibration						
0-1″	0.0001″	1″	±0.0001″	193-211	2041A22	193.93
Starrett Series 216 Micrometers						
With Ratchet Thimble						
0-1″	0.001″	1″	±0.0001″	216XRL-1	8585A52	223.01
0-1″	0.0001″	1″	±0.00005″	T216XRL-1	8585A51	225.01
With Ratchet Thimble and Certificate of Calibration						
0-1″	0.001″	1″	±0.0001″	216XRL-1	8585A611	249.68
With Friction Thimble						
0-1″	0.001″	1″	±0.0001″	216XFL-1	8585A12	223.01
0-1″	0.0001″	1″	±0.00005″	T216XFL-1	8585A11	225.01
With Friction Thimble and Certificate of Calibration						
0-1″	0.001″	1″	±0.0001″	216XFL-1	8585A612	249.68
With Plain Thimble						
0-1″	0.001″	1″	±0.0001″	216P-1	8585A13	213.01
Economy Micrometers						
With Ratchet Thimble						
0-1″	0.0001″	1″	±0.00016″	—	2115A1	48.18
1-2″	0.0001″	1¼″	±0.00016″	—	2115A2	54.42
2-3″	0.0001″	1⅞″	±0.0002″	—	2115A3	70.55
3-4″	0.0001″	2¼″	±0.0002″	—	2115A4	83.43

Starrett Calibration Rods

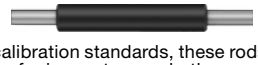

Also known as calibration standards, these rods let you check and set the calibration of micrometers and other measuring tools. They include insulated plastic handles to minimize heat expansion. All are Starrett Series 234.

Also Available: Calibration rods with a certificate of calibration traceable to NIST. Please ask for 8570A26 and specify length.

Lg.	Dia.		
1″	¼″	8570A11	$22.00
2″	¼″	8570A12	27.01
3″	¼″	8570A13	29.01
4″	¼″	8570A14	33.01
5″	¼″	8570A15	36.00
6″	¼″	8570A16	41.01

Mitutoyo Micrometers

Series 101

Series 103 with Friction Thimble

Quickly get easy-to-read measurements. Spindle and anvil have carbide faces and are 0.250″ dia. A case is included.

Series 101 micrometers have a steel frame. ***Series 103 micrometers*** have a cast iron frame. Certificate of calibration is traceable to NIST.

Micrometer Sets— Contain Series 103 micrometers with ratchet thimble, except 0-1″ and 1″-2″ in 85205A71 and 1″-2″ in 85205A72 have a friction thimble. A case is included.

Range	Graduations	Throat Dp.	Accuracy	Mitutoyo No.		
Series 101 Micrometers						
With Ratchet Thimble						
0-1″	0.0001″	1″	±0.0001″	101-113	**85185A52**	$133.87
1-2″	0.0001″	1¼″	±0.0001″	101-114	**85185A56**	134.50
2-3″	0.0001″	1¾″	±0.0001″	101-119	**85185A54**	146.45
Series 103 Micrometers						
With Ratchet Thimble						
0-1″	0.001″	1	±0.0001″	103-259	**85205A61**	89.84
1-2″	0.0001″	1½″	±0.0001″	103-262	**85205A64**	114.10
2-3″	0.001″	1⅞″	±0.0001″	103-179	**85205A65**	120.39
2-3″	0.0001″	1⅞″	±0.0001″	103-217	**85205A66**	127.58
3-4″	0.0001″	2⅜″	±0.00015″	103-218	**85205A68**	146.45
4-5″	0.0001″	3″	±0.00015″	103-219	**85205A73**	159.02
5-6″	0.0001″	3¾″	±0.00015″	103-220	**85205A74**	176.09
0-25 mm	0.01 mm	1″	±0.002 mm	103-137	**85205A69**	89.84
With Ratchet Thimble and Certificate of Calibration						
0-1″	0.0001″	1.10″	±0.0001″	101-113	**85185A41**	174.17
With Friction Thimble						
0-1″	0.0001″	1″	±0.0001″	103-135	**85205A75**	98.83

Micrometer Sets

Range	No. of Micrometers	Graduations	Mitutoyo No.		
0-3″	3	0.0001″	103-922	**85205A71**	$355.78
0-6″	6	0.0001″	103-907-01	**85205A72**	844.53

Precision Measuring Tool Sets

Electronic Tool Sets

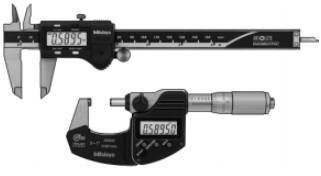

Mitutoyo Tool Set

Sets include a caliper, a micrometer, batteries, and a case. All have zero-position memory, also known as absolute (ABS) positioning.

Caliper takes inside, outside, and depth measurements. Range is 0-6″ and 0-150 mm. Measures in 0.0005″ and 0.01 mm increments.

Micrometer has a range of 0-1″ and 0-25 mm. Measures in 0.00005″ and 0.001 mm increments.

	Micrometer Thimble Style	Mfr. No.		
Mitutoyo	Ratchet	950-939-9	**20765A242**	$320.30
Mitutoyo	Friction	950-940-9	**20765A241**	320.30
Starrett	Friction	S766AZ	**23205A15**	309.01
Economy	Friction	———	**2111A5**	199.63

Nonelectronic Tool Sets

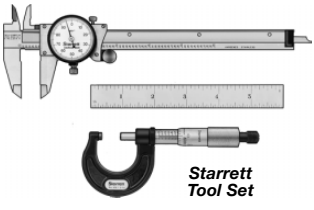

Starrett Tool Set

Sets include a dial caliper, a micrometer, a 6″ long rule, and a case.

Dial caliper takes inside, outside, and depth measurements. Range is 0-6″. Dial is graduated in 0.001″ increments.

Micrometer has a range of 0-1″. It has a friction thimble graduated in 0.0001″ increments, except Starrett has a ratchet thimble.

	Rule Graduations, Inch	Mfr. No.		
Mitutoyo	10ths, 32nds, 50ths, and 64ths	950-903	**3272A55**	$264.14
Starrett	8ths, 16ths, 32nds, and 64ths	S909Z	**2296A46**	368.00
Economy	10ths, 32nds, 64ths, and 100ths	———	**2084A44**	81.81

Tips for Micrometers

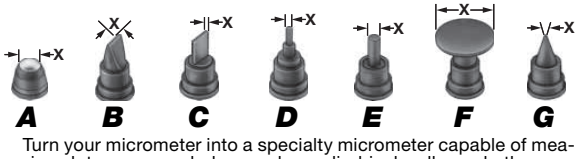

Turn your micrometer into a specialty micrometer capable of measuring slots, grooves, holes, angles, cylindrical walls, and other surfaces. Each tip comes with a 0.28″ long rubber holding device that fits 0.235″ and 0.250″ spindle and anvil diameters.

2313A11 also fits 0.270″ spindle and anvil diameter; 2313A12 also fits 0.270″ and 6 to 7 mm spindle and anvil diameter. Both include two balls.

		Tip Size (X)	Lg.		
A	Ball (Inch)	0.200″ Dia.	0.20″	**2313A11**	$4.08
A	Ball (Metric)	5 mm Dia.	0.20″	**2313A12**	5.50
B	Knife	30°	0.50″	**2313A13**	15.00
C	Blade	0.030″ Thick	0.50″	**2313A17**	15.00
D	Spline	0.050″ Dia.	0.50″	**2313A14**	15.00
E	Spline	0.100″ Dia.	0.50″	**2313A18**	15.00
F	Disc	0.500″ Dia.	0.50″	**2313A15**	15.79
G	Cone	30°	0.50″	**2313A16**	15.00

8-Piece Tip Kit— Includes the following tips listed above and a case: two of 2313A11 and one each of 2313A13, A17, A14, A18, A15, and A16.

2313A21 ..... $49.14

Mitutoyo Long-Reach Micrometers

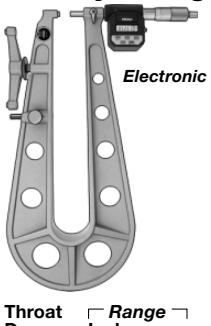

Electronic

Nonelectronic

An extra-deep throat gives you a longer reach for measuring sheet metal and other large items. Micrometers have a ratchet thimble and cast iron frame with carbide spindle and anvil faces. All include a case.

All micrometers have a 0.25″ dia. spindle and anvil.

Electronic Micrometers— Have an easy-to-read LCD and zero-position memory, also known as absolute (ABS) positioning. Battery is included.

They also have SPC data output so you can connect them to a Mitutoyo miniprocessor (sold separately on page 2269) using an SPC data output cable (sold separately below), or to your PC using an SPC data output cable and an input tool (sold separately on page 2270).

Harsh environment micrometer is IP65 rated for dust and direct water splash.

Throat Dp.	Range Inch	Range mm	Graduations Inch	Graduations mm	Accuracy Inch	Accuracy mm	Micrometers Mitutoyo No.			SPC Data Output Cables Mitutoyo No.		
Electronic with SPC Data Output												
13″	0-1	0-25	0.001	0.025	±0.00025	±0.006	389-714	**20585A69**	$756.93	937387	**20395A68**	$46.70
Electronic Harsh Environment with SPC Data Output												
6″	0-1	0-25	0.001	0.025	±0.0002	±0.005	389-351	**20585A66**	440.00	05CZA662	**20395A83**	77.01
Nonelectronic												
6″	0-1	———	0.0001	———	±0.0002	———	118-129	**2304A11**	197.66	———	———	———
13″	0-1	———	0.001	———	±0.00025	———	118-107	**2304A12**	328.83	———	———	———

Replacement Battery for Electronic Micrometers **21105A201** 2.34

Mitutoyo and Starrett Wide-Range Micrometers

Change out the anvil to increase the micrometer's range. All micrometers have a ratchet thimble and a cast iron frame. A case, measuring rod, and wrench are included.

Mitutoyo Electronic Harsh Environment Micrometers— Have an LCD and zero-position memory, also known as absolute (ABS) positioning. They also have SPC data output so you can connect them to a Mitutoyo miniprocessor (sold separately on page 2269) using an SPC data output cable (sold separately below), or to your PC using an SPC data output cable and an input tool (sold separately on page 2270). Spindle and anvil have carbide faces and are 0.250″ dia. A battery is included. All are IP65 rated to protect from dust and direct water splash.

0-6″ micrometer measures in 0.00005″ and 0.001 mm increments; *6″-12″* micrometer in 0.0001″ and 0.003 mm increments.

Starrett Nonelectronic Micrometers— Graduated in 0.001″ and 0.03 mm increments. Spindle and anvil have steel faces and are 0.300″ dia.

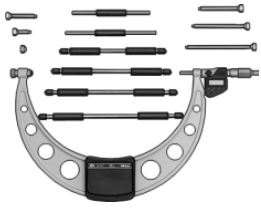

Mitutoyo Electronic

Range Inch	Range mm	Throat Dp.	Accuracy Inch	Accuracy mm	Mfr. No.		
Mitutoyo Electronic Harsh Environment with SPC Data Output							
0- 6	0-152	3½″	±0.0003	±0.008	340-351-10	**20605A1**	$626.59
6-12	152-305	6½″	±0.0004	±0.01	340-352-10	**20605A2**	769.97
Starrett Nonelectronic							
0- 4	—	2½″	±0.00015	—	224AARLZ	**8597A31**	394.00
2- 6	—	3½″	±0.00015	—	224ARLZ	**8597A32**	442.00
6- 9	—	5″	±0.00015	—	224BRLZ	**8597A33**	587.01
6-12	—	6½″	±0.00025	—	224GRLZ	**8597A34**	874.00
9-12	—	6½″	±0.00025	—	224CRLZ	**8597A35**	664.00
12-16	—	8½″	±0.0003	—	224DRLZ	**8597A36**	823.01
16-20	—	10½″	±0.0003	—	224ERLZ	**8597A37**	1,022.00
20-24	—	12½″	±0.0003	—	224JRLZ	**8597A38**	1,204.00
SPC Data Output Cable (40″ Long)					05CZA662	**20395A83**	77.01
Replacement Battery for Electronic Micrometers						**21105A201**	2.34

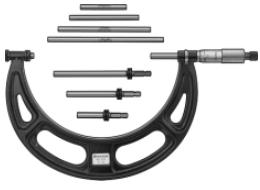

Starrett Nonelectronic

Micrometer Check Gauge

Check for out-of-parallel anvils and determine other wear on your 1″ micrometer. Gauge is steel and has nine steps that measure from 0.140″ to 0.964″. Sizes correspond to a 45° turn of a micrometer's lead screw. Each step is accurate to ±0.0001″. Overall length is 2 13/16″. A case and certificate of calibration traceable to NIST are included.

8564A12 ..... $317.45

Mitutoyo and Starrett Micrometer Heads

A

B

C

D

Use these micrometer heads with special equipment, such as jigs/fixtures, machine tools, and equipment with movable tables, where precise movement and adjustments are required. Heads are held in place by the cylindrical mounting hub using your existing brackets or fixtures. Spindle length listed is the maximum extended distance when micrometer is set at zero. *Nonrotating* spindles are ideal for delicate and high-accuracy applications.

Electronic Micrometer Heads— Have an LCD and zero-position memory, also known as absolute (ABS) positioning. They also have SPC data output so they can be connected to a Mitutoyo miniprocessor (sold separately on page 2253) using an SPC data output cable (sold separately below), or to your PC using an SPC data output cable and an input tool (sold separately on page 2270). They display in 0.00005″ and 0.001 mm increments. Spindle face is carbide. Battery is included.

8283A22 and *A23* have a mounting-hub hold-down nut for extra support.

Nonelectronic Micrometer Heads— Have a steel spindle face.

Style C inch heads are graduated in 0.001″ increments. Metric heads are graduated in 0.01 mm.

Style D have a mechanical digital counter that displays in 0.001″ increments. Thimble is graduated in 0.001″ increments.

Range Inch	Range mm	Thimble	Spindle	Spindle Face	Accuracy Inch	Accuracy mm	Approx. O'all Lg.	Mounting Hub Dia.	Mounting Hub Lg.	Spindle Dia.	Spindle Lg.	Mfr. No.		
Mitutoyo Electronic														
A 0-1	0-25	Ratchet	Rotating	Flat	±0.0001	±0.0025	6 5/32″	0.375″	0.59″	0.250″	1.06″	350-351-10	**8283A21**	$285.00
A 0-1	0-25	Ratchet	Rotating	Flat	±0.0001	±0.0025	6 5/32″	0.375″	0.59″	0.250″	1.06″	350-352-10	**8283A22**	308.00
A 0-1	0-25	Ratchet	Rotating	Rounded	±0.0001	±0.0025	6 5/32″	0.375″	0.59″	0.250″	1.06″	350-354-10	**8283A23**	320.00
B 0-2	0-50	Plain	Nonrotating	Flat	±0.00015	±0.003	6 11/16″	0.709″	0.55″	0.433″	2″	164-164	**19705A91**	787.66
Mitutoyo Nonelectronic														
C 0-0.25	—	Plain	Rotating	Flat	±0.0002	—	1½″	0.250″	0.236″	0.138″	0.354″	148-202	**19725A61**	51.89
C 0-0.5	—	Plain	Rotating	Flat	±0.0001	—	2 13/16″	0.375″	0.375″	0.197″	0.61″	148-502	**19725A62**	56.48
Starrett Nonelectronic														
C 0-0.5	—	Plain	Rotating	Flat	±0.0001	—	2⅝″	0.375″	0.375″	0.200″	0.75″	463P	**8578A65**	72.00
C 0-0.5	—	Plain	Rotating	Flat	±0.0001	—	2⅝″	0.375″	0.375″	0.200″	0.75″	463L	**8578A66**	78.00
C 0-0.5	—	Ratchet	Rotating	Flat	±0.0001	—	3⅜″	0.375″	0.375″	0.200″	0.75″	463RL	**8578A21**	83.01
C 0-0.5	—	Plain	Nonrotating	Flat	±0.0001	—	3 7/16″	0.375″	0.375″	0.200″	0.75″	261L	**8578A11**	169.01
C 0-1	—	Plain	Rotating	Flat	±0.0001	—	4⅛″	0.500″	0.75″	0.235″	1.25″	263P	**8578A68**	78.00
C 0-1	—	Plain	Rotating	Flat	±0.0001	—	4⅛″	0.500″	0.75″	0.235″	1.25″	263L	**8578A69**	83.01
C 0-1	—	Ratchet	Rotating	Flat	±0.0001	—	4 15/16″	0.500″	0.75″	0.235″	1.25″	263RL	**8578A22**	87.01
C 0-1	—	Ratchet	Nonrotating	Flat	±0.0001	—	5½″	0.500″	0.75″	0.235″	1.25″	262RL	**8578A12**	185.01
C —	0-13	Plain	Rotating	Flat	—	±0.002	2″	0.236″	0.234″	0.138″	0.625″	460MB	**8578A16**	82.00
C —	0-13	Plain	Rotating	Flat	—	±0.002	2⅝″	0.375″	0.375″	0.200″	0.75″	463MP	**8578A67**	72.00
D 0-1	—	Plain	Rotating	Flat	±0.0001	—	5⅞″	0.500″	0.75″	0.250″	1.25″	363L	**8578A18**	208.00
D 0-1	—	Ratchet	Rotating	Flat	±0.0001	—	5⅞″	0.500″	0.75″	0.250″	1.25″	363RL	**8578A31**	212.00
Accessories and Replacement Battery for Mitutoyo Electronic Heads														
SPC Data Output Cable (40″ Long) for 8283A21, A22, and A23												05CZA662	**20395A83**	77.01
SPC Data Output Cable (40″ Long) for 19705A91												959149	**20395A7**	46.40
Replacement Battery													**21105A201**	2.34

Specialty Micrometers from Mitutoyo and Starrett

	Range Inch	Range mm	Mfr. No.		
Mitutoyo					
Disc	0-1	—	223-125	8655A11	$259.15
Disc	0-1	0-25	323-350	20485A88	459.00
Point (15°)	0-1	—	142-177	8653A11	239.88
Point (15°)	0-1	0-25	342-351	19585A61	425.00
Point (30°)	0-1	—	112-225	8653A32	140.38
Point (30°)	0-1	—	142-225	8653A12	194.96
Point (30°)	0-1	0-25	342-361	19585A62	415.00
Rounded Anvil	0-1	—	295-153	8654A11	177.89
Mitutoyo (Cont.)					
Rounded Anvil and Spindle	0-1	—	295-253	8654A12	$185.98
Rounded Anvil and Spindle	0-1	0-25	395-371	2339A4	377.00
Starrett					
Mul-T-Anvil	0-1	—	220XFL-1	8575A61	234.00
Screw Thread Comparator	0- ⅞	—	210AP	8594A46	149.01
Disc	0-1	—	256RL-1	8603A61	287.01
Rounded Anvil	0- ½	—	576XR	8576A11	189.01
Rounded Anvil	0-1	—	577XP	8576A12	182.00

Mitutoyo Electronic Pocket Thickness Gauges

Do quick thickness checks on paper, film, and other flat stock. Push the thumb button to operate. Gauges have an LCD and measure in 0.0005″ and 0.01 mm increments. Accuracy is ±0.001″. Spindle and anvil faces are steel. Include a battery and case.

Certificate of calibration is traceable to NIST.

Range Inch	Range mm	Throat Dp.	Mitutoyo No.		
Standard					
0-0.5	0-12.7	¾″	700-118-20	2104A1	$92.65
Standard with Certificate of Calibration					
0-0.5	0-12.7	¾″	700-118-20	2104A8	132.95
Replacement Battery				21105A201	2.34

Mitutoyo Electronic Thickness Gauges

A

B ***Flat Anvil Face***

B ***Ball Anvil Face***

C

An LCD gives you instant readings. Gauges measure in 0.0005″ and 0.01 mm increments, except for 20955A16, which measures in increments selectable between 0.00005″, 0.0001″, 0.0005″, 0.001 mm, and 0.01 mm. They have zero-position memory, also known as absolute (ABS) positioning. They also have SPC data output so you can connect them to a Mitutoyo miniprocessor (sold separately on page 2269) using an SPC data output cable (sold separately below), or to your PC using an SPC data output cable and an input tool (sold separately on page 2270). A battery is included.

Flat anvil faces measure paper and other flat stock. Spindle and anvil faces are ceramic, except for 20955A16, which has carbide faces.

Ball anvil face measures wall thickness of pipes, tubes, and other cylindrical shapes. Spindle and anvil faces are steel.

Certificates of calibration are traceable to NIST.

	Range Inch	Range mm	Anvil Face	Anvil Dia.	Throat Dp.	Accuracy	Mitutoyo No.	Without Certificate of Calibration		With Certificate of Calibration	
A	0-0.47	0-12	Flat	0.25″	¾″	±0.00015″	547-400S	20955A16	$711.31	—	—
B	0-0.47	0-12	Flat	0.4″	1⅛″	±0.001″	547-500	20955A11	259.00	20955A15	$299.30
B	0-0.47	0-12	Ball	0.14″	¾″	±0.001″	547-561	20955A14	259.00	—	—
C	0-0.47	0-12	Flat	0.4″	4¾″	±0.001″	547-520	20955A12	280.00	20955A8	320.30
40″ SPC Data Output Cable (Mitutoyo No. 905338)										20395A67	36.75
Replacement Batteries										21105A201	2.34

Dial Thickness Gauges

Mitutoyo Loop Handle

Starrett Pocket

Economy

Glance at the dial to check thickness measurements. A case is included. *Inch* dial faces are white; *metric* dial faces are yellow.

Mitutoyo loop-handle gauges have a comfortable hand grip with a thumb lever that raises the spindle.

Starrett pocket gauges fit between your thumb and index finger. Pull the serrated finger slide to raise the spindle.

Economy gauge operates with a serrated finger slide that raises the spindle.

Certificates of calibration are traceable to NIST.

Range	Graduations	Range per Dial Rev.	Throat Dp.	Accuracy	Mfr. No.	Without Certificate of Calibration		With Certificate of Calibration	
Mitutoyo Loop Handle									
0-0.05″	0.0001″	0- 10	1⅛″	±0.0002″	7326S	2102A3	$182.38	2102A9	$222.68
0-0.5″	0.001″	0-100	1⅛″	±0.001″	7300S	2102A1	109.61	2102A5	149.91
0-1″	0.001″	0-100	1⅛″	±0.002″	7304S	2102A2	132.07	2102A6	172.37
0-10 mm	0.01 mm	0-100	1⅛″	±0.015 mm	7301	2102A4	106.02	—	—
Starrett Pocket									
0-0.375″	0.0005″	0- 50	5/16″	±0.0005″	1010EZ	2095A2	293.01	2095A8	319.68
0-0.375″	0.001″	0-100	5/16″	±0.001″	1010Z	2095A1	277.01	2095A6	303.68
Economy									
0-0.5″	0.001″	0-100	½″	±0.001″	—	19795A31	54.10	—	—

Starrett Inside Hole Micrometers

Series 823

Series 124

Find the inside diameter of cylinders and rings, as well as the distance between two surfaces. Micrometers measure in 0.001″ increments. Accuracy is ±0.0001″. They have a plain thimble and steel measuring faces. A case is included.

Series 823— Have lightweight 3/8″ dia. tubular steel extensions that attach at each end of the micrometer head.

2049A1, 2049A2, and 2049A6 include a 5 1/2″ long handle.

Series 124— Have solid steel extensions with individual length adjustment.

2048A1 and 2048A2 extensions are 1/4″ dia.; 2048A3 extensions are 11/32″ dia.; and 2048A4 extensions are 1/4″ dia. and 11/32″ dia.

Range	No. of Heads	Head Travel	No. of Extensions	Starrett No.		
Series 823						
1 1/2″- 8″	1	1/2″	5	823AZ	**2049A1**	$319.32
1 1/2″-12″	1	1/2″	8	823BZ	**2049A2**	390.66
1 1/2″-32″	2	1/2″, 1″	10	823FZ	**2049A6**	641.01
4″ -24″	1	1″	7	823CZ	**2049A3**	493.59
4″ -32″	1	1″	8	823DZ	**2049A4**	546.23
4″ -40″	1	1″	10	823EZ	**2049A5**	604.71
Series 124						
2″ - 8″	1	1/2″	6	124AZ	**2048A1**	228.00
2″ -12″	1	1/2″	10	124BZ	**2048A2**	277.01
2″ -32″	2	1/2″, 1″	10	124DZ	**2048A4**	715.01
8″ -32″	1	1″	4	124CZ	**2048A3**	504.00

Optional 6 1/2″ Handle— For *2048A1*, *2048A2*, and *2048A4*.

2048A8 ..... $11.50

Inside Hole Dial Calipers

With short, narrow contacts, these calipers have no problem measuring shallow recesses. Push the button to close the arms and release to obtain the diameter. Inch calipers measure in 0.001″ increments; metric in 0.025 mm increments. Bezel rotates to set zero anywhere on the dial and has a lock screw. Dial face is white. Arms are 3 1/4″ long and have carbide measuring points.

Range	Accuracy		
0.375″-1.375″	±0.001″	**8631A61**	$122.98
0.750″-1.750″	±0.001″	**8631A62**	137.55
1.125″-2.125″	±0.001″	**8631A63**	152.36
1.500″-2.500″	±0.001″	**8631A64**	165.97
10-35 mm	±0.025 mm	**8631A72**	132.83

Telescoping Hole Gauges

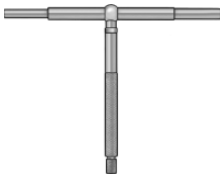

Spring tension forces two telescoping steel contacts to expand inside the hole and a screw in the handle locks the contacts. To determine hole size, measure the distance across the locked contacts with a micrometer (not included).

Sets include a pouch.

Starrett gauges are steel.

Economy gauge sets are chrome-plated brass and steel.

Range	Handle Lg.	Starrett No.		
Starrett Gauges				
5/16″- 1/2″	2 7/8″	579A	**2081A6**	$29.01
1/2″ - 3/4″	2 7/8″	579B	**2081A1**	31.01
3/4″ -1 1/4″	2 7/8″	579C	**2081A2**	32.00
1 1/4″ -2 1/8″	2 7/8″	579D	**2081A3**	33.01
2 1/8″ -3 1/2″	2 7/8″	579E	**2081A4**	41.50
3 1/2″ -6″	4″	579F	**2081A5**	52.00
Starrett Gauge Sets				
5/16″-2 1/8″ (4 Gauges)	—	S579GZ	**2081A8**	133.01
5/16″-6″ (6 Gauges)	—	S579HZ	**2081A9**	230.00
Economy Gauge Sets				
5/16″-2 1/8″ (4 Gauges)	—	—	**6743A37**	48.91
5/16″-6″ (6 Gauges)	—	—	**6743A38**	65.55

Brown & Sharpe Intrimik Hole Gauges

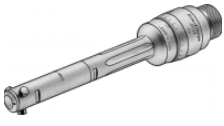

Read measurements directly from these gauges without the need for a micrometer. Three evenly spaced steel contacts ensure proper centering. Gauges have a ratchet thimble and measure in 0.0002″ increments. Also known as bore gauges.

Range	Meas. Dp.	Accuracy	Brown & Sharpe No.		
0.275″-0.350″	2″	±0.00015″	599-281-3	**19545A551** ★	$523.00
0.350″-0.425″	2″	±0.00015″	599-281-4	**19545A552** ★	524.00
0.425″-0.500″	2″	±0.00015″	599-281-5	**19545A553** ★	529.00
0.500″-0.600″	3″	±0.00015″	599-281-6	**19545A554**	536.00
0.600″-0.700″	3″	±0.00015″	599-281-7	**19545A555**	539.00
0.700″-0.800″	3″	±0.00015″	599-281-8	**19545A556**	552.00
0.800″-1.000″	3″	±0.00015″	599-281-10	**19545A557**	592.00
1.000″-1.200″	3″	±0.00015″	599-281-12	**19545A558**	598.00
1.200″-1.400″	3″	±0.00015″	599-281-14	**19545A559**	606.00
1.400″-1.600″	3″	±0.00015″	599-281-16	**19545A561**	613.00
1.600″-2.000″	3″	±0.0002″	599-281-20	**19545A562**	698.00
2.000″-2.400″	3″	±0.0002″	599-281-24	**19545A563**	710.00
2.400″-2.800″	3″	±0.0002″	599-281-28	**19545A564**	724.00

★ Measures in 0.0001″ increments.

Hole Gauges

Use the interchangeable anvils to measure the inside diameter of holes and cylindrical bores, as well as identify out-of-roundness problems. Also known as bore gauges.

Dial Gauges— Have a 2 1/4″ dia. (AGD Group 2) dial indicator with white face. A case is included.

Mitutoyo dial gauges measure in 0.0001″ increments and have a jeweled bearing to prevent excessive wear. Anvils have carbide steel points, except 20685A663, which has alloy steel.

Mitutoyo 3-piece dial gauge set includes 20685A664, A665, and A666.

Economy dial gauges measure in 0.0005″ increments. Anvils are carbide steel; probes have carbide steel points.

Economy Electronic Gauge— Has an LCD to make reading measurements easier, and zero-position memory, also known as absolute (ABS) positioning. Measures in 0.00005″ increments. A battery is included.

Mitutoyo Dial

Economy Dial

Economy Electronic

Type A Probe

Type B Probe

Type C Probe

Range	Measuring Depth	Accuracy	Probe Type	No. of Anvils	Mfr. No.		
Mitutoyo Dial Gauges							
0.4″-0.7″	2.4″	±0.0002″	B	8	526-123	**20685A663**	$395.31
0.7″-1.4″	4″	±0.00008″	C	9	511-751	**20685A664**	339.61
1.4″-2.5″	6″	±0.00008″	C	6	511-752	**20685A665**	331.52
2″ -6″	6″	±0.00008″	C	11	511-753	**20685A666**	362.07
Mitutoyo 3-Piece Dial Gauge Set							
0.7″-6″	4″, 6″	±0.00008″	C	26	511-932	**20685A66**	787.50
Economy Dial Gauges							
0.7″-1.5″	8″	±0.0009″	A	8	—	**2110A13**	117.85
1.4″-6″	9″	±0.0009″	C	15	—	**2110A12**	150.27
2″ -6″	9″	±0.0009″	C	11	—	**2110A11**	119.00
Economy Electronic Gauge							
1.4″-6″	9″	±0.0006″	C	15	—	**6745A44**	273.00
Replacement Battery for Electronic Hole Gauge						**7701K34**	1.92

Small-Hole Gauges

Full Ball

Insert into small holes, slots, grooves, and recesses and turn the knob on the handle to expand the contacts. To get your reading, measure the distance across the contacts with a micrometer (not included).

Full-ball gauges are great for deep through holes. ***Half-ball gauges*** are best for flat, shallow areas.

Starrett Gauges— Full-ball gauges are Series 829; half-ball gauges are Series 831.

Starrett 4-piece gauge set includes one gauge in each range listed and a pouch. **To Order:** Please specify full-ball or half-ball for all Starrett gauges.

Economy 4-Piece Gauge Set— Includes a full-ball gauge in each of the following ranges: 0.125″-0.200″, 0.200″-0.300″, 0.300″-0.400″, and 0.400″-0.500″. Comes in a pouch.

Range	O'all Lg.	Starrett No.		
Starrett Gauges				
0.125″-0.200″	2⅞″	829A/831A	**2100A25**	$31.01
0.200″-0.300″	3⅛″	829B/831B	**2100A26**	31.50
0.300″-0.400″	3⅜″	829C/831C	**2100A27**	31.50
0.400″-0.500″	3½″	829D/831D	**2100A28**	32.50
Starrett 4-Piece Gauge Set				
0.125″-0.500″	—	S829EZ/S831EZ	**2100A29**	132.75
Economy 4-Piece Gauge Set				
0.125″-0.500″	—	—	**6741A47**	76.09

Mitutoyo Depth Gauges

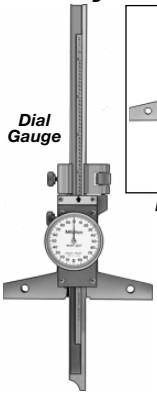

Dial Gauge

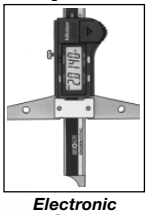

Electronic Gauge

A curve on the tip of the measuring blade lets you access narrow spaces. Base is 4″ long. A pouch is included.

Dial Gauges— Measuring blade is 0.43″ wide (0.16″ at the tip). Inch gauges measure in 0.001″ increments; metric in 0.05 mm increments. All have a white dial face and a fine-adjustment screw.

Electronic Gauges— Measuring blade is 0.63″ wide (0.20″ wide at the tip). Gauges have an LCD and measure in 0.0005″ and 0.01 mm increments. They also have zero-position memory, also known as absolute (ABS) positioning, and SPC data output so they can be connected to a Mitutoyo miniprocessor using an SPC data output cable (sold separately below), or to your PC using an SPC data output cable and an input tool (sold separately on page 2270). Battery is included.

Electronic harsh environment gauge is IP67 rated for dust and temporary water submersion.

Optional base extensions increase the base length to measure larger diameter holes.

Range Inch	Range mm	Accuracy Inch	Accuracy mm	Mitutoyo No.		
Dial Gauges						
0- 6	—	±0.001	—	527-311-50	**2105A41**	$203.05
0-12	—	±0.0015	—	527-313-50	**2105A42**	279.41
—	0-150	—	±0.05	527-301-50	**2105A43**	203.05
Electronic Gauges with SPC Data Output						
0- 6	0-150	±0.001	±0.025	571-211-20	**20545A214**	365.00
0- 8	0-200	±0.001	±0.025	571-212-20	**20545A215**	392.00
0-12	0-300	±0.0015	±0.04	571-213-10	**20545A216**	452.00
Electronic Harsh Environment Gauge with SPC Data Output						
0- 6	0-150	±0.001	±0.025	571-261-10	**20545A302**	471.46
Accessories and Replacement Battery						
SPC Data Output Cable (40″ Long) for 20545A214, A215, A216				959149	**20395A7**	46.40
SPC Data Output Cable (40″ Long) for 20545A302				05CZA624	**20395A81**	86.30
7″ Base Extension					**2105A66**	41.65
12″ Base Extension					**2105A68**	70.20
Replacement Battery for Electronic Gauges					**21105A201**	2.34

Dial Depth Gauges

Measure depths up to 22″ using the included connectable rod extensions. Extensions are 1″, 2″, 3″, 4″, 5″ and 6″ long with a 0.2″ dia. Without extensions, gauge has 0-1″ range and measures in 0.001″ increments. Range per dial revolution is 0.100″ and accuracy is ±0.001″. Includes three interchangeable contact points with 4-48 threads—one 0.118″ dia. carbide ball, one 1″ Lg.×0.078″ dia. point, and one 1″ long needle point. Dial face is white. Base is 4″ long. A case and a clamping screw to lock settings are included.

8645A11 ..... $166.56

Electronic Depth Micrometers

Mitutoyo

Micrometers have an LCD, interchangeable steel rods in 1″ incremental lengths for measuring a variety of depths, and a ratchet thimble. A battery and case are included.

Mitutoyo Micrometers— Accuracy is ±0.00012″. Micrometers have zero-position memory, also known as absolute (ABS) positioning, and SPC data output that allows them to be connected to a Mitutoyo miniprocessor using an SPC data output cable (sold separately below), or to your PC using an SPC data output cable and an input tool (see page 2270).

20635A33 measures in 0.00005″ and 0.001 mm increments; 20635A63 in 0.0001″ and 0.001 mm increments.

Economy Harsh Environment Micrometer— IP54 rated for dust and splashing water. Micrometer measures in 0.00005″ and 0.001 mm increments. Accuracy is ±0.0001″.

Range Inch	Range mm	Base Lg.	Rods No.	Rods Dia.	Mfr. No.		
Mitutoyo with SPC Data Output							
0- 6	0-150	4″	6	0.157″	329-350-10	**20635A33**	$505.55
0-12	0-300	4″	12	0.157″	329-351-10	**20635A63**	621.00
Economy Harsh Environment							
0- 6	0-150	4″	6	0.176″	—	**6747A6**	178.42
Accessory and Replacement Battery							
SPC Data Output Cable (40″ Long)					05CZA662	**20395A83**	77.01
Replacement Battery						**21105A201**	2.34

Mitutoyo and Starrett Depth Micrometers

Starrett

Change out the steel rods supplied in 1″ incremental lengths to measure depth of holes, slots, shoulders, and projections. Micrometers have a ratchet thimble. *Inch* micrometers measure in 0.001″ increments; *metric* micrometers measure in 0.01 mm increments. A case is included.

Mitutoyo Micrometers— Accuracy is ±0.00012″.

Starrett Micrometers— Accuracy is ±0.0001″ for inch micrometers and ±0.002 mm for metric.

Certificates of calibration are traceable to NIST.

Range	Base Lg.	Rods No.	Rods Dia.	Mfr. No.		
Mitutoyo						
0- 4″	2½″	4	5/32″	129-127	**20365A12**	$154.53
0- 4″	4″	4	5/32″	129-131	**20365A13**	170.70
0- 6″	2½″	6	5/32″	129-128	**20365A14**	186.88
0- 6″	4″	6	5/32″	129-132	**20365A15**	199.45
0-12″	4″	12	5/32″	129-150	**20365A17**	344.10
Mitutoyo with Certificate of Calibration						
0- 4″	2½″	4	5/32″	129-127	**20365A18**	194.83
Starrett						
0- 3″	2½″	3	1/8″	440Z-3RL	**2051A3**	222.00
0- 3″	3″	3	5/32″	445AZ-3RL	**2051A31**	223.00
0- 3″	4″	3	5/32″	445BZ-3RL	**2051A32**	238.00
0- 6″	2½″	6	1/8″	440Z-6RL	**2051A4**	265.01
0- 6″	3″	6	5/32″	445AZ-6RL	**2051A41**	269.00
0- 6″	4″	6	5/32″	445BZ-6RL	**2051A42**	281.01
0- 6″	6″	6	5/32″	445DZ-6RL	**2051A43**	371.95
0- 9″	4″	9	5/32″	445BZ-9RL	**2051A52**	350.00
0- 75 mm	63.5 mm	3	3.2 mm	440MZ-75RL	**2051A61**	222.00
0-150 mm	63.5 mm	6	3.2 mm	440MZ-150RL	**2051A62**	265.01
Starrett with Certificate of Calibration						
0-3″	2½″	3	1/8″	440Z-3RL	**2051A88**	248.67

Mitutoyo Electronic Depth Gauges

Connect the ½″, 1″, 2″, and 4″ long rod extensions to measure depths up to 8″. Rod extensions are 0.236″ dia. Gauges have an LCD and measure in 0.0005″ and 0.01 mm increments. Accuracy is ±0.001″. Contact point is 0.118″ dia. with 4-48 threads. A battery is included.

All gauges have zero-position memory, also known as absolute (ABS) positioning, and SPC data output so they can be connected to a Mitutoyo miniprocessor using an SPC data output cable (sold separately below), or to your PC using an SPC data output cable and an input tool (sold separately on page 2270).

Range Inch	Range mm	Base Lg.	Mitutoyo No.		
0-8	0-200	2½″	547-217S	**20915A21**	$443.00
0-8	0-200	4″	547-218S	**20915A22**	449.00
SPC Data Output Cable (40″ Long)			905338	**20395A67**	36.75
Replacement Battery				**21105A201**	2.34

Mitutoyo Electronic Indicators

Indicators have an LCD, ability to count forward or backward from zero, and zero-position memory, also known as absolute (ABS) positioning. They also have SPC data output so they can be connected to a Mitutoyo miniprocessor using an SPC data output cable (sold separately below), or to your PC using an SPC data output cable and an input tool (sold separately on page 2270). Mounting stem is 3/8″ dia. and contact point has 4-48 threads. A battery is included where required.

(B&C) Easy-read indicators have a larger display than the other indicators and a rotating dial face. You can set any starting value, and they have go/no-go operation for tolerance checking.

(D) Compact indicator has a slim design for use in tight spaces.

(E) Backlit quick-read indicators' LCD changes from green to red so you can quickly identify out of tolerance. Indicators perform TIR (total indicating runout), which determines range of high and low spots of round parts. You can set any starting value. They have an analog bar display with adjustable range and tolerance indicators and a function lock. Operate on 120 VAC and have a 6½-ft. long power cord with a two-prong plug.

(F) Harsh environment indicators are IP53 rated for dust and water droplets.

Certificates of calibration are traceable to NIST.

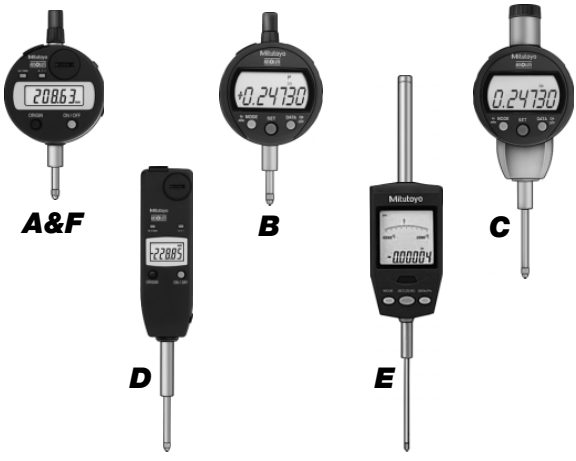

Indicators

Range Inch	Range mm	Increments Inch	Increments mm	Accuracy	Dial Dia./ Body Size	Back Style	Mitutoyo No.	Without Certificate of Calibration		With Certificate of Calibration	
Standard											
A	0-0.5	0-12.7	0.0005	0.01	±0.0008″	2 3/8″	1/4″ Lug	543-683	20835A71	$163.00	20835A91	$203.30
A	0-0.5	0-12.7	0.0005	0.01	±0.0008″	2 3/8″	Flat	543-683B	20835A72	163.00	20835A92	203.30
A	0-0.5	0-12.7	0.0001	0.001	±0.00012″	2 3/8″	1/4″ Lug	543-693	20835A21	250.00	20835A31	290.30
A	0-0.5	0-12.7	0.0001	0.001	±0.00012″	2 3/8″	Flat	543-693B	20835A22	250.00	20835A32	290.30
Easy Read											
B	0-0.5	0-12.7	0.0005	0.01	±0.001″	2 3/8″	1/4″ Lug	543-402	20875A77	284.00	20875A35	324.30
B	0-0.5	0-12.7	0.0005	0.01	±0.001″	2 3/8″	Flat	543-402B	20875A81	284.00	20875A42	324.30
B	0-0.5	0-12.7	0.00005	0.001	±0.0001″	2 3/8″	1/4″ Lug	543-392	20875A76	390.00	20875A45	430.30
B	0-0.5	0-12.7	0.00005	0.001	±0.0001″	2 3/8″	Flat	543-392B	20875A75	390.00	20875A46	430.30
C	0-1.0	0-25.4	0.00005	0.001	±0.0001″	2 3/8″	Flat	543-472B	20875A78	522.00	20875A47	562.30
Compact											
D	0-1.0	0-25.4	0.0005	0.01	±0.0008″	5″ × 1 1/2″ × 1″	Flat	575-123	19975A73	179.00	19975A74	219.30
Backlit Quick Read											
E	0-1.2	0-30.4	0.00005	0.001	±0.00006″	9 7/8″ × 2 3/8″ × 1 5/8″	Flat	543-562A	19485A91★	756.00	19485A92★	797.26
E	0-2.4	0-60.9	0.00005	0.001	±0.0001″	12 1/4″ × 2 3/8″ × 1 5/8″	Flat	543-564A	19485A93★	896.59	19485A94★	937.99
Harsh Environment											
F	0-0.5	0-12.7	0.00005	0.001	±0.00012″	2 3/8″	1/4″ Lug	543-696	2360A1	277.00	2360A3	317.30
F	0-0.5	0-12.7	0.00005	0.001	±0.00012″	2 3/8″	Flat	543-696B	2360A2	277.00	2360A4	317.30

★ Has selectable measurement increments of 0.00002″, 0.00005″, 0.0001″, 0.0005 mm, and 0.001 mm.

Accessories and Replacement Battery

	For Indicators	Mitutoyo No.		
1/4″ Lug Back	A and F	02ACB430	20835A81	$15.49
1/4″ Lug Back	B, C, and E	101306	20625A917	11.54
Spindle Lifting Cable (Remotely lifts spindle)	A, B, C, E, and F	540774	20875A72	34.52
SPC Data Output Cable (40″ Long)	A, B, C, D, and F	905338	20395A67	36.75
SPC Data Output Cable (40″ Long)	E	936937	20395A66	43.90
Replacement Battery	A, B, C, D, and F		21105A201	2.34

Economy Electronic Indicators

An economical alternative to our other electronic indicators. They have an LCD, a 3/8″ dia. mounting stem, a 1/4″ lug back, and a contact point with 4-48 threads. A control button provides go/no-go tolerance checking. Battery is included. ***Fraction*** indicator also measures in 1/64″ increments.

Range Inch	Range mm	Increments Inch	Increments mm	Accuracy Inch	Accuracy mm	Dial Dia.	Back Style		
Inch									
0-0.5	0-12.7	0.0005	0.01	±0.001	±0.03	2 1/4″	1/4″ Lug	2357A1	$77.00
0-1.0	0-25.4	0.0005	0.01	±0.001	±0.03	2 1/4″	1/4″ Lug	2357A2	83.42
Fraction									
0-1.0	0-25.4	0.0005	0.01	±0.001	±0.03	2 1/4″	1/4″ Lug	2357A7	84.34

Depth-Gauge Bases for Indicators

Convert electronic and dial indicators into depth gauges. All are made of steel.

Economy bases come with a set screw to hold a 3/8″ dia. indicator mounting stem. Size is 5/8″ Wd. × 3/4″ Ht.

Standard bases come with one holding collet that accepts a 3/8″ dia. indicator mounting stem. Additional mounting holes add adaptability. Size is 3/4″ Wd. × 5/8″ Ht.

Economy

Standard
20665A43

Lg.	No. of Holes			
Economy				
2 1/2″	1 (center)	20665A81	$21.31
4″	1 (center)	20665A82	27.03
Standard			
2″	1 (center)	20665A41	74.92
3″	1 (center)	20665A42	80.12
4″	2 (center; 1″ from end)	20665A43	93.78
6″	3 (center; 1″ from end; 2″ from end)	20665A44	115.36
8″	3 (center; 1″ from end; 2″ from end)	20665A45	128.84
Replacement Collet for Standard Bases (9/16″-18 external thread)		20665A48	19.44

Starrett Electronic Indicators

Economy Basic

Advanced Wisdom Plus

Indicators have an LCD and the ability to count forward or backward from zero. They have a 3/8″ dia. mounting stem, a 1/4″ lug back, and a contact point with 4-48 threads. A battery is included.

Economy indicators are AGD Group 2.

Basic indicators have a rotating dial (AGD Group 2) for reading in any position. 20695A47 also has SPC data output so it can be connected to a Starrett data collector using an SPC data output cable, or to your PC using an SPC data output cable and an interface adapter (both sold separately below).

Advanced indicators have a rotating dial (AGD Group 2) for reading in any position, go/no-go tolerance checking, and zero-position memory, also known as absolute (ABS) positioning. They also have SPC data output so they can be connected to a Starrett data collector using an SPC data output cable, or to your PC using an SPC data output cable and an interface adapter (both sold separately below).

Wisdom Plus indicators are AGD Group 3 and have everything the advanced indicators have plus display freeze, capability to set any starting value, function lock, and selectable display increments (increment listed in the table is the most accurate). They also have SPC data output so they can be connected to a Starrett data collector or to your PC using an SPC data output cable assembly (sold separately below).

	Range Inch	Range mm	Increments Inch	Increments mm	Accuracy	Dial Dia.	Starrett No.		
Economy	0- 1/2	0-12.7	0.0005	0.01	±0.001″	2 1/4″	3600-5	20695A34	$158.00
Basic	0-1	0-25	0.0005	0.01	±0.001″	2 1/4″	2600-1	20695A47	470.71
Basic	0-1	0-25	0.001	0.02	±0.001″	2 1/4″	2600-7	20695A48	462.00
Advanced	0-1	0-25	0.0005	0.01	±0.001″	2 1/4″	2600-4	20695A36	702.87
Advanced	0-1	0-25	0.001	0.02	±0.001″	2 1/4″	2600-8	20695A35	586.00
Wisdom Plus	0-1	0-25	0.00005	0.001	±0.0001″	2 9/32″	F2730-0	2511A35	669.00
Wisdom Plus	0-1	0-25	0.0001	0.002	±0.0002″	2 9/32″	F2730-1	2511A36	620.00
Accessories and Replacement Battery									
Interface Adapter for Basic and Advanced							PT61768	23175A81	149.00
SPC Data Output Cable (10 ft. Long) for Basic and Advanced							PT22938	8602A68	47.51
SPC Data Output Cable (9 ft. Long) Assembly for Wisdom Plus							PT26441	2511A63	218.00
Replacement Battery							PT61120	2511A71	4.51

Dial Indicators with Magnetic Base

Place on any flat steel surface—a magnetic base provides a solid mount. A case is included.

Indicators have a 0-1″ range, plain bearings, a 3/8″ dia. mounting stem, a 1/4″ lug back, and contact point with 4-48 threads. They also have a 2 1/4″ dia. (AGD Group 2) rotating continuous dial with a white face that reads 0-100 in both directions. Dial measures in 0.001″ increments. Accuracy is ±0.002″.

Base has a 45-lb. magnetic pull and is 2″ Lg.×1 3/8″ Wd.×1 7/8″ Ht. The upright post is steel and 5/16″ Dia.×4″ Ht. Indicator holding rod is 4 1/2″ long. A swivel clamp and indicator holding clamp are included.

2316A11 ..... $93.94

Precision Dial Indicator Stands

Get precise measurements and the convenience of a stand. Stands have a black granite base with a steel upright post.

Economy stands have an indicator holding arm. 86285A51 and 86285A54 have a 1/4″ lug-back mount; 86285A55 and 86285A56 accept a 3/8″ dia. mounting stem.

Standard stands provide stability for close tolerance inspection as well as nearly frictionless workpiece movement. All include a certificate of accuracy traceable to NIST. 8628A44 has a rigid indicator holding arm. 8628A45 and 8628A46 have a fine-adjustment knob on the indicator holding arm. 8628A46 also includes a case.

To Order: Please specify 1/4″ lug-back mount or flat-back mount.

Base Lg.	Base Wd.	Base Ht.	Upright Post Dia.	Upright Post Ht.	Throat Dp. from Post	Surface Accuracy		
Economy								
6″	6″	2″	1″	8″	2 3/8″	±0.0005″	86285A51	$64.04
6″	6″	2″	1″	8″	2 3/8″	±0.0001″	86285A54	123.47
8″	12″	2″	1 1/4″	12″	5 5/8″	±0.0001″	86285A55	135.71
12″	18″	4″	1 1/4″	12″	4 25/32″	±0.0001″	86285A56	175.51
Standard								
6″	6″	2″	1 1/4″	8″	1 3/4″	±0.00005″	8628A44	182.46
8″	12″	2″	1 1/4″	12″	5″	±0.0001″	8628A45	337.59
12″	18″	4″	1 1/4″	12″	4 5/32″	±0.0001″	8628A46	456.62

Dial Indicators with Precision Stand

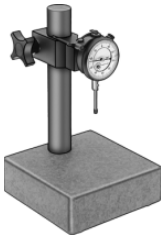

A high-quality granite base provides stability for close tolerance inspection as well as nearly frictionless workpiece movement.

Indicators have a 0-1″ range, jeweled bearings, a 3/8″ dia. mounting stem, and a contact point with 4-48 threads. They also have a 2 1/4″ (AGD Group 2) rotating continuous dial with a white face that reads 0-100 in a clockwise direction. Dial measures in 0.001″ increments. Accuracy is ±0.001″. Include a certificate of calibration traceable to NIST.

Bases have a steel upright post. 8628A41 has a rigid indicator holding arm; 8628A42 has a fine-adjustment knob on the indicator holding arm.

To Order: Please specify indicator back style: 1/4″ lug back or flat back.

Base Lg.	Base Wd.	Base Ht.	Upright Post Dia.	Upright Post Ht.	Throat Dp. from Post	Surface Accuracy		
6″	6″	2″	1 1/4″	8″	1 3/4″	±0.00005″	8628A41	$256.56
8″	12″	2″	1 1/4″	12″	5″	±0.0001″	8628A42	415.59

Dial Indicator Stands

Stand with One Anvil

Use with your AGD electronic or dial indicator (not included) to take accurate comparative measurements. Stands fit 3/8″ or 8 mm dia. mounting stem. Base is made of cast iron and is 5 3/4″ Lg.×3 1/2″ Wd.×1 1/2″ Ht. Upright post and anvils are steel. The indicator holding arm has a fine-adjustment knob.

Stand with one anvil includes an anvil with a serrated face.

Stand with two anvils includes one anvil with a serrated face and one with a flat face.

	Upright Post Dia.	Upright Post Ht.	Throat Dp. from Post	Anvil Face Dia.		
With One Anvil	1″	8″	2 1/2″	2″	7386A12	$195.19
With Two Anvils	1″	14″	2 3/4″	2 3/8″	7386A14	211.23

Electronic Test Indicators

An LCD provides instant, easy-to-read measurements. Indicators have a dovetail mount, measure in selectable increments of 0.00005″, 0.0005″, 0.001 mm, and 0.01 mm, and display both digits and a bar graph. Dial face is 1 1/2″ dia. and rotates 360°. Contact point is 0.080″ dia. and swivels 270°. Operate on one 3-volt battery (included). IP65 rated for dust and spraying water.

Range Inch	Range mm	Display Reading Inch	Display Reading mm	Accuracy Inch	Accuracy mm	Contact Point Lg.		
0-0.02	0-0.5	0-40-0	0-1-0	±0.0004	±0.01	17/16″	2112A13	$308.09
0-0.03	0-0.8	0-40-0	0-1-0	±0.0004	±0.01	1/2″	2112A11	285.27
Replacement Battery							21105A186	1.92

Dial Indicators

Indicators have jeweled bearings, a rotating dial face, a 1/4″ lug back, and a contact point with 4-48 threads, except 2434A11 has 0-80 threads and all economy have M2.5×0.45 threads. Mounting stem is 3/8″ dia. except 2434A11, which is 7/32″ dia. Inch dial faces are white; metric dial faces are yellow.

Continuous dials are numbered in a clockwise direction for direct measurements. ***Balanced dials*** are numbered on each side of zero (+ and –) for comparative measurements. ***Combination dials*** have a continuous scale numbered in a clockwise direction and a balanced scale numbered on each side of zero (+ and –).

Certificates of calibration are traceable to NIST.

Also Available: Replacement indicator backs in additional styles.

For Mitutoyo indicators, please ask for 20625A911 and specify 1/4″ lug back, flat back, or magnetic base and AGD Group.

For Starrett indicators, please ask for 20625A711 and specify 1/4″ lug back, flat back, universal back, or magnetic base and AGD Group.

For standard indicators, please ask for 20625A811 and specify 1/4″ lug back or flat back and AGD Group.

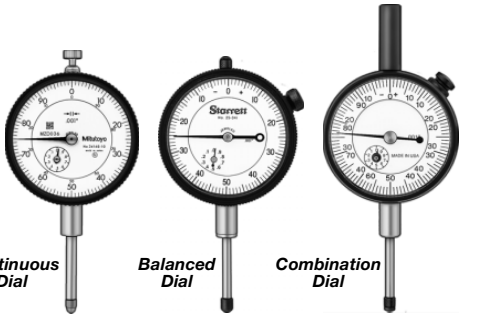

Continuous Dial *Balanced Dial* *Combination Dial*

Range	Graduations	Dial Reading	Accuracy	Mfr. No.		
Mitutoyo						
Continuous Dial—1 5/8″ Dia. Dial (AGD Group 1)						
0-0.250″	0.001″	0-100	±0.001″	1410S-10	2246A41	$92.54
Continuous Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.500″	0.0001″	0-10	±0.0001″	2358S-10	2092A7	182.38
0-1.000″	0.0005″	0-50	±0.0005″	2776S	2246A55 ●	117.70
0-1.000″	0.001″	0-100	±0.001″	2416S-10	2246A54	116.80
0-1.000″	0.001″	0-100	±0.001″	2416S	2246A53 ●	98.83
0-2.000″	0.001″	0-100	±0.001″	2424S-19	2246A57	182.38
Balanced Dial—1 7/32″ Dia. Dial (AGD Group 0)						
0-0.025″	0.0001″	0-5-0	±0.0002″	1925-10	2092A67	132.07
0-0.050″	0.0005″	0-10-0	±0.0005″	1923	2092A68 ●	115.90
0-0.100″	0.001″	0-20-0	±0.001″	1921	2092A69 ●	106.91
Balanced Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.025″	0.0001″	0-5-0	±0.0001″	2803S-10	2246A58	132.07
Mitutoyo with Certificate of Calibration						
Continuous Dial—1 5/8″ Dia. Dial (AGD Group 1)						
0-0.250″	0.001″	0-100	±0.001″	1410S-10	2246A42	132.84
Continuous Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.500″	0.0001″	0-10	±0.0001″	2358S-10	2092A71	222.68
0-1.000″	0.0005″	0-50	±0.0005″	2776S	2246A48 ●	158.00
0-1.000″	0.001″	0-100	±0.001″	2416S-10	2246A47	157.10
0-1.000″	0.001″	0-100	±0.001″	2416S	2246A43 ●	139.13
0-2.000″	0.001″	0-100	±0.001″	2424S-19	2246A44	222.68
Starrett						
Continuous Dial—1 11/16″ Dia. Dial (AGD Group 1)						
0-0.250″	0.001″	0-100	±0.001″	81-241J	2128A21	155.57
Continuous Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.200″	0.0001″	0-10	±0.0001″	25-611J	2128A76	251.01
0-0.250″	0.001″	0-100	±0.001″	25-241J	2128A31	133.01
0-0.500″	0.001″	0-100	±0.001″	25-441/5J	2128A32	133.01
0-1.000″	0.0005″	0-50	±0.0005″	25-631J	2128A35	153.01
0-1.000″	0.001″	0-100	±0.001″	25-441J	2128A34	133.01
0-1.000″	0.001″	0-100	±0.001″	25-441P	2128A33 ●	133.01
0-2.000″	0.001″	0-100	±0.001″	25-2041J	2128A36	298.74
0-3.000″	0.001″	0-100	±0.001″	25-3041J	2128A73	393.00
0-4.000″	0.001″	0-100	±0.001″	25-4041J	2128A72	466.70
0-5.000″	0.001″	0-100	±0.001″	25-5041J	2128A71	463.01
Balanced Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.200″	0.0001″	0-5-0	±0.0001″	25-511J	2128A74	251.01
0-1.000″	0.001″	0-50-0	±0.001″	25-341J	2128A75	133.01
Starrett with Certificate of Calibration						
Continuous Dial—1 11/16″ Dia. Dial (AGD Group 1)						
0-0.250″	0.001″	0-100	±0.001″	81-241J	2128A41	182.24
Continuous Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.200″	0.0001″	0-10	±0.0001″	25-611J	2128A86	277.68
0-0.250″	0.001″	0-100	±0.001″	25-241J	2128A44	159.68
0-0.500″	0.001″	0-100	±0.001″	25-441/5J	2128A45	159.68
0-1.000″	0.0005″	0-50	±0.0005″	25-631J	2128A65	179.68
0-1.000″	0.001″	0-100	±0.001″	25-441J	2128A64	159.68
0-1.000″	0.001″	0-100	±0.001″	25-441P	2128A47 ●	159.68
0-2.000″	0.001″	0-100	±0.001″	25-2041J	2128A46	325.41
Balanced Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-1.000″	0.001″	0-50-0	±0.001″	25-341J	2128A43	159.68
Mahr Federal						
Continuous Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.500″	0.001″	0-100	±0.001″	28IQN	2434A41	149.40
0-1.000″	0.001″	0-100	±0.001″	28ISN	2434A42	149.40
Balanced Dial—1 7/32″ Dia. Dial (AGD Group 0)						
0-0.100″	0.001″	0-20-0	±0.001″	A6Q	2434A11	203.73
Balanced Dial—1 11/16″ Dia. Dial (AGD Group 1)						
0-0.025″	0.0001″	0-5-0	±0.0001″	12I	2434A21	185.97
0-0.050″	0.0005″	0-10-0	±0.0005″	B3Q	2434A22	185.97
0-0.250″	0.001″	0-50-0	±0.001″	B8I	2434A23	154.38
Balanced Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.025″	0.0001″	0-5-0	±0.0001″	22IN	2434A31	218.28
0-0.125″	0.0005″	0-25-0	±0.0005″	27I	2434A33	199.74

Range	Graduations	Dial Reading	Accuracy	Mfr. No.		
Standard with Certificate of Calibration						
Continuous Dial—1 11/16″ Dia. Dial (AGD Group 1)						
0-0.025″	0.0001″	0-10	±0.0001″	—	2092A51	$132.68
0-0.075″	0.0005″	0-30	±0.0005″	—	2092A39 ●	91.60
0-0.125″	0.0005″	0-50	±0.0005″	—	2092A81	101.90
0-0.250″	0.001″	0-100	±0.001″	—	2092A28 ●	87.95
0-5.0 mm	0.01 mm	0-100	±0.01 mm	—	2092A84 ●	106.18
Continuous Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.025″	0.0001″	0-10	±0.0001″	—	2092A15	134.13
0-0.125″	0.0005″	0-50	±0.0005″	—	20935A12 ♣	85.92
0-0.200″	0.0001″	0-10	±0.0001″	—	2092A29	153.30
0-0.250″	0.001″	0-100	±0.001″	—	2092A13 ●	86.40
0-0.250″	0.001″	0-100	±0.001″	—	20935A13 ♣	89.73
0-0.500″	0.001″	0-100	±0.001″	—	2092A12 ●	87.10
0-0.500″	0.001″	0-100	±0.001″	—	20935A65 ♣	97.60
0-1.000″	0.0005″	0-100	±0.0005″	—	2092A55 ●	92.43
0-1.000″	0.001″	0-100	±0.001″	—	2092A54	93.88
0-1.000″	0.001″	0-100	±0.001″	—	2092A11 ●	87.10
0-1.000″	0.001″	0-100	±0.001″	—	20935A66 ♣	97.60
0-2.000″	0.001″	0-100	±0.001″	—	2092A56	165.50
0-3.000″	0.001″	0-100	±0.001″	—	2092A58	189.33
0-4.000″	0.001″	0-100	±0.001″	—	2092A59	211.67
0-5.000″	0.001″	0-100	±0.001″	—	2092A61	236.22
0-10.0 mm	0.01 mm	0-100	±0.01 mm	—	2092A37 ●	105.42
0-25.0 mm	0.01 mm	0-100	±0.01 mm	—	2092A49	112.77
0-25.0 mm	0.01 mm	0-100	±0.01 mm	—	2092A57 ●	104.98
Balanced Dial—1 11/16″ Dia. Dial (AGD Group 1)						
0-0.025″	0.0001″	0-5-0	±0.0001″	—	2092A52	134.13
0-0.075″	0.0005″	0-15-0	±0.0005″	—	2092A38 ●	92.43
0-0.250″	0.001″	0-50-0	±0.001″	—	2092A33 ●	86.40
Balanced Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.025″	0.0001″	0-5-0	±0.0001″	—	2092A24	130.69
0-0.125″	0.0005″	0-25-0	±0.0005″	—	2092A23 ●	90.75
0-0.200″	0.0001″	0-5-0	±0.0001″	—	2092A34	153.87
0-0.250″	0.001″	0-50-0	±0.001″	—	2092A22 ●	88.07
0-0.250″	0.001″	0-50-0	±0.001″	—	20935A16 ♣	89.73
0-0.500″	0.001″	0-50-0	±0.001″	—	2092A62 ●	88.68
0-1.000″	0.001″	0-50-0	±0.001″	—	2092A42 ●	88.68
0-1.000″	0.001″	0-50-0	±0.001″	—	20935A67 ♣	97.60
0-10.0 mm	0.01 mm	0-50-0	±0.01 mm	—	2092A78	113.20
0-25.0 mm	0.01 mm	0-50-0	±0.01 mm	—	2092A63 ●	104.87
Combination Dial—2 1/4″ Dia. Dial (AGD Group 2)						
0-0.250″	0.001″	0-100/ 0-50-0	±0.001″	—	8662A67 ●	85.92
0-0.500″	0.001″	0-100/ 0-50-0	±0.001″	—	8662A62 ●	94.67
0-1.000″	0.001″	0-100/ 0-50-0	±0.001″	—	8662A61 ●	94.53
0-25.0 mm	0.01 mm	0-100/ 0-50-0	±0.01 mm	—	8662A63 ●	114.08
Economy						
Continuous Dial—1 11/16″ Dia. Dial (AGD Group 1)						
0-0.250″	0.001″	0-100	±0.001″	—	20715A25 ●	18.88
Continuous Dial—2 3/8″ Dia. Dial (AGD Group 2)						
0-0.250″	0.001″	0-100	±0.001″	—	20715A74 ●	16.53
0-0.500″	0.001″	0-100	±0.001″	—	20715A75 ●	17.30
0-1.000″	0.0005″	0-50	±0.0005″	—	20715A76 ●	27.12
0-1.000″	0.001″	0-100	±0.001″	—	20715A69 ●	19.67
0-1.000″	0.001″	0-100	±0.002″	—	20715A21 ●■	53.86
0-2.000″	0.001″	0-100	±0.003″	—	20715A77 ●	44.70

Dial Indicator/Magnetic-Base Set— Includes indicator 20715A69 and magnetic-base holder with rigid arm (1958A31 on page 2284).

20715A44 ..... $35.57

● Has plain bearings. ♣ Dial face is black with high-visibility markings. ■ Can read inch and metric simultaneously (to 25 mm).

Starrett Plunger-Style Dial Test Indicators

Indicators

Rugged plunger-style construction has few moving parts to wear out. Indicators have jeweled bearings; a 1/4″ dia. mounting stem; 0.125″, 0.3″, and 0.5″ dia. contact points; and a tip adapter for 4-48 threaded contact points. They also have a 1 3/8″ dia. rotating dial with a white face. Dial hand moves clockwise.

Certificate of calibration is traceable to NIST.

Range	Graduations	Dial Reading	Accuracy	Starrett No.		
Indicator						
0-0.200″	0.001″	0-100	±0.001″	196B1	**2217A12**	$125.01
Indicator with Certification of Calibration						
0-0.200″	0.001″	0-100	±0.001″	196B1	**2217A77**	151.68

Replacement Contact Points and Accessories

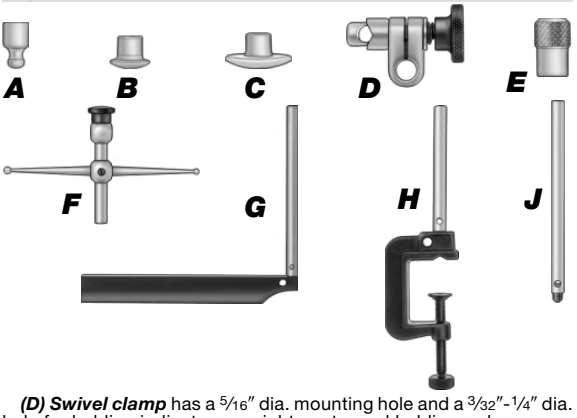

(D) Swivel clamp has a 5/16″ dia. mounting hole and a 3/32″-1/4″ dia. hole for holding indicators, upright posts, and holding rods.

(E) Tip adapter allows you to use an AGD dial indicator with 4-48 threaded contact point.

(F) Hole attachment is for inside holes up to 1 5/8″ deep.

(G) Tool post holder measures 6″ Lg.×3/4″ Wd.×3/8″ Thick. and has a 5/16″ Dia.×4 1/2″ Lg. upright post.

(H) Clamp allows the indicator to be securely attached to machine tools. It has a 5/16″ Dia.×3″ Lg. upright post.

(J) Upright post is 5/16″ Dia.×4 1/2″ Lg.

		Starrett No.		
A	Repl. 0.125″ Dia. Contact Point	PT05471	**2217A3**	$3.71
B	Repl. 0.3″ Dia. Contact Point	PT05472	**2217A31**	3.71
C	Repl. 0.5″ Dia. Contact Point	PT05473	**2217A16**	3.71
D	Swivel Clamp	PT18718	**2217A22**	16.00
E	Tip Adapter	196R	**2217A32**	4.90
F	Hole Attachment	196F	**2217A17**	26.50
G	Tool Post Holder	PT99438	**2217A19**	16.00
H	Clamp	PT99437	**2217A18**	31.00
J	Upright Post	13820-0	**2217A24**	5.80

Indicator Sets

Set with indicator includes accessories A-H listed above and a case.

Set with antimagnetic indicator is for use near an object with a magnetic field, such as a magnetic chuck. Includes accessories A-D and F-H listed above and a case.

	Starrett No.		
Set with Indicator	196A1Z	**2217A11**	$217.01
Set with Antimagnetic Indicator	196A6Z	**2217A61**	253.01

Starrett No. 711 Last Word Dial Test Indicators

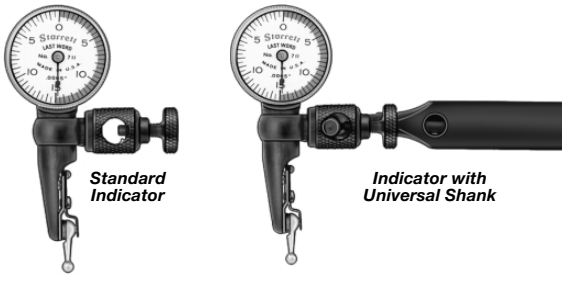

Half of the dial face is white and the other half is shaded yellow to make measurements easier to read. Indicators have jeweled bearings and a 1″ dia. rotating dial. The dial hand moves clockwise and counterclockwise. The contact point is steel, 0.120″ Dia.× 5/32″ Lg., swivels 180°, and has a ratcheting positioner joint to adjust to various angles.

Standard indicators include a mounting clamp that fastens to a 1/8″-1/4″ dia. indicator holding rod. ***Indicators with universal shank*** mount to a lathe tool post or height gauge. A mounting clamp with two arms to hold the indicator is included.

Indicator sets include an indicator with universal shank and 0.035″, 0.062″, and 0.120″ dia. contact points. They also include a body clamp, a holder with 3/16″ dia. shank, a tool post holder with 1/4″ dia. swivel post, a two-joint extension, a female coupling with 3/16″ opening on each end, a height gauge attachment, and a surface gauge attachment.

Range	Graduations	Dial Reading	Accuracy	Starrett No.		
Standard Indicators						
0-0.030″	0.0005″	0-15-0	±0.0005″	711HSZ	**2096A8**	$153.01
0-0.030″	0.001″	0-15-0	±0.001″	711FSZ	**2096A7**	149.01
Indicators with Universal Shank						
0-0.030″	0.0005″	0-15-0	±0.0005″	711HSAZ	**2096A5**	164.00
0-0.030″	0.001″	0-15-0	±0.001″	711FSAZ	**2096A1**	161.01
Indicator Sets						
0-0.030″	0.0005″	0-15-0	±0.0005″	711LCSZ	**2096A6**	225.01
0-0.030″	0.001″	0-15-0	±0.001″	711GCSZ	**2096A2**	221.01
Replacement Contact Points						
0.035″ Dia.				PT07137	**2096A28**	6.80
0.062″ Dia.				PT07136	**2096A29**	6.80
0.120″ Dia.				PT07087	**2096A31**	6.20

Starrett Dial Test Indicators

An angled head provides a better reading position and three dovetail mounts give you mounting versatility. Indicators are lever style and have jeweled bearings and a 1 3/8″ dia. rotating dial with a white face. Contact point is carbide, 0.078″ dia., and swivels 180°. Dial hand moves clockwise. A case is included.

Indicator sets include an indicator and 0.078″ dia. contact point. They also include a dovetail clamp with 3/16″ dia. stem, a tool post holder with 1/4″ dia. upright post, a swivel clamp with dovetail mount, and a swivel-clamp rod unit with one 1/4″ Dia.×4″ Lg. rod and one 3/8″ Dia.×4″ Lg. rod. **To Order:** For 20965A16 and 20965A12, please specify black, red, or white dial face.

Range	Graduations	Dial Reading	Accuracy	Starrett No.		
Indicators						
0-0.010″	0.0001″	0-5-0	±0.0001″	708AZ	**20965A65**	$266.00
0-0.020″	0.0001″	0-5-0	±0.0002″	708BZ	**20965A67**	319.01
0-0.030″	0.0005″	0-15-0	±0.0005″	709AZ	**20965A8**	227.01
0-0.060″	0.0005″	0-15-0	±0.001″	709BZ	**20965A81**	273.00
Indicator Sets						
0-0.010″	0.0001″	0-5-0	±0.0001″	708ACZ	**20965A16**	335.01
0-0.020″	0.0001″	0-5-0	±0.0002″	708BCZ	**20965A68**	391.01
0-0.030″	0.0005″	0-15-0	±0.0005″	709ACZ	**20965A12**	276.00
0-0.060″	0.0005″	0-15-0	±0.001″	709BCZ	**20965A83**	343.01
Repl. 0.078″ Dia. Contact Point				PT23914	**20965A84**	31.67

Starrett Swivel-Head Dial Test Indicators

A 1 3/8″ dia. rotating dial pivots 90° so indicators can be used in vertical, horizontal, and angular positions. They are lever style and have jeweled bearings and two dovetail mounts. Contact point is 0.078″ dia. and swivels 180°. Dial hand moves clockwise.

Indicators include a dovetail mounting clamp with 3/16″ mounting stem; tool post holder with 1/4″ Dia.×1 5/16″ Lg. upright post and 1/4″×1/2″ body; swivel clamp with dovetail mount that fits 3/32″-1/4″ dia. rods; and a swivel clamp with two 4″ long rods (one is 1/4″ dia., the other is 3/8″ dia.). A case is included.

To Order: For 8591A62 and A61, please specify black, red, or white dial face. 8591A13 has a yellow dial face.

Range	Graduations	Dial Reading	Contact Point Lg.	Accuracy	Starrett No.		
0-0.030″	0.0005″	0-15-0	5/8″	±0.0005″	811-5CZ	**8591A62**	$436.00
0-0.060″	0.001″	0-30-0	1 5/16″	±0.001″	811-1CZ	**8591A61**	425.01
0-0.8 mm	0.01 mm	0-40-0	5/8″	±0.01 mm	811-MCZ	**8591A13**	449.01

Brown & Sharpe BesTest Dial Indicators

Indicators are lever style and have jeweled bearings, a rotating dial, and two dovetail mounts. Contact point is carbide, 0.080″ Dia.×1/2″ Lg. (except 2047A63 and A64 are 1 7/16″ long), and swivels 180°. Dial hand moves clockwise and counterclockwise. A case is included.

Indicators with white dial face and ***indicators with yellow dial face*** come with a 3″ Lg.×3/16″ Wd.×5/16″ Ht. tool post mounting bar with a 0.22″ dia. mounting stem and swivel clamp with 7/32″ and 3/8″ dia. holes.

Indicators with black dial face have a high-visibility orange hand and come with a dovetail mounting clamp with a 1/4″ Dia.×1/2″ Lg. stem.

White Dial Face

Black Dial Face

Indicators

Range	Graduations	Dial Reading	Accuracy	Dial Dia.	White Dial Face B & S No.			Black Dial Face B & S No.			Yellow Dial Face B & S No.		
0-0.008″	0.00005″	0-4-0	±0.0001″	1 1/2″	599-7033-3	2047A76	$273.00	599-7033-5	2047A69	$227.00			
0-0.008″	0.0001″	0-4-0	±0.0001″	1″	599-7032-3	2047A74	236.00	599-7032-5	2047A68	216.00			
0-0.020″	0.0005″	0-10-0	±0.0005″	1″				599-7034-5	2047A63	199.00			
0-0.020″	0.0005″	0-10-0	±0.0005″	1 1/2″				599-7035-5	2047A64	219.00			
0-0.030″	0.0005″	0-15-0	±0.0005″	1″	599-7030-3	2047A72	210.00	599-7030-5	2047A66	161.00			
0-0.030″	0.0005″	0-15-0	±0.0005″	1 1/2″	599-7031-3	2047A73	218.00	599-7031-5	2047A67	179.00			
0-0.030″	0.001″	0-15-0	±0.0005″	1″	599-7029-3	2047A71	202.00	599-7029-5	2047A65	159.00			
0-0.2 mm	0.002 mm	0-100-0	±0.002 mm	1 1/2″							599-7033-13	2047A77	$273.00
0-0.8 mm	0.01 mm	0-0.4-0	±0.01 mm	1 1/2″							599-7031-13	2047A78	218.00

Replacement Contact Points

Fits Indicators	Length	0.040″ Dia. Points B & S No.		0.080″ Dia. Points B & S No.		0.120″ Dia. Points B & S No.		
2047A63 and A64	1 7/16″	599-7034-40	2047A84	599-7034-80	2047A85			$11.70
2047A65-A78	1/2″	599-7030-40	2047A81	599-7030-80	2047A82	599-7030-120	2047A83	11.70

Miti-Mite Magnetic-Base Set

Includes test indicator 2047A72 and a magnetic V-shaped base. The base is 1 1/4″ Sq.×1 3/4″ Ht., has a 23-lb. magnetic pull, and attaches to rounded and flat surfaces. Ball-and-socket action of the posts and a fine adjustment screw allows a variety of setups. Set also includes one 7/32″ Dia.×1 1/2″ Lg. and one 5/16″ Dia.×1 1/2″ Lg. upright post as well as a 7/32″ Dia.×4 3/8″ Lg. indicator holding rod. A case is included.

23185A65 ..... $329.47

Wide-Range Interapid Dial Test Indicators

Interapid indicators measure larger ranges than other indicators. They're lever style and have jeweled bearings, a 5/32″ dia. mounting stem, a 0.080″ Dia.×0.65″ Lg. carbide contact point, a white dial face, and a rotating dial with a revolution counter to keep track of hand revolutions. Dial hand moves clockwise and counterclockwise. A case is included.

Horizontal indicators have two dovetail mounts. Contact point swivels 210°. ***Vertical indicators*** have one dovetail mount. Contact point swivels 190°.

Replacement contact points fit all Interapid indicators listed.

Horizontal

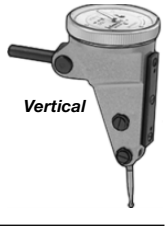
Vertical

Indicators

Range	Graduations	Dial Reading	Accuracy	Dial Dia.	Horizontal Interapid No.			Vertical Interapid No.		
0-0.016″	0.0001″	0-4-0	±0.0001″	1 1/2″	312b-3	19515A53	$266.89	312b-3v	19515A64	$279.80
0-0.060″	0.0005″	0-15-0	±0.0005″	1 1/4″	312b-2	19515A52	215.23	312b-2v	19515A62	225.56
0-0.060″	0.0005″	0-15-0	±0.0005″	1 1/2″	312b-1	19515A51	216.95	312b-1v	19515A61	230.73
0-0.060″	0.001″	0-15-0	±0.001″	1 1/4″	312b-20	19515A55	212.65	312b-20v	19515A63	212.65
0-1.6 mm	0.01 mm	0-40-0	±0.01 mm	1 15/32″	312-1	19515A54	216.95			

Replacement Contact Points

Dia.	Lg.	Interapid No.			Dia.	Lg.	Interapid No.		
0.015″	0.687″	74.116284	19515A79	$18.95	0.060″	0.687″	74.105997	19515A72	$13.50
0.031″	0.687″	74.105998	19515A73	13.50	0.080″	0.687″	74.105996	19515A71	13.50
0.031″	1.45″	74.106363	19515A75	13.50	0.080″	1.45″	74.106361	19515A74	13.50

Mounting Stem Adapter

Increase the diameter of your indicator mounting stem from 5/32″ to 3/8″ so your indicator can mount to magnetic-base holders that fit 3/8″ diameter stems.

19515A86 ..... $16.55

Economy Dial Test Indicators

These lever-style test indicators have a 0.078″ Dia.×1/2″ Lg. carbide contact point that swivels 180°. They also have jeweled bearings, a 19/32″ dia. rotating dial with white face, and two dovetail mounting clamps (one with 5/32″ dia. mounting stem, one with 3/8″ dia. mounting stem). Dial hand moves clockwise. Accuracy for 0.008″ gauge is ±0.00015″; 0.030″ gauge is ±0.0004″. A case is included.

Indicator/base sets include indicator 3295A15 and a rigid- or jointed-arm magnetic base.

Horizontal

Vertical

Range	Graduations	Dial Reading	Horizontal		Vertical	
0-0.008″	0.0001″	0-40-0	3295A14	$68.44	3295A22	$70.90
0-0.030″	0.0005″	0-15-0	3295A15	55.17	3295A23	62.33
Indicator with Rigid-Arm Magnetic Base Set			3295A44	70.51		
Indicator with Jointed-Arm Magnetic Base Set			3295A55	82.49		

Chain-Clamp Holders

18″ chain-clamp holder has a 2″ Lg.×3/4″ Wd. steel body with four 5/16″ dia. threaded holes (three on the side; one on the top). Includes one 5/16″ Dia.×4″ Lg. and one 5/16″ Dia.×6″ Lg. steel holding rod and an ANSI No. 35 chain with 6″ dia. capacity.

24″ chain-clamp holder has an aluminum body with one 5/16″ Dia.×3″ Lg. and one 5/16″ Dia.×6″ Lg. stainless steel holding rod and an ANSI No. 41 chain with 9″ dia. capacity.

Alignment Kit—Includes two chain clamps, an inspection mirror, and a case.

Alignment Kit with Test Indicators—Two chain clamps position the two Starrett 196B1 indicators (included) at different points along a shaft to find any misalignment. Indicators have a 0-0.2″ range and are graduated in 0.001″ increments with a 0-100 dial reading. Kit also includes two swivel clamps, an inspection mirror, and a case.

24″ Chain-Clamp Holder

18″ Chain-Clamp Holder	21025A21	$104.44
24″ Chain-Clamp Holder	2593A11	228.57
Alignment Kit	2593A12	488.14
Alignment Kit with Test Indicators	2593A13	856.25

Electronic and Dial Indicator Attachments

Attachments fit electronic and dial indicators that conform to AGD (American Gauge Design) standards. All are made of steel.

Holding Rods

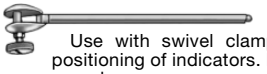

Use with swivel clamps for easy positioning of indicators. Have 1/4″ lug mount.

Dia.	Lg.		
5/16″	6″	20625A311	$21.82
3/8″	7 1/2″	20625A312	23.02

Extension Rods

4-48 threads internally at one end; externally at the other. Length doesn't include external threads.

Dia.	Lg.		
7/32″	1/2″	20625A132	$3.97
7/32″	1″	20625A133	3.85
7/32″	1 1/2″	20625A134	4.17
7/32″	2″	20625A135	4.17
7/32″	2 1/2″	20625A136	4.47
7/32″	3″	20625A137	5.09
7/32″	4″	20625A138	6.35
7/32″	6″	20625A151	7.61
Set of 3	1″, 2″, 3″	20625A124	11.69

Lifting Lever

Allows easy lifting of indicator spindle. For AGD Groups 1, 2, and 3, with ranges up to 1″.

20625A645 ..... $20.22

Right-Angle Contact Point Adapter

Transfers the up/down motion of the contact point 90° to a second contact point moving left to right. Fits a 3/8″ dia. mounting stem.

20625A416 ..... $24.60

Clamp Attachments

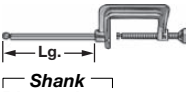

Clamp on to any surface. Clamp capacity is 1 3/8″.

Shank Dia.	Shank Lg.		
5/16″	3 1/8″	20625A211	$23.12
3/8″	4″	20625A212	28.45

Contact Points

Have 4-48 threads. Length doesn't include threaded portion.

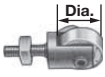

Dia.	Lg.		
Roller			
3/8″	0.51″	20625A665	$22.26
1/2″	0.76″	20625A146	49.13
Regular			
3/16″	1/4″	20625A651	2.20
3/16″	1/2″	20625A652	2.62
3/16″	3/4″	20625A653	3.15
3/16″	1″	20625A654	3.15
3/16″	2″	20625A655	3.60
3/16″	3″	20625A656	4.95
3/16″	4″	20625A657	6.22
Flat			
3/16″	1/4″	20625A661	5.50
3/16″	1/2″	20625A662	5.50
3/16″	3/4″	20625A663	5.80
3/16″	1″	20625A664	6.07
7/32″	3/8″	20625A161	1.80
7/32″	5/8″	20625A162	2.11
7/32″	1 1/4″	20625A163	3.35
3/4″	0.10″	20625A164	9.28
1″	1/8″	20625A165	14.84
Tapered			
3/16″	13/32″	20625A612	2.57
3/16″	1″	20625A613	2.85
3/16″	1 1/2″	20625A614	3.48
3/16″	2″	20625A615	3.63
Needle—Carbide Tip			
0.015″	0.40″	20625A125	35.41
0.031″	0.40″	20625A126	35.41
0.062″	0.80″	20625A127	27.75
Button			
3/8″	1/8″	20625A511	2.37
1/2″	1/8″	20625A512	2.90
3/4″	1/8″	20625A513	5.35
Wide			
1/4″	3/32″	20625A417	5.07
3/8″	3/32″	20625A418	5.79
1/2″	3/32″	20625A419	6.26
5/8″	3/32″	20625A421	7.96

Contact Point Sets

Starrett No. 25 R

The most popular indicator points with 4-48 threads. Lengths don't include threads.

Starrett No. 25 R— Has 14 points on an aluminum ring for fast, easy selection. Includes one regular 1/4″ lg. point; nine special-form points; one anvil; and three extra-long regular points (1/2″, 3/4″, and 1″ long).

Economy— Has 22 points in a case. Includes nine flat points 0.175″ to 1.250″ long; five regular points 0.225″ to 0.825″ long; four tapered points 0.500″ to 0.875″ long; three needle points 0.935″ to 1.35″ long; and one bent needle point 0.312″ long.

Starrett No. 25 R	2193A11	$110.00
Economy	20645A51	11.38

Backs

Flat Back

Lug Back

Universal (Starrett Only)

Starrett— Only fit Starrett indicators, not all AGD. **To Order:** Specify AGD Group No. and flat, 1/4″ lug, universal, or magnetic back.

Chicago Dial (CDI)— **To Order:** Specify AGD Group No. and flat or 1/4″ lug back.

Mitutoyo— **To Order:** Specify AGD Group No. and flat, 1/4″ lug, or magnetic back.

Manufacturer	
Starrett	20625A711
Chicago Dial (CDI)	20625A811
Mitutoyo	20625A911

Thread Adapter

Has 4-48 female threads at one end and M2.5 male at the other. 7/32″ Dia.×1/2″ Lg. Length doesn't include external threads.

20625A155 ..... $4.16

Tungsten Carbide and Ruby Contact Points

Replace your standard steel point. Points are hard, smooth, and precision ground to 0.000025″ (Grade 25). They fit indicators that conform to AGD Groups 1, 2, 3, and 4. Tip length doesn't include threads.

Tungsten carbide provides excellent wear resistance and lasts much longer than standard steel contact points. ***Ruby*** provides excellent chemical and thermal stability with extremely low friction.

Tip Lg.	Ball Size	Thread Mount	*Tungsten Carbide*		*Ruby*	
1/4″	3 mm	4-48	1851A11	$14.62	1853A11	$16.09
1/4″	3 mm	M2.5	1851A13	15.20	1853A13	17.26
1/4″	4 mm	4-48	1851A12	15.91	1853A12	19.42
1/2″	3 mm	4-48	1851A16	15.79	1853A16	19.53
1/2″	4 mm	4-48	1851A17	16.37	1853A17	19.84
3/4″	4 mm	4-48	1851A19	17.26	1853A19	19.53

Ball Contact Points

Precision ground to 0.000025″ (Grade 25), these hard, smooth points have a large contact area ideal for measuring contoured shapes. Attach them directly to your indicator, replacing standard steel points. They fit indicators that conform to AGD Groups 1, 2, 3, and 4. Made of chrome alloy steel.

To Order: Please specify size needed.

Available Ball Sizes	Thread Mount		
0.031″, 0.046″, 0.062″, 0.078″, 0.093″, 0.125″, 0.156″, 0.187″, 0.218″, 0.250″	4-48	1922A11	$11.23
0.281″, 0.312″, 0.343″, 0.375″, 0.406″, 0.437″, 0.468″, 0.500″, 0.531″, 0.562″	4-48	1922A21	11.23

Miniature Magnetic Holders

Get 45 lbs. of magnetic pull with six locations for mounting indicators and accessories. Holder has three 1/4″-20 threaded holes, one 10-32 threaded hole, one hole for a 3/8″ dia. stem, and a V-shaped hole for a 1/8″ to 5/16″ dia. stem. One 1/4″-20 thumbscrew and one 10-32 thumbscrew are included. Body is 4 3/8″ Lg.×1″ Wd.×1 1/16″ Ht.

23105A65 ..... $15.00

Clamp-On Holders

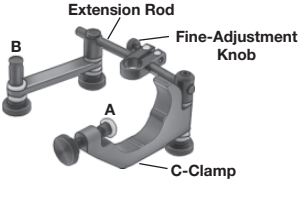

Attach the C-clamp almost anywhere for hands-free measurements. Holders include an extension rod with a fine-adjustment knob for precise positioning. They accept a 5/32″ dia. stem or a 1/4″ dovetail mount. 20945A65 is for use on Bridgeport "J" heads.

Clamping Range	Overall Reach●	Extension Rod, Lg.		
1 1/2″ to 1 7/8″	7 7/16″	4″	20945A65	$78.10
1 5/8″ to 2″	7 1/2″	4″	20945A66	107.40
1 7/8″ to 2 1/4″	9 1/8″	6″	20945A67	129.45
Repl. 4″ Long Extension Rod for 20945A65 and A66			20945A68	23.45
Repl. 6″ Long Extension Rod for 20945A67			20945A69	26.40

●Distance from center of mounting clamp (A) to end of arm (B) when both are extended.

Test Indicator Attachments

Universal Shank

Mount an indicator to a lathe tool post or height gauge. An elbow connects the 3/16″ dia. shank and 1/2″ Wd.×1/4″ Thick. body. Length is 4 1/4″.

1987A32 ..... $13.00

Double-Jointed Attachment

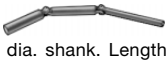

Flexes in two directions. Has one 1/4″ dia. shank and one 3/8″ dia. shank. Length is 5 3/8″.

1987A19 ..... $18.51

Tool-Post Holder

Body is 1/2″ Wd.×1/4″ Thick. Mounting rod is 1/4″ Dia.×15/16″ Lg.

1987A16 ..... $19.00

Body Clamp

Has a 3/8″ dia. hole and a hole that adjusts from 1/8″ to 1/4″ dia.

1987A23 ..... $11.51

Swivel Clamp with Dovetail Groove

Has a dovetail groove and a hole that adjusts from 3/32″ to 1/4″ dia.

1987A69 ..... $19.00

Long and Short Arm

Has two 3/16″ dia. shanks with an elbow. Tool is 2″ Lg. Short arm is 13/16″ Lg.; long arm is 1 3/16″ Lg.

1987A21 ..... $8.20

Dovetail Holder with Shank

Has a dovetail groove and a 5/8″ long shank.

To Order: Specify shank dia.: 5/32″, 7/32″, 1/4″, or 5/16″.

1987A146 ..... $11.96

Universal Dovetail Holder

Has a swiveling dovetail groove and 1/4″ dia. shank. Length is 3″.

1987A65 ..... $13.95

Swivel Support Dovetail Holder

Has a swiveling dovetail groove and a 3/8″ dia. shank. Length is 2″.

1987A53 ..... $26.74

Dovetail Body Clamp

Has a dovetail groove and a 3/16″ dia. rotating ball shank. Length is 2″.

1987A7 ..... $19.00

Double-Jointed Holder with Dovetail Groove

Flexes in two directions. Has a dovetail groove and 3/8″ dia. shank. Length is 4 1/2″.

1987A52 ..... $32.56

Combination Stem/Dovetail Holder

5 1/2″ long and it flexes in three directions. Has a dovetail groove, one 5/32″ and one 1/4″ dia. hole, and a 3/8″ dia. shank.

1987A51 ..... $27.91

Height Gauge Attachment

Has a 3″ Lg.×1/4″ Wd.×1/2″ Ht. gauge bar and a 0.218″ Dia.×0.343″ Ht. post. Has a dovetail groove and two 7/32″ dia. and one 5/32″ dia. mounting holes for holding indicators.

1987A28 ..... $38.24

Starrett Rotating Friction Attachment for Last Word Indicators

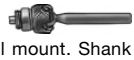

Fits into the end plug located on top of an indicator to provide a rotating ball mount. Shank is 3/16″ dia. Overall length is 2″.

1987A24 ..... $11.71

Indicator Swivel Clamps

Secure indicators, upright posts, and indicator holding rods at any angle. All wing nuts are nylon with brass inserts. *Dual wing nuts* tighten the two sides independently.

Diameter (A)	Diameter (B)		
Knurled Knob—Steel			
1/4″	1/4″	**5148A11**	$13.42
5/16″	5/32″	**5148A12**	13.42
5/16″	1/4″	**5148A13**	13.42
5/16″	5/16″	**5148A14**	13.42
3/8″	1/4″	**5148A15**	13.42
3/8″	5/16″	**5148A16**	13.42
3/8″	3/8″	**5148A17**	17.02
1/2″	3/8″	**5148A18**	18.25
6 mm	6 mm	**5148A71**	26.09
8 mm	8 mm	**5148A73**	26.14
10 mm	8 mm	**5148A74**	27.51
10 mm	10 mm	**5148A75**	26.12
12 mm	10 mm	**5148A76**	27.51
Knurled Knob—Type 303 SS			
1/4″	1/4″	**5148A81**	25.83
5/16″	1/4″	**5148A82**	25.83
3/8″	1/4″	**5148A83**	25.83
3/8″	3/8″	**5148A84**	34.04

Diameter (A)	Diameter (B)		
Tee Handle—Steel			
1/4″	1/4″	**5148A24**	$15.85
5/16″	1/4″	**5148A22**	15.85
5/16″	5/16″	**5148A25**	15.85
3/8″	1/4″	**5148A23**	15.85
3/8″	5/16″	**5148A26**	15.85
3/8″	3/8″	**5148A27**	20.06
1/2″	3/8″	**5148A28**	21.43
Dovetail—Steel with 1/16″ to 1/4″ Adjustable Hole			
1/4″	1/8″	**5148A37**	13.90
Dovetail—Steel			
7/32″	7/32″	**5148A31**★	26.21
7/32″	3/8″	**5148A35**■	20.56
1/4″	1/4″	**5148A33**★	26.21
1/4″	3/8″	**5148A36**■	20.56
Wing Nut—Steel			
3/8″	3/8″	**2067A51**	33.18
3/8″	1/2″	**2067A52**	33.18
1/2″	1/2″	**2067A53**	35.85

Diameter (A)	Diameter (B)		
Wing Nut—Steel (Cont.)			
1/2″	5/8″	**2067A54**	$37.13
5/8″	5/8″	**2067A55**	38.51
5/8″	3/4″	**2067A56**	45.20
3/4″	3/4″	**2067A57**	57.16
10 mm	12 mm	**2067A23**	43.95
12 mm	12 mm	**2067A24**	45.33
14 mm	12 mm	**2067A25**	45.56
Wing Nut—Type 303 SS			
3/8″	3/8″	**2067A41**	60.25
1/2″	1/2″	**2067A42**	63.17
Dual Wing Nuts—Steel			
3/8″	3/8″	**2067A61**	41.18
3/8″	1/2″	**2067A62**	42.51
1/2″	1/2″	**2067A63**	43.85
1/2″	5/8″	**2067A64**	45.18
5/8″	5/8″	**2067A65**	46.49
5/8″	3/4″	**2067A66**	47.84
3/4″	3/4″	**2067A67**	58.51
1″	1″	**2067A69**	94.51

★ Bottom hole (C) dia. is 5/32″. ■ Has two top holes. Does not have bottom hole (C).

Knurled Knob

Tee Handle

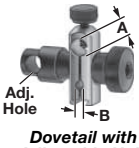

Dovetail with Adjustable Hole

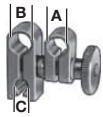

Dovetail

Wing Nut

Dual Wing Nuts

Low-Profile Magnetic-Base Holders

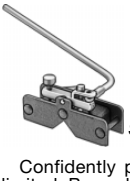

Standard

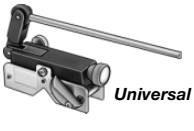

Universal

Direct Mount

Confidently position indicators in areas where vertical space is limited. Bases have 50 lbs. of magnetic pull and a magnetic-release switch.

Standard holder has a fine-adjustment knob for precise positioning. Holding rod is 1/4″ Dia.×6″ Lg. and sits in a ball socket for versatile positioning.

Universal holder has a swivel block that holds the arm at any angle and a fine-adjustment knob for precise positioning. Holding rod is 1/4″ Dia.×6″ Lg. and can be removed to hold a 1/4″ lug back.

Direct-mount holder has a nut and bolt to mount a 1/4″ lug back to the base.

	Base Lg.	Base Wd.	Base Ht.		
Standard	3 1/2″	1 1/8″	1″	**2122A2**	$38.41
Universal	3 1/2″	1 1/8″	1 1/2″	**2098A2**	56.48
Direct Mount	3 1/2″	1 1/8″	1″	**2098A1**	26.60

Magnetic-Base Holders for Uneven Surfaces

A specially designed bottom allows base to conform to any shape and grip most surfaces. Bases have 120 lbs. of magnetic pull and a magnetic-release switch. The hole on top of the base has M8×1.25 mm threads. Holders are 2 1/2″ Lg.×2″ Wd.×2 1/4″ Ht.

Rigid arm holder has a fine-adjustment knob. Arm is 15/32″ Dia.×3 1/2″ Lg. and has a swivel clamp at the end that accepts a 5/32″ to 3/8″ dia. stem or a 1/4″ lug back. Upright post is 15/32″ Dia.×7″ Lg.

Flexible arm holder has a ball-and-socket segmented arm for flexibility in accessing awkward spots. Arm is 12 1/2″ Lg. and has a swivel clamp at the end that accepts a 5/64″ to 1/2″ dia. stem.

Rigid Arm

Flexible Arm

Arm Style		
Rigid	**1951A84**	$103.12
Flexible	**1951A85**	199.74

Magnetic Bases

Standard

Easily moved from place to place, bases have threaded mounting holes to hold upright posts and fixtures. All have a magnetic-release switch.

Economy base has one top mounting hole and a V-grooved bottom. ***Standard*** bases have one top mounting hole and a V-grooved bottom, except 1977A17 and A2 have a flat bottom. ***Starrett*** base has one top and one side mounting hole and a V-step on top.

Magnetic Bases

Magnetic Pull, lbs.	Base Lg.	Base Wd.	Base Ht.	Mounting Hole Thread Size		
Economy						
176	2½″	2″	2³⁄₁₆″	M8 ×1.25	1878A22	$15.20
Standard						
38	1³⁄₁₆″	1³⁄₁₆″	1³⁄₁₆″	M5 ×0.8	1977A17	32.68
176	2⁵⁄₈″	2″	2³⁄₁₆″	M8 ×1.25	1977A1	30.44
220	3″	2″	2³⁄₁₆″	M8 ×1.25	1977A15	42.86
292	4⁵⁄₈″	2″	2³⁄₁₆″	M10 ×1.50	1977A16	97.83
337	4¾″	2³⁄₈″	2¹⁄₁₆″	M8 ×1.25	1977A2	108.56
Starrett—No. 657P						
75	1⅞″	1⅝″	1¹⁵⁄₁₆″	¼″-20	2501A56	114.00

Optional Upright Posts

Thread Size	Dia.	Lg.		
M5 ×0.8	9.5 mm	152 mm	1977A45	$3.83
M8 ×1.25	12 mm	176 mm	1977A38	8.39
M10 ×1.5	12 mm	176 mm	1977A42	4.73
¼″-20	⅜″	7⁷⁄₁₆″	2501A48	11.50

Flexible-Arm Magnetic-Base Holders

Adjust the arm to nearly any position for use in tight spots. Holders have a ball-and-socket segmented arm that locks in place with a lever. Base has a magnetic-release switch.

(A) Standard— Arm is 12½″ long and has a swivel clamp that accepts a 5⁄32″ to ½″ dia. stem. Base has a V-grooved bottom.

(B) Fine Adjustment— Has a knob for precise positioning. Arm is 14″ long and has a swivel clamp that accepts a ⅛″ to ½″ dia. stem. Base has a flat bottom.

(C) Super-Fine Adjustment— A micro-screw thumb adjuster allows exact positioning. Arm is 15¼″ long and has a swivel clamp that accepts a ⅜″ dia. stem or an indicator with dovetail mount. Base has a V-grooved bottom.

	Magnetic Pull, lbs.	Base Lg.	Base Wd.	Base Ht.	Holders		Repl. Arms	
A	180	2½″	2″	2¼″	8667A31	$67.40	8667A32	$52.93
B	65	2″	1⅝″	2″	20755A65	108.17	20755A74	82.73
C	90	2″	2½″	2⅝″	20755A23	118.07	20755A22	81.02

Vise-Grip Flexible-Arm Holders

Clamp securely to a variety of surfaces to position an indicator around any obstruction. Holders have a 13″ long flexible arm attached to Vise-Grip locking pliers. The pliers have two threaded holes to mount the arm horizontally or vertically. A lever locks the arm. A swivel clamp at the end of the arm accepts a ⅛″ to ½″ dia. stem.

Holder	23165A75	$91.40
Replacement Arm	23165A76	49.00

Starrett Electronic Height Gauges

Read measurements from both the LCD and the graduated scale on the column. LCD measures in 0.0005″ and 0.01 mm increments; scale in 0.100″. Accuracy for 12″ gauge is ±0.0015″ and ±0.002″ for 24″ gauge. Set the gauges to zero at any position.

They have SPC data output so they can be connected to a Starrett data collector using an SPC data output cable (sold separately below). A carbide-tipped scriber with clamp and batteries are included.

Range Inch	Range mm	Base Lg.	Base Wd.	Starrett No.		
0-12	0-300	6″	4″	3752-12/300	20975A75	$740.00
0-24	0-600	7½″	4¾″	3752-24/600	20975A77	1,213.00

SPC Data Output Cable (10 ft. Long)	PT22938	8602A68	47.51
Replacement Battery (Requires 2)		7701K58	4.17

Magnetic-Base Holders

Standard

A solid mount offers numerous positioning options. Holders have a swivel clamp on both the upright post and rigid arm and a fine-adjustment knob. All accept a ¼″ lug back. Base has a magnetic-release switch.

Economy holder is 2½″ Lg. × 2″ Wd. × 2¼″ Ht. and also accepts a ⅜″ dia. stem. Upright post has M8 × 6.5 mm threads. Has a V-grooved bottom.

Standard holders have an upright post with M8 × 1.25 mm threads and a V-grooved bottom.

2310A1 and 2310A15 are 2⅝″ Lg. × 2¼″ Wd. × 2″ Ht. and also accept a 5⁄32″ to ¼″ dia. stem.

2310A16 is 3″ Lg. × 2″ Wd. × 2¼″ Ht. and also accepts a ¼″ to 5⁄16″ dia. stem.

Starrett holder is 1⅞″ Lg. × 1⅝″ Wd. × 2″ Ht. and also accepts a ¼″ dia. stem. Upright post has ¼″-20 threads. Has a flat bottom.

Magnetic Pull, lbs.	Upright Post Dia.	Upright Post Lg.	Rigid Arm Dia.	Rigid Arm Lg.		
Economy						
132	7⁄16″	7″	⅜″	5¹³⁄₁₆″	1958A31	$22.00
Standard						
176	7⁄16″	6⁷⁄₈″	⅜″	6½″	2310A1♦	38.87
176	7⁄16″	6⁷⁄₈″	⅜″	6½″	2310A15	44.76
220	⅝″	8⁷⁄₈″	9⁄16″	6½″	2310A16	57.91
Starrett—No. 657AA						
75	⅜″	7⁷⁄₁₆″	¼″	6″	20725A67♦	196.50
Fine-Adjustment Attachment—No. 657W					20725A68	42.50

♦ Does not have a fine-adjustment knob.

Jointed-Arm Magnetic-Base Holders

Standard

Control the joints at the top, middle, and bottom of the arm with the locking knob. A fine-adjustment knob allows precise positioning and a swivel clamp provides a wide range of positions. Holders accept a ⅜″ dia. stem or an indicator with dovetail mount. Base has a magnetic-release switch and V-grooved bottom.

Magnetic Pull, lbs.	Base Lg.	Base Wd.	Base Ht.	Arm Lg.		
Economy						
132	2½″	2″	2³⁄₁₆″	13½″	2214A5	$30.25
Standard						
180	2⅜″	1¹⁵⁄₁₆″	2³⁄₁₆″	11″	85195A11	102.55
290	4¾″	1¹⁵⁄₁₆″	2⁵⁄₃₂″	25″	85195A28	204.71

Mitutoyo Electronic Height Gauges

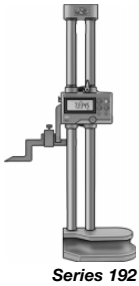
Series 192

Series 570

Gauges have a low-battery indicator and zero-position memory, also known as absolute (ABS) positioning. They also have SPC data output so you can connect them to a Mitutoyo miniprocessor using an SPC data output cable, or to your PC using an SPC data output cable and an input tool (output cable is sold below; see pages 2269-2270 for Mitutoyo miniprocessor and input tool). A carbide-tipped scriber with clamp and a battery are included.

Series 192 gauges have a dual-column design and an error alarm. They measure in 0.0005″ and 0.01 mm increments. Accuracy is ±0.001″ and 0.03 mm for 12″ gauge; ±0.002″ and 0.04 mm for 18″ gauge; and ±0.002″ and 0.05 mm for 24″ gauge.

Series 570 gauges have a handwheel for smooth movement along the column. They measure in 0.0005″ increments. Accuracy is ±0.0015″ for 12″ gauge; ±0.002″ for 18″ and 24″ gauges.

Range Inch	Range mm	Base Lg.	Base Wd.	Mitutoyo No.		
Series 192						
0-12	0-300	5⁵⁄₁₆″	3⁹⁄₁₆″	192-630-10	8566A15	$1,206.95
0-18	0-450	7⅛″	4¾″	192-631-10	8566A16	1,648.93
0-24	0-600	7⅛″	4¾″	192-632-10	8566A17	2,099.41
Series 570						
0-12	0-300	6⁵⁄₁₆″	4⁷⁄₁₆″	570-312	3740A11	537.21
0-18	0-450	7⅛″	5⅝″	570-313	3740A12	754.14
0-24	0-600	7⅛″	5⅝″	570-314	3740A13	968.28
Accessories and Replacement Battery						
SPC Data Output Cable (40″ Long)				905338	20395A67	36.75
Replacement Scriber				900258	8566A24	54.80
Replacement Scriber Clamp				901385	8566A26	21.71
Replacement Battery					7604K1	2.26

Mitutoyo Height Gauges

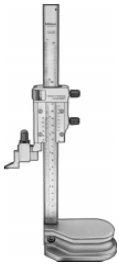

Gauges have a hardened stainless steel column for wear resistance and a fine-adjustment knob for precise positioning.

They measure in 0.001″ increments. Accuracy is ±0.001″ for the 8″ gauge; ±0.002″ for the 12″ gauge. A carbide-tipped scriber with clamp is included.

Range	Base Lg.	Base Wd.	Mitutoyo No.			
Gauges						
0″- 8″	3 15/16″	2 9/16″	506-208	2118A21	$304.44
0″-12″	3 9/16″	5 5/16″	514-103	2118A22	576.97
Accessories					
Test Indicator Holder for 8″ Gauge			953639	2118A41	16.40
Test Indicator Holder for 12″ Gauge			953638	2118A42	14.06
Replacement Scriber for 8″ Gauge			900173	2118A79	53.15
Replacement Scriber for 12″ Gauge			07GZA000	2118A78	64.43
Case for 8″ Gauge			———	2118A54	117.71
Case for 12″ Gauge			———	8648A41	162.29

Economy Dual-Reading Height Gauges

In addition to the dial, two mechanical digital counters display measurements (one counts up; the other counts down).

Dial measures in 0.001″ increments; the counters in 0.1″ increments. A carbide-tipped scriber with clamp is included.

Range	Base Lg.	Base Wd.	Accuracy		
0-12″	5″	3 5/16″	±0.0015″	19765A72	$198.48
0-18″	5 15/16″	3 15/16″	±0.002″	19765A73	275.15
0-24″	7 1/8″	4 3/4″	±0.002″	19765A74	366.67

Starrett Surface Gauges

Use these versatile gauges as height and depth gauges, as indicator holders, or for transferring lines from one part to another. All have a fine-adjustment screw, a scriber with clamp, and a V-grooved bottom.

Gauge pins can be pushed down for use against the edge of a surface plate or T-slot for linear work.

Rod Lg.	Rod Dia.	Base Lg.	Base Wd.	Starrett No.		
Cast Iron Base with Two Gauge Pins						
9″ and 12″	5/16″	3″	2 9/16″	57B	2208A5	$146.00
12″ and 18″	3/8″	3 3/4″	3 3/8″	57D	2208A6	205.01
Hardened Steel Base with Four Gauge Pins						
9″ and 12″	5/16″	2 7/8″	2 3/8″	257B	2208A3	179.01
12″ and 18″	3/8″	3 1/2″	3 3/16″	257D	2208A4	235.01

Easy-View Electronic Edge Finders

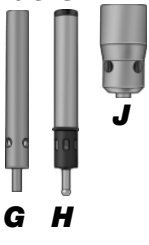

A bulb lights up to give you 360° visibility when positioning work surfaces and tools. Batteries are included.

Note: These items will not work with nonconductive materials such as plastic and wood or with rotating surfaces such as spinning wheels.

(G) Standard finder emits light when the sensor shaft reaches the edge of the surface. Made of Type 304 stainless steel.

(H&J) Precision finders have a highly perceptive sensing system with a spring-loaded probe to allow for overrun without breaking. Made of steel. *Style H* finds workpiece edges. *Style J* is for measuring and setting cutting tool height.

	Tip Dia.	Body Dia.	O'all Lg.	Accuracy		
Finders						
G	0.20″	1/2″	3 15/16″	±0.003″	2039A12	$26.73
H	0.20″	1/2″	4 1/8″	±0.0002″	2040A41	97.62
H	0.40″	3/4″	4 1/4″	±0.0002″	2040A66	97.62
J	0.31″	1″	2″	±0.0002″	2040A68	115.67
Replacement Batteries						
Battery for G (Requires 1)					65605T71	.79
Battery for H (Requires 1)					7735K33	1.41
Battery for J (Requires 3)					7604K14	1.44

Replacement Styli and Accessories for Renishaw CMM Probes

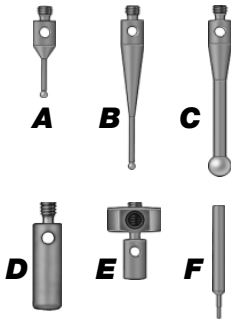

Mount styli and accessories into coordinate-measuring machine (CMM) probes. **Also Available:** M4 threads for all items. Please ask for 85175A999.

(A-C) Styli—300 series stainless steel bodies with Grade 10 ruby balls. Sphericity tolerance is ±0.00001″ and diameter tolerance is ±0.00001″.

(D) Stylus Extensions—Allow for added penetration. Made of 300 series stainless steel.

(E) Five-Way Stylus Crosshead Center—Holds up to five styli. Made of 300 series stainless steel.

(F) Universal Stylus Wrench—Fits all Renishaw CMM styli. Has two diameters (1.27 mm and 1.73 mm). Made of steel.

	Thread Mount	Lg.	Ball Dia.	Replaces Renishaw No.		
Styli						
A	M2	10 mm	1 mm	———	85175A21	$25.77
A	M3	10 mm	1 mm	———	85175A14	27.10
B	M2	20 mm	1 mm	PS23R	85175A22	29.98
B	M3	20 mm	1 mm	PS1-9R	85175A15	36.61
B	M2	20 mm	2 mm	PS2R	85175A23	29.74
B	M3	20 mm	2 mm	PS1-10R	85175A16	39.65
C	M2	20 mm	3 mm	PS16R	85175A24	28.62
C	M2	20 mm	4 mm	PS17R	85175A25	31.74
C	M3	21 mm	5 mm	PS1-13R	85175A43	36.90
Accessories						
D	M2	10 mm	———	SE4	85175A31	18.71
D	M2	20 mm	———	SE5	85175A32	18.58
D	M3	35 mm	———	———	85175A53	16.75
E	M2	8 mm	———	SC2	85175A34	40.87
F	———	———	———	———	85175A11	18.58

Starrett Wiggler/Center Finder Sets

Determine tool spindle position in relation to work surface, layout lines, holes, and slots.

Set includes a chuck, an offset indicator holder, a 0.10″ dia. disc contact, a 0.25″ dia. ball contact, and a needle point. Attachments are interchangeable.

8632A72 ..... $51.01

Center Finders for Round Bar and Pipe

Find the center point on round workpieces. Mount center finder into your drill chuck or collet, place it over round bar stock, and line up the pointer with the mark on the shaft. Capacity is 5″. Made of steel with a corrosion-resistant chrome finish.

22025A11 ..... $12.02

Edge Finders

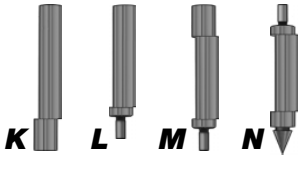

Locate working edges, shoulders, center points, and lines. All are made of steel.

Audible edge finders make a distinct sound when tip runs concentric with shank (for edge positioning; not for center points).

Style	Tip Dia.	Body Dia.	O'all Lg.	Starrett No.		
Economy						
K Single End	0.50″	1/2″	3 1/4″	———	20535A651	$8.73
K Single End	10 mm	10 mm	3 1/4″	———	20535A756	8.65
L Single End	0.20″	3/8″	3 1/4″	———	20535A655	8.65
L Single End	0.20″	1/2″	3 1/4″	———	20535A755	8.65
M Double End	0.20″/0.50″	1/2″	3 1/4″	———	20535A652	10.33
N Double End	Point/0.20″	1/2″	3 1/4″	———	20535A656	10.33
Starrett						
L Single End	0.20″	3/8″	2 1/2″	827A	20535A653	23.00
L Single End	6 mm	10 mm	3 1/8″	827MA	20535A681	23.01
N Double End	Point/0.20″	1/2″	3 5/16″	827B	20535A654	31.58
Audible						
L Single End	0.20″	3/8″	2 7/8″	———	20995A65	15.24
L Single End	0.20″	1/2″	2 7/8″	———	20995A66	15.62

Feeler Thickness Gauges

Check gaps, alignment, and narrow slots. All gauges are 1/2″ wide. ***12″ Lengths—*** Have rounded ends and are marked with thickness. ***Rolls—*** Come in a dispenser box. Cut to length needed. Thickness is marked every 6″.

Steel is polished and magnetic. ***Type 302/304 stainless steel*** is corrosion resistant and mildly magnetic. ***Type 316 stainless steel*** has superior resistance to corrosion and is mildly magnetic. ***Brass*** is corrosion resistant and nonmagnetic.

Gauges

	12″ Length				Roll		
			Each				
Thick.	Pkg. Qty.		Partial Pkg.	Full Pkg.	Lg.		Each
Steel							
0.001″	12	2083A11	$2.74	$2.36	25 ft.	2093A11	$46.85
0.0015″	12	2083A12	1.71	1.44	25 ft.	2093A12	22.05
0.002″	12	2083A13	1.68	1.42	25 ft.	2093A13	25.78
0.0025″	12	2083A14	1.68	1.42	25 ft.	2093A14	25.78
0.003″	12	2083A15	1.68	1.42	25 ft.	2093A15	24.22
0.004″	12	2083A16	1.39	1.18	25 ft.	2093A16	17.26
0.005″	12	2083A17	1.39	1.18	25 ft.	2093A17	17.26
0.006″	12	2083A18	1.39	1.18	25 ft.	2093A18	17.26
0.007″	12	2083A19	1.10	.94	25 ft.	2093A19	14.86
0.008″	12	2083A21	1.10	.94	25 ft.	2093A21	14.86
0.009″	12	2083A22	1.10	.94	25 ft.	2093A22	14.86
0.01″	12	2083A23	1.10	.94	25 ft.	2093A23	14.89
0.011″	12	2083A24	1.10	.94	25 ft.	2093A24	14.89
0.012″	12	2083A25	1.10	.94	25 ft.	2093A25	15.31
0.013″	12	2083A26	1.10	.94	25 ft.	2093A26	15.31
0.014″	12	2083A27	1.10	.94	25 ft.	2093A27	15.31
0.015″	12	2083A28	1.10	.94	25 ft.	2093A28	15.31
0.016″	12	2083A29	1.10	.94	25 ft.	2093A29	15.31
0.017″	12	2083A31	1.10	.94	20 ft.	2093A31	11.82
0.018″	12	2083A32	1.10	.94	20 ft.	2093A32	11.82
0.019″	12	2083A33	1.10	.94	20 ft.	2093A33	11.82
0.02″	12	2083A34	1.07	.91	20 ft.	2093A34	11.82
0.021″	12	2083A35	1.07	.91	20 ft.	2093A35	11.82
0.022″	12	2083A36	1.07	.91	20 ft.	2093A36	11.82
0.023″	12	2083A37	1.07	.91	20 ft.	2093A37	12.52
0.024″	12	2083A38	1.31	1.11	20 ft.	2093A38	11.24
0.025″	12	2083A39	1.31	1.11	20 ft.	2093A39	11.24
0.026″	12	2083A51	1.31	1.11	20 ft.	2093A51	14.13
0.027″	12	2083A52	1.31	1.11	20 ft.	2093A52	15.00
0.028″	12	2083A41	1.24	1.08	20 ft.	2093A41	11.94
0.029″	12	2083A53	1.31	1.11	20 ft.	2093A53	15.00
0.03″	12	2083A42	1.34	1.14	20 ft.	2093A42	11.94
0.031″	12	2083A43	1.42	1.24	20 ft.	2093A43	23.06
0.032″	12	2083A44	1.42	1.24	20 ft.	2093A44	23.06
0.033″	12	2083A45	1.42	1.24	20 ft.	2093A45	23.06
0.034″	12	2083A46	1.42	1.24	20 ft.	2093A46	22.83
0.035″	12	2083A47	1.42	1.24	20 ft.	2093A47	23.06
0.04″	12	2083A48	2.27	1.97	15 ft.	2093A48	27.14
0.045″	6	2083A54	8.00	7.27	—	—	—
0.046″	6	2083A55	8.67	7.88	—	—	—
0.05″	6	2083A56	8.67	7.88	—	—	—
0.06″	6	2083A57	9.33	8.48	—	—	—
0.1″	6	2083A58	10.67	9.70	—	—	—
0.125″	6	2083A59	10.67	9.70	—	—	—
0.04 mm	12	2283A1	2.80	2.33	10 ft.	2282A1	12.55
0.05 mm	12	2283A2	2.80	2.33	10 ft.	2282A2	12.55
0.06 mm	12	2283A3	2.80	2.33	10 ft.	2282A3	11.62
0.07 mm	12	2283A4	2.80	2.33	10 ft.	2282A4	12.55
0.08 mm	12	2283A5	2.80	2.33	10 ft.	2282A5	12.55
0.09 mm	12	2283A6	2.80	2.33	10 ft.	2282A6	12.55
0.1 mm	12	2283A7	2.80	2.33	10 ft.	2282A7	13.45
0.15 mm	12	2283A8	1.81	1.53	10 ft.	2282A8	10.40
0.2 mm	12	2283A9	1.81	1.53	10 ft.	2282A9	10.41
0.25 mm	12	2283A11	1.81	1.53	10 ft.	2282A11	10.41
0.3 mm	12	2283A12	1.81	1.53	10 ft.	2282A12	10.41
0.35 mm	12	2283A13	1.81	1.53	10 ft.	2282A13	10.41
0.4 mm	12	2283A14	1.81	1.53	10 ft.	2282A14	10.41
0.5 mm	12	2283A15	1.81	1.66	10 ft.	2282A15	10.41
0.55 mm	12	2283A16	1.81	1.53	10 ft.	2282A16	10.41
0.6 mm	12	2283A17	1.81	1.53	10 ft.	2282A17	10.41
0.65 mm	12	2283A18	1.81	1.53	10 ft.	2282A18	10.41
0.7 mm	12	2283A19	1.81	1.53	10 ft.	2282A19	10.41
0.75 mm	12	2283A21	1.81	1.53	10 ft.	2282A21	10.41
0.8 mm	12	2283A22	1.81	1.53	10 ft.	2282A22	10.41
0.85 mm	12	2283A23	1.81	1.53	10 ft.	2282A23	10.41
Steel (Cont.)							
0.9 mm	12	2283A24	$2.80	$2.33	10 ft.	2282A24	$12.55
0.95 mm	12	2283A25	2.80	2.33	10 ft.	2282A25	12.55
1 mm	12	2283A26	2.80	2.33	10 ft.	2282A26	13.45
Type 302/304 Stainless Steel							
0.0005″	12	19875A3	7.75	6.83	10 ft.	2319A1	55.89
0.001″	12	19875A31	5.92	5.00	10 ft.	2319A2	35.38
0.0015″	12	19875A32	3.81	3.22	10 ft.	2319A3	22.77
0.002″	12	19875A33	3.22	2.72	10 ft.	2319A4	19.80
0.0025″	12	19875A47	3.22	2.72	10 ft.	2319A5	19.80
0.003″	12	19875A34	3.22	2.72	10 ft.	2319A6	19.80
0.004″	12	19875A35	3.22	2.72	10 ft.	2319A7	16.61
0.005″	12	19875A36	2.74	2.31	10 ft.	2319A8	16.61
0.006″	12	19875A37	2.74	2.31	10 ft.	2319A9	16.61
0.007″	12	19875A38	2.74	2.31	10 ft.	2319A11	16.61
0.008″	12	19875A39	2.74	2.31	10 ft.	2319A12	16.61
0.009″	12	19875A4	2.74	2.31	10 ft.	2319A13	16.61
0.01″	12	19875A41	2.74	2.31	10 ft.	2319A14	16.61
0.012″	12	19875A42	2.74	2.31	10 ft.	2319A15	16.61
0.015″	12	19875A43	2.74	2.31	10 ft.	2319A16	16.61
0.016″	12	19875A48	3.22	2.72	10 ft.	2319A17	16.61
0.018″	12	19875A49	3.22	2.72	10 ft.	2319A18	16.61
0.02″	12	19875A44	3.81	3.22	10 ft.	2319A19	19.09
0.025″	12	19875A45	3.81	3.22	10 ft.	2319A21	19.09
0.031″	12	19875A46	3.81	3.22	10 ft.	2319A22	19.09
0.04 mm	12	2300A1	3.53	2.82	10 ft.	2300A18	18.50
0.05 mm	12	2300A2	3.69	3.15	10 ft.	2300A19	18.50
0.06 mm	12	2300A3	3.69	3.15	10 ft.	2300A21	18.50
0.07 mm	12	2300A4	2.96	2.88	10 ft.	2300A22	16.07
0.08 mm	12	2300A5	3.37	2.88	10 ft.	2300A23	16.07
0.09 mm	12	2300A6	3.37	2.88	10 ft.	2300A24	16.07
0.1 mm	12	2300A7	3.37	2.88	10 ft.	2300A25	16.07
0.15 mm	12	2300A8	3.03	2.59	10 ft.	2300A26	16.07
0.2 mm	12	2300A9	2.72	2.46	10 ft.	2300A27	16.07
0.25 mm	12	2300A11	3.03	2.59	10 ft.	2300A28	16.07
0.3 mm	12	2300A12	3.03	2.59	10 ft.	2300A29	16.07
0.4 mm	12	2300A13	3.37	2.88	10 ft.	2300A31	18.50
0.45 mm	12	2300A14	3.37	2.88	10 ft.	2300A32	18.50
0.5 mm	12	2300A15	3.69	3.15	10 ft.	2300A33	18.50
0.6 mm	12	2300A16	3.69	3.15	10 ft.	2300A34	18.50
0.8 mm	12	2300A17	3.69	3.15	10 ft.	2300A35	18.50
Type 316 Stainless Steel							
0.001″	12	2315A1	12.71	10.79	10 ft.	2306A1	71.67
0.002″	12	2315A3	6.74	5.72	10 ft.	2306A3	38.00
0.003″	12	2315A4	6.74	5.72	10 ft.	2306A4	38.00
0.004″	12	2315A5	6.74	5.72	10 ft.	2306A5	38.00
0.005″	12	2315A6	6.74	5.72	10 ft.	2306A6	38.00
0.01″	12	2315A7	6.74	5.72	10 ft.	2306A7	38.01
0.012″	12	2315A8	6.74	5.72	10 ft.	2306A8	38.01
0.015″	12	2315A9	8.11	6.89	10 ft.	2306A9	45.67
0.02″	12	2315A11	8.11	6.89	10 ft.	2306A11	45.67
0.03″	12	2315A12	11.79	10.02	10 ft.	2306A12	66.44
Brass							
0.001″	12	20385A31	4.69	3.97	10 ft.	2317A1	16.55
0.002″	12	20385A32	2.54	2.15	10 ft.	2317A2	9.49
0.003″	12	20385A33	2.54	2.15	10 ft.	2317A3	9.49
0.004″	12	20385A34	2.38	2.03	10 ft.	2317A4	9.49
0.005″	12	20385A35	2.38	2.03	10 ft.	2317A5	9.49
0.006″	12	20385A36	2.38	2.03	10 ft.	2317A6	9.49
0.007″	12	20385A37	2.39	2.03	10 ft.	2317A7	9.49
0.008″	12	20385A38	2.39	2.03	10 ft.	2317A8	9.49
0.009″	12	20385A39	2.39	2.03	10 ft.	2317A9	9.49
0.01″	12	20385A41	2.32	1.97	10 ft.	2317A11	9.49
0.015″	12	20385A42	2.38	2.03	10 ft.	2317A13	9.49
0.02″	12	20385A43	2.38	2.03	10 ft.	2317A14	9.49
0.025″	12	20385A44	2.38	2.03	10 ft.	2317A15	9.49
0.032″	12	20385A45	2.38	2.03	10 ft.	2317A16	9.49

Assortments

No. of Pcs.	Lg.	Thicknesses (Ranges, where indicated, are in 0.001″ increments.)		Each
Steel				
20	6″	0.001″, 0.0015″, 0.002″ to 0.01″, 0.012″, 0.014″, 0.015″, 0.016″, 0.018″, 0.02″, 0.022″, 0.024″, 0.025″	2058A11	$21.02
32	12″	0.001″, 0.0015″, 0.002″, 0.0025″, 0.003″ to 0.03″	2066A7	42.38
48	12″	3 each: 0.001″, 0.0015″, 0.002″, 0.0025″, 0.003″ to 0.01″, 0.015″, 0.02″, 0.025″, 0.03″	2066A5	50.25
Type 302/304 Stainless Steel				
20	6″	0.0005″, 0.001″, 0.0015″, 0.002″, 0.0025″, 0.003″ to 0.01″, 0.012″, 0.015″, 0.016″, 0.018″, 0.02″, 0.025″, 0.031″	19855A1	47.87
20	12″	0.0005″, 0.001″, 0.0015″, 0.002″, 0.0025″, 0.003″ to 0.01″, 0.012″, 0.015″, 0.016″, 0.018″, 0.02″, 0.025″, 0.031″	19855A2	58.75

Feeler Thickness Gauge Sets

Sets consist of 1/2″ wide leaves nested in a high-quality steel frame. Each leaf is clearly marked with the thickness. A lock keeps individual leaves secure in any position (except 2334A65 and A66).

Certificates of calibration are traceable to NIST.

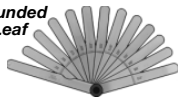
Rounded Leaf

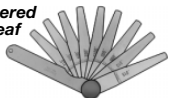
Tapered Leaf

Offset Leaf

No. of Leaves	Leaf Lg.	Thicknesses	Starrett No.	Starrett		Economy	
Rounded Leaf							
Tool Steel (Inch)							
8	9″	0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.008″, 0.01″, 0.015″	—	—	—	2334A5	$13.18
8	12″	0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.008″, 0.01″, 0.015″	172E	2070A6	$62.00	2334A6	14.40
9	3″	0.0015″, 0.002″, 0.003″, 0.004″, 0.006″, 0.008″, 0.01″, 0.012″, 0.015″	172A	2070A2	35.68	2334A2	5.67
13	4 1/2″	0.0015″, 0.002″, 0.003″, 0.004″, 0.006″, 0.008″, 0.01″, 0.02″, 0.03″, 0.04″, 0.075″, 0.1″, 0.2″	467	2070A11	95.89	—	—
16	3″	0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.008″, 0.011″, 0.012″, 0.013″, 0.014″, 0.016″, 0.018″, 0.02″, 0.022″, 0.025″, and a 2.5″ long ruler blade leaf	—	—	—	8568A11	5.29
22	2 5/16″	0.004″ to 0.025″ (0.001″ increments)	—	—	—	2334A1	12.08
25	12″	0.0015″, 0.002″ to 0.021″ (0.001″ increments), 0.025″, 0.027″, 0.03″, 0.04″	—	—	—	8675A31	33.80
26	3″	0.0015″, 0.002″, 0.0025″, 0.003″ to 0.025″ (0.001″ increments)	66	2070A8	54.00	2334A8	11.77
Tool Steel (Inch) with Certificate of Calibration							
13	4 1/2″	0.0015″, 0.002″, 0.003″, 0.004″, 0.006″, 0.008″, 0.01″, 0.02″, 0.03″, 0.04″, 0.075″, 0.1″, 0.2″	467	2070A12	121.82	—	—
26	3″	0.0015″, 0.002″, 0.0025″, 0.003″ to 0.025″ (0.001″ increments)	66	2070A43	80.67	—	—
Tool Steel (Metric)							
13	4 1/2″	0.04, 0.05, 0.06, 0.07, 0.08, 0.10, 0.15, 0.20, 0.30, 1.0, 2.0, 3.0, 5.0 mm	467M	2070A52	86.00	—	—
15	3″	0.06, 0.07, 0.08, 0.10, 0.15 to 0.60 mm (0.05 mm increments), 0.70mm	—	—	—	2334A65	6.13
25	3″	0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10 to 1.0 mm (0.05 mm increments)	—	—	—	2334A66	11.30
300 Series Stainless Steel (Inch)							
18	3″	0.0015″, 0.002″, 0.0025″, 0.003″, 0.0035″, 0.004″ to 0.01″ (0.001″ increments), 0.012″, 0.015″, 0.016″, 0.018″, 0.02″, 0.025″	—	—	—	19495A26	21.11
25	12″	0.0015″, 0.002″ to 0.025″ (0.001″ increments)	—	—	—	2331A43	75.75
High-Carbon Spring Steel (Inch)							
25	24″	0.0015″, 0.002″ to 0.021″ (0.001″ increments), 0.025″, 0.027″, 0.03″, 0.04″	—	—	—	8675A32	98.33
High-Carbon Spring Steel (Metric)							
25	12″	0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10 to 1.0 mm (0.05 mm increments)	—	—	—	2334A4	75.26
Tapered Leaf							
Tool Steel (Inch)							
8	6″	0.002″, 0.003″, 0.004″, 0.006″, 0.008″, 0.01″, 0.012″, 0.015″	172CT	2070A4	45.50	—	—
9	3″	0.0015″, 0.002″, 0.003″, 0.004″, 0.006″, 0.008″, 0.01″, 0.012″, 0.015″	172AT	2070A9	37.44	—	—
26	3″	0.0015″, 0.002″, 0.0025″, 0.003″ to 0.025″ (0.001″ increments)	66T	2070A7	61.00	—	—
Tool Steel (Inch) with Certificate of Calibration							
26	3″	0.0015″, 0.002″, 0.0025″, 0.003″ to 0.025″ (0.001″ increments)	66T	2070A71	79.88	—	—
Tool Steel (Metric)							
13	3″	0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.30, 0.40, 0.50 mm	173MAT	2070A44	49.01	—	—
High-Carbon Steel (Inch)							
9	3″	0.0015″, 0.002″, 0.003″, 0.004″, 0.006″, 0.008″, 0.01″, 0.012″, 0.015″	—	—	—	2334A9	18.33
26	3″	0.0015″, 0.002″, 0.0025″, 0.003″ to 0.025″ (0.001″ increments)	—	—	—	2334A7	19.68
Offset Leaf							
Tool Steel (Inch)							
12	4″	0.008″, 0.01″, 0.012″, 0.013″, 0.014″, 0.015″, 0.016″, 0.018″, 0.019″, 0.02″, 0.025″, 0.026″	—	—	—	8674A41	10.08

Plastic Color-Coded Feeler Thickness Gauges

Each thickness is a different color—no more stopping to read the thickness each time you check gaps. Gauges are also nonmagnetic, nonmarring, noncorrosive, nonsparking, and resistant to oil.

Gauges have square ends and can be cut with scissors. Size is 12″ Lg. × 1/2″ Wd.

Gauge sets have a fan design to keep gauges together and easily accessible. Leaves are 1/2″ wide and have rounded ends.

Thickness Gauge Set

Gauges

Thick.	Color	Pkg. Qty.		Pkg.
0.001″	Amber	5	21035A11	$2.85
0.0015″	Purple	5	21035A12	2.85
0.002″	Red	5	21035A13	2.85
0.003″	Green	5	21035A14	2.85
0.004″	Tan	5	21035A15	2.85
0.005″	Blue	5	21035A16	2.85
0.0075″	Cream	5	21035A17	3.60
0.01″	Brown	5	21035A18	4.50
0.0125″	Black	5	21035A19	5.99
0.015″	Pink	5	21035A21	7.35
0.02″	Yellow	5	21035A22	8.55
0.025″	White	5	21035A23	9.15
0.03″	Orange	5	21035A24	10.35
0.04″	Clear	3	21035A28	8.55
0.05″	Clear	3	21035A29	10.35
0.06″	Clear	3	21035A31	12.60

Gauge Sets

No. of Leaves	Leaf Lg.	Thicknesses		Each
8	12″	0.001″, 0.002″, 0.003″, 0.004″, 0.005″, 0.01″, 0.02″, 0.04″	82755A13	$14.21
13	5″	0.001″, 0.0015″, 0.002″, 0.003″, 0.004″, 0.005″, 0.0075″, 0.01″, 0.0125″, 0.015″, 0.02″, 0.025″, 0.03″	82755A11	16.84
14	12″	0.0005″, 0.001″, 0.0015″, 0.002″, 0.003″, 0.004″, 0.005″, 0.0075″, 0.01″, 0.0125″, 0.015″, 0.02″, 0.025″, 0.03″	82755A12	23.51
16	12″	0.001″, 0.0015″, 0.002″, 0.003″, 0.004″, 0.005″, 0.0075″, 0.01″, 0.0125″, 0.015″, 0.02″, 0.025″, 0.03″, 0.04″, 0.05″, 0.06″	82755A14	26.01

Feeler Thickness Gauge Holders

Cam-lock clamps keep a single 1/2″ wide feeler thickness gauge in position. Fit gauges 0.001″ to 0.025″ thick and up to 6″ long. Holders are 5 1/4″ Lg. × 9/16″ Wd. × 3/32″ Thick.

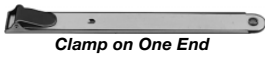
Clamp on One End

Clamp on Both Ends

Clamp Location

One End	2322A11	$25.01
Both Ends	2322A12	28.50

For information about go/no-go measurement, see page 2289.

Starrett Tapered Thickness Gauges

Starrett No. 270

Starrett No. 269A and No. 269B

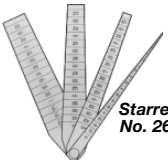

Starrett No. 267

Starrett No. 270 gauge tapers in thickness throughout its length. One side measures in 0.001″ increments, the other in 0.05 mm increments. Made of tool steel. Size is 6¼″ Lg.×7/16″ Wd. *Certificate of calibration* is traceable to NIST.

Starrett No. 269A and ***269B*** gauges measure in 0.001″ increments. Made of tempered steel. Closed size for 8611A55 is 2½″ Lg.×½″ Wd.; 8611A56 is 2¾″ Lg.×1″ Wd.

Starrett No. 267 gauge measures in 1/64″ increments. Made of spring-tempered steel. Closed size is 5¼″ Lg.×1″ Wd.

Range	No. of Leaves	Starrett No.		
Gauges				
0.010″ to 0.150″ (0.3 to 4 mm)	1	270	8611A53	$104.00
0.100″ to 0.500″	8	269A	8611A55	123.01
0.500″ to 1.000″	10	269B	8611A56	144.00
1/16″ to 1 1/16″	4	267	8611A54	114.00
Gauge with Certificate of Calibration				
0.010″ to 0.150″ (0.3 to 4 mm)	1	270	8611A62	115.90

Tapered Thickness Gauges

Replace a set of feeler thickness gauges with just one tapered gauge. Capable of measuring clearance, narrow slots, and gaps, these tools are more durable than other thickness gauges. They measure in 0.005″ increments. Made of black-oxide steel with white numerals for visibility.

Range	Blade Wd.	O'all Lg.		
0.005″ to 0.250″	1/4″	18″	8626A12	$414.86
0.020″ to 0.500″	1/4″	18″	8626A13	529.14
0.020″ to 0.500″	3/8″	18″	8626A14	565.33
0.370″ to 1.000″	3/8″	18″	8626A65	668.80

Combination Wire and Thickness Gauges

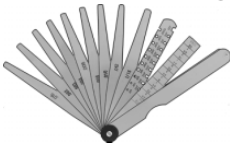

Get a tapered gauge, a wire gauge, and an assortment of thickness gauge leaves in one tool. All are steel and closed size is 4¾″ Lg.×½″ Wd.

Inch—*Tapered gauge* range is 1/64″ to 3/16″ in 1/64″ increments. *Wire gauge* is Birmingham Standard. It has sizes numbered from 19 to 36 plus 1/16″ and ⅛″. The reverse side gives equivalents in 0.001″. *Thickness leaves* are sizes 0.002″, 0.003″, 0.004″, 0.006″, 0.008″, 0.010″, 0.012″, 0.015″, and 1/16″.

Metric—*Tapered gauge* range is 0.5 to 5 mm in 0.5 mm increments. *Wire gauge* is English Standard. It has sizes numbered from 19 to 36 plus 1/16″ and ⅛″. The reverse side gives equivalents in 0.001″. *Thickness leaves* are sizes 0.04, 0.05, 0.06, 0.07, 0.08, 0.10, 0.15, 0.20, 0.30, 1, and 2 mm.

Inch	2323A11	$85.60
Metric	2323A13	161.01

Setting Rings

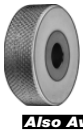

Set equipment and tooling such as calipers and gauges. Rings are Class Z, made of hardened ground steel, and have an aluminum heat shield. Rockwell hardness is C58-C60; surface smoothness is 10 microinches. Tolerance is ±0.0001″ for sizes up to 0.8125″; ±0.00012″ for sizes 0.8750″ to 1.5000″; and ±0.00016″ for sizes 1.7500″ to 2.0000″.

Also Available: Additional sizes in 0.0312″ increments. Please ask for 20785A81 and specify size.

Size			Size		
0.2500″	20785A2	$42.82	0.8125″	20785A38	$64.01
0.3125″	20785A22	42.82	0.8750″	20785A4	64.01
0.3750″	20785A24	42.82	1.0000″	20785A44	64.01
0.4375″	20785A26	42.82	1.1250″	20785A48	70.16
0.5000″	20785A28	42.82	1.2500″	20785A52	70.16
0.5625″	20785A3	48.12	1.3750″	20785A56	85.53
0.6250″	20785A32	48.12	1.5000″	20785A6	85.53
0.6875″	20785A34	48.12	1.7500″	20785A68	87.10
0.7500″	20785A36	48.12	2.0000″	20785A76	98.88

Ring Gauges

All are made of tool steel. Rockwell hardness is C60-C62. Surface smoothness is 8 microinches for Class Z gauges and 4 microinches for Class X gauges. A certificate of accuracy traceable to NIST is included. **To Order:** Please specify size in 0.0001″ increments.

Go/no-go gauges let you inspect parts, shafts, and rods to determine if they pass or fail the tolerances.

Master gauges set inside micrometers, dial bore gauges, and other precision tools.

	Gauge Tolerances		
Class	Go	No-Go	Master
Z (Up to 0.825″)	–0.0001″	+0.0001″	±0.00005″
Z (0.826″ to 1.51″)	–0.00012″	+0.00012″	±0.00006″
Z (1.52″ to 2.51″)	–0.00016″	+0.00016″	±0.00008″
X (Up to 0.825″)	–0.00004″	+0.00004″	±0.00002″
X (0.826″ to 1.51″)	–0.00006″	+0.00006″	±0.00003″
X (1.52″ to 2.51″)	–0.00008″	+0.00008″	±0.00004″

	CLASS Z GAUGES				CLASS X GAUGES			
Sizes	Go	No-Go	Master		Go	No-Go	Master	
0.2301″ to 0.3650″	2261A53	2263A63	2266A73	$92.40	2261A23	2263A33	2266A43	$102.00
0.3651″ to 0.5100″	2261A54	2263A64	2266A74	93.60	2261A24	2263A34	2266A44	103.20
0.5101″ to 0.8250″	2261A55	2263A65	2266A75	97.20	2261A25	2263A35	2266A45	108.00
0.8251″ to 1.1350″	2261A56	2263A66	2266A76	99.60	2261A26	2263A36	2266A46	110.40
1.1351″ to 1.5100″	2261A57	2263A67	2266A77	114.00	2261A27	2263A37	2266A47	126.00
1.5101″ to 2.0100″	2261A58	2263A68	2266A78	144.00	2261A28	2263A38	2266A48	156.00
2.0101″ to 2.5100″	2261A59	2263A69	2266A79	168.00	2261A29	2263A39	2266A49	198.00

Plug Gauge Handles

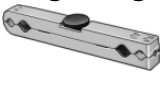

Holding 0.03″ to 0.50″ plug gauges is easier with a handle. Go/no-go ends are clearly marked and bushings are not required. Made of aluminum.

Colored Handles— **To Order:** Please specify green, purple, red, or yellow.

Natural Aluminum	2302A55	$17.55
Colored	2302A11	20.10

Universal Plug Gauge Handles

No bushings needed—one handle covers a range of pins. Made of aluminum. One end is green and the other is red.

Range Inch	Range mm	O'all Lg.		
0.0110 to 0.0605	0.28 to 1.51	4″	2367A11	$16.58
0.0610 to 0.2505	1.52 to 7.71	5 3/8″	2367A12	17.77
0.2510 to 0.5005	7.72 to 12.71	6 1/8″	2367A13	19.58
0.5010 to 0.6255	12.72 to 15.31	5 1/2″	2367A14	20.87
0.6260 to 0.7505	15.32 to 17.81	5 3/4″	2367A15	23.87
0.7510 to 0.8325	17.82 to 20.37	5 7/8″	2367A16	32.10
0.8330 to 1.0150	20.38 to 25.41	6″	2367A17	33.17

Black-Oxide Class ZZ Plug Gauges

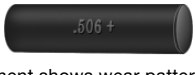

A black-oxide treatment shows wear patterns when calibration or replacement is necessary. Gauges are made of tool steel and are 2″ long. Rockwell hardness is C60-C62; surface smoothness is 10 microinches or better. A certificate of accuracy traceable to NIST is included. Gauges 0.0610″ and larger are marked with size and direction of tolerance.

Go gauge tolerance is +0.0002″. *No-go gauge* tolerance is –0.0002″.

Gauges— **To Order:** Please specify size in 0.0005″ increments.

Gauge Sets— Measure in 0.001″ increments. A case is included.

Sizes	Pieces Per Set	Go Gauges	No-Go Gauges	
Gauges				
0.0110″ to 0.0605″	—	2320A001	2321A001	$3.13
0.0610″ to 0.5005″	—	2320A002	2321A002	2.81
0.5010″ to 0.6255″	—	2320A003	2321A003	3.75
0.6260″ to 0.7505″	—	2320A004	2321A004	5.63
Gauge Sets				
0.0110″ to 0.0600″	50	2327A11	2327A21	64.46
0.0610″ to 0.2500″	190	2327A12	2327A22	143.80

About Go/No-Go Measurement

A go gauge checks the minimum hole diameter. A no-go gauge checks the maximum hole diameter. If the go gauge enters the hole and the no-go gauge is unable to enter, the design specifications of the hole have been met.

Plug Gauges

Also known as pin gauges, use plug gauges for precision go/no-go measuring of hole sizes and depths, checking hole location and distance, and setting micrometers.

Gauges are heat-treated tool steel. Rockwell hardness is C60-C62. They are 2″ long, except extra-long Class ZZ inch style, which are 4″ long. All come with a certificate of accuracy traceable to NIST.

Class Z and ***Class ZZ*** gauges 0.0610″ and 1.52 mm and larger are etched with the size and "+" (go) or "–" (no-go).

	Inch Gauge Tolerances	
Class	**Go**	**No-Go**
Z	+0.0001″	–0.0001″
ZZ	+0.0002″	–0.0002″
X (up to 0.8250″)	+0.00004″	–0.00004″
X (0.8251″ to 1.0100″)	+0.00006″	–0.00006″

	Metric Gauge Tolerances	
Class	**Go**	**No-Go**
Z	+0.0025 mm	–0.0025 mm
ZZ	+0.005 mm	–0.005 mm
X (up to 20.9600 mm)	+0.001 mm	–0.001 mm
X (20.9625 to 25.654 mm)	+0.0015 mm	–0.0015 mm

Individual Plug Gauges

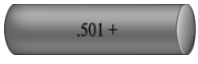

INCH

Sizes	Go Gauges		No-Go Gauges	
Class Z				
To Order: Please specify exact size needed in 0.0005″ increments.				
0.0110″ to 0.0605″	23055A001	$3.48	23065A503	$3.48
0.0610″ to 0.5005″	23055A002	3.10	23065A504	3.10
0.5010″ to 0.6255″	23055A004	4.25	23065A506	4.25
0.6260″ to 0.7505″	23055A005	6.17	23065A507	6.17
0.7510″ to 0.8325″	23055A006	9.27	23065A508	9.27
0.8330″ to 0.9165″	23055A007	10.60	23065A509	10.60
0.9170″ to 1.0005″	23055A008	10.96	23065A511	10.96
Extra-Long Class ZZ				
To Order: Please specify exact size needed in 0.0001″ increments.				
0.0110″ to 0.3759″	2162A11♦	55.24	2162A51♦	55.24
Class X				
To Order: Please specify exact size needed in 0.0001″ increments.				
0.0040″ to 0.0150″	21135A71	19.41	21135A81	19.41
0.0151″ to 0.0300″	21135A32	19.41	21135A52	19.41
0.0301″ to 0.0750″	21135A33	15.91	21135A53	15.91
0.0751″ to 0.1800″	21135A34	11.18	21135A54	11.14
0.1801″ to 0.2810″	21135A35	11.14	21135A55	11.14
0.2811″ to 0.4060″	21135A36	11.45	21135A56	11.45
0.4061″ to 0.5100″	21135A37	12.73	21135A57	12.73
0.5101″ to 0.6350″	21135A38	13.36	21135A58	13.36
0.6351″ to 0.7600″	21135A39	18.42	21135A59	18.45
0.7601″ to 1.0100″	21135A41	29.67	21135A61	29.67

METRIC

Sizes	Go Gauges		No-Go Gauges	
Class Z				
To Order: Please specify exact size needed in 0.01 mm increments.				
0.22 to 1.51 mm	2281A1	$4.25	2281A9	$4.25
1.52 to 12.71 mm	2281A2	3.87	2281A11	3.87
12.72 to 15.31 mm	2281A3	4.88	2281A12	4.88
15.32 to 17.81 mm	2281A4	7.63	2281A13	7.63
17.82 to 20.37 mm	2281A5	9.17	2281A14	9.17
20.38 to 22.05 mm	2281A6	10.75	2281A15	10.75
22.06 to 23.73 mm	2281A7	12.04	2281A16	12.04
23.74 to 25.41 mm	2281A8	13.56	2281A17	13.56
Class X				
To Order: Please specify exact size needed in 0.0025 mm increments.				
0.101 to 0.381 mm	2301A1	34.91	2301A8	34.91
0.382 to 0.762 mm	2301A2	21.82	2301A9	21.82
0.763 to 1.905 mm	2301A3	13.09	2301A11	13.09
1.906 to 4.572 mm	2301A4	13.96	2301A12	13.96
4.573 to 7.137 mm	2301A16	16.58	2301A17	16.58
7.138 to 10.312 mm	2301A18	17.45	2301A19	17.45
10.313 to 12.954 mm	2301A21	17.45	2301A22	17.45
12.955 to 16.129 mm	2301A5	20.95	2301A13	20.95
16.130 to 19.304 mm	2301A6	21.82	2301A14	21.82
19.305 to 25.654 mm	2301A7	29.67	2301A15	29.67

♦ Price shown is for 1-2 plug gauges of the same size. Deduct 60% for orders of 3-5 pieces of the same size and 75% for orders of 6 pieces and up of the same size.

Plug Gauge Sets

Standard Set

Master Set

Sizes	Pieces Per Set	Go Gauges	No-Go Gauges	
Standard Set with Class Z Inch Gauges— *0.001″ increments*				
0.0110″ to 0.0600″	50	2326A11	2326A31	$77.07
0.0110″ to 0.2500″	240	2326A19	2326A39	237.60
0.0115″ to 0.0605″	50	2326A21	2326A41	77.07
0.0115″ to 0.2505″	240	2326A29	2326A49	237.60
0.0610″ to 0.2500″	190	2326A12	2326A32	173.39
0.0615″ to 0.2505″	190	2326A22	2326A42	173.11
0.2510″ to 0.5000″	250	2326A13	2326A33	256.86
0.2515″ to 0.5005″	250	2326A23	2326A43	256.86
0.5010″ to 0.6250″	125	2326A14	2326A34	296.18
0.6260″ to 0.7500″	125	2326A15	2326A35	327.68
Standard Set with Class Z Metric Gauges— *0.02 mm increments*				
0.22 to 1.50 mm	65	2326A61	2326A65	99.74
Standard Set with Class ZZ Metric Gauges— *0.02 mm increments*				
1.30 to 4.98 mm	185	2326A69	2326A73	169.72
5.00 to 9.98 mm	250	2326A71	2326A74	264.56
10.00 to 13.98 mm	200	2326A72	2326A75	229.62
Master Set with Class Z Inch Gauges— *0.001″ increments*				
0.0110″ to 0.6250″	615	21015A11	21015A21	897.74
0.0610″ to 0.7500″	690	21015A12	21015A22	1,168.00

Go/No-Go Plug Gauge with Handle

Includes a handle with bushings and a go plug gauge on one end and a no-go plug gauge on the other.

Sizes

Class Z Inch		
To Order: Please specify exact size needed in 0.0005″ increments.		
0.0110″ to 0.0755″	21205A21	$18.23
0.0760″ to 0.1805″	21205A22	18.07
0.1810″ to 0.2815″	21205A23	19.40
0.2820″ to 0.4065″	21205A24	19.79
0.4070″ to 0.5005″	21205A25	22.88
0.5010″ to 0.5105″	21205A26	24.82
0.5110″ to 0.6255″	21205A27	30.24
0.6260″ to 0.6355″	21205A28	34.36
0.6360″ to 0.7505″	21205A29	36.30
0.7510″ to 0.7605″	21205A31	42.50
0.7610″ to 0.8325″	21205A32	51.95
0.8330″ to 0.9165″	21205A33	53.50
0.9170″ to 1.0005″	21205A34	54.66
Class X Inch		
To Order: Please specify exact size needed in 0.0001″ increments.		
0.0040″ to 0.0250″	2328A21	52.50
0.0251″ to 0.0750″	2328A83	46.66
0.0751″ to 0.1800″	2328A84	37.92
0.1801″ to 0.2810″	2328A85	38.49
0.2811″ to 0.4060″	2328A86	39.67
0.4061″ to 0.5100″	2328A87	44.33
0.5101″ to 0.6350″	2328A88	50.75
0.6351″ to 0.7600″	2328A89	60.67
0.7601″ to 1.0100″	2328A91	72.33

For information about go/no-go measurements, see page 2289.

Target-Size Plug Gauge Sets

Get your choice of one target-size gauge with 12 larger gauges and 12 smaller gauges, graduated in increments of 0.0001″. Also known as "tenth step" gauges, they're often used in metrology labs, quality control departments, and tool rooms for setting snap gauges and comparators. Sets are Class X and Rockwell hardness is C60-C62; surface smoothness is 2 microinches or better. All are 2″ long and made of heat-treated tool steel. Gauges 0.0610″ and larger are etched with size. A case and a certificate of accuracy traceable to NIST are included. **To Order:** Please specify nominal (target) size.

Go gauges have a tolerance of +0.00004″. ***No-go gauges*** have a tolerance of –0.00004″.

Nominal (Target) Size	Go Gauges	No-Go Gauges	
0.0110″ to 0.0609″	2149A11	2149A51	$316.05
0.0610″ to 0.2509″	2149A13	2149A53	161.70
0.2510″ to 0.5009″	2149A15	2149A55	184.72
0.5010″ to 0.7499″	2149A17	2149A57	254.92
0.7500″ to 0.8129″	2149A19	2149A59	356.87

Thread Gauges

Inspect internal and external threads on parts. All are tool steel and include a certificate of accuracy traceable to NIST.
Plug gauges have external (male) threads to measure internal (female) threads.
Ring gauges have internal (female) threads to measure external (male) threads.

Inch and Metric Thread Gauges

Plug Gauge

Ring Gauge

Plug Gauges— Have a threaded (taperlock) handle with a go gauge on one end and a no-go gauge on the other. They are chrome plated and marked with thread size. Rockwell hardness is C70-C72.

Ring Gauges— The no-go gauges are also known as "lo" gauges. Rockwell hardness is C60-C62.

Inch gauges meet Class X tolerance for pitch diameter: ±0.0002″ for 80 to 36 threads/in.; ±0.0003″ for 32 to 9 threads/in.; and ±0.004″ for 7 threads/in.

Threads have different classes of fit. "Fit" designates the tightness or looseness of the mating threads. For example, inch threads with a 3A fit have tighter tolerances than threads with a 2A fit. *Plug gauges* are offered in 2B and 3B thread fit; *ring gauges* are offered in 2A and 3A thread fit. **To Order:** Please specify thread fit.

Metric gauges meet Class X tolerance for pitch diameter: ±0.005 mm for 0.35 to 0.7 threads/mm and ±0.008 mm for 0.8 to 2 threads/mm. *Plug gauges* have a 6H thread fit; *ring gauges* have a 6g thread fit.

Also Available: Thread gauges with certificate of calibration traceable to NIST.
For *inch plug gauges* please ask for 3157A9 and specify part number and thread fit.
For *inch ring gauges* please ask for 3160A9 and specify part number and thread fit.
For *metric plug gauges* please ask for 3206A9 and specify part number.
For *metric ring gauges* please ask for 3227A9 and specify part number.

Thread Size	PLUG GAUGES		RING GAUGES Go	RING GAUGES No-Go	
0-80 UNF	2366A501	$119.61	2356A301	2356A401	$137.88
1-72 UNF	2366A503	122.72	2356A303	2356A403	127.27
2-56 UNC	2366A504	117.27	2356A304	2356A404	113.90
3-48 UNC	2366A506	99.29	2356A306	2356A406	112.66
4-40 UNC	2366A508	95.82	2356A308	2356A408	98.74
4-48 UNF	2366A509	98.36	2356A309	2356A409	98.74
5-40 UNC	2366A511	86.19	2356A311	2356A411	91.36
6-32 UNC	2366A513	83.71	2356A313	2356A413	91.36
6-40 UNF	2366A514	83.71	2356A314	2356A414	91.36
8-32 UNC	2366A515	76.80	2356A315	2356A415	95.43
8-36 UNF	2366A516	76.80	2356A316	2356A416	95.43
10-24 UNC	2366A517	76.80	2356A317	2356A417	95.43
10-32 UNF	2366A518	76.80	2356A318	2356A418	95.43
12-24 UNC	2366A519	76.80	2356A319	2356A419	95.43
1/4″-20 UNC	2366A522	69.82	2356A322	2356A422	90.00
1/4″-28 UNF	2366A523	69.82	2356A323	2356A423	90.00
5/16″-18 UNC	2366A524	69.82	2356A324	2356A424	90.00
5/16″-24 UNF	2366A525	69.82	2356A325	2356A425	90.00
3/8″-16 UNC	2366A526	72.15	2356A326	2356A426	98.00
3/8″-24 UNF	2366A527	72.15	2356A327	2356A427	98.00
7/16″-14 UNC	2366A528	72.15	2356A328	2356A428	95.38
7/16″-20 UNF	2366A529	72.15	2356A329	2356A429	95.38
1/2″-13 UNC	2366A531	74.47	2356A331	2356A431	99.66
1/2″-20 UNF	2366A532	74.47	2356A332	2356A432	99.66
9/16″-18 UNF	2366A153	93.09	2356A181	2356A185	117.55
5/8″-11 UNC	2366A533	95.42	2356A333	2356A433	117.50
5/8″-18 UNF	2366A534	95.42	2356A334	2356A434	117.50
3/4″-10 UNC	2366A535	108.58	2356A335	2356A435	147.78
3/4″-16 UNF	2366A536	109.05	2356A336	2356A436	147.78

Thread Size	PLUG GAUGES		RING GAUGES Go	RING GAUGES No-Go	
7/8″-9 UNC	2366A537	$120.11	2356A337	2356A437	$159.32
7/8″-14 UNF	2366A538	122.65	2356A338	2356A438	159.32
1″-8 UNC	2366A539	136.81	2356A339	2356A439	192.81
1″-12 UNF	2366A541	136.81	2356A341	2356A441	192.81
1″-14 UNS	2366A542	136.81	2356A342	2356A442	192.81
1 1/8″-12 UNF	2366A544	168.66	2356A344	2356A444	224.74
1 1/4″-7 UNC	2366A545	175.80	2356A345	2356A445	230.66
1 1/4″-12 UNF	2366A546	175.80	2356A346	2356A446	230.66
M1.6×0.35	23585A103	119.76	23575A102	23575A103	148.31
M2×0.4	23585A107	119.99	23575A106	23575A107	128.66
M2.5×0.45	23585A109	107.61	23575A108	23575A109	128.66
M3×0.5	23585A111	107.73	23575A112	23575A111	111.57
M3.5×0.6	23585A113	95.47	23575A114	23575A113	110.46
M4×0.7	23585A115	95.47	23575A116	23575A115	110.12
M5×0.8	23585A119	95.47	23575A12	23575A119	116.80
M6×1.0	23585A121	77.24	23575A122	23575A121	101.35
M8×1.0	23585A129	77.24	23575A13	23575A129	101.35
M8×1.25	23585A127	77.24	23575A128	23575A127	101.35
M10×1.25	23585A133	90.21	23575A134	23575A133	110.91
M10×1.5	23585A131	87.24	23575A132	23575A131	110.91
M12×1.0	23585A141	113.79	23575A142	23575A141	112.61
M12×1.25	23585A139	94.49	23575A14	23575A139	113.89
M12×1.5	23585A137	94.81	23575A138	23575A137	119.65
M12×1.75	23585A135	94.81	23575A136	23575A135	119.65
M14×1.5	23585A143	101.85	23575A144	23575A143	131.60
M16×1.5	23585A145	101.61	23575A146	23575A145	130.29
M16×2.0	23585A147	101.61	23575A148	23575A147	130.29
M18×1.5	23585A149	111.24	23575A152	23575A149	173.78

NPT Pipe Thread Gauges

Plug Gauge

Ring Gauge

Meet Class X tolerance for pitch diameter: ±0.0002″ for 1/16″-27 to 3/8″-18 thread size and ±0.0003″ for 1/2″-14 to 2″-11 1/2 thread size. Rockwell hardness is C60-C62. Plug gauges also have a notch that indicates when the thread being measured is within tolerance.

Also Available: Thread gauges with certificate of calibration traceable to NIST. Please ask for 2121A9 and specify thread size and plug or ring gauge part number.

Thread Size	Plug Gauges		Ring Gauges	
1/16″-27	2365A11	$86.35	2365A21	$155.41
1/8″-27	2365A111	62.67	2365A211	108.62
1/4″-18	2365A112	71.04	2365A212	119.20
3/8″-18	2365A113	79.40	2365A213	137.31
1/2″-14	2365A114	89.13	2365A214	152.40

Thread Size	Plug Gauges		Ring Gauges	
3/4″-14	2365A115	$99.74	2365A215	$173.53
1″-11 1/2	2365A116	112.80	2365A216	197.66
1 1/4″-11 1/2	2365A117	122.54	2365A217	215.77
1 1/2″-11 1/2	2365A118	137.89	2365A218	256.49
2″-11 1/2	2365A119	164.35	2365A219	307.79

About Gauge Block Grades and Tolerances

Gauge blocks are classified by grades based on tolerance—the smaller the tolerance the greater the accuracy.

Sizes (S)	Inch Size Tolerances	
	Grade 0	Grade AS-1
0-0.050″	+0.000006″, –0.000006″	+0.000012″, –0.000012″
0.051″-1″	+0.000006″, –0.000006″	+0.000012″, –0.000012″
2″	+0.000008″, –0.000008″	+0.000016″, –0.000016″
3″	+0.000010″, –0.000010″	+0.000020″, –0.000020″
4″	+0.000012″, –0.000012″	+0.000024″, –0.000024″
5″	+0.000016″, –0.000016″	+0.000032″, –0.000032″
6″	+0.000016″, –0.000016″	+0.000032″, –0.000032″
8″	+0.000020″, –0.000020″	+0.000040″, –0.000040″
12″	+0.000028″, –0.000028″	+0.000056″, –0.000056″

Sizes (S), mm	Metric Size Tolerances, mm	
	Grade 0	Grade AS-1
0-5	+0.00014, –0.00014	+0.00030, –0.00030
5.001- 10	+0.00012, –0.00012	+0.00020, –0.00020
10.001- 25	+0.00014, –0.00014	+0.00030, –0.00030
25.001- 50	+0.00020, –0.00020	+0.00040, –0.00040
50.001- 75	+0.00025, –0.00025	+0.00050, –0.00050
75.001-100	+0.00030, –0.00030	+0.00060, –0.00060
125	+0.00040, –0.00040	+0.00080, –0.00080
150	+0.00040, –0.00040	+0.00080, –0.00080
175	+0.00050, –0.00050	+0.00100, –0.00100
200	+0.00050, –0.00050	+0.00100, –0.00100

Gauge Blocks

Precision gauge blocks are vital to dimensional quality control. They're commonly used for exacting layout, machine setup, and production of close-tolerance dies and fixtures. They are also excellent for checking the accuracy of measuring instruments such as micrometers. Blocks are high-carbon, high-chrome steel and have excellent stability and resistance to thermal expansion. They are individually numbered for recalibration at a later date. All meet ASME B89.1.9.

Block size (S) refers to the distance between the block's two measuring surfaces. To get a size that isn't offered below, press two clean blocks together with a twisting/sliding motion.

Rectangular Blocks—Dimension (A) is 0.354″ (9 mm). Dimension (B) for 0″ to 0.400″ blocks is 1.181″ (30 mm); Dimension (B) for 0.450″ blocks and larger is 1.378″ (35 mm).

Square Blocks—Dimensions (A) and (B) are both 0.949″ (24.1 mm).

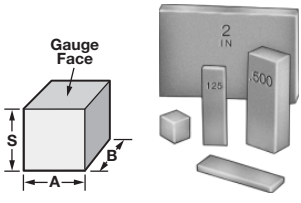

Mitutoyo Grade 0 Gauge Blocks

All include a certificate of accuracy traceable to NIST. **To Order:** Where applicable, specify size from ranges shown in the table.
Also Available: Grade AS-1 blocks in inch and Grade 0 in metric sizes. Ask for 1809A3 for inch or 2249A21 for metric and specify size.

Sizes (S)	Increments		
Rectangular			
0.004″-0.007″	0.001″	19575A12	$109.00
0.008″-0.011″	0.001″	19575A13	92.60
0.012″-0.019″	0.001″	19575A14	85.40
0.02005″	—	19575A138	42.36
0.020″-0.0209″	0.0001″	19575A15	44.76
0.021″-0.035″	0.001″	19575A15	44.76
0.036″-0.039″	0.001″	19575A17	40.20
0.040″-0.049″	0.001″	19575A18	30.10
0.050″-0.090″	0.01″	19575A21	37.44
0.0625″	—	19575A202	37.44
0.078125″	—	19575A65	35.60
0.10005″	—	19575A204	22.80
0.100″-0.1009″	0.0001″	19575A31	23.38
0.101″-0.149″	0.001″	19575A31	23.38
0.150″-0.200″	0.01″	19575A31	23.38

Sizes (S)	Increments		
Rectangular (Cont.)			
0.210″	—	19575A276	$28.00
0.250″	—	19575A277	28.00
0.300″-0.400″	0.05″	19575A41	28.00
0.375″	—	19575A307	28.00
0.450″-0.850″	0.05″	19575A51	33.90
0.900″-0.950″	0.05″	19575A61	37.45
1.000″	—	19575A294	40.85
2.000″	—	19575A295	55.50
3.000″	—	19575A296	61.70
4.000″	—	19575A297	71.90
5.000″	—	19575A298	224.00
6.000″	—	19575A299	266.00
8.000″	—	19575A302	325.00
12.000″	—	19575A304	573.00

Sizes (S)	Increments		
Square			
0.020″-0.0209″	0.0001″	2233A2	$59.94
0.021″-0.030″	0.001″	2233A2	59.94
0.040″	—	2233A34	59.94
0.050″-0.090″	0.01″	2233A3	40.77
0.0625″	—	2233A37	40.77
0.10005″	—	2233A43	27.00
0.100″-0.1009″	0.0001″	2233A4	27.53
0.101″-0.149″	0.001″	2233A4	27.53
0.150″-0.190″	0.01″	2233A4	27.53
0.200″	—	2233A5	27.00
0.250″-0.350″	0.05″	2233A6	34.70
0.400″-0.800″	0.05″	2233A7	43.42
0.850″-1.000″	0.05″	2233A8	48.40
2.000″	—	2233A9	78.60

Gauge Block Sets

Sets consist of rectangular blocks in a case. A certificate of calibration traceable to NIST is included, except Mitutoyo sets, which include a certificate of accuracy traceable to NIST.

9-Block Inch Sets—One block each in sizes 0.0625″, 0.100″, 0.125″, 0.200″, 0.250″, 0.300″, 0.500″, 1.000″, and 2.000″. 2210A12 and A67 include an optical flat to check flatness and parallelism.

34-Block Inch Set—Nine blocks in sizes 0.1001″ to 0.1009″ in 0.0001″ increments; nine blocks in sizes 0.101″ to 0.109″ in 0.001″ increments; nine blocks in sizes 0.110″ to 0.190″ in 0.01″ increments; one block each in sizes 0.100″, 0.200″, 0.300″, 0.500″, 1.000″, 2.000″, and 4.000″.

35-Block Inch Set—One block in size 0.10005″; nine blocks in sizes 0.1001″ to 0.1009″ in 0.0001″ increments; nine blocks in sizes 0.101″ to 0.109″ in 0.001″ increments; 10 blocks in sizes 0.100″ to 0.190″ in 0.01″ increments; one block each in sizes 0.200″, 0.300″, 0.500″, 1.000″, 2.000″, and 4.000″.

36-Block Inch Sets—Nine blocks in sizes 0.1001″ to 0.1009″ in 0.0001″ increments; nine blocks in sizes 0.101″ to 0.109″ in 0.001″ increments; nine blocks in sizes 0.110″ to 0.190″ in 0.01″ increments; five blocks in sizes 0.100″ to 0.500″ in 0.1″ increments; one block each in sizes 0.050″, 1.000″, 2.000″, and 4.000″.

81-Block Inch Sets—Nine blocks in sizes 0.1001″ to 0.1009″ in 0.0001″ increments; 49 blocks in sizes 0.101″ to 0.149″ in 0.001″ increments; 19 blocks in sizes 0.050″ to 0.950″ in 0.05″ increments; four blocks in sizes 1.000″ to 4.000″ in 1″ increments.

10-Block Metric Sets—One block each in sizes 1, 1.25, 1.5, 2, 3, 5, 10, 15, 20, and 25 mm.

47-Block Metric Set—One block in size 1.005 mm; 19 blocks in sizes 1.01 to 1.19 mm in 0.01 mm increments; eight blocks in sizes 1.2 to 1.9 mm in 0.1 mm increments; 10 blocks in sizes 1 to 10 mm in 1 mm increments; nine blocks in sizes 20 to 100 mm in 10 mm increments.

87-Block Metric Sets—2262A3 has nine blocks in sizes 1.001 to 1.009 mm in 0.001 mm increments; 49 blocks in sizes 1.01 to 1.49 mm in 0.01 mm increments; 19 blocks in sizes 0.5 to 9.5 mm in 0.5 mm increments; 10 blocks in sizes 10 to 100 mm in 10 mm increments.

2226A2 has nine blocks in sizes 1.001 to 1.009 mm in 0.001 mm increments; 50 blocks in sizes 1.01 to 1.50 mm in 0.01 mm increments; 17 blocks in sizes 2 to 10 mm in 0.5 mm increments; nine blocks in sizes 20 to 100 mm in 10 mm increments; one 0.5 mm block; one 1 mm block.

No. of Blocks	Grade	Mfr. Number		
Mitutoyo—*Inch*				
9	0	516-930-26	2210A12	$314.33
9	AS-1	516-931-26	2210A67	273.49
9	AS-1	516-935-26	2210A68	210.82
35	0	516-914-26	2210A65	902.15
81	0	516-902-26	2210A72	1,718.83
Mitutoyo—*Metric*				
10	0	516-103-26	2262A1	342.00
10	AS-1	516-101-26	2262A2	263.00
87	0	516-946-26	2262A3	2,297.74
Starrett—*Inch*				
9	0	RS9.A1	2305A1	309.60
34	0	RS34.A1	2305A9	901.25

★ Tolerance is +0.00005″, –0.00005″. Does not meet ASME 89.1.9.

No. of Blocks	Grade	Mfr. Number		
Starrett—*Inch (Cont.)*				
81	0	RS81.A1	2305A3	$1,537.33
Economy—*Inch*				
36	0	—	2318A65	402.18
36	AS-1	—	2318A66	334.69
36	★	—	2318A22	226.88
81	0	—	2318A68	610.71
81	AS-1	—	2318A69	516.80
81	★	—	2318A23	271.11
Economy—*Metric*				
47	0	—	2226A1	385.37
87	0	—	2226A2	540.97

Compasses

A

B

C

D

Who needs the North Star when you have these compasses to guide you. All have a 0° to 360° scale. ***Style C*** is digital with a reverse scale. Includes a CR2032 lithium battery. ***Style D*** have a reverse scale.

	Graduations	Accuracy	Housing Material	Overall Size, Ht. × Wd. × Dp.		Each
A	2°	2°	Clear Lucite	3½″ × 2¼″ × ½″	20185A18	$14.52
B	2°	2°	Clear Lucite	3 5/16″ × 2¼″ × ⅝″	20185A21	30.60
C	1°	2°	Tan Plastic	3½″ × 2 5/16″ × ¾″	19935A64	84.54
D	0.5°	0.3°	Aluminum	3″ × 2″ × 9/16″	19935A66	157.08
D	1°	0.5°	Yellow ABS Plastic	2⅞″ × 2⅛″ × ⅝″	19935A65	82.48

Global Positioning System Receiver

Never get lost again—this pocket-size receiver provides latitude, longitude, and direction. It has a built-in worldwide map (with major rivers, lakes, and cities). It also stores points of interest, trails, and routes. Has a full color 2.2″ display. Accurate to within 10 to 16 ft.

Receiver is weather resistant, has 500 MB of usable memory, and includes a user guide. Operates on two AA batteries (included). Operating temperature range is 14° to 140° F. Designed for outdoor use; not suitable for indoor use due to poor satellite reception in buildings.

	Overall Size		Each
Receiver	4.4″ Ht. × 2.2″ Wd. × 1.4″ Dp.	21395A41	$249.61
Replacement AA Battery (Requires 2)		65605T72	.68
Optional Carrying Case		21395A44	25.07

Tripods

E

F

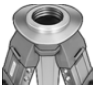
G

Made of aluminum with changeable feet—sharp points and rubber (unless noted). Head is flat. Use ***Style F*** with optical plumb instruments. It has an opening for aligning plumb crosshairs to a reference point on the ground. ***Thread adapter*** converts ⅝″-11 male threads to ¼″-20 male threads.

	Mounting Thread(s), Male	Height		Each
E	½″-20, ⅝″-11	38″ to 63″	8973A84■	$96.17
F	⅝″-11	42″ to 65″	8973A81	88.02
G	3½″-8	42″ to 65″	8973A83	208.23
Thread Adapter			8973A43	Each $23.37

■ Sharp point feet only.

Levels and Transit Levels

Manual Level

Automatic Level

Standard Transit Level

Transit Level with Laser Plumb Dot

Levels—Can be turned sideways, but cannot be tilted up or down. *Manual level* has four leveling screws to adjust line of sight. *Automatic levels* have a compensator that automatically adjusts the line of sight and keeps it level if bumped or moved by vibration.

Transit Levels—Can turn sideways and tilt up and down, thus they indicate not only true horizontal, but also the angle of inclination. *Standard* has four leveling screws to adjust line of sight, as well as a lever that quickly converts instrument from a transit level to a level. *Transit level with laser plumb dot* allows for fast and easy setup. Laser is Class IIM, 635 nm wavelength. It generates a ⅛″ dia. dot at 4′6″ with 2 minute sensitivity. Includes a CR123A lithium battery, carrying case, weather shade, and instructions.

Sets—Include a level, leveling rod, and tripod. *Leveling rod* aids sight leveling and is aluminum, telescopes from 4- to 8-ft. high, and is graduated in feet and inches to 8ths. *Tripod* is aluminum and adjusts from 38″ to 63″ high.

	Magnification	Accuracy	Working Range	Horizontal Angle Range	Horizontal Angle Graduations	Vertical Angle Range	Vertical Angle Graduations	Mounting Thread, Female	Individual Instruments	Each	Sets	Each
Levels—*For Horizontal Leveling and Grading*												
Manual	20X	¼″ @ 100 ft.	200 ft.	0°-360°	15 min.	—	—	⅝″-11	1926A41	$334.09	1926A51	$416.18
Automatic	22X	3/32″ @ 150 ft.	250 ft.	0°-360°	1°	—	—	⅝″-11	1926A42	315.05	1926A52	445.08
Automatic	26X	1/16″ @ 200 ft.	325 ft.	0°-360°	1°	—	—	⅝″-11	1926A43	372.28	1926A53	471.59
Standard Transit Level—*For Horizontal and Vertical Leveling and Grading*												
Manual	20X	¼″ @ 100 ft.	200 ft.	0°-360°	15 min.	0°-40°★	1°	½″-20	1926A44	484.24	1926A54	582.28
Transit Level with Laser Plumb Dot—*For Horizontal and Vertical Leveling and Grading*												
Manual	26X	3/16″ @ 150 ft.	400 ft.	0°-360°	5 min.	0°-45°★	1°	⅝″-11	1926A46	989.18	—	—

★ Measures in both directions.

Sight Levels

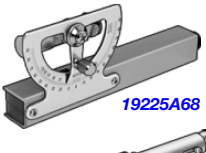
19225A68

19225A65

Quickly and accurately establish a level sight line with these yellow pocket-size instruments.

Nonmagnifying have an enclosed vial. 19225A62 has a lens crosshair and reference lines that correspond to the working distance. Comes with a pocket clip. 19225A68 (also known as an Abney level) is a topographic level with a radius arc graduated 0° to 90° in both directions, vernier reading to 10 minutes, and a grade scale of 0 to 100%. Comes with a padded belt-loop case.

Magnifying come with a padded belt-loop case. 19225A67 has 2X magnification of objective and an enclosed vial. 19225A65 has 5X magnification of objective and 2X magnification of level bubble. An objective lens is mounted on a movable slide to bring distant objects into sharp focus. Lens has reference lines that correspond to the working distance.

	Housing	Length		Each
Nonmagnifying	Aluminum	5″	19225A62	$19.39
Nonmagnifying	Aluminum	5¼″	19225A68	75.02
Magnifying	Brass	6″-7½″	19225A67	72.02
Magnifying	Brass	8″-9″	19225A65	103.41

Telescoping Leveling Rods

J

Use these telescoping leveling rods with transit and sight levels for easier sight leveling.

(H&J) Fiberglass leveling rods are nonconductive. *Style H* are rectangular; *Style J* are oval and include a carrying case.

(K) Aluminum leveling rods are rectangular.

Overall Length Open	Closed	Graduations		Each
(H) Fiberglass—*Rectangular*				
13 ft.	4 ft., 10 in.	ft./in./8ths	19235A58	$86.78
13 ft.	4 ft., 10 in.	ft./10ths/100ths	19235A59	86.78
16 ft.	4 ft., 8 in.	ft./in./8ths	19235A53	132.58
5 m	1.44 m	m/dm/cm/0.5 cm	19235A54	132.58
Optional Carrying Case for Style H			19235A61	18.89
(J) Fiberglass—*Oval*				
25 ft.	5 ft., 6 in.	ft./in./8ths	19235A68	226.26
25 ft.	5 ft., 6 in.	ft./10ths/100ths	19235A69	226.26
(K) Aluminum—*Rectangular*				
8 ft.	2 ft., 8 in.	ft./in./8ths	19235A55	45.20
16 ft.	3 ft., 2.4 in.	ft./in./8ths	19235A56	67.17
Optional Carrying Case for Style K			19235A62	17.82

Chalk Line Reels

Creating chalk lines couldn't be easier. These corrosion-resistant chalk line reels lock and include a line. Fill them with powdered marking chalk (sold separately on this page).

(A) Standard Chalk Line Reels—Have a durable cast aluminum case that fits in your pocket. Double as a plumb bob.

(B) Quick-Return Chalk Line Reel—Rewinds three times faster than other chalk line reels. Case is chrome-plated ABS plastic and fits in your pocket. Doubles as a plumb bob.

(C) Giant Chalk Line Reels—With a large chalk capacity these reels handle big jobs and make big, bold lines. Case is orange high-impact ABS plastic with a D-handle.

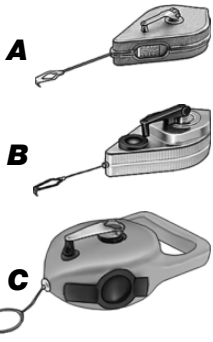

	Cord Lg., ft.	Chalk Cap., oz.	Complete Unit	Each	Repl. Lines	Each
A	50	2	2026A11	$6.46	2026A13 ♦	$2.06
A	100	2	2026A12	7.10	2026A14 ♦	2.60
B	100	3	2267A28	8.65	2267A68 ♣	2.11
C	100	15	23605A16	24.98	23605A14 ♦	9.52
C	150	24	23605A24	40.94	23605A14 ♦	9.52

♦ Cord Only. ♣ Cord with spool.

Smudge-Resistant Ink Line Reel

Making precise semipermanent lines is a snap with this ink line reel. It holds 65 ft. of nylon line and ⅔ oz. of ink. Plus, it automatically rewinds up to 25 ft. of line. Comes with a 3.5-oz. bottle of red quick-dry ink or choose a color from the ink sold separately.

2126A22 ..... Each $24.61

Ink	Size		Each	Ink	Size		Each
Black	6 oz.	2126A31	$11.24	Red	6 oz.	2126A32	$11.24
Blue	6 oz.	2126A33	11.24	White	6 oz.	2126A34	11.24

Plumb Bobs and Cord

Bobs are polished and have a removable cap for cord replacement. ***Steel bobs*** are chrome-plated, machined hexagonal steel. ***Brass bobs*** are lacquered brass with replaceable hardened-steel points. ***Cord*** (sold separately) is 1/32″ braided white linen and is for 5- to 32-oz. bobs.

Steel

Brass

Weight	Lg.	Hex/Dia.♠		Each
Steel Bobs				
5 oz.	3½″	⅞″	2161A11	$5.86
8 oz.	4″	31/32″	2161A12	6.21
12 oz.	4½″	15/32″	2161A13	9.07
Brass Bobs				
6 oz.	47/32″	11/16″	2178A1	18.26
8 oz.	447/64″	13/16″	2178A2	18.48
10 oz.	5⅛″	1¼″	2178A3	20.09
12 oz.	527/64″	123/64″	2178A4	21.73
16 oz.	529/32″	131/64″	2178A5	22.41
18 oz.	615/64″	139/64″	2178A55	26.21
24 oz.	651/64″	123/32″	2178A6	29.73
32 oz.	7½″	1⅞″	2178A64	40.63
Repl. Steel Point for Brass Bobs			2178A7	3.08
Cord (25-yd. spool)			2178A8	6.70

♠ Measured at widest point.

Leather Plumb Bob Sheaths

A retaining strap with snap holds plumb bobs securely.

For Bobs		Each
8 to 12 oz.	2179A6	$10.46
12 to 18 oz.	2179A7	11.62
24 to 32 oz.	2179A8	11.62

Multimount Cord Reel and Plumb Bob

Plumb work is quick and easy with this combination cord reel and plumb bob—an adjustable hook, magnet, and stainless steel pin allow for a variety of mounting settings. The cord reel includes 14½ ft. of braided nylon line that retracts automatically for easy cord storage.

The bob is 14 oz. and chrome plated. It has a quick-stabilizing cap that reduces bob wobble and spin. Cord reel also accepts any plumb bob from 3.5 to 35 oz.

2240A44 ..... Each $42.70

Marking Chalk

Nonpermanent and ***permanent powdered chalk*** comes in a plastic squeeze bottle with a long spout for effortless filling.

Chalk cake is a 2¼″ Dia.×1″ Ht. hemispherical cake.

Nonpermanent Powdered Chalk

Lime and *orange* colors are fluorescent.

Color	8-oz. Bottle	Each	12-oz. Bottle	Each	5-lb. Bottle	Each
Black	2159A12	$1.55	2159A15	$2.03	2159A44	$8.22
Blue	2159A21	1.55	2159A25	2.03	2159A65	8.22
Red	2159A18	1.55	2159A23	2.03	2159A63	8.22
White	2159A19	1.55	2159A24	2.03	2159A64	8.22
Yellow	2159A22	1.55	2159A26	2.03	2159A66	8.22
Lime	2159A34	2.26	—	—	2159A35	13.15
Orange	2159A67	2.32	—	—	2159A69	13.15

8-oz. Bottle

Permanent Powdered Chalk

Chalk mark lasts 3-5 times longer than nonpermanent chalk and is water resistant.

Color	Bottle Size		Each
Black	8 oz.	3342A34	$3.72
Blue	8 oz.	3342A33	3.72
Red	8 oz.	3342A32	3.72

Chalk Cake

Color	Pkg. Qty.		Per Pkg.
Blue	72	22015A2	$14.86
Red	72	22015A3	14.86
White	72	22015A1	14.86

Adjustable-Dot Lasers

20005A21 with Optional Bracket

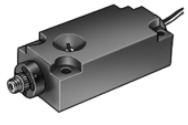
20005A43

These tools make aligning and positioning machinery, tools, and equipment easier and more precise. Lasers also have a focus adjustment to produce a smaller dot at distances of 12 ft. or less. Dot is 1/32″ dia. at 3 ft., 1/16″ Ht.×⅛″ Wd. at 5 ft., 3/16″ Ht.×7/16″ Wd. at 25 ft., and ½″ Ht.×1¼″ Wd. at 100 ft. Recommended range is 0 to 100 ft. Laser is Class IIIA, 650 nm wavelength. Housing is aluminum. Laser has an on/off switch. For indoor use; visibility will decrease in brightly lit areas.

Flat Lasers—These lasers have a bottom that's machined flat to within 0.001″ and four 0.200″ dia. mounting holes (fasteners not included).

Battery powered lasers use one 3-volt lithium battery (sold separately) for 40 hours of continuous use. ***110 VAC powered*** lasers have a 6-ft. cord with two-prong plug.

Accessories—*Mounting bracket for cylindrical lasers* has a dovetail clamp and two 0.219″ dia. mounting holes (fasteners not included). Size is 1″ Lg.×1.120″ Wd.×1.470″ Ht.

Beam splitter converts laser dot into two dots that project at a 90° angle. The second dot can be locked at 12-, 3-, 6-, and 9-o'clock positions.

Variable-length line generator converts laser dot into a line length between 0-12″ at a 1 ft. distance. As the distance between laser and surface increases, line length increases at a 1:1 ratio.

Crosshair optics projects a dotted cross on a surface. Cross image increases 2″ in size for every 12″ of distance.

Variable brightness filter decreases dot brightness 5-95% for easier viewing.

	Overall Size		Each
Cylindrical Lasers			
Battery Powered	¾″ Dia.×3¾″ Lg.	20005A21	$450.94
110 VAC Powered	¾″ Dia.×3¾″ Lg.	20005A23	450.94
Flat Lasers			
Battery Powered	4″ Lg.×1½″ Wd.×1″ Ht.	20005A41	450.94
110 VAC Powered	4″ Lg.×1½″ Wd.×1″ Ht.	20005A43	450.94
Accessories			
Mounting Bracket for Cylindrical Lasers		20005A27	73.58
Beam Splitter		20005A31	243.40
Variable-Length Line Generator		20005A32	205.66
Crosshair Optics		20005A33	92.45
Variable Brightness Filter		20005A34	73.58
3-Volt Lithium Battery		7821K63	5.64

Miniature Lasers

Simply hook these tiny lasers to a power source and you're ready to start aligning and positioning. The dot size and line width increase as the distance increases. Visibility will decrease in brightly lit areas.

Lasers with brass housing have built-in electronic protection against surges. Plus, the brass transfers heat away from the laser to prevent breakdown of the laser.

Lasers with Aluminum Housing and Plastic Lens

Fixed Dot w/Optional Laser Mount

Lasers have 12″ long wire leads with a plug that fits the optional plug-in transformer. Or you can cut off the plug and connect the wire leads to a 5 VDC power supply (operating voltage is 3.3-9 volts). For indoor use.

Fixed-dot laser projects a 3/8″ Ht.×3/4″ Wd. elliptical dot at 100 ft. Laser is IEC60825 Class 2, 670 nm wavelength.

Line-generator laser projects a line at a 90° viewing angle. Line is 2 ft. long at 1 ft.; 19 5/8 ft. long at 10 ft. Line is 0.118″ wide at 10 ft. Laser is IEC60825 Class 1M, 670 nm wavelength.

Optional laser mount allows for 80° rotation. It has a removable magnetic base and one 1/4″-20 threaded hole (fastener not included) for mounting. ***Optional plug-in transformer*** has 110 VAC input, 5 VDC output, and a 6-ft. cord with two-prong plug.

	Power, mW	O'all Size, Dia.×Lg.		Each
Fixed Dot	0.75-0.95	7/16″×1 7/16″	2073A11	$102.73
Line Generator	0.75-0.95	1/2″ ×1 15/16″	2073A21	130.00
Optional Laser Mount			2073A31	91.11
Optional 1″ OD Pipe Laser Mount			2073A32	78.55
Optional Plug-In Transformer			2073A33	66.93

Lasers with Brass/Aluminum Housing and Glass Lens

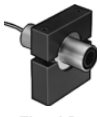

Fixed Dot w/Optional Laser Mount

Lasers have 36″ long wire leads that can be connected to a 5 VDC power source or to the optional male-plug connector and optional plug-in transformer.

Fixed-dot laser projects a 7/16″ dia. dot at 100 ft. Recommended range is 0 to 200 ft. Laser is Class IIIA, 670 nm wavelength. For indoor and outdoor use.

Line-generator laser projects a line at a 60° viewing angle. Line is 13 29/32″ long at 1 ft.; 41 5/8″ long at 3 ft. Line is about 0.059″ wide at 3 ft. Recommended range is 0 to 25 ft. Laser is Class II, 635 nm wavelength. For indoor use.

Optional laser mount holds a laser module horizontally or can be tilted 15° up or down. It also acts as a heat dissipater and electrical insulator. It is 1 3/4″ Ht.×1 1/2″ Wd.×1/2″ Dp. and has three mounting holes (two 8-32 and one 1/4″-20; fasteners not included). ***Optional plug-in transformer*** has 90-264 VAC input, 5 VDC output, and a 6-ft. cord with three-prong plug.

	Power, mW	O'all Size, Dia.×Lg.		Each
Fixed Dot	2.3	9/16″ ×1 3/4″	2046A12	$366.67
Line Generator	2	11/16″×1 3/8″	2046A22	256.86
Optional Laser Mount			2046A31	134.59
Optional Male-Plug Connector			2046A32	8.89
Optional Plug-In Transformer			2046A33	84.44

Adjustable-Dot Laser with Brass Housing and Glass Lens

Laser

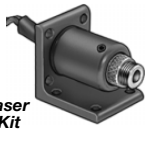

Laser Kit

Laser projects an elliptical dot that can be adjusted to a 1/32″ dia. dot at 3 ft. and a 1/8″ dia. dot at 25 ft. Recommended range is 0 to 100 ft. It has two 6″ long wire leads that connect to a 3-5 VDC power source. Laser is Class IIIA, 650 nm wavelength. For indoor use; must have a target or detector for outdoor use. Targets sold separately on page 2295.

Accepts the following series 20005A accessories sold on page 2293: beam splitter (A31), variable-length line generator (A32), crosshair optics (A33), and variable brightness filter (A34).

Laser kit includes laser, tube housing with X and Y adjustments to reposition beam without moving laser, 1″×1″ mounting bracket with eight 1/8″ dia. holes, and a 110 VAC power supply with a 6-ft. cord with two-prong plug.

Power, mW	Overall Size, Dia.×Lg.	Laser	Each	Laser Kit	Each
5.0	7/16″×1″	2055A11	$185.42	2055A21	$281.13

Right-Angle Line Laser

Project two right-angle lines for easier aligning. Plus, this laser has a built-in protractor so you can project beams at precise angles of 30°, 45°, 60°, 75°, and 90°. Line is 0.0625″ wide at 50 ft. Recommended range is 0 to 30 ft. Accuracy is ±1/4″ at 60 ft. Laser is Class IIIA, 635 nm wavelength. For indoor use. Visibility will decrease in brightly lit areas.

Housing is plastic with two slots for securing to a surface. Overall size is 6 1/8″ Lg.×6 1/8″ Wd.×1 15/16″ Ht. Operates on two AA batteries (included) for up to 30 hours of continuous use. Includes a target and a soft-sided case.

2019A33 ..... **Each** $82.38

Harsh Environment Dot Lasers

115 VAC with Optional Mounting Bracket and Base

Align and position tools, machinery, and conveyor equipment in washdown and harsh areas. These dot lasers have a sealed, watertight brass housing to keep out dust and moisture. Three removable covers are included to change the laser dot to 1/16″, 3/32″, or 1/8″ dia. at 18″. Recommended range is 0 to 100 ft. Accuracy is ±1/8″ at 100 ft. Temp. range is 14° to 122°F. Laser is Class IIIA, 635 nm wavelength. For indoor use; visibility will decrease in brightly lit areas.

115 VAC laser has a 6-ft. 2-wire cord with two-prong adapter.
4-24 VDC laser has a 6-ft. 2-wire cord with tinned leads.
Optional mounting bracket acts as a heat dissipater for all lasers.

	Overall Size		Each
115 VAC	3/4″ Dia.×3 1/4″ Lg.	5198T71	$382.69
4-24 VDC @ 50 mA	3/4″ Dia.×3 1/4″ Lg.	5198T72	286.54
Optional Mounting Bracket		5198T91	57.29
Optional Magnetic Base for Mounting Bracket		5198T92	40.62

Optional Line-Laser Lenses

Convert your dot laser into a line laser. These optical glass lenses thread easily to the above lasers. Line is 1/16″ wide at 3 ft. Housing is brass.

Line @ 18″ Distance	Viewing Angle		Each
6″ Lg.	20°	5198T84	$72.92
25″ Lg.	70°	5198T85	72.92

Center-Finding Dot Laser

with Drill Chuck (Not Included)

Precisely mark drilling positions and extend centerlines for alignment. Simply place the stud end of this tool into a drill or lathe chuck and it finds your center. Fits into any 1/4″ or larger chuck or hole. Four screws adjust the horizontal and vertical position of the beam.

Projects a dot that has a diameter between 0.1 and 0.5 mm. Recommended range is 1″ to 12″. Laser is Class IIIA, 650 nm wavelength. Housing is aircraft aluminum. Size is 3/4″ Dia.×2 3/4″ Lg. Operates on three 1.5-volt batteries (included); approximately three hours of continuous use. For indoor use; visibility will decrease in brightly lit areas.

Dot Laser ..... 2035A7 **Each** $158.46
Repl. Battery (3 req.) ..... 7604K14 **Each** $1.44

Multi-Dot Lasers

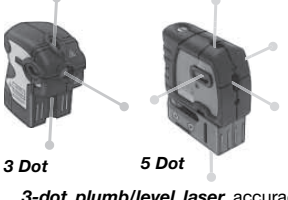

3 Dot ***5 Dot***

Multiple laser dots make layout, installation, and aligning work easier and quicker. These lasers project a 1/4″ dia. dot at 100 ft., automatically level themselves within 5°, and have an "out of level" indicator. Recommended range is 0 to 100 ft. For indoor use. Visibility will decrease in brightly lit areas. Housing is rubber-cushioned impact-resistant plastic.

3-dot plumb/level laser accuracy is ±1/4″ at 100 ft.; down plumb accuracy is ±1/4″ at 50 ft. Laser is Class III, 635 nm wavelengths. Size is 4 1/2″ Ht.×2 1/2″ Wd.×4″ Dp. Includes a magnetic wall bracket, a 1 1/2″ high floor stand, a target, and a padded nylon case. Operates on three AA batteries (included) for up to 15 hours of intermittent use. Lasers fit on tripods with a 1/4″-20 or 5/8″-11 connection. See page 2292 for tripods.

5-dot plumb/level/square laser accuracy is ±1/4″ at 100 ft.; down plumb accuracy is ±1/4″ at 100 ft. Laser is Class II, 635 nm wavelengths. Size is 4 1/8″ Ht.×3 1/8″ Wd.×1 5/8″ Dp. Includes a multipurpose magnetic attachment, mounting strap, a recalibration wrench, and a padded canvas case. Operates on three AA batteries (included) for up to 24 hours of intermittent use. Lasers fit on tripods with a 1/4″-20 connection. See page 2292 for tripods.

3-Dot Plumb/Level Laser Tool ..... 1986A13 **Each** $182.29
5-Dot Plumb/Level/Square Laser Tool ..... 1986A17 **Each** $244.44

Multiline Laser

Check plumb and level with ease. Laser projects lines at a 130° viewing angle and automatically levels itself. A switch lets you select between horizontal beam, vertical beam, or both beams at the same time. Lines are 100 ft. long and 0.079″ wide at 30 ft. Recommended range is 0 to 100 ft. Accuracy is ±3/32″ at 30 ft. Laser is Class II, 635 nm. For indoor use. Visibility will decrease in brightly lit areas. Laser has an impact-resistant molded-rubber housing. Overall size is 4″ Lg.×3″ Wd.×4 1/8″ Ht. Includes a 5″ high mini tripod, a magnetic mount, a hold-down strap, and a plastic case. Operates on three AA batteries (included) for up to 25 hours of continuous use and fits on tripods with a 1/4″-20 or 5/8″-11 connection. See page 2292 for tripods.

Multiline Laser ..... 4098T25 **Each** $270.48

360° Rotary Lasers

Get 360° leveling. These lasers can scan back and forth to appear as a short line (except for 19985A55) or rotate to appear as a horizontal line 360° around an enclosed area. Plus, a vertical plumb dot beam gives you a constant 90° squaring beam. Lasers can also be set on their side to produce a 360° rotating vertical line and a horizontal dot. Lasers are Class IIIA, 635 nm wavelength. Use indoors; for working outdoors use with the included laser-enhancing glasses. Visibility decreases in brightly lit areas. All include a detector for sensing the laser when it cannot be seen. Tools fit tripods with a 5/8″-11 connection (sold separately, see page 2292) and include a 6-volt adapter/charger, a carrying case, and batteries (unless noted).

Horizontal/vertical automatic leveling and ***horizontal automatic leveling/vertical manual leveling*** lasers have a self-leveling range for quick setup on uneven surfaces (±5° for 19985A42, ±3° for A55, and ±3.5° for A51) and an audible and visual alarm when laser is out of level. 19985A42 and A51 also include a remote control. Size is 5 3/4″ Lg. × 7 3/4″ Wd. × 7 5/8″ Ht. (unless noted).

Horizontal/vertical manual leveling laser has large leveling knobs and precision vials. Size is 5 1/8″ Lg. × 5 1/8″ Wd. × 6 1/8″ Ht.

Max. Distance Without Detector	Max. Distance With Detector	Accuracy at Recommended Distance	Accuracy at Maximum Distance	Dot Size at Recommended Distance, dia.	Dot Size at Maximum Distance, dia.	Rotation Speeds, rpm	Batteries No. of/ Type	Batteries Life, hours		Each
Horizontal/Vertical Automatic Leveling										
100 ft.	1,000 ft.	±1/16″ @ 100 ft.	± 5/8″ @ 1,000 ft.	1/4″ @ 100 ft.	5/8″ @ 1,000 ft.	120, 500	4/C	20	19985A42■	$1,104.85
Horizontal Automatic Leveling/Vertical Manual Leveling										
100 ft.	400 ft.	±1/8″ @ 50 ft.	±1″ @ 400 ft.	—	—	200, 400, 600	4/AA	20	19985A55♦	570.11
100 ft.	1,000 ft.	±1/8″ @ 100 ft.	±1 1/4″ @ 1,000 ft.	3/32″ @ 100 ft.	1/4″ @ 1,000 ft.	150, 200, 250, 300	4/C	15	19985A51■♣	983.02
Horizontal/Vertical Manual Leveling										
100 ft.	400 ft.	±1/4″ @ 100 ft.	±1″ @ 400 ft.	1/8″ @ 50 ft.	1/4″ @ 400 ft.	150-300	4/AA	15	19985A54♦	368.60
C Battery									65605T73	1.50
AA Battery									65605T72	.68

■ Batteries not included (sold separately above). ♦ 6-Volt adapter/charger not included. ♣ Size is 7 3/32″ Lg. × 6 3/8″ Wd. × 7 15/16″ Ht.

Long-Distance Laser Levels

Precision Standard Laser

Never bother with string, transits, or water levels again—these laser levels project an elliptical dot for aligning machines, walls, and beams, as well as for pipe laying and construction applications. Simple to use; just aim the level to project a dot onto a surface up to 500 ft. away (unless noted), and mark the laser dot, which has a bull's eye appearance. Laser is Class IIIA. Levels are made of aircraft-grade aluminum with one recessed, 5-minute accuracy level vial (except 21475A63, which has one 45 minute accuracy vial). Use indoors. Batteries are included.

Standard lasers have 670 nm wavelength; ***bright lasers*** have 635 nm wavelength—20 times brighter than standard lasers for improved outdoor viewing.

General Purpose and ***Commercial Laser Levels***—Project a 3/8″ Ht. × 3/4″ Wd. elliptical dot at 100 ft.; dot size will increase as distance increases. Operate on two AAA batteries for 12 hours of continuous use.

Precision Laser Levels—In addition to the level vial, they have two 30-min. plumb vials. They project a 1/4″ Ht. × 7/16″ Wd. elliptical dot at 100 ft.; dot size increases as distance increases. Fit tripods with 1/4″-20 connection. For use with tripods with 5/8″-11 connection, you will need the *leveling plate* (21475A54, sold separately below). For 5/8″-11 tripods, see page 2292. Operate on 3-volt lithium batteries for 30 hours of continuous use. All vials are acrylic with yellow fluid.

Laser Level Kits—Include 100-ft. precision laser level, beam splitter, leveling plate, and carrying case.

Accessories—*Beam splitter* splits laser beam into two beams at a 90° angle. *Line generator* converts laser dot into a line. Acts as a chalk line for layouts. Line length varies as the distance and angle from the surface is changed. *Leveling plate* has a 2″ × 4″ mounting base with fine level adjustment and 360° swivel action. Fits tripods with 5/8″-11 connections (see 8973A68 on page 2292). *Transit adapter* has everything the leveling plate has plus horizontal and vertical axes for slope and grade applications.

	Accuracy	Lg. × Wd. × Ht.		Each
Standard Lasers				
Gen. Purpose	±1/4″ @ 25 ft.	6 1/2″ × 5/8″ × 1 1/4″	21475A63★	$171.51
Commercial	±1/8″ @ 50 ft.	6 1/2″ × 5/8″ × 1 1/4″	21475A62●	178.95
Precision	±1/8″ @ 100 ft.	9 1/2″ × 1″ × 1 1/8″	21475A61	239.47
Bright Lasers				
Commercial	±1/8″ @ 50 ft.	6 1/2″ × 5/8″ × 1 1/4″	21475A65	191.23
Precision	±1/8″ @ 100 ft.	9 1/2″ × 1″ × 1 1/8″	21475A64	311.32
Laser Level Kits				
With Standard Precision Laser			21475A67	438.33
With Bright Precision Laser			21475A68	463.33
Accessories				
Beam Splitter			21475A55	98.07
Line Generator			21475A57	98.07
Leveling Plate			21475A54	96.49
Transit Adapter			21475A56	261.40
Replacement AAA Battery			65605T71	.79
Replacement 3-Volt Lithium Battery			7821K63	5.64

★ Maximum distance is 50 ft. ● Maximum distance is 100 ft.

Magnetic Laser Targets

Make laser aligning even easier with targets. They have bull's-eye centers, graduation marks (mm on left and inches on right), and magnets on the top. Made of plastic.

Color	Overall Size, Ht. × Wd.		Each
Translucent	4″ × 3″	5741T31	$34.00
Red Reflective	4″ × 3″	5741T32	49.40

Compact Laser Levels with Magnetic Base

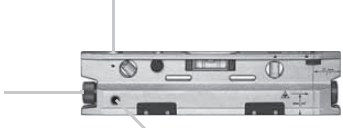

Three-Beam Level

It's easy to achieve precise leveling with these torpedo-style laser levels. They project a reference laser dot or line and have a magnetic base for hands-free operation. Lasers operate at 650 nm wavelength. They have an aluminum housing and a V-grooved base with four magnets for holding on to ferrous surfaces. Vials are acrylic with yellow fluid. Levels fit a tripod with 1/4″-20 connections (for tripods, see page 2292). All levels include a leveling base and a case.

Single-Beam Level—Has a built-in rotating head that swivels between point, horizontal, and vertical lines. Includes graduated level, plumb, and cross-check vials. Accuracy is ±1/8″ at 50 ft. Max. distance is 100 ft. Laser is Class IIIA. Size is 7 3/8″ Lg. × 2″ Wd. × 1″ Ht. Color is orange. Includes two AA batteries for a minimum of 64 hours of continuous operation.

Three-Beam Level—Projects three 90° beams for simultaneous level, plumb, and square reference points. Has a level vial, a plumb vial, a cross-check vial, and a 45° vial. Accuracy is ±1/8″ at 50 ft. Maximum distance is 200 ft. Laser is Class III. Size is 9 1/2″ Lg. × 1″ Wd. × 2 1/4″ Ht. Color is silver. Includes three AA batteries for 70 hours of continuous operation.

Single-Beam Level	2032A7	Each	$93.65
Three-Beam Level	2032A9	Each	$129.58
Replacement AA Battery	65605T72	Each	$0.68

Level Cases

Protect your levels against damage. These hard-shell cases are high-impact styrene with a snap-lock cap and hanging hook. Inside dimensions are 2 1/2″ Ht. × 1 1/4″ Wd. Interior is not padded. Color is black.

Fits Level Lg.		Each
24″	21375A65	$11.72
36″	21375A66	14.32
48″	21375A67	17.36
72″	21375A68	24.31
96″	21375A69	29.51

Levels

Standard Duty Extruded Aluminum

Super Duty Extruded Aluminum

Cast Aluminum

Mahogany

Whatever your needs, we'll keep you level. All have acrylic vials with yellow fluid (unless noted). *Magnetic levels* have magnetic inserts for hands-free work on ferrous metals.

Extruded Aluminum Levels

Standard duty have an I-beam frame, a magnified top-reading window for easy viewing, milled edges for smoothness, plastic end caps for shock absorption, and an anodized finish (unless noted). Size is 2¼″ Ht. x 1″ Wd. (unless noted). 2169A1 also has a 45° vial; one of its level vials is a pitch vial for use in setting a grade or slope.

Dual vial have an I-beam frame with a bright red painted finish for high visibility, plastic end caps (unless noted), and glass dual vials with protective acrylic lenses. Size is 2⅜″ Ht. × 1⅛″ Wd.

Super duty have a box beam frame and offer a high degree of stability and durability. Levels have precision-machined leveling surfaces, shock-protecting rubber end caps, and rubber grip hand holes with bumper edges to protect frame. Vials are machined with permanent interior markings. Size is 2⁵⁄₁₆″ Ht. × 1″ Wd.

Cast Aluminum and Mahogany Levels

Rugged construction and dual vials ensure the accuracy of the levels.

Cast aluminum have one-piece die cast aluminum frame for better strength and stability versus extruded aluminum levels. Plus, they have precision-machined edges that ensure parallel sides and a clear glass cover to protect permanently set vials. Size is 2⅜″ Ht. × 1⅛″ Wd.

Cast aluminum with ruled edge is the same as above, but is graduated in inches to 8ths and in cm to mm and has ground edges and a clear glass cover with rubber mounts to protect vials.

Mahogany are also known as mason's levels. They're permanently reinforced with brass edging. They have shock-absorbing rubber end caps and permanent dual vials with protective glass covers. Good for use around wet cement. Size is 2⁷⁄₁₆″ Ht. × 1³⁄₁₆″ Wd.

Lg.	No. of Vials: Level	No. of Vials: Plumb	Nonmagnetic	Nonmagnetic Each	Magnetic	Magnetic Each
Extruded Aluminum Levels						
Standard Duty						
12″	2	1	—	—	2169A1★✓	$12.13
18″	1	2	22675A21	$14.36	2169A2	17.13
24″	1	2	22675A22	15.23	2169A3	17.82
36″	1	2	22675A23	20.34	2169A4	25.57
48″	1	2	22675A24	23.15	2169A6	29.31
72″	2	3	22675A25	42.90	2169A8	49.74
78″	2	3	—	—	2169A7	52.11
96″	2	3	22675A67	54.84	2169A67	63.53
Dual Vial						
18″	2	4	2170A55	25.76	—	—
24″	2	4	2170A66	25.09	—	—
36″	2	4	2170A67	30.11	—	—
48″	2	4	2170A68	31.02	—	—
72″	4	6	2170A69●	47.95	—	—
96″	4	6	2170A72●	64.96	—	—
Super Duty						
24″	1	2	2188A21■	31.37	2188A51■	42.78
48″	1	2	2188A23	36.72	2188A53	61.44
72″	1	2	2188A24	89.58	—	—
78″	1	2	—	—	2188A54	96.75
Cast Aluminum and Mahogany Levels						
Cast Aluminum						
18″	2	4	2138A1	31.62	—	—
24″	2	4	2138A2	32.16	—	—
48″	2	4	2138A3	57.08	—	—
Cast Aluminum with Ruled Edge						
24″	2	4	2138A4	52.65	—	—
Mahogany						
24″	2	4	2139A3♦	50.85	—	—
36″	2	4	2139A5♦	62.42	—	—
48″	2	4	2139A2♦	64.60	—	—

★ Fluid is blue. Size is 1⁵⁄₈″ Ht. × ⁵⁄₈″ Wd.
✓ Nonmagnified top-reading window and smooth but not milled edges.
● Does not have end caps. ■ Does not have hand holes.
♦ Vials are glass.

Levels with LCD Readout

Level with Dual Vials and LCD

6″ Level with LCD

Easy-to-read LCD immediately shows the angle measurement. Display always reads right-side-up—it flips over when you turn the level upside-down. Display provides accuracy within 0.1° for level and plumb as well as all other angles within a 360° range. It shows angle in degrees, % of slope, and pitch (inches of rise/ft. of run). Levels have an auto shut-off, a hold button that freezes measurement, and an alarm button that signals when level or plumb is reached. Operate on one 9-volt battery (included).

Levels with dual vials and LCD find level and plumb in two ways; use the vial for quick reference or use the display for precision work. They have an aluminum box frame with plastic end caps and acrylic vials with yellow fluid. Size is 2⁵⁄₁₆″ Ht. × 1¹⁄₁₆″ Wd. Color is yellow. Padded vinyl cases sold separately below.

6″ level with LCD has a plastic frame and includes a carrying case. Size is 2¹⁄₁₆″ Ht. × 1⅜″ Wd. Color is black.

Lg.	Levels	Each	Cases	Each
Levels with Dual Vials and LCD				
24″	21425A61	$132.80	23325A73	$19.74
48″	21425A62	152.39	21425A81	32.53
6″ Level with LCD				
6⁵⁄₈″	23325A12	117.67	—	—

Replacement 9-Volt Battery (1/Pkg.) ..... 23325A77 **Per Pkg.** $2.75

Compact Levels

Nonmagnetic Standard Aluminum

10″ Magnetic Heavy Duty Aluminum

Plastic

Also known as torpedo levels, these small levels with tapered ends are perfect for tight places. Plus, they easily slide into your pocket. All have a top-reading level vial, a plumb vial, a 45° vial, and a V-groove edge for working on curved surfaces. Vials are acrylic with yellow fluid (unless noted).

Magnetic levels have a magnetic strip for hands-free leveling on ferrous surfaces except the heavy duty models, which have individual magnets.

Standard Aluminum Levels—Vials are mounted in a white housing for improved visibility. Nonmagnetic is 1¾″ Ht. × ⅝″ Wd. and blue; magnetic is 1⅞″ Ht. × ⅝″ Wd. and gray/red.

Lighted-Vial Aluminum Level—Has vials that light up and automatically turn off—perfect if you use your level in low-light environments. Has shock-resistant rubber end caps and is water-resistant. Size is 1⅞″ Ht. × ¾″ Wd. Operates on two AAA batteries (not included). Color is yellow.

Heavy Duty Aluminum Levels—Have an extra-thick extruded frame with machined ends and oversized vials for easy viewing. Strong rare-earth magnets provide maximum holding power. Size is 1¾″ Ht. × ¾″ Wd. Color is bronze.

Plastic Levels—The economical choice, these levels are made of high-impact plastic. Size is 1¾″ Ht. × ⅝″ Wd. Color is yellow.

High-Visibility Plastic Level—This brightly colored, impact-resistant level is easy to find. Size is 1⅝″ Ht. × ⅝″ Wd. Color is neon orange.

	Lg.	Nonmagnetic	Nonmagnetic Each	Magnetic	Magnetic Each
Standard Aluminum	9″	2151A65♣	$8.51	2151A45	$10.46
Lighted-Vial Aluminum	9″	—	—	21525A66	20.43
Heavy Duty Aluminum	10″	—	—	2151A27	20.88
Heavy Duty Aluminum	12″	—	—	2151A14	23.48
Plastic	9″	2332A42	2.94	2332A41	4.46
High-Visibility Plastic	9″	—	—	21535A67	9.04

AAA Battery ..... 65605T71 **Each** $0.79

♣ Fluid is blue. Also has a pitch level vial.

Pocket Levels

Standard

Standard—Small but accurate, this plastic level has an acrylic vial with yellow fluid, a magnetic pick-up on one end for retrieving metal parts, and a metal pocket clip. Bottom surface has a V-groove. Level is 5″ Lg. × 1/2″ Wd. × 5/8″ Ht.

2034A15 ..... **Each** $3.27

Magnetic

Magnetic—A magnet holds this tiny anodized aluminum level on any ferrous surface. View the vial from both the top and sides. Vial is acrylic with yellow fluid. Level is 4″ Lg. × 5/8″ Wd. × 5/8″ Ht.

2182A24 ..... **Each** $17.14

Mini-Level with Pipe-End Attachment

Make more accurate pipe bends. Level has a notch and a thumbscrew on the end for easy attachment to conduit or pipe during bending. Also has three magnets for strong holding power on metal surfaces and a V-groove on one edge for working on curved surfaces. Level is aluminum alloy with an anodized finish. Includes a top-reading level and four vials that measure 0°, 30°, 45°, and 90° angles. Vials are acrylic with yellow fluid.

Overall Size, Lg. × Wd. × Ht.		Each
5 1/2″ × 3/4″ × 1 1/2″	**3860A67**	$40.36

Master Precision Levels

Square

Triangular

Horizontal

Cross

Use precision levels to check the accuracy of horizontal and vertical surfaces in quality control, inspection, and tool and die work.

Levels have a smooth side for checking flat surfaces and a notched side for secure seating on cylindrical surfaces (except the cross frame level, which is designed for mounting on machinery—it has two 0.216″ dia. mounting holes with a 1.378″ center-to-center distance).

All are cast iron and have glass vials with clear fluid. They include a wood case except the cross frame level. Levels with insulated handles prevent hand heat transfer that may affect level sensitivity.

Overall Size	Insulated Part		Each
Square Frame—*Sensitivity is 0.0002″ (0.05 mm/m).*			
4″ Lg. × 1 1/4″ Wd.	Handles	**2330A15**	$1,087.85
6″ Lg. × 1 3/8″ Wd.	Handles	**2330A11**	1,275.00
8″ Lg. × 1 9/16″ Wd.	Top Plate	**2330A12**▲	899.89
10″ Lg. × 1 3/4″ Wd.	Handles	**2330A13**	1,565.08
Triangular Magnetic Frame—*Sensitivity is 0.0002″ (0.05 mm/m).*			
6″ Lg. × 1 9/16″ Wd.	Handle	**2330A16**	1,440.26
Horizontal Frame—*Sensitivity is 0.0005″/10″, 10 seconds (0.05 mm/m).*			
8″ Lg. × 1 9/16″ Wd. × 1 5/8″ Ht.	Top Plate	**23305A31**	425.23
12″ Lg. × 1 9/16″ Wd. × 2″ Ht.	Top Plate	**23305A32**	514.60
Cross Frame—*Sensitivity is 0.001″/10″, 20 seconds (0.1 mm/m).*			
3 5/32″ Lg. × 2 9/16″ Wd. × 1 11/16″ Ht.	—	**21665A31**	529.64

▲ Sensitivity is 0.0005″/10″, 10 seconds (0.05 mm/m).

Starrett No. 466 Angle Gauge Set

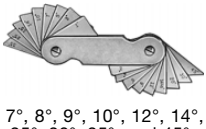

Quickly check angles or use this gauge in place of a protractor.

Gauge is steel and has 18 leaves that fold to a size of 4 3/16″ Lg. × 1 11/16″ Wd. The leaves lock in position with a thumbscrew. Each leaf is marked with the angle size. Gauge measures angles of 1°, 2°, 3°, 4°, 5°, 7°, 8°, 9°, 10°, 12°, 14°, 14 1/2° (half the Acme standard 29°), 15°, 20°, 25°, 30°, 35°, and 45°.

8612A57 ..... **Each** $133.01

Electronic Water Level

Determine level around corners and over long distances. This level lets water seeking its own level do the work. Just fill the attached hose with water and raise the unattached end of the hose in a different area. When the electronic sensor buzzes, the water level in the hose marks the matching level point. Finds a level point up to 100 ft. away (using extra hose sold below). Housing is high-impact polystyrene. Operates on one 9-volt battery (not included).

	Accuracy		Each
Level with 25-ft. Hose	±1/16″	**2223A62**	$35.32
Extra 25-ft. Hose Section		**2223A63**	10.62
9-Volt Battery (1/Pkg.)		**23325A77** **Per Pkg.**	$2.75

Starrett Precision Levels

No. 98 Machinists' Level

199Z Master Precision Level

Sensitive vials make these levels perfect for precision work. All vials are ground glass with clear fluid.

No. 98 Machinists' Levels—Main vial is graduated and adjustable with a rotating cover to protect it. Levels have a cross-check vial except the 4″ size. The 12″ size includes a plumb vial. The 18″ size has a double plumb vial. Sensitivity for all is 0.0047″ to 0.0052″/ft., 80 to 90 sec. except for the 4″ size, which is 0.014″ to 0.016″/ft., 4 to 4 1/2 min. Bases are cast iron with V-groove for seating on round work.

199Z Master Precision Level—Main vial is graduated. An auxiliary vial shows lateral position. Sensitivity is 0.0005″/ft., 10 sec. Base is cast iron alloy. Bearing surface is machined and scraped for smoothness; other surfaces have a black textured finish.

Overall Size, Lg. × Wd. × Ht.	Levels	Each	Repl. Vials	Each
No. 98 Machinists' Levels				
4″ × 7/8″ × 1 1/8″	**21515A21**	$96.00	**21515A26**	$41.58
6″ × 1 3/16″ × 1 1/2″	**21515A22**	112.00	**21515A27**	71.23
8″ × 1 1/4″ × 1 5/8″	**21515A23**	139.01	**21515A28**	77.71
12″ × 1 1/2″ × 2 7/8″	**21515A24**♠	265.01	**21515A29**	96.99
18″ × 1 3/4″ × 3″	**21515A25**♠	402.00	**21515A3**	87.21
199Z Master Precision Level				
15″ × 1 5/8″ × 3″	**21675A22**♠	769.31	**21675A32**	56.00

♠ Comes in a wood case.

Dual-Vial Levels

Machined Aluminum

Cast Iron with Plumb

Two vials at right angles allow you to level in two directions simultaneously, making it easier to adjust a surface into a level position.

Plastic—Has plastic vials, yellow fluid, and two 5/32″ dia. mounting holes (fasteners not included). Size is 1 31/32″ Lg. × 1 3/16″ Wd. × 19/32″ Ht. Color is black.

3355A35 ..... **Each** $3.70

Machined Aluminum—Has precision glass vials, clear fluid, and two 1/8″ dia. mounting holes (fasteners not included). Size is 2 1/4″ Lg. × 2″ Wd. × 1/2″ Ht. Color is green.

3355A37 ..... **Each** $70.20

Cast Iron—Has two glass vials with clear fluid and a black textured finish. Each leg is 2 3/4″ Lg. × 5/8″ Wd.

2212A52 ..... **Each** $31.34

Cast Iron with Plumb—Also has a plumb level for checking squareness. Level has a nickel-plated finish and glass vials with clear fluid. One leg is 2″ Lg. × 3/8″ Wd. and the other is 3″ Lg. × 3/8″ Wd.

2212A51 ..... **Each** $44.68

Line Levels

A

B

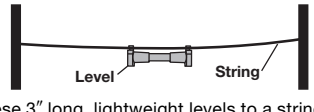

Attach these 3″ long, lightweight levels to a string for long-distance leveling. Vials are acrylic with yellow fluid.

		Dia.		Each
A	Aluminum with Plastic Hooks	3/8″	**2141A11**	$2.42
B	Plastic with Pocket Clip	3/8″	**2141A12**	2.04

Post Levels

These polystyrene levels have a 90° frame with one plumb vial at the corner and one level vial on each side. Use for leveling posts and corners.

Vials are acrylic with yellow fluid. Surfaces are 3 1/4″ wide on each side. Overall height is 5 1/8″. A rubber strap holds the level in place.

		Each
Corner Level	**2186A17**	$3.83
Corner Level w/Magnetic Edges	**2186A18**	5.03

Bull's-Eye and Tubular Levels and Vials

Choose circular bull's-eye levels for leveling all directions on a horizontal plane; tubular levels for leveling in one direction. Acrylic vials are more durable; glass vials have better resistance to temperature extremes and chemicals.

Bull's-Eye Levels—Fluid is clear.

A **B** **C&D** **E** **F** w/Mounting Flange **G** **H** **J** **K**

(A-C) Glass Surface Mount—Chrome-plated brass housing with three mounting holes (fasteners not included). *Style A* has one center circle. *Style B* has one center circle and cross lines. *Style C* has concentric circles; 2198A86 has two circles, 2308A27 and 2308A3 have four, 2198A72 and 2198A88 have seven, and 2198A83 has three.

	Base Dia.	O'all Ht.	Sensitivity in./ft.	Sensitivity min./0.1″	Mounting Hole Dia.		Each
A	11/16″	5/16″	0.453	130	0.076″	2308A8	$12.04
A	7/8″	25/64″	0.157	45	0.093″	2308A5	13.27
A	1″	7/16″	0.157	45	0.093″	2308A6	13.44
A	1″	29/64″	0.157	45	—	3329A31♦	12.10
A	1 1/4″	7/16″	0.157	45	0.120″	2308A7	14.56
A	1 7/16″	33/64″	0.070	20	0.120″	2308A9	20.22
A	1 3/4″	5/8″	0.035	10	0.120″	2308A4	33.50
A	2 1/4″	11/16″	0.035	10	0.136″	2308A1	56.77
A	2 3/4″	11/16″	0.035	10	0.140″	2308A2	62.15
B	1″	7/16″	0.157	45	0.093″	2198A84	13.30
B	1 1/4″	7/16″	0.157	45	0.120″	2198A85	13.90
B	1 3/4″	5/8″	0.035	10	0.120″	2198A87	34.50
C	1 7/16″	33/64″	0.070	24●	0.120″	2198A86	18.20
C	1 3/4″	5/8″	0.035	10	0.120″	2308A27	60.88
C	2 1/4″	11/16″	0.209	60●	0.136″	2308A3	82.91
C	2 3/4″	11/16″	0.035	10	0.140″	2198A72	139.35
C	2 3/4″	11/16″	0.105	30●	0.140″	2198A88	122.96
C	2 3/4″	11/16″	1.046	300●	0.140″	2198A83	93.85

♦ Has a magnetic back. ● Minutes/division.

(D) Acrylic Surface Mount—An aluminum housing (unless noted) with three mounting holes (fasteners not included). All have concentric circles; 2308A37 has three circles, 2308A38 and 2308A34 have four, and 2308A35 has six.

	Base Dia.	O'all Ht.	Sensitivity in./ft.	Sensitivity min./0.1″	Mounting Hole Dia.		Each
D	3 15/16″	15/32″	0.11	30	0.204″	2308A37	$76.06
D	3 15/16″	15/32″	0.21	61	0.204″	2308A38	76.06
D	3 15/16″	9/16″	0.11	60	0.204″	2308A34▲	34.13
D	3 15/16″	9/16″	0.13	38	0.204″	2308A35▲	34.13

▲ Has an acrylic housing.

(E&F) Acrylic Unmounted—*Style E* has two center circles; *Style F* has one. Optional acrylic mounting flange for Style F uses three No. 4 flat head screws (not included) and measures 1 1/16″ × 1 1/16″ × 1 1/16″.

	Base Dia.	Ht.	Sensitivity in./ft.	Sensitivity min./0.1″		Each
E	1 3/8″	37/64″	0.13	40	2147A11	$2.91
F	21/32″	21/64″	0.13	40	2147A61	2.25
Mounting Flange for 2147A61					2147A71	.73

(G&H) Glass Recess Mount—Have one center circle and fit into drilled holes. *Style G* is brass with a black finish and fits in a 47/64″ dia. hole. *Style H* is chrome-plated brass; fits in an 11/16″ dia. hole and has three mounting holes (fasteners not included).

	Base Dia.	Ht.	Sensitivity in./ft.	Sensitivity min./0.1″	Mounting Hole Dia.		Each
G	7/8″	7/16″	0.453	130	—	22325A11	$10.70
H	1″	13/32″	0.157	45	0.070″	22325A12	15.00

(J) Glass Surface Mount/Screw Mount—One center circle. Two-part level: threaded disc attaches to surface using included 6-32 × 1/2″ machine screw and an anodized aluminum vial housing screws onto disc.

Base Dia.	Ht.	Sensitivity in./ft.	Sensitivity min./0.1″	Mounting Hole Dia.		Each
13/16″	9/16″	0.157	45	0.149″	22395A21	$11.30

(K) Glass Unmounted—One center circle. *Note:* Bottom of the vial may not be completely level; vial must be leveled when mounting.

Base Dia. (A)	(B)	O'all Ht.	Sensitivity in./ft.	Sensitivity min./0.1″		Each
3/8″	0.364″	0.198″	0.453	130	2201A61	$5.70
1/2″	0.482″	0.219″	0.157	45	2201A63	5.50
5/8″	0.586″	0.230″	0.157	45	2201A64	5.50
3/4″	0.738″	0.275″	0.157	45	2201A65	6.50
7/8″	0.856″	0.275″	0.070	20	2201A72	9.44
1″	0.974″	0.288″	0.035	10	2201A67	11.52
1 1/2″	1.417″	0.406″	0.035	10	2201A73	33.50
2″	1.969″	0.406″	0.035	10	2201A71	35.80

Tubular Levels

(L&M) Acrylic Unmounted Level Vials—Fluid is yellow. Optional plastic mounting flange snaps onto the vial and then attaches to any surface with adhesive (not included) or mounting hole (where shown in table; fasteners not included). 2148A72 has graduated divisions and reads pitch of slope in increments from level to 1/2″/ft. pitch. *Style M* are square and can be mounted and referenced from any side.

Overall Size	Sensitivity in./ft.	Sensitivity min./0.1″	Mounting Hole Dia.	Level Vial		Mounting Flange		
				Each 1-19	Each 20-Up		Each 1-19	Each 20-Up
L 15/64″ Dia. × 19/32″ Lg.	0.16	46	1/8″	2148A81	$0.96	$0.77	2148A73	$0.35	$0.28
L 5/16″ Dia. × 57/64″ Lg.	0.16	45	1/8″	2148A65	.62	.50	2148A74	.35	.28
L 3/8″ Dia. × 1″ Lg.	0.20	60	1/8″	2148A66	1.09	.88	2148A76	.81	.64
L 3/8″ Dia. × 1 3/8″ Lg.	0.13	38	1/8″	2148A67	.83	.67	2148A77	.83	.67
L 3/8″ Dia. × 1 9/16″ Lg.	0.125	28	1/8″	2148A72	2.98	2.38	2148A78	.86	.70
L 3/8″ Dia. × 1 9/16″ Lg.	0.13	38	1/8″	2148A68	1.00	.79	2148A78	.86	.70
L 3/8″ Dia. × 1 3/4″ Lg.	0.13	38	—	2148A69	1.09	.88	—	—	—
L 7/16″ Dia. × 2″ Lg.	0.13	38	—	2148A71	5.32	4.27	—	—	—
M 13/32″ Sq. × 19/64″ Lg.	0.16	44	—	3338A14	2.20	1.93	—	—	—
M 19/32″ Sq. × 1 37/64″ Lg.	0.16	44	—	3338A16	2.26	1.98	—	—	—
M 19/32″ Sq. × 2 13/64″ Lg.	0.13	38	11/64″♠	3338A22	1.11	.98	—	—	—

♠ Has two mounting holes.

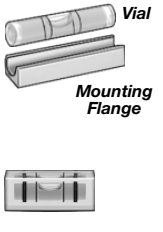

(N-W) Glass Mounted Levels—Have clear fluid and graduated divisions (unless noted). Levels have two mounting holes (unless noted); one of the two holes is slotted on 2160A2, 2209A76, 2209A72, and 2209A75. Fasteners are not included.

Overall Size	Sensitivity in./ft.	Sensitivity °/measurement	Mounting Hole Dia.	Housing Material		Each
Horizontal-Mount Levels						
N 5/8″ Dia. × 3 3/4″ Lg.	0.0015	20 sec./2 mm	0.228″	Brass (Black Finish)	2160A5	$76.30
N 5/8″ Dia. × 3 3/4″ Lg.	0.005	1 min./2 mm	0.228″	Brass (Black Finish)	2160A7	63.04
N 5/8″ Dia. × 4 13/16″ Lg.	0.007	2 min./0.1″	0.196″	Chrome-Plated Brass	2160A1	96.98
P 13/16″ Dia. × 6 3/8″ Lg.	0.0003	6 sec./2 mm	0.375″	Brass (Black Finish)	2160A2	171.20
Q 2 15/16″ Lg. × 9/16″ Wd. × 9/16″ Ht.	0.033	15 min./0.050″	0.156″	Aluminum	2160A3	28.60
Q 2 15/16″ Lg. × 9/16″ Wd. × 9/16″ Ht.	0.033	15 min./0.1″	0.156″	Polycarbonate (Black)	2160A4	9.80
Q 2 15/16″ Lg. × 9/16″ Wd. × 9/16″ Ht.	0.122	45 min./0.1″	0.156″	Polycarbonate (Black)	2160A9★♥■	9.50
Q 2 31/32″ Lg. × 9/16″ Wd. × 37/64″ Ht.	0.122	45 min./0.050″	0.156″	Polycarbonate (Black)	3329A46♦	10.50
R 2 5/32″ Lg. × 29/64″ Wd. × 21/64″ Ht.	0.18	51 sec./0.1″	0.079″	Brass (Black Finish)	2160A36	11.95
R 2 5/32″ Lg. × 29/64″ Wd. × 21/64″ Ht.	0.18	51 sec./0.1″	0.079″	Brass (Chrome Finish)	2160A37	11.95
R 2 1/2″ Lg. × 1/2″ Wd. × 5/8″ Ht.	0.005	1 min./2 mm	0.125″	Brass (Black Finish)	2160A11	73.30
R 3 23/64″ Lg. × 5/8″ Wd. × 3/4″ Ht.	0.005	1 min./2 mm	0.125″	Brass (Black Finish)	2160A6	69.50

★ Acrylic vial. ♥ Yellow-green fluid. ■ No graduated divisions. ♦ Has a magnetic back.

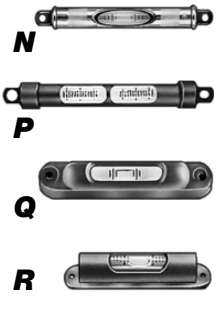

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Bull's-Eye and Tubular Levels and Vials *(Continued from previous page)*

Overall Size	Sensitivity in./ft.	Sensitivity °/measure.	Mounting Hole Dia.	Housing Material		Each
Vertical-Mount Levels						
S... 1½″ Lg. × 1³⁄₃₂″ Ht. × ⁹⁄₁₆″ Dp.	0.122	45 min./0.1″	✓	Brass (Black Finish)	3329A53 ♦	$49.10
S... 2″ Lg. × ¹³⁄₁₆″ Ht. × ⁹⁄₁₆″ Dp.	0.044	11 min./2 mm	0.140″	Brass (Black Finish)	2209A74	53.20
T... 4″ Lg. × ½″ Ht. × ⅝″ Dp.	0.026	15 min./0.1″	0.147″	Brass (Black Finish)	2209A76 ♥	63.11
U.. 2″ Lg. × ⅜″ Ht. × ½″ Dp.	0.122	35 min./0.1″	0.136″	Brass (Black Finish)	2209A73 ■	42.40
U.. 2″ Lg. × ½″ Ht. × ⅝″ Dp.	0.009	150 sec./0.1″	0.147″	Brass (Black Finish)	2209A72	49.92
V... 1¼″ Lg. × 1″ Ht. × ¹⁹⁄₃₂″ Dp.	0.009	150 sec./0.1″	0.166″	Brass (Black Finish)	2209A71	49.50
V... 2″ Lg. × 1″ Ht. × ¹⁷⁄₃₂″ Dp.	0.044	11 min./2 mm	0.156″	Brass (Black Finish)	2209A75	49.50
W.. 2″ Lg. × 1″ Ht. × ½″ Dp.	0.100	55 min./0.1″	⅜″ Wd. × 1″ Dp.	Alum. (Blue Finish)	2209A48 ♣	18.89

✓ No mounting holes. ♦ Has a magnetic back. ♥ Yellow-green fluid. ■ No graduated divisions.
♣ Slot accepts material up to ⅜″ wide.

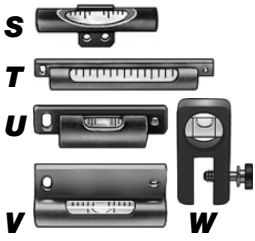

General Purpose Angle Indicators

A

B

C

D

E

F

G

Read any angle from 0° to 90° in each of four quadrants (two quadrants for Style F). Indicators measure to and are accurate to ±0.5° except Style F, which is accurate to ±1°. On the back, an angle and grade chart converts degrees to pitch per inch and per foot (except Style F). V-grooved edges allow for use on curved surfaces. Vials are acrylic with clear fluid.

(A-E) Standard Angle Indicators—Housing is molded high-impact plastic. Straight edges of Styles A, B, and C are graduated to 16ths. ***Styles A*** and ***B*** have V-grooved bottoms and sides except 20025A34, which has a magnetic strip across the bottom and a V-grooved side edge. ***Style C*** has a magnetic strip on the bottom; side is V-grooved; and back is notched for easy attachment to squares and straight edges. ***Style D*** has a hole at the top to allow for use as a plumb bob. Bottom has a magnetic strip. ***Style E*** has two ⅛″ × ¼″ mounting holes (fasteners included).

(F) Pitch and Angle Indicator—Housing is high-impact plastic. Reads angles from 0° to 90° in two quadrants. Has pitch (inch rise per foot run) scales on opposite two quadrants.

(G) Premium Angle Indicator—Housing is cast aluminum alloy for strength and has a black nonglare finish. Base is precision machined for accuracy. Indicator has a magnetic strip on the bottom; remaining three sides are V-grooved. Has two ⅜″ dia. mounting holes (fasteners not included).

Base Lg.	Edge Lg.	Dial Dia.	With Vials: No. of Vials Level	With Vials: No. of Vials Plumb	With Vials Each	Without Vials Each
Standard Angle Indicators						
A.... 5″	5″	4″	1	1	20025A31 ... $21.93	20025A32 ... $15.71
B... 3⅝″	2″	2¾″	1	1	20025A34 ... 18.20	20025A33 ... 10.65
C... 3½″	3″	4″	1	—	20025A36 ... 22.62	20025A35 ... 19.44
D... 2⅛″	1″	2¾″	1	—	20025A38 ... 15.45	20025A37 ... 12.52
E.... 1¾″	1¾″	1¾″	—	—	—	20025A39 ... 8.27
Pitch and Angle Indicator						
F.... 4″	4″	3″	—	—	—	20025A41 ... 8.00
Premium Angle Indicator						
G... 4″	4″	3″	1	1	20145A42 ... 69.93	—

Tilt Indicators

An economical choice for measuring incline or tilt-angle in degrees. These tilt indicators are well-suited for machinery, boats, cranes, and medical devices. Metal ball in level tube indicates the angle.

Housing is black ABS plastic with white lettering. Adhesive backing makes mounting easy. Indicators have 1° graduations except 20035A34, A21, A36, A23, and A27 which have 5° graduations and A35 which has 0.5° graduations.

20035A21

20035A28

Range	Accuracy	Overall Size, Ht. × Wd. × Thick.		Each
0°- 3°	±0.12°	2¼″ × 9″ × 1⅛″	20035A35	$38.02
0°- 6°	±0.8°	1 1/16″ × 3⅝″ × ¹³⁄₃₂″	20035A26	19.70
0°-10°	±1.0°	1²¹⁄₃₂″ × 3³⁵⁄₆₄″ × ¹³⁄₃₂″	20035A22	23.55
0°-15°	±1.5°	2″ × 5″ × ½″	20035A34	23.44
0°-26°	±1.2°	2⁵⁄₆₄″ × 5⅛″ × ³³⁄₆₄″	20035A25	21.90
0°-45°	±1.8°	1²¹⁄₃₂″ × 3³⁵⁄₆₄″ × ¹³⁄₃₂″	20035A21	23.33
0°-45°	±1.8°	2″ × 4″ × ⅜″	20035A36	19.79
0°-50°	±2.0°	2⁵⁵⁄₆₄″ × 6²⁹⁄₆₄″ × ⁵¹⁄₆₄″	20035A23	27.47
0°-26°/0°-6°	±1.2°/±1.0°	2⁵⁄₆₄″ × 5⅛″ × ⁵⁵⁄₆₄″	20035A28	47.26
0°-50°/0°-6°	±2.0°/±1.0°	2⁵⁵⁄₆₄″ × 6⁷⁄₁₆″ × ⁵⁹⁄₆₄″	20035A27	51.28

Dual-Axis Tilt Indicators

Indicators determine side-to-side tilt and front-to-back tilt. Choose an indicator with a 25° or a 45° side-to-side tilt. Both indicators tilt 40° front-to-back. Perfect for use with machinery, cranes, and medical equipment. Repeatability is ±0.1°; resolution is 0.1°; front-to-back accuracy is ±3° .

Housing is black ABS plastic with white lettering. A metal ball indicates angle for side-to-side and a white point for front-to-back. Include mounting bracket and stainless steel fasteners.

Side-to-Side Range	Side-to-Side Accuracy	Overall Size, Ht. × Wd. × Thick.		Each
0°-25°	±1.5°	1½″ × 5¾″ × 2¼″	3799A31	$39.53
0°-45°	±1.8°	2½″ × 5″ × 2¼″	3799A34	37.91

Magnetic Base Angle Finders/ Center Locators

Find the center of square and round stock and determine setup angles on milling machines, shapers, and grinders. The 90° V-base has powerful Alnico magnets to attach to ferrous surfaces. Center-finder punch-point accurately finds and marks the center of workpieces. Protractor is set in a cast aluminum housing and has a calibrated dial indicator. Measure in 10° increments; accuracy is ±0.5°. Overall size is 5¼″ Ht. × 5″ Wd. × 1″ Dp. Dial is 2″ dia.

Calibration		Each
0°-90°-0° Dial	2194A17	$213.27
360° with Counterclockwise Dial	2194A18	213.27
360° with Clockwise Dial	2194A19	213.27
Replacement Plastic Dial Cover	2194A21	13.51
Optional Metal Case	2194A22	29.57

Magnetic-Mount Angle Indicators

Easy to use—just set the rotating dial to the desired angle, then turn the unit until it reads level. Use to set, transfer, and check angles from 0° to 360°. Vials are acrylic with yellow fluid. Magnetic base allows hands-free use on ferrous surfaces.

Economy Angle Indicator—Dial has four quadrants that are graduated from 0° to 90° with 5° increments. Includes one level vial. Housing is lightweight plastic. Accuracy is ±1°. Size is 2¾″ Lg. × ¾″ Wd. × 3″ Ht. Dial is 2″ dia.

Economy Angle Indicator

Heavy Duty Angle Indicator—Rotating dial has two 90° quadrants, graduated to 2½°. Conversion chart shows degrees and rise per foot and per meter. Base has V-groove for working on rounded surfaces. Includes one level vial. Frame is cast aluminum. Accurate to ±2½°. Size is 9″ Lg. × ⅞″ Wd. × 2″ Ht.

Heavy Duty Angle Indicator

		Each
Economy Angle Indicator	2150A25	$8.50
Heavy Duty Angle Indicator	2145A11	74.32
Replacement Vial for Heavy Duty Indicator	2195A11	31.43

Mini Digital Angle Indicator

Only 2″ square and 1 5/16″ thick, this compact tool provides digital angle readings with a 180° range. Magnets allow you to mount on saw blades and machine guides for hands-free use. It measures in 0.1° increments with ±0.1° accuracy and repeatability. Indicator has an aluminum housing and an auto shut-off. Operates on one 3-volt lithium battery (included).

Angle Indicator	3353A77	Each	$45.76
Replacement Battery	7701K34	Each	$1.92

Electronic Protractor/Level/Inclinometers

Angle, level, and tilt instantly appear on the liquid crystal display. Plus, you can set zero from any position with the 360° range. Numbers invert when tools are upside down so you can always read display. Tools have a machined aluminum frame, V-groove base for use on curved surfaces, and two tapped 6-32 holes for mounting (fasteners not included). Readout is between –90° and +90°. Accuracy is ±0.2°. Operate on one 9-volt battery (included). Overall size is 6 1/64″ Lg. × 1 7/32″ Wd. × 1 29/32″ Ht. Plastic case included.

21465A82 also has an RS-232 compatible serial port for ASCII output. *Connecting cable and foot switch for* 21465A82 is for use with a PC.

Range	Measuring Increments	Accuracy		Each
0-360° (90° × 4)	0.1°	±0.1° (0-10°)	21465A81	$205.77
0-360° (90° × 4)	0.01° (0-10°)	±0.05° (0-10°)	21465A82	337.04
Connecting Cable & Foot Switch for 21465A82			21465A91	170.38
Replacement 9V Battery			23325A77	2.75

Magnetic Laser Pulley Alignment Tool

Align pulleys, gears, sprockets, and just about anything ferrous with this aluminum magnetic laser alignment tool. It works with pulleys that have 3″ to 6 ft. diameters and 3″ to 20 ft. spacings. Place the adjustable magnetic targets onto the edge of one pulley and attach the laser line emitter on the edge of the other pulley. The laser light intersects the three targets to visually show any misalignment. Laser is Class II, 635 nm wavelength, accurate to ±0.07°, and 1/16″ wide at 30″ with a 70° spread. Tool includes two belt-tension testers for capacities of 30 to 300 lbs., three adjustable targets, laser line emitter, and plastic carrying case with foam inserts. Operates on two AAA batteries (included).

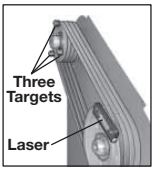

Alignment Tool	2309A46	Each	$924.07
Repl. AAA Battery	65605T71	Each	$0.79

Angle Sensors with Remote Display

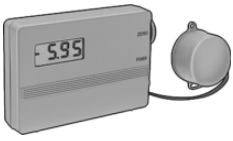

Measure angles from a distance—this sensor measures angular positions of machine tool tables, cutting tool tables, and cranes and can be used to determine accurate positioning of satellite and microwave antennas. Mount sensor four ft. from readout; mount up to 200 ft. away with a longer cable (sold separately).

Accuracy from 0° to 10° is ±0.1°; from 10° to maximum range is ±1% of angle. Housing is plastic with an LCD that displays to 0.1° or 0.01° (see table). Display size is 5 1/64″ Lg. × 3 15/32″ Ht. × 1 17/64″ Dp. Include a 2 19/32″ Ht. × 1 13/64″ Dp. electronic sensor and a 4-ft. cable. Operate on one 9-volt battery (not included).

Also Available: Other cable lengths. Please ask for 21955A21 and specify length: 10, 20, 30, 40, 50, 100, 150, or 200 ft.

Range	Measuring Increments		Each
±19.99°	0.01°	21955A68	$324.00
±45°	0.1°	21955A67	324.00
Replacement Sensor Only		21955A74	261.33
9V Battery		23325A77	2.75

Digital Protractor/Angle Finders

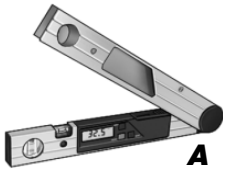

Large digital displays let you easily read angle calculations and a hold button freezes display. Both include an on/off switch with auto shut-off.

(A) Digital Protractor/Angle Finder— This aluminum tool has front and back digital displays, as well as plumb and level vials. Also has a memory that stores angle measurements and a cut calculator that helps to determine exact angles. Ideal for miter and bevel angles. Includes low power indicator, four AA batteries, nylon case and leg extension. Vials are acrylic with yellow fluid. Closed size is 17″ Lg. × 1 3/8″ Wd. × 2 3/8″ Ht.

(B) Digital Protractor/Angle Finder with Laser— A laser extends the working distance 100 ft. beyond the length of the tool. Plus, this aluminum and steel tool has two digital displays; one shows the angle of the base and the other shows the angle of the moveable arm. Numbers invert when unit is upside down so you can always read the display. Ideal for beams, rafters, and slopes. Arm locks in all positions, and magnets allow for hands-free operation. Fits tripods with a 1/4″-20 connection (see page 2292 for tripods). Operates on three AAA batteries (included). Laser is Class III, 650 nm wavelength, and for indoor and outdoor use; visibility will decrease in brightly lit areas. Closed size is 20 7/8″ Lg. × 1 1/4″ Wd. × 2 1/2″ Ht.

	Range	Measuring Increments	Digital Display Accuracy	Vial Accuracy		Each
A	0-220°	0.1°	±0.1°	±0.05°	8521A31	$242.25
B	0-180°	0.1°	±0.1°	—	8521A46	246.46
Replacement AA Battery					65605T72	.68
Replacement AAA Battery					65605T71	.79

Granite Surface Plates

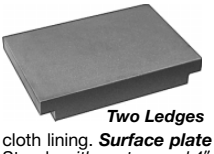
Two Ledges

Granite construction means these plates are noncorrosive and nonmagnetic, resist warping and abrasion, and are easy to clean. They provide an accurate reference plane for inspection work and layout and have a nonglare black finish. Choose plates with ledges to hold fixtures and instruments in place with clamps. Plates meet or exceed Fed. Spec. GGG-P-463C and ISO 10012. Include a certificate of accuracy traceable to NIST (National Institute of Standards and Technology).

Laboratory grade AA is for precise operations in constant-temperature-gauging rooms and metrology departments. ***Inspection grade A*** is for general quality control work. ***Toolroom grade B*** is for checking work throughout a shop.

Surface plate covers keep harmful abrasives from damaging flatness and finish. Made of heavy duty vinyl with a soft cloth lining. ***Surface plate stands*** are angle iron with a 36″ overall working height. Stands *with casters and 3″ dia wheels* have hard rubber wheels. Stands *with casters and 4″ dia. wheels* have phenolic wheels. Stands *without casters* have leveling screws on the bottom of each leg. **To Order:** Please specify stand for a plate with no ledges or for a plate with two ledges. ***Surface plate cleaner*** removes particles from your plate.

Also Available: Other sizes. Please ask for 2245A999 and specify grade, length, width, thickness, and the number of ledges (0 or 2).

Surface Plates

Lg. × Wd. × Thick.	Unilateral Tolerance	No Ledges Wt., lbs.		No Ledges Each	Two Ledges Wt., lbs.		Two Ledges Each
Laboratory Grade AA							
18″ × 12″ × 4″	±0.000025″	93	2245A39	$226.15	83	2245A72	$258.46
24″ × 18″ × 4″	±0.000037″	186	2245A41	439.62	175	2245A53	488.37
Inspection Grade A							
18″ × 12″ × 4″	±0.00005″	93	2245A43	186.92	83	2245A46	226.15
24″ × 18″ × 4″	±0.000075″	186	2245A44	360.00	175	2245A47	394.62
36″ × 24″ × 6″	±0.0001″	555	2245A45	675.00	530	2245A48	750.00
48″ × 36″ × 6″	±0.0002″	1,110	2245A56	1,374.64	1,050	2245A49	1,468.93
Toolroom Grade B							
12″ × 8″ × 2″	±0.0001″	21	2245A23	83.08	—	—	—
18″ × 12″ × 3″	±0.0001″	70	2245A24	140.77	66	2245A62	173.08
24″ × 18″ × 3″	±0.00015″	139	2245A21	243.46	130	2245A63	280.38
36″ × 24″ × 4″	±0.0002″	370	2245A26	496.07	357	2245A64	560.36

Surface Plate Covers

For Plate Size		Each	For Plate Size		Each
18″ Lg. × 12″ Wd.	22455A64	$45.71	36″ Lg. × 24″ Wd.	22455A66	$77.70
24″ Lg. × 18″ Wd.	22455A65	65.15	48″ Lg. × 36″ Wd.	22455A67	99.43

Surface Plate Stands

For Plate Size, Lg. × Wd.	Wheel Size, Dia. × Wd.		Each
With Casters			
18″ × 12″	3″ × 1 1/4″	2196A71	$565.30
24″ × 18″	3″ × 1 1/4″	2196A72	587.02
36″ × 24″	4″ × 2″	2196A73	796.87
48″ × 36″	4″ × 2″	2196A74	861.84
Without Casters			
18″ × 12″	—	2196A81	447.73
24″ × 18″	—	2196A82	459.78
36″ × 24″	—	2196A83	614.36
48″ × 36″	—	2196A84	662.50

Surface Plate Cleaner

Size		Each
Pint Bottle	2216A51	$3.95
Pint Spray Pump Bottle	2216A54	5.39
Quart Bottle	2216A55	8.37
Gallon Bottle	2216A52	16.79

Cast Iron Surface Plates

With a high-precision surface, these plates are great for tool making, layout, and inspecting parts. Plus, heavy deep-rib construction and 3-point bearing pads maintain the plate's surface accuracy even when it's supported by an uneven surface. Include a wooden cover and two handles.

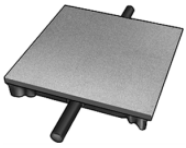

Lg. × Wd. × Ht.	Top Thick.	Wt., lbs.	Surface Accuracy		Each
Hand-Scraped					
12″ × 12″ × 2 9/16″	1/2″	45	0.0002″	2239A17	$568.62
18″ × 12″ × 3 9/16″	1/2″	80	0.0002″	2239A18	929.36
Precision-Ground					
12″ × 12″ × 2 9/16″	1/2″	45	0.0005″	2239A42	364.00
18″ × 12″ × 3 9/16″	1/2″	80	0.0005″	2239A43	643.40

Dual-Sided Cast Iron Surface Plates

Get two precision surfaces—these plates have one on the top and one on the bottom. Surface accuracy is within 0.0005″. Lapped and grooved sides have 1/16″ Wd. × 1/16″ Dp. grooves spaced 1/2″ apart. Grooves collect compounds, grit, and oil. Plates are 14″ Lg. × 10″ Wd. × 2 3/8″ Ht. and weigh 50 lbs.

		Each
2 Smooth Sides	2224A1	$354.47
2 Lapped and Grooved Sides	2224A3	391.21
1 Smooth and 1 Lapped and Grooved Side	2224A2	365.39

Parallel Straightedges

Use these straightedges to set up and level machinery and equipment, to check the flatness of surfaces, and for use in scribing and positioning work above and parallel to a surface. Made of stress-relieved cast iron for maximum stability. Top and bottom faces are precision ground parallel and straight to within 0.0001″ per 12″.

Lg. × Wd. × Ht.	Wt., lbs.		Each
24″ × 1″ × 2″	8	2213A1	$581.58
36″ × 1 1/2″ × 3″	25	2213A2	830.43
48″ × 1 1/2″ × 3″	40	2213A3	1,034.81
60″ × 2″ × 4″	95	2213A4	1,632.46
72″ × 2″ × 4″	110	2213A5	1,805.92

Parallels

Excellent for inspection and layout on surface plates and for setups on drill presses and milling and grinding machines. Parallels are made of hardened and ground tool steel.

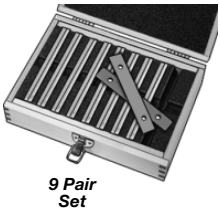

9 Pair Set

Parallels Ground on Two Sides

Perfect when your job requires only two parallel sides. Parallels are 6″ Lg. × 1/4″ Wd. and have a height tolerance of ±0.001″. Total parallel tolerance over entire length is ±0.0001″, and total size tolerance between a matched pair is ±0.0001″. Sets include 6″ Lg. × 1/4″ Wd. matched pairs in 1/16″ height increments and a wood case.

Pairs Per Set	Ht. Range		Each
9	3/8″-7/8″	8642A67	$432.28
9	15/16″-1 7/16″	8642A68	433.33
22	1/2″-1 13/16″	8642A61	1,103.45

Matched Pairs—Available 3/8″ to 2″ high in 1/16″ increments. **To Order:** Please specify exact height.

8642A3 ..... **Per Pair** $49.22

Parallels Ground on Four Sides

Use these parallels when more than two parallel sides are needed. Pairs are precision ground parallel and straight within 0.0002″.

Lg. × Wd. × Ht.	Wd. and Ht. Tolerance	Square Tolerance		Per Pair
6″ × 1/4″ × 1/2″	0.0002″	0.0005″	2259A12	$95.01
6″ × 1/4″ × 3/4″	0.0002″	0.0005″	2259A14	95.01
6″ × 3/8″ × 3/4″	0.0002″	0.0005″	2259A17	95.01
6″ × 1/2″ × 3/4″	0.0002″	0.0005″	2259A19	104.00
6″ × 1/2″ × 1″	0.0002″	0.0005″	2259A21	104.00
8″ × 1/2″ × 1″	±0.0002″	0.0004″	2259A39	283.33
12″ × 3/4″ × 1″	±0.0002″	0.0004″	2259A28	420.83
12″ × 1″ × 2″	±0.0002″	0.0004″	2259A33	471.93
12″ × 1 1/2″ × 3″	±0.0002″	0.0004″	2259A38	764.91
18″ × 1″ × 2″	±0.0003″	0.0004″	2259A44	878.89
24″ × 1″ × 2″	±0.0003″	0.0004″	2259A45	1,176.28

1-2-3 Blocks

Use for surface plate setups, layout, and inspection jobs. The 11- and 23-hole blocks have drilled, counterbored, and tapped holes for easy mounting. All blocks are sold as matched pairs.

Made of hardened alloy steel and precision ground to the following tolerances: squareness is 0.0001″ per inch; parallel accuracy is 0.0001″ to 0.0003″ for 8630A76 and A74 and ±0.0002″ for A75.

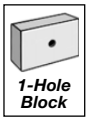

1-Hole Block

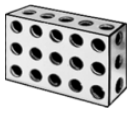

23-Hole Block

	Block Size Lg.	Wd.	Ht.	Hole Size		Per Pair
1-hole Blocks	3″	2″	1″	1/2″	8630A75	$117.46
11-hole Blocks	3″	2″	1″	5/16″-18	8630A76	132.28
23-hole Blocks	3″	2″	1″	3/8″-16	8630A74	120.88

Sine Plates

Built to exacting specifications, these hardened steel plates hold work for inspection and grinding. (*Note:* Do not use for milling and drilling machine processes.) Use with surface plates and height gauges to measure and duplicate angles. They have a locking strap that stays below the top surface and rolls for stability.

Nonmagnetic sine plates have tapped holes and two self-storing rails.

Magnetic sine plate contains ceramic magnets for superior holding power. Removable handle turns magnets on and off. Plate does not have tapped holes. Comes with two rails.

Nonmagnetic Sine Plate

Lg. × Wd. × Ht.	Center Distance	Tapped Hole Size	Square and Parallel Tolerance		Each
Nonmagnetic Sine Plates					
4″ × 4″ × 2″	3″	1/4″-20	0.0002″	5216A21	$451.12
6″ × 6″ × 2″	5″	1/4″-20	0.0002″	5216A24	657.51
12″ × 6″ × 2 5/8″	10″	3/8″-16	0.0003″	5216A26	1,314.55
Magnetic Sine Plate					
6″ × 6″ × 4 1/4″	5″	—	0.0002″	5216A31	1,428.32

Parallels for Narrow Applications

10-Pair 1/8″ Thick Set

Get the job done with these thin hardened-steel parallels. They're great for layout on surface plates and for setups on drill presses and milling and grinding machines. Parallel within 0.0008″ and each pair is matched in height to ±0.001″. Parallels are 6″ Lg. × 1/8″ Thick. Heights are 1/2″, 5/8″, 3/4″, 7/8″, 1″, 1 1/8″, 1 1/4″, 1 3/8″, 1 1/2″, and 1 5/8″. Set comes in a plastic case.

86425A65 ..... **Each** $160.38

20-Pair 1/32″ Thick Set

Use this thin spring steel parallel set for machining applications with small, narrow components. Parallel within 0.0001″ and each pair is matched in height to ±0.001″. Parallels are 6″ Lg. × 1/32″ Thick. Set includes 20 pairs of 1/2″-1 11/16″ high parallels in 1/16″ increments in a plastic case.

8644A7 ..... **Each** $196.88

Starrett No. 154 Adjustable Parallels

No need for dozens of parallels, these adjust to the exact size you need. Use them for leveling work when setting up milling and grinding machines, planers, and drill presses.

To measure the size of an opening, insert a parallel, adjust it to fit, then hold it in place with the included screw. Measure the parallel with a micrometer to find the opening size. Parallels are cast iron and 9/32″ thick. Parallel tolerance is ±0.005″ for 1 3/4″ and 2 1/8″ lengths; ±0.007″ for 2 11/16″ and 3 9/16″ lengths; and ±0.009″ for 4 3/16″ and 5 1/16″ lengths.

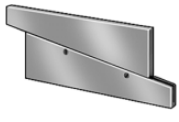

Inch Range	Metric Range	Length	Starrett Number		Each
Individual Parallels					
3/8″-1/2″	9.5-12.7 mm	1 3/4″	154A	2211A11	$29.01
1/2″-11/16″	12.7-17.5 mm	2 1/8″	154B	2211A12	31.01
11/16″-15/16″	17.5-24 mm	2 11/16″	154C	2211A13	32.50
15/16″-1 5/16″	24-33 mm	3 9/16″	154D	2211A14	36.00
1 5/16″-1 3/4″	33-44 mm	4 3/16″	154E	2211A15	40.00
1 3/4″-2 1/4″	44-57 mm	5 1/16″	154F	2211A16	44.50
Parallel Sets in Vinyl Cases					
Set of Four (3/8″-1/2″ to 15/16″-1 5/16″)			S154SZ	2211A21	137.01
Set of Six (3/8″-1/2″ to 1 3/4″-2 1/4″)			S154LZ	2211A22	230.00

Angle Plates

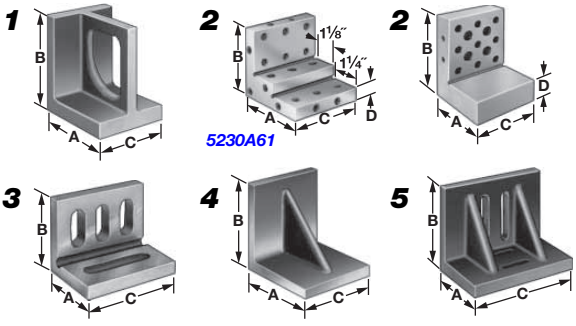

Ground finish plates are often used in layout and inspection work and are manufactured to a tighter tolerance than ***machine finish*** plates.

(1) Cast Iron Universal Right Angle Plates

Clamp work to either face for measuring and machining; rotate through three planes without reclamping. Include a single web that adds strength and gives you more finished faces. ***Machine Finish—*** Faces and ends are square and parallel within 0.002″ per 6″. ***Ground Finish—*** Faces and ends are square within 0.0005″ per 6″ and parallel within 0.00025″ per 6″.

Size (A)	Size (B)	Size (C)	Wt., lbs.	Machine Finish	Machine Finish Each	Ground Finish	Ground Finish Each
4″	5″	3¾″	10	23535A65	$83.57	2244A65	$222.86
4″	6″	4″	13	23535A66	104.00	2244A66	248.86
5″	6″	4½″	16	23535A67	116.07	2244A67	265.57
5″	8″	4″	21	23535A68	156.93	2244A68	299.93
6″	8″	6″	32	23535A72	223.79	2244A3	441.07
7″	10″	5½″	37	23535A69	226.57	2244A69	421.57
8″	10″	5½″	40	23535A7	240.50	2244A77	456.86
8″	12″	5″	44	23535A71	247.00	2244A71	474.50
9″	16″	8″	94	23535A73	441.07	2244A5	840.36
10″	12″	8″	75	23535A74	387.21	2244A74	632.36

(2) Alloy Steel Right Angle Plates

Have four counterbored holes except for 5230A61, which has two 1/2″ high steps. Faces and ends are ground square and parallel within 0.0002″.

Size (A)	Size (B)	Size (C)	Size (D)	Tapped Holes, No. (Size)	Counter-bored Holes, Dia.×Dp.	Wt., lbs.	Ground Finish	Ground Finish Each
3″	2¾″	3″	1/2″	24 (1/4″-20)	—	5	5230A61	$294.55
3″	4″	3″	1″	13 (1/4″-20)	5/16″×7/16″	6	5230A62	198.88
4″	4″	4″	1¼″	13 (1/4″-20)	5/16″×7/16″	10	5230A63	309.43
4″	6″	4″	1¼″	14 (3/8″-16)	7/16″×5/8″	14	5230A65	381.07

(3) Cast Iron Slotted Open-End Angle Plates

Clamp work from the inside or outside. Slotted faces and webless sides increase versatility and simplify mounting workpieces. Faces and ends are machined square and parallel within 0.002″ per 6″.

Size (A)	Size (B)	Size (C)	No. of Slots	Wt., lbs.	Machine Finish	Machine Finish Each
3″	3½″	4½″	4	4	2351A65	$83.57
4½″	5″	6″	7	12	2351A66	117.00
4½″	5½″	7″	8	14	2351A67	137.43
5″	6″	8″	8	20	2351A68	161.57
6″	7″	9″	13	24	2351A69	199.77
6″	8″	10″	13	33	2351A71	247.93
8″	9″	12″	13	50	2351A72	350.07

(4) Cast Iron Plain Webbed Angle Plates

Webs add strength to these plates. Ends are machine finished square and parallel within 0.002″ per 6″.

Machine Finish— Faces are square and parallel within 0.002″ per 6″. ***Ground Finish—*** Faces are square and parallel within 0.0005″ per 6″.

Size (A)	Size (B)	Size (C)	No. of Webs	Wt., lbs.	Machine Finish	Machine Finish Each	Ground Finish	Ground Finish Each
2″	2″	2″	1	1	23525A65	$33.43	2243A65	$67.79
3″	3″	3″	1	3	23525A66	36.21	2243A66	76.14
4″	4″	4″	1	7	23525A67	58.50	2243A13	104.00
5″	5″	5″	1	11	23525A68	85.43	2243A68	163.43
6″	6″	6″	1	17	23525A69	120.71	2243A17	242.36
6″	8″	10″	2	50	—	—	2243A22	390.00
8″	8″	8″	2	37	23525A7	211.71	2243A7	364.93
8″	10″	6″	1	45	—	—	2243A25	372.36
12″	12″	12″	2	104	23525A71	494.00	—	—

(5) Cast Iron Slotted Webbed Angle Plates

Plates have four slots (unless noted) for increased versatility and easy mounting of workpieces, and webs for added strength.

Machine Finish— Faces and ends are square and parallel within 0.002″ per 6″. ***Ground Finish—*** Faces and ends are square and parallel within 0.0005″ per 6″.

Size (A)	Size (B)	Size (C)	No. of Webs	Wt., lbs.	Machine Finish	Machine Finish Each	Ground Finish	Ground Finish Each
2½″	3″	3½″	1	4	2353A65	$61.29	—	—
3″	3½″	4½″	1	5	2353A66	63.14	2359A66	$151.67
4½″	5″	6″	1	13	2353A67	83.57	2359A67	187.42
4½″	5½″	7″	1	14	2353A68	115.14	2359A68	269.75
5″	6″	8″	2	22	2353A69	140.21	2359A69	336.92
6″	7″	9″	2	28	2353A7	173.64	2359A7	413.83
6″	8″	10″	2	35	2353A71	206.14	2359A71	460.42
8″	9″	12″	2	60	2353A72♦	314.79	2359A72♦	738.83

♦ Plate has 11 slots.

Precision V-Blocks

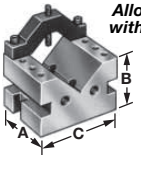

Support layout, machining, grinding, and inspection work with these precision-ground steel blocks.

Alloy Steel V-Blocks with Clamp— Have a reversible swing-away clamp and an offset hole pattern in the top of the V-block (unless noted) to allow a wide variety of clamping positions. Side slots permit easy clamping to almost any work surface. The V is 90°, square with sides, and parallel to the base within 0.0002″. Two screws for clamp included. *Hardened and ground V-blocks* are extremely durable. Rockwell hardness is C58-C60. *Ground V-blocks* are an economical alternative.

Plain Steel V-Blocks— Create custom setups. Blocks do not have drilled or tapped holes and don't include clamps or screws. The V is 90°, square with sides, and parallel to the base within 0.0002″.

Also Available: Matched pairs. Please ask for 2361A888 and specify V-block part number.

Max. Dia. of Work	Size★ (A)	Size★ (B)	Size★ (C)	Threaded Hole for Clamp	Alloy Steel with Clamp: Hardened and Ground V-Blocks	Hardened and Ground V-Blocks Each	Ground V-Blocks	Ground V-Blocks Each	Plain Steel: Ground V-Blocks	Ground V-Blocks Each
1⅝″	2½″	2″	2½″	1/4″-20 ×0.50″ Dp.	2361A61	$192.90	2361A66	$141.82	2361A76	$80.36
2⅞″	3″	3″	4″	1/4″-20 ×0.68″ Dp.	2361A62	279.92	2361A67	217.45	2361A77	121.73
3¼″	3″	3″	5″	3/8″-16 ×0.75″ Dp.	2361A63♣	429.84	2361A68♣	276.55	2361A78♣	148.91
4⅜″	6″	4″	6″	3/8″-16 ×0.75″ Dp.	2361A64	657.76	2361A69	323.82	2361A79	178.45
5¼″	6″	4″	7″	5/16″-18×0.625″ Dp.	2361A65	1,135.40	—	—	—	—

★ Outside dimensions of individual blocks may vary slightly. ♣ Hole pattern is not offset.

Starrett V-Blocks and Clamps

Designed for toolroom and layout applications, these precision-ground V-blocks hold work securely for drilling, grinding, and milling operations. V is 90° and parallel to the base within 0.0002″, and square within 0.0003″. Tapped holes permit mounting on plates and angle irons. All blocks are hardened steel and sold in matched pairs.

Starrett No. 568C V-Blocks and Clamps— Hold 2″ dia. round and 1 7/16″ square work. Clamps mount in a low or high position on the block for small or large work. Clamps do not project beyond the size of the block, allowing block to be used on its base, ends, or sides. Blocks have a 3/8″-16 tapped hole through the sides. Size is 2½″ Lg.×3″ Wd.×2″ Ht.

Starrett No. 278 V-Blocks and Clamps— Hold up to 1″ dia. round workpieces. Blocks have a 1/4″-20 tapped hole through the sides. Size is 1⅝″ Lg.×1¼″ Wd.×1¼″ Ht.

	Per Pair		Repl. Clamp Each
Starrett No. 568C V-Blocks and Clamps	2203A11	$422.00	2203A21 $26.50
Starrett No. 278 V-Blocks and Clamps	2221A11	250.00	2221A21 19.01

Magnetic V-Block

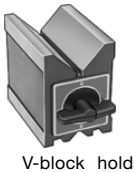

The capability of a V-block with the power of a magnet. A simple turn of a lever switches the magnetic force in the 90° V and the faces on and off. The base is magnetic, so the block is ideal for flat ferrous surfaces.

V-block holds 3/16″ to 2¾″ round and square work with a holding force of 180 lbs. V is square with the sides and parallel to the base. Faces and V are ground within 0.0004″. Size is 4″ Lg.×3″ Wd.×3¾″ Ht.

2202A3 ..... Each $153.79

Cast Iron V-Blocks

Support shafts and cylinders. Blocks are cast iron.

Standard V-Blocks— Base, sides, and V have a machine finish. The V is 90°, square with sides, and parallel to the base within 0.0015″, unless noted. Pairs are matched. Can be used for machining and inspection.

Precision V-Blocks— Base, sides, and V have a precision-ground finish. The V is 90°, square with sides, and parallel to the base within 0.0005″. Can be used for inspection.

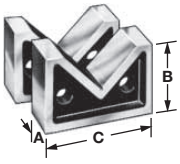

Max. Dia. of Work	Size (A)	(B)	(C)		Per Pair
Standard V-Blocks					
3″	1½″	2½″	4″	2227A2	$38.56
3 13/32″	2″	3″	5″	2227A7	61.22
4 13/64″	2½″	3½″	6″	2227A8	93.87
6 19/64″	2 23/64″	5⅛″	7 3/32″	2227A5●	326.02
7⅞″	2 49/64″	6 19/64″	8 21/32″	2227A6●	422.96
Precision V-Blocks					
3½″	2″	2½″	5″	2225A1	596.28
4¾″	3″	3½″	6″	2225A2	669.34
5½″	6″	6″	7″	2225A3	1,199.35
7″	6″	8″	8″	2225A4	1,320.97

● Parallel to the base within 0.0025″

Economy Aluminum V-Block

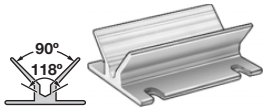

Get back to the basics with this economical V-block. It easily centers round material for drilling, cutting, and sawing. Lower a drill bit into the V-block's 7/16″ wide bottom groove to align holder on drill presses.

V-block is aluminum and can be held down by hand or bolted down with the four 11/16″ Lg.×3/8″ Wd. slots (fasteners not included). V is 118° for large and small diameter workpieces. Size is 5″ Lg.×4″ Wd.×1¾″ Ht.

20065A8 ..... **Each** $17.78

Miniature Steel V-Block Set

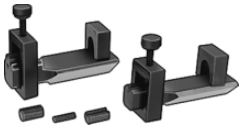

Use as a universal holding tool for miniature and intricate parts for fixturing on comparators, inspection setups, and grinding fixtures. Set has bridges for straddling long workpieces. Capacity for round and square parts is 1/32″ to 9/32″. Blocks are precision ground and made from hardened steel. V is central, square with sides, and parallel to the base within 0.0002″. Includes two mini V-blocks (capacities for round and square parts are 1/32″-5/32″ and 3/64″-9/32″), two clamps, two bridges, and five prisms with 3/16″, 5/32″, 1/8″ capacities. Comes in a plastic case.

20115A41 ..... **Each** $115.50

Shaft Alignment Kits

Misalignment and vibration can cause shaft and coupling failure, but these simple kits let you quickly check for angular and offset shaft misalignment. Come in a plastic carrying case.

Stylus Indicators

Use stylus movement to check for misalignment. Kits include two sets of mounting brackets with adjustment knobs and styli.

For Shaft Size	Stylus Lg.	Kits	Each	Repl. Styli	Per Pair
7/16″-3″	4¼″	6468K24	$182.78	6468K34	$23.50
7/16″-8″	6½″	6468K25	207.84	6468K35	29.38

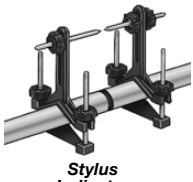

Stylus Indicator

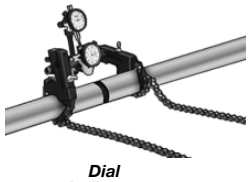

Dial Indicator

Dial Indicators

Also known as rim/face method, these easy-to-read dial indicator kits offer greater precision when checking for misalignment. Kits include steel mounting tubes (see table), software for alignment calculation, and two each of the following: alignment frames, dial indicators, and indicator mount rods with swivel joints. 61035K29 includes two 20″ lengths of roller chain. 61035K49 includes two 12″ lengths and two 18″ lengths of roller chain; user can connect one 12″ chain to each 18″ chain for a total length of 30 inches.

For Shaft Size	Steel Mounting Tubes, No. of Tubes and (Lg.)		Each
¾″-3¾″	2 (5″), 2 (7″), 2 (9″)	61035K29	$883.33
¾″-7¾″	2 (5″), 1 (7″), 1 (9″), 1 (12″), 2 (15″)	61035K49	1,077.92

Static Balancing Ways

Evaluate balance without time-consuming set up, leveling, or centering. These ways accurately balance, straighten, and align armatures, flywheels, propellers, grinding wheels, and other rotating parts. Easy to use—just place the part to be tested on the discs; they freely rotate on sensitive ball bearings. Discs are hardened and ground steel.

Super-Sensitive Bench Style— Have a knife-edge and lightened cut-out discs for extreme precision. Balancing ways can detect out-of-balance as small as five grains in a 3″ radius on a 1½-lb. workpiece. (1 grain = 0.002286 oz.).

Pillow-Block Style— Excellent for use with unusual widths and lengths. Ways can be set apart at any distance and attached to any solid sub-base. Come as a set of two pieces.

Also Available: Replacement discs. Please ask for 20075A888 and specify static balancing way part number.

Max. Cap., lbs.	Max. Dia. of Work	Max. Space Between Discs	Disc Size, Dia.×Thick.	Overall Ht.	Wt., lbs.		Each
Standard Bench Style							
1,000	21″	20″	5 29/32″ × 5/32″	13 5/16″	40	2264A2	$898.75
2,000	40″	30″	5⅝″ × 1/4″	24″	80	2264A13	1,145.04
Super-Sensitive Bench Style							
200	21″	20″	5 29/32″ × 5/32″	13 5/16″	40	2264A7	1,012.68
Standard Floor Style							
1,000	43″	29″	5 29/32″ × 5/32″	30 5/16″	95	2264A11	1,401.31
Pillow-Block Style							**Per Set**
200	—	—	5 29/32″ × 5/32″	6 15/16″	40	2337A19	$1,218.91
1,000	—	—	5 29/32″ × 5/32″	6 15/16″	45	2337A21	1,173.18
2,000	—	—	5⅞″ × 5/16″	6 15/16″	50	2337A17	1,783.24

Standard Bench Style (2264A2)

Pillow-Block Style (2337A19)

Binoculars

Focus Free— Your subject comes into clear view without any focusing. An extra-wide field of view makes it easy to track fast-moving objects. Binoculars have 7X (700%) magnification and 35 mm lenses that cover a 578-ft. wide field at 1,000 yards. A lens coating neutralizes reflection. Retractable rubber eyecups make viewing easy for eyeglass wearers. Size is 5″ Lg.×7⅛″ Wd.×2¼″ Ht. Weight is 22.5 oz. Include a soft padded case with carrying strap.

Night Vision— See in complete darkness at distances up to 600 feet. Great for security and navigation at night. They have 2.5X (250%) magnification, a built-in illuminator, and 42 mm lenses that cover a 94-ft. wide field at 100 yards. Uses two AA batteries (sold separately). Size is 6½″ Lg.×6 19/64″ Wd.×3″ Ht. Weight is 1.75 lbs. Include carrying case and strap.

Focus Free

Night Vision

Focus-Free Binoculars	6590T11	Each	$59.08
Night Vision Binoculars	14175T9	Each	$543.44
AA Batteries (4/pkg.)	71455K53	Per Pkg.	$2.94

Compact One-Handed Telescope

Quickly and easily view far off items while keeping one hand free—a unique slide mechanism allows one-finger focusing. Lens has 6X (600%) magnification with an 8° field of view and a working distance of 3¼ ft. and beyond. Telescope is completely rubber coated for durability and has a vinyl carrying case. Size is 3¼″ Lg.×1½″ Wd.×1″ Ht.

3118T38 ..... **Each** $147.90

About Magnification

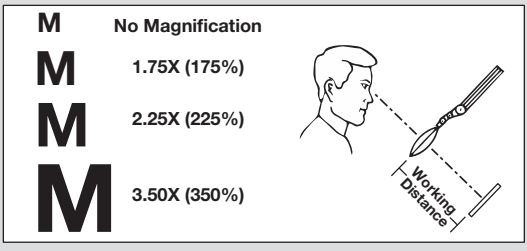

Magnification— Refers to how much larger an object appears when viewed through a magnifying lens. It is expressed by a number followed by an X or a %. For example, an object viewed through a 1.75X lens is magnified to 175% of its original size.

Working Distance— The distance from the magnifying lens to the point where the viewed object is in the best possible focus.

Lens— *Glass* is best used where heat or chemicals might damage an acrylic lens. *Acrylic* is lighter than glass, a factor to consider when buying hand-held magnifiers.

Illuminated Magnifiers

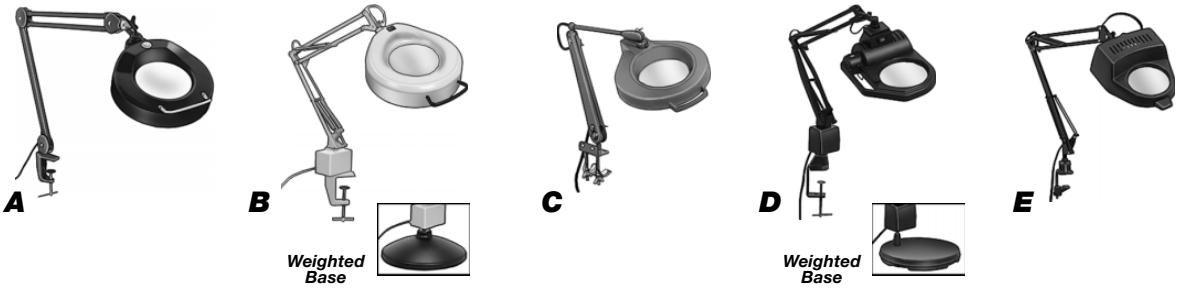

Shine a light on your magnification work. Illuminated magnifiers have either a fluorescent, halogen, or incandescent light source. *Fluorescent* operates cooler than the other two and produces an even, white light. *Halogen* produces a brighter light than the others, but generates more heat. *Incandescent* is for general lighting applications. All magnifiers have a glass lens and a steel spring arm, and include a light bulb (unless noted). Operate on 120 VAC, 60 Hz (unless otherwise stated); UL listed.

Fluorescent Magnifiers

(A) Economy— Cool, even light at an economical price. Shade is aluminum. Base clamps to surfaces up to 2¼″ thick. Include a 5-ft. cord with two-prong plug. Operate on 110 VAC, 60 Hz.

(B) Standard— Have feather-touch control for easy positioning and a stamped steel shade with a plastic shield to protect the bulb. Include a 5-ft. cord with three-prong plug. Operate on 115 VAC, 60 Hz. *Clamp base* attaches to surfaces up to 2¼″ thick. *Weighted base* is 10½″ dia.

(C) Steady Arm— Not even vibrating machinery will make this magnifier lose its place. Arm has steel ball-joints that lock into position with wing nuts. Shade is die cast zinc with a handle for easy positioning and a plastic shield to protect the bulb. Dual clamp base prevents magnifier from twisting off the mounting edge and attaches to surfaces up to 2″ thick. Base has mounting holes for vertical and horizontal mounting (bolts included). Includes a 9-ft. cord with three-prong plug. *Add-on 3X (300%) lens* increases the magnification to 3.75X (375%) with a 3¾″ working distance. Add-on lens screws onto magnifier.

Halogen Magnifiers

(D) Standard— Lens is set in a thermoplastic shade. Magnifiers have an on/off switch and a 700-watt, three-prong outlet in the base. Include a 9-ft. cord with three-prong plug. *Clamp base* attaches to surfaces up to 2¾″ thick. *Weighted base* is 10½″ dia. *Add-on 1.75X (175%) lens* increases magnification to 2.5X (250%) with an 8″ working distance; *add-on 3.5X (350%) lens* increases magnification to 4.25X (425%) with a 2½″ working distance. Add-on lenses screw onto magnifier.

Incandescent Magnifier

(E) Standard— Uses a 60-watt incandescent bulb (sold separately). It has a thermoplastic shade and clamp base that attaches to surfaces up to 2″ thick. Includes a 5-ft. cord with two-prong plug.

Base	Magnification	Arm Reach	Lens Dia.	Working Distance	Magnifiers	Each	Replacement Lenses	Each	Replacement Bulbs Watts	Replacement Bulbs	Each
Fluorescent Magnifiers											
(A) Economy— **To Order:** Please specify color: black or white.											
Clamp	1.75X (175%)	36″	5″	13″	14695T5	$113.87	14695T21	$30.00	22	14715T52	$9.12
Clamp	1.75X (175%)	45″	5″	13″	14695T7	112.01	14695T21	30.00	22	14715T52	9.12
Clamp	2.25X (225%)	36″	5″	8″	14695T6	128.73	14695T31	36.00	22	14715T52	9.12
Clamp	2.25X (225%)	45″	5″	8″	14695T8	126.71	14695T31	36.00	22	14715T52	9.12
(B) Standard— *Color is light gray.*											
Clamp	1.75X (175%)	30″	5″	13″	1461T63	155.53	1461T22	29.41	22	14715T52	9.12
Clamp	1.75X (175%)	45″	5″	13″	1461T61	155.53	1461T22	29.41	22	14715T52	9.12
Clamp	2.25X (225%)	30″	5″	8″	1461T65	172.92	1461T23	35.29	22	14715T52	9.12
Clamp	2.25X (225%)	45″	5″	8″	1461T64	172.92	1461T23	35.29	22	14715T52	9.12
Weighted	1.75X (175%)	30″	5″	13″	1461T62	219.04	1461T22	29.41	22	14715T52	9.12
Weighted	2.25X (225%)	30″	5″	8″	1461T66	230.57	1461T23	35.29	22	14715T52	9.12
(C) Steady Arm— *Color is gray.*											
Clamp	1.75X (175%)	28″	5″	13″	8538T31	220.71	8477T701	41.67	22	14715T52	9.12
Halogen Magnifiers											
(D) Standard— *Color is black.*											
Clamp	1.75X (175%)	45″	5″	13″	1035T56	192.37	1035T55	14.00	100	1513K32	20.56
Weighted	1.75X (175%)	30″	5″	13″	1035T57	212.65	1035T55	14.00	100	1513K32	20.56
Incandescent Magnifier— *Light bulb not included.*											
(E) Standard— **To Order:** Please specify color: black or white.											**Pkg.** (2/Pkg.)
Clamp	1.75X (175%)	32″	3″	13″	66045T73	34.40	———	———	60	1728K96	$7.24

Accessories and Replacement Parts

For (B) Fluorescent Standard Magnifiers Only
Repl. Switch Assembly ..... 1461T75 ..... $10.67

For (C) Fluorescent Steady-Arm Magnifier Only
Add-On 3X (300%) Lens ..... 1462T122 ..... 35.06
Optional 2.25X (225%) Lens ..... 8477T702 ..... 47.83

For (D) Halogen Standard Magnifiers Only
Add-On 1.75X (175%) Lens ..... 1035T59 ..... $28.89
Add-On 3.5X (350%) Lens ..... 1035T62 ..... 34.67

For information about magnification, see page 2304.

Specialty Fluorescent Illuminated Magnifiers

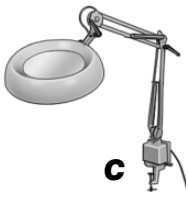

Weighted Base

Screw Base

Weighted Base

Weighted Base

Weighted Base

Add light to any magnification job. Illuminated magnifiers have either one or two low-heat fluorescent bulbs (included) that produce an even, white light. All have a glass lens and a steel spring arm. Operate on 120 VAC, 60 Hz; UL listed.

(A) Floating-Arm ESD-Safe— A counterbalanced arm positions effortlessly with a touch and won't drift. Plus, it's safe for use in areas where electrostatic discharge (ESD) is a problem. Shade is die cast zinc with a handle and a plastic shield to protect the bulb. Include an 8-ft. cord with three-prong plug. *5X (500%) magnifier* meets MIL-STD-2000. *Clamp base* attaches to surfaces up to 2¾″ thick. *Weighted base* is 9¾″ Lg.×7″ Wd. *Add-on 3X (300%) lens* increases magnification to 3.75X (375%) with a 3¾″ working distance; for 1.75X models only. Add-on lens is held in place with included metal clips.

(B) Highlighting— Cast light at an angle, making textures and surface irregularities more visible. Have an ABS plastic shade and a 10-ft. cord with three-prong plug. *Clamp base* attaches to surfaces up to 2″ thick. *Weighted base* is 9¾″ Lg.×7″ Wd. *Add-on 3X (300%) lens* increases magnification to 3.75X (375%) with a 3¾″ working distance; for 1.75X models only. Add-on lens is held in place with included metal clips.

(C) Distortion-Free— Get a distortion-free viewing area. *Clamp and screw base* have an aluminum shade and a 6-ft. cord with three-prong plug. *Clamp base* attaches to surfaces up to 2 9/16″ thick. *Weighted base* has a polycarbonate shade and a 9-ft. cord with three-prong plug. Base is 10½″ dia.

(D) Wide Angle— Have a 6¾″ Wd.×4½″ Ht. rectangular lens for a large, distortion-free magnification area. Two independently controlled bulbs cast even, shadow-free light when both are lit and highlight surface irregularities when only one bulb is lit. Magnifiers have an ABS plastic shade and a 6-ft. cord with three-prong plug. *Anti-reflective lens* minimizes glare and reflection from overhead lighting. Coating meets MIL-STD C-675C for abrasion resistance. Safe for use in areas where electrostatic discharge (ESD) is a problem. *Clamp base* attaches to surfaces up to 2¾″ thick. *Weighted base* is 9″ dia. *Add-on 3.5X (350%) swing-away lens* increases magnification to 4.375X (437.5%) with a 3″ working distance.

(E) Dimmable-Light Wide Angle— These magnifiers dim intensity from 100% to 25% for an improved view of reflective surfaces and provide our largest distortion-free magnification area. They have a cast aluminum shade, a cast iron base, a 3.5X (350%) swing-away lens that increases magnification to 4.25X (425%), and a 6-ft. cord with three-prong plug. C-UL listed. *Clamp base* attaches to surfaces up to 2 9/16″ thick. *Weighted base* is 12″ Lg.×11″ Wd.

Base	Magnification	Arm Reach	Lens Dia.	Working Distance	Illuminated Magnifiers		Replacement Lens		Replacement Bulb Watts		
(A) Floating-Arm ESD-Safe—To Order: Please specify color: almond, black, or gray (unless noted).											
Clamp	1.75X (175%)	28″	5″	13″	**8477T26**	$236.27	**8477T701**	$41.67	22	**14715T52**	$9.12
Clamp	1.75X (175%)	42″	5″	13″	**8477T29**	253.45	**8477T701**	41.67	22	**14715T52**	9.12
Clamp	2.25X (225%)	28″	5″	8″	**8477T25**	253.45	**8477T702**	47.83	22	**14715T52**	9.12
Clamp	2.25X (225%)	42″	5″	8″	**8477T27**	253.45	**8477T702**	47.83	22	**14715T52**	9.12
Clamp	5X (500%)	42″	3″★	2½″	**10025T51**●	262.25	—	—	22	**14715T52**	9.12
Weighted	1.75X (175%)	28″	5″	13″	**8477T24**	276.82	**8477T701**	41.67	22	**14715T52**	9.12
Weighted	2.25X (225%)	28″	5″	8″	**8477T23**	291.32	**8477T702**	47.83	22	**14715T52**	9.12
(B) Highlighting—To Order: Please specify color: almond, black, or gray.											
Clamp	1.75X (175%)	26″	5″	13″	**1462T16**	220.83	**8477T701**	41.67	13	**14715T74**	4.26
Clamp	1.75X (175%)	40″	5″	13″	**1462T18**	220.83	**8477T701**	41.67	13	**14715T74**	4.26
Clamp	2.25X (225%)	26″	5″	8″	**1462T15**	250.00	**8477T702**	47.83	13	**14715T74**	4.26
Clamp	2.25X (225%)	40″	5″	8″	**1462T17**	250.00	**8477T702**	47.83	13	**14715T74**	4.26
Weighted	1.75X (175%)	26″	5″	13″	**1462T14**	256.98	**8477T701**	41.67	13	**14715T74**	4.26
Weighted	2.25X (225%)	26″	5″	8″	**1462T13**	282.62	**8477T702**	47.83	13	**14715T74**	4.26
(C) Distortion-Free— *Color is beige (unless noted).*											
Clamp	2X (200%)	43″	7½″	10″	**6788T9**	369.83	**6788T32**	152.00	34	**6788T15**	25.47
Screw	2X (200%)	43″	7½″	10″	**6788T8**	369.83	**6788T32**	152.00	34	**6788T15**	25.47
Weighted	2.25X (225%)	30″	5″	8″	**6788T24**♠	280.90	**6788T42**	32.22	22	**1614K14**	9.12
(D) Wide Angle with Standard Lens—To Order: Please specify color: black or light gray.											
Clamp	1.875X (187.5%)	30″	6¾″ Wd.×4½″ Lg.	11″	**1080T35**	409.18	**1080T111**	81.67	13	**1528K47**	10.71
Clamp	1.875X (187.5%)	45″	6¾″ Wd.×4½″ Lg.	11″	**1080T34**	409.18	**1080T111**	81.67	13	**1528K47**	10.71
Weighted	1.875X (187.5%)	30″	6¾″ Wd.×4½″ Lg.	11″	**1080T36**	487.69	**1080T111**	81.67	13	**1528K47**	10.71
(D) Wide-Angle ESD-Safe with Anti-Reflective Lens— *Color is black.*											
Clamp	1.875X (187.5%)	30″	6¾″ Wd.×4½″ Lg.	12″	**1080T32**	611.56	**1080T112**	231.48	13	**1528K47**	10.71
Clamp	1.875X (187.5%)	45″	6¾″ Wd.×4½″ Lg.	12″	**1080T31**	611.56	**1080T112**	231.48	13	**1528K47**	10.71
Weighted	1.875X (187.5%)	30″	6¾″ Wd.×4½″ Lg.	12″	**1080T33**	701.79	**1080T112**	231.48	13	**1528K47**	10.71
(E) Dimmable-Light Wide Angle—To Order: Please specify color: beige or black.											
Clamp	1.75X (175%)	43″	7½″ Wd.×6 3/16″ Lg.	13″	**8415T11**	524.06	—	—	34	**8415T23**	51.18
Weighted	1.75X (175%)	25″	7½″ Wd.×6 3/16″ Lg.	13″	**8415T12**	615.40	—	—	34	**8415T23**	51.18

For Floating-Arm ESD-Safe Magnifiers and Highlighting Magnifiers with 1.75X (175%) Lenses Only

Add-On 3X (300%) Lens **1462T122** $35.06

For Wide-Angle Magnifiers Only (Not for Dimmable-Light Wide-Angle Magnifiers)

Add-On 3.5X (350%) Swing-Away Lens **1080T18** $96.74

★ Includes two 3″ dia. lenses. ● Available in black only. ♠ Color is black.

Combination Halogen Magnifier/Lamp

Get the ultimate in flexibility for demanding inspection jobs—a 50-watt halogen lamp for bright, crisp light and a 5″ diameter glass lens are mounted on separate flexible steel gooseneck arms for use together or alone. Shade is steel. The weighted base is 7″ Lg.×4¼″ Wd. and has a 9-ft. cord with three-prong plug. Bulb is included. Color is black. Operate on 120 VAC, 50/60 Hz. UL listed.

Add-on 2X (200%) lens increases magnification to 2.75X (275%) with a 5½″ working distance; *add-on 3X (300%)* lens provides 3.75X (375%) magnification with a 3½″ working distance. Add-on lenses screw onto magnifier.

Magnification	Arm Reach	Working Distance		
1.75X (175%)	22″	13″	**10605T44**	$144.23
Accessories and Replacement Parts				
Add-On 2X (200%) Lens			**10605T441**	29.12
Add-On 3X (300%) Lens			**10605T581**	37.44
Replacement 1.75X (175%) Lens			**1035T55**	14.00
Replacement 50-Watt Halogen Bulb			**1997K25**	7.50

For information about magnification, see page 2304.

Incandescent Stand Magnifier

A 0.75-watt bulb illuminates your work while the plastic stand holds the lens in place above the surface. Simply tilt the lens to bring objects into focus. The magnifier detaches from the base for hand-held use. Lens is acrylic. Stand is 5¾″ wide at base. Magnifier includes a 4X (400%) bifocal lens insert and a bulb. Operates on two AA batteries (not included, sold separately below).

Magnification	Lens Dia.	Working Distance		Each
2X (200%)	4¼″	6″	2122T41	$17.50
Replacement Bulb (10/Pkg.)			1505K34	Pkg. $5.23
AA Batteries (4/Pkg.)			71455K53	Pkg. $2.94

Hand-Held Extension Magnifiers

Flex-Shaft

Telescoping

Slip into tight, out-of-reach locations to read part numbers, serial numbers, and other fine print. A ball-joint style connection allows magnifiers to swivel to almost any position. All have a shatter-resistant acrylic lens.

Flex-Shaft—Has a plastic-coated flexible-steel shaft that bends and holds its shape until bent again. Remove the center core and shaft remains flexible to be "snaked" into position. Flexible shaft length is 14¼″; overall length is 23½″. Lens frame measures 2½″ Lg.×1¾″ Wd.

Telescoping—Has a stainless steel telescoping handle with a cushion grip. Handle extends from 6⅞″ to 36⅛″. When retracted the overall length is 9½″. Lens frame is 2⅜″ dia.

	Magnification	Lens Dia.	Working Distance		
Flex-Shaft	2X (200%)	1½″	2″	1099T16	$20.99
Telescoping	2.5X (250%)	2″	4″	1330T4	10.91

Multi-Adjustable Dual Lens Magnifiers

Shown with Two Optional Gooseneck Lamps

Back and forth, up and down, left and right—magnifiers adjust to your needs. Plus, they have two acrylic lenses to instantly double your viewing power. Frame base is 1″ square steel tubing and measures 15″ Ht.×12″ Wd.×12″ Dp. Inner working area is 10″ Lg.×10½″ Wd. Color is black.

Optional halogen gooseneck lamp is useful in low-light areas (maximum two lamps per magnifier). Light has a 16″ flexible arm and an on/off switch. Includes a 20-watt MR-16 halogen bulb and a 9-ft. cord with three-prong plug. Operates on 115 VAC, 60 Hz.

Total Magnification	Each Lens Magnification	Lens Size, Lg.×Wd.	Working Distance		
5X (500%)	2.5X (250%)	6″×8″	10″	1101T51	$401.64
6X (600%)	3X (300%)	6″×6″	10″	1101T52	341.32
Optional Halogen Gooseneck Lamp				1101T53	126.00

Gooseneck Magnifiers

Magnetic Base

With a flexible steel neck these magnifiers bend to any position and stay in place. Color is black.

Magnetic-Base Magnifiers—Have a 3⅜″ dia. magnetic base that attaches to any flat, metal surface and a glass lens.

Weighted-Base Magnifier—Easily disassembles for storage and portability. Has a 6″ Lg.×6½″ Wd. weighted base and an acrylic lens.

Magnification	Arm Reach	Lens Dia.	Working Distance		
Magnetic-Base Magnifiers					
2.25X (225%)	9″	4″	8″	2106T11	$57.05
2.25X (225%)	15″	4″	8″	2106T12	59.04
2.25X (225%)	24″	4″	8″	2106T13	64.13
Weighted-Base Magnifier					
2X (200%)	12″	4″	10″	11675T61	31.48

Round Magnifiers

Nonilluminated

Illuminated

LED Illuminated

Magnifiers have plastic handles and frames and acrylic lenses. Color is black (unless noted).

Nonilluminated—The 2X (200%) and 2.5X (250%) lenses have a bifocal lens insert.

Illuminated—Light the magnified area. All have a bifocal lens insert. 8564T12 uses four AA batteries (included). 2154T11 uses two C batteries (included).

LED-Illuminated—Has 12 high-powered LED bulbs for bright, even light and distortion-free viewing over the entire magnified area. LEDs also have long bulb life—50,000 hours. Magnifier uses three AA batteries (not included; sold separately below). Includes a wrist strap.

Magnification★	Lens Dia.	Working Distance★	Overall Lg.	Magnifiers		Repl. Bulb		Repl. Battery	
Nonilluminated									
2X (200%), 4X (400%)	4″	2″, 1¼″	8⅞″	1422T3	$16.54				
2X (200%), 5X (500%)	3″	2¼″, 1¼″	7⅜″	1422T2	10.65				
2.5X (250%), 6X (600%)	5″	2¾″, 1¼″	10⅜″	1422T4♣	24.43				
3X (300%)	2″	1½″	5⅞″	1422T1	7.62				
Illuminated									
2X (200%), 4X (400%)	3″	5″, 2½″	9″	8564T12	23.05	8564T22	$0.67	14715T102	$0.68
3X (300%), 5X (500%)	4″	11¼″, 2½″	10″	2154T11	22.44	2154T33	1.50	14715T103	1.50
LED-Illuminated—*Batteries not included.*									
2.5X (250%)	2″	4″	7½″	1366T32	52.36			14715T102	.68

★ First figure refers to magnifier lens; second to bifocal lens insert. ♣ Frame is gray and black.

Rectangular Magnifiers

B
Illuminated Magnifier

All magnifiers feature a 2″ Lg.×4″ Wd. lens with a bifocal lens insert. Handles and frames are plastic; lenses are acrylic. Color is black.

(A) Nonilluminated Magnifier—Ideal for use in bright environments. Overall length is 8¼″.

(B) Illuminated Magnifier—Has an overall length of 8¼″. Uses two AA batteries (included).

(C) Folded Illuminated Magnifier—Swing handle open to use and fold it shut to store. Overall length is 7″. Closed size is 3″ Lg.×4⅞″ Wd. Uses two AAA batteries (included).

	Magnification★	Working Distance★		
A	2X (200%), 6X (600%)	2″, 1¾″	2143T31	$15.99
B	3X (300%), 5X (500%)	11¼″, 1¼″	10155T64	22.31
C	2X (200%), 6X (600%)	6½″, 2¼″	11645T65	13.72
Replacement Battery for 10155T64			14715T102	.68
Replacement Battery for 11645T65			14715T101	.79

★ First figure refers to magnifier lens; second to bifocal lens inset.

Magnifier Bench Set

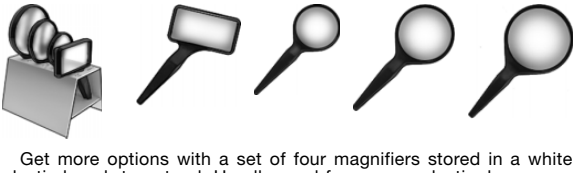

Get more options with a set of four magnifiers stored in a white plastic bench-top stand. Handles and frames are plastic; lenses are acrylic. Color is black. Set includes one each of the following:

2″ Lg.×4″ Wd. Rectangle Lens Magnifier—Magnification is 2X (200%) with a 9″ working distance.

2½″ Diameter Round Lens Magnifier—Magnification is 3X (300%) with a 6″ working distance.

3¼″ Diameter Round Lens Magnifier—Magnification is 2X (200%) with an 8″ working distance.

4″ Diameter Round Lens Magnifier—Magnification is 2X (200%) with a 9″ working distance.

2131T41 ..... **Set** $57.78

For information about magnification, see page 2304.

Compact Illuminated Magnifiers

Small but powerful, these magnifiers light your work for an even better view. They have an acrylic lens set in an impact-resistant plastic housing. Include two AAA batteries.

Mini Magnifiers— Our smallest illuminated magnifiers come in a plastic pouch. Bulbs are not replaceable.

Standard Magnifiers— Have a locking light switch and an integral handle. 8485T14 has a wide-angle lens for a wider view.

Magnification	Lens Size, Lg.×Wd.	Working Distance	Overall Size, Lg.×Wd.		Each
Mini Magnifiers					
5X (500%)	1″ Dia.	2 3/16″	2″ ×2″	**8536T14**	$11.40
10X (1,000%)	1″ Dia.	1 1/8″	2″ ×2″	**8536T16**	13.17
Standard Magnifiers					
3X (300%)	1 3/4″×1 3/4″	3 1/4″	5 1/4″×2″	**8485T14**	10.94
4X (400%)	1 1/4″×1 1/4″	3 5/16″	4 3/4″×1 1/2″	**8485T15**●	11.67
5X (500%)	1 1/4″×1 3/8″	2″	4 3/4″×1 1/2″	**8485T12**	9.93
10X (1,000%)	1 1/4″×1 3/8″	1″	4 3/4″×1 1/2″	**8485T13**	17.95
Replacement Parts					
AAA Battery				**14715T101** Each	$0.79
Bulbs for Standard Magnifiers (10/Pkg.)				**1505K41** Pkg.	$6.38

● Has an 8X (800%) bifocal lens insert with a 1 1/4″ working distance.

Measuring Magnifiers

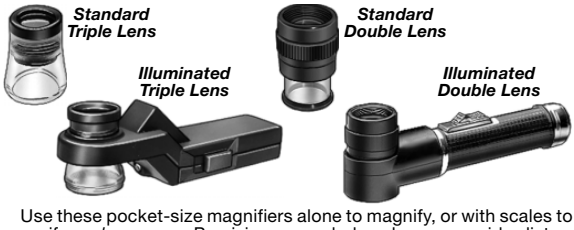

Use these pocket-size magnifiers alone to magnify, or with scales to magnify *and* measure. Precision-ground glass lenses provide distortion-free images and are adjustable for clear focus. Choose from standard and illuminated models with a triple- or double-lens system.

Triple-Lens Measuring Magnifiers

Also known as Hastings Triplet magnifiers, these have three separate lenses bonded together for sharp images. The next step up in image quality is a microscope. Magnifiers are 2″ high. Measuring scales are not included. General purpose, protractor, inch, and metric scales are sold separately below.

Illuminated magnifier has a 5 3/4″ long handle and uses two AA batteries (not included; sold separately below).

Magnification	Lens Dia.	Working Distance	***Standard***		***Illuminated***	
7X (700%)	0.780″	1.5″	**1502T2**	$63.45	———	———
10X (1,000%)	0.622″	1″	**1502T3**	68.63	**1060T22**	$70.96
AA Battery					**14715T102**	$0.68

General Purpose Scale— Measures any radius from 1/16″ to 3/8″; angles up to 90° in 1° increments; lengths up to 3/4″ in 0.005″ increments; lengths up to 20 mm in 0.1 mm increments; and line widths of 0.001″, 0.002″, and 0.003″.
1502T4 ..... $37.20

Protractor Scale— Measures angles up to 360° in 1° increments.
1502T7 ..... $37.20

Inch Scale— Measures lengths up to 3/4″ in 0.005″ increments.
1502T5 ..... $37.20

Metric Scale— Measures lengths up to 20 mm in 0.1 mm increments.
1502T6 ..... $37.20

Double-Lens Measuring Magnifiers

Two lenses provide distortion-free viewing. Magnifiers are 2 5/16″ high and include a general purpose scale. Scale measures circles from 0.002″ to 0.0625″; radii from 1/16″ to 3/8″; angles from 0° to 90° in 5° increments; and lengths from 0.016″ to 0.250″. Also has a millimeter scale 10 mm long with 1 mm divisions and an inch scale 0.500″ long with 0.005″ divisions. An American Thread Accuracy Scale is sold separately below.

Illuminated magnifier has a 4 1/2″ long handle and runs on two C batteries (not included; sold separately below).

Magnification	Lens Dia.	Working Distance	***Standard***		***Illuminated***	
7X (700%)	1″	1″	**1755T17**	$83.96	**1755T11**	$98.05
C Battery					**14715T103**	$1.50
Replacement General Purpose Scale					**1755T22**	$16.92

American Thread Accuracy Scale— Measures the following threads per inch: 50, 32, 28, 24, 20, 18, 16, 14, and 8.
1755T23 ..... $16.92

Flashlight-Style Illuminated Magnifiers

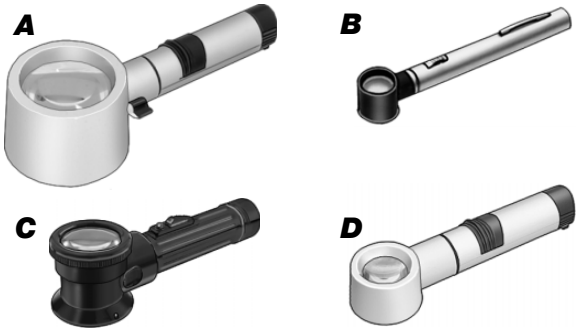

A flip of the on/off switch provides illuminated magnification in perfect focus. See also 6545T41 (magnifier attachment) and 6545T4 (mini light) on page 733.

A Wide-Lens Illuminated Magnifier— Has an extra-large acrylic aspheric lens (flat on the object side, curved on the viewing side) to ensure edge-to-edge clarity. Lens resists scratches and dust. Magnifier has a plastic housing and uses two C batteries (not included; sold separately below).

Magnification	Lens Dia.	Working Distance	Overall Lg.		
4X (400%)	2.75″	2.5″	10″	**1466T1**	$88.36
C Battery				**14715T103**	1.50

B Grooved-Lens Illuminated Magnifier— Also called a Coddington magnifier, it has a grooved lens circumference for extra sharp, crisp images. Magnifier has an impact-resistant plastic head with a chrome-plated copper handle and a glass lens. Uses two AA batteries (not included; sold separately below).

Magnification	Lens Dia.	Working Distance	Overall Lg.		
10X (1,000%)	0.780″	1″	5 3/4″	**1504T14**	$34.44
AA Battery				**14715T102**	.68

C Illuminated Magnifiers with Scale— Eyepiece has both 1/32″ and 0.5 mm scales on two sides. Magnifiers have an impact-resistant plastic head, a glass lens, and a black plastic handle. Use two C batteries (not included; sold separately below).

Magnification	Lens Dia.	Working Distance	Overall Lg.		
5X (500%)	2″	2″	8 1/4″	**6559T11**	$37.64
10X (1,000%)	1.2″	1″	7″	**6559T12**	30.47
C Battery				**14715T103**	1.50

D Illuminated Magnifier with Precision Scale— Detachable scale has 1/2 mm and 1/64″ graduations. Magnifier has an acrylic aspheric lens (flat on the object side, curved on the viewing side) to ensure edge-to-edge clarity. Lens resists scratches and dust. Magnifier has a plastic housing and uses two C batteries (not included; sold separately below).

Magnification	Lens Dia.	Working Distance	Overall Lg.		
10X (1,000%)	1.38″	1.0″	8 1/2″	**1147T52**	$79.66
C Battery				**14715T103**	1.50

Compact Fold-Out Magnifiers

Triple Lens

Precision glass lenses with high magnification provide sharp color and detailed imaging. These compact magnifiers fit easily in your pocket and have a fold-out nickel-plated case.

Triple-Lens Magnifiers— Also called Hastings Triplet magnifiers, these have three lenses bonded together for sharp images without distortion.

Single-Lens Magnifiers— Also called Coddington magnifiers, these have a single lens with a grooved circumference for excellent image resolution; exceeded only by the triple lens.

Magnification	Working Distance	***Triple Lens*** Lens Dia.			***Single Lens*** Lens Dia.		
7X (700%)	1 1/2″	0.780″	**1501T1**	$47.64	———	———	———
10X (1,000%)	1″	0.622″	**1501T2**	49.76	0.780″	**1501T6**	$31.07
14X (1,400%)	3/4″	0.492″	**1501T3**	56.77	0.622″	**1501T7**	33.98
20X (2,000%)	1/2″	0.327″	**1501T4**	58.14	0.492″	**1501T8**	37.03

For information about magnification, see page 2304.

Pocket Magnifiers with Attached Case

Rectangular Case

Oval Case One Lens

Oval Case Three Lenses

Dual-purpose plastic cases protect these compact magnifiers when not in use and serve as handles when they are. Color is black (unless noted).

Rectangular case magnifiers have an acrylic lens and a slide-out case.

Oval case magnifiers have either a single lens or multiple lenses that can be used alone or together for maximum magnification. Lenses are glass (unless noted) and swing out of case.

Magnification	Lens Dia.	Working Distance	No. of Lenses		
Rectangular Case					
3X (300%)	1.38″	3½″	1	**2152T1**★	$10.23
5X (500%)	1.38″	2″	1	**2152T2**	10.08
Oval Case					
3X (300%)	1.38″	3½″	1	**6798T13**♠	8.52
4X (400%)	1.42″	2½″	1	**1503T3**	16.94
7X (700%) ♦	1.70″	1¼″	2	**1503T7**★♠	17.16
9X (900%) ♦	0.91″	1⅛″	2	**1503T5**	23.29
15X(1,500%) ♦	1.34″	1″	3	**1503T4**	24.00
20X (2,000%) ♦	0.80″	½″	3	**1503T6**	30.17

★ Color is gray. ♠ Has an acrylic lens.
♦ Maximum magnification when lenses are used together.

Fixed-Focus Stand Magnifiers

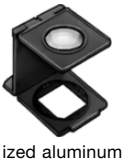

A built-in stand keeps the lens at optimal distance for focused, hands-free magnification. Also called linen testers, these magnifiers are perfect for quality control and thread counting in fabric inspection.

Plastic Stand—Has an acrylic lens and a 1″ scale with 1/16″ graduations and 1 mm graduations. Color is black.

Aluminum Stands—They're black-coated anodized aluminum with a glass lens. Include a vinyl pouch. 1493T26 has a 1″ scale with ⅛″ and 1 mm graduations. 1493T27 has a ½″ scale with ⅛″ graduations.

Magnification	Lens Dia.	Working Distance	Overall Size, Lg.×Wd.×Ht.		
Plastic Stand					
5X (500%)	1″	2″	2¼″×1 19/32″×2⅜″	**1493T14**	$7.50
Aluminum Stand					
5X (500%)	1″	2″	2¼″×1½″ ×2″	**1493T26**	18.35
10X (1,000%)	½″	1″	1¼″× ¾″ ×1¼″	**1493T27**	17.50

Watchmakers' Loupes

8539T65 *8539T35*

Bring fine, detailed work into focus. Loupes have a glass lens mounted in a black plastic body and can be used with the optional adjustable elastic headband.

The ***triple-lens*** loupe has three separate lenses bonded together, known as a Hastings Triplet lens, for extra-sharp images without distortion.

Magnification	Lens Dia.	Working Distance		
Single Lens				
4X (400%)	1″	2½″	**8539T65**	$14.00
5X (500%)	1″	2″	**8539T64**	14.00
7X (700%)	1″	1½″	**8539T34**	14.00
10X (1,000%)	1″	1″	**8539T63**	16.58
Triple Lens				
10X (1,000%)	0.62″	1″	**8539T35**	51.95
Optional Elastic Headband			**8539T5**	10.32

Adjustable-Magnification Loupe

Zoom in on the magnification you need. Loupe adjusts to magnify at 8X (800%), 10X (1,000%), 12X (1,200%), 14X (1,400%), and 16X (1,600%). Simply twist to adjust and focus. It has scales that are 16 mm long in 0.1 mm increments and 0.6″ long in 0.005″ increments. Lens is glass and ⅜″ dia. Body is black metal and plastic. Includes a vinyl case.

13765T21 ..... $368.18

Double-Lens Magnifier

Two glass lenses provide a wide, flat viewing field. A flat lens on the outside of both lenses and convex lenses on the inside of the magnifier give distortion-free magnification. Plus, the plastic body fits comfortably between your thumb and index finger. Color is black.

Magnification	Lens Dia.	Working Distance		
3.5X (350%)	1.625″	3″	**1494T1**	$43.53

Headband Flip-Up Magnifiers

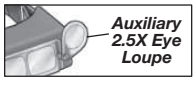

Standard and Economy

With Light

Antistatic

Read fine print and inspect precision parts with these lightweight magnifiers that can be worn over prescription and safety glasses. Lenses pivot up and out of the way when not needed. Magnifiers include a headband and a lens. All except antistatic models also include a visor, which blocks any unnecessary light.

Standard

Have a 1½″ Lg.×4″ Wd. glass lens and an adjustable headband with felt padding. Color is gray.

Replacement lenses, sold separately, are easily interchangeable, making it possible to change the level of magnification. The auxiliary eye loupe attaches for an additional 2.5X (250%) magnification.

Magnification	Working Distance	*Magnifiers*		*Repl. Lens*	
1.5X (150%)	20″	**1490T1**	$48.26	**1509T31**	$30.00
1.75X (175%)	14″	**1490T2**	48.26	**1509T32**	30.00
2X (200%)	10″	**1490T6**	48.26	**1509T36**	30.00
2.5X (250%)	8″	**1490T3**	48.26	**1509T33**	30.00
2.75X (275%)	6″	**1490T4**	49.90	**1509T34**	31.52
3.5X (350%)	4″	**1490T5**	49.90	**1509T35**	31.52
Accessories					
Auxiliary 2.5X Eye Loupe				**1509T14**	$10.98
Headband and Visor without Lens				**1490T8**	24.00

Economy

Have a soft, flexible headband that easily adjusts to the correct fit and a 1½″ Lg.×4″ Wd. acrylic lens with mar-resistant coating. Color is gray.

Magnification	Working Distance	*Magnifiers*		*Repl. Lens*	
1.75X (175%)	14″	**11555T3**	$19.68	**11555T31**	$6.55
2.25X (225%)	8″	**11555T1**	19.68	**11555T11**	6.55
2.75X (275%)	6″	**11555T5**	19.68	**11555T51**	6.55

With Light

An 8,000-candlepower xenon light allows for even better viewing. Magnifiers have a 1⅛″ Lg.×3⅛″ Wd. acrylic lens and an adjustable padded headband. Color is tan. Light uses two AA batteries (included).

Magnification	Working Distance	*Magnifiers*		*Repl. Lens*	
1.75X (175%)	14″	**1500T2**	$72.20	**1500T12**	$10.00
2.25X (225%)	8″	**1500T4**	72.20	**1500T14**	10.00
2.75X (275%)	6″	**1500T5**	72.20	**1500T15**	10.00
Replacement Xenon Bulb				**65135T65**	$5.47
Replacement AA Battery				**14715T102**	.68

Antistatic

A specially-constructed frame eliminates static electricity build-up, making magnifiers ideal for sensitive electronic and clean room environments. Open-design cushioned headband fits all head sizes. Lens is 1 3/16″ Lg.×3 5/16″ Wd. and acrylic. Color is black.

Magnification	Working Distance	*Magnifiers*		*Repl. Lens*	
1.6X (160%)	12″-14″	**1485T11**	$29.81	**1485T21**	$9.58
2.25X (225%)	7″-10″	**1485T13**	33.65	**1485T23**	13.42
2.75X (275%)	4″- 7″	**1485T14**	33.65	**1485T24**	13.42

For information about magnification, see page 2304.

Eyeglass Loupes

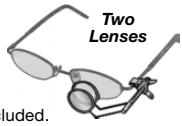

Note: Eyeglass Frames not Included.

An adjustable metal (unless noted) clip fits and attaches to all eyeglass frames. Flip loupes out of the way when you don't need them. Loupes have a 0.94″ dia. glass lens (unless noted).

Magnification♣	Working Distance♣	No. of Lenses		
3X (300%)	3½″	1	1340T1●	$29.00
4X (400%)	2½″	1	1340T9	36.81
7X (700%)	1½″	1	1340T5	39.24
4X (400%), 7X (700%)	2½″, 1½″	2	1340T6	46.99

♣ Second figure refers to the combination of both lenses.
● Clip is plastic. Lens is acrylic.

Handy Sheet and Page Magnifiers

Flexible ultra-thin plastic magnifying sheets for reading books, newspapers, maps, and blueprints. Magnifiers include a protective vinyl case, unless noted. 6796T15 has a vinyl border around lens.

6796T12

	Magnification	Working Distance	Lens Size, Lg.×Wd.		
Credit Card	2X (200%)	1½″	3¼″× 2″	6796T12	$1.86
Pocket	2X (200%)	1½″	2½″× 7¼″	6796T13	3.02
Index Card	2X (200%)	1½″	3¾″× 5⅜″	6796T14	3.02
Page	2X (200%)	1½″	7″ ×10″	6796T15▲	4.28
Page	2X (200%)	1½″	8½″×11″	6796T16▲	4.60
Page	2X (200%)	2¼″	8¼″×11″	6796T21★	9.75

▲ Does not include a case. ★ Nonbendable; thickness is ⅛″.

Bar Magnifier with Ruler

Read across an entire line of text without eyestrain—the semicircular surface doubles the height of type with 2X (200%) magnification. Simply slide the flat surface of the 8″ Lg.×1″ Wd. lens down the page for easy reading. Ruled markings are shown in inches and sixteenths up to 8″ on one edge, and in centimeters and millimeters up to 200 mm on the other edge. Handle length is 2″. Overall length is 10″.

6786T1 ..... $6.82

Microscope Illuminators

Fluorescent

Maximize your microscope's power with illuminators that provide 360° of uniform shadow-free light. Ideal for inspecting multicolored objects. They're adapted to fit microscopes by American Optical, Bausch and Lomb, Nikon, Olympus, Unitron, Wild, Zeiss, and others. Color is white.

Fluorescent—Made of molded plastic and 6.77″ long with a 3.84″ OD ring. Approximate bulb life is 7,000 hours. Include a 7½-ft. cord with two-prong plug. Operate on 120 VAC, 60 Hz.

LED—Made of ESD-safe plastic and 5.5″ long with a 3.5″ OD ring. Approximate bulb life is 50,000 hours. Has 9 LEDs for variable light from 25% to 100%. Includes a 6-ft. cord with three-prong plug. Operates on 100-240 VAC, 50/60 Hz.

Inside Dia.		
Fluorescent		
1.82″	11505T63	$257.29
2.14″	11505T64	257.29
2.65″	11505T65	257.29
Replacement Bulb	11505T81	74.25
LED		
2.35″	11505T42	349.00

Microscope Slides and Cover Glasses

Just like the ones you used in science class, these slides and cover glasses are designed for specimen observation.

Ht.×Wd.×Thick., mm	Pkg. Qty.		Pkg.
Slides			
25×75×1	72	1149T11	$10.91
Cover Glasses			
22×22×0.15	162	1149T12	6.50
22×40×0.15	89	1149T13	5.99

Eyeglass Magnifiers

Ideal for users with or without eyeglasses. The 1⅛″ Lg.×3⅛″ Wd. acrylic lens can be flipped up and out of the way when not in use.

Clip-On—Perfect for eyeglass wearers. Wire clips can be bent to fit any size or shape eyeglass frames (even frames with bifocals) for instant magnified viewing with both eyes. Eyeglasses not included.

Eyeglass Frame—Eyeglass-style frame is perfect for those who don't wear glasses, but still want lightweight, hands-free magnification. Frames weigh only 1.2 oz. and are ABS plastic for extra durability. Can also use over eyeglasses. Include a case.

Magnification	Working Distance	Clip-On		Eyeglass Frame	
1.5X (150%)	20″	6771T36	$22.62	—	—
1.75X (175%)	14″	6771T21	22.62	1344T21	$34.10
2X (200%)	10″	6771T38	22.62	—	—
2.25X (225%)	8″	6771T22	22.62	1344T22	34.10
2.75X (275%)	6″	6771T23	22.62	1344T23	34.10
3.5X (350%)	4″	6771T24	24.87	1344T24	34.10

Adjustable-Focus Eyeglass Magnifiers

Adjust the focus for multiple working distances. Each lens has a dial for individual focusing. Glasses have plastic lenses and frames with a molded nose bridge. Include a hard shell case.

Detail Glasses—Have 2X (200%) magnification and allow for a working distance up to 16″. Ideal for close-up work.

Long-Range Glasses—Have 2.1X (210%) magnification and a working distance of 10 ft. and longer. Use for far distances.

Detail Glasses	3102T45	$94.10
Long-Range Glasses	3102T41	85.30

Stereo Microscope

A stereo microscope gives you an unreversed image and good depth of field, which are essential for precision inspection and assembly. This scope has rack-and-pinion focus with a viewing angle of 45°, a 360° rotatable head, and 10X (1,000%) and 30X (3,000%) magnification settings. Working distance is 4.3″. Viewing field is 0.728″ dia. at 10X; 0.255″ dia. at 30X. Microscope includes two built-in illuminators with an electronic dimmer. Illuminators run at 110 VAC, 60 Hz. Includes 6-ft. cord with three-prong plug.

Microscope	11705T96	$391.30
Repl. Upper Bulb	11705T94	13.00
Repl. Lower Bulb	11705T95	10.11

Adjustable-Arm Stereo Microscopes

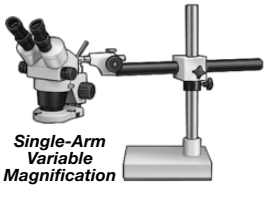

Single-Arm Variable Magnification

An adjustable arm provides maximum flexibility and comfort, while the extra-heavy base adds stability. All microscopes have individually adjustable eyepieces and a fluorescent ring light for extra-bright illumination. Viewing angle is 45°. Head rotates 360°. Lights operate on 120 VAC, 60 Hz.

Single-Arm Microscopes—*Dual magnification* has 10X (1,000%) and 20X (2,000%) settings; working distance is 4.13″. Viewing field is 0.8″ dia. at 10X; 0.4″ dia. at 20X. *Variable magnification* has adjustable magnification from 6.5X (650%) to 45X (4,500%); working distance is 3.7″. Viewing field is 1.2″ dia. at 6.5X; 0.18″ dia. at 45X. Include an 8-ft. cord with two-prong plug.

Dual-Arm Microscopes—Provide extra stability and easily slide across your specimen. *Dual magnification* has 10X (1,000%) and 20X (2,000%) settings; working distance is 4.45″. Viewing field is 0.91″ dia. at 10X; 0.45″ dia. at 20X. *Variable magnification* has adjustable magnification from 6.7X (670%) to 50X (5,000%); working distance is 4.25″. Viewing field is 1.35″ dia. at 6.7X; 0.18″ dia. at 50X. Include a 7-ft. cord with three-prong plug.

	Single Arm		Dual Arm	
Dual Magnification	10705T63	$1,187.10	10705T41	$1,469.23
Variable Magnification	10705T64	1,628.55	10705T42	1,969.23

For information about magnification, see page 2304.

Stereo Zoom Microscopes

Microscope

Microscope with Digital Imaging

Just zoom in on your subject—you'll get a crisp clear image over the entire zoom range. Perfect for precision inspection and assembly. Viewing angle is 45°.

Microscope— Has a wide magnification range of 7X (700%) to 180X (18,000%) and a 360° rotating head. Includes 10X (1,000%) and 20X (2,000%) eyepieces and a 2X (200%) objective lens for greater range. Working distance is 3.54″. Viewing field is 1.24″ dia. at 10X; 0.618″ dia. at 20X.

Microscope with Digital Imaging— Has a camera that plugs into a USB 2.0 port to capture images, annotate the images, and perform basic measurements. Magnification range is 2.25X (225%) to 50X (5,000%). Includes 10X (1,000%) eyepieces. Working distance is 4¼″. Viewing field is 1.35″ dia. at 6.7X; 0.14″ at 50X. Microscope includes a built-in fluorescent ring light. Operates on 110 VAC, 50/60 Hz. Includes a 6-ft. cord with three-prong plug.

Fiber-optic light source offers quartz-halogen "cold" light to keep heat from your subject (bulb included) when used with the light guide and ring illuminator sold separately below. Runs at 115 VAC, 60 Hz. Includes 6-ft. cord with three-prong plug.

Fiber-optic split light guide plugs into the fiber-optic light source. Features two 23″ flexible arms with 0.460″ fiber-optic light tips. Arms can be bent to any position. Requires an adapter ring (sold separately below).

Fiber-optic ring illuminator plugs into the fiber-optic light source. It fits over the 2X objective lenses for "cold" shadow-free light. Requires an adapter ring (sold separately below).

Microscope	**22005A11**	$843.14
Microscope with Digital Imaging	**22005A27**	2,685.71
Fiber-Optic Light Source for 22005A11	**22005A12**	337.76
Repl. Bulb for Fiber-Optic Light Source	**1535K36**	21.67
Fiber-Optic Split Light Guide for 22005A11	**22005A13**	231.22
Fiber-Optic Ring Illuminator for 22005A11	**22005A14**	375.16
Adapter Ring	**22005A15**	28.90
Replacement Bulb for 22005A27	**22005A34**	28.00

Machinists' Pocket Microscopes

25X Magnification Scope with Scale

40X Magnification Scope with Scale

Always be prepared to make on-the-job "spec" checks with microscopes small enough to carry in your pocket. They come with a light and have beveled openings (unless noted) to gather and focus light, providing a distortion-free inverted image.

Scopes without Scale— Scopes are 5″ high with a ¼″ OD eyepiece. They come in a vinyl sleeve. Body is aluminum. Require three coin cell batteries (included).

Scopes with Scale— Have an internal scale pattern for measurement and a precision ground three-lens system. *25X magnification* scope is 5″ high with a ¼″ OD eyepiece. Comes in a vinyl sleeve. Body is aluminum. *40X magnification* scope light turns on once scope is pulled open. Scope is 5½″ high with a ¼″ OD eyepiece. Body is black plastic. Requires two AA batteries (not included).

Magnification	Viewing Field	Scale		
Scopes without Scale				
25X	3.3 mm	—	**1452T51**	$22.79
50X	2 mm	—	**1452T54**	24.86
Scopes with Scale— *0.05 mm graduations.*				
25X	3.3 mm	0-3 mm	**1452T52**	36.29
40X	4.4 mm	0-4 mm	**1452T53★**	56.98
Replacement Coin Cell Battery for 1452T51, T54, and T52			**7604K67**	1.19
AA Battery for 1452T53			**14715T102**	.68

★ Opening is not beveled.

Hand-Held Digital Microscope

Weighing less than 1 lb., this portable digital microscope provides detailed examination of any object you choose. Capture magnified images as pictures or movies; resolution is 1.3 megapixels. Microscope has a compact lens with magnification that can be set from 10X (1,000%) to 200X (20,000%). Focus distance is 150 mm at 10X. Includes a measurement function and built-in LED lights that adjust for brightness.

Microscope requires a PC with Windows XP SP2 or Vista, a USB port, and a CD-ROM drive. Install the included software on your PC, and connect the microscope to your PC's USB port via the attached 4′10″ long cable. Operates on 5 VDC drawn from your PC. Comes with an adjustable microscope stand.

Microscope (4.25″ Lg. × 1.25″ Dia.) **1058T23** $227.27

Illuminated Compact Microscope

You never need to be without a microscope when your scope fits in your pocket. It zooms from 60X (6,000%) to 100X (10,000%) and includes a built-in adjustable light source. Microscope has an ABS plastic housing, an adjustable focus control knob, and uses two AA batteries (included). Overall size with included snap-on microscope slide holder is 6½″ Ht. × 2″ Wd. × 3″ Dp.; size without holder is 5½″ Ht. × ⅞″ Wd. × 1½″ Dp.

	Viewing Field		
Microscope	0.5″ dia.	**1483T4**	$42.78
Replacement AA Battery		**14715T102**	.68

Shop Microscopes

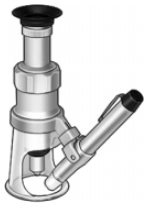

Make precise, direct readings with microscopes that feature a graduated depth-focus ring and an internal scale. Just turn the eyepiece adjuster to focus—vertical adjustment sharpens the image.

Scopes have a cut-out portion at the side of the base for the use of instruments. Include an adjustable swivel-point mounted penlight and two AA batteries.

Base is 2½″ dia. Overall height is 7½″. Viewing field is 0.094″ dia. at 60X; 0.057″ dia. at 100X.

Magnification	Scale	Graduations		
60X (6,000%)	0.001″-0.080″	0.001″	**2158T12**	$431.26
100X (10,000%)	0.0005″-0.050″	0.0005″	**2158T13**	431.26
Replacement AA Battery			**14715T102**	.68

Digital Microscope/Camera

Get high-definition, high-resolution digital pictures of magnified images. Great for quality control, medical, forensic, and forestry work. Camera has a magnification range from 10X (1,000%) to 40X (4,000%). It also has a 2 megapixel resolution, a 2″ LCD preview screen with a 2X (200%) digital zoom, 2 GB memory, and built-in adjustable LED lights to brighten the image. Images are created in JPEG format. Includes a case, a lithium ion rechargeable battery, viewing software on CD-ROM, and a USB cable. Size is ½″ Ht. × 2 3/16″ Wd. × 1″ Dp. Weight is 4 oz.

3077T65 ..... $402.35

Digital Camera

Take pictures and easily transfer them to the Web. Camera has 14 megapixel resolution and creates JPEG images and Motion JPEG (AVI) movies. It also includes a 2.7″ LCD monitor, center-point autofocus, direct camera-to-printer capability, 5X optical zoom, 6.7X digital zoom, and a metal and silver plastic housing. Requires a memory card (sold separately below). Camera also comes with a USB cable, viewing software on CD-ROM, and a hand strap. Operates on a rechargeable lithium battery (included). Size is 2.2″ Ht. × 3.7″ Wd. × 0.9″ Dp. Weight is 4 oz.

Digital Camera	**1041T87**	$135.20
4 GB Memory Card	**1041T89**	19.50

Surface-Finish Scales

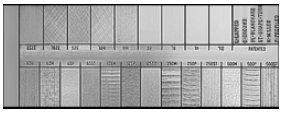

Both scales have 22 individual scales from 2 to 500 microinches: 2, 4, and 8 μ″ Ra (lapped); 8, 16, 32, and 63 μ″ Ra (ground); 16 and 32 μ″ Ra (blanchard ground); 32, 63, 125, 250, and 500 μ″ Ra (shape turned); 63, 125, 250, and 500 μ″ Ra (profiled); and 63, 125, 250, and 500 μ″ Ra (milled).

Scales are 2″ Lg.×5⅜″ Wd. and electroformed solid nickel. They come with a leather case and engineering data.

Scale without Calibration Certificate	8555T12	$62.71
Scale with Calibration Certificate	8555T16	306.00

Economy Surface-Finish Scale

Get highly accurate surface comparisons at an economical price. Scale has 18 surfaces marked in AA and Ra from 16 to 500 microinches: 16, 32, 63, 125, and 250 μ″ (ground); 63, 125, 250, and 500 μ″ (end milled); 63, 125, 250, and 500 μ″ (milled); 63, 125, 250, and 500 μ″ (shape turned); and 500 μ″ (flame cut). Scale is 5″ Lg.×3½″ Wd. and high-impact ABS plastic. Comes with a plastic case.

1005T2 ..... $9.18

Master Set of Surface-Finish Scales

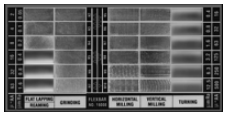

Comprehensive set contains 30 scales from 2 to 500 microinches: 2, 4, and 8 μ″ AA (lapped); 16, 32, and 63 μ″ AA (reamed); 2, 4, 8, 16, 32, and 63 μ″ AA (ground); 16, 32, 63, 125, 250, and 500 μ″ AA (horizontal milled); 16, 32, 63, 125, 250, and 500 μ″ AA (vertical milled); and 16, 32, 63, 125, 250, and 500 μ″ AA (turned).

Scale set is 3″ Lg.×6″ Wd. and is made from electroformed solid nickel. Standards are marked in AA and Ra. Set includes instructions and a graph that correlates CLA, AA, and Ra values plus ISO "N" scale. Manufactured to ANSI B46.1 standards.

85615T1 ..... $105.54

Hardness Calibration Test Blocks

Make sure your hardness testers are accurately calibrated. Blocks are marked with Rockwell hardness scale. They have a serial number and a certificate of calibration. All meet ASTM E18 requirements. *C Scale blocks* are traceable to NIST.

To Order: Please specify a hardness within the ranges listed. *Note:* Test blocks are supplied to within ±5 points of the hardness ordered.

	Hardness Range	Overall Size Ht.	Wd.	Thick.		
A Scale	30- 55	2″	2″	0.250″	12105T54	$58.33
A Scale	60- 80	1.5″	2.5″	0.250″	12105T54	58.33
B Scale	30-100	2″	2″	0.250″	12105T55♦	66.67
C Scale	20- 63	1.5″	2.5″	0.250″	12105T53	58.33
E Scale	75-100	2″	2″	0.250″	12105T56	66.67

♦100 hardness block is 1.5″ Ht.×2.5″ Wd.×0.250″ Thick.

Hardness-Testing Files

Set

An easy and economical way to determine the hardness of steel materials. Files are steel with a curved tip. Handles are marked with Rockwell hardness values.

Set—Includes six files that cover the Rockwell C scale from 40 to 65 in increments of five, a chart to convert Rockwell C to Vickers scales, and a vinyl case.

13705T91 ..... $94.29

Individual Files—**To Order:** Please specify Rockwell C: 40, 45, 50, 55, 60, or 65.

13705T38 ..... $23.39

Metal/Alloy Identification Kit

Quickly identify common alloys with nondestructive testing. Kit electrically removes a 0.00004″ thickness of metal from the test alloy for testing. Then you add test solution to the paper for a distinct color reaction. Kit includes metal-testing solutions, alloy ID charts, metal standards, filter paper, an electro-deposit apparatus with battery, and a plastic case.

Identifies the following stainless steels: 303, 304, 316, 416, 431 (420 and 440), and 17-4; and the following corrosion-resistant alloys: Monel, copper-nickel, Inconel, and other nickel alloys.

1385T91 ..... $583.82

Electronic Surface-Roughness Tester

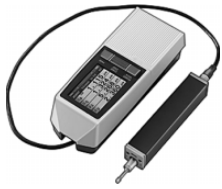

Quick, easy-to-read testing almost anywhere. Tester has a compact detector attached to a display unit with a large LCD. It also has an upper and lower control limit for go/no-go readings and auto display shut-off. Tester can take 1,000 measurements and save 10 in memory. Detector unit detaches for use in tight spaces. Probe tip radius is 0.0002″. Measuring ranges: 14,170 μ″, 4,000 μ″, 1,000 μ″, and automatic. Measures Mr1, Mr2, RPc, S, RSm, R3z, Ra, Rp, Rq, Rt, Ry, and Rz roughness parameters. Measurement speed: 0.01″/sec. (0.25 mm/sec.).

Tester has an SPC data output and can be connected to a Mitutoyo miniprocessor using an SPC data output cable (sold separately below); it also has an RS-232C connector for a direct connection to a PC. Operates on a rechargeable battery or on 120 VAC, 60 Hz with included AC adapter that has a 5-ft. cord with two-prong plug. Also includes connecting cable, roughness sample (use as a standard for calibration), operation manual, and a plastic case. Detector unit is 4 17/32″ Lg.×29/32″ Wd.×1 1/64″ Ht.; weight is 0.4 lb. Display unit is 6 55/64″ Lg.×2 19/32″ Wd.×2 3/64″ Ht.; weight is 0.68 lb. Meets ANSI, VDA, ISO, and JIS (old and new) standards.

Tester	1181T14	$2,234.53
Adapter Mount for Vertical Use	1181T15	40.33
Detector Probe 2″ Extension Rod	1181T16	155.93
Detector Support Feet w/ Height Adjustment	1181T41	126.08
Height Gauge Adapter—¼″×½″ Mount	1181T42	92.11
Small Hole Detector—0.097″ Dia. Tip	1181T17	597.74
SPC Data Output Cable (40″)	20395A66	43.90

Portable Dial Hardness Tester

Test parts that are inaccessible to bench-type hardness testers. Tester is compact and lightweight so you can easily carry it to the test material. It measures Rockwell A-, B-, C-, D-, E-, F-, G-, H-, and K-scale hardness for all metals. Scale range is 0-100 with one-point dial increments. Tester measures hardness of inside and outside surfaces and can be used at any angle without affecting accuracy; accuracy is ±1.5 points.

Made and calibrated to ASTM E110 standards. Includes a flat anvil, a V-anvil, a convex anvil, a 1/16″ ball indenter, a B-scale hardness standard, operating instructions, and a vinyl-covered steel case. Maximum vertical height is 4½″. Throat depth is 2¼″. Size is 11″ Ht.×8″ Wd.×1½″ Dp. Weight is 3.6 lbs.

Tester	14065T9	$2,187.50
Optional C-Scale Diamond Indenter	14065T5	364.58

Pressure-Grip Hardness Testers

Operate testers with one hand—simply squeeze handles until penetrator contacts test material; a reading appears on the dial indicator. Accuracy is ±1 point. For use with materials up to ¼″ thick. Testers include an extra penetrator, a test strip, an adjusting spring wrench, a conversion chart, a plastic case, and instructions. Overall size is 8″ Lg.×1″ Wd.×3″ Ht.

Rockwell B scale tester tests brass, mild steel, and aluminum alloys in the Rockwell B scale with a range of 20 to 100. Tester has graduations from 1 to 20, where 1 equals B20 and 20 equals B100. Also tests annealed to full-hard brass. ***Rockwell E scale tester*** tests aluminum alloys in the Rockwell E scale with a range of 25 to 110. Tester has graduations from 1 to 20, where 1 equals E25 and 20 equals E110.

Rockwell B Scale Tester	8731T12	$1,089.06
Rockwell E Scale Tester	8731T11	1,089.06
Repl. Penetrator Tip for Rockwell B Scale Tester	8731T47	81.36
Repl. Penetrator Tip for Rockwell E Scale Tester	8731T46	81.36

Microscopic Hardness Tester

A microscope measures the indentation diameter made by a 1/16″ tungsten-carbide ball penetrator providing hardness readings for steel alloys and other metals in ranges from 20 to 65 on the Rockwell C scale. The microscope has a calibrated scale and is directly read on the Rockwell C scale. Accuracy is ±1.5 points.

Includes a hand-held impact indenter with a ball penetrator; an illuminated, fixed-focus 60X (6,000%) microscope with a ⅞″ eyepiece; a test block; a conversion chart; two AAA batteries; a plastic case; and instructions. Microscope is ⅞″ Dia.×7½″ Ht.

Tester	1342T13	$720.34
Repl. Impact Indenter	1342T21	212.73
Repl. AAA Battery	14715T101	.79

Brinell Hardness Tester Kit

Take on-the-spot Brinell hardness measurements in the field, plant, or lab. To use, slide a test bar that most matches the material you're testing into the tester. Place the tester on the surface of the material and hit the tester's rubber striking surface with a hammer; a steel ball will make an impression. Measure the impression and use the computing disc to determine hardness.

Kit includes test instrument, 10X (100%) microscope, computing disc, record sheets, three extra impression balls, an assortment of five test bars for testing steel within 150-400 BHN (Brinell Hardness Number), a pen light with batteries, and a vinyl-covered steel case.

Also Available: Test bars for testing aluminum. Please ask for 1347T999 and specify BHN from 57 to 107.

Tester Kit ..... **1347T41** ... $1,315.46

Extra Test Bars■ **1347T2** 1-5 $38.45 6-Up $35.25

■ **To Order:** Specify BHN from 106 to 578.

Durometer Hardness Testers

Standard Dial

Slimline Dial

Pen-Style Dial

Digital

Pocket Style

Measure the hardness of flat materials.

A scale is for natural, soft vulcanized, and synthetic rubbers; neoprene; butyl; silicone; leather; and felt.

D scale is for plastic, acrylic, polystyrene, vinyl, high-pressure laminate, hard rubber, phenolic molded parts, epoxies, and soft metals such as lead. Not for aluminum or steel.

O scale is for soft printing rollers, textile windings, and similar materials.

OO scale is for gels, sponges, and microcellular foam.

Note: For more information on durometer scales, see page 3526.

Dial Durometer Hardness Testers

Have a dial with a range of 0-100 in one-point increments for quick reads. Minimum testing thickness is 1/4″. Accuracy is ±1 point except for 1388T232 and T238, which are ±2 points. Testers include a metal case and meet or exceed requirements of ASTM D-2240.

Standard and ***slimline*** have a magnetic clutch with a pointer (unless noted) that "freezes" on the highest durometer reading and include a test block. Testers can be hand held or mounted to a stand with an included 8-32 threaded knob. *Standard* are 4″ Ht.×2 1/4″ Wd.×1 3/4″ Dp.; base is 1 5/8″ Wd.×1″ Dp. *Slimline* are 4″ Ht.×2 1/4″ Wd.×1 3/4″ Dp.; base is 1″ Wd.×1″ Dp. for better access to confined areas. ***Pen style*** include a certificate of calibration traceable to NIST (National Institute of Standards and Technology) and are 6 1/8″ Ht.×2 1/4″ Wd.

Scale	*Standard*		*Slimline*		*Pen Style*	
A	**1388T2**	$507.49	**1388T213**	$507.49	**1388T235**	$399.33
D	**1388T1**	507.49	**1388T113**	507.49	**1388T236**	399.33
O	———	———	**1388T231**	566.41	**1388T237**	465.89
OO	———	———	**1388T232**●	574.04	**1388T238**	465.89

● Does not come with a pointer that "freezes" on highest reading.

Digital Durometer Hardness Testers

Eliminate reading errors with a large easy-to-read LCD. Testers have a hold function that keeps the maximum reading on screen, high and low buttons for setting acceptable tolerance limits, a face that rotates 270° for taking readings in difficult positions, an automatic shut-off, and an RS-232 port for connection to computer serial ports. Scale range is 0-100 in 0.1 increments. Accuracy is ±1 point. Testers come with two 3-volt lithium batteries, an AC adapter that runs on 120 VAC, 60 Hz for continuous use, and a metal case. Size is 6 1/8″ Ht.×2 1/4″ Wd.×1 1/2″ Dp. All meet ASTM D-2240 standards.

Scale		
A	**11665T26**	$991.67
D	**11665T27**	991.67
Repl. 3V Battery	**7701K58**	4.17

Pocket-Style Durometer Hardness Testers

Compact testers fit in your pocket and operate in any position. Plus, they have no gears, cams, or levers that can wear out or break—just apply pressure to the spring-loaded penetrator and take a reading. Vernier scale has a range of 5-100 in five-point increments. Accuracy is ±1 point. Testers are 1/2″ Dia.×4 1/2″ Lg. and include a leather pocket sheath.

Scale			Scale		
A	**11545T21**	$246.15	D	**11545T22**	$246.15

Type A Durometer Hardness Test Kit

Perfect as a reference check for durometer hardness testers and to establish a feel for using a durometer gauge. Kit includes seven color-coded test blocks that cover the Durometer A scale from 30 to 90 in increments of ten. Each block is rubber and measures 2″ Ht.×2″ Wd.×1/4″ Dp. Includes a 2.6″ Ht.×5.5″ Wd.×4.7″ Dp. vinyl-covered steel case.

1011T11 ..... $246.03

Coating-Thickness Gauges

Mechanical, Magnetic Pull-Off

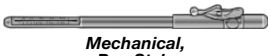

Mechanical, Pen Style

Digital, Standard

Digital, Universal

Mechanical Coating-Thickness Gauges

For nondestructive measuring of nonmagnetic coatings such as paint, plastic, galvanizing, plating, and enamel on steel as well as cast iron. All include a certificate of calibration traceable to NIST (National Institute of Standards and Technology), except 14055T11.

Magnetic Pull-Off Gauges—Calibrated gauges with a wear-resistant carbide probe for long life and accuracy. Visual and audible indicators tell you when thickness reading is established. V-grooves in probe housing and base allow proper positioning on cylindrical objects. Gauges can be used in any position and have a go/no-go indicator for rapid measurements. Include a wrist strap, neck strap, and leather case with belt straps. Size is 2″ Ht.×8 1/2″ Wd.×1 1/4″ Dp.

Pen-Style Gauges—Use on small, hard-to-reach surfaces. Place tip on the surface to be measured, allowing an internal magnet to make contact. Pull tip away and watch scale and indicator. Note reading when magnet releases. Gauge has two scales and can be used in any position. Includes a leather case with belt clip. Can be used in extreme temperature applications from –150° to +450° F.

Economy Pen-Style Gauge—Use this magnetic gauge for measuring nonferrous coatings such as paints, platings, and plastics on steel. Includes a storage case.

	Scale★		
Magnetic Pull-Off	0-8 mils	**1378T21**	$362.07
Magnetic Pull-Off	0-80 mils	**1378T22**	362.07
Pen Style	0.25-20 mils/5-500 microns	**1374T25**	278.44
Economy Pen Style	1-15 mils	**14055T11**	76.72

★ One mil equals 0.001″.

Digital Coating-Thickness Gauges

These precision instruments have an easy-to-read LCD, a reset function and a solid ruby probe tip (unless noted) for long life and one-point measurement. Plus, they're mils/microns switchable. Ferrous gauges measure the thickness of nonmagnetic coatings such as paint and plating on steel. Ferrous/nonferrous gauges also measure the thickness of nonconductive coatings on ferrous or nonferrous metals. Nonmetal gauges measure coating thickness on materials other than metals, such as plastic, wood, concrete, and fiberglass.

Standard—Have ±3% accuracy. Include a hard rubber case, plastic shims, and one AAA battery. Size is 4″ Ht.×1 1/2″ Wd.×29/32″ Dp.

Universal—Gauges support 11 languages; have hi/low limits; and have continual display of average, min./max. thickness, and number of readings. They include a certificate of calibration traceable to NIST (National Institute of Standards and Technology), a rubber pouch with belt clip, calibration shims, and three AAA batteries. *1453T61*, *T65*, and *T73* store 250 readings. Gauges are 5 3/8″ Ht.×2 3/8″ Wd.×1 1/8″ Dp. and include a wrist strap. Conform to ISO 2808; ASTM B499, D1186, and D1400. *1453T82* and *T83* store 10,000 readings. Gauges are 5 3/4″ Ht.×2 1/2″ Wd.×1 13/64″ Dp. Conform to ISO 2808 and ASTM D6132.

Coated Material	Scale★		
Standard Gauges with Built-In Probe Tip			
Ferrous	0-40 mils/0-1,000 microns	**1453T48**	$488.00
Ferrous/Nonferrous	0-40 mils/0-1,000 microns	**1453T49**	685.21
Universal Gauges with Built-In Probe Tip			
Ferrous	0-60 mils/0-1,500 microns	**1453T61**	705.65
Ferrous/Nonferrous	0-60 mils/0-1,500 microns	**1453T65**	961.27
Universal Gauges with 3-ft. Cable and Remote Probe Tip			
Ferrous/Nonferrous	0-60 mils/0-1,500 microns	**1453T73**	1,157.69
Wood/Plastic	0.5-40 mils/13-1,000 microns	**1453T82**▲	1,769.72
Concrete/Fiberglass	2-150 mils/50-3,800 microns	**1453T83**▲	1,966.90
Replacement AAA Battery		**14715T101**	.79

★ One mil equals 0.001″.

▲ Probe tip is plastic.

Ultrasonic Thickness Gauges and Calibration Blocks

Thickness Gauges

Highly accurate, hand-held instruments have a 4-digit LCD screen that gives readouts in English and metric units. Both gauges include an ultrasonic coupling medium for maximum surface contact.

Painted-Surface Thickness Gauge— Quickly and accurately measure the metal thickness of a painted structure without removing the coating. Accurate to ±0.001″. Allowable surface temperature range is –40° to +150° F. Uses three AAA alkaline batteries (included). Conforms to ASTM E797.

Thickness Gauge— Measures the wall thickness of materials such as steel and plastic from 0.040″ to 5.000″ with an ultrasonic probe (included) on a 3-ft. cable. Accurate to ±0.001″. Allowable surface temperature range is –40° to +300° F. Uses three AAA alkaline batteries (included).

Optional software and USB cable to download data are sold separately below.

Painted-Surface Thickness Gauge	8729T73	$1,682.98
Thickness Gauge	8729T71	1,160.83
Replacement Battery for 8729T73 and T71	14715T101	.79
Optional Software and USB Cable for 8729T71	8729T72	138.18
Ultrasonic Coupling Medium (4 oz.)	8729T81	12.38
Ultrasonic Coupling Medium (1 gal.)	8729T82	42.78

Calibration Blocks

Use these blocks to calibrate ultrasonic instruments and transducers. Steps are 0.75″ square. All blocks have a serial number and a certificate traceable to NIST (National Institute of Standards and Technology). Include a wood case.

	For 7075 Aluminum or 1018 Steel♣		For Type 304 Stainless Steel	
4 Step (0.25″-1.0″)	8489T16	$240.00	8489T18	$344.44
5 Step (0.1″-0.5″)	8489T17	260.00	8489T19	380.95

♣ **To Order:** Please specify test material: aluminum or steel.

Magnetic-Particle Flaw Detection Kits

Standard Kit

Use each kit's yoke to create a magnetic field on the part you're inspecting and then apply the powder—defects will immediately appear. The perfect choice for finding defects on ferrous components. Both kits comply with ASTM E1444 and MIL-STD 2132.

Standard kit includes an AC yoke for finding surface cracks, two 1-lb. bottles of powder (one gray and one red), a powder dispenser, a paint marker, wet hand towels, and a plastic case. Yoke has a 10-ft. cord with three-prong plug; operates on 115 VAC, 50/60 Hz.

Cordless kit is completely portable. Includes a DC yoke for finding surface and subsurface cracks, 1-lb. of gray powder, a powder dispenser, a paint marker, wet hand towels, a battery, a battery charger, a battery case with shoulder strap, and a plastic case. Operates on a 6-volt, 12-amp battery that provides 8 hours of use per charge.

		Each
Kits		
Standard	1394T1	$814.94
Cordless	1372T1	1,040.47
Accessories		
10 lbs. Gray Natural-Light Detection Powder	1394T372	90.18
10 lbs. Red Natural-Light Detection Powder	1394T373	90.18
Replacement Parts		
4-oz. Powder Dispenser	8572T12	27.20
Yoke for Standard Kit	1394T5	707.77
Battery for Cordless Kit	1372T2	95.62

Cleaner is used to prepare the surface before inspection.

	Case Qty.		Each Partial Case	Each Full Case
16-oz. Can	9	1383T7	$11.93	$10.81

Colored-Dye Flaw Detection Kits

Visible Dye Kit

Fluorescent Dye Kit

Reveal cracks and other flaws open to the surface in virtually any nonporous material. Ideal for use on metal surfaces (magnetic or nonmagnetic). The contents of all kits comply with SAE-AMS-2644, ASTM E1417, MIL-STD 271, MIL-STD 2132, and sulfur-chlorine-halogen requirements.

Visible Dye-Penetrant Detection Kit

Flaws become visible under natural light, appearing bright red—no ultraviolet light is needed. Great for weld inspection and spot checking on aluminum, magnesium, brass, copper, cast iron, steel, stainless steel, carbide, stellite, and certain plastics and ceramics. Contains four 16-oz. aerosol cans of cleaner, two 16-oz. aerosol cans of red penetrant, two 16-oz. aerosol cans of white developer, a cloth, a marking pen, wet hand towels, and a plastic case.

		Each
Visible Dye Kit	1383T3	$123.09

	Can Size	Case Qty.		Each Partial Case	Each Full Case
Repl. Cleaner	16 oz.	9	1383T7	$11.93	$10.81
Repl. Red Penetrant	16 oz.	9	1383T4	14.83	13.45
Repl. White Developer	16 oz.	9	1383T5	13.60	12.33

Fluorescent Dye-Penetrant Detection Kit

A high-intensity UV light makes fluorescent dye-penetrant visible. Light operates at peak fluorescent output, making this detection kit more sensitive than the visible dye method above. Use for the following materials: aluminum, magnesium, brass, copper, titanium, bronze, sintered carbide, steel, stainless steel, nonmagnetic alloys, ceramics, and glass. Kit contains a 100-watt fan-cooled UV light with bulb and transformer, one 16-oz. aerosol can of fluorescent green penetrant, one 16-oz. aerosol can of white developer, two 16-oz. aerosol cans of cleaner, a cloth, a marking pen, wet hand towels, and a plastic case. UV light has a 10-ft. cord with three-prong plug. Lamp operates on 115 VAC, 60 Hz. ***Refill kit*** (sold separately) includes two cans each of penetrant and developer, four cans of cleaner, a cloth, a marking pen, wet hand towels, and a plastic case.

		Each
Fluorescent Dye Kit	1387T61	$752.81

	Can Size	Case Qty.		Each Partial Case	Each Full Case
Repl. Fluor. Green Penetrant	16 oz.	9	1387T8	$18.48	$16.90
Repl. White Developer	16 oz.	9	1387T22	17.19	15.62
Repl. Cleaner	16 oz.	9	1383T7	11.93	10.81
White Dry Developer	16 oz.	9	1387T5	25.55	23.23

		Each
Refill Kit	1387T7	$126.98
Repl. 100-Watt UV Bulb	1387T13	86.03

Magnetic-Field Indicators

Noncalibrated

Calibrated

Indicators measure magnetism in tools and parts after exposure to magnetic chucks, magnetic-particle testing, and magnetized machine tools. Simply place the lower edge of the indicator near or against the object being tested.

Noncalibrated Indicator— Use this economical unit to measure relative intensity and direction of magnetic fields. Scale is black. Housing is plastic and 2″ dia.

Calibrated Indicators— Calibrated at 70°, these indicators measure the direction of a magnetic field in positive/negative and magnitude of magnetic field in gauss. Units have a black scale that measures the magnetic field parallel with the centerline and a red scale that measures magnetic field parallel with the pointer. Housing is aluminum and 2½″ dia.

Calibrated Indicators with Certificate— Exactly the same as the calibrated indicators above, but include a certificate traceable to NIST (National Institute of Standards and Technology).

Gauss Range	Noncalibrated		Calibrated		Calibrated w/Certificate	
10-0-10	8575T11	$39.98	8450T14	$107.50	8450T21	$166.61
20-0-20	_____	_____	8450T16	106.25	8450T22	165.29
50-0-50	_____	_____	8450T18	113.75	8450T23	173.22

Digital Gauss/Tesla Meter

Get magnetic-field measurements to determine electromagnetic interference, to detect flaws in welded joints, and for magnetic-particle testing. Meter reads in gauss, tesla, and ampere/meters. Includes auto zero, min./max./peak hold, and auto range. The three measurement ranges are 200 g, 2 kg, and 20 kg in 0.1 g, 1.0 g, and 10 g increments. Accuracy is 2%; frequency bandwidth is DC-20 kHz. Operating temperature range is 32° to 122° F (0° to 50° C). Unit includes a transverse probe, a zero gauss chamber, four AA batteries, an AC adapter, and a plastic case. Overall size is 6.9″ Ht.×3.9″ Wd.×1.4″ Dp.

Digital Gauss/Tesla Meter	1488T55	$1,055.36
Replacement AA Battery	14715T102	.68

Ultraviolet Light

A sturdy stand allows hands-free use; light can be easily removed for hand-held use. Plus, a switch lets you select between UV and white fluorescent light. Ideal for lab and security images.

Light intensity is 950 microwatts/cm^2 at 3″; wavelength is 365 nm. Lamp uses two 8-watt bulbs (included) and has a beige extruded metal housing with black end caps and filter face. Operates on 115 VAC and includes an 8-ft. cord with three-prong plug. Size is 14 29/32″ Lg.×3 13/16″ Wd.×2 1/2″ Ht.

Lamp	1000T11	$333.29
Replacement UV Bulb	1000T31	25.34

Retractable-Cord UV Lights

Simply pull lights from the ceiling when you need them and when you're done, tug the cord and they retract out of your way. Lights are perfect for UV curing, leak detection, and nondestructive testing applications. All have an impact-resistant, polymer housing and an easy-to-hold pistol-grip handle. Light intensity is 4,800 microwatts/cm^2 at 15″; wavelength is 365 nm. Lights include a 100-watt bulb, an 8-ft. power cord with three-prong plug, a 35-ft. retractable cord on a fly reel, 6-ft. mounting chain, on/off pull chain, and UV-absorbing eyeglasses.

	Wt., lbs.		
120 VAC, 60 Hz	24.8	13605T73	$611.14
230 VAC, 50 Hz	24.8	13605T74	762.86
Replacement 100-Watt Bulb		13605T76	90.63
Replacement Lens Cover		13605T78	60.27

High-Intensity UV Lights

100 Watt

160 Watt

High-intensity lights provide brilliant illumination for optimum fluorescence. Light wavelength is 365 nm. Operate on 115 VAC, 60 Hz and include a bulb and an 8-ft. cord with three-prong plug.

***100 Watt*—**Use for nondestructive testing, UV curing, and dye-penetrant inspection. For hand-held or stationary bench-top use; when used on a benchtop head rotates 360°. Lamps include a transformer and have an on/off switch. 1447T17 has a 5.5″ Dia.×8.5″ Lg. lamp head and an 8.5″ Ht.×4.25″ Wd.×6.25″ Dp. transformer; 1447T15 has a 6″ Dia.×9.75″ Lg. lamp head and an 8.5″ Ht.×4.25″ Wd.×6.25″ Dp. transformer. Choose a painted aluminum or a heat-resistant plastic housing. *Optional lens filter* (sold separately) reduces output of visible light, reducing glare and enabling finer particles to be seen.

***160 Watt*—**Self-ballasted lamp needs no transformer, making it more portable. Good for automotive leak detection and magnetic-particle flaw detection. Vented housing keeps unit cool. Handle has finger grips and an on/off switch. Lamp is 6″ Dia.×9.75″ Lg.

Wattage	Housing	Light Intensity, microwatts/cm^2 at 2″	at 10″	Wt., lbs.		
100	Aluminum	21,700	8,900	11.7■	1447T17	$627.00
100	Plastic	21,700	8,900	12.5♣	1447T15	643.21
160	Plastic	11,600	5,000	3.1	1447T18	481.10

■ Weight includes transformer; lamp weighs 2.38 lbs.
♣ Weight includes transformer; lamp weighs 3.14 lbs.

Replacement Parts

Bulb for 1447T17 and T15	1447T42	$88.27
Bulb for 1447T18	1447T145	188.35
Optional Lens Filter for 1447T17 and T15	1447T41	45.95
Funnel Nozzle for 1447T15, T18—Directs UV Light	1447T13	87.05
Socket for all Lamps	1447T27	36.69

UV Light Fixtures

Black Light

***Black Light*—**Use for inspection applications and bug and rodent detection. Light wavelength is 355 nm. Operates on 120 VAC and includes a 5-ft. cord with two-prong plug. Not rated for light intensity. Housing is black plastic with a clear diffuser and includes a bulb.

***UV Curing Black Light*—**Use for UV curing and inspection applications. Light intensity is 2,160 microwatts/cm^2 at 5″; wavelength is 365 nm. Housing has a built-in reflector and is made of white powder-coated aluminum. Operates on 115 VAC and includes an 8-ft. cord with three-prong plug. Two bulbs are included.

Required Bulb	Lg.×Wd.×Dp.	Fixtures		Bulb	
Black Light					
15 watt	21″ ×1 3/4″ ×2 1/4″	8336K11	$20.91	8311K38	$25.78
UV Curing Black Light					
15 watt	19 3/4″×6″ ×4 1/4″	8337K11	347.18	8337K12	30.84

UV Magnifying Lights

1495T25

The combination of UV lights and a magnifying lens lets you see the smallest traces of fluorescence during testing. Choose two UV tubes or a combination of two UV tubes and two white fluorescent tubes (for normal light) that work independently of each other. Magnifying lens is plastic, measures 2″ Lg.×4″ Wd., and magnifies 3X (300%) with an 8″ working distance. Housing is polycarbonate with an aluminum reflector, a phenolic handle, and an on/off switch. A friction-lock swivel joint lets you position the head.

Light intensity is 650 microwatts/cm^2 at 6″; wavelength is 365 nm. Operate on 120 VAC and include an 8-ft. cord with three-prong plug. Size is 7″ Lg.×5 3/4″ Wd.×2 1/4″ Ht. UL listed.

UV Tubes	White Tubes	Hz	Wt., lbs.		
2	—	60	4.2	1495T23	$304.73
2	2	50	4.5	1495T25	352.01

Replacement Tube, Long-Wave UV, 4-Watt	8311K41	16.86
Replacement Tube, White Fluorescent, 4-Watt	1495T12	24.06

Broad-Beam UV Lights

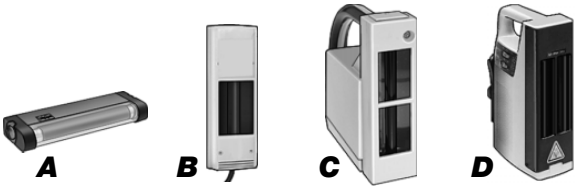

A tubular UV bulb sheds light over a wide area. Use for security control, rodent detection, UV curing, and magnetic-particle flaw detection. Lights have a plastic housing and an on/off switch.

***(A) Pocket-Size*—**The smallest and most economical light we offer. It has a 4-watt UV bulb and a built-in white-light flashlight. Light wavelength is 365 nm. Operates on four AA batteries (sold separately below). Size is 6 1/4″ Lg.×2 1/16″ Wd.×7/8″ Ht.

***(B) 115 VAC*—**Has a filter that blocks most visible light interference. Includes a 4-watt UV bulb and an 8-ft. cord with three-prong plug. Light wavelength is 365 nm. Size is 7 13/16″ Lg.×2 13/16″ Wd.×2 1/10″ Ht.

***(C) 12 Volt*—**Has a built-in white-light flashlight, a 6-watt self-filtering UV black light blue (BLB) bulb, and a three-position switch. Light wavelength is 365 nm. Operates on two 6-volt lantern batteries (included). Size is 9 1/2″ Lg.×2 13/16″ Wd.×9 13/32″ Ht.

***(D) Rechargeable*—**Has a rechargeable lead-acid battery that provides approximately five hours of continuous use when fully charged. To recharge, use wall-outlet plug inside unit or optional car-lighter adapter plug sold below. Light includes two 6-watt self-filtering UV black light blue (BLB) bulbs. Wavelength is 365 nm. Size is 5 1/2″ Lg.×3″ Wd.×9 13/16″ Ht.

	Light Intensity, microwatts/cm^2 at 3″	Wt., lbs.	Lights		Repl. UV Bulb	
A	—	0.3125	6760T11	$32.30	8311K41	$16.86
B	1,000	1	8519T14	137.62	8519T17	20.30
C	1,650	4	8519T16	314.11	8519T18	15.58
D	1,130	4	13875T13	311.39	8519T18	15.58

AA Battery	14715T102	$0.68
Replacement 6V Lantern Battery	7690K13	3.29
Replacement White Bulb for 8519T16	8519T19	9.52
Optional Car-Lighter Adapter Plug for Style D	13875T15	29.26

Forming

Punches	2316
Presses	2327
Sheet Metal Formers	2330
Pipe & Tube Benders	2333

Cutting

Tube Cutters	2337
Tile Cutters	2339
Gasket Cutters	2340
Drum Deheaders	2341
Bolt & Chain Cutters	2342
Cable Cutters	2344
Snips	2346
Nibblers & Shears	2348
Paper Cutters	2351
Scissors	2352
Knives	2356
Chisels & Scrapers	2366

Sawing

Band Saws & Blades	2373
Reciprocating Saws & Blades	2384
Jigsaws & Blades	2388
Hacksaws & Blades	2390
Handsaws	2391
Chain Saws & Waterjet Cutter Parts	2392
Circular Saws & Saw Blades	2393
Table & Panel Saws	2398
Cutoff Saws & Wheels	2399
Hole Saws & Cutters	2404

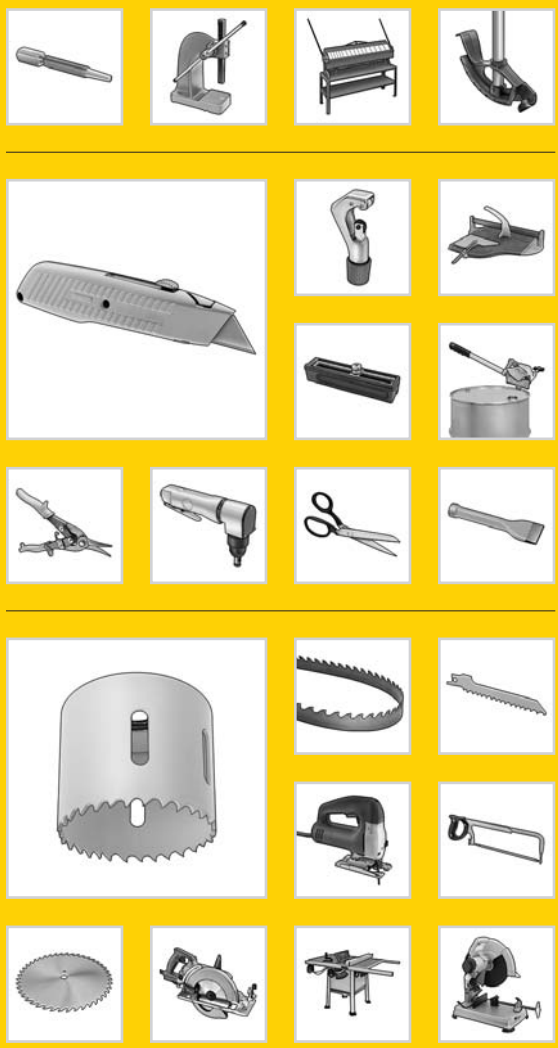

Hydraulic Drivers for Knockout Hole Punches

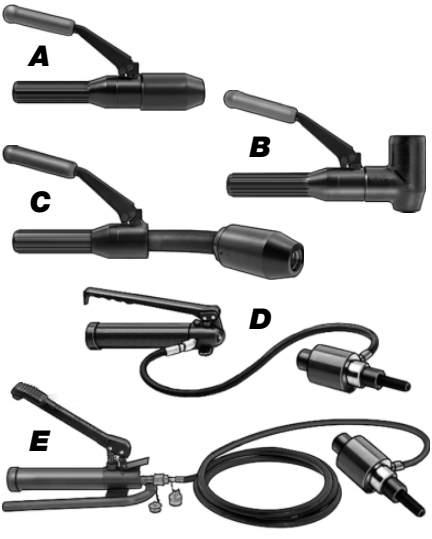

The power behind your knockout punch. Use these drivers with punches and dies (sold separately on this page and pages 2317-2318). Drivers come in a carrying case.

Styles A-C work with 19/32″-2½″ hole dia. Round Knockout Hole Punches, all Self-Centering Round Knockout Hole Punches, ⅞″-1 11/16″ hole dia. Self-Centering Round Knockout Hole Punches for Stainless Steel, all Special-Shape Knockout Hole Punches, and all Quick-Cut DB Connector-Shaped Knockout Hole Punches.

Styles D and *E* are compatible with all Round Knockout Hole Punches (except ½″ hole dia.), all Self-Centering Round Knockout Hole Punches, all Self-Centering Round Knockout Hole Punches for Stainless Steel, all Special-Shape Knockout Hole Punches, all DIN-Shaped Knockout Hole Punches, and all Quick-Cut DB Connector-Shaped Knockout Hole Punches.

(A) 8-Ton Hydraulic Driver— For straight-on, front-panel punching. Has two draw studs (⅜″×2 13/16″ and ¾″×4⅛″), a stud adapter, and a spacer.

(B) 8-Ton Right-Angle Hydraulic Driver— Drive head rotates 180° for flexibility in tight spots. Includes two draw studs (⅜″×2 13/16″ and ¾″×4⅛″), a stud adapter, and a spacer.

(C) 8-Ton Flexible Head Hydraulic Driver— Fits in tight spots and around corners. Includes two draw studs (⅜″×2 13/16″ and ¾″×4⅛″), a stud adapter, and a spacer.

(D) 11-Ton Hand-Pump Hydraulic Driver and Ram— For repeated punching. Comes with one ⅜″×2 13/16″ draw stud, one ¾″×5⅜″ draw stud, a stud adapter, 3 spacers, 3-ft. hose, and ½″ step bit.

(E) 11-Ton Foot-Pump Hydraulic Driver and Ram— Punch quickly and easily with your feet and keep your hands free. Includes one ¾″×5⅜″ draw stud, two stud adapters, three spacers, 10-ft. hose, and ½″ step bit.

			Each
A	8-Ton Hydraulic Driver	**3484A15**	$668.78
B	8-Ton Right-Angle Hydraulic Driver	**3490A21**	786.32
C	8-Ton Flexible Head Hydraulic Driver	**3448A2**	798.99
D	11-Ton Hand-Pump Hydraulic Driver and Ram	**3448A1**	843.99
E	11-Ton Foot-Pump Hydraulic Driver and Ram	**3448A3**	1,455.88

Round Knockout Hole Punches

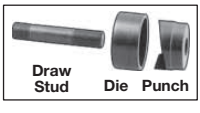

Knockout Punch with Hydraulic Driver (Sold Separately)

Tough enough to cut clean holes in mild steel, fiberglass, and plastic enclosures, these punches are ideal for sockets, plugs, electrical controls, switches, meters, panel lights, relay sockets, timers, and receptacles. A drilled pilot hole for the draw stud is required.

Punches with a 2½″ hole dia. and smaller split the slug into two pieces. Punches with hole diameters larger than 2½″ produce one slug piece.

Punches with 19/32″-2½″ hole dia. can be used with any of the drivers above. Punches with hole diameters larger than 2½″ can be used only with the 11-ton hydraulic drivers on this page.

Also Available: Replacement punch, die, and draw stud. Please ask for 34685A1 and specify part required and hole diameter.

Individual Punches

All punches are made of steel and have a ball-bearing drive. To drive, use a hand wrench, ratchet wrench (see pages 2778-2780), or hydraulic driver (sold separately on this page), except 34685A41-A46, which cannot be used with a hydraulic driver. Each punch includes a die and a draw stud.

Hole Dia.	For Conduit Size	Cutting Cap., Mild Steel		Each
½″	—	16 ga. (0.0598″)	**34685A27**	$45.30
19/32″	—	14 ga. (0.0747″)	**34685A28**	43.27
41/64″	—	14 ga. (0.0747″)	**34685A29**	43.40
47/64″	—	14 ga. (0.0747″)	**34685A33**	43.27
¾″	—	14 ga. (0.0747″)	**34685A69**	42.79
13/16″	—	14 ga. (0.0747″)	**34685A34**	43.27
⅞″	½″	10 ga. (0.1345″)	**34685A41**	37.56
15/16″	—	14 ga. (0.0747″)	**34685A71**	47.51
1″	—	14 ga. (0.0747″)	**34685A35**	49.28
1 1/16″	—	14 ga. (0.0747″)	**34685A72**	49.74
1 7/64″	¾″	10 ga. (0.1345″)	**34685A42**	53.45
1 7/32″	—	14 ga. (0.0747″)	**3449A137**	62.89
1¼″	—	10 ga. (0.1345″)	**34685A73**	74.53
1 9/32″	—	10 ga. (0.1345″)	**34685A37**	75.54
1 23/64″	1″	10 ga. (0.1345″)	**34685A43**	61.72
1½″	—	10 ga. (0.1345″)	**34685A74**	71.12
1⅝″	—	10 ga. (0.1345″)	**34685A75**	80.75
1 11/16″	1¼″	10 ga. (0.1345″)	**34685A44**	$66.82
1¾″	—	10 ga. (0.1345″)	**34685A77**	81.30
1⅞″	—	10 ga. (0.1345″)	**34685A78**	97.94
1 15/16″	1½″	10 ga. (0.1345″)	**34685A45**	85.93
2″	—	10 ga. (0.1345″)	**34685A39**	112.30
2⅛″	—	10 ga. (0.1345″)	**34685A47**	111.81
2¼″	—	10 ga. (0.1345″)	**34685A79**	113.61
2⅜″	2″	10 ga. (0.1345″)	**34685A46**	107.42
2½″	—	10 ga. (0.1345″)	**34685A48**	142.77
2⅝″	—	10 ga. (0.1345″)	**3449A69**	262.94
2¾″	—	10 ga. (0.1345″)	**3449A124**	243.01
2⅞″	2½″	10 ga. (0.1345″)	**3447A43**	194.79
3″	—	10 ga. (0.1345″)	**3449A125**	320.28
3½″	3″	10 ga. (0.1345″)	**3447A44**	240.04
3¾″	—	10 ga. (0.1345″)	**34685A82**	566.93
4″	3½″	10 ga. (0.1345″)	**3449A36**	418.81
4½″	4″	10 ga. (0.1345″)	**3447A45**	533.70

Punch Sets

6-Punch Set with Ratchet Driver

6-Punch Set with 11-Ton Hand-Pump Hydraulic Driver and Ram

Sets include punches, dies, and draw studs in a carrying case, unless noted. For more information on the hydraulic drivers, see Hydraulic Drivers for Knockout Hole Punches on this page.

Six-Punch Set with 8-Ton Hydraulic Driver— For straight-on punching.

Six-Punch Set with 8-Ton Right-Angle Hydraulic Driver— Driver head rotates 180° for added flexibility in tight spots.

Six-Punch Set with 8-Ton Flexible Head Hydraulic Driver— Has a versatile driver head that fits into tight spots and around corners.

Six-Punch Set with 11-Ton Hand-Pump Hydraulic Driver and Ram— Also includes a 3-ft. hydraulic hose, adapter, spacers, and a step bit.

10-Punch Set with 11-Ton Hand-Pump Hydraulic Driver and Ram— Furnished with a 3-ft. hydraulic hose, adapter, spacers, and a step bit.

	For Hole Diameters		Per Set
2-Punch Set	1 15/16″, 2⅜″	**34685A32**	$175.09
4-Punch Set	⅞″, 1 7/64″, 1 23/64″, 1 11/16″	**34685A31**	174.42
6-Punch Set	⅞″, 1 7/64″, 1 23/64″, 1 11/16″, 1 15/16″, 2⅜″	**34685A87▲**	315.69
6-Punch Set with Ratchet Driver	⅞″, 1 7/64″, 1 23/64″, 1 11/16″, 1 15/16″, 2⅜″	**34685A51**	327.57
6-Punch Set with 8-Ton Hydraulic Driver	⅞″, 1 7/64″, 1 23/64″, 1 11/16″, 1 15/16″, 2⅜″	**34685A61**	885.15
6-Punch Set with 8-Ton Right-Angle Hydraulic Driver	⅞″, 1 7/64″, 1 23/64″, 1 11/16″, 1 15/16″, 2⅜″	**34685A63**	1,008.74
6-Punch Set with 8-Ton Flexible Head Hydraulic Driver	⅞″, 1 7/64″, 1 23/64″, 1 11/16″, 1 15/16″, 2⅜″	**34685A85**	1,105.31
6-Punch Set with 11-Ton Hand-Pump Hydraulic Driver and Ram	⅞″, 1 7/64″, 1 23/64″, 1 11/16″, 1 15/16″, 2⅜″	**34685A62**	1,049.70
10-Punch Set with 11-Ton Hand-Pump Hydraulic Driver and Ram	⅞″, 1 7/64″, 1 23/64″, 1 11/16″, 1 15/16″, 2⅜″, 2⅞″, 3½″, 4″, 4½″	**34685A68**	1,835.42

▲ Punches are self-centering and designed for use with hydraulic drivers. Set does not include draw studs or carrying case.

Self-Centering Round Knockout Hole Punches for Stainless Steel

Stronger and longer lasting than the punches on page 2316, these punches are ideal for use on tough materials such as 10-ga. stainless steel. They automatically center on the draw stud pilot hole, eliminating the need to make additional cross hair marks. A hydraulic driver is required to operate (sold separately on page 2316). Punches with 7/8″-1 11/16″ hole dia. can be used with all hydraulic drivers listed on page 2316; punches with 1 15/16″ hole dia. and larger can be used only with 11-ton hydraulic drivers.

Also Available: Replacement punch, die, and draw stud. Please ask for 3454A61 and specify part required and hole dia.

Individual Punches

Each punch includes a die and draw stud.

Hole Dia.	For Conduit Size	Cutting Capacity, Stainless Steel		Each
7/8″	1/2″	10 ga. (0.1345″)	3454A41	$171.28
1 7/64″	3/4″	10 ga. (0.1345″)	3454A42	186.06
1 7/32″	Oil-Tight	10 ga. (0.1345″)	3454A43	253.43
1 23/64″	1″	10 ga. (0.1345″)	3454A44	218.15
1 11/16″	1 1/4″	10 ga. (0.1345″)	3454A45	222.55
1 15/16″	1 1/2″	10 ga. (0.1345″)	3454A46	310.31
2 3/8″	2″	10 ga. (0.1345″)	3454A47	378.64

Punch and Die Sets

Sets are complete with punches, dies, and draw studs and come in a steel carrying case. *Six-punch set with hydraulic driver* also includes an 11-ton hydraulic ram, hydraulic hand pump, 3-ft. hydraulic hose, and all necessary couplings.

	For Hole Diameters		Each
4-Punch Set	7/8″, 1 7/64″, 1 23/64″, 1 11/16″	3454A28	$557.65
6-Punch Set with Hydraulic Driver	7/8″, 1 7/64″, 1 23/64″, 1 11/16″, 1 15/16″, 2 3/8″	3454A31	1,873.23
7-Punch Set	7/8″, 1 7/64″, 1 7/32″, 1 23/64″, 1 11/16″, 1 15/16″, 2 3/8″	3454A29	1,198.61

4-Punch Set

Self-Centering Round Knockout Hole Punches

The special design of these punches allows you to quickly make perfectly centered holes. No need to draw cross hairs or make adjustments; they automatically align themselves in the draw stud pilot hole. Tools also split the slug into two pieces for easy removal.

All punches are made of steel and have a ball-bearing drive to reduce friction. Die and draw stud included. To drive, use a hand wrench, ratchet driver, or any of the hydraulic drivers listed on page 2316.

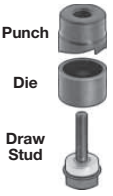

Hole Dia.	For Conduit Size	Cutting Cap., Mild Steel		Each
7/8″	1/2″	10 ga. (0.1345″)	34685A49	$42.11
1 7/64″	3/4″	10 ga. (0.1345″)	34685A52	60.04
1 23/64″	1″	10 ga. (0.1345″)	34685A53	69.28
1 11/16″	1 1/4″	10 ga. (0.1345″)	34685A54	74.97
1 15/16″	1 1/2″	10 ga. (0.1345″)	34685A55	96.36
2 3/8″	2″	10 ga. (0.1345″)	34685A56	118.61

Plier-Action Keyway Punch

Squeeze the handles together, and let the plier action do the rest. Also known as a keyway nibbler, this punch instantly cuts 1/8″ and 3/16″ keyways in existing holes (7/8″ dia. or larger) for oil-tight switches and other applications. Tool is made of steel and typically used with round hole knockout punches. Use on up to 10-ga. (0.1345″) mild steel.

3536A11 ..... Each $220.27

DIN-Shaped Knockout Hole Punches

Use these punches to cut DIN-sized openings for rectangular- and square-shaped instruments. Punches have a hardened tool steel cutting surface. Furnished in a plastic case.

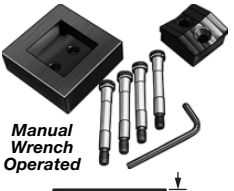
Manual Wrench Operated

Manual Wrench-Operated Punches—Use an adjustable wrench to turn the draw bolt until the punch completes the hole. Cutting cap. is 16-ga. (0.0598″) mild steel; 18-ga. (0.0478″) stainless steel; and 14-ga. (0.0747″) aluminum. Puller adapter is required (sold separately); hydraulic driver is optional (sold separately).

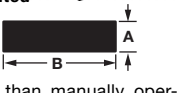

Hydraulic Driver- and Cylinder-Operated Punches—Require less manpower than manually operated punches. They have a cutting capacity of 12-ga. (0.1046″) mild steel; 14-ga. (0.0747″) stainless steel; and 10-ga. (0.1345″) aluminum. Hydraulic driver and cylinder are required (sold separately).

	Hole Size, (A)×(B)		Each
Manual Wrench-Operated Punches			
1/32 DIN	0.88″ ×1.78″	34835A51	$536.25
3/64 DIN	0.88″ ×2.68″	34835A52	579.58
1/16 DIN	1.776″×1.776″	34835A53	590.42
1/16 DIN	1.313″×2.625″	34835A54	622.92
Puller Adapter		34835A35	140.78
Hydraulic Driver- and Cylinder-Operated Punches			
1/8 DIN	1.776″×3.626″	34835A46	695.00
1/4 DIN	3.626″×3.626″	34835A47	795.00
11-Ton Hydraulic Driver		3448A1	843.99
Hydraulic Cylinder		34835A49	595.00

Special-Shape Knockout Hole Punches

Make precise, nonround holes in sheet metal with these specially shaped punches. Ideal for creating openings for various panel cutout switches.

Also known as chassis punches, they have an automatic centering design to accurately align with dies. A ball-bearing drive nut is included for use with a hand wrench (except for keyway punches). Die and draw stud also included.

Use with any hydraulic driver listed on page 2316. A ***stud adapter*** (sold separately) is required when using a hydraulic driver, unless noted.

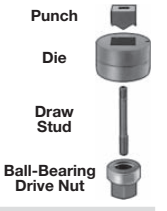

Punches

Hole Size, (A)×(B)	Cutting Cap., Mild Steel		Each
Square			
1/2″ × 1/2″	16 ga. (0.0598″)	3449A71	$199.74
5/8″ × 5/8″	14 ga. (0.0747″)	3449A72	198.33
3/4″ × 3/4″	14 ga. (0.0747″)	3449A73	208.11
7/8″ × 7/8″	14 ga. (0.0747″)	3449A74	242.98
0.945″×0.945″	14 ga. (0.0747″)	3449A41	280.94
1″ ×1″	14 ga. (0.0747″)	3449A75	271.75
1 13/16″×1 13/16″	10 ga. (0.1345″)	3449A68♣	726.93
2″ ×2″	10 ga. (0.1345″)	3449A42♣	837.72
D-Shaped			
0.500″×0.469″	16 ga. (0.0598″)	3449A81	198.50
0.625″×0.594″	14 ga. (0.0747″)	3449A82	210.25
0.750″×0.703″	14 ga. (0.0747″)	3449A83	222.00
Double-D			
0.642″×0.769″	14 ga. (0.0747″)	3449A65	232.11
0.697″×0.795″	14 ga. (0.0747″)	3449A84	252.29
0.756″×0.913″	14 ga. (0.0747″)	3449A85	292.63
1.125″×1.375″	14 ga. (0.0747″)	3449A86	303.84
Rectangle			
0.749″×0.670″	14 ga. (0.0747″)	3449A45	342.57
1.018″×0.861″	14 ga. (0.0747″)	3449A87	289.46
1.181″×0.866″	14 ga. (0.0747″)	3449A88	349.80
1.140″×0.990″	14 ga. (0.0747″)	3449A89	387.14
1.380″×1.250″	14 ga. (0.0747″)	3449A91	387.14

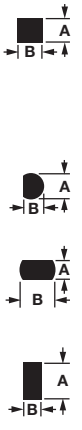

♣ For hydraulic driver use only. Stud adapter not required.

Hole Dia.	Notch Size, (A)×(B)	Cutting Cap., Mild Steel		Each
Key				
0.481″	0.055″×0.030″	16 ga. (0.0598″)	3449A77	$220.50
1.171″	0.123″×0.097″	14 ga. (0.0747″)	3449A44	270.10
Oil-Tight				
Stamp four equally spaced notches for installing standard and miniature oil-tight switches.				
0.875″	0.125″×0.06″	14 ga. (0.0747″)	3449A92	293.72
1.210″	0.190″×0.08″	10 ga. (0.1345″)	3449A93	313.99
Keyway				
Cuts a notch for oil-tight electrical switches in a drilled 1 7/32″ hole to prevent rotary switch movement.				
———	3/16″ ×3/16″	10 ga. (0.1345″)	3449A138	220.22

Stud Adapters for Hydraulic Drivers

Fits Punch Sizes		Each
0.481″, 1/2″	3449A171	$35.28
5/8″, 0.642″, 0.697″, 0.749″, 3/4″, 0.756″, 7/8″, 0.945″	3449A172	29.85
1″ and up, Rectangle (except 0.749″), and Oil-Tight	3449A173	35.28

DB Connector-Shaped Knockout Hole Punches

Create panel openings for mounting DB (D-subminiature) connectors without leaving a hole in your wallet. These economical punches are hardened steel and cut through 22- to 16-ga. (0.0299″-0.0598″) mild steel and 1/8″ aluminum. Edges can be resharpened. Use for Amphenol, T & B Ansley, ITT Cannon, TRW Cinch, 3M, and other equivalent connectors. All include a die, drive screws, strip of 25 adhesive templates, and hex keys. Not for use with hydraulic drivers.

No. of Pins	Hole Size, (A)×(C)		Each
9 Pins	0.755″×0.440″	3476A51	$202.17
15 Pins	1.085″×0.440″	3476A52	202.17
25 Pins	1.640″×0.440″	3476A53	202.17
25 Pins▲	1.658″×0.446″	3476A55	260.87
37 Pins	2.280″×0.440″	3476A56	202.17
50 Pins	2.165″×0.540″	3476A58	313.04

▲ For mounting to the front side of panel.

Quick-Cut DB Connector-Shaped Knockout Hole Punches

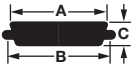

Use these tools to make fast, accurate punch-outs and mounting slots for DB (D-subminiature) connectors. Drill one 7/16″ pilot hole and use a hand wrench or an 11-ton hydraulic driver to tighten the stud.

Punches are steel and cut through up to 16-ga. (0.0598″) mild steel and 1/8″ aluminum. Use for front or back mount of ITT Cannon, TRW Cinch, and equivalent connectors. Includes a die and draw stud. Furnished in a plastic box.

No. of Pins	Hole Size, (A)×(B)×(C)		Each
9 Pins	0.787″×0.982″×0.469″	34195A61	$502.45
15 Pins	1.127″×1.309″×0.469″	34195A62	502.45
25 Pins	1.655″×1.853″×0.469″	34195A63	502.45
37 Pins	2.296″×2.497″×0.469″	34195A64	540.46
50 Pins	2.201″×2.402″×0.579″	34195A65	540.46

Bench-Mount Hole Punches

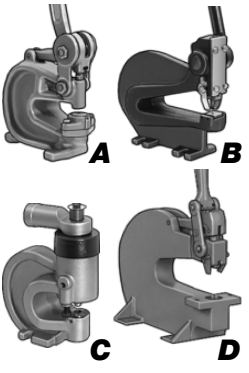

Mount these manually operated punches to your workstation (fasteners not included), and punch holes through metal or other materials. Overall height listed in table below does not include handle.

(A) Smooth Action Bench Punches—With 34 roller bearings in the lever, these medium duty punches have a smooth, fluid punching action. They include a 9/32″ round punch and die as well as adjustable die shoes to punch light-gauge metal. Handle is 24 1/2″ long.

3441A19 is hot-rolled steel and has four 3/8″ dia. mounting holes. 3441A18 is cast iron and has three 3/8″ dia. mounting holes.

Optional workplate for Style A is steel and provides you with a larger work surface for punching. Measures 8″ Wd.×6″ Dp.

(B) Deep Throat Bench Punch—Punch larger workpieces than *Style A* and make holes further from the edge. Punch is medium duty, made of ductile iron, and comes with a 1/4″ round punch and die. Base has four 9/16″ Wd.×7/8″ Lg. mounting slots. Handle is 29″ long.

(C) Heavy Duty Rotary Handle Bench Punch—Has the greatest punching capacity of our punches. Made of cast iron, it has a ball-bearing, rotary action handle for smooth operation. A 1/2″ round punch, die, and coupling nut are included. Base has two 1/2″ Wd.×1″ Lg. mounting slots. Handle socket accepts 1″ unthreaded pipe up to 48″ long to extend handle.

Optional ratchet handle for Style C works in tight spots where rotating the handle 360° isn't possible.

(D) Heavy Duty Large Capacity Bench Punches—With their geared mechanism, these tools punch through tougher materials than other punches. Made of drop-forged steel, they are for use on structural steel channels (2 1/2″ flange) and angle iron (2 1/2″ Ht.×2 1/2″ Wd.×1/4″ Dp. maximum size). Tools include a set of two stripping plates to help remove the punch from your material. A die shoe is required (sold separately below). Base has four 17/32″ dia. mounting holes. Handle is 30″ long.

Punches

	Capacities in Mild Steel: Max. Hole Dia.	Max. Metal Thick.	Throat Dp.	Punching Pressure	Overall Size, Ht.×Wd.×Dp.	Trade No.		Each
A	9/16″ in 12 ga. (0.1046″)	1/4″ with 1/4″ punch	6 1/2″	5 tons	10 9/16″×4 1/2″×12 3/8″	No. 17	3441A19	$639.54
A	9/16″ in 10 ga. (0.1345″)	7/32″ with 3/8″ punch	3 1/4″	7.3 tons	9 5/8″× 3 7/8″× 8 7/16″	No. 16	3441A18	494.75
B	1/2″ in 1/8″ thick	1/8″ with 1/2″ punch	8″	5 tons	10 7/8″ ×4 1/4″×13″	No. 6	3450A11	507.32
C	13/16″ in 5/16″ thick	1/2″ with 1/2″ punch	2 1/4″	20 tons	11 1/2″ ×3 7/8″× 7″	No. 20	3442A12	517.75
D	2″ in 12 ga. (0.1046″)	1/4″ with 1/2″ punch	5″	10 tons	13 3/8″ ×5 3/4″×11 1/2″	No. 91	3443A111	1,314.78
D	2″ in 12 ga. (0.1046″)	1/4″ with 1/2″ punch	10″	10 tons	15 3/4″ ×5 3/4″×19 5/8″	No. 92	3443A112	1,665.39

Optional Workplate for Style A ..... 3441A11 **Each** $81.87

Optional Ratchet Handle for Style C ..... 3442A15 **Each** $195.22

Extra Round Punch and Die Sets

Sets include one punch and one die. Set for No. 20 punch tool requires a coupling nut. **To Order:** For all sets, please specify hole diameter. For coupling nut, please ask for 3442A61 and specify hole diameter.

For Punch Tool (Trade No.)	Available Hole Diameters		Per Set
No. 17	1/16″ to 9/16″×64ths	3441A62	$37.58
No. 16	1/16″ to 9/16″×64ths	3441A41	39.63
No. 6	1/16″ to 1/2″ ×32nds	3450A61	25.54
No. 6	1/8″ to 1/2″ ×16ths	3450A62★	109.31
No. 20	1/8″ to 13/16″×64ths	3442A41	$37.90
No. 91	1/16″ to 9/16″ ×32nds	3443A81	25.89
No. 92	1/16″ to 9/16″ ×32nds	3443A81	25.89

★ Punches and dies are square in shape.

Die Shoes

For use with 3443A111 and 3443A112.

For Hole Size		Each
1/16″ to 5/8″	3443A121	$91.43
21/32″ to 7/8″	3443A122	114.29
29/32″ to 1 1/2″	3443A123	142.86
1 17/32″ to 2″	3443A124	154.29

Portable Electro-Hydraulic Hole Punch

When punching takes you away from the workstation, bring the punch with you. With a 9-ft. power cord and two-prong plug, this easy-to-handle tool simply needs to be plugged in and it's ready to go. Its hydraulic pump with automatic return enables you to punch every 1.2 seconds. Use for flat bar stock, angle iron, channel, and sheet stock. Housing is aluminum. Punching tool is 20 5/32″ Ht.×5 1/2″ Wd.×6 1/2″ Dp. and has a punching pressure of 13.2 tons. Motor is 115 VAC single phase, 9.5 amps.

Punch includes tool, one round 9/16″ punch, two dies, stand, foot switch, and plastic carrying case.

Punch

Capacity in Mild Steel: Max. Hole Dia.	Max. Metal Thick.	Throat Dp.		Each
11/16″	1/4″	2 3/8″	34525A12	$2,698.07

Extra Round Punches and Dies

To Order: Please specify hole diameter.

	Available Hole Diameters		Each
Punch	1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″	34525A411	$50.62
Die	1/4″, 5/16″, 5/8″, 11/16″	34525A431	65.50
Die	3/8″, 7/16″, 1/2″, 9/16″	34525A461	50.62

Portable Heavy Duty Hydraulic Hole Punch

Made of heavy duty forged steel, this tool punches round holes when used with any 10,000 psi hydraulic pumping source (see hydraulic pump below or pages 1387-1388). Ideal for bus bar, tower iron, railing, and I-beams. Tool measures 13 1/4″ Ht.×3 3/4″ Wd.×7 1/2″ Dp. and has a punching pressure of 35 tons.

Punch includes tool; four round punches and dies in sizes 7/16″, 9/16″, 11/16″, and 13/16″; a 3/8″ female quick-coupler for attaching a 10,000 psi hydraulic hose (see page 1389); and metal carrying case.

Extra Punch and Die Sets—Include one round punch and one die. **To Order:** Please specify size: 5/16″, 7/16″, 9/16″, 5/8″, 11/16″, or 13/16″.

Capacity in Mild Steel: Max. Hole Dia.	Max. Metal Thick.	Throat Dp.	Punch	Each	Extra Punch and Die Sets	Per Set
13/16″	1/2″	2 3/4″	3456A11	$2,048.78	3456A12	$107.14

Hydraulic Pump—This 10,000 psi pump has a 10-ft. remote control cable that provides you with full control of the pump as well as safety and convenience. It has a 1/2 hp motor that operates on 115 VAC, 60 Hz. Pump measures 14″ Ht.×6″ Wd.×7″ Dp.

3456A41 ..... **Each** $2,231.25

Portable Hole Punches

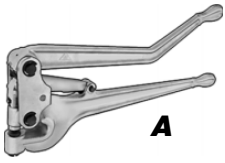

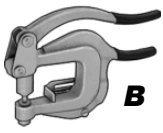

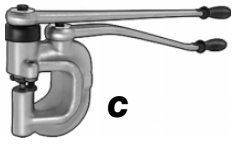

Punching Tool Kit

Easy to handle and easy to take with you, these tools punch round holes in mild steel or stainless steel. ***Punching tools*** include one punch and die for mild steel.

(A) Lever with Cam Action— Feature a powerful cam gear design. 3531A11 is cast iron, has a slip-on grip handle, and comes with a 7/32″ punch and die. It has a max. hole diameter of 1/4″ in 14-ga. (0.0747″) stainless steel with a max. metal thick. of 10 ga. (0.1345″) with a 1/8″ punch.

3433A21 is drop-forged steel and includes a 1/4″ punch and die. It has a max. hole diameter of 15/32″ in 14-ga. (0.0747″) stainless steel with a max. metal thick. of 10 ga. (0.1345″) with a 1/4″ punch.

3530A11 is made of drop-forged steel. It includes a 1/4″ punch and die. It has a max. hole diameter of 17/32″ in 12-ga. (0.1046″) stainless steel with a max. metal thick. of 3/16″ with a 5/16″ punch.

(B) Compact Lever with Cam Action and Adjustable Throat— Designed like *Style A* punches, but small enough to fit in your tool box. They have an adjustable throat for punching at varying depths from the edge of material. Made of cast iron with comfort grip handles. 3461A22 comes with a 3/16″ punch and die. 3485A12 includes a 9/32″ punch and die.

(C) Rotary Lever with Ball-Bearing Action— The lever smoothly rotates 360° so you can punch in close quarters. Made of cast iron with plastic-dipped handles. Includes a 9/32″ punch and die. Handle is 19 1/2″. *Optional ratchet handle* interchanges with the top rotary lever for use in tight spots.

Punching Tools

Capacities in Mild Steel: Max. Hole Dia.	Max. Metal Thick.	Throat Dp.	Punching Pressure	O'all Size, Lg. × Wd. × Ht.	Trade No.		Each
(A) Lever with Cam Action							
7/16″ in 16 ga. (0.0598″)	1/8″ with 3/16″ punch	1 5/8″	2.5 tons	18″ × 2″ × 5 3/4″	No. 7A	3531A11	$329.48
1/2″ in 10 ga. (0.1345″)	1/4″ with 9/32″ punch	1 7/8″	5 tons	23″ × 2 1/2″ × 7 3/8″	No. 2	3433A21	428.20
9/16″ in 10 ga. (0.1345″)	1/4″ with 3/8″ punch	2″	7.5 tons	34″ × 3 1/8″ × 7 7/8″	No. 1	3530A11	505.99
(B) Compact Lever with Cam Action and Adjustable Throat							
9/32″ in 18 ga. (0.0478″)	0.12″ with 1/8″ punch	1/4″-1 3/4″	1.2 tons	8 1/4″ × 1 13/32″ × 3 3/4″	No. 5	3461A22	62.11
17/32″ in 20 ga. (0.0359″)	0.12″ with 1/8″ punch	1/4″-3 1/4″	1.2 tons	10 1/4″ × 1 5/8″ × 6 3/8″	No. XX	3485A12	173.68
(C) Rotary Lever with Ball-Bearing Action							
9/16″ in 10 ga. (0.1345″)	3/16″ with 3/8″ punch	2 1/4″	7.3 tons	19 1/2″ × 2 7/8″ × 8 5/16″	No. 12	3434A12	520.00
Optional Ratchet Handle for Style C Rotary Lever						3434A15	202.29

Extra Round Punch and Die Sets

Sets include one punch and one die. **To Order:** Please specify hole diameter.

For Punch Tool (Trade No.)	Available Hole Diameters	For Mild Steel Per Set		For Stainless Steel Per Set	
3531A11 (No. 7A)	1/16″ to 7/16″ × 32nds	3531A51	$23.45	3531A41▲	$23.45
3433A21 (No. 2)	1/16″ to 1/2″ × 32nds	3433A82	21.66	3433A81●	19.80
3530A11 (No. 1)	1/16″ to 9/16″ × 32nds	3530A3	28.82	3530A2	28.82
3461A22 (No. 5)	1/16″ to 9/32″ × 32nds	3461A41	12.84	—	—
3485A12 (No. XX)	1/16″ to 13/64″ × 64ths■ and 7/32″ to 17/32″ × 32nds	3485A18	23.73	—	—
3434A11 (No. 10)	1/16″ to 9/16″ × 32nds	3434A21	34.09	—	—
3434A12 (No. 12)	1/16″ to 9/16″ × 32nds	3434A21	34.09	—	—

▲ Largest size is 13/32″. ● Largest size is 15/32″. ■ 5/64″ and 9/64″ hole dia. not available.

Punching Tool Kits—Furnished in a plastic case.

Kit Contents		Each
Punching tool 3461A22 plus punches and dies in the following sizes: 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 9/32″	3461A11	$90.53
Punching tool 3485A12 plus punches and dies in the following sizes: 5/32″, 7/32″, 9/32″, 11/32″, 13/32″, 15/32″, 17/32″	3485A11	267.37

Small-Diameter Hole Punches

Bigger isn't always better. These steel punches make small, precise holes in spots other tools can't reach. Punches have a waste slot in the handle to easily remove cuttings. Use on soft nonmetallic materials.

One-Piece Punches

Handle and punch are one complete unit.

Hole Dia.	Trade Size	O'all Lg.		Each	Hole Dia.	Trade Size	O'all Lg.		Each
1/16″	00	4″	3424A57	$5.84	9/32″	11	4 1/2″	3424A22	$8.23
5/64″	0	4″	3424A31	6.21	5/16″	12	4 1/2″	3424A23	8.23
3/32″	1	4″	3424A11	6.55	11/32″	13	4 1/2″	3424A24	9.32
1/8″	2	4″	3424A12	6.55	3/8″	14	4 1/2″	3424A25	9.32
9/64″	3	4″	3424A13	6.55	13/32″	15	4 1/2″	3424A26	10.09
5/32″	4	4″	3424A14	6.55	7/16″	16	4 1/2″	3424A27	10.09
11/64″	5	4″	3424A15	6.55	1/2″	—	5″	3424A28	11.76
3/16″	6	4″	3424A16	6.55	9/16″	—	5 1/4″	3424A29	13.44
13/64″	7	4″	3424A17	7.31	5/8″	—	5 1/4″	3424A32	14.34
7/32″	8	4″	3424A18	7.31	3/4″	18	5″	3424A51	19.71
1/4″	9	4″	3424A19	7.31	7/8″	20	5 1/4″	3424A52	24.64
17/64″	10	4 1/2″	3424A21	8.23	1″	22	5 1/2″	3424A53	30.00

6-Piece Sets— Have one of each size listed. Supplied in a plastic roll.

Hole Dia.		Each
1/8″, 5/32″, 3/16″, 1/4″, 5/16″, and 3/8″	3424A41	$44.40
3/16″, 1/4″, 5/16″, 3/8″, 7/16″, and 1/2″	3507A11	38.33

Multi-Diameter Hole Punching Tool

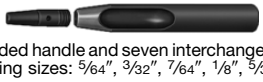

You'll get a threaded handle and seven interchangeable screw-in punch tubes in the following sizes: 5/64″, 3/32″, 7/64″, 1/8″, 5/32″, 11/64″, and 3/16″.

3426A1 ..... Per Set $34.96

Sheet Metal Fastening Punch

A punch that doesn't quite punch. Unlike other tools, these punches don't cut holes in the material. Instead, they create indents, or dimples, that can be used to securely hold pieces of sheet metal together. Also known as button punches.

For ease of use, the head rotates 360° to punch in any position and the jaw ends are offset to give you a clean view of the material.

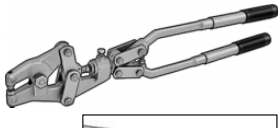

Indents in Sheet Metal

Capacity in Mild Steel: Indent Dia.	Max. Metal Thick.	Throat Depth	O'all Lg.		Each
3/8″	3 sheets of 20 ga. (0.0359″)	1 3/4″	26″	3467A11	$525.95
Replacement Punch and Die Set				3467A12	89.93

Oblong Hole Arch Punches

Make oblong holes in soft nonmetallic materials with these punches. They are made of alloy steel and taper to provide easy clearance for the punched-out material.

Hole Size, (A) × (B)	Punch Lg.		Each
1/2″ × 7/64″	4 1/2″	3503A11	$40.13
5/8″ × 1/8″	4 5/8″	3503A15	40.13
3/4″ × 9/64″	4 5/8″	3503A16	40.13
1″ × 5/32″	5 1/4″	3503A12	47.29
1 1/4″ × 11/64″	6″	3503A17	54.36
1 1/2″ × 13/64″	6 3/4″	3503A14	55.97

Round Hole Arch Punches

The unique design of these punches makes them ideal for punching round holes in soft metals (soft brass, copper, and lead) as well as soft materials (leather, rubber, canvas, and gasketing). They have a tapered head to prevent clogging and a strengthened cutting edge for extra durability. All conform to U.S. Gov't. Spec. GGG-P-833a. For best results, use on a solid surface with a punch-cutting pad (see 3496A on page 2321).

Inch punches are hardened tool steel; ***metric*** punches are forged steel.

Round Hole Arch Punch Set (3429A11)

Inch Sizes

Hole Dia.		Each	Hole Dia.		Each	Hole Dia.		Each	Hole Dia.		Each
3/16"	3427A57	$11.24	7/8"	3427A22	$18.72	1 5/8"	3427A34	$55.07	2 7/8"	3427A45	$120.08
1/4"	3427A11	11.24	15/16"	3427A23	20.45	1 3/4"	3427A35	62.88	3"	3427A46	122.98
5/16"	3427A12	11.24	1"	3427A24	20.45	1 7/8"	3427A36	73.27	3 1/8"	3427A47	127.41
3/8"	3427A13	11.97	1 1/16"	3427A25	27.02	2"	3427A37	77.32	3 1/4"	3427A48	127.64
7/16"	3427A14	11.97	1 1/8"	3427A26	27.35	2 1/8"	3427A38	88.73	3 3/8"	3427A49	130.18
1/2"	3427A15	13.32	1 3/16"	3427A27	30.29	2 1/4"	3427A39	99.74	3 1/2"	3427A51	138.08
9/16"	3427A16	15.00	1 1/4"	3427A28	30.29	2 3/8"	3427A41	105.92	3 5/8"	3427A52	149.38
5/8"	3427A17	15.00	1 5/16"	3427A29	33.82	2 1/2"	3427A42	106.94	3 3/4"	3427A53	149.27
11/16"	3427A18	15.69	1 3/8"	3427A31	35.47	2 5/8"	3427A43	109.60	3 7/8"	3427A54	168.41
3/4"	3427A19	16.31	1 7/16"	3427A32	45.42	2 3/4"	3427A44	113.14	4"	3427A55	168.41
13/16"	3427A21	18.72	1 1/2"	3427A33	45.42						

Metric Sizes

Hole Dia., mm		Each	Hole Dia., mm		Each	Hole Dia., mm		Each	Hole Dia., mm		Each
2	3418A56	$27.25	15	3418A15	$34.99	28	3418A28	$56.73	41	3418A41	$122.26
3	3418A57	26.26	16	3418A16	34.99	29	3418A29	56.73	42	3418A42	139.81
4	3418A54	24.49	17	3418A17	34.99	30	3418A3	66.11	43	3418A43	139.81
5	3418A55	24.49	18	3418A18	36.91	31	3418A31	66.11	44	3418A44	139.81
6	3418A6	24.49	19	3418A19	36.91	32	3418A32	66.11	45	3418A45	139.81
7	3418A7	24.49	20	3418A2	40.37	33	3418A33	69.47	46	3418A46	158.26
8	3418A8	24.49	21	3418A21	40.37	34	3418A34	74.55	47	3418A47	158.26
9	3418A9	24.49	22	3418A22	40.37	35	3418A35	76.68	48	3418A48	162.37
10	3418A1	24.49	23	3418A23	45.15	36	3418A36	98.74	49	3418A49	189.94
11	3418A11	24.49	24	3418A24	45.15	37	3418A37	98.74	50	3418A5	191.84
12	3418A12	30.11	25	3418A25	45.15	38	3418A38	98.74	51	3418A51	191.84
13	3418A13	30.11	26	3418A26	56.73	39	3418A39	122.26	52	3418A52	193.55
14	3418A14	34.99	27	3418A27	56.73	40	3418A4	122.26			

Round Hole Arch Punch and Tool Set

Punch Sets

Round Hole Arch Punch Sets— Include some of our most popular inch-size punches in a nylon roll pouch.

Hole Dia.		Per Set
3/16", 5/16", 7/16", 9/16", 11/16", 13/16", 15/16"	3429A12	$93.81
1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1"	3429A11	96.17
1 1/16", 1 1/4", 1 3/8", 1 5/8", 1 3/4"	3429A67	178.03

Round Hole Arch Punch and Tool Set— Has five arch punches in 1/4", 3/8", 1/2", 5/8", and 3/4" sizes; a 5" scratch awl for marking gasket material; and 7" long duckbill snips with a 1 3/4" length of cut for making precise cuts. Furnished in a nylon roll pouch.

3491A11 ..... **Per Set** $117.67

Cork and Rubber Punches

Also known as cork borers, these punching tools quickly cut holes in cork or rubber. Simply push down on the tee handle and turn. Punches are made of zinc-plated brass tubing. They have precision-ground cutting edges, which can be resharpened. Handles are plastic.

7-Piece Set— Includes one of each size punch listed and one solid-pin style punch. Punches can be nested for easy storage.

Hole Dia.		Each
3/16"	6122A22	$11.34
1/4"	6122A23	11.34
5/16"	6122A24	11.34
3/8"	6122A25	11.34
7/16"	6122A26	11.34
1/2"	6122A27	11.34
7-Piece Set	6122A12	**Per Set** $34.93

Gasket and Washer Punch Sets

10-Punch Economy Set

13-Punch Deluxe Set

25-Punch Dual-Cutting Head Set

Punch holes and internal radii without blowing a gasket. These punches cut right through gaskets and soft materials (leather, rubber, canvas, and felt) as well as soft metals (foils).

Sets are furnished in a plastic carrying case. For best results, use a hardwood block or punch-cutting pad underneath the material to be cut. If the set you select does not include a pad, see 3496A on the following page.

Economy Set

10-Punch Set— Contains 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 3/4", 7/8", and 1" punches and driving handle.

3430A12 ..... **Per Set** $38.92

Deluxe Sets

Sets include a handle, punches, a precision centering pin, and a punch-cutting pad. Use the precision centering pin to easily and accurately cut both washers and gaskets. The handle is made of drop-forged steel and has an arched design with quick-release locking mechanism for fast punch changes. Its large striking surface minimizes miss-hits, and the step-relief design eliminates clogging.

7-Punch Deluxe Set— Contains 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", and 1" punches.

3466A15 ..... **Per Set** $142.31

13-Punch Deluxe Set— Contains 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", and 1" punches.

3466A16 ..... **Per Set** $196.53

Dual-Cutting Head Sets

Use these sets to create gaskets, washers, and rings in one operation. With a step-down mount and a threaded mount, the included handle can hold two punch heads and cut both the inner and outer holes at once. Also for use on foam, cardboard, rubber fiber, and lead.

10-Punch Set— Contains 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", and 3/4" punches with dual-cutting heads.

33785A51 ..... **Per Set** $133.17

15-Punch Set— 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 3/4", 7/8", 1", 1 1/16", 1 1/8", and 1 3/16" punches with dual-cutting heads.

33785A11 ..... **Per Set** $206.80

25-Punch Set— 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 3/4", 7/8", 1", 1 1/16", 1 1/8", 1 3/16", 1 1/4", 1 5/16", 1 3/8", 1 7/16", 1 1/2", 1 5/8", 1 11/16", 1 3/4", 1 7/8", and 2" punches with dual-cutting heads.

33785A12 ..... **Per Set** $409.80

10-Punch Metric Set— 3, 4, 6, 8, 10, 12, 14, 16, 18, and 20 mm punches with dual-cutting heads.

33785A52 ..... **Per Set** $128.00

15-Punch Metric Set— 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, and 30 mm punches with dual-cutting heads.

33785A14 ..... **Per Set** $206.60

29-Punch Metric Set— 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, and 50 mm punches with dual-cutting heads.

33785A15 ..... **Per Set** $459.55

Shim-Stock Punch Sets

Make your own washers, shims, and gaskets in just seconds. These punches cut steel, brass, rubber, and plastic up to 0.025″ thick, except the punches in the ***9-pc. large-diameter inch set***, which cut brass, rubber, and plastic up to 0.020″ thick and steel up to 0.015″ thick. All punches also cut stainless steel and heat-treated steel up to 0.010″ thick. Punches are made of tool steel. Furnished in a plastic case.

10-Pc. Metric Set

Small-Diameter Sets

To use, scribe center lines, align punch and base with center lines, and then hit with hammer.

10-Pc. Inch Set—Contains one each of 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, and 3/4″ punch sizes and base.

3472A11 ..... **Per Set** $141.65

10-Pc. Metric Set—Contains one each of 3.5, 5, 7, 8.5, 10, 11.5, 13.5, 16.5, and 19.5 mm punch sizes and base.

3861A56 ..... **Per Set** $122.54

Small-Diameter and Large-Diameter Sets with ID Pilots

No need for scribing; the ID pilots automatically center the OD punches in relation to the ID hole.

18-Pc. Small-Diameter Inch Set—Contains one each of 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, and 3/4″ punch sizes; eight ID pilots; and base.

3455A71 ..... **Per Set** $248.60

9-Pc. Large-Diameter Inch Set—Contains one each of 7/8″, 1″, 1 1/8″, and 1 1/4″ punch sizes; four ID pilots; and base.

3455A72 ..... **Per Set** $384.97

20-Pc. Metric Set—Contains one each of 3, 4, 5, 6, 7, 8, 10, 12, 16, and 20 mm punch sizes; nine ID pilots; and base.

3455A73 ..... **Per Set** $286.20

Multi-Diameter Expandable Transfer Punches

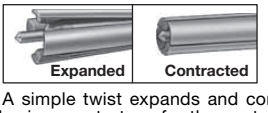

A simple twist expands and contracts the end of these punches, allowing you to transfer the center of any hole within their diameter range. Precision-made of hardened and alloy steel, they have a point that is accurate to 0.005″, even in thin material.

Diameter Range		Body Length		Each
1/4″ -5/16″;	6- 8 mm	3 25/32″	**3380A12**	$50.24
5/16″-7/16″;	8-11 mm	4 1/64″	**3380A13**	57.12
7/16″-11/16″;	11-17 mm	4 1/2″	**3380A14**	66.03

3-Pc. Set—Contains one of each punch listed above. Furnished in a plastic case.

3380A11 ..... **Per Set** $137.80

Self-Aligning Threaded-Hole Transfer Punches

Transfer entire hole patterns without having to meticulously align your punches. These specially designed punches, also known as transfer screws, have a uniform shoulder height of 0.200″ regardless of diameter. By inserting them into the hole and tightening with a wrench or pliers, the punches automatically align themselves. Made of steel.

Individual Punches

Thread Size		Each	Thread Size		Each
10-24	**3400A11**	$1.92	3/8″-24	**3400A33**	$2.30
10-32	**3400A12**	1.92	7/16″-14	**3400A17**	2.46
1/4″-20	**3400A14**	2.03	7/16″-20	**3400A34**	2.45
1/4″-28	**3400A31**	2.02	1/2″-13	**3400A18**	2.61
5/16″-18	**3400A35**	2.17	1/2″-20	**3400A36**	2.60
5/16″-24	**3400A32**	2.17	5/8″-11	**3400A19**	2.90
3/8″-16	**3400A16**	2.31	3/4″-10	**3400A21**	3.23

Punch Sets

These 12-piece sets include four punches in each size listed mounted on an indexed plastic plate.

Included Thread Sizes		Per Set
10-24, 10-32, 1/4″-20	**3400A22**	$23.83
1/4″-20, 5/16″-18, 3/8″-16	**3400A23**	25.62
5/16″-18, 3/8″-16, 1/2″-13	**3400A24**	28.00
7/16″-14, 1/2″-13, 5/8″-11	**3400A25**	31.90
1/2″-13, 5/8″-11, 3/4″-10	**3400A26**	34.67

Punch-Cutting Sheets

Keep the edges of your punches sharp by using them with these resilient polypropylene sheets. Ideal for arch and gasket punches. Color is translucent off-white.

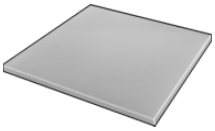

Lg. × Wd. × Thick.		Each
12″ × 12″ × 1/2″	**3496A22**	$15.40
12″ × 24″ × 1/2″	**3496A23**	28.23

Plier-Action Hole Punches

Squeeze the handles to punch round holes in leather, canvas, and rubber. Punches are 8 1/2″ long and have a 1 1/2″ throat depth. The punch tubes are steel with a black-oxide finish, unless noted.

Single-tube punches have a forged-steel frame with self-opening spring-return handles.

Economy multi-tube punch has a revolving head and a pressed nickel-plated steel frame. Includes six punch tube sizes: 5/64″, 3/32″, 7/64″, 1/8″, 5/32″, and 3/16″.

Deluxe multi-tube punch has a revolving head, forged-steel frame, and self-opening spring-return handles. It comes with six punch tubes in the following sizes: 3/32″, 7/64″, 1/8″, 5/32″, 11/64″, and 3/16″.

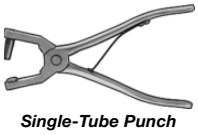

Single-Tube Punch

Deluxe Multi-Tube Punch

		Each
1/8″ Single-Tube Punch	**3435A22**	$74.83
3/16″ Single-Tube Punch	**3435A21**	74.83
1/4″ Single-Tube Punch	**3435A11**	74.83
Economy Multi-Tube Punch	**3488A9**★	17.55
Deluxe Multi-Tube Punch	**3488A1**	82.63

★ Punch tubes are black-zinc steel.

Threaded-Hole Transfer Punches

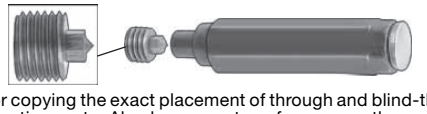

Ideal for copying the exact placement of through and blind-threaded holes to mating parts. Also known as transfer screws, these punches come with six heat-treated steel transfer punches and a hollow handle that doubles as a wrench and storage holder for the punches. Additional uses include locating fixtures, air cylinders, and chucks.

Inch Sizes

Thread Size		Each	Thread Size		Each
4-40	**3385A11**	$13.90	5/16″-24	**3385A52**	$13.65
4-48	**3385A12**	13.90	3/8″-16	**3385A19**	13.65
5-40	**3385A61**	13.90	3/8″-24	**3385A21**	13.65
5-44	**3385A62**	13.90	7/16″-14	**3385A22**	13.65
6-32	**3385A31**	13.40	7/16″-20	**3385A64**	13.65
6-40	**3385A51**	13.40	1/2″-13	**3385A23**	13.65
8-32	**3385A32**	13.40	1/2″-20	**3385A24**	13.65
8-36	**3385A63**	13.40	9/16″-12	**3385A25**	13.65
10-24	**3385A13**	13.65	9/16″-18	**3385A56**	13.65
10-32	**3385A14**	13.65	5/8″-11	**3385A26**	14.14
12-24	**3385A54**	13.65	5/8″-18	**3385A57**	14.14
12-28	**3385A55**	13.65	3/4″-10	**3385A27**	14.39
3/16″-24	**3385A15**	13.65	3/4″-16	**3385A58**	14.39
3/16″-32	**3385A53**	13.65	7/8″-9	**3385A28**	15.38
1/4″-20	**3385A16**	13.65	7/8″-14	**3385A59**	15.38
1/4″-28	**3385A17**	13.65	1″-8	**3385A29**	16.38
5/16″-18	**3385A18**	13.65	1″-14	**3385A65**	16.38

Metric Sizes

Thread Size		Each	Thread Size		Each
M3 × 0.50	**3385A71**	$13.90	M12 × 1.75	**3385A46**	$13.65
M4 × 0.70	**3385A41**	13.40	M14 × 2.00	**3385A72**	13.65
M5 × 0.80	**3385A42**	13.65	M16 × 2.00	**3385A73**	14.14
M6 × 1.00	**3385A43**	13.65	M20 × 2.50	**3385A74**	14.39
M8 × 1.25	**3385A44**	13.65	M24 × 3.00	**3385A75**	16.38
M10 × 1.50	**3385A45**	13.65			

Punch Sets

Sets include a wrench and four of each punch size listed. The wrench can be used with every punch in its set but not with the punches shown above or in another set. Furnished in a plastic box.

Included Thread Sizes		Per Set
Inch Sizes		
4-40, 6-32, 8-32, 10-24	**3385A79**	$38.75
1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14	**3385A77**	38.75
1/2″-13, 9/16″-12, 5/8″-11, 3/4″-10	**3385A78**	41.13
Metric Sizes		
M3 × 0.50, M4 × 0.70, M5 × 0.80, M6 × 1.00	**3385A83**	38.75
M6 × 1.00, M8 × 1.25, M10 × 1.50, M12 × 1.75	**3385A82**	38.75
M14 × 2.00, M16 × 2.00, M20 × 2.50, M24 × 3.00	**3385A81**	41.13

Transfer Punches

Use to transfer the location of threaded, drilled, and reamed holes from one piece of metal to another that requires identical holes. These U.S.-made punches are made from top-quality heat-treated tempered steel with a black-oxide finish for durability. All are approximately 4⅞″ long.

The diameter tolerances of these punches are ±0.0005″. Punches with diameters of 1/16″ to 3/32″, #40 to #60, and 1 mm to 2 mm are approximately 0.002″ undersized. Those with diameters 7/64″ to 17/32″, A to Z, #1 to #39, and 2.5 mm to 13 mm are approximately 0.0025″ undersized. Punch diameters 35/64″ to 2″ and 13.5 mm to 25 mm are approximately 0.003″ undersized.

Punch sets are furnished in a storage stand.

Inch Sizes

Dia.		Each	Dia.		Each	Dia.		Each	Dia.		Each	Dia.		Each
1/16″	3374A113	$2.75	19/64″	3374A26	$3.19	17/32″	3374A43	$4.85	3/4″	3374A52	$7.60	31/32″	3374A582	$9.43
5/64″	3374A115	2.75	5/16″	3374A27	3.25	35/64″	3374A431	6.53	49/64″	3374A53	8.28	63/64″	3374A583	9.51
3/32″	3374A12	2.36	21/64″	3374A28	2.85	9/16″	3374A44	5.47	25/32″	3374A54	7.81	1″	3374A59	8.94
7/64″	3374A13	2.75	11/32″	3374A29	3.45	37/64″	3374A45	6.91	51/64″	3374A541	8.45	1 1/32″	3374A62	9.96
1/8″	3374A14	2.36	23/64″	3374A31	3.60	19/32″	3374A46	6.98	13/16″	3374A55	7.94	1 1/16″	3374A61	9.66
9/64″	3374A15	2.75	3/8″	3374A32	3.21	39/64″	3374A461	7.06	53/64″	3374A551	8.58	1 3/32″	3374A63	11.72
5/32″	3374A16	2.42	25/64″	3374A33	3.89	5/8″	3374A47	5.70	27/32″	3374A552	8.66	1 1/8″	3374A64	14.00
11/64″	3374A17	2.42	13/32″	3374A34	3.96	41/64″	3374A48	7.21	55/64″	3374A553	8.74	1 3/16″	3374A65	17.34
3/16″	3374A18	2.42	27/64″	3374A35	4.17	21/32″	3374A49	6.79	7/8″	3374A56	8.25	1 1/4″	3374A66	19.38
13/64″	3374A19	2.42	7/16″	3374A36	4.32	43/64″	3374A491	7.36	57/64″	3374A561	8.91	1 5/16″	3374A67	24.87
7/32″	3374A21	2.49	29/64″	3374A37	4.45	11/16″	3374A51	6.94	29/32″	3374A57	9.13	1 3/8″	3374A68	28.43
15/64″	3374A22	2.49	15/32″	3374A38	4.60	45/64″	3374A511	7.83	59/64″	3374A571	9.21	1 1/2″	3374A71	35.62
1/4″	3374A23	2.55	31/64″	3374A39	4.74	23/32″	3374A512	7.91	15/16″	3374A58	8.66	1 3/4″	3374A75	52.55
17/64″	3374A24	2.60	1/2″	3374A41	4.30	47/64″	3374A513	7.98	61/64″	3374A581	9.36	2″	3374A79	64.75
9/32″	3374A25	3.11	33/64″	3374A42	5.38									

Letter Sizes

Letter Size		Each	Letter Size		Each	Letter Size		Each	Letter Size		Each	Letter Size		Each
A	3374A941	$3.49	G	3374A947	$3.87	L	3374A953	$4.09	Q	3374A958	$4.40	V	3374A964	$4.77
B	3374A942	3.49	H	3374A948	3.94	M	3374A954	4.09	R	3374A959	4.47	W	3374A965	4.85
C	3374A943	3.49	I	3374A949	4.02	N	3374A955	4.17	S	3374A961	4.55	X	3374A966	4.92
D	3374A944	3.70	J	3374A951	4.02	O	3374A956	4.25	T	3374A962	4.62	Y	3374A967	5.00
E	3374A945	3.70	K	3374A952	4.02	P	3374A957	4.32	U	3374A963	4.70	Z	3374A968	5.15
F	3374A946	3.87												

Wire-Gauge Sizes

Wire Gauge		Each	Wire Gauge		Each	Wire Gauge		Each	Wire Gauge		Each	Wire Gauge		Each
1	3374A811	$3.49	13	3374A824	$3.42	25	3374A837	$3.32	37	3374A851	$3.25	49	3374A864	$3.19
2	3374A812	3.49	14	3374A825	3.42	26	3374A838	3.32	38	3374A852	3.25	50	3374A865	3.19
3	3374A813	3.49	15	3374A826	3.42	27	3374A839	3.32	39	3374A853	3.25	51	3374A866	3.11
4	3374A814	3.25	16	3374A827	3.42	28	3374A841	3.32	40	3374A854	3.25	52	3374A867	3.11
5	3374A815	3.49	17	3374A828	3.42	29	3374A842	3.32	41	3374A855	3.19	53	3374A868	3.11
6	3374A816	3.49	18	3374A829	3.42	30	3374A843	3.32	42	3374A856	3.19	54	3374A869	3.11
7	3374A817	3.49	19	3374A831	3.42	31	3374A844	3.25	43	3374A857	3.19	55	3374A871	3.11
8	3374A818	3.49	20	3374A832	3.42	32	3374A845	3.25	44	3374A858	3.19	56	3374A872	3.11
9	3374A819	3.49	21	3374A833	3.32	33	3374A846	3.25	45	3374A859	3.19	57	3374A873	3.11
10	3374A821	3.49	22	3374A834	3.32	34	3374A847	3.25	46	3374A861	3.19	58	3374A874	3.11
11	3374A822	3.42	23	3374A835	3.32	35	3374A848	3.25	47	3374A862	3.19	59	3374A875	3.11
12	3374A823	3.42	24	3374A836	3.32	36	3374A849	3.25	48	3374A863	3.19	60	3374A876	3.11

Metric Sizes

Dia., mm		Each	Dia., mm		Each	Dia., mm		Each	Dia., mm		Each	Dia., mm		Each
1	8962A421	$3.38	5	8962A429	$3.53	9	8962A438	$4.29	13	8962A447	$6.10	19	8962A456	$8.40
1.5	8962A422	3.38	5.5	8962A431	3.60	9.5	8962A439	4.43	13.5	8962A448	6.52	20	8962A457	8.83
2	8962A423	3.38	6	8962A432	3.60	10	8962A441	4.50	14	8962A449	6.66	21	8962A458	9.10
2.5	8962A424	3.47	6.5	8962A433	3.74	10.5	8962A442	4.64	14.5	8962A451	6.93	22	8962A459	9.38
3	8962A425	3.47	7	8962A434	3.81	11	8962A443	5.05	15	8962A452	7.21	23	8962A461	9.67
3.5	8962A426	3.47	7.5	8962A435	3.88	11.5	8962A444	5.14	16	8962A453	7.43	24	8962A462	9.93
4	8962A427	3.53	8	8962A436	4.16	12	8962A445	5.48	17	8962A454	7.71	25	8962A463	10.21
4.5	8962A428	3.53	8.5	8962A437	4.22	12.5	8962A446	5.67	18	8962A455	7.97			

Punch Sets

28-Pc. Inch-Size Set

***28-Pc. Inch-Size Set*—**Includes the following punch sizes: 3/32″ to 1/2″ in 1/64″ increments, plus 17/32″ size.
3374A11 ..... **Per Set** $53.75

***33-Pc. Inch-Size Set*—**Includes the following punch sizes: 1/2″ to 1″ in 1/64″ increments.
3374A93 ..... **Per Set** $212.75

***26-Pc. Letter-Size Set*—**Comes with a complete set of letter sizes from A to Z.
3374A91 ..... **Per Set** $82.47

***60-Pc. Wire-Gauge-Size Set*—**Comes with a complete set of wire-gauge sizes from #1 to #60.
3374A92 ..... **Per Set** $102.58

***25-Pc. Metric-Size Set*—**Includes punches in the following sizes: 1 mm to 13 mm in 0.5 mm increments.
8962A41 ..... **Per Set** $82.40

***25-Pc. Metric-Size Set*—**Includes punches in the following sizes: 13 mm to 25 mm in 0.5 mm increments.
8962A35 ..... **Per Set** $181.22

Blind-Hole Transfer Punches

108-Pc. Set

Designed for holes that don't extend all the way through the workpiece, these punches easily locate opposite centers. Also known as blind-hole spotters. Punches are made of steel. Package quantity is six.

Also Available: Additional individual punches. Inch sizes in 1/32″ intervals up to 1″ dia. Please ask for 3414A21 and specify size. Package quantity is six.

Inch Sizes

Dia.		Per Pkg.
1/8″	3414A211	$5.18
5/32″	3414A213	5.18
3/16″	3414A215	5.38
1/4″	3414A219	5.44
9/32″	3414A222	5.65
5/16″	3414A224	5.65
11/32″	3414A226	5.70
3/8″	3414A228	5.83
13/32″	3414A231	5.83
1/2″	3414A237	6.22
17/32″	3414A239	6.28

Metric Sizes

Dia., mm		Per Pkg.
3	3414A31	$5.74
4	3414A32	5.95
5	3414A33	6.07
6	3414A34	6.22
7	3414A35	6.34
8	3414A36	6.40
9	3414A37	6.60
10	3414A38	6.71
11	3414A39	6.85
12	3414A41	6.96
13	3414A42	7.11

Punch Sets

Sets include plastic tubes that contain six of each punch size listed. Packed in a steel case with a rack for easy identification.

***66-Pc. Set*—**Six each of the 11 sizes from 11/16″ to 1″ in 1/32″ increments.
3414A12 ..... **Per Set** $86.71

***108-Pc. Set*—**Six each of the 18 sizes from 1/8″ to 2 1/32″ in 1/32″ increments.
3414A11 ..... **Per Set** $87.00

Self-Centering Transfer Punches

Push down on the spring-loaded, cone-shaped mechanism of these tools to self-center them in any hole shape—round, rectangular, elongated, and square. These punches are made of hardened steel and work for both inch and metric hole sizes. Use on materials up to 2″ thick and with any sized hole within their diameter range.

To use, set cone in hole and push and hold the knurled body down on the material surface to center. Then slide the punch down and tap it with a hammer to mark the workpiece.

Dia. Range		Each
3/16″- 5/8″; 5-16 mm	8963A1	$16.01
3/16″-1 1/16″; 5-27 mm	8963A2	18.78

Automatic Center Punches

Steel Handle

Aluminum Handle with Pocket Clip

No need for a hammer; just press down on the punch handle to drive the point down. Turn the knurled cap to adjust the stroke impact from light to heavy. Punches have a hardened tool steel point, which is replaceable in steel handle punches.

Point Dia.	Handle Dia.	O'all Lg.	Punches	Each	Repl. Points	Each
Steel-Handle Punches						
1/16″	1/2″	4 7/8″	3489A13	$22.81	3489A16	$4.47
3/32″	5/8″	5 5/8″	3489A12	33.51	3489A15	4.92
Aluminum-Handle Punch with Pocket Clip						
1/16″	5/16″	5 3/4″	34895A65	15.08	—	—

Premium Automatic Center Punches

Steel Handle

Aluminum Handle with Self-Centering Sleeve

Marking centers with these premium punches is so easy you'll only need one hand. Simply press down on the handle to automatically strike a blow and mark the center. Adjust the stroke impact from light to heavy by turning the knurled cap. Punches have a hardened tool steel point that can be removed for regrinding and replacement.

Point Dia.	Handle Dia.	O'all Lg.	Punches	Each	Repl. Points	Each
Steel-Handle Punches						
1/16″	3/8″	3 3/4″	3422A5	$32.50	3422A61	$8.57
1/16″	1/2″	4 7/8″	3422A1	41.79	3422A62	12.86
1/8″	11/16″	5 1/8″	3422A3	43.50	34225A66	3.61
Aluminum-Handle Punch						
7/64″	5/8″	5″	34225A65	31.76	34225A66	3.61
Aluminum-Handle Punch with Self-Centering Sleeve						
3/16″	5/8″	5″	3497A11	34.25	3497A12	5.73

Center Punch for Curved Surfaces

Find and mark the vertical center of pipe, round stock, and other curved surfaces. This punch has a jig and a level set in shock-resistant material to ensure accurate results. Punch is hardened tool steel. Body is aluminum. Use the adjustable guide to reproduce identical layouts on multiple workpieces. Body is 1 7/8″ Lg.×1 1/2″ Wd.×1″ Ht. Use on surfaces with a 1/4″ to 8″ diameter.

3436A32 ..... **Each** $40.62

Optical Center Punch

Make accurate center marks over scribed lines with this unique punch. Look through the optical lens to center the holder and pinpoint the exact spot you want. Then replace the lens with the included tool steel center punch to make your mark. Holder has an anodized aluminum main body with cork base that prevents movement. Body is 1 7/8″ Dia.×1″ Ht. Furnished in a plastic case.

		Each
Optical Center Punch	3440A21	$75.00
Repl. Centering Optical Lens	3440A66	39.00

Center Punches

Round Knurled Handle

Hexagonal Handle

Make small marks in metal and other materials. Typically used before drilling, these punches can mark the center of a hole to prevent your drill bit from wandering. Made of alloy steel with a polished taper and point.

Point Dia.	Handle Size	O'all Lg.		Each
Round Knurled-Handle Punches—*Plain finish*				
3/32″	1/4″ Dia.	3 1/4″	3498A11	$2.75
1/8″	5/16″ Dia.	4″	3498A12	2.85
5/32″	3/8″ Dia.	4″	3498A13	3.01
5/16″	1/2″ Dia.	4″	3498A14	3.41
Hexagonal-Handle Punches—*Black-oxide finish*				
3/32″	1/4″	4″	3417A4	3.53
5/32″	5/16″	4 1/2″	3417A1	3.73
3/16″	3/8″	5″	3417A2	4.07
5/16″	1/2″	6″	3417A3	5.26
3/8″	5/8″	6 1/4″	3417A5	6.77

4-Pc. Round Knurled-Handle Set— Contains one each of the round knurled-handle punches listed above. Furnished in a vinyl pouch.

3498A21 ..... **Per Set** $14.10

5-Pc. Hexagonal-Handle Set— Contains one each of the hexagonal-handle punches listed above. Furnished in a vinyl pouch.

3514A11 ..... **Per Set** $27.45

7-Pc. Hexagonal-Handle Set— Contains the following punches: 1/16″×4″ Lg., 5/64″×4″ Lg., 3/32″×4″ Lg., 1/8″×4 1/4″ Lg., 5/32″×4 1/2″ Lg., 3/16″×5″ Lg., and 1/4″×5 1/2″ Lg. Furnished in a vinyl pouch.

3527A14 ..... **Per Set** $33.98

Premium Center Punches

Round Handle

Square Handle

A ground tip gives these premium tools a level of precision and toughness not found in many punches. Made of hardened tool steel, they have a knurled black-oxide handle and a polished taper.

	Round-Handle Punches				Square-Handle Punches			
Point Dia.	Handle Dia.	O'all Lg.		Each	Handle Size	O'all Lg.		Each
1/16″	13/64″	3″	34155A11	$5.60	23/64″	3″	34155A21	$6.80
5/64″	19/64″	4″	34155A12	5.60	23/64″	3 1/2″	34155A22	6.80
3/32″	21/64″	4″	34155A13	5.60	23/64″	3 3/4″	34155A23	6.80
1/8″	21/64″	4″	34155A14	5.60	23/64″	4″	34155A24	6.80
5/32″	25/64″	4″	34155A15	5.60	23/64″	4 1/4″	34155A25	6.80
3/16″	—	—	—	—	27/64″	4 1/2″	34155A26	7.01
1/4″	29/64″	5″	34155A16	6.90	27/64″	5″	34155A27	7.30

5-Pc. Round-Handle Set— Includes one each of the round-handle sizes listed above, except 1/4″ size. Furnished in a plastic case.

34155A41 ..... **Per Set** $33.50

7-Pc. Square-Handle Set— Includes one each of the square-handle sizes listed above. Furnished in a plastic case.

34155A51 ..... **Per Set** $62.00

Prick Punches

With sharper tips than center punches, these punches are perfect when you need to precisely position a point or an intersection of lines. The point is hardened tool steel and polished. Punches have a round knurled aluminum handle with a black-oxide finish as well as a polished head.

Point Dia.	Handle Dia.	O'all Lg.		Each
5/64″	19/64″	4″	3451A31	$5.90
1/8″	21/64″	4″	3451A32	5.90
5/32″	25/64″	4″	3451A33	6.40

Ice Picks

Ice Pick with Wood Handle

Ice Pick Crusher

Use these tools to chip ice; start holes in thin metal and wood; and punch holes in leather, plastic, and other soft materials.

Ice pick crusher has a heavy metal cap to break ice.

Handle Material	Blade Material	Blade Lg.	O'all Lg.		Each 1-11	Each 12-Up
Ice Picks						
Wood	Steel	4 1/2″	8 3/4″	3603A1	$3.87	$3.09
Plastic	Stainless Steel	4″	7″	3526A71	11.60	9.25
Ice Pick Crusher						
Wood	Steel	4 1/2″	8 3/4″	3603A2	5.20	4.16

Nail Punches

Drive unsightly nails out of view without leaving hammer marks. Also known as nail sets, all tools except 3425A4 and A5 are hardened and tempered alloy steel with a black-oxide finish. They have a hexagonal head and polished point. Overall length is 4″. 3425A4 and A5 are polished steel with a chrome finish. They have a round head and a plastic grip. Overall length is 4 59/64″.

Point Dia.	Head Size		Each	Point Dia.	Head Size		Each
1/32″	11/32″	3425A1	$3.14	1/8″	5/16″	3425A4	$3.23
1/16″	11/32″	3425A2	3.14	5/32″	5/16″	3425A5	3.23

3-Pc. Set—Contains 1/32″, 1/16″, and 3/32″ punches.

3425A9 ..... **Per Set** $7.42

Premium Nail Punches

These premium tools are made of hardened and tempered steel. Also known as nail sets, they have a knurled handle with black-oxide finish, large square head, and polished point. Overall length is 4″.

Point Dia.	Head Size		Each	Point Dia.	Head Size		Each
1/32″	23/64″	3411A21	$10.71	1/8″	23/64″	3411A24	$11.16
1/16″	23/64″	3411A22	10.71	5/32″	23/64″	3411A25	11.16
3/32″	23/64″	3411A23	11.16				

5-Pc. Set—Contains one of each of the punches listed above. Furnished in a plastic case.

3411A26 ..... **Per Set** $59.14

Premium Pin Punches

Made from high-quality hardened and tempered tool steel, these punches have a polished pin and round knurled handle with a black-oxide finish.

Individual Punches

Pin Dia.	Pin Lg. (A)	Handle Dia.	O'all Lg.		Each
1/16″	9/16″	19/64″	4″	34185A65	$4.97
3/32″	11/16″	19/64″	4″	34185A66	4.97
1/8″	3/4″	19/64″	4″	34185A67	4.97
1/8″	3 1/2″	29/64″	8″	34185A73	6.37
5/32″	7/8″	19/64″	4″	34185A68	4.97
3/16″	1 3/64″	21/64″	4″	34185A69	4.97
3/16″	3 1/2″	33/64″	8″	34185A74	6.37
7/32″	1 3/64″	21/64″	4″	34185A7	4.97
1/4″	1″	25/64″	4″	34185A71	4.83
1/4″	3 1/2″	33/64″	8″	34185A75	6.37
5/16″	1″	29/64″	4″	34185A72	4.97
5/16″	3 1/2″	33/64″	8″	34185A76	6.37
3/8″	3 1/2″	37/64″	8″	34185A77	6.37

Punch Sets

8-Pc. Punch Set

5-Pc. Punch Set—Contains one each of the 8″ long punches listed above. Furnished in a vinyl case.

3446A35 ..... **Per Set** $37.60

8-Pc. Punch Set—Contains one each of the 4″ long punches listed above. Furnished in a plastic case.

3446A25 ..... **Per Set** $47.82

Heavy Duty Pin Punches

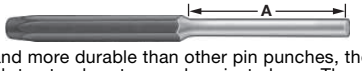

Stronger and more durable than other pin punches, these tools are tough enough to stand up to your heaviest abuse. They are made of double heat-treated, high-grade S2 alloy tool steel. Each punch has a black-oxide-finished handle and a polished pin.

Pin Dia.	Pin Lg. (A)	Handle Size	O'all Lg.		Each
1/16″	3/4″	1/4″	4 1/8″	3502A1	$6.71
3/32″	7/8″	5/16″	4 1/2″	3502A2	7.51
1/8″	1″	5/16″	4 3/4″	3502A3	8.31
1/8″	3″	5/16″	8″	3502A8	11.09
5/32″	1″	5/16″	5″	3502A4	8.89
3/16″	1 1/4″	3/8″	5 1/4″	3502A5	9.56
3/16″	3 1/2″	3/8″	8″	3502A9	15.96
1/4″	1 1/4″	3/8″	5 3/4″	3502A6	11.51
1/4″	3 1/2″	3/8″	8″	3502A11	16.53
5/16″	3 1/2″	7/16″	8″	3502A12	18.04
3/8″	3 1/2″	1/2″	8″	3502A13	18.82

Pin Punches

Use these punches to knock out loosened straight and tapered pins and rivets.

Individual punches are made of heat-treated alloy steel with a black-oxide finish and have a hexagonal handle, unless noted.

Individual Punches

Pin Dia.	Pin Lg. (A)	Handle Size	O'all Lg.		Each
Inch Sizes					
1/16″	3/4″	1/4″	4″	3416A11	$6.21
5/64″	3/4″	1/4″ Dia.	2 3/4″	3416A23●	3.93
3/32″	7/8″	5/16″	4 1/2″	3416A12	4.83
1/8″	1″	5/16″	4 3/4″	3416A13	4.83
1/8″	3″	5/16″	8″	3416A24	7.98
5/32″	1″	5/16″	5″	3416A14	4.86
5/32″	2 1/4″	5/16″	6″	3416A1	5.21
5/32″	3″	5/16″	8″	3416A68	7.95
3/16″	1 1/4″	3/8″	5 1/4″	3416A15	5.07
3/16″	2 1/2″	3/8″	6″	3416A2	5.40
3/16″	1 1/4″	1/2″	6″	3416A16	5.69
3/16″	3 1/2″	3/8″	8″	3416A17	7.95
7/32″	2 1/2″	3/8″	6″	3416A3	5.48
7/32″	3 1/2″	3/8″	8″	3416A69	7.98
1/4″	2 5/8″	3/8″	6″	3416A4	5.48
1/4″	1 1/4″	1/2″	6″	3416A31	5.95
1/4″	3 1/2″	3/8″	8″	3416A18	8.05
5/16″	3 1/2″	7/16″	8″	3416A19	8.05
3/8″	2 1/4″	5/8″	8″	3416A34	9.21
3/8″	3 1/2″	1/2″	8″	3416A21	8.05
7/16″	2 1/4″	3/4″	10″	3416A41	10.36
1/2″	2 1/4″	3/4″	10″	3416A22	7.98
Metric Sizes					
3 mm	1 3/4″	5/16″	6″	34245A63	5.50
4 mm	2 1/4″	5/16″	6″	34245A64	5.61
5 mm	2 1/2″	3/8″	6″	34245A65	5.82
6 mm	2 1/2″	3/8″	6″	34245A66	5.89
7 mm	2 5/8″	3/8″	6″	34245A67	5.91
8 mm	2 3/4″	7/16″	6″	34245A68	6.65

● Round knurled handle with plain finish.

Punch Sets

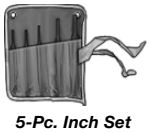

5-Pc. Inch Set

8-Pc. Inch Set

5-Pc. Inch Set—Punches are alloy steel with a black-oxide finish and have a hexagonal handle. Set contains 1/8″×4 3/4″ Lg., 5/32″×5″ Lg., 3/16″×5 1/4″ Lg., 1/4″×5 3/4″ Lg., and 5/16″×6″ Lg. punches. Furnished in a vinyl pouch.

3465A2 ..... **Per Set** $22.58

5-Pc. Inch Set—Punches are tool steel with a polished pin. They have a round knurled handle with black-oxide finish. Set contains five 8″ long punches in the following pin sizes: 1/8″, 3/16″, 1/4″, 5/16″, and 3/8″. Furnished in a vinyl pouch.

3486A11 ..... **Per Set** $21.03

5-Pc. Inch Set—Punches are heat-treated alloy steel and have a hexagonal handle with a black-oxide finish. Set contains 1/8″×8″ Lg., 3/16″×8″ Lg., 1/4″×8″ Lg., 5/16″×8″ Lg., and 3/8″×8″ Lg. punches. Furnished in a plastic pouch.

3453A11 ..... **Per Set** $30.60

8-Pc. Inch Set—Punches are tool steel and have a round knurled handle with black-oxide finish. Punches are 4″ long. Set contains 1/16″, 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, and 5/16″ pin sizes. Furnished in a vinyl pouch.

3480A11 ..... **Per Set** $23.20

10-Pc. Inch Set—Punches are heat-treated alloy steel with a black-oxide finish and have a hexagonal handle. Set contains 1/8″×4 3/4″ Lg., 1/8″×7 7/8″ Lg., 3/16″×5 1/4″ Lg., 3/16″×7 7/8″ Lg., 1/4″×5 3/4″ Lg., 1/4″×7 7/8″ Lg., 5/16″×6″ Lg., 5/16″×8″ Lg., 3/8″×6″ Lg., and 3/8″×8″ Lg. punches.

3505A11 ..... **Per Set** $88.08

6-Pc. Metric Set—Punches are made of heat-treated alloy steel with a black-oxide finish. They are 6″ long and have a hexagonal handle. Set contains 3, 4, 5, 6, 7, and 8 mm pin sizes. Furnished in a vinyl pouch.

34245A69 ..... **Per Set** $34.13

Nonmarring Brass Pin Punches

Round Handle

Hexagonal Handle

Softer than their steel counterparts, these brass pin punches reduce marring of work surfaces.

Round-handle punches have a matte finish and a knurled handle.

Hexagonal-handle punches have a brushed finish.

Pin Dia.	Pin Lg. (A)	Handle Size	O'all Lg.		Each
Round-Handle Punches					
3/16"	1 1/4"	5/16" Dia.	4"	34255A74	$6.88
1/4"	1 1/8"	1/2" Dia.	4"	34255A69	7.64
5/16"	1 1/4"	1/2" Dia.	4"	34255A75	7.79
3/8"	1 3/4"	1/2" Dia.	6"	34255A71	10.71
Hexagonal-Handle Punches					
1/16"	21/64"	23/64"	3 9/16"	34255A61	5.39
3/32"	7/16"	23/64"	3 9/16"	34255A62	5.39
1/8"	37/64"	23/64"	3 9/16"	34255A63	5.39
5/32"	5/8"	23/64"	3 9/16"	34255A64	5.39
3/16"	3/4"	23/64"	3 9/16"	34255A65	5.39
7/32"	61/64"	23/64"	3 9/16"	34255A66	5.39
1/4"	59/64"	23/64"	3 9/16"	34255A67	4.91
5/16"	7/8"	23/64"	3 9/16"	34255A68	5.39

8-Pc. Hexagonal-Handle Set—Contains one each of the hexagonal-handle punches listed above. Furnished in a vinyl pouch.

34255A7 ..... **Per Set** $40.20

Solid Punches

Loosen pins and rivets for final removal by a pin punch. These punches have a hexagonal handle, except the brass punch, which has a round handle.

Alloy steel punches have a black-oxide finish, unless noted.

High-carbon steel punches have a polished taper and are heat-treated.

Brass punch has a round knurled handle and is less likely to mar surfaces than steel.

Point Dia.	Taper Lg. (A)	Handle Size	O'all Lg.		Each
Alloy Steel Punches					
1/16"	1 1/2"	3/8"	5"	3415A51	$4.49
3/32"	1 1/2"	3/8"	5"	3415A37	3.76
1/8"	1 1/2"	3/8"	5"	3415A13	4.83
5/32"	1 1/2"	3/8"	5"	3415A38	3.56
3/16"	1 1/2"	3/8"	5"	3415A35	3.87
1/4"	3"	1/2"	6"	3415A39★	5.18
1/4"	1 1/2"	3/8"	5"	3415A17	4.12
5/16"	2"	1/2"	6"	3415A41	4.98
3/8"	2 1/4"	5/8"	6 1/2"	3415A19	8.37
1/2"	2 1/4"	5/8"	6 1/2"	3415A52	9.51
High-Carbon Steel Punches					
1/16"	1 1/4"	3/16"	4"	3415A11	4.66
1/4"	3"	1/2"	7"	3415A31	10.35
5/16"	3"	1/2"	7"	3415A36	11.50
3/8"	3 1/4"	5/8"	9"	3415A22	13.64
1/2"	2 3/4"	7/8"	18"	3415A33	14.88
Brass Punch					
1/4"	2"	1/2" Dia.	6"	3483A32	10.82

★ Has a plain finish.

6-Pc. Alloy Steel Set—Contains 3/32"×5" Lg., 1/8"×5" Lg., 5/32"×5" Lg., 3/16"×5" Lg., 1/4"×5" Lg., and 5/16"×6" Lg. punches with black-oxide finish. Furnished in a vinyl pouch.

3415A61 ..... **Per Set** $33.96

Backing-Out Punch Hammers

Knock out rusted rivets, bolts, and pins with ease. These punch hammers have a heat-treated carbon steel head securely fastened to the handle with a wooden wedge and steel compression ring. Overall length is 16 3/4".

Punch Size	Head Lg.		Each
1/2"	7 3/4"	6052A11	$44.19
5/8"	8"	6052A12	45.12
3/4"	8 1/2"	6052A13	49.88
7/8"	9"	6052A14	51.50
1"	8 3/4"	6052A15	54.79
Replacement Handle		6052A47	7.93

Roll and Spring Pin Punches

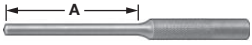

The rounded tip of these punches protects the ends of roll and spring pins from punching damage. Made of high-carbon alloy steel. Punches have a polished pin and round knurled handle with a plain finish.

Individual Punches

Pin Dia.	Pin Lg. (A)	Trade No.	Handle Dia.	O'all Lg.		Each
Inch Sizes						
1/16"	1"	#1	1/4"	2 3/4"	3421A33	$4.93
5/64"	1 1/2"	#2	1/4"	3 1/4"	3421A34	5.17
3/32"	1 1/2"	#3	1/4"	3 1/2"	3421A35	5.65
1/8"	2"	#4	1/4"	4"	3421A36	5.76
5/32"	2 1/2"	#5	1/4"	4 1/2"	3421A37	6.54
3/16"	2 1/2"	#6	3/8"	4 1/2"	3421A38	6.67
7/32"	3"	#7	3/8"	5"	3421A39	7.59
1/4"	3 1/2"	#8	7/16"	5 1/2"	3421A41	8.65
5/16"	4"	#9	7/16"	6"	3421A42	9.46
3/8"	4"	#10	1/2"	6"	3421A43	10.37
7/16"	4"	#11	5/8"	6"	3421A44	11.52
1/2"	4"	#12	5/8"	6"	3421A45	13.02
Metric Sizes						
2 mm	1 1/2"	—	1/4"	3 1/4"	3421A51	7.26
3 mm	2"	—	1/4"	4"	3421A53	7.87
4 mm	2 1/2"	—	1/4"	4 1/2"	3421A54	8.37
5 mm	2 5/8"	—	3/8"	4 1/2"	3421A55	10.54
6 mm	3 1/2"	—	7/16"	5 1/2"	3421A56	9.35
7 mm	4"	—	7/16"	6"	3421A57	10.54
8 mm	4"	—	7/16"	6"	3421A58	12.70

Punch Sets

6-Pc. Inch Set—Contains 1/8", 5/32", 3/16", 7/32", 1/4", and 5/16" punches. Furnished in a vinyl pouch.

3421A6 ..... **Per Set** $36.40

9-Pc. Inch Set—Contains 1/16", 5/64", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4", and 5/16" punches. Furnished in a vinyl pouch.

3421A5 ..... **Per Set** $58.04

12-Pc. Inch Set—Contains one each of every inch-size punch listed above.

Set with Vinyl Pouch .... 3421A2 ... **Per Set** $90.39
Set with Wood Box..... 3421A1 ... **Per Set** $114.20

12-Pc. Inch Set with Wood Box

6-Pc. Metric Set—Contains 3, 4, 5, 6, 7, and 8 mm punches. Furnished in a vinyl pouch.

3421A7 ..... **Per Set** $50.25

Alignment Punches

Line up holes in pieces of metal for easy placement of rivets, pins, and bolts. Also known as lineup taper punches, these tools have a hexagonal handle and black-oxide finish, unless noted.

Alloy steel punches are hardened and tempered.

Heavy duty alloy steel punch is made of double heat-treated high-grade S2 alloy steel for added strength and durability.

Individual Punches

Point Dia.	Taper Lg. (A)	Handle Size	O'all Lg.		Each
Alloy Steel Punches					
3/32"	3 1/2"	5/16"	8"	3420A2	$5.60
1/8"	3 1/2"	5/16"	8"	3420A3	5.56
5/32"	4 1/2"	3/8"	9"	3420A4	5.86
3/16"	5"	1/2"	10"	3420A65	7.67
3/16"	6"	3/8"	12"	3420A9	7.64
7/32"	5"	1/2"	10"	3420A66	7.87
1/4"	6 3/4"	5/8"	12"	3420A7	8.91
1/4"	7"	3/4"	15"	3420A11	13.86
5/16"	7 1/4"	5/8"	16"	3420A12	16.22
3/8"	7"	3/4"	15"	3420A13	15.35
1/2"	7 1/2"	7/8"	18"	3420A8	22.36
Heavy Duty Alloy Steel Punch					
1/8"	3 1/2"	5/16"	8"	3420A21	9.83

Punch Sets

4-Pc. Alloy Steel Punch Set—Punches are hardened and tempered. Set contains 1/8"×8" Lg., 5/32"×9" Lg., 3/16"×10" Lg., and 1/4"×12" Lg. punches in a vinyl pouch.

3508A12 ..... **Per Set** $37.63

6-Pc. Alloy Steel Punch Set—Set includes 1/8"×8" Lg., 5/32"×9" Lg., 3/16"×10" Lg., 7/32"×10" Lg., 1/4"×12" Lg., and 5/16"×12" Lg. punches in a vinyl pouch.

3508A11 ..... **Per Set** $64.51

Nonmarring Brass Alignment Punches

The perfect choice for jobs requiring a soft punch to reduce marring. All have a round knurled handle.

Individual Punches

Point Dia.	Handle Dia.	O'all Lg.		Each
3/8"	3/8"	6"	3483A23	$8.22
1/2"	1/2"	7"	3483A24	10.98
3/4"	3/4"	8"	3483A22	22.56

Punch Sets

3-Pc. Set—Contains one of each size listed above. Furnished in a blister pack.

34235A66 ..... **Per Set** $40.12

3-Pc. Set—Contains 3/4"×12" Lg. untapered alignment punch and 3/8"×10" Lg. and 7/16"×14" Lg. tapered alignment punches. All have a round knurled handle. Furnished in a cloth roll pouch.

34235A68 ..... **Per Set** $98.41

4-Pc. Set—Contains 1/4"×4" Lg. and 3/8"×6" Lg. pin punches, 1/4"×6" Lg. tapered solid punch, and 3/8"×6" Lg. untapered alignment punch. All have a round knurled handle. Furnished in a blister pack.

34235A67 ..... **Per Set** $35.25

Punch and Chisel Holders

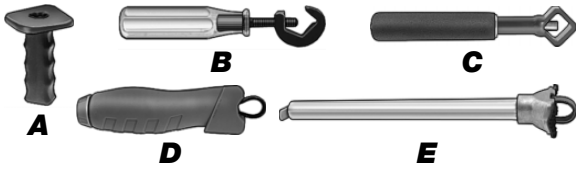

Firmly grip punches, chisels, drift pins, and other impact tools with these holders while protecting your hands from stray blows.

Style A—The large striking area shields your hand while the holder absorbs the shock of your blow. Use with punches and chisels with a minimum length of 6".

Styles B and ***C***—Turn handle to tighten. *Style C* also has a spring-loaded clamp and foam grip to reduce shock.

Styles D and ***E***—Holders have a screw at the bottom of the handle for tightening. *Style E* also has a brass rivet to resist sparking.

	Tool Size Capacity	Handle Material	O'all Lg.		Each
A	5/8" to 3/4" Dia.	Plastic	4 3/8"	65295A65	$9.28
B	3/16" to 3/4"	Plastic	5 1/2"	3596A11	17.55
B	1/4" to 1"	Plastic	9"	3596A12	24.63
C	1/4" to 1"	Steel	10"	3596A13	37.00
D	Up to 1" Dia.	Plastic	6 7/8"	6524A1	17.56
E	Up to 2 3/4" Dia.	Aluminum	18"	6524A2	86.54

Combination Punch and Chisel Sets

5-Pc. Punch Set

Deluxe 24-Pc. Punch & Chisel Set

Punches and chisels are made of alloy steel, unless noted. All are supplied in a vinyl roll pouch, except for the ***14-pc. heavy duty punch and chisel set***, which comes in a leather pouch, and the ***24-pc. punch set*** and ***deluxe 24-pc. punch and chisel set***, which come in a wood stand.

5-Pc. Punch Set—Black-oxide finish; round knurled handle.
Pin Punches—1/16"×4" Lg., 3/32"×4" Lg., 1/8"×4" Lg., and 5/32"×4" Lg.
Solid Punch—1/16"×4" Lg.

34615A61 ..... **Per Set** $20.09

10-Pc. Punch Set—Plain finish; round knurled handle.
Center Punches—1/4"×3 1/2" Lg., 5/16"×4" Lg.
Prick Punch— 5/16"×4" Lg.
Pin Punches—1/16"×2 3/4" Lg., 5/64"×2 3/4" Lg., 3/32"×2 3/4" Lg., 3/32"×4" Lg., 1/8"×4" Lg., 5/32"×4" Lg.
Solid Punch—3/32"×4" Lg.

3481A11 ..... **Per Set** $37.64

10-Pc. Long Punch Set—Black-oxide finish; hexagonal handle.
Center Punch—5/16"×4 1/2" Lg.
Pin Punches—3/32"×6" Lg., 1/8"×6" Lg., 5/32"×6" Lg., 3/16"×6" Lg., 7/32"×6" Lg., 1/4"×6" Lg., 5/16"×8" Lg., 3/8"×8" Lg.
Solid Punch—1/8"×5" Lg.

3479A11 ..... **Per Set** $56.25

16-Pc. Punch Set—Black-oxide finish; hexagonal handle.
Pin Punches—1/16"×4" Lg., 3/32"×4 1/2" Lg., 1/8"×4 3/4" Lg., 5/32"×5" Lg., 3/16"×5 1/4" Lg., 7/32"×5 1/2" Lg., 1/4"×5 3/4" Lg., 5/16"×6" Lg., 3/8"×6" Lg.
Solid Punches—3/32"×5" Lg., 1/8"×5" Lg., 5/32"×5" Lg., 3/16"×5" Lg., 1/4"×5" Lg., 5/16"×6" Lg., 3/8"×6 1/2" Lg.

3462A15 ..... **Per Set** $84.69

24-Pc. Punch Set—Black-oxide finish; hexagonal handle.
Center Punches—Two each of 3/8"×5" Lg., 1/2"×6" Lg.
Prick Punches—Two each of 3/8"×5" Lg.
Pin Punches—Two each of 3/32"×4 1/2" Lg., 1/8"×4 3/4" Lg., 5/32"×5" Lg., 3/16"×5 1/4" Lg., and one each of 1/4"×5 3/4" Lg., 5/16"×6" Lg.
Solid Punches—Two each of 1/8"×5" Lg., 5/32"×5" Lg., 3/16"×5" Lg.; one each of 1/4"×5" Lg., 5/16"×6" Lg.

3482A21 ..... **Per Set** $128.69

8-Pc. Punch and Chisel Set—Plain finish.
Center Punch—3/16"×5" Lg.
Pin Punches—1/8"×4 3/4" Lg., 3/16"×5 1/4" Lg., 1/4"×5 3/4" Lg.
Solid Punch—3/16"×5" Lg.
Cold Chisels—3/8" cut×5 1/2" Lg.,1/2" cut×6" Lg., 5/8" cut×6 1/2" Lg.

3535A12 ..... **Per Set** $39.84

11-Pc. Punch and Chisel Set—Black-oxide finish.
Center Punch—5/16"×4 1/2" Lg.
Prick Punch—1/4"×4" Lg.
Pin Punches—1/16"×4" Lg., 3/32"×4 1/2" Lg., 1/8"×4 3/4" Lg.
Solid Punches—1/16"×5" Lg., 3/32"×5" Lg., 1/8"×5" Lg.
Cold Chisels—1/4" cut×5" Lg., 5/16" cut×5" Lg., 3/8" cut×5 1/2" Lg.

3504A11 ..... **Per Set** $52.00

14-Pc. Punch and Chisel Set—Black-oxide finish.
Center Punch—3/8"×5" Lg.
Pin Punches—3/32"×4 1/2" Lg., 1/8"×4 3/4" Lg., 5/32"×5" Lg., 3/16"×5 1/4" Lg., 1/4"×5 3/4" Lg.
Solid Punches—1/8"×5" Lg., 3/16"×5" Lg.
Taper Punch—1/8"×8" Lg.
Cold Chisels—1/4" cut×5" Lg., 3/8" cut×5 1/2" Lg., 1/2" cut×6" Lg., 5/8" cut×6 1/2" Lg., 3/4" cut×7" Lg.

3470A4 ..... **Per Set** $69.27

14-Pc. Heavy Duty Punch and Chisel Set—High-grade S2 alloy steel; handles have a black-oxide finish.
Center Punches—3/32"×4" Lg., 3/16"×4 7/8" Lg.
Pin Punches—3/32"×4 1/2" Lg., 1/8"×4 3/4" Lg., 5/32"×5" Lg., 3/16"×5 1/4" Lg., 1/4"×5 3/4" Lg.
Solid Punches—1/8"×5" Lg., 3/16"×5" Lg.
Cold Chisels—1/4"×4 7/8" Lg., 3/8"×5 1/2" Lg., 1/2"×6" Lg., 5/8"×6 3/8" Lg., 3/4"×6 3/4" Lg.

3470A5 ..... **Per Set** $110.88

19-Pc. Punch and Chisel Set—Black-oxide finish.
Center Punches—5/32"×4 1/2" Lg., 3/16"×5" Lg.
Pin Punches—3/32"×4 1/2" Lg., 1/8"×4 3/4" Lg., 5/32"×5" Lg., 3/16"×5 1/4" Lg., 1/4"×5 3/4" Lg., 5/16"×6" Lg.
Solid Punches—3/32"×5" Lg., 1/8"×5" Lg., 5/32"×5" Lg., 3/16"×5" Lg., 1/4"×5" Lg., 5/16"×6" Lg.
Cold Chisels—1/4" cut×5" Lg., 3/8" cut×5 1/2" Lg., 1/2" cut×6" Lg., 5/8" cut×6 1/2" Lg., 3/4" cut×7" Lg.

3470A3 ..... **Per Set** $105.12

24-Pc. Punch and Chisel Set—Black-oxide finish.
Center Punches—3/8"×5" Lg., 1/2"×6" Lg.
Prick Punch—5/16"×4 1/2" Lg.
Pin Punches—3/32"×4 1/2" Lg., 1/8"×4 3/4" Lg., 5/32"×5" Lg., 3/16"×5 1/4" Lg., 1/4"×5 3/4" Lg., 5/16"×6" Lg.
Solid Punches—1/8"×5" Lg., 5/32"×5" Lg., 3/16"×5" Lg., 1/4"×5" Lg., 5/16"×6" Lg.
Cold Chisels—3/32" cut×5" Lg., 1/4" cut×5" Lg., 5/16" cut×5" Lg., 3/8" cut×5 1/2" Lg., 1/2" cut×6" Lg., 5/8" cut×6 1/2" Lg., 3/4" cut×7" Lg.
Cape Chisels—1/4" cut×5" Lg.
Half-Round Nose Chisels—1/4" cut×5" Lg.
Diamond-Point Chisels—1/4" cut×5" Lg.

3470A2 ..... **Per Set** $187.04

Deluxe 24-Pc. Punch and Chisel Set—Black-oxide finish.
Center Punches—3/8"×5" Lg., 1/2"×6" Lg.
Prick Punches—3/8"×5" Lg., 1/2"×6" Lg.
Pin Punches—3/32"×4 1/2" Lg., 1/8"×4 3/4" Lg., 5/32"×5" Lg., 3/16"×5 1/4" Lg., 1/4"×5 3/4" Lg., 7/32"×5 1/2" Lg.
Solid Punches—1/8"×5" Lg., 3/16"×5" Lg., 1/4"×5" Lg.
Cold Chisels—1/4" cut×5" Lg., 5/16" cut×5" Lg., 3/8" cut×5 1/2" Lg., 1/2" cut×6" Lg., 5/8" cut×6 1/2" Lg., 3/4" cut×7" Lg.
Cape Chisels—1/4" cut×5 1/2" Lg., 3/8" cut×7" Lg.
Half-Round Nose Chisel—1/4" cut×5 1/2" Lg.
Diamond-Point Chisel—1/4" cut×5 3/4" Lg.
Rivet-Buster Chisel—3/4"×6 1/4" Lg.

3506A76 ..... **Per Set** $136.58

Arbor Presses

Use for staking and riveting as well as for installing and removing bearings and arbors. The lever arm slides so when it's clamped in the center it can be spun to bring the ram down. Maximum leverage is achieved when the lever arm is fully extended and clamped at one end. Frames are cast iron and rams are solid steel without any drilled or tapped holes (unless otherwise stated). Mounting fasteners are not included.

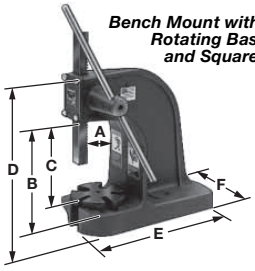

Bench Mount with Removable Rotating Base Plate and Square Ram

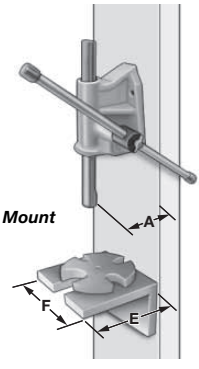

Wall Mount

Arbor Presses with Fixed Base Plate

Standard Bench Mount Presses— The fixed base plate, or platen base, is a flat machined surface that allows you to easily affix dies, fixtures, press-in assemblies, and printed circuit boards. Rams are square.

1-ton model has two 1/2″ dia. holes for bench mounting. The ram housing can be shimmed to compensate for ram wear.

1 1/2-ton model has two 5/8″ dia. holes for bench mounting. The ram housing can be shimmed to compensate for ram wear. Optional *floor stand* is steel and has four 9/16″ dia. holes for floor mounting.

3-ton model has two 3/4″ Dia. × 1 1/2″ Lg. slots for bench mounting. It has adjustment screws to keep ram aligned. Optional *floor stand* is steel and has four 3/8″ slots for floor mounting.

Arbor Presses with Removable Rotating Base Plate

Rotating base plate is removable and has four machined openings (unless otherwise stated) to allow arbors or shafts of different diameters to pass through.

Economy Bench-Mount Presses— Rams are square with a drilled hole and have adjustment screws to ensure alignment. Presses have two 7/16″ dia. mounting holes for bench mounting. 2444A62 has a handwheel to rapidly raise or lower ram into position and can be used for light duty pressing.

Standard Bench-Mount Presses— Bench mount using the two 5/8″ dia. mounting holes, except the 1-ton model has two 1/2″ dia. mounting holes. *Presses with square rams* have five machined openings and the ram housing can be shimmed to compensate for ram wear.

Optional *floor stands* are made of steel. They have six 11/16″ dia. mounting holes, except 2425A672 has four 1/2″ dia. mounting holes.

Wall-Mount Press— Has a round ram. Attach to a wall, a sturdy column, or a machine side to save valuable bench space. The head is separate from the base, so the height above the base is unlimited. Spacer plates (not included) can be inserted behind the head and base for additional throat depth. The base and the head each have four 11/16″ dia. mounting holes.

Approx. Cap., tons	Throat Dp. (A)	Clearance Over Base (B)	Clearance Over Plate (C)	Ram Size	Usable Ram Lg.	Base Plate Slot Size Min.	Base Plate Slot Size Max.	Press Ht. (D)	Base Size, Lg. (E)	× Wd. (F)	Arbor Presses		Optional Floor Stand	
Standard Bench-Mount Presses with Fixed Base Plate														
1	3 1/2″	4 1/2″	—	1″ sq.	4 9/16″	—	—	9″	9 1/2″	× 4 1/4″	2429A11	$292.22	—	—
1 1/2	4 1/2″	7 3/4″	—	1″ sq.	7 7/8″	—	—	14 1/2″	15″	× 6″	2429A66	418.06	2425A662	$323.23
3	7 5/8″	12 1/2″	—	1 1/2″ sq.	12 1/2″	—	—	21 1/2″	18″	× 8″	2429A14	907.47	2425A39	677.43
Economy Bench-Mount Presses with Removable Rotating Base Plate														
1/2	3 1/4″	4 5/8″	4 1/16″	3/4″ sq.	5″	5/16″	1″	9 1/4″	9 5/16″	× 5 1/8″	2444A61	71.67	—	—
1	4″	6″	5 3/16″	1″ sq.	6 3/4″	9/16″	1 1/4″	11″	10 9/16″	× 6 1/8″	2444A62★	97.59	—	—
2	5 3/16″	7 7/8″	6 7/8″	1 1/4″ sq.	9″	3/4″	1 13/16″	15 1/8″	16″	× 8″	2444A73	201.25	2444A81	252.58
3	5 7/8″	12 1/2″	11 1/2″	1 1/2″ sq.	13″	3/4″	1 13/16″	21 1/2″	17 3/4″	× 9 1/2″	2444A74	287.77	2444A81	252.58
4	8 7/16″	15 3/8″	14 5/16″	1 3/4″ sq.	16 1/4″	11/16″	2 3/4″	27 1/8″	21″	× 10 3/4″	2444A77	581.25	2444A81	252.58
Standard Bench-Mount Presses with Removable Rotating Base Plate and Square Ram														
1	3 1/2″	5″	4 1/2″	1″ sq.	5″	9/16″	1 1/16″	9 3/8″	9″	× 4 1/4″	2425A65	292.22	—	—
1 1/2	4 1/2″	7 3/4″	7 1/8″	1″ sq.	7 3/4″	1/2″	1 1/16″	14 1/2″	14″	× 6″	2425A66	425.94	2425A662	323.23
3	7″	11 1/2″	10 3/4″	1 1/4″ sq.	11 1/2″	13/16″	1 13/16″	19″	18″	× 7 1/4″	2425A67	643.87	2425A672	501.14
Standard Bench-Mount Presses with Removable Rotating Base Plate and Round Ram														
3	12″	12″	11 1/4″	1 3/4″ dia.	11 1/2″	3/4″	1 3/4″	24 3/4″	24 1/2″	× 10″	2425A14	1,644.00	2425A24	946.00
3	17″	12″	11 1/4″	1 3/4″ dia.	11 1/2″	3/4″	1 3/4″	27 3/4″	30 1/4″	× 10″	2425A15	1,754.00	2425A24	946.00
Wall-Mount Press with Removable Rotating Base Plate														
3	5 1/2″	—	—	1 3/4″ dia.	11 1/2″	3/4″	1 3/4″	—	7 1/4″	× 8″	23785A65	1,037.20	—	—

★ Furnished with a handwheel to rapidly raise or lower ram into position. Can also be used for light duty pressing.

Low-Effort Arbor Presses

Get more force with less effort. These presses give you more leverage with minimal force. They have a cast iron frame and a removable rotating base plate with four openings (unless noted) to allow arbors or shafts of different diameters to pass through. Rams are solid steel without any drilled or tapped holes. Rams are square except 2426A12, which has a round ram.

Arbor Press with Easy-Effort Lever— Insert a sliding pin to easily convert from single leverage to compound leverage. Rams have adjustment screws to ensure ram alignment. Bench mount using the two 41/64″ dia. mounting holes (fasteners not included).

Arbor Presses with Easy-Access Lever— A ratcheting device allows lever to be used in the most convenient position. Simply turn the handwheel to quickly advance and position the ram, thus lowering the lever arm into a comfortable position for the final application of force. Presses have two 5/8″ dia. mounting holes except 2426A12, which has two 11/16″ dia. holes and 2426A67, which has two 11/16″ dia. mounting holes (fasteners not included).

Optional *floor stands* are steel. 2425A672 has four 1/2″ dia. mounting holes; 2442A31 has four 9/16″ dia. holes; 2425A24 has six 11/16″ dia. holes; and 2426A672 has four 11/16″ dia. holes. Mounting fasteners included.

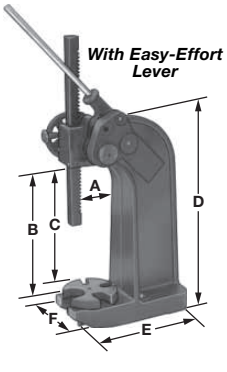

With Easy-Effort Lever

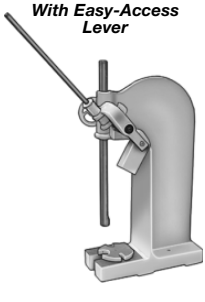

With Easy-Access Lever

Approx. Cap., tons	Throat Dp. (A)	Clearance Over Base (B)	Clearance Over Plate (C)	Ram Size	Usable Ram Lg.	Base Plate Slot Size Min.	Base Plate Slot Size Max.	Press Ht. (D)	Base Size, Lg. (E)	× Wd. (F)	Arbor Presses		Optional Floor Stand	
Arbor Press with Easy-Effort Lever														
6	7 3/4″	21 1/2″	20 1/4″	1 1/2″ sq.	21 1/2″	1/2″	3 1/16″	32 1/2″	20″	× 8 1/4″	2442A25	$2,273.35	2442A31	$472.50
Arbor Presses with Easy-Access Lever														
3	7″	11 1/2″	10 3/4″	1 1/4″ sq.	11 1/2″	13/16″	1 13/16″	19″	18″	× 7 1/4″	2426A65♣	916.27	2426A672	801.82
3	7″	18 1/4″	17 1/2″	1 1/4″ sq.	18 1/4″	5/8″	1 1/2″	28″	21″	× 8 1/4″	2426A66	1,436.32	2442A31	472.50
3	7″	22 3/4″	22 1/8″	1 3/4″ dia.	22″	3/4″	1 5/8″	36 1/4″	21 3/4″	× 8″	2426A12	1,969.41	2425A24	946.00
5	10″	16″	14 1/2″	2″ sq.	16″	1 1/4″	3 1/2″	28 1/2″	24″	× 10″	2426A67	2,922.17	2426A672	801.82

♣ Base plate has five openings.

Compact Arbor Presses

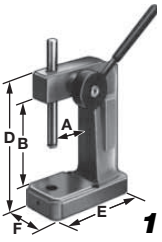

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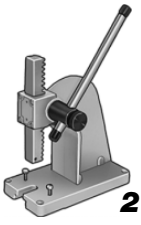
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Designed for working on and assembling small parts made of light-gauge metal and plastic. Mounting fasteners are not included.

(1&2) Side-Arm Presses— Lever arms have manual return.

Style 1— Ram is steel and round. It is accurately keyed into the head and aligned with a 5/8″ dia. hole in the base. Frame is cast iron. Base has two 1/4″ dia. holes for bench mounting.

Style 2— Ram is steel, square, and reversible. One end is solid and the other end has a 1/4″ dia. hole and a tapped hole on the side with 10-32 threads for a set screw or custom fixturing. Frame is die cast zinc. Base has a 1/2″ slot for arbor work and two holes, each with a 1/4″-20 screw for attaching dies. Base also has four 1/4″ dia. holes for bench mounting. Arm is adjustable. When arm is clamped in the center it can be spun to bring ram down. Maximum leverage is achieved when arm is fully extended and clamped on one end.

(3) Side-Arm Press with Deep Throat— Cast iron press has a deep throat for larger items. Base and column are separate pieces held together by four screws. Add a riser block between base and column flange to increase clearance over base. Ram is steel, round, and aligned with the 5/8″ dia. hole in the base. Base also has two 3/8″ dia. holes for bench mounting. The press has an adjustable upstroke limiter. Lever arm has manual return.

(4) Side-Arm Presses with Adjustable Height— Presses are cast iron and have two clamp screws that hold the adjustable head in place. Head adjusts approximately 7 1/4″, enabling you to use a variety of tool setups. Also reduces the time spent operating the lever for take-up. Ram is steel and has a tapped hole with 10-32 threads on the end. Lever arms have manual return.

2423A11 has an adjustable upstroke limiter. Base has a 5/8″ dia. hole for tool setups. Ram is square. 2423A12 has an adjustable down stop and upstroke limiter. Base has two 1/4″ dia. holes for mounting. Ram is round.

(5) Center-Arm Press— Operating arm lever is centered directly on top of ram for easy use by right- and left-handed workers. Frame is aluminum. Ram is round, steel, and has a 9/32″ Dia.×0.85″ Dp. hole and set screw for tool attachment. Base has a 1/4″ T-slot for tool setups. Bench mount using the two 9/32″ dia. holes in the base. Two springs return handle and ram to starting position.

	Approx. Cap., lbs.	Throat Dp. (A)	Clearance Over Base (B)	Ram Size	Usable Ram Lg.	Press Ht. (D)	Base Size, Lg. (E)×Wd. (F)		
1	1,000	2 1/16″	5″	5/8″ dia.	4″	7 3/4″	5 1/2″×2 7/8″	2450A11	$324.84
2	500	2 1/4″	3 15/16″	3/4″ sq.	3 1/2″	7″	7″×3 11/16″	2402A11	167.18
3	500	6 1/8″	5″	5/8″ dia.	4″	7 5/8″	12″×5″	2455A74	532.84
4	1,000	2 5/8″	1″-9 1/2″	3/4″ dia.	12 1/2″	12″	7″×4″	2423A12	696.67
4	1,000	3 1/8″	1″-9 1/2″	3/4″ sq.	7 1/2″	12″	7″×4″	2423A11	626.47
5	400	2 9/16″	5 3/16″	9/16″ dia.	1″	10 3/16″	6″×3 11/16″	2480A12	626.22

Hydraulic Arbor Press

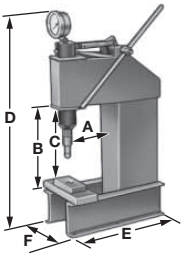

Manual hydraulic pump provides 20,000 lbs. of ram pressure. The long, adjustable lever arm provides excellent control with little effort. Maximum leverage is achieved when the lever arm is fully extended and clamped at one end. Ram is steel, round, and self-retracting. Press is steel and bench mounts using the six 1/2″ dia. mounting holes (fasteners not included). The adjustable relief valve allows you to set any pressure below the 20,000-lb. maximum.

Press includes a 4″ OD pressure gauge that reads 0 to 12 tons in 100-psi increments and in 200-pound increments, a removable ram tip (full usable ram length is 6 5/8″), and a removable 4 1/2″ Lg.×12″ Wd.×1 1/4″ Ht. base plate with a 1 1/4″ Wd.×1 5/8″ Dp. U-shaped cutout and two V-blocks.

Optional ram extension insert set contains one each 3/8″, 1/2″, 5/8″, 3/4″, and 7/8″ dia. ram extension inserts and an adapter. All inserts are 2″ long.

Throat Dp. (A)	Clearance Over Base (B)	Clearance Over Plate (C)	Ram Size, Dia.	Usable Ram Lg.	Press Ht. (D)	Base Size, Lg. (E)×Wd. (F)		
8 1/2″	11″	9 1/2″	1″	6 5/8″	38 1/2″	19 1/2″×12″	2427A14	$1,657.15
Optional Ram Extension Insert Set							2427A16	180.00

Air-Powered Arbor Presses

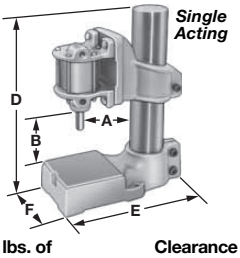

Get more consistent pressure at a faster pace than manual presses. These air-powered presses are great for applications such as pressing, punching, and swaging. Presses have a fixed stroke length. Ram force can be adjusted by regulating air line pressure. Presses are made of steel and aluminum with a cast iron base. Rams are round and solid steel (no drilled or tapped holes). Change clearance over base plate by moving the cylinder up and down on the column. Presses require a minimum of 25-30 psi to a maximum of 120 psi air pressure to operate. Mounting holes and bolts included.

Single-Acting Presses— Spring returns ram to original position; use where a powerful or a controllable ram return is not needed.

Double-Acting Presses— Have a powerful and controllable air-actuated ram return. Use with heavy punches and dies where return action is required. 2373A21 comes with ram guides to prevent ram rotation.

Two-Hand Safety Control Kits with Double-Acting Press— In addition to one of the double-acting presses from above, these kits have a safety package that complies with OSHA regulations (operator must hit two controls simultaneously to operate). Plus, assembled on the press are the following accessories: a pilot-operated four-way valve, a filter, regulator, polyurethane tubing, and fittings. 2373A25 comes with ram guides to prevent ram rotation.

lbs. of Force @ 100 psi	Throat Dp. (A)	Clearance Over Base (B)	Ram Dia.	Air Conn., NPT Female	Cylinder Bore Size	Press Ht. (D)	Base Size, Lg. (E)×Wd. (F)	Single Acting Stroke Lg.			Double Acting Stroke Lg.		
Presses													
398	4″	0-6″	1/2″	1/4″	2 1/4″	12 3/4″	10 1/8″×4 11/16″	1 1/2″	2373A11	$414.93	1″	2373A15	$435.07
707	4 3/8″	0-6″	1/2″	1/4″	3″	12 3/4″	10 1/8″×4 11/16″	1 1/2″	2373A12	451.12	1″	2373A16	462.31
1,256	4 1/8″	0-6″	3/4″	3/8″	4″	14 1/2″	11 7/8″×5 7/8″	2″	2373A13	608.43	—	—	—
1,963	4 11/16″	0-6″	1″	1/2″	5″	14 1/2″	11 7/8″×5 7/8″	2″	2373A14	659.43	1 1/2″	2373A18	714.25
3,926	4 1/2″	0-6″	1″	1/2″	5″	21 1/2″	11 7/8″×5 7/8″	—	—	—	2″	2373A21	928.58
Two-Hand Safety Control Kits with Double-Acting Press													
398	4″	0-6″	1/2″	1/4″	2 1/4″	12 3/4″	10 1/8″×4 11/16″	—	—	—	1″	2373A22	1,087.50
707	4 3/8″	0-6″	1/2″	1/4″	3″	12 3/4″	10 1/8″×4 11/16″	—	—	—	1″	2373A23	1,125.71
1,963	4 11/16″	0-6″	1″	1/2″	5″	14 1/2″	11 7/8″×5 7/8″	—	—	—	1 1/2″	2373A24	1,378.21
3,926	4 1/2″	0-6″	1″	1/2″	5″	21 1/2″	11 7/8″×5 7/8″	—	—	—	2″	2373A25	1,447.60

ⓘ For additional information on air-powered arbor presses, including performance data and additional dimensions, go to mcmaster.com and search for **2373AAC**.

Hydraulic Floor-Mount Presses

A large working area under the ram allows you to easily position bulky work on these presses. Rams are steel.

Hand-Operated Presses

Economy Presses— Made of angle steel and have a hydraulic hand-operated jack mounted on the top cross member instead of a ram. The jack exerts pressure against the top cross member to drive the press plate downward. Press plate returns automatically via external return springs. Table can be raised and lowered by repositioning the movable supports in the vertical uprights. Include four drilled 1.6″×0.5″ mounting holes (fasteners not included).

Optional accessory kit for economy hand-operated presses includes one 9″ long V-block set, a V-pushing adapter, and ¾″ dia. and 1″ dia. pushing adapters.

Medium Duty Presses— Have structural steel frames with open sides for inserting long pieces. They also have a gauge for taking direct pressure readings. Rams are round with an adjustable extension screw that lowers ram to workpiece.

5-ton press includes a hydraulic cylinder with hand pump; pump handle; two table plates; and a 4 5/16″ OD; 0- to 12-ton pressure gauge. Raise and lower table by repositioning the movable locking bars in the uprights. Does not include mounting holes.

15-ton press is furnished with a hydraulic cylinder with hand pump; pump handle; two table plates; and a 4 5/16″ OD, 0- to 30-ton pressure gauge. Table can be raised and lowered by the hand crank. For added versatility, ram moves laterally up to 10 3/16″. Press has four ½″ dia. holes for floor mounting (fasteners not included).

Heavy Duty Presses— Constructed of welded reinforced steel channel and have a gauge for indicating direct pressure readings. A self-locking hoist raises and lowers table by means of a hand crank. Presses have a rapid ram return, which starts as soon as the release valve is opened. Ram is round and can be stopped at any point by closing the valve. Come with two table plates, two V-blocks, a flat ram nose, a pump, and a pump handle. Presses have four 17/32″ dia. holes for floor mounting (fasteners not included).

25-ton press includes a 4″ OD pressure gauge (0 to 25 tons). Work head is stationary.

50- and 75-ton presses include a V-ram nose and a 4″ OD pressure gauge (0 to 50 tons for 2374A2; 0 to 75 tons for 2374A3). Include movable roller-bearing mounted work head for off-center work (up to 20¾″ for the 50-ton model; 29⅝″ for the 75-ton model). Lock head in position with handwheel.

Electric Presses

Presses are steel channel with round rams and have one-hand ram positioning and pressure relief with a four-way valve hydraulic control. Cylinder is double acting and fixed between uprights. Removable table pins allow height adjustment. Include a 2½″ OD pressure gauge (0 to 2,500 psi for 23825A11; 0 to 3,200 psi for 23825A15); hydraulic pump; two pressing plates; a 1 hp, 1,725 rpm, 110 volt, 50/60 Hz, single-phase motor; and a 3½-ft. cord with three-prong plug. Presses have four 17/32″ dia. holes for floor mounting (fasteners not included).

25-ton press has a lifting chain.

Air-Powered Press

Press is steel channel with a round ram. Operated by an air-driven hydraulic foot pump that provides 10,000 psi @ 100 psi of air pressure. Comes with a 3½″ OD, 0- to 10,000-psi gauge; tee; and ¼″ ID×8-ft. hose. Has four 1.6″×0.5″ mounting holes (fasteners not included).

Optional accessory kit for air-powered press includes bearing pulling attachment, ¾″ dia. and 1″ dia. ram-pushing adapters, V-pushing adapter, a pair of 11½″ long V-blocks, ram-forcing cap, and threaded adapter.

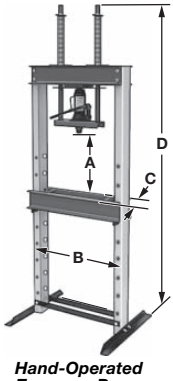

Hand-Operated Economy Press

Hand-Operated Heavy Duty Press

10-Ton Electric Press

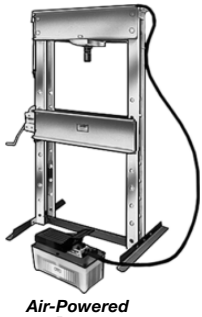

Air-Powered Press

Cap., tons	Table Travel	Clearance Over Table (A)	Ram Travel	Ram Dia.	Table Size, Lg. (B)×Wd. (C)	Press Ht. (D)	Floor Space Required, Lg.×Wd.		
Hand-Operated Economy Presses									
12	42″	42″	5⅞″	—	24¾″×6½″	84½″	28¾″×28″	23795A21	$1,241.13
20	47″	47″	6⅝″	—	32½″×9½″	85⅞″	37½″×28″	23795A22	1,335.53
Hand-Operated Medium Duty Presses									
5	15¾″	15¾″	4″	1¾″	19″×5½″	51½″	23½″×26″	2376A3	1,441.40
15	22 3/16″	22 3/16″	4½″	2½″	24¾″×7½″	65″	33⅞″×29½″	2376A2	2,570.46
Hand-Operated Heavy Duty Presses									
25	35″	39″	5″	2½″	33½″×5 3/16″	76″	42½″×30″	2374A1	3,172.66
50	35″	40″	4″	3½″	32¾″×7¼″	85″	43½″×36″	2374A2	4,189.02
75	30″	36″	4½″	4″	44″×8¼″	87″	55″×36″	2374A3	5,136.69
Electric Presses									
10	36″	40″	10″	1¾″	20″×7″	80″	29¾″×24″	23825A11	2,945.79
25	36″	44″	10″	3″	28″×10″	88″	38″×30″	23825A15	3,944.37
Air-Powered Press									
25	5¾″-46″	46″	6¼″	2¼″	30″×9½″	69½″	41½″×28″	23825A24	3,503.29
Accessories									
Optional Accessory Kit for Hand-Operated Economy Presses								23795A31	293.08
Optional Accessory Kit for Air-Powered Press								23795A32	777.70

Hydraulic Bench-Mount Press

The low height makes this press perfect for mounting on a workbench. Plus, a large opening under the ram makes the positioning of bulky work a snap. Press is steel and powered by a hydraulic hand pump with two speeds. Pump includes hose and fittings. Press has a steel frame and a round 1½″ dia. steel ram. Ram travel is 10⅛″.

Optional accessory kit includes two V-blocks, ½″ dia. and ¾″ dia. ram-pushing adapters, a V-pushing adapter, and a 1″-8 threaded adapter.

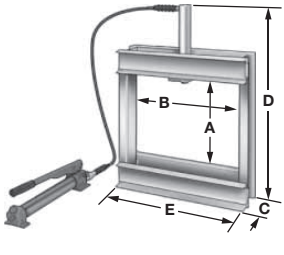

Cap., tons	Clearance Over Table (A)	Table Size, Lg. (B)×Wd. (C)	Press Ht. (D)	Base Size, Lg. (E)×Wd. (C)		
10	15⅜″	22″×7¼″	33¾″	25¼″×7¼″	2473A22	$1,169.34
Optional Accessory Kit					2473A24	343.49

Laboratory Hydraulic Bench-Mount Presses

Powered by a hydraulic hand pump, these presses work well in applications such as compression molding, destructive testing, fluid extraction, pressure forming, and pelletizing. Presses are steel with a round steel ram. Ram travel is 5⅛″.

Presses have a safety shield with polycarbonate door and an easy-to-read 4½″ OD gauge that is calibrated for fast, accurate readout in pounds (from 0 to 24,000 lbs.) and in metric tons (from 0 to 11 tons).

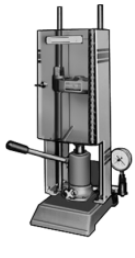

Cap., tons	O'all Size, Ht.×Wd.×Dp.	Platen Size		
12	25″×12″×16″	6″ sq.	8767A25	$2,665.38
12	39″×15″×16″	6″ sq.	8767A23	2,746.15

Die Sets

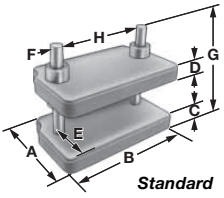

Standard

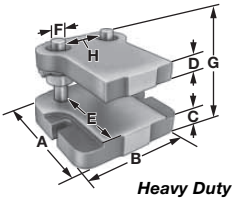

Heavy Duty

Sets can be adapted for use with manual, mechanical, hydraulic, and air-operated arbor presses.

Standard— Made of steel. Excellent for assembly operations and light stamping work using the compact presses on page 2328. Also for use in punching, staking, and bending operations. Dies *with linear ball bushings* have smoother movement.

Heavy Duty— Made of hot rolled steel with hardened steel bushings. Ideal for heavy duty stamping applications as well as metal forming, staking, crimping, pressing, and punching. Base has two 25/32″ mounting slots (fasteners not included).

(A)	(B)	(C)	(D)	(E)	(F), dia.	(G)	(H)		
Standard with Bushings									
2 1/4″	2 5/8″	5/8″	1/2″	1 1/16″	5/16″	3″	1 9/16″	**2395A35**	$183.48
2 7/8″	3 1/2″	3/4″	9/16″	1 7/16″	3/8″	3 1/2″	2 1/8″	**2395A36**	185.00
3 3/4″	5″	13/16″	5/8″	2″	1/2″	5″	3 1/4″	**2395A37**	217.42
4 3/8″	6 1/2″	13/16″	13/16″	2 3/8″	5/8″	5″	4 3/8″	**2395A38**	270.45
5″	8 1/2″	1″	1″	2 3/4″	3/4″	6 3/4″	5 5/8″	**2395A39**	323.48
6″	9 1/2″	1″	1″	3 1/4″	3/4″	6 3/4″	6 5/8″	**2395A41**	347.88
7″	10 3/8″	1″	1″	3 1/2″	3/4″	6 3/4″	7″	**2395A42**	448.64
Standard with Linear Ball Bushings									
5″	8 1/2″	1″	1″	2 3/4″	3/4″	6 3/4″	5 5/8″	**2395A43**	562.12
6″	9 1/2″	1″	1″	3 1/4″	3/4″	6 3/4″	6 5/8″	**2395A44**	579.09
7″	10 3/8″	1″	1″	3 1/2″	3/4″	6 3/4″	7″	**2395A45**	685.15
Heavy Duty with Bushings									
6 9/16″	6 3/4″	1 3/8″	1 1/4″	5″	1″	6″	2 1/4″	**2493A51**	399.85
6 3/4″	8″	1 3/8″	1 1/4″	5″	1″	6″	3″	**2493A52**	399.69
7 3/4″	8″	1 1/2″	1 1/4″	6″	1″	6″	3″	**2493A53**	463.48
10 3/4″	12″	1 1/2″	1 1/4″	9″	1″	6″	6 3/4″	**2493A61**	697.85

Sheet Metal Benders

Economy

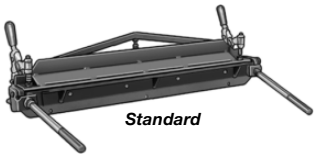
Standard

Also known as press brakes, these benders easily mount to your bench top. Mounting fasteners are not included.

Economy— These extruded aluminum benders make clean, smooth bends up to 90°. Brake bar lets you form boxes, trays, and pans. Adjusts easily for stock thickness and angle of bends. Mount using the four 3/8″ dia. mounting holes.

Standard— Use these steel benders to form trays, rocker panels, duct work, and other shapes usually done by bigger units. They have a 4″ clearance for easy insertion and removal of awkward shapes. Toggle clamp system provides quick clamping. The bending edge has a machined surface for bending angles up to 135°. Front edge is removable for making bends that are close together.

Mount benders in a vise or bench mount using the four 27/64″ dia. mounting holes. *Optional floor stands,* sold separately, have four slots to accept benders and four 27/64″ dia. mounting holes for securing stand to floor.

Maximum Bending Wd.	Capacity: Mild Steel	Capacity: Stainless Steel	Capacity: Aluminum	Overall Size, Ht. × Wd. × Dp.		
Economy						
18″	18 ga. (0.0478″)	18 ga. (0.0478″)	16 ga. (0.0508″)	1 3/4″ × 20″ × 3 3/4″	**2409A11**	$49.51
30″	18 ga. (0.0478″)	18 ga. (0.0478″)	16 ga. (0.0508″)	2 1/2″ × 33″ × 6″	**2409A12**	128.00
40″	20 ga. (0.0359″)	20 ga. (0.0359″)	18 ga. (0.0403″)	3″ × 46″ × 8 3/4″	**2409A13**	394.00
Standard						
27″	18 ga. (0.0478″)	20 ga. (0.0359″)	18 ga. (0.0403″)	9″ × 32″ × 15″	**2461A11**	395.20
40″	18 ga. (0.0478″)	20 ga. (0.0359″)	18 ga. (0.0403″)	9″ × 45″ × 15″	**2461A12**	504.00
Optional Floor Stands						
Floor Stand for 27″ Standard Bender					**2461A21**	151.85
Floor Stand for 40″ Standard Bender					**2461A22**	158.18

Adjustable-Width Sheet Metal Benders

Bench Model Shown with Optional Floor Stand

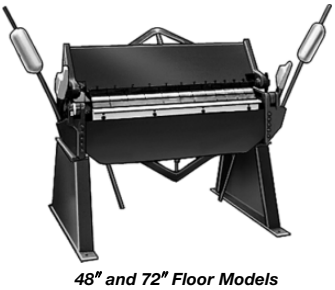
48″ and 72″ Floor Models

Easily create boxes, trays, and pans by adjusting the width of these benders. Also known as press brakes or box- and pan-press brakes, they bend a variety of materials including mild steel, stainless steel, aluminum, and heavy plastic. Just position or remove sectional forming dies (fingers) to adjust width. Benders can then form the bends of all four sides of a box.

Benders have welded steel-plate body sections with heavy truss rods. Upper leaf and nose bar are adjustable for radius bending. Minimum reverse bend is 1/4″ except 2489A11, which is 5/16″. All (except 2489A11) include removable apron insert, apron stop rod, and counterweights.

Bench Models— For lighter gauge metals. These benders have a base with four 3/8″ dia. holes for bench mounting (fasteners not included). Handles have plastic grips. *Optional heavy-gauge steel floor stand* is sold separately below.

Floor Models— For heavier gauge materials. These benders have heavy duty bending-leaf support bushings and reinforced aprons and top leaves to minimize deflection. 48″ and 72″ models have four 9/16″ dia. holes for floor mounting (fasteners not included); 48 1/4″ model has four 5/8″ dia. mounting holes (fasteners not included).

Max. Bending Wd.	Capacity: Mild Steel	Capacity: Stainless Steel	Capacity: Aluminum	Width and Number of Forming Dies (Fingers): 2″	3″	4″	5″	6″	Max. Box Dp.	Overall Size, Ht. × Wd. × Dp.		
Bench Models												
48 1/4″	22 ga. (0.0299″)	26 ga. (0.0179″)	15 ga. (0.0571″)	5	6	5	0	0	3″	20″ × 59″ × 16″	**2489A11**	$855.56
48 1/4″	16 ga. (0.0598″)	20 ga. (0.0359″)	9 ga. (0.1144″)	5	6	5	0	0	4″	25″ × 65″ × 22″	**2489A12**	1,356.25
Optional 26″ high Heavy-Gauge Steel Floor Stand for Bench Models											**2489A13**	241.07
Floor Models												
48″	12 ga. (0.1046″)	16 ga. (0.0598″)	9 ga. (0.1144″)	0	5	2	5	0	6″	60″ × 90″ × 53″	**2437A33**	5,526.55
48 1/4″	12 ga. (0.1046″)	16 ga. (0.0598″)	5 ga. (0.1819″)	5	6	5	0	0	4″	53″ × 72″ × 36″	**2437A32**	3,936.21
72″	12 ga. (0.1046″)	16 ga. (0.0598″)	9 ga. (0.1144″)	0	5	4	7	1	6″	60″ × 117″ × 53″	**2437A35**	7,145.53

Miniature Sheet Bender

Small but powerful, this mini sheet bender easily bends mild steel, stainless steel, aluminum, brass, styrene, and similar light sheet materials. Makes bends up to 90°. Made of aluminum with plastic hand knobs and a steel bending blade. Furnished with a reversible steel die. Simply tighten the press screws to change the degree of the bend. An adjustable depth guide simplifies duplicate bends.

Optional urethane dies will not scar material. Three urethane dies are required to replace one steel die.

Maximum Bending Wd.	Capacity: Mild Steel	Capacity: Stainless Steel	Capacity: Aluminum	Overall Size, Ht. × Wd. × Dp.		Each
3″	32 ga. (0.010″)	32 ga. (0.010″)	30 ga. (0.010″)	3½″ × 4″ × 1½″	2371A76	$47.94
Optional Urethane Dies (3/Pkg.)					2371A77	Pkg. $3.33

Sheet Benders for Plastic

These benders heat a narrow strip across a sheet of plastic to create a bendable section.

Bender for Acrylic Sheets

For Acrylic Sheets— Specifically designed for bending acrylic sheet. Simply lay a sheet over the heating element, wait three to six minutes for it to soften, and bend. Units have an on/off switch, pilot light, and a thermostat control with a dial numbered 0-6 (maximum temperature is 450° F). They also have a 6-ft. cord with three-prong plug and operate on 120 VAC. Housing is steel. CSA certified.

Bender for Thermoplastic Sheets

For Thermoplastic Sheets— Great for bending polyethylene, polypropylene, polycarbonate, PVC, CPVC, ABS, Kynar, Kydex, acrylic, and other types of thermoplastic. Just place your sheets between the two heating bars and heat until flexible. Heating can take from 30 seconds to 12 minutes. Each heating bar has a 6-ft. cord that plugs into the control box. The control box has a stepless, variable-heat controller; an 8-ft. cord with three-prong plug; and operates on 120 VAC. Maximum temperature is 400° F. Heating elements are replaceable. Made of aluminum. Use pieces of 2 × 4 (not included) to support sheets while heating.

The optional ***V-groove attachments*** create sharp, nonradius, 90° bends in polypropylene and polyethylene by melting a deep groove into the material. Bend at the groove to form the angle. A contact weld is left along the groove reinforcing the inner joint. Made of aluminum.

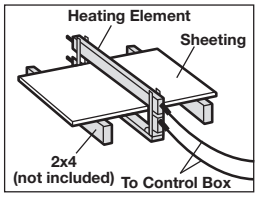

Maximum Bending Wd.	For Sheet Thickness	Watts	Overall Size, Ht. × Wd. × Dp.	Bender		Opt. V-Groove Attachment	
For Acrylic Sheets							
34″	up to ½″	500	5″ × 37″ × 7″	23845A11	$408.51	———	———
48″	up to ½″	625	5″ × 53″ × 7″	23845A12	446.81	———	———
For Thermoplastic Sheets							
48″	up to ½″	500	4″ × 66″ × 2″	2370A21	805.26	2370A31	$65.62
96″	up to ½″	1,000	4″ × 116″ × 2″	2370A22	1,089.47	2370A32	98.44

Combination Sheet Bender, Roll Former, and Shear

Get three machines in one—sheet bender (press brake), roll former (slip roll), and shear. Made of heavy cast iron, this right- or left-hand operated machine includes a spring-loaded work hold-down and guards for the slip roll. Overall size is 28″ Ht. × 42½″ Wd. × 21½″ Dp. Base has four ⅜″ dia. holes for floor mounting (fasteners not included).

Sheet Bender (Press Brake)—Makes up to 30″ long bends in 20-ga. (0.0359″) mild steel, 24-ga. (0.0239″) stainless steel, and 15-ga. (0.0571″) aluminum. Includes a set of six removable forming dies (also called fingers) that are 4⅜″ long and have widths of 1″, 2″, 3″, 6″, 8″, and 10″. Also has one nonremovable ¾″ Wd. × 30″ Lg. V-die. Makes a ⅜″ minimum reverse bend and a 90° maximum angle.

Roll Former (Slip Roll)—Roll is 1½″ Dia. × 30″ Lg. with ⅛″, 3/16″, and ¼″ dia. wire-forming grooves. Rolls mild steel up to 20 ga. (0.0359″). Minimum forming radius is ¾″.

Shear—Cuts up to 30″ wide, 20-ga. (0.0359″) mild steel or equivalent. A gauge in the back adjusts from 1″ to 16″. Remove gauge to cut sheets of any length. Includes a reversible dual-edge blade for longer life.

2384A72 ..... $1,320.05

Roll Formers

Heavy Duty

Also known as slip rolls, these formers create a variety of rolled metal shapes—from reverse curves and radius bends to perfect circles. All slip rolls can be mounted on a bench or table. Mounting hardware not included.

(A) Light Duty— Has a machined aluminum frame, three ground and polished steel rollers, knurled head-screw adjustments, gear covers, a work release cam, and side supports. Rollers are 1″ dia. Minimum bending radius is ½″. Base has two ¼″ mounting holes.

(B) Heavy Duty— Have rigid cast iron frame, fully enclosed steel gears, and three ground steel rollers. Grooves in one roller enable them to form wire as well as sheet metal. Lift the top roller with the handle to remove material easily. Rollers are 2″ dia. Minimum bending radius is 1″. Base has four 7/16″ mounting holes.

(C) High-Capacity Gear Drive— Has a rigid cast iron frame, fully enclosed steel gears, and three ground steel rollers. A 4:1 gear ratio makes turning easier than other roll formers, particularly with thick materials. It has 3″ dia. rollers, a minimum bending radius of 1½″, and four ½″ mounting holes.

	Max. Bending Wd.	Capacity: Mild Steel	Capacity: Stainless Steel	Capacity: Aluminum	Wire Grooves, dia.	Overall Size, Ht. × Wd. × Dp.		
A	12″	26 ga. (0.0179″)	Not Rated	18 ga. (0.0403″)	1/16″, ⅛″, 5/32″	7″ × 23″ × 6″	23815A11	$379.49
B	24″	20 ga. (0.0359″)	24 ga. (0.0239″)	14 ga. (0.0641″)	3/16″, ¼″, 5/16″	22″ × 42″ × 11″	2438A35	740.00
B	36″	22 ga. (0.0299″)	26 ga. (0.0179″)	15 ga. (0.0571″)	3/16″, ¼″, 5/16″	22″ × 54″ × 11″	2438A37	956.52
B	42″	24 ga. (0.0239″)	28 ga. (0.0149″)	17 ga. (0.0453″)	3/16″, ¼″, 5/16″	22″ × 60½″ × 11″	2438A19	1,076.09
C	49″	16 ga. (0.0598″)	20 ga. (0.0359″)	9 ga. (0.1144″)	⅜″, ½″, ⅝″	23″ × 94″ × 18″	2438A28	3,805.82

Rotary Edge Former

With a simple roller change, you can turn, crimp, bead, edge, and perform many other forming tasks. Tool can form 24-ga. (0.0239″) mild steel; 26-ga. (0.0179″) when crimping. The distance between roller centers is 2″. Frame is cast iron; rollers are steel. A C-clamp mounting base attaches to work surfaces from 1½″ to 2½″ thick. Includes rollers for ⅛″ turning, burring, crimping, wiring, and ¾″ ogee beading, plus all required gauges. Additional rollers sold separately.

Forming Machine

Throat Dp.	Overall Size, Ht. × Wd. × Dp.		Each
7″	24″ × 4″ × 16″	2435A74	$1,043.55

Additional and Replacement Rollers

⅛″ Turning 2435A75 ... Pair $102.11

Crimping 2435A88 ... Pair $128.00

Wiring 2435A76 ... Pair $102.11

Offset 2435A81 ... Pair $226.17

Burring 2435A77 ... Pair $102.11

Elbow Edging 2435A91 ... Pair $102.11

¼″ Single Beading 2435A79 ... Pair $113.97

¾″ Ogee Beading 2435A89 ... Pair $113.97

Combination Crimping and Beading Machines

Crimp and bead at the same time. These machines have crimping and ogee beading rolls that do both with one pass. Plus, you can adjust for deep or shallow beading and for "fade-away" crimping. Replace the beading rolls with spacing collars (included) for applications that only require crimping. A quick-acting crank screw raises and lowers the upper roll. Frame is cast iron. Distance between roll centers is 1¾″. Roll length is 1¾″.

Includes a throat gauge, a wrench, one pair each of crimping and ogee beading rolls, a pair of spacing collars, and a C-clamp mounting base (for ½″ to 2½″ bench thicknesses).

Capacity: Mild Steel	Capacity: Stainless Steel	Capacity: Aluminum	Overall Size, Ht.×Wd.×Dp.		
24 ga. (0.0239″)	28 ga. (0.0149″)	22 ga. (0.0253″)	20″×5″×11″	23695A67	$835.59
20 ga. (0.0359″)	24 ga. (0.0239″)	18 ga. (0.0403″)	24″×8″× 8″	23695A68	1,544.60

Radius Forming Tools

Easily turn an angled strip of sheet metal with a 90° bend into a curve. These tools can form a radius as small as 3″ and will curve angles on sheet metal as wide as 2″ and as deep as 8″. Perfect for forming angle rings for the top of a drum or other container, for joining pieces of round duct, or for other similar applications. Both tools are hand operated, made of cast iron, and provide a leverage ratio of 45:1 to either shrink or stretch metal into your curve.

They form up to 18-ga. (0.0478″) mild steel, 20-ga. (0.0359″) stainless steel, and 16-ga. (0.0598″) aluminum. Jaws are hardened alloy steel and reversible for longer life. Tools have two ⅜″-16 threaded holes for bench mounting (fasteners not included) or can be mounted in a vise.

Shrinker— Contracts sheet metal for inside curves; makes rings that fit around outside of drum.

Stretcher— Expands sheet metal for outside curves; makes rings that fit around inside of drum.

	Complete Tools	Each	Sets of 4 Repl. Jaws	Set
Shrinker	2452A11	$271.38	2452A13	$121.25
Stretcher	2452A12	271.38	2452A14	121.25

Sheet Metal Forming Hand Tools

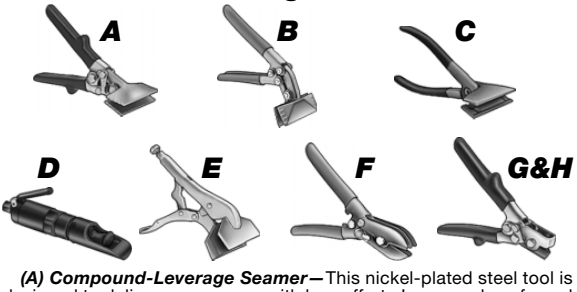

(A) Compound-Leverage Seamer— This nickel-plated steel tool is designed to deliver more power with less effort. Jaws are drop-forged steel and notched in ¼″ increments to measure depth. Handles are hardened steel with cushioned grips.

(B) Compound-Leverage Seamer with Offset Handles— Same as *Style A* above, but with offset handles that allow you to work at awkward angles. Jaws are heat-treated alloy steel.

(C) Rounded-Jaw Seamer— Jaw shape prevents tears in aluminum and other light metals. Drop-forged steel with cushioned handles.

(D) Air-Powered Lock Seamer— Hammers down tight, uniform lock seams at a rate of approximately 15 feet per minute. Use on sheet metal from 30 to 18 ga. (0.0120″ to 0.0478″) without making adjustments for thickness. Operating pressure is 60 to 80 psi. Hose connection is ¼″ NPT female. Made of heat-treated alloy steel.

(E) Vise-Grip Sheet Metal Tool— Locks on to make bending and crimping easier. Use lever for quick release. Made of nickel-plated alloy steel.

(F) Five-Blade Pipe-End Crimper— Crimp and join the same size corrugated, round, and square sheet-metal pipe. Jaws have leverage action for more power with less effort; marks at ¼″ increments measure crimp depth. Made of cold-rolled, low carbon steel; spring-return cushioned handles.

(G) Snap-Lock Joining Punch— Creates a ⅜″ long louver-shaped edge on a piece of metal. The raised edge locks into the rolled edge of another piece of metal, eliminating the need for a second tool. Joins 28- to 24-ga. (0.0149″ to 0.0239″) sections of sheet metal, duct, and pipe. Nickel-plated steel with forged steel jaws and cushioned handles.

(H) Snap-Lock Joining Punch with Adjustable Depth Gauge— Same as *Style G* above, but adjusts to allow different throat depth settings.

	Throat Dp.	Jaw Wd.	Overall Size		
A	¼″-1¼″	3¼″	8″ Lg.	8763A11	$68.07
B	¼″-1¼″	3¼″	9″ Lg.	8763A12	49.36
C	1″	3½″	8″ Lg.	2519A11	55.26
D	2″	1¾″	1 13/16″ Dia.×9″ Lg.	2391A11	242.20
E	1¾″	3⅛″	8″ Lg.	2445A11	16.16
F	¼″-1¼″	⅞″	9½″ Lg.	2377A51	33.01
G	⅜″	⅜″	8″ Lg.	8752A41	60.48
H	¼″-⅝″	½″	8″ Lg.	8752A42	45.40

Combination Press, Shear, and Punch

Meet all your metalworking needs with one machine. Often called a 40-ton metalworker, this electrically operated hydraulic machine presses mild steel and shears ⅜″ Thick.×4″ Wd. to ¼″ Thick.×6″ Wd. sheets and ¾″ dia. rods. It can also bend and form with the optional sheet bender, notch with the optional notcher, and punch with one of the optional punch sets.

Throat depth is 3¾″. Overall size is 55¼″ Ht.×30″ Wd.×24″ Dp. Base has four 9/16″ mounting holes (fasteners not included). Includes a 5-ft. cord with three-prong plug; runs on 110 VAC. Safety guard complies with ANSI B11-5 standards.

Optional 8″ sheet bender bends up to ¼″ thick mild steel. Maximum bend width is 8″. ***Optional notcher*** makes ¼″×2″×1¾″ notches.

Optional Punch Sets— Punch up to 1″ dia. or 1″ sq. in ⅜″ mild steel. **To Order:** Please specify size, ¼″ to 1″ in 1/16″ increments. Include punch and die.

Metalworker	24695A11	$3,036.23
Optional 8″ Sheet Bender	24695A12	619.40
Optional Notcher	24695A13	619.40
Optional Round Punch Set	24695A14	50.91
Optional Square Punch Set	24695A16	132.73

Contour Forming Wheel

Forming Wheel with Optional Floor Stand

Also known as an English wheel, this machine creates curves in up to 18-ga. (0.0478″) mild steel, 11-ga. (0.0907″) aluminum, copper, brass, and some stainless steel. Metal is stretched as it passes between the upper and lower wheels. The lower wheel, often called the anvil wheel, is curved to produce contoured shapes in metal. Ideal for auto body components, shrouds, covers, fuel tanks, doors, and more. The lower wheel has a 3¼″ radius. Use the optional wheels sold separately to create tighter or flatter contours; the larger the wheel radius, the flatter the contour. Overall size is 29″ Ht.×27″ Wd.×8″ Dp. Throat depth is 22″.

Unit has welded steel construction and can be bench mounted or clamped to a vise. It has four mounting holes for ½″ bolts (bolts not included); mounts to optional floor stand.

Contour Forming Wheel	2468A11	$744.64
Optional Floor Stand (26¾″ Ht.)	2468A47	230.77
Optional 2½″ Radius Lower Wheel	2468A48	106.15
Optional 5″ Radius Lower Wheel	2468A34	106.15
Optional 8½″ Radius Lower Wheel	2468A35	106.15

Cast Iron Anvils

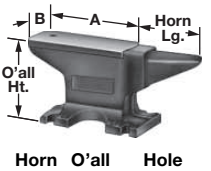

Wt., lbs.	Work Surface, Lg. (A)	Wd. (B)	Horn Lg.	O'all Ht.	Hole Size		
1	2″	1¼″	1¼″ ●	1¼″	—	2495A24 ♣	$36.09
4¼	1½″	1½″	2⅞″ ●	5¼″	—	2495A26 ♦	63.55
8	5″	2″	3¼″	3⅞″	⅜″ dia.	2495A11	66.87
55	8¼″	4″	3¼″	7″	1⅛″ sq.	2481A41	292.38
65	9″	4 5/16″	6⅛″	7½″	1⅛″ sq.	2481A42	345.53
85	9 13/16″	4⅝″	6 1/16″	8 1/16″	1⅛″ sq.	2481A43	451.87
110	10½″	4⅞″	6⅞″	9½″	1⅜″ sq.	2481A64	584.25
150	12⅝″	5⅛″	8″	9 15/16″	1⅜″ sq.	2481A65	797.38
210	14⅜″	5 5/16″	8¼″	11 7/32″	1⅜″ sq.	2481A66	1,116.38

● Has two horns. ♣ Surface-hardened forged steel. ♦ Cast steel.

Miniature Wire Bender

At only 4¾″ Lg.×1″ Wd., this bender can easily be clamped in a vise or mounted to a workbench with its two ¼″ holes (fasteners not included). Create angles, curves, and eyes by changing the arrangement of pins. Handles steel and softer metal wire up to ¼″ in diameter. Includes three bending pins. Made of die cast aluminum.

2379A11 ..... $8.88

Wire, Rod, and Flat Stock Benders

Economy Bender

Standard Bender

Create braces, hooks, eyes, loops, brackets, and pipe hangers. Benders can be clamped in a vise.

Economy benders bend wire and rod up to ⅜″ dia. and flat stock up to ½″×3/16″. Both are aluminum. *Small diameter* includes ½″, ¾″, 1″, 1¼″, and 1½″ dies. Handle is 12″ long. Base is 3″×3″. *Large diameter* includes ⅜″, ¾″, 2″, 3″, and 4″ dies. Handle is 16″ long. Base is 4″×6″.

Standard bender bends wire, rod, and rebar up to ⅝″ dia. and flat stock up to ¼″×1″. Change sleeves for eye-diameter and radius bends—¾″, 1¼″, and 1⅝″ sleeves are included. Overall size is 19¼″ Lg.×2″ Wd.×5½″ Ht. Made of steel.

Small Diameter Economy Bender	**2460A16**	$44.44
Large Diameter Economy Bender	**2460A18**	69.00
Standard Bender	**2460A11**	75.72

Wire Bender for Complex Shapes

Forming wire and flat metal into complex shapes couldn't be easier. This compact steel bender makes bends on multiple planes, S-shapes, squares, coils, and more. Use with wire and rod up to 5/16″ dia. and flat stock up to 1″ Wd.×⅛″ Thick. Can be clamped in a vise or bench mounted with the two 5/16″ dia. holes (fasteners not included).

Bender includes 3/16″, ¼″, ½″, and 1″ dia. circle pins; one sharp-angle die; a form pin follower; a bending gauge; and a 1-ft. long handle. It measures 9½″ Lg.×2½″ Wd.×3½″ Ht. (not including handle).

Expand your bending capabilities with the optional ***edge bender kit***. It adds edgewise bending capability (for ductile materials up to 0.12″ thick and ¾″ wide).

Use the ***optional circle pins*** to create large diameter circles.

Wire Bender	**2436A12**	$327.10
Accessories		
Edge Bender Kit	**2436A13**	56.61
⅞″ Dia. Circle Pin	**2436A14**	14.56
1¼″ Dia. Circle Pin	**2436A15**	16.67
2″ Dia. Circle Pin	**2436A16**	11.11
2½″ Dia. Circle Pin	**2436A17**	12.22
3″ Dia. Circle Pin	**2436A18**	35.27

Bar, Pipe, and Tube Benders

These versatile tools can bend flat bar stock, angle iron, round and square pipe, tubing, and conduit. Angles up to 180° can be easily and accurately duplicated using set stops. Benders include a set of general purpose dies for cold-bending Schedule 40 pipe and hot-rolled, low carbon steel bar stock and tubing. Made of steel.

Bending Capacities							
Flat Bar Stock, Thick.×Wd.	**Round & Square Bar Stock**	**Pipe Size**	**Tubing, Wall Thick.**	**Tubing, Size**	**Overall Size, Lg.×Wd.×Ht.**		
7/16″×3″	⅞″	¼″ to 1¼″	16 ga.	Up to ¾″ OD	44″×14″×8″	**8761A11**	$1,607.38
½″×4½″	1¼″	¼″ to 2″	16 ga.	Up to ¾″ OD	57″×17″×8″	**8761A12**	1,999.74

Conduit Benders

Benders meet National Electrical Code (NEC) specifications for conduit bending. Heads and handles sold separately.

Conduit Bending Heads—Degrees are marked for 10°, 22°, 30°, 45°, 60°, and 90° angles. A star, an arrow, and a rim notch are also marked to align conduit for accurate stub, offset, saddle, and 90° bends. Markings are easy to read and cast on both sides of the bender. Aluminum heads are lighter and more corrosion resistant than cast iron heads.

Short-Radius Bending Heads—Also known as hickey benders, they're ideal for making short-radius bends.

Handles—Handles are labeled with a bending guide. Made of tempered steel.

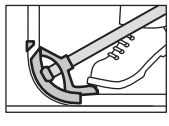

Conduit Bending Head

Short-Radius Bending Head

Capacities for Tube OD			*HEADS*							*HANDLES*		
EMT	**IMC**	**Rigid**	**O'all Size, Lg.×Ht.**	**Centerline Bend Radius▲**	**Handle Socket, dia.**	***Aluminum***		***Cast Iron***		**Lg.**		
Conduit Benders												
½″	—	—	7¾″×4¾″	4 23/64″	¾″	**2424A55**	$22.11	**2424A5**	$27.94	38″	**8754A11**	$24.76
¾″	½″	½″	9 13/32″×6″	5 13/64″	¾″	**2424A65**	36.33	**2424A6**	40.44	38″	**8754A11**	24.76
1″	¾″	¾″	12″×7½″	6 19/32″	1″	**2424A75**	55.81	**2424A7**	69.92	44″	**8754A12**	38.87
1¼″	1″	1″	16 29/32″×9 19/64″	9¾″	1¼″	**2424A85**	132.56	**2424A8**	148.04	60″	**8754A13**	52.59
Short-Radius Conduit Benders												
—	½″	½″	3¾″×4½″	—	1″	**2510A21**	41.07	—	—	44″	**8754A12**	38.87
—	¾″	¾″	4¼″×5″	—	1″	**2510A22**	50.40	—	—	44″	**8754A12**	38.87
—	1″	1″	5¼″×6¼″	—	1¼″	**2510A23**	75.02	—	—	60″	**8754A13**	52.59

▲Distance from the axis point through the center of the pipe or tubing.

Conduit Benders for Offset Bends

Just insert conduit, depress handle, and release. These tough benders produce identical offsets in EMT conduit every time. Bending heads are made of aluminum alloy and have two 5/16″ dia. holes for bench mounting (fasteners not included). Furnished with a 22″ long steel handle with a cushioned grip. Overall length is 27¼″.

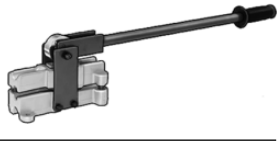

For ½″ EMT Conduit	**2458A1**	$235.49
For ¾″ EMT Conduit	**2458A2**	346.62

Multisize Conduit and Pipe Benders

Now you only need one bender for different sizes of conduit and pipe. These handy tools not only bend several sizes, but have ratcheting action for increased leverage and productivity—there's no need to reposition your conduit or pipe for multiple bends. Plus, with two 8″ dia. plastic wheels you can take them anywhere. Body and bending heads are steel.

They have a scale marked for 30°, 45°, 60°, and 90° angles. Handle is not included; use your own 3- to 4-ft. length of 1″ OD pipe or rigid conduit. Use benders with IMC conduit and ½″ to 1½″ rigid pipe (Schedule 40). 2412A11 can also bend EMT conduit.

Note: Not for use on Schedule 80 pipe.

EMT Conduit		*Rigid/IMC Conduit and Rigid Pipe*					
For Tube OD	**Centerline Bend Radius▲**	**For Tube OD**	**Centerline Bend Radius▲**	**Overall Size, Lg.×Wd.×Ht.**			
—	—	½″, ¾″, 1″	2.61″, 4.65″, 5.91″	47″×23″×32″	**2412A4**	$764.53
—	—	1¼″, 1½″	7.71″, 9.2″	47″×23″×38″	**2412A5**	906.72
½″, ¾″, 1″, 1¼″, 1½″	4.35″, 5.46″, 6.58″, 8.75″, 10.87″	½″, ¾″, 1″, 1¼″	5.365″, 6.525″, 8.66″, 10.83″	47″×23″×40″	**2412A11**	1,355.16

▲Distance from the axis point through the center of the pipe or tubing.

Hydraulic Benders for Rigid Conduit

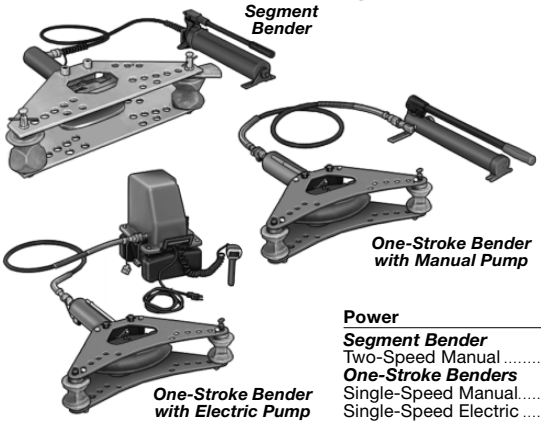

These lightweight aluminum tools are both powerful and portable. Bending mandrels are included in a variety of conduit sizes. Not for use with EMT or IMC conduit.

Segment Bender— Also called a sweep bender, this tool forms curves by making a series of small bends, enabling you to incrementally adjust a curve to fit a specific application. Create up to a 90° radius in 1¼″ to 4″ dia. rigid steel and rigid aluminum conduit. Powered by a two-speed hand-operated hydraulic pump. Comes in a 48″ Lg.×18″ Wd.×18″ Ht. steel storage case.

One-Stroke Benders— These benders make uniform 90° bends in 1″ to 2″ dia. rigid steel conduit with one stroke of the ram. Each comes in a 25⅞″ Lg.×24⅝″ Wd.×7⅜″ Ht. steel storage case.

The *electric* bender has a powerful single-phase, ½ hp motor that operates on 120 VAC, 50/60 Hz. It includes an 8-ft. cord with three-prong plug.

Power	Mandrel Sizes Included	Hydraulic Cylinder Capacity		
Segment Bender				
Two-Speed Manual	1¼″, 1½″, 2″, 2½″, 3″, 3½″, 4″	25 tons	**2479A14**	$4,183.58
One-Stroke Benders				
Single-Speed Manual	1″, 1¼″, 1½″, 2″	15 tons	**2414A1**	2,956.03
Single-Speed Electric	1″, 1¼″, 1½″, 2″	15 tons	**2414A8**	4,541.26

Benders for PVC Conduit and Pipe

Heating Blanket

Heater

Portable and simple to use, these benders heat PVC conduit and pipe, making it pliable enough for you to bend by hand.

Electric Heating Blanket— Just wrap it around the pipe and secure it with the hook-and-loop strap. Evenly heats any schedule of ½″ to 1½″ dia. PVC conduit and pipe. Blanket measures 13″ Lg.×8¼″ Wd. and has a woven glass exterior and a silicone vinyl interior. Includes an 8-ft. cord with two-prong plug. Operates on 120 VAC. Reaches temperatures over 300° F.

Electric Heater— The open-end design of this heater lets you work on any length of pipe. A pair of rollers at each end aligns the pipe so it heats evenly. Accommodates Schedule 40 to 80 PVC conduit and ½″ to 2″ dia. pipe. Includes a bending guide that adjusts from 0° to 90° in any radius from 6″ to 12″. It has an on/off switch with indicating light and a carrying handle and latch on the cover. Includes a 12″ cord with three-prong plug. Operates on 115/120 VAC. Overall size is 29½″ Lg.×7″ Wd.×7⅛″ Ht. Housing is steel. Maximum temperature is 450° F.

Electric Heating Blanket	**3236A66**	$227.71
Electric Heater	**8756A14**	679.40

Spring Tube Benders

Simple yet effective—just slip over aluminum, copper, and other thin-wall tubing to eliminate crimping and collapsing when hand bending. Made of oil-hardened spring steel with zinc-plated finish.

For Tube OD	Length	Pkg. Qty.		Pkg.
¼″	10⅝″	6	**2420A11**	$9.36
5/16″	10½″	6	**2420A12**	10.44
⅜″	10⅝″	6	**2420A13**	11.40
7/16″	10⅜″	6	**2420A14**	13.08
½″	11¾″	6	**2420A15**	14.65
⅝″	11¾″	6	**2420A16**	15.42
¾″	12″	1	**2420A18**	5.36

Spring Tube Bender Set— Includes one each of the following sizes: ¼″, 5/16″, ⅜″, 7/16″, ½″, and ⅝″ ..... **2420A17** **Set** $11.48

Small Diameter Multisize Tube Bender

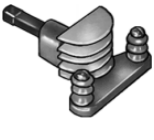

Bend four sizes of copper tubing (3/16″, ¼″, 5/16″, and ⅜″ OD) and three sizes of steel tubing (3/16″, ¼″, and 5/16″ OD). Works on fuel, brake, and hydraulic lines. To use, clamp the bender in a vise or hold one end of the tubing stationary. Bends up to 135° in a single motion. Bender is steel with a nylon mandrel to prevent kinking and flattening. Length is 4″.

2478A12 ..... $21.00

Tube Benders for Soft and Hard Metals

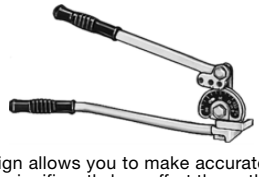
Adjustable Bender

The lever-action design allows you to make accurate bends in one continuous motion with significantly less effort than other hand benders. Use to create bends in steel, stainless steel, titanium, and other hard metal tubing. Bend up to 180°.

Standard— Built-in rollers never lose contact with the tube, which virtually eliminates out-of-plane bends. Two-stage handle lets you stop mid-bend and reposition for better comfort and control. Benders are ductile iron (unless noted).

Adjustable— You can adjust the calibrated face plate to compensate for spring-back, adjust the top handle to minimize flattening, and fine tune the clamping hook so it holds the tube snugly. Rollers are self-aligning to eliminate scoring, and an offset handle reduces bending effort. Benders are steel. Meet ANSI and ASME Boiler and Nuclear Standards: ASME 3; ANSI B31.1.

For Tube OD	Centerline Bend Radius▲	Angle Increments	O'all Lg.		
Standard					
⅜″	15/16″	15°, 22½°	16″	**33745A61**	$258.00
⅜″	15/16″	15°	17″	**2422A12**★	291.14
½″	1½″	15°, 22½°	22″	**33745A62**	286.06
Adjustable					
⅜″	1⅛″	15°	16¾″	**2422A11**	291.14
½″	1½″	15°	24″	**2422A13**	298.74

▲ Distance from the axis point through the center of the pipe or tubing.
★ Bender is steel.

One-Hand Tube Benders for Soft Metals

So easy to use, you only need one hand to operate these benders.

Compact Bender with Mandrels

Includes a bender and four mandrels (sizes ¼″, 5/16″, ⅜″, and ½″) in a plastic carrying case. Individual mandrels are also sold separately.

2430A32 ..... $290.35

Bender Kit

Everything you need to make 90° bends in soft copper tubing from ⅜″ to ⅞″ OD. Bender is steel, 12½″ long, and has angle marks that guide you when bending tubing. In addition to the bender, kit includes the following tools: a steel tube cutter for ⅛″ to 1⅛″ OD tubing; a tube reamer; ⅜″, ½″, ⅝″, ¾″, and ⅞″ mandrels; and a plastic carrying case.

2454A11 ..... $191.91

Compact Bender

At just 6″ long, this bender makes it a cinch to form 0° to 90° inline bends in confined spaces. It'll bend aluminum and soft copper tubing from 3/16″ to ½″ OD and soft steel tubing from 3/16″ to ⅜″ OD. Made of steel. Mandrels are sold separately below.

2430A6 ..... $130.00

Bending Mandrels

For Tube OD	Centerline Bend Radius▲		
3/16″	25/32″	**2430A41**	$31.50
¼″	15/16″	**2430A42**	35.50
5/16″	1⅛″	**2430A43**	38.00
⅜″	1 5/16″	**2430A44**	40.50
½″	1 15/32″	**2430A45**	52.00

▲ Distance from the axis point through the center of the pipe or tubing.

Tube Benders for Soft Metals

Slip one of these open-sided tools over soft metal tubing, position it for the best leverage, and create a bend in one continuous motion. Tools have incremental calibration marks (unless noted) so you can be sure of the accuracy of your angle. Use on brass, aluminum, steel, stainless steel, and soft copper tubing (unless noted). Benders are steel (unless noted).

90° Multisize—*Triple-head benders* can bend more than one size of tubing without adjustments to the bending head. They bend up to 90°.

180° Single Size— Each of these benders works on one size of tubing. They have a wide (fixed) hook that holds the tube securely while you bend. They bend up to 180° and conform to Fed. Spec. GGG-B-191A, Type III, Class 2.

180° Multisize— Bend up to 180° (unless noted). *Triple-head benders* bend different tubing sizes without adjustments to the bending head. *Note:* Use the 1/4″ groove for both 1/4″ and 3/16″ tube OD. *Wide-range bender kits* include a bender that quickly adjusts to bend different sizes of tubing with the change of a mandrel. Kits also come with an assortment of mandrels that fit a variety of tubing sizes and a steel carrying case. Meet Fed. Spec. GGG-B-191A Type III, Class 1 (unless noted).

90° Multisize Triple-Head Bender (2492A21)

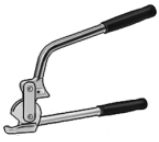

180° Single-Size Bender (2418A35)

180° Multisize Triple-Head Bender (2421A5)

180° Multisize Wide-Range Bender Kit (2421A1)

For Tube OD	Centerline Bend Radius▲	Angle Increments	Overall Length		
90° Multisize—*Triple-Head Benders*					
1/8″, 3/16″, 1/4″; 3 mm, 4 mm, 6 mm	9/16″, 14 mm	45°	5 3/4″	2492A12♥	$31.00
1/4″, 5/16″, 3/8″	1″	15°	8″	2492A21■	37.26
180° Single Size					
1/8″	3/8″	45°	7 7/8″	2418A21	43.83
3/16″	5/8″	15°	9″	2418A11●	70.69
1/4″	9/16″	22 1/2°	10″	2418A33	56.76
5/16″	11/16″	22 1/2°	10 1/2″	2418A34	68.45
3/8″	15/16″	15°	14″	2418A35	63.80
7/16″	1 1/2″	22 1/2°	20 1/4″	2418A18	105.67
1/2″	1 1/2″	22 1/2°	21 7/8″	2418A37	109.09
5/8″	2 1/4″	15°	28 1/4″	2418A16■	145.40
3/4″	3″	15°	31 5/8″	2418A17■	206.48
7/8″	3″	15°	32 1/8″	2418A19■	262.90
1″	3 1/2″	15°	32″	2418A22■	350.47
6 mm	16 mm	15°	9″	2515A11●	79.82
8 mm	17.5 mm	22 1/2°	10 1/2″	2418A34	68.45
10 mm	24 mm	15°	13″	2515A15●	87.92
12 mm	38 mm	15°	18″	2515A17●	138.66
180° Multisize—*Triple-Head Benders*					
3/16″, 1/4″, 5/16″, 3/8″	7/16″, 9/16″, 11/16″, 15/16″	15°	10 7/8″	2421A5	45.51
3/16″, 1/4″, 3/8″, 1/2″	11/16″, 11/16″, 1 1/8″, 1 1/2″	15°	16 7/8″	2421A4♥	52.85
180° Multisize—*Wide-Range Bender Kits*					
1/4″, 5/16″, 3/8″, 1/2″, 5/8″, 3/4″	9/16″, 11/16″, 1 5/8″, 1 5/8″, 2 1/4″, 3″	15°♦	32 1/8″	2421A2♠	607.76
1/4″, 5/16″, 3/8″, 1/2″, 5/8″, 3/4″, 7/8″	9/16″, 11/16″, 1 5/8″, 1 5/8″, 2 1/4″, 3″, 3″	15°♦	32 1/8″	2421A1♠	815.09
3/8″, 1/2″, 5/8″, 3/4″	1 5/8″, 1 5/8″, 2 1/4″, 3″	15°	32 1/8″	2421A3♠	455.62
1/2″, 5/8″, 3/4″, 7/8″	1 31/32″, 1 31/32″, 3 13/32″, 3 13/32″	—	29″	2421A7★	153.36

▲ Distance from the axis point through the center of the pipe or tubing. ♥ Not recommended for stainless steel. ■ For bending annealed copper and aluminum tubing only. ● Can also bend hard copper. ◢ Made of aluminum. ♦ 22 1/2° for 1/4″ and 5/16″ OD tubing. ♠ Mandrels for 3/8″ OD tubing and larger are recommended for annealed copper and aluminum tubing only. ★ Bends up to 120°; not recommended for steel or stainless steel. Carrying case not included. Does not meet Fed. Spec. GGG-B-191A, Type III, Class 1.

Benders for Thick-Wall Tubing

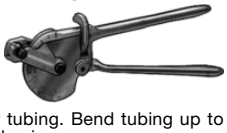

Ratcheting action and leverage give these tools the strength to bend thick-wall tubing without heating or tempering. Use for steel tubing with up to a 1/8″ wall thickness, stainless steel tubing with up to a 3/32″ wall thickness, as well as Types K and L hard-copper water tubing. Bend tubing up to 180° in one continuous motion. Made of aluminum.

For Tube OD	Centerline Bend Radius▲	Angle Increments	O'all Lg.		
5/8″	3″	15°	22″	23705A11	$306.37
3/4″	3 3/4″	15°	31″	23705A12	414.38
7/8″	3 3/4″	15°	31″	23705A13	414.38

▲ Distance from the axis point through the center of the pipe or tubing.

Easy-Use Precision Tube Bender for Hard Metals

Make smooth bends in mild steel, chromemoly, bendable grades of aluminum, Type 303 stainless steel, and DOM (drawn over mandrel) steel. Forms 90° bends in 2 steps; 180° bends in 3 1/2 steps. Can make either right or left-hand bends. Bender and mandrels are made of steel. Can be bench mounted. ***Bender*** includes a degree indicator wheel and a 36″ telescoping handle.

Optional pedestal is made of steel and has four 1/2″ bolt holes.

Tube Bender	2378A1	$316.07
Optional Pedestal	2378A2	144.64

Bending Mandrels

For Tube OD	Tube Wall Thick. Min.	Tube Wall Thick. Max.	Centerline Bend Radius▲		
1/2″	0.035″	0.120″	2 1/4″	2378A11	$144.64
5/8″	0.049″	0.120″	3″	2378A12	155.36
3/4″	0.058″	0.120″	4 1/2″	2378A13	241.07
7/8″	0.058″	0.120″	4 1/2″	2378A14	241.07
1″	0.058″	0.120″	4 1/2″	2378A15	251.79
1 1/8″	0.058″	0.120″	4 1/2″	2378A16	262.50

▲ Distance from the axis point through the center of the pipe or tubing.

Precision Tube Bender for Soft and Hard Metals

Bender with Slide Bar and Mandrel

A slide bar keeps the tube round for precise bends. To bend, simply crank the revolving hand lever and the enclosed gear with a 50:1 leverage ratio creates a lot of force with minimal effort. Bend both soft and hard metal tubing, including hard and soft copper, aluminum, brass, thin-wall steel, stainless steel, Monel (nickel-copper alloy), titanium, and even aircraft-grade high-strength stainless steel. Create bends up to 180° in one continuous motion. Clamp in a vise or mount to a bench using the two 3/8″ threaded holes (fasteners not included).

A complete tool requires a bender, a dual-style slide bar, and a bending mandrel (slide bar and mandrel need to have matching tube ODs).

Complete Tube-Bending Kit

Includes the *bender* and all of the *slide bars* and *mandrels* listed below for bending 1/4″ to 3/4″ OD tubing. Comes in a steel carrying case.

2487A35 ..... $1,880.18

Individual Bender

Does not include slide bar or mandrel. Made of steel and is 16 1/4″ long. Comes in a steel carrying case.

2487A55 ..... $936.00

Dual-Style Slide Bars

Slide Bar for 1/4″ and 5/16″ Tube OD	2487A44	$109.94
Slide Bar for 3/8″ and 1/2″ Tube OD	2487A45	151.16
Slide Bar for 5/8″ and 3/4″ Tube OD	2487A46	206.11

Bending Mandrels

For Tube OD	Tube Wall Thick. Min.	Tube Wall Thick. Max.	Centerline Bend Radius▲		
1/4″	0.016″	0.049″	3/4″	2487A47	$112.13
5/16″	0.020″	0.065″	1″	2487A48	112.13
3/8″	0.028″	0.083″	1 1/4″	2487A49	154.19
1/2″	0.035″	0.083″	2″	2487A52	151.16
5/8″	0.042″	0.083″	2 1/2″	2487A53	168.19
3/4″	0.049″	0.083″	3″	2487A54	210.23

▲ Distance from axis point through the center of the pipe or tubing.

Tube Flaring Tools

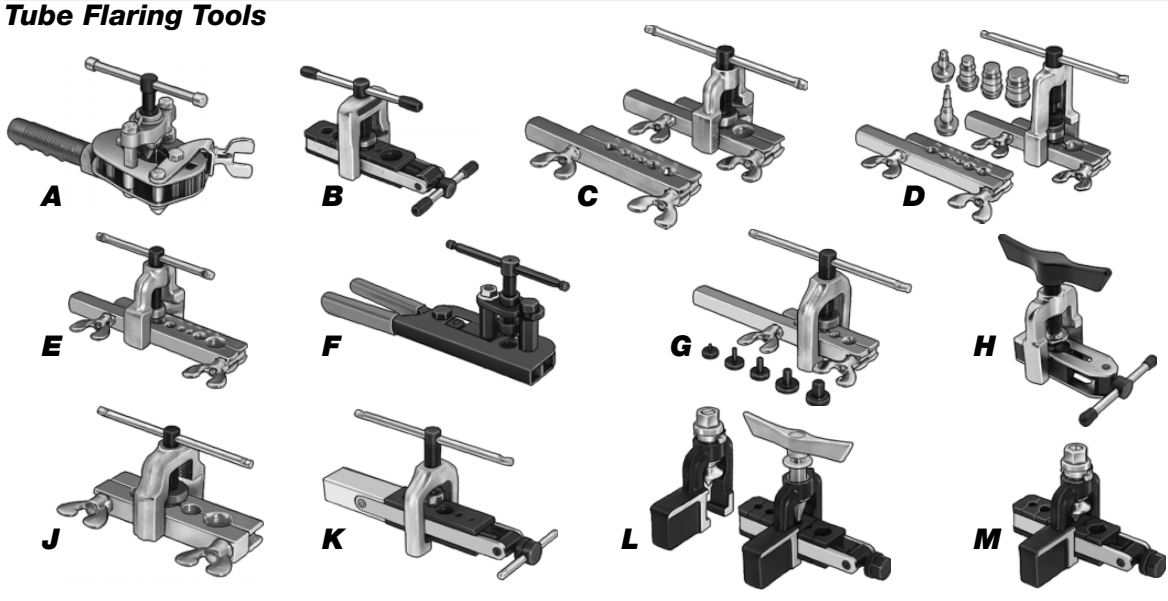

Flaring tools create a funnel shape at the end of tubing so it can be used with 37° or 45° flared fittings. All tools are steel (unless noted). Use *flaring tools for soft metals* on copper, brass, aluminum, and soft steel. *Flaring tools for hard metals* can be used on 1/8-hard and annealed stainless steel as well as titanium. *Note:* Type M hard copper should be torch annealed before flaring.

For Tube OD	Features	O'all Lg.		
37° Flaring Tools for Soft Metals				
A 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4"	—	8 3/4"	2721A11	$105.14
B 3/16", 1/4", 5/16", 3/8", 1/2", 5/8"	—	6"	2691A14	83.83
45° Flaring Tools for Soft Metals				
A 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4"	—	8 1/32"	2721A12	128.88
C 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4"	Plastic tool case	6 3/4"	2699A6	92.74
D 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4"	Can expand 3/16" to 3/4" OD tubing; plastic tool case	6 3/4"	2698A1	113.08
E 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8"	—	7 1/2"	2691A15	35.00
F 3/16", 1/4", 5/16", 3/8", 1/2", 5/8"	Plier-action handle	11"	2697A5	75.61
G 3/16", 1/4", 5/16", 3/8", 1/2"	Can double flare 3/16" to 1/2" OD tubing; plastic tool case	8"	2694A12	64.32
H 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 4 mm, 6 mm, 8 mm, 10 mm, 12 mm, 15 mm, 16 mm	—	4 5/8"	2692A11	71.36
J 5/8", 3/4", 7/8", 1 1/8"	—	7 1/4"	2693A14	113.10
37° Flaring Tools for Soft and Hard Metals				
K 1/8", 3/16", 1/4", 5/16", 3/8", 1/2"	Can be clamped in a vise	9 1/8"	2714A11	424.69
L 3/16", 1/4", 5/16", 3/8", 1/2", 5/8"	Can ream 1/4" to 5/8" OD tubing; plastic tool case	6 1/8"	2690A12	481.48
M 3/16", 1/4", 5/16", 3/8", 1/2", 5/8"	Can be clamped in a vise; plastic tool case	6 1/8"	2723A2	347.45
M 3/4", 7/8", 1", 1 1/4"	Can be clamped in a vise; steel tool case	11 1/2"	2696A2★	416.94

★ Tool is steel with an aluminum bar.

Tube Expanders

Join tubing of the same size without fittings. Expanders enlarge the end of a piece of tubing so another piece can slip into it, making soldering and sealing with adhesives easier. They're made of aluminum and have plastic handle grips. Expanders measure 16" long and include durable stainless steel expansion heads that ensure precisely rounded tube openings. Use on soft copper, aluminum, and steel tubing with a wall thickness up to 0.063". Include a metal carrying case.

Complete Expanders

Expander Heads Included		
1/2", 5/8", and 7/8" Tube OD Sizes	2637A12	$359.72
3/8", 1/2", 3/4", and 1" Tube OD Sizes	2637A42	423.07

Replacement and Additional Expander Heads

For Tube OD			For Tube OD		
3/8"	2637A41	$61.39	3/4"	2637A43	$61.39
1/2"	2637A15	61.39	7/8"	2637A18	61.39
5/8"	2637A26	61.39	1"	2637A19	61.39

Tube Flaring and Expanding Tools

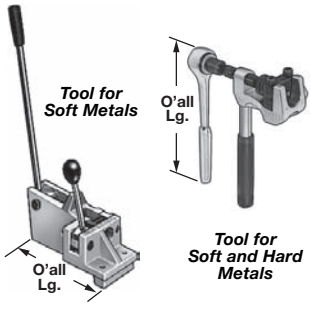

Flaring and expanding tubing couldn't be easier. These tools include everything you need for flaring and expanding a variety of tubing diameters. Tools flare the end of a piece of tubing to create a funnel shape so that it can be used with 37° or 45° flared fittings. They also expand, or swage, the end of a piece of tubing just enough so another piece with the same diameter can slip into it. All tools are steel.

Tool for soft metals is designed for use with copper, brass, and aluminum. Mount tool in a vise or to a bench with the two 5/16" dia. mounting holes (fasteners not included). Includes six expanding adapters, 37° and 45° flaring cones, six flaring adapters, and two Allen wrenches.

Tool for soft and hard metals expands soft copper, aluminum, and brass. Designed for 37° or 45° flaring of soft copper, brass, aluminum, steel, and stainless steel, and for 45° double flaring of soft copper, aluminum, and steel. This tool can be hand held or vise mounted. Includes a yoke assembly, hex socket, 3/8" square drive ratchet wrench, seven expanding adapters, 37° and 45° flaring cones, seven double-flaring adapters, and a plastic carrying case. *Note:* Type M hard copper should be torch annealed before flaring.

For Tube OD	Overall Lg.		
For Soft Metals			
3/16", 1/4", 5/16", 3/8", 1/2", 5/8"	7 1/8"	2713A21	$687.06
For Soft and Hard Metals			
1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4"	7 7/8"	27555A21●	329.23

● Will not expand or double flare 1/8" or 7/16" OD tubing.

Metal Tube Cutters

Cutters have dual rollers with a groove (unless otherwise stated) for cutting off flared tube ends.

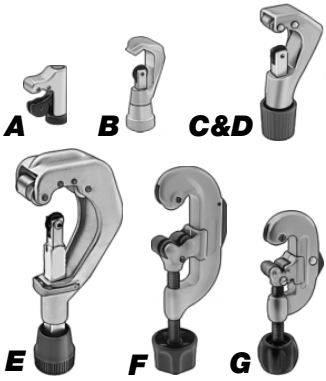

Cutters with Enclosed Adjustment Screw

Prevent damage to the adjustment screw from chips and debris.

(A) Compact Tube Cutters— A small swing radius lets you cut tubing in tight spaces. 2764A12 has a 1¼″ swing radius and smooth dual rollers. 2764A14 has a 1 11/16″ swing radius. 2764A13 has a 1 15/16″ swing radius.

(B) Economy Tube Cutter— A good general purpose cutter.

(C) Premium Tube Cutters— Have a precision mounted cutting wheel for more accurate cuts and an adjustment screw with steel bearings for smooth operation. Body is chrome plated. Include a fold-away deburring reamer with file and an extra cutting wheel.

(D) Tube Cutter and Constrictor— In addition to cutting tubing, this tool crimps tubing to reduce its size. Includes two cutting wheels, one crimping wheel, and a fold-away deburring reamer.

(E) Quick-Adjusting Tube Cutters— An enclosed ratchet feed opens quickly to insert tubing; instantly slides to cutting position. Include an extra cutting wheel. 2708A2 has four extra-wide grooved rollers; *A3* has two extra-wide grooved rollers.

C-Frame Cutters

(F) Economy C-Frame Tube Cutter— Includes a fold-away deburring reamer.

(G) C-Frame Tube Cutters— All have an extra-heavy cast frame for extended life and a fold-away deburring reamer, except 2670A5, which does not have a reamer and has an aluminum frame. 2670A1, A2, and A3 have rollers that are not grooved.

	Cutting Cap., OD Min.-Max.	Tool Length Open	Tool Length Closed	Recommended for Cutting: Soft Copper	Hard Copper	Brass and Aluminum	Thin-Wall Steel	Stainless Steel	Titanium	Complete Tool		Repl. Wheel	
A	1/8″ - 5/8″	1¾″	1¾″	Yes	Yes	Yes	No	No	No	**2764A12**	$13.15	**2757A18**	$4.15
A	3/16″- 7/8″	2¼″	2¼″	Yes	Yes	Yes	♦	♦	♦	**2764A14**	19.54	**2757A19**	4.11
A	3/8″ -1 1/8″	3¼″	2 11/16″	Yes	Yes	Yes	♦	♦	♦	**2764A13**	25.75	**2757A19**	4.11
B	1/8″ - ¾″	3½″	3½″	Yes	Yes	Yes	No	No	No	**2707A1**	15.21	**2757A18**	4.15
C	1/8″ -1 1/8″	5″	5″	Yes	♦	Yes	♦	♦	♦	**2706A1**	26.23	**2757A2**	5.04
C	1/4″ -1 5/8″	6″	6″	Yes	Yes	Yes	♦	♦	♦	**2706A4**	40.33	**2757A19**	4.11
D	1/8″ -1 1/8″	5″	5″	Yes	♦	Yes	♦	♦	♦	**2766A12**	34.58	**2757A2**	5.04
E	3/8″ -2 5/8″	11¼″	8″	Yes	Yes	Yes	Yes	Yes	Yes	**2708A2**	63.88	**2757A24**	6.40
E	2″ -4 1/8″	14¾″	11½″	Yes	Yes	Yes	Yes	Yes	Yes	**2708A3**	129.69	**2757A25**	15.03
E	4″ -6 5/8″	17″	13½″	Yes	Yes	Yes	Yes	Yes	Yes	**2708A4**	188.31	**2708A8**	12.40
F	1/4″ -1 5/8″	8½″	6¾″	Yes	Yes	Yes	Yes	Yes	No	**2751A12**	17.51	**27645A12**	7.40
G	1/8″ -1″	7″	5″	Yes	Yes	Yes	Yes	No	No	**2670A3**	28.05	**2757A22**	5.13
G	3/16″-1 1/8″	7½″	6″	Yes	Yes	Yes	Yes	No	No	**2670A1**	32.73	**2757A22**	5.13
G	1/4″ -1 3/8″	7¾″	6¼″	Yes	Yes	Yes	No	Yes	No	**2670A5**	41.51	**2757A34●**	11.70
G	5/8″ -2 1/8″	9½″	7½″	Yes	Yes	Yes	Yes	No	No	**2670A2**	62.90	**2757A22**	5.13

♦ Yes, when used with the heavy duty cutting wheel (sold separately). ● Comes with two wheels.

♦ ***Heavy Duty Cutting Wheel—*** Use with the cutters indicated in the table above to cut the material listed.

2757A2 ..... $5.04

Replacement Cutting Wheels for Tube Cutters

Cutter Brand and Model Nos.		Each
Thin Wheels		
For Soft Copper, Brass, Aluminum, Stainless Steel, Iron, and PVC		
General: All	**27645A12**	$7.40
For Hard and Soft Copper		
General: All	**2757A21**	3.56
For Soft Copper, Brass, and Aluminum		
Imperial: 174F, 274FC, 312FB	**2757A19**	4.11
Ridgid: 10, 15, 20	**2757A22**	5.13
Ridgid: 30, 40, 106, 108, 109, 133, 134, 136, 154, 156	**2757A23**	7.76
Ridgid: 101, 103, 104, 105, 131, 132, 150, 151, 152, 153, 205	**2757A15**	5.57
For Polyethylene, Polypropylene, and PVC		
Ridgid: 131P, 132P, 151P, 152P, 153P	**23855A21**	11.46
Ridgid: 40P, 133P, 134P, 136P, 154P, 156P	**23855A22**	13.99
For Polyethylene, Polypropylene, and ABS		
Reed: TC1Q, TC2Q, T10, T15, T20	**2527A15**	13.19
Reed: TC3Q, TC4Q, TC5Q, TC6Q	**2527A16**	16.11
Thin Wheels (Cont.)		
For PVC Only		
Reed: TC1Q, TC2Q, T10, T15, T20	**2527A18**	$11.58
Reed: TC3Q, TC4Q, TC5Q, TC6Q	**2527A19**	11.94
Heavy Duty Wheels		
For Copper, Brass, Aluminum, Steel, Stainless Steel, and Titanium		
Imperial: 374FC, TC1000, TC1020	**2757A2**	5.04
Imperial: 206FA, 206FB	**2757A24**	6.40
Imperial: 406FA	**2757A25**	15.03
Ridgid: 10, 15, 20	**2757A31**	4.77
Ridgid: 30, 40, 134, 136, 153, 154, 156	**2757A32**	9.09
Ridgid: 35S	**2757A34★**	11.70
Ridgid: 105, 131, 132, 150, 151, 152, 153P, 205	**2757A29**	6.77
For Copper, Brass, Aluminum, and Steel		
Imperial: 127F, 127FA, 127FB, 227F, 227FA, TC1050	**2757A18**	4.15

★ Does not cut titanium. Comes with two wheels.

Metal Tube Cutters for Tight Spots

(H) Ratchet Tube Cutters— Ratchet action permits cutting in cramped areas. Cutters are aluminum-zinc alloy with a high-impact nylon fiberglass handle and a smooth roller. Also cut plastic and PVC tubing; when used with a *heavy duty cutting wheel* (sold separately) cutters can cut thin-wall steel and stainless steel.

(J) Spring-Loaded Tube Cutters— A spring-loaded cutting wheel automatically tightens as you turn these cutters. All have a plastic body, except 27005A31, which is zinc-plated steel. *Optional ratchet handle* provides extra leverage.

	Cutting Cap., OD Min.-Max.	Tool Size	Recommended for Cutting: Soft Copper	Hard Copper	Brass and Aluminum	Complete Tool		Repl. Wheel	
H	1/8″ - 3/8″	4″ Lg.	Yes	Yes	Yes	**8290A41**	$34.06	**8290A51**	$5.40
H	5/16″-1 1/8″	7″ Lg.	Yes	Yes	Yes	**8290A42**	37.77	**8290A53**	5.40
J	1/2″	2″ Dia. × 7/8″ Dp.	No	Yes	No	**27005A22**	22.10	**27005A26**	5.65
J	3/4″	2 3/8″ Dia. × 7/8″ Dp.	No	Yes	No	**27005A23**	24.14	**27005A26**	5.65
J	1″	2 11/16″ Dia. × 1 3/16″ Dp.	No	Yes	No	**27005A31**	32.59	**27005A26**	5.65

Heavy Duty Cutting Wheel for 8290A41 (Style H) ..... **8290A54** $11.00

Heavy Duty Cutting Wheel for 8290A42 (Style H) ..... **8290A55** 11.00

Optional Ratchet Handle for 27005A22 (Style J) ..... **27005A24** 8.90

Optional Ratchet Handle for 27005A23 (Style J) ..... **27005A25** 9.74

Corrugated Stainless Steel Tube Cutter

This cutter has two sets of guide wheels that ride in the corrugations for stability so you get clean, precise cuts in 3/8″ to 1″ OD corrugated stainless steel tubing. Cutter is cast aluminum with a steel cutting wheel. It's 8¾″ long when opened and 7″ long when closed.

Cutter	3241A16	$60.72
Replacement Wheel	2757A29	6.77

Flexible Hose and Tube Cutters

Mini Cutters

With Lanyard

Have a hardened steel blade mounted to a sturdy plastic spring-action frame. For soft rubber and plastic hose and tubing. Cutting capacity is 1/8″ to ¾″ OD. Overall length is 3″.

Cutter with Lanyard	8288A52	Each	$15.77
Cutter without Lanyard	8288A51	Each	$7.00
Repl. Blades (5/Pkg.)	8288A54	Pkg.	$12.40
Repl. Blades (10/Pkg.)	8288A53	Pkg.	$20.00

Snap-Back Safety Cutter

Has a plastic frame and an enclosed, spring-loaded stainless steel blade for safe, clean cuts. For soft rubber and plastic hose and tubing. Maximum cutting cap. is 1″ OD. Overall length is 8″.

Cutter	8337A1	$23.37
Repl. Blade	8337A3	11.63

Bench-Mount Cutter

Has an aluminum frame with four 9/32″ mounting holes (fasteners not included). Blade is hardened steel. For soft rubber and plastic hose and tubing. Cutting capacity is 1/8″ to ¾″ OD. Overall length is 9½″.

Cutter	3676A11	$79.76
Repl. Blade	3676A12	20.64

Plastic Pipe, Hose, and Tube Cutters

Lightweight Pipe, Hose, and Tube Cutters

Cut PVC and polyethylene pipe and tubing, and rubber hose. Cutters are nylon with a black antistick steel blade (unless noted). 3691A55 has a three-position blade.

Cutting Capacity: Plastic Pipe Size	Hose and Tube OD	Lg.	Cutters		Repl. Blade	
1″	1¼″	8 3/16″	3691A39	$17.85	3691A19	$6.04
1¼″	1⅝″	8 9/16″	3691A51	20.03	3691A11	6.62
1¼″	1⅞″	9 9/16″	3691A43★	23.44	3691A23★	7.51
1½″■	2″	10 3/8″	3691A55♣	16.38	3691A56♣	7.13

★ Blade is stainless steel. ■ Cutting capacity is 1″ for PVC pipe.
♣ Blade is black antistick stainless steel.

Ratchet-Action Pipe, Hose, and Tube Cutters

Ratchet action increases leverage. Cut Schedule 40 PVC and polyethylene pipe and soft rubber and plastic hose and tubing. Cutters are cast aluminum with a steel blade.

Cutting Capacity: Plastic Pipe Size	Hose and Tube OD	Lg.	Cutters		Repl. Blade	
¾″	1″	7½″	8336A13	$49.79	8336A14	$22.41
1¼″	1⅝″	8½″	8336A11	57.66	8336A21	26.45
2″	2 7/16″	13″	8336A15	128.64	8336A23	49.09
2⅛″	2½″	17¼″	8336A12	127.78	8336A22	39.54

Pistol-Grip Ratchet-Action Pipe Cutter

The pistol grip lets you more easily and comfortably cut; the ratchet action increases leverage. Cut Schedule 40 CPVC pipe. Cutter is cast aluminum with a stainless steel blade. Cutting capacity is 1⅝″ for plastic pipe. Overall length is 8¼″.

Cutter	24875A75	$64.13
Repl. Blade	24875A77	20.91

Polyethylene (PEX) Tube Cutters

Quickly and easily cut cross-linked polyethylene, or PEX, tubing with one or two twists. Plus, these cutters automatically adjust pressure during cutting to prevent distorting the tube end, so it's easier to attach fittings. Cutters are plastic with a steel cutting blade.

Cutting Cap., Plastic Tube Size	Size, Dia. × Wd.	Cutters	Each	Repl. Blades: Pkg. Qty.	Pkg.
½″	2″ × 1″	3254A3	$12.18	3	3254A6 $9.20
¾″	2¼″ × 1″	3254A4	13.27	3	3254A6 9.20
1″	2½″ × 1″	3254A5	17.64	3	3254A7 10.50

Plastic Pipe and Tube Cutters

Standard *Quick Adjust*

Standard Cutters—Cut PVC, polyethylene, and most plastic pipe and tubing. Cutters have dual rollers to keep tubing aligned, fingertip control for adjusting to tube size, a cast aluminum frame, and a steel cutting wheel. The adjustment screw is enclosed to prevent damage from chips and debris.

Quick-Adjust Cutters—A fast-acting release lever lets you instantly open cutter to maximum size, then just push the handle to quickly slide the cutting wheel to pipe. Extra clearance is built in to keep pipe from hitting the frame. Cutters have dual rollers to keep pipe and tubing in perfect alignment for a precise cut, a cast aluminum frame, and a steel cutting wheel for ABS, polyethylene, and other rigid plastic pipe and tubing. ***Cutting wheels for PVC*** are sold separately.

Cutting Cap., OD Min.-Max.	Tool Length: Open	Closed	Cutters		Repl. Wheel	
Standard						
1/8″ - ¾″	4½″	4½″	8314A11	$36.36	8314A13	$12.60
3/16″-1¼″	5½″	5½″	8314A12	40.91	8314A13	12.60
Quick Adjust						
1/8″ -1 5/16″	7⅜″	6″	2527A11	53.08	2527A15	13.19
¼″ -2⅝″	11″	8″	2527A12	87.04	2527A15	13.19
⅜″ -3½″	14¾″	10⅞″	2527A13	108.40	2527A16	16.11
1⅞″ -4½″	16″	12″	2527A17	125.92	2527A16	16.11
4″ -6⅝″	19″	15″	2527A14	158.72	2527A16	16.11

Cutting Wheels for PVC

Wheel for 2527A11 and 2527A12	2527A18	$11.58
Wheel for 2527A13, 2527A17, and 2527A14	2527A19	11.94

Clay Pipe Cutters

These cutters have ratchet action to let you access clay pipe and cast iron soil pipe in tight spots. They use a cutter chain to score and fracture pipe. Minimum clearance is 1¼″. Include a long-handle ratchet.

Cutting Cap., Pipe OD	O'all Lg.		
1½″-6″	26″	24935A41	$469.83
1½″-8″	26″	24935A42	520.69

Pipe Cutters for Tight Spots

Ratchet Action *Four Wheel*

Ratchet-Action Cutter—Requires only 10° of handle swing to complete a 360° cut; swings a full 360° if desired. Cuts semirigid plastic pipe (such as ABS, PVC, and polyethylene) and Schedule 40 and 80 steel pipe. Also cuts plastic, copper, brass, aluminum, and galvanized steel tubing. Cutter is cast aluminum with a hardened steel cutting wheel.

Four-Wheel Cutters—Require just a 90°-110° handle swing and 4″ clearance around the pipe. They have an iron frame that opens to fit around pipe and four heat-treated steel wheels for cutting steel pipe.

Cutting Cap., OD Min.-Max.	Tool Length: Open	Closed	Cutters		Repl. Wheel	
Ratchet Action						
5/16″- 1¼″	13″	13″	2710A76	$223.75	2710A86	$20.53
Four Wheel						
1″ - 2½″	20″	17″	2683A16	406.09	2680A41	21.27
2″ - 4″	26½″	22″	2683A17	564.17	2680A42	19.37
4″ - 6″	33½″	28¼″	2683A18	742.50	2680A43	20.64
6″ - 8″	38¼″	32″	2683A19	981.74	2680A44	21.46
8″ -12″	40″	34″	2683A2	1,218.68	2680A44	21.46

Pipe Cutters

Economy Single Wheel— Comes with a cutting wheel for iron pipe, stainless steel and copper tubing, thin wall conduit, and PVC pipe.

Ridgid— These heavy duty cutters come with a cutting wheel for steel pipe and have an iron frame for exceptional durability. Use ***single-wheel*** cutters where cutter can make a complete turn. 2679A65 has extra-wide rollers that resist wobbling for straight, clean cuts. ***Four-wheel*** cutters are great when only a half turn is possible. 2679A7 has an extra-short handle for spots where you can't make a half turn.

Cutting Cap., Pipe OD	Tool Length Open	Tool Length Closed	No. of Handles	Ridgid No.		
Economy Single-Wheel						
1/2″-2 5/8″	12 1/2″	9 3/4″	1	—	**27645A11**	$41.79
Replacement Economy Cutting Wheel					**27645A12**	7.40
Ridgid Single-Wheel						
1/8″-1 1/4″	17″	15″	1	1-A	**2679A1**	131.86
1/8″-2″	19″	16 1/2″	1	2-A	**2679A2**	150.59
1/8″-2″	19″	16″	1	202	**2679A65**	178.25
1″ -3″	26″	22″	2	3-S	**2679A4**	263.93
2″ -4″	27″	23″	2	4-S	**2679A3**	391.40
4″ -6″	30″	25″	2	6-S	**2679A5**	573.94
Ridgid Four-Wheel						
3/4″-2″	16 1/2″	14″	1	42-A	**2679A7**	170.21
2 1/2″-4″	29″	23″	2	44-S	**2679A8**	456.00

Glass Cutters

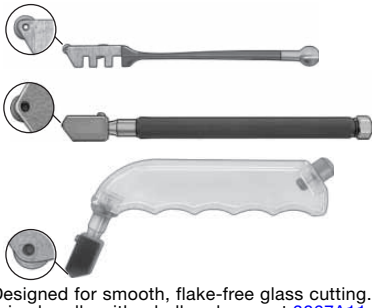

Standard Cutters— Designed for smooth, flake-free glass cutting. Cutters have a die cast zinc handle with a ball end, except 3867A11, which has a straight handle with no ball. Overall length is 5 1/8″. Carbide wheels last up to 10 times longer than steel.

Easy-Cut Cutters— A reservoir in the handle provides automatic oil-feed to keep the cutting wheel blade sharp longer and make cutting easier. Cutting oil sold separately. Cutters have a swivel head with cutting wheel. The *straight handle* is brass and 6 3/4″ long. The *pistol-grip handle* is plastic and 6″ long. *Optional thinner pattern-cutting wheel* is for more intricate work.

For Cutting	Cutting Cap., Material Thick.		
Standard Cutter with Steel Wheel			
Single-/Double-Strength Glass	0.090″-0.125″	**3869A12**	$4.02
Standard Cutters with Carbide Wheel			
Single-/Double-Strength Glass	0.090″-0.125″	**3867A14**	16.32
Single-/Double-Strength Glass	0.125″-0.250″	**3867A16**	16.32
Hard Glass	0.030″-0.090″	**3867A11**	12.00
Easy-Cut Cutter with Carbide Wheel and Straight Handle			
Single-/Double-Strength Glass	0.0625″-0.315″	**24855A13**	25.46
Easy-Cut Cutter with Carbide Wheel and Pistol-Grip Handle			
Single-/Double-Strength Glass	0.0625″-0.315″	**3543A31**	30.45
Accessories for Easy-Cut Cutters			
Replacement Carbide Cutting Wheel		**3543A32**	16.06
Optional Thinner Pattern-Cutting Wheel		**3543A33**	16.06
4-oz. Cutting Oil		**3543A34**	3.28

Glass Pliers

Made of glass-filled nylon, these pliers include two sets of jaw inserts: a set of plastic inserts for breaking large pieces of glass along a scored line and a set of hardened steel inserts for shaping and breaking off small pieces.

O'all Lg.	Jaw Lg.	Jaw Wd.		Each
8″	3/4″	1 1/4″	**5628A71**	$17.83
Replacement Plastic Inserts (Set of 2)			**5628A72**	Set $5.55
Replacement Steel Inserts (Set of 2)			**5628A73**	Set $5.55

Replacement Cutting Wheels for Pipe Cutters

For Cutter Brand and Model Nos.		
For Schedule 5, 10, 40, and 80 Steel Pipe		
Ridgid 1, 1-A, 2, 2-A, 42, 42-A, 201, 202, 300, 360, 364, 535, 820; Reed 2-3, 2-3Q, 2-4	**2680A16**	$6.83
Ridgid 3, 3-S, 4, 4-S, 44, 44-S, 466-C, 466-S, 466-HWS, 468-C, 468-S, 468-HWS, 472-C, 472-S, 472-HWS	**2680A26**	15.88
Ridgid 300, 360, 364, 535, 802, 820; Reed H2 1/2	**2680A67**	13.83
Ridgid 6-S, 208, 209, F367	**2680A33**	18.47
For Stainless Steel Pipe		
Ridgid 1, 1-A, 2, 2-A, 42, 42-A, 201, 202, 300, 360, 364, 535, 820; Reed 2-3, 2-3Q, 2-4	**2680A19**	8.02
Ridgid 3, 3-S, 4, 4-S, 44, 44-S, 466-C, 466-S, 466-HWS, 468-C, 468-S, 468-HWS, 472-C, 472-S, 472-HWS	**2680A29**	15.89
Ridgid 300, 360, 364, 535, 802, 820; Reed H2 1/2	**2680A68**	19.09
For Schedule 5, 10, and 40 Steel and Stainless Steel Pipe		
Ridgid 1, 1-A, 2, 2-A, 42, 42-A, 201, 202, 300, 360, 364, 535, 820; Reed 2-1, 2-1Q, 2-4WG	**2680A13**♣	6.77
Reed H2 1/2	**2680A41**	21.27
Reed H4; Wheeler 95041	**2680A42**	19.37
Reed H6; Wheeler 95061	**2680A43**	20.64
Reed H8, H12; Wheeler 95081, 95121	**2680A44**	21.46
For Cast Iron Pipe		
Ridgid 1, 1-A, 2, 2-A, 42, 42-A, 201, 202, 300, 360, 364, 535, 820	**2680A59**	12.07

♣ Not for stainless steel.

Glass Tube Cutters

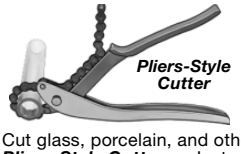

Cut glass, porcelain, and other brittle tubing.

Pliers-Style Cutters— Just wrap cutter chain around the tube, then squeeze the handles while rotating the tube. Cutters have one steel and one aluminum handle, except 3655A13, which has steel handles with plastic grips.

Compact Fingertip Cutter— Apply fingertip pressure while rotating the tube. Cutter is spring loaded and made from die cast zinc with a replaceable steel cutting wheel.

Cutting Capacity, Tube OD	Overall Length	Cutters	Each	Replacement Wheels/Chain	Each
Pliers Style					
1/4″- 3/4″	9″	**3655A13**	$40.56	**3655A23**	$24.07
1/4″-1″	8″	**3655A11**	49.54	**3655A21**	34.26
1/4″-1 1/2″	8″	**3655A12**	61.57	**3655A22**	49.54
Compact Fingertip			**Each**		**Pkg.**
1/4″-1 1/2″	2 3/4″	**36755A21**	$17.39	**36755A22**●	$11.51

●10 per package.

Glass and Ceramic Tile Cutter

Score glass and ceramic tile easily. This pistol-grip cutter has a die cast zinc handle and includes a carbide tile-cutting wheel. Cutting wheels for glass are sold separately. *Carbide wheels* last 10 times longer than steel.

For Cutting	O'all Lg.	Cutting Cap., Material Thick.		
Cutter				
Ceramic Tile	6 1/2″	0.030″-0.090″	**3943A11**	$33.64
Replacement Carbide Wheel			**3943A32**	22.31
Steel Cutting Wheels for Glass				
Single-/Double-Strength Glass		0.090″-0.125″	**3943A21**	4.91
Hard Glass		0.030″-0.090″	**3943A22**	4.76
Carbide Cutting Wheels for Glass				
Single-/Double-Strength Glass		0.090″-0.125″	**3943A31**	22.31
Single-Strength Glass		0.125″-0.250″	**3943A33**	22.31

Ceramic Tile End Cutter

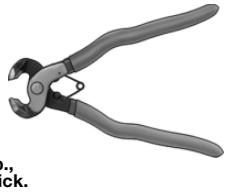

Also known as nippers, this end cutter is great for cutting standard thicknesses of ceramic tile. Cutter has a handle spring for repetitive cutting and handle stops that keep jaws from damaging each other. Made of steel with plastic-coated handles and durable carbide jaw inserts.

Overall Length	Jaw Wd.	Cutting Cap., Material Thick.		
8″	13/16″	5/16″	**3736A12**	$29.81

Breakaway-Blade Circular Gasket Cutter

When the blade gets dull just snap it off for a new, sharp one. This cutter is mounted on a radius bar for precision. Excellent for cutting gasket material, thin plywood, carpet, leather, and cardboard. Also good for scoring wallboard. Cuts 2 13/16″ to 12″ diameter circles. Maximum depth of cut is 3/4″. Includes one blade with eight snap-off points.

Cutter	24555A7	Each	$36.18
Repl. Blades (10/Pkg.)	38505A22	Pkg.	$7.89

Ceramic and Flexible Tile Cutters

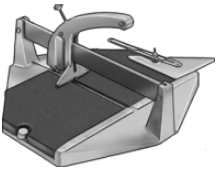

Ceramic Tile Cutter

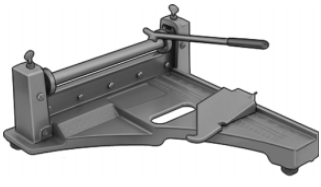

Flexible Tile Cutter

Ceramic Tile Cutters— Score and break tile without repositioning. Base is aluminum alloy with an inch-graduated rule. *10″ cutter* includes a steel six-wheel turret assembly and scores tile up to 1/2″ thick. *16″ cutter* includes a carbide wheel assembly and scores tile up to 1 1/2″ thick.

Flexible Tile Cutter— Cut flexible (resilient) floor tile up to 1/4″ thick. For asphalt and vinyl composition, solid vinyl, linoleum, felt-backed vinyl, and marble-chip epoxy tiles. Cutter has a gauge for making accurate 45° and 90° cuts, a steel blade, an aluminum alloy base with inch/metric graduations, and three 1″ dia. ball casters.

Cutting Length Straight	Cutting Length Diagonal	Lg. × Wd.		
Ceramic Tile Cutters				
10″	6″	15″ × 15″	3826A2	$94.72
16″	10″	16 1/2″ × 21″	3826A4	199.11
Flexible Tile Cutter				
12 1/4″	—	18 1/2″ × 18″	3825A11	271.39

Circular Gasket and Washer Cutters

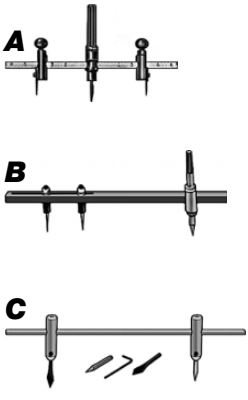

Cut leather, rubber, cork, graphite, and other soft materials. Styles A and B simultaneously cut inside and outside diameters.

(A) Standard Dual-Blade Cutter— Has steel blades, a 5/16″ square shank, and a steel cutter bar with a graduated scale from 5/8″ to 6 1/2″. Use in a bit brace or hand-powered tool only.

(B) Wide-Range Dual-Blade Cutter— Also cuts 2-3 mil thick copper. Has steel blades, a 1/4″ tapered shank, and a steel cutter bar. Use by hand, in a bit brace, or in a drill press.

(C) Wide-Range Single-Blade Cutters— Include two steel knife blades with blade holder, two center points with holder, and a hex wrench. Use by hand only; do not use in a bit brace, hand drill, or drill press.

The *2″-70″ capacity* cutter has dual bars for rigidity.

	Cutting Cap., dia.	Bar Length	Max. Material Thick.	Cutters	Each	Repl. Blades	Pair
A	5/8″- 6 1/2″	6 1/2″	1/4″	36795A11	$27.60	36795A12	$3.68
B	1″ -24″	13 1/4″	1/8″	3077A11	88.14	3077A21	53.66
							Each
C	1″ -22″	12″	1/8″	3857A11	30.11	3857A21	$5.34
C	2″ -70″	36″	1/8″	3857A12	59.01	3857A21	5.34

Circular Gasket Cutters

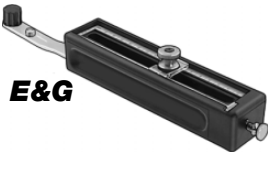

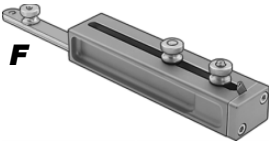

Cut circular gaskets in pliable, nonmetallic materials. Cutters have blade depth adjustment, top-reading inch and metric scales, and a smoothing base (unless noted). The smoothing base prevents thin materials (0.001″) from buckling. Include a cutting board that reseals itself after each cut.

(D) Standard Cutter (1/4″-6″ Cap.)— Includes one general purpose, one heavy duty, and one thin-material blade; one short and one long pivot pin; one pin for cutting discs; and an extra center pin ferrule. Also cuts straight strips up to 3 5/8″ wide. Body is phenolic. Comes in a metal storage case.

Replacement blade set contains four general purpose blades, one heavy duty blade, and one thin-material blade. *Blade assortment* contains two each of general purpose and heavy duty blades, and one blade each for thin and rigid materials.

(E) Wide-Range Cutter (1″-25″ Cap.)— Includes an extension arm, three general purpose and three heavy duty blades, one short and one long pivot pin, one pin for cutting discs, and a pin insertion handle. Body is plastic. Comes in a plastic case.

Replacement blade set contains three general purpose and three heavy duty blades.

(F) Extra-Wide-Range Cutter (1/4″-37″ Cap.)— Includes two extension arms, six general purpose blades, one short and one long pivot pin, a hex key, piercing awl, and cutting knob. Body is brass. Comes in a molded plastic box.

Replacement blade set contains six general purpose blades. *Optional extension arm* can be used for cutting gaskets up to 49″ diameter.

(G) Deluxe Extra-Wide-Range Cutter (1″-37″ Cap.)— Has a dovetail tool for cutting a circular gasket in sections held together by dovetail cutouts. Also includes two extension arms, three general purpose and three heavy duty blades, one pin insertion handle, one short and two long pivot pins, one pin for cutting discs, a bolt-hole locator that can find the center point of any size hole, one hex wrench, and one extra center pin ferrule. Body is plastic. Comes in a plastic case.

Replacement blade set contains three general purpose and three heavy duty blades. *Optional extension arm* can be used to cut gaskets up to 49″ diameter.

Gasket Cutters

	Cutting Cap., dia.	Maximum Material Thick.	Cutting Board Size	Cutters	Each	Repl. Blade Set	Set
D	1/4″- 6″	1/2″	6″ × 6″	3854A11	$116.79	3854A15	$26.18
E	1″ -25″	1/2″	12″ × 12″	3870A8	199.74	3574A14	30.22
F	1/4″-37″	3/4″	18″ × 18″	3870A1 ■	266.89	3870A2	17.02
G	1″ -37″	3/4″	18″ × 18″	3852A1	301.88	3574A14	30.22

■ Does not have metric scale or smoothing base.

Accessories

		Each
Repl. Pivot Pin (1/2″ long tip)		
For F	3870A4	$5.78
Repl. Pivot Pin (3/4″ long tip)		
For F	3870A5	5.78
Pivot Pin Set (3 short/3 long)		**Set**
For D	3854A13	$24.56
For E and G	3574A12	44.52

		Each
Optional Extension Arm		
For F	3870A3	$21.48
For G	3852A2	39.78
6″ × 6″ Cutting Board		
For D-G	3854A12	17.27
18″ × 18″ Cutting Board		
For D-G	3852A3	78.44

		Pkg.
General Purpose Blades— *6/Pkg.*		
For E and G	3854A17	$30.89
Heavy Duty Blades— *6/Pkg.*		
For E and G	3854A18	30.89
For F	3870A7	20.67
Blade Assortment		**Each**
For D	3854A16	$29.29

Crank-Style Circular Gasket Cutters

Cut gaskets with ease, speed, and accuracy. Just punch a hole in your material, mount it on the spindle, set the radius you need, and crank the handle. Cutters are cast iron and steel. Use the optional extension bars (sold separately) for cutting larger diameter gaskets.

Vise-Mount Cutter for Nonmetallic Materials— Easily mounts in a standard bench vise and cuts 2″ to 22″ dia. gaskets. Also cuts 1/32″ to 1/8″ thick rubber and cloth sheet packing.

Heavy Duty Bench-Mount Cutter for Metallic and Nonmetallic Materials— Cuts 3″ to 28″ dia. gaskets. For soft steel, zinc, brass, tin, and galvanized iron up to 0.04″ thick; stainless steel and Monel up to 0.03″ thick; copper up to 0.0625″ thick; lead, fiber, rubber, and PTFE up to 0.125″ thick; and cork up to 0.25″ thick.

Vise-Mount Cutter

Cutter	3830A1	$624.84
Extension Bar for 22″-42″ Dia. Gaskets	3830A2	102.81
Extension Bar for 42″-62″ Dia. Gaskets	3830A3	112.93
Replacement Top Cutting Wheel	3830A67	32.11
Replacement Bottom Cutting Wheel	3830A66	33.60
Replacement Knurled Nut	3830A65	8.50

Vise Mount

Heavy Duty Bench-Mount Cutter

Cutter	3847A1	1,710.72
Extension Bar for 28″-54″ Dia. Gaskets	3847A2	148.29
Extension Bar for 54″-80″ Dia. Gaskets	3847A3	162.42
Repl. Top Cutting Wheel (Metallic Materials)	3847A67	32.50
Repl. Top Cutting Wheel (Nonmetallic Materials)	3847A68	31.12
Replacement Bottom Cutting Wheel	3847A66	95.46
Replacement Knurled Nut	3847A65	8.50

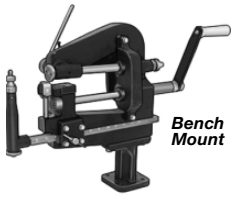

Bench Mount

Guillotine-Style Packing-Seal Cutter

Cut all kinds of packing including Kevlar, copper-sheathed, and wire-core up to 1″ dia. at 15° and 45° angles. This cutter includes a vernier caliper for accurate measurements and a direct-reading diameter/circumference scale (4″ dia. max. shaft size) to eliminate material waste. Overall size is 21″ Lg.×6″ Wd.

Cutter	3662A11	$549.06
Replacement Blade	3662A21	26.76

Steel Drum Head Cutters

These cutters give you a reusable container with a clean edge and lip for using a cover (see page 1712 for covers). Good for occasional head cutting. Drum head cutters operate counterclockwise except for the *ratchet-action head cutter*, which can operate in either direction.

Standard Drum Head Cutter— Turn the knob to clamp cutter onto drum, then push down and pull up on the handle to cut around the head. Made of cast steel with a steel blade. Overall length is 20½″.

Nonsparking Drum Head Cutter— For drums containing flammable materials. Made entirely from aluminum alloys and bronze alloys with a beryllium copper blade. Like the *standard drum head cutter*, simply turn the knob to clamp cutter onto drum, then push down and pull up on handle to cut. Overall length is 19″.

High-Leverage Drum Head Cutter— With longer handles than the models above, you get better leverage and therefore reduced effort while cutting. Cutter has a rear pointed tip and a striking surface for an easier start. Simply squeeze the handles together to clamp to drum, then push both handles down and pull them up to cut. Made of steel with a steel blade. Overall length is 24″.

Ratchet-Action Drum Head Cutter— Clamp to drum and adjust the 18¾″ long ratchet handle for left- or right-handed use. Move handle up and down to open drums with less effort. Made of steel and high-strength aluminum with a steel blade. Size is 18″ Ht.×7″ Wd.×12″ Dp. (without handle).

Standard and Nonsparking

High Leverage

Ratchet Action

	Capacity: Drum Size, gal.	Capacity: Gauge	Cutters		Repl. Blade	
Standard	20-85	Up to 16	3778A12	$66.18	3778A14	$20.11
Nonsparking	30-85	Up to 16	3778A61	353.73	3778A62	122.33
High Leverage	20-85	Up to 16	3756A1	209.46	3756A2	52.76
Ratchet Action	30-55	Up to 16	2457A5	697.74	2457A6	102.59

Electric and Air-Powered Steel Drum Head Cutters

Fast cutting with virtually no manual effort. A self-propelled round blade makes a continuous cut, leaving a reusable container with a burr-free, smooth edge and lip for using a cover (see page 1712 for covers). Cutters have a high-strength aluminum and steel frame, a steel cutting wheel, and nonmarring rollers.

Standard drum head cutter is 24″ Ht.×10″ Wd.×12″ Dp.; ***heavy duty drum head cutters*** are 25″ Ht.×11″ Wd.×17″ Dp.

Electric Drum Head Cutters— Have a quiet-operating, single-phase, totally enclosed motor. They have a 31½″ long coiled power cord with three-prong plug. *Standard* is 1/8 hp, 60 Hz, 115 volts; *heavy duty* is 1/3 hp, 60 Hz, 110 volts.

Air-Powered Drum Head Cutter— Ideal for areas where work surfaces are wet. It has a variable-speed control and operates on 60-100 psi, 25 cfm air pressure. Air inlet is ¼″ NPT male. Hose size is ½″ (hose not included).

Optional Support Stands— Have an overhead roller and chain that holds the cutter at working height and pivots 360°. Stands are steel and 74½″ high. They're portable but can also be bolted to the floor.

Standard

	Capacity: Drum Size, gal.	Capacity: Gauge	Cutters		Replacement Cutting Wheel		Optional Support Stand	
Standard—*For 25-50 drums per week.*								
Electric	30-55	Up to 16	24505A11	$1,166.67	24505A12	$102.86	—	—
Heavy Duty—*For 50 or more drums per week.*								
Electric	30-55	Up to 16	3606A18	2,240.00	3606A55	91.43	3606A45	$1,230.77
Air Powered	30-55	Up to 16	3606A22	2,426.67	3606A55	91.43	3606A47	1,230.77

Heavy Duty Electric with Optional Support Stand

Bolt and Chain Cutters

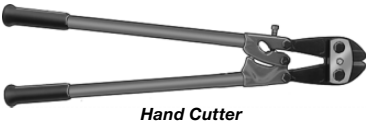

Hand Cutter

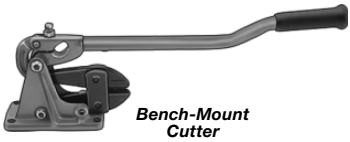

Bench-Mount Cutter

General Purpose, Heavy Duty, and Flush Cut

Flush Cut with Angled Head

Hard Chain and Padlock

Cut metal bolts, chain, rods, screws, rivets, nails, bars, and wire. Cutters have an adjustment screw for aligning cutting edges, forged tool steel jaws, and a lightweight tubular steel handle with rubber grips. The longer the handle, the more leverage the cutter provides. Not for wire rope.

General Purpose—Handle most jobs.

Flush Cut—Blades are beveled on one side for close-to-the-surface cuts.

Flush Cut with Angled Head—Cutting jaw is angled 30° up from the handle to keep work in sight and hands clear of the work surface. Blades are beveled on one side for close-to-the-surface cuts.

Heavy Duty—Have heavy duty extended-nose side plates to reinforce the blades and keep them aligned during cutting.

Hard Chain and Padlock—With a short-nosed jaw, these cutters force the material being cut deeper into the jaw for maximum leverage. The short jaw also allows you to cut one side of a chain link or padlock hasp without hitting the other side.

Bench-mount cutters can be mounted to a workbench for extra stability as well as ease of use for repeated cuts. Base is 3″×6″ with four 3/8″ dia. mounting holes (fasteners not included).

Replacement cutter heads include lockplate, jaws, and bolts.

O'all Lg.	Cutter Type	Cutting Capacity: Soft Steel★	Medium Steel●	Hard Steel♣	Rebar♣	Hard Chain♣◤	Cutters	Each	Repl. Cutter Heads	Each	Replacement Jaws	Pair
Hand Cutters												
14″	General Purpose	5/16″	5/16″	3/16″	3/16″	No	3771A11	$83.25	3771A31	$56.36	3771A22	$48.96
14″	Flush Cut	5/16″	1/4″	No	No	No	3772A11	95.64	3772A31	61.62	—	—
14″	Flush Cut with Angled Head	5/16″	1/4″	No	No	No	3770A1	156.19	3770A4	94.27	—	—
18″	General Purpose	3/8″	3/8″	1/4″	1/4″	No	3771A12	88.62	3771A32	62.18	3771A23	51.24
18″	Flush Cut	3/8″	5/16″	No	No	No	3772A12	105.34	3772A32	65.84	—	—
24″	General Purpose	7/16″	7/16″	5/16″	5/16″	No	3771A13	99.04	3771A33	73.20	3771A24	54.64
24″	Flush Cut	7/16″	3/8″	No	No	No	3772A13	112.57	3772A33	76.38	—	—
24″	Flush Cut with Angled Head	7/16″	3/8″	No	No	No	3770A2	184.02	3770A5	103.93	—	—
24″	Heavy Duty	7/16″	7/16″	5/16″	5/16″	5/16″	3757A11	158.81	3757A14	99.79	3771A24	54.64
24″	Hard Chain and Padlock	5/16″	5/16″	5/16″	5/16″	5/16″	3759A1	149.96	3759A4	79.54	—	—
30″	General Purpose	1/2″	1/2″	3/8″	3/8″	No	3771A14	121.75	3771A34	93.29	3771A25	65.38
30″	Heavy Duty	1/2″	1/2″	3/8″	3/8″	3/8″	3757A12	173.84	3757A15	110.57	3771A25	65.38
36″	General Purpose	9/16″	9/16″	7/16″	7/16″	No	3771A15	146.05	3771A35	99.16	3771A26	83.27
36″	Heavy Duty	9/16″	9/16″	7/16″	7/16″	7/16″	3757A13	219.24	3757A16	133.66	3771A26	83.27
36″	Hard Chain and Padlock	7/16″	7/16″	7/16″	7/16″	7/16″	3759A2	239.90	3759A5	149.34	—	—
42″	General Purpose	11/16″	11/16″	1/2″	1/2″	No	3757A1	185.76	3757A5	112.62	3757A21	93.28
42″	Heavy Duty	11/16″	11/16″	1/2″	1/2″	1/2″	3757A4	260.32	3757A8	160.66	3757A21	93.28
42″	Hard Chain and Padlock	1/2″	1/2″	1/2″	1/2″	1/2″	3759A3	295.24	3759A6	174.95	—	—
Bench-Mount Cutters												
21″	General Purpose	3/8″	5/16″	1/4″	1/4″	No	3785A8	266.02	3771A33	73.20	3771A24	54.64
21″	Flush Cut	3/8″	5/16″	No	No	No	3785A9	273.51	3772A33	76.38	—	—
21″	Hard Chain and Padlock	No	1/4″	1/4″	1/4″	1/4″	3785A7	276.39	3759A4	79.54	—	—

★ Rockwell C15/Brinell 200. ● Rockwell C31/Brinell 300. ♣ Rockwell C48/Brinell 455. ◤ Up to Grade 70.

Compact Bolt and Wire Cutters

General Purpose

Heavy Duty

Flush Cut with Angled Head

End Cutter

Cutting through bolt and wire is a snap with these compact cutters. Their small design lets you make one-handed cuts, takes up less space, and makes them more portable. Cutters have spring-action handles with a plastic grip, except 7119A33, which has a pliers-style handle (without spring return). Jaws are riveted onto the handles and are not replaceable. Overall length is 8″. Not for wire rope.

Cutter Type	Jaw Material	Cutting Capacity: Soft Steel★	Medium Steel●	Hard Steel♣		
General Purpose	Steel	3/16″	No	No	7119A11	$16.74
General Purpose	Stainless Steel	3/16″	1/16″	No	4969A41	32.51
General Purpose	Steel	3/16″	1/16″	No	7119A12	22.80
Heavy Duty	Steel	1/4″	13/64″	9/64″	7119A33	51.38
Flush Cut with Angled Head	Steel	1/8″	No	No	7119A13	21.40
End Cutter	Steel	1/8″	1/16″	No	7119A14	25.72

★ Rockwell C15/Brinell 200. ● Rockwell C31/Brinell 300. ♣ Rockwell C48/Brinell 455.

Air-Powered Bolt and Chain Cutters

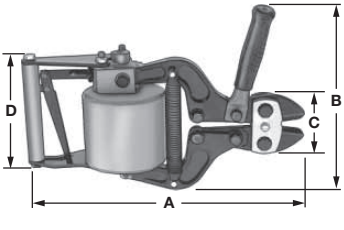

Easily slice through bolts, chain, bars, hard wire, pins, and rivets with these hand-held air-powered cutters. Heads are made of forged hardened steel and precision ground to produce accurate cuts.

Air inlets are 3/8″ NPT female. Required hose size is 3/8″ (hose not included).

Light duty cutter requires 80-120 psi. *Heavy duty* cutter requires 90-130 psi.

	(A)	(B)	(C)	(D)	Cutting Capacity: Soft and Medium Steel♠	Hard Steel■	Rebar■	Hard Chain■◤	Cutters		Replacement Cutter Head	
Light Duty	15″	7 1/4″	3 1/8″	6 3/8″	3/8″	5/16″	5/16″	5/16″	3666A11	$1,240.30	3666A12	$83.72
Heavy Duty	17 1/2″	10″	3 3/4″	6 3/8″	1/2″	3/8″	3/8″	3/8″	3666A22	1,575.12	3666A31	90.17

♠ Rockwell C30/Brinell 285. ■ Rockwell C40/Brinell 375. ◤ Up to grade 70.

Bench-Mount Rod Cutters

An alternative to hacksaws and bandsaws, these cutters use leverage to cut rods cleanly in a single stroke. They have an adjustable-length gauge for cutting duplicate lengths. Cut five sizes of threaded and unthreaded mild steel, brass, and aluminum rods and bars. Blades are steel. One blade mounts in the base, the other to the movable jaw.

Cutting Capacity, Mild Steel Rod	Size, Lg. × Wd. × Ht.	Handle Lg.		
1/8″, 3/16″, 1/4″, 5/16″, 3/8″	7 1/2″ × 3 1/2″ × 5 1/2″	16″	3781A1	$362.84
3/8″, 1/2″, 5/8″, 3/4″, 7/8″	11 1/2″ × 5 1/4″ × 8 1/2″	54″	3781A3	732.82

Threaded Rod Cutter

Turn cutter's blade with a wrench to cut #10 to 3/8″ dia. bolts and easily shear bolts up to Grade 5 while leaving their threads intact. Made of heat-treated alloy steel with a black-oxide finish. Overall length is 16″.

7792A21 ..... $67.24

Hard-Wire Cutters

Compact—Designed to cut music wire and other hardened solid wire. They have soft cushion-grip handles.

Heavy Duty—These powerful cutters make diagonal cuts with a nipping action to cut extra-hard wire with ease. They have PVC handle grips.

Cutter Type	Cutting Cap., Music Wire	Overall Length		
Compact	0.040″	5 1/2″	59445A45	$21.00
Compact	0.060″	5 1/2″	59445A44	36.11
Heavy Duty	0.079″	8″	27485A93	47.96
Heavy Duty	0.118″	10″	27485A91	68.58

Hard-Wire End Cutters

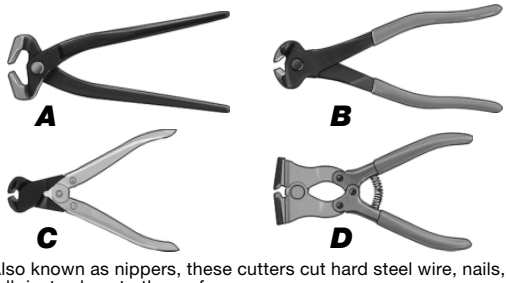

Also known as nippers, these cutters cut hard steel wire, nails, and small rivets close to the surface.

(A) Standard General Purpose—Also great for pulling nails.

(B) Premium General Purpose—Ideal for cutting copper, aluminum, and steel wire. Cutters have plastic grips and aligned, hardened cutting edges with a rust-resistant coating for clean, even cuts.

(C) High Leverage—Cutter has spring-return handles and uses leverage to make cutting heavy stock easier.

(D) Adjustable Jaw—Jaws adjust up to a 1/4″ opening and can be removed and ground. Cutters have a spring-action handle with vinyl grip.

	Overall Length	Jaw Wd.	Cutting Cap., Hard Steel Wire		
A	8″	51/64″	0.080″	3734A2	$17.03
A	10″	25/32″	0.080″	3734A3	17.62
A	14″	7/8″	0.091″	3734A4	21.38
B	6 1/4″	13/16″	0.091″	3738A1	19.43
B	7 1/2″	13/16″	0.091″	3738A2	19.19
B	8″	13/16″	0.091″	3738A3	21.94
B	10″	7/8″	0.091″	3738A5	25.71
C	6 1/2″	1″	0.078″	3737A11	63.52
D	5 1/2″	21/32″	0.050″	3730A5	232.28
D	7″	13/16″	0.080″	3730A6	282.91

Nut Splitters

Remove frozen, rusted, and stubborn nuts.

Manual—Blade swivels 360° to cut in any position (except on compact splitter, which has a nonswiveling, reversible blade). ***Compact*** and ***standard*** split one side of the nut at a time. Use a 3/4″ hand wrench to turn the adjustment screw. ***Heavy duty*** splits both sides of the nut at once. Use a 3/4″ impact or hand wrench to turn the adjustment screw.

Hydraulic—For all grades of nuts up to Rockwell C44. Splitters have an angled head to get in close for easy splitting, a heavy duty chisel that can be sharpened, and a single-acting 10,000 psi cylinder to connect to a 10,000 psi-rated hand, air, or electric pump. Include a chisel, a wrench, and a plastic case.

Manual

	Nut Size Range▲	Overall Length	Splitters		Repl. Blade	
Compact	Up to 3/4″	5 1/2″	37425A65	$25.15	—	—
Standard	Up to 3/4″	7″	3843A15	55.36	3843A42	$12.84
Heavy Duty	Up to 3/4″	11 3/4″	3742A11	135.21	3742A13	14.72

▲Measured across flats.

Hydraulic

Nut Size Range▲	Bolt Dia. Range	Overall Length		
1/2″ to 3/4″	5/16″ to 1/2″	7 7/8″	36555A21	$674.29
3/4″ to 15/16″	1/2″ to 5/8″	8 15/16″	36555A22	1,902.67
15/16″ to 1 1/8″	5/8″ to 7/8″	10 1/4″	36555A23	2,396.41
1 1/8″ to 1 9/16″	7/8″ to 1 1/8″	11 1/4″	36555A24	3,046.42

▲Measured across flats.

Hydraulic Hose—Hose is 6-ft. long and has a 3/8″ NPTF male connection. Includes a male coupler. Rated at 10,000 psi.

2916T5 ..... $107.40

Two-Speed Hydraulic Hand Pump—Rated at 200/10,000 psi. Outlet connection is 3/8″ NPTF female. Oil capacity is 45 cu. in.

2992T17 ..... $354.01

Large-Diameter Wire Rope Cutters

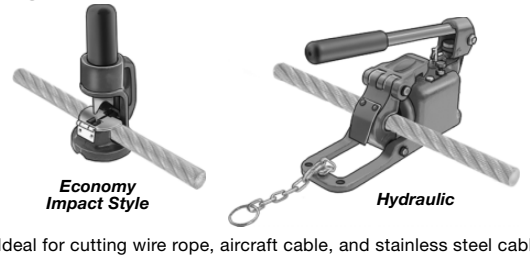

Ideal for cutting wire rope, aircraft cable, and stainless steel cable.

Economy Impact Style—With a quick hammer blow, these cutters cut without squeezing or flattening wire. Your rope is instantly ready for splicing or socketing. Dies and blades are made of steel. For best results, use with wire rope cutting bands (see 3501T on page 1421).

Also Available: Replacement parts. Please ask for 38535A92 and specify the McMaster-Carr part number of the cutter.

Hydraulic—These manually operated cutters make a clean cut with just a few pumps of the handle. They don't require any outside power and are light enough to carry to the job. Cutters and blades are steel.

Also Available: Repair kit. Please ask for 39525A81 and specify the McMaster-Carr part number of the cutter.

Economy Impact Style

Cutting Capacity	Base Dia.	O'all Ht.	Cutters		Replacement Blade with Pin	
3/4″	3 1/2″	6″	38535A71	$94.92	38535A81	$23.50
1 1/16″	6 1/4″	7″	38535A72	156.02	38535A82	23.50
1 1/2″	7 3/4″	9″	38535A73	264.52	38535A83	30.17

Hydraulic

Cutting Capacity	Overall Size, Lg. × Wd. × Ht.	Cutters	Each	Repl. Blades	Set
3/4″	12″ × 3 5/8″ × 6″	39525A71	$912.68	39525A74	$76.10
1 1/8″	14″ × 4 1/8″ × 7″	39525A72	1,064.79	39525A75	88.03
1 3/4″	18 1/2″ × 5″ × 8″	39525A73	1,597.18	39525A76	120.28

Bolt and Wire Rope Cutter

Get one tool to cut bolts and wire rope. Cutter has forged steel jaws and tubular steel handles with rubber cushion grips.

CUTTING CAPACITY: Steel Rods Soft and Med.-Hard●	Steel Rods Hard♣	Steel Wire Rope	Overall Length		
7/16″	5/16″	1/4″	24″	4943A14	$165.48
Replacement Cutter Head				4943A21	91.79

●Up to Rockwell C31/Brinell 300. ♣Up to Rockwell C48/Brinell 455.

Hydraulic Wire Rope, Bolt, and Power Cable Cutters

Hydraulic operation makes these cutters quick and easy to use on a wide variety of materials and they leave minimal distortion. Cutters are steel with rubber-cushioned grips and can even be used under water. Blades can be sharpened and replaced.

3777A11 has insulated handles rated to 20,000 volts.

Cutting Capacity: Wire Rope	Soft Steel♠	ACSR ■	Guy Wire	Power Cable	Rebar	Overall Length	Cutters		Replacement Blade	
5/8″	5/8″	5/8″	1/2″	5/8″	1/2″	15″	3777A19	$1,085.22	3777A15	$133.98
3/4″	11/16″	3/4″	1/2″	3/4″	1/2″	15″	3777A11	1,231.30	3777A15	133.98
1″	1 1/4″	2″	3/4″	2″	3/4″	24″	3777A31	2,126.39	3777A32	362.75
1 1/4″	1 1/4″	1 1/4″	7/8″	1 1/4″	7/8″	27″	3777A12	2,053.53	3777A16	209.20

♠Up to Rockwell C30/Brinell 285. ■ACSR = steel-reinforced aluminum cable.

Wire Rope Cutters

Cut steel and stainless steel wire rope.

Style A

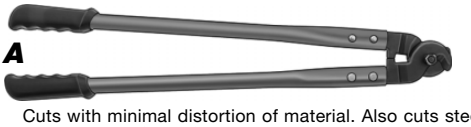

Cuts with minimal distortion of material. Also cuts steel-reinforced aluminum cable (ACSR). Cutters are steel with rubber cushion grips.

	Cutting Capacity	Overall length		
A	1/2″	28″	4949A33	$82.12

Styles B&C

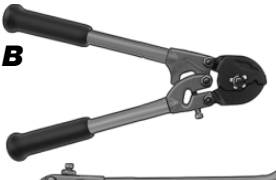

Cut coarse to fine strands with minimal distortion. Cutters are steel with rubber cushion grips. *Style C* has a 3″×6″ base with four 0.4″ dia. mounting holes.

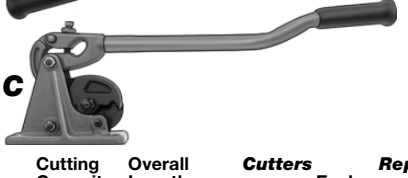

	Cutting Capacity	Overall Length	Cutters	Each	Repl. Cutter Heads★	Each
B	1/4″	13 1/2″	39025A71	$139.14	39025A75	$81.12
B	3/8″	22″	39025A72	166.04	39025A21	108.18
B	5/8″	34″	39025A73	243.68	39025A77	159.02
B	3/4″	39 1/2″	39025A74	275.45	39025A78	170.82
C	3/8″	21″	39025A3	288.79	39025A21	108.18

★Includes blades, nut, and bolt.

Styles D&E

These cutters prevent crushed and frayed cable ends. They also cut steel-reinforced aluminum cable (ASCR) and high tensile strength wire.

Style D have a smaller grip that's ideal for constant use. They're tool steel with plastic grips. 39615A81 has pointed, extra-long-life blades for easier gripping and cutting of cable and individual wire strands.

Style E have tool steel blades and lightweight forged aluminum handles with plastic grips.

	Cutting Capacity	Overall Length	Cutters	Each	Repl. Blades	Set
D	1/8″	8″	39615A81	$75.00		
D	3/16″	8″	39615A71	62.91		
E	1/4″	13″	39615A85	170.35	39615A88	$140.16
E	3/8″	19″	39615A72	263.90	39615A76	198.97
E	5/8″	23″	39615A73	405.15	39615A77	331.14

No-Fray Rope and Cord Cutter

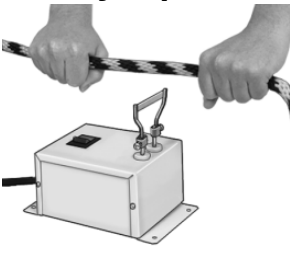

A heated blade fuses the ends of material to prevent fraying. Cuts synthetic rope and cord including nylon, Dacron, and polypropylene. Blade is 2 5/16″ long and heats to 1200°F in 30 seconds. Cuts through 1″ rope in just 10 seconds. Base has four 3/16″ dia. holes for mounting. Operates on 110 VAC. Has a 5 1/2-ft. long power cord with three-prong plug. Overall size is 6 1/4″ Lg.×4″ Wd.×5 3/4″ Ht.

Cutter	2834A27	$149.98
Replacement Blade	2834A42	21.73

General Purpose Wire Cutters

The cutting edge is centered on the jaws, so these pliers can cut through soft, hard, and thick wire more easily than diagonal-cutting pliers. Cutters are steel with plastic grips.

Cutting Capacity, Dia. (AWG)	Overall Length	Jaw Length		
0.197″ (5)	9 27/32″	3/4″	5453A91	$49.89

Cordless Power Cable Cutter

Cut copper and aluminum power cable with the push of a button. Blades automatically open when the cut is complete. Head rotates 350° so you can cut in tight spots and inside panel boxes. Cuts up to 500 MCM copper and aluminum power cable.

Cutter has hardened steel jaws and an ABS plastic handle. Operates on one rechargeable 18-volt lithium ion battery; makes about 100 cuts per battery charge. Includes two batteries, a battery charger, and a carrying case. Overall length is 16″.

2920A13 ..... $1,477.03

Self-Healing Die-Cutting Boards

Made from pressed polypropylene, these boards endure pressure from dies and blades. After the pressure is released, they heal themselves to seal surface cuts. Durometer is 78D. Color is white.

Size		
18″×35″×1″ (450 mm× 900 mm×25 mm)	2967A15	$102.62
20″×39″×1″ (500 mm×1,000 mm×25 mm)	2967A17	135.23

Power and Communication Cable Cutters

A

B

C

D

E

F

G

Cut copper and aluminum power and communication cable with minimal distortion of strands. Jaws are hardened steel.

(A-C) Standard Cutters— Traditional two-handed cutters.

(D&E) Ratchet Cutters— Have spring-return jaws for easy, continuous cutting. *Style D* lets you make clean cuts with just one hand. *Style E* is a two-handed cutter with a ratchet that increases cutting pressure as you open and close the handles.

(F&G) Insulated Cutters— Handles are coated with a synthetic insulation that can't be removed and are rated to 1,000 volts. Cutters meet IEC standards. One-handed operation. *Style F* has a spring-return jaw and pliers-style handles. *Style G* has ratchet action, making it ideal for overhead, underground, and close-quarters cuts.

	Cutting Capacity							
	Communication Cable	Power Cable: Copper	Power Cable: Aluminum	Lg.	Handles/Grips	Cutters		Replacement Cutting Jaw	
Standard Cutters									
A	3/4″	11/16″	11/16″	16 3/4″	Solid Steel/Vinyl	**70745A65**	$74.04	—	—
B	1 3/8″	13/16″	1″	25 1/2″	Fiberglass/Rubber	**7074A11**	129.39	**7074A12**	$93.95
B	1 3/4″	1″	1 1/4″	32″	Fiberglass/Rubber	**7074A13**	169.91	**7074A14**	126.70
C	2 1/4″	2 1/4″	2 1/4″	37″	Tubular Steel/Rubber	**3671A1**	184.20	—	—
Ratchet Cutters									
D	1 1/8″	23/32″	7/8″	10 1/4″	Steel/Plastic	**3600A12**	234.48	**3600A23**✓	71.62
								3600A24▲	73.64
D	1 3/16″	1″	1 1/8″	10 1/2″	Steel/Plastic	**3600A65**	288.66	—	—
E	2″	2″	2″	27 1/2″	Tubular Steel/Rubber	**3670A1**	473.41	**3670A2**	160.18
Insulated Cutters									
F	0.020″	11/32″ (2/0 AWG)	15/32″ (4/0 AWG)	8″	Steel/PVC	**4994A41**	80.10	—	—
G	1 1/4″	7/8″	7/8″	10″	Steel/Plastic	**4935A24**	392.97	—	—

✓ Moving jaw for 3600A12. Includes assembly hardware. ▲ Fixed jaw for 3600A12. Includes assembly hardware.

Small-Diameter Power and Communication Cable Cutters

Perfect for cutting small-diameter electrical cable, these cutters also cut 0.020″ dia. telephone wire. One-handed operation.

Style H cuts stranded wire. Cutter is steel with plastic-coated handles.

Style J has spring-return jaws, plastic handles, and stainless steel blades.

Style K is steel with plastic-coated handles.

Style L are premium cutters with razor-sharp edges for clean, easy cuts. Made of steel with plastic handles. 3563A76 has insulated handles rated to 1,000 volts.

H

J

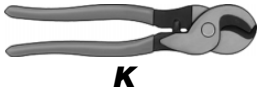
K

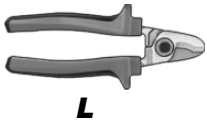
L

	Cutting Capacity: Copper	Aluminum	Lg.		
H	3/32″ (12 AWG)	3/32″ (12 AWG)	5 3/8″	**2893A62**	$13.27
J	25/64″ (2/0 AWG)	25/64″ (2/0 AWG)	6 1/2″	**3563A73**	28.27
K	11/32″ (2/0 AWG)	1/2″ (4/0 AWG)	9 1/2″	**3563A71**	19.41
L	9/16″ (5/0 AWG)	9/16″ (5/0 AWG)	6 1/2″	**3563A74**	68.95
L	9/16″ (5/0 AWG)	9/16″ (5/0 AWG)	6 1/2″	**3563A76**	68.95

BX-Cable and Flexible-Conduit Cutter

Easily cut armored cable such as BX, MC, and HCF cable and flexible metal conduit. Made from forged steel, cutter has plastic-dipped hand grips and a notch for stripping insulated wire. Cutting capacity is 1/2″. Overall length is 7 5/8″. One-handed operation.

3724A2 ..... $37.61

Coaxial and Fiber-Optic Cable Cutter

Get clean, distortion-free cuts with one-handed operation. Also cuts carbon fiber, Kevlar, and fiberglass. Cuts 3/4″ dia. cable. Overall length is 8 1/4″. Made from forged steel with plastic-coated handles.

4938A31 ..... $20.43

Rotary BX-Cable and Flexible-Conduit Strippers

Strip armored cable such as BX, MC, and HCF cable and flexible metal conduit. Turn the crank to make a slit in the cable casing, then just twist the casing to remove it without damaging the wires inside or having to debur the ends. Strippers can cut at the end or the middle of a cable roll. Made from die cast zinc.

	Capacity					
	BX, MC, HCF Cable	Flexible Conduit	O'all Lg.	Strippers		Repl. Blade	
	14/2 to 8/4 AWG	3/8″	7 1/2″	**3760A11**	$34.19	**3760A12**	$4.91
	2/4 to 4/2 AWG	1/2″ to 3/4″	7 1/2″	**3760A21**	37.73	**3760A12**	4.91

Strap Cutters and Breakers

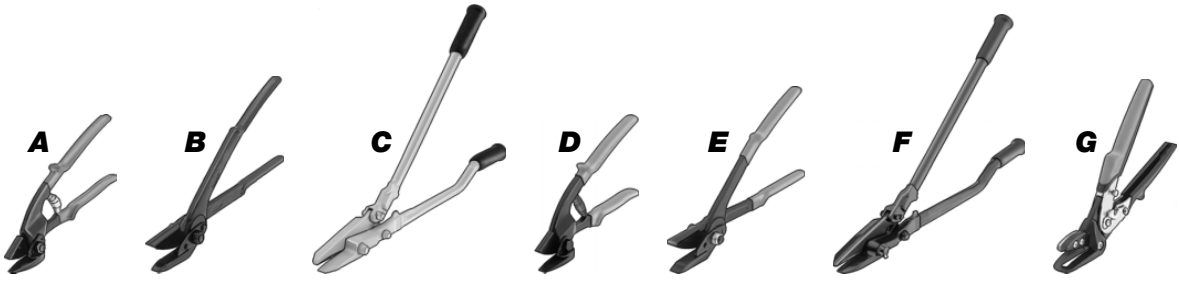

Strap Cutter

Strap Breaker

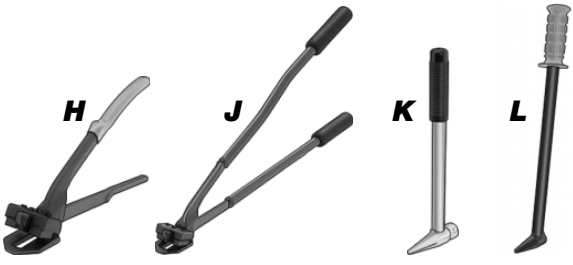

Break or cut steel and plastic strapping with ease.

(A-J) Strap Cutters

Economy— Made from forged steel.

Style A has spring-action jaws that open automatically. One-handed operation.

Style B has long handles for better leverage. One-handed operation.

Style C has an offset lower handle for cutting heavy steel strapping easily and preventing bruised knuckles. Two-handed operation.

Standard— Have hardened steel cutting heads and plastic handle grips.

Style D has spring-action jaws that open automatically. It also cuts tie wire. One-handed operation.

Style E has long handles for extra leverage when cutting wide straps. One-handed operation.

Style F makes light work of cutting heavy steel strapping. Offset lower handle prevents bruised knuckles. Two-handed operation.

Safety— Reduce the chance of worker injury from sharp flying strap ends. Cutters hold both ends of properly tightened strapping until tension is released. They're high-grade alloy steel with a plastic-grip top handle; *Styles G* and *J* also have a plastic-grip bottom handle.

Style G uses leverage for additional power. One-handed operation.

Styles H and *J* have rubber compression pads for greater control of tight straps. *Style H* is one-handed operation; *Style J* is two-handed.

(K&L) Strap Breakers

Just slip the strapping into the slot, rotate the handle, and snap the strap. Made from steel with a durable heat-treated cutting head and a vinyl handle grip.

	Cutting Capacity Thick.	Wd.	Overall Length		
Strap Cutters					
Economy					
A	0.023″	3/4″	9″	2508A11	$42.97
B	0.031″	1 1/4″	12 1/2″	35785A65	41.42
C	0.050″	2″	24 1/2″	3544A1	127.64
Standard					
D	0.035″	3/4″	9″	3727A11	91.72
E	0.050″	1 1/4″	12″	3675A11	99.47
F	0.050″	2″	24″	3909A11	218.70
Safety					
G	0.039″	1 1/4″	10 1/4″	2516A21	80.47
H	0.035″	1 1/4″	12″	35775A11	105.18
J	0.050″	1 1/4″	24 1/2″	35775A12	164.04
Strap Breakers					
K	0.040″	2″	12″	2025T14	32.34
L	0.050″	2″	18″	1920T86	46.30

Sheet Metal Snips

Standard

Standard with Replaceable Blade

Heavy Duty with Offset Handle

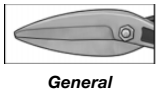
General

Notch/Nibble

Tight Spot

Standard Snips— Made of steel with vinyl grips. Meet Fed. Spec. GGG-S-291F and ANSI/ASME Industrial Standard B107.16M.

Standard Snips with Replaceable Blade— Blades are steel and easily replaceable. Handle is lightweight cast magnesium. *Replacement blade kit* includes 2 blades, 4 screws, and 4 nuts.

Heavy Duty Snips— Blades are heat treated then sharpened for increased performance and durability. Made of steel with vinyl grips.

Heavy Duty Snips with Offset Handle— Blades are heat treated then sharpened for increased performance and durability. Snips have an offset handle to keep your hand away from the material being cut. Made of steel with a plain handle.

Cutting Heads: *General* is for straight cuts and wide left and right curves. *Notch/Nibble* (also known as bulldog) has long handles and short blades, making it perfect for cutting heavy stock. For straight cuts as well as left and right curves. *Tight Spot* (also known as duckbill) has a tapered blade that cuts straight, tight left and right curves, and circles.

Cutting Head	O'all Lg.	Cut Lg.	Cutting Capacity Steel	Stain. Steel		
Standard						
General	8″	1 3/4″	24 ga.	28 ga.	3902A1	$13.85
General	10″	2 1/2″	22 ga.	26 ga.	3902A4	17.22
General	12″	3″	20 ga.	22 ga.	3902A6	21.00
General	14″	3 7/8″	18 ga.	22 ga.	3902A8	41.67
Notch/Nibble	16″	2 1/2″	16 ga.	18 ga.	3902A9	39.96
Tight Spot	7″	1 3/4″	26 ga.	28 ga.	3896A1	14.80
Tight Spot	10″	2 1/2″	24 ga.	26 ga.	3896A3	18.37
Tight Spot	12″	3″	22 ga.	24 ga.	3896A2	21.63
Standard with Replaceable Blade						
General	13″	3 1/2″	22 ga.	26 ga.	3902A2	32.63
Replacement Blade Kit for 3902A2					3902A3	8.37
Heavy Duty						
General	14 1/2″	4″	18 ga.	20 ga.	3895A4	47.05
Notch/Nibble	16 1/2″	2 1/2″	16 ga.	18 ga.	3905A11	49.55
Heavy Duty with Offset Handle						
General	14 1/4″	4″	18 ga.	20 ga.	38805A74	52.73

Light Gauge Sheet Metal Snips

Designed for cutting light gauge sheet steel up to 24 ga. Snips are double-plated Type 420 stainless steel with a polished finish. Overall length is 7 1/8″; cut length is 1 7/16″.

3729A65 ..... $16.68

High-Leverage Sheet Metal Snips

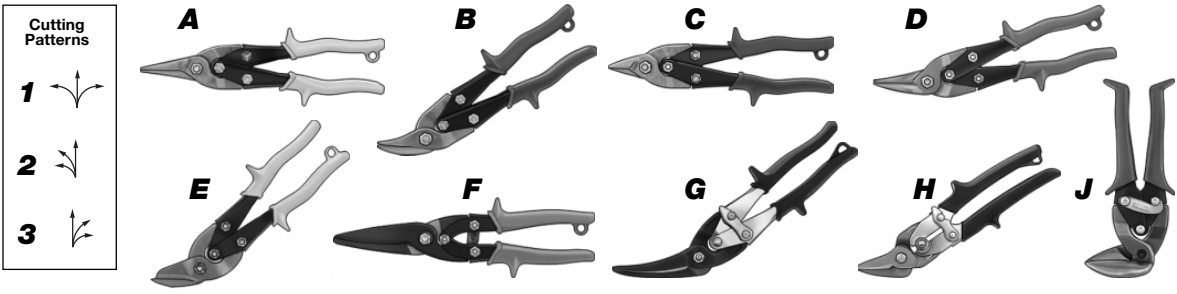

Also known as aviation snips. High leverage gives these snips substantially increased cutting pressure while self-opening jaws allow fast, smooth cutting. They cut angles, complex patterns, and circles with half the effort required with conventional snips. Snips have a locking latch and steel handles with vinyl-cushion grips (unless otherwise stated). Blades are steel. All except Styles G and H have blades that cannot be sharpened.

A Standard Snips—Blades are serrated to prevent slipping. Cut aluminum, tin, and steel up to 18 ga.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
1	Yellow	9 3/4"	1 1/2"	3585A12	$14.78
2	Red	9 3/4"	1 3/8"	3585A13	14.78
3	Green	9 3/4"	1 3/8"	3585A14	14.78

B Standard Snips with Offset Handle—Keep your hand away from the material being cut. Have serrated blades to prevent slipping. Cut aluminum, tin, and steel up to 18 ga. 3558A13 has polypropylene grips.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
1	Yellow	9 5/8"	1 1/2"	3558A13	$18.58
2	Red	9 1/4"	1 1/4"	3558A11	20.33
3	Green	9 1/4"	1 1/4"	3558A12	20.33

C Notch/Nibble Snips—Also known as bulldog snips. Trim and notch extra-heavy steel to 16 ga. Blades are serrated.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
1	Red	9 1/4"	7/8"	3832A11	$21.28

D Hard-Edge Snips—Blades are serrated and hardened to cut stainless steel up to 18 ga.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
2	Blue	9 3/4"	1 3/8"	3673A1	$25.52
3	Blue	9 3/4"	1 3/8"	3673A2	25.52

E Double-Cut Snips—Snips make two cuts, creating a 13/64" wide strip that peels back leaving little distortion. For duct, sheet metal, and steel up to 20 ga. They have offset handles to keep your hand away from the material being cut. Blade clearance can be adjusted for clean, square cuts.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
1	Gray	9 1/4"	9/16"	3908A11	$27.38

F Long-Cut Snips—A 3" cut length makes these snips great for cutting aluminum, vinyl siding, plastic, screening, and steel up to 20 ga. Serrated blades prevent slipping. Blades are hardened steel.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
1	Blue	11 1/2"	3"	7102A15	$19.54

G Long-Cut Snips with Offset Handle—Have a curved jaw for better cutting ability and an offset handle to keep your hand away from the material being cut. Cut steel up to 18 ga. and stainless steel up to 22 ga.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
2	Black	11"	2 3/8"	6770A13	$29.44

H Sharpenable High-Speed Steel Snips—Stay sharp significantly longer than standard steel snips and can be sharpened. Blade edge has a high-speed steel surface for cutting steel up to 16 ga., stainless steel up to 18 ga., rusty steel, and other hard-to-cut materials. Snips have offset handles to keep hand away from material being cut.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
2	Black	10 1/4"	1 5/16"	3545A41	$91.31
3	Black	10 1/4"	1 5/16"	3545A42	91.31

J Upright Snips—Blades are 90° from the handle to keep your hand away from the blade and allow for easier cutting of curves and in tight areas. Snips cut up to 28-ga. stainless steel. Grips are polypropylene.

Cutting Pattern (See Chart)	Handle Color	O'all Lg.	Cut Lg.		
2	Red	8 3/4"	1 1/4"	4249A21	$19.85
3	Green	8 3/4"	1 1/4"	4249A22	19.85

Leather Belt Sheath

For all snips except Style J.

3585A21 ..... $3.94

Burr-Free Edge Sheet Metal Cutter

High leverage and quick action let you make clean burr-free cuts without damaging painted or plated materials. Plus, a safety guard prevents cut-off waste from flying up at operator. Cut a 0.110" wide strip. Jaws are self-opening. Handles have a polyurethane cushion grip and locking latch. One-handed operation.

Cutting Capacity: Mild Steel	Aluminum, Brass, Copper	Lg.	Cutter		Repl. Blade	
18 ga.	15 ga.	11"	3793A4	$52.27	3793A11	$11.50

Manual Sheet Metal Nibbler

Make round, square, and irregular-shaped holes in steel up to 18 ga. (0.048"), aluminum up to 16 ga. (0.060"), copper, and plastic. Use a drill to make a 7/16" dia. hole, then push nibbler through hole and squeeze handles together to nibble out small pieces of material. Nibbler is made of hardened tool steel with a rust-preventive black-oxide finish. Overall length is 6 3/4".

Nibbler 3623A14 $37.00
Repl. Punch 3623A15 21.00

Nibbler Attachment for Portable Drills

With Drill (Not Included)

Attach this tool to any portable drill to create a high-powered nibbler that cuts curved or straight shapes in flat and corrugated sheet metal and plastic. Requires a 1/2" dia. start hole. Use with a drill having a maximum speed of 3,000 rpm. Attachment has a 1/4" hex shank, hardened tool steel punch, and ABS plastic housing.

Maximum cutting capacity is 0.031" thick for stainless steel; 0.047" thick for sheet steel; 0.059" thick for copper/brass; 0.079" thick for PVC, aluminum, and floor tile; and 0.099" thick for synthetic material.

Nibbler 7293A11 $110.75
Repl. Cutter 7293A14 42.52

Sheet Metal Notchers

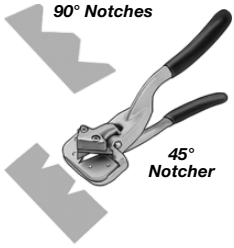

Cut 1" deep V-shaped notches in mild steel up to 20 ga. (0.036"). Notchers are forged steel with rubber cushion-grip handles. Overall length is 9".

Notch Angle	Notchers Each		Repl. Blade Set	
45°	3599A1	$186.03	3599A11	$95.82
90°	3599A2	168.10	3599A21	91.18

About Power Nibblers and Power Shears

Nibblers— Cut heavy gauge material without distortion and with relatively burr-free edges. A nibbler is actually a fast punch that nibbles small pieces out of the material.

Shears for Thin Materials— For cutting light gauge materials. They operate like sheet metal snips, producing a clean edge with no material waste.

Burr-Free Edge Shears— Also known as slotting shears, these make two parallel cuts to create a waste strip that peels away from the remaining material. Use for cutting straight lines, contours, and irregular shapes; not for cutting tight curves or corrugated material. They cut smoother than shears for thin materials and leave clean edges.

Sheet Metal Shears— Also known as right-angle shears. For cutting heavier gauge material compared to shears for thin materials and burr-free edge shears. Best for straight patterns on flat material, they also cut curves and notches. There's no material waste, but shears leave material with slightly rough edges.

Electric Nibblers for Heavy Gauge Sheet Metal

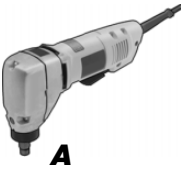
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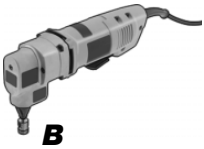
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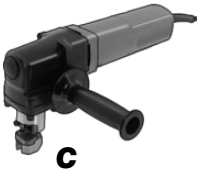
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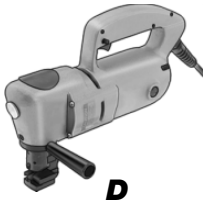
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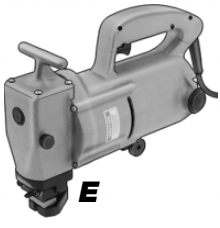
E

Achieve an almost burr-free cut with no material distortion. These nibblers have an aluminum housing, except Style C is magnesium. All include one punch, one die, and instructions.

Style A has a round punch that can rotate 360°. Can cut flat stock up to 60″ per minute. Not for corrugated or uneven material. Nibbler can change cutting direction as desired (no cutting radius required). Has a lever switch. Overall length is 9¾″. Nibbler is double insulated; operates on 120 VAC/VDC, 60 Hz, 3 amps; and has an 8-ft. cord with two-prong plug. UL listed, CSA certified, and meets OSHA requirements.

Style B has a round punch that can rotate 360°. Can cut uneven and corrugated material up to 84″ per minute. Nibbler can change cutting direction as desired (no cutting radius required). Has a lever switch with locking button. Overall length is 10½″. Operates on 120 VAC/VDC, 60 Hz, 6.5 amps; has an 8-ft. cord with two-prong plug; and is double insulated. UL listed, CSA certified, and meets OSHA requirements.

Style C cuts flat stock and uneven and corrugated material up to 105″ per minute. Has a toggle switch and a reversible side handle. Overall length is 12¼″. Nibbler is double insulated; operates on 120 VAC/VDC, 60 Hz, 4 amps; and has an 8-ft. cord with two-prong plug. UL listed and meets OSHA requirements.

Style D cuts flat stock up to 48″ per minute. Not for corrugated or uneven material. Has a trigger switch with locking button. Overall length is 13″. Operates on 110 VAC, 60 Hz, 3-5 amps and has a 10-ft. cord with three-prong plug.

Style E cut flat stock up to 48″ per minute. Not for corrugated or uneven material. They have a locking trigger switch and include an extra punch. Additional tools (sold separately) are required to cut aluminum. Overall length is 14¼″. Operate on 120 VAC, 60 Hz, 15 amps and have a 10-ft. cord with three-prong plug.

	Cutting Capacity: Mild Steel	Stainless Steel	Aluminum	Cut Wd.	No-Load Strokes/ Minute	Min.▲ Cut Radius	Start Hole	Nibblers		Replacement Punch		Replacement Die	
A	16 ga. (0.060″)	18 ga. (0.048″)	0.098″	0.25″	2,100	0	½″	3601A71	$397.55	3601A72●	$74.20	—	—
B	14 ga. (0.075″)	16 ga. (0.060″)	0.098″	0.25″	1,950	0	5/8″	4942A71	574.08	4942A72	79.31	4942A73	$79.31
C	10 ga. (0.134″)	12 ga. (0.105″)	0.081″	0.24″	1,000	2½″	1 21/32″	3604A71	1,037.50	3604A72	61.85	3604A73	207.08
D	7 ga. (0.179″)	10 ga. (0.134″)	0.188″	0.21″	260	6″	2½″	3557A12	780.00	3557A24	24.54	3557A22	38.66
E	¼″ (0.250″)	3/16″ (0.187″)	0.375″	0.25″	240	32″	3½″	3819A1	1,125.00	3819A14	19.09	3819A11	57.27
E	¼″ (0.250″)	3/16″ (0.187″)	0.375″	0.25″	240	8″	3½″	3819A77	1,125.00	3819A14	19.09	3819A11	57.27

Accessories for Style E

Punch (Recommended for cutting stainless steel)	3819A16	$20.45
Punch (Required for cutting aluminum)	3819A15	25.91
Die (Required for cutting aluminum)	3819A12	63.00
Stripper (Required for cutting aluminum)	3819A17	96.82

▲The smallest arc (or curve) the tool can cut. Radius × 2 equals the smallest diameter circle the tool can cut. ●Punch and die set.

Air-Powered Nibblers for Heavy Gauge Sheet Metal

F

G

H

J

Powered by compressed air, these nibblers have heavy duty bearings and an aluminum housing, unless noted. They have a lever switch, unless otherwise stated, and include one punch, one die, and instructions. Operate on 90 psi air pressure and require a ⅜″ hose (not included), except Style H, which requires 100 psi and a ½″ hose.

Style F cuts corrugated material and leaves a burr-free cut with no material distortion. Cuts 62″ per minute. Overall length is 7 1/16″. Air inlet is ¼″ NPT female. Air consumption is 21 cfm.

Style G cuts corrugated or uneven material and leaves a burr-free cut with no material distortion. Cuts 46½″ per minute. Includes an extra punch. Overall length is 7″. Air inlet is ¼″ NPT female. Air consumption is 4 cfm. Housing is plastic.

Style H cuts flat stock and corrugated or uneven material while leaving minimal burr and no material distortion. Cuts 55″ per minute. Overall length is 12″. Air inlet is ⅜″ NPT female. Air consumption is 27 cfm.

Style J cuts flat stock and leaves minimal burr and no material distortion. Not for corrugated or uneven material. Cuts 48″ per minute. Has a locking trigger-style switch. Overall length is 12″. Air inlet is ⅜″ NPT female. Air consumption is 21-23 cfm.

	Cutting Capacity: Mild Steel	Stainless Steel	Aluminum	Cut Wd.	No-Load Strokes/ Minute	Min.▲ Cut Radius	Start Hole	Nibblers		Replacement Punch		Replacement Die	
F	18 ga. (0.048″)	22 ga. (0.030″)	0.040″	¼″	3,200	¼″	½″	37615A71	$141.07	37615A66	$13.93	37615A67	$32.50
G	16 ga. (0.060″)	—	0.063″	3/16″	2,600	3/16″	⅜″	3761A75	197.54	3761A86	15.46	3761A87	35.98
H	12 ga. (0.105″)	13 ga. (0.090″)	0.125″	¼″	192	2″	1½″	3837A3	675.00	3837A62	23.86	3837A52	31.50
J	7 ga. (0.179″)	10 ga. (0.134″)	0.187″	3/16″	192	6″	2½″	24745A13	864.41	3557A24	24.54	3557A22	38.66

▲The smallest arc (or curve) the tool can cut. Radius × 2 equals the smallest diameter circle the tool can cut.

For information about power shears, see page 2348.

Electric Sheet Metal Shears

Also known as right-angle shears, these shears don't waste material (such as produced by nibblers and burr-free shears). Ideal for cutting straight patterns on flat material and for trimming heavy gauge material. They also cut angles and curves. They're double insulated. Operate on 120 VAC/VDC, 60 Hz (unless otherwise indicated) and have an 8-ft. power cord with two-prong plug. UL listed. CSA certified. Meet OSHA requirements.

Style A have an adjustable lower blade to accommodate various metal thicknesses.

Style B has four-sided blades for longer life; when you need a new edge, just turn the blade 90°.

Style C has a D-shaped handle for excellent control. Operate on 120 VAC, 60 Hz.

A&B

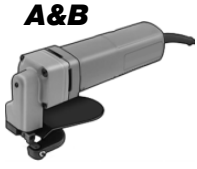

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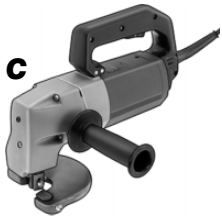

	Cutting Capacity: Mild Steel	Stainless Steel	Aluminum	No-Load Strokes/ Minute	Min.▲ Cut Radius	Amps	O'all Lg.	Shears	Each	Repl. Blades	Set
A	16 ga. (0.060″)	18 ga. (0.048″)	0.051″	4,000	½″	4.0	10¼″	**38005A72**	$344.30	**38005A74**	$24.81
A	14 ga. (0.075″)	16 ga. (0.060″)	0.064″	4,000	¾″	5.0	10¼″	**38005A73**	379.75	**38005A75**	24.45
B	12 ga. (0.105″)	14 ga. (0.075″)	0.118″	1,950	1″	6.5	10½″	**38365A11**	618.52	**38365A12**●	48.53
C	8 ga. (0.164″)	10 ga. (0.134″)	0.196″	1,250	2″	9.2	13½″	**3834A81**	1,403.53	**3834A87**	66.69

▲The smallest arc (or curve) the tool can cut. Radius×2 equals the smallest diameter circle that tool can cut.
● Sold and priced individually. Tool requires two identical blades (upper and lower).

Electric and Air-Powered Shears for Thin, Pliable Materials

Similar to sheet metal snips, these shears cut with a scissor-like action and are also known as scissor-blade shears. They leave a clean sheared edge. The bottom blade remains stationary while the upper blade moves up and down to cut. Blades are tool steel.

Electric shears are double insulated and rated 5 amps. Operate on 120 VAC, 50/60 Hz and have an 8-ft. power cord with two-prong plug.

Air-Powered shears require 90 psi air pressure. Air inlet is ¼″ NPT female. Requires ¼″ to ½″ hose (not included). Air consumption is 4 cfm.

D ***Shears for Light Gauge Materials—*** Cut light gauge materials including mild steel up to 24 ga. (0.024″ thick), aluminum up to 0.020″ thick, and plastics up to ⅛″ thick. Blades close completely when cutting. 3818A18 has a variable-speed trigger.

E&F ***Shears for Pliable Materials—*** For pliable materials including foam rubber, vinyl, foils, wire mesh screening up to 18 ga., and plastic sheeting up to ⅛″ thick. Blades do not close completely. *Style E* is UL and C-UL listed.

D

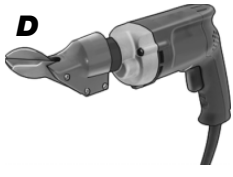

E

F

	No-Load Strokes/ Minute	Max. Blade Opening	O'all Lg.	Shears		Repl. Upper Blade		Repl. Lower Blade	
Shears for Light Gauge Materials									
D ... Electric	2,500	9/16″	16″	**3818A18**	$286.59	**3818A22**	$29.87	**3818A24**	$29.87
D ... Air Powered	2,200	9/16″	11″	**3818A19**	286.59	**3818A22**	29.87	**3818A24**	29.87
Shears for Pliable Materials									
E ... Electric	2,500	¾″	16″	**38185A16**	242.12	**38185A25**	26.14	**38185A26**	26.14
F ... Air Powered	2,500	¾″	12″	**38185A14**	257.25	**38185A25**	26.14	**38185A26**	26.14

Burr-Free Electric and Air-Powered Sheet Metal Shears

Get burr-free edges with no distortion of the material with these double-cut shears. Also known as slotting shears, they have a movable blade between two stationary blades; the movable blade creates two cuts and a 7/32″ wide waste strip. Shears cut sheet metal in straight lines, contours, and irregular shapes such as those needed for flashing and signs. Blades are tool steel.

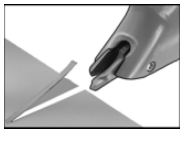

G ***Electric Shears—*** Double insulated and rated for 5 amps. Come with a wrench for head adjustment and lubricant. Operate on 120 VAC, 50/60 Hz and have an 8-ft. power cord with two-prong plug. UL and C-UL listed.

H&J ***Air-Powered Shears—*** Operate on 90 psi air pressure. Air inlet is ¼″ NPT female. Requires ¼″ to ½″ hose (not included). Air consumption is 4 cfm. Come with a wrench for head adjustment and lubricant.

K ***Cordless Shears—*** Come with a 14.4-volt NiCad battery pack, charger, blade wrench, and case.

G

H

J

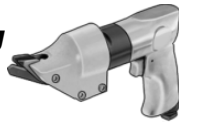

K

	Cutting Capacity: Mild Steel	Stainless Steel	Aluminum	No-Load Strokes/ Minute	Min.▲ Cut Radius	Start Hole	O'all Lg.		
Electric Shears									
G	14 ga. (0.075″)	16 ga. (0.060″)	0.10″	2,500	7″	½″	14″	**3717A16**	$247.42
Air-Powered Shears									
H	18 ga. (0.048″)	20 ga. (0.036″)	0.060″	2,500	6″	½″	10″	**3622A21**	222.35
J	14 ga. (0.075″)	16 ga. (0.060″)	0.10″	2,200	7″	½″	10½″	**3717A19**	266.82
Cordless Shears									
K	18 ga. (0.048″)	20 ga. (0.036″)	Not Rated	2,300	5½″	⅝″	12¾″	**7080A14**	378.70

Replacement Blades for Electric and Air-Powered Shears

Movable Center Blade for Styles G and J	**3717A22**	26.14
Movable Center Blade for Style H	**3717A25**	19.92
Left Stationary Blade for Styles G-J	**3717A23**	18.66
Right Stationary Blade for Styles G-J	**3717A24**	18.66

Replacement Parts for Cordless Shears

Replacement Battery Pack	**29835A12**	83.66
Replacement Battery Charger	**29835A631**	81.82

▲The smallest arc (or curve) the tool can cut. Radius×2 equals the smallest diameter circle that the tool can cut.

Bench-Top Shears for Heavy Gauge Sheet Metal

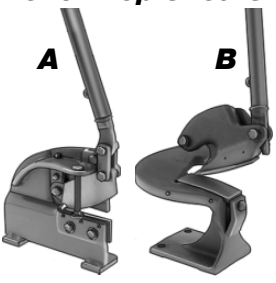

Make clean cuts in heavy gauge metals without distortion. These shears also cut plastic, rubber, and leather. Blades are steel and can be sharpened.

(A) Standard Shears— Frames are steel plate and are rigidly braced to keep blades aligned. Base has two 1/2″ dia. mounting holes (fasteners not included).

(B) Shape-Cutting Shears— The unique shoulder design lets you turn the work during cutting so you can create complex shapes. Frame is cast steel. Blades are adjustable. Base has three 1/2″ dia. mounting holes (fasteners not included). The *4 1/4″ max. cut length shear* has an adjustable hold-down bar to keep material in place.

Replacement blades are sold in sets of two.

	Max. Cut Lg.	Shear Capacity: Mild Steel ♦	Shear Capacity: Stainless Steel	Lg.×Wd.×Ht.	Handle Lg.	Shears Each		Repl. Blades Set	
A	2 1/2″	10 ga. (0.134″)	14 ga. (0.075″)	8″ × 3 1/4″ × 8″	20″	3788A2	$417.72	3788A15	$195.50
A	2 1/2″	3/16″ (0.1875″)	10 ga. (0.134″)	11″ × 3 3/4″ × 13″	30″	3788A3	572.96	3788A16	188.42
B	3″	14 ga. (0.075″)	18 ga. (0.048″)	7″ × 9″ × 14″	18″	3796A2	584.10	3796A6	126.08
B	3 1/8″	10 ga. (0.134″)	14 ga. (0.075″)	9″ × 10″ × 15″	24″	3796A3	814.04	3796A7	162.92
B	4 1/4″	3/16″ (0.1875″)	10 ga. (0.134″)	9″ × 14″ × 15″	30″	3796A4	1,178.01	3796A8	228.08

♦ Shear capacity is the same for soft aluminum.

Light Duty 12″ Bench-Top Sheet Metal Shears

Cut flexible material up to 0.0625″ thick, brass up to 0.020″ thick, steel up to 0.015″ thick, and aluminum up to 0.030″ thick. The work surface of these shears has holes for positioning the calibrated scale, so you can use the entire length of the blades. Shears are 11″ Ht.×25″ Wd.×14 1/2″ Dp.; handle is 17 1/4″ long. Frame is aluminum and steel. Blades are hardened steel and can be sharpened. Do not use on phenolic or other rigid materials.

Max. Cut Wd.		
Shears		
12″	86745T51	$531.45
Replacement Blades		
Upper Blade	86745T52	170.92
Lower Blade	86745T53	127.69

Bench-Top Sheet Metal Notcher/Shears

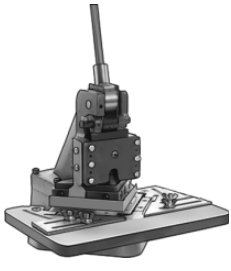

Notch, shear, and pierce steel, aluminum, copper, plastic, leather, linoleum, Formica, and more. These versatile shears have an adjustable ram stroke for piercing and knockout operations. Frame is made of cast iron. Blades are tool steel and are set at 90°. Base has four 1/2″ dia. mounting holes (fasteners not included). Tools cut a 90° notch (maximum size 6″×6″) in mild steel up to 16 ga. (0.060″ thick), stainless steel up to 20 ga. (0.036″ thick), and soft aluminum up to 9 ga. (0.125″ thick).

Repl. blades are sold in a set of four.

Optional floor stand (sold separately) is 30″ Ht.×16 1/2″ Wd.×19″ Dp.

Size, Lg.×Wd.×Ht.	Handle Lg.	Notcher/Shears Each		Repl. Blades Set	
19″×18″×15″	22 1/4″	3803A8	$958.93	3803A9	$377.14
Optional Floor Stand		3803A91	Each		$316.07

Heavy Duty 25″ Bench-Top Sheet Metal Shears

These large-capacity shears have an 11 13/16″×28 1/2″ work surface, an easy-to-read front gauge (up to 12″), a back gauge (up to 12 1/2″), a finger safety guard, and an automatic material hold-down. Frame is steel. Weight is 220 lbs. Blades are hardened tool steel, can be sharpened, and are reversible and interchangeable for use as an upper or lower blade. Cut leaded brass up to 16 ga. (0.062″ thick), mild steel up to 18 ga. (0.048″ thick), and aluminum up to 14 ga. (0.075″ thick).

Max. Cut Wd.	Size, Ht.×Wd.×Dp.●	Handle Lg.		Each	
25″	15 13/32″×32 1/2″×27 3/32″	25″	36665A11		$1,864.02
Replacement Upper and Lower Blades			36665A14	Pair	$935.06

● Dimensions without handle; overall height with handle is 36 7/8″.

Wide-Width Sheet Metal Shears

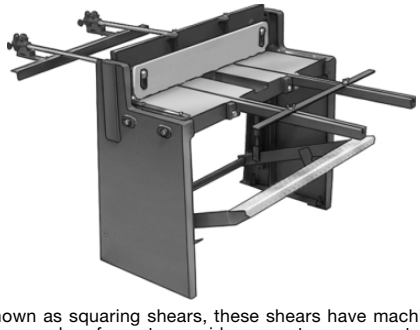

Also known as squaring shears, these shears have machined and precision ground surfaces to provide accurate square cuts and are foot operated—just step on the foot treadle to run. Frame is cast iron. Blades are steel, adjustable, and can be sharpened.

Shears have a material hold-down clamp, a front gauge, a double-locking back gauge with embossed scales and vernier wheels for fine adjustments, 30″ long front extension arms with stop, and pedal stops for safety. Back gauge range is up to 30″; front gauge range is up to 37″.

Shears cut mild steel up to 16 ga. (0.060″ thick), stainless steel up to 20 ga. (0.036″ thick), and soft aluminum up to 9 ga. (0.125″ thick). Shears also cut other metals including copper and nickel alloys.

Max. Cut Wd.	Overall Size, Ht.×Wd.×Dp.	Shears Each		Repl. Blades Set	
37″	42″×46 1/2″×27″	3809A2	$2,106.16	3809A11	$631.43
52 1/4″	42″×61″ ×36″	3809A4	2,787.16	3809A12	807.50

Rounded-Corner Sheet Metal Cutter

Cutting Base with Corner Punch

Easily round corners or punch holes into sheet metal—simply combine the cutting base and a rounded-corner punch. Cuts brass up to 0.020″ thick, steel up to 0.015″ thick, aluminum up to 0.040″ thick, and plastic up to 0.060″ thick.

Cutting base is 8″ Lg.×6″ Wd.×2 1/2″ Ht. with a 10 1/4″ lg. handle. Made of aluminum.

Corner punch is hardened aluminum and steel. **To Order:** Please specify radius: 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, or 1/2″.

Cutting Base	23805A11	$110.00
Corner Punch	23805A92	108.33

Angle-Iron Floor-Mount Shears

Cut mild steel angle iron up to 2″×2″×1/4″ with these handy shears. They have a cast iron frame, tool steel blades, and a long handle for maximum leverage. Base has two 17/32″ dia. mounting holes (fasteners not included). Shears are 13 1/2″ Lg.×7″ Wd.×10″ Ht.; handle is 72″ long.

Shears	3807A1	Each	$528.11
Repl. Blade for Jaw	3807A3	Each	$80.45
Repl. Blade Set for Base	3807A5	Set	$105.00

Paper Cutters

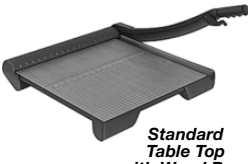

Standard Table Top with Wood Base

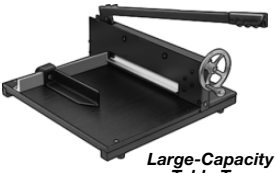

Large-Capacity Table Top

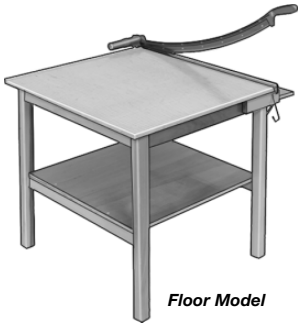

Floor Model

Cut most paper products. Not for sheet metal, wood, leather, rubber, or roofing materials.

Table-Top Paper Cutters

Standard—Have a self-sharpening blade, a base marked with a ½″ grid, an inch/metric rule, a trigger-locking safety latch, a blade guard, and skid-resistant feet. 3823A42 and 3823A21 also have automatic hold-down clamps to prevent slipping and improve cutting accuracy.

Cutters with a polypropylene base have stainless steel blades and are warp, crack, and peel resistant. Not for mat board.

Cutters with a wood base have steel blades.

Also Available: Replacement blades. Please ask for 3823A51 and specify handle or base blade and paper cutter part number. *Cutters with a polypropylene base* have stainless steel replacement blades (unless noted). *Cutters with a wood base* have steel replacement blades.

Large Capacity—A clamp securely holds the paper in place while roller guides control the blade for easier cutting of large capacities. It has a hardened-steel blade, a safety latch, and protective rubber feet. The back stop is marked with inch and metric scales.

Base Size	Sheet Cap.★/ Max. Thick.	Cut Lg.		
Standard with Polypropylene Base				
11″ × 12″	10 / 1/32″	12″	3823A12	$63.48
12″ × 15″	10 / 1/32″	15″	3823A17	62.09
13″ × 18″	10 / 1/32″	18″	3823A18■	113.24
Standard with Wood Base				
12½″ × 12″	20 / 1/16″	12″	3823A19	111.20
12½″ × 15″	20 / 1/16″	15″	3823A23	159.20
12½″ × 15″	30 / 1/8″	15″	3823A42	206.58
18½″ × 18″	20 / 1/16″	18″	3823A14	189.85
18½″ × 24″	20 / 1/16″	24″	3823A15	263.20
18½″ × 24″	30 / 1/8″	24″	3823A44	317.13
23½″ × 30″	20 / 1/16″	30″	3823A16	387.05
23½″ × 36″	20 / 1/16″	36″	3823A21	558.58
30″ × 30″	15 / 1/16″	30″	3823A24	540.36
Large Capacity with Wood Base				
19″ × 19″	350 / 1 1/2″	12″	3561A31	940.91

★ Based on standard 20-lb. paper. ■ Replacement blade is steel.

Floor-Model Paper Cutter

Paper cutter has a self-sharpening steel blade, a wood base marked with a ½″ grid, a 1/16″ increment precision rule, a safety guard rail, a blade handle lock, and a storage shelf.

Size, Lg. × Wd. × Ht.	Sheet Cap.★/ Max. Thick.	Cut Lg.		
30″ × 30″ × 30″	15 / 1/16″	30″	3823A22	$659.33
Replacement Handle Blade			3823A71	129.40
Replacement Base Blade			3823A72	60.00

★ Based on standard 20-lb. paper.

Rubber Sheet and Belt Cutter

Slice through rubber sheets, mats, and belts with ease. Cutter has a 14″ blade and built-in cutting table. One side of the cutting table is longer and has an edge to keep materials lined up in the cutter for consistently straight, square cuts. Body is steel and aluminum. Blade is steel.

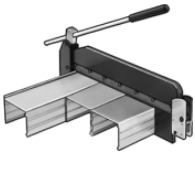

Cutting Capacity Wd.	Thick.	Cutter		Repl. Blade	
14″	3/8″	6141K11	$611.13	6141K9	$127.75

Paper Cutters with Safety Blades

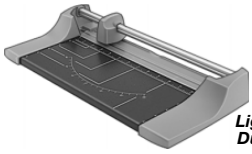

Light Duty

Heavy Duty

These table-top paper cutters have a self-sharpening blade that is partially enclosed to prevent accidental cuts. Cut most paper products. Not for sheet metal, wood, leather, rubber, or roofing materials.

Light Duty—Have a steel cutting wheel with a molded-plastic handle that's mounted on a single guide rail, a metal base with an inch rule, and a see-through paper clamp.

Heavy Duty—Cut light foils and film to mat board. Paper cutters have a tungsten steel cutting wheel that glides on dual guide rails for more precise cuts. They have a gray melamine wood base marked with a 1/4″ grid, an aluminum inch/metric side rule, an adjustable paper stop, and a clamp.

Base Size	Sheet Cap.★/ Max. Thick.	Cut Lg.		
Light Duty				
17″ × 8 1/4″	5 / 1/64″	12½″	3828A34	$77.28
22½″ × 8 1/4″	5 / 1/64″	18″	3828A32	87.07
Heavy Duty				
18½″ × 15″	♣ / 1/8″	12″	3828A51	338.18
24½″ × 15″	♣ / 1/8″	18″	3828A53	429.09
30½″ × 15″	♣ / 1/8″	24″	3828A56	505.45
42½″ × 15″	♣ / 5/64″	36″	3828A57	723.64
Replacement Parts				
Handle Blade Assembly for Light Duty Models			3828A37	29.70
Blade for Heavy Duty Models			3828A55	122.18

★ Based on standard 20-lb. paper. ♣ Not rated.

Precision Paper Cutters with Safety Blades

To prevent accidents, a clear polycarbonate guard completely covers the steel cutting blades. These table-top paper cutters have a metal base, a hand clamp that exerts extra pressure for improved cutting accuracy, a back gauge, and a side guide with inch/metric scale. Cut thin paper to mat board. Not for sheet metal, wood, leather, rubber, or roofing materials.

Also Available: Replacement upper and lower blades are sold as a set. Please ask for 3850A3 and specify paper cutter part number.

Base Size	Sheet Cap.★/ Max. Thick.	Cut Lg.		
15 3/16″ × 11 15/16″	25 / 1/8″	13 3/4″	3850A15	$304.36
16″ × 14 1/4″	50 / 1/8″	14 3/4″	3850A11	631.64
30 5/8″ × 20 1/4″	40 / 3/16″	28½″	3850A13	1,031.80

★ Based on standard 20-lb. paper.

Electric Foam-Rubber Cutter

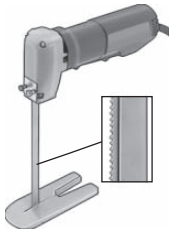

Similar in operation to a jigsaw, this heavy duty cutter uses reciprocating cutting action to cut any density of foam, sponge rubber, and flexible plastic foam. Cutter has an 8″ high-speed steel blade with sawlike teeth; maximum cutting depth is 8″.

The included footplate guides the blade, making it easier to cut corners. For cutouts, just remove footplate.

Motor housing is nylon and gear housing is aluminum. Operates on 120 VAC, 60 Hz, 3.2 amps; has a 7-ft. power cord with two-prong plug; and is double insulated. UL listed. Meets OSHA requirements.

Optional 12″ blades have a maximum cutting depth of 12″. To properly install them, you will need the *blade guide* sold separately.

	No-Load Strokes/Minute	O'all Lg.			Each
Cutter	3,200	9 3/4″	4981A22		$530.70
Replacement Parts and Accessories					
Replacement 8″ Blades (2 Per Set)			4981A42	Set	$31.09
Optional 12″ Blades (2 Per Set)			4981A45	Set	$33.71
Blade Guide for 12″ Blades			4981A46	Each	$61.84

Heavy Duty General Purpose Scissors

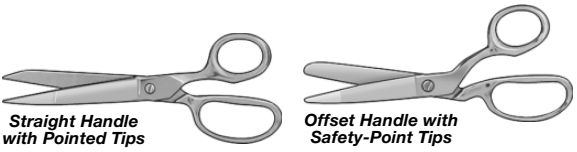

Straight Handle with Pointed Tips — *Offset Handle with Safety-Point Tips*

Scissors are for right-hand use except the left-handed offset handle scissors. Chrome/nickel blades have chrome plating over nickel plating for added durability. ***Pointed tips*** have standard scissor blades. ***Safety-point tips*** have rounded blade ends. ***Offset-handles*** keep your hand clear of the material being cut. ***Heavy duty blades*** are wider, thicker, and stronger and have a raised edge to prevent blade separation.

Overall Length	Cut Lg.	Handle Finish	Blade Finish		
Pointed Tips					
Straight Handle					
6 1/8″	2 5/8″	Chrome/Nickel	Chrome/Nickel	3886A1	$20.27
7 1/2″	3 1/4″	Chrome/Nickel	Chrome/Nickel	3886A3	23.86
8 1/4″	4″	Chrome/Nickel	Chrome/Nickel	3886A5	25.01
9 1/4″	4 1/2″	Chrome/Nickel	Chrome/Nickel	3886A6	28.43
10 1/2″	4 7/8″	Chrome/Nickel	Chrome/Nickel	3886A7	33.20
Offset Handle					
7 1/4″	2 3/4″	Cushioned	Chrome/Nickel	3879A3	19.89
8″	3 1/2″	Chrome/Nickel	Chrome/Nickel	3820A13	22.71
9 3/4″	4″	Chrome/Nickel	Chrome/Nickel	3879A5	23.86
10 3/8″	4 3/4″	Cushioned	Nickel	24535A11	36.96
10 3/8″	4 3/4″	Painted	Nickel	3820A14	35.77
12 1/2″	5 3/4″	Painted	Nickel	3820A15	41.02
12 1/2″	6 1/8″	Cushioned	Nickel	24535A12	42.29
Offset Handle with Heavy Duty Blades					
10 3/8″	4 3/4″	Painted	Nickel	3879A8	38.58
12 1/2″	6 1/8″	Painted	Nickel	3879A9	46.38
Left-Handed Offset Handle					
8″	3 1/2″	Painted	Chrome/Nickel	3879A46	28.18
10 3/8″	4 3/4″	Painted	Nickel	3910A1	31.35
Safety-Point Tips					
Straight Handle					
6″	2 5/16″	Chrome/Nickel	Chrome/Nickel	37695A71	24.09
8″	3 3/4″	Chrome/Nickel	Chrome/Nickel	37695A73	25.89
10″	4 3/8″	Chrome/Nickel	Chrome/Nickel	37695A75	39.22
Offset Handle					
6″	2 3/8″	Chrome/Nickel	Chrome/Nickel	37275A71	24.01
8″	3 1/4″	Chrome/Nickel	Chrome/Nickel	37275A73	29.20
10″	4 1/4″	Chrome/Nickel	Chrome/Nickel	3591A71	35.80
10 3/8″	4 3/4″	Cushioned	Nickel	24535A21	38.44
12″	5 3/8″	Chrome/Nickel	Chrome/Nickel	3591A72	41.43

Sharp-Point Scissors

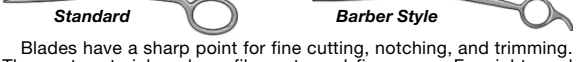

Standard — *Barber Style*

Blades have a sharp point for fine cutting, notching, and trimming. They cut material such as filaments and fine paper. For right- and left-hand use.

Standard and ***Heavy Duty Scissors—*** Made of chrome over nickel-plated forged steel. *Heavy duty scissors* have thicker blades.

Barber Style Scissors— The bottom blade is serrated to prevent material from slipping. Scissors are forged stainless steel, except for 3605A11, which is nickel-plated forged steel.

	O'all Lg.	Cut Lg.		
Standard	4 1/2″	1 1/2″	3882A1	$14.78
Standard	5 1/8″	2 1/8″	3882A2	15.68
Standard	6 1/8″	2 1/2″	3882A3	17.36
Heavy Duty	5 1/2″	2″	3871A1	19.62
Barber Style	5 5/8″	1 7/8″	3605A12	27.19
Barber Style	7 5/8″	3″	3605A11	21.83
Barber Style	10″	5″	3605A13	48.23

Heavy Duty Corrosion-Resistant Scissors

Curved Blade

Cut in wet areas without worry of rust or corrosion. These scissors handle anything from paper and gasketing to poultry. For right-hand use.

Curved blade works well for close-cut trimming on flat surfaces.

Serrated blades keep materials from slipping while cutting.

Knife blades have one blade ground extra sharp for fast, clean cuts.

Overall Length	Cut Length	Blade Type		
Chrome over Nickel-Plated Steel				
8″	3 1/2″	Curved and Serrated	3684A22	$27.24
Stainless Steel				
8″	3″	1 Knife/1 Serrated	39465A14	34.00
8″	3″	Knife	39465A13	33.20
9″	3″	Regular	39465A16♠	34.08

♠ Have an extended bottom ring for easy four-finger insertion.

Heavy Duty High-Leverage Scissors

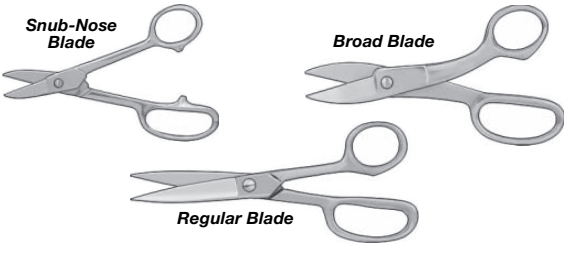

Snub-Nose Blade — *Broad Blade* — *Regular Blade*

Longer handles and shorter blades give you more leverage than general purpose scissors for easily slicing and trimming light metals, light wire screening, heavy fabrics, and thin plastics. For right-hand use.

Snub-nose blade is for close, intricate cutting.

Broad blades are shorter and wider for even more leverage.

Serrated blades keep materials from slipping while cutting.

O'all Lg.	Cut Lg.	Blade Type		
Chrome over Nickel-Plated Steel				
7 1/8″	1 3/8″	Snub Nose	3891A18	$21.47
7 3/4″	2″	Broad and Serrated	36875A11	22.71
7 3/4″	2″	Broad and Serrated	36875A12♥	30.22
8 5/8″	3″	Regular	3891A11	22.32
9″	3″	Regular	3891A14▲	24.42
Stainless Steel				
8″	3″	Serrated	3891A15	29.51
8 5/8″	3″	Regular	3891A12	28.78

♥ Can also cut Kevlar. ▲ Have a cushioned grip and an extended bottom ring for easy four-finger insertion.

Ever-Sharp Ceramic-Blade Scissors

4945A45

Ceramic blades retain their edge longer than steel and are corrosion resistant, nonmagnetic, and electrically nonconductive. For right- and left-hand use. 4945A45 have a zirconia-ceramic blade insert; 4945A47 have a solid zirconia-ceramic snub-nose blade.

O'all Lg.	Cut Lg.		
5″	1 13/16″	4945A45	$48.79
7″	2 5/16″	4945A47	58.56

Lightweight Titanium Scissors

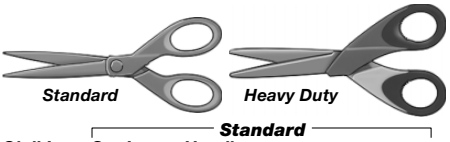

Standard — *Heavy Duty*

Titanium is bonded over a stainless steel core, producing a sharp, long-lasting cutting edge that's three times harder than stainless steel. These scissors resist rust, corrosion, and adhesive residue. Handles are contoured with a cushioned grip. For right- and left-hand use. ***Heavy duty scissors*** have extra-wide blades with a longer cut length for ultra-smooth cutting. ***Heavy duty scissors with nonstick blades*** cut tape, hook and loop, and other glued surfaces without the adhesive sticking to the blades.

	Standard				Heavy Duty				Heavy Duty w/ Nonstick Blades			
O'all Lg.	Cut Lg.	Handles			Cut Lg.	Handles			Cut Lg.	Handles		
5″	2 1/4″	Straight	3438A11	$9.96	2 3/4″	Straight	3438A5	$13.70	—	—	—	—
7″	3 1/4″	Straight	3438A12	11.22	3 1/4″	Straight	3438A6	14.97	—	—	—	—
8″	3 1/4″	Straight	3438A13	12.47	3 1/2″	Offset	3438A7	16.20	3 1/2″	Offset	3438A47	$16.71
8″	3 1/2″	Offset	3438A14	12.47	3 3/4″	Straight	3438A8	16.20	3 3/4″	Straight	3438A46	16.71
9″	4″	Offset	3438A15	12.59	4 1/2″	Offset	3438A9	18.72	4 1/2″	Offset	3438A48	19.21

Lightweight Stainless Steel Scissors

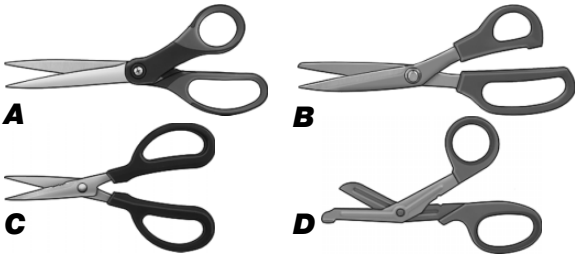

These lightweight scissors work well on fabric, paper, and cardboard. For right- and left-hand use (unless noted). Blades are stainless steel. *TiN* (titanium nitride) coating resists wear and corrosion and reduces friction. *PTFE* coating creates a nonstick surface.

(A) General Purpose— Handles are contoured for a comfortable grip.

(B) Soft, Flexible Grip with Oversized Finger Loops— Soft, flexible nonslip grips reduce hand fatigue. The lower finger loops are oversized to accommodate gloved hands. 7091A14 has slightly curved blades.

(C&D) High Leverage— Shorter blades give these scissors extra leverage to cut wire, rubber, leather, light plastic, and heavy canvas. *Style C* have one serrated blade. *Style D* blades are ribbed for extra strength and they have one serrated blade.

	O'all Lg.	Cut Lg.	Blade Coating	Handles		
General Purpose						
A	5″	1 5/8″	PTFE	Straight	**3608A22**★	$11.00
A	7 1/4″	2 1/2″	Uncoated	Offset	**3608A21**	13.06
A	8 1/4″	3″	Uncoated	Offset	**3608A11**	11.42
A	8 1/4″	3 1/4″	Uncoated	Offset	**3608A12**●	14.27
A	8″	3 1/2″	TiN	Straight	**3344A46**	12.02
A	8 1/4″	3 1/4″	PTFE	Offset	**3608A23**★	14.38
A	8 1/2″	3 39/64″	Uncoated	Offset	**3608A24**★	15.60
A	9 1/4″	4 1/4″	Uncoated	Offset	**3608A14**	14.27
A	9 1/2″	4 1/4″	TiN	Offset	**3344A47**★	17.75
A	11 1/2″	6 1/2″	Uncoated	Offset	**3608A15**	14.97
Soft, Flexible Grip with Oversized Finger Loops						
B	5 1/4″	2″	Uncoated	Straight	**7091A16**	9.14
B	8″	3″	Uncoated	Straight	**7091A11**	11.26
B	9″	3 1/4″	Uncoated	Straight	**7091A12**	11.91
B	9″	3 1/2″	Uncoated	Offset	**7091A13**	14.68
B	9″	3 3/4″	Uncoated	Offset	**7091A14**	15.96
High Leverage						
C	6″	1 3/4″	Uncoated	Straight	**3610A12**	10.47
C	7″	2″	Uncoated	Straight	**3610A13**	11.85
D	7 1/4″	1 3/4″	Uncoated	Offset	**3768A11**	5.43
D	7 1/4″	1 3/4″	TiN	Offset	**3768A12**	7.91

★ Right-hand use only. ● True left-hand scissors with reversed blades.

Easy-Cut Spring-Action Stainless Steel Scissors

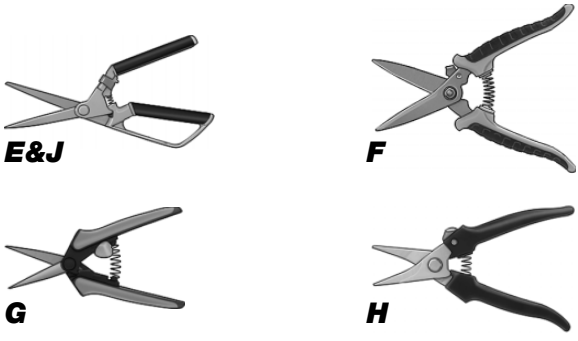

Handles automatically return to the open position after each cut, for smooth and easy cutting. These lightweight scissors work well on fabric, paper, and cardboard. They have stainless steel blades and a soft, cushioned grip (unless noted). For right- and left-hand use. *TiN* (titanium nitride) coating resists wear and corrosion and reduces friction.

(E&F) General Purpose— *Style E* have a flat bottom that slides across cutting surfaces for long, straight cuts.

(G) Super-Sharp Pointed Blades— Designed for precise cutting in tight places.

(H&J) High Leverage— Shorter blades give these scissors extra leverage to cut rubber, leather, light plastic, and heavy canvas. *Style J* has a flat bottom that slides across cutting surfaces for long, straight cuts.

	O'all Lg.	Cut Lg.	Blade Coating	Handles		
General Purpose						
E	10″	3″	Uncoated	Offset	**36705A32**	$17.22
E	10″	3″	TiN Coated	Offset	**36705A48**	19.89
F	8″	2 1/4″	TiN Coated	Straight	**3540A14**	15.62
Super-Sharp Pointed Blades						
G	6″	1 1/2″	Uncoated	Straight	**36705A31**	12.90
G	6″	1 1/2″	TiN Coated	Straight	**36705A49**	13.60
High Leverage						
H	7 1/4″	1 1/2″	Uncoated	Straight	**3512A21**✓	10.19
J	8″	1 1/4″	Uncoated	Offset	**36705A34**	17.22

✓ Noncushioned grip.

Scissors

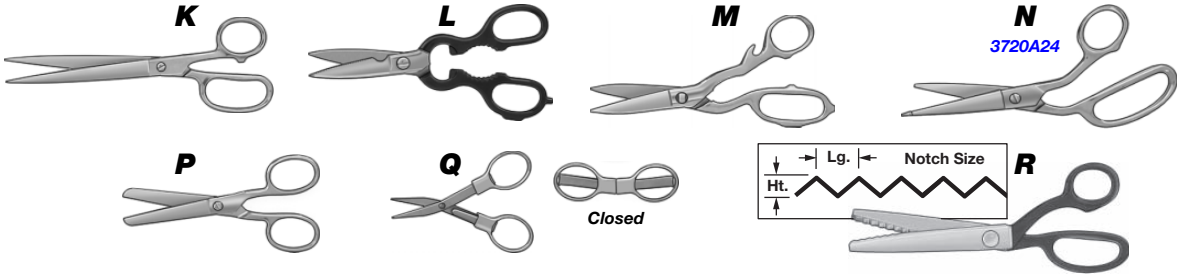

(K) Long-Cut Paper and Fabric Scissors— Make long, continuous cuts. 3885A1 and 3885A4 are forged steel with chrome over nickel-plated blades. 3877A12 is polished stainless steel with PVC-dipped handles.

(L) Scissors with Jar/Bottle Opener— Cut twine, rope, cardboard, wire screens, light metals, and more. Also open jars and bottles. Made of stainless steel with painted handles.

(M) Scissors with Screwdriver and Bottle Opener— Get more than scissors. These scissors are also a prying screwdriver, a bottle opener, and a tacking hammer. Made of steel with chrome-plated blades.

(N) First-Aid Scissors— Blunted tips slip under bandages and prevent injury. 3720A22 and 3720A23 are stainless steel. 3720A24 has large rings for easy finger insertion and is steel with a chrome over nickel plating.

(P) Blunt-Point Scissors— Also known as pocket shears, these cut fabric and other light materials. Made of forged steel with chrome over nickel plating.

(Q) Collapsible Pocket Scissors— Points tuck away for safe, go-anywhere convenience. Blades are stainless steel; handles are chrome-plated die cast zinc.

(R) Notched-Blade Scissors— Also known as pinking shears, these leave a ravel-resistant zigzag edge. Made of forged steel with chrome over nickel-plated blades.

	O'all Lg.	Cut Lg.		
K	9″	4 5/8″	**3885A1**	$22.27
K	11 7/8″	6 7/8″	**3885A4**	30.52
K	16″	8″	**3877A12**★	33.33
L	8 1/4″	2 5/8″	**3889A21**	21.38
M	8″	2 5/8″	**3437A21**	27.09
N	5 1/2″	1 1/2″	**3720A22**	13.30
N	7 1/4″	2″	**3720A23**	20.17
N	9 1/8″	3″	**3720A24**	20.68
P	4 3/8″	1 3/4″	**3887A1**	14.81
P	5 1/4″	2 1/4″	**3887A3**	15.17
P	6 1/4″	2 3/4″	**3887A5**	17.04
P	6 5/8″	2 3/4″	**3887A7**	16.56
Q	3 3/4″■	1 1/8″	**3703A11**	9.19
R	9″	3 1/4″◆	**3884A1**★	38.54
R	10 5/8″	3 7/8″◆	**3884A2**★	47.40

★ Right-hand use only. ■ Folded length is 3 1/8″.
◆ Notch size is 1/4″ Lg. × 1/8″ Ht.

Heavy Duty Belt and Leather Scissors

Short, durable blades give you leverage to slice through heavy leather belting. Made of forged steel, these scissors have one serrated blade to prevent material from slipping and one knife-edged blade for easier cutting. Overall length is 9¾″; cut length is 3¼″. For right-hand use.

3878A11 ..... $35.60

Heavy Duty Fabric and Rubber Scissors

Cut carpet, rubber, canvas, and other thick fabrics. Blades are forged steel that is tempered, precision ground, and double plated with chrome over nickel. Handles are offset to keep hand clear of the material being cut. 3877A15 has a soft cushion grip; 3877A11 has a contoured handle and meets GSA specifications. Both are for right-hand use.

O'all Lg.	Cut Lg.		
11½″	4½″	**3877A15**	$47.62
12½″	6″	**3877A11**	70.67

Light Fabric Cutters

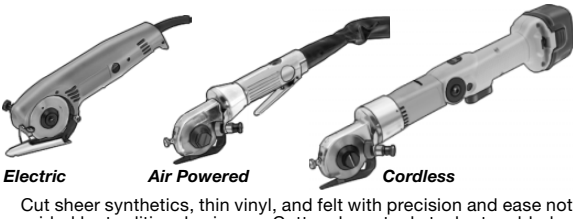

Electric *Air Powered* *Cordless*

Cut sheer synthetics, thin vinyl, and felt with precision and ease not provided by traditional scissors. Cutters have tool steel rotary blades and a built-in blade sharpener. Not for cutting carpet, corrugated material, rubber, plastic, or metal.

Electric— Cut straight lines and patterns in light fabrics up to ½″ thick with the included 2¼″ dia. round blade in a plastic housing. Use the *optional hexagonal blade* (sold separately) to cut dense cloth up to ½″ thick. Motor is 1/10 hp. Operates on 110 VAC, 60 Hz, 0.7 amps; has an 8-ft. long power cord with two-prong plug; and is double insulated.

Air Powered— Use for general purpose wet and dry cutting and for cutting light or dense cloth up to ⅜″ thick with the included 2 1/32″ semi-square blade in an aluminum housing. Use the *optional round blade* (sold separately) for trimming and edging light fabrics up to ⅜″ thick. Motor is ⅓ hp. Recommended air pressure is 90 psi. Air inlet is ¼″ NPT male. Hose size is ¼″; hose not included. Air consumption is 4 cfm.

Cordless— Operates on a 7.2-volt battery, so there's no power cord or air line to get in your way. Make clean, nonfray cuts through a wide range of fabrics from lightweight textiles to heavy-grade felts with the included 2 1/32″ dia. semi-square blade. Use the *optional round blade* for general purpose cutting (may cause fraying). Use the *optional octagonal blade* to make nonfray cuts in coarse fabrics. Cutter has a variable speed motor that operates from 0 to 2,000 rpm in both forward and reverse and an adjustable blade guard. Includes two 7.2-volt batteries and a one-hour charger.

	O'all Lg.		
Electric			
Cutter	9″	**7093A31**	$497.75
Replacement 2¼″ Dia. Round Blade	—	**7093A17**	30.68
Optional 2¼″ Hexagonal Blade	—	**7093A18**	42.77
Air Powered			
Cutter	9″	**7096A11**	950.00
Replacement 2 1/32″ Semi-Square Blade	—	**7096A21**	30.68
Optional 2 1/32″ Dia. Round Blade	—	**7096A23**	37.79
Cordless			
Cutter	15¼″	**7611A11**	504.86
Replacement 2 1/32″ Semi-Square Blade	—	**7096A21**	30.68
Optional 2 1/32″ Octagonal Blade	—	**7611A22**	43.07
Optional 2 1/32″ Round Blade	—	**7611A21**	41.67
Replacement 7.2-Volt Battery	—	**6978A48**	33.72
Replacement One-Hour Charger	—	**29835A631**	81.82

Scissors for Kevlar and Abrasive Materials

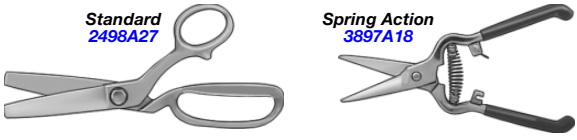

Easily cut abrasive materials like Kevlar and fine wire and light metals.

Standard Scissors— For right-hand use. 2498A28 is heat-treated steel with nylon comfort grips and pointed tips. 2498A27 is forged steel with blunted tips to prevent snagging.

Spring-Action Scissors— After each cut, the jaws spring to the open position, making continuous cutting a breeze. Made of forged steel with vinyl-covered grips. For right- and left-hand use. 3897A11 and 3897A12 have short, narrow blades for getting into tight spots.

Blade Type	O'all Lg.	Cut Lg.	Finish		
Standard Scissors					
Regular	8″	3″	Polished	**2498A28**	$34.57
Regular	10″	3¾″	Chrome	**2498A27**	46.15
Spring-Action Scissors					
Regular	6½″	⅝″	Chrome/Nickel	**3897A11**	25.48
Serrated	6½″	⅝″	Chrome/Nickel	**3897A12**	28.13
Serrated	8¼″	2″	Chrome/Nickel	**3897A18**	26.29
Curved/Serrated	8⅛″	2″	Chrome/Nickel	**3897A19**	28.40

No-Fray Heated-Blade Scissors

Eliminate fraying when cutting carpet, nylon webbing and slings, and synthetic fabrics. With the required temperature control unit (sold separately) the blades on these scissors heat to 540° F to sear thread ends. Scissors generate 100 watts and are made of forged steel. Include a stand and 6-ft. long cord that plugs into the temperature control unit. For right-hand use.

Temperature control unit has 12 settings that let you choose temperatures from 80° to 540° F. Operates on 115/120 VAC and has a 6-ft. power cord with three-prong plug.

	O'all Lg.	Cut Lg.		
Scissors	12″	5″	**2843A41**	$315.00
Temperature Control Unit			**2843A42**	75.92

Precise-Cut Compact Scissors

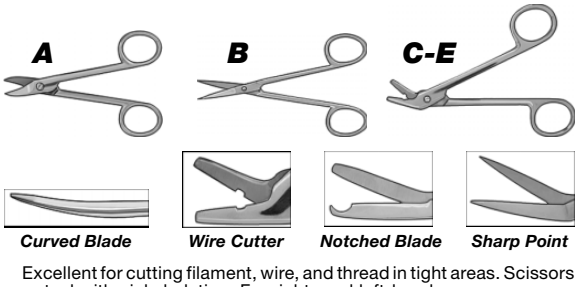

Excellent for cutting filament, wire, and thread in tight areas. Scissors are steel with nickel plating. For right- and left-hand use.

Snub-nosed blades are short to fit into tight spaces. ***Curved blades*** are for trimming flush against a flat surface. ***Angled blades*** keep hand clear of material being cut.

Style C has a wire cutter and a serrated jaw to prevent material from slipping.

Style D has a notched blade to selectively cut small wires.

Blade Type	O'all Lg.	Cut Lg.		
A .. Snub Nose	4¼″	¾″	**3892A1**	$13.26
A .. Snub Nose	4⅛″	¾″	**3892A3**♠	14.17
A .. Curved Snub Nose	4⅛″	11/16″	**3892A2**	14.17
B .. Needle Point	4½″	1″	**3611A11**	14.17
B .. Curved/Needle Point	3½″	⅝″	**3611A31**	11.78
B .. Curved/Needle Point	4⅜″	⅞″	**3611A21**	13.69
C .. Angled with Wire Cutter	4¾″	½″	**2870A21**	6.00
D .. Angled/Notched	5″	¾″	**2870A31**	5.84
E .. Angled/Sharp Point	4½″	½″	**2870A41**	5.01

♠ One blade is serrated to prevent wire slippage.

Precision Flush-Cut Wire Cutters

These precision tweezer-style cutters have specially designed tips to let you position and flush-cut wire. Recommended for cutting soft copper, gold, silver, and magnetic wire of no more than 0.010″ diameter. Tips are 3/8″ long and angled 70°. Cutters have a smooth outside grip and dull finish. Overall length is 4 1/2″.

Steel	8387A71	$35.38
400 Series Stainless Steel	8387A75	76.00

Compact Thread-Snipping Scissors

Replaceable-Blade with Sharp Point

Nonreplaceable-Blade with Sharp Point

Snip thread and lightweight filaments with these compact scissors. They have self-opening, spring-action handles for smooth, easy cutting. For right- and left-hand use.

Sharp-point blades are for work in tight places.

Blunt-point blades prevent snagging.

Replaceable-Blade Scissors

Have stainless steel blades and a PVC handle. *Replacement blades* are sold 10 pairs to a package and include 40 blade screws.

Point	O'all Lg.	Cut Lg.	Scissors	Each	Repl. Blades	Pkg.
Sharp	4 3/4″	1″	3844A11	$6.67	3844A13	$35.71
Blunt	4 3/4″	1″	3844A12	6.67	3844A14	34.82

Nonreplaceable-Blade Scissors

Steel scissors have chrome over nickel plating.

Point	O'all Lg.	Cut Lg.	Steel	Each	400 Series Stainless Steel	Each
Sharp	4 1/2″	1 1/4″	3898A11	$15.43	3898A12	$15.23
Blunt	4 1/2″	1 1/2″	3898A21	11.13	—	—

Shears for Laminated Plastics

Cut right through all kinds of brittle, high-pressure laminates without chipping, binding, or fracturing the material. Shears work by cutting out a 1/8″ wide strip of material while the material on either side of the strip lays flat. They won't mar decorative surfaces. Not for use on soft plastics. Shears have steel blades and PVC hand grips. For right- and left-hand use.

O'all Lg.	Cut Lg.		
9″	1 1/2″	7103A11	$33.40

Mini Sheet Cutters

Standard

Replaceable Blade

Choose one of these handy plastic cutters for quick, clean cutting of paper and thin plastic sheeting. All have guarded blades to protect your fingers.

Economy Cutter— Blade is stainless steel. Overall length is 3″. Package quantity is 5.

49305A71 ..... **Pkg.** $5.71

Standard Cutter— Blade is stainless steel. Overall length is 2 3/4″.

49305A67 ..... **Each** $3.73

Replaceable-Blade Cutter— Replace blade as needed to be sure you always have a sharp edge. Cutter has a hold-down tab that flattens the material ahead of the blade edge for easier cutting. Blade is steel. Overall length is 3 1/2″.

Replaceable-Blade Cutter	3221A3	**Each**	$6.78
Repl. Blades (Pkg. of 10)	3221A4	**Pkg.**	$4.62

Compact Scissors and Wire Strippers

Notched Blade

Also known as electricians' shears, these scissors are well-suited for many telephone-installation and electrical-service applications. The back edge of the blade has a file to clean contacts. Made of forged, nickel-plated steel. For right- and left-hand use.

Notched blades have two notches for stripping 19- and 23-gauge wire.

Serrated blades keep materials from slipping while cutting.

Blade Type	O'all Lg.	Cut Lg.		
Regular	5 1/4″	1 7/8″	3890A11	$12.22
Notched	5 1/4″	1 7/8″	3890A12	12.53
1 Notched and 1 Serrated	5 1/4″	1 7/8″	3890A14	12.88

Clean-Cut Utility Shears

Short Cut

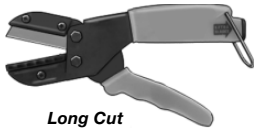

Long Cut

The cutting blade pushes down on the flat anvil-style jaw to produce a clean cut. Grips are vinyl-coated. For right- and left-hand use.

Short-Cut Shears— Great for cutting wood dowels, rope, and small branches. Made of steel with a brass anvil and steel blade with non-stick coating.

Replacement blade kit for short cut shears includes a steel blade with non-stick coating, brass anvil, and hardware.

Long-Cut Shears— Cut hose, tubing, and a variety of common materials including carpet, wood trim, and leather. Made of steel with a plastic anvil and a steel blade. There are three extra blades in the handle.

Replacement blade kits for long cut shears include three steel blades and a plastic anvil.

O'all Lg.	Cut Lg.		
Short-Cut Shears			
8″	1 3/4″	3881A11	$15.24
Repl. Blade Kit for 3881A11		3881A21	6.21
Long-Cut Shears			
9″	2 3/8″	3095A13	22.13
10 1/2″	3 7/8″	3095A16	24.88
Repl. Blade Kit for 3095A13		3095A21	6.26
Repl. Blade Kit for 3095A16		3095A22	6.26

Finger-Safe Cutters

Single-Blade Disposable

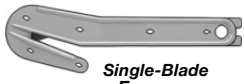

Single-Blade Economy

Single-Blade Standard and Heavy Duty

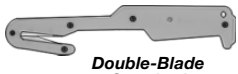

Double-Blade Standard

Single-Blade Cutters— Safely and easily cut stretch wrap, fabric, and sheet material. Blades are steel. *Heavy duty* has a heavier plastic handle for durability.

Double-Blade Cutter— Has two stainless steel blades (one on each side of the knife's throat). Cut flat and tubular webbing up to 3/8″ thick and most rope up to 3/8″ thick. Includes two replacement blades.

Replacement blades are steel (unless noted).

	Cutters: O'all Lg.	Throat Wd.		Each	Repl. Blades: Pkg. Qty.		Pkg.
Single Blade							
Disposable	6 3/8″	1/8″	2157T36	$2.83	—	—	—
Economy	7 3/4″	7/16″	2157T37	5.42	5	38755A22	$1.32
Economy	8 1/2″	3/16″	4926A56★	7.11	50	4926A58	9.09
Standard	6″	1/4″	4926A41	13.68	10	4926A43	9.74
Heavy Duty	7″	1/4″	4926A42	16.34	10	4926A43	9.74
Double Blade							
Standard	8″	3/8″	4926A51	16.88	2	4926A52♥	7.50

★ Includes three blades. ♥ Blades are stainless steel.

Stanley Utility Knives and Blades

(A-J) Retractable-Blade Knives

All have three cutting positions: full out, half out, and quarter out (except Style J, which has one cutting position). Blade retracts into the handle for safety. Include three steel blades, unless otherwise stated; extra blades store in the handle.

A

Stanley No. 10-099—Light gray; 6″ long.
4927A11 ..... $5.22

B

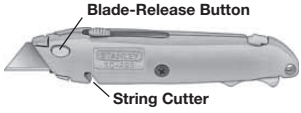

Stanley No. 10-499—Light gray; 6″ long.
3682A11 ..... $6.61

C

Stanley No. 10-788—Silver/black; 6½″ long.
4924A11 ..... $11.01

D

Stanley No. 10-989—Light gray; 7″ long.
4927A42 ..... $9.04

E

Stanley No. 10-778—Yellow/black; 6⅞″ long. Includes 5 blades.
24885A22 ..... $12.73

F

Stanley No. 10-804—Silver/black; 6½″ long. Includes 10 blades.
4951A8 ..... $27.17

G

Stanley No. 10-079—Dark gray; 6″ long.
4927A21 ..... $5.71

Stanley No. 10-179—Neon green; 6″ long.
4927A251 ..... $6.26

H

Stanley No. 10-779—Yellow/black; 6″ long.
4927A31 ..... $9.54

J

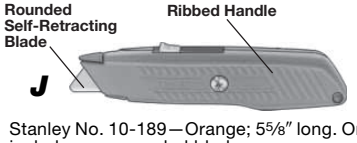

Stanley No. 10-189—Orange; 5⅝″ long. Only includes one rounded blade.
24575A61 ..... $6.85

(K-M) Fixed-Blade Knives

Blade remains fixed in the full-out cutting position for extra stability—excellent when hard pressure is required. Include three steel blades (unless otherwise stated); extra blades store in the handle.

K

Stanley No. 10-299—Light gray; 5½″ long. Only includes one blade.
4927A14 ..... $3.93

L

Stanley No. 10-209—Light gray; 5½″ long.
3678A11 ..... $6.76

M

Stanley No. 10-399—Dark gray; 6″ long.
4927A19 ..... $5.78

Replacement Stanley Knife Blades—All blades are steel.

Blades with dispensers include a wall-mount dispenser, except 4927A39. **Also Available:** Additional Stanley knife blades. Please ask for 4927A77 and specify Stanley number.

1

2

3

4

	Blade Type	For Knives	Thick.	Stanley No.	Pkg. Qty.		Pkg.
	Blades without Dispenser						
1	Light Duty	A-M★	0.017″	11-911	5	**4927A15**	$1.30
1	Heavy Duty	A-M	0.024″	11-700	5	**4927A41**	1.54
1	Heavy Duty	A-M	0.024″	11-700A	100	**4927A43**	17.46
1	Heavy Duty	A-M	0.024″	11-921	5	**4927A12**	1.41
1	Heavy Duty	A-M	0.024″	11-921	400	**4927A65**	58.41
1	Extra-Heavy Duty	A-M★	0.035″	11-931	5	**3678A16**	2.15
1	Extra-Heavy Duty	A-M★	0.035″	11-931	100	**3678A12**	29.70
2	Rounded Edge	A-M	0.024″	11-987	5	**4927A24**	2.02
3	Hook	A-M	0.024″	11-961	5	**4927A17**	4.15
4	Large Hook	A-M	0.024″	11-983	5	**4927A35**	4.97
	Blades with Dispenser						
1	Light Duty	A-M★	0.017″	11-911	100	**4927A16**	13.31
1	Heavy Duty	A-M	0.024″	11-921	10	**4927A39**	4.18
1	Heavy Duty	A-M	0.024″	11-921	100	**4927A13**	15.51
2	Rounded Edge	A-M	0.024″	11-988	100	**4927A22**	19.90
3	Hook	A-M	0.024″	11-961	100	**4927A18**	45.50
4	Large Hook	A-M	0.024″	11-983	100	**4927A36**	69.49

★ Not compatible with Style E knife.

Auto-Retract Utility Knife

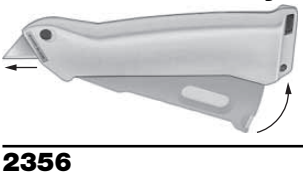

Cutting edge remains safely in the handle until you squeeze the grip, exposing the blade. Release the grip and blade retracts. A push-button release allows for easy blade changes. Spare blades store in the handle. Knife includes three blades.

Knife	**8982A11**	**Each**	$11.88
Leather Holster	**8982A21**	**Each**	$5.73
Repl. Blades (5/pkg.)	**38755A22**	**Pkg.**	$1.32

Retractable-Blade Utility Knives

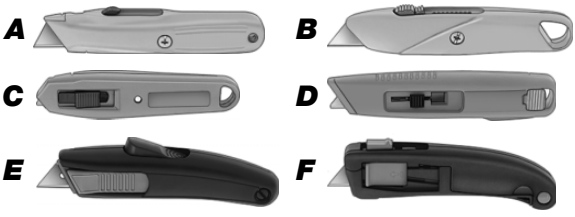

(A) Standard— Blade locks in three cutting positions. Knife is 6″ long, has an aluminum handle, and includes three 0.025″ thick steel blades.

(B) Colored— Blade locks in nine positions. Knife is 6″ long, has an aluminum handle with a red finish, and includes one 0.025″ thick steel blade.

(C&D) Snap Back— Blade moves into the cutting position when you slide the side lever forward and automatically snaps back into the handle when the lever is released. *Style C* is 5½″ long with an aluminum handle and one 0.025″ thick steel blade. *Style D* is 6¼″ long with an orange plastic handle and six 0.025″ thick steel blades.

(E&F) Ultra-Safe Snap Back— Blade automatically snaps back inside knife after losing contact with cutting surface—even if user continues to hold button in extended position. *Style E* is 6″ long with an aluminum handle and one 0.025″ thick steel blade. *Style F* is 6″ long with a black plastic handle and one 0.025″ thick steel blade.

Utility Knives

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
A	6	**3957A21**	$6.38	$5.85
B	5	**4930A14**	4.27	3.69
C	10	**4923A41**	7.42	6.71
D	12	**4923A44**	3.79	3.37
E	5	**4923A56**	26.88	24.81
F	10	**4923A57**	18.97	17.51

Replacement Blades

For Knives	Blade Thick.	*Pkg. of 5*	Pkg.	*Pkg. of 100*	Pkg.
A	0.018″	**3957A12**	$1.03	**3957A16**	$15.99
A	0.025″	**3957A13**	1.27	**3957A17**	16.19
B	0.025″	**4927A12**	1.41	**4927A13★**	15.51
C	0.025″	**4923A43**	2.05	**4923A42★**	29.08
D	0.025″	**4923A45**	1.62	—	—
E&F	0.025″	**4923A58●**	7.98	—	—

● Package of 10. ★ Includes dispenser.

Fixed-Blade Safety-Guard Utility Knives

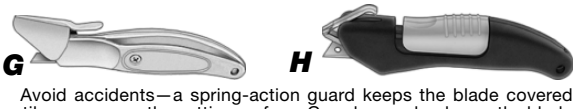

Avoid accidents—a spring-action guard keeps the blade covered until you press on the cutting surface. Guard snaps back over the blade once contact is lost with cutting surface. Package quantity is 12.

Style G is 6″ long with a chrome-plated die cast zinc handle. Includes three 0.025″ thick steel blades.

Style H stores five blades in the handle and opens easily with a lever for quick blade changes. Only for ¼″ and ¾″ cutting depths. Knife is 6¾″ long and has a plastic handle. Includes one 0.025″ thick steel blade.

Utility Knives

		Each Partial Pkg.	Each Full Pkg.
G	**4970A1**	$6.67	$6.00
H	**4970A6**	15.50	13.95

Replacement Blades

Pkg. Qty.	Pkg./ Case		Pkg. Partial Case	Pkg. Full Case
5	12	**4970A2**	$2.67	$2.40
100	3	**4970A3**	39.18	35.26

Leather and Nylon Utility-Knife Pouches

Keep utility knives handy by attaching one of these pouches to your belt.

(J&K) Leather— *Style K* has a cut-resistant fiber lining.

(L) Nylon— Has two pockets.

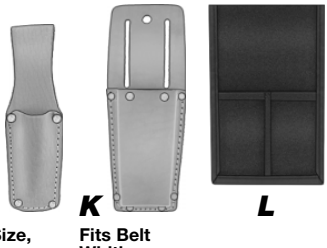

	O'all Size, Lg.×Wd.	Pocket Size, Wd.×Dp.	Fits Belt Width		
J	7½″×2¼″	1¾″ × ½″	3″	**3961A11**	$4.65
K	8½″×3″	2″ × ¾″	2¼″	**70985A71**	7.15
L	7½″×4¾″	3½″ × 1⅞″	2½″	**3672A12**	5.25

Mini Retractable-Blade Utility Knife

Perfect for small jobs. Knife has a die cast zinc handle with a push-button to lock the blade in cutting position. It is 3″ long and includes one 0.018″ thick steel blade.

Utility Knife

Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
10	**3806A12**	$3.07	$2.77

Replacement Blades

Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
5	**3806A14**	$1.99	$1.61

Folding Utility Knives

Folded

Similar to a pocket-knife, the blade in these utility knives folds into the handle. Use with two-notch utility blades and hook blades (sold separately on page 2356). Include a belt clip and one 0.040″ thick steel blade.

Aluminum handle has an anodized finish and a quick, one-button blade change.

Rubberized-grip handle has a textured grip and a lanyard hole.

Handle Material	Closed Lg.	Open Lg.		
Aluminum	3⅞″	6¼″	**6733A12**	$11.85
Rubberized Grip	3¾″	6″	**6733A14**	9.70
Black Nylon Pouch with Belt Loop			**73385A71**	5.55

Angle-Grip Utility Knives

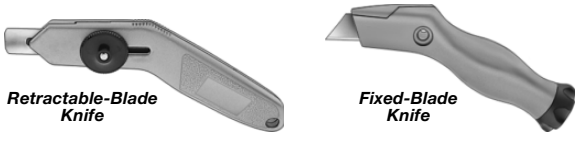

An angled aluminum handle gives you control, even in hard-to-reach places. ***Retractable-blade knife*** cuts linoleum, cloth, and cardboard. It's 6½″ long and has three double-edge, 0.015″ thick steel blades. ***Fixed-blade knife*** cuts wallboard and carpet padding. It's 6″ long and has two straight, 0.027″ thick steel blades.

Utility Knives

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Retractable Blade	6	**7086A11**	$11.19	$10.18
Fixed Blade	6	**3915A1**	12.95	10.60

Replacement Blades

	Blade Thick.	Pkg. Qty.		Pkg. 1-9	Pkg. 10-Up
For Retractable-Blade Knife					
Double Edge	0.015″	5	**7086A12**	$2.41	$2.02
Double Edge	0.017″	100	**7086A65**	25.32	21.33
For Fixed-Blade Knife					
Straight	0.027″	5	**3915A2**	2.97	2.42
Hook	0.027″	5	**3915A3**	7.85	6.42

Carton Cutters

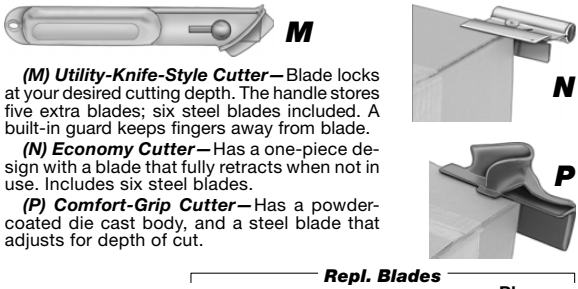

(M) Utility-Knife-Style Cutter— Blade locks at your desired cutting depth. The handle stores five extra blades; six steel blades included. A built-in guard keeps fingers away from blade.

(N) Economy Cutter— Has a one-piece design with a blade that fully retracts when not in use. Includes six steel blades.

(P) Comfort-Grip Cutter— Has a powder-coated die cast body, and a steel blade that adjusts for depth of cut.

Cutters		Each	Repl. Blades For Cutter	Pkg. Qty.	Pkg./ Case		Pkg. Partial Case	Pkg. Full Case
M	**2042T21**	$4.92	M	5	20	**2042T22**	$1.80	$1.40
N	**1982T1**	4.87	N	5	—	**1982T2**	—	1.11
P	**2033T1**	26.89	P	5	—	**2033T2**	—	2.78
—	—	—	P	100	—	**2033T3**	—	43.00

Replacement Blades for Utility Knives

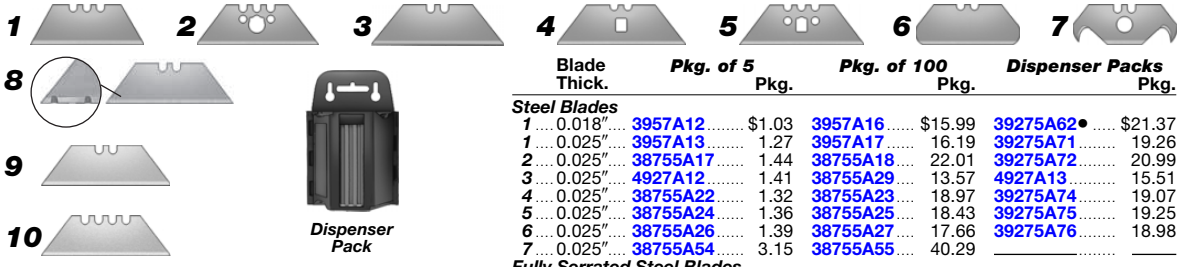

Dispenser Pack

Fit most brands of utility knives, including Ardell, Hyde, Wiss, General, Red Devil, Allway, Starrett, Evans, Great Neck, and Warner. Check the style of blade used in your knife and match it with the images shown here.

Dispenser packs include 100 blades (unless noted), dispense one at a time, and can be hung on the wall.

Serrated blades create less friction allowing a faster cut with less force.

Bimetal blades stay sharp three times longer than steel blades. *TiN-coated* blades are extra durable.

	Blade Thick.	Pkg. of 5	Pkg.	Pkg. of 100	Pkg.	Dispenser Packs	Pkg.
Steel Blades							
1	0.018″	**3957A12**	$1.03	**3957A16**	$15.99	**39275A62**●	$21.37
1	0.025″	**3957A13**	1.27	**3957A17**	16.19	**39275A71**	19.26
2	0.025″	**38755A17**	1.44	**38755A18**	22.01	**39275A72**	20.99
3	0.025″	**4927A12**	1.41	**38755A29**	13.57	**4927A13**	15.51
4	0.025″	**38755A22**	1.32	**38755A23**	18.97	**39275A74**	19.07
5	0.025″	**38755A24**	1.36	**38755A25**	18.43	**39275A75**	19.25
6	0.025″	**38755A26**	1.39	**38755A27**	17.66	**39275A76**	18.98
7	0.025″	**38755A54**	3.15	**38755A55**	40.29	—	—
Fully Serrated Steel Blades							
8	0.025″	**4861A41**	2.95	**4861A42**■	27.60	—	—
Half Serrated Steel Blades							
8	0.025″	**4861A54**	2.95	**4861A55**■	27.60	—	—
Type 440 Stainless Steel Blades							
3	0.036″	**4927A72**♣	6.45	—	—	—	—
Bimetal Blades							
9	0.025″	**5237A31**	2.18	**5237A33**	32.48	—	—
TiN-Coated Bimetal Blades							
10	0.025″	**5237A41**	3.20	**5237A43**	44.01	—	—

● Includes 150 blades. ■ Pkg. of 50. ♣ Pkg. of 10.

Single-Edge Razor Blades

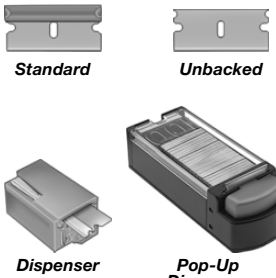

All, except plastic and unbacked blades and blades with dispensers, are individually wrapped. ***Clean room blades*** are cleaned and degreased. ***Unbacked*** do not have the traditional back support. ***Dispensers*** also store used blades. ***Pop-up dispensers*** have a button to pop-up the next new blade; also store used blades.

	Blade Thick.	Pkg. Qty.	Pkg./ Case		Pkg. Partial Case	Pkg. Full Case
Steel Blades						
Standard	0.009″	5	20	**3962A1**	$0.75	$0.65
Standard	0.009″	100	10	**3962A3**	5.52	5.01
Standard with Dispenser	0.009″	10	12	**7071A11**	3.22	2.41
Standard with Pop-Up Dispenser	0.009″	100	12	**7071A15**	13.71	12.34
Standard with Pop-Up Dispenser	0.009″	100	12	**7071A14**▲	13.27	11.94
Precision Edge	0.009″	100	10	**3962A4**	10.05	8.79
Heavy Duty	0.012″	100	10	**3962A6**	8.82	7.38
Clean Room with Dispenser	0.009″	10	200	**3962A54**	3.83	3.15
Unbacked	0.009″	100	10	**3962A47**	7.05	6.29
Stainless Steel Blades						
Standard	0.009″	5	20	**3962A65**	1.08	0.96
Standard	0.009″	100	10	**3962A5**	15.80	13.94
Precision Edge	0.009″	100	10	**3962A8**	21.50	17.36
Clean Room with Dispenser	0.009″	10	200	**3962A55**	6.05	4.84
Clean Room with Pop-Up Dispenser	0.009″	100	50	**7071A16**	26.40	24.20
Unbacked	0.009″	100	10	**3962A48**	11.73	10.49
Plastic Blades						
Nonscratch	0.040″	5	20	**3962A7**	2.05	1.78

▲ Blade back is aluminum.

Razor Blade Knives

Standard— Includes one steel blade. Sold in packages of 12.

Breakaway Blade— Snap off dull blades for a fresh, sharp edge. Knife includes one steel blade with six snap-off blade segments.

Snap Back— Retracts the blade when cutting action stops. Includes one double-edged stainless steel blade.

	Knives: Closed Lg.	Knives: Pkg.	Each	Repl. Blades: Pkg. Qty.	Repl. Blades: Pkg.	
Standard	4″	**3954A11**	$7.31	5	**3962A1**	$0.75
Breakaway	4 1/8″	**39555A68**	2.74	5	**39555A69**	3.63
Snap Back	4″	**39545A65**	6.85	10	**39545A66**	5.71

Easy-Grip Rotary-Blade Cutters

Cut foam board, mat board, cardboard, construction paper, fiberglass, and many other materials. Cutter has a replaceable 0.012″ thick stainless steel blade. ***Loop handle*** cutter has a blade that can be mounted on either side for left- or right-hand use. ***Straight handle*** cutters are for right-hand use only.

Blade Dia.	Cutters: O'all Lg.	Cutters: Depth of Cut		Each	Repl. Blades: Pkg. Qty.		Pkg.
Loop Handle							
1 3/4″	6 1/4″	5/16″	**49255A65**	$13.52	1	**49255A66**	$6.35
Straight Handle							
1 1/8″	6 1/8″	3/16″	**49255A82**	8.36	2	**49255A56**	6.35
2 3/8″	7 1/4″	15/16″	**49255A84**	25.06	1	**49255A86**	8.40

Blade Disposal Containers

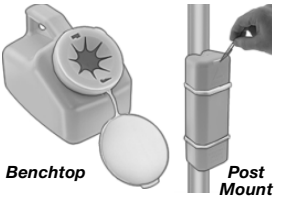

Safely dispose of worn knife blades. These containers store used single-edge, razor, precision (X-ACTO® style), and utility-knife blades. They're high-impact, puncture-resistant yellow plastic.

Benchtop can be mounted to a wall with the *optional wall-hanging rack*. ***Post mount*** has two ties for attaching to posts, forklift cages, and more. ***Wall mount*** has a bracket for mounting to a wall.

	O'all Size, Ht. × Wd. × Dp.		
Benchtop	7″ × 5 1/2″ × 8 1/2″	**70885A67**	$15.64
Post Mount	9 1/4″ × 3 1/2″ × 2 1/2″	**70885A73**	10.31
Wall Mount	9 1/4″ × 3 1/2″ × 2 1/2″	**70885A76**	12.40
Optional Wall-Hanging Rack for Benchtop		**70885A68**	13.02

Retractable Rotary-Blade Safety Cutter

With a squeeze of the plastic spring-loaded handle, you can cut plastic sheet, cloth, felt, and other sheet material. Includes one 0.024″ thick steel blade that retracts into the handle when the squeeze bar is released. Blade diameter is 1″. Cutter is 5 3/4″ long with a cut depth of 1/8″.

Cutter	**4925A11**	$15.23
Repl. Blade	**4925A13**	4.89

Breakaway-Blade Utility Knives and Blades

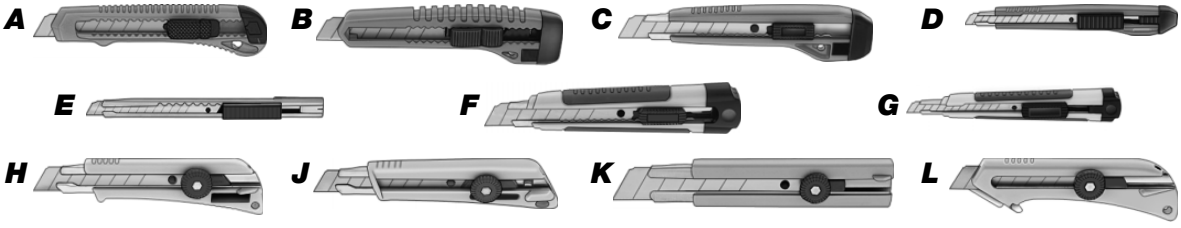

Always have a sharp blade ready to go. Just snap off the dull blade segment with the built-in blade breaker; ratchet-lock knives require pliers to break off the blade. All knives have plastic handles, except Style E has a stainless steel handle and Style J has a hard, rubber-like handle. All have steel blades, except Styles E-G have stainless steel blades.

Manual-Lock Knives
A sliding two-piece, manually operated lock holds the blade in position.
(A) Standard Duty— Good general purpose knife.
(B) Magazine Load— Has a five-blade magazine with automatic blade load.

Auto-Lock Knives
Blade locks instantly in position when the push-button is advanced.
(C) Standard Duty— Extra blades store in the handle.
(D) Trimline— Slim design with storage for extra blades in the handle.
(E) Stainless Steel Trimline— Slim design with a stainless steel handle and blade.
(F) Cushion Insert— Rubber insert for comfort and slip resistance.
(G) Cushion Insert Trimline— Slim design with a rubber insert for comfort and slip resistance.

Ratchet-Lock Knives
Knives have a ratchet wheel lock that adjusts the blade at any position.
(H) Standard Duty— Has a comfort-grip, slip-resistant handle.
(J) Chemical Resistant— Resists acetone and solvents. Handle is made of a slip-resistant, rubber-like material for a firm grip.
(K) Heavy Duty Cushion Grip— Has a thicker and wider blade for durability and a rubber cushioned grip for comfort and slip resistance.
(L) Carton Cutting— Has a depth-cutting guide and a staple puller.

					Knives					Repl. Blades				
	Blade Segments	No. of Blades	Blade Wd.	Blade Thick.	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.	Pkg. Qty.	Pkg./ Case		Pkg. Partial Case	Pkg. Full Case
Manual-Lock Knives														
A Standard Duty	8	3	0.70″ (18 mm)	0.02″	6″	10	**3814A11**	$3.50	$3.00	10	10	**3814A31**	$3.83	$3.29
B Magazine Load	8	5	0.70″ (18 mm)	0.02″	6″	10	**3815A65**	9.95	8.62	5	10	**3815A66**	4.16	3.60
Auto-Lock Knives														
C Standard Duty	8	3	0.70″ (18 mm)	0.02″	6¼″	10	**35545A73**	5.36	4.63	10	10	**3814A31**	3.83	3.29
D Trimline	13	3	0.35″ (9 mm)	0.016″	5½″	10	**35545A71**	3.47	3.00	10	10	**3814A41**	2.79	2.40
E SS Trimline	13	1	0.35″ (9 mm)	0.015″	5⅜″	6	**38155A7**	8.54	7.39	10	6	**38155A71**	6.65	5.76
F Cushion Insert	8	3	0.70″ (18 mm)	0.02″	6½″	10	**5098A26**	7.02	6.08	5	10	**24995A55**	2.93	2.64
G Cushion Insert Trimline	13	3	0.35″ (9 mm)	0.016″	5½″	10	**5098A24**	4.52	3.90	10	6	**38155A71**	6.65	5.76
Ratchet-Lock Knives														
H Standard Duty	8	1	0.70″ (18 mm)	0.02″	5¾″	6	**26775A64**	8.99	7.78	10	10	**3814A31**	3.83	3.29
J Chemical Resistant	8	1	0.70″ (18 mm)	0.02″	6¼″	6	**24905A41**	9.53	8.24	5	10	**24995A55**	2.93	2.64
K Heavy Duty	7	1	0.98″ (25 mm)	0.028″	6¾″	6	**38145A7**	15.29	13.24	5	6	**38145A71**	7.10	6.14
L Carton Cutting	8	1	0.70″ (18 mm)	0.02″	5¾″	6	**39585A65**	11.36	9.83	10	10	**3814A31**	3.83	3.29

Replacement Blades for Breakaway-Blade Utility Knives

Fit most brands of breakaway-blade utility knives including Olfa, Stanley, Techni-Edge, and Hyde. Match your blade with the dimensions below. Safety-pack dispenser stores used blades. ***Ultra-sharp*** blades cut hard-to-cut materials such as Kevlar and rubber. ***Bimetal*** blades stay sharp three times longer than steel blades.

	Blade Thick.	Pkg. Qty.	Pkg./ Case		Pkg. Partial Case	Pkg. Full Case
0.35″ (9 mm) Wide Blades— *13 Blade Segments*						
Steel	0.015″	50	6	**24995A62**	$12.82	$10.36
Steel	0.016″	10	10	**3814A41**	2.79	2.40
Steel	0.02″	10	10	**24995A61★**	3.74	3.13
Ultra-Sharp Steel	0.015″	50	10	**24995A63**	24.07	20.24
Stainless Steel	0.015″	10	6	**38155A71★**	6.65	5.76
0.70″ (18 mm) Wide Blades— *8 Blade Segments*						
Steel	0.02″	10	10	**24995A51★**	5.12	4.29
Steel	0.02″	10	10	**3814A31**	3.83	3.29
Steel	0.025″	100	10	**24995A52**	29.66	25.95
Ultra-Sharp Steel	0.02″	10	6	**24995A53**	8.09	7.01

★ Supplied in a safety-pack dispenser.

	Blade Thick.	Pkg. Qty.	Pkg./ Case		Pkg. Partial Case	Pkg. Full Case
0.70″ (18 mm) Wide Blades— *8 Blade Segments (Cont.)*						
Ultra-Sharp Steel	0.02″	50	10	**24995A54**	$29.84	$25.83
Bimetal	0.02″	10	5	**24995A84**	10.22	9.22
Bimetal	0.02″	50	5	**24995A85**	37.03	33.41
Magazine Load Steel	0.02″	5	10	**3815A66**	4.16	3.60
Stainless Steel	0.02″	5	10	**24995A55**	2.93	2.64
0.98″ (25 mm) Wide Blades— *7 Blade Segments*						
Heavy Duty Steel	0.028″	5	6	**38145A71**	7.10	6.14
Heavy Duty Steel	0.015″	20	10	**24995A72**	25.10	21.72
Ultra-Sharp Steel	0.03″	20	6	**24995A74**	25.31	22.92

Precision Knife with Breakaway Blades

Knife has an extra-sharp breakaway blade angled for precise cutting; blade has seven segments. Handle is stainless steel with a 0.35″ Wd.×0.015″ Thick. steel blade. Overall length is 5⅛″.

Knife

Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
12	**24585A5**	$8.94	$8.24

Replacement Blades

Pkg. Qty.	Pkg./ Case		Pkg. Partial Case	Pkg. Full Case
10	12	**24585A6**	$9.27	$8.08

Finger-Ring Twine Cutter

Just slip this cutter on your finger like a ring for a quick way to cut twine and cord. Band is aluminum. Blade is steel. **To Order:** Please specify ring size, #4 (0.585″ dia.) to #15 (0.956″ dia.).

	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Cutter	12	**1940T31**	$5.43	$4.44

Bench-Mount String Cutter

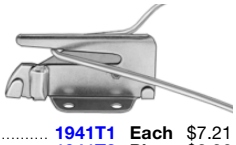

Mount on the wall or your bench top to cut string, twine, and rope (up to ¼″ dia.). Cutter has a zinc-plated steel body and a concealed blade. Includes three 0.025″ thick steel blades and mounting fasteners.

Cutter	**1941T1**	**Each**	$7.21
Replacement Blades (5/Pkg.)	**1941T2**	**Pkg.**	$3.36

Precision Knives and Replacement Blades

Knives

Standard

Choose-a-Color Rubber Grip

Heavy Duty

Plastic Handle

Swivel Blade

Retractable Blade

Great for fine cutting, slicing, trimming, etching, and scoring. All except the plastic-handle knife come with a safety cap. All include one blade.

Standard— Has an aluminum handle.

Choose-a-Color Rubber Grip— Has a fatigue-reducing rubberized grip on the handle. **To Order:** Please specify grip color: black, blue, green, purple, or red.

Heavy Duty— For tough cutting jobs. Has an aluminum handle.

Plastic Handle— Good for heavy-pressure cutting, this knife has a large, fluted plastic handle for an extra-firm grip; handle is red.

Swivel Blade— Blade rotates 360° for cutting curves and circles. Handle is aluminum.

Retractable Blade— Like a pen, a push of a button extends or retracts the blade. Handle is aluminum.

	Included Blade	Comparable to X-ACTO® Knife	Handle, Dia. × Lg.	Fits Replacement Blades (see drawings)	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard	E	No. 1	5/16″ × 4 7/8″	A-J	12	35435A11	$3.14	$2.83
Choose-a-Color Rubber Grip	E	Soft Grip	3/8″ × 5″	A-J	10	35575A71	4.76	4.08
Heavy Duty	R	No. 2	7/16″ × 4 7/8″	K-V	12	38995A71	4.41	3.98
Plastic Handle	L	No. 5	7/8″ × 4 3/8″	K-V	12	35515A12	5.84	5.27
Swivel Blade	W	X3241	5/16″ × 4 3/4″	W	1	3154A21	—	7.81
Retractable Blade	X	X3295	5/16″ × 5″	X	1	4929A12	—	13.82

Replacement Blades

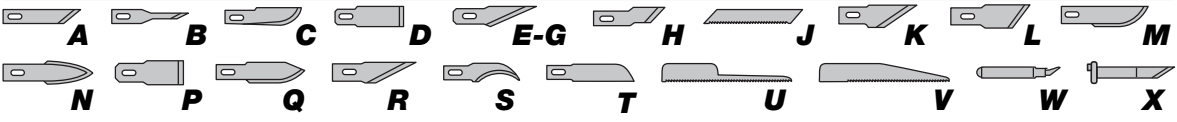

Styles A-J— Blades are steel, except Style F, which is stainless steel and Style G, which is titanium. Titanium blade is three times stronger than stainless steel. All fit X-ACTO® knife No. 1; Techni-Edge Nos. 1, 1SGK, and 1 X-Press; Griffin Nos. 7 and 7SC; PO No. 1; Excel No. 1. Shank width of blade is approximately 0.250″.

Styles K-V— All are steel. Fit X-ACTO® knife Nos. 2 and 5; Techni-Edge Nos. 2 and 2SGK; Griffin Nos. 15 and 14-15; PO Nos. 2 and 5; and Excel Nos. 2 and 5. Shank width of blade is approximately 0.350″.

Style W— Made of steel. Fits X-ACTO X3241.

Style X— Made of stainless steel. Fits X-ACTO X3295.

	I.S.★ No.	Blade Lg.	Blade Wd.♦	Blade Thick.	Pkg./Case (Pkg. of 5)		Pkg. Partial Case	Pkg. Full Case	Pkg. of 100	Pkg. of 100 Pkg.
Blades for Standard and Choose-a-Color Rubber-Grip Knives										
A ... Light and medium straight cutting	—	1.42″	0.23″	0.020″	10	35435A12	$2.74	$2.38	35435A65	$40.80
B ... Detail and curve cutting; stenciling	—	1.43″	0.10″	0.020″	10	35435A13	3.43	2.97	35435A66	53.55
C ... General purpose cutting, carving, and slicing	10	1.57″	0.34″	0.020″	10	35435A14	3.10	2.69	35435A67	37.08
D ... Light to medium chiseling	17	1.41″	0.35″	0.020″	10	35435A15	1.95	1.62	35435A68	21.83
E ... General purpose cutting, trimming, and stripping	11	1.59″	0.35″	0.020″	50	35435A16	1.58	1.35	35435A69	20.33
E ... Ultrasharp for precision cutting	11	1.56″	0.33″	0.020″	10	35435A82	1.45	1.25	35435A83	16.13
F ... Stainless steel; general purpose cutting	11	1.54″	0.31″	0.020″	12	35435A7	2.77	2.22	35435A71	29.78
F ... Stainless steel; ultrasharp for precision cutting	11	1.55″	0.33″	0.020″	10	35435A84	1.83	1.57	35435A85	24.78
G ... Cutting adhesives/tapes without sticking	11	1.57″	0.38″	0.020″	36	35435A18	6.19	5.57	—	—
H ... Stenciling, etching, and scoring	16	1.40″	0.30″	0.020″	10	35435A17	1.59	1.36	35435A76	19.14
J ... Fine-tooth saw blade; small, precise cutting	13	1.75″	0.25″	0.020″	12	35435A34	3.03	2.65	—	—
Blades for Heavy Duty and Plastic-Handle Knives										
K ... Angled for detail cutting	24	1.57″	0.45″	0.025″	10	38995A72	1.74	1.51	38995A65	24.84
L ... General purpose straight cutting	19	1.69″	0.45″	0.025″	10	38995A73	1.74	1.51	38995A66	24.84
M ... General purpose carving	22	1.79″	0.35″	0.025″	10	38995A74	2.59	2.36	38995A67	40.71
N ... Double-edged for carving	23	1.80″	0.35″	0.025″	10	38995A75	4.81	4.17	38995A68	57.25
P ... Medium to heavy scraping and cutting	18	1.80″	0.50″	0.025″	12	38995A76	2.26	2.02	38995A69	30.73
Q ... Tapered-tip for carving	25	1.89″	0.35″	0.025″	10	38995A77	5.88	5.11	38995A7	74.64
R ... Sharp angle for cutting med. to heavy material	2	1.89″	0.40″	0.025″	12	38995A78	3.17	2.83	38995A79	27.58
S ... Curved for contouring and shaping	28	1.77″	0.43″	0.025″	10	38995A83	8.50	7.44	38995A84	87.46
T ... Angled for whittling and trimming	26	3.05″	0.44″	0.025″	12	38995A85	5.00	4.47	—	—
U ... Narrow saw blade; smooth cutting in tight areas	15	2.50″	0.38″	0.025″	12	35435A35	4.94	4.33	—	—
V ... Narrow saw blade; smooth cutting in tight areas	27	3.13″	0.38″	0.025″	12	35435A36	5.00	4.38	—	—
Blade for Swivel-Blade Knife										
W ... Curved and circle cutting	—	0.16″	0.09″	0.010″	1	3154A22●	—	2.55	—	—
Blade for Retractable-Blade Knife										
X ... General purpose cutting	—	0.98″	0.16″	0.020″	1	4929A22	—	7.59	—	—

★ I.S. = Industry Standard. ♦ At widest point of cutting edge. ● 2 blades/pkg.

Safety Pack Plastic Dispensers—Include 15 blades.

Dispenser Pack		Pkg. 1-9	Pkg. 10-Up
Style D Blades	35435A87	$6.21	$5.33
Style E Ultrasharp Blades	35435A81	5.73	4.73
Style H Blades	35435A86	6.21	5.33
Style R Blades	38995A82	7.20	5.60

Blade Disposal Container

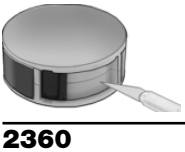

Safely dispose of worn knife blades in this plastic container. A 1 5/8″ long slot on the side of the container slides open to accept precision and breakaway knife blades. Overall size is 2 5/8″ Dia. × 1″ Ht.

24525A3 ..... **Each** $3.05

Precision Knife and Blade Kits

General Purpose Kit— Includes three knife handles (one standard, one medium duty, and one heavy duty) and 14 blades (one each of Styles A-D; two of Style E; one of Style H; three of Style K; two of Style L; and one each of Styles M and P). Comes in a wood case.

3960A11 ..... **Each** $16.95

Deluxe Kit

Deluxe Kit— Includes three knife handles (one standard and two heavy duty) and 23 blades (three each of Styles C, D, E, H, L, M, and N and one each of Styles Q and R). Also includes a screwdriver, pin-point stylus, miter box, sander block with sandpaper, razor saw blade, and stencil blade. Comes in a wood case.

7055A12 ..... **Each** $37.31

Protective Cutting Pads with Grid

These PVC, nonslip, 1/8″ thick pads heal themselves to seal surface nicks and cuts. Pads are marked with inch and centimeter grids and 45° and 60° angles.

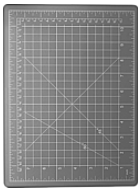

Size	Blue Pads		Clear Pads	
9″×12″	70875A65	$8.83	70875A41	$9.26
12″×18″	70875A66	14.48	70875A42	19.26
18″×24″	70875A67	26.57	70875A43	30.69
24″×36″	70875A68	45.93	70875A44	53.54

Scalpel Knives

These super-sharp knives are perfect for slicing and trimming plastics and other materials, as well as for dissecting.

Stainless Steel Handles—Blades sold separately below.

	Size, Lg.×Wd.		
A	4 7/8″×1/2″	36325A63	$4.81
B	5 3/8″×3/4″	36325A64	14.81
C	5 3/8″×9/16″	36325A58	4.81

Blades

Sterile knives are surgical-quality stainless steel. All are 0.015″ thick.

Industry Standard No.	Lg.×Wd.	Pkg. Qty.	Nonsterile Steel	Pkg.	Sterile Stainless Steel	Pkg.
For Handle Styles A and B						
10	1 1/4″×3/16″	10	36325A68	$3.63	36325A67	$5.29
10	1 1/4″×3/16″	100	36325A69	32.50	36325A73	42.50
11	1 1/4″×3/16″	10	36325A71	3.63	36325A66	5.29
11	1 1/4″×3/16″	100	36325A72	32.50	36325A74	42.50
12	1 1/4″×3/16″	10	36325A75	3.63	36325A76	5.29
12	1 1/4″×3/16″	100	36325A77	32.50	36325A78	48.57
15	1 1/4″×3/16″	10	36325A81	3.63	36325A82	5.29
15	1 1/4″×3/16″	100	36325A83	32.50	36325A84	48.57
For Handle Style C						
21	2″ ×1/4″	10	36325A91	3.63	36325A93	5.29
21	2″ ×1/4″	100	36325A92	32.50	36325A94	48.57
24	2″ ×1/4″	10	36325A86	3.63	—	—
24	2″ ×1/4″	100	36325A87	32.50	—	—

Disposable Sterile Scalpels

Include a plastic handle and stainless steel blade. All have a safety cover that slides to expose blade.

Industry Standard Blade No.	O'all Lg.		
10	5 3/4″	36325A47	$3.20
11	5 3/4″	36325A48	3.20
15	5 3/4″	36325A49	3.20

Scalpel Blade Remover and Disposal Container

Insert scalpel and then press the button to remove the blade. Holds 150-300 blades.

36325A14 ..... $9.38

Plastic-Scoring/Cutting Knives

Economy

Standard

Great for acrylics and other fracture-sensitive plastics.

Economy has a plastic handle and a nonreplaceable steel blade.

Standard has a plastic handle and three tungsten-carbide blades.

Heavy duty has a pistol-grip, steel handle and one steel blade.

Heavy Duty

	Knives: O'all Lg.		Each	Repl. Blades: Pkg. Qty.		Pkg.
Economy	5 1/2″	3194A41	$4.31	—	—	—
Standard	7″	38595A65	9.60	3	38595A66	$5.56
						Each
Heavy Duty	6″	8291A11	32.02	—	8291A13	$4.85

Light Duty Hot-Blade Knife

Knife

Temperature-Control Unit

Use heat to cut through gasketing, nylon webbing, slings, and other thin synthetic fabrics. Without the optional temperature-control unit, knife heats up to 1050°F. The cutting tip is copper with a 5/8″ Lg.×3/8″ Wd.×1/16″ Thick. blade that is similar in shape to a butter knife. Knife with tip is 10″ long. Maximum cutting depth is 5/8″. Operates on 60 watts, 115 VAC, 60 Hz, and has a 5-ft. long cord with two-prong plug.

Optional Temperature-Control Unit—Lets you adjust the temperature from 150° to 1050°F. Knife plugs into the unit. Operates on 115 VAC and has a three-prong plug. Size is 3 3/4″ Ht.×2″ Wd.×2″ Dp.

Knife	2453A61	$64.68
Optional Temperature-Control Unit	2453A62	61.48
Optional Knife Stand	2453A64	6.83
Replacement Knife Tip	2453A63	15.51

Thermocutters

Standard

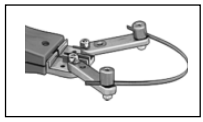

Optional Cutting Sling with Blade

Heavy Duty

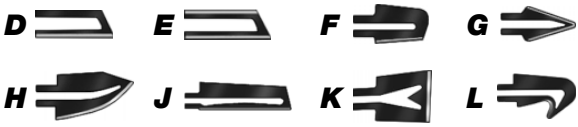

Blades heat instantly to cut rubber, PVC, cork, polystyrene, and other thermoplastic materials up to 5″ thick (depending on material density). All blades (Styles D-L) can be used with either cutter, unless noted.

Standard Cutter—At 11 1/2 oz., this steel cutter weighs significantly less than the heavy duty cutter. Designed for intermittent use. Temperature easily adjusts from 0° to 1050°F with a thumb control. Overall length is 9″. Includes one Style D blade. Operates on 150 watts, 115 VAC, and has an 11-ft. power cord with three-prong plug.

Heavy Duty Cutter—Can be used for continuous operation. Has a steel handle connected to a base unit by a 9 1/2-ft. cord. Cutter is 9″ long; base unit is 11 7/8″ Lg.×7 1/2″ Wd.×8 1/2″ Dp. Temperature adjusts from 220° to 1400°F. Includes one Style J blade. Operates on 500 watts, 115 VAC, and has a 6-ft. cord with three-prong plug.

Optional Cutting Sling with Blade—Easily mounts on cutters. Blade can be bent once into your desired shape.

Cutters

Standard	2858A44	$477.09
Heavy Duty	2858A12	2,104.51

Optional Cutting Sling with Blade

Cutting Sling with Blade	2858A25	$71.74
Replacement Blade for Cutting Sling	2858A26	5.54

Blades

	Blade Style	Cut Lg.		
D	Straight General Purpose	19/32″	2858A13	$12.44
D	Straight General Purpose	2″	2858A14	12.44
D	Straight General Purpose	3 17/32″	2858A15	16.33
D	Straight General Purpose	5″	2858A23	16.33
E	Straight Double Edge	3 15/16″	2858A21	15.29
E	Straight Double Edge	7 7/8″	2858A22	17.31
F	Heat-Sealing Edge	1 3/8″	2858A16	19.72
G	Pointed—Two-Directional Cuts	1 3/8″	2858A17	21.47
H	Curved Edge—Long Cuts	1 25/32″	2858A18	34.88
J	Straight—Clean Cuts	3″	2858A19▲	28.72
K	Wide Cuts	1 3/8″	2858A24	19.84
L	Hook Edge	15/64″	2858A27	14.70
L	Hook Edge	15/32″	2858A28	14.70

▲For use with the heavy duty cutter only.

Bench-Top Hot-Blade Cutter

This aluminum cutter has a 5″ long stainless steel blade that easily melts through woven and knitted synthetic materials (such as webbing, strapping, cord, ribbon, hook and loop, and rope) without fraying. The handle is insulated and reverses for right- or left-hand use.

Cutter has a 190-watt heater for efficient heating and an easy-to-read, variable-heat controller that adjusts the temperature up to 1000°F. Operates on 120 VAC and has a 6-ft. cord with three-prong plug. Size is 11½″ Ht. × 6″ Wd. × 15¼″ Dp.

7653A1 ..... $518.75

Foam and Insulation Cutters

Wood Handle

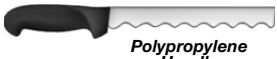

Polypropylene Handle

Rubber Handle

Excellent for cutting through insulation made of foam, fiberglass, and rock wool and similar materials. 49345A1 and *A4* have a steel blade; 49345A7 has a stainless steel blade. All include a storage pouch.

Handle	Blade Size, Lg. × Thick.		
Wood	6¾″ × 0.03″	**49345A1**	$27.73
Polypropylene	8¾″ × 0.074″	**49345A4**	30.02
Rubber	6¼″ × 0.12″	**49345A7**	14.27

Soft Plastic Foam Cutter

Cut tubular insulation material, soft boards, panels, and other plastic foams up to 2.36″ thick. This easy-grip cutter has a steel blade and a hinged blade guard. It comes with five replacement blades that store in the plastic handle. Overall size is 5½″ Lg. × 4⅝″ Ht.

Cutter	**3225A21**	**Each**	$29.92
Replacement Blades (10/Pkg.)	**3225A23**	**Pkg.**	$13.65

Food Service Knives

Wood Handles (A, C, G, J, L, T)—Blades are steel; Style G is stain-free steel.

Polypropylene Handles (B, D-F, H, K, M-S, U-X)—These synthetic handles resist bacteria, moisture, and grease. Blades are stain-free steel, unless noted. National Sanitation Foundation (NSF) certified.

Choose-a-Color—Textured for slip resistance. **To Order:** Please specify handle color: blue, green, red, or yellow.

Soft Grip—This comfortable grip reduces user fatigue.

Antimicrobial—An antimicrobial treatment is added to these handles for continuous protection against bacteria, mold, and fungus. Handles are also textured for slip resistance. Blades are made of steel and titanium and resist adhesives and corrosion.

Produce

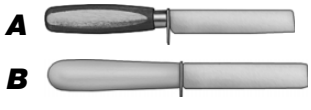

	Handle	Blade Size, Lg. × Wd.		
A	Wood	4¼″ × 1″	**7053A12**	$10.01
A	Wood	6″ × 1″	**7053A11**	10.02
B	Polypropylene	4½″ × ⅞″	**4983A16**	14.23
B	Polypropylene	6″ × 1″	**4983A17**	15.96

Paring

	Handle	Blade Size, Lg. × Wd.		
C	Wood	3¼″ × ⅝″	**3919A11**	$8.70
D	Polypropylene	3¼″ × 9/16″	**3924A13**	7.20
D	Soft Grip	3¼″ × 9/16″	**3924A16**	8.07
E	Polypropylene	3¼″ × 9/16″	**3924A11**	5.97
E	Choose-a-Color	3¼″ × 9/16″	**3764A4**■	6.26
E	Soft Grip	3¼″ × 9/16″	**3924A14**	6.83
F	Polypropylene	3½″ × 9/16″	**3924A12**	10.21
F	Antimicrobial	2½″ × ½″	**3279A21**	9.38

Chef's

	Handle	Blade Size, Lg. × Wd.		
G	Wood	10″ × 1¾″	**3920A12**	$38.13
H	Polypropylene	8″ × 1¾″	**3917A11**	27.75
H	Polypropylene	10″ × 1¾″	**3917A12**	30.75
H	Soft Grip	8″ × 1¾″	**3917A15**	28.68
H	Antimicrobial	10″ × 2½″	**3279A52**	34.37

Butcher

	Handle	Blade Size, Lg. × Wd.		
J	Wood	6″ × 1¾″	**3921A1**	$19.92
J	Wood	8″ × 1⅞″	**3921A2**	23.46
K	Polypropylene	6″ × 1¼″	**3926A11**	19.29
K	Polypropylene	8″ × 1¼″	**3926A12**	22.54
K	Polypropylene	10″ × 1¼″	**3926A13**	26.77
K	Polypropylene	12″ × 1¼″	**3926A14**	38.04

Fillet

	Handle	Blade Size, Lg. × Wd.		
L	Wood	8″ × ⅝″	**7052A11**●	$16.44
L	Wood	9″ × ⅝″	**7052A12**●	16.27
M	Polypropylene	7″ × ⅝″	**3939A13**●	18.75
M	Polypropylene	8″ × ⅝″	**3939A11**●	20.25
M	Soft Grip	8″ × ⅝″	**3939A14**●	20.97
N	Polypropylene	8″ × ⅞″	**3939A12**	21.39

Bread

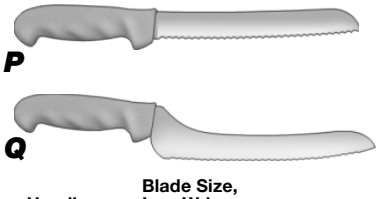

	Handle	Blade Size, Lg. × Wd.		
P	Soft Grip	8″ × ⅞″	**3177A21**	$16.40
Q	Soft Grip	9″ × ⅞″	**3177A22**	18.03

Meat Slicer

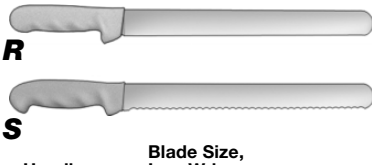

	Handle	Blade Size, Lg. × Wd.		
R	Polypropylene	12″ × 1⅛″	**3851A11**	$28.88
S	Soft Grip	12″ × 1⅛″	**3851A13**	27.92

Boning

	Handle	Blade Size, Lg. × Wd.		
T	Wood	6″ × ¾″	**3918A2**	$15.90
U	Polypropylene	6″ × 11/16″	**3933A11**	15.48
V	Polypropylene	4½″ × ⅝″	**3721A9**	15.36
V	Polypropylene	6″ × 11/16″	**3721A11**	18.56
V	Choose-a-Color	6″ × 11/16″	**3306A7**■	16.72
V	Soft Grip	6″ × 11/16″	**3697A71**	20.56
V	Soft Grip	6″ × 11/16″	**3697A72**●	20.55
V	Antimicrobial	5″ × ¾″	**3279A41**	21.51
W	Soft Grip	6″ × 11/16″	**3697A73**	20.62

Utility

	Handle	Blade Size, Lg. × Wd.		
X	Polypropylene	6″ × ¾″	**3715A72**	$13.01
X	Polypropylene	8″ × ¾″	**3715A73**	16.32
X	Soft Grip	8″ × ¾″	**3715A74**	17.43

■ **To Order:** Please specify handle color: blue, green, red, or yellow. ● Has a thinner, more flexible blade.

Ceramic-Blade Knives

Paring Knife

Utility Knife

Chef's Knife

Ceramic blades are easy to clean and retain their sharp edges up to 10 times longer than steel blades. Handles are molded black plastic.

	Blade, Lg. × Wd.		
Paring Knife	3⅛″ × 15/16″	3226A23	$26.55
Utility Knife	4 5/16″ × 1 1/16″	3226A25	27.96
Chef's Knife	6 5/16″ × 1 7/8″	3226A27	55.96

Knife Blade Protectors

Knife not included.

Protect your knife blades from nicks and scratches. Unlike knife sheaths, these hinged, clear polypropylene protectors snap over the blade so the knife can't slide out.

For Blade Lg.	Max. Blade Wd.	O'all Size, Lg. × Wd. × Ht.		
2½″-4½″	¾″	5″ × 1¾″ × ¾″	4959A31	$3.75
4″-6″	1⅛″	6½″ × 2″ × ¾″	4959A33	3.83
6″-8″	2⅛″	9″ × 3″ × ¾″	4959A35	5.15
8″-10″	2⅛″	10½″ × 3″ × ¾″	4959A37	5.62

Shop Knives

A

B

C

D

E

F

G

H

J

Cut leather, rubber, cloth, and cardboard with these knives. All have heat-treated steel blades riveted to wood handles, except Style B, which has a plastic handle with a soft rubber cushion insert for comfort and slip resistance. Package quantity is 12, unless noted.

Blade, Lg. × Wd.		Each Partial Pkg.	Each Full Pkg.
Square Tip with Finger Guard			
A ... 4″ × 1″	3951A11	$11.40	$9.42
A ... 6″ × 1″	3951A13	11.02	9.21
B ... 4″ × 1 1/16″	6426A12 ♦	13.40	12.17
Square Tip			
C ... 2½″ × 9/16″	3951A1	8.39	6.96
C ... 3″ × 5/8″	3951A2	8.43	7.05
C ... 3⅝″ × 11/16″	3951A3	8.24	6.89
C ... 3⅞″ × 11/16″	3951A4	8.29	6.85
C ... 4¼″ × 13/16″	3951A5	8.24	6.87
Square Tip (Cont.)			
C ... 5″ × 1″	3951A6	$9.10	$7.61
C ... 6″ × 1″	3951A7	9.70	8.11
C ... 8″ × 1⅛″	3951A8	15.01	12.42
Square Tip with Widening Blade			
D ... 4″ × 1″ ♠	3953A11	8.59	7.18
Round Tip			
E ... 4⅞″ × 9/16″ ★	3953A12	11.47	9.54
E ... 6⅝″ × 15/16″ ★	3953A13	12.19	10.20
Angle Tip			
F ... 3″ × 7/8″	3948A11	$12.42	$10.17
Sharp Tip (Sloyd Knives)			
G ... 2½″ × ½″	3952A12	11.62	9.50
G ... 3″ × 9/16″	3952A13	12.02	9.83
Fine Point			
H ... 1″ × ¼″	7057A2	12.57	10.33
H ... 2″ × 11/16″	7057A1	9.32	7.75
Butcher Style			
J ... 14″ × 2 9/16″	3937A5	____	35.47

♦ Package quantity is 5. ♠ Width at blade point; width of blade at handle is 9/16″. ★ Width at blade point; width of blade at handle is ¾″.

Interchangeable-Blade Shop Knives

Curved Blade

Angled Blade

Aluminum/Rosewood Handle

Aluminum/Rubber Handle

Select the handle and blade that best fit your needs. Originally called mill and shoe knives, these knives cut cloth, canvas, leather, and rubber. The blades slide back into the handle and adjust to the cutting length you prefer. Blades and handles are sold separately.

Blades— Made of steel and 5/8″ wide. The *curved* blade can be positioned in either handle to expose ¼″ to 5″ of blade. The *angled* blade can be positioned in either handle to expose ¼″ to 8″ of it. At certain lengths blades will extend through the end of the handle.

Handles— All have a set screw for adjusting the blade length. *Aluminum/rubber* handle has a soft rubber-like material molded to the aluminum and is contoured to fit your hand for a more comfortable grip.

Blades

Blade Tip Style	Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Curved	6″	12	3848A4	$10.16	$8.32
Angled	9″	12	3848A2	7.93	6.49

Handles

Handle Style	Handle, Lg. × Wd.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Aluminum/Rosewood	4⅜″ × 1¼″	12	3848A1	$16.89	$14.11
Aluminum/Rubber	4⅜″ × 1¼″	10	5648A12	12.96	10.60

Comfort-Grip Stainless Steel Knife

A nonslip rubber handle and short Type 440 stainless steel blade give this knife the high leverage needed to cut thick cardboard, burlap, and packaging materials. Plus, it can be chemically cleaned or autoclaved for sterilization. Includes a black pouch. Handle is neon orange. Knife is 6½″ long; blade is 1 9/16″.

70515A21 ..... $20.71

Hammer Knives

Wood Handle with Finger Guard

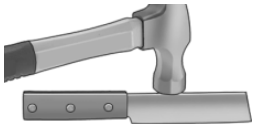

Leather Handle without Finger Guard

Blades are steel and extra heavy on top, so you can drive these knives in with a hammer. Blades are approximately 4″ Lg. × 1¼″ Wd.

Wood Handle without Finger Guard	3956A12	$12.62
Wood Handle with Finger Guard	3956A13	18.56
Leather Handle without Finger Guard	3956A11	20.86

Knife Sheaths

K

L

M

Style K is white polypropylene.

Style L is made of top-grain leather and has a stitched and rivet-reinforced pocket.

Style M is made of top-grain leather and has a stitched and rivet-reinforced pocket. Also has a snap-loop to hold the knife handle in place.

	Max. Blade, Lg. × Wd.	Max. Belt Wd.	O'all Size, Lg. × Wd.		
K	9″ × 1¼″	2″	15¼″ × 1¾″	24565A35	$8.24
L	6″ × 1″	1¾″	11¼″ × 2″	3609A77	7.42
M	6″ × 1½″	2¾″	11″ × 2¼″	6794A11	5.20

Linoleum/Vinyl-Flooring Knives

Standard Knife (3944A2 and A3)

Comfort-Grip Knife (70905A66)

Standard Knives—Have a varnished wood handle and a steel blade. 3944A1 has a shorter point on the blade.

Comfort-Grip Knives—Have a rubber-grip handle for a comfortable grip. 3944A9 has a steel blade with no serrations; 70905A66 has a partially serrated stainless steel blade.

Blade Length	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard Knives				
2″	12	3944A1	$10.42	$9.38
2½″	12	3944A2	10.78	9.70
3½″	12	3944A3	11.67	10.60
Comfort-Grip Knives				
3½″	10	3944A9	12.38	11.14
3½″	—	70905A66	—	15.57

Electrical Cable Stripping Knives

Standard Knife

Cushion-Grip Knife

Standard Knife—Has a plastic handle with finger guard and shackle. Blade is steel with a notched back for scraping copper wire. *Leather pouch* (sold separately) fits belts up to 2″ wide.

Cushion-Grip Knife—Has a nonslip rubber handle for firm control and a stainless steel blade. Includes a leather pouch for belts up to 1¾″ wide.

	Blade Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Standard Knife	3″	6	3942A2	$23.54	$19.92
Cushion-Grip Knife	1 9/16″	—	35745A81	—	13.04
Leather Pouch for Standard Knife			73405A78	Each	$8.22

Pouches for Folding Knives

Leather

Nylon

Pouches fit on your belt and are for most styles of folding knives. ***Leather*** pouch fits belts up to 2½″ wide; ***nylon*** fits belts up to 1½″ wide when used horizontally and 2½″ wide when used vertically.

Material	Max. Knife Closed Lg.	O'all Size, Lg.×Wd.		
Leather	4½″	6″ ×2⅜″	73385A67	$5.00
Nylon	4½″	5″ ×2½″	73385A71	5.55

Key Chain Pocket Knives

Folding

Fixed

Folding knife includes a pocket clip.

Fixed knife has a protective pouch and a twist lock to prevent it from accidentally opening.

Both have stainless steel blades.

Knife Style	Handle Material	Blade Lg.	Closed Lg.		
Folding	Aluminum/Stainless Steel	2 1/16″	3 9/16″	24485A23	$25.53
Fixed	Nylon	1 13/32″	3⅜″	24485A1	12.64

Replaceable-Blade Folding Pocket Knife

This knife has a replaceable stainless steel blade that locks in the open position. Handle is silver-colored powder-coated zinc. Blade is 2 9/16″ long. Knife closed length is 4¼″.

Knife	3916A11	$8.39
Repl. Pointed-Tip Blade	3916A12	2.81
Repl. Blunt-Tip Blade	3916A13	2.86

Folding Knives

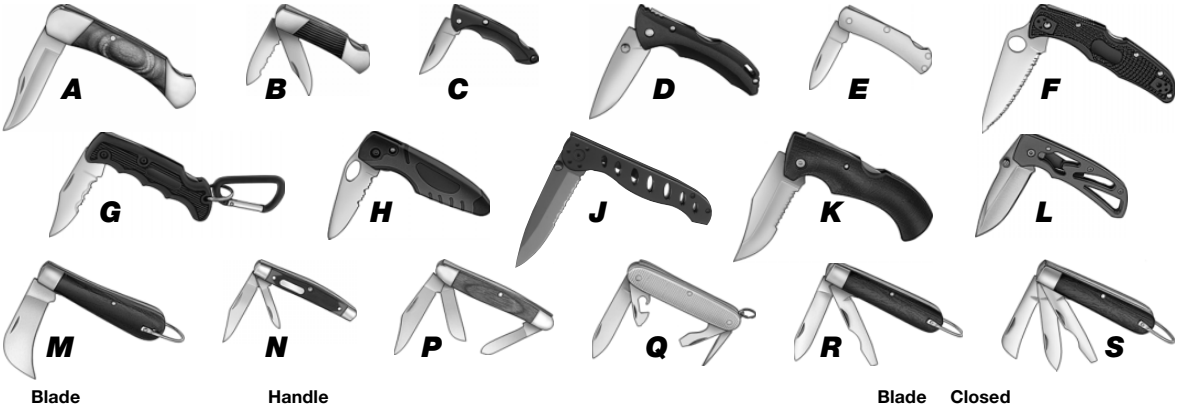

	Blade Edge	Handle Material	Features	Blade Lg.	Closed Lg.		
Locking Stainless Steel Blades—*Lock in the open position.*							
A	Straight	Wood with Metal	Brass liner; nickel end cap; leather pouch	2 11/16″	3¾″	3970A15	$39.55
A	Straight	Wood with Metal	Brass liner; nickel end cap; leather pouch	3½″	5″	3970A14	47.22
B	Straight; Partially Serrated	Rubber★	Two blades	1 15/16″	3″	4957A17	34.70
C	Straight	Thermoplastic★	Key chain hole	1⅞″	3″	37015A14	14.69
D	Straight	Thermoplastic★	Belt clip; lanyard hole	3⅛″	4⅜″	37015A15	22.04
E	Straight	Stainless Steel	Resists corrosion	2⅜″	3″	49385A22	16.62
F	Serrated	Nylon★	One-hand blade opening	2⅞″	4¼″	49235A51	71.56
F	Serrated	Nylon★	One-hand blade opening	3¾″	5″	49235A31	75.33
G	Partially Serrated	Rubber★	Spring clip	2⅝″	4″	24595A15	26.96
H	Partially Serrated	Plastic★	One-hand blade opening/closing; belt clip	2⅞″	4⅛″	3412A33	31.98
J	Straight	Aluminum	One-hand blade opening/closing; belt clip	3 7/16″	4½″	3492A8	34.09
J	Partially Serrated	Aluminum	One-hand blade opening/closing; belt clip	3 7/16″	4½″	3492A9	34.09
K	Partially Serrated	Thermoplastic★	Contoured grip; nylon pouch	3¾″	5″	37015A11	38.35
L	Partially Serrated	Stainless Steel	One-hand blade opening/closing; belt clip	3″	4″	3492A6	25.50
M	Straight	Acetal	Strips wire; stainless steel liner; nickel end cap; shackle	2⅝″	4½″	3929A11	26.53
Nonlocking Stainless Steel Blades							
N	Straight	Acetal	Two blades	♥	3 5/16″	3872A31	20.47
P	Straight	Wood with Metal	Three blades	♠	4″	3872A32	30.18
Q	Straight	Aluminum	Screwdriver/wire stripper; reamer; bottle opener; can opener; engraving panel; key ring	2⅝″	3½″	3934A13	30.09
R	Straight	Acetal★	Screwdriver; insulation cutter; shackle	2⅝″	3¾″	3932A11	24.55
S	Straight	Acetal★	Two blades; screwdriver; insulation cutter; shackle	2⅞″	3¾″	4984A11	28.80

★ With a nonslip textured grip. ♥ 2 13/32″, 1 11/16″. ♠ 2½″, 1¾″, 1⅝″.

Swiss Army Knives

FEATURES

1—Large blade
2—Small blade
3—Corkscrew
4—Can opener w/small screwdriver
5—Bottle opener with large screwdriver and wire stripper
6—Reamer with sewing eye
7—Scissors
8—Phillips screwdriver
9—Magnifying glass
10—Wood saw
11—Fish scaler w/hook remover and ruler
12—Metal file w/metal saw and nail file
13—Fine screwdriver
14—Wood chisel
15—Key ring
16—Toothpick
17—Tweezers
18—Pliers with wire cutter/crimper
19—Nail file with screwdriver tip
20—Electrician's blade
21—Hook
22—Mini screwdriver
23—Ballpoint pen
24—Straight pin
25—LED white light
26—Reamer without sewing eye

Swiss Champ

Style	Features	Closed Lg.		
Standard Knives				
Swiss Champ	1-18, 21-24	3½″	3791A11	$65.37
Electrician	1, 5, 20, 26	3½″	3791A17	30.56
Classic	2, 7, 15-17, 19	2¼″	3791A18	14.14
Tinker	1, 2, 4-6, 8, 15-17	3½″	3791A19	20.93
Super Tinker	1, 2, 4-8, 15-17, 21	3½″	3791A26	27.84
Climber	1-7, 15-17, 21	3½″	3791A24	29.86

Style	Features	Closed Lg.		
Standard Knives (Cont.)				
Pocket Pal	1, 2	3¼″	3791A25	$14.46
Spartan Lite	1-6, 8, 15-17, 22, 25	3½″	3791A41	40.41
Huntsman Lite	1-8, 10, 15-17, 21-25	3½″	3791A42	57.79
Locking-Blade Knife—*Blades lock into place; release with a button.*				
Adventurer	1, 4-6, 8, 15-17	4⅜″	3791A31	35.56
Leather Pouch for 3791A11 and 3791A42			3791A22	9.08

Stainless Steel Multitools

FEATURES

1—Needle-nose pliers
2—Blunt-nose pliers
3—Wire cutter
4—Smooth-edge knife
5—Serrated-edge knife
6—Ruler
7—Can opener
8—Bottle opener
9—Sm. slotted screwdriver
10—Med. slotted screwdriver
11—Large slotted screwdriver
12—Phillips screwdriver #1
13—Phillips screwdriver #2
14—Jeweler's screwdriver
15—Metal/wood file
16—Crimper
17—Wire stripper
18—Awl/punch
19—Lanyard ring/hole
20—Small scissors
21—Large scissors
22—Tweezers
23—Nail file/cleaner
24—Bone/wood saw
25—Diamond-coated file
26—Metal/wood saw
27—Replaceable insert for wire cutting
28—Comfort-grip insert
29—Cutting hook

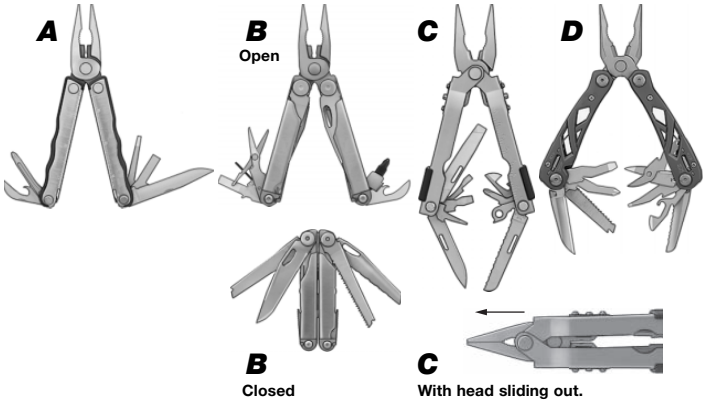

With various implements stored in the handle, these multitools are like a tool box in your pocket. Tools are stainless steel (unless noted) and include pliers, except 24655A31, which has scissors. Multitools also include a nylon pouch (unless noted).

Head Style	Features	Open Lg.	Closed Lg.		
(A) Folding-Handle Tools—*Handle swings open in fan-like motion to expose head.*					
Needle Nose	1, 3, 4, 6-10, 12, 17, 19, 28	6¼″	4″	53835A82	$31.83
Needle Nose II	1, 3, 4, 6-10, 12, 13, 17, 19, 20, 28	6¼″	4″	53835A63	42.50
Needle Nose III	1, 3, 4, 6-10, 12-15, 17, 19, 20, 24, 28	6¼″	4″	53835A64	53.75
Super Needle Nose II	1, 3-13, 15-19, 24	7″	4½″	53835A94	70.00
(A) Folding-Handle Spring-Action Tools—*Jaws open automatically for ease of use.*					
Needle Nose	1, 3-5, 8-10, 12, 15, 19	3⅞″	2⁵⁄₁₆″	5991A57✓	16.58
Blunt Needle Nose	1, 3, 4, 8-11, 13, 15, 20, 26, 27	6½″	4¼″	53835A42	99.74
Scissors	4, 6, 8, 10, 12-14, 19, 21-23	5″	2½″	24655A31✓	25.41
(B) Folding-Handle Tools with Outside Access to Four Blades—*Handle swings open in fan-like motion to expose head.*					
Super Needle Nose	1, 3-8, 10-15, 17, 19, 20, 24, 25	6¼″	4″	53835A62	78.73
Super Needle Nose III	1, 3-8, 11-20, 24, 25	7″	4½″	53835A96●	96.00
Super Needle Nose with Titanium Handles	1, 3-8, 10, 11, 15-17, 19, 20, 24, 25, 29	6¼″	4″	53835A15▲	152.00
Needle Nose with Lightweight Handles	1, 3, 4, 8-10, 12, 13, 19	6½″	4″	53835A48♣	60.83
(C) Sliding-Head Tools—*Head slides out of handle and locks in position; release buttons allow it to slide back in.*					
Compact Needle Nose	1, 3, 5-11, 13, 16, 20	5⅝″	4⅜″	53835A52	47.77
Needle Nose	1, 3-11, 13, 15-17, 19	6⁹⁄₁₆″	4¹⁵⁄₁₆″	53835A27	61.15
Needle Nose II	1, 3, 5-10, 13, 15, 16, 20, 26	6⅝″	5¹⁄₁₆″	53835A54	66.26
Extra-Long Needle Nose	1, 3, 5, 7-11, 13, 15, 20, 24, 26	6⅝″	4¹⁵⁄₁₆″	53835A44	68.81
Blunt Needle Nose	2-11, 13, 15-17, 19	6⁵⁄₁₆″	4¹⁵⁄₁₆″	53835A25	61.15
(D) Folding-Handle Spring-Action Tool—*Jaws open automatically for ease of use.*					
Needle Nose	1, 3-5, 7-10, 12, 19, 20, 26	6″	3½″	53835A47	35.58

✓ Pouch not included. ● Has a ³⁄₁₆″ screwdriver bit. ▲ Has two bit holders with eight double-end bits. ♣ Has an open-frame handle.

Multitool and Mini Flashlight Combination

Similar to the 53835A64 (shown above), this folding-handle multitool with needle-nose pliers also includes a black nylon pouch and a pocket-size flashlight with a black aluminum body. Requires one AAA battery (included).

Folding-Handle Multitool	3247A46	Each	$77.37
Repl. AAA Batteries (4/Pkg.)	71455K62	Pkg.	$2.82

¼″ Hex-Bit Kit for Sliding-Head Tools

Fits sliding-head tools except 53835A44. Includes nine ¼″ hex-shaped bits: #1, #2, and #3 Phillips; ⅛″, ³⁄₁₆″, and ⁹⁄₃₂″ slotted; and 3 mm, 4 mm, 6 mm hex (also known as Allen). Includes a nylon pouch for the coupler and bits.

53835A34 ..... Each $15.76

Repl. Wire-Cutting Inserts for 53835A42 and A25

Includes two carbide inserts, four screws, and a wrench.

53835A46 ..... Pkg. $17.60

File/Plane Forming Tools

Shaver

Pocket Plane

Standard Plane

Cut and form wood, plaster, auto body filler, soft metals, and vinyl.

Shaver has a curved steel blade and a plastic handle. Blade cuts on the backward stroke.

Pocket plane has a cast metal body and a fine steel blade that cuts on the forward stroke.

Standard plane has a cast metal body and plastic handle. It comes with a flat steel blade that has an edge-cut feature for inside corner use. Blade cuts on the forward stroke.

Tools	Planing Wd.	O'all Size, Lg. × Wd.		
Shaver	1⅝″	7¼″ × 1⅝″	3758A15	$4.34
Pocket Plane	1⅝″	5⅝″ × 1⅝″	3758A11	7.88
Standard Plane	1⅝″	12½″ × 1⅝″	3696A1	16.05
Replacement Blades				
Replacement Blade for Shaver			3758A16	3.10
Replacement Blade for Pocket Plane			3758A12	4.86
Replacement Flat Blade for Standard Plane			3696A5	5.69
Optional Half-Round Blade for Standard Plane			3696A3	5.63

Block and Bench Planes

Standard Block Plane

Bench Plane

Bases are cast iron; blades are chrome-plated steel. All planes have depth-of-cut and lateral-blade adjustment.

Block Planes— Best suited for small planing jobs and end-grain planing. The *standard* plane has a 21° cutting angle. The *low-angle* plane has a 13½° cutting angle. Both have a brass adjustment knob.

Bench Planes— Have a high-impact polymer handle and a brass adjustment knob.

	Planing Wd.	O'all Lg.	Planes		Repl. Blade	
Block Planes						
Standard	1⅝″	6⅜″	3693A6	$46.74	3693A13	$17.75
Low Angle	1⅜″	6¼″	3693A5	44.38	3693A12	9.91
Bench Planes						
For Smoothing	2″	9¾″	3692A13	62.87	3692A22	15.70
For Trimming	2″	14″	3692A15	76.03	3692A22	15.70

Portable Electric Plane

Compact and lightweight, this plane is perfect for fast production planing and trimming. It has depth-of-cut adjustment and a D-shaped handle with trigger switch. Includes two reversible carbide blades and a carrying case. Overall length is 11¼″.

Plane is double-insulated and includes a 9-ft. power cord with two-prong plug. UL listed and meets OSHA requirements.

Planing Wd.	Planing Dp.	No Load Speed, rpm	VAC	Amps		Each
3¼″	3/32″	15,000	120	7.0	3228A25	$202.49
Replacement Blades					3228A22	Pair $11.79

Plastic-Handle Wood-Cutting Chisels

Great for rough cutting and finishing work. Blades and shanks are forged from a single piece of heat-treated steel and have a tempered bevel edge. Handles are high-impact plastic with a steel cap. Blade length is 3″; overall length is 8½″.

Chisels Cutting Wd.		
¼″	3590A21	$8.60
⅜″	3590A27	8.60
½″	3590A23	9.50
⅝″	3590A28	9.70
¾″	3590A25	9.70
1″	3590A26	10.00
1½″	3590A22	12.11
2″	3590A24	14.40

Chisel Sets

No. of Pieces	Sizes Included (Cutting Wd.)		Set
4	¼″, ½″, ¾″, 1″	3590A32	$32.49
6	¼″, ½″, ¾″, 1″, 1¼″, 1½″	3590A42	52.58

Wood-Turning Gouges

Use these gouges to shape wood on a lathe. Each has a forged steel blade and a wood handle. Handle has a natural finish.

Cutting Wd.	Blade Lg.	O'all Lg.		
⅜″	6″	16″	3712A11	$14.17
⅝″	6″	16″	3712A12	14.17
1″	6″	16″	3712A13	14.17

12-Piece Carving-Tool Set

Carve patterns and designs in wood and other soft materials. Set includes two flat chisels (⅛″ and ½″ wide); five straight gouges (¾″, two ½″, and two ¼″ wide); ¼″ wide parting tool; ¼″ wide corner chisel; ⅛″ wide front bent chisel; ¼″ wide front bent gouge; and ¼″ wide veiner/straight gouge. Tools have a tempered and ground steel blade and a wood handle. Blade length is 5″; approximate overall length is 10″.

35965A22 ..... **Set** $141.58

Draw Knives

Straight Blade

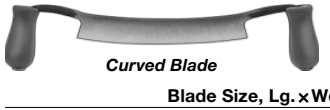
Curved Blade

Knives have a wood handle on each side of the blade. Good for rough cutting and shaping wood. Blades are steel.

Knife with curved blade is great for forming contoured surfaces.

	Blade Size, Lg. × Wd.		
Straight Blade	10″ × 1⅜″	7087A11	$58.16
Curved Blade	8¾″ × 1⅜″	7087A13	67.15

Machetes

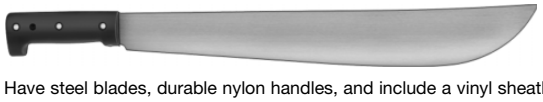

Have steel blades, durable nylon handles, and include a vinyl sheath.

18″ Lg. Blade	3955A21	$10.22
22″ Lg. Blade	3955A22	11.67

Metal-Cutting Chisels

Standard Head

Big Head

Also known as cold chisels, these chisels are forged steel. ***Big head*** chisels are easier to hit.

Chisels

Cutting Wd.	O'all Lg.		
Standard Head			
1/4"	5"	3575A11	$2.98
5/16"	5"	3575A12	3.12
3/8"	5 1/2"	3575A13	3.41
7/16"	6"	3575A14	3.73
1/2"	6"	3575A22	3.91
1/2"	9"	3575A39	4.75
1/2"	12"	3575A41	5.75
5/8"	6 1/2"	3575A15	3.95
5/8"	12"	3575A31	5.66
3/4"	7"	3575A16	4.86
3/4"	12"	3575A32	6.70
3/4"	18"	3575A33	11.11
7/8"	7 1/2"	3575A17	6.41
7/8"	12"	3575A34	9.36
7/8"	18"	3575A35	11.66
1"	8"	3575A18	8.77
1"	12"	3575A36	9.23
1"	18"	3575A37	12.89

Cutting Wd.	O'all Lg.		
Big Head			
1/4"	4 7/8"	3566A11	$3.74
5/16"	5 1/4"	3566A12	3.96
3/8"	5 5/8"	3566A13	4.12
1/2"	6 3/8"	3566A15	4.86
1/2"	12"	3567A14	6.30
5/8"	6 3/4"	3566A16	5.20
5/8"	12"	3567A15	7.04
3/4"	7 1/8"	3566A17	6.10
3/4"	12"	3567A16	8.40
3/4"	18"	3567A21	10.90
7/8"	7 1/2"	3566A18	7.38
7/8"	12"	3567A17	10.24
1"	7 7/8"	3566A19	9.18
1"	12"	3567A18	12.10
1"	18"	3567A23	15.42
1 1/4"	12"	36085A31★	8.66

★ Chisel has a flat body for hard-to-reach areas.

Standard-Head Chisel Sets

No. of Pcs.	Sizes Included (Cutting Wd.×O'all Lg.)		Set
4	1/4"×5", 5/16"×5", 3/8"×5 1/2", 7/16"×6"	3575A19♦	$14.08
4	5/8"×6 1/2", 3/4"×7", 7/8"×7 1/2", 1"×8"	3575A21	25.88
5	1/4"×5", 3/8"×5 1/2", 1/2"×6", 3/4"×7", 1"×8"	3575A38♦	24.64
5	3/8"×5 1/2", 7/16"×6", 5/8"×6 1/2", 3/4"×7", 7/8"×7 1/2"	3575A23	24.22

♦ Furnished in a vinyl roll pouch.

Masonry Chisels

Plugging Chisel

Mason's Chisel

Brick Chisel

Chisels are steel.

Plugging Chisel—Has a tapered tip for cleaning mortar from brick joints.

Mason's Chisels—For clean cuts in cement, cinder block, brick, and veined stone.

Brick Chisels—For scoring, cutting, and trimming bricks and blocks.

Cutting Wd.	O'all Lg.		
Plugging Chisel			
3/16"	10"	3782A14	$8.83
Mason's Chisels			
1 1/4"	7 1/2"	3571A6	7.67
2 1/4"	7 1/2"	3571A8	9.71

Cutting Wd.	O'all Lg.		
Brick Chisels			
2 1/2"	7"	3576A4	$7.50
3"	7"	3576A1	8.46
3 1/2"	7"	3576A2	8.94
4"	7"	3576A3	9.94

Specialty-Tip Chisels

Half-Round-Nose Chisel

Diamond-Point Chisel

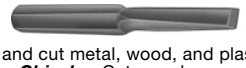
Slot-Cutting Chisel

Chisels are steel and cut metal, wood, and plastic.

Half-Round-Nose Chisels—Cut round grooves.

Diamond-Point Chisels—Cut V-shaped grooves.

Slot-Cutting Chisels—Also known as cape chisels, they get into tight places.

Cutting Wd.	O'all Lg.		
Half-Round-Nose Chisels			
1/8"	5 1/2"	3568A1	$6.86
3/16"	5 1/2"	3568A2	7.62
1/4"	5 1/2"	3568A3	7.79
3/8"	7"	3568A5	9.42
1/2"	8"	3568A6	11.64
Diamond-Point Chisels			
1/8"	5"	3570A8	5.58
3/16"	5 1/2"	3570A9	6.54
1/4"	5 3/4"	3570A2	6.86
5/16"	6"	3570A3	7.41

Cutting Wd.	O'all Lg.		
Diamond-Point Chisels (Cont.)			
3/8"	7"	3570A4	$7.94
1/2"	7"	3570A5	9.52
Slot-Cutting Chisels			
1/8"	5 1/2"	3569A1	6.62
3/16"	5 1/2"	3569A2	7.10
1/4"	5 1/2"	3569A3	7.32
5/16"	6 1/4"	3569A4	7.98
3/8"	7"	3569A5	9.21
1/2"	8"	3569A6	11.36

Super Duty Metal-Cutting Chisels

Also known as cold chisels, these chisels are tool steel with a knurled end for a better grip.

5-piece chisel set includes one each of chisels in the following cutting widths: 3/8", 1/2", 5/8", 3/4", and 7/8". Comes in a nylon roll pouch.

Cutting Wd.	O'all Lg.		Each
3/8"	6"	3271A31	$9.12
1/2"	6 13/16"	3271A32	11.16
5/8"	7 5/8"	3271A33	12.27
3/4"	8 7/16"	3271A34	15.76
7/8"	9 1/4"	3271A35	21.32
1"	10 1/16"	3271A36	22.68
5-Piece Chisel Set		3271A41	Set $64.66

Safety-Grip Chisels

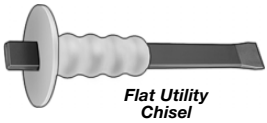
Flat Utility Chisel

Hit the chisel instead of your hand. Plastic guards on these chisels protect hands from injury. Blades are forged steel.

Replacement chisel hand guard fits all chisels listed as well as other tools with a 5/8"-3/4" shank.

	Cutting Wd.	O'all Lg.		
Metal-Cutting Chisel	3/4"	7"	3555A11	$11.02
Metal-Cutting Chisel	1"	8"	3555A12	13.66
Flat Utility Chisel	1 1/4"	12"	3555A18	11.54
Concrete Chisel	3/4"	12"	3555A13	13.48
Floorboard Chisel	2 1/2"	10"	3555A15	16.29
Brick Chisel	3"	7"	3555A16	15.93
Brick Chisel	4"	7"	3555A17	20.80
Replacement Chisel Hand Guard			65295A65	9.28

Flooring Chisels

Electrician's Chisel

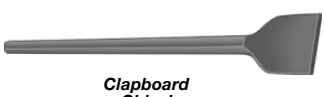
Clapboard Chisel

Chisels are steel.

Electrician's Chisels—Great for rough cutting, trimming wood, and removing the tongue off floorboards.

Clapboard Chisel—This long-shank chisel easily rips through flooring and clapboard lumber.

Chisel Type	Cutting Wd.	O'all Lg.		
Electrician's	2"	10"	3586A14	$11.12
Electrician's	2 3/4"	8"	3586A11	12.68
Electrician's	3"	11"	3586A12	14.60
Clapboard	2"	18"	3577A11	12.59

Utility Scrapers

Do-It-All Scraper

Heavy Duty Scraper

Chisels are steel with a ground blade edge on both ends.

Do-It-All Scraper—More than just a scraper, it's also a chisel, pinch bar, and tack and nail puller. Blade edge is 1 9/16" wide on both ends. Overall length is 9 1/2".

3640A11 ..... $6.92

Heavy Duty Scraper—Great for removing rust and paint from wood and metal. Blade edge is 1 3/4" wide on both ends. Overall length is 14".

7100A21 ..... $16.17

Screwdriver-Handle Scrapers

Standard

Angled

These versatile scrapers have forged, heat-treated, alloy steel blades and molded-plastic handles for a firm grip.

	Blade Wd.	O'all Lg.		
Standard	5/8"	7 1/4"	3645A5	$13.63
Standard	7/8"	7"	3645A6	13.42
Standard	1"	9 3/4"	3645A2	11.62
Standard	1 1/2"	13"	3645A3	16.98
Angled	5/8"	8"	3645A4	15.82

Nonscratching Plastic Scrapers

Scraper

Scraper/Knife

Angled Scraper/Knife

The sharp edge and plastic construction of these scrapers make them ideal for cleaning and scraping off sealant and gasketing without scratching the surface. Made of nylon with 33% glass reinforcement for extra strength and longer edge life. Color is blue.

4-piece set includes one of each scraper listed in the table.

	Blade Wd.	O'all Lg.		Each
Scraper	1″	7″	3618A14	$5.00
Scraper	1¼″	7″	3618A47	5.00
Scraper/Knife	1″	7″	3618A25	5.00
Angled Scraper/Knife	1″	7″	3618A36	5.00
4-Piece Set			3618A51	Set $16.00

Heavy Duty Machinist's Hand Scrapers

Flat

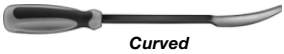
Curved

Get extra-smooth surfaces on slides, bearings, and surface plates with these tough metal scrapers. Blades are made of chrome-vanadium steel and are hardened to maintain a sharp cutting edge. Blades can be sharpened. They have an ultra-grip handle that provides a secure, comfortable grip.

	Blade, Wd. × Lg.	O'all Lg.		
Flat Blade	1 1/16″ × 3 7/16″	13¼″	3801A11	$30.80
Curved Blade	15/16″ × 3⅜″	14″	3801A12	40.42

Curved Bearing Scrapers

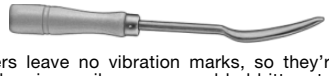

These scrapers leave no vibration marks, so they're perfect for scraping metal bearings, oil grooves, and babbitt metal. Blades are ground tool steel; handles are wood.

3-piece set includes one of each scraper listed in the table.

Blade, Wd. × Lg.	O'all Lg.		Each
½″ × 3″	10½″	3779A11	$27.51
⅝″ × 3½″	11″	3779A12	28.20
⅝″ × 4″	11½″	3779A13	28.58
3-Piece Set		3779A1	Set $80.07

Adjustable-Blade Scrapers for Metal

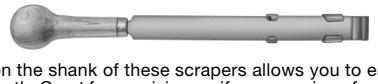

A clamp on the shank of these scrapers allows you to easily adjust the blade length. Great for precision, uniform scraping of machine-tool dovetails, surface plates, and mating surfaces.

Scrapers have a solid steel body and a wood handle. They come with one carbide-tipped blade that easily cuts through materials as hard as alloy bronze. Blade is 1/16″ thick and requires sharpening before first use. Occasional touch-up sharpening will maintain its super-sharp edge.

Blade, Wd. × Lg.	O'all Lg.	Scrapers		Repl. Blade	
¾″ × 3¼″	14″	3643A17	$118.79	3643A21	$37.24
1″ × 3¼″	15″	3643A18	127.59	3643A22	41.36
1¼″ × 3¼″	17″	3643A19	144.83	3643A23	44.91

Air-Powered Scraper

Scrape away gaskets, undercoatings, and other glued-on materials. Scraper has a chrome-plated steel handle and a steel blade with 45° bevel. Variable stroke speed is 0-4,800 strokes/min.; stroke length is 1/8″. Recommended operating pressure is 90 psi; average air consumption is 3 cfm. Recommended hose size is ⅜″; air inlet is ¼″ NPT female. Scraper comes with an external air regulator and one blade.

	Blade, Wd. × Lg.	O'all Lg.		
Scraper	1″ × 2½″	9¾″	4964A34	$54.74
Replacement Blade			4964A35	27.85
Replacement Blade Holder			4964A36	30.18

Machinist's Scrapers and Deburring Tools

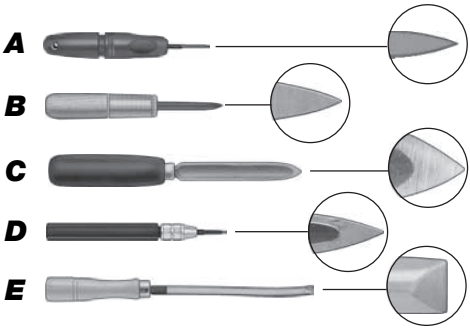

Great for scraping and deburring metal bearings and surfaces. Blades are ground high-grade tool steel. *Style A* have plastic handles; *Styles B, C,* and *E* have wood handles; and *Style D* has an aluminum handle.

	Blade, Wd. × Lg.	O'all Lg.		
Triangular Blade				
A	⅛″ × 2 15/16″	5″	4291A12	$8.64
A	3/16″ × 3 5/32″	4 13/16″	4291A13▲	8.83
B	3/16″ × 2″	5½″	4291A14	12.23
B	3/16″ × 3″	6½″	4291A15	12.85
B	¼″ × 3¼″	6½″	4291A17	15.85
B	5/16″ × 4″	8″	4291A16	14.32
C	½″ × 4″	8″	3647A2	18.45
C	½″ × 8″	13″	3797A11	35.71
C	½″ × 10″	15″	3797A12	38.02
D	3/32″ × 3 5/32″	4½″♣	4291A22▲	13.34
Half-Round Blade				
E	¾″ × 8″	13″	3650A11	45.17
E	⅞″ × 10″	15″	3650A12	48.61

▲ Blade is double ended. ♣ Handle Lg.

Ceramic Scraping and Deburring Tool

Remove burrs and high spots on bearing surfaces. Tool has a fixed zirconia ceramic blade. Handle is plastic. Includes one blade.

Blade, Wd. × Lg.	O'all Lg.	Scraper		Repl. Blade		Repl. Handle	
9/16″ × 1½″	6⅞″	6074A36	$22.24	6074A39	$16.80	6074A38	$7.37

Electric Heated Scrapers

Scraper

Scraper/Knife

Cut through and scrape off solidified adhesives, waxes, and sealants. Scrapers include a thermostat that keeps the temperature at 340° F. Blades are Type 304 stainless steel. Handles are wood. Operate on 120 VAC and have a 6-ft. power cord with three-prong plug.

Scraper/Knife— Has a pointed-tip blade that can be used as either a knife or a scraper.

	Blade, Wd. × Lg.	O'all Lg.		
Scraper	2″ × 4″	15″	8106A21	$135.00
Scraper	4″ × 2″	12″	8106A22	135.00
Scraper/Knife	2″ × 9″	17″	3233A98	120.00

Scraper Blades for Reciprocating Saws

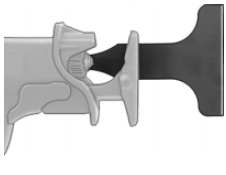

Attach one of these blades to your reciprocating saw to create a scraper powerful enough to scrape through linoleum, glue, tar, and other tough substances. Blades are steel.

3-piece set includes one of each blade listed in the table.

O'all Size, Wd. × Lg.		Each
2″ × 5½″	3907A12	$10.67
4″ × 5½″	3907A14	14.59
6″ × 5½″	3907A16	18.67
3-Piece Set	3907A18	Set $39.83

Long-Handle Scrapers

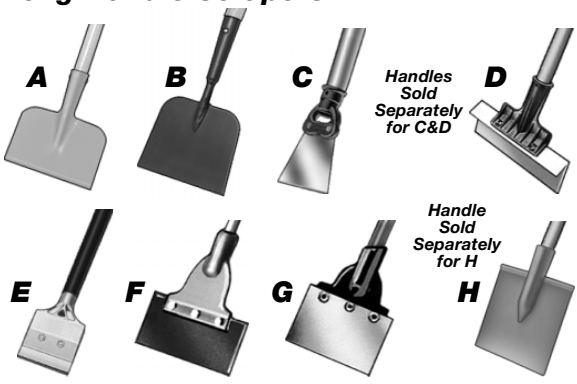

***A&B** Ice and Snow Scrapers—*Have a straight wood handle.
Style A has a stamped beveled steel blade.
Style B scrapers have hot-forged steel blades for heavy duty use. 6351A14 has a blunt edge. 6351A15 and *A16* have a beveled edge.

	Blade Wd.	Blade Thick.	Handle Lg.		
A	7″	3/32″	48″	**6351A13**	$19.52
B	3 3/4″	1/8″	48″	**6351A16**	31.54
B	7″	1/8″	54″	**6351A14**	26.27
B	8 1/2″	1/8″	48″	**6351A15**	52.96

***C** Light Duty Scrapers—*Have a flexible steel blade. Handle not included; sold separately.

	Blade Wd.	Blade Thick.		
C	4″	3/64″	**7089A61**	$12.51
C	7″	3/64″	**7089A62**	14.13
54″ Lg. Tapered Wood Handle			**7349T14**	6.26

***D** Standard Duty Scraper—*Has a Type 301 stainless steel self-sharpening blade with a blunt edge. Handle not included; sold separately.

	Blade Wd.	Blade Thick.		
D	8″	1/16″	**37525A71**	$31.54
54″ Lg. Tapered Wood Handle			**7349T14**	6.26

***E-H** Replaceable-Blade Scrapers—*Weight is concentrated close to the blade for greater scraping power. All have a replaceable tempered spring-steel blade, unless otherwise stated.
Style E are well suited for removing ceramic tiles and adhesives. Scrapers have a ground double-edge blade that is chiseled to a sharp point and a steel pipe handle with rubber grips.
Styles F and *G* are ideal for removing floor tiles, paint, gravel, and tar. *Style F* have a self-sharpening blade with a blunt edge and a steel pipe handle with a knob-shaped hand grip. *Style G* has a sharpenable blunt-edged blade and a steel D-shaped handle.
Style H has an aluminum bronze blade. Handle not included; sold separately.

	Blade Wd.	Blade Thick.	O'all Lg.	Scrapers		Repl. Blade	
Heavy Duty Scrapers							
E	4″	1/16″	12″	**38985A77**	$27.35	**38985A79**	$8.87
E	4″	1/16″	18″	**38985A78**	29.47	**38985A79**	8.87
F	4″	1/16″	55 1/2″	**38985A71**	67.10	**38985A74**	5.90
F	8″	1/16″	55″	**38985A72**	74.37	**38985A75**	7.43
F	14″	1/16″	54″	**38985A73**	97.08	**38985A76**	13.12
Extra-Heavy Duty Scrapers							
G	7″	1/8″	55″	**7072A11**	104.35	**7072A12**	21.74
H	6″	1/8″	7 7/8″	**6476A1**	67.92	—	—
54″ Lg. Tapered Wood Handle for Style H						**7349T14**	$6.26

Hammer-Action Impact Scraper

Sliding hammer action gives you 150 lbs. of impact per square inch for your toughest scraping jobs. Scraper comes with a spring-steel blade that mounts to the handle's head assembly. Use for scraping glued-down carpeting, vinyl and acrylic tile, pliable floor coverings, linoleum, and dried mastic.
The head assembly can also be used alone for scraping tar and shingle roofing, asphalt tile, and ceramic tile. Handle is made of heavy duty welded steel and has a rubber grip.

	Blade Wd.	Blade Thick.	O'all Lg.		
Scraper	6″	0.039″	62 3/4″	**3565A16**	$46.04
Replacement Spring-Steel Blade				**3565A18**	10.33

Razor Blade Scrapers

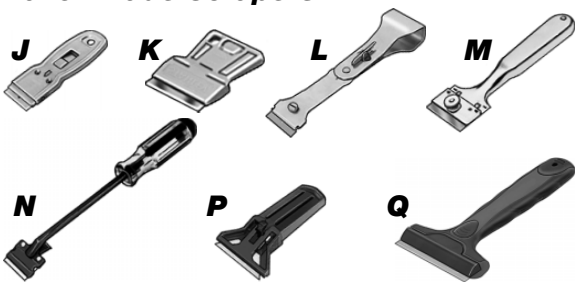

Scrapers—Replacement blades sold separately below.

***J** Utility Scrapers—*Include five steel blades.

***K** Mini Scraper—*Includes one steel blade.

***L** Three-Position Scraper—*Locks in three different positions. Blade and holder fold into handle. Includes five steel blades.

***M** Heavy Duty Scraper—*Made of heavy-gauge steel and cadmium plated to resist rust. Includes six steel blades.

***N** Long-Handle Scraper—*Includes five carbon steel blades and one plastic blade.

***P** Wide-Blade Scraper—*Includes one steel blade.

***Q** Extra-Wide-Blade Scraper—*Includes one steel blade.

	Blade Wd.	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
J	1 1/2″	4 1/2″	10	**7070A22**	$2.30	$1.84
J	1 1/2″	3 7/8″	10	**7070A37**	3.11	2.75
K	1 1/2″	1 13/16″	12	**2506A21**	1.32	1.06
L	1 1/2″	8″	10	**7110A21**	8.55	7.70
M	1 7/8″	5 3/4″	1	**7099A11**	—	4.62
N	1 1/2″	11″	1	**7078A24**	—	12.47
P	2 1/4″	5″	10	**3853A11**	3.76	3.38
Q	4″	5 1/2″	10	**26765A31**	3.81	3.11

Scraper Pack—Includes one Style K mini scraper and one Style Q extra-wide-blade scraper. Package quantity is 20.
26765A33 ..... **Each** Partial Pkg. $4.32 Full Pkg. $3.53

Repl. Blades—All are steel, except Style N, which is stainless steel.

Fits	Pkg./Case	Pkg. of 5	Partial Case	Full Case	Pkg. of 100	Pkg.
J	20	**3962A1**	$0.75	$0.65	**3962A3**	$5.52
K	20	**3962A1**	.75	.65	**3962A3**	5.52
L	20	**3962A1**	.75	.65	**3962A3**	5.52
M	20	**7099A12**	1.94	1.51	—	—
N	20	**3962A65**	1.08	.96	**3962A5**	15.80
P	10	**3853A12**	2.25	1.80	**3853A65**	23.24
Q	10	**26765A32**	2.39	2.09	—	—

Plastic Blades—Fit Styles J, L, and N.

Plastic Blades—Prevent scratching on surfaces such as plastic-laminated windshields. Blades are 0.040″ thick.
Package of 5 ..... **3962A7** **Pkg.** 1-19 $2.05 20-Up $1.78

Contour Scraper

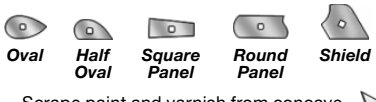

Scrape paint and varnish from concave and convex moldings, cracks, and seams. Handle is made of wood. Overall length is 9″. Includes one 2 1/4″ triangular blade.

Blade Shape	Blade Size, Wd. × Lg.		
Scraper			
Triangular Blade	2 1/4″ × 2 1/4″	**7069A11**	$11.00
Blades			
Triangular Blade	2 1/4″ × 2 1/4″	**7069A41**	4.21
Triangular Blade	3″ × 3″	**7069A42**	4.41
Oval Blade	1 5/16″ × 2 1/4″	**7069A43**	4.41
Half Oval Blade	1 1/8″ × 2 1/8″	**7069A44**	4.41
Square Panel Blade	1″ × 2 1/16″ ♠	**7069A45**	4.29
Round Panel Blade	1 5/16″ × 3″	**7069A46**	4.43
Shield Blade	1 3/4″ × 2″	**7069A47**	4.25

♠ Blade width tapers to 3/4″.

8-Piece Set—Includes a scraper and one of each blade listed above.
7069A18 ..... **Set** $26.04

Paint and Wallpaper Scrapers

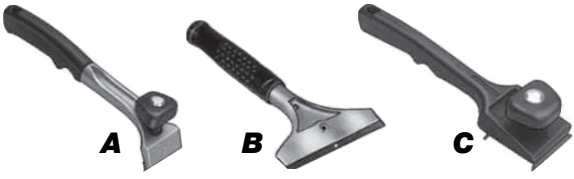

A ***Tungsten-Carbide-Blade Scrapers—*** Have tungsten carbide blades that keep their sharp edges longer than steel blades. Include one reversible blade with two scraping edges.

B ***Wide-Blade Scrapers—*** Include one steel blade. 7106A11 and 7106A13 store extra blades in their handles. 7106A11 has a threaded end for use with any Acme-threaded extension pole.

C ***Four-Edge Scrapers—*** 7105A31 and 7105A32 include one steel blade with one corrugated edge for tough scraping and three smooth edges for finishing. 7105A13 has one steel blade with two serrated and two smooth edges.

	Blade Wd.	O'all Lg.	Scrapers	Each	Repl. Blades Pkg. Qty.		Pkg.
A	2″	10¼″	3639A3	$15.22	1	3639A4	$7.06
A	2⅜″	10¼″	3639A6	17.39	1	3639A7	9.58
B	4″	7½″	7106A11	8.08	5	7106A21	3.44
B	4″	11 13/16″	7106A12	9.31	5	7106A21	3.44
B	4″	20⅞″	7106A14	13.67	5	7106A21	3.44
B	4″	50⅜″	7106A13	15.60	5	7106A21	3.44
C	1¾″	9″	7105A31	7.42	2	7105A21	4.05
C	2½″	11¼″	7105A32	8.20	2	7105A22	4.58
C	3″	12¼″	7105A13	9.22	1	7105A23	4.22

60″ Lg. Wood Pole for 7106A11 ..... 7255T5 Each $9.61

Nonsparking Scrapers

Nonsparking, nonmagnetic blades make these tools ideal for hazardous locations. Blades are stiff with a beveled edge, unless noted.

Brass blades are spring tempered. *Ultra-grip handles* combine hard polypropylene plastic with soft rubber for a comfortable grip and shock absorption.

Beryllium copper blades are stronger and harder than brass blades.

Blade, Wd. × Lg.	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Brass Blades					
Nylon Handles					
1¼″ × 3¼″	7½″	10	7114A11	$6.47	$5.82
1 5/16″ × 3¼″	7½″	10	7114A14	7.54	6.78
1 5/16″ × 3¾″	11½″	5	7114A15♦	14.43	12.98
2″ × 3¼″	7½″	10	7114A12	7.66	6.90
3″ × 4¼″	8″	10	7114A13	9.24	8.32
3″ × 4¼″	12½″	5	7114A16♦	15.11	13.60
Ultra-Grip Handles					
1¼″ × 3½″	8½″	5	2528A32	7.04	6.29
1 5/16″ × 3½″	8½″	5	2528A33	8.00	7.15
2″ × 3⅝″	8½″	5	2528A34	8.12	7.25
3″ × 4⅛″	9″	5	2528A35	9.60	8.57
Beryllium Copper Blades					
Hardwood Handles					Each
1½″ × 3½″	7½″	—	3665A2		$18.85
2″ × 4″	7⅝″	—	3665A1		22.51
3″ × 4½″	8¼″	—	3626A1		37.90
3″ × 4½″	8¼″	—	3626A2▲		39.24

♦ Polypropylene handle. ▲ Flexible blade.

Stainless Steel Long-Reach Scrapers

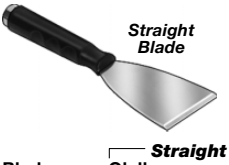

These plastic-handle scrapers have a Type 420 stainless steel blade and screw onto any standard Acme-threaded pole. A 54″ long pole is sold separately. Use bent blade for increased leverage.

Blade, Wd. × Lg.	Straight Blade O'all Lg.			Bent Blade O'all Lg.		
3″ × 4⅜″	10¼″	35585A77	$8.10	10¼″	35585A79	$9.00
4″ × 4″	9¾″	35585A81	8.57	9⅝″	35585A83	8.57

54″ Lg. Wood Pole 7255T1 $4.66

Multipurpose Painters' Tools

Use these multifunction tools as a putty knife, spreader, paint-roller cleaner, scraper, and crack cutter. All except 4992A24 can also set nails.

Stainless steel blades are Type 420.

Ultra-grip handles are hard polypropylene with soft rubber for a comfortable grip and shock absorption.

Blade Material	Handle Material	Blade, Wd. × Lg.	O'all Lg.		
Carbon Steel	Polypropylene	2½″ × 3½″	7¼″	3581A2	$7.20
Brass	Ultra-grip	2⅜″ × 3⅜″	8¼″	35595A81	10.49
Stainless Steel	Ultra-grip	2⅜″ × 3⅜″	8¼″	2456A11	7.80
Stainless Steel	Hardwood	2 5/16″ × 4″	7¾″	4992A24	9.26
Stainless Steel	Nylon	2⅜″ × 3⅜″	7¼″	35595A65	10.96

Wide-Blade Utility Scrapers

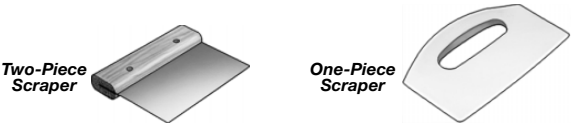

Two-piece scraper with polypropylene handle has a white handle and is NSF certified.

One-piece scraper is chemical resistant and FDA compliant. **To Order:** Please specify color: blue, green, red, white, or yellow.

Blade Material	Handle Material	Blade Wd.	O'all Lg.		
Two-Piece Scrapers					
Type 410 Stainless Steel	Wood	6″	4⅝″	3651A13	$16.42
Type 410 Stainless Steel	Polypropylene	6″	4⅝″	3651A14	10.35
One-Piece Scraper					
Polypropylene	Polypropylene	8 5/16″	5″	5732A14	11.00

Stainless Steel Scrapers

Package quantity is 5.

Wood handles have a Type 420 stainless steel blade.

Nylon handles resist wear and most common paint thinners. Blades are Type 420 stainless steel.

Ultra-grip handles are molded polypropylene with a soft rubber-like material for a comfortable grip and shock absorption. Blades are Type 410 stainless steel (unless noted).

Blade, Wd. × Lg.	O'all Lg.	Stiff Blade	Each Partial Pkg.	Full Pkg.	Flexible Blade	Each Partial Pkg.	Full Pkg.
Wood Handles with Straight Blade							
1¼″ × 3¾″	7½″	7107A26	$5.40	$4.50	7107A25	$5.40	$4.50
1½″ × 3¾″	7½″	7107A22	6.17	5.14	7107A21	6.17	5.14
2″ × 3¾″	7½″	7107A28	6.94	5.79	7107A27	6.94	5.79
3″ × 4¾″	8½″	7107A24	8.49	7.07	7107A23	8.49	7.07
4″ × 4½″	8⅜″	—	—	—	4963A14	8.04	7.18
6″ × 4½″	8⅜″	—	—	—	4963A16	11.89	10.63
Wood Handles with Chisel-Edge Blade							
1¼″ × 3⅝″	7⅜″	4968A26	6.56	5.46	—	—	—
Wood Handles with Chisel-Edge Bent Blade							
3″ × 4½″	9″	4991A11	9.26	7.71	—	—	—
Long Wood Handles with Chisel-Edge Blade							
3 1/16″ × 4 3/16″	12″	4990A16	9.26	7.71	—	—	—
Nylon Handles with Straight Blade							
1½″ × 3⅝″	7⅝″	2459A22	7.78	6.51	2459A21	7.78	6.51
3″ × 4¼″	8″	2459A25	11.33	9.48	2459A24	11.33	9.48
6″ × 4⅜″	8⅜″	—	—	—	4963A19	17.24	15.67
Ultra-Grip Handles with Straight Blade							
1½″ × 3¼″	8¼″	2641A21	7.01	6.14	—	—	—
1½″ × 4¼″	8¾″	—	—	—	2641A22	7.01	6.14
3″ × 3¾″	8¾″	2641A23	9.45	8.22	2641A24	9.45	8.22
4″ × 3¾″	8¾″	2641A26	10.62	9.34	2641A27	10.62	9.34
6″ × 3¾″	8¾″	—	—	—	2641A25	14.49	12.60
10″ × 4 1/16″	8¾″	—	—	—	3686A11✓	9.68	8.69

✓ Blade is Type 301 stainless steel.

Scrapers

Also known as putty knives, these scrapers have carbon steel blades (unless noted) and handles with a metal grommet for hanging (except 3631A11).

Ultra-grip handles are a hard polypropylene plastic with a soft rubber-like material for a comfortable grip and shock absorption.

***Premium*—**Have heavier-gauge steel blades than our other scrapers.

Straight Blade Ultra-Grip Handle

Chisel-Edge Blade Nylon Handle

Bent Blade Wood Handle

Blade, Wd. × Lg.	O'all Lg.	Handle	Pkg. Qty.	Stiff Blade Each Partial Pkg.	Stiff Blade Each Full Pkg.	Flexible Blade Each Partial Pkg.	Flexible Blade Each Full Pkg.
Straight Blades							
Standard							
3/4″ × 3 5/8″	7 1/2″	Nylon	5	—	—	7113A29	$5.96
1 1/8″ × 3 3/4″	7 3/4″	Polypropylene	10	—	—	3632A12★	2.08
1 1/4″ × 3 5/8″	7 3/4″	Nylon	5	7113A11	$4.07	7113A15	4.07
1 1/4″ × 3 3/4″	7 3/4″	Wood	5	3668A1	5.13	3668A2	5.06
1 1/2″ × 3 1/2″	8 1/2″	Ultra Grip	5	35625A22♦	4.84	35625A21♦	4.84
1 1/2″ × 3 5/8″	7 5/8″	Wood	12	3668A11♠	9.38	3668A12♠	10.42
1 1/2″ × 3 5/8″	7 3/4″	Nylon	5	7113A25	4.54	7113A26	4.54
2″ × 3 5/8″	7 5/8″	Wood	12	3668A13♠	9.77	3668A14♠	9.77
2″ × 3 5/8″	7 3/4″	Nylon	5	7113A12	4.91	7113A16	4.91
3″ × 4″	8″	Polypropylene	10	—	—	3632A11★	2.68
3″ × 4 1/8″	9″	Ultra Grip	5	35625A26♦	6.60	35625A25♦	6.60
3″ × 4 1/2″	8 1/4″	Wood	5	3668A3	7.34	3668A4	7.25
3″ × 4 1/2″	10 3/4″	Wood	6	3631A11	12.06	—	—
4″ × 4 1/4″	9″	Ultra Grip	5	—	—	35625A32♦	9.00
4″ × 4 1/2″	8 1/4″	Nylon	5	—	—	7113A18	8.45
4″ × 5″	9″	Wood	6	3668A16♠	11.72	3668A17♠	14.07
5″ × 4 1/4″	8 1/4″	Nylon	5	—	—	7113A19	9.20
5″ × 4 1/4″	9 1/8″	Ultra Grip	5	—	—	35625A27♦	9.82
5″ × 4 5/8″	8 1/2″	Wood	6	3668A18♠	13.47	3668A19♠	11.71
6″ × 4 1/4″	9 1/8″	Ultra Grip	5	—	—	35625A28♦	10.44
6″ × 4 1/2″	8 3/8″	Wood	5	—	—	3668A5	9.80
6″ × 4 1/2″	8 1/2″	Nylon	5	—	—	7113A21	9.51
8″ × 4 1/4″	9 1/4″	Ultra Grip	5	—	—	35625A33♦	15.07
10″ × 4 1/4″	9 1/4″	Ultra Grip	5	—	—	35625A34♦	17.60
10″ × 4 3/8″	8 3/8″	Nylon	5	—	—	7113A41	16.80
Premium							
3/4″ × 3 7/16″	7 9/16″	Wood	6	—	—	3658A31	9.83
1 1/4″ × 3 1/2″	7 1/4″	Wood	12	3658A11	10.37	3658A12	10.37
1 1/2″ × 3 1/2″	7 1/4″	Wood	12	3658A34	11.12	3658A35	11.12
2″ × 3 1/2″	7 1/4″	Wood	12	3658A13	11.97	3658A14	11.97
3″ × 4 1/2″	8 1/8″	Wood	12	3658A15	14.64	3658A16	14.64
3 1/2″ × 4 1/4″	8 1/8″	Wood	12	3658A17	15.94	—	—
4″ × 5 1/4″	9″	Wood	12	3658A21	16.09	—	—
Chisel-Edge Blades							
Standard							
3/4″ × 3 5/8″	7 1/2″	Nylon	5	7113A28	5.20	—	—
1 1/4″ × 3 5/8″	8 1/2″	Ultra Grip	5	35625A24♦	6.02	—	—
1 1/4″ × 3 3/4″	7 3/4″	Wood	5	3668A24	5.59	—	—
1 5/16″ × 3 5/8″	7 3/4″	Nylon	5	7113A23	4.91	—	—
1 1/2″ × 3 5/8″	7 5/8″	Wood	12	3668A15♠	10.84	—	—
3″ × 4 1/4″	8 1/4″	Nylon	5	7113A31	7.46	—	—
4″ × 4 1/4″	8″	Nylon	5	7113A35	7.33	—	—
Premium							
1 1/2″ × 3 1/2″	7 1/2″	Wood	6	3658A32	10.82	—	—
Bent Chisel-Edge Blades							
Standard							
3″ × 3 7/8″	10″	Nylon	5	7113A32	9.14	—	—
3″ × 4 3/4″	9 1/4″	Wood	5	3668A25	8.96	—	—
Bent Blades							
Premium							
1 1/8″ × 3″	6 5/8″	Wood	12	3667A11	13.37	—	—

★ Blade is spring steel. ♦ Blade is Type 420 stainless steel. ♠ Blade is Type 410 stainless steel.

Premium Steel Scrapers

With a thicker carbon steel blade than on other scrapers, these scrapers have increased life and durability. ***Semistiff*** scrapers have tempered spring steel blades and hardwood handles. ***Stiff*** scrapers have forged steel blades and rosewood handles.

Scraper Type	Blade, Wd. × Lg.	O'all Lg.		
Semistiff	1″ × 4 1/2″	8 5/8″	3705A11	$23.50
Semistiff	2″ × 5″	9 1/8″	3705A12	25.59
Semistiff	3″ × 5″	9 1/8″	3705A13	27.55
Stiff	3″ × 4″	8 1/2″	3629A3	34.66
Stiff	4″ × 4 3/4″	9″	3629A5	36.09

Ceramic-Blade Scraper

Ceramic blade stays sharper longer than steel and won't rust. It's chemical resistant, nonmagnetic, and nonconductive. Handle is plastic. Blade is 2 1/8″ Wd. × 1 1/4″ Lg. O'all length is 6 3/4″.

35685A65 ..... $18.62

Flexible/Conformable Silicone Scraper

This one-piece silicone scraper has flat and curved edges that flex to fit tight areas and contoured surfaces. Size is 6″ Lg. × 3 1/2″ Wd.

To Order: Please specify color: blue or red.

6060A3 ..... $16.67

Disposable Plastic Putty Scrapers

Overall length is 7 1/4″.

Blade, Wd. × Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
1 1/2″ × 3 1/2″	36	3546A41	$0.63	$0.49
2″ × 3 1/2″	36	3546A42	.74	.57
3″ × 3 1/2″	36	3546A43	.83	.64
4″ × 3 1/2″	36	3546A44	.89	.70
6″ × 3 1/2″	24	3546A71	1.19	.95
8″ × 3 3/4″	24	3546A72	1.35	1.05
10″ × 3 1/8″	24	3546A73	1.63	1.27

FDA-Compliant and High-Temperature Plastic Scrapers

Standard

FDA-Compliant Scrapers—Can be sterilized, which makes them ideal for food-processing plants. Scrapers are polypropylene, nonsparking, chemical and corrosion resistant, and won't scratch metal surfaces. Resist heat up to 212° F intermittently.

Standard Scrapers—**To Order:** Please specify color: blue, green, red, white, or yellow.

Safety Scrapers—Are antistatic for the most hazardous applications. Color is green.

High-Temperature Scraper—Made of a glass-filled nylon for additional resistance to heat (up to 456° F) and chemicals. Color is blue.

	Blade, Wd. × Lg.	Overall Length		
FDA-Compliant Scrapers				
Standard	3″ × 3¼″	8″	**3661A1**	$4.45
Standard	4⁷⁄₁₆″ × 4½″	9¹¹⁄₁₆″	**3661A2**	5.36
Safety	3″ × 3¼″	8″	**3661A26**	4.45
Safety	4⁷⁄₁₆″ × 4½″	9¹¹⁄₁₆″	**3661A27**	5.36
High-Temperature Scraper				
Standard	4⁷⁄₁₆″ × 4¾″	10″	**3661A28**	8.28

Spatulas

Stainless Steel Straight Blade with Wood Handle

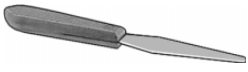

Stainless Steel Tapered Blade with Wood Handle

Copper Alloy Rounded Blade with Wood Handle

Nylon Straight Blade with Plastic Handle

Plastic Rounded Blade

Stainless Steel Blades—Also known as ink knives, these spatulas mix and spread paints, chemicals, and adhesives. Blades are Type 420 stainless steel and semiflexible except for 3660A19, which has a stiff blade. *Polypropylene handles* are white and NSF (National Sanitation Foundation) certified. *Vinyl handles* provide a nonslip grip and have high temperature resistance.

Copper Alloy Blades—Completely nonsparking, these spatulas are the ideal choice when accidental sparks could be hazardous. Blade is stiff and nonmagnetic.

Nylon Blades—Self-sharpening and won't absorb odors and bacteria. Perfect for food, printing, and paint process industries. Withstand heat up to 300° F intermittently. Spatulas with *stainless steel handles* have white blades. Spatulas with *plastic handles* have red, white, or yellow handles and blades. **To Order:** Please specify color.

Plastic Blades—Are disposable and have flexible blades. Withstand temperatures up to 180° F.

Blade, Wd. × Lg.	Blade Shape	Handle Material	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Stainless Steel Blades							
9⁄₁₆″-5⁄₁₆″ × 3″	Tapered	Wood	6¾″	12	**3748A4**	$10.52	$8.76
5⁄₈″-7⁄₁₆″ × 4″	Tapered	Wood	7¾″	12	**3748A5**	11.72	9.76
11⁄₁₆″-½″ × 5″	Tapered	Wood	8¾″	12	**3748A6**	12.01	10.00
⅝″ × 3″	Rounded	Vinyl	6½″	12	**4007A41**	8.57	7.14
⅝″ × 3″	Rounded	Wood	6⁷⁄₈″	12	**3660A11**	10.68	8.89
¾″ × 3⅝″	Rounded	Wood	7½″	12	**3660A19**	12.86	10.71
¾″ × 4″	Rounded	Vinyl	7½″	12	**4007A42**	9.63	8.03
¾″ × 4″	Rounded	Wood	7⁷⁄₈″	12	**3660A12**	12.00	10.00
⅞″ × 5″	Rounded	Vinyl	9″	12	**4007A43**	11.43	9.53
⅞″ × 5″	Rounded	Wood	8¾″	12	**3660A13**	11.57	9.64
1″ × 6″	Rounded	Polypropylene	9¾″	12	**5170A31**	13.01	10.84
1″ × 6″	Rounded	Vinyl	10⅜″	12	**4007A44**	12.86	10.71
1″ × 6″	Rounded	Wood	10½″	12	**3660A14**	14.72	12.26
1¼″ × 3″	Rounded	Polypropylene	7½″	12	**7101A12**	11.25	9.57
1¼″ × 3⅝″	Rounded	Wood	8⅛″	12	**7101A11**	15.42	12.86
1¼″ × 8″	Rounded	Polypropylene	11½″	12	**5170A33**	15.14	12.62
1¼″ × 8″	Rounded	Vinyl	12¾″	12	**4007A45**	14.85	12.38
1¼″ × 8″	Rounded	Wood	12½″	6	**3660A15**	18.57	15.48
1½″ × 4″	Straight	Wood	9½″	6	**3633A1**	19.71	16.43
1½″ × 10″	Rounded	Polypropylene	14¾″	6	**5170A35**	19.29	16.08
1½″ × 10″	Rounded	Wood	15″	6	**3660A16**	20.72	17.26
1⅝″ × 6″	Straight	Wood	11½″	6	**3633A2**	23.56	19.65
1¾″ × 12″	Rounded	Polypropylene	16¾″	6	**5170A37**	21.94	18.29
1¾″ × 12″	Rounded	Wood	17¼″	6	**3660A17**	26.29	21.90
2″ × 14″	Rounded	Polypropylene	18″	6	**5170A39**	26.23	21.85
2″ × 14″	Rounded	Wood	19¼″	6	**3660A18**	30.00	25.01
2¼″ × 8″	Straight	Wood	13½″	6	**3633A3**	25.71	21.42
2⅞″ × 10″	Straight	Wood	15½″	6	**3633A4**	30.01	24.99
3″ × 12″	Straight	Wood	17½″	6	**3633A5**	32.14	26.79
Copper Alloy Blades							
1″ × 6″	Rounded	Wood	10¼″	1	**3669A1**	———	23.57
1½″ × 9″	Rounded	Wood	14″	1	**3669A2**	———	45.16
2″ × 14″	Rounded	Wood	19¼″	1	**3669A3**	———	60.68
Nylon Blades							
4½″ × 7½″	Straight	Plastic	13½″	1	**3572A21**	———	21.54
4½″ × 7½″	Straight	Plastic	40″	1	**3572A22**	———	27.11
4½″ × 7½″	Straight	Stainless Steel	48″	1	**3572A13**	———	88.12
4½″ × 7½″	Straight	Stainless Steel	72″	1	**3572A14**	———	102.47
Replacement White Nylon Blade for 3572A21, A22, A13, and A14					**3572A15**	**Each**	$15.23
Plastic Blades							**Pkg.**
1″ × 3″	Rounded	Plastic	6½″	20	**70505A2**		$13.20
1¼″ × 3¼″	Rounded	Plastic	7½″	20	**70505A1**		14.00
1⅝″ × 4¼″	Rounded	Plastic	9½″	20	**70505A3**		14.90

Mini Stainless Steel Lab Spatulas

These compact spatulas have a Type 304 stainless steel blade on each end except *Styles A* and *E* , which have a Type 304 stainless steel blade on one end and a vinyl handle on the other. All spatulas have a satin finish except 7075A18 and 7075A19, which have a nonstick coating.

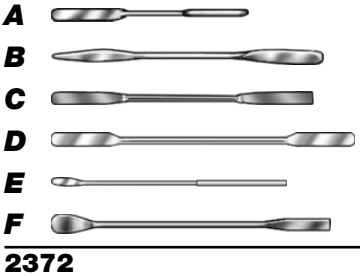

	Spatula Blade(s)	Blade, Wd. × Lg.	O'all Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
A	Single Flat	5⁄₁₆″ × 2″	5½″	12	**7075A13**	$4.28	$3.57
B	Tapered/Rounded	5⁄₁₆″ × 2″	7½″	12	**7075A12★**	5.99	5.00
B	Tapered/Rounded	5⁄₁₆″ × 2″	7½″	12	**7075A16●**	4.72	3.93
B	Tapered/Rounded	5⁄₁₆″ × 2″	7½″	12	**7075A18**	6.14	5.12
C	Rounded/Squared	5⁄₁₆″ × 2″	7½″	12	**7075A17**	6.57	5.48
C	Rounded/Squared	5⁄₁₆″ × 2″	7½″	12	**7075A19**	9.69	8.08
D	Double Flat Rounded	5⁄₁₆″ × 2″	8″	12	**7075A11**	4.28	3.57
E	Single Oval Spoon	3⁄₁₆″ × ¾″	5½″	12	**7075A14**	4.29	3.57
F	Spoon/Squared	9⁄₁₆″ × 1¼″	9″	12	**7075A15**	9.42	7.86

★ One blade tapers to 3⁄32″. ● One blade tapers to ⅛″.

About Selecting Band Saw Blades

1. Select a blade type based on the material and shape you plan to cut.

Materials	Shapes	Recommended Blade Type	Page
Steel, aluminum, brass	Solid rounds and rectangles, pipe, I-beams	General Purpose Band Saw Blades	2374
Steel	Pipe, I-beams, angle iron, tubing, bundles	Bimetal Band Saw Blades for Structural Shapes and Bundles	2378
Tool steel, mold steel, stainless steel	Solid rounds and rectangles, pipe, I-beams	Bimetal Band Saw Blades for Hard Metals	2376
Steel, stainless steel, aluminum, brass, bronze	Thin sheets and thin-walled pipe	Band Saw Blades for Thin Metals	2379
Steel, stainless steel, aluminum	Thick, solid rounds and rectangles	Bimetal Band Saw Blades for Thick Metals	2378
Tool steel, stainless steel, aluminum, titanium alloys	Solid rounds and rectangles, pipe, I-beams	High-Performance Bimetal Band Saw Blades	2380
Hardened steel, super alloys, graphite, composites, glass	Solid rounds and rectangles, pipe, I-beams	Carbide-Grit-Edge Band Saw Blades	2381
Quartz, silicon, ceramic, stone, glass, marble	Solid rounds and rectangles	Diamond-Grit-Edge Band Saw Blades	2381
Aluminum castings, fiberglass, composites, hardwood	Solid rounds and rectangles, bundles	Carbide-Tipped Band Saw Blades	2380
Hardwood, softwood, soft metals	Any	Band Saw Blades for Wood	2378
Rubber, cloth, plastic, foam, bread, meat	Any	Knife-Edge Band Saw Blades	2380

2. Select number of teeth per inch based on the thickness of your material.

Choose teeth per inch based on the thickness of the shape you plan to cut. For bundles, determine the teeth per inch for one piece and then choose one tooth per inch or teeth per inch range less.

More teeth per inch are for thinner materials, harder materials, and where the finish is most important. Fewer teeth per inch are for thicker materials, softer materials, and where speed of cut is most important.

Depending on the blade type you select, you may choose from anti-vibration or standard tooth styles.

Anti-Vibration— Teeth vary in size and number per inch and are set in the blade in a varying pattern (also known as variable set). They reduce vibration and handle a broader range of material thicknesses compared to standard tooth blades.

Standard— The number of teeth per inch is constant throughout the blade. Teeth are set in the blade in a constant pattern (also known as raker set).

Note: Teeth on Band Saw Blades for Thin Metals are set in a wavy pattern.

If material thickness is	ANTI-VIBRATION — Choose Teeth per Inch from Shaded Area								STANDARD — Choose Teeth per Inch from Shaded Area								
	3-4	4-6	5-8	6-10	8-12	10-14	14-18	20-24	3	4	6	8	10	14	18	24	32
0-5/32″								■									■
5/32″-7/32″								■								■	■
7/32″-1/4″							■	■							■	■	■
1/4″-5/16″						■	■							■	■	■	■
5/16″-11/32″						■	■							■	■	■	
11/32″-3/8″					■	■	■							■	■	■	
3/8″-1/2″				■	■	■	■						■	■	■	■	
1/2″-5/8″			■	■	■	■	■					■	■	■	■		
5/8″-7/8″			■	■	■	■	■					■	■	■			
7/8″-1″			■	■	■	■						■	■				
1″-1 1/4″		■	■	■	■	■					■	■	■				
1 1/4″-1 1/2″		■	■	■	■						■	■					
1 1/2″-2″	■	■	■	■						■	■						
2″-2 3/8″	■	■	■						■	■	■						
2 3/8″-3″	■	■							■	■							
3″-4″	■								■								
4″ and up	■								■								

3. Select blade width, length, and thickness.

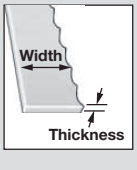

Width— Most band saws accept only one blade width, though some accept a small range of blade widths. To choose between blade widths, measure the minimum radius you will need to cut. For tight turns and curves (small radius), choose narrower blades. For straighter cuts (large radius), choose wider blades.

If minimum cutting radius is	5/8″	1 7/16″	2 1/2″	3 3/4″	5 7/16″	7 1/2″	12″
Choose blade width	1/4″	3/8″	1/2″	5/8″	3/4″	1″	1 1/4″

Measuring minimum cutting radius:

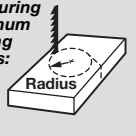

Length— Varies by band saw size. See your band saw user's manual for determining the correct blade length.

Thickness— Thicker blades resist shock and damage better than thin blades, especially when cutting bundles, strut channels, and I-beams. Thinner blades create thinner cuts, which result in less material loss.

For information about band saw blades, see page 2373.

General Purpose Band Saw Blades

Cut a wide range of materials such as steel, aluminum, and brass of different shapes including solid rounds and rectangles, pipe, and I-beams.

***Anti-Vibration*—**Teeth vary in size and number per inch and are set in the blade in a varying pattern (also known as variable set). They reduce vibration and handle a broader range of material thicknesses compared to standard tooth blades.

***Standard*—**The number of teeth per inch is constant throughout the blade. Teeth are set in the blade in a constant pattern (also known as raker set).

Bimetal blades outlast hard-carbon steel and flex-carbon steel blades; they're great for straight and contoured cuts. ***Hard-carbon steel*** blades are better for straight cuts than ***flex-carbon steel*** blades, which are better for contoured cuts.

Anti-Vibration Bimetal—For straight and contoured cuts.

Lg.	Teeth per In.	Thick.		Each
½″ Width				
4′8⅛″	10-14	0.020″	4179A308	$17.52
4′11½″	10-14	0.020″	4179A401	22.47
5′	10-14	0.020″	4179A857	17.52
5′4½″	10-14	0.020″	4179A157	18.67
6′8″	10-14	0.020″	4179A164	22.02
7′5″	10-14	0.020″	4179A551	23.14
7′6″	10-14	0.020″	4179A169	23.14
7′11″	10-14	0.020″	4179A898	24.26
10′3″	10-14	0.020″	4179A306	29.88
11′8″	14-18	0.020″	4179A968	31.02
12′10″	10-14	0.020″	4179A324	47.76
¾″ Width				
7′9″	4-6	0.035″	4179A889	40.38
7′9″	5-8	0.035″	4179A891	40.38
9′	5-8	0.035″	4179A176	44.60
10′	5-8	0.035″	4179A182	47.67
10′9″	4-6	0.035″	4179A237	53.02
10′10½″	4-6	0.035″	4179A245	53.02
10′10½″	5-8	0.035″	4179A183	53.02
11′1″	5-8	0.035″	4179A331	51.47
11′6″	4-6	0.035″	4179A285	51.47
11′6″	5-8	0.035″	4179A593	55.14
14′6″	4-6	0.035″	4179A256	63.27
14′6″	5-8	0.035″	4179A675	63.27
¾″ Width (Cont.)				
14′8″	4-6	0.035″	4179A812	$65.22
14′8″	5-8	0.035″	4179A641	65.22
1″ Width				
8′10″	4-6	0.035″	4179A901	48.98
9′11½″	4-6	0.035″	4179A936	54.95
10′	5-8	0.035″	4179A943	54.95
10′10″	4-6	0.035″	4179A247	59.76
10′10½″	4-6	0.035″	4179A585	58.37
10′10½″	5-8	0.035″	4179A586	58.37
11′	4-6	0.035″	4179A735	58.37
11′	5-8	0.035″	4179A736	58.37
11′1″	5-8	0.035″	4179A964	58.04
11′3″	4-6	0.035″	4179A683	58.04
11′6″	3-4	0.035″	4179A596	58.04
11′6″	4-6	0.035″	4179A294	58.04
11′6″	5-8	0.035″	4179A597	58.04
12′	3-4	0.035″	4179A203	60.29
12′	4-6	0.035″	4179A334	60.29
12′	5-8	0.035″	4179A605	60.29
12′1″	5-8	0.035″	4179A209	62.53
12′6″	3-4	0.035″	4179A613	62.53
12′6″	4-6	0.035″	4179A384	62.53
12′6″	5-8	0.035″	4179A614	62.53
12′10″	4-6	0.035″	4179A226	64.78
1″ Width (Cont.)				
12′10″	5-8	0.035″	4179A227	$64.78
12′11″	4-6	0.035″	4179A681	64.78
13′3″	4-6	0.035″	4179A743	67.02
13′3″	5-8	0.035″	4179A744	67.02
13′4″	4-6	0.035″	4179A794	67.02
13′6″	3-4	0.035″	4179A623	67.02
13′6″	4-6	0.035″	4179A624	67.02
13′6″	5-8	0.035″	4179A625	67.02
13′11″	4-6	0.035″	4179A751	69.27
13′11″	5-8	0.035″	4179A631	69.27
14′6″	3-4	0.035″	4179A233	71.51
14′6″	4-6	0.035″	4179A443	71.51
14′6″	5-8	0.035″	4179A634	71.51
15′6″	3-4	0.035″	4179A795	76.00
15′6″	4-6	0.035″	4179A643	76.00
1¼″ Width				
11′6″	4-6	0.042″	4179A601	68.16
12′	4-6	0.042″	4179A607	70.78
12′6″	4-6	0.042″	4179A224	73.42
13′6″	4-6	0.042″	4179A679	78.69
14′6″	4-6	0.042″	4179A637	83.96
14′6″	5-8	0.042″	4179A638	83.96
15′	4-6	0.042″	4179A646	86.60
15′6″	4-6	0.042″	4179A647	89.24

Also Available: Additional anti-vibration bimetal sizes. Please ask for 1997A2 and specify width, length, teeth per inch, and thickness.

Standard Bimetal—For straight and contoured cuts.

Lg.	Teeth per In.	Thick.		Each
¼″ Width				
6′8″	10	0.025″	4179A876	$29.42
6′8″	14	0.025″	4179A877	29.42
7′9″	10	0.025″	4179A521	32.74
7′9″	14	0.025″	4179A522	32.74
⅜″ Width				
7′8½″	14	0.025″	4179A963	32.74
7′9″	14	0.025″	4179A524	32.74
½″ Width				
4′5¾″	14	0.035″	4179A724	24.20
5′4½″	10	0.025″	4179A251	25.63
5′4½″	14	0.020″	4179A858	18.67
5′4½″	14	0.025″	4179A252	25.63
5′4½″	14	0.035″	4179A162	27.38
5′4½″	18	0.020″	4179A309	22.07
5′8″	14	0.025″	4179A546	26.00
6′8″	14	0.020″	4179A549	22.02
7′5″	10	0.035″	4179A516	34.09
7′5″	14	0.025″	4179A518	31.09
7′5″	14	0.035″	4179A519	34.09
7′9″	14	0.025″	4179A555	32.74
7′9½″	6	0.035″	4179A172	34.44
7′9½″	14	0.025″	4179A528	32.74
7′9½″	14	0.035″	4179A317	35.93
7′11″	14	0.025″	4179A533	32.74
8′	14	0.025″	4179A535	32.74
8′	14	0.035″	4179A564	35.93
8′2½″	14	0.035″	4179A566	37.77
½″ Width (Cont.)				
9′	10	0.035″	4179A191	$39.60
9′	14	0.035″	4179A192	39.60
9′6″	14	0.025″	4179A313	37.72
9′7½″	10	0.035″	4179A926	43.28
9′7½″	14	0.035″	4179A927	43.28
10′	14	0.025″	4179A578	39.40
10′6″	10	0.035″	4179A221	45.14
10′6″	14	0.035″	4179A222	45.14
10′10″	14	0.025″	4179A988	42.70
11′6″	10	0.035″	4179A271	46.64
11′6″	14	0.035″	4179A272	46.64
12′	14	0.025″	4179A725	43.98
12′6″	10	0.035″	4179A371	49.74
12′6″	14	0.025″	4179A612	45.58
12′6″	14	0.035″	4179A372	49.74
12′9″	10	0.035″	4179A316	51.91
¾″ Width				
7′9″	14	0.035″	4179A526	37.84
9′	8	0.035″	4179A212	42.79
9′7½″	14	0.035″	4179A575	46.83
10′5″	14	0.035″	4179A582	48.86
10′10½″	8	0.035″	4179A242	50.88
10′10½″	10	0.035″	4179A243	50.88
10′10½″	14	0.035″	4179A584	49.70
11′6″	8	0.035″	4179A282	49.38
11′6″	10	0.035″	4179A283	49.38
11′6″	14	0.035″	4179A595	52.90
¾″ Width (Cont.)				
14′6″	8	0.035″	4179A255	$60.76
14′8″	8	0.035″	4179A462	62.64
14′8″	10	0.035″	4179A463	62.64
1″ Width				
10′10½″	6	0.035″	4179A536	56.60
10′10½″	8	0.035″	4179A537	56.60
10′10½″	10	0.035″	4179A538	56.60
10′10½″	14	0.035″	4179A539	56.60
11′	10	0.035″	4179A591	56.60
11′	14	0.035″	4179A592	56.60
11′5″	10	0.035″	4179A32	56.24
11′6″	6	0.035″	4179A291	56.24
11′6″	8	0.035″	4179A292	56.24
11′6″	10	0.035″	4179A293	56.24
12′	6	0.035″	4179A606	58.40
12′	8	0.035″	4179A333	58.40
12′	10	0.035″	4179A206	58.40
12′1″	8	0.035″	4179A353	60.56
12′6″	6	0.035″	4179A381	60.56
12′6″	8	0.035″	4179A382	60.56
12′6″	10	0.035″	4179A383	60.56
13′3″	14	0.035″	4179A996	56.25
13′11″	6	0.035″	4179A411	67.04
13′11″	10	0.035″	4179A413	67.04
14′6″	6	0.035″	4179A442	69.22
14′6″	10	0.035″	4179A238	69.22

Also Available: Additional standard bimetal sizes. Please ask for 1998A3 and specify width, length, teeth per inch, and thickness.

Standard Hard-Carbon Steel—For straight cuts.

Lg.	Teeth per In.	Thick.		Each
¼″ Width				
4′8⅛″	10	0.025″	4125A64	$11.42
6′	10	0.025″	4125A154	11.73
6′8″	10	0.025″	4125A727	12.67
6′8″	14	0.025″	4125A728	12.67
6′10″	10	0.025″	4125A819	11.45
7′7″	18	0.025″	4125A114	13.62
7′9″	10	0.025″	4125A351	13.62
7′9″	14	0.025″	4125A352	13.62
7′9″	18	0.025″	4125A725	13.62
¼″ Width (Cont.)				
7′9½″	10	0.025″	4125A742	$13.62
7′9½″	14	0.025″	4125A743	13.62
7′11″	14	0.025″	4125A158	12.68
7′11″	18	0.025″	4125A159	13.62
9′10″	14	0.025″	4125A824	15.46
10′6″	14	0.025″	4125A832	15.94
11′9″	18	0.025″	4125A775	17.30
12′	14	0.025″	4125A623	17.30
12′6″	10	0.025″	4125A192	17.79
12′6″	14	0.025″	4125A838	17.79
¼″ Width (Cont.)				
12′8″	14	0.025″	4125A109	$18.26
12′8″	18	0.025″	4125A108	18.26
14′6″	10	0.025″	4125A197	19.64
⅜″ Width				
7′8″	8	0.025″	4125A74	13.62
7′8″	18	0.025″	4125A65	13.62
7′9″	8	0.025″	4125A355	13.62
7′9″	10	0.025″	4125A356	13.62
7′9″	14	0.025″	4125A156	13.62
7′9″	18	0.025″	4125A357	13.62

(Continued on following page)

For information about band saw blades, see page 2373.

General Purpose Band Saw Blades *(Continued from previous page)*

Standard Hard-Carbon Steel (Cont.)—For straight cuts.

Lg.	Teeth per In.	Thick.		Each
3/8″ Width (Cont.)				
7′9½″	8	0.025″	4125A746	$13.62
7′9½″	10	0.025″	4125A821	13.62
7′9½″	14	0.025″	4125A747	13.62
8′	18	0.025″	4125A69	12.28
9′9″	10	0.025″	4125A138	15.46
9′9″	14	0.025″	4125A139	15.46
10′31½″	14	0.025″	4125A855	15.94
12′6″	10	0.025″	4125A7	17.79
12′6″	14	0.025″	4125A8	17.79
13′4″	10	0.025″	4125A146	18.72
13′4″	14	0.025″	4125A147	18.72
14′11″	14	0.025″	4125A843	20.11
1/2″ Width				
5′	10	0.025″	4125A278	11.31
5′	14	0.025″	4125A279	11.31
5′4½″	6	0.025″	4125A723	11.48
5′4½″	10	0.025″	4125A151	11.47
5′4½″	14	0.025″	4125A281	11.47
5′4½″	18	0.025″	4125A282	12.23
5′4½″	24	0.025″	4125A283	11.47
5′8″	10	0.025″	4125A153	11.94
5′8″	14	0.025″	4125A112	11.94
6′1″	14	0.025″	4125A113	12.45
6′8″	6	0.025″	4125A817	12.91
6′8″	10	0.025″	4125A818	12.91
6′8″	14	0.025″	4125A115	12.91
6′8″	24	0.025″	4125A116	12.91
6′9″	10	0.025″	4125A311	12.91
6′9″	14	0.025″	4125A312	12.91
7′5″	10	0.025″	4125A321	13.41
7′5″	14	0.025″	4125A322	13.41
7′5″	18	0.025″	4125A155	13.41
7′9″	6	0.025″	4125A361	13.93
7′9″	10	0.025″	4125A362	13.93
7′9″	14	0.025″	4125A363	13.93
7′9″	18	0.025″	4125A364	13.93
7′9½″	6	0.025″	4125A753	13.93
7′9½″	10	0.025″	4125A367	13.93
7′9½″	14	0.025″	4125A368	13.93
7′9½″	18	0.025″	4125A759	13.93
7′11″	10	0.025″	4125A391	13.93
7′11″	14	0.025″	4125A392	13.93
7′11″	18	0.025″	4125A393	13.93
7′11″	24	0.025″	4125A396	13.93
8′	10	0.025″	4125A421	13.93
8′	14	0.025″	4125A422	13.93
8′2″	6	0.025″	4125A822	14.35
8′2½″	14	0.025″	4125A745	14.21
8′5″	14	0.025″	4125A58	14.35
8′9″	6	0.025″	4125A751	14.86
1/2″ Width (Cont.)				
8′9″	10	0.025″	4125A125	$14.86
8′9″	14	0.025″	4125A755	14.86
8′9″	18	0.025″	4125A126	14.86
9′3″	10	0.025″	4125A168	15.34
9′3″	14	0.025″	4125A169	15.34
9′6″	14	0.025″	4125A131	15.34
9′6″	18	0.025″	4125A132	15.34
10′	10	0.025″	4125A127	15.83
10′	14	0.025″	4125A141	15.83
10′	24	0.025″	4125A128	15.83
10′6″	10	0.025″	4125A833	16.33
10′6″	14	0.025″	4125A492	16.33
11′	10	0.025″	4125A143	16.81
11′	14	0.025″	4125A758	16.79
11′6″	6	0.025″	4125A178	17.27
11′6″	10	0.025″	4125A179	17.27
11′6″	14	0.025″	4125A181	17.27
11′8″	6	0.025″	4125A185	17.76
11′8″	14	0.025″	4125A186	17.76
11′9″	14	0.025″	4125A774	17.76
12′	10	0.025″	4125A624	17.73
12′	14	0.025″	4125A622	17.76
12′6″	6	0.025″	4125A769	18.26
12′6″	10	0.025″	4125A662	18.26
12′6″	14	0.025″	4125A663	18.26
12′9″	6	0.025″	4125A57	18.72
12′9″	14	0.025″	4125A51	18.72
12′10½″	14	0.025″	4125A841	17.11
13′1½″	10	0.025″	4125A107	19.23
14′11″	14	0.025″	4125A844	20.68
5/8″ Width				
7′9″	10	0.032″	4125A737	15.49
7′9″	14	0.032″	4125A738	15.49
3/4″ Width				
7′1″	14	0.032″	4125A111	15.74
7′9″	6	0.032″	4125A739	16.37
7′9″	10	0.032″	4125A118	16.37
7′9″	14	0.032″	4125A119	16.37
8′	18	0.032″	4125A77	16.37
8′21½″	10	0.032″	4125A749	17.02
8′5″	10	0.032″	4125A161	17.02
8′5″	14	0.032″	4125A162	17.02
8′5″	18	0.032″	4125A163	17.01
8′11″	6	0.032″	4125A752	17.67
8′11″	10	0.032″	4125A164	17.67
8′11″	14	0.032″	4125A165	17.67
9′	6	0.032″	4125A166	17.67
9′	10	0.032″	4125A481	17.67
9′	14	0.032″	4125A483	17.67
9′71½″	6	0.032″	4125A756	18.92
3/4″ Width (Cont.)				
9′71½″	10	0.032″	4125A134	$18.92
9′71½″	14	0.032″	4125A135	18.92
9′8″	14	0.032″	4125A136	18.92
10′	8	0.032″	4125A174	18.92
10′	10	0.032″	4125A826	18.92
10′	14	0.032″	4125A825	18.92
10′	18	0.032″	4125A129	18.92
10′5″	6	0.032″	4125A761	19.57
10′5″	8	0.032″	4125A831	19.57
10′5″	10	0.032″	4125A488	19.57
10′5″	14	0.032″	4125A489	19.57
10′9″	10	0.032″	4125A757	20.21
10′10½″	10	0.032″	4125A512	20.21
10′10½″	14	0.032″	4125A513	20.21
11′1″	8	0.032″	4125A176	20.86
11′1″	14	0.032″	4125A177	20.86
11′5″	10	0.032″	4125A544	20.86
11′5″	14	0.032″	4125A545	20.86
11′6″	6	0.032″	4125A581	20.86
11′6″	10	0.032″	4125A582	20.86
11′6″	14	0.032″	4125A583	20.86
12′1″	14	0.032″	4125A837	22.13
14′8″	10	0.032″	4125A198	25.33
14′8″	14	0.032″	4125A199	25.33
15′9″	6	0.032″	4125A845	26.58
18′3″	8	0.032″	4125A846	29.79
1″ Width				
10′	14	0.035″	4125A827	22.41
10′10½″	8	0.035″	4125A515	24.03
10′10½″	10	0.035″	4125A542	24.03
10′10½″	14	0.035″	4125A543	24.03
11′	10	0.035″	4125A144	24.03
11′	14	0.035″	4125A145	24.03
11′6″	6	0.035″	4125A182	24.83
11′6″	8	0.035″	4125A183	24.83
11′6″	10	0.035″	4125A592	24.83
11′6″	14	0.035″	4125A593	24.83
11′9″	10	0.035″	4125A762	25.64
11′9″	14	0.035″	4125A763	25.64
12′	6	0.035″	4125A188	25.64
12′	8	0.035″	4125A189	25.64
12′	10	0.035″	4125A191	25.64
12′	14	0.035″	4125A836	25.64
12′6″	6	0.035″	4125A852	26.47
12′6″	10	0.035″	4125A849	26.47
12′6″	14	0.035″	4125A848	26.47
13′3″	10	0.035″	4125A766	28.06
13′11″	10	0.035″	4125A702	28.91
14′6″	6	0.035″	4125A773	29.70

Also Available: Additional standard hard-carbon steel sizes. Please ask for 2163A1 and specify width, length, teeth per inch, and thickness.

Standard Flex-Carbon Steel—For contoured cuts.

Lg.	Teeth per In.	Thick.		Each
1/8″ Width				
4′8⅛″	14	0.025″	4053A194	$14.23
6′8″	14	0.025″	4053A199	16.96
6′8″	18	0.025″	4053A201	16.96
7′9½″	14	0.025″	4053A158	18.32
7′9½″	18	0.025″	4053A842	17.29
3/16″ Width				
7′9½″	14	0.025″	4053A843	12.16
1/4″ Width				
4′8⅛″	14	0.014″	4053A83	10.93
4′8⅛″	14	0.025″	4053A195	10.93
4′8⅛″	18	0.025″	4053A861	10.03
4′8⅞″	14	0.014″	4053A11	9.90
4′9″	14	0.014″	4053A862	9.90
4′11½″	14	0.014″	4053A873	9.58
6′8″	10	0.025″	4053A204	11.70
6′10″	8	0.025″	4053A866	10.53
7′9″	10	0.025″	4053A351	12.86
7′9″	14	0.025″	4053A352	12.86
7′9½″	10	0.025″	4053A162	13.24
7′9½″	14	0.025″	4053A203	13.24
3/8″ Width				
4′8⅛″	14	0.014″	4053A82	10.76
4′8⅛″	18	0.025″	4053A114	10.76
7′9″	10	0.025″	4053A356	13.02
7′9″	18	0.025″	4053A357	13.02
3/8″ Width (Cont.)				
7′9″	24	0.025″	4053A358	$13.02
10′4″	8	0.025″	4053A868	15.18
1/2″ Width				
5′	14	0.025″	4053A279	11.10
5′4½″	10	0.025″	4053A151	11.29
5′4½″	14	0.025″	4053A281	10.81
5′4½″	18	0.025″	4053A282	11.29
5′4½″	24	0.025″	4053A283	11.29
5′8″	14	0.025″	4053A112	11.73
6′8″	6	0.025″	4053A837	12.66
6′8″	14	0.025″	4053A115	12.66
6′8″	24	0.025″	4053A116	12.66
6′9″	14	0.025″	4053A312	12.66
6′9″	18	0.025″	4053A153	12.66
7′5″	10	0.025″	4053A321	12.96
7′5″	14	0.025″	4053A322	12.96
7′9″	6	0.025″	4053A361	13.62
7′9″	10	0.025″	4053A362	13.62
7′9″	14	0.025″	4053A363	13.62
7′9″	18	0.025″	4053A364	13.62
7′9½″	10	0.025″	4053A367	13.26
7′9½″	14	0.025″	4053A368	13.26
7′11″	10	0.025″	4053A391	13.26
7′11″	14	0.025″	4053A392	13.26
7′11″	18	0.025″	4053A393	13.26
1/2″ Width (Cont.)				
8′9″	10	0.025″	4053A125	$14.55
8′11″	6	0.025″	4053A166	14.55
9′6″	14	0.025″	4053A131	14.97
10′	14	0.025″	4053A141	15.47
10′6″	14	0.025″	4053A492	11.38
12′	14	0.025″	4053A622	17.30
12′6″	10	0.025″	4053A662	17.79
12′6″	14	0.025″	4053A663	17.79
3/4″ Width				
7′9″	8	0.032″	4053A157	15.94
7′9″	10	0.032″	4053A118	15.94
7′9″	14	0.032″	4053A119	15.94
9′71½″	10	0.032″	4053A134	18.38
9′71½″	14	0.032″	4053A135	18.38
10′5″	8	0.032″	4053A169	18.98
10′5″	10	0.032″	4053A488	18.98
10′5″	14	0.032″	4053A489	18.98
11′6″	10	0.032″	4053A582	20.21
11′6″	14	0.032″	4053A583	20.21
1″ Width				
11′	14	0.035″	4053A145	19.93
12′6″	10	0.035″	4053A171	25.82
19′6″	6	0.035″	4053A173	36.77

Also Available: Additional standard flex-carbon steel sizes. Please ask for 2404A1 and specify width, length, teeth per inch, and thickness.

For information about band saw blades, see page 2373.

Bimetal Band Saw Blades for Hard Metals

These blades have forward-angled teeth for cuts in hard metals such as stainless steel, tool steel, and mold steel with less pressure on the band saw. Use them on shapes including solid rounds and rectangles, pipe, and I-beams. All are made of bimetal, which is great for straight and contoured cuts.

Anti-Vibration— Teeth vary in size and number per inch and are set in the blade in a varying pattern (also known as variable set). They reduce vibration and handle a broader range of material thicknesses compared to standard tooth blades.

Standard— The number of teeth per inch is constant throughout the blade. Teeth are set in the blade in a constant pattern (also known as raker set).

Lg.	Teeth per In.	Thick.		Each
Anti-Vibration Bimetal				
1/4″ Width				
4′8″	10-14	0.025″	4179A903	$24.93
4′8⅛″	10-14	0.025″	4179A156	24.93
4′8¼″	10-14	0.025″	4179A854	24.93
4′8½″	10-14	0.025″	4179A855	24.93
4′8¾″	10-14	0.025″	4179A856	24.93
4′11¼″	14-18	0.025″	4179A453	24.33
4′11½″	10-14	0.025″	4179A874	24.73
5′2″	10-14	0.025″	4179A12	26.76
5′10″	10-14	0.025″	4179A862	27.23
6′1¼″	10-14	0.025″	4179A868	28.95
6′8″	10-14	0.025″	4179A321	30.67
6′9″	10-14	0.025″	4179A881	30.67
6′10″	10-14	0.025″	4179A819	30.67
7′9″	10-14	0.025″	4179A146	34.12
7′9½″	10-14	0.025″	4179A153	34.93
7′11″	10-14	0.025″	4179A531	34.12
8′2″	10-14	0.025″	4179A907	35.86
8′9″	10-14	0.025″	4179A921	37.58
9′6″	10-14	0.025″	4179A315	40.24
10′	10-14	0.025″	4179A938	41.02
10′3½″	10-14	0.025″	4179A23	42.74
10′7″	10-14	0.025″	4179A583	44.47
12′	10-14	0.025″	4179A216	45.80
12′6″	10-14	0.025″	4179A318	47.44
12′8″	10-14	0.025″	4179A21	49.09
3/8″ Width				
4′8⅛″	10-14	0.025″	4179A852	24.93
4′8⅞″	10-14	0.025″	4179A11	24.93
4′11¼″	10-14	0.025″	4179A817	24.93
4′11½″	10-14	0.025″	4179A878	24.93
5′2″	10-14	0.025″	4179A13	26.76
5′4½″	10-14	0.025″	4179A467	26.12
5′10″	10-14	0.025″	4179A863	27.23
5′10½″	10-14	0.025″	4179A866	27.88
5′10¾″	10-14	0.025″	4179A867	27.23
6′8″	10-14	0.025″	4179A322	30.67
6′10″	10-14	0.025″	4179A818	30.67
6′10½″	10-14	0.025″	4179A1	30.67
7′8½″	10-14	0.025″	4179A993	34.12
7′9″	8-12	0.025″	4179A523	34.12
7′9″	10-14	0.025″	4179A147	34.12
7′9½″	10-14	0.025″	4179A796	34.12
8′	8-12	0.025″	4179A562	34.93
9′11½″	10-14	0.025″	4179A487	42.00
10′	10-14	0.025″	4179A576	41.02
10′4″	10-14	0.025″	4179A869	42.74
11′4″	10-14	0.025″	4179A494	44.16
11′9″	10-14	0.025″	4179A971	45.80
12′6″	10-14	0.025″	4179A975	47.44
1/2″ Width				
4′11¼″	10-14	0.025″	4179A455	24.93
4′11½″	6-10	0.025″	4179A403	24.93
4′11½″	10-14	0.025″	4179A457	24.33
5′	10-14	0.025″	4179A155	24.93
5′2″	10-14	0.025″	4179A14	26.76
5′4½″	6-10	0.025″	4179A406	26.12
5′4½″	8-12	0.025″	4179A432	26.12
5′4½″	10-14	0.025″	4179A543	26.76
5′4½″	10-14	0.035″	4179A163	27.38
5′7″	10-14	0.025″	4179A859	27.24
5′8″	10-14	0.025″	4179A545	27.13
5′10″	10-14	0.025″	4179A865	27.23
6′1″	10-14	0.025″	4179A872	28.95
6′6″	10-14	0.025″	4179A873	28.95
6′8″	10-14	0.025″	4179A879	30.67
6′9″	10-14	0.025″	4179A154	30.67
6′10″	10-14	0.025″	4179A821	30.67
7′5″	8-12	0.025″	4179A517	32.40
Anti-Vibration Bimetal (Cont.)				
1/2″ Width (Cont.)				
7′5″	10-14	0.025″	4179A165	$32.40
7′5″	10-14	0.035″	4179A168	34.09
7′6″	10-14	0.025″	4179A884	32.40
7′7″	10-14	0.025″	4179A16	34.12
7′8½″	10-14	0.025″	4179A977	34.12
7′9″	6-10	0.025″	4179A409	34.94
7′9″	8-12	0.025″	4179A554	34.12
7′9″	10-14	0.025″	4179A557	34.12
7′9″	10-14	0.035″	4179A171	35.93
7′9½″	8-12	0.025″	4179A527	34.12
7′9½″	10-14	0.025″	4179A173	34.12
7′10″	10-14	0.025″	4179A895	34.12
7′11″	8-12	0.025″	4179A532	34.12
7′11″	10-14	0.025″	4179A174	34.12
8′	8-12	0.025″	4179A534	34.12
8′	10-14	0.025″	4179A565	34.12
8′2″	8-12	0.025″	4179A677	36.71
8′2½″	10-14	0.035″	4179A193	37.77
8′7″	10-14	0.025″	4179A678	37.58
8′9″	10-14	0.025″	4179A195	37.58
9′	10-14	0.035″	4179A199	39.60
9′2″	8-12	0.025″	4179A685	39.30
9′2″	10-14	0.025″	4179A917	39.30
9′3″	10-14	0.025″	4179A923	39.30
9′4″	10-14	0.025″	4179A924	39.30
9′5″	10-14	0.025″	4179A925	39.30
9′6″	6-10	0.025″	4179A312	39.30
9′6″	10-14	0.025″	4179A214	39.30
9′10″	10-14	0.025″	4179A932	41.02
9′11½″	10-14	0.025″	4179A486	42.00
10′	6-10	0.025″	4179A937	41.02
10′	8-12	0.025″	4179A179	41.02
10′	10-14	0.025″	4179A181	41.02
10′1″	10-14	0.025″	4179A944	42.74
10′2″	10-14	0.025″	4179A946	42.74
10′3″	10-14	0.025″	4179A952	42.74
10′3″	10-14	0.035″	4179A953	45.14
10′6″	10-14	0.035″	4179A236	45.14
10′8″	6-10	0.025″	4179A17	44.47
10′10″	10-14	0.025″	4179A989	44.47
10′10″	10-14	0.035″	4179A991	46.98
10′10½″	10-14	0.025″	4179A962	44.47
11′	10-14	0.025″	4179A994	44.47
11′4″	10-14	0.025″	4179A493	44.16
11′6″	10-14	0.035″	4179A789	46.64
11′8″	10-14	0.025″	4179A791	45.80
11′9″	10-14	0.025″	4179A893	45.80
12′	6-10	0.025″	4179A973	45.80
12′	10-14	0.025″	4179A792	45.80
12′6″	6-10	0.025″	4179A976	47.44
12′6″	8-12	0.025″	4179A609	47.44
12′6″	10-14	0.025″	4179A215	47.44
12′6″	10-14	0.035″	4179A217	49.74
12′9″	10-14	0.025″	4179A978	49.09
12′10″	10-14	0.025″	4179A314	49.09
13′1½″	10-14	0.025″	4179A22	54.38
13′1″	10-14	0.025″	4179A982	50.76
13′2″	10-14	0.025″	4179A902	50.76
13′2½″	8-12	0.025″	4179A684	50.76
13′5″	10-14	0.025″	4179A622	50.76
13′6″	10-14	0.025″	4179A671	50.76
13′7″	10-14	0.035″	4179A673	55.42
5/8″ Width				
7′9″	5-8	0.035″	4179A886	32.47
7′9″	10-14	0.035″	4179A887	32.47
8′9″	10-14	0.035″	4179A908	35.80
8′10″	10-14	0.035″	4179A909	35.80
9′6″	10-14	0.035″	4179A307	37.47
Anti-Vibration Bimetal (Cont.)				
3/4″ Width				
4′11¼″	6-10	0.035″	4179A456	$28.41
5′4½″	6-10	0.035″	4179A459	29.86
5′4½″	10-14	0.035″	4179A468	29.86
7′1″	10-14	0.035″	4179A882	38.29
7′8½″	6-10	0.035″	4179A471	40.38
7′8½″	10-14	0.035″	4179A482	40.38
7′9″	6-10	0.035″	4179A152	40.38
7′9″	8-12	0.035″	4179A733	40.38
7′9″	10-14	0.035″	4179A734	40.38
7′10″	6-10	0.035″	4179A897	40.38
7′10″	10-14	0.035″	4179A896	40.38
7′11″	6-10	0.035″	4179A728	40.38
8′2″	10-14	0.035″	4179A676	42.50
8′2½″	10-14	0.035″	4179A327	42.50
8′5″	6-10	0.035″	4179A194	42.50
8′5″	10-14	0.035″	4179A567	42.50
8′10″	10-14	0.035″	4179A911	44.60
8′10½″	10-14	0.035″	4179A197	44.60
8′11″	6-10	0.035″	4179A914	43.56
8′11″	10-14	0.035″	4179A198	43.56
9′	6-10	0.035″	4179A474	44.60
9′	8-12	0.035″	4179A213	44.60
9′	10-14	0.035″	4179A177	43.56
9′2″	6-10	0.035″	4179A918	46.71
9′2″	10-14	0.035″	4179A919	46.71
9′3″	10-14	0.035″	4179A201	46.71
9′6″	10-14	0.035″	4179A178	46.71
9′7″	6-10	0.035″	4179A232	47.67
9′7″	10-14	0.035″	4179A573	48.81
9′7½″	8-12	0.035″	4179A574	48.81
9′7½″	10-14	0.035″	4179A234	48.81
9′8″	10-14	0.035″	4179A798	48.81
9′8½″	10-14	0.035″	4179A928	48.81
9′9″	10-14	0.035″	4179A929	48.81
9′11½″	6-10	0.035″	4179A484	48.81
9′11½″	10-14	0.035″	4179A488	48.81
10′	6-10	0.035″	4179A939	48.81
10′	8-12	0.035″	4179A436	48.81
10′	10-14	0.035″	4179A275	48.81
10′1″	10-14	0.035″	4179A945	50.93
10′5″	6-10	0.035″	4179A731	49.74
10′5″	8-12	0.035″	4179A581	50.93
10′5″	10-14	0.035″	4179A235	50.93
10′7″	10-14	0.035″	4179A957	51.79
10′9″	6-10	0.035″	4179A187	53.02
10′9″	8-12	0.035″	4179A958	51.79
10′9″	10-14	0.035″	4179A329	53.02
10′10½″	6-10	0.035″	4179A246	53.02
10′10½″	8-12	0.035″	4179A475	53.02
10′10½″	10-14	0.035″	4179A184	52.22
11′	10-14	0.035″	4179A995	51.79
11′1″	10-14	0.035″	4179A788	51.47
11′4″	6-10	0.035″	4179A491	51.47
11′4″	10-14	0.035″	4179A495	51.47
11′5″	6-10	0.035″	4179A188	51.47
11′5″	10-14	0.035″	4179A189	51.47
11′6″	6-10	0.035″	4179A286	51.47
11′6″	8-12	0.035″	4179A476	51.47
11′6″	10-14	0.035″	4179A594	55.14
11′8″	10-14	0.035″	4179A969	53.42
12′3″	6-10	0.035″	4179A366	55.40
12′6″	6-10	0.035″	4179A793	55.40
12′6″	10-14	0.035″	4179A811	55.40
12′10″	10-14	0.035″	4179A332	57.36
13′2″	10-14	0.035″	4179A983	59.33

(Continued on following page)

For information about band saw blades, see page 2373.

Bimetal Band Saw Blades for Hard Metals *(Continued from previous page)*

Lg.	Teeth per In.	Thick.		Each
Anti-Vibration Bimetal (Cont.)				
3/4″ Width (Cont.)				
14′6″	6-10	0.035″	4179A257	$63.27
14′6″	8-12	0.035″	4179A674	63.27
14′6″	10-14	0.035″	4179A258	63.27
14′8″	6-10	0.035″	4179A465	65.22
14′8″	8-12	0.035″	4179A239	65.22
14′8″	10-14	0.035″	4179A253	65.22
15′8″	6-10	0.035″	4179A259	69.16
20′	6-10	0.035″	4179A987	84.89
1″ Width				
5′4½″	6-10	0.035″	4179A461	33.31
5′4½″	10-14	0.035″	4179A469	33.31
7′8½″	6-10	0.035″	4179A472	45.33
7′8½″	10-14	0.035″	4179A483	45.33
7′9″	10-14	0.035″	4179A894	45.33
8′11½″	6-10	0.035″	4179A906	46.63
8′11½″	10-14	0.035″	4179A905	46.63
8′10″	6-10	0.035″	4179A913	49.74
8′10″	8-12	0.035″	4179A904	48.94
8′10″	10-14	0.035″	4179A912	49.74
8′11″	8-12	0.035″	4179A916	48.98
8′11″	10-14	0.035″	4179A915	48.98
9′6″	10-14	0.035″	4179A301	51.33
9′7½″	10-14	0.035″	4179A797	53.67
9′9″	10-14	0.035″	4179A931	54.95
9′11″	10-14	0.035″	4179A933	53.67
9′11½″	6-10	0.035″	4179A128	53.67
9′11½″	10-14	0.035″	4179A934	54.95
10′	6-10	0.035″	4179A134	53.67
10′	8-12	0.035″	4179A942	54.95
10′	10-14	0.035″	4179A941	54.95
10′2″	10-14	0.035″	4179A947	56.05
10′3″	10-14	0.035″	4179A954	56.05
10′5″	6-10	0.035″	4179A949	56.05
10′5″	10-14	0.035″	4179A948	56.05
Anti-Vibration Bimetal (Cont.)				
1″ Width (Cont.)				
10′6″	6-10	0.035″	4179A951	$56.05
10′6″	10-14	0.035″	4179A241	56.05
10′8″	6-10	0.035″	4179A19	58.37
10′8″	10-14	0.035″	4179A18	58.37
10′9″	6-10	0.035″	4179A302	58.37
10′9″	10-14	0.035″	4179A959	58.37
10′10″	6-10	0.035″	4179A135	58.37
10′10″	10-14	0.035″	4179A992	58.37
10′10½″	6-10	0.035″	4179A185	58.37
10′10½″	8-12	0.035″	4179A587	58.37
10′10½″	10-14	0.035″	4179A588	58.37
11′	6-10	0.035″	4179A737	58.37
11′	8-12	0.035″	4179A738	58.37
11′	10-14	0.035″	4179A186	58.37
11′3″	6-10	0.035″	4179A965	58.04
11′3″	10-14	0.035″	4179A686	58.04
11′4″	6-10	0.035″	4179A967	58.04
11′4″	10-14	0.035″	4179A966	58.04
11′5″	5-8	0.035″	4179A729	58.04
11′5″	8-12	0.035″	4179A303	58.04
11′6″	4-6	0.035″	4179A428	58.04
11′6″	6-10	0.035″	4179A295	58.04
11′6″	8-12	0.035″	4179A202	58.04
11′6″	10-14	0.035″	4179A598	58.04
11′9″	10-14	0.035″	4179A972	60.29
12′	6-10	0.035″	4179A335	60.29
12′	8-12	0.035″	4179A204	60.29
12′	10-14	0.035″	4179A205	60.29
12′1″	6-10	0.035″	4179A355	62.53
12′1″	10-14	0.035″	4179A974	62.53
12′6″	6-10	0.035″	4179A385	62.53
12′6″	8-12	0.035″	4179A218	62.53
12′6″	10-14	0.035″	4179A219	62.53
12′10″	6-10	0.035″	4179A228	64.78
Anti-Vibration Bimetal (Cont.)				
1″ Width (Cont.)				
13′3″	6-10	0.035″	4179A745	$67.02
13′3″	8-12	0.035″	4179A997	67.02
13′3″	10-14	0.035″	4179A304	67.02
13′4″	6-10	0.035″	4179A618	67.02
13′4″	8-12	0.035″	4179A619	67.02
13′4″	10-14	0.035″	4179A621	67.02
13′6″	6-10	0.035″	4179A626	67.02
13′6″	8-12	0.035″	4179A672	67.02
13′11″	6-10	0.035″	4179A752	69.27
13′11″	8-12	0.035″	4179A244	69.27
13′11″	10-14	0.035″	4179A231	69.27
14′4″	6-10	0.035″	4179A305	71.51
14′6″	6-10	0.035″	4179A444	71.51
14′6″	8-12	0.035″	4179A635	71.51
14′6″	10-14	0.035″	4179A636	71.51
16′8″	6-10	0.035″	4179A986	82.73
1¼″ Width				
13′6″	6-10	0.042″	4179A687	83.38
14′6″	6-10	0.042″	4179A639	89.00
15′	6-10	0.042″	4179A649	91.80
15′6″	6-10	0.042″	4179A642	94.62
Standard Bimetal				
1/4″ Width				
6′8″	6	0.025″	4179A875	30.67
7′9½″	6	0.025″	4179A558	34.12
3/8″ Width				
6′8″	6	0.025″	4179A323	30.67
7′9½″	6	0.025″	4179A559	34.12
1/2″ Width				
5′10″	4	0.025″	4179A864	27.23
7′9½″	4	0.025″	4179A561	34.12
12′5″	6	0.025″	4179A739	47.44
12′6″	6	0.025″	4179A742	47.44

Also Available: Additional sizes. Please ask for 1999A2 and specify width, length, teeth per inch, and thickness.

Band Saw Blades for Thin Metals

Also known as wavy set blades, these have teeth that are set in the blade in a wavy pattern for cutting metal sheets and thin-walled pipe.

Anti-Vibration—Teeth vary in size and number per inch. They reduce vibration and handle a broader range of material thicknesses compared to standard tooth blades.

Standard—The number of teeth per inch is constant throughout the blade.

Bimetal blades outlast hard-carbon steel and flex-carbon steel blades; great for straight and contoured cuts. Use them for most metals including steel, stainless steel, and aluminum.

Hard-carbon steel blades are better for straight cuts than ***flex-carbon steel*** blades, which are better for contoured cuts. Use hard-carbon steel and flex-carbon steel blades for soft metals such as bronze and brass.

Lg.	Teeth per In.	Thick.		Each
Anti-Vibration Bimetal				
3/8″ Width				
5′4½″	14-18	0.025″	4179A448	$26.12
7′9″	14-18	0.025″	4179A449	34.94
10′	14-18	0.025″	4179A451	42.00
11′6″	14-18	0.025″	4179A452	44.16
1/2″ Width				
4′8⅛″	14-18	0.020″	4179A853	17.95
4′11½″	14-18	0.020″	4179A447	22.47
5′4½″	14-18	0.020″	4179A143	18.67
5′4½″	14-18	0.025″	4179A144	26.50
5′8″	14-18	0.025″	4179A861	28.15
6′1″	14-18	0.020″	4179A871	20.42
7′8½″	14-18	0.025″	4179A955	34.12
7′9″	14-18	0.025″	4179A149	34.12
7′9½″	14-18	0.025″	4179A175	34.93
7′11″	14-18	0.025″	4179A899	34.93
8′9″	14-18	0.025″	4179A196	37.58
9′6″	14-18	0.025″	4179A311	39.30
10′	14-18	0.025″	4179A577	41.02
10′10½″	14-18	0.025″	4179A961	44.47
13′	14-18	0.025″	4179A981	49.09
Standard Bimetal				
1/2″ Width				
2′8⅞″	24	0.020″	4179A102	13.37
5′4½″	18	0.020″	4179A159	18.67
5′4½″	18	0.025″	4179A542	26.76
Standard Bimetal (Cont.)				
1/2″ Width (Cont.)				
5′4½″	24	0.020″	4179A161	$18.67
6′8″	24	0.020″	4179A548	22.02
7′9″	18	0.025″	4179A556	34.12
Standard Hard-Carbon Steel				
1/4″ Width				
7′9½″	32	0.025″	4125A744	13.62
1/2″ Width				
5′	18	0.025″	4125A722	11.31
5′4½″	14	0.025″	4125A152	11.48
5′4½″	18	0.025″	4125A724	11.47
6′1″	18	0.025″	4125A726	12.45
6′8″	14	0.025″	4125A117	12.91
6′9″	14	0.025″	4125A314	12.91
6′9″	18	0.025″	4125A729	12.91
7′5″	10	0.025″	4125A323	13.41
7′5″	14	0.025″	4125A324	13.41
7′5″	18	0.025″	4125A732	13.41
7′9″	10	0.025″	4125A365	13.93
7′9″	14	0.025″	4125A366	13.93
7′9″	18	0.025″	4125A734	13.93
7′9½″	18	0.025″	4125A369	13.93
7′11″	14	0.025″	4125A395	13.93
8′	14	0.025″	4125A424	13.93
8′2½″	10	0.025″	4125A425	14.35
Standard Hard-Carbon Steel (Cont.)				
1/2″ Width (Cont.)				
9′6″	10	0.025″	4125A133	$15.34
10′6″	14	0.025″	4125A494	16.33
12′6″	14	0.025″	4125A664	18.26
12′6″	18	0.025″	4125A765	18.26
12′6″	24	0.025″	4125A839	18.27
3/4″ Width				
7′9″	10	0.032″	4125A704	16.37
9′	14	0.032″	4125A486	17.67
9′	18	0.032″	4125A487	17.67
9′7½″	18	0.032″	4125A171	18.92
9′8″	14	0.032″	4125A137	18.92
10′5″	14	0.032″	4125A142	19.57
10′10½″	10	0.032″	4125A511	20.21
11′6″	10	0.032″	4125A585	20.86
11′6″	14	0.032″	4125A586	20.86
Standard Flex-Carbon Steel				
1/4″ Width				
4′11¼″	32	0.014″	4053A863	9.90
1/2″ Width				
5′4½″	14	0.025″	4053A865	11.29
5′4½″	18	0.025″	4053A872	11.29
12′6″	14	0.025″	4053A664	17.79
3/4″ Width				
11′6″	14	0.032″	4053A586	20.20

Also Available: Additional sizes. Please ask for 2000A3 for bimetal, 2165A1 for hard-carbon steel, or 2406A1 for flex-carbon steel. Also specify width, length, teeth per inch, and thickness.

For information about band saw blades, see page 2373.

Bimetal Band Saw Blades for Thick Metals

A combination of extreme forward-angled teeth and plenty of space for chips to collect allows these blades to make clog-free cuts in thick cross sections of metals such as steel, stainless steel, and aluminum. Blades are anti-vibration with teeth that vary in size and number per inch. Teeth are set in the blade in a varying pattern (also known as variable set). All are made of bimetal, which is great for straight and contoured cuts.

Lg.	Teeth per In.	Thick.		Each
3/4″ Width				
7′1″	4-6	0.035″	4191A21	$41.04
7′9″	4-6	0.035″	4191A22	43.24
9′6″	4-6	0.035″	4191A23	49.86
10′	4-6	0.035″	4191A27	52.06
11′6″	4-6	0.035″	4191A42	58.68
1″ Width				
9′7½″	3-4	0.035″	4191A24	56.31
9′7½″	4-6	0.035″	4191A25	56.31
9′7½″	5-8	0.035″	4191A26	56.31
1″ Width (Cont.)				
10′	3-4	0.035″	4191A28	$56.31
10′	4-6	0.035″	4191A29	56.31
10′	5-8	0.035″	4191A31	56.31
10′10½″	3-4	0.035″	4191A32	61.15
10′10½″	4-6	0.035″	4191A33	61.15
10′10½″	5-8	0.035″	4191A34	61.15
11′	3-4	0.035″	4191A35	61.15
11′	4-6	0.035″	4191A36	61.15
11′	5-8	0.035″	4191A37	61.15
1″ Width (Cont.)				
11′3″	3-4	0.035″	4191A38	$63.55
11′3″	4-6	0.035″	4191A39	63.55
11′3″	5-8	0.035″	4191A41	63.55
11′6″	3-4	0.035″	4191A43	63.55
11′6″	4-6	0.035″	4191A44	63.55
11′6″	5-8	0.035″	4191A45	60.65

Bimetal Band Saw Blades for Structural Shapes and Bundles

Penetrate steel structural shapes such as I-beams and angle iron as well as bundles of structural shapes and tubing with less feed pressure and tooth breakage. The teeth on these blades are forward-angled and reinforced. In addition, there's plenty of space for chips to collect, resulting in clog-free cuts. Blades are anti-vibration with teeth that vary in size and number per inch. Teeth are set in the blade in a varying pattern (also known as variable set). All are made of bimetal, which is great for straight and contoured cuts.

Lg.	Teeth per In.	Thick.		Each
3/4″ Width				
7′1″	4-6	0.035″	4198A11	$38.16
7′1″	5-8	0.035″	4198A12	38.16
7′9″	4-6	0.035″	4198A13	40.16
7′9″	5-8	0.035″	4198A14	40.16
9′6″	4-6	0.035″	4198A15	46.16
9′6″	5-8	0.035″	4198A16	46.16
10′	4-6	0.035″	4198A19	48.16
10′	5-8	0.035″	4198A21	48.16
11′6″	4-6	0.035″	4198A31	54.18
11′6″	5-8	0.035″	4198A32	54.18
1″ Width				
9′7½″	4-6	0.035″	4198A17	$52.14
9′7½″	5-8	0.035″	4198A18	54.68
10′	4-6	0.035″	4198A22	54.44
10′	5-8	0.035″	4198A23	54.44
10′10½″	4-6	0.035″	4198A24	59.08
10′10½″	5-8	0.035″	4198A25	59.08
11′	4-6	0.035″	4198A26	59.08
11′	5-8	0.035″	4198A27	59.08
11′3″	4-6	0.035″	4198A28	61.40
11′3″	5-8	0.035″	4198A29	61.40
1″ Width (Cont.)				
11′6″	3-4	0.035″	4198A33	$61.40
11′6″	4-6	0.035″	4198A34	61.40
11′6″	5-8	0.035″	4198A35	61.40

Band Saw Blades for Wood

Specially designed teeth make cutting hardwood and softwood easier. Blades cut any shape and have a constant number of teeth per inch. Teeth are set in a constant pattern (also known as raker set).

Blades for softwood are also known as skip-tooth blades and have extra space for softwood chips to collect, resulting in clog-free cuts. They are also for use on soft metals such as aluminum.

Blades for hardwood are also known as hook-tooth blades and have forward-angled teeth that dig into hardwood.

Hard-carbon steel blades are better for straight cuts than ***flex-carbon steel*** blades, which are better for contoured cuts.

Blades for Softwood

Lg.	Teeth per In.	Thick.		Each
Hard-Carbon Steel				
1/4″ Width				
7′9½″	4	0.025″	4125A353	$13.62
8′9″	4	0.025″	4125A823	13.13
11′9″	6	0.025″	4125A776	17.30
12′6″	4	0.025″	4125A767	17.79
3/8″ Width				
7′9½″	4	0.025″	4125A748	13.62
12′6″	4	0.025″	4125A768	17.79
14′6″	4	0.025″	4125A771	19.64
1/2″ Width				
7′9″	4	0.025″	4125A736	13.93
12′	4	0.025″	4125A764	17.76
Hard-Carbon Steel (Cont.)				
1/2″ Width (Cont.)				
12′6″	4	0.025″	4125A196	$18.26
14′6″	4	0.025″	4125A772	20.17
Flex-Carbon Steel				
3/16″ Width				
7′9½″	4	0.025″	4053A159	12.16
1/4″ Width				
4′8⅛″	6	0.014″	4053A833	10.93
4′11½″	6	0.014″	4053A864	9.58
6′8″	4	0.025″	4053A208	11.70
Flex-Carbon Steel (Cont.)				
1/4″ Width (Cont.)				
7′9″	4	0.025″	4053A155	$12.86
7′9½″	4	0.025″	4053A161	13.24
7′9½″	6	0.025″	4053A163	13.24
3/8″ Width				
4′8⅛″	6	0.014″	4053A835	10.76
4′11½″	6	0.014″	4053A875	10.19
1/2″ Width				
7′9″	4	0.025″	4053A156	13.62
7′9½″	4	0.025″	4053A165	13.26

Blades for Hardwood

Lg.	Teeth per In.	Thick.		Each
Hard-Carbon Steel				
1/4″ Width				
7′9½″	6	0.025″	4125A741	$13.62
10′	6	0.025″	4125A172	15.47
10′3″	6	0.025″	4125A828	15.94
3/8″ Width				
14′11″	6	0.025″	4125A842	20.11
18′6″	6	0.025″	4125A203	23.34
1/2″ Width				
6′8″	6	0.025″	4125A816	12.91
7′9″	6	0.025″	4125A735	13.93
7′9½″	4	0.025″	4125A157	13.93
9′3″	6	0.025″	4125A167	15.29
10′	6	0.025″	4125A173	15.83
11′1″	6	0.025″	4125A733	17.27
11′8″	6	0.025″	4125A184	17.76
12′	6	0.025″	4125A187	17.76
Hard-Carbon Steel (Cont.)				
1/2″ Width (Cont.)				
12′6″	3	0.025″	4125A193	$18.26
12′6″	4	0.025″	4125A194	18.26
12′6″	6	0.025″	4125A195	18.26
13′1″	3	0.025″	4125A106	19.23
19′6″	4	0.025″	4125A204	25.02
3/4″ Width				
8′5″	6	0.032″	4125A754	17.02
11′1″	6	0.032″	4125A175	20.86
18′6″	6	0.032″	4125A847	29.79
Flex-Carbon Steel				
1/8″ Width				
4′11½″	8	0.018″	4053A871	12.35
1/4″ Width				
7′9″	6	0.025″	4053A839	12.83
7′9½″	6	0.025″	4053A164	13.24
Flex-Carbon Steel (Cont.)				
3/8″ Width				
7′9″	6	0.025″	4053A841	$13.02
7′9½″	6	0.025″	4053A867	13.38
1/2″ Width				
5′4½″	6	0.025″	4053A836	11.29
7′5″	6	0.025″	4053A838	12.96
7′9½″	6	0.025″	4053A844	13.26
7′11″	6	0.025″	4053A845	13.26
8′9″	6	0.025″	4053A293	14.52
3/4″ Width				
9′	4	0.032″	4053A846	17.17

Also Available: Additional sizes. Please ask for 2166A1 for hard-carbon steel for softwood, 2407A1 for flex-carbon steel for softwood, 2167A1 for hard-carbon steel for hardwood, or 2410A1 for flex-carbon steel for hardwood. Also specify width, length, teeth per inch, and thickness.

For information about band saw blades, see page 2373.

Bimetal Blades for Portable Band Saws

Choose from blades for general purpose use and blades for thin metals—sizes fit all standard portable band saws. Blades are ½″ Wd. × 0.020″ Thick. All are made of bimetal, which is great for straight and contoured cuts.

Anti-Vibration— Teeth vary in size and number per inch and are set in the blade in a varying pattern (also known as variable set), except for the teeth on blades for thin metals, which are set in a wavy pattern. All reduce vibration and handle a broader range of material thicknesses compared to standard tooth blades.

Standard— The number of teeth per inch is constant throughout the blade. The teeth are set in the blade in a constant pattern (also known as raker set), except for the teeth on blades for thin metals, which are set in a wavy pattern.

Teeth per In.	Tooth Style	3 ft. 8⅞″ Long	Each	4 ft. 5¾″ Long	Each
General Purpose					
10-14	Anti-Vibration	4051A15	$7.48	4051A24	$11.04
10	Standard	4051A11	7.48	4051A27	11.04
14	Standard	4051A12	7.48	4051A22	11.04
For Thin Metals					
14-18	Anti-Vibration	4051A26	$7.48	4051A28	$11.59
18	Standard	4051A13	7.48	4051A23	11.48
20-24	Anti-Vibration	4051A33	7.65	4051A31	11.59
24	Standard	4051A14	7.48	4051A29	11.04

Band Saw Blade Coil Stock

Create custom-length band saw blades from coil stock that meets your application needs. Cut stock to length and use a band saw welder to join the ends. All stock comes in 100 ft. coils except where noted.

Anti-Vibration— Teeth vary in size and number per inch. They are set in the blade in a varying pattern (also known as variable set), except for the teeth on blades for thin metals, which are set in a wavy pattern. All reduce vibration and handle a broader range of material thicknesses compared to standard tooth blades.

Standard— The number of teeth per inch is constant throughout the blade. The teeth are set in the blade in a constant pattern (also known as raker set), except for the teeth on blades for thin metals, which are set in a wavy pattern.

Bimetal blades outlast hard-carbon and flex-carbon steel blades and are great for straight and contoured cuts. ***Hard-carbon steel*** blades are better for straight cuts than ***flex-carbon steel*** blades, which are better for contoured cuts.

Wd.	Teeth per In.	Thick.		Each
General Purpose				
Anti-Vibration Bimetal				
½″	6-10	0.035″	4179A715	$292.03
½″	10-14	0.020″	4179A109	195.83
⅝″	10-14	0.035″	4179A834	307.82
1″	4-6	0.035″	4179A142	426.97
Standard Bimetal				
¼″	10	0.025″	4179A112	294.54
¼″	14	0.025″	4179A113	294.54
¼″	14	0.035″	4179A716	292.03
⅜″	14	0.025″	4179A116	294.54
½″	10	0.025″	4179A844★	144.43
½″	10	0.025″	4179A705	294.54
½″	10	0.035″	4179A848★	164.58
½″	10	0.035″	4179A117	303.55
½″	14	0.025″	4179A843★	144.43
½″	14	0.025″	4179A704	294.54
½″	14	0.035″	4179A847★	164.58
½″	14	0.035″	4179A118	303.55
¾″	10	0.035″	4179A123	359.26
¾″	14	0.035″	4179A661	354.17
Standard Hard-Carbon Steel				
¼″	10	0.025″	4125A29	81.72
¼″	14	0.025″	4125A32	81.72
¼″	18	0.025″	4125A33	81.72
¼″	24	0.025″	4125A34	81.72
⅜″	8	0.025″	4125A42	84.70
⅜″	10	0.025″	4125A43	84.70
⅜″	14	0.025″	4125A44	84.70
⅜″	18	0.025″	4125A45	84.70
½″	6	0.025″	4125A53	87.99
½″	10	0.025″	4125A54	87.99
½″	14	0.025″	4125A55	87.99
½″	18	0.025″	4125A56	87.99
½″	24	0.025″	4125A23	87.99
¾″	6	0.032″	4125A67	116.00
¾″	8	0.032″	4125A68	116.00
¾″	10	0.032″	4125A71	116.00
¾″	14	0.032″	4125A75	116.00
¾″	18	0.032″	4125A713	116.00
1″	10	0.035″	4125A85	147.30
1″	14	0.035″	4125A46	147.30
Standard Flex-Carbon Steel				
⅛″	14	0.025″	4053A181	133.98
⅛″	18	0.025″	4053A202	133.98
3/16″	10	0.025″	4053A852	54.84
3/16″	14	0.025″	4053A205	54.84
¼″	10	0.025″	4053A25	55.94
¼″	14	0.025″	4053A27	55.94
¼″	18	0.014″	4053A206	55.94

★ Coil length is 50 ft.

Wd.	Teeth per In.	Thick.		Each
General Purpose (Cont.)				
Standard Flex-Carbon Steel (Cont.)				
¼″	18	0.025″	4053A28	$55.94
¼″	24	0.025″	4053A29	55.94
⅜″	10	0.025″	4053A38	64.06
⅜″	14	0.025″	4053A39	64.06
⅜″	18	0.025″	4053A41	64.06
⅜″	24	0.025″	4053A856	64.06
½″	6	0.025″	4053A48	69.46
½″	10	0.025″	4053A49	69.46
½″	14	0.025″	4053A51	69.46
½″	18	0.025″	4053A52	69.46
½″	24	0.025″	4053A53	69.46
¾″	6	0.032″	4053A63	91.07
¾″	8	0.032″	4053A64	91.07
¾″	10	0.032″	4053A66	91.07
¾″	14	0.032″	4053A71	91.07
1″	6	0.035″	4053A191	116.73
1″	10	0.035″	4053A81	116.73
1″	14	0.035″	4053A193	116.73
For Hard Metals				
Anti-Vibration Bimetal				
¼″	10-14	0.025″	4179A836★	154.17
¼″	10-14	0.025″	4179A141	304.84
¼″	10-14	0.035″	4179A837★	164.58
¼″	10-14	0.035″	4179A719	303.55
⅜″	8-12	0.025″	4179A115	304.84
⅜″	10-14	0.025″	4179A838★	154.17
⅜″	10-14	0.025″	4179A708	304.84
⅜″	10-14	0.035″	4179A139	298.74
½″	6-10	0.025″	4179A714	282.28
½″	8-12	0.025″	4179A839★	154.17
½″	8-12	0.025″	4179A707	304.84
½″	10-14	0.025″	4179A841★	154.17
½″	10-14	0.025″	4179A652	304.84
½″	10-14	0.035″	4179A845★	164.58
½″	10-14	0.035″	4179A711	303.55
¾″	6-10	0.035″	4179A125	374.05
¾″	8-12	0.035″	4179A702	368.75
¾″	10-14	0.035″	4179A849★	184.38
¾″	10-14	0.035″	4179A659	368.75
1″	6-10	0.035″	4179A148	380.59
1″	8-12	0.035″	4179A145	426.97
1″	10-14	0.035″	4179A151	420.83
Standard Bimetal				
¼″	6	0.025″	4179A158	310.66
⅜″	6	0.025″	4179A136	310.01
⅜″	6	0.035″	4179A827	303.61
½″	4	0.025″	4179A648	308.33
½″	6	0.025″	4179A651	304.84
½″	6	0.035″	4179A656	316.67

Wd.	Teeth per In.	Thick.		Each
For Thin Metals				
Anti-Vibration Bimetal				
½″	14-18	0.020″	4179A842★	$95.26
½″	14-18	0.020″	4179A105	195.83
½″	14-18	0.025″	4179A138	310.66
Standard Bimetal				
½″	18	0.020″	4179A106	195.83
½″	18	0.025″	4179A846★	154.17
½″	18	0.025″	4179A829	302.04
½″	24	0.020″	4179A107	195.83
Standard Hard-Carbon Steel				
¼″	32	0.025″	4125A711	81.72
½″	10	0.025″	4125A59	87.99
½″	14	0.025″	4125A61	87.99
½″	18	0.025″	4125A714	87.99
½″	24	0.025″	4125A62	87.30
¾″	10	0.032″	4125A72	116.00
¾″	14	0.032″	4125A76	116.00
Standard Flex-Carbon Steel				
¼″	32	0.014″	4053A207	55.94
¼″	32	0.025″	4053A853	55.94
½″	14	0.025″	4053A56	69.46
¾″	14	0.032″	4053A72	91.07
For Softwood				
Standard Hard-Carbon Steel				
¼″	4	0.025″	4125A39	81.70
¼″	6	0.025″	4125A28	81.72
⅜″	4	0.025″	4125A41	84.70
½″	4	0.025″	4125A52	87.99
¾″	3	0.032″	4125A66	116.00
Standard Flex-Carbon Steel				
¼″	4	0.025″	4053A23	55.39
¼″	6	0.014″	4053A301	55.94
¼″	6	0.025″	4053A24	65.81
⅜″	4	0.025″	4053A36	64.06
½″	4	0.025″	4053A47	69.46
For Hardwood				
Standard Hard-Carbon Steel				
¼″	4	0.025″	4125A25	81.72
¼″	6	0.025″	4125A26	81.72
⅜″	4	0.025″	4125A37	84.70
⅜″	6	0.025″	4125A38	84.70
½″	4	0.025″	4125A48	87.99
½″	6	0.025″	4125A49	87.99
Standard Flex-Carbon Steel				
¼″	4	0.025″	4053A854	55.94
¼″	6	0.025″	4053A22	55.94
⅜″	4	0.025″	4053A185	64.06
⅜″	6	0.025″	4053A34	64.06
½″	4	0.025″	4053A44	69.46
½″	6	0.025″	4053A45	69.46
¾″	4	0.032″	4053A831	91.07
¾″	6	0.032″	4053A188	91.07

Band Saw Blades

For information about band saw blades, see page 2373.

High-Performance Bimetal Band Saw Blades

The TiAlN (titanium aluminum nitride) coated, precision-ground teeth on these blades are long-lasting and provide a smooth finish at fast speeds. Use them to cut most metals including stainless steel, titanium alloys, nickel alloys, tool steel, brass, and aluminum of different shapes such as solid rounds and rectangles, pipe, and I-beams.

All blades are anti-vibration with teeth that vary in size and number per inch. Teeth are set in the blade in a varying pattern (also known as variable set). All blades are made of bimetal, which is great for straight and contoured cuts.

Lg.	Teeth per In.	Thick.		Each
½″ Width				
5′4½″	10-14	0.025″	4200A24	$86.58
5′4½″	10-14	0.035″	4200A25	90.06
7′9″	8-12	0.025″	4200A28	108.14
7′9½″	10-14	0.025″	4200A36	108.14
12′6″	8-12	0.025″	4200A49	162.04
12′6″	8-12	0.035″	4200A48	169.58
12′10″	10-14	0.025″	4200A51	162.04
¾″ Width				
7′1″	10-14	0.035″	4200A26	$115.90
7′9″	5-8	0.035″	4200A29	115.90
7′9″	6-10	0.035″	4200A31	115.90
7′9″	8-12	0.035″	4200A32	115.90
7′9″	10-14	0.035″	4200A33	115.90
9′6″	10-14	0.035″	4200A37	139.40
10′	10-14	0.035″	4200A39	139.40
11′6″	10-14	0.035″	4200A45	162.90
1″ Width				
9′7½″	10-14	0.035″	4200A38	$188.90
10′	10-14	0.035″	4200A41	188.90
10′10½″	10-14	0.035″	4200A42	204.90
11′	10-14	0.035″	4200A43	205.60
11′3″	6-10	0.035″	4200A44	222.30
11′6″	6-10	0.035″	4200A46	222.30
11′6″	10-14	0.035″	4200A47	222.30

Carbide-Tipped Band Saw Blades

Wear-resistant and great for cutting aluminum castings, fiberglass, composites, and hardwood, the teeth on these blades are carbide-tipped and forward-angled. Use them on solid rounds and rectangles as well as bundles. They have a constant number of teeth per inch, and teeth are set in a constant pattern (also known as raker set).

Lg.	Teeth per In.	Thick.		Each
½″ Width				
3′8⅞″	3	0.025″	4189A21	$75.63
5′4½″	3	0.025″	4189A31	94.70
6′8″	3	0.025″	4189A32	121.42
7′9″	3	0.025″	4189A41	126.29
7′9″	3	0.035″	4189A42	108.28
10′	3	0.025″	4189A33	168.71
10′10½″	3	0.025″	4189A34	184.47
11′1″	3	0.025″	4189A71	218.23
12′6″	3	0.025″	4189A91	210.72
¾″ Width				
7′9″	3	0.035″	4189A43	$141.26
7′9″	4	0.035″	4189A44	114.23
10′	3	0.035″	4189A51	161.06
10′	4	0.035″	4189A52	130.17
10′10½″	3	0.035″	4189A61	187.06
10′10½″	4	0.035″	4189A62	151.18
11′1″	3	0.035″	4189A72	206.69
11′6″	3	0.035″	4189A81	206.69
12′6″	3	0.035″	4189A92	223.88
1″ Width				
10′	3	0.050″	4189A53	$183.27
10′	4	0.035″	4189A54	162.45
10′10½″	3	0.050″	4189A63	202.50
10′10½″	4	0.035″	4189A64	162.45
11′6″	3	0.050″	4189A82	209.56
11′6″	4	0.035″	4189A83	162.45
12′6″	3	0.050″	4189A93	227.02

Also Available: Additional sizes. Please ask for 4189A999 and specify blade width, length, teeth per inch, and thickness.

Knife-Edge Band Saw Blades

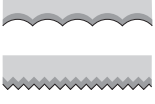

Cut various nonmetallics of any shape. Blades are made of high-carbon spring steel. All are welded unless noted.

Scallop-edge blades cut materials such as rubber, paperboard, fiberglass insulation, and cloth as well as bread and boneless meat. The blades make smooth, quick cuts with minimal dust. All have a standard ½″ pitch (distance from point to point).

V-tooth-edge blades cut materials such as plastic, plastic film, foam rubber, filter media, sponge, and meat products. They're designed for long life and quick, accurate cuts. All have 14 teeth per inch, unless noted.

Scallop Edge

Lg.	Thick.		Each
½″ Width			
1′	0.025″	4091A124 ♦	$4.08
4′10″	0.025″	4091A42	18.75
5′4½″	0.020″	4091A114	17.97
5′4½″	0.025″	4091A125	19.75
6′8″	0.020″	4091A115	20.48
6′8″	0.025″	4091A31	22.75
6′10″	0.020″	4091A116	20.48
6′10″	0.025″	4091A126	22.75
7′8″	0.020″	4091A22	22.15
7′9″	0.020″	4091A117	22.15
7′9″	0.025″	4091A32	24.75
7′9½″	0.020″	4091A119	22.15
7′9½″	0.025″	4091A127	24.75
7′10″	0.020″	4091A118	22.15
8′	0.020″	4091A23	22.15
8′	0.025″	4091A128	24.75
8′9″	0.020″	4091A121	23.83
9′2″	0.025″	4091A33	27.73
9′3″	0.025″	4091A129	27.73
10′	0.020″	4091A122	25.52
10′	0.025″	4091A13	28.83
10′2″	0.025″	4091A35	29.78
½″ Width (Cont.)			
12′	0.025″	4091A131	$32.73
12′6″	0.020″	4091A123	29.90
12′6″	0.025″	4091A132	33.73
12′10″	0.025″	4091A133	34.73
19′8″	0.025″	4091A43	48.73
100′	0.020″	4091A221 ♦	167.60
100′	0.025″	4091A222 ♦	199.90
⅝″ Width			
10′4″	0.020″	4091A44	28.50
10′8″	0.025″	4091A53	31.35
100′	0.020″	4091A223 ♦	188.03
100′	0.025″	4091A244 ♦	205.52
¾″ Width			
1′	0.035″	4091A138 ♦	4.58
6′	0.020″	4091A134	21.45
7′9″	0.035″	4091A139	28.77
7′9½″	0.020″	4091A135	25.70
10′	0.020″	4091A136	29.93
10′	0.035″	4091A14	33.77
11′	0.020″	4091A137	32.05
11′1″	0.035″	4091A141	37.52
¾″ Width (Cont.)			
11′6″	0.035″	4091A142	$37.52
13′10¼″	0.035″	4091A71	43.78
15′	0.035″	4091A143	46.28
19′11½″	0.020″	4091A46	51.12
20′	0.035″	4091A144	59.62
29′3″	0.020″	4091A64	71.23
100′	0.020″	4091A224 ♦	211.80
100′	0.035″	4091A225 ♦	250.20
1″ Width			
2′	0.025″	4091A145 ♦	7.18
2′	0.032″	4091A146 ♦	7.68
3′	0.032″	4091A147 ♦	10.50
5′	0.032″	4091A148	22.77
6′	0.032″	4091A149	25.57
10′	0.032″	4091A15	36.78
10′2″	0.025″	4091A81	35.50
11′	0.032″	4091A91	39.58
30′	0.032″	4091A151	92.85
36′10″	0.032″	4091A92	112.47
100′	0.025″	4091A245 ♦	254.72
100′	0.032″	4091A246 ♦	280.32

V-Tooth Edge

Lg.	Thick.		Each
½″ Width			
7′8″	0.020″	4091A2	$14.01
7′9″	0.020″	4091A165★	14.01
7′9″	0.020″	4091A152	14.01
7′9″	0.025″	4091A6	19.82
7′9½″	0.025″	4091A154	19.82
8′	0.020″	4091A3★	14.01
10′6″	0.025″	4091A155	23.28
12′6″	0.020″	4091A153	16.96
12′10″	0.025″	4091A156	26.73
19′5″	0.020″	4091A24	21.57
22′	0.020″	4091A25	23.22
½″ Width (Cont.)			
25′11½″	0.020″	4091A26	$25.85
28′3½″	0.020″	4091A27	27.48
100′	0.020″	4091A441 ♦★	65.73
100′	0.020″	4091A442 ♦	65.73
100′	0.025″	4091A443 ♦	138.38
¾″ Width			
5′	0.020″	4091A157	12.73
6′	0.020″	4091A158	13.53
9′11½″	0.020″	4091A66	16.70
10′	0.020″	4091A159	16.70
19′5″	0.020″	4091A65	24.27
¾″ Width (Cont.)			
21′2½″	0.020″	4091A67	$25.85
26′4″	0.020″	4091A68	29.83
100′	0.020″	4091A449 ♦★	79.57
100′	0.020″	4091A444 ♦	79.57
1″ Width			
1′	0.020″	4091A454 ♦	3.02
2′	0.020″	4091A455 ♦	3.95
3′	0.020″	4091A456 ♦	4.88
4′	0.020″	4091A457 ♦	5.82
10′	0.020″	4091A458	18.08
100′	0.020″	4091A451 ♦	93.40

♦ Coil stock; ends are not welded. ★ Has 10 teeth per inch.

Also Available: Additional sizes. Please ask for 4091A999 and specify blade style (scallop edge or v-tooth edge), width, length, teeth per inch (v-tooth edge only), and thickness.

For information about band saw blades, see page 2373.

Carbide-Grit-Edge Band Saw Blades

Carbide grit is bonded to these alloy steel blades to cut through hard materials such as nickel alloys, hardened steel, graphite composites, and glass. Use finer grit for less material loss and a smooth finish; use coarser grit for fast cutting. *Note:* Use coolant (not included, see page 2179) when cutting metals, glass, and similar materials.

Gullet Style

Continuous Style

Gullet Style— For materials that are at least 1/4″ thick.

Continuous Style— For materials that are less than 1/4″ thick. They're also for use on brittle materials and whenever chipping is a concern.

Lg.	Wd.	Thick.	Grit Size	Gullet Style	Continuous Style	Each
7′9″	1/4″	0.020″	Medium	3054A131	—	$95.81
7′9″	1/2″	0.025″	Medium	3054A112	3054A212	103.94
7′9″	3/4″	0.032″	Coarse	3054A135	3054A235	111.45
7′9″	3/4″	0.032″	Medium	3054A114	3054A214	111.45
10′	1/2″	0.025″	Med. Coarse	3054A117	3054A217	130.25
10′	1/2″	0.025″	Medium	3054A116	3054A216	130.25
11′	1″	0.035″	Med. Coarse	3054A119	3054A238●	159.04
11′6″	3/4″	0.032″	Coarse	3054A141	3054A241	157.40
11′6″	1″	0.035″	Coarse	3054A123	3054A223	165.98
11′6″	1″	0.035″	Med. Coarse	3054A122	—	165.98
12′	1″	0.035″	Coarse	3054A125	3054A225	172.92
12′	1″	0.035″	Med. Coarse	3054A124	—	172.92

● Coarse grit.

Diamond-Grit-Edge Band Saw Blades

The diamond-grit edge on these stainless steel blades makes them last 10 times longer than carbide-grit-edge blades when cutting hard materials such as carbon fiber, quartz, silicon, ceramic, stone, glass, and marble. Plus, these blades make precise cuts with minimal material loss. Use finer grit for less material loss and a smooth finish; use coarser grit for fast cutting. All blades are continuous style for use on a wide range of material thicknesses.

Note: Not for metal. Use coolant (not included, see page 2179) when cutting quartz, silicon, stone, and glass.

Lg.	Wd.	Thick.	Coarse Grit	Medium Grit	Fine Grit	Each
7′9″	1/2″	0.020″	3058A41	3058A42	3058A43	$190.57
7′9″	3/4″	0.020″	3058A44	3058A45	3058A46	190.57
7′9″	1″	0.035″	3058A47	3058A48	3058A49	190.57
10′	1/2″	0.020″	3058A31	3058A32	3058A33	245.90
10′	3/4″	0.020″	3058A34	3058A35	3058A36	245.90
10′	1″	0.035″	3058A37	3058A38	3058A39	245.90
12′6″	1/2″	0.020″	3058A21	3058A22	3058A23	297.62
12′6″	3/4″	0.020″	3058A24	3058A25	3058A26	297.62
12′6″	1″	0.035″	3058A27	3058A28	3058A29	297.62
14′6″	1/2″	0.020″	3058A11	3058A12	3058A13	339.84
14′6″	3/4″	0.020″	3058A14	3058A15	3058A16	339.84
14′6″	1″	0.035″	3058A17	3058A18	3058A19	339.84

Portable Cordless Band Saws

Why bring your material to your saw when you can bring your saw to your material? Saws accept 1/2″ wide blades and are furnished in a plastic carrying case.

Lightweight— Great for small cutting jobs in hard-to-reach places, this saw weighs only 9 lbs. and has a quick-release lever for easy blade changes. Saw cuts angle iron, PVC, conduit, rebar, and wood. Includes one 2′8 7/8″ Lg.×1/2″ Wd.×0.020″ Thick. bimetal blade with 14-18 teeth per inch, two 18-volt NiCad batteries, and a battery charger.

Milwaukee 0729-21— Just as powerful as a corded electric tool, this saw runs on a 28-volt battery and cuts through metal and wood. Includes one 3′8 7/8″ Lg.×1/2″ Wd.×0.020″ Thick. bimetal blade with 14 teeth per inch, a 28-volt lithium-ion battery, and a battery charger. Run time is displayed on a battery fuel gauge. UL listed and meets OSHA requirements.

Optional 15″×11″ cutting table converts 4133A11 into a benchtop saw.

Lightweight

Milwaukee 0729-21

Cutting Capacity Round	Rectangle	No-Load Blade Speeds, sfpm	Lg.	Wt., lbs.	Saws	Each	Repl. Blades	Each	Repl. Batteries	Each	Repl. Chargers	Each
Lightweight												
2 1/2″	2 1/2″×2 3/4″	425-475	15″	9	4133A11	$331.08	4179A102	$13.37	4133A21	$73.83	4133A22	$69.22
Milwaukee 0729-21												
4 3/4″	4 3/4″×4 3/4″	0-225, 0-350	22″	19.6	4070A21	472.50	4051A12	7.48	54275A31	170.00	54275A32	66.00

Optional 15″×11″ Cutting Table for Lightweight Saw ..... 4133A31 Each $99.98

Portable Electric Band Saws

Carry these saws to your job site to cut wood and most metals. Saws accept 1/2″ wide blades (not included, unless noted). They operate on 120 VAC and have an 8-ft. power cord with a three-prong plug. UL listed and meet OSHA requirements. Saws are also CSA certified, except 40065A12 and A15, which are C-UL listed. Furnished in a plastic carrying case.

Stand has a chain vise to hold your material. Use to convert saw for bench-top use, or add 3/4″ diameter pipe (with threaded end) for legs.

Blade is 3′8 7/8″ Lg.×1/2″ Wd.×0.020″ Thick. bimetal with 14 teeth per inch.

Also Available: Replacement parts. Please ask for 40065A888 for Milwaukee or 4006A888 for DeWalt; then specify the manufacturer number of the saw and the replacement part needed.

Milwaukee 6226

Cutting Capacity Round	Rectangle	No-Load Blade Speeds, sfpm	Amps	Lg.	Wt., lbs.	Saw Mfr.	Mfr. No.♣	Band Saws	Each	Stand	Each
3 1/2″	3 1/2″×4 1/2″	200, 250	5.0, 6.0	20″	16	Milwaukee	6226 (6225)	40065A11	$318.75	40065A13	$303.35
5″	5″×5″	0-420	11	21″	14.75	Milwaukee	6232-21 (6232-20)	40065A12	323.75	—	—
5″	5″×5″	320, 420	11	21″	14.75	Milwaukee	6238-21 (6238-20)	40065A15	323.75	—	—
4 3/4″	4 1/2″×4 3/4″	100-245	6.0	21 1/2″	14	DeWalt	DW328K (DW328)	4006A32♦	309.16	—	—

Blade for All Saws ..... 4051A12 Each $7.48

♣ No. in parentheses is model No. shown on tool nameplate. ♦ Includes a 3′8 7/8″ Lg.×1/2″ Wd.×0.020″ Thick. bimetal blade with 18 teeth per inch.

Heavy Duty Vertical Band Saws

Tackle your heavy production work. These saws have a smooth table surface that tilts 12° left, 15° right, and 8° front and back. They also have a built-in blade welder, a magnetic starter, an adjustable blade guard, and a material guide.

The ***saw for metal*** has a blade wheel diameter of 14″ and accepts 1/8″ to 1/2″ wide blades. Includes a 9′6″ Lg.×1/4″ Wd.×0.025″ Thick. bimetal blade with 14-18 teeth per inch. It has a 1-hp motor and operates on 115/230 VAC, 60 Hz, 1 ph. Wired for 115 VAC. No-load blade speed is 82-330 sfpm.

The ***saw for metal and wood*** has an extra-wide range of blade speeds, allowing you to cut both metal and wood. Blade wheel diameter is 16″. Accepts blades 1/8″ to 5/8″ wide and includes a 10′3 1/2″ Lg.×1/4″ Wd.×0.025″ Thick. bimetal blade with 10-14 teeth per inch. It has a 2-hp motor and operates on 230/460 VAC, 60 Hz, 3 ph. Wired for 230 volts. No-load blade speeds are 82-330 sfpm for metal and 985-3,950 sfpm for wood.

Also Available: Replacement parts for both saws. Please ask for 4182A999 and specify the McMaster-Carr part number of the saw and the replacement part needed.

Saw for Metal

For Material	Cutting Capacity Dp.	Ht.	Table Size	Floor to Table	Overall Height	Floor Space	Wt., lbs.	Band Saws	Each	Replacement Blades	Each
Metal	14″	8″	20″×20″	39″	68 1/2″	34″×24″	585	4182A36	$4,023.14	4179A315	$40.24
Metal and Wood	15 1/2″	10″	22″×24″	40″	72 1/2″	37″×28″	900	4182A32	6,221.71	4179A23	42.74

Band Saws for Metal

A

B

C

D

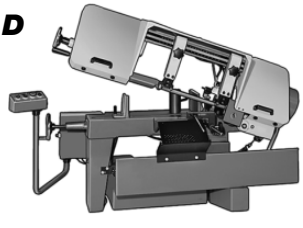

Maintain stability and power when cutting through metals. All saws are single phase and include an adjustable stop for material being cut, auto shut-off after cutting (unless noted), and a 6-ft. cord with three-prong plug.

***A* Bench-Top Horizontal Dry Band Saws—**They may be small, but these saws are the most powerful of all our band saws for metal. Both saws accept 1/2″ wide blades. *Note:* Saws do not have auto shut-off. 4180A11 overall size is 33 1/2″ Lg.×32 3/4″ Wd.×23 1/2″ Max. Ht. Saw includes a 4′8 3/4″ Lg.×1/2″ Wd.×0.025″ Thick. bimetal blade with 8-12 teeth per inch. 4180A12 overall size is 42 1/2″ Lg.×29 1/2″ Wd.×31 1/2″ Max. Ht. Saw includes a 5′8 1/4″ Lg.×1/2″ Wd.×0.035″ Thick. bimetal blade with 6-10 teeth per inch.

- Variable-speed motor with digital speed regulator: 4180A11 is 1.7 hp; 4180A12 is 2.7 hp
- Manual feed system
- Adjustable ball bearing blade guides; meet OSHA requirements
- Fixed vise and a swiveling head for angle and miter cutting: 4180A11 is for 0°-60° angles; 4180A12 is for 0°-45° angles.
- Aluminum blade wheels: 4180A11 has a 7 1/8″ diameter rear and 6 1/4″ diameter front; 4180A12 has 10″ diameter rear and front.

***B* Horizontal and Vertical Dry Band Saw—**Overall size of this light duty saw is 44″ Lg.×19″ Wd.×57″ Max. Ht. Saw accepts 1/2″ wide blades and includes a 5′4 1/2″ Lg.×1/2″ Wd.×0.025″ Thick. bimetal blade with 14 teeth per inch.

- Three-speed, open dripproof, 1/2-hp motor with underside cooling vents; UL listed
- Coil-spring assisted feed system
- Adjustable ball bearing blade guides; meet OSHA requirements
- 9 5/8″×9 1/2″ vertical work table; stand with wheels
- 0°-45° vise for angle and miter cuts
- Cast iron 7 3/8″ diameter blade wheels
- 25 1/2″ from floor to table

Also Available: Replacement parts. Please ask for 4204A888 and specify part needed.

***C* Horizontal and Vertical Wet/Dry Band Saws—**Overall size is 50″ Lg.×18″ Wd. x 62″ Max. Ht. Both saws accept 3/4″ wide blades and include a 7′9″ Lg.×3/4″ Wd. x 0.035″ Thick. carbon steel blade with 10 teeth per inch.

- Four-speed, fan-cooled, 3/4-hp motor; conforms to NEMA specifications
- Hydraulic feed system
- Adjustable ball bearing blade guides; meet OSHA requirements
- 9 1/2″×10″ vertical work table; enclosed stand with wheels
- 0°-45° vise for angle and miter cuts
- Cast iron 11 7/16″ diameter blade wheels
- 23 1/2″ from floor to table
- Steel, heat-treated worm drive with bronze gears in an oil bath
- Coolant system with 3-gpm pump and a 1-gallon reservoir (coolant not included, see page 2179)

Also Available: Replacement parts. Please ask for 4164A888 and specify part needed.

***D* Horizontal Wet/Dry Band Saws—**Choose from saws with a swiveling vise or a swiveling head. Overall size is 79″ Lg.×31″ Wd.×68″ Max. Ht. Both saws accept 1″ wide blades and include an 11′3″ Lg.×1″ Wd.× 0.035″ Thick. bimetal blade with 4-6 teeth per inch.

- Variable-speed, fan-cooled, 1 1/2-hp motor with magnetic start and overload protection
- Counterbalanced, gravity feed system
- Blade guide assembly with six contact points for accurate cuts; meets OSHA requirements
- 42125A45 has a three-jaw, 0°-45° vise for angle and miter cuts. 42125A48 has a fixed vise and a swiveling head for 0°-45° angle and miter cuts; great when workspace around the saw is limited.
- Cast iron 14″ diameter blade wheels
- 42125A45 is 23 1/2″ from floor to table; 42125A48 is 25 1/2″ from floor to table
- Swivel control panel allows access to machine controls from any angle
- Worm drive with hardened and ground gears in an oil bath
- Coolant system with a 1-gpm pump and an 8-gallon reservoir (coolant not included, see page 2179)

Also Available: Replacement parts. Please ask for 42125A888 and specify part needed.

	Cutting Capacity Blade at 90° Angle Round	Cutting Capacity Blade at 90° Angle Rectangle	Cutting Capacity Blade at 45° Angle Round	Cutting Capacity Blade at 45° Angle Rectangle	No-Load Blade Speeds, sfpm	VAC	Hz	Wired for Volts	Wt., lbs.	Band Saws	Each	Replacement Blades	Each
A	4 3/4″	4 3/4″× 3 1/2″	3 1/4″	3 1/4″×3 1/4″	115-265	115	60	—	39	**4180A11**	$1,326.15	**4180A21**	$24.34
A	6″	6 1/4″× 5 1/2″	4″	4 3/4″×4″	98-262	115	60	—	77	**4180A12**	1,964.10	**4180A22**	29.26
B	5″	5″ × 6″	3″	5″ ×3″	80, 120, 200	115/230	60	115	115	**4204A31**	515.10	**4179A252**	25.63
C	7″	7″ ×10″	6″	4 3/4″×5″	86, 132, 178, 260	115	60	—	360	**4164A11**	1,257.04	**4179A733**	40.38
C	7″	7″ ×10″	6″	4 3/4″×5″	86, 132, 178, 260	230	60	—	360	**4164A12**	1,257.04	**4179A733**	40.38
D	10″	9″ ×16″	10″	9″ ×8″	100-350	115/230	60	230	973	**42125A45**	6,553.36	**4179A683**	58.04
D	10″	9″ ×16″	8 1/2″	8 1/2″×9″	100-350	115/230	60	230	1,125	**42125A48**	7,857.86	**4179A683**	58.04

Medium Duty Vertical Band Saw for Metal and Wood

Versatile enough to cut wood, plastic, bakelite, composites, and most metals, this saw runs at multiple blade speeds. It has a steel base for stability, a 14″×14″ cast iron table that tilts 10° left and 45° right, and a miter gauge. Cutting capacity is 13 1/2″ deep and 6″ high. Blade wheel diameter is 14″. Saw accepts 1/8″ to 3/4″ wide blades. Includes a 7′8 1/2″ Lg.×3/8″ Wd.×0.025″ Thick. bimetal blade with 14 teeth per inch.

Motor is 1 hp and operates on 115 VAC, 60 Hz, single phase. Includes a 6-ft. cord with three-prong plug. No-load blade speeds for metal are 39, 57, 78, 107, 142, 196, and 278 sfpm; no-load blade speed for wood is 3,300 sfpm. Floor to table measures 44″. Overall size is 20″ Lg.×16″ Wd.× 68″ Ht. Weight is 280 lbs.

		Each
Band Saw	**4120A11**	$1,633.08
Replacement Blade	**4179A963**	32.74
Optional Material Guide (Rip Fence)	**4120A32**	121.67

Vertical Band Saw for Glass, Stone, and Ceramics

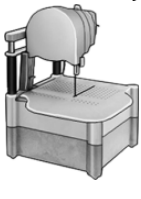

The grinding action of the diamond-grit blade on this saw creates a smooth finish on hard materials such as glass, ceramic, phenolic, stone, tile, brick, fiberglass, composites, and printed circuit boards. A recirculating tap water coolant system provides a longer blade life. *Note:* Not for cutting metal.

Saw is molded plastic and has a 12″×12″ table. Blade wheel diameter is 5″ top and 6″ bottom. Accepts 1/4″ wide diamond grit blades and includes a 3′1″ Lg.×1/4″ Wd.×0.020″ Thick. diamond-grit blade. Motor is 1/3 hp and operates on 110 VAC, 50/60 Hz, single phase. Cutting capacity is 5″ Dp.×3″ Ht. No-load blade speed is 3,520 sfpm. Coolant tank holds 16 oz. water. Overall size is 13 1/2″ Lg.×14″ Wd.×17 1/2″ Ht. Weight is 16 lbs.

		Each
Band Saw	**39725A11**	$371.83
Replacement Blade	**39725A15**	55.00
		Per Pkg.
Replacement Blade Guides (4/Pkg.)	**39725A14**	$6.50

Vertical Band Saw Blade Guards with Light

Increase safety and visibility with these blade guards that have a built-in light. Made of clear acrylic, guards attach to your band saw blade's support arm at an angle to minimize glare. Operate on 120 VAC and have a 7½-ft. cord with leads for hardwiring to your saw's on/off switch. Mounting hardware included.

Guard for 10″ to 16″ vertical band saws fits most saws with 10″ to 16″ blade wheel diameter including Atlas, Craftsman, Delta, Homecraft, J-Line, Powermatic, Vega, Walker Turner, Wells, and Yates American. ***Guard for 18″ to 36″ vertical band saws*** fits most saws with 18″ to 36″ blade wheel diameter, including Delta, Delta Rockwell, Grob, Monarch, Powermatic, and Walker Turner.

		Each
Guard for 10″ to 16″ Vertical Band Saws	**4720A11**	$141.73
Guard for 18″ to 36″ Vertical Band Saws	**4720A12**	141.73

Band Saw Blade Tension and Alignment Gauges

Ensure that your blades are tensioned properly and square to the cut. ***Tension gauge*** measures up to 60,000 psi and 4,000 kg per cm^2 and also works with power hacksaws. ***Alignment gauge*** keeps blades straight between guides.

Tension Gauge

Alignment Gauge

		Each
Tension Gauge	**4177A11**	$435.44
Alignment Gauge	**4177A12**	80.18

Adjustable Band Saw Fence

Keep your material in line with your band saw blade. This fence mounts on your band saw table and adjusts to your blade's angle for a precise cut every time. Plus, the fence's top and face have T-slots for adding accessories. For use on most band saws with a 14″ diameter blade wheel, including Jet, Delta, General, and Grizzly models. Fence is 18″ long and made of aluminum.

Comes with a 26″ long aluminum mounting rail with hardware to bolt the fence to your band saw table.

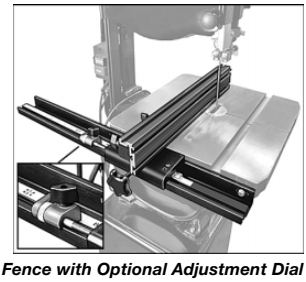

Fence with Optional Adjustment Dial

Optional adjustment dial allows you to make adjustments to the fence to give the most accurate cut.

Band Saw Fence	**5152A53**	**Each**	$129.98
Optional Adjustment Dial	**5152A62**	**Each**	$16.24

Band Saw Wheel Cushions

Reduce blade slippage and preserve tooth shape by placing one of these cushions on your band saw wheel. Also known as band saw rubbers and band saw tires, these 3⁄16″ thick cushions are made of neoprene rubber. Install with glue, rubber cement, or rubber adhesive (see 7509A73 on page 3417) and trim width with a razor blade. *Note:* All are undersized by approximately 20% for a stretched fit.

For Band Saw Wheel Dia.	Width		Each	For Band Saw Wheel Dia.	Width		Each
10″	1″	**4561A31**	$27.33	22″	1½″	**4561A22**	$44.78
12″	1″	**4561A11**	26.05	24″	1½″	**4561A24**	48.07
14″	1″	**4561A12**	27.27	30″	2″	**4561A16**	62.53
16″	1¼″	**4561A23**	34.71	32″	2″	**4561A25**	67.18
18″	1½″	**4561A14**	36.15	36″	2″	**4561A18**	76.25
20″	1½″	**4561A13**	37.78				

Vertical Band Saw Blade Guides

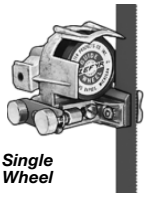

Single Wheel

Dual Wheel

Adjustable for various blade widths and thicknesses, these blade guides adapt for right- and left-hand mounting near the top or bottom blade wheel. An inner backup wheel controls backward blade motion. Mounting holes on the back of each guide fit onto your saw's mounting stud, and set screws lock the guide in place. Replacement studs are sold separately below. *Note:* Saw modifications may be necessary for installation.

Single Wheel— Designed for contour-cutting applications in wood and nonferrous metals such as bronze and brass. All have PTFE-impregnated support blocks for maximum blade support near the cutting edge.

Dual Wheel— The choice for high-load operations, this dual-wheel guide offers excellent support for all cutting applications. It has permanently sealed and lubricated ball bearing support wheels.

For Band Saw Wheel Dia.	For Blade Wd.	Guide Size Ht.	Guide Size Wd.	Guide Size Dp.	Mounting Stud Dia.		Each
Single Wheel							
14″-20″	1⁄8″ - 3⁄4″	2¼″	3″	1⅞″	7⁄16″	**4019A11**	$99.60
16″-36″	1⁄8″ -1¼″	3″	4″	2½″	3⁄4″	**4019A12**	154.80
30″-42″	3⁄16″-1¾″	4″	4¼″	3″	3⁄4″	**4019A13**	195.60
Dual Wheel							
14″-30″	3⁄16″- 3⁄4″	2¾″	2¼″	1¾″	7⁄16″	**4019A21**	130.80
Replacement Mounting Studs							
7⁄16″ Dia. ×3″ Lg.						**4019A52**	14.00
3⁄4″ Dia. ×4½″ Lg.						**4019A51**	14.00

Bimetal Reciprocating Saw Blade Assortments

All include bimetal blades for a variety of applications.

Standard Assortment— This 10-piece assortment includes one 6″ long (7 teeth per inch) blade for wood as well as four 4″ long (6, 10, 18, and 24 teeth per inch) and five 6″ long (5-8, 10, 14, 18, and 24 teeth per inch) blades for metal, plastic, laminates, and wood with nails.

4034A22 ..... **Each** $19.15

Heavy Duty Assortment— This 30-piece assortment includes five 6″ long (5-8 teeth per inch) blades for nail-embedded wood as well as ten 6″ long (6 teeth per inch) and fifteen 6″ long (five each of 10, 14, and 18 teeth per inch) blades for up to 18-gauge thick metal. Furnished in a black plastic case.

4034A25 ..... **Each** $70.42

Demolition Assortment— This 27-piece assortment includes fifteen 6″ long (five each of 5-8, 6, and 10 teeth per inch) blades for nail-embedded wood and metal, as well as four 6″ long (6 teeth per inch) and eight 6″ long (10 teeth per inch) blades for any type of demolition job. Furnished in a black plastic case.

4034A35 ..... **Each** $81.72

Heavy Duty Assortment

Reciprocating Saw Accessories

Turn your ordinary reciprocating saw into a multipurpose tool with these accessories. Designed to fit most saw brands.

Flush-cut adapter offsets the blade 1½″ to allow flush cuts in hard-to-reach areas. Overall length is 6½″.

Blade extensions reach into difficult spots.

Wood rasp is great for fast wood removal and shaping.

Diamond-grit blade cuts, sands, and grinds hardened steel pipe, bars, and bolts as well as reinforced concrete.

Masonry blades cut and sand reinforced concrete, rock, composites, brick, and fiberglass, unless noted.

		Each
Flush-Cut Adapter	**4009A11**	$36.13
12″ Lg. Blade Extension	**4009A12**	28.25
18″ Lg. Blade Extension	**4009A13**	30.05
22″ Lg. Blade Extension	**4009A14**	31.20
Wood Rasp	**4009A19**	25.67
Diamond-Grit-Blade	**4009A18**	104.09
16-Grit Masonry Blade	**4009A17**	31.20
24-Grit Masonry Blade	**4009A16**	31.20
60-Grit Masonry Blade	**4009A15★**	31.20

★ Not for reinforced concrete or fiberglass.

Flush-Cut Adapter

Wood Rasp

Masonry Blade

1/2″ Universal-Shank Reciprocating Saw Blades

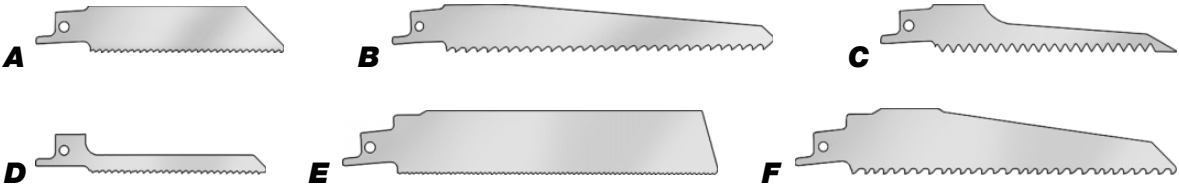

Don't worry about compatibility with your saw—the 1/2″ shank on these blades fits in most common reciprocating saws. Choose blades with more teeth per inch for a smooth finish; choose blades with fewer teeth per inch for fast, rough cutting.

Blades for multiple materials are for general purpose use on a wide range of materials. ***Blades for metal*** and ***blades for wood*** last longer than blades for multiple materials on metal and wood, respectively. ***Heavy duty blades for metal*** last longer and cut faster than blades for metal.

Bimetal blades have a tough cutting edge that's made of high-speed steel (unless noted) with a flexible backing that resists shattering and wear.

Bimetal blades with TiN (Titanium Nitride) coated edge have improved wear resistance resulting in longer blade life.

Carbide-tipped and *carbide-grit blades* are perfect for hard-to-cut materials. *Carbide-tipped blades* have teeth with tips made of carbide. Instead of teeth, *carbide grit blades* have tungsten carbide grit bonded to the edge of an alloy steel blade.

Style A— A flat-top design makes these stiffer than other blades, resulting in straighter cuts.

Style B— Blades taper to a point for plunging directly into the material rather than cutting from the side (also known as plunge cutting).

Style C— Teeth are V-shaped allowing for cuts on the forward and backward strokes of the saw; great for faster cuts in plaster and drywall.

Style D— Blades are short and narrow for tight-curve cuts (also known as scroll-cutting).

Styles E&F— Also known as demolition blades, these are thicker and wider for cuts through multiple layers of materials. *Style E* is best for straight cuts and *Style F* is best for plunge cuts.

	Lg.	Wd.	Thick.	Teeth per Inch	Recommended Use★	Pkg. Qty.		Per Pkg.
Blades for Multiple Materials								
Bimetal								
A	4″	3/4″	0.035″	10	Wood, wood with nails, plastic, up to 1/2″ thick ferrous and nonferrous metals	5	**4059A37**	$7.92
A	4″	3/4″	0.035″	10	Plastic, up to 1/4″ thick ferrous metals, up to 1/2″ thick nonferrous metals	5	**4059A27**	8.63
A	6″	3/4″	0.035″	10	Plastic, up to 1/4″ thick ferrous metals, up to 1/2″ thick nonferrous metals	5	**4059A59**	11.11
A	6″	3/4″	0.050″	8-12	Wood, wood with nails, plastic	5	**4059A51**	11.02
A	6″	3/4″	0.050″	8-12	Wood, wood with nails, plastic	50	**4059A121**	91.45
A	8″	5/8″	0.035″	10-14	Plastic, up to 3/16″ thick ferrous metals, up to 3/8″ thick nonferrous metals	5	**4059A88**	13.56
A	8″	3/4″	0.035″	10	Wood with nails, aluminum, light-gauge metal	5	**4059A81**	14.45
A	8″	3/4″	0.035″	10-14	Composition board, plastic	5	**4059A96**	14.77
A	8″	3/4″	0.050″	8-12	Wood, wood with nails, plastic	2	**4059A791**	6.26
A	8″	3/4″	0.050″	8-12	Wood, wood with nails, plastic	50	**4059A129**	117.95
A	12″	5/8″	0.035″	10-14	Plastic, up to 3/16″ thick ferrous metals, up to 3/8″ thick nonferrous metals	2	**4059A49**	10.50
A	12″	3/4″	0.050″	8-12	Wood, wood with nails, plastic	2	**4059A792**	11.81
A	12″	3/4″	0.050″	8-12	Wood, wood with nails, plastic	50	**4059A125**	173.42
B	6″	3/4″	0.050″	6	Wood, plastic	2	**4059A89**	8.92
B	6″	3/4″	0.050″	10	Wood with nails, composition board, plastic	5	**4059A92**	10.50
B	9″	3/4″	0.050″	6	Wood, plastic	2	**4059A97**	11.79
B	12″	3/4″	0.050″	6	Wood, plastic	2	**4059A98**	12.86
B	12″	3/4″	0.050″	6-10	Wood, plastic	5	**4059A48** ♦	26.71
C	5″	3/4″	0.050″	6	Plaster, drywall	5	**4059A41**	9.66
D	3 5/8″	5/16″	0.035″	10	Up to 1/4″ thick plastic, ferrous metals; up to 1/2″ thick nonferrous metals	5	**4059A18**	11.28
E	6″	1″	0.042″	18	1/8″-3/16″ thick metal, rubber, fiber	2	**4059A146**	6.68
E	6″	1″	0.042″	18	1/8″-3/16″ thick metal, rubber, fiber	25	**4059A148**	67.18
E	9″	1″	0.042″	18	1/8″-3/16″ thick metal, rubber, fiber	2	**4059A147**	11.09
E	12″	1″	0.042″	18	1/8″-3/16″ thick metal, rubber, fiber	2	**4059A3**	12.46
F	6″	1″	0.062″	8	Wood, wood with nails, plastic	2	**4059A151** ●	6.56
F	9″	1″	0.062″	8	Wood, wood with nails, plastic	2	**4059A152** ●	10.87
F	12″	1″	0.062″	8	Wood, wood with nails, plastic	2	**4059A153** ●	12.54
Bimetal with TiN (Titanium Nitride) Coated Edge								
A	6″	3/4″	0.035″	10	Wood, metal	5	**4128A24** ♦	20.10
B	6″	3/4″	0.050″	6	Wood, wood with nails, drywall, plaster	5	**4128A21** ♦	23.80
B	9″	3/4″	0.050″	6	Wood, wood with nails, drywall, plaster	5	**4128A22** ♦	31.39
B	12″	3/4″	0.050″	6	Wood, wood with nails, drywall, plaster	5	**4128A23** ♦	38.40
Carbide Tipped								**Each**
A	3 1/2″	3/4″	0.050″	3	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A11**	$7.33
A	3 1/2″	3/4″	0.050″	6	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A15**	8.00
A	6″	3/4″	0.050″	3	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A12**	8.00
A	6″	3/4″	0.050″	6	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A16**	10.11
A	9″	3/4″	0.050″	3	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A13**	9.11
A	9″	3/4″	0.050″	6	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A17**	12.33
A	12″	3/4″	0.050″	3	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A14**	10.89
A	12″	3/4″	0.050″	6	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A18**	15.89
D	3 5/8″	5/16″	0.050″	6	Wood, nonferrous metals, hardboard, fiberglass	—	**4106A19**	7.56
Carbide Grit								
A	4″	3/4″	0.035″	0	Fiberglass, tile, brick, marble	—	**4027A14**	5.57
A	6″	3/4″	0.032″	0	Cast iron, fiberglass, tile, brick, marble	—	**4027A16**	6.68
A	8″	3/4″	0.042″	0	Cast iron, fiberglass, tile, brick, marble	—	**4027A21**	8.10

★ Ferrous metals include steel and cast iron; nonferrous metals include aluminum, brass, and bronze.

♦ These sizes are available in less than full-package quantities. Prices are 25% higher. ● For use on straight and plunge cuts.

(Continued on following page)

1/2″ Universal-Shank Reciprocating Saw Blades *(Continued from previous page)*

	Lg.	Wd.	Thick.	Teeth per Inch	Recommended Use	Pkg. Qty.		Per Pkg.
Blades for Metal								
Bimetal								
A	4″	3/4″	0.035″	14	3/16″-1/4″ thick metal	5	4059A56	$8.14
A	4″	3/4″	0.035″	18	1/8″-3/16″ thick metal	5	4059A57	8.14
A	4″	3/4″	0.035″	24	Up to 1/8″ thick metal	5	4059A58	8.14
A	6″	3/4″	0.035″	14	3/16″-1/4″ thick metal	5	4059A61	10.90
A	6″	3/4″	0.035″	14	3/16″-1/4″ thick metal	50	4059A126	91.45
A	6″	3/4″	0.035″	18	1/8″-3/16″ thick metal	5	4059A62	10.90
A	6″	3/4″	0.035″	18	1/8″-3/16″ thick metal	50	4059A127	91.45
A	6″	3/4″	0.035″	24	Up to 1/8″ thick metal	5	4059A63	10.90
A	6″	3/4″	0.035″	24	Up to 1/8″ thick metal	50	4059A128	91.45
A	6″	1″	0.042″	10	Up to 1/2″ thick metal	5	4059A811	15.10
A	6″	1″	0.042″	14	1/8″ and thicker metal	5	4059A181 ◆	15.73
A	6″	1″	0.042″	18	0.048″ (18-ga.)-1/8″ thick metal	5	4059A812	13.24
A	6″	1″	0.042″	24	Up to 0.048″ thick (18-ga.) metal	5	4059A813 ◆	16.59
A	8″	3/4″	0.035″	14	1/8″ and thicker metal	5	4059A82	14.45
A	8″	3/4″	0.035″	18	1/8″-3/16″ thick metal	5	4059A83	14.45
A	9″	3/4″	0.035″	14	3/16″-1/4″ thick metal	5	4059A64	13.56
A	9″	3/4″	0.035″	18	1/8″-3/16″ thick metal	5	4059A23	13.56
A	9″	3/4″	0.035″	18	1/8″-3/16″ thick metal	50	4059A132	113.25
A	9″	1″	0.050″	10	Up to 1/2″ thick metal	5	4059A814 ◆	19.60
A	9″	1″	0.050″	14	1/8″ and thicker metal	5	4059A182 ◆	19.60
A	9″	1″	0.050″	18	0.048″ (18-ga.)-1/8″ thick metal	5	4059A815 ◆	19.60
A	12″	3/4″	0.035″	18	1/8″-3/16″ thick metal	2	4059A65	9.06
A	12″	1″	0.050″	10	Up to 1/2″ thick metal	5	4059A816 ◆	23.95
A	12″	1″	0.050″	14	1/8″ and thicker metal	5	4059A817 ◆	23.94
A	12″	1″	0.050″	18	0.048″ (18-ga.)-1/8″ thick metal	5	4059A183 ◆	23.94
D	3 5/8″	5/16″	0.035″	14	3/16″-1/2″ thick metal	5	4059A14	11.28
D	3 5/8″	5/16″	0.035″	18	1/8″-3/16″ thick metal	5	4059A15	11.28
E	6″	1″	0.042″	10	1/4″-3/8″ thick metal	2	4059A144	6.68
E	6″	1″	0.042″	10	1/4″-3/8″ thick metal	25	4059A138	67.18
E	6″	1″	0.042″	14	3/16″-1/4″ thick metal	2	4059A1	6.89
E	6″	1″	0.042″	14	3/16″-1/4″ thick metal	25	4059A139	67.18
E	9″	1″	0.042″	10	1/4″-3/8″ thick metal	2	4059A145	11.09
E	9″	1″	0.042″	14	3/16″-1/4″ thick metal	2	4059A2	10.81
Bimetal with TiN (Titanium Nitride) Coated Edge								
A	6″	3/4″	0.035″	14	3/32″-3/8″ thick metal	5	4128A25 ◆	20.10
A	6″	3/4″	0.035″	18	1/16″-3/16″ thick metal	5	4128A26 ◆	20.10
A	6″	3/4″	0.035″	24	Up to 1/8″ thick metal	5	4128A27 ◆	20.10
Heavy Duty Blades for Metal								
Bimetal								
A	4″	3/4″	0.035″	14	1/8″-1/2″ thick metal, including structural steel and soft metal (such as aluminum)	5	4171A23	12.30
A	4″	3/4″	0.035″	18	3/32″-5/16″ thick metal, including structural steel and stainless steel	5	4171A24	12.30
A	6″	3/4″	0.035″	14	1/8″-1/2″ thick metal, including structural steel and soft metal (such as aluminum)	5	4171A25 ◆	15.90
A	6″	3/4″	0.035″	18	3/32″-5/16″ thick metal, including structural steel and stainless steel	5	4171A26 ◆	15.90
A	6″	3/4″	0.035″	24	Up to 1/8″ thick metal	5	4171A27 ◆	15.90
A	6″	1″	0.042″	14	3/32″-3/8″ thick metal, including structural steel	2	4171A32	9.88
A	6″	1″	0.042″	18	1/16″-1/4″ thick metal, including structural steel	2	4171A33	9.88
A	8″	3/4″	0.035″	14	1/8″-1/2″ thick metal, including structural steel and soft metal (such as aluminum)	5	4171A28 ◆	17.70
A	8″	3/4″	0.035″	18	3/32″-5/16″ thick metal, including structural steel and stainless steel	5	4171A29 ◆	20.36
A	8″	3/4″	0.035″	24	Up to 1/8″ thick metal	5	4171A31 ◆	19.20
A	9″	1″	0.042″	14	Structural steel	2	4171A34	12.36
A	9″	1″	0.042″	18	Structural steel	2	4171A35	12.36
A	12″	1″	0.042″	14	3/32″-3/8″ thick metal, including structural steel	2	4171A36	14.84
A	12″	1″	0.042″	18	1/16″-1/4″ thick metal, including structural steel	2	4171A37	14.84
Blades for Wood								
Bimetal								
A	4″	3/4″	0.035″	5	Wood, wood with nails	5	4059A45	10.42
B	6″	1/2″	0.050″	4-6	Tight-curve cuts; wood, wood with nails	2	4059A66	6.20
B	6″	3/4″	0.050″	3	Wood	5	4059A223 ◆	17.38
B	6″	3/4″	0.050″	5	Wood, wood with nails	2	4059A91	5.01
B	6″	3/4″	0.050″	5	Wood, wood with nails	50	4059A122	104.62
B	9″	3/4″	0.050″	5	Pruning	5	4059A84 ◆■	20.52
B	9″	3/4″	0.050″	5	Wood, wood with nails	2	4059A93	7.11
B	9″	3/4″	0.050″	5	Wood, wood with nails	50	4059A123	138.80
B	12″	3/4″	0.050″	5	Wood, wood with nails	2	4059A94	10.98
B	12″	3/4″	0.050″	5	Wood, wood with nails	50	4059A124	155.38
F	6″	1″	0.062″	5	Wood, wood with nails	2	4059A4	8.07
F	9″	1″	0.062″	5	Wood, wood with nails	2	4059A5	10.52
F	12″	1″	0.062″	5	Wood, wood with nails	2	4059A6	12.10

◆ These sizes are available in less than full-package quantities. Prices are 25% higher. ■ Blade is made of carbon steel.

Milwaukee Reciprocating Saws

Electric

Cordless (4596A6)

Cordless Hatchet (4596A21)

Cordless (24795A11 and A7)

These heavy duty saws have a variable-speed motor and a Quik-Lok keyless blade-change system, so you don't need tools to change blades. All accept ½″ Universal-Shank Reciprocating Saw Blades (see pages 2384-2385) and include a carrying case. Saw blades are sold separately (unless noted). UL listed, CSA certified (unless noted), and meet OSHA requirements.

Electric saws have an adjustable shoe-release lever for control of cutting depth (unless noted). They are furnished with a power cord and plug. 4011A83 has a counter-balance mechanism to reduce vibration, a trigger control to adjust speed, and an advanced gear system to power through tough materials. 4011A81 has a switch for fast, full-orbital cutting action as well as a counter-balance mechanism to reduce vibration, a dial selector to adjust speed, a detachable Quik-Lok power cord for easy replacement and storage, and an advanced gear system to power through tough materials.

Cordless saws are furnished with a trigger control to adjust speed, two batteries, and a charger (unless noted). 4596A6 is compact, which allows cutting in tight spaces and on awkward angles. It has a battery fuel gauge and a built-in LED light to illuminate the work surface. 24795A7 includes 28-volt batteries that are 40% more powerful and last twice as long.

Saws

Stroke Length	Strokes/Min. (No Load)	Length	Wt., lbs.	Volts	Hz	Amps	Cord Length	Plug Style	Model No.		Each
Electric											
1⅛″	0-3,000	19″	7.1	120 VAC	20-60	12	8 ft.	2 prong	6519-31	**4011A67**■	$135.00
1¼″	0-3,000	18¾″	9.8	120 VAC	20-60	13	8 ft.	3 prong	6536-21	**4011A83**	198.75
1¼″	0-3,000	19″	10	120 VAC	20-60	13	10 ft.	2 prong	6523-21	**4011A81**	217.50
Cordless											
½″	0-3,000	11″	2.6	12	—	—	—	—	2420-22	**4596A6**★	175.00
¾″	0-3,000	13″	4.1	18	—	—	—	—	2625-21 (Hatchet)	**4596A21**♣	219.00
1″	0-3,200	17¾″	7.8	18	—	—	—	—	2620-21	**24795A11**♣	274.01
1⅛″	0-2,000/0-3,000	15⅞″	9.4	28	—	—	—	—	0719-22	**24795A7**	446.25

■ Does not include an adjustable shoe-release lever. ★ Includes two blades. Not CSA certified.
♣ Includes one blade and one battery. Not CSA certified.

Accessories and Replacement Parts

Part (Model No.)	Fits Saw Model No.		Each
Two-Prong, 10-ft. Lg. Quik-Lok Power Cord (48-76-5010)	6523-21	**2744A78**	$21.17
Quik-Lok Blade Clamp Kit (14-46-1011)	6519-22	**4011A57**	15.10
Quik-Lok Blade Clamp Kit (14-46-1060)	6523-21, 6536-21	**4011A85**	13.95
Quik-Lok Blade Clamp Kit (42-68-1200)	2620-21	**24795A12**	10.65
12-Volt Battery (48-11-2401)	2420-22	**4443A33**	$49.23
18-Volt Battery (48-11-1828)	2620-21, 2625-21	**29735A124**	151.95
Charger for 12-Volt Battery (48-59-2401)	2420-22	**4443A22**	56.92
Charger for 18-Volt Battery (48-59-1801)	2620-21, 2625-21	**29735A128**	64.62
28-Volt Battery (48-11-2830)	0719-22	**54275A31**	170.00
Charger for 28-Volt Battery (48-59-2818)	0719-22	**54275A32**	66.00

Porter-Cable and DeWalt Reciprocating Saws

Porter-Cable Electric

DeWalt Electric

DeWalt Cordless

These heavy duty, variable speed saws accept ½″ Universal-Shank Reciprocating Saw Blades (see pages 2384-2385) and have a keyless blade change system, so you don't need tools to change blades. Saws include a carrying case (unless noted). UL listed and meet OSHA requirements. ***Electric*** saws have an adjustable shoe-release lever for control of cutting depth. They are furnished with an 8-ft. cord with two-prong plug and are CSA certified. ***Cordless*** saws include a battery and a one-hour charger.

Saws

Stroke Length	Strokes/Min. (No Load)	Length	Wt., lbs.	Volts	Hz	Amps	Manufacturer and Model No.		Each
Electric									
1⅛″	0-2,600	18¼″	9.3	120 VAC	60	11.5	Porter-Cable 9748	**3998A16**♦	$188.22
1⅛″	0-2,700	18″	8.6	120 VAC	50/60	12	DeWalt DW310K	**40205A17**	155.60
1⅛″	0-2,700	18″	9	120 VAC	50/60	13	DeWalt DW311K	**40205A14**	182.31
1⅛″	0-2,800	17½″	7	120 VAC	50/60	10	DeWalt DW304PK	**40205A23**	113.85
1¼″	0-2,900	19″♥	9	120 VAC	50/60	11.5	Porter-Cable 9750	**3998A35**♦	245.44
Cordless									
1⅛″	0-3,000	17½″	8.2	18	—	—	DeWalt DC385K	**2971A31**	244.47
1⅛″	0-3,000	17½″	8.4	36	—	—	DeWalt DC305K	**2971A41**	434.15

♥ Has a rotating head; length with head at 90° is 8½″. ♦ Does not include a carrying case.

Replacement Parts for DeWalt Cordless Reciprocating Saws

Model No.	Fits Saw Model No.		Each
18-Volt Battery (DC9096)	DC385K	**29835A13**	$95.29
36-Volt Battery (DC9360)	DC305K	**29835A102**	184.75
1-Hour Charger (DC9310)	DC385K	**29835A631**	$81.82
1-Hour Charger (DC9000)	DC305K	**29835A101**	99.74

Makita Cordless Reciprocating Saw

Compact and lightweight for easy handling, this single-speed saw includes a battery, one-hour charger, and two carbon steel blades. Saw is 13½″ long and weighs 3.1 lbs. UL listed. Meets OSHA requirements.
Note: Use only with the included Makita reciprocating saw blades and the replacement blades below.

Saw

Stroke Lg.	Strokes/Min. (No Load)	Volts	Model No. (No. on Tool Nameplate)		Each
9/16″	2,700	9.6	4390DW (4390D)	**4048A13**	$137.01

Replacement Parts

9.6-Volt Battery	**3972A22**	Each	$55.86
1-Hour, 115 VAC Charger	**27875A78**	Each	$56.26
4″ Blade for Steel, 24 teeth per inch (5/Pkg.)	**4048A31**	Per Pkg.	$14.72
4¾″ Blade for Wood, 9 teeth per inch (5/Pkg.)	**4048A32**	Per Pkg.	$12.77

Portable Air-Powered Saws

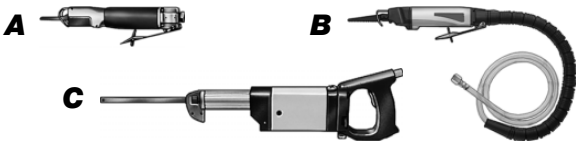

Make straight-line and tight-curve cuts in many materials. All are for use with 3/8″ ID air hose.

A Economy Mini Reciprocating Saw— Good for occasional use, this saw has a front-end bottom exhaust and lockout throttle lever to prevent accidental starting.

Includes two 3 3/8″ long bimetal blades. Recommended air pressure is 90 psi; air consumption is 16 cfm. Air inlet is 1/4″ NPT female.

B Mini Reciprocating Saw— Get precision cutting from this compact saw. Double-lock throttle lever prevents accidental starting. Rear exhaust system vents air away from your work.

Includes two 3 1/2″ long, 32 teeth per inch high-speed steel blades, an air hose with fitting, a hex key wrench, and a 1/4″ reducer bushing. Additional bimetal blades are sold separately below. Recommended air pressure is 85 psi; air consumption is 10.2 cfm. Air inlet is 1/4″ NPT female.

C D-Handle Hacksaw— This variable-speed saw will cut anything a hand hacksaw can with less effort. Use it in liquids including water, oil, and slurries—it won't be damaged if it stalls. A self-lubricating system oils all moving parts, and the handle has a speed-control valve that adjusts cutting speed. Saw has a front exhaust.

Includes ten 12″ long bimetal blades, lubricating oil, and a metal carrying case. Recommended air pressure is 90-110 psi; air consumption is 6 1/2 cfm. Air inlet is 1/4″ NPT male. Meets OSHA requirements.

Saws

	Strokes/Min. (No Load)	Stroke Length	Overall Length	Wt., lbs.		Each
A	9,000	3/16″	9 1/4″	1.4	**4074A52**	$252.51
B	7,000	7/16″	8 1/2″	1.3	**4073A33**	378.82
C	0-1,200	1 3/4″	16″	6	**4207A1**	1,301.47

Replacement Bimetal Blades

Fits Saw	Lg. × Wd. × Thick.	Teeth per Inch	Pkg. Qty.		Per Pkg.
A	3 3/8″ × 13/32″ × 0.039″	32	3	**4074A53** ♠	$29.96
B	3 13/16″ × 1/2″ × 0.039″	14	5	**4073A28**	13.86
B	3 13/16″ × 1/2″ × 0.039″	18	5	**4073A29**	13.86
B	3 13/16″ × 1/2″ × 0.039″	24	5	**4073A31**	13.86
B	3 13/16″ × 1/2″ × 0.039″	32	5	**4073A32**	13.86
C	12″ × 1/2″ × 0.025″	24	5	**2476A25**	8.53

♠ Available in less than full-package quantities. Price is 20% higher.

Large-Capacity Air-Powered Hacksaw

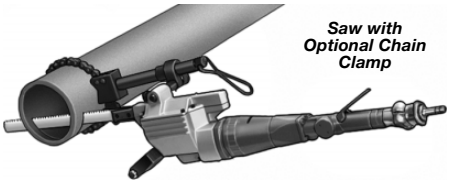

Great for cutting pipes, angle iron, and other structural shapes. Saw has a cast aluminum gear case, a side exhaust system, and a safety off switch. It's furnished with two 12″ long, 16 teeth per inch high-speed steel blades; assorted wrenches; front handles; and a hose coupling. Recommended air pressure is 86 psi; air consumption is 51 cfm. Air inlet is 1″ NPT male. Use with air hose at least 1/2″ ID.

Chain clamps attach the saw to pipe for demolition work.

Extension chains are for use with 3990A13 chain clamp. Maximum material thicknesses are listed.

Work support is for freehand work and cutting corrugated sheet metal.

Saw blade guide works on material up to 12 3/4″ dia. with blades up to 20 3/4″ long.

Saw

Strokes/Min. (No Load)	Stroke Length	Overall Length	Wt., lbs.		Each
0-330	2 3/8″	18 3/4″	15.4	**3990A31**	$2,345.41
Replacement Blade				**3990A41**	9.94

Accessories

		Each
Chain Clamp for Pipe up to 6″ Dia.	**3990A12**	$385.53
Chain Clamp for Pipe 4″ to 12 3/4″ Dia.	**3990A13**	450.56
Extension Chain for Pipe up to 17 5/16″ Dia.	**3990A15**	78.51
Extension Chain for Pipe up to 24″ Dia.	**3990A16**	196.29
Work Support	**3990A17**	294.76
Saw Blade Guide	**3990A19**	398.65

Optional High-Speed Steel Blades

Lg. × Wd. × Thick.	Teeth per Inch	Max. Cutting Dia.		Each
12″ × 1″ × 0.062″	12	6 5/8″	**3990A47**	$11.18
15 3/4″ × 1″ × 0.062″	16	10 1/4″	**3990A42**	14.86
19 3/4″ × 1″ × 0.078″	14	13 3/4″	**3990A46**	23.75
21 7/8″ × 1″ × 0.062″	12	15 7/8″	**3990A43**	20.23
23 5/8″ × 1″ × 0.078″	14	17 5/8″	**3990A44**	33.39
30 3/8″ × 1″ × 0.078″	12	24 3/8″	**3990A45**	40.51

RotoZip Spiral Saws

The unique rotary action of the cutting bit on these saws allows you to plunge-cut directly into your material. Saws cut wood, composites, ceramic tile, acoustical tile, drywall, fiberglass, and plastic, unless noted. Handles are removable and have built-in storage. All saws are double insulated; operate on 120 VAC, 50/60 Hz; and include a 10-ft. cord (unless noted) with two-prong plug.

Model No. RZ01-1300 (RZ1) includes two bits, three collets (1/8″, 5/32″, and 1/4″), and one wrench. Saw cuts wood, drywall, and fiberglass.

Model No. RZ1500-30 (RZ1500) includes two bits, three collets (1/8″, 5/32″, and 1/4″), one wrench, a circle cutter attachment, an 8-ft. cord, and a canvas tool bag.

Model No. RZ2000-55 (RZ2000) includes three bits, one wrench, a right-angle cutoff attachment, three cutoff wheels, a guard attachment, an accessory storage case, and a canvas tool bag.

Right-angle cutoff attachment starter kit converts the spiral saw into a cutoff saw. **To Order:** Please specify model number.

RZ01-1300

Right-Angle Cutoff Attachment

Saw Kits

Model No.	rpm (No Load)	Amps	Length	Weight		Each
RZ01-1300 (RZ1)	30,000	5.0	9 1/4″	3.1 lbs.	**3979A14**	$63.75
RZ1500-30 (RZ1500)	30,000	5.7	14 1/2″	3.6 lbs.	**3979A12**	106.25
RZ2000-55 (RZ2000)	15,000-30,000	6.0	9 1/2″	3.5 lbs.	**3979A13**	165.38

Replacement Parts and Accessories

		Each
1/8″ Replacement Collet Chuck	**3979A51**	$7.21
1/4″ Replacement Collet Chuck	**3979A52**	7.21
Circle Cutter (cuts 1″-12″ dia. circles)	**3979A22**	18.13
Flexible Shaft Extension for 3979A14 and A12	**3979A82**	48.28
1/8″ Solid Carbide Bit for Tile (not for ceramic floor tile)	**3979A37**	8.04
1/4″ Solid Carbide Bit for Plaster, Cement Board, and Stucco	**3979A38**	14.40
1/4″ Solid Carbide Fiber Rock Bit	**3979A81**	$13.86
1/4″ Steel Drywall Bit	**3979A41**	6.76
		Per Pkg.
1/8″ Steel Sabre Cut Bit for Wood (Pkg. of 4)	**3979A33**	$7.18
1/8″ Steel Plunge-Cutting Drywall Bit (Pkg. of 8)	**3979A39**	8.27
1/8″ Steel Side-Cutting Drywall Bit (Pkg. of 8)	**3979A34**	8.90

Right-Angle Cutoff Attachment Starter Kit and Accessories

	Pkg. Qty.		Each
Right-Angle Cutoff Attachment Starter Kit	—	**3979A95**	$60.94
Diamond Cutoff Wheel for Ceramics, Concrete, and Floor Tile	—	**3979A66**	26.11
			Per Pkg.
Masonry Cutoff Wheel for Brick, Concrete, and Nonferrous Metals (Brass, Bronze)	2	**3979A88**	$5.65
Metal Cutoff Wheel for Ferrous Metals (Steel, Stainless Steel, Cast Iron)	2	**3979A87**	5.65

Jigsaw Blades

T-Shank

U-Shank

U-Shank w/Progressive Teeth

Hook Shank

Our jigsaw blades are offered in three shank styles to fit most jigsaws: T-Shank, U-Shank (also known as Universal Shank), and Hook Shank. *Note:* Check your jigsaw to see which shank style you need.

Choose blades with more teeth per inch for a smooth finish; choose blades with fewer teeth per inch for fast, rough cutting. Blades with progressive teeth have small, fine teeth at the shank end that gradually increase to large teeth at the tip for maximum versatility. Recommended uses for blades are based on blade and tooth design.

Carbon steel blades are good for occasional use and for cutting wood and soft materials.

High-speed steel blades are tougher and last longer than carbon steel blades.

Bimetal blades have a tough cutting edge that's made of high-speed steel and welded to a strong, flexible backing that resists shattering and wear. They last longer than high-speed steel and carbon steel blades.

Carbide-tipped, carbide-grit, and ***diamond-plated blades*** are perfect for hard-to-cut materials. ***Carbide-tipped blades*** have teeth with tips made of carbide. Instead of teeth, ***carbide-grit blades*** have tungsten carbide grit bonded to the edge of an alloy steel blade. Use finer grit blades for less material loss and a smooth finish; use coarser grit blades for faster cutting. ***Diamond-plated blades*** slice through tough materials that destroy other blades.

Blade Material	Lg.	Wd.	Thick.	Teeth per In.	Recommended Use♣	Pkg. Qty.		Per Pkg.
T-Shank								
Blades for Multiple Materials								
Carbon Steel	4″	9/32″	0.05″	0■	Leather, rubber, cardboard	3	4131A17	$12.18
Carbon Steel	4″	9/32″	0.06″	Pro.★	1/4″-2 3/8″ thick wood, particleboard, plastic	5	4131A65	8.96
Carbon Steel	4″	9/32″	0.06″	10	Wood, plastic	5	4131A26	8.96
High-Speed Steel	4″	9/32″	0.05″	14	Cast acrylic, 5/64″-3/4″ nonferrous metals	5	4131A45	14.47
High-Speed Steel	5 1/4″	3/8″	0.04″	24	1/16″-1/8″ thick metal; up to 2 1/2″ dia. pipe	5	4131A66	15.11
Bimetal	3″	3/16″	0.04″	10	Tight-curve cuts; 1/8″-1 1/4″ thick wood w/nails, plastic	5	4131A27	12.25
Bimetal	4″	9/32″	0.04″	8	3/16″-5/8″ thick aluminum; 3/16″-3/4″ thick fiberglass	5	4131A41	12.23
Bimetal	4″	9/32″	0.04″	8	3/16″-1 1/4″ thick wood w/nails, plastic, nonferrous metals	5	4131A29	11.73
Bimetal	4″	9/32″	0.05″	10	Wood, plastic	5	4131A63	14.34
Bimetal	5 1/4″	3/8″	0.05″	Pro.★	3/16″-3 5/8″ thick wood w/nails, particleboard; 5/64″-1 1/4″ thick aluminum	5	4017A33	14.68
Carbide Tipped	4″	5/16″	0.05″	6	Wood, nonferrous metals, plaster, fiberglass	2	4106A31	14.00
Carbide Tipped	5″	5/16″	0.05″	6	Wood, nonferrous metals, plaster, fiberglass	2	4106A32	11.41
								Each
Medium Carbide Grit	3″	5/16″	0.04″	0	Tile, brick, marble, stainless steel	—	4027A17	$3.02
Coarse Carbide Grit	3″	5/16″	0.04″	0	Tile, brick, marble, stainless steel	—	4027A18	3.02
Diamond Plated	3 3/8″	5/16″	0.04″	0	Reinforced plastics, fiberglass, ceramics, cement, tile	—	4045A72	26.81
Blades for Metal								**Per Pkg.**
High-Speed Steel	4″	9/32″	0.04″	8	3/16″-1/4″ thick nonferrous metals	5	4131A44	$9.41
High-Speed Steel	4″	11/32″	0.04″	Pro.★	5/64″-3/8″ thick metal; 1/16″-1/8″ thick stainless steel	5	4017A32	11.14
High-Speed Steel	5 1/4″	5/16″	0.05″	14	5/64″-5/16″ thick metal	5	4131A46	14.56
Bimetal	3″	3/8″	0.04″	24	0.048″ (18 ga.)-1/8″ thick steel; stainless steel	2	4131A94	4.18
Bimetal	3 5/8″	9/32″	0.04″	Pro.★	5/64″-7/32″ thick metal	5	4131A37	10.62
Bimetal	3 5/8″	9/32″	0.04″	Pro.★	1/16″-1/8″ thick metal	5	4131A71	11.17
Bimetal	3 5/8″	9/32″	0.04″	Pro.★	1/8″-1/4″ thick metal	5	4131A38	10.62
Blades for Wood								
Carbon Steel	3″	1/4″	0.035″	12	Tight-curve cuts; wood	2	4131A93	5.69
Carbon Steel	3 1/4″	5/32″	0.05″	20	Wood, plywood, veneer	5	4131A25	7.38
Carbon Steel	3 1/2″	5/16″	0.05″	6	Wood	2	4131A91	3.23
Carbon Steel	3 1/2″	5/16″	0.05″	10	Wood	2	4131A92	3.23
Carbon Steel	4″	9/32″	0.06″	10	Wood, plywood, laminated particleboard	5	4131A64	10.04
Carbon Steel	4 1/2″	3/8″	0.06″	Pro.★	Wood, particleboard	5	4017A31	10.25
Bimetal	3″	3/16″	0.04″	12	Wood	5	4131A62	13.68
Bimetal	4″	9/32″	0.05″	Pro.★	1/4″-2 3/8″ thick wood w/nails	5	4131A28	13.78
U-Shank								
Blades for Multiple Materials								
Carbon Steel	2 3/4″	11/64″	0.05″	20	Tight-curve cuts; 5/64″-3/4″ thick wood, plywood, plastic	5	4101A37	9.15
Carbon Steel	4″	9/32″	0.05″	10	Wood, plastic, laminates	5	4101A14	11.54
Bimetal	2 3/4″	3/16″	0.05″	20	Wood, laminates	5	4101A62	12.56
Bimetal	4″	9/32″	0.04″	10	1/8″-1 1/4″ thick wood w/nails, nonferrous metals	5	4101A38	9.90
Bimetal	4″	5/16″	0.05″	6	Wood, plastic	5	4101A16▲	19.52
Bimetal	4″	5/16″	0.05″	10	Wood, plastic	5	4101A61▲	13.22
Bimetal	4″	5/16″	0.05″	10	3/16″-1 1/4″ thick wood, plastic, particleboard	5	4101A63	11.67
Bimetal	5″	3/8″	0.05″	Pro.★	3/16″-3 5/8″ thick wood w/nails, particleboard; 5/64″-1 1/4″ thick aluminum	5	4017A28	14.45
Carbide Tipped	3 1/2″	5/16″	0.05″	6	Wood, nonferrous metals, plaster, fiberglass	2	4106A21	14.00
								Each
Fine Carbide Grit	2 7/8″	3/16″	0.04″	0	Tile, brick	—	4027A22	$2.85
Fine Carbide Grit	2 7/8″	3/8″	0.04″	0	Tile, brick	—	4027A11	2.85
Medium Carbide Grit	2 7/8″	3/8″	0.04″	0	Tile, brick	—	4027A12	2.85
Medium Carbide Grit	4″	3/4″	0.04″	0	Tile, brick	—	4027A85	3.61
Coarse Carbide Grit	2 7/8″	3/16″	0.04″	0	Tile, brick	—	4027A23	2.85
Coarse Carbide Grit	2 7/8″	3/8″	0.04″	0	Tile, brick	—	4027A13	2.85
Diamond Plated	2 3/4″	1/4″	0.04″	0	Reinforced plastics, fiberglass, ceramics, cement, tile	—	4045A71	26.81
Blades for Metal								**Per Pkg.**
High-Speed Steel	2 3/4″	9/32″	0.03″	18	1/8″ and thicker metal	5	4101A19	$7.09
High-Speed Steel	2 3/4″	9/32″	0.03″	24	Up to 1/8″ thick metal	5	4101A21	7.09
High-Speed Steel	2 3/4″	9/32″	0.04″	14	1/4″ and thicker metal	5	4101A18	7.09
High-Speed Steel	3 5/8″	5/16″	0.04″	Pro.★	5/64″-3/8″ thick metal; 1/16″-1/8″ thick stainless steel	5	4017A27	11.88

♣ Nonferrous metals include aluminum, brass, and bronze. ■ Blade has a knife edge. ★ Progressive teeth.
▲ Fit both T- and U-shank designs.

(Continued on following page)

Jigsaw Blades *(Continued from previous page)*

Blade Material	Lg.	Wd.	Thick.	Teeth per In.	Recommended Use♣	Pkg. Qty.		Per Pkg.
U-Shank (Cont.)								
Blades for Metal (Cont.)								
Bimetal	3″	3/8″	0.04″	14	1/8″ and thicker metal	2	4101A42	$3.88
Bimetal	3″	3/8″	0.04″	18	0.048″ (18-ga.)-1/8″ thick metal	2	4101A43	3.88
Bimetal	3″	3/8″	0.04″	24	Up to 0.048″ thick (18-ga.) metal	2	4101A44	3.88
Bimetal	3″	3/8″	0.04″	32	Up to 0.048″ thick (18-ga.) metal and other very thin materials	2	4101A45	3.90
Bimetal	3 5/8″	9/32″	0.03″	14	1/4″ and thicker metal	5	4101A26	10.67
Blades for Wood								
Carbon Steel	4″	9/32″	0.05″	6	Wood	5	4101A11	9.71
Carbon Steel	4″	9/32″	0.05″	10	Wood	5	4101A12	9.71
Carbon Steel	4″	5/16″	0.05″	6	Up to 2 3/8″ thick wood	5	4101A13	10.56
Carbon Steel	4 1/4″	3/8″	0.06″	Pro.★	Wood, particleboard	5	4017A26	10.43
Bimetal	4″	9/32″	0.04″	6	Wood w/nails	5	4101A31	9.08
Bimetal	4″	9/32″	0.04″	10	Wood w/nails	5	4101A32	9.08
Bimetal	4″	9/32″	0.05″	6	Wood	5	4101A28	11.62
Hook Shank								
Blades for Metal								
Bimetal	3″	3/8″	0.03″	14	1/8″-1/4″ thick metal	2	4132A23	4.93
Bimetal	3″	3/8″	0.03″	24	Up to 0.048″ thick (18-ga.) metal	2	4132A24	4.93
Bimetal	3″	3/8″	0.03″	24	Tight-curve cuts; up to 0.048″ thick (18-ga.) metal	5	4132A25	11.96
Blades for Wood								
Carbon Steel	3″	3/16″	0.04″	20	Tight-curve cuts; wood	5	4132A17	14.29
Carbon Steel	3″	3/8″	0.05″	6	Wood	5	4132A15	15.60
Carbon Steel	3 1/2″	1/4″	0.05″	10	Tight-curve cuts; wood, plastic	5	4132A18	13.67

♣ Nonferrous metals include aluminum, brass, and bronze. ★ Progressive teeth.

5-Piece T-Shank Blade Assortment— For wood and metal. Includes three carbon steel blades for wood: one 3 1/4″ long (12 teeth per inch) and two 4″ long (6 and 10 teeth per inch). Also includes two 3 5/8″ long (14 and 24 teeth per inch) high-speed steel metal-cutting blades.

4131A51 ..... **Each** $7.38

5-Piece U-Shank Bimetal Blade Assortment— For wood and metal. Includes two 4″ long (6 and 10 teeth per inch) blades for wood and wood with nails. Also includes three metal-cutting blades: two 2 3/4″ long (18 and 24 teeth per inch) and one 3 5/8″ long (14 teeth per inch).

4028A41 ..... **Each** $10.37

Jigsaws

A

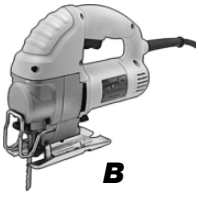
B

C&D

E

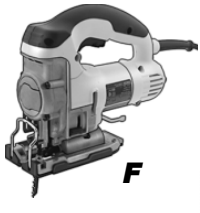
F

G

All saws have a quick-change blade system and bases that tilt 45° for angle cutting. Blades can be set in four positions—from straight-line reciprocating to small, medium, and full-orbital action. All have a variable-speed motor, include a carrying case, and are UL listed.

For replacement blades, see page 2388 and the top of this page.

A-F Electric Saws— All are double-insulated, operate on 120 volts, 50/60 Hz, and have a power cord with two-prong plug.

Style A includes two blades.

Style B includes one T-shank blade.

Styles C-E have a speed-control dial, a lock button, and include one blade. All are designed for low vibration and have a precision-machined plunging mechanism for increased accuracy and smooth operation.

Style F includes three blades.

G Cordless Saw— Has an adjustable dust blower and comes with an 18-volt/2.4 amp-hr. battery, a one-hour charger, and two blades.

	Strokes/Min. (No Load)	Accepts Blade Shank Style	Stroke Length	Amps	Wt., lbs.	Length	Cord Lg.	Manufacturer and Model No.		Each
Electric Saws										
A	0-3,000	T	1″	6.5	6.4	9 1/2″	12′8″	Milwaukee 6268-21	39835A26	$175.75
B	0-3,100	T and U	1″	5.5	6.2	10″	8′	DeWalt DW317K	39995A21	116.38
C	500-3,100	T	1″	7.0	5.9	9 7/8″	10′	Bosch JS470E	39755A85	166.44
D	500-3,100	T	1″	6.5	5.4	10″	8′	Bosch JS365	39755A81	136.80
E	500-3,100	T	1″	7.0	5.9	10 1/2″	10′	Bosch JS470EB	39755A52	171.57
F	500-3,100	T	1″	6.5	6.4	10″	8′	DeWalt DW331K	39995A32	162.29
Cordless Saw										
G	0-3,000	T	1″	—	7.5	11 3/4″	—	DeWalt DC330K	39995A41	297.00

Replacement Parts

Replacement Battery for 39995A41	29835A13	95.29
Replacement Charger for 39995A41	29835A631	81.82

Hacksaw Blades

Choose blades with more teeth per inch for thin, hard materials; choose fewer teeth per inch for thick, soft materials. All blades cut most materials including metal, plastic, and wood, unless stated otherwise.

High-Speed Bimetal Plus—Teeth are ground into a forward angle, which increases cutting efficiency by 30% compared to other bimetal blades. Blades are virtually unbreakable and have a high-speed steel cutting edge welded to a flexible alloy steel backing.

High-Speed Bimetal—You'll get excellent cuts along with great wear resistance and flexibility. Blades have a high-speed steel cutting edge welded to a flexible spring steel backing.

High-Speed Steel Flexible—These blades combine an unhardened center for flexibility with a hardened tooth edge for smooth cuts.

Carbon Steel Flexible—Great for general purpose cuts in mild steel, copper, aluminum, brass, plastic, wood, and other soft materials.

Lg.	Wd.	Thick.	Teeth per Inch	Pkg. Qty.	High-Speed Bimetal Plus	Per Pkg.	High-Speed Bimetal	Per Pkg.	High-Speed Steel Flexible	Per Pkg.	Carbon Steel Flexible	Per Pkg.
10″	½″	0.025″	18	10	2476A21●	$8.25	6927A11	$12.61	—	—	4050A1	$6.24
10″	½″	0.025″	24	10	2476A22●	8.25	6927A12	12.61	—	—	4050A2	6.24
10″	½″	0.025″	32	10	2476A23●	8.25	6927A13	11.93	—	—	4050A3	6.24
12″	½″	0.025″	14	10	—	—	6927A17	14.42	—	—	4050A4	5.79
12″	½″	0.025″	18	10	2476A24●	8.53	6927A14	14.00	4047A15	$10.45	4050A5	6.66
12″	½″	0.025″	24	10	2476A25●	8.53	6927A15	14.00	4047A16	10.45	4050A6	6.66
12″	½″	0.025″	32	10	2476A26●	8.53	6927A16	14.42	4047A17	10.45	4050A7	6.66
12″	½″	0.025″	18-24-32■	10	—	—	6927A18	15.54	—	—	—	—

● Package quantity is 5. ■ Blade has varying teeth per inch.

Carbide-Grit Hacksaw and Rodsaw Blades

Hacksaw Blade

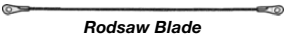

Rodsaw Blade

Made of carbide-grit particles bonded to an alloy-steel backing, these blades cut hard, abrasive materials that standard and bimetal blades can't handle. They'll fit most standard hacksaw frames.

Hacksaw blades are for use on case-hardened steel, cable, chain, masonry, ceramics, and glass.

Rodsaw blades have the added benefit of cutting in any direction, making them great for contour cutting. Use them on metal bolts, thin-walled pipe, and tubing as well as ceramics, glass, and fiberglass.

Hacksaw Blades					Rodsaw Blades		
Lg.	Wd.	Thick.		Each	Dia.		Each
10″	¾″	0.025″	4025A12	$3.65	0.100″	4127A13	$3.03
12″	¾″	0.025″	4025A11	3.96	0.100″	4127A14	3.56

Bimetal Blades for Power Hacksaws

Shatter resistant and great for high-speed applications, these blades are for use with power hacksaws. They have a high-speed steel cutting edge and durable alloy steel backing.

Length	Width	Thick.	Teeth per Inch		Each
12″	⅝″	0.032″	14	4049A16	$6.03
12″	⅝″	0.032″	18	4049A17	6.03
12″	1⅛″	0.050″	10	4049A11	12.09
12″	1⅛″	0.050″	14	4049A12	12.09
14″	1⅛″	0.050″	10	4049A13	14.11
14″	1⅛″	0.050″	14	4049A14	14.11
14″	1⅜″	0.062″	6	4049A15	17.12
14″	1⅜″	0.062″	10	4049A21	17.12
14″	1⅝″	0.075″	6	4049A23	20.93
17″	1⅜″	0.062″	6	4049A32	19.63
17″	1⅜″	0.062″	10	4049A24	$19.63
18″	1⅜″	0.062″	6	4049A34	20.93
18″	1⅜″	0.062″	10	4049A35	20.93
18″	1⅝″	0.075″	4	4049A36	26.89
18″	1⅝″	0.075″	6	4049A42	26.89
18″	1⅞″	0.088″	4	4049A43	32.96
18″	1⅞″	0.088″	6	4049A44	32.96
21″	1⅞″	0.088″	6	4049A51	38.72
24″	2⅛″	0.100″	4	4049A54	52.68

Hacksaws

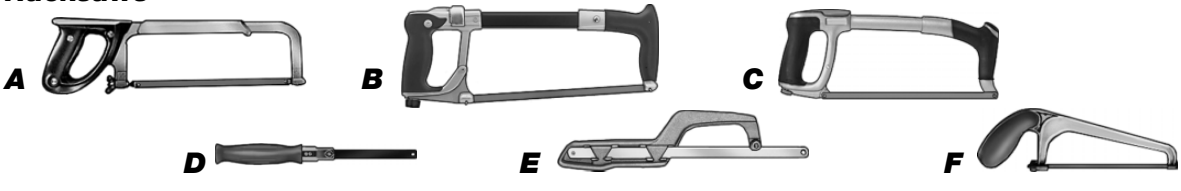

Choose from a wide range of hacksaw frame styles. All include one blade that cuts metal, plastic, and wood, unless noted.

A Light Duty—Frame is steel and holds blade at four different cutting positions: up, down, 90° left, and 90° right. Handle is plastic. Saw is adjustable for holding 10″ and 12″ long blades; it includes one 10″ long bimetal blade.

B Standard Duty—Has a cushion-grip handle and blade storage in the frame. Blade tension is adjustable. Frame is aluminum and steel and holds blade straight or at 45°. Saw accepts 12″ long blades; it includes one bimetal blade.

C Heavy Duty—Cushion-grip handle and front-end body design provide stable, nonslip operation. Blade tension is adjustable. Frame is aluminum and steel and holds blade straight or at 55°. Saw accepts 12″ long blades; it includes one bimetal blade.

D Straight Handle—Reaches 4½″ into a ¾″ hole and makes straight cuts. Has a plastic handle and a clamping hub that hold the blade firmly in place. Accepts 10″ long blades and includes one carbon steel blade for soft metals.

E Tight Spot—Cuts flush where other saws can't. Frame is aluminum and has a clamping screw to hold blade firmly for straight cuts. Accepts any length blade; it includes one 10″ long bimetal blade.

F Mini Frame—Has a small aluminum frame with a chipproof plastic inset handle and a tapered nose to fit hard-to-reach spots. Great for cutting steel wire. Blade rotates on a hex mount to cut up, down, 90° left and right, and 135° left and right. Accepts 6″ long blades (see 4202A18 blades sold separately below) and includes one bimetal blade.

Hacksaws

	Blade Length	Teeth per Inch	Throat Depth	O'all Lg.		Each
A	10″	24	3¾″	17½″	4077A1	$13.90
B	12″	24	4¼″	16¼″	4075A31	32.73
C	12″	24	4¾″	15½″	4086A34	35.79
D	10″	18	—	11″	4113A5	$7.54
E	10″	24	1⅜″	10⅞″	4060A16	6.00
F	6″	32	½″-2″	10″	4202A12	17.99

Replacement Blades

For Style★	Lg.	Teeth per Inch	Pkg. Qty.		Per Pkg.
F	6″	32	3	4202A18	$4.50

★ For Styles A-E, see Hacksaw Blades above.

Handsaws

Standard

The teeth on these saws are sharpened on three sides for fast, accurate cuts. Blades are made of high carbon steel. Use for cutting wood and plastic.

Standard—Has a hardwood handle.

Heavy Duty—Has a 15% thicker blade than standard saw that reduces bending and makes straighter cuts. A slip-resistant rubber grip is molded over the wood handle.

Easy Grip—Has a comfortable plastic handle.

Big Grip—Has a hardwood handle with a large opening that's perfect when you're wearing gloves.

	Blade Lg.	Teeth per Inch	O'all Lg.		Each
Standard	15″	9	18½″	4058A45	$14.31
Heavy Duty	15″	9	18″	4058A51	17.93
Easy Grip	20″	12	24½″	4058A61	23.12
Big Grip	26″	12	29″	4088A71	25.94

Miter Box Saw

Durable and accurate, this miter box saw has a solid one-piece aluminum frame with guide rods that keep the saw parallel to your material. Angles are set at 90°, 75°, 67.5°, 60°, 54°, and 45° left and right. Saw includes a 22″ Lg. × 1½″ Wd., 14 teeth per inch, carbon steel wood-cutting blade and a material clamp.

Table is 14½″ × 4¼″. Max. cutting height is 4½″; max. cutting width is 4″ at 45° and 6½″ at 90°. Overall length is 27¾″.

		Each
Miter Box Saw	4201A48	$49.94
Replacement Saw Blade	4201A55	10.90

Specialty Handsaws

All handsaws have steel blades and wood handles, unless noted.

A Thin Finishing Saw—Has a thin (0.020″ thick) blade with two working edges: one with fine teeth for precision cross-cutting and the other with medium teeth for rip cutting. Handle is plastic and has a slip-resistant rubber grip.

Blade Lg.	Teeth per Inch	O'all Lg.		Each
10″	18	23″	4012A1	$31.43
Replacement Blade			4012A2	19.46

B Razor Saw—Has an ultra-thin (0.008″ thick) brass-backed stainless steel blade for cutting rod, thin tubing, and delicate parts made of wood, plastic, and soft metal.

Blade Lg.	Teeth per Inch	O'all Lg.		Each
5⅛″	60	9¼″	4163A11	$21.86
Replacement Blade			4163A12	11.07

C Folding Pocket Saw—Folds like a jackknife to 8″ long. Accepts any 6″ long reciprocating saw blade (see pages 2384-2385); includes a wood-cutting blade. Handle is plastic.

Blade Lg.	Teeth per Inch	Open Lg.		Each
6″	10	13″	6918A75	$10.57

D&E Drywall/Wallboard Saws—Points are sharp for easy plunge cuts. Blades are not replaceable. 4040A11 has carbide-tipped teeth. 2171A11 has teeth on both sides and a rubber handle.

	Blade Lg.	Teeth per Inch	O'all Lg.		Each
D	6″	6	11⅛″	6923A11	$5.56
D	7″	6	12½″	4040A11	19.77
E	6″	7	12″	2171A11	6.50

F Multiblade Job Saw—Accepts the blades sold below as well as ½″ Universal Shank Reciprocating Blades (see pages 2384-2385). Saw has a soft-grip plastic handle. Includes one 6″ long bimetal reciprocating saw blade for rough cuts in wood and wood with nails. Overall length without blade is 6¾″.

Utility blade cuts ceiling tile, soft wood, soft rubber, and soft plastics; ***scallop blade*** cuts cardboard, foam, insulation, soft vinyl, and rubber; ***linoleum blade*** cuts linoleum, ceiling tile, and vinyl.

		Each
Job Saw	8635A11	$23.28
Utility Blade	8635A54	2.72
Scallop Blade	8635A51	3.54
Linoleum Blade	8635A53	2.90
Repl. Reciprocating Saw Blades for Wood, Pkg. of 2	4059A91	$5.01

G Brick Saw—Reversible blade. Cuts insulating brick.

Blade Lg.	Teeth per Inch	O'all Lg.		Each
15″	3-4	19″	6914A61	$18.40
Replacement Blade			6914A71	9.11

H Fast-Cut Bow Saws—Cut on both forward and backward strokes. Both saws have a steel tubing frame with a knuckle guard and include a blade with 4 teeth per inch for cutting wood. 4105A7 has a steel handle, a 6″ throat depth, and an additional blade for cutting metal and plastic. 4105A1 has a 7″ throat depth and a plastic handle.

Blade Lg.	O'all Lg.	Saw	Each	Repl. Blade	Each
12″	16½″	4105A7	$10.98	4105A9	$3.01
30″	34 13/16″	4105A1	12.50	4105A3	5.87

J&K Coping Saws

Saws

	Blade Lg.	Teeth per Inch	O'all Lg.	Throat Depth		Each
J	6⅜″	15	12¼″	4¾″	4099A1	$6.59
K	5″	16	12″	11½″	6917A11	16.97

Blades for Coping Saws

For Saw	Blade Wd.	Teeth per Inch	Pkg. Qty.		Per Pkg.
J	0.125″	15	5	4099A2	$3.61
K	0.022″	28	12	6917A22	5.00
K	0.029″	20	12	6917A23	5.00
K	0.070″	18	12	6917A24	5.67
K	0.080″	14	12	6917A25	5.67

L Backsaw/Miter Box Saw—Blade is 14″ Lg. × 4″ Wd. and has 13 teeth per inch. Overall saw length is 18 5/16″. Blade is not replaceable. Handle is plastic.

4092A1 ..... **Each** $16.14

M PVC/ABS Plastic Pipe-Cutting Saws—The handle is cast aluminum.

Blade Lg.	Teeth per Inch	O'all Lg.		Each
12″	10	15¾″	68895A3	$20.68
18″	10	22″	68895A1	22.17
12″ Lg. Replacement Blade			68895A4	10.56
18″ Lg. Replacement Blade			68895A2	11.83

N Tile Grout Saw—Remove stained and damaged tile grout and prepare grout for coating. Carbide-grit edge is 1″ Lg. × 1/16″ Thick. Overall length of saw is 4″. Handle is plastic. Saw comes with a 4-oz. tube of ceramic tile and grout adhesive.

4122A12 ..... **Each** $7.15

Cable Saws for PVC Pipe

Great for hard-to-reach areas, these saws cut up to 4″ diameter irrigation, plumbing, and electrical grade PVC pipe. The cutting cables are flexible stainless steel and have no teeth; they melt through PVC pipe with heat friction. Handles are plastic.

O'all Lg.	Cable Lg.		Each
35″	27″	39705A31	$5.97
57″	50″	39705A32	7.22

Scroll Saw Blades

Compatible with scroll saws, hand coping saws, fret saws, and jewelry saws, these steel blades are 5″ long.

Recommended Use	Wd.	Thick.	Teeth per Inch	Pkg. Qty.		Per Pkg.
General Purpose Blades						
Wood 3/32″-1/4″ thick	0.100″	0.022″	20	12	41865A11	$5.89
Wood 1/4″-3/4″ thick; plastic	0.250″	0.028″	7	12	41865A13	5.89
Lead, copper, brass, aluminum up to 1/2″ thick	0.250″	0.028″	20	12	41865A12	5.89
Fast-Cutting Blades						
Wood, plastic 3/32″-1/2″ thick; tight-curve cuts	0.029″	0.012″	20	12	6917A23	5.00
Wood, plastic 1/8″ and thicker; tight-curve cuts	0.038″	0.016″	12.5	12	41865A15	5.00
Softwood up to 1 1/2″ thick; hardwood up to 2″ thick	0.100″	0.022″	9	12	41865A16	6.11

Poulan Chain Saws

Gas Chain Saw

Whether you pick a gas or an electric model, all of these saws have the following safety features: a front-handle guard; a low-kickback chain; and a chain catcher to reduce the hazards from kickback, derailing, and breaking the chain. Saws also have an automatic chain oiler and are UL listed. All are furnished with a chain brake to stop the chain in the event of kickback.

Gas Chain Saws— For easy starts and smooth operation, these saws have a two-cycle engine with electronic ignition, an all-position carburetor, and an anti-vibration system. A safety grip prevents accidental acceleration and a muffler keeps noise at a minimum without power loss.

Electric Chain Saws— These double-insulated saws have a safety trigger and a motor that operates on 120 VAC, 60 Hz, 13 amps (unless noted). ***PLN3516F*** has a 14″ cord with two-prong plug and a 3.5-hp motor. ***PP400E*** has a 15″ cord with two-prong plug and a 4-hp motor.

Mfr. No.	Bar Lg.	Engine Displacement, cu. in.	Fuel Cap., oz.	Oil Cap., oz.	Wt., lbs.	*Chain Saws*	Each	*Repl. Chains*	Each
Gas Chain Saws									
PP3516AVX	16″	2.1	12.1	8.1	11.8	4063A51	$183.75	4554A12	$19.31
PP4620AVX	20″	2.8	13.9	9.8	15.6	4063A37●	249.69	4554A16	25.23
Electric Chain Saws									
PLN3516F	16″	—	—	—	11.5	4061A12 ♣	85.00	4554A73	17.44
PP400E	18″	—	—	—	10.5	4061A51	96.25	4554A14	19.77

● Includes carrying case. ♣ Operates on 13.5 amps.

Replacement Cutting Chain for Chain Saws

The chain number in the table below refers to the chain trade number, which is engraved on one of the links of your cutting chain.

Bar Lg.	Chain No.	*Cutting Chains* Fits Saw Types		Each	*Bar/Chain Combinations* Fits Saw Types		Each
14″	S49	McCulloch	4554A18	$15.36	McCulloch, Remington	4554A61	$31.58
14″	S50	Homelite, McCulloch	4554A19	15.76	—	—	—
14″	S52	Craftsman, Homelite, Husqvarna, Poulan	4554A11	16.38	Craftsman, Homelite, Husqvarna, Poulan	4554A51	31.58
14″	S53	Craftsman, Homelite	4554A21	16.71	—	—	—
16″	D60	Craftsman, Homelite, Husqvarna, Poulan	4554A24	19.53	Craftsman, McCulloch, Poulan	4554A64	41.11
16″	S54	McCulloch	4554A22	17.11	—	—	—
16″	S55	Poulan	4554A73	17.44	McCulloch	4554A62	35.76
16″	S56	Craftsman, Homelite, Husqvarna, Poulan	4554A12	19.31	Craftsman, Homelite, Husqvarna, Poulan	4554A52	35.76
16″	S59	Homelite	4554A23	18.56	Homelite	4554A63	35.76
18″	S62	Craftsman, Homelite, Poulan	4554A14	19.77	Craftsman, Homelite, Poulan	4554A54	44.82
20″	D70	Craftsman, Homelite, McCulloch, Poulan	4554A15	22.73	Craftsman, McCulloch, Poulan	4554A55	47.35
20″	H78	Craftsman, Homelite, McCulloch, Poulan	4554A16	25.23	Craftsman, Homelite, Poulan	4554A56	46.44
22″	D76	Poulan	4554A17	24.67	—	—	—

Waterjet Cutter Replacement Parts

Keep your waterjet cutter flowing. These orifices and nozzles are compatible with the most common waterjet cutting heads.

Orifices— Choose from orifices for abrasive cutting heads or water-only cutting heads. Larger orifice IDs are for fast cuts and more material removal; smaller orifice IDs are for more accurate cuts.

Carbide Nozzles for Abrasive Cutting Heads— For abrasive cutting heads only. Choose nozzle size based on the ID of your orifice.

Orifices for Abrasive Cutting Heads

Autoline

DP3000

ECL and Paser III

Maxjet 5

Permalign II

ID	OEM No.★	Material		Each
For Autoline (KMT) Cutting Heads				
0.010″	5109103	Sapphire	4165A37	$16.15
0.013″	—	Sapphire	4165A38	16.15
0.014″	5109137	Sapphire	4165A39	16.15
For DP3000 (IWP) Cutting Heads (0.281″ nozzle)				
0.010″	61115-1-10	Sapphire	4165A42	34.62
0.013″	61115-1-13	Sapphire	4165A43	34.62
0.014″	61115-1-14	Sapphire	4165A44	34.62
For ECL and Paser III (Flow) Cutting Heads				
0.010″	014201-10	Ruby	4165A31	20.77
0.013″	014201-13	Ruby	4165A32	20.77
0.014″	014201-14	Ruby	4165A33	20.77
For Maxjet 5 (Omax) Cutting Heads				
0.014″	303281-14	Sapphire	4165A41	27.69
For Permalign II (Jet Edge) Cutting Heads				
0.010″	100159-010	Sapphire	4165A34	16.15
0.013″	100159-013	Sapphire	4165A35	16.15
0.014″	100159-014	Sapphire	4165A36	16.15

★ OEM = Original Equipment Manufacturer

Orifices for Water-Only Cutting Heads

KMT

Low-Mass

ID	OEM No.★	Material		Each
For KMT Cutting Heads				
0.007″	A2260007	Sapphire	4165A52	$16.15
For Low-Mass (Flow) Cutting Heads				
0.007″	003788-07	Sapphire	4165A51	15.38

Carbide Nozzles for Abrasive Cutting Heads

OD × ID × Lg.	For Orifice ID		Each
0.250″ × 0.030″ × 3″	0.010″	4165A11	$96.00
0.250″ × 0.040″ × 3″	0.013″, 0.014″	4165A12	96.00
0.281″ × 0.030″ × 3″	0.010″	4165A13	96.00
0.281″ × 0.040″ × 3″	0.013″, 0.014″	4165A14	96.00
0.281″ × 0.040″ × 4″	0.013″, 0.014″	4165A15	96.00
0.281″ × 0.040″ × 4″	0.013″, 0.014″	4165A16 ◆	109.33
0.314″ × 0.030″ × 4″	0.010″	4165A17	96.00
0.371″ × 0.030″ × 3″	0.010″	4165A18	96.00
0.371″ × 0.040″ × 3″	0.013″, 0.014″	4165A19	96.00

◆ Has a collar.

About Circular Saw Blades

Choose from a variety of blade styles for specific cutting applications. All blade bodies are steel. Blades have an arbor (hole in the center of the blade) for attaching the blade to your saw. Blades with a ***universal arbor*** have a 5/8″ hole and a diamond-shaped knockout. Blades listed with more than one arbor have a bushing that reduces the size of the arbor, allowing you to choose between sizes to fit different saws.

Toothed Blades

Toothed blades have steel or carbide teeth. Blades with a large number of teeth are for smoother cuts on thinner materials. Fewer teeth are for fast, rough cuts. The ***hook angle*** is the amount of forward or backward tilt of each tooth on a saw blade. Choose a positive hook angle for fast cuts; choose a zero or negative hook angle for controlled, precise cuts, especially in metal.

Steel-Tooth Blades— Blades have steel teeth for occasional use on wood and some metals.

Carbide-Tooth Blades— Have carbide teeth that last longer and cut faster than the teeth on steel-tooth blades. For use on wood, plastic, laminates, and various metals.

Grit-Edge/Diamond Blades

Instead of teeth, grit-edge blades and long-life diamond blades have a continuous, turbo, or segmented rim. ***Continuous rim*** style gives the smoothest finish but should be run at slower speeds. ***Turbo rim*** style is for general purpose applications. ***Segmented rim*** style cuts faster than continuous and turbo rim styles and prevents chips from clogging the blade.

Grit-edge and long-life diamond blades are designed for wet or dry cutting applications. Blades for ***wet cutting*** are best for deep cuts and reduce airborne dust. Blades for ***dry cutting*** resist heat and do not require water cooling. They can also be used for wet-cutting applications.

Fast-Cut Grit-Edge Blades— Carbide grit, diamond grit, or a mix of both is bonded to the edge of the blade. All of the grit is exposed for fast cuts in hard or brittle nonmetals such as tile and plastic.

Long-Life Diamond Blades— Several layers of diamonds on the edge of these blades means that they maintain their cutting edge even after continued use. Use them on concrete, masonry materials, and asphalt.

Steel-Tooth Blades

Choose from a variety of blades for occasional use.

For With- and Cross-Grain Cuts in Wood— Make smooth cuts in wood, either with the grain (ripping) or across the grain (cross-cutting).

For Cross-Grain Cuts in Wood— Perfect for clean cuts across the grain (cross-cutting).

For Plywood/Veneer— For fine, clean cuts. Also for thin plastics.

For Wood Paneling— Blades are designed to prevent clogging and produce smoother cuts in panels.

For Soft Metals/Plastic— Cuts soft metals such as aluminum, copper, and brass as well as plastic.

For Metal— Use for cutting sheet metal, corrugated steel roofing, siding, and studs up to 1/8″ thick. *Note:* Not intended for fully hardened steel.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
For With- and Cross-Grain Cuts in Wood							
7 1/4″	Univ.	40	20°	0.085″	9,400	4038A79	$6.63
10″	5/8″	44	18°	0.106″	7,000	4038A87	11.22
10″	5/8″	80	0°	0.086″	7,000	4038A55	20.07
For Cross-Grain Cuts in Wood							
7 1/4″	Univ.	100	0°	0.109″	9,400	4038A75	7.23
For Plywood/Veneer							
3 3/8″	15 mm	60	0°	0.065″	12,000	4079A16	8.66
5 3/8″	10 mm	80	0°	0.065″	11,000	4079A19	7.83
5 1/2″	5/8″, 1/2″	100	0°	0.065″	11,000	4079A18	8.40
6 1/2″	Univ.	140	0°	0.078″	9,800	4079A11	7.57

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
For Plywood/Veneer (Cont.)							
7 1/4″	Univ.	140	0°	0.090″	9,400	4079A12	$7.64
10″	5/8″	180	3°	0.094″	5,900	4079A15	11.97
For Wood Paneling							
7 1/4″	Univ.	150	0°	0.149″	9,400	4123A4	14.10
For Soft Metals/Plastic							
7″	Univ.	150	–5°	0.149″	9,400	3973A53	15.69
10″	5/8″	150	–5°	0.169″	7,000	3973A57	27.82
For Metal							
7″	Univ.	144	–10°	0.149″	9,400	4082A25	11.84

Carbide-Tooth Blades for Steel

The specially designed teeth on these blades make fast, clean cuts in rebar, galvanized steel, angle iron, and steel pipe. Choose from blades for steel only and blades for steel and stainless steel.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
For Steel							
5 3/8″	20 mm, 10 mm	32	0°	0.059″	4,200	2431A51	$37.18
6 1/2″	5/8″	40	0°	0.079″	4,200	2431A52	48.63
6 3/4″	20 mm	40	0°	0.079″	4,200	2431A53	46.44
7″	20 mm	36	0°	0.079″	3,500	4573A21	39.95
7 1/4″	Univ.	48	0°	0.079″	5,800	2431A2	48.58
7 1/4″	5/8″	68	5°	0.063″	5,800	2431A55	53.94
8″	5/8″	42	0°	0.079″	5,800	2431A56	54.84
8 1/4″	Univ.	48	0°	0.078″	5,800	2431A3	79.36
9″	1″	48	3°	0.079″	3,200	2431A57	62.29
10″	5/8″	52	0°	0.087″	5,200	2431A4	91.24
For Steel and Stainless Steel							
7″	20 mm	48	7°	0.071″	3,500	4573A23	57.95
9″	1″	60	10°	0.071″	3,200	2431A58	73.41

Carbide-Tooth Blades for Soft Metals

Prevent clogging when cutting aluminum, copper, brass, and other soft metals—these blades have a unique tooth shape and plenty of space between the teeth.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
5 3/8″	20 mm, 10 mm	50	5°	0.059″	4,200	6910A71	$35.53
7″	20 mm	54	4°	0.079″	3,500	4573A22	43.50
7 1/4″	Univ.	40	12°	0.104″	7,900	6910A515	48.62
7 1/4″	5/8″	60	7°	0.079″	5,800	6910A75	49.64
8″	5/8″	58	–7°	0.122″	9,000	6910A84	66.18
9″	1″	80	7°	0.087″	3,200	6910A77	84.19
10″	5/8″	60	10°	0.121″	6,000	6910A551	79.88
10″	5/8″	80	0°	0.127″	6,500	6910A57	110.36
12″	1″	80	–5°	0.118″	4,800	6910A39	120.40
12″	1″	80	0°	0.145″	6,500	6910A59	142.00
12″	1″	100	0°	0.145″	5,500	6910A37	135.08
14″	1″	80	0°	0.140″	5,000	6910A26	169.36
14″	1″	100	0°	0.152″	4,500	6910A61	168.98
15″	1″	100	–5°	0.120″	4,200	6910A62	217.36
16″	1″	100	0°	0.172″	4,000	6910A63	243.14

Narrow-Cut Carbide-Tooth Blades for Soft Metals

Make narrow, fast cuts in soft metals such as aluminum, brass, and bronze. These blades have a thin cutting edge and plenty of space between the teeth to prevent material buildup.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
8″	5/8″	64	–5°	0.083″	9,000	4176A21	$60.53
10″	5/8″	80	–5°	0.091″	7,000	4176A22	74.85
12″	1″	96	–5°	0.091″	6,000	4176A23	90.23

For information about circular saw blades, see page 2393.

General Purpose Carbide-Tooth Blades for Wood

Cut with the grain (ripping) and across the grain (cross-cutting) in wood, plywood, and particleboard. ***Economy*** blades are for occasional use.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
Economy							
4½″	3⁄8″	24	20°	0.074″	9,300	4124A18	$11.26
6″	1⁄2″	24	20°	0.074″	9,800	4124A29	10.65
6½″	5⁄8″	24	22°	0.106″	8,300	4124A12	8.34
6½″	5⁄8″	40	19°	0.106″	8,300	4124A13	11.40
7¼″	Univ.	20	20°	0.084″	9,400	4124A22	9.00
7¼″	Univ.	24	20°	0.074″	9,400	4124A46	9.78
7¼″	Univ.	24	20°	0.084″	9,400	4124A23	9.51
7¼″	Univ.	40	20°	0.084″	9,400	4124A26	13.51
7¼″	5⁄8″	16	22°	0.106″	8,300	4124A14	6.22
8″	Univ.	24	20°	0.084″	9,000	4124A24	14.75
8″	Univ.	40	12°	0.100″	6,900	4124A27	18.96
8¼″	Univ.	24	20°	0.084″	6,000	4124A25	14.44
10″	5⁄8″	24	16°	0.106″	5,900	4124A45	25.44
10″	5⁄8″	40	20°	0.100″	7,000	4124A28	27.75

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
Standard							
6½″	Univ.	40	12°	0.104″	8,800	6901A42	$31.04
6½″	5⁄8″	24	18°	0.059″	10,000	6900A32	13.79
7¼″	Univ.	24	20°	0.104″	7,900	6900A36	25.08
7¼″	Univ.	40	12°	0.104″	7,900	6901A46	34.49
8″	Univ.	40	12°	0.110″	9,000	6908A77	40.30
8″	Univ.	40	12°	0.121″	6,900	6901A48	39.57
8¼″	Univ.	40	12°	0.110″	8,200	6901A21	48.67
10″	5⁄8″	24	22°	0.098″	6,000	6900A51	28.40
10″	5⁄8″	40	12°	0.121″	6,000	6901A57	44.80
10″	5⁄8″	60	12°	0.100″	6,000	6902A48	62.64
10″	5⁄8″	60	12°	0.121″	6,000	6901A81	62.62
12″	1″	40	12°	0.131″	4,700	6900A34	57.30
12″	1″	60	12°	0.145″	5,500	6902A63	105.68

Narrow-Cut Carbide-Tooth Blades for Wood

A thin cutting edge means you'll cut through wood faster and keep material loss to a minimum. Great for cuts with the grain (ripping) and across the grain (cross-cutting).

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
3⅜″	15 mm	24	10°	0.040″	12,000	39885A25	$17.42
4⅜″	20 mm	18	12°	0.060″	12,000	39885A14	16.12
4½″	3⁄8″	18	12°	0.060″	12,000	39885A26	16.12
5⅜″	10 mm	16	20°	0.059″	7,000	39885A81	13.64
5⅜″	10 mm	24	20°	0.063″	8,500	39885A83	15.25
5½″	1⁄2″,5⁄8″	24	18°	0.064″	11,000	39885A27	13.28
6½″	5⁄8″	24	20°	0.067″	7,000	4154A31	17.92
6½″	5⁄8″	40	23°	0.063″	8,300	39885A16	22.60
7¼″	Univ.	18	20°	0.065″	9,400	39885A17♠	13.29
7¼″	Univ.	18	20°	0.065″	9,400	39885A35	9.80
7¼″	Univ.	24	15°	0.065″	9,400	39885A36	11.82
7¼″	Univ.	36	15°	0.065″	9,400	39885A37	20.42
7¼″	5⁄8″	24	15°	0.059″	10,000	6900A33	13.29

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
8″	Univ.	40	20°	0.080″	9,400	39885A28	$28.58
8¼″	Univ.	24	20°	0.083″	7,300	39885A43	20.02
10″	5⁄8″	24	14°	0.095″	7,000	39885A54	31.44
10″	5⁄8″	40	14°	0.095″	7,000	39885A55	35.41
10″	5⁄8″	60	14°	0.095″	7,000	39885A56	54.51
10″	5⁄8″	80	15°	0.095″	7,000	39885A57	74.75
12″	1″	40	20°	0.095″	5,000	39885A19	51.90
12″	1″	60	15°	0.097″	6,400	39885A62	62.47
12″	1″	80	12°	0.097″	6,400	39885A63	70.07
15″	1″	80	10°	0.094″	4,000	6902A75	160.97

♠ Recommended for decking materials.

Nonstick Carbide-Tooth Blades for Wood

Don't get stuck in the middle of a cut. Whether you're making cuts with the grain (ripping) or across the grain (cross-cutting), these blades won't get stuck in wood, plywood, veneer, or particleboard. A special coating protects them from heat while reducing buildup and corrosion. Plus, large gaps between the teeth prevent vibration and side movement resulting in straight, clean cuts.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
8″	5⁄8″	40	10°	0.126″	9,000	6907A45	$60.38
10″	5⁄8″	50	15°	0.128″	6,500	6907A35	68.22
12″	1″	60	10°	0.126″	6,000	6907A41	95.47
14″	1″	70	10°	0.157″	5,000	6907A25	113.70
16″	1″	80	10°	0.157″	4,000	6907A29	128.55

Carbide-Tooth Blades for With-Grain Cuts in Wood

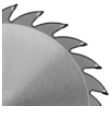

Also known as rip blades, these blades have large, forward-angled teeth and are best for making fast, long cuts parallel to the grain when working with wood. *Note:* Not recommended for radial arm saws.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
6½″	Univ.	18	20°	0.106″	9,800	4124A16	$6.98
8″	Univ.	24	20°	0.115″	6,900	6900A31	68.38
10″	5⁄8″	24	15°	0.130″	7,000	6908A15	59.82
10″	5⁄8″	24	20°	0.098″	6,000	41215A211	59.09
10″	5⁄8″	28	20°	0.100″	6,000	4124A34	22.25
10″	5⁄8″	30	12°	0.118″	7,000	6908A74	72.83
12″	1″	30	20°	0.169″	6,000	6908A82	75.53
12″	1″	40	12°	0.118″	6,000	6908A76	85.12
14″	1″	36	15°	0.140″	5,000	6908A25	114.47
14″	1″	44	12°	0.138″	5,000	6908A78	104.78
16″	1″	36	20°	0.177″	4,000	6908A71	93.96

Carbide-Tooth Blades for Cross-Grain Cuts in Wood

Nonstick

The large number of teeth on these blades shear wood rather than tearing it, making them perfect for across-the-grain cuts (cross-cutting).

Nonstick blades have a heat-resistant coating that prevents corrosion and material buildup. In addition, slots in the blades prevent vibration and side movement resulting in straight, clean cuts.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
General Purpose							
7¼″	Univ.	60	10°	0.100″	9,400	6902A11	$58.67
7¼″	5⁄8″	60	18°	0.106″	8,300	4124A15	16.40
9″	5⁄8″	60	12°	0.120″	6,000	6902A74	88.04
10″	5⁄8″	60	20°	0.100″	7,000	4124A33	36.13
10″	5⁄8″	72	0°	0.118″	6,500	6902A55	101.49
10″	5⁄8″	80	0°	0.098″	6,000	39885A74	72.48
10″	5⁄8″	80	12°	0.120″	6,500	6902A13	112.21
10″	5⁄8″	100	0°	0.110″	7,000	4124A35	70.03
12″	1″	80	12°	0.145″	4,700	6902A33	112.21
12″	1″	96	10°	0.145″	5,500	6902A24	123.73
14″	1″	60	12°	0.140″	5,000	6902A35	147.84
14″	1″	80	10°	0.152″	4,500	6902A16	137.34
14″	1″	100	10°	0.152″	4,500	6902A25	153.62
16″	1″	100	10°	0.174″	4,000	6902A26	192.11
Nonstick							
8″	5⁄8″	64	10°	0.116″	9,000	41215A141	56.93
9″	5⁄8″	72	10°	0.116″	8,000	41215A171	66.79
10″	5⁄8″	80	5°	0.126″	7,000	41215A381♣	82.24
10″	5⁄8″	80	10°	0.098″	6,000	41215A241	77.66
12″	1″	80	7°	0.106″	4,800	41215A651	88.28
14″	1″	108	10°	0.136″	5,000	41215A311	163.54
15″	1″	108	10°	0.136″	4,000	41215A341	168.87

♣ For cuts in laminates and chipboard.

For information about circular saw blades, see page 2393.

Carbide-Tooth Blades for Wood with Nails

The square-shaped teeth on these blades power through reclaimed lumber, flooring with embedded nails, and concrete-coated forming material.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
7¼″	Univ.	14	–5°	0.120″	9,400	4217A14	$23.73
12″	1″	24	–15°	0.137″	6,500	4217A21	55.85

Groove-Cutting Carbide-Tooth Blades for Wood

Also known as dado-head blades, these are for cutting grooves with the grain (ripping) and across the grain (cross-cutting) in all types of wood.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
6″	⅝″	18	20°	¼″-13⁄16″	10,000	4062A29	$165.22
8″	⅝″	22	15°	¼″-13⁄16″	8,000	4062A41	179.29
10″	⅝″	24	20°	¼″-13⁄16″	7,000	4062A32	228.22
12″	1″	36	–12°	¼″-29⁄32″	6,000	4062A53	303.65

Carbide-Tooth Blades for Plastic

Get smooth cuts and chip-free edges on plastic materials including polystyrene, polycarbonate, PVC, and acrylic. When cutting thin and brittle plastics, use a blade with more teeth; when cutting thicker plastics and soft plastics with a low melting point, use a blade with fewer teeth.

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
7¼″	Univ.	60	10°	0.100″	9,400	6909A12	$73.10
8″	⅝″	60	10°	0.120″	6,900	6909A42★	74.15
10″	⅝″	40	10°	0.120″	6,000	6908A81★	71.48
10″	⅝″	60	12°	0.130″	7,000	6909A15	89.40
10″	⅝″	80	10°	0.120″	6,000	6909A18★	98.58
12″	1″	80	15°	0.136″	6,400	6909A22	143.80
12″	1″	100	10°	0.148″	5,500	6909A23★	164.56
14″	1″	100	18°	0.149″	5,000	6909A26	208.32

★ Also cuts chipboard and plywood.

Curve-Cutting Blades

Arcs and circles are no challenge for these blades. Cut curves with a radius of 15″ and up. ***Blade for wood*** has carbide teeth and is coated for reduced friction. ***Blade for masonry*** is a long-life diamond blade and is turbo rim style. ***Compass guide*** is made of aluminum and attaches to circular saws for cutting 30″ to 54″ circles and arches.

Side View

Blade for Wood

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
For Wood							
7¼″	⅝″	24	20°	3⁄16″	7,000	4064A11	$43.60
For Masonry							
7¼″	⅝″	—	—	1⁄8″	7,700	4064A13	51.55
Compass Guide						4064A14	57.31

Circular Saw Blade Reducer Bushings

Adapt most blades to fit your saw arbor. Bushings mount to the arbor hole of circular saw blades. All are made of steel. *Note:* Do not use more than one bushing per blade.

Hole Size Reduction		Each
⅝″ to ½″	68885A64	$0.70
¾″ to ⅝″	68885A63	.87
1″ to ⅝″	68885A61	.88
1″ to ¾″	68885A62	.97

Hole Size Reduction		Each
1″ to 20 mm	4109A58	$0.85
1″ to ⅞″	4109A57	1.72
Diamond to ⅝″	4109A59	.37

Fast-Cut Carbide-Grit-Edge Blades for Nonmetals

Cut brittle and abrasive materials including laminates, glass, fiberglass, and ceramics. Choose ***medium grit*** for less material loss and a smoother finish; choose ***coarse grit*** for faster cutting. The 3″ and 4″ dia. blades are continuous rim style; all other blades are segmented rim style.

Dia.	Arbor	Width of Cut	Max. rpm		6½″-12″ Blades Each
Medium Grit					
7″	Diamond, ½″, ⅝″	0.120″	6,500	4021A21	$69.19
8″	Diamond, ½″, ⅝″	0.125″	5,700	4021A22	76.68
Coarse Grit					
3″	⅜″	0.100″	15,200	4021A31	33.07
4″	⅝″	0.110″	11,500	4021A12	44.24
6½″	Diamond, ½″, ⅝″	0.110″	7,000	4021A13	63.15
7″	Diamond, ½″, ⅝″	0.120″	6,500	4021A14	69.19
8″	Diamond, ½″, ⅝″	0.125″	5,700	4021A15	76.68
10″	⅝″, ¾″	0.135″	4,600	4021A16	97.46
12″	¾″, 1″	0.150″	3,800	4021A17	151.49

Fast-Cut Carbide/Diamond-Grit-Edge Blades for Nonmetals

A blend of tungsten carbide grit and diamond grit on the edge of these blades makes them last longer than carbide-grit-edge blades. They are ideal for cutting reinforced plastic, fiberglass, ceramic, composites, graphite, and other hard nonmetallic material. All are continuous rim style.

Dia.	Arbor	Width of Cut	Max. rpm		Each
2″	¼″	0.085″	23,000	40225A1	$49.23
3″	¼″	0.085″	23,000	40225A8	66.27
3″	⅜″	0.085″	23,000	40225A9	66.27
4″	¾″	0.085″	22,000	40225A14	76.23
6″	⅝″	0.092″	9,000	40225A17	111.14
7¼″	⅝″	0.092″	9,000	40225A18	124.91
8″	⅝″	0.092″	9,000	40225A19	144.55
10″	1″	0.130″	9,000	40225A21	173.18

Fast-Cut Diamond-Grit-Edge Blades for Nonmetals

Diamond grit provides multiple cutting points on the edge of these blades so they'll last longer than carbide/diamond-grit-edge blades. Use them for dry cuts in brittle nonmetals such as graphite, ceramic, quartz, fiberglass, carbon, and phenolics. All are segmented rim style.

Dia.	Arbor	Width of Cut	Max. rpm		Each
4″	½″	3⁄32″	11,460	4102A31	$95.00
5″	½″	3⁄32″	9,170	4102A32	114.00
6″	½″	3⁄32″	7,640	4102A33	118.00
7″	½″	3⁄32″	6,550	4102A34	129.00
8″	½″	3⁄32″	5,730	4102A35	159.00
10″	½″	⅛″	4,585	4102A36	198.00
12″	½″	5⁄32″	3,820	4102A37	223.00
14″	1″	5⁄32″	3,275	4102A38	253.00

Fast-Cut Diamond-Grit-Edge Blades for Multiple Materials

Don't waste time swapping blades to cut different materials. These blades can handle soft materials such as PVC and copper, abrasive materials such as fiberglass and composites, and hard metals such as ductile iron and steel. All are segmented rim style.

Dia.	Arbor	Width of Cut	Max. rpm		Each
4″	⅝″, ⅞″	0.080″	15,000	4153A11	$59.80
4½″	⅝″, ⅞″	0.080″	13,300	4153A12	63.78
7″	Univ.	0.095″	8,730	4153A13	116.40
12″	20 mm, 1″	0.125″	6,300	4153A14	243.96
14″	20 mm, 1″	0.125″	5,400	4153A15	302.96

Circular Saw Blade Stiffeners

Mount these 4″ dia. steel stiffeners on stationary saws with blades that are 10″ dia. or larger. They have a ⅝″ arbor and are ⅛″ thick.

41035A11 ..... **Per Pair** $19.11

For information about circular saw blades, see page 2393.

General Purpose Long-Life Diamond Blades

Turbo Rim

Segmented Rim

Designed for wet and dry cutting, these blades are for use on hard, brittle materials such as concrete, masonry, and stone. Diamond depth for all blades is 0.4″.

Economy blades are for general purpose applications.
Premium blades are more durable than economy blades.

Turbo-rim style cuts the widest range of materials including reinforced concrete, granite, and paver bricks. *Segmented-rim* style makes fast cuts in softer materials such as concrete, brick, and asphalt.

				ECONOMY				PREMIUM					
Dia.	Max. rpm	Arbor	Width of Cut	Turbo Rim	Each	Segmented Rim	Each	Arbor	Width of Cut	Turbo Rim	Each	Segmented Rim	Each
4″	15,000	5/8″, 20 mm	0.080″	4134A11	$12.45	4134A21	$12.45	5/8″, 7/8″	0.080″	4109A31	$44.76	4109A41	$48.20
4 1/2″	13,300	5/8″, 7/8″	0.080″	4134A12	13.99	4134A22	13.99	5/8″, 7/8″	0.080″	4109A32	58.54	4109A42	51.65
5″	12,000	—	—	—	—	—	—	5/8″, 7/8″	0.080″	4109A6	61.98	4109A64	58.54
6″	10,185	—	—	—	—	—	—	Diamond, 5/8″, 7/8″	0.080″	4109A61	68.88	4109A65	72.33
7″	8,700	Diamond, 5/8″	0.080″	4134A13	31.11	4134A23♣	31.11	Diamond, 5/8″, 7/8″	0.090″	4109A34	86.08	4109A44	96.42
8″	7,640	—	—	—	—	—	—	Diamond, 5/8″, 7/8″	0.090″	4109A35	117.08	4109A45	113.63
9″	6,790	—	—	—	—	—	—	5/8″, 7/8″	0.090″	4109A62	123.95	4109A66	130.84
10″	6,100	Diamond, 5/8″	0.100″	4134A14	40.44	4134A24	40.44	5/8″, 7/8″	0.090″	4109A36	148.06	4109A46■	154.95
12″	6,300	—	—	—	—	—	—	20 mm, 1″	0.110″	4109A37	227.27	—	—
14″	5,400	—	—	—	—	—	—	20 mm, 1″	0.110″	4109A63	254.79	—	—

♣ 0.090″ width of cut. ■ Diamond, 5/8″, 7/8″ arbor.

Long-Life Diamond Blades for Cured Concrete

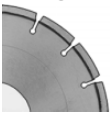

For use on poured concrete that has set for more than 48 hours. Blades are segmented rim style. Drive pinhole is 7/16″ dia.
Economy blades are for occasional use. Diamond depth is 0.22″.
Standard blades are more durable than economy blades. Diamond depth is 0.25″.
Premium blades are for frequent use on large cutting jobs. They have a higher concentration of diamonds and more cutting points for faster cutting than standard blades. Diamond depth is 0.25″.
Use *wet-cutting* blades on walk-behind flat saws. Use *dry-cutting* blades on hand-held high-speed saws and low horsepower (under 20 hp) walk-behind flat saws.

			Max. rpm		ECONOMY		STANDARD		PREMIUM			
Dia.	Arbor	Width of Cut	Wet Cutting	Dry Cutting	Dry Cutting	Each	Dry Cutting	Each	Wet Cutting	Each	Dry Cutting	Each
12″	20 mm, 1″	0.110″	5,095	6,300	4162A21	$90.20	4215A11	$141.66	4466A7	$213.87	4466A33	$213.89
12″	20 mm, 1″	0.125″	5,095	6,300	4162A22	106.60	4215A12	159.35	4466A8	262.99	4466A34	263.01
12″	20 mm, 1″	0.140″	5,095	6,300	—	—	—	—	4466A9	272.01	4466A35	271.95
14″	20 mm, 1″	0.110″	4,365	5,400	4162A23	118.90	4215A13	174.12	4466A14	256.05	4466A37	256.07
14″	20 mm, 1″	0.125″	4,365	5,400	4162A24	141.46	4215A14	194.79	4466A19	294.52	4466A38	294.49
14″	20 mm, 1″	0.140″	4,365	5,400	—	—	—	—	4466A17	340.11	4466A39	340.07
16″	20 mm, 1″	0.125″	3,820	4,800	4162A25	182.46	4215A15	283.34	4466A71	330.55	4466A72	330.56
18″	1″	0.125″	3,395	3,395	—	—	4215A16	312.84	4466A15	420.74	4466A41	420.78
18″	1″	0.140″	3,395	3,395	—	—	4215A17	330.55	4466A18	455.78	4466A42	455.74
20″	1″	0.140″	3,055	3,055	—	—	4215A18	360.04	4466A2	560.65	4466A43	560.71

Long-Life Diamond Blades for Tile

Make fast, smooth cuts in tile, stone, and hard ceramic materials. All blades are continuous rim style. Diamond depth is 0.4″.
Wet-cutting blades produce a smooth finish and are also for use on glass.

Dia.	Arbor	Width of Cut	Max. rpm	Wet Cutting	Each	Dry Cutting	Each
4″	5/8″, 7/8″	0.060″	15,000	4166A4	$37.42	4166A7	$37.42
4 1/2″	5/8″, 7/8″	0.060″	13,300	4166A41	31.47	4166A71	31.47
5″	5/8″, 7/8″	0.060″	12,000	4166A42	33.86	4166A56	33.93
6″	5/8″	0.060″	10,185	4166A47	43.50	4166A57	35.96
7″	5/8″	0.060″	8,730	4166A52	54.53	4166A72■	46.21
8″	5/8″	0.060″	7,640	4166A48	57.36	4166A73	47.73
10″	5/8″	0.060″	6,115	4166A49	71.39	4166A74	64.43
12″	20 mm, 1″	0.080″	5,095	4166A6	112.55	4166A62	112.55
14″	20 mm, 1″	0.080″	4,365	4166A61	173.15	4166A63	173.15

■ Diamond, 5/8″, 7/8″ arbor.

Long-Life Diamond Blades for Masonry

Great for dry cutting brick, concrete block, and other masonry materials. All blades are turbo rim style. Diamond depth is 0.3″.

Dia.	Arbor	Width of Cut	Max. rpm		Each
4″	5/8″, 7/8″, 20 mm	0.080″	15,200	4111A3	$20.80
4 1/2″	5/8″, 7/8″	0.080″	13,300	4111A4	24.56
7″	Diamond, 5/8″, 7/8″	0.090″	8,700	4111A2	29.89

Metal-Cutting Blades for Multi-Cutter Saws

Made to run at slower speeds than most circular saw blades, these blades have teeth that make precise cuts in metal when used on low-rpm multi-cutter saws (see page 2397).

Dia.	Arbor	Teeth	Hook Angle	Width of Cut	Max. rpm		Each
Steel-Cutting Blades							
12″	1″	60	0°	0.087″	2,000	2514A21	$127.67
14″	1″	66	0°	0.095″	1,800	2514A51	137.74
Stainless Steel-Cutting Blades							
12″	1″	80	0°	0.087″	1,800	6911A12	245.00
14″	1″	72	5°	0.087″	1,800	6911A15	250.00
14″	1″	90	0°	0.087″	1,800	6911A16	280.00
Aluminum-Cutting Blades							
12″	1″	80	10°	0.099″	2,000	2514A61	132.31
14″	1″	80	10°	0.107″	1,800	2514A62	145.11

For information about circular saw blades, see page 2393.

Metal-Cutting Blades for Cold Saws

Designed to run at slow speeds on cold saws, these blades make clean, efficient cuts in hard metals such as stainless steel and cast iron. They are made of steel and are steam-oxide treated to a Rockwell Hardness between C63 and C65 for increased wear resistance. Blades normally run at 15-65 rpm. Maximum blade speed is 200 sfpm. Hook angle is 18°.

Blades for a 32 mm arbor have two 8.5 mm drive pinholes with a center-to-center distance of 45 mm, two 9 mm drive pinholes with a center-to-center distance of 50 mm, and two 12 mm drive pinholes with a center-to-center distance of 64 mm. ***Blades for a 40 mm arbor*** have two 9 mm drive pinholes with a center-to-center distance of 55 mm as well as four 12 mm drive pinholes with a center-to-center distance of 64 mm.

32 mm

40 mm

Dia., mm	Teeth	Width of Cut, mm	32 mm Arbor	Each	40 mm Arbor	Each
225 (9″)	120	2.0 (0.078″)	4190A12	$85.95	4190A52	$85.95
250 (10″)	180	2.0 (0.078″)	4190A14	90.74	4190A54	90.74
275 (11″)	180	2.5 (0.098″)	4190A16	122.95	4190A56	122.95
300 (12″)	140	2.5 (0.098″)	4190A17	160.65	4190A57	160.65
300 (12″)	220	2.5 (0.098″)	4190A18	160.65	4190A58	160.65
315 (12.5″)	160	2.5 (0.098″)	4190A19	$158.81	4190A59	$131.48
315 (12.5″)	180	2.5 (0.098″)	4190A21	158.81	4190A61	158.81
350 (14″)	180	2.5 (0.098″)	4190A22	150.32	4190A62	181.75
350 (14″)	280	2.5 (0.098″)	4190A23	181.75	4190A63	150.32

Circular Saws

Milwaukee Electric

Skil Electric Worm Drive (Left-Side Blade)

DeWalt Cordless

Milwaukee Cordless

Electric saws operate at 115/120 VAC. ***Cordless*** saws have left-side blades, unless noted.

ⓘ For a specification sheet with additional information, go to mcmaster.com and search for the part number.

Manufacturer/Model No.	Blade Dia.	Arbor Size	Max. Cut. Dp. at 90°	No-Load Speed, rpm	Wt., lbs.		Each
Electric							
Bosch CS10	7¼″	5/8″	27/16″	5,600	10.2	4033A31	$139.08
DeWalt DW364	7¼″	5/8″	27/16″	5,800	12.3	39895A11	187.86
DeWalt DW369CSK (Lightweight)	7¼″	5/8″	23/8″	5,800	9.8	39895A51	159.19
Milwaukee 6370-21	8″	5/8″	29/16″	3,700	13.3	5241A12	312.50
Milwaukee 6390-21	7¼″	5/8″	27/16″	5,800	10.4	4052A21	147.19
Milwaukee 6391-21 (Left-Side Blade)	7¼″	5/8″	27/16″	5,800	10.4	4052A22	158.75
Skil HD5510 (Left-Side Blade)	5½″	1/2″	13/4″	4,500	6.5	4033A96	122.31
Skil HD5860 Worm Drive (Left-Side Blade)	8¼″	Diamond	27/8″	4,300	18.8	4155A13	227.30
Skil SHD77 Worm Drive (Left-Side Blade)	7¼″	Diamond	23/8″	4,600	16	4155A12	192.25
Skil SHD77M Worm Drive (Lightweight; Left-Side Blade)	7¼″	Diamond	23/8″	4,600	14	4155A14	213.88
Cordless							
DeWalt DC300K (36 volts)	7¼″	5/8″	27/16″	4,000	9.9	24705A71	418.46
DeWalt DC390K (18 volts)	6½″	5/8″	21/4″	3,700	8.7	24705A63	230.12
Makita BSS501 (18 volts)	5⅜″	5/8″	2″	3,600	5.7	2725A1 ♣	362.54
Milwaukee 0730-22 (28 volts)	6½″	5/8″	21/8″	4,200	9.4	4154A16	446.25
Milwaukee 2630-22 (18 volts)	6½″	5/8″	21/8″	3,500	8.5	4154A51	383.90

♣ Saw has a right-side blade.

Compound Miter Saws, Cold Saw, and Multi-Cutter Saw

ⓘ For a specification sheet with additional information, go to mcmaster.com and search for the part number.

Manufacturer/ Model No.	Blade Dia.	Arbor Size	Max. Cut. Dp. at 90°	No-Load Speed, rpm	VAC		Each
Compound Miter Saws							
DeWalt DW715	12″	5/8″, 1″	2″	4,000	120	41325A18	$346.16
Makita LS1040	10″	5/8″	23/4″	4,600	115	4140A31	223.10
Sliding-Arm Compound Miter Saw							
DeWalt DW718	12″	5/8″, 1″	2″	3,600	120	3001A14	655.98
Cold Saw							
Jet J-F225	225 mm	32 mm	21/4″	52	115	4030A11	1,139.69
Multi-Cutter Saw							
DeWalt DW872	14″	1″	53/16″	1,300	120	4213A21	523.55

Compound Miter Saw

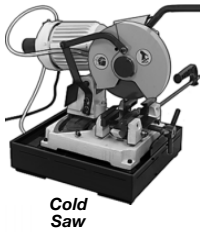

Cold Saw

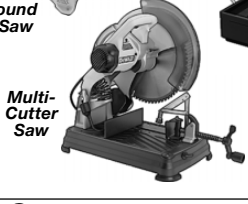

Multi-Cutter Saw

Replacement Parts for Circular and Compound Miter Saws

For Mfr./ Model No.	Brushes	Each	Switches	Each	Cords	Each
Bosch						
CS10	4148A38	$5.45	4148A65	$6.24	4148A89	$8.51
DeWalt						
DC300K	4148A16	7.34	4148A51	62.15	———	———
DC390K	4148A15	5.61	4148A49	14.41	———	———
DW364	4148A12	5.24	4148A46	24.37	4148A82	17.90
DW369CSK	4148A13	3.18	4148A47	22.01	4148A82	17.90
DW715	4148A11	8.08	4148A45	21.27	4148A82	17.90
DW718	4148A11	8.08	4148A45	21.27	4148A81	19.55
DW872	4148A17	4.50	4148A52	24.89	4148A83	19.21
DW935K	4148A14	5.00	4148A48	16.22	———	———
Makita						
LS1040	40625A31●	$10.48	4148A64	$26.92	4148A95	$28.52
Milwaukee						
6370-21	4148A26	1.42	4148A71	11.07	4148A97	14.35
6390-21	4148A24	1.85	4148A71	11.07	4148A96	10.96
6391-21	4148A25	2.73	4148A71	11.07	4148A96	10.96
Skil						
HD5510	4148A41	10.13	4148A66	12.47	4148A94	18.80
HD5860	4148A42●	6.12	4155A24	11.94	4148A91	12.00
SHD77	4148A42●	6.12	4148A67	8.51	4148A91	12.00
SHD77M	4148A42●	6.12	4148A67	8.51	4148A91	12.00

● Sold as a kit containing two brushes.

Also Available: Parts for other DeWalt and Milwaukee saws. Ask for 4148A511 and specify saw mfr./model number and brush, switch, or cord.

Table Saws

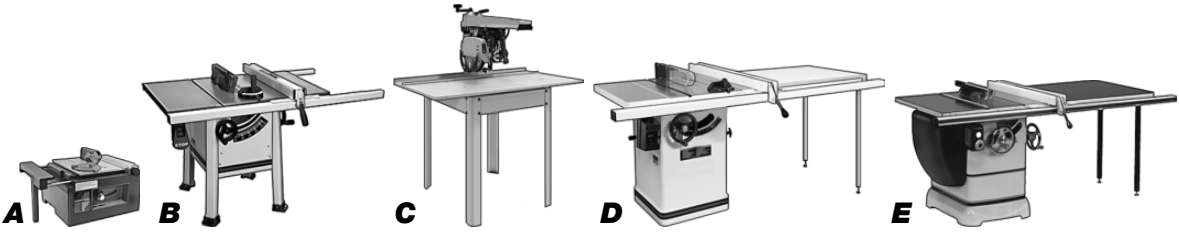

For a specification sheet with additional information, go to mcmaster.com and search for the part number.

	Model	Blade Dia.	Arbor Size	Max. Cut. Dp. at 90°	No-Load Speed, rpm	Volts	Wired for Volts	Wt., lbs.		Each
A	Miniature Benchtop	3 9/64″-3 11/32″	10 mm	7/8″	7,000	115 VDC	—	13.2	**4514A11**	$454.86
B	Contractor/Utility	10″	5/8″	3 1/8″	3,600	115/230 VAC	115	350	**4206A61**	1,061.50
C	Radial Arm	10″	5/8″	2 3/4″	3,600	120/240 VAC	120	166	**4199A35**	1,481.39
D	3-hp Heavy Duty Tilting	10″	5/8″	3″	4,200	230 VAC	—	528	**27925A11**	1,910.70
E	5-hp Heavy Duty Tilting	10″	5/8″	3 1/8″	3,450	230 VAC	—	600	**27925A13**	2,790.60

Universal Portable Miter Saw Stand

Great for carrying between job sites, this galvanized steel stand has universal mounting clamps that support all brands of miter saws. Arms adjust from 46″ to 114″ for longer pieces and have a flip-up stop on each end for making repetitive cuts. Overall size is 36″ Ht.×114″ Wd.×27 1/2″ Dp.; legs fold up and lock into stand for a compact carrying size of 9″ Ht.×46″ Wd.×6″ Dp. Weighs 43 lbs.

4136A11 ..... **Each** $230.91

Laser Cutting Guides for Miter and Chop Saws

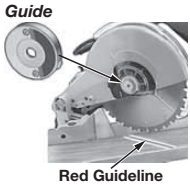

Make sure your saw blade is aligned before you make the cut. These guides sit flush against the blade and project a laser guideline just to the left of the cut. They automatically turn on/off when the blade moves or stops.

Laser cutting guide for miter saws fits most 8 1/4″, 8 1/2″, 10″, and 12″ miter saws, with the exception of Bosch, Rigid, and Protech. Furnished with bolts, hex L-keys, batteries, and a carrying case.

Laser cutting guide for chop saws can be used on most chop saws. Includes batteries and an arbor adapter.

Laser Cutting Guide for Miter Saws	**4517A61**	**Each**	$35.04
Laser Cutting Guide for Chop Saws	**4517A71**	**Each**	$26.70
Replacement 1.5-Volt Battery	**7604K57**	**Each**	$2.03

Vertical Panel Saws

Cut across the grain (cross-cutting) and with the grain (ripping) on panels up to 1 3/4″ thick with a cutting accuracy of 1/32″. Great for cutting wood, laminates, crating materials, vinyl sheeting, and aluminum plate.

Saws use 8″ dia. blades with a 5/8″ arbor (sold separately on pages 2393-2395). Motor is 3 1/4 hp and operates at 120 VAC, 15 amps. No-load speed is 5,800 rpm. Saws include an 18-ft. cord with two-prong plug.

50″ saw has a 5-ft. steel frame and a folding stand with wheels.

64″ saw has a 10-ft. steel frame and a fixed stand with wheels.

Quick-stop gauging systems are designed for repetitive cuts of the same measurement.

40″ length extension adds 20″ length to each side of the saw frame for cutting larger panels.

Saws

Cross-Grain Cut. Wd.	With-Grain Cut. Lg.	O'all Height	O'all Width	Wt., lbs.		Each
50″	96″	75″	60″	189	**24775A11**	$1,408.05
64″	Unlimited	90″	120″	298	**24775A31**	2,324.88

Accessories

		Each
Quick-Stop Gauging System for 50″ Saw	**24775A12**	$221.11
Quick-Stop Gauging System for 64″ Saw	**24775A27**	265.56
40″ Length Extension	**24775A13**	176.67
Dust Hose Exhaust Kit	**24775A33**	221.11

Pistol-Grip Panel Saw

Saw

Ideal for cuts in large sheets of material that are too big for regular panel saws or table saws. Maximum cutting depth is 3/8″. Saw uses 1 3/4″ and 2″ dia. blades and includes four blades (one each of 4000A25, A26, A14, and A27 listed below). Has a 5-amp, variable-speed, 0-2,500 rpm motor that operates on 120 VAC, 50 Hz, single phase. Includes an 8-ft. cord with two-prong plug. Weighs 7 lbs.

4000A4 ..... **Each** $451.50

Replacement Blades

Blades are 1/32″ thick and cut a slot that's approximately 0.045″ wide. They're made of high-speed steel with a black-oxide finish. *Note:* Use stick wax lubricant or cutting fluid to improve performance (sold separately on pages 2179-2180).

Recommended Use	Blade Dia.	Arbor Size	Teeth	Max. Cut. Dp.		Each
Aluminum, brass, plywood, plastics, fiberglass	1 3/4″	7/16″	30	5/16″	**4000A25**	$4.72
Aluminum, brass, plastics, laminates, fiberglass	1 3/4″	7/16″	44	5/16″	**4000A26**	4.78
Aluminum, plywood, plastics, laminates, fiberglass	2″	7/16″	44	3/8″	**4000A15**	5.41
14-15 gauge mild steel, brass, plastics, laminates, fiberglass	2″	7/16″	60	3/8″	**4000A14**	5.51
14-24 gauge mild steel, fiberglass	1 3/4″	7/16″	60	5/16″	**4000A27**	4.83
16-24 gauge mild steel, fiberglass	2″	7/16″	80	3/8″	**4000A28**	5.57

Portable Wet-Cutting Tile Saw

Designed for wet cutting tile and marble, this saw handles straight cuts up to 18″ and diagonal cuts up to 13″. It has an adjustable guide bar for precise cuts. Includes a water reservoir, pump, blade guard, diamond blade, and an 8′4″ cord with three-prong plug. Saw has a 1 1/4-hp motor and operates on 120 VAC, 60 Hz. CSA certified.

Blade Dia.	Arbor Size	Max. Cut. Dp.	No-Load Speed, rpm	Wt., lbs.		Each
7″	5/8″	2″	6,000	33	**6446A21**	$330.99
Replacement Diamond Blade					**6446A31**	44.00

About Cutoff Wheels

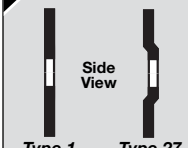

Cutoff wheels cut through harder materials than carbide-toothed circular saw blades and are great for cuts in metal. They are made with abrasive grit and are typically reinforced by one or more layers of fiberglass for added stability and strength. ***Type 1*** wheels are flat with a flat center. ***Type 27*** wheels are flat with a depressed center.

Depending on size and type, cutoff wheels can be used on a variety of tools such as portable and stationary chop/cutoff saws, small-wheel grinders, right-angle grinders, and circular saws.

Note: Do not use for grinding. Be sure the operating speed of the saw does not exceed the speed marked on the cutoff wheel, its instruction sheet, or its packaging. Always wear safety glasses. For additional safety information, see ANSI Safety Guide B7.1.

Cutoff Wheels

Cut iron, steel, stainless steel, and other ferrous metals. These cutoff wheels are made with aluminum oxide abrasive and are double reinforced. All are Type 1 cutoff wheels.

36 Grit— For fast cuts.
46 Grit— For cuts with minimal burrs.
60 Grit— For smooth, burr-free cuts.

Dia.	Max. rpm	Dia.	Max. rpm
3/4"	61,116	2 7/8"	25,000
1"	61,116	3"	25,000
1 1/2"	45,000	4"	19,000
2"	30,000	4 1/2"	15,000
2 1/2"	26,000		

Dia.	Thick.	Arbor	36 Grit	46 Grit	60 Grit	Each
3/4"	1/16"	1/8"	4550A11	4550A12	4550A13	$0.87
1"	0.035"	1/16"	—	—	4550A121	.87
1"	0.035"	1/8"	—	—	4550A122	.87
1"	1/8"	1/8"	4550A14	4550A15	4550A16	.91
1 1/2"	0.035"	1/16"	—	—	4550A125	1.01
1 1/2"	0.035"	1/8"	—	—	4550A126	1.01
1 1/2"	0.035"	1/4"	—	—	4550A127	1.01
1 1/2"	1/8"	1/8"	4550A17	4550A18	4550A19	1.01
1 1/2"	1/8"	1/4"	4550A21	4550A22	4550A23	1.01
2"	0.035"	1/8"	—	—	4550A186	1.03
2"	0.035"	1/4"	—	—	4550A51	1.03
2"	0.035"	3/8"	—	—	4550A52	1.03
2"	1/16"	1/8"	4550A53	4550A54	4550A55	1.03
2"	1/16"	1/4"	4550A56	4550A57	4550A58	1.03
2"	1/16"	3/8"	4550A59	4550A61	4550A62	1.03
2"	1/8"	1/4"	4550A24	4550A25	4550A26	1.03
2"	1/8"	3/8"	4550A63	4550A64	4550A65	1.03
2 1/2"	0.035"	1/4"	—	—	4550A66	1.12
2 1/2"	0.035"	3/8"	—	—	4550A67	1.12
2 1/2"	1/16"	1/4"	4550A68	4550A69	4550A74	1.05
2 1/2"	1/16"	3/8"	4550A75	4550A76	4550A77	1.04
2 1/2"	1/8"	1/4"	4550A31	4550A32	4550A33	1.12
2 1/2"	1/8"	3/8"	4550A78	4550A79	4550A81	1.12
2 7/8"	0.035"	1/4"	—	—	4550A128	$1.17
2 7/8"	0.035"	3/8"	—	—	4550A129	1.16
2 7/8"	1/16"	1/4"	4550A131	4550A144	4550A132	1.17
2 7/8"	1/16"	3/8"	4550A133	4550A145	4550A134	1.17
2 7/8"	1/8"	3/8"	4550A137	4550A146	4550A138	1.17
3"	0.035"	1/4"	—	—	4550A82	1.17
3"	0.035"	3/8"	—	—	4550A83	1.17
3"	1/16"	1/4"	4550A84	4550A85	4550A86	1.17
3"	1/16"	3/8"	4550A87	4550A88	4550A89	1.17
3"	3/32"	1/4"	4550A139	4550A147	4550A141	1.17
3"	3/32"	3/8"	4550A142	4550A148	4550A143	1.17
3"	1/8"	1/4"	4550A37	4550A38	4550A39	1.20
3"	1/8"	3/8"	4550A91	4550A92	4550A93	1.20
4"	0.035"	1/4"	—	—	4550A151	1.70
4"	0.035"	3/8"	—	—	4550A152	1.70
4"	1/16"	1/4"	4550A153	4550A157	4550A154	1.70
4"	1/16"	3/8"	4550A155	4550A158	4550A156	1.70
4"	1/8"	1/4"	4550A44	4550A45	4550A46	1.69
4"	1/8"	3/8"	4550A171	4550A172	4550A173	1.69
4"	1/8"	1/2"	4550A174	4550A175	4550A176	1.69
4"	1/8"	5/8"	4550A177	4550A161	4550A179	1.69
4"	1/8"	7/8"	4550A181	4550A162	4550A183	1.69
4 1/2"	1/8"	7/8"	4550A187	4550A163	4550A189	2.05

Long-Life Cutoff Wheels

Get three times the life of standard cutoff wheels. These incredibly durable wheels are double reinforced and cut iron, stainless steel, high-alloy steel, and other ferrous metals. All are Type 1 cutoff wheels.

36 Grit— For fast cuts.
60 Grit— For smooth, burr-free cuts.
Ceramic aluminum oxide wheels combine high performance with fast cutting action for an even longer wheel life than long-life aluminum oxide cutoff wheels.

Dia.	Thick.	Arbor	Max. rpm	36 Grit	60 Grit	Each
Aluminum Oxide Wheels						
3"	0.040"	1/4"	25,000	—	45615A81	$1.61
3"	0.040"	3/8"	25,000	—	45615A82	1.61
3"	1/16"	1/4"	25,000	45615A23	45615A83	1.61
3"	1/16"	3/8"	25,000	45615A24	45615A84	1.61
3"	3/32"	1/4"	25,000	45615A26	45615A108	1.61
3"	3/32"	3/8"	25,000	45615A27	45615A109	1.61
4"	0.040"	1/4"	22,000	—	45615A85	2.07
4"	0.040"	3/8"	22,000	—	45615A86	2.07
4"	0.040"	5/8"	22,000	—	45615A87	2.07
4"	0.040"	7/8"	22,000	—	45615A88	2.07
4"	1/16"	1/4"	19,000	45615A29	45615A89	2.07
4"	1/16"	3/8"	19,000	45615A31	45615A91	2.07
4"	1/16"	5/8"	19,000	45615A32	45615A92	2.07
4"	1/16"	3/4"	19,000	45615A33	45615A93	2.07
4"	1/16"	7/8"	19,000	45615A34	45615A94	2.07
4"	3/32"	1/4"	19,000	45615A35	45615A138	2.07
4"	3/32"	3/8"	19,000	45615A37	45615A139	2.07
4 1/2"	0.040"	7/8"	15,000	—	45615A95	2.49
4 1/2"	1/16"	7/8"	15,000	45615A36	45615A96	2.49
5"	0.040"	3/8"	12,223	—	45615A97	3.20
5"	0.040"	1/2"	12,223	—	45615A98	3.20
5"	0.040"	5/8"	12,223	—	45615A101	3.20
5"	0.040"	7/8"	12,223	—	45615A102	3.20
5"	1/16"	3/8"	12,223	45615A41	45615A111	3.20
5"	1/16"	1/2"	12,223	45615A42	45615A112	3.20
5"	1/16"	5/8"	12,223	45615A43	45615A113	3.20
5"	1/16"	7/8"	12,223	45615A44	45615A114	3.20
6"	0.040"	3/8"	10,186	—	45615A115	3.95
6"	0.040"	1/2"	10,186	—	45615A116	3.95
6"	0.040"	5/8"	10,186	—	45615A117	3.95
6"	0.040"	7/8"	10,186	—	45615A118	3.95
6"	1/16"	3/8"	10,186	45615A49	45615A119	3.95
Aluminum Oxide Wheels (Cont.)						
6"	1/16"	1/2"	10,186	45615A51	45615A121	$3.95
6"	1/16"	5/8"	10,186	45615A52	45615A122	3.95
6"	1/16"	7/8"	10,186	45615A53	45615A123	3.95
7"	0.040"	1/2"	8,732	—	45615A124	5.23
7"	0.040"	5/8"	8,732	—	45615A125	5.23
7"	0.040"	1 1/4"	8,732	—	45615A126	5.23
7"	1/16"	1/2"	8,732	45615A57	45615A127	5.24
7"	1/16"	5/8"	8,732	45615A58	45615A128	5.24
7"	1/16"	1 1/4"	8,732	45615A61	45615A145	5.24
8"	0.040"	1/2"	7,640	—	45615A131	5.45
8"	0.040"	5/8"	7,640	—	45615A132	5.45
8"	0.040"	1 1/4"	7,640	—	45615A133	5.45
8"	1/16"	1/2"	7,640	45615A63	45615A143	5.45
8"	1/16"	5/8"	7,640	45615A64	45615A144	5.45
8"	1/16"	7/8"	7,640	45615A65	45615A146	5.45
8"	1/16"	1 1/4"	7,640	45615A66	45615A147	5.45
10"	0.040"	5/8"	6,112	—	45615A148	7.80
10"	1/16"	5/8"	6,112	45615A67	45615A149	7.80
10"	1/16"	1"	6,112	45615A68	45615A151	7.80
10"	3/32"	5/8"	6,112	45615A69	45615A152	9.13
10"	3/32"	1"	6,112	45615A71	45615A153	9.13
Ceramic Aluminum Oxide Wheels						
3"	0.035"	1/4"	25,000	—	45615A163	2.20
3"	0.035"	3/8"	25,000	—	45615A164	2.20
3"	1/16"	1/4"	25,000	—	45615A161	2.20
3"	1/16"	3/8"	25,000	—	45615A162	2.20
4"	0.035"	1/4"	19,000	—	45615A168	3.16
4"	0.035"	3/8"	19,000	—	45615A169	3.16
4"	0.035"	5/8"	19,000	—	45615A171	3.16
4"	1/16"	1/4"	19,000	—	45615A165	3.16
4"	1/16"	3/8"	19,000	—	45615A166	3.16
4"	1/16"	5/8"	19,000	—	45615A167	3.16

For information about cutoff wheels, see page 2399.

High-Performance Cutoff Wheels

Made with a combination of two abrasives (ceramic aluminum oxide and zirconia aluminum), these wheels give you the best performance for the toughest applications.

They are reinforced and last up to five times longer than aluminum oxide wheels on hard metals including Inconel, Hastelloy, and hardened tool steel. All are Type 1 cutoff wheels.

***36 Grit*—**For fast cuts.

***60 Grit*—**For straight, burr-free cuts.

Dia.	Thick.	Arbor	Grit	Max. rpm		Each
3″	0.035″	1/4″	60	25,465	2499A31	$3.95
3″	0.035″	3/8″	60	25,465	2499A32	3.95
3″	1/16″	1/4″	36	25,465	2499A35	3.95
3″	1/16″	3/8″	36	25,465	2499A36	3.95
3″	1/8″	3/8″	36	25,465	2499A38	4.84
4″	0.035″	1/4″	60	19,100	2499A33	5.42
4″	0.035″	3/8″	60	19,100	2499A34	5.42
4″	1/16″	1/4″	36	19,100	2499A49	5.42
4″	1/16″	3/8″	36	19,100	2499A41	5.42
4″	1/8″	3/8″	36	19,100	2499A43	7.42
4 1/2″	0.045″	7/8″	36	13,580	2499A51	4.03
5″	0.045″	7/8″	36	12,225	2499A52	4.62
6″	0.045″	7/8″	36	10,185	2499A54	4.86

High-Speed Cutoff Wheels

Make more cuts in less time. These cutoff wheels are engineered to run at higher speeds than regular cutoff wheels. All are Type 1 cutoff wheels.

***General Purpose Metal Cutting*—**Made with aluminum oxide abrasive.

***Stainless Steel Cutting*—**Made with zirconia alumina abrasive.

Dia.	Thick.	Arbor	Grit	Max. rpm		Each
General Purpose Metal Cutting						
3″	0.045″	1/4″	60	27,000	4144A11	$1.40
4″	0.045″	3/8″	60	22,000	4144A12	1.79
4 1/2″	0.045″	7/8″	60	18,000	4144A13	2.12
5″	0.045″	7/8″	60	15,000	4144A14	2.69
6″	0.045″	7/8″	60	14,200	4144A15	3.54
7″	0.045″	7/8″	60	10,500	4144A16	4.50
Stainless Steel Cutting						
3″	0.045″	1/4″	60	27,000	4144A21	1.50
4″	0.045″	3/8″	60	22,000	4144A22	1.89
4 1/2″	0.045″	7/8″	60	18,000	4144A23	2.17
5″	0.045″	7/8″	60	15,000	4144A24	2.78
6″	0.045″	7/8″	60	14,200	4144A25	3.76
7″	0.045″	7/8″	60	10,500	4144A26	4.71

Smooth-Cutting Cutoff Wheels

The extra-fine, internal reinforcement on these aluminum oxide wheels allows for a smooth finish when cutting steel. All are Type 1 cutoff wheels.

***46 Grit*—**For steel bar and bolts.

***60 Grit*—**For aircraft and tool steel.

Dia.	Thick.	Arbor	Grit	Max. rpm		Each
6″	1/16″	1/2″	46	9,040	4297A11	$4.24
6″	1/16″	1/2″	60	9,040	4297A12	4.24
6″	1/16″	1 1/4″	46	9,040	4297A13	4.24
6″	1/16″	1 1/4″	60	9,040	4297A14	4.24
7″	1/16″	1/2″	46	7,749	4297A15	4.78
7″	1/16″	1/2″	60	7,749	4297A16	4.78
7″	1/16″	1 1/4″	46	7,749	4297A17	4.78
7″	1/16″	1 1/4″	60	7,749	4297A18	4.78
8″	1/16″	1/2″	46	6,780	4297A19	5.48
8″	1/16″	1/2″	60	6,780	4297A21	5.48
8″	1/16″	1 1/4″	46	6,780	4297A22	5.48
8″	1/16″	1 1/4″	60	6,780	4297A23	5.48

Cutoff Wheels for Metallurgical Testing

These non-reinforced wheels provide a nearly polished finish and are ideal for preparing metal for testing (metallurgy). All are Type 1 cutoff wheels and are made with silicon carbide abrasive, unless noted. *Note:* Use on metallurgical testing machines only. Securely clamp material to the machine.

Dia.	Thick.	Arbor	Grit	Max. rpm	For Steel with RH✓		Each
9″	1/16″	1 1/4″	90	4,025	30-40	4170A13★	$18.33
9″	1/16″	1 1/4″	100	4,025	40-55	4170A12★	18.33
9″	1/16″	1 1/4″	100	4,025	55-68	4170A11	18.33
10″	1/16″	1 1/4″	90	3,500	30-40	4170A16	19.40
10″	1/16″	1 1/4″	100	3,500	40-55	4170A15	19.40
10″	1/16″	1 1/4″	100	3,500	55-68	4170A14	19.40
12″	0.078″	1 1/4″	80	3,820	30-40	4170A19	21.58
12″	0.078″	1 1/4″	90	3,820	40-55	4170A18	21.58
12″	0.078″	1 1/4″	90	3,820	55-68	4170A17	21.58
13 3/4″	0.098″	1 1/4″	70	2,770	30-40	4170A23	28.02
13 3/4″	0.098″	1 1/4″	80	2,770	40-55	4170A22★	28.02
13 3/4″	0.098″	1 1/4″	80	2,770	55-68	4170A21	28.02

✓ RH = Rockwell Hardness ★ Made with aluminum oxide abrasive.

Diamond Cutoff Wheels for Carbide, Glass, and Ceramics

A diamond edge means these reinforced steel cutoff wheels last longer than other wheels during cuts in hard, nonferrous materials such as carbide, ceramics, and glass. All are Type 1 cutoff wheels.

Note: Not for steel and other ferrous metals.

Dia.	Thick.	Arbor	Grit	Max. rpm		Each
4″	0.035″	1 1/4″	100	15,275	4142A11	$108.00
6″	0.035″	1 1/4″	100	10,175	4571A91	114.71
7″	0.040″	1 1/4″	100	8,725	4142A12	134.00
8″	0.040″	1 1/4″	100	7,625	4142A13	143.92
10″	0.050″	1 1/4″	100	6,100	4142A14	189.14

Cutoff Wheels for Right-Angle Grinders

The added fiberglass reinforcement on these cutoff wheels allows them to be used on right-angle grinders for cutoff applications. All are Type 1 cutoff wheels.

***General Purpose Metal Cutting*—**Made with aluminum oxide abrasive for cuts in a wide variety of metals including steel and stainless steel.

***Stainless Steel Cutting*—**Made with zirconia alumina abrasive (unless noted) for fast cuts in stainless steel and other alloys.

***Aluminum Cutting*—**Made with aluminum oxide abrasive and designed for cuts in aluminum and other soft metals.

***Masonry/Concrete Cutting*—**Made with silicon carbide abrasive for cuts in masonry and concrete.

Dia.	Thick.	Arbor	Grit	Max. rpm		Each
General Purpose Metal Cutting						
4″	0.040″	5/8″	60	19,000	4003A61	$2.22
4″	0.045″	5/8″	46	15,280	4003A11	1.90
4″	3/32″	5/8″	36	19,000	4003A31	2.68
4 1/2″	0.045″	7/8″	36	13,580	4003A12	2.22
4 1/2″	0.045″	7/8″	60	13,300	4003A62	2.30
4 1/2″	3/32″	7/8″	36	13,300	4003A32	2.70
5″	0.045″	7/8″	36	12,225	4003A13	2.56
5″	0.045″	7/8″	60	12,000	4003A63	2.62
5″	3/32″	7/8″	36	12,000	4003A33	2.92
6″	0.045″	7/8″	36	10,185	4003A14	2.66
6″	0.045″	7/8″	60	10,000	4003A64	3.48
7″	3/32″	7/8″	36	8,600	4003A34	3.70
9″	3/32″	7/8″	36	6,800	4003A35	4.98
Stainless Steel Cutting						
4″	0.045″	5/8″	60	19,000	4003A45●	2.42
4 1/2″	0.045″	7/8″	36	13,580	4003A71	3.22
5″	0.045″	7/8″	36	12,225	4003A72	3.70
6″	0.045″	5/8″	60	10,200	4003A76●	3.42
6″	0.045″	7/8″	36	10,185	4003A73	4.22
7″	0.045″	5/8″	60	8,500	4003A74	2.98
7″	0.090″	5/8″	60	8,500	4003A75	3.70
Aluminum Cutting						
4″	0.045″	5/8″	46	19,000	4003A81	2.28
4 1/2″	0.045″	7/8″	46	13,300	4003A82	2.56
5″	0.045″	7/8″	46	12,200	4003A83	2.86
6″	0.045″	5/8″	46	10,200	4003A84	3.14
6″	0.045″	7/8″	46	10,200	4003A85	3.14
7″	0.045″	5/8″	46	8,500	4003A86	3.52
Masonry/Concrete Cutting						
4″	1/16″	5/8″	30	15,280	4003A41	1.94
4 1/2″	1/16″	7/8″	30	13,580	4003A52	2.18
5″	1/16″	7/8″	30	12,225	4003A53	2.54

● Made with ceramic aluminum oxide abrasive.

For information about cutoff wheels, see page 2399.

Flush-Cutting Cutoff Wheels for Right-Angle Grinders

Also known as Type 27, raised hub, and depressed-center cutoff wheels, these wheels have a center that is higher than the cutting edge, making flush cutting easier than when using flat cutoff wheels on right-angle grinders. All are made with aluminum oxide abrasive (unless noted).

General Purpose Metal Cutting—Use for cutting ferrous metals such as steel and stainless steel (unless noted).

Stainless Steel Cutting—Use for cutting stainless steel, high-tensile alloys, and other hard metals.

Aluminum and Nonferrous Metal Cutting—Have a soft bond for aggressive cutting and resistance to loading. Use for cutting aluminum, brass, copper, and other soft nonferrous metals.

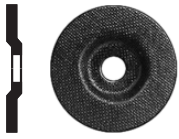

Dia.	Thick.	Arbor	Grit	Max. rpm		Each
Wheels for Cutting Applications						
General Purpose Metal Cutting						
4″	0.045″	5/8″	60	19,000	4535A11	$2.36
4″	3/32″	5/8″	24	15,000	4535A14	2.64
4 1/2″	0.045″	7/8″	24	13,580	4535A61 ♦	2.71
4 1/2″	0.045″	7/8″	60	13,300	4535A17	2.61
4 1/2″	3/32″	5/8″-11	24	13,300	4535A15	3.73
4 1/2″	3/32″	7/8″	24	13,300	4535A71	2.40
5″	0.045″	7/8″	60	12,200	4535A23	3.00
5″	3/32″	5/8″-11	24	12,000	4535A26	4.24
5″	3/32″	7/8″	24	12,200	4535A72	4.02
6″	0.045″	7/8″	24	10,185	4535A63 ♦	3.37
6″	0.045″	7/8″	60	10,200	4535A29	3.27
6″	3/32″	5/8″-11	24	10,000	4535A33	4.64
6″	3/32″	7/8″	24	10,000	4535A73	3.86
6″	1/8″	7/8″	24	10,200	4535A74	5.76
7″	0.045″	7/8″	60	8,500	4535A12	3.62
7″	3/32″	5/8″-11	24	8,600	4535A36	5.98
7″	3/32″	7/8″	24	8,600	4535A75	4.36
9″	3/32″	5/8″-11	24	6,600	4535A77	9.25
9″	3/32″	7/8″	24	6,600	4535A76	6.78
Stainless Steel Cutting						
4″	0.045″	5/8″	24	15,280	4535A91	2.64
4″	0.045″	5/8″	60	19,000	4535A19●	2.96
4 1/2″	0.045″	7/8″	60	13,300	4535A18●	3.17
4 1/2″	3/32″	5/8″-11	30	13,300	4535A82	3.75
4 1/2″	3/32″	7/8″	30	13,300	4535A83	2.74
5″	0.045″	7/8″	60	12,200	4535A24●	3.75
5″	3/32″	5/8″-11	30	12,000	4535A84	4.36
5″	3/32″	7/8″	30	12,000	4535A85	3.29

Dia.	Thick.	Arbor	Grit	Max. rpm		Each
Wheels for Cutting Applications (Cont.)						
Stainless Steel Cutting (Cont.)						
6″	0.045″	7/8″	60	10,200	4535A31●	$4.09
6″	3/32″	7/8″	30	10,000	4535A87	3.88
7″	0.045″	7/8″	60	8,500	4535A32●	4.43
7″	3/32″	7/8″	30	8,600	4535A89	4.38
7″	1/8″	5/8″-11	30	8,600	4535A92	5.85
Aluminum and Nonferrous Metal Cutting						
4″	0.045″	5/8″	46	19,000	4535A52	2.84
4 1/2″	0.045″	5/8″-11	24	13,580	4535A93	4.24
4 1/2″	0.045″	7/8″	46	13,300	4535A53	2.93
5″	0.045″	5/8″-11	24	12,225	4535A94	4.53
5″	0.045″	7/8″	46	12,200	4535A54	3.32
6″	0.045″	5/8″-11	24	10,185	4535A95	4.82
6″	0.045″	7/8″	46	10,200	4535A55	3.76
7″	0.045″	7/8″	46	8,500	4535A56	4.07
9″	1/16″	5/8″-11	24	6,600	4535A96	10.05
Wheels for Cutting and Notching Applications						
General Purpose Metal Cutting						
4″	0.09″	5/8″	60	19,000	4535A13	2.84
4 1/2″	0.09″	5/8″-11	60	13,300	4535A21	5.20
4 1/2″	0.09″	7/8″	60	13,300	4535A16	3.02
5″	0.09″	5/8″-11	60	12,200	4535A25	5.45
7″	0.09″	5/8″-11	60	8,500	4535A35	6.96
Stainless Steel Cutting						
4 1/2″	0.09″	5/8″-11	60	13,300	4535A49●	5.91
4 1/2″	0.09″	7/8″	60	13,300	4535A48●	3.74
5″	0.09″	5/8″-11	60	12,200	4535A57●	6.35
7″	0.09″	5/8″-11	60	8,500	4535A66●	8.02

♦ Also for soft nonferrous metals such as aluminum and brass. ● Made with ceramic aluminum oxide abrasive.

Cutoff Wheels for Portable Circular Saws

Cut metal and concrete with your portable circular saw by attaching one of these wheels. These cutoff wheels have arbors that fit most portable circular saws and are reinforced. All are Type 1 cutoff wheels. Wheels with a universal arbor have a knockout that fits 5/8″ round and 13/16″ diamond arbors (unless noted).

General Purpose Metal Cutting—Made with aluminum oxide abrasive for fast cuts in ferrous metals such as steel and cast iron. All are 3/32″ thick (unless noted) and 36 grit.

Stainless Steel Cutting—Made with aluminum oxide abrasive for fast cuts in stainless steel. Wheels are 1/16″ thick and 46 grit.

Sheet Metal Cutting—Made with aluminum oxide abrasive. Excellent for use on worm-drive saws to cut sheet metal, roof decking, and metal siding. Wheels are 1/8″ thick and 30 grit.

Concrete and Masonry Cutting—Made with silicon carbide abrasive for cutting concrete, brick, stone, fire brick, and other masonry materials. All are 1/8″ thick and 30 grit.

Dia.	Arbor	Max. rpm	***General Purpose Metal Cutting***	Each	***Stainless Steel Cutting***	Each	***Sheet Metal Cutting***	Each	***Concrete and Masonry Cutting***	Each
6″	5/8″	10,000	4465A4	$4.03	—	—	—	—	—	—
6 1/2″	Univ.	9,405	4465A32♣	2.60	—	—	—	—	4465A11	$4.64
7″	Univ.	8,600	4465A5	4.43	4465A21♥	$4.57	4465A15	$4.57	4465A2	4.67
8″	Univ.	7,500	4465A6	5.04	4465A22♥	5.19	4465A16	5.19	4465A3	5.29

♣ 1/8″ thick. ♥ Has a 5/8″ round arbor hole; no 13/16″ diamond knockout.

Cutoff Wheels for Portable Gas/Electric Cutoff Saws

Sized to fit portable gas and electric cutoff saws, these wheels have large diameters and various arbor sizes. All are reinforced Type 1 cutoff wheels.

General Purpose Metal Cutting—Made with aluminum oxide abrasive for cutting mild steel and stainless steel, including rebar, pipe, and structural shapes. All are 1/8″ thick (unless noted) and 24-30 grit.

Ductile Iron Cutting—Made with aluminum oxide and silicon carbide abrasive for ductile and cast iron applications. All are 1/8″ thick (unless noted) and 24 grit.

Sheet Metal Cutting—Made with aluminum oxide abrasive, these wheels are best for cutting sheet metal, roof decking, and siding. All are 5/32″ thick and 24 grit.

Concrete and Masonry Cutting—Made with silicon carbide abrasive for cutting concrete, brick, clay pipe, and other masonry products. All are 1/8″ thick (unless noted) and 30 grit.

I-Beam/Rail Cutting—Made with aluminum oxide abrasive for cutting metal I-beams, rails, and bar stock. Wheels are 1/8″ thick and 24 grit.

Dia.	Arbor	Max. rpm	***General Purpose Metal Cutting***	Each	***Ductile Iron Cutting***	Each	***Sheet Metal Cutting***	Each	***Concrete and Masonry Cutting***	Each	***I-Beam/Rail Cutting***	Each
12″	7/8″	6,300	4178A11	$5.90	—	—	—	—	—	—	—	—
12″	1″	6,300	4178A12	5.90	4178A22	$7.00	—	—	4178A32	$5.97	—	—
12″	20 mm	6,300	4178A45	5.90	4178A47	7.00	4178A17	$7.83	4178A49	5.97	—	—
14″	1″	5,400	4178A14	8.93	4178A24	10.48	4178A42	11.44	4178A34	8.93	4178A65	$12.74
14″	20 mm	5,460	4178A51	10.31	4178A52	10.48	4178A41	11.44	4178A53	8.93	—	—
16″	1″	4,700	4178A26♠	17.45	4178A38♠	17.57	—	—	4178A56♠	17.20	4178A66▲	17.69

♠ 5/32″ thick. ▲ Max. rpm is 4,800.

For information about cutoff wheels, see page 2399.

Cutoff Wheels for Benchtop Chop/Cutoff and Stationary Saws

Choose from wheels in a variety of styles and diameters for use on benchtop chop/cutoff saws and stationary saws. All are 24-36 grit, Type 1, reinforced, and made of aluminum oxide (unless otherwise indicated). *Note:* Do not use with hand-held saws.

Cutoff Wheels for Chop/Cutoff Saws

General Purpose Metal Cutting—For burr-free cuts in small cross-sections of steel.
Fast Metal Cutting—For fast, burr-free cuts in steel, stainless steel, and aluminum.
Metal Drywall Studs/Thin Metal Cutting—Last longer than general purpose wheels for cuts in metal drywall studs and other thin metals.
Aluminum Cutting—For aluminum and other soft metals.
Stainless Steel Cutting—For stainless steel, high-tensile alloys, and ferrous metals. Wheels are made of a patented ceramic aluminum oxide that combines high performance with fast cutting action for an extremely long blade life.

Dia.	Thick.	Arbor	Max. rpm		Each
General Purpose Metal Cutting					
10″	7/64″	1″	6,110	4173A24	$6.13
12″	3/32″	1″	5,092	4173A17	5.17
14″	3/32″	1″	4,365	4173A18	7.13
16″	3/32″	1″	3,820	4173A25	10.37
Fast Metal Cutting					
12″	7/64″	1″	5,095	4173A27	6.40
14″	3/32″	1″	4,365	4173A28	7.13
Metal Drywall Studs/Thin Metal Cutting					
12″	3/32″	1″	5,092	4173A21	6.06
12″	7/64″	1″	5,095	4173A46★	10.26
Metal Drywall Studs/Thin Metal Cutting (Cont.)					
14″	3/32″	1″	4,365	4173A22	$8.02
14″	7/64″	1″	4,365	4173A47★	12.66
16″	7/64″	1″	3,820	4173A48★	20.39
Aluminum Cutting					
14″	7/64″	1″	4,365	4173A63	9.21
Stainless Steel Cutting					
12″	3/32″	1″	5,100	4173A71	7.60
14″	3/32″	1″	4,400	4173A72	10.64
16″	3/32″	1″	3,700	4173A73	16.60

★ Made with a blend of zirconia alumina and aluminum oxide abrasives.

Cutoff Wheels for Stationary Saws

General Purpose Metal Cutting—Use these wheels when the material is fixed and the cutting plane of the wheel is controlled. Excellent for cuts in small cross-sections of steel and stainless steel.
Long-Life General Purpose Metal Cutting—Made with a blend of zirconia alumina and aluminum oxide abrasives.
Ductile/Cast Iron Cutting—Made with aluminum oxide and silicon carbide abrasive for easy cutting of ductile/cast iron.

Dia.	Thick.	Arbor	Max. rpm		Each
General Purpose Metal Cutting					
10″	1/8″	5/8″	6,112	4173A11	$6.17
10″	1/8″	1″	6,112	4173A23	6.17
12″	1/8″	1″	5,092	4173A12	7.65
14″	1/8″	1″	4,365	4173A13	10.56
16″	5/32″	1″	3,820	4173A14	13.96
18″	3/16″	1″	3,396	4173A15	23.73
20″	3/16″	1″	3,066	4173A16	25.87
Long-Life General Purpose Metal Cutting					
10″	3/32″	5/8″	6,110	4173A41	$14.73
12″	1/8″	1″	5,095	4173A42	18.20
14″	1/8″	1″	4,365	4173A43	24.82
16″	5/32″	1″	3,820	4173A44	32.25
20″	5/32″	1″	2,710	4173A49	58.12
Ductile/Cast Iron Cutting					
20″	7/32″	1″	3,066	4173A31	29.73

Cutoff Saws

A
DeWalt

B

C

D
14″ Floor

E

F

G
Standard Duty

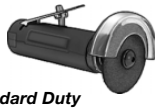

ⓘ For a specification sheet with additional information, go to mcmaster.com and search for the part number.

Electric

Model/Style	Dia.	Arbor	VAC	No-Load Speed, rpm		Each
(A) Standard Benchtop						
DeWalt D28715	14″	1″	120	4,000	4193A22	$213.97
Makita 2414NB	14″	1″	115	3,800	6922A13	192.97
(B) Portable						
DeWalt D28754	12″	1″	120	5,000	4209A21	504.20
(C) Compact Benchtop						
Light Duty	5 5/8″	5/8″	110	7,000	24675A31	308.20
(D) Heavy Duty						
Benchtop	10″	5/8″	230	3,450	4022A9	750.00
Benchtop	10″	5/8″	440	3,450	4022A7	750.00
Floor	14″	1″	220	4,400	4110A13	2,037.72
Floor	14″	1″	440	4,400	4110A14	2,037.72
Floor	20″	1″	220	2,500	4084A37	3,339.17
Floor	20″	1″	440	2,500	4084A38	3,339.17

Cordless

Model	Dia.	Arbor	No-Load Speed, rpm		Each
(E) Portable Right Angle					
DeWalt DC411KA	4 1/2″	5/8″-11	6,500	6449A21	$274.90
Repl. 18-Volt Battery DC9096				29835A13	95.29
Repl. 1-Hour Charger DC9310				29835A631	81.82

Gas Powered

Model	Dia.	Arbor	No-Load Speed, rpm		Each
(F) Portable					
Makita DPC7331	14″	20 mm	4,300	3983A24	$1,021.22

Air Powered

Style	Dia.	Arbor	No-Load Speed, rpm		Each
(G) Portable					
Light Duty	2 7/8″-3″	3/8″	20,000	4089A51	$59.56
Standard Duty	2 7/8″	3/8″	23,000	40935A22	111.25

For information about cutoff wheels, see page 2399.

Miniature Cutoff Wheels for Dremel-Type Tools

They may be small, but these cutoff wheels will cut through hard materials when used on Dremel-type tools. All wheels have a fine grain abrasive grit.

Aluminum Oxide Wheels—Designed for general purpose cutting in anything from metal to plastic. All are 90 grit, except 1257A85, which is 46 grit.

Silicon Carbide Wheels—Use to cut plastic, stone, ceramics, wood, and soft metals such as aluminum and brass. All are 80 grit.

Ceramic Aluminum Oxide Wheels—Superior for cuts in stainless steel, titanium, and other high-tensile alloys. All are 80 grit.

Dia.	Thick.	Arbor	Max. rpm	Pkg. Qty.		Per Pkg.
Aluminum Oxide Wheels						
15/16″	0.025″	1/16″	30,000	50	1257A74	$6.97
15/16″	0.040″	1/16″	30,000	25	1257A75	6.86
1 1/4″	0.049″	1/16″	30,000	10	1257A76	13.20
1 1/4″	0.062″	1/16″	21,000	12	1257A86	12.52
1 1/2″	0.025″	1/16″	21,000	12	1257A87	12.52
1 1/2″	0.040″	1/16″	21,000	12	1257A88	12.52
1 1/2″	0.049″	1/16″	40,744	12	1257A85	16.03

Dia.	Thick.	Arbor	Max. rpm	Pkg. Qty.		Per Pkg.
Silicon Carbide Wheels						
1″	1/32″	1/8″	61,116	2	1257A29	$3.36
1 1/2″	1/32″	1/8″	45,000	2	1257A31	3.80
1 3/4″	1/32″	1/8″	42,000	2	1257A32	3.95
Ceramic Aluminum Oxide Wheels						
1 1/2″	3/64″	1/8″	45,000	2	1257A41	4.67
1 3/4″	3/64″	1/8″	42,000	2	1257A42	5.47
2″	3/64″	1/8″	30,000	2	1257A43	5.94
2 1/2″	3/64″	1/4″	26,000	2	1257A44	8.07

Miniature Blades for Dremel-Type Tools

A

B

C

Style A—Made of hardened steel with ground sides for low clearance, these blades have teeth that make clean, precise cuts.

Style B—Blades are steel with a tungsten carbide grit edge.

Style C—Several layers of diamonds means these stay sharp after continued use. 1257A92 and A91 are diamond from the arbor hole to the edge of the blade. 1257A89 is steel with diamond on the outer 1/8″ of the blade.

Dia.	Thick.	Arbor	Teeth	Max. rpm		Each
(A) Plastic and Wood Cutting						
3/4″	0.015″	1/8″	36	35,000	6448A21	$12.84
1″	0.015″	1/8″	34	35,000	6448A22	13.87
1 1/2″	0.015″	1/8″	44	35,000	6448A23	17.30
(A) Plastic, Wood, and Soft Metal Cutting♠						
3/4″	0.015″	1/8″	60	35,000	6448A11	12.84
7/8″	0.015″	1/8″	80	35,000	6448A12	13.32
1″	0.015″	1/8″	68	35,000	6448A13	13.87
1 1/4″	0.015″	1/8″	80	35,000	6448A14	15.31
1 1/2″	0.015″	1/8″	100	35,000	6448A15	17.30
2″	0.015″	1/8″	140	35,000	6448A16	23.79
(B) Fiberglass, Plastic, and Carbon Fiber Cutting						
3/4″	0.065″	1/8″	—	20,000	1257A51♦	14.70
1″	0.120″	1/4″	—	23,000	1257A55	18.94
1 1/4″	0.065″	1/8″	—	20,000	1257A52♦	15.93
1 1/2″	0.120″	1/4″	—	23,000	1257A56	20.36
1 3/4″	0.075″	1/4″	—	26,200	4021A18	21.88
(C) Ceramic, Glass, and Soft Metal Cutting♠						
7/8″	0.007″	1/16″	—	20,000	1257A92	28.93
1 1/4″	0.025″	1/16″	—	20,000	1257A91	33.65
1 1/4″	0.032″	1/16″	—	20,000	1257A89	21.27

♠ Soft metals include aluminum, brass, and copper.
♦ Furnished with a 1/8″ shank mandrel.

High Performance Miniature Blades for Dremel-Type Tools

The diamond grit edge on these blades means they produce smoother, cleaner cuts and last longer than standard miniature blades for Dremel-type tools. You'll get a quality finish on a variety of materials, especially those used for dental applications.

All blades are steel with a synthetic diamond grit edge that lasts longer than a natural diamond grit edge. Choose thinner blades for less material removal and thicker blades for faster cuts.

D

E

F

G

Dia.	Thick.	Arbor	Max. rpm		Each
(D) For Contoured Cuts in Ceramic					
7/8″	0.007″	1/16″	25,000	4301A21	$19.75
7/8″	0.011″	1/16″	25,000	4301A22	19.75
(E) For Contoured Cuts in Ceramic, Acrylic, Plaster, and Gypsum					
7/8″	0.007″	1/16″	25,000	4301A23	19.75
7/8″	0.011″	1/16″	25,000	4301A24	19.75
(F) For Straight Cuts in Acrylic					
7/8″	0.007″	1/16″	25,000	4301A25	19.75
7/8″	0.011″	1/16″	25,000	4301A26	19.75
(G) For Straight Cuts in Acrylic, Gypsum, and Plaster					
1 3/16″	0.007″	1/16″	25,000	4301A27	34.75
1 3/16″	0.011″	1/16″	25,000	4301A28	34.75
1 9/16″	0.007″	1/16″	25,000	4301A29	44.75
1 9/16″	0.011″	1/16″	25,000	4301A31	44.75

Wheel Arbors and Mandrels

H

J

K

L

M

Mount cutoff wheels, grinding wheels, wire brushes, and more with these wheel arbors and mandrels. All are made of steel (unless noted). ***Styles H, J, K,*** and ***M*** have screws with slotted heads. ***Style L*** have an open-ended threaded mounting shaft.

	Fits Arbor Hole Size	Max. Wheel Thick.	Shank Dia.	Head Dia.	O'all Lg.		Each
H	1/16″	1/4″	1/8″	3/16″	1 3/4″	4568A11	$2.25
H	1/8″	1/16″	1/8″	1/4″	1 1/2″	4568A26♣	3.42
H	1/8″	1/8″	3/32″	1/4″	1 3/4″	4568A13	2.10
H	1/8″	3/16″	1/8″	1/4″	1 3/4″	4568A12	2.25
H	1/8″	1/4″	1/4″	3/8″	2″	4568A14	2.55
J	1/4″	1/8″	1/8″	7/16″	1 15/16″	4568A25♣	4.53
J	1/4″	1/4″	1/4″	3/4″	2″	4568A15	3.07
J	3/8″	1/4″	1/4″	3/4″	2″	4568A17	3.07
J	1/4″ or 3/8″	1/4″	1/4″	3/4″	2″	4568A19▲	4.00

	Fits Arbor Hole Size	Max. Wheel Thick.	Shank Dia.	Head Dia.	O'all Lg.		Each
K	1/4″	1/4″	3/8″	3/4″	2″	4568A16	$4.55
K	3/8″	1/4″	3/8″	3/4″	2″	4568A18	4.55
L	1/4″	5/8″	1/4″	1″	2 1/2″	4568A21	2.70
L	3/8″	5/8″	1/4″	1″	2 1/2″	4568A22	3.20
L	1/2″	3/8″	1/4″	1 1/2″	2 1/2″	4568A23	3.48
M	1/16″	1/8″	3/32″	3/16″	1 3/4″	4568A24	2.10

♣ Made of stainless steel. ▲ Includes screws from 4568A15 and A17, plus a body that holds either screw.

Mandrel Set—Includes two Style H mandrels. Arbor hole size: 1/16″. Max. wheel thickness: 3/16″. Shank dia.: 1/8″. Head dia.: 3/16″. Overall length: 1 1/2″. One mandrel also comes with two 5/16″ dia. washers.

1257A81 ..... **Per Set** $4.54

Hole Saw Size Selection Guide for Pipe, Copper Tubing, and Conduit

Use the table below to determine the correct hole saw size you need when working with pipe, copper pipe and tubing, and conduit. For additional hole saw sizes for other applications, see the hole saw presentations on this page and the next page.

Please refer to the table below for the following examples:

***Pipe*—**Example: Use a 7/8″ diameter hole saw to cut holes for 1/2″ pipe. For more information about pipe size, see pages 2-3.

***Copper Pipe and Tubing*—**Example: Use a 7/8″ diameter hole saw to cut holes for 5/8″ copper pipe and tubing.

***Conduit*—**Example: Use a 7/8″ diameter hole saw to cut holes for 1/2″ conduit.

***Pipe Taps*—**Taps are used to form pipe threads in the cut hole. Example: Use a 7/8″ diameter hole saw to cut holes that you will thread with a 3/4″ pipe tap for 1/2″ pipe.

Pipe Size	3/8″	1/2″	—	3/4″	—	1″	—	1 1/4″	1 1/2″	—	2″	—	2 1/2″	—	3″	—	3 1/2″	—	4″	5″
Copper Pipe Size	1/2″	5/8″	3/4″	3/4″	1″	—	1 1/4″	1 1/2″	—	2″	2″	—	2 1/2″	—	—	—	3 1/2″	4″	—	5″
Conduit Size	—	1/2″	—	3/4″	—	1″	—	1 1/4″	1 1/2″	—	2″	—	2 1/2″	—	3″	—	3 1/2″	—	4″	—
Pipe Tap Size	1/2″	3/4″	—	1″	—	—	1 1/4″	1 1/2″	—	2″	—	2 1/2″	—	3″	—	3 1/2″	—	4″	—	—
Hole Saw Dia.	**3/4″**	**7/8″**	**1″**	**1 1/8″**	**1 1/4″**	**1 3/8″**	**1 1/2″**	**1 3/4″**	**2″**	**2 1/4″**	**2 1/2″**	**2 5/8″**	**3″**	**3 1/4″**	**3 5/8″**	**3 3/4″**	**4 1/8″**	**4 1/4″**	**4 1/2″**	**5 1/2″**

Hole Saws

Bimetal
1 1/2″ Cut Depth

Carbide Tipped
1 1/2″ Cut Depth

Carbide Grit
1 1/8″ Cut Depth

Diamond Grit
1 1/2″ Cut Depth

Note: To select the correct arbor size, find the arbors that are compatible with your hole saw diameter. From those arbors, choose one with a shank size that fits in your drill chuck. For example, if your hole saw is 1″ dia. and your drill chuck accepts hex shanks 1/4″ dia. and smaller, choose 4066A76. When using 3″ dia. and larger deep-cutting hole saws, use a driving plate for extra reinforcement (sold separately, see 4066A96 on page 2405).

Bimetal and ***Deep-Cutting Bimetal Hole Saws*—**Have high-speed steel teeth welded to a steel body. Use for cutting wood, plastic, nonferrous metals such as aluminum, brass, and bronze, and ferrous metals such as steel, stainless steel, and cast iron.

***Heavy Duty Bimetal Hole Saws*—**Superior for cutting in all metal and wood applications. Blades have high-speed steel teeth welded to a flexible steel body. Teeth are angled forward for faster cutting.

Carbide-Tipped and ***Deep-Cutting Carbide-Tipped Hole Saws*—**Hard carbide teeth are welded to a steel body for cutting tough, abrasive materials that would ruin bimetal hole saws. They're a good choice for cutting fiberglass, plasterboard, fiberboard, plastic laminate, masonite, tile, and nonferrous metals such as aluminum, brass, and bronze.

***Carbide-Grit Hole Saws*—**A carbide-grit edge is bonded to a steel body for easy cutting of ceramic tile, fiberglass, slate, plastic laminate, cast iron, marble, glass, and composites (unless noted).

***Diamond-Grit Hole Saws*—**Have a diamond-grit edge bonded to a steel body that cuts more accurately, leaves a smoother finish, and lasts longer than carbide-grit saws. Use them for cutting reinforced plastics, Kevlar, stone, brick, and other abrasive materials with a high silicon content. *Note:* To cut ceramic tile, you must use a 1/4″ carbide-tipped pilot drill (see 4066A141 on page 2405).

Inch Sizes

Dia.	Bimetal— 1 1/2″ Cut Depth	Each	Deep-Cutting Bimetal— 1 7/8″ Cut Depth	Each	Heavy Duty Bimetal— 1 1/2″ Cut Depth	Each	Carbide Tipped— 1 1/2″ Cut Depth	Each	Deep-Cutting Carbide Tipped— 1 5/8″ Cut Depth	Each	Carbide Grit— 1 1/8″ Cut Depth	Each	Diamond Grit— 1 1/2″ Cut Depth	Each
9/16″	4066A11	$4.05	3994A66	$4.74	41005A11	$8.33	4192A11	$8.89	—	—	—	—	6930A31	$43.02
5/8″	4066A12	4.04	3994A67	4.74	41005A12	8.33	4192A12	9.06	—	—	4194A13	$19.70	6930A32	47.67
11/16″	4066A13	4.04	3994A68	4.74	41005A13	8.33	4192A13	8.97	4114A12	$11.34	—	—	6930A33	49.74
3/4″	4066A14	4.04	3994A37	4.74	41005A14	8.33	4192A14	9.06	4114A11	11.33	4194A42	20.75	6930A34	49.74
25/32″	4066A91	4.04	—	—	41005A67♣	8.75	4192A74	9.19	—	—	—	—	—	—
13/16″	4066A15	4.04	3994A69	4.74	41005A15	8.33	4192A63	8.94	—	—	—	—	6930A21	53.49
7/8″	4066A16	4.04	3994A38	4.93	41005A16	8.33	4192A15	8.67	4114A13	11.33	4194A11	20.75	6930A35	56.98
15/16″	4066A17	4.04	3994A71	4.92	41005A17	8.33	4192A64	9.51	—	—	—	—	6930A22	58.14
1″	4066A18	4.04	3994A41	4.92	41005A18	9.04	4192A16	9.38	4114A15	12.04	4194A12	22.65	6930A36	60.47
1 1/16″	4066A19	4.24	3994A72	4.92	41005A19	9.04	4192A17	10.03	—	—	—	—	6930A37	63.64
1 1/8″	4066A21	4.24	3994A42	4.92	41005A21	9.04	4192A18	10.12	4114A17	12.92	4194A43	22.65	6930A38	67.05
1 3/16″	4066A22	4.24	3994A36	4.92	41005A22	9.04	4192A19	10.17	—	—	—	—	6930A23	70.45
1 1/4″	4066A23	4.24	3994A39	4.92	41005A23	9.04	4192A21	10.76	4114A19	13.38	4194A14	23.24	6930A39	75.00
1 5/16″	4066A24	4.24	3994A73	5.34	41005A24	9.04	4192A22	10.76	—	—	—	—	6930A24	78.41
1 3/8″	4066A25	4.54	3994A44	5.34	41005A25	9.51	4192A23	10.55	4114A22	13.89	4194A44	23.46	6930A41	82.95
1 7/16″	4066A26	4.54	3994A74	5.34	41005A26	9.51	4192A65	11.06	—	—	—	—	—	—
1 1/2″	4066A27	4.54	3994A45	5.34	41005A27	9.51	4192A24	11.08	4114A24	13.94	4194A16	23.46	6930A42	85.23
1 9/16″	4066A28	4.54	3994A75	5.34	41005A28	9.51	4192A66	12.60	—	—	—	—	—	—
1 5/8″	4066A29	4.54	3994A55	5.34	41005A29	9.51	4192A25	12.67	4114A25	15.05	4194A17★	34.26	6930A43	86.36
1 11/16″	4066A31	4.54	3994A76	6.63	41005A31	9.51	4192A26	12.57	—	—	—	—	—	—
1 3/4″	4066A32	5.65	3994A46	6.62	41005A32	11.93	4192A27	14.19	4114A28	15.43	4194A18	28.76	6930A44	86.36
1 13/16″	4066A33	5.65	3994A77	6.62	41005A33	11.93	4192A56	14.19	—	—	—	—	—	—
1 7/8″	4066A34	5.65	3994A56	6.62	41005A34	11.93	4192A28	14.15	—	—	4194A45	28.76	6930A45	93.18
2″	4066A35	5.65	3994A47	6.62	41005A35	11.93	4192A29	14.19	4114A32	16.63	4194A19	28.76	6930A46	95.65
2 1/16″	4066A36	6.97	3994A78	8.20	41005A36	14.43	4192A68	14.06	—	—	—	—	—	—
2 1/8″	4066A37	6.97	3994A57	8.20	41005A37	14.43	4192A31	14.06	4114A34	19.95	4194A46	34.08	6930A47	105.43
2 1/4″	4066A38	6.97	3994A48	8.20	41005A38	14.43	4192A32	14.88	4114A35	20.17	4194A22	34.08	6930A48	104.30
2 5/16″	4066A39	6.97	3994A79	8.20	41005A39■	13.75	4192A33	17.50	—	—	—	—	—	—
2 3/8″	4066A41	6.97	3994A58	8.20	41005A41	14.43	4192A34	17.43	4114A37	21.34	4194A47	34.08	6930A49	109.68
2 1/2″	4066A42	7.46	3994A49	8.84	41005A42	15.55	4192A35	16.36	4114A38	21.90	4194A24	38.39	6930A51	108.33
2 9/16″	4066A43	7.46	3994A81	8.84	41005A43	15.55	4192A36	18.79	4114A39	24.08	—	—	—	—
2 5/8″	4066A44	7.46	3994A82	8.84	41005A44	15.55	4192A37	18.64	4114A41	24.35	—	—	6930A27	111.46
2 11/16″	4066A92	7.46	—	—	41005A69	15.55	4192A75	18.03	—	—	—	—	—	—
2 3/4″	4066A45	7.46	3994A59	8.84	41005A45	15.55	4192A38	18.63	—	—	4194A33	38.39	6930A52	113.54
2 7/8″	4066A46	7.46	3994A83	8.84	41005A46	15.55	4192A69	18.80	—	—	—	—	6930A28	116.67
3″	4066A47	7.67	3994A51	9.03	41005A47	16.10	4192A39	19.60	4114A44	24.59	4194A27	46.55	6930A53	119.79
3 1/8″	4066A48	7.67	3994A84	9.03	41005A48	16.54	4192A41	19.64	—	—	—	—	—	—
3 1/4″	4066A49	7.67	3994A62	9.03	41005A49	16.54	4192A42	19.81	4114A45	28.69	4194A26	46.55	6930A61	124.00
3 3/8″	4066A51	7.67	3994A52	9.03	41005A51	16.54	4192A43	21.21	4114A46	31.20	4194A48	46.55	6930A62	132.14

♣ 1 3/4″ cutting depth. ★ 1 1/2″ cutting depth. Not for wood, plastic laminate, glass, slate, or marble. ■ 1 5/8″ cutting depth.

(Continued on following page)

For information about hole saw size selection, see page 2404.

Hole Saws *(Continued from previous page)*

Inch Sizes (Cont.)

Dia.	Bimetal— 1½″ Cut Depth	Each	Deep-Cutting Bimetal— 1⅞″ Cut Depth	Each	Heavy Duty Bimetal— 1½″ Cut Depth	Each	Carbide Tipped— 1½″ Cut Depth	Each	Deep-Cutting Carbide Tipped— 1⅝″ Cut Depth	Each	Carbide Grit— 1⅛″ Cut Depth	Each	Diamond Grit— 1½″ Cut Depth	Each
3½″	4066A52	$7.67	3994A63	$9.03	41005A52	$16.54	4192A44	$21.21	4114A47	$32.72			6930A63	$134.75
3⅝″	4066A53	8.71	3994A85	10.72	41005A53	19.13	4192A45	23.80	4114A48	36.13			6930A25	144.74
3¾″	4066A54	10.36	3994A86	12.51	41005A54	22.60	4192A46	24.49	4114A49	37.15	4194A49	$57.51	6930A65	150.88
3⅞″	4066A55	10.71	3994A87	13.13	41005A55	23.59	4192A47	25.96						
4″	4066A56	11.35	3994A54	13.78	41005A56	24.35	4192A48	28.06	4114A51	39.56	4194A31	61.25	6930A54	155.26
4⅛″	4066A57	12.82	3994A88	15.02	41005A57	26.40	4192A71	29.81	4114A52	49.70				
4¼″	4066A58	15.97	3994A53	19.64	41005A58	34.62	4192A49	34.45	4114A54	52.58			6930A66	173.68
4⅜″	4066A59	18.69	3994A89	27.10	41005A59	41.97	4192A57	40.46						
4½″	4066A61	22.12	3994A64	27.09	41005A61	47.76	4192A51	43.19	4114A56	57.79	4194A32	75.51	6930A67	180.70
4¾″	4066A71	24.34	3994A91	30.14	41005A62	53.11	4192A73	49.77	4114A57	62.90			6930A11	210.00
5″	4066A72	27.23	3994A92	33.40	41005A63	58.91	4192A52	56.28	4114A58	64.76			6930A68	230.00
5¼″	4066A93	29.68					4192A76	58.86						
5½″	4066A73	33.07	3994A93	39.92	41005A64	70.58	4192A53	71.50	4114A59	68.20			6930A14	250.00
5¾″	4066A94	35.31	3994A95	43.37			4192A77	74.04						
6″	4066A75	38.10	3994A94	44.94	41005A65	82.37	4192A54	83.03	4114A63	71.45			6930A69	295.00

Metric Sizes—All are bimetal and have a 1½″ cut depth.

Dia.		Each	Dia.		Each	Dia.		Each	Dia.		Each
16 mm	4556A11	$5.18	30 mm	4556A14	$5.45	40 mm	4556A17	$5.89	55 mm	4556A21	$8.96
20 mm	4556A12	4.38	32 mm	4556A15	5.51	45 mm	4556A18	7.26	68 mm	4556A22	9.68
25 mm	4556A13	5.45	35 mm	4556A16	5.89	50 mm	4556A19	7.26	75 mm	4556A23	9.96

Hole Saw Arbors

Attach your hole saw to your drill or drill press with one of these arbors. They are for use with the hole saws sold separately on this page and on the previous page. All arbors are designed so you can change saws without removing the arbor from the chuck. One arbor can be used with a range of hole saw diameters.

Note: To select the correct arbor size, find the arbors that are compatible with your hole saw diameter. From those arbors, choose one with a shank size that fits in your drill chuck or drill press. For example, if your hole saw is 1″ dia. and your drill chuck accepts hex shanks ¼″ dia. and smaller, choose 4066A76.

Arbor Shank Size	Arbor Thread Size	Pilot Drill Lg.	Arbor with Pilot Drill	Each	Replacement Pilot Drill	Each
Fits 9/16″-1 3/16″ Hole Saw Dia.						
¼″ Hex	½″-20	3 1/16″	4066A76	$4.62	4066A86	$2.43
⅜″ Hex	½″-20	3 1/16″	4066A78	6.85	4066A86	2.43
7/16″ Hex	½″-20	4 5/16″	4066A62	6.39	4066A89	2.53
Fits 1¼″-6″ Hole Saw Dia.						
⅜″ Hex	⅝″-18	3 1/16″	4066A79	10.01	4066A86	2.43
7/16″ Hex	⅝″-18	3 1/16″	4066A63	10.05	4066A86	2.43
⅝″ Hex	⅝″-18	4 5/16″	4066A68	10.05	4066A89	2.53

7/16″ Hex Arbor— Fits 9/16″-1 3/16″ Dia. Hole Saws

7/16″ Hex Arbor— Fits 1¼″-6″ Dia. Hole Saws

Hole Saw Arbor Kit

Includes one ¼″ round shank arbor with ½″-20 threads for 9/16″-1 3/16″ dia. saws; one 7/16″ hex shank arbor with ½″-20 threads for 9/16″-6″ dia. saws (has a retainer nut that also allows it to be used on 1¼″-6″ dia. saws with ⅝″-18 threads); two ¼″ pilot drills; and two adapter nuts for the ¼″ round and 7/16″ hex arbors.

4130A14 ..... **Each** $18.52

Accessories for Hole Saws and Hole Saw Arbors

Driving Plate—Use to reinforce 3″-4⅛″ dia. hole saws for heavier feed and drive pressures.

4066A96 ..... **Each** $14.31

12″ Extension—Use with 7/16″ hex shank arbors to increase the reach of the hole saw.

4066A64 ..... **Each** $8.03

Arbor Adapter—Lets you use arbors 4066A76, A78, and A62 with 1¼″-6″ dia. hole saws.

4066A77 ..... **Each** $3.13

¼″ Carbide-Tipped Pilot Drill—Great for cutting hard materials, this pilot drill fits all arbors above except 4066A62 and A68. Drill is 2⅞″ long.

4066A141 ..... **Each** $8.56

Quick-Change Hole Saw Arbors

Switch hole saws without using extra adapters or special tools. These arbors have a spring-loaded quick-release collar that pulls back to let you quickly unthread the hole saw from the arbor instead of using a wrench or loosening set screws, unless noted.

These arbors are designed to work with all brands of hole saws. 4043A11 and A13 include one 4″ long pilot drill. 4043A12 includes one 3″ long pilot drill. Body is made of steel.

For Hole Saw Dia.	Hex Shank Dia.		Each
9/16″-1 3/16″	⅜″	4043A11●	$21.66
1¼″-3″	⅜″	4043A12	22.54
1¼″-6″	7/16″	4043A13	22.54
Repl. Pilot Drill, ¼″ Dia. × 3″ Lg.		4043A22	3.47
Repl. Pilot Drill, ¼″ Dia. × 4″ Lg.		4043A21	3.47

● Collar is not spring loaded.

Hole Saw Pilot for Enlarging Holes

Enlarge too-small holes in one cut by using the existing smaller hole as a guide for creating a perfectly centered, larger hole. Fits all brands of threaded hole saws.

To use, replace your arbor's pilot drill with this pilot. Attach the larger diameter hole saw (in size desired) to your arbor. Then, thread the smaller hole saw that matches the size of the existing hole onto the end of the pilot with teeth facing up. The smaller hole saw now acts as a pilot for the existing hole rather than a cutting tool. Insert arbor into chuck and slowly drill the larger hole.

Adapter Nut—Required for 1⅛″ dia. and larger hole saws. Adapts ½″-20 arbor threads to ⅝″-18 arbor threads.

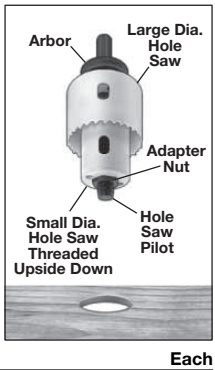

		Each
Size Adapter	4158A11	$20.17
Adapter Nut	4158A12	4.48

For information about hole saw size selection, see page 2404.

Hole Saw Kits

Kits include a 1/4″ pilot drill with each arbor and come in a plastic case, except 4005A31, which comes in a metal case.

	No. of Saws	Saw Cut Depth	Contents: Hole Saws, Arbors, and Accessories		Each
Bimetal	5	1 1/2″	**Hole Saws:** 7/8″, 1″, 1 1/8″, 1 1/4″, and 1 1/2″; **Arbors:** one 1/4″ hex shank for 9/16″-1 3/16″ dia. saws; **Accessories:** one arbor adapter for 1 1/4″ and 1 1/2″ saws	4044A15	$37.47
Bimetal	6	1 1/2″	**Hole Saws:** 3/4″, 7/8″, 1 1/8″, 1 1/2″, 1 3/4″, and 2 1/4″; **Arbors:** one 1/4″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** one 12″ arbor extension	4044A11	$80.67
Bimetal	6	1 1/2″	**Hole Saws:** 7/8″, 1 1/8″, 1 3/8″, 1 3/4″, 2″, and 2 1/2″; **Arbors:** one 1/4″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** one 12″ arbor extension	4044A12	$99.32
Bimetal	9	1 1/2″	**Hole Saws:** 3/4″, 7/8″, 1 1/8″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/4″, and 2 1/2″; **Arbors:** one 1/4″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** one extra 1/4″ pilot drill and one arbor adapter for 1 1/4″-6″ dia. saws	4742A11	$69.42
Bimetal	12	1 1/2″	**Hole Saws:** 5/8″, 3/4″, 7/8″, 1″, 1 1/8″, 1 1/4″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/2″, and 3″; **Arbors:** one 7/16″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** three extra 1/4″ pilot drills	4044A13	$144.81
Bimetal	16	1 1/2″	**Hole Saws:** 3/4″, 7/8″, 1″, 1 1/8″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/4″, 2 1/2″, 3″, 3 1/4″, 3 5/8″, 3 3/4″, 4 1/8″, and 4 3/4″; **Arbors:** one 7/16″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** three extra 1/4″ pilot drills	4005A31	$207.68
Deep-Cutting Bimetal	9	1 7/8″	**Hole Saws:** 3/4″, 7/8″, 1 1/8″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/4″, and 2 1/2″; **Arbors:** one 1/4″ round shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** one extra 1/4″ pilot drill and one arbor adapter for 1 1/4″ hole saws	3994A65	$66.38
Heavy Duty Bimetal	7	1 1/2″	**Hole Saws:** 7/8″, 1″, 1 1/4″, 1 3/8″, 1 1/2″, 1 3/4″, and 2 1/8″; **Arbors:** one 3/8″ hex shank for 9/16″-1 3/16″ dia. saws, one 3/8″ hex shank for 1 1/4″-6″ dia. saws	41005A86	$106.85
Heavy Duty Bimetal	12	1 1/2″	**Hole Saws:** 5/8″, 3/4″, 7/8″, 1″, 1 1/8″, 1 1/4″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/2″, and 3″; **Arbors:** one 7/16″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** three extra 1/4″ pilot drills	41005A84	$158.54
Heavy Duty Bimetal	20	1 1/2″	**Hole Saws:** 3/4″, 7/8″, 1″, 1 1/8″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/8″, 2 1/4″, 2 1/2″, 2 11/16″, 3″, 3 1/4″, 3 3/8″, 3 5/8″, 3 3/4″, 4 1/8″, 4 1/2″, and 4 3/4″; **Arbors:** one 7/16″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws, one 3/8″ hex shank for 9/16″-1 3/16″ dia. saws; **Accessories:** three extra 1/4″ pilot drills	41005A81	$354.09
Carbide Tipped	5	1 1/2″	**Hole Saws:** 7/8″, 1″, 1 1/8″, 1 1/4″, and 1 1/2″; **Arbors:** one 1/4″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** one arbor adapter for 1 1/4″-6″ dia. saws	4192A61	$71.14
Carbide Tipped	9	1 1/2″	**Hole Saws:** 3/4″, 7/8″, 1 1/8″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/4″, and 2 1/2″; **Arbors:** one 1/4″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** one extra 1/4″ pilot drill and one arbor adapter for 1 1/4″-6″ dia. saws	4192A62	$157.55
Carbide Grit	9	1 1/2″	**Hole Saws:** 3/4″, 7/8″, 1 1/8″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/4″, and 2 1/2″; **Arbors:** one 1/4″ round shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 9/16″-1 3/16″ dia. saws, one 7/16″ hex shank for 1 1/4″-6″ dia. saws; **Accessories:** one 12″ arbor extension	4194A63	$175.23

Bimetal Hole Saws with Built-In Arbor

Hole Saw

Pilot Drill

No need to find an arbor for these hole saws—the saw and the arbor are one piece. Use them to cut wood with nails, plywood, plastic, and ferrous and nonferrous metals including steel, stainless steel, aluminum, and copper. Saws have a high-speed steel cutting edge that's welded to a steel backing. Cutting depth is 1 1/2″; arbor shank size is 7/16″ hex.

Hole Saws—All require a pilot drill (sold separately below.)

Dia.		Each	Dia.		Each	Dia.		Each	Dia.		Each
9/16″	4008A73	$10.43	1 3/8″	4008A251	$8.82	2 1/4″	4008A381	$13.56	3 1/2″	4008A521	$14.98
5/8″	4008A13	7.81	1 7/16″	4008A75	8.82	2 5/16″	4008A81	13.56	3 5/8″	4008A84	17.68
11/16″	4008A15	7.81	1 1/2″	4008A271	8.82	2 3/8″	4008A411	13.56	3 3/4″	4008A85	20.77
3/4″	4008A141	7.81	1 9/16″	4008A76	8.82	2 1/2″	4008A421	14.55	3 7/8″	4008A86	21.82
13/16″	4008A74	7.81	1 5/8″	4008A291	8.82	2 9/16″	4008A82	14.55	4″	4008A561	22.80
7/8″	4008A161	7.81	1 11/16″	4008A77	8.82	2 5/8″	4008A431	14.55	4 1/4″	4008A581	32.42
15/16″	4008A17	7.83	1 3/4″	4008A321	10.92	2 3/4″	4008A441	14.55	4 3/8″	4008A87	38.61
1″	4008A181	8.21	1 13/16″	4008A78	10.92	2 7/8″	4008A451	14.55	4 1/2″	4008A611	44.88
1 1/16″	4008A19	8.21	1 7/8″	4008A331	10.92	3″	4008A471	14.98	4 3/4″	4008A88	49.85
1 1/8″	4008A211	8.21	2″	4008A351	10.92	3 1/8″	4008A48	14.98	5″	4008A631	55.30
1 3/16″	4008A22	8.22	2 1/16″	4008A79	13.56	3 1/4″	4008A49	14.98	5 1/2″	4008A65	66.12
1 1/4″	4008A231	8.29	2 1/8″	4008A371	13.56	3 3/8″	4008A83	14.98	6″	4008A68	77.47
1 5/16″	4008A24	8.31									

Hole Saw Kits—Cutting depth is 1 1/2″.

5-Saw Kit—Includes 7/8″, 1″, 1 1/8″, 1 1/4″, and 1 1/2″ hole saws; one 1/4″ × 4 5/16″ pilot drill; and a plastic carrying case.

4008A72 ..... **Each** $45.31

9-Saw Kit—Includes 3/4″, 7/8″, 1 1/8″, 1 3/8″, 1 1/2″, 1 3/4″, 2″, 2 1/4″, and 2 1/2″ hole saws; four 1/4″ × 4 5/16″ pilot drills; a screwdriver; 12″ arbor extension; and plastic carrying case.

4008A71 ..... **Each** $105.05

Pilot Drill

For use with hole saws sold above. Drill is 1/4″ dia., 4 5/16″ long, and made of high-speed steel.

4066A89 ..... **Each** $2.53

Hole Saw Pipe and Tube Notcher

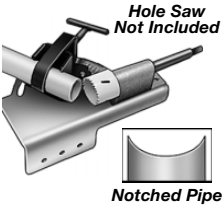

Cut notches in pipe and tubing using this fixture with your hole saw. You'll have a perfect fit when you need to weld intersecting pipe. A built-in laser-engraved protractor lets you cut angles from 30° to 90° in 1° increments. A sturdy V-block clamping system holds pipe or tube with an OD up to 2″. Notcher mounts easily to a workbench, stand, or truck bed.

You'll need a portable variable-speed 1/2″ drill to drive the hole saw unless you mount the notcher on a drill press. If mounting notcher onto a drill press, a mounting base (sold separately below) must be used. Choose a hole saw (sold separately on pages 2404-2405) that has the same diameter as the OD of the pipe or tubing to which you are attaching the notched pipe or tubing. Furnished with a 1/2″-20 arbor for use with 9/16″-2″ dia. hole saws and a 5/8″-18 adapter for use with 1 1/4″-2″ dia. hole saws.

		Each
Notcher	4104A22	$186.34
Replacement 5/8″-18 Adapter	4104A25	7.68

		Each
Optional Mounting Base	4104A23	$42.09
Optional Arbor with 5/8″-18 Thread	4104A24	19.02

For information about hole saw size selection, see page 2404.

Heavy Duty Carbide-Tooth Hole Saws

The carbide teeth on these saws outperform and last longer than the teeth on carbide-tipped and bimetal saws. Plus, they can be sharpened as needed.

Note: Hole saws, arbors, and pilot drills are sold separately below. Arbors and pilot drills work only with the hole saws below. To select the correct arbor size, find the arbors that are compatible with your hole saw diameter. For example, if your hole saw is 1″ dia., choose arbor 4118A57.

Metal-cutting saws have a 1″ cutting depth. Use them to cut steel, cast iron, stainless steel, titanium, aluminum, and hard rubber.

Pipe/duct-cutting saws have a 2″ cutting depth. Use them to cut cast and ductile iron pipe as well as other metal structural shapes.

Metal Cutting

Arbor

Pilot Drill

Hole Saws

Dia.	Metal Cutting	Each	Pipe/Duct Cutting	Each	Dia.	Metal Cutting	Each	Pipe/Duct Cutting	Each	Dia.	Metal Cutting	Each	Pipe/Duct Cutting	Each
3/4″	4118A11	$45.67	4118A36	$64.59	1 5/8″	4118A18	$59.81	4118A59	$157.14	2 1/2″	4118A26	$80.47	4118A48	$118.52
7/8″	4118A12	47.84	4118A37	66.33	1 3/4″	4118A19	60.89	4118A44	90.25	2 3/4″	4118A29	83.73	4118A49	130.49
1″	4118A13	48.93	4118A38	69.59	1 7/8″	4118A21	70.68	4118A27	167.18	3″	4118A31	94.60	4118A51	144.62
1 1/8″	4118A14	49.74	4118A39	75.03	2″	4118A22	71.76	4118A45	104.39	3 1/4″	4118A32	103.30	4118A52	159.84
1 1/4″	4118A15	52.62	4118A41	80.47	2 1/8″	4118A23	73.94	4118A28	183.50	3 1/2″	4118A33	109.51	4118A53	171.81
1 3/8″	4118A16	54.71	4118A42	82.64	2 1/4″	4118A24	75.35	4118A46	108.74	3 3/4″	4118A34	207.96	—	—
1 1/2″	4118A17	57.63	4118A43	85.90	2 3/8″	4118A25	79.38	4118A47	114.17	4″	4118A35	129.40	4118A55	188.12

Arbors—Work only with the hole saws above.

For Hole Saw Dia.	Arbor Shank, Dia. × Lg.	Arbor Thread Size	For Pilot Drill Dia.		Each
3/4″-7/8″	3/8″ × 3″	1/2″-13	1/4″	4118A56	$13.62
1″-1 7/8″	1/2″ × 3″	3/4″-10	1/4″	4118A57	13.62
2″-4″	1/2″ × 3″	3/4″-10	3/8″	4118A58	13.62

Carbide-Tipped Pilot Drills—Work only with the hole saws above.

For Hole Saw Dia.	Drill Dia.	Metal Cutting Drill Lg.		Each	Pipe/Duct Cutting Drill Lg.		Each
3/4″-1 7/8″	1/4″	2 3/4″	4118A61	$9.14	3 5/8″	4118A83	$9.14
2″-4″	3/8″	2 3/4″	4118A62	8.79	3 5/8″	4118A84	9.14

TiN- and TiAlN-Coated High-Speed Steel Hole Saws for Sheet Metal

Coated to last longer and run at higher speeds than uncoated hole saws for sheet metal. These hole saws and arbors (sold separately) are high-speed steel. Cutting depth is 1/4″. Arbors have a hex shank and come with a 2 5/32″ long pilot drill, except for 4146A93, which has a 2″ pilot drill.

TiN (Titanium Nitride)—Color is gold.

TiAlN (Titanium Aluminum Nitride)—For very high speeds and high-temperature applications. Color is purple-blue.

Hole Saw

Arbor (4146A92 & A93)

Dia.	HOLE SAWS TiN Coated	Each	TiAlN Coated	Each	ARBORS Hex Shank		Each
9/16″	4146A11	$14.63	4146A51	$15.86	3/8″	4146A91	$5.28
5/8″	4146A12	14.63	4146A52	15.86	3/8″	4146A91	5.28
11/16″	4146A13	16.20	4146A53	17.43	3/8″	4146A91	5.28
3/4″	4146A14	17.43	4146A54	18.66	3/8″	4146A91	5.28
13/16″	4146A15	19.34	4146A55	20.89	3/8″	4146A92	6.82
7/8″	4146A16	20.12	4146A56	21.66	3/8″	4146A92	6.82
15/16″	4146A17	21.69	4146A57	23.25	3/8″	4146A92	6.82
1″	4146A18	22.38	4146A58	23.92	3/8″	4146A92	6.82
1 1/16″	4146A19	22.95	4146A59	24.51	3/8″	4146A92	6.82
1 1/8″	4146A21	25.65	4146A61	27.20	3/8″	4146A92	6.82
1 3/16″	4146A22	26.55	4146A62	28.09	3/8″	4146A92	6.82
1 1/4″	4146A23	29.23	4146A63	30.78	3/8″	4146A92	6.82
1 3/8″	4146A25	32.03	4146A65	33.58	1/2″	4146A93	9.82
1 1/2″	4146A27	35.31	4146A67	36.86	1/2″	4146A93	9.82
1 5/8″	4146A29	40.94	4146A69	43.25	1/2″	4146A93	9.82
1 3/4″	4146A32	44.63	4146A72	46.94	1/2″	4146A93	9.82
1 7/8″	4146A34	47.35	4146A74	49.63	1/2″	4146A93	9.82
2″	4146A35	57.92	4146A75	61.14	1/2″	4146A93	9.82
2 1/4″	4146A38	66.37	4146A78	69.60	1/2″	4146A93	9.82
2 1/2″	4146A41	97.89	4146A81	101.15	1/2″	4146A93	9.82

Repl. Pilot Drill for 4146A91 ..... **4146A971** **Each** $3.12

Repl. Pilot Drill for 4146A92 and 4146A93 ..... **4146A981** **Each** $4.00

Adjustable Diameter Hole Cutters for Sheet Metal

Adjust the hole diameter to cut a variety of hole sizes with just one tool. Use these cutters in a drill press to cut holes in sheet metal, mild steel, laminates, plastic, and wood. Maximum safe speed is 500 rpm. Maximum cutting depth is 7/8″. Include a single high-speed steel cutting bit and a 1/4″ pilot drill.

Dia. Range	Shank Size	Bit Size	Hole Cutters	Each	Repl. Cutting Bits	Each
1″-6″	3/8″	3/16″	8830A13	$19.19	8830A15	$4.52
1 3/4″-7 7/8″	1/2″	1/4″	3082A2	28.52	3082A4	5.88

Carbide-Tooth Hole Saws for Sheet Metal

Get smoother cuts than high-speed steel saws on sheet metal and plastic up to 1/4″ thick. These saws have carbide teeth and a spring-ejector system for easy slug removal. Include an arbor with a 1/2″ dia. shank and a 1/4″ dia. pilot drill.

Dia.	Each	Dia.	Each
3/4″	4080A21 ... $57.75	1 3/8″	4080A31 ... $73.50
13/16″	4080A22 ... 59.50	1 1/2″	4080A33 ... 80.50
7/8″	4080A23 ... 60.67	1 5/8″	4080A34 ... 89.83
1″	4080A24 ... 63.00	1 3/4″	4080A35 ... 93.33
1 1/16″	4080A25 ... 66.50	2″	4080A36 ... 98.00
1 1/8″	4080A26 ... 67.67	2 1/8″	4080A37 ... 109.71
1 7/32″	4080A27 ... 68.83	2 1/4″	4080A38 ... 112.00
1 1/4″	4080A28 ... 71.17	2 3/8″	4080A39 ... 113.17
1 5/16″	4080A29 ... 72.33	2 1/2″	4080A41 ... 115.50

Replacement Pilot Drill ..... **4080A51** **Each** $9.34

Recessed Lighting Hole Saws

Specially sized with a carbide grit cutting edge, these saws are just right for cutting holes for recessed lighting fixtures. Use to cut materials such as drywall, lath, plaster, and ceiling tiles. An arbor is required for operation (sold separately below).

Dust catcher fits between the drill chuck and the hole saw and catches dust and debris when sawing into ceilings. Use with hole saws up to 8″ dia. Made of flexible plastic.

Hole Saw

Dust Catcher

Dia.	Fits Lighting Fixtures		Each
4 3/8″	Capri, Halo, Marco, Mini Juno	4478A11	$60.99
6 3/8″	Capri, Halo	4478A12	68.67
6 5/8″	Juno, Progress	4478A13	68.67
6 7/8″	Capri, Lightolier, Lithonia, Marco, Preacolite, Progress	4478A14	68.67

7/16″ Arbor ..... **4066A63** **Each** $10.05

Dust Catcher ..... **4478A21** **Each** $14.85

Hole Saw Core and Slug Removing Tool

Quickly and easily remove cores and slugs from your hole saw. The tool has two reverse-angled hooks that fit through the cleanout slots in your hole saw and allow you to quickly pull out cores and slugs. Made of black-oxide coated steel. Works with 1/2″-2 1/2″ dia. hole saws.

4067A21 ..... **Each** $6.31

For information about hole saw size selection, see page 2404.

High-Speed Steel Hole Saws for Sheet Metal

Large-Diameter Hole Saw

Deep-Cutting Hole Saw

Arbor with Spring-Loaded Pilot Pin

Arbor with Pilot Drill

Designed for fast, smooth cuts in sheet metal, these hole saws are made from heat-treated high-speed steel. Use them in portable drills and drill presses.

Large Diameter—Use to cut large diameter holes in sheet metal.

Deep Cutting—These have large flutes that prevent chips from clogging the saw, allowing you to cut deeper holes. *Note:* For hole saws with greater cutting depths than shown here, see page 2404.

Arbors—*Arbors with pilot pin* require a drilled pilot hole before using. *Arbors with spring-loaded pilot pin* allow easier removal of the core/slug. Drill pilot hole before using. *Arbors with pilot drill* allow you to drill a center pilot hole while sawing.

Kits—Include a high-speed steel pilot drill with each arbor and are furnished in a plastic carrying case.

Large-Diameter Inch Hole Saws

Dia.	Cutting Depth		Each	Dia.	Cutting Depth		Each
11/16″	1/8″	3789A11	$13.38	1 5/8″	1/8″	3789A27	$16.98
3/4″	1/8″	3789A12	13.53	1 11/16″	1/8″	3789A28	17.58
13/16″	1/8″	3789A13	13.62	1 3/4″	1/8″	3789A29	18.92
7/8″	1/8″	3789A14	13.81	1 7/8″	1/8″	3789A32	22.13
15/16″	1/8″	3789A15	13.96	2″	1/8″	3789A33	23.77
1″	1/8″	3789A16	14.11	2 1/16″	1/8″	3789A34	28.28
1 1/16″	1/8″	3789A17	14.36	2 1/8″	1/8″	3789A35	29.23
1 1/8″	1/8″	3789A18	14.51	2 1/4″	1/8″	3789A36	30.85
1 3/16″	1/8″	3789A19	14.60	2 3/8″	1/8″	3789A38	32.30
1 1/4″	1/8″	3789A21	14.87	2 1/2″	1/8″	3789A39	33.98
1 5/16″	1/8″	3789A22	14.96	2 9/16″	1/8″	3789A41	40.57
1 3/8″	1/8″	3789A23	15.21	2 5/8″	1/8″	3789A42	41.42
1 7/16″	1/8″	3789A24	16.74	2 3/4″	1/8″	3789A43	41.85
1 1/2″	1/8″	3789A25	16.79	2 7/8″	1/8″	3789A44	44.77
1 9/16″	1/8″	3789A26	16.89	3″	1/8″	3789A45	45.11

Arbors for Large-Diameter Inch Hole Saws

3/8″ Shank Arbor with Pilot Drill—For all large-diameter hole saws above.

Arbor ..... 3789A61 **Each** $28.96
Replacement 3/16″ Pilot Drill ..... 3789A62 **Each** $7.30

Kits

6-Saw Large-Diameter Inch Kit—Includes 7/8″, 1 1/8″, 1 3/8″, 1 3/4″, 2″, and 2 1/2″ saws; one 3/8″ arbor with a 3/16″ pilot drill (arbor also fits a 1/2″ chuck size); one extra 3/16″ pilot drill; and one washer.
3789A52 ..... **Each** $179.98

4-Saw Deep-Cutting Inch Kit—Includes 1/4″, 3/8″, 1/2″, and 3/4″ saws; one 3/8″ arbor with spring-loaded pilot pin; one extra 1/8″ pilot drill; and washers.
4093A83 ..... **Each** $55.18

7-Saw Deep-Cutting Inch Kit—Includes 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, and 3/4″ saws; one 3/8″ arbor with spring-loaded pilot pin; two extra 1/8″ pilot drills; one center punch; one hex wrench; and washers.
4093A81 ..... **Each** $77.68

7-Saw Deep-Cutting Metric Kit—Includes 8 mm, 10 mm, 12 mm, 14 mm, 16 mm, 18 mm, and 20 mm saws; one 3/8″ arbor with spring-loaded pilot pin; two extra 1/8″ pilot drills; one center punch; one hex wrench; and washers.
4298A31 ..... **Each** $80.51

Deep-Cutting Inch Hole Saws

Dia.	Cutting Depth		Each	Dia.	Cutting Depth		Each
1/4″	1/4″	4093A31	$7.34	23/32″●	1/4″	4093A66	$18.58
5/16″	1/4″	4093A33	7.77	3/4″	1/4″	4093A47	15.16
11/32″●	1/4″	4093A24	10.84	13/16″	1/2″	4093A51	24.67
3/8″	1/4″	4093A35	9.06	7/8″	1/2″	4093A52	25.96
13/32″●	1/4″	4093A26	13.47	15/16″	1/2″	4093A53	27.20
27/64″●	1/4″	4093A27	13.47	1″	1/2″	4093A54	28.49
7/16″	1/4″	4093A38	10.81	1 1/16″	1/2″	4093A55	32.12
15/32″●	1/4″	4093A29	14.26	1 1/8″	1/2″	4093A56	33.22
1/2″	1/4″	4093A41	11.22	1 3/16″	1/2″	4093A57	35.80
17/32″●	1/4″	4093A62	15.49	1 1/4″	1/2″	4093A58	38.90
9/16″	1/4″	4093A43	12.53	1 3/8″	1/2″	4093A59	42.72
5/8″	1/4″	4093A44	12.97	1 1/2″	1/2″	4093A61	44.63
11/16″	1/4″	4093A45	14.74				

● For arbor, use 4093A76 only.

Deep-Cutting Metric Hole Saws

Dia.	Cutting Depth		Each	Dia.	Cutting Depth		Each
6 mm	1/4″	4298A11	$8.60	14 mm	1/4″	4298A19	$12.52
7 mm	1/4″	4298A12	8.59	15 mm	1/4″	4298A21	12.87
8 mm	1/4″	4298A13	9.10	16 mm	1/4″	4298A22	12.97
9 mm	1/4″	4298A14	10.60	17 mm	1/4″	4298A23	14.30
10 mm	1/4″	4298A15	10.18	18 mm	1/4″	4298A24	14.78
11 mm	1/4″	4298A16	10.81	19 mm	1/4″	4298A25	15.16
12 mm	1/4″	4298A17	11.04	20 mm	1/4″	4298A26	16.13
13 mm	1/4″	4298A18	11.29				

Arbors for Deep-Cutting Hole Saws

3/8″ Shank Arbor with Pilot Pin—For 5/16″-13/16″ dia. saws. Has set screws that hold arbor and pin together.
Arbor ..... 4093A76 **Each** $43.38

3/8″ Shank Arbor with Spring-Loaded Pilot Pin—For 1/4″-3/4″ (6 mm-20 mm) dia. saws.
Arbor ..... 4093A71 **Each** $15.67
Replacement Pilot Pins (3/Pkg.) ..... 4093A75 **Per Pkg.** $5.78

1/2″ Shank Arbor with Spring-Loaded Pilot Pin—For 13/16″-1 1/2″ dia. saws. Has set screws that hold arbor and pin together.
Arbor ..... 4093A73 **Each** $49.74
Replacement Pilot Pin ..... 4093A74 **Each** $5.73

3/8″ Shank Arbor with Pilot Drill—For 3/8″-3/4″ dia. saws.
Arbor ..... 4093A72 **Each** $21.28
Replacement 3/16″ Pilot Drill (3/Pkg.) ..... 4093A84 **Per Pkg.** $14.56

Adjustable Large Diameter Hole Cutters for Sheet Metal

Drill Not Included

Attach these cutters to your portable drill and cut large-diameter holes in sheet metal up to 20 gauge (0.040″ thick). The 3/16″ dia. cutting bit fits 1/4″ and larger drill chucks. Cutter rotates on a 1/4″ pilot pin inserted into a drilled hole to produce clean, symmetrical holes. Shank is mounted to a cast aluminum frame.

Dia. Range		Each
2″-12″	30885A12	$65.24
2″-20″	30885A14	83.06
Replacement Cutting Bit	30885A18	14.11

Spot Weld Hole Saw

Designed to remove spot welds from sheet metal, this 3/8″ dia. high-speed steel saw is faster and more precise than drills and other hole saws. Has 1/4″ hex shank.
4096A11 ..... **Each** $16.96

Extra-Large Diameter Hole Saws

Cut holes up to twice the diameter of other bimetal hole saws. Saws are made with a titanium-aluminum body and have three replaceable bimetal blades that allow for easy chip removal. Replacement blades sold separately.

Use for cuts in plywood, laminates, sheetrock, acrylic, fiberglass, and metal siding. Cutting depth is 3/4″. Use with a portable drill or drill press that has a 1/2″ or larger chuck. Require a 1/2″ arbor with pilot drill (sold separately below).

Dia.		Each	Dia.		Each
4″	4002A22	$52.57	7 1/2″	4002A29	$103.90
4 1/2″	4002A23	58.98	8″	4002A31	116.73
5″	4002A24	65.40	8 3/8″	4002A32	129.57
5 1/2″	4002A25	71.82	9″	4002A33	135.98
6″	4002A26	78.23	10″	4002A35	143.68
6 1/2″	4002A27	84.65	11″	4002A37	170.63
7″	4002A28	97.48	12″	4002A39	178.32

1/2″ Arbor with Pilot Drill ..... 4002A53 **Each** $59.22
Replacement Blades (3/Pkg.) ..... 4002A52 **Per Pkg.** $15.69

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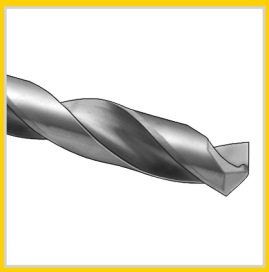
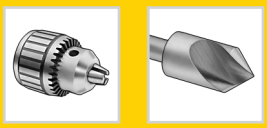

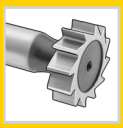

Air-Powered Drills

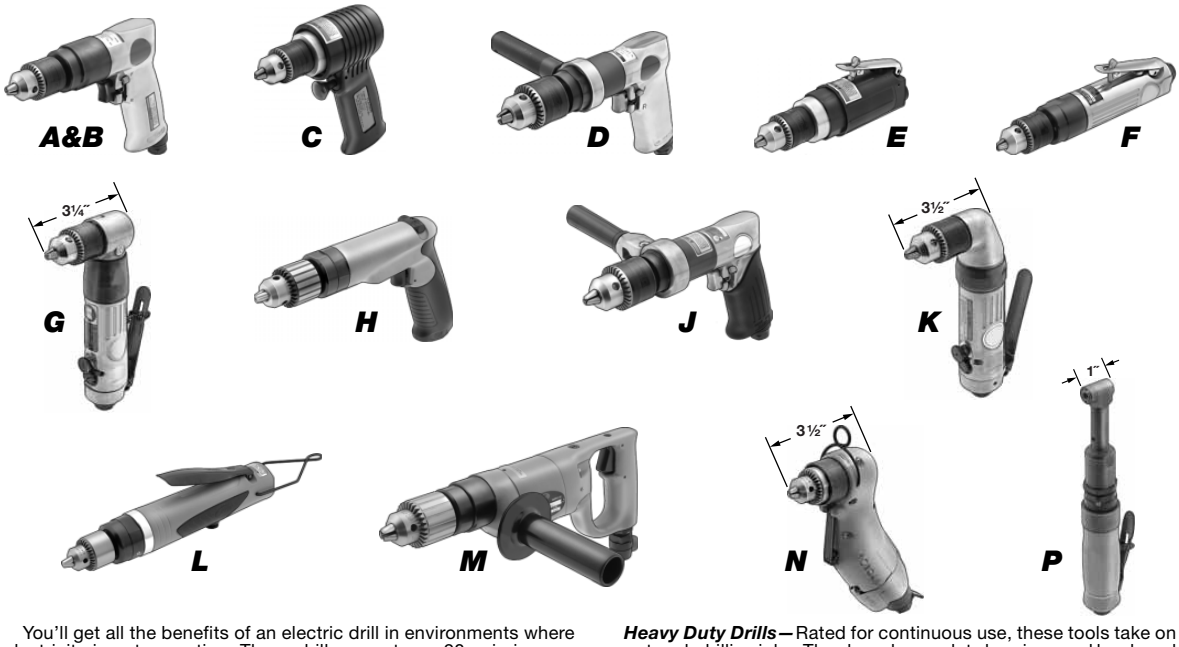

You'll get all the benefits of an electric drill in environments where electricity is not an option. These drills operate on 90 psi air pressure and have a ¼″ NPT female air inlet. All come with a chuck and a key, except Style B, which has a keyless chuck, and Style P, which have a threaded spindle.

Light Duty Drills— Designed for intermittent use. *Style A* has a rubber hand grip for added comfort. *Style D* has a side handle that adjusts 360°. *Styles E, F,* and *G* have a lever throttle with a lock to prevent accidental starts.

Medium Duty Drills— More durable than our light duty drills, these drills are excellent for general purpose drilling jobs. *Style H* have a rubber hand grip to reduce vibration. *Style J* has a side handle that adjusts 360° and a rubber hand grip for added comfort.

Heavy Duty Drills— Rated for continuous use, these tools take on your tough drilling jobs. They have heavy duty bearings and hardened steel gears. *Style H* has a rubber hand grip to reduce vibration. *Styles L* and *N* have a speed control that lets you set the motor speed at less than the max. rpm. *Style N* has an exhaust deflector/silencer that adjusts 360°.

Heavy Duty Drills for Threaded-Shank Drill Bits— Also rated for continuous use, these drills have a threaded spindle instead of a drill chuck and use ¼″-28 threaded-shank drill bits (sold separately, see page 2457). They have heavy duty bearings and hardened-steel gears.

Drill Style	Chuck Cap.	No-Load rpm	Motor Type	hp	Avg. cfm @ 90 psi	Exhaust Style	Air Hose ID	Lg.	Wt., lbs.		Each	
Light Duty Drills												
A Pistol Grip	3/8″	2,000	Reversing	0.50	4	Rear	3/8″	7 1/2″	2.2	**27755A17**	$69.73	***A***
B Pistol Grip	3/8″	2,000	Reversing	0.50	4	Rear	3/8″	7 1/2″	2.2	**27755A22**	75.32	***B***
C Pistol Grip	3/8″	20,000	Nonreversing	0.48	4	Front	3/8″	5″	1.7	**27755A12**	70.92	***C***
D Pistol Grip	1/2″	800	Reversing	0.50	4	Rear	3/8″	7″	4	**28105A16**	134.47	***D***
E Straight Handle	3/8″	20,000	Nonreversing	0.48	4	Front	3/8″	6 1/2″	1.6	**27755A14**	65.57	***E***
F Straight Handle	3/8″	2,700	Nonreversing	0.37	6.8	Rear	3/8″	8″	2.2	**27825A21**	137.40	***F***
G Right Angle	3/8″	1,800	Reversing	0.50	5.3	Rear	3/8″	8 1/4″	2.2	**27825A31**	174.30	***G***
Medium Duty Drills												
A Pistol Grip	3/8″	2,000	Reversing	0.50	4	Rear	3/8″	6 3/8″	2.5	**28495A12**	172.01	***A***
A Pistol Grip	3/8″	2,000	Nonreversing	0.50	4	Rear	3/8″	7 13/16″	2.4	**28495A11**	127.41	***A***
H Pistol Grip	3/8″	2,000	Reversing	1.00	7.5	Rear	3/8″	7 19/32″	2.6	**2803A13**	274.26	***H***
H Pistol Grip	3/8″	2,600	Nonreversing	1.00	7.5	Rear	3/8″	7″	2.5	**2803A11**	284.34	***H***
J Pistol Grip	1/2″	800	Reversing	0.50	6	Rear	3/8″	8 1/2″	3.3	**27755A18**	261.05	***J***
K Right Angle	3/8″	1,800	Reversing	0.50	4.6	Rear	3/8″	7″	2.5	**27755A21**	145.38	***K***
Heavy Duty Drills												
H Pistol Grip	1/4″	4,000	Reversing	1.00	7.5	Rear	3/8″	7 3/32″	2.4	**3130A33**	310.83	***H***
L Straight Handle	1/4″	4,000	Reversing	1.00	7.5	Rear	3/8″	9 5/16″	2.2	**3130A29**	365.46	***L***
L Straight Handle	3/8″	1,200	Reversing	1.00	7.5	Rear	3/8″	10 13/16″	2.8	**8894A11**	390.15	***L***
M D-Handle	1/2″	550	Nonreversing	1.00	8	Side	3/8″	13 3/8″	6.6	**3131A12**	716.49	***M***
N Angle Head	1/4″	2,200	Reversing	0.33	4	Rear	3/8″	9″	2.6	**3129A15**	448.45	***N***
Heavy Duty Drills for Threaded-Shank Drill Bits												
P Right Angle	—	2,400	Nonreversing	0.40	22	Rear	5/16″	11 3/32″	1.8	**29955A21**	741.00	***P***
P Right Angle	—	5,300	Nonreversing	0.40	22	Rear	5/16″	10 11/16″	1.6	**29955A22**	741.00	***P***

Multi-Angle Drill Attachment

Drill here, drill there...this attachment lets you drill anywhere. It fits onto your drill and rotates a full 360°, making it ideal for use in recessed locations.

Attachment has a round body with a 3/8″ keyless chuck and a 3/8″ hex shaft that rotate independently from each other. Simply slide the thumb switch and twist the soft-grip handle to lock and unlock the moving parts. For use with drills that have a 3/8″ and larger chuck capacity.

2496A11 ..... **Each** $34.71

DeWalt Cordless Drill/Drivers

Get drilling power where you need it. These cordless drills have a variable-speed reversing motor, an adjustable clutch, a keyless chuck, and a cushion-grip handle (except Style C, which does not have a clutch or a cushion-grip handle). All drills are furnished with two batteries; a 1-hr., 120 VAC battery charger; and a carrying case. All are UL listed and meet OSHA requirements.

29835A88 has a 360° rotating side handle.

A

B
29835A88

C

	Volts	Chuck Cap.	No-Load rpm	Battery, amp-hrs.	Battery Type	Clutch Settings	Lg.	Wt., lbs.	DeWalt Model No.		Each	
A	12	3/8″	0-400/0-1450	1.3	Nickel Cadmium	17	7.8″	3.8	DC742KA	29835A104	$157.91	**A**
A	14.4	1/2″	0-400/0-1450	1.7	Nickel Cadmium	17	8.2″	4.3	DC730KA	29835A105	203.71	**A**
A	18	1/2″	0-500/0-1700	1.7	Nickel Cadmium	17	8.2″	4.8	DC720KA	29835A103	217.82	**A**
B	12	1/2″	0-425/0-1200/0-1800	2.4	Nickel Cadmium	22	9.5″	5.3	DCD910KX	29835A86	211.39	**B**
B	14.4	1/2″	0-425/0-1200/0-1800	2.4	Nickel Cadmium	22	9.5″	5.8	DCD920KX	29835A87	240.76	**B**
B	18	1/2″	0-500/0-1250/0-2000	2.4	Nickel Cadmium	22	9.5″	6.3	DCD940KX	29835A88	294.24	**B**
C	18	3/8″	0-500/0-1500	2.4	Nickel Cadmium	—	10.4″	4.7	DW960K-2	29835A66	225.16	**C**

Batteries and Chargers for DeWalt Cordless Tools

Switch out your DeWalt nickel cadmium battery for a lighter DeWalt lithium ion battery—DeWalt's nickel cadmium and lithium ion batteries can be used interchangeably in DeWalt tools. Batteries and chargers are not interchangeable with other brands and are not for use with DeWalt Univolt tools.

Nickel cadmium batteries are compatible with all DeWalt chargers for nickel cadmium and lithium ion batteries.

Lithium ion batteries are lighter than nickel cadmium batteries. They are compatible with all DeWalt chargers except those that are for nickel cadmium batteries only (chargers for nickel cadmium batteries only are black in color).

29835A123 ***charger*** is for use in vehicles.

9.6- to 18-Volt Batteries

24- to 36-Volt Batteries

Charger 29835A631

Charger 29835A101

Batteries

Volts	Amp-Hrs.	For DeWalt Models	Battery Type	DeWalt No.		Each
9.6	1.7	All 9.6-volt models	Nickel Cadmium	DW9061	29835A42	$53.74
12	2.4	All 12-volt models	Nickel Cadmium	DC9071	29835A11	72.89
14.4	2.4	All 14.4-volt models	Nickel Cadmium	DC9091	29835A12	83.66
18	2.4	All 18-volt models	Nickel Cadmium	DC9096	29835A13	95.29
18	2.4	All 18-volt models	Lithium Ion	DC9180	29835A121	161.11
24	2.4	All 24-volt models	Nickel Cadmium	DW0242	29835A95	160.66
28	2.4	All 28-volt models	Lithium Ion	DC9280	29835A122	222.45
36	2.4	All 36-volt models	Lithium Ion	DC9360	29835A102	184.75

Chargers

For DeWalt Batteries	Charge Time	Voltage	DeWalt No.		Each
All 7.2- to 18-volt nickel cadmium batteries only	15 min.	120 VAC	DW9117	29835A64	$115.26
All 7.2- to 18-volt batteries	1 hr.	120 VAC	DC9310	29835A631	81.82
All 7.2- to 18-volt batteries	1 hr.	12 VDC (Vehicle Charger)	DC9319	29835A123	133.28
24-volt nickel cadmium batteries only	1 hr.	120 VAC	DW0246	29835A78	94.32
28- and 36-volt lithium ion batteries only	1 hr.	120 VAC	DC9000	29835A101	99.74

DeWalt 18-Volt Cordless Tool Combination Kits

Get the tools you need in an easy-to-carry two- or four-tool combination kit. Both kits come with two 18-volt, 2.4 amp-hour, nickel-cadmium batteries, and a 1-hr., 120 VAC charger.

Two-Tool Kit— Includes a hammer drill with 1/2″ chuck capacity, a reciprocating saw (0-3000 strokes per minute) with one 1/2″ universal-shank reciprocating saw blade, and a carrying bag.

Four-Tool Kit— Includes a hammer drill with 1/2″ chuck capacity, a reciprocating saw (0-3000 strokes per minute) with one 1/2″ universal-shank reciprocating saw blade, a 6 1/2″ circular saw (5/8″ arbor) with one carbide-tipped circular-saw blade, a flexible-stem flashlight, and a carrying case.

Four-Tool Kit

		Each
Two-Tool Kit (Model No. DCK251X)	8862A43	$377.65
Four-Tool Kit (Model No. DCK450X)	8862A44	507.06

Hand Drills

Good for use on wood that is prone to splintering.

D Crank-Action Hand Drill— Just turn the smooth-running hand crank to drill.

E Spiral-Action Ratchet Hand Drill/Screwdriver— An up and down stroke turns this drill to quickly drive and remove screws. Set the drill to turn clockwise, counterclockwise, or lock in place for increased power.

F Ratchet-Bit Brace Hand Drill— Great for use in confined areas. The three-jaw chuck provides a secure fit for driving round shank drills, hex shank tools, and auger bits.

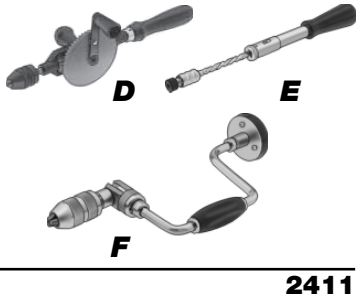

	Chuck Capacity	Lg.		Each
D Crank-Action Hand Drill	5/16″	11″	2297A1	$52.15
E Spiral-Action Ratchet Hand Drill/Screwdriver	1/4″	13 3/16″	2297A2	66.50
F Ratchet-Bit Brace Hand Drill	7/64″-9/32″	10″	2297A3	99.21

Milwaukee Cordless Drill/Drivers

A

B

C

D

A lithium ion battery powers these cordless drills, which means they weigh less and have a longer run-time than Milwaukee cordless drills that use nickel cadmium batteries. All drills have a variable-speed reversing motor; a cushion-grip handle; one or two batteries (as stated); and a carrying case. All are UL listed and meet OSHA requirements.

Styles A, B, and ***C*** have a keyless chuck and an adjustable clutch for adjusting torque. They come with two batteries. *Styles A* and *B* include a 30-min., 120 VAC battery charger. *Style C* includes a 1-hr., 120 VAC battery charger.

Style D has an angle head that swivels 360° and locks in any position. It also has a 360° adjustable side handle and comes with one 28-volt battery. Includes a 1-hr., 120 VAC battery charger. C-UL listed.

	Volts	Chuck Cap.	No-Load rpm	Max. Torque, in.-lbs.	Battery, amp-hrs.	Battery Type	Clutch Settings	Lg.	Wt., lbs.	Milwaukee Model No.		Each
A	12	3/8″	0-400/0-1500	250	1.3	Lithium Ion	20	7¼″	2.3	2410-22	29735A103	$163.90
B	18	1/2″	0-350/0-1400	400	1.4	Lithium Ion	21	7¾″	4	2601-22	29735A121	230.63
C	18	1/2″	0-450/0-1800	650	2.8	Lithium Ion	24	9¼″	5.3	2610-24	29735A122	361.90
D	28	1/2″	0-400/0-1000	1081	3	Lithium Ion	—	18¼″	10.9	0721-21	29735A77	412.50

Batteries and Chargers for Milwaukee Cordless Tools

Batteries and chargers are not interchangeable with other brands.

Batteries

	Battery No.	For Milwaukee Tool Nos.	Each
12-Volt Lithium Ion—1.3 amp-hrs., Push-Up Style			
	48-11-2401	2410-22	4443A33 $49.23
12-Volt Nickel Cadmium—2.4 amp-hrs., Slide-On Style			
	48-11-1970	0501-02, -20, -23 0502-02, -20, -21, -23 0602-22	29735A43 $71.43
14.4-Volt Nickel Cadmium—2.4 amp-hrs., Slide-On Style			
	48-11-1024	0511-21 0512-02, -21 0513-02, -21 0516-20, -22 0612-22 0613-20, -24 0615-20, -24 0617-20, -24 9082-22	29735A83 $81.63

	Battery No.	For Milwaukee Tool Nos.	Each
18-Volt Lithium Ion—1.4 amp-hrs., Slide-On Style			
	48-11-1815	2601-22 2650-21	29735A123 $86.15
18-Volt Lithium Ion—2.8 amp-hrs., Slide-On Style			
	48-11-1828	2610-24 2611-24 2620-21, -22 2630-22 2650-22	29735A124 $151.95
18-Volt Nickel Cadmium—2.4 amp-hrs., Slide-On Style			
	48-11-2230	0522-20, -21 0523-20, -22 0524-20, -22 0628-20, -24 0629-20, -24 9079-22	29735A84 $106.06
28-Volt Lithium Ion—3 amp-hrs., Slide-On Style			
	48-11-2830	0719-22 0721-21 0726-22 0729-21 0730-22 0779-22	54275A31 $170.00

Battery Chargers

E

F

G

H

J

All chargers are 120 VAC and have one port, except ***Style G***, which has three ports for charging up to three slide-on style batteries simultaneously.

	For Milwaukee Batteries	Charging Time	Model No.		Each
E	48-11-2401	30 min.	48-59-2401	4443A22	$56.92
F	All 12-, 14.4-, and 18-volt nickel cadmium slide-on style batteries	1 hr.	48-59-0255	29735A85	56.76
G	All 12-, 14.4-, and 18-volt nickel cadmium slide-on style batteries, 48-11-1830, 48-11-2830	45-60 min.	48-59-0280	29735A127	219.98
H	48-11-1815, 48-11-1828	1 hr.	48-59-1801	29735A128	64.62
J	48-11-1830, 48-11-2230, 48-11-2830	1 hr.	48-59-2818	54275A32	66.00

Milwaukee 28-Volt Cordless Tool Combination Kit

With this selection of powerful portable tools, you'll be ready to tackle any job, anywhere. Kit includes a hammer drill (29735A97); a Sawzall reciprocating saw (24795A7) with two blades; a 5/8″ arbor circular saw (4154A16) with 6½″ blade; a work light; a belt clip; two 28-volt lithium ion batteries; a 1-hr., 120 VAC battery charger; and a heavy duty carrying bag.

2998A11 ..... **Each** $797.74

Makita Cordless Drill/Drivers

These cordless drills have a variable-speed reversing motor and a keyless chuck for fast bit changes, unless noted. They come with two batteries and a carrying case. All are UL listed and meet OSHA requirements.

Styles A and ***C*** have a cushion-grip handle and an adjustable clutch that lets you adjust torque for driving various screws. All include a 1-hour, 115 VAC battery charger except 27875A51, which includes a 15-minute, 115 VAC charger.

Style B has a 3/8″ keyed chuck. Includes a 30-minute, 115 VAC battery charger.

Style D uses lithium ion batteries, which means it lasts longer and weighs less than drills that use nickel cadmium and nickel metal hydride batteries. Includes a 30-minute, 115 VAC battery charger.

	Volts	Chuck Cap.	No-Load rpm	Max. Torque, in.-lbs.	Battery, amp-hrs.	Battery Type	Clutch Settings	Lg.	Wt., lbs.	Makita Model No.		Each
A	9.6	3/8″	0-400/0-1,300	200	1.3	Nickel Cadmium	16	7 9/16″	3.1	6261DWPE	**27875A36**	$117.61
A	12	3/8″	0-400/0-1,300	250	1.3	Nickel Cadmium	16	7 9/16″	3.3	6271DWPE	**27875A71**	127.31
A	14.4	3/8″	0-400/0-1,300	260	1.3	Nickel Cadmium	16	7 9/16″	3.6	6281DWPE	**27875A52**	134.59
B	18	3/8″	0-1,800	121	3	Lithium Ion	—	12 3/8″	3.5	BDA350	**8777A41**	398.91
C	18	1/2″	0-400/0-1,500	480	1.5	Lithium Ion	16	7 9/16″	3.3	LXFD01CW	**27875A51**	217.70
D	18	1/2″	0-400/0-1,500	480	3	Lithium Ion	16	7 9/16″	3.8	LXFD01	**27875A19**	321.38

Batteries and Chargers for Makita Cordless Tools

Batteries and chargers are not interchangeable with other brands.

Batteries

	Battery No.	For Makita Tool Nos.		Each
7.2-Volt Nickel Cadmium—1.3 amp-hrs., Push-Up Style				
	Series B7000	All 7.2-volt nickel cadmium tools	**8777A31**	$46.28
9.6-Volt Nickel Cadmium—1.3 amp-hrs., Push-Up Style				
	Series B9000	4190D (DW) 4390D (DW) 5090D (DW) 6093D (DW) 6891D (DW) DA391D (DW)	**3972A22**	$55.86
	Series 9120, No. 192638-6	6222D (DWE) 6226D (DWE) 6260D (DWPE) 6261D (DWPE) 6991D (DWE)	**27875A85**	$61.43
9.6-Volt Nickel Metal Hydride—2.6 amp-hrs., Push-Up Style				
	Series 9034, No. 193890-9	6095D (DWBE, DWBLE)	**29435A33**	$88.46
12-Volt Nickel Cadmium—1.3 amp-hrs., Push-Up Style				
	Series 1200, No. 192271-4	6211D (DW) 6311D (DW) 6911D (DW) 8411D (DW)	**27875A25**	$75.26
	Series 1210, No. 632277-5	5092D (DW) 6011D (DW, DWE)	**27875A86**	$78.55
12-Volt Nickel Cadmium—2 amp-hrs., Push-Up Style				
	Series 1222, No. 192598-2	5093D (DWAE) 6213D (DWAE) 6271D (DWPE) 6313D (DWAE) 6911 (HDWA) 6914D (DWAE)	**27875A82**	$77.60
12-Volt Nickel Metal Hydride—2.6 amp-hrs., Push-Up Style				
	Series 1234, No. 193157-5	6217D (DWDE) 6317D (DWDE) 8413D (DWDE) DA312D (DWD)	**27835A32**	$105.36

	Battery No.	For Makita Tool Nos.		Each
14.4-Volt Nickel Cadmium—1.3 amp-hrs., Push-Up Style				
	Series PA14, No. 194172-2	6280DWPE 6281DWPE 6339DWDE	**51455A74**	$76.93
14.4-Volt Nickel Cadmium—2 amp-hrs., Push-Up Style				
	Series 1422, No. 192600-1	6228D (DWAE) 6233D (DWAE) 6333D (DWAE)	**27875A83**	$88.64
14.4-Volt Nickel Metal Hydride—2.6 amp-hrs., Push-Up Style				
	Series 1434, No. 193158-3	6233D (DWBE) 6237D (DWDE) 6333D (DWBE) 6336D (DWBE) 6337D (DWDE) 6935FD (DWDE) 8433D (DWDE)	**27875A93**	$106.70
18-Volt Nickel Cadmium—2 amp-hrs., Push-Up Style				
	Series 1822, No. 192827-3	6343D (DWAE) 6390D (DWPLE) 8390D (DWPLE)	**27875A77**	$95.38
18-Volt Nickel Metal Hydride—2.6 amp-hrs., Push-Up Style				
	Series 1834, No. 193159-1	4334D (DWD) 5620D (DWD) 6347D (DWDE) 6349D (DWDE) 6936FD 8444D (DWDE) JR180D (DWD)	**39815A89**	$108.41
18-Volt Lithium Ion—1.5 amp-hrs., Slide-On Style				
	Series BL1815	BTD142HW LXFD01CW	**27875A12**	$94.02
18-Volt Lithium Ion—3 amp-hrs., Slide-On Style				
	Series BL1830	All 18-volt lithium ion tools	**27875A15**	$128.34

Battery Chargers

For Makita Batteries	Charging Time	Voltage	Model No.		Each
All 7.2- to 18-volt nickel cadmium and nickel metal hydride batteries	1 hrs.	115 VAC	DC1804	**27875A78**	$56.26
All 14.4- to 18-volt lithium ion batteries	30 min.	115 VAC	DC18RA	**27875A17**	122.97

27875A78

Pistol-Grip Electric Drills

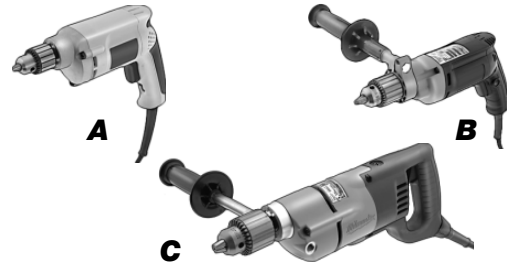

A traditional pistol-grip shape makes these drills suitable for a variety of drilling applications. All have a variable-speed, reversing motor. Drills include a chuck, a chuck key (except the keyless models), and an 8-ft. power cord with plug. Drills with two-prong plugs are double insulated. All operate on 115/120 VAC, 60 Hz and are CSA certified (except Makita models) and UL listed.

Style A have a trigger lock (except 28925A4) so you don't have to hold down the trigger for continuous use.

Style B have a 360° adjustable side handle for additional control (except 29005A61 and 2829A51, which have a two-position side handle). They also have a trigger lock (except 28135A82) so you don't have to hold down the trigger for continuous use. 2829A51 and 2829A94 have a detachable Quik-Lok power cord.

Style C have a two-position side handle for additional control and a detachable Quik-Lok power cord.

	Chuck Cap.	No-Load rpm	Chuck Style	Motor Amps	Gear Housing Material	Plug Type	Lg.	Wt., lbs.	Brand	Model No.		Each	
A	1/4″	0-4,000	Key	6.7	Metal	2 Prong	9 5/8″	3.2	DeWalt	DW217	**3142A71**	$165.76	***A***
A	3/8″	0-1,200	Key	7.0	Metal	3 Prong	11 3/8″	3.6	DeWalt	DW223G	**28925A23**	147.35	***A***
A	3/8″	0-1,200	Keyless	6.7	Thermoplastic	2 Prong	11 3/8″	3.3	DeWalt	DW222	**28925A22**	121.56	***A***
A	3/8″	0-2,500	Key	4.9	Thermoplastic	2 Prong	10 9/32″	3.1	Makita	6407	**29125A33**	82.45	***A***
A	3/8″	0-2,500	Keyless	4.9	Thermoplastic	2 Prong	10 9/32″	3.1	Makita	6408	**29125A41**	82.45	***A***
A	3/8″	0-2,500	Keyless	8.0	Thermoplastic	2 Prong	9″	4.1	DeWalt	DWD112	**28925A4**	70.03	***A***
B	3/8″	0-1,200	Key	7.0	Metal	3 Prong	12″	4.2	Milwaukee	0200-20	**2946A71**	146.25	***B***
B	1/2″	0-550	Key	6.5	Metal	2 Prong	11 1/4″	4.8	Makita	6302H	**29005A61**	141.86	***B***
B	1/2″	0-600	Key	7.8	Metal	2 Prong	12″	4.4	DeWalt	DW245	**28135A83**	158.91	***B***
B	1/2″	0-850	Key	7.8	Metal	3 Prong	12″	4.2	DeWalt	DW235G	**28135A92**	116.38	***B***
B	1/2″	0-850	Key	8.0	Metal	3 Prong	12 3/16″	5.4	Milwaukee	0300-20	**2829A91**	135.00	***B***
B	1/2″	0-850	Keyless	8.0	Metal	3 Prong	12 1/4″	5.6	Milwaukee	0302-20	**2829A94**	155.25	***B***
B	1/2″	0-950	Key	5.5	Metal	3 Prong	10 1/2″	4.8	Milwaukee	0234-6	**2829A51**	155.62	***B***
B	1/2″	0-1,200	Key	10.0	Metal	3 Prong	12 1/4″	4.9	DeWalt	DWD210G	**28135A82**	135.18	***B***
C	1/2″	0-500	Key	7.0	Metal	3 Prong	14 3/4″	6.8	Milwaukee	1107-6	**89125A42**	230.00	***C***
C	1/2″	0-600	Key	7.0	Metal	3 Prong	14 3/4″	6.8	Milwaukee	1007-1	**89125A45**	223.75	***C***

Three-Handle Electric Drills

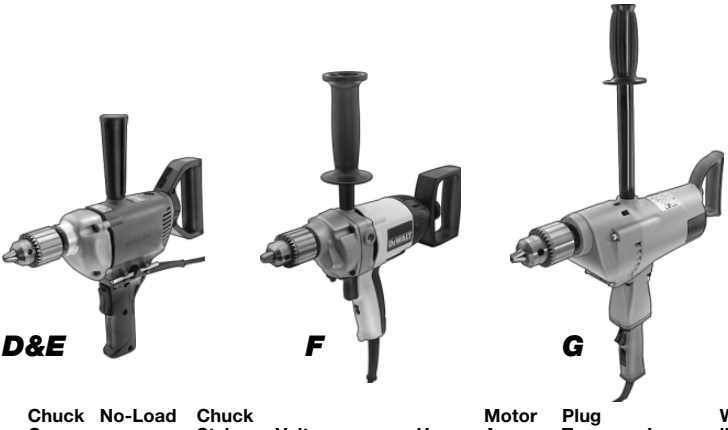

With a powerful motor, these drills have the strength for big drilling and mixing applications. Their top handle provides additional leverage and stability, and a rear D-handle makes them easy to carry. Motors are single-speed reversing, except Style F, which is variable-speed reversing. Gear housing is metal.

Drills come with a chuck, a chuck key, and an 8-ft. power cord with plug (unless noted). Those with two-prong plugs are double insulated. All are UL listed, CSA certified, and meet OSHA requirements.

Style D has a removable top handle and a rear handle that adjusts 360°.

Style E has removable top and rear handles.

Style F has a trigger lock so you don't have to hold down the trigger for continuous use. Also has a removable three-position top handle and a removable two-position rear handle.

Style G has a removable top handle and a two-position rear handle.

	Chuck Cap.	No-Load rpm	Chuck Style	Voltage	Hz	Motor Amps	Plug Type	Lg.	Wt., lbs.	Brand	Model No.		Each	
D	1/2″	600	Key	120 VAC	50/60	8.5	2 Prong	13 3/8″	6.3	Makita	DS4011	**29005A52**★	$168.54	***D***
E	1/2″	450	Key	120 VAC/VDC	60	7.0	3 Prong	12 1/4″	11.4	Milwaukee	1660-6	**3119A27**	240.00	***E***
F	1/2″	0-550	Key	120 VAC	60	9.0	2 Prong	11 1/2″	7.5	DeWalt	DW130V	**28135A62**	194.77	***F***
G	3/4″	350	Key	120 VAC/VDC	60	10.0	3 Prong	18 1/2″	19	Milwaukee	1854-1	**2832A41**	640.00	***G***

★ Has a 6-ft. power cord.

Milwaukee Quik-Lok Power Cords

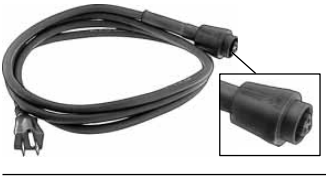

Replacement cords for Milwaukee tools with Quik-Lok connections.

Cord Type	Milwaukee No.		Each
8-ft. Cord with 3-Prong Plug	48-76-4008	**2744A68**	$21.17
10-ft. Cord with 2-Prong Plug	48-76-5010	**2744A78**	21.17
25-ft. Cord with 2-Prong Plug	48-76-5025	**2744A79**	33.83
25-ft. Cord with 3-Prong Plug	48-76-4025	**2744A69**	33.83

Drilling-Debris Containment Bubbles

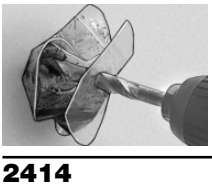

Make cleanup after drilling easy by containing chips and dust in these disposable bubbles. Use the adhesive backing to stick the bubble to the wall and pull the label to inflate. Drill through the bubble to the wall; then gently pull it off the surface to dispose.

Package quantity is 10.

For Use On		Per Pkg.
Metal	**8937A13**	$26.23
Painted Walls and Wallpaper	**8937A21**	5.01
Wood and Plaster	**8937A22**	5.01

Angle-Head Electric Drills

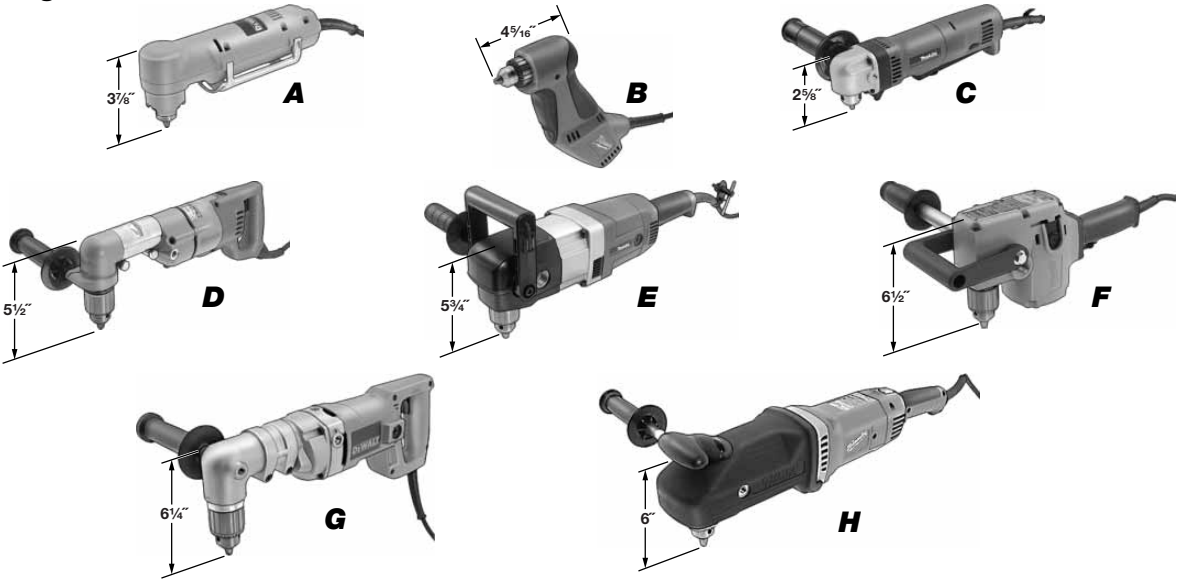

Get a better angle when drilling into hard-to-reach spaces. These durable drills have variable-speed reversing motors (except E, F, G, and H) and operate on 115/120 VAC, 60 Hz. They include a chuck, a chuck key, and an 8-ft. power cord with plug (except Style H, which has a 9-ft. power cord with plug). Drills with two-prong plugs are double insulated. All are UL listed, CSA certified (except Styles C and E), and meet OSHA requirements.

Style C has an LED light and a two-position side handle.

Style D has a 360° adjustable head, a 360° adjustable side handle, a chuck remover bar, a Quik-Lok power cord, and a carrying case.

Style E has a two-speed reversing motor, a rear handle that rotates 90°, a two-position side handle, an adjustable top handle, and a torque limiter that disengages the motor at low speeds if the bit gets stuck.

Style F has a two-position side handle and a three-position front handle.

Style G has a 360° adjustable head, a three-speed nonreversing motor (400 and 900 rpm angle drilling; 600 rpm straight drilling), a multiposition side handle, and a carrying case.

Style H has a rear handle that rotates 90° and a two-position side handle.

	Chuck Cap.	No-Load rpm	Motor Amps	Head Angle	Gear Housing Material	Plug Type	Lg.	Wt., lbs.	Brand	Model No.		Each	
A	⅜″	0-1200	3.7	90°	Thermoplastic	2 Prong	10″	3.7	DeWalt	DW160V	**3143A55**	$168.54	***A***
B	⅜″	0-1300	3.5	55°	Thermoplastic	2 Prong	11″	3.9	Milwaukee	0370-20	**28705A21**	132.50	***B***
C	⅜″	0-2400	4.0	90°	Metal	2 Prong	10⅝″	3.1	Makita	DA3010F	**27775A51**	237.77	***C***
D	½″	0-335/0-750★	7.0	90°	Metal	3 Prong	16¾″	10.3	Milwaukee	3107-6	**3147A74**	270.00	***D***
E	½″	300/1200	10.0	90°	Metal	2 Prong	18¼″	12.3	Makita	DA4031	**29005A71**	428.01	***E***
F	½″	300/1200	7.5	90°	Metal	3 Prong	15¼″	11.5	Milwaukee	1675-6	**29175A21**	334.38	***F***
G	½″	400/600/900	7.0	90°	Metal	2 Prong	17½″	9.75	DeWalt	DW120K	**28135A91**	292.85	***G***
H	½″	450/1750	13.0	90°	Metal	3 Prong	22″	14.7	Milwaukee	1680-20	**29175A51**	360.00	***H***

★ With right-angle attachment.

Right-Angle Drilling Attachments

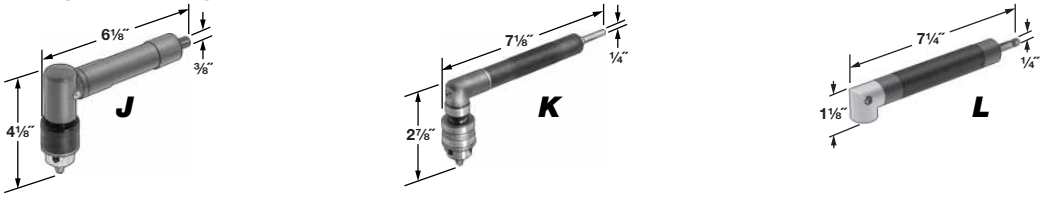

Change your drill into a right-angle tool for access into hard-to-reach spaces. Use with cordless, electric, and air-powered drills.

J General Purpose Attachment—For a variety of maintenance drilling jobs. Comes with a Jacobs drill chuck, a chuck key, and a wrench. Use in drills with ⅜″ and ½″ chuck capacities. Maximum speed is 4000 rpm.

K Heavy Duty Attachment—The gears, shaft, and spindle are heat-treated alloy steel for long life. Use this attachment in drills with ¼″, ⅜″, and ½″ chuck capacities. Furnished with a 1/32″-¼″ capacity Jacobs drill chuck and key. Maximum speed is 2500 rpm.

L Tight-Spot Attachment—Work in tight spaces with as little as 2″ clearance using your ¼″-28 threaded-shank drill bits. For use in drills with ¼″, ⅜″, and ½″ chuck capacities. Maximum speed is 2500 rpm. *Note:* Do not use with drill bits larger than ¼″ dia.

Tight-Spot Attachment Kit includes the tight-spot attachment above and six ¼″-28 threaded-shank high-speed drill bits in the following sizes: (Dia.×O'all Lg.) 3/32″×2½″, ⅛″×13/16″, ⅛″×1½″, ⅛″×2⅜″, 5/32″×1½″, and 3/16″×1½″. You'll also get a 6″ extension, a chuck adapter, a wrench, and a vinyl storage pouch. For replacement threaded-shank drill bits, see below and page 2457.

	For Drill Chuck Capacity	Attachment Chuck Capacity		Each
J General Purpose Attachment	⅜″, ½″	⅜″	**2778A15**	$66.72
K Heavy Duty Attachment	¼″, ⅜″, ½″	¼″	**4450A4**	139.20
L Tight-Spot Attachment	¼″, ⅜″, ½″	—	**8787A14**	32.57
L Tight-Spot Attachment Kit	¼″, ⅜″, ½″	—	**8787A11**	62.48
Replacement Six-Piece Drill Bit Set for 8787A11			**8787A12**	23.85

Cordless Hammer Drills

DeWalt

Milwaukee (29735A126)

Makita

One cordless tool for many jobs—these drills have rotary-percussion mode and rotary-only mode for drilling masonry and other materials and an adjustable clutch for fastening applications. Drills also have a variable-speed reversing motor; a side handle (except Makita model); a cushion-grip handle; a keyless chuck; two lithium-ion batteries; a 115/120 VAC battery charger; and a carrying case. All are UL listed and meet OSHA requirements. See pages 2458-2461 for masonry drill bits. See pages 2411-2412 for replacement batteries and chargers.

Torque ratings are 650 in.-lbs. for 29735A126 and 750 in.-lbs. for 29735A97. All others are not rated.

Chuck Cap.	Max. Bit Size Concrete	Max. Bit Size Steel	No-Load Blows per Min.	Battery amp-hrs.	No-Load rpm	Lg.	Wt., lbs.	Brand	Model No.		Each
18 Volts											
1/2"	5/8"	1/2"	0-8,500/0-21,250/0-34,000	2.4	0-500/0-1,250/0-2,000	9 1/2"	5.3	DeWalt	DCD970KL	29835A52	$366.43
1/2"	5/8"	1/2"	0-7,200/0-28,000	2.8	0-450/0-1,800	9 1/4"	5.3	Milwaukee	2611-24	29735A126	383.90
1/2"	1/2"	1/2"	0-6,000/0-22,500	3	0-400/0-1,500	8 3/4"	4.2	Makita	BHP452	27835A52	314.04
28 Volts											
1/2"	5/8"	1/2"	0-7,200/0-28,800	3	0-450/0-1,800	9 1/4"	6.7	Milwaukee	0726-22	29735A97	446.25
36 Volts											
1/2"	1/4"	1/2"	0-6,800/0-20,400/0-27,200	2.4	0-400/0-1,200/0-1,600	10 1/2"	6.7	DeWalt	DC901KL	29835A93	519.66

Electric Hammer Drills

Just push a switch or twist the collar ring and these tools will change from a regular pistol-grip electric drill to a hammer drill—great for drilling in masonry materials. Rotary-percussion mode is for drilling masonry materials using carbide-tipped straight- and hex-shank hammer drill bits (see page 2460). Rotary-only mode is for use with standard drill bits for wood and metal as well as rotary-masonry drill bits (see page 2461).

Drills have a variable-speed reversing motor, a depth gauge, a side handle, a keyed chuck, and a power cord with two-prong plug (unless noted). They are double-insulated (unless noted). All operate on 120 VAC, 60 Hz. UL listed, CSA certified, and meet OSHA requirements.

Style A has a three-prong plug. Drill is not double insulated.

Style B has an overload-protected motor and a trigger lock so you don't have to hold down the trigger for continuous use.

Style C has a detachable Quik-Lok cord. See page 2414 for replacement cord.

	Chuck Cap.	Max. Bit Size Concrete	Max. Bit Size Steel	No-Load Blows per Min.	No-Load rpm	Motor Amps	Cord Lg., ft.	Lg.	Wt., lbs.	Brand	Model No.		Each
A	1/2"	3/4"	1/2"	0-18,000/0-51,000	0-1,000/0-3,000	8.5	12	14"	6.4	Bosch	HD19-2	3133A81	$168.42
B	1/2"	1/2"	1/2"	0-19,000/0-46,000	0-1,100/0-2,700	7.8	8	13"	4.8	DeWalt	DW505	31505A81	149.35
C	1/2"	3/4"	1/2"	0-16,000/0-40,000	0-1,000/0-2,500	8.5	10	13"	6.4	Milwaukee	5387-20	31685A71	188.44
Carrying Case for Style C Drill												31685A8	34.47

Drill Guides for Portable Drills

Drill precise holes without a drill press. Simply attach the chuck on your 3/8" or 1/2" capacity portable drill to the drill guide's drive spindle. A dual-locking knob and handle with an easy-to-read protractor let you position your drill up to 45° in either direction. Guides have a built-in V-groove that centers round material up to 2 1/2" in diameter.

Overall height in vertical position is 11 1/2". Include a chuck and a chuck key.

		Each
Guide with 3/8" Capacity Chuck	8898A21	$40.71
Guide with 1/2" Capacity Chuck	8898A31	49.74

Variable-Diameter Drill Bits

Drill and enlarge several hole sizes with one bit. To drill a specific hole size, place a washer with an ID of the desired hole size over the tip. The washer acts as a stop and prevents the bit from drilling a larger hole. Bits stay centered without a pilot hole, unless noted. All are high-speed steel with a black-oxide treatment and are for use on carbon steel, aluminum, copper, brass, and plastic. Maximum material thickness is 5/64".

Drill Bit Size Range	O'all Lg.	Shank Dia.	Point Angle		Each
1/8"-9/16"	2 7/32"	1/4"	90°	8910A11	$22.22
1/4"-13/16"	2 23/32"	3/8"	90°	8910A12	37.71
5/8"-1 3/16"	2 31/32"	3/8"	82°	8910A13	63.89
1"-1 5/8"	3 9/32"	3/8"	82°	8910A14	83.33
1 1/2"-2 1/16"	2 11/16"	1/2"	None	8910A15▲	114.87

▲ Requires a 1 29/64" dia. pilot hole.

Drill Bit Stop Collars

Ensure identical hole depths every time. Hex keys for set screws are not included; see pages 2838-2847.

Individual Stop Collars—To Order: Please specify exact drill size from the listing below.

Also Available: Stop collars for drill sizes 5/64" to 51/64", wire gauge sizes 1 to 52, letter sizes A to Z, and some metric sizes. Please ask for 8865A91 and specify the exact drill size needed.

Individual Stop Collars

For Drill Bit Sizes	Hex Key Size		Each
1/16", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4"	3/32"	8865A11	$2.77
9/32", 5/16", 11/32", 3/8"	3/32"	8865A12	4.29
13/32", 7/16", 15/32", 1/2"	1/8"	8865A13	6.18
17/32", 9/16"	1/8"	8865A14	9.30
19/32", 5/8"	5/32"	8865A15	9.30
21/32", 11/16", 23/32", 3/4"	5/32"	8865A16	11.25
13/16", 7/8", 15/16", 31/32", 1"	5/32"	8865A17♦	16.19

♦ Hex key size for 1" is 3/16".

Stop Collar Sets

For Drill Bit Sizes	No. of Collars		Per Set
1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2"	7	8959A16	$5.20
5/8", 3/4", 7/8", 1"	4	8959A19	5.60

Cordless Rotary Hammers

Get the drilling and hammering benefits of a rotary hammer with the convenience of cord-free operation. Both hammers have an SDS drive (also known as SDS Plus) and a variable-speed reversing motor with three modes of operation: rotary percussion, rotary only, and percussion only.

In rotary-percussion mode, the tool provides both a rotary drilling and hammering action. Use SDS-Shank Rotary-Hammer Drill Bits (see page 2459) for fast penetration into masonry materials. *Note:* SDS and SDS-Max bits are not interchangeable. Use the rotary-only mode for general purpose drilling and driving fasteners (requires a chuck adapter or a magnetic bit holder; sold separately below). In the percussion-only mode, the tool provides only the hammering action. Use percussion-only mode when working with chisels and other masonry tools (for chisels for rotary hammers, see page 2459).

Maximum bit capacities listed are for drilling in concrete. Hammers come with two 2.4 amp-hr. batteries, a 1-hour charger, a 360° side handle, a depth gauge, and a carrying case. Length is 10½″. UL listed.

Volts	Maximum Capacity Rotary Hammer Drill Bit Size	No-Load Blows per Min.	No-Load rpm	Wt., lbs.	Brand/ Model No.	Battery Type		Each
18	⅞″	0-4100	0-1100	7.6	DeWalt DC212KA	Nickel Cadmium	2842A51	$445.99
36	1″	0-4400	0-1150	7.8	DeWalt DC233KL	Lithium Ion	2842A43	893.30
Repl. 18-Volt Nickel Cadmium Battery, DeWalt DC9096							29835A13	95.29
Repl. 36-Volt Lithium Ion Battery, DeWalt DC9360							29835A102	184.75
Repl. Charger for 18-Volt Nickel-Cadium Battery, DeWalt DC9310							29835A631	81.82
Repl. Charger for 36-Volt Lithium Ion Battery, DeWalt DC9000							29835A101	99.74

Electric Rotary Hammers

A

B&C

D-G

H

A powerful and durable hammer mechanism lets you drill deeper, larger holes in less time than with hammer drills. In rotary-percussion mode, the tool provides both a rotary drilling and hammering action. In percussion-only mode, the tool provides only the hammering action. Use percussion-only mode when working with chisels and other masonry tools (for chisels for rotary hammers, see page 2459).

Maximum bit capacities listed are for drilling in concrete. All styles have a built-in safety clutch to protect you and the hammer if the bit gets stuck in your material. They also have a depth gauge (unless noted); a double-insulated motor that operates on 120 VAC, 60 Hz; a power cord with two-prong plug; and a carrying case. All are UL listed (except Style A, which is CSA-US certified) and meet OSHA requirements.

A-E ***SDS-Drive Rotary Hammers—*** Also known as SDS-Plus rotary hammers, these are lightweight and ideal for overhead work and drilling smaller holes. For use with 0.393″ shank diameter SDS-shank drill bits (see 8948A on page 2459). *Note:* SDS and SDS-Max bits are not interchangeable.

Styles A-D have reversing motors.

Styles B-E have a rotary-only mode in addition to rotary-percussion and percussion-only modes. Use rotary-only mode for general purpose drilling and driving fasteners (requires a chuck adapter or a magnetic bit holder; sold separately on this page).

Styles B, D, and E have a chisel-lock feature that allows you to choose from 36 chisel positions (35 positions for Style D) to match the angle of many surfaces.

F ***Spline-Drive Rotary Hammer—*** Designed to drill larger holes than an SDS-drive hammer, this uses spline-shank bits (see 8783A on page 2458 and 3084A on page 2460). Hammer has a variable-speed motor, a cushion-grip handle, and a service-reminder light. It has a vibration reduction in the system for increased user comfort, provides smooth starts, and won't slow down as you drill deeper. Has a chisel-lock feature that allows you to choose from 12 chisel positions to match the angle of many surfaces.

G&H ***SDS-Max-Drive Rotary Hammers—*** A deeper drive system minimizes wobble for straighter, more accurate holes and better overall performance compared to other rotary hammers. These have a chisel-lock feature that allows you to choose from 12 chisel positions to match the angle of many surfaces. For use with 0.708″ shank diameter SDS-Max drill bits (see 88705A and 88865A on page 2459). *Note:* SDS and SDS-Max bits are not interchangeable.

Style H provides smooth starts and won't slow down as you drill deeper. Has a variable-speed motor, a cushion-grip handle, and a service-reminder light.

	Maximum Capacity Rotary Hammer Drill Bit Size	Maximum Capacity Rotary Hammer Core Drill Bit Size	No-Load Blows per Min.	No-Load rpm	Motor Amps	Lg.	Wt., lbs.	Cord Lg., ft.	Brand	Model No.		Each	
SDS-Drive Rotary Hammers													
A	¾″	—	0-4400	0-1000	6.1	13¼″	5.4	13	Bosch	11250VSR	27845A71	$193.23	***A***
B	⅞″	—	0-6150	0-1100	6.9	17½″	6.5	8	Bosch	11224VSR	27845A31	207.48	***B***
C	1″	—	0-4300	0-1150	8	16½″	6.1	8	DeWalt	D25213K	29935A34	242.46	***C***
D	1″	—	0-5980	0-1400	7	13″	7.9	10	Milwaukee	5363-21	31605A42	340.00	***D***
E	1⅛″	—	0-3900	0-850	7.5	15¼″	9.3	6	Bosch	11236VS	27845A41	339.15	***E***
Spline-Drive Rotary Hammer													
F	1⅝″	4⅛″	1700-2900	170-340	13	18 13/16″	14.3	12	Bosch	11265EVS	8911A21▲	651.51	***F***
SDS-Max-Drive Rotary Hammers													
G	1 9/16″	4″	3000	400	10	17¼″	13.2	8	Bosch	11240	31795A18▲	444.60	***G***
H	2″	6″	1100-2500	120-250	14	23½″	24.5	12	Bosch	11245EVS	31795A23▲	1,033.98	***H***

▲ Doesn't have a depth gauge.

Chuck Adapter and Magnetic Bit Holder for SDS-Drive Rotary Hammers

Chuck Adapter

Magnetic Bit Holder

Attach one of these tools to your SDS-drive rotary hammer (also known as SDS Plus) so you can perform regular drilling and driving operations with round- or hex-shank drill bits. *Note:* SDS and SDS-Max bits are not interchangeable.

Chuck adapter works with a standard drill chuck for drilling in wood and metal. It has an SDS shank on one end and is threaded (½″-20) on the other end. Use with a drill chuck that has a ½″-20 thread mount so it will properly fit the chuck adapter. Drill chucks are shown on pages 2423-2426.

Magnetic bit holder has an SDS shank and accepts all ¼″ hex shank bits for driving masonry screws.

		Each
Chuck Adapter	27845A51	$37.02
Magnetic Bit Holder	8845A21	23.78

Cutters for Magnetic-Base Drills

Cutter

Also called annular cutters, these cut on the periphery of the hole and produce a solid slug. They work with magnetic-base drills that have a 3/4″ arbor (see Compact Magnetic-Base Drills on page 2419). You can also pair them with an arbor adapter (sold separately below) when using a manual drill press or milling machine. *Note:* Carbide-tipped cutters are not for use with magnetic-base drill 8837A21 (Model No. USA101) on page 2419.

High-Speed Steel and Cobalt Steel Cutters—*Uncoated high-speed steel* has a bright finish and is for general purpose cutting of a wide range of materials. *TiN (titanium nitride) coated high-speed steel* lasts longer than uncoated high-speed steel. *Cobalt steel* offers better heat and abrasion resistance than high-speed steel.

Carbide-Tipped Cutters—Last longer than high-speed steel and cobalt steel cutters and are for high-volume cutting of difficult-to-machine materials such as stainless steel, cast iron, and titanium. *Note:* These cutters are more sensitive to shock and vibration compared to other cutters.

Pilot Pins—Also called ejector pins, these align the cutter to the desired position and eject the slug.

Arbor Adapters—Allow you to use cutters on a manual drill press and milling machine. *3/4″ straight shank* fits a 3/4″ capacity drill chuck or a 3/4″ R8 collet on a milling machine. *#2* and *#3 Morse taper shanks* are for use on a drill press.

Fractional Size High-Speed Steel and Cobalt Steel Cutters

1″ CUTTING DEPTH

Cutter Dia.	Uncoated High-Speed Steel	Each	TiN-Coated High-Speed Steel	Each	Cobalt Steel	Each
7/16″	31315A108	$28.53	8847A71	$35.55	3124A71	$31.93
1/2″	31315A141	30.23	8847A11	37.13	3124A11	33.81
9/16″	31315A112	34.43	8847A12	41.02	3124A13	38.53
5/8″	31315A113	36.16	8847A13	42.62	3124A14	40.45
11/16″	31315A114	37.60	8847A14	43.96	3124A15	42.07
3/4″	31315A115	39.58	8847A15	45.80	3124A16	44.28
13/16″	31315A116	42.34	8847A16	54.73	3124A17	47.37
7/8″	31315A117	45.37	8847A17	57.53	3124A18	50.76
15/16″	31315A118	48.38	8847A18	60.33	3124A19	54.14
1″	31315A119	51.95	8847A19	63.64	3124A21	58.13
1 1/16″	31315A121	53.37	8847A21	64.95	3124A22	59.71
1 1/8″	31315A122	61.36	8847A22	72.36	3124A23	68.66
1 3/16″	31315A123	64.68	8847A23	75.44	3124A24	72.37
1 1/4″	31315A124	66.43	8847A24	77.05	3124A25	74.33
1 5/16″	31315A125	69.85	8847A25	85.69	3124A26	78.16
1 3/8″	31315A126	89.80	8847A26	104.18	3124A27	99.74
1 1/2″	31315A128	105.09	8847A28	118.36	3124A29	117.58
1 5/8″	31315A131	123.76	8847A31	133.85	3124A32	138.48
1 3/4″	31315A133	137.86	8847A33	148.75	3124A34	154.26
2″	31315A137	166.17	8847A37	175.00	3124A38	185.92

2″ CUTTING DEPTH

Cutter Dia.	Uncoated High-Speed Steel	Each	TiN-Coated High-Speed Steel	Each	Cobalt Steel	Each
7/16″	31315A109	$36.21	8847A72	$44.48	3124A73	$40.52
1/2″	31315A241	39.76	8847A41	46.87	3124A39	44.49
9/16″	31315A212	45.11	8847A42	51.84	3124A43	50.47
5/8″	31315A213	48.65	8847A43	55.11	3124A44	54.43
11/16″	31315A214	53.99	8847A44	60.07	3124A45	60.41
3/4″	31315A215	59.32	8847A45	65.02	3124A46	66.40
13/16″	31315A216	62.87	8847A46	75.58	3124A47	70.35
7/8″	31315A217	66.71	8847A47	79.13	3124A48	74.64
15/16″	31315A218	71.71	8847A48	84.67	3124A49	80.24
1″	31315A219	77.88	8847A49	89.49	3124A51	87.14
1 1/16″	31315A221	79.73	8847A51	96.65	3124A52	89.20
1 1/8″	31315A222	92.11	8847A52	102.69	3124A53	103.06
1 3/16″	31315A223	97.54	8847A53	107.73	3124A54	109.13
1 1/4″	31315A224	99.48	8847A54	109.53	3124A55	111.30
1 5/16″	31315A225	104.70	8847A55	124.36	3124A56	117.14
1 3/8″	31315A226	109.96	8847A56	129.24	3124A57	123.03
1 1/2″	31315A228	132.17	8847A58	149.84	3124A59	147.88
1 5/8″	31315A231	156.87	8847A61	172.75	3124A62	175.53
1 3/4″	31315A233	173.93	8847A63	188.56	3124A64	194.62
2″	31315A237	213.29	8847A67	225.05	3124A68	238.67

Multiple-Sheet Fractional Size High-Speed Steel Cutters—Uncoated

The special geometry of these cutters allows you to cut aligned holes in multiple sheets at one time.

2″ CUTTING DEPTH

Cutter Dia.		Each	Cutter Dia.		Each	Cutter Dia.		Each	Cutter Dia.		Each
1/2″	5258A42	$64.08	3/4″	5258A46	$85.20	1″	5258A51	$105.23	1 5/16″	5258A55	$134.17
9/16″	5258A43	69.85	13/16″	5258A47	89.03	1 1/8″	5258A52	120.58	1 3/8″	5258A56	139.85
5/8″	5258A44	73.67	7/8″	5258A48	93.16	1 3/16″	5258A53	126.44	1 7/16″	5258A57	157.32
11/16″	5258A45	79.44	15/16″	5258A49	98.56	1 1/4″	5258A54	128.54	1 1/2″	5258A58	163.82

Tap Size High-Speed Steel Cutters—Uncoated

These cutters are perfectly sized for cutting holes that will be tapped later.

2″ CUTTING DEPTH

Cutter Dia.	For Tap Size		Each	Cutter Dia.	For Tap Size		Each	Cutter Dia.	For Tap Size		Each
27/64″	1/2″-13	6849A41	$42.92	49/64″	7/8″-9	6849A46	$67.86	1 1/32″	1 1/8″-12	6849A52	$86.05
29/64″	1/2″-20	6849A42	42.92	51/64″	7/8″-14	6849A47	67.86	1 7/64″	1 1/4″-7	6849A53	94.95
31/64″	9/16″-12	6849A43	42.92	59/64″	1″-12	6849A48	75.14	1 11/64″	1 1/4″-12	6849A54	99.23
17/32″	5/8″-11	6849A44	48.69	59/64″	1″-14	6849A49	75.14	1 11/32″	1 1/2″-6	6849A55	108.11
21/32″	3/4″-10	6849A45	58.28	25 mm	1 1/8″-7	6849A51	81.87	1 27/64″	1 1/2″-12	6849A56	136.16

Fractional Size Carbide-Tipped Cutters

2″ CUTTING DEPTH

Cutter Dia.		Each	Cutter Dia.		Each	Cutter Dia.		Each	Cutter Dia.		Each
11/16″	3118A111	$93.36	1″	3118A116	$98.09	1 5/16″	3118A122	$107.55	1 5/8″	3118A127	$131.18
3/4″	3118A112	93.36	1 1/16″	3118A117	99.74	1 3/8″	3118A123	111.09	1 3/4″	3118A129	133.55
13/16″	3118A113	94.55	1 1/8″	3118A118	101.64	1 7/16″	3118A124	113.45	1 13/16″	3118A131	141.82
7/8″	3118A114	95.73	1 3/16″	3118A119	105.18	1 1/2″	3118A125	115.82	1 15/16″	3118A133	147.73
15/16″	3118A115	96.91	1 1/4″	3118A121	106.36	1 9/16″	3118A126	130.00	2″	3118A134	164.27

Metric Size High-Speed Steel Cutters—Uncoated

1″ CUTTING DEPTH

Cutter Dia.		Each	Cutter Dia.		Each
12 mm	6850A21	$30.67	24 mm	6850A34	$51.29
14 mm	6850A23	33.40	26 mm	6850A36	54.69
16 mm	6850A25	37.47	28 mm	6850A38	56.11
18 mm	6850A27	41.31	30 mm	6850A41	64.62
20 mm	6850A29	43.76	32 mm	6850A43	70.09

2″ CUTTING DEPTH

Cutter Dia.		Each	Cutter Dia.		Each
12 mm	6850A22	$42.40	24 mm	6850A35	$76.07
14 mm	6850A24	47.00	26 mm	6850A37	82.09
16 mm	6850A26	50.36	28 mm	6850A39	85.24
18 mm	6850A28	61.31	30 mm	6850A42	97.42
20 mm	6850A31	65.58	32 mm	6850A44	105.11

Pilot Pins

For Cutter Dia.	Cutter Depth	Pin Dia.		Each
For High-Speed Steel and Cobalt Steel Cutters				
7/16″ and 1/2″	1″	3/16″	3124A81	$7.72
7/16″ and 1/2″	2″	3/16″	3124A82	8.01
9/16″-2″	1″	1/4″	31315A252	7.68
9/16″-2″	2″	1/4″	31315A253	8.22
For Carbide-Tipped Cutters				
11/16″-2″	2″	5/16″	3118A141	12.13

Arbor Adapters

Shank Type		Each
For High-Speed Steel and Cobalt Steel Cutters		
3/4″ Straight Shank	31315A254	$82.29
#2 Morse Taper	31315A255	72.00
#3 Morse Taper	31315A251	82.29
For Carbide-Tipped Cutters		
#2 Morse Taper (Includes pilot pin.)	3118A142	226.23
#3 Morse Taper (Includes pilot pin.)	3118A143	285.00

Cutter Sets—Uncoated High-Speed Steel

Sets include five hole cutters (9/16″, 11/16″, 13/16″, 15/16″, and 1 1/16″), a pilot pin, and a hex key in a compartmented case.

Cutter Dp.		Per Set	Cutter Dp.		Per Set
1″	31315A311	$198.30	2″	31315A312	$272.73

Compact Magnetic-Base Drills

Light enough to carry to your jobsite. All drills have a ¾″ arbor for use with cutters on page 2418. Drills also have a feed handle that mounts on the left or right side of the drill. Holding force (also called drill-point breakaway) is calculated against a 1″ thick steel plate. Electromagnetic base attaches to flat ferrous surfaces (such as steel and cast iron) that are at least ⅜″ thick.

Hougen Drills—Include a 9-ft. power cord with three-prong plug, a 4-ft. safety chain, and a fitted carrying case. 2831A44 and 2831A46 have a 1-pint capacity coolant reservoir (coolant not included).

Jancy Drills—Include an 8-ft. power cord with three-prong plug, a 5-ft. safety strap, a retractable chip shield, and a carrying case. They also have a 1-pint capacity coolant reservoir except 8837A21, which has a 13-oz. capacity coolant reservoir. 2840A39 has a rear-mounted control panel and does not have a valve. Coolant flows automatically when pen touches material. 8837A21 and *A22* are UL listed and have a valve to adjust coolant flow and a side-mounted control panel. *Chucks* and *adapters* allow 8837A21 and 8837A22 to accept standard drill bits.

2831A31

8837A22

Max. Cutter Dia.	Max. Cutting Depth	Spindle Travel	No-Load rpm	Drill Motor	Motor Amps	Holding Force	Overall Size, Lg. × Wd. × Ht.	Wt., lbs.	Model No.		Each
Hougen Drills											
1½″	2″	2″	450	120 VAC, 60 Hz	7.2	900 lbs.	8¼″ × 7³⁄₁₆″ × 16⅜″	27.5	HMD904	2831A31	$995.00
2¹⁄₁₆″	3″	3″	350	120 VAC, 60 Hz	10.5	1065 lbs.	12¼″ × 7½″ × 23″	41	HMD914	2831A44	1,395.00
2¹⁄₁₆″	3″	3″	350	230 VAC, 50 Hz-60 Hz	5.6	1065 lbs.	12¼″ × 7½″ × 23″	41	HMD914	2831A46	1,475.00
Jancy Drills											
1⅜″	2″	4¼″	450	120 VAC, 60 Hz	11.5	670 lbs.	13¾″ × 7¾″ × 18¼″	30	USA200	2840A39	874.93
1½″	2″	2⅝″	450	120 VAC, 60 Hz	11.5	650 lbs.	13⅝″ × 7⅞″ × 17⅝″	29	USA101	8837A21	981.91
2⅜″	3″	3⅞″	270/520	120 VAC, 60 Hz	11.7	950 lbs.	11″ × 7½″ × 23¾″	51	USA5	8837A22	1,495.00
½″ Chuck and Adapter for 8837A21										8837A51	133.94
¾″ Chuck and Adapter for 8837A22										8837A32	138.61
1.6-oz Concentrated Cutting Fluid—Makes 1 pint of fluid when mixed with water.										2831A52	3.93
1-gal. Concentrated Cutting Fluid—Makes 11 gallons of fluid when mixed with water.										2831A53	57.16

Heavy Duty Magnetic-Base Drills with Tapping Capability

Switch these drills from forward to reverse without stopping—ideal for both drilling and tapping applications (not recommended for use with pipe taps). In addition, a dial lets you adjust the speed to match your application, making these great for drilling hard materials at slow speeds.

For use with carbide-tipped cutters sold separately below. Holding force (also called drill point breakaway) is approximately 1600 lbs. and is calculated against a 1″ steel plate. Base attaches to flat ferrous surfaces (such as steel and cast iron) that are at least ½″ thick. Motor is 120 VAC, 60 Hz. All include a spoked feed handle that mounts on either side, a 9-ft. power cord with three-prong plug, and a 6-ft. safety chain. Drills with ½″ and ¾″ chuck mount style also include a drill chuck and key. Bases and motors are UL listed.

Adjustable-position base drills let you lock the magnet to secure the base and then move the motor to center the cutter for pinpoint accuracy. You can also move the motor ¾″ forward and backward and 20° left and right.

Adjustable-Position Base with ¾″ Chuck

Carbide-Tipped Cutter

Max. Capacity Cutter Dia.★	Drill Bit Size	Tap Size	Spindle Travel	No-Load rpm	Mount Style	Motor Amps	Overall Size, Lg. × Wd. × Ht.	Wt., lbs.	Model No.		Each
Milwaukee Adjustable-Position Base Drills											
—	½″	⅝″-18■	11″	0-600	½″ Chuck	7.2	15¼″ × 7½″ × 29½″	57	4204-1	2805A23	$1,343.76
2¼″	¾″	1″-14	11″	0-350	¾″ Chuck	12.5	17″ × 7½″ × 32½″	70	4206-1	2805A24	1,562.51
2¼″	1¼″	1″-14	11″	0-250, 0-500	#3 Morse Taper	12.5	17″ × 7½″ × 32½″	72	4208-1	2805A26	1,712.51
2¼″	1¼″	1″-14	11″	0-375, 0-750	#3 Morse Taper	12.5	17″ × 7½″ × 32½″	72	4209-1	2805A25	1,712.51
Milwaukee Fixed-Position Base Drills											
—	½″	⅝″-18■	9″	0-600	½″ Chuck	7.2	14½″ × 7½″ × 25½″	49	4202 and 4253-1	2805A18	1,233.55
2¼″	¾″	1″-14	9″	0-350	¾″ Chuck	12.5	16¼″ × 7½″ × 27″	62	4210-1	2805A19	1,456.24
2¼″	1¼″	1″-14	9″	0-250, 0-500	#3 Morse Taper	12.5	16¼″ × 7½″ × 27″	64	4202 and 4297-1	2805A22	1,631.22
2¼″	1¼″	1″-14	9″	0-375, 0-750	#3 Morse Taper	12.5	16¼″ × 7½″ × 27″	64	4202 and 4292-1	2805A21	1,698.53

★ See carbide-tipped cutters below. ■ Not for use with ⅝″-11 and ½″-13 taps.

Carbide-Tipped Cutters—2″ Cutting Depth

Use with Milwaukee magnetic-base drills equipped with a ¾″ drill chuck or #3 Morse taper (listed above). They require an arbor adapter (sold separately below). Use on most metals. *Note:* Not for use with Milwaukee magnetic-base drills with a ½″ drill chuck.

Cutter Dia.		Each	Cutter Dia.		Each	Cutter Dia.		Each	Cutter Dia.		Each
¾″	30975A35	$84.68	1″	30975A39	$124.21	1⁵⁄₁₆″	30975A45	$153.30	1¾″	30975A53	$255.69
1³⁄₁₆″	30975A36	91.19	1¹⁄₁₆″	30975A41	125.05	1⅜″	30975A46	160.81	1⅞″	30975A55	283.00
⅞″	30975A37	105.22	1⅛″	30975A42	134.49	1½″	30975A48	192.74	2″	30975A57	314.11
¹⁵⁄₁₆″	30975A38	113.68	1¼″	30975A44	143.89	1⅝″	30975A51	232.26	2¹⁄₁₆″	30975A72	355.36

Arbor Adapters

Required when using the carbide-tipped cutters above. They come with an oiler, oil hose, and pilot pin. The ***¾″ straight shank*** arbor adapter fits a ¾″ drill chuck or a ¾″ collet on a milling machine. The ***#3 Morse taper*** shank arbor adapter fits a magnetic-base drill or drill press.

		Each
¾″ Straight Shank	30975A58	$116.98
#3 Morse Taper	30975A61	116.98

Chuck and Arbor Kit

Allows magnetic-base drills with a #3 Morse taper mount style to accept standard drill bits. Includes a ¾″ capacity drill chuck, a chuck key, and a chuck arbor.

2805A61 ..... **Each** $111.00

Cutting Fluid

When mixed with water, this 16-oz. bottle makes 1 gallon of solution.

31625A61 ..... **Each** $7.64

Mini Magnetic Drill Base

Drill Not Included

Get the accuracy of a drill press when you use this lightweight, portable magnetic drill base with Milwaukee electric drill models 0234-6 and 0244-1 (for Milwaukee model 0234-6, see 2829A51 on page 2414). This powerful electromagnetic base firmly attaches to flat, ferrous surfaces such as steel and cast iron that are at least 0.20″ thick. Holding force (also called drill-point breakaway) is 770 lbs. and is calculated against a 1″ steel plate. It is controlled by an on/off toggle switch and measures 9½″ Ht. × 9″ Wd. Drill travel is 3.9″. Operates on 120 VAC, 60 Hz and weighs only 12 lbs. Comes with a 7½-ft. power cord with three-prong plug.

28125A24 ..... **Each** $912.00

Multispeed Floor Drill Presses

20″ (16 Speed)

Select from a number of speeds by repositioning the drive belt before starting the drill press. Motors are totally enclosed fan cooled, except 28695A51, which is open dripproof. Maximum hole size is based on drilling in steel, except for 28785A61, which is based on drilling in cast iron.

All presses have a three-spoke feed handle; a depth gauge graduated in 16ths of an inch; a drill chuck, a chuck key, and a 6-ft. power cord with three-prong plug. Presses are also wired for 115 volts (except 28785A61, which is wired for 120 volts). All except 28785A61 have a built-in worklight (bulb not included; see 1532K41 on page 683). Head, table, and base are made of durable cast iron. Columns are steel (except 28785A61, which is cast iron).

	15″ (16 Speed)	*16½″ (16 Speed)*	*20″ (16 Speed)*
Max. Work Dia.	15″	16½″	20″
Max. Hole Size	⅝″	⅝″	1″
Drill rpm	200-3630	200-3630	119-3788
Chuck Size	⅝″	⅝″	¾″
Spindle Taper	#2 Morse	#2 Morse	#3 Morse
Spindle Travel	3⅛″	4⅜″	6″
Spindle to Table	29″	29⅛″	26⅜″
Spindle to Base	48″	49″	45⅜″
Table Size	16½″×13″	13¾″ dia.	18⅝″×16⅝″
Max. Table Load	81 lbs.	88 lbs.	100 lbs.
Table Tilt	45°	45°	45°
Base Size	11″×20⅜″	11⅛″×19⅝″	17⅝″×22½″
Height	63″	66½″	70¼″
Motor hp	¾	¾	1½
Motor Amps	9	9	13
Volts (AC), Hz, ph	115/230, 60, 1	115/230, 60, 1	120/240, 60, 1
Weight	170 lbs.	209 lbs.	330 lbs.
	Each **28695A51** $545.14	**Each** **8812A51** $602.14	**Each** **28785A61** $939.28

Variable-Speed Floor Drill Presses

General Purpose 18″

Heavy Duty 20″

Simply turn the dial on these drill presses while they are running to get the optimum speed for your job. All include a three-spoke feed handle and a depth gauge graduated in 16ths of an inch. Head, base, and table are cast iron. Maximum hole size is based on drilling in steel.

General Purpose 18″ Drill Press— A laser projects a crosshair at the point of bit contact and a digital readout displays the spindle speed. Sections on each side of the table slide outward, extending the work area to 16″×26″. Motor is totally enclosed fan cooled. Includes a built-in worklight (bulb included), a keyless drill chuck, and a 7½-ft. power cord with three-prong plug. Wired for 115 volts.

Heavy Duty Drill Presses— The weight and rigidity of these presses prevent vibration so you can maintain close tolerances for high-quality metal drilling.

15″ drill press motor is totally enclosed fan cooled. Includes a drill chuck and key and a 6-ft. power cord with three-prong plug. Wired for 115 volts.

20″ drill press motor is open dripproof. Includes a safety guard that swings away for easy tool changes and an 8-ft. power cord with three-prong plug. Wired for 115 volts. For chucks and arbors, see pages 2423-2427.

Also Available: 220 VAC, 3 ph and 440 VAC, 3 ph versions of 2776A75. Please ask for 2776A71 and specify voltage.

	General Purpose	***Heavy Duty***	
	18″ Drill Press	***15″ Drill Press***	***20″ Drill Press***
Max. Work Dia.	18″	15″	20″
Max. Hole Size	⅝″	½″	⅞″
Drill rpm	400-3000	400-5000	300-2000
Chuck Size	⅝"	½"	———
Spindle Taper	#2 Morse	#2 Morse	#3 Morse
Spindle Travel	4⅜″	6″	6½″
Spindle to Table	26½″	41″	33⅛″
Spindle to Base	47″	47½″	43⅜″
Table Size	16″×14″	14½″×12½″	22″×19½″
Max. Table Load	88 lbs.	150 lbs.	300 lbs.
Table Tilt	90°	Nontilting	Nontilting
Base Size	11⅞″×19⅝″	21″×15″	36″×22″
Height	68″	67½″	69″
Motor hp	1	1	1½
Motor Amps	15	14	17.9
Volts (AC), Hz, ph	115/230, 60, 1	115/220, 60, 1	115/230, 60, 1
Weight	287 lbs.	426 lbs.	590 lbs.
	Each **2717A45** $1,144.90	**Each** **2774A1** $2,050.62	**Each** **2776A75** $3,595.50

Extended-Reach Tilting-Head Drill Presses

If you have a large, odd-shaped piece of material, the head of these drill presses moves 12″ forward and backward and tilts 45° left and 90° right (as viewed when facing the drill press). Graduated in 1° increments with a locking stop at 0°. Presses run at five speeds. Motors are totally enclosed fan cooled.

Maximum hole size is based on drilling in steel. Maximum hole size for drilling in cast iron is 5/8″. Both include a graduated depth gauge, a drill chuck and key, and a 6½-ft. power cord with three-prong plug. Head, table, column, and base are cast iron.

	Bench Model	*Floor Model*
Max. Work Dia.	33"	33″
Max. Hole Size	3/8″	3/8″
Drill rpm	575-3520	575-3520
Chuck Size	5/8″	5/8″
Spindle Taper	#2 Morse	#2 Morse
Spindle Travel	3 5/32″	3 5/32″
Spindle to Table	15"	30″
Spindle to Base	22"	50″
Table Size	9½″ × 9″	10 3/8″ × 10 3/8″
Max. Table Load	70 lbs.	50 lbs.
Table Tilt	45° left and right	45° left and right
Base Size	16¾" × 8 7/8"	16¾″ × 10 1/8″
Height	37"	65″
Motor hp	½	½
Motor Amps	4.8	4.8
Volts (AC), Hz, ph	115, 60, 1	115, 60, 1
Weight	100 lbs.	151 lbs.
	Each	**Each**
	8776A84 $400.00	**8776A85** $458.62

Bench Model

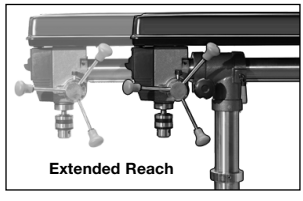

General Purpose Bench Drill Presses

Set these on top of your workbench for light- to medium-duty drilling jobs.

Maximum hole size is based on drilling in steel. All have a three-spoke feed handle, a graduated depth gauge, a drill chuck and key, and a 6-ft. power cord with three-prong plug. Head, table, and base are cast iron. Column is steel, except 10″ (5 speed) drill press column, which is cast iron.

10″ (5 speed) drill press is our most economical light-duty drill press. Motor is totally enclosed fan cooled.

12″ (variable speed) drill press allows you to select the optimum speed for the tool you're using and the material being drilled. Plus, you can change the speed while the drill is running. Motor is open dripproof. Includes a worklight (bulb not included; see 1509K26 on page 687).

15″ (16 speed) drill press is our largest capacity bench unit. Motor is open dripproof and comes wired for 115 volts. Includes a built-in worklight (bulb not included; see 1532K41 on page 683).

10″ (5 Speed) *12″ (Variable Speed)* *15″ (16 Speed)*

	10″ (5 Speed)	*12″ (Variable Speed)*	*15″ (16 Speed)*
Max. Work Dia.	10″	12″	15″
Max. Hole Size	½″	3/8″	5/8″
Drill rpm	620-3100	500-3100	200-3630
Chuck Size	½″	½″	5/8″
Spindle Taper	#33 Jacobs	#33 Jacobs	#2 Morse
Spindle Travel	2½″	3¼″	3⅛″
Spindle to Table	11″	14⅛″	16½″
Spindle to Base	15¾″	19″	24″
Table Size	7 5/8″ × 7 5/8″	8½″ × 9 7/8″	16½″ × 13″
Max. Table Load	70 lbs.	65 lbs.	81 lbs.
Table Tilt	45° left and right	90° left and right	45° left and right
Base Size	13″ × 8″	19½″ × 9½″	20 3/8″ × 11″
Height	27½″	37″	39½″
Motor hp	⅓	⅓	¾
Motor Amps	6.8	6.5	9
Volts (AC), Hz, ph	115, 60, 1	120, 60, 1	115/230, 60, 1
Weight	70 lbs.	78 lbs.	163 lbs.
	Each	**Each**	**Each**
	28015A51 ..... $192.73	**2789A21** $331.67	**28695A52** $578.63

Safety Guard for Drill Presses

Keep your fingers and hands protected from your drill bit, drill chuck, and flying chips. This guard retracts as the drill penetrates your material, lowers when the spindle is raised, and flips out of the way for quick bit changes. A depth adjustment knob allows for quick adjusting of the guard position.

Body is made from high-impact clear plastic for an unobstructed view. Includes five clamps for 1¾″ (45 mm), 2″ (52 mm), 2⅜″ (60 mm), 2.6″ (66 mm), and 3″ (75 mm) drill press spindle shafts (also known as quills).

For Spindle Shaft Dia.	Max. Chuck Dia.	Min. Guard Lg.	Max. Guard Lg.		Each
1¾″-3″	2⅛″	4½″	6 11/16″	**5235A21**	$65.45

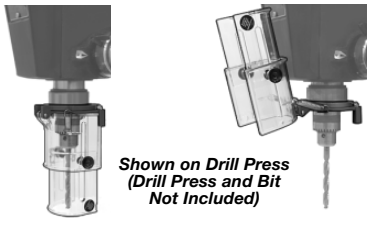

Shown on Drill Press (Drill Press and Bit Not Included)

Small-Hole Precision Bench Drill Press

A sensitive belt-drive motor reduces drill breakage and damage. Perfect for drilling small holes in steel, stainless steel, nonferrous metals (such as brass and bronze), plastic, graphite, and printed circuit boards. Also great for diamond drilling in ceramic, sapphire, and glass. Motor is self contained.

Maximum hole size is based on drilling in steel. Includes a depth gauge graduated in 0.001″ increments; an Albrecht keyless drill chuck; and a 7-ft. cord with three-prong plug. Column is steel; head is cast aluminum; base is cast iron.

	7″ (Variable Speed)
Max. Work Dia.	7″
Max. Hole Size	1/8″
Drill rpm - low speed	200-4,000
Drill rpm - high speed	1,000-20,000
Chuck Size	1/8″
Spindle Taper	#0 Jacobs
Spindle Travel	1 1/2″
Spindle to Table	6″
Table Size	6 1/2″×6 1/2″
Table Tilt	Nontilting
Height	18″
Motor hp	1/5
Motor Amps	2
Volts (AC), Hz, ph	120, 60, 1
Weight	24 lbs.
	Each
	8929A21 ..... $1,745.33

Light-Pressure Drill-Feed Attachment

When drilling small holes with a drill press or milling machine, this attachment lets you apply light feed pressure with your fingers while the machine rotates the bit. A spring-loaded, ball-bearing drill feed automatically retracts when the gripping ring is released. Attachment has a #0 Jacobs taper and a 1/2″ dia. shank that fits into a chuck or holder. Drill spindle travel length is 3/4″.

		Each
Light-Pressure Drill-Feed Attachment	3100A45	$63.93
C15-J0 Albrecht Keyless Chuck 0.005″-1/16″ (0-1.5 mm)	2823A11	276.45
C30-J0 Albrecht Keyless Chuck 0.015″-1/8″ (0-3 mm)	2823A12	224.20
#0 Jacobs Key-Style Chuck 0.0135″-5/32″ (0.35-4 mm)	2812A11	69.37

Small-Hole Drilling Adapter

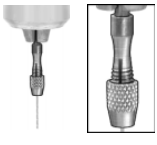

Drilling extremely small holes with your drill press is easy with this adapter. It securely holds a #99 (0.0051″) to #60 (0.040″) wire gauge drill bit.

For use in any 1/8″ or 3/16″ collet or adjustable drill chuck. Shank diameter is 1/8″. Head diameter is 1/4″. Overall length is 1 5/16″.

30505A5 ..... **Each** $7.01

Drilling/Milling Machines

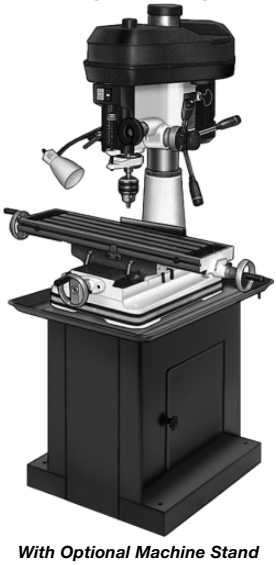

With Optional Machine Stand

Get the dual capability of drilling and milling in one 12-speed machine. Motors are totally enclosed fan cooled and are UL listed.

Maximum hole size, face mill capacity, and end mill capacity are based on machining steel. Both machines have an angle drill-press vise; a head that rotates 360°; table hand wheels with micrometer dials graduated in 0.001″ increments; a depth gauge graduated in 16ths of an inch; a drill chuck with key and arbor; a work light (bulb not included; see 1532K41 on page 683); and a 6-ft. power cord (no plug). Head, table, and column are cast iron; base is steel.

Manual drill feed machine lets you manually adjust the feed of the spindle with rapid- and fine-feed controls.

Power drill feed machine easily switches between three power drill feeds: 0.004″, 0.007″, and 0.01″ per revolution.

	Manual Drill Feed	*Power Drill Feed*
Max. Work Dia.	15 7/8″	15 7/8″
Max. Hole Size	1 1/4″	1 1/4″
Spindle rpm	150-3000	150-3000
Chuck Size	1/2″	1/2″
Spindle Taper	R8	R8
Face Mill Capacity	3″	3″
End Mill Capacity	3/4″	3/4″
Spindle Travel	5″	5″
Spindle to Table	18″	26″
Table Size	9 1/2″×31 3/4″	9 1/2″×31 3/4″
Max. Table Load	400 lbs.	400 lbs.
Table Tilt	Nontilting	Nontilting
Travel, Cross Slide	7″	7″
Travel, Max Table	24″	24″
Base Size	15 3/4″×23 3/4″	15 3/4″×23 3/4″
Height	43 1/2″	51 1/2″
Motor hp	2	2
Motor Amps	9	9
Volts (AC), Hz, ph	230, 60, 1	230, 60, 1
Weight	600 lbs.	700 lbs.
	Each	**Each**
	8774A39 ..... $2,481.43	8774A43 ..... $3,051.60

Optional Drilling/Milling Machine Stand— Secure your machine to this heavy-gauge steel stand. Overall size is 32″ Lg.×26″ Wd.×29″ Ht. Weighs 64 lbs. Shipped unassembled.

8774A41 ..... **Each** $227.46

Optional Drilling/Milling Machine Power Table Feed— Quickly reposition your table for long cuts. This easy-to-install table feed is for both manual and power drill feed machines. It operates in forward/reverse. Adjustable stops allow automatic shut-off. Has a 1/15 hp motor that runs on 110 VAC, 0.5 amps. Includes an 8-ft. power cord with three-prong plug. Weighs 33 lbs.

8774A45 ..... **Each** $726.36

Light Duty Jacobs Drill Chucks

Great for occasional use. These chucks thread mount directly onto the threaded spindle of a portable drill. For use in both forward and reverse tool operation. All come with a chuck key and are made of steel. Chuck with a minimum inch capacity of 0.028″ holds a #70 drill bit.

Capacity Inch	Capacity mm	Mount	Key No.	Model No.		Each
0.028-1/4	0.7-6.5	3/8″-24	KG1	30243	3094A11	$13.32
1/16-3/8	1.5-10	3/8″-24	KG1	30247	3094A13	16.16
5/64-1/2	2-13	3/8″-24	KK	30598	3094A15	21.32
5/64-1/2	2-13	1/2″-20	KK	30602	3094A17	21.32

General Purpose Jacobs Drill Chucks

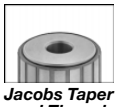

Jacobs Taper and Thread Mount

Slot-Drive Jacobs Taper Mount

Slot-Drive Straight Mount

Pin-Drive Jacobs Taper Mount

The combination of strength and durability makes these chucks the most widely used for general purpose applications. All chucks come with a chuck key and are made of steel. Chucks with a minimum inch capacity of 0.0135″ hold a #80 drill bit; chucks with a minimum inch capacity of 0.040″ hold a #60 drill bit.

Jacobs taper mount chucks require an arbor (sold separately on page 2427). For use in both forward and reverse tool operation.

Thread mount chucks mount directly onto the threaded spindle of a portable drill. Not for use in reverse tool operation, except chucks that contain the letters "BA" in the model number. Jacobs 33BA chucks can be used on a hammer drill.

Slot-drive and ***pin-drive*** (also known as positive drive) chucks mount onto a spindle or arbor for use in high-torque applications.

Drill Chucks

Capacity Inch	Capacity mm	Mount★	Key No.	Model No.		Each
Jacobs Taper Mount						
0.0135-5/32	0.4-4	0 JT	K0	0	2812A11	$69.37
0.040-1/4	1-6.5	1 JT	K1	1A	2812A12	55.87
0.040-3/8	1-10	1 JT	K2	2-01	2812A71	84.64
0.040-3/8	1-10	2 JT	K2	2A	2812A13	77.40
0.040-1/2	1-13	2 JT	K3	34-02	2812A15	78.31
0.040-1/2	1-13	6 JT	K3	34-06	2812A32	104.49
0.040-1/2	1-13	33 JT	K3	34-33	2812A16	88.95
0.040-1/2	1-13	33 JT	K3C	34-33C	2812A67	81.80
5/64-1/2	2-13	33 JT	K32	33	2812A14	86.53
1/8-5/8	3-16	3 JT	K3	3A	2812A34	125.29
3/16-0.8	5-20.3	3 JT	K4	36	2812A35	157.23
Thread Mount						
0.0135-5/32	0.4-4	5/16″-24	K0	0B 5/16	2812A17	85.08
0.040-1/4	1-6.5	3/8″-24	K1	1BA 3/8	2812A19	56.72
0.040-1/4	1-6.5	3/8″-24	K7	7BA 3/8	2812A84	63.58
0.040-3/8	1-10	3/8″-24	K2	2BA 3/8	2812A82	76.13
0.040-3/8	1-10	3/8″-24	K30	41BA 3/8	2812A38	46.94
0.040-3/8	1-10	1/2″-20	K30	41BA 1/2	2812A39	89.27
0.040-3/8	1-10	1/2″-20	K32	32BA 1/2	2812A41	83.99
5/64-1/2	2-13	3/8″-24	K32	33BA 3/8	2812A83	81.87
5/64-1/2	2-13	1/2″-20	K32	33BA 1/2	2812A58	78.46
5/64-1/2	2-13	5/8″-16	K32	33BA 5/8	2812A23	81.75
1/8-5/8	3-16	1/2″-20	K3	3B 1/2	2812A66	95.06
1/8-5/8	3-16	5/8″-16	K3	3B 5/8	2812A47	126.26
3/16-0.8	5-20.3	5/8″-16	K4	36B 5/8	2812A51	189.96
3/16-0.8	5-20.3	3/4″-16	K4	36B 3/4	2812A52	178.41
Slot-Drive Jacobs Taper Mount						
5/64-1/2	2-13	33 JT	K32	33KD	2812A73	96.36
1/8-5/8	3-16	3 JT	K3	3KD	2812A74	168.25
3/16-0.8	5-20.3	3 JT	K4	36KD	2812A62	151.52
Slot-Drive Straight Mount						
5/64-1/2	2-13	5/8″	K32	3326A	2812A72	109.83
Pin-Drive Jacobs Taper Mount						
1/8-5/8	3-16	3 JT	K3	3PD	2812A75	196.61
3/16-0.8	5-20.3	3 JT	K4	36PD	2812A63	151.52

★ JT = Jacobs Taper.

Replacement Parts

For Model No.	Jaw and Nut Sets	Each	Sleeves	Each
3 Series	2812A86	$50.29	2812A91	$35.95
33 Series	2812A87	39.21	2812A92	22.30
34 Series	2812A88	40.76	2812A93	30.28
36 Series	2812A89	64.43	2812A94	39.12

Corrosion-Resistant Jacobs Drill Chucks

When you need the rust and corrosion resistance of stainless steel, reach for these chucks. For use in both forward and reverse tool operation. All come with a chuck key and are made of Type 416 stainless steel and hold a #70 drill bit. ***Jacobs taper mount*** chucks require an arbor (sold separately on page 2427). ***Thread mount*** chucks mount directly onto the threaded spindle of a portable drill.

Capacity Inch	Capacity mm	Mount★	Key No.	Model No.		Each
Jacobs Taper Mount						
0.028-5/32	0.7-4	0 JT	K0M	0M	3166A11	$140.33
0.028-1/4	0.7-6.5	1 JT	K1M	1M	3166A14	128.00
Thread Mount						
0.028-5/32	0.7-4	5/16″-24	K0M	0BM 5/16	3166A13	137.85
0.028-1/4	0.7-6.5	5/16″-24	K1M	1BM 5/16	3166A19	139.94
0.028-1/4	0.7-6.5	3/8″-24	K1M	1BM 3/8	3166A17	136.55

★ JT = Jacobs Taper.

Extra-Grip Jacobs Drill Chucks

A ball-bearing design provides increased gripping force to keep bits from slipping, allowing these chucks to take on high-torque drilling applications. Also known as super chucks, these are excellent for use on production drilling machines, milling machines, jig borers, and lathes. All chucks are Jacobs taper mount and require an arbor (sold separately on page 2427). For use in both forward and reverse tool operation. They come with a chuck key and are made of steel. Chucks with a minimum inch capacity of 0.040″ hold a #60 drill bit.

Drill Chucks

Capacity Inch	Capacity mm	Mount★	Key No.	Model No.		Each
0.040-1/4	1-6.5	2 JT	K30	8 1/2N	2815A11	$103.45
0.040-3/8	1-10	2 JT	K32	11N	2815A12	115.25
0.040-1/2	1-13	3 JT	K3	14N	2815A13	161.13
1/8-5/8	3-16	3 JT	K4	16N	2815A14	184.94
1/8-3/4	3-19	4 JT	K4	18N	2815A15	278.16
3/8-1	10-25.4	5 JT	K5	20N	2815A16	374.62

★ JT = Jacobs Taper.

Replacement Parts

Service kits include a set of jaws, nuts, a caged bearing, and a thrust washer. *Style A* is for older chucks that do not have a service kit number on their nose. *Style B* is for chucks that have a service kit number on their nose.

For Model No.	Service Kits (A)	Each	(B)	Each	Sleeves	Each
8 1/2N	2815A51	$62.98	2815A41	$75.61	2815A24	$33.82
11N	2815A52	71.14	2815A42	89.24	2815A25	38.35
14N	2815A53	98.06	2815A43	122.48	2815A26	48.34
16N	2815A54	113.73	2815A44	143.63	2815A27	69.46
18N	2815A55	154.65	2815A45	220.77	2815A28	95.59
20N	2815A56	186.31	2815A46	298.74	2815A29	149.64

Economy Drill Chucks

Similar in design to our General Purpose Jacobs Drill Chucks, these chucks are an economical alternative. For use in both forward and reverse tool operation. All include a chuck key and are made of steel. Chucks with a minimum inch capacity of 0.0135″ hold a #80 drill bit; chucks with a minimum inch capacity of 0.040″ hold a #60 drill bit.

Jacobs taper mount chucks require an arbor (sold separately on page 2427). ***Thread mount*** chucks mount directly onto the threaded spindle of a portable drill.

Capacity Inch	Capacity mm	Mount★	Key No.		Each
Jacobs Taper Mount					
0.0135-5/32	0.4-4	0 JT	K0	2780A11	$58.87
0.0135-3/8	0.4-10	2 JT	K2	2780A12	61.89
1/32-5/8	0.8-16	3 JT	K3	2780A16	108.72
0.040-1/2	1-13	2 JT	K3	2780A13	76.28
0.040-1/2	1-13	6 JT	K3	2780A14	76.28
0.040-1/2	1-13	33 JT	K3	2780A15	76.28
1/16-1/2	1.5-13	33 JT	K32	2780A17	74.11
3/16-3/4	5-19	3 JT	K3	2780A18	142.79
Thread Mount					
0.0135-3/8	0.4-10	3/8″-24	K30	2780A31	57.04
1/16-1/2	1-13	3/8″-24	K32	2780A32	72.40
1/16-1/2	1-13	1/2″-20	K32	2780A33	69.06

★ JT = Jacobs Taper.

Drill Chucks for Hammer Drills

A special gripping ring in these chucks prevents drill bits from loosening during heavy hammer-drilling operations. Chucks mount directly onto the threaded spindle of a hammer drill. For use in both forward and reverse tool operation. All come with a chuck key and are made of steel.

Capacity Inch	Capacity mm	Mount	Key No.		Each
1/16-1/2	1.5-13	3/8"-24	K32	28885A11	$102.18
1/16-1/2	1.5-13	1/2"-20	K32	28885A12	102.18
3/32-5/8	2.5-16	1/2"-20	K3	28885A13	132.39
3/32-5/8	2.5-16	5/8"-16	K3	28885A14	132.39

Keys for Jacobs and Rohm Drill Chucks—Fixed and Self-Ejecting Pin

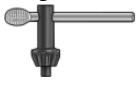

All keys are made of steel, except 3169A24 and 3169A25, which are Type 416 stainless steel.

Self-ejecting pin keys have improved safety compared to fixed-pin keys. They have a spring-loaded pin that ejects the key from the chuck when released, preventing it from being left in the chuck.

Extra-long keys have handles that are almost twice the length of standard-length keys and provide more leverage for tightening power.

Key Nos.	Jacobs Chuck No.	Rohm Chuck No.	Fixed Pin	Fixed Pin Each	Self-Ejecting Pin	Self-Ejecting Pin Each
Standard-Length Keys						
K0, TK0, 0	0, 0B	No Rohm Equivalent	3169A11	$2.16	8815A11	$12.77
K0M	0BM, 0M	No Rohm Equivalent	3169A24	$8.79	—	—
K1, S7, T1, TK1, 1	1A, 1B, 1BS	R0-0	3169A12	$2.32	8815A12	$7.94
K1M	1BM, 1M	No Rohm Equivalent	3169A25	$13.90	—	—
K2, S17, T2, TK2, 2	2A, 2B, 2BA	No Rohm Equivalent	3169A13	$3.42	8815A13	$11.04
K3, S10, T6, TK3	3, 3A, 3B, 3KD, 3PD, 6A-33, 6B, 14N, 34, 34-02, 34-06, 34-33, 34B, 34KD, 35B	BB13-3, BB16-3, R4-3, R4-12TH, R4-58TH	3169A15	$4.78	8815A14	$10.53
K3C, T6C, TK3C	34-33C	No Rohm Equivalent	3169A42	$6.09	8815A15	$11.13
K4, S13, TK4, 9	16N, 18N, 36, 36B, 36KD, 36PD	BB20-4, BB26-5, R5-3, R5-4, R6-5	3169A16	$9.02	8815A16	$23.13
K5, TK5, 26	20N	No Rohm Equivalent	3169A17	$18.52	8815A22	$55.49
K7, R4, S18, T4, TK7	7, 7-1A, 7B, 7BA	R1-38TH	3169A18	$2.70	8815A17	$10.02
K30, R13, S8, TK30, 13	8½N, 30, 30B, 31-01, 31-02, 31B, 31BA, 41BA	LCT9-12TH, LCT9-38TH, LST9-12TH, R1-1, R1-12TH, R1-38TH, R2-38TH, R8-1, R8-12TH, R8-38TH	3169A21	$3.62	8815A18	$10.34
K32, S9, T5, TK32	11N, 32, 32B, 32BA, 33, 33B, 33BA, 33KD, 3326A	R2-12TH, R2-2, R2-33, R3-2, R3-12TH, R3-33, R3-38TH, R3-58TH, R3-6	3169A23	$4.77	8815A19	$10.34
K32C, T5C, TK32C	32C, 33C	No Rohm Equivalent	3169A52	$6.37	8815A21	$11.81
KG, KG1, KGA, S14, TB1, TKG	20BA, 30248, All 1/4" and 3/8" Multi-Craft Chucks	LCT8-12TH, LCT8-38TH, LST8-38TH	3169A26	$1.74	8815A26	$11.74
KK, KKA, S19, TB13, TKK	31052, 30246, All 1/2" Multi-Craft Chucks	No Rohm Equivalent	3169A27	$2.40	8815A24	$10.34
S2A	No Jacobs Equivalent	111 Prima-8, 129-00	3169A54	$2.92	—	—
S3	No Jacobs Equivalent	111 Prima-13, 111 Prima-16, 111 Prima-16M	3169A55	$5.95	—	—
Extra-Long Keys						
K0, TK0, 0	0, 0B	No Rohm Equivalent	3169A61	$8.13	—	—
K1, S7, TK1, 1	1A, 1B, 1BS	R0-0	3169A62	$9.53	—	—

Multiple-Size Keys for Jacobs Drill Chucks

Key with Fixed Pinions

Key with Replaceable Pinions

Each of these keys fits a number of Jacobs chuck sizes. All keys are made of steel.

Keys with replaceable pinions have a set screw for easy replacement of worn pinions.

Note: See chart above for Jacobs key and chuck numbers and their compatibility.

Keys

Replaces Key Nos.		Each
With Fixed Pinions		
K7, K30, KG1, KK	3175A34	$16.11
K2, K3, K4, K32	3175A36	17.60
With Replaceable Pinions		
K1, K7, KG1, KK	30035A41	20.98
K2, K3, K30, K32	30035A61	23.99

Replacement Pinions

Key Nos.		Each	Key Nos.		Each
For Key 30035A41			***For Key 30035A61***		
K1	30035A45	$2.63	K2	30035A65	$3.10
K7	30035A46	2.77	K3	30035A66	3.19
KG1	30035A47	2.76	K30	30035A67	2.63
KK	30035A48	2.78	K32	30035A68	3.10

Chuck Key Holders

No more lost or misplaced keys—these holders (also called key leashes) attach to your power cord to hold your chuck key.

Note: See chart above for Jacobs key and chuck numbers and their compatibility.

For Key Number		Each
All Jacobs keys except K4 and K5	28155A72	$2.83
K1, K7, KG1, K0, K0M, K1M, K7HD, KG, KGA	3138A11	3.31
K2, K30, K32, KK, K32C, KKA	3138A12	3.31

Drill Chuck Removal Wedge Sets

Easily remove taper mount drill chucks from arbors and spindles with these steel wedge sets. Each set consists of two wedges. Simply place one wedge on each side of the chuck, and then hammer each wedge end until the chuck is removed.

For Use on Jacobs Taper No.		Per Set
1	29225A34	$8.10
2	29225A35	8.10
3	29225A36	8.10
6, 33	29225A37	8.10

Extra-Grip Keyless Drill Chucks

Ball bearings provide increased gripping force to keep your bits from slipping. For use in both forward and reverse tool operation. All chucks are made of steel unless otherwise stated.

Jacobs taper mount chucks require an arbor (sold separately on page 2427).

Thread mount chucks mount directly onto the threaded spindle of a portable drill. Chucks with a minimum inch capacity of "0" hold a #80 (0.0135″) drill bit.

Ratchet-locking thread mount chucks allow easier tightening and releasing of drill bits and other tools. They have carbide jaws, which are harder and grip tighter than steel jaws.

Capacity Inch	Capacity mm	Mount★		Each
Jacobs Taper Mount				
1/16-1/2	1.5-13	2 JT	2848A53	$73.42
1/16-1/2	1.5-13	33 JT	2848A44	72.20
Thread Mount				
0-3/8	0.5-10	3/8″-24	2848A42	54.92
0-3/8	0.5-10	1/2″-20	2848A43	54.92
1/16-1/2	1.5-13	3/8″-24	2848A55	73.42
1/16-1/2	1.5-13	1/2″-20	2848A56	73.42
Ratchet-Locking Thread Mount				
1/16-1/2	1.5-13	3/8″-24	2848A61	74.56
1/16-1/2	1.5-13	1/2″-20	2848A62	75.69

★ JT = Jacobs Taper.

Jacobs Taper Mount and Thread Mount

Ratchet-Locking Thread Mount

Keyless Chucks for DeWalt, Milwaukee, and Makita Cordless Drills

Find your DeWalt, Milwaukee, or Makita cordless drill model number, and then choose from a manufacturer-brand chuck or a Jacobs-brand equivalent. For use in both forward and reverse tool operation.

For Cordless Drill Model Nos.	Chuck Cap.	Mount	DeWalt/Milwaukee/Makita Brand	Each	Jacobs Brand	Each
DeWalt						
DW961	3/8″	3/8″-24	30405A62	$38.79	28165A32	$25.09
DW927, DW928, DW929, DW953, DW954, DW960, DW971, DW972, DW974, DW975, DW991, DW992	3/8″	1/2″-20	30405A64	$42.94	—	—
DC720, DC728, DC730, DC759, DC920, DC930, DC936, DC940, DC980, DC983, DC985, DC987, DC988, DW006, DW971, DW972, DW975, DW980, DW983, DW985, DW987, DW988, DW990, DW995, DW996, DW997	1/2″	1/2″-20	30405A76	$55.94	28165A61	$37.60
DW990, DW995, DW996, DW997	1/2″	1/2″-20	30405A66	$71.32	28935A31	$49.74
Milwaukee						
0502-02	3/8″	3/8″-24	—	—	28165A32	$25.09
0512-21	1/2″	3/8″-24	30405A73	$35.24	28165A37	$38.73
0501-02, 0511-21, 0521-20, 0523-20	1/2″	1/2″-20	30405A74	$61.58	28935A31	$49.74
0513-21, 0514-20, 0516-20, 0522-20, 0524-20, 1109-20, 3109-20	1/2″	1/2″-20	30405A75	$69.51	28935A31	$49.74
0614-20, 0615-20, 0616-20, 0617-20, 0622-20, 0624-20, 0625-20, 0627-20, 0724-20	1/2″	1/2″-20	30405A86	$74.75	28165A61	$37.60
Makita						
6201D, 6203D, 6211D, 6213D, 6217D, 6233D, 6260D, 8402VD	3/8″	3/8″-24	—	—	28165A32	$25.09
6226D, 6227D, 6228D, DA312D, DA391D, DA392D	3/8″	3/8″-24	30405A71	$36.33	28165A32	$25.09
BDF452, BHP452	1/2″	3/8″-24	30405A81	$28.18	28165A37 ♦	$38.73
6336D, 6337D, 6343D, 6347D	1/2″	1/2″-20	30405A72	$59.96	28165A42	$38.73

♦ Not for use with BHP452.

3/8″ Chuck Capacity

1/2″ Chuck Capacity

Hex-Shank Drill Chucks for Power Screwdrivers and Impact Drivers

Convert your power screwdriver or impact driver into a versatile drill. Also known as adapt-a-drive, these chucks have a standard 1/4″ hex shank that fits the hex socket of most power screwdrivers and impact drivers. For use in both forward and reverse tool operation.

Choose from keyed or keyless chucks. 28055A71 is made of steel and is furnished with a chuck key. Chuck holds a #70 drill bit. 28055A72 has a steel body and a plastic sleeve.

Capacity Inch	Capacity mm	Key No.	Jacobs Model No.		Each
0.028-1/4	0.7-6.5	KG1	30248	28055A71	$17.64
1/16-3/8	1.5-10	Keyless	31248	28055A72	35.79

Keyed

Keyless

Keyless Drill Chucks for Impact Wrenches

Transform standard impact wrenches into efficient drilling tools. These chucks mount directly onto the square-drive spindle of your impact wrench. Not for use in reverse tool operation. All are made of steel.

Capacity Inch	Capacity mm	Mount		Each
3/32-3/8	2.5-10	3/8″ Square	3167A12	$68.58
1/8-1/2	3-13	1/2″ Square	3167A11	86.66

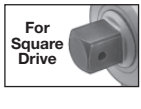

Precision Keyless Drill Chucks

A self-tightening feature causes the chuck to grip tighter as torque increases, which prevents tool-shank slippage and allows for precise drilling. For use with drill presses, jig borers, and milling machines. Not for use in reverse tool operation. Chucks are Jacobs taper mount and require an arbor (sold separately on page 2427), except Albrecht stainless steel precision chucks, which have a through-hole and mount directly onto your machine's threaded spindle.

Albrecht*—**The original precision keyless drill chucks. ***Albrecht stainless steel precision chucks resist rust and corrosion and are ideal when tools have to be sterilized. All are made entirely of stainless steel.

Also Available: Replacement hoods, ball bearing sets, collars, jaws, jaw guides, shells, drive pins, and body and spindle assemblies for Albrecht steel precision chucks. Please ask for 2825A6 and specify part desired and Albrecht chuck number.

Jacobs*—**Chucks with a minimum inch capacity of 0.012″ hold a #83 drill bit; 0.02″ hold a #76 drill bit; 0.039″ hold a #61 drill bit; and 0.118″ hold a #31 drill bit. ***Jacobs extra-grip steel precision chucks have milled wrench flats and a spanner wrench that allow additional tightening to increase gripping torque up to three times greater than hand tightening. These chucks also resist loosening when used on high-speed machines with instant spindle stop.

Albrecht and Jacobs Steel Precision Chucks

		Albrecht					Jacobs				
		Capacity					Capacity				
Mount★	Max. rpm	Inch	mm	Model No.		Each	Inch	mm	Model No.		Each
0 JT	50,000	0.005-0.063	0-1.5	C15-J0	2823A11	$276.45					
0 JT	35,000	0.015-0.125	0-3	C30-J0	2823A12	224.20					
1 JT	35,000	0.015-0.125	0-3	C30-J1	2823A13	224.20					
1 JT	25,000	0.015-0.188	0-5	C50-J1	2823A14	226.10					
1 JT	20,000	0.015-0.25	0-6.5	C65-J1	2823A15	243.20	0.012-0.255	0.3-6.5	JKP 65-J1	2844A49	$182.98
2 JT	15,000	0.015-0.313	0-8	C80-J2	2823A36	260.30	0.012-0.315	0.3-8	JKP 80-J2S	2844A51■	182.98
2 JT	12,000	0.015-0.375	0-10	C100-J2	2823A18	276.45	0.02-0.394	0.5-10	JKP 100-J2	2844A52	196.57
2 JT	7,000	0.031-0.5	1-13	C130-J2	2823A21	305.90	0.039-0.512	1-13	JKP 130-J2	2844A54	210.11
6 JT	7,000	0.031-0.5	1-13	C130-J6	2823A22	305.90	0.039-0.512	1-13	JKP 130-J6	2844A56	210.11
6 JT	4,000	0.125-0.625	3-16	C160-J6	2823A23	345.80	0.118-0.63	3-16	JKP 160-J6	2844A57	242.93
33 JT	12,000	0.015-0.375	0-10	C100-J33	2823A17	276.45	0.02-0.394	0.5-10	JKP 100-J33	2844A53	196.57
33 JT	7,000	0.031-0.5	1-13	C130-J33	2823A19	305.90	0.039-0.512	1-13	JKP 130-J33	2844A55	210.11

★ JT = Jacobs Taper. ■ Jacobs short taper.

Jacobs Extra-Grip Steel Precision Chucks

		Capacity				
Mount★	Max. rpm	Inch	mm	Model No.		Each
1 JT	20,000	0.012-0.255	0.3-6.5	JKT 65-J1	28305A59	$203.33
2 JT	15,000	0.012-0.315	0.3-8	JKT 80-J2S	28305A61■	203.33
2 JT	7,000	0.039-0.512	1-13	JKT 130-J2	28305A62	244.01
6 JT	7,000	0.039-0.512	1-13	JKT 130-J6	28305A64	244.01
6 JT	4,000	0.118-0.63	3-16	JKT 160-J6	28305A65	291.62
33 JT	7,000	0.039-0.512	1-13	JKT 130-J33	28305A63	244.01

★ JT = Jacobs Taper. ■ Jacobs short taper.

Albrecht Stainless Steel Precision Chucks

		Capacity				
Mount	Max. rpm	Inch	mm	Model No.		Each
3/8″-24	7,500	0-0.125	0-3	CS30-3/8″	8890A44	$424.65
3/8″-24	5,000	0.031-0.25	0.6-7.4	CS50-3/8″	8890A55	455.05

Albrecht Precision Keyless Drill Chucks with Integral Arbor

R8 (Bridgeport) Shank

The integral arbor offers greater accuracy and rigidity than a drill chuck used with a separate arbor. Not for use in reverse tool operation. All are made of steel.

Also Available: Replacement hoods, jaw guides, jaws, and drive pins. Please ask for 30075A6 and specify part and Albrecht chuck number.

		Capacity				
Shank Style	Max. rpm	Inch	mm	Model No.		Each
2 Morse Taper	7000	1/32-1/2	1-13	CP130-2MT	30075A45	$350.84
3 Morse Taper	7000	1/32-1/2	1-13	CP130-3MT	30075A46	352.81
3 Morse Taper	4000	1/8-5/8	3-16	CP160-3MT	30075A54	392.12
4 Morse Taper	7000	1/32-1/2	1-13	CP130-4MT	30075A47	372.47
4 Morse Taper	4000	1/8-5/8	3-16	CP160-4MT	30075A56	411.78
5/8″ Straight	7000	1/32-1/2	1-13	CP130- 5/8	30075A49	349.86
R8 (Bridgeport)	7000	1/32-1/2	1-13	CP130-R8	30075A48	386.22
R8 (Bridgeport)	4000	1/8-5/8	3-16	CP160-R8	30075A58	424.55

Economy Precision Keyless Drill Chucks

Ideal for close-tolerance drilling with drill presses, jig borers, and milling machines, these all-steel chucks are an economical alternative to Albrecht and Jacobs precision keyless chucks. All are Jacobs taper mount and require an arbor (sold separately on page 2427). Chucks with a minimum inch capacity of "0" hold a #80 (0.0135″) drill bit.

		Capacity			
Mount★	Max. rpm	Inch	mm		Each
1 JT	4500	1/64-5/16	0.5-8	2848A45	$131.91
2 JT	4500	0-3/8	0.5-10	2848A47	152.58
6 JT	4500	1/64-1/2	0.5-13	2848A48	194.33
6 JT	4500	1/8-5/8	3-16	2848A49	217.74
33 JT	4500	1/64-1/2	0.5-13	2848A51	194.33

★ JT = Jacobs Taper.

Taper Shank Removal Tools

Also called drill drifts or drift keys, these tools are designed to separate Morse taper shank cutting tools from machinery spindles and Morse Taper Adapters (also known as sleeves and extension sockets; see page 2427). To use, simply insert the removal tool into spindle slot and tap with a hammer to release the cutting tool. Made of steel.

For Morse Taper No.	O'all Lg.		Each
1	4 1/2″	2796A11	$8.75
2	5 3/4″	2796A12	9.95
3	7 7/8″	2796A13	11.10
4, 5	9 1/4″	2796A24	15.68

Machinable-End Morse Taper Arbors

Create your own Morse taper arbors to suit your job requirements. Made of soft steel (Type 1144), these blank-end arbors are easy to machine. Arbors have a Morse taper shank.

	Machinable End			
Morse Taper No.	Body Dia.	Body Lg.		Each
2	1 3/4″	2 1/8″	2862A11	$47.67
3	1 3/4″	2 1/8″	2862A12	56.23
4	2 1/2″	3″	2862A13	63.59
5	3″	4 1/16″	2862A14	105.08

Drill Chuck Arbors

Attach your drill chuck to your machine's spindle with one of these arbors. Choose an arbor with one end that fits into your machine spindle (Morse taper, straight shank, or R8 taper) and one end that fits your drill chuck mount (Jacobs taper or threaded). All arbors are made of hardened, precision-ground steel.

The following is a list of machines and some of their spindle types:
Drill Press = Morse Taper Spindle
CNC/Lathe = Straight Shank Spindle
Milling Machine = R8 Taper Spindle

If your machine spindle is Morse taper, measure the internal diameter of the spindle or chuck (which will be equal to the diameter of the arbor you need) and use the tables to the right to determine the taper number.

Dia.	Morse Taper No.	Dia.	Jacobs Taper No.
0.3561″	0	0.2500″	0
0.475″	1	0.3840″	1
0.700″	2	0.5590″	2
0.938″	3	0.6240″	33
1.231″	4	0.6760″	6
1.748″	5	0.8110″	3
2.494″	6	1.1240″	4
3.270″	7	1.4130″	5

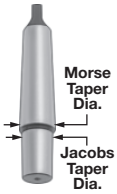

Arbor Shown with Chuck (Not Included)

Morse Taper (Spindle) to Jacobs Taper (Chuck)

Morse Taper No.	Jacobs Taper No.★	O'all Lg.		Each
1	0 JT	3 3/16″	2811A14	$25.64
1	1 JT	3 25/64″	2811A15	15.74
1	2 JT	3 5/8″	2811A16	15.46
1	3 JT	4 1/64″	2811A17	17.44
1	6 JT	3 25/32″	2811A19	17.80
1	33 JT	3 25/32″	2811A21	17.68
2	0 JT	3 25/32″	2811A22	25.64
2	1 JT	3 63/64″	2811A23	16.72
2	2 JT	4 7/32″	2811A24	15.08
2	3 JT	4 39/64″	2811A25	15.08
2	4 JT	5 3/64″	2811A26	$21.86
2	6 JT	4 3/8″	2811A28	19.92
2	33 JT	4 17/64″	2811A31	15.94
3	1 JT	4 47/64″	2811A32	31.22
3	2 JT	4 31/32″	2811A33	21.22
3	3 JT	5 23/64″	2811A34	21.22
3	4 JT	5 51/64″	2811A35	21.74
3	5 JT	5 29/32″	2811A61	38.70
3	6 JT	5 1/8″	2811A37	21.40
3	33 JT	5 1/8″	2811A38	22.26
4	2 JT	6″	2811A39	$36.78
4	3 JT	6 3/8″	2811A41	33.40
4	4 JT	6 13/16″	2811A42	34.40
4	5 JT	6 15/16″	2811A43	55.22
4	6 JT	6 5/32″	2811A44	33.40
4	33 JT	6 5/32″	2811A45	34.40
5	3 JT	7 9/16″	2811A47	75.00
5	4 JT	8 1/8″	2811A48	78.18
5	5 JT	8 1/8″	2811A49	90.14

★ JT = Jacobs Taper.

Straight Shank (Spindle) to Jacobs Taper (Chuck)

Shank Dia.	Jacobs Taper No.★	O'all Lg.		Each
1/2″	0 JT	3 7/64″	2811A53	$21.26
1/2″	1 JT	3 11/32″	2811A54	17.02
1/2″	2 JT	3 35/64″	2811A55	16.38
1/2″	3 JT	3 63/64″	2811A56	23.34
1/2″	6 JT	3 3/4″	2811A58	18.94
1/2″	33 JT	3 3/4″	2811A59	16.48
5/8″	1 JT	3 11/32″	2811A66	$21.90
5/8″	2 JT	3 19/32″	2811A62	19.04
5/8″	3 JT	3 63/64″	2811A63	20.32
5/8″	6 JT	3 3/4″	2811A64	18.86
5/8″	33 JT	3 3/4″	2811A65	17.66
3/4″	2 JT	4 7/64″	2811A68	$27.78
3/4″	3 JT	4 1/2″	2811A69	25.94
3/4″	6 JT	4 17/64″	2811A71	25.74
3/4″	33 JT	4 17/64″	2811A72	28.66

★ JT = Jacobs Taper.

R8 Taper (Spindle) to Jacobs Taper (Chuck)

Jacobs Taper No.★	O'all Lg.		Each
1 JT	4 53/64″	8775A11	$63.27
2 JT	5 5/64″	8775A12	63.27
3 JT	5 27/64″	8775A13	63.27
6 JT	5 15/64″	8775A14	63.27
33 JT	5 15/64″	8775A15	63.27

★ JT = Jacobs Taper.

#2 Morse Taper (Spindle) to Thread Mount (Chuck)

Thread Size	O'all Lg.		Each
3/8″-24	4″	3170A31	$56.60
1/2″-20	4 7/64″	3170A32	60.26
5/8″-16	4 3/16″	3170A33	59.26

Morse Taper Adapters

If your Morse taper arbor is too small or large for your machine spindle or you need additional reach, insert it into one of these adapters. All are made of hardened steel.

Adapters are also known as sleeves or shell sockets. They adapt smaller Morse taper arbors to larger Morse taper machine spindles.

Extended-reach adapters are also known as extension sockets and are longer for hard-to-reach spots. In addition to extending your Morse taper arbor, these adapters also adapt larger Morse taper shank tools to smaller Morse taper machine spindles.

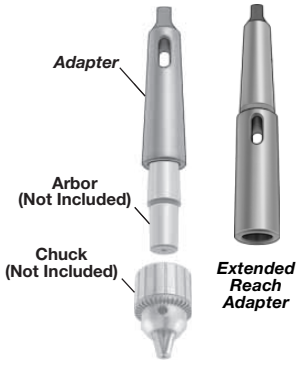

Morse Taper No. Machine Spindle	Morse Taper No. Arbor	Adapters O'all Lg.		Adapters Each	Extended-Reach Adapters O'all Lg.		Extended-Reach Adapters Each
1	0	3 1/8″	2976A19	$14.14	—	—	—
1	1	—	—	—	5 45/64″	2977A54	$25.10
1	2	—	—	—	6 19/64″	2977A55	28.97
2	1	3 5/8″	2976A21	9.90	6 19/64″	2977A11	25.10
2	2	—	—	—	6 57/64″	2977A15	36.79
2	3	—	—	—	7 23/32″	2977A19	44.85
3	1	3 7/8″	2976A22	12.82	6 57/64″	2977A12	28.97
3	2	4 3/8″	2976A25	12.82	7 41/64″	2977A16	36.79
3	3	—	—	—	8 29/64″	2977A21	46.88
3	4	—	—	—	9 7/16″	2977A24	72.63
4	1	4 7/8″	2976A23	18.93	—	—	—
4	2	4 7/8″	2976A26	18.93	8 29/64″	2977A17	46.25
4	3	5 1/2″	2976A28	17.76	9 29/64″	2977A22	46.25
4	4	—	—	—	10 7/16″	2977A25	75.06
4	5	—	—	—	11 13/16″	2977A28	136.98
5	1	6 1/8″	2976A24	36.53	—	—	—
5	2	6 1/8″	2976A27	36.53	—	—	—
5	3	6 1/8″	2976A29	35.00	10 11/32″	2977A23	70.34
5	4	6 11/16″	2976A31	35.00	11 13/16″	2977A26	74.87
5	5	—	—	—	13 3/16″	2977A29	137.06
6	4	8 9/16″	2976A32	91.52	—	—	—
6	5	8 9/16″	2976A33	91.52	—	—	—

About Drill Bits

Bit Materials

High-speed steel bits are for general use in most materials.

Cobalt steel bits are better than high-speed steel for drilling very hard materials such as stainless steel, titanium alloys, and nickel alloys.

Carbide-tipped bits resist wear better than high-speed steel and cobalt steel, particularly in abrasive materials such as fiberglass and aluminum.

Carbide bits are harder, stronger, and offer greater wear resistance than high-speed steel, cobalt steel, and carbide-tipped bits. However, they require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications.

Treatments & Coatings

Uncoated (Bright Finish)— Surface is untreated. For general purpose drilling of most metals, wood, and plastic.

Black-Oxide Treatment— Color is dull black. For drilling of ferrous metals such as steel, stainless steel, and cast iron.

Black-and-Gold-Oxide Treatment— Color is black and gold. Resists breakage better than black-oxide bits when drilling ferrous metals such as steel, stainless steel, and cast iron.

Extended-Life Coatings— These coatings extend the life of bits by forming a barrier against heat and abrasion.

Extended-Life Coating	Color
Long-Life TiN (titanium nitride)	Bright gold
Extra-Life TiCN (titanium carbonitride)	Violet/blue-gray
Super-Life TiAlN (titanium aluminum nitride)	Dark violet/blue-gray
Ultra-Life TiN/TiAlN	Dark violet/blue-gray

Bit Shank Diameter

The shank diameter of each drill bit is the same as or slightly smaller than the drill bit size, unless otherwise stated.

Bit Length

Though ***jobbers' length*** bits are highly versatile, you may require shorter or longer bits for your specific application.

Short-length bits have maximum rigidity and a shorter overall length for drilling straighter, shallower holes than jobbers' and maintenance-length bits.

Maintenance-length bits are more rigid and drill shallower holes than jobbers' length bits.

Extended-reach bits are for hard-to-reach spots and drilling deeper holes than jobbers' length bits.

Short Length
Pages 2440, 2442, 2444, 2446-2448

Maintenance Length
Page 2445

Jobbers' Length
Pages 2430-2445

Extended Reach
Pages 2449-2451

Jobbers' Bits Application Guide

Jobbers' drill bits are the most widely used because they're rigid enough to make accurate hole sizes in a variety of materials and long enough to drill the hole depths required for most applications.

Select a jobbers' drill bit based on the material you plan to drill. Bits with a "Good" rating are both effective and economical; bits with a "Better" rating offer longer life; and bits with a "Best" rating are designed for superior performance.

Note: For drill bits for masonry, concrete, and wood, see pages 2458-2464.

For Drilling	GOOD	Pages	BETTER	Pages	BEST	Pages
Alloy Steel and Carbon Steel	General Purpose High-Speed Steel Jobbers' Drill Bits, Black Oxide	2432-2436	General Purpose High-Speed Steel Jobbers' Drill Bits, Long-Life TiN Coated	2432-2436	General Purpose High-Speed Steel Jobbers' Drill Bits, Super-Life TiAlN Coated	2432-2434
Cast Iron	General Purpose High-Speed Steel Jobbers' Drill Bits, Black Oxide	2432-2436	General Purpose High-Speed Steel Jobbers' Drill Bits, Long-Life TiN Coated	2432-2436	Carbide-Tipped Drill Bits for Difficult-to-Drill Materials	2440
Hard Steel	General Purpose High-Speed Steel Jobbers' Drill Bits, Super-Life TiAlN Coated	2432-2436	Straight-Flute Carbide-Tipped Drill Bits for Hard Steel	2442	Ultra Duty Carbide Drill Bits for Tool Steel and Dies	2441
Stainless Steel	Heat-Resistant Cobalt Steel Jobbers' Drill Bits	2438-2439	Heavy Duty Chip-Clearing Cobalt Steel Jobbers' Drill Bits	2437	High-Speed Steel Jobbers' Drill Bits for Stainless Steel	2443
Nickel Alloys/ Titanium Alloys	Heat-Resistant Cobalt Steel Jobbers' Drill Bits, Uncoated (Bright Finish)	2438-2439	Heat-Resistant Cobalt Steel Jobbers' Drill Bits, Ultra-Life TiN/TiAlN Coated	2438-2439	High-Speed Steel Jobbers' Drill Bits for Stainless Steel	2443
Aluminum	General Purpose High-Speed Steel Jobbers' Drill Bits, Uncoated (Bright Finish)	2432-2434	Heavy Duty Chip-Clearing High-Speed Steel Jobbers' Drill Bits, Long-Life TiN Coated	2436	High-Performance Carbide Jobbers' Drill Bits for Aluminum	2442
Brass and Bronze	General Purpose High-Speed Steel Jobbers' Drill Bits, Black Oxide	2432-2436	High-Speed Steel Jobbers' Drill Bits for Brass and Bronze	2443	High-Performance Carbide Jobbers' Drill Bits for Aluminum	2442
Plastic	General Purpose High-Speed Steel Jobbers' Drill Bits, Uncoated (Bright Finish)	2432-2434	General Purpose High-Speed Steel Jobbers' Drill Bits, Long-Life TiN Coated	2432-2436	High-Speed Steel Jobbers' Drill Bits for Plastic	2443
Fiberglass	General Purpose High-Speed Steel Jobbers' Drill Bits, Extra-Life TiCN Coated	2432-2434	General Purpose High-Speed Steel Jobbers' Drill Bits, Super-Life TiAlN Coated	2432-2434	Carbide-Tipped Drill Bits for Difficult-to-Drill Materials	2440
Composites	Carbide-Tipped Drill Bits for Difficult-to-Drill Materials	2440	Carbide Jobbers' Drill Bits for Fiber-Reinforced Composites	2444	Carbide Jobbers' Drill Bits for Composites	2444
Glass and Ceramics	—		Carbide-Tipped Drill Bits for Glass and Ceramics	2443	—	

Drill Bit Size Decimal Equivalents

Dec. Equiv.	Drill Bit Size	Dec. Equiv.	Drill Bit Size	Dec. Equiv.	Drill Bit Size	Dec. Equiv.	Drill Bit Size	Dec. Equiv.	Drill Bit Size	Dec. Equiv.	Drill Bit Size	Dec. Equiv.	Drill Bit Size
0.0135″	80	0.0551″	1.4 mm	0.1065″	36	0.1850″	13	0.2810″	K	0.4331″	11.0 mm	0.7188″	23/32″
0.0145″	79	0.0591″	1.5 mm	0.1094″	7/64″	0.1875″	3/16″	0.2813″	9/32″	0.4375″	7/16″	0.7283″	18.5 mm
0.0156″	1/64″	0.0595″	53	0.1100″	35	0.1890″	12	0.2900″	L	0.4528″	11.5 mm	0.7344″	47/64″
0.0160″	78	0.0625″	1/16″	0.1102″	2.8 mm	0.1910″	11	0.2950″	M	0.4531″	29/64″	0.7480″	19.0 mm
0.0180″	77	0.0630″	1.6 mm	0.1110″	34	0.1935″	10	0.2953″	7.5 mm	0.4688″	15/32″	0.7500″	3/4″
0.0200″	76	0.0635″	52	0.1130″	33	0.1960″	9	0.2969″	19/64″	0.4724″	12.0 mm	0.7656″	49/64″
0.0210″	75	0.0669″	1.7 mm	0.1142″	2.9 mm	0.1968″	5.0 mm	0.3020″	N	0.4844″	31/64″	0.7677″	19.5 mm
0.0225″	74	0.0670″	51	0.1160″	32	0.1990″	8	0.3125″	5/16″	0.4921″	12.5 mm	0.7813″	25/32″
0.0240″	73	0.0700″	50	0.1181″	3.0 mm	0.2010″	7	0.3150″	8.0 mm	0.5000″	1/2″	0.7874″	20.0 mm
0.0250″	72	0.0709″	1.8 mm	0.1200″	31	0.2031″	13/64″	0.3160″	O	0.5118″	13.0 mm	0.7969″	51/64″
0.0260″	71	0.0730″	49	0.1250″	1/8″	0.2040″	6	0.3230″	P	0.5156″	33/64″	0.8071″	20.5 mm
0.0280″	70	0.0748″	1.9 mm	0.1285″	30	0.2055″	5	0.3281″	21/64″	0.5313″	17/32″	0.8125″	13/16″
0.0292″	69	0.0760″	48	0.1360″	29	0.2090″	4	0.3320″	Q	0.5315″	13.5 mm	0.8268″	21.0 mm
0.0310″	68	0.0781″	5/64″	0.1378″	3.5 mm	0.2130″	3	0.3346″	8.5 mm	0.5469″	35/64″	0.8281″	53/64″
0.0313″	1/32″	0.0785″	47	0.1405″	28	0.2165″	5.5 mm	0.3390″	R	0.5512″	14.0 mm	0.8438″	27/32″
0.0320″	67	0.0787″	2.0 mm	0.1406″	9/64″	0.2188″	7/32″	0.3438″	11/32″	0.5625″	9/16″	0.8465″	21.5 mm
0.0330″	66	0.0810″	46	0.1440″	27	0.2210″	2	0.3480″	S	0.5709″	14.5 mm	0.8594″	55/64″
0.0350″	65	0.0820″	45	0.1470″	26	0.2280″	1	0.3543″	9.0 mm	0.5781″	37/64″	0.8661″	22.0 mm
0.0360″	64	0.0827″	2.1 mm	0.1495″	25	0.2340″	A	0.3580″	T	0.5905″	15.0 mm	0.8750″	7/8″
0.0370″	63	0.0860″	44	0.1520″	24	0.2344″	15/64″	0.3594″	23/64″	0.5938″	19/32″	0.8858″	22.5 mm
0.0380″	62	0.0866″	2.2 mm	0.1540″	23	0.2362″	6.0 mm	0.3680″	U	0.6094″	39/64″	0.8906″	57/64″
0.0390″	61	0.0890″	43	0.1563″	5/32″	0.2380″	B	0.3740″	9.5 mm	0.6102″	15.5 mm	0.9055″	23.0 mm
0.0394″	1.0 mm	0.0906″	2.3 mm	0.1570″	22	0.2420″	C	0.3750″	3/8″	0.6250″	5/8″	0.9063″	29/32″
0.0400″	60	0.0935″	42	0.1575″	4.0 mm	0.2460″	D	0.3770″	V	0.6299″	16.0 mm	0.9219″	59/64″
0.0410″	59	0.0938″	3/32″	0.1590″	21	0.2500″	1/4″, E	0.3860″	W	0.6406″	41/64″	0.9252″	23.5 mm
0.0420″	58	0.0945″	2.4 mm	0.1610″	20	0.2559″	6.5 mm	0.3906″	25/64″	0.6496″	16.5 mm	0.9375″	15/16″
0.0430″	57	0.0960″	41	0.1660″	19	0.2570″	F	0.3937″	10.0 mm	0.6563″	21/32″	0.9449″	24.0 mm
0.0433″	1.1 mm	0.0980″	40	0.1695″	18	0.2610″	G	0.3970″	X	0.6693″	17.0 mm	0.9531″	61/64″
0.0465″	56	0.0984″	2.5 mm	0.1719″	11/64″	0.2656″	17/64″	0.4040″	Y	0.6719″	43/64″	0.9646″	24.5 mm
0.0469″	3/64″	0.0995″	39	0.1730″	17	0.2660″	H	0.4063″	13/32″	0.6875″	11/16″	0.9688″	31/32″
0.0472″	1.2 mm	0.1015″	38	0.1770″	16	0.2720″	I	0.4130″	Z	0.6890″	17.5 mm	0.9842″	25.0 mm
0.0512″	1.3 mm	0.1024″	2.6 mm	0.1772″	4.5 mm	0.2756″	7.0 mm	0.4134″	10.5 mm	0.7031″	45/64″	0.9844″	63/64″
0.0520″	55	0.1040″	37	0.1800″	15	0.2770″	J	0.4219″	27/64″	0.7087″	18.0 mm	1.0000″	1″
0.0550″	54	0.1063″	2.7 mm	0.1820″	14								

Drill Bit Extensions

Add length to your drill bit for hard-to-reach areas. Both the extension collet and the extension body are required for use (sold separately). Simply insert your drill bit into the collet; then thread the collet onto the extension and tighten with a wrench. All are made of steel.

Extension Collets—Each collet fits a specific drill bit size. **To Order:** Please specify the exact drill bit size to be used in the collet within the range of sizes listed.

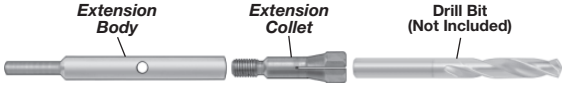

For Drill Bit Sizes	EXTENSION COLLETS Collet Hex Size		Each	EXTENSION BODY Shank Dia.	O'all Dia.	4″ Length	Each	9″ Length	Each
1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″; Nos. 43, 40, 30, 21	1/4″	3016A21	$8.34	1/4″	5/16″	3016A11	$12.39	3016A12	$12.58
11/64″, 3/16″, 13/64″, 7/32″, 15/64″, 1/4″; Nos. 11, 10	3/8″	3016A23	10.11	1/4″	7/16″	3016A13	16.13	3016A14	16.55
1/4″, 17/64″, 9/32″, 19/64″, 5/16″	7/16″	3016A25	19.11	3/8″	9/16″	3016A15	21.16	3016A16	21.86

Miniature Drill Bit Extensions

Smaller than our other drill bit extensions, these are perfect for extra reach when using small drill bit sizes. Collet and body are one piece and no special tools are needed to change the drill bit. Simply insert the drill bit into the collet end of the extension and tighten the knurled collar. Made of steel.

To Order: Each extension fits a specific drill bit size. Please specify the exact drill bit size to be used in the extension within the range of sizes listed.

Shank Dia.	For Drill Bit Sizes	O'all Lg.		Each
1/8″	1/64″, 1/32″; Nos. 80-56	4″	2864A11	$36.12
3/16″	1/64″, 1/32″, 3/64″, 1/16″; Nos. 80-53	4″	2864A21	37.76

Hex-Shank Adapters for Round-Shank Drill Bits

Use your round-shank drill bits in your power screwdriver or other tool that accepts a 1/4″ hex shank. Each adapter accepts a variety of round-shank drill bit sizes. Made of steel.

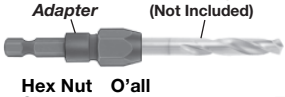

For Drill Bit Sizes	Hex Nut Size	O'all Lg.		Each	For Drill Bit Sizes	Hex Nut Size	O'all Lg.		Each
1/16″; Nos. 54-52; 1.4-1.6 mm	5/16″	1 11/16″	3185A41	$5.51	11/64″; Nos. 19-16; 4.1-4.4 mm	7/16″	1 3/4″	3185A48	$5.51
5/64″; Nos. 51-45; 1.7-2.0 mm	5/16″	1 11/16″	3185A42	5.51	3/16″; Nos. 15-11; 4.5-4.8 mm	7/16″	1 3/4″	3185A49	5.51
3/32″; Nos. 44-40; 2.1-2.4 mm	5/16″	1 11/16″	3185A43	5.51	13/64″; Nos. 10-5; 4.9-5.2 mm	7/16″	2 5/32″	3185A51	5.51
7/64″; Nos. 39-33; 2.5-2.8 mm	7/16″	1 3/4″	3185A44	5.51	7/32″; Nos. 4-2; 5.3-5.6 mm	7/16″	2 5/32″	3185A52	5.51
1/8″; Nos. 32-30; 2.9-3.2 mm	7/16″	1 3/4″	3185A45	5.51	15/64″; No. 1; A, B; 5.7-6.0 mm	7/16″	2 5/32″	3185A53	5.51
9/64″; Nos. 29-27; 3.3-3.6 mm	7/16″	1 3/4″	3185A46	5.51	1/4″, C-E, 6.1-6.4 mm	1/2″	2 5/32″	3185A54	6.63
5/32″; Nos. 26-20; 3.7-4.0 mm	7/16″	1 3/4″	3185A47	5.51					

For information about drill bits and decimal equivalents, see pages 2428-2429.

General Purpose High-Speed Steel Jobbers' Drill Bit Sets

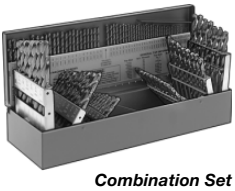

Combination Set

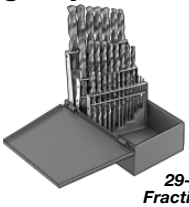

29-Piece Fractional Set

Get the drill bit sizes you need for general purpose applications in one convenient set. Sets contain one bit per size. They come in a metal case with holes for drill bits that are marked with the bit size for quick reference.

135° point angle bits perform better than 118° point angle bits on hard materials, and they produce smaller chips to reduce clogging. All have a split point that keeps the bit centered without a pilot hole to meet NAS 907 Type B aerospace specifications (except wire gauge sizes 80-53, metric sizes smaller than 1.6 mm, and where noted).

No. of Pieces	Size Range	Treatment/Coating	Point Angle	Replacement Bits on Page Nos.	Per Set
Combination Sets					
114	1/16″-1/2″ (increments of 1/64″), Nos. 60-1, 1-13 mm (increments of 0.5mm)	Black Oxide	118°	2432-2436	**8834A13**..... $299.06
115	1/16″-1/2″ (increments of 1/64″), Nos. 60-1, A-Z	Uncoated (Bright Finish)	118°	2432-2434	**29585A7**..... $277.22
		Black Oxide	135°	2432-2434	**8834A71**..... $311.78
			118°	2432-2434	**8834A12**..... $270.85
		Long-Life TiN Coated	135°	2432-2434	**29585A8**..... $611.08
Fractional Sets					
13	1/16″-1/4″ (increments of 1/64″)	Uncoated (Bright Finish)	118°	2432-2433	**8875A13**..... $23.78
		Black Oxide	135°	2432	**8907A12**..... $25.31
			118°	2432-2433	**2948A52**..... $24.63
		Long-Life TiN Coated	135°	2432	**31555A52**.. $46.98
		Extra-Life TiCN Coated	135°	2432	**3108A11**..... $63.39
15	1/16″-1/2″ (increments of 1/32″)	Uncoated (Bright Finish)	118°	2432-2433	**8875A14**..... $59.84
		Black Oxide	135°	2432	**8907A14**..... $62.10
			118°	2432-2433	**2948A31**..... $61.69
		Long-Life TiN Coated	135°	2432	**31555A54**.. $105.30
			118°	2432-2433	**2763A52**..... $113.74
		Extra-Life TiCN Coated	135°	2432	**3108A14**..... $140.83
21	1/16″-3/8″ (increments of 1/64″)	Uncoated (Bright Finish)	118°	2432-2433	**8875A25**..... $53.08
		Black Oxide	135°	2432	**8907A13**..... $56.34
			118°	2432-2433	**2948A27**..... $57.30
		Long-Life TiN Coated	135°	2432	**31555A53**.. $99.01
		Extra-Life TiCN Coated	135°	2432	**3108A12**..... $129.77
29	1/16″-1/2″ (increments of 1/64″)	Uncoated (Bright Finish)	118°	2432-2433	**8875A15**..... $111.04
		Black Oxide	135°	2432	**8907A11**..... $113.11
			118°	2432-2433	**2948A28**..... $111.31
		Heavy Duty Chip-Clearing Black Oxide	135°	2436	**3186A41●**.. $142.86
		Long-Life TiN Coated	135°	2432	**31555A51**.. $194.82
			118°	2432-2433	**2763A51**..... $212.20
		Heavy Duty Chip-Clearing Long-Life TiN Coated	135°	2436	**3186A42●**.. $287.49
		Extra-Life TiCN Coated	135°	2432	**3108A13**..... $240.69
Wire Gauge Sets					
20	Nos. 80-61	Uncoated (Bright Finish)	118°	2433	**31055A64**.. $35.72
		Black Oxide	135°	2433	**8907A17**..... $42.57
			118°	2433	**2948A33**..... $38.14
		Long-Life TiN Coated	135°	2433	**31555A57**.. $68.26
			118°	2433	**2763A56**..... $60.48
60	Nos. 60-1	Uncoated (Bright Finish)	118°	2433	**31055A62**.. $89.15
		Black Oxide	135°	2433	**8907A16**..... $97.73
			118°	2433	**2948A32**..... $90.23
		Long-Life TiN Coated	135°	2433	**31555A56**.. $166.04
			118°	2433	**2763A54**..... $161.35
80	Nos. 80-1	Black Oxide	118°	2433	**2948A34**..... $155.71
Letter Sets					
26	A-Z	Uncoated (Bright Finish)	118°	2434	**8875A35**..... $111.35
		Black Oxide	135°	2434	**8907A15**..... $111.13
			118°	2434	**2948A37**..... $110.71
		Long-Life TiN Coated	135°	2434	**31555A55**.. $201.20
			118°	——	**2763A53**..... $205.59
Metric Sets					
13	1-7 mm (increments of 0.5mm)	Black Oxide	118°	2435-2436	**2788A11▲**.. $31.55
		Black-and-Gold Oxide	135°	2434-2435	**30155A53**.. $29.18

● Does not meet NAS 907 Type B. ▲ Manufactured to DIN lengths.

(Continued on following page)

For information about drill bits and decimal equivalents, see pages 2428-2429.

General Purpose High-Speed Steel Jobbers' Drill Bit Sets *(Continued from previous page)*

No. of Pieces	Size Range	Treatment/Coating	Point Angle	Replacement Bits on Page Nos.	Per Set
Metric Sets					
19	1-10 mm (increments of 0.5 mm)	Uncoated (Bright Finish)	118°	_____	30555A64▲... $70.94
		Black Oxide	118°	2435-2436	2788A12▲..... $71.38
		Black-and-Gold Oxide	135°	2434-2435	30155A55 ..... $58.37
25	1-13 mm (increments of 0.5 mm)	Uncoated (Bright Finish)	118°	_____	30555A66▲... $99.74
		Black Oxide	118°	2435-2436	2788A13▲..... $106.20
		Black-and-Gold Oxide	135°	2434-2435	30155A57 ..... $106.17
41	6-10 mm (increments of 0.1 mm)	Uncoated (Bright Finish)	118°	_____	30555A68▲... $231.17
		Black Oxide	118°	2435-2436	2788A14▲..... $192.27
		Black-and-Gold Oxide	135°	2434	30155A59 ..... $194.67
50	1- 5.9 mm (increments of 0.1 mm)	Black Oxide	118°	2435	2788A31▲..... $91.98
118	1-2.45 mm (increments of 0.05 mm), 2.5-10 mm (increments of 0.1 mm), 10.2, 10.5, 10.8, 11, 11.2, 11.5, 11.8, 12, 12.2, 12.5, 12.8, 13 mm	Black Oxide	118°	2435-2436	3085A11▲..... $447.00

▲Manufactured to DIN lengths.

General Purpose High-Speed Steel Jobbers' Drill Bit Master Sets

These master sets contain multiple bits of each size—choose from fractional, letter, and wire gauge sizes. Drill bits are black-oxide treated high-speed steel.

All bits have a 135° point angle that produces small chips to prevent clogging. They also have a split point that keeps the bit centered without a pilot hole and meet NAS 907 Type B aerospace specifications, except wire gauge sizes 60-53. Sets come in a 14⅝″ Lg.×7⅜″ Wd.×7¾″ Ht. steel drawer cabinet with compartments marked with the bit size for quick reference. Fractional set and letter set have three drawers; wire gauge set has five drawers.

Fractional Drill Bit Set

Fractional Drill Bit Set—96 Pieces

Size	No. of Pieces	Size	No. of Pieces	Size	No. of Pieces	Size	No. of Pieces
1/16″	6	3/16″	6	19/64″	1	13/32″	2
5/64″	3	13/64″	3	5/16″	3	27/64″	2
3/32″	6	7/32″	6	21/64″	2	7/16″	2
7/64″	3	15/64″	3	11/32″	3	29/64″	2
1/8″	6	1/4″	6	23/64″	2	15/32″	2
9/64″	3	17/64″	2	3/8″	2	31/64″	1
5/32″	6	9/32″	3	25/64″	2	1/2″	2
11/64″	6						

8802A11 ..... **Per Set** $277.57

Wire Gauge Drill Bit Set—249 Pieces

Sizes	No. of Pieces for Each Size
Nos. 60-30	5
Nos. 29-23	4
Nos. 22-1	3

8802A13 ..... **Per Set** $338.30

Letter Drill Bit Set—72 Pieces

Sizes	No. of Pieces for Each Size
A-T	3
U-Z	2

8802A12 ..... **Per Set** $293.22

Heat-Resistant Cobalt Steel Jobbers' Drill Bit Sets

Each handy set includes a variety of cobalt steel jobbers' drill bits, which are harder and more heat-resistant than high-speed steel drill bits. For use on hard metals including stainless steel, nickel alloy, and titanium. Sets contain one bit per size. They come in a metal case with holes for drill bits that are marked with the bit size for quick reference.

All bits have a 135° point angle, which produces small chips to prevent clogging. All have a split point that keeps the bit centered without a pilot hole and meet NAS 907 Type J aerospace specifications, except 87875A24, wire gauge sizes 80-53, and metric sizes smaller than 1.6 mm.

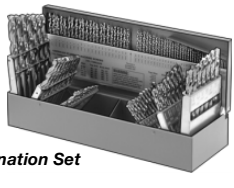

Combination Set

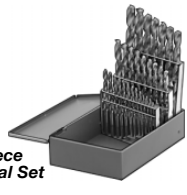

29-Piece Fractional Set

No. of Pieces	Size Range	Treatment/Coating	Point Angle	Replacement Bits on Page Nos.	Per Set
Combination Set					
115	1/16″-1/2″ (increments of 1/64″), Nos. 60-1, A-Z	Uncoated (Bright Finish)	135°	2438-2439	3048A46..... $528.65
Fractional Sets					
13	1/16″-1/4″ (increments of 1/64″)	Uncoated (Bright Finish)	135°	2438	8856A51..... $38.80
13	1/16″-1/4″ (increments of 1/64″)	Long-Life TiN Coated	135°	2438	28115A71 .... $60.16
15	1/16″-1/2″ (increments of 1/32″)	Uncoated (Bright Finish)	135°	2438	8856A53..... $102.09
15	1/16″-1/2″ (increments of 1/32″)	Long-Life TiN Coated	135°	2438	28115A74 .... $170.80
21	1/16″-3/8″ (increments of 1/64″)	Uncoated (Bright Finish)	135°	2438	8856A56..... $83.65
21	1/16″-3/8″ (increments of 1/64″)	Long-Life TiN Coated	135°	2438	28115A72 .... $149.12
29	1/16″-1/2″ (increments of 1/64″)	Uncoated (Bright Finish)	135°	2438	8856A52..... $198.14
29	1/16″-1/2″ (increments of 1/64″)	Short-Flute Black Oxide	135°	2437	87875A24 .... $271.07
29	1/16″-1/2″ (increments of 1/64″)	Long-Life TiN Coated	135°	2438	28115A77 .... $308.70
Wire Gauge Sets					
20	Nos. 80-61	Uncoated (Bright Finish)	135°	2438	8856A57..... $60.68
60	Nos. 60-1	Uncoated (Bright Finish)	135°	2438	8856A54..... $157.72
Letter Set					
26	A-Z	Uncoated (Bright Finish)	135°	2439	8856A55..... $210.90
Metric Sets					
13	1-7 mm (increments of 0.5 mm)	Uncoated (Bright Finish)	135°	2439	27945A24 .... $35.12
19	1-10 mm (increments of 0.5 mm)	Uncoated (Bright Finish)	135°	2439	27945A25 .... $79.62
25	1-13 mm (increments of 0.5 mm)	Uncoated (Bright Finish)	135°	2439	27945A27 .... $146.82
41	6-10 mm (increments of 0.1 mm)	Uncoated (Bright Finish)	135°	2439	27945A28 .... $254.48

For information about drill bits and decimal equivalents, see pages 2428-2429.

General Purpose High-Speed Steel Jobbers' Drill Bits

High-speed steel combined with ideal reach, drilling depth, and rigidity make these bits highly versatile.

135° Point Angle— Perform better than 118° point angle bits on hard materials and produce smaller chips to prevent clogging. They also have a split point that keeps the bit centered without a pilot hole and meet NAS 907 Type B aerospace specifications, unless noted.

Black-oxide bits are for use on steel, stainless steel, and cast iron. *Black-and-gold-oxide* bits are for use on steel, stainless steel, aluminum, copper, and plastic. *Long-life TiN (titanium nitride) coated* bits last longer than black-oxide and black-and-gold-oxide bits. For use on alloy steel, stainless steel, cast iron, brass, bronze, plastic, and fiberglass. *Extra-life TiCN (titanium carbonitride) coated* bits last longer than long-life TiN-coated bits. For use on alloy steel, stainless steel, cast iron, bronze, and fiberglass. *Super-life TiAlN (titanium aluminum nitride) coated* bits last longer than extra-life TiCN-coated bits. For use on alloy steel, stainless steel, cast iron, nickel alloys, titanium alloys, brass, bronze, and fiberglass.

118° Point Angle— *Metric-size 118° point angle* bits are made to DIN length specifications.

Uncoated (bright finish) bits are for use on carbon steel, aluminum, copper, brass, bronze, and plastic. *Black-oxide* bits are for use on steel and cast iron. *Black-and-gold-oxide* bits are for use on steel, stainless steel, aluminum, copper, and plastic. *Long-life TiN (titanium nitride) coated* bits last longer than uncoated, black-oxide, and black-and-gold-oxide bits. For use on steel, cast iron, brass, and bronze.

Fractional Size—135° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Black Oxide	Each 1-11	Each 12-Up	Long-Life TiN Coated	Each 1-11	Each 12-Up	Extra-Life TiCN Coated	Each 1-11	Each 12-Up	Super-Life TiAlN Coated	Each 1-11	Each 12-Up
1/64"	3/4"	0.2"	2901A107★	$3.01	$2.56	—	—	—	—	—	—	—	—	—
1/32"	1 3/8"	0.5"	2901A108★	1.52	1.29	—	—	—	—	—	—	—	—	—
3/64"	1 3/4"	0.7"	2901A109★	1.47	1.25	—	—	—	—	—	—	—	—	—
1/16"	1 7/8"	0.8"	2901A111	1.32	1.12	29115A711	$2.39	$2.03	3192A34	$3.33	$2.83	3202A44	$3.56	$3.02
5/64"	2"	0.9"	2901A112	1.32	1.12	29115A712	2.43	2.06	3192A35	3.35	2.85	3202A45	3.59	3.05
3/32"	2 1/4"	1.1"	2901A113	1.36	1.15	29115A713	2.46	2.09	3192A36	3.37	2.86	3202A46	3.60	3.06
7/64"	2 5/8"	1.3"	2901A114	1.40	1.19	29115A714	2.63	2.23	3192A37	3.94	3.35	3202A47	4.21	3.57
1/8"	2 3/4"	1.4"	2901A115	1.50	1.27	29115A715	2.77	2.35	3192A38	4.10	3.48	3202A48	4.38	3.72
9/64"	2 7/8"	1.5"	2901A116	1.58	1.34	29115A716	2.90	2.46	3192A39	4.45	3.78	3202A49	4.64	3.94
5/32"	3 1/8"	1.8"	2901A117	1.70	1.45	29115A717	3.15	2.67	3192A41	4.54	3.85	3202A51	4.76	4.04
11/64"	3 1/4"	1.9"	2901A118	1.78	1.51	29115A718	3.22	2.73	3192A42	4.62	3.92	3202A52	5.11	4.34
3/16"	3 1/2"	2"	2901A119	2.04	1.73	29115A719	3.48	2.96	3192A43	5.26	4.46	3202A53	5.38	4.57
13/64"	3 5/8"	2.1"	2901A121	2.14	1.82	29115A721	3.88	3.29	3192A44	5.55	4.72	3202A54	5.92	5.02
7/32"	3 3/4"	2.2"	2901A122	2.24	1.90	29115A722	4.22	3.59	3192A45	5.63	4.78	3202A55	6.29	5.34
15/64"	3 7/8"	2.3"	2901A123	2.51	2.13	29115A723	4.61	3.91	3192A46	6.27	5.32	3202A56	6.76	5.74
1/4"	4"	2.4"	2901A124	2.72	2.31	29115A724	4.80	4.08	3192A47	6.58	5.59	3202A57	6.98	5.93
17/64"	4 1/8"	2.5"	2901A125	3.13	2.66	29115A725	6.68	5.67	3192A48	9.04	7.68	3202A58	9.83	8.35
9/32"	4 1/4"	2.5"	2901A126	3.33	2.83	29115A726	6.98	5.92	3192A49	9.29	7.89	3202A59	10.21	8.67
				1-5	6-Up		1-5	6-Up		1-5	6-Up		1-5	6-Up
19/64"	4 3/8"	2.6"	2901A127	$3.83	$3.25	29115A727	$8.11	$6.89	3192A51	$10.56	$8.97	3202A61	$11.63	$9.87
5/16"	4 1/2"	2.7"	2901A128	4.16	3.53	29115A728	8.24	7.00	3192A52	10.82	9.19	3202A62	12.00	10.19
21/64"	4 5/8"	2.8"	2901A129	4.61	3.91	29115A729	9.06	7.69	3192A53	12.13	10.30	3202A63	12.86	10.92
11/32"	4 3/4"	2.9"	2901A131	5.00	4.25	29115A731	9.92	8.43	3192A54	12.96	11.01	3202A64	13.69	11.62
23/64"	4 7/8"	3"	2901A132	5.71	4.85	29115A732	11.23	9.54	3192A55	14.92	12.67	3202A65	15.83	13.44
3/8"	5"	3.1"	2901A133	6.01	5.10	29115A733	11.35	9.64	3192A56	15.24	12.94	3202A66	16.32	13.86
25/64"	5 1/8"	3.2"	2901A134	6.73	5.72	29115A734	12.72	10.80	3192A57	17.54	14.89	3202A67	18.58	15.77
13/32"	5 1/4"	3.3"	2901A135	6.80	5.77	29115A735	13.19	11.20	3192A58	18.14	15.40	3202A68	19.17	16.27
27/64"	5 3/8"	3.3"	2901A136	7.81	6.63	29115A736	14.31	12.15	3192A59	19.26	16.35	3202A69	20.21	17.16
7/16"	5 1/2"	3.4"	2901A137	7.97	6.76	29115A737	14.55	12.36	3192A61	19.67	16.70	3202A71	20.61	17.50
29/64"	5 5/8"	3.5"	2901A138	9.15	7.77	29115A738	16.11	13.67	3192A62	21.74	18.46	3202A72	23.11	19.62
15/32"	5 3/4"	3.6"	2901A139	9.55	8.11	29115A739	16.93	14.37	3192A63	23.02	19.54	3202A73	24.82	21.08
31/64"	5 7/8"	3.6"	2901A141	10.17	8.63	29115A741	17.67	15.00	3192A64	24.39	20.71	3202A74	25.73	21.85
1/2"	6"	3.8"	2901A142	10.47	8.89	29115A742	18.42	15.64	3192A65	24.93	21.17	3202A75	26.17	22.22

★ Point is not split. Does not meet NAS 907 Type B.

Fractional Size—118° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Uncoated (Bright Finish)	Each 1-11	Each 12-Up	Black Oxide	Each 1-11	Each 12-Up	Long-Life TiN Coated	Each 1-11	Each 12-Up
1/64"	3/4"	0.2"	8870A11	$2.23	$1.90	2931A57	$2.04	$1.74	—	—	—
1/32"	1 3/8"	0.4"	8870A12	1.43	1.22	2931A58	1.31	1.11	—	—	—
3/64"	1 3/4"	0.7"	8870A13	1.10	.93	2931A11	1.24	1.06	—	—	—
1/16"	1 7/8"	0.8"	8870A14	1.05	.89	2931A12	1.20	1.02	3022A31	$2.16	$1.84
5/64"	2"	0.9"	8870A15	1.10	.88	2931A13	1.23	1.05	3022A32	2.19	1.86
3/32"	2 1/4"	1.1"	8870A16	1.12	.95	2931A14	1.26	1.07	3022A33	2.34	1.99
7/64"	2 5/8"	1.3"	8870A17	1.12	.90	2931A15	1.25	1.06	3022A34	2.48	2.11
1/8"	2 3/4"	1.4"	8870A18	1.15	.98	2931A16	1.29	1.09	3022A35	2.51	2.14
9/64"	2 7/8"	1.5"	8870A19	1.22	.98	2931A17	1.38	1.17	3022A36	2.64	2.25
5/32"	3 1/8"	1.8"	8870A21	1.40	1.14	2931A18	1.59	1.35	3022A37	2.82	2.39
11/64"	3 1/4"	1.9"	8870A22	1.46	1.22	2931A19	1.66	1.41	3022A38	2.92	2.49
3/16"	3 1/2"	2"	8870A23	1.64	1.40	2931A21	1.86	1.58	3022A39	3.19	2.71
13/64"	3 5/8"	2.1"	8870A24	1.81	1.53	2931A22	2.04	1.73	3022A41	3.56	3.03
7/32"	3 3/4"	2.2"	8870A25	1.87	1.51	2931A23	2.11	1.79	3022A42	4.15	3.53
15/64"	3 7/8"	2.3"	8870A26	2.05	1.72	2931A24	2.34	1.99	3022A43	4.33	3.68
1/4"	4"	2.4"	8870A27	2.19	1.87	2931A25	2.50	2.12	3022A44	4.59	3.91
17/64"	4 1/8"	2.5"	8870A28	2.49	2.12	2931A26	2.83	2.40	3022A45	6.04	5.13
9/32"	4 1/4"	2.5"	8870A29	2.66	2.15	2931A27	3.02	2.56	3022A46	6.21	5.28
				1-5	6-Up		1-5	6-Up		1-5	6-Up
19/64"	4 3/8"	2.6"	8870A31	$3.09	$2.62	2931A28	$3.51	$2.98	3022A47	$7.34	$6.24
5/16"	4 1/2"	2.7"	8870A32	3.31	2.68	2931A29	3.75	3.18	3022A48	7.54	6.42
21/64"	4 5/8"	2.8"	8870A33	3.72	3.16	2931A31	4.21	3.57	3022A49	8.44	7.18
11/32"	4 3/4"	2.9"	8870A34	4.16	3.54	2931A32	4.72	4.01	3022A51	9.07	7.71
23/64"	4 7/8"	3"	8870A35	4.61	3.92	2931A33	5.22	4.44	3022A52	10.63	9.04
3/8"	5"	3.1"	8870A36	4.86	4.14	2931A34	5.50	4.67	3022A53	10.85	9.22

(Continued on following page)

For information about drill bits and decimal equivalents, see pages 2428-2429.

General Purpose High-Speed Steel Jobbers' Drill Bits *(Continued from previous page)*

Fractional Size—118° Point Angle (Cont.)

Drill Bit Size	O'all Lg.	Drilling Depth	Uncoated (Bright Finish)	Each 1-5	Each 6-Up	Black Oxide	Each 1-5	Each 6-Up	Long-Life TiN Coated	Each 1-5	Each 6-Up
25/64"	5 1/8"	3.2"	8870A37	$5.51	$4.69	2931A35	$6.27	$5.32	3022A54	$12.30	$10.46
13/32"	5 1/4"	3.3"	8870A38	5.74	4.88	2931A36	6.52	5.54	3022A55	12.69	10.79
27/64"	5 3/8"	3.3"	8870A39	6.33	5.39	2931A37	7.19	6.10	3022A56	13.75	11.69
7/16"	5 1/2"	3.4"	8870A41	6.59	5.34	2931A38	7.47	6.35	3022A57	14.06	11.96
29/64"	5 5/8"	3.5"	8870A42	7.47	6.35	2931A39	8.47	7.20	3022A58	15.77	13.41
15/32"	5 3/4"	3.6"	8870A43	8.10	6.89	2931A41	9.20	7.81	3022A59	16.47	14.01
31/64"	5 7/8"	3.6"	8870A44	8.39	7.14	2931A42	9.53	8.09	3022A61	16.69	14.19
1/2"	6"	3.8"	8870A45	8.53	7.25	2931A43	9.68	8.22	3022A62	17.03	14.48
					Each			Each			Each
33/64"	6 5/8"	4"	8870A46		$15.40	2931A44		$20.78	3022A63		$35.95
17/32"	6 5/8"	4"	8870A47		15.91	2931A45		21.45	3022A64		36.36
35/64"	6 5/8"	4"	8870A48		17.54	2931A46		23.12	3022A65		38.12
9/16"	6 5/8"	4"	8870A49		17.84	2931A47		23.52	3022A66		38.25
37/64"	6 5/8"	3.9"	8870A51		18.27	2931A48		24.10	3022A67		40.06
19/32"	7 1/8"	4.3"	8870A52		18.77	2931A49		25.31	3022A68		45.43
39/64"	7 1/8"	4.3"	8870A53		19.78	2931A51		26.07	3022A69		46.12
5/8"	7 1/8"	4.3"	8870A54		19.78	2931A52		26.65	3022A71		48.46
41/64"	7 1/8"	4.2"	8870A55		21.50	2931A53		27.74	3022A72		49.85
21/32"	7 1/8"	4.2"	8870A56		22.44	2931A54		28.36	3022A73		49.74
43/64"	7 5/8"	4.6"	8870A57		24.49	2931A55		31.44	3022A74		57.34
11/16"	7 5/8"	4.6"	8870A58		28.37	2931A56		31.61	3022A75		59.78

Wire Gauge Size—Overall Length and Drilling Depth

Drill Bit Size	O'all Lg.	Drilling Depth	Drill Bit Size	O'all Lg.	Drilling Depth	Drill Bit Size	O'all Lg.	Drilling Depth	Drill Bit Size	O'all Lg.	Drilling Depth	Drill Bit Size	O'all Lg.	Drilling Depth
80-79	3/4"	0.1"	65-62	1 1/2"	0.6"	43-42	2 1/4"	1.1"	31-30	2 3/4"	1.4"	17-14	3 3/8"	1.9"
78-76	7/8"	0.2"	61-58	1 5/8"	0.6"	41-39	2 3/8"	1.2"	29-28	2 7/8"	1.5"	13-11	3 1/2"	2.0"
75-74	1"	0.2"	57-56	1 3/4"	0.7"	38-36	2 1/2"	1.3"	27-25	3"	1.7"	10-7	3 5/8"	2.1"
73-72	1 1/8"	0.3"	55-52	1 7/8"	0.8"	35-33	2 5/8"	1.3"	24-22	3 1/8"	1.8"	6-3	3 3/4"	2.2"
71-70	1 1/4"	0.3"	51-47	2"	0.9"	32	2 3/4"	1.5"	21-18	3 1/4"	1.9"	2-1	3 7/8"	2.3"
69-66	1 3/8"	0.5"	46-44	2 1/8"	1.0"									

Wire Gauge Size—135° Point Angle

To Order: Please specify exact wire gauge size within the range listed. See chart above for overall length and drilling depth.

Drill Bit Size Range	Black Oxide	Each 1-11	Each 12-Up	Long-Life TiN Coated	Each 1-11	Each 12-Up	Extra-Life TiCN Coated	Each 1-11	Each 12-Up	Super-Life TiAlN Coated	Each 1-11	Each 12-Up
80-79	2901A324★	$2.79	$2.37	29045A64★	$4.64	$3.94						
78-71	2901A323★	1.80	1.53	29045A65★	3.22	2.74						
70-69	2901A322★	1.52	1.29	29045A66★	3.22	2.73						
68-61	2901A321★	1.44	1.22	29045A67★	2.81	2.39						
60-53	2901A325★	1.51	1.28	29045A68★	2.81	2.39						
52-28	2901A326	1.51	1.28	29045A61	2.47	2.10						
27-25	2901A327	1.76	1.49	29045A59	2.88	2.44	2821A119	$4.46	$3.79	3178A41	$4.64	$3.94
24-23	2901A328	1.76	1.50	29045A58	2.92	2.49	2821A121	4.43	3.76	3178A51	4.60	3.91
22-21	2901A317	1.75	1.49	29045A57	2.98	2.53	2821A117	4.64	3.94	3178A48	4.85	4.11
20-19	2901A329	1.91	1.62	29045A56	3.13	2.66	2821A116	4.77	4.05	3178A47	5.07	4.30
18	2901A191	1.91	1.62	29045A739	3.21	2.73	2821A171	4.77	4.05	3178A471	5.07	4.30
17-14	2901A331	2.19	1.86	29045A49	3.21	2.73	2821A115	5.35	4.54	3178A46	5.76	4.89
13	2901A185	2.19	1.86	29045A734	3.64	3.10	2821A161	5.35	4.54	3178A461	5.76	4.89
12-11	2901A314	2.12	1.80	29045A54	3.64	3.10	2821A114	5.62	4.77	3178A45	5.82	4.94
10-7	2901A313	2.27	1.93	29045A53	3.86	3.28	2821A113	5.84	4.95	3178A44	5.99	5.09
6-3	2901A312	2.65	2.25	29045A52	4.27	3.63	2821A112	6.25	5.31	3178A43	6.49	5.51
2-1	2901A311	2.72	2.31	29045A51	4.53	3.85	2821A111	6.55	5.56	3178A42	6.85	5.81

★Point is not split. Does not meet NAS 907 Type B.

Wire Gauge Size—118° Point Angle

To Order: Please specify exact wire gauge size within the range listed. See chart above for overall length and drilling depth.

Drill Bit Size Range	Uncoated (Bright Finish)	Each 1-11	Each 12-Up	Black Oxide	Each 1-11	Each 12-Up	Long-Life TiN Coated	Each 1-11	Each 12-Up
80-79	30585A225	$2.29	$1.95	2930A144	$2.81	$2.39	8903A79	$3.96	$3.36
78-71	30585A224	1.45	1.23	2930A143	1.62	1.38	8903A81	2.56	2.18
70-69	30585A223	1.23	1.04	2930A142	1.39	1.18	8903A82	2.57	2.18
68	30585A85	1.26	1.06	2930A85	1.34	1.14	8903A781	2.57	2.18
67-61	30585A209	1.26	1.06	2930A121	1.34	1.14	8903A77	2.31	1.97
60-51	30585A226	1.12	.96	2930A145	1.27	1.07	8903A455	2.17	1.85
50-31	30585A227	1.12	.96	2930A146	1.26	1.07	8903A435	2.19	1.86
30-28	30585A228	1.12	.96	2930A147	1.26	1.07	8903A395	2.45	2.08
27-23	30585A219	1.42	1.20	2930A138	1.64	1.39	8903A335	2.60	2.21
22	30585A34	1.46	1.24	2930A34	1.64	1.39	8903A34	2.60	2.21
21	30585A33	1.46	1.24	2930A33	1.64	1.39	8903A33	2.87	2.44
20-18	30585A217	1.61	1.37	2930A136	1.80	1.52	8903A285	2.87	2.44
17-13	30585A216	1.73	1.48	2930A135	2.02	1.72	8903A235	3.30	2.81
12-11	30585A215	1.81	1.54	2930A134	2.02	1.72	8903A215	3.39	2.88
10-7	30585A214	1.86	1.58	2930A133	2.08	1.76	8903A165	3.57	3.03
6-3	30585A213	1.97	1.68	2930A132	2.23	1.90	8903A125	3.92	3.34
2-1	30585A212	2.13	1.82	2930A131	2.39	2.03	8903A1	4.17	3.54

(Continued on following page)

For information about drill bits and decimal equivalents, see pages 2428-2429.

General Purpose High-Speed Steel Jobbers' Drill Bits *(Continued from previous page)*

High-speed steel combined with ideal reach, drilling depth, and rigidity make these bits highly versatile.

135° Point Angle— Perform better than 118° point angle bits on hard materials and produce smaller chips to prevent clogging. They also have a split point that keeps the bit centered without a pilot hole and meet NAS 907 Type B aerospace specifications, unless noted.

Black-oxide bits are for use on steel, stainless steel, and cast iron. *Black-and-gold-oxide* bits are for use on steel, stainless steel, aluminum, copper, and plastic. *Long-life TiN (titanium nitride) coated* bits last longer than black-oxide and black-and-gold-oxide bits. For use on alloy steel, stainless steel, cast iron, brass, bronze, plastic, and fiberglass. *Extra-life TiCN (titanium carbonitride) coated* bits last longer than long-life TiN-coated bits. For use on alloy steel, stainless steel, cast iron, bronze, and fiberglass. *Super-life TiAlN (titanium aluminum nitride) coated* bits last longer than extra-life TiCN-coated bits. For use on alloy steel, stainless steel, cast iron, nickel alloys, titanium alloys, brass, bronze, and fiberglass.

118° Point Angle— *Metric-size 118° point angle* bits are made to DIN length specifications.

Uncoated (bright finish) bits are for use on carbon steel, aluminum, copper, brass, bronze, and plastic. *Black-oxide* bits are for use on steel and cast iron. *Black-and-gold-oxide* bits are for use on steel, stainless steel, aluminum, copper, and plastic. *Long-life TiN (titanium nitride) coated* bits last longer than uncoated, black-oxide, and black-and-gold-oxide bits. For use on steel, cast iron, brass, and bronze.

Letter Size—135° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Black Oxide	Each 1-11	Each 12-Up	Long-Life TiN Coated	Each 1-11	Each 12-Up	Extra-Life TiCN Coated	Each 1-11	Each 12-Up	Super-Life TiAlN Coated	Each 1-11	Each 12-Up
A	3⅞"	2.3"	2901A143	$3.21	$2.73	3199A21	$5.73	$4.87	3184A61	$6.98	$5.92	3180A21	$7.34	$6.24
B	4"	2.4"	2901A144	3.21	2.73	3199A22	5.73	4.87	3184A62	6.98	5.92	3180A22	7.67	6.51
C	4"	2.4"	2901A145	3.30	2.80	3199A23	5.90	5.01	3184A63	7.33	6.22	3180A23	7.71	6.54
D	4"	2.4"	2901A146	3.30	2.80	3199A24	5.90	5.01	3184A64	7.37	6.26	3180A24	7.84	6.65
E	4"	2.4"	2901A147	2.72	2.31	3199A25	4.80	4.08	3184A65	6.58	5.59	3180A25	6.98	5.93
F	4⅛"	2.5"	2901A148	3.37	2.86	3199A26	6.72	5.70	3184A66	7.84	6.65	3180A26	8.41	7.14
G	4⅛"	2.5"	2901A149	3.61	3.07	3199A27	7.42	6.30	3184A67	9.57	8.12	3180A27	10.36	8.80
H	4⅛"	2.5"	2901A151	3.84	3.26	3199A28	7.76	6.59	3184A68	10.00	8.49	3180A28	10.80	9.17
I	4⅛"	2.5"	2901A152	3.84	3.26	3199A29	7.84	6.65	3184A69	10.01	8.50	3180A29	10.93	9.28
J	4⅛"	2.5"	2901A153	3.94	3.35	3199A31	7.94	6.75	3184A71	10.17	8.63	3180A31	11.11	9.44
K	4¼"	2.5"	2901A154	4.24	3.60	3199A32	8.64	7.34	3184A72	10.98	9.33	3180A32	11.91	10.11
L	4¼"	2.5"	2901A155	4.29	3.64	3199A33	8.80	7.47	3184A73	11.06	9.39	3180A33	12.04	10.22
				1-5	6-Up		1-5	6-Up		1-5	6-Up		1-5	6-Up
M	4⅜"	2.6"	2901A156	$4.67	$3.97	3199A34	$9.33	$7.92	3184A74	$11.63	$9.87	3180A34	$12.44	$10.57
N	4⅜"	2.6"	2901A157	4.72	4.00	3199A35	9.42	8.00	3184A75	11.71	9.95	3180A35	12.44	10.57
O	4½"	2.7"	2901A158	4.92	4.18	3199A36	9.74	8.27	3184A76	12.49	10.61	3180A36	12.91	10.96
P	4⅝"	2.8"	2901A159	5.19	4.41	3199A37	10.16	8.63	3184A77	12.75	10.82	3180A37	13.16	11.17
Q	4¾"	2.9"	2901A161	5.34	4.54	3199A38	10.41	8.84	3184A78	12.94	10.99	3180A38	13.35	11.34
R	4¾"	2.9"	2901A162	5.81	4.94	3199A39	11.27	9.57	3184A79	13.23	11.23	3180A39	13.96	11.85
S	4⅞"	3"	2901A163	6.11	5.19	3199A41	11.95	10.15	3184A81	15.02	12.75	3180A41	15.64	13.28
T	4⅞"	3"	2901A164	6.65	5.65	3199A42	12.08	10.26	3184A82	15.06	12.79	3180A42	16.81	14.28
U	5"	3.1"	2901A165	6.80	5.77	3199A43	12.49	10.61	3184A83	15.82	13.44	3180A43	17.07	14.49
V	5"	3.1"	2901A166	7.06	5.99	3199A44	13.25	11.25	3184A84	16.61	14.10	3180A44	17.35	14.74
W	5⅛"	3.2"	2901A167	7.48	6.35	3199A45	13.71	11.64	3184A85	16.70	14.18	3180A45	19.41	16.48
X	5⅛"	3.2"	2901A168	8.91	7.57	3199A46	15.64	13.28	3184A86	20.81	17.67	3180A46	21.98	18.67
Y	5¼"	3.3"	2901A169	9.92	8.42	3199A47	17.67	15.00	3184A87	22.93	19.47	3180A47	25.14	21.35
Z	5¼"	3.3"	2901A171	10.13	8.60	3199A48	18.23	15.48	3184A88	23.31	19.79	3180A48	25.78	21.89

Letter Size—118° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.	Uncoated (Bright Finish)	Each ♦	Black Oxide	Each ♦
A	3⅞"	2.3"	12	30595A31	$2.42	2932A11	$2.54
B	4"	2.4"	12	30595A32	2.42	2932A12	2.54
C	4"	2.4"	12	30595A33	2.42	2932A13	2.54
D	4"	2.4"	12	30595A34	2.49	2932A14	2.62
E	4"	2.4"	12	30595A35	2.22	2932A15	2.34
F	4⅛"	2.5"	12	30595A36	2.56	2932A16	2.69
G	4⅛"	2.5"	12	30595A37	2.90	2932A17	3.05
H	4⅛"	2.5"	12	30595A38	2.90	2932A18	3.05
I	4⅛"	2.5"	12	30595A39	2.90	2932A19	3.05
J	4⅛"	2.5"	12	30595A41	3.11	2932A21	3.28
K	4¼"	2.5"	12	30595A42	3.35	2932A22	3.53
L	4¼"	2.5"	12	30595A43	3.37	2932A23	3.54
M	4⅜"	2.6"	6	30595A44	3.60	2932A24	3.77
N	4⅜"	2.6"	6	30595A45	$3.63	2932A25	$3.82
O	4½"	2.7"	6	30595A46	3.70	2932A26	3.90
P	4⅝"	2.8"	6	30595A47	4.01	2932A27	4.22
Q	4¾"	2.9"	6	30595A48	4.12	2932A28	4.33
R	4¾"	2.9"	6	30595A49	4.34	2932A29	4.55
S	4⅞"	3"	6	30595A51	4.70	2932A31	4.95
T	4⅞"	3"	6	30595A52	5.25	2932A32	5.54
U	5"	3.1"	6	30595A53	5.30	2932A33	5.57
V	5"	3.1"	6	30595A54	5.52	2932A34	5.80
W	5⅛"	3.2"	6	30595A55	5.84	2932A35	6.13
X	5⅛"	3.2"	6	30595A56	7.05	2932A36	7.40
Y	5¼"	3.3"	6	30595A57	8.04	2932A37	8.46
Z	5¼"	3.3"	6	30595A58	8.45	2932A38	8.89

♦ Prices are 15% lower when you order full-package quantities.

Metric Size—135° Point Angle

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Black-and-Gold Oxide	Each 1-9	Each 10-Up
1.0	41	14.3	30565A211★	$1.59	$1.37
1.05	41	14.3	30565A212★	1.60	1.37
1.1	44	15.9	30565A213★	1.59	1.37
1.15	44	15.9	30565A214★	1.59	1.37
1.2	48	19.1	30565A215★	1.59	1.37
1.25	48	19.1	30565A216★	1.59	1.37
1.3	48	19.1	30565A217★	1.59	1.37
1.35	48	19.1	30565A218★	1.59	1.37
1.4	48	19.1	30565A219★	1.59	1.37
1.45	48	19.1	30565A221★	1.59	1.37
1.5	48	19.1	30565A222★	1.59	1.27
1.55	48	19.1	30565A223★	1.59	1.37
1.6	48	19.1	30565A224	1.59	1.37
1.65	51	22.2	30565A225	1.60	1.37
1.7	51	22.2	30565A226	1.62	1.39
1.75	51	22.2	30565A227	$1.62	$1.38
1.8	51	22.2	30565A228	1.60	1.37
1.9	51	22.2	30565A231	1.60	1.37
2.0	51	22.2	30565A233	1.49	1.27
2.05	54	23.8	30565A234	1.53	1.31
2.1	54	23.8	30565A235	1.53	1.31
2.2	57	25.4	30565A237	1.53	1.31
2.3	57	25.4	30565A239	1.53	1.31
2.4	60	34.1	30565A242	1.57	1.34
2.5	60	34.1	30565A244	1.57	1.34
2.6	64	36.9	30565A245	1.57	1.34
2.7	64	36.9	30565A246	1.57	1.34
2.8	67	37.3	30565A247	1.57	1.34
2.9	70	38.1	30565A248	1.49	1.27
3.0	70	38.1	30565A249	1.56	1.33

★ Point is not split. Does not meet NAS 907 Type B.

(Continued on following page)

For information about drill bits and decimal equivalents, see pages 2428-2429.

General Purpose High-Speed Steel Jobbers' Drill Bits *(Continued from previous page)*

Metric Size—135° Point Angle (Cont.)

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Black-and-Gold Oxide	Each 1-9	Each 10-Up
3.1	70	38.1	30565A251	$1.58	$1.36
3.2	70	38.1	30565A252	1.69	1.45
3.3	73	41.3	30565A253	1.69	1.45
3.4	73	41.3	30565A254	1.69	1.45
3.5	73	41.3	30565A255	1.74	1.49
3.6	76	44.5	30565A256	1.74	1.49
3.7	76	44.5	30565A257	1.74	1.49
3.8	76	44.5	30565A258	1.78	1.52
3.9	79	47.6	30565A259	1.78	1.52
4.0	83	49.2	30565A261	1.82	1.56
4.1	83	49.2	30565A262	1.88	1.61
4.2	83	49.2	30565A263	1.95	1.67
4.3	83	49.2	30565A264	1.95	1.67
4.4	86	50.8	30565A265	2.10	1.80
4.5	86	50.8	30565A266	2.26	1.93
4.6	86	50.8	30565A267	2.26	1.93
4.7	89	58.3	30565A268	2.35	2.01
4.8	89	58.3	30565A269	2.41	2.06
4.9	92	61.1	30565A271	2.50	2.13
5.0	92	61.1	30565A272	2.50	2.13
5.1	92	61.1	30565A273	2.56	2.19
5.2	95	62.3	30565A274	2.59	2.22
5.3	95	62.3	30565A275	2.67	2.28
5.4	95	62.3	30565A276	2.72	2.33
5.5	95	62.3	30565A277	2.73	2.34
5.6	98	63.5	30565A278	2.98	2.55
5.7	98	63.5	30565A279	2.98	2.55
5.8	98	63.5	30565A281	3.01	2.58
5.9	98	63.5	30565A282	3.03	2.59
6.0	102	66.7	30565A283	3.05	2.61
6.1	102	66.7	30565A284	3.05	2.61
6.2	102	66.7	30565A285	3.28	2.80
6.3	102	66.7	30565A286	3.28	2.80
6.4	105	69.9	30565A287	3.59	3.08
6.5	105	69.9	30565A288	3.59	3.08
6.6	105	69.9	30565A289	3.66	3.13
6.7	105	69.9	30565A291	3.66	3.13
6.8	105	69.9	30565A292	3.91	3.35
6.9	105	69.9	30565A293	3.91	3.35
7.0	105	69.9	30565A294	3.91	3.35
7.1	108	71.4	30565A295	4.29	3.67
7.2	108	71.4	30565A296	4.37	3.74
7.3	108	71.4	30565A297	$4.45	$3.81
7.4	111	73	30565A298	4.53	3.88
				1-4	5-Up
7.5	111	73	30565A299	$4.56	$3.90
7.6	111	73	30565A301	4.75	4.07
7.7	114	79.8	30565A302	4.91	4.20
7.8	114	79.8	30565A303	4.91	4.20
7.9	114	79.8	30565A304	5.01	4.28
8.0	114	79.8	30565A305	5.01	4.28
8.1	117	83.3	30565A306	5.54	4.74
8.2	117	83.3	30565A307	5.54	4.74
8.3	117	83.3	30565A308	5.65	4.83
8.4	121	86.1	30565A309	5.65	4.83
8.5	121	86.1	30565A311	5.59	4.78
8.6	121	86.1	30565A312	5.70	4.88
8.7	121	86.1	30565A313	6.06	5.19
8.8	124	87.7	30565A314	6.28	5.36
8.9	124	87.7	30565A315	6.58	5.64
9.0	124	87.7	30565A316	6.38	5.45
9.1	124	87.7	30565A317	7.20	6.17
9.2	127	88.9	30565A318	7.20	6.17
9.3	127	88.9	30565A319	7.20	6.17
9.4	127	88.9	30565A321	7.20	6.17
9.5	127	88.9	30565A322	6.75	5.77
9.6	130	92.1	30565A323	7.52	6.44
9.7	130	92.1	30565A324	7.52	6.44
9.8	130	92.1	30565A325	7.85	6.71
9.9	130	92.1	30565A326	7.85	6.71
10.0	130	92.1	30565A327	7.69	6.57
10.2	133	92.1	30565A328	8.26	7.06
10.5	133	92.1	30565A329	8.88	7.60
10.8	140	99.8	30565A331	9.66	8.27
11.0	140	99.8	30565A332	9.41	8.05
11.2	143	106.4	30565A333	10.03	8.58
11.5	143	106.4	30565A334	10.14	8.67
11.8	146	109.5	30565A335	10.76	9.21
12.0	149	110.3	30565A336	10.65	9.11
12.2	149	110.3	30565A337	10.76	9.21
12.5	152	113.1	30565A338	11.29	9.66
13.0	152	113.1	30565A339	13.52	11.57

Metric Size—118° Point Angle

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Pkg. Qty.	Black Oxide	Each ♦	Long-Life TiN Coated	Each ♦
1.0	34	10	12	2958A25	$1.41	8950A31	$3.08
1.1	36	11.8	12	2958A27	1.66	8950A32	3.08
1.15	36	11.7	12	2958A18	1.56		
1.2	38	13.6	12	2958A29	1.58		
1.25	38	13.5	12	2958A19	1.58	8950A33	3.08
1.3	38	13.4	12	2958A32	1.61	8950A34	3.20
1.35	40	15.3	12	2958A2	1.82		
1.4	40	15.2	12	2958A34	1.61		
1.45	40	15.1	12	2958A21	1.65		
1.5	40	15	12	2958A36	1.44	8950A35	3.03
1.55	43	16.9	12	2958A22	1.65		
1.6	43	16.8	12	2958A38	1.56	8950A36	3.08
1.65	43	16.7	12			8950A37	3.08
1.7	43	16.6	12	2958A41	1.70		
1.75	46	18.5	12	2958A24	1.65		
1.8	46	18.4	12	2958A42	1.70	8950A38	3.08
1.9	46	18.2	12	2958A44	1.56		
1.95	49	20.1	12	2958A26	1.82		
2.0	49	20	12	2958A46	1.39	8950A39	3.08
2.1	49	19.8	12	2958A48	1.70		
2.2	53	22.6	12	2958A49	1.70		
2.3	53	22.4	12	2958A52	1.56	8950A41	3.08
2.35	53	22.3	12	2958A33	1.82		
2.4	57	25.2	12	2958A54	1.70	8950A42	3.08
2.5	57	25	12	2958A55	1.42	8950A43	3.08
2.6	57	24.8	12	2958A56	1.82	8950A44	3.15
2.7	61	27.6	12	2958A57	1.82	8950A45	3.16
2.8	61	27.4	12	2958A58 ■	1.46		
2.9	61	27.2	12	2958A59	1.78	8950A46	3.18
3.0	61	27	12	2958A61	1.53		
3.0	61	28.5	12			8950A11	2.49
3.1	65	29.8	12	2958A62	1.78	8950A47	3.11
3.2	65	29.6	12	2958A63	1.55	8950A48	3.45
3.3	65	29.4	12	2958A64	$1.55		
3.3	65	31.1	12			8950A13	$2.65
3.4	70	32.2	12	2958A65	1.77	8950A49	3.65
3.5	70	32	12	2958A66	1.55	8950A51	3.45
3.6	70	31.8	12	2958A67	2.46		
3.7	70	31.6	12	2958A68	1.84		
4.0	75	35	12	2958A72	1.75		
4.0	75	37	12			8950A15	2.77
4.1	75	34.8	12	2958A73	1.99	8950A52	3.92
4.2	75	34.6	12	2958A74	1.83		
4.2	75	36.7	12			8950A16	2.96
4.3	80	38.4	12	2958A75	2.11		
4.4	80	38.2	12	2958A76	2.46		
4.5	80	38	12	2958A77	1.91	8950A53	4.06
4.6	80	37.8	12	2958A78	2.37		
4.8	86	42.4	12	2958A81	2.49		
5.0	86	42	12	2958A83	2.10		
5.0	86	44.5	12			8950A17	3.52
5.1	86	41.8	12	2958A84	2.56		
5.2	86	41.6	12	2958A85	2.71	8950A54	6.58
5.3	86	41.4	12	2958A86	2.86		
5.4	93	46.2	12	2958A87	3.00		
5.5	93	46	12	2958A88	2.42	8950A55	6.78
5.6	93	45.8	12	2958A89	3.14		
5.7	93	45.6	12	2958A91	3.09		
5.8	93	45.4	12	2958A92	3.07		
6.0	93	45	12	2958A94	2.85		
6.0	93	48	12			8950A18	4.61
6.1	101	50.8	12	2958A95	3.22		
6.2	101	50.6	12	2958A96	3.07		
6.3	101	50.4	12	2958A97	3.09		
6.4	101	50.2	12	2958A98	3.40	8950A56	8.93
6.5	101	50	12	2958A99	3.15	8950A57	8.84

♦ Prices are 15% lower when you order in full-package quantities. ■ Full pkg. qty. is 10.

(Continued on following page)

For information about drill bits and decimal equivalents, see pages 2428-2429.

General Purpose High-Speed Steel Jobbers' Drill Bits *(Continued from previous page)*

High-speed steel combined with ideal reach, drilling depth, and rigidity make these bits highly versatile.

118° Point Angle— All 118° metric size bits are made to DIN length specifications. *Black-oxide* bits are for use on steel and cast iron. *Long-life TiN (titanium nitride) coated* bits last longer than black-oxide bits. For use on steel, cast iron, brass, and bronze.

Metric Size—118° Point Angle (Cont.)

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Pkg. Qty.	Black Oxide	Each ♦	Long-Life TiN Coated	Each ♦
6.6	101	49.8	12	2958A112	$3.88		
6.7	101	49.6	12	2958A113	3.52	8950A58	$9.07
6.8	109	55.4	12	2958A114	3.55	8950A59	9.90
7.0	109	55	12	2958A116	3.50	8950A21	5.21
7.2	109	54.6	12	2958A118	4.26		
7.3	109	54.4	12	2958A119	4.74		
7.4	109	54.2	12	2958A121	4.64		
7.5	109	54	12	2958A122	4.05	8950A61	10.90
7.6	117	54.2	12	2958A123	5.22		
7.8	117	59.4	12	2958A125	5.32		
7.9	117	59.2	12	2958A126	5.32		
8.0	117	59	6	2958A127	4.83	8950A22	7.28
8.1	117	58.8	6	2958A128	5.89		
8.2	117	58.6	6	2958A129	6.01		
8.4	117	58.2	6	2958A132	6.35		
8.5	117	58	6	2958A133	5.42	8950A23	7.49
8.6	125	63.8	6	2958A134	6.66		
8.7	125	63.6	6	2958A135	6.54		
8.8	125	63.4	6	2958A136	7.06		
8.9	125	63.2	6	2958A137	7.06		
9.0	125	67.5	6	2958A138	6.66	8950A25	8.16
9.3	125	62.4	6	2958A142	7.60		
9.4	125	62.2	6	2958A143	7.82		
9.5	125	62	6	2958A144	6.44	8950A62	15.45
9.6	133	67.8	6	2958A145	8.17		
9.7	133	67.6	6	2958A146	8.31		
9.8	133	67.4	6	2958A147	8.69		
9.9	133	67.2	6	2958A148	8.52		
10.0	133	67	6	2958A149	7.33	8950A26	$10.42
10.2	133	66.6	6	2958A151	8.21	8950A63	19.70
10.5	133	66	6	2958A152	8.14	8950A27	11.04
10.8	142	72.4	6	2958A153	10.29		
11.0	142	72	6	2958A154	8.48	8950A64	20.43
11.2	142	71.6	6	2958A155	11.02		
11.5	142	71	6	2958A156	9.44	8950A65	21.43
11.8	142	70.4	6	2958A157	12.26		
12.0	151	77	6	2958A158	10.51	8950A28	14.49
12.2	151	76.6	6	2958A159	12.84		
12.5	151	76	6	2958A169	10.71	8950A66	22.62
13.0	151	75	1	2958A171	15.79	8950A67	26.51
13.5	160	81	1	2958A172	21.07		
14.0	160	80	1	2958A173	19.70	8950A68	29.52
14.5	169	85	1	2958A174	20.82	8950A69	31.44
15.0	169	84	1	2958A175	20.82	8950A71	31.44
15.5	178	89	1	2958A176	22.28		
16.0	178	88	1	2958A177	23.90		
16.5	184	92	1	2958A178	25.04		
17.0	184	91	1	2958A179	27.75		
17.5	191	95	1	2958A181	25.83		

♦ Prices are 15% lower when you order in full-package quantities (except when package quantity is one).

Heavy Duty Chip-Clearing High-Speed Steel Jobbers' Drill Bits

Also known as parabolic-flute drill bits, these resist breakage better than Chip-Clearing High-Speed Steel Jobbers' Drill Bits on page 2437 and have wider flutes to lift chips out of the hole, reduce clogging, and improve coolant flow. They have a 135° split point that keeps the bit centered without a pilot hole.

Uncoated (bright finish) bits are for use on steel, stainless steel (300 and 400 series), cast iron, aluminum, copper, and brass.

Black-oxide bits have improved chip flow and wear resistance compared to uncoated bits. For use on steel, stainless steel (300 and 400 series), and cast iron.

Long-life TiN (titanium nitride) coated bits last longer than uncoated and black-oxide bits. For use on steel, stainless steel (300 and 400 series), cast iron, aluminum, brass, and copper.

Fractional Size—135° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Uncoated (Bright Finish)	Each	Black Oxide	Each	Long-Life TiN Coated	Each
1/16"	1 7/8"	0.8"	2754A41	$2.38	29925A11	$2.33	29925A51	$4.33
5/64"	2"	0.8"	2754A42	2.40	29925A12	2.35	29925A52	4.44
3/32"	2 1/4"	1.1"	2754A43	2.38	29925A13	2.33	29925A53	4.33
7/64"	2 5/8"	1.3"	2754A44	2.58	29925A14	2.55	29925A54	4.90
1/8"	2 3/4"	1.4"	2754A45	2.60	29925A15	2.57	29925A55	4.90
9/64"	2 7/8"	1.5"	2754A46	2.71	29925A16	2.66	29925A56	5.19
5/32"	3 1/8"	1.7"	2754A47	2.77	29925A17	2.73	29925A57	5.29
11/64"	3 1/4"	1.8"	2754A48	3.15	29925A18	3.11	29925A58	5.90
3/16"	3 1/2"	1.9"	2754A49	3.35	29925A19	3.30	29925A59	6.46
13/64"	3 5/8"	2"	2754A51	3.77	29925A21	3.73	29925A61	7.48
7/32"	3 3/4"	2.1"	2754A52	4.19	29925A22	4.12	29925A62	7.81
15/64"	3 7/8"	2.2"	2754A53	4.73	29925A23	4.66	29925A63	8.92
1/4"	4"	2.3"	2754A54	4.83	29925A24	4.77	29925A64	9.06
17/64"	4 1/8"	2.3"	2754A55	5.73	29925A25	5.64	29925A65	11.42
9/32"	4 1/4"	2.4"	2754A56	5.73	29925A26	5.63	29925A66	11.50
19/64"	4 3/8"	2.5"	2754A57	6.96	29925A27	6.85	29925A67	13.60
5/16"	4 1/2"	2.6"	2754A58	7.38	29925A28	7.25	29925A68	13.96
21/64"	4 5/8"	2.7"	2754A59	8.40	29925A29	8.29	29925A69	15.94
11/32"	4 3/4"	2.7"	2754A61	9.21	29925A31	9.07	29925A71	17.60
23/64"	4 7/8"	2.8"	2754A62	10.71	29925A32	10.56	29925A72	20.33
3/8"	5"	2.9"	2754A63	10.50	29925A33	10.36	29925A73	20.06
25/64"	5 1/8"	3"	2754A64	12.31	29925A34	12.15	29925A74	23.56
13/32"	5 1/4"	3.1"	2754A65	12.23	29925A35	12.06	29925A75	23.31
27/64"	5 3/8"	3.1"	2754A66	14.08	29925A36	13.88	29925A76	27.04
7/16"	5 1/2"	3.2"	2754A67	14.10	29925A37	13.91	29925A77	26.88
29/64"	5 5/8"	3.3"	2754A68	16.56	29925A38	16.34	29925A78	31.56
15/32"	5 3/4"	3.4"	2754A69	17.00	29925A39	16.76	29925A79	32.17
31/64"	5 7/8"	3.4"	2754A71	18.46	29925A41	18.21	29925A81	35.54
1/2"	6"	3.5"	2754A72	17.88	29925A42	17.63	29925A82	34.21

Metric Size—135° Point Angle

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Uncoated (Bright Finish)	Each
1.5	40	15	2754A21	$2.17
2	49	20	2754A22	2.17
2.5	57	25	2754A23	2.38
3	61	27	2754A24	2.42
3.5	70	32	2754A25	2.50
4	75	35	2754A26	2.77
4.5	80	38	2754A27	3.10
5	86	42	2754A28	3.40
5.5	93	46	2754A29	3.90
6	93	45	2754A31	4.48
6.5	101	50	2754A32	5.19
6.8	109	55.4	2754A33	5.37
7	109	55	2754A34	5.37
7.5	109	54	2754A35	6.24
8	117	59	2754A36	7.60
8.5	117	58	2754A37	8.49
9	125	63	2754A38	9.50
9.5	125	62	2754A39	9.87
10	133	67	2754A81	11.49
10.5	133	66	2754A82	12.72
11	142	72	2754A83	13.23
12	151	77	2754A84	16.43
12.5	151	76	2754A85	16.76
13.0	151	75	2754A86	16.76

Also Available: Wire gauge sizes with a 135° point angle. Please specify exact size within the range listed.

Drill Bit Size Range	Uncoated (Bright Finish)	Black Oxide	Long-Life TiN Coated
52-1	2761A21	27575A11	29925A945

For information about drill bits and decimal equivalents, see pages 2428-2429.

Chip-Clearing High-Speed Steel Jobbers' Drill Bits

The flutes on these bits are more tightly spiraled than the flutes on General Purpose High-Speed Steel Jobbers' Drill Bits, improving their ability to lift chips out of the hole. Also known as fast-spiral bits, they have a 135° point angle with a split point that keeps the bit centered without a pilot hole. All have a black-and-gold oxide finish and are for use on most metals including steel, stainless steel, and cast iron. Also for use on plastic.

Also Available: Uncoated (bright finish) fractional sizes 1/16" to 1/2" with a 118° point angle; uncoated (bright finish) wire gauge sizes 80 to 1 with a 118° point angle; and black-oxide metric sizes 1 to 8.5 mm with a 135° point angle. Please ask for 2912A71 for fractional sizes; 2912A72 for wire gauge sizes; or 30055A91 for metric sizes. Also specify exact size.

Drill Bit Size	O'all Lg.	Drilling Depth		Each 1-9	Each 10-Up
1/16"	1 11/16"	0.7"	31115A41	$1.67	$1.41
5/64"	1 15/16"	0.8"	31115A42	1.77	1.50
3/32"	2 1/4"	1"	31115A43	1.76	1.50
7/64"	2 13/32"	1.1"	31115A44	1.84	1.56
1/8"	2 9/16"	1.2"	31115A45	1.89	1.60
9/64"	2 3/4"	1.3"	31115A46	2.02	1.72
5/32"	2 15/16"	1.4"	31115A47	2.03	1.74
11/64"	3 5/32"	1.5"	31115A48	2.08	1.77
3/16"	3 3/8"	1.7"	31115A49	2.44	2.06
13/64"	3 3/8"	1.7"	31115A51	2.70	2.29
7/32"	3 21/32"	1.8"	31115A52	$2.99	$2.53
15/64"	3 21/32"	1.8"	31115A53	3.20	2.74
1/4"	3 31/32"	2"	31115A54	3.46	2.93
17/64"	4 9/32"	2.2"	31115A55	4.09	3.48
9/32"	4 9/32"	2.2"	31115A56	4.44	3.76
19/64"	4 19/32"	2.3"	31115A57	4.88	4.14
5/16"	4 19/32"	2.3"	31115A58	5.37	4.55
21/64"	4 19/32"	2.3"	31115A59	5.91	5.03
11/32"	4 29/32"	2.5"	31115A61	6.59	5.58
23/64"	4 29/32"	2.5"	31115A62	7.35	6.25
3/8"	5 1/4"	2.7"	31115A63	$7.77	$6.60
25/64"	5 1/4"	2.7"	31115A64	8.61	7.31
				1-4	5-Up
13/32"	5 1/4"	2.6"	31115A65	$8.96	$7.60
27/64"	5 19/32"	2.8"	31115A66	9.99	8.48
7/16"	5 19/32"	2.8"	31115A67	10.21	8.67
29/64"	5 19/32"	2.8"	31115A68	12.05	10.23
15/32"	5 15/16"	3"	31115A69	12.87	10.93
31/64"	5 15/16"	3"	31115A71	12.89	10.94
1/2"	5 15/16"	3"	31115A72	13.26	11.27

Heavy Duty Chip-Clearing Cobalt Steel Jobbers' Drill Bits

Resist heat and reduce clogs when drilling stainless steel (300 and 400 series), nickel alloys, and titanium (unless otherwise stated). Also known as parabolic-flute drill bits, these are made of cobalt steel and have wide flutes to lift chips out of the hole. They have a 135° split point that keeps the bit centered without a pilot hole. ***TiN (titanium nitride) coated*** drill bits last longer than uncoated (bright finish) drill bits. They are not for use on titanium.

Also Available: Wire gauge sizes 52 to 1. All are uncoated (bright finish) with a 135° point angle. Please ask for 28555A11 and specify exact size. See chart on page 2433 for overall length and drilling depth.

Drill Bit Size	O'all Lg.	Drilling Depth	Uncoated (Bright Finish)	Each	Long-Life TiN Coated	Each
1/16"	1 7/8"	0.7"	29925A911	$2.95	3183A41	$4.07
5/64"	2"	0.8"	29925A912	2.95	3183A42	4.07
3/32"	2 1/4"	1.1"	29925A913	2.95	3183A43	4.07
7/64"	2 3/8"	1.3"	29925A914	3.13	3183A44	4.24
1/8"	2 1/2"	1.4"	29925A915	3.74	3183A45	4.83
9/64"	2 3/4"	1.5"	29925A916	3.78	3183A46	5.25
5/32"	2 7/8"	1.6"	29925A917	4.26	3183A47	5.69
11/64"	3 1/8"	1.8"	29925A918	4.50	3183A48	5.88
3/16"	3 3/8"	1.9"	29925A919	4.97	3183A49	6.41
13/64"	3 3/8"	1.9"	29925A921	5.93	3183A51	8.75
7/32"	3 5/8"	2.2"	29925A922	6.54	3183A52	9.25
15/64"	3 5/8"	2.2"	29925A923	7.22	3183A53	9.89
1/4"	4"	2.4"	29925A924	7.43	3183A54	10.08
17/64"	4 1/4"	2.6"	29925A925	8.73	3183A55	13.43
9/32"	4 1/4"	2.6"	29925A926	$8.84	3183A56	$13.55
19/64"	4 1/2"	2.8"	29925A927	10.87	3183A57	15.29
5/16"	4 1/2"	2.8"	29925A928	11.47	3183A58	17.30
21/64"	4 1/2"	2.8"	29925A929	13.32	3183A59	18.82
11/32"	4 7/8"	3.1"	29925A931	13.87	3183A61	19.49
23/64"	4 7/8"	3.1"	29925A932	16.96	3183A62	22.80
3/8"	5"	3.4"	29925A933	15.93	3183A63	21.83
25/64"	5 1/4"	3.4"	29925A934	18.74	3183A64	26.18
13/32"	5 1/4"	3.4"	29925A935	18.92	3183A65	26.33
27/64"	5 1/2"	3.6"	29925A936	21.68	3183A66	28.82
7/16"	5 1/2"	3.6"	29925A937	21.40	3183A67	28.54
31/64"	5 7/8"	3.8"	29925A941	28.84	3183A71	35.77
1/2"	5 7/8"	3.8"	29925A942	26.39	3183A72	33.50

Cobalt Steel Jobbers' Drill Bits for Shallow Holes

Short flutes make these bits ideal for drilling shallow holes. They are also more rigid and provide straighter drilling compared to our other jobbers' drill bits. All are made of cobalt steel with a black-oxide surface treatment for heat resistance. For use on alloy steel, stainless steel, hardened steel, nickel alloys, and titanium alloys. Bits have a 135° point angle that produces small chips to prevent clogging. They also have a split point that keeps the bit centered without a pilot hole.

Fractional Size

Drill Bit Size	O'all Lg.	Drilling Depth		Each 1-9	Each 10-Up
1/16"	1 7/8"	0.5"	3146A112	$2.36	$2.01
5/64"	2"	0.6"	3146A113	2.36	2.01
3/32"	2 1/4"	0.6"	3146A114	2.26	1.92
7/64"	2 5/8"	0.7"	3146A115	2.45	2.09
1/8"	2 3/4"	0.7"	3146A116	2.28	1.94
9/64"	2 7/8"	0.7"	3146A117	2.50	2.13
5/32"	3 1/8"	0.8"	3146A118	2.65	2.25
11/64"	3 1/4"	0.8"	3146A119	2.82	2.39
3/16"	3 1/2"	0.8"	3146A121	3.23	2.75
13/64"	3 5/8"	0.9"	3146A122	3.58	3.04
7/32"	3 3/4"	0.9"	3146A123	4.00	3.40
15/64"	3 7/8"	1"	3146A124	$4.08	$3.47
1/4"	4"	1"	3146A125	4.56	3.88
17/64"	4 1/8"	1"	3146A126	5.64	4.79
9/32"	4 1/4"	1.1"	3146A127	5.77	4.90
				1-4	5-Up
19/64"	4 3/8"	1.1"	3146A128	$8.70	$7.40
5/16"	4 1/2"	1.2"	3146A129	8.74	7.43
21/64"	4 5/8"	1.2"	3146A131	9.61	8.17
11/32"	4 3/4"	1.2"	3146A132	10.07	8.56
23/64"	4 7/8"	1.2"	3146A133	11.37	9.66
3/8"	5"	1.3"	3146A134	$11.42	$9.71
25/64"	5 1/8"	1.3"	3146A135	12.61	10.72
13/32"	5 1/4"	1.3"	3146A136	14.71	12.51
27/64"	5 3/8"	1.4"	3146A137	14.87	12.64
7/16"	5 1/2"	1.4"	3146A138	16.08	13.67
29/64"	5 5/8"	1.5"	3146A139	17.47	14.85
15/32"	5 3/4"	1.4"	3146A141	18.18	15.45
31/64"	5 7/8"	1.5"	3146A142	18.47	15.70
1/2"	6"	1.5"	3146A143	18.54	15.76

Wire Gauge Size

To Order: Please specify exact size within the range listed. See chart on page 2433 for overall length.

Drill Bit Size Range		Each 1-9	Each 10-Up
52-28	3146A615	$2.01	$1.69
27-25	3146A317	2.38	2.03
24-18	3146A316	$2.50	$2.13
17-16	3146A315	2.79	2.38
15-7	3146A612	$3.13	$2.67
6-1	3146A611	3.74	3.18

For information about drill bits and decimal equivalents, see pages 2428-2429.

Heat-Resistant Cobalt Steel Jobbers' Drill Bits

If your bits can't take the heat, replace them with these cobalt steel bits. Unlike high-speed steel bits, these stay sharp at the high temperatures generated when drilling materials such as stainless steel and nickel alloys. All have a 135° point angle, except Ultra-Life TiN/TiAlN-coated bits, that produces small chips to reduce clogging. They also have a split point that keeps the bit centered without a pilot hole and meet NAS 907 Type J aerospace specifications, unless noted.

Uncoated (bright finish) bits are for drilling stainless steel, alloy steel, tool steel, nickel alloys, and titanium alloys.

Long-life TiN (titanium nitride) coated bits last longer than uncoated bits. For use on stainless steel, alloy steel, tool steel, and cast iron.

Ultra-life TiN/TiAlN (titanium nitride/titanium aluminum nitride) coated bits offer the longest life for drilling stainless steel, alloy steel, tool steel, cast iron, and nickel alloys.

Fractional Size—135° Point Angle

Drill Bit Size	Uncoated (Bright Finish) O'all Lg.	Drilling Depth		Each 1-11	Each 12-Up	Long-Life TiN Coated O'all Lg.	Drilling Depth		Each 1-11	Each 12-Up	Ultra-Life TiN/TiAlN Coated■ O'all Lg.	Drilling Depth		Each
1/64"	3/4"	0.2"	3069A108★	$3.99	$3.39	—	—	—	—	—	0.79"	0.1"	2753A121★	$12.19
1/32"	1 3/8"	0.5"	3069A109★	2.48	2.11	—	—	—	—	—	—	—	—	—
3/64"	1 3/4"	0.7"	3069A11★	1.98	1.78	—	—	—	—	—	1.49"	0.2"	2753A122★	10.52
1/16"	1 7/8"	0.8"	3069A12	1.83	1.55	1 7/8"	0.8"	27995A511	$3.68	$3.13	1.69"	0.3"	2753A123	10.52
5/64"	2"	0.8"	3069A13	1.84	1.56	2"	0.8"	27995A512	3.68	3.13	1.92"	0.4"	2753A124	9.65
3/32"	2 1/4"	1.1"	3069A14	1.88	1.59	2 1/4"	1.1"	27995A513	3.68	3.13	2.24"	0.5"	2753A125	9.65
7/64"	2 5/8"	1.3"	3069A15	2.09	1.78	2 5/8"	1.3"	27995A514	3.94	3.35	2.4"	0.5"	2753A126	9.65
1/8"	2 3/4"	1.4"	3069A16	2.34	1.99	2 3/4"	1.4"	27995A515	3.98	3.39	2.55"	0.6"	2753A127	9.65
9/64"	2 7/8"	1.5"	3069A17	2.46	2.09	2 7/8"	1.5"	27995A516	4.46	3.81	2.75"	0.7"	2753A128	11.46
5/32"	3 1/8"	1.7"	3069A18	2.83	2.40	3 1/8"	1.7"	27995A517	4.57	3.89	2.95"	0.8"	2753A129	11.46
11/64"	3 1/4"	1.8"	3069A19	3.02	2.57	3 1/4"	1.8"	27995A518	5.20	4.43	3.14"	0.9"	2753A131	12.19
3/16"	3 1/2"	2"	3069A21	3.41	2.89	3 1/2"	1.9"	27995A519	5.94	5.06	3.38"	0.9"	2753A132	13.99
13/64"	3 5/8"	2.1"	3069A22	3.75	3.19	3 5/8"	2"	27995A521	6.82	5.80	3.38"	1"	2753A133	13.99
7/32"	3 3/4"	2.1"	3069A23	4.05	3.44	3 3/4"	2.1"	27995A522	7.16	6.09	3.66"	1.1"	2753A134	15.81
15/64"	3 7/8"	2.2"	3069A24	4.35	3.69	3 7/8"	2.2"	27995A523	7.42	6.31	3.66"	1.2"	2753A135	15.81
1/4"	4"	2.3"	3069A25	4.73	4.02	4"	2.3"	27995A524	7.77	6.61	3.97"	1.3"	2753A136	15.80
17/64"	4 1/8"	2.5"	3069A26	5.38	4.57	4 1/8"	2.3"	27995A525	10.34	8.80	4.29"	1.3"	2753A137	22.12
9/32"	4 1/4"	2.5"	3069A27	6.01	5.11	4 1/4"	2.4"	27995A526	10.60	9.02	4.29"	1.4"	2753A138	23.87
19/64"	—	—	—	—	—	4 3/8"	2.5"	27995A527	11.84	10.07	4.6"	1.5"	2753A139	27.35
				1-5	6-Up				1-5	6-Up				Each
19/64"	4 3/8"	2.6"	3069A28	$7.00	$5.94	—	—	—	—	—	—	—	—	—
5/16"	4 1/2"	2.7"	3069A29	7.40	6.28	4 1/2"	2.6"	27995A528	$13.51	$11.50	4.6"	1.6"	2753A141	$27.35
21/64"	4 5/8"	2.8"	3069A31	8.41	7.14	4 5/8"	2.7"	27995A529	15.07	12.83	4.6"	1.6"	2753A142	30.90
11/32"	4 3/4"	2.9"	3069A32	9.11	7.74	4 3/4"	2.8"	27995A531	15.92	13.53	4.92"	1.7"	2753A143	36.20
23/64"	4 7/8"	2.9"	3069A33	10.30	8.75	4 7/8"	2.8"	27995A532	16.84	14.33	4.92"	1.8"	2753A144	38.02
3/8"	5"	3"	3069A34	11.02	9.36	5"	2.9"	27995A533	16.84	14.33	5.23"	1.9"	2753A145	41.64
25/64"	5 1/8"	3.1"	3069A35	12.12	10.29	5 1/8"	3"	27995A534	20.24	17.23	5.23"	2"	2753A146	50.54
13/32"	5 1/4"	3.2"	3069A36	12.73	10.81	5 1/4"	3.1"	27995A535	20.76	17.66	5.23"	2"	2753A147	39.82
27/64"	5 3/8"	3.3"	3069A37	13.94	11.83	5 3/8"	3.1"	27995A536	22.06	18.77	5.59"	2.1"	2753A148	55.84
7/16"	5 1/2"	3.4"	3069A38	14.83	12.59	5 1/2"	3.2"	27995A537	22.35	19.02	5.59"	2.2"	2753A149	55.84
29/64"	5 5/8"	3.5"	3069A39	16.90	14.35	5 5/8"	3.3"	27995A538	25.20	21.44	5.59"	2.3"	2753A151	64.70
15/32"	5 3/4"	3.6"	3069A41	17.46	14.82	5 3/4"	3.4"	27995A539	25.52	21.70	5.94"	2.3"	2753A152	73.41
31/64"	5 7/8"	3.6"	3069A42	18.92	16.06	5 7/8"	3.4"	27995A541	26.01	22.13	5.94"	2.4"	2753A153	73.41
1/2"	6"	3.7"	3069A43	19.88	16.88	6"	3.5"	27995A542	26.01	22.13	5.94"	2.5"	2753A154	79.36
					Each					Each				Each
33/64"	6 5/8"	4"	3069A81		$44.40	6 5/8"	3.8"	27995A543		$37.38	5.94"	2.6"	2753A155	$88.13
17/32"	6 5/8"	4"	3069A82		44.86	6 5/8"	3.8"	27995A544		38.72	6.29"	2.7"	2753A156	73.91
35/64"	6 5/8"	4"	3069A83		49.09	6 5/8"	3.7"	27995A545		41.09	—	—	—	—
9/16"	6 5/8"	3.9"	3069A84		49.32	6 5/8"	3.7"	27995A546		42.61	6.65"	2.8"	2753A157	105.62
37/64"	6 5/8"	3.9"	3069A85		51.97	6 5/8"	3.7"	27995A547		42.65	—	—	—	—
19/32"	7 1/8"	4.2"	3069A86		53.35	7 1/8"	4"	27995A548		43.61	—	—	—	—
39/64"	7 1/8"	4.2"	3069A87		53.94	7 1/8"	4"	27995A549		46.20	—	—	—	—
5/8"	7 1/8"	4.2"	3069A88		54.41	7 1/8"	3.9"	27995A551		46.20	—	—	—	—
41/64"	7 1/8"	4.2"	3069A89		63.41	7 1/8"	3.9"	27995A552		50.48	—	—	—	—
21/32"	7 1/8"	4.2"	3069A91		65.30	7 1/8"	3.9"	27995A553		52.46	—	—	—	—
43/64"	7 1/8"	4.6"	3069A92		70.62	7 5/8"	4.3"	27995A554		55.94	—	—	—	—
11/16"	7 1/8"	4.6"	3069A93		75.15	7 5/8"	4.3"	27995A555		55.94	—	—	—	—

■ Point angle is 130°. Does not meet NAS 907 Type J. ★ Point is not split. Does not meet NAS 907 Type J.

Wire Gauge Size—135° Point Angle

To Order: Please specify exact wire gauge size within the range listed. See chart on page 2433 for overall length and drilling depth.

Drill Bit Size Range	Uncoated (Bright Finish)	Each 1-11	Each 12-Up	Long-Life TiN Coated	Each 1-11	Each 12-Up
80-75	3033A44★	$3.67	$3.12	—	—	—
74-69	3033A43★	2.77	2.36	—	—	—
68-66	3033A42★	2.57	2.18	—	—	—
65-61	3033A41★	2.28	1.94	—	—	—
60	3033A276★	2.17	1.84	27995A678★	$4.32	$3.67
59-58	3033A38★	2.17	1.85	27995A65★	4.32	3.67
57-56	3033A37★	2.17	1.85	27995A66★	4.32	3.67
55-53	3033A36★	2.06	1.76	27995A67★	4.32	3.67
52-41	3033A45	2.14	1.83	27995A63	4.11	3.51
40-38	3033A46	2.14	1.83	27995A62	4.14	3.52
37-33	3033A34	2.37	2.01	27995A61	4.34	3.69
32-30	3033A33	2.45	2.08	27995A59	4.40	3.75

Drill Bit Size Range	Uncoated (Bright Finish)	Each 1-11	Each 12-Up	Long-Life TiN Coated	Each 1-11	Each 12-Up
29-28	3033A32	$2.71	$2.30	27995A58	$4.71	$4.01
27-25	3033A31	3.11	2.64	27995A57	4.88	4.17
24-22	3033A29	3.10	2.64	27995A68	5.25	4.49
21-20	3033A28	3.12	2.65	27995A69	5.25	4.49
19-18	3033A27	3.38	2.87	27995A71	5.25	4.49
17-16	3033A26	3.62	3.08	27995A55	5.64	4.79
15-13	3033A25	3.67	3.11	27995A54	5.83	4.95
12-11	3033A24	3.89	3.30	27995A72	7.64	6.49
10-7	3033A23	4.07	3.45	27995A73	7.64	6.49
6-3	3033A22	4.73	4.03	27995A52	8.68	7.38
2-1	3033A21	5.05	4.28	27995A51	9.03	7.68

★ Point is not split. Does not meet NAS 907 Type J.

(Continued on following page)

For information about drill bits and decimal equivalents, see pages 2428-2429.

Heat-Resistant Cobalt Steel Jobbers' Drill Bits *(Continued from previous page)*

Letter Size—135° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Uncoated (Bright Finish)	Each 1-11	Each 12-Up
A	3⅞"	2.3"	3069A51	$4.99	$4.24
B	4"	2.4"	3069A52	5.31	4.51
C	4"	2.4"	3069A53	5.31	4.51
D	4"	2.4"	3069A54	5.39	4.58
E	4"	2.4"	3069A55	4.73	4.02
F	4⅛"	2.5"	3069A56	5.54	4.71
G	4⅛"	2.5"	3069A57	5.89	5.00
H	4⅛"	2.5"	3069A58	6.05	5.14
I	4⅛"	2.5"	3069A59	6.22	5.28
J	4⅛"	2.5"	3069A61	6.61	5.61
K	4¼"	2.5"	3069A62	$6.77	$5.75
L	4¼"	2.5"	3069A63	7.41	6.29
				1-5	**6-Up**
M	4⅜"	2.6"	3069A64	$8.04	$6.83
N	4⅜"	2.6"	3069A65	8.21	6.97
O	4½"	2.7"	3069A66	8.94	7.59
P	4⅝"	2.8"	3069A67	9.34	7.93
Q	4¾"	2.9"	3069A68	9.41	7.99
R	4¾"	2.9"	3069A69	9.60	8.15
S	4⅞"	3"	3069A71	$11.29	$9.59
T	4⅞"	3"	3069A72	11.55	9.81
U	5"	3.1"	3069A73	11.95	10.15
V	5"	3.1"	3069A74	12.49	10.61
W	5⅛"	3.2"	3069A75	12.63	10.73
X	5⅛"	3.2"	3069A76	13.39	11.37
Y	5¼"	3.3"	3069A77	13.68	11.62
Z	5¼"	3.3"	3069A78	14.50	12.31

Metric Size—135° Point Angle

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Uncoated (Bright Finish)	Each 1-11	Each 12-Up
1.0	34	10	29355A11	$2.24	$1.92
1.05	34	9.9	29355A12	2.65	2.27
1.1	36	11.8	29355A13	2.51	2.14
1.15	36	11.7	29355A14	2.65	2.27
1.2	38	13.6	29355A15	2.39	2.04
1.25	38	13.5	29355A16	2.29	1.96
1.3	38	13.4	29355A17	2.30	1.96
1.35	40	15.3	29355A18	2.39	2.05
1.4	40	15.2	29355A19	2.28	1.95
1.45	40	15.1	29355A21	2.39	2.05
1.5	40	15	29355A22	2.17	1.86
1.55	43	16.9	29355A23	2.39	2.05
1.6	43	16.8	29355A24	2.41	2.06
1.65	43	16.7	29355A25	2.41	2.07
1.7	43	16.6	29355A26	2.41	2.06
1.75	46	18.5	29355A27	2.54	2.18
1.8	46	18.4	29355A28	2.41	2.06
1.85	46	18.3	29355A29	2.54	2.18
1.9	46	18.2	29355A31	2.41	2.06
1.95	49	20.1	29355A32	2.54	2.18
2.0	49	20	29355A33	2.17	1.85
2.05	49	19.9	29355A34	2.54	2.18
2.1	49	19.8	29355A35	2.41	2.06
2.2	53	22.6	29355A37	2.41	2.06
2.3	53	22.4	29355A39	2.41	2.06
2.35	53	22.3	29355A41	2.49	2.14
2.4	57	25.2	29355A42	2.36	2.01
2.5	57	25	29355A44	2.21	1.89
2.6	57	24.8	29355A45	2.51	2.14
2.7	61	27.6	29355A46	2.51	2.14
2.8	61	27.4	29355A48	2.97	2.54
2.9	61	27.2	29355A49	2.82	2.41
3.0	61	27	29355A51	2.79	2.39
3.1	65	29.8	29355A52	2.82	2.41
3.2	65	29.6	29355A53	$2.58	$2.20
3.3	65	29.4	29355A55	2.58	2.20
3.4	70	32.2	29355A56	2.90	2.49
3.5	70	32	29355A57	2.79	2.39
3.6	70	31.8	29355A58	3.24	2.76
3.7	70	31.6	29355A59	3.28	2.80
3.8	75	35.4	29355A62	3.43	2.93
3.9	79	47.6	29355A63	2.51	2.14
4.0	75	35	29355A64	3.01	2.58
4.1	75	34.8	29355A65	3.49	2.99
4.2	75	34.6	29355A66	3.12	2.68
4.3	80	38.4	29355A68	3.58	3.07
4.5	80	38	29355A71	3.36	2.86
4.7	80	37.6	29355A73	4.02	3.43
4.8	86	42.4	29355A75	4.37	3.74
4.9	92	61.1	29355A76	3.56	3.04
5.0	86	42	29355A77	4.01	3.43
5.1	86	41.8	29355A78	4.56	3.90
5.2	86	41.6	29355A79	4.98	4.27
5.3	86	41.5	29355A82	4.98	4.27
5.4	95	62.3	29355A83	4.08	3.48
5.5	93	46	29355A84	4.52	3.85
5.6	93	45.8	29355A85	5.34	4.56
5.7	93	45.6	29355A86	5.34	4.56
5.8	98	63.5	29355A89	4.47	3.82
5.9	93	45.2	29355A91	5.60	4.78
6.0	93	45	29355A92	5.01	4.27
6.1	101	50.8	29355A93	5.75	4.91
6.2	101	50.6	29355A94	5.48	4.70
6.3	101	50.4	29355A96	5.18	4.44
6.4	101	50.2	29355A97	5.87	5.04
6.5	101	50	29355A98	5.64	4.82
6.6	101	49.8	29355A112	6.43	5.50
6.7	101	49.6	29355A113	5.87	5.04
				1-5	**6-Up**
6.8	109	55.4	29355A115	$6.19	$5.30
6.9	109	55.2	29355A116	6.74	5.78
7.0	109	55	29355A117	5.94	5.08
7.5	109	54	29355A124	7.38	6.32
7.7	114	80.2	29355A126	6.78	5.79
7.8	117	59.4	29355A128	8.74	7.48
7.9	117	59.2	29355A131	8.74	7.48
8.0	114	80.2	29355A132	$7.10	$6.07
8.1	117	83.3	29355A133	7.38	6.30
8.2	117	58.6	29355A134	10.15	8.69
8.3	117	83.3	29355A136	8.04	6.86
8.4	117	58.2	29355A137	11.14	9.53
8.5	117	58	29355A138	9.33	7.98
8.6	121	86.1	29355A139	8.58	7.33
8.7	121	60.7	29355A141	8.58	7.33
8.8	125	63.4	29355A143	12.16	10.42
9.0	125	63	29355A145	10.74	9.18
9.4	125	62.2	29355A151	12.76	10.93
9.5	125	62	29355A152	10.97	9.39
9.6	133	67.8	29355A153	14.50	12.41
9.7	133	67.6	29355A154	14.42	12.35
10.0	133	67	29355A158	12.70	10.87
10.2	133	66.6	29355A159	13.49	11.54
10.5	133	66	29355A161	14.01	11.99
10.8	142	72.4	29355A162	16.63	14.24
11.0	142	72	29355A163	14.33	12.28
11.5	142	71	29355A165	17.23	14.75
11.8	142	70.4	29355A166	21.30	18.24
12.0	151	77	29355A167	18.06	15.46
12.5	151	76	29355A169	18.41	15.76
13.0	151	75	29355A171	17.88	15.19

Metric Size—130° Point Angle

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Ultra-Life TiN/TiAlN Coated ■	Each
1.0	34	5	2753A161	$9.65
2.0	49	10	2753A162	9.65
2.5	57	12.5	2753A163	9.65
3.0	61	15	2753A164	9.65
3.3	65	16.5	2753A165	9.65
3.5	70	17.5	2753A166	9.65
4.0	75	20	2753A167	11.46
4.2	75	21	2753A168	$11.46
4.5	80	22.5	2753A169	12.19
5.0	86	25	2753A171	13.99
5.5	93	27.5	2753A172	15.81
6.0	93	30	2753A173	15.81
6.5	101	32.5	2753A174	20.38
7.0	109	35	2753A175	22.12
8.0	117	40	2753A176	$23.87
8.5	117	42.5	2753A177	25.53
9.0	125	45	2753A178	30.90
10.0	133	50	2753A179	38.15
12.0	151	60	2753A182	68.18
14.0	160	70	2753A184	87.99
14.5	169	72.5	2753A185	105.62

■ Point angle is 130°. Does not meet NAS 907 Type J.

High-Speed Steel Jobbers' Drill Bits for Tight-Tolerance Holes

Also known as double-margin drill bits, these have a flute construction that keeps them centered as they drill, giving you rounder holes with a tighter tolerance than other bits provide. All are TiN (titanium nitride) coated high-speed steel and have a 118° point angle. For use on steel and cast iron.

Also Available: Solid carbide fractional sizes ⅛" to ½" with a 145° point angle and TiCN (titanium carbonitride) or AlTiN (aluminum titanium nitride) coating. Please ask for 8980A91 and specify size and coating.

Drill Bit Size	O'all Lg.	Drilling Depth	Each
3/16"	3½"	2.3"	3021A26	$3.38
13/64"	3⅝"	2.4"	3021A27	4.62
7/32"	3¾"	2.5"	3021A28	4.75
¼"	4"	2.8"	3021A31	5.04
17/64"	4⅛"	2.9"	3021A32	$8.13
9/32"	4¼"	2.9"	3021A33	8.43
5/16"	4½"	3.2"	3021A35	9.11
⅜"	5"	3.6"	3021A39	12.19
25/64"	5⅛"	3.8"	3021A41	$14.62
7/16"	5½"	4.1"	3021A44	16.23
½"	6"	4.5"	3021A48	18.71

For information about drill bits and decimal equivalents, see pages 2428-2429.

Smooth-Finish Three-Flute Carbide Jobbers' Drill Bits

With three cutting edges instead of the typical two, these uncoated (bright finish) solid-carbide bits drill holes with a smoother finish than other drill bits. For use on steel, stainless steel, nickel alloys, aluminum, copper, bronze, and cast iron. All bits have a 150° point angle with a split point that keeps the bit centered without a pilot hole. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications.

Also Available: Wire gauge sizes 36 to 1 and letter sizes A to Z. For wire gauge sizes, please ask for 3171A96 and specify size. For letter sizes, please ask for 2792A81 and specify size.

Fractional Size

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/16"	1 1/2"	0.6"	3171A31	$13.40
3/32"	2"	0.8"	3171A33	14.29
7/64"	2 1/4"	1"	3171A34	15.96
1/8"	2 1/4"	1"	3171A35	16.43
9/64"	2 1/2"	1.1"	3171A36	18.86
5/32"	2 1/2"	1.1"	3171A37	21.91
11/64"	2 3/4"	1.3"	3171A38	24.41
3/16"	2 3/4"	1.3"	3171A39	24.65
13/64"	3"	1.4"	3171A41	$29.40
7/32"	3"	1.4"	3171A42	32.62
15/64"	3 1/4"	1.6"	3171A43	35.24
1/4"	3 1/4"	1.6"	3171A44	37.63
17/64"	3 1/2"	1.7"	3171A21	43.27
9/32"	3 1/2"	1.7"	3171A45	47.39
5/16"	3 3/4"	1.9"	3171A46	54.53
11/32"	4"	2"	3171A47	$64.84
3/8"	4 1/4"	2.2"	3171A48	71.20
25/64"	4 1/2"	2.3"	3171A25	89.67
27/64"	4 1/2"	2.3"	3171A26	106.09
7/16"	4 1/2"	2.3"	3171A51	113.47
1/2"	4 3/4"	2.4"	3171A53	131.44
33/64"	4 3/4"	3"	3171A54	126.27

Metric Size

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm		Each
3.0	46	15.9	2783A1	$15.75
3.1	49	18	2783A11	16.54
3.2	49	18	2783A12	16.54
3.3	49	18	2783A13	18.22
3.4	52	19.9	2783A14	$18.22
3.5	52	19.9	2783A15	18.24
4.0	55	21.9	2783A2	20.44
4.2	55	21.9	2783A22	20.91
5.0	62	25.9	2783A3	$25.38
5.5	66	28	2783A35	29.25
6.0	66	28	2783A4	31.61
6.4	70	31	2783A44	32.80

Carbide-Tipped Drill Bits for Difficult-to-Drill Materials

A steel body and a carbide cutting edge give these bits the perfect combination of long life and vibration resistance for difficult-to-drill materials. For use on cast iron, aluminum, copper, brass, bronze, titanium, plastic, and composites. All bits are uncoated (bright finish).

Short-length bits have a shorter overall length for maximum rigidity. They drill straighter, shallower holes than jobbers' length bits. Also known as screw-machine and stub-length drill bits.

135° point angle bits perform better than 118° point angle bits on hard materials and produce smaller chips to reduce clogging. They also have a split point that keeps the bit centered without a pilot hole.

Fractional Size—Jobbers' Length

Drill Bit Size	O'all Lg.	Drilling Depth	135° Point Angle	Each	118° Point Angle	Each
1/8"	2 3/4"	1.4"	31575A32	$11.40	2940A13	$8.83
9/64"	3 1/8"	1.6"	31575A33	12.29	2940A14	9.58
5/32"	3 1/8"	1.6"	31575A11	12.14	2940A15	9.42
11/64"	3 1/2"	1.9"	31575A12	13.03	2940A16	10.25
3/16"	3 1/2"	1.9"	31575A13	12.79	2940A17	9.92
13/64"	3 3/4"	2"	31575A14	13.93	2940A18	10.92
7/32"	3 3/4"	2"	31575A15	13.93	2940A19	10.92
15/64"	4"	2.1"	31575A16	15.08	2940A21	11.83
1/4"	4"	2.3"	31575A17	15.08	2940A22	11.83
17/64"	4 1/4"	2.4"	31575A18	15.57	2940A23	12.25
9/32"	4 1/4"	2.4"	31575A19	17.70	2940A24	13.83
19/64"	4 1/2"	2.6"	31575A34	19.59	2940A25	15.33
5/16"	4 1/2"	2.6"	31575A21	$19.18	2940A26	$15.00
21/64"	4 3/4"	2.8"	31575A35	20.41	2940A27	15.92
11/32"	4 3/4"	2.8"	31575A22	20.41	2940A28	15.92
23/64"	5"	2.9"	31575A36	21.72	2940A29	16.92
3/8"	5"	2.9"	31575A23	21.72	2940A31	16.92
25/64"	5 1/4"	3"	31575A24	23.61	2940A32	18.42
13/32"	5 1/4"	3"	31575A25	23.61	2940A33	18.42
27/64"	5 1/2"	3.2"	31575A26	25.58	2940A34	20.00
7/16"	5 1/2"	3.2"	31575A27	25.58	2940A35	20.00
29/64"	5 3/4"	3.6"	31575A37	29.34	2940A36	23.00
31/64"	6"	3.8"	31575A29	32.21	2940A38	25.17
1/2"	6"	3.8"	31575A31	32.21	2940A39	25.17

Fractional Size—Short Length

Drill Bit Size	O'all Lg.	Drilling Depth	135° Point Angle	Each	118° Point Angle	Each
1/8"	1 7/8"	0.4"	2750A11	$11.50	28805A211	$8.83
9/64"	2 1/16"	0.4"	2750A12	15.08	28805A212	9.58
5/32"	2 1/16"	0.5"	2750A13	12.25	28805A213	9.42
11/64"	2 3/16"	0.5"	2750A14	13.67	28805A214	10.25
3/16"	2 3/16"	0.5"	2750A15	13.00	28805A215	9.92
13/64"	2 3/8"	0.6"	2750A16	14.92	28805A216	12.00
7/32"	2 3/8"	0.6"	2750A17	13.92	28805A217	10.83
1/4"	2 1/2"	0.8"	2750A19	15.00	28805A219	11.58
17/64"	2 11/16"	0.8"	2750A21	18.67	28805A221	13.58
9/32"	2 11/16"	0.8"	2750A22	17.25	28805A222	13.33
5/16"	2 13/16"	0.9"	2750A24	18.42	28805A224	13.83
11/32"	3"	1"	2750A26	21.42	28805A226	16.50
3/8"	3 1/8"	1.1"	2750A28	$21.92	28805A228	$16.50
25/64"	3 5/16"	1.2"	2750A29	26.08	28805A229	20.00
13/32"	3 5/16"	1.2"	2750A31	26.08	28805A231	20.00
27/64"	3 7/16"	1.3"	2750A32	28.33	28805A232	21.83
7/16"	3 7/16"	1.3"	2750A33	26.67	28805A233	20.50
1/2"	3 3/4"	1.5"	2750A35	37.92	28805A237	29.17
17/32"	3 7/8"	1.6"	2750A36	45.92	28805A238	35.25
9/16"	4"	1.7"	2750A37	45.92	28805A239	35.25
5/8"	4 1/4"	1.9"	2750A39	52.58	28805A242	40.50
11/16"	4 5/8"	2"	2750A42	65.00	28805A244	49.74
3/4"	5"	2.3"	2750A44	73.75	28805A246	56.67

Metric Size—Jobbers' Length

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	118° Point Angle	Each
3.0	70	34.3	28595A41	$12.78
3.3	79	41.9	28595A44	13.40
3.5	79	41.9	28595A46	12.26
4.0	79	41.9	28595A51	12.09
4.2	89	47	28595A53	12.26
4.5	89	47	28595A56	12.78
5.0	95	50.8	28595A59	13.40
5.5	95	50.8	28595A61	$14.17
6.0	102	53.3	28595A63	14.69
6.5	108	61	28595A65	15.22
7.0	108	61	28595A71	15.90
8.0	114	66	28595A73	17.04
8.5	121	71.1	28595A74	17.83
9.0	127	73.7	28595A76	$18.26
10.0	133	76.2	28595A81	20.52
10.5	140	81.3	28595A85	23.66
11.0	140	81.3	28595A87	25.56
12.0	146	91.4	28595A89	31.04
13.0	168	101.6	28595A94	32.96

Fractional Size Drill Bit Sets—Jobbers' Length

Sets include the 118° point angle fractional size bits above. Come in a metal case.

Drill Bit Size Range	No. of Bits		Per Set
1/8"-1/2" (increments of 1/32")	13	2940A61	$256.12
1/8"-1/4" (increments of 1/64")	9	2940A62	133.10

Also Available: Wire gauge, letter, and metric sizes. Please specify exact size within the range listed.

Drill Bit Size Range	Point Angle	Style	
32-1	135°	Jobbers' Length	31575A71
40-1	118°	Jobbers' Length	2940A81
A-Z	118°	Jobbers' Length	2940A82
A-Z	135°	Jobbers' Length	31575A72
3.5-14.0 mm	118°	Short Length	28805A401

For information about drill bits and decimal equivalents, see pages 2428-2429.

Super Duty Carbide Jobbers' Drill Bits

Made from a solid piece of carbide, these bits are harder and more wear resistant than our other jobbers' bits. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications. All have a 118° point angle with a four-facet point (unless noted) that keeps the bit centered without a pilot hole.

Uncoated (bright finish) bits are for use on soft metals such as aluminum and copper as well as soft plastics. ***Long-life TiN (titanium nitride) coated*** bits last longer than uncoated bits. For use on steel, stainless steel, cast iron, aluminum, copper, nickel alloys, and titanium. ***Super-life TiAlN (titanium aluminum nitride) coated*** bits last longer than TiN-coated bits. For use on steel, stainless steel, cast iron, aluminum, copper, nickel alloys, and titanium.

Also Available: Wire gauge sizes with a long-life TiN coating or super-life TiAlN coating. For long-life TiN-coated sizes 56-1, please ask for 8825A61 and specify size. For super-life TiAlN-coated sizes 30-1, please ask for 8879A91 and specify size.

Fractional Size

To Order: For coated bits, please specify coating: long-life TiN or super-life TiAlN.

Drill Bit Size	O'all Lg.	Drilling Depth	Uncoated (Bright Finish)	Each	Coated	Each
1/64"	1 1/4"	0.2"	2956A57♣	$13.82	8879A211♣	$17.64
1/32"	1 1/4"	0.3"	2956A58	8.51	8879A212	11.33
3/64"	1 1/2"	0.6"	2956A59	8.51	8879A213	10.50
1/16"	1 1/2"	0.6"	2956A61	8.67	8879A214	10.68
5/64"	1 3/4"	0.7"	2956A12	8.95	8879A215	11.12
3/32"	2"	0.8"	2956A13	9.26	8879A216	11.42
7/64"	2 1/4"	1"	2956A14	10.32	8879A217	13.42
1/8"	2 1/4"	1"	2956A15	10.64	8879A218	13.74
9/64"	2 1/2"	1.1"	2956A16	12.22	8879A219	15.99
5/32"	2 1/2"	1.1"	2956A17	14.17	8879A311	17.94
11/64"	2 3/4"	1.3"	2956A18	15.76	8879A312	19.54
3/16"	2 3/4"	1.3"	2956A19	15.95	8879A313	19.72
13/64"	3"	1.4"	2956A21	19.05	8879A314	24.15
7/32"	3"	1.4"	2956A22	21.08	8879A315	26.18
15/64"	3 1/4"	1.6"	2956A23	22.81	8879A316	29.23
1/4"	3 1/4"	1.6"	2956A24	24.36	8879A317	30.79
17/64"	3 1/2"	1.7"	2956A25	28.01	8879A318	35.98
9/32"	3 1/2"	1.7"	2956A26	$30.65	8879A319	$38.63
19/64"	3 3/4"	1.9"	2956A27	32.74	8879A411	40.71
5/16"	3 3/4"	1.9"	2956A28	35.27	8879A412	43.24
21/64"	4"	2"	2956A29	38.05	8879A413	46.73
11/32"	4"	2"	2956A31	41.95	8879A414	50.59
23/64"	4 1/4"	2.2"	2956A32	46.73	8879A415	60.02
3/8"	4 1/4"	2.2"	2956A33	46.07	8879A416	59.36
25/64"	4 1/2"	2.3"	2956A34	58.03	8879A417	73.32
13/32"	4 1/2"	2.3"	2956A35	62.33	8879A418	77.62
27/64"	4 1/2"	2.3"	2956A36	68.66	8879A419	83.95
7/16"	4 1/2"	2.3"	2956A37	73.44	8879A511	89.62
29/64"	4 3/4"	2.4"	2956A38	80.63	8879A512	97.91
15/32"	4 3/4"	2.4"	2956A39	85.24	8879A513	102.51
1/2"	4 3/4"	2.4"	2956A42	85.06	8879A515	102.33
9/16"	6"	3.2"	2956A76	151.94	8879A516	171.21
5/8"	6"	3.2"	2956A77	176.54	8879A517	198.02
3/4"	6"	3.2"	2956A78	236.99	8879A518	262.03

♣ Two-facet point.

Wire Gauge Size—Uncoated (Bright Finish)

To Order: Please specify exact size within the range listed.

Drill Bit Size Range		Each	Drill Bit Size Range		Each	Drill Bit Size Range		Each	Drill Bit Size Range		Each
80-73	2860A224★	$13.38	50-48	2860A218	$8.73	32-30	2860A212	$11.34	16-13	2860A115	$16.48
72-70	2860A223★	12.84	47-45	2860A217	8.95	29-28	2860A211	12.23	12-10	2860A114	17.24
69-66	2860A222★	9.30	44-43	2860A216	8.95	27-25	2860A119	12.73	9-7	2860A113	18.35
65-61	2860A221	9.08	42-40	2860A215	9.26	24-23	2860A118	13.47	6-4	2860A112	19.58
60-57	2860A226	8.59	39-36	2860A214	10.33	22-20	2860A117	14.76	3-2	2860A111	20.61
56-51	2860A225	8.59	35-33	2860A213	10.82	19-17	2860A116	15.50	1	2860A11	23.05

★ Drill bit sizes 69-80 have a two-facet point.

Letter Size—Uncoated (Bright Finish)

To Order: Please specify exact size within the range listed.

Drill Bit Size Range	O'all Lg.	Drilling Depth		Each	Drill Bit Size Range	O'all Lg.	Drilling Depth		Each
A-E	3 1/4"	1.6"	29195A71	$23.70	P-S	4"	2"	29195A74	$38.05
F-L	3 1/2"	1.7"	29195A72	28.01	T-V	4 1/4"	2.2"	29195A75	46.73
M-O	3 3/4"	1.9"	29195A73	32.74	W-Z	4 1/2"	2.3"	29195A76	51.88

Metric Size—Uncoated (Bright Finish)

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm		Each	Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm		Each	Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm		Each
1.0	38	10.4	3030A21	$9.62	3.5	63	28	3030A26	$13.29	6.0	82	40	3030A32	$25.71
1.5	38	15.2	3030A22	9.35	4.0	63	28	3030A27	15.84	7.0	89	43.2	3030A34	32.99
2.0	44	17.6	3030A23	9.73	4.5	70	32.8	3030A28	17.52	8.0	95	48	3030A36	38.91
2.5	50	20	3030A24	10.59	5.0	76	35.2	3030A29	19.55	9.0	108	56	3030A38	46.16
3.0	57	25.6	3030A25	12.03	5.5	76	35.2	3030A31	22.39	10.0	114	58.4	3030A41	60.45

Fractional and Wire Gauge Size Drill Bit Sets—Uncoated (Bright Finish)

All sets come in a metal case.

Drill Bit Size Range	No. of Bits		Per Set	Drill Bit Size Range	No. of Bits		Per Set
1/16"-3/8" (increments of 1/16")	6	29325A21	$153.29	1/16"-1/2" (increments of 1/32")	15	29325A23	$526.59
1/16"-3/8" (increments of 1/64")	21	29325A22	458.07	Nos. 60-1	60	29325A24	699.77

Ultra Duty Carbide Drill Bits for Tool Steel and Dies

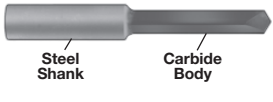

Four straight cutting edges and a carbide body give these bits the strength to drill steel with a Rockwell hardness up to C70 such as tool steel and dies. All have an uncoated (bright finish) carbide body with a steel shank and a 120° point angle. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications.

Also Available: Wire gauge sizes 50 to 1. Please ask for 8839A95 and specify exact size.

Drill Bit Size	O'all Lg.	Drilling Depth		Each	Drill Bit Size	O'all Lg.	Drilling Depth		Each	Drill Bit Size	O'all Lg.	Drilling Depth		Each
5/64"	1 3/8"	0.9"	8839A09	$29.51	13/64"	2 1/2"	1.3"	8839A64	$39.64	5/16"	2 1/2"	1.3"	8839A18	$51.39
3/32"	1 1/2"	0.9"	8839A11	27.15	7/32"	2 1/2"	1.3"	8839A15	44.51	3/8"	2 3/4"	1.3"	8839A2	56.51
1/8"	1 3/4"	0.9"	8839A12	28.48	1/4"	2 1/2"	1.3"	8839A16	44.64	13/32"	2 3/4"	1.3"	8839A28	60.59
5/32"	2 1/8"	1"	8839A13	31.92	17/64"	2 1/2"	1.3"	8839A66	45.10	1/2"	2 3/4"	1.3"	8839A24	66.66
3/16"	2 1/4"	1"	8839A14	35.85	9/32"	2 1/2"	1.3"	8839A17	45.25	17/32"	2 3/4"	1.3"	8839A26	73.57

For information about drill bits and decimal equivalents, see pages 2428-2429.

Straight-Flute Carbide-Tipped Drill Bits for Hard Steel

The 118° notched point and straight flutes on these carbide-tipped bits withstand the heavy feed pressure necessary to penetrate hard steel with a Rockwell hardness between C45 and C60. Bits also produce a smooth finish.

Also Available: Metric sizes 5 to 14 mm. Please ask for 2973A61 and specify size.

Drill Bit Size	O'all Lg.	Drilling Depth		Each
3/16"	3 1/2"	0.8"	2973A19	$16.78
3/64"	3 3/4"	0.8"	2973A21	17.20
7/32"	3 3/4"	0.9"	2973A22	17.20
15/64"	4"	0.9"	2973A23	17.97
1/4"	4"	1"	2973A24	17.97
17/64"	4 1/4"	1.1"	2973A25	18.98
9/32"	4 1/4"	1.1"	2973A26	18.98
19/64"	4 1/2"	1.2"	2973A27	19.83
5/16"	4 1/2"	1.3"	2973A28	$19.83
21/64"	4 3/4"	1.3"	2973A29	21.27
11/32"	4 3/4"	1.4"	2973A31	21.18
23/64"	5"	1.4"	2973A52	22.80
3/8"	5"	1.5"	2973A33	22.80
25/64"	5 1/4"	1.6"	2973A34	26.53
13/32"	5 1/4"	1.6"	2973A35	26.53
27/64"	5 1/2"	1.7"	2973A36	30.76
7/16"	5 1/2"	1.8"	2973A37	$30.76
15/32"	5 3/4"	1.9"	2973A39	33.90
1/2"	6"	2"	2973A42	39.66
17/32"	6"	2.1"	2973A43	45.42
9/16"	6"	2.3"	2973A44	37.71
5/8"	7"	2.5"	2973A46	54.07
3/4"	8"	3"	2973A51	67.29

Straight-Flute Carbide Short-Length Drill Bits for Hard Steel

The best choice for drilling hard steel, these solid carbide bits are shorter than jobbers' length bits for maximum rigidity and have straight flutes to withstand the heavy feed pressure necessary to drill hard steel (hardness of Rockwell C50 and higher), stainless steel, and high-temperature alloys. Bits have two flutes and a 135° point angle with a split point that keeps the bit centered without a pilot hole. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling operations. TiN (titanium nitride) coated bits last longer and resist heat and friction for cleaner holes than uncoated (bright finish) bits.

Also Available: Uncoated (bright finish) letter sizes A to Z. Please ask for 8944A669 and specify size.

Fractional Size

Drill Bit Size	O'all Lg.	Drilling Depth	Uncoated (Bright Finish)	Each	Long-Life TiN Coated	Each
1/16"	1 1/2"	0.3"	8944A11	$11.13	8882A11	$12.59
5/64"	2"	0.4"	8944A12	11.48	8882A12	13.13
3/32"	2"	0.4"	8944A13	11.68	8882A13	13.31
7/64"	2 1/4"	0.5"	8944A14	12.93	8882A14	15.48
1/8"	2 1/4"	0.5"	8944A15	14.38	8882A15	16.83
9/64"	2 1/2"	0.5"	8944A16	15.56	8882A16	18.66
5/32"	2 1/2"	0.6"	8944A17	16.28	8882A17	19.34
11/64"	2 1/2"	0.6"	8944A18	19.07	8882A18	21.94
3/16"	2 1/2"	0.6"	8944A19	20.14	8882A19	22.96
13/64"	2 1/2"	0.8"	8944A21	23.33	8882A21	27.40
7/32"	2 1/2"	0.8"	8944A22	$24.11	8882A22	$28.11
15/64"	2 1/2"	0.8"	8944A23	25.65	8882A23	29.57
1/4"	2 1/2"	0.8"	8944A24	28.83	8882A24	32.56
17/64"	2 1/2"	0.8"	8944A25	37.28	8882A25	41.68
9/32"	2 1/2"	0.8"	8944A26	38.73	8882A26	43.03
5/16"	2 1/2"	1"	8944A28	42.49	8882A28	46.54
3/8"	3"	1"	8944A33	57.54	8882A33	61.11
7/16"	3"	1"	8944A37	78.81	8882A37	83.21
1/2"	3"	1"	8944A39	87.31	8882A39	91.42

Wire Gauge Size

To Order: Please specify exact size within the range listed.

Drill Bit Size Range	Uncoated (Bright Finish)	Each	Long-Life TiN Coated	Each
60-53	8944A131	$11.13	8882A71★	$12.59
52-48	8944A129	11.48	8882A69	13.13
47-42	8944A128	11.68	8882A68	13.31
41-36	8944A127	12.93	8882A67	15.48
35-32	8944A126	13.14	8882A66	15.69
31	8944A7	12.47	8882A65	16.36
30-29	8944A124	14.62	8882A64	17.79
28-27	8944A123	$15.70	8882A63	$18.81
26-23	8944A122	16.28	8882A62	19.34
22	8944A61	17.87	8882A61	20.83
21-20	8944A119	18.60	8882A59	21.51
19-18	8944A118	19.07	8882A58	21.94
17-15	8944A117	19.41	8882A57	22.28
14-13	8944A116	$20.14	8882A56	$22.96
12-11	8944A115	21.73	8882A55	25.91
10-9	8944A114	21.89	8882A54	26.05
8-7	8944A113	22.52	8882A53	26.62
6-3	8944A112	23.79	8882A52	27.83
2-1	8944A111	25.65	8882A51	29.57

★ Available in sizes 56-53 only.

Metric Size

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Uncoated (Bright Finish)	Each
1.0	38	7.6	8842A41	$10.43
1.5	38	7.6	8842A42	10.43
2.0	50	9.6	8842A43	10.95
2.5	50	9.6	8842A44	11.76
3.0	57	12.8	8842A45	$12.98
4.0	63	15.2	8842A47	16.73
4.5	63	15.2	8842A48	18.18
5.0	63	20	8842A49	$21.08
6.0	63	20	8842A52	27.06
8.0	63	25.6	8842A56	39.80

High-Performance Carbide Jobbers' Drill Bits for Aluminum

The specially designed cutting edge, heavy duty chip-clearing flutes (also known as parabolic flutes), and 130° point angle on these solid carbide drill bits make them ideal for drilling all types of aluminum. They are also for use on copper and bronze. ***TiN (titanium nitride) coated*** bits last longer than uncoated (bright finish) bits.

Also Available: Wire gauge sizes 30 to 1. Please ask for 8822A91 for uncoated or 8822A92 for TiN-coated and specify size.

Drill Bit Size	O'all Lg.	Drilling Depth	Uncoated (Bright Finish)	Each	Long-Life TiN Coated	Each
1/8"	2 3/4"	1"	8822A11	$29.19	8822A51	$42.30
9/64"	2 7/8"	1.1"	8822A13	29.19	8822A53	42.30
5/32"	3 1/8"	1.2"	8822A15	30.63	8822A55	44.38
3/16"	3 1/2"	1.5"	8822A18	41.24	8822A58	57.62
7/32"	3 3/4"	1.7"	8822A23	49.46	8822A63	69.16
1/4"	4"	2"	8822A25	$53.48	8822A65	$72.11
9/32"	4 1/4"	2.2"	8822A29	61.38	8822A69	82.91
5/16"	4 1/2"	2.5"	8822A32	71.30	8822A72	92.58
3/8"	5"	3"	8822A37	97.98	8822A77	127.41
1/2"	6"	4"	8822A45	146.24	8822A85	175.49

For information about drill bits and decimal equivalents, see pages 2428-2429.

High-Speed Steel Jobbers' Drill Bits for Stainless Steel

Made of powdered steel with an ultra-life TiN/TiAlN coating for long life and resistance to heat, these bits are tough enough to drill all types of stainless steel as well as nickel alloys and tool steel. They have a heavy duty chip-clearing flute design (also known as parabolic flute) and a 130° point angle with a split point that keeps the bit centered without a pilot hole.

Fractional Size

Drill Bit Size	O'all Lg.	Drilling Depth		Each
3/32"	2.24"	0.5"	3020A11	$9.77
7/64"	2.4"	0.5"	3020A12	9.77
1/8"	2.56"	0.6"	3020A13	11.01
9/64"	2.76"	0.7"	3020A14	11.01
5/32"	2.95"	0.8"	3020A15	11.01
11/64"	3.15"	0.9"	3020A16	$11.65
3/16"	3.39"	0.9"	3020A17	12.27
13/64"	3.39"	1"	3020A18	12.27
7/32"	3.66"	1.1"	3020A19	14.79
15/64"	3.66"	1.2"	3020A21	14.79
1/4"	3.98"	1.3"	3020A22	$16.05
9/32"	4.29"	1.4"	3020A23	21.73
5/16"	4.61"	1.6"	3020A24	22.99
11/32"	4.92"	1.7"	3020A25	28.34
7/16"	5.59"	2.2"	3020A26	53.84

Metric Size

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm		Each
1.5	40	7.5	3020A32	$9.77
2.0	49	10	3020A33	8.51
2.5	57	12.5	3020A34	9.77
3.0	61	15	3020A36	9.13
3.3	65	16.5	3020A39	11.01
3.4	70	17	3020A41	$11.01
3.5	70	17.5	3020A42	11.01
4.0	75	20	3020A43	10.39
4.2	75	21	3020A44	11.65
5.0	86	25	3020A46	$11.01
6.0	93	30	3020A48	12.91
6.7	101	33.5	3020A51	16.69
7.0	109	35	3020A54	19.52

High-Speed Steel Jobbers' Drill Bits for Brass and Bronze

Also known as slow-spiral drill bits, these are designed to lift chips from the hole and reduce clogging when drilling brass and bronze. All are uncoated (bright finish) with a 118° point angle.

Fractional Size

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦
1/16"	1 7/8"	0.8"	12	2928A211	$2.24
5/64"	2"	0.8"	12	2928A212	2.24
3/32"	2 1/4"	1.1"	12	2928A213	2.24
7/64"	2 5/8"	1.3"	12	2928A214	2.24
1/8"	2 3/4"	1.4"	12	2928A215	2.37
9/64"	2 7/8"	1.5"	12	2928A216	2.29
5/32"	3 1/8"	1.7"	12	2928A217	2.65
11/64"	3 1/4"	1.8"	12	2928A218	3.18
3/16"	3 1/2"	1.9"	12	2928A219	3.05
13/64"	3 5/8"	2"	12	2928A221	3.67
7/32"	3 3/4"	2.1"	12	2928A222	$4.13
15/64"	3 7/8"	2.2"	12	2928A223	4.69
1/4"	4"	2.3"	12	2928A224	4.38
17/64"	4 1/8"	2.3"	12	2928A225	6.15
9/32"	4 1/4"	2.4"	12	2928A226	5.89
19/64"	4 3/8"	2.5"	12	2928A227	7.61
5/16"	4 1/2"	2.6"	6	2928A228	7.20
21/64"	4 5/8"	2.7"	6	2928A229	8.61
11/32"	4 3/4"	2.8"	6	2928A231	9.51
23/64"	4 7/8"	2.8"	6	2928A232	11.49
3/8"	5"	2.9"	6	2928A233	$10.48
25/64"	5 1/8"	3"	6	2928A234	13.85
13/32"	5 1/4"	3.1"	6	2928A235	13.03
27/64"	5 3/8"	3.1"	6	2928A236	14.88
7/16"	5 1/2"	3.2"	6	2928A237	15.11
29/64"	5 5/8"	3.3"	6	2928A238	19.03
15/32"	5 3/4"	3.4"	6	2928A239	17.75
31/64"	5 7/8"	3.4"	6	2928A241	21.37
1/2"	6"	3.5"	6	2928A242	17.76

Wire Gauge Size

Full-package quantity is 12. **To Order:** Please specify exact size within the range listed. See chart on page 2433 for o'all lg. and drilling dp.

Drill Bit Size Range		Each ♦
80-79	2928A185	$5.15
78-71	2928A184	4.33
70-69	2928A183	3.32
68-61	2928A182	3.00
60-29	2928A181	$2.60
28-26	2928A179	2.99
25-23	2928A178	3.37
22-21	2928A177	3.38
20-18	2928A176	$3.46
17-13	2928A175	3.94
12-11	2928A174	4.22
10-7	2928A173	$4.49
6-3	2928A172	5.22
2-1	2928A171	5.13

♦ Prices are 15% lower when you order in full-package quantities.

High-Speed Steel Jobbers' Drill Bits for Plastic

A sharp 60° point angle eliminates edge chipping and chip wrapping when drilling plastic. For use on hard plastics such as cast acrylic, nylon, PVC, vinyl, and melamine and soft plastics such as ABS, polyethylene, and polypropylene. All bits have a black-oxide treatment, unless noted.

Fractional Size

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/8"	2 3/4"	0.9"	27465A81	$3.34
9/64"	2 7/8"	1.1"	27465A51	5.33
5/32"	3 1/8"	1.1"	27465A82	3.82
11/64"	3 1/4"	1.1"	27465A52	5.84
3/16"	3 1/2"	1.5"	27465A83	4.31
13/64"	3 5/8"	1.8"	27465A53	6.54
7/32"	3 3/4"	1.8"	27465A54	6.80
15/64"	3 7/8"	1.9"	27465A55	7.06
1/4"	4"	1.8"	27465A84●	5.67
17/64"	4 1/8"	2.1"	27465A56	7.76
9/32"	4 1/4"	2.1"	27465A57	$8.79
19/64"	4 3/8"	2.3"	27465A58	9.56
5/16"	3 7/8"	1"	27465A85★●	8.00
21/64"	4 5/8"	2.5"	27465A59	10.91
11/32"	4 3/4"	2.6"	27465A61	11.61
23/64"	4 7/8"	2.6"	27465A62	12.45
3/8"	4 3/8"	1.4"	27465A86★●	11.02
25/64"	5 1/8"	2.9"	27465A63	13.99
13/32"	5 1/8"	3"	27465A64	14.89
27/64"	5 3/8"	3"	27465A65	16.11
7/16"	4 3/4"	1.6"	27465A87★●	$12.30
29/64"	5 5/8"	3.3"	27465A66	17.07
15/32"	5 3/4"	3.4"	27465A67	17.97
31/64"	5 7/8"	3.4"	27465A68	19.12
1/2"	5 1/8"	1.6"	27465A88★●	14.61
33/64"	6"	2.1"	27465A69■	41.26
17/32"	6"	2.1"	27465A71■	41.26
35/64"	6"	2.1"	27465A72■	42.54
9/16"	6"	2.1"	27465A73■	43.63

● Has a black-and-gold-oxide treatment. ★ Has a 1/4" shank diameter. ■ Has a 1/2" shank diameter.

Fractional Size Drill Bit Set—7 Pieces

Includes one each of the following bit sizes: 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", and 1/2". Overall lengths differ from those listed above by approximately 1/8". Comes in a metal case.

27465A94 ..... **Per Set** $56.75

Also Available: Wire gauge, letter, and metric sizes. Please specify exact size within the range listed.

Drill Bit Size Range	
Wire Gauge Nos. 31-1	27465A31
A-Z	27465A21
3-17.5 mm	27465A41

Carbide-Tipped Drill Bits for Glass and Ceramics

Here's a smooth solution to the tricky job of drilling through glass, ceramics, and other nonmetals. Bit sizes 1/8"-1/2" require a coolant such as water. All are steel with a carbide-tipped spear point.

Drill Bit Size	O'all Lg.	Shank Dia.		Each
1/8"	2 3/16"	7/64"	2954A1	$6.00
3/16"	2 3/16"	5/32"	2954A2	6.39
1/4"	2 9/16"	11/64"	2954A3	6.75
5/16"	3"	7/32"	2954A4	8.36
3/8"	3 9/16"	15/64"	2954A5	$10.68
1/2"	3 9/16"	5/16"	2954A7	13.14
5/8"	3 3/4"	5/16"	2954A71	13.47
3/4"	4"	5/16"	2954A72	$15.83
7/8"	4"	5/16"	2954A73	18.19
1"	4"	5/16"	2954A74	20.54

For information about drill bits and decimal equivalents, see pages 2428-2429.

Carbide Jobbers' Drill Bits for Fiber-Reinforced Composites

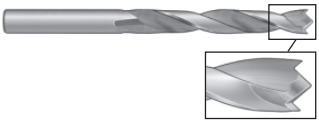

Also known as brad-point drill bits, these have three drill points that make a clean hole in fiber-reinforced composites without fraying or delaminating the material. Bits are made of uncoated (bright finish) solid carbide and stay centered without a pilot hole. Also for use on wood; soft plastics such as polyethylene, polypropylene, and ABS; fiberglass; and carbon fiber. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications.

Also Available: Wire gauge sizes 60 to 1 and letter sizes A to Z. For wire gauge sizes, please ask for 2828A84 and specify size. For letter sizes, please ask for 2828A81 and specify size.

Drill Bit Size	O'all Lg.	Drilling Depth		Each
3/64"	1 1/2"	0.6"	2828A6	$14.51
1/16"	1 1/2"	0.6"	2828A7	14.82
5/64"	1 3/4"	0.7"	2828A11	15.37
3/32"	2"	0.8"	2828A71	14.11
7/64"	2 1/4"	1"	2828A12	17.74
1/8"	2 1/4"	1"	2828A72	18.14
9/64"	2 1/2"	1.1"	2828A13	20.94
5/32"	2 1/2"	1.1"	2828A73	21.61
11/64"	2 3/4"	1.3"	2828A14	26.99
3/16"	2 3/4"	1.3"	2828A74	24.30
13/64"	3"	1.4"	2828A15	32.65
7/32"	3"	1.4"	2828A69	$35.99
15/64"	3 1/4"	1.6"	2828A16	38.96
1/4"	3 1/4"	1.6"	2828A75	41.58
17/64"	3 1/2"	1.7"	2828A17	47.83
9/32"	3 1/2"	1.7"	2828A76	46.71
19/64"	3 3/4"	1.9"	2828A18	55.94
5/16"	3 3/4"	1.9"	2828A77	53.73
21/64"	4"	2"	2828A19	65.00
11/32"	4"	2"	2828A21	71.80
23/64"	4 1/4"	2.2"	2828A22	79.81
3/8"	4 1/4"	2.2"	2828A78	70.20
25/64"	4 1/2"	2.3"	2828A23	$99.06
13/32"	4 1/2"	2.3"	2828A24	106.51
27/64"	4 1/2"	2.3"	2828A25	117.36
7/16"	4 1/2"	2.3"	2828A26	125.38
29/64"	4 3/4"	2.4"	2828A27	137.63
15/32"	4 3/4"	2.4"	2828A28	145.56
31/64"	4 3/4"	2.4"	2828A29	152.07
1/2"	4 3/4"	2.4"	2828A79	129.60
9/16"	6"	3.2"	2828A31	240.94
5/8"	6"	3.2"	2828A32	273.39

Carbide Jobbers' Drill Bits for Composites

Made of solid carbide with a diamond coating, these bits are wear resistant and last longer than other drill bits when drilling abrasive composites such as plastic, carbon fiber, graphite, and fiberglass. Also for use on copper, brass, and aluminum. Bits have a 118° point angle with a split point that keeps the bit centered without a pilot hole. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications.

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/16"	1 1/2"	0.6"	3162A11	$28.50
5/64"	1 3/4"	0.7"	3162A12	29.05
3/32"	2"	0.8"	3162A13	29.59
7/64"	2 1/4"	1"	3162A14	30.68
1/8"	2 1/4"	1"	3162A16	31.79
9/64"	2 1/2"	1.1"	3162A18	$39.44
5/32"	2 1/2"	1.1"	3162A19	43.29
11/64"	2 3/4"	1.3"	3162A22	44.39
3/16"	2 3/4"	1.3"	3162A24	49.31
7/32"	3"	1.4"	3162A26	55.35
1/4"	3 1/4"	1.6"	3162A28	$60.83
5/16"	3 3/4"	1.9"	3162A31	79.45
3/8"	4 1/4"	2.2"	3162A33	96.44
1/2"	4 3/4"	2.4"	3162A35	150.68

Carbide Short-Length Drill Bits for Composites

Shorter than our Carbide Jobbers' Drill Bits for Composites, these have maximum rigidity to drill straighter, shallower holes than jobbers' bits. For use on carbon fiber, graphite, and fiberglass as well as copper, brass, aluminum, and plastic. Also known as screw-machine and stub-length bits, they are made of solid carbide with a diamond coating. All have a 118° point angle with a split point that keeps the bit centered without a pilot hole. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications.

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/8"	2"	0.5"	3162A15	$33.68
9/64"	2"	0.5"	3162A17	41.98
11/64"	2 1/2"	0.6"	3162A21	46.31
3/16"	2 1/2"	0.6"	3162A23	$52.68
7/32"	2 1/2"	0.8"	3162A25	58.33
1/4"	2 1/2"	0.8"	3162A27	62.54
5/16"	2 3/4"	1"	3162A29	$80.58
3/8"	3"	1"	3162A32	95.61
1/2"	3"	1"	3162A34	136.51

High-Speed Steel Drill Bits for Sheet Metal

Single End

Double End

Also known as body drills, these bits are short and sturdy for all of your sheet metal drilling needs. They are also for use on thin-wall tubing and for general shallow-hole drilling. All are high-speed steel with a black-oxide treatment. They have a 135° point angle with a split point that keeps the bit centered without a pilot hole. Full package quantity is 12. ***Double-end*** bits can be turned around if one end becomes worn.

Drill Bit Size	Single End O'all Lg.	Single End Drilling Depth		Single End Each ♦	Double End O'all Lg.	Double End Drilling Depth		Double End Each ♦
7/64"	3"	5/8"	3045A12	$1.45	1 15/16"	1/2"	3163A52	$1.77
1/8"	2"	5/8"	3045A14	1.36	1 15/16"	9/16"	3163A54	1.84
No. 30	2"	5/8"	3045A25	1.36	2"	9/16"	3163A56	1.84
9/64"	2"	5/8"	3045A16	1.45	2"	9/16"	3163A58	2.14
5/32"	2"	3/4"	3045A18	1.74	2 1/8"	9/16"	3163A62	2.28
No. 20	—	—	—	—	2 1/8"	9/16"	3163A64	$2.28
3/16"	2"	3/4"	3045A21	$1.74	2 5/16"	9/16"	3163A66	2.54
No. 11	—	—	—	—	2 5/16"	9/16"	3163A71	2.54
7/32"	—	—	—	—	2 9/16"	11/16"	3163A73	3.19
1/4"	2 1/2"	3/4"	3045A23	2.41	2 5/8"	3/4"	3163A75	3.58

♦ Prices are 15% lower when you order full-package quantities.

Carbide Spade Drill Bits for Sheet Metal

A combination of two flat flutes and a short length prevent pulling and breakage when drilling thin sheets of steel and stainless steel. All bits are made of solid carbide and have a 118° point angle. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications.

Drill Bit Size	O'all Lg.		Each
1/16"	1 1/2"	8769A21	$12.46
3/32"	1 1/2"	8769A22	12.46
1/8"	1 1/2"	8769A23	12.46
5/32"	2"	8769A24	15.98
3/16"	2"	8769A25	$17.04
7/32"	2"	8769A26	19.73
1/4"	2"	8769A27	22.28
9/32"	2"	8769A28	27.37
5/16"	2 1/2"	8769A29	$30.78
11/32"	2 1/2"	8769A31	36.87
3/8"	2 1/2"	8769A32	39.38
13/32"	2 1/2"	8769A33	44.57
7/16"	2 3/4"	8769A34	$47.14
15/32"	3"	8769A35	51.44
1/2"	3"	8769A36	56.53

For information about drill bits and decimal equivalents, see pages 2428-2429.

Hole-Starting Drill Bits

120° Point Angle

With a short flute and a short overall length, these bits stay straight to give you accurate placement when starting holes that will be drilled deeper with a longer bit. Also known as spotting bits, all are uncoated (bright finish). ***Cobalt steel*** bits are heat resistant for drilling stainless steel, nickel alloys, and titanium. ***Carbide*** bits are more rigid and maintain their sharp edges longer than cobalt bits. For use on cast iron, aluminum, brass, bronze, fiberglass, plastic, and graphite.

90° point angle bits are for centering and chamfering holes that will be followed by a smaller drill bit size. ***120° point angle*** bits are for starting a hole that will be followed by a drill bit with a point angle from 90°–118°. ***140° point angle*** bits are for starting a hole that will be followed by a drill bit with a point angle from 118°–135°.

Cobalt Steel

Drill Bit Size	O'all Lg.	Drilling Depth	90° Point Angle	Each	120° Point Angle	Each
4 mm	2 1/16″	0.5″	27445A15	$17.10	27445A25	$17.10
5 mm	2 3/8″	0.6″	27445A16	19.44	27445A26	19.44
1/4″	2 5/8″	0.9″	27445A11	21.91	27445A21	21.91
3/8″	3 1/2″	1″	27445A12	23.42	27445A22	23.42
1/2″	4″	1.4″	27445A13	$30.23	27445A23	$30.23
5/8″	4 1/2″	1.4″	27445A14	43.83	27445A24	43.83
3/4″	5 1/8″	1.6″	27445A17	61.44	27445A27	61.44

Carbide

Drill Bit Size	O'all Lg.	Drilling Depth	90° Point Angle	Each	120° Point Angle	Each	140° Point Angle	Each
1/4″	2 1/2″	0.3″	2911A29	$19.04	2911A39	$19.04	2911A51	$19.04
3/8″	2 1/2″	0.4″	2911A32	25.00	2911A42	25.00	2911A53	25.00
1/2″	3″	0.5″	2911A33	43.12	2911A43	43.12	2911A54	43.12
5/8″	3 1/2″	0.6″	2911A34	82.69	2911A44	82.69	2911A55	82.69

Left-Hand (Reverse Flute) Drill Bits

Commonly used for drilling into broken screws, these bits have flutes that spiral in the opposite direction of other bits and are for use in reverse tool operation only. Bits are uncoated (bright finish), except the 88055A series, which have a black-and-gold oxide treatment. All have a 135° point angle with a split point that keeps the bit centered without a pilot hole, unless otherwise stated. ***Jobbers' length high-speed steel*** bits are for use on steel, cast iron, and plastic, unless otherwise stated. ***Maintenance-length cobalt steel*** bits provide more heat resistance and rigidity and drill shallower holes than jobbers' length high-speed steel bits. For use on stainless steel, nickel alloys, and titanium alloys.

Also Available: High-speed steel fractional sizes 1/32″ to 1/2″, wire gauge sizes 60 to 1, and metric sizes 1 to 12 mm. All have a 118° point angle and are uncoated (bright finish) except metric sizes larger than 2.5 mm, which have a black-oxide treatment. For fractional sizes, please ask for 2876A61 and specify size. For wire gauge sizes, please ask for 3024A41 and specify size. For metric sizes, please ask for 29855A91 and specify size.

Fractional Size—Jobbers' Length, High-Speed Steel

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦
1/16″	1 7/8″	0.8″	6	88055A41	$4.94
5/64″	2″	0.9″	6	88055A42	4.94
3/32″	2 1/4″	1.2″	6	88055A43	4.94
7/64″	2 5/8″	1.5″	6	88055A44	4.94
1/8″	2 3/4″	1.5″	6	88055A45	4.94
9/64″	2 7/8″	1.6″	6	88055A61	4.94
5/32″	3 1/8″	1.9″	6	88055A46	5.76
11/64″	3 1/4″	2.1″	6	88055A62	$6.63
3/16″	3 1/2″	2.3″	6	88055A47	6.90
13/64″	3 5/8″	2.4″	6	88055A63	7.73
7/32″	3 3/4″	2.5″	6	88055A64	8.29
15/64″	3 7/8″	2.5″	6	88055A65	8.83
1/4″	4″	2.6″	6	88055A48	9.55
17/64″	4 1/8″	2.8″	6	88055A66	10.16
9/32″	4 1/4″	2.8″	6	88055A67	$12.15
19/64″	4 3/8″	2.9″	3	88055A49	13.81
5/16″	4 1/2″	3.2″	3	88055A51	14.50
3/8″	5″	3.5″	3	88055A52	22.40
7/16″	5 1/2″	3.9″	3	88055A53	29.51
1/2″	6″	4.5″	3	88055A54	37.53

♦ Prices are 15% lower when you order full-package quantities.

Fractional Size—Maintenance Length, Cobalt Steel

Drill Bit Size	O'all Lg.	Drilling Depth		Each
5/64″	2″	0.9″	3474A11	$2.93
7/64″	2 3/16″	0.8″	3474A12	3.28
1/8″	2 1/4″	1.1″	3474A13	3.64
5/32″	2 9/16″	1.3″	3474A14	3.84
3/16″	2 7/8″	1.3″	3474A15	4.74
7/32″	3 1/8″	1.4″	3474A16	5.43
1/4″	3 5/16″	1.6″	3474A17	$5.71
9/32″	3 9/16″	1.7″	3474A18	7.70
19/64″	3 5/8″	1.9″	3474A19	8.01
5/16″	3 3/4″	2″	3474A21	9.05
11/32″	3 15/16″	2″	3474A22	10.17
3/8″	4 1/8″	2.1″	3474A23	$12.94
13/32″	4 3/8″	2.1″	3474A24	14.47
7/16″	4 9/16″	2.2″	3474A25	16.68
15/32″	4 3/4″	2.2″	3474A26	18.43
1/2″	5″	2.3″	3474A27	20.89

Fractional and Wire Gauge Size Drill Bit Sets—Jobbers' Length, High-Speed Steel

Come in a metal case with folding panels that are marked with the drill bit sizes. All have a 118° point angle and are for use on carbon steel, alloy steel, and cast iron.

Drill Bit Size Range	No. of Pieces		Per Set
1/16″-1/2″ (increments of 1/64″)	29	29505A51	$305.37
Wire Gauge Nos. 60-1	60	29505A71	187.82

High-Speed Steel Maintenance-Length Drill Bits

Shorter than jobbers' length drill bits for better rigidity; longer than short-length drill bits for extra depth. All are high-speed steel with a black-and-gold-oxide treatment that adds wear resistance and improves coolant flow. Three flats on the drill bit shank provide a secure grip to eliminate slipping in the drill chuck. Drill bits have a 135° point angle with a split point that keeps the bit centered without a pilot hole. For use on steel, stainless steel, cast iron, aluminum, brass, copper, and plastic.

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦
3/16″	3″	1.8″	12	87755A29	$2.13
13/64″	3 1/8″	1.8″	12	87755A31	2.32
7/32″	3 1/4″	1.9″	12	87755A32	2.39
15/64″	3 3/8″	1.9″	12	87755A33	2.58
1/4″	3 1/2″	1.9″	12	87755A34	2.96
17/64″	3 5/8″	2″	12	87755A35	3.60
9/32″	3 3/4″	2.2″	12	87755A36	3.66
19/64″	3 7/8″	2.3″	6	87755A37	$4.13
5/16″	4″	2.5″	6	87755A38	4.38
21/64″	4 1/16″	2.5″	6	87755A39	4.93
11/32″	4 1/8″	2.5″	6	87755A41	5.58
23/64″	4 3/16″	2.6″	6	87755A42	6.16
3/8″	4 1/4″	2.6″	6	87755A43	6.34
25/64″	4 5/16″	2.6″	6	87755A44	7.26
13/32″	4 3/8″	2.7″	6	87755A45	$7.51
27/64″	4 7/16″	2.8″	6	87755A46	8.32
7/16″	4 1/2″	2.8″	6	87755A47	8.61
29/64″	4 5/8″	2.9″	6	87755A48	9.69
15/32″	4 3/4″	3″	6	87755A49	10.27
31/64″	4 7/8″	3.2″	6	87755A51	10.92
1/2″	5″	3.3″	6	87755A52	11.08

♦ Prices are 15% lower when you order in full-package quantities.

For information about drill bits and decimal equivalents, see pages 2428-2429.

High-Speed Steel Short-Length Drill Bits

Maximum rigidity and a shorter overall length make these bits better for drilling straighter, shallower holes than jobbers' and maintenance-length bits. Also known as screw-machine and stub-length bits. ***Drill bit sets*** come in a metal case.

135° Point Angle—Better for hard materials than 118° point angle bits. All have a split point that keeps the bit centered without a pilot hole, except size 3/64″ and wire gauge sizes 60-53. *Black-oxide* bits are more wear resistant than uncoated bits and are for use on steel and cast iron. *Long-life TiN (titanium nitride) coated* bits last longer than black-oxide bits and are for use on steel, stainless steel, aluminum, brass, nickel alloys, and plastic.

118° Point Angle—*Uncoated (bright finish)* bits are for use on steel, cast iron, and plastic. *Black-oxide* bits are more wear resistant than uncoated bits and are for use on steel and cast iron. *Long-life TiN (titanium nitride) coated* bits last longer than uncoated bits and are for use on steel, aluminum, brass, bronze, plastic, and composites.

Fractional Size—135° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Black Oxide Pkg. Qty.	Black Oxide Each ♦	Long-Life TiN Coated Pkg. Qty.	Long-Life TiN Coated Each ♦
3/64″	1 3/8″	0.4″	12	2896A11 $1.36	—	—
1/16″	1 5/8″	0.5″	12	2896A12 1.36	6	2908A31 $2.70
5/64″	1 11/16″	0.6″	12	2896A13 1.38	6	2908A32 2.70
3/32″	1 3/4″	0.6″	12	2896A14 1.38	6	2908A33 2.70
7/64″	1 13/16″	0.6″	12	2896A15 1.39	6	2908A34 2.70
1/8″	1 7/8″	0.7″	12	2896A16 1.40	6	2908A35 2.70
9/64″	1 15/16″	0.7″	12	2896A17 1.47	6	2908A36 3.09
5/32″	2 1/16″	0.8″	12	2896A18 1.52	6	2908A37 3.17
11/64″	2 1/8″	0.8″	12	2896A19 1.55	6	2908A38 3.30
3/16″	2 3/16″	0.8″	12	2896A21 1.64	6	2908A39 3.37
13/64″	2 1/4″	0.9″	12	2896A22 1.78	6	2908A41 4.45
7/32″	2 3/8″	0.9″	12	2896A23 2.10	6	2908A42 4.77
15/64″	2 7/16″	1″	12	2896A24 2.18	6	2908A43 4.79
1/4″	2 1/2″	1″	12	2896A25 2.30	6	2908A44 4.95
17/64″	2 5/8″	1″	12	2896A26 2.58	6	2908A45 6.88

Drill Bit Size	O'all Lg.	Drilling Depth	Black Oxide Pkg. Qty.	Black Oxide Each ♦	Long-Life TiN Coated Pkg. Qty.	Long-Life TiN Coated Each ♦
9/32″	2 11/16″	1.1″	12	2896A27 $2.72	6	2908A46 $7.07
19/64″	2 3/4″	1.1″	6	2896A28 3.19	3	2908A47 7.26
5/16″	2 13/16″	1.2″	6	2896A29 3.29	3	2908A48 7.49
21/64″	2 15/16″	1.2″	6	2896A31 3.67	3	2908A49 8.64
11/32″	3″	1.2″	6	2896A32 4.04	3	2908A51 9.08
23/64″	3 1/16″	1.2″	6	2896A33 4.56	3	2908A52 9.69
3/8″	3 1/8″	1.3″	6	2896A34 4.79	3	2908A53 9.92
25/64″	3 1/4″	1.3″	6	2896A35 5.45	3	2908A54 11.35
13/32″	3 5/16″	1.3″	6	2896A36 5.67	3	2908A55 11.55
27/64″	3 3/8″	1.4″	6	2896A37 6.26	3	2908A56 12.06
7/16″	3 7/16″	1.4″	6	2896A38 6.32	3	2908A57 12.24
29/64″	3 9/16″	1.4″	6	2896A39 7.58	3	2908A58 14.15
15/32″	3 5/8″	1.4″	6	2896A41 7.98	3	2908A59 14.52
31/64″	3 11/16″	1.5″	6	2896A42 8.24	3	2908A61 14.81
1/2″	3 3/4″	1.5″	6	2896A43 8.31	3	2908A62 14.81

♦ Prices are 15% lower when you order in full-package quantities.

Fractional Size—118° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.	Uncoated (Bright Finish) Each ♦
3/64″	1 3/8″	0.4″	12	8947A11 $1.33
1/16″	1 5/8″	0.5″	12	8947A111 1.24
5/64″	1 11/16″	0.6″	12	8947A112 1.27
3/32″	1 3/4″	0.6″	12	8947A113 1.27
7/64″	1 13/16″	0.6″	12	8947A114 1.27
1/8″	1 7/8″	0.7″	12	8947A115 1.27
9/64″	1 15/16″	0.7″	12	8947A116 1.31
5/32″	2 1/16″	0.8″	12	8947A117 1.37
11/64″	2 1/8″	0.8″	12	8947A118 1.47
3/16″	2 3/16″	0.8″	12	8947A119 1.48
13/64″	2 1/4″	0.9″	12	8947A121 1.69
7/32″	2 3/8″	0.9″	12	8947A122 1.85
15/64″	2 7/16″	1″	12	8947A123 1.98
1/4″	2 1/2″	1″	12	8947A124 2.14
17/64″	2 5/8″	1″	12	8947A125 2.39
9/32″	2 11/16″	1.1″	12	8947A126 2.54

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.	Uncoated (Bright Finish) Each ♦
19/64″	2 3/4″	1.1″	6	8947A127 $2.87
5/16″	2 13/16″	1.2″	6	8947A128 2.97
21/64″	2 15/16″	1.2″	6	8947A129 3.24
11/32″	3″	1.2″	6	8947A131 3.59
23/64″	3 1/16″	1.2″	6	8947A132 4.10
3/8″	3 1/8″	1.3″	6	8947A133 4.34
25/64″	3 1/4″	1.3″	6	8947A134 4.98
13/32″	3 5/16″	1.3″	6	8947A135 5.21
27/64″	3 3/8″	1.4″	6	8947A136 5.64
7/16″	3 7/16″	1.4″	6	8947A137 5.72
29/64″	3 9/16″	1.4″	6	8947A138 6.67
15/32″	3 5/8″	1.4″	6	8947A139 7.18
31/64″	3 11/16″	1.5″	6	8947A141 7.55
1/2″	3 3/4″	1.5″	6	8947A142 7.69

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.	Black Oxide Each
33/64″	3 7/8″	1.6″	1	8947A217 $18.37
17/32″	3 7/8″	1.6″	1	8947A218 18.84
35/64″	4″	1.7″	1	8947A219 19.88
9/16″	4″	1.7″	1	8947A221 19.94
37/64″	4 1/8″	1.8″	1	8947A222 20.84
19/32″	4 1/8″	1.7″	1	8947A223 22.75
39/64″	4 1/4″	1.8″	1	8947A224 23.64
5/8″	4 1/4″	1.8″	1	8947A225 23.84
41/64″	4 1/2″	1.9″	1	8947A226 25.51
21/32″	4 1/2″	1.9″	1	8947A227 26.46
11/16″	4 5/8″	1.8″	1	8947A228 26.67
23/32″	4 3/4″	1.9″	1	8947A229 29.84
3/4″	5″	2″	1	8947A231 31.83
13/16″	5 1/4″	2.2″	1	8947A232 37.08
7/8″	5 1/2″	2.2″	1	8947A233 42.80
57/64″	5 5/8″	2.3″	1	8947A234 44.03
1″	6″	2.5″	1	8947A235 55.29

♦ Prices are 15% lower when you order in full-package quantities.

Wire Gauge Size—135° Point Angle

To Order: Please specify exact size within the range listed.

Drill Bit Size Range	O'all Lg.	Pkg. Qty.	Black Oxide Each ♦	Long-Life TiN Coated Each ♦
60-56	1 3/8″	12	2896A826 $1.30	—
55-53	1 5/8″	12	2896A825 1.30	—
52-48	1 11/16″	12	2896A824 1.34	3584A24 $3.29
47-42	1 3/4″	12	2896A823 1.34	3584A23 3.29
41-36	1 13/16″	12	2896A822 1.35	3584A22 3.18
35-31	1 7/8″	12	2896A821 1.35	3584A21 3.31
30-28	1 15/16″	12	2896A819 1.35	3584A19 3.95
27-25	2 1/16″	12	2896A818 1.49	3584A18 3.64

Drill Bit Size Range	O'all Lg.	Pkg. Qty.	Black Oxide Each ♦	Long-Life TiN Coated Each ♦
24-23	2 1/16″	12	2896A817 $1.51	3584A17 $3.64
22-21	2 1/8″	12	2896A816 1.50	3584A16 3.64
20-18	2 1/8″	12	2896A815 1.58	3584A15 3.92
17-13	2 3/16″	12	2896A814 1.82	3584A14 4.48
12-7	2 1/4″	12	2896A813 1.79	3584A13 4.57
6-3	2 3/8″	12	2896A812 2.21	3584A12 4.83
2-1	2 7/16″	12	2896A811 2.21	3584A11 4.98

♦ Prices are 15% lower when you order in full-package quantities.

Wire Gauge Size—118° Point Angle

To Order: Please specify exact size within the range listed.

Drill Bit Size Range	O'all Lg.	Pkg. Qty.	Uncoated (Bright Finish) Each ♦	Long-Life TiN Coated Each ♦
60-56	1 3/8″	12	8947A47 $1.25	29425A227 $2.32
55-53	1 5/8″	12	8947A46 1.27	29425A226 2.32
52-48	1 11/16″	12	8947A45 1.29	29425A224 2.01
47-42	1 3/4″	12	8947A44 1.29	29425A223 2.32
41-36	1 13/16″	12	8947A43 1.33	29425A222 2.32
35-31	1 7/8″	12	8947A42 1.33	29425A221 2.32
30-28	1 15/16″	12	8947A41 1.25	29425A219 2.67
27-25	2 1/16″	12	8947A39 1.30	29425A218 2.67

Drill Bit Size Range	O'all Lg.	Pkg. Qty.	Uncoated (Bright Finish) Each ♦	Long-Life TiN Coated Each ♦
24-23	2 1/16″	12	8947A38 $1.33	29425A217 $2.71
22-21	2 1/8″	12	8947A37 1.35	29425A216 2.71
20-18	2 1/8″	12	8947A36 1.38	29425A215 3.19
17-13	2 3/16″	12	8947A35 1.55	29425A214 3.20
12-7	2 1/4″	12	8947A34 1.53	29425A213 3.20
6-3	2 3/8″	12	8947A33 1.79	29425A212 3.96
2-1	2 7/16″	12	8947A32 1.92	29425A211 4.06

♦ Prices are 15% lower when you order in full-package quantities.

(Continued on following page)

For information about drill bits and decimal equivalents, see pages 2428-2429.

High-Speed Steel Short-Length Drill Bits *(Continued from previous page)*

Letter Size—135° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.	Black Oxide	Each ♦
A	2 7/16"	0.8"	12	2896A611	$2.49
B	2 1/2"	0.9"	12	2896A612	2.49
C	2 1/2"	0.9"	12	2896A613	2.49
D	2 1/2"	0.9"	12	2896A614	2.49
E	2 1/2"	0.9"	12	2896A615	2.65
F	2 5/8"	0.9"	12	2896A616	2.73
G	2 5/8"	0.9"	12	2896A617	2.92
H	2 11/16"	1"	12	2896A618	2.92
I	2 11/16"	1"	12	2896A619	2.92
J	2 11/16"	0.9"	12	2896A621	$3.14
K	2 11/16"	0.9"	12	2896A622	3.37
L	2 3/4"	1"	12	2896A623	3.37
M	2 3/4"	1"	12	2896A624	3.67
N	2 13/16"	1"	12	2896A625	3.67
O	2 15/16"	1.1"	6	2896A626	3.71
P	2 15/16"	1"	6	2896A627	4.15
Q	3"	1"	6	2896A628	4.15
R	3"	1"	6	2896A629	4.20
S	3 1/16"	1.1"	6	2896A631	$4.79
T	3 1/16"	1"	6	2896A632	5.53
U	3 1/8"	1.1"	6	2896A633	5.53
V	3 1/4"	1.1"	6	2896A634	5.91
W	3 1/4"	1.1"	6	2896A635	6.19
X	3 5/16"	1.1"	6	2896A636	7.19
Y	3 5/16"	1.1"	6	2896A637	8.53
Z	3 3/8"	1.2"	6	2896A638	8.53

♦ Prices are 15% lower when you order in full-package quantities.

Metric Size—135° Point Angle

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm	Pkg. Qty.	Black Oxide	Each ♦
1	26	3.9	10	28255A11★	$1.78
1.3	30	5.4	10	28255A13★	1.64
1.5	32	5.9	10	28255A15★	1.51
2	38	8	10	28255A17★	1.49
2.4	43	9.1	10	28255A19★	1.63
2.5	43	9	10	28255A21★	1.49
3	46	9.9	10	28255A23	1.49
3.2	49	11.6	10	28255A25	1.27
3.3	49	11.4	10	28255A26	1.27
3.4	52	13.1	10	28255A27	$1.37
3.5	52	12.9	10	28255A31	1.46
4	55	13.9	10	28255A33	1.91
4.2	55	13.5	10	28255A35	1.63
4.5	58	14.9	10	28255A37	1.92
5	62	15.9	10	28255A39	2.00
5.5	66	17	10	28255A41	2.37
6	66	16	10	28255A43	2.67
6.5	70	18	10	28255A45	3.15
6.8	74	20.4	10	28255A47	$3.50
7	74	19.9	10	28255A49	3.22
7.5	74	18.9	10	28255A51	3.35
8	79	20.9	10	28255A53	4.48
8.5	79	20	10	28255A55	5.17
9	84	22	10	28255A57	6.01
10	89	22.9	5	28255A61	7.26
11	95	24.9	5	28255A63	8.22
12	102	27	5	28255A65	10.51

♦ Prices are 15% lower when you order in full-package quantities. ★ Has a 118° point angle.

Fractional, Wire Gauge, and Letter Size Drill Bit Sets

Uncoated (bright finish) bits have a 118° point angle. ***Black-oxide*** and ***TiN-coated*** bits have a 135° point angle.

Drill Bit Size Range	No. of Pieces	Uncoated (Bright Finish)	Per Set	Black Oxide	Per Set	TiN Coated	Per Set
1/16"-1/2" (increments of 1/32")	15	—	—	2927A27	$64.06	—	—
1/16"-1/2" (increments of 1/64")	29	2953A82	$111.16	2927A31	111.63	3076A48	$186.18
Wire Gauge Nos. 60-1	60	2953A85	105.64	2927A34	117.30	3076A51	165.67
A-Z	26	2953A88	133.56	—	—	—	—

Super Duty Carbide Short-Length Drill Bits

More wear resistant than high-speed steel with a shorter length for better rigidity and shallower drilling than jobbers' bits. Also known as screw-machine and stub-length drill bits, all have a split point that keeps the bit centered without a pilot hole. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling applications. ***Uncoated (bright finish)*** bits are for use on aluminum, copper, and soft plastic. ***Long-life TiN (titanium nitride) coated*** bits last longer than uncoated bits. For use on steel, stainless steel, cast iron, aluminum, copper, nickel alloys, and titanium. ***Super-life TiAlN (titanium aluminum nitride) coated*** bits last longer than TiN-coated bits. For use on most metals such as steel, stainless steel, cast iron, aluminum, copper, nickel alloys, and titanium.

Fractional Size, Uncoated (Bright Finish)—118° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/8"	2"	0.5"	2956A43	$12.59
9/64"	2"	0.5"	2956A79	14.56
11/64"	2 1/2"	0.6"	2956A64	17.21
3/16"	2 1/2"	0.6"	2956A45	18.79
13/64"	2 1/2"	0.6"	2956A65	21.18
7/32"	2 1/2"	0.8"	2956A46	22.34
15/64"	2 1/2"	0.8"	2956A66	23.39
1/4"	2 1/2"	0.8"	2956A47	$24.55
17/64"	2 1/2"	0.8"	2956A67	26.25
9/32"	2 1/2"	0.8"	2956A48	27.73
5/16"	2 3/4"	1"	2956A49	34.50
21/64"	2 3/4"	1"	2956A69	37.25
11/32"	3"	1"	2956A51	40.02
23/64"	3"	1"	2956A71	43.23
3/8"	3"	1"	2956A52	$43.77
25/64"	3"	1"	2956A72	48.16
13/32"	3"	1"	2956A53	53.13
27/64"	3"	1"	2956A73	55.88
7/16"	3"	1"	2956A54	59.27
29/64"	3"	1"	2956A74	63.92
1/2"	3"	1"	2956A56	69.86

Fractional Size, Coated—118° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth	Long-Life TiN Coated	Each	Super-Life TiAlN Coated	Each
1/8"	2"	0.5"	27515A11	$13.80	8879A21	$15.19
9/64"	2"	0.5"	27515A24	16.12	8879A22	17.73
5/32"	2 1/2"	0.6"	—	—	8879A23	20.11
11/64"	2 1/2"	0.6"	27515A12	19.72	8879A24	21.70
3/16"	2 1/2"	0.6"	27515A13	21.17	8879A25	23.29
13/64"	2 1/2"	0.6"	27515A14	24.78	8879A26	27.26
7/32"	2 1/2"	0.8"	27515A15	25.84	8879A27	28.42
1/4"	2 1/2"	0.8"	27515A17	$27.86	8879A29	$30.65
9/32"	2 1/2"	0.8"	27515A18	31.94	8879A31	35.14
5/16"	2 3/4"	1"	27515A19	38.11	8879A32	41.91
3/8"	3"	1"	27515A21	47.00	8879A34	51.70
7/16"	3"	1"	27515A22	63.27	—	—
1/2"	3"	1"	27515A23	73.12	8879A42	80.43

Ultra Duty Carbide Short-Length Drill Bits

Stronger than our Super Duty Carbide Short-Length Drill Bits, these are for use on hard steel with a Rockwell hardness up to C65 as well as titanium, nickel alloys, stainless steel, and cast iron. All have a long-life TiN (titanium nitride) coating and a 140° point angle with a split point that keeps the bit centered without a pilot hole. They require rigid toolholding to prevent breakage and should not be used in hand-held drilling operations.

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/8"	2 1/16"	0.4"	88915A21	$40.16
No. 29	2 1/16"	0.4"	88915A362	44.83
9/64"	2 5/32"	0.4"	88915A22	41.77
5/32"	2 7/32"	0.5"	88915A23	41.77
No. 21	2 7/32"	0.5"	88915A353	48.74
3/16"	2 3/8"	0.6"	88915A25	45.17
No. 7	2 7/16"	0.6"	88915A337	$48.01
13/64"	2 7/16"	0.6"	88915A26	45.17
7/32"	2 1/2"	0.7"	88915A27	48.25
15/64"	2 17/32"	0.7"	88915A28	48.25
1/4"	2 19/32"	0.8"	88915A29	51.83
F	2 19/32"	0.8"	88915A216	52.95
17/64"	2 5/8"	0.8"	88915A31	$57.67
9/32"	2 11/16"	0.8"	88915A32	61.33
5/16"	2 13/16"	0.9"	88915A34	69.50
3/8"	3 1/4"	1.1"	88915A38	96.68
7/16"	3 1/2"	1.3"	88915A43	127.58

For information about drill bits and decimal equivalents, see pages 2428-2429.

Heat-Resistant Cobalt Steel Short-Length Drill Bits

A combination of cobalt steel and a short overall length keeps these bits sharp at high temperatures while providing rigidity for drilling straight, shallow holes. Also known as stub-length and screw-machine length bits. For use on alloy and tool steels, stainless steel, nickel alloys, and hard plastic. All have a 135° point angle that produces small chips to reduce clogging. They also have a split point that keeps the bit centered without a pilot hole. ***Long-life TiN (titanium nitride) coated*** bits last longer than uncoated (bright finish) bits.

Fractional Size—Uncoated (Bright Finish)

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦
1/16"	1 5/8"	0.5"	12	28765A11	$1.48
5/64"	1 11/16"	0.6"	12	28765A12	1.50
3/32"	1 3/4"	0.6"	12	28765A13	1.57
7/64"	1 13/16"	0.6"	12	28765A14	1.68
1/8"	1 7/8"	0.7"	12	28765A15	1.98
9/64"	1 15/16"	0.7"	12	28765A16	2.03
5/32"	2 1/16"	0.8"	12	28765A17	2.14
11/64"	2 1/8"	0.8"	12	28765A18	2.34
3/16"	2 3/16"	0.8"	12	28765A19	2.67
13/64"	2 1/4"	0.9"	12	28765A21	3.09
7/32"	2 3/8"	0.9"	12	28765A22	3.22
15/64"	2 7/16"	1"	12	28765A23	3.54
1/4"	2 1/2"	1"	12	28765A24	3.79
17/64"	2 5/8"	1"	12	28765A25	4.18
9/32"	2 11/16"	1.1"	12	28765A26	4.49
19/64"	2 3/4"	1.1"	6	28765A27	$5.40
5/16"	2 13/16"	1.2"	6	28765A28	5.57
21/64"	2 15/16"	1.2"	6	28765A29	6.45
11/32"	3"	1.2"	6	28765A31	6.71
23/64"	3 1/16"	1.2"	6	28765A32	7.81
3/8"	3 1/8"	1.3"	6	28765A33	7.81
25/64"	3 1/4"	1.3"	6	28765A34	8.98
13/32"	3 5/16"	1.3"	6	28765A35	9.11
27/64"	3 3/8"	1.4"	6	28765A36	10.13
7/16"	3 7/16"	1.4"	6	28765A37	10.32
29/64"	3 9/16"	1.4"	6	28765A38	11.41
15/32"	3 5/8"	1.4"	6	28765A39	11.78
31/64"	3 11/16"	1.5"	6	28765A41	12.77
1/2"	3 3/4"	1.5"	6	28765A42	12.92

♦ Prices are 15% lower when you order in full-package quantities.

Fractional Size—Long-Life TiN Coated

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦
1/16"	1 5/8"	0.5"	12	2416A11	$3.52
5/64"	1 11/16"	0.6"	12	2416A12	3.69
3/32"	1 3/4"	0.6"	12	2416A13	3.77
7/64"	1 13/16"	0.6"	12	2416A14	4.03
1/8"	1 7/8"	0.7"	12	2416A15	4.42
9/64"	1 15/16"	0.7"	12	2416A16	4.54
5/32"	2 1/16"	0.8"	12	2416A17	4.66
11/64"	2 1/8"	0.8"	12	2416A18	4.98
3/16"	2 3/16"	0.8"	12	2416A19	5.86
13/64"	2 1/4"	0.9"	12	2416A21	6.56
7/32"	2 3/8"	0.9"	12	2416A22	7.01
15/64"	2 7/16"	1"	12	2416A23	7.44
1/4"	2 1/2"	1"	12	2416A24	7.83
17/64"	2 5/8"	1"	12	2416A25	8.96
9/32"	2 11/16"	1.1"	12	2416A26	9.48
19/64"	2 3/4"	1.1"	6	2416A27	$11.75
5/16"	2 13/16"	1.2"	6	2416A28	12.21
21/64"	2 15/16"	1.2"	6	2416A29	13.60
11/32"	3"	1.2"	6	2416A31	14.39
23/64"	3 1/16"	1.2"	6	2416A32	15.98
3/8"	3 1/8"	1.3"	6	2416A33	15.53
25/64"	3 1/4"	1.3"	6	2416A34	18.74
13/32"	3 5/16"	1.3"	6	2416A35	19.11
27/64"	3 3/8"	1.4"	6	2416A36	21.04
7/16"	3 7/16"	1.4"	6	2416A37	21.32
29/64"	3 9/16"	1.4"	6	2416A38	22.61
15/32"	3 5/8"	1.4"	6	2416A39	22.97
31/64"	3 11/16"	1.5"	6	2416A41	23.66
1/2"	3 3/4"	1.5"	6	2416A42	23.82

♦ Prices are 15% lower when you order in full-package quantities.

Wire Gauge Size—Uncoated (Bright Finish)

To Order: Please specify exact size within the range listed.

Drill Bit Size Range	Pkg. Qty.		Each ♦
60-56	12	28765A886	$1.74
55-53	12	28765A885	1.68
52-48	12	28765A884	1.67
47-42	12	28765A883	1.67
41-36	12	28765A882	1.89
35-31	12	28765A881	$2.03
30-28	12	28765A879	2.12
27-25	12	28765A878	2.29
24-23	12	28765A877	2.46
22-21	12	28765A876	2.46
20-18	12	28765A875	$2.62
17-13	12	28765A874	3.01
12-7	12	28765A873	3.07
6-3	12	28765A872	4.18
2-1	12	28765A871	4.06

♦ Prices are 15% lower when you order in full-package quantities.

Letter Size—Uncoated (Bright Finish)

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦
A	2 7/16"	1"	12	28765A841	$4.05
B	2 1/2"	1"	12	28765A842	4.08
C	2 1/2"	1"	12	28765A843	4.14
D	2 1/2"	1"	12	28765A844	4.21
E	2 1/2"	1"	12	28765A845	3.79
F	2 5/8"	1.1"	12	28765A846	4.38
G	2 5/8"	1"	12	28765A847	4.53
H	2 11/16"	1"	12	28765A848	4.74
I	2 11/16"	1.1"	12	28765A849	4.80
J	2 11/16"	1.1"	12	28765A85	4.86
K	2 11/16"	1.1"	12	28765A851	5.03
L	2 3/4"	1.1"	12	28765A852	5.67
M	2 3/4"	1.1"	6	28765A853	5.80
N	2 13/16"	1.2"	6	28765A854	$6.23
O	2 15/16"	1.2"	6	28765A855	6.80
P	2 15/16"	1.2"	6	28765A856	6.92
Q	3"	1.2"	6	28765A857	7.27
R	3"	1.2"	6	28765A858	7.40
S	3 1/16"	1.2"	6	28765A859	8.75
T	3 1/16"	1.2"	6	28765A86	8.87
U	3 1/8"	1.3"	6	28765A861	8.92
V	3 1/4"	1.3"	6	28765A862	9.68
W	3 1/4"	1.3"	6	28765A863	10.30
X	3 5/16"	1.3"	6	28765A864	10.78
Y	3 5/16"	1.3"	6	28765A865	10.79
Z	3 3/8"	1.4"	6	28765A866	11.62

♦ Prices are 15% lower when you order in full-package quantities.

Fractional, Wire Gauge, and Letter Size Drill Bit Sets—Uncoated (Bright Finish)

All sets come in a metal case.

Drill Bit Size Range	No. of Pieces		Per Set
1/16"-1/2" (increments of 1/64")	29	3148A68	$191.46
1/16"-1/2" (increments of 1/32")	15	3148A62	108.18
Wire Gauge Nos. 60-1	60	3148A72	$139.53
A-Z	26	3148A76	206.12

For information about drill bits and decimal equivalents, see pages 2428-2429.

Extended-Reach Drill Bits

Reach recessed locations and drill deep holes—these bits have longer flutes and a longer overall length than jobbers' length and maintenance-length bits.

High-Speed Steel— All have a 118° point angle. *Uncoated (bright finish)* bits are for use on steel, stainless steel, aluminum, copper, brass, and bronze. *Black-oxide* bits are for use on steel, cast iron, and plastic. *TiN (titanium nitride) coated* bits last longer than uncoated (bright finish) and black-oxide bits. For use on steel, cast iron, copper, brass, and bronze.

Cobalt Steel— All are uncoated (bright finish) and have a 135° point angle with a split point that keeps bits centered without a pilot hole. For use on steel, stainless steel, nickel alloys, and titanium.

Also Available: Carbide-tipped steel fractional sizes 1/8″ to 1″ with a 118° point angle (please ask for 29465A75 and specify size); cobalt steel wire gauge sizes 40 to 1 with a 135° point angle (please ask for 88555A91 and specify size); and uncoated (bright finish) high-speed steel metric sizes 1 to 16 mm with a 118° point angle (please ask for 3083A3 and specify size).

Fractional Size, Uncoated (Bright Finish) High-Speed Steel—118° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/8″	8″	5.8″	29515A61	$9.84
1/8″	12″	8.8″	2939A11	13.38
9/64″	12″	8.7″	2939A12	14.54
5/32″	8″	5.7″	29515A62	10.82
5/32″	12″	8.7″	2939A13	14.55
11/64″	12″	8.7″	2939A14	15.10
3/16″	8″	5.6″	29515A63	11.14
3/16″	12″	8.6″	2939A15	15.10
13/64″	12″	8.6″	2939A16	16.23
7/32″	8″	5.6″	29515A64	12.12
7/32″	12″	8.6″	2939A17	16.24
15/64″	12″	8.5″	2939A18	16.55
1/4″	8″	5.5″	29515A65	12.40
1/4″	12″	8.5″	2939A19	16.86
1/4″	18″	12.5″	2955A15	31.08
17/64″	12″	8.5″	2939A21	17.86
17/64″	18″	12.5″	2955A16	35.41
9/32″	8″	5.4″	29515A66	13.06
9/32″	12″	8.4″	2939A22	$17.54
9/32″	18″	12.4″	2955A17	34.18
19/64″	12″	8.4″	2939A23	18.47
5/16″	8″	5.4″	29515A67	13.38
5/16″	12″	8.4″	2939A24	18.12
5/16″	18″	12.4″	2955A19	33.23
21/64″	12″	8.3″	2939A25	19.31
21/64″	18″	12.3″	2955A21	37.52
11/32″	8″	5.3″	29515A68	14.11
11/32″	12″	8.3″	2939A26	18.99
11/32″	18″	12.3″	2955A22	36.20
23/64″	12″	8.3″	2939A27	19.82
23/64″	18″	12.3″	2955A23	40.91
3/8″	8″	5.3″	29515A69	14.36
3/8″	12″	8.3″	2939A28	19.45
3/8″	18″	12.3″	2955A24	35.20
25/64″	12″	8.2″	2939A29	22.29
25/64″	18″	12.2″	2955A25	40.67
13/32″	8″	5.2″	29515A71	$16.26
13/32″	12″	8.2″	2939A31	21.89
13/32″	18″	12.2″	2955A26	39.20
27/64″	12″	8.2″	2939A32	23.57
27/64″	18″	12.2″	2955A27	43.83
7/16″	8″	5.1″	29515A72	17.20
7/16″	12″	8.1″	2939A33	23.15
7/16″	18″	12.1″	2955A28	41.09
29/64″	12″	8.1″	2939A34	25.88
15/32″	8″	5.1″	29515A73	19.23
15/32″	12″	8.1″	2939A35	25.43
31/64″	12″	8″	2939A36	26.91
31/64″	18″	12″	2955A32	52.27
1/2″	8″	5″	29515A74	19.34
1/2″	12″	8″	2939A37	25.96
1/2″	18″	12″	2955A33	48.99

Fractional Size, Black-Oxide High-Speed Steel—118° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth		Each
3/64″	2 1/4″	1.1″	29315A115	$3.01
1/16″	3″	1.7″	29315A116	3.08
5/64″	3 3/4″	1.9″	29315A117	3.45
3/32″	4 1/4″	2.1″	29315A118	3.99
7/64″	4 5/8″	2.3″	29315A119	4.65
7/64″	8″	5.3″	29515A41	13.35
1/8″	5 1/8″	2.6″	29315A121	4.69
9/64″	5 3/8″	2.8″	29315A122	4.89
9/64″	8″	5.3″	29515A42	13.07
5/32″	5 3/8″	2.8″	29315A123	5.13
11/64″	5 3/4″	3.1″	29315A124	5.29
11/64″	8″	5.2″	29515A43	13.25
3/16″	5 3/4″	3.1″	29315A125	5.16
3/16″	18″	12″	2955A11	25.80
13/64″	6″	3.3″	29315A126	5.98
13/64″	18″	12″	2955A12	25.80
7/32″	6″	3.3″	29315A131	6.04
7/32″	18″	12″	2955A13	25.80
15/64″	6 1/8″	3.4″	29315A132	6.56
15/64″	8″	5.1″	29515A44	14.67
1/4″	6 1/8″	3.4″	29315A133	6.60
17/64″	6 1/4″	3.5″	29315A134	7.47
17/64″	8″	5.1″	29515A45	14.21
9/32″	6 1/4″	3.5″	29315A135	7.67
19/64″	6 3/8″	3.6″	29315A136	8.01
19/64″	8″	5.1″	29515A46	16.09
5/16″	6 3/8″	3.5″	29315A141	8.23
21/64″	6 1/2″	3.6″	29315A142	9.38
21/64″	8″	5″	29515A47	16.89
11/32″	6 1/2″	3.6″	29315A143	$9.45
23/64″	6 3/4″	3.7″	29315A144	10.97
23/64″	8″	5″	29515A48	17.29
3/8″	6 3/4″	3.7″	29315A145	11.07
25/64″	7″	3.8″	29315A146	12.74
25/64″	8″	4.9″	29515A49	18.78
13/32″	7″	3.8″	29315A147	12.96
27/64″	7 1/4″	4″	29315A148	13.70
7/16″	7 1/4″	4″	29315A153	13.83
29/64″	7 1/2″	4.1″	29315A154	15.58
15/32″	7 1/2″	4″	29315A155	16.15
31/64″	7 3/4″	4″	29315A156	17.09
1/2″	7 3/4″	4″	29315A161	17.17
33/64″	8″	4″	29315A162	24.04
33/64″	12″	8″	2939A38	33.50
33/64″	18″	12″	2955A34	62.11
17/32″	8″	4″	29315A163	24.04
17/32″	12″	7.9″	2939A39	32.33
17/32″	18″	11.9″	2955A35	59.91
35/64″	8 1/4″	4.1″	29315A164	26.71
9/16″	8 1/4″	4″	29315A165	26.70
9/16″	12″	7.9″	2939A42	32.33
9/16″	18″	11.9″	2955A37	60.88
37/64″	8 3/4″	4″	29315A166	30.24
37/64″	12″	7.8″	2939A43	36.00
19/32″	8 3/4″	4″	29315A167	31.48
19/32″	12″	7.8″	2939A44	34.71
39/64″	8 3/4″	4″	29315A168	31.65
39/64″	12″	7.8″	2939A45	37.80
5/8″	8 3/4″	3.9″	29315A173	$32.01
5/8″	12″	7.8″	2939A46	36.47
5/8″	18″	11.8″	2955A42	66.12
41/64″	9″	4.2″	29315A174	35.18
21/32″	9″	4.1″	29315A175	35.18
21/32″	12″	7.7″	2939A48	40.38
43/64″	9 1/4″	4.4″	29315A176	40.67
11/16″	9 1/4″	4.3″	29315A181	40.67
11/16″	12″	7.6″	2939A51	42.72
11/16″	18″	11.6″	2955A44	78.27
45/64″	9 1/2″	4.6″	29315A182	42.47
23/32″	9 1/2″	4.5″	29315A183	42.47
23/32″	12″	7.6″	2939A53	46.25
47/64″	9 3/4″	4.8″	29315A184	41.84
3/4″	9 3/4″	4.8″	29315A185	41.84
3/4″	12″	7.5″	2939A55	48.05
3/4″	18″	11.5″	2955A46	90.71
49/64″	9 7/8″	4.9″	29315A186	43.65
25/32″	9 7/8″	4.8″	29315A187	44.46
25/32″	18″	11.4″	2955A47	101.18
13/16″	10″	4.9″	29315A189	49.96
13/16″	18″	11.4″	2955A48	105.04
7/8″	10″	4.8″	29315A212	52.93
7/8″	18″	11.3″	2955A49	108.38
29/32″	10″	4.8″	29315A214	60.44
1″	11″	4.9″	29315A225	75.16
1″	18″	11″	2955A52	120.80

Fractional Size, Long-Life TiN-Coated High-Speed Steel—118° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/8″	5 1/8″	2.5″	28965A731	$7.36
9/64″	5 3/8″	2.7″	28965A732	10.00
5/32″	5 3/8″	2.7″	28965A733	10.00
11/64″	5 3/4″	3″	28965A734	10.00
3/16″	5 3/4″	3″	28965A735	10.00
13/64″	6″	3.2″	28965A736	11.12
7/32″	6″	3.2″	28965A737	$11.12
15/64″	6 1/8″	3.3″	28965A738	11.12
1/4″	6 1/8″	3.3″	28965A739	11.11
17/64″	6 1/4″	3.3″	28965A741	14.83
9/32″	6 1/4″	3.3″	28965A742	14.83
19/64″	6 3/8″	3.4″	28965A743	$14.95
5/16″	6 3/8″	3.4″	28965A744	14.95
3/8″	6 3/4″	3.5″	28965A748	20.85
7/16″	7 1/4″	3.8″	28965A753	24.49
1/2″	7 3/4″	3.8″	28965A757	28.52

(Continued on following page)

For information about drill bits and decimal equivalents, see pages 2428-2429.

Extended-Reach Drill Bits *(Continued from previous page)*

Reach recessed locations and drill deep holes—these bits have longer flutes and a longer overall length than jobbers' length and maintenance-length bits.

High-Speed Steel— All have a 118° point angle. *Uncoated (bright finish)* bits are for use on steel, stainless steel, aluminum, copper, brass, and bronze. *Black-oxide* bits are for use on steel, cast iron, and plastic. *TiN (titanium nitride) coated* bits last longer than uncoated (bright finish) and black-oxide bits. For use on steel, cast iron, copper, brass, and bronze.

Cobalt Steel— All are uncoated (bright finish) and have a 135° point angle with a split point that keeps bits centered without a pilot hole. For use on steel, stainless steel, nickel alloys, and titanium.

Also Available: Carbide-tipped steel fractional sizes 1/8″ to 1″ with a 118° point angle (please ask for 29465A75 and specify size); cobalt steel wire gauge sizes 40 to 1 with a 135° point angle (please ask for 88555A91 and specify size); and uncoated (bright finish) high-speed steel metric sizes 1 to 16 mm with a 118° point angle (please ask for 3083A3 and specify size).

Fractional Size, Uncoated (Bright Finish) Cobalt Steel—135° Point Angle

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/16″	3″	1.6″	3063A111	$5.22
5/64″	3 3/4″	1.8″	3063A112	6.05
3/32″	4 1/4″	2.1″	3063A113	7.10
3/32″	8″	5.5″	3168A11	26.47
7/64″	4 5/8″	2.3″	3063A114	9.13
1/8″	5 1/8″	2.5″	3063A115	8.94
1/8″	8″	5.5″	3168A12	21.31
1/8″	12″	9″	3168A31	27.07
9/64″	5 3/8″	2.7″	3063A116	10.96
5/32″	5 3/8″	2.7″	3063A117	11.06
5/32″	8″	5.5″	3168A13	23.27
11/64″	5 3/4″	3″	3063A118	11.06
3/16″	5 3/4″	3″	3063A119	10.88
3/16″	8″	5.5″	3168A14	23.69
3/16″	12″	9″	3168A32	30.64
13/64″	6″	3.2″	3063A121	12.79
7/32″	6″	3.2″	3063A122	12.57
15/64″	6 1/8″	3.3″	3063A123	$13.26
1/4″	6 1/8″	3.3″	3063A124	12.57
1/4″	8″	5.5″	3168A15	24.33
1/4″	12″	9″	3168A33	34.18
17/64″	6 1/4″	3.3″	3063A125	16.37
17/64″	8″	5.5″	3168A16	24.41
9/32″	6 1/4″	3.3″	3063A126	15.50
9/32″	8″	5.5″	3168A17	26.89
5/16″	6 3/8″	3.4″	3063A128	15.51
5/16″	8″	5.5″	3168A19	28.51
5/16″	12″	9″	3168A34	36.73
21/64″	6 1/2″	3.5″	3063A129	18.85
11/32″	6 1/2″	3.4″	3063A131	18.15
3/8″	6 3/4″	3.5″	3063A133	20.62
3/8″	8″	5.5″	3168A22	29.02
3/8″	12″	9″	3168A35	39.41
25/64″	7″	3.6″	3063A134	$23.10
7/16″	7 1/4″	3.8″	3063A137	24.17
7/16″	8″	5.5″	3168A25	41.03
7/16″	12″	9″	3168A36	46.93
1/2″	7 3/4″	3.8″	3063A142	29.73
1/2″	12″	9″	3168A37	52.65
17/32″	8″	3.7″	3063A144	39.23
9/16″	8 1/4″	3.8″	3063A146	42.42
9/16″	12″	9″	3168A38	65.58
5/8″	8 3/4″	3.6″	3063A151	49.89
5/8″	12″	9″	3168A39	74.02
21/32″	9″	3.8″	3063A153	54.79
11/16″	9 1/4″	4″	3063A155	64.08
11/16″	12″	9″	3168A42	86.76
3/4″	9 3/4″	4.4″	3063A159	74.36
1″	11″	4.4″	3063A177	133.06

Wire Gauge Size, Black-Oxide High-Speed Steel—118° Point Angle

To Order: Please specify exact size within the range listed.

Drill Bit Size Range	O'all Lg.	Drilling Depth		Each
80-76	1 1/2″	0.2″	3096A68	$5.19
75-72	1 1/2″	0.2″	3096A67	4.49
71-70	2″	0.7″	3096A66	4.43
69-66	2″	0.7″	3096A65	4.09
65-61	2″	0.7″	3096A64★	4.09
60-56	2 1/4″	1″	3096A33	4.17
55-53	3″	1.6″	3096A32	$4.17
52-48	3 3/4″	1.9″	3096A31	4.17
47-42	4 1/4″	2.1″	3096A29	5.18
41-39	4 5/8″	2.3″	3096A28	6.26
38-36	4 5/8″	2.4″	3096A27	6.68
35-31	5 1/8″	2.6″	3096A26	7.74
30-28	5 3/8″	2.8″	3096A25	$7.82
27-23	5 3/8″	2.7″	3096A24	7.82
22-13	5 3/4″	3.1″	3096A23	8.19
12-3	6″	3.3″	3096A22	8.83
2-1	6 1/8″	3.4″	3096A21	8.95

★ No. 61 is 2 1/4″ long and has a drilling depth of 1″.

Letter Size, Black-Oxide High-Speed Steel—118° Point Angle

To Order: Please specify exact size within the range listed.

Drill Bit Size Range	O'all Lg.	Drilling Depth		Each
A-E	6 1/8″	3.4″	3110A81	$10.41
F-K	6 1/4″	3.5″	3110A82	10.66
L-N	6 3/8″	3.5″	3110A83	$11.54
O-R	6 1/2″	3.6″	3110A84	12.09
S-U	6 3/4″	3.7″	3110A85	$15.41
V-Z	7″	3.8″	3110A86	16.19

Metric Size, Black-Oxide High-Speed Steel—118° Point Angle

Drill Bit Size, mm	O'all Lg., mm	Drilling Depth, mm		Each
1.5	160	96.9	88455A32●	$17.95
2.0	160	96	88455A34●	16.24
2.5	160	95	88455A36	13.82
3.0	160	94	88455A37	13.31
3.0	200	144	88455A57	24.98
3.3	160	93.4	88455A38	13.20
3.5	160	92.9	88455A39	12.71
4.0	160	91.9	88455A42	13.22
4.0	200	141.9	88455A62	$16.51
4.0	315	241.9	88455A72	39.11
5.0	160	89.9	88455A44	14.87
5.0	200	139.9	88455A64	18.64
5.0	315	239.9	88455A74	43.87
5.5	200	139	88455A65	19.69
6.0	200	138	88455A66	22.33
6.0	315	238	88455A76	35.36
6.5	200	136.9	88455A67	$23.65
6.5	315	236.9	88455A77	55.82
7.0	200	135.9	88455A68	24.98
7.5	200	134.9	88455A69	28.45
8.0	315	233.9	88455A81	48.33
10.0	315	229.9	88455A85	66.96
12.0	315	226	88455A88	89.29

● Have a bright finish.

Chip-Clearing High-Speed Steel Extended-Reach Drill Bits

Long, wide flutes and a long overall length allow you to drill deep holes in hard-to-reach areas without worrying about clogs. For use on steel, stainless steel, aluminum, and plastic. All are uncoated (bright finish) high-speed steel and have a 135° point angle with a split point that keeps the bit centered without a pilot hole.

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/8″	8″	5.8″	29745A31	$15.26
1/8″	12″	8.8″	29745A61	19.68
9/64″	8″	5.7″	29745A32	18.34
5/32″	8″	5.7″	29745A33	16.59
5/32″	12″	8.7″	29745A63	21.68
11/64″	8″	5.7″	29745A34	17.50
11/64″	12″	8.7″	29745A64	24.04
3/16″	8″	5.6″	29745A35	17.26
3/16″	12″	8.6″	29745A65	22.20
13/64″	8″	5.6″	29745A36	19.66
13/64″	12″	8.6″	29745A66	24.20
7/32″	8″	5.6″	29745A37	19.32
7/32″	12″	8.6″	29745A67	23.90
15/64″	8″	5.5″	29745A38	$21.12
1/4″	8″	5.5″	29745A39	20.04
1/4″	12″	8.5″	29745A69	24.76
17/64″	8″	5.5″	29745A41	22.82
17/64″	12″	8.5″	29745A71	33.89
9/32″	8″	5.4″	29745A42	21.70
9/32″	12″	8.4″	29745A72	30.01
5/16″	8″	5.4″	29745A44	22.44
5/16″	12″	8.4″	29745A74	30.58
21/64″	8″	5.3″	29745A45	28.46
21/64″	12″	8.3″	29745A75	36.62
11/32″	8″	5.3″	29745A46	27.02
11/32″	12″	8.3″	29745A76	35.32
23/64″	12″	8.3″	29745A77	$40.96
3/8″	8″	5.3″	29745A48	27.80
3/8″	12″	8.3″	29745A78	35.72
25/64″	8″	5.2″	29745A49	32.83
25/64″	12″	8.2″	29745A79	42.24
13/32″	12″	8.2″	29745A81	40.76
7/16″	8″	5.1″	29745A53	39.60
7/16″	12″	8.1″	29745A83	51.02
1/2″	8″	5″	29745A57	47.34
1/2″	12″	8″	29745A87	68.58

For information about drill bits and decimal equivalents, see pages 2428-2429.

Short-Flute Extended-Reach Drill Bits

A long overall length allows you to reach deep, inaccessible spots while a short flute maximizes rigidity for drilling straighter holes. All bits meet NAS 907 aerospace standards and have a 135° point angle with a split point that keeps the bit centered without a pilot hole (unless noted).

High-speed steel bits are for use on steel, stainless steel, and cast iron. They have a black-oxide treatment. ***Cobalt steel*** bits provide better heat and abrasion resistance than high-speed steel. For use on stainless steel, cast iron, and nickel alloys. They have a bright finish. ***Carbide-tipped*** bits provide better wear resistance when drilling materials such as cast iron, brass, bronze, hard plastic, fiberglass, and graphite.

High-Speed Steel

Drill Bit Size	Drilling Depth	Pkg. Qty.	6″ Length	Each ♦	12″ Length	Each ♦
3/64″	0.7″	12	2986A11♥	$7.11	2986A45♥	$11.94
1/16″	0.8″	12	2986A12	3.99	2986A46	10.47
5/64″	0.9″	12	2986A13	4.05	2986A47	10.85
3/32″	1.1″	12	2986A14	3.39	2986A48	10.95
7/64″	1.3″	12	2986A15	3.53	2986A49	11.39
1/8″	1.4″	12	2986A16	3.53	2986A51	8.96
9/64″	1.5″	12	2986A17	4.14	2986A52	9.26
5/32″	1.8″	12	2986A18	4.19	2986A53	9.27
11/64″	1.9″	12	2986A19	4.30	2986A54	10.23
3/16″	2″	12	2986A21	4.30	2986A55	10.23
13/64″	2.1″	12	2986A22	5.18	2986A56	11.51
7/32″	2.2″	12	2986A23	5.18	2986A57	11.51
15/64″	2.3″	12	2986A24	5.66	2986A58	12.22
1/4″	2.4″	12	2986A25	5.66	2986A59	12.22
17/64″	2.5″	12	2986A26	13.00	2986A61	15.49
9/32″	2.5″	12	2986A27	$13.18	2986A62	$15.56
19/64″	2.6″	6	2986A28	16.39	2986A63	17.49
5/16″	2.7″	6	2986A29	16.76	2986A64	17.78
21/64″	2.8″	6	2986A31	18.08	2986A65	20.24
11/32″	2.9″	6	2986A32	18.13	2986A66	20.43
23/64″	3″	6	2986A33	20.31	2986A67	21.92
3/8″	3.1″	6	2986A34	20.53	2986A68	22.38
25/64″	3.1″	6	2986A35	22.72	2986A69	25.05
13/32″	3.3″	6	2986A36	22.78	2986A71	25.18
27/64″	3.3″	6	2986A37	24.11	2986A72	26.53
7/16″	3.4″	6	2986A38	24.30	2986A73	26.73
29/64″	3.5″	6	2986A39	26.20	2986A74	30.26
15/32″	3.6″	6	2986A41	27.86	2986A75	32.20
31/64″	3.6″	6	2986A42	28.08	2986A76	32.58
1/2″	3.8″	6	2986A43	28.29	2986A77	32.88

♦ Prices are 15% lower when you order in full-package quantities. ♥ Does not have a split point.

Cobalt Steel

Drill Bit Size	Drilling Depth	6″ Length Pkg. Qty.	Each ♦	12″ Length Pkg. Qty.	Each ♦
1/16″	0.8″	12	8934A11	$5.35	12	8934A31	$14.34
5/64″	0.8″	12	8934A12	5.45	12	8934A32	14.34
3/32″	1.1″	12	8934A61	3.98	12	8934A62	12.22
7/64″	1.3″	12	8934A14	4.51	12	8934A34	13.20
1/8″	1.4″	12	8934A15	4.28	12	8934A35	12.28
9/64″	1.5″	12	8934A16	5.10	12	8934A36	14.34
5/32″	1.7″	12	8934A17	5.03	12	8934A37	13.06
11/64″	1.8″	12	8934A18	$5.61	12	8934A38	$14.19
3/16″	1.9″	12	8934A19	5.47	6	8934A39	13.82
13/64″	2″	12	8934A21	6.94	6	8934A41	18.06
7/32″	2.1″	12	8934A22	6.87	6	8934A42	16.30
15/64″	2.2″	12	8934A23	7.51	6	8934A43	17.45
1/4″	2.3″	12	8934A24	7.38	6	8934A44	16.63

♦ Prices are 15% lower when you order in full-package quantities.

Carbide Tipped

Drill Bit Size	Drilling Depth	Pkg. Qty.	6″ Length	Each	12″ Length	Each
1/8″	0.4″	1	2854A51	$12.78	2854A11	$14.59
9/64″	0.4″	1	2854A52	13.87	2854A34	15.83
5/32″	0.5″	1	2854A53	13.59	2854A12	15.50
3/16″	0.6″	1	2854A55	14.49	2854A14	16.58
13/64″	0.6″	1	2854A56	15.87	2854A15	18.08
7/32″	0.7″	1	2854A57	15.87	2854A16	18.08
1/4″	0.8″	1	2854A59	17.06	2854A18	19.50
17/64″	0.8″	1	2854A61	18.24	2854A19	20.75
9/32″	0.8″	1	2854A62	$18.24	2854A21	$20.92
5/16″	0.9″	1	2854A64	19.81	2854A23	22.50
21/64″	1″	1	2854A65	21.05	2854A24	24.00
3/8″	1.1″	1	2854A68	22.42	2854A27	25.50
25/64″	1.2″	1	2854A69	23.04	2854A28	26.34
27/64″	1.3″	1	2854A72	24.98	2854A31	28.50
7/16″	1.3″	1	2854A73	24.98	2854A32	28.50
1/2″	1.5″	1	2854A77	31.53	2854A33	35.92

Also Available: Wire gauge and letter sizes. Please specify exact size within the range listed.

Drill Bit Size Range	Material	O'all Lg.	
60-1	High-Speed Steel	6″	3161A96
60-1	High-Speed Steel	12″	3158A5
52-1	Cobalt Steel	6″	8952A4
32-1, A-Z	Carbide Tipped	12″	2854A41

High-Speed Steel Multidiameter Step Drill Bits

Each bit has cutting steps with progressively larger diameters for drilling a range of hole sizes in thin materials. All bits are high-speed steel and stay centered without a pilot hole, unless noted. ***Uncoated (bright finish)*** bits are for use on steel, aluminum, brass, bronze, and plastic. ***Long-Life TiN (titanium nitride) coated*** bits last longer than uncoated (bright finish) bits. They are for use on steel, stainless steel, nickel alloys, and titanium.

Individual Multidiameter Step Drill Bits

Drill Bit Size Range	Increments	No. of Sizes	Shank Dia.	Max. Material Thick.	Uncoated (Bright Finish)	Each	Long-Life TiN-Coated	Each
Fractional Size								
1/8″-1/2″	1/32″	13	1/4″	1/8″	8841A21	$18.43	89315A41	$24.62
3/16″-1/2″	1/16″	6	1/4″	1/4″	8841A22	18.43	89315A46	24.62
3/16″-7/8″	1/16″	12	3/8″	1/8″	8841A24	39.72	89315A42	52.96
1/4″-3/4″	1/16″	9	3/8″	1/8″	8841A23	33.26	89315A43	44.35
1/4″-1 3/8″	1/8″	10	7/16″	1/8″	8841A25	70.47	—	—
9/16″-1″	1/16″	8	7/16″	1/8″	8841A33■	38.04	89315A44■●	58.13
13/16″-1 3/8″	1/16″	10	7/16″	1/8″	8841A34■	78.06	89315A47■★	118.08
1/4″, 7/8″, 1 1/8″	—	3	3/8″	3/32″	—	—	89315A45	78.96
7/8″, 1 1/8″	—	2	7/16″	1/8″	8841A35	53.79	—	—
Metric Size								
4-12	1 mm	9	6.5 mm	5 mm	89275A11	19.24	89275A31	26.20
4-12	2 mm	5	6.5 mm	11 mm	89275A12	19.24	89275A32	26.20
4-22	2 mm	10	10 mm	5 mm	89275A14	41.49	89275A34	55.84
5-35	2-3 mm	13	11.1 mm	4 mm	89275A15	73.60	89275A35	98.96
6-18	2 mm	7	10 mm	5 mm	89275A13	34.74	89275A33	47.24
14-24	2 mm	6	11.1 mm	5 mm	89275A16■	39.74	—	—
20-34	2 mm	8	11.1 mm	5 mm	89275A17■	81.53	—	—

■ Requires a pilot hole. ● Shank diameter is 3/8″. ★ Shank diameter is 1/2″.

Multidiameter Step Drill Bit Sets

Uncoated (Bright Finish)—Come in a fitted case. *Set with 1/8″-3/4″ bits* contains one drill bit in each of the following size ranges: 1/8″-1/2″, 3/16″-1/2″, and 1/4″-3/4″. *Set with 1/8″-1 3/8″ bits* contains one drill bit in each of the following size ranges: 1/8″-1/2″, 3/16″-1/2″, 3/16″-7/8″, and 13/16″-1 3/8″.

Long-Life TiN-Coated—Comes in a nylon pouch. Contains one drill bit in each of the following size ranges: 1/8″-1/2″, 3/16″-1/2″, and 1/4″-3/4″.

Drill Bit Size Range	No. of Bits		Per Set
Uncoated (Bright Finish)			
1/8″-3/4″	3	8841A32	$67.38
1/8″-1 3/8″	4	8841A36	151.85
Long-Life TiN Coated			
1/8″-3/4″	3	89315A48	87.98

For information about drill bits and decimal equivalents, see pages 2428-2429.

Chamfering, Counterboring, and Countersinking Drill Bits

Style 1

Style 2

Style 3

With a point that matches the profile of common fasteners, these bits save time by chamfering, counterboring, or countersinking the hole as they drill. When you're done drilling, tap the hole and install your fastener. Each bit produces a range of hole diameters. They are uncoated (bright finish) high-speed steel with a 118° point angle. For use on carbon steel, alloy steel, and cast iron.

Styles 1 and 2—Also known as subland drill bits, these last longer than Style 3 bits because their diameters will not change, even after sharpening.

Style 1 is for drilling and chamfering holes (creating a beveled edge around the top of the hole) prior to tapping. The body has a large diameter and produces a 90° countersink angle that guides the tap. Percent of thread refers to the amount of thread engagement between interlocking threads. *Style 2* is for drilling and counterboring holes for socket head cap screws.

Style 3—Also known as step drill bits. Choose from bits for drilling and counterboring socket head cap screw holes and bits for drilling and countersinking 82° flat head machine screw holes. *Note:* After multiple sharpenings, the drill bit diameter may become smaller.

Style 1—Chamfering Bits

For Tap Size	% of Thread	Large Dia.	Small Dia.	Step Lg.	O'all Lg.		Each
6-32	78	0.156″	0.107″	5/16″	3 1/8″	29475A71	$39.53
8-32	69	0.188″	0.136″	3/8″	3 1/2″	29475A72	39.53
10-32	76	0.219″	0.159″	1/2″	3 3/4″	29475A74	40.03
1/4″-20	75	0.281″	0.201″	1/2″	4 1/4″	29475A75	39.16
1/4″-28	80	0.313″	0.213″	5/8″	4 1/2″	29475A76	41.04
5/16″-18	75	0.438″	0.257″	11/16″	5 1/2″	29475A77	$42.85
5/16″-24	75	0.375″	0.272″	11/16″	5″	29475A78	42.19
3/8″-16	77	0.438″	0.313″	3/4″	5 1/2″	29475A79	42.85
7/16″-14	75	0.5″	0.368″	3/4″	6″	29475A81	45.41

Style 2—Counterboring Bits

For Screw Size	Type of Fit♥	Large Dia.	Small Dia.	Step Lg.	O'all Lg.		Each
#6	B	0.234″	0.146″	5/16″	2 7/16″	29525A41	$35.01
#6	A	0.228″	0.141″	5/16″	3 7/8″	29525A42	35.10
#8	A	0.272″	0.164″	3/8″	2 11/16″	29525A44	35.41
#8	B	0.281″	0.175″	3/8″	4 1/4″	29525A47	36.01
#10	A	0.313″	0.19″	1/2″	2 13/16″	29525A48	35.83
#10	B	0.328″	0.206″	5/8″	4 5/8″	29525A49	36.31
#10	D	0.344″	0.206″	1/2″	4 3/4″	29525A51	37.27
1/4″	A	0.375″	0.25″	1/2″	5″	29525A53	41.10
1/4″	B	0.391″	0.266″	1/2″	5 1/8″	29525A54	$42.20
1/4″	C	0.406″	0.281″	1/2″	5 1/4″	29525A55	42.46
1/4″	D	0.406″	0.266″	1/2″	5 1/4″	29525A71	42.46
5/16″	A	0.469″	0.313″	5/8″	3 5/8″	29525A56	43.36
5/16″	C	0.5″	0.344″	5/8″	6″	29525A62	46.40
3/8″	B	0.578″	0.391″	3/4″	4 1/8″	29525A63	46.93
3/8″	C	0.594″	0.406″	3/4″	4 1/8″	29525A64	47.84

♥ A = exact. B = 1/64″ oversize head and body. C = 1/32″ oversize head and body. D = 1/32″ oversize head and 1/64″ oversize body.

Style 3—Counterboring and Countersinking Bits

For Screw Size	Step Lg.	*For Socket Head Cap Screw Holes* Large Dia.	Small Dia.	O'all Lg.		Each	*For 82° Flat Head Machine Screw Holes* Large Dia.	Small Dia.	O'all Lg.		Each
#6	1/2″	0.25″	0.15″	4″	8914A31	$14.81	0.281″	0.142″	4 1/4″	8914A51	$15.24
#8	1/2″	0.29″	0.178″	4 1/4″	8914A32	16.95	0.332″	0.169″	4 3/4″	8914A52	19.05
#10	5/8″	0.332″	0.204″	4 3/4″	8914A33	18.54	0.386″	0.196″	5 1/8″	8914A53	20.64
1/4″	11/16″	0.406″	0.281″	5 1/4″	8914A34	21.41	0.5″	0.257″	6″	8914A54	25.79
5/16″	3/4″	0.5″	0.344″	6″	8914A35	27.74	0.625″	0.32″	7 1/8″	8914A55	38.51
3/8″	7/8″	0.594″	0.406″	7 1/8″	8914A36	41.66	0.75″	0.383″	7 5/8″	8914A56	52.37
7/16″	1″	0.688″	0.469″	7 5/8″	8914A38	50.34	0.813″	0.446″	5 1/4″	8914A58	59.51
1/2″	1″	0.781″	0.531″	9 7/8″	8914A37	80.71	0.875″	0.51″	5 1/2″	8914A57	70.39

1/4″ and 3/8″ Diameter Reduced-Shank Drill Bits

1/4″ Shank Diameter

When you need to drill a large hole, but your chuck only accepts 1/4″ or 3/8″ shank diameter bits, these bits come to the rescue. The shank diameter of these bits is smaller than the drill bit size. For use in steel, stainless steel, aluminum, brass, and plastic. Bits with a 135° point angle have a split point that keeps the bit centered without a pilot hole. ***1/4″ shank diameter*** bits are uncoated (bright finish) high-speed steel with black-oxide treated flutes. They are about 20% shorter than jobbers' bits, unless noted. ***3/8″ shank diameter*** bits are black-oxide high-speed steel for more wear resistance than uncoated (bright finish) bits. They are the same length as jobbers' bits. ***Drill bit sets*** come in a metal case. All are uncoated (bright finish) unless noted.

1/4″ Shank Diameter—118° Point Angle

Drill Bit Size	O'all Lg.		Each	Drill Bit Size	O'all Lg.		Each
17/64″	3 1/2″	3038A11	$4.63	27/64″	4 9/16″	3038A22	$8.34
9/32″	3 19/32″	3038A12	4.69	7/16″	4 11/16″	3038A23	7.93
5/16″	3 27/32″	3038A14	4.69	29/64″	4 25/32″	3038A24	11.94
3/8″	4 1/4″	3038A18	6.07	15/32″	4 7/8″	3038A25	9.44
25/64″	4 11/32″	3038A19	7.78	31/64″	5″	3038A26	12.40
13/32″	4 15/32″	3038A21	7.35	1/2″	5″	3038A27	9.44

3/8″ Shank Diameter—135° Point Angle

Drill Bit Size	O'all Lg.		Each	Drill Bit Size	O'all Lg.		Each
25/64″	5 1/8″	8773A51	$9.63	29/64″	5 5/8″	8773A55	$13.06
13/32″	5 1/4″	8773A52	8.64	15/32″	5 3/4″	8773A56	11.83
27/64″	5 3/8″	8773A53	11.03	31/64″	5 7/8″	8773A57	14.23
7/16″	5 1/2″	8773A54	11.11	1/2″	6″	8773A58	14.11

1/4″ Shank Diameter Drill Bit Sets—118° Point Angle

Size Range	Increments	No. of Pieces		Per Set
1/16″-1/2″	32nds	15	2969A12♠	$54.45
1/16″-1/2″	64ths	29	2969A14♠	109.65

3/8″ Shank Diameter Drill Bit Sets—118° Point Angle

Size Range	Increments	No. of Pieces		Per Set
1/16″-1/2″	32nds	15	3135A39	$48.23
1/16″-1/2″	64ths	29	3135A44	86.46

♠ Sizes 1/16″-1/4″ are jobbers' length. Sizes 17/64″-1/2″ have black-oxide flutes.

1/2″ Diameter Reduced-Shank TiN-Coated Cobalt Steel Drill Bits

Protect against heat and abrasion with these long-life TiN-coated cobalt steel drill bits. Also known as Silver and Deming bits, the 1/2″ dia. shank allows you to drill large holes using a tool or machine with a 1/2″ or 3/4″ chuck. The shank dia. is smaller than the drill bit size. All have a 118° angle with a split point that keeps the bit centered without a pilot hole. Drilling depth is 3 1/8″. For use on steel and cast iron.

Drill Bit Size	O'all Lg.		Each	Drill Bit Size	O'all Lg.		Each
17/32″	6″	3322A12	$33.98	25/32″	6″	3322A29	$61.17
9/16″	6″	3322A14	34.47	13/16″	6″	3322A32	61.67
19/32″	6″	3322A16	45.32	27/32″	6″	3322A34	66.74
5/8″	6″	3322A18	45.32	7/8″	6″	3322A36	66.75
21/32″	6″	3322A21	49.33	29/32″	6″	3322A38	73.18
11/16″	6″	3322A23	49.33	15/16″	6″	3322A41	74.08
23/32″	6″	3322A25	53.65	31/32″	6″	3322A43	84.57
3/4″	6″	3322A27	54.16	1″	6″	3322A45	84.95

For information about drill bits and decimal equivalents, see pages 2428-2429.

1/2″ Diameter Reduced-Shank Drill Bits

Also known as Silver and Deming bits, these have a 1/2″ diameter shank that allows you to drill large holes using a tool or machine with a 1/2″ or 3/4″ chuck. The shank diameter is smaller than the drill bit size. Overall length is 6″ and drilling depth is 2.1″. ***Slip-resistant shank*** bits have three flats to prevent the bit from slipping in the chuck.

135° Point Angle— A split point keeps the bit centered without a pilot hole. *Black-oxide high-speed steel* bits are for use on steel, cast iron, brass, bronze, and plastic. ***118° Point Angle—****Black-oxide high-speed steel* bits are for use on steel and cast iron. *Long-life TiN (titanium nitride) coated high-speed steel* bits last longer than black-oxide high-speed steel bits and are for use on steel, aluminum, brass, bronze, nickel alloys, and plastic. *Uncoated (bright finish) cobalt steel* bits perform better than high-speed steel bits on hard metals. Use on carbon and alloy steel, stainless steel, ductile iron, nickel alloys, titanium, and fiberglass. *Carbide-tipped* bits resist wear better than high-speed steel and cobalt steel bits. Use on cast iron, brass, bronze, and plastic.

Round Shank, 118° Point Angle

Slip-Resistant Shank, 118° Point Angle

Fractional Size, Black-Oxide High-Speed Steel—135° Point Angle

Drill Bit Size	Slip-Resistant Shank	Each	Drill Bit Size	Slip-Resistant Shank	Each	Drill Bit Size	Slip-Resistant Shank	Each	Drill Bit Size	Slip-Resistant Shank	Each	Drill Bit Size	Slip-Resistant Shank	Each
33/64″	2905A11	$19.91	37/64″	2905A15	$22.78	5/8″	2905A18	$22.75	43/64″	2905A22	$26.46	23/32″	2905A25	$26.68
17/32″	2905A12	18.98	19/32″	2905A16	21.70	41/64″	2905A19	25.46	11/16″	2905A23	25.19	47/64″	2905A26	29.21
35/64″	2905A13	21.21	39/64″	2905A17	23.85	21/32″	2905A21	24.24	45/64″	2905A24	28.03	3/4″	2905A27	27.80
9/16″	2905A14	20.20												

Fractional Size, Black-Oxide High-Speed Steel—118° Point Angle

Drill Bit Size	Round Shank	Each	Slip-Resistant Shank	Each	Drill Bit Size	Round Shank	Each	Slip-Resistant Shank	Each	Drill Bit Size	Round Shank	Each	Slip-Resistant Shank	Each
1/2″	2933A23	$16.90			51/64″	2933A61	$33.27	29415A41	$36.35	13/32″	2933A77	$53.17	29415A62	$53.26
33/64″	2933A51	18.16	29415A21	$19.84	13/16″	2933A35	28.98	29415A42	31.65	17/64″	2933A69	57.02	29415A63	57.16
17/32″	2933A25	17.69	29415A22	19.28	53/64″	2933A62	34.42	29415A43	37.58	1 1/8″	2933A44	54.58	29415A64	56.78
35/64″	2933A52	19.30	29415A23	21.14	27/32″	2933A36	29.99	29415A44	32.75	19/64″	2933A78	58.25	29415A65	58.43
9/16″	2933A26	18.78	29415A24	20.56	55/64″	2933A63	35.69	29415A45	39.05	1 5/32″	2933A79	56.67	29415A66	56.81
37/64″	2933A53	20.72	29415A25	22.68	7/8″	2933A37	31.12	29415A46	34.03	1 11/64″	2933A81	62.54	29415A67	62.72
19/32″	2933A27	20.18	29415A26	22.04	57/64″	2933A64	37.27	29415A47	40.78	1 3/16″	2933A45	59.88	29415A68	62.32
39/64″	2933A54	21.71	29415A27	23.78	29/32″	2933A39	32.51	29415A48	35.50	1 13/64″	2933A82	67.33	29415A69	67.52
5/8″	2933A28	21.12	29415A28	23.10	59/64″	2933A65	39.87	29415A49	43.62	1 7/32″	2933A83	66.94	29415A71	67.10
41/64″	2933A55	23.19	29415A29	25.32	15/16″	2933A41	34.74	29415A51	38.00	1 15/64″	2933A84	68.79	29415A72	68.99
21/32″	2933A29	22.56	29415A31	24.66	61/64″	2933A66	42.15	29415A52	46.09	1 1/4″	2933A46	66.31	29415A73	67.11
43/64″	2933A56	24.10	29415A32	26.33	31/32″	2933A47	36.74	29415A53	40.16	1 9/32″	2933A85	77.44	29415A74	77.61
11/16″	2933A31	23.47	29415A33	25.63	63/64″	2933A67	46.93	29415A54	51.30	1 5/16″	2933A71	82.06	29415A77	89.68
45/64″	2933A57	24.41	29415A34	26.68	1″	2933A42	40.88	29415A55	44.69	1 11/32″	2933A86	89.02	29415A75	89.28
23/32″	2933A32	23.75	29415A35	25.95	1 1/64″	2933A68	56.21	29415A56	61.44	1 3/8″	2933A72	94.35	29415A82	103.12
47/64″	2933A58	26.59	29415A36	29.03	1 1/32″	2933A74	49.88	29415A57	54.50	1 13/32″	2933A87	109.83	29415A76	120.00
3/4″	2933A33	25.83	29415A37	28.24	1 3/64″	2933A75	51.26	29415A58	51.39	1 7/16″	2933A88	102.41	29415A78	113.42
49/64″	2933A59	28.36	29415A38	30.98	1 1/16″	2933A43	47.98	29415A59	49.98	1 15/32″	2933A89	120.75	29415A79	118.90
25/32″	2933A34	27.58	29415A39	30.17	1 5/64″	2933A76	52.97	29415A61	53.08	1 1/2″	2933A73	114.15	29415A91	124.76

Fractional Size, Long-Life TiN-Coated High-Speed Steel—118° Point Angle

Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each
17/32″	8512A23	$29.82	5/8″	8512A29	$34.59	3/4″	8512A38	$44.92	7/8″	8512A46	$49.74	1″	8512A55	$61.40
9/16″	8512A25	32.58	11/16″	8512A34	41.17	13/16″	8512A42	47.95	15/16″	8512A51	56.24			

Fractional Size, Uncoated (Bright Finish) Cobalt Steel—118° Point Angle

Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each
33/64″	8939A41	$33.48	5/8″	8939A12	$43.91	47/64″	8939A49	$46.93	53/64″	8939A53	$65.60	59/64″	8939A56	$73.73
17/32″	8939A42	33.48	41/64″	8939A46	42.48	3/4″	8939A14	46.93	27/32″	8939A24	67.07	15/16″	8939A17	73.73
35/64″	8939A43	33.48	21/32″	8939A21	43.53	49/64″	8939A51	60.35	55/64″	8939A54	65.82	61/64″	8939A57	73.52
9/16″	8939A11	33.51	43/64″	8939A47	43.03	25/32″	8939A23	60.35	7/8″	8939A16	63.89	31/32″	8939A26	73.52
37/64″	8939A44	41.30	11/16″	8939A13	43.03	51/64″	8939A52	60.87	57/64″	8939A55	72.99	63/64″	8939A58	73.52
19/32″	8939A19	42.31	45/64″	8939A48	46.93	13/16″	8939A15	60.87	29/32″	8939A25	72.99	1″	8939A18	73.52
39/64″	8939A45	43.91	23/32″	8939A22	46.93									

Fractional Size, Carbide Tipped—118° Point Angle

Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each	Drill Bit Size	Round Shank	Each
1/2″	8871A11	$39.03	21/32″	8871A16	$74.10	25/32″	8871A21	$92.31	29/32″	8871A25	$98.54	11/16″	8871A31	$110.04
17/32″	8871A12	57.10	11/16″	8871A17	77.00	13/16″	8871A22	92.50	15/16″	8871A26	99.56	1 1/8″	8871A33	114.87
9/16″	8871A13	59.17	23/32″	8871A18	79.90	27/32″	8871A23	92.50	1″	8871A28	105.11	1 1/4″	8871A37	136.08
5/8″	8871A15	68.35	3/4″	8871A19	83.71	7/8″	8871A24	96.22	1 1/32″	8871A29	101.49			

Metric Size, Black-Oxide High-Speed Steel—118° Point Angle

Drill Bit Size, mm	Round Shank	Each	Drill Bit Size, mm	Round Shank	Each
14	3091A31	$21.16	22	3091A48	$37.05
15	3091A33	22.76	24	3091A53	41.80
16	3091A35	25.08	26	3091A57	54.65
17	3091A37	26.78	27	3091A59	56.25
18	3091A39	28.28	28	3091A62	62.31
19	3091A42	30.27	29	3091A64	64.42
20	3091A44	31.96	30	3091A66	67.15
21	3091A46	33.96	31	3091A68	72.24

Fractional Size Drill Bit Sets

Size Range	Increments	Point Angle	No. of Pieces	Case Style		Per Set
Black-Oxide High-Speed Steel, Round Shank						
1/2″-1″	64ths	118°	33	Metal Stand	2933A97★	$901.66
17/32″-1″	32nds	118°	16	Wood Stand	2933A98	403.25
9/16″-1″	16ths	118°	8	Metal Case	2933A99	237.55
Black-Oxide High-Speed Steel, Slip-Resistant Shank						
1/2″-1″	64ths	118°	33	Metal Stand	29415A93	829.02
17/32″-1″	32nds	118°	16	Wood Stand	29415A92	437.36
9/16″-1″	16ths	118°	8	Metal Case	29415A94	263.29
Long-Life TiN-Coated High-Speed Steel, Round Shank						
9/16″-1″	16ths	118°	8	Metal Stand	8512A62	398.74
Uncoated (Bright Finish) Cobalt Steel, Round Shank						
9/16″-1″	16ths	118°	8	Metal Case	8939A31	396.14

★ Uncoated (bright finish) with black-oxide flutes.

For information about drill bits and decimal equivalents, see pages 2428-2429.

Extended-Reach 1/2″ Diameter Reduced-Shank Drill Bits

Drill deep, large holes using toolholders that accept a 1/2″ diameter bit—the shank diameter on these bits is smaller than the drill bit size. For use on cast iron and steel. Drill bits are black-oxide high-speed steel with a 118° point angle. Overall length is 12″ and drilling depth is 9″.

Also Available: Bits with an 18″ overall length and 12″ drilling depth. Please ask for 2464A71 and specify size.

Drill Bit Size		Each	Drill Bit Size		Each	Drill Bit Size		Each	Drill Bit Size		Each	Drill Bit Size		Each
17/32″	2464A11	$38.56	39/64″	2464A15	$42.03	11/16″	2464A19	$49.33	3/4″	2464A24	$54.30	7/8″	2464A28	$71.07
9/16″	2464A12	38.56	5/8″	2464A16	44.08	45/64″	2464A21	52.52	49/64″	2464A25	58.27	59/64″	2464A29	75.52
37/64″	2464A13	40.78	41/64″	2464A17	47.37	23/32″	2464A22	52.52	25/32″	2464A26	58.27	15/16″	2464A31	75.52
19/32″	2464A14	40.78	21/32″	2464A18	47.37	47/64″	2464A23	54.30	13/16″	2464A27	61.67	1″	2464A32	86.85

Hole-Enlarging 1/2″ Diameter Reduced-Shank Drill Bits

Enlarge an existing hole using your 1/2″ capacity toolholder (unless noted) without altering the hole depth. These bits have four flutes for precise hole enlarging and a slip-resistant shank. All are tool steel with a black-and-gold-oxide treatment for use on steel, stainless steel, cast iron, nickel alloys, aluminum, brass, titanium, and plastic. Bit length is 4 5/16″ and drilling depth is 1 3/4″.

Drill Bit Size	Min. Starting Hole Size		Each	Drill Bit Size	Min. Starting Hole Size		Each
3/8″	1/4″	30455A61●	$19.88	5/8″	25/64″	30455A64	$37.73
1/2″	5/16″	30455A62	25.96	11/16″	7/16″	30455A65	42.15
9/16″	3/8″	30455A63	33.82	3/4″	15/32″	30455A66	45.95

● Shank dia. is 3/8″.

8-Piece Hole-Enlarging Drill Bit Set—Includes hole-enlarging drill bit sizes 3/8″, 1/2″, 5/8″, and 3/4″. Also includes 1/4″, 5/16″, 25/64″, and 15/32″ hole-starting bits with a 135° point angle. Comes in a metal case.

30455A71 ..... **Per Set** $123.82

3/4″ Diameter Reduced-Shank Drill Bits

Our largest drill bit sizes have a 3/4″ shank diameter for use in your 3/4″ capacity or larger toolholder. Overall length is 6″ and drilling depth is 2.1″.

High-speed steel bits are uncoated (bright finish) with black-oxide treated flutes and a 118° point angle. For use on steel, stainless steel, cast iron, aluminum, brass, and plastic. ***Cobalt steel*** bits stay sharp at the high temperatures generated when drilling stainless steel, nickel alloys, and titanium alloys. They are uncoated (bright finish) and have a 135° point angle with a split point that keeps the bit centered without a pilot hole.

Drill Bit Size	*High-Speed Steel*	Each	*Cobalt Steel*	Each	Drill Bit Size	*High-Speed Steel*	Each	*Cobalt Steel*	Each
1″	8772A11	$53.51	8814A41	$75.63	1 3/8″	8772A17	$113.89	8814A47	$174.30
1 1/32″	8772A31	64.00	8814A31	90.80	1 7/16″	8772A18	126.89	8814A48	191.73
1 1/16″	8772A12	64.00	8814A42	90.80	1 15/32″	8772A38	132.16	—	—
1 3/32″	8772A32	68.18	—	—	1 1/2″	8772A19	135.91	8814A49	210.90
1 1/8″	8772A13	71.38	8814A43	103.15	1 9/16″	8772A21	145.73	8814A54	228.60
1 5/32″	8772A33	72.73	8814A33	113.22	1 5/8″	8772A22	162.02	—	—
1 3/16″	8772A14	79.82	8814A44	113.22	1 11/16″	8772A39	185.87	—	—
1 7/32″	8772A34	86.33	—	—	1 3/4″	8772A24	187.87	8814A52	303.82
1 1/4″	8772A15	87.98	8814A45	125.28	1 13/16″	8772A25	210.56	—	—
1 9/32″	8772A35	98.96	—	—	1 7/8″	8772A26	215.07	—	—
1 5/16″	8772A16	102.84	8814A46	153.67	1 15/16″	8772A27	226.02	—	—
1 11/32″	8772A36	109.60	—	—	2″	8772A28	234.58	8814A53	382.12

Micro-Size Drill Bits

The smallest of our drill bit sizes, these bits are for drilling extremely small holes. They are uncoated (bright finish) and have a 118° point angle.

High-speed steel bits are for use on steel, cast iron, aluminum, brass, and bronze. The shank diameter is the same as the drill bit size.

Cobalt steel bits maintain a sharp edge at the high temperatures generated when drilling stainless steel and titanium. Also for use on steel, aluminum, copper, brass, and plastic. These bits have a 0.0394″ (1 mm) shank diameter.

High-Speed Steel

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦	Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦	Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦
0.0059″	3/4″	0.04″	12	2951A11	$9.56	0.011″	3/4″	0.09″	12	2951A25	$4.94	0.0181″	25/32″	0.16″	12	2951A36	$3.00
0.0063″	3/4″	0.04″	12	2951A12	9.56	0.0114″	3/4″	0.09″	12	2951A26	4.94	0.0189″	25/32″	0.15″	12	2951A37	3.00
0.0067″	3/4″	0.04″	12	2951A13	8.65	0.0118″	3/4″	0.09″	12	2951A27	4.72	0.0197″	7/8″	0.19″	12	2951A38	3.00
0.0071″	3/4″	0.04″	12	2951A14	8.65	0.0126″	3/4″	0.13″	12	2951A28	4.16	0.0217″	15/16″	0.23″	12	2951A42	3.00
0.0075″	3/4″	0.04″	12	2951A15	6.88	0.0134″	3/4″	0.13″	12	2951A29	3.53	0.0236″	15/16″	0.22″	12	2951A43	3.00
0.0079″	3/4″	0.08″	12	2951A16	6.88	0.0138″	3/4″	0.12″	12	2951A39	3.53	0.0256″	1 1/32″	0.26″	12	2951A44	3.00
0.0083″	3/4″	0.08″	12	2951A17	6.88	0.0142″	3/4″	0.12″	12	2951A31	3.53	0.0276″	1 3/32″	0.29″	12	2951A45	2.41
0.0087″	3/4″	0.08″	12	2951A18	6.88	0.015″	3/4″	0.12″	12	2951A32	3.00	0.0295″	1 3/32″	0.29″	12	2951A46	2.22
0.0091″	3/4″	0.08″	12	2951A19	6.88	0.0157″	25/32″	0.16″	12	2951A33	3.00	0.0315″	1 3/16″	0.33″	12	2951A47	1.97
0.0094″	3/4″	0.07″	12	2951A21	6.88	0.0165″	25/32″	0.16″	12	2951A34	3.00	0.0335″	1 3/16″	0.32″	12	2951A48	2.09
0.0098″	3/4″	0.09″	12	2951A22	5.47	0.0173″	25/32″	0.16″	12	2951A35	3.00	0.0354″	1 1/4″	0.36″	12	2951A49	2.03
0.0102″	3/4″	0.09″	12	2951A23	5.47	0.0177″	25/32″	0.16″	12	2951A41	3.00	0.0374″	1 1/4″	0.35″	12	2951A51	2.09
0.0106″	3/4″	0.09″	12	2951A24	4.94												

♦ Prices are 20% lower when you order in full-package quantities.

Cobalt Steel

Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦	Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦	Drill Bit Size	O'all Lg.	Drilling Depth	Pkg. Qty.		Each ♦
0.002″	63/64″	0.01″	10	8904A11	$15.40	0.0059″	63/64″	0.03″	10	8904A22	$12.98	0.0118″	63/64″	0.06″	10	8904A38	$8.65
0.0024″	63/64″	0.01″	10	8904A12	15.40	0.0071″	63/64″	0.04″	10	8904A25	12.98	0.0126″	63/64″	0.06″	10	8904A41	8.77
0.0028″	63/64″	0.01″	10	8904A13	15.15	0.0075″	63/64″	0.04″	10	8904A26	12.98	0.013″	63/64″	0.07″	10	8904A42	9.11
0.0031″	63/64″	0.02″	10	8904A14	14.89	0.0079″	63/64″	0.04″	10	8904A27	9.29	0.0142″	63/64″	0.07″	10	8904A45	9.11
0.0039″	63/64″	0.02″	10	8904A16	14.64	0.0087″	63/64″	0.04″	10	8904A29	9.10	0.015″	63/64″	0.08″	10	8904A47	9.11
0.0043″	63/64″	0.02″	10	8904A17	14.89	0.0098″	63/64″	0.05″	10	8904A33	8.39	0.0181″	63/64″	0.09″	10	8904A56	9.11
0.0047″	63/64″	0.02″	10	8904A18	15.15	0.0102″	63/64″	0.05″	10	8904A34	9.11	0.0189″	63/64″	0.09″	10	8904A58	9.11
0.0051″	63/64″	0.03″	10	8904A19	14.89	0.0106″	63/64″	0.05″	10	8904A35	9.00	0.0197″	63/64″	0.1″	10	8904A61	8.73
0.0055″	63/64″	0.03″	10	8904A21	12.85	0.011″	63/64″	0.06″	10	8904A36	8.72						

♦ Prices are 20% lower when you order in full-package quantities.

For information about drill bits and decimal equivalents, see pages 2428-2429.

Carbide Small-Diameter Drill Bits with 1/8″ Shank

A 1/8″ shank diameter allows for fast changes between small drill bit sizes—eliminating the need for different collets to hold each bit size. All bits are made of uncoated (bright finish) solid carbide for use on steel, stainless steel, aluminum, brass, fiberglass, and plastic. They have a 130° point angle.

Fractional Size

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/64″	1 1/2″	0.27″	2841A91	$6.95
1/32″	1 1/2″	0.39″	2841A92	4.51
3/64″	1 1/2″	0.39″	2841A93	4.51
1/16″	1 1/2″	0.41″	2841A94	4.51
5/64″	1 1/2″	0.41″	2841A95	5.60
3/32″	1 1/2″	0.41″	2841A96	5.60
7/64″	1 1/2″	0.41″	2841A97	5.60
1/8″	1 1/2″	0.41″	2841A98	5.60

Wire Gauge Size

To Order: Please specify exact size within the range listed.

Drill Bit Size Range	O'all Lg.	Drilling Depth		Each
80-79	1 1/2″	0.27″	2841A25	$6.95
78-77	1 1/2″	0.27″	2841A28	6.28
76-73	1 1/2″	0.33″	2841A24	4.98
72-52	1 1/2″	0.39″	2841A23	4.51
51-31	1 1/2″	0.41″	2841A21	5.60

Taper-Shank Drill Bits

The Morse taper shank on these bits fits directly into the tapered spindle hole of machines such as drill presses as well as Morse taper size adapters (also known as sleeves and sockets; see Morse Taper Size Adapters on page 2427). ***Black-oxide high-speed steel*** bits have a 118° point angle. For use on steel, cast iron, and plastic. ***Cobalt steel*** bits offer more heat resistance than high-speed steel. They are uncoated (bright finish) and have a 135° point angle with a split point that stays centered without a pilot hole.

Also Available: Black-oxide high-speed steel metric size bits with a 118° point angle. Please ask for 3070A41 and specify size.

Black-Oxide High-Speed Steel—118° Point Angle

Drill Bit Size	Morse Taper No.	O'all Lg.	Drilling Depth		Each
3/16″	1	5 3/4″	2.2″	2929A325	$12.34
13/64″	1	6″	2.4″	2929A331	11.27
1/4″	1	6 1/8″	2.5″	2929A334	13.53
17/64″	1	6 1/4″	2.6″	2929A335	14.09
9/32″	1	6 1/4″	2.6″	2929A336	14.09
5/16″	1	6 3/8″	2.7″	2929A343	14.60
3/8″	1	6 3/4″	2.9″	2929A352	18.61
13/32″	1	7″	3″	2929A354	19.04
27/64″	1	7 1/4″	3.2″	2929A359	20.76
7/16″	1	7 1/4″	3.2″	2929A361	20.76
29/64″	1	7 1/2″	3.4″	2929A362	23.63
31/64″	2	8 1/4″	3.6″	2929A364	24.13
1/2″	2	8 1/4″	3.6″	2929A365	24.28
33/64″	2	8 1/2″	3.9″	2929A368	25.01
17/32″	2	8 1/2″	3.8″	2929A372	26.02
35/64″	2	8 3/4″	4.1″	2929A373	27.98
9/16″	2	8 3/4″	4″	2929A374	28.63
37/64″	2	8 3/4″	4″	2929A375	30.53
19/32″	2	8 3/4″	4″	2929A381	30.82
39/64″	2	8 3/4″	4″	2929A382	31.42
5/8″	2	8 3/4″	3.9″	2929A383	31.48
41/64″	2	9″	4.2″	2929A384	$33.38
21/32″	2	9″	4.1″	2929A385	33.38
43/64″	2	9 1/4″	4.4″	2929A386	34.45
11/16″	2	9 1/4″	4.3″	2929A392	34.86
45/64″	2	9 1/2″	4.6″	2929A393	37.18
23/32″	2	9 1/2″	4.5″	2929A394	37.30
47/64″	2	9 3/4″	4.8″	2929A395	41.16
3/4″	2	9 3/4″	4.8″	2929A411	41.70
49/64″	2	9 7/8″	4.9″	2929A412	45.20
25/32″	2	9 7/8″	4.8″	2929A413	46.45
51/64″	3	10 3/4″	4.9″	2929A414	48.29
13/16″	3	10 3/4″	4.9″	2929A415	48.35
53/64″	3	10 3/4″	4.9″	2929A416	51.79
27/32″	3	10 3/4″	4.9″	2929A422	51.91
55/64″	3	10 3/4″	4.8″	2929A423	53.34
7/8″	2	10″	4.8″	2929A511	71.69
7/8″	3	10 3/4″	4.8″	2929A424	54.05
29/32″	3	10 3/4″	4.8″	2929A426	57.08
59/64″	3	10 3/4″	4.7″	2929A427	57.68
15/16″	3	10 3/4″	4.7″	2929A433	58.39
31/32″	3	11″	4.9″	2929A435	61.24
63/64″	3	11″	4.9″	2929A436	$61.89
1″	3	11″	4.9″	2929A442	62.72
1 1/64″	3	11 1/8″	5″	2929A443	70.92
1 1/32″	3	11 1/8″	5″	2929A444	71.10
1 1/16″	3	11 1/4″	5″	2929A446	74.25
1 1/8″	3	11 3/4″	5.4″	2929A512	102.60
1 1/8″	4	12 3/4″	5.4″	2929A451	88.92
1 3/16″	4	13″	5.6″	2929A456	97.29
1 1/4″	3	12 1/2″	6″	2929A514	122.00
1 1/4″	4	13 1/2″	6″	2929A461	108.22
1 5/16″	4	14 1/4″	6.7″	2929A463	154.85
1 11/32″	4	14 3/8″	6.7″	2929A464	160.96
1 3/8″	4	14 1/2″	6.8″	2929A465	163.87
1 7/16″	4	14 3/4″	7″	2929A467	174.03
1 1/2″	4	15″	7.1″	2929A469	192.74
1 9/16″	5	16 5/8″	7.3″	2929A612	243.23
1 3/4″	4	16 1/4″	7.8″	2929A516	364.46
1 3/4″	5	17 1/8″	7.5″	2929A618	281.95
1 7/8″	5	17 3/8″	7.6″	2929A623	355.55
2″	4	16 5/8″	7.6″	2929A517	377.35
2″	5	17 3/8″	7.4″	2929A627	402.11

Cobalt Steel—135° Point Angle

Drill Bit Size	Morse Taper No.	O'all Lg.	Drilling Depth		Each
1/4″	1	6 1/8″	2.9″	3068A11	$16.33
3/8″	2	7 3/8″	3.5″	3068A15	25.84
1/2″	2	8 1/4″	4.4″	3068A19	33.04
17/32″	2	8 1/2″	4.6″	3068A21	38.87
9/16″	2	8 3/4″	4.9″	3068A22	40.50
5/8″	2	8 3/4″	4.9″	3068A24	46.29
41/64″	2	9″	3.8″	3068A64	$65.19
21/32″	3	9 3/4″	5.1″	3068A25	52.31
11/16″	3	10″	5.4″	3068A26	57.13
3/4″	3	10 1/2″	5.9″	3068A28	66.31
13/16″	3	10 3/4″	6.1″	3068A31	71.81
7/8″	3	10 3/4″	6.1″	3068A32	$83.77
15/16″	3	10 3/4″	6.1″	3068A33	98.56
1″	3	11″	6.4″	3068A34	112.63
1 1/16″	4	12 1/4″	6.6″	3068A35	143.38
1 1/4″	4	13 1/2″	8.6″	3068A38	202.37

High-Speed Steel Hex-Shank Drill Bits

Slide these high-speed steel bits into your power screwdriver and other holders and drivers that accept a 1/4″ hex shank. All bits have a black-oxide treatment and a 130° point angle, except sizes 1/16″ and 3/32″, which have a 118° point angle. For use on steel, cast iron, aluminum, brass, copper, and plastic, unless noted.

Drill Bit Size	O'all Lg.	Drilling Depth		Each
1/16″	2 1/4″	0.18″	29305A11 ♠	$3.63
3/32″	2 7/16″	0.28″	29305A12 ♠	3.67
1/8″	2 5/8″	1.1″	29305A13	4.06
5/32″	2 13/16″	1.2″	29305A14	4.14
3/16″	3″	1.3″	29305A15	$4.77
7/32″	3 1/8″	1.4″	29305A16	5.50
1/4″	3 3/16″	1.5″	29305A17	6.60
5/16″	4″	2″	29305A41	9.30
3/8″	4″	2″	29305A42	$11.70
7/16″	4″	2″	29305A43	15.50
1/2″	4″	2″	29305A44	19.50

♠ Not rated for use with impact drivers. For use on steel and wood only.

7-Piece Drill Bit Set—Includes two each of size 1/8″ and one each of sizes 5/32″, 3/16″, 7/32″, 1/4″, and 5/16″.

29305A61 ..... **Per Set** $31.55

Cases and Stands for Drill Bits

Organize your individual drill bits in these compact cases and stands. They have one hole for each bit size listed. Holes are marked with the size and decimal equivalent, unless noted. All are made of steel, except 2961A61, which is made of high-impact plastic and is waterproof.

Combination Case for Jobbers' Drill Bits

Case for Jobbers' Drill Bits 2961A61

Case for Jobbers' Drill Bits 2961A12

Stand for Jobbers' and Extended-Reach Drill Bits

Holds Drill Bit Sizes	No. of Holes	Overall Size, Lg. × Wd. × Ht.		Each
Combination Cases for Jobbers' Drill Bits				
Fractional Size/Wire Gauge Size/Letter Size				
1/16″, 5/64″, 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, 27/64″, 7/16″, 1/2″, Nos. 29, 25, 21, 7, F, U	19	7″ × 4″ × 1 1/4″	2961A43●	$6.38
1/16″-1/2″(increments of 1/64″), Nos. 60-1, A-Z	115	13 1/2″ × 4 5/8″ × 2 1/4″	2798A12	33.33
1/16″-1/2″(increments of 1/64″), Nos. 80-1, A-Z	135	13 1/2″ × 4 5/8″ × 2 1/4″	2798A13	39.58
Fractional Size/Wire Gauge Size/Metric Size				
1/16″-1/2″(increments of 1/64″), Nos. 80-1, 1-13 mm (increments of 0.5 mm)	134	13 1/2″ × 4 5/8″ × 2 1/4″	2798A14	39.58
Cases for Jobbers' Drill Bits				
Fractional Size				
1/64″-1/4″ (increments of 1/64″)	16	5 3/8″ × 4″ × 5/16″	2961A27	7.66
1/16″-1/4″ (increments of 1/64″)	13	5 3/8″ × 4″ × 5/16″	2961A33	3.38
1/16″-1/2″ (increments of 1/64″)	29	3″ Dia. × 6 5/8″ Ht.	2961A61	11.85
1/16″-1/2″ (increments of 1/64″)	29	7″ × 4″ × 1 3/4″	2961A11	6.54
1/16″-1/2″ (increments of 1/32″)	15	7″ × 4″ × 1 1/4″	2961A22	6.31
1/16″-3/8″ (increments of 1/64″)	21	6″ × 4″ × 1 1/8″	2961A12	5.54
Wire Gauge Size				
Nos. 80-61	20	2″ × 1 1/2″ × 9/32″	2961A17	3.77
Nos. 60-1	60	4 1/2″ × 3 1/4″ × 1″	2961A16	6.16
Nos. 80-1	80	4 1/2″ × 3 1/4″ × 15/16″	2961A21	16.53
Letter Size				
A-Z	26	7″ × 4″ × 1 3/4″	2961A19	6.77
Metric Size				
1-5.9 mm (increments of 0.1mm)	50	4 1/2″ × 3 1/4″ × 1″	2961A31	8.62
1-7 mm (increments of 0.5 mm)	13	5 1/2″ × 4″ × 1/2″	2961A28	4.62
1-10 mm (increments of 0.5 mm)	19	6″ × 4″ × 1 1/8″	2961A29	6.46
1-13 mm (increments of 0.5 mm)	25	7″ × 4″ × 1 3/4″	2961A25	7.38
6-10 mm (increments of 0.1 mm)	41	7 1/8″ × 4 1/2″ × 2 1/2″	2961A32	18.46
Case for Extended-Reach Drill Bits (overall length less than 8″)				
1/16″-1/2″(increments of 1/64″)	29	8 3/4″ × 4″ × 1 3/4″	2961A34	16.76
Case for 1/2″ Reduced-Shank Diameter Drill Bits				
9/16″-1″(increments of 1/16″)	8	8 1/2″ × 6 1/4″ × 2″	2961A35●	17.70
Stands for Jobbers' and Extended-Reach Drill Bits				
Fractional Size				
1/16″-1/2″ (increments of 1/64″)	29	5 5/8″ × 2 5/8″ × 1 1/2″	2793A12	8.15
Letter Size				
A-Z	26	5 5/8″ × 2 5/8″ × 1 1/2″	2793A18	8.15
Stand for Jobbers' and Short-Length Drill Bits				
1/2″-1″ (increments of 1/64″)	33	13″ × 5″ × 2 3/4″	2793A24	39.53
Stand for 1/2″ Reduced-Shank Diameter Drill Bits				
1/2″-1″ (increments of 1/64″)	33	13″ × 5″ × 2 3/4″	2793A27	39.53

● Decimal equivalents are not indicated.

Drawer Cabinets for Drill Bits

Keep multiple drill bits of each size in order. Drill bit sizes and decimal equivalents are permanently marked on the drawers, unless noted. All cabinets are made of steel. ***Combination cabinets*** have a built-in lock with two keys. The bottom drawer is undivided for general storage. Stack up to three high. ***Standard cabinets*** can be stacked up to three high. *Fractional size 1/2″ reduced-shank diameter drill bit cabinets* hold two of each drill bit size. ***Undermount cabinets*** mount underneath a workbench or shelf with 1/4″ screws (not included). They have a built-in lock with two keys.

Combination Cabinet

Undermount Cabinet

Holds Drill Bit Sizes	No. of Drawers	No. of Compartments	Overall Size, Lg. × Wd. × Ht.		Each
Combination Cabinets					
Fractional Size/Letter Size/Wire Gauge Size					
1/16″-1/2″ (increments of 1/64″), A-Z, Nos. 60-1	4	159	26″ × 12″ × 12 1/2″	8922A31	$430.77
Metric Size					
0.35-2.5 mm (increments of 0.05 mm), 2.6-10 mm (increments of 0.1 mm), 10.2, 10.5, 10.8, 11, 11.2, 11.5, 11.8, 12, 12.2, 12.5, 13 mm	4	138	26″ × 12″ × 12 1/2″	8922A44●	430.77
Standard Cabinets					
Fractional Size					
1/16″-1/2″ (increments of 1/64″)	3	29	14 5/8″ × 7 3/8″ × 7 3/4″	2962A1	80.00
Letter Size					
A-Z	3	28	14 5/8″ × 7 3/8″ × 7 3/4″	2962A3	80.00
Wire Gauge Size					
Nos. 60-1	5	60	14 5/8″ × 7 3/8″ × 7 3/4″	2962A2	99.74
Nos. 80-1	5	84	14 5/8″ × 7 3/8″ × 7 3/4″	2962A8	103.64
Metric Size					
1-13 mm (increments of 0.5 mm)	3	29	14 5/8″ × 7 3/8″ × 7 3/4″	2962A4	83.64
1-6.9 mm (increments of 0.1 mm)	5	60	14 5/8″ × 7 3/8″ × 7 3/4″	2962A5	103.64
Fractional Size 1/2″ Reduced-Shank Diameter Drill Bits					
33/64″-63/64″ (increments of 1/64″)	5	60	14 5/8″ × 7 3/8″ × 7 3/4″	2755A31	151.45
1″, 1 1/32″, 1 1/16″, 1 1/8″, 1 5/32″, 1 3/16″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, and 1 1/2″	3	23	14 5/8″ × 7 3/8″ × 7 3/4″	2755A32	90.68
Undermount Cabinets					
Fractional Size					
1/16″-1/2″ (increments of 1/64″)	1	42	26 1/8″ × 12 1/2″ × 4 1/2″	2786A11	136.36
Letter Size					
A-Z	1	42	26 1/8″ × 12 1/2″ × 4 1/2″	2786A12	136.36
Wire Gauge Size					
Nos. 60-1	1	75	26 1/8″ × 12 1/2″ × 4 1/2″	2786A13	136.36
Open Storage					
No Dividers	1	1	26 1/8″ × 12 1/2″ × 4 1/2″	2786A14	110.65

● Decimal equivalents are not indicated.

Threaded-Shank Drill Bits

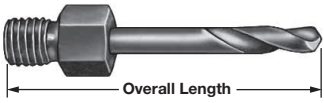

All bits have a 1/4″-28 threaded shank and with a 135° point angle with a split point that keeps the bit centered without a pilot hole. Bits are black-oxide high-speed steel. Use on steel, stainless steel, cast iron, aluminum, brass, and bronze. Meet NAS (National Aerospace Standard) 965, Type B.

Drill Bit Size	Short O'all Lg.		Medium O'all Lg.		Long O'all Lg.		Each
Fractional Size							
3/32″	3/4″	8824A62	1 1/4″	8824A47	2 3/8″	8824A33	$4.90
7/64″	3/4″	8824A26	1 1/4″	8824A25	2 3/8″	8824A24	9.35
1/8″	3/4″	8824A64	1 1/4″	8824A49	2 3/8″	8824A35	4.63
9/64″	13/16″	8824A29	—	—	2 3/8″	8824A27	10.40
5/32″	13/16″	8824A67	1 1/2″	8824A53	2 3/8″	8824A38	4.96
11/64″	13/16″	8824A76	1 1/2″	8824A75	2 3/8″	8824A74	10.65
3/16″	13/16″	8824A71	1 1/2″	8824A56	2 3/8″	8824A42	5.50
13/64″	—	—	1 1/2″	8824A88	2 3/8″	8824A87	10.75
7/32″	7/8″	8824A93	1 1/2″	8824A92	—	—	6.12
1/4″	7/8″	8824A73	1 1/2″	8824A58	2 3/8″	8824A44	5.27
Wire Gauge Size							
40	3/4″	8824A63	1 1/4″	8824A48	2 3/8″	8824A34	2.75
30	13/16″	8824A65	1 1/2″	8824A51	2 3/8″	8824A36	2.85
27	13/16″	8824A66	1 1/2″	8824A52	2 3/8″	8824A37	3.92
21	13/16″	8824A68	1 1/2″	8824A54	2 3/8″	8824A39	2.96
20	13/16″	8824A69	1 1/2″	8824A55	2 3/8″	8824A41	3.88
13	13/16″	8824A79	1 1/2″	8824A78	2 3/8″	8824A77	4.90
12	13/16″	8824A83	1 1/2″	8824A82	—	—	5.40
11	13/16″	8824A86	1 1/2″	8824A85	—	—	4.23
10	13/16″	8824A72	1 1/2″	8824A57	2 3/8″	8824A43	4.06

Diamond-Core Drill Bits for Masonry

Diamond particles attached to the hollow steel barrel provide fast cutting. Use for wet drilling of concrete and masonry as well as light to moderate amounts of steel reinforcing bar (rebar). Bits are 15 1/2″ long and have a drilling depth of 13″. Bit ID is approximately 1/4″ less than the OD. *Note:* Not suitable for dry drilling. Not for use with portable electric drills or grinders.

1″-1 1/2″ bits have 5/8″-11 threaded hubs. Add an optional thread adapter (sold separately) and use in drilling rigs (see 3165A31 on this page). *1 3/4″ and larger bits* have 1 1/4″-7 threaded hubs.

Bit OD		Each	Bit OD		Each
1″	2872A51	$88.80	3″	2872A57★	$173.68
1 1/8″	2872A29	94.20	3 1/2″	2872A37	211.20
1 1/4″	2872A52	109.20	4″	2872A58	244.27
1 3/8″	2872A31	111.00	4 1/2″	2872A59	298.74
1 1/2″	2872A53	113.40	5″	2872A61	319.47
1 3/4″	2872A54	126.60	6″	2872A62	346.56
2″	2872A55★	119.28	7″	2872A43	486.72
2 1/4″	2872A34	156.00	8″	2872A63	504.96
2 1/2″	2872A56	167.88	10″	2872A22	615.84
2 3/4″	2872A35	186.00	12″	2872A23	710.88

★ Overall length is 16 1/2″ and drilling depth is 14″.

Optional thread adapter lets you use core drill bits with 5/8″-11 threaded hubs on drilling rigs that have a 1 1/4″-7 threaded spindle. Overall length, including threads, is 5 3/8″.

2872A99 ..... **Each** $101.25

Hollow Drill Bits for Paper and Fabric

Razor-sharp cutting edges quickly cut through paper, fabric, and other soft materials. All bits are steel and have a 11/16″ shank diameter and a 3 1/8″ overall length.

These are standard Style A bits for use with Casco, Challenge, Climax, Lassco, Ottawa, and Super Speed paper-drilling machines.

Drill Bit Size	Max. Material Thickness		Each
1/8″	1″	3164A21	$31.25
3/16″	1 3/4″	3164A23	31.25
1/4″	2″	3164A25	31.25
5/16″	2″	3164A27	31.25
3/8″	2″	3164A29	31.25
7/16″	2″	3164A31	33.63
1/2″	2″	3164A33	31.25

Drill Press Diamond-Core Drill Bits for Glass and Nonmetallic Materials

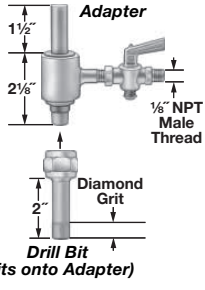

Hard, abrasive nonmetallic materials such as glass, alumina, quartz, ruby, and silica are no match for these bits. An adapter (sold separately below) is required for use. Bits are 2″ long with a 1/4″ of 100-grit diamonds.

Recommended operating speed is 1,800-2,400 rpm for OD sizes up to 1/2″ and 1,250-1,800 rpm for OD sizes 9/16″-1 1/4″. Recommended coolant is plain water.

Also Available: Other sizes from 7/64″ to 5″ OD in 1/64″ increments. Please ask for 2868A999 and specify bit OD.

Bit Size OD	ID		Each
3/32″	0.043″	2868A46	$108.15
1/8″	0.075″	2868A21	81.25
5/32″	0.106″	2868A22	76.69
3/16″	0.137″	2868A23	78.70
7/32″	0.169″	2868A27	80.81
1/4″	0.200″	2868A24	82.60
9/32″	0.231″	2868A28	84.94
5/16″	0.262″	2868A29	86.13
3/8″	0.325″	2868A25	91.66
7/16″	0.387″	2868A33	97.95
1/2″	0.446″	2868A26	101.86
9/16″	0.504″	2868A18	106.68
5/8″	0.562″	2868A35	111.89
3/4″	0.692″	2868A36	122.63
7/8″	0.817″	2868A38	133.69
1″	0.940″	2868A37	145.08
1 1/4″	1.190″	2868A39	187.23

Adapters— Required to connect the core drill bits above to a drill press. Attach the threaded nut on the bit to the adapter. Adapter is equipped with a water swivel.

Shank Dia.		Each
3/8″	2868A12	$134.77
1/2″	2868A11	134.77

Milwaukee Diamond-Core Drilling Rig

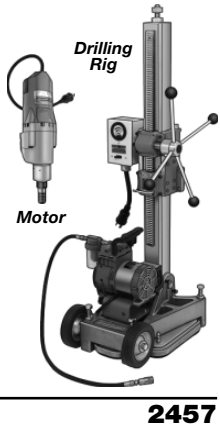

Roll this portable drill to where you need it and cut holes up to 10″ diameter in masonry, reinforced concrete, tile, marble, and natural stone. Drilling rig and motor are sold separately.

Drilling Rig— Has a rack-and-pinion feed mechanism and feed wheel that mounts on either side of the column. The column is 43 1/2″ high and it can be set at any angle up to 45° for 28″ of smooth and precise drill alignment. The base is cast aluminum and has two rubber wheels and a mounting slot to secure it to the floor or wall.

Rig includes a bubble level and vacuum base. The 1/3 hp, 115 VAC vacuum base provides 1,800 lbs. of holding force. Rig also has a 360° adjustable, 30 amp, 120 VAC meter box that indicates proper drilling pressure and speed. Power cord is 6-ft. long with a three-prong plug. Overall height is 47″; weight is 106 lbs.

Motor— Has triple gear reduction and a clutch to protect against overload. A built-in water swivel and adapter accepts a standard water hose and water control valve. Spindle thread size is 1 1/4″-7. Comes with a 2-ft. long power cord with NEMA L5-20P twist-lock plug. Operates on 120 VAC, 60 Hz, 20 amps. No load rpm is 450/900. Weight is 24 lbs.

Optional Spacer Assembly— Increases core bit OD capacity from 10″ to 14″.

		Each
Drilling Rig (Milwaukee No. 4136)	3165A31	$1,765.00
Motor (Milwaukee No. 4096)	3165A32	812.50
Optional Spacer Assembly	3165A33	89.00

About Masonry Drill Bits

Bits have alloy steel bodies with carbide tips that can be resharpened. Bits are made to ANSI standards (where applicable).

Hammer Drilling Bits

Also called percussion or impact bits, these bits drill holes using simultaneous rotary and hammering action to break masonry materials, such as concrete, into tiny granules. This dual action allows bits to drill faster and penetrate materials with less pressure than drilling-only bits. These bits can be used with hammer drills or rotary hammers. If you need a shank adapter, see our 89385A series on page 2460.

Drilling-Only Bits

These bits drill holes using rotary action. They don't break up masonry materials like hammer drilling bits, but they do grind it up when you apply pressure. Use these bits with portable electric drills, cordless drills, and hammer drills (rotary-mode only).

Drill Bit Shank Styles

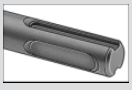

How to Avoid Premature Bit Failure

1. Do not let bit come into contact with embedded rebar (reinforcing bar). If you do encounter rebar, move the hole or switch to a rebar cutting bit, such as our 28655A series on page 2461.
2. Frequently withdraw the bit from the hole to clean out dust to lessen the chance of the drill bit binding in the hole.
3. Keep the bit's shank clean and lubricated.
4. Do not pour water into the hole while drilling. The extreme change in temperature may cause the bit's carbide tip to fail.

Spline-Shank Masonry Drill Bits for Rotary Hammers

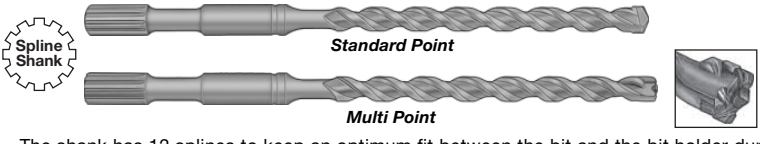

The shank has 12 splines to keep an optimum fit between the bit and the bit holder during the heavy impact produced by a spline-drive rotary hammer. Shank is 3/4" dia. ***Multi-point*** bits have five carbide cutters in the tip, resulting in less vibration, smoother and rounder holes, faster drilling, and longer bit life.

Standard Point

Bit Size	Drilling Depth	O'all Lg.		
3/8"	4"	10"	8783A18	$27.94
3/8"	8"	14"	8783A71	36.51
3/8"	12"	18"	8783A19	39.24
7/16"	8"	14"	8783A72	39.63
1/2"	6"	12"	8783A21	28.00
1/2"	8"	14"	8783A11	33.03
1/2"	12"	18"	8783A22	34.45
1/2"	16"	22"	8783A23	43.52
1/2"	22"	28"	8783A73	47.54
1/2"	36"	42"	8783A74	94.29
9/16"	8"	14"	8783A13	41.65
9/16"	12"	18"	8783A46	43.84
5/8"	6"	12"	8783A24	33.74
5/8"	8"	14"	8783A12	39.06
5/8"	12"	18"	8783A25	38.68
5/8"	16"	22"	8783A26	$47.90
5/8"	22"	28"	8783A77	62.82
11/16"	8"	14"	8783A15	43.52
11/16"	12"	18"	8783A47	46.33
3/4"	6"	12"	8783A27	35.42
3/4"	8"	14"	8783A16	43.66
3/4"	12"	18"	8783A28	44.12
3/4"	16"	22"	8783A29	46.63
3/4"	22"	28"	8783A79	64.39
13/16"	8"	14"	8783A61	43.89
13/16"	16"	22"	8783A62	56.86
7/8"	8"	14"	8783A17	51.93
7/8"	12"	18"	8783A31	48.22
7/8"	16"	22"	8783A32	55.64
7/8"	22"	28"	8783A82	68.91
1"	6"	12"	8783A33	$46.70
1"	8"	14"	8783A48	52.13
1"	12"	18"	8783A34	54.40
1"	16"	22"	8783A35	60.77
1"	22"	28"	8783A84	71.32
1 1/8"	8"	14"	8783A52	67.61
1 1/8"	12"	18"	8783A42	67.20
1 1/8"	16"	22"	8783A43	74.25
1 1/4"	8"	14"	8783A54	76.31
1 1/4"	12"	18"	8783A36	75.46
1 1/4"	16"	22"	8783A37	74.95
1 1/4"	22"	28"	8783A85	105.17
1 3/8"	16"	22"	8783A63	109.07
1 1/2"	12"	18"	8783A44	93.20
1 1/2"	16"	22"	8783A45	104.19

Multi Point

Bit Size	Drilling Depth	O'all Lg.		
5/8"	8"	14"	8809A11	$37.05
5/8"	12"	18"	8809A12	46.81
5/8"	36"	42"	8783A78	94.08
3/4"	8"	14"	8809A13	41.71
3/4"	12"	18"	8809A14	45.29
3/4"	16"	22"	8809A15	53.25
3/4"	36"	42"	8783A81	$99.63
7/8"	8"	14"	8809A18	51.91
7/8"	12"	18"	8809A19	63.29
7/8"	36"	42"	8783A83	113.29
1"	8"	14"	8809A16	48.36
1"	12"	18"	8809A17	54.65
1"	36"	42"	8783A51	$130.35
1 1/8"	16"	22"	8809A21	87.47
1 1/4"	16"	22"	8809A22	101.68
1 3/8"	16"	22"	8809A23	118.76
1 1/2"	16"	22"	8809A24	138.67
1 1/2"	36"	42"	8783A58	185.57

Tapered Round-Shank Masonry Drill Bits for Rotary Hammers

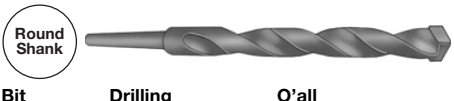

Also known as A-taper bits, they fit all rotary hammers with a taper-shank chuck. An adapter (sold separately) is required for use in spline-drive and SDS-Plus drive rotary hammers.

Adapters are made of steel and include a bit removal tool (also called a drift pin).

Bit Size	Drilling Depth	O'all Lg.		
1/4"	4 1/4"	6"	2808A31	$12.09
5/16"	4 1/4"	6"	2808A32	12.58
5/16"	7 1/4"	9"	2808A43	20.37
3/8"	4 1/4"	6"	2808A33	13.83
3/8"	7 1/4"	9"	2808A44	20.19
3/8"	10 1/4"	12"	2808A55	22.11
1/2"	4 1/4"	6"	2808A35	21.82
1/2"	7 1/4"	9"	2808A46	24.61
1/2"	10 1/4"	12"	2808A56	27.65
1/2"	17 1/4"	19"	2808A64	$46.10
9/16"	7 1/4"	9"	2808A47	26.57
9/16"	10 1/4"	12"	2808A57	30.92
5/8"	3 1/4"	5"	2808A37	27.11
5/8"	7 1/4"	9"	2808A48	27.05
5/8"	10 1/4"	12"	2808A58	35.62
3/4"	7 1/4"	9"	2808A51	36.25
3/4"	10 1/4"	12"	2808A61	40.85

Spline-Shank Adapter for Spline-Drive Rotary Hammers	2813A47	52.47
SDS-Plus Shank Adapter for SDS-Plus Drive Rotary Hammers	2813A53	41.09

For information about masonry drill bits, see page 2458.

SDS-Shank Masonry Drill Bits for Rotary Hammers

Designed to withstand the heavy blows from a rotary hammer.

SDS-Plus shank drill bits have two deep slots and two shallow slots on the shank for additional hold in your rotary hammer. Shank dia. is 0.393″. Use with an SDS-Plus drive rotary hammer and Hilti brand rotary hammer models TE-1 through TE-25.

SDS-Max shank drill bits have five slots on the shank—three deep slots for driving the bit in a rotary motion and two shallow slots for keeping a secure hold in the rotary hammer. This design adds strength and maximizes impact at the drill tip while minimizing wobble and vibration. Bits 5/8″ dia. and larger have five cutting edges rather than two, which enhances hole accuracy. Shank dia. is 0.708″. Use with an SDS-Max drive rotary hammer and Hilti brand rotary hammer models TE-50 through TE-94. Cannot be used with an SDS-Plus drive rotary hammer.

SDS-Max shank core bits have a one-piece design that provides power at impact. Multiple carbide tips cut on the outside edge for easier drilling of larger holes. Shank dia. is 0.708″. A pilot drill and ejector key are included. Use with an SDS-Max drive rotary hammer. Cannot be used with an SDS-Plus drive rotary hammer.

SDS-Plus Shank Bit

SDS-Max Shank Bit

SDS-Max Shank Core Bit

Bit Size	Drilling Depth	O'all Lg.		
SDS-Plus Shank Bits				
5/32″	2″	4 5/8″	8948A75	$7.85
5/32″	6″	8 5/8″	8948A76	15.71
3/16″	2″	4 3/8″	8948A49	5.32
3/16″	4″	6 3/8″	8948A11	5.18
3/16″	6″	8 5/8″	8948A51	9.02
3/16″	8″	10 5/8″	8948A52	11.60
3/16″	10″	12 5/8″	8948A53	15.01
3/16″	12″	14 5/8″	8948A54	16.16
7/32″	2 1/2″	4 3/4″	8948A55	6.30
7/32″	4″	6 5/8″	8948A56	6.50
7/32″	6″	8 5/8″	8948A57	9.60
7/32″	8″	10 1/4″	8948A58	10.14
7/32″	12″	14 5/8″	8948A61	12.83
1/4″	2″	4 3/8″	8948A62	4.54
1/4″	4″	6 3/8″	8948A13	5.07
1/4″	6″	8 5/8″	8948A63	6.73
1/4″	9″	11 5/8″	8948A64	10.55
1/4″	9 5/8″	12 1/4″	8948A65	13.23
1/4″	12″	14 5/8″	8948A66	14.30
1/4″	18″	20 5/8″	8948A77	22.17
5/16″	4″	6 5/8″	8948A14	6.83
5/16″	7 1/2″	9 3/4″	8948A15	9.11
5/16″	10″	12 5/8″	8948A16	15.69
3/8″	4″	6 5/8″	8948A17	6.80
3/8″	8″	10 5/8″	8948A18	12.38
3/8″	10″	12 5/8″	8948A19	12.59
3/8″	18″	20 5/8″	8948A21	25.16
3/8″	22″	24″	8948A93	27.48
3/8″	34″	36″	8948A94	71.46
7/16″	4″	6 5/8″	8948A22	9.93
7/16″	10″	12 5/8″	8948A23	15.91
7/16″	16″	18 5/8″	8948A24	19.36
1/2″	4″	6 5/8″	8948A25	8.65
1/2″	8″	10 5/8″	8948A26	15.33
1/2″	10″	12 5/8″	8948A27	15.30
1/2″	16″	18 5/8″	8948A28	22.59
1/2″	22″	24″	8948A78	35.48

5-Piece SDS-Plus Shank Drill Bit Set— Includes one each of sizes (bit size×o'all lg.) 3/16″×6″, 1/4″×6″, 5/16″×6″, 3/8″×6″, and 1/2″×6″. Comes in a plastic box.

8948A98 ..... $44.97

Bit Size	Drilling Depth	O'all Lg.		
SDS-Plus Shank Bits (Cont.)				
1/2″	36″	38″	8948A95	$57.09
9/16″	4″	6 3/4″	8948A29	12.15
9/16″	7 7/8″	10 1/8″	8948A31	15.56
9/16″	10″	12 3/4″	8948A32	20.60
9/16″	16″	18 3/4″	8948A33	31.67
5/8″	4″	6 3/4″	8948A34	14.11
5/8″	7″	9 3/4″	8948A35	16.25
5/8″	10″	12 3/4″	8948A36	25.61
5/8″	16″	18 3/4″	8948A37	32.87
5/8″	22″	24″	8948A81	46.62
5/8″	34″	36″	8948A96	76.37
11/16″	10″	12 3/4″	8948A38	29.61
3/4″	7″	9 3/4″	8948A39	27.24
3/4″	10″	12 3/4″	8948A41	28.96
3/4″	16″	18 3/4″	8948A42	39.45
3/4″	22″	24″	8948A83	42.12
13/16″	10″	12 3/4″	8948A43	32.89
27/32″	6″	8 3/4″	8948A44	35.10
7/8″	7″	9 3/4″	8948A45	37.27
7/8″	10″	12 3/4″	8948A46	38.16
7/8″	16″	18 3/4″	8948A47	48.27
1″	8″	10 3/4″	8948A84	38.70
1″	10″	13 1/8″	8948A48	45.71
1″	16″	18 3/4″	8948A67	62.13
1″	22″	25″	8948A85	66.36
1″	28″	30″	8948A97	68.18
1 1/8″	10″	12 3/4″	8948A86	71.16
1 1/8″	16″	18 3/4″	8948A87	83.78
SDS-Max Shank Bits				
3/8″	8″	14″	88705A42	38.51
3/8″	12″	18″	88705A43	43.24
7/16″	8″	14″	88705A44	39.38
1/2″	8″	14″	88705A11	41.26
1/2″	16″	22″	88705A12	56.56
1/2″	22″	28″	88705A45	61.51
9/16″	8″	14″	88705A13	48.75

6-Piece SDS-Plus Shank Drill Bit Set— Includes one each of sizes (bit size×o'all lg.) 3/16″×6 3/8″, 1/4″×6 3/8″, 5/16″×6 5/8″, 3/8″×6 5/8″, 1/2″×6 5/8″, and 1/2″×10 5/8″. Comes in a vinyl pouch.

8948A91 ..... $54.59

Bit Size	Drilling Depth	O'all Lg.		
SDS-Max Shank Bits (Cont.)				
5/8″	8″	14″	88705A15	$49.12
5/8″	12″	18″	88705A46	54.44
5/8″	16″	22″	88705A16	62.08
5/8″	36″	42″	88705A47	101.70
3/4″	8″	14″	88705A19	57.27
3/4″	12″	18″	88705A48	60.80
3/4″	16″	22″	88705A21	62.75
3/4″	36″	42″	88705A22	122.35
7/8″	8″	14″	88705A25	59.32
7/8″	12″	18″	88705A51	67.47
7/8″	16″	22″	88705A26	76.80
7/8″	36″	42″	88705A52	122.71
1″	8″	14″	88705A27	65.56
1″	12″	18″	88705A53	67.56
1″	16″	22″	88705A28	78.13
1″	36″	42″	88705A54	131.73
1 1/8″	8″	14″	88705A32	91.56
1 1/8″	16″	22″	88705A33	102.40
1 1/8″	36″	42″	88705A55	163.65
1 1/4″	8″	14″	88705A34	101.05
1 1/4″	16″	22″	88705A35	106.18
1 3/8″	16″	22″	88705A38	130.29
1 1/2″	16″	22″	88705A41	148.84
1 1/2″	36″	42″	88705A56	219.38
SDS-Max Shank Core Bits				
1 3/4″	7″	12″	88865A21	156.76
1 3/4″	17″	22″	88865A22	171.20
2″	7″	12″	88865A63	166.06
2″	17″	22″	88865A64	180.50
2 5/8″	7″	12″	88865A23	198.04
2 5/8″	17″	22″	88865A24	212.46
3 1/4″	7″	12″	88865A25	215.04
3 1/4″	17″	22″	88865A26	220.35
3 9/16″	7″	12″	88865A79	221.27
4″	12″	17″	88865A76	249.40
5″	17″	22″	88865A74	312.84

Replacement Pilot Drill and Ejector Key— For SDS-Max shank core bits.

88865A97 ..... $15.93

Chisels with Spline, SDS-Plus, and SDS-Max Shanks for Rotary Hammers

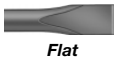

Flat

Bull Point

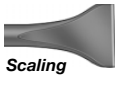

Scaling

Bushing Tool

Slotting

Seam

Chisels with spline shank have a combination 5/8″ dia. round and 3/4″ hex shank that works with all spline-drive rotary hammers.
Chisels with SDS-Plus shank have a 0.393″ dia. shank and work only in SDS-Plus rotary hammers.
Chisels with SDS-Max shank have a 0.708″ dia. shank and work only in SDS-Max rotary hammers.

Chisel Type	Application	With Spline Shank Wd.	Lg.			With SDS-Plus Shank Wd.	Lg.			With SDS-Max Shank Wd.	Lg.		
Flat	Edging/Chipping Masonry	1″	12″	28645A11	$15.71	3/4″	10″	28645A31	$19.16	1″	12″	28645A41	$19.54
Bull Point	Light Masonry Demolition	Pt.	12″	28645A12	15.71	Pt.	10″	28645A32	19.16	Pt.	12″	28645A42	19.54
Scaling	Remove Scale/Rust/Concrete	2″	12″	28645A51	27.12	1 1/2″	10″	28645A33	32.30	2″	12″	28645A52	34.01
Scaling	Remove Scale/Rust/Concrete	3″	12″	28645A13	41.39	—	—	—	—	3″	12″	28645A43	37.49
Bushing Tool	Finish Concrete Surfaces	1 3/4″	9 1/2″	28645A14	83.24	—	—	—	—	1 3/4″	9 1/2″	28645A46	84.44
Slotting	Slotting/Web Breaking	1 1/8″	12″	28645A15	24.44	—	—	—	—	1 1/8″	12″	28645A44	41.12
Seam	Remove Mortar Between Bricks	1 1/8″	15″	28645A16	20.66	—	—	—	—	1 1/8″	15″	28645A45	38.68

For information about masonry drill bits, see page 2458.

Shank Adapters for Rotary Hammers

89385A31

89385A32

89385A34

Quick-change adapters let you use a bit with a different shank style in your rotary hammer. Made of steel.

For Rotary Hammer Style	For Bit Style	O'all Lg.		
Spline Drive	SDS-Plus Shank	8″	89385A31	$66.73
SDS-Max Drive and Hilti Rotary Hammers	SDS-Plus Shank	8″	89385A32	76.63
SDS-Max Drive and Hilti Rotary Hammers	Spline Shank	10¾″	89385A34	105.40

Three-Piece Large-Hole Masonry Drill Bits for Rotary Hammers

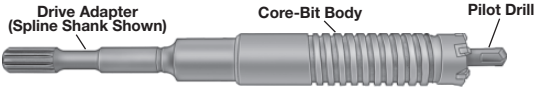

Complete Core Bit

Because they cut only on their outside edge, these bits are effective for drilling holes from 1″ to 5″ in diameter in demanding applications.

A complete core bit consists of a core-bit body, a drive adapter, and a pilot drill (each sold separately). Each component is made of alloy steel and has ¾″-10 threads for easy assembly and replacement of individual parts. Drilling depth is achieved in 4″ increments.

Core-bit bodies have carbide tips.

Spline-shank drive adapter fits all spline-drive rotary hammers.

SDS-Max shank drive adapter fits all SDS-Max shank rotary hammers.

Pilot drill has a carbide tip to make starting a hole easier.

Optional drive extensions are for use with 1¼″ to 5″ dia. core-bit bodies. Made of alloy steel.

Core-Bit Bodies

Bit Size	Length			Bit Size	Length		
1″	6″	3084A21	$130.95	2½″	6″	3084A27	$224.34
1⅛″	6″	3084A22	135.31	3″	6″	3084A29	305.00
1¼″	6″	3084A23	134.31	3½″	6″	3084A31	364.53
1½″	6″	3084A24	138.11	4″	6″	3084A32	425.00
1¾″	6″	3084A25	179.17	4½″	6″	3084A33	464.47
2″	6″	3084A26	206.71	5″	6″	3084A34	520.76

Drive Adapters and Pilot Drill

	Length		
Spline-Shank Drive Adapter	7″	3084A62	$54.48
SDS-Max Shank Drive Adapter	7¼″	3084A67	65.22
Pilot Drill for 1½″ to 5″ Bit Sizes	6″	3084A42	20.63

Accessories and Replacement Parts

Optional 6″ Drive Extension	3084A71	$31.08
Optional 12″ Drive Extension	3084A73	33.34
Optional 18″ Drive Extension	3084A75	47.49
Replacement Drive Adapter Thread	3084A78	8.24

Hex- and Round-Shank Masonry Drill Bits for Hammer Drills

Standard Hex Shank

Premium Round Shank

Use in hammer drills that have a three-jaw drill chuck.

Standard hex-shank bits are for use in concrete and masonry.

Premium round-shank bits penetrate faster than standard hex-shank bits. In addition to concrete and masonry, you can also use them on marble, granite, tile, hard metals, and plastics. Bits have serrations on the edges of the tips for faster, cooler cutting and longer life. Bits with shank diameters ⅜″ and larger have three flats on the shank for more secure gripping. *Note:* Bits should be used in a drill press when drilling hard metals.

Standard Hex Shank

Bit Size	Shank Dia.	Drilling Depth	O'all Lg.		
⅛″	⅛″	1⅜″	3″	8897A19●	$3.44
⅛″	⅛″	4″	6″	8897A64●	4.00
5/32″	5/32″	1⅜″	3″	8897A22●	3.43
5/32″	5/32″	4″	6″	8897A65●	4.17
11/64″	5/32″	1⅜″	3″	8897A21●	3.72
3/16″	3/16″	1½″	4″	8897A1	3.43
3/16″	3/16″	3⅞″	6″	8897A23	3.43
3/16″	3/16″	6″	8″	8897A66	5.73
7/32″	3/16″	4″	6″	8897A67	4.47
¼″	15/64″	2″	4″	8897A24	3.38
¼″	15/64″	4″	6″	8897A2	4.15
¼″	15/64″	12″	13½″	8897A51	8.91
9/32″	¼″	2″	4″	8897A3	5.18
5/16″	¼″	4″	6″	8897A25	5.06
5/16″	9/32″	2″	4″	8897A4	4.82
5/16″	9/32″	4″	6″	8897A5	5.06
5/16″	9/32″	12″	13½″	8897A52	10.02
3/8″	11/32″	2″	4″	8897A6	$5.44
3/8″	11/32″	4″	6″	8897A7	6.00
3/8″	11/32″	12″	13½″	8897A8	11.49
3/8″	11/32″	16″	18″	8897A9	15.09
3/8″	3/8″	10″	12″	8897A34	10.66
7/16″	3/8″	4″	6″	8897A11	7.23
½″	3/8″	2″	4″	8897A26	5.54
½″	3/8″	4″	6″	8897A12	8.70
½″	3/8″	12″	13½″	8897A13	12.65
½″	3/8″	16″	18″	8897A53	19.75
9/16″	3/8″	4″	6″	8897A27	6.89
9/16″	3/8″	12″	13½″	8897A35	13.46
⅝″	3/8″	4″	6″	8897A14	10.96
⅝″	3/8″	16″	18″	8897A15	23.32
⅝″	½″	12″	13½″	8897A54	16.35
11/16″	½″	4″	6″	8897A28	9.33
11/16″	½″	12″	13½″	8897A36	$14.08
¾″	3/8″	4″	6″	8897A16	14.48
¾″	½″	12″	13½″	8897A55	22.24
¾″	½″	16″	18″	8897A56	27.14
⅞″	½″	4″	6″	8897A17	17.44
⅞″	½″	12″	13½″	8897A57	25.70
⅞″	½″	16″	18″	8897A58	29.53
1″	½″	4″	6″	8897A18	20.95
1″	½″	12″	13½″	8897A59	28.90
1″	½″	16″	18″	8897A61	32.69
1⅛″	½″	4″	6″	8897A29	22.57
1⅛″	½″	12″	13½″	8897A62	32.43
1⅛″	½″	16″	18″	8897A63	37.13
1¼″	½″	4″	6″	8897A31	23.85
1⅜″	½″	4″	6″	8897A32	27.74
1½″	½″	4″	6″	8897A33	33.96

● Round shank.

6-Piece Standard Hex-Shank Drill Bit Set—Includes one each of sizes (bit size×drilling depth) ⅛″×1⅜″, 3/16″×3⅞″, ¼″×4″, 5/16″×4″, ⅜″×4″, and ½″×4″. Comes in a vinyl pouch.

8897A92 ..... $23.97

Premium Round Shank

Bit Size	Shank Dia.	Drilling Depth	O'all Lg.		
3/16″	3/16″	2⅜″	4″	2899A22	$7.16
3/16″	3/16″	4½″	6″	2899A19	7.58
3/16″	3/16″	6″	8″	2899A23	9.26
¼″	¼″	2¼″	4″	2899A24	7.58
¼″	¼″	3¾″	6″	2899A25	8.34
¼″	¼″	6″	8″	2899A26	$11.79
5/16″	¼″	2½″	4¼″	2899A27	10.10
5/16″	¼″	4″	6″	2899A28	10.95
⅜″	⅜″	4″	6″	2899A31	11.79
7/16″	¼″	4″	6″	2899A34	16.00
½″	⅜″	4″	6″	2899A33	$14.32
⅝″	½″	4″	6″	2899A35	19.36
¾″	½″	4″	6″	2899A37	26.15
1″	½″	4″	6″	2899A38	42.95

5-Piece Premium Round-Shank Drill Bit Set—Includes one each of sizes (bit size×drilling depth) 3/16″×4½″, ¼″×3¾″, 5/16″×4″, ⅜″×4″, and ½″×4″. Comes in a plastic case.

2899A51 ..... $56.42

For information about masonry drill bits, see page 2458.

Round-Shank Masonry Drill Bits for Portable Drills

Designed for nonhammer drilling.
Slow spiral bits are better than fast spiral bits for drilling concrete.
Fast spiral bits are for more brittle, soft to medium materials such as block and brick.

Round Shank

Bit Size	Shank Dia.	Drilling Depth	O'all Lg.	Slow Spiral		Fast Spiral	
1/8"	1/8"	1 1/2"	3"	2960A54	$2.83	—	—
1/8"	1/8"	1 5/8"	3"	—	—	2941A12	$2.20
5/32"	5/32"	1 5/8"	3"	2960A55	3.08	2941A14	2.93
11/64"	11/64"	1 5/8"	3"	2960A56	3.23	2941A15	2.78
3/16"	3/16"	1 5/8"	3"	2960A57	2.88	2941A16	2.45
1/4"	1/4"	2 1/2"	4"	2960A58	3.00	2941A23	1.82
1/4"	1/4"	4"	6"	2960A39	3.08	2941A17	3.17
1/4"	1/4"	10"	12"	2960A12	7.95	2941A51	10.34
1/4"	1/4"	13"	18"	2960A13	11.83	2941A52	20.46
1/4"	1/4"	16"	24"	2960A41	23.23	—	—
9/32"	1/4"	2 1/2"	4"	2960A59	3.83	—	—
9/32"	1/4"	3"	4"	—	—	2941A24	2.62
5/16"	1/4"	2 1/2"	4"	2960A611	2.76	2941A25	2.75
5/16"	1/4"	4"	6"	2960A38	3.64	2941A18	3.87
5/16"	1/4"	10"	12"	2960A14	9.77	2941A53	12.61
5/16"	5/16"	16"	24"	2960A42	28.46	—	—
3/8"	1/4"	2 1/2"	4"	2960A612	3.18	2941A26	3.64
3/8"	1/4"	4"	6"	2960A37	3.87	2941A19	6.90
3/8"	1/4"	10 1/2"	12"	—	—	2941A55	16.54
3/8"	1/4"	16 1/2"	18"	—	—	2941A56	19.98
3/8"	5/16"	10"	12"	2960A16	10.43	—	—
3/8"	3/8"	16"	24"	2960A43	36.85	—	—
7/16"	1/4"	4"	6"	2960A613	5.62	2941A32	5.63
7/16"	3/8"	16"	18"	2960A18	16.62	—	—
1/2"	1/4"	4"	6"	2960A614	5.31	2941A38	6.66
1/2"	3/8"	4 1/2"	6"	—	—	2941A33	5.70

Bit Size	Shank Dia.	Drilling Depth	O'all Lg.	Slow Spiral		Fast Spiral	
1/2"	3/8"	10"	12"	2960A19	$13.64	2941A58	$24.30
1/2"	3/8"	16"	18"	2960A21	20.58	2941A59	36.96
1/2"	3/8"	16"	24"	2960A44	40.62	—	—
9/16"	3/8"	4"	6"	2960A615	7.22	2941A39	6.78
5/8"	3/8"	10 1/2"	12"	—	—	2941A61	43.31
5/8"	1/2"	4"	6"	2960A616	7.88	2941A35	11.86
5/8"	1/2"	16"	24"	2960A45	43.91	—	—
11/16"	1/2"	4"	6"	—	—	2941A37	9.76
3/4"	1/2"	4"	6"	2960A617	12.12	2941A41	14.52
3/4"	1/2"	10"	12"	2960A22	21.66	2941A63	48.01
3/4"	1/2"	16"	24"	2960A46	46.68	—	—
7/8"	1/2"	4"	6"	2960A618	19.31	2941A42	12.19
7/8"	1/2"	10 1/2"▲	12"	2960A24	27.55	—	—
1"	1/2"	4"	6"	2960A619	27.91	2941A43	15.05
1"	1/2"	10 1/2"▲	12"	2960A26	29.11	—	—
1"	1/2"	16 1/2"▲	18"	2960A27	35.47	—	—
1 1/8"	1/2"	4"	6"	2960A621	26.71	—	—
1 1/8"	1/2"	10 1/2"▲	12"	2960A28	30.95	—	—
1 1/4"	1/2"	4"	6"	2960A622	30.24	—	—
1 1/4"	1/2"	10 1/2"▲	12"	2960A31	35.18	—	—
1 1/4"	1/2"	16 1/2"▲	18"	2960A32	38.62	—	—
1 3/8"	1/2"	10 1/2"▲	12"	2960A33	41.04	—	—
1 3/8"	1/2"	16 1/2"▲	18"	2960A34	43.89	—	—
1 1/2"	1/2"	10 1/2"▲	12"	2960A35	44.42	—	—
1 1/2"	1/2"	16 1/2"▲	18"	2960A36	49.27	—	—
1 1/2"	1/2"	22 1/2"▲	24"	2960A53	93.50	—	—

▲Flute length is 4". Drill in 4" increments to achieve drilling depth.

4-Piece Round-Shank Drill Bit Set—
Includes one each of sizes (bit size×o'all lg.) 1/4"×4", 5/16"×4", 3/8"×4", and 1/2"×6". Comes in a vinyl pouch.

Slow Spiral	2943A4	$22.69
Fast Spiral	2943A1	19.13

6-Piece Round-Shank Drill Bit Set—
Includes one each of sizes (bit size×o'all lg.) 1/4"×4", 5/16"×4", 3/8"×4", 1/2"×6", 5/8"×6", and 3/4"×6". Comes in a vinyl pouch.

Slow Spiral	2943A5	$41.76
Fast Spiral	2943A2	51.39

6-Piece Round-Shank Drill Bit Set—
Includes one each of sizes (bit size×o'all lg.) 3/16"×3", 1/4"×4", 5/16×4", 3/8"×4, 1/2"×6", and 5/8"×6". Comes in a vinyl pouch.

Slow Spiral	2943A6	$32.57
Fast Spiral	2943A3	36.96

Round-Shank Large-Hole Masonry Drill Bits for Portable Drills

Drill large holes using a portable drill. Bits are rotary only and work well on thin or brittle materials that might be damaged by the impact of rotary-hammer bits. All have a removable shank. To achieve maximum drilling depth, break up and remove the core every 4" of depth before drilling deeper.
Optional carbide-tipped pilot drill makes starting a hole easier.

Round Shank

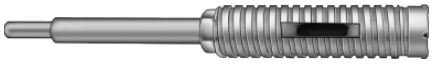

Bit Size	Shank Dia.	Drilling Depth	O'all Lg.	Bits		Optional Extensions	
1"	1/2"	8"	9"	2942A23	$87.91	2942A62	$22.37
1"	1/2"	11"	12"	2942A42	97.71	2942A62	22.37
1 1/4"	1/2"	11"	12"	2942A25	103.53	2942A62	22.37
1 1/2"	1/2"	11"	12"	2942A27	120.33	2942A62	22.37
1 3/4"	1/2"	11"	12"	2942A41 ♣	171.45	2942A73	40.78
2"	1/2"	11"	12"	2942A43 ♣	190.91	2942A73	40.78
2 1/2"	1/2"	17"	18"	2942A47	218.69	2942A62	22.37
3"	1/2"	11"	12"	2942A48	244.33	2942A62	22.37

♣Shank is 3/4" stepped down to 1/2".

Optional Carbide-Tipped Pilot Drill for Bit Sizes 1 1/2" and Larger	2942A89	20.19

Drill Bits for Concrete-Embedded Rebar

When you encounter rebar (reinforcing bar), stop drilling and mount one of these bits in your tool. Drill through the rebar and resume drilling with your masonry drill bit. *Note:* Bits are for rotary drilling only—hammer drilling will damage the bit.
Round-shank bits have three flats on the shank for a secure hold. Use with portable drills with a 1/2" chuck. Shank diameter is 5/16" for 3/8" bit size; 3/8" for 1/2"-9/16" bit sizes; and 1/2" for 5/8" and larger bit sizes.
SDS-Plus shank bits are used with SDS-Plus drive rotary hammers. Shank diameter is 0.393". Bit sizes 7/8" and larger have a removable shank.

Round Shank

Round Shank

SDS-Plus Shank

SDS-Plus Shank

Bit Size	Drilling Depth	O'all Lg.	Round Shank		SDS-Plus Shank	
3/8"	6"	8"	28655A19	$33.43	28655A51	$35.79
1/2"	10"	12"	28655A21	34.88	28655A52	37.26
1/2"	16"	18"	28655A18	52.23	28655A53	55.53
9/16"	10"	12"	28655A22	39.75	28655A54	42.37
5/8"	10"	12"	28655A23	41.99	28655A55	44.56
5/8"	16"	18"	28655A32	55.93	28655A56	59.18
11/16"	10"	12"	28655A33	47.50	28655A57	50.41
3/4"	10"	12"	28655A25	48.18	28655A61	51.14
3/4"	16"	18"	28655A34	61.96	28655A62	65.02
3/4"	22"	24"	28655A35	$70.75	28655A63	$74.51
13/16"	10"	12"	28655A36	52.23	28655A64	55.53
7/8"	10"	12"	28655A27	64.36	28655A65	67.95
1"	10"	12"	28655A28	67.06	28655A66	70.87
1 1/8"	10"	12"	28655A31	79.18	28655A67	83.28
1 1/4"	10"	12"	28655A29	83.55	28655A71	87.67
1 3/8"	10"	12"	28655A37	85.34	28655A72	89.13
1 1/2"	10"	12"	28655A38	93.86	28655A73	97.90

Deep-Hole Drill Bits for Wood

Bits start easily and cut holes in construction lumber, railroad ties, and utility poles. All are made of heat-treated steel and have a screw point. Overall length includes the screw point.

Extra Long

Also called pole auger bits, these are our longest bits for deep-boring jobs. All have a single cutting edge. The hex shank can be cut off to expose a 1/2″ round shank.

Bit Size	Hex Size	Drilling Depth	O'all Lg.		
9/16″	7/16″	24″	29″	2907A31	$66.89
5/8″	7/16″	24″	29″	2907A32	68.86
11/16″	7/16″	24″	29″	2907A33	71.90
3/4″	7/16″	24″	29″	2907A34	73.96
13/16″	7/16″	24″	29″	2907A35	$77.02
7/8″	7/16″	24″	29″	2907A36	78.98
1″	7/16″	24″	29″	2907A38	88.43
1 1/16″	7/16″	24″	29″	2907A39	98.77

Regular Length

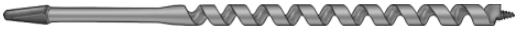

A

B

C

Break through obstructions in wood to produce a smooth hole. Bits have a single cutting edge and a hollow center. They can be resharpened.

Bits ***with tapered square shank*** are also known as pole auger bits. The tapered square shank can be cut off to expose a round shank. All have an extra-long twist.

Bits ***with quick-change hex shank*** are also known as ship auger bits.

	Bit Size	Shank Dia.	Drilling Depth	O'all Lg.		
With Tapered Square Shank						
A	3/8″	3/8″	12″	18″	2878A11	$24.65
A	1/2″	3/8″	12″	18″	2878A13	26.00
A	9/16″	3/8″	12″	18″	2878A14	26.13
A	5/8″	3/8″	12″	18″	2878A15	26.38
B	3/4″	5/16″	12″	18″	2878A17	28.30
B	7/8″	5/16″	12″	18″	2878A19	32.40
B	1″	5/16″	12″	18″	2878A22	36.43
With Quick-Change Hex Shank						
C	7/16″	3/8″	12″	17″	2818A13	$22.28
C	1/2″	7/16″	12″	17″	2818A15	23.28
C	9/16″	7/16″	12″	17″	2818A11	23.65
C	5/8″	7/16″	12″	17″	2818A12	24.15
C	3/4″	7/16″	12″	17″	2818A14	27.02
C	7/8″	7/16″	12″	17″	2818A16	30.08
C	1″	7/16″	12″	17″	2818A18	32.23
C	1 1/16″	7/16″	12″	17″	2878A23	37.88
C	1 1/8″	7/16″	12″	17″	2818A21	39.52
C	1 1/4″	7/16″	12″	17″	2818A22	45.48
C	1 3/8″	7/16″	12″	17″	2818A23	52.35
C	1 1/2″	7/16″	12″	17″	2818A24	55.32
C	1 3/4″	7/16″	12″	17″	2818A25	84.58
C	2″	7/16″	12″	17″	2818A26	88.63

Carbide Tipped

Bits have a double cutting edge and the carbide tips can be resharpened. Use in electric, air, and hydraulic impact wrenches, as well as air and electric drills with a capacity of 1/2″ or larger.

Bit Size	Hex Size	Drilling Depth	O'all Lg.		
9/16″	7/16″	21″	24″	30395A73	$93.79
11/16″	7/16″	15″	18″	30395A71	92.29
11/16″	7/16″	21″	24″	30395A74	115.47
13/16″	7/16″	15″	18″	30395A72	95.15
13/16″	7/16″	21″	24″	30395A76	$122.37
15/16″	7/16″	21″	24″	30395A78	130.79
1 1/16″	7/16″	21″	24″	30395A81	141.30

General Purpose Drill Bits for Wood

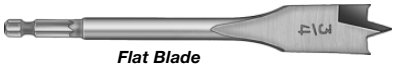

Flat Blade

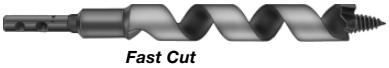

Fast Cut

An economical choice for drilling large holes in hard and soft woods, including plywood.

Flat-blade bits are also known as spade bits. They have a grooved point and extended cutting edges for fast, clean boring. Made of steel. Use with quick-change chucks and drill chucks. For holders, see 7179A series on page 2826.

Fast-cut bits have a cutting angle on the flute for fast chip removal, and a self-feed screw tip for faster cutting than flat-blade bits. Made of heat-treated steel.

Bit Size	Hex Size	Drilling Depth	O'all Lg.		
Flat Blade					
1/4″	1/4″	4 1/2″	6″	2894A62	$2.85
5/16″	1/4″	4 1/2″	6″	2894A63	2.85
3/8″	1/4″	4 1/2″	6″	2894A53	3.06
3/8″	1/4″	14 1/4″	16″	2894A43	9.19
7/16″	1/4″	4 1/2″	6″	2894A64	3.06
1/2″	1/4″	4 1/2″	6″	2894A54	3.06
1/2″	1/4″	14 1/4″	16″	2894A44	9.67
9/16″	1/4″	4 1/2″	6″	2894A65	3.22
5/8″	1/4″	4 1/2″	6″	2894A55	3.22
5/8″	1/4″	14 1/4″	16″	2894A45	10.15
11/16″	1/4″	4 1/2″	6″	2894A66	3.22
3/4″	1/4″	4 1/2″	6″	2894A56	3.22
3/4″	1/4″	14 1/4″	16″	2894A46	10.63
13/16″	1/4″	4 1/2″	6″	2894A67	3.58
7/8″	1/4″	4 1/2″	6″	2894A57	3.58
7/8″	1/4″	14 1/4″	16″	2894A47	11.08
Flat Blade (Cont.)					
15/16″	1/4″	4 1/2″	6″	2894A68	$3.80
1″	1/4″	4 1/2″	6″	2894A58	3.65
1″	1/4″	14 1/4″	16″	2894A48	11.58
1 1/8″	1/4″	4 1/2″	6″	2894A69	5.40
1 1/4″	1/4″	4 1/2″	6″	2894A59	5.40
1 3/8″	1/4″	4 1/2″	6″	2894A71	5.40
1 1/2″	1/4″	4 1/2″	6″	2894A61	5.40
Fast Cut					
3/4″	5/16″	5″	7 5/8″	2906A41	22.40
7/8″	5/16″	5″	7 5/8″	2906A42	25.32
7/8″	7/16″	5″	7 5/8″	2906A43	25.32
1″	5/16″	5″	7 5/8″	2906A44	29.02
1″	7/16″	5″	7 5/8″	2906A45	29.02
1 1/4″	7/16″	5″	7 5/8″	2906A46	44.48
1 3/8″	7/16″	4″	6 1/2″	2897A19	27.98
1 1/2″	7/16″	4″	6 1/2″	2897A21	30.84

6-Piece Flat-Blade Drill Bit Set— Includes one each of 6″ long bits in sizes 3/8″, 1/2″, 5/8″, 3/4″, 7/8″, and 1″. Comes in a plastic pouch.

2894A91 ..... $18.42

13-Piece Flat-Blade Drill Bit Set— Includes one each of 6″ long bits in sizes 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, and 1″. Comes in a plastic pouch.

2894A92 ..... $40.75

Fast-Cutting Drill Bits for Wood

A self-feed screw draws the bit in to quickly bore holes without applying pressure. Bits are made of tool steel. Overall length includes screw.

Bit Size	Hex Size	O'all Lg.		
1″	7/16″	5″	3188A11	$25.49
1 1/8″	7/16″	5″	3188A12	25.55
1 1/4″	7/16″	5″	3188A13	25.55
1 3/8″	7/16″	5″	3188A14	25.55
1 1/2″	7/16″	5″	3188A15	25.55
1 3/4″	7/16″	5 1/8″	3188A16	$27.36
2″	7/16″	5 1/8″	3188A17	29.36
2 1/8″	7/16″	5 1/8″	3188A18	30.00
2 1/4″	7/16″	5 1/8″	3188A19	32.55
2 9/16″	7/16″	5 1/8″	3188A21	33.57

Bit Size	Shank Dia.	O'all Lg.		
3″	1/2″	6 1/4″	3188A22	$80.70
3 5/8″	1/2″	6 1/4″	3188A23	109.74
4 1/8″	1/2″	6 1/4″	3188A41	122.26
4 5/8″	1/2″	6 1/4″	3188A24	129.13

7/16″ Hex Shank Extensions—Use with 1″ to 2 9/16″ bit sizes.

5 1/2″ Length	3188A31	$16.26
12″ Length	3188A32	17.22

8-Piece Drill Bit Set—Includes bit sizes 1″, 1 1/8″, 1 1/4″, 1 1/2″, 1 3/4″, 2 1/8″, and 2 9/16″, plus a 5 1/2″ extension. Comes in a plastic case.

3188A33 ..... $178.00

Smooth-Finish Drill Bits for Wood

Bore accurate, smooth-finish holes at a wide range of angles in soft wood, thin stock veneer, and laminates. Also known as Forstner bits, they can produce partial-arc and end-grain holes, pilot holes for mortising and grooving, and perfectly finished flat-bottom holes. The rim scribes the hole while the two cutters rapidly remove the chips.

Bits with Center Guide Point—Use in portable electric tools and drill presses. The center guide point keeps the bits from wandering. Overall length includes the center guide point. *Carbide-tipped* bits outlast steel bits and can cut tough, abrasive materials such as plywood, hard wood, and solid surface materials.

Bits without Center Guide Point—Use in drill presses only.

With Center Guide Point

Without Center Guide Point

Bits with Center Guide Point for Portable Electric Tools and Drill Presses

Bit Size	O'all Lg.	Steel: Shank Dia.			Carbide-Tipped Steel: Shank Dia.		
1/4″	3 1/2″	5/16″	3216A19	$11.83	5/32″	8799A31	$22.34
3/8″	3 1/2″	5/16″	3216A21	12.91	1/4″	8799A32	22.34
1/2″	3 1/2″	5/16″	3216A22	14.15	5/16″	8799A33	23.73
5/8″	3 1/2″	5/16″	3216A23	15.24	5/16″	8799A34	25.36
3/4″	3 1/2″	5/16″	3216A24	16.30	3/8″	8799A35	27.86
7/8″	3 1/2″	5/16″	3216A25	17.08	3/8″	8799A36	30.19
1″	3 1/2″	5/16″	3216A26	19.68	3/8″	8799A37	33.01
1 1/8″	3 1/2″	3/8″	3216A27	20.22	3/8″	8799A38	34.77

Bit Size	O'all Lg.	Steel: Shank Dia.			Carbide-Tipped Steel: Shank Dia.		
1 1/4″	3 1/2″	3/8″	3216A28	$24.20	3/8″	8799A39	$37.43
1 3/8″	3 1/2″	3/8″	3216A29	28.07	3/8″	8799A41	38.86
1 1/2″	3 1/2″	3/8″	3216A31	30.36	3/8″	8799A42	45.78
1 5/8″	3 1/2″	3/8″	3216A32	33.68	3/8″	8799A43	49.09
1 3/4″	3 1/2″	3/8″	3216A33	39.14	3/8″	8799A44	53.26
1 7/8″	3 1/2″	3/8″	3216A34	40.16	3/8″	8799A45	58.42
2″	3 1/2″	3/8″	3216A35	44.32	3/8″	8799A46	62.02
2 1/8″	3 1/2″	3/8″	3216A36	50.82	3/8″	8799A47	71.51

7-Piece Steel Drill Bit Set—Includes sizes 1/4″ to 1″ in 1/8″ increments. Comes in a wood case.

3216A41 ..... $107.98

16-Piece Steel Drill Bit Set—Includes sizes 1/4″ to 2 1/8″ in 1/8″ increments. Comes in a wood case.

3216A42 ..... $320.95

Optional 4″ Bit Extension—For use with bits that have a 3/8″ shank diameter. Includes two set screws and a hex key.

3216A66 ..... $13.75

Bits without Center Guide Point for Drill Presses—*Steel*

Bit Size	Shank Dia.	O'all Lg.		
5/16″	5/16″	5″	32175A32	$34.12
7/16″	1/2″	5″	32175A34	33.61
9/16″	1/2″	5″	32175A36	35.73
11/16″	1/2″	5″	32175A38	$36.47
13/16″	1/2″	5″	32175A41	37.17
15/16″	1/2″	5″	32175A43	37.91
1 1/16″	1/2″	5″	32175A45	$39.72
1 3/16″	1/2″	5″	32175A47	43.44
1 5/16″	1/2″	5″	32175A49	45.92

Fast-Cutting Smooth-Finish Drill Bits for Wood

Ideal for use in a drill press, bits have multiple outlining teeth that bore clean holes without chipping and splintering your wood's surface—even when cutting across the grain. Also known as multispur bits, they are excellent for boring overlapping holes, holes on close centers, and straight boring in wood and veneered stock. Bits are heat-treated steel. The cutting edges are precision ground for quick chip removal. A center guide point prevents the bit from wandering. The overall length includes the center guide point. Bits 3 1/4″ diameter and larger have a replaceable center guide point and two cutting edges.

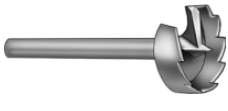

Bit Size	Shank Dia.	O'all Lg.		
3/4″	1/2″	6″	2890A15	$35.50
13/16″	1/2″	6″	2890A16	35.50
7/8″	1/2″	6″	2890A17	36.10
15/16″	1/2″	6″	2890A18	36.10
1″	1/2″	6″	2890A19	36.72
1 1/16″	1/2″	6″	2890A21	36.72
1 1/8″	1/2″	6″	2890A22	38.08
1 3/16″	1/2″	6″	2890A23	38.08
1 1/4″	1/2″	6″	2890A24	38.70
1 5/16″	1/2″	6″	2890A25	38.70
1 3/8″	1/2″	6″	2890A26	39.68
1 7/16″	1/2″	6″	2890A27	$40.02
1 1/2″	1/2″	6″	2890A28	41.42
1 9/16″	1/2″	6″	2890A29	41.42
1 5/8″	1/2″	6″	2890A31	42.93
1 11/16″	1/2″	6″	2890A32	44.55
1 3/4″	1/2″	6″	2890A33	46.29
1 13/16″	1/2″	6″	2890A34	49.99
1 7/8″	1/2″	6″	2890A35	52.17
1 15/16″	1/2″	6″	2890A36	54.44
2″	1/2″	6″	2890A37	56.42
2 1/8″	1/2″	6″	2890A38	$60.15
2 1/4″	1/2″	6″	2890A39	64.53
2 3/8″	1/2″	6″	2890A41	70.46
2 1/2″	1/2″	6″	2890A42	74.89
2 3/4″	1/2″	6″	2890A44	84.04
2 7/8″	1/2″	6″	2890A45	93.83
3″	1/2″	6″	2890A46	122.50
3 1/4″	3/4″	6″	2890A47	192.26
3 1/2″	3/4″	6″	2890A48	213.00
4″	3/4″	6″	2890A51	276.14

Drill Bit Extensions for Wood

Add reach to hex- and round-shank bits with an extension. All include two set screws and a hex wrench.

Hex Size/ Shank Dia.	O'all Lg.	Large End Dia.		
1/4″	6″	1/2″	3127A77	$4.05
1/4″	12″	1/2″	3127A78	5.39
5/16″	18″	11/16″	2773A11	22.72
5/16″	24″	11/16″	2773A12	$26.47
7/16″	18″	1 1/16″	2773A14	22.47
7/16″	24″	7/8″	2773A15	30.04

Drill Press Adjustable-Hole Drill Bits for Wood

Cut a variety of hole sizes with one bit by sliding the blade to the desired cutting diameter. Two adjustable cutter blades have easy-to-read markings and are securely held in position by the screw. Bits are forged steel and have three flats on the shank for extra grip. Bits require the torque and rpm of a drill press and are not recommended for use in portable electric drills. Use in standard drill chucks.

Hole Dia. Range	Blade Ranges #1	Blade Ranges #2	Shank Dia.	O'all Lg.		
5/8"-1 3/4"	5/8"-1"	1"-1 3/4"	9/32"	5 1/2"	3140A51	$34.79
7/8"-3"	7/8"-1 3/4"	1 3/4"-3"	11/32"	6 1/2"	3140A53	51.12

Clean-Cut Drill Bits for Wood

Bore smooth and accurate holes across the grain. Also known as brad-point bits. A center guide point prevents the bit from wandering so even overlapping holes can be bored without splintering. Overall length includes the center guide point. Use in portable power tools, power-feed boring machines, and drill presses. ***High-speed steel*** bits can be run at higher speeds than steel bits.

Bit Size	Shank Dia.	O'all Lg.		
Steel				
1/16"	1/8"	2 9/16"	2926A35	$2.76
3/16"	3/16"	3 3/8"	2926A38	3.08
1/4"	1/4"	3 31/32"	2926A41	3.53
5/16"	5/16"	4 19/32"	2926A44	4.15
3/8"	3/8"	5 1/4"	2926A45	4.95
7/16"	3/8"	5 19/32"	2926A47	8.60
1/2"	3/8"	5 15/16"	2926A49	10.53
1/2"	1/2"	6"	2926A22	15.55
9/16"	1/2"	6"	2926A23	17.14
5/8"	1/2"	6"	2926A24	19.87
3/4"	1/2"	6"	2926A26	25.01
7/8"	1/2"	6"	2926A28	29.87
High-Speed Steel				
1/8"	1/2"	6"	2926A61	18.46
5/32"	1/2"	6"	2926A62	18.46
7/32"	1/2"	6"	2926A64	18.46
1/4"	1/2"	6"	2926A65	18.46
High-Speed Steel (Cont.)				
17/64"	1/2"	6"	2926A66	$19.02
9/32"	1/2"	6"	2926A67	18.46
5/16"	1/2"	6"	2926A68	18.46
11/32"	1/2"	6"	2926A69	19.02
3/8"	1/2"	6"	2926A71	18.46
25/64"	1/2"	6"	2926A72	18.46
13/32"	1/2"	6"	2926A73	19.02
7/16"	1/2"	6"	2926A74	18.46
29/64"	1/2"	6"	2926A75	19.02
15/32"	1/2"	6"	2926A76	19.02
1/2"	1/2"	6"	2926A77	18.46
17/32"	1/2"	6"	2926A78	22.14
9/16"	1/2"	6"	2926A79	23.39
19/32"	1/2"	6"	2926A81	23.39
5/8"	1/2"	6"	2926A82	26.32
21/32"	1/2"	6"	2926A83	26.32
11/16"	1/2"	6"	2926A84	27.56
High-Speed Steel (Cont.)				
3/4"	1/2"	6"	2926A85	$33.61
25/32"	1/2"	6"	2926A86	33.61
13/16"	1/2"	6"	2926A87	42.28
7/8"	1/2"	6"	2926A88	43.15
15/16"	1/2"	6"	2926A89	47.83
1"	1/2"	6"	2926A91	51.57
1 1/16"	1/2"	6"	2926A92	57.37
3 mm	3 mm	70 mm	28205A71	15.10
5 mm	5 mm	90 mm	28205A73	15.95
6 mm	6 mm	100 mm	28205A74	15.95
7 mm	7 mm	110 mm	28205A75	16.45
8 mm	8 mm	115 mm	28205A76	16.45
9 mm	9 mm	125 mm	28205A77	18.25
10 mm	10 mm	130 mm	28205A78	19.25
14 mm	10 mm	140 mm	28205A83	34.65
15 mm	10 mm	140 mm	28205A84	41.10

5-Piece Steel Drill Bit Set—Includes one each of sizes (bit size×o'all lg.) 3/16"×3 3/8", 1/4"×3 31/32", 5/16"×4 19/32", 3/8"×5 1/4", and 1/2"×5 15/16". Comes in a plastic pouch.

2810A21 ..... $23.05

Drill Bits for Wood Screws

Bits are cut to match a wood screw's thread and shank, resulting in a perfect fit for your screw. They produce clean edges when cutting soft and hard woods. Bits are high-speed steel and have a bright finish. Shank diameter is the same as the bit size. Use in drill presses and portable drills.

Standard length bits are equivalent to a jobbers' length bit; ***long length*** bits are equivalent to a taper length bit.

Bit Size	For Screw Size	Standard Length O'all Lg.			Long Length O'all Lg.		
5/64"	No. 2	2"	3080A35	$4.61	3 3/4"	30915A71	$8.46
3/32"	No. 3	2 1/4"	3080A36	4.61	4 1/4"	30915A72	9.36
7/64"	No. 4	2 5/8"	3080A37	4.73	4 5/8"	30915A73	11.20
1/8"	No. 5	2 3/4"	3080A14	4.61	5 1/8"	30915A74	11.44
9/64"	No. 6	2 7/8"	3080A16	4.91	5 3/8"	30915A75	14.06
5/32"	No. 7	3 1/8"	3080A17	4.91	5 3/8"	30915A76	13.29
11/64"	No. 8	3 1/4"	3080A18	5.15	5 3/4"	30915A77	13.47
3/16"	No. 9	3 1/2"	3080A19	$5.40	5 3/4"	30915A78	$13.41
13/64"	No. 10	3 5/8"	3080A22	5.64	6"	30915A79	16.33
7/32"	No. 12	3 3/4"	3080A23	6.00	6"	30915A81	17.16
1/4"	No. 14	4"	3080A25	6.61	6 1/8"	30915A83	15.13
9/32"	No. 16	4 1/4"	3080A32	8.48	6 1/4"	30915A85	17.70
5/16"	No. 18-20	4 1/2"	3080A34	9.33	6 3/8"	30915A87	18.42

Wire-Installing Drill Bits

Also known as bell hanger drill bits, a hole in the flute near the tip lets you pull wire through after holes are drilled. Bits drill through wood, plaster, metal lath, stucco, light masonry, and concrete. Bits are steel with carbide tips.

Bit Size	Shank Dia.	Drilling Depth	12" O'all Lg.		18" O'all Lg.		24" O'all Lg.		36" O'all Lg.		48" O'all Lg.	
1/4"	1/4"	3 1/2"	2934A21	$16.30	2934A25	$20.49	2934A29	$23.83	2934A34	$32.97	2934A38	$46.17
5/16"	5/16"	3 1/2"	2934A22	19.63	2934A26	22.51	2934A31	27.97	2934A35	36.35	2934A39	44.57
3/8"	3/8"	5 1/2"	2934A23	16.88	2934A27	19.42	2934A32	24.28	2934A36	28.72	2934A41	39.77
1/2"	3/8"	7 1/2"	2934A24	19.34	2934A28	23.55	2934A33	29.01	2934A37	34.85	2934A42	43.55

Drill Press Wood-Plug Cutters

Cut wood plugs to conceal fastener heads in counterbored holes. Cutters are made of steel. Use in a drill press.

For Plug Size Dia.	For Plug Size Max. Lg.	Cutter OD	Shank Dia.		
1/4"	3/8"	1/2"	1/4"	2806A11	$10.73
5/16"	3/8"	9/16"	1/4"	2806A12	12.42
3/8"	1/2"	5/8"	1/4"	2806A13	13.85
7/16"	1/2"	3/4"	1/4"	2806A14	14.89
1/2"	1/2"	3/4"	1/4"	2806A15	$17.68
5/8"	5/8"	7/8"	1/4"	2806A17	20.41
3/4"	3/4"	1"	1/2"	2806A18	27.04
1"	3/4"	1 5/16"	1/2"	2806A21	38.87

Dowel Hole Drill Guide

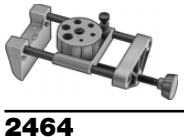

Drill holes for dowels that require exact alignment in the edge, end, or surface of your work. Clamp the jig onto your material, lift and turn the turret to select the drill hole size you need, and drill. The turret has 3/16", 1/4", 5/16", 3/8", 7/16", and 1/2" drill hole sizes. Use the graduations to set the jig to the centerline of your workpiece. Designed for material up to 4" wide.

3123A11 ..... $50.45

About Countersinks

Countersinks form a cone-shaped opening at the top of a hole, which acts as a seat for the head of a screw or rivet. They can also be used for chamfering, deburring, and creating openings for holding material between centers.

Flutes

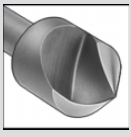

Fast Cut (Single Flute)

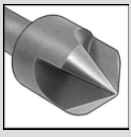

General Purpose (Three Flutes)

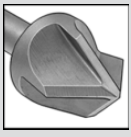

General Purpose (Four Flutes)

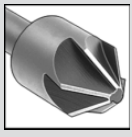

Smooth Finish (Six Flutes)

***Fast Cut*—**Have one flute and won't vibrate at high speeds. Also great for cutting smaller holes.

***General Purpose*—**Have two, three, or four flutes. Tool life increases with more flutes because the cutting load is distributed over more edges. However, fewer flutes provide better chip clearance, which is a consideration when machining stringy materials like plastic.

***Smooth Finish*—**Have six flutes. These remove more material per revolution and have a longer life than other countersinks.

Body Diameter and Countersink Angle

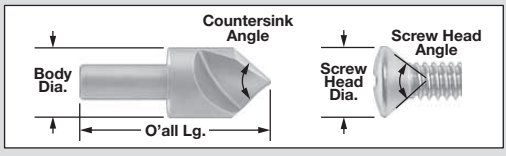

The countersink body diameter must be equal to or larger than the head diameter of the screw, center, or rivet being countersunk. Use a pilot hole that's larger than 10% of the countersink body diameter.

- ***60° Countersink Angle:*** For holding workpieces between the centers on a lathe.
- ***82° Countersink Angle:*** For flat- and oval-head inch screws.
- ***90° Countersink Angle:*** For flat- and oval-head metric screws. They're also great for chamfering.
- ***100° Countersink Angle:*** For rivets.
- ***120° Countersink Angle:*** For rivets.

Drill-Bit Countersinks

When used in combination with your drill bit (not included), these tools let you drill and countersink wood-screw holes in one quick operation. They attach to the body of your drill bit with two set screws and can be easily adjusted up and down for any length wood screw. All countersinks have four flutes.

Carbon steel countersinks have an 82° angle and are for use in wood and plastic.

High-speed steel countersinks come in your choice of an 82° or 90° angle and are for use in wood, plastic, and most metals. **To Order:** Please specify 82° or 90° countersink angle.

Stop collars control the cutting depth of your countersinks. The inside diameter of the stop collar fits the outside diameter of your countersink. Collars attach easily with two set screws and can be easily adjusted for depth. Made of steel with a black-oxide surface treatment.

Drill Bit Not Included

Stop Collar Sold Separately

Drill Bit Countersinks and Stop Collars

For Screw Size	Fits Drill Bit Size	Body Dia.	O'all Lg.	DRILL BIT COUNTERSINKS Carbon Steel	Each	High-Speed Steel	Each	STOP COLLARS OD	Wd.		Each
#3	3/32″	1/4″	3/4″	2785A12	$8.06	2910A63	$16.45	1/2″	1/4″	2903A11	$2.73
#4	7/64″	5/16″	7/8″	2785A13	8.06	2910A42★	16.45	9/16″	1/4″	2903A12	2.80
#5	1/8″	3/8″	7/8″	2785A21	7.28	2910A43	14.89	5/8″	1/4″	2903A13	2.99
#6	9/64″	3/8″	7/8″	2785A22	7.28	2910A44	14.89	5/8″	1/4″	2903A13	2.99
#7	5/32″	3/8″	7/8″	2785A23	7.28	2910A64	14.89	5/8″	1/4″	2903A13	2.99
#7	5/32″	1/2″	7/8″	2785A35	8.06	2910A62	16.45	3/4″	1/4″	2903A15	3.38
#8	11/64″	3/8″	7/8″	2785A24	7.28	2910A46	14.89	5/8″	1/4″	2903A13	2.99
#9	3/16″	3/8″	7/8″	2785A25	7.28	2910A47	14.89	5/8″	1/4″	2903A13	2.99
#9	3/16″	1/2″	7/8″	2785A37	8.06	2910A57	16.45	3/4″	1/4″	2903A15	3.38
#9	3/16″	5/8″	1 1/16″	2785A53	10.79	2910A53	22.49	7/8″	1/4″	2903A17	4.03
#10	13/64″	3/8″	7/8″	2785A26	7.28	2910A59	14.89	5/8″	1/4″	2903A13	2.99
#10	13/64″	7/16″	7/8″	2785A31	8.06	2910A48	14.89	11/16″	1/4″	2903A14	3.32
#10	13/64″	1/2″	7/8″	2785A38	8.06	2910A49	16.45	3/4″	1/4″	2903A15	3.38
#12	7/32″	3/8″	7/8″	2785A27	7.28	2910A61	14.89	5/8″	1/4″	2903A13	2.99
#12	7/32″	1/2″	7/8″	2785A39	8.06	2910A51	16.45	3/4″	1/4″	2903A15	3.38
#14	1/4″	1/2″	7/8″	2785A52	8.06	2910A52	16.45	3/4″	1/4″	2903A15	3.38
#16	1/4″	5/8″	1 1/16″	2785A54	10.79	2910A54	22.49	7/8″	1/4″	2903A17	4.03
#16	9/32″	5/8″	1 1/16″	2785A56	10.79	2910A55	22.49	7/8″	1/4″	2903A17	4.03
#18	5/16″	5/8″	1 1/16″	2785A58	10.79	2910A56	22.49	7/8″	1/4″	2903A17	4.03

★ Overall length is 3/4″.

Drill Bit Countersink Sets

All countersinks have an 82° countersink angle. Sets are furnished in a wood stand.

***7-Piece Sets*—**You'll get one each 3/8″ body dia. countersink for 1/8″, 9/64″, 5/32″, 11/64″, and 3/16″ dia. drill bits; one 7/16″ body dia. countersink for a 13/64″ dia. drill bit; and one 1/2″ body dia. countersink for a 7/32″ dia. drill bit.

		Per Set
Carbon Steel Set	2785A46	$55.38
High-Speed Steel Set	2910A41	102.14

***14-Piece Sets*—**You'll get one each 3/8″ body dia. countersinks for 1/8″, 9/64″, 5/32″, 11/64″, and 3/16″ dia. drill bits; one 7/16″ body dia. countersink for a 13/64″ dia. drill bit; four 1/2″ body dia. countersinks for 3/16″, 13/64″, 7/32″, and 1/4″ dia. drill bits; and four 5/8″ body dia. countersinks for 3/16″, 1/4″, 9/32″, and 5/16″ dia. drill bits.

		Per Set
Carbon Steel Set	2785A48	$125.13
High-Speed Steel Set	2910A45	235.58

Hex Shank Combination Drill Bits and Countersinks for Wood

Make holes for wood plugs in one easy operation. These combination tools consist of a general purpose, high-speed steel jobbers' drill bit and a hardened steel countersink. Tools have an 82° countersink angle and a hex shank that fits all quick-change and standard drill chucks. Bits are securely held by a set screw and can be adjusted up to 1″ for different screw lengths.

For Screw Size Hardwood	Softwood	Drill Bit Size	Drill Bit/ Countersinks	Each	Replacement Drill Bits	Each
#4	—	5/64″	2747A21	$7.92	8870A15	$1.10
—	#6	3/32″	2747A22	7.92	8870A16	1.12
#6	#8	7/64″	2747A23	7.92	8870A17	1.12
#8	#10	1/8″	2747A24	7.92	8870A18	1.15
#10	#12	9/64″	2747A25	7.92	8870A19	1.22

Countersinks for Aluminum, Brass, and Bronze

Three spiral flutes leave a clean, smooth finish on soft metals such as aluminum, brass, and bronze. Made of high-speed steel. **To Order:** Please specify 60°, 82°, 90°, 100°, or 120° countersink angle.

Body Dia.	Shank Dia.	O'all Lg.		Each
1/4″	1/4″	1 1/4″	2742A511	$10.59
3/8″	1/4″	1 5/8″	2742A512	11.81
1/2″	1/4″	2″	2742A513	15.47
5/8″	1/4″	2 1/4″	2742A514	21.32
3/4″	1/2″	3″	2742A515	28.63
1″	1/2″	3 1/4″	2742A517	47.52
1 1/4″	5/8″	3 1/2″	2742A519	86.19
1 1/2″	3/4″	3 7/8″	2742A521	120.40
2″	3/4″	4 1/4″	2742A522	222.42

***Five-Piece Sets*—**You'll get one countersink in each of the following body diameters: 1/4″, 3/8″, 1/2″, 5/8″, and 3/4″. Furnished in a plastic case. **To Order:** Please specify 60°, 82°, 90°, 100°, or 120° countersink angle.

2742A601 ..... **Per Set** $84.83

For information about countersinks, see page 2465.

High-Speed Steel and Cobalt Steel Countersinks

Single End Fast Cut (Single Flute)

High-Speed Steel—For use on ferrous and nonferrous metals such as steel, brass, and bronze.

Cobalt Steel—Heat and abrasion-resistant, these are for use on hard-to-machine metals such as cast iron, stainless steel, Inconel, and titanium.

TiN (titanium nitride) coated countersinks last longer and withstand more heat than uncoated.

To Order: Please specify 60°, 82°, 90°, 100°, or 120° countersink angle, unless noted. Smooth-finish (six-flute) individual countersinks are also available with a 110° countersink angle, except for double-end countersinks.

Single-End Countersinks

Body Dia.	Shank Dia.	HIGH-SPEED STEEL Uncoated O'all Lg.		Each	HIGH-SPEED STEEL TiN Coated O'all Lg.		Each	COBALT STEEL Uncoated O'all Lg.		Each	COBALT STEEL TiN Coated O'all Lg.		Each
Fast Cut (Single Flute)													
1/8"	1/8"	1 1/4"	2846A121	$6.89	1 1/4"	3210A21	$9.56	1 1/2"	3285A31	$10.28	1 1/2"	3213A31	$11.49
3/16"	3/16"	1 3/8"	2846A122	7.14	1 3/8"	3210A22	9.65	1 1/2"	3285A32	10.83	1 1/2"	3213A32	12.11
1/4"	1/4"	1 1/2"	2846A123	7.53	1 1/2"	3210A23	13.38	2"	3285A33	11.02	2"	3213A33	12.46
3/8"	1/4"	1 3/4"	2846A124	8.43	1 3/4"	3210A24	13.49	2"	3285A34	13.08	2"	3213A34	15.98
1/2"	1/4"	2"	2846A125	10.40	2"	3210A25	19.06	2"	3285A35■	16.85	2"	3213A35●	22.67
5/8"	3/8"	2 1/4"	2846A126	13.79	2 1/4"	3210A26	28.62	2 1/4"	3285A36	23.42	2 1/4"	3213A36	30.55
3/4"	1/2"	2 5/8"	2846A127	20.18	2 5/8"	3210A27	35.02	2 3/4"	3285A37	32.49	2 3/4"	3213A37	46.36
1"	1/2"	2 3/4"	2846A128	34.59	2 3/4"	3210A28	54.21	2 3/4"	3285A38	52.51	2 3/4"	3213A38	65.11
1 1/4"	1/2"	2 3/4" ◆	2846A129	62.63	2 3/4" ◆	3210A29	95.39	3"	3285A39	91.67	3"	3213A39	98.69
1 1/2"	3/4"	2 7/8" ◆	2846A131	91.62	2 7/8" ◆	3210A31	118.77	3 1/2"	3285A41	125.53	3 1/2"	3213A41	141.20
1 3/4"	3/4"	3" ◆	2846A132	116.94	3" ◆	3210A32	171.42	4 1/4"	3285A42	199.04	4 1/4"	3213A42	219.00
2"	3/4"	3 1/4" ◆	2846A133	163.69	3 1/4" ◆	3210A33	228.59	3 3/4"	3285A43	226.18	3 3/4"	3213A43	263.24
General Purpose (Three Flute)													
1/4"	1/4"	1 1/2"	3013A111	8.82	2"	3210A41	10.18	2"	3285A44	11.02	2"	3213A51	12.46
3/8"	1/4"	1 3/4"	3013A112	9.91	2"	3210A42	12.66	2"	3285A45	13.09	2"	3213A52	15.98
1/2"	1/4"	2"	3013A113	12.15	2"	3210A43●	17.50	2"	3285A46●	16.84	2"	3213A53●	22.67
5/8"	3/8"	2 1/4"	3013A114	16.16	2 1/4"	3210A44	21.42	2 1/4"	3285A47	23.43	2 1/4"	3213A54	30.55
3/4"	1/2"	2 5/8"	3013A115	23.56	2 3/4"	3210A45	34.76	2 3/4"	3285A48	32.49	2 3/4"	3213A55	46.36
1"	1/2"	2 3/4"	3013A116	36.37	2 3/4"	3210A46	51.80	2 3/4"	3285A49	52.51	2 3/4"	3213A56	65.11
General Purpose (Four Flute)													
1 1/4"	1/2"	2 3/4" ◆	3013A117▲	87.59	2 3/4" ◆	3210A47▲	102.95	2 3/4" ◆	3285A51▲	106.25	2 3/4" ◆	3213A61▲	112.93
1 1/2"	3/4"	2 7/8" ◆	3013A118▲	119.54	2 7/8" ◆	3210A48▲	143.23	2 7/8" ◆	3285A52▲	147.33	2 7/8" ◆	3213A62▲	157.86
1 3/4"	3/4"	3" ◆	3013A119▲	151.39	3" ◆	3210A49▲	188.47	3" ◆	3285A53▲	190.41	3" ◆	3213A63▲	215.77
2"	3/4"	3 1/4" ◆	3013A121▲	211.83	3 1/4" ◆	3210A51▲	250.13	3 1/4" ◆	3285A54▲	266.78	3 1/4" ◆	3213A64▲	289.44
Smooth Finish (Six Flute)★													
1/8"	1/8"	1 1/4"	3098A109	7.78	1 1/4"	3210A61	7.85	1 1/4"	3285A61	7.83	1 1/2"	3213A11	12.29
3/16"	3/16"	1 3/8"	3098A111	8.31	1 3/8"	3210A62	8.75	1 3/8"	3285A62	8.57	1 1/2"	3213A12	12.96
1/4"	1/4"	1 1/2"	3098A112	8.48	1 1/2"	3210A63	9.32	1 1/2"	3285A63	8.93	2"	3213A13	13.38
5/16"	1/4"	1 3/4"	3098A113	10.12	1 3/4"	3210A64	11.22	1 1/2"	3285A64	10.92	2"	3213A14	15.80
3/8"	1/4"	1 3/4"	3098A114	10.50	1 3/4"	3210A65	11.61	1 3/4"	3285A65	11.74	2"	3213A15	17.07
1/2"	3/8"	2"	3098A115	12.84	2"	3210A66	14.99	2"	3285A66	15.28	2"	3213A16	24.29
5/8"	3/8"	2 1/4"	3098A116	18.73	2 1/4"	3210A67	22.52	2 1/4"	3285A67	23.03	2 1/4"	3213A17	32.66
3/4"	1/2"	2 5/8"	3098A117	25.82	2 5/8"	3210A78	29.76	2 5/8"	3285A68	32.97	2 3/4"	3213A18	49.82
7/8"	1/2"	2 3/4"	3098A118	36.33	2 3/4"	3210A69	41.64	2 3/4"	3285A69	46.48	2 3/4"	3213A19	62.58
1"	1/2"	2 3/4"	3098A119	40.41	2 3/4"	3210A71	47.71	2 3/4"	3285A71	52.93	2 3/4"	3213A21	69.60
1 1/4"	1/2"	2 3/4" ◆	3098A121	62.13	2 3/4" ◆	3210A72	69.50	2 3/4" ◆	3285A72	83.35	3"	3213A22▲	105.56
1 1/2"	3/4"	2 7/8" ◆	3098A122	88.86	2 7/8" ◆	3210A73	101.27	2 7/8" ◆	3285A73	121.86	2 7/8" ◆	3213A23	130.95
2"	3/4"	3 1/4" ◆	3098A123	150.23	3 1/4" ◆	3210A74	169.26	3 1/4" ◆	3285A74	217.44	3 1/4" ◆	3213A24	229.74
2 1/2"	1"	5"	3098A124▲	390.27	5"	3210A75	411.22	5"	3285A75	475.76	5"	3213A25	535.73
3"	1"	5 1/4"	3098A125▲	536.27	5 1/4"	3210A76	617.85	5 1/4"	3285A76	670.60	5 1/4"	3213A26	805.81

■ Countersinks with angles 100° and 120° have 3/8" shank dia. ● Has 3/8" shank dia. ◆ Overall length may vary depending on the countersink angle. ▲ Choose from 60°, 82°, or 90° countersink angle. ★ Uncoated countersinks have a black oxide treatment.

Double-End Smooth-Finish (Six-Flute) Countersinks

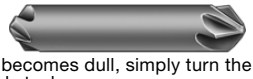

When one end becomes dull, simply turn the countersink around. All are high-speed steel.

Body Dia.	O'all Lg.		Each	Body Dia.	O'all Lg.		Each
1/8"	1 1/2"	27885A11	$11.73	3/8"	2 1/2"	27885A15	$16.42
3/16"	2"	27885A12	12.58	1/2"	3"	27885A16	20.45
1/4"	2"	27885A13	12.78	5/8"	3 1/2"	27885A17	26.93
5/16"	2 1/2"	27885A14	14.95	3/4"	4"	27885A18	42.33

Single-End Countersink Sets

You'll get one countersink in each of the sizes shown. All are high-speed steel. Five-piece sets come in a wood block stand; the seven-piece set comes in a padded plastic case.

No. of Pcs.	No. of Flutes	Sizes in Set 1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"		Per Set
5	1	✓		✓	✓		✓	✓	2846A134	$93.19
5	3	✓		✓	✓		✓	✓	3012A21	$96.51
7	6	✓	✓	✓	✓	✓	✓	✓	3098A126	$126.31

Long-Reach Countersinks

Fast Cut (Single Flute)

General Purpose (Two Flute)
Head and Extension Sold Separately

All countersinks are high-speed steel for use on materials including steel, brass, and bronze. ***Fast-cut*** and ***smooth-finish*** countersinks are made with an integral long-reach shank. Add a carbon steel ***extension*** to give ***general-purpose heads*** a long reach.

Fast Cut (Single Flute)—82°

Body Dia.	Shank Dia.	O'all Lg.		Each
1/8"	1/8"	4"	3172A11	$17.44
3/16"	3/16"	4"	3172A12	19.50
1/4"	1/4"	6"	3172A13	24.02
5/16"	5/16"	6"	3172A14	24.56
3/8"	3/8"	6"	3172A15	29.58
1/2"	3/8"	6"	3172A16	40.26
5/8"	3/8"	6"	3172A17	47.86
3/4"	1/2"	6"	3172A18	53.46
1"	1/2"	6"	3172A19	80.72

Smooth Finish (Six Flute)—82°

Body Dia.	Shank Dia.	O'all Lg.		Each
1/8"	1/8"	4"	3195A21	$19.32
3/16"	3/16"	4"	3195A22	21.46
1/4"	1/4"	6"	3195A23	25.92
5/16"	5/16"	6"	3195A24	27.46
3/8"	3/8"	6"	3195A25	32.48
1/2"	3/8"	6"	3195A26	43.32
5/8"	3/8"	6"	3195A27	52.70
3/4"	1/2"	6"	3195A28	58.28
1"	1/2"	6"	3195A29	85.54

General-Purpose (Two-Flute) Heads

To Order: Please specify 82°, 90°, or 100° countersink angle.

Body Size	Shank Dia.		Each
3/8" Dia. x 3/4" Lg.	1/4"	3109A51	$11.50
1/2" Dia. x 3/4" Lg.	1/4"	3109A52	12.94

General-Purpose (Two-Flute) Extensions

O'all Lg.	Shank Dia.		Each
4"	1/4"	3109A71	$10.29
6"	1/4"	3109A72	11.91
12"	1/4"	3109A73	21.78

For information about countersinks, see page 2465.

Solid-Carbide Countersinks for Hard and Abrasive Materials

Harder and longer lasting than high-speed steel countersinks, these tools are more effective for cutting hard and abrasive materials. They are not for use in hand-held applications.

TiCN (titanium carbonitride) coated tools last longer than uncoated tools and are best for general purpose cuts in steel and cast aluminum. ***TiAlN*** (titanium aluminum nitride) is the best choice for materials up to a Rockwell hardness of C50. ***AlTiN*** (aluminum titanium nitride) is for high-speed machining on materials with a Rockwell hardness up to C70. Not for use on aluminum.

To Order: Please specify 60°, 82°, 90°, or 100° countersink angle. For coated countersinks, also specify TiCN, TiAlN, or AlTiN coating.

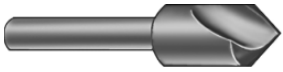

Single End Fast Cut (Single Flute)

Double End Smooth Finish (Six Flute)

Single-End Countersinks

Sizes 1/8″ through 1/4″ are made entirely of carbide. Sizes 5/16″ and larger have a solid carbide body that's brazed onto a hardened steel shank. *Note:* Overall length may vary slightly depending on the countersink angle.

			FAST CUT (SINGLE FLUTE)				GENERAL PURPOSE (THREE FLUTE)				SMOOTH FINISH (SIX FLUTE)			
Body Dia.	Shank Dia.	O'all Lg.	Uncoated	Each	Coated	Each	Uncoated	Each	Coated	Each	Uncoated	Each	Coated	Each
1/8″	1/8″	1 1/2″	2922A411	$12.18	2944A11	$15.72	29485A22	$14.83	2944A31	$16.69	2923A511	$11.25	2944A51	$15.02
3/16″	3/16″	2″	2922A412	13.02	2944A12	17.30	29485A23	16.70	2944A32	19.07	2923A512	12.02	2944A52	16.58
1/4″	1/4″	2″	2922A413	16.50	2944A13	23.37	29485A11	17.29	2944A33	25.71	2923A513	17.31	2944A53	24.56
5/16″	1/4″	2 5/8″	2922A422	24.95	2944A82	33.81	29485A18	22.88	2944A83	33.81	2923A522	24.41	2944A81	33.81
3/8″	1/4″	2 5/8″	2922A414	24.30	2944A14	33.30	29485A12	26.84	2944A34	38.40	2923A514	24.63	2944A54	34.22
1/2″	1/4″	2 5/8″	2922A415	33.41	2944A15	46.57	29485A13	38.02	2944A35	54.72	2923A515	36.32	2944A55	50.27
5/8″	3/8″	2 3/4″	2922A416	51.83	2944A16	70.84	29485A14	54.91	2944A36	79.07	2923A516	52.73	2944A56	72.90
3/4″	3/8″	2 3/4″	2922A417	70.54	2944A17	91.63	29485A15	78.35	2944A37	106.83	2923A517	73.79	2944A57	96.55
1″	1/2″	3″	2922A418	119.37	2944A18	151.04	29485A16	126.67	2944A38	170.24	2923A518	120.53	2944A58	154.82
1 1/4″	3/4″	3 1/4″	2922A419	175.33	2944A19	223.89	29485A17	190.63	2944A39	257.08	2923A519	178.79	2944A59	230.85
1 1/2″	3/4″	3 1/4″									2923A521	283.88	2944A61	352.09

Five-Piece Single-End Countersink Sets

You'll get one countersink in each of the following body diameters: 1/4″, 3/8″, 1/2″, 5/8″, and 3/4″. Furnished in a metal case.

To Order: Please specify 60°, 82°, 90°, or 100° countersink angle. For coated countersink sets, also specify TiCN, TiAlN, or AlTiN coating.

	Uncoated	Per Set	Coated	Per Set
Fast Cut (Single Flute)	2922A421	$208.53	2944A71	$274.26
General Purpose (Three Flute)	29485A21	229.89	2944A72	321.63
Smooth Finish (Six Flute)	2923A523	215.05	2944A73	285.42

Double-End Smooth-Finish (Six-Flute) Countersinks

When one end is worn, simply turn the countersink around for a sharp cutting edge. All are uncoated solid carbide.

To Order: Please specify 60°, 82°, 90°, 100°, or 120° countersink angle.

Body Dia.	O'all Lg.		Each	Body Dia.	O'all Lg.		Each	Body Dia.	O'all Lg.		Each
1/8″	1 1/2″	27655A11	$19.60	5/16″	2 1/2″	27655A14	$50.52	5/8″	3 1/2″	27655A17	$111.73
3/16″	2″	27655A12	25.40	3/8″	2 1/2″	27655A15	60.13	3/4″	4″	27655A18	159.90
1/4″	2″	27655A13	30.63	1/2″	3″	27655A16	84.17				

Carbide-Insert Countersinks

Instead of sharpening your countersink, rotate the carbide insert in these tools to reveal a fresh cutting edge. When all of the edges are used, just replace the insert. You can use them on ferrous and nonferrous metals including steel, aluminum, and copper. An uncoated carbide insert and a Torx wrench are included with each tool.

Uncoated carbide inserts are for general purpose use. ***TiN (titanium nitride) coated carbide inserts*** offer higher heat resistance and reduced friction for increased productivity and tool life.

To Order: For countersinks, please specify 60°, 82°, 90°, or 100° countersink angle.

With Triangle Insert

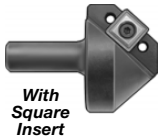

With Square Insert

For Hole Dia. Min.	Max.	Shank Dia.	Insert Type, ANSI Code	COUNTERSINKS WITH INSERT	Each	REPLACEMENT CARBIDE INSERTS Uncoated	Each	TiN-Coated	Each	REPLACEMENT INSERT SCREWS	Each
1/4″	3/4″	1/2″	Triangle, TPGH-321	29245A11	$87.78	29245A67	$6.98	29245A71	$8.51	29245A96	$0.46
1/2″	1 3/4″	1/2″	Square, SPGH-433	29245A12	130.22	29245A68	12.19	29245A72	14.62	29245A96	.46
1 1/4″	2 1/2″	3/4″	Square, SPGH-433	29245A13	171.51	29245A68	12.19	29245A72	14.62	29245A96	.46

Precision Countersinks for CNC Applications

A tight tolerance ensures accuracy and precision on computer-controlled machines. All have six flutes and the tolerance is +0.001″/-0.001″. ***High-speed steel*** is for use on a wide variety of materials including wood, steel, brass, and bronze. Carbide is harder and longer lasting than high-speed steel and is for use on hard and abrasive materials such as cast aluminum and fiberglass.

To Order: Please specify 60°, 82°, 90°, or 100° countersink angle.

For Min. Hole Dia. 60° Angle	82°, 90°, and 100° Angle	Body Dia.	Shank Dia.	High-Speed Steel O'all Lg.		Each	Carbide O'all Lg.		Each
0.078″	0.046″	1/4″	1/4″	2″	3214A12	$10.63	2″	3308A32	$23.21
0.125″	0.078″	3/8″	1/4″	2″	3214A14	15.33	2 1/2″	3308A34	39.56
0.156″	0.109″	1/2″	3/8″	2″	3214A16	19.56	2 1/2″	3308A36	55.47
0.203″	0.125″	5/8″	3/8″	2 1/4″	3214A18	28.06	2 5/8″	3308A38	84.79
0.250″	0.156″	3/4″	1/2″	2 1/4″	3214A21	32.42	2 3/4″	3308A41	119.00
0.328″	0.203″	1″	1/2″	2 3/4″	3214A25	50.24	3″	3308A45	169.89

Repair Tools for 60° Countersunk Holes

Made with a large number of flutes and cutting edges to lightly shear off material, these tools repair and clean out holes used for machining between centers. The countersink angle is 60°. Sizes 5/16″ to 3/4″ have a solid-carbide head brazed to a steel shank. The 1/4″ size is made entirely of carbide.

Body Dia.	Shank Dia.	O'all Lg.	No. of Flutes		Each
1/4″	1/4″	2″	6	27865A11	$21.33
5/16″	1/4″	2 5/8″	6	27865A12	26.94
3/8″	1/4″	2 5/8″	6	27865A13	29.39
1/2″	1/4″	2 5/8″	6	27865A14	44.20
5/8″	3/8″	2 3/4″	8	27865A15	58.84
3/4″	3/8″	2 3/4″	10	27865A16	87.17

For information about countersinks, see page 2465.

Anti-Vibration Through-Hole Countersinks

Also known as zero-flute countersinks, all have a single flute that passes through the center of the tool. This design reduces vibration (chatter) for smooth cuts and prevents chips from clogging. These countersinks are also great for deburring.

Single End and ***Double End***—*High-speed steel* is for use on steel and other ferrous metals. *Cobalt steel* has higher heat and abrasion resistance for use on high-tensile alloys, stainless steel, and other hard-to-machine materials. Double-end countersinks can be turned around when one end becomes worn.

Single-End with Pilot—The pilot acts as a guide to maintain alignment in the hole. All are high-speed steel for use on steel and other ferrous metals. They have an 82° countersink angle.

To Order: Please specify countersink angle when a choice is given.

Single-End and Double-End Countersinks

Single End

Double End

For Hole Dia. Range	Shank Dia.	O'all Lg.	Available Countersink Angles		Each
Single End—*High-Speed Steel*					
5/32"-13/32"	1/4"	1 21/32"	82°, 90°, 100°	2739A12■	$9.69
3/16"-13/32"	1/4"	1 25/32"	60°	2739A53	10.51
3/16"-17/32"	1/4"	1 7/8"	82°, 90°, 100°	2739A13	11.51
5/16"-17/32"	1/4"	1 15/16"	60°	2739A54	11.51
5/16"-25/32"	1/4"	2 1/8"	82°, 90°	2739A14■	20.00
5/16"-25/32"	1/2"	2 5/8"	82°, 90°, 100°	2739A15■	20.00
7/16"-25/32"	1/4"	2 3/8"	60°	2739A55	20.00
7/16"-25/32"	1/2"	2 3/4"	60°	2739A56	20.00
7/16"-7/8"	1/2"	2 19/32"	82°	2739A45	31.71
9/16"-1 1/16"	1/2"	2 29/32"	82°, 90°, 100°	2739A16■	33.91
5/8"-1 15/32"	1/2"	2 7/8"	82°	2739A46	52.93
11/16"-1 3/32"	1/2"	2 11/64"	60°	2739A57	34.22
3/4"-1 3/4"	5/8"	3 1/8"	82°	2739A47	83.42
1"-2"	5/8"	3 1/2"	82°	2739A48	109.11
1 1/4"-2 1/2"	3/4"	3 7/8"	82°	2739A49	120.33
Single End—*Cobalt Steel*					
13/64"-27/64"	1/4"	2 1/32"	60°, 82°, 90°	2724A12	14.69
5/16"-17/32"	1/4"	2"	60°, 82°, 90°	2724A13	18.37
1/2"-25/32"	1/2"	2 5/8"	60°, 82°, 90°	2724A14	33.81
3/4"-1 3/32"	1/2"	2 7/8"	60°, 82°, 90°	2724A15	56.43
Double End—*High-Speed Steel*					
1/16"-15/64"	1/4"	1 7/8"	82°, 90°, 100°	2739A11■	9.69
1/8"-15/64"	1/4"	1 7/8"	60°	2739A52	9.69
Double End—*Cobalt Steel*					
3/32"-15/64"	1/4"	1 1/2"	60°, 82°, 90°	2724A11	13.36

■ Overall length may vary slightly depending on the countersink angle.

Single-End Countersinks with Pilot—High-Speed Steel, 82°

Single End with Pilot

For Hole Dia. Range	For Screw Size	Shank Dia.	Pilot Dia.	Pilot Lg.	O'all Lg.		Each
1/4"-33/64"	1/4"	3/8"	1/4"	5/32"	2"	2739A64	$12.72
5/16"-41/64"	5/16"	3/8"	5/16"	5/32"	2 3/16"	2739A66	15.12
3/8"-49/64"	3/8"	1/2"	3/8"	5/32"	2 1/2"	2739A68	20.20
7/16"-53/64"	7/16"	1/2"	7/16"	7/32"	2 11/16"	2739A71	25.20
1/2"-15/16"	1/2"	1/2"	1/2"	1/4"	2 11/16"	2739A73	26.05

Five-Piece Sets—High-Speed Steel

Single End

Single End with Pilot

Single-End Sets—Include one each of the sizes listed below in a wood block stand.

Countersink Angle	1/4" Shank Dia. For Min. Hole Dia.	1/2" Shank Dia. For Min. Hole Dia.		Per Set
60°	1/8", 3/16", 5/16"	7/16", 11/16"	2739A27	$79.22
82°	1/16", 5/32", 3/16"	5/16", 9/16"	2739A42	80.63
90°	1/16", 5/32", 3/16"	5/16", 9/16"	2739A43	80.63
100°	1/16", 5/32", 3/16"	5/16", 9/16"	2739A28	81.04

Single-End with Pilot Set—All have an 82° countersink angle. You'll get one each of the piloted-style tools above furnished in a wood block stand.

2739A29 ..... **Per Set** $93.67

Drill-Tip Countersinks for Flat- and Oval-Head Screws

One tool is all you need to drill and countersink for flat- and oval-head screws. All countersinks are high-speed steel and have two flutes. ***Machine screw and fractional sizes*** have an 82° countersink angle. ***Metric sizes*** have a 90° countersink angle.

Machine Screw and Fractional Sizes

Screw Size	Body Dia.	Shank Dia.	Drill Tip Dia.	O'all Lg.		Each
#5	5/16"	1/4"	0.127"	1 3/4"	28145A41	$11.57
#6	5/16"	1/4"	0.140"	1 3/4"	28145A42	11.57
#8	7/16"	1/4"	0.166"	2"	28145A43	13.87
#10	7/16"	1/4"	0.192"	2"	28145A44	13.87
#12	7/16"	1/4"	0.220"	2"	28145A45	16.19
1/4"	1/2"	3/8"	0.252"	2 3/8"	28145A46	18.50
5/16"	5/8"	3/8"	0.315"	2 5/8"	28145A47	20.82
3/8"	3/4"	1/2"	0.378"	3"	28145A48	25.44

Metric Sizes, mm

Screw Size	Body Dia.	Shank Dia.	Drill Tip Dia.	O'all Lg.		Each
3	6.20	6.35	3.10	44.44	28145A71	$14.22
4	8.20	6.35	4.10	44.44	28145A72	14.59
5	10.20	7.93	5.10	50.79	28145A73	17.49
6	12.20	7.93	6.10	50.79	28145A74	20.42
8	16.20	11.11	8.10	66.66	28145A75	23.33
10	20.20	12.70	10.10	76.19	28145A76	26.26
12	24.20	15.87	12.10	76.19	28145A77	32.06

Eight-Piece Set—You'll get one of each machine screw and fractional size listed above in a plastic tube. ..... 28145A61 **Per Set** $150.30

Step-Saver Countersinks

Single-End High-Speed Steel

Double-End Solid Carbide

A drill point is blended into two of the four flutes, so you can drill a starter hole and countersink in one step—no need for separate tools.

Double-End—When one end becomes dull, simply turn the countersink around.

To Order: Please specify 60°, 82°, 90°, 100°, or 120° countersink angle.

Single-End High-Speed Steel

Body Dia.	Drill Point	Shank Dia.	O'all Lg.		Each
1/8"	0.041"	1/8"	1 1/2"	27535A11	$11.35
3/16"	0.062"	3/16"	1 1/2"	27535A12	12.04
1/4"	0.082"	1/4"	2"	27535A13	12.62
5/16"	0.104"	1/4"	2"	27535A14	14.79
3/8"	0.125"	1/4"	2"	27535A15	17.31
1/2"	0.167"	3/8"	2"	27535A16	22.33
5/8"	0.208"	3/8"	2 1/4"	27535A17	31.67
3/4"	0.250"	1/2"	2 3/4"	27535A18	42.62
7/8"	0.291"	1/2"	2 3/4"	27535A19	53.94
1"	0.333"	1/2"	2 3/4"	27535A21	66.04

Double-End Solid Carbide

Body Dia.	Drill Point	O'all Lg.		Each
1/8"	0.041"	1 1/2"	3290A51	$24.83
3/16"	0.062"	2"	3290A52	32.08
1/4"	0.082"	2"	3290A53	38.64
5/16"	0.104"	2 1/2"	3290A54	64.77
3/8"	0.125"	2 1/2"	3290A55	76.13
1/2"	0.167"	3"	3290A56	106.25
5/8"	0.208"	3 1/2"	3290A57	143.09
3/4"	0.250"	4"	3290A58	198.72

For information about countersinks, see page 2465.

Drill-Point Countersinks

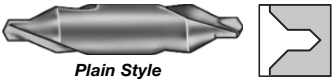

Plain Style

Radius Style

Bell Style

The tips of these countersinks have small drill points and are also double-ended (unless noted)—if one end becomes worn, simply turn the tool around.

Plain Style—For general purpose use.

Radius Style—The surface formed by these tools minimizes contact between the material and the centers, preventing damage and allowing for more precise machining between centers than 60° plain style tools.

Long Plain Style—A great choice when a longer reach is needed.

Bell Style—For applications where accuracy is important and where the material will go through several machining processes. The tool bevels the outer edges and gives an additional 120° chamfer to prevent damage to the center hole.

Use ***60° countersinks*** to create the holes needed to machine material between centers. The drill tip creates a small gap that prevents damage to the points of live or dead centers. The tips on ***82°*** and ***90° countersinks*** create a small pilot hole at the bottom of the countersunk hole to facilitate drilling.

High-speed steel countersinks are for use on steel and other ferrous metals. ***Cobalt steel countersinks*** have higher heat and abrasion resistance for use on high-tensile alloys, stainless steel, and other hard-to-machine materials. ***TiN (titanium nitride) coated high-speed steel countersinks*** have a wear- and heat-resistant coating that improves tool life and reduces friction. In most applications, the user may be able to increase speeds, and in many cases improve feed rates as well.

Plain Style and Radius Style

				PLAIN STYLE								RADIUS STYLE	
				60° High-Speed Steel		60° Cobalt Steel		60° TiN-Coated High-Speed Steel		82° and 90° ★ High-Speed Steel		High-Speed Steel	
Trade Size	Drill Size	Body Dia.	O'all Lg.		Each		Each		Each		Each		Each
00000	0.010″	1/8″	1 1/4″	2915A111	$7.86	—	—	29775A11	$8.28	2915A132●	$27.11	27435A15	$10.68
0000	0.015″	1/8″	1 1/4″	2915A112	6.96	—	—	29775A12	7.62	2915A133●	23.27	27435A16	10.12
000	0.020″	1/8″	1 1/4″	2915A81	7.30	—	—	29775A13	7.22	2915A134●	21.87	27435A17	8.77
00	0.025″	1/8″	1 1/4″	2915A82	7.15	2915A117♦	$12.20	29775A14	7.22	2915A141	23.24	27435A18	8.77
0	1/32″	1/8″	1 1/4″	2915A83	7.33	2915A118♦	12.20	29775A15	16.81	2915A144	23.24	27435A19	8.77
1	3/64″	1/8″	1 1/4″	2915A11	5.05	2915A51	8.61	29775A16	5.20	2915A145	7.69	27435A21	5.94
2	5/64″	3/16″	1 7/8″	2915A12	5.05	2915A52	7.40	29775A17	5.20	2915A146	7.87	27435A22	6.20
3	7/64″	1/4″	2″	2915A13	5.10	2915A53	7.63	29775A18	5.24	2915A147	8.53	27435A23	6.48
4	1/8″	5/16″	2 1/8″	2915A14	5.23	2915A54	7.69	29775A19	5.51	2915A148	8.59	27435A24	6.68
4 1/2	9/64″	3/8″	2 1/2″	2915A19	7.03	2915A55	21.92	29775A21	15.53	2915A151	17.52	27435A32	9.62
5	3/16″	7/16″	2 3/4″	2915A15	7.79	2915A56	13.85	29775A22	11.66	2915A152	13.45	27435A25	10.51
6	7/32″	1/2″	3″	2915A16	11.98	2915A57	20.80	29775A23	14.74	2915A153	20.18	27435A26	15.87
7	1/4″	5/8″	3 1/4″	2915A17	17.95	2915A58	30.24	29775A24	19.16	2915A154	26.17	27435A27	22.36
8	5/16″	3/4″	3 1/2″	2915A18	25.75	2915A59	43.69	29775A25	23.62	2915A155	34.37	27435A28	30.43
9	11/32″	7/8″	3 5/8″	2915A113	48.13	—	—	29775A26	80.28	2915A161	94.28	27435A29	58.66
10	3/8″	1″	3 3/4″	2915A114	62.64	—	—	29775A27	108.39	2915A164	124.04	27435A31	76.57

★ **To Order:** Please specify 82° or 90° countersink angle. ● Not available with an 82° countersink angle. ♦ Single-ended. 1 1/8″ overall length.

Plain Style Sets—High-Speed Steel

Five-Piece Sets—Come in a plastic case.

Countersink Angle	Trade Sizes In Set		Per Set
60°	00000-0	2917A4	$16.13
60°	1, 2, 3, 4, 5	2917A1	30.91
82°	1, 2, 3, 4, 5	2917A2	$40.40
90°	1, 2, 3, 4, 5	2917A3	40.40

Plain Style Set—Cobalt Steel

Five-Piece Set—Comes in a plastic case.

Countersink Angle	Trade Sizes In Set		Per Set
60°	1, 2, 3, 4, 5	2917A5	$41.99

Long Plain Style

Trade Size	Drill Size	Body Dia.	O'all Lg.	60° High-Speed Steel	Each	60° Cobalt Steel	Each	82° High-Speed Steel	Each	90° High-Speed Steel	Each
1	3/64″	1/8″	3″	2915A31	$11.32	2728A11	$29.70	2756A11	$17.69	2756A41	$17.69
1	3/64″	1/8″	4″	2915A32	11.51	2728A12	31.02	2756A12	20.08	2756A42	20.08
1	3/64″	1/8″	5″	2915A325	16.22	2728A13	43.50	2756A13	27.90	2756A43	27.90
1	3/64″	1/8″	6″	2915A33	21.14	2728A14	56.83	2756A14	36.47	2756A44	36.47
2	5/64″	3/16″	3″	2915A331	10.30	2728A15	30.38	2756A15	19.91	2756A45	19.51
2	5/64″	3/16″	4″	2915A34	12.80	2728A16	34.26	2756A16	22.41	2756A46	22.41
2	5/64″	3/16″	5″	2915A35	16.45	2728A17	43.93	2756A17	28.44	2756A47	28.44
2	5/64″	3/16″	6″	2915A36	21.47	2728A18	57.26	2756A18	37.34	2756A48	37.34
3	7/64″	1/4″	3″	2915A361	10.74	2728A19	31.60	2756A19	20.55	2756A49	20.55
3	7/64″	1/4″	4″	2915A37	13.51	2728A21	36.04	2756A21	23.86	2756A51	23.86
3	7/64″	1/4″	5″	2915A38	17.67	2728A22	47.51	2756A22	30.80	2756A52	30.80
3	7/64″	1/4″	6″	2915A39	21.47	2728A23	57.68	2756A23	37.37	2756A53	37.37
4	1/8″	5/16″	3″	2915A391	12.49	2728A24	37.11	2756A24	24.06	2756A54	24.06
4	1/8″	5/16″	4″	2915A41	14.83	2728A25	40.03	2756A25	25.93	2756A55	25.93
4	1/8″	5/16″	5″	2915A42	19.11	2728A26	51.17	2756A26	39.10	2756A56	39.10
4	1/8″	5/16″	6″	2915A43	22.01	2728A27	59.02	2756A27	38.03	2756A57	38.03
4 1/2	9/64″	3/8″	4″	2915A86	16.45	2728A28	43.96	2756A28	28.93	2756A58	28.93
4 1/2	9/64″	3/8″	5″	2915A44	17.64	2728A29	52.11	2756A29	33.83	2756A59	33.83
4 1/2	9/64″	3/8″	6″	2915A87	23.50	2728A31	62.88	2756A31	41.17	2756A61	41.17
5	3/16″	7/16″	4″	2915A88	17.69	2728A32	51.53	2756A32	33.68	2756A62	33.68
5	3/16″	7/16″	5″	2915A45	22.34	2728A33	59.77	2756A33	39.10	2756A63	39.10
5	3/16″	7/16″	6″	2915A46	27.61	2728A34	67.03	2756A34	43.81	2756A64	43.81
6	7/32″	1/2″	4″	2915A461	19.16	2728A35	54.72	2756A35	27.54	2756A65	27.54
6	7/32″	1/2″	5″	2915A91	23.50	2728A36	62.95	2756A36	41.17	2756A66	41.17
6	7/32″	1/2″	6″	2915A47	28.51	2728A37	75.92	2756A37	49.80	2756A67	49.80
7	1/4″	5/8″	6″	2915A48	52.29	2728A38	140.38	2756A38	90.04	2756A68	90.04
8	5/16″	3/4″	6″	2915A49	56.55	2728A39	151.57	2756A39	97.27	2756A69	97.27

Bell Style

Trade Size	Drill Size	Body Dia.	O'all Lg.	60° High-Speed Steel	Each
11	3/64″	1/8″	1 1/4″	2915A71	$6.23
12	1/16″	3/16″	1 7/8″	2915A72	6.54
13	3/32″	1/4″	2″	2915A73	6.66
14	7/64″	5/16″	2 1/8″	2915A74	6.78
15	5/32″	7/16″	2 3/4″	2915A75	10.47
16	3/16″	1/2″	3″	2915A76	$15.92
17	7/32″	5/8″	3 1/4″	2915A77	21.76
18	1/4″	3/4″	3 1/2″	2915A78	29.11
19	5/16″	7/8″	3 5/8″	2915A119	60.12
20	3/8″	1″	3 3/4″	2915A121	81.79

For information about countersinks, see page 2465.

Solid-Carbide Drill-Point Countersinks

Longer-lasting than high-speed steel drill-point countersinks and great for hard and abrasive materials. The tips of these countersinks have small drill points and are double-ended—if one end becomes worn, simply turn the tool around.

Use ***60° countersinks*** to create the holes needed to machine material between centers. The drill tip creates a small gap that prevents damage to the points of live or dead centers. The tips on ***82°*** and ***90° countersinks*** create a small pilot hole at the bottom of the countersunk hole to facilitate drilling.

Uncoated tools are for use with hardened steel, nonferrous metals such as aluminum, and nonmetallic materials. ***Coated tools*** offer superior performance and longer life. *TiCN* (titanium carbonitride) coated tools last longer than uncoated tools and are best for general purpose cutting of steel. They are also the best option for cuts in cast aluminum. *TiAlN* (titanium aluminum nitride) is the best choice for materials up to Rockwell hardness C50. Not for use on aluminum. *AlTiN* (aluminum titanium nitride) is for high-speed machining on materials with a Rockwell hardness between C50 and C70. Not for use on aluminum.

To Order: Please specify 60°, 82°, or 90° countersink angle. For coated tools, also specify TiCN, TiAlN, or AlTiN coating.

Countersinks

Trade Size	Drill Size	Body Dia.	O'all Lg.	Uncoated	Each	Coated	Each
00	0.025″	1/8″	1 1/2″	2925A51	$16.36	2936A11	$21.91
0	1/32″	1/8″	1 1/2″	2925A52	15.35	2936A12	20.75
1	3/64″	1/8″	1 1/2″	2925A53	14.32	2936A13	19.63
2	5/64″	3/16″	2″	2925A54	22.60	2936A14	29.58
3	7/64″	1/4″	2″	2925A55	25.66	2936A15	35.78
4	1/8″	5/16″	2 1/2″	2925A56	35.08	2936A16	49.69
5	3/16″	7/16″	2 3/4″	2925A57	52.12	2936A17	72.82
6	7/32″	1/2″	3″	2925A58	71.54	2936A18	94.57
7	1/4″	5/8″	3 1/2″	2925A59	112.96	2936A19	148.86
8	5/16″	3/4″	4″	2925A61	148.85	2936A21	192.74

Six-Piece Countersink Sets

You'll get one countersink in each of the following trade sizes: 1, 2, 3, 4, 5, and 6. Furnished in a metal case.

To Order: For coated countersink sets, please specify TiCN, TiAlN, or AlTiN coating.

	Uncoated	Per Set	Coated	Per Set
60° Countersink Angle	2925A22	$221.82	2936A31	$260.39
82° Countersink Angle	2925A72	221.82	2936A32	260.39
90° Countersink Angle	2925A73	221.82	2936A33	260.39

Hand-Driven Countersinks

A manually powered, angled shank makes it easy to countersink and debur next to a shoulder and in hard-to-reach holes.

Complete tool is furnished in a plastic case and includes a 5″ long plastic handle and four high-speed steel countersinks with a 90° countersink angle in 1/8″, 1/4″, 5/16″, and 3/8″ body diameters.

		Each
Complete Tool	28775A61	$54.80
Replacement Parts		
5″ Long Plastic Handle	28775A67	6.17
1/8″ Countersink	28775A62	5.90
1/4″ Countersink	28775A63	16.11
5/16″ Countersink	28775A64	16.46
3/8″ Countersink	28775A65	16.37

Tight-Spot Reverse Countersinks

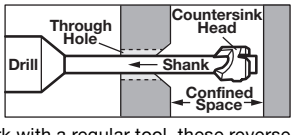

When you can't get at your work with a regular tool, these reverse countersinks do the trick. Simply put the shank (sold separately) in your drill chuck, insert shank into a through hole, and attach the countersink head on the end. Pull back on the drill to countersink the backside of the hole. Shanks are 6″ long and are tempered steel; countersink heads are high-speed steel.

For Hole Dia.	Body Dia.	COUNTERSINK HEADS 82°	Each	100°	Each	SHANKS Dia.	Each
3/32″	5/16″	3309A41	$23.40	3309A11	$20.05	3/32″	3309A31 $7.11
1/8″	5/16″	3309A42	23.40	3309A12	20.05	1/8″	3309A32 7.40
5/32″	5/16″	3309A43	23.40	3309A13	20.05	5/32″	3309A33 8.11
1/8″	3/8″	3309A44	24.50	3309A14	21.05	1/8″	3309A32 7.40
5/32″	3/8″	3309A45	24.50	3309A15	21.05	5/32″	3309A33 8.11
3/16″	3/8″	3309A46	24.50	3309A16	21.05	3/16″	3309A34 8.51
5/32″	1/2″	3309A47	26.10	3309A17	22.29	5/32″	3309A33 8.11
3/16″	1/2″	3309A48	26.10	3309A18	22.29	3/16″	3309A34 8.51
1/4″	1/2″	3309A49	26.10	3309A19	22.29	1/4″	3309A35 9.00

About Counterbores

Counterboring

Counterboring— Enlarge the top portion of an existing hole, forming a cylindrical-shaped opening with a flat bottom that acts as a seat for the head of a screw or wood plug.

Shallow Counterboring

Shallow Counterboring— Bore a shallow spot (1/8″ or less) around a hole so that the head of the screw, bolt, or nut is slightly raised above the surface of the material (also known as spot facing).

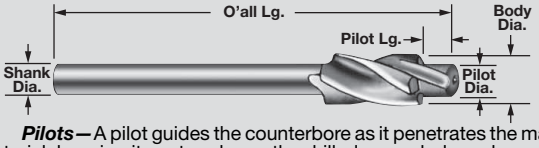

Pilots— A pilot guides the counterbore as it penetrates the material, keeping it centered over the drilled screw hole and ensuring a level seat for the screw head. ***Counterbores with built-in pilots*** have a counterbore and pilot made from one piece of steel. ***Changeable-pilot counterbores*** have a removable pilot, allowing you to use various pilot diameters in a single tool.

Drill-Bit Counterbores for Wood and Plastic

Drill Bit Not Included

Stop Collar Sold Separately

Simply position one of these counterbores on your standard jobbers' or guide-point (brad-point) drill bit and lock it into position with the two set screws. You can now drill and counterbore in a single step.

All are made of steel and have four flutes. Drill bits are not included. For general purpose jobbers' drill bits, see page 2432.

Stop collars control the cutting depth of your counterbore. They attach with two set screws and are made of steel.

Counterbores Body Dia.	Fits Drill Size	O'all Lg.		Each	Stop Collars OD	Wd.		Each
5/8″	3/16″	1″	3105A11 ✓	$21.94	7/8″	1/4″	2903A17	$4.03
5/8″	1/4″	1″	3105A21	20.74	7/8″	1/4″	2903A17	4.03
3/4″	1/4″	1″	3105A12 ✓	24.69	1″	1/4″	2903A18	4.16
3/4″	5/16″	1 1/8″	3105A13 ✓	23.34	1″	1/4″	2903A18	4.16
7/8″	3/8″	1 1/4″	3105A14 ✓	30.94	1 1/8″	1/4″	2903A19	4.29
1″	7/16″	1 3/8″	3105A15 ✓	35.30	1 1/4″	5/16″	2903A21	4.68
1 1/8″	1/2″	1 1/2″	3105A16 ✓	46.75	1 3/8″	5/16″	2903A32	4.88
1 1/4″	9/16″	1 5/8″	3105A22	48.88	1 1/2″	3/8″	2903A23	5.53

Six-Piece Drill-Bit Counterbore Set— Includes one each of the above counterbores marked with a ✓. The set comes in a wood stand.

3105A31 ..... **Per Set** $187.21

For information about counterbores, see page 2470.

Large-Diameter Drill-Bit Counterbores for Wood

Also known as multi-spur counterbores, these counterbores have a single set screw to secure them to any woodworking bit that has a 1/2″ shank and a cutting diameter of 1/2″ and larger. Counterbores are made of carbon steel and are for wood applications only. The drill bit is not included.

Body Dia.	O'all Lg.		Each
1 1/8″	1″	2921A12	$55.06
1 1/4″	1″	2921A13	55.98
1 3/8″	1″	2921A14	58.11
1 1/2″	1″	2921A15	65.24
1 3/4″	1″	2921A17	$75.59
2″	1 1/4″	2921A19	81.39
2 1/4″	1 1/4″	2921A22	89.13
2 1/2″	1 1/4″	2921A24	103.02

Drill-Tip Counterbores

In one timesaving operation, drill and counterbore holes with sufficient clearance for socket-head cap screws. All counterbores have round shanks and are made of high-speed steel for use on most metals.

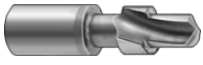

Machine Screw and Fractional Sizes

For Screw Size	Body Dia.	Drill Bit Dia.	Shank Dia.	O'all Lg.		Each
#5	0.220″	0.138″	1/4″	1 7/32″	29445A11	$11.58
#6	0.242″	0.150″	1/4″	1 7/32″	29445A12	12.09
#8	0.290″	0.178″	5/16″	1 15/32″	29445A13	12.41
#10	0.332″	0.200″	5/16″	1 1/2″	29445A14	13.05
1/4″	0.406″	0.280″	7/16″	1 3/4″	29445A15	15.23
5/16″	0.490″	0.340″	1/2″	1 15/16″	29445A16	16.41
3/8″	0.593″	0.406″	5/8″	2 11/32″	29445A17	18.28
7/16″	0.687″	0.468″	5/8″	2 1/2″	29445A18	23.10
1/2″	0.781″	0.532″	5/8″	2 11/16″	29445A19	33.15

Metric Sizes

For Screw Size, mm	Body Dia., mm	Drill Bit Dia., mm	Shank Dia.	O'all Lg.		Each
3	5.95	3.57	1/4″	1 1/4″	29445A21	$13.44
4	7.54	4.36	1/4″	1 3/8″	29445A22	13.92
5	9.13	5.55	5/16″	1 1/2″	29445A23	15.78
6	10.71	6.35	5/16″	1 9/16″	29445A24	18.57
8	13.49	8.73	7/16″	1 13/16″	29445A25	19.29
10	16.66	10.32	1/2″	2 1/16″	29445A26	21.61
12	18.75	12.70	5/8″	2 7/16″	29445A27	32.60
14	21.82	14.68	5/8″	2 5/8″	29445A28	33.88
16	24.60	16.67	5/8″	2 3/4″	29445A29	34.92

Counterbores with Built-In Pilots

High-Speed Steel

Carbide Tipped

Also known as cap-screw and solid-pilot counterbores, these round shank tools have four spiral flutes (unless noted) for easy cutting with no chip clogging.

High-speed steel counterbores are for use on most metals.

Choose *TiN (titanium nitride) coated high-speed steel counterbores* when you need increased wear and heat resistance. For use on ferrous metals such as steel and stainless steel.

Grade C-2 carbide-tipped counterbores are for cast iron and nonferrous metals such as aluminum, brass, and copper.

Grade C-5/C-6 carbide-tipped counterbores are for use on steel.

Machine Screw and Fractional Sizes— Choose from standard size, 1/64″ oversize, and 1/32″ oversize styles. Use the 1/64″ and 1/32″ oversize counterbores when screw holes in sheets or layers of material are misaligned. **To Order:** Please specify size: standard, 1/64″ oversize, or 1/32″ oversize.

Metric Sizes— All are high-speed steel and 0.5 mm oversize.

Machine Screw and Fractional Sizes

For Screw Size	Body Dia.★	Pilot Dia.★	Pilot Lg.	Shank Dia.	O'all Lg.	HIGH-SPEED STEEL Uncoated	Each	HIGH-SPEED STEEL TiN-Coated	Each	CARBIDE TIPPED Grade C-2	Each	CARBIDE TIPPED Grade C-5/C-6	Each
#4	0.1860″	0.1120″	5/32″	5/32″	3 7/8″	2919A11	$18.39	28225A11	$24.76	—	—	—	—
#5	0.2050″	0.1250″	3/16″	3/16″	4 1/8″	2919A92	18.39	28225A12	24.76	—	—	—	—
#6	0.2280″	0.1380″	7/32″	7/32″	4 5/8″	2919A13	18.63	28225A13	25.17	—	—	—	—
#8	0.2720″	0.1640″	1/4″	1/4″	5″	2919A94	20.17	28225A14	26.64	—	—	—	—
#10	0.3140″	0.1900″	9/32″	9/32″	5 1/4″	2919A15	20.79	28225A15	28.03	—	—	—	—
1/4″	0.3820″	0.2500″	5/16″	5/16″	5 5/8″	2919A96	22.33	28225A16	31.79	3218A11●	$74.83	3218A21●	$93.31
5/16″	0.4750″	0.3125″	3/8″	3/8″	6 1/8″	2919A17	26.96	28225A17	39.07	3218A12●	83.71	3218A22●	93.99
3/8″	0.5720″	0.3750″	1/2″	1/2″	6 1/2″	2919A18	28.82	28225A18	43.56	3218A13●	94.44	3218A23●	105.96
7/16″	0.6630″	0.4375″	1/2″	1/2″	7″	2919A19	34.77	28225A19	53.94	3218A14●	91.20	3218A24●	102.31
1/2″	0.7570″	0.5000″	1/2″	1/2″	7 1/2″	2919A21	39.02	28225A21	61.05	3218A15●	103.38	3218A25●	116.05
5/8″	0.9450″	0.6250″	5/8″	5/8″	7 5/8″	2919A22	64.83	28225A22	90.39	3218A16●	113.94	3218A26●	127.85
3/4″	1.1330″	0.7500″	3/4″	3/4″	7 3/4″	2919A23	74.10	28225A23	106.82	3218A17●	112.32	3218A27●	126.03
7/8″	1.3220″	0.8750″	7/8″	7/8″	8 1/8″	2919A24	90.72	28225A24	132.98	3218A18	124.90	3218A28	140.22
1″	1.5100″	1.0000″	1″	1″	8 1/2″	2919A25	114.52	28225A25	169.59	3218A19	143.00	3218A29	160.46

★ Dimensions are for standard size. Add 1/64″ (0.0156″) or 1/32″ (0.0312″) to size shown for approximate dimensions of oversize counterbores.
● Has three flutes.

Metric Sizes

For Screw Size, mm	Body Dia., mm	Pilot Dia., mm	Pilot Lg.	Shank Dia.	O'all Lg.	HIGH-SPEED STEEL Uncoated	Each
3	6.0	3.5	7/32″	3/16″	4 1/2″	2740A11	$18.08
4	7.5	4.5	1/4″	1/4″	5″	2740A12	19.38
5	9.0	5.5	9/32″	5/16″	5 5/8″	2740A13	21.10
6	10.5	6.5	5/16″	5/16″	5 5/8″	2740A14	25.36
8	13.5	8.5	3/8″	1/2″	6 1/2″	2740A15	34.45
10	16.5	10.5	1/2″	1/2″	7″	2740A16	34.78
12	18.5	12.5	1/2″	1/2″	7 1/8″	2740A17	39.87
14	21.5	14.5	9/16″	5/8″	7 1/2″	2740A18	58.84
16	24.5	16.5	5/8″	5/8″	7 5/8″	2740A22	62.58
20	30.5	20.5	3/4″	7/8″	8 1/8″	2740A26	82.80

Counterbore Sets

10-Piece Machine Screw and Fractional Size Sets— Each set contains uncoated high-speed steel counterbores for screw sizes #4 through 1/2″. Come in a wood case.

		Per Set
Standard Size	2919A12	$274.78
1/64″ Oversize	2919A14	274.78
1/32″ Oversize	2919A16	274.78

8-Piece Metric Size Set— Each set contains uncoated high-speed steel counterbores for metric screw sizes 3 mm through 14 mm. Come in a wood case.

		Per Set
0.5 mm Oversize	2740A19	$279.65

For information about counterbores, see page 2470.

Counterbores for Fillister-Head Screws

Get accurate counterbored holes for fillister-head machine screws. These tools are made of high-speed steel for use on most metals. All have a round shank and two straight flutes. Shank diameter is slightly larger than the counterbore body diameter.

For Screw Size	Body Dia.	Pilot Head Dia.	O'all Lg.		Each
#0	0.110″	0.059″	2½″	2909A11	$9.14
#1	0.133″	0.072″	2½″	2909A12	9.14
#2	0.155″	0.085″	2½″	2909A13	8.55
#3	0.176″	0.098″	2½″	2909A14	8.55
#4	0.198″	0.111″	2⅝″	2909A15	8.55
#5	0.220″	0.124″	2⅝″	2909A16	9.33
#6	0.241″	0.137″	2⅝″	2909A17	9.69
#8	0.285″	0.163″	2¾″	2909A18	10.31
#10	0.328″	0.189″	2⅞″	2909A19	11.08
#12	0.372″	0.215″	3″	2909A21	12.37

Adjustable-Diameter Counterbores

Straight Shank

Counterbore a variety of diameters with one tool. Simply turn the set screw and adjust the blades to the diameter you need. Use these counterbores to machine tough steel forgings, cast iron, and aluminum alloys. They have a steel body with replaceable high-speed steel blades and carbon steel pilots. The replaceable pilots provided are the minimum size recommended for use with these counterbores. If your job requires a larger pilot size, see 3103A series pilots for changeable-pilot counterbores (sold separately on this page). *Note:* Not for use in hand-held, portable tools.

Body Dia. Range	Shank Dia.	Pilot Shank Dia.	Pilot Head Dia.	Counterbores	Each	Set of Two Repl. Blades	Per Set
Straight-Shank Counterbores							
1″ -1¼″	½″	3/16″	7/16″	3104A11	$405.24	3104A31	$143.92
1¼″-1⅝″	½″	¼″	9/16″	3104A14	407.21	3104A32	157.08
Morse Taper-Shank Counterbore							
2⅛″-2⅞″	#3	⅜″	¾″	3104A22	653.05	3104A34	298.58

Changeable-Pilot Counterbores

Narrow-Shank Counterbore Shown with Pilot (Pilot Sold Separately)

Pilot

Unlike counterbores with built-in pilots, these tools allow you to change pilots so you can use the right pilot diameter for your application. All have three flutes, except the narrow-shank high-speed steel counterbores, which have four flutes. *Note*: Changeable counterbore pilots are sold separately.

Standard-Shank Counterbores— Use *high-speed steel* tools on most metals and plastic. *Carbide-tipped* tools come in two grades. **To Order:** For carbide-tipped counterbores, please choose grade for steel or grade for nonferrous metals (such as aluminum, brass, and bronze) and cast iron.

Narrow-Shank Counterbores— Also known as aircraft counterbores, these have a narrower ¼″ diameter shank and are designed to fit in aerospace tools that use a smaller shank size. *High-speed steel* tools are for use on most metals and plastic. *Carbide-tipped* tools are for soft nonferrous metals such as aluminum, brass, and bronze.

Standard-Shank Counterbores

Body Dia.	Shank Dia.	For Pilot Shank Dia.	High-Speed Steel O'all Lg.		Each	Carbide Tipped O'all Lg.		Each
3/16″	15/64″	3/32″	3″	3015A11	$64.34	———	———	———
7/32″	15/64″	3/32″	3″	3015A12	64.34	———	———	———
1/4″	15/64″	3/32″	3 13/16″	3015A13	38.50	3 13/16″	2814A41	$72.05
9/32″	17/64″	3/32″	3 13/16″	3015A14	41.17	3 13/16″	2814A42	86.62
5/16″	19/64″	3/32″	3 13/16″	3015A15	38.42	3 13/16″	2814A59	78.81
11/32″	5/16″	3/32″	3 13/16″	3015A16	42.07	3 13/16″	2814A31	97.17
3/8″	5/16″	5/32″	4 1/16″	3015A17	43.25	4 1/16″	2814A43	81.32
13/32″	3/8″	5/32″	4 1/16″	3015A18	43.83	4 1/16″	2814A32	91.91
7/16″	3/8″	5/32″	4 1/16″	3015A19	44.42	4 1/16″	2814A44	83.54
15/32″	7/16″	3/16″	4 5/16″	3015A21	46.33	4 5/16″	2814A33	101.47
1/2″	7/16″	3/16″	4 5/16″	3015A22	47.08	4 5/16″	2814A45	92.32
17/32″	1/2″	3/16″	4 5/16″	3015A23	49.33	4 5/16″	2814A34	103.33
9/16″	1/2″	3/16″	4 5/16″	3015A24	52.92	4 5/16″	2814A46	93.97
19/32″	1/2″	3/16″	5 1/8″	3015A25	56.50	5 1/8″	2814A35	106.18
5/8″	1/2″	3/16″	5 1/8″	3015A26	60.83	5 1/8″	2814A47	96.51
21/32″	1/2″	3/16″	5 1/8″	3015A27	62.17	5 1/8″	2814A36	112.10
11/16″	1/2″	3/16″	5 1/8″	3015A28	62.58	5 1/8″	2814A37	101.84
23/32″	1/2″	1/4″	5 3/8″	3015A29	63.75	5 3/8″	2814A38	113.99
3/4″	1/2″	1/4″	5 3/8″	3015A31	62.25	5 3/8″	2814A49	103.52
25/32″	5/8″	1/4″	5 1/8″	3015A32	65.08	5 3/8″	2814A39	115.85
13/16″	5/8″	1/4″	5 1/8″	3015A33	67.75	5 3/8″	2814A51	105.35
7/8″	3/4″	1/4″	5 3/8″	3015A34	70.50	5 3/8″	2814A53	110.75
15/16″	3/4″	1/4″	6 1/8″	3015A43	74.00	6 1/8″	2814A56	113.76
1″	3/4″	5/16″	6 3/8″	3015A36	88.33	6 3/8″	2814A54	116.41
1 1/8″	1″	5/16″	6 3/8″	3015A38	99.00	6 3/8″	2814A58	121.71

Narrow-Shank Counterbores

Body Dia.	Shank Dia.	For Pilot Shank Dia.	High-Speed Steel O'all Lg.		Each	Carbide Tipped O'all Lg.		Each
1/4″	1/4″	3/32″	2 3/8″	3102A11	$23.61	2 3/8″	31125A21	$45.71
9/32″	1/4″	3/32″	2 3/8″	3102A12	24.22	2 3/8″	31125A22	45.76
5/16″	1/4″	3/32″	2 3/8″	3102A13	24.39	2 3/8″	31125A23	46.92
11/32″	1/4″	3/32″	2 3/8″	3102A14	24.93	2 3/8″	31125A24	47.85
3/8″	1/4″	3/32″	2 3/8″	3102A15	24.93	2 3/8″	31125A25	48.01
13/32″	1/4″	1/8″	2 13/16″	3102A16	25.85	2 3/4″	31125A26	54.59
7/16″	1/4″	1/8″	2 13/16″	3102A17	25.85	2 3/4″	31125A27	58.86
15/32″	1/4″	1/8″	2 13/16″	3102A18	27.24	2 3/4″	31125A28	59.85
1/2″	1/4″	1/8″	2 13/16″	3102A19	27.24	2 3/4″	31125A29	60.56
17/32″	1/4″	1/8″	2 13/16″	3102A21	33.80	2 3/4″	31125A31	60.89
9/16″	1/4″	1/8″	2 13/16″	3102A22	33.80	2 3/4″	31125A32	61.11
19/32″	1/4″	1/8″	2 13/16″	3102A23	35.50	2 3/4″	31125A33	61.44
5/8″	1/4″	1/8″	2 13/16″	3102A24	35.50	2 3/4″	31125A34	62.15
21/32″	1/4″	3/16″	3 1/8″	3102A25	37.57	2 3/4″	31125A35	69.06
11/16″	1/4″	3/16″	3 1/8″	3102A26	38.57	2 3/4″	31125A36	72.51
23/32″	1/4″	3/16″	3 1/8″	3102A27	40.04	2 3/4″	31125A37	74.98
3/4″	1/4″	3/16″	3 1/8″	3102A28	41.59	2 3/4″	31125A38	75.91
25/32″	1/4″	3/16″	3 1/8″	3102A29	43.44	2 3/4″	31125A39	75.91
13/16″	1/4″	3/16″	3 1/8″	3102A31	43.44	2 3/4″	31125A41	76.90
7/8″	1/4″	3/16″	3 1/8″	3102A33	46.59	2 3/4″	31125A43	78.21
15/16″	1/4″	3/16″	3 1/8″	3102A35	49.74	2 3/4″	31125A45	79.47
1″	1/4″	3/16″	3 1/8″	3102A37	53.26	2 3/4″	31125A47	80.24

Steel Pilots for Changeable-Pilot Counterbores

When selecting a pilot, be sure the pilot shank diameter is compatible with your counterbore. The length of the pilot head is equal to its diameter. All are carbon steel. **Also Available:** Other sizes. Please ask for 3103A999 and specify pilot diameter and shank diameter.

Pilot Shank Dia.	Pilot Head Dia.		Each	Pilot Shank Dia.	Pilot Head Dia.		Each	Pilot Shank Dia.	Pilot Head Dia.		Each	Pilot Shank Dia.	Pilot Head Dia.		Each
3/32″	3/32″	3103A1	$5.54	1/8″	3/8″	3103A22	$7.03	3/16″	3/8″	3103A3	$7.22	1/4″	9/16″	3103A39	$10.94
3/32″	1/8″	3103A11	5.54	5/32″	3/16″	3103A23	5.58	3/16″	13/32″	3103A65	7.22	1/4″	5/8″	3103A4	13.11
3/32″	5/32″	3103A12	5.54	5/32″	7/32″	3103A24	6.50	3/16″	7/16″	3103A31	7.22	1/4″	1 1/16″	3103A41	11.65
3/32″	3/16″	3103A13	5.14	5/32″	1/4″	3103A25	6.50	3/16″	15/32″	3103A66	7.22	1/4″	3/4″	3103A42	15.95
3/32″	7/32″	3103A14	6.49	5/32″	9/32″	3103A61	6.50	3/16″	1/2″	3103A32	5.20	1/4″	13/16″	3103A43	18.26
3/32″	1/4″	3103A15	6.50	5/32″	5/16″	3103A26	6.50	3/16″	17/32″	3103A48	20.02	5/16″	3/8″	3103A45	7.03
1/8″	1/8″	3103A16	6.00	5/32″	3/8″	3103A27	6.50	3/16″	9/16″	3103A33	18.75	5/16″	7/16″	3103A46	7.43
1/8″	5/32″	3103A17	6.00	3/16″	3/16″	3103A64	6.00	3/16″	5/8″	3103A34	20.33	5/16″	1/2″	3103A47	7.43
1/8″	3/16″	3103A18	6.00	3/16″	1/4″	3103A28	6.67	1/4″	5/16″	3103A35	6.84	5/16″	5/8″	3103A49	13.11
1/8″	7/32″	3103A19	6.67	3/16″	9/32″	3103A62	7.22	1/4″	3/8″	3103A36	6.84	5/16″	11/16″	3103A5	14.78
1/8″	1/4″	3103A2	6.67	3/16″	5/16″	3103A29	7.22	1/4″	7/16″	3103A37	6.84	5/16″	3/4″	3103A51	14.78
1/8″	5/16″	3103A21	7.03	3/16″	11/32″	3103A63	7.22	1/4″	1/2″	3103A38	7.43	5/16″	1″	3103A55	20.85

Standard-Shank High-Speed Steel Changeable-Pilot Counterbore Set

15-Piece Set— You'll get five high-speed steel counterbores in sizes 1/4″-1/2″ × 16ths. You'll also get 10 pilots: 1/8″, 5/32″, 3/16″, and 1/4″ diameters with a 3/32″ shank; 3/16″, 7/32″, 1/4″, and 5/16″ diameters with a 5/32″ shank; and 1/4″ and 5/16″ diameters with a 3/16″ shank. Come in a wood case.

2817A71 ..... **Per Set** $375.38

For information about counterbores, see page 2470.

Tight-Spot Reverse Counterbores

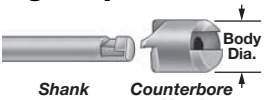

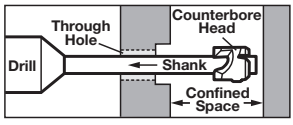

If limited space makes it difficult to counterbore your hole, access it from the other side with this tool. Simply put the shank (sold separately) in your drill chuck, insert shank into a through hole, and attach the counterbore on the end. Pull back on the drill to counterbore the backside of the hole. All are high-speed steel with four flutes; for use on most metals. Shanks are 6″ long and made of steel.

Counterbore Heads				Shanks		
For Hole Dia.	Body Dia.		Each	Dia.		Each
3/32″	5/16″	3323A21	$20.04	3/32″	3309A31	$7.11
1/8″	5/16″	3323A22	20.04	1/8″	3309A32	7.40
1/8″	3/8″	3323A24	20.75	1/8″	3309A32	7.40
5/32″	5/16″	3323A23	20.04	5/32″	3309A33	8.11
5/32″	3/8″	3323A25	20.75	5/32″	3309A33	8.11
5/32″	1/2″	3323A27	21.96	5/32″	3309A33	8.11
3/16″	3/8″	3323A26	20.75	3/16″	3309A34	8.51
3/16″	1/2″	3323A28	21.96	3/16″	3309A34	8.51
1/4″	1/2″	3323A29	21.96	1/4″	3309A35	9.00

Contouring Router Bits

A ball-nose design with upward chip removal provides accurate, smooth carving and modeling in CNC routers. These solid-carbide router bits allow for contours and curved corners and are for use on modeling foam, soft and hard plastics, and aluminum blocks and plates. All have two spiral flutes.

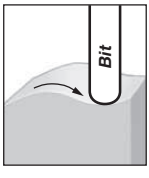

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1/8″	1/2″	1/4″	2″	8793A21	$34.87
3/16″	3/4″	1/4″	2″	8793A22	34.87
1/4″	7/8″	1/4″	2 1/2″	8793A23	34.87
3/8″	1 1/8″	3/8″	3″	8793A24	55.32
1/2″	1 1/8″	1/2″	3″	8793A25	85.06

Router Bits for Carbon Fiber

Designed for routing carbon fiber composites and fiber laminates with minimal material separation and loosening of fibers. All are solid carbide with diamond-pattern cutting edges.

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1/8″	1/2″	1/8″	2″	3334A11	$87.53
3/16″	5/8″	3/16″	2″	3334A12	90.65
1/4″	3/4″	1/4″	2″	3334A13	91.21
1/4″	1 1/2″	1/4″	3″	3334A14	93.14
3/8″	1 1/8″	3/8″	3″	3334A15	98.48
1/2″	1 1/8″	1/2″	3 1/2″	3334A16	106.70
1/2″	2 1/8″	1/2″	4″	3334A17	114.68

Mil. Spec. Hydraulic Port Counterbores

MS 33649

MS 16142

Create the contoured profiles you need for installing hydraulic ports in accordance with military and SAE specifications. All counterbores are made of steel, have an integral reamer pilot, and are for use on most metals.

Thread Size	Series No.	Shank Dia.	Shank Lg.	O'all Lg.		Each
MS 33649 Counterbores						
3/8″-24	NB-3	0.4995″	2″	5 1/16″	2144A11	$199.74
7/16″-20	NB-4	0.4995″	2″	5 5/32″	2144A12	204.00
1/2″-20	NB-5	0.4995″	2″	5 5/32″	2144A13	213.71
9/16″-18	NB-6	0.4995″	2″	5 3/16″	2144A14	222.21
3/4″-16	NB-8	0.4995″	2″	5 5/16″	2144A15	238.00
MS 16142 Counterbores						
3/8″-24	SAE-3SS	0.5000″	2″	3 3/4″	2144A21	166.36
7/16″-20	SAE-4SS	0.5000″	2″	3 3/4″	2144A22	170.00
1/2″-20	SAE-5SS	0.7500″	2 1/32″	4″	2144A23	178.50
9/16″-18	SAE-6SS	0.7500″	2 1/32″	4″	2144A24	185.79
3/4″-16	SAE-8SS	0.7500″	2 1/32″	4″	2144A25	199.14

Router Bits for Aluminum

Machine aluminum on your CNC router with these solid-carbide bits. All have one flute.

Grooving and Slotting— Have a spiral flute for upward chip removal. They machine multiple sheets and plates.

Edging— Have a straight flute and do not pull up on your material, making them great for edges.

Grooving and Slotting

Edging

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
Grooving and Slotting					
1/8″	1/4″	1/8″	1 1/2″	3317A21	$28.01
1/8″	1/2″	1/4″	2″	3317A22	35.05
3/16″	3/8″	1/4″	2″	3317A23	35.05
3/16″	5/8″	1/4″	2″	3317A24	37.05
1/4″	3/8″	1/4″	2″	3317A25	34.93
1/4″	1 1/4″	1/4″	3″	3317A26	54.55
3/8″	3/4″	3/8″	3″	3317A27	64.79
3/8″	1 1/8″	3/8″	3″	3317A28	78.47
Edging					
1/8″	1/2″	1/4″	2″	3317A31	34.68
3/16″	5/8″	1/4″	2″	3317A32	34.68
1/4″	3/4″	1/4″	2 1/2″	3317A33	34.68
5/16″	13/16″	3/8″	2 1/2″	3317A34	59.39
3/8″	7/8″	3/8″	2 1/2″	3317A35	59.39
7/16″	1″	1/2″	3″	3317A36	90.79
1/2″	1″	1/2″	3″	3317A37	90.79

Router Bits for Stainless Steel

An AlTiN (aluminum titanium nitride) coating over these solid-carbide router bits provides long tool life for cutting stainless steel. They have two spiral flutes for upward chip removal. *Note*: Do not use a dust collector when cutting stainless steel, as it may cause a fire.

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1/8″	1/4″	1/8″	2″	3324A11	$27.80
3/16″	3/8″	3/16″	2 1/2″	3324A12	37.93
1/4″	3/8″	1/4″	2 1/2″	3324A13	39.52
3/8″	1/2″	3/8″	3″	3324A14	55.80

Router Bits for Fiberglass and Ceramics

Fiberglass Cutting— The diamond-pattern cutting edge creates small chips for a fine finish on fiberglass-reinforced polyester, graphite-composite laminates, and some grades of Kevlar. Bits are made of solid carbide. ***Plain end*** are for side routing. ***Bur end*** are for side and bottom routing. ***End-mill end*** are for side and bottom routing, as well as for plunge cuts. ***Drill-point end*** are for fast plunge cutting and slotting.

Ceramic Cutting— Not to be confused with plated tools, a 40-grit diamond coating is firmly bonded to the router bit body using a high-temperature metal alloy. These bits stay sharper longer than solid carbide for longer tool life. Use for routing nonmetallic composites such as graphite, fiberglass, phenolics, and ceramics.

				FIBERGLASS CUTTING								CERAMIC CUTTING		
Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.	Plain End	Each	Bur End	Each	End-Mill End	Each	Drill-Point End	Each	O'all Lg.		Each
1/16″	3/16″	1/8″	1 1/2″	8785A11	$7.39	8785A31	$8.78	8785A21	$8.81	8785A41	$9.33	—	—	—
1/8″	1/2″	1/8″	1 1/2″	8785A12	7.50	8785A32	8.38	8785A22	9.06	8785A42	9.59	2″	8796A11	$27.00
3/16″	5/8″	3/16″	2″	8785A13	12.32	8785A33	13.68	8785A23	14.23	8785A43	15.57	—	—	—
1/4″	3/4″	1/4″	2″	8785A14	13.37	8785A34	14.95	8785A24	15.93	8785A44	16.62	2 1/2″	8796A12	36.95
3/8″	1″	3/8″	2 1/2″	8785A15	34.65	8785A35	37.64	8785A25	39.11	8785A45	40.63	3″	8796A13	55.79
1/2″	1″	1/2″	3″	8785A16	47.55	8785A36	52.33	8785A26	54.83	8785A46	57.40	4″	8796A14★	63.16
3/4″	1″	1/2″	—	—	—	—	—	—	—	—	—	4″	8796A15	89.47

★ Cutting length is 1 1/2″.

Router Bits for Plastic

Carbide-tipped bits outlast ***high-speed steel*** bits. ***Solid-carbide*** bits last longer than carbide-tipped bits and are not for hand-held applications.

(1 & 2) Bits for Hard and Soft Plastic

1

Up Cut

Down Cut

2

(1) Smooth-finish bits produce a smooth groove or slot in soft and hard plastic. All have two spiral flutes and are pilotless. *Up-cut bits* provide upward chip removal and the best finish on the bottom of your material; *down-cut bits* push chips down and give the best finish on the top of your material.

(2) Edge-rounding bits create round edges on soft and hard plastic sheets. Bits have 3/8″ cutting length. All have one straight flute and are pilotless.

Cutting Dia.	Cutting Lg./Radius	Shank Dia.	O'all Lg.		Each
(1) Smooth-Finish Solid-Carbide Bits—Up Cut					
1/4″	3/8″ length	1/4″	2 1/2″	8782A11	$20.50
1/4″	3/4″ length	1/4″	2 1/2″	8782A12	21.90
(1) Smooth-Finish Solid-Carbide Bits—Down Cut					
1/4″	3/8″ length	1/4″	2 1/2″	8782A21	20.50
1/4″	3/4″ length	1/4″	2 1/2″	8782A22	21.90
(2) Edge-Rounding Solid-Carbide Bits					
1/4″	1/8″ radius	1/4″	2 1/2″	3144A21	41.00
1/4″	3/16″ radius	1/4″	2 1/2″	3144A22	41.00
1/4″	1/4″ radius	1/4″	2 1/2″	3144A23	41.00

(3-5) Bits for Plastic Laminates

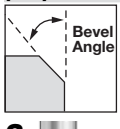

3

4

5

Great for trimming and edging laminate countertops and other laminate materials. All have straight flutes.

(3) Flush/22° bevel-cutting bit has two flutes that make flush and 22° bevel cuts; it is pilotless.

(4) Flush-cutting and ***7° bevel-cutting*** bits have one flute and a solid pilot for either flush or 7° bevel cuts.

(5) Smooth-edging bits have two flutes (unless noted) with a ball-bearing pilot for flush cuts. The bearing diameter is equal to the cutting diameter.

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
(3) Flush/22° Bevel-Cutting Carbide-Tipped Bit					
7/16″	1/4″	1/4″	1 3/4″	35465A63	$20.92
(4) Flush-Cutting Solid-Carbide Bit					
1/4″	1/4″	1/4″	1 1/2″	35505A61	11.81
(4) 7° Bevel-Cutting Solid-Carbide Bit					
1/4″	1/4″	1/4″	1 1/2″	35505A59	11.81
(5) Smooth-Edging Carbide-Tipped Bits					
3/8″	1/2″	1/4″	2 1/4″	35505A62	16.90
3/8″	1″	1/4″	2 3/4″	35505A63	17.83
1/2″	1/2″	1/4″	2″	35505A64	17.15
1/2″	1″	1/4″	2 3/4″	35505A65★	20.01
1/2″	1″	1/2″	3 1/4″	35505A66	20.01
1/2″	1 1/2″	1/2″	4 1/4″	35505A67	20.01
1/2″	2″	1/2″	4 1/4″	35505A68	30.92

★ Has three flutes.

(6) Bits for Hard Plastic and Composites

6

For plunge and profile cuts in fiberglass, phenolics, reinforced acetal, cast acrylic, melamine, nylon, rigid PVC, vinyl, and solid-surface materials such as Corian. All have two straight flutes and are pilotless.

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
(6) Smooth-Finish Solid-Carbide Bits					
1/8″	1/4″	1/4″	2″	31615A19	$23.32
3/16″	5/8″	1/4″	2″	31615A21	23.53
1/4″	3/4″	1/4″	2 1/2″	31615A22	25.92
3/8″	7/8″	3/8″	2 1/2″	31615A23	46.45
1/2″	1″	1/2″	3″	31615A24	73.00

(7 & 8) Bits for Soft Plastic

7

Fast Cutting

8

Smooth Finish

For plunge and profile cuts in soft- to medium-density plastics such as ABS, polycarbonate, polyethylene, polystyrene, polypropylene, HDPE, UHMW, extruded acrylic, and some PVCs. All have straight flutes and are pilotless.

(7) Fast-cutting bits have one flute.

(8) Smooth-finish bits have two flutes.

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
(7) Fast-Cutting High-Speed Steel Bits					
1/8″	1/2″	1/4″	2″	36035A21	$11.23
3/16″	5/8″	1/4″	2″	36035A22	8.92
1/4″	1″	1/4″	2 3/8″	36035A23	8.78
(7) Fast-Cutting Solid-Carbide Bits					
1/8″	1/2″	1/4″	2″	36035A49	26.05
3/16″	5/8″	1/4″	2″	36035A51	28.37
1/4″	3/4″	1/4″	2 1/2″	36035A52	29.93
3/8″	7/8″	3/8″	2 1/2″	36035A53	51.50
1/2″	1″	1/2″	3″	36035A54	74.45
(8) Smooth-Finish High-Speed Steel Bits					
3/16″	5/8″	1/4″	2″	36035A41	12.24
1/4″	3/4″	1/4″	2 1/8″	36035A42	9.12
1/4″	1″	1/4″	2 3/8″	36035A43	10.35
3/8″	1″	3/8″	2 1/2″	36035A45	15.06
1/2″	1 1/4″	1/2″	2 3/4″	36035A47	18.34
(8) Smooth-Finish Solid-Carbide Bits					
1/8″	1/2″	1/4″	2″	36035A61	22.55
3/16″	5/8″	1/4″	2″	36035A62	22.55
1/4″	1″	1/4″	2 1/2″	36035A63	24.72

Router Bits for Wood and Laminates

9

Up Cut

Down Cut

10

Up Cut

Down Cut

The spiral flutes on these bits cut soft and hard natural woods, wood composites such as plywood and particleboard, and solid-surface materials such as Corian. Made of solid carbide.

Up-Cut Bits— Designed for effective, upward chip removal. These bits are the best choice for straight grooving and slotting applications where a smoother finish on the bottom of the material is desired. Because these bits are designed to lift, it is necessary to securely clamp your material.

Down-Cut Bits— Push chips down from the cut. Use this style for grooving and slotting applications where a smoother finish on the top of your material is desired. They are the best choice for laminates because they eliminate edge chipping. Also good for small parts that would be difficult to clamp down.

(9) Smooth-finish bits have two flutes and make fast, clean cuts with a smooth finish.

(10) Ultra-smooth-finish bits have three flutes and provide a smoother finish than smooth-finish bits. Also for use on hard plastics.

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.	*Up Cut*	*Down Cut*	Each
(9) Smooth-Finish Bits						
1/8″	1/2″	1/4″	2″	27395A21	27395A41	$21.97
5/32″	5/8″	1/4″	2″	27395A22	27395A42	21.97
3/16″	3/4″	1/4″	2 1/2″	27395A23	27395A43	21.97
7/32″	3/4″	1/4″	2 1/2″	27395A36	27395A56	22.08
1/4″	7/8″	1/4″	2 1/2″	27395A24	27395A44	24.44
1/4″	1″	1/4″	2 1/2″	27395A25	27395A45	25.33
5/16″	1 1/8″	5/16″	3″	27395A26	27395A46	41.21
5/16″	1 1/8″	1/2″	3″	27395A27	27395A47	64.04
3/8″	1 1/8″	3/8″	3″	27395A28	27395A48	46.07
3/8″	1 1/4″	3/8″	3″	27395A37	27395A57	44.28
3/8″	1 1/4″	1/2″	3″	27395A29	27395A49	65.11
1/2″	1 1/4″	1/2″	3 1/2″	27395A31	27395A51	62.29
1/2″	1 5/8″	1/2″	3 1/2″	27395A32	27395A52	67.31
1/2″	2 1/8″	1/2″	4″	27395A33	27395A53	76.10
(10) Ultra-Smooth-Finish Bits						
1/4″	7/8″	1/4″	3″	8771A11	8771A21	57.04
3/8″	1 1/8″	3/8″	3″	8771A12	8771A22	78.40
1/2″	1 5/8″	1/2″	4″	8771A13	8771A23	127.33

Router Bits for Wood

Create decorative and functional edges in wood and wood composites such as plywood and particleboard. All bits have two flutes, unless otherwise stated. ***Square-cut*** bits come in your choice of high-speed steel or carbide-tipped. All other styles are carbide-tipped. ***Carbide-tipped*** bits outlast ***high-speed steel***.

Square Cut—Pilotless

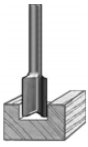

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
High-Speed Steel					
3/16″	5/8″	1/4″	2″	2891A11	$6.40
1/4″	3/4″	1/2″	2 3/8″	2891A12	13.38
1/4″	1″	1/4″	2 1/4″	2891A23	7.27
5/16″	1 1/4″	1/2″	2 3/4″	2891A13	17.67
3/8″	1″	1/4″	2 1/4″	2891A24	12.10
3/8″	1 1/2″	1/2″	3″	2891A14	18.93
1/2″	3/4″	1/4″	2″	2891A25	9.78
1/2″	1 1/4″	1/2″	2 3/4″	2891A16	14.16
5/8″	1 1/4″	1/2″	2 3/4″	2891A18	27.31
3/4″	3/4″	1/4″	1 3/4″	2891A26	22.86
3/4″	1 1/4″	1/2″	2 3/4″	2891A19	21.35
7/8″	1 1/2″	1/2″	3″	2891A21	54.31
1″	1 1/4″	1/2″	2 3/4″	2891A22	50.89
Carbide-Tipped					
1/4″	7/8″	1/4″	2 1/8″	2904A22	15.49
1/4″	1″	1/4″	2 1/4″	2904A31	15.42
5/16″	3/4″	1/2″	2 1/2″	2904A12	23.37
5/16″	1″	1/4″	2 1/4″	2904A11	15.72
3/8″	1″	1/4″	2 1/4″	2904A13	15.54
3/8″	1″	1/2″	2 3/4″	2904A14	16.07
3/8″	1 1/4″	1/2″	3″	2904A15	14.62
1/2″	1″	1/4″	2 1/4″	2904A23	15.71
1/2″	1″	1/2″	2 5/8″	2904A16	15.76
1/2″	1 1/4″	1/2″	2 7/8″	2904A26	17.47
1/2″	1 1/2″	1/2″	3 1/8″	2904A17	16.40
1/2″	2″	1/2″	4 1/4″	2904A18	17.65
5/8″	3/4″	1/4″	2″	2904A24	14.79
5/8″	1 1/4″	1/2″	2 7/8″	2904A19	15.82
3/4″	3/4″	1/4″	2″	2904A25	16.98
3/4″	1 1/4″	1/2″	2 7/8″	2904A21	16.29

Corner Round—Have 1/2″ dia. ball-bearing pilot.

Curve Radius	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1/8″	3/8″	1/4″	2 1/8″	35455A29	$27.88
5/32″	15/32″	1/4″	2 3/32″	35455A37	30.68
3/16″	1/2″	1/4″	2″	35455A36	26.35
1/4″	7/16″	1/4″	1 29/32″	35455A31	27.81
5/16″	9/16″	1/4″	2 1/4″	35455A38	30.49
3/8″	5/8″	1/4″	2 1/32″	35455A32	29.60
1/2″	3/4″	1/4″	2 5/32″	35455A33	31.48
1/2″	3/4″	1/2″	2 11/16″	35455A34	37.38
3/4″	1 1/32″	1/2″	3″	35455A35	48.95

Wavy—Has 1/2″ dia. ball-bearing pilot.

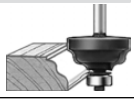

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1 1/4″	5/8″	1/4″	2 1/4″	29875A31	$38.09

Roman Ogee—Have 3/8″ dia. ball-bearing pilot.

Curve Radius	Cutting Lg.	Shank Dia.	O'all Lg.		Each
5/32″	9/16″	1/4″	2″	35495A11	$32.65
1/4″	3/4″	1/4″	2 15/32″	35495A12	35.54

3/16″ Bead—Have 3/8″ dia. ball-bearing pilot.

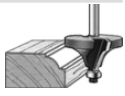

Curve Radius	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1/4″	7/16″	1/4″	1 29/32″	35475A71	$26.73
3/8″	23/32″	1/4″	2 3/8″	35475A72	30.26
1/2″	13/16″	1/4″	2 13/32″	35475A73	37.35

Chamfer—Have 1/2″ dia. ball-bearing pilot.

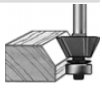

Bevel Angle	Cutting Lg.	Shank Dia.	O'all Lg.		Each
25°	3/8″	1/4″	1 7/8″	35485A23	$24.26
45°	1/2″	1/4″	2″	35485A21	28.58
45°	1/2″	1/2″	2 1/2″	35485A22	29.81

Cove—Have 3/8″ dia. ball-bearing pilot.

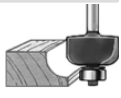

Curve Radius	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1/4″	9/16″	1/4″	2″	29655A11	$31.70
3/8″	9/16″	1/4″	2″	29655A12	31.89
1/2″	3/4″	1/4″	2 1/4″	29655A13	32.98

Rabbet—Has 1/2″ dia. ball-bearing pilot.

Rabbet Wd.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
3/8″	1/2″	1/4″	2″	3187A16	$25.22

Hinge Mortise—Pilotless

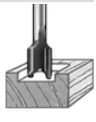

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1/2″	3/4″	1/4″	2″	3794A41	$16.22
3/4″	3/4″	1/4″	2″	3794A42	18.52

Panel Pilot—Pilotless with one flute.

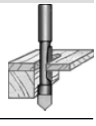

Cutting Dia.	Cutting Lg.	Shank Dia.	O'all Lg.		Each
1/4″	3/4″	1/4″	2 9/16″	3190A11	$11.89
3/8″	1″	3/8″	3″	3190A12	12.25
1/2″	1 3/16″	1/2″	3 1/2″	3190A13	13.60

Electric and Air-Powered Routers

Electric routers are CSA certified, UL listed, and meet OSHA requirements, unless noted. All are double insulated and have a two-prong plug.

Style A router comes with a 1/4″ collet. *Styles B-D* come with 1/4″ and 1/2″ collets. *Style C* router has a precision centering system for accurate cuts at any depth and is C-UL listed.

Style D router is variable speed with plunging capability. It has a six-position speed control that matches rpm to your material and circuitry that maintains constant speed under full load. An eight-position turret and depth-rod control maintain cutting depth. Also has a swing-away chip shield. C-UL listed.

Air-powered router *(Style E)* includes a 6-ft 3/8″ air hose and a 3/8″ collet. Recommended operating pressure is 90 psi. Air consumption is 38 cfm. Air inlet is 1/4″ NPT. Additional collet sizes are sold separately below.

	hp	No-Load rpm	Collet Cap.	Electrical Specifications	Amps	Base Size	Max. O'all Ht.	Weight, lbs.	Cord Lg., ft.		Each
Electric Routers											
A	1	35,000	1/4″	120 VAC, 60 Hz	5.6	3 1/2″ Lg. × 3 1/2″ Wd.	8 9/16″	3.2	10	35465A61●	$107.16
B	1 3/4	27,500	1/2″	120 VAC, 60 Hz	11	5 3/4″ Dia.	8″	8	8	36515A61	166.85
C	2	25,000	1/2″	120 VAC, 60 Hz	11	6″ Dia.	10″	8.1	10	3677A41●	178.97
D	2 1/4	8,000-25,000	1/2″	120 VAC, 60 Hz	12	6″ Dia.	11 3/4″	20	10	36485A11●	250.23
Air-Powered Router											
E	1 1/2	20,000 at 90 psi, 38 cfm	1/2″	—	—	4″ Dia.	7 5/8″	4 1/2	—	3773A11	746.24

Replacement 1/4″ Collet for Style A Electric Router	35465A65	6.64
Roller Guide Kit for Style A Electric Router (for use with non-piloted bit)	35465A66	17.32
Style A Electric Router Kit (includes Style A router, straight-edge guide, 1/4″ collet, wrench, and plastic case)	35465A81	128.25
1/4″ Collet for Style E Air-Powered Router	3773A12	75.78
1/2″ Collet for Style E Air-Powered Router	3773A13	70.61

● Not CSA certified.

About Chucking Reamers and Hand Reamers

Reamers are rotary cutting tools used to enlarge an existing hole to an exact size, as well as provide a smooth finish to the walls of the hole. Reaming may be done with a variety of machine tools or by hand. *Note:* When using a reamer, never rotate it in the reverse direction of the cut. This will ruin its accuracy.

Types of Reamers

Chucking Reamers— Also known as machine reamers, they are used in drill presses, turret lathes, screw machines, and other machine tools. The shank is round or Morse taper and the cutting end of the reamer is ground with a 45° chamfer angle for easy hole entry.

Hand Reamers— A square portion on the end of the shank allows the reamer to be turned by hand with an adjustable wrench or a straight-handle tap wrench. Most hand reamers have a slight taper at the cutting end for easy hole entry.

Reamer Material

High-speed steel is used on a wide variety of materials including tool steel, cast iron, and aluminum.

Cobalt steel can be run up to 25% faster than high-speed steel and has better abrasion and heat resistance for longer tool life. Use on hard-to-machine materials such as nickel alloys, stainless steel, Inconel, and titanium.

Carbide tipped and ***solid carbide*** have better abrasion resistance and retain a sharper, harder edge at higher temperatures than high-speed steel and cobalt steel. Typically used on abrasive materials such as cast iron, nonferrous alloys, plastics, and hardened steels.

Solid carbide offers more wear resistance for the most accuracy but requires rigid tool holding to prevent breakage.

High-Speed Steel and Cobalt Steel Chucking Reamer Sets

All reamers have a round shank.

Standard-Length Reamers— Shank diameter is slightly smaller than the reamer cutting diameter except 3008A5, which is equal to the reamer cutting diameter.

Drill-Length Reamers— Have the same overall length as a jobbers' twist drill bit for added rigidity. The shank diameter is the same as the cutting diameter.

Straight-flute reamers are used for most jobs. ***Spiral-flute*** reamers are right-hand spiral, right-hand cut. They are ideal where chip removal is necessary, such as in blind holes. They also give a smoother finish and work well where there is an interrupted cut, such as in keyways.

Size Range	Pieces Per Set	Flute Style	Case		
High-Speed Steel Standard Length					
Fractional Sizes					
1/16″-1/2″×32nds	15	Straight	Roll Pouch	3008A24	$269.15
1/16″-1/2″×64ths	29	Straight	Wood	3008A8	642.37
1/16″-1/2″×64ths	29	Straight	Metal	3008A17	619.90
1/16″-1/2″×64ths	29	Spiral	Metal	3008A9	717.71
Wire Gauge Sizes					
1-60	60	Straight	Metal	3008A13	939.77
61-80	20	Straight	Metal	3008A5	358.43
Dowel-Pin Sizes					
1/8″-1/2″×16ths	14	Straight	Metal	3002A39	399.61
Metric Sizes					
1- 7 mm×0.5 mm	13	Straight	Wood	3008A15	272.28
1-13 mm×0.5 mm	25	Straight	Metal	3008A16	529.62
Decimal Sizes—*Includes 7 oversize and 7 undersize reamers*					
0.124″-0.499″/ 0.126″-0.501″	14	Straight	Roll Pouch	3087A21	276.85
0.124″-0.499″/ 0.126″-0.501″	14	Straight	Wood	3087A22	298.74
0.124″-0.499″/ 0.126″-0.501″	14	Spiral	Wood	3087A23	354.12

Size Range	Pieces Per Set	Flute Style	Case		
High-Speed Steel Drill Length					
Fractional Sizes					
1/16″-1/4″×64ths	13	Straight	Metal	3008A1	$167.78
1/16″-1/2″×32nds	15	Spiral	Metal	3008A34	270.60
1/16″-1/2″×64ths	29	Straight	Metal	3008A2	496.97
Letter Sizes					
A-Z	26	Straight	Metal	3008A3	476.46
Wire Gauge Sizes					
1-60	60	Straight	Metal	3008A4	754.71
Cobalt Steel Standard Length					
Dowel-Pin Sizes					
1/8″-1/2″×16ths	14	Straight	Metal	3002A79	458.46
Decimal Sizes—*Includes 7 oversize and 7 undersize reamers*					
0.124″-0.499″/ 0.126″-0.501″	14	Straight	Wood	3087A24	370.84
0.124″-0.499″/ 0.126″-0.501″	14	Spiral	Wood	3087A25	419.44

High-Speed Steel and Cobalt Steel Chucking Reamers

Straight Flute

Spiral Flute

Straight-flute reamers are used for most jobs.

Spiral-flute reamers have right-hand spiral, right-hand cut. They are ideal where chip removal is necessary, such as in blind holes. They also give a smoother finish and work well where there is an interrupted cut, such as in keyways.

High-Speed Steel Fractional Sizes—Round Shank

Shank diameter is slightly smaller than the reamer cutting diameter. *Straight flute* cutting diameter tolerance is +0.0002″, –0.0000″. *Spiral flute* cutting diameter tolerance is +0.0002″, –0.0000″ for 1/32″ to 1/2″; +0.0003″, –0.0000″ for 17/32″ to 5/8″; and +0.0004″ to +0.0001″ for 21/32″ to 1 1/2″.

Dia.	Flute Lg.	O'all Lg.	No. of Flutes	Straight Flute		Spiral Flute	
1/32″	1/2″	2 1/2″	4	2995A111	$12.76	—	—
3/64″	1/2″	2 1/2″	4	2995A112	12.66	3106A09	$17.29
1/16″	1/2″	2 1/2″	4	2995A59	10.77	3106A11	17.29
5/64″	3/4″	3″	4	2995A113	10.78	3106A12	13.93
3/32″	3/4″	3″	4	2995A114	9.91	3106A13	13.81
7/64″	7/8″	3 1/2″	4	2995A115	10.78	3106A14	14.45
1/8″	7/8″	3 1/2″	4	2995A61	8.50	3106A15	11.77
9/64″	1″	4″	4	2995A116	11.82	3106A16	17.29
5/32″	1″	4″	4	2995A62★	13.68	3106A18	17.29
11/64″	1 1/8″	4 1/2″	6	2995A117	13.39	3106A17	18.46
3/16″	1 1/8″	4 1/2″	6	2995A63	12.19	3106A19	17.53
13/64″	1 1/4″	5″	6	2995A118	13.99	3106A21	18.70
7/32″	1 1/4″	5″	6	2995A64	14.74	3106A22	18.70
15/64″	1 1/2″	6″	6	2995A119	15.19	3106A23	19.22
1/4″	1 1/2″	6″	6	2995A65	14.67	3106A24	18.62
17/64″	1 1/2″	6″	6	2995A121	17.76	3106A25	24.41
9/32″	1 1/2″	6″	6	2995A66	17.91	3106A26	22.87
19/64″	1 1/2″	6″	6	2995A122	21.05	3106A27	24.41
5/16″	1 1/2″	6″	6	2995A67	$16.99	3106A28	$21.97
21/64″	1 1/2″	6″	6	2995A123	23.30	3106A29	26.12
11/32″	1 1/2″	6″	6	2995A68	21.45	3106A31	26.12
23/64″	1 3/4″	7″	6	2995A124	23.39	3106A32	26.36
3/8″	1 3/4″	7″	6	2995A69	18.79	3106A33	23.70
25/64″	1 3/4″	7″	6	2995A125	24.88	3106A34	28.16
13/32″	1 3/4″	7″	6	2995A71	23.01	3106A35	29.22
27/64″	1 3/4″	7″	6	2995A126	25.75	3106A36	29.22
7/16″	1 3/4″	7″	6	2995A72	21.74	3106A37	27.74
29/64″	1 3/4″	7″	6	2995A127	27.08	3106A38	31.81
15/32″	1 3/4″	7″	6	2995A73	27.34	3106A39	31.81
31/64″	2″	8″	6	2995A128	27.64	3106A41	31.81
1/2″	2″	8″	6	2995A74	24.62	3106A42	30.21
17/32″	2″	8″	8	2995A75	32.90	3106A43★	37.53
9/16″	2″	8″	8	2995A76	32.19	3106A44	36.19
19/32″	2″	8″	8	2995A77	40.79	3106A45	36.19
5/8″	2 1/4″	9″	8	2995A78	39.90	3106A46	42.23
21/32″	2 1/4″	9″	8	2995A79	43.00	3106A47	44.43

★ Has 6 flutes.

(Continued on following page)

For information about reamers, see page 2476.

High-Speed Steel and Cobalt Steel Chucking Reamers *(Continued from previous page)*

High-Speed Steel Fractional Sizes—Round Shank

Dia.	Flute Lg.	O'all Lg.	No. of Flutes	Straight Flute		Spiral Flute	
11/16"	2 1/4"	9"	8	2995A81	$44.68	3106A48	$47.75
23/32"	2 1/4"	9"	8	2995A82	49.21	3106A49	53.31
3/4"	2 1/2"	9 1/2"	8	2995A83	49.74	3106A51	53.31
25/32"	2 1/2"	9 1/2"	8	2995A84	54.56	3106A52	57.80
13/16"	2 1/2"	9 1/2"	8	2995A85	58.44	3106A53	57.80
27/32"	2 1/2"	9 1/2"	8	2995A86	63.17	3106A54	68.41
7/8"	2 5/8"	10"	8	2995A87	62.67	3106A55	69.95
29/32"	2 5/8"	10"	10	2995A88	70.51	3106A56★	75.42
15/16"	2 5/8"	10"	10	2995A89	76.83	3106A57★	75.42
31/32"	2 5/8"	10"	10	2995A91	$79.09	3106A58★	$84.46
1"	2 3/4"	10 1/2"	10	2995A92	78.69	3106A59★	78.97
1 1/16"	2 3/4"	10 1/2"	10	2995A93	92.64	3106A61★	94.51
1 1/8"	2 7/8"	11"	10	2995A94	101.70	3106A62★	99.74
1 3/16"	2 7/8"	11"	10	2995A95	111.98	3106A63	117.63
1 1/4"	3"	11 1/2"	12	2995A96	121.99	3106A64♦	124.67
1 5/16"	3"	11 1/2"	12	2995A129	135.64	3106A65♦	145.42
1 3/8"	3 1/4"	12"	12	2995A97	145.89	3106A66♦	152.83
1 1/2"	3 1/2"	12 1/2"	12	2995A98	170.60	3106A68♦	176.44

★ Has 8 flutes. ♦ Has 10 flutes.

TiN-Coated High-Speed Steel Fractional Sizes—Round Shank with Spiral Flutes

TiN-coated (titanium nitride) reamers run faster than uncoated high-speed steel and last twice as long. The coating acts as a barrier against high temperatures and abrasion. They are right-hand spiral, right-hand cut. Use on free-machining steels as well as nonmetallic materials and plastics. Not for use on aluminum and titanium alloys. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002", –0.0000".

Dia.	Flute Lg.	O'all Lg.	No. of Flutes		
1/16"	1/2"	2 1/2"	4	28435A153	$22.75
3/32"	3/4"	3"	4	28435A155	22.75
1/8"	7/8"	3 1/2"	4	28435A157	22.75
5/32"	1"	4"	6	28435A159	22.75
3/16"	1 1/8"	4 1/2"	6	28435A162	$22.75
1/4"	1 1/2"	6"	6	28435A166	29.46
5/16"	1 1/2"	6"	6	28435A171	32.52
3/8"	1 3/4"	7"	6	28435A175	36.51
7/16"	1 3/4"	7"	6	28435A179	$42.96
1/2"	2"	8"	6	28435A184	50.86
5/8"	2 1/4"	9"	8	28435A188	71.15
3/4"	2 1/2"	9 1/2"	8	28435A193	94.50

Cobalt Steel Fractional Sizes—Round Shank with Straight Flutes

Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002", –0.0000" for 3/64" to 1/2"; +0.0003", –0.0000" for 17/32" to 5/8"; and +0.0001" to +0.0004" for 21/32" to 1".

Dia.	Flute Lg.	O'all Lg.	No. of Flutes		
3/64"	1/2"	2 1/2"	4	2975A19	$18.45
1/16"	1/2"	2 1/2"	4	2975A21	18.45
5/64"	3/4"	3"	4	2975A34	14.87
3/32"	3/4"	3"	4	2975A35	14.87
7/64"	7/8"	3 1/2"	4	2975A36	15.44
1/8"	7/8"	3 1/2"	4	2975A22	12.35
9/64"	1"	4"	4	2975A37	18.44
5/32"	1"	4"	4	2975A39	16.57
11/64"	1 1/8"	4 1/2"	6	2975A38	19.71
3/16"	1 1/8"	4 1/2"	6	2975A23	17.75
13/64"	1 1/4"	5"	6	2975A57	23.81
7/32"	1 1/4"	5"	6	2975A41	23.81
15/64"	1 1/2"	6"	6	2975A58	24.50
1/4"	1 1/2"	6"	6	2975A24	20.94
17/64"	1 1/2"	6"	6	2975A59	$33.38
9/32"	1 1/2"	6"	6	2975A42	31.71
19/64"	1 1/2"	6"	6	2975A61	33.38
5/16"	1 1/2"	6"	6	2975A25	30.03
21/64"	1 1/2"	6"	6	2975A62	35.95
11/32"	1 1/2"	6"	6	2975A43	35.95
23/64"	1 3/4"	7"	6	2975A63	36.58
3/8"	1 3/4"	7"	6	2975A26	32.88
25/64"	1 3/4"	7"	6	2975A64	44.56
13/32"	1 3/4"	7"	6	2975A44	44.56
7/16"	1 3/4"	7"	6	2975A27	42.36
29/64"	1 3/4"	7"	6	2975A66	51.08
15/32"	1 3/4"	7"	6	2975A45	51.08
31/64"	2"	8"	6	2975A67	51.08
1/2"	2"	8"	6	2975A28	$48.53
17/32"	2"	8"	6	2975A46	57.32
9/16"	2"	8"	8	2975A47	55.25
19/32"	2"	8"	8	2975A48	55.25
5/8"	2 1/4"	9"	8	2975A29	64.48
21/32"	2 1/4"	9"	8	2975A49	72.89
11/16"	2 1/4"	9"	8	2975A51	72.89
23/32"	2 1/4"	9"	8	2975A52	81.37
3/4"	2 1/2"	9 1/2"	8	2975A31	81.83
25/32"	2 1/2"	9 1/2"	8	2975A53	88.26
13/16"	2 1/2"	9 1/2"	8	2975A54	88.25
7/8"	2 5/8"	10"	8	2975A32	106.84
15/16"	2 5/8"	10"	8	2975A56	115.11
1"	2 3/4"	10 1/2"	8	2975A33	130.14

High-Speed Steel and Cobalt Steel Oversize/Undersize Sizes—Round Shank with Straight Flutes

Allow for a slightly tighter or looser fit than the common fractional reamer diameters. Oversize reamers are 0.001" larger than the fractional size, and undersize are 0.001" smaller. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002", –0.0000".

Dia.	Flute Lg.	O'all Lg.	No. of Flutes	High-Speed Steel		Cobalt Steel	
Oversize							
0.1260"	7/8"	3 1/2"	4	3087A31	$11.22	2791A31	$12.66
0.1885"	1 1/8"	4 1/2"	6	3087A32	14.26	2791A32	16.16
0.2510"	1 1/2"	6"	6	3087A33	15.91	2791A33	18.15
0.3135"	1 1/2"	6"	6	3087A34	18.70	2791A34	26.00
0.3760"	1 3/4"	7"	6	3087A35	20.17	2791A35	27.94
0.4385"	1 3/4"	7"	6	3087A36	22.87	2791A36	35.89
0.5010"	2"	8"	6	3087A37	25.65	2791A37	36.75
0.5635"	2"	8"	8	3087A38	29.33	____	____
0.6260"	2 1/4"	9"	8	3087A39	40.96	____	____
0.6885"	2 1/4"	9"	8	3087A41	40.72	____	____
0.7510"	2 1/2"	9 1/2"	8	3087A42	55.57	____	____
0.8760"	2 5/8"	10"	8	3087A43	68.78	____	____
1.0010"	2 3/4"	10 1/2"	10	3087A44	81.04	____	____
Undersize							
0.1240"	7/8"	3 1/2"	4	3087A51	$11.22	2791A51	$12.66
0.1865"	1 1/8"	4 1/2"	6	3087A52	14.26	2791A52	16.15
0.2490"	1 1/2"	6"	6	3087A53	15.40	2791A53	18.15
0.3115"	1 1/2"	6"	6	3087A54	18.70	2791A54	26.00
0.3740"	1 3/4"	7"	6	3087A55	19.25	2791A55	27.94
0.4365"	1 3/4"	7"	6	3087A56	23.91	2791A56	35.88
0.4990"	2"	8"	6	3087A57	25.65	2791A57	41.14
0.5615"	2"	8"	8	3087A58	33.88	____	____
0.6240"	2 1/4"	9"	8	3087A59	40.94	____	____
0.6865"	2 1/4"	9"	8	3087A61	44.94	____	____
0.7490"	2 1/2"	9 1/2"	8	3087A62	57.39	____	____
0.8740"	2 5/8"	10"	8	3087A63	67.65	____	____
0.9990"	2 3/4"	10 1/2"	10	3087A64	77.91	____	____

High-Speed Steel Decimal Sizes—Round Shank with Straight Flutes

Flute length, overall length, and number of flutes are equivalent to dimensions of fractional, letter, and wire gauge size chucking reamers. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002", –0.0000".

To Order: For standard decimal sizes in increments of 0.0005" (size must end in 0 or 5), please ask for the part number in the appropriate size range below and specify the exact size.

Also Available: Other decimal sizes in 0.0001" increments. Please ask for 8803A999 and specify the exact size.

Available Diameters		
0.0405"-0.0620"	8803A11	$15.74
0.0625"-0.0935"	8803A14	14.60
0.0940"-0.1090"	8803A18	14.91
0.1095"-0.1245"	8803A21	14.45
0.1250"-0.1405"	8803A23	17.95
0.1410"-0.1560"	8803A25	16.93
0.1565"-0.1715"	8803A27	17.69
0.1720"-0.1870"	8803A29	17.55
0.1880"-0.2030"	8803A32	$19.99
0.2035"-0.2185"	8803A34	19.51
0.2190"-0.2340"	8803A36	19.83
0.2345"-0.2500"	8803A38	19.67
0.2505"-0.2690"	8803A41	22.66
0.2695"-0.2965"	8803A43	22.17
0.2970"-0.3125"	8803A46	21.68
0.3130"-0.3435"	8803A48	24.29
0.3440"-0.3590"	8803A53	$24.64
0.3595"-0.3750"	8803A54	24.46
0.3755"-0.3905"	8803A56	26.10
0.3910"-0.4215"	8803A58	25.92
0.4220"-0.4375"	8803A63	27.57
0.4380"-0.4840"	8803A65	30.34
0.4845"-0.4985"	8803A72	30.12
0.4990"-0.5050"	8803A74	37.22

(Continued on following page)

For information about reamers, see page 2476.

High-Speed Steel and Cobalt Steel Chucking Reamers *(Continued from previous page)*

Straight Flute

High-Speed Steel Decimal Sizes (Cont.)—Round Shank with Straight Flutes

Flute length, overall length, and number of flutes are equivalent to dimensions of fractional, letter, and wire gauge size chucking reamers. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002″, –0.0000″.

Also Available: Other decimal sizes in 0.0001″ increments. Please ask for 2777A999 and specify the exact size.

Dia.			Dia.			Dia.			Dia.		
0.0622″	2777A12	$20.16	0.5100″	2777A52	$37.31	0.5920″	2777A635	$45.01	0.6900″	2777A788	$54.96
0.0623″	2777A13	20.16	0.5110″	2777A351	37.47	0.6000″	2777A623	45.02	0.6910″	2777A8	55.16
0.0942″	2777A14	18.62	0.5120″	2777A44	37.47	0.6020″	2777A636	45.01	0.7000″	2777A801	55.16
0.1186″	2777A15	18.00	0.5130″	2777A122	45.51	0.6040″	2777A124	49.33	0.7095″	2777A128	63.47
0.1243″	2777A16	18.00	0.5140″	2777A45	37.47	0.6050″	2777A125	49.33	0.7250″	2777A129	65.24
0.1248″	2777A17	18.00	0.5150″	2777A451	37.31	0.6120″	2777A637	45.01	0.7400″	2777A811	57.13
0.1253″	2777A171	21.14	0.5180″	2777A452	37.31	0.6150″	2777A638	45.01	0.7430″	2777A812	57.13
0.1256″	2777A18	22.27	0.5190″	2777A453	37.31	0.6200″	2777A639	45.01	0.7450″	2777A813	57.13
0.1257″	2777A19	22.27	0.5200″	2777A53	37.47	0.6220″	2777A66	45.01	0.7470″	2777A82	57.18
0.1552″	2777A21	21.38	0.5230″	2777A531	37.47	0.6230″	2777A67	45.01	0.7485″	2777A821	57.13
0.1557″	2777A22	21.38	0.5250″	2777A46	37.47	0.6235″	2777A68	45.01	0.7495″	2777A83	63.14
0.1572″	2777A23	21.82	0.5270″	2777A532	37.31	0.6245″	2777A69	45.01	0.7505″	2777A84	63.07
0.1872″	2777A231	17.85	0.5300″	2777A54	37.47	0.6255″	2777A7	44.99	0.7520″	2777A85	63.07
0.1878″	2777A24	22.62	0.5350″	2777A541	39.87	0.6270″	2777A71	52.63	0.7530″	2777A86	63.07
0.2008″	2777A241	24.22	0.5430″	2777A542	39.87	0.6280″	2777A72	52.63	0.7550″	2777A87	63.07
0.2357″	2777A25	22.59	0.5460″	2777A55	39.87	0.6290″	2777A73	52.66	0.7570″	2777A871	63.11
0.2367″	2777A251	22.58	0.5470″	2777A551	39.87	0.6295″	2777A731	52.66	0.7600″	2777A91	63.11
0.2493″	2777A26	22.59	0.5500″	2777A56	39.87	0.6300″	2777A74	52.63	0.7750″	2777A911	63.11
0.2497″	2777A27	22.59	0.5520″	2777A58	39.87	0.6302″	2777A741	52.66	0.7900″	2777A912	63.11
0.2498″	2777A28	22.59	0.5550″	2777A581	39.87	0.6330″	2777A75	52.66	0.8000″	2777A131	70.40
0.2502″	2777A29	27.79	0.5580″	2777A582	39.87	0.6350″	2777A78	52.66	0.8400″	2777A913	69.08
0.2503″	2777A31	27.79	0.5600″	2777A59	39.85	0.6400″	2777A781	52.66	0.8650″	2777A914	70.59
0.3144″	2777A311	28.86	0.5610″	2777A61	39.82	0.6410″	2777A782	52.66	0.8730″	2777A915	66.29
0.3752″	2777A32	31.25	0.5620″	2777A611	39.85	0.6450″	2777A126	53.51	0.8745″	2777A132	76.80
0.3757″	2777A321	31.25	0.5630″	2777A62	44.98	0.6500″	2777A751	52.66	0.8770″	2777A92	76.69
0.3932″	2777A322	31.84	0.5650″	2777A621	44.98	0.6690″	2777A127	57.24	0.8810″	2777A133	82.13
0.3947″	2777A33	31.84	0.5660″	2777A63	45.01	0.6700″	2777A752	54.17	0.8830″	2777A134	82.13
0.5002″	2777A34	37.47	0.5670″	2777A631	45.01	0.6810″	2777A783	54.17	0.8850″	2777A921	76.64
0.5003″	2777A35	37.47	0.5680″	2777A632	45.01	0.6820″	2777A784	54.17	0.9980″	2777A922	85.28
0.5060″	2777A47	37.31	0.5750″	2777A622	45.01	0.6850″	2777A785	55.24	0.9995″	2777A923	85.28
0.5070″	2777A48	37.31	0.5780″	2777A633	45.01	0.6860″	2777A786	54.17	1.0050″	2777A135	108.44
0.5080″	2777A49	37.31	0.5800″	2777A634	45.01	0.6870″	2777A787	54.17	1.0100″	2777A136	108.44
0.5090″	2777A51	37.31	0.5890″	2777A123	49.33	0.6880″	2777A79	54.96			

Cobalt Steel Decimal Sizes—Round Shank with Straight Flutes

Flute length, overall length, and number of flutes are equivalent to dimensions of fractional, letter, and wire gauge size chucking reamers. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002″, –0.0000″.

Dia.			Dia.			Dia.			Dia.		
0.0480″	8324A01	$19.05	0.0930″	8324A28	$21.77	0.1370″	8324A55	$28.70	0.2540″	8324A82	$33.08
0.0490″	8324A02	19.05	0.0940″	8324A29	20.09	0.1410″	8324A56	28.70	0.2550″	8324A83	33.08
0.0495″	8324A03	19.05	0.0945″	8324A3	20.09	0.1550″	8324A57	28.70	0.2560″	8324A84	33.08
0.0500″	8324A04	19.05	0.0950″	8324A31	20.09	0.1555″	8324A58	28.70	0.2600″	8324A85	33.08
0.0510″	8324A05	19.05	0.0955″	8324A32	20.09	0.1560″	8324A59	28.70	0.3080″	8324A86	40.39
0.0540″	8324A06	19.05	0.0965″	8324A33	20.09	0.1565″	8324A6	28.70	0.3100″	8324A87	40.39
0.0560″	8324A07	19.05	0.0970″	8324A34	20.09	0.1580″	8324A61	28.70	0.3110″	8324A88	40.39
0.0600″	8324A08	19.05	0.0990″	8324A35	20.09	0.1650″	8324A62	27.61	0.3130″	8324A89	40.39
0.0610″	8324A09	19.05	0.1000″	8324A36	20.09	0.1860″	8324A63	27.61	0.3140″	8324A9	40.39
0.0615″	8324A1	19.05	0.1170″	8324A37	20.09	0.1880″	8324A64	27.61	0.3145″	8324A91	31.61
0.0620″	8324A11	19.05	0.1175″	8324A38	20.09	0.1895″	8324A65	27.61	0.3155″	8324A92	31.61
0.0630″	8324A12	18.67	0.1180″	8324A39	20.09	0.1900″	8324A66	30.41	0.3180″	8324A93	34.37
0.0640″	8324A13	19.05	0.1190″	8324A4	20.09	0.1920″	8324A67	30.41	0.3190″	8324A94	34.37
0.0645″	8324A14	21.77	0.1210″	8324A41	20.09	0.1965″	8324A68	30.41	0.3200″	8324A95	34.37
0.0650″	8324A15	21.77	0.1220″	8324A42	20.09	0.1970″	8324A69	30.41	0.3735″	8324A96	34.37
0.0660″	8324A16	21.77	0.1245″	8324A43	20.09	0.1975″	8324A7	30.41	0.3780″	8324A97	45.85
0.0690″	8324A17	21.77	0.1255″	8324A44	27.12	0.2000″	8324A71	30.41	0.3790″	8324A98	45.85
0.0770″	8324A18	21.77	0.1265″	8324A45	27.12	0.2180″	8324A72	30.41	0.3800″	8324A111	45.97
0.0780″	8324A19	21.77	0.1270″	8324A46	27.12	0.2200″	8324A73	33.08	0.3930″	8324A112	45.97
0.0790″	8324A2	21.77	0.1275″	8324A47	27.12	0.2350″	8324A74	33.08	0.4970″	8324A113	52.71
0.0795″	8324A21	21.77	0.1280″	8324A48	27.12	0.2360″	8324A75	33.08	0.4985″	8324A114	52.71
0.0800″	8324A22	21.77	0.1290″	8324A49	28.70	0.2485″	8324A76	33.08	0.5005″	8324A115	73.76
0.0830″	8324A23	21.77	0.1300″	8324A5	28.70	0.2505″	8324A77	33.08	0.5020″	8324A116	73.76
0.0900″	8324A24	21.77	0.1310″	8324A51	28.70	0.2515″	8324A78	33.08	0.5030″	8324A117	73.76
0.0910″	8324A25	21.77	0.1320″	8324A52	28.70	0.2520″	8324A79	33.08	0.5040″	8324A118	73.76
0.0920″	8324A26	21.77	0.1340″	8324A53	28.70	0.2525″	8324A8	33.08			
0.0925″	8324A27	21.77	0.1350″	8324A54	28.70	0.2530″	8324A81	33.08			

High-Speed Steel and Cobalt Steel Letter Sizes—Round Shank with Straight Flutes

Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002″, –0.0000″.

To Order: Please specify exact letter size within the size range listed.

Avail. Sizes	Flute Lg.	O'all Lg.	No. of Flutes	High-Speed Steel		Cobalt Steel		Avail. Sizes	Flute Lg.	O'all Lg.	No. of Flutes	High-Speed Steel		Cobalt Steel	
A	1½″	6″	6	89485A41	$16.12	26885A41	$20.72	O-R	1½″	6″	6	89485A74	$20.20	26885A74	$31.18
B-D	1½″	6″	6	89485A71	16.78	26885A71	22.12	S-U	1¾″	7″	6	89485A75	20.77	26885A75	31.12
E	1½″	6″	6	89485A45	12.68	26885A45	18.66	V-W	1¾″	7″	6	89485A76	21.09	26885A76	37.79
F-G	1½″	6″	6	89485A72	17.55	26885A72	22.41	X-Z	1¾″	7″	6	89485A77	22.98	26885A77	38.96
H-N	1½″	6″	6	89485A73	19.25	26885A73	28.97								

(Continued on following page)

For information about reamers, see page 2476.

High-Speed Steel and Cobalt Steel Chucking Reamers *(Continued from previous page)*

High-Speed Steel and Cobalt Steel Wire Gauge Sizes—Round Shank with Straight Flutes

High-speed steel wire gauge sizes 71-80 and *cobalt steel wire gauge sizes 61-80* have shank diameters equal to the reamer cutting diameter. All other sizes have shank diameters slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002″, –0.0000″.

To Order: Please specify exact wire gauge size within the range listed.

Avail. Sizes	Flute Lg.	O'all Lg.	High-Speed Steel No. of Flutes			Cobalt Steel No. of Flutes		
1-2	1½″	6″	6	8930A78	$14.06	6	2733A78	$18.26
3-11	1¼″	5″	6	8930A79	13.85	6	2733A79	16.55
12	1⅛″	4½″	6	8930A24	13.89	6	2733A24	14.69
13-15	1⅛″	4½″	6	8930A81	12.69	6	2733A81	17.20
16-21	1⅛″	4½″	6	8930A82	11.32	6	2733A82	17.20
22-29	1″	4″	4	8930A83★	11.21	4	2733A83★	16.09
30	⅞″	3½″	4	8930A44	10.49	4	2733A44	11.50
31-35	⅞″	3½″	4	8930A84	9.13	4	2733A84	13.47
36-41	⅞″	3½″	4	8930A85	9.07	4	2733A85	13.07
42-50	¾″	3″	4	8930A86	9.48	4	2733A86	12.27
51	¾″	3″	4	8930A67	11.43	4	2733A67	11.08
52-60	½″	2½″	4	8930A87	$11.58	4	2733A87	$14.93
61	½″	1⅝″	4	8930A88●	10.47	3	2733A88	14.93
62-65	½″	1½″	4	8930A89●	10.47	3	2733A89	16.36
66-67	½″	1⅜″	4	8930A91●	10.47	3	2733A91	16.36
68-69	½″	1⅜″	4	8930A92●	13.18	3	2733A92	19.88
70-71	½″	1¼″	3	8930A93	13.16	3	2733A93	19.88
72-73	½″	1⅛″	3	8930A94	15.38	3	2733A94	19.88
74-75	½″	1″	3	8930A95	15.45	3	2733A95	19.88
76-78	⅜″	⅞″	2	8930A96	15.45	2	2733A96	19.88
79-80	⅜″	¾″	2	8930A97	15.45	2	2733A97	19.88

★ Size 22 has 6 flutes. ● Overall length is 2½″.

High-Speed Steel and Cobalt Steel Dowel-Pin Sizes—Round Shank with Straight Flutes

Size holes in preparation for installing dowel pins. Two reamer diameters are listed for each dowel-pin diameter so holes can be made for a slightly tighter- or looser-fitting pin. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0000″, –0.0002″.

For Pin Dia.	Reamer Dia.	Flute Lg.	O'all Lg.	No. of Flutes	High-Speed Steel		Cobalt Steel	
⅛″	0.1230″	⅞″	3½″	4	3002A21	$13.00	3002A56	$14.24
⅛″	0.1247″	⅞″	3½″	4	3002A22	12.31	3002A57	13.40
3/16″	0.1855″	1⅛″	4½″	6	3002A23	18.26	3002A58	20.05
3/16″	0.1870″	1⅛″	4½″	6	3002A24	18.26	3002A72	20.05
¼″	0.2480″	1½″	6″	6	3002A25	19.15	3002A61	20.81
¼″	0.2495″	1½″	6″	6	3002A26	19.41	3002A62	21.18
5/16″	0.3105″	1½″	6″	6	3002A27	21.93	3002A63	34.86
5/16″	0.3120″	1½″	6″	6	3002A28	$21.93	3002A64	$34.87
⅜″	0.3730″	1¾″	7″	6	3002A29	24.00	3002A65	38.06
⅜″	0.3745″	1¾″	7″	6	3002A31	24.00	3002A66	38.06
7/16″	0.4355″	1¾″	7″	6	3002A32	27.27	3002A67	43.23
7/16″	0.4370″	1¾″	7″	6	3002A33	27.27	3002A68	49.95
½″	0.4980″	2″	8″	6	3002A34	29.94	3002A69	53.78
½″	0.4995″	2″	8″	6	3002A35	29.94	3002A71	53.78

High-Speed Steel Metric Sizes—Round Shank with Straight Flutes

Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.005, –0.000 mm for 1.0 to 12.5 mm and 30.0 mm; +0.008, –0.000 mm for 13.0 to 15.5 mm; and +0.01, +0.0025 mm for 16.0 to 25.0 mm.

Also Available: Cobalt steel reamers in sizes 1.5 through 12.5 mm. Please ask for 2735A51 and specify size.

Dia., mm	Flute Lg.	O'all Lg.	No. of Flutes		
1.0	½″	2½″	4	8851A09	$16.16
1.5	½″	2½″	4	8851A11	16.16
1.6	½″	2½″	4	8851A122	11.63
1.65	½″	2½″	4	8851A131	11.63
2.0	¾″	3″	4	8851A12	12.99
2.4	¾″	3″	4	8851A132	11.25
2.5	⅞″	3½″	4	8851A13	13.14
3.0	⅞″	3½″	4	8851A14	13.34
3.5	1″	4″	4	8851A15	14.94
4.0	1″	4″	6	8851A16	16.16
4.2	1⅛″	4½″	6	8851A161	16.51
4.5	1⅛″	4½″	6	8851A17	16.34
5.0	1¼″	5″	6	8851A18	16.68
5.5	1¼″	5″	6	8851A19	17.78
6.0	1½″	6″	6	8851A21	19.91
6.5	1½″	6″	6	8851A41	21.27
7.0	1½″	6″	6	8851A22	23.34
7.5	1½″	6″	6	8851A42	23.55
8.0	1½″	6″	6	8851A23	24.93
8.5	1½″	6″	6	8851A43	25.13
9.0	1¾″	7″	6	8851A24	25.26
9.5	1¾″	7″	6	8851A44	23.34
10.0	1¾″	7″	6	8851A25	25.83
10.5	1¾″	7″	6	8851A45	26.63
11.0	1¾″	7″	6	8851A26	26.89
11.5	1¾″	7″	6	8851A46	30.07
12.0	2″	8″	6	8851A27	30.37
12.5	2″	8″	6	8851A47	$29.89
13.0	2″	8″	6	8851A28	33.02
13.5	2″	8″	6	8851A48	34.02
14.0	2″	8″	8	8851A29	33.73
14.5	2″	8″	8	8851A49	36.22
15.0	2″	8″	8	8851A31	36.83
15.5	2¼″	9″	8	8851A51	40.13
16.0	2¼″	9″	8	8851A32	40.72
16.5	2¼″	9″	8	8851A52	41.66
17.0	2¼″	9″	8	8851A33	43.16
17.5	2¼″	9″	8	8851A53	40.84
18.0	2¼″	9″	8	8851A54	46.17
18.5	2½″	9½″	8	8851A55	49.09
19.0	2½″	9½″	8	8851A69	50.34
19.5	2½″	9½″	8	8851A71	53.46
20.0	2½″	9½″	8	8851A72	53.48
20.5	2½″	9½″	8	8851A73	55.63
21.0	2½″	9½″	8	8851A74	60.93
21.5	2⅝″	10″	8	8851A75	60.90
22.0	2⅝″	10″	8	8851A76	60.90
22.5	2⅝″	10″	8	8851A77	68.65
23.0	2⅝″	10″	8	8851A5	69.59
23.5	2⅝″	10″	8	8851A511	73.22
24.0	2⅝″	10″	8	8851A6	75.64
25.0	2¾″	10½″	8	8851A7	75.48
30.0	2⅞″	11″	10	8851A711	142.78

High-Speed Steel Hand Reamers for Morse Taper-Socket Holes

Turn existing straight, drilled holes into Morse taper holes. Reamers are also good for sizing and smoothing existing Morse taper holes and for removing nicks and burs in machine spindles. All have straight flutes. Use an adjustable wrench or straight-handle tap wrench (sold separately).

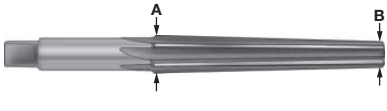

Morse Taper No.	Diameter Large End (A)	Diameter Small End (B)	Flute Lg.	O'all Lg.	No. of Flutes	Reamers		Optional Tap Wrenches	
0	0.367″	0.250″	2¼″	3¾″	6	2996A11	$45.12	2546A13	$65.94
1	0.517″	0.367″	3″	5″	6	2996A12	58.75	2546A15	86.21
2	0.745″	0.569″	3½″	6″	6	2996A13	68.91	2546A16	110.77
3	0.988″	0.775″	4¼″	7¼″	8	2996A14	102.03	2546A16	110.77
4	1.289″	1.017″	5¼″	8½″	10	2996A15	149.38	2546A18	262.64
5	1.799″	1.471″	6¼″	9¾″	12	2996A16	284.03	2546A19	335.85

For information about reamers, see page 2476.

Solid Carbide Chucking Reamers

Fractional, Wire Gauge, and Metric

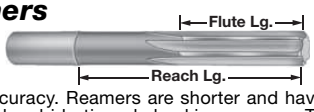

Oversize/Undersize, Decimal, and Dowel Pin

Solid carbide construction provides superior accuracy. Reamers are shorter and have better abrasion and temperature resistance than standard-length high-speed steel, cobalt steel, and carbide-tipped chucking reamers. They require a rigid machine setup.

Fractional Sizes—Round Shank with Straight Flutes

Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0003″, –0.0000″ for 1/16″ to 1/4″ and +0.0004″, –0.0000″ for 9/32″ to 1/2″.

Dia.	Flute Lg.	O'all Lg.	No. of Flutes		
1/16″	3/8″	1 1/2″	4	3026A11	$22.26
3/32″	1/2″	2″	4	3026A16	25.91
1/8″	5/8″	2 1/4″	4	3026A18	28.90
5/32″	3/4″	2 1/2″	4	3026A21	32.29
3/16″	7/8″	2 3/4″	4	3026A23	38.40
13/64″	1″	3″	4	3026A24	42.88
7/32″	1″	3″	4	3026A19	$42.88
15/64″	1″	3″	4	3026A26	44.24
1/4″	1″	3″	4	3026A27	44.24
9/32″	1 1/8″	3 1/4″	6	3026A25	55.34
5/16″	1 1/8″	3 1/4″	6	3026A32	60.93
21/64″	1 1/4″	3 1/2″	6	3026A34	70.86
11/32″	1 1/4″	3 1/2″	6	3026A31	$70.86
3/8″	1 1/4″	3 1/2″	6	3026A37	78.40
13/32″	1 1/4″	3 1/2″	6	3026A36	90.11
7/16″	1 3/8″	4″	6	3026A38	104.49
15/32″	1 3/8″	4″	6	3026A41	119.41
1/2″	1 1/2″	4″	6	3026A44	132.28

Oversize/Undersize Sizes—Round Shank with Straight Flutes

Allow for a slightly tighter or looser fit than the common fractional reamer diameters. Oversize reamers are 0.001″ larger than the fractional size, and undersize are 0.001″ smaller. Flute length is half the reach length. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0002″, –0.0000″.

Reamer Dia.	Shank Dia.	Reach Lg.	O'all Lg.	No. of Flutes		
Oversize						
0.1260″	9/64″	1 1/2″	2 1/2″	4	8307A193	$32.13
0.1885″	13/64″	2″	3″	4	8307A342	41.75
0.2510″	17/64″	2 1/4″	3 1/2″	6	8307A513	63.03
0.3135″	21/64″	2 3/8″	4″	6	8307A652	78.67
0.3760″	25/64″	2 7/8″	4″	6	8307A788	93.66
Undersize						
0.1240″	1/8″	1 1/4″	2 1/4″	4	8307A187	$32.02
0.1865″	3/16″	1 3/4″	2 3/4″	4	8307A329	42.03
0.2490″	1/4″	2″	3″	4	8307A479	61.27
0.3115″	5/16″	2 1/4″	3 3/4″	6	8307A647	75.89
0.3740″	3/8″	2 3/8″	4″	6	8307A336	92.61

Decimal Sizes—Round Shank with Straight Flutes

Flute length is half the reach length. Cutting diameter tolerance is +0.0002″, –0.0000″.

To Order: Within the diameter range shown, please specify the exact size in standard decimal increments of 0.0005″ (size must end in 0 or 5).

Available Reamer Dia.	Shank Dia.	Reach Lg.	O'all Lg.	No. of Flutes		
0.0470″-0.0625″	1/16″	3/4″	1 1/2″	4	8307A11	$28.17
0.0630″-0.0775″	5/64″	1″	2″	4	8307A47	29.99
0.0780″-0.0935″	3/32″	1 1/4″	2 1/4″	4	8307A83	25.78
0.0940″-0.1090″	7/64″	1 1/4″	2 1/4″	4	8307A118	29.23
0.1095″-0.1250″	1/8″	1 1/4″	2 1/4″	4	8307A154	32.02
0.1255″-0.1405″	9/64″	1 1/2″	2 1/2″	4	8307A191	32.13
0.1410″-0.1555″	5/32″	1 1/2″	2 1/2″	4	8307A226	38.29
0.1560″-0.1715″	11/64″	1 3/4″	2 3/4″	4	8307A262	37.72
0.1720″-0.1875″	3/16″	1 3/4″	2 3/4″	4	8307A296	42.03
0.1880″-0.2025″	13/64″	2″	3″	4	8307A333	45.91
0.2030″-0.2185″	7/32″	2″	3″	4	8307A374	53.61
0.2190″-0.2340″	15/64″	2″	3″	4	8307A409	53.58
0.2345″-0.2500″	1/4″	2″	3″	4	8307A445	61.27
0.2505″-0.2650″	17/64″	2 1/4″	3 1/2″	6	8307A511	63.03
0.2655″-0.2805″	9/32″	2 1/4″	3 1/2″	6	8307A545	67.54
0.2810″-0.2965″	19/64″	2 1/4″	3 3/4″	6	8307A579	$71.02
0.2970″-0.3120″	5/16″	2 1/4″	3 3/4″	6	8307A615	75.89
0.3130″-0.3275″	21/64″	2 3/8″	4″	6	8307A649	78.67
0.3280″-0.3435″	11/32″	2 3/8″	4″	6	8307A683	81.03
0.3440″-0.3590″	23/64″	2 3/8″	4″	6	8307A717	85.99
0.3595″-0.3745″	3/8″	2 3/8″	4″	6	8307A753	92.61
0.3750″-0.3900″	25/64″	2 7/8″	4″	6	8307A786	93.66
0.3905″-0.4055″	13/32″	2 7/8″	4″	6	8307A819	115.01
0.4060″-0.4215″	27/64″	2 7/8″	4″	6	8307A854	115.13
0.4220″-0.4370″	7/16″	2 7/8″	4″	6	8307A891	110.95
0.4375″-0.4525″	29/64″	2 7/8″	4″	6	8307A924	99.22
0.4530″-0.4685″	15/32″	2 7/8″	4″	6	8307A958	119.29
0.4690″-0.4840″	31/64″	2 7/8″	4″	6	8307A995	120.58
0.4845″-0.4995″	1/2″	2 7/8″	4″	6	8307A998	121.45

Wire Gauge Sizes—Round Shank with Straight Flutes

Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0003″, –0.0000″.

To Order: Please specify exact size within range listed.

Avail. Sizes	Flute Lg.	O'all Lg.	No. of Flutes		
1	1″	3″	4	30425A21	$52.51
2-9	1″	3″	4	30425A22	45.60
10-11	7/8″	2 3/4″	4	30425A41	45.60
12-16	7/8″	2 3/4″	4	30425A23	40.79
17-19	7/8″	2 3/4″	4	30425A24	38.86
20	7/8″	2 1/2″	4	30425A432	38.86
21-26	3/4″	2 1/2″	4	30425A25	34.27
27-29	3/4″	2 1/2″	4	30425A26	$33.96
30	3/4″	2 1/4″	4	30425A443	30.68
31-32	5/8″	2 1/4″	4	30425A27	30.68
33-40	5/8″	2 1/4″	4	30425A28	28.72
41	5/8″	2″	4	30425A455	28.72
42-44	1/2″	1 7/8″	4	30425A29	27.53
45-46	1/2″	1 3/4″	4	30425A45	$27.53
47-50	1/2″	1 3/4″	4	30425A31	25.91
51	1/2″	1 1/2″	4	30425A466	25.91
52-55	3/8″	1 1/2″	4	30425A32	23.68
56-59	3/8″	1 1/2″	4	30425A33	22.35
60-61	1/4″	1 1/2″	4	30425A47	22.35

Dowel-Pin Sizes—Round Shank with Straight Flutes

Used to size holes in preparation for installing dowel pins. Two reamer diameters are listed for each dowel-pin diameter so holes can be made for jobs that require a slightly tighter- or looser-fitting pin. Flute length is half the reach length. Cutting diameter tolerance is +0.0002″, –0.0000″.

Pin Dia.	Reamer Dia.	Shank Dia.	Reach Lg.	O'all Lg.	No. of Flutes		
1/8″	0.1230″	1/8″	1 1/4″	2 1/4″	4	8307A185	$32.02
1/8″	0.1247″	1/8″	1 1/4″	2 1/4″	4	8307A189	27.04
3/16″	0.1855″	3/16″	1 3/4″	2 3/4″	4	8307A327	42.03
3/16″	0.1870″	3/16″	1 3/4″	2 3/4″	4	8307A331	42.03
1/4″	0.2480″	1/4″	2″	3″	4	8307A477	61.27
1/4″	0.2495″	1/4″	2″	3″	4	8307A481	$61.27
5/16″	0.3120″	5/16″	2 1/4″	3 3/4″	6	8307A648	75.89
3/8″	0.3730″	3/8″	2 3/8″	4″	6	8307A783	92.61
3/8″	0.3745″	3/8″	2 3/8″	4″	6	8307A785	92.61
1/2″	0.4995″	1/2″	2 7/8″	4″	6	8307A072	121.45

Metric Sizes—Round Shank with Straight Flutes

Shank diameter is slightly smaller than the cutting diameter. Cutting diameter tolerance is +0.0076 mm, –0.0000 mm for 1.0 to 6.0 mm and +0.0102 mm, –0.0000 mm for 6.5 to 12.0 mm.

Dia., mm	Flute Lg.	O'all Lg.	No. of Flutes		
1.0	1/4″	1 1/2″	4	30545A61	$22.35
1.5	3/8″	1 1/2″	4	30545A62	23.68
2.0	1/2″	1 3/4″	4	30545A63	25.91
2.5	5/8″	2 1/4″	4	30545A64	28.72
3.0	5/8″	2 1/4″	4	30545A65	30.68
3.5	3/4″	2 1/2″	4	30545A66	33.96
4.0	3/4″	2 1/2″	4	30545A67	$44.15
5.0	1″	3″	4	30545A69	45.60
5.5	1″	3″	4	30545A71	62.87
6.0	1″	3″	4	30545A72	47.01
6.5	1″	3″	6	30545A73	60.06
7.0	1 1/8″	3 1/4″	6	30545A74	58.80
8.0	1 1/8″	3 1/4″	6	30545A76	$92.20
8.5	1 1/4″	3 1/2″	6	30545A77	73.16
9.0	1 1/4″	3 1/2″	6	30545A78	80.96
10.0	1 1/4″	3 1/2″	6	30545A81	95.78
11.0	1 3/8″	4″	6	30545A83	111.00
12.0	1 1/2″	4″	6	30545A85	140.50

For information about reamers, see page 2476.

Carbide-Tipped Chucking Reamers

Carbide tips brazed to a one-piece hardened tool steel body provide better abrasion resistance and retain a sharper, harder edge at higher temperatures than high-speed steel and cobalt steel. Reamers have a round shank and straight flutes. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0003″, –0.0000″.

Dia.	Flute Lg.	O'all Lg.	No. of Flutes		
3/16″	1 1/8″	4 1/2″	4	3025A13	$38.32
7/32″	1 1/4″	5″	4	3025A14	38.32
1/4″	1 1/2″	6″	4	3025A15	38.32
9/32″	1 1/2″	6″	4	3025A18	39.14
5/16″	1 1/2″	6″	4	3025A17	39.14
11/32″	1 1/2″	6″	4	3025A25	40.53
3/8″	1 3/4″	7″	4	3025A19	37.18
13/32″	1 3/4″	7″	4	3025A29	42.50
7/16″	1 3/4″	7″	4	3025A22	45.41
15/32″	1 3/4″	7″	4	3025A34	46.04
1/2″	2″	8″	6	3025A24	54.78
17/32″	2″	8″	6	3025A37	59.60
9/16″	2″	8″	6	3025A38	59.60
19/32″	2″	8″	6	3025A39	$62.00
5/8″	2 1/4″	9″	6	3025A28	62.00
21/32″	2 1/4″	9″	6	3025A41	63.08
11/16″	2 1/4″	9″	6	3025A43	63.08
3/4″	2 1/2″	9 1/2″	6	3025A33	66.06
13/16″	2 1/2″	9 1/2″	6	3025A44	68.21
7/8″	2 5/8″	10″	6	3025A45	73.66
1″	2 3/4″	10 1/2″	8	3025A42	89.93
1 1/8″	2 7/8″	11″	8	3025A48	99.74
1 3/16″	2 7/8″	11″	8	3025A49	105.70
1 1/4″	3″	11 1/2″	8	3025A51	111.72
1 1/2″	3 1/2″	12 1/2″	8	3025A55	146.93

Carbide-Tipped Expansion Chucking Reamers

Slots allow expansion as the adjusting screw is tightened. Bodies are made of one-piece tool steel. The carbide-tipped cutting edges run the full length of the flutes. All have a round shank and straight flutes. Shank diameter is slightly smaller than the reamer cutting diameter. Cutting diameter tolerance is +0.0003″, –0.0000″. Minimum expansion is 0.006″ for 3/8″ and 7/16″; 0.010″ for 1/2″ to 7/8″; 0.013″ for 1″ to 1 1/2″; and 0.015″ for 1 3/4″.

Note: These reamers are not designed for producing holes larger than the listed diameter or for producing holes of various sizes. The expansion screw should never be loosened.

Dia.	Flute Lg.	O'all Lg.	No. of Flutes		
3/8″	1″	7″	4	3107A11	$56.30
7/16″	1″	7″	4	3107A13	59.74
1/2″	1″	8″	6	3107A14	63.35
17/32″	1″	8″	6	3107A12	64.90
9/16″	1 1/8″	8″	6	3107A16	64.90
5/8″	1 1/4″	9″	6	3107A18	67.75
11/16″	1 1/4″	9″	6	3107A19	74.10
3/4″	1 3/8″	9 1/2″	6	3107A23	76.84
25/32″	1 3/8″	9 1/2″	6	3107A22	82.81
13/16″	1 3/8″	9 1/2″	6	3107A24	$82.81
7/8″	1 1/2″	10″	6	3107A27	89.32
1″	1 5/8″	10 1/2″	8	3107A32	98.78
1 1/16″	1 5/8″	10 1/2″	8	3107A31	108.25
1 1/8″	1 3/4″	11″	8	3107A33	108.25
1 1/4″	1 7/8″	11 1/2″	8	3107A36	118.14
1 3/8″	2″	12″	8	3107A37	137.12
1 1/2″	2 1/8″	12 1/2″	8	3107A39	166.80
1 3/4″	2 3/8″	13 1/2″	10	3107A41	242.57

High-Speed Steel Hand Reamers

Straight Flute

Spiral Flute

A slightly tapered cutting end eases hole entry for final sizing of drilled holes. Use on most ferrous and nonferrous materials. All have a round shank and are for use with a straight-handle tap wrench (not included; see page 2519).

Straight-flute reamers are for general purpose reaming.

Spiral-flute reamers have a left-hand spiral, right-hand cut and are preferred for use on holes that have an interrupted cut, such as a keyway.

Fractional Sizes

Cutting diameter tolerance is +0.0002″, –0.0000″ for 1/8″ to 1/2″; +0.0003″, –0.0000″ for 9/16″ and 5/8″; and +0.0001″, +0.0004″ for 11/16″ to 1 1/4″. Recommended tap wrench is 2546A13 for 1/8″ to 1/4″; 2546A16 for 5/16″ to 9/16″; and 2546A19 for 5/8″ to 1 1/4″.

Dia.	Flute Lg.	O'all Lg.	No. of Flutes	*Straight Flute*		*Spiral Flute*	
1/8″	1 1/2″	3″	4	2989A11	$38.82	2989A81	$47.72
3/16″	1 3/4″	3 1/2″	6	2989A13	41.17	2989A82	51.49
1/4″	2″	4″	6	2989A15	45.10	2989A51	49.89
5/16″	2 1/4″	4 1/2″	6	2989A17	47.72	2989A53	54.90
3/8″	2 1/2″	5″	6	2989A19	54.11	2989A55	61.51
7/16″	2 3/4″	5 1/2″	6	2989A22	61.48	2989A57	68.60
1/2″	3″	6″	6	2989A24	65.42	2989A59	73.87
9/16″	3 1/4″	6 1/2″	8	2989A26	74.25	2989A62	85.16
5/8″	3 1/2″	7″	8	2989A28	$80.00	2989A64	$90.96
11/16″	3 7/8″	7 3/4″	8	2989A31	87.90	2989A66	99.43
3/4″	4 3/16″	8 3/8″	8	2989A33	93.74	2989A68	105.17
7/8″	4 7/8″	9 3/4″	8	2989A37	113.58	2989A73	125.05
15/16″	5 1/8″	10 1/4″	8	2989A39	113.66	2989A75	139.44
1″	5 7/16″	10 7/8″	8	2989A42	137.54	2989A77	153.52
1 1/8″	5 13/16″	11 5/8″	8	2989A49	179.77	2989A84	197.60
1 1/4″	6 1/8″	12 1/4″	10	2989A43	220.74	2989A78	243.16

Metric Sizes—Spiral Flute

Cutting diameter tolerance is +0.008 mm, +0.004 mm for 2.0 to 3.0 mm; +0.010 mm, +0.005 mm for 4.0 to 6.0 mm; +0.012 mm, +0.006 mm for 6.5 to 10.0 mm; +0.015 mm, +0.008 mm for 11.0 to 18.0 mm, and +0.017 mm, +0.009 mm for 20.0 to 25.0 mm.

Recommended tap wrench is 7112A2 for 2.0 to 2.5 mm; 2546A13 for 3.0 to 7.0 mm; 2546A15 for 8.0 to 11.0 mm; 2546A16 for 12.0 to 17.0 mm; and 2546A18 for 18.0 to 25.0 mm.

Dia., mm	Flute Lg.	O'all Lg.	No. of Flutes		
2.0	1″	2″	4	2822A31	$65.57
2.5	1 1/8″	2 1/4″	4	2822A32	56.04
3.0	1 1/4″	2 1/2″	6	2822A33	65.57
4.0	1 1/2″	3″	6	2822A35	56.04
5.0	1 3/4″	3 1/2″	6	2822A37	56.04
5.5	1 7/8″	3 11/16″	6	2822A38	52.22
6.0	1 7/8″	3 11/16″	6	2822A39	52.22
6.5	2″	4″	6	2822A41	61.10
7.0	2 1/8″	4 3/16″	6	2822A42	67.76
8.0	2 1/4″	4 1/2″	6	2822A44	67.76
9.0	2 1/2″	4 3/4″	6	2822A46	65.00
10.0	2 9/16″	5 1/4″	6	2822A48	74.54
11.0	2 3/4″	5 9/16″	6	2822A49	$74.54
12.0	3″	6″	6	2822A51	77.40
13.0	3″	6″	6	2822A52	77.40
14.0	3 3/16″	6 1/2″	8	2822A53	105.00
15.0	3 3/16″	6 1/2″	8	2822A54	105.00
16.0	3 7/16″	6 7/8″	8	2822A55	95.92
17.0	3 7/16″	6 7/8″	8	2822A56	104.46
18.0	3 5/8″	7 7/16″	8	2822A57	111.11
20.0	4″	8″	8	2822A59	122.02
22.0	4 3/16″	8 1/2″	8	2822A62	153.32
25.0	4 1/2″	9 1/8″	8	2822A65	162.39

For information about reamers, see page 2476.

High-Speed Steel Expansion Hand Reamers

Straight Flute

Spiral Flute

Slightly enlarge previously drilled holes for proper fit. The undersized pilot on these reamers acts as a guide to maintain alignment with the hole to be reamed. Slots in the hollow center permit expansion as the adjusting screw is tightened. Recommended expansion limit is 0.010″ for 1/4″ to 5/8″ diameters and 0.013″ for 3/4″ to 1″. Cutting diameter tolerance is +0.0000″, –0.0005″. Use with an adjustable wrench or straight-handle tap wrench (sold separately).

Straight-flute reamers are for general purpose reaming.

Spiral-flute reamers have a left-hand spiral, right-hand cut and are for use on holes that have an interrupted cut, such as a keyway. They provide a smoother finish.

Dia.	Flute Lg.	O'all Lg.	No. of Flutes	Straight-Flute Reamers		Spiral-Flute Reamers		Optional Tap Wrenches	
1/4″	1 7/16″	4 1/4″	6	2993A56	$50.48	2993A79	$53.00	2546A15	$86.21
5/16″	1 3/4″	4 1/2″	6	2993A57	51.68	2993A8	54.62	2546A15	86.21
3/8″	1 3/4″	5″	6	2993A58	59.10	2993A81	61.74	2546A15	86.21
1/2″	1 13/16″	5 1/2″	6	2993A6	62.00	2993A83	65.10	2546A16	110.77
5/8″	2 1/2″	6 1/2″	8	2993A62	73.34	2993A85	76.72	2546A16	110.77
3/4″	2 11/16″	7 1/16″	8	2993A64	92.66	2993A87	97.28	2546A16	110.77
7/8″	3 5/16″	8″	8	2993A66	112.26	2993A89	117.88	2546A19	335.85
1″	3 3/4″	8 7/8″	8	2993A68	136.62	2993A91	143.44	2546A19	335.85

Replaceable-Blade Adjustable-Size Hand Reamers

Angle and Straight Blade

Extra-Long Angle Blade

Handle multiple hole sizes with just one tool—loosen one nut and tighten another to move the six adjustable blades within their size range. They're an excellent choice for reaming bushings to a precise fit when size needs to be determined during assembly. Blades can be reground and replaced. To measure size, adjust blades to a known size (such as a bushing or ring), or measure across two opposite blades with a micrometer.

Also Available: Optional reamer extensions for all except extra-long angle-blade reamers. Use in place of the end adjusting nut to align holes that are spaced far apart. Made of steel. Please ask for 3004A22 and specify McMaster-Carr part number.

Angle-blade reamers are for general purpose use and for use on holes that have an interrupted cut, such as a keyway. **Also Available:** Replacement blades. Please ask for 2987A48 and specify diameter range.

Straight-blade reamers are for general purpose reaming. Blades outlast angle-blade reamers. **Also Available:** Replacement blades. Please ask for 3141A4 and specify diameter range.

Extra-long angle-blade reamers are great for aligning holes that are spaced far apart. They have an extra-long, permanently mounted pilot. A floating sleeve steadies the pilot. **Also Available:** Replacement blades. Please ask for 3027A3 and specify diameter range.

Angle Blade—Steel

Dia. Range	O'all Lg.		
27/64″-29/64″	5 3/8″	2987A28	$52.37
27/64″-15/32″	5 3/8″	2987A1	52.37
7/16″-1/2″	5 3/8″	2987A29	52.37
15/32″-17/32″	5 5/8″	2987A11	52.37
1/2″-9/16″	5 5/8″	2987A3	52.37
17/32″-19/32″	5 5/8″	2987A12	52.37
9/16″-5/8″	5 7/8″	2987A31	52.37
19/32″-21/32″	6 5/8″	2987A13	55.38
5/8″-11/16″	6 5/8″	2987A32	55.38
21/32″-23/32″	6 7/8″	2987A14	55.38
11/16″-3/4″	6 7/8″	2987A33	55.38
23/32″-25/32″	7 1/8″	2987A15	$60.11
3/4″-13/16″	7 1/8″	2987A34	60.11
25/32″-27/32″	7 1/2″	2987A16	60.11
13/16″-7/8″	7 1/2″	2987A35	60.11
27/32″-15/16″	8 1/8″	2987A17	64.58
7/8″-1″	8 1/8″	2987A36	64.58
15/16″-1 1/16″	9 1/4″	2987A18	68.75
1″-1 1/8″	9 1/4″	2987A37	68.75
1 1/16″-1 3/16″	10 1/4″	2987A19	79.25
1 1/8″-1 1/4″	10 1/4″	2987A38	79.25
1 3/16″-1 11/32″	11 1/4″	2987A2	95.07
1 1/4″-1 7/16″	11 1/4″	2987A39	$95.07
1 11/32″-1 17/32″	12″	2987A21	119.07
1 7/16″-1 5/8″	12″	2987A4	119.07
1 17/32″-1 25/32″	14 1/4″	2987A22	169.58
1 5/8″-1 7/8″	14 1/4″	2987A41	169.58
1 25/32″-2 3/32″	16″	2987A23	234.15
1 7/8″-2 3/16″	16″	2987A42	234.15
2 3/32″-2 15/32″	18″	2987A24	348.55
2 3/16″-2 9/16″	18″	2987A43♦	348.55
2 9/16″-3″	20″	2987A44♦	490.67

♦ Blades are straight.

Straight Blade—High-Speed Steel

Dia. Range	O'all Lg.		
1/4″-9/32″	3 1/4″	3141A61★	$80.33
9/32″-5/16″	3 5/8″	3141A62★	80.33
5/16″-11/32″	4″	3141A63★	80.33
11/32″-3/8″	4 1/4″	3141A64★	80.30
3/8″-13/32″	4 1/2″	3141A65★	80.33
13/32″-7/16″	4 3/4″	3141A66	108.07
7/16″-15/32″	5 1/8″	3141A67	108.07
15/32″-17/32″	5 5/8″	3141A12	$108.07
17/32″-19/32″	5 5/8″	3141A13	108.07
19/32″-21/32″	6 5/8″	3141A14	113.10
21/32″-23/32″	6 7/8″	3141A16	118.31
23/32″-25/32″	7 1/8″	3141A15	124.36
25/32″-27/32″	7 1/2″	3141A17	130.73
27/32″-15/16″	8 1/8″	3141A18	136.70
15/16″-1 1/16″	9 1/4″	3141A23	$153.25
1 1/16″-1 3/16″	10 1/4″	3141A24	170.39
1 3/16″-1 11/32″	11 1/4″	3141A25	194.85
1 11/32″-1 17/32″	12″	3141A26	247.70
1 17/32″-1 25/32″	14 1/4″	3141A27	262.49
1 25/32″-2 3/32″	16″	3141A28	333.69
2 3/32″-2 15/32″	18″	3141A31	561.99

★ Has four blades.

Extra-Long Angle Blade—Steel

Dia. Range	Pilot Lg.	O'all Lg.		
15/32″-17/32″	10″	15 5/8″	3027A11	$116.88
17/32″-19/32″	10″	15 5/8″	3027A12	116.88
19/32″-21/32″	12″	18 5/8″	3027A13	122.15
23/32″-25/32″	16″	23 1/8″	3027A15	$132.77
25/32″-27/32″	16″	23 1/2″	3027A16	142.24
15/16″-1 1/16″	18″	27 1/8″	3027A18	152.78

Reamer Sets—Come in a wood case.

Blade Style	Blade Material	Dia. Range	Pieces Per Set		
Angle	Steel	15/32″-1 1/16″	8	2987A91	$516.67
Angle	Steel	15/32″-1 17/32″	11	2987A93	775.58
Angle	Steel	7/16″-1 1/4″	10	2987A95	$630.53
Straight	High-Speed Steel	1/4″-15/32″	7	3141A79	672.17

Optional Tap Wrenches

For 3141A reamers with an overall length of 4 1/2″ and shorter.

2546A12 ..... $47.09

For 2987A and 3141A reamers with an overall length of 4 3/4″-7 1/2″ and 3027A reamers with an overall length of 23 1/2″ and shorter.

2546A15 ..... $86.21

For 2987A and 3141A reamers with an overall length of 8 1/8″-11 1/4″ and 3027A reamers with an overall length of 27 1/8″.

2546A16 ..... $110.77

For 2987A and 3141A reamers with an overall length of 12″ and longer.

2546A19 ..... $335.85

For information about reamers, see page 2476.

High-Speed Steel Reamers for Taper-Pin Holes

Accurately ream previously drilled holes for standard taper pins. All reamers have a round shank and are tapered 1/4″ per foot.

Straight- and ***spiral-flute hand reamers*** are square drive. For pin size Nos. 7/0-4/0, use a common adjustable wrench or a pin vise (see 8455A on page 2566). Others are used with a straight-handle tap wrench (see 2546A on page 2533). Recommended tap wrench for Nos. 3/0-7 and 2.00-5.00 mm is 2546A13; Nos. 4-10 and 3.00-13.00 mm, use 2546A16; Nos. 8.00-20.00 mm, use 2546A18.; and Nos. 11-14, use 2546A19.

Straight-flute reamers are used in easy-to-ream materials, such as aluminum and brass. *Spiral-flute* reamers have a left-hand spiral, right-hand cut that operates with ease in hard-to-ream materials, such as high-carbon steel and cast iron.

Helical-flute chucking reamers have left-hand helical construction, which moves chips forward to prevent chips from packing in flutes. This reduces breakage and produces a fine finish.

Straight-Flute Hand Reamer

Spiral-Flute Hand Reamer

Helical-Flute Chucking Reamer

Standard Pin Sizes

Pin Size No.	Reamer Dia. Large End (A)	Reamer Dia. Small End (B)	Shank Dia.	Flute Lg.	O'all Lg.	Straight-Flute Hand Reamers No. of Flutes			Spiral-Flute Hand Reamers No. of Flutes			Helical-Flute Chucking Reamers No. of Flutes		
7/0	0.0666″	0.0497″	5/64″	13/16″	1 13/16″	4	2990A11	$36.56	4	2990A41	$37.59	3	2991A11	$34.90
6/0	0.0806″	0.0611″	3/32″	15/16″	1 15/16″	4	2990A12	36.56	4	2990A42	37.59	3	2991A12	34.90
5/0	0.0966″	0.0719″	7/64″	1 3/16″	2 3/16″	4	2990A13	33.19	4	2990A43	36.56	3	2991A13	32.52
4/0	0.1142″	0.0869″	1/8″	1 5/16″	2 5/16″	4	2990A14	33.19	4	2990A44	36.56	3	2991A14	32.52
3/0	0.1302″	0.1029″	9/64″	1 5/16″	2 5/16″	4	2990A15	33.19	4	2990A45	36.56	3	2991A15	32.52
2/0	0.1462″	0.1137″	5/32″	1 9/16″	2 9/16″	4	2990A16	27.34	4	2990A46	29.46	3	2991A16	29.80
0	0.1638″	0.1287″	11/64″	1 11/16″	2 15/16″	6	2990A17	27.66	6	2990A47	30.66	3	2991A17	27.76
1	0.1798″	0.1447″	3/16″	1 11/16″	2 15/16″	6	2990A18	26.55	6	2990A48	29.43	3	2991A18	28.44
2	0.2008″	0.1605″	13/64″	1 15/16″	3 3/16″	6	2990A19	26.55	6	2990A49	29.43	3	2991A19	31.67
3	0.2294″	0.1813″	15/64″	2 5/16″	3 11/16″	6	2990A21	25.73	6	2990A51	28.53	3	2991A21	32.86
4	0.2604″	0.2071″	17/64″	2 9/16″	4 1/16″	6	2990A22	27.17	6	2990A52	30.14	3	2991A22	35.75
5	0.2994″	0.2409″	5/16″	2 13/16″	4 5/16″	6	2990A23	29.63	6	2990A53	32.86	3	2991A23	41.09
6	0.3540″	0.2773″	23/64″	3 11/16″	5 7/16″	6	2990A24	36.47	6	2990A54	44.25	3	2991A24	47.80
7	0.4220″	0.3297″	13/32″	4 7/16″	6 5/16″	6	2990A25	47.04	6	2990A55	49.74	3	2991A25	59.52
8	0.5050″	0.3971″	7/16″	5 3/16″	7 3/16″	6	2990A26	60.45	6	2990A56	65.55	3	2991A26	69.62
9	0.6066″	0.4805″	9/16″	6 1/16″	8 5/16″	8	2990A27	71.49	8	2990A57	76.92	3	2991A27	73.95
10	0.7216″	0.5799″	5/8″	6 13/16″	9 5/16″	8	2990A28	78.37	8	2990A58	85.75	4	2991A28	94.42
11	0.8780″	0.7060″	3/4″	8 1/4″	11 1/4″	8	2990A29	80.63	8	2990A59	88.72	4	2991A29	97.55
12	1.0500″	0.8420″	3/4″	10″	13 7/8″	8	2990A31	120.22	8	2990A61	132.23	4	2991A31	145.51
13	1.2590″	1.0090″	1 1/16″	12″	16″	10	2990A32	233.15	10	2990A62	256.47	6	2991A32	354.42
14	1.5420″	1.2500″	1 13/32″	14″	18 1/4″	10	2990A33	357.46	10	2990A63	393.14	6	2991A33	421.97

Metric Pin Sizes—Dimensions in mm

Pin Size	Straight-Flute Hand Reamers: Reamer Dia. Large End (A)	Reamer Dia. Small End (B)	Shank Dia.	Flute Lg.	O'all Lg.	No. of Flutes			Helical-Flute Chucking Reamers: Reamer Dia. Large End (A)	Reamer Dia. Small End (B)	Shank Dia.	Flute Lg.	O'all Lg.	No. of Flutes		
2.00	2.86	1.90	2.86	48	68	4	30165A61	$57.94	2.86	1.90	3.15	48	73	3	30025A61	$37.61
2.50	3.36	2.40	3.36	48	68	4	30165A62	49.72	3.46	2.40	3.15	53	79	3	30025A62	37.61
3.00	4.06	2.90	4.00	58	80	4	30165A63	48.30	4.16	2.90	3.94	63	88	3	30025A63	37.61
4.00	5.26	3.90	5.00	68	93	4	30165A64	44.49	5.40	3.90	5.13	75	100	3	30025A64	32.26
5.00	6.36	4.90	6.30	73	100	4	30165A65	48.02	6.64	4.90	6.32	87	115	3	30025A65	36.85
6.00	8.00	5.90	7.90	105	135	6	30165A66	55.89	8.28	5.90	7.90	119	150	3	30025A66	42.62
8.00	10.80	7.90	10.50	145	180	6	30165A67	75.13	10.72	7.90	10.29	141	177	3	30025A67	46.19
10.00	13.40	9.90	13.30	175	215	6	30165A68	92.79	13.16	9.90	11.09	163	205	3	30025A68	75.24
12.00	16.00	11.80	16.00	210	255	8	30165A69	108.61	15.74	11.86	14.26	194	240	3	30025A69	85.42
13.00	16.74	12.86	16.74	210	255	8	30165A71	125.53	16.74	12.80	15.85	194	240	3	30025A71	93.95
16.00	20.40	15.80	20.40	230	280	8	30165A72	368.81	—	—	—	—	—	—	—	—
20.00	24.80	19.80	24.80	250	310	8	30165A73	509.31	—	—	—	—	—	—	—	—

Taper-Pin Sets

Pin Size No.	Flute Style	Pieces Per Set	Case		
7/0-0	Straight	7	Plastic	2990A67	$202.57
7/0-0	Spiral	7	Plastic	2990A69	221.40
0-5	Straight	6	Wood	2990A72	155.37
0- 5	Spiral	6	Wood	2990A74	$164.67
0-10	Straight	11	Wood	2990A76	383.01
0-10	Spiral	11	Wood	2990A78	421.69

High-Speed Steel Combination Drill Bit and Reamer for Taper-Pin Holes

Drill and ream tapered holes for taper pins in one operation. All are tapered at 1″ per 50″ and have chip breakers on the cutting edge, a straight shank, and a 118° point. Designed for machine reaming.

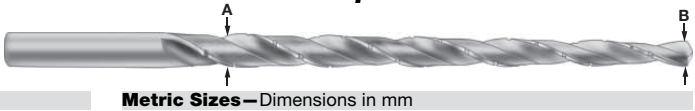

Standard Sizes

Pin Size No.	Diameter Large End (A)	Diameter Small End (B)	Shank Dia.	Flute Lg.	O'all Lg.		
3/0	0.1270″	0.0879″	1/8″	1 7/8″	3 1/8″	8831A13	$60.61
0	0.1580″	0.1137″	5/32″	2 1/8″	3 3/8″	8831A15	69.37
2	0.1950″	0.1325″	3/16″	3″	4 3/8″	8831A17	87.46
3	0.2200″	0.1575″	7/32″	3″	4 1/2″	8831A18	111.85
4	0.2530″	0.1775″	1/4″	3 5/8″	5 1/4″	8831A19	90.29
5	0.2920″	0.1983″	9/32″	4 1/2″	6 1/4″	8831A21	140.29
6	0.3470″	0.2455″	11/32″	4 7/8″	6 7/8″	8831A22	203.80
7	0.4120″	0.2818″	13/32″	6 1/4″	8 1/2″	8831A23	225.46
8	0.5060″	0.3600″	1/2″	7″	9 3/4″	8831A24	225.46

Metric Sizes—Dimensions in mm

Pin Size	Diameter Large End (A)	Diameter Small End (B)	Shank Dia.	Flute Lg.	O'all Lg.		
2.00	2.84	1.98	2.84	43	65	8831A71	$58.00
2.50	3.46	2.33	3.46	56	89	8831A72	53.17
3.00	4.16	2.84	4.16	66	98	8831A73	53.12
4.00	5.40	3.78	5.40	81	119	8831A74	65.07
5.00	6.64	4.70	6.64	97	138	8831A75	80.61
6.00	8.28	5.71	8.28	129	179	8831A76	93.17
8.00	10.72	7.64	10.72	154	211	8831A77	131.22
10.00	13.16	9.65	13.16	175	246	8831A78	168.05
12.00	15.70	11.96	15.70	198	275	8831A79	260.78

Reamers for Structural Steel

Also known as bridge reamers, car reamers, and aligning reamers. Use them to ream, true, enlarge, align, and debur holes in structural steel. Ends are tapered for easy entry into out-of-line holes. All are made of high-speed steel and have a left-hand spiral and right-hand cut. Not for reaming tapered holes.

Round Shank

Three flats provide a secure fit in portable electric and air tools. Cutting diameter tolerance is +0.010″, –0.000″.

Diameter Large End (A)	Diameter Small End (B)	Shank Dia.	Flute Lg.	O'all Lg.		
1/4″	5/32″	1/4″	2 1/4″	4 3/8″	3089A11♦	$30.09
5/16″	3/16″	5/16″	2 1/2″	4 5/8″	3089A12	31.29
3/8″	1/4″	3/8″	2 1/2″	4 5/8″	3089A13	31.29
7/16″	1/4″	7/16″	3 1/4″	5 3/8″	3089A14	34.44
1/2″	9/32″	1/2″	3 3/4″	5 7/8″	3089A15	37.33
9/16″	11/32″	1/2″	3 3/4″	5 7/8″	3089A16	39.60
5/8″	11/32″	1/2″	4 1/4″	6 3/8″	3089A17	43.20
21/32″	3/8″	1/2″	4 1/4″	6 3/8″	3089A18	47.87
11/16″	3/8″	1/2″	4 1/4″	6 3/8″	3089A19	48.00
3/4″	13/32″	1/2″	4 1/2″	6 7/8″	3089A21	57.64
25/32″	13/32″	1/2″	4 1/2″	6 7/8″	3089A22	55.96
13/16″	7/16″	1/2″	4 1/2″	6 7/8″	3089A26	57.64
7/8″	15/32″	1/2″	4 1/2″	6 7/8″	3089A23	65.11
15/16″	9/16″	1/2″	4 1/2″	6 7/8″	3089A27	81.07
1″	19/32″	1/2″	4 1/2″	6 7/8″	3089A24	92.84
1 1/16″	5/8″	1/2″	4 1/2″	6 7/8″	3089A25	87.60

♦ Shank does not have flats.

Round Shank with Safety Collar

A collar prevents overpenetration and a fast spiral clears away chips. Use in portable electric and air tools. Cutting diameter tolerance is +0.005″, –0.000″.

Diameter Large End (A)	Diameter Small End (B)	Shank Dia.	Flute Lg.	O'all Lg.		
3/16″	1/8″	1/4″	1 3/8″	3 1/2″	2743A51	$36.26
7/32″	1/8″	1/4″	1 3/8″	3 1/2″	2743A52	36.86
1/4″	1/8″	1/4″	1 7/8″	4″	2743A53	37.29
9/32″	9/64″	1/4″	1 7/8″	4″	2743A54	38.24
5/16″	5/32″	1/4″	2 3/8″	4 1/2″	2743A55	39.44
11/32″	11/64″	1/4″	2 3/8″	4 1/2″	2743A56	40.29
3/8″	3/16″	3/8″	2 7/8″	5″	2743A11	46.76
7/16″	7/32″	7/16″	3 1/8″	5 1/4″	2743A12	47.93
1/2″	7/32″	1/2″	3 13/16″	5 15/16″	2743A13	51.16
9/16″	19/64″	1/2″	4 1/8″	6 1/4″	2743A31	48.06
5/8″	1/4″	1/2″	4 7/16″	6 9/16″	2743A14	56.25
11/16″	23/64″	1/2″	4 7/8″	7″	2743A32	59.33
3/4″	29/64″	1/2″	4 7/8″	7″	2743A15	66.19
13/16″	15/32″	1/2″	5 1/8″	7 1/4″	2743A33	70.90
7/8″	37/64″	1/2″	5 1/8″	7 1/4″	2743A16	81.18
15/16″	19/32″	1/2″	5 1/8″	7 1/4″	2743A34	84.23
1″	45/64″	1/2″	5 1/8″	7 1/4″	2743A17	88.36
1 1/16″	25/32″	1/2″	5 1/8″	7 1/4″	2743A35	95.24
1 1/8″	13/16″	1/2″	5 1/8″	7 1/4″	2743A36	102.19
1 3/16″	53/64″	1/2″	5 1/8″	7 1/4″	2743A37	108.65
1 1/4″	7/8″	1/2″	5 3/8″	7 1/2″	2743A38	114.55
1 5/16″	57/64″	1/2″	5 3/8″	7 1/2″	2743A39	155.78
1 3/8″	1 1/64″	1/2″	5 3/8″	7 1/2″	2743A41	191.62
1 1/2″	1 5/64″	1/2″	5 3/8″	7 1/2″	2743A43	213.63

Taper Shank

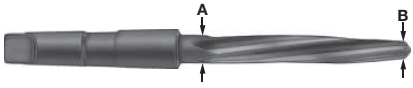

For use in stationary machines. Cutting diameter tolerance is +0.010″, –0.000″.

Diameter Large End (A)	Diameter Small End (B)	Morse Taper No.	Flute Lg.	O'all Lg.		
3/8″	7/32″	1	2 3/4″	5 11/16″	2992A15	$32.20
7/16″	1/4″	2	4 3/8″	8 1/4″	2992A17	36.20
1/2″	9/32″	2	4″	7 9/16″	2992A18	37.69
1/2″	9/32″	2	5 1/8″	9″	2992A19	39.07
9/16″	11/32″	2	4″	7 9/16″	2992A21	39.98
9/16″	11/32″	2	5 1/8″	9″	2992A22	43.00
5/8″	11/32″	2	4 1/2″	8 1/16″	2992A41	43.62
5/8″	3/8″	2	6 1/8″	10″	2992A23	48.78
11/16″	3/8″	3	4 1/2″	8 13/16″	2992A42	48.56
11/16″	25/64″	3	7 1/8″	11 3/4″	2992A24	59.80
3/4″	13/32″	3	5″	9 1/2″	2992A43	58.27
3/4″	13/32″	3	7 3/8″	12″	2992A25	67.31
13/16″	15/32″	3	5″	9 1/2″	2992A44	58.27
13/16″	1/2″	3	7 3/8″	12″	2992A26	68.64
7/8″	15/32″	3	5″	9 1/2″	2992A45	65.78
7/8″	9/16″	3	7 3/8″	12″	2992A27	77.76
15/16″	19/32″	3	5″	9 1/2″	2992A46	65.78
15/16″	19/32″	3	7 3/8″	12″	2992A28	78.07
1″	19/32″	3	5″	9 1/2″	2992A47	79.67
1″	11/16″	3	7 3/8″	12″	2992A29	90.42
1 1/16″	5/8″	3	5″	9 1/2″	2992A48	92.98
1 1/16″	3/4″	3	7 3/8″	12″	2992A31	102.03
1 1/8″	21/32″	3	5″	9 1/2″	2992A49	102.44
1 1/8″	13/16″	3	7 3/8″	12″	2992A32	114.70
1 1/4″	23/32″	4	5″	10 1/2″	2992A51	123.50
1 1/4″	15/16″	4	7 3/8″	13″	2992A34	143.17
1 3/8″	1 1/16″	4	7 3/8″	13″	2992A36	183.91
1 1/2″	1 3/16″	4	7 3/8″	13″	2992A38	217.20

Hex Nut Shank

Reamers have a hex nut on the end of the shank for use with square-drive impact wrench sockets. Cutting diameter tolerance is +0.010″, –0.000″.

Diameter Large End (A)	Diameter Small End (B)	Hex Head Wd.	Flute Lg.	O'all Lg.		
9/16″	11/32″	1 1/16″	4″	5 1/2″	3000A24	$50.78
9/16″	11/32″	1 1/16″	5 1/8″	6 7/8″	3000A25	53.51
11/16″	3/8″	1 1/16″	4 1/2″	6 3/8″	3000A28	61.57
11/16″	25/64″	1 1/16″	7 1/8″	9 1/4″	3000A29	74.84
13/16″	15/32″	1 1/4″	5″	7″	3000A35	73.78
13/16″	1/2″	1 1/4″	7 3/8″	9 3/8″	3000A36	85.59
15/16″	19/32″	1 7/16″	5″	7″	3000A42	85.87
15/16″	19/32″	1 7/16″	7 3/8″	9 3/8″	3000A43	95.45
1 1/16″	5/8″	1 5/8″	5″	7″	3000A48	116.67
1 1/16″	3/4″	1 5/8″	7 3/8″	9 3/8″	3000A49	127.16
1 3/16″	11/16″	1 13/16″	5″	7″	3000A55	143.10
1 3/16″	7/8″	1 13/16″	7 3/8″	9 3/8″	3000A56	158.60
1 5/16″	1″	2″	7 3/8″	10″	3000A62	201.26

Hex Nut Shank with Safety Magnet

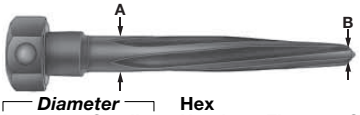

A strong magnet on two of the hex surfaces holds the reamer in the tool. The magnets can also keep the reamer from accidentally falling when not in the socket (see OSHA standard 1926.759 for falling object protection). Use with square-drive impact wrench sockets. Cutting diameter tolerance is +0.010″, –0.000″.

Diameter Large End (A)	Diameter Small End (B)	Hex Head Wd.	Flute Lg.	O'all Lg.		
9/16″	11/32″	1 1/16″	4″	5 1/2″	3239A11	$48.39
5/8″	11/32″	1 1/16″	4 1/2″	6″	3239A13	52.69
11/16″	3/8″	1 1/16″	4 1/2″	6 3/8″	3239A15	58.45
3/4″	13/32″	1 1/4″	5″	7″	3239A17	69.90
13/16″	15/32″	1 1/4″	5″	7″	3239A19	69.90
7/8″	15/32″	1 7/16″	5″	7″	3239A22	80.55
15/16″	19/32″	1 7/16″	5″	7″	3239A24	80.55
1″	19/32″	1 7/16″	5″	7″	3239A26	98.21
1 1/16″	5/8″	1 5/8″	5″	7″	3239A28	$109.09
1 1/8″	21/32″	1 5/8″	5″	7″	3239A31	125.93
1 3/16″	11/16″	1 13/16″	5″	7″	3239A33	132.12
1 1/4″	23/32″	1 13/16″	5″	7″	3239A35	147.58
1 5/16″	25/32″	2″	5″	7 7/8″	3239A37	162.21
1 3/8″	1 1/16″	2″	7 3/8″	10″	3239A39	216.98
1 7/16″	1 1/8″	2″	7 3/8″	10″	3239A41	215.27
1 1/2″	1 3/16″	2″	7 3/8″	10″	3239A42	255.96

High-Speed Steel Reamers for Taper-Pipe Holes

Use these reamers prior to tapping with taper-pipe taps. All have a left-hand spiral and right-hand cut. They fit into straight-handle tap wrenches (see 2546A on page 2533).

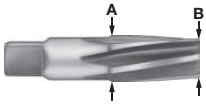

For Pipe Size	Diameter Large End (A)	Diameter Small End (B)	Flute Lg.	O'all Lg.		
1/8"	0.362"	0.316"	3/4"	2 1/8"	8798A11	$34.95
1/4"	0.472"	0.406"	1 1/16"	2 7/16"	8798A12	41.10
3/8"	0.606"	0.54"	1 1/16"	2 9/16"	8798A13	43.73
1/2"	0.751"	0.665"	1 3/8"	3 1/8"	8798A14	54.45
3/4"	0.962"	0.876"	1 3/8"	3 1/4"	8798A15	76.28
1"	1.212"	1.103"	1 3/4"	3 3/4"	8798A16	112.20

Tube Reaming and Deburring Tools

Ream and debur the inside and outside edges of 3/16"-1 1/2" PVC and CPVC tubing and 3/16"-1 1/2" metal tubing with one tool. Tools have three cutters on each end and a die cast zinc body. They cut both clockwise and counterclockwise.

Tool with Tungsten Tool Steel Cutters—Use on PVC, CPVC, stainless steel (including Type 304 and Type 316), brass, hard and soft copper, and aluminum tubing.

2737A11 ..... $69.02

Tool with Hardened Steel Cutters—Use on PVC, CPVC, brass, soft copper, and aluminum tubing.

2709A12 ..... $18.61

High-Speed Steel Deburring Reamers for Sheet Metal

Also known as repairmen's reamers.

Spiral-flute reamers not only countersink, enlarge, and smooth the edges of holes in sheet metal, they also remove burs from pipe and conduit.

Straight-flute reamers remove burs and enlarge holes in thin sheet metal.

Reamers with a ***round shank*** are for portable drills. Reamers with a ***T-handle shank*** are for hand use.

Spiral Flute Round Shank

Straight Flute T-Handle

Shank Style	For Pipe Size	Diameter Large End	Diameter Point End	O'all Lg.		
Spiral Flute						
1/2" Round	1/8"-1"	1 1/4"	3/16"	5 3/64"	3017A11	$92.05
1/2" Round	1/4"-1 1/4"	1 15/32"	1/4"	5"	3017A12	137.19
1/2" Round	1/4"-2"	2 17/64"	1/4"	5 7/8"	3017A13	214.84
T-Handle	1/4"-2"	2 17/64"	1/4"	5 7/8"	3017A18	235.03
Straight Flute						
3/8" Round	____	1/2"	1/8"	5 9/16"	3018A5	34.66
1/2" Round	____	1"	3/8"	6 1/2"	3018A6	103.97
T-Handle	____	1/2"	1/8"	5 9/16"	3018A4	39.87

Morse Taper Shank High-Speed Steel Chucking Reamers

The tapered shank on these reamers fits the spindle hole of a machine tool with a Morse taper. All have straight flutes. Cutting diameter tolerance is +0.0002", –0.0000" for 1/2"; +0.0003", –0.0000" for 5/8"; and +0.0004", +0.0001" for 3/4" to 1 1/2".

Dia.	Morse Taper	Flute Lg.	O'all Lg.	No. of Flutes		
1/2"	1	2"	8"	6	2995A24	$40.84
5/8"	2	2 1/4"	9"	8	2995A28	50.46
3/4"	2	2 1/2"	9 1/2"	8	2995A33	53.42
13/16"	2	2 1/2"	9 1/2"	8	2995A35	67.18
7/8"	2	2 5/8"	10"	8	2995A37	75.80
1"	3	2 3/4"	10 1/2"	8	2995A42	94.53
1 1/16"	3	2 3/4"	10 1/2"	8	2995A43	$103.37
1 1/8"	3	2 7/8"	11"	8	2995A14	120.12
1 3/16"	3	2 7/8"	11"	10	2995A45	128.53
1 1/4"	4	3"	11 1/2"	10	2995A46	139.18
1 3/8"	4	3 1/4"	12"	10	2995A48	164.51
1 1/2"	4	3 1/2"	12 1/2"	10	2995A51	189.50

Threaded-Shank High-Speed Steel Reamers

Ream hard, high-strength alloys and tough, heat-resistant materials. All have a 1/4"-28 threaded shank and straight flutes. The pilot is 1/4" long and has a 45° cutting chamfer. Overall length includes the pilot and threaded shank. Reamer cutting diameter tolerance is +0.0002", –0.0000". Pilot cutting diameter tolerance is +0.000", –0.001".

Reamer Dia.	Pilot Dia.	Flute Lg.	O'all Lg.	No. of Flutes		
0.161"	0.152"	1 1/8"	2 3/8"	6	2585A11	$31.56
0.1719"	0.164"	1 1/8"	2 3/8"	6	2585A13	31.56
0.185"	0.175"	1 1/8"	2 3/8"	6	2585A15	31.78
0.187"	0.178"	1 1/8"	2 3/8"	6	2585A17	31.78
0.1875"	0.178"	1 1/8"	2 3/8"	6	2585A19	31.78
0.189"	0.18"	1 1/8"	2 3/8"	6	2585A21	31.78
0.191"	0.18"	1 1/8"	2 3/8"	6	2585A23	31.78
0.1935"	0.183"	1 1/8"	2 3/8"	6	2585A25	31.78
0.2031"	0.194"	1 1/8"	2 3/8"	6	2585A27	$32.00
0.2188"	0.207"	1 1/8"	2 3/8"	6	2585A29	32.00
0.2344"	0.226"	1 1/8"	2 3/8"	6	2585A31	32.00
0.25"	0.24"	1 1/8"	2 3/8"	6	2585A33	32.22
0.2656"	0.255"	1 1/8"	2 3/8"	6	2585A35	33.11
0.2812"	0.27"	1 1/8"	2 3/8"	6	2585A37	33.33
0.2969"	0.288"	1 1/8"	2 3/8"	6	2585A39	33.33
0.3125"	0.3"	1 1/8"	2 3/8"	6	2585A41	33.56

Drill Guides for Countersunk Holes

Save time when drilling holes for hinges, latches, and other hardware that requires screws. Each guide has a beveled tip that fits into countersunk hardware, ensuring centered pilot holes.

Round-shank guides are also known as Vix Bits. ***Hex-shank*** guides fit all quick-change and standard drill chucks.

Guides are spring loaded. Drilling pressure compresses the guide body and extends the drill bit into the material. All are made of steel. ***Drill bits*** (sold separately) are high-speed steel.

Round Shank

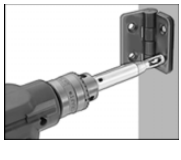

Bit Size	For Screw Sizes	ROUND SHANK Shank Dia.	ROUND SHANK Guides		ROUND SHANK Drill Bits		HEX SHANK Shank Size	HEX SHANK Guides		HEX SHANK Drill Bits	
5/64"	Nos. 2, 3, 4	1/4"	27455A61	$11.00	27455A91	$3.25	1/4"	2869A31	$11.58	2869A81	$3.02
7/64"	Nos. 5, 6	1/4"	27455A62	9.60	27455A92	3.38	1/4"	2869A32	11.58	2869A82	3.02
9/64"	Nos. 8, 9, 10	1/4"	27455A63	10.00	27455A93	3.50	1/4"	2869A33	12.70	2869A83	3.02
11/64"	No. 12	3/8"	27455A64	42.00	27455A94	7.12	1/4"	2869A34	22.05	2869A84	5.15
13/64"	No. 14	3/8"	27455A65	42.00	27455A95	7.12	1/4"	2869A35	22.05	2869A85	5.15

CAT-V40 Flange End Mill Holders

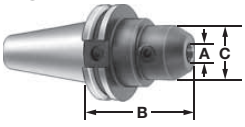

Holders securely grip end mills in machines with a 40 taper spindle. All are made of case-hardened alloy steel and have 5/8″-11 threads on the tapered end to hold retention knobs that fit your machine. End mill holding set screws are included.

For End Mill Shank Dia. (A)	Projection (B)	Dia. (C)		
1/8″	2 3/8″	3/4″	28745A118	$107.21
3/16″	2 1/2″	3/4″	28745A122	112.13
1/4″	2 1/2″	51/64″	28745A125	103.28
3/8″	2 1/2″	1″	28745A132	103.28
1/2″	2 1/2″	1 3/8″	28745A136	103.28
1/2″	4″	1 3/8″	28745A137	123.93
5/8″	3″	1 21/32″	28745A141	112.13
3/4″	3″	1 3/4″	28745A145	103.28
1″	4″	2 3/8″	28745A153	116.07
1 1/4″	4″	2 1/2″	28745A156	128.85

End Mill Extensions

Get into tight spots with these extensions. Made of steel, they securely hold your end mill with the included set screws.

For End Mill Shank Dia.	Extension Shank Dia.	O'all Lg.		
1/8″	3/4″	6″	28045A41	$83.20
3/16″	3/4″	6″	28045A42	83.20
1/4″	3/4″	6″	28045A43	83.20
3/8″	1″	6″	28045A45	91.65
1/2″	1″	6″	28045A48	91.65

Machine Tool Wipers

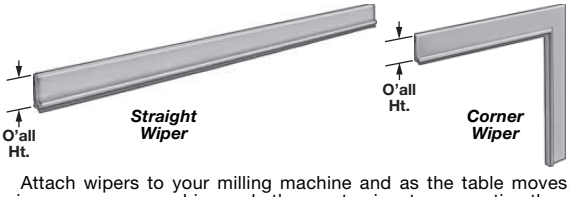

Attach wipers to your milling machine and as the table moves, wipers sweep away chips and other contaminants, preventing them from wearing down sliding parts.

Housing is made of 0.18″ thick Type 304 stainless steel and has a 0.33″ thick extended lip to protect the wiper blade from hot chips. Wiper blades are made of polyurethane, so they withstand exposure to most oils, coolants, and contaminants. Wipers can be cut to length. To mount, counterbore holes and attach with 1/4″-20 socket head cap screws (not included).

Straight Wipers				Corner Wipers		
O'all Ht.	O'all Lg.			Leg Lg., Inside		
0.68″	20.9″	8920A21	$26.86	5.25″	8920A23	$49.95
0.94″	20.9″	8920A22	24.29	5.25″	8920A24	49.95

R8 Right-Angle Milling Machine Attachments

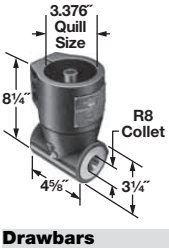

Simplify right-angle work by reducing the need for special tooling. Ideal for cavities and pocket-milling jobs, this attachment requires a drawbar (sold separately) to operate.

Attachments

Has hardened and ground spiral bevel gears (1.33:1 ratio), sealed bearings, R8 collet spindle, and a grease fitting. Body is ductile iron and has alignment flats on the sides.

29155A11 ..... $1,041.81

Drawbars

Required for the attachment above. They are made of heat-treated alloy steel and have 1 1/2″ long 7/16″-20 threads.

For Milling Machine	Drawbar Lg.	Hex Lg.		
Bridgeport, Clausing/Kondia	18″	8 1/2″	29155A61	$40.76
Lagun, Index	18″	11 1/2″	29155A64	45.85

R8 Shank End Mill Holders and Adapters

End Mill Holder

Morse Taper Adapter

Designed to hold end mills, drills, and reamers securely in Bridgeport and similar milling machines with an R8 taper spindle. All are made of heat-treated alloy steel and are ground to accurate size. Their R8 shanks have a 7/16″-20 internal drawbar thread.

R8 Shank End Mill Holders

All include set screws.

Holders for ***1/8″***, ***5/16″***, and ***1/2″ to 1 1/2″*** diameter end mills accept single-end end mills only. Holders for ***3/16″***, ***1/4″***, and ***3/8″*** diameter end mills accept single- and double-end end mills.

For End Mill Dia.	Head Dia.			For End Mill Dia.	Head Dia.		
1/8″	3/4″	8781A33	$58.00	5/8″	1 21/32″	8781A24	$68.00
3/16″	3/4″	8781A21	58.00	3/4″	1 57/64″	8781A25	68.00
1/4″	51/64″	8781A32	58.00	7/8″	2″	8781A26	68.00
5/16″	7/8″	8781A34	58.00	1″	2 3/8″	8781A27	68.00
3/8″	1″	8781A22	58.00	1 1/4″	2 1/2″	8781A28	88.00
1/2″	1 3/8″	8781A23	58.00	1 1/2″	3″	8781A29	118.00

Morse Taper to R8 Shank Milling Machine Adapters

Convert tools with a Morse taper shank to an R8 shank.

Adapter Hole Size	Adapter Shank		
#1 Morse Taper	R8	8784A13	$97.38
#2 Morse Taper	R8	8784A14	97.38
#3 Morse Taper	R8	8784A15	107.21

End Mill Storage Cabinets

Three drawers and 29 compartments make it easy to organize and store your 1/8″ to 1″ end mills. Size is marked on each drawer for easy identification. Cabinets are steel with a gray epoxy finish. Overall size is 14 5/8″ Lg. × 7 3/8″ Wd. × 7 3/4″ Ht.

Cabinet holds one each of sizes 9/16″, 11/16″, and 7/8″; two each of sizes 3/16″, 5/16″, 7/16″, 5/8″, and 1″; three each of sizes 1/8″, 1/4″, 3/8″, and 3/4″; and four of size 1/2″.

28345A17 ..... $82.14

Milling Machine Power Feeds

Convert your milling machine from manual feed to motorized power. Designed for general purpose machining on Class 1 mills up to 3 hp, you'll get smooth power and rapid traverse. Speed is variable so you can make adjustments for material, cutter, and coolant. Install on the X (left/right) or the Y (in/out) motion axis. Feeds fit below the table surface for unobstructed workpiece mounting, and a limit switch prevents damage caused by over-travel. Single-lever control engages and disengages as well as starts and stops feeds. Feeds also have a central control knob for speed adjustment, on/off switch, pilot light, protective breaker, travel stop/limit switch assemblies, and 110 VAC, 50/60 Hz motor.

Standard Torque— Peak torque is 140 in.-lbs., intermittent torque is 105 in.-lbs., and continuous torque is 90 in.-lbs.

High Torque— For applications where it's necessary to maintain stable feed control for a smooth surface finish at speeds as low as 1/2″/min. at full torque. Peak torque is 150 in.-lbs., intermittent torque is 120 in.-lbs., and continuous torque is 100 in.-lbs.

To Order: Select the power feed of your choice and a mounting kit (sold separately below) designed to fit your milling machine.

Also Available: Other mounting kits that fit milling machines not listed below. Please ask for 30815A999 and specify the make and model number of your milling machine.

Power Feeds

Torque	Amps	Feed Rate	Rapid Traverse		
Standard	2.5	3/4″-25″/min.	35″/min.	30815A27	$560.84
High	3.0	1/2″-35″/min.	35″/min.	30815A34	650.35

Mounting Kits

X-axis table feed for manually operated Bridgeport, Brute 9″ × 42″, 9″ × 49″, Jet 1048, South Bend Import	30815A41	$80.00
X-axis table feed for Bridgeport (to replace existing Bridgeport gearbox power table feed)	30815A42	228.57
Y-axis table feed for manually operated Bridgeport 12″ Cross Travel	30815A61	145.71

Drawbars for Milling Machines

2J

Universal Adjustable Length

All have 1½″ long 7/16″-20 threads and a black-oxide finish. Made of alloy steel, except the universal adjustable-length drawbar, which is low-carbon steel. ***Universal adjustable-length*** drawbar has spacers so you can adjust the shaft length in ¼″ increments. It also has a hex so it will fit a variety of milling machines.

	Bar Lg.	Hex Lg.		
1J for Bridgeport Belt Drive or Vari-Speed	18″	1¾″	29705A21	$14.61
2J for Bridgeport Belt Drive or Vari-Speed	18″	4¾″	29705A22	18.61
For Lagun Variable Speed	18⅝″	7⅛″	29705A25	36.89
For Kondia Variable Speed	19″	4¼″	29705A27	31.11
For Wells Index Variable Speed	19¼″	5¼″	29705A26	34.67
Extended Hex for Bridgeport and Clausing/Kondia	18″	8½″	29155A61	40.76
Extended Hex for Lagun and Wells Index	18″	11½″	29155A64	45.85
Universal Adjustable Length	17¼″-20″	7¼″	29705A23	44.44

Machine Tool Depth Stops

Attach a depth stop to your milling machine to accurately set machining depth. Also known as quill stops, they fit all ½″-20 threaded rods.

Clamp-on stop is spring-loaded. Squeeze knobs toward each other to set depth. Made of aluminum.

Push-button stop installs on the quill and lets you adjust the depth in two ways. Push the button and slide the stop to the desired position, or turn the nut and make adjustments in 0.001″ increments. Made of carbon steel. Can also be used on drill presses.

Clamp On	2949A71	$20.85
Push-Button	2949A75	44.85

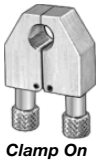

Clamp On

Push-Button

End Mill Cut Styles

Square End
Pages 2488-2509

Ball End
Pages 2488-2507

Rounded Edge
Pages 2494, 2500, 2503, 2505

Tapered
Pages 2496, 2502

Drill/Mill
Pages 2495, 2508

Chamfer
Pages 2498, 2506

Corner Rounding
Pages 2487, 2502

Concave Radius
Page 2487

Convex Radius
Page 2487

Concave- and Convex-Radius End Mills for Curved Edges

Machine curved edges into your workpiece. End mills have six flutes and a radius tolerance of ±0.001″. All are made of high-speed steel.

Concave-radius end mills produce a rounded outward-curving shape.

Convex-radius end mills produce a hollow inward-curving shape.

Concave Radius

Convex Radius

Radius	Shank Dia.	O'all Lg.	Concave Radius Mill Dia.			Convex Radius Mill Dia.		
1/32″	1/2″	3″	3/4″	2800A71	$54.35	3/4″	2820A71	$55.55
1/16″	1/2″	3″	3/4″	2800A72	54.35	3/4″	2820A72	55.55
3/32″	1/2″	3″	3/4″	2800A73	53.76	7/8″	2820A73	58.54
1/8″	3/4″	3½″	1″	2800A74	66.05	1¼″	2820A74	63.67
5/32″	3/4″	3½″	1″	2800A75	66.29	1 5/16″	2820A78	66.29
3/16″	3/4″	3½″	1″	2800A76	66.05	1⅜″	2820A75	69.16
1/4″	3/4″	4″	1¼″	2800A77★	82.66	1½″	2820A76★	78.72
3/8″	3/4″	4 3/16″	1½″	2800A79★	113.42	1¾″	2820A77★◆	97.95

★ Four flutes. ◆Overall length is 4″.

Corner-Rounding End Mills

Round off sharp corners on the edge of your workpiece. End mills have four flutes and a radius tolerance of ±0.001″. ***Cobalt steel*** provides better heat and abrasion resistance than high-speed steel. Use on tough materials such as cast iron, cast steel, and heat-treated steel.

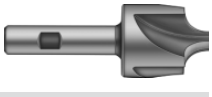

Inch Sizes

Radius	Tip Dia.	Mill Dia.	Shank Dia.	O'all Lg.	High-Speed Steel		Cobalt Steel	
1/32″	1/4″	7/16″	3/8″	2½″	3067A34	$31.59	2790A69	$33.50
1/16″	1/4″	7/16″	3/8″	2½″	3067A11	31.92	2790A71	33.85
3/32″	1/4″	1/2″	3/8″	2½″	3067A12	33.96	2790A72	36.29
1/8″	1/4″	5/8″	1/2″	3″	3067A13	41.82	2790A73	44.39
5/32″	5/16″	3/4″	1/2″	3″	3067A14	45.76	2790A74	49.02
3/16″	3/8″	7/8″	1/2″	2 7/8″	3067A28	51.82	2790A61♣	59.24
3/16″	3/8″	7/8″	3/4″	3⅛″	3067A15	51.82	2790A75	55.99
1/4″	3/8″	1″	1/2″	3″	3067A29	57.78	2790A62♣	70.73
1/4″	3/8″	1″	3/4″	3¼″	3067A16	57.78	2790A76	63.32
5/16″	3/8″	1⅛″	1/2″	3¼″	3067A36	$70.82	2790A63♣▲	$76.89
5/16″	3/8″	1⅛″	7/8″	3½″	3067A17	70.82	2790A77	79.37
3/8″	3/8″	1¼″	1/2″	3½″	3067A32	80.60	2790A64♣●	95.45
3/8″	3/8″	1¼″	7/8″	3¾″	3067A18	80.60	2790A78	90.29
7/16″	3/8″	1⅜″	3/4″	3¾″	3067A21	88.94	2790A81	95.73
1/2″	3/8″	1½″	3/4″	3⅞″	3067A23	94.45	2790A82	101.06
1/2″	3/8″	1½″	1″	4⅛″	3067A33	94.45	2790A79	107.72
5/8″	9/16″	1⅞″	3/4″	4″	3067A25	115.13	2790A83	125.64
3/4″	5/8″	2¼″	3/4″	4⅛″	3067A27	129.65	2790A84	139.81

♣Tip dia. is 1/2″. ▲Overall length is 3½″. ●Overall length is 3¾″.

Metric Sizes

Radius	Tip Dia.	Mill Dia.	Shank Dia.	O'all Lg.	High-Speed Steel	
1.0 mm	6.0 mm	7/16″	3/8″	2½″	30245A31	$42.91
2.0 mm	7.0 mm	1/2″	3/8″	2½″	30245A33	45.75
2.5 mm	6.0 mm	1/2″	3/8″	2½″	30245A34	45.75
3.0 mm	7.0 mm	5/8″	1/2″	3″	30245A35	53.54
4.0 mm	8.0 mm	3/4″	1/2″	3″	30245A37	$56.36
5.0 mm	9.0 mm	7/8″	1/2″	3″	30245A39	63.55
6.0 mm	10.5 mm	1″	3/4″	3¼″	30245A41	71.75

High-Speed Steel Two-Flute End Mill Sets

Sets pack mill diameters 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, and 1/2″ into a wood block stand. End mills have a 3/8″ shank diameter, except the 1/2″ mill dia. size, which has a 1/2″ shank. Overall lengths range from 2 5/16″ to 3 3/4″. All are square end and center cutting. Helix angle is 30°. Mill diameter tolerance is +0.001″, –0.000″ for single-end tools; +0.0000″, –0.0015″ for double-end tools.

Square-end end mills allow plunge cuts. ***Ball-end*** end mills machine rounded details into a workpiece.

Uncoated end mills are for general milling of alloy steel, carbon steel, and cast iron.

Coated end mills last longer and can be run at much higher feeds/speeds.

Long-life TiN (titanium nitride) coating is good for use on alloy steel, aluminum, and plastic. Maximum working temperature is 1100° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating, making it a good choice for tough-to-machine materials such as ductile cast iron, stainless steel, aluminum, and plastic. Maximum working temperature is 750° F. Color is blue-gray.

	Uncoated		Long-Life TiN Coated		Extra-Life TiCN Coated	
Single Square End	88505A24	$70.38	88505A31	$75.36	88505A34	$79.58
Single Ball End	88505A26	95.17	88505A33	101.94	88505A36	107.59
Double Square End	88505A27	94.47	88505A32	101.18	88505A35	106.76

High-Speed Steel Two-Flute End Mills

An economical alternative to cobalt and carbide tools, two flutes maximize chip clearance for slotting applications. All are square end and center cutting, allowing plunge cuts into a surface. Helix angle is 30°. Mill diameter tolerance is +0.001″, –0.000″.

Uncoated end mills are for general milling of alloy steel, carbon steel, and cast iron.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating is good for use on alloy steel, aluminum, and plastic. Max. working temperature is 1100° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating, making it a good choice for tough-to-machine materials such as ductile cast iron, stainless steel, aluminum, and plastic. Max. working temperature is 750° F. Color is blue-gray.

Super-life TiAlN (titanium aluminum nitride) coating is the best for very high feeds/speeds and high-temperature applications. Use to mill cast iron, stainless steel, nickel-based alloys, and titanium. Not for use on aluminum. Max. working temperature is 1470° F. Color is purple-gray.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		Long-Life TiN Coated		Extra-Life TiCN Coated		Super-Life TiAlN Coated	
1/8″	3/8″	3/8″	2 5/16″	3051A11	$11.36	8949A14	$12.23	30225A21	$13.73	8838A11	$13.73
1/8″	3/8″	3/8″	2 3/8″	3051A42	19.80	8949A811	21.23	30225A111	23.94	8838A811	23.94
11/64″	3/8″	7/16″	2 5/16″	3051A25	16.42	8949A812	17.66	30225A112	20.38	8838A812	20.38
3/16″	3/8″	7/16″	2 5/16″	3051A12	11.36	8949A16	12.23	30225A23	13.73	8838A14	13.73
3/16″	3/8″	3/4″	2 5/8″	3051A44	17.40	8949A17	18.64	30225A24	21.02	8838A813	21.02
13/64″	3/8″	7/16″	2 5/16″	3051A26	16.42	8949A813	17.66	30225A113	20.38	8838A814	20.38
7/32″	3/8″	1/2″	2 5/16″	3051A73	12.78	8949A31	13.73	30225A25	15.57	8838A815	15.57
7/32″	3/8″	7/8″	2 11/16″	3051A45	17.40	8949A814	18.64	30225A114	21.02	8838A816	21.02
15/64″	3/8″	1/2″	2 5/16″	3051A27	16.42	8949A815	17.66	30225A115	20.38	8838A817	20.38
1/4″	3/8″	1/2″	2 5/16″	3051A13	11.36	8949A21	12.23	30225A27	13.73	8838A18	13.73
1/4″	3/8″	5/8″	3 1/16″	3051A51	19.80	8949A816	21.23	30225A116	23.94	8838A819	23.94
1/4″	3/8″	1″	2 7/8″	3051A48	17.40	8949A43	18.64	30225A28	21.02	8838A818	21.02
17/64″	3/8″	9/16″	2 5/16″	3051A28	16.42	8949A817	17.66	30225A117	20.38	8838A821	20.38
9/32″	3/8″	9/16″	2 5/16″	3051A74	12.78	8949A32	13.73	30225A29	15.57	8838A822	15.57
9/32″	3/8″	1 3/8″	3 1/8″	3051A52	17.40	8949A818	18.64	30225A118	19.71	8838A823	21.02
19/64″	3/8″	9/16″	2 5/16″	3051A29	16.42	8949A819	17.66	30225A119	20.38	8838A824	20.38
5/16″	3/8″	9/16″	2 5/16″	3051A14	11.36	8949A33	12.23	30225A32	13.73	8838A22	13.73
5/16″	3/8″	3/4″	3 5/16″	3051A55	20.16	8949A821	21.64	30225A121	24.48	8838A826	24.48
5/16″	3/8″	1 3/8″	3 1/8″	3051A54	17.40	8949A44	18.64	30225A33	21.02	8838A825	21.02
21/64″	3/8″	9/16″	2 5/16″	3051A31	16.42	8949A822	17.66	30225A122	20.38	8838A827	20.38
11/32″	3/8″	9/16″	2 5/16″	3051A75	12.78	8949A51	13.73	30225A34	15.57	8838A828	15.57
11/32″	3/8″	1 1/2″	3 1/4″	3051A59	17.40	8949A823	18.64	30225A123	21.02	8838A829	21.02
23/64″	3/8″	9/16″	2 5/16″	3051A33	16.42	8949A824	17.66	30225A124	20.38	8838A831	20.38
3/8″	3/8″	9/16″	2 5/16″	3051A15	11.36	8949A22	12.23	30225A36	13.73	8838A26	13.73
3/8″	3/8″	3/4″	3 5/16″	3051A62	20.16	8949A46	21.64	30225A72	24.48	8838A833	24.48
3/8″	3/8″	1 1/2″	3 1/4″	3051A61	17.40	8949A45	18.64	30225A37	21.02	8838A832	21.02
25/64″	3/8″	13/16″	2 1/2″	3051A34	23.67	8949A825	25.43	30225A125	28.13	8838A834	28.13
13/32″	3/8″	13/16″	2 1/2″	3051A76	16.53	8949A34	17.80	30225A38	20.07	8838A835	20.07
27/64″	3/8″	13/16″	2 1/2″	3051A35	23.16	8949A826	24.98	30225A126	28.68	8838A836	28.68
7/16″	3/8″	13/16″	2 1/2″	3051A16	15.96	8949A35	17.16	30225A41	19.27	8838A31	19.27
7/16″	3/8″	2″	3 11/16″	3051A65	19.89	8949A47	21.34	30225A42	24.23	8838A837	24.23
29/64″	3/8″	13/16″	2 1/2″	3051A36	25.49	8949A827	27.43	30225A127	30.20	8838A838	30.20
15/32″	3/8″	13/16″	2 1/2″	3051A77	18.38	8949A828	19.75	30225A128	22.22	8838A839	22.22
31/64″	3/8″	13/16″	2 1/2″	3051A37	25.49	8949A829	27.43	30225A129	30.20	8838A841	30.20
1/2″	3/8″	13/16″	2 1/2″	3051A17	15.96	8949A39	17.16	30225A45	19.27	8838A35	19.27
1/2″	1/2″	1″	3″	3051A18	16.53	8949A23	17.80	30225A46	20.07	8838A36	20.07
1/2″	1/2″	1″	4″	3051A67	25.49	8949A831	27.43	30225A131	29.52	8838A842	29.52
1/2″	1/2″	2″	4″	3051A89	21.87	8949A48	23.45	30225A47	26.47	8838A843	26.47
33/64″	1/2″	1″	3″	3051A38	24.16	8949A832	25.93	30225A132	28.66	8838A844	28.66
17/32″	1/2″	1 1/8″	3 1/8″	3051A78	22.82	8949A36	24.45	30225A48	27.69	8838A845	27.69
35/64″	1/2″	1 1/8″	3 1/8″	3051A39	29.84	8949A833	32.08	30225A133	36.96	8838A846	36.96
9/16″	1/2″	1 1/8″	3 1/8″	3051A19	19.89	8949A37	21.34	30225A51	22.51	8838A847	24.23
9/16″	1/2″	2 1/2″	4 1/2″	3051A92	28.05	8949A834	30.43	30225A134	34.38	8838A848	34.38
37/64″	1/2″	1 1/8″	3 1/8″	3051A41	29.62	8949A835	31.82	30225A135	36.72	8838A849	36.72
19/32″	1/2″	1 1/8″	3 1/8″	3051A79	25.02	8949A836	26.80	30225A136	28.44	8838A851	29.02
5/8″	1/2″	1 1/8″	3 1/8″	3051A21	22.36	8949A41	23.98	30225A55	27.14	8838A44	27.14
5/8″	5/8″	1 5/16″	3 7/16″	3051A24	23.16	8949A24	24.98	30225A56	28.08	8838A852	28.08
5/8″	5/8″	1 3/8″	4 5/8″	3051A984	35.29	8949A838	38.20	30225A138	43.15	8838A854	43.15
5/8″	5/8″	2″	4 1/8″	3051A93	28.41	8949A837	30.80	30225A137	34.73	8838A853	34.73
5/8″	5/8″	2 1/2″	4 5/8″	3051A96	26.42	8949A839	28.41	30225A139	30.69	8838A855	30.69
21/32″	5/8″	1 5/16″	3 7/16″	3051A81	27.07	8949A841	27.83	30225A141	31.32	8838A856	31.32

(Continued on following page)

For information about end mill cut styles, see page 2487.

High-Speed Steel Two-Flute End Mills *(Continued from previous page)*

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		Long-Life TiN Coated		Extra-Life TiCN Coated		Super-Life TiAlN Coated	
11/16"	1/2"	1 5/16"	3 5/16"	3051A22	$24.02	8949A55	$25.80	30225A61	$27.85	8838A857	$27.85
11/16"	5/8"	1 5/16"	3 7/16"	3051A46	24.02	8949A842	25.80	30225A142	27.85	8838A858	27.85
45/64"	3/4"	1 5/16"	3 9/16"	3051A47	36.94	8949A843	39.66	30225A143	45.70	8838A859	45.70
23/32"	3/4"	1 5/16"	3 9/16"	3051A82	28.98	8949A844	29.82	30225A144	33.59	8838A861	33.59
3/4"	1/2"	1 5/16"	3 5/16"	3051A23	26.20	8949A57	28.16	30225A66	30.41	8838A54	30.41
3/4"	5/8"	1 5/16"	3 7/16"	3051A49	26.20	8949A42	28.16	30225A67	30.41	8838A862	30.41
3/4"	3/4"	1 5/16"	3 9/16"	3051A32	26.20	8949A25	28.16	30225A68	30.41	8838A56	30.41
3/4"	3/4"	1 5/8"	5 3/8"	3051A324	44.45	8949A845	48.18	30225A145	54.34	8838A864	54.34
3/4"	3/4"	3"	5 1/4"	3051A322	35.53	8949A49	38.58	30225A69	43.40	8838A863	43.40
25/32"	3/4"	1 1/2"	3 3/4"	3051A83	33.68	8949A58	36.55	30225A71	41.10	8838A865	41.10
13/16"	5/8"	1 1/2"	3 5/8"	3051A84	29.91	8949A59	32.45	30225A73	36.52	8838A866	36.52
13/16"	3/4"	1 1/2"	3 3/4"	3051A53	29.91	8949A846	32.45	30225A146	36.52	8838A867	47.55
27/32"	7/8"	1 1/2"	3 3/4"	3051A85	34.36	8949A847	37.28	30225A147	42.00	8838A868	42.00
7/8"	5/8"	1 1/2"	3 5/8"	3051A56	29.91	8949A62	32.45	30225A78	36.52	8838A869	36.52
7/8"	3/4"	1 1/2"	3 3/4"	3051A57	30.23	8949A63	32.78	30225A79	36.89	8838A871	36.89
7/8"	7/8"	1 1/2"	3 3/4"	3051A58	31.26	8949A848	33.95	30225A148	38.19	8838A872	38.19
7/8"	7/8"	3 1/2"	5 3/4"	3051A582	43.32	8949A849	47.00	30225A149	52.95	8838A873	52.95
29/32"	7/8"	1 5/8"	3 7/8"	3051A86	38.38	8949A851	41.68	30225A151	46.98	8838A874	46.98
15/16"	7/8"	1 5/8"	3 7/8"	3051A87	33.56	8949A65♦	36.45	30225A85♦	40.99	8838A875	40.99
31/32"	1"	1 5/8"	4 1/8"	3051A88	38.94	8949A852	42.25	30225A152	47.62	8838A876	47.62
1"	5/8"	1 1/2"	3 5/8"	3051A66	34.71	8949A68	37.62	30225A91	42.39	8838A877	42.39
1"	3/4"	1 1/2"	3 3/4"	3051A43	34.71	8949A38	37.62	30225A92	42.39	8838A76	42.39
1"	1"	1 5/8"	4 1/8"	3051A68	38.48	8949A26	41.78	30225A93	47.07	8838A878	47.07
1"	1"	2 1/2"	7 1/4"	3051A682	78.33	8949A854	84.98	30225A154	95.72	8838A881	95.72
1"	1"	4"	6 1/2"	3051A684	63.69	8949A853	69.10	30225A153	77.88	8838A879	77.88
1 1/16"	3/4"	1 1/2"	3 3/4"	3051A69	64.27	8949A855	69.70	30225A155	78.52	8838A882	78.52
1 1/8"	3/4"	1 5/8"	3 7/8"	3051A91	57.28	8949A69	62.13	30225A94	70.03	8838A883	70.03
1 1/8"	1"	1 5/8"	4 1/8"	3051A63	56.27	8949A856	61.07	30225A156	68.71	8838A884	68.71
1 3/16"	1"	1 5/8"	4 1/8"	3051A94	71.03	8949A857	77.02	30225A157	86.83	8838A885	86.83
1 1/4"	3/4"	1 5/8"	3 7/8"	3051A95	71.03	8949A71	77.02	30225A95	86.83	8838A886	86.83
1 1/4"	1"	1 5/8"	4 1/8"	3051A64	62.78	8949A858	68.05	30225A158	76.74	8838A887	76.74
1 1/4"	1 1/4"	1 5/8"	4 1/8"	3051A97	62.78	8949A859	68.05	30225A159	76.74	8838A888	76.74
1 3/8"	3/4"	1 5/8"	3 7/8"	3051A971	71.03	8949A861	77.02	30225A161	86.83	8838A889	86.83
1 3/8"	1"	1 5/8"	4 1/8"	3051A71	70.26	8949A862	76.20	30225A162	85.80	8838A891	85.80
1 1/2"	3/4"	1 5/8"	3 7/8"	3051A974	84.22	8949A73	91.38	30225A97	102.96	8838A892	102.96
1 1/2"	1"	1 5/8"	4 1/8"	3051A72	77.00	8949A863	83.55	30225A163	94.05	8838A893	94.05
1 1/2"	1 1/4"	1 5/8"	4 1/8"	3051A975	77.00	8949A864	83.55	30225A164	99.74	8838A894	94.05
1 5/8"	1 1/4"	1 5/8"	4 1/8"	3051A977	81.80	8949A865	88.75	30225A165	99.95	8838A895	99.95
1 3/4"	3/4"	1 5/8"	3 7/8"	3051A978	94.40	8949A866	102.36	30225A166	115.30	8838A896	115.30
1 3/4"	1 1/4"	1 5/8"	4 1/8"	3051A979	94.40	8949A867	102.36	30225A167	115.30	8838A897	115.30
2"	3/4"	1 5/8"	3 7/8"	3051A981	111.71	8949A868	126.45	30225A168	136.58	8838A898	136.58
2"	1 1/4"	1 5/8"	4 1/8"	3051A983	111.71	8949A869	126.45	30225A169	136.58	8838A899	136.58

♦ Shank diameter is 3/4"; length of cut is 1 1/2"; overall length is 3 3/4".

Tight-Tolerance High-Speed Steel Two-Flute End Mills

Made to a closer tolerance than standard two-flute end mills for cutting keyways. Use for materials such as alloy steel, carbon steel, and cast iron. All are square end and center cutting so you can make plunge cuts into a surface. Helix angle is 30°. Mill diameter tolerance is +0.0000", –0.0015".

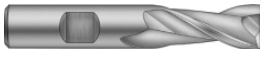

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/8"	3/8"	3/8"	2 5/16"	8857A61	$14.10
3/16"	3/8"	7/16"	2 5/16"	8857A62	14.62
7/32"	3/8"	1/2"	2 5/16"	8857A74	15.90
1/4"	3/8"	1/2"	2 5/16"	8857A63	14.62
9/32"	3/8"	9/16"	2 5/16"	8857A75	15.90
5/16"	3/8"	9/16"	2 5/16"	8857A64	$14.62
11/32"	3/8"	9/16"	2 5/16"	8857A76	15.90
3/8"	3/8"	9/16"	2 5/16"	8857A65	15.38
7/16"	3/8"	13/16"	2 1/2"	8857A654	23.67
1/2"	1/2"	1"	3"	8857A66	20.98
9/16"	1/2"	1 1/8"	3 1/8"	8857A664	$30.24
5/8"	5/8"	1 5/16"	3 7/16"	8857A67	28.92
3/4"	3/4"	1 5/16"	3 9/16"	8857A68	32.70
7/8"	7/8"	1 1/2"	3 3/4"	8857A69	41.55
1"	1"	1 5/8"	4 1/8"	8857A71	50.86

Metric High-Speed Steel Two-Flute End Mills

Two flutes provide maximum chip clearance for slotting applications. All are square end and center cutting so you can make plunge cuts into a surface. Helix angle is 30°. Mill diameter tolerance is +0.001", –0.000".

Uncoated end mills are for general milling of alloy steel, carbon steel, and cast iron.

Long-life TiN (titanium nitride) coated end mills last longer and can be run at much higher feeds/speeds. Use on alloy steel, aluminum, and plastic. Maximum working temperature is 1100° F. Color is gold.

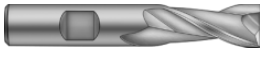

Mill Dia., mm	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		Long-Life TiN Coated	
1.6	3/16"	1/4"	1 1/2"	8853A61	$12.43	8694A11	$14.05
2.0	3/16"	1/4"	1 1/2"	8853A63	12.43	8694A12	14.05
2.5	3/16"	1/4"	1 1/2"	8853A64	12.43	8694A13	14.05
3.0	3/8"	3/8"	2 5/16"	8853A66	13.33	8694A14	13.79
3.5	3/8"	7/16"	2 5/16"	8853A67	13.33	8694A15	13.79
4.0	3/8"	7/16"	2 5/16"	8853A68	13.33	8694A16	15.05
4.5	3/8"	7/16"	2 5/16"	8853A69	14.48	8694A17	15.10
5.0	3/8"	7/16"	2 5/16"	8853A71	14.48	8694A18	15.10
5.5	3/8"	1/2"	2 5/16"	8853A72	14.48	8694A19	15.10
6.0	3/8"	1/2"	2 5/16"	8853A73	14.48	8694A21	15.10
6.5	3/8"	1/2"	2 5/16"	8853A735	14.48	8694A22	15.10
7.0	3/8"	9/16"	2 5/16"	8853A74	14.48	8694A23	15.10
8.0	3/8"	9/16"	2 5/16"	8853A75	14.48	8694A24	15.10
8.5	3/8"	9/16"	2 5/16"	8853A755	$14.48	8694A25	$15.10
9.0	3/8"	9/16"	2 5/16"	8853A76	14.48	8694A26	15.10
10.0	3/8"	13/16"	2 1/2"	8853A77	17.50	8694A27	18.15
10.5	3/8"	13/16"	2 1/2"	8853A772	20.98	8694A28	21.72
11.0	3/8"	13/16"	2 1/2"	8853A774	20.98	8694A29	21.72
11.5	3/8"	13/16"	2 1/2"	8853A776	21.21	8694A31	22.00
12.0	3/8"	13/16"	2 1/2"	8853A79	21.99	8694A32	22.87
13.0	1/2"	1"	3"	8853A794	25.74	8694A33	26.69
14.0	1/2"	1 1/8"	3 1/8"	8853A82	25.74	8694A34	26.69
16.0	5/8"	1 5/16"	3 7/16"	8853A83	28.00	8694A35	29.02
18.0	3/4"	1 5/16"	3 9/16"	8853A84	31.09	8694A36	32.35
20.0	3/4"	1 1/2"	3 3/4"	8853A85	37.32	8694A37	38.70
25.0	1"	1 5/8"	4 1/8"	8853A91	47.74	8694A38	49.50

High-Speed Steel Three-Flute End Mills

Three flutes make smoother cuts and produce a finer finish than two flutes, though they do not provide the same chip clearance. Use on alloy steel, carbon steel, and cast iron. All are square end and center cutting, allowing plunge cuts into a surface. Helix angle is 30°. Mill diameter tolerance is +0.001″, –0.000″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/8″	3/8″	3/8″	2 5/16″	2849A73	$15.77
3/16″	3/8″	1/2″	2 3/8″	2849A74	15.77
1/4″	3/8″	5/8″	2 7/16″	2849A75	15.77
1/4″	3/8″	1 1/4″	3 1/8″	2849A61	22.82
5/16″	3/8″	3/4″	2 1/2″	2849A76	15.77
5/16″	3/8″	1 3/8″	3 1/8″	2849A62	22.82
3/8″	3/8″	3/4″	2 1/2″	2849A77	21.35
3/8″	3/8″	1 1/2″	3 1/4″	2849A63	$22.82
7/16″	3/8″	1″	2 11/16″	2849A78	25.25
1/2″	1/2″	1 1/4″	3 1/4″	2849A79	26.20
1/2″	1/2″	2″	4″	2849A64	27.18
9/16″	1/2″	1 3/8″	3 3/8″	2849A8	30.47
5/8″	5/8″	1 5/8″	3 3/4″	2849A81	30.47
5/8″	5/8″	2 1/2″	4 5/8″	2849A65	$32.95
3/4″	3/4″	1 5/8″	3 7/8″	2849A82	35.70
3/4″	3/4″	3″	5 1/4″	2849A66	41.00
7/8″	3/4″	1 7/8″	4 1/8″	2849A83	43.09
1″	1″	2″	4 1/2″	2849A84	48.04
1″	1″	4″	6 1/2″	2849A67	66.42

High-Speed Steel Four-Flute End Mill Sets

You'll get six end mills in diameters 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, and 1/2″ in a wood block stand. All have a 3/8″ shank dia., except the 1/2″ mill dia. size, which has a 1/2″ shank. All are square end and center cutting so you can make plunge cuts into a surface. Helix angle is 30°. ***Single end*** overall lengths range from 2 5/16″ to 3 1/4″. Mill diameter tolerance is +0.001″, –0.000″. ***Double end*** overall lengths range from 3 1/16″ to 4 1/8″. Mill diameter tolerance is +0.0000″, –0.0015″.

Uncoated end mills are for general milling of alloy steel, carbon steel, and cast iron.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating is good for use on alloy steel, aluminum, and plastic. Maximum working temperature is 1100° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating, making it a good choice for tough-to-machine materials such as ductile cast iron, stainless steel, aluminum, and plastic. Maximum working temperature is 750° F. Color is blue-gray.

	Uncoated		Long-Life TiN Coated		Extra-Life TiCN Coated	
Single-End Set	88505A25	$91.22	88505A41	$96.01	88505A43	$97.69
Double-End Set	88505A28	120.66	88505A42	127.02	88505A44	136.42

High-Speed Steel Four-Flute End Mills

Center Cutting

Try four flutes for a fine finish and feeds twice as fast as two-flute end mills. All are square end and have a 30° helix angle. Mill diameter tolerance is +0.001″, –0.000″.

Noncenter cutting end mills are designed for operations where the peripheral teeth do most of the work. ***Center cutting*** end mills allow plunge cuts into a surface.

Uncoated end mills are for general milling of alloy steel, carbon steel, and cast iron.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating is good for use on alloy steel, aluminum, and plastic. Max. working temperature is 1100° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating, making it a good choice for tough-to-machine materials such as ductile cast iron, stainless steel, aluminum, and plastic. Max. working temperature is 750° F. Color is blue-gray.

Super-life TiAlN (titanium aluminum nitride) coating is the best for very high feeds/speeds and high-temperature applications. Use to mill cast iron, stainless steel, nickel-based alloys, and titanium. Not for use on aluminum. Max. working temperature is 1470° F. Color is purple-gray.

				NONCENTER CUTTING				CENTER CUTTING							
Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		Long-Life TiN Coated		Uncoated		Long-Life TiN Coated		Extra-Life TiCN Coated		Super-Life TiAlN Coated	
1/8″	3/8″	3/8″	2 5/16″	3052A11	$11.87	89205A11	$12.74	3056A61	$15.47	8918A41	$16.18	30305A41	$18.18	2715A11	$18.18
11/64″	3/8″	1/2″	2 3/8″	3052A61	16.82	89205A71	17.56	3056A211	15.47	8918A111	16.18	30305A711	18.37	2715A711	18.37
3/16″	3/8″	1/2″	2 3/8″	3052A12	11.87	89205A13	12.74	3056A62	15.47	8918A42	16.18	30305A42	18.18	2715A12	18.18
3/16″	3/8″	3/4″	2 5/8″	3052A22	15.31	89205A51	16.44	3056A11	18.22	8918A21	19.18	30305A21	21.38	2715A41	21.38
3/16″	3/8″	1 1/8″	3″	3052A24	18.41	89205A52	19.70	3056A12	22.09	8918A22	23.16	30305A22	25.87	2715A42	25.87
13/64″	3/8″	1/2″	2 3/8″	3052A62	16.82	89205A72	17.56	3056A212	15.47	8918A112	16.18	30305A712	18.37	2715A712	18.37
7/32″	3/8″	5/8″	2 7/16″	3052A42	12.10	89205A15	13.02	3056A35	16.33	8918A61	17.13	30305A43	19.22	2715A13	19.22
7/32″	3/8″	1 3/4″	3 9/16″	3052A422	19.40	89205A73	20.56	3056A13	22.93	8918A113	24.16	30305A713	26.91	2715A713	26.91
15/64″	3/8″	5/8″	2 7/16″	3052A63	16.82	89205A74	17.56	3056A213	15.47	8918A114	16.18	30305A714	18.37	2715A714	18.37
1/4″	3/8″	5/8″	2 7/16″	3052A13	11.87	89205A17	12.74	3056A63	14.84	8918A51	15.58	30305A44	17.42	2715A14	17.42
1/4″	3/8″	1 1/4″	3 1/16″	3052A25	15.67	89205A53	16.79	3056A14	17.62	8918A23	18.47	30305A23	20.76	2715A43	20.76
1/4″	3/8″	1 3/4″	3 9/16″	3052A27	18.62	89205A54	20.07	3056A15	20.76	8918A24	21.87	30305A24	24.36	2715A44	24.36
17/64″	3/8″	5/8″	2 7/16″	3052A64	16.82	89205A75	17.56	3056A214	15.47	8918A115	16.18	30305A715	18.37	2715A715	18.37
9/32″	3/8″	5/8″	2 7/16″	3052A43	12.10	89205A19	13.02	3056A36	16.42	8918A62	17.27	30305A45	19.32	2715A15	19.32
9/32″	3/8″	1 3/8″	3 1/8″	3052A433	15.31	89205A76	16.23	3056A16	18.22	8918A116	19.18	30305A716	21.38	2715A716	21.38
9/32″	3/8″	2″	3 3/4″	3052A28	19.89	89205A77	21.08	3056A17	23.16	8918A117	24.42	30305A717	27.17	2715A717	27.17
19/64″	3/8″	3/4″	2 1/2″	3052A65	16.82	89205A78	17.56	3056A215	15.47	8918A118	16.18	30305A718	18.37	2715A718	18.37
5/16″	3/8″	3/4″	2 1/2″	3052A14	11.87	89205A21	12.74	3056A64	14.84	8918A43	15.58	30305A46	17.42	2715A16	17.42
5/16″	3/8″	1 3/8″	3 1/8″	3052A58	15.67	89205A55	16.79	3056A18	17.62	8918A25	18.47	30305A25	20.76	2715A45	20.76
5/16″	3/8″	2″	3 3/4″	3052A59	19.52	89205A56	20.98	3056A19	21.87	8918A26	22.93	30305A26	25.63	2715A46	25.63
11/32″	3/8″	3/4″	2 1/2″	3052A44	12.10	89205A23	13.02	3056A37	16.42	8918A63	17.27	30305A47	19.32	2715A17	19.32
11/32″	3/8″	1 1/2″	3 1/4″	3052A444	15.31	89205A79	16.23	3056A21	18.22	8918A119	19.18	30305A719	21.38	2715A719	21.38
23/64″	3/8″	3/4″	2 1/2″	3052A67	16.82	89205A81	17.56	3056A216	15.47	8918A121	16.18	30305A721	18.37	2715A721	18.37
3/8″	3/8″	3/4″	2 1/2″	3052A15	11.87	89205A25	12.74	3056A65	14.84	8918A52	15.58	30305A48	17.42	2715A18	17.42
3/8″	3/8″	1 1/2″	3 1/4″	3052A69	15.31	89205A57	16.44	3056A22	16.89	8918A27	17.73	30305A27	19.81	2715A47	19.81
3/8″	3/8″	2 1/2″	4 1/4″	3052A72	19.89	89205A58	21.35	3056A23	22.09	8918A28	23.16	30305A28	25.87	2715A48	25.87
25/64″	3/8″	1″	2 11/16″	3052A68	24.74	89205A811	25.77	3056A217	15.47	8918A122	16.18	30305A722	18.37	2715A722	18.37
13/32″	3/8″	1″	2 11/16″	3052A45	16.90	89205A26	18.21	3056A38	22.36	8918A64	23.44	30305A49	26.25	2715A19	26.25
13/32″	3/8″	2 5/8″	4 5/16″	3052A455	26.43	89205A812	28.07	3056A24	27.90	8918A123	29.28	30305A723	32.68	2715A723	32.68
7/16″	3/8″	1″	2 11/16″	3052A16	16.17	89205A27	17.47	3056A39	21.16	8918A44	22.22	30305A51	24.84	2715A21	24.84
7/16″	1/2″	1 3/4″	3 3/4″	3052A75	21.62	89205A814	22.95	3056A218	23.56	8918A125	24.76	30305A726	27.69	2715A726	27.69
7/16″	3/8″	2″	3 11/16″	3052A166	20.87	89205A59	22.37	3056A25	23.29	8918A29	24.51	30305A724	27.29	2715A724	27.29
7/16″	3/8″	2 5/8″	4 5/16″	3052A74	24.95	89205A813	26.44	3056A26	27.53	8918A124	27.64	30305A725	30.93	2715A725	30.93
29/64″	3/8″	1″	2 11/16″	3052A71	23.44	89205A815	25.28	3056A219	21.16	8918A126	22.22	30305A727	25.09	2715A727	25.09
15/32″	3/8″	1″	2 11/16″	3052A46	16.17	89205A28	17.47	3056A75	21.16	8918A65	22.22	30305A52	24.84	2715A22	24.84
1/2″	3/8″	1″	2 11/16″	3052A17	16.17	89205A61	17.47	3056A76	21.87	8918A31	22.93	30305A17	25.63	2715A49	25.63
1/2″	1/2″	1 1/4″	3 1/4″	3052A18	16.17	89205A29	17.47	3056A66	21.87	8918A53	22.93	30305A53	25.63	2715A23	25.63
1/2″	1/2″	2″	4″	3052A76	21.13	89205A62	22.74	3056A27	23.56	8918A32	24.76	30305A29	27.69	2715A51	27.69

(Continued on following page)

For information about end mill cut styles, see page 2487.

High-Speed Steel Four-Flute End Mills *(Continued from previous page)*

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	NONCENTER CUTTING Uncoated		NONCENTER CUTTING Long-Life TiN Coated		CENTER CUTTING Uncoated		CENTER CUTTING Long-Life TiN Coated		CENTER CUTTING Extra-Life TiCN Coated		CENTER CUTTING Super-Life TiAlN Coated	
1/2"	1/2"	3"	5"	3052A78	$25.69	89205A63	$27.53	3056A28	$28.40	8918A33	$28.60	30305A31	$31.94	2715A52	$31.94
33/64"	1/2"	1 1/4"	3 1/4"	3052A73	24.20	89205A817	25.28	3056A221	27.42	8918A128	27.54	30305A728	31.12	2715A728	31.12
17/32"	1/2"	1 3/8"	3 3/8"	3052A47	20.87	89205A31	22.37	3056A41	27.42	8918A66	27.54	30305A54	30.82	2715A24	30.82
17/32"	1/2"	2 1/2"	4 1/2"	3052A477	26.90	89205A818	28.57	3056A29	31.58	8918A129	33.20	30305A729	37.00	2715A729	37.00
9/16"	1/2"	1 3/8"	3 3/8"	3052A19	20.61	89205A32	22.14	3056A42	28.70	8918A45	30.12	30305A55	33.66	2715A25	33.66
9/16"	1/2"	2 1/2"	4 1/2"	3052A82	28.47	89205A64	30.65	3056A31	34.62	8918A34	36.32	30305A731	40.56	2715A731	40.56
9/16"	1/2"	4"	6"	3052A822	34.23	89205A819	36.40	3056A32	37.50	8918A131	39.34	30305A732	43.90	2715A732	43.90
19/32"	1/2"	1 3/8"	3 3/8"	3052A48	24.95	89205A821	26.44	3056A222	27.42	8918A132	27.54	30305A733	30.82	2715A733	30.82
5/8"	1/2"	1 3/8"	3 3/8"	3052A21	22.59	89205A34	24.23	3056A223	27.42	8918A133	27.54	30305A734	30.82	2715A734	30.82
5/8"	5/8"	1 5/8"	3 3/4"	3052A79	24.70	89205A35	26.53	3056A67	27.42	8918A54	27.54	30305A56	30.82	2715A26	30.82
5/8"	5/8"	2 1/2"	4 5/8"	3052A85	28.47	89205A822	30.21	3056A33	31.58	8918A134	33.20	30305A32	37.00	2715A53	37.00
5/8"	5/8"	4"	6 1/8"	3052A93	35.55	89205A823	37.72	3056A34	39.24	8918A135	41.18	30305A735	45.99	2715A735	45.99
41/64"	5/8"	1 5/8"	3 3/4"	3052A77	37.17	89205A824	38.75	3056A224	28.60	8918A136	29.96	30305A736	33.88	2715A736	33.88
21/32"	5/8"	1 5/8"	3 3/4"	3052A49	28.29	89205A825	28.64	3056A225	28.60	8918A137	29.96	30305A737	33.57	2715A737	33.57
11/16"	1/2"	1 5/8"	3 5/8"	3052A51	24.95	89205A36	26.77	3056A226	28.60	8918A138	29.96	30305A738	36.98	2715A738	33.57
11/16"	5/8"	1 5/8"	3 3/4"	3052A81	26.43	89205A33	28.44	3056A43	28.60	8918A67	29.96	30305A57	33.57	2715A27	33.57
11/16"	5/8"	3"	5 1/8"	3052A817	33.54	89205A826	35.55	3056A51	34.24	8918A139	35.98	30305A739	40.20	2715A739	40.20
23/32"	3/4"	1 5/8"	3 7/8"	3052A52	28.58	89205A827	30.29	3056A235	30.22	8918A141	31.72	30305A741	35.38	2715A741	35.38
3/4"	1/2"	1 5/8"	3 5/8"	3052A23	27.02	89205A37	27.86	3056A77	30.22	8918A57	31.72	30305A18	35.38	2715A54	35.38
3/4"	1/2"	3"	5"	3052A97	33.31	89205A828	35.32	3056A227	38.64	8918A142	40.62	30305A742	45.26	2715A742	45.26
3/4"	5/8"	1 5/8"	3 3/4"	3052A26	27.02	89205A38	27.86	3056A228	30.22	8918A143	31.72	30305A743	35.38	2715A743	35.38
3/4"	3/4"	1 5/8"	3 7/8"	3052A711	28.13	89205A39	28.93	3056A68	30.22	8918A55	31.72	30305A58	35.38	2715A28	35.38
3/4"	3/4"	3"	5 1/4"	3052A95	34.73	89205A66	37.40	3056A52	38.64	8918A35	40.62	30305A33	45.26	2715A55	45.26
3/4"	3/4"	4"	6 1/4"	3052A96	41.69	89205A67	44.95	3056A53	45.96	8918A36	48.26	30305A34	53.91	2715A56	53.91
49/64"	3/4"	1 7/8"	4 1/8"	3052A83	45.24	89205A831	47.22	3056A229	37.26	8918A145	39.14	30305A744	44.05	2715A744	44.05
25/32"	3/4"	1 7/8"	4 1/8"	3052A53	36.03	89205A832	38.19	3056A231	37.26	8918A146	39.14	30305A745	43.64	2715A745	43.64
13/16"	3/4"	1 7/8"	4 1/8"	3052A54	33.68	89205A42	36.22	3056A44	37.26	8918A68	39.14	30305A59	43.64	2715A29	43.64
13/16"	3/4"	3 1/2"	5 3/4"	3052A549	43.44	89205A833	46.06	3056A54	46.74	8918A147	49.08	30305A746	54.77	2715A746	54.77
27/32"	7/8"	1 7/8"	4 1/8"	3052A55	36.03	89205A834	38.19	3056A232	38.18	8918A148	40.16	30305A747	44.77	2715A747	44.77
7/8"	3/4"	1 7/8"	4 1/8"	3052A712	35.43	89205A44	38.14	3056A233	38.18	8918A149	40.16	30305A748	44.77	2715A748	44.77
7/8"	7/8"	1 7/8"	4 1/8"	3052A86	33.78	89205A41	36.32	3056A45	38.18	8918A69	40.16	30305A61	44.77	2715A31	44.77
7/8"	7/8"	3 1/2"	5 3/4"	3052A962	43.44	89205A835	46.06	3056A55	48.14	8918A151	50.58	30305A749	56.49	2715A749	56.49
7/8"	7/8"	5"	7 1/4"	3052A961	55.14	89205A836	58.45	3056A56	60.40	8918A152	63.40	30305A751	70.82	2715A751	70.82
29/32"	7/8"	1 7/8"	4 1/8"	3052A56	42.62	89205A837	45.22	3056A234	42.24	8918A153	44.32	30305A752	49.59	2715A752	49.59
15/16"	7/8"	1 7/8"	4 1/8"	3052A57	37.33	89205A43	40.22	3056A78	42.24	8918A46	44.32	30305A62	49.59	2715A32	49.59
1"	3/4"	1 7/8"	4 1/8"	3052A32	38.40	89205A46	41.28	3056A79	45.96	8918A58	48.26	30305A19	53.91	2715A57	53.91
1"	1"	2"	4 1/2"	3052A33	40.74	89205A47	43.82	3056A46	45.96	8918A56	48.26	30305A63	53.91	2715A33	53.91
1"	1"	3"	5 1/2"	3052A335	52.89	89205A838	56.09	3056A81	61.68	8918A154	64.80	30305A753	72.29	2715A753	72.29
1"	1"	4"	6 1/2"	3052A964	58.93	89205A839	62.55	3056A57	64.80	8918A155	68.06	30305A754	75.98	2715A754	75.98
1"	1"	6"	8 1/2"	3052A966	72.62	89205A841	77.11	3056A58	79.12	8918A156	83.08	30305A755	92.76	2715A755	92.76
1 1/8"	1"	2"	4 1/2"	3052A971	55.40	89205A91	59.58	3056A47	63.66	8918A71	66.88	30305A64	74.63	2715A34	74.63
1 1/4"	1 1/4"	2"	4 1/2"	3052A972	63.55	89205A92	68.41	3056A48	69.76	8918A72	73.26	30305A756	81.80	2715A756	81.80
1 1/2"	1 1/4"	2"	4 1/2"	3052A973	77.46	89205A93	83.42	3056A49	88.30	8918A73	92.66	30305A757	103.50	2715A757	103.50

Metric High-Speed Steel Four-Flute End Mills

The metric version of our inch size four-flute end mills, they produce a fine finish and can be fed up to twice as fast as two-flute end mills. All are square end and center cutting so you can make plunge cuts into a surface. Helix angle is 30°. Mill diameter tolerance is +0.001", –0.000".

Mill Dia., mm	Shank Dia.	Lg. of Cut	O'all Lg.		
3.0	3/8"	3/8"	2 5/16"	8854A11	$15.59
3.5	3/8"	1/2"	2 3/8"	8854A12	15.59
4.0	3/8"	1/2"	2 3/8"	8854A13	15.59
4.5	3/8"	1/2"	2 3/8"	8854A14	16.96
5.0	3/8"	1/2"	2 3/8"	8854A15	16.96
5.5	3/8"	5/8"	2 7/16"	8854A16	16.96
6.0	3/8"	5/8"	2 7/16"	8854A17	16.96
6.5	3/8"	5/8"	2 7/16"	8854A18	16.96
7.0	3/8"	5/8"	2 7/16"	8854A19	$16.96
8.0	3/8"	3/4"	2 1/2"	8854A21	16.96
9.0	3/8"	3/4"	2 1/2"	8854A22	16.96
10.0	3/8"	1"	2 11/16"	8854A23	21.22
11.0	3/8"	1"	2 11/16"	8854A24	22.46
12.0	3/8"	1"	2 11/16"	8854A25	22.95
12.5	1/2"	1 1/4"	3 1/4"	8854A26	22.95
13.0	1/2"	1 1/4"	3 1/4"	8854A27	$26.19
14.0	1/2"	1 3/8"	3 3/8"	8854A28	26.19
15.0	1/2"	1 3/8"	3 3/8"	8854A29	27.46
16.0	5/8"	1 5/8"	3 3/4"	8854A31	30.09
18.0	3/4"	1 5/8"	3 7/8"	8854A32	33.78
20.0	3/4"	1 7/8"	4 1/8"	8854A33	43.31
25.0	1"	2"	4 1/2"	8854A35	53.34

High-Speed Steel Six- and Eight-Flute End Mills

More flutes means these end mills produce a finer finish. They can also be fed at faster rates and resist wear better than tools with fewer flutes. Use for machining alloy steel, carbon steel, and cast iron. All are square end, noncenter cutting, and have a 30° helix angle. Mill diameter tolerance is +0.001", –0.000".

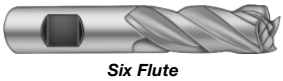

Six Flute

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Six Flute					
3/4"	3/4"	1 1/2"	3 3/4"	3052A713	$28.13
13/16"	5/8"	1 7/8"	4"	3052A84	33.18
7/8"	5/8"	1 7/8"	4"	3052A29	34.23
1"	5/8"	1 7/8"	4"	3052A31	39.09
1"	3/4"	1 1/4"	3 1/2"	3052A714	48.65
1 1/8"	3/4"	1 1/4"	3 1/2"	3052A715	71.45
1 1/8"	3/4"	2"	4 1/4"	3052A87	59.75
1 1/8"	7/8"	2"	4 1/4"	3052A88	53.74
1 1/8"	1"	2"	4 1/2"	3052A34	55.40
1 1/8"	1"	4"	6 1/2"	3052A344	77.84
Six Flute (Cont.)					
1 1/4"	3/4"	1 1/4"	3 1/2"	3052A716	$75.82
1 1/4"	3/4"	2"	4 1/4"	3052A89	65.20
1 1/4"	7/8"	2"	4 1/4"	3052A91	58.20
1 1/4"	1"	2"	4 1/2"	3052A35	60.25
1 1/4"	1"	4"	6 1/2"	3052A355	91.88
1 1/4"	1 1/4"	4"	6 1/2"	3052A922	91.88
1 1/4"	1 1/4"	6"	8 1/2"	3052A968	109.13
1 3/8"	3/4"	1 1/4"	3 1/2"	3052A717	76.52
1 3/8"	1"	2"	4 1/2"	3052A36	68.75
1 1/2"	3/4"	2"	4 1/4"	3052A718	84.56
Six Flute (Cont.)					
1 1/2"	1"	2"	4 1/2"	3052A37	$77.46
1 1/2"	1 1/4"	2"	4 1/2"	3052A94	77.46
1 1/2"	1 1/4"	4"	6 1/2"	3052A944	109.70
1 3/4"	3/4"	2"	4 1/4"	3052A719	93.43
1 3/4"	1 1/4"	2"	4 1/2"	3052A38	93.43
1 7/8"	1 1/4"	2"	4 1/2"	3052A39	95.78
Eight Flute					
2"	3/4"	2"	4 1/4"	3052A721	107.58
2"	1 1/4"	2"	4 1/2"	3052A41	107.58
2"	1 1/4"	4"	6 1/2"	3052A415	175.04

Double-End High-Speed Steel Two-Flute End Mills

Double the life of your tool—when one end wears out, switch to the opposite end. They are an economical alternative to cobalt and carbide tools. Two flutes maximize chip clearance for slotting applications. All are square end and center cutting for plunge cuts. Helix angle is 30°. Mill diameter tolerance is +0.0000″, –0.0015″.

Uncoated end mills are for general milling of alloy steel, carbon steel, and cast iron.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating is good for use on alloy steel, aluminum, and plastic. Max. working temperature is 1100° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating, making it a good choice for tough-to-machine materials such ductile cast iron, stainless steel, aluminum, and plastic. Max. working temperature is 750° F. Color is blue-gray.

Super-life TiAlN (titanium aluminum nitride) coating is the best for very high feeds/speeds and high-temperature applications. Use to mill cast iron, stainless steel, nickel-based alloys, and titanium. Not for use on aluminum. Max. working temperature is 1470° F. Color is purple-gray.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		Long-Life TiN Coated		Extra-Life TiCN Coated		Super-Life TiAlN Coated	
7/64″	3/8″	3/8″	3 1/16″	3049A155	$15.82	8924A52	$18.77	89255A29	$19.57	8850A15	$19.57
1/8″	3/8″	3/8″	3 1/16″	3049A19	15.82	8924A53	18.39	89255A31	19.18	8850A16	19.18
9/64″	3/8″	7/16″	3 1/8″	3049A39	17.62	8924A54	20.77	89255A51	21.90	8850A17	21.90
5/32″	3/8″	7/16″	3 1/8″	3049A41	16.78	8924A55	19.43	89255A52	20.35	8850A18	20.35
11/64″	3/8″	7/16″	3 1/8″	3049A5	17.62	8924A81	20.77	89255A81	21.90	8850A61	21.90
3/16″	3/8″	7/16″	3 1/8″	3049A2	15.82	8924A57	18.39	89255A32	19.18	8850A21	19.18
13/64″	3/8″	1/2″	3 1/8″	3049A42	17.62	8924A82	20.77	89255A82	21.90	8850A22	21.90
7/32″	3/8″	1/2″	3 1/8″	3049A43	16.78	8924A59	19.43	89255A56	20.35	8850A23	20.35
15/64″	3/8″	1/2″	3 1/8″	3049A44	17.62	8924A83	20.77	89255A83	21.90	8850A62	21.90
1/4″	3/8″	1/2″	3 1/8″	3049A21	16.04	8924A62	18.61	89255A33	19.43	8850A25	19.43
17/64″	3/8″	9/16″	3 1/8″	3049A45	17.62	8924A68	20.77	89255A59	21.90	8850A63	21.90
9/32″	3/8″	9/16″	3 1/8″	3049A46	16.89	8924A71	19.53	89255A61	20.47	8850A27	20.47
19/64″	3/8″	9/16″	3 1/8″	3049A47	17.62	8924A84	20.77	89255A84	21.90	8850A64	21.90
5/16″	3/8″	9/16″	3 1/8″	3049A23	15.82	8924A72	18.39	89255A34	19.18	8850A29	19.18
21/64″	3/8″	9/16″	3 1/8″	3049A48	17.62	8924A85	20.77	89255A85	21.90	8850A65	21.90
11/32″	3/8″	9/16″	3 1/8″	3049A49	16.78	8924A74	19.43	89255A65	20.35	8850A32	20.35
23/64″	3/8″	9/16″	3 1/8″	3049A51	17.62	8924A86	20.77	89255A86	21.90	8850A66	21.90
3/8″	3/8″	9/16″	3 1/8″	3049A25	16.04	8924A63	18.61	89255A35	19.43	8850A34	19.43
25/64″	1/2″	13/16″	3 3/4″	3049A52	26.91	8924A87	30.47	89255A87	31.88	8850A67	31.88
13/32″	1/2″	13/16″	3 3/4″	3049A53	25.49	8924A75	28.27	89255A69	29.52	8850A36	29.52
27/64″	1/2″	13/16″	3 3/4″	3049A54	26.91	8924A88	30.47	89255A88	31.88	8850A68	31.88
7/16″	1/2″	13/16″	3 3/4″	3049A26	24.27	8924A76	28.08	89255A36	28.16	8850A38	28.16
29/64″	1/2″	13/16″	3 3/4″	3049A55	26.91	8924A89	30.47	89255A89	31.88	8850A69	31.88
15/32″	1/2″	13/16″	3 3/4″	3049A56	25.22	8924A91	27.85	89255A91	29.28	8850A71	29.28
31/64″	1/2″	13/16″	3 3/4″	3049A57	26.91	8924A92	30.47	89255A92	31.88	8850A72	31.88
1/2″	1/2″	13/16″	3 3/4″	3049A29	24.27	8924A64	28.08	89255A37	28.16	8850A42	28.16
17/32″	5/8″	1 1/8″	4 1/2″	3049A3	35.96	8924A93	42.00	89255A93	43.91	8850A73	43.91
9/16″	5/8″	1 1/8″	4 1/2″	3049A31	32.67	8924A77	38.08	89255A38	39.95	8850A44	39.95
19/32″	5/8″	1 1/8″	4 1/2″	3049A33	35.96	8924A94	42.00	89255A94	43.91	8850A74	43.91
5/8″	5/8″	1 1/8″	4 1/2″	3049A32	31.82	8924A65	37.18	89255A39	38.95	8850A46	38.95
21/32″	3/4″	1 5/16″	5″	3049A35	45.23	8924A95	52.80	89255A95	55.37	8850A75	55.37
11/16″	3/4″	1 5/16″	5″	3049A58	40.62	8924A96	46.98	89255A96	49.13	8850A76	49.13
3/4″	3/4″	1 5/16″	5″	3049A34	40.22	8924A66	46.98	89255A41	49.13	8850A51	49.13
13/16″	7/8″	1 9/16″	5 1/2″	3049A59	50.62	8924A97	59.07	89255A97	61.84	8850A77	61.84
7/8″	7/8″	1 9/16″	5 1/2″	3049A36	50.62	8924A98	59.07	89255A98	61.84	8850A78	61.84
1″	1″	1 5/8″	5 7/8″	3049A38	62.32	8924A99	72.69	89255A99	76.10	8850A79	76.10

Metric Double-End High-Speed Steel Two-Flute End Mills

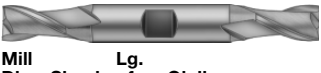

The metric version of our inch size end mills, all are square end and center cutting for plunge cuts. Use on alloy steel, carbon steel, and cast iron. Helix angle is 30°. Mill dia. tolerance is +0.003″, –0.000″.

Mill Dia., mm	Shank Dia.	Lg. of Cut	O'all Lg.			Mill Dia., mm	Shank Dia.	Lg. of Cut	O'all Lg.			Mill Dia., mm	Shank Dia.	Lg. of Cut	O'all Lg.		
3.0	3/8″	3/8″	3 1/16″	8855A57	$24.31	7.0	3/8″	9/16″	3 3/8″	8855A65	$24.84	12.0	1/2″	13/16″	4 1/8″	8855A71	$34.96
4.0	3/8″	7/16″	3 1/4″	8855A59	24.31	8.0	3/8″	9/16″	3 1/2″	8855A66	24.31	14.0	5/8″	1 1/8″	5″	8855A73	52.38
5.0	3/8″	7/16″	3 1/4″	8855A62	24.31	9.0	3/8″	9/16″	3 1/2″	8855A67	23.75	16.0	3/4″	1 5/16″	5 5/8″	8855A74	61.84
6.0	3/8″	1/2″	3 3/8″	8855A64	24.84	10.0	1/2″	13/16″	4 1/8″	8855A68	36.33	18.0	3/4″	1 5/16″	5 5/8″	8855A75	61.84

Double-End High-Speed Steel Three-Flute End Mills

Two cutting ends double the life of these tools and three flutes produce smoother cuts and a finer finish than two-flute tools. Use on alloy steel, carbon steel, cast iron, and nonferrous metals. All are square end and center cutting for plunge cuts. Helix angle is 30°. Mill diameter tolerance is +0.0000″, –0.0015″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.			Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.			Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/8″	3/8″	3/8″	3 1/16″	2847A68	$21.10	3/8″	3/8″	3/4″	3 1/2″	2847A73	$27.63	5/8″	5/8″	1 3/8″	5″	2847A76	$43.26
3/16″	3/8″	1/2″	3 1/4″	2847A69	21.10	7/16″	1/2″	1″	4 1/8″	2847A74	30.51	3/4″	3/4″	1 5/8″	5″	2847A77	54.43
1/4″	3/8″	5/8″	3 3/8″	2847A71	21.10	1/2″	1/2″	1″	4 1/8″	2847A75	30.51	7/8″	7/8″	1 7/8″	6 1/8″	2847A79	70.17
5/16″	3/8″	3/4″	3 1/2″	2847A72	21.10	9/16″	5/8″	1 3/8″	5″	2847A83	43.26	1″	1″	1 7/8″	6 3/8″	2847A82	84.44

Double Ball-End High-Speed Steel Two-Flute End Mills

Machine rounded details into alloy steel, carbon steel, and cast iron workpieces. All have two cutting ends for extended life. They are center cutting and have a 30° helix angle. Mill diameter tolerance is +0.0000″, –0.0015″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.			Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.			Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/8″	3/8″	3/8″	3 1/16″	3060A11	$31.72	5/16″	3/8″	9/16″	3 1/8″	3060A17	$31.72	1/2″	1/2″	13/16″	3 3/4″	3060A23	$44.54
3/16″	3/8″	7/16″	3 1/8″	3060A13	31.72	3/8″	3/8″	9/16″	3 1/8″	3060A19	31.72	5/8″	5/8″	1 1/8″	4 1/2″	3060A24	61.02
1/4″	3/8″	1/2″	3 1/8″	3060A15	31.72	7/16″	1/2″	13/16″	3 3/4″	3060A22	44.54	3/4″	3/4″	1 5/16″	5″	3060A25	77.39

For information about end mill cut styles, see page 2487.

Double-End High-Speed Steel Four-Flute End Mills

Switch to the opposite cutting end when one end wears out and double the life of your tool. Four flutes produce a fine finish. All are square end and have a 30° helix angle.

Noncenter-cutting end mills are for operations where the peripheral teeth do most of the work. Mill diameter tolerance is +0.001″, –0.000″. ***Center-cutting*** end mills allow you to make plunge cuts into a surface. Mill diameter tolerance is +0.0000″, –0.0015″.

Uncoated end mills are for general milling of alloy steel, carbon steel, and cast iron.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating is good for use on alloy steel, aluminum, and plastic. Max. working temperature is 1100° F. Color is gold.

Noncenter Cutting

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating, making it a good choice for tough-to-machine materials such as ductile cast iron, stainless steel, aluminum, and plastic. Max. working temperature is 750° F. Color is blue-gray.

Super-life TiAlN (titanium aluminum nitride) coating is the best for very high feeds/speeds and high-temperature applications. Use to mill cast iron, stainless steel, nickel-based alloys, and titanium. Not for use on aluminum. Max. working temperature is 1470° F. Color is purple-gray.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	NONCENTER CUTTING Uncoated		NONCENTER CUTTING Long-Life TiN Coated		CENTER CUTTING Uncoated		CENTER CUTTING Long-Life TiN Coated		CENTER CUTTING Extra-Life TiCN Coated		CENTER CUTTING Super-Life TiAlN Coated	
1/8″	3/8″	3/8″	3 1/16″	3050A2	$16.04	89145A31	$16.89	2873A61	$20.67	8912A41	$21.73	8864A21	$24.36	8828A12	$24.36
9/64″	3/8″	7/16″	3 1/8″	3050A11	16.89	89145A32	17.73	2873A21	20.67	8912A21	21.73	8864A41	24.57	8828A51	24.57
5/32″	3/8″	7/16″	3 1/8″	3050A21	16.78	89145A33	17.62	2873A22	20.67	8912A22	21.73	8864A42	24.36	8828A14	24.36
11/64″	3/8″	1/2″	3 1/4″	3050A12	16.89	89145A34	17.73	2873A23	20.67	8912A23	21.73	8864A43	24.57	8828A52	24.57
3/16″	3/8″	1/2″	3 1/4″	3050A18	16.04	89145A35	16.89	2873A62	20.67	8912A42	21.73	8864A22	24.36	8828A16	24.36
13/64″	3/8″	9/16″	3 1/4″	3050A13	16.89	89145A36	17.73	2873A24	20.67	8912A24	21.73	8864A44	24.57	8828A53	24.57
7/32″	3/8″	9/16″	3 1/4″	3050A23	16.78	89145A37	17.62	2873A25	20.67	8912A25	21.73	8864A45	24.36	8828A18	24.36
15/64″	3/8″	5/8″	3 3/8″	3050A49	16.89	89145A38	17.73	2873A26	20.67	8912A26	21.73	8864A46	24.57	8828A54	24.57
1/4″	3/8″	5/8″	3 3/8″	3050A19	15.82	89145A39	16.69	2873A63	20.67	8912A43	21.73	8864A23	24.36	8828A21	24.36
17/64″	3/8″	11/16″	3 3/8″	3050A51	16.89	89145A41	17.73	2873A27	20.67	8912A27	21.73	8864A47	24.57	8828A55	24.57
9/32″	3/8″	11/16″	3 3/8″	3050A27	16.78	89145A42	17.62	2873A28	20.67	8912A28	21.73	8864A48	24.36	8828A23	24.36
19/64″	3/8″	3/4″	3 1/2″	3050A52	16.89	89145A43	17.73	2873A29	20.67	8912A29	21.73	8864A49	24.57	8828A56	24.57
5/16″	3/8″	3/4″	3 1/2″	3050A22	15.82	89145A44	16.69	2873A64	20.67	8912A37	21.73	8864A24	24.36	8828A25	24.36
21/64″	3/8″	3/4″	3 1/2″	3050A53	16.89	89145A45	17.73	2873A31	20.67	8912A31	21.73	8864A51	24.57	8828A57	24.57
11/32″	3/8″	3/4″	3 1/2″	3050A29	16.78	89145A46	17.62	2873A32	20.67	8912A32	21.73	8864A52	24.36	8828A27	24.36
23/64″	3/8″	3/4″	3 1/2″	3050A41	16.89	89145A11	17.73	2873A33	20.67	8912A11	19.96	8864A53	24.57	8828A58	24.57
3/8″	3/8″	3/4″	3 1/2″	3050A24■	15.82	89145A48■	16.69	2873A65	20.67	8912A44	21.73	8864A25	24.36	8828A29	24.36
25/64″	1/2″	1″	4 1/8″	3050A42	25.13	89145A49	26.31	2873A34	20.67	8912A34	21.73	8864A54	24.57	8828A59	24.57
13/32″	1/2″	1″	4 1/8″	3050A32	23.44	89145A51	24.62	2873A41	33.47	8912A51	35.54	8864A55	39.81	8828A61	39.81
7/16″	1/2″	1″	4 1/8″	3050A26	22.82	89145A53	23.91	2873A35	30.35	8912A35	32.14	8864A26	36.22	8828A34	36.22
15/32″	1/2″	1″	4 1/8″	3050A34	23.44	89145A12	24.62	2873A42	33.32	8912A12	35.42	8864A56	39.68	8828A62	39.68
1/2″	1/2″	1″	4 1/8″	3050A28■	22.82	89145A55■	23.91	2873A66	30.35	8912A45	32.14	8864A27	36.22	8828A38	36.22
17/32″	5/8″	1 3/8″	5″	3050A43	32.77	89145A56	34.72	2873A36	38.84	8912A36	41.18	8864A57	46.73	8828A63	46.73
9/16″	5/8″	1 3/8″	5″	3050A36	31.42	89145A57	33.34	2873A43	38.84	8912A53	41.18	8864A28	46.22	8828A41	46.22
5/8″	5/8″	1 3/8″	5″	3050A31■	31.42	89145A58■	33.34	2873A67	38.84	8912A46	41.18	8864A29	46.22	8828A43	46.22
21/32″	3/4″	1 5/8″	5 5/8″	3050A44	41.58	89145A59	44.08	2873A37	53.58	8912A39	56.84	8864A58	62.26	8828A64	62.26
11/16″	3/4″	1 5/8″	5 5/8″	3050A38	39.67	89145A61	42.00	2873A44	53.58	8912A54	56.84	8864A59	63.86	8828A65	63.86
3/4″	3/4″	1 5/8″	5 5/8″	3050A33■	39.67	89145A62■	42.00	2873A68	48.79	8912A47	51.72	8864A31	58.17	8828A45	58.17
13/16″	7/8″	1 7/8″	6 1/8″	3050A39	50.38	89145A64	53.44	2873A38	63.12	8912A38	66.98	8864A61	75.88	8828A66	75.88
7/8″	7/8″	1 7/8″	6 1/8″	3050A35■	50.38	89145A66■	53.44	2873A69	63.12	8912A55	66.98	8864A62	75.12	8828A46	75.12
1″	1″	1 7/8″	6 3/8″	3050A37■	60.96	89145A68■	64.68	2873A71	75.97	8912A48	80.54	8864A32	90.35	8828A47	90.35

■ Mill diameter tolerance is +0.000″, –0.0015″.

Ball-End High-Speed Steel Two-Flute End Mills

Machine rounded details into a workpiece. End mills are center cutting and have a 30° helix angle. Mill diameter tolerance is +0.001″, –0.000″.

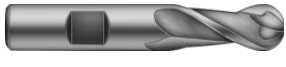

Uncoated end mills are for general purpose milling of alloy steel, carbon steel, and cast iron. ***Long-life TiN (titanium nitride) coated*** end mills last longer and can be run at higher feed/speeds. Use on alloy steel, aluminum, and plastic. Max. working temp. 1100° F. Color is gold.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		Long-Life TiN Coated	
1/8″	3/8″	3/8″	2 5/16″	3046A11	$17.38	8900A15	$17.98
3/16″	3/8″	1/2″	2 3/8″	3046A12	17.38	8900A18	17.98
1/4″	3/8″	5/8″	2 7/16″	3046A13	17.38	8900A21	17.98
1/4″	3/8″	5/8″	3 1/16″	3046A41	26.83	8900A22	27.69
5/16″	3/8″	3/4″	2 1/2″	3046A14	19.49	8900A24	20.07
3/8″	3/8″	3/4″	2 1/2″	3046A15	20.12	8900A27	20.86
3/8″	3/8″	3/4″	3 5/16″	3046A42	28.67	8900A28	28.39
7/16″	1/2″	1″	3″	3046A16	26.44	8900A32	27.31
1/2″	1/2″	1″	3″	3046A17	26.44	8900A35	27.31
1/2″	1/2″	1″	4″	3046A43	39.80	8900A36	41.17
9/16″	1/2″	1 1/8″	3 1/8″	3046A18	31.35	8900A38	32.37
5/8″	1/2″	1 1/8″	3 1/8″	3046A44	36.10	8900A39	37.32
5/8″	5/8″	1 3/8″	3 1/2″	3046A19	$36.10	8900A41	$37.32
3/4″	1/2″	1 5/16″	3 5/16″	3046A45	42.30	8900A42	43.77
3/4″	3/4″	1 5/8″	3 7/8″	3046A21	42.30	8900A46	43.77
3/4″	3/4″	1 5/8″	5 5/8″	3046A46	66.19	8900A47	68.43
13/16″	3/4″	2″	4 1/4″	3046A47	53.75	8900A48	55.53
7/8″	7/8″	2″	4 1/4″	3046A22	53.75	8900A49	55.53
15/16″	3/4″	2 1/4″	4 1/2″	3046A48	62.68	8900A51	64.85
1″	3/4″	2 1/4″	4 1/2″	3046A49	67.85	8900A58	70.17
1″	1″	2 1/4″	4 3/4″	3046A23	67.85	8900A61	70.17
1 1/8″	3/4″	1 5/8″	3 7/8″	3046A24	76.54	8900A62	79.09
1 1/4″	3/4″	1 5/8″	3 7/8″	3046A26	86.37	8900A63	89.25
1 1/2″	3/4″	1 5/8″	3 7/8″	3046A31	99.74	8900A64	103.90

Ball-End High-Speed Steel Four-Flute End Mills

The ball end lets you machine rounded details into a workpiece and four flutes produce a fine finish. All are center cutting and have a 30° helix angle. Mill diameter tolerance is +0.001″, –0.000″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/4″	3/8″	5/8″	2 7/16″	2866A61	$27.89
1/4″	3/8″	1 1/4″	3 1/16″	2866A71	30.53
1/4″	3/8″	1 3/4″	3 9/16″	2866A78	31.50
5/16″	3/8″	3/4″	2 1/2″	2866A62	27.89
5/16″	3/8″	1 3/8″	3 1/8″	2866A72	31.96
5/16″	3/8″	2″	3 3/4″	2866A79	33.95
3/8″	3/8″	3/4″	2 1/2″	2866A63	29.95
3/8″	3/8″	1 1/2″	3 1/4″	2866A73	$34.57
3/8″	3/8″	2 1/2″	4 1/4″	2866A81	38.01
1/2″	1/2″	1 1/4″	3 1/4″	2866A64	34.57
1/2″	1/2″	2″	4″	2866A74	40.98
1/2″	1/2″	3″	5″	2866A82	53.98
5/8″	5/8″	1 5/8″	3 3/4″	2866A65	52.80
5/8″	5/8″	4″	6 1/8″	2866A83	73.95
3/4″	3/4″	1 5/8″	3 7/8″	2866A66	$61.07
3/4″	3/4″	3″	5 1/4″	2866A77	72.58
3/4″	3/4″	4″	6 1/4″	2866A84	84.50
7/8″	7/8″	1 7/8″	4 1/8″	2866A67	67.95
1″	1″	2″	4 1/2″	2866A68	102.36
1″	1″	4″	6 1/2″	2866A86	117.15
1″	1″	6″	8 1/2″	2866A85	144.59

Cobalt Steel End Mills

For information about end mill cut styles, see page 2487.

Cobalt Steel Two-Flute End Mills

Cobalt steel provides better heat and abrasion resistance than uncoated high-speed steel. Use on tough, abrasive materials such as cast iron, cast steel, and heat-treated steel. All are square end and center cutting so you can make plunge cuts. Helix angle is 30°. Mill diameter tolerance is +0.001″, –0.000″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/8″	3/8″	3/8″	2 5/16″	2782A69	$12.63
5/32″	3/8″	7/16″	2 5/16″	2782A61	14.69
3/16″	3/8″	7/16″	2 5/16″	2782A71	12.63
7/32″	3/8″	1/2″	2 5/16″	2782A62	14.69
1/4″	3/8″	1/2″	2 5/16″	2782A72	12.63
9/32″	3/8″	9/16″	2 5/16″	2782A63	14.69
5/16″	3/8″	9/16″	2 5/16″	2782A73	12.63
11/32″	3/8″	9/16″	2 5/16″	2782A64	$14.69
3/8″	3/8″	9/16″	2 5/16″	2782A74	12.63
7/16″	3/8″	13/16″	2 1/2″	2782A75	19.25
1/2″	3/8″	13/16″	2 1/2″	2782A65	19.25
1/2″	1/2″	1″	3″	2782A76	16.91
9/16″	1/2″	1 1/8″	3 1/8″	2782A66	26.80
5/8″	5/8″	1 5/16″	3 7/16″	2782A77	26.57
3/4″	1/2″	1 5/16″	3 5/16″	2782A67	$27.60
3/4″	3/4″	1 5/16″	3 9/16″	2782A78	27.60
7/8″	7/8″	1 1/2″	3 3/4″	2782A68	38.01
1″	3/4″	1 1/2″	3 3/4″	2782A82	45.46
1″	1″	1 5/8″	4 1/8″	2782A81	42.37
1 1/8″	1″	1 5/8″	4 1/8″	2782A83	67.45
1 1/2″	1 1/4″	1 5/8″	4 1/8″	2782A86	99.40

Cobalt Steel Four-Flute End Mills

Center Cutting

Use on tough, abrasive materials such as cast iron, cast steel, and heat-treated steel for a finer finish than two-flute end mills. Cobalt steel provides better heat and abrasion resistance than uncoated high-speed steel. All are square end and have a 30° helix angle. Mill diameter tolerance of +0.001″, –0.000″.

Noncenter-cutting end mills are for operations where the peripheral teeth do most of the work.

Center-cutting end mills allow you to make plunge cuts into a surface.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	***Noncenter Cutting***		***Center Cutting***	
1/8″	3/8″	3/8″	2 5/16″	28855A11	$12.34	2883A11	$14.68
3/16″	3/8″	1/2″	2 3/8″	28855A12	12.34	2883A12	14.68
1/4″	3/8″	5/8″	2 7/16″	28855A13	12.34	2883A13	14.68
1/4″	3/8″	1 1/4″	3 1/16″	28855A14	17.27	2883A41	20.14
1/4″	3/8″	1 3/4″	3 9/16″	28855A15	21.00	2883A42	26.32
5/16″	3/8″	3/4″	2 1/2″	28855A16	12.34	2883A14	14.68
5/16″	3/8″	1 3/8″	3 1/8″	28855A17	17.27	2883A43	20.14
5/16″	3/8″	2″	3 3/4″	28855A18	21.00	2883A44	26.32
3/8″	3/8″	3/4″	2 1/2″	28855A19	12.34	2883A15	14.68
3/8″	3/8″	1 1/2″	3 1/4″	28855A21	17.27	2883A45	20.14
3/8″	3/8″	2 1/2″	4 1/4″	28855A22	23.09	2883A25	26.32
7/16″	3/8″	1″	2 11/16″	28855A23	17.91	2883A46	20.86
7/16″	1/2″	1 3/4″	3 3/4″	28855A24	24.20	2883A54■	27.68
1/2″	3/8″	1″	2 11/16″	28855A25	19.16	2883A17	21.73
1/2″	1/2″	1 1/4″	3 1/4″	28855A26	17.66	2883A16	20.50
1/2″	1/2″	2″	4″	28855A27	23.98	2883A47	28.52
1/2″	1/2″	3″	5″	28855A28	25.70	2883A26	31.96
1/2″	1/2″	4″	6″	—	—	2883A35	$47.10
9/16″	1/2″	1 3/8″	3 3/8″	28855A29	$23.59	2883A48	30.43
5/8″	1/2″	1 3/8″	3 3/8″	28855A31	23.98	—	—
5/8″	5/8″	1 5/8″	3 3/4″	28855A32	25.59	2883A18	29.13
5/8″	5/8″	2 1/2″	4 5/8″	28855A33	31.96	2883A49	38.01
5/8″	5/8″	4″	6 1/8″	28855A34	40.03	2883A51	42.47
3/4″	1/2″	1 5/8″	3 5/8″	28855A35	28.40	2883A52	33.15
3/4″	5/8″	1 5/8″	3 3/4″	28855A36	28.40	—	—
3/4″	3/4″	1 5/8″	3 7/8″	28855A37	27.60	2883A21	33.15
3/4″	3/4″	3″	5 1/4″	28855A38	36.22	2883A28	42.37
3/4″	3/4″	4″	6 1/4″	28855A39	47.10	2883A37	55.25
7/8″	3/4″	1 7/8″	4″	28855A41	39.42	2883A53▲	43.53
1″	5/8″	1 7/8″	4″	28855A44●	46.50	—	—
1″	3/4″	1 7/8″	4 1/8″	28855A45	39.42	2883A55	53.37
1″	1″	2″	4 1/2″	28855A46	41.78	2883A23	49.70
1″	1″	4″	6 1/2″	28855A47	63.78	2883A31	76.67
1 1/4″	1 1/4″	2″	4 1/2″	28855A49●	79.77	2883A36●	88.88

■ Shank dia. is 3/8″; lg. of cut is 2″; o'all length is 3 11/16″. ▲ Shank dia. is 7/8″. O'all length is 4 1/8″. ● Six flutes.

Premium Cobalt Steel Four-Flute End Mills

Built to last, these particle metal tools resist chipping and can be run at higher feeds/speeds than standard cobalt steel end mills. Use on high-temperature alloys such as titanium, Inconel 718, Monel, and Hastelloy. All are square end and center cutting so you can make plunge cuts in a surface. Helix angle is 35°. Mill diameter tolerance is +0.001″, –0.000″.

Extra-life TiCN (titanium carbonitride) coated end mills have better wear resistance than uncoated tools. Maximum working temperature is 750° F. Color is blue-gray.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	***Uncoated***		***Extra-Life TiCN Coated***	
3/8″	3/8″	3/8″	2 1/8″	8933A11	$16.26	8933A51	$17.93
3/8″	3/8″	3/4″	2 1/2″	8933A12	19.40	8933A52	21.31
3/8″	3/8″	2 1/2″	4 1/4″	8933A13	31.61	8933A53	34.84
1/2″	1/2″	1/2″	2 1/2″	8933A14	23.57	8933A54	25.88
1/2″	1/2″	1 1/4″	3 1/4″	8933A15	29.26	8933A55	32.26
1/2″	1/2″	3″	5″	8933A16	44.99	8933A56	49.48
1/2″	1/2″	4″	6″	8933A17	49.58	8933A57	54.58
5/8″	5/8″	5/8″	2 3/4″	8933A18	31.24	8933A58	34.33
5/8″	5/8″	1 5/8″	3 3/4″	8933A19	42.50	8933A59	46.75
5/8″	5/8″	2 1/2″	4 5/8″	8933A21	52.46	8933A61	57.64
5/8″	5/8″	3″	5 1/8″	8933A22	53.35	8933A62	58.70
5/8″	5/8″	4″	6 1/8″	8933A23	69.56	8933A63	76.47
3/4″	3/4″	3/4″	3″	8933A24	$40.02	8933A64	$44.00
3/4″	3/4″	1 5/8″	3 7/8″	8933A25	51.70	8933A65	56.88
3/4″	3/4″	2″	4 1/4″	8933A26	51.99	8933A66	57.20
3/4″	3/4″	3″	5 1/4″	8933A29	70.04	8933A69	77.13
3/4″	3/4″	4″	6 1/4″	8933A32	83.45	8933A72	91.74
7/8″	7/8″	1 7/8″	4 1/8″	8933A34	68.07	8933A74	74.88
1″	1″	1″	3 1/2″	8933A36	64.35	8933A76	70.80
1″	1″	2″	4 1/2″	8933A37	82.69	8933A77	90.98
1″	1″	3″	5 1/2″	8933A39	101.01	8933A79	111.21
1″	1″	4″	6 1/2″	8933A42	119.41	8933A82	131.30
1″	1″	6″	8 1/2″	8933A27	143.19	8933A67	157.53
1 1/4″	1 1/4″	3″	5 1/2″	8933A31	125.59	8933A71	138.07

Rounded-Edge Cobalt Steel Four-Flute End Mills

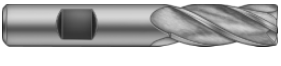

Rounded edges on the tips of the flutes reduce chipping and lengthen the life of the tool. Also known as corner radius end mills, they work well for making molds. Use on cast iron, cast steel, and heat-treated steel. All are center cutting and have a 30° helix angle. Mill diameter tolerance is +0.0015″, –0.000″; corner radius tolerance is ±0.001″.

To Order: Please specify corner radius.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Available Corner Radii		
1/8″	3/8″	3/8″	2 5/16″	0.015″	30855A41	$22.48
3/16″	3/8″	1/2″	2 3/8″	0.020″, 0.030″	30855A42	22.48
1/4″	3/8″	5/8″	2 7/16″	0.020″, 0.030″, 0.045″	30855A45	24.06
5/16″	3/8″	3/4″	2 1/2″	0.020″, 0.030″, 0.045″	30855A51	25.33
3/8″	3/8″	3/4″	2 1/2″	0.020″, 0.030″, 0.045″	30855A55	25.33
1/2″	1/2″	1 1/4″	3 1/4″	0.020″, 0.030″, 0.045″, 0.060″	30855A61	34.02
5/8″	5/8″	1 5/8″	3 3/4″	0.020″, 0.030″, 0.045″, 0.060″, 0.090″	30855A71	43.30
3/4″	3/4″	1 5/8″	3 7/8″	0.020″, 0.030″, 0.045″, 0.060″, 0.090″, 0.125″	30855A81	52.42

For information about end mill cut styles, see page 2487.

Double-End Cobalt Steel Two-Flute End Mills

Two cutting ends extend working life. Cobalt steel provides better heat and abrasion resistance than uncoated high-speed steel. Use on tough, abrasive materials such as cast iron, cast steel, and heat-treated steel. All are square end and center cutting so you can make plunge cuts in a surface. Helix angle is 30°. Mill diameter tolerance is +0.0000″, –0.0015″.

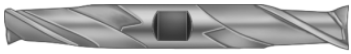

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/8″	3/8″	3/8″	3 1/16″	29815A56	$18.33
5/32″	3/8″	7/16″	3 1/8″	29815A57	21.35
3/16″	3/8″	7/16″	3 1/8″	29815A58	18.33
7/32″	3/8″	1/2″	3 1/8″	29815A59	21.35
1/4″	3/8″	1/2″	3 1/8″	29815A61	18.33
9/32″	3/8″	9/16″	3 1/8″	29815A71	$21.35
5/16″	3/8″	9/16″	3 1/8″	29815A62	18.33
11/32″	3/8″	9/16″	3 1/8″	29815A72	21.35
3/8″	3/8″	9/16″	3 1/8″	29815A63	18.33
7/16″	1/2″	13/16″	3 3/4″	29815A73	28.16
1/2″	1/2″	13/16″	3 3/4″	29815A64	$27.53
9/16″	5/8″	1 1/8″	4 1/2″	29815A74	37.64
5/8″	5/8″	1 1/8″	4 1/2″	29815A65	35.84
3/4″	3/4″	1 5/16″	5″	29815A66	46.51
1″	1″	1 5/8″	5 7/8″	29815A77	72.66

Double-End Cobalt Steel Four-Flute End Mills

Four flutes provide a fine finish and two cutting ends extend tool life. Cobalt steel provides higher heat and abrasion resistance than uncoated high-speed steel. Use on tough, abrasive materials such as cast iron, cast steel, and heat-treated steel. All are center cutting with a 30° helix angle.

Square-end end mills allow plunge cuts. Mill diameter tolerance is +0.0000″, –0.0015″. ***Ball-end*** end mills machine rounded details into a workpiece. Mill diameter tolerance is ±0.0005″.

Ball End

Inch

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Square End		Ball End	
1/8″	3/8″	3/8″	3 1/8″	8858A51	$22.17	3253A11	$41.72
5/32″	3/8″	7/16″	3 1/8″	8858A71	23.78	3253A12	41.72
3/16″	3/8″	1/2″	3 1/4″	8858A52	22.17	3253A13	41.72
7/32″	3/8″	9/16″	3 1/4″	8858A72	23.78	3253A14	42.97
1/4″	3/8″	5/8″	3 3/8″	8858A53	22.17	3253A15	42.97
9/32″	3/8″	11/16″	3 3/8″	8858A73	23.25	3253A16	42.97
5/16″	3/8″	3/4″	3 1/2″	8858A54	22.17	3253A17	42.97
11/32″	3/8″	3/4″	3 1/2″	8858A74	23.78	3253A18	42.97
3/8″	3/8″	3/4″	3 1/2″	8858A55	$22.17	3253A19	$42.97
7/16″	1/2″	1″	4 1/8″	8858A75	36.67	—	—
1/2″	1/2″	1″	4 1/8″	8858A56	35.85	3253A21	61.40
9/16″	5/8″	1 3/8″	5″	8858A76	49.30	—	—
5/8″	5/8″	1 3/8″	5″	8858A57	47.95	3253A22	82.75
3/4″	3/4″	1 5/8″	5 5/8″	8858A58	60.62	3253A23★	110.39
7/8″	7/8″	1 7/8″	6 1/8″	8858A59	83.12	—	—
1″	1″	1 7/8″	6 3/8″	8858A61	99.74	3253A24★	167.36

★Mill diameter tolerance is ±0.001″.

Metric

Mill Dia., mm	Shank Dia.	Lg. of Cut	O'all Lg.	Square End	
3.0	3/8″	3/8″	3 1/16″	8891A31	$26.49
4.0	3/8″	7/16″	3 1/8″	8891A32	26.49
5.0	3/8″	9/16″	3 1/4″	8891A33	26.49
6.0	3/8″	5/8″	3 3/8″	8891A34	27.00
7.0	3/8″	11/16″	3 3/8″	8891A35	27.51
8.0	3/8″	3/4″	3 1/2″	8891A36	27.00
9.0	3/8″	3/4″	3 1/2″	8891A37	$27.00
10.0	1/2″	1″	4 1/8″	8891A38	41.45
11.0	1/2″	1″	4 1/8″	8891A39	41.45
12.0	1/2″	1″	4 1/8″	8891A41	41.45
13.0	5/8″	1 3/8″	5″	8891A42	61.19
14.0	5/8″	1 3/8″	5″	8891A43	61.19
15.0	5/8″	1 3/8″	5″	8891A44	$61.19
16.0	3/4″	1 5/8″	5 5/8″	8891A45	77.55
18.0	3/4″	1 5/8″	5 5/8″	8891A46	77.55
20.0	7/8″	1 7/8″	6 1/8″	8891A47	101.66
22.0	7/8″	1 7/8″	6 1/8″	8891A48	101.66

Reduced-Shank End Mills

Also known as Bridgeport end mills, these tools have a reduced shank for use in milling machines and a shorter cutting length for extra rigidity. The more flutes, the finer the finish. Made of cobalt steel, unless noted. All are square end with a 30° helix angle.

Two-flute end mills are center cutting so you can make plunge cuts in a surface. Mill diameter tolerance is +0.0015″, –0.000″. ***Four-, six-,*** and ***eight-flute*** end mills are noncenter cutting for operations where peripheral teeth do most of the work. Mill diameter tolerance is +0.0015″, –0.0000″.

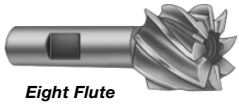

Eight Flute

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Two Flute					
3/4″	1/2″	5/8″	2 5/8″	8827A15	$40.94
7/8″	1/2″	5/8″	2 5/8″	8827A17	59.20
1″	1/2″	3/4″	2 3/4″	8827A19	68.18
1″	5/8″	3/4″	2 7/8″	8827A18	62.49
1″	3/4″	3/4″	3″	8827A2	62.43
1 1/8″	3/4″	3/4″	3″	8827A27	101.43
1 1/4″	1/2″	3/4″	2 3/4″	8827A23	111.36
1 1/4″	5/8″	3/4″	2 7/8″	8827A22	111.36
1 1/4″	3/4″	3/4″	3″	8827A24	111.36
1 3/8″	3/4″	3/4″	3″	8827A25♦	112.71
1 1/2″	3/4″	3/4″	3″	8827A26♦	128.92
Four Flute					
3/4″	1/2″	5/8″	2 5/8″	3057A11	47.70
7/8″	1/2″	5/8″	2 5/8″	3057A12	61.23
Four Flute (Cont.)					
1″	1/2″	3/4″	2 3/4″	3057A13	$67.85
1″	3/4″	3/4″	3″	3057A14	67.85
Six Flute					
3/4″	1/2″	5/8″	2 5/8″	3057A15	60.04
3/4″	3/4″	1 1/2″	3 7/8″	3057A16	66.81
7/8″	1/2″	5/8″	2 5/8″	3057A23	72.40
1 1/8″	3/4″	3/4″	3″	3057A24	103.62
1 1/8″	3/4″	1 1/2″	3 7/8″	3057A25	103.62
1 1/4″	5/8″	3/4″	2 7/8″	3057A26	113.53
1 1/4″	3/4″	3/4″	3″	3057A28	113.53
1 1/4″	3/4″	1 1/2″	3 7/8″	3057A31	113.53
1 3/8″	5/8″	3/4″	2 7/8″	3057A46♥	125.30
1 3/8″	3/4″	3/4″	3″	3057A47♥	128.30
1 3/8″	3/4″	1 1/2″	3 7/8″	3057A48♥	125.30
Six Flute (Cont.)					
1 1/2″	3/4″	3/4″	3″	3057A49♥	$140.51
1 1/2″	3/4″	1 1/2″	3 7/8″	3057A51♥	140.51
1 3/4″	3/4″	1 1/2″	3 7/8″	3057A52♥	172.09
Eight Flute					
1″	1/2″	3/4″	2 3/4″	3057A27	71.57
1″	5/8″	3/4″	2 7/8″	3057A53	88.94
1″	3/4″	3/4″	3″	3057A54	92.43
1″	3/4″	1 1/2″	3 7/8″	3057A55	88.55
1 1/8″	5/8″	3/4″	2 7/8″	3057A29	103.62
1 1/8″	3/4″	3/4″	3″	3057A56	111.33
1 1/8″	3/4″	1 1/2″	3 7/8″	3057A57	118.70
1 1/4″	3/4″	1 1/2″	3 7/8″	3057A58	128.45
1 1/2″	3/4″	2″	4 1/4″	3057A59♥	182.98

♦High-speed steel. ♥High-speed steel. Mill diameter tolerance is +0.002″, –0.000″.

Cobalt Steel Two-Flute Drill/Mills

A 90° point angle turns these end mills into drills for slotting, side milling, beveling, and profiling. Cobalt steel provides better heat and abrasion resistance than uncoated high-speed steel. Use on tough, abrasive materials such as cast iron, cast steel, and heat-treated steel. All have a 30° helix angle. Mill diameter tolerance is +0.0015″, –0.0000″. ***Long-life TiN (titanium nitride) coated*** end mills offer higher heat and abrasion resistance and longer tool life. Use on stainless steel, alloy steel, cast iron, and nickel alloys. Maximum working temperature is 950° F. Color is gold.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		Long-Life TiN Coated	
1/4″	3/8″	5/8″	2 7/16″	2957A11	$19.70	8877A51	$26.05
5/16″	3/8″	23/32″	2 15/32″	2957A12	19.70	8877A52	26.05
3/8″	3/8″	3/4″	2 1/2″	2957A13	19.70	8877A53	26.05
7/16″	3/8″	1 1/32″	2 23/32″	2957A14	30.30	8877A54	39.60
1/2″	1/2″	1 1/4″	3 1/4″	2957A15	28.49	8877A55	38.40
9/16″	1/2″	1 13/32″	3 13/32″	2957A16	$38.27	8877A56	$50.30
5/8″	5/8″	1 5/8″	3 3/4″	2957A17	41.81	8877A57	54.88
3/4″	3/4″	1 11/16″	3 15/16″	2957A19	47.84	8877A59	70.60
7/8″	3/4″	1 15/16″	4 3/16″	2957A21	65.00	8877A61	90.35
1″	3/4″	2″	4 1/4″	2957A22	73.77	8877A62	98.70

For information about end mill cut styles, see page 2487.

Miniature Double-End End Mills

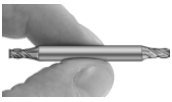

Square End

Ball End

Thanks to small mill diameters, these tools are well suited for detail work. All have a 3/16″ shank diameter, which allows you to use one holder for all sizes. They are center cutting and have a 35° to 40° helix angle. ***Cobalt steel*** provides better heat and abrasion resistance than high-speed steel.

Square-end end mills allow plunge cuts into a surface. *Four-flute* end mills have a mill diameter tolerance of +0.002″, –0.000″. ***Ball-end*** end mills machine rounded details into a workpiece.

Two Flute

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Mill Dia. Tolerance	SQUARE END High-Speed Steel		SQUARE END Cobalt Steel		BALL END High-Speed Steel		BALL END Cobalt Steel	
1/32″	3/16″	3/64″	2″	+0.000″, –0.0015″	2802A12	$13.00	28425A31	$14.64	2802A42	$19.19	2827A11	$20.67
1/32″	3/16″	3/32″	2 1/4″	+0.000″, –0.0015″	2802A26	13.75	28425A11	15.78	2802A57	19.53	2827A12	20.70
3/64″	3/16″	1/16″	2″	+0.000″, –0.0015″	2802A13	13.00	28425A32	14.64	2802A43	19.19	2827A13	20.90
3/64″	3/16″	9/64″	2 1/4″	+0.000″, –0.0015″	2802A27	13.91	28425A12	15.78	2802A58	19.53	2827A14	20.70
1/16″	3/16″	3/32″	2″	+0.000″, –0.0015″	2802A14	11.18	28425A33	13.16	2802A44	17.32	2827A15	18.59
1/16″	3/16″	3/16″	2 1/4″	+0.000″, –0.0015″	2802A28	12.27	28425A13	13.94	2802A59	18.59	2827A16	19.71
1/16″	3/16″	7/32″	2 1/2″	+0.002″, –0.0000″	2802A81	17.02	28425A14	18.95	2802A71	25.57	2827A17	27.20
5/64″	3/16″	1/8″	2″	+0.000″, –0.0015″	2802A15	11.18	28425A34	13.21	2802A45	17.52	2827A18	18.59
5/64″	3/16″	15/64″	2 1/4″	+0.000″, –0.0015″	2802A29	12.27	28425A15	14.04	2802A61	18.36	2827A19	19.71
3/32″	3/16″	9/64″	2″	+0.000″, –0.0015″	2802A16	11.18	28425A35	13.21	2802A46	17.32	2827A21	18.59
3/32″	3/16″	9/32″	2 1/4″	+0.000″, –0.0015″	2802A31	12.27	28425A16	14.17	2802A62	18.36	2827A22	19.71
3/32″	3/16″	9/32″	2 5/8″	+0.002″, –0.0000″	2802A82	17.02	28425A17	18.95	2802A72	25.88	2827A23	27.27
7/64″	3/16″	5/32″	2″	+0.000″, –0.0015″	2802A17	11.05	28425A36	13.47	2802A47	17.32	2827A24	18.67
7/64″	3/16″	21/64″	2 1/4″	+0.000″, –0.0015″	2802A32	12.27	28425A18	14.17	2802A63	18.36	2827A25	19.76
1/8″	3/16″	3/16″	2″	+0.000″, –0.0015″	2802A18	11.05	28425A37	13.60	2802A48	17.32	2827A26	18.75
1/8″	3/16″	3/8″	2 1/4″	+0.000″, –0.0015″	2802A33	12.27	28425A19	14.30	2802A64	18.36	2827A27	19.76
1/8″	3/16″	3/4″	3 1/8″	+0.002″, –0.0000″	2802A83	17.10	28425A21	19.12	2802A73	25.57	2827A28	27.35
9/64″	3/16″	7/32″	2″	+0.000″, –0.0015″	2802A19	11.78	28425A38	13.68	2802A49	17.32	2827A29	18.80
9/64″	3/16″	13/32″	2 1/4″	+0.000″, –0.0015″	2802A34	12.27	28425A22	14.98	2802A65	18.59	2827A31	19.92
5/32″	3/16″	15/64″	2″	+0.000″, –0.0015″	2802A21	11.18	28425A39	14.12	2802A51	17.32	2827A32	18.90
5/32″	3/16″	7/16″	2 1/4″	+0.000″, –0.0015″	2802A35	12.27	28425A23	15.05	2802A66	18.36	2827A33	19.92
5/32″	3/16″	7/8″	3 1/4″	+0.002″, –0.0000″	2802A84	18.20	28425A24	24.52	2802A74	25.57	2827A34	27.48
11/64″	3/16″	1/4″	2″	+0.000″, –0.0015″	2802A22	11.05	28425A41	14.12	2802A52	17.32	2827A35	18.90
11/64″	3/16″	1/2″	2 1/4″	+0.000″, –0.0015″	2802A36	12.27	28425A25	15.05	2802A67	18.36	2827A36	20.12
3/16″	3/16″	9/32″	2″	+0.000″, –0.0025″	2802A23	11.18	28425A42	14.12	2802A53	17.32	2827A37	19.03
3/16″	3/16″	1/2″	2 1/4″	+0.000″, –0.0025″	2802A37	12.27	28425A26	15.05	2802A68	18.36	2827A38	19.92
3/16″	3/16″	1″	3 3/8″	+0.000″, –0.0025″	2802A85	16.85	28425A27	19.68	2802A75	25.57	2827A39	27.48

Four Flute—Square End

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	High-Speed Steel		Cobalt Steel	
1/16″	3/16″	3/32″	2″	8807A44	$11.21	28715A51	$13.47
1/16″	3/16″	3/16″	2 1/4″	8807A49	13.10	28715A41	14.33
1/16″	3/16″	7/32″	2 1/2″	8807A55	16.70	28715A61	17.95
3/32″	3/16″	9/64″	2″	8807A45	11.05	28715A52	13.47
3/32″	3/16″	9/32″	2 1/4″	8807A51	12.97	28715A42	14.33
3/32″	3/16″	9/32″	2 5/8″	8807A56	16.70	28715A62	18.12
1/8″	3/16″	3/16″	2″	8807A46	11.05	28715A53	13.55
1/8″	3/16″	3/8″	2 1/4″	8807A52	13.10	28715A43	14.53
1/8″	3/16″	3/4″	3 1/8″	8807A57	$16.70	28715A63	$18.38
5/32″	3/16″	15/64″	2″	8807A47	11.05	28715A54	14.35
5/32″	3/16″	7/16″	2 1/4″	8807A53	12.97	28715A44	15.16
5/32″	3/16″	7/8″	3 1/4″	8807A58	16.70	28715A64	24.52
3/16″	3/16″	9/32″	2″	8807A48▲	10.92	28715A55▲	14.51
3/16″	3/16″	1/2″	2 1/4″	8807A54▲	13.10	28715A45▲	15.16
3/16″	3/16″	1″	3 3/8″	8807A59▲	16.70	28715A65▲	19.43

▲ Mill diameter tolerance is +0.000″, –0.0025″.

Tapered High-Speed Steel End Mills

10° Taper

Machine angled slots in dies and molds. Also known as taper degree end mills. All have three flutes and are center cutting. Mill diameter tolerance is ±0.002″.

Tip Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
0.5° Taper Per Side					
3/32″	3/8″	3/4″	2 5/8″	8936A13	$15.32
1/8″	3/8″	3/4″	2 1/2″	8936A15	15.32
1/8″	3/8″	1″	2 7/8″	8936A16	17.11
3/16″	3/8″	1 1/4″	3 1/8″	8936A17	18.70
1/4″	3/8″	3/4″	2 1/2″	8936A18	15.53
1/4″	3/8″	1 1/4″	3″	8936A11	19.62
3/8″	1/2″	2 1/4″	4 1/4″	8936A19	30.38
1° Taper Per Side					
3/32″	3/8″	1/2″	2 1/2″	8936A22	14.47
3/32″	3/8″	3/4″	2 1/2″	8936A23	15.45
1/8″	3/8″	1/2″	2 1/2″	8936A24	14.53
1/8″	3/8″	3/4″	2 1/2″	8936A25	15.53
1/8″	3/8″	1″	2 7/8″	8936A12	17.25
1/8″	3/8″	1 1/2″	3 1/4″	8936A21	20.21
3/16″	3/8″	1 1/4″	3 1/8″	8936A26	18.83
1/4″	3/8″	1 1/4″	3″	8936A28	19.75
3/8″	1/2″	2 1/4″	4 1/4″	8936A32	32.75
1/2″	1/2″	1 1/4″	3 1/4″	8936A34	30.25
1.5° Taper Per Side					
1/4″	3/8″	1 1/4″	3″	8936A33	19.89
2° Taper Per Side					
1/8″	3/8″	3/4″	2 1/2″	8936A42	15.85
1/8″	3/8″	1 1/4″	3 1/8″	8936A35	19.68
3/16″	3/8″	1 1/4″	3 1/8″	8936A43	19.36
1/4″	3/8″	3/4″	2 1/2″	8936A46	16.11
1/4″	3/8″	1 1/4″	3″	8936A47	20.02
3° Taper Per Side					
3/32″	3/8″	1″	2 7/8″	8936A48	$17.51
3/32″	3/8″	1 1/2″	3 1/4″	8936A49	18.96
1/8″	3/8″	3/4″	2 5/8″	8936A53	16.06
1/8″	3/8″	1″	2 7/8″	8936A54	17.96
3/16″	3/8″	1 1/4″	3 1/8″	8936A58	19.89
1/4″	3/8″	3/4″	2 1/2″	8936A59	17.11
1/4″	3/8″	1 1/4″	3 1/8″	8936A61	20.21
1/4″	1/2″	2 1/4″	4 1/4″	8936A62	34.47
1/2″	1/2″	1 1/4″	3 1/4″	8936A66	31.64
5° Taper Per Side					
1/16″	3/8″	1/2″	2 5/8″	8936A69	17.11
3/32″	3/8″	3/4″	2 5/8″	8936A71	16.06
3/32″	3/8″	1″	2 7/8″	8936A72	17.77
1/8″	3/8″	3/4″	2 5/8″	8936A74	16.25
1/8″	3/8″	1″	2 7/8″	8936A75	18.04
1/8″	3/8″	1 1/2″	3 1/4″	8936A76	22.32
3/16″	3/8″	3/4″	2 9/16″	8936A36	16.64
3/16″	1/2″	1 1/4″	3 3/8″	8936A77	20.81
1/4″	3/8″	3/4″	2 1/2″	8936A78	17.70
1/4″	1/2″	1″	3″	8936A37	20.81
1/4″	1/2″	1 1/4″	3 1/4″	8936A79	21.74
7° Taper Per Side					
3/32″	3/8″	1″	2 3/4″	8936A38	18.49
1/8″	3/8″	3/4″	2 9/16″	8936A81	16.85
3/16″	1/2″	1 1/4″	3 1/4″	8936A82	25.23
10° Taper Per Side					
3/32″	3/8″	1/2″	2 3/8″	8936A84	$18.04
3/32″	1/2″	1 1/2″	3 1/2″	8936A86	36.53
1/8″	3/8″	3/4″	2 5/8″	8936A87	18.83
1/8″	1/2″	1 1/4″	3 1/4″	8936A88	30.25
3/16″	1/2″	1 1/4″	3 3/8″	8936A89	29.13
1/4″	1/2″	3/4″	2 3/4″	8936A92	22.85
1/4″	1/2″	1 1/4″	3 1/4″	8936A93	35.47
15° Taper Per Side					
1/8″	1/2″	1″	3 1/8″	8936A94	28.92
3/16″	1/2″	1″	3 1/8″	8936A95	33.94
1/4″	1/2″	1″	3 1/8″	8936A96	42.34
20° Taper Per Side					
1/8″	3/8″	1/2″	2 1/2″	8936A971	25.13
1/8″	1/2″	1″	3 1/8″	8936A972■	51.25
3/16″	1/2″	1″	3 1/8″	8936A973■	54.63
1/4″	1/2″	1″	3 1/8″	8936A974■	57.20
25° Taper Per Side					
1/8″	1/2″	1/2″	2 1/2″	8936A975	34.27
1/4″	5/8″	1″	3 1/4″	8936A976■	75.25
30° Taper Per Side					
1/8″	1/2″	1/2″	2 5/8″	8936A977■	40.92
1/4″	3/4″	1″	3 3/8″	8936A978■	90.00
45° Taper Per Side					
1/8″	1/2″	5/16″	2 1/2″	8936A979■	51.70
1/8″	1/2″	1/2″	2 5/8″	8936A981■	61.63

■ Four flutes.

For information about end mill cut styles, see page 2487.

High-Speed Steel Two-Flute End Mills for Aluminum

Square End

Ball End

A helix angle of 37° allows for greater chip removal than a 30° helix angle. All are center cutting and have a mill diameter tolerance of +0.001″, –0.000″. ***Square-end*** end mills allow plunge cuts in a surface. ***Ball-end*** end mills machine rounded details into a workpiece.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Square End					
1/8″	3/8″	3/8″	2 5/16″	2983A31	$11.88
3/16″	3/8″	1/2″	2 3/8″	2983A32	11.88
1/4″	3/8″	5/8″	2 7/16″	2983A11	14.28
1/4″	3/8″	1 1/4″	3 1/16″	2983A16	17.09
1/4″	3/8″	1 3/4″	3 9/16″	2983A17	18.84
5/16″	3/8″	3/4″	2 1/2″	2983A12	14.28
5/16″	3/8″	1 3/8″	3 1/8″	2983A25	17.09
5/16″	3/8″	2″	3 3/4″	2983A26	19.23
3/8″	3/8″	3/4″	2 1/2″	2983A13	14.28
3/8″	3/8″	1 1/2″	3 1/4″	2983A27	17.09
3/8″	3/8″	2 1/2″	4 1/4″	2983A28	20.60
7/16″	3/8″	1″	2 11/16″	2983A14	18.44
7/16″	1/2″	1 3/4″	3 3/4″	2983A29	23.40
1/2″	1/2″	1 1/4″	3 1/4″	2983A15	19.86
1/2″	1/2″	2″	4″	2983A35	23.79
1/2″	1/2″	3″	5″	2983A36	27.95
5/8″	1/2″	1 3/8″	3 3/8″	2983A51	28.16

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Square End (Cont.)					
5/8″	5/8″	1 5/8″	3 3/4″	2983A18	$26.40
5/8″	5/8″	2 1/2″	4 5/8″	2983A37	30.36
5/8″	5/8″	4″	6 1/8″	2983A38	37.55
11/16″	5/8″	1 5/8″	3 3/4″	2983A52	28.33
3/4″	1/2″	1 5/8″	3 5/8″	2983A53	30.65
3/4″	3/4″	1 5/8″	3 7/8″	2983A19	28.47
3/4″	3/4″	3″	5 1/4″	2983A39	39.96
3/4″	3/4″	4″	6 1/4″	2983A41	47.48
13/16″	3/4″	1 7/8″	4 1/8″	2983A54	35.72
7/8″	3/4″	1 7/8″	4 1/8″	2983A33	40.68
7/8″	7/8″	1 7/8″	4 1/8″	2983A21	40.68
15/16″	7/8″	1 7/8″	4 1/8″	2983A55	38.50
1″	3/4″	1 7/8″	4 1/8″	2983A34	50.37
1″	1″	2″	4 1/2″	2983A22	46.99
1″	1″	4″	6 1/2″	2983A42	67.95
1″	1″	6″	8 1/2″	2983A43	83.42
1 1/4″	1 1/4″	2″	4 1/2″	2983A23	71.94

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Square End (Cont.)					
1 1/2″	1 1/4″	2″	4 1/2″	2983A24	$89.12
Ball End					
1/4″	3/8″	5/8″	2 7/16″	8909A21	23.12
1/4″	3/8″	1 3/4″	3 9/16″	8909A41	31.96
5/16″	3/8″	3/4″	2 1/2″	8909A22	25.02
3/8″	3/8″	3/4″	2 1/2″	8909A23	25.02
3/8″	3/8″	2 1/2″	4 1/4″	8909A43	34.02
7/16″	3/8″	1″	2 11/16″	8909A24	25.40
1/2″	1/2″	1 1/4″	3 1/4″	8909A25	33.06
1/2″	1/2″	3″	5″	8909A45	47.48
5/8″	1/2″	1 3/8″	3 3/8″	8909A26	45.66
5/8″	5/8″	1 5/8″	3 3/4″	8909A28	45.66
3/4″	1/2″	1 5/8″	3 5/8″	8909A27	51.08
3/4″	3/4″	1 5/8″	3 7/8″	8909A29	51.08
7/8″	7/8″	1 7/8″	4 1/8″	8909A33	62.24
1″	1″	2″	4 1/2″	8909A31	76.67
1 1/4″	1 1/4″	2″	4 1/2″	8909A32	88.54

High-Speed Steel Three-Flute End Mills for Aluminum

Three flutes provide a fine finish and a helix angle of 37° allows for greater chip removal than a 30° helix angle. All are square end and center cutting for plunge cuts into a surface. Mill diameter tolerance is +0.001″, –0.000″.

Extra-life TiCN (titanium carbonitride) coated end mills have better wear resistance than uncoated tools. Maximum working temperature is 750° F. Color is blue-gray.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	*Uncoated*		*Extra-Life TiCN Coated*	
3/16″	3/8″	1/2″	2 3/8″	2716A11	$16.53	2716A51	$18.22
1/4″	3/8″	5/8″	2 7/16″	2716A13	16.53	2716A53	18.22
1/4″	3/8″	1 1/4″	3 1/16″	2716A14	18.96	2716A54	20.93
1/4″	3/8″	1 3/4″	3 9/16″	2716A15	22.30	2716A55	24.50
5/16″	3/8″	3/4″	2 1/2″	2716A17	16.53	2716A57	18.22
5/16″	3/8″	1 3/8″	3 1/8″	2716A18	18.96	2716A58	20.93
5/16″	3/8″	2″	3 3/4″	2716A19	22.30	2716A59	24.50
3/8″	3/8″	3/4″	2 1/2″	2716A22	16.53	2716A62	18.22
3/8″	3/8″	1 1/2″	3 1/4″	2716A23	18.96	2716A63	20.93
3/8″	3/8″	2 1/2″	4 1/4″	2716A24	22.30	2716A64	24.50
7/16″	1/2″	1 1/4″	3 1/4″	2716A26	23.75	2716A66	26.10
7/16″	1/2″	1 3/4″	3 3/4″	2716A27	27.24	2716A67	28.68

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	*Uncoated*		*Extra-Life TiCN Coated*	
7/16″	1/2″	2 3/4″	4 3/4″	2716A28	$29.68	2716A68	$32.63
1/2″	1/2″	1/2″	2 1/2″	2716A29	21.26	2716A69	23.52
1/2″	1/2″	1 1/4″	3 1/4″	2716A31	22.70	2716A71	25.05
1/2″	1/2″	2″	4″	2716A32	25.81	2716A72	28.40
5/8″	5/8″	5/8″	2 3/4″	2716A34	26.86	2716A74	28.33
5/8″	5/8″	1 5/8″	3 3/4″	2716A35	28.55	2716A75	30.04
5/8″	5/8″	2″	4 1/8″	2716A36	29.29	2716A76	32.30
3/4″	3/4″	3/4″	3″	2716A39	28.24	2716A79	29.81
3/4″	3/4″	1 5/8″	3 7/8″	2716A41	28.68	2716A81	31.53
1″	1″	1″	3 1/2″	2716A46	44.15	2716A86	48.60
1″	1″	2″	4 1/2″	2716A47	46.87	2716A87	51.58
1″	1″	4″	6 1/2″	2716A49	67.90	2716A88	74.68

Double-End High-Speed Steel Two-Flute End Mills for Aluminum

When one cutting end wears out switch to the opposite end. They have a 37° helix angle for greater chip removal than a 30° helix angle. All are square end and center cutting so you can make plunge cuts into a surface. Mill diameter tolerance is +0.0000″, –0.0015″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/8″	3/8″	3/8″	3 1/16″	29905A41	$16.92
3/16″	3/8″	7/16″	3 1/8″	29905A42	16.92
1/4″	3/8″	1/2″	3 1/8″	29905A43	28.12
5/16″	3/8″	9/16″	3 1/8″	29905A44	28.12
3/8″	3/8″	9/16″	3 1/8″	29905A45	$28.12
7/16″	1/2″	13/16″	3 3/4″	29905A46	27.53
1/2″	1/2″	13/16″	3 3/4″	29905A47	42.30
9/16″	5/8″	1 1/8″	4 1/2″	29905A48	$35.27
5/8″	5/8″	1 1/8″	4 1/2″	29905A49	61.57
3/4″	3/4″	1 5/16″	5″	29905A52	75.85

Roughing High-Speed Steel End Mills

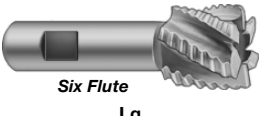

Six Flute

For some applications speed is more important than a smooth finish. Roughing end mills remove large amounts of material up to three times faster than conventional end mills. Their coarse pitch also removes large chips. Use for milling alloy steel, carbon steel, and cast iron. All are square end, noncenter cutting, and have a 30° helix angle, except three flute are center cutting and have a 35° helix angle. Mill diameter tolerance is ±0.005″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Three Flute					
1/4″	3/8″	5/8″	2 7/16″	8819A41	$25.61
5/16″	3/8″	3/4″	2 1/2″	8819A42	26.98
Four Flute					
3/16″	3/8″	1/2″	2 3/8″	8819A31	25.10
3/8″	3/8″	3/4″	2 1/2″	8819A43	30.61
3/8″	3/8″	1 1/2″	3 1/4″	8819A32	31.95
7/16″	3/8″	1″	2 11/16″	8819A33	31.95
1/2″	1/2″	1″	3″	8819A12	31.46
1/2″	1/2″	1 1/4″	3 1/4″	8819A13	33.67
1/2″	1/2″	2″	4″	8819A14	47.29
5/8″	5/8″	1 5/8″	3 3/4″	8819A16	41.87
5/8″	5/8″	2 1/2″	4 5/8″	8819A18	56.18
3/4″	5/8″	1 5/8″	3 7/8″	8819A34	49.61

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Four Flute (Cont.)					
3/4″	3/4″	3/4″	3″	8819A35	$47.29
3/4″	3/4″	1 5/8″	3 7/8″	8819A21	51.20
3/4″	3/4″	3″	5 1/4″	8819A23	65.51
Five Flute					
7/8″	3/4″	1 1/8″	3 3/8″	8819A44	54.63
7/8″	3/4″	3 1/2″	5 3/4″	8819A62	71.75
1″	3/4″	1 1/8″	3 3/8″	8819A45	68.57
1″	3/4″	1 1/2″	3 3/4″	8819A36	74.82
1″	3/4″	1 7/8″	4 1/8″	8819A46	69.16
1″	3/4″	4″	6 1/4″	8819A47	93.31
1″	1″	2″	4 1/2″	8819A63	73.63
1″	1″	3″	5 1/2″	8819A65	82.90
1″	1″	4″	6 1/2″	8819A64	90.22

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Six Flute					
1 1/8″	3/4″	1 1/8″	3 3/8″	8819A71	$69.22
1 1/8″	1″	2″	4 1/2″	8819A37	80.47
1 1/4″	3/4″	1 1/8″	3 3/8″	8819A72	77.88
1 1/4″	3/4″	1 1/2″	3 3/4″	8819A38	101.27
1 1/4″	3/4″	2″	4 1/2″	8819A73	96.71
1 1/4″	1 1/4″	2″	4 1/2″	8819A76	96.71
1 1/4″	1 1/4″	4″	6 1/2″	8819A78	135.06
1 1/2″	3/4″	1 1/8″	3 3/8″	8819A74	127.16
1 1/2″	3/4″	1 1/2″	3 3/4″	8819A39	138.25
1 1/2″	3/4″	2 1/4″	4 1/2″	8819A79	153.90
Eight Flute					
2″	3/4″	1 1/8″	3 3/8″	8819A75	202.98

For information about end mill cut styles, see page 2487.

Roughing Cobalt Steel End Mills

Four Flute Coarse Pitch

Not only do these end mills quickly remove chips, they resist heat and abrasion better than uncoated high-speed steel end mills. All are square end and noncenter cutting. Helix angle is 30°. Mill diameter tolerance is +0.003″, –0.000″ for 3/16″ to 1″ diameters and +0.006″, –0.000″ for 1 1/8″ to 2″ diameters.

Coarse-pitch end mills produce large chips. Use for milling low- to medium-carbon steel and alloy steel. ***Fine-pitch*** end mills last longer and produce smaller chips. Use on high-temperature alloys, stainless steel, and nickel-based alloys.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating has a maximum working temperature of 1100° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating. Maximum working temperature is 750° F. Color is light gray.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	COARSE PITCH Uncoated		COARSE PITCH Long-Life TiN Coated		COARSE PITCH Extra-Life TiCN Coated		FINE PITCH Uncoated		FINE PITCH Extra-Life TiCN Coated	
Four Flute													
3/16″	3/8″	1/2″	2 3/8″	8817A19	$25.56	88185A61	$26.86	88335A11	$28.16	28315A11	$25.56	8919A11	$29.76
1/4″	3/8″	5/8″	2 7/16″	8817A24	25.56	88185A11	26.86	88335A12	28.16	28315A12	25.56	8919A12	29.76
5/16″	3/8″	3/4″	2 1/2″	8817A25	25.56	88185A12	26.86	88335A14	28.16	28315A14	25.56	8919A13	29.76
3/8″	3/8″	3/4″	2 1/2″	8817A26	25.56	88185A13	26.86	88335A16	28.16	28315A16	25.56	8919A14	29.76
3/8″	3/8″	1 1/2″	3 1/4″	8817A11	29.26	88185A41	30.70	88335A17	32.15	28315A17	29.26	8919A15	35.46
7/16″	3/8″	1″	2 11/16″	8817A51	36.29	88185A14	38.14	88335A18	39.91	28315A18	36.88	8919A16	44.76
1/2″	1/2″	1″	3″	8817A27	30.92	88185A62	32.49	88335A61	34.07	28315A61	32.25	8919A17	39.18
1/2″	1/2″	1 1/4″	3 1/4″	8817A12	32.15	88185A15	33.73	88335A19	35.41	28315A19	32.15	8919A18	39.05
1/2″	1/2″	2″	4″	8817A52	42.81	88185A16	44.97	88335A21	47.12	28315A21	42.81	8919A19	51.96
5/8″	5/8″	1 5/8″	3 3/4″	8817A28	39.03	88185A17	40.95	88335A23	42.93	28315A23	39.03	8919A21	47.36
5/8″	5/8″	2 1/2″	4 5/8″	8817A53	50.35	88185A18	52.84	88335A24	55.42	28315A24	50.35	8919A22	61.11
3/4″	5/8″	1 5/8″	3 3/4″	8817A54	49.68	88185A23	52.17	88335A26	54.62	28315A25	49.68	8919A23	60.24
3/4″	3/4″	3/4″	3″	8817A18	46.54	88185A22	48.91	88335A25	51.16	28315A26	46.54	8919A24	56.42
3/4″	3/4″	1 5/8″	3 7/8″	8817A29	44.74	88185A19	46.98	88335A27	49.27	28315A27	44.74	8919A25	54.32
3/4″	3/4″	3″	5 1/4″	8817A55	58.60	88185A21	61.48	88335A28	64.42	28315A28	58.60	8919A26	71.03
Five Flute													
7/8″	3/4″	1 7/8″	4 1/8″	8817A31	64.19	88185A24	67.49	88335A29	70.62	28315A29	64.19	8919A27	77.87
7/8″	3/4″	3 1/2″	5 3/4″	8817A21	78.13	88185A49	82.07	88335A31	86.01	28315A31	74.89	8919A28	90.88
1″	3/4″	1 1/2″	3 3/4″	8817A13	66.01	88185A28	69.25	88335A34	72.64	28315A34	71.27	8919A29	86.41
1″	3/4″	2″	4 1/4″	8817A32	70.51	88185A63	73.96	88335A62	77.56	28315A62	70.51	8919A31	85.54
1″	3/4″	4″	6 1/4″	8817A33	87.58	88185A64	91.97	88335A63	96.37	28315A63	87.58	8919A32	106.28
1″	1″	2″	4 1/2″	8817A56	67.32	88185A25	70.70	88335A35	74.10	28315A35	67.32	8919A33	81.72
1″	1″	3″	5 1/2″	8817A57	86.23	88185A26	90.51	88335A36	94.90	28315A36	86.23	8919A34	104.65
1″	1″	4″	6 1/2″	8817A58	91.31	88185A27	95.91	88335A37	99.74	28315A37	91.31	8919A35	110.68
Six Flute													
1 1/8″	1″	2″	4 1/2″	8817A59	96.37	88185A43	101.19	88335A41	105.98	28315A41	96.37	8919A36	116.89
1 1/4″	3/4″	1 1/2″	3 3/4″	8817A22	91.97	88185A44	96.58	88335A42	101.19	28315A42	91.97	8919A37	111.57
1 1/4″	3/4″	2″	4 1/4″	8817A34	96.37	88185A65	101.19	88335A64	105.98	28315A64	96.37	8919A38	116.89
1 1/4″	1 1/4″	4″	6 1/2″	—	—	88185A31	138.83	88335A45	145.45	28315A45	132.18	8919A41	160.41
1 1/2″	3/4″	1 1/2″	3 3/4″	8817A23	121.66	88185A46	127.69	88335A51	133.77	28315A49	121.66	8919A42	147.53
1 1/2″	3/4″	2″	4 1/4″	8817A63	125.94	88185A66	132.18	88335A65	138.50	28315A65	125.94	8919A43	152.75
Eight Flute													
2″	3/4″	1 1/8″	3 3/8″	8817A71	158.97	88185A67	166.95	88335A66	174.84	28315A66	158.97	8919A44	192.79

Roughing Cobalt Steel End Mills for Aluminum

Three wide flutes, a 36° helix angle, and a coarse pitch provide maximum chip removal when milling aluminum. End mills can also be used on other soft metals such as brass and bronze. All are square end and center cutting so you can make plunge cuts into a surface. Mill diameter tolerance is +0.005″, –0.000″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/4″	3/8″	5/8″	2 7/16″	3300A29	$27.59
3/8″	3/8″	3/4″	2 1/2″	3300A31	27.59
1/2″	1/2″	1 1/4″	3 1/4″	3300A32	31.13
1/2″	1/2″	2″	4″	3300A33	40.26
5/8″	5/8″	1 5/8″	3 3/4″	3300A34	37.76
5/8″	5/8″	2 1/2″	4 5/8″	3300A35	$47.87
3/4″	3/4″	1 5/8″	3 7/8″	3300A36	46.54
3/4″	3/4″	2″	4 1/4″	3300A37	52.28
1″	3/4″	3/4″	3″	3300A46	66.56
1″	3/4″	1 1/2″	3 3/4″	3300A45	$86.54
1″	1″	3″	5 1/2″	3300A44	77.44
1 1/4″	3/4″	1 1/2″	3 3/4″	3300A49	88.48
1 1/2″	3/4″	3/4″	3″	3300A55	107.79

Carbide Chamfer End Mills

Make bevelled and angled cuts without the need for hand deburring. All are made of premium sub-micrograin carbide. Two flutes provide better chip clearance, while four flutes produce a finer finish. Shank diameter is equal to mill diameter. Mill diameter tolerance is +0.000″, –0.003″.

Mill Dia.	Cutting Angle	Lg. of Cut	O'all Lg.	Two Flute		Four Flute	
1/4″	60°	0.216″	2 1/2″	3073A42	$28.78	3073A62	$28.78
1/4″	82°	0.143″	2 1/2″	3073A49	28.77	3073A71	28.77
1/4″	90°	0.125″	2 1/2″	3073A46	28.78	3073A66	28.78
3/8″	60°	0.324″	2 1/2″	3073A43	36.72	3073A63	36.72
3/8″	82°	0.215″	2 1/2″	3073A51	36.73	3073A72	36.73
3/8″	90°	0.188″	2 1/2″	3073A47	$36.72	3073A67	$36.72
1/2″	60°	0.433″	3″	3073A44	61.64	3073A64	61.64
1/2″	82°	0.287″	3″	3073A52	61.65	3073A73	61.65
1/2″	90°	0.250″	3″	3073A48	61.64	3073A68	61.64

Carbide End Mill Sets

Get diameters 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, and 1/2″ in a wood case. All are center cutting with a helix angle of 30°. Mill diameter tolerance is +0.000″, –0.002″. ***Square-end*** end mills allow plunge cuts into a surface. ***Ball-end*** end mills machine rounded details into a workpiece.

To Order: For coated end mills, please specify coating: long-life TiN, extra-life TiCN, or high-temperature AlTiN.

	SINGLE END Uncoated		SINGLE END Coated		DOUBLE END Uncoated		DOUBLE END Coated	
Two Flute Square End	8873A11	$127.46	8873A21	$152.23	8873A15	$160.30	8873A31	$212.55
Four Flute Square End	8873A12	136.83	8873A22	152.23	8873A16	160.30	8873A32	212.55
Two Flute Ball End	8873A13	154.90	8873A23	184.77	8873A17	189.90	8873A33	244.20
Four Flute Ball End	8873A14	161.66	8873A24	184.77	8873A18	189.90	8873A34	244.20

For information about end mill cut styles, see page 2487.

Ultra Duty Carbide End Mills

Use these tools for strong, fast, and long-lasting aggressive machining on hardened steel, stainless steel, titanium, Monel, and workpieces with interrupted cuts. Premium sub-micrograin carbide provides excellent wear and fracture resistance. Sharper cutting edges improve lubricity and provide a finer finish than our other carbide end mills. Fewer flutes provide better chip clearance, while more flutes produce a finer finish. All are center cutting and have a 30° helix angle. Mill diameter tolerance is +0.000″, –0.002″.

Square-end end mills allow plunge cuts into a surface. ***Ball-end*** end mills machine rounded details into a workpiece.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating has a maximum working temperature of 840°F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating. Maximum working temperature is 1110°F. Color is light violet.

Super-life TiAlN (titanium aluminum nitride) coating is best for high-speed, high-temperature applications. Maximum working temperature is 1560°F. Color is purple-gray.

To Order: For coated end mills, please specify coating: TiN, TiCN, or TiAlN.

Four Flute Square End

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	TWO FLUTE Uncoated		TWO FLUTE Coated		THREE FLUTE Uncoated		THREE FLUTE Coated		FOUR FLUTE Uncoated		FOUR FLUTE Coated	
Square End															
1/64″	1/8″	3/64″	1 1/2″	8848A51	$16.33	8795A11	$19.09	8901A11	$16.33	8770A11	$19.09	8848A19	$16.33	8977A11	$19.09
1/32″	1/8″	3/32″	1 1/2″	8848A35	12.10	8795A12	14.84	8901A12	12.10	8770A12	14.85	8848A21	12.10	8977A12	14.85
3/64″	1/8″	3/16″	1 1/2″	8848A52	12.10	8795A13	14.84	8901A13	12.10	8770A13	14.85	8848A72	12.10	8977A13	14.85
1/16″	1/8″	3/16″	1 1/2″	8848A36	11.26	8795A14	14.01	8901A14	11.26	8770A14	14.01	8848A22	11.26	8977A14	14.01
5/64″	1/8″	1/4″	1 1/2″	8848A53	11.26	8795A15	14.01	8901A15	11.26	8770A15	14.01	8848A73	11.26	8977A15	14.01
3/32″	1/8″	3/8″	1 1/2″	8848A37	10.98	8795A16	13.73	8901A16	10.98	8770A16	13.73	8848A23	10.98	8977A16	13.73
7/64″	1/8″	1/2″	1 1/2″	8848A54	10.98	8795A17	13.73	8901A17	10.98	8770A17	13.73	8848A74	10.98	8977A17	13.73
1/8″	1/8″	1/2″	1 1/2″	8848A38	9.85	8795A18	12.60	8901A18	9.85	8770A18	12.60	8848A24	9.85	8977A18	12.60
1/8″	1/8″	3/4″	2″	8848A711	15.08	8795A19	17.83	8901A19	15.08	8770A19	17.83	8848A746	15.08	8977A19	17.83
1/8″	1/8″	1″	3″	8848A712	21.10	8795A21	25.04	8901A21	21.10	8770A21	25.04	8848A747	21.10	8977A21	25.04
9/64″	3/16″	1/2″	2″	8848A55	15.18	8795A22	18.57	8901A22	15.18	8770A22	18.57	8848A75	15.18	8977A22	18.57
5/32″	3/16″	9/16″	2″	8848A39	15.18	8795A23	18.57	8901A23	15.18	8770A23	18.57	8848A25	15.18	8977A23	18.57
11/64″	3/16″	9/16″	2″	8848A713	15.18	8795A24	18.57	8901A24	15.18	8770A24	18.57	8848A748	15.18	8977A24	18.57
3/16″	3/16″	5/8″	2″	8848A41	14.05	8795A25	17.44	8901A25	14.05	8770A25	17.44	8848A26	14.05	8977A25	17.44
3/16″	3/16″	1″	4″	8848A715	28.14	8795A27	34.04	8901A27	28.14	8770A27	34.04	8848A751	28.14	8977A27	34.04
3/16″	3/16″	1 1/4″	3″	8848A714	23.62	8795A26	28.42	8901A26	23.62	8770A26	28.42	8848A749	23.62	8977A26	28.42
13/64″	1/4″	5/8″	2 1/2″	8848A716	19.11	8795A28	25.60	8901A28	19.13	8770A28	25.60	8848A752	19.13	8977A28	25.60
7/32″	1/4″	5/8″	2 1/2″	8848A42	19.13	8795A29	25.60	8901A29	19.13	8770A29	25.60	8848A27	19.13	8977A29	25.60
15/64″	1/4″	3/4″	2 1/2″	8848A717	19.13	8795A31	25.60	8901A31	19.13	8770A31	25.60	8848A753	19.13	8977A31	25.60
1/4″	1/4″	3/4″	2 1/2″	8848A43	16.88	8795A32	23.35	8901A32	16.88	8770A32	23.35	8848A28	16.88	8977A32	23.35
1/4″	1/4″	1 1/8″	3″	8848A718	29.83	8795A33	36.29	8901A33	29.83	8770A33	36.29	8848A754	29.83	8977A33	36.29
1/4″	1/4″	1 1/2″	4″	8848A11	31.56	8795A34	39.72	8901A34	31.56	8770A34	39.72	8848A91	31.56	8977A34	39.72
1/4″	1/4″	1 1/2″	6″	8848A719	42.58	8795A35	53.29	8901A35	42.58	8770A35	53.29	8848A755	42.58	8977A35	53.29
17/64″	5/16″	3/4″	2 1/2″	8848A721	26.72	8795A36	34.61	8901A36	26.72	8770A36	34.61	8848A756	26.72	8977A36	34.61
9/32″	5/16″	3/4″	2 1/2″	8848A44	26.72	8795A37	34.61	8901A37	26.72	8770A37	34.61	8848A29	26.72	8977A37	34.61
19/64″	5/16″	13/16″	2 1/2″	8848A722	26.72	8795A38	34.61	8901A38	26.72	8770A38	34.61	8848A757	26.72	8977A38	34.61
5/16″	5/16″	13/16″	2 1/2″	8848A45	23.62	8795A39	31.50	8901A39	23.62	8770A39	31.50	8848A31	23.62	8977A39	31.50
5/16″	5/16″	1 1/8″	3″	8848A723	36.86	8795A41	44.73	8901A41	36.86	8770A41	44.73	8848A758	36.86	8977A41	44.73
5/16″	5/16″	1 1/2″	6″	8848A724	61.05	8795A43	75.11	8901A43	61.05	8770A43	75.11	8848A759	61.05	8977A43	75.11
5/16″	5/16″	1 5/8″	4″	8848A12	41.18	8795A42	51.32	8901A42	41.18	8770A42	51.32	8848A92	41.18	8977A42	51.32
21/64″	3/8″	13/16″	2 1/2″	8848A725	32.64	8795A44	41.07	8901A44	32.64	8770A44	41.07	8848A761	32.64	8977A44	41.07
11/32″	3/8″	13/16″	2 1/2″	8848A56	32.64	8795A45	41.07	8901A45	32.64	8770A45	41.07	8848A76	32.64	8977A45	41.07
23/64″	3/8″	1″	2 1/2″	8848A726	32.64	8795A46	41.07	8901A46	32.64	8770A46	41.07	8848A762	32.64	8977A46	41.07
3/8″	3/8″	1″	2 1/2″	8848A46	28.14	8795A47	36.58	8901A47	28.14	8770A47	36.58	8848A32	28.14	8977A47	36.58
3/8″	3/8″	1 1/8″	3″	8848A727	41.41	8795A48	49.85	8901A48	41.41	8770A48	49.85	8848A763	41.41	8977A48	49.85
3/8″	3/8″	2″	4″	8848A13	45.57	8795A49	56.55	8901A49	45.57	8770A49	56.55	8848A93	45.57	8977A49	56.55
3/8″	3/8″	3″	6″	8848A728	66.34	8795A51	83.22	8901A51	66.34	8770A51	83.22	8848A764	66.34	8977A51	83.22
25/64″	7/16″	1″	2 3/4″	8848A729	43.32	8795A52	54.29	8901A52	43.32	8770A52	54.29	8848A765	43.32	8977A52	54.29
13/32″	7/16″	1″	2 3/4″	8848A731	43.32	8795A53	54.29	8901A53	43.32	8770A53	54.29	8848A766	43.32	8977A53	54.29
7/16″	7/16″	1″	2 3/4″	8848A47	39.95	8795A55	50.93	8901A55	39.95	8770A55	50.93	8848A33	39.95	8977A55	50.93
7/16″	7/16″	2″	4″	8848A733	67.01	8795A56	81.08	8901A56	67.01	8770A56	81.08	8848A768	67.01	8977A56	81.08
7/16″	7/16″	3″	6″	8848A734	86.70	8795A57	106.12	8901A57	86.70	8770A57	106.12	8848A769	86.70	8977A57	106.12
15/32″	1/2″	1″	3″	8848A736	49.74	8795A59	61.33	8901A59	49.74	8770A59	61.33	8848A772	49.74	8977A59	61.33
1/2″	1/2″	1″	3″	8848A48	48.93	8795A62	60.80	8901A62	47.68	8770A62	60.80	8848A34	48.93	8977A62	60.80
1/2″	1/2″	2″	4″	8848A16	71.17	8795A63	87.17	8901A63	67.52	8770A63	87.17	8848A96	71.17	8977A63	87.17
1/2″	1/2″	3″	6″	8848A17	101.41	8795A64	123.36	8901A64	101.41	8770A64	123.36	8848A97	101.41	8977A64	123.36
9/16″	9/16″	1 1/4″	3 1/2″	8848A57	84.52	8795A65	101.41	8901A65	82.35	8770A65	96.21	8848A77	80.18	8977A65	101.41
5/8″	5/8″	1 1/2″	3 1/2″	8848A58	93.41	8795A67	111.79	8901A67	91.02	8770A67	111.79	8848A78	93.41	8977A67	111.79
5/8″	5/8″	2 1/2″	5″	8848A739	141.14	8795A68	169.91	8901A68	141.14	8770A68	169.91	8848A775	141.14	8977A68	169.91
3/4″	3/4″	1 1/2″	4″	8848A61	130.47	8795A72	152.13	8901A72	130.47	8770A72	152.13	8848A81	130.47	8977A72	152.13
3/4″	3/4″	2 1/2″	5″	8848A742	213.49	8795A73	247.01	8901A73	213.49	8770A73	247.01	8848A777	213.49	8977A73	247.01
1″	1″	1 1/2″	4″	8848A63	214.98	8795A76	246.12	8901A76	214.98	8770A76	246.12	8848A83	214.98	8977A76	246.12
1″	1″	2 1/2″	5″	8848A744	359.14	8795A77	402.00	8901A77	359.14	8770A77	402.00	8848A779	359.14	8977A77	402.00
Ball End															
1/32″	1/8″	3/32″	1 1/2″	8848A412	15.48	8795A79	18.22	8901A79	15.48	8770A79	18.22	8848A612	15.48	8977A79	18.22
3/64″	1/8″	3/16″	1 1/2″	8848A413	15.48	8795A81	18.22	8901A81	15.48	8770A81	18.22	8848A613	15.48	8977A81	18.22
1/16″	1/8″	3/16″	1 1/2″	8848A414	14.63	8795A82	17.40	8901A82	14.63	8770A82	17.40	8848A614	14.63	8977A82	17.40
5/64″	1/8″	1/4″	1 1/2″	8848A415	14.63	8795A69	17.40	8901A83	14.63	8770A58	17.40	8848A615	14.63	8977A54	17.40
3/32″	1/8″	3/8″	1 1/2″	8848A416	14.36	8795A84	17.10	8901A84	14.36	8770A84	17.10	8848A616	14.36	8977A84	17.10
1/8″	1/8″	1/2″	1 1/2″	8848A418	12.94	8795A85	15.70	8901A85	12.94	8770A85	15.70	8848A618	12.94	8977A85	15.70
5/32″	3/16″	9/16″	2″	8848A421	19.13	8795A71	22.51	8901A95	19.13	8770A69	22.51	8848A621	19.13	8977A58	22.51
3/16″	3/16″	5/8″	2″	8848A422	18.01	8795A86	21.37	8901A86	18.01	8770A86	21.37	8848A622	18.01	8977A86	21.37
1/4″	1/4″	3/4″	2 1/2″	8848A424	21.67	8795A87	28.14	8901A87	21.67	8770A87	28.14	8848A624	21.67	8977A87	28.14
5/16″	5/16″	13/16″	2 1/2″	8848A426	30.12	8795A88	37.99	8901A88	30.12	8770A88	37.99	8848A626	30.12	8977A88	37.99
3/8″	3/8″	1″	2 1/2″	8848A428	36.00	8795A89	44.45	8901A89	36.00	8770A89	44.45	8848A628	36.00	8977A89	44.45
1/2″	1/2″	1″	3″	8848A431	61.98	8795A92	73.85	8901A92	61.98	8770A92	73.85	8848A631	61.98	8977A92	73.85
5/8″	5/8″	1 1/2″	3 1/2″	8848A811	116.83	8795A93	135.22	8901A93	116.83	8770A93	135.22	8848A821	116.83	8977A93	135.22
3/4″	3/4″	1 1/2″	4″	8848A812	163.09	8795A94	184.74	8901A94	163.09	8770A94	184.74	8848A822	163.09	8977A94	184.74

For information about end mill cut styles, see page 2487.

Carbide End Mills

Four Flute

Speed up your milling operation—these micrograin carbide tools can be run two to five times faster than high-speed steel end mills. They're also harder than high-speed steel for better resistance to abrasion and high cutting temperatures. Fewer flutes provide better chip clearance, while more flutes produce a finer finish. All are square end and center cutting so you can make plunge cuts into a surface. Helix angle is 30°. Mill diameter tolerance is +0.000″, –0.002″.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating has a maximum working temperature of 1110° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating. Maximum working temperature is 750° F. Color is light violet.

High-temperature AlTiN (aluminum titanium nitride) coating is best for very high feeds/speeds and high-temperature applications. Maximum working temperature is 1450° F. Color is dark gray.

To Order: For coated end mills, please specify coating: TiN, TiCN, or AlTiN.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	TWO FLUTE Uncoated		TWO FLUTE Coated		THREE FLUTE Uncoated		THREE FLUTE Coated		FOUR FLUTE Uncoated		FOUR FLUTE Coated	
1/64″	1/8″	1/32″	1 1/2″	8876A56	$21.69	8926A11	$25.96	88815A11	$21.69	8927A11	$25.96	3066A53	$22.59	8928A11	$25.96
1/32″	1/8″	5/64″	1 1/2″	8876A28	11.49	8926A12	13.74	88815A12	11.96	8927A12	13.74	3066A49	11.96	8928A12	13.74
3/64″	1/8″	7/64″	1 1/2″	8876A29	12.33	8926A13	14.04	88815A13	12.21	8927A13	13.91	3066A51	12.21	8928A13	14.04
1/16″	1/8″	3/16″	1 1/2″	8876A11	8.88	8926A14	12.47	88815A14	10.87	8927A14	12.47	3066A11	10.87	8928A14	12.47
5/64″	1/8″	3/16″	1 1/2″	8876A31	10.55	8926A15	12.63	88815A15	10.97	8927A15	12.63	3066A28	10.97	8928A15	12.63
3/32″	1/8″	9/32″	1 1/2″	8876A12	10.03	8926A16	12.03	88815A16	10.45	8927A16	12.03	3066A12	10.45	8928A16	12.03
7/64″	1/8″	3/8″	1 1/2″	8876A32	8.90	8926A17	12.03	88815A17	10.45	8927A17	12.03	3066A29	10.45	8928A17	12.03
1/8″	1/8″	1/2″	1 1/2″	8876A13	8.47	8926A18	12.07	88815A18	9.69	8927A18	11.15	3066A13	9.69	8928A18	11.15
1/8″	1/8″	3/4″	2 1/4″	8876A26	13.91	8926A19	16.63	88815A31	10.85	8927A37	13.08	3066A58	14.48	8928A19	16.63
1/8″	1/8″	1″	3″	8876A48	20.38	8926A21	24.37	88815A37	15.20	8927A53	17.82	3066A59	21.22	8928A21	24.37
9/64″	3/16″	1/2″	2″	8876A33	12.26	8926A22	16.43	88815A19	14.31	8927A19	16.43	3066A31	14.31	8928A22	16.43
5/32″	3/16″	1/2″	2″	8876A14	13.73	8926A23	16.43	88815A21	14.31	8927A21	16.43	3066A14	14.31	8928A23	16.43
11/64″	3/16″	5/8″	2″	8876A34	13.86	8926A24	16.55	88815A22	14.42	8927A22	16.55	3066A32	14.42	8928A24	16.55
3/16″	3/16″	5/8″	2″	8876A15	11.96	8926A25	15.55	88815A23	13.55	8927A23	15.55	3066A15	13.55	8928A25	15.55
3/16″	3/16″	3/4″	2 1/2″	8876A61	17.92	8926A26	21.24	88815A39	13.93	8927A54	17.05	3066A61	18.65	8928A26	21.24
3/16″	3/16″	1 1/8″	3″	8876A62	18.57	8926A27	26.98	88815A42	17.23	8927A55	20.58	3066A62	23.49	8928A27	26.98
13/64″	1/4″	5/8″	2 1/2″	8876A35	14.66	8926A28	20.70	88815A24	18.02	8927A24	20.70	3066A33	18.02	8928A28	20.70
7/32″	1/4″	5/8″	2 1/2″	8876A16	14.65	8926A29	20.70	88815A25	18.02	8927A25	20.70	3066A26	18.02	8928A29	20.70
15/64″	1/4″	3/4″	2 1/2″	8876A36	17.74	8926A31	21.25	88815A26	18.48	8927A26	21.25	3066A34	18.48	8928A31	21.25
1/4″	1/4″	3/4″	2 1/2″	8876A17	15.35	8926A32	18.99	88815A27	16.51	8927A27	18.99	3066A16	16.51	8928A32	18.99
1/4″	1/4″	1 1/8″	3″	8876A63	20.41	8926A33	26.55	88815A43	17.90	8927A56	21.52	3066A63	23.11	8928A33	26.55
1/4″	1/4″	1 1/2″	4″	8876A64	24.90	8926A34	30.52	88815A44	22.07	8927A57	25.82	3066A64	27.74	8928A34	30.52
17/64″	5/16″	3/4″	2 1/2″	8876A37	21.14	8926A35	25.29	88815A28	22.00	8927A28	25.29	3066A35	22.00	8928A35	25.29
9/32″	5/16″	3/4″	2 1/2″	8876A18	16.60	8926A36	25.29	88815A29	22.00	8927A29	25.29	3066A27	22.00	8928A36	25.29
19/64″	5/16″	13/16″	2 1/2″	8876A81	21.99	8926A37	26.32	88815A81	22.88	8927A31	26.32	3066A81	22.88	8928A37	26.32
5/16″	5/16″	13/16″	2 1/2″	8876A19	17.28	8926A38	26.06	88815A32	22.69	8927A32	26.06	3066A17	22.69	8928A38	26.06
5/16″	5/16″	1 1/8″	3″	8876A65	25.06	8926A39	33.48	88815A53	24.40	8927A58	28.37	3066A65	29.58	8928A39	33.48
5/16″	5/16″	1 5/8″	4″	8876A66	29.28	8926A41	41.67	88815A54	28.82	8927A59	33.19	3066A66	35.72	8928A41	41.41
21/64″	3/8″	1″	2 1/2″	8876A39	27.84	8926A42	31.90	88815A33	28.18	8927A33	31.90	3066A37	28.18	8928A42	31.90
11/32″	3/8″	1″	2 1/2″	8876A41	27.84	8926A43	31.90	88815A34	28.18	8927A34	31.90	3066A38	28.18	8928A43	31.90
23/64″	3/8″	1″	2 1/2″	8876A42	27.84	8926A44	31.90	88815A35	28.18	8927A35	31.90	3066A39	28.18	8928A44	31.90
3/8″	3/8″	1″	2 1/2″	8876A21	26.16	8926A45	29.95	88815A36	27.24	8927A36	29.95	3066A18	27.24	8928A45	29.95
3/8″	3/8″	1 1/8″	3″	8876A67	30.92	8926A46	39.89	88815A55	28.75	8927A61	33.10	3066A67	35.25	8928A46	39.90
3/8″	3/8″	1 3/4″	4″	8876A68	40.04	8926A47	49.15	88815A56	35.34	8927A62	39.73	3066A68	41.55	8928A47	47.06
13/32″	7/16″	1″	2 3/4″	8876A44	31.85	8926A48	45.17	88815A38	39.90	8927A38	45.17	3066A42	39.90	8928A48	45.17
27/64″	7/16″	1″	2 3/4″	8876A82	37.75	8926A49	45.17	88815A82	39.90	8927A39	45.17	3066A82	39.90	8928A49	45.17
7/16″	7/16″	1″	2 3/4″	8876A22	31.82	8926A51	48.98	88815A41	34.25	8927A41	38.76	3066A19	34.25	8928A51	38.76
7/16″	7/16″	2″	4″	8876A69	53.62	8926A52	64.15	88815A57	47.23	8927A63	54.83	3066A69	55.37	8928A52	63.22
29/64″	1/2″	1″	3″	8876A83	45.50	8926A53	54.45	88815A83	48.10	8927A42	54.45	3066A83	48.10	8928A53	54.45
15/32″	1/2″	1″	3″	8876A84	45.50	8926A54	54.45	88815A84	48.10	8927A43	54.45	3066A84	48.10	8928A54	54.45
31/64″	1/2″	1″	3″	8876A85	45.50	8926A55	54.45	88815A85	48.10	8927A44	54.45	3066A85	53.74	8928A55	54.45
1/2″	1/2″	1″	3″	8876A23	36.92	8926A56	49.06	88815A45	43.32	8927A45	49.06	3066A21	43.32	8928A56	49.06
1/2″	1/2″	2″	4″	8876A71	58.56	8926A57	70.01	88815A58	53.08	8927A64	59.78	3066A71	65.37	8928A57	70.01
1/2″	1/2″	3″	6″	8876A72	88.99	8926A58	103.33	88815A59	80.26	8927A65	88.11	3066A72	87.39	8928A58	98.92
9/16″	9/16″	1 1/8″	3 1/2″	8876A24	62.67	8926A59	82.58	88815A46	76.36	8927A46	82.58	3066A22	76.36	8928A59	82.58
5/8″	5/8″	1 1/4″	3 1/2″	8876A25	66.58	8926A61	91.89	88815A47	84.99	8927A47	91.89	3066A23	84.99	8928A61	91.89
5/8″	5/8″	2 1/4″	5″	8876A73	103.03	8926A62	124.39	88815A61	103.60	8927A66	107.65	3066A73	115.02	8928A62	124.39
5/8″	5/8″	3″	6″	8876A74	146.37	8926A63	161.24	88815A62	116.50	8927A67	123.83	3066A74	124.77	8928A63	134.90
11/16″	3/4″	1 3/8″	4″	8876A53	95.46	8926A64	145.69	88815A48	150.53	8927A48	145.69	3066A24	150.53	8928A64	145.69
3/4″	3/4″	1 1/2″	4″	8876A27	97.55	8926A65	135.40	88815A49	125.19	8927A49	135.40	3066A25	125.19	8928A65	135.40
3/4″	3/4″	2 1/4″	5″	8876A75	134.10	8926A66	166.66	88815A63	133.17	8927A68	144.23	3066A75	154.09	8928A66	166.66
3/4″	3/4″	3″	6″	8876A76	183.15	8926A67	219.97	88815A64	166.10	8927A69	183.72	3066A76	198.73	8928A67	214.88
7/8″	7/8″	1 1/2″	4″	8876A54	166.27	8926A68	201.91	88815A51	172.59	8927A51	201.91	3066A55	182.40	8928A68	197.28
1″	1″	1 1/2″	4″	8876A55	180.68	8926A69	211.34	88815A52	180.67	8927A52	206.49	3066A56	190.94	8928A69	206.49

Long-Reach Rounded-Edge Carbide End Mills for Mold Steels

Use to mill hardened steel for die and mold work. A rounded-edge cutting surface with recessed teeth won't scratch your workpiece like other end mills. Plus, they have a long neck for deep cuts. Also known as torus end mills. All are made of micrograin carbide and have four flutes. They are coated with a multilayered blend of TiN (titanium nitride) and TiAlN (titanium aluminum nitride) for extended life and use in temperatures up to 1470° F. Color is red-violet. All are center cutting. Helix angle is 30°. Mill diameter tolerance is +0.000″, –0.001″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
3/16″	1/4″	3/16″	2 1/2″	8899A21	$26.02
1/4″	1/4″	1/4″	3″	8899A22	29.32
5/16″	5/16″	5/16″	3″	8899A23	38.81
3/8″	3/8″	3/8″	3″	8899A24	$46.24
1/2″	1/2″	1/2″	4 1/2″	8899A25	80.11
5/8″	5/8″	5/8″	5″	8899A26	144.11

For information about end mill cut styles, see page 2487.

Metric Carbide End Mills

Micrograin carbide end mills can be run two to five times faster than high-speed steel. They're also harder for better resistance to abrasion and high cutting temperatures. Fewer flutes provide better chip clearance, while more flutes produce a finer finish. All are square end and center cutting so you can make plunge cuts in a surface. Helix angle is 30°. Mill diameter tolerance is +0.000 mm, –0.051 mm.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating has a maximum working temperature of 840° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating. Maximum working temperature is 1110° F. Color is light violet.

Four Flute

Super-life TiAlN (titanium aluminum nitride) coating is best for high-speed, high-temperature applications. Maximum working temperature is 1560° F. Color is purple-gray.

To Order: For coated end mills, please specify coating: TiN, TiCN, or TiAlN.

Mill Dia., mm	Shank Dia., mm	Lg. of Cut, mm	O'all Lg., mm	TWO FLUTE Uncoated		TWO FLUTE Coated		THREE FLUTE Uncoated		THREE FLUTE Coated		FOUR FLUTE Uncoated		FOUR FLUTE Coated	
1	3	3	38	8940A21	$11.81	8866A21	$14.37	8945A21	$12.34	8931A21	$14.37	29605A16	$11.81	8780A21	$14.37
1.5	3	4.5	38	8940A22	10.93	8866A22	13.49	8945A22	11.42	8931A22	13.49	29605A17	10.93	8780A22	13.49
2	3	6.3	38	8940A23	10.93	8866A23	13.49	8945A23	11.42	8931A23	13.49	29605A18	10.93	8780A23	13.49
2.5	3	9.5	38	8940A24	10.36	8866A24	12.90	8945A24	10.82	8931A24	12.90	29605A19	10.36	8780A24	12.90
3	3	12	38	8940A25	9.63	8866A25	12.18	8945A25	10.06	8931A25	12.18	29605A21	9.63	8780A25	12.18
3	3	25	76	8940A26	20.84	8866A26	24.48	8945A26	21.77	8931A26	24.48	29605A41	20.84	8780A26	24.48
4	4	14	50	8940A27	14.18	8866A27	17.29	8945A27	14.79	8931A27	17.29	29605A22	14.18	8780A27	17.29
4	4	28	76	8940A28	23.90	8866A28	28.33	8945A28	24.97	8931A28	28.33	29605A42	23.90	8780A28	28.33
5	5	16	50	8940A29	15.67	8866A29	20.62	8945A29	16.37	8931A29	20.62	29605A23	15.67	8780A29	20.62
5	5	32	76	8940A31	28.02	8866A31	34.00	8945A31	29.25	8931A31	34.00	29605A43	28.02	8780A31	34.00
6	6	19	50	8940A32	16.14	8866A32	21.10	8945A32	16.86	8931A32	21.10	29605A24	16.14	8780A32	21.10
6	6	38	76	8940A33	29.21	8866A33	35.20	8945A33	30.51	8931A33	35.20	29605A44	29.21	8780A33	35.20
7	7	20	60	8940A47	22.38	8866A19	29.69	8945A11	23.38	8931A11	29.69	29605A15	22.38	8780A19	29.69
8	8	20	63	8940A34	22.66	8866A34	30.47	8945A34	23.66	8931A34	30.47	29605A25	22.66	8780A34	30.47
8	8	40	101	8940A35	38.11	8866A35	48.27	8945A35	39.81	8931A35	48.27	29605A45	38.11	8780A35	48.27
10	10	22	70	8940A36	36.46	8866A36	46.61	8945A36	38.07	8931A36	46.61	29605A26	36.46	8780A36	46.61
10	10	50	101	8940A37	59.93	8866A37	72.95	8945A37	62.60	8931A37	72.95	29605A46	59.93	8780A37	72.95
12	12	25	76	8940A38	46.12	8866A38	57.08	8945A38	48.16	8931A38	57.08	29605A27	46.12	8780A38	57.08
12	12	76	152	8940A39	96.06	8866A39	117.46	8945A39	99.74	8931A39	117.46	29605A48	91.13	8780A39	117.46
14	14	32	89	8940A41	81.79	8866A41	97.43	8945A41	85.43	8931A41	97.43	29605A28	81.79	8780A41	97.43
16	16	38	89	8940A42	87.82	8866A42	107.86	8945A42	91.72	8931A42	107.86	29605A29	87.82	8780A42	107.86
18	18	38	101	8940A43	145.46	8866A43	165.48	8945A43	151.93	8931A43	165.48	29605A36	145.46	8780A43	165.48
20	20	38	101	8940A44	167.41	8866A44	190.46	8945A44	174.85	8931A44	190.46	29605A37	167.41	8780A44	190.46

Double-End Carbide End Mills

Two ends are better than one when it comes to tool life. These micrograin carbide tools can be run two to five times faster than high-speed steel end mills. They're also harder than high-speed steel for better resistance to abrasion and high cutting temperatures. Two flutes provide better chip clearance, while four flutes produce a finer finish. End mills with 3″ or greater overall length have a flat on the shank for better gripping power. All are center cutting and have a 30° helix angle. Mill diameter tolerance is +0.000″, –0.002″.

Square-end end mills allow plunge cuts into a surface. ***Ball-end*** end mills machine rounded details into a workpiece.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating has a maximum working temperature of 1110° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating. Maximum working temperature is 750° F. Color is light violet.

Four Flute Ball End

High-temperature AlTiN (aluminum titanium nitride) coating is best for very high feeds/speeds. Maximum working temperature is 1470° F. Color is dark gray.

To Order: For coated end mills, please specify coating: TiN, TiCN, or AlTiN.

Also Available: Ball-end end mills with TiN coating. Please ask for 27375A7 and specify mill diameter, overall length, and two or four flutes.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	SQUARE END UNCOATED Two Flute	SQUARE END UNCOATED Four Flute		SQUARE END COATED Two Flute	SQUARE END COATED Four Flute		BALL END UNCOATED Two Flute	BALL END UNCOATED Four Flute	
1/32″	1/8″	1/16″	1 1/2″	8888A11	8889A18	$17.74	8888A61	8889A11	$20.73	8762A31	8766A11	$22.59
3/64″	1/8″	3/32″	1 1/2″	8888A21	8889A31	17.74	8888A62	8889A12	20.73	8762A32	8766A12	22.59
1/16″	1/8″	1/8″	1 1/2″	8888A12	8889A19	14.93	8888A63	8889A13	17.45	8762A33	8766A13	18.91
5/64″	1/8″	1/8″	1 1/2″	8888A22	8889A32	14.93	8888A64	8889A14	17.45	8762A34	8766A14	18.91
3/32″	1/8″	3/16″	1 1/2″	8888A23	8889A33	14.93	8888A65	8889A15	17.45	8762A35	8766A15	18.91
7/64″	1/8″	3/16″	1 1/2″	8888A24	8889A34	14.93	8888A66	8889A16	17.45	8762A36	8766A16	18.91
1/8″	1/8″	1/4″	1 1/2″	8888A13	8889A21	13.32	8888A67	8889A17	15.59	8762A37	8766A17	16.92
1/8″	3/8″	3/8″	3 1/16″	8888A41	8889A51	38.19	8888A68	8889A65	42.32	8762A38	8766A18	44.54
9/64″	3/16″	5/16″	2″	8888A25	8889A35	19.84	8888A69	8889A66	23.23	8762A39	8766A19	26.39
5/32″	3/16″	5/16″	2″	8888A26	8889A36	19.84	8888A71	8889A67	23.23	8762A41	8766A21	26.39
5/32″	3/8″	7/16″	3 1/8″	—	—	—	—	—	—	8762A42	8766A22	46.98
11/64″	3/16″	5/16″	2″	8888A27	8889A37	19.72	8888A73	8889A69	23.08	8762A43	8766A23	26.24
3/16″	3/16″	3/8″	2″	8888A14	8889A22	18.81	8888A74	8889A71	22.03	8762A44	8766A24	23.92
3/16″	3/8″	1/2″	3 1/4″	8888A43	8889A53	38.19	8888A75	8889A72	44.01	8762A45	8766A25	47.83
13/64″	1/4″	1/2″	2 1/2″	8888A28	8889A38	24.43	8888A76	8889A73	28.58	8762A46	8766A26	31.08
7/32″	1/4″	1/2″	2 1/2″	8888A29	8889A39	24.43	8888A77	8889A74	28.58	8762A47	8766A27	29.71
15/64″	1/4″	1/2″	2 1/2″	8888A31	8889A41	24.43	8888A79	8889A76	28.58	8762A49	8766A29	31.08
1/4″	1/4″	1/2″	2 1/2″	8888A15	8889A23	22.77	8888A81	8889A77	26.63	8762A51	8766A31	28.40
1/4″	3/8″	5/8″	3 3/8″	8888A45	8889A55	44.73	8888A82	8889A78	49.78	8762A52	8766A32	54.09
9/32″	5/16″	1/2″	2 1/2″	8888A32	8889A42	30.56	8888A83	8889A79	35.85	8762A53	8766A33	40.82
5/16″	5/16″	1/2″	2 1/2″	8888A33	8889A43	29.93	8888A85	8889A82	35.01	8762A55	8766A35	40.84
5/16″	3/8″	3/4″	3 1/2″	8888A47	8889A57	51.19	8888A86	8889A83	59.90	8762A56	8766A36	66.72
3/8″	3/8″	9/16″	2 1/2″	8888A16	8889A24	31.36	8888A88	8889A85	36.65	8762A58	8766A38	40.78
3/8″	3/8″	3/4″	3 1/2″	8888A49	8889A59	55.32	8888A89	8889A86	64.71	8762A59	8766A39	72.05
7/16″	7/16″	9/16″	2 3/4″	8888A34	8889A44	45.13	8888A91	8889A87	52.80	8762A61	8766A41	61.60
7/16″	1/2″	7/8″	4″	—	—	—	—	—	—	8762A62	8766A42	113.12
1/2″	1/2″	5/8″	3″	8888A17	8889A25	54.35	8888A93	8889A89	63.63	8762A63	8766A43	70.53
1/2″	1/2″	1″	4″	8888A52	8889A62	87.33	8888A94	8889A91	102.15	8762A64	8766A44	113.74

For information about end mill cut styles, see page 2487.

Tight-Tolerance Carbide End Mills

Four Flute

Made for precision machining, tools have a +0.001″, –0.000″ mill diameter tolerance. The shank diameter is equal to or slightly smaller than the mill diameter, allowing you to make deep cuts. They are premium sub-micrograin carbide. Two flutes provide better chip clearance, while four flutes produce a finer finish. All are square end and center cutting so you can make plunge cuts in a surface. Helix angle is 30°.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating has a maximum working temperature of 840° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating. Maximum working temperature is 1110° F. Color is light violet.

Super-life TiAlN (titanium aluminum nitride) coating is best for high-speed, high-temperature applications. Maximum working temperature is 1560° F. Color is purple-gray.

To Order: For coated end mills, please specify TiN, TiCN, or TiAlN.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	TWO FLUTE Uncoated		TWO FLUTE Coated		FOUR FLUTE Uncoated		FOUR FLUTE Coated	
1/32″	1/8″	3/32″	1 1/2″	28605A11	$21.35	4557A11	$24.14	28605A25	$21.35	4557A61	$24.14
3/64″	1/8″	3/16″	1 1/2″	28605A54	21.35	4557A54	24.14	28605A55	21.35	4557A62	24.14
1/16″	1/8″	3/16″	1 1/2″	28605A12	17.02	4557A12	19.81	28605A26	17.02	4557A63	19.81
3/32″	1/8″	3/8″	1 1/2″	28605A13	16.12	4557A13	18.90	28605A27	16.12	4557A64	18.90
1/8″	1/8″	1/2″	1 1/2″	28605A14	15.66	4557A14	18.43	28605A28	15.66	4557A65	18.43
5/32″	3/16″	9/16″	2″	28605A15	24.47	4557A15	27.89	28605A29	24.47	4557A66	27.89
3/16″	3/16″	5/8″	2″	28605A16	20.83	4557A16	24.25	28605A31	20.83	4557A67	24.25
1/4″	1/4″	3/4″	2 1/2″	28605A18	23.96	4557A18	30.50	28605A33	23.96	4557A68	30.50
5/16″	5/16″	13/16″	2 1/2″	28605A21	34.26	4557A21	42.25	28605A35	34.26	4557A69	42.25
3/8″	3/8″	1″	2 1/2″	28605A22	43.94	4557A22	52.49	28605A36	43.94	4557A71	52.49
1/2″	1/2″	1″	3″	28605A24	74.39	4557A24	86.40	28605A38	74.39	4557A73	86.40

Tapered Carbide End Mills

2° Taper

Also known as taper degree end mills, these premium sub-micrograin carbide tools machine angled slots in dies and molds. Three flutes provide efficient chip ejection and a smooth finish. All are center cutting, allowing plunge cuts in a surface. Mill diameter tolerance is ±0.002″.

Tip Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
0.5° Taper					
3/32″	1/8″	3/4″	2″	8946A13	$30.18
1/8″	3/16″	3/4″	2″	8946A14	33.22
1/4″	3/8″	1 1/4″	3″	8946A19	49.56
1° Taper					
1/32″	1/8″	1/2″	2″	8946A22	35.56
1/16″	1/8″	1/2″	2″	8946A24	35.93
1/16″	1/8″	3/4″	2″	8946A25	40.07
3/32″	1/8″	1/2″	2″	8946A28	31.04
1/8″	1/4″	3/4″	2 1/2″	8946A31	38.20
1/8″	1/4″	1″	3″	8946A32	40.29
3/16″	1/4″	3/4″	2 1/2″	8946A34	38.20
3/16″	1/4″	1 1/4″	3″	8946A35	43.64
1/4″	3/8″	3/4″	2 1/2″	8946A37	46.98
1/4″	3/8″	1 1/4″	3″	8946A38	52.27
1/4″	3/8″	2″	4″	8946A39	72.02
1.5° Taper					
3/16″	3/8″	1 3/4″	3 1/2″	8946A43	52.27
1/4″	3/8″	1 1/4″	3″	8946A45	52.27
2° Taper					
1/16″	3/16″	1″	3″	8946A46	50.49
3/32″	1/4″	1″	3″	8946A47	39.44
2° Taper (Cont.)					
1/8″	1/4″	3/4″	2 1/2″	8946A48	$38.20
1/8″	1/4″	1 1/4″	3″	8946A49	41.16
3/16″	3/8″	1 3/4″	3 1/2″	8946A52	56.93
1/4″	3/8″	3/4″	2 1/2″	8946A53	46.98
1/4″	3/8″	1 1/4″	3″	8946A54	52.27
1/4″	1/2″	2″	4″	8946A51	72.02
3° Taper					
3/32″	1/4″	1″	3″	8946A56	39.04
1/8″	1/4″	1″	3″	8946A59	39.91
3/16″	3/8″	1 1/4″	3″	8946A62	52.27
1/4″	3/8″	3/4″	2 1/2″	8946A63	46.98
1/4″	3/8″	1 1/4″	3″	8946A64	52.27
1/4″	1/2″	2″	4″	8946A65	72.02
5° Taper					
1/16″	1/4″	1/2″	2″	8946A67	40.07
3/32″	1/4″	3/4″	2 1/2″	8946A69	39.91
3/32″	3/8″	1″	3″	8946A71	47.84
1/8″	1/4″	3/4″	2 1/2″	8946A72	34.84
1/8″	3/8″	1″	3″	8946A73	49.56
3/16″	3/8″	3/4″	2 1/2″	8946A75	46.98
3/16″	1/2″	1 1/4″	3″	8946A76	72.02
5° Taper (Cont.)					
1/4″	1/2″	3/4″	3″	8946A77	$54.13
1/4″	1/2″	1″	3″	8946A78	60.44
1/4″	5/8″	2″	4″	8946A79	85.40
7° Taper					
3/32″	3/8″	1″	3″	8946A82	49.09
3/16″	1/2″	1 1/4″	3 1/2″	8946A84	72.02
1/4″	1/2″	3/4″	3″	8946A85	63.78
1/4″	5/8″	1 1/4″	3 1/2″	8946A98	77.93
10° Taper					
3/32″	3/8″	1/2″	2 1/2″	8946A86	36.33
1/8″	3/8″	3/4″	2 1/2″	8946A88	48.69
1/8″	1/2″	1″	3″	8946A89	72.02
3/16″	5/8″	1 1/4″	3 1/2″	8946A92	79.27
1/4″	5/8″	3/4″	3″	8946A93	77.24
20° Taper					
1/8″	1/2″	1/2″	2 1/2″	8946A87	70.40
25° Taper					
1/8″	1/2″	1/2″	2 1/2″	8946A91●	86.73
30° Taper					
1/8″	1/2″	1/2″	2 1/2″	8946A94●	145.69

●Four flutes.

Spherical Carbide End Mills

Four Flute

A 220° tip provides a greater curve than a ball-end tool with a 180° tip. Made of premium sub-micrograin carbide with a high-temperature AlTiN (aluminum titanium nitride) coating for very high feeds/speeds. Mill titanium, nickel-based alloys, cast iron, and stainless steel.

Two flutes provide better chip clearance, while four flutes produce a finer finish. All are center cutting to allow plunge cuts in a surface. Helix angle is 15°. Mill diameter tolerance is +0.000″, –0.002″. Maximum working temperature is 1450° F. Color is black.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Two Flute		Four Flute	
1/8″	1/8″	3/32″	1 1/2″	8892A11	$20.76	8892A31	$20.76
1/8″	1/8″	3/32″	3″	8892A12	22.20	8892A32	22.20
3/16″	3/16″	9/64″	2″	8892A13	25.02	8892A33	25.02
3/16″	3/16″	9/64″	3″	8892A14	27.82	8892A34	27.82
1/4″	1/4″	3/16″	2 1/2″	8892A15	36.20	8892A35	36.20
1/4″	1/4″	3/16″	4″	8892A16	39.84	8892A36	39.84
3/8″	3/8″	9/32″	2 1/2″	8892A17	51.56	8892A37	51.56
3/8″	3/8″	9/32″	4″	8892A18	57.25	8892A38	57.25
1/2″	1/2″	3/8″	3″	8892A19	76.58	8892A39	76.58
1/2″	1/2″	3/8″	6″	8892A21	110.31	8892A41	110.31

Corner-Rounding Carbide End Mills

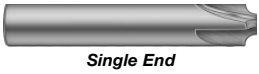

Single End

Round off sharp corners. All are noncenter cutting and have straight flutes.

Single-end four-flute end mills are premium sub-micrograin carbide and have a radius tolerance of ±0.0005″. *Note:* Those with a mill dia. greater than 1/2″ have a carbide head brazed on a steel shank. ***Double-end three-flute*** end mills are micrograin carbide and have a radius tolerance of ±0.002″.

Corner Radius	Mill Dia.	Tip Dia.	Shank Dia.	O'all Lg.		
Single End Four Flute						
1/32″	3/16″	1/8″	3/16″	2″	8505A41	$36.08
1/16″	1/4″	1/8″	1/4″	2 1/2″	8505A42	49.00
3/32″	3/8″	3/16″	3/8″	2 1/2″	8505A43	77.11
1/8″	1/2″	1/4″	1/2″	3″	8505A44	98.27
3/16″	3/4″	3/8″	3/8″	3″	8505A46	112.44
1/4″	1″	1/2″	1/2″	3″	8505A47	137.17
Double End Three Flute						
0.020″	1/4″	0.140″	1/4″	2 1/2″	8508A33	45.73
0.025″	1/4″	0.140″	1/4″	2 1/2″	8508A34	45.73
1/32″	1/4″	0.140″	1/4″	2 1/2″	8508A35	45.73
0.039″	1/4″	0.140″	1/4″	2 1/2″	8508A37	45.73
3/64″	1/4″	0.140″	1/4″	2 1/2″	8508A38	45.73
0.050″	1/4″	0.140″	1/4″	2 1/2″	8508A39	45.73
1/16″	1/4″	0.090″	1/4″	2 1/2″	8508A43	45.73
0.075″	1/4″	0.090″	1/4″	2 1/2″	8508A45	45.73
3/32″	3/8″	0.115″	3/8″	2 1/2″	8508A47	76.24
1/8″	3/8″	0.115″	3/8″	2 1/2″	8508A49	72.43

For information about end mill cut styles, see page 2487.

Ball-End Carbide End Mills

These end mills cut rounded grooves up to 2½ times faster than high-speed steel end mills. Made of micrograin carbide, they're also harder than high-speed steel for better resistance to abrasion and high cutting temperatures. Two flutes provide maximum chip clearance, while three and four flutes produce a finer finish. All are center cutting. Helix angle is 30°. Mill diameter tolerance is +0.000″, –0.002″.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating has a maximum working temperature of 1100° F. Color is gold.

Extra-life TiCN (titanium carbonitride) coating has better wear resistance than TiN coating. Maximum working temperature is 750° F. Color is dark gray.

High-temperature AlTiN (aluminum titanium nitride) coating is best for very high feeds/speeds. Maximum working temperature is 1650° F. Color is black.

To Order: For coated end mills, please specify TiN, TiCN, or AlTiN.

Four Flute

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	TWO FLUTE Uncoated		TWO FLUTE Coated		THREE FLUTE Uncoated		THREE FLUTE Coated		FOUR FLUTE Uncoated		FOUR FLUTE Coated	
1/64″	1/8″	3/64″	1 1/2″	8878A31	$20.70	8885A11	$22.52	88825A11	$21.68	8886A11	$23.02	88805A11	$21.20	8887A11	$22.50
1/32″	1/8″	3/32″	1 1/2″	8878A32	11.94	8885A12	12.03	88825A12	11.94	8886A12	13.00	88805A12	11.94	8887A12	12.03
3/64″	1/8″	1/8″	1 1/2″	8878A33	10.57	8885A13	12.12	88825A13	10.57	8886A13	12.12	88805A13	10.57	8887A13	12.12
1/16″	1/8″	3/16″	1 1/2″	8878A11	10.94	8885A14	11.50	88825A14	10.94	8886A14	12.43	88805A14	10.94	8887A14	12.43
5/64″	1/8″	3/16″	1 1/2″	8878A34	10.57	8885A15	11.05	88825A15	10.57	8886A15	11.95	88805A15	10.57	8887A15	11.95
3/32″	1/8″	3/8″	1 1/2″	8878A12	10.66	8885A16	11.30	88825A16	10.66	8886A16	11.30	88805A16	10.66	8887A16	11.30
7/64″	1/8″	3/8″	1 1/2″	8878A36	10.66	8885A17	11.30	88825A17	10.66	8886A17	11.30	88805A17	10.66	8887A17	11.30
1/8″	1/8″	1/2″	1 1/2″	8878A13	10.66	8885A18	11.78	88825A18	10.66	8886A18	11.78	88805A18	10.66	8887A18	11.78
1/8″	1/8″	3/4″	2 1/4″	8878A22	12.47	8885A19	13.52	88825A31	12.47	8886A37	13.60	88805A54	12.47	8887A19	13.52
1/8″	1/8″	1″	3″	8878A35	18.18	8885A21	19.40	88825A37	18.18	8886A53	19.98	88805A55	18.18	8887A21	19.40
9/64″	3/16″	9/16″	2″	8878A37	12.95	8885A22	16.18	88825A19	12.95	8886A19	16.32	88805A19	12.95	8887A22	16.18
5/32″	3/16″	9/16″	2″	8878A14	12.95	8885A23	16.18	88825A21	12.95	8886A21	16.18	88805A21	12.95	8887A23	16.18
11/64″	3/16″	9/16″	2″	8878A38	14.12	8885A24	16.23	88825A22	14.12	8886A22	16.75	88805A22	14.12	8887A24	16.23
3/16″	3/16″	5/8″	2″	8878A15	13.12	8885A25	15.18	88825A23	13.12	8886A23	15.18	88805A23	13.12	8887A25	15.18
3/16″	3/16″	3/4″	2 1/2″	8878A61	16.88	8885A26	19.18	88825A39	16.88	8886A54	19.18	88805A61	16.88	8887A26	19.18
3/16″	3/16″	1 1/8″	3″	8878A62	20.65	8885A27	22.97	88825A42	20.65	8886A55	23.10	88805A62	25.87	8887A27	22.97
13/64″	1/4″	5/8″	2 1/2″	8878A39	16.93	8885A28	19.45	88825A24	16.93	8886A24	19.45	88805A24	16.93	8887A28	19.45
7/32″	1/4″	5/8″	2 1/2″	8878A16	17.35	8885A29	19.62	88825A25	17.35	8886A25	19.70	88805A25	17.35	8887A29	19.62
15/64″	1/4″	3/4″	2 1/2″	8878A41	17.57	8885A31	19.85	88825A26	17.57	8886A26	19.85	88805A26	18.18	8887A31	19.85
1/4″	1/4″	3/4″	2 1/2″	8878A17	16.45	8885A32	18.80	88825A27	16.45	8886A27	18.80	88805A27	16.45	8887A32	18.80
1/4″	1/4″	1 1/8″	3″	8878A63	22.45	8885A33	25.02	88825A43	22.45	8886A56	25.02	88805A63	28.35	8887A33	25.02
1/4″	1/4″	1 1/2″	4″	8878A64	27.62	8885A34	30.05	88825A44	27.62	8886A57	31.00	88805A64	27.62	8887A34	30.05
17/64″	5/16″	3/4″	2 1/2″	8878A42	24.10	8885A35	27.25	88825A28	24.10	8886A28	26.73	88805A28	24.10	8887A35	27.25
9/32″	5/16″	3/4″	2 1/2″	8878A18	21.73	8885A36	26.40	88825A29	21.73	8886A29	25.90	88805A29	21.73	8887A36	26.40
19/64″	5/16″	13/16″	2 1/2″	8878A81	24.55	8885A37	27.65	88825A81	24.55	8886A31	27.00	88805A81	24.55	8887A37	27.65
5/16″	5/16″	13/16″	2 1/2″	8878A19	21.32	8885A38	25.30	88825A32	21.32	8886A32	25.30	88805A32	21.32	8887A38	25.30
5/16″	5/16″	1 1/8″	3″	8878A65	28.48	8885A39	31.75	88825A53	28.48	8886A58	31.75	88805A65	35.70	8887A39	31.75
5/16″	5/16″	1 5/8″	4″	8878A66	34.27	8885A41	37.80	88825A54	34.17	8886A59	38.05	88805A66	34.27	8887A41	37.80
21/64″	3/8″	7/8″	2 1/2″	8878A43	29.50	8885A42	32.67	88825A33	29.50	8886A33	32.85	88805A33	29.50	8887A42	32.67
11/32″	3/8″	7/8″	2 1/2″	8878A44	29.50	8885A43	32.67	88825A34	29.50	8886A34	32.88	88805A34	29.50	8887A43	32.67
23/64″	3/8″	7/8″	2 1/2″	8878A45	29.50	8885A44	32.67	88825A35	29.50	8886A35	32.85	88805A35	29.50	8887A44	32.67
3/8″	3/8″	1″	2 1/2″	8878A21	26.82	8885A45	29.52	88825A36	26.82	8886A36	29.52	88805A36	26.82	8887A45	29.52
3/8″	3/8″	1 1/8″	3″	8878A67	35.92	8885A46	39.08	88825A55	35.92	8886A61	39.08	88805A67	45.65	8887A46	39.08
3/8″	3/8″	1 3/4″	4″	8878A68	42.77	8885A47	45.85	88825A56	42.77	8886A62	46.08	88805A68	58.93	8887A47	45.85
13/32″	7/16″	1″	2 3/4″	8878A46	39.75	8885A48	46.12	88825A38	39.75	8886A38	46.12	88805A38	39.75	8887A48	46.12
27/64″	7/16″	1″	2 3/4″	8878A82	41.90	8885A49	47.25	88825A82	41.90	8886A39	47.33	88805A82	41.90	8887A49	47.25
7/16″	7/16″	1″	2 3/4″	8878A47	38.67	8885A51	43.92	88825A41	38.67	8886A41	43.92	88805A41	38.67	8887A51	43.92
7/16″	7/16″	2″	4″	8878A69	57.65	8885A52	63.10	88825A57	57.73	8886A63	63.20	88805A69	57.65	8887A52	63.10
29/64″	1/2″	1″	3″	8878A83	51.48	8885A53	57.38	88825A83	51.48	8886A42	57.38	88805A83	51.48	8887A53	57.38
15/32″	1/2″	1″	3″	8878A84	51.48	8885A54	57.38	88825A84	51.48	8886A43	57.38	88805A84	51.48	8887A54	57.38
31/64″	1/2″	1″	3″	8878A85	51.05	8885A55	56.95	88825A85	51.05	8886A44	56.88	88805A85	51.05	8887A55	56.88
1/2″	1/2″	1″	3″	8878A23	44.45	8885A56	55.48	88825A45	44.45	8886A45	55.48	88805A45	44.45	8887A56	55.48
1/2″	1/2″	2″	4″	8878A71	62.05	8885A57	67.60	88825A58	62.05	8886A64	67.60	88805A71	62.05	8887A57	67.60
1/2″	1/2″	3″	6″	8878A72	94.08	8885A58	99.88	88825A59	94.08	8886A65	99.90	88805A72	133.70	8887A58	99.88
9/16″	9/16″	1 1/4″	3 1/2″	8878A24	73.72	8885A59	79.28	88825A46	73.72	8886A46	79.30	88805A46	73.72	8887A59	79.28
5/8″	5/8″	1 1/4″	3 1/2″	8878A25	79.30	8885A61	87.30	88825A47	79.30	8886A47	87.30	88805A47	79.30	8887A61	87.30
11/16″	3/4″	1 3/8″	4″	8878A26	129.75	8885A64	140.38	88825A48	129.75	8886A48	140.62	88805A48	129.75	8887A64	140.43
3/4″	3/4″	1 1/2″	4″	8878A27	120.12	8885A65	129.93	88825A49	120.12	8886A49	129.93	88805A49	120.12	8887A65	129.93
3/4″	3/4″	2 1/4″	5″	8878A75	160.93	8885A66	176.15	88825A63	160.93	8886A68	176.15	88805A75	203.88	8887A66	176.15
3/4″	3/4″	3″	6″	8878A76	207.53	8885A67	217.65	88825A64	207.53	8886A69	217.65	88805A76	269.15	8887A67	217.65
7/8″	7/8″	1 1/2″	4″	8878A28	201.90	8885A68	221.60	88825A51	201.90	8886A51	221.91	88805A51	201.90	8887A68	221.60
1″	1″	1 1/2″	4″	8878A29	226.95	8885A69	245.68	88825A52	226.95	8886A52	245.68	88805A52	226.95	8887A69	245.68

Rounded-Edge Carbide End Mills

Put an end to chipped corners. Rounded edges on the tips of the flutes reduce chipping and extend tool life. Also known as corner radius end mills, they work well for mold applications. Two flutes provide better chip clearance, while four flutes produce a finer finish. All are micrograin carbide and center cutting. Helix angle is 30°. Mill diameters 3/8″ and 1/2″ have a flat on the shank for better gripping power. Mill diameter tolerance is –0.001″, –0.002″; corner radius tolerance is +0.000″, –0.002″.

Uncoated end mills are for general milling applications.

Long-life TiN (titanium nitride) coated end mills can be run at higher feeds/speeds and resist heat better than uncoated tools. Maximum working temperature is 1110° F. Color is gold.

To Order: Please specify corner radius from the table.

Four Flute

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Available Corner Radii	TWO FLUTE Uncoated		TWO FLUTE Long-Life TiN Coated		FOUR FLUTE Uncoated		FOUR FLUTE Long-Life TiN Coated	
1/8″	1/8″	1/2″	1 1/2″	0.015″, 0.020″	30705A122	$14.39	2851A11	$16.12	30705A121	$14.39	2851A21	$16.12
3/16″	3/16″	5/8″	2″	0.015″, 0.020″, 0.030″	30705A124	19.27	2851A12	21.58	30705A123	19.27	2851A22	21.58
1/4″	1/4″	3/4″	2 1/2″	0.015″, 0.020″, 0.030″, 0.045″	30705A126	23.46	2851A13	26.27	30705A125	23.46	2851A23	26.27
5/16″	5/16″	13/16″	2 1/2″	0.015″, 0.020″, 0.030″, 0.045″	30705A128	31.01	2851A14	34.73	30705A127	31.01	2851A24	34.73
3/8″	3/8″	1″	2 1/2″	0.015″, 0.020″, 0.030″, 0.045″	30705A131	37.04	2851A15	41.48	30705A129	37.04	2851A25	41.48
1/2″	1/2″	1″	3″	0.015″, 0.030″, 0.045″, 0.060″	30705A133	65.58	2851A16	73.45	30705A132	65.58	2851A26	73.45

For information about end mill cut styles, see page 2487.

Miniature Carbide End Mills

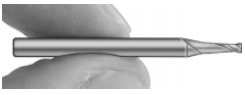

Use where short, precise cuts are necessary. Made of premium submicrograin carbide. Shank diameter is 1/8″. Overall length is 1 1/2″. Two flutes provide better chip clearance, while four flutes produce a finer finish. All are center cutting and have a 30° helix angle. Mill diameter tolerance is ±0.0005″.

Square-end end mills allow plunge cuts in a surface. *Short flute* length of cut is the mill diameter multiplied by 1.5. *Regular flute* length of cut is the mill diameter multiplied by 3. *Long flute* length of cut is the mill diameter multiplied by 5.

Ball-end end mills machine rounded details into a workpiece.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds. *Extra-life TiCN (titanium carbonitride)* coating resists wear. Maximum working temperature is 750° F. Color is light violet.

Super-life TiAlN (titanium aluminum nitride) coating is best for high-speed, high-temperature applications. Maximum working temperature is 1560° F. Color is purple-gray.

To Order: For coated end mills, please specify coating: TiCN or TiAlN.

Square End Two Flute

Mill Dia.	SHORT FLUTE Uncoated		SHORT FLUTE Coated		REGULAR FLUTE Uncoated		REGULAR FLUTE Coated		LONG FLUTE Uncoated		LONG FLUTE Coated	
0.005″	8832A005	$45.51	8832A222	$49.74	—	—	—	—	—	—	—	—
0.006″	8832A006	45.51	8832A225	49.74	—	—	—	—	—	—	—	—
0.007″	8832A007	41.35	8832A228	45.85	—	—	—	—	—	—	—	—
0.008″	8832A008	41.35	8832A232	45.85	—	—	—	—	—	—	—	—
0.009″	8832A009	36.92	8832A235	41.31	—	—	—	—	—	—	—	—
0.010″	8832A11	36.93	8832A238	41.69	8832A16	$38.97	8832A551	$45.10	8915A11	$47.89	8915A411	$55.79
0.011″	8832A12	33.10	8832A242	37.37	8832A17	34.68	8832A554	38.77	8915A12	43.40	8915A414	50.56
0.012″	8832A13	33.10	8832A245	37.37	8832A18	34.68	8832A557	38.77	8915A13	43.40	8915A417	50.56
0.013″	8832A14	27.39	8832A248	30.93	8832A19	28.82	8832A561	32.21	8915A14	36.55	8915A421	42.58
0.014″	8832A29	27.39	8832A252	30.93	8832A21	28.82	8832A564	32.23	8915A15	36.55	8915A424	42.58
0.015″	8832A31	23.09	8832A255	26.07	8832A56	24.39	8832A567	27.26	8915A16	30.86	8915A427	35.96
0.016″	8832A32	23.09	8832A258	26.09	8832A57	24.37	8832A571	27.31	8915A17	30.86	8915A431	35.96
0.017″	8832A33	23.09	8832A262	26.09	8832A58	24.37	8832A574	27.31	8915A18	30.86	8915A434	35.96
0.018″	8832A34	23.10	8832A265	26.12	8832A59	24.37	8832A577	27.27	8915A19	30.86	8915A437	35.96
0.020″	8832A36	20.98	8832A272	23.71	8832A62	22.05	8832A584	24.68	8915A22	28.34	8915A444	32.19
0.021″	8832A37	20.98	8832A275	23.71	8832A63	22.05	8832A587	24.68	8915A23	28.34	8915A447	32.19
0.022″	8832A38	20.99	8832A278	23.80	8832A64	22.04	8832A591	24.72	8915A24	28.34	8915A451	32.19
0.023″	8832A39	20.99	8832A282	23.80	8832A65	22.04	8832A594	24.72	8915A25	28.34	8915A454	32.19
0.024″	8832A41	20.99	8832A285	23.80	8832A66	22.04	8832A597	24.72	8915A26	28.34	8915A457	32.19
0.025″	8832A42	20.96	8832A288	23.96	8832A67	22.04	8832A611	24.88	8915A27	25.15	8915A461	32.19
0.026″	8832A43	19.77	8832A292	22.62	8832A68	20.77	8832A614	23.45	8915A28	23.61	8915A464	32.19
0.027″	8832A44	19.77	8832A295	22.93	8832A69	20.75	8832A617	23.83	8915A29	26.92	8915A467	36.67
0.028″	8832A45	19.77	8832A298	22.93	8832A71	20.75	8832A621	23.83	8915A31	26.92	8915A471	36.67
0.030″	8832A47	19.77	8832A354	22.93	8832A73	20.75	8832A627	23.83	8915A33	26.92	8915A477	35.74
0.031″	8832A48	18.44	8832A357	22.03	8832A74	19.42	8832A631	22.85	8915A34	30.44	8915A481	40.44
0.032″	8832A482	18.44	8832A361	22.03	8832A741	19.42	8832A634	22.85	8915A35	30.44	8915A484	40.44
0.037″	8832A483	18.43	8832A364	22.15	8832A746	19.41	8832A637	22.95	8915A41	30.44	8915A487	40.44
0.040″	8832A51	18.42	8832A367	22.18	8832A76	19.41	8832A641	23.00	8915A44	32.14	8915A491	42.69
0.046″	8832A518	18.42	8832A371	22.30	8832A766	19.41	8832A644	22.41	8915A51	32.14	8915A494	42.69
0.047″	8832A52	18.05	8832A374	21.86	8832A77	18.88	8832A647	22.46	8915A52	32.14	8915A497	42.69
0.050″	8832A53	18.05	8832A377	21.86	8832A78	18.88	8832A651	22.46	8915A55	32.14	8915A511	40.47
0.055″	8832A54	18.05	8832A381	21.86	8832A79	18.88	8832A654	22.46	8915A61	32.14	8915A514	40.47
0.057″	8832A543	18.05	8832A384	21.86	8832A792	18.88	8832A657	22.46	8915A63	32.14	8915A517	40.47
0.060″	8832A55	18.05	8832A387	21.86	8832A81	18.88	8832A661	22.46	8915A66	32.14	8915A521	40.47

Square End Four Flute

Mill Dia.	REGULAR FLUTE Uncoated		REGULAR FLUTE Coated		Mill Dia.	REGULAR FLUTE Uncoated		REGULAR FLUTE Coated		Mill Dia.	REGULAR FLUTE Uncoated		REGULAR FLUTE Coated	
0.010″	8916A11	$33.27	8916A111	$66.24	0.021″	8916A23	$30.33	8916A147	$37.03	0.032″	8916A35	$29.27	8916A184	$36.35
0.011″	8916A12	33.27	8916A114	66.24	0.022″	8916A24	30.33	8916A151	37.03	0.037″	8916A41	24.71	8916A187	31.57
0.012″	8916A13	33.27	8916A117	66.24	0.023″	8916A25	30.33	8916A154	37.03	0.040″	8916A44	24.71	8916A191	31.57
0.013″	8916A14	33.27	8916A121	66.24	0.024″	8916A26	30.33	8916A157	37.03	0.046″	8916A51	24.71	8916A194	31.57
0.014″	8916A15	33.27	8916A124	66.24	0.025″	8916A27	30.33	8916A161	34.31	0.047″	8916A52	24.69	8916A197	31.98
0.015″	8916A16	33.26	8916A127	40.00	0.026″	8916A28	29.25	8916A164	36.35	0.050″	8916A55	24.69	8916A211	31.98
0.016″	8916A17	33.26	8916A131	40.00	0.027″	8916A29	29.25	8916A167	36.35	0.055″	8916A61	24.69	8916A214	31.98
0.017″	8916A18	33.26	8916A134	40.00	0.028″	8916A31	29.25	8916A171	36.35	0.057″	8916A63	24.69	8916A217	31.98
0.018″	8916A19	33.26	8916A137	40.00	0.030″	8916A33	29.25	8916A177	36.35	0.060″	8916A66	24.69	8916A221	31.98
0.020″	8916A22	31.74	8916A144	38.17	0.031″	8916A34	29.27	8916A181	36.35					

Ball End Two Flute—Uncoated

Mill Dia.	Short Flute Lg. of Cut			Regular Flute Lg. of Cut			Mill Dia.	Short Flute Lg. of Cut			Regular Flute Lg. of Cut		
0.010″	0.0150″	8832A306	$29.39	0.0300″	8832A335	$30.90	0.030″	0.0450″	8832A313	$26.31	0.0900″	8832A323	$27.83
0.013″	0.0195″	8832A307	29.39	0.0390″	8832A336	30.90	0.031″	0.0465″	8832A314	26.31	0.0930″	8832A324	27.81
0.015″	0.0225″	8832A308	29.39	0.0450″	8832A337	30.90	0.032″	0.0480″	8832A329	19.58	0.0960″	8832A341	20.67
0.018″	0.0270″	8832A309	28.47	0.0540″	8832A338	30.22	0.037″	0.0555″	8832A331	19.10	0.1110″	8832A342	20.24
0.020″	0.0300″	8832A311	29.34	0.0600″	8832A321	30.83	0.040″	0.0600″	8832A315	24.45	0.1200″	8832A325	25.95
0.022″	0.0330″	8832A328	28.15	0.0660″	8832A339	30.22	0.047″	0.0705″	8832A316	24.45	0.1410″	8832A326	25.94
0.025″	0.0375″	8832A312	27.45	0.0750″	8832A322	28.94	0.055″	0.0825″	8832A317	24.45	0.1650″	8832A327	25.94

High-Performance Carbide End Mills for Titanium

Designed with titanium in mind—three flutes and a 45° helix angle provide superior shearing and chip removal. All are micrograin carbide coated with a multilayered blend of long-life TiN (titanium nitride) and super-life TiAlN (titanium aluminum nitride) for extended life and heat resistance. Use on titanium alloys and nickel-based alloys. Max. working temp. is 1470° F. Color is red-violet. All are square end and center cutting for plunge cuts. Mill diameter tolerance is +0.000″, –0.003″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/8″	1/8″	3/8″	1 1/2″	8883A11	$12.80
3/16″	3/16″	5/8″	2″	8883A12	17.76
1/4″	1/4″	3/4″	2 1/2″	8883A13	21.89
5/16″	5/16″	13/16″	2 1/2″	8883A14	30.15
3/8″	3/8″	1″	2 1/2″	8883A15	36.34
1/2″	1/2″	1″	3″	8883A16	59.46
5/8″	5/8″	1 1/4″	3 1/2″	8883A17	111.89
3/4″	3/4″	1 1/2″	4″	8883A18	164.75

For information about end mill cut styles, see page 2487.

High-Performance Carbide End Mills for Mold Steels

Get better results milling mold steels at high feeds/speeds. All have a high-temperature AlTiN (aluminum titanium nitride) coating for extended life, heat resistance, and dry or semidry machining. Mill diameter tolerance is +0.000″, –0.001″. Maximum working temperature is 1650° F. Color is purple-gray. Choose end mills based on the Rockwell hardness of material to be machined. *End mills for hardness up to C52* are standard carbide; *end mills for hardness up to C62* are premium sub-micrograin carbide.

Two-flute ball-end end mills provide better chip clearance for rough and finish milling of contours and complex shapes. They are center cutting and have a 15° helix angle.

Six-flute rounded-edge end mills, also known as corner radius end mills, produce a fine finish. They are square end and noncenter cutting. Helix angle is 45°. Corner radius is 0.020″.

Two Flute Ball End

Six Flute Rounded Edge

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	For Hardness Up to C52		For Hardness Up to C62	
Two Flute Ball End							
1/32″	1/4″	1/32″	2 1/2″	8942A11	$61.41	8942A41	$79.83
1/16″	1/4″	1/16″	2 1/2″	8942A12	61.41	8942A42	79.83
3/32″	1/4″	3/32″	2 1/2″	8942A13	61.41	8942A43	79.83
1/8″	1/4″	1/8″	3″	8942A14	70.51	8942A44	91.63
3/16″	1/4″	3/16″	3″	8942A15	72.80	8942A45	94.53
1/4″	1/4″	1/4″	3″	8942A16	75.03	8942A46	97.53
5/16″	5/16″	5/16″	3″	8942A17	86.44	8942A47	112.37
3/8″	3/8″	3/8″	3″	8942A18	95.55	8942A48	124.17
1/2″	1/2″	1/2″	4″	8942A21	140.98	8942A51	188.76
Two Flute Ball End—Dimensions in mm							
1	6	1	64	8942A28	61.41	8942A58★	79.83
2	6	2	64	8942A29	61.41	8942A59★	79.83

★ O'all lg. is 60 mm. ■ O'all lg. is 105 mm. ♦ Corner radius is 0.030″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	For Hardness Up to C52		For Hardness Up to C62	
Two Flute Ball End—Dimensions in mm (Cont.)							
3	6	3	64	8942A31	$70.51	8942A61★	$101.82
4	6	4	64	8942A32	72.80	8942A62★	94.53
5	6	5	64	8942A33	72.80	8942A63★	94.53
6	6	6	64	8942A34	75.03	8942A64★	97.53
8	8	8	80	8942A35	86.44	8942A65	112.37
10	10	10	82	8942A36	102.30	8942A66	132.99
12	12	12	100	8942A37	125.15	8942A67	162.61
16	16	16	120	8942A38	156.31	8942A68■	218.97
Six Flute Rounded Edge							
1/8″	1/4″	3/8″	3″	8942A22	81.07	8942A52	99.74
1/4″	1/4″	5/8″	3″	8942A24	86.32	8942A54	112.12
3/8″	3/8″	1″	3″	8942A26	109.92	8942A56	142.81
1/2″	1/2″	1 1/8″	4″	8942A27♦	162.10	8942A57♦	217.12

High-Performance Carbide End Mills for Stainless Steel and High-Temp. Alloys

Three Flute Rounded Edge

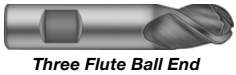

Three Flute Ball End

Five Flute Square End

Machine stainless steel and high-temperature alloys with ease. Made of extra-fine grain carbide with a super-life TiAlN (titanium aluminum nitride) coating for extended life, heat resistance, and higher feeds/speeds in dry applications. End mills are center cutting and have a mill diameter tolerance of +0.000″, –0.002″. Maximum working temperature is 1470° F. Color is purple-gray.

Three-flute end mills provide good chip clearance and have a 35° helix angle. *Rounded-edge* end mills' corner radius is 0.008″-0.010″ for mill diameters 1/8″-3/16″, 0.015″-0.020″ for mill diameters 7/32″-7/16″, and 0.030″-0.035″ for mill diameters 1/2″-1″. *Ball-end* end mills machine rounded details into a workpiece.

Five-flute square-end end mills allow plunge cuts into a surface and produce a fine finish. Helix angle is 45°.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Three Flute Rounded Edge					
1/8″	1/8″	1/4″	1 1/2″	8835A1	$20.17
1/8″	1/8″	1/2″	1 1/2″	8835A11	22.55
5/32″	3/16″	5/16″	2″	8835A12	24.18
3/16″	3/16″	5/16″	2″	8835A14	21.74
3/16″	3/16″	9/16″	2″	8835A15	24.18
7/32″	1/4″	3/8″	2″	8835A16	25.74
1/4″	1/4″	3/8″	2″	8835A18	23.43
1/4″	1/4″	3/4″	2 1/2″	8835A19	26.17
9/32″	5/16″	7/16″	2″	8835A2	31.09
5/16″	5/16″	7/16″	2″	8835A22	28.27
5/16″	5/16″	13/16″	2 1/2″	8835A23	31.37
11/32″	3/8″	1/2″	2″	8835A24	38.45
3/8″	3/8″	1/2″	2″	8835A26	34.97
3/8″	3/8″	1″	2 1/2″	8835A27	38.93
7/16″	7/16″	9/16″	2 1/2″	8835A28	43.87
1/2″	1/2″	5/8″	2 1/2″	8835A3	53.92
1/2″	1/2″	1 1/4″	3″	8835A31	59.90
5/8″	5/8″	3/4″	3″	8835A32	113.43
5/8″	5/8″	1 5/8″	3 1/2″	8835A33	126.08
3/4″	3/4″	1″	3″	8835A34	146.93
1″	1″	2″	4″	8835A36	259.86
Three Flute Ball End					
1/8″	1/8″	1/4″	1 1/2″	8835A37	22.55
1/8″	1/8″	1/2″	1 1/2″	8835A38	24.95

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Three Flute Ball End (Cont.)					
5/32″	3/16″	5/16″	2″	8835A39	$27.02
3/16″	3/16″	5/16″	2″	8835A41	24.35
7/32″	1/4″	3/8″	2″	8835A43	27.62
1/4″	1/4″	3/8″	2″	8835A45	26.26
9/32″	5/16″	7/16″	2″	8835A47	34.84
5/16″	5/16″	7/16″	2″	8835A49	31.61
11/32″	3/8″	1/2″	2″	8835A51	43.03
3/8″	3/8″	1/2″	2″	8835A53	39.18
7/16″	7/16″	9/16″	2 1/2″	8835A55	49.10
1/2″	1/2″	5/8″	2 1/2″	8835A57	60.37
5/8″	5/8″	3/4″	3″	8835A59	127.07
3/4″	3/4″	1″	3″	8835A61	164.53
1″	1″	2″	4″	8835A63	291.08
Five Flute Square End					
1/8″	1/8″	1/4″	1 1/2″	8835A64	19.79
1/8″	1/8″	1/2″	1 1/2″	8835A65	21.86
5/32″	3/16″	5/16″	2″	8835A66	24.18
3/16″	3/16″	5/16″	2″	8835A68	21.74
3/16″	3/16″	9/16″	2″	8835A69	24.18
7/32″	1/4″	3/8″	2″	8835A7	25.74
1/4″	1/4″	3/8″	2″	8835A72	23.43
1/4″	1/4″	3/4″	2 1/2″	8835A73	26.17
1/4″	1/4″	1 1/4″	4″	8835A74	43.13
9/32″	5/16″	7/16″	2″	8835A75	31.09

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Five Flute Square End (Cont.)					
5/16″	5/16″	7/16″	2″	8835A77	$28.27
5/16″	5/16″	13/16″	2 1/2″	8835A78	31.37
5/16″	5/16″	1 1/4″	4″	8835A79	52.80
5/16″	5/16″	2 1/8″	4″	8835A8	76.60
11/32″	3/8″	1/2″	2″	8835A81	38.45
3/8″	3/8″	1″	2 1/2″	8835A83	38.93
3/8″	3/8″	1 1/2″	4″	8835A84	59.90
3/8″	3/8″	2 1/2″	6″	8835A85	102.74
13/32″	7/16″	1″	2 3/4″	8835A86	53.58
7/16″	7/16″	1″	2 3/4″	8835A87	48.72
7/16″	7/16″	2″	4″	8835A88	80.85
1/2″	1/2″	5/8″	2 1/2″	8835A9	53.92
1/2″	1/2″	1 1/4″	3″	8835A91	59.90
1/2″	1/2″	2″	4″	8835A92	86.54
1/2″	1/2″	3 1/8″	6″	8835A93	169.74
5/8″	5/8″	3/4″	3″	8835A94	110.68
5/8″	5/8″	1 5/8″	3 1/2″	8835A95	124.25
3/4″	3/4″	1″	3″	8835A96	142.45
3/4″	3/4″	1 5/8″	4″	8835A97	159.71
1″	1″	2″	4″	8835A98	252.53

High-Performance Diamond-Coated Carbide End Mills for Nonmetals

Designed for machining graphite and other nonmetals, diamond-coated tools are stronger, last up to 30 times longer, and can run 2-3 times faster than other carbide end mills. Made of premium sub-micrograin carbide. Four flutes provide a fine finish. All are center cutting. Helix angle is 30°. Mill diameter tolerance is +0.001″, –0.001″.

Square-end end mills allow plunge cuts. ***Ball-end*** end mills machine rounded details into a workpiece.

Square End

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Square End		Ball End	
1/32″	1/8″	3/32″	1 1/2″	3725A111	$75.00	3725A113	$84.38
1/16″	1/8″	3/16″	1 1/2″	3725A121	84.38	3725A123	93.76
3/32″	1/8″	3/8″	1 1/2″	3725A131	84.38	3725A133	93.76
1/8″	1/8″	1/2″	1 1/2″	3725A141	93.76	3725A143	103.14
1/8″	1/8″	1″	3″	3725A142	121.88	3725A144	131.26
3/16″	3/16″	5/8″	2″	3725A151	103.14	3725A153	131.26

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Square End		Ball End	
1/4″	1/4″	3/4″	2 1/2″	3725A161	$112.50	3725A163	$121.88
1/4″	1/4″	1 1/4″	3″	3725A162	168.76	3725A164	178.14
3/8″	3/8″	7/8″	2 1/2″	3725A181	168.76	3725A183	178.14
1/2″	1/2″	1″	3″	3725A211	206.26	3725A213	215.62
1/2″	1/2″	2″	4″	3725A212	262.50	3725A214	281.26

For information about end mill cut styles, see page 2487.

High-Performance Carbide End Mills for Aluminum

Two Flute Square End

With their premium extra-fine grain carbide composition and extra-life TiCN (titanium carbonitride) coating, these end mills are engineered to mill aluminum and soft coppers. They resist wear and shock better than other carbide end mills for aluminum. Two flutes provide better chip clearance, while three flutes produce a finer finish. All are center cutting. Helix angle is 45°. Mill diameter tolerance is +0.000″, –0.002″. Maximum working temperature is 750° F. Color is purple-gray. ***Square-end*** end mills allow plunge cuts into a surface. ***Ball-end*** end mills machine rounded details into a workpiece.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
Two Flute Square End					
1/8″	1/8″	1/4″	1 1/2″	8829A11	$15.38
1/8″	1/8″	3/8″	1 1/2″	8829A12	16.96
5/32″	3/16″	5/16″	2″	8829A13	20.69
3/16″	3/16″	5/16″	2″	8829A15	20.98
3/16″	3/16″	9/16″	2″	8829A16	23.29
7/32″	1/4″	3/8″	2 1/2″	8829A17	30.11
1/4″	1/4″	3/8″	2 1/2″	8829A19	28.62
1/4″	1/4″	3/4″	2 1/2″	8829A2	30.36
1/4″	1/4″	1 1/4″	4″	8829A21	47.36
9/32″	5/16″	7/16″	2 1/2″	8829A22	32.47
5/16″	5/16″	7/16″	2 1/2″	8829A24	29.62
5/16″	5/16″	13/16″	2 1/2″	8829A25	32.85
5/16″	5/16″	1 1/4″	4″	8829A26	62.62
11/32″	3/8″	1/2″	2 1/2″	8829A28	37.95
3/8″	3/8″	1/2″	2 1/2″	8829A3	34.59
3/8″	3/8″	1″	2 1/2″	8829A31	38.19
3/8″	3/8″	1 1/2″	4″	8829A32	72.79
13/32″	7/16″	9/16″	2 3/4″	8829A33	54.05
7/16″	7/16″	1″	2 3/4″	8829A35	54.68
1/2″	1/2″	5/8″	3″	8829A37	55.68
1/2″	1/2″	1 1/4″	3″	8829A38	61.73
Two Flute Square End (Cont.)					
1/2″	1/2″	2″	4″	8829A39	$97.35
1/2″	1/2″	3 1/8″	6″	8829A4	160.41
5/8″	5/8″	3/4″	3″	8829A41	106.38
5/8″	5/8″	2 1/2″	5″	8829A42	174.56
3/4″	3/4″	1″	3″	8829A43	147.14
3/4″	3/4″	2 1/4″	5″	8829A44	212.25
Two Flute Ball End					
1/4″	1/4″	3/8″	2 1/2″	8829A47	30.11
1/4″	1/4″	3/4″	2 1/2″	8829A48	33.46
5/16″	5/16″	7/16″	2 1/2″	8829A49	32.70
3/8″	3/8″	1/2″	2 1/2″	8829A51	38.19
7/16″	7/16″	9/16″	2 3/4″	8829A53	54.53
1/2″	1/2″	5/8″	3″	8829A55	61.52
Three Flute Square End					
1/8″	1/8″	1/4″	1 1/2″	8829A62	15.38
1/8″	1/8″	3/8″	1 1/2″	8829A63	16.96
5/32″	3/16″	5/16″	2″	8829A64	20.98
3/16″	3/16″	5/16″	2″	8829A66	20.98
3/16″	3/16″	9/16″	2″	8829A67	29.26
7/32″	1/4″	3/8″	2 1/2″	8829A68	28.62
1/4″	1/4″	3/8″	2 1/2″	8829A7	28.62
Three Flute Square End (Cont.)					
1/4″	1/4″	3/4″	2 1/2″	8829A71	$30.36
1/4″	1/4″	1 1/4″	4″	8829A72	47.36
9/32″	5/16″	7/16″	2 1/2″	8829A73	32.47
5/16″	5/16″	7/16″	2 1/2″	8829A75	32.47
5/16″	5/16″	13/16″	2 1/2″	8829A76	36.06
5/16″	5/16″	1 1/4″	3 1/2″	8829A77	59.00
5/16″	5/16″	2 1/4″	4″	8829A78	76.60
11/32″	3/8″	1/2″	2 1/2″	8829A79	40.30
3/8″	3/8″	1/2″	2 1/2″	8829A81	40.30
3/8″	3/8″	1″	2 1/2″	8829A82	44.76
3/8″	3/8″	1 1/2″	4″	8829A83	68.43
13/32″	7/16″	9/16″	2 3/4″	8829A84	49.71
7/16″	7/16″	1″	2 3/4″	8829A86	55.32
1/2″	1/2″	5/8″	3″	8829A88	61.52
1/2″	1/2″	1 1/4″	3″	8829A89	68.43
1/2″	1/2″	2″	4″	8829A9	97.35
1/2″	1/2″	3 1/8″	6″	8829A91	169.74
5/8″	5/8″	3/4″	3″	8829A92	115.42
5/8″	5/8″	1 5/8″	3 1/2″	8829A93	149.52
3/4″	3/4″	1″	3″	8829A94	159.82
3/4″	3/4″	1 5/8″	4″	8829A95	176.06

Carbide End Mills for Aluminum

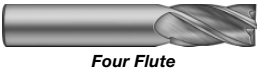

Four Flute

These micrograin carbide end mills machine smooth cuts in aluminum as well as other nonferrous metals and nonmetallic material. They can also be run at higher feeds/speeds than other carbide end mills. Two flutes provide better chip clearance, while four flutes produce a finer finish. All are square end and center cutting, allowing plunge cuts into a surface. Helix angle is 30°. Mill diameter tolerance is +0.000″, –0.002″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	*Two Flute*		*Four Flute*	
1/8″	1/8″	7/16″	1 1/2″	26865A31	$11.07	26865A51	$11.07
3/16″	3/16″	9/16″	2″	26865A32	15.66	26865A52	15.66
1/4″	1/4″	3/4″	2 1/2″	26865A33	20.08	26865A53	20.08
5/16″	5/16″	13/16″	2 1/2″	26865A34	22.61	26865A54	22.61
3/8″	3/8″	7/8″	2 1/2″	26865A35	27.25	26865A55	27.25
7/16″	7/16″	1″	2 3/4″	26865A36	$28.28	26865A56	$28.28
1/2″	1/2″	1″	3″	26865A37	46.81	26865A57	46.81
9/16″	9/16″	1 1/8″	3 1/2″	26865A38	79.34	26865A58	79.34
5/8″	5/8″	1 1/4″	3 1/2″	26865A39	88.78	26865A59	88.78
3/4″	3/4″	1 1/2″	4″	26865A41	131.09	26865A61	131.09

Reduced-Vibration Carbide End Mills

Chamfer Edge

Unequal spacing between the flutes reduces vibration for smooth, silent machining. Also known as variable-helix end mills, these tools remove large amounts of material and leave a fine finish at high feeds/speeds. All have four flutes and are center cutting. Mill diameter tolerance is +0.000″, –0.002″.

Square-end end mills allow plunge cuts in a surface. They have a super-life TiAlN (titanium aluminum nitride) coating. Maximum working temperature is 1500° F. Color is purple-gray.

Chamfer-edge end mills have a 45° corner chamfer for improved cutting edge strength in roughing cuts. Chamfer width is 0.020″. All have a super-life TiAlN (titanium aluminum nitride) coating. Maximum working temperature is 1500° F. Color is purple-gray.

Ball-end end mills machine rounded details into a workpiece. They have a high-temperature AlTiN (aluminum titanium nitride) coating. Maximum working temperature is 1470° F. Color is blue-gray.

Mill Dia.	Shank Dia.	***Square End*** Lg. of Cut	O'all Lg.			***Chamfer Edge*** Lg. of Cut	O'all Lg.			***Ball End*** Lg. of Cut	O'all Lg.		
1/4″	1/4″	3/4″	2 1/2″	8745A11	$37.59	3/4″	2 1/2″	8745A31	$37.59	3/4″	2 1/2″	8745A51	$37.01
5/16″	5/16″	3/4″	2 1/2″	8745A12	49.20	3/4″	2 1/2″	8745A32	49.20	13/16″	2 1/2″	8745A52	49.74
3/8″	3/8″	7/8″	2 1/2″	8745A13	59.06	7/8″	2 1/2″	8745A33	59.06	7/8″	2 1/2″	8745A53	58.57
1/2″	1/2″	5/8″	2 1/2″	8745A14	86.79	5/8″	2 1/2″	8745A34	86.79	1″	6″	8745A55	139.89
1/2″	1/2″	5/8″	6″	8745A15	190.12	5/8″	6″	8745A35	190.12	1 1/4″	3″	8745A54	99.91
5/8″	5/8″	3/4″	3″	8745A16	171.55	3/4″	3″	8745A36	178.46	1 1/4″	3 1/2″	8745A56	159.07
5/8″	5/8″	3/4″	6″	8745A17	227.24	3/4″	6″	8745A37	227.24	1 1/4″	6″	8745A57	265.43
3/4″	3/4″	7/8″	3 1/2″	8745A18	236.31	7/8″	3 1/2″	8745A38	236.31	1 1/2″	4″	8745A58	228.11
3/4″	3/4″	1″	6″	8745A19	297.48	1″	6″	8745A39	297.48	1 1/2″	6″	8745A59	353.69
1″	1″	1 1/8″	6″	8745A22	439.69	1 1/8″	6″	8745A42	439.69	1 1/2″	6″	8745A62	521.22
1″	1″	1 1/2″	4″	8745A21	388.59	1 1/2″	4″	8745A41	388.59	2″	5″	8745A63	389.46

Reduced-Vibration Carbide End Mills for Stainless Steel and High-Temp. Alloys

Finishing

A variable helix angle of 36°-38° reduces vibration for smooth machining. All are solid carbide coated with a multilayered blend of long-life TiN (titanium nitride) and super-life TiAlN (titanium aluminum nitride) for extended life and heat resistance. Mill diameter tolerance is +0.000″, –0.002″. Maximum working temperature is 1650° F. They are square end and center cutting, allowing plunge cuts into a surface.

Roughing end mills remove large amounts of material at high speeds. ***Finishing*** end mills produce a fine finish.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	*Roughing*		*Finishing*	
3/16″	3/16″	5/8″	2″		—	8207A21	$23.57
1/4″	1/4″	3/4″	2 1/2″	8207A41	$52.00	8207A22	28.78
5/16″	5/16″	13/16″	2 1/2″	8207A42	59.10	8207A23	39.57
3/8″	3/8″	1″	2 1/2″	8207A43	67.81	8207A24	47.55
1/2″	1/2″	1 1/4″	3 1/2″	8207A44	92.74	8207A25	77.84
5/8″	5/8″	1 1/4″	3 1/2″	8207A45	132.37	8207A26	145.88

For information about end mill cut styles, see page 2487.

Diamondlike-Coated Carbide End Mills for Nonmetals

Four Flute Square End

The diamondlike carbon coating is very hard and highly abrasion resistant. Tools are premium sub-micrograin carbide for roughing and finishing cuts in composites, green ceramics, carbon fiber, PVC, acrylic, ABS, nylon, PTFE, and fiberglass. Two flutes provide chip clearance, while four flutes produce a finer finish. All are center cutting and have a 33° helix angle. Mill diameter tolerance is ±0.0005″.

Square-end end mills allow plunge cuts into a surface. ***Ball-end*** end mills machine rounded details into a workpiece.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	TWO FLUTE Square End		TWO FLUTE Ball End		FOUR FLUTE Square End		FOUR FLUTE Ball End	
1/32″	1/8″	1/16″	2″	4083A61	$48.54	4083A81	$53.40	4119A51	$48.54	4119A71	$53.40
1/32″	1/8″	1/4″	2″	4083A62	59.86	4083A82	64.72	4119A52	59.86	4119A72	64.72
1/16″	1/8″	5/16″	1 1/2″	4083A11	34.55	4083A31	34.55	4119A11	34.55	4119A31	34.55
1/16″	1/8″	1/2″	2″	4083A63	61.47	4083A83	66.35	4119A53	61.47	4119A73	66.35
5/64″	1/8″	25/64″	1 1/2″	4083A12	34.55	4083A32	34.55	4119A12	34.55	4119A32	34.55
3/32″	1/8″	15/32″	1 1/2″	4083A13	34.55	4083A33	34.55	4119A13	34.55	4119A33	34.55
7/64″	1/8″	35/64″	1 1/2″	4083A14	34.55	4083A34	34.55	4119A14	34.55	4119A34	34.55
1/8″	1/8″	5/8″	1 1/2″	4083A15	34.55	4083A35	34.55	4119A15	34.55	4119A35	34.55
1/8″	1/8″	1″	4″	4083A64	68.77	4083A84	73.61	4119A54	68.77	4119A74	73.61
5/32″	3/16″	3/4″	2″	4083A17	44.74	4083A37	44.74	4119A17	44.74	4119A37	44.74
3/16″	3/16″	3/4″	2″	4083A19	44.74	4083A39	44.74	4119A19	44.74	4119A39	44.74
3/16″	3/16″	1 3/8″	4″	4083A65	72.81	4083A85	77.66	4119A55	72.81	4119A75	77.66
7/32″	1/4″	1″	2 1/2″	4083A21	51.70	4083A41	51.70	4119A21	51.70	4119A41	51.70
1/4″	1/4″	1″	2 1/2″	4083A22	51.70	4083A42	51.70	4119A22	51.70	4119A42	51.70
1/4″	1/4″	1 1/2″	6″	4083A66	101.12	4083A86	105.97	4119A56	101.12	4119A76	105.97
5/16″	5/16″	1″	2 1/2″	4083A23	65.32	4083A43	65.32	4119A23	65.32	4119A43	65.32
3/8″	3/8″	1″	2 1/2″	4083A24	97.35	4083A44	97.35	4119A24	97.35	4119A44	97.35
3/8″	3/8″	2″	6″	4083A67	186.06	4083A87	194.15	4119A57	186.06	4119A77	194.15
1/2″	1/2″	1 1/4″	3″	4083A25	128.59	4083A45	128.59	4119A25	128.59	4119A45	128.59
1/2″	1/2″	2″	6″	4083A68	239.44	4083A88	248.35	4119A58	239.44	4119A78	248.35

Miniature Diamondlike-Coated Carbide End Mills for Nonmetals

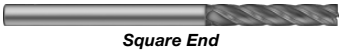

Square End

Small mill diameters cut fine details in hard-to-reach spots. Their diamondlike carbon coating is very hard and highly abrasion resistant for use on graphite and other nonmetals. They are made of premium sub-micrograin carbide and have three flutes, except 3/16″ and 1/4″ mill diameters have four flutes, for a fine finish. All are center cutting and have a 35° helix angle. Mill diameter tolerance is +0.000″, –0.001″, except 1/8″ to 1/4″ mill diameters are +0.000″, –0.002″.

Square-end end mills allow plunge cuts into a surface. ***Ball-end*** end mills machine rounded details into a workpiece.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Square End		Ball End	
1/64″	1/8″	5/64″	2 1/2″	8880A21	$46.18	8880A34	$36.54
1/32″	1/8″	1/16″	2 1/2″	8880A22	33.24	8880A35	42.55
1/32″	1/8″	5/32″	2 1/2″	8880A23	45.49	8880A36	35.04
3/64″	1/8″	1/4″	2 1/2″	8880A24	47.99	8880A37	32.06
1/16″	1/8″	1/8″	2 1/2″	8880A25	41.54	8880A38	41.84
1/16″	1/8″	1/2″	2 1/2″	8880A26	40.20	8880A39	30.71
5/64″	1/8″	1/2″	2 1/2″	8880A27	39.97	8880A41	32.87
3/32″	1/8″	3/16″	2 1/2″	8880A28	45.23	8880A42	45.23
3/32″	1/8″	3/4″	2 1/2″	8880A29	39.97	8880A43	33.22
1/8″	1/8″	1″	3″	8880A31	39.97	8880A44	60.40
3/16″	3/16″	1 1/8″	3″	8880A32	63.59	8880A45	75.73
1/4″	1/4″	1 1/2″	4″	8880A33	84.01	8880A46	82.50

Smooth-Finish Fast-Spiral Carbide End Mills

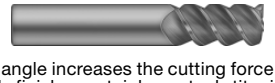

A high 60° helix angle increases the cutting force while three flutes produce a smooth finish on stainless steel, titanium, and Inconel. All are made of micrograin carbide. They are square end and center cutting, allowing plunge cuts into a surface. Mill diameter tolerance is +0.000″, –0.0015″, except 1/8″ is +0.000″, –0.001″.

Long-life TiN (titanium nitride) coated tools last longer than uncoated tools and can be run at higher feeds/speeds. Maximum working temperature is 930° F. Color is gold.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		Long-Life TiN Coated	
1/8″	1/8″	1/2″	1 1/2″	29335A31	$12.24	29335A51	$14.88
3/16″	3/16″	5/8″	2″	29335A33	17.34	29335A53	20.69
1/4″	1/4″	3/4″	2 1/2″	29335A35	21.61	29335A55	28.17
5/16″	5/16″	13/16″	2 1/2″	29335A37	25.91	29335A57	35.77
3/8″	3/8″	1″	2 1/2″	29335A38	34.45	29335A58	45.09
1/2″	1/2″	1″	3″	29335A41	53.93	29335A61	66.45
5/8″	5/8″	1 1/4″	3 1/2″	29335A43	88.56	29335A63	106.72
3/4″	3/4″	1 1/2″	4″	29335A44	129.87	29335A64	151.33

Finishing Carbide End Mills

You won't believe the smoothness of a five-flute finish. End mills also excel at cutting tough-to-machine materials such as stainless steel, titanium, and titanium alloys. Made of premium sub-micrograin carbide, they are square end and center cutting, allowing plunge cuts into a surface. Helix angle is 45°. Mill diameter tolerance is +0.000″, –0.002″.

Uncoated end mills are for general milling applications.

Coated end mills last longer and can be run at higher feeds/speeds.

Extra-life TiCN (titanium carbonitride) coating resists wear. Maximum working temperature is 750° F. Color is light gray.

High-temperature AlTiN (aluminum titanium nitride) coating is best for very high feeds/speeds. Maximum working temperature is 1650° F. Color is blue-gray.

To Order: For coated end mills, specify coating: TiCN or AlTiN.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		TiCN or AlTiN Coated	
3/16″	3/16″	5/16″	2″	8992A11	$17.34	8993A11	$20.41
3/16″	3/16″	9/16″	2″	8992A12	17.34	8993A12	20.41
1/4″	1/4″	3/8″	2″	8992A13	19.36	8993A13	23.69
1/4″	1/4″	3/4″	2 1/2″	8992A14	20.91	8993A14	27.17
1/4″	1/4″	1 1/4″	4″	8992A15	37.78	8993A15	44.52
5/16″	5/16″	13/16″	2 1/2″	8992A17	29.33	8993A17	37.67
3/8″	3/8″	1/2″	2″	8992A19	32.70	8993A19	39.46
3/8″	3/8″	7/8″	2 1/2″	8992A21	36.53	8993A21	44.88
3/8″	3/8″	1 1/2″	3 1/2″	8992A22	54.57	8993A22	64.92
7/16″	7/16″	1″	2 3/4″	8992A24	44.59	8993A24	54.62
1/2″	1/2″	1 1/4″	3″	8992A27	58.51	8993A27	68.52
1/2″	1/2″	2″	4″	8992A28	79.87	8993A28	92.38
5/8″	5/8″	1 5/8″	3 1/2″	8992A31	112.83	8993A31	128.43
3/4″	3/4″	1 5/8″	4″	8992A34	165.44	8993A34	183.30

Light-Finish Carbide Bur End Mills

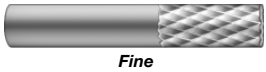

Fine

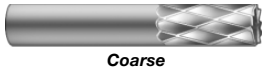

Coarse

Multiple intersecting flutes make these the choice for light stock removal. They can also be used for finishing on heat-treated die steels, stainless steel, and graphite. All are made of micrograin carbide. They are square end and center cutting, allowing plunge cuts into a surface. Mill diameter tolerance is +0.000″, –0.003″ for 1/8″ through 1/4″ mill diameters and +0.000″, –0.004″ for all others.

Coarse end mills remove material faster than fine end mills, but leave a rougher finish.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Fine		Coarse	
1/8″	1/8″	1/2″	1 1/2″	28685A41	$11.75	28685A61	$11.75
5/32″	3/16″	9/16″	2″	28685A42	16.46	28685A62	16.46
3/16″	3/16″	5/8″	2″	28685A43	16.46	28685A63	16.46
1/4″	1/4″	3/4″	2 1/2″	28685A44	21.43	28685A64	21.43
5/16″	5/16″	13/16″	2 1/2″	28685A45	24.67	28685A65	24.67
3/8″	3/8″	1″	2 1/2″	28685A46	30.84	28685A66	30.84
1/2″	1/2″	1″	3″	28685A48	52.64	28685A68	52.64

For information about end mill cut styles, see page 2487.

Roughing Carbide End Mills

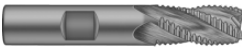

Remove large amounts of material at high speeds on medium- to high-tensile steels, stainless steels, and high-temp. alloys. All are premium sub-micrograin carbide and have four flutes. They are square end and center cutting for plunge cuts. Helix angle is 30°. Mill diameter tolerance is +0.0000″, –0.0035″.

Long-life TiN (titanium nitride) coated end mills are good for basic milling jobs. Maximum working temperature is 840° F. Color is gold.

Super-life TiAlN (titanium aluminum nitride) coated end mills are best for high-speed, high-temperature applications. Maximum working temperature is 1560° F. Color is purple-gray.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Long-Life TiN Coated		Super-Life TiAlN Coated	
1/4″	1/4″	3/8″	2″	87825A11	$35.97	87825A61	$35.97
1/4″	1/4″	3/4″	2 1/2″	87825A31	40.76	87825A62	40.76
5/16″	5/16″	7/16″	2 1/2″	87825A12	47.30	87825A63	47.30
5/16″	5/16″	13/16″	2 1/2″	87825A32	54.00	87825A64	54.00
3/8″	3/8″	1/2″	2 1/2″	87825A13	55.87	87825A65	55.87
3/8″	3/8″	1″	2 1/2″	87825A33	61.99	87825A66	61.99
1/2″	1/2″	5/8″	2 1/2″	87825A14	92.26	87825A67	92.26
1/2″	1/2″	1″	3″	87825A34	109.87	87825A68	109.87
1/2″	1/2″	2″	4″	87825A15	168.25	87825A69	168.25
5/8″	5/8″	1 1/2″	3 1/2″	87825A35	186.19	87825A72	186.19
3/4″	3/4″	7/8″	4″	87825A18	204.99	87825A74	204.99
3/4″	3/4″	1 1/2″	4″	87825A36	252.10	87825A75	252.10

Roughing Carbide End Mills for Aluminum

Specially designed for aluminum, these incorporate a staggered pitch angle the full length of the cutting edge for complete chip removal. All are solid carbide and have three flutes. They are square end and center cutting for plunge cuts. Helix angle is 30°. Mill diameter tolerance is +0.000″, –0.002″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/4″	1/4″	3/4″	2 1/2″	3469A11	$41.01
5/16″	5/16″	3/4″	2 1/2″	3469A12	46.61
3/8″	3/8″	7/8″	2 1/2″	3469A13	53.47
1/2″	1/2″	1″	3″	3469A14	73.15
5/8″	5/8″	1 1/4″	3 1/2″	3469A15	104.39

Reduced-Vibration Roughing Carbide End Mills

Four flutes with variable helix angle of 30° to 32° remove large amounts of material and reduce vibration for smooth machining. All are made of solid carbide and are coated with a multilayered blend of long-life TiN (titanium nitride) and super-life TiAlN (titanium aluminum nitride) for extended life and heat resistance. Max. working temp. is 1470° F. All are square end and center cutting, allowing for plunge cuts into a surface. Mill diameter tolerance is +0.000″, –0.002″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/4″	1/4″	3/4″	2 1/2″	8581A31	$52.00
5/16″	5/16″	13/16″	2 1/2″	8581A32	59.10
3/8″	3/8″	1″	2 1/2″	8581A33	67.81
1/2″	1/2″	1 1/4″	3 1/2″	8581A34	92.74
5/8″	5/8″	1 1/4″	3 1/2″	8581A35	132.37

Square Tool Bit Flat-Surface Cutters

Also known as fly tool cutters, these are used with square tool bits (sold separately on page 2516) for machining flat surfaces. Compared to standard end mills, they make wider cuts, produce less vibration, cut thin materials easily, and can be run at faster speeds. Made of hardened steel.

Head Dia.	Shank Dia.	For Square Tool Bit Size		
Cutters				
3/4″	1/2″	3/16″	3041A17	$11.92
1 1/8″	1/2″	1/4″	3041A18	13.44
1 3/8″	1/2″	5/16″	3041A19	15.35
1 3/8″	3/4″	5/16″	3041A14	23.74
2″	3/4″	5/16″	3041A15	25.46
2 1/2″	3/4″	5/16″	3041A16	29.20
2 1/2″	R8	5/16″	3041A22	48.08
Three-Piece Cutter Sets— Come in a wood stand				
One of each 1/2″ shank dia. cutter above			3041A13	39.96
One of each 3/4″ shank dia. cutter above			3041A11	78.42

Straight-Flute Carbide End Mills

Make light cuts on cast iron and other very hard, abrasive materials, as well as on thin sheeting where spiral flutes would lift the material. All are premium sub-micrograin carbide and have two flutes. They are center cutting for plunge cuts. Mill diameter tolerance is +0.000″, –0.002″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/16″	1/8″	3/16″	1 1/2″	8881A11	$12.89
3/32″	1/8″	9/32″	1 1/2″	8881A12	12.89
1/8″	1/8″	1/2″	1 1/2″	8881A13	12.51
5/32″	3/16″	1/2″	2″	8881A14	18.17
3/16″	3/16″	5/8″	2″	8881A15	17.31
7/32″	1/4″	5/8″	2 1/2″	8881A16	23.74
1/4″	1/4″	3/4″	2 1/2″	8881A17	22.31
5/16″	5/16″	13/16″	2 1/2″	8881A19	29.83
3/8″	3/8″	1″	2 1/2″	8881A21	34.60
7/16″	7/16″	1″	2 3/4″	8881A22	49.31
1/2″	1/2″	1″	3″	8881A23	58.51

Straight-Flute Carbide-Tipped End Mills

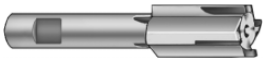

Four straight flutes tipped with premium sub-micrograin carbide produce fine finishes on very hard, abrasive materials such as cast iron, ductile iron, malleable iron, and nonferrous metals. Tool body is made of high-speed steel. All are square end and noncenter cutting. Mill diameter tolerance is +0.005″, –0.000″.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.		
1/4″	3/8″	1/2″	2 1/2″	3053A11	$36.67
5/16″	3/8″	5/8″	2 1/2″	3053A12	39.13
3/8″	3/8″	5/8″	2 1/2″	3053A13	41.23
7/16″	3/8″	1″	2 11/16″	3053A14	41.23
1/2″	1/2″	1″	3 1/4″	3053A15	43.86
9/16″	1/2″	1″	3 3/8″	3053A16	49.21
5/8″	1/2″	1″	3 3/8″	3053A17	51.58
3/4″	5/8″	1″	3 5/8″	3053A19	56.75
7/8″	5/8″	1 1/4″	4″	3053A22	67.11
1″	7/8″	1 1/4″	4″	3053A24	77.46
1 1/8″	1″	1 1/4″	4 1/4″	3053A26	87.81
1 1/4″	1″	1 1/4″	4 1/4″	3053A28	95.09

Carbide Drill/Mills

Four Flute

A pointed tip on these tools makes them capable of drilling, slotting, spotting, and other milling operations. Two flutes provide better chip clearance, while four flutes produce a finer finish. All are made of premium sub-micrograin carbide and have a 90° point angle and a 30° helix angle. Mill diameter tolerance is +0.000″, –0.003″.

Coated end mills last longer and can be run at higher feeds/speeds.

Long-life TiN (titanium nitride) coating has a maximum working temperature of 1110° F. Color is gold. *High-temperature AlTiN (aluminum titanium nitride)* coating is best for very high feeds/speeds. Maximum working temperature is 1450° F. Color is purple-gray.

To Order: For coated end mills, please specify TiN or AlTiN.

Three-piece set includes an uncoated two-flute drill/mill in 1/4″, 3/8″, and 1/2″ mill diameters. Comes in a plastic case.

Mill Dia.	Shank Dia.	Lg. of Cut	O'all Lg.	Uncoated		TiN or AlTiN Coated	
Two Flute							
1/16″	1/8″	3/16″	1 1/2″	2770A52	$11.82	3723A71	$14.33
3/32″	1/8″	3/8″	1 1/2″	2770A54	11.24	3723A72	13.63
1/8″	1/8″	1/2″	1 1/2″	2770A61	11.79	3723A73	17.37
3/16″	3/16″	5/8″	2″	2770A63	16.21	3723A74	23.42
1/4″	1/4″	3/4″	2 1/2″	2770A65	19.39	3723A75	30.51
5/16″	5/16″	13/16″	2 1/2″	2770A67	27.19	3723A76	41.49
3/8″	3/8″	1″	2 1/2″	2770A69	33.96	3723A77	50.33
1/2″	1/2″	1″	3″	2770A72	53.16	3723A78	76.73
5/8″	5/8″	1 1/2″	3 1/2″	2770A74	103.20	3723A79	144.42
3/4″	3/4″	1 1/2″	4″	2770A76	150.09	3723A81	204.93
Four Flute							
1/16″	1/8″	3/16″	1 1/2″	8747A22	11.66	8905A61	15.69
3/32″	1/8″	3/8″	1 1/2″	8747A24	11.40	8905A62	15.33
1/8″	1/8″	1/2″	1 1/2″	8747A11	11.78	8905A63	17.37
3/16″	3/16″	5/8″	2″	8747A12	16.21	8905A64	23.43
1/4″	1/4″	3/4″	2 1/2″	8747A13	19.39	8905A65	30.51
5/16″	5/16″	13/16″	2 1/2″	8747A14	27.18	8905A66	41.49
3/8″	3/8″	1″	2 1/2″	8747A15	33.95	8905A67	50.33
1/2″	1/2″	1″	3″	8747A16	53.15	8905A68	76.73
5/8″	5/8″	1 1/4″	3 1/2″	8747A17	103.20	8905A69	144.42
3/4″	3/4″	1 1/2″	4″	8747A18	150.09	8905A71	204.93
Three-Piece Set						2770A81	117.06

For information about end mill cut styles, see page 2487.

Replaceable Carbide-Insert End Mills

Use on low-horsepower Bridgeport and similar milling machines. Add positive-rake triangular carbide inserts which can be replaced when worn or chipped (not included, see pages 2518-2519). End mills with a 1/2″ shank dia. use insert style TPG-221 through 223. All others use TPG-321 through 324. Tool body is steel. All are noncenter cutting. ***R8 shanks*** have a 7/16″-20 internal thread.

Replacement parts fit end mills with a 3/4″ to 3″ mill diameter.

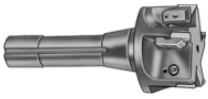

Shown with Carbide Inserts (Not Included)

Mill Dia.	Shank Dia./ Style	O'all Lg.	No. of Inserts Req'd		
End Mills					
1/2″	1/2″	3″	1	**8902A27**	$50.24
5/8″	1/2″	3″	1	**8902A29**	50.24
3/4″	3/4″	3 7/8″	1	**8902A31**	56.11
1″	3/4″	3 7/8″	1	**8902A32**	68.94
1″	R8	5 7/8″	1	**8902A33**	74.78
1 1/4″	3/4″	3 7/8″	2	**8902A34**	80.63
1 1/4″	R8	5 7/8″	2	**8902A35**	87.65
1 3/8″	3/4″	3 7/8″	2	**8902A36**	95.83
1 1/2″	3/4″	3 7/8″	3	**8902A37**	107.50
1 1/2″	1″	3 7/8″	3	**8902A38**	104.57
1 1/2″	R8	5 7/8″	3	**8902A39**	115.69
1 5/8″	R8	5 7/8″	3	**8902A41**	123.85
1 3/4″	R8	5 7/8″	3	**8902A43**	144.91
2″	3/4″	3 7/8″	3	**8902A44**	146.06
2″	1″	6 1/4″	3	**8902A52**	197.06
2″	R8	5 7/8″	3	**8902A45**	158.61
2″	R8	8 1/4″	3	**8902A53**	219.69
2 1/2″	R8	5 7/8″	5	**8902A56**	245.39
2 1/2″	R8	8 1/4″	5	**8902A54**	321.35
3″	R8	5 7/8″	5	**8902A57**	275.48
3″	R8	8 1/4″	5	**8902A55**	362.24
Replacement Parts					
Hold-Down Clamp				**8902A64**	5.01
Clamp Screw				**8902A65**	.30

Large-Diameter High-Speed Steel Face Milling Cutters

Also known as shell cutters, these tools have a large diameter for face and side milling. All require the use of an R8 shank arbor (sold separately below). Milling cutters are noncenter cutting and have a 30° helix angle. Mill diameter tolerance is +0.015″, –0.000″.

Mill Dia.	Hole Dia.	Face Wd.	No. of Teeth		
1 1/4″	1/2″	1″	8	**3040A11**	$58.81
1 1/2″	1/2″	1 1/8″	8	**3040A12**	60.63
2″	3/4″	1 3/8″	10	**3040A14**	86.79
2 1/4″	1″	1 1/2″	10	**3040A15**	95.47
2 1/2″	1″	1 5/8″	10	**3040A16**	114.53
3″	1 1/4″	1 3/4″	12	**3040A18**	155.12
3 1/2″	1 1/4″	1 7/8″	12	**3040A19**	214.48
4″	1 1/2″	2 1/4″	14	**3040A21**	259.05

R8 Shank Arbors for Large-Diameter Face Milling Cutters

An arbor is required to hold large-diameter milling cutters securely in Bridgeport and similar milling machines with an R8 taper spindle. All are heat-treated alloy steel. Shank has an internal 7/16″-20 thread.

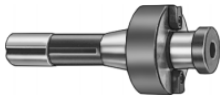

For Milling Cutter Hole Dia.		
1/2″	**8778A11**	$78.40
3/4″	**8778A12**	78.40
1″	**8778A13**	86.40
1 1/4″	**8778A14**	86.40
1 1/2″	**8778A15**	110.40

Large-Diameter Replaceable Carbide-Insert Face Milling Cutters

Create versatile face mills, also known as indexable face mills, by combining a cutter body and carbide inserts (both sold separately).

Cutter Bodies

Remove metal 2-5 times faster with these carbide cutter bodies than comparable high-speed steel face mills. An R8 shank arbor is required (sold separately above). All cutter bodies accept octagon, round, and square carbide inserts (sold separately).

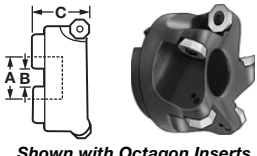

Shown with Octagon Inserts (Sold Separately)

Mill Dia.	Hole Dia. (A)	Key Wd. (B)	Dp. (C)	No. of Inserts Req'd		
2″	3/4″	5/16″	1 23/32″	4	**8826A11**	$173.47
3″	1 1/4″	1/2″	1 7/8″	5	**8826A12**	236.24
3 1/2″	1 1/2″	5/8″	1 7/8″	5	**8826A13**	248.04
4″	1 1/2″	5/8″	1 7/8″	6	**8826A14**	325.18
5″	1 1/2″	5/8″	1 61/64″	6	**8826A15**	349.82
6″	1 1/2″	5/8″	1 61/64″	8	**8826A16**	398.74

Carbide Inserts

Octagon inserts are for general face milling. They generate smooth cuts with eight cutting edges.

Round inserts are the strongest. Use for roughing and heavy cuts.

Square inserts are used when a shoulder is required, with or without a radius.

To Order: Please specify shape.

Octagon

Round

Square

For Use On	Available Shapes		
Carbon Steel	Octagon, Round, Square	**8826A31**	$15.33
Stainless Steel	Octagon, Round, Square	**8826A32**	15.33
Cast Iron	Octagon, Round, Square	**8826A33**	15.33
Nickel Alloys, Titanium	Octagon, Round, Square	**8826A34**	15.33
Aluminum, Copper	Octagon, Round, Square	**8826A35**	15.33
PH Stainless Steel, Die Steel	Octagon, Round, Square	**8826A36**	15.33

Face Mill Kits—Each includes 1 cutter body, 10 inserts, 2 wrenches, extra screws, and a plastic carrying case.

For Use On	WITH OCTAGON INSERTS 2″ Mill Dia.		3″ Mill Dia.		4″ Mill Dia.		WITH SQUARE INSERTS 2″ Mill Dia.		3″ Mill Dia.		4″ Mill Dia.	
Carbon Steel	**8826A41**	$240.00	**8826A42**	$325.00	**8826A43**	$405.00	**8826A44**	$240.00	**8826A45**	$325.00	**8826A46**	$405.00
Aluminum and Copper	**8826A51**	240.00	**8826A52**	325.00	**8826A53**	405.00	**8826A54**	240.00	**8826A55**	325.00	**8826A56**	405.00
PH Stainless, Die Steel	**8826A47**	240.00	**8826A48**	325.00	**8826A49**	405.00	—	—	—	—	—	—

Dovetail Cutters

Machine slots for components that require a sliding fit. Cutter diameter tolerance is ±0.010″.

Cobalt steel is more resistant to heat and abrasion than high-speed steel.

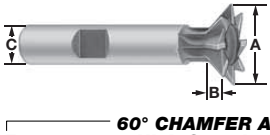

Cutter Dia. (A)	Shank Dia. (C)	O'all Lg.	45° CHAMFER ANGLE Face Wd. (B)	High-Speed Steel		Cobalt Steel		60° CHAMFER ANGLE Face Wd. (B)	High-Speed Steel		Cobalt Steel	
3/8″	3/8″	2 1/8″	1/8″	**2984A17**	$41.92	**2984A61**	$51.42	3/16″	**2984A19**	$41.92	**2984A71**	$51.42
1/2″	3/8″	2 1/8″	1/8″	**2984A16**	41.92	**2984A62**	51.42	7/32″	**2984A21**	41.92	**2984A72**	51.42
3/4″	3/8″	2 1/8″	3/16″	**2984A11**	41.92	**2984A63**	51.42	5/16″	**2984A22**	41.92	**2984A73**	51.42
1 3/8″	5/8″	2 7/8″	3/8″	**2984A12**	68.47	**2984A64**	83.93	9/16″	**2984A23**	68.47	**2984A74**	83.93
1 7/8″	7/8″	3 1/4″	1/2″	**2984A13**	149.85	**2984A65**	183.48	13/16″	**2984A24**	149.85	**2984A75**	183.48
2 1/4″	1″	3 3/4″	11/16″	**2984A14**	181.67	**2984A66**	222.42	1 1/16″	**2984A25**	181.67	**2984A76**	222.42
2 1/2″	1″	3 3/4″	3/4″	**2984A15**	232.52	**2984A67**	284.74	1 1/8″	**2984A26**	232.52	**2984A77**	284.74

T-Slot Cutters

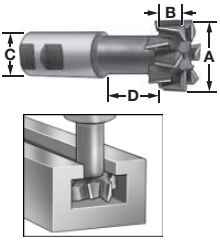

Mill T-slots in machine tool tables, indexing tables, and other work-holding surfaces. All are made of high-speed steel and have staggered teeth for efficient chip clearance. Cutter diameter tolerance is +0.000″, –0.010″. Face width tolerance is +0.000″, –0.005″. For T-slot bolts, see page 3162.

Note: Before using the cutter, mill a slot in the work surface so the neck of the cutter can enter the cut.

T-Slot Bolt Size	Cutter Dia. (A)	Face Wd. (B)	Shank Dia. (C)	Neck Dia.	Neck Lg. (D)	O'all Lg.		
1/4″	9/16″	15/64″	1/2″	17/64″	35/64″	2 19/32″	8789A16	$48.49
5/16″	21/32″	17/64″	1/2″	21/64″	39/64″	2 11/16″	8789A17	51.89
3/8″	25/32″	21/64″	3/4″	13/32″	55/64″	3 1/4″	8789A11	75.95
1/2″	31/32″	25/64″	3/4″	17/32″	63/64″	3 7/16″	8789A12	86.12
5/8″	1 1/4″	31/64″	1″	21/32″	1 9/64″	3 15/16″	8789A13	117.45
3/4″	1 15/32″	5/8″	1″	25/32″	1 1/2″	4 7/16″	8789A14	137.43
1″	1 27/32″	53/64″	1 1/4″	1 1/32″	1 43/64″	4 13/16″	8789A15	222.12

V-Slot Cutters

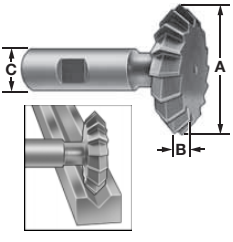

A single pass cuts a V-shaped slot. Also known as double-angle milling cutters, they can also mill notches, serrations, angles, and chamfers. All are high-speed steel. Overall length ranges from 2 3/8″ to 3 1/8″. Cutter diameter and face width tolerances are +0.015″, –0.000″.

Bevel Cutters

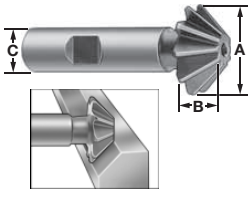

Make uniform bevel cuts in your workpieces. All cutters are high-speed steel with a long-life TiN (titanium nitride) coating for heat resistance and faster feeds/speeds. Overall length ranges from 2 1/8″ to 2 3/4″. Cutter diameter tolerance is +0.010″, –0.000″. Maximum working temperature is 1100° F. Color is gold.

		60° Angle			90° Angle		
Cutter Dia. (A)	Shank Dia. (C)	Face Wd. (B)			Face Wd. (B)		
3/4″	3/8″	3/16″	29755A17	$31.85	1/4″	29755A12	$31.85
1″	1/2″	5/16″	29755A18	50.85	3/8″	29755A13	50.85
1 3/8″	5/8″	7/16″	29755A19	67.81	1/2″	29755A14	67.81
2 1/4″	3/4″	1/2″	29755A21	122.68	1/2″	29755A11	122.68

		45° Chamfer Angle			60° Chamfer Angle		
Cutter Dia. (A)	Shank Dia. (C)	Face Wd. (B)			Face Wd. (B)		
1/2″	3/8″	1/8″	29895A51	$43.95	7/32″	29895A61	$43.95
3/4″	3/8″	3/16″	29895A52	51.70	5/16″	29895A62	51.70
1″	1/2″	5/16″	29895A53	64.28	7/16″	29895A63	64.28
1 1/2″	3/4″	1/2″	29895A54	83.08	5/8″	29895A64	83.08

Keyseat Cutters

Straight Tooth

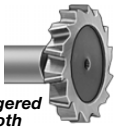
Staggered Tooth

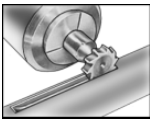

Also known as Woodruff keyseat cutters, tools mill precise notches in shafts. They can also be used for slot milling. Cutters have a 1/2″ diameter shank and an overall length of 2 1/16″ to 2 3/8″. Face width tolerance is +0.0000″, –0.0010″.

Straight-tooth cutters work well on high-carbon steel and cast iron. *Carbide* cutters are premium sub-micrograin carbide for fast, smooth cuts. ***Staggered-tooth*** cutters have an alternating right- and left-hand helix for efficient cuts in mild steel, aluminum, and brass.

Straight Tooth

		High-Speed Steel			Carbide		
Cutter Dia.	Amer. Std. No.	Neck Dia.			Neck Dia.		
1/16″ Face Wd.							
1/4″	202	0.11″	3031A11	$23.12	—	—	—
5/16″	202 1/2	0.11″	3031A12	23.12	—	—	—
3/8″	203	0.11″	3031A14	23.12	0.20″	31595A51	$76.86
1/2″	204	0.13″	3031A17	23.12	0.25″	31595A37	61.79
3/32″ Face Wd.							
5/16″	302 1/2	0.11″	3031A13	23.13	—	—	—
3/8″	303	0.12″	3031A15	23.13	0.20″	31595A11	77.10
1/2″	304	0.16″	3031A18	23.13	0.25″	31595A13	86.93
5/8″	305	0.19″	3031A19	23.28	0.28″	31595A14	90.78
1/8″ Face Wd.							
3/8″	403	0.13″	3031A16	23.13	0.20″	31595A12	78.45
1/2″	404	0.19″	3031A21	23.13	0.25″	31595A15	88.20
5/8″	405	0.22″	3031A22	23.28	0.28″	31595A16	95.82
3/4″	406	0.22″	3031A23	24.43	0.28″	31595A17	121.46
5/32″ Face Wd.							
5/8″	505	0.25″	3031A24	24.44	0.28″	31595A18	98.85
3/4″	506	0.25″	3031A26	24.43	0.28″	31595A21	124.49
7/8″	507	0.25″	3031A28	26.66	0.28″	31595A23	147.42
3/16″ Face Wd.							
5/8″	605	0.25″	3031A25	23.35	0.28″	31595A19	101.99
3/4″	606	0.28″	3031A29	24.43	0.28″	31595A24	130.21
7/8″	607	0.28″	3031A31	26.66	0.28″	31595A25	148.68
1″	608	0.28″	3031A33	29.20	0.28″	31595A27	162.04
1 1/8″	609	0.31″	3031A36	32.73	0.28″	31595A29	221.63
1 1/4″	610	0.31″	3031A42	36.66	0.28″	31595A34	228.68

		High-Speed Steel			Carbide		
Cutter Dia.	Amer. Std. No.	Neck Dia.			Neck Dia.		
7/32″ Face Wd.							
7/8″	707	0.28″	3031A32	$27.12	0.28″	31595A26	$154.35
1″	708	0.34″	3031A34	30.29	0.28″	31595A28	178.03
1 1/8″	709	0.31″	3031A39	32.73	0.28″	31595A38	158.63
1 1/4″	710	0.38″	3031A43	36.66	0.28″	31595A35	232.47
1/4″ Face Wd.							
3/4″	806	0.28″	3031A27	24.43	0.28″	31595A22	130.86
7/8″	807	0.34″	3031A37	27.12	0.28″	31595A31	159.39
1″	808	0.34″	3031A38	29.44	0.28″	31595A32	180.36
1 1/8″	809	0.38″	3031A41	33.37	0.28″	31595A33	226.55
1 1/4″	810	0.38″	3031A44	37.91	0.28″	31595A36	233.72
1 3/8″	811	0.40″	3031A45	44.49	0.40″	31595A46	191.21
1 1/2″	812	0.44″	3031A46	46.56	0.31″	31595A41	276.62
5/16″ Face Wd.							
1″	1008	0.40″	3031A47	30.22	—	—	—
1 1/8″	1009	0.44″	3031A48	35.07	0.44″	31595A39	155.26
1 1/4″	1010	0.44″	3031A49	39.32	0.44″	31595A44	157.76
1 3/8″	1011	0.47″	3031A51	42.41	0.47″	31595A47	191.21
1 1/2″	1012	0.47″	3031A52	45.45	0.31″	31595A42	287.47
3/8″ Face Wd.							
1″	1208	0.40″	3031A35	30.30	—	—	—
1 1/4″	1210	0.47″	3031A53	39.34	0.47″	31595A45	160.35
1 3/8″	1211	0.47″	3031A54	43.09	0.47″	31595A48	191.21
1 1/2″	1212	0.47″	3031A55	46.90	0.31″	31595A43	297.99

Staggered Tooth High-Speed Steel

Face Wd.	Cutter Dia.	Amer. Std. No.	Neck Dia.		
1/16″	1/4″	202	0.11″	8765A11	$27.76
1/16″	3/8″	203	0.12″	8765A41	27.76
1/16″	1/2″	204	0.13″	8765A17	27.82
3/32″	5/16″	302 1/2	0.11″	8765A39	27.76
3/32″	1/2″	304	0.16″	8765A18	26.40
3/32″	5/8″	305	0.19″	8765A21	27.98
1/8″	3/8″	403	0.13″	8765A16	27.76
1/8″	1/2″	404	0.19″	8765A19	$27.76
1/8″	5/8″	405	0.22″	8765A22	27.98
1/8″	3/4″	406	0.22″	8765A25	29.34
3/16″	5/8″	605	0.25″	8765A24	27.98
3/16″	3/4″	606	0.28″	8765A27	45.94
3/16″	7/8″	607	0.28″	8765A42	44.13
3/16″	1″	608	0.28″	8765A34	56.22
1/4″	3/4″	806	0.28″	8765A28	$45.94
1/4″	7/8″	807	0.34″	8765A33	49.74
1/4″	1″	808	0.34″	8765A36	56.59
1/4″	1 1/2″	812	0.44″	8765A53	85.20
5/16″	1″	1008	0.40″	8765A37	36.33
3/8″	1″	1208	0.40″	8765A38	36.31
3/8″	1 1/2″	1212	0.47″	8765A55	56.24

Narrow-Width Keyseat Cutters

Cut narrow Woodruff keyseats. All cutters are high-speed steel and have straight teeth. Shank is 2″ long from under the head and has a 1/2″ diameter. Face width tolerance is +0.0000″, –0.0005″.

Also Available: Cobalt steel cutters. Please ask for 2970A81 and specify face width and cutter diameter.

Face Wd.	Cutter Dia.	Neck Dia.		
0.02″	1/2″	0.130″	2970A12	$24.93
0.02″	5/8″	0.191″	2970A18	24.93
1/32″	1/2″	0.130″	2970A13	24.93
1/32″	5/8″	0.191″	2970A19	24.93
1/32″	3/4″	0.218″	2970A29	26.82
3/64″	1/2″	0.130″	2970A14	24.93
3/64″	5/8″	0.191″	2970A21	24.93
1/16″	5/8″	0.191″	2970A22	24.93
1/16″	3/4″	0.218″	2970A32	$26.82
1/16″	1″	0.279″	2970A41	33.12
1/16″	1 1/8″	0.312″	2970A56	39.46
1/16″	1 1/4″	0.312″	2970A69	42.65
1/16″	1 1/2″	0.435″	2970A73	49.21
3/32″	3/4″	0.218″	2970A34	26.82
3/32″	1″	0.279″	2970A43	33.12
3/32″	1 1/8″	0.312″	2970A57	$39.30
3/32″	1 1/4″	0.312″	2970A71	42.65
3/32″	1 1/2″	0.435″	2970A75	49.21
1/8″	1″	0.279″	2970A45	33.12
1/8″	1 1/8″	0.312″	2970A58	39.46
1/8″	1 1/4″	0.312″	2970A72	42.65
3/16″	1 1/2″	0.435″	2970A74	49.21

Straight- and Staggered-Tooth Milling Cutters

With peripheral and side teeth, cutters remove chips for consistent cutting width. All are made of high-speed steel and have a standard keyway. Cutter thickness tolerance is ±0.001″.

Straight-tooth cutters are thinner, have more teeth, and leave a finer finish than staggered-tooth cutters. Use for thin slots and plunge cuts. Cutter diameter tolerance is ±0.015″.

Staggered-tooth cutters are for deep slots and other applications requiring maximum chip clearance. Also known as side-milling cutters, they have alternating right- and left-hand helical teeth to remove more metal at higher feeds/speeds than straight-tooth cutters. The keyway lets you interlock two or more cutters of the same diameter so you can customize the thickness of the cutter to match the slot width you require. Cutter diameter tolerance is +0.015″, –0.000″.

Straight Tooth

Staggered Tooth

Straight Tooth

Thick.	Cutter Dia.	Hole Dia.	No. of Teeth		
1/16″	2 1/2″	7/8″	28	3064A11	$55.40
1/16″	3″	1″	32	3064A14	63.80
1/16″	4″	1″	36	3064A19	84.80
1/16″	5″	1″	40	3064A25	109.45
1/16″	6″	1″	42	3064A32	180.26
1/16″	6″	1 1/4″	42	3064A33	192.80
3/32″	3″	1″	32	3064A15	63.80
3/32″	4″	1″	36	3064A21	84.80
3/32″	5″	1″	40	3064A26	$112.33
3/32″	6″	1″	42	3064A42	141.59
1/8″	3″	1″	32	3064A16	63.80
1/8″	4″	1″	36	3064A22	86.42
1/8″	5″	1″	40	3064A27	115.05
1/8″	5″	1 1/4″	40	3064A28	115.05
1/8″	6″	1″	42	3064A34	147.14
1/8″	6″	1 1/4″	42	3064A35	147.14
1/8″	8″	1″	48	3064A38	$286.29
5/32″	3″	1″	32	3064A17	63.80
5/32″	4″	1″	36	3064A23	88.45
5/32″	5″	1″	40	3064A29	119.33
3/16″	3″	1″	32	3064A18	109.71
3/16″	4″	1″	36	3064A24	95.24
3/16″	5″	1″	40	3064A31	124.01
3/16″	6″	1″	42	3064A36	164.99

Staggered Tooth

Thick.	Cutter Dia.	Hole Dia.	No. of Teeth		
3/16″	3″	1″	16	3139A13	$68.21
7/32″	3″	1″	16	3139A14	90.82
1/4″	2 1/2″	7/8″	16	3139A11	70.37
1/4″	3″	1″	16	3139A15	73.21
1/4″	4″	1″	18	3139A36	120.84
1/4″	4″	1 1/4″	18	3139A37	106.55
1/4″	5″	1″	24	3139A59	167.74
1/4″	6″	1 1/4″	24	3139A75	221.34
5/16″	3″	1″	16	3139A17	81.79
5/16″	4″	1″	18	3139A114	$125.68
5/16″	6″	1 1/4″	24	3139A78	229.57
3/8″	2 1/2″	7/8″	16	3139A12	79.79
3/8″	4″	1″	18	3139A115	131.74
3/8″	4″	1 1/4″	18	3139A41	110.42
3/8″	6″	1 1/4″	24	3139A8	195.92
1/2″	2 1/2″	7/8″	16	3139A111	83.82
1/2″	4″	1″	18	3139A117	145.00
1/2″	4″	1 1/4″	18	3139A44	125.16
1/2″	6″	1″	24	3139A84	$261.53
1/2″	6″	1 1/4″	24	3139A129	219.11
5/8″	4″	1 1/4″	18	3139A97	137.06
5/8″	5″	1 1/4″	24	3139A126	190.92
5/8″	6″	1 1/4″	24	3139A85	255.42
3/4″	4″	1 1/4″	18	3139A118	153.74
3/4″	5″	1 1/4″	24	3139A127	209.79
1″	6″	1 1/4″	24	3139A133	354.24

Vibration-Reducing Arbors for Milling and Slitting Cutters

A low-profile cap on these arbors absorbs vibration and adds support and rigidity. Made of heat-treated steel. Use with straight-tooth milling cutters on this page and the slitting cutters on page 2512.

High-precision arbors are for use with carbide cutters and high-rpm CNC machines.

Three-piece arbor sets include a wood stand.

For Cutter Hole Dia.	Shank Dia.	Head Dia.	Head Lg.	O'all Lg.	*Standard*		*High Precision*	
Arbors								
1/4″	1/2″	1/2″	1″	2 25/32″	28545A61	$38.92	28545A51	$132.07
3/8″	1/2″	5/8″	1 3/16″	2 61/64″	28545A62	40.78	28545A52	158.16
1/2″	1/2″	3/4″	1 3/8″	3 11/64″	28545A63	43.39	28545A53	170.40
5/8″	3/4″	1″	1 1/2″	3 21/32″	28545A64	47.33	28545A54	181.07
1″	3/4″	1 1/2″	1 3/4″	3 15/16″	28545A65	50.35	28545A55	212.17
1 1/4″	3/4″	1 3/4″	2″	4 1/4″	28545A66	50.85	28545A56	222.51
Three-Piece Arbor Sets								
One of each 1/2″ shank dia. standard arbor					28545A71	$108.77		
One of each 3/4″ shank dia. standard arbor					28545A81	133.82		

Arbors for Slitting Cutters

2807A22

2807A41

2807A1

2807A33

Arbors hold and center your slitting cutters. All are made of steel, have spring-loaded centering, and include a hex key for installation. Use with high-speed steel slitting cutters on page 2512.

2807A33 has a 7/16″-20 thread.

For Cutter Hole Dia.	*Max. Cutter Size* Dia.	Thick.	Shank Dia.	Head Dia.	O'all Lg.		
1/4″, 3/8″, 1/2″	3″	1/16″	1/4″	5/8″	1 3/4″	2807A22	$39.22
3/8″	4″	3/16″	1/2″	5/8″	3 3/8″	2807A41	27.37
1/2″, 5/8″, 3/4″, 7/8″, 1″	4″	3/16″	1/2″	1 1/4″	2 9/16″	2807A1	37.64
1/2″, 5/8″, 3/4″, 7/8″, 1″	4″	3/16″	R8	1 1/4″	5 3/32″	2807A33	55.10

Slitting Cutters

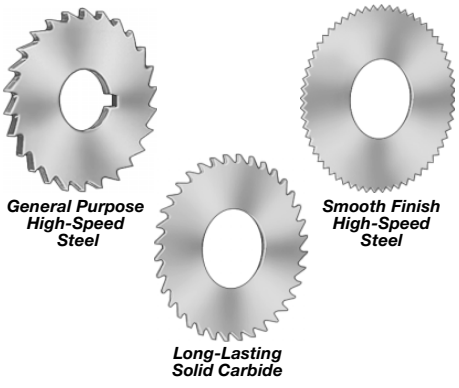

Also known as metal slitting saws, these cutters do not have side teeth, making them the choice for thin slitting and slotting jobs. They are ground concave for free cutting through your workpiece. See page 2511 for arbors.

When choosing a cutter, consider the diameter and the number of teeth. A cutter with a smaller diameter provides better rigidity.

To determine how many teeth your cutter should have, follow these guidelines:

1. Always have at least three teeth in the cut.
2. Use more teeth for thin and hard materials.
3. Use fewer teeth for soft materials and larger sections.

General purpose high-speed steel cutters are best for cutoff, slitting, and slotting applications. Cutters with a 2¾″ dia. are also known as screw slotting saws; other diameters are also known as plain metal slitting saws. All have a standard keyway. Cutter diameter tolerance is ±0.015″; thickness tolerance is ±0.001″.

Smooth-finish high-speed steel cutters are also known as jewelers' slotting saws. Use for very thin materials, such as wire, tubing, and extrusions requiring delicate cuts. Cutters do not have a keyway, except those with a 1″ hole diameter have a standard keyway. Cutter diameter tolerance is ±0.015″; thickness tolerance is ±0.001″.

Long-lasting solid carbide cutters can be used for climb (down) milling rather than conventional (up) milling for better tooth engagement and finish. Cutters do not have a keyway. Cutter diameter tolerance is ±0.015″; thickness tolerance is ±0.00025″.

General Purpose High-Speed Steel

Thick.	Cutter Dia.	Hole Dia.	No. of Teeth		
0.006″	2¾″	1″	72	3062A39	$19.64
0.008″	2¾″	1″	72	3062A38	15.93
0.010″	2¾″	1″	72	3062A37	13.60
0.013″	2¾″	1″	72	3062A16	12.00
0.014″	2¾″	1″	72	3062A35	12.00
0.016″	2¾″	1″	72	3062A34	11.13
0.018″	2¾″	1″	72	3062A33	10.55
0.020″	2¾″	1″	72	3062A32	9.75
0.023″	2¾″	1″	72	3062A31	9.75
0.025″	2¾″	1″	56	3062A42	12.59
0.025″	2¾″	1″	72	3062A29	9.75
0.028″	2¾″	1″	56	3062A43	12.59
0.028″	2¾″	1″	72	3062A28	9.75
1/32″	1¼″	1/2″	28	3061A11	10.24
1/32″	1½″	1/2″	32	3061A13	15.08
1/32″	2″	1/2″	38	3061A22	18.77
1/32″	2½″	7/8″	28	3061A28	23.90
1/32″	3″	1″	30	3061A33	26.22
1/32″	4″	1″	36	3061A43	32.38
0.032″	2¾″	1″	56	3062A44	11.50
0.032″	2¾″	1″	72	3062A27	11.13
0.036″	2¾″	1″	56	3062A45	11.13
0.036″	2¾″	1″	72	3062A26	11.13
0.040″	2¾″	1″	56	3062A46	11.13
0.040″	2¾″	1″	72	3062A25	11.13
0.045″	2¾″	1″	56	3062A47	12.73
0.045″	2¾″	1″	72	3062A24	$12.73
3/64″	3″	1″	30	3061A34	26.68
0.051″	2¾″	1″	56	3062A48	13.45
0.051″	2¾″	1″	72	3062A23	13.45
0.057″	2¾″	1″	56	3062A49	14.18
0.057″	2¾″	1″	72	3062A22	14.18
1/16″	1¼″	1/2″	28	3061A12	9.00
1/16″	1½″	1/2″	26	3061A14	14.08
1/16″	2″	1/2″	34	3061A23	17.39
1/16″	3″	1″	30	3061A35	27.14
1/16″	4″	1″	36	3061A44	34.06
1/16″	5″	1″	40	3061A49	46.64
1/16″	6″	1″	42	3061A56	64.35
0.064″	2¾″	1″	56	3062A51	14.91
0.064″	2¾″	1″	72	3062A21	14.91
0.072″	2¾″	1″	56	3062A52	18.40
0.072″	2¾″	1″	72	3062A19	18.40
5/64″	3″	1″	30	3061A36	45.98
0.081″	2¾″	1″	56	3062A54	18.55
0.081″	2¾″	1″	72	3062A53	18.55
0.091″	2¾″	1″	56	3062A55	19.85
0.091″	2¾″	1″	72	3062A17	19.85
3/32″	1½″	1/2″	26	3061A15	17.44
3/32″	2″	1/2″	34	3061A24	20.27
3/32″	3″	1″	30	3061A37	32.60
3/32″	4″	1″	36	3061A45	42.76
3/32″	6″	1″	42	3061A57	$72.96
0.102″	2¾″	1″	56	3062A57	20.65
0.102″	2¾″	1″	72	3062A56	20.65
0.114″	2¾″	1″	56	3062A59	21.96
0.114″	2¾″	1″	72	3062A58	21.96
1/8″	1½″	1/2″	26	3061A16	16.40
1/8″	2″	1/2″	34	3061A25	20.30
1/8″	2½″	7/8″	28	3061A31	29.44
1/8″	3″	1″	30	3061A38	35.00
1/8″	4″	1″	36	3061A46	46.22
1/8″	5″	1″	40	3061A52	64.24
1/8″	6″	1″	42	3061A58	81.11
1/8″	8″	1″	46	3061A63	185.19
1/8″	8″	1¼″	46	3061A64	185.19
0.128″	2¾″	1″	56	3062A62	22.84
0.128″	2¾″	1″	72	3062A61	22.84
0.144″	2¾″	1″	56	3062A64	28.73
0.144″	2¾″	1″	72	3062A63	28.73
5/32″	2″	1/2″	34	3061A26	22.80
5/32″	3″	1″	30	3061A39	38.02
0.182″	2¾″	1″	72	3062A67	37.82
3/16″	3″	1″	30	3061A41	47.38
3/16″	4″	1″	36	3061A48	62.55
3/16″	5″	1″	40	3061A55	105.60
3/16″	6″	1″	42	3061A61	143.08

Smooth-Finish High-Speed Steel

Thick.	Cutter Dia.	Hole Dia.	No. of Teeth		
0.006″	1″	3/8″	90	3044A11	$8.82
0.006″	1½″	1/2″	140	3044A37	10.96
0.006″	2″	1/2″	190	3044A51	14.34
0.008″	1″	3/8″	90	3044A12	7.13
0.008″	1½″	1/2″	140	3044A38	10.04
0.008″	2″	1/2″	190	3044A52	13.42
0.010″	1″	3/8″	90	3044A13	6.06
0.010″	1½″	1/2″	140	3044A39	9.51
0.010″	2″	1/2″	190	3044A53	11.58
0.012″	1″	3/8″	90	3044A14	6.06
0.012″	1½″	1/2″	140	3044A41	7.97
0.012″	2″	1/2″	190	3044A54	11.12
0.014″	1″	3/8″	80	3044A15	6.06
0.014″	1½″	1/2″	110	3044A42	7.97
0.014″	2″	1/2″	150	3044A55	11.12
0.016″	1″	3/8″	80	3044A16	6.06
0.016″	1½″	1/2″	110	3044A43	7.59
0.016″	2″	1/2″	150	3044A56	10.50
0.018″	1″	3/8″	80	3044A17	5.60
0.018″	1½″	1/2″	110	3044A44	7.44
0.018″	2″	1/2″	150	3044A57	$9.51
0.020″	1″	3/8″	80	3044A18	5.60
0.020″	1½″	1/2″	110	3044A45	7.05
0.020″	2″	1/2″	150	3044A58	8.89
0.020″	3″	1/2″	224	3044A25	13.19
0.020″	3″	1″	224	3044A71	13.19
0.020″	4″	1″	300	3044A75	23.69
0.020″	5″	1/2″	380	3044A28	34.84
0.020″	5″	1″	380	3044A78	34.84
0.023″	1″	3/8″	80	3044A19	5.60
0.023″	1½″	1/2″	110	3044A46	6.59
0.025″	1″	3/8″	80	3044A21	5.60
0.025″	1½″	1/2″	110	3044A47	6.59
0.025″	2″	1/2″	150	3044A61	8.89
0.025″	6″	1/2″	440	3044A32	46.94
0.025″	6″	1″	440	3044A29	46.94
0.028″	1″	3/8″	80	3044A22	6.06
0.028″	1½″	1/2″	110	3044A48	6.59
0.028″	2″	1/2″	150	3044A62	8.89
0.032″	1″	3/8″	80	3044A23	$6.06
0.032″	1½″	1/2″	110	3044A49	7.82
0.032″	2″	1/2″	110	3044A63	9.58
0.032″	3″	1/2″	170	3044A24	13.11
0.032″	3″	1″	170	3044A72	13.11
0.032″	4″	1″	224	3044A76	21.08
0.032″	5″	1″	280	3044A79	30.72
0.035″	2″	1/2″	110	3044A64	9.58
0.035″	3″	1″	170	3044A73	14.11
0.035″	4″	1″	224	3044A26	22.16
0.040″	2″	1/2″	110	3044A65	10.50
0.040″	4″	1/2″	224	3044A27	23.15
0.040″	6″	1″	340	3044A31	44.22
0.045″	2″	1/2″	110	3044A66	10.50
0.051″	2″	1/2″	110	3044A67	11.58
0.057″	2″	1/2″	110	3044A68	11.58
0.057″	3″	1″	170	3044A74	16.79
0.057″	4″	1″	224	3044A77	25.99
0.057″	5″	1″	280	3044A81	36.66

Long-Lasting Solid Carbide

Thick.	Cutter Dia.	Hole Dia.	No. of Teeth		
1/64″	3/4″	1/4″	18	3078A931	$29.27
1/64″	1″	3/8″	20	3078A935	41.65
1/64″	1¼″	1/2″	24	3078A938	52.82
1/64″	1½″	1/2″	32	3078A942	60.03
1/64″	2″	1/2″	36	3078A945	72.88
1/32″	3/4″	1/4″	18	3078A932	29.07
1/32″	1″	3/8″	20	3078A936	43.71
1/32″	1¼″	1/2″	24	3078A939	$49.74
1/32″	1½″	1/2″	32	3078A943	59.03
1/32″	2″	1/2″	36	3078A946	75.09
1/32″	2½″	1″	48	3078A948	116.95
1/32″	3″	1″	60	3078A951	144.69
3/64″	3/4″	1/4″	18	3078A933	29.27
1/16″	3/4″	1/4″	18	3078A934	29.27
1/16″	1″	3/8″	20	3078A937	$45.43
1/16″	1¼″	1/2″	24	3078A941	58.42
1/16″	1½″	1/2″	32	3078A944	60.17
1/16″	2″	1/2″	36	3078A947	70.85
1/16″	2½″	1″	48	3078A949	116.97
1/16″	3″	1″	60	3078A952	155.30
1/16″	4″	1″	96	3078A953	215.04

Gear Cutters

Mill spur or pinion gears with a 14½° pressure angle. Also known as involute gear cutters, cutters may be sharpened repeatedly. All are high-speed steel and have a standard keyway. Determine the cutter number you need based on the number of teeth in your gear.

To Order: Please specify the cutter number (1-8) from the chart at right.

No. of Teeth to Be Cut	Please Specify Cutter No.	No. of Teeth to Be Cut	Please Specify Cutter No.
135 and Up	1	21 to 25	5
55 to 134	2	17 to 20	6
35 to 54	3	14 to 16	7
26 to 34	4	12 to 13	8

Cutter No. 5

Pitch	Cutter Dia.	Hole Dia.	Available Cutter Nos.		
4	3⅝″	1″	1-5, 7-8	3034A928	$166.42
5	3¾″	1¼″	1-8	3034A912	149.36
6	3⅛″	1″	1-8	3034A913	118.97
7	2⅞″	1″	1-8	3034A931	118.97
8	2⅞″	1″	1-8	3034A914	96.82
10	2⅜″	⅞″	1-6, 8	3034A915	78.32
10	2¾″	1″	1-8	3034A933	87.36
12	2¼″	⅞″	1-8	3034A916	68.55
12	2⅝″	1″	1-8	3034A935	77.56
14	2⅛″	⅞″	1-8	3034A917	$65.93
14	2½″	1″	1-8	3034A936	78.32
16	2⅛″	⅞″	2-8	3034A918	65.93
16	2½″	1″	1-8	3034A937	78.32
20	2″	⅞″	1-8	3034A921	59.34
20	2⅜″	1″	1-8	3034A939	70.27
24	1¾″	⅞″	1-8	3034A922	58.59
32	1¾″	⅞″	1-4, 6-8	3034A923	55.79
48	1¾″	⅞″	1-8	3034A924	55.79

About Keyway Broaches

Keyway broaches are straight, multitoothed, high-speed steel cutting tools for making keyways. Each tooth's cutting edge is a few thousandths of an inch larger than the one before. The cutting edges increase until they reach the required size. Broaches are for use in hand and hydraulic arbor presses and are great for maintenance and short-run production operations.

Bushings for keyway broaches rest inside the arbor hole of your workpiece. They have a slot that works as a guide for broaches. With bushings, you can use a single broach in a variety of arbor holes. Bushings for smaller arbor holes are collared for easier handling. The collar rests on top of the workpiece rather than being supported from below.

Shims for keyway broaches slide between the broach and bushing to set the depth of the keyway.

Note: Broaches have a style designation of A, B, B1, C, C1, D, D1, or E. For proper fit, broaches, bushings, and shims used together must have the same letter designation.

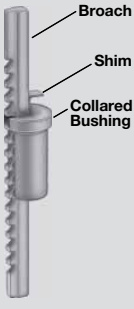

Keyway Broach Sets

Sets contain combinations of broaches and bushings and include the necessary shims. They come in a wood box.

Keyway Sizes	Broach Style	Bushing Sizes for Hole Dia.	Bushing Type	No. of Keyway Variations		
1/16″, 3/32″, 1/8″	A	1/4″, 5/16″, 3/8″, 7/16″, 1/2″	Collared	15	3152A12	$189.59
1/8″ 3/16″, 1/4″	B C	1/2″, 5/8″, 3/4″ 7/8″, 1″, 1 1/8″, 1 1/4″, 1 3/8″, 1 1/2″	Collared	15	3152A16	$282.37
1/8″, 3/16″ 1/4″, 3/8″	B C	1/2″, 5/8″, 3/4″, 7/8″ 1″, 1 1/8″, 1 1/4″, 1 3/8″, 1 1/2″	Collared	18	3152A29	$328.76
1/8″, 3/16″ 1/4″, 3/8″	B C	1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″ 15/16″, 1″, 1 1/16″, 1 1/8″, 1 3/16″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″, 1 9/16″	Collared	36	3152A38	$421.54
1/8″, 3/16″ 1/4″, 5/16″, 3/8″	B C	1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″ 15/16″, 1″, 1 1/16″, 1 1/8″, 1 3/16″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″, 1 9/16″	Collared	47	3152A39	$484.07
5/16″, 3/8″, 7/16″, 1/2″	D	1 1/2″, 1 5/8″, 1 3/4″, 1 7/8″, 2″, 2 1/8″, 2 1/4″, 2 1/2″	Plain	32	3152A41	$596.16
1/8″, 3/16″ 1/4″, 5/16″ 3/8″, 7/16″, 1/2″ 5/8″, 3/4″	B C D E	1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″ 15/16″, 1″, 1 1/16″, 1 1/8″, 1 3/16″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″, 1 9/16″ 1 7/16″, 1 1/2″, 1 9/16″, 1 5/8″, 1 11/16″, 1 3/4″, 1 13/16″, 1 7/8″, 1 15/16″, 2″, 2 1/16″, 2 1/8″, 2 3/16″, 2 1/4″ 2 5/16″, 2 3/8″, 2 7/16″, 2 1/2″, 2 9/16″, 2 5/8″, 2 11/16″, 2 3/4″, 2 13/16″, 2 7/8″, 2 15/16″, 3″	Plain and Collared	102	3152A49	$2,097.63
2, 3 mm	A	6, 8, 10 mm	Collared	6	2801A11	$148.87
4, 5 mm 6, 8 mm	B1 C1	12, 14, 15, 16 mm 18, 19, 20, 22, 24, 25, 26, 28, 30 mm	Collared	26	2801A12	$383.10
10, 12, 14 mm	D1	32, 34, 35, 36, 38, 40, 42, 44, 45, 46, 48, 50 mm	Plain	36	2801A13	$578.37

Shims for Keyway Broaches

When broaching in multiple passes, shims are necessary to ensure full keyway depth. All are made of steel. Use with the keyway broaches on page 2514.

Keyway Size	Broach Style	Shim Thick.	Shim Lg.		
1/8″	A	0.0310″	1 1/4″	8836A11	$2.92
1/8″	B	0.0310″	1 13/16″	8836A12	2.92
5/32″	B	0.0420″	1 13/16″	8836A13	2.92
3/16″	B	0.0500″	1 13/16″	8836A14	2.92
3/16″	C	0.0500″	2 11/16″	8836A15	2.92
1/4″	C	0.0625″	2 11/16″	8836A16	2.92
5/16″	C	0.0550″	2 11/16″	8836A17	2.92
5/16″, 7/16″	D	0.0560″	6 1/4″	8836A19	4.21
3/8″	C	0.0625″	2 11/16″	8836A18	2.92
3/8″	D	0.0625″	6 1/4″	8836A21	4.21
1/2″	D	0.0625″	6 1/4″	8836A23	4.21
5/8″, 3/4″	E	0.0625″	6 3/4″	8836A24	4.27

Keyway Size, mm	Broach Style	Shim Thick.	Shim Lg.		
3	A	0.0310″	1 1/4″	8836A31	$2.92
4	B1	0.0380″	1 13/16″	8836A32	2.92
5	B1	0.0500″	1 13/16″	8836A33	2.92
5	C	0.0470″	2 11/16″	8836A34	2.92
6	C1	0.0625″	2 11/16″	8836A35	2.92
8	C	0.0500″	2 11/16″	8836A36	2.92
10, 12	D	0.0560″	6 1/4″	8836A37	4.21
14	D	0.0625″	6 1/4″	8836A39	4.21
16, 18	E	0.0560″	6 3/4″	8836A41	4.27

For information about keyway broaches, see page 2513.

Keyway Broaches

Cut precision keyways with these push-style broaches. All are made of high-speed steel and include the required shims. A bushing is also required (sold separately on this page). Metric broaches meet ISO standards.

Long-life TiN (titanium nitride) coated broaches offer increased hardness, heat resistance, and lubricity for extended life.

Keyway Size	Broach Style	Body Size Wd.	Body Size Lg.	No. of Shims Included		
Uncoated						
1/16″	A	1/8″	5″	0	3153A12	$44.62
3/32″	A	1/8″	5″	0	3153A14	44.62
3/32″	B	3/16″	6 3/4″	0	3153A18	53.66
1/8″	A	1/8″	5″	1	3153A16	44.62
1/8″	B	3/16″	6 3/4″	1	3153A21	53.65
5/32″	B	3/16″	6 3/4″	1	3153A23	53.66
3/16″	B	3/16″	6 3/4″	1	3153A25	53.66
3/16″	C	3/8″	11 3/4″	1	3153A27	67.19
1/4″	C	3/8″	11 3/4″	1	3153A29	67.19
5/16″	C	3/8″	11 3/4″	2	3153A32	67.19
5/16″	D	9/16″	13 7/8″	2	3153A36	101.56
3/8″	C	3/8″	11 3/4″	2	3153A34	67.19
3/8″	D	9/16″	13 7/8″	2	3153A38	101.56
7/16″	D	9/16″	13 7/8″	3	3153A41	101.56
1/2″	D	9/16″	13 7/8″	3	3153A43	101.56
5/8″	E	3/4″	15 1/2″	4	3153A45	172.34
3/4″	E	3/4″	15 1/2″	5	3153A47	172.34
2 mm	A	1/8″	5″	0	8805A11	44.62
3 mm	A	1/8″	5″	1	8805A12	44.62
4 mm	B1	1/4″	6 3/4″	1	8805A13	53.66
Uncoated (Cont.)						
5 mm	B1	1/4″	6 3/4″	1	8805A14	$53.66
5 mm	C	3/8″	11 3/4″	1	8805A15	67.19
6 mm	C	3/8″	11 3/4″	1	8805A16	67.19
8 mm	C	3/8″	11 3/4″	2	8805A17	67.19
10 mm	D	9/16″	13 7/8″	2	8805A18	101.56
12 mm	D	9/16″	13 7/8″	2	8805A19	101.56
14 mm	D	9/16″	13 7/8″	2	8805A21	101.56
16 mm	E	3/4″	15 1/2″	3	8805A22	172.34
18 mm	E	3/4″	15 1/2″	3	8805A23	172.34
Long-Life TiN Coated						
1/8″	A	1/8″	5″	1	3153A51	79.61
1/8″	B	3/16″	6 3/4″	1	3153A53	90.28
3/16″	B	3/16″	6 3/4″	1	3153A55	90.28
3/16″	C	3/8″	11 3/4″	1	3153A56	125.77
1/4″	C	3/8″	11 3/4″	1	3153A57	125.77
5/16″	C	3/8″	11 3/4″	2	3153A58	125.77
3/8″	C	3/8″	11 3/4″	2	3153A59	125.77
3/8″	D	9/16″	13 7/8″	2	3153A62	169.27
1/2″	D	9/16″	13 7/8″	3	3153A64	169.27
5/8″	E	3/4″	15 1/2″	4	3153A65	264.12
3/4″	E	3/4″	15 1/2″	5	3153A66	264.12

Bushings for Keyway Broaches

Collared

Plain

Use individual keyway broaches in a variety of arbor hole sizes. Bushings act as guides to ensure rigid and accurate keyway cutting. Use with the keyway broaches on this page. Made of steel.

To Order: Please specify bushing diameter from those listed in the table.

For Broach Style	Available Bushing Diameters	Lg.		
Collared				
A	1/4″, 5/16″, 3/8″, 7/16″, 1/2″	1 1/8″	3151A109	$10.57
A	6, 8, 10, 12, 15 mm	1 1/8″	8804A71	11.29
B	1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″	1 11/16″	3151A11	9.43
B1	12, 14, 15, 16, 17, 18, 19 mm	1 11/16″	8804A72	11.18
C	3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″	2 1/2″	3151A12	12.41
C	1 3/16″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″	2 1/2″	3151A14	14.56
C	18, 19, 20, 22, 24, 25, 26 mm	2 1/2″	8804A73	13.24
C	28, 30, 32, 34, 35, 36 mm	2 1/2″	8804A74	15.39
Plain				
D	1 7/16″, 1 1/2″, 1 9/16″, 1 5/8″	4″	3151A184	$15.59
D	1 11/16″, 1 3/4″, 1 13/16″, 1 7/8″	4″	3151A15	20.92
D	1 15/16″, 2″, 2 1/16″, 2 1/8″, 2 3/16″	5″	3151A186	22.57
D	2 1/4″, 2 5/16″, 2 3/8″, 2 7/16″, 2 1/2″	5″	3151A187	31.75
D	32, 34, 35, 36, 38 mm	4″	8804A75	20.21
D	40, 42, 44, 45 mm	4″	8804A76	21.95
D	46, 48, 50 mm	5″	8804A77	24.21
D	52, 54, 56 mm	5″	8804A78	35.69
E	2 5/16″, 2 3/8″, 2 7/16″, 2 1/2″	6″	3151A16	36.33
E	2 5/8″, 2 11/16″, 2 3/4″, 2 7/8″, 2 15/16″, 3″	6″	3151A197	44.84
E	52, 54, 55, 56, 58, 60, 62, 63 mm	5″	8804A79	44.12
E	64, 65, 66, 68, 70, 72 mm	6″	8804A81	49.13

Square and Hexagon Broaches

Square

Hexagon

Transform round holes into finely finished square- and hex-shaped holes. Broaches are push style and made of high-speed steel. Square/hex size tolerance is ±0.0005″ for inch sizes; –0.0102 mm to +0.0127 mm for metric sizes. Tolerances are based on actual size. Drill a pilot hole into your workpiece using the drill size listed. Use with hand and hydraulic arbor presses. No shims or bushings are required.

Square broaches have a square shank.

Hexagon broaches have a round shank, except 5/8″ and larger hex size have a hex shank.

Square Size	Actual Square Size	Lg.	Use Drill Size			
Square						
1/8″	0.1260″	4 1/8″	#30		3156A11	$98.42
5/32″	0.1570″	5 1/8″	#21		3156A12	111.91
3/16″	0.1885″	5 9/16″	#10		3156A13	98.42
1/4″	0.2510″	6 1/2″	17/64″		3156A15	98.42
9/32″	0.2820″	7 3/4″	19/64″		3156A16	123.33
5/16″	0.3135″	7 7/8″	21/64″		3156A17	99.74
3/8″	0.3760″	9 3/8″	25/64″		3156A19	127.69
7/16″	0.4385″	10 7/8″	29/64″		3156A22	161.95
1/2″	0.5010″	12″	17/32″		3156A24	186.87
9/16″	0.5635″	14 3/4″	19/32″		3156A25	238.78
5/8″	0.6265″	16 5/16″	21/32″		3156A26	272.52
3/4″	0.7515″	17 3/4″	13/16″		3156A28	367.35
1″	1.0025″	24 1/8″	13/32″		3156A32	557.02
4 mm	4.0069 mm	5 1/8″	4.1 mm		8757A41	117.62
5 mm	5.0051 mm	6 1/2″	5.2 mm		8757A42	146.69
6 mm	6.0096 mm	6 11/16″	6.4 mm		8757A43	146.69
7 mm	7.0104 mm	7 3/4″	7.4 mm		8757A44	163.30
8 mm	8.0112 mm	7 7/8″	8.4 mm		8757A45	148.46
10 mm	10.0101 mm	10 1/4″	10.4 mm		8757A46	169.22
12 mm	12.0091 mm	12″	12.8 mm		8757A47	249.16

Hex Size	Actual Hex Size	Lg.	Use Drill Size			
Hexagon						
1/8″	0.1260″	4 1/8″	1/8″		2875A11	$111.08
3/16″	0.1885″	5 1/16″	3/16″		2875A13	118.35
1/4″	0.2510″	6″	1/4″		2875A15	118.35
5/16″	0.3135″	7 3/4″	5/16″		2875A17	124.16
3/8″	0.3760″	8 1/2″	3/8″		2875A19	145.34
7/16″	0.4385″	10 1/2″	7/16″		2875A22	183.76
1/2″	0.5010″	11 7/8″	1/2″		2875A24	214.38
5/8″	0.6265″	16 1/4″	5/8″		2875A26	288.87
11/16″	0.6890″	16 3/4″	11/16″		2875A27	318.30
3/4″	0.7515″	17 1/4″	3/4″		2875A28	335.75
1″	1.0025″	19 3/4″	1″		2875A31	553.76
5 mm	5.0051 mm	5 3/8″	5 mm		8760A42	297.50
6 mm	6.0096 mm	6″	6 mm		8760A43	309.40
8 mm	8.0112 mm	7 3/4″	8 mm		8760A45	352.83
10 mm	10.0101 mm	9 5/8″	10 mm		8760A46	436.73
12 mm	12.0091 mm	11 7/8″	12 mm		8760A47	454.58

For tool posts and tool holders, see page 2525. For information about tool bit materials, see page 2520.

Single-Point Carbide-Tipped Tool Bits

Style AR

Style AL

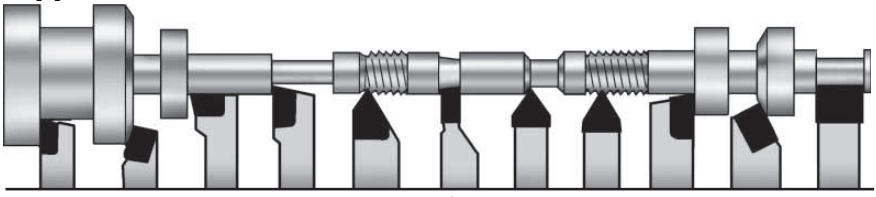

★ Right-hand tool shown.

The combination of a brazed tip and a steel shank provide these tools with the strength and flexibility needed for precise lathe work. All are finished and ground. When used in a lathe, styles AR, BR, FR, GR, and ER are fed from right to left (as shown above). Styles AL, BL, FL, GL, and EL are fed from left to right.

Choose from two popular grades—Grade C-6 and Grade C-2. *Grade C-6* is excellent for machining steel. These bits are comparable to Kennametal K21, Seco 370, and Wesson VR75. *Grade C-2* is best for cast iron and nonferrous metals. These are comparable to Kennametal K68, Seco 883, and Wesson 2A5.

Right- and Left-Handed Bits

Shank Size, sq.	O'all Lg.	Tip Radius	RIGHT-HANDED Style No.	Grade C-6	Each	Grade C-2	Each	LEFT-HANDED Style No.	Grade C-6	Each	Grade C-2	Each
***Styles AR and AL**—8° lead-angle turning tools for turning, boring, and facing a square shoulder as well as chamfering.*												
1/4"	2"	1/64"	AR- 4	3367A331	$3.80	3367A121	$3.77	AL- 4	3367A341	$3.80	3367A131	$3.77
5/16"	2 1/4"	1/64"	AR- 5	3367A332	4.33	3367A122	4.34	AL- 5	3367A342	4.33	3367A132	4.34
3/8"	2 1/2"	1/64"	AR- 6	3367A333	4.40	3367A123	4.38	AL- 6	3367A343	4.40	3367A133	4.38
7/16"	3"	1/32"	AR- 7	3367A334	4.42	3367A124	4.43	AL- 7	3367A344	4.42	3367A134	4.43
1/2"	3 1/2"	1/32"	AR- 8	3367A335	5.71	3367A125	5.69	AL- 8	3367A345	5.71	3367A135	5.69
5/8"	4"	1/32"	AR-10	3367A337	8.04	3367A127	8.06	AL-10	3367A347	8.04	3367A137	8.06
3/4"	4 1/2"	1/32"	AR-12	3367A339	9.89	3367A129	9.86	AL-12	3367A349	9.89	3367A139	9.86
1"	7"	1/32"	AR-16	3367A451	17.67	3367A452	17.68	AL-16	3367A453	17.67	3367A454	17.68
***Styles BR and BL**—15° lead-angle turning tools for interrupted cuts, turning, boring, and facing where a square shoulder is not required.*												
1/4"	2"	1/64"	BR- 4	3367A361	3.80	3367A151	3.78	BL- 4	3367A381	3.80	3367A171	3.78
5/16"	2 1/4"	1/64"	BR- 5	3367A362	4.33	3367A152	4.34	BL- 5	3367A382	4.33	3367A172	4.34
3/8"	2 1/2"	1/64"	BR- 6	3367A363	4.40	3367A153	4.38	BL- 6	3367A383	4.40	3367A173	4.38
7/16"	3"	1/32"	BR- 7	3367A364	4.42	3367A154	4.43	BL- 7	3367A384	4.42	3367A174	4.43
1/2"	3 1/2"	1/32"	BR- 8	3367A365	5.71	3367A155	5.69	BL- 8	3367A385	5.71	3367A175	5.69
5/8"	4"	1/32"	BR-10	3367A367	8.04	3367A157	8.06	BL-10	3367A387	8.04	3367A176	8.06
3/4"	4 1/2"	1/32"	BR-12	3367A369	9.89	3367A159	9.86	BL-12	3367A389	9.89	3367A177	9.86
***Styles FR and FL**—0° end-cutting edge offset turning and facing tools for turning and facing to a shoulder when working close to a lathe chuck.*												
1/2"	3 1/2"	1/32"	FR- 8	3367A471	6.89	3367A472	6.87	FL- 8	3367A479	6.89	3367A481	6.87
5/8"	4"	1/32"	FR-10	3367A473	9.04	3367A474	8.97	FL-10	3367A482	9.04	3367A483	8.97
3/4"	4 1/2"	1/32"	FR-12	3367A475	12.62	3367A476	13.02	FL-12	3367A484	12.62	3367A485	13.02
***Styles GR and GL**—0° lead angle offset turning and facing tools for turning, boring, and facing.*												
1/2"	3 1/2"	1/32"	GR- 8	3367A488	6.89	3367A489	6.87	GL- 8	3367A497	6.89	3367A498	6.87
5/8"	4"	1/32"	GR-10	3367A491	9.04	3367A492	9.06	GL-10	3367A499	9.04	3367A501	9.06
3/4"	4 1/2"	1/32"	GR-12	3367A493	11.67	3367A494	11.95	GL-12	3367A502	11.67	3367A503	11.95
***Styles ER and EL**—30° side-cutting edge angle for threading and boring to shoulder. Standard 60° included angle for universal threading.*												
5/16"	2 1/4"	—	ER- 5	3367A512	4.71	3367A518	4.74	EL- 5	3367A525	4.71	3367A532	4.74
3/8"	2 1/2"	—	ER- 6	3367A513	4.91	3367A519	4.93	EL- 6	3367A526	4.91	3367A533	4.93
1/2"	3 1/2"	—	ER- 8	3367A514	6.69	3367A521	6.70	EL- 8	3367A527	6.69	3367A534	6.70
5/8"	4"	—	ER-10	3367A515	9.29	3367A522	10.41	EL-10	3367A528	9.29	3367A535	10.41
3/4"	4 1/2"	—	ER-12	3367A516	11.89	3367A523	11.90	EL-12	3367A529	11.89	3367A536	11.90

Bit Width	Shank Size Wd.	Shank Size Ht.	O'all Lg.	RIGHT-HANDED Style No.	Grade C-6	Each	Grade C-2	Each	LEFT-HANDED Style No.	Grade C-6	Each	Grade C-2	Each
***Styles CT (also COR) and CTL**—6° top angle. For cutoff and grooving operations.*													
3/16"	1/2"	1"	5"	CT-122▲	3367A464	$10.60	3367A465	$10.60	CTL-122	3367A751	$10.59	3367A754	$10.59
1/4"	1/2"	1"	5"	CT-121●	3367A466	10.91	3367A467	10.91	CTL-121	3367A752	10.91	3367A755	10.95
5/16"	1/2"	1"	5"	CT-120■	3367A468	11.53	3367A469	11.53	CTL-120	3367A753	11.53	3367A756	11.57

▲ Same as COR-44-3. ● Same as COR-44-4. ■ Same as COR-44-5.

Non-Handed Bits

Shank Size, sq.	O'all Lg.	Tip Radius	NON-HANDED Style No.	Grade C-6	Each	Grade C-2	Each
***Style D**—80° included angle pointed-nose tools for outside and inside diameter turning, boring, facing, chamfering, and undercutting.*							
1/4"	2"	1/64"	D- 4	3367A421	$3.56	3367A251	$3.51
5/16"	2 1/4"	1/64"	D- 5	3367A422	4.16	3367A252	4.12
3/8"	2 1/2"	1/64"	D- 6	3367A423	4.58	3367A253	4.60
7/16"	3"	1/32"	D- 7	3367A424	4.98	3367A254	5.01
1/2"	3 1/2"	1/32"	D- 8	3367A425	5.95	3367A255	6.18
5/8"	4"	1/32"	D-10	3367A427	8.22	3367A256	8.34
3/4"	4 1/2"	1/32"	D-12	3367A429	11.02	3367A257	11.02
1"	7"	1/32"	D-16	3367A462	19.22	3367A463	19.21
***Style E**—60° included angle pointed-nose tools for universal threading, 30° chamfering, notching, undercutting, and V-grooving.*							
1/4"	2"	—	E- 4	3367A441	3.56	3367A271	3.51
5/16"	2 1/4"	—	E- 5	3367A442	4.16	3367A272	4.12
3/8"	2 1/2"	—	E- 6	3367A443	4.58	3367A273	4.60
1/2"	3 1/2"	—	E- 8	3367A445	5.95	3367A275	6.18
5/8"	4"	—	E-10	3367A447	8.22	3367A276	8.34
3/4"	4 1/2"	—	E-12	3367A449	11.02	3367A277	11.02

Shank Size, sq.	O'all Lg.	Tip Radius	NON-HANDED Style No.	Grade C-6	Each	Grade C-2	Each
***Style TSA**—For boring a square shoulder in 90° boring bars.*							
5/16"	1 1/2"	1/64"	TSA-5	3367A541	$4.62	3367A544	$4.62
3/8"	1 3/4"	1/64"	TSA-6	3367A542	4.69	3367A545	4.69
1/2"	2 1/2"	1/32"	TSA-8	3367A543	6.67	3367A546	6.67
***Style TSC**—For boring a square shoulder in 30° and 45° boring bars.*							
5/16"	1 1/2"	1/64"	TSC-5	3367A547	4.62	3367A551	4.62
3/8"	1 3/4"	1/64"	TSC-6	3367A548	4.69	3367A552	4.69
1/2"	2 1/2"	1/32"	TSC-8	3367A549	7.26	3367A553	7.26
***Style C**—0° square nose. Use for turning, facing, chamfering, forming, and grooving.*							
1/4"	2"	—	C- 4	3367A393	3.96	3367A231	3.96
5/16"	2 1/4"	—	C- 5	3367A394	4.42	3367A232	4.42
3/8"	2 1/2"	—	C- 6	3367A395	4.67	3367A233	4.67
7/16"	3"	—	C- 7	3367A396	5.58	3367A234	5.58
1/2"	3 1/2"	—	C- 8	3367A397	6.22	3367A235	6.22
5/8"	4"	—	C-10	3367A398	9.13	3367A237	9.13
3/4"	4 1/2"	—	C-12	3367A399	13.16	3367A239	13.16
1"	7"	—	C-16	3367A459	22.04	3367A461	22.04

For tool posts and tool holders, see page 2525. For information about tool bit materials, see page 2520.

Single-Point Diamond-Tipped Tool Bits

Style AR

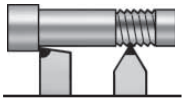

AR★ AL E

★Right-hand tool shown.

If a carbide tip doesn't quite cut it for your job, look no further. The PCD (polycrystalline diamond) tip on these tool bits is ideal for higher speeds on nonferrous and nonmetallic materials such as aluminum, copper, magnesium, fiberglass, rubber, sintered ceramics, plastics, carbon, and carbide. At lower speeds, the tip lasts hundreds of times longer than carbide and resists chipping better than a natural diamond tip.

Styles AR and ***AL*** bits have a 6° lead angle. Use for turning, facing, and boring. ***Style E*** bits have a 60° included angle. Use for threading, chamfering, and undercutting.

Shank Size, sq.	O'all Lg.	Tip Radius	Right-Handed Style No.		Left-Handed Style No.		Each
Styles AR and AL							
1/4"	2"	0.015"	AR-4	3316A32	AL-4	3316A42	$69.14
3/8"	2 1/2"	0.015"	AR-6	3316A34	AL-6	3316A44	69.14
1/2"	3 1/2"	0.030"	AR-8	3316A36	AL-8	3316A46	69.14

Shank Size, sq.	O'all Lg.	Tip Radius	Non-Handed Style No.		Each
Style E					
5/16"	2 1/4"	0.010"	E-5	3316A82	$69.14
3/8"	2 1/2"	0.010"	E-6	3316A83	69.14
1/2"	3 1/2"	0.010"	E-8	3316A85	69.14

Ground-to-Shape High-Speed Steel Tool Bits

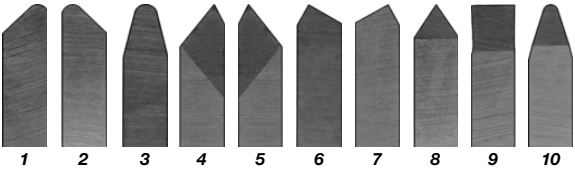

1 2 3 4 5 6 7 8 9 10

Ground to a variety of ready-to-use shapes, these tool bits are made of heat-treated high-speed steel. Sold individually and in convenient 10-piece sets.

Individual Bits

Shank Size, sq.	O'all Lg.	Style 1 R.H. Turning	Style 2 L.H. Turning	Style 3 Rd. Nose Turning	Style 4 R.H. Side	Style 5 L.H. Side	Each
1/4"	2 1/2"	3364A23	3364A21	3364A22	3364A29	3364A27	$13.50
5/16"	2 1/2"	3364A34	3364A32	3364A33	3364A41	3364A38	20.05
3/8"	3"	3364A45	3364A43	3364A44	3364A52	3364A49	28.21

Shank Size, sq.	O'all Lg.	Style 6 R.H. Corner	Style 7 L.H. Corner	Style 8 Threading	Style 9 Square Nose	Style 10 Rd. Nose for Brass	Each
1/4"	2 1/2"	3364A26	3364A24	3364A25	3364A28	3364A31	$13.50
5/16"	2 1/2"	3364A37	3364A35	3364A36	3364A39	3364A42	20.05
3/8"	3"	3364A48	3364A46	3364A47	3364A51	3364A53	28.21

10-Piece Tool Bit Sets

Contain one each of the bit styles above, giving you the necessary tools to perform a complete range of turning and threading operations.

		Per Set
1/4" Sq. × 2 1/2" O'all Lg. Tool Bit Set	3364A12	$122.57
5/16" Sq. × 2 1/2" O'all Lg. Tool Bit Set	3364A13	182.10
3/8" Sq. × 3" O'all Lg. Tool Bit Set	3364A14	255.99

Radius-Cutting Carbide-Tipped Tool Bits

Concave Bit

Convex Bit

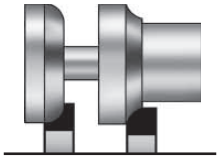

Concave Convex

Form a perfectly round concave or convex radius on your workpiece by using these tool bits. All bits are right-handed. Radius tolerance is ±0.001".

Choose from Grade C-6 and Grade C-2 carbide tips. Use *Grade C-6* for machining steel and *Grade C-2* for general purpose machining of cast iron and nonferrous metals. **To Order:** Please specify Grade C-6 or Grade C-2.

Radius	Shank Size, sq.	O'all Lg.	Concave Bits	Each	Convex Bits	Each
1/32"	1/4"	2"	3359A11	$24.87	3361A11	$24.87
1/16"	1/4"	2"	3359A12	24.87	3361A12	24.87
3/32"	1/4"	2"	3359A13	24.87	3361A13	24.87
1/8"	1/4"	2"	3359A14	24.87	3361A14	24.87
5/32"	3/8"	2 1/2"	3359A15	26.05	3361A15	26.05
3/16"	3/8"	2 1/2"	3359A16	26.05	3361A16	26.05
1/4"	3/8"	2 1/2"	3359A18	26.05	3361A18	26.05
5/16"	1/2"	3 1/2"	3359A21	27.05	3361A21	27.05
3/8"	1/2"	3 1/2"	3359A23	27.05	3361A23	27.05
1/2"	3/4"	4 1/2"	3359A27	31.93	3361A27	31.93

Square Tool Bit Blanks

Create your own custom tool bits by grinding these blanks down to the size and shape you need.

High-speed steel and ***cobalt high-speed steel*** tool bits have 10° beveled ends.

High cobalt cast alloy tool bits have one 7° beveled end and one square end.

Shank Size, sq.	O'all Lg.	M-2 High-Speed Steel	Each	M-42 Cobalt High-Speed Steel	Each	PM T-15 High-Speed Steel	Each
3/16"	2 1/2"	3200A21	$6.12	3363A8	$6.02	—	—
1/4"	2 1/2"	3200A22	6.62	3363A1	6.79	3205A62	$8.40
5/16"	2 1/2"	3200A23	7.35	3363A2	7.86	3205A63	9.80
3/8"	3"	3200A24	9.71	3363A3	11.15	3205A64	13.44
7/16"	3 1/2"	3200A25	12.19	3363A4	15.46	3205A65	20.20
1/2"	4"	3200A26	16.81	3363A5	21.63	3205A66	27.80
5/8"	4 1/2"	3200A27	25.33	3363A6	33.25	3205A67	44.36
3/4"	5"	3200A28	39.96	3363A7	53.02	3205A68	61.73
7/8"	6"	3200A29	63.71	3363A9	94.52	—	—

Shank Size, sq.	O'all Lg.	PM M-48 High-Speed Steel	Each	Gen. Purpose High Cobalt Cast Alloy	Each	High-Impact High Cobalt Cast Alloy	Each
3/16"	2"	—	—	3203A14	$15.40	3203A31	$15.40
1/4"	2 1/2"	3205A71	$10.15	3203A11▲	23.50	3203A32▲	23.50
5/16"	2 1/2"	3205A72	15.10	3203A12	26.00	3203A33	26.00
3/8"	3"	3205A73	18.47	3203A13	40.70	3203A34	40.70
7/16"	3"	—	—	3203A19	51.30	3203A35	51.30
1/2"	4"	3205A75	35.13	3203A15	90.00	3203A36	90.00
5/8"	4 1/2"	3205A76	53.50	—	—	—	—
3/4"	5"	3205A77	79.67	—	—	—	—

▲ Overall length is 2 1/8".

Lathe Chuck Wrenches

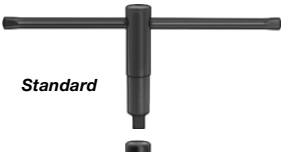

Standard

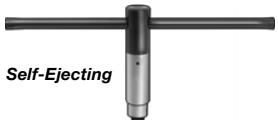

Self-Ejecting

You don't need strength to open tight lathe chucks; you need leverage. The long T-handle of these wrenches gives you just that. Also known as lathe chuck keys.

Self-ejecting wrenches prevent injuries and damage to the machine by automatically ejecting when hand pressure is released.

Standard Wrenches

Square Size	Handle Lg.	O'all Ht.		Each
1/4"	6"	4"	3204A62	$16.30
5/16"	6"	4"	3204A59	15.23
3/8"	8"	4"	3204A65	18.72
7/16"	8"	5"	3204A61	19.57
1/2"	10"	5"	3204A69	29.13
9/16"	10"	6"	3204A75	36.32
5/8"	12"	6"	3204A83	56.64
11/16"	12"	10"	3204A84	62.30

Self-Ejecting Wrenches

Square Size	Handle Lg.	O'all Ht.		Each
1/4"	6"	4"	3189A12	$33.86
5/16"	6"	4"	3189A44	34.51
3/8"	8"	4"	3189A15	38.26
7/16"	8"	5"	3189A45	41.42
1/2"	10"	5"	3189A19	38.73
9/16"	10"	6"	3189A31	47.88
5/8"	12"	6"	3189A38	65.58
11/16"	12"	10"	3189A39	69.99

Carbide Insert Holders

Assemble the exact lathe tool you need by pairing these holders with a carbide insert (sold separately on pages 2518-2519). Use with manual and CNC lathes. For replacement screws, see page 3085.

Multi-lock tool holders are furnished with a clamp, clamp screw, lock pin, and insert seat (unless noted).

Screw-lock tool holders include a screw for holding the insert.

Clamp-lock tool holders are furnished with a clamp, clamp screw, insert seat, and screw (unless noted).

To Order: Please specify right-handed or left-handed tool where applicable.

Note: Illustrations are for right-handed tools, except where tools are noted as non-handed. Left-handed tools look the exact opposite.

Multi-Lock Tool Holders

Holder Shank Wd.	Holder Shank Ht.	O'all Lg.	For Insert Size IC ♦	For Insert Size Thick.		Each
Style MCLN						
Negative 5° end- or side-cutting edge angle. Offset shank. For use with CNG, CNGA, CNGG, CNMA, CNMG, CNMM, CNMP, and CNMX inserts.						
3/4"	3/4"	4 1/2"	1/2"	3/16"	**3288A13**	$57.10
1"	1"	6"	1/2"	3/16"	**3288A14**	60.75
Style MDJN						
Negative 3° side-cutting edge angle. Offset shank. For use with DNGA, DNGG, DNMA, DNMG, DNMM, DNMP, and DNMZ inserts.						
3/4"	3/4"	4 1/2"	1/2"	3/16"	**3288A15**	88.50
1"	1"	6"	1/2"	3/16"	**3288A16**	90.63
Style MRGN						
0° side-cutting edge angle. Offset shank. For use with RNG, RNMA, RNMG, and RNMP inserts.						
3/4"	3/4"	4 1/2"	1/2"	3/16"	**3288A17**	57.10
1"	1"	6"	1/2"	3/16"	**3288A18**	60.75
Style MSDNN—Non-Handed						
45° side-cutting edge angle. Straight shank. For use with SNG, SNGA, SNMA, SNMG, SNMM, SNMP, SNMX, SNMZ, and SNU inserts.						
1/2"	1/2"	4"	3/8"	1/8"	**3288A441**	47.25
3/4"	3/4"	4 1/2"	3/8"	1/8"	**3288A442**	57.10
3/4"	3/4"	4 1/2"	1/2"	3/16"	**3288A443**	57.10
1"	1"	6"	3/4"	1/4"	**3288A444**	66.83
Style MTAN						
0° side-cutting edge angle. Straight shank. For use with TNG, TNGG, TNMA, TNMG, TNMM, TNMX, TNMZ, and TNU inserts.						
5/8"	5/8"	4 1/2"	3/8"	1/8"	**3288A19**	52.69
3/4"	3/4"	4 1/2"	3/8"	1/8"	**3288A23**	57.10
1"	1"	6"	3/8"	3/16"	**3288A24**	60.75
1"	1"	6"	1/2"	3/16"	**3288A25**	60.75
Style MTENN—Non-Handed						
30° side-cutting edge angle. Straight shank. For use with TNGG, TNMA, TNMG, TNMM, TNMP, TNMX, and TNMZ inserts.						
3/4"	3/4"	4 1/2"	3/8"	1/8"	**3288A82**	57.10
3/4"	3/4"	4 1/2"	1/2"	3/16"	**3288A84**	57.10
1"	1"	6"	1/2"	3/16"	**3288A86**	60.75
Style MTGN						
0° side-cutting edge angle. Offset shank. For use with TNG, TNGG, TNMA, TNMG, TNMM, TNMP, TNMX, TNMZ, and TNU inserts.						
3/4"	3/4"	4 1/2"	3/8"	1/8"	**3288A26**	57.10
1"	1"	6"	1/2"	3/16"	**3288A27**	60.75
Style MTJN						
Negative 3° side-cutting edge angle. Offset shank. For use with TNGG, TNMA, TNMG, TNMM, TNMP, TNMX, and TNMZ inserts.						
3/4"	3/4"	4 1/2"	3/8"	1/8"	**3288A28**	57.10
1"	1"	6"	3/8"	1/8"	**3288A29**	60.75
1"	1"	6"	1/2"	3/16"	**3288A31**	60.75
Style MTVO						
Neutral rake. Straight shank. For use with TNMC and TPMC inserts.						
1/2"	1/2"	4"	3/8"	1/8"	**3288A37★**	65.68
3/4"	3/4"	4 1/2"	3/8"	1/8"	**3288A38★**	69.33
1"	1"	6"	3/8"	1/8"	**3288A39★**	75.41
Style MVJN						
Negative 3° side-cutting edge angle. Offset shank. For use with VNGA, VNMA, VNMG, VNMP, and VNMZ inserts.						
3/4"	3/4"	4 1/2"	3/8"	3/16"	**3288A32**	93.37
1"	1"	6"	3/8"	3/16"	**3288A33**	95.18
Style MWLN						
Negative 5° end- or side-cutting edge angle. Offset shank. Use with WNGG, WNMA, and WNMG inserts.						
3/4"	3/4"	4 1/2"	3/8"	3/16"	**3288A34**	57.10
3/4"	3/4"	4 1/2"	1/2"	3/16"	**3288A35**	57.10
1"	1"	6"	1/2"	3/16"	**3288A36**	60.75

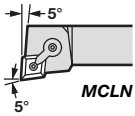

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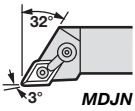

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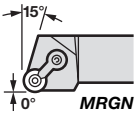

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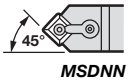

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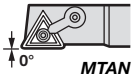

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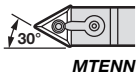

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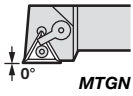

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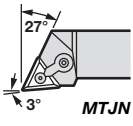

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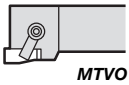
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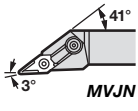

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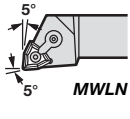

MWLN

Screw-Lock Tool Holders

Holder Shank Wd.	Holder Shank Ht.	O'all Lg.	For Insert Size IC ♦	For Insert Size Thick.		Each
Style SCLC						
Negative 5° end- or side-cutting edge angle. Offset shank. For use with CCMT inserts.						
3/8"	3/8"	3 1/2"	1/4"	3/32"	**3288A42**	$48.56
1/2"	1/2"	4"	3/8"	5/32"	**3288A43**	48.56
5/8"	5/8"	4 1/2"	3/8"	5/32"	**3288A46**	49.71
3/4"	3/4"	4 1/2"	3/8"	5/32"	**3288A47**	59.11
Style SDJC						
Negative 3° side-cutting edge angle. Offset shank. For use with DCMT inserts.						
3/8"	3/8"	3 1/2"	1/4"	3/32"	**3288A48**	59.42
1/2"	1/2"	4"	1/4"	3/32"	**3288A49**	59.42
1/2"	1/2"	4"	3/8"	5/32"	**3288A52**	59.42
5/8"	5/8"	4 1/2"	3/8"	5/32"	**3288A53**	61.66
3/4"	3/4"	4 1/2"	3/8"	5/32"	**3288A54**	77.08
Style SSDCN—Non-Handed						
45° side-cutting edge angle. Straight shank. For use with SCMT inserts.						
1/2"	1/2"	4"	3/8"	5/32"	**3288A834**	48.57
5/8"	5/8"	4 1/2"	3/8"	5/32"	**3288A836**	49.71
3/4"	3/4"	4 1/2"	3/8"	5/32"	**3288A838**	59.11
Style SVJB						
Negative 3° side-cutting edge angle. Offset shank. For use with VBMT inserts.						
3/4"	3/4"	4 1/2"	3/8"	3/16"	**3288A56**	87.04
Style STFP—Right-Handed						
*For right-hand boring. 0° end-cutting edge angle. For use with TPGB and TPGM inserts, except **3288A571** which uses TPGH inserts.*						

Bar Size Dia.	Bar Size Lg.	Min. Bore	For Insert Size IC ♦	For Insert Size Thick.		Each
3/8"	6"	15/32"	1/4"	3/32"	**3288A467**	$85.54
1/2"	6"	19/32"	1/4"	3/32"	**3288A468**	85.54
5/8"	8"	25/32"	1/4"	3/32"	**3288A469**	101.20
3/4"	10"	15/16"	3/8"	1/8"	**3288A571**	126.04

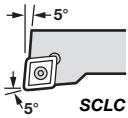

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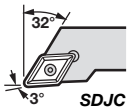

SDJC

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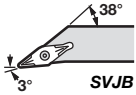

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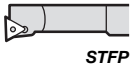
STFP

Clamp-Lock Tool Holders

Holder Shank Wd.	Holder Shank Ht.	O'all Lg.	For Insert Size IC ♦	For Insert Size Thick.		Each
Style CSBP						
15° side-cutting edge angle. Straight shank. For use with SPG, SPGR, and SPU inserts.						
5/8"	5/8"	4 1/2"	3/8"	1/8"	**3288A77■**	$49.74
3/4"	3/4"	4 1/2"	1/2"	1/8"	**3288A78**	57.10
Style CTAE						
0° side-cutting edge angle. Straight shank. For use with TEGE inserts.						
3/8"	3/8"	2 1/2"	7/32"	3/32"	**3288A76■**	45.01
Style CTAP						
0° side-cutting edge angle. Straight shank. For use with TP, TPG, TPGR, and TPU inserts.						
1/2"	1/2"	3 1/2"	1/4"	1/8"	**3288A57■**	45.01
5/8"	5/8"	4 1/2"	1/4"	1/8"	**3288A58■**	49.74
3/4"	3/4"	4 1/2"	3/8"	1/8"	**3288A59**	57.10
1"	1"	6"	1/2"	3/16"	**3288A62**	60.75
Style CTCE						
Positive 10° end-cutting edge angle. Straight shank. For use with TEGE inserts.						
3/8"	3/8"	2 1/2"	7/32"	3/32"	**3288A75■**	45.01
Style CTCON—Non-Handed						
0° end-cutting edge angle. Straight shank. For use with TP, TPG, TPGR, and TPU inserts.						
1/2"	1/2"	3 1/2"	3/8"	1/8"	**3288A509■**	44.23
1/2"	1"	8"	3/8"	1/8"	**3288A51**	101.30
3/4"	3/4"	4 1/2"	1/2"	3/16"	**3288A875**	57.44
3/4"	1"	8"	1/2"	3/16"	**3288A877**	144.96
Style CTFP						
0° end-cutting edge angle. Offset shank. For use with TPG, TPGR, and TPU inserts.						
5/8"	5/8"	4 1/2"	3/8"	1/8"	**3288A63**	49.74
3/4"	3/4"	4 1/2"	3/8"	1/8"	**3288A64**	57.10
1"	1"	6"	1/2"	3/16"	**3288A65**	60.75

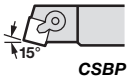

CSBP

CTAE

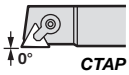

CTAP

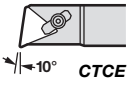

CTCE

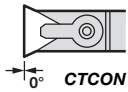

CTCON

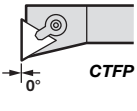

CTFP

♦ IC=Inscribed circle. ★ Lock pin and insert seat not required. ■ Insert seat and screw not required.

Carbide Inserts

From heavy material removal to finishing, these inserts are a great choice for your machining needs. Insert holders sold separately on page 2517.

Coated High-Performance— Have a multilayered coating for maximum wear and heat resistance. Use for roughing to medium machining on steel, stainless steel, cast iron, high-temperature alloys, nonferrous metals, plastics, and hardened materials. Coated using a chemical vapor deposition (CVD) process, except grades TN6010, R321, and C-2, which are coated using a physical vapor deposition (PVD) process. All are comparable to Sandvik GC4035, GC1005, and GC1015, Seco TP3000, and Valenite VP5535 and VP5515. *Grade RC3503* has a TiN and ceramic coating. *Grades RC1502* and *C-2* have a TiN and titanium aluminum nitride coating. *Grades TN7115, TN7125, TN7135, TN5120, RC5015, TN7110,* and *TN5105* have a TiN, ceramic, and aluminum coating. *Grade TN6010* has a titanium aluminum nitride coating. *Grades RC906* and *925* have a ceramic, titanium carbide, and aluminum coating. *Grade RC706* has a TiN coating. *Grade R321* has a TiN, ceramic, and titanium carbide coating. *Grade CW2015* has a ceramic and aluminum coating.

Uncoated High-Performance— Use for light roughing to finishing. All are equivalent to Kennametal K68 and K313, Sandvik H13A, Seco 883, and Valenite VC2. *Grades THM* and *CQ2* are for use on cast iron, high-temperature alloys, and hardened materials. *Grade CQ23* is for use on aluminum, high-temperature alloys, plastics, and other nonmetals. *Grade SPTM00* is for use on steel and stainless steel.

General Purpose— *TiN-coated* inserts are grade C-5 for making interrupted cuts on steel, stainless steel, and high-strength alloys.

Uncoated inserts come in Grade C-5 for use on steel, and Grade C-2 for use on cast iron and nonferrous metals. **To Order:** Please specify Grade C-5 or Grade C-2, unless noted.

Positive-Rake Inserts

Inscribed Circle

CCMT

DCMT

VBMT

RCMT

SCMT

SPG

TCMT

TP

TPGB

TPGH

TPG, TPU, TEGE

Positive-rake inserts have an angled face that keeps cutting edges sharp. Machine soft metals such as aluminum, copper, and brass. Inserts CCMT, DCMT, VBMT, RCMT, SCMT, TCMT, and TPGH have a built-in chipbreaker for roughing to finishing.

ANSI Code	IC ♦	Thick.	Tip Radius	Coated Grade	Coated Each ■	Coated Grade	Coated Each ■	Uncoated Grade	Uncoated Each ■
High Performance									
80° Diamond, 7° Relief Angle									
CCMT-21.50.5	1/4"	3/32"	0.008"	RC3503	3244A411	$11.84	RC1502	3244A311	$11.85	—	—	—
CCMT-21.51	1/4"	3/32"	1/64"	RC3503	3244A412	11.84	RC1502	3244A313	11.85	THM	3244A312	$8.24
CCMT-32.50.5	3/8"	5/32"	0.008"	RC1502	3244A413	13.14	—	—	—	—	—	—
CCMT-32.51	3/8"	5/32"	1/64"	RC3503	3244A414	13.44	RC1502	3244A317	13.43	CQ23	3244A316	9.10
CCMT-32.52	3/8"	5/32"	1/32"	RC3503	3244A415	12.04	RC1502	3244A319	13.43	CQ23	3244A318	9.10
55° Diamond, 7° Relief Angle									
DCMT-21.50.5	1/4"	3/32"	0.008"	TN7115	3244A416	12.83	RC1502	3244A321	12.57	—	—	—
DCMT-21.51	1/4"	3/32"	1/64"	TN7125	3244A417	12.83	RC1502	3244A323	12.57	CQ23	3244A322	9.84
DCMT-32.51	3/8"	5/32"	1/64"	RC3503	3244A418	13.57	RC1502	3244A325	14.50	THM	3244A324	10.57
DCMT-32.52	3/8"	5/32"	1/32"	TN7135	3244A419	15.72	RC1502	3244A327	14.50	CQ23	3244A326	11.84
35° Diamond, 5° Relief Angle									
VBMT-331	3/8"	3/16"	1/64"	RC3503	3244A421	17.99	TN7115	3244A343	16.66	CQ23	3244A342	17.03
VBMT-332	3/8"	3/16"	1/32"	RC3503	3244A422	17.99	TN7115	3244A345	15.69	CQ23	3244A344	14.88
Round, 7° Relief Angle									
RCMT-32.5	3/8"	5/32"	—	—	—	—	—	—	—	CQ23	3244A328	9.10
Square, 7° Relief Angle									
SCMT-32.51	3/8"	5/32"	1/64"	TN7125	3244A424	15.47	RC1502	3244A354	13.30	THM	3244A352	11.04
SCMT-32.52	3/8"	5/32"	1/32"	TN7135	3244A425	15.47	TN6010	3244A358	14.80	CQ23	3244A356	8.68
Square, 11° Relief Angle									
SPG-321	3/8"	1/8"	1/64"	—	—	—	—	—	—	THM	3244A361	8.80
SPG-321	3/8"	1/8"	1/64"	—	—	—	—	—	—	TTM	3244A497	9.73
SPG-322	3/8"	1/8"	1/32"	—	—	—	—	—	—	CQ23	3244A362	9.10
SPG-322	3/8"	1/8"	1/32"	—	—	—	—	—	—	THM	3244A499	9.73
SPG-422	1/2"	1/8"	1/32"	TN5120	3244A431	16.57	RC1502	3244A365	15.13	THM	3244A364	10.10
SPG-423	1/2"	1/8"	3/64"	TN5120	3244A433	16.69	—	—	—	—	—	—
SPG-424	1/2"	1/8"	1/16"	—	—	—	—	—	—	CQ2	3244A492	12.19
SPG-432	1/2"	3/16"	1/32"	RC906	3244A437	19.58	—	—	—	—	—	—
SPG-633	3/4"	3/16"	3/64"	925	3244A439	26.48	—	—	—	—	—	—
Triangle, 7° Relief Angle									
TCMT-21.50.5	1/4"	3/32"	0.008"	RC3503	3244A441	11.41	RC1502	3244A331	10.61	—	—	—
TCMT-21.51	1/4"	3/32"	1/64"	RC3503	3244A442	11.76	RC1502	3244A333	9.75	CQ23	3244A332	6.87
TCMT-21.52	1/4"	3/32"	1/32"	RC3503	3244A443	11.76	TN7125	3244A335	13.03	THM	3244A334	10.17
TCMT-32.51	3/8"	5/32"	1/64"	RC3503	3244A444	12.11	RC1502	3244A337	14.49	THM	3244A336	11.64
TCMT-32.52	3/8"	5/32"	1/32"	RC3503	3244A445	12.11	RC1502	3244A339	12.58	THM	3244A338	11.64
Triangle, 11° Relief Angle									
TPGB-322	3/8"	1/8"	1/32"	RC3503	3244A471	17.89	RC1502	3244A469	17.89	—	—	—
TPG-321	3/8"	1/8"	1/64"	RC3503	3244A454	11.51	RC1502	3244A376	11.51	CQ23	3244A375	10.09
TPG-322	3/8"	1/8"	1/32"	RC3503	3244A455	11.51	RC1502	3244A378	9.47	CQ23	3244A377	10.09
TPG-323	3/8"	1/8"	3/64"	—	—	—	—	—	—	THM	3244A494	10.52
TPG-324	3/8"	1/8"	1/16"	RC3503	3244A458	11.51	RC1502	3244A381	11.51	—	—	—
TPG-431	1/2"	3/16"	1/64"	RC706	3244A461	20.54	—	—	—	CQ23	3244A382	14.08
TPG-432	1/2"	3/16"	1/32"	RC1502	3244A385	20.08	—	—	—	—	—	—
TPG-434	1/2"	3/16"	1/16"	RC5015	3244A464	20.54	—	—	—	—	—	—
TPU-221	1/4"	1/8"	1/64"	TN7135	3244A448	9.65	TN7110	3244A372	10.41	—	—	—
TPU-222	1/4"	1/8"	1/32"	TN7110	3244A473	13.05	—	—	—	—	—	—
TPU-322	3/8"	1/8"	1/32"	RC3503	3244A474	9.20	RC1502	3244A392	9.20	—	—	—
TPU-323	3/8"	1/8"	3/64"	TN7125	3244A476	10.55	TN5120	3244A475	10.67	—	—	—
TPU-432	1/2"	3/16"	1/32"	TN7135	3244A462	16.36	—	—	—	SPTM00	3244A384	11.19
TPU-433	1/2"	3/16"	3/64"	RC3503	3244A478	11.58	TN7125	3244A477	10.63	—	—	—
Triangle, 20° Relief Angle									
TEGE-731	7/32"	3/32"	1/64"	—	—	—	—	—	—	CQ2	3244A595	12.40

♦ IC=Inscribed circle. ■ Prices are approximately 15% lower when you buy in quantities of 10 or more.

ANSI Code	IC ♦	Thick.	Tip Radius	TiN Coated Each ■	Uncoated Each ■
General Purpose					
80° Diamond, 7° Relief Angle					
CCMT-21.51	1/4"	3/32"	1/64"	7376A311	$4.57	3289A911	$3.18
CCMT-32.51	3/8"	5/32"	1/64"	7376A312	6.04	3289A912	4.46
CCMT-32.52	3/8"	5/32"	1/32"	7376A313	6.04	3289A913	4.46
55° Diamond, 7° Relief Angle					
DCMT-21.51	1/4"	3/32"	1/64"	7376A314	6.83	3289A914	5.03
DCMT-32.51	3/8"	5/32"	1/64"	7376A315	7.12	3289A915	5.30
DCMT-32.52	3/8"	5/32"	1/32"	7376A316	7.12	3289A916	5.30
35° Diamond, 5° Relief Angle					
VBMT-331	3/8"	3/16"	1/64"	7376A317	9.47	3289A917	7.90
VBMT-332	3/8"	3/16"	1/32"	7376A318	9.47	3289A918	7.90

ANSI Code	IC ♦	Thick.	Tip Radius	TiN Coated Each ■	Uncoated Each ■
General Purpose (Cont.)					
Round, 7° Relief Angle					
RCMT-32.5	3/8"	5/32"	1/32"	7376A319	$8.45	3289A919	$7.04
Square, 7° Relief Angle					
SCMT-32.51	3/8"	5/32"	1/64"	7376A321	5.87	3289A921	4.32
SCMT-32.52	3/8"	5/32"	1/32"	7376A322	5.87	3289A922	4.32
Square, 11° Relief Angle					
SPG-322	3/8"	1/8"	1/32"	7376A181	5.85	3289A923	4.95
SPG-422	1/2"	1/8"	1/32"	7376A182	6.52	3289A924	5.50
SPG-423	1/2"	1/8"	3/64"	7376A198	6.51	3289A925	5.50
SPG-424	1/2"	1/8"	1/16"	7376A199	6.52	3289A926	5.51

♦ IC=Inscribed circle. ■ Prices are approximately 15% lower when you buy in quantities of 10 or more.

(Continued on following page)

Carbide Inserts *(Continued from previous page)*

ANSI Code	IC♦	Thick.	Tip Radius	TiN Coated	Each■	Uncoated	Each■
General Purpose (Cont.)							
Square, 11° Relief Angle (Cont.)							
SPG-432	½″	3/16″	½″	7376A183	$7.46	3289A927	$6.29
SPG-633	¾″	3/16″	3/64″	7376A185	11.61	3289A928	9.60
Triangle, 7° Relief Angle							
TCMT-21.52	¼″	3/32″	½″	7376A323	5.71	3289A929	4.16
TCMT-32.51	3/8″	5/32″	1/64″	7376A324	6.08	3289A931	4.32
TCMT-32.52	3/8″	5/32″	½″	7376A325	6.08	3289A932	4.32
Triangle, 11° Relief Angle							
TP-41	¼″	3/32″	1/64″	—	—	3289A81♣	13.20
TPGB-21.51-E	¼″	3/32″	1/64″	7376A187	7.53	3289A86▲	5.55
TPGB-21.52-E	¼″	3/32″	½″	7376A189	7.53	3289A88▲	5.55
TPGB-322-F	3/8″	⅛″	½″	—	—	3289A82▲	17.26
TPGH-322-EZ	3/8″	⅛″	½″	—	—	3289A821▲	7.35
TPG-221	¼″	⅛″	1/64″	7376A169	5.16	3289A934	4.27
TPG-222	¼″	⅛″	½″	7376A191	5.16	3289A935	4.27
TPG-223	¼″	⅛″	3/64″	7376A19	5.16	3289A936	4.27

ANSI Code	IC♦	Thick.	Tip Radius	TiN Coated	Each■	Uncoated	Each■
General Purpose (Cont.)							
Triangle, 11° Relief Angle (Cont.)							
TPG-320	3/8″	⅛″	—	7376A192	$6.10	3289A937	$4.87
TPG-321	3/8″	⅛″	1/64″	7376A171	6.10	3289A938	5.04
TPG-322	3/8″	⅛″	½″	7376A172	6.10	3289A939	5.04
TPG-323	3/8″	⅛″	3/64″	7376A193	6.10	3289A941	5.04
TPG-324	3/8″	⅛″	1/16″	7376A194	7.14	3289A942	5.04
TPG-431	½″	3/16″	1/64″	7376A173	8.49	3289A943	7.14
TPG-432	½″	3/16″	½″	7376A174	8.49	3289A944	7.14
TPG-434	½″	3/16″	1/16″	7376A175	8.49	3289A945	7.14
TPU-222	¼″	⅛″	½″	7376A196	3.67	3289A949	2.82
TPU-322	3/8″	⅛″	½″	7376A177	4.56	3289A951	3.38
TPU-323	3/8″	⅛″	3/64″	7376A197	4.57	3289A952	3.57
TPU-433	½″	3/16″	3/64″	—	—	3289A953	6.10
Triangle, 20° Relief Angle							
TEGE-731	7/32″	3/32″	1/64″	—	—	3289A954	12.90

♦ IC=Inscribed circle. ■ Prices are approximately 15% lower when you buy in quantities of 10 or more. ♣ Available in grade C-5 only.
▲ Available in Grade C-2 only.

Chipbreakers

Shape	For Insert IC	Wd.		Each
Triangle	¼″ ♦	0.060″	3287A14	$4.21
Triangle	¼″ ♦	0.093″	3287A16	4.60
Triangle	3/8″ ♦	0.090″	3287A11	$5.38
Triangle	½″ ♦	0.125″	3287A12	6.91

♦ IC=Inscribed circle.

Negative-Rake Inserts

Negative rake inserts provide greater heat resistance and handle heavier loads. Inserts have a built-in chipbreaker except SNG, SNMA, SNU, TNG, TNMA, and TNMC. **To Order:** For *uncoated general purpose* inserts, please specify Grade C-5 or Grade C-2.

ANSI Code	IC♦	Thick.	Tip Radius	COATED HIGH-PERFORMANCE Grade		Each■	Grade		Each■	GENERAL PURPOSE TiN Coated	Each■	Uncoated	Each■
80° Diamond													
CNGG-430.2	½″	3/16″	0.004″	R321	3244A481	$16.46	—	—	—	—	—	—	—
CNGG-431	½″	3/16″	¼″	RC3503	3244A482	16.38	R321	3244A213	$16.46	—	—	—	—
CNGG-432	½″	3/16″	½″	RC3503	3244A483	16.38	RC1502	3244A215	16.38	—	—	—	—
CNMG-431	½″	3/16″	¼″	RC3503	3244A221	12.41	RC1502	3244A484	12.41	7376A326	$5.53	3289A961	$4.57
CNMG-432	½″	3/16″	½″	RC3503	3244A222	12.41	RC1502	3244A485	12.41	7376A327	5.53	3289A962	4.57
CNMG-433	½″	3/16″	3/64″	RC3503	3244A224	12.41	TN6010	3244A487	12.04	7376A328	5.53	3289A963	4.57
CNMG-643	¾″	¼″	3/64″	RC3503	3244A226	27.02	RC1502	3244A489	23.50	7376A329	13.80	3289A964	11.97
55° Diamond													
DNMG-431	½″	3/16″	¼″	RC3503	3244A491	20.33	—	—	—	7376A331	8.35	3289A965	7.35
DNMG-432	½″	3/16″	½″	RC3503	3244A233	18.29	RC1502	3244A493	20.33	7376A332	8.35	3289A966	7.35
DNMG-433	½″	3/16″	3/64″	RC3503	3244A495	20.33	—	—	—	7376A333	8.35	3289A967	7.35
35° Diamond													
VNMG-331	3/8″	3/16″	1/64″	RC3503	3244A274	19.19	TN7110	3244A496	14.42	7376A336	7.90	3289A968	6.90
VNMG-332	3/8″	3/16″	½″	RC3503	3244A276	19.19	RC1502	3244A498	19.19	7376A337	7.90	3289A969	6.90
Round													
RNMG-43	½″	3/16″	—	RC3503	3244A242	9.05	TN7110	3244A512	10.72	7376A334	5.16	3289A955	3.61
RNMG-64	¾″	¼″	—	RC706	3244A513	20.12	—	—	—	7376A335	11.10	3289A956	7.62
Square													
SNG-321	3/8″	⅛″	1/64″	—	—	—	—	—	—	7376A166	4.60	3289A971	3.53
SNG-322	3/8″	⅛″	½″	CW2015	3244A517	9.04	—	—	—	7376A167	4.60	3289A972	3.66
SNG-422	½″	⅛″	½″	—	—	—	—	—	—	7376A168	5.54	3289A973	4.52
SNMA-432	½″	3/16″	½″	TN5105	3244A522	12.23	TN5120	3244A521	12.64	7376A154	4.64	3289A974	3.44
SNMG-322	3/8″	⅛″	½″	TN7125	3244A524	9.31	TN7110	3244A523	9.13	7376A148	3.38	3289A975	2.41
SNMG-432	½″	3/16″	½″	TN7135	3244A251	12.71	TN6010	3244A525	11.67	7376A149	5.05	3289A976	3.93
SNMG-643	¾″	¼″	3/64″	TN7135	3244A256	24.55	TN7110	3244A527	24.08	—	—	—	—
SNMG-644	¾″	¼″	1/16″	TN7135	3244A257	24.55	TN7110	3244A528	18.43	—	—	—	—
SNU-422	½″	⅛″	½″	—	—	—	—	—	—	7376A159	3.90	3289A38	3.04
SNU-432	½″	3/16″	½″	TN5120	3244A533	13.40	—	—	—	7376A161	4.79	3289A977	3.91
Triangle													
TNG-221	¼″	⅛″	1/64″	—	—	—	—	—	—	7376A111	3.71	3289A978	2.86
TNG-322	3/8″	⅛″	½″	C-2	3244A587	16.80	—	—	—	7376A112	4.51	3289A979	3.49
TNG-432	½″	3/16″	½″	CW2015	3244A538	13.97	—	—	—	7376A113	7.35	3289A981	6.09
TNMA-432	½″	3/16″	½″	TN5120	3244A562	13.92	TN5105	3244A563	13.67	7376A122	5.75	3289A993	4.40
TNMA-434	½″	3/16″	1/16″	TN5120	3244A564	13.92	TN5105	3244A565	13.67	7376A123	5.75	3289A994	4.40
TNMA-542	5/8″	¼″	½″	—	—	—	—	—	—	7376A124	10.13	3289A995	7.87
TNMC-32NV	3/8″	⅛″	—	—	—	—	—	—	—	7376A126★	11.14	3289A992★	9.91
TNMG-321	3/8″	⅛″	1/64″	RC3503	3244A258	7.45	RC1502	3244A541	4.97	7376A131	3.45	3289A982	2.51
TNMG-322	3/8″	⅛″	½″	RC3503	3244A259	7.45	—	—	—	7376A114	3.45	3289A983	2.50
TNMG-323	3/8″	⅛″	3/64″	—	—	—	—	—	—	7376A144	3.45	3289A984	2.51
TNMG-324	3/8″	⅛″	1/16″	—	—	—	—	—	—	7376A147	3.45	3289A985	2.51
TNMG-331	3/8″	3/16″	1/64″	RC3503	3244A261	8.30	TN6010	3244A547	9.80	—	—	—	—
TNMG-332	3/8″	3/16″	½″	RC3503	3244A263	9.27	TN7125	3244A549	10.61	7376A115	4.38	3289A986	3.29
TNMG-33249	3/8″	3/16″	½″	TN7135	3244A572	10.78	—	—	—	—	—	—	—
TNMG-431	½″	3/16″	¼″	RC3503	3244A265	13.96	—	—	—	7376A116	5.98	3289A987	4.73
TNMG-432	½″	3/16″	½″	RC3503	3244A266	13.96	RC1502	3244A553	13.96	7376A117	5.98	3289A988	4.72
TNMG-433	½″	3/16″	3/64″	TN7125	3244A268	14.28	TN7110	3244A555	13.75	—	—	—	—
TNMG-434	½″	3/16″	1/16″	RC3503	3244A271	12.12	TN7115	3244A556	14.00	7376A118	5.98	3289A989	4.73
TNMG-543	5/8″	¼″	3/64″	RC3503	3244A558	24.72	TN7110	3244A557	24.47	7376A119	10.94	3289A991	8.69
Trigon													
WNMG-331	3/8″	3/16″	¼″	TN7115	3244A282	10.75	TN7110	3244A568	10.88	7376A338	6.12	3289A996	4.96
WNMG-332	3/8″	3/16″	½″	TN7135	3244A283	11.01	TN7110	3244A571	10.88	7376A339	6.12	3289A997	4.96
WNMG-431	½″	3/16″	¼″	RC3503	3244A285	13.56	TN7110	3244A573	13.75	7376A341	7.45	3289A998	5.73
WNMG-432	½″	3/16″	½″	RC3503	3244A287	13.96	TN6010	3244A575	12.87	7376A342	7.45	3289A478	5.73

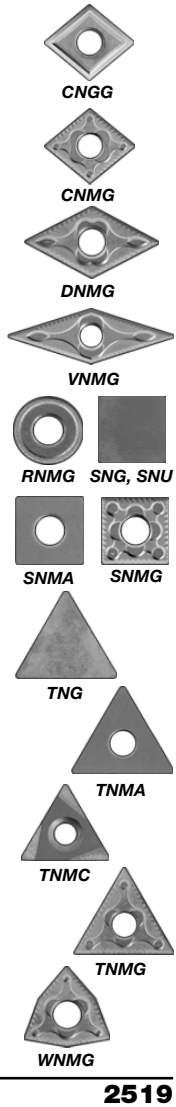

♦ IC=Inscribed circle. ■ Prices are approximately 15% lower when you buy in quantities of 10 or more. ★ Neutral rake.

Three-Point Carbide-Insert Tool Bits

Style AR

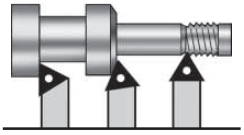

★ Right-hand tool shown.

There's no need to find another tool bit when one point dulls—just rotate the insert and use another point. These bits include a carbide insert with three cutting points that provide them with a longer tool life than solid bits. When all three points are dull, don't replace the tool—just replace the insert. All tool bits include a carbide insert with 1/64″ tip radius, positive rake, and built-in chipbreaker. Furnished with hold-down screws. Tool bits are sold individually and in convenient five-piece sets.

Styles AR and ***AL*** have a 0° lead angle. Use for turning or facing to a 90° square shoulder.

Styles BR and ***BL*** have a 15° lead angle. Use for turning or facing where a square shoulder is not required.

Style E is neutral with a 60° included angle for turning, threading, boring, facing, chamfering, and V-grooving.

Carbide inserts have a positive rake and built-in chipbreaker. *Grade C-5* inserts are for general purpose machining of steel. *Grade C-2* inserts are for use on cast iron and nonferrous metals. *TiN-coated C-5* inserts offer increased productivity and longer life than uncoated inserts. To determine which insert size you need, match the IC shown with your tool insert IC.

Tool Bits—Furnished with a Grade C-5 carbide insert

Shank Size, sq.	O'all Lg.	IC ♦	Right-Handed Style No.		Right-Handed Each	Left-Handed Style No.		Left-Handed Each
Styles AR and AL								
3/8″	2 1/2″	1/4″	AR-6	3240A101	$19.80	AL-6	3240A102	$19.80
1/2″	3 1/2″	3/8″	AR-8	3240A105	21.60	AL-8	3240A106	21.60
5/8″	4″	3/8″	AR-10	3240A109	24.30	AL-10	3240A111	24.30
3/4″	4 1/2″	3/8″	AR-12	3240A114	26.10	AL-12	3240A115	26.10
Styles BR and BL								
3/8″	2 1/2″	1/4″	BR-6	3240A103	19.80	BL-6	3240A104	19.80
1/2″	3 1/2″	3/8″	BR-8	3240A107	21.60	BL-8	3240A108	21.60
5/8″	4″	3/8″	BR-10	3240A112	24.30	BL-10	3240A113	24.30
3/4″	4 1/2″	3/8″	BR-12	3240A116	26.10	BL-12	3240A117	26.10

♦ IC=Inscribed circle.

Shank Size, sq.	O'all Lg.	Insert IC ♦	Non-Handed Style No.		Non-Handed Each
Style E					
3/8″	2 1/2″	1/4″	E-6	3240A118	$19.80
1/2″	3 1/2″	3/8″	E-8	3240A119	21.60
5/8″	4″	3/8″	E-10	3240A121	24.30
3/4″	4 1/2″	3/8″	E-12	3240A122	26.10

♦ IC=Inscribed circle.

Tool Bit Sets

All sets are furnished in a wood stand. Each tool bit includes a Grade C-5 carbide insert with 1/64″ tip radius, positive rake, and built-in chipbreaker.

Tool Bits Included		Per Set
AR-6, AL-6, BR-6, BL-6, E-6	3240A125	$93.40
AR-8, AL-8, BR-8, BL-8, E-8	3240A126	99.74
AR-10, AL-10, BR-10, BL-10, E-10	3240A127	114.62
AR-12, AL-12, BR-12, BL-12, E-12	3240A128	123.11

Carbide Inserts

IC ♦	Tip Radius	Grade C-5	Grade C-5 Each	Grade C-2	Grade C-2 Each	TiN-Coated Grade C-5	TiN-Coated Grade C-5 Each
1/4″	1/64″	3240A131	$5.26	3240A132	$5.26	3240A133	$6.49
1/4″	1/32″	3240A134	5.26	3240A135	5.26	3240A136	6.49
3/8″	1/64″	3240A137	5.74	3240A138	5.74	3240A139	7.08
3/8″	1/32″	3240A141	5.74	3240A142	5.74	3240A143	7.08

Replacement Screw for 1/4″ IC Inserts	3240A211	Each	$1.73
Replacement Screw for 3/8″ IC Inserts	3240A212	Each	$1.92

♦ IC=Inscribed circle.

About Cutoff Blade and Tool Bit Materials

When ordering cutoff blades and tool bits, it's important to understand how materials differ from one another and how this affects their ability to work in certain applications.

Heat resistance, or red hardness, refers to a tool's ability to retain its hardness when heated until it turns a dull red color.

Wear resistance, or abrasion resistance, refers to how well a tool resists the wear of its operating surface, especially at exposed edges.

Shock resistance, or toughness, measures how well a tool sustains suddenly applied loads, impacts, and interrupted cuts.

Note: The following chart should be used only as a general guide when choosing cutoff blades and tool bits.

Material	Heat Resistance	Wear Resistance	Shock Resistance	Best Applications
M-2 HSS	Good	Good	Very Good	General applications on most ferrous and nonferrous alloys
M-3 HSS	Good	Very Good	Good	Abrasive materials (cast alloys, nonferrous metals, plastics)
M-35 Cobalt HSS	Very Good	Good	Good	High-strength steels and soft, gummy materials
M-42 Cobalt HSS	Excellent	Very Good	Good	Cast iron, stainless steel, high-strength alloys (titanium, Inconel)
M-45 Cobalt HSS	Excellent	Very Good	Good	High-tensile strength, heat-resistant alloys and stainless steel
C-2 Carbide-Tipped	Excellent	Excellent	Very Good	Cast iron, nonferrous metals, and high-temperature alloys
C-5 Carbide-Tipped	Excellent	Excellent	Very Good	Machining of steel
C-6 Carbide-Tipped	Excellent	Excellent	Very Good	Machining of steel
T-15 HSS	Very Good	Excellent	Not As Good	Fast speeds on high-tensile strength steels
PM T-15 HSS	Very Good	Excellent	Very Good	Tough materials, such as stainless steel, titanium, and Inconel
PM M-48 HSS	Excellent	Excellent	Very Good	Tough materials, such as stainless steel, titanium, and Inconel
High Cobalt Cast Alloy	Best	Best	Not As Good	High removal rates—use high impact grade for interrupted cuts

Chipbreaking Cutoff Blades

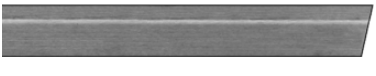

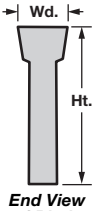

End View of Blade

The ground top surface of these T-shaped blades collapses chips as you work. This reduces friction and allows chips to escape the narrow cut.

Use with any tool holder that accepts T-shaped blades (see 31805A on page 2525).

M-2 high-speed steel blades are for general purpose use on most ferrous and nonferrous metals.

M-35 cobalt high-speed steel blades are ideal for heavy cutting on difficult-to-machine metals.

Double-end carbide-tipped blades have micrograin Grade C-2 carbide tips on both ends, which are designed for general purpose use on cast iron and nonferrous metals.

Wd.	Ht.	Lg.	M-2 High-Speed Steel	M-2 Each	M-35 Cobalt High-Speed Steel	M-35 Each	Double-End Carbide Tipped	Double-End Each
1/16″	1/2″	4 1/2″	3275A42	$15.66	3275A56	$14.99	3282A71	$47.93
5/64″	1/2″	4 1/2″	3275A41	16.57	3275A74	16.48	3282A69	49.01
3/32″	1/2″	4 1/2″	3275A43	17.81	3275A57	16.48	3282A72	49.01
3/32″	11/16″	5″	3275A45	18.07	3275A59	18.99	3282A74	53.80
1/8″	1/2″	4 1/2″	3275A44	18.04	3275A58	17.70	3282A73	51.56
1/8″	11/16″	5″	3275A46	19.56	3275A61	19.74	3282A75	53.80
1/8″	3/4″	5″	3275A49	20.98	—	—	3282A78	55.08
1/8″	7/8″	6″	3275A51	24.30	3275A64	23.18	3282A79	57.52
1/8″	1 1/8″	6 1/2″	3275A69	34.84	—	—	—	—
5/32″	11/16″	5″	3275A47	22.88	3275A62	21.74	3282A76	55.96
5/32″	7/8″	6″	3275A53	24.32	—	—	3282A81	58.01
3/16″	11/16″	5″	3275A48	22.90	3275A63	22.23	3282A77	55.12
3/16″	7/8″	6″	3275A52	24.31	3275A65	26.88	3282A82	61.67
1/4″	7/8″	6″	3275A68	27.44	—	—	—	—

For information about cutoff blade materials, see page 2520. For tool posts and tool holders, see page 2525.

High-Speed Steel Cutoff Blades

Standard Beveled Blade—One End Beveled 10° and One End Square

Standard Beveled Blade—Both Ends Beveled 10°

Hollow Ground Beveled Blade

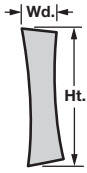

End View of Hollow Ground Beveled Blade

All blades are beveled, ground, and ready for immediate use.

Standard Beveled Blades— Blades with *one end beveled 10° and one end square* fit cutoff tool holders 31805A on page 2525. Blades with *both ends beveled 10°* have an angled top and bottom and fit cutoff tool holders 3307A on page 2524.

Hollow Ground Beveled Blades— Have improved clearance on both sides, one end beveled 10°, and an angled top and bottom to fit a dovetail slot in a tool holder.

Standard Beveled Blades

Wd.	Ht.	Lg.	M-2 Each	M-42 Cobalt Each	T-15 Each
One End Beveled 10° and One End Square					
1/16"	1/2"	4 1/2"	3366A71 $24.14	3366A24 $27.65	3366A37 $32.72
1/16"	11/16"	5"	3366A72 28.46	3366A25 36.33	3366A38 42.89
1/16"	13/16"	6"	3366A73 34.97	3366A26 46.74	3366A39 55.15
3/32"	1/2"	4 1/2"	3366A74 24.05	3366A13 31.60	3366A41 42.52
3/32"	11/16"	5"	3366A14 28.94	3366A27 37.27	3366A42 36.75
3/32"	13/16"	6"	3366A75 35.28	3366A28 57.98	3366A43 59.36
3/32"	1"	6 1/2"	3366A76 41.16	3366A29 58.73	3366A44 56.49
1/8"	11/16"	5"	3366A77 29.77	3366A31 38.39	3366A45 40.39
1/8"	13/16"	6"	3366A18 36.11	3366A32 49.06	3366A46 49.85
1/8"	1"	6 1/2"	3366A79 42.11	3366A33 49.85	3366A47 59.09

Wd.	Ht.	Lg.	M-2 Each	M-42 Cobalt Each	T-15 Each
One End Beveled 10° and One End Square (Cont.)					
3/16"	13/16"	6"	3366A81 $50.46	3366A34 $54.34	3366A48 $68.13
3/16"	1"	6 1/2"	3366A85 62.50	3366A86 67.35	3366A49 85.03
1/4"	1"	6 1/2"	3366A22 63.84	3366A35 88.45	3366A69 87.49
5/16"	1"	6 1/2"	3366A83 65.44	3366A36 78.07	3366A68 95.40
Both Ends Beveled 10°					
3/32"	1/2"	4 1/2"	3366A51 29.70	3366A61 49.74	3366A91 47.06
3/32"	5/8"	5"	3366A52 30.58	3366A62 51.44	3366A92 48.11
1/8"	3/4"	5"	3366A53 36.61	3366A63 53.35	3366A93 54.37
1/8"	7/8"	6"	3366A55 44.04	3366A64 65.73	3366A94 58.20
3/16"	1"	6 1/2"	3366A56 49.49	3366A65 83.18	3366A95 96.57
3/16"	1 1/8"	7"	3366A57 61.44	3366A66 104.61	3366A96 104.31

Hollow Ground Beveled Blades

Wd.	Ht.	Lg.	M-3 Each	M-45 Cobalt Each
1/16"	1/2"	4 1/2"	3181A21 $21.88	3181A41 $24.98
1/16"	11/16"	5"	3181A51 25.14	3181A64 28.39
5/64"	1/2"	4 1/2"	3181A22 21.88	3181A63 25.12
3/32"	1/2"	4 1/2"	3181A23 21.26	3181A42 24.28
3/32"	11/16"	5"	3181A26 26.07	3181A44 27.93

Wd.	Ht.	Lg.	M-3 Each	M-45 Cobalt Each
1/8"	1/2"	4 1/2"	3181A24 $22.42	3181A43 $25.60
1/8"	11/16"	5"	3181A27 27.62	3181A45 31.81
1/8"	13/16"	6"	3181A33 29.02	3181A47 33.21
3/16"	11/16"	5"	3181A29 31.28	3181A46 36.70

Carbide-Insert Cutoff and Grooving Tools

A more versatile option than one-piece cutoff blades, these tools use a carbide insert that enables you to change only the insert instead of the entire blade. Use for light and heavy duty cutoff and grooving applications on solid rods and tubing.

For a complete tool, you'll need a tool block, insert-holder blade, and carbide insert, or just an insert holder with integral shank and carbide insert (each sold separately).

Tool Blocks for Insert-Holder Blades

Designed for stability and strength, these tool blocks correctly align and firmly hold your insert-holder blade. Blocks are neutral; use for right- and left-handed machining on manual and CNC machines.

Shown with Insert-Holder Blade and Carbide Insert (Each Sold Separately)

(A)	(B)	O'all Lg.	For Use with Insert-Holder Blade Nos.	Each
5/8"	5/8"	3 7/16"	3212A81	3212A09 $89.38
3/4"	3/4"	3 7/16"	3212A16, A17, and A18	3212A11 97.32
3/4"	3/4"	4 5/16"	3212A21, A22, A23, and A24	3212A12 97.58
25/32"	1"	4 5/16"	3212A21, A22, A23, and A24	3212A13 101.09
1 1/8"	1 1/4"	4 5/16"	3212A21, A22, A23, and A24	3212A15 108.19

Carbide Inserts

Inserts permit free chip flow and minimize chip buildup by producing easy-to-remove, C-shaped chips. Use inserts with a neutral, 0° lead angle for cutoff and grooving applications on solid rods; use inserts with a right-handed, 8° lead angle for cutoff applications on tubing.

Grade C-5 inserts are for steel and 400-series stainless steel. ***Grade C-2*** inserts are for cast iron, high-temperature alloys, and nonferrous metals. ***TiN (titanium nitride)-coated Grade C-5*** inserts are for high speeds and interrupted cutting on steel and 400-series stainless steel.

Lead Angle (K)	Insert Wd.★ (W)	Grade C-5 Each	Grade C-2 Each	TiN-Coated Grade C-5 Each
0°	0.087"	3212A39 $4.54	3212A38 $4.54	3212A41 $8.05
0°	0.093"	3212A46 5.30	3212A45 5.30	3212A47 9.02
0°	0.120"	3212A53 4.92	3212A52 4.92	3212A54 9.02
0°	0.160"	3212A59 6.18	3212A58 6.18	3212A61 10.50
0°	0.187"	3212A66 6.08	3212A65 6.08	3212A67 10.97
0°	0.200"	3212A73 6.82	3212A72 6.82	3212A74 10.97
0°	0.250"	3212A76 9.23	3212A75 9.23	3212A77 12.67
8°	0.087"	3212A43 6.02	3212A42 6.02	3212A44 9.48
8°	0.093"	3212A49 6.08	3212A48 6.08	3212A51 9.51
8°	0.120"	3212A56 5.78	3212A55 5.78	3212A57 9.48
8°	0.160"	3212A63 6.82	3212A62 6.82	3212A64 10.89
8°	0.187"	3212A69 7.94	3212A68 7.94	3212A71 8.10

★ ±0.004".

Insert-Holder Blades

Double-ended with a tapered opening on each side, these insert-holder blades firmly hold your insert in place. Use for right- and left-handed mounting.

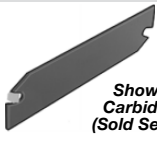

Shown with Carbide Insert (Sold Separately)

Max. Work Dia.	Blade Wd.	Blade Ht.	Blade Lg.	For Use with Insert Width	Each
1 1/2"	0.063"	3/4"	3 3/8"	0.087", 0.093"	3212A81 $50.29
3"	0.063"	1 1/32"	4 5/16"	0.087", 0.093"	3212A16 50.27
3"	0.094"	1 1/32"	4 5/16"	0.120"	3212A17 45.70
3"	0.125"	1 1/32"	4 5/16"	0.160"	3212A18 50.55
4"	0.094"	1 1/4"	5 7/8"	0.120"	3212A21 57.48
4"	0.125"	1 1/4"	5 7/8"	0.160"	3212A22 57.48
5"	0.156"	1 1/4"	5 7/8"	0.187", 0.200"	3212A23 61.09
5"	0.203"	1 1/4"	5 7/8"	0.250"	3212A24 61.06

Insert Holders with Integral Shank

No need for a tool block—the shank of these holders fits directly into a lathe post or an appropriately sized tool holder. With a tapered opening at one end, these tools firmly hold your insert in place. All are right-handed. An insert extractor tool is included.

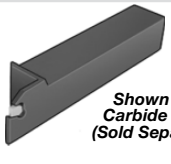

Shown with Carbide Insert (Sold Separately)

Max. Work Dia.	Shank Size, sq.	O'all Lg.	For Use with Insert Width	Each
1 7/64"	3/8"	3 3/8"	0.087", 0.093"	3212A25 $56.64
1 11/64"	1/2"	4 21/64"	0.087", 0.093"	3212A26 60.74
1 17/64"	1/2"	4 21/64"	0.120"	3212A27 60.74
1 17/64"	5/8"	4 21/64"	0.120"	3212A29 63.53
1 17/64"	3/4"	4 21/64"	0.087", 0.093"	3212A32 69.03
1 13/32"	3/4"	4 21/64"	0.120"	3212A33 69.03
2 1/16"	1"	5 7/8"	0.120"	3212A35 86.65
2 1/2"	1"	5 7/8"	0.160"	3212A98 86.65
3"	1"	5 7/8"	0.187", 0.200"	3212A37 86.65

For tool posts and tool holders, see page 2525.

Carbide-Tipped and Cobalt Steel Boring Tools

Carbide-Tipped

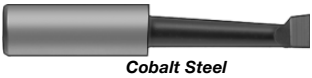

Cobalt Steel

The combination of strength and rigidity makes these tools ideal for all types of precision boring operations. They have an offset taper that provides additional clearance to prevent chips from clogging the hole. All are right-handed and have a round shank that is ground to fit standard holders.

Carbide-tipped boring tools have a heat-treated alloy steel shank with a black-oxide coating for extra durability. Choose *Grade C-6* carbide for use on steel or *Grade C-2* carbide for use on cast iron and nonferrous metals. **To Order:** Please specify Grade C-6 or C-2.

Cobalt steel boring tools are made of M-42 cobalt steel and are for use on cast iron, stainless steel, and high-strength alloys.

Carbide-Tipped Boring Tools

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
3/8" Shank Diameter				
5/16"	3/4"	2"	3296A711	$12.19
5/16"	1 1/8"	2 3/8"	3296A712	12.33
5/16"	1 1/2"	2 3/4"	3296A713	12.77
3/8"	15/16"	2 3/16"	3296A714	13.52
3/8"	1 13/32"	2 21/32"	3296A715	14.01
3/8"	1 7/8"	3 1/8"	3296A716	14.50
7/16"	1 1/8"	2 3/8"	3296A717	14.83
7/16"	1 11/16"	2 15/16"	3296A718	15.23
7/16"	2 1/4"	3 1/2"	3296A719	15.76
1/2" Shank Diameter				
5/16"	3/4"	2 1/4"	3296A731	16.36
5/16"	1 1/8"	2 5/8"	3296A732	16.74
5/16"	1 1/2"	3"	3296A733	17.18

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
1/2" Shank Diameter (Cont.)				
7/16"	1 1/8"	2 5/8"	3296A734	$17.96
7/16"	1 11/16"	3 3/16"	3296A735	18.26
7/16"	2 1/4"	3 3/4"	3296A736	18.60
9/16"	1 1/2"	3"	3296A737	19.34
9/16"	2 1/4"	3 3/4"	3296A738	19.64
9/16"	3"	4 1/2"	3296A739	19.93
3/4" Shank Diameter				
7/16"	1 1/8"	3 1/8"	3296A751	22.81
7/16"	1 11/16"	3 11/16"	3296A752	23.55
7/16"	2 1/4"	4 1/4"	3296A753	24.38
9/16"	1 1/2"	3 1/2"	3296A754	25.41
9/16"	2 1/4"	4 1/4"	3296A755	26.39
9/16"	3"	5"	3296A756	27.12

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
3/4" Shank Diameter (Cont.)				
11/16"	1 7/8"	3 7/8"	3296A757	$28.35
11/16"	2 13/16"	4 13/16"	3296A758	29.42
11/16"	3 3/4"	5 3/4"	3296A759	30.11
13/16"	2 1/4"	4 1/4"	3296A761	32.31
13/16"	3 3/8"	5 3/8"	3296A762	33.39
13/16"	4 1/2"	6 1/2"	3296A763	34.61
1" Shank Diameter				
9/16"	3"	5"	3296A781	42.99
11/16"	3 3/4"	5 3/4"	3296A782	45.24
7/8"	4 1/2"	6 1/2"	3296A783	48.13
1 1/16"	4 1/2"	6 1/2"	3296A784	51.11

Carbide-Tipped Boring Tool Sets

9-Pc. 3/8" Shank Dia. Sets— Include one each of the 3/8" shank dia. tools listed above. Furnished in a wood stand.

Grade C-6 ..... **3296A71** **Per Set** $117.78
Grade C-2 ..... **3296A72** **Per Set** $117.78

9-Pc. 1/2" Shank Dia. Sets— Include one each of the 1/2" shank dia. tools listed above. Furnished in a wood stand.

Grade C-6 ..... **3296A73** **Per Set** $154.36
Grade C-2 ..... **3296A74** **Per Set** $154.36

12-Pc. 3/4" Shank Dia. Sets— Include one each of the 3/4" shank dia. tools listed above. Furnished in a wood stand.

Grade C-6 ..... **3296A75** **Per Set** $317.99
Grade C-2 ..... **3296A76** **Per Set** $317.99

Cobalt Steel Boring Tools

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
3/8" Shank Diameter				
3/16"	9/16"	1 13/16"	3252A711	$16.77
3/16"	15/16"	2 3/16"	3252A712	17.50
1/4"	3/4"	2"	3252A713	17.76
1/4"	1 1/4"	2 1/2"	3252A714	17.97
5/16"	1 9/16"	2 13/16"	3252A716	19.68
3/8"	1 7/8"	3 1/8"	3252A718	21.36

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
1/2" Shank Diameter				
1/4"	3/4"	2 1/8"	3252A731	$21.36
1/4"	1 1/4"	2 5/8"	3252A732	21.67
5/16"	1 9/16"	2 15/16"	3252A734	22.97
3/8"	1 1/8"	2 1/2"	3252A735	23.60
3/8"	1 7/8"	3 1/4"	3252A736	24.17
7/16"	2 3/16"	3 9/16"	3252A738	25.32
1/2"	1 1/2"	2 7/8"	3252A739	26.50
1/2"	2 1/2"	3 7/8"	3252A741	26.77

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
3/4" Shank Diameter				
3/8"	1 1/8"	2 7/8"	3252A751	$30.21
3/8"	1 7/8"	3 5/8"	3252A752	30.89
7/16"	2 3/16"	3 15/16"	3252A754	32.91
1/2"	2 1/2"	4 1/4"	3252A756	35.00
5/8"	3 1/8"	4 7/8"	3252A761	39.07
3/4"	3 3/4"	5 1/2"	3252A765	43.33

Small-Diameter Solid Carbide Boring Tools

The smallest of the boring tools we offer, tools are made of solid micrograin carbide to resist abrasion. All are right-handed and have flats on their shanks for quick setups. Use on most metals and plastics.

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
1/8" Shank Diameter				
0.050"	0.15"	2"	3301A11	$18.74
0.060"	0.30"	2"	3301A15	18.74
0.080"	0.50"	2"	3301A22	18.74
0.100"	0.50"	2"	3301A25	18.74
3/16" Shank Diameter				
0.120"	0.70"	2 1/2"	3301A32	20.08
0.140"	0.40"	2 1/2"	3301A34	20.08
0.160"	0.60"	2 1/2"	3301A37	20.08
1/4" Shank Diameter				
0.180"	0.35"	2 1/2"	3301A39	21.63
0.180"	0.50"	2 1/2"	3301A41	21.63
0.180"	0.75"	2 1/2"	3301A43	21.63
0.180"	1.00"	2 1/2"	3301A44	21.63
0.200"	0.80"	2 1/2"	3301A46	21.63
0.200"	1.00"	2 1/2"	3301A47	21.63
5/16" Shank Diameter				
0.230"	1.00"	2 1/2"	3301A53	29.65
0.230"	1.20"	2 1/2"	3301A54	29.65
3/8" Shank Diameter				
0.320"	1.00"	2 1/2"	3301A59	41.45
0.360"	1.50"	2 1/2"	3301A65	41.45

General Purpose Carbide-Insert Boring Tools

The three cutting points of the carbide insert give these boring tools a longer life than their carbide-tipped counterparts. When one point dulls, simply rotate the insert for a new cutting point. Tools are reusable; just replace the insert when all three cutting points are dull. All have a round shank so you can set positive and negative rake angles. They include a carbide insert with a 1/64" radius and built-in chipbreaker.

Carbide inserts have a built-in chipbreaker. *Grade C-5* inserts are for use on steel. *Grade C-2* inserts are for use on cast iron and nonferrous metals.

Boring Tools—Furnished with a Grade C-5 carbide insert

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
1/2" Shank Diameter				
7/16"	1 1/4"	2 3/4"	3249A201	$26.25
7/16"	2 1/8"	3 5/8"	3249A202	26.73
1/2"	1 1/2"	3"	3249A203	26.73
1/2"	2 1/2"	4"	3249A204	27.27
3/4" Shank Diameter				
7/16"	1 3/8"	3 3/8"	3249A205	32.90
7/16"	2 1/4"	4 1/4"	3249A206	33.45

Min. Hole Dia.	Max. Boring Depth	O'all Lg.		Each
3/4" Shank Diameter (Cont.)				
1/2"	1 5/8"	3 5/8"	3249A207	$33.92
1/2"	2 5/8"	4 5/8"	3249A208	34.47
9/16"	1 7/8"	3 7/8"	3249A209	34.96
9/16"	3"	5"	3249A211	35.49
11/16"	2 1/4"	4 1/4"	3249A212	35.49
11/16"	3 1/2"	5 1/2"	3249A213	35.98

Carbide Inserts

Radius	Grade C-5	Each	Grade C-2	Each
1/64"	3240A131	$5.26	3240A132	$5.26
1/32"	3240A134	5.26	3240A135	5.26

Replacement Hex Screw (2-56 × 1/4") ..... **3249A215** **Each** $1.37

Boring Tool Sets

4-Pc. 1/2" Shank Dia. Set— Includes one each of the 1/2" shank dia. tools listed above. Furnished in a wood stand.

3249A221 ..... **Per Set** $98.75

8-Pc. 3/4" Shank Dia. Set— Includes one each of the 3/4" shank dia. tools listed above. Furnished in a wood stand.

3249A222 ..... **Per Set** $255.34

High-Performance Carbide-Insert Boring Tools

Boring Bar with Carbide Insert (Sold Separately)

The replaceable carbide insert of these tools stands up to the toughest jobs. Boring bars and carbide inserts sold separately.

Boring bars have a through-hole for coolant and a round shank, unless noted. All are right-handed and have a 5° lead angle, unless noted. *Boring bars with carbide shanks* have an alloy steel head. Use for maximum rigidity and deeper boring.

TiN-coated micrograin carbide inserts provide exceptional performance as well as increased cutting ability and extended tool life. They have a built-in chipbreaker and tip radius of 0.007″, unless noted. Use on steel, stainless steel, and nickel-based alloys.

Also Available: Replacement torx screws and torx keys for holding carbide inserts. Please ask for 3315A91 and specify the boring bar part number listed in the table below.

Min. Hole Dia.	Max. Boring Depth	Shank Dia.	O'all Lg.	Boring Bars	Each	TiN-Coated Carbide Inserts	Each
Boring Bars with Steel Shanks							
0.180″	1/2″	3/16″	2 1/2″	3315A11♠	$108.17	3315A51	$14.70
0.208″	1″	3/8″	2 1/2″	3315A17♦	165.55	3315A51	14.70
0.230″	3/4″	3/16″	2 1/2″	3315A12	108.17	3315A51	14.70
0.230″	1″	1/2″	2 3/4″	3315A19♦	169.25	3315A51	14.70
0.275″	3/4″	3/16″	3 1/2″	3315A13	99.73	3315A52	14.16
0.285″	1″	1/4″	3″	3315A14	108.17	3315A51	14.70
0.300″	1″	1/4″	4″	3315A15	99.73	3315A52	14.16
0.300″	1 1/4″	1/2″	3″	3315A21♦	205.08	3315A52	14.16
0.360″	1 1/4″	5/16″	4″	3315A16	99.73	3315A52	14.16
0.438″	1 1/2″	3/8″	5″	3315A18	108.18	3315A53★	14.05
0.563″	2″	1/2″	6″	3315A22	116.66	3315A53★	14.05
0.731″	2 1/2″	5/8″	7″	3315A24	116.66	3315A54★	16.27
0.855″	3″	3/4″	8″	3315A27	126.90	3315A54★	16.27
1.105″	4″	1″	10″	3315A28	181.13	3315A54★	16.27
Boring Bars with Carbide Shanks							
0.563″	5″	1/2″	10″	3315A39	426.29	3315A53★	14.05
0.731″	6 1/4″	5/8″	10″	3315A44	498.67	3315A54★	16.27
0.855″	7 1/2″	3/4″	10″	3315A45	610.85	3315A54★	16.27
1.105″	10″	1″	12″	3315A46	862.97	3315A54★	16.27

♠ 7° lead angle. ♦ Have flats on the shank. ★ Tip radius is 0.015″.

Boring Bars for TCMT Carbide Inserts

Pair these boring bars with TCMT inserts (sold separately on page 2518). Shanks are round, made of steel, and come with one insert screw and one torx key. All have a 3° lead angle.

Use 3/8″, 1/2″, and 5/8″ dia. shanks with TCMT-21.50.5, TCMT-21.51, and TCMT-21.52 inserts. Use 3/4″ and 1″ dia. shanks with TCMT-32.51 and TCMT-32.52 inserts.

Min. Hole Dia.	Max. Bore Depth	Shank Dia.	O'all Lg.	Right-Hand	Each	Left-Hand	Each
0.500″	1 1/2″	3/8″	5″	3707A11	$44.99	3707A16	$44.99
0.590″	2″	1/2″	6″	3707A12	50.34	3707A17	50.34
0.750″	2 1/2″	5/8″	8″	3707A13	51.06	3707A18	51.06
0.845″	3″	3/4″	10″	3707A14	53.92	3707A19	53.92
1.115″	4″	1″	12″	3707A15	58.17	3707A21	58.17

Adjustable-Length Carbide Boring Tools

Boring Tool with Holder (Sold Separately)

The only good vibrations are no vibrations. With these two-piece tools, you can eliminate vibration by adjusting the length of the boring bar. Tools are comprised of a boring tool and holder (each sold separately).

Boring tools are right-handed and made of Grade C-6 solid carbide. Suitable for general purpose use on steel.

Boring tool holders are made of hardened and ground steel and have a round shank. Wrench is included.

Boring Tools

Min. Hole Dia.	Shank Dia.	O'all Lg.	Adjustable Lg.		Each
1/8″	3/32″	2 5/8″	2 1/16″	3224A16	$37.73
3/16″	1/8″	2 11/16″	2 1/4″	3224A17	39.89
1/4″	3/16″	3 1/4″	2 9/16″	3224A18	45.19
3/8″	1/4″	3 3/8″	2 9/16″	3224A19	51.00
1/2″	5/16″	3 3/4″	2 13/16″	3224A21	55.17

Boring Tool Holders

For Shank Dia.	Holder Dia.	O'all Lg.		Each
3/32″	1/2″	2 1/2″	3224A32	$24.70
1/8″	3/8″	2 1/2″	3224A35	24.70
1/8″	1/2″	2 1/2″	3224A36	24.70
3/16″	1/2″	3″	3224A39	27.56
3/16″	5/8″	3″	3224A41	27.56
1/4″	1/2″	3″	3224A43	27.56
5/16″	1/2″	3″	3224A46	32.20
5/16″	3/4″	3″	3224A48	32.20

Double-Angle Boring Tools

Bit Holder with Tool Bits (Sold Separately)

For added versatility, these boring tools have one end angled at 45° and the other at 90°. A set screw holds the tool bits firmly in place. Use with boring bar tool holders (sold separately on page 2525). Bit holders and tool bits are sold separately.

Bit holders are made of steel and have a round shank. Use both right- and left-handed.

Tool bits are made of M-2 high-speed steel. Use on most metals.

Bit Holders Dia.	O'all Lg.		Each	Tool Bits Size		Each
1/4″	5″	32435A11	$12.63	5/32″ Rd.	32435A51	$2.74
5/16″	5″	32435A12	14.35	3/16″ Rd.	32435A52	3.12
3/8″	6″	32435A13	15.49	3/16″ Rd.	32435A52	3.12
1/2″	6″	32435A14	20.37	3/16″ Sq.	3200A21	6.12
9/16″	9″	32435A15	22.96	3/16″ Sq.	3200A21	6.12
5/8″	10″	32435A16	24.09	1/4″ Sq.	3200A22	6.62
3/4″	12″	32435A17	27.53	1/4″ Sq.	3200A22	6.62
1″	12″	32435A18	34.33	5/16″ Sq.	3200A23	7.35
1 1/4″	16″	32435A19	56.78	1/2″ Sq.	3200A26	16.81
1 1/2″	18″	32435A21	76.58	1/2″ Sq.	3200A26	16.81

Precision Boring Heads

When used with one of the interchangeable shanks, these double-bar boring heads allow you to bore on a vertical milling machine instead of a lathe. These heads have a round body design with two vertical holes and a horizontal cross hole for holding boring bars. They also have a large bearing surface for heavy roughing cuts as well as accurate finish cuts. A micrometer adjusting screw with graduated dial face enables direct readings and easy changes; one graduation on the screw adjusts the head to remove 0.001″ from the bore diameter. With the screw's wide adjustment range, there's no need for offset bars and special setups. Boring heads and interchangeable shanks are sold separately.

Boring Heads

Head Dia.	O'all Lg.	Vert. Boring Bar Dia.	Offset	Threaded Back Size	Distance Between Hole Centers	Horiz. Cross Hole Dia.		Each
2″	2 13/32″	3/8″	5/8″	7/8″-20	5/8″	1/2″	3176A59	$287.11
2″	2 13/32″	1/2″	5/8″	7/8″-20	5/8″	1/2″	3176A61	287.11
3″	3 5/32″	3/4″	1″	1 1/2″-18	15/16″	3/4″	3176A15	407.66
4″	3 7/8″	1″	1 5/8″	1 1/2″-18	1 1/4″	1″	3176A14	573.12

Interchangeable Shanks

Shank Style		Each
For 7/8″-20 Threaded Back		
R-8	3176A25	$65.36
1/2″ Dia. Straight	3176A27	33.80
3/4″ Dia. Straight	3176A29	33.80
CAT 40 V-Flange	3176A71	157.82
For 1 1/2″-18 Threaded Back		
R-8	3176A64	84.32
1″ Dia. Straight	3176A65	48.14
CAT 40 V-Flange	3176A72	173.61

Boring Head and Tool Combination Sets

7-Pc. Sets— Include the 3176A15 boring head with an R-8 shank and five 3/4″ shank dia. boring tools in 1/2″, 5/8″, 3/4″, 1″, and 1 1/4″ minimum boring dia. Furnished in a fitted storage case.

		Per Set
Grade C-6 Tools	3182A36	$807.35
Grade C-2 Tools	3182A37	807.35

8-Pc. Sets— Include the 3176A61 boring head with an R-8 shank and six 1/2″ shank dia. boring tools in 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, and 1/2″ minimum boring dia. Furnished in a fitted storage case.

		Per Set
Grade C-6 Tools	3182A33	$638.05
Grade C-2 Tools	3182A32	638.05

Internal Threading Tools

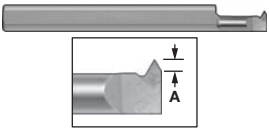

Create standard 60° V-shaped internal threads in tubing, pipe, and other cylinders. Made of solid micrograin carbide, these tools are right-handed and have flats on the shank for quick setups. Use on most metals and plastic.

Min. Hole Dia.	Max. Hole Depth	Offset (A)	Shank Dia.	O'all Lg.		Each
0.12"	0.30"	0.030"	3/16"	2 1/2"	3369A21	$27.96
0.14"	0.30"	0.035"	3/16"	2 1/2"	3369A22	27.96
0.18"	0.50"	0.040"	1/4"	2 1/2"	3369A23	30.03
0.18"	0.75"	0.040"	1/4"	2 1/2"	3369A24	30.03
0.20"	0.60"	0.045"	1/4"	2 1/2"	3369A25	30.03
0.23"	0.75"	0.055"	5/16"	2 1/2"	3369A26	37.68
0.23"	1.00"	0.055"	5/16"	2 1/2"	3369A27	37.68
0.29"	1.00"	0.070"	5/16"	2 1/2"	3369A28	37.68
0.32"	0.75"	0.075"	3/8"	2 1/2"	3369A29	49.09
0.36"	0.75"	0.085"	3/8"	2 1/2"	3369A31	49.09
0.36"	1.00"	0.085"	3/8"	2 1/2"	3369A32	49.09
0.49"	0.75"	0.120"	1/2"	3"	3369A33	68.10

Grooving Tools for O-Rings

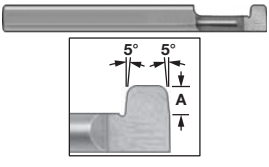

By cutting grooves with a 5° taper, these tools make it easier to insert and remove O-rings. All are right-handed and made of solid micrograin carbide. They have flats on the shank for quick setups. Use on most metals and plastic.

Groove Width	Min. Hole Dia.	Max. Hole Depth	Offset (A)	Shank Dia.	O'all Lg.		Each
0.096"-0.098"	1/4"	1/2"	0.100"	1/4"	2 1/2"	3373A11	$30.85
0.141"-0.143"	1/4"	9/16"	0.100"	1/4"	2 1/2"	3373A12	30.85
0.144"-0.146"	1/4"	5/8"	0.100"	1/4"	2 1/2"	3373A13	30.85
0.174"-0.176"	3/8"	3/4"	0.115"	3/8"	2 1/2"	3373A14	50.70
0.208"-0.210"	3/8"	13/16"	0.115"	3/8"	2 1/2"	3373A15	50.70
0.241"-0.243"	3/8"	15/16"	0.115"	3/8"	2 1/2"	3373A16	50.70

Turning Tool Bit Holders

Straight Shank

Right-Hand Offset

Left-Hand Offset

For use with square shank tool bits, these holders use set screws to keep your turning tools in place. Holders are constructed of heat-treated alloy steel and are furnished with one wrench. Tool bits not included, see pages 2515-2516 and page 2520. **To Order:** Please specify straight shank, right-hand offset, or left-hand offset.

For Lathe Swing	For Bit Size	Tool Holder Size, Wd. × Ht. × Lg.		Each
10" to 12"	1/4"	3/8" × 7/8" × 5"	3298A71	$21.37
13" to 16"	5/16"	1/2" × 1 1/8" × 6"	3298A72	23.80
16" to 18"	3/8"	5/8" × 1 3/8" × 7"	3298A73	26.79

Hand Knurling Tools

Standard Duty

Lightweight and portable, tools easily go with you to the job site. Their three-knurl design provides equal pressure on all sides of the workpiece for an even finish. All are self-centering and adjustable for various workpiece diameters. Tools include a set of straight pattern knurls with 25 teeth per inch.

Standard Duty— Has a cast steel frame. Furnished in a plastic case.

Heavy Duty— Has a larger capacity and a heat-treated steel frame to withstand continuous use.

Also Available: Replacement knurls (set of three) for standard duty tools. Please ask for 3328A12 and specify teeth per inch (16, 25, or 33) and knurl pattern (diamond or straight). For replacement knurls for heavy duty tools, see 3330A, 33425A, 3340A, and 3371A (sold separately on page 2525).

	Knurling Capacity	Knurl Size: Knurl Dia.	Face Wd.	Hole Dia.	O'all Lg.		Each
Standard Duty	1/8"-1"	1/2"	1/4"	3/16"	12 1/2"	3328A1	$139.02
Heavy Duty	1/4"-2"	3/4"	3/8"	1/4"	12"	3328A2	271.45

Grooving Tools for Retaining Rings

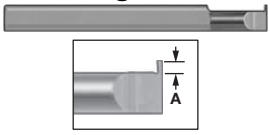

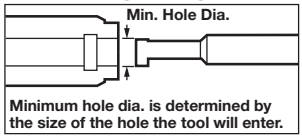

Use to easily cut square-corner grooves for retaining rings. Made of solid micrograin carbide, these tools are right-handed and have flats on the shank for fast setups. Use on most metals and plastic.

Groove Width	Min. Hole Dia.	Max. Hole Dp.	Offset (A)	Shank Dia.	O'all Lg.		Each
Inch							
0.025"-0.026"	1/4"	1/2"	0.050"	1/4"	2 1/2"	32335A18	$27.39
0.030"-0.031"	3/16"	1/4"	0.050"	3/16"	2 1/2"	32335A21	25.55
0.030"-0.031"	1/4"	3/8"	0.050"	1/4"	2 1/2"	32335A22	27.39
0.030"-0.031"	1/4"	5/8"	0.050"	1/4"	2 1/2"	32335A24	27.39
0.031"-0.032"	1/16"	3/16"	0.020"	1/8"	2"	32335A25	22.05
0.038"-0.039"	5/16"	3/4"	0.100"	5/16"	2 1/2"	32335A31	34.20
0.039"-0.041"	3/8"	1/2"	0.100"	3/8"	2 1/2"	32335A34	44.76
0.046"-0.047"	3/32"	1/4"	0.030"	1/8"	2 1/2"	32335A17	22.10
0.046"-0.048"	3/8"	1"	0.100"	3/8"	2 1/2"	32335A41	44.76
0.055"-0.057"	3/8"	1"	0.100"	3/8"	2 1/2"	32335A46	44.76
0.062"-0.063"	1/8"	1/4"	0.040"	1/8"	2"	32335A42	22.05
0.062"-0.063"	1/8"	3/8"	0.040"	1/8"	2"	32335A43	22.05
0.062"-0.064"	5/16"	3/4"	0.100"	5/16"	2 1/2"	32335A47	32.88
0.062"-0.064"	3/8"	1/2"	0.100"	3/8"	2 1/2"	32335A48	44.76
0.062"-0.064"	3/8"	1"	0.100"	3/8"	2 1/2"	32335A51	44.76
0.069"-0.071"	3/8"	1"	0.100"	3/8"	2 1/2"	32335A54	44.76
0.087"-0.089"	3/8"	1"	0.100"	3/8"	2 1/2"	32335A58	44.76
0.093"-0.095"	1/2"	3/4"	0.150"	1/2"	3"	32335A59	60.84
0.103"-0.105"	3/8"	1/2"	0.100"	3/8"	2 1/2"	32335A61	39.85
0.120"-0.122"	3/8"	1/2"	0.100"	3/8"	2 1/2"	32335A62	39.85
Metric							
0.5 mm, ±0.025 mm	1/4"	1/2"	0.050"	1/4"	2 1/2"	32335A73	24.38
0.9 mm, ±0.025 mm	1/4"	1/2"	0.050"	1/4"	2 1/2"	32335A74	24.38
1.1 mm, ±0.025 mm	1/4"	1/2"	0.050"	1/4"	2 1/2"	32335A75	24.38
1.3 mm, ±0.025 mm	1/4"	1/2"	0.050"	1/4"	2 1/2"	32335A76	24.38
1.85 mm, ±0.025 mm	3/8"	1/2"	0.100"	3/8"	2 1/2"	32335A77	39.85
2.15 mm, ±0.025 mm	3/8"	1/2"	0.100"	3/8"	2 1/2"	32335A78	39.85
2.65 mm, ±0.025 mm	3/8"	1/2"	0.100"	3/8"	2 1/2"	32335A79	39.85

Cutoff Blade Tool Holders

Straight Shank

Right-Hand Offset

Use these heat-treated alloy steel holders to firmly lock your cutoff tools in place. All holders are furnished with a wrench and fully support the blade to reduce breakage. Blade length is adjustable. Use with blades that have both ends beveled 10°. Cutting tools not included, see page 2521. **To Order:** Please specify straight shank or right-hand offset.

For Lathe Swing	For Blade Size, Wd. × Ht.	Tool Holder Size, Wd. × Ht. × Lg.		Each
9" to 10"	3/32" × 5/8"	3/8" × 7/8" × 5"	3307A41	$19.23
11" to 14"	1/8" × 3/4"	1/2" × 1 1/8" × 6"	3307A42	23.80
14" to 16"	1/8" × 7/8"	5/8" × 1 3/8" × 7"	3307A43	28.69
16"	3/16" × 1"	3/4" × 1 5/8" × 8"	3307A44	38.97

Lathe Knurling Tools

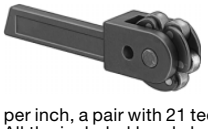

Designed for power knurling on manual lathes, these tools fit directly in your lathe tool post. They are self-centering and have a revolving head with three pairs of knurls to eliminate time-consuming knurl changes.

Tools include a pair of knurls with 14 teeth per inch, a pair with 21 teeth per inch, and a pair with 33 teeth per inch. All the included knurls have a right- and left-hand spiral for producing a male diamond pattern.

For replacement knurls, see 3330A, 33425A, 3340A, and 3371A (sold separately on page 2525).

Shank Size, Wd. × Ht.	Knurling Capacity	Knurl Size: Knurl Dia.	Face Wd.	Hole Dia.	O'all Lg.		Each
5/16" × 3/4"	3/16" and Up	5/8"	5/16"	7/32"	6 1/2"	3332A51	$238.09
3/8" × 7/8"	3/16" and Up	5/8"	5/16"	7/32"	6 1/2"	3332A52	251.22
1/2" × 1 1/8"	1/4" and Up	3/4"	3/8"	1/4"	6 1/2"	3332A53	261.80
5/8" × 1 5/8"	1/4" and Up	3/4"	3/8"	1/4"	7"	3332A54	292.92

High-Speed Steel and Cobalt Steel Knurls

Both sides of these circular-pitch knurls as well as their bore have a ground finish for close tolerances.

High-Speed Steel Knurls—Made of M-1 high-speed steel, these knurls are heat treated to Rockwell C63 for superior strength and wear resistance. They have extremely smooth teeth to provide a clean finish.

Cobalt Steel Knurls—Made of M-42 cobalt steel, these knurls are slightly harder for severe knurling operations on semihardened materials and stainless steel. Their teeth are extremely smooth to provide a clean finish.

TiN-Coated Cobalt Steel Convex Knurls—Made of M-42 cobalt steel, these knurls have a TiN-coating for extra durability. Their convex design is ideal for creating long knurling patterns along your part's axis. Use for severe knurling operations on semihardened steels and Type 303 stainless steel.

Straight knurls have a 90° included tooth angle except for the 50 and 80 teeth per inch knurls, which have a 70° included angle. ***Right-*** and ***left-hand spiral knurls*** have a 30° diagonal spiral.

Note: To produce a male diamond pattern, choose one right-hand and one left-hand spiral knurl.

To Order: Please specify number of teeth per inch (see table below).

Straight

Right-Hand Spiral

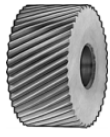
Left-Hand Spiral

Convex Straight

Knurl Dia.	Face Wd.	Hole Dia.	Available Teeth per Inch	Straight	Each	Right-Hand Spiral	Each	Left-Hand Spiral	Each
High-Speed Steel Knurls									
1/2"	3/16"	3/16"	20, 25, 30, 35, and 80	3330A31	$12.19	33425A61	$12.19	3340A81	$12.19
5/8"	1/4"	1/4"	12★, 16, 20, 24★, 25, 30, 35★, 40, and 50	3330A32	13.12	33425A62	13.12	3340A82	13.12
5/8"	5/16"	7/32"	14, 21, and 33	3330A33	16.26	33425A63	16.26	3340A83	16.26
3/4"	1/4"	1/4"	16, 20, 25, 30, 35★, 40, 50, and 80★	3330A34	14.86	33425A64	14.86	3340A84	14.86
3/4"	3/8"	1/4"	12, 14, 16, 20, 21, 25, 30, 33, 40, and 50	3330A35	15.56	33425A65	15.56	3340A85	15.56
1"	3/8"	5/16"	14	3330A177	24.04	33425A47	24.04	3340A67	24.04
Cobalt Steel Knurls									
1/2"	3/16"	3/16"	20, 25, 30, 35, 40, 50, and 80	3371A601	14.86	3371A602	14.86	3371A603	14.86
3/4"	3/8"	1/4"	12, 14, 20, 21, 25, 30, and 80	3371A604	18.86	3371A605	18.86	3371A606	18.86
1"	3/8"	5/16"	14, 21, and 33	3371A607	29.03	3371A608	29.03	3371A609	29.03
TiN-Coated Cobalt Steel Convex Knurls									
3/4"	3/8"	1/4"	12, 14, 16, 20, 21, 25, and 33	32915A501	29.74	32915A502	29.74	32915A503	29.74

★ Only available with straight knurls.

Quick-Change Tool Posts and Holders

Known for their strength and durability, these tool posts and holders allow you to work with speed and precision. Dovetail mounts on the tool posts allow you to quickly change from one tool holder to another without loosening and tightening screws. Posts and holders (sold separately) are interchangeable with systems from Aloris, Dorian, and Armstrong. Use them with most manual and CNC lathes.

Tool Post

Tool Posts

With a handle for instant positioning and two dovetail mounts for quick tool holder changes, these tool posts allow you to work with speed and efficiency. Their locking system eliminates vibration and ensures repeated accuracy within millionths of an inch. The dovetail mounts are set 90° apart, allowing you to mount tool holders on either side. All tool posts are furnished with a machined T-bolt.

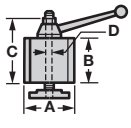

For Lathe Swing	(A)	(B)	(C)	(D)	Center Ht. Min.	Center Ht. Max.	Tool Post Series	Use with Tool Holder Nos.		Each
Up to 12"	2 1/2"	2 1/4"	3 7/8"	1/2"-20	7/8"	1 5/8"	AXA	31805A15, A33, A19, A91	31805A11	$297.87
10" to 15"	3"	2 3/4"	4 5/8"	5/8"-18	1 1/16"	2 1/8"	BXA	31805A26, A34, A21, A92	31805A12	363.15
13" to 18"	3 1/2"	3"	5 1/8"	3/4"-16	1 1/4"	2 1/4"	CXA	31805A17, A35, A22, A93	31805A13	494.61
14" to 20"	4"	3 5/8"	6 1/4"	7/8"-14	1 9/16"	2 3/4"	CA	31805A18, A36, A23, A94	31805A14	622.40

Tool Holders

No shimming—holders have a center height adjustment screw for a secure fit every time. Tool holder capacity listed is the maximum tool size. You can use smaller tools, but this may result in less rigidity and reduced cutting tool performance. Tool bits, boring bars, and other cutting tools not included. For tool bits, see pages 2515-2516 and page 2520. For cutoff blades, see pages 2520-2521. For boring bars, see page 2523.

(1) Turning and facing holders grip shanks close to the post for more rigidity. Use with high-speed steel and carbide square-shank tools.

(2) Turning, facing, and boring bar holders are suitable for holding high-speed steel and carbide square-shank tools. They also have a V-groove that enables them to grip round-shank boring bars.

(3) Heavy duty boring bar holders have four flat-head screws to lock down on the tool and provide maximum rigidity. Use with boring bars.

(4) Cutoff blade holders are for standard beveled blades with one end beveled, T-shaped cutoff blades, and high-speed steel blades.

1

2

3

4

Tool Holder Capacity	Fits Tool Post Series		Each
(1) Turning and Facing Holders			
1/2"	AXA	31805A15	$48.86
5/8"	BXA	31805A26	57.01
3/4"	CXA	31805A17	71.48
1"	CA	31805A18	86.86
(2) Turning, Facing, and Boring Bar Holders			
1/2"	AXA	31805A33	54.20
5/8"	BXA	31805A34	65.41
3/4"	CXA	31805A35	81.30
1"	CA	31805A36▲	98.74

▲ Round shank capacity is 15/16".

Tool Holder Capacity	Fits Tool Post Series		Each
(3) Heavy Duty Boring Bar Holders			
3/4"	AXA	31805A19	$82.74
1"	BXA	31805A21	98.74
1"	CXA	31805A22	113.08
1 1/4"	CA	31805A23	136.06
(4) Cutoff Blade Holders			
3/32" × 1/2"	AXA	31805A91	87.84
1/8" × 11/16"	BXA	31805A92	99.98
1/8" × 3/4"	CXA	31805A93	111.20
3/16" × 7/8"	CA	31805A94	144.84

Lathe Drivers

Also known as lathe dogs, lathe drivers have a set screw that grips your work and a bent tail that fits into the lathe face plate to drive the workpiece.

Cap.		Each	Cap.		Each
1/2"	3283A52	$3.20	1 1/2"	3283A56	$9.16
3/4"	3283A53	4.65	2"	3283A58	11.27
1"	3283A54	6.94	2 1/2"	3283A59	20.43
1 1/4"	3283A55	8.06	3"	3283A61	26.27

5C and R8 Collets

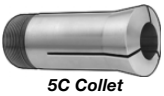
5C Collet

R8 Collet

Round

Hexagon

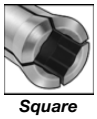
Square

The most popular collets we offer, 5C and R8 collets are ideal when you need to machine a large number of parts that have the same diameter. All have split grooves, or slots, in the sides of the body that allow them to tightly grip the workpiece. The diameter of the workpiece held should be within +0.000″, –0.005″ of the collet size. These collets are made of hardened and ground tool steel. They have an accuracy of 0.00078″ total indicator readout (T.I.R.) measured at the nose of the collet.

5C Collets— Main body diameter is 1¼″. Overall length is 3.270″. They have 1.041″×24 RH internal threads and 1.238″×20 RH external threads.

R8 Collets— Main body diameter is 0.95″. Overall length is 4.089″. They have 0.4375″×20 RH internal threads.

5C Collets

Size		Each
Round		
3/64″	3223A401	$23.45
1/16″	3223A411	23.45
5/64″	3223A412	23.45
3/32″	3223A413	23.45
7/64″	3223A414	23.45
1/8″	3223A415	20.21
9/64″	3223A416	20.21
5/32″	3223A417	20.21
11/64″	3223A418	20.21
3/16″	3223A419	20.21
13/64″	3223A421	20.21
7/32″	3223A422	20.21
15/64″	3223A423	20.21
1/4″	3223A424	20.21
17/64″	3223A425	20.21
9/32″	3223A426	20.21
19/64″	3223A427	20.21
5/16″	3223A428	20.21
21/64″	3223A429	20.21
11/32″	3223A431	20.21
23/64″	3223A432	20.21
3/8″	3223A433	20.21
25/64″	3223A434	20.21
13/32″	3223A435	20.21
27/64″	3223A436	20.21
7/16″	3223A437	20.21
29/64″	3223A438	20.21
15/32″	3223A439	20.21
31/64″	3223A441	20.21
1/2″	3223A442	20.21
Round (Cont.)		
33/64″	3223A443	$20.21
17/32″	3223A444	20.21
35/64″	3223A445	20.21
9/16″	3223A446	20.21
37/64″	3223A447	20.21
19/32″	3223A448	20.21
39/64″	3223A449	20.21
5/8″	3223A451	20.21
41/64″	3223A452	20.21
21/32″	3223A453	20.21
43/64″	3223A454	20.21
11/16″	3223A455	20.21
45/64″	3223A456	20.21
23/32″	3223A457	20.21
47/64″	3223A458	20.21
3/4″	3223A459	20.21
49/64″	3223A461	20.21
25/32″	3223A462	20.21
51/64″	3223A463	20.21
13/16″	3223A464	20.21
53/64″	3223A465	20.21
27/32″	3223A466	20.21
55/64″	3223A467	20.21
7/8″	3223A468	20.21
57/64″	3223A469	20.21
29/32″	3223A471	20.21
59/64″	3223A472	20.21
15/16″	3223A473	20.21
61/64″	3223A402	20.21
31/32″	3223A475	20.21
Round (Cont.)		
63/64″	3223A476	$20.21
1″	3223A477	20.21
1 1/64″	3223A478	23.45
1 1/32″	3223A479	23.45
1 3/64″	3223A481	23.45
1 1/16″	3223A482	23.45
1 5/64″	3223A403	23.45
1 3/32″	3223A404	23.45
1 7/64″	3223A405	23.45
1 1/8″	3223A406	23.45
Round Metric		
3 mm	3223A656	23.92
4 mm	3223A657	23.92
5 mm	3223A659	23.92
6 mm	3223A658	23.92
7 mm	3223A66	27.49
8 mm	3223A661	27.49
9 mm	3223A662	27.49
10 mm	3223A663	27.49
11 mm	3223A664	27.49
12 mm	3223A665	27.49
13 mm	3223A666	27.49
14 mm	3223A667	27.49
15 mm	3223A668	27.49
16 mm	3223A669	27.49
17 mm	3223A671	27.49
18 mm	3223A672	27.49
19 mm	3223A673	27.49
20 mm	3223A674	27.49
21 mm	3223A675	27.49
Round Metric (Cont.)		
22 mm	3223A676	$27.49
23 mm	3223A677	27.49
24 mm	3223A678	27.49
25 mm	3223A679	27.49
26 mm	3223A685	27.49
Hexagon		
1/8″	3223A521	29.55
3/16″	3223A522	29.55
1/4″	3223A523	29.55
5/16″	3223A524	29.55
3/8″	3223A525	29.55
7/16″	3223A526	29.55
1/2″	3223A567	29.55
9/16″	3223A572	29.55
5/8″	3223A576	29.55
11/16″	3223A573	29.55
3/4″	3223A577	29.55
7/8″	3223A594	29.55
Square		
1/8″	3223A621	29.55
3/16″	3223A622	29.55
1/4″	3223A623	29.55
5/16″	3223A624	29.55
3/8″	3223A628	29.55
7/16″	3223A629	29.55
1/2″	3223A637	29.55
5/8″	3223A646	29.55
3/4″	3223A655	29.55

R8 Collets

Size		Each
Round		
1/16″	3257A61	$22.96
3/32″	3257A62	22.96
1/8″	3257A11	19.79
5/32″	3257A12	19.79
3/16″	3257A13	19.79
7/32″	3257A14	19.79
1/4″	3257A15	19.79
9/32″	3257A16	19.79
5/16″	3257A17	19.79
11/32″	3257A18	19.79
3/8″	3257A19	19.79
13/32″	3257A21	19.79
7/16″	3257A22	19.79
15/32″	3257A23	19.79
1/2″	3257A24	19.79
17/32″	3257A25	19.79
9/16″	3257A26	19.79
19/32″	3257A63	19.79
5/8″	3257A28	19.79
21/32″	3257A29	19.79
11/16″	3257A31	19.79
23/32″	3257A32	19.79
3/4″	3257A33	19.79
25/32″	3257A34	19.79
13/16″	3257A35	19.79
27/32″	3257A36	19.79
7/8″	3257A37	19.79
1″	3257A64	38.00

5C Round Collet Sets

Size Range	Pieces per Set		Per Set
1/8″ -1″ × 8ths	8	3223A681	$160.85
1/8″ -1″ ×16ths	15	3223A682	298.74
1/8″ -1″ ×32nds	29	3223A683	586.17
1/16″-1 1/8″×64ths	69	3223A684	1,315.80

R8 Round Collet Sets

Size Range	Pieces per Set		Per Set
1/8″-1″ × 8ths	8	3257A65	$182.08
1/8″- 7/8″×16ths	13	3257A66	245.42
1/8″- 7/8″×32nds	25	3257A67	482.92

Machinable-Face 5C Collets

Large-Diameter Collet

These collets have a soft face you can machine to handle unusual or odd-shaped workpieces.

Large-Diameter Collets— Also known as step collets, these are made of steel and have a hardened body. Collets have 1.238″×20 RH external threads.

Replaceable Head Collets— Also known as clutch collets, these allow you to switch head sizes instead of replacing the entire collet. To machine, simply insert the expander pin into the collet head and bore, mill, or step out to size. Remove the expander pin when finished. *Note:* Overall length refers to the length of the collet when assembled with the 5C adapter body. **To Order:** Please specify collet head material: aluminum or steel.

5C Adapter Body for Replaceable Head Collets— Has 1.238″×20 RH external threads.

Replaceable Head Collet and 5C Adapter Body (Sold Separately)

Large-Diameter Collets

Head Dia.	Head Thick.	O'all Lg.		Each
2″	1 13/64″	4 33/64″	3208A28	$47.33
3″	1 13/64″	4 33/64″	3208A31	54.68
4″	1 13/64″	4 33/64″	3208A33	80.00
5″	1 13/64″	4 33/64″	3208A34	115.33
6″	1 13/64″	4 33/64″	3208A35	132.67

Replaceable Head Collets

Head Dia.	Head Thick.	O'all Lg.		Each	Head Dia.	Head Thick.	O'all Lg.		Each
1 1/2″	7/8″	4 1/8″	3311A11	$28.41	2 1/2″	1 1/2″	4 7/8″	3311A15	$39.07
2″	3/4″	4 1/8″	3311A12	34.93	3″	1″	4 3/8″	3311A16	42.31
2″	1 1/4″	4 5/8″	3311A13	38.48	3″	1 5/8″	5 1/8″	3311A17	46.18
2 1/2″	1″	4 3/8″	3311A14	39.65	4″	1″	4 3/8″	3311A18	52.09

5C Adapter Body for Replaceable Head Collets.... 3311A21 Each $22.12

Lathe Chuck to 5C Collet Adapter

Shown with Collet (Not Included)

Instead of removing your lathe chuck when a job calls for a 5C collet, save time by just using this adapter. Made of hardened steel, it fits most conventional lathe chucks. The lock at the front of the adapter makes it easy to change collets. It is an excellent choice for short-production runs on a lathe or CNC machine. Adapter includes a hex key.

Dia.	Lg.		Each
3″	3 1/2″	3302A21	$398.74

5C Collet to Lathe Chuck Adapters

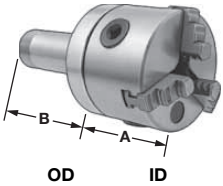

When your workpiece is too large for a 5C collet, these adapters can step right in and handle the job. They work on any machine with a 5C spindle. All are self-centering and have three jaws to securely grasp the workpiece. They have 7/8″×20 RH internal threads and 1.238″×20 RH external threads. Furnished with two sets of hardened steel jaws (internal and external) and a chuck key.

Dia.	OD Holding Range	ID Holding Range	Length (A)	Length (B)	Hole Thru Center		Each
3″	5/64″-2 15/32″	63/64″-2 3/4″	2 5/8″	3 13/32″	5/8″	33135A21	$264.71
4″	5/64″-3 5/32″	1 3/16″ -3 35/64″	2 13/16″	3 13/32″	7/8″	33135A22	286.18

5C Emergency Collets

In just minutes you can bore or step out these emergency collets to any size up to 1⅛″ in diameter. Their soft face allows you to easily machine them to your desired size and shape.

These collets have a 1/16″ dia. pilot hole on the face, 1.041″×24 RH internal threads, and 1.238″×20 RH external threads. Collets are furnished with pins to lock the collet segments in place while machining; the pins should be removed once the collet is ready to be used.

Steel collet has a heat-treated body and threads.

Brass collet is recommended for holding soft and delicate work.

	Body Dia.	O'all Lg.		Each
Steel Collet	1¼″	3.270″	3209A12	$22.66
Brass Collet	1¼″	3.270″	3209A14	29.33

Expanding-Grip 5C Collets

Threaded like standard 5C collets, these collets expand to hold the inside diameter of the workpiece so you won't need a mandrel. All are made of steel for easy machining. They hold concentricity within 0.0005″ and have 1.238″×20 RH external threads. The front inch of the collets expands. Use on any machine with a 5C spindle.

Head Dia.	Head Thick.	Min. Machinable Dia.	O'all Lg.		Each
½″	1″	0.250″	4½″	3242A11	$42.48
1″	1″	0.437″	4½″	3242A14	42.48
1″	2″	0.437″	5½″	3242A15	92.10
1½″	1″	0.750″	4½″	3242A17	42.48
1½″	1½″	0.750″	5″	3242A18	71.33
2″	1″	0.750″	4½″	3242A23	77.05
2″	1½″	0.750″	5″	3242A24	84.10
2½″	2½″	0.750″	6″	3242A32	122.48
3″	1″	0.750″	4½″	3242A34	111.24
3″	2″	0.750″	5½″	3242A51	133.14
4″	1″	0.750″	4½″	3242A52	123.24
4″	2″	0.750″	5½″	3242A42	145.81

Adjustable 5C Collet Stops

Collet Stop

Collet Stop with Optional Spring Ejector

Prevent parts from being pushed back into the collet while machining. Made of aluminum, these collet stops have an adjustable rod that makes installation and removal quick and easy. Simply slide the expanding sleeve into the back of your collet and tighten the nut. Adjust the depth of the rod by loosening the set screw with the included wrench. Use with 5C collets that have internal threads.

Optional spring ejector has a spring plunger that is ideal for taking out small parts that are difficult to remove.

		Each
Stop for Collets Up to 63/64″ Dia.	3256A21	$23.18
Stop for 1″ to 1 1/16″ Dia. Collets	3256A25	23.18
Optional Spring Ejector	3256A31	28.98

5C and R8 Collet Stands

5C 30 Piece

5C 76 Piece

R8 17 Piece

R8 32 Piece

Protect your 5C and R8 collets from damage while keeping them organized in these stands. All are made of steel, except 8908A22, which is made of high-impact plastic.

Collet Cap.	Overall Size Ht.	Wd.	Dp.	Mounts On		Each
For 5C Collets						
30	5⅛″	12″	9″	Machine, Bench	8908A12	$31.58
76	3″	17″	14″	Bench	8908A22	31.36
For R8 Collets						
17	2¾″	9″	5¼″	Machine, Wall	8908A11	32.73
32	3½″	8″	10½″	Machine, Bench	8908A17	55.32

ER-16, ER-32, and 100-TG Collets

ER-16 and ER-32 Collet

100-TG Collet

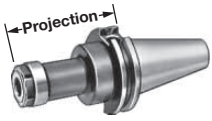

Collet Chuck for ER-16 Collets

All collets are made of hardened tool steel.

ER-16 and ***ER-32 Collets—*** Have a range of sizes so you'll need fewer collets. Collet diameters compress approximately 1/32″. Tolerance at the collet nose is 0.0003″.

ER-16 collets have a maximum body diameter of 0.677″ and an overall length of 1.06″. *ER-32 collets* have a maximum body diameter of 1.30″ and an overall length of 1.57″.

100-TG Collets— Collet diameters compress approximately 1/64″. Tolerance at the collet nose is 0.0003″. Maximum body diameter is 1.278″. Overall length is 2.386″.

Collet Chucks and Nut Wrenches— Collet chucks securely hold collets. Taper is CAT 40. Use a nut wrench to tighten the chuck nut.

ER-16 Collets

Size Range		Each	Size Range		Each
0.0233″-1/32″	3215A301	$30.44	7/32″-1/4″	3215A308	$27.35
1/32″-1/16″	3215A302	30.44	1/4″-9/32″	3215A309	27.35
1/16″-3/32″	3215A303	30.44	9/32″-5/16″	3215A311	27.35
3/32″-1/8″	3215A304	27.35	5/16″-11/32″	3215A312	27.35
1/8″-5/32″	3215A305	27.35	11/32″-3/8″	3215A313	27.35
5/32″-3/16″	3215A306	27.35	3/8″-13/32″	3215A314	27.35
3/16″-7/32″	3215A307	27.35			

ER-32 Collets

Size Range		Each	Size Range		Each
3/32″-1/8″	3321A11	$30.00	11/32″-3/8″	3321A16	$30.00
5/32″-3/16″	3321A12	30.00	13/32″-7/16″	3321A17	30.00
7/32″-1/4″	3321A13	30.00	15/32″-1/2″	3321A18	30.00
9/32″-5/16″	3321A14	30.00	19/32″-5/8″	3321A19	30.00
5/16″-11/32″	3321A15	30.00	23/32″-3/4″	3321A21	30.00

100-TG Collets

Size		Each	Size		Each
1/8″	32605A25	$41.17	1/2″	32605A52	$28.16
3/16″	32605A29	41.17	9/16″	32605A56	28.16
1/4″	32605A34	36.83	5/8″	32605A61	28.16
5/16″	32605A38	36.83	3/4″	32605A69	28.16
3/8″	32605A43	28.16	7/8″	32605A78	24.23
7/16″	32605A47	28.17	1″	32605A87	28.16

Collet Chucks and Nut Wrenches

For Collet	Collet Chucks Projection		Each	Nut Wrenches	Each
ER-16	3½″	3215A326	$188.00	3215A341	$18.42
ER-32	3⅛″	3321A31	173.54	3321A32	23.00
100-TG	2¾″	32605A15	137.54	32605A95	26.23
100-TG	3½″	32605A16	119.08	32605A95	26.23

5C Collet Wrench

Changing 5C collets on CNC lathes doesn't get much easier. With a steel head and reinforced plastic fins, this wrench allows you to quickly insert and remove your 5C collets. Handle is made of plastic. Body diameter is 1⅛″. Overall length is 4¼″.

3197A24 ..... **Each** $28.76

5C Collet Block Chucks

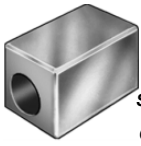

Square Block Chuck

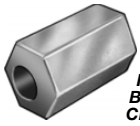

Hex Block Chuck

Optional Lever Collet Closer

Pair block chucks with a 5C collet to hold your workpiece, and you can easily and accurately machine square and hex shapes or drill crossholes at 60°, 90°, and 120°. All are made of ground tool steel. They are made with ±0.0006″ flatness, squareness, and parallelism on their sides. Furnished with a tightening ring to close the collet.

The 5C collet capacity is 3/64″ to 1⅛″ for round collets, ⅛″ to ¾″ for square collets, and ⅛″ to 7/8″ for hexagon collets.

Optional lever collet closer replaces the tightening ring for faster opening and closing.

	Lg.	Wd. Across Flats		Each
Square Block Chuck	2¾″	1¾″	3245A22	$52.32
Hex Block Chuck	2¾″	1¾″	3246A22	52.32
Optional Lever Collet Closer			3248A11 **Each**	$52.32

5C Collet Fixtures

Compact Air-Operated

Heavy Duty Air-Operated

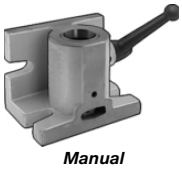

Manual

Quickly and easily grip and release parts with 5C collet fixtures. All use 5C collets (not included) to hold the parts.

Compact Air-Operated Collet Fixture

Small enough for mounting multiple fixtures in a limited amount of space, this fixture has an aluminum housing, four 3/8″ dia. mounting holes, and two air ports (1/4″-18 straight pipe thread, male). Maximum collet size is 1 1/16″. Holding power is 7 1/2 times the air-line pressure.

Compact air-operated collet fixture kit includes the compact air-operated fixture described above, four-way foot-operated air valve, and three air hoses.

Dia.	Ht.	Max. Air Pressure, psi		Each
5 1/2″	3 1/4″	150	5317A13	$227.24
Compact Air-Operated Collet Fixture Kit			5317A21 Each	$361.71

Heavy Duty Air-Operated Collet Fixture

Use with step collets for internal gripping. Base is made of cast iron; collet holder is made of steel. Fixture has two 5/8″ slots for mounting (lugs included), two air ports (1/4″-18 straight pipe thread, male), and a 17/64″ dia. hole through the unit for feeding rods and dropping finished parts. Holding power is 18 times the air-line pressure.

Heavy duty air-operated collet fixture kit includes the heavy duty air-operated fixture described above, a four-way foot-operated air valve, and three air hoses. **Also Available:** Replacement parts. Please ask for 3198A5 and specify part needed.

Dia.	Ht.	Max. Air Pressure, psi		Each
8 1/4″	5″	120	3198A42	$430.90
Heavy Duty Air-Operated Collet Fixture Kit			3198A41 Each	$559.69

Manual Collet Fixture

A spring-loaded handle allows you to easily operate this fixture from any position. It is made of cast iron and has four 11/16″ slots for mounting vertically or horizontally. Maximum collet size is 1 1/16″.

Ht.	Wd.	Dp.		Each
4″	5″	3 3/4″	3174A42	$208.26

Dead Centers

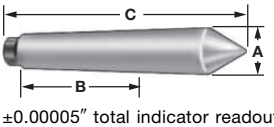

Avoid the wobbling points of live centers by using dead centers in high-speed turning applications where friction is not a concern. They have a 60° included angle and are ground for accuracy to ±0.00005″ total indicator readout (T.I.R.) between the shank and the point. All are made of hardened steel.

Carbide-tipped dead centers have great wear resistance that makes them the preferred choice for high-volume, fast-turning operations.

Morse Taper■	Point Dia. (A)	Taper Lg. (B)	O'all Lg. (C)	*Steel*	Each	*Carbide Tipped*	Each
1	0.475″	2″	3 5/16″	3266A2	$60.39	31755A31	$74.83
2	0.700″	2 5/16″	4 3/16″	3266A3	66.60	31755A32	86.16
3	0.938″	2 15/16″	5 1/4″	3266A5	101.32	31755A33	116.58
4	1.231″	3 3/4″	6 3/4″	3266A6	144.92	31755A34	155.33
5	1.748″	4 7/8″	8 1/2″	3266A7	217.64	31755A35	239.86

■ See page 2427 for Morse Taper dimensions.

Pipe and Tubing Centers

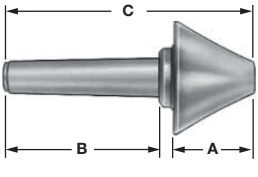

Also known as bull-nose centers, these centers have a wide head to hold pipe and large-diameter tubing. They are free-running and consist of snug-fitting heads on solid steel arbors.

Small Head— The head is 1″ dia. at the tip and 3 1/2″ dia. at the base. Made of hardened steel.

Large Head— The head is 3 1/4″ dia. at the tip and 6 1/2″ dia. at the base. Made of steel.

Morse Taper■	Point Lg. (A)	Shank Lg. (B)	O'all Lg. (C)	*Small Head*	Each	*Large Head*	Each
2	2 9/16″	3 1/4″	6 13/64″	3265A11♠	$259.33	3265A16	$271.99
3	2 9/16″	3 7/8″	6 13/16″	3265A12♠	259.33	3265A17	271.99
4	2 9/16″	4 3/4″	7 45/64″	3265A13♠	259.33	3265A18	271.99
5	2 9/16″	5 29/32″	8 13/16″	3265A14♠	278.38	3265A19	297.32

■ See page 2427 for Morse Taper dimensions. ♠ Point Lg. (A) is 2 1/2″.

Live Centers

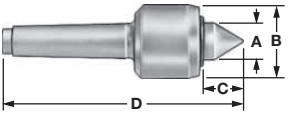

CNC Point

With bearings to support their free-turning point, live centers are exceptionally accurate and produce minimal friction between the center and your work. For increased tool life, the bearings are lubricated and sealed to protect them from fluids and chips. All centers have heat-treated steel points with a 60° included angle and are ground for accuracy to ±0.00005″ total indicator readout (T.I.R.) between the shank and the point, unless noted.

Max. rpm is 6,000 for Morse Tapers 1 and 2, except 3280A61 and A62 are 5,000; 5,000 for Morse Taper 3; 4,500 for Morse Taper 4, except 3229A14 is 4,000; and 3,500 for Morse Taper 5, except 3280A65 is 4,500.

Economy Live Centers— A good choice for intermittent use on manual lathes. T.I.R. is ±0.00002″.

Light to Medium Duty Live Centers— For light to moderate loads on manual lathes. Body and point are hardened for extra strength and wear resistance.

Medium to Heavy Duty Live Centers— Designed for continuous use, these centers have a high load capacity for turning heavier parts. The body and point are hardened for extra strength and wear resistance. The point extends into the shank for increased rigidity and reduced point deflection and vibration. They are a perfect choice for manual and CNC lathes.

CNC Point Medium to Heavy Duty Live Centers— Similar to the medium to heavy duty live centers, except these have an extended point for additional tool clearance. They are often required on CNC lathes.

Morse Taper■	Max. Weight of Work, lbs.	Point Dia. (A)	Head Dia. (B)	Point Lg. (C)	O'all Lg. (D)		Each
Economy Live Centers							
1	200	23/32″	1 11/32″	61/64″	4 37/64″	3229A21	$54.32
2	600	7/8″	1 27/64″	1″	4 59/64″	3229A12	61.17
3	900	1 11/64″	1 55/64″	1 17/64″	6 3/8″	3229A13	99.74
4	1,800	1 3/8″	2 11/64″	1 31/64″	7 41/64″	3229A14	122.25
5	3,000	1 49/64″	2 49/64″	1 55/64″	9 29/64″	3229A15	172.13
Light to Medium Duty Live Centers							
1	390	3/4″	1 11/16″	7/8″	4 13/16″	3280A61	156.45
2	390	3/4″	1 11/16″	7/8″	5 1/4″	3280A62	158.62
3	390	3/4″	1 11/16″	7/8″	5 57/64″	3280A63	166.38
4	750	1 1/8″	2 7/16″	1 13/64″	7 43/64″	3280A64	203.45
5	750	1 1/8″	2 7/16″	1 13/64″	8 13/16″	3280A65	227.59
Medium to Heavy Duty Live Centers							
2	725	7/8″	1 3/4″	1 1/32″	5 19/64″	3259A17	309.33
3	970	1″	2 11/32″	1 15/64″	6 27/64″	3259A12	342.49
4	1,720	1 1/4″	2 11/16″	1 31/64″	7 57/64″	3259A28	445.45
5	3,260	1 1/2″	3 29/64″	1 27/32″	10 7/32″	3259A29	615.97
CNC Point Medium to Heavy Duty Live Centers							
2	375	7/8″●	1 3/4″	1 23/64″	5 41/64″	3305A31	309.33
3	740	1″●	2 11/32″	1 7/8″	7 1/16″	3305A32	360.38
4	1,120	1 1/4″★	2 11/16″	2 7/32″	8 19/32″	3305A33	451.99
5	1,930	1 1/2″★	3 29/64″	2 19/32″	10 61/64″	3305A34	615.97

■ See page 2427 for Morse Taper dimensions.
● Small point dia. (dimension "E" on illustration) is 3/8″.
★ Small point dia. (dimension "E" on illustration) is 1/2″.

Expanding-End Mandrels

Also known as arbors, these mandrels have an expanding end for holding and supporting the inside diameter of your workpiece. All are made of carbon steel for easy machining. Use with milling machines, lathes, grinders, chucks, collets, and fixtures.

To use, tighten the expansion screw so the mandrel expands 0.002″. Then machine the mandrel, loosen the expansion screw, position the part on the mandrel, and retighten the screw.

Body Dia.	Shank Dia.	O'all Lg.		Each
1/4″	1/4″	3″	2779A11	$13.95
3/8″	3/8″	3″	2779A12	13.95
1/2″	1/2″	3″	2779A13	16.74
5/8″	5/8″	3″	2779A14	16.74
3/4″	3/4″	4″	2779A21	19.52
7/8″	7/8″	4″	2779A22	19.52
1″	1″	4″	2779A23	22.31
1 1/4″	1″	4″	2779A24	27.88
1 1/2″	1″	4″	2779A25	41.83
1 3/4″	1″	4″	2779A26	55.76
2″	1″	4″	2779A27	62.74
2 1/2″	1″	4″	2779A28	112.93

8-Piece Mandrel Set— Includes mandrels in sizes listed above from 1/4″ to 1 1/4″, four hex-key wrenches, and a wood stand.

2779A19 ..... **Per Set** $121.67

Solid Mandrels

Also known as arbors, solid mandrels are used for machining the outside diameter of a workpiece concentric with a drilled or bored hole. They are made of hardened, ground steel, are tapered, and have flat ends. To use, insert the larger end into the hole of the workpiece and press until tight (an arbor press is usually used to do this). The mandrel then supports the workpiece while it's being turned between centers on a lathe. Taper is 0.0005″ per inch over entire body. Mandrels 1″ dia. and smaller are 0.0005″ undersized on the tapered end; those 1⅛″ dia. and larger are 0.001″ undersized on the tapered end. Sizes are stamped on the larger end.

Body Dia.	O'all Lg.		Each	Body Dia.	O'all Lg.		Each	Body Dia.	O'all Lg.		Each	Body Dia.	O'all Lg.		Each
1/8″	2 1/2″	3277A11	$5.79	7/16″	4 1/2″	3277A17	$7.96	7/8″	6 1/2″	3277A27	$13.30	1 3/8″	8 1/2″	3277A36	$26.04
3/16″	3″	3277A13	6.32	1/2″	5″	3277A18	9.04	1″	7″	3277A29	14.61	1 1/2″	9″	3277A38	30.29
1/4″	3 3/4″	3277A14	6.91	9/16″	5 1/4″	3277A19	10.20	1 1/8″	7 1/2″	3277A32	18.32	1 5/8″	9 1/2″	3277A44	34.29
5/16″	4″	3277A15	7.16	5/8″	5 1/2″	3277A23	10.20	1 1/4″	8″	3277A34	21.21	2″	11″	3277A43	48.36
3/8″	4 1/4″	3277A16	7.39	3/4″	6″	3277A25	10.57								

Expanding-Sleeve Mandrels

Also known as arbors, these mandrels have an expanding sleeve to hold a range of diameters, giving them more versatility than solid mandrels that hold only a single size. The expanding sleeve also allows them to hold the workpiece closer to its middle for additional support while turning between centers on a lathe.

Each mandrel consists of a hardened, precision-ground steel tapered body and an expanding sleeve that combine for an accuracy of 0.001″ or better. The sleeve mounts on the body, provides a large bearing surface with a positive grip, and prevents vibration.

To use, insert the sleeve into the workpiece. Then insert the small end of the body into the sleeve and push until it's tight. Workpieces can be held in any position on the sleeve and may overhang either or both ends for facing operations.

Standard duty mandrels are recommended for toolrooms and light production work. One expanding sleeve is included. ***Heavy duty*** mandrels are recommended for production line operations and heavy roughing cuts. Mandrels include two expanding sleeves.

Also Available: Replacement sleeves for standard duty mandrels only. Please ask for 3276A71 and specify mandrel OD range.

Heavy Duty

Mandrel OD Range	O'all Lg.	Sleeve Lg.		Each
Standard Duty				
1/2″ to 9/16″	5″	2 1/2″	3276A31	$34.60
9/16″ to 21/32″	6″	2 3/4″	3276A32	34.60
21/32″ to 3/4″	7″	2 3/4″	3276A33	43.30
3/4″ to 7/8″	7″	3 1/4″	3276A34	47.60
7/8″ to 1″	7″	3 1/2″	3276A35	51.92
Heavy Duty				
1″ to 1 1/4″	9″	4″	3276A38	103.80
1 1/4″ to 1 1/2″	9″	4″	3276A39	108.20
1 1/2″ to 2″	11 1/2″	5″	3276A42	132.00
2″ to 2 3/4″	14″	6″	3276A43	410.97
2 3/4″ to 3 3/4″	17″	7″	3276A44	540.75

13″×40″ Geared Head Lathe

With eight spindle speeds ranging from 70 to 2,000 rpm and a quick-change gearbox, this precision metalworking bench-model lathe can handle a variety of turning, facing, boring, and inch/metric threading operations.

Lathe operates on 230 VAC single-phase and has a 2-hp motor. It has a hardened and precision-ground V-way bed design; D1-4 cam-lock spindle supported by precision-tapered roller bearings; removable gap bed section for larger diameter work; full-length chip pan; splash guard; reversing switch; threading dial; steady and follow rest; enclosed oil bath system gearbox; and gears for inch and metric threading.

Lathe also includes 6″ three-jaw universal direct mount chuck with top reversing jaws; 8″ four-jaw independent direct-mount chuck; spindle taper reducing sleeves No. MT-5 to No. MT-3; two No. MT-3 dead centers; four-way tool post; service tools; and instruction manual.

- Swing over bed: 13″
- Swing over cross slide: 7 25/32″
- Swing through gap: 18 3/4″
- Distance between centers: 40″
- Max. cutting tool size: 5/8″×5/8″
- Hole through spindle: 1 3/8″
- Spindle nose taper: No. MT-5 with No. MT-3 sleeve
- Tailstock taper: No. MT-3
- Number of inch threads (range): 40 (4 to 112 teeth/inch)
- Number of metric threads (range): 27 (0.2 to 6 mm)
- Overall size: 71″ Lg.×32″ Wd.×25 1/2″ Ht.
- Weight: 1,015 lbs.

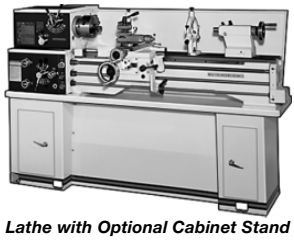

Lathe with Optional Cabinet Stand

		Each
Lathe	8941A61	$5,790.00
Optional Coolant System	8941A64	377.01
Optional 5C Collet Closer	8941A65	986.30
Optional Cabinet Stand	8941A66	413.57

Lathe Guards

Lathe Chuck Guards

The 3/16″ thick clear polycarbonate window on these guards prevents you from getting snagged by the lathe chuck yet offers you an unobstructed view of the workpiece. These guards easily lift and can be locked in the swing-away or down position. The back is reinforced with a plated wire-form housing.

Complete guards include a side-mount base bracket with mounting hardware.

Optional headstock mounting bracket (Style 1) allows mounting on the top or back of lathe headstock.

Optional headstock extension mounting bracket (Style 2) is the same as Style 1, but has an extension tube.

Lathe Chuck Guard

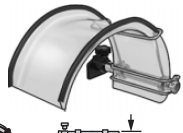

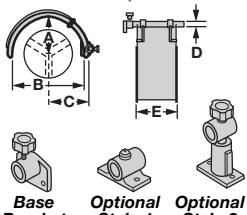

Base Bracket (Included) *Optional Style 1 Bracket* *Optional Style 2 Bracket*

Fits Lathe Size★	Max. Chuck Dia.	(A)	(B)	(C)	(D)	(E)	Complete Guards	Each	Replacement Guards	Each
6″ to 12″	8″	6″	12″	7″	1″	6 1/4″	6157A45	$156.38	6157A51	$88.20
12″ to 16″	12″	8″	16″	9″	1″	8″	6157A46	172.26	6157A52	97.38
16″ to 20″	16″	10 1/4″	19.7″	11″	1″	8″	6157A42	187.61	6157A53	112.70
20″ to 24″	20″	12″	24″	12.9″	1″	8″	6157A43	220.12	6157A54	127.40

Optional Headstock Mounting Bracket (Style 1)	6157A55	Each	$26.26
Optional Headstock Extension Mounting Bracket (Style 2)	6157A44	Each	$50.92

★ Approximate swing over lathe bed size.

Cutting-Point Lathe Guards

Protect yourself from flying chips and coolant splash by covering the spot where your tools cut the workpiece. These guards have a heavy gauge steel frame and a 3/16″ thick clear polycarbonate window that provides you with a clear view of the lathe. The front panel is hinged above the window and lifts for quick access. Guards mount and travel on the cross slides and are fully adjustable in all directions. Adjustable arm (F) swivels and mounting bracket (G) adjusts vertically. Both lock for easy positioning.

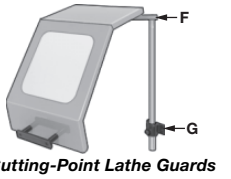

Cutting-Point Lathe Guards

Max. Chuck Dia.	Panel Size, Lg.×Wd.	Window Size, Ht.×Wd.		Each
20″	13″ ×11 7/8″	8 1/2″×8 1/2″	32635A31	$265.84
28″	14 1/2″×14″	10 3/4″×9 3/4″	32635A32	292.17

Ridgid Pipe-Threading Machines

Quickly cut and thread pipe up to 2″ and bolts up to 1″. Use threading fluid on page 2179 with all machines. All operate on 115 VAC and include the following: a safety foot switch; machine-mounted forward/off/reverse switch; quick-opening die head; pipe reamer; pipe/rod/bolt cutter; cutter wheel for steel and ductile iron; and right-hand, NPT dies for threading pipe sizes ½″, ¾″, 1″, 1¼″, 1½″, and 2″.

Ridgid 300 Complete Pipe-Threading Machine

With Tripod Stand (Included)

Ridgid 300 Complete pipe-threading machine is a simple setup for threading pipe and a great alternative to manual threaders. It has a ½-hp, 25-60 Hz, single-speed (38 rpm, no load) motor; manual chuck; alloy steel dies; a manual oiler; cutter for ⅛″ to 2″ pipe or ¼″ to 1″ bolt; tripod stand; and 15-ft. long power cord with three-prong plug.

	Ridgid No.		Each
Pipe-Threading Machine	300 Comp.	25245A21	$4,145.06
Optional Pipe Nipple Chuck	819	2620A13	387.90
Optional Cutter Wheel for Stainless Steel	E-1032S	2650A97	26.72
Repl. Die Head	811A	25245A29	367.58
Repl. Cutter Wheel for Steel and Ductile Iron	E-1032	2650A86	18.90
Repl. Jaw Insert Set	44715	2650A42	83.62
Repl. Reamer Assembly	341	25245A28	196.51
Repl. Power Drive	300	25245A23	2,497.74
Repl. Pipe Cutter	360	25245A27	208.10
Repl. Carriage with Feed Lever	311	25245A26	357.82
Repl. Oiler with 1-gal. Cutting Oil	418	25245A41	286.50
Repl. Oil (Pump) Gun	72332	25245A42	148.71
Repl. Clip-On Tool Tray	1452	25245A32	112.79
Repl. Tripod Stand	1206	25245A25	355.58
Repl. Chuck Jaw Set	44090	2650A71	277.23

Ridgid 535 Pipe-Threading Machine

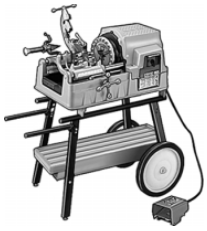

With Tray Stand (Optional)

Ridgid 535 pipe-threading machine takes the 300 Complete a step further with a self-lubricating die head. This machine has a ½-hp, 25-60 Hz, single-speed (36 rpm, no load) motor; manual chuck; alloy steel dies; a cutter with length guide for ⅛″ to 2″ pipe or ¼″ to 1″ bolt; and 17-ft. long power cord with three-prong plug.

	Ridgid No.		Each
Pipe-Threading Machine	535	2650A11	$6,040.90
Optional Pipe Nipple Chuck	819	2620A13	387.90
Optional Cutter Wheel for Stainless Steel	E-1032S	2650A97	26.72
Optional Tray Stand	150A	2650A24	734.78
Optional Cabinet Stand	200A	2689A51	1,081.09
Repl. Die Head	811A	25245A29	367.58
Repl. Cutter Wheel for Steel and Ductile Iron	E-1032	2650A86	18.90
Repl. Jaw Insert Set	44715	2650A42	83.62
Repl. Reamer Assembly	341	25245A28	196.51
Repl. Reamer Core	36277	2650A91	102.75
Repl. Chuck Jaw Set	44090	2650A71	277.23
Repl. Carbon Brush Assembly	44540	2650A43	20.52
Repl. Wheel for 150A Tray Stand	27442	2650A49	127.02

Ridgid 535A Pipe-Threading Machine

With Cabinet Stand (Optional)

Ridgid 535A pipe-threading machine has all the convenience of the 535 with added power for faster threading and higher volume. It has a premium 2-hp, 60 Hz, three-speed (16, 46, and 58 rpm, no load) motor; an automatic chuck; and high-speed steel dies. Like the 535, it also has a self-lubricating die head, cutter with length guide for ⅛″ to 2″ pipe or ¼″ to 1″ bolt, and 17-ft. long power cord with three-prong plug.

	Ridgid No.		Each
Pipe-Threading Machine	535A	2650A51	$6,776.73
Optional Pipe Nipple Chuck	819	2620A13★	387.90
Optional Nipple Chuck Adapter Kit	839	2620A15	97.59
Optional Cutter Wheel for Stainless Steel	E-1032S	2650A97	26.72
Optional Tray Stand	150A	2650A24	734.78
Optional Cabinet Stand	200A	2689A51	1,081.09
Repl. Die Head	811A	25245A29	367.58
Repl. Cutter Wheel for Steel and Ductile Iron	E-1032	2650A86	18.90
Repl. Reamer Assembly	341	25245A28	196.51
Repl. Reamer Core	36277	2650A91	102.75
Repl. Wheel for 150A Tray Stand	27442	2650A49	127.02

★ Requires Nipple Chuck Adapter Kit when used with 535A.

Ridgid Geared Pipe Threader

Use this threader with Ridgid 300 Complete, 535, and 535A pipe-threading machines to thread larger pipe sizes including 2½″, 3″, 3½″, and 4″.

	Ridgid No.		Each
Geared Pipe Threader	141	2587A11	$2,269.98
Connector (required for No. 300)	758	2587A41	40.35
Drive Bar (required for Nos. 300 and 535)	844	2587A34	123.10
Drive Link Assembly (required for No. 535)	768	2587A36	148.82
Mounting Kit (required for No. 535A)	97882	2587A42	525.24
Optional Ratchet and Handle	D-1440	2587A23	$198.55
Optional Metal Case	96725	2587A22	199.74
Optional Universal Drive Shaft	840A	2587A24	467.94
			Set
Optional Dies for Stainless Steel (Set of 5)	—	2587A13	$321.98
Repl. Dies for Steel (Set of 5)	—	2587A12	321.98

Dies for Ridgid Pipe-Threading Machines

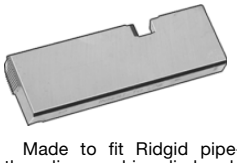

Made to fit Ridgid pipe-threading machine die heads for threading a variety of pipe and bolt sizes. For use with Ridgid 811A die head above as well as 504A, 711, 815A, 816, and 817 die heads, except 2660A18 and 2660A19, which are for use with Ridgid 714 die head only. All are right hand and include four dies per set. ***High-speed steel*** dies outlast ***alloy steel*** dies.

Pipe Dies (NPT)

For Pipe Size	Alloy Steel for Steel	Set	High-Speed Steel for Steel	Set	High-Speed Steel for Stainless Steel	Set	High-Speed Steel for PVC	Set
Economy								
¼″-⅜″	25435A31	$101.18	25435A34	$90.83	—	—	—	—
½″-¾″	25435A32	90.83	25435A35	129.82	25435A37	$129.82	—	—
1″-2″	25435A33	90.83	25435A36	129.82	25435A38	129.82	—	—
Ridgid								
⅛″	2660A21	116.41	2660A25	173.67	2660A64	174.52	—	—
¼″-⅜″	2660A22	116.41	2660A26	174.52	2660A65	174.52	—	—
½″-¾″	2660A23	116.41	2660A27	174.52	2660A66	174.52	2660A17	$201.62
1″-2″	2660A24	116.41	2660A28	174.52	2660A67	174.52	2660A16	201.62
2½″-4″	—	—	2660A18	260.41	2660A19	260.41	—	—

Bolt Dies—High-Speed Steel for Steel

For Bolt Size		Set	For Bolt Size		Set	For Bolt Size		Set
¼″-20	2660A63	$221.04	½″-20	2660A57	$226.74	⅞″-9	2660A48	$227.84
¼″-28	2660A54	221.04	⅝″-11	2660A82	227.84	⅞″-14	2660A61	226.74
5/16″-18	2660A78	221.00	⅝″-18	2660A58	226.74	1″-8	2660A49	227.84
⅜″-16	2660A79	227.84	¾″-10	2660A83	227.84	1″-14	2660A62	226.74
⅜″-24	2660A56	226.74	¾″-16	2660A59	226.74	1½″-6	2660A98	221.00
½″-13	2660A81	227.84						

Ridgid Portable Electric Pipe Threader

Carry this pipe threader to the site for convenient threading. Use with Ridgid 12-R die heads (not included) for 1/8″ to 2″ pipe. Threader runs on 115 VAC, 50/60 Hz, and 1/2 hp. It has a cast aluminum body, a reversible, single-speed (30 rpm, no-load) motor; and an 8 1/2-ft. long power cord with three-prong plug. Overall length is 28 1/4″. CSA certified. Use the Optional Geared Pipe Threader with the Square Drive Adapter to thread 2 1/2″ to 4″ pipe. Use the Die Head Adapters with 00-R die heads to thread 1/8″ to 1″ pipe, and with 11-R die heads to thread 1/8″ to 1 1/4″ pipe.

	Ridgid No.		Each
Portable Electric Pipe Threader	700	8303A11	$1,441.85
Optional Geared Pipe Threader	141	2587A11	2,269.98
Optional Square Drive Adapter	774	8303A12	106.32
Optional Die Head Adapter for use with 00-R Die Head	770	8303A18	152.16
Optional Die Head Adapter for use with 11-R Die Head	772	8303A19	110.70
Optional Metal Carrying Case	B-171-X	8303A15	156.69
Optional Support Arm	775	8303A13	192.72
Optional Oiler with 1-gal. Oil	418	25245A41	286.50
Repl. Motor Brush Assembly	44815	8303A63	14.56

Ridgid Manual Pipe Threaders

Complete threader sets include everything you need to manually thread pipe—ratchet and handle; die heads; and right-hand, alloy steel NPT dies. Slide in the die heads from either side of the ratchet head, lock in place, and remove by pulling the ratchet knob. The arrow on the ratchet knob indicates forward and reverse direction.

Exposed-style threaders have a ratchet that accommodates a round-bottom die head.

Enclosed-style threaders have a ratchet that accommodates a squared-bottom die head, and they keep chips out for smoother operation.

Complete Threader Sets

Ridgid No.	Die Sizes Furnished	Pipe Size Range		Per Set
Exposed-Style Threader Set				
00-R	1/8″, 1/4″, 3/8″, 1/2″, 3/4″, 1″	1/8″-1″	2536A49	$441.40
00-R	1/2″, 3/4″, 1″	1/2″-1″	2536A67	245.73
12-R	1/8″, 1/4″, 3/8″, 1/2″, 3/4″, 1″, 1 1/4″, 1 1/2″, 2″	1/8″-2″	2536A71	975.47
12-R	1/2″, 3/4″, 1″, 1 1/4″	1/2″-1 1/4″	2536A68	477.68
12-R	1/2″, 3/4″, 1″, 1 1/4″, 1 1/2″, 2″	1/2″-2″	2536A73	689.86
Enclosed-Style Threader Set				
11-R	1/2″, 3/4″, 1″, 1 1/4″	1/2″-1 1/4″	2569A26	386.23

Complete Threader Set

Repl. Ratchets with Handle

For Ridgid No.	Handle Lg.		Each
00-R	17 1/2″	2569A91	$67.71
12-R	22 1/2″	2569A93	75.22
11-R	22 1/2″	2569A45	107.20
0-R	17 1/2″	2569A44	107.96
111-R	22 1/2″	2569A92	81.34

Optional Metal Cases

For Ridgid No.		Each
00-R	2536A42	$80.24
12-R	2536A43	152.31
11-R	2536A44	133.74

Exposed Style Ratchet w/Handle

Ridgid Die Heads with Pipe Dies

Compatible with the Ridgid manual pipe threaders above. Each die head comes with four right-hand, alloy steel, NPT dies.

For Pipe Size	***EXPOSED STYLE*** ***Ridgid 00-R***	Each	***Ridgid 12-R***	Each	***ENCLOSED STYLE*** ***Ridgid 11-R***	Each
1/8″	2569A61	$70.78	2569A75	$91.68	2569A36	$104.82
1/4″	2569A62	70.78	2569A76	91.68	2569A37	104.82
3/8″	2569A63	70.78	2569A77	91.68	2569A38	104.82
1/2″	2569A64	70.53	2569A78	98.40	2569A39	104.82
3/4″	2569A65	70.53	2569A79	98.40	2569A41	104.82
1″	2569A66	75.95	2569A81	125.24	2569A42	114.78
1 1/4″	—	—	2569A82	125.24	2569A43	114.78
1 1/2″	—	—	2569A83	138.04	—	—
2″	—	—	2569A84	138.04	—	—

Enclosed Style Ratchet w/Handle

Pipe Dies for Ridgid Manual Pipe Threaders

Don't worry about compatibility—all dies fit in the die heads above. They also fit in Ridgid 0-R, 111-R, 30-A, and 31-A pipe threader die heads. All are right-hand, NPT (unless noted); four per set. ***High-speed steel*** dies outlast ***alloy steel*** dies.

Also Available: Left-hand, high-speed steel NPT dies for steel. Please ask for 2536A98 and specify pipe size.

For Pipe Size	***Alloy Steel for Steel***	Per Set	***High-Speed Steel for Steel***	Per Set	***High-Speed Steel for Stainless Steel***	Per Set	***High-Speed Steel for PVC***	Per Set	***Alloy Steel NPSM ♦***	Per Set
Economy										
1/4″	25435A11	$26.00	25435A21	$28.44	—	—	—	—	—	—
3/8″	25435A12	29.91	25435A22	33.96	—	—	—	—	—	—
1/2″	25435A13	43.38	25435A23	51.91	—	—	—	—	—	—
3/4″	25435A14	36.22	25435A24	49.64	—	—	—	—	—	—
1″	25435A15	47.17	25435A25	49.88	—	—	—	—	—	—
1 1/4″	25435A16	47.17	25435A26	53.81	—	—	—	—	—	—
1 1/2″	25435A17	47.17	25435A27	49.81	—	—	—	—	—	—
2″	25435A18	51.54	25435A28	54.14	—	—	—	—	—	—
Ridgid										
1/8″	2536A86	45.51	2536A22	50.45	2536A32	$55.06	—	—	2536A961	$49.83
1/4″	2536A87	45.51	2536A23	50.45	2536A33	55.05	—	—	2536A962	49.83
3/8″	2536A88	45.51	2536A24	50.45	2536A34	55.05	2536A76	$58.05	2536A963	49.83
1/2″	2536A89	45.51	2536A25	50.45	2536A35	56.20	2536A77	58.05	2536A964	49.83
3/4″	2536A91	45.51	2536A26	50.45	2536A36	56.20	2536A78	58.05	2536A965	50.83
1″	2536A92	54.00	2536A27	59.90	2536A37	64.27	2536A79	67.69	2536A966	57.34
1 1/4″	2536A93	54.00	2536A28	59.90	2536A38	68.50	2536A81	69.07	2536A967	58.68
1 1/2″	2536A94	60.05	2536A29	74.25	2536A39	79.81	2536A82	86.22	2536A968	64.27
2″	2536A95	60.05	2536A31	74.25	2536A41	79.81	2536A83	86.22	2536A969	64.27

♦ American Standard Straight Pipe Thread for free-fitting mechanical fixtures.

Exposed Style Die Head

Enclosed Style Die Head

Die

Manual Roll-Grooving Tool

Use this tool when your piping system requires grooved-end rather than threaded pipe. A compact design lets you groove when there's only 3½″ of clearance area around the pipe and only 2¾″ of exposed pipe.

For use on 2″ to 6″ Schedule 10 pipe and 2″ to 3½″ Schedule 40 pipe. Has a cast-in carrying handle and a ratchet with a 90° bend in the handle.

8342A11 ..... $991.50

Pipe-Threading Square Dies

For use in square-die pipe threaders, these dies have wide throats and extra-fine threads that pull the die onto pipe even if it has a large burr. Dies have two cutting edges and two guiding edges for easier threading. Use on steel and stainless steel pipe. Dies are right-hand NPT and are made of tool steel.

To Order: Please specify pipe size from those listed.

Dies Available for Pipe Sizes	Square Size		
⅛″, ¼″, ⅜″, ½″, ¾″, 1″	2″ × 2″	2580A2	$48.41
⅛″, ¼″, ⅜″, ½″, ¾″, 1″, 1¼″	2½″ × 2½″	2580A3	47.18
½″, ¾″, 1″, 1¼″, 1½″, 2″	4″ × 4″	2580A4	64.19

Self-Reversing Tapping Attachments and Collets

Also known as tapping heads, these attachments make a smooth transition from forward to reverse for precision tapping on manually operated drill presses and milling machines. They also reverse at fast speeds for increased productivity. Choose ***Procunier for Straight and Morse Taper Shanks*** or ***Jacobs Taper Shank*** depending on the shank/mount style of your machine.

Procunier Tapping Attachments for Straight and Morse Taper Shanks

A friction clutch provides smooth, cushioned action. Choose from straight shank and Morse Taper mount styles. All come with two wrenches. Collets are sold separately below.

To Order: Please specify shank/mount style from those listed below.

Also Available: Replacement parts: clutch assembly, clutch spring, stud nut, collet nut, and wrenches. Please ask for 2532A61 and specify Procunier number and replacement part needed.

Procunier No.	Shank/Mount Styles Available■	For Tap Sizes: For Mild Steel	For Tap Sizes: For Nonferrous Metals	Max. rpm		
1-E	½″ SS, 1 MT, 2 MT	0-10; 1.6-5 mm	0-¼″; 1.6-6.3 mm	3,000	2532A81	$644.44
2-E	½″ SS, 2 MT, 3 MT	6-5/16″; 3.5-8 mm	6-½″; 3.5-12.5 mm; ⅛″ Pipe	2,000	2532A82	777.78
3-E	¾″ SS, 2 MT, 3 MT	10-½″; 4.5-12.5 mm	10-¾″; 4.5-18 mm; ¼″ Pipe	1,000	2532A83	1,022.22
4-F	¾″ SS, 3 MT, 4 MT	¼″-1″; 6-25 mm	¼″-1⅛″; 6-27 mm; ⅛″-¾″ Pipe	800	2532A84	1,444.44

■ SS = Straight Shank; MT = Morse Taper

Collets for Procunier Tapping Attachments

Split-steel for a firm hold.

To Order: Please specify Procunier tapping attachment number and collet size from those listed.

Also Available: Other collet sizes. Please ask for 2532A999 and specify Procunier number and collet size.

For Procunier No.	Collets Available for Tap Sizes●		
1-E	0-6♣, 8, 10, 12; ¼″	2532A51	$35.56
2-E	0-6♣, 8, 10, 12; ¼″, 5/16″, ⅜″, ½″	2532A52	37.93
3-E	8, 10, 12; ¼″, 5/16″, ⅜″, 7/16″, ½″, ⅝″; ⅛″ Pipe, ¼″ Pipe	2532A53	40.30
4-F	¼″, 5/16″, ⅜″, ½″, ⅝″, ¾″, ⅞″, 1″; ⅛″ Pipe	2532A54	46.22

● Collets will also accept metric taps. ♣ One collet fits tap sizes 0-6.

Tapping Attachments for Jacobs Taper Shanks

These attachments align the tap for precise threading and have a torque-control clutch that stops the tap when it bottoms to prevent breakage. They also have a cushioned drive that eliminates cross threading and allows the tap to pick up the lead of a previously tapped thread. For use on mild steel. Collets are sold separately below.

Mount Style	For Tap Sizes	Max. rpm▲		
33 Jacobs Taper	0-¼″; 1.6-6 mm	2,000	8317A65	$503.40
33 Jacobs Taper	6-½″; 3.5-12.5 mm; 1/16″-⅛″ Pipe	1,500	8317A66	682.77

▲ Max. rpm may be lower depending on tap size and workpiece material. Each attachment includes a chart.

Collets for Jacobs Taper Shank Tapping Attachments

These flexible-rubber collets provide a uniform grip more powerful than split-steel collets. Made of synthetic rubber bonded to hardened steel jaw inserts, these are resistant to heat, coolants, and cutting compounds.

For Tap Sizes		
Fits 0-¼″ Capacity Attachment for Jacobs Taper Mount		
0-8	25305A71	$46.28
10-¼″	25305A72	46.28
Fits 6-½″ Capacity Attachment for Jacobs Taper Mount		
6-¼″	25305A55	40.06
¼″-½″	25305A56	40.06

Jacobs Tap Chucks and Collets

Tap Chuck

Tap Chucks—One turn of the screw disengages the back jaws and lets you remove and replace taps. Pair one of these chucks with a collet (sold separately) to handle a wide range of tap sizes.

Tap Chucks

Mount Style	For Tap Sizes	Uses Jacobs Collets	Jacobs No.		
1 Jacobs Taper	0-¼″; 1- 6 mm	J116, J117	41-01	25305A41	$181.95
1 Jacobs Taper	0-½″; 1-12.5 mm	J420, J421, J422, J423	42-01	25305A42	207.96
2 Jacobs Taper	0-⅝″; 1-16 mm	J440, J441, J443	44-02	25305A46	233.94
½″ Sq. Hole	0-⅝″; 1-16 mm	J440, J441, J443	44-J9	25305A48	338.03

Collet

Flexible-Rubber Collets—Provide a uniform grip more powerful than split-steel collets. Made of synthetic rubber bonded to hardened steel jaw inserts, collets are resistant to heat, coolants, and cutting compounds.

Flexible-Rubber Collets

Jacobs No.	Fits Tools with Square Size		
J116	0.1″-0.177″	25305A71	$46.28
J117	0.177″-0.256″	25305A72	46.28
J420	0.176″-0.32″	25305A54	40.06
J421	0.139″-0.257″	25305A55	40.06
J422	0.253″-0.383″	25305A56	40.06

Jacobs No.	Fits Tools with Square Size		
J423	0.09″-0.18″	25305A57	$40.06
J440	0.28″-0.5″	25305A58	45.89
J441	0.176″-0.383″	25305A59	45.89
J443	0.11″-0.28″	25305A61	45.89

For taps, see pages 2536-2553.

Tapping Adapter for Portable Drills

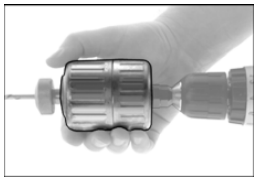

Attach to your portable drill for fast and convenient tapping of most materials. Clutch instantly reverses the tap without stopping the drill's motor. Not for use in drill presses.

A 1/4″ shank chuck adapter (included) allows you to use the tapping attachment without removing your drill chuck. If chuck is removed, attachment fits drills with a 1/2″-20 spindle thread, or it can be used with a 3/8″-24 thread with a spindle adapter (sold separately). Use with tap sizes 6 to 5/16″. Spiral-point taps are recommended.

Furnished with collets for tap sizes 6, 8, and 10, a wrench pin, 1/4″ shank chuck adapter, bushing wrench, and operating instructions.

Also Available: Replacement tap collets and other replacement parts. Please ask for 2559A61 and specify part required.

Tapping Attachment	**2559A14**	$259.48
Accessories		
Spindle Adapter—1/2″-20 to 3/8″-24	**2559A41**	17.45
Thread Chase Adapter for 3/8″ Tap	**2559A42**	68.81
1/4″ Tap Collet	**2559A24**	33.46
5/16″ Tap Collet	**2559A25**	33.46

Manual Tap Drivers

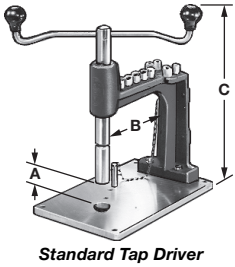

Standard Tap Driver

Also known as hand tappers, these lightweight tools create straight tapped holes and can be attached to your work surfaces. They come with a tap guide, work table, spindle wrench, and steel tap adapters as listed. Spiral-point taps are recommended.

Also Available: Replacement tap adapters. Please ask for 2704A91 and specify driver model and tap size.

Mini Tap Driver—Includes seven adapters; two for tap sizes 0 to 6 and one adapter for each of the following tap sizes: 8, 10, 12, 1/4″, and 5/16″. Also for use with metric tap sizes 1.6, 1.8, 2, 2.2, 2.5, 3, 3.15, 3.5, 4, 4.5, 5, 6, 6.3, 7, and 8 mm.

Standard Tap Driver—Has a removable spindle wrench for lathe use with a dead center. Includes nine adapters; one for each of the following tap sizes: 8, 10, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, and 3/4″. Also for use with metric tap sizes 4, 4.5, 5, 6, 6.3, 7, 8, 10, 12, 12.5, and 16 mm.

For Tap Sizes	Base Lg.	Base Wd.	(A)	(B)	(C)		
Mini Tap Driver							
0-5/16″	8 1/2″	6″	3 3/4″	4 1/2″	9″	**2704A11**	$203.07
Standard Tap Driver							
8-3/4″	13″	8″	7″	7 1/2″	14″	**2704A12**	328.45

Power Tap Driver

A variable-speed drive allows you to control tapping speed in both forward and reverse. Driver begins to rotate counterclockwise in order to allow proper alignment of the tap. Once engaged, the tool moves clockwise. For use in through holes in steel; accepts up to 3/8″ right-hand taps. It is double insulated, 11 1/2″ long, and has a 120 VAC, 50-60 Hz, 4 amp, automatic-reverse drive with forward no-load speeds of 0-1,200 rpm and reverse no-load speeds of 0-580 rpm. Includes a chuck key and an 8-ft. long power cord with two-prong plug. Meets OSHA requirements.

8304A61 ..... $1,027.20

Tap Wrenches

Gain flexibility in tight, hard-to-reach spaces and manually tap drilled holes with ease.

T-handle wrenches are for general purpose use.

Machine mount with guide wrenches allow you to manually thread drilled holes without moving your workpiece from your machine. Just slide the wrench right into your drill press or lathe chuck using the attachable guide.

Straight handle wrenches provide more leverage and can be used with larger diameter taps. They can also be used with reamers, screw extractors, and other hand tools that have a square on the tool shank.

Handle styles are either one or a combination of the following:

Sliding—Handle moves from side to side for accessing tight spaces.

Ratcheting—Adjust for right- or left-hand ratchet action or lock in fixed position.

Fixed—Great for general tapping in open areas.

Long—Have a long shank for hard-to-reach tapping jobs.

Solid—Handles are solid steel. One handle is rigid and one handle adjusts the hardened and tempered steel jaws.

Tubular—Handles are tubular steel and are removable for easy storage. One handle is rigid and the other handle adjusts the hardened and tempered tool steel jaws.

T-Handle

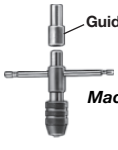

Machine Mount

Straight Handle

Handle Style	For Tap Sizes	Fits Tools with Square Size	Lg.		Each
T-Handle					
Economy					
Sliding	0-1/4″; 1.6-6.3 mm	0.110″-0.191″	2 3/8″	**25605A63**	$5.00
Sliding	1/4″-1/2″; 6-12.5 mm	0.191″-0.275″	3 1/2″	**25605A67**	7.50
Sliding	1/4″-1/2″; 6-12.5 mm	0.191″-0.275″	3 1/2″	**25605A71** ♠	11.82
Standard					
Sliding	0-1/4″; 1.6-6.3 mm	0.110″-0.191″	2 3/4″	**2546A22**	23.65
Sliding	12-1/2″; 6-12.5 mm	0.165″-0.275″	3 5/8″	**2546A24**	32.97
Sliding/Ratcheting	0-1/4″; 1.6-6.3 mm	0.110″-0.191″	3 3/4″	**2546A28**	55.11
Sliding/Ratcheting	12-1/2″; 6-12.5 mm	0.165″-0.275″	5″	**2546A29**	59.22
Fixed	0-1/4″; 1.6-6.3 mm	0.110″-0.191″	2 3/4″	**2546A23**	17.90
Fixed	12-1/2″; 6-12.5 mm	0.165″-0.275″	3 5/8″	**2546A25**	29.74
Fixed/Long	0-1/4″; 1.6-6.3 mm	0.110″-0.191″	8 3/4″	**2546A26**	40.91
Fixed/Long	12-1/2″; 6-12.5 mm	0.165″-0.275″	10 5/8″	**2546A27**	56.40
Chrome Plated					
Sliding/Ratcheting	1/16″-1/4″; 1.6-6.3 mm	0.110″-0.191″	3 1/2″	**2544A1**	38.22
Sliding/Ratcheting	1/4″-1/2″; 6-12.5 mm	0.191″-0.275″	4 3/8″	**2544A5**	40.03
Sliding/Ratcheting/Long	1/16″-1/4″; 1.6-6.3 mm	0.110″-0.191″	10″	**2544A6**	36.58
Sliding/Ratcheting/Long	1/4″-1/2″; 6-12.5 mm	0.191″-0.275″	12″	**2544A7**	40.33
					Set
Replacement Jaws and Spring Set for 2544A1 and 2544A6				**2544A611**	$3.26
Machine Mount With Guide					
					Each
Sliding	0-1/4″; 1.6-6.3 mm	0.110″-0.191″	3 1/2″	**2550A64** ★	$16.57
Sliding	1/4″-1/2″; 6-12.5 mm	0.191″-0.275″	4″	**2550A65** ★	20.90
Sliding	1/2″-3/4″; 12-18 mm	0.275″-0.442″	4 1/4″	**2550A66** ♥	43.57
Sliding	3/4″-1″; 20-25 mm	0.442″-0.600″	5″	**2550A67** ♦	105.16
Straight Handle					
Economy					
Solid	0-1/2″; 1.6-12.5 mm	0.110″-0.275″	9″	**25605A75**	15.98
Solid	1/4″-1″; 6-25 mm	0.191″-0.600″	18″	**25605A79**	41.74
Standard					
Solid	0-1/4″; 1.6-6.3 mm	0.110″-0.191″	7″	**2546A12**	47.09
Solid	0-3/8″; 1.6-10 mm	0.110″-0.286″	9″	**2546A13**	65.94
Solid	8-1/2″; 4-12.5 mm	0.131″-0.275″	11 1/8″	**2546A14**	78.84
Solid	8-3/4″; 4-18 mm	0.131″-0.442″	14 7/8″	**2546A15**	86.21
Solid	1/4″-1 1/8″; 6-27 mm	0.191″-0.679″	19″	**2546A16**	110.77
Tubular	3/4″-1 5/8″; 20-39 mm	0.442″-0.984″	40″	**2546A18**	262.64
Tubular	1″-2 1/2″; 25-56 mm	0.600″-1.575″	54″	**2546A19**	335.85

♠ Has a removable handle and a 3/8″ square-drive socket on the end for an extension or ratchet wrench.
★ Guide spindle dia. is 1/2″. ♥ Guide spindle dia. is 5/8″. ♦ Guide spindle dia. is 3/4″.

For taps, see pages 2536-2553.

Tap Extensions

For Tap Sizes	Extension Dimensions: Sq. Socket Opening	Sq. on Shank	OD ♦		Set
(A) Extensions for Hand Tapping					
10; 3/16″; 4.5 mm, 5 mm	0.154″	0.152″	0.289″	2545A15	$29.43
14; 1/4″; 6 mm, 6.3 mm	0.193″	0.191″	0.354″	2545A11	31.23
5/16″; 7 mm, 8 mm	0.242″	0.238″	0.454″	2545A12	33.80
3/8″; 10 mm	0.290″	0.286″	0.529″	2545A13	38.55
7/16″	0.246″	0.242″	0.454″	2545A14	39.17
1/2″; 12 mm, 12.5 mm	0.279″	0.275″	0.529″	2545A16	41.58
5/8″; 16 mm	0.364″	0.360″	0.704″	2545A17	45.79
3/4″	0.446″	0.442″	0.854″	2545A18	68.45
7/8″; 22 mm	0.527″	0.523″	1.129″	2545A19	79.89
(B) Extensions for Hand and Machine Tapping					**Each**
0-6; 1/16″-1/8″; 1.6-3.5 mm	0.112″	0.191″	0.312″	2760A11	$30.80
8; 5/32″; 4 mm	0.133″	0.191″	0.375″	2760A12	33.33
10; 3/16″; 4.5 mm, 5 mm	0.154″	0.191″	0.375″	2760A13	35.31
12; 7/32″; 5.5 mm	0.166″	0.164″	0.437″	2760A14	36.34
14; 1/4″; 6 mm, 6.3 mm	0.193″	0.191″	0.437″	2760A15	38.08
5/16″; 7 mm, 8 mm	0.240″	0.237″	0.500″	2760A16	40.14
3/8″; 10 mm	0.288″	0.285″	0.625″	2760A17	43.94
7/16″; 11 mm	0.244″	0.241″	0.625″	2760A18	45.76
1/2″; 12 mm, 12.5 mm	0.277″	0.274″	0.625″	2760A19	47.90
9/16″; 14 mm	0.322″	0.320″	0.687″	2760A22	54.86
5/8″; 16 mm	0.361″	0.359″	0.750″	2760A23	57.48
3/4″	0.443″	0.441″	0.875″	2760A24	70.22
(C) Adjustable Tap Extensions					
0-12; 1/16″-7/32″; 1.6-5 mm	—	—	—	2674A71♠	31.78
12-14; 7/32″-1/2″; 6-12.5 mm	—	—	—	2674A72■	33.70

♦ Largest OD of the extension. ♠ 7″ overall length. ■ 10 3/4″ overall length.

A ***Extensions for hand tapping*** are 5″ long, made of alloy steel, and come in sets of two that can be used separately or together as a 10″ extension. The socket holds the square shank of the tap. Use with a manual tap wrench.

B ***Extensions for hand and machine tapping*** are 8″ long, made of alloy steel, and have two set screws (hex key included) for a more secure hold on the square shank of the tap in a close-fitting deep socket. Can be used with a manual tap wrench or in a power-tapping attachment.

C ***Adjustable tap extensions*** have a steel shank and chuck with replaceable hardened steel jaws. Use with a manual tap wrench.

9-Pc. Hand and Machine Tapping Extension Set— Contains one each of extensions 2760A11-A19 plus three hex keys and six extra socket set screws. Furnished in a plastic case.

2760A21 ..... **Set** $345.80

Split-Sleeve Tap Drivers

Insert tap into driver, insert driver into machine spindle, and start tapping. Also known as tap chucks, these allow you to tap holes with machines that have a Morse Taper spindle. Drivers are made of heat-treated steel with a black-oxide finish.

Shank Size▲	For Tap Sizes		
2 MT	14; 1/4″; 6 mm, 6.3 mm	2731A46	$17.29
2 MT	5/16″; 7 mm, 8 mm	2731A48	17.29
2 MT	3/8″; 10 mm	2731A49	17.29
2 MT	7/16″	2731A51	17.29
2 MT	1/2″; 12 mm, 12.5 mm	2731A52	17.29
2 MT	9/16″; 14 mm	2731A54	17.29
2 MT	5/8″; 16 mm	2731A55	17.29
2 MT	1/8″ Pipe LS♥	2731A64	17.29
3 MT	1/2″; 12 mm, 12.5 mm	2731A53	28.81
3 MT	5/8″; 16 mm	2731A56	28.81
3 MT	3/4″	2731A57	28.81
3 MT	7/8″; 22 mm	2731A59	28.81
3 MT	1/4″ Pipe	2731A65	28.81
4 MT	3/4″	2731A58	48.41
4 MT	7/8″; 22 mm	2731A61	48.41
4 MT	1″; 25 mm	2731A62	48.41
4 MT	3/8″ Pipe	2731A66	48.41
4 MT	1/2″ Pipe	2731A67	48.41
4 MT	3/4″ Pipe	2731A68	48.41

▲ MT = Morse Taper. ♥ LS = Large shank (0.4375″).

Ratcheting Wrench Set for Taps and Dies

Switch from internal to external threading using interchangeable tap and die adapters.

Set includes ratcheting wrench with attachable sliding T-handle; small tap adapter for tap sizes 0 to 1/4″; medium tap adapter for tap sizes 5/16″ to 1/2″; and die adapter for 1″ (width across flats) hex dies.

8340A21 ..... **Set** $72.79

Chip Retrievers for Tapped Holes

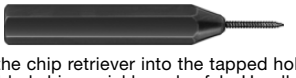

Simply insert the chip retriever into the tapped hole and pull it out, removing embedded chips quickly and safely. Handle is anodized aluminum. *3-piece set* is furnished in a wood case.

For #10 to 3/4″ Holes	2681A11	**Each**	$16.00
3-Piece Set (For #5 to 1 1/2″ Holes)	2681A21	**Set**	$52.00

Tap Aligner/Holder

Square up your tap with your work surface and keep it straight to prevent tool breakage. The base of this holder has a 120° V-guide for working on rounded surfaces. Side slots in the base act as a wrench to tighten the sleeve when changing jaws. Tool is made of steel and includes two sets of hardened jaws that hold tap sizes 0 to 1/2″ (1.6 to 12.5 mm).

Tap and Reamer Aligner/Holder	2548A12	$52.02
Replacement Jaws (2 Sets)	2548A42	14.10

Tap Sockets

Use your conventional ratchet wrench with these sockets for your tapping job. They can also be used with other tools such as screw extractors and hand reamers that have a square on the shank. Sockets are made of case-hardened steel.

For Tap Sizes	Square Drive★	Fits Tools with Square Size		Each
0-8; 1.6-3.5 mm	1/4″	0.110″	2604A37	$7.04
8; 4 mm	1/4″	0.131″	2604A39	7.04
10; 4.5 mm, 5 mm	1/4″	0.152″	2604A41	7.04
1/4″; 6 mm, 6.3 mm	1/4″	0.191″	2604A43	7.04
5/16″; 7/16″; 7 mm, 8 mm	3/8″	0.242″	2604A45	7.04
3/8″; 10 mm	3/8″	0.286″	2604A47	7.04
1/2″; 12 mm, 12.5 mm	3/8″	0.275″	2604A49	7.58
5/8″; 16 mm	1/2″	0.360″	2604A52	11.38
1/8″ Pipe	3/8″	0.328″	2604A51	7.58

★ Required wrench size shown.

8-Piece Set— Contains one of each size above (except 2604A52).

2604A35 ..... **Set** $44.98

Adjustable Tap Sockets

A knurled ring adjusts for different tap sizes, and a small profile makes it easy to slide into tight spaces. Fits 3/8″ square-drive ratchet wrenches.

For Tap Sizes		
6-1/4″	8334A31	$13.38
1/4″-1/2″	8334A32	15.26

6-in-1 Hand Tapping Tool

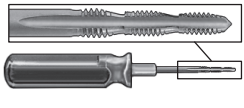

Create and restore threads in six sizes with one tool. Reverse the tool holder in the plastic handle and insert one of the two carbon steel taps, which tap three sizes each. Maximum tapping depth per thread size is 3/8″. Tool taps thread sizes 6-32, 8-32, 10-24, 10-32, 12-24, and 1/4″-20. Overall length is 8 1/2″.

6-in-1 Hand Tapping Tool	2555A7	$22.66
Repl. Tap for 6-32, 8-32, and 10-32 Sizes	2555A71	8.20
Repl. Tap for 10-24, 12-24, and 1/4″-20 Sizes	2555A72	8.20

Extractors for Hand and Spiral Point Taps

Remove broken taps and save threads without drilling or using special tools. Extractors have hardened steel fingers that fit in the flutes of a broken tap so you can remove the tap without damaging the workpiece threads. Their square shank is compatible with standard tap wrenches. Made of tool steel.

Choose 2-, 3-, or 4-finger style extractors based on the number of flutes on your tap.

Also Available: Pipe tap extractors and replacement fingers for sizes 1/8″ to 1/2″. For pipe tap extractors, please ask for 2547A61 and specify tap size. For replacement fingers, please ask for 2547A51 and specify tap size.

Individual Tap Extractors

	2- AND 3-FINGER STYLES♣				4-FINGER STYLE			
	Complete Extractors		Replacement Fingers		Complete Extractors		Replacement Fingers	
For Tap Sizes		Each	Pkg. Qty.	Pkg.		Each	Pkg. Qty.	Pkg.
4	2561A521	$12.86	12	2561A546	$6.09	—	—	—
5; 1/8″; 3 mm, 3.15 mm	2561A522	12.86	12	2561A547	6.09	—	—	—
6; 3.5 mm	2561A523	12.86	12	2561A548	6.09	2561A321	$12.86	12	2561A351	$6.09
8; 5/32″; 4 mm	2561A524	12.86	12	2561A549	6.09	2561A322	12.86	12	2561A352	6.09
10; 3/16″; 4.5 mm, 5 mm	2561A525	12.86	12	2561A551	9.04	2561A323	12.86	12	2561A353	9.04
12; 7/32″	2561A526	13.27	12	2561A552	9.05	2561A324	13.27	12	2561A354	9.04
14; 1/4″; 6 mm, 6.3 mm	2561A527	13.27	12	2561A553	10.81	2561A325	13.27	12	2561A355	10.81
5/16″; 7 mm, 8 mm	2561A529	13.84	12	2561A554	12.18	2561A327	13.84	12	2561A357	12.18
3/8″; 10 mm	2561A532	13.84	12	2561A556	12.18	2561A329	13.84	12	2561A359	12.18
7/16″	2561A534	14.41	12	2561A558	12.58	2561A332	14.41	12	2561A362	12.58
1/2″; 12 mm, 12.5 mm	2561A535	15.48	12	2561A559	16.12	2561A333	15.48	12	2561A363	16.12
9/16″; 14 mm	2561A236●	21.30	12	2561A261●	18.28	2561A334	21.30	12	2561A364	18.28
					Each					Each
5/8″; 16 mm	2561A237●	23.18	—	2561A262●	$1.92	2561A335	23.18	—	2561A365	$1.92
3/4″	2561A239●	28.41	—	2561A264●	2.12	2561A337	28.41	—	2561A367	2.12
7/8″; 22 mm	2561A241●	30.96	—	2561A265●	2.72	2561A338	30.96	—	2561A368	2.72
1″; 25 mm	2561A242●	34.73	—	2561A266●	2.72	2561A339	34.73	—	2561A369	2.72

♣ **To Order:** Please specify two- or three-finger style. ● Offered in three-finger style only.

Tap Extractor Sets— Extractors have four fingers, except for sizes 6 and smaller, which have three fingers. Come in a compartmented box.

No. of Pcs.	For Tap Sizes: Machine Screw	Fractional	Metric, mm		Set
6	10, 14	3/16″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″	4.5, 5, 6, 6.3, 7, 8, 10, 12, 12.5	2561A421	$85.83
6	14	1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″	6, 6.3, 7, 8, 10, 12, 12.5, 16	2561A422	96.23
6	—	5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″	7, 8, 10, 12, 12.5, 14, 16	2561A423	104.25
11	5, 10, 14	1/8″, 3/16″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, 3/4″, 7/8″, 1″	3, 3.15, 4.5, 5, 6, 6.3, 7, 8, 10, 12, 12.5, 16, 22, 25	2561A424	214.63
13	4, 5, 6, 8, 10, 12, 14	1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, 3/4″	3, 3.15, 3.5, 4, 4.5, 5, 6, 6.3, 7, 8, 10, 12, 12.5, 16	2561A425	202.20
15	4, 5, 6, 8, 10, 12, 14	1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, 3/4″, 7/8″, 1″	3, 3.15, 3.5, 4, 4.5, 5, 6, 6.3, 7, 8, 10, 12, 12.5, 16, 22, 25	2561A426	267.72

Drill Out Tap Removers

Drill your broken tap out of your workpiece in just three steps. Make a starter hole in the broken tap with a larger diameter drill (not included). Then choose the correct size tap remover and drill through the broken tap. Remove remains with a scriber or pick. For machine use only. Removers are solid carbide and work on spiral flute, spiral point, and hand taps.

Seven-piece set includes the four tap removers, a pin vise, two picks, and a plastic case.

For Tap Sizes	Dia.	Lg.		Each
4, 5, 6; 3 mm, 3.5 mm	5/64″	1 9/32″	2624A11	$21.54
8, 10, 12; 4 mm, 5 mm	1/8″	1 1/2″	2624A12	24.81
1/4″, 5/16″; 6 mm, 7 mm	3/16″	2″	2624A13	34.09
5/16″, 3/8″, 7/16″, 1/2″; 8 mm, 12 mm	1/4″	2 1/2″	2624A14	43.81

Seven-Piece Set 2624A25 **Set** $124.04

Hand Tap Sets

All the tap sizes you use most in one handy set. Furnished in a metal case, except sets 2524A19 and 2524A18, which come in a vinyl pouch. ***High-speed steel*** taps outlast ***carbon steel*** taps.

2524A18

27045A21

25555A31, A81

27045A22

Tap Size Range	No. of Pcs.	Individual Tap Thread Sizes	Set
Sets with Carbon Steel Plug Chamfer Hand Taps			
0-12	19	0-80, 1-64, 1-72, 2-56, 2-64, 3-48, 3-56, 4-40, 4-48, 5-40, 5-44, 6-32, 6-40, 8-32, 8-36, 10-24, 10-32, 12-24, 12-28	2524A19 $51.40
1/4″-1/2″	10	1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20	2524A18 $39.79
Sets with High-Speed Steel Plug Chamfer Hand Taps			
0-12	19	0-80, 1-64, 1-72, 2-56, 2-64, 3-48, 3-56, 4-40, 4-48, 5-40, 5-44, 6-32, 6-40, 8-32, 8-36, 10-24, 10-32, 12-24, 12-28	27045A21 $142.34
4-5/8″	10	4-40, 6-32, 8-32, 10-24, 10-32, 1/4″-20, 5/16″-18, 3/8″-16, 1/2″-13, 5/8″-11	25555A31 $114.38
1/4″-1/2″	10	1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20	27045A22 $99.74
3-16 mm	10	3×0.5, 3.5×0.6, 4×0.7, 4.5×0.75, 5×0.8, 6×1, 8×1.25, 10×1.5, 12×1.75, 16×2	25555A81 $127.09

About Taps

Tap Styles

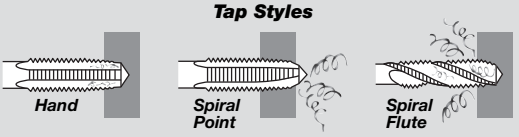

Hand Taps— Use for through-hole and blind-hole tapping. Have straight flutes that store chips during hand and machine threading.

Spiral Point Taps— Also known as gun taps, these are typically used in through-hole tapping. Have an angular point that pushes chips ahead of the tap and out of the hole. Also for use in deep blind holes where accumulated chips are beyond the length of the thread being cut.

Spiral Flute Taps— When tapping blind holes, deep holes, and holes with a keyway or gap, the spiral flute pulls chips up and out of the hole. Ideal for tapping soft materials.

Pipe Taps— Have straight or spiral flutes.

Tap Materials

Carbon steel taps are for small jobs where resistance to heat and abrasion are not a priority.

High-speed steel taps last longer than carbon steel taps during high-speed and high-volume tapping.

Cobalt steel taps provide extra heat resistance at high speeds compared to high-speed steel taps.

Vanadium steel taps offer better abrasion resistance than high-speed steel for longer tap life during high-volume tapping.

Carbide taps are for use on highly abrasive materials and require a rigid tool setup; not for hand tapping.

Surface Coatings and Treatments

Surface coatings and treatments improve tap life and workpiece thread finish during high-speed tapping of ferrous metals (such as steel and cast iron) and nonferrous metals (such as copper and aluminum), as well as plastic and graphite.

Uncoated (Bright Finish)— Handles general purpose tapping.

Chrome Plating Treatment— Increases hardness of threads on tap and decreases friction for longer tap life. Color is silver.

Oxide Treatment— Prevents buildup of workpiece material on tap surface, reduces friction, and provides a porous layer to hold lubricants. Color is blue-black.

Nitride Treatment— Improves tap surface toughness for longer tap life. Color is gray.

Oxide-over-Nitride Treatment— Combines benefits of oxide and nitride treatments for extended tap life. Color is blue-black.

TiN (Titanium Nitride) Coating— Provides longer tap life and better workpiece thread finish than uncoated (bright finish) when tapping plastics and ferrous metals. Color is gold.

TiCN (Titanium Carbonitride) Coating— Harder, tougher, and more wear resistant than TiN when used at higher speeds. Color is blue-gray.

Chamfers

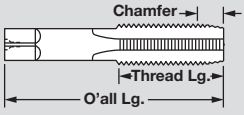

The chamfer is the reduced thread height at the front of the tap that guides the tap into the hole. There are three types of chamfers:

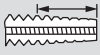

Taper Chamfer— Has 7 to 10 chamfered threads. Use for starting threads and in through holes. Requires less torque than other chamfers.

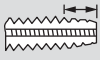

Plug Chamfer— Has 3 to 5 chamfered threads. Use in through holes as well as in blind holes that have sufficient space at the bottom for chips to accumulate.

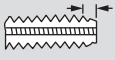

Bottoming Chamfer— Has 1 to 2 chamfered threads. Variations of the bottoming chamfer include semi-bottoming, which has 2 to 2½ chamfered threads, and modified bottoming, which has 2½ to 4 chamfered threads. Use in blind holes where threads must come as close to the hole's bottom as possible.

Pitch Diameter and Pitch Diameter Limit

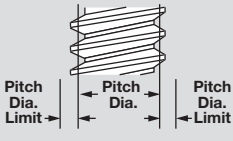

Pitch diameter is the distance across the tap from the points where the width of the thread equals the width of the space between the teeth. This is the reference point for determining tolerance (pitch diameter limit).

Pitch diameter limit is the tolerance above pitch diameter. For a looser thread fit or for materials that may shrink, select a higher pitch diameter limit. Pitch diameter limits are shown with the letter H (D for metric taps) followed by a decimal or decimal range in the table below. Most pitch diameter limits provided in this section are for Class 2B thread fit.

H1/D1	+0.0005″	**H7/D7**	+0.0030″ to +0.0035″
H2/D2	+0.0005″ to +0.0010″	**H8/D8**	+0.0035″ to +0.0040″
H3/D3	+0.0010″ to +0.0015″	**H9/D9**	+0.0040″ to +0.0045″
H4/D4	+0.0015″ to +0.0020″	**H10/D10**	+0.0045″ to +0.0050″
H5/D5	+0.0020″ to +0.0025″	**H11/D11**	+0.0050″ to +0.0055″
H6/D6	+0.0025″ to +0.0030″	**H12/D12**	+0.0055″ to +0.0060″

Carbon Steel Hand Taps

When you need a tap for occasional use, these are an economical choice. Taps are uncoated (bright finish) and do not have pitch diameter limits. **To Order:** Please specify taper, plug, or bottoming chamfer. ***Tap sets*** include one each taper, plug, and bottoming tap of the same size (a set of all three taps is recommended when tapping to the bottom of a blind hole).

Tap Thread Size	Thread Lg.	O'all Lg.	Taps	Each	Tap Sets	Set
0-80	5/16″	1 5/8″	25995A111	$5.71	25995A117	$15.42
1-72	3/8″	1 11/16″	25995A112	5.35	25995A118	14.45
2-56	7/16″	1 3/4″	25995A411	5.59	25995A333	15.09
4-40	9/16″	1 7/8″	25995A412	2.63	25995A335	7.10
6-32	11/16″	2″	25995A413	2.08	25995A337	5.62
8-32	3/4″	2 1/8″	25995A414	2.08	25995A338	5.62
10-24	7/8″	2 3/8″	25995A415	2.24	25995A339	6.05
10-32	7/8″	2 3/8″	25995A416	2.24	25995A359	6.05
12-24	15/16″	2 3/8″	25995A417	2.63	25995A341	7.10
1/8″-40	5/8″	1 15/16″	26035A511	1.97	26035A413	5.32
3/16″-24	7/8″	2 3/8″	26035A512	2.19	26035A416	5.91
1/4″-20	1″	2 1/2″	26035A513	2.32	26035A351	6.26
1/4″-28	1″	2 1/2″	26035A514	2.32	26035A371	6.26
5/16″-18	1 1/8″	2 23/32″	26035A515	2.80	26035A352	7.56
5/16″-24	1 1/8″	2 23/32″	26035A516	2.80	26035A372	7.56
3/8″-16	1 1/4″	2 15/16″	26035A517	3.14	26035A353	8.48
3/8″-24	1 1/4″	2 15/16″	26035A518	3.14	26035A373	8.48
7/16″-14	1 7/16″	3 5/32″	26035A519	4.15	26035A354	11.21
7/16″-20	1 7/16″	3 5/32″	26035A521	4.15	26035A374	11.21
1/2″-13	1 21/32″	3 3/8″	26035A522	4.73	26035A355	12.77
1/2″-20	1 21/32″	3 3/8″	26035A523	4.73	26035A375	12.77
9/16″-12	1 21/32″	3 19/32″	26035A524	$6.43	26035A356	$17.36
9/16″-18	1 21/32″	3 19/32″	26035A525	6.43	26035A376	17.36
5/8″-11	1 13/16″	3 13/16″	26035A526	7.20	26035A357	19.44
5/8″-18	1 13/16″	3 13/16″	26035A527	7.20	26035A377	19.44
3/4″-10	2″	4 1/4″	26035A528	10.00	26035A359	27.00
3/4″-16	2″	4 1/4″	26035A529	10.00	26035A379	27.00
7/8″-9	2 7/32″	4 11/16″	26035A531	13.89	26035A361	37.50
7/8″-14	2 7/32″	4 11/16″	26035A532	13.89	26035A381	37.50
1″-8	2 1/2″	5 1/8″	26035A533	17.18	26035A362	46.39
1″-12	2 1/2″	5 1/8″	26035A534	17.18	26035A382	46.39
1″-14	2 1/2″	5 1/8″	26035A535	17.18	26035A844	46.39
1 1/8″-7	2 9/16″	5 7/16″	26035A536	42.87	26035A363	115.75
1 1/8″-12	2 9/16″	5 7/16″	26035A537	42.87	26035A383	115.75
1 1/4″-7	2 9/16″	5 3/4″	26035A538	49.22	26035A364	132.89
1 1/4″-12	2 9/16″	5 3/4″	26035A539	49.22	26035A384	132.89
1 3/8″-6	3″	6 1/16″	26035A541	79.41	26035A365	214.41
1 3/8″-12	3″	6 1/16″	26035A542	79.41	26035A385	214.41
1 1/2″-6	3″	6 3/8″	26035A543	93.61	26035A366	252.75
1 3/4″-5	3 3/16″	7″	26035A544	135.85	26035A367	366.80
2″-4 1/2	3 9/16″	7 5/8″	26035A545	182.89	26035A368	493.80

For information about taps, see page 2536.

General Purpose High-Speed Steel Hand Taps

Get the job done with these uncoated (bright finish) high-speed steel taps, which are for use on almost any type of metal. ***Tap sets*** include one each taper, plug, and bottoming tap of the same size (a set of all three taps is recommended when tapping to the bottom of a blind hole).

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
0-80	H1	2	5/16"	1 5/8"	3/64"	2522A751	2522A771	2522A811	$11.66	2522A881	$31.48
1-64	H1	2	3/8"	1 11/16"	#53	2522A662	2522A712	2522A732	10.80	2522A862	29.16
1-72	H1	2	3/8"	1 11/16"	#53	2522A752	2522A772	2522A812	10.80	2522A882	29.16
2-56	H2	3	7/16"	1 3/4"	#50	2522A663	2522A713	2522A733	9.30	2522A863	25.11
2-64	H2	3	7/16"	1 3/4"	#50	2522A753	2522A773	2522A813	10.03	2522A883	27.08
3-48	H2	3	1/2"	1 13/16"	#47	2522A664	2522A714	2522A734	7.14	2522A864	19.28
3-56	H2	3	1/2"	1 13/16"	#46	2522A754	2522A774	2522A814	7.99	2522A884	21.57
4-40	H2	3	9/16"	1 7/8"	#43	2522A665	2522A715	2522A735	5.86	2522A865	15.82
4-48	H2	3	9/16"	1 7/8"	#42	2522A755	2522A775	2522A815	6.31	2522A885	17.04
5-40	H2	3	5/8"	1 15/16"	#38	2522A666	2522A716	2522A736	5.86	2522A866	15.82
5-44	H2	3	5/8"	1 15/16"	#37	2522A756	2522A776	2522A816	6.31	2522A886	17.04
6-32	H3	3	11/16"	2"	#36	2522A667	2522A717	2522A737	4.45	2522A867	12.02
6-40	H2	3	11/16"	2"	#33	2522A757	2522A777	2522A817	4.74	2522A887	12.80
8-32	H3	4	3/4"	2 1/8"	#29	2522A668	2522A718	2522A738	4.62	2522A868	12.47
8-36	H2	4	3/4"	2 1/8"	#29	2522A758	2522A778	2522A818	4.74	2522A888	12.80
10-24	H3	4	7/8"	2 3/8"	#26	2522A671	2522A719	2522A739	4.74	2522A869	12.80
10-32	H3	4	7/8"	2 3/8"	#21	2522A759	2522A779	2522A819	4.74	2522A889	12.80
12-24	H3	4	15/16"	2 3/8"	#16	2522A672	2522A721	2522A741	5.02	2522A871	13.55
12-28	H3	4	15/16"	2 3/8"	#15	2522A761	2522A781	2522A821	5.51	2522A891	14.88
1/4"-20	H3	4	1"	2 1/2"	#7	2521A571	2521A621	2521A641	5.11	2521A771	13.80
1/4"-28	H3	4	1"	2 1/2"	#3	2521A661	2521A681	2521A721	5.11	2521A821	13.80
1/4"-32	H3	4	1"	2 1/2"	5.6 mm	2521A482	2521A427	2521A445	6.86	2521A211	17.07
5/16"-18	H3	4	1 1/8"	2 23/32"	F	2521A572	2521A622	2521A642	6.31	2521A772	17.04
5/16"-24	H3	4	1 1/8"	2 23/32"	I	2521A662	2521A682	2521A722	6.31	2521A822	17.04
5/16"-32	H3	4	1 1/8"	2 23/32"	9/32"	2521A418	2521A428	2521A446	8.07	2521A212	19.97
3/8"-16	H3	4	1 1/4"	2 15/16"	5/16"	2521A573	2521A623	2521A643	7.13	2521A773	19.25
3/8"-24	H3	4	1 1/4"	2 15/16"	Q	2521A663	2521A683	2521A723	7.13	2521A823	19.25
3/8"-32	H3	4	1 1/4"	2 15/16"	11/32"	2521A419	2521A429	2521A447	8.23	2521A213	20.37
7/16"-14	H3	4	1 7/16"	3 5/32"	U	2521A574	2521A624	2521A644	12.14	2521A774	32.78
7/16"-20	H3	4	1 7/16"	3 5/32"	25/64"	2521A664	2521A684	2521A724	12.14	2521A824	32.78
7/16"-28	H3	4	1 7/16"	3 5/32"	13/32"	2521A421	2521A483	2521A448	11.58	2521A214	28.70
1/2"-13	H3	4	1 21/32"	3 3/8"	27/64"	2521A575	2521A625	2521A645	12.92	2521A775	34.88
1/2"-20	H3	4	1 21/32"	3 3/8"	29/64"	2521A665	2521A685	2521A725	14.44	2521A825	38.99
1/2"-28	H3	4	1 21/32"	3 3/8"	11.8 mm	2521A422	2521A484	2521A449	13.89	2521A215	34.11
9/16"-12	H3	4	1 21/32"	3 19/32"	31/64"	2521A576	2521A626	2521A646	21.94	2521A776	59.24
9/16"-18	H3	4	1 21/32"	3 19/32"	33/64"	2521A666	2521A686	2521A726	21.94	2521A826	59.24
5/8"-11	H3	4	1 13/16"	3 13/16"	17/32"	2521A577	2521A627	2521A647	26.24	2521A777	70.85
5/8"-18	H3	4	1 13/16"	3 13/16"	37/64"	2521A667	2521A687	2521A727	26.24	2521A827	70.85
5/8"-24	H3	6	1 13/16"	3 13/16"	14.8 mm	2521A423	2521A527	2521A495	18.46	2521A216	44.50
11/16"-24	H3	6	1 13/16"	4 1/32"	16.5 mm	2521A424	2521A491	2521A497	22.61	2521A217	54.48
3/4"-10	H3	4	2"	4 1/4"	21/32"	2521A578	2521A628	2521A648	36.66	2521A778	98.98
3/4"-16	H3	4	2"	4 1/4"	11/16"	2521A668	2521A688	2521A728	36.66	2521A828	98.98
3/4"-20	H3	6	2"	4 1/4"	45/64"	2521A425	2521A443	2521A498	26.20	2521A218	61.99
7/8"-9	H4	4	2 7/32"	4 11/16"	49/64"	2521A579	2521A629	2521A649	51.20	2521A779	138.24
7/8"-14	H4	4	2 7/32"	4 11/16"	13/16"	2521A669	2521A689	2521A729	51.20	2521A829	138.24
7/8"-20	H3	6	2 7/32"	4 11/16"	53/64"	2521A426	2521A444	2521A456	35.87	2521A219	84.86
1"-8	H4	4	2 1/2"	5 1/8"	7/8"	2521A581	2521A631	2521A651	68.17	2521A781	184.06
1"-12	H4	4	2 1/2"	5 1/8"	59/64"	2521A671	2521A691	2521A731	70.32	2521A831	189.86
1"-14	H4	4	2 1/2"	5 1/8"	23.6 mm	2521A851	2521A852	2521A853	68.17	2521A854	184.06
1 1/8"-7	H4	4	2 9/16"	5 7/16"	63/64"	2521A582	2521A632	2521A652	110.21	2521A782	297.57
1 1/8"-12	H4	4	2 9/16"	5 7/16"	1 3/64"	2521A672	2521A692	2521A732	117.06	2521A832	316.06
1 1/4"-7	H4	4	2 9/16"	5 3/4"	1 7/64"	2521A583	2521A633	2521A653	144.35	2521A783	389.75
1 1/4"-12	H4	6	2 9/16"	5 3/4"	1 11/64"	2521A673	2521A693	2521A733	147.27	2521A833	397.63
1 3/8"-6	H4	4	3"	6 1/16"	1 7/32"	2521A584	2521A634	2521A654	182.38	2521A784	492.43
1 3/8"-12	H4	6	3"	6 1/16"	1 19/64"	2521A674	2521A694	2521A734	183.35	2521A834	495.05
1 1/2"-6	H4	4	3"	6 3/8"	1 11/32"	2521A855	2521A856	2521A857	209.69	2521A858	566.16
1 1/2"-12	H4	6	3"	6 3/8"	1 27/64"	2521A859	2521A861	2521A862	213.58	2521A863	576.67

0.005" Oversize High-Speed Steel Hand Taps

The H11 pitch diameter limit on these taps provides a +0.005" tolerance, leaving enough space in your part's threaded hole for heat treating or plating. Taps are uncoated (bright finish) for use on most metals. All taps have a plug chamfer and four flutes, except sizes 6-32 through 10-32, which have three flutes.

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦		
6-32	H11	11/16"	2"	#36	2535A11	$5.82
8-32	H11	3/4"	2 1/8"	#29	2535A12	5.83
10-24	H11	7/8"	2 3/8"	#26	2535A13	5.99
10-32	H11	7/8"	2 3/8"	#21	2535A23	5.99
1/4"-20	H11	1"	2 1/2"	#7	2535A14	6.17
1/4"-28	H11	1"	2 1/2"	#3	2535A33	5.75
5/16"-18	H11	1 1/8"	2 23/32"	F	2535A15	7.20
5/16"-24	H11	1 1/8"	2 23/32"	I	2535A34	6.44
3/8"-16	H11	1 1/4"	2 15/16"	5/16"	2535A16	$8.14
3/8"-24	H11	1 1/4"	2 15/16"	Q	2535A35	6.78
7/16"-14	H11	1 7/16"	3 5/32"	U	2535A19	12.79
7/16"-20	H11	1 7/16"	3 5/32"	25/64"	2535A21	10.65
1/2"-13	H11	1 21/32"	3 3/8"	27/64"	2535A17	15.45
1/2"-20	H11	1 21/32"	3 3/8"	29/64"	2535A36	12.64
5/8"-11	H11	1 13/16"	3 13/16"	17/32"	2535A18	27.42

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Metric High-Speed Steel Hand Taps

Metric-sized and uncoated (bright finish), these taps are for general purpose use on most metals. ***Tap sets*** include one each taper, plug, and bottoming tap of the same size (a set of all three is recommended when tapping to the bottom of a blind hole).

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
1.6×0.35	D3	2	5/16″	1 5/8″	1.25 mm	26015A631	26015A632	26015A633	$11.45	26015A411	$30.91
1.8×0.35	D3	2	3/8″	1 11/16″	1.45 mm	26015A122	26015A123	26015A124	15.44	26015A412	41.69
2 ×0.4	D3	3	7/16″	1 3/4″	1.6 mm	8305A77	8305A78	8305A79	15.08	8305A511	40.72
2.2×0.45	D3	3	7/16″	1 3/4″	1.75 mm	26015A131	26015A132	26015A133	14.54	26015A413	39.26
2.5×0.45	D3	3	1/2″	1 13/16″	2.05 mm	8305A11	8305A31	8305A51	8.94	8305A513	24.14
3 ×0.5	D3	3	5/8″	1 15/16″	2.5 mm	8305A12	8305A32	8305A52	7.74	8305A515	20.90
3.5×0.6	D4	3	11/16″	2″	2.9 mm	8305A13	8305A33	8305A53	6.69	8305A517	18.06
4 ×0.7	D2	4	3/4″	2 1/8″	3.3 mm	26015A157	26015A158	26015A159	13.10	26015A414	35.37
4 ×0.7	D4	4	3/4″	2 1/8″	3.3 mm	8305A14	8305A34	8305A54	6.37	8305A519	17.20
4 ×0.75	D4	4	3/4″	2 1/8″	3.3 mm	26015A154	26015A155	26015A156	21.16	26015A415	57.13
4.5×0.75	D4	4	7/8″	2 3/8″	3.7 mm	8305A15	8305A35	8305A55	6.69	8305A522	18.06
5 ×0.5	D3	4	7/8″	2 3/8″	4.5 mm	26015A141	26015A142	26015A143	20.97	26015A416	56.62
5 ×0.8	D4	4	7/8″	2 3/8″	4.2 mm	8305A16	8305A36	8305A56	6.37	8305A524	17.20
6 ×0.5	D3	4	1″	2 1/2″	5.5 mm	26015A151	26015A152	26015A153	28.88	26015A417	77.98
6 ×0.75	D3	4	1″	2 1/2″	5.25 mm	26015A161	26015A162	26015A163	12.76	26015A418	34.45
6 ×1	D3	4	1″	2 1/2″	5.0 mm	26015A164	26015A165	26015A166	12.76	26015A419	34.45
6 ×1	D5	4	1″	2 1/2″	5.0 mm	8305A17	8305A37	8305A57	6.75	8305A526	18.23
6.3×1	D5	4	1″	2 1/2″	5.3 mm	26015A671	26015A672	26015A673	6.86	26015A674	18.87
7 ×1	D5	4	1 1/8″	2 23/32″	6.0 mm	8305A18	8305A38	8305A58	7.37	8305A528	19.90
8 ×0.5	D4	4	1 1/8″	2 23/32″	7.5 mm	26015A177	26015A178	26015A179	22.40	26015A422	60.48
8 ×0.75	D5	4	1 1/8″	2 23/32″	7.3 mm	26015A171	26015A172	26015A173	30.04	26015A423	81.11
8 ×1	D3	4	1 1/8″	2 23/32″	7.0 mm	26015A174	26015A175	26015A176	12.16	26015A424	32.83
8 ×1	D5	4	1 1/8″	2 23/32″	7.0 mm	26015A181	26015A182	26015A183	9.07	26015A425	24.49
8 ×1.25	D3	4	1 1/8″	2 23/32″	6.7 mm	26015A167	26015A168	26015A169	12.16	26015A426	32.83
8 ×1.25	D5	4	1 1/8″	2 23/32″	6.7 mm	8305A19	8305A39	8305A59	7.37	8305A531	19.90
9 ×1	D5	4	1 1/4″	2 15/16″	8.0 mm	26015A187	26015A188	26015A189	29.76	26015A427	80.35
9 ×1.25	D5	4	1 1/4″	2 15/16″	7.8 mm	26015A184	26015A185	26015A186	29.76	26015A428	80.35
10 ×1	D3	4	1 1/4″	2 15/16″	9.0 mm	26015A197	26015A198	26015A199	19.69	26015A429	53.16
10 ×1	D5	4	1 1/4″	2 15/16″	9.0 mm	26015A191	26015A192	26015A193	33.78	26015A431	91.21
10 ×1.25	D5	4	1 1/4″	2 15/16″	8.7 mm	26015A211	26015A212	26015A213	17.17	26015A432	46.36
10 ×1.5	D3	4	1 1/4″	2 15/16″	8.5 mm	26015A194	26015A195	26015A196	21.12	26015A433	57.02
10 ×1.5	D6	4	1 1/4″	2 15/16″	8.5 mm	8305A2	8305A4	8305A6	9.12	8305A533	24.62
11 ×1	D5	4	1 21/32″	3 3/8″	10.0 mm	26015A217	26015A218	26015A219	34.89	26015A434	94.20
11 ×1.5	D6	4	1 21/32″	3 3/8″	9.5 mm	26015A214	26015A215	26015A216	24.35	26015A435	65.75
12 ×1	D5	4	1 21/32″	3 3/8″	11.0 mm	26015A221	26015A222	26015A223	35.33	26015A436	95.39
12 ×1.25	D5	4	1 21/32″	3 3/8″	10.8 mm	26015A231	26015A232	26015A233	21.11	26015A437	57.00
12 ×1.5	D6	4	1 21/32″	3 3/8″	10.5 mm	26015A611	26015A612	26015A613	37.30	26015A438	100.71
12 ×1.75	D3	4	1 21/32″	3 3/8″	10.2 mm	26015A224	26015A225	26015A226	26.25	26015A439	70.88
12 ×1.75	D6	4	1 21/32″	3 3/8″	10.2 mm	8305A21	8305A41	8305A61	16.32	8305A535	44.06
14 ×1	D5	4	1 21/32″	3 19/32″	13.0 mm	26015A241	26015A242	26015A243	40.14	26015A441	108.38
14 ×1.25	D4	4	1 21/32″	3 19/32″	12.8 mm	26015A227	26015A228	26015A229	35.45	26015A442	95.72
14 ×1.5	D6	4	1 21/32″	3 19/32″	12.5 mm	26015A251	26015A252	26015A253	30.69	26015A443	82.86
14 ×2	D7	4	1 21/32″	3 19/32″	12.0 mm	8305A22	8305A42	8305A62	24.39	8305A537	65.85
16 ×1	D5	4	1 13/16″	3 13/16″	15.0 mm	26015A234	26015A235	26015A236	41.23	26015A444	111.32
16 ×1.5	D6	4	1 13/16″	3 13/16″	14.5 mm	26015A261	26015A262	26015A263	35.09	26015A445	94.74
16 ×2	D7	4	1 13/16″	3 13/16″	14.0 mm	8305A23	8305A43	8305A63	29.71	8305A539	80.22
18 ×1	D5	4	1 13/16″	4 1/32″	17.0 mm	26015A271	26015A272	26015A273	53.52	26015A446	144.50
18 ×1.5	D6	4	1 13/16″	4 1/32″	16.5 mm	26015A281	26015A282	26015A283	45.87	26015A447	123.85
18 ×2.5	D7	4	1 11/16″	4 1/32″	15.5 mm	8305A24	8305A44	8305A64	39.96	8305A542	107.89
20 ×1	D6	4	2″	4 15/32″	3/4″	26015A237	26015A238	26015A239	56.31	26015A448	152.04
20 ×1.5	D6	4	2″	4 15/32″	47/64″	26015A291	26015A292	26015A293	58.58	26015A449	158.17
20 ×2.5	D7	4	2″	4 15/32″	17.5 mm	8305A25	8305A45	8305A65	54.38	8305A544	146.83
22 ×1.5	D6	4	2 7/32″	4 11/16″	13/16″	26015A311	26015A312	26015A313	63.40	26015A451	171.18
22 ×2.5	D7	4	2 7/32″	4 11/16″	25/32″	26015A321	26015A322	26015A323	63.40	26015A452	171.18
24 ×1.5	D6	4	2 7/32″	4 29/32″	57/64″	26015A331	26015A332	26015A333	82.45	26015A453	222.62
24 ×2	D7	4	2 7/32″	4 29/32″	22.0 mm	26015A341	26015A342	26015A343	75.16	26015A454	202.93
24 ×3	D8	4	2 7/32″	4 29/32″	21.0 mm	8305A66	8305A67	8305A68	75.64	8305A546	204.23
26 ×1.5	D6	6	2 1/2″	5 1/8″	24.5 mm	26015A351	26015A352	26015A353	87.92	26015A455	237.38
27 ×1.5	D6	6	1 1/2″	4″	1″	26015A244	26015A245	26015A246	89.10	26015A456	240.57
27 ×2	D7	4	2 1/2″	5 1/8″	25.0 mm	26015A361	26015A362	26015A363	106.92	26015A457	288.68
27 ×3	D8	4	2 1/2″	5 1/8″	24.0 mm	26015A371	26015A372	26015A373	106.92	26015A458	288.68
30 ×1.5	D6	6	1 1/2″	4″	1 1/8″	26015A381	26015A382	26015A383	150.85	26015A459	407.30
30 ×2	D5	4	2 9/16″	5 7/16″	1 7/64″	26015A247	26015A248	26015A249	145.20	26015A461	392.04
30 ×2	D7	4	2 9/16″	5 7/16″	1 7/64″	26015A391	26015A392	26015A393	145.86	26015A462	393.82
30 ×3.5	D9	4	2 9/16″	5 7/16″	1 1/32″	8305A69	8305A71	8305A72	167.01	8305A548	450.93
33 ×2	D7	4	2 9/16″	5 3/4″	1 7/32″	26015A254	26015A255	26015A256	128.02	26015A463	345.65
33 ×3.5	D9	4	2 9/16″	5 3/4″	1 5/32″	26015A731	26015A732	26015A733	157.40	26015A464	424.98
35 ×1.5	D6	6	1 1/2″	4″	1 5/16″	26015A257	26015A258	26015A259	132.91	26015A465	358.86
36 ×1.5	D6	6	1 1/2″	4″	1 11/32″	26015A267	26015A268	26015A269	149.85	26015A466	404.60
36 ×2	D7	6	3″	6 1/16″	1 21/64″	26015A264	26015A265	26015A266	172.08	26015A467	464.62
36 ×4	D9	4	3″	6 1/16″	32.0 mm	8305A73	8305A74	8305A75	211.62	8305A551	571.37
40 ×1.5	D6	6	2″	5″	1 33/64″	26015A274	26015A275	26015A276	182.10	26015A468	491.67
42 ×4.5	D10	6	3 3/16″	7″	1 15/32″	26015A277	26015A278	26015A279	255.60	26015A469	690.12

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

High-Speed Steel Hand Taps for Deep Threading

Fewer flutes give chips extra space to accumulate when tapping holes with depths more than 1½ times the tap diameter. ***Uncoated (bright finish)*** taps are for use on most metals. ***TiN (titanium nitride) coated*** taps have improved tap life and workpiece thread finish compared to uncoated (bright finish) taps when used on plastic and ferrous metals such as steel and stainless steel.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	UNCOATED (BRIGHT FINISH) Plug	Bottoming		TiN COATED Plug	Bottoming	
2-56	H2	2	7/16"	1 3/4"	#50	26955A21	26955A61	$10.04	26955A11	26955A68	$12.51
3-48	H2	2	1/2"	1 13/16"	#47	26955A22	26955A62	8.07	26955A12	26955A69	10.06
4-40	H2	2	9/16"	1 7/8"	#43	26955A24	26955A64	6.32	26955A13	26955A71	7.87
5-40	H2	2	5/8"	1 15/16"	#38	26955A25	26955A65	6.32	26955A14	26955A72	7.87
6-32	H3	2	11/16"	2"	#36	26955A27	26955A67	4.74	26955A15	26955A74	5.91
6-40	H2	2	11/16"	2"	#33	26955A28	26955A281	5.51	26955A16	26955A161	11.13
8-32	H3	3	3/4"	2 1/8"	#29	26955A33	26955A73	4.19	26955A17	26955A76	5.91
10-24	H3	3	7/8"	2 3/8"	#26	26955A37	26955A77	4.94	26955A18	26955A78	6.15
10-32	H2	3	7/8"	2 3/8"	#21	26955A39	26955A79	5.51	26955A19	26955A85	6.88
10-32	H3	2	7/8"	2 3/8"	#21	26955A41	26955A81	4.94	26955A29	26955A86	5.61
10-32	H3	3	7/8"	2 3/8"	#21	26955A42	26955A82	4.94	26955A31	26955A87	6.15
1/4"-20	H3	2	1"	2 1/2"	#7	26955A43	26955A83	6.39	26955A32	26955A95	7.97
1/4"-20	H3	3	1"	2 1/2"	#7	26955A44	26955A84	6.39	26955A34	26955A97	7.97
1/4"-28	H3	3	1"	2 1/2"	#3	26955A48	26955A88	6.39	26955A35	26955A98	7.97
5/16"-18	H3	2	1 1/8"	2 23/32"	F	26955A49	26955A89	7.99	26955A36	26955A99	9.97
5/16"-18	H3	3	1 1/8"	2 23/32"	F	26955A51	26955A91	7.99	26955A45	26955A991	9.11
5/16"-24	H3	3	1 1/8"	2 23/32"	I	26955A52	26955A92	7.99	26955A46	26955A992	9.97
3/8"-16	H3	3	1 1/4"	2 15/16"	5/16"	26955A53	26955A93	8.06	26955A47	26955A993	10.04
3/8"-24	H3	3	1 1/4"	2 15/16"	Q	26955A54	26955A94	9.26	26955A58	26955A994	11.53
7/16"-14	H3	3	1 7/16"	3 5/32"	U	26955A55	_____	13.39	26955A59	_____	16.70
1/2"-13	H3	3	1 21/32"	3 3/8"	27/64"	26955A56	26955A96	15.87	26955A63	26955A996	19.80
1/2"-20	H3	3	1 21/32"	3 3/8"	29/64"	26955A57	_____	15.87	26955A66	_____	19.80

Special Thread Size High-Speed Steel Hand Taps

Find unusual tap thread sizes here. Taps are uncoated (bright finish) for use on most metals. **To Order:** Specify taper, plug, or bottoming chamfer. Tap thread sizes 15/16"-20 and 1 1/4"-18 are not available with taper chamfer.

Also Available: Additional sizes from No. 0 to 4". Please ask for 2595A999 and specify tap thread size (diameter and threads per inch); pitch diameter limit; and taper, plug, or bottoming chamfer.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
6-48	H2	3	11/16"	2"	3.0 mm	2595A515	$24.89
8-24	H3	4	3/4"	2 1/8"	1/8"	2595A147	24.79
8-40	H2	4	3/4"	2 1/8"	#28	2595A148	24.79
10-28	H3	4	7/8"	2 3/8"	5/32"	2595A149	32.87
10-36	H2	4	7/8"	2 3/8"	#19	2595A151	32.87
10-40	H2	4	7/8"	2 3/8"	4.2 mm	2595A152	32.87
10-48	H2	4	7/8"	2 3/8"	#18	2595A153	32.87
10-56	H2	4	7/8"	2 3/8"	#17	2595A154	32.87
12-36	H2	4	15/16"	2 3/8"	4.8 mm	2595A559	26.95
3/16"-100	H2	4	0.194"	2 3/8"	#14	2595A12	34.96
7/32"-32	H3	4	1"	2 1/2"	3/16"	2595A811	29.78
1/4"-24	H3	4	1"	2 1/2"	#7	2595A158	20.62
1/4"-27	H3	4	1"	2 1/2"	#3	2595A159	20.62
1/4"-36	H2	4	1"	2 1/2"	#2	2595A161	20.62
1/4"-36	H3	4	1"	2 1/2"	#2	2595A162	21.44
1/4"-40	H2	4	1"	2 1/2"	5.7 mm	2595A163	20.62
1/4"-40	H3	4	1"	2 1/2"	#1	2595A464	21.44
1/4"-48	H2	4	1"	2 1/2"	5.8 mm	2595A201	20.62
1/4"-56	H2	4	1"	2 1/2"	5.9 mm	2595A202	20.62
1/4"-80	H2	4	1"	2 1/2"	B	2595A813	26.55
9/32"-32	H3	4	1 1/8"	2 23/32"	1/4"	2595A814	46.00
5/16"-20	H3	4	1 1/8"	2 23/32"	6.7 mm	2595A239	24.85
5/16"-27	H3	4	1 1/8"	2 23/32"	7 mm	2595A241	24.85
5/16"-28	H3	4	1 1/8"	2 23/32"	J	2595A242	24.85
5/16"-40	H2	4	1 1/8"	2 23/32"	7.3 mm	2595A243	24.85
11/32"-32	H3	4	1 1/4"	2 15/16"	5/16"	2595A816	26.18
3/8"-18	H3	4	1 1/4"	2 15/16"	8.2 mm	2595A245	27.60
3/8"-20	H3	4	1 1/4"	2 15/16"	8.3 mm	2595A246	27.60
3/8"-27	H3	4	1 1/4"	2 15/16"	R	2595A247	27.60
3/8"-28	H3	4	1 1/4"	2 15/16"	R	2595A444	27.60
3/8"-40	H2	4	1 1/4"	2 15/16"	8.9 mm	2595A284	27.60
7/16"-16	H3	4	1 7/16"	3 5/32"	V	2595A285	29.90
7/16"-18	H3	4	1 7/16"	3 5/32"	9.7 mm	2595A286	29.90
7/16"-24	H3	4	1 7/16"	3 5/32"	X	2595A819	29.71
7/16"-27	H3	4	1 7/16"	3 5/32"	10.2 mm	2595A287	30.28
7/16"-32	H3	4	1 7/16"	3 5/32"	13/32"	2595A293	30.28
7/16"-40	H2	4	1 7/16"	3 5/32"	10.5 mm	2595A294	30.28
15/32"-32	H3	6	1 21/32"	3 3/8"	7/16"	2595A235	41.00
1/2"-12	H3	4	1 21/32"	3 3/8"	27/64"	2595A295	32.60
1/2"-16	H3	4	1 21/32"	3 3/8"	7/16"	2595A296	32.60
1/2"-18	H3	4	1 21/32"	3 3/8"	11.2 mm	2595A331	32.60
1/2"-24	H3	4	1 21/32"	3 3/8"	29/64"	2595A332	32.60
1/2"-27	H3	4	1 21/32"	3 3/8"	11.8 mm	2595A333	32.60
1/2"-32	H3	6	1 21/32"	3 3/8"	15/32"	2595A334	32.60
1/2"-40	H2	6	1 21/32"	3 3/8"	12.0 mm	2595A335	32.60
9/16"-16	H3	4	1 21/32"	3 19/32"	1/2"	2595A336	30.72
9/16"-20	H3	4	1 21/32"	3 19/32"	33/64"	2595A337	$30.72
9/16"-24	H3	4	1 21/32"	3 19/32"	33/64"	2595A338	30.72
9/16"-27	H3	6	1 21/32"	3 19/32"	17/32"	2595A339	30.72
9/16"-32	H3	6	1 21/32"	3 19/32"	17/32"	2595A341	30.72
5/8"-12	H3	4	1 13/16"	3 13/16"	35/64"	2595A342	43.24
5/8"-16	H3	4	1 13/16"	3 13/16"	9/16"	2595A343	43.24
5/8"-20	H3	4	1 13/16"	3 13/16"	37/64"	2595A344	43.24
5/8"-27	H3	6	1 13/16"	3 13/16"	15.0 mm	2595A345	43.24
5/8"-28	H3	6	1 13/16"	3 13/16"	15.0 mm	2595A346	43.24
5/8"-32	H3	6	1 13/16"	3 13/16"	19/32"	2595A347	43.24
11/16"-16	H3	4	1 13/16"	4 1/32"	5/8"	2595A348	46.48
11/16"-18	H3	4	1 13/16"	4 1/32"	16.0 mm	2595A349	46.48
11/16"-20	H3	6	1 13/16"	4 1/32"	41/64"	2595A351	46.48
11/16"-32	H3	6	1 13/16"	4 1/32"	21/32"	2595A352	46.48
3/4"-12	H4	4	2"	4 1/4"	17.0 mm	2595A353	48.43
3/4"-18	H3	4	2"	4 1/4"	45/64"	2595A381	48.43
3/4"-24	H3	6	2"	4 1/4"	45/64"	2595A382	48.43
3/4"-27	H3	6	2"	4 1/4"	23/32"	2595A383	48.43
3/4"-32	H3	6	2"	4 1/4"	23/32"	2595A384	48.43
13/16"-12	H4	4	2"	4 15/32"	47/64"	2595A385	59.31
13/16"-16	H3	4	2"	4 15/32"	3/4"	2595A386	59.31
13/16"-18	H3	4	2"	4 15/32"	49/64"	2595A387	59.31
7/8"-12	H4	4	2 7/32"	4 11/16"	51/64"	2595A388	64.70
7/8"-16	H3	4	2 7/32"	4 11/16"	13/16"	2595A389	64.70
7/8"-18	H3	4	2 7/32"	4 11/16"	53/64"	2595A391	64.70
7/8"-27	H3	6	2 7/32"	4 11/16"	27/32"	2595A401	86.72
7/8"-32	H3	6	2 7/32"	4 11/16"	27/32"	2595A402	86.72
15/16"-16	H3	6	2 7/32"	4 29/32"	7/8"	2595A439	67.29
15/16"-20	H3	6	2 7/32"	4 29/32"	57/64"	2595A864	60.87
1"-16	H3	6	2 1/2"	5 1/8"	15/16"	2595A405	73.91
1"-18	H3	6	2 1/2"	5 1/8"	61/64"	2595A406	73.91
1"-20	H3	6	2 1/2"	5 1/8"	61/64"	2595A455	72.66
1"-24	H3	6	2 1/2"	5 1/8"	61/64"	2595A408	73.91
1"-32	H3	6	2 1/2"	5 1/8"	31/32"	2595A409	73.91
1 1/16"-20	H4	6	1 1/2"	4"	1"	2595A834	104.50
1 1/8"-14	H5	6	1 1/2"	4"	1 3/64"	2595A835	111.66
1 1/8"-16	H4	6	1 1/2"	4"	1 1/16"	2595A836	91.55
1 1/8"-20	H4	6	1 1/2"	4"	1 5/64"	2595A837	111.66
1 3/16"-16	H4	6	1 1/2"	4"	1 1/8"	2595A448	126.50
1 3/16"-20	H4	6	1 1/2"	4"	1 9/64"	2595A449	126.50
1 1/4"-16	H4	6	1 1/2"	4"	1 3/16"	2595A461	98.36
1 1/4"-18	H6	6	1 1/2"	4"	1 3/16"	2595A861	117.90
1 1/4"-20	H4	6	1 1/2"	4"	1 13/64"	2595A463	98.36
15/16"-16	H6	6	1 1/2"	4"	1 1/4"	2595A841	130.50
1 3/8"-16	H4	6	1 1/2"	4"	1 5/16"	2595A842	130.70
1 1/2"-16	H4	6	1 1/2"	4"	1 7/16"	2595A843	166.91

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Left-Hand Thread High-Speed Steel Hand Taps

Tap left-hand threads on most metals with these uncoated (bright finish) taps. ***Tap sets*** include one each taper, plug, and bottoming tap of the same size (a set of all three taps is recommended when tapping to the bottom of a blind hole).

Also Available: Special thread taps. Please ask for 2584A4 and specify tap thread size (diameter and threads per inch) and chamfer (taper, plug, bottoming, or a set of all three).

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
6-32	H3	3	11/16"	2"	#36	2584A45	2584A12	2584A67	$5.67	2584A312	$15.31
8-32	H3	4	3/4"	2 1/8"	#29	2584A46	2584A13	2584A68	5.68	2584A314	15.34
10-24	H3	4	7/8"	2 3/8"	#26	2584A47	2584A14	2584A69	5.67	2584A316	15.31
10-32	H3	4	7/8"	2 3/8"	#21	2584A48	2584A32	2584A71	5.36	2584A318	14.47
1/4"-20	H3	4	1"	2 1/2"	#7	2584A49	2584A15	2584A72	6.97	2584A321	18.82
1/4"-28	H3	4	1"	2 1/2"	#3	2584A51	2584A33	2584A73	9.16	2584A323	24.73
5/16"-18	H3	4	1 1/8"	2 23/32"	F	2584A52	2584A16	2584A74	7.79	2584A325	21.03
5/16"-24	H3	4	1 1/8"	2 23/32"	I	2584A53	2584A34	2584A75	7.79	2584A327	21.03
3/8"-16	H3	4	1 1/4"	2 15/16"	5/16"	2584A54	2584A17	2584A76	10.08	2584A329	27.22
3/8"-24	H3	4	1 1/4"	2 15/16"	Q	2584A55	2584A35	2584A77	10.08	2584A332	27.22
7/16"-14	H3	4	1 7/16"	3 5/32"	U	2584A56	2584A18	2584A78	14.65	2584A334	39.56
7/16"-20	H3	4	1 7/16"	3 5/32"	25/64"	2584A57	2584A36	2584A79	14.65	2584A336	39.56
1/2"-13	H3	4	1 21/32"	3 3/8"	27/64"	2584A58	2584A19	2584A81	17.11	2584A338	46.20
1/2"-20	H3	4	1 21/32"	3 3/8"	29/64"	2584A59	2584A37	2584A82	17.11	2584A341	46.20
9/16"-12	H3	4	1 21/32"	3 19/32"	31/64"	2584A591	2584A371	2584A821	26.04	2584A342	70.31
9/16"-18	H3	4	1 21/32"	3 19/32"	33/64"	2584A592	2584A372	2584A822	26.04	2584A344	70.31
5/8"-11	H3	4	1 13/16"	3 13/16"	17/32"	2584A61	2584A38	2584A83	32.94	2584A343	88.94
5/8"-18	H3	4	1 13/16"	3 13/16"	37/64"	2584A62	2584A39	2584A84	32.94	2584A345	88.94
3/4"-10	H3	4	2"	4 1/4"	21/32"	2584A63	2584A41	2584A85	43.26	2584A347	116.80
3/4"-16	H3	4	2"	4 1/4"	11/16"	2584A64	2584A42	2584A86	43.26	2584A349	116.80
1"-8	H4	4	2 1/2"	5 1/8"	7/8"	2584A65	2584A43	2584A87	59.05	2584A352	159.44
1"-12	H4	4	2 1/2"	5 1/8"	59/64"	2584A66	2584A44	2584A88	59.05	2584A354	159.44
1"-14	H4	4	2 1/2"	5 1/8"	23.6 mm	2584A01	2584A21	2584A89	59.05	2584A556	159.44
1 1/8"-7	H4	4	2 9/16"	5 7/16"	63/64"	2584A02	2584A22	2584A91	81.54	2584A558	220.16
1 1/8"-12	H4	4	2 9/16"	5 7/16"	1 3/64"	2584A03	2584A23	2584A92	81.54	2584A561	220.16
1 1/4"-7	H4	4	2 9/16"	5 3/4"	1 7/64"	2584A04	2584A24	2584A93	99.25	2584A563	267.98
1 1/4"-12	H4	4	2 9/16"	5 3/4"	1 11/64"	2584A05	2584A25	2584A94	99.25	2584A565	267.98
1 1/2"-6	H4	4	3"	6 3/8"	1 11/32"	2584A08	2584A28	2584A97	131.09	2584A569	353.94
1 1/2"-12	H4	6	3"	6 3/8"	1 27/64"	2584A09	2584A29	2584A98	131.09	2584A572	353.94

Metric Sizes

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
4×0.7	D4	4	3/4"	2 1/8"	3.3 mm	26565A12	26565A32	26565A52	$5.85	26565A72	$15.80
5×0.8	D4	4	7/8"	2 3/8"	4.2 mm	26565A14	26565A34	26565A54	5.85	26565A74	15.80
6×1	D5	4	1"	2 1/2"	5.0 mm	26565A15	26565A35	26565A55	6.96	26565A75	18.79
7×1	D5	4	1 1/8"	2 23/32"	6.0 mm	26565A16	26565A36	26565A56	7.74	26565A76	20.90
8×1	D5	4	1 1/8"	2 23/32"	7.0 mm	26565A161	26565A361	26565A561	7.85	26565A761	21.20
8×1.25	D5	4	1 1/8"	2 23/32"	6.7 mm	26565A17	26565A37	26565A57	7.74	26565A77	20.90
10×1	D5	4	1 1/4"	2 15/16"	9.0 mm	26565A172	26565A372	26565A572	51.85	26565A772	140.00
10×1.25	D5	4	1 1/4"	2 15/16"	8.7 mm	26565A173	26565A373	26565A573	14.70	26565A773	39.69
10×1.5	D6	4	1 1/4"	2 15/16"	8.5 mm	26565A18	26565A38	26565A58	14.56	26565A78	39.31
12×1.25	D5	4	1 21/32"	3 3/8"	10.8 mm	26565A182	26565A382	26565A582	17.41	26565A782	47.01
12×1.5	D6	4	1 21/32"	3 3/8"	10.5 mm	26565A183	26565A383	26565A583	57.45	26565A783	155.12
12×1.75	D6	4	1 21/32"	3 3/8"	10.2 mm	26565A19	26565A39	26565A59	17.27	26565A79	46.63
14×1	D5	4	1 21/32"	3 19/32"	13.0 mm	26565A191	26565A391	26565A591	58.27	26565A791	157.33
14×1.5	D6	4	1 21/32"	3 19/32"	12.5 mm	26565A192	26565A392	26565A592	25.83	26565A792	69.74
14×2	D7	4	1 21/32"	3 19/32"	12.0 mm	26565A21	26565A41	26565A61	27.59	26565A81	74.49
16×1	D5	4	1 13/16"	3 13/16"	15.0 mm	26565A211	26565A411	26565A611	62.80	26565A811	169.56
16×1.5	D6	4	1 13/16"	3 13/16"	14.5 mm	26565A212	26565A412	26565A612	25.12	26565A812	67.82
16×2	D7	4	1 13/16"	3 13/16"	14.0 mm	26565A22	26565A42	26565A62	29.15	26565A82	78.70
18×1.5	D6	4	1 13/16"	4 1/32"	16.5 mm	26565A221	26565A421	26565A621	35.53	26565A821	95.93
18×2.5	D7	4	1 13/16"	4 1/32"	15.5 mm	26565A23	26565A43	26565A63	35.32	26565A83	95.36
20×1.5	D6	4	2"	4 15/32"	47/64"	26565A231	26565A431	26565A631	44.52	26565A831	120.20
20×2	D7	4	2"	4 15/32"	18.0 mm	26565A232	26565A432	26565A632	77.51	26565A832	209.28
20×2.5	D7	4	2"	4 15/32"	17.5 mm	26565A24	26565A44	26565A64	44.20	26565A84	119.34
24×3	D8	4	2 7/32"	4 11/16"	21.0 mm	26565A25	26565A45	26565A65	56.55	26565A85	152.69

Eight- and Twelve-Pitch High-Speed Steel Hand Taps

Also known as constant pitch taps, these have the same number of teeth (eight or twelve) per inch throughout each series (long and short) and are often used for oil field and power generation applications. They are uncoated (bright finish) for use on most metals. All have six flutes, unless noted.

Eight Pitch (Long Series)

Tap Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦	Plug	Bottoming	
1 1/8"★	H5	2 9/16"	5 7/16"	1"	2597A11	2597A71	$57.26
1 1/4"★	H5	2 9/16"	5 3/4"	1 1/8"	2597A12	2597A72	75.06
1 3/8"★	H5	3"	6 1/16"	1 1/4"	2597A13	2597A73	82.08
1 1/2"★	H5	3"	6 3/8"	1 3/8"	2597A14	2597A74	95.70
1 5/8"	H6	3 3/16"	6 11/16"	1 1/2"	2597A15	2597A75	113.09
1 3/4"	H6	3 3/16"	7"	1 5/8"	2597A16	2597A76	144.38
2"	H6	3 9/16"	7 5/8"	1 7/8"	2597A18	2597A78	182.54
2 1/4"	H6	3 9/16"	8 1/4"	2 1/8"	2597A21	2597A81	266.04
2 1/2"	H6	4"	8 3/4"	2 3/8"	2597A23	2597A83	312.91

Twelve Pitch (Short Series)

Tap Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦	Plug	Bottoming	
1 1/16"★	H4	1 1/2"	4"	63/64"	26625A11	26625A31	$60.11
1 5/16"	H4	1 1/2"	4"	1 15/64"	26625A13	26625A33	80.28
1 5/8"	H6	2"	5"	1 9/16"	26625A14	26625A34	118.79
1 3/4"	H6	2"	5"	1 11/16"	26625A15	26625A35	141.01
2"	H6	2"	5"	1 15/16"	26625A17	26625A37	169.54
2 1/4"	H6	2"	5 1/4"	2 3/16"	26625A19	26625A39	231.28
2 1/2"	H6	2"	5 1/4"	2 7/16"	26625A22	26625A42	287.34

★ Has four flutes.

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

High-Speed Steel Hand Taps for Vibration-Resistant Threads

Create threads with a unique profile that resists fastener loosening due to vibration and eliminates the need for self-locking fasteners. Taps are uncoated (bright finish) for use on most metals. All have four flutes and cut threads with a Class 2B thread fit.

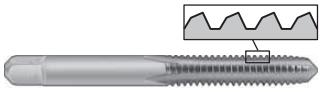

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size ♦	Plug	Bottoming	
1/2"-13	1 21/32"	3 3/8"	27/64"	2494A11	2494A12	$89.48
9/16"-12	1 21/32"	3 19/32"	31/64"	2494A13	2494A14	92.03
5/8"-11	1 13/16"	3 13/16"	17/32"	2494A15	2494A16	99.18
3/4"-10	2"	4 1/4"	21/32"	2494A17	2494A18	113.33
7/8"-9	2 7/32"	4 11/16"	49/64"	2494A19	2494A21	132.94
1"-8	2 1/2"	5 1/8"	7/8"	2494A22	2494A23	$154.58
1 1/8"-7	2 9/16"	5 7/16"	63/64"	2494A24	2494A25	179.81
1 1/4"-7	2 9/16"	5 3/4"	1 7/64"	2494A26	2494A27	210.31
1 3/8"-6	3"	6 1/16"	1 7/32"	2494A28	2494A29	241.51
1 1/2"-6	3"	6 3/8"	1 11/32"	2494A31	2494A32	291.45

Low-Friction Chrome-Plated High-Speed Steel Hand Taps

Chrome plating provides additional tap surface hardness and reduces friction for longer tap life on most metals. Plating is approximately 0.0001" thick. ***Tap sets*** include one each taper, plug, and bottoming tap of the same size (a set of all three taps is recommended when tapping to the bottom of a blind hole).

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
4-40	H2	3	9/16"	1 7/8"	#43	8330A22	8330A23	8330A24	$7.48	8330A11	$20.20
4-48	H2	3	9/16"	1 7/8"	#42	8330A25	8330A26	8330A27	7.48	8330A12	20.20
5-40	H2	3	5/8"	1 15/16"	#38	8330A28	8330A29	8330A31	7.48	8330A13	20.20
6-32	H3	3	11/16"	2"	#36	8330A35	8330A36	8330A37	5.75	8330A15	15.53
6-40	H2	3	11/16"	2"	#33	8330A38	8330A39	8330A41	5.75	8330A16	15.53
8-32	H3	4	3/4"	2 1/8"	#29	8330A42	8330A43	8330A44	5.99	8330A17	16.17
10-24	H3	4	7/8"	2 3/8"	#26	8330A48	8330A49	8330A51	6.10	8330A19	16.47
10-32	H3	4	7/8"	2 3/8"	#21	8330A52	8330A53	8330A54	6.10	8330A21	16.47
12-24	H3	4	15/16"	2 3/8"	#16	8330A55	8330A56	8330A57	6.22	8330A58	16.79
1/4"-20	H3	4	1"	2 1/2"	#7	8332A22	8332A23	8332A24	6.35	8332A11	17.14
1/4"-28	H3	4	1"	2 1/2"	#3	8332A25	8332A26	8332A27	6.35	8332A12	17.14
5/16"-18	H3	4	1 1/8"	2 23/32"	F	8332A28	8332A29	8332A31	7.32	8332A13	19.76
5/16"-24	H3	4	1 1/8"	2 23/32"	I	8332A32	8332A33	8332A34	7.32	8332A14	19.76
3/8"-16	H3	4	1 1/4"	2 15/16"	5/16"	8332A35	8332A36	8332A37	8.41	8332A15	22.71
3/8"-24	H3	4	1 1/4"	2 15/16"	Q	8332A38	8332A39	8332A41	8.41	8332A16	22.71
7/16"-14	H3	4	1 7/16"	3 5/32"	U	8332A42	8332A43	8332A44	13.03	8332A17	35.18
1/2"-13	H3	4	1 21/32"	3 3/8"	27/64"	8332A48	8332A49	8332A51	16.26	8332A19	43.90
1/2"-20	H3	4	1 21/32"	3 3/8"	29/64"	8332A52	8332A53	8332A54	16.26	8332A21	43.90
5/8"-11	H3	4	1 13/16"	3 13/16"	17/32"	8332A55	8332A56	8332A57	28.24	8332A58	76.25

Oxide-Treated High-Speed Steel Hand Taps for Iron and Steel

An oxide surface treatment prevents buildup of materials, reduces friction, and provides a porous layer to hold lubricants when tapping iron and steel. ***Tap sets*** include one each taper, plug, and bottoming tap of the same size (a set of all three taps is recommended when tapping to the bottom of a blind hole).

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
4-40	H2	3	9/16"	1 7/8"	#43	27255A79	27255A19	27255A59	$5.86	27255A111	$15.82
6-32	H3	3	11/16"	2"	#36	27255A81	27255A21	27255A61	4.45	27255A112	12.02
8-32	H3	4	3/4"	2 1/8"	#29	27255A82	27255A22	27255A62	4.62	27255A113	12.47
10-24	H3	4	7/8"	2 3/8"	#26	27255A83	27255A23	27255A63	4.74	27255A114	12.80
10-32	H3	4	7/8"	2 3/8"	#21	27255A84	27255A24	27255A64	4.74	27255A115	12.80
1/4"-20	H3	4	1"	2 1/2"	#7	27255A85	27255A25	27255A65	5.11	27255A116	13.80
1/4"-28	H3	4	1"	2 1/2"	#3	27255A86	27255A26	27255A66	5.11	27255A117	13.80
5/16"-18	H3	4	1 1/8"	2 23/32"	F	27255A87	27255A27	27255A67	6.31	27255A118	17.04
3/8"-16	H3	4	1 1/4"	2 15/16"	5/16"	27255A89	27255A29	27255A69	7.13	27255A119	19.25
1/2"-13	H3	4	1 21/32"	3 3/8"	27/64"	27255A92	27255A32	27255A72	12.92	27255A121	34.88
5/8"-11	H3	4	1 13/16"	3 13/16"	17/32"	27255A94	27255A34	27255A74	26.24	27255A122	70.85
3/4"-10	H3	4	2"	4 1/4"	21/32"	27255A95	27255A35	27255A75	36.66	27255A123	98.98
3/4"-16	H3	4	2"	4 1/4"	11/16"	27255A96	27255A36	27255A76	35.90	27255A124	96.93
7/8"-9	H4	4	2 7/32"	4 11/16"	49/64"	27255A97	27255A37	27255A77	55.27	27255A125	149.23
1"-8	H4	4	2 1/2"	5 1/8"	7/8"	27255A98	27255A38	27255A78	66.77	27255A126	180.28

Cobalt Steel Hand Taps for Mold Steel

Ideal for tapping mold steel as well as hardened steel with a Rockwell hardness between C30 and C45, these taps are uncoated (bright finish) and have a plug chamfer. Tap thread sizes 4-40 to 1/4"-28 have three flutes; all others have four flutes.

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦		
4-40	H2	0.31"	1 7/8"	#43	2662A41	$14.97
5-40	H2	0.31"	1 15/16"	#38	2662A42	14.97
6-32	H3	0.38"	2"	#36	2662A43	12.28
8-32	H3	0.38"	2 1/8"	#29	2662A44	12.28
10-24	H3	0.50"	2 3/8"	#26	2662A45	12.28
10-32	H3	0.50"	2 3/8"	#21	2662A46	12.28
1/4"-20	H3	0.63"	2 1/2"	#7	2662A11	13.55
1/4"-28	H3	0.63"	2 1/2"	#3	2662A12	13.55
5/16"-18	H3	0.69"	2 23/32"	F	2662A13	15.51
5/16"-24	H3	0.69"	2 23/32"	I	2662A14	15.51
3/8"-16	H3	0.75"	2 15/16"	5/16"	2662A15	$17.49
3/8"-24	H3	0.75"	2 15/16"	Q	2662A16	17.49
7/16"-14	H3	0.88"	3 5/32"	U	2662A17	23.36
7/16"-20	H3	0.88"	3 5/32"	25/64"	2662A18	23.36
1/2"-13	H3	0.94"	3 3/8"	27/64"	2662A19	25.29
1/2"-20	H3	0.94"	3 3/8"	29/64"	2662A21	25.29
5/8"-11	H3	1.09"	3 13/16"	17/32"	2662A22	50.61
5/8"-18	H3	1.09"	3 13/16"	37/64"	2662A23	50.61
3/4"-10	H3	1.22"	4 1/4"	21/32"	2662A24	70.03
3/4"-16	H3	1.22"	4 1/4"	11/16"	2662A25	70.03

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Wear-Resistant TiN-Coated High-Speed Steel Hand Taps

A coating of TiN (titanium nitride) provides improved tap life and workpiece thread finish compared to uncoated (bright finish) when tapping plastic and ferrous metals such as steel, stainless steel, and cast iron. ***Tap sets*** include one each taper, plug, and bottoming tap of the same size (a set of all three taps is recommended when tapping to the bottom of a blind hole).

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
0-80	H2	2	5/16"	1 5/8"	3/64"	—	2636A112	2636A113	$16.13	—	—
2-56	H2	3	7/16"	1 3/4"	#51	2636A115	2636A116	2636A117	12.40	2636A118	$33.48
3-48	H2	3	1/2"	1 13/16"	5/64"	2636A252	2636A262	2636A272	9.46	2636A292	25.54
3-56	H2	3	1/2"	1 13/16"	#46	2636A254	2636A264	2636A274	10.60	2636A294	28.62
4-40	H2	3	9/16"	1 7/8"	#43	2636A21	2636A41	2636A61	7.61	2636A81	20.55
4-48	H2	3	9/16"	1 7/8"	#42	2636A211	2636A412	2636A613	7.93	2636A814	21.41
5-40	H2	3	5/8"	1 15/16"	#39	2636A22	2636A42	2636A62	8.23	2636A82	22.22
5-44	H2	3	5/8"	1 15/16"	#37	2636A221	2636A422	2636A623	9.42	2636A824	25.43
6-32	H3	3	11/16"	2"	#36	2636A23	2636A43	2636A63	5.85	2636A83	15.80
6-40	H2	3	11/16"	2"	#33	2636A231	2636A432	2636A633	6.73	2636A834	18.17
8-32	H3	4	3/4"	2 1/8"	#29	2636A24	2636A44	2636A64	5.98	2636A84	16.15
8-36	H2	4	3/4"	2 1/8"	#29	2636A241	2636A442	2636A643	6.46	2636A844	17.44
10-24	H3	4	7/8"	2 3/8"	#25	2636A25	2636A45	2636A65	6.15	2636A85	16.61
10-32	H3	4	7/8"	2 3/8"	#21	2636A251	2636A452	2636A653	6.15	2636A854	16.61
12-24	H3	4	15/16"	2 3/8"	#17	2636A26	2636A46	2636A66	6.71	2636A86	18.12
1/4"-20	H3	4	1"	2 1/2"	#8	2636A27	2636A47	2636A67	6.61	2636A87	17.85
1/4"-28	H3	4	1"	2 1/2"	#3	2636A271	2636A472	2636A673	6.61	2636A874	17.85
5/16"-18	H3	4	1 1/8"	2 23/32"	F	2636A28	2636A48	2636A68	8.26	2636A88	22.30
5/16"-24	H3	4	1 1/8"	2 23/32"	I	2636A281	2636A482	2636A683	8.25	2636A884	22.28
3/8"-16	H3	4	1 1/4"	2 15/16"	5/16"	2636A29	2636A49	2636A69	9.29	2636A89	25.08
3/8"-24	H3	4	1 1/4"	2 15/16"	Q	2636A291	2636A492	2636A693	9.51	2636A894	25.68
7/16"-14	H3	4	1 7/16"	3 5/32"	U	2636A31	2636A51	2636A71	16.02	2636A91	43.25
7/16"-20	H3	4	1 7/16"	3 5/32"	W	2636A311	2636A512	2636A713	16.02	2636A914	43.25
1/2"-13	H3	4	1 21/32"	3 3/8"	27/64"	2636A32	2636A52	2636A72	16.75	2636A92	45.23
1/2"-20	H3	4	1 21/32"	3 3/8"	29/64"	2636A321	2636A522	2636A723	19.54	2636A924	52.76
9/16"-12	H3	4	1 21/32"	3 19/32"	31/64"	2636A33	2636A53	2636A73	28.25	2636A93	76.28
5/8"-11	H3	4	1 13/16"	3 13/16"	17/32"	2636A34	2636A54	2636A74	33.86	2636A94	91.42
5/8"-18	H3	4	1 13/16"	3 13/16"	37/64"	2636A341	2636A542	2636A743	33.86	2636A944	91.42
3/4"-10	H3	4	2"	4 1/4"	21/32"	2636A35	2636A55	2636A75	46.95	2636A95	126.77
3/4"-16	H3	4	2"	4 1/4"	11/16"	2636A351	2636A552	2636A753	46.95	2636A954	126.77
7/8"-9	H4	4	2 7/32"	4 11/16"	49/64"	2636A36	2636A56	2636A76	65.42	2636A96	176.63
7/8"-14	H4	4	2 7/32"	4 11/16"	13/16"	2636A361	2636A562	2636A763	65.42	2636A964	176.63
1"-8	H4	4	2 1/2"	5 1/8"	7/8"	2636A37	2636A57	2636A77	87.01	2636A97	234.93
1"-12	H4	4	2 1/2"	5 1/8"	59/64"	2636A131	2636A141	2636A151	90.79	2636A171	245.13
1 1/8"-7	H4	4	2 9/16"	5 7/16"	63/64"	2636A132	2636A142	2636A152	140.85	2636A172	380.30
1 1/8"-12	H4	4	2 9/16"	5 7/16"	1 1/32"	2636A133	2636A143	2636A153	151.34	2636A173	408.62
1 1/4"-7	H4	4	2 9/16"	5 3/4"	1 7/64"	2636A134	2636A144	2636A154	184.86	2636A174	499.12
1 1/4"-12	H4	6	2 9/16"	5 3/4"	1 11/64"	2636A135	2636A145	2636A155	188.13	2636A175	507.95

Metric Sizes

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size, mm ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
2 ×0.4	D3	3	7/16"	1 3/4"	1.6	26475A32	26475A68	26475A63	$20.18	26475A11	$54.49
2.5×0.45	D3	3	1/2"	1 13/16"	2.05	26475A33	26475A69	26475A64	12.47	26475A12	33.67
3 ×0.5	D3	3	5/8"	1 15/16"	2.5	26475A34	26475A71	26475A65	10.51	26475A13	28.38
3.5×0.6	D4	3	11/16"	2"	2.9	26475A35	26475A95	26475A66	8.56	26475A14	23.11
4 ×0.7	D2	4	3/4"	2 1/8"	3.3	26475A355	26475A995	26475A665	13.98	26475A145	37.75
4 ×0.7	D4	4	3/4"	2 1/8"	3.3	26475A36	26475A72	26475A78	8.38	26475A15	22.63
4.5×0.75	D4	4	7/8"	2 3/8"	3.7	26475A37	26475A53	26475A93	8.56	26475A16	23.11
5 ×0.5	D3	4	7/8"	2 3/8"	4.5	26475A375	26475A535	26475A935	21.10	26475A165	56.97
5 ×0.8	D4	4	7/8"	2 3/8"	4.2	26475A38	26475A73	26475A79	8.38	26475A17	22.63
6 ×0.75	D3	4	1"	2 1/2"	5.25	26475A384	26475A734	26475A794	13.76	26475A174	37.15
6 ×1.00	D3	4	1"	2 1/2"	5.0	26475A388	26475A738	26475A798	13.76	26475A178	37.15
6 ×1.00	D5	4	1"	2 1/2"	5.0	26475A39	26475A74	26475A81	8.48	26475A18	22.90
7 ×1.00	D5	4	1 1/8"	2 23/32"	6.0	26475A41	26475A54	26475A94	9.87	26475A19	26.65
8 ×1.00	D3	4	1 1/8"	2 23/32"	7.0	26475A414	26475A544	26475A944	16.65	26475A194	44.95
8 ×1.00	D5	4	1 1/8"	2 23/32"	7.0	26475A416	26475A546	26475A946	13.76	26475A196	37.15
8 ×1.25	D3	4	1 1/8"	2 23/32"	6.8	26475A418	26475A548	26475A948	16.65	26475A198	44.95
8 ×1.25	D5	4	1 1/8"	2 23/32"	6.8	26475A42	26475A75	26475A82	9.59	26475A21	25.89
10 ×1.00	D3	4	1 1/4"	2 15/16"	9.0	26475A422	26475A752	26475A952	22.22	26475A212	59.99
10 ×1.00	D5	4	1 1/4"	2 15/16"	9.0	26475A424	26475A754	26475A954	29.90	26475A214	80.73
10 ×1.25	D5	4	1 1/4"	2 15/16"	8.75	26475A426	26475A756	26475A956	21.76	26475A216	58.75
10 ×1.50	D3	4	1 1/4"	2 15/16"	8.5	26475A428	26475A758	26475A958	23.92	26475A218	64.58
10 ×1.50	D6	4	1 1/4"	2 15/16"	8.5	26475A43	26475A76	26475A83	23.68	26475A22	63.94
12 ×1.00	D5	4	1 21/32"	3 3/8"	11.0	26475A433	26475A763	26475A833	35.35	26475A223	95.45
12 ×1.25	D5	4	1 21/32"	3 3/8"	10.75	26475A435	26475A765	26475A835	25.04	26475A225	67.61
12 ×1.50	D6	4	1 21/32"	3 3/8"	10.5	26475A437	26475A767	26475A837	35.35	26475A227	95.45
12 ×1.75	D6	4	1 21/32"	3 3/8"	10.2	26475A44	26475A77	26475A84	21.15	26475A23	57.10
14 ×1.50	D6	4	1 21/32"	3 19/32"	12.5	26475A446	26475A776	26475A846	38.92	26475A236	105.08
14 ×2.00	D7	4	1 21/32"	3 19/32"	12.0	26475A45	26475A55	26475A85	33.10	26475A24	89.37
16 ×1.50	D6	4	1 13/16"	3 13/16"	14.5	26475A458	26475A558	26475A858	45.25	26475A248	122.18
16 ×2.00	D7	4	1 13/16"	3 13/16"	14.0	26475A46	26475A56	26475A86	38.84	26475A25	104.87
18 ×1.00	D5	4	1 13/16"	4 1/32"	17.5	26475A466	26475A566	26475A866	56.00	26475A256	151.20
18 ×1.50	D6	4	1 13/16"	4 1/32"	16.5	26475A469	26475A569	26475A869	54.71	26475A259	147.72
18 ×2.50	D7	4	1 13/16"	4 1/32"	15.5	26475A47	26475A57	26475A87	53.09	26475A26	143.34
20 ×1.50	D6	4	2"	4 15/32"	18.5	26475A475	26475A575	26475A875	60.61	26475A265	163.65
20 ×2.50	D7	4	2"	4 15/32"	17.5	26475A48	26475A58	26475A88	72.83	26475A27	196.64
24 ×3.00	D8	4	2 7/32"	4 29/32"	21.0	26475A49	26475A59	26475A89	101.51	26475A28	274.08

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Extra-Wear-Resistant TiCN-Coated High-Speed Steel Hand Taps

Harder, tougher, and more wear-resistant than TiN-coated taps, TiCN (titanium carbonitride) coated taps are for use on plastic, graphite, and ferrous metals such as steel, stainless steel, and cast iron. ***Tap sets*** include one each taper, plug, and bottoming tap of the same size (a set of all three taps is recommended when tapping to the bottom of a blind hole).

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Taper	Plug	Bottoming	Each	Tap Sets	Set
0-80	H2	2	5/16"	1 5/8"	3/64"	26545A111	26545A16	26545A141	$19.22	26545A171	$51.89
2-56	H2	3	7/16"	1 3/4"	#50	26545A112	26545A17	26545A142	15.03	26545A172	40.58
3-48	H2	3	1/2"	1 13/16"	#47	26545A311	26545A312	26545A313	18.31	26545A314	52.55
4-40	H2	3	9/16"	1 7/8"	#43	26545A113	26545A18	26545A143	11.15	26545A173	30.11
4-48	H2	3	9/16"	1 7/8"	#42	26545A321	26545A322	26545A323	18.83	26545A324	50.84
5-40	H2	3	5/8"	1 15/16"	#38	26545A114	26545A19	26545A144	11.93	26545A174	32.21
6-32	H3	3	11/16"	2"	#36	26545A115	26545A21	26545A145	9.07	26545A175	24.49
6-40	H2	3	11/16"	2"	#33	26545A331	26545A332	26545A333	13.08	26545A334	35.32
8-32	H3	4	3/4"	2 1/8"	#29	26545A116	26545A22	26545A146	8.69	26545A176	23.46
8-36	H2	4	3/4"	2 1/8"	#29	26545A411	26545A412	26545A413	9.48	26545A414	25.60
10-24	H3	4	7/8"	2 3/8"	#26	26545A117	26545A23	26545A147	9.46	26545A177	25.54
10-32	H3	4	7/8"	2 3/8"	#21	26545A118	26545A24	26545A148	9.09	26545A178	24.54
12-24	H3	4	15/16"	2 3/8"	#16	26545A119	26545A26	26545A149	10.22	26545A179	27.59
1/4"-20	H3	4	1"	2 1/2"	#7	26545A121	26545A25	26545A151	9.87	26545A181	26.65
1/4"-28	H3	4	1"	2 1/2"	#3	26545A122	26545A27	26545A152	10.07	26545A182	27.19
5/16"-18	H3	4	1 1/8"	2 23/32"	F	26545A123	26545A28	26545A153	12.60	26545A183	34.02
5/16"-24	H3	4	1 1/8"	2 23/32"	I	26545A124	26545A29	26545A154	13.01	26545A184	35.13
3/8"-16	H3	4	1 1/4"	2 15/16"	5/16"	26545A125	26545A36	26545A155	14.37	26545A185	38.80
3/8"-24	H3	4	1 1/4"	2 15/16"	Q	26545A126	26545A37	26545A156	14.73	26545A186	39.77
7/16"-14	H3	4	1 7/16"	3 5/32"	U	26545A127	26545A38	26545A157	22.90	26545A187	61.83
7/16"-20	H3	4	1 7/16"	3 5/32"	25/64"	26545A128	26545A39	26545A158	23.15	26545A188	62.51
1/2"-13	H3	4	1 21/32"	3 3/8"	27/64"	26545A129	26545A46	26545A159	25.69	26545A189	69.36
1/2"-20	H3	4	1 21/32"	3 3/8"	29/64"	26545A131	26545A47	26545A161	28.26	26545A191	76.30
9/16"-12	H3	4	1 21/32"	3 19/32"	31/64"	26545A132	26545A31	26545A162	30.25	26545A192	81.68
5/8"-11	H3	4	1 13/16"	3 13/16"	17/32"	26545A133	26545A48	26545A163	31.97	26545A193	86.32
5/8"-18	H3	4	1 13/16"	3 13/16"	37/64"	26545A134	26545A49	26545A164	40.25	26545A194	108.68
3/4"-10	H3	4	2"	4 1/4"	21/32"	26545A135	26545A56	26545A165	56.17	26545A195	151.66
3/4"-16	H3	4	2"	4 1/4"	11/16"	26545A136	26545A57	26545A166	56.44	26545A196	152.39
7/8"-9	H4	4	2 7/32"	4 11/16"	49/64"	26545A137	26545A58	26545A167	55.54	26545A197	149.96
7/8"-14	H4	4	2 7/32"	4 11/16"	13/16"	26545A421	26545A422	26545A423	102.82	26545A424	277.61
1"-8	H4	4	2 1/2"	5 1/8"	7/8"	26545A138	26545A59	26545A168	74.92	26545A198	202.28
1 1/4"-7	H4	4	2 9/16"	5 3/4"	17/64"	26545A431	26545A432	26545A433	289.84	26545A434	782.57

High-Performance TiN-Coated Cobalt Steel Hand Taps for Steel and Iron

Designed to stand up to steel and iron, these taps last three times longer than TiN-coated high-speed steel taps. Use them on steel up to Rockwell hardness C45, armor plate up to C35, cast iron, brass, bronze, and hard plastics such as epoxy and phenolics. All taps have a plug chamfer and three flutes, unless noted.

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦		
Machine Screw and Fractional Sizes						
4-40	H2	9/16"	1 7/8"	#43	25215A51	$14.97
6-32	H2	3/8"	2"	#36	25215A52	18.62
6-32	H3	3/8"	2"	#36	25215A53	18.62
8-32	H2	3/8"	2 1/8"	#29	25215A54	19.22
8-32	H3	3/8"	2 1/8"	#29	25215A55	19.22
10-24	H3	1/2"	2 3/8"	#26	25215A56	19.71
10-32	H2	1/2"	2 3/8"	#21	25215A57	18.71
10-32	H3	1/2"	2 3/8"	#21	25215A58	19.71
1/4"-20	H3	5/8"	2 1/2"	#7	25215A59	23.24
1/4"-28	H3	5/8"	2 1/2"	#3	25215A61	21.41

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦		
Machine Screw and Fractional Sizes (Cont.)						
5/16"-18	H3	11/16"	2 23/32"	F	25215A62	$26.28
5/16"-24	H3	11/16"	2 23/32"	I	25215A63	27.60
3/8"-16	H3	3/4"	2 15/16"	5/16"	25215A64	29.69
3/8"-24	H3	3/4"	2 15/16"	Q	25215A65	29.82
Metric Sizes—Dimensions in mm						
6×1	D5	5/8"	2 1/2"	5.0	25235A41	21.48
8×1.25	D5	11/16"	2 23/32"	6.7	25235A43	26.27
10×1.5	D6	3/4"	2 15/16"	8.5	25235A45	27.88
12×1.75	D6	15/16"	3 3/8"	10.2	25235A47★	40.39

★ Has four flutes.

Solid Carbide Taps for Abrasive Materials

Made of micrograin carbide, these taps outlast high-speed steel taps on abrasive materials. Taps are uncoated (bright finish) for use on aluminum, titanium alloys, Inconel, and steel up to Rockwell hardness C45. All have a plug chamfer and four flutes except size 4-40, which has two flutes, and size 6-32, which has three flutes. Taps require a rigid tool setup; not for hand-tapping.

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦		
4-40	H2	9/16"	1 7/8"	#43	2666A21	$96.98
6-32	H3	11/16"	2"	#36	2666A24	97.76
8-32	H3	3/4"	2 1/8"	#29	2666A26	99.71
10-24	H3	7/8"	2 3/8"	#26	2666A28	101.90
10-32	H3	7/8"	2 3/8"	#21	2666A29	101.90
1/4"-20	H3	1"	2 1/2"	#7	2666A33	126.09
1/4"-28	H3	1"	2 1/2"	#3	2666A34	126.09
5/16"-18	H3	1 1/8"	2 23/32"	F	2666A35	143.77
5/16"-24	H3	1 1/8"	2 23/32"	I	2666A36	143.77
3/8"-16	H3	1 1/4"	2 15/16"	5/16"	2666A37	179.72

Cobalt Steel Hand Taps for Plastics

Choose from taps for hard (thermoset) and soft (thermoplastic) plastics. Taps are cobalt steel with a nitride coating. All have a plug chamfer and four flutes except size 2-56, which has three flutes.

Taps ***for hard plastic*** can be used on epoxy, melamine, EPDM, and phenolics and have an H4 pitch diameter limit. Taps ***for soft plastic*** can be used on nylon, polyethylene, polypropylene, PVC, and polystyrene and have an H7 pitch diameter limit.

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size ♦	For Hard Plastic		For Soft Plastic	
2-56	7/16"	1 3/4"	#50	2490A11	$19.64	2490A31	$19.64
4-40	9/16"	1 7/8"	#43	2490A13	12.93	2490A33	12.93
6-32	11/16"	2"	#36	2490A15	10.67	2490A35	10.67
8-32	3/4"	2 1/8"	#29	2490A17	10.67	2490A37	10.67
10-24	7/8"	2 3/8"	#26	2490A19	11.63	2490A39	11.63
10-32	7/8"	2 3/8"	#21	2490A22	11.63	2490A42	11.63
1/4"-20	1"	2 1/2"	#7	2490A24	11.63	2490A44	11.63

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Vanadium Steel Hand Taps for Aluminum

The combination of high-hook teeth and a nitride treatment over vanadium steel provides a smooth and accurate thread finish on aluminum. Tap thread sizes 2-56 and 4-40 are uncoated (bright finish).

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Plug	Bottoming	
2-56	H2	3	7/16"	1 3/4"	#50	27175A111	27175A211	$18.33
4-40	H2	3	5/16"	1 7/8"	#43	27175A112	27175A212	12.18
5-40	H2	3	5/16"	1 15/16"	#38	27175A113	27175A213	12.18
6-32	H3	3	3/8"	2"	#36	27175A114	27175A214	10.03
8-32	H3	3	3/8"	2 1/8"	#29	27175A115	27175A215	10.03
10-24	H3	3	1/2"	2 3/8"	#26	27175A116	27175A216	10.03
10-32	H3	3	1/2"	2 3/8"	#21	27175A117	27175A217	10.03
1/4"-20	H3	3	5/8"	2 1/2"	#7	27175A118	27175A218	11.23
1/4"-28	H3	3	5/8"	2 1/2"	#3	27175A119	27175A219	11.23
5/16"-18	H3	4	11/16"	2 23/32"	F	27175A121	27175A221	12.58
5/16"-24	H3	4	11/16"	2 23/32"	I	27175A122	27175A222	12.58
3/8"-16	H3	4	3/4"	2 15/16"	5/16"	27175A123	27175A223	14.18
3/8"-24	H3	4	3/4"	2 15/16"	Q	27175A124	27175A224	14.18
7/16"-14	H3	4	7/8"	3 5/32"	U	27175A125	27175A225	18.44
7/16"-20	H3	4	7/8"	3 5/32"	25/64"	27175A126	27175A226	18.44
1/2"-13	H3	4	15/16"	3 3/8"	27/64"	27175A127	27175A227	21.25
1/2"-20	H3	4	15/16"	3 3/8"	29/64"	27175A128	27175A228	21.25

Metric Sizes

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size, mm ♦	Plug	Bottoming	
3×0.5	D3	3	5/16"	1 15/16"	2.5	27175A511	27175A611	$15.91
4×0.7	D4	3	3/8"	2 1/8"	3.3	27175A512	27175A612	14.18
5×0.8	D5	3	1/2"	2 3/8"	4.2	27175A513	27175A613	14.18
6×1	D5	3	5/8"	2 1/2"	5.0	27175A514	27175A614	14.18
8×1.25	D5	4	11/16"	2 23/32"	6.7	27175A515	27175A615	15.91
10×1.25	D5	4	3/4"	2 15/16"	8.7	27175A516	27175A616	22.21
10×1.5	D6	4	3/4"	2 15/16"	8.5	27175A517	27175A617	22.21
12×1.75	D6	4	15/16"	3 3/8"	10.25	27175A518	27175A618	26.47

General Purpose High-Speed Steel Spiral Point Taps

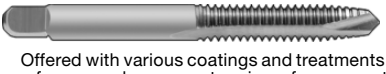

Offered with various coatings and treatments, these spiral point taps are for general purpose tapping of many materials. All have a plug chamfer. Sizes 0-80 through 5/16"-24 have two flutes; all others have three flutes.

Uncoated (bright finish) taps can be used on most metals.

Oxide treated taps have less friction and buildup of workpiece materials. For use on ferrous metals such as steel and stainless steel.

TiN (titanium nitride) coated taps have improved tap life and workpiece thread finish compared to uncoated (bright finish) taps when used on plastic and ferrous metals such as steel, stainless steel, and cast iron.

TiCN (titanium carbonitride) coated taps are harder and more wear resistant than TiN-coated taps. For use on plastic, graphite, and ferrous metals including steel, stainless steel, and cast iron.

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦	Uncoated (Bright Finish)		Oxide Treated		TiN Coated		TiCN Coated	
0-80	H2	5/16"	1 5/8"	3/64"	2523A461	$14.26	8321A51	$14.26	2762A31	$19.97	2568A31	$22.97
1-64	H2	3/8"	1 11/16"	#53	2523A481	13.00	8321A52	16.92	2762A311	18.21	2568A311	24.26
1-72	H2	3/8"	1 11/16"	#53	2523A462	13.00	8321A53	13.00	2762A32	20.30	2568A312	24.26
2-56	H2	7/16"	1 3/4"	#50	2523A442	10.91	8321A54	10.91	2762A33	15.28	2568A32	17.57
2-64	H2	7/16"	1 3/4"	#50	2523A482	12.43	8321A55	16.10	2762A331	17.40	2568A321	23.19
3-48	H2	1/2"	1 13/16"	#47	2523A443	8.82	8321A56	8.82	2762A34	12.36	2568A322	16.45
3-56	H2	1/2"	1 13/16"	#46	2523A464	9.76	8321A57	9.76	2762A35	15.35	2568A323	19.11
4-36	H2	9/16"	1 7/8"	#44	2523A483	8.81	8321A571	8.17	2762A351	14.23	2568A324	16.43
4-40	H2	9/16"	1 7/8"	#43	2523A444	7.06	8321A58	7.06	2762A36	9.88	2568A33	11.35
4-48	H2	9/16"	1 7/8"	#42	2523A484	8.15	8321A6	10.37	2762A361	11.43	2568A331	18.65
5-40	H2	5/8"	1 15/16"	#38	2523A445	7.06	8321A61	7.06	2762A38	9.88	2568A34	11.35
5-44	H2	5/8"	1 15/16"	#37	2523A485	8.15	8321A62	10.37	2762A381	10.45	2568A341	21.87
6-32	H3	11/16"	2"	#36	2523A446	5.94	8321A63	5.94	2762A41	8.32	2568A35	9.56
6-40	H2	11/16"	2"	#33	2523A467	6.76	8321A64	6.76	2762A71	9.46	2568A351	10.87
8-32	H3	3/4"	2 1/8"	#29	2523A447	5.94	8321A65	5.94	2762A42	8.32	2568A36	9.56
8-36	H2	3/4"	2 1/8"	#29	2523A468	6.76	8321A66	6.76	2762A421	9.46	2568A361	12.60
10-24	H3	7/8"	2 3/8"	#26	2523A448	5.94	8321A67	5.94	2762A43	8.32	2568A37	9.56
10-32	H2	7/8"	2 3/8"	#21	2523A469	5.94	8321A68	5.94	2762A44	8.32	2568A38●	9.56
12-24	H3	15/16"	2 3/8"	#16	2523A449	6.76	8321A69	6.76	2762A45	9.46	2568A39	10.88
12-28	H3	15/16"	2 3/8"	#15	2523A471	6.76	8321A71	6.76	2762A75	11.45	2568A391	12.60
1/4"-20	H3	1"	2 1/2"	#7	2523A411	5.94	8321A72	5.94	2762A46	8.32	2568A41★	9.56
1/4"-28	H3	1"	2 1/2"	#3	2523A431	5.94	8321A73	5.94	2762A47	8.32	2568A42★▲	11.88
5/16"-18	H3	1 1/8"	2 23/32"	F	2523A412	6.39	8321A74	6.39	2762A48	8.95	2568A43★	13.63
5/16"-24	H3	1 1/8"	2 23/32"	I	2523A432	6.39	8321A75	6.39	2762A49	8.95	2568A44★■	13.63
3/8"-16	H3	1 1/4"	2 15/16"	5/16"	2523A413	7.61	8321A76	7.61	2762A51	10.67	2568A45	12.26
3/8"-24	H3	1 1/4"	2 15/16"	Q	2523A433	8.15	8321A77	8.15	2762A52	11.43	2568A46	13.13
7/16"-14	H3	1 7/16"	3 5/32"	U	2523A414	13.00	8321A78	13.00	2762A53	18.20	2568A47	20.94
7/16"-20	H3	1 7/16"	3 5/32"	25/64"	2523A434	13.00	8321A79	13.00	2762A54	18.20	2568A48	20.94
1/2"-13	H3	1 21/32"	3 3/8"	27/64"	2523A415	13.20	8321A81	13.20	2762A55	18.48	2568A49	21.26
1/2"-20	H3	1 21/32"	3 3/8"	29/64"	2523A435	15.41	8321A82	15.41	2762A56	21.57	2568A51	24.81
5/8"-11	H3	1 13/16"	3 13/16"	17/32"	2523A416	29.94	8321A83	29.94	2762A58	41.12	2568A52	47.30
5/8"-18	H3	1 13/16"	3 13/16"	37/64"	2523A491	29.94	8321A85	29.93	2762A59	41.12	2568A521	55.89
3/4"-10	H3	2"	4 1/4"	21/32"	2523A417	42.42	8321A84	42.42	2762A61	58.25	2568A53	67.00

● H3 pitch diameter limit. ★ Has 3 flutes. ▲ H2 pitch diameter limit. ■ H4 pitch diameter limit.

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Metric High-Speed Steel Spiral Point Taps

Metric-sized with a variety of coatings, these high-speed steel spiral point taps are for general purpose use. All have a plug chamfer.

Uncoated (bright finish) taps are for use on most metals. ***TiN (titanium nitride) coated*** taps have improved tap life and workpiece thread finish when used on plastic and ferrous metals such as steel and stainless steel. ***TiCN (titanium carbonitride) coated*** taps are harder and more wear-resistant when used on plastic, graphite, and ferrous metals such as steel and stainless steel.

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size, mm ♦	Uncoated (Bright Finish)		TiN Coated		TiCN Coated	
1.6×0.35	D3	2	5/16"	1 5/8"	1.25	8302A31	$16.79	2703A61	$23.30	2605A11	$22.36
2 ×0.4	D3	2	7/16"	1 3/4"	1.6	8302A32	15.56	2703A62	22.03	2605A12	10.17
2.5×0.45	D3	2	1/2"	1 13/16"	2.05	8302A11	11.19	2703A63	16.29	2605A13	9.17
3 ×0.5	D3	2	5/8"	1 15/16"	2.5	8302A12	8.95	2703A71	10.99	2605A21	13.52
3.5×0.6	D4	2	11/16"	2"	2.9	8302A13	7.74	2703A711	8.98	2605A211★	13.12
4 ×0.7	D4	2	3/4"	2 1/8"	3.3	8302A14	7.74	2703A72	9.49	2605A22	11.69
4.5×0.75	D4	2	7/8"	2 3/8"	3.7	8302A15	7.74	2703A721	11.28	2605A221	13.56
5 ×0.8	D4	2	7/8"	2 3/8"	4.2	8302A16	7.74	2703A73	9.49	2605A23	11.69
6 ×1	D5	2	1"	2 1/2"	5	8302A17	7.74	2703A74	9.49	2605A24	11.69
6.3×1	D5	2	1"	2 1/2"	5.3	8302A33	7.74	2703A741	23.63	2605A241	14.15
7 ×1	D5	2	1 1/8"	2 23/32"	6	8302A18	8.95	2703A742	13.56	2605A242	21.94
8 ×1.25	D5	2	1 1/8"	2 23/32"	6.7	8302A19	8.95	2703A75	10.99	2605A25	13.52
10 ×1.5	D6	3	1 1/4"	2 15/16"	8.5	8302A2	9.18	2703A76	13.32	2605A26	13.88
12 ×1.75	D6	3	1 21/32"	3 3/8"	10.2	8302A21	18.22	2703A77	22.33	2605A27	27.52
14 ×2	D7	3	1 21/32"	3 19/32"	12	8302A22	26.94	2703A78	39.27	2605A28	47.10
16 ×2	D7	3	1 13/16"	3 13/16"	14	8302A23	31.50	2703A79	45.90	2605A29	28.01
18 ×2.5	D7	3	1 3/32"	4 1/32"	15.5	8302A24♣	45.75	2703A81	64.85	2605A31	80.40
20 ×2.5	D7	4	2"	4 15/32"	17.5	8302A25	60.44	2703A82●	89.96	2605A32	95.90

★ Has a D3 pitch diameter limit. ● Has three flutes. ♣ 1 1/16" thread length.

High-Speed Steel Spiral Point Taps for Special, Extra-Fine, and Left-Hand Threads

For unusual tap thread sizes or left-hand thread taps, you've found the right place. All taps are uncoated (bright finish) for use on most metals and have a plug chamfer.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
Special Thread							
6-48	H2	2	11/16"	2"	3.0 mm	25705A51	$23.96
8-40	H2	2	3/4"	2 1/8"	3.5 mm	25705A53	23.96
10-40	H2	2	7/8"	2 3/8"	4.2 mm	25705A55	22.27
1/4"-24	H3	2	1"	2 1/2"	#4	25705A58	19.58
1/4"-36	H2	2	1"	2 1/2"	5.7 mm	25705A61	19.58
1/4"-40	H2	3	1"	2 1/2"	5.7 mm	25705A62	19.58
Extra-Fine Thread							
12-32	H3	2	15/16"	2 3/8"	#13	25705A57	23.33
1/4"-32	H3	2	1"	2 1/2"	5.6 mm	25705A59	15.54
5/16"-32	H3	2	1 1/8"	2 23/32"	9/32"	25705A63	17.28
3/8"-32	H3	3	1 1/4"	2 15/16"	11/32"	25705A64	19.70
1/2"-28	H3	3	1 21/32"	3 3/8"	11.8 mm	25705A65	26.35
Left-Hand Thread							
5-40	H2	2	5/8"	1 15/16"	#38	25315A49	23.04
6-32	H3	2	11/16"	2"	#36	25315A51	18.23
Left-Hand Thread (Cont.)							
8-32	H3	2	3/4"	2 1/8"	#29	25315A52	$18.66
10-24	H3	2	7/8"	2 3/8"	#26	25315A54	19.84
10-32	H3	2	7/8"	2 3/8"	#21	25315A55	18.66
1/4"-20	H3	2	1"	2 1/2"	#7	25315A56	20.56
1/4"-28	H3	2	1"	2 1/2"	#3	25315A57	22.53
5/16"-18	H3	2	1 1/8"	2 23/32"	F	25315A58	22.40
5/16"-24	H3	2	1 1/8"	2 23/32"	I	25315A59	22.40
3/8"-16	H3	3	1 1/4"	2 15/16"	5/16"	25315A61	23.23
3/8"-24	H3	3	1 1/4"	2 15/16"	Q	25315A62	23.23
7/16"-14	H3	3	1 7/16"	3 5/32"	U	25315A63	31.76
1/2"-13	H3	3	1 21/32"	3 3/8"	27/64"	25315A64	31.19
1/2"-20	H3	3	1 21/32"	3 3/8"	29/64"	25315A65	31.28
5/8"-11	H3	3	1 13/16"	3 13/16"	17/32"	25315A66	46.54

0.005" Oversize High-Speed Steel Spiral Point Taps

Tap oversize threaded holes in workpieces that will be plated or heat-treated later. Taps are uncoated (bright finish) for use on most metals. All have a plug chamfer.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
4-40	H11	2	9/16"	1 7/8"	#43	2612A11	$8.48
6-32	H11	2	11/16"	2"	#36	2612A13	7.40
8-32	H11	2	3/4"	2 1/8"	#29	2612A14	7.39
10-24	H11	2	7/8"	2 3/8"	#26	2612A15	7.49
10-32	H11	2	7/8"	2 3/8"	#21	2612A16	7.49
1/4"-20	H11	2	1"	2 1/2"	#7	2612A17	7.39
1/4"-28	H11	2	1"	2 1/2"	#3	2612A18	9.50
5/16"-18	H11	3	1 1/8"	2 23/32"	F	2612A19	8.56
5/16"-24	H11	3	1 1/8"	2 23/32"	I	2612A21	$10.61
3/8"-16	H11	3	1 1/4"	2 15/16"	5/16"	2612A22	9.94
3/8"-24	H11	3	1 1/4"	2 15/16"	Q	2612A23	11.38
1/2"-13	H11	3	1 21/32"	3 3/8"	27/64"	2612A26	18.11
1/2"-20	H11	3	1 21/32"	3 3/8"	29/64"	2612A27	20.75
5/8"-11	H11	3	1 13/16"	3 13/16"	17/32"	2612A28	32.03
3/4"-10	H11	3	2"	4 1/4"	21/32"	2612A31	49.93

Heavy Duty High-Speed Steel Spiral Point Taps for Hard Materials

Designed to tap cast iron and hardened steel up to Rockwell hardness C40, these taps have an oxide-over-nitride treatment for abrasion resistance and reduced friction. All have a plug chamfer.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
6-32	H3	3	11/16"	2"	#36	8300A11	$8.87
8-32	H3	3	3/4"	2 1/8"	#29	8300A13	8.87
10-24	H3	3	7/8"	2 3/8"	#26	8300A15	8.87
1/4"-20	H3	3	1"	2 1/2"	#7	8300A17	8.87
1/4"-28	H3	3	1"	2 1/2"	#3	8300A18	8.87
5/16"-18	H3	3	1 1/8"	2 23/32"	F	8300A19	10.24
5/16"-24	H3	3	1 1/8"	2 23/32"	I	8300A2	10.24
3/8"-16	H3	3	1 1/4"	2 15/16"	5/16"	8300A21	11.63
3/8"-24	H3	3	1 1/4"	2 15/16"	Q	8300A22	$11.63
7/16"-14	H3	3	1 7/16"	3 5/32"	U	8300A23	17.14
7/16"-20	H3	3	1 7/16"	3 5/32"	25/64"	8300A24	17.14
1/2"-13	H3	3	1 21/32"	3 3/8"	27/64"	8300A25	20.76
1/2"-20	H3	3	1 21/32"	3 3/8"	29/64"	8300A26	20.76
5/8"-11	H3	3	1 13/16"	3 13/16"	17/32"	8300A27	35.31
3/4"-10	H3	3	2"	4 1/4"	21/32"	8300A28	49.84

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Ultra-Performance Vanadium Steel Spiral Point Taps

Premium high-vanadium steel with various surface treatments and coatings provides outstanding high-speed tapping capability on many materials. All taps have a plug chamfer. Tap thread sizes 2-56 to 4-48 have two flutes; all others have three flutes.

For Materials with Less than C30 Rockwell Hardness— Use these taps on steel and steel alloys, stainless steel (such as Types 316 and 416), malleable iron, hard plastic, and fiberglass.

For Materials with C30-C40 Rockwell Hardness— Use these taps on hardened steel, stainless steel (such as Types 420 and 15-5 PH), mold and tool steels, and nickel alloys (such as Inconel, Waspalloy, and Hastelloy). Taps are made with a blend of vanadium and cobalt steel.

Oxide-treated taps have less friction and buildup of workpiece materials with a porous layer to hold lubricants.

Oxide-over-Nitride treated taps have the same benefits as oxide-treated taps with additional surface toughness for longer tap life.

TiN (titanium nitride) coated taps have improved tap life and workpiece thread finish when run at high speeds.

TiCN (titanium carbonitride) coated taps have the same benefits as TiN-coated taps, but they're harder and more wear resistant.

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦	FOR MATERIALS WITH LESS THAN C30 ROCKWELL HARDNESS: Oxide Treated		TiN Coated		TiCN Coated		FOR MATERIALS WITH C30-C40 ROCKWELL HARDNESS: Oxide-over-Nitride Treated		TiCN Coated	
2-56	H2	0.256″	1 3/4″	#50	2684A61	$21.44	83535A81♥	$24.40	8311A11♥	$27.56	25595A31	$38.85	2507A11	$88.78
3-48	H2	0.295″	1 13/16″	#47	2684A62	17.15	83535A82♣	40.89	8311A12♣	37.62	25595A21	76.45	2507A12	99.38
4-40	H2	0.335″	1 7/8″	#43	2684A29	14.07	83535A33	15.31	8311A15	17.59	25595A32●	20.72	2507A13	27.76
4-48	H2	0.335″	1 7/8″	#42	2684A63	14.07	83535A83◤	25.85	8311A16◤	47.23	25595A33	20.72	2507A14	67.23
5-40	H2	0.374″	1 15/16″	#38	2684A64	14.07	83535A84	37.93	8311A17	35.63	25595A34	20.72	2507A15	61.30
6-32	H3	0.413″	2″	#36	2684A31	11.78	83535A36	12.83	8311A19	14.74	25595A35	17.34	2507A16	23.24
6-40	H3	0.413″	2″	#33	2684A65	11.78	83535A85	36.03	8311A21	33.73	25595A36▲	17.34	2507A17	68.27
8-32	H3	0.453″	2 1/8″	#29	2684A32	11.78	83535A38	12.83	8311A22	14.74	25595A37	17.34	2507A18	23.24
8-36	H2	0.453″	2 1/8″	#29	2684A84	11.78	83535A86●	31.95	8311A23●◤	47.58	25595A22	49.31	2507A19	70.65
10-24	H3	0.531″	2 3/8″	#26	2684A33	11.78	83535A41	12.83	8311A26	14.74	25595A38	17.34	2507A21	23.24
10-32	H3	0.531″	2 3/8″	#21	2684A34	11.78	83535A42	12.83	8311A28	14.74	25595A39	17.34	2507A22	23.24
12-24	H3	0.571″	2 3/8″	#16	2684A66	13.07	83535A87	29.92	8311A29	28.68	25595A23	80.31	2507A23	71.64
12-28	H3	0.571″	2 3/8″	#15	2684A67	13.07	83535A88	49.69	8311A31	46.62	25595A24	80.31	2507A24	73.74
1/4″-20	H3	0.591″	2 1/2″	#7	2684A35	13.07	83535A45	14.21	8311A33	16.35	25595A41	20.60	2507A25	27.59
1/4″-28	H3	0.591″	2 1/2″	#3	2684A36	13.07	83535A46	14.21	8311A34	16.35	25595A42	20.60	2507A26	27.59
5/16″-18	H3	0.669″	2 23/32″	F	2684A37	14.60	83535A47	15.88	8311A35	18.25	25595A43	22.84	2507A27	30.60
5/16″-24	H3	0.669″	2 23/32″	I	2684A38	14.60	83535A48	15.88	8311A36	18.25	25595A44	22.84	2507A28	30.60
3/8″-16	H3	0.748″	2 15/16″	5/16″	2684A39	16.61	83535A49	18.07	8311A37	20.76	25595A45	26.19	2507A29	35.10
3/8″-24	H3	0.748″	2 15/16″	Q	2684A41	16.61	83535A51	18.07	8311A38	20.76	25595A46	26.19	2507A31	35.10
7/16″-14	H3	0.866″	3 5/32″	U	2684A68	21.44	83535A52	23.34	8311A41	26.82	25595A47★	35.49	2507A32★	47.55
7/16″-20	H3	0.866″	3 5/32″	25/64″	2684A69	21.44	83535A53	23.34	8311A42	26.82	25595A48★	35.49	2507A33★	47.55
1/2″-13	H3	0.984″	3 3/8″	27/64″	2684A71	24.72	83535A54	26.91	8311A43	30.92	25595A49	42.09	2507A34	56.40
1/2″-20	H3	0.984″	3 3/8″	29/64″	2684A72	24.72	83535A55	26.91	8311A44	30.92	25595A51	42.09	2507A35	56.40
9/16″-12	H3	0.984″	3 19/32″	31/64″	2684A85	38.32	83535A23	41.70	8311A45	47.92	25595A25	99.74	2507A36	110.25
9/16″-18	H3	0.984″	3 19/32″	33/64″	2684A86	38.32	83535A24	41.70	8311A46	47.92	25595A26	71.87	2507A37	117.83
5/8″-11	H3	1.083″	3 13/16″	17/32″	2684A75	44.89	83535A58	48.87	8311A47	56.13	25595A52	96.94	2507A38	155.07
5/8″-18	H3	1.083″	3 13/16″	37/64″	2684A76	44.89	83535A59	48.87	8311A48	56.13	25595A53	96.94	2507A39	157.46
3/4″-10	H3	1.201″	4 1/4″	21/32″	2684A77	70.52	83535A61	76.78	8311A54	88.20	25595A54	124.92	2507A41	183.85
3/4″-16	H3	1.201″	4 1/4″	11/16″	2684A78	70.52	83535A62	76.78	8311A55	88.20	25595A55	124.92	2507A42	141.50
7/8″-9	H4	1.339″	4 11/16″	49/64″	2684A79	91.57	83535A26	99.70	8311A58	114.52				
7/8″-14	H4	1.339″	4 11/16″	13/16″	2684A81	91.57	83535A27	99.70	8311A59	114.52				
1″-8	H4	1.496″	5 1/8″	7/8″	2684A82	124.80	83535A28	135.85	8311A65	156.07				
1″-12	H4	1.496″	5 1/8″	59/64″	2684A83	125.42	83535A89	152.12	8311A66♠	233.29				

♥ 0.438″ thread length. ♣ 0.500″ thread length. ● H3 pitch diameter limit. ◤ 0.380″ thread length.
▲ H2 pitch diameter limit. ★ 0.886″ thread length. ♠ 1.500″ thread length.

Metric Sizes

Tap Thread Size, mm	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size, mm ♦	FOR MATERIALS WITH LESS THAN C30 ROCKWELL HARDNESS: Oxide Treated		TiN Coated		TiCN Coated		FOR MATERIALS WITH C30-C40 ROCKWELL HARDNESS: Oxide-over-Nitride Treated		TiCN Coated	
3 ×0.5	D3	0.374″	1 15/16″	2.5	2671A71	$17.20	8338A24	$20.43	8299A24	$22.39	2676A31	$21.46	2682A11	$28.75
3.5 ×0.6	D4	0.413″	2″	2.9	2671A81	15.31	8338A25	19.37	8299A25	19.11	2676A32	22.68	2682A12	68.27
4 ×0.7	D4	0.453″	2 1/8″	3.3	2671A72	15.31	8338A28	18.18	8299A28	19.92	2676A33	22.68	2682A13	30.38
5 ×0.8	D4	0.531″	2 3/8″	4.2	2671A73	15.31	8338A33	18.18	8299A33	19.92	2676A34	22.68	2682A14	30.38
6 ×1	D5	0.591″	2 1/2″	5	2671A74	15.31	8338A37	18.18	8299A37	19.92	2676A35	24.29	2682A15	32.54
7 ×1	D5	0.669″	2 23/32″	6	2671A82	17.20	8338A38	22.17	8299A38	22.76	2676A36	25.99	2682A16	76.38
8 ×1	D5	0.669″	2 23/32″	7	2671A83	17.20	8338A39	22.17	8299A39	22.76	2676A37	25.99	2682A17	77.37
8 ×1.25	D5	0.669″	2 23/32″	6.7	2671A75	17.20	8338A41	20.43	8299A41	22.39	2676A38	25.99	2682A18	34.82
10 ×1.25	D5	0.748″	2 15/16″	8.7	2671A84	23.89	8338A42	38.54	8299A42	39.13	2676A39	30.31	2682A19	78.90
10 ×1.5	D6	0.748″	2 15/16″	8.5	2671A76	23.89	8338A45	28.38	8299A45	31.07	2676A41	30.31	2682A21	40.60
12 ×1.25	D5	0.984″	3 3/8″	10.8	2671A85	28.64	8338A46	45.58	8299A46	45.15	2676A42	43.12	2682A22	91.28
12 ×1.75	D6	0.984″	3 3/8″	10.2	2671A77	28.64	8338A49	34.02	8299A49	37.26	2676A43	43.12	2682A23	57.77
14 ×1.5	D6	0.984″	3 19/32″	12.5	2671A86	39.63	8338A51	60.11	8299A51	62.12	2676A44	147.66	2682A24	214.64
14 ×2	D7	0.984″	3 19/32″	12	2671A87	42.58	8338A52	60.54	8299A52	62.12	2676A45	147.66	2682A25	215.93
16 ×1.5	D6	1.083″	3 13/16″	14.5	2671A88	51.64	8338A53	69.38	8299A53	71.40	2676A46	131.23	2682A26	208.35
16 ×2	D7	1.083″	3 13/16″	14	2671A89	51.64	8338A54	71.30	8299A54	66.67	2676A47	145.30	2682A27	208.52
18 ×1.5	D6	1.083″	4 1/32″	16.5	2671A91	72.47	8338A55	150.23	8299A55	107.90				
18 ×2.5	D7	1.083″	4 1/32″	15.5	2671A92	72.47	8338A56	150.23	8299A56	107.90				

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Vanadium Steel Spiral Point Taps for Aluminum

High-hook cutting threads and nitride-treated vanadium steel are the perfect combination for tapping wrought and die cast aluminum. These taps also can be used on nonferrous metals such as bronze and brass as well as soft plastics such as nylon and polyethylene. All have a plug chamfer.

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
2-56	H2	2	0.276″	1.770″	#50	2687A21	$20.61
4-40	H2	2	0.433″	2.210″	#43	2687A22	13.53
5-40	H2	3	0.433″	2.210″	#38	2687A23	13.53
6-32	H3	3	0.512″	2.210″	#36	2687A24	11.33
8-32	H3	3	0.512″	2.480″	#29	2687A25	11.33
10-24	H3	3	0.630″	2.760″	#26	2687A26	11.33
10-32	H3	3	0.630″	2.760″	#21	2687A27	11.33
1/4″-20	H3	3	0.748″	3.150″	#7	2687A28	12.57
1/4″-28	H3	3	0.748″	3.150″	#3	2687A29	12.57
5/16″-18	H3	3	0.866″	3.540″	F	2687A31	14.04
3/8″-16	H3	3	0.945″	3.940″	5/16″	2687A33	15.97
7/16″-14	H3	3	0.945″	3.940″	U	2687A35	20.61
1/2″-13	H3	3	1.142″	4.330″	27/64″	2687A37	23.77
1/2″-20	H3	3	0.866″	3.940″	29/64″	2687A38	23.77

Metric Sizes

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size, mm ♦		
3 ×0.5	D3	3	0.433″	2.210″	2.5	2673A51	$18.52
3.5×0.6	D4	3	0.512″	2.210″	2.9	2673A52	16.49
4 ×0.7	D4	3	0.512″	2.480″	3.3	2673A53	16.49
5 ×0.8	D4	3	0.630″	2.760″	4.2	2673A54	16.49
6 ×1	D5	3	0.748″	3.150″	5	2673A55	16.49
7 ×1	D5	3	0.748″	3.150″	6	2673A56	18.52
8 ×1.25	D5	3	0.866″	3.540″	6.7	2673A58	18.52
10 ×1.25	D5	3	0.945″	3.940″	8.7	2673A59	25.73
10 ×1.5	D6	3	0.945″	3.940″	8.5	2673A61	25.73
12 ×1.25	D5	3	0.866″	3.940″	10.8	2673A62	30.84
12 ×1.5	D5	3	0.866″	3.940″	10.5	2673A63	30.84
12 ×1.75	D6	3	1.142″	4.330″	10.2	2673A64	30.84

Super-Performance Cobalt Steel Spiral Point Taps

Abrasion-resistant and long-wearing, these uncoated (bright finish) cobalt steel taps perform better than high-speed steel taps on alloy and tool steels, malleable iron, aluminum, brass, copper, and zinc. All have a plug chamfer.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
2-56	H2	2	7/16″	1 3/4″	#50	8779A21	$16.41
2-64	H2	2	7/16″	1 3/4″	#50	8779A35	18.76
3-48	H2	2	1/2″	1 13/16″	#47	8779A22	16.41
3-56	H2	2	1/2″	1 13/16″	#45	8779A36	18.76
4-40	H2	2	9/16″	1 7/8″	#43	8779A23	11.72
4-48	H2	2	9/16″	1 7/8″	#44	8779A37	16.41
5-40	H2	2	5/8″	1 15/16″	#38	8779A24	11.72
5-44	H2	2	5/8″	1 15/16″	#37	8779A38	16.41
6-32	H2	2	11/16″	2″	#36	8779A25	8.17
6-40	H2	2	11/16″	2″	#33	8779A39	11.72
8-32	H2	2	3/4″	2 1/8″	#29	8779A26	8.17
8-36	H2	2	3/4″	2 1/8″	#29	8779A41	11.72
10-24	H3	2	7/8″	2 3/8″	#25	8779A27	8.17
10-32	H3	2	7/8″	2 3/8″	#21	8779A42	8.17
12-24	H3	2	15/16″	2 3/8″	#16	8779A28	$11.72
12-28	H3	2	15/16″	2 3/8″	#14	8779A43	11.72
1/4″-20	H3	2	1″	2 1/2″	#7	8779A29	10.84
1/4″-28	H3	2	1″	2 1/2″	#3	8779A44	11.72
5/16″-18	H3	2	1 1/8″	2 23/32″	F	8779A31	12.02
5/16″-24	H3	2	1 1/8″	2 23/32″	I	8779A45	12.90
3/8″-16	H3	3	1 1/4″	2 15/16″	5/16″	8779A32	13.72
3/8″-24	H3	3	1 1/4″	2 15/16″	Q	8779A46	15.24
7/16″-14	H3	3	1 7/16″	3 5/32″	U	8779A33	19.47
7/16″-20	H3	3	1 7/16″	3 5/32″	25/64″	8779A47	21.10
1/2″-13	H3	3	1 21/32″	3 3/8″	27/64″	8779A34	22.28
1/2″-20	H3	3	1 21/32″	3 3/8″	29/64″	8779A48	25.21
5/8″-11	H3	3	1 13/16″	3 13/16″	17/32″	8779A49	49.79
3/4″-10	H3	3	2″	4 1/4″	21/32″	8779A51	76.21

Cobalt Steel Spiral Point Taps for Stainless Steel

No need to switch taps for different types of stainless steel—these taps work on Types 303, 304, 316, 316L, 416, and 420. A coating of TiN (titanium nitride) extends tap life, improves thread finish, and allows for tapping at higher speeds compared to uncoated (bright finish) taps. All have a plug chamfer and are for Class 2B thread fit.

Tap Thread Size	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
4-40	2	0.250″	2.205″	#43	2408A11	$33.45
5-40	3	0.250″	2.205″	#38	2408A12	35.51
6-32	3	0.313″	2.205″	#36	2408A13	31.38
8-32	3	0.313″	2.480″	#29	2408A14	30.99
10-24	3	0.417″	2.756″	#26	2408A15	30.99
10-32	3	0.313″	2.756″	#21	2408A16	31.97
1/4″-20	3	0.500″	3.150″	#7	2408A17	34.72
1/4″-28	3	0.357″	3.150″	#3	2408A18	35.80
5/16″-18	4	0.556″	3.543″	F	2408A19	39.44
5/16″-24	4	0.417″	3.543″	I	2408A21	40.33
3/8″-16	4	0.625″	3.937″	5/16″	2408A22	43.87
3/8″-24	4	0.417″	3.937″	Q	2408A23	45.44
7/16″-14	4	0.714″	3.937″	U	2408A24	59.21
7/16″-20	4	0.500″	3.937″	25/64″	2408A25	61.58
1/2″-13	4	0.769″	4.331″	27/64″	2408A26	59.80
1/2″-20	4	0.500″	3.937″	29/64″	2408A27	61.97
5/8″-11	4	0.909″	4.331″	17/32″	2408A28	98.16
5/8″-18	4	0.556″	3.937″	37/64″	2408A29	101.31
3/4″-10	4	1.000″	4.921″	21/32″	2408A31	128.56
3/4″-16	4	0.625″	4.331″	11/16″	2408A32	130.62

Cobalt Steel Spiral Point Taps for Titanium

A special spiral point pushes these nitride-treated cobalt steel taps through pure titanium and titanium alloys. Taps can also be used on hardened stainless steels (such as Types 15-5 PH and 420) and abrasion-resistant steel (such as Ferro-TiC and Hardox 500). All have a plug chamfer and are for Class 3B thread fit.

Tap Thread Size	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
4-40	2	0.433″	2.205″	#43	2439A12	$35.11
5-40	2	0.433″	2.205″	#38	2439A14	36.59
6-32	3	0.472″	2.205″	#36	2439A16	32.36
8-32	3	0.512″	2.480″	#29	2439A18	31.38
10-24	3	0.591″	2.756″	#26	2439A21	31.38
10-32	3	0.512″	2.756″	#21	2439A22	32.86
1/4″-20	3	0.669″	3.150″	#7	2439A25	35.11
1/4″-28	3	0.669″	3.150″	#3	2439A26	37.08
5/16″-18	3	0.787″	3.543″	F	2439A27	39.04
5/16″-24	3	0.669″	3.543″	I	2439A28	40.33
3/8″-16	3	0.866″	3.937″	5/16″	2439A29	44.56
3/8″-24	3	0.709″	3.937″	Q	2439A31	46.43
7/16″-14	3	0.866″	3.937″	U	2439A32	63.05
7/16″-20	3	0.866″	3.937″	25/64″	2439A33	65.02
1/2″-13	3	0.984″	4.331″	27/64″	2439A34	63.74
1/2″-20	3	0.866″	3.937″	29/64″	2439A35	66.69
5/8″-11	3	1.063″	4.331″	17/32″	2439A38	101.80
5/8″-18	3	0.866″	3.937″	37/64″	2439A39	105.64
3/4″-10	3	1.181″	4.921″	21/32″	2439A41	133.97
3/4″-16	4	0.984″	4.331″	11/16″	2439A42	139.28

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Solid Carbide Spiral Point Taps for Abrasive Materials

Tough enough for the highly abrasive materials that high-speed steel taps can't handle. These uncoated (bright finish) micrograin carbide taps last longer on aluminum, cast iron, titanium alloys, and nickel-based alloys. All taps have a plug chamfer.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
4-40	H2	2	9/16"	1 7/8"	#43	26575A18	$94.73
6-32	H3	2	11/16"	2"	#36	26575A28	97.13
8-32	H3	2	3/4"	2 1/8"	#29	26575A38	102.71
10-24	H3	2	7/8"	2 3/8"	#26	26575A48	108.04
10-32	H3	2	7/8"	2 3/8"	#21	26575A58	$108.04
1/4"-20	H3	2	1"	2 1/2"	#7	26575A68	129.59
5/16"-18	H3	2	1 1/8"	2 23/32"	F	26575A78	148.58
3/8"-16	H3	3	1 1/4"	2 15/16"	5/16"	26575A88	184.68

General Purpose High-Speed Steel Spiral Flute Taps

Choose from uncoated (bright finish) and TiN-coated high-speed steel for your general tapping needs. All taps have a 52° spiral. ***Uncoated (bright finish)*** taps are for use on most metals, but they're not recommended for cast iron. ***TiN (titanium nitride) coated*** taps can be run at high speeds and have improved tap life and workpiece thread finish compared to uncoated (bright finish) taps when used on plastic and ferrous metals such as steel and stainless steel.

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	UNCOATED (BRIGHT FINISH) Plug	Bottoming		TiN COATED Plug	Bottoming	
4-40	H2	2	9/16"	1 7/8"	#43	2529A12	2529A44	$13.27	26255A31	26255A51	$16.99
5-40	H2	2	9/16"	1 15/16"	#38	2529A13	2529A45	13.27	26255A21	26255A22	20.25
6-32	H3	2	3/8"	2"	#36	2529A14	2529A46	10.78	26255A32	26255A52	13.81
8-32	H3	3	3/8"	2 1/8"	#29	2529A15	2529A47	10.78	26255A33	26255A53	13.81
10-24	H3	3	1/2"	2 3/8"	#26	2529A16	2529A48	10.78	26255A34	26255A54	13.81
10-32	H3	3	1/2"	2 3/8"	#21	2529A32	2529A49	10.78	26255A35	26255A55	13.81
12-24	H3	3	1/2"	2 3/8"	#16	2529A17	2529A51	11.73	26255A23	26255A24	29.45
1/4"-20	H3	3	5/8"	2 1/2"	#7	2529A18	2529A53	11.73	26255A36	26255A56	15.03
1/4"-28	H3	3	5/8"	2 1/2"	#3	2529A34	2529A54	11.73	26255A37	26255A57	15.03
5/16"-18	H3	3	11/16"	2 23/32"	F	2529A19	2529A55	14.51	26255A38	26255A58	18.58
5/16"-24	H3	3	11/16"	2 23/32"	I	2529A61	2529A62	14.51	26255A39	26255A59	18.58
3/8"-16	H3	3	3/4"	2 15/16"	5/16"	2529A21	2529A56	16.78	26255A41	26255A61	21.50
3/8"-24	H3	3	3/4"	2 15/16"	Q	2529A36	2529A57	16.78	26255A42	26255A62	21.50
7/16"-14	H3	3	7/8"	3 5/32"	U	2529A42	2529A58	24.98	26255A43	26255A63	32.00
1/2"-13	H3	3	15/16"	3 3/8"	27/64"	2529A23	2529A59	29.37	26255A44	26255A64	37.63
5/8"-11	H3	4	1 3/32"	3 13/16"	17/32"	2529A63	2529A64	51.79	—	—	—

Metric Sizes

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size, mm ♦	UNCOATED (BRIGHT FINISH) Plug	Bottoming		TiN COATED Plug	Bottoming	
3×0.5	D3	2	5/16"	1 15/16"	2.5	26355A41	26355A61	$13.81	26355A71	26355A81	$17.93
4×0.7	D4	3	3/8"	2 1/8"	3.3	26355A42	26355A62	11.23	26355A72	26355A82	14.57
5×0.8	D4	3	1/2"	2 3/8"	4.2	26355A43	26355A63	11.23	26355A73	26355A83	14.57
6×1	D5	3	3/8"	2 1/2"	5.0	26355A44●	26355A64	12.22	26355A74●	26355A84	15.86
8×1.25	D5	3	11/16"	2 23/32"	6.7	26355A45	26355A65	15.11	26355A75	26355A85	19.60
10×1.5	D6	3	3/4"	2 15/16"	8.5	26355A46	26355A66	17.47	26355A76	26355A86	22.68
12×1.75	D6	3	15/16"	3 3/8"	10.2	26355A47	26355A67	30.59	26355A77	26355A87	39.73

● 5/8" thread lg.

Vanadium Steel Spiral Flute Taps for Stainless Steel

These oxide-treated vanadium steel taps provide abrasion resistance as well as quality thread finish when tapping all types of stainless steel. All taps have a semi-bottoming chamfer and 48° spiral flutes.

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
4-40	H2	3	0.6091"	1 7/8"	#43	8315A11	$21.67
5-40	H2	3	0.7404"	1 15/16"	#38	8315A12	21.67
6-32	H2	3	0.2610"	2"	#36	8315A13	20.32
8-32	H2	3	0.2484"	2 1/8"	#29	8315A14	20.32
10-24	H3	3	0.2650"	2 3/8"	#26	8315A15	19.20
10-32	H2	3	0.2650"	2 3/8"	#21	8315A16	20.32
12-24	H3	3	0.2520"	2 3/8"	#16	8315A17	22.01
1/4"-20	H3	3	0.3937"	2 1/2"	#7	8315A18	23.10
1/4"-28	H3	3	0.3937"	2 1/2"	#3	8315A19	23.10
5/16"-18	H3	3	0.4567"	2 23/32"	F	8315A21	28.47
5/16"-24	H3	3	0.4567"	2 23/32"	I	8315A22	28.47
3/8"-16	H3	3	0.5315"	2 15/16"	5/16"	8315A23	32.87
3/8"-24	H3	3	0.5315"	2 15/16"	Q	8315A24	32.87
7/16"-14	H3	3	0.6299"	3 5/32"	U	8315A25	48.85
7/16"-20	H3	3	0.6299"	3 5/32"	25/64"	8315A26	48.85
1/2"-13	H3	3	0.6890"	3 3/8"	27/64"	8315A27	58.62
1/2"-20	H3	3	0.6890"	3 3/8"	29/64"	8315A28	58.62

Metric Sizes

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size, mm ♦		
4×0.7	D4	3	0.2484"	2 1/8"	3.30	8315A41	$24.36
5×0.8	D4	3	0.2650"	2 3/8"	4.20	8315A42	26.69
6×1	D5	3	0.3937"	2 1/2"	5.00	8315A43	26.69
8×1.25	D5	3	0.4567"	2 23/32"	6.70	8315A44	33.04
10×1.5	D6	3	0.5315"	2 15/16"	8.50	8315A45	49.85

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Ultra-Performance Vanadium Steel Spiral Flute Taps

No matter which of these taps you choose, you'll get exceptional quality for tapping a variety of materials. All taps have a modified bottoming chamfer. Tap thread sizes 2-56 to 4-48 have two flutes (unless noted); sizes 5-40 to ⅝″-18 and metric sizes have three flutes (unless noted); sizes ¾″-10 to 1″-12 have four flutes.

For Materials with Less than C30 Rockwell Hardness— Use these taps on steel and steel alloys, stainless steel such as Types 316 and 416, and malleable iron. Taps have 45° spiral flutes.

For Materials with C30-C40 Rockwell Hardness— Use these taps on hardened steel, stainless steel such as Types 420 and 15-5 PH, mold and tool steels, and nickel alloys such as Inconel, Waspalloy, and Hastelloy. Taps are made of cobalt and vanadium steel and have 15° spiral flutes.

Oxide-treated taps have less friction and buildup of workpiece materials with a porous layer to hold lubricants. ***Oxide-over-Nitride treated*** taps are the same as oxide-treated with additional surface toughness and longer tap life. ***TiN (titanium nitride) coated*** taps have improved tap life and workpiece thread finish and can be run at high speeds. ***TiCN (titanium carbonitride) coated*** taps are the same as TiN-coated, but they're harder and more wear resistant.

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦	FOR MATERIALS WITH LESS THAN C30 ROCKWELL HARDNESS: Oxide Treated		TiN Coated		TiCN Coated		FOR MATERIALS WITH C30-C40 ROCKWELL HARDNESS: Oxide-over-Nitride Treated		TiCN Coated	
2-56	H2	0.157″	1¾″	#50	27055A11	$32.08	83755A11	$34.27	2622A14♥	$51.23	2626A11●	$58.77	8301A31●	$83.61
4-40	H2	0.236″	1⅞″	#43	27055A31	21.06	83755A33	23.35	2622A15	27.39	2626A12●	28.23	8301A11●	39.38
4-48	H2	0.236″	1⅞″	#42	27055A32	21.06	83755A81	75.13	2622A16	30.37	2626A13●	28.23	8301A32●	69.31
5-40	H2	0.236″	1 15/16″	#38	27055A33	21.06	83755A12	23.35	2622A18	27.39	2626A14	28.23	8301A12	39.38
6-32	H3	0.276″	2″	#36	27055A34	16.75	83755A36	18.57	2622A21	21.79	2626A15	25.64	8301A13	35.77
6-40	H3	0.276″	2″	#33	27055A35	16.75	83755A82◤	57.93	2622A22	24.14	2626A66	75.60	8301A33	116.66
8-32	H3	0.276″	2⅛″	#29	27055A36	16.75	83755A38	18.57	2622A24	21.79	2626A17	25.19	8301A14	35.15
10-24	H3	0.354″	2⅜″	#26	27055A37	17.15	83755A41	19.00	2622A27	22.30	2626A19	25.19	8301A15	35.15
10-32	H3	0.276″	2⅜″	#21	27055A38	17.15	83755A42	19.00	2622A28	22.30	2626A22	25.19	8301A16	35.15
12-24	H3	0.354″	2⅜″	#16	27055A39	18.91	83755A83	84.52	2622A29	27.26	2626A63	78.90	8301A34	110.73
12-28	H3	0.276″	2⅜″	#15	27055A41	18.91	83755A84♣	64.74	2622A31	27.27	2626A64	92.68	8301A35	110.73
¼″-20	H3	0.433″	2½″	#7	27055A42	18.91	83755A45	20.96	2622A33	24.59	2626A25	28.23	8301A17	39.38
¼″-28	H3	0.354″	2½″	#3	27055A43	18.91	83755A46	20.96	2622A34	24.59	2626A28	28.23	8301A18	39.38
5/16″-18	H3	0.472″	2 23/32″	F	27055A44	21.06	83755A47	23.35	2622A35	27.39	2626A32	31.02	8301A19	43.29
5/16″-24	H3	0.394″	2 23/32″	I	27055A45	21.06	83755A48	23.35	2622A36	27.39	2626A35	31.02	8301A21	43.29
⅜″-16	H3	0.551″	2 15/16″	5/16″	27055A46	23.47	83755A49	26.01	2622A37	30.53	2626A38	35.72	8301A22	49.84
⅜″-24	H3	0.394″	2 15/16″	Q	27055A47	23.47	83755A51	26.01	2622A38	30.53	2626A42	35.72	8301A23	49.84
7/16″-14	H3	0.591″	3 5/32″	U	27055A48	34.26	83755A52	37.98	2622A41	44.55	2626A45	49.74	8301A24	69.96
7/16″-20	H3	0.472″	3 5/32″	25/64″	27055A49	34.26	83755A53	37.98	2622A42	44.55	2626A46	49.74	8301A25	69.96
½″-13	H3	0.630″	3⅜″	27/64″	27055A51	41.73	83755A54	46.28	2622A43	54.27	2626A48	55.19	8301A26	77.03
½″-20	H3	0.472″	3⅜″	29/64″	27055A52	41.73	83755A55	46.28	2622A44	54.27	2626A52	55.19	8301A27	77.03
⅝″-11	H3	0.748″	3 13/16″	17/32″	27055A55	69.50	83755A58	77.08	2622A47	90.41	2626A55▲	124.92	8301A36▲	212.59
⅝″-18	H3	0.512″	3 13/16″	37/64″	27055A56	69.50	83755A59	77.08	2622A48	90.41	2626A57▲	124.92	8301A37▲	217.15
¾″-10	H3	0.827″	4¼″	21/32″	27055A57	89.79	83755A61	99.57	2622A52	116.81	2626A58	160.18	8301A38	278.45
¾″-16	H3	0.591″	4¼″	11/16″	27055A58	89.79	83755A62	99.57	2622A53	116.81	2626A59	160.18	8301A39	278.45
⅞″-9	H4	0.827″	4 11/16″	49/64″	27055A59	133.18	83755A63	147.67	2622A56	173.22	—	—	—	—
⅞″-14	H4	0.709″	4 11/16″	13/16″	27055A61	133.18	83755A64	147.67	2622A57	173.22	—	—	—	—
1″-8	H4	0.984″	5⅛″	⅞″	27055A62	174.76	83755A65	193.76	2622A61	227.32	—	—	—	—
1″-12	H4	0.709″	5⅛″	59/64″	27055A63	175.60	83755A85	253.19	2622A62	291.64	—	—	—	—

♥ 0.438″ thread length. ● Has three flutes. ◤ 0.380″ thread length. ♣ 0.500″ thread length. ▲ Has four flutes.

Metric Sizes

Tap Thread Size, mm	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size, mm ♦	FOR MATERIALS WITH LESS THAN C30 ROCKWELL HARDNESS: Oxide Treated		TiN Coated		TiCN Coated		FOR MATERIALS WITH C30-C40 ROCKWELL HARDNESS: Oxide-over-Nitride Treated		TiCN Coated	
3 ×0.5	D3	0.197″	1 15/16″	2.5	8296A21	$26.71	2730A34	$31.43	8308A34	$34.42	8327A41	$28.62	8297A61	$41.55
3.5 ×0.6	D4	0.276″	2″	2.9	8296A22	24.65	2730A35	29.16	8308A35	28.88	8327A42	25.79	—	—
4 ×0.7	D4	0.276″	2⅛″	3.3	8296A23	24.65	2730A38	28.98	8308A38	31.74	8327A43	25.79	8297A63	37.44
5 ×0.8	D4	0.354″	2⅜″	4.2	8296A24	24.65	2730A41	28.98	8308A41	31.74	8327A44	25.79	8297A64	37.44
6 ×1	D5	0.433″	2½″	5.0	8296A25	24.65	2730A45	28.98	8308A45	31.74	8327A45	27.87	8297A65	40.44
7 ×1	D5	0.433″	2 23/32″	6.0	8296A26	26.71	2730A46	30.86	8308A46	38.25	8327A46	31.45	—	—
8 ×1	D5	0.472″	2 23/32″	7.0	8296A27	26.71	2730A47	32.55	8308A47	33.19	8327A47	31.45	8297A67	74.35
8 ×1.25	D5	0.472″	2 23/32″	6.7	8296A28	26.71	2730A49	31.43	8308A49	34.42	8327A48	31.45	8297A68	45.63
10 ×1.25	D5	0.472″	2 15/16″	8.7	8296A29	37.68	2730A51	51.37	8308A51	52.00	8327A49	37.66	—	—
10 ×1.5	D6	0.512″	2 15/16″	8.5	8296A31	37.68	2730A55	44.33	8308A55	48.54	8327A51	37.66	8297A71	54.65
12 ×1.25	D5	0.551″	3⅜″	10.8	8296A32	45.37	2730A57	62.54	8308A57	64.69	8327A52	51.96	—	—
12 ×1.75	D6	0.591″	3⅜″	10.2	8296A33	45.37	2730A58	53.38	8308A58	58.45	8327A53	51.96	8297A73	75.42

Cobalt Steel Spiral Flute Taps for Titanium

Specially designed for tapping pure titanium and titanium alloys. Also for use on hardened stainless steel such as Types 15-5 PH and 440 and abrasion-resistant steel such as Ferro-TiC and Hardox 500. All taps have a semi-bottoming chamfer, 15° spiral flutes, and are for Class 3B thread fit, which is tighter than the Class 2B thread fit.

Tap Thread Size	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
2-56	2	0.276″	1.772″	#50	2401A24	$45.55
4-40	2	0.433″	2.205″	#43	2401A28	35.11
4-48	2	0.433″	2.205″	#42	2401A29	37.08
5-40	2	0.433″	2.205″	#38	2401A31	36.59
6-32	3	0.472″	2.205″	#36	2401A33	32.36
6-40	3	0.472″	2.205″	#33	2401A34	33.25
8-32	3	0.512″	2.480″	#29	2401A35	31.38
8-36	3	0.512″	2.480″	#29	2401A36	32.86
10-24	3	0.591″	2.756″	#26	2401A37	31.38
10-32	3	0.512″	2.756″	#21	2401A38	32.86
12-24	3	0.630″	3.150″	#16	2401A39	32.36
12-28	3	0.630″	3.150″	#15	2401A41	$33.25
¼″-20	3	0.669″	3.150″	#7	2401A42	35.11
¼″-28	3	0.669″	3.150″	#3	2401A43	37.08
5/16″-18	3	0.787″	3.543″	F	2401A44	39.04
5/16″-24	3	0.669″	3.543″	I	2401A45	40.33
⅜″-16	3	0.866″	3.937″	5/16″	2401A46	44.56
⅜″-24	3	0.709″	3.937″	Q	2401A47	46.43
7/16″-14	3	0.866″	3.937″	U	2401A48	63.05
7/16″-20	3	0.866″	3.937″	25/64″	2401A49	65.02
½″-13	3	0.984″	4.331″	27/64″	2401A51	63.74
½″-20	3	0.866″	3.937″	29/64″	2401A52	66.69

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Thread-Forming Hand Taps

Also known as cold forming, fluteless, and chipless taps, these form threads under pressure rather than by cutting so no chips are formed. ***Uncoated (bright finish)*** taps are for general purpose use on most metals. ***TiN (titanium nitride) coated*** taps last longer, provide a better thread finish, and can be run faster than uncoated (bright finish) taps when used on plastic and ferrous metals such as steel and stainless steel.

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦	*Plug*	*Bottoming*	
Uncoated (Bright Finish)							
4-40	H3	9/16″	1 7/8″	#38	2531A14	2531A26	$14.14
5-40	H3	5/8″	1 15/16″	#33	2531A37	2531A49	14.14
6-32	H3	3/8″	2″	1/8″	2531A16	2531A27	11.63
8-32	H3	3/8″	2 1/8″	#25	2531A17	2531A28	11.63
10-24	H4	1/2″	2 3/8″	11/64″	2531A18	2531A29	11.63
10-32	H4	1/2″	2 3/8″	#16	2531A39	2531A53	11.63
12-24	H4	1/2″	2 3/8″	#8	2531A61	2531A62	12.34
1/4″-20	H4	5/8″	2 1/2″	#1	2531A21	2531A31	12.34
1/4″-28	H4	5/8″	2 1/2″	15/64″	2531A43	2531A54	12.34
5/16″-18	H5	1 1/16″	2 23/32″	L	2531A22	2531A32	13.72
5/16″-24	H5	1 1/16″	2 23/32″	M	2531A44	2531A55	13.72
3/8″-16	H5	3/4″	2 15/16″	S	2531A23	2531A33	15.64
3/8″-24	H5	3/4″	2 15/16″	T	2531A46	2531A56	15.64
1/2″-13	H5	15/16″	3 3/8″	15/32″	2531A25	2531A34	26.66
1/2″-20	H5	15/16″	3 3/8″	12.25 mm	2531A47	2531A57	26.66
TiN Coated							
6-32	H3	3/8″	2″	1/8″	2534A11	2534A21	14.90
8-32	H3	3/8″	2 1/8″	#25	2534A12	2534A22	14.90
10-24	H4	1/2″	2 3/8″	11/64″	2534A13	2534A23	14.90
10-32	H4	1/2″	2 3/8″	#16	2534A14	2534A24	14.90
1/4″-20	H4	5/8″	2 1/2″	#1	2534A15	2534A25	15.80
1/4″-28	H4	5/8″	2 1/2″	15/64″	2534A16	2534A26	15.80
5/16″-18	H5	1 1/16″	2 23/32″	L	2534A17	2534A27	17.58
3/8″-16	H5	3/4″	2 15/16″	S	2534A18	2534A28	20.03

Metric Sizes—*TiN-Coated*

Tap Thread Size, mm	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦	*Plug*	*Bottoming*	
3×0.5	D5	5/16″	1 15/16″	7/64″	2541A31	2541A41	$15.22
4×0.7	D6	3/8″	2 1/8″	3.7 mm	2541A32	2541A42	15.14
5×0.8	D7	1/2″	2 3/8″	#14	2541A33	2541A43	14.94
6×1.0	D8	5/8″	2 1/2″	7/32″	2541A34	2541A44	15.63
8×1.25	D9	1 1/16″	2 23/32″	7.4 mm	2541A35	2541A45	18.48
10×1.5	D10	3/4″	2 15/16″	U	2541A36	2541A46	20.67
12×1.75	D11	15/16″	3 3/8″	11.2 mm	2541A37	2541A47	34.36

Long-Shank and Nut Hand Taps

Long Shank

Nut

Get into areas regular taps can't reach. Taps are uncoated (bright finish) high-speed steel for use on most metals. All have straight flutes with a plug chamfer.

Long-Shank Taps—Also known as extension taps, these are best when extra reach is needed.

Nut Taps—Store tapped nuts on the long, narrow shank as you finish tapping each one. Taps have a shank diameter that is smaller than the thread diameter, which makes them great for deep-hole tapping.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Shank Dia.	Thread Lg.	O'all Lg.	Drill Size ♦		
Long-Shank Taps								
6-32	H3	3	0.141″	11/16″	6″	#36	2582A12	$20.82
8-32	H3	4	0.168″	3/4″	6″	#29	2582A13	19.12
10-24	H3	4	0.194″	7/8″	6″	#26	2582A14	18.13
10-32	H3	4	0.194″	7/8″	6″	#21	2582A16	18.13
1/4″-20	H3	4	0.255″	1″	6″	#7	2582A31	31.26
1/4″-28	H3	4	0.255″	1″	6″	#3	2582A32	31.26
5/16″-18	H3	4	0.318″	1 1/8″	6″	F	2582A33	33.32
5/16″-24	H3	4	0.318″	1 1/8″	6″	I	2582A34	32.46
3/8″-16	H3	4	0.381″	1 1/4″	6″	5/16″	2582A35	35.70
3/8″-24	H3	4	0.381″	1 1/4″	6″	Q	2582A36	32.45
7/16″-14	H3	4	0.323″	1 7/16″	6″	U	2582A17	19.98
7/16″-20	H3	4	0.323″	1 7/16″	6″	25/64″	2582A18	35.15
1/2″-13	H3	4	0.367″	1 21/32″	6″	27/64″	2582A19	20.58
1/2″-20	H3	4	0.367″	1 21/32″	6″	29/64″	2582A21	41.76
5/8″-11	H3	4	0.480″	1 13/16″	6″	17/32″	2582A22	26.53
5/8″-18	H3	4	0.480″	1 13/16″	6″	37/64″	2582A23	55.35
Nut Taps								
1/4″-20	H3	4	0.185″	1 5/8″	5″	#7	2583A12	42.91
5/16″-18	H3	4	0.240″	1 13/16″	5 1/2″	F	2583A13	48.43
3/8″-16	H3	4	0.294″	2″	6″	5/16″	2583A14	57.16
1/2″-13	H3	4	0.400″	2 1/2″	7″	27/64″	2583A16	77.47
5/8″-11	H3	4	0.503″	3″	8″	17/32″	2583A17	88.21
3/4″-10	H3	4	0.616″	3 1/4″	9″	21/32″	2583A18	123.20
1″-8	H4	4	0.834″	4″	11″	7/8″	2583A19	230.06

Thread Mills for Extra-Hard Materials

Cut left- and right-hand internal threads and get 100% threading depth in difficult-to-machine materials such as stainless steel and nickel-based alloys. These thread mills are AlTiN (aluminum titanium nitride) coated solid carbide for improved thread finish and longer life. All are blue-gray in color. Use with CNC machines with helical interpolation capability (simultaneous three-axis movement).

Also Available: Metric thread mill sizes. Please ask for 2659A999 and specify tap thread size (diameter and pitch).

Tap Thread Size	No. of Flutes	Shank Dia.	Cutter Dia.	Thread Lg.	O'all Lg.		
Machine Screw and Fractional Sizes							
4-40	2	1/4″	0.080″	3/16″	2″	2659A31	$161.11
6-32	2	1/4″	0.100″	1/4″	2″	2659A32	161.11
8-32	3	1/4″	0.115″	1/4″	2″	2659A33	161.11
1/4″-20	3	1/4″	0.180″	1/2″	2 1/2″	2659A37	177.64
1/4″-28	3	1/4″	0.180″	1/2″	2 1/2″	2659A38	177.64
3/8″-16	4	5/16″	0.285″	3/4″	2 1/2″	2659A41	235.63
3/8″-24	4	5/16″	0.285″	3/4″	2 1/2″	2659A42	235.63
1/2″-13	4	3/8″	0.350″	7/8″	3″	2659A45	247.10
5/8″-11	4	1/2″	0.470″	1 1/4″	4″	2659A48	283.21
3/4″-10	4	1/2″	0.495″	1 1/4″	4″	2659A49	283.21
1″-8	4	5/8″	0.620″	1 3/8″	4″	2659A54	305.59
NPT Sizes							
1/16″-27, 1/8″-27	3	1/4″	0.245″	7/16″	2 1/2″	2659A55	194.49
1/4″-18, 3/8″-18	4	5/16″	0.305″	5/8″	3″	2659A56	236.28
1/2″-14, 3/4″-14	4	1/2″	0.495″	7/8″	4″	2659A57	244.30
1″-11.5, 2″-11.5	4	5/8″	0.620″	1 1/8″	4″	2659A58	313.68

Ultra-Performance Long-Shank Spiral Point Taps

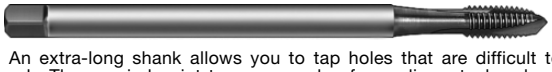

An extra-long shank allows you to tap holes that are difficult to reach. These spiral point taps are made of vanadium steel and are oxide-treated for reduced friction and improved tap life. Use them on steel and steel alloys, stainless steel, and malleable iron with a Rockwell hardness less than C30. All have a plug chamfer. Taps with thread sizes 7/16″-14 to 1/2″-20 have a shank diameter smaller than the thread diameter for deep-hole tapping.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Shank Dia.	Thread Lg.	O'all Lg.	Drill Size ♦		
2-56	H2	2	0.141″	0.256″	6″	#50	2589A17	$91.61
3-48	H2	2	0.141″	0.295″	6″	#47	2589A18	74.94
4-40	H2	2	0.141″	0.335″	6″	#43	2589A19	51.00
6-32	H3	3	0.141″	0.413″	6″	#36	2589A21	42.92
8-32	H3	3	0.168″	0.453″	6″	#29	2589A22	37.91
10-24	H3	3	0.194″	0.531″	6″	#26	2589A23	32.97
10-32	H3	3	0.194″	0.531″	6″	#21	2589A24	32.97
1/4″-20	H3	3	0.255″	0.591″	6″	#7	2589A25	28.97
1/4″-28	H3	3	0.255″	0.591″	6″	#3	2589A26	28.97
5/16″-18	H3	3	0.318″	0.669″	6″	F	2589A27	25.69
5/16″-24	H3	3	0.318″	0.669″	6″	I	2589A28	25.69
3/8″-16	H3	3	0.381″	0.748″	6″	5/16″	2589A29	33.13
3/8″-24	H3	3	0.381″	0.748″	6″	Q	2589A31	33.13
7/16″-14	H3	3	0.323″	0.866″	6″	U	2589A32	45.63
7/16″-20	H3	3	0.323″	0.866″	6″	25/64″	2589A33	45.63
1/2″-13	H3	3	0.367″	0.984″	6″	27/64″	2589A34	54.46
1/2″-20	H3	3	0.367″	0.984″	6″	29/64″	2589A35	54.46

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Tapered Thread Pipe Taps

Offered in various types of steel and styles for tapping different pipe materials. ***NPT*** taps create threads that require a sealer (sold separately on page 3415) for a pressure-tight joint. ***NPTF (Dryseal)*** taps create threads that are less likely than NPT to leak when a sealer is not used.

High-Speed Steel

All taps are high-speed steel and have straight flutes. ***Uncoated (bright finish)*** taps can be used on most metals. ***Chrome-plated*** taps are harder and have a longer tap life than uncoated (bright finish) taps. For use on most metals. ***TiN (titanium nitride) coated*** taps have improved tap life and workpiece thread finish when used on plastic and ferrous metals such as steel, stainless steel, and cast iron. ***Left-hand*** taps create left-hand threads and are for use on most metals. ***Interrupted thread*** taps have extra space between cutting teeth for better chip storage while tapping most metals. Taps with ***high hook*** teeth are best on materials that produce long and continuous chips such as aluminum, magnesium, and Types 303 and 416 stainless steel.

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size	UNCOATED (BRIGHT FINISH) NPT	UNCOATED (BRIGHT FINISH) NPTF		CHROME PLATED NPT	CHROME PLATED NPTF		TiN COATED NPT	TiN COATED NPTF	
1/16"-27	11/16"	2 1/8"	C	2525A171	2525A211	$19.79	8329A11	8329A31	$20.65	2652A41	2652A21	$29.27
1/8"-27	3/4"	2 1/8"	Q	2525A169●	2525A213●	19.79	8329A12●	8329A33●	23.45	2652A11●	2652A12●	29.27
1/8"-27	3/4"	2 1/8"	Q	2525A172♠	2525A212♠	19.79	8329A22♠	8329A32♠	20.65	2652A42♠	2652A22♠	29.27
1/4"-18	1 1/16"	2 7/16"	7/16"	2525A173	2525A214	22.72	8329A13	8329A34	24.82	2652A43	2652A23	32.26
3/8"-18	1 1/16"	2 9/16"	9/16"	2525A174	2525A215	28.84	8329A14	8329A35	30.05	2652A44	2652A24	42.67
1/2"-14	1 3/8"	3 1/8"	45/64"	2525A175	2525A216	45.66	8329A15	8329A36	44.63	2652A45	2652A25	67.53
3/4"-14	1 3/8"	3 1/4"	29/32"	2525A176	2525A217	63.94	8329A16	8329A37	60.10	2652A46	2652A26	94.58
1"-11 1/2	1 3/4"	3 3/4"	1 9/64"	2525A177	2525A218	96.78	8329A17	8329A38	91.11	2652A47	2652A27	143.12
1 1/4"-11 1/2	1 3/4"	4"	1 31/64"	2525A178	2525A219	138.99	8329A18	8329A39	127.29	2652A48	—	227.53
1 1/2"-11 1/2	1 3/4"	4 1/4"	1 23/32"	2525A179	2525A221	186.50	8329A19	8329A41	168.59	2652A49	2652A29	299.62
2"-11 1/2	1 3/4"	4 1/2"	2 3/16"	2525A181★	2525A222★	252.47	8329A21	8329A42	226.97	2652A51	—	407.06
2 1/2"-8	2 9/16"	5 1/2"	2 39/64"	2525A182	2525A223	355.00	—	—	—	—	—	—
3"-8	2 5/8"	6"	3 15/64"	2525A183	2525A224	392.49	—	—	—	—	—	—

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size	LEFT HAND UNCOATED (BRIGHT FINISH) NPTF		INTERRUPTED THREAD UNCOATED (BRIGHT FINISH) NPT	INTERRUPTED THREAD UNCOATED (BRIGHT FINISH) NPTF		HIGH HOOK UNCOATED (BRIGHT FINISH) NPT	HIGH HOOK UNCOATED (BRIGHT FINISH) NPTF	
1/16"-27	11/16"	2 1/8"	C	2525A128	$32.10	—	—	—	—	—	—
1/8"-27	3/4"	2 1/8"	Q	—	—	2525A191●	2525A231●	$30.78	—	—	—
1/8"-27	3/4"	2 1/8"	Q	2525A129	43.99	2525A189♠	2525A229♠	30.70	2654A11	2654A21	$20.79
1/4"-18	1 1/16"	2 7/16"	7/16"	2525A131	44.93	2525A192	2525A232	34.15	2654A12	2654A22	22.91
3/8"-18	1 1/16"	2 9/16"	9/16"	2525A142	58.30	2525A193	2525A233	44.71	2654A13	2654A23	30.30
1/2"-14	1 3/8"	3 1/8"	45/64"	2525A143	66.93	2525A194	2525A234	71.27	2654A14	2654A24	47.97
3/4"-14	1 3/8"	3 1/4"	29/32"	2525A144	92.23	2525A195	2525A235	99.74	2654A15	2654A25	67.17
1"-11 1/2	1 3/4"	3 3/4"	1 9/64"	2525A145	130.72	2525A196	2525A236	155.77	2654A16	2654A26	101.65
1 1/4"-11 1/2	1 3/4"	4"	1 31/64"	2525A146	205.90	2525A197	—	219.01	—	—	—
1 1/2"-11 1/2	1 3/4"	4 1/4"	1 23/32"	2525A147	235.76	2525A198	—	285.86	—	—	—
2"-11 1/2	1 3/4"	4 1/2"	2 3/16"	—	—	2525A199	—	384.74	—	—	—

● 0.3125" shank dia. ♠ 0.4375" shank dia. ★ Overall length is 4 1/4".

Cobalt Steel and Vanadium Steel

Cobalt steel taps are uncoated (bright finish) with straight flutes and are ideal for tapping mold steel and hardened steel with a Rockwell hardness between C30 and C45. ***Vanadium steel*** taps have spiral flutes (unless noted) and better abrasion resistance than high-speed steel taps. *Oxide-treated* taps have less friction and buildup of workpiece materials. For use on ferrous metals such as steel and stainless steel. *TiN-coated* taps have improved tap life and workpiece thread finish when used on plastic and ferrous metals such as steel and stainless steel.

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size	COBALT STEEL NPT		OXIDE-TREATED VANADIUM STEEL NPT	OXIDE-TREATED VANADIUM STEEL NPTF		TiN COATED VANADIUM STEEL NPT	TiN COATED VANADIUM STEEL NPTF	
1/16"-27	11/16"	2 1/8"	C	—	—	2661A31	2661A38	$34.68	2663A41	2663A51	$38.03
1/8"-27	3/4"	2 1/8"	Q	—	—	2661A32●	2661A39●	34.68	2663A38●	2663A39●	38.03
1/8"-27	3/4"	2 1/8"	Q	2662A26♠	$42.77	2661A28♠	2661A29♠	36.86	2663A42♠	2663A52♠	41.74
1/4"-18	1 1/16"	2 7/16"	7/16"	2662A27	46.68	2661A33	2661A41	38.17	2663A43	2663A53	43.25
3/8"-18	1 1/16"	2 9/16"	9/16"	2662A28	62.37	2661A34	2661A42	50.37	2663A44	2663A54	59.21
1/2"-14	1 3/8"	3 1/8"	45/64"	2662A29	97.11	2661A35	2661A43	80.20	2663A45	2663A55	88.39
3/4"-14	1 3/8"	3 1/4"	29/32"	2662A31	135.96	2661A36	2661A44	111.96	2663A46	2663A56	126.74
1"-11 1/2	1 3/4"	3 3/4"	1 9/64"	—	—	2661A37	2661A45	170.24	2663A47	2663A57	188.90
1 1/4"-11 1/2	1 3/4"	4"	1 31/64"	—	—	2661A51▲	2661A54▲	163.31	—	—	—
1 1/2"-11 1/2	1 3/4"	4 1/4"	1 23/32"	—	—	2661A52▲	—	217.74	—	—	—
2"-11 1/2	1 3/4"	4 1/2"	2 3/16"	—	—	2661A53▲	2661A56▲	296.52	—	—	—

● 0.3125" shank dia. ♠ 0.4375" shank dia. ▲ Straight flute.

Long-Shank High-Speed Steel

A long-shank gives you a better range for tapping difficult-to-reach holes. Taps have straight flutes and are uncoated (bright finish) for use on most metals.

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size	UNCOATED (BRIGHT FINISH) NPT	UNCOATED (BRIGHT FINISH) NPTF	
1/8"-27	3/4"	3"	Q	2538A41●	2538A11●	$23.01
1/8"-27	3/4"	6"	Q	2538A31♠	2538A21♠	43.70
1/4"-18	1 1/16"	3 1/2"	7/16"	2538A42	2538A12	25.80
1/4"-18	1 1/16"	6"	7/16"	2538A32	2538A22	39.44
3/8"-18	1 1/16"	3 3/4"	9/16"	2538A43	2538A13	33.85
3/8"-18	1 1/16"	6"	9/16"	2538A33	2538A23	45.67
1/2"-14	1 3/8"	4 3/8"	45/64"	2538A44	—	54.03
1/2"-14	1 3/8"	6"	45/64"	2538A34	2538A24	91.25
3/4"-14	1 3/8"	4 5/8"	29/32"	2538A45	—	72.56
3/4"-14	1 3/8"	6"	29/32"	2538A35	2538A25	111.50
1"-11 1/2	1 3/4"	5 1/4"	1 9/64"	2538A46	—	109.76

● 0.3125" shank dia. ♠ 0.4375" shank dia.

Carbon Steel

These uncoated (bright finish) taps are for occasional use. For use on most metals. All have straight flutes.

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size	UNCOATED (BRIGHT FINISH) NPT	
1/8"-27	3/4"	2 1/8"	Q	2525A112	$5.20
1/4"-18	1 1/16"	2 7/16"	7/16"	2525A113	6.02
3/8"-18	1 1/16"	2 9/16"	9/16"	2525A114	8.10
1/2"-14	1 3/8"	3 1/8"	45/64"	2525A115	16.50
3/4"-14	1 3/8"	3 1/4"	29/32"	2525A116	22.67
1"-11 1/2	1 3/4"	3 3/4"	1 9/64"	2525A117	31.30
1 1/4"-11 1/2	1 3/4"	4"	1 31/64"	2525A118	41.07
1 1/2"-11 1/2	1 3/4"	4 1/4"	1 23/32"	2525A119	58.25
2"-11 1/2	1 3/4"	4 1/2"	2 3/16"	2525A121	79.28

6-Piece Sets—Carbon Steel and High Speed Steel

Contain one each of NPT pipe tap sizes 1/8", 1/4", 3/8", 1/2", 3/4", and 1". 2765A42 and 2765A43 are furnished in a plastic pouch; 2765A44 is furnished in a wood case. ***High-speed steel*** taps last longer than ***carbon steel*** taps. ***Ground-thread*** taps have a more precise tolerance than ***cut-thread.***

		Set
Carbon-Steel Cut-Thread Set	2765A42	$114.72
High-Speed Steel Cut-Thread Set	2765A43	202.10
High-Speed Steel Ground-Thread Set	2765A44	284.23

For information about taps, see page 2536.

NPTF Pipe Taps for Shallow Holes

Also known as short projection taps, these are used where tapping depth is limited. Shorter projection and fewer chamfered threads eliminate the need to grind down taps and allow you to tap full threads close to the bottom of the hole. All taps are high-speed steel, have straight flutes, and create NPTF (Dryseal) threads, which are less likely to leak than NPT threads when a sealer is not being used.

Uncoated (bright finish) taps are for use on most metals. ***TiN (titanium nitride) coated*** taps have improved thread finish and longer tap life than uncoated (bright finish) taps when used on plastic and ferrous metals such as steel, stainless steel, and cast iron.

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size ♦	Uncoated (Bright Finish)		TiN Coated	
1/16″-27	11/16″	2 1/8″	C	2553A11	$22.12	2553A31	$26.26
1/8″-27	3/4″	2 1/8″	Q	2553A12	22.12	2553A32	26.26
1/4″-18	1 1/16″	2 7/16″	7/16″	2553A13	24.37	2553A33	28.94
3/8″-18	1 1/16″	2 9/16″	9/16″	2553A14	32.23	2553A34	38.25
1/2″-14	1 3/8″	3 1/8″	45/64″	2553A15	51.00	2553A35	60.53
3/4″-14	1 3/8″	3 1/4″	29/32″	2553A16	71.44	2553A36	84.80
1″-11 1/2	1 3/4″	3 3/4″	1 9/64″	2553A17	106.67	2553A37	128.31
1 1/4″-11 1/2	1 3/4″	4″	1 31/64″	2553A18	155.27	2553A38	184.30
1 1/2″-11 1/2	1 3/4″	4 1/4″	1 23/32″	2553A19	208.31	2553A39	247.28
2″-11 1/2	1 3/4″	4 1/4″	2 3/16″	2553A21	274.08	2553A41	334.75

Straight Thread Pipe Taps

Ideal for tapping holes that will be used in low pressure applications. All are uncoated (bright finish) high-speed steel for use on most metals and have straight flutes. ***NPS (American Standard Straight Pipe Thread)*** taps create threaded holes that assemble with taper threaded pipe for a pressure-tight joint (a sealer must be used). ***NPSF (Dryseal American Standard Straight Pipe Thread)*** taps are for tapping holes that connect fuel and oil lines (a sealer is not required).

Tap Thread Size	Thread Lg.	O'all Lg.	NPS Drill Size ♦			NPSF Drill Size ♦		
1/8″-27	3/4″	2 1/8″	T	2526A31 ●	$23.24	R	2526A41 ●	$23.24
1/8″-27	3/4″	2 1/8″	T	2526A29 ♠	23.24	R	2526A42 ♠	23.24
1/4″-18	1 1/16″	2 7/16″	15/32″	2526A32	25.81	7/16″	2526A43	25.81
3/8″-18	1 1/16″	2 9/16″	0.603″	2526A33	33.75	37/64″	2526A44	33.75
1/2″-14	1 21/32″	3 1/8″	19 mm	2526A34	53.84	18 mm	2526A45	53.84
3/4″-14	1 3/8″	3 1/4″	61/64″	2526A35	75.54	59/64″	2526A46	75.54
1″-11 1/2	1 3/4″	3 3/4″	1 13/64″	2526A36	114.76	—	—	—

● 0.3125″ shank dia. ♠ 0.4375″ shank dia.

British Standard Thread Pipe Taps

BSPT (British Standard Pipe Taper) taps are the European equivalent of NPT taper pipe taps. ***BSPP (British Standard Pipe Parallel)*** taps are the equivalent of NPS straight pipe taps. BSPT and BSPP threads should not be substituted for NPT or NPS threads. All taps have straight flutes and are uncoated (bright finish) high-speed steel for use on most metals.

To Order: Please specify BSPT or BSPP thread.

Tap Thread Size	Thread Lg.	O'all Lg.	Drill Size, mm ♦ BSPT	BSPP		
1/8″-28	3/4″	2 1/8″	8.4	8.8	8328A41	$16.78
1/4″-19	1 1/16″	2 7/16″	11.2	11.8	8328A42	18.00
3/8″-19	1 1/16″	2 9/16″	14.75	15.25	8328A43	23.15
1/2″-14	1 3/8″	3 1/8″	18.25	19	8328A44	36.75
3/4″-14	1 3/8″	3 1/4″	23.75	24.5	8328A45	50.83
1″-11	1 3/4″	3 3/4″	30	30.75	8328A46	78.52
1 1/4″-11	1 3/4″	4″	38.5	39.5	8328A47	113.92
1 1/2″-11	1 3/4″	4 1/4″	44.5	45	8328A48	151.78
2″-11	1 3/4″	4 1/2″	56	57	8328A49	212.28

Garden Hose, Spark Plug, and NGO Hand Taps

Specially made for tapping the unique thread sizes of garden hoses, spark plugs, and NGO (National Gas Outlet) connections. These taps are made of uncoated (bright finish) high-speed steel for use on most metals. All have a bottoming chamfer and four flutes, except the garden hose tap, which has six flutes. NGO tap thread size 0.830″-14 is for carbon dioxide and tap thread size 0.965″-14 is for nitrogen.

Tap Thread Size	Pitch Dia. Limit	Thread Lg.	O'all Lg.	Drill Size ♦		
Garden Hose						
3/4″-11 1/2	—	1 1/2″	4″	31/32″	2477A21	$79.08
Spark Plug						
14×1.25 mm	D4	1 21/32″	3 19/32″	12.75 mm	26015A229	35.45
18×1.5 mm	D4	1 13/16″	4 1/32″	16.5 mm	2477A22	52.30
7/8″-18	H3	2 7/32″	4 11/16″	20.85 mm	2595A425	64.70
NGO (National Gas Outlet)						
0.830″-14	H3	2 7/32″	4 11/16″	19.25 mm	2477A23	89.24
0.965″-14	H3	2 1/2″	5 1/8″	57/64″	2477A24	112.49

Conduit Thread Hand Taps

Designed to match European (PG) thread standards for conduit, these taps are made of uncoated (bright finish) high-speed steel for use on metals with a Rockwell hardness up to C32. They have a plug chamfer and four flutes, unless noted. Tap thread sizes 12.5×1.27 to 22.5×1.41 have a 0.006″ pitch diameter limit; all others have a 0.010″ pitch diameter limit.

Tap Thread Size, mm	Thread Lg.	O'all Lg.	Drill Size ♦		
12.5×1.27 (PG7)	1 21/32″	3 3/8″	11.2 mm	2485A11	$49.77
15.2×1.41 (PG9)	1 13/16″	3 13/16″	35/64″	2485A12	68.20
18.6×1.41 (PG11)	2″	4 1/4″	17.25 mm	2485A13	83.60
20.4×1.41 (PG13.5)	2″	4 15/32″	3/4″	2485A14	95.42
22.5×1.41 (PG16)	2 7/32″	4 11/16″	21.25 mm	2485A15	111.37
28.3×1.588 (PG21)	1 1/2″	4″	1 1/16″	2485A16★	133.38
37 ×1.588 (PG29)	1 1/2″	4″	1 13/32″	2485A17★	235.95
47 ×1.588 (PG36)	2″	5″	1 51/64″	2485A18★	349.12

★ Has six flutes.

Micro-Thread Hand Taps

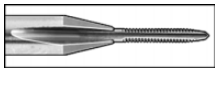

The smallest taps we offer, these uncoated (bright finish) high-speed steel taps cut threads to sizes as small as machine screw size 0000 and metric size 0.50 mm. All taps are for use on most metals and have straight flutes with a plug chamfer. ***Metric sizes*** are for Class D1 and D2 thread fit.

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦		
Machine Screw and Fractional Sizes							
0000-160	H2	2	1/4″	3/4″	#78	2504A11	$86.25
000-120	H2	2	0.200″	1.57″	#70	2504A12	53.48
00-90	H2	2	5/16″	1 5/8″	#62	2504A14	40.20
00-96	H2	2	5/16″	1 5/8″	#62	2504A13	40.20
Metric Sizes (dimensions in mm)							
0.50×0.12	—	2	1/4″	3/4″	#78	2504A21	86.25
0.80×0.2	—	2	5/16″	1″	#71	2504A22	49.17
1.00×0.25	—	3	3/8″	1 1/16″	#67	2504A23	49.17
1.20×0.25	—	3	3/8″	1 1/16″	#60	2504A24	49.17

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

For information about taps, see page 2536.

Acme Thread Taps

Straight Flute

Spiral Flute

Combine a roughing cut and a finishing cut in one pass to form acme threads with a Class 2G thread fit. Use for tapping through-holes on most metals. Taps are high-speed steel.

Straight-flute taps are uncoated (bright finish) for general purpose tapping. ***Spiral-flute*** taps have an oxide treatment that prevents buildup of workpiece materials on the tap, reduces friction, and provides a porous layer to hold lubricants.

Also Available: Other sizes. Please ask for 25345A888 and specify style (straight or spiral flute and right- or left-hand thread), tap thread size (tap dia. and threads per inch), material being tapped, and tap depth.

Tap Thread Size	No. of Flutes	Thread Lg.	O'all Lg.	Drill Size ♦	Max. Tapping Depth: Bronze and Steel	Max. Tapping Depth: Brass and Cast Iron	Straight Flute For Right-Hand Threads		SPIRAL FLUTE For Right-Hand Threads		SPIRAL FLUTE For Left-Hand Threads	
1/4"-16	4	1 3/4"	3"	#10	5/8"	1"	25345A41	$69.70	—	—	—	—
3/8"-12	4	2 1/8"	4 1/16"	7.6 mm	5/8"	1"	25345A42	76.03	—	—	—	—
1/2"-10	4	2 9/16"	5"	13/32"	1"	1 1/2"	25345A55	72.93	25345A67	$104.72	25345A76	$104.72
5/8"-8	4	3 3/16"	6 1/4"	13.0 mm	1 1/4"	1 7/8"	25345A56	91.05	25345A68	125.65	25345A77	125.65
5/8"-10	4	3 3/16"	6 1/4"	17/32"	1 1/4"	1 7/8"	25345A11	101.89	25345A12	181.48	25345A13	181.48
3/4"-5	4	4 5/16"	7 15/16"	14.5 mm	1 1/2"	2 1/4"	25345A14	133.12	25345A15	220.71	25345A16	220.71
3/4"-6	4	4 5/16"	7 15/16"	39/64"	1 1/2"	2 1/4"	25345A57	118.82	25345A69	164.72	25345A78	164.72
3/4"-8	4	4 5/16"	7 15/16"	41/64"	1 1/2"	2 1/4"	25345A17	139.17	25345A18	220.71	25345A19	220.71
3/4"-10	4	4 5/16"	7 15/16"	21/32"	1 1/2"	2 1/4"	25345A21	133.12	25345A22	220.71	25345A23	220.71
7/8"-6	4	4 3/8"	8 5/8"	47/64"	1 3/4"	2 5/8"	25345A59	155.70	25345A71	183.79	25345A79	183.79
1"-4	4	5 1/4"	10 1/8"	49/64"	2"	3"	25345A24	190.02	25345A25	254.84	25345A26	254.84
1"-5	4	5 1/4"	10 1/8"	21.0 mm	2"	3"	25345A61	169.64	25345A72	199.63	25345A84	199.63
1"-10	4	5 1/4"	10 1/8"	29/32"	2"	3"	25345A27	190.02	25345A28	254.84	25345A29	254.84
1 1/8"-5	4	5 1/4"	10 3/4"	24.0 mm	2 1/4"	3 3/8"	25345A62	187.49	25345A73	245.46	25345A85	245.46
1 1/4"-4	4	5 1/4"	11 1/8"	11/64"	2 1/2"	3 3/4"	25345A31	228.95	25345A32	323.87	25345A33	323.87
1 1/4"-5	4	5 1/4"	11 1/8"	15/64"	2 1/2"	3 3/4"	25345A63	202.16	25345A74	268.06	25345A86	268.06
1 1/2"-4	4	5 7/8"	12 5/8"	32.5 mm	3"	4 1/2"	25345A65	251.38	25345A75	328.32	25345A87	328.32

Combination Taps/Drills

Square-Shank

Hex-Shank

Drill through-holes and cut threads in a single step. Choose a combination tap/drill with a square-shank or one with a hex-shank for use with power screwdrivers and other holders that accept a 1/4" hex shank. All are uncoated (bright finish) for use on most metals, except square-shank cobalt steel tools, which are for use on hard-to-machine metals such as cast iron and hardened steel.

Square-shank high-speed steel tools have a 110° point (except the pipe sizes). ***Square-shank cobalt steel*** tools have a 118° point. ***Hex-shank high-speed steel*** tools have a 1/4" hex shank and a 118° split point. ***NPTF pipe sizes*** have a 118° point.

Machine Screw and Fractional Sizes

Tap Thread Size	Pitch Dia. Limit	No. of Flutes	Square-Shank High-Speed Steel: Thread Lg.	Square-Shank High-Speed Steel: O'all Lg.			Square-Shank Cobalt Steel: Thread Lg.	Square-Shank Cobalt Steel: O'all Lg.			Hex-Shank High-Speed Steel: Thread Lg.	Hex-Shank High-Speed Steel: O'all Lg.		
4-40	H2	2	3/8"	1 7/8"	2748A14	$15.46	3/8"	1 7/8"	2738A31	$16.34	3/8"	2 7/8"	3464A11	$16.71
4-48	H2	2	3/8"	1 7/8"	2748A15	16.71	11/32"	1 7/8"	2738A32	17.66	—	—	—	—
5-40	H2	2	13/32"	1 15/16"	2748A16	15.46	13/32"	1 15/16"	2738A33	16.34	—	—	—	—
6-32	H2	2	7/16"	2"	2748A22	15.09	15/32"	2"	2738A35★	16.34	7/16"	3"	3464A12★	16.08
6-40	H2	2	7/16"	2"	2748A23	15.93	7/16"	2"	2738A36	17.66	—	—	—	—
8-32	H2	2	1/2"	2 1/8"	2748A24	15.09	33/64"	2 1/8"	2738A37★	16.34	1/2"	3 1/8"	3464A13★	16.08
8-36	H2	2	1/2"	2 1/8"	2748A25	15.46	1/2"	2 1/8"	2738A38	17.66	—	—	—	—
10-24	H2	2	5/8"	2 3/8"	2748A28	15.09	5/8"	2 3/8"	2738A39★	16.34	5/8"	3 3/8"	3464A14★	20.10
10-32	H2	2	5/8"	2 3/8"	2748A32	15.09	9/16"	2 3/8"	2738A41★	16.34	5/8"	3 3/8"	3464A15★	20.10
12-24	H2	2	21/32"	2 3/8"	2748A33	15.46	11/16"	2 3/8"	2738A42★	16.34	—	—	—	—
12-28	H2	2	21/32"	2 3/8"	2748A34	16.71	21/32"	2 3/8"	2738A43★	17.66	—	—	—	—
1/4"-20	H3	2	25/32"	2 1/2"	2748A38	15.09	13/16"	2 1/2"	2738A44	16.34	25/32"	3 1/2"	3464A16	20.10
1/4"-28	H3	2	25/32"	2 1/2"	2748A39	15.46	23/32"	2 1/2"	2738A45	16.34	25/32"	3 1/2"	3464A17	20.73
5/16"-18	H3	2	15/16"	2 27/32"	2748A43	22.80	31/32"	2 27/32"	2738A46	24.34	15/16"	3 23/32"	3464A18	25.38
5/16"-24	H3	2	15/16"	2 27/32"	2748A44	22.80	7/8"	2 27/32"	2738A47	24.34	15/16"	3 23/32"	3464A19	25.60
3/8"-16	H3	2	1 1/16"	3 3/8"	2748A47	27.70	1 1/8"	3 3/8"	2738A48	29.31	1 1/8"	3 15/16"	3464A21	26.87
3/8"-24	H3	2	1 1/16"	3 3/8"	2748A48	27.70	1"	3 3/8"	2738A49	29.31	1 1/8"	3 15/16"	3464A22	27.50
7/16"-14	H3	2	1 1/4"	3 3/4"	2748A49	33.17	1 5/16"	3 3/4"	2738A51	35.14	—	—	—	—
7/16"-20	H3	2	1 1/4"	3 3/4"	2748A51	33.17	1 5/16"	3 3/4"	2738A52	35.14	—	—	—	—
1/2"-13	H3	2	1 3/8"	4 1/16"	2748A57	37.44	1 15/32"	4 1/16"	2738A53	39.37	—	—	—	—
1/2"-20	H3	2	1 3/8"	4 1/16"	2748A58	37.44	1 15/32"	4 1/16"	2738A54	39.37	—	—	—	—

★ H3 pitch dia. limit.

7-Piece Set—Hex-Shank High-Speed Steel

Includes a 1/4" hex chuck and taps/drills in sizes 6-32, 8-32, 10-24, 1/4"-20, 5/16"-18, and 3/8"-16. Furnished in a fabric pouch with belt-clip.

3464A31 ..... Set $150.19

NPTF Pipe Sizes—Square-Shank High-Speed Steel

Tap Thread Size	No. of Flutes	Thread Lg.	O'all Lg.		
1/8"-27	4	3/4"	2 7/8"	2655A22	$68.58
1/4"-18	4	1 1/16"	3 5/16"	2655A23	84.87
3/8"-18	4	1 1/16"	3 1/2"	2655A24	74.61
1/2"-14	4	1 3/8"	4 3/8"	2655A25	136.66
3/4"-14	5	1 3/8"	4 9/16"	2655A26	214.47
1"-11 1/2	5	1 3/4"	5 3/8"	2655A27	321.82

Metric Sizes—Square-Shank High-Speed Steel

Tap Thread Size, mm	Pitch Dia. Limit	No. of Flutes	Thread Lg.	O'all Lg.		
3×0.5	D3	2	13/32"	1 15/16"	2748A59	$18.34
4×0.7	D4	2	1/2"	2 1/8"	2748A61	18.34
5×0.8	D4	2	5/8"	2 3/8"	2748A63	16.59
6×1	D5	2	25/32"	2 1/2"	2748A64	16.59
7×1	D5	2	15/16"	2 27/32"	2748A65	30.07
8×1.25	D5	2	15/16"	2 27/32"	2748A66	30.07
10×1.5	D6	2	1 1/16"	3 3/8"	2748A67	34.38
12×1.75	D6	2	1 3/8"	4 1/16"	2748A68	34.38

♦ Drill sizes shown are the most commonly used sizes and are suitable for the majority of threading requirements. For other drill sizes and additional information about drill bits, see pages 2428-2429.

Tap and Drill Sets

26175A72

2609A12

27275A27

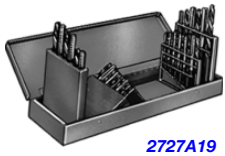
2727A19

All sets come with high-speed steel jobbers-length drills (unless noted) with a black oxide finish except 27275A27, which is uncoated (bright finish). Sets are furnished with hand taps except 27275A27, which has spiral-point taps. ***High-speed steel*** taps and drills outlast ***carbon steel*** taps and drills.

No. of Pcs.	Tap Material	Drill Point Angle	Tap Thread Sizes	Drill Sizes	Accessories	Set
Machine Screw and Fractional Size Sets Furnished with Plug Chamfer Hand Taps						
10	High-Speed Steel	135° Split Point	1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13	13/64″, 17/64″, 5/16″, 3/8″, 27/64″	Plastic Pouch	**26175A72★** $53.22
13	Carbon Steel	135° Point	4-40, 6-32, 8-32, 10-24, 10-32, 1/4″-20	43, 35, 29, 25, 21, 7	Tap Wrench, Plastic Pouch	**2609A12**..... $23.75
18	High-Speed Steel, Spiral Point	118° Point	6-32, 8-32, 10-24, 10-32, 1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13	36, 29, 25, 21, 7, F, 5/16″, U, 27/64″	Metal Case	**27275A27**... $98.48
36	High-Speed Steel	135° Split Point	6-32, 6-40, 8-32, 8-36, 10-24, 10-32, 12-24, 12-28, 1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20	36, 33, 29 (2 ea.), 25, 21, 16, 15, 7, 3, F, I, 5/16″, Q, U, 25/64″, 27/64″, 29/64″	Metal Case	**2727A19**.....$283.00
Metric Size Sets Furnished with Plug Chamfer Hand Taps						
16	High-Speed Steel	135° Split Point	3×0.5, 3.5×0.6, 4×0.7, 5×0.8, 6×1, 8×1.25, 10×1.5, 12×1.75	2.5, 2.9, 3.3, 4.2, 5.0, 6.75, 8.5, 10.25	Vinyl Pouch	**2610A45★**.. $74.27
Metric Size Sets Furnished with 3 Hand Taps (one of each size of taper, plug, and bottoming chamfer)						
29	Carbon Steel	118° Point	3×0.5, 4×0.7, 5×0.8, 6×1, 8×1.25, 10×1.5, 12×1.75	2.5, 3.3, 4.2, 5.0, 6.8, 8.5, 10.2	Tap Wrench, Metal Case	**2608A12**.....$154.55
29	High-Speed Steel	118° Point	3×0.5, 4×0.7, 5×0.8, 6×1, 8×1.25, 10×1.5, 12×1.75	2.5, 3.3, 4.2, 5.0, 6.8, 8.5, 10.2	Tap Wrench, Metal Case	**2608A13**.....$180.00

★ Furnished with machine-screw length drills.

Cases and Cabinets for Taps and Drills

2794A74, A75, A77

2543A46

2551A72

Protect your taps and drills from damage and keep them organized. All cases and cabinets are made of steel with a gray finish and are labeled with sizes. Taps and drills not included. Hand tap sets for cabinets 2543A46 and 2543A49 are sold separately below.

For	Holds Tool Sizes	Lg.×Wd.×Ht.	Each
Cases			
Taps	Three each of 6, 10, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″	6 3/16″×4 3/8″×1 3/8″	**2656A11**..... $14.85
Taps & Drills	Taps: 6-32, 8-32, 10-24, 10-32, 1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13 Drills: 36, 29, 25, 21, 7, F, 5/16″, U, 27/64″	7″×4″×1 1/4″	**2794A74**..... $10.88
Taps & Drills	Taps: 6-40, 8-36, 10-24, 10-32, 1/4″-28, 5/16″-24, 3/8″-24, 7/16″-20, 1/2″-20 Drills: 33, 29, 25, 21, 3, I, Q, 25/64″, 29/64″	7″×4″×1 1/4″	**2794A75**..... $11.25
Metric Taps & Drills	Taps: 2.5×0.45, 3×0.5, 3.5×0.6, 4×0.7, 5×0.8, 6×1, 8×1.25, 10×1.5, 12×1.75 Drills: 2.05, 2.5, 2.9, 3.3, 4.2, 5, 6.7, 8.5, 10.2 mm	7″×4″×1 1/4″	**2794A77**..... $14.00
Cabinets			
Taps	Fractional 1/4″ to 1″. Has three drawers with 26 compartments (most hold multiples of each tap size).	14 5/8″×7 3/8″×7 3/4″	**2543A46**..... $99.74
Taps	Machine screw 2-56 to 12-28. Has five drawers with 60 compartments (all hold multiples of each tap size).	14 5/8″×7 3/8″×7 3/4″	**2543A48**.....$108.89
Metric Taps	Metric 3 to 24 mm. Has three drawers with 29 compartments (most hold multiples of each tap size).	14 5/8″×7 3/8″×7 3/4″	**2543A49**.....$102.22
Taps (including metric)	Machine screw 2 to 12, fractional 1/4″ to 1 1/2″, and metric 2.5 to 30 mm. Has four drawers with 152 compartments (most hold multiples of each tap size). Comes with a lock and two keys.	26″×12″×12 1/2″	**2551A72**.....$407.27
Taps & Drills	Machine screw 6 to 10 and fractional 1/4″ to 1/2″. Has three drawers with 29 compartments (all hold multiples of each tool size).	14 5/8″×7 3/8″×7 3/4″	**25475A71**... $90.00
Pipe Taps	Sizes 1/16″-2″. Has three drawers with 21 compartments (most hold multiples of each tap size).	14 5/8″×7 3/8″×7 3/4″	**2543A51**..... $85.45

60-Piece Hand Tap Set— Includes carbon steel taper, plug, and bottoming chamfer taps in sizes 1/4″ to 1″. Fits cabinet 2543A46.

2688A11 ..... **Set** $344.02

113-Piece Metric Hand Tap Set— Includes 5 each of sizes 3-12 mm and one each of sizes 14-24 mm carbon steel plug chamfer taps. Fits 2543A49.

2688A13 ..... **Set** $347.17

Tap and Drill Stands

Keep taps and drills at hand and organized. Stands are made of high-impact plastic. Tap and drill sizes are clearly marked with embossed characters. Size is 7 3/8″ Lg.×4 11/16″ Wd.×1 11/16″ Ht.

Machine screw/fractional stand has two holes each for tap sizes 2, 3, 4, 5, 6, 8, 10, 12, 1/4″, 5/16″, 3/8″, 7/16″, and 1/2″, plus corresponding tap drill and body drill sizes. Metric stand has two holes each for tap sizes 2, 3, 4, 5, 6, 8, 10, 12, and 14 mm, plus corresponding tap drill and body drill sizes.

Machine Screw/Fractional Stand..... **2972A11** $10.60
Metric Stand **2972A41** 14.02

Machine Screw and Fractional Tap and Die Sets

With a wide range of popular machine screw and fractional sizes in carbon steel, high-speed steel, or both, our tap and die sets meet all your threading needs. All sets include one hand tap and one die of each size marked. All are furnished in a compartmented case.

Carbon steel sets are for occasional use. They include plug chamfer hand taps and hex-shaped dies.

High-speed steel sets last longer than carbon steel taps and dies. They include plug chamfer hand taps and hex-shaped dies.

High-speed steel and carbon steel sets have high-speed steel, plug chamfer hand taps and round, adjustable, carbon steel dies.

23-Piece Set

	Carbon Steel				High-Speed Steel		High-Speed Steel and Carbon Steel				
	27-Pc. Set	40-Pc. Set	58-Pc. Set	65-Pc. Set	40-Pc. Set	58-Pc. Set	17-Pc. Set	19-Pc. Set	23-Pc. Set	24-Pc. Set	47-Pc. Set
	2631A1 $88.47	2625A12 $127.42	25955A48 $282.45	26075A71 $446.22	26055A64 $266.78	26055A74 $528.04	2638A2 $272.56	2638A3 $308.36	2638A4 $289.82	2640A4 $408.48	2640A3 $1,469.67
Thread Size	***Taps and Dies Included in Set***										
0-80								✓			
1-72								✓			
2-56								✓			
3-48								✓			
4-40		✓		✓	✓		✓	✓	✓		
4-48									✓		
6-32		✓	✓	✓	✓	✓	✓	✓	✓		
6-40									✓		
8-32		✓	✓	✓	✓	✓	✓	✓	✓		
8-36									✓		
10-24		✓	✓	✓	✓	✓	✓	✓	✓		
10-32		✓	✓	✓	✓	✓	✓		✓		
12-24		✓	✓	✓	✓	✓	✓		✓		
12-28									✓		
1/4″-20	✓	✓	✓	✓	✓	✓	✓			✓	✓
1/4″-28	✓	✓	✓	✓	✓	✓				✓	✓
5/16″-18	✓	✓	✓	✓	✓	✓				✓	✓
5/16″-24	✓	✓	✓	✓	✓	✓				✓	✓
3/8″-16	✓	✓	✓	✓	✓	✓				✓	✓
3/8″-24	✓	✓	✓	✓	✓	✓				✓	✓
7/16″-14	✓	✓	✓	✓	✓	✓				✓	✓
7/16″-20	✓	✓	✓	✓	✓	✓				✓	✓
1/2″-13	✓	✓	✓	✓	✓	✓				✓	✓
1/2″-20	✓	✓	✓	✓	✓	✓				✓	✓
9/16″-12			✓	✓		✓					✓
9/16″-18			✓	✓		✓					✓
5/8″-11			✓	✓		✓					✓
5/8″-18			✓	✓		✓					✓
3/4″-10			✓	✓		✓					✓
3/4″-16			✓	✓		✓					✓
7/8″-9				✓							✓
7/8″-14				✓							✓
1″-8				✓							✓
1″-14				✓							✓
1/8″-27 (NPT)	✓	✓	✓	✓	✓	✓				✓	✓
1/4″-18 (NPT)			✓	✓		✓					
Accessories	***Number Included in Set***										
Die Wrenches	1	2	2	4	1	2	1	1	1	1	3
Tap Wrenches	2	3	3	4	3	3	1	1	1	1	2
Thread Gauge	1	1	1	1	1	1					
Screwdriver	1		1		1	1	1	1	1		
Extractors			5			5					

Thread Repair Tap and Die Set

Repair internal and external threads in a wide range of sizes. This 53-piece set contains carbon steel taps and dies and two thread repair files. Taps have hex shanks. Dies are hex shaped and can be used with most conventional wrenches.

	Sizes Included
Taps	1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20, 9/16″-12, 9/16″-18; Metric, mm—6×1, 8×1.25, 10×1.25, 10×1.5, 12×1.25, 12×1.5, 12×1.75
Dies	1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20, 9/16″-12, 9/16″-18, 5/8″-11, 5/8″-18, 3/4″-10, 3/4″-16, 3/4″-20; Metric, mm—6×1, 6×1.25, 7×1, 8×1, 8×1.25, 8×1.5, 10×1, 10×1.25, 10×1.5, 12×1.25, 12×1.5, 12×1.75, 14×1.25, 14×1.5, 20×1.5
Files	Two for sizes 11, 12, 13, 14, 16, 18, 20, and 24 threads per inch, plus metric sizes 0.8, 1, 1.25, 1.5, 1.75, 2, 2.5, and 3 threads per mm.

25325A14 ..... **Set** $111.30

Metric Tap and Die Sets

52-Piece Set

Choose from different combinations of metric tap and die sizes for internal and external threading. Furnished in a compartmented case.

Carbon steel sets include one plug chamfer hand tap and one hex die of each size marked.

High-speed steel outlasts carbon steel. Set includes three hand taps (one each taper, plug, and bottoming chamfer) and one nonadjustable round die of each size marked.

	Carbon Steel				High-Speed Steel
	24-Pc. Set	40-Pc. Set	52-Pc. Set	65-Pc. Set	33-Pc. Set
	26025A41 $81.47	2647A12 $151.56	2726A66 $235.55	2726A68 $444.02	2646A13 $279.25
Thread Size	**Taps and Dies Included in Set**				
3×0.5	✓	✓	✓	✓	✓
4×0.7	✓	✓	✓	✓	✓
4×0.75		✓	✓	✓	
5×0.8	✓	✓	✓	✓	✓
5×0.9		✓	✓	✓	
6×1	✓	✓	✓	✓	✓
7×1	✓	✓	✓	✓	
8×1		✓		✓	
8×1.25	✓	✓	✓	✓	✓
9×1		✓	✓	✓	
9×1.25	✓	✓	✓	✓	
10×1.25		✓	✓	✓	
10×1.5	✓	✓	✓	✓	✓
11×1.5		✓	✓	✓	
12×1.5	✓	✓	✓	✓	
12×1.75	✓	✓	✓	✓	✓
14×1.25			✓	✓	
14×1.5				✓	
14×2			✓	✓	
16×1.5			✓	✓	
16×2			✓	✓	
18×1.5			✓	✓	
18×2.5			✓	✓	
20×2.5				✓	
22×1.5				✓	
24×2				✓	
24×3				✓	
1/8″-28 (BSPT)	✓	✓	✓	✓	
1/4″-19 (BSPT)			✓		
Accessories	**Number Included in Set**				
Die Wrenches	1	2	2	4	1
Tap Wrenches	1	3	3	4	2
Thread Gauge		1	1	1	1
Screwdriver					1

Machine Screw, Fractional, and Metric Tap and Die Sets

75-Piece Set

Why buy separate tap and die sets for machine screw, fractional, and metric sizes? These sets have them all in one.

All taps and dies are carbon steel, and sets include one plug chamfer hand tap and one hex die of each size marked. Furnished in a compartmented case.

	Carbon Steel		
	40-Pc. Set	75-Pc. Set	116-Pc. Set
	2668A36 $136.40	2668A34 $229.26	82955A11 $376.60
Thread Size	**Taps and Dies Included in Set**		
4-40		✓	✓
6-32	✓	✓	✓
8-32	✓	✓	✓
10-24	✓	✓	✓
10-32		✓	✓
12-24		✓	✓
1/4″-20	✓	✓	✓
1/4″-28		✓	✓
5/16″-18	✓	✓	✓
5/16″-24		✓	✓
3/8″-16	✓	✓	✓
3/8″-24		✓	✓
7/16″-14	✓	✓	✓
7/16″-20		✓	✓
1/2″-13	✓	✓	✓
1/2″-20		✓	✓
1/8″-27 (NPT)	✓	✓	✓
1/8″-28 (BSPT)		✓	✓
Metric, mm			
3×0.5		✓	✓
4×0.7		✓	✓
4×0.75	✓	✓	✓
5×0.8	✓	✓	✓
5×0.9		✓	✓
6×1	✓	✓	✓
7×1	✓	✓	✓
8×1		✓	✓
8×1.25	✓	✓	✓
9×1		✓	✓
9×1.25		✓	✓
10×1.25	✓	✓	✓
10×1.5	✓	✓	✓
11×1.5		✓	✓
12×1.5		✓	✓
12×1.75	✓	✓	✓
Accessories	**Number Included in Set**		
Die Wrenches	2	2	2
Tap Wrenches	3	3	3
Thread Gauges	1	2	2
Extractors			5
Drill Bits			36

Thread Repair Tap and Die Sets for Taper Pipe

Maintain secure pipe connections by repairing burred and worn threads on your pipe.

These 12-piece sets contain one tap and one hex die in each of the following NPT pipe sizes: 1/8″-27, 1/4″-18, 3/8″-18, 1/2″-14, 3/4″-14, and 1″-11 1/2.

Sets come in a compartmented case. Dies can be used with most conventional wrenches. ***High-speed steel*** taps outlast ***carbon steel*** taps.

		Set
Carbon Steel Taps and Dies	2549A76	$206.17
High-Speed Steel Taps and Carbon Steel Dies	2549A78	333.77

Compact External Thread Repair Tools

Clamp these tools onto threaded rod from the side—great for repairing threads in tight areas and where rod ends are not exposed. Blades adjust to any pitch and can be used on right- and left-hand threads (inch and metric). Tools are furnished with two high-speed steel blades.

Replacement blades are furnished in sets of two.

OD Range	Tools	Each	Repl. Blades	Set
5/32″-11/16″; 4-18 mm	2607A21	$54.10	2607A31	$15.58
11/16″-1 1/2″; 17-38 mm	2607A22	78.90	2607A32	21.15

Round Adjustable Threading Dies

Create external threads on bolts, studs, rods, and pipe—an adjusting screw allows you to open and close the die to produce most standard classes of thread fit. ***High-speed steel*** dies last longer than ***carbon steel*** dies.

Die sets are furnished in a compartmented case.

Machine Screw and Fractional—Carbon Steel

Thread Size		
13/16″ Die OD		
0-80	2576A232	$18.76
1-64	2576A131	18.76
1-72	2576A233	18.76
2-56	2576A132	18.76
2-64	2576A234	18.76
3-48	2576A133	18.76
3-56	2576A235	18.76
4-40	2576A134	12.88
4-48	2576A236	12.88
5-40	2576A135	12.88
5-44	2576A237	12.88
6-32	2576A136	12.88
6-40	2576A238	12.88
8-32	2576A137	12.88
8-36	2576A239	12.88
10-24	2576A138	12.88
10-32	2576A241	12.88
12-24	2576A139	12.88
12-28	2576A242	12.88

Thread Size		
1″ Die OD		
6-32	2576A141	$16.31
8-32	2576A142	16.31
10-24	2576A143	16.31
10-32	2576A245	16.31
12-24	2576A144	16.31
1/4″-20	2576A451	16.31
1/4″-28	2576A455	16.31
5/16″-18	2576A452	16.31
5/16″-24	2576A456	16.31
3/8″-16	2576A453	16.31
3/8″-24	2576A457	16.31
7/16″-14	2576A454	16.31
7/16″-20	2576A458	16.31
1/2″-13	2576A261	16.31
1/2″-20	2576A262	16.31
1 1/2″ Die OD		
1/4″-20	2576A621	28.20
1/4″-28	2576A628	28.20
5/16″-18	2576A622	28.20

Thread Size		
1 1/2″ Die OD (Cont.)		
5/16″-24	2576A629	$28.20
3/8″-16	2576A623	28.20
3/8″-24	2576A631	28.20
7/16″-14	2576A624	28.20
7/16″-20	2576A632	28.20
1/2″-13	2576A625	28.20
1/2″-20	2576A633	28.20
9/16″-12	2576A626	28.20
9/16″-18	2576A634	28.20
5/8″-11	2576A627	28.20
5/8″-18	2576A635	28.20
3/4″-10	2576A263	28.20
3/4″-16	2576A264	28.20
2″ Die OD		
1/4″-20	2576A721	45.65
1/4″-28	2576A731	45.65
5/16″-18	2576A722	45.65
5/16″-24	2576A733	45.65
3/8″-16	2576A723	45.65

Thread Size		
2″ Die OD (Cont.)		
3/8″-24	2576A734	$45.65
7/16″-14	2576A724	45.65
7/16″-20	2576A735	45.65
1/2″-13	2576A725	45.65
1/2″-20	2576A736	45.65
9/16″-12	2576A726	45.65
9/16″-18	2576A737	45.65
5/8″-11	2576A727	45.65
5/8″-18	2576A759	45.65
3/4″-10	2576A728	45.65
3/4″-16	2576A738	45.65
7/8″-9	2576A729	45.65
7/8″-14	2576A739	45.65
1″-8	2576A265	45.65
1″-12	2576A266	45.65
2 1/2″ Die OD		
5/8″-11	2576A741	65.92
3/4″-10	2576A742	65.92
3/4″-16	2576A743	65.92

Thread Size		
2 1/2″ Die OD (Cont.)		
7/8″-9	2576A744	$65.92
7/8″-14	2576A745	65.92
1″-8	2576A746	65.92
1″-12	2576A747	65.92
3″ Die OD		
1″-8	2576A748	126.73
1″-12	2576A749	126.73
1 1/8″-7	2576A751	126.73
1 1/8″-12	2576A752	126.73
1 1/4″-7	2576A753	126.73
1 1/4″-12	2576A754	126.73
1 3/8″-6	2576A755	126.73
1 3/8″-12	2576A756	126.73
1 1/2″-6	2576A757	126.73
1 1/2″-12	2576A758	126.73

Machine Screw and Fractional—High-Speed Steel

Thread Size		
13/16″ Die OD		
0-80	2602A125	$50.61
1-64	2602A121	50.61
1-72	2602A131	50.61
2-56	2602A122	50.61
2-64	2602A132	50.61
3-48	2602A123	50.61
3-56	2602A133	50.61
4-40	2602A124	50.61
4-48	2602A134	50.61
5-40	2602A11	33.61
5-44	2602A51	33.61
6-32	2602A12	33.61
6-40	2602A52	33.61
8-32	2602A13	33.61
8-36	2602A53	33.61
10-24	2602A14	33.61
10-32	2602A54	33.61
12-24	2602A15	33.61
12-28	2602A55	33.61

Thread Size		
13/16″ Die OD (Cont.)		
1/4″-20	2602A16	$33.61
1/4″-28	2602A56	33.61
5/16″-18	2602A17	33.61
5/16″-24	2602A57	33.61
1″ Die OD		
6-32	2602A21	30.64
6-40	2602A282	30.64
8-32	2602A22	30.64
8-36	2602A283	30.64
10-24	2602A23	30.64
10-32	2602A61	30.64
12-24	2602A24	30.64
12-28	2602A284	30.64
1/4″-20	2602A25	30.64
1/4″-28	2602A62	30.64
5/16″-18	2602A26	30.64
5/16″-24	2602A63	30.64
3/8″-16	2602A27	30.64
3/8″-24	2602A64	30.64

Thread Size		
1″ Die OD (Cont.)		
7/16″-14	2602A28	$30.64
7/16″-20	2602A65	30.64
1/2″-13	2602A281	30.64
1/2″-20	2602A285	30.64
1 1/2″ Die OD		
1/4″-20	2602A31	48.71
1/4″-28	2602A71	48.71
5/16″-18	2602A32	48.71
5/16″-24	2602A72	48.71
3/8″-16	2602A33	48.71
3/8″-24	2602A73	48.71
7/16″-14	2602A34	48.71
7/16″-20	2602A74	48.71
1/2″-13	2602A35	48.71
1/2″-20	2602A75	48.71
9/16″-12	2602A36	48.71
9/16″-18	2602A76	48.71
5/8″-11	2602A37	48.71
5/8″-18	2602A77	48.71

Thread Size		
1 1/2″ Die OD (Cont.)		
3/4″-10	2602A371	$48.71
3/4″-16	2602A372	48.71
2″ Die OD		
1/4″-20	2602A381	52.06
1/4″-28	2602A388	52.06
5/16″-18	2602A382	52.06
5/16″-24	2602A389	52.06
3/8″-16	2602A383	52.06
3/8″-24	2602A391	52.06
7/16″-14	2602A384	52.06
7/16″-20	2602A392	52.06
1/2″-13	2602A385	52.06
1/2″-20	2602A393	52.06
9/16″-12	2602A386	52.06
9/16″-18	2602A394	52.06
5/8″-11	2602A41	52.07
5/8″-18	2602A81	52.07
11/16″-11	26005A242	52.06
11/16″-16	26005A243	52.06

Thread Size		
2″ Die OD (Cont.)		
3/4″-10	2602A42	$52.07
3/4″-16	2602A82	52.07
7/8″-9	2602A43	52.07
7/8″-14	2602A83	52.07
1″-8	2602A387	52.06
1″-12	2602A395	52.06
1″-14	26005A221	52.08
3″ Die OD		
1 1/8″-7	2602A462	145.96
1 1/8″-12	2602A466	145.96
1 1/4″-7	2602A463	145.96
1 1/4″-12	2602A467	145.96
1 3/8″-6	2602A464	145.96
1 3/8″-12	2602A468	145.96
1 1/2″-6	2602A465	145.96
1 1/2″-12	2602A469	145.96

Machine Screw and Fractional—Die Sets

Die OD	No. of Pcs.	Carbon Steel Thread Sizes Included	Carbon Steel Set	High-Speed Steel Thread Sizes Included	High-Speed Steel Set
13/16″	6	2-56, 3-48, 4-40, 5-40, 6-32, 8-32	2576A92 $98.85	5-40, 6-32, 8-32, 10-24, 1/4″-20, 5/16″-18	2602A85 $172.11
13/16″	6	2-64, 3-56, 4-48, 5-44, 6-40, 8-36	2576A93 95.12	5-44, 6-40, 8-36, 10-32, 1/4″-28, 5/16″-24	2602A86 172.11
1″	4	10-32, 1/4″-28, 5/16″-24, 3/8″-24	2576A95 76.54	10-32, 1/4″-28, 5/16″-24, 3/8″-24	2602A88 143.36
1″	6	6-32, 8-32, 10-24, 1/4″-20, 5/16″-18, 3/8″-16	2576A94 102.31	6-32, 8-32, 10-24, 1/4″-20, 5/16″-18, 3/8″-16	2602A87 210.78

Metric, mm—High-Speed Steel

Thread Size		
13/16″ Die OD		
2.5×0.45	8294A11	$30.94
3 ×0.5	8294A12	30.94
3.5×0.6	8294A13	30.94
4 ×0.7	8294A14	30.94
4.5×0.75	8294A15	30.94
5 ×0.8	8294A16	30.94
6 ×1	8294A17	30.94
1″ Die OD		
3 ×0.5	8294A37	36.90
3 ×0.6	8294A38	36.90
3.5×0.6	8294A39	36.90
4 ×0.7	8294A41	36.90
4.5×0.75	8294A42	36.90
5 ×0.8	8294A43	36.90

Thread Size		
1″ Die OD (Cont.)		
6×0.75	8294A44	$36.90
6×1	8294A21	36.90
7×0.75	8294A45	36.90
7×1	8294A22	36.90
8×1	8294A46	36.90
8×1.25	8294A23	36.90
9×1	8294A47	36.90
9×1.25	8294A48	36.90
10×1.5	8294A24	36.90
12×1.75	8294A25	36.90
1 1/2″ Die OD		
10×1	8294A56	41.03
10×1.25	8294A57	41.03
10×1.5	8294A58	41.03

Thread Size		
1 1/2″ Die OD (Cont.)		
11×1.5	8294A59	$41.03
12×1	8294A591	41.03
12×1.25	8294A35	41.03
12×1.5	8294A61	41.03
12×1.75	8294A62	41.03
14×1.25	8294A63	41.03
14×1.5	8294A36	41.03
14×2	8294A31	41.03
16×1.5	8294A64	41.03
16×2	8294A32	41.03
18×1.5	8294A65	41.03
18×2	8294A66	41.03
18×2.5	8294A33	41.03
20×2.5	8294A34	41.03

Thread Size		
2″ Die OD		
20×1.5	8294A51	$45.41
20×2.5	8294A72	45.41
22×1.5	8294A52	45.41
22×2.5	8294A73	45.41
24×1.5	8294A53	45.41
24×2	8294A74	45.41
24×3	8294A54	45.41
25×1.5	8294A55	45.41
25×2	8294A75	45.41
26×3	8294A76	45.41
2 1/2″ Die OD		
27×3	8294A78	67.32
28×2	8294A79	67.32

Thread Size		
2 1/2″ Die OD (Cont.)		
28×3	8294A82	$67.32
30×1.5	8294A821	116.71
30×2	8294A83	67.32
30×3	8294A84	67.32
30×3.5	8294A85	67.32
32×2	8294A86	67.32
33×2	8294A87	67.32
33×3	8294A88	67.32
34×3.5	8294A89	67.32
36×2	8294A93	67.32
36×3	8294A94	67.32
36×4	8294A95	67.32

NPT Pipe—Carbon Steel

Thread Size		
1 1/2″ Die OD		
1/8″-27	2685A111	$16.11
1/4″-18	2685A112	16.11
3/8″-18	2685A12	19.17
1/2″-14	2685A13	32.20
2″ Die OD		
1/2″-14	2685A14	40.46
3/4″-14	2685A15	53.63

NPT Pipe—High-Speed Steel

Thread Size		
1″ Die OD		
1/16″-27	2556A111	$61.53
1/8″-27	2556A112	61.53
1/4″-18	2556A113	61.53
1 1/2″ Die OD		
1/16″-27	2556A121	74.88
1/8″-27	2556A122	74.88
1/4″-18	2556A123	74.88
3/8″-18	2556A124	74.88
1/2″-14	2556A125	74.88

Thread Size		
2″ Die OD		
1/4″-18	2556A131	$89.36
3/8″-18	2556A132	89.36
1/2″-14	2556A133	89.36
3/4″-14	2556A134	89.36
2 1/2″ Die OD		
3/8″-18	2556A141	130.04
1/2″-14	2556A142	130.04
3/4″-14	2556A143	130.04
1″-11 1/2	2556A144	130.04

Thread Size		
3″ Die OD		
1/2″-14	2556A151	$156.19
3/4″-14	2556A152	156.19
1″-11 1/2	2556A153	156.19
1 1/4″-11 1/2	2556A154	156.19

TiN-Coated Round Adjustable Threading Dies

A TiN (titanium nitride) coating over high-speed steel provides longer life and improved strength compared to uncoated high-speed steel and carbon steel dies. An adjusting screw opens and closes the die to produce most standard classes of thread fit.

Fractional

Thread Size		
1″ Die OD		
1/4″-20	8349A11	$59.10
1/4″-28	8349A12	59.10
5/16″-18	8349A13	59.10
5/16″-24	8349A14	55.79
3/8″-16	8349A15	55.24
3/8″-24	8349A16	59.10
7/16″-14	8349A17	55.24
7/16″-20	8349A18	59.10
1/2″-13	8349A19	59.10
1/2″-20	8349A21	59.10
2″ Die OD		
5/8″-11	8349A33	$123.81
5/8″-18	8349A34	112.73
11/16″-11	8349A35	112.73
11/16″-16	8349A36	123.81
3/4″-10	8349A37	123.81
3/4″-16	8349A38	112.73
7/8″-9	8349A39	134.40
7/8″-14	8349A41	134.40
1″-8	8349A42	124.37
1″-12	8349A43	124.37

Metric, mm

Thread Size		
1″ Die OD		
6×1	8349A51	$59.10
7×1	8349A52	59.10
8×1	8349A53	55.24
8×1.25	8349A54	59.10
9×1.25	8349A55	55.24
10×1.25	8349A56	55.24
10×1.5	8349A57	55.24
11×1.5	8349A58	55.24
12×1.25	8349A61	55.24
12×1.75	8349A62	55.24
2″ Die OD		
14×1.5	8349A71	$107.58
14×2	8349A72	107.58
16×1.5	8349A73	112.73
18×1.5	8349A74	112.73
18×2.5	8349A75	112.73
20×1.5	8349A76	124.37
20×2.5	8349A77	124.37
22×1.5	8349A78	124.37
22×2.5	8349A79	124.37
24×2	8349A81	124.37

Left-Hand Thread Round Adjustable Threading Dies

All are designed for creating left-hand threads and have an adjusting screw that opens and closes the die to produce most standard classes of thread fit. ***High-speed steel*** dies outlast ***carbon steel*** dies.

Machine Screw and Fractional—*Carbon Steel*

Thread Size		
13/16″ Die OD		
6-32	2600A51	$20.64
8-32	2600A52	20.64
10-24	2600A53	20.64
10-32	2600A54	20.64
1/4″-20	2600A55	20.64
1/4″-28	2600A56	20.64
5/16″-18	2600A57	20.64
5/16″-24	2600A58	20.64
1″ Die OD		
6-32	2600A11	21.83
8-32	2600A12	21.83
10-24	2600A13	21.83
10-32	2600A14	21.83
1/4″-20	2600A15	14.23
1/4″-28	2600A16	14.23
5/16″-18	2600A17	14.23
5/16″-24	2600A18	14.23
3/8″-16	2600A19	14.23
3/8″-24	2600A21	14.23
1/2″-13	2600A24	14.23
1/2″-20	2600A25	14.23
1 1/2″ Die OD		
1/4″-20	2600A31	$25.53
1/4″-28	2600A32	25.53
5/16″-18	2600A33	25.53
5/16″-24	2600A34	25.53
3/8″-16	2600A35	25.53
3/8″-24	2600A36	25.53
7/16″-14	2600A37	25.53
7/16″-20	2600A38	25.53
1/2″-13	2600A39	25.53
1/2″-20	2600A41	25.53
5/8″-11	2600A42	26.15
5/8″-18	2600A43	26.15
3/4″-10	2600A44	26.15
2″ Die OD		
5/8″-11	2600A61	43.12
5/8″-18	2600A62	43.12
3/4″-10	2600A63	43.12
3/4″-16	2600A64	43.12

Machine Screw and Fractional—*High-Speed Steel*

Thread Size		
13/16″ Die OD		
6-32	2645A11	20.82
8-32	2645A12	20.82
10-24	2645A13	20.82
10-32	2645A14	20.82
13/16″ Die OD (Cont.)		
1/4″-20	2645A15	20.82
1/4″-28	2645A16	20.82
3/8″-16	2645A17	20.82
3/8″-24	2645A18	20.82

Machine Screw and Fractional—*High-Speed Steel (Cont.)*

Thread Size		
1″ Die OD		
6-32	2645A71	$23.03
8-32	2645A72	23.03
10-24	2645A73	23.03
10-32	2645A74	23.03
1/4″-20	2645A75	23.03
1/4″-28	2645A76	23.03
5/16″-18	2645A77	23.03
5/16″-24	2645A78	23.03
3/8″-16	2645A79	23.03
3/8″-24	2645A81	23.03
1 1/2″ Die OD		
1/4″-20	2645A59	31.37
1/4″-28	2645A61	31.37
3/8″-16	2645A62	31.37
3/8″-24	2645A63	31.37
1 1/2″ Die OD (Cont.)		
7/16″-14	2645A82	$31.37
7/16″-20	2645A83	31.37
1/2″-13	2645A84	31.37
1/2″-20	2645A85	31.37
9/16″-18	2645A64	31.37
5/8″-11	2645A86	31.37
5/8″-18	2645A87	31.37
3/4″-10	2645A65	31.37
3/4″-16	2645A66	31.37
2″ Die OD		
5/8″-11	2645A91	57.82
5/8″-18	2645A67	57.82
3/4″-10	2645A89	57.82
3/4″-16	2645A68	57.82
1″-8	2645A69	57.82

Metric, mm—*High-Speed Steel*

Thread Size		
1″ Die OD		
5×0.8	2596A21	29.10
6×1	2596A22	29.10
8×1.25	2596A23	29.10
10×1.5	2596A24	44.03
12×1.75	2596A25	44.03
1 1/2″ Die OD		
10×1.5	2596A41	37.26
12×1.75	2596A42	37.26
1 1/2″ Die OD (Cont.)		
14×2	2596A43	37.26
16×2	2596A44	37.26
18×1.5	2596A45	37.26
18×2.5	2596A46	37.26
20×2.5	2596A32	37.26

Special Thread Size Round Adjustable Threading Dies

The sizes may be uncommon, but you'll get the same great quality of our other round adjustable dies. All are high-speed steel and have an adjusting screw that opens and closes the die to produce most standard classes of thread fit.

Thread Size		
1″ Die OD		
6-48	26005A231	$46.80
8-40	26005A232	46.80
10-40	26005A233	44.91
12-32	26005A235	46.82
1/4″-24	26005A112	44.09
1/4″-27	26005A113	44.09
1/4″-32	26005A211	44.09
1/4″-36	26005A223	44.09
1/4″-40	26005A114	44.09
1/4″-48	26005A224	44.09
1/4″-64	26005A225	44.09
5/16″-20	26005A116	47.63
5/16″-27	26005A117	47.63
5/16″-32	26005A212	47.63
5/16″-40	26005A118	47.63
3/8″-18	26005A121	47.63
3/8″-20	26005A122	47.63
3/8″-27	26005A123	47.63
3/8″-32	26005A213	47.63
3/8″-40	26005A124	47.63
1 1/2″ Die OD		
7/16″-16	26005A126	$56.56
7/16″-18	26005A127	56.56
7/16″-24	26005A128	56.56
7/16″-27	26005A129	56.56
7/16″-32	26005A131	56.56
7/16″-40	26005A132	56.56
1/2″-12	26005A227	62.37
1/2″-16	26005A134	62.37
1/2″-24	26005A135	62.37
1/2″-27	26005A136	62.37
1/2″-28	26005A214	62.37
1/2″-32	26005A137	62.37
1/2″-40	26005A138	62.37
9/16″-16	26005A141	66.57
9/16″-20	26005A142	66.57
9/16″-24	26005A215	66.57
9/16″-27	26005A143	66.57
9/16″-32	26005A144	66.57
5/8″-12	26005A146	70.23
5/8″-16	26005A147	70.23
1 1/2″ Die OD (Cont.)		
5/8″-20	26005A148	$70.23
5/8″-24	26005A216	70.23
5/8″-27	26005A149	70.23
5/8″-28	26005A151	70.23
5/8″-32	26005A152	70.23
2″ Die OD		
11/16″-18	26005A154	74.10
11/16″-20	26005A155	74.10
11/16″-24	26005A217	74.10
11/16″-32	26005A157	74.10
3/4″-12	26005A161	74.10
3/4″-18	26005A162	74.10
3/4″-20	26005A219	74.10
3/4″-24	26005A163	74.10
3/4″-27	26005A164	74.10
3/4″-32	26005A165	74.10
13/16″-16	26005A171	74.63
13/16″-18	26005A228	74.63
13/16″-20	26005A244	74.63
2″ Die OD (Cont.)		
7/8″-12	26005A174	$88.63
7/8″-16	26005A175	88.63
7/8″-18	26005A176	88.63
7/8″-20	26005A245	88.63
7/8″-24	26005A177	88.63
7/8″-27	26005A178	88.63
7/8″-32	26005A179	88.63
15/16″-16	26005A183	88.63
15/16″-18	26005A184	88.63
15/16″-20	26005A226	88.63
15/16″-32	26005A185	88.63
1″-16	26005A191	78.98
1″-18	26005A192	78.98
1″-20	26005A222	78.98
1″-24	26005A193	78.98
1″-32	26005A195	78.98

BSPT and BSPP Round Adjustable Threading Dies

Create BSPT (British Standard Pipe Taper) and BSPP (British Standard Pipe Parallel) threads, which are the European equivalents of NPT taper and NPS straight pipe threads, respectively. BSPT and BSPP threads should not be substituted for NPT and NPS threads. Dies are high-speed steel and have an adjusting screw that opens and closes the die to produce most standard classes of thread fit.

Thread Size	Die OD	***BSPT Dies***		***BSPP Dies***	
1/8″-28	1″	8287A21	$45.03	8287A11	$45.03
1/4″-19	1″	8287A22	45.03	8287A12	45.03
3/8″-19	1 1/2″	8287A23	58.27	8287A13	58.27
1/2″-14	1 1/2″	8287A24	63.75	8287A14	63.75
3/4″-14	2″	8287A25	$80.05	8287A15	$80.05
1″-11	2 1/2″	8287A26	109.71	8287A16	109.71
1 1/4″-11	3″	8287A27	197.25	8287A17	197.25

Two-Piece Adjustable Threading Dies

Shown Assembled

Two-Piece Dies— A two-piece design allows a wider range of thread-fit adjustment compared to round adjustable dies. Ideal for threading as well as thread repair. Dies are carbon steel and have chamfered threads on both sides: one side has 2 to 3 chamfered threads for regular threading, while the other side has 1 to 1½ chamfered threads for threading close to a shoulder. For use with the die collets and wrenches sold separately below.

Die Collets— Each collet consists of a cap and guide. Screws in the cap open and close the dies for a wide range of thread-fit adjustment while the guide holds them in place.

Wrenches— An adjusting screw secures the die collet. All have a cast steel holder and solid steel handles.

Also Available: Dies for left-hand threads in 7/16″, 5/8″, and 3/4″ sizes. Please ask for 2579A71 and specify thread size and the OD of your collet.

Two-Piece Dies

Thread Size	Fits Collet OD		Pair
4-40	1¼″	2579A61	$26.34
6-32	1¼″	2579A63	27.39
8-32	1¼″	2579A64	25.50
10-32	1¼″	2579A74	25.50
¼″-20	1¼″	2579A11	25.87
¼″-20	2″, 2¾″	2579A12	25.87
¼″-28	1¼″	2579A24	25.87
¼″-28	2″, 2¾″	2579A25	25.87
5/16″-18	2″, 2¾″	2579A13	25.87
5/16″-24	2″, 2¾″	2579A26	25.87
3/8″-16	2″, 2¾″	2579A14	30.20
3/8″-24	2″, 2¾″	2579A27	30.20
7/16″-14	2″, 2¾″	2579A15	30.20
7/16″-20	2″, 2¾″	2579A28	30.20
½″-13	2″	2579A16	36.33
½″-13	2¾″	2579A17	36.33
½″-20	2″	2579A29	34.49
½″-20	2¾″	2579A41	34.49
9/16″-12	2¾″	2579A18	34.49
9/16″-18	2¾″	2579A91	34.49
5/8″-11	2¾″	2579A19	42.25
5/8″-18	2¾″	2579A31	42.25
¾″-10	2¾″	2579A21	46.11
¾″-16	2¾″	2579A32	46.11
⅞″-9	2¾″	2579A22	70.15
⅞″-14	2¾″	2579A33	66.16
1″-8	2¾″	2579A23	66.16
1″-12	2¾″	2579A34	66.16
1″-14	2¾″	2579A57	66.16

Die Collets for Two-Piece Dies

For Die Size			For Die Size		
2″ OD			***2¾″ OD***		
¼″	2618A156	$22.95	⅝″	2618A224	$39.00
5/16″	2618A157	22.95	¾″	2618A226	39.00
3/8″	2618A158	22.95	⅞″	2618A227	39.00
7/16″	2618A159	22.95	1″	2618A228	39.00

Wrenches for Two-Piece Die Collets

For Collet OD	O'all Lg.		
2″	14½″	2578A2	$56.82
2¾″	23″	2578A3	83.44

Die Holders for Round Threading Dies

Straight Shank

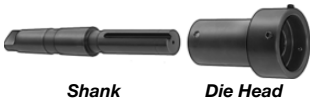

Shank *Die Head*

Morse Taper

Get better thread quality than you would with handheld threading tools. Ideal for machine threading of all types of shafts, these holders secure dies with adjustable screws.

Straight Shank

Straight shank die holders are for use on lathes, milling machines, and tapping heads.

For Die OD	Shank Dia.		
13/16″	½″	8326A12	$17.15
1″	½″	8326A11	17.15
1½″	¾″	8326A13	20.27

Morse Taper

Morse taper die holders are for use on lathes fitted with a Morse taper tool holder. *Note:* Die heads and shanks are sold separately.

Die Heads					Shanks		
For Die OD	Accepts Morse Taper No.	Max. Thread Lg.			Morse Taper No.		
1″	2	2⅜″	29265A51	$56.73	2	29265A56	$55.60
1″	3 and 4	2⅞″	29265A52	67.16	3	29265A57	74.09
1½″	3 and 4	2⅞″	29265A53	67.16	4	29265A58	86.84
2″	3 and 4	2⅞″	29265A54	74.09			

Wrenches for Round Dies

Also known as die stocks, these wrenches have a circular die holder and three adjusting screws to secure round dies. The handles are solid steel. ***Economy*** wrenches have cast zinc die holders. ***Heavy duty*** wrenches have cast steel die holders and a black-oxide surface treatment to prevent rust.

For Die OD	Economy O'all Lg.			Heavy Duty O'all Lg.		
13/16″	7″	25565A19	$9.05	6¼″	2577A19	$27.91
1″	8″	25565A21	9.50	9″	2577A21	32.29
1½″	12″	25565A22	15.31	14″	2577A22	49.44
2″	20″	25565A25	33.90	23″	2577A23	73.90
2½″	25″	25565A26	45.66	29″	2577A24	94.23
3″	—	—	—	40″	2577A25	157.74

Wrenches for Hex Dies

8325A22, 8325A23, 8325A24

Also known as die stocks, these wrenches are designed to accommodate hex-shaped threading and thread repair dies. Furnished with an adjusting screw to secure the dies. All wrenches except 8325A21 also have an adjustable guide that maintains threading alignment. The die holder is cast zinc; handle material is listed below.

For Die Width Across Flats	O'all Lg.	Handle Material		
⅝″	4¾″	Cast Zinc	8325A21	$5.23
1″	9⅞″	Cast Zinc	8325A22 ♦	11.80
1 7/16″	14⅛″	Aluminum	8325A23	24.69
1 13/16″	21⅜″	Aluminum	8325A24	43.41

♦ Also accepts 1″ round dies.

Round Die to Hex Die Adapters

Easily convert round dies to hex dies for use with a conventional wrench. Adapters are made of tool steel and have an adjusting screw to secure the dies.

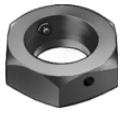

Holds Round Die OD	Width Across Flats		
13/16″	1 11/16″	25545A21	$9.98
1″	1¼″	25545A22	11.57
1½″	1 31/32″	25545A23	12.64
2″	2 9/16″	25545A24	$14.15
2½″	3″	25545A25	21.37

Thread Repair Hex Dies

Repair damaged and rusty threads without using a die holder. All are hex shaped for use with most conventional wrenches and are made of carbon steel.

Also Available: Additional metric sizes. Please ask for 2573A999 and specify metric thread size and right- or left-hand threads.

Fractional

Thread Size	Width Across Flats	Right Hand		Left Hand	
1/4″-20	19/32″	2573A11	$17.17	2560A31	$15.26
1/4″-28	19/32″	2573A31	17.17	2560A51	15.26
5/16″-18	11/16″	2573A12	19.29	2560A32	16.15
5/16″-24	11/16″	2573A32	19.29	2560A52	16.15
3/8″-16	25/32″	2573A13	20.12	2560A33	17.76
3/8″-24	25/32″	2573A33	20.12	2560A53	17.76
7/16″-14	7/8″	2573A14	22.49	2560A34	19.74
7/16″-20	7/8″	2573A34	22.49	2560A54	19.74
1/2″-13	1 1/16″	2573A15	23.80	2560A35	21.91
1/2″-20	1 1/16″	2573A35	23.80	2560A55	21.91
9/16″-12	1 1/16″	2573A16	25.96	2560A36	22.80
9/16″-18	1 1/16″	2573A36	25.96	2560A56	22.80
5/8″-11	1 1/4″	2573A17	28.45	2560A37	27.24
5/8″-18	1 1/4″	2573A37	28.45	2560A57	27.24
11/16″-11	1 7/16″	2573A51	38.13	2560A42	33.04
11/16″-16	1 7/16″	2573A53	38.13	2560A43	33.04
3/4″-10	1 7/16″	2573A19	$36.62	2560A38	$33.63
3/4″-16	1 7/16″	2573A39	36.62	2560A58	33.63
7/8″-9	1 5/8″	2573A21	40.46	2560A39	42.63
7/8″-14	1 5/8″	2573A41	40.46	2560A59	42.63
1″-8	1 13/16″	2573A22	48.46	2560A41	47.43
1″-12	1 13/16″	2573A42	48.46	2560A61	47.43
1″-14	1 13/16″	2573A27	48.68	2560A62	47.42
1 1/8″-7	2″	2573A23	56.42	2560A63	49.63
1 1/8″-12	2″	2573A43	56.42	2560A67	49.63
1 1/4″-7	2 3/16″	2573A24	60.98	2560A64	58.89
1 1/4″-12	2 3/16″	2573A44	60.98	2560A68	58.89
1 3/8″-6	2 3/8″	2573A25	67.70	2560A65	67.26
1 3/8″-12	2 3/8″	2573A45	67.70	2560A69	67.26
1 1/2″-6	2 9/16″	2573A26	68.38	2560A66	74.65
1 1/2″-12	2 9/16″	2573A46	68.38	2560A71	74.65
2″-4 1/2	3 1/2″	2573A28	187.55	—	—

Metric, mm

Thread Size	Width Across Flats		
Right Hand			
4×0.7	11/16″	2573A54	$24.92
5×0.8	19/32″	2573A71	21.34
6×1	19/32″	2573A72	21.73
7×1	11/16″	2573A56	8.82
8×1.25	11/16″	2573A73	23.22
10×1	7/8″	2573A57	13.22
10×1.25	7/8″	2573A58	13.22
10×1.5	7/8″	2573A74	22.65
12×1	1 1/16″	2573A671	40.86
12×1.25	1 1/16″	2573A673	40.86
12×1.5	1 1/16″	2573A59	13.38
12×1.75	1 1/16″	2573A75	24.57
14×1.5	1 1/16″	2573A67	15.36
Right Hand (Cont.)			
14×2	1 1/16″	2573A76	$25.96
16×1	1 1/4″	2573A675	43.06
16×1.5	1 1/4″	2573A68	15.28
16×2	1 1/4″	2573A77	32.49
18×1.5	1 7/16″	2573A677	46.00
18×2	1 7/16″	2573A69	18.44
18×2.5	1 7/16″	2573A79	21.76
20×1	1 5/8″	2573A679	47.62
20×1.5	1 5/8″	2573A81	26.32
20×2.5	1 5/8″	2573A78	39.54
22×1.5	1 5/8″	2573A681	47.62
22×2.5	1 5/8″	2573A82	26.32
24×1.5	1 13/16″	2573A683	49.40
Right Hand (Cont.)			
24×3	1 13/16″	2573A83	$27.20
26×1.5	2″	2573A831	38.58
27×3	2″	2573A84	28.08
28×1.5	2″	2573A841	38.58
30×1.5	2 3/16″	2573A685	61.30
30×3.5	2 1/4″	2573A85	33.66
32×3	2 1/4″	2573A86	33.66
33×3.5	2 3/8″	2573A87	36.02
35×1.5	2 3/8″	2573A687	64.24
36×1.5	2 9/16″	2573A689	65.56
36×2	2 9/16″	2573A88	38.52
36×3	2 9/16″	2573A89	38.52
36×4	2 9/16″	2573A91	38.52
Left Hand			
6×1	11/16″	2573A982	$38.52
8×1.25	11/16″	2573A983	39.10
10×1.25	7/8″	2573A984	40.28
10×1.5	7/8″	2573A985	40.28
12×1.5	1 1/16″	2573A986	40.86
12×1.75	1 1/16″	2573A987	40.86
14×1.5	1 1/16″	2573A988	41.60
14×2	1 1/16″	2573A989	41.60
16×1.5	1 1/4″	2573A991	43.06
16×2	1 1/4″	2573A993	43.06

NPT Pipe

Thread Size	Width Across Flats		
1/16″-27	11/16″	2573A49	$27.02
1/8″-27	1 1/16″	2573A61	32.07
1/4″-18	1 1/4″	2573A62	36.56
3/8″-18	1 7/16″	2573A63	43.46
1/2″-14	1 5/8″	2573A64	52.23
3/4″-14	2″	2573A65	71.11
1″-11 1/2	2 3/8″	2573A66	$89.54
1 1/4″-11 1/2	3 1/8″	2573A92	144.65
1 1/2″-11 1/2	3 1/2″	2573A93	167.31
2″-11 1/2	4 1/2″	2573A94	210.18
2 1/2″-8	5″	2573A95	581.81
3″-8	5″	2573A96	603.33

Die Sets— Dies are for right-hand threads and are furnished in a case.

No. of Pcs.	Individual Thread Sizes		Set
Fractional Sizes			
8	1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13, 9/16″-12, 5/8″-11, 3/4″-10	2575A2	$195.96
10	1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20	2575A5	189.72
10	1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13, 9/16″-12, 5/8″-11, 3/4″-10, 7/8″-9, 1″-8	2575A3	276.70
14	1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13, 9/16″-12, 5/8″-11, 3/4″-10, 7/8″-9, 1″-8, 1 1/8″-7, 1 1/4″-7, 1 3/8″-6, 1 1/2″-6	2575A4	536.86
16	1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20, 9/16″-12, 9/16″-18, 5/8″-11, 5/8″-18, 3/4″-10, 3/4″-16	2575A6	369.53
20	1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20, 9/16″-12, 9/16″-18, 5/8″-11, 5/8″-18, 3/4″-10, 3/4″-16, 7/8″-9, 7/8″-14, 1″-8, 1″-14	2575A7	550.93
Metric Sizes, mm			
7	6×1, 8×1.25, 10×1.5, 12×1.75, 14×2, 16×2, 20×2.5	8316A21	190.01
NPT Pipe Sizes			
6	1/8″-27, 1/4″-18, 3/8″-18, 1/2″-14, 3/4″-14, 1″-11 1/2	2557A66	138.64

Tight-Spot Thread Repair Hex Die Sets

The dies in these sets have a much smaller width across the flats than regular hex dies, making them perfect for rethreading in tight spots. Dies are made of carbon steel and don't require a special holder—most ratchet-style and other conventional wrenches will work.

Also Available: Individual dies. Please ask for 2667A4 and specify thread size and right- or left-hand threads.

Dimensions																
Thread Size	1/4″	5/16″	3/8″	7/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1″	1 1/8″	1 1/4″	6 mm	7 mm	8 mm	10 mm	12 mm
Width Across Flats	7/16″	1/2″	9/16″	11/16″	3/4″	7/8″	15/16″	1 1/16″	1 1/4″	1 1/2″	1 5/8″	1 3/4″	11 mm	14 mm	14 mm	18 mm	19 mm

Thread	No. of Pcs.	Individual Thread Sizes		Set
Fractional				
Right Hand	5	3/4″-10, 7/8″-9, 1″-8, 1 1/8″-7, 1 1/4″-7	2667A19	$25.00
Right Hand	5	3/4″-16, 7/8″-14, 1″-14, 1 1/8″-12, 1 1/4″-12	2667A21	25.00
Right Hand	7	1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13, 9/16″-12, 5/8″-11	2667A11	10.47
Right Hand	7	1/4″-28, 5/16″-24, 3/8″-24, 7/16″-20, 1/2″-20, 9/16″-18, 5/8″-18	2667A12	10.47
Right Hand	8	1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13, 9/16″-12, 5/8″-11, 3/4″-10	2667A13	12.98
Right Hand	8	1/4″-28, 5/16″-24, 3/8″-24, 7/16″-20, 1/2″-20, 9/16″-18, 5/8″-18, 3/4″-16	2667A14	12.98
Left Hand	7	1/4″-20, 5/16″-18, 3/8″-16, 7/16″-14, 1/2″-13, 9/16″-12, 5/8″-11	2667A15	15.74
Left Hand	7	1/4″-28, 5/16″-24, 3/8″-24, 7/16″-20, 1/2″-20, 9/16″-18, 5/8″-18	2667A16	15.74
Metric, mm				
Right Hand	5	6×1, 7×1, 8×1.25, 10×1.5, 12×1.75	2667A32	7.06

BSPT and BSPP Thread Repair Hex Dies

Clean up your British Standard pipe threads. BSPT (British Standard Pipe Taper) threads are the European equivalent of NPT taper threads. BSPP (British Standard Pipe Parallel) threads are the equivalent of NPS straight pipe threads. BSPT and BSPP threads should not be substituted for NPT and NPS threads. Dies are carbon steel and hex shaped for use with most conventional wrenches.

Thread Size	Width Across Flats	BSPT Dies		BSPP Dies	
1/8″-28	7/8″	8285A21	$36.62	8285A11	$36.62
1/4″-19	1 1/16″	8285A22	37.82	8285A12	37.82
3/8″-19	1 7/16″	8285A23	39.15	8285A13	39.15
1/2″-14	1 5/8″	8285A24	43.29	8285A14	43.29
3/4″-14	2″	8285A25	47.04	8285A15	47.04
1″-11	2 3/8″	8285A26	58.40	8285A16	58.40
1 1/4″-11	3 1/8″	8285A27	144.32	8285A17	144.32

Acme Thread Repair Hex Dies

Specially made to repair the broad, square threads on Acme threaded rods and studs. All dies are for general purpose Acme threads with a Class 2G thread fit (looser than the Class 2C thread fit of precision Acme threads). They are high-speed steel and hex shaped for use with most conventional wrenches.

Thread Size	Width Across Flats			Thread Size	Width Across Flats		
1/2″-10	1 1/16″	2486A11	$63.64	1″-4	1 13/16″	2486A19	$81.34
5/8″-8	1 1/4″	2486A12	67.62	1″-5	1 13/16″	2486A21	81.34
5/8″-10	1 1/4″	2486A13	67.62	1″-10	1 13/16″	2486A22	81.34
3/4″-5	1 7/16″	2486A14	73.44	1 1/8″-5	2″	2486A23	117.60
3/4″-6	1 7/16″	2486A15	73.44	1 1/4″-4	2 3/16″	2486A24	136.34
3/4″-8	1 7/16″	2486A16	73.44	1 1/4″-5	2 3/16″	2486A25	136.34
3/4″-10	1 7/16″	2486A17	73.44	1 1/2″-4	2 9/16″	2486A26	149.21
7/8″-6	1 5/8″	2486A18	74.48				

Bearing-Locknut Thread Repair Hex Dies

Repair threads on bearing-locknut spindles. These dies are also great for cleaning out locking compound that has built up in the threads. All are hex shaped and can be used with most conventional wrenches. ***High-speed steel*** dies outlast ***carbon steel*** dies.

Also Available: Dies for ABMA (American Bearing Manufacturer's Association) locknut Nos. 16 to 30. Please ask for 2619A26 and specify locknut number and carbon or high-speed steel.

ABMA ♦ Locknut No.	Thread Size	Width Across Flats	High-Speed Steel		Carbon Steel	
00	0.391″-32	7/8″	2619A31	$72.80	2619A71	$49.32
01	0.469″-32	1 1/16″	2619A32	74.75	2619A72	52.21
02	0.586″-32	1 1/4″	2619A33	78.32	2619A73	53.95
03	0.664″-32	1 7/16″	2619A34	79.69	2619A74	55.10
04	0.781″-32	1 5/8″	2619A35	83.22	2619A75	56.50
05	0.969″-32	1 13/16″	2619A36	85.26	2619A76	58.74
06	1.173″-18	2 3/16″	2619A37	98.74	2619A77	66.22
07	1.376″-18	2 3/8″	2619A38	104.48	2619A78	69.50
08	1.563″-18	3 1/8″	2619A39	153.82	2619A79	116.85
09	1.767″-18	3 1/8″	2619A41	176.53	2619A81	151.37
10	1.967″-18	3 1/2″	2619A42	202.04	2619A82	176.84
11	2.157″-18	3 1/2″	2619A43	209.91	2619A83	184.69
12	2.360″-18	4 1/2″	2619A44	231.36	2619A84	205.05
13	2.548″-18	4 1/2″	2619A45	240.37	2619A85	216.37
14	2.751″-18	4 1/2″	2619A46	247.43	2619A86	220.12
15	2.933″-12	5″	2619A47	348.90	2619A87	299.78

♦ ABMA = American Bearing Manufacturer's Association

Eight- and Twelve-Pitch Thread Repair Hex Dies

These constant pitch dies have the same number of threads per inch (eight or twelve) throughout the size range for thread repair in oil field and power generation applications. They are carbon steel and hex shaped for use with most conventional wrenches.

Die Size	Width Across Flats		
Eight Pitch			
1 1/8″	2″	25585A11	$44.58
1 1/4″	2 1/4″	25585A12	53.22
1 3/8″	2 3/8″	25585A13	56.63
1 1/2″	2 5/8″	25585A14	53.96
1 5/8″	3 1/4″	25585A15	140.55
1 3/4″	3 1/4″	25585A16	141.46
2″	3 1/2″	25585A18	166.45
2 1/4″	3 1/2″	25585A21	178.64
Eight Pitch (Cont.)			
2 1/2″	4 1/2″	25585A23	$215.32
2 3/4″	4 1/2″	25585A32	236.43
3″	5″	25585A34	398.96
Twelve Pitch			
1 1/16″	2″	25585A41	44.58
1 3/16″	2 1/4″	25585A42	55.51
1 5/16″	2 3/8″	25585A43	57.90
1 5/8″	3 1/4″	25585A44	140.55
Twelve Pitch (Cont.)			
1 3/4″	3 1/4″	25585A45	$141.47
2″	3 1/2″	25585A47	166.45
2 1/4″	3 1/2″	25585A49	178.64
2 1/2″	4 1/2″	25585A52	215.32
2 3/4″	4 1/2″	25585A54	226.35
3″	5″	25585A56	388.19
3 1/2″	5″	25585A63	344.31
4″	6″	25585A65	458.98

Wrap-Around Thread Repair Die Set

Start thread repair anywhere along the length of a shaft, bolt, or stud—unlike solid hex dies, these don't need to be threaded onto the end of your material. Dies are made of heat-treated tool steel.

This 23-piece set contains one die wrench, one socket for use with a 3/8″ ratchet wrench (not included), and one die in each of the following sizes: 1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20; Metric—6×1, 7×1, 8×1, 8×1.25, 9×1, 9×1.25, 10×1.25, 10×1.5, 11×1.5, 12×1.5, and 12×1.75 mm.

8335A21 ..... **Set** $212.91

Thread Repair File and Die Sets

18-Piece Set

Renew external threads in a wide range of sizes. All files and dies are carbon steel. Dies are hex shaped and have a smaller OD than other dies for use in tight spots with most conventional ratchet wrenches.

No. of Pieces	Sizes Included	Set
15	Files: One for 11, 12, 13, 14, 16, 18, 20, and 24 threads per inch Dies: 1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20, 9/16″-12, 9/16″-18, 5/8″-11, 5/8″-18	2616A19 ..... $35.72
18	Files: Two for 9, 10, 11, 12, 13, 14, 16, 18, 20, 24, 27, 28, and 32 threads per inch Dies: 1/4″-20, 1/4″-28, 5/16″-18, 5/16″-24, 3/8″-16, 3/8″-24, 7/16″-14, 7/16″-20, 1/2″-13, 1/2″-20, 9/16″-12, 9/16″-18, 5/8″-11, 5/8″-18, 3/4″-10, 3/4″-16	2616A21 ..... $45.35
13 (Metric)	Files: One for 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, and 3 threads per mm Dies: 6×1, 6×1.25, 8×1, 8×1.25, 8×1.5, 10×1, 10×1.25, 10×1.5, 12×1.25, 12×1.5, 14×1.25, 14×1.5 mm	2616A22 ..... $33.48

External Thread Repair Tools

A

B

C

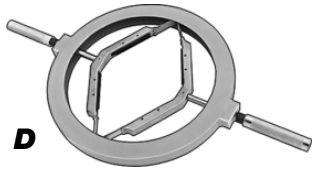

D

There's no need to rethread your whole bolt, rod, or pipe to repair one area of damaged threads. Simply slide one of these tools to the area where threads are damaged, tighten, and rotate until threads are repaired. Each tool has one set of hardened tool steel blades for use on machine screw, fractional, and taper pipe thread sizes from 6 to 28 threads per inch and metric thread sizes from 1 to 4 mm.

	OD Range	Max. Handle Swing★	Length Left Unthreaded■	Thread Restorers	Each	Replacement Blade Sets	Set
A	1/4″-1″	7″	1/2″	2615A11	$95.86	2615A115	$72.31
B	1/4″-1″	3″	1/2″	2615A12	183.42	2615A125	34.60
C	1″-2 9/16″	5 1/4″	5/16″	2615A14	295.65	2615A145	82.87
C	1 3/4″-4″	7″	5/16″	2615A15	369.30	2615A155	82.87
C	4″-6″	8″	5/16″	2615A16	471.16	2615A165	113.76
D	6″-12″	15″	5/16″	2615A17	1,138.84	2615A175	393.31

★ Measured from the center of the tool to the end of the handle with handle adjusted to its maximum limit.
■ The portion of the threads at the beginning of the shaft or bolt that can't be reached by the die blades.

Replaceable Die External Thread Repair Tool

Eliminate the cost of buying new external thread repair tools when the dies are worn—this tool has replaceable dies.

Tool comes with dies for 4, 5, 6, 7, 7 1/2, 8, 9, 10, 11, 11 1/2, 12, 14, 16, 18, 20, and 24 threads per inch. OD range is 1 1/4″ to 5″. A die cast alloy pad firmly holds the tool on the threaded portion without damaging the threads. Overall length in closed position is 9″. Maximum handle swing is 7″. Handle is steel.

2630A12 ..... $120.82

Optional Metric Die Set

For use with the thread repair tool above. Includes three dies for metric thread sizes 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, and 4 mm.

2630A29 ..... **Set** $39.02

Replacement Dies

For Thread Pitch		Each
Machine Screw and Fractional (threads per inch)		
4, 5	2630A24	$3.69
6, 7	2630A25	3.69
7 1/2, 9	2630A26	3.69
8, 10, 12, 14	2630A21	3.69
11, 11 1/2	2630A23	3.69
16, 18, 20, 24	2630A22	3.69
Metric (threads per mm)		
1, 1.25, 1.5, 1.75	2630A33	12.44
2, 2.5, 3, 3.5	2630A34	13.69
4	2630A35	8.56
Replacement Pad	2630A31	21.18

Replaceable Die Internal Thread Repair Tool

Change the dies when they become worn rather than buying a new internal thread repair tool. This tool has a 3/4″ to 6″ ID capacity. Use on straight and tapered threads. Dies automatically line up with threads at any point and can be removed at any point.

Tool comes with dies for 14 threads per inch for 1/2″ and 3/4″ pipe, 11 1/2 threads per inch for 1″ to 2″ pipe, and 8 threads per inch for 2 1/4″ to 6″ pipe.

2598A11 ..... $18.38

Also Available: Pairs of dies in individual sizes. Please ask for 2598A31 and specify threads per inch.

Die Sets in Additional Sizes

Sets include two dies per size and do not include tool.

12-Size Die Set—Includes one pair of dies for each size: 9, 10, 11, 12, 13, 16, 18, 20, 24, 27, 28, and 32 threads per inch.

2598A12 ..... **Set** $26.05

8-Size Metric Die Set—Includes one pair of dies for each metric thread size: 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, and 3 mm.

2598A13 ..... **Set** $17.37

Combination Internal and External Thread Repair Files

One file restores internal and external threads on bolts, studs, threaded shafts, pipe, and pipe fittings in many sizes. Not for use on British Standard pipe threads. Files are heat-treated carbon steel. Sizes are marked on each file. Each file is 25/64″ square and 9″ long; furnished in a plastic storage tube.

Thread Type	For Thread Pitch		Each
Machine Screw and Fractional (threads per inch)			
Bolt	9, 10, 12, 16, 20, 27, 28, 32	2542A51	$28.95
Bolt	11, 12, 13, 14, 15, 16, 18, 20, 24	2542A41	28.95
Pipe	8, 10, 11 1/2, 14, 16, 18, 24, 27	2542A52	28.95
Metric (threads per mm)			
Bolt	0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3	2542A42	28.95

4-Piece Thread-Restoring File Set—Includes one each of the files above in a plastic pouch.

2542A61 ..... **Set** $116.46

Thread Repair Files

External Thread File

Repair rusted and damaged threads on any diameter bolt, pipe, rod, or shaft. All files are steel. ***External thread files*** are 7/16″ square (unless noted) and 8 3/8″ long. Thread sizes are marked on each file for use as thread gauges. ***Internal thread files*** are 7/16″ square and 10″ long.

Individual Files

Thread Type	For Thread Pitch		Each
External Threads (threads per inch)			
Bolt	11, 12, 13, 14, 16, 18, 20, 24	2616A11	$11.27
Bolt	9, 10, 12, 16, 20, 27, 28, 32	2616A12	11.27
Pipe	8, 10, 11 1/2, 14	2616A14●	33.26
Pipe	8, 10, 11 1/2, 14, 16, 18, 24, 27	2616A15	11.27
Metric External Threads (threads per mm)			
Bolt	0.8, 1, 1.25, 1.5, 1.75, 2, 2.5, 3	8309A11	10.19
Internal Threads (threads per inch)			
Pipe	8, 10	2616A16	17.25
Pipe	8, 11 1/2	2616A17	17.25
Pipe	10, 14	2616A18	17.25

● Size is 1″ Wd. × 1/2″ Thick.

Plastic File Handle—Slips over file for a comfortable grip. Fits all files listed above except 2616A14. Six handles per package.

2616A41 ..... **Pkg.** $6.00

6-Piece File Set—Includes one each of 2616A11, A12, A14, A15, 8309A11, and 2617A12. Also includes four plastic handles and pouch.

2616A31 ..... **Set** $67.95

Universal External Thread Repair File

Renews all machine screw, fractional, and metric thread sizes as well as NPT and NPS pipe thread sizes. Has a cushion-grip plastic handle. File size is 7/8″ Wd. × 1/8″ Thick. Overall length is 9″.

2617A12 ..... $5.51

About Vises

Vises

Bench Vises (pgs. 2563-2564)— Typically mounted to a workbench for general clamping.

Woodworkers' Vises (pg. 2564)— Typically mounted to a workbench, these have large jaws to prevent damage to the workpiece.

Pipe Vises (pg. 2565)— For holding round material such as pipe.

Pin Vises (pg. 2566)— Small, hand-held vises for narrow tools such as scribers and drill bits.

Hand Vises (pg. 2567)— Small, hand-held vises with a handle.

Drill-Press Vises (pgs. 2567-2568)— Mount to a drill press to hold material being drilled, tapped, reamed, or worked vertically.

Vises (Cont.)

Machine Vises (pgs. 2568-2569)— Mount to milling or CNC machines. Use for vertical machining and demanding horizontal applications such as milling, routing, and grinding.

Jaws

Smooth Jaws— Versatile enough to hold different material shapes without creating indentions in soft metals.

Grooved Jaws— Vertical and horizontal grooves hold cylindrical pieces well, either parallel or perpendicular to the vise.

Serrated Jaws— Have a fine cross-hatch pattern to grip work firmly in any position.

Wilton Heavy Duty Bench Vises

Also known as machinists' vises, these bench vises are built for a long life of heavy use. The vise body is made of heavy ductile iron for industrial-grade strength. All moving parts are enclosed to keep contaminants out and keep lubricants in for smooth operation. Vises have replaceable serrated steel jaws, a built-in anvil, and an Acme-threaded main screw. Mounting fasteners not included. ***Replacement serrated jaws*** come with screws for attaching the jaw faces to the vise.

Bench Vises— Choose a stationary base or a locking 360° swivel base. ***Bench Vises with Pipe Jaws—*** In addition to their top jaws, these vises have replaceable steel pipe jaws. They have a locking 360° swivel base.

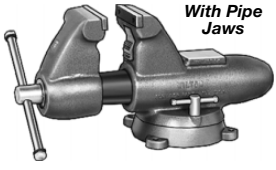
With Pipe Jaws

For a listing of repair parts for these vises, go to mcmaster.com and search for **5298AAC**.

Bench Vises

Jaw Wd.	Max. Opening	Throat Dp.	Vises with Stationary Base: Wilton No.	Mounting Holes Dia.	Mounting Holes Qty.		Each	Vises with Swivel Base: Wilton No.	Mounting Holes Dia.	Mounting Holes Qty.		Each	Replacement Serrated Jaws	Per Pair
3″	4¾″	2⅝″	300N	17/32″	2	5298A19	$417.08	300S	7/16″	4	5298A12	$474.32	8467A12	$121.98
3½″	5¼″	2¾″	350N	17/32″	2	5298A21	449.79	350S	9/16″	4	5298A13	498.86	8467A32	130.19
4″	6½″	3½″	400N	17/32″	2	5298A22	515.21	400S	11/16″	4	5298A14	572.46	8467A34	129.98
4½″	7½″	4″	450N	17/32″	2	5298A23	596.99	450S	11/16″	4	5298A15	654.24	8467A35	176.39
5″	8″	4¼″	500N	17/32″	2	5298A24	875.04	500S	11/16″	4	5298A16	945.37	8467A36	184.87
6″	10″	5½″	600N	21/32″	2	5298A25	1,136.74	600S	11/16″	4	5298A17	1,283.94	8467A17	232.53
8″	12″	5 13/16″	800N	21/32″	2	5298A27	3,189.41	800S	11/16″	4	5298A26	3,189.41	8467A18	270.69

Bench Vises with Pipe Jaws

Jaw Wd.	Max. Opening	Throat Dp.	Pipe Cap.	Vises with Swivel Base: Wilton No.	Mounting Holes Dia.	Mounting Holes Qty.		Each	Replacement Serrated Top Jaws	Per Pair
3½″	5″	4½″	⅛″-2½″	C-0	9/16″	4	5200A11	$603.12	8467A32	$130.19
4½″	6″	4¾″	⅛″-3½″	C-1	11/16″	4	5200A12	836.33	8467A35	176.39
5″	7″	5 5/16″	⅛″-4½″	C-2	11/16″	4	5200A13	1,149.96	5200A151	182.84
6″	9″	6⅝″	¼″-6″	C-3	11/16″	4	5200A14	1,688.75	5200A779	178.51

Heavy Duty Bench Vises

A body made of heavy iron gives these bench vises the strength and durability to withstand heavy use. They're also known as machinists' vises. All have replaceable serrated steel jaws, a precision slide bar, and an Acme-threaded main screw. Mounting fasteners not included. ***Replacement serrated jaws*** come with fasteners for attaching the jaw faces to the vise.

Bench Vises— Choose a stationary base or a locking 360° swivel base. Body is made of cast iron.

Bench Vises with Pipe Jaws— In addition to their top jaws, these vises have replaceable steel pipe jaws. They have a locking 360° swivel base. Body is made of ductile iron, except 5289A2, which has a cast iron body.

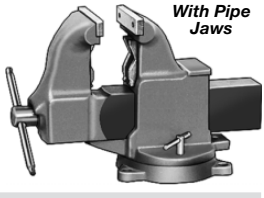
With Pipe Jaws

For a listing of repair parts for these vises, go to mcmaster.com and search for **5286AAC**.

Bench Vises

Jaw Wd.	Max. Opening	Throat Dp.	Vises with Stationary Base: Mounting Holes Dia.	Mounting Holes Qty.		Each	Vises with Swivel Base: Mounting Holes Dia.	Mounting Holes Qty.		Each	Replacement Serrated Jaws	Per Pair
3″	4″	2½″	9/16″	2	5286A1	$246.45	9/16″	3	5287A1	$324.47	8469A21	$54.76
3½″	5″	2¾″	9/16″	2	5286A8	292.13	9/16″	3	5287A2	361.32	8469A22	57.01
4″	6″	3¼″	9/16″	2	5286A3	325.43	9/16″	3	5287A3	404.88	8469A23	60.19
4½″	7″	3½″	9/16″	2	5286A4	380.88	9/16″	3	5287A4	468.73	8469A24	59.12
5″	8″	3½″	9/16″	2	5286A5	466.89	9/16″	3	5287A5	601.47	8469A25	67.49
6″	10″	4″	25/32″	3	5286A6	745.05	¾″	3	5287A6	927.84	8469A48	88.96
8″	12″	5½″	25/32″	3	5286A7	1,456.30	¾″	3	5287A7	1,780.43	8469A49	113.22

Bench Vises with Pipe Jaws

Jaw Wd.	Max. Opening	Throat Dp.	Pipe Cap.	Vises with Swivel Base: Mounting Holes Dia.	Mounting Holes Qty.		Each	Replacement Serrated Top Jaws	Per Pair
3½″	4″	4½″	⅛″-2½″	7/16″	3	5289A1	$470.69	5289A112	$72.00
4½″	6″	5½″	⅛″-3½″	⅝″	3	5289A2	679.31	5289A122	90.64
5″	7½″	6″	⅛″-4½″	⅝″	4	5289A3	975.00	5289A132	99.22
6″	10″	7½″	¼″-6″	¾″	4	5289A4	1,466.67	5289A142	132.00

Medium Duty Bench Vises

A great all-purpose choice, these bench vises have a ductile-iron body, replaceable steel top jaws, and replaceable steel pipe jaws. You can flip the faces on the top jaws; they're smooth on one side and serrated on the other side. Furnished with a locking 360° swivel base, a built-in anvil, a precision slide bar, and an Acme-threaded main screw. Mounting fasteners not included.

Jaw Wd.	Max. Opening	Throat Dp.	Pipe Cap.	Mounting Holes Dia.	Mounting Holes Qty.		Each
4½″	4½″	4½″	⅛″-2½″	7/16″	3	5344A31	$378.69
5½″	5″	4½″	⅛″-2½″	7/16″	3	5344A32	456.14
6½″	6½″	5½″	⅛″-3½″	⅝″	3	5344A33	551.67
8″	7½″	6″	⅛″-4½″	⅝″	4	5344A34	722.74

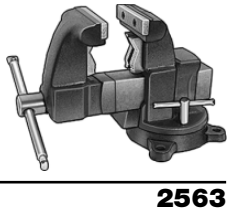

For information about vises, see page 2563.

Reversible-Jaw Medium Duty Bench Vise

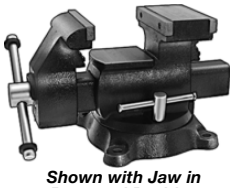

Shown with Jaw in Reversed Position

Use this bench-top vise with its top jaws in their standard position or reverse the jaw on the sliding section to expand the jaw opening more than 3″.

Body is cast iron with built-in pipe jaws. All have replaceable serrated steel top jaws, two anvil surfaces, an Acme-threaded main screw, and a locking 360° swivel base. Base has four 5/8″ dia. holes for bench mounting (fasteners not included).

Jaw Wd.	Max. Opening (reversed)	Throat Dp. (reversed)	Pipe Cap.		Each
5 1/2″	6″ (9 3/4″)	3 3/4″ (2 3/4″)	1/8″-3″	4065A1	$153.55

Light Duty Bench Vises

Intended for less demanding applications than heavy and medium duty bench vises, these vises have a cast iron body and built-in pipe jaws. All have replaceable serrated hardened-steel top jaws, a steel slide bar that covers the Acme-threaded main screw, and a locking 360° swivel base (unless noted). Mounting fasteners not included.

Jaw Wd.	Max. Opening	Throat Dp.	Pipe Cap.	Mounting Holes Dia.	Qty.		Each
4″	4″	2 3/4″	1/8″- 2″	1/2″	4	5310A42	$105.60
5″	5″	3″	1/8″- 2 1/2″	1/2″	4	5310A43	114.10
6″	6″	3 1/2″	3/8″- 2 1/2″	1/2″	4	5310A7	164.74
6 1/2″	5 1/2″	3 13/16″	1/8″- 2 1/2″	7/16″	4	5310A44★	153.72
8″	8″	4″	3/8″- 3″	1/2″	4	5310A6	275.61

★ Has a locking 180° swivel base.

Weather-Resistant Bench Vises

Go ahead and use these vises outdoors. To prevent rusting, the steel body has a black enamel painted finish and the screws, handles, and locknuts are chrome plated. Vises have built-in pipe jaws, replaceable serrated steel top jaws, a built-in anvil, a steel slide bar that covers the Acme-threaded main screw, and a locking 360° swivel base. Slide bar has a translucent rust-preventative coating. Mounting fasteners not included.

Jaw Wd.	Max. Opening	Throat Dp.	Pipe Cap.	Mounting Holes Dia.	Qty.		Each
4″	4″	2 1/4″	1/4″-1 1/2″	1/2″	3	5252A1	$97.55
5″	5″	2 5/8″	1/2″-1 1/2″	9/16″	3	5252A2	125.10
6″	6″	3″	1/2″-2″	9/16″	3	5252A3	163.88
8″	8″	3 1/2″	3/4″-2 1/4″	5/8″	3	5252A4	226.88

High-Visibility Bench Vises

A yellow painted finish promotes worker safety and conforms to OSHA safety color standards for physical hazards regulation No. 1910.144. Body is steel. Vises are light duty and have built-in pipe jaws, replaceable serrated steel top jaws, a built-in anvil, a steel slide bar that covers the Acme-threaded main screw, and a locking 360° swivel base. Mounting fasteners not included.

Jaw Wd.	Max. Opening	Throat Dp.	Pipe Cap.	Mounting Holes Dia.	Qty.		Each
4″	4″	2 1/4″	1/4″-1 1/2″	1/2″	3	5333A21	$99.74
5″	5″	2 5/8″	1/2″-1 1/2″	9/16″	3	5333A22	124.00
6″	6″	3″	1/2″-2″	9/16″	3	5333A23	151.25
8″	8″	3 1/2″	3/4″-2 1/4″	5/8″	3	5333A38	214.29

Vise Adapter for Round Material

Add this adapter to the top jaws of your vise to firmly hold small-diameter material vertically. It has two different size openings, so you can find the perfect fit for your projects. Just insert your round material into the adapter and tighten the vise. The adapter jaws open automatically when you open the vise. Made of steel with nonreplaceable aluminum jaws.

Fits Diameters Slot 1	Slot 2		Each
5/16″-11/32″	11/32″-13/32″	6325A42	$13.16

Rotating Multijaw Medium Duty Bench Vise

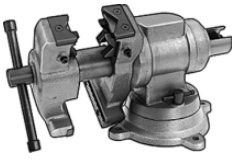

Hold both flat and round stock in almost any position. This vise comes with three sets of replaceable hardened-steel jaws—serrated top jaws, pipe jaws, and V-jaws. The head rotates 360° and locks at 30° intervals. Plus, the swivel base rotates 360° and locks at any position. Body is cast iron and has a built-in anvil. Base has three 7/16″ dia. holes for bench mounting (fasteners not included).

Jaw Wd.	Max. Opening Top Jaw	Pipe Jaw	V-Jaw	Throat Dp.	Pipe Cap. Pipe Jaw	V-Jaw		Each
5 1/8″	4″	3 1/2″	5 1/4″	3 1/2″	3/8″-3″	1″-4 1/2″	5256A1	$201.38

Clamp-On Bench Vises

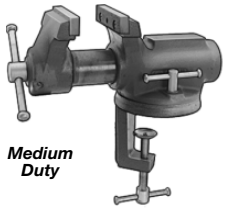

Medium Duty

Take these portable vises anywhere you have a workbench—a spindle clamp allows mounting on bench tops. All vises have a built-in anvil.

Medium Duty—Heavier in weight than the light duty style to handle more demanding workholding applications, these vises clamp onto bench tops up to 3″ thick. Vises have a cast iron body and replaceable grooved alloy steel jaws. Vise spindle and threads are enclosed to keep out dust and other contaminants. All have a swivel base that rotates 45° to the left and right and locks in position.

Light Duty—For light holding operations. Clamp onto bench tops up to 1 7/8″ thick. Body is cast iron with built-in smooth top jaws and pipe jaws. Base has holes for permanent bench mounting (fasteners not included). 5312A2 has two 3/16″ dia. holes; A3 has two 5/16″ dia. holes and two 1/4″ dia. holes. Vise *with swivel base* rotates 360° and locks in position.

	Jaw Wd.	Max. Opening	Throat Dp.	Pipe Cap.		Each
Medium Duty						
With Swivel Base	2 1/2″	2 1/8″	1 3/4″	———	4985A1	$128.00
With Swivel Base	4″	2 1/4″	2″	———	4985A2	150.00
Light Duty						
Without Swivel Base	3″	2 1/2″	2 5/8″	3/8″-2 3/4″	5312A2	48.02
With Swivel Base	3″	2 1/2″	2 5/8″	3/8″-2 3/4″	5312A3	51.77

Woodworkers' Vises

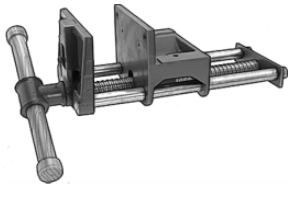

Each vise has large iron jaw facings that are drilled and tapped with two 1/4″-20 holes to accommodate wood pads. Because the jaws are large, they apply pressure across a large surface area to hold and protect wood pieces.

Vises have a wood handle. Turn the handle to disengage the screw, then slide the jaw into position—it moves quickly and easily. Turn the handle in the opposite direction to engage the screw and nut for clamping. A stop (commonly called a bench dog) in the front jaw holds work in place during planing.

When mounted under a standard 2 1/4″ thick bench top, these vises fit flush with the top. Jaw has two 3/8″ dia. holes for bench mounting (fasteners not included). Vises meet Fed. Spec. GGG-V-445 Type I, Class II.

Jaw Wd.	Jaw Dp.	Max. Opening	Lg.×Ht.		Each
7″	4″	9″	18 1/2″×5 3/4″	5275A3	$178.92
10″	4″	12″	22″ ×6″	5275A4	201.20

Miniature Bench Vises

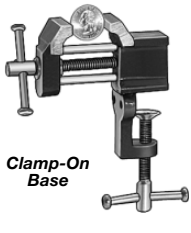

Clamp-On Base

Hold items 1″ and smaller with these mini vises. All have built-in smooth top jaws. Mounting fasteners not included.

Clamp-On Base—Clamp onto bench tops up to 1 1/8″ thick or permanently bench mount. Body is cast iron. Size is 3 1/8″ Lg.×4 3/8″ Ht.

Stationary Base—Body is cast iron. Size is 3 1/4″ Lg.×1 7/8″ Ht.

Swivel Base—Base rotates 360° and locks in position. Body is drop-forged steel. Size is 3 3/4″ Lg.×2 1/2″ Ht.

Base Type	Jaw Wd.	Max. Opening	Throat Dp.	Mounting Holes Dia.	Qty.		Each
Clamp On	1 1/16″	1″	9/16″	7/32″	2	6015A33	$8.62
Stationary	1 5/32″	1″	11/16″	7/32″	2	6015A57	7.75
Swivel	1 1/4″	1″	11/16″	1/4″	3	6015A74	17.50

For information about vises, see page 2563.

Yoke-Grip Pipe Vises

Turn the handle on these vises for a strong grip. The top and bottom jaws firmly hold pipe, tubing, and conduit for cutting and threading. Jaws are made of hardened steel; they are replaceable.

The hinge-style side opening has a locking latch. You can reverse the yoke to open on the left or on the right. Yoke and base are made of ductile iron. The base has holes for bench mounting (fasteners not included).

Note: Not recommended for plastic pipe.

5325A1-A4

Pipe Capacity	Mounting Holes Dia.	Mounting Holes Qty.		Each
1/8"- 2"	7/16"	3	5325A1	$195.88
1/8"- 2 1/2"	3/8"	3	5325A2	232.68
1/8"- 3 1/2"	1/4"	3	5325A3	291.94
1/8"- 4 1/2"	3/4"	3	5325A4	335.21
1/4"- 6"	21/32"	3	5325A6	750.11
1" - 8"	25/32"	3	5325A7	1,629.59
1 1/2"-12"	25/32"	5	5325A8	2,386.97

Vise-Jaw Liners

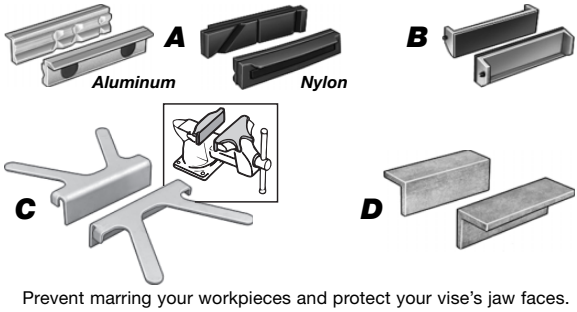

Prevent marring your workpieces and protect your vise's jaw faces.

***A** Vise-Jaw Liners with Magnets—*These easy-to-install liners are held in place by magnets.

Material	For 5" Jaw Wd.	Per Pair	For 6" Jaw Wd.	Per Pair
Horizontally V-Grooved				
Aluminum	5268A18	$34.77	5268A19	$39.84
Horizontally and Vertically V-Grooved				
Aluminum	5268A15	43.14	5268A16	45.94
Nylon	5345A5	15.80	—	—
Covered				
Rubber-Covered Aluminum	5268A21	38.20	5268A22	40.90
Fiber-Covered Aluminum	5268A13	41.15	5268A14	44.05

***B** Vise-Jaw Liners with Set Screws—*Place liners over your vise jaws, close vise, and tighten the set screws; no hammering or holes to drill.

For Jaw Width	Rubber-Covered Aluminum	Per Pair	Solid Brass	Per Pair
3"	5346A17	$28.82	5346A19	$34.45
3 1/2"	5346A21	29.93	5346A22	38.37
4"	5346A25	32.00	5346A27	44.00
4 1/2"	5346A28	34.45	5346A29	54.67
5"	5346A31	37.78	5346A32	57.04
6"	5346A35	44.82	5346A36	63.41

***C** Vise-Jaw Liners with Extensions—*Liners have polished faces with pliable extensions that fold securely over the vise jaws, making installation fast and easy.

For Jaw Width	Copper	Per Pair	Aluminum	Per Pair
3"	5254A44	$28.28	5254A61	$28.06
3 1/2"	5254A45	39.63	5254A62	30.00
4"	5254A46	43.08	5254A63	32.12
4 1/2"	5254A47	43.38	5254A64	34.00
5"	5254A48	57.41	5254A65	40.01
6"	5254A49	89.08	5254A66	57.11
6 1/2"	5254A53	112.01	—	—
8"	5254A51●	129.62	5254A67	67.94

● Brass.

***D** Workpiece-Holding Vise-Jaw Liners with Magnets—*Magnets in these liners have a dual purpose. They hold the liners on the vise and hold small workpieces such as springs and sockets as the jaws are closed.

For Jaw Width	Aluminum	Per Pair
4"	5268A25	$18.89

Chain-Grip Pipe Vises

Just crank the handle to tighten the chain and secure round as well as irregularly shaped material against the base jaws. You can quickly adjust these vises to hold various sizes of pipe, tubing, and conduit.

The crank handle is on the side of the base, away from the chain. Body is cast iron. Base has holes for bench mounting (fasteners not included). Vises with ***neoprene-coated jaws*** grip pipe without marring it.

Pipe Capacity	Mounting Holes Dia.	Mounting Holes Qty.		Each
Hardened-Steel Jaws				
1/8"- 2 1/2"	25/64"	3	5328A67	$135.93
1/8"- 4"	9/16"	3	5328A68	218.11
1/8"- 5"	9/16"	3	5328A13	299.56
1/4"- 6"	9/16"	3	5328A14	410.10
1/2"- 8"	21/32"	3	5328A3	538.57
1" -12"	25/32"	3	5328A36	1,776.48
Neoprene-Coated Hardened-Steel Jaws				
1/8"- 2 1/2"	25/64"	3	5328A11	135.56
1/8"- 4"	9/16"	3	5328A12	223.80

Pipe Vises with Tripod Stand

No workbench available? No problem. These vises have a pipe rest and a tripod stand that provide sturdy support for on-the-job cutting and threading of pipe, tubing, and conduit. The tripod has a handle and folds for portability. All except 5340A4 have pipe-bending slots and holes for hanging tools. All except 5340A4 meet Fed. Spec. GGG-00740A.

Yoke-Grip Vise—Has a ductile iron table and double-faced steel lower jaws. Tripod frame is steel.

Chain-Grip Vises—*Chain-grip vise* has a ductile iron table and double-faced, serrated steel jaws. Tripod frame is steel. *Lightweight chain-grip vise* is 20% lighter in weight than the chain-grip vise for easier carrying. It has a cast aluminum table and serrated steel jaws. Tripod frame is tubular steel. *Clean room chain-grip vise* has an anodized aluminum table; double-faced, serrated Type 410 stainless steel jaws with rubber on one side; and a clear polymer slip tube over the chain. Chain is lubricated with food-grade, nonpetroleum-based oil. Tripod frame is steel.

	Pipe Capacity		Each
Yoke-Grip Vise	1/8"-2 1/2"	5340A1	$512.24
Chain-Grip Vise	1/8"-6"	5340A2	447.89
Lightweight Chain-Grip Vise	1/8"-2 1/2"	5340A4	368.56
Clean Room Chain-Grip Vise	1/8"-6"	5340A3	541.89

Any-Angle Spring-Clip Workholder

Twist, rotate, and bend the jointed arms of this workholder in all directions, placing the spring clips in the exact position you need. Each clip opens approximately 3/4" and is attached to a 7" long arm. Clips are made of carbon steel. Overall size is 11" Ht. × 8 1/2" Wd. × 6 1/2" Dp.

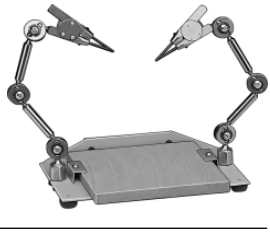

5162A76 ..... **Each** $144.85

Any-Angle Miniature Workholders

You can adjust these workholders 360° in every plane, so it's easy to position the vise head to hold small items. Heads provide positive gripping power to hold flat, round, and hexagonal parts. Jaws are aluminum to prevent damage to parts. One jaw has a horizontal V-groove; the other jaw has a horizontal and a vertical V-groove. Body is made of cast aluminum.

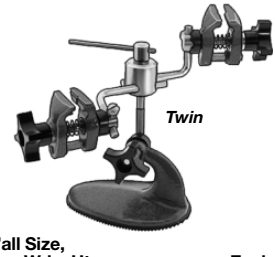

Head Style	Jaw Wd.	Jaw Dp.	Max. Opening	O'all Size, Lg. × Wd. × Ht.		Each
Single	1 1/2"	13/32"	11/16"	5 1/2" × 6" × 6 1/2"	52015A66	$113.21
Twin	1 1/2"	13/32"	11/16"	8" × 7" × 7 1/4"	52015A67	152.07

Multiposition Vises and Workholders

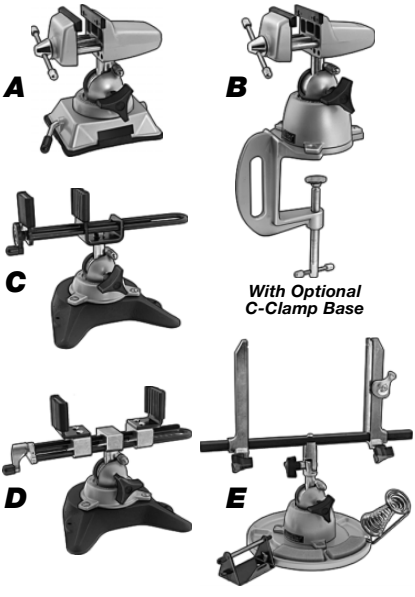

A split-ball joint with a locking screw knob allows you to rotate the vise head 360° and tilt it up and down 90°. Just loosen the knob to position the head; tighten the knob to lock the head in place. Vises are made of cast zinc alloy and steel.

A ***Standard Vise Head with Vacuum Base—*** The vacuum base has the added convenience of portability. A simple half turn of the mount lever attaches or releases the rubber suction pad. Use on any smooth nonporous surface. Vise jaws are smooth and made of nylon; they are replaceable. Vacuum base measures 5⅛″ × 4¼″.

B ***Standard Vise Head with Bench Mount Base—*** Vise jaws are smooth and made of nylon; they are replaceable. The base has a 4⁵⁄₁₆″ bolt circle with three lugs and ¼″ dia. holes for bench mounting (fasteners not included).

C ***Wide Opening Vise Head with Weighted Base—*** A wide jaw opening with reversible, replaceable neoprene jaw pads and a 5-lb. weighted base adds versatility to this vise. Base is 7⁵⁄₁₆″ × 6¾″. Jaw pads are ribbed on one side and have V-grooves on the other side.

D ***Extra-Wide Self-Centering Vise Head with Weighted Base—*** Self-centering feature lets you hold heavier objects because the weight is centered over the 5-lb. base. Base is 7⁵⁄₁₆″ × 6¾″. Comes with reversible, replaceable neoprene jaw pads that are ribbed on one side and have V-grooves on the other side.

E ***Circuit Board Vise Head with Tool Tray Base—*** Accommodates PC boards from ⅛″ to 12″ wide and up to ⁵⁄₃₂″ thick. Comes with six-position 8½″ dia. tool tray base, solder holder, and soldering iron holder. Vise jaws are made of die cast zinc and are replaceable; jaws have V-grooves to hold a circuit board.

Optional C-Clamp Base for Styles B, C, and D— Use to convert the bases on Styles B, C, and D to a C-clamp base. C-clamp opens 3⁷⁄₁₆″ and is 9¾″ long.

	Jaw Wd.	Jaw Dp.	Max. Jaw Opening	O'all Size, Lg. × Ht.		Each
A	2½″	½″	2¼″	7½″ × 6⅛″	8464A63	$75.26
B	2½″	½″	2¼″	5¼″ × 6¼″	8464A14	53.75
C	1⅞″	2″	6″	11″ × 7½″	8464A91	105.34
D	1⅞″	2″	9″	11½″ × 7½″	8464A92	118.26
E	⁵⁄₃₂″	6″	12″	14″ × 13½″	8464A48	98.92
Optional C-Clamp Base for Styles B, C, and D					8464A41	54.79

Ball Joint Workholding Bases

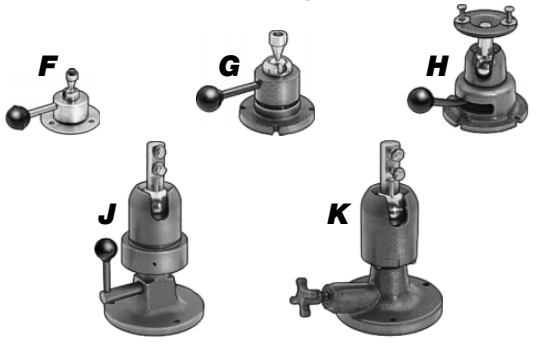

Each ball joint rotates 360° and pivots 90° to position work where you want it. Just unlock the lever, rotate and pivot the ball joint into position, and then lock the lever in place. Your work is secure for hands-free production. All of these bases can be bench-mounted (fasteners not included).

F ***Midget Workholder—*** This small workholder has all steel construction. Work mounting stem has a ⁵⁄₁₆″-24 × ¹⁵⁄₃₂″ long threaded stud with nut. Base has three ¼″ dia. mounting holes.

G ***Light Duty Workholder—*** Body is made from cadmium-plated steel; base is cast iron. Work mounting stem has a ½″ ID × ½″ Dp. hole with ⅜″-16 set screw. Base has four ¼″ wide mounting slots.

H ***Standard Duty Workholder—*** Body is made from cast aluminum with steel parts. Base is die cast zinc. Work mounting stem has 3″ dia. pad with two ¼″-20 threaded holes with screws and washers. Base has four ⁹⁄₃₂″ wide mounting slots.

J ***Heavy Duty Workholder—*** Body and base are made from machined cast iron with all steel parts. Work mounting stem has two ⁵⁄₁₆″-18 threaded holes, spaced 1″ center-to-center (includes screws and washers). Base has three ⅜″ dia. mounting holes.

K ***Heavy Duty Hydraulic Workholder—*** The hydraulic system is hand operated and self-contained. Body and base are made from cast iron with all steel parts. Work mounting stem has two ⁵⁄₁₆″-18 threaded holes, spaced 1″ center-to-center (includes screws and washers). Base has three ⅜″ dia. mounting holes.

	Workholding Capacity	Base Dia.	O'all Ht.		Each
F	6 lbs.	2½″	1¼″	5251A2	$146.34
G	20 lbs.	3¾″	4¼″	5251A3	163.64
H	30 lbs.	4¼″	5″	5251A1	204.51
J	70 lbs.	5¹⁵⁄₁₆″	10½″	5250A1	457.91
K	150 lbs.	5⅞″	10½″	5250A2	592.34

Pin Vises

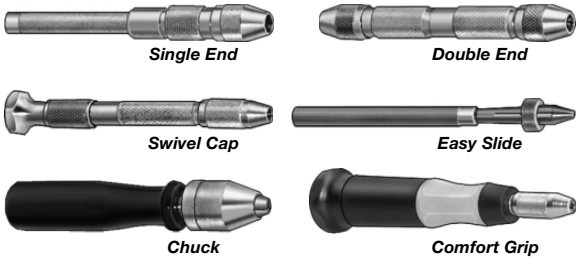

These hand-held vises have collet-style jaws. Use them to hold wires, scriber points, small files, taps, drills, pins, and other small objects.

Single End— Vises have an adjustable threaded collar and spring-tempered steel collets. The body is hollow to accept long wires and rods.

Double End— Each end has an adjustable threaded collar and a reversible steel collet. Body is hollow to accept long wires and rods.

Swivel Cap— Vise has a hexagonal swivel cap that turns independently of the body. Comes with two double-end collets. Collets are steel.

Easy Slide— For one-handed operation. The knurled ring slides forward to close the steel jaws. Body is hollow to accept long wires and rods.

Chuck— Vises have three adjustable steel jaws and a plastic handle.

Comfort Grip— Vises have a cushioned rubber grip and large hexagonal swivel cap for extra comfort. Plus, you can store drills, taps, and collets in the vise body. Collets are steel. Handle is ABS plastic. 7112A1 has a single-end collet; 7112A2 comes with two double-end collets.

Size Range	Dia.	Lg.		Each
Single End				
0″-0.055″ / 0-1.4 mm	⁵⁄₁₆″	3⅛″	8455A16	$12.75
0.025″-0.075″ / 0.64-1.91 mm	⅜″	3½″	8455A17	13.57
0.045″-0.125″ / 1.14-3.2 mm	⁷⁄₁₆″	3¹³⁄₁₆″	8455A18	15.32
0.110″-0.187″ / 2.80-4.75 mm	⁹⁄₁₆″	4″	8455A19	16.24
Double End				
0″-0.125″ / 0-3.2 mm	⁵⁄₁₆″	3¾″	8455A12	12.84
Swivel Cap				
0″-0.125″ / 0-3.2 mm	⁵⁄₁₆″	4″	8455A31	10.39
Easy Slide				
0″-0.051″ / 0-1.3 mm	¼″	4⅛″	5205A32	13.60
Chuck				
0.010″-0.312″ / 0.25-7.9 mm	1″	4½″	5232A55	25.23
0.040″-0.250″ / 1-6.3 mm	1″	5¾″	5204A41	12.83
Comfort Grip				
0″-0.059″ / 0-1.4 mm	¹³⁄₁₆″	4⅛″	7112A1	12.75
0″-0.125″ / 0-3.1 mm	1″	4⅝″	7112A2	14.37

4-Piece Single-End Vise Set— Includes one each of the four single-end pin vises listed above. Packed in a plastic pouch.

8455A14 ..... **Each** $61.78

For information about vises, see page 2563.

Wide-Grip Micro Hand Vise

Sized to fit your smallest items, this vise is 1⅞″ Lg. × 1¼″ Wd. × 1″ Ht. The jaw opens from ½″ to 1⅜″ wide—almost the full length of the vise. Ideal for holding flat objects by their edge.

Use the knurled thumb screw to tighten; it applies enough gripping force to hold an item securely without damaging it. Vise has four double-sided surfaces to provide eight gripping edges. Made of plated brass.

5123A16 ..... **Each** $22.50

Hand Vises

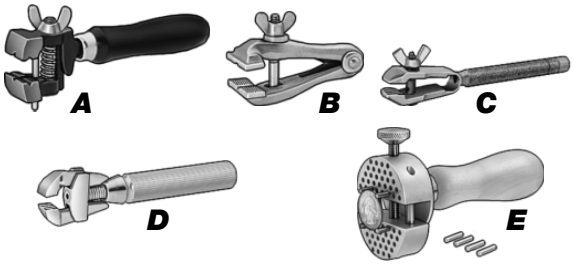

Hold these vises in your hand. Styles A-C have a wing nut closure and a spring in the handle to control the holding force and jaw opening. Turn the handle to open and close Style D. Turn the screw to open and close Style E. Vises have all-steel construction, except for Styles A and E, which are steel with a wood handle. *Style C* and *Style D* have a hollow handle for long wires to pass through. Style C handle is knurled for a better grip. *Style E* has eight removable pins that you arrange to hold work in position.

	Jaw Wd.	Throat Dp.	Max. Open.	Jaw Faces	O'all Lg.		Each
A	1¼″	⅝″	1″	V-Grooved	6¼″	**5042A17**	$11.52
B	1¼″	1″	7/16″	Serrated	3¾″	**5042A23**	29.55
C	¼″	½″	¼″	Serrated	4½″	**5042A29**	33.77
C	⅝″	9/16″	¼″	Serrated	4½″	**5042A38**	31.57
D	½″	9/16″	¼″	Serrated	4¾″	**5042A44**	25.10
E	1⅞″	⅜″	2¼″	Pins	5¼″	**5042A45**	50.89

Palmgren Drill-Press Vises

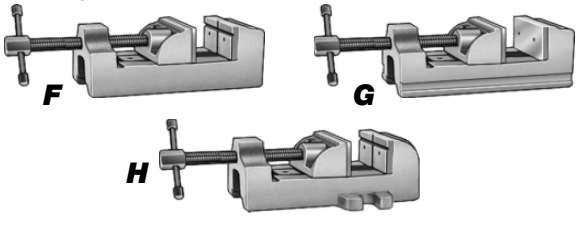

The traditional design of these vises makes them the industry favorite for drill press workholding. Vises have a cast iron body and an open base that allows clear-through drilling. All have replaceable steel jaw faces. Made in the U.S.A.

F Smooth-Base Vises—Their rectangular shape allows you to use them sitting on the bottom, on either side, or on end. 5226A5 can be used without jaws to expand the max. opening size.

G Side-Grooved Base Vises—A groove along the base enables you to clamp the vise to a workbench.

H Lug-Base Vises—Have two side lugs for bench mounting. 5272A1 requires ⅜″ bolts (not included); 5272A2 requires 9/16″ bolts (not included).

Jaw Wd.	Jaw Dp.	Max. Open.	Body Lg.	O'all Ht.	Palmgren No.		Each
(F) Smooth-Base Vises—*One smooth jaw, one grooved jaw*							
1½″	1″	1½″	4⅛″	1⅞″	6	**5226A2**	$54.40
2 7/16″	1½″	3″	6¾″	2⅝″	10	**5226A3**	63.65
2 7/16″	1½″	3½″★	6¾″	2⅝″	30	**5226A5**	66.28
4″	1¾″	4″	9⅛″	3¼″	14	**5226A6**	151.33
(G) Side Grooved Base Vise—*Two smooth jaws*							
3″	1¾″	3″	7⅜″	3″	13	**5226A7**	128.54
(G) Side Grooved Base Vise—*One smooth jaw, one grooved jaw*							
6″	2″	6″	11⅜″	3½″	DP60	**5226A75**	84.70
(H) Lug-Base Vises—*One smooth jaw, one grooved jaw*							
1¾″	1″	1½″	4¼″	1⅞″	120	**5272A1**	51.03
3″	1½″	3″	6¾″	2⅝″	320	**5272A2**	76.38

★ Opening size with jaws removed.

Micro-Jaw Hand Vises

Round Jaws Rubber/Brass

Narrow Jaws Stainless Steel

For delicate handling of small and lightweight items, these tiny vises grip firmly without distortion. Just squeeze the body together to open the jaws; release the body to grip. Made of Type 303 stainless steel.

Jaw Material	Max. Jaw Opening	Jaw Dimensions	O'all Size, Lg. × Ht.		Each
Round Jaws—*For round items*					
Rubber	⅝″	¼″ Dia.	2¼″ × 1″	**5097A51**	$5.89
Rubber/Brass	⅝″	¼″ Dia.	2⅜″ × ⅞″	**5097A52**	6.14
Narrow Jaws—*For flat items*					
Stainless Steel	¾″	3/16″ × ⅜″	2½″ × 1″	**5097A54**	7.98
Stainless Steel	¾″	¼″ × ¾″	2¾″ × 1″	**5097A53**	7.98
Rubber/Stainless	¾″	3/16″ × ⅜″	2½″ × ¾″	**5097A55**	7.98

Quick-Lock Drill-Press Vises

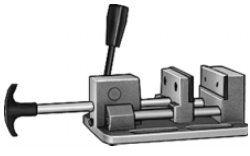

Light Duty Slide-Bar Style

Slide-Bar Style and Pump Action Slide-Bar Style

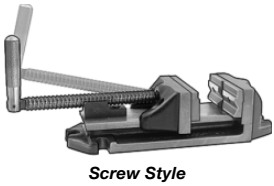

Screw Style

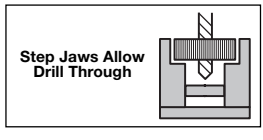

It's easy to tighten and lock the jaws on these vises. The jaw faces have steps to elevate the workpiece for workpiece drill through. All can be bench mounted (fasteners not included).

Light Duty Slide-Bar Style and Slide-Bar Style—Push the center lever to slide the movable jaw to your workpiece. Press the locking lever to exert final holding pressure. Vises have a cast iron body, replaceable smooth steel jaws, and an open base that allows clear-through drilling.

Pump Action Slide-Bar Style—Pump the locking lever to advance the jaws for final holding. The pumping action takes up slack in compressible materials such as wood and plastic. Vises have a cast iron body, replaceable smooth steel jaws, and an open base that allows clear-through drilling.

Screw Style—Lower the threaded rod into the base and turn the handle to advance the jaws for final holding. Jaws are made of hardened alloy steel; one is smooth and the other is grooved. You can reverse the grooved jaw to a smooth ground plate that's useful for holding small parts. Jaws are replaceable. Body is steel.

Jaw Wd.	Jaw Dp.	Max. Open.	Body Lg.	O'all Ht.	Mounting Holes Size	Mounting Holes Qty.		Each
Light Duty Slide-Bar Style								
3″	1 9/16″	3″	7¼″	3″	1¾″ × ½″ Slots	4	**5013A1**	$37.60
4″	1 21/32″	4″	12⅛″	3½″	17/32″ Lugs	4	**5013A2**	123.13
6″	2¼″	6″	14⅝″	4⅜″	⅝″ Lugs	4	**5013A3**	131.22
8″	2 5/32″	8″	18⅝″	4½″	25/32″ Lugs	4	**5013A4**	193.27
Slide-Bar Style								
3″	1¼″	3″	9″	2¾″	½″ Lugs	4	**5219A1**	176.14
4″	1 5/16″	4 11/16″	11¾″	3¼″	17/32″ Lugs	4	**5219A3**	225.40
6″	1 13/16″	6 3/16″	14¾″	3¾″	11/16″ Lugs	4	**5219A5**	287.36
8″	2″	8 3/16″	17⅞″	4½″	11/16″ Lugs	4	**5219A7**	406.77
Pump Action Slide-Bar Style								
3″	1¼″	3″	9″	2¾″	½″ Lugs	4	**5227A1**	176.14
4″	1 5/16″	4 11/16″	11¾″	3¼″	17/32″ Lugs	4	**5227A2**	241.38
6″	1 13/16″	6 3/16″	14¾″	3¾″	11/16″ Lugs	4	**5227A3**	303.17
8″	2″	8 3/16″	17⅞″	4½″	11/16″ Lugs	4	**5227A4**	418.60
Screw Style								
3″	1½″	2¼″	9″	2⅝″	⅝″ × 7/16″ Slots	4	**5221A51**	198.22
4″	1½″	3¼″	11½″	2⅞″	11/16″ × ½″ Slots	4	**5221A52**	250.92
4″	1½″	5″	13″	3″	11/16″ × 9/16″ Slots	4	**5221A53**	274.99
6″	2″	5″	15″	3¾″	11/16″ × ⅝″ Slots	5	**5221A54**	337.98
6″	2″	7″	17″	3⅞″	⅞″ × 11/16″ Slots	8	**5221A55**	427.38
8″	3″	9″	21¾″	5½″	1⅛″ × 1⅛″ Slots	8	**5221A56**	904.74

For information about vises, see page 2563.

Cross-Slide Drill-Press Vises

Cross Slide

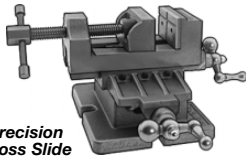

Precision Cross Slide

Designed to move work on two axes (X and Y), these vises are perfect for drilling and light milling applications where your work must be accurately positioned. Vises have a cast iron body and replaceable steel jaws; one is smooth, the other is grooved. The feed screws have precision Acme threads. Crank handles are solid steel and counterbalanced. Mounting fasteners not included.

Cross Slide— Dials are graduated in 0.1 mm increments. All have five mounting lugs; 6079A11 requires 1/2″ bolts, A12 and A13 require 5/8″ bolts.

Precision Cross Slide— Jaws are parallel to 0.002″. The dials are graduated in 0.001″ increments; each dial can be adjusted to start at zero. The base has a 5/8″ keyway. Vise has four mounting lugs and requires 1/2″ bolts. You can remove the vise from the base and use it as a traditional drill-press vise.

Jaw Wd.	Jaw Dp.	Max. Open.	Base, Lg.×Wd.	Ht.	Cross-Slide Travel		Each
Cross Slide							
3″	1 3/8″	3″	8 1/4″×4 1/2″	5 3/4″	5″	×5″ 6079A11	$102.62
6″	2″	6″	12 1/8″×7 1/8″	7 5/16″	8″	×8″ 6079A12	198.13
8″	2″	8″	12 1/8″×7 1/8″	7 5/16″	8″	×8″ 6079A13	266.20
Precision Cross Slide							
3″	1 3/4″	3″	7 5/8″×6 5/8″	5 1/2″	3 1/2″×4″	52645A61	486.23

Machine Vises

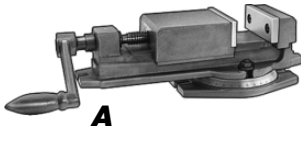

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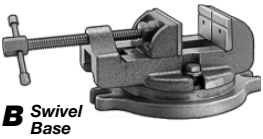

B Swivel Base

Vises have a cast iron body (unless noted) and replaceable hardened tool steel jaws to handle machining such as milling, drilling, shaping, and grinding. Mounting fasteners not included.

Vises with ***swivel base*** rotate 360°, lock in place, and are graduated in 1° increments. You can remove the vise from its swivel base and use it as a stationary model.

A Heavy Duty— The extra-heavy body provides great strength for production tooling and maintenance. All have a swivel base; smooth jaws; a keyway; a removable crank handle; and a steel pointer for quick, accurate degree setting. Base and bed are parallel to within 0.002″. Jaws are square to within 0.0015″. There are two mounting slots for 5/8″ bolts (3/8″ bolts for 5240A41). 5240A45 has a coolant trough.

B Medium Duty— For general maintenance operations. One jaw is smooth, the other is grooved. Base and bed are parallel to within 0.001″. Jaws are square to within 0.002″. All vises have two bolt slots for mounting. *Stationary base* vises have slots for 1/2″ bolts. *Swivel base* vises have slots for 5/8″ bolts.

Jaw Wd.	Jaw Dp.	Max. Open.	Body Lg.	O'all Ht.	Keyway Size		Each
(A) Heavy Duty— *Swivel Base*							
4″	1 1/2″	4″	14 1/2″	4 9/16″	3/8″	5240A41	$183.23
6″	2″	6″	20 3/16″	6″	5/8″	5240A43	367.52
6″	1 3/4″	8 7/8″	19 5/16″	6 1/4″	11/16″	5240A45★	521.77
(B) Medium Duty— *Stationary Base*							
4″	1 3/4″	4″	8 3/4″	3 3/8″	—	5265A8	148.94
6″	2″	6″	11 1/2″	3 7/8″	—	5265A9	326.26
(B) Medium Duty— *Swivel Base*							
4″	1 3/4″	4″	8 3/4″	4 3/4″	—	5265A2	224.31
6″	2″	6″	11 1/2″	5 1/2″	—	5265A3	435.31

★ Body is ductile iron.

Self-Centering Machine Vise

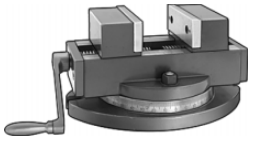

Both jaws move to automatically adjust the workpiece to its center, saving you time when drilling and milling jobs require quick, accurate centering. Base and bed are parallel to within 0.0012″ and jaws are square to within 0.0012″. Body is cast alloy steel. Jaws are steel; they're smooth and replaceable. Vise has a locking 360° swivel base that is graduated in 1° increments. Base has a 1/2″ keyway and two 1/2″×3/4″ mounting slots (fasteners not included).

Jaw Wd.	Jaw Dp.	Max. Open.	Body Lg.	O'all Ht.		Each
4″	1 1/2″	4″	10 1/4″	5″	4980A11	$483.33

Light Duty Drill-Press Vises

A good choice for less demanding applications, these vises are made of cast iron and have replaceable steel jaws (one is smooth, the other is grooved). They have center slide-bar construction for accuracy and stability. Four side slots allow mounting to a workbench (fasteners not included).

Jaw Wd.	Jaw Dp.	Max. Open.	Body Lg.	O'all Ht.	Mounting Slot Size		Each
3″	1 1/8″	3″	6 9/16″	2 7/16″	2″ ×1/2″	52855A21	$43.38
4″	1 1/2″	4″	7 9/16″	2 7/8″	2 1/8″×1/2″	52855A22	66.24
6″	2″	6″	10 3/4″	3 9/16″	2 7/8″×5/8″	52855A24	119.24
8″	2″	8″	13 15/16″	3 9/16″	3 1/4″×5/8″	52855A25	214.13

Variable-Angle Drill-Press Vises

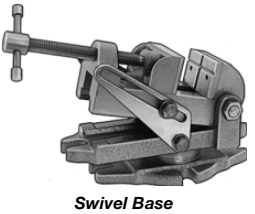

Swivel Base

Frequent angle changes aren't a problem for these vises. They hold your work at any vertical angle between 0° and 90°. Use for drilling, milling, grinding, and tapping. Vises have a cast iron body and steel jaws; one is smooth, the other is grooved. All have replaceable jaws and two mounting lugs, and require 1/2″ bolts (fasteners not included).

Swivel Base— The vise base rotates 360° and locks in place. Vises are graduated in 5° increments.

Jaw Wd.	Jaw Dp.	Max. Open.	Body Lg.	O'all Ht.		Each
Stationary Base						
2 7/16″	1 1/2″	2 1/2″	7 7/8″	3 7/16″	5202A15	$112.04
Swivel Base						
2 7/16″	1 1/2″	2 1/2″	7 7/8″	4 9/16″	5202A66	150.05
4″	1 1/8″	4″	12″	6 1/4″	5199A1	211.75

Any-Angle Precision Machine Vises

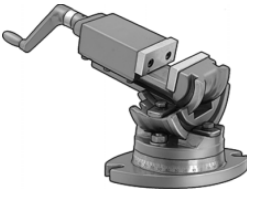

Three-way angle adjustment on these vises provides maximum flexibility when positioning your work—the most adjustability of any vises we offer. Vises tilt 45° to each side and have 90° vertical indexing that allows the body of the vise to be positioned at a right angle to the work surface. All are made of ductile iron with hardened and precision ground steel jaws that are square to within 0.0012″ for precise holding of flat objects. Jaws are smooth and replaceable. The base swivels 360°, locks in place, and is graduated in 1° increments. Base has a keyway and two mounting slots for 1/4″ bolts (not included).

Jaw Wd.	Jaw Dp.	Max. Open.	Body Lg.	O'all Ht.	Keyway Size		Each
2″	1″	2″	7 51/64″	4 1/2″	1/2″	4159A21	$346.94
4″	1 1/2″	4″	13 13/64″	7 1/4″	1/2″	4159A22	815.30
6″	1 3/4″	6″	16 15/16″	9 1/2″	1/2″	4159A23	1,143.36

Ultra-Precision Vises

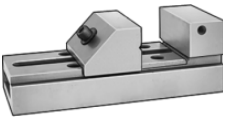

Also known as toolmakers' vises, these vises are built for precision grinding and inspection applications. The base and bed are parallel to within 0.0002″, and the jaws are square to within 0.0002″. Plus, the movable jaw pulls into the base at a 45° to 60° angle, preventing jaw lift. Use a 1/4″ hex wrench to tighten the jaws. The vise body is made of solid, one-piece steel. Jaws are steel; one is smooth, the other is grooved. The movable jaw is replaceable and has built-in horizontal and vertical V-grooves for holding round stock. Vises have holes for bench mounting (fasteners not included). 5218A54 has end pockets for clamping to sine plates (see page 2301 for sine plates).

Jaw Wd.	Jaw Dp.	Max. Open.	Body Lg.	O'all Ht.	*Mounting Holes* Dia.	Qty.		Each
2″	1″	3 1/4″	5 7/8″	2″	5/16″	4	5218A52	$440.96
3″	1 5/16″	4 3/4″	7 1/2″	2 5/8″	5/16″	4	5218A54	546.83

For information about vises, see page 2563.

Kurt Precision Angle-Lock Machine Vises

Achieve precise machining—the angle-lock design of these vises and their precision ground bed surfaces eliminate jaw lift and workpiece deflection. For each pound of force applied by turning the screw and moving the jaw horizontally, there is a half-pound of force pushing the jaw downward and seating it firmly on the vise bed.

Vises have four jaw-plate positions, allowing extra capacity when the jaw faces are in the outside position. The base is cast from 80,000-psi ductile iron; the jaws are hardened steel. The jaws and the top and bottom of the bed have ground surfaces; bed is flat within 0.001″ and parallel within 0.006″. A needle-roller bearing thrust collar reduces friction and increases clamping pressure. Vises have two holes for mounting to a machine and one hole for mounting to the optional swivel base (fasteners not included).

Optional swivel bases rotate 360°, lock in place, and are graduated in 1° increments. They have two holes for mounting to a machine. Hardware for mounting swivel base to vise is included; fasteners for mounting swivel base to a machine are not included. ***CNC-Machine Vise—*** Delivers repeatable clamping accuracy of 0.0005″.

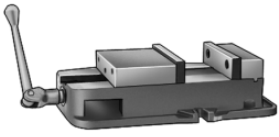

Standard

Jaw Wd.	Jaw Dp.	Max. Open.	Max. Cap.●	Keyway Size	Body Lg.	O'all Ht.	Vises: Mounting Holes		Vises: Each	Optional Swivel Bases: Mounting Holes		Optional Swivel Bases: Each
Standard Machine Vises												
4″	1 15/64″	3 7/8″	10 5/16″	1/2″	12 11/32″	3 31/64″	7/32″	8474A12	$557.04	15/16″ × 9/16″	5210A12	$375.32
6″	1 47/64″	8 51/64″	17 1/32″	11/16″	16 13/16″	4 39/64″	7/8″ × 21/32″	8474A16	560.89	1 3/64″ × 11/16″	5210A13	275.74
8″	2 3/16″	10″	20 3/4″	13/16″	21 13/16″	5 1/2″	7/8″	8474A14	1,425.01	29/32″ × 1 1/4″	5210A14	748.44
CNC-Machine Vise												
6″	1 47/64″	6″	14 3/4″	11/16″	15 1/16″	4 59/64″	13/16″ × 5/8″	8474A17	783.41	—	—	—

● With jaw faces assembled in outside positions.

Air-Powered Machine Vises

Step on the foot control to instantly close these vises; step again to release. They're great for repeatedly inserting and removing workpieces. Vises have soft steel jaw inserts you can remove to accommodate jigs and fixtures. Four mounting lugs permit bench and machine table mounting (fasteners not included). Multiply your operating pressure by the gripping force factor to calculate your force. To control the amount of force, add an air regulator (see pgs. 971-975).

Single-Acting Vise with Flat Jaws— Vise has a maximum travel of 5/8″. Ram is driven by a diaphragm. Furnished with two 5-ft. long air hoses and foot control valve with guard. Hose connections on vise and foot control valve are 1/4″ NPT female.

Spring-Return Vises with Recessed Parallel Jaws— Vises have a max. travel after setting of 3/8″. Ram is driven by a diaphragm-type spring return air cylinder. Furnished with two 5-ft. long air hoses and foot control valve. Hose connections on vise and foot control valve are 1/4″ NPT male.

Double-Acting Vises with Recessed Parallel Jaws— Vises have a piston-type double-acting air cylinder that returns jaw under air pressure. You can shorten the jaw opening by attaching a stop rod to the back of the movable jaw. Furnished with three 5-ft. long hoses and a foot control valve. Hose connections on vise and foot control valve are 1/4″ NPT male.

Single Acting with Flat Jaws

Spring Return with Recessed Parallel Jaws

Double Acting with Recessed Parallel Jaws

Jaw Wd.	Jaw Dp.	Max. Jaw Opening	Max. Operating Pressure	Max. Gripping Force Factor	Lg.×Ht.		Mounting Lug Size		Each
Single-Acting Vise with Flat Jaws									
3″	2″	2 5/8″	150 psi	15	12″	× 6″	3/8″	5257A11	$314.65
Spring-Return Vises with Recessed Parallel Jaws									
3″	1 1/4″	3 1/8″	120 psi	15	10 1/4″	× 5 3/8″	17/32″	5269A24	353.73
4″	1 5/16″	4 5/8″	120 psi	15	13 1/2″	× 5 3/8″	21/32″	5269A21	404.08
Double-Acting Vises with Recessed Parallel Jaws									
3″	1 1/4″	3 1/8″	120 psi	15	13 11/16″	× 5 3/8″	17/32″	5269A25	493.16
4″	1 5/16″	5″	120 psi	15	18 1/4″	× 5 3/8″	21/32″	5269A22	547.38
6″	2 1/2″	7 3/8″	120 psi	19	25 5/8″	× 6 17/32″	11/16″	5269A23	1,003.10

Machine Vise Workstop

Position this stop over one of the 1/2″-1″ thick vise jaws on your machine vise. It creates a workstop to allow proper workpiece positioning and provides full-range movement without removing the spring. Turn the socket cap screw to adjust tension. Made of heat-treated cold-rolled steel that's black-oxide plated. Size is 1 7/16″ Lg. × 1″ Wd.

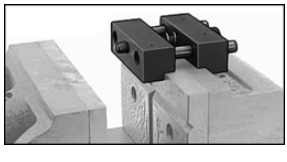

51985A67 ..... **Each** $16.22

Fine-Adjust Rotary Tables

All of these tables rotate 360°; just turn the crank handle(s) to accurately position your work. You can bolt these tables to your drill press, milling machine, or grinder for milling, routing, shaping, grinding, and cutting slots and keyways. They're especially useful for precision layout, screening, and positioning. Made of cast iron, tops are ground and machined to 0.001″ and are graduated in 1° increments. Tables have a worm gear drive to provide smooth operation and an adjustable pointer on the body to set the table top. All have a 1 5/8″ center bore and two 5/8″ × 1″ T-slots at 90°. The handle that controls the 360° rotation of the top is graduated to 1/20°. Mounting fasteners not included.

Cross-Slide Rotary Tables— In addition to controlling the rotation of the tables, you can manually control their lateral and transverse positioning via ball crank handles that are graduated to 0.001″. All have mounting holes and adjust to compensate for wear and maintain accuracy.

Horizontal/Vertical Rotary Tables— Use tables in either the horizontal or vertical position. Tables have four mounting holes (two horizontal holes and two vertical holes).

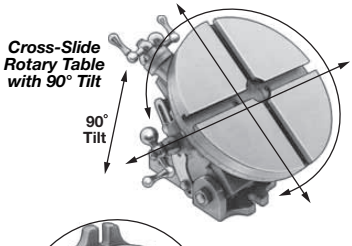

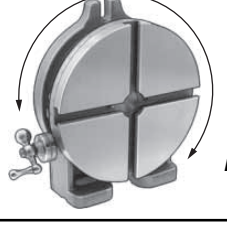

Horizontal/ Vertical Rotary Table

Table Dia.	Load Cap., lbs.	Base Size	Table Travel (X × Y)	Keyway Size	O'all Ht.	Gear Ratio	Mounting Holes Dia.	Mounting Holes Qty.		Each
Cross-Slide Rotary Tables										
8″	50	6 1/2″ × 7 1/2″	4″ × 4″	5/8″	5 1/2″	40:1	3/4″	4	5207A4	$784.13
10″	50	6 1/2″ × 7 1/2″	4″ × 4″	5/8″	5 5/8″	40:1	3/4″	4	5207A7	905.29
Cross-Slide Rotary Tables with 90° Tilt—Adjust from 0° to 90°										
8″	50	5″ × 9″	4″ × 4″	5/8″	5″	40:1	5/8″	2	5207A5	866.69
10″	50	5″ × 9″	4″ × 4″	5/8″	5 3/4″	40:1	5/8″	2	5207A8	1,022.22
Horizontal/Vertical Rotary Tables										
8″	50	12″ × 9 11/16″	—	5/8″	3 7/8″	40:1	5/8″	4	5209A1	571.54
10″	50	12″ × 9 11/16″	—	5/8″	3 7/8″	40:1	5/8″	4	5209A2	632.26

Fine-Adjust Cross-Slide Tables

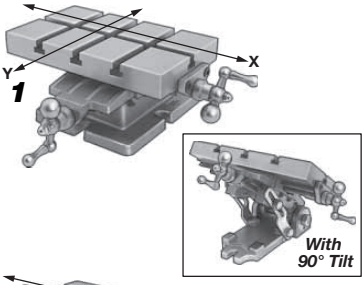

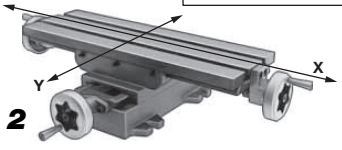

Turn the crank handles or hand wheels to position your work exactly where you need it—on two axes (X and Y). These tables are well-suited for inspection and layout jobs, as well as for boring, drilling, grinding, and milling operations. The table tops are made of cast iron. Each base has mounting lugs for 1/2″ dia. bolts. Mounting fasteners not included.

Style 1— The dials are graduated in 0.001″ increments and have a thumb screw for zero setting. The top is precision ground to ±0.001″. Tables have one longitudinal T-slot and three equally spaced cross T-slots. T-slots are 7/16″ × 3/4″. The dovetail slides adjust to compensate for wear and maintain accuracy. The base has a keyway. Table *with 90° tilt* adjusts from 0° to 90°.

Style 2— Hand wheels on both ends of this table let you work from the most accessible side. The dials are graduated in 0.02 mm increments. The top is machined and ground to 0.01″ and has two 9/16″ T-slots that are 2 3/8″ center-to-center. Slides adjust to compensate for wear and maintain accuracy.

	Table Size	Load Cap., lbs.	Base Size	Table Travel (X×Y)	Keyway	O'all Ht.	No. of Mounting Lugs		Each
Cross-Slide Tables									
1	10″ × 6″	50	7 5/8″ × 6 3/8″	6″ × 4″	5/8″	4 3/8″	4	**5234A1**	$547.55
1	12″ × 6″	50	7 5/8″ × 6 3/8″	8″ × 4″	5/8″	4 3/8″	4	**5234A2**	626.05
2	18 5/8″ × 6 3/16″	150	12″ × 7 1/8″	12″ × 8″	—	5 3/16″	5	**5179A29**	309.27
Cross-Slide Table with 90° Tilt									
1	12″ × 6″	50	9″ × 5″	8″ × 4″	5/8″	4 5/8″	2	**5234A6**	820.45

Manually Operated Turntables

Rotate these tables the old-fashioned way. They make it easy to position objects for spray painting, assembly and repair work, welding, and more. Turntables are made of steel. All include a rubber platform pad to protect your components from scratches.

Floor models have an adjustable height. 7869T35 has a pedestal base and 7869T36 has a tripod base.

Load Cap., lbs.	Platform Dia.	O'all Ht.		Each
Bench Top				
Pedestal				
500	8″	4″	**7869T27**	$83.00
500	12″	4″	**7869T32**	110.00
Surface				
1,000	18″	7/8″	**7869T33**	192.00

Load Cap., lbs.	Platform Dia.	O'all Ht.		Each
Bench Top (Cont.)				
Surface (Cont.)				
1,000	24″	7/8″	**7869T34**	$287.00
Floor				
300	18″	21″-32″	**7869T35**	214.00
300	30″	21″-32″	**7869T36**	445.00

Motorized Turntables

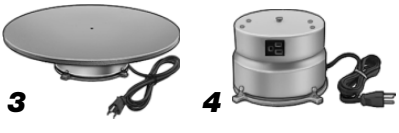

Plug these turntables into a 115 VAC, 60 Hz outlet and they're ready to rotate. Turntables have one-way clockwise rotation. Motor has a 6-ft. power cord with three-prong plug. The top has a through mounting hole you can use to mount objects on the turntable. The base has holes for bench mounting (fasteners not included).

Style 3 is made of both steel and aluminum. ***Style 4*** is made entirely of aluminum and has a three-prong electric outlet to provide power to an object mounted on the turntable.

	Load Cap., lbs.	Platform Dia.	rpm	O'all Ht.	Rotating Electric Outlet	Base Mounting Holes Dia.	Base Mounting Holes Qty.	Top Through Mounting Holes Dia.	Top Through Mounting Holes Qty.		Each
3	100	17″	2	4 1/4″	No	3/16″	4	1/4″	1	**6034K31**	$191.53
3	150	23″	2	5 1/8″	No	3/16″	4	1/4″	1	**6034K32**	286.44
4	100	6 3/8″	2	5″	Yes	3/16″	4	1/4″	1	**6034K51**	225.93
4	150	8 1/2″	2	5 1/2″	Yes	3/16″	4	1/4″	1	**6034K58**	315.79

Precision Positioning Slides

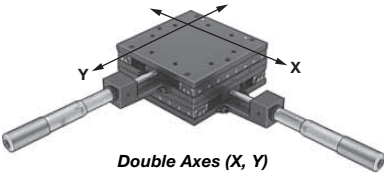

Double Axes (X, Y)

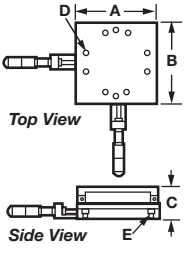

A spring-loaded analog micrometer drive system gives these slides precise, repeatable low-friction movement along one linear axis (X) or two linear axes (X and Y). The micrometer is graduated to 0.001″ (double axes slides have two micrometers). All slides come fully assembled with tapped holes for fixture mounting and have drilled counterbored holes on the bottom for installation. Mounting fasteners not included.

Precision Positioning Slides— Straight line accuracy is 0.0005″ per inch of travel. Carriage is black anodized aluminum with steel ball bearings.

Ultra-Precision Positioning Slides— Straight line accuracy is 0.00008″ per inch of travel. Slides are made of black anodized aluminum and have Type 440C stainless steel ball bearings for low-friction linear movement without backlash or side play. All (except 5239A45 and A56) have a knurled locking screw to lock slide without affecting position. The micrometer also provides travel-distance readout. Top and bottom surfaces are precision ground.

Load Cap., lbs.	Travel (X, X×Y)	Top Mounting Holes (D) Screw Size	Top Mounting Holes (D) Qty.	Bottom Mounting Holes (E) Size ♦	Bottom Mounting Holes (E) Qty.	(A)	(B)	Single Axis (X) (C)		Single Axis (X) Each	Double Axes (X, Y) (C)		Double Axes (X, Y) Each
Precision Positioning Slides													
4	0.50″, 0.50″×0.50″	2-56	10	#2	4	1.25″	1.25″	0.38″	**60935K11**	$221.71	0.76″	**60935K21**	$418.92
12	0.50″, 0.50″×0.50″	4-40	4	#4	2	1.50″	1.50″	0.62″	**60935K13**	242.44	1.26″	**60935K23**	458.77
20	0.50″, 0.50″×0.50″	6-32	6	#6	2	1.75″	1.75″	0.75″	**60935K14**	218.36	1.50″	**60935K24**	412.11
20	1.00″, 1.00″×1.00″	6-32	6	#6	2	1.75″	1.75″	0.75″	**60935K15**	248.66	1.50″	**60935K25**	462.78
30	2.00″, 2.00″×2.00″	10-32	10	#10	2	4.12″	4.12″	0.91″	**60935K18**	404.92	1.82″	**60935K28**	762.90
60	1.00″, 1.00″×1.00″	10-32	8	#10	2	2.62″	2.62″	1.00″	**60935K17**	265.37	2.00″	**60935K27**	497.74
Ultra-Precision Positioning Slides													
6	0.50″, 0.50″×0.50″	4-40	6	#4	2	1.28″	1.28″	0.50″	**5239A19**	280.97	1.00″	**5239A51**	607.14
25	0.50″, 0.50″×0.50″	6-32	8	#6	2	1.75″	1.75″	0.75″	**5239A21**	307.67	1.50″	**5239A52**	679.76
44	1.00″, 1.00″×1.00″	10-32	8	1/4″	2	2.62″	2.62″	1.00″	**5239A43**	386.19	2.00″	**5239A55**	854.76
95	1.00″, 1.00″×1.00″	1/4″-20	12	1/4″	2	5.00″	5.00″	1.00″	**5239A45**	479.10	2.00″	**5239A56**	1,059.52

♦ Holes are counterbored.

Adjustable-Height Support Stands

Also known as laboratory jacks, these stands support small shop and laboratory equipment. They have a precision-machined scissor mechanism and an easy-grip thermoplastic control knob for height adjustments. The platform, base, scissor lift, and all hardware are made of 300 series stainless steel.

Note: Do not make height adjustments with weight on the stand.

Ratchet Handle for 9967T45—For easier height adjustments, just remove the knob on the jack and replace it with this 6⅞″ long ratchet handle.

Platform Size, Lg.×Wd.	Load Cap., lbs.	Projection Range		Each
3″×3″	20	2½″ to 5″	9967T42	$128.04
4″×4″	30	2½″ to 5″	9967T51	141.42
6″×6″	35	3″ to 9¾″	9967T43	183.74
8″×8″	55	3½″ to 13″	9967T44	221.28
10″×10″	80	3½″ to 13″	9967T55	305.96
12″×12″	150	4″ to 19½″	9967T45	460.53
Ratchet Handle for 9967T45			9967T59	60.64

Monitor and Equipment Positioning Arms

Units have a platform for supporting monitors and other equipment. Both have a black powder-coated finish.

Style A—The arm projects the platform 21½″ forward from the mounting point. The platform extends from 16″ to 27¼″ wide (holds most 13″ to 27″ monitors) and has a ¾″ high lip on the front and a safety strap to secure the monitor. The platform swivels 90° and can tilt down 10°. Includes a mounting plate with four 5⁄16″ dia. holes for attaching to a wall (fasteners included). Made of steel.

Style B—Mount monitor directly to the base with the included hardware. Holds most 19″ to 20″ monitors. The base swivels 360° and does not tilt. Includes a mounting plate with one 5⁄16″ dia. center hole for bolting directly to any horizontal surface (fasteners included). Made of heavy duty steel.

ⓘ For additional mounting and attaching dimensions, go to mcmaster.com and search for **4631TAC**.

A

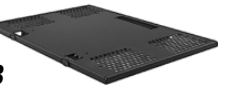

B

	Mounting Style	Load Cap., lbs.	Platform Size, Lg.×Wd.		Each
A	Wall Mount	100	12⅛″×16″-27⅜″	1464A8	$59.15
B	Surface Bolt	125	13″ ×19½″	1464A7	71.16

Extra-Large Monitor Mounting Platforms

Designed to mount very large monitors to the wall. Made of epoxy-coated steel.

Style C—The arm projects the platform 20½″ forward from the mounting surface. The platform swivels 360° and tilts down 10°. Includes a lock and key to secure the monitor to the platform. Units have a mounting plate for attaching to a single wall stud. UL listed.

Style D—The platform swivels 360° and tilts down 30°. Includes mounting brackets for attaching to wall studs (wood stud mounting fasteners included). Unit has a single wall stud and projects 22½″ from the wall. UL and C-UL listed.

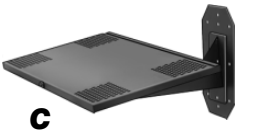

C

D

Monitor Mounts

	Fits Monitor Size	Load Cap., lbs.	Maximum Platform Size, Lg.×Wd.		Each
C	19″ to 20″	125	13″×22″	9127T54	$139.99
D	25″ to 27″	125	10″×31″	9127T34	305.32

Video Equipment Mounting Brackets

Designed to fit under the platform of the monitor mounts shown above. Brackets are 6½″ deep and have an adjustable width from 13¼″ to 17¼″. Mounting fasteners are included.

Bracket for Style C has an adjustable height from 1½″ to 2¾″.

Bracket for Style D has an adjustable height from 2 11⁄16″ to 4½″.

		Each
For Style C	9127T68	$95.74
For Style D	9127T39	90.42

Flat Panel Monitor Ceiling Mounts

Save space by suspending your flat-screen monitor from the ceiling. Mounts are made of steel with a black powder-coated finish. All swivel 360° and include mounting plates and fasteners.

Style E mounts tilt down 20° and up 5°. They include clips to route cables along the pole. Both are compatible with 75 mm and 100 mm VESA (Video Electronics Standards Association) mounting hole patterns. 4653T12 is also compatible with 200 mm and 100 mm×200 mm VESA mounting hole patterns.

Style F mount tilts down 15°. Route cables through the pole. Supports a mounting hole pattern of up to 500 mm×860 mm.

E

F

	Fits Flat Panel Size	Load Cap., lbs.	Pole Height		Each
E	10″ to 23″	25	17″ to 27″	4653T11	$58.55
E	25″ to 37″	75	18″ to 30″	4653T12	90.73
F	37″ to 63″	180	23″ to 35″	4653T13	167.64

Warning! ***Capacity is based on maximum projection. Never exceed capacities.***

For additional mounting and attaching dimensions for the products on this page, go to mcmaster.com and search for **5164TAC**.

Flat Panel Monitor Positioning Arms

Light Duty Surface Mount

Light Duty Wall Mount

Optional Desk-Top Mounting Adapter

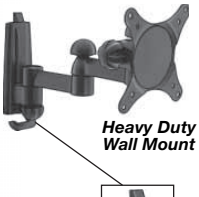

Heavy Duty Wall Mount

Wall Plate

Light Duty Surface-Mount Arms

Arms are made of die cast aluminum and have gas springs that counterbalance the weight of the monitor for easy positioning. Arms mount directly on 1″ to 2″ thick horizontal work surfaces and raise the monitor a maximum of 14″ above the work surface. The attaching point swivels 360°, tilts up 120°, tilts down 60°, and pans side-to-side 90°. Arms include mounting plates for both 75 mm and 100 mm VESA (Video Electronics Standards Association) mounting hole patterns.

1993A3 bolts directly to your work surface (fasteners included); 1993A5 has a clamp mount.

Mounting Style	Load Cap., lbs.	Base Size	Projection Range		Each
Surface Bolt	6 to 21	4″ Dia.	4″ to 22″	**1993A3**	$312.50
Surface Clamp	6 to 21	4″ Dia.	4″ to 22″	**1993A5**	312.50

Light Duty Wall-Mount Support Arms

Great for lightweight equipment mounting, these arms are made of die cast aluminum with a silver powder-coated finish. Base has a 75 mm and 100 mm VESA (Video Electronics Standards Association) mounting hole pattern. Furnished with a 3/16″ Allen wrench and wood stud mounting fasteners.

All attaching points rotate 360° and tilt up and down 180°. 4628T12 and T13 also tilt side-to-side 210°.

Maximum Projection	Load Cap., lbs.	Base Size, Wd.×Ht.		Each
3 3/16″	40	2 7/16″×3 13/16″	**4628T11**	$45.45
5″	40	2 7/16″×3 13/16″	**4628T12**	63.64
11″	40	2 7/16″×3 13/16″	**4628T13**	90.91

Heavy Duty Wall-Mount Support Arms

Use these support arms to mount LCD and plasma monitors as well as flat-screen televisions. Designed for easy installation, units have a wall plate with a built-in bubble level. After mounting the wall plate, slide the bracket (with arms and attaching point) over the wall plate until the two pieces snap together. Wall plate, support arms, and attaching point are die cast aluminum; bracket is steel. All components have a black powder-coated finish. Dual-arm design allows you to position screens up to 8″ from the wall and 8″ off-center from the wall stud. The attaching point tilts 15° up and down and swivels up to 30° side-to-side. Wall plate has a hook to keep cords organized. Furnished with mounting fasteners.

Compatible with 75 mm, 100 mm, and 200 mm VESA (Video Electronics Standards Association) mounting hole patterns. 1133A2 is also compatible with a 400 mm VESA mounting hole pattern.

You can attach the wall plate to the ***optional desk-top mounting adapter*** (sold separately). Adapter securely clamps to most desk tops and tables. Made of steel with a black powder-coated finish. Mount the wall plate (not included) on the adapter from a min. of 8 1/2″ to a max. of 16 1/2″ above the desk top.

Fits Monitor Size	Load Cap., lbs.	Base Size, Wd.×Ht.		Each
10″ to 30″	60	1 3/4″×6 1/2″	**1133A1**	$41.45
10″ to 37″	100	2 1/2″×7 1/2″	**1133A2**	65.45
Optional Desk-Top Mounting Adapter (22 1/2″ Ht.×6″ Wd.×4″ Dp.)			**1133A3**	36.36

Positioning Arm Systems and Components

These systems have rigid arms that move horizontally with a single touch as well as friction adjustment to control drift. You can select a complete system or design your own using the components we offer below. All components are steel with a black enamel finish (except where noted).

(A&B) Bases

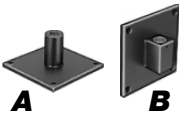

A B

Fasteners are not included.

(A) Bench-Bolt Mounting Plate—For use with rigid (C) as well as counterbalanced (D) arms.

(B) Wall-Mount Mounting Plate—For use with rigid arm (C). It can be used with a counterbalanced arm (D) when a rigid arm (C) is also used.

Size	Load Cap., lbs.	Mounting Hole Size (Qty.)		Each
A 6″ Lg.×6″ Wd.	100	13/32″ Dia. (4)	**5164T51**	$80.39
B 6″ Lg.×6″ Wd.	100	13/32″ Dia. (4)	**5164T52**	80.39

(C&D) Connectors

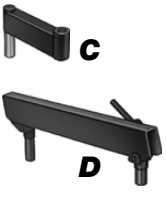

C D

(C) Rigid Arms—Use them alone for horizontal movement or combine with counterbalanced arms (D) for both vertical and horizontal movement. You can connect multiple rigid arms up to a maximum length of 48″.

(D) Counterbalanced Arms—Provide vertical movement (+40°, –35°). Load capacity is adjustable (use a 1/2″ socket wrench, not included). Arms connect directly to a bench-mount mounting plate (A). When used with a wall-mount mounting plate (B), a rigid arm (C) is required.

	Lg.	Load Cap., lbs.		Each
C	6″	100	**5164T61**	$82.69
C	12″	100	**5164T62**	90.38
C	18″	100	**5164T63**	102.00
C	24″	100	**5164T92**	108.00
D	13 1/2″	18 to 43	**5164T74**	241.47
D	18″	6 to 33	**5164T72**	285.76
D	24″	16 to 35	**5164T73**	334.00

(E-J) Ends

E F G H J

Fasteners are not included, except where noted.

(E) Straight and ***(F) Tee Extensions***—Use these extensions alone; tee extension (F) can also be used with load shelf (H). When connecting to a rigid arm (C), a connector pin (J) is required.

(G) Pivoting Plate—Allows 360° rotation of your load. It can be used with a rigid arm (C) as well as load shelf (H).

(H) Load Shelf—For use with tee extension (F) as well as pivoting plate (G). Made of wood with a black veneer top. Fasteners included.

(J) Connector Pin—Furnished with two retaining rings. It's required when connecting a straight (E) or tee (F) extension to a rigid arm (C).

	Size	Load Cap., lbs.	Mount. Hole Size (Qty.)		Each
E	8 3/4″ Lg.	100	1/4″ Dia. (2)	**5164T81**	$62.75
F	9 3/4″ Lg. ×7 1/2″ Wd.	—	1/4″ Dia. (4)	**5164T82**	56.84
G	6″ Lg. ×6″ Wd.	100	13/32″ Dia. (4)	**5164T83**	82.00
H	18 3/8″ Wd.×12″ Dp.	100	10-32 thread (8)	**5164T84**	44.21
J	7/8″ Dia.×3 7/8″ Lg.	—	—	**5164T85**	9.91

Complete Positioning Arm Systems

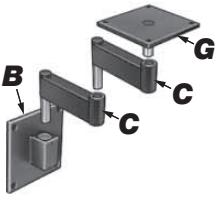

B C C G

Both of these wall-mount systems include a 6″ Lg.×6″ Wd. wall-mount mounting plate (B) with four 13/32″ dia. mounting holes, and a pivoting plate (G) with four 13/32″ dia. mounting holes that swivels 360° but does not tilt. 5164T1 also has two 12″ rigid arms (C); T2 has two 18″ rigid arms (C).

Max. Projection	Load Cap., lbs.		Each
24 3/4″	100	**5164T1**	$302.61
36 3/4″	100	**5164T2**	340.43

Warning! ***Capacity is based on maximum projection. Never exceed capacities.***

For additional mounting and attaching dimensions for the products on this page, go to mcmaster.com and search for **5031TAC**.

Ball-Grip Positioning Arms

Create your own custom positioning arm by choosing a base, connector, and end from the selection below. All pieces are aluminum with a black powder-coated finish. Bases and ends have a 1½″ dia. ball on one side that quickly snaps into the connector, allowing it to swivel 360°. Ball is made of nitrile rubber and has a temperature range of –40° to +140° F. Maximum load capacity is 10 lbs. (except Style D is 1 lb.). Mounting fasteners are not included.

(A-G) Bases—Attach the ball end to the (H) connector; the other end mounts directly to your work surface.

(A) Round—Has seven 0.22″ dia. mounting holes.

(B) Parallel-Bar Clamp—Clamps onto square and rectangular bar and tubing. Fits a maximum bar size of 2⅛″ Ht.×2½″ Wd.

(C) Round-Bar Clamp—Clamps onto round bars, rails, and pipes. Fits a maximum OD of 1¼″.

(D) Suction Cup—Has a rubber suction cup that quickly attaches to smooth surfaces such as glass and polished metal.

(E) Swinging Arm—The arm swivels 360° around the base. The base has four ¼″ dia. mounting holes. 5031T77 requires two ½″ wide hose clamps (not included) for mounting to pipe.

(F) Double Swinging Arm—Similar to Style E, except these have two arms for greater extension. Base has four ¼″ dia. mounting holes. 5031T25 requires two ½″ wide hose clamps (not included) for mounting to pipe.

(G) Lift Lock Arm—You can lock the arm into any position. Base swivels 360° and tilts 90° up and 65° down; it has four 5/16″ dia. mounting holes. 5031T26 lifts a maximum of 13¼″; T27 lifts a maximum of 15¾″.

Mounting Style	Base Size, Lg.×Wd.	Max. Ht.	Max. Extension		Each
A..Bench Bolt	2.44″ Dia.	2.16″	____	5031T63	$15.29
B..Bar Clamp	3.8″ ×1.2″	2.42″	____	5031T28	24.17
C..Pipe Clamp	2.38″×0.90″	2.88″	____	5031T38	21.43
D..Bench Suction	3.32″ Dia.	4.12″	____	5031T58	22.06
E...Bench Bolt/Ceiling	3.50″×3.50″	6″	6″	5031T74	67.91
E...Wall/Pipe	4″ ×3.31″	4.50″	8.50″	5031T77	76.69
F...Bench Bolt/Ceiling	3.50″×3.50″	8.13″	12″	5031T24	109.42
F...Wall/Pipe	4″ ×3.31″	6.38″	14.50″	5031T25	118.54
G..Bench Bolt/Ceiling	3.50″×3.50″	14.62″	13.25″	5031T26	157.56
G..Wall/Pipe	4″ ×3.31″	13.13″	15.75″	5031T27	168.68

(H) Connectors

Use to connect bases and ends.

	O'all Lg.		Each
H...3½″		5031T31	$20.54
H...5⅝″		5031T68	28.51
H...9″		5031T33	39.40

(J-M) Ends—Attach the ball end to the (H) connector; the other end mounts directly to your equipment.

(J) Round—Has seven 0.22″ dia. mounting holes.

(K) Rectangular—Has twenty-four 7/32″ dia. mounting holes.

(L) Flat Panel—Base on 5031T11 has a 75 mm VESA (Video Electronics Standards Association) mounting hole pattern; base on T12 has a 100 mm VESA mounting hole pattern.

(M) Quick Release—Has a spring-loaded clip that securely holds small (1.5″ to 3.5″ wide) hand-held devices.

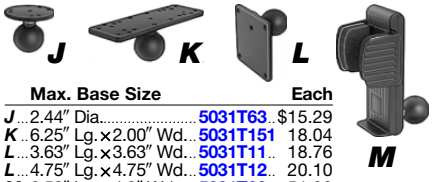

	Max. Base Size		Each
J...2.44″ Dia.		5031T63	$15.29
K..6.25″ Lg.×2.00″ Wd.		5031T151	18.04
L...3.63″ Lg.×3.63″ Wd.		5031T11	18.76
L...4.75″ Lg.×4.75″ Wd.		5031T12	20.10
M..6.53″ Lg.×4.9″ Wd.		5031T69	51.20

Ultra Flexible Positioning Arms

Easily bend or pivot these support arms to hold small equipment such as machine lights, medical equipment, inspection lights, and microphones in almost any position.

(N) Ball and Socket Arm

This arm has a plate-style attaching point with ball connector and a flexible shaft that stays put where you position it. Arm is made of black die cast zinc and requires #10 screws or bolts for mounting (not included).

	Maximum Projection	Load Cap., lbs.	*Mounting Point* Size, Lg.×Wd.	Swivel	Tilt	Mount. Hole Size (Qty.)	*Attaching Point* Size, Lg.×Wd.	Swivel	Tilt	Mount. Hole Size (Qty.)		Each
N..	14″	5	2″×3″	None	None	13/64″ (3)	2″×1 11/16″	360°	210°	11/64″ (8)	1492A1	$44.31

(P) Threaded-End Arms

The threaded ends allow you to mount these arms on any surface that has a matching threaded hole. Thread connections are ⅛″-27 NPSM or ⅝″-27 UNF. Arms are made of steel; attaching points do not swivel.

	Maximum Projection	Load Cap., lbs.	Mounting Point Size	Attaching Point Thread Size	*Chrome Finish*	Each	*Black Vinyl Finish*	Each
P...	24″	0.46	⅛″-27 male×⅜″ Lg.	⅛″-27 male	50035A665	$8.61	50035A683	$8.61
P...	15″	1.06	⅛″-27 male×⅜″ Lg.	⅛″-27 male	50035A663	6.59	50035A682	6.59
P...	18″	1.93	⅝″-27 male×⅜″ Lg.	⅝″-27 female	50035A673	8.98	50035A693	8.98
P...	12″	3.25	⅝″-27 male×⅜″ Lg.	⅝″-27 female	50035A672	7.06	50035A692	7.06
P...	9″	1.88	⅛″-27 male×⅜″ Lg.	⅛″-27 male	50035A661	4.19	50035A681	4.19
P...	6″	9	⅝″-27 male×⅜″ Lg.	⅝″-27 female	50035A671	6.21	50035A691	6.21

(Q-S) Gooseneck Arms

The attaching points on these arms do not swivel.

Style Q—A dual base lets you mount these arms by bolting through or clamping onto surfaces up to 2″ thick. Arms are hollow and have an opening at the base for cords to pass through. Arms are steel with a baked-on gray painted finish. Thread connection is ⅛″-27 NPT and extends ¼″ from the end of the arm.

Style R—Clamp these bases onto surfaces up to 2″ thick. Polyurethane pads on the clamp prevent marring on the mounting surface. Arms are steel with a black vinyl finish; have a ⅜″-16 female thread connection that is ½″ deep.

Style S—The magnetic base on these arms has 100 lbs. of pull strength for extra holding power. Place them on any magnetic surface. Arms are steel with a black vinyl finish; have a ⅜″-16 female thread connection that is ½″ deep.

	Maximum Projection	Load Cap., lbs.	*Mounting Point* Size	Mount. Hole Size (Qty.)	Attaching Point Thread Size		Each
Q..	26″	1.5	2″ Wd.×2⅞″ Lg.	¼″×⅝″ (4)	⅛″-27 male	49985A13	$103.17
Q..	16″	1.5	2″ Wd.×2⅞″ Lg.	¼″×⅝″ (4)	⅛″-27 male	49985A12	111.82
R..	24″	2	2″ Wd.×2″ Dp.	____	⅜″-16 female	49985A16	49.04
R..	16″	3	2″ Wd.×2″ Dp.	____	⅜″-16 female	49985A17	41.98
S...	25″	2	3⅜″ Dia.	____	⅜″-16 female	49985A18	45.92
S...	16″	3	3⅜″ Dia.	____	⅜″-16 female	49985A19	38.57

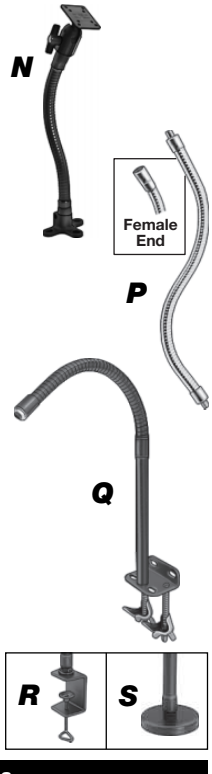

Warning! ***Capacity is based on maximum projection. Never exceed capacities.***

Support Arms

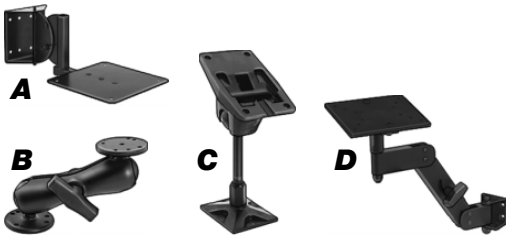

All have a plate-style mounting point for fastening directly to your wall, ceiling, or benchtop.

Style A— Made of steel with a black powder-coated finish, these arms come with a slip-resistant pad that attaches to the platform and reduces vibration. Mounting fasteners are not included.

Style B— Made of aluminum with a black powder-coated finish. It has two nitrile ball joints that can be locked into position with the nylon hand knob. Mounting fasteners are not included.

Style C— Made of aircraft-grade aluminum, this arm has a polymer ball joint that allows for infinite angles of adjustment. Arm locks in place with a nut on the mounting plate. Mounting fasteners are not included.

Style D— Made of aluminum with a black anodized finish, these arms have two joints for a wide range of motion. Both joints tilt ±60°. Arms swivel at the mounting bracket. Knobs lock the arms into position. Mounting fasteners are included.

ⓘ For additional mounting and attaching dimensions, go to mcmaster.com and search for **8262KAC**.

	Maximum Projection	Load Cap., lbs.	Mounting Point: Size, Lg. × Wd.	Mounting Point: Swivel	Mounting Point: Tilt	Mounting Point: Mount. Hole Size (Qty.)	Attaching Point: Size, Lg. × Wd.	Attaching Point: Swivel	Attaching Point: Tilt	Attaching Point: Mount. Hole Size (Qty.)		Each
Wall Mount												
A	12″	20	3⅞″ × 3⅞″	±135°	–20°	3/16″ (8)	6″ × 6″	None	None	3/16″ (4)	**8262K12**	$17.90
Wall, Ceiling, or Benchtop Mount												
B	7¼″	10	2 7/16″ Dia.	360°	180°	7/32″ (7)	2 7/16″ Dia.	360°	180°	7/32″ (7)	**5031T61**	47.40
C	9½″	60	4¼″ × 3 5/16″	None	None	3/8″ (4)	6″ × 4″	360°	±80°	3/8″ (4)	**1492A6**	77.35
D	15″	25	3″ × 2″	±210°	None	9/32″ (4)	5⅞″ × 4″	360°	±15°	3/16″ (12)	**1592A31**	143.36
D	22⅛″	25	3″ × 2″	±210°	None	9/32″ (4)	5⅞″ × 4″	360°	±15°	3/16″ (12)	**1592A32**	152.08

Suction-Cup Support Arms

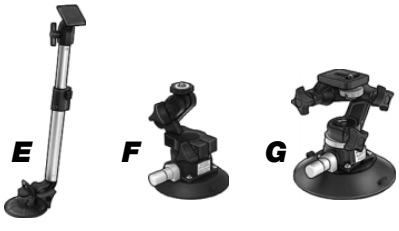

The vinyl suction cup mounting point on these supports quickly attaches to smooth surfaces such as glass and polished metal. *Note:* Mounting surface must be flat, clean, and dry.

Style E— Arm is made of aircraft-grade aluminum. It has a plate-style attaching point with four 3/16″ dia. holes to mount your equipment and a ball connector that locks into position with a knob. Arm has a shaft that extends and locks into position.

Style F— For added adjustability, this arm has a joint that tilts ±255° but does not swivel. Arm is made of polycarbonate plastic and has a ¼″-20 threaded stud attaching point. Arm extends and locks into position with a knob.

Style G— This arm has two joints for a wider range of motion. One joint swivels 360° but does not tilt; the other joint tilts ±180°. Arm is made of cast aluminum with a black powder-coated finish and has a ¼″-20 threaded stud attaching point. Arm extends and locks into position with a knob.

	Maximum Projection	Load Cap., lbs.	Mounting Point: Size	Mounting Point: Swivel	Mounting Point: Tilt	Attaching Point: Size	Attaching Point: Swivel	Attaching Point: Tilt		Each
Surface Mount										
E	18″	4	3½″ Dia.	None	±180°	2″ Lg. × 1 21/32″ Wd.	360°	±210°	**1492A15**	$50.64
Jointed Surface Mount										
F	6¾″	10	4½″ Dia.	360°	+255°	¼″-20 Threaded Stud	360°	±180°	**1592A2**	70.36
G	6″	20	6″ Dia.	360°	None	¼″-20 Threaded Stud	360°	±180°	**1592A3**	148.40

Adjustable-Height Versahead Positioning Stands

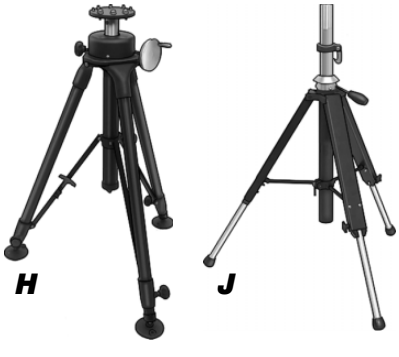

High load capacities and several mounting adapters give these stands tremendous versatility and flexibility. Telescoping legs and an extendable central column facilitate height adjustment. Legs have crossbars for added stability, unless noted.

Style H— With the highest load rating, this stand is ideal for heavy duty usage. Has 4″ self-leveling footplates with a ⅝″ hole for staking. Includes a 6″ diameter head with four ¼″-20 and four ⅝″-18 mounting holes for easy attachment. Also includes screws on the head. Made of aluminum.

Style J— Strong and lightweight. Central column has a gas cylinder for height adjustment. Has a safety latch to lock central column in down position, and tightening knobs and side-mounted clamp locks for legs. Made of aluminum and steel. Head not included: sold separately (*Styles L* and *M*) below.

Style K— Includes a pan and tilt head, which swivels 360° and tilts 90°. Lightweight and easy to transport. Legs are aluminum and do not have crossbars. Adjust height of central column via wing locks. Head has ¼″-20 mounting connections and quick-release attachment plate. Includes storage case.

Heads for Style J— Both have a ¼″-20 stud and locking pin to attach stand. Made of aluminum. *Style L* is 3¼″ diameter. *Style M* is 7⅛″ Wd. × 8¾″ Lg., is ideal for larger equipment, and has a pan and tilt head that swivels 360° and tilts –90°, +15°.

Adapter Plate— Allows you to mount equipment that lacks the standard camera-style thread. Has a central ¼″-20 hole in a 4″ square ⅜″ thick aluminum platform with four 0.225″ unthreaded holes spaced 1½″ × 1 3/16″ apart. You can also drill and tap holes to meet your mounting requirements.

Ball-Grip Adapter— Has a 1½″ dia. nitrile ball that allows for 360° swivel positioning. A ¼″-20 screw beneath the base can be removed to provide a female ¼″-20 connection that adapts *Styles J* and *K* for use with our Ball-Grip Positioning Arm connectors and ends (see 5031T on page 2573). It has a 2.44″ dia. aluminum base with seven 0.22″ dia. drilled holes for attachments.

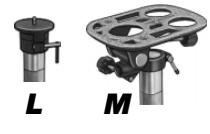

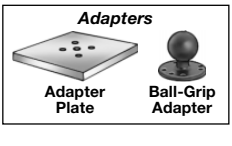

	Height Range	Load Capacity, lbs.		Each
Positioning Stands				
H	33½″-70″	150	**1425A7**	$1,955.71
J	25½″-54½″	50	**1425A12**	353.85
K	11″-63″	9	**1425A5**	82.53
Heads for Style J				
L		50	**1425A13**	79.08
M		35	**1425A14**	182.83
Adapters for Styles J and K				
Adapter Plate		Not rated	**1425A17**	21.35
Ball-Grip Adapter		10	**5031T55**	16.42

Ultra-Precise Micropositioner

Control the position of small equipment such as laser sensors with this compact support mount. It allows precise linear adjustments in 0.001″ increments; total adjustment range is 1/2″. A knurled knob on the base makes it easy to set the position of the unit. Mount your equipment using the brackets sold separately below; brackets are available in a variety of thread sizes to fit your equipment and can be mounted in eight different positions.

Unit is made of lightweight anodized aluminum and has a load capacity of 5 lbs. Overall size is 3 1/2″ Lg. × 1 3/4″ Wd. × 5/8″ Ht. Requires two 10-32 socket head cap screws for surface mounting (not included, see page 3112).

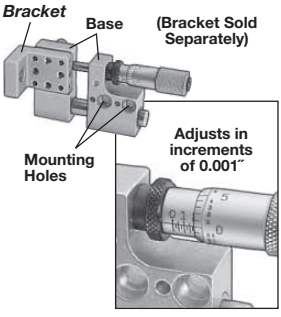

		Each
Micropositioner	6120A1	$478.57
Bracket with M8 Threaded Hole	6120A5	38.21
Bracket with M12 Threaded Hole	6120A6	68.00
Bracket with M18 Threaded Hole	6120A7	68.36
Bracket with 1/4″-20 Threaded Hole	6120A8	38.21

Tool Supports

Mount these supports on or adjacent to your workbench to suspend and position power tools for assembly work. Bench- and floor-mount supports consist of a support arm and vertical column. Wall-mount supports consist of a support arm only.

Bench-Mount Supports

Both models have a 37″ high vertical column made of 1″ square, 18-ga. steel tubing with a polished chrome finish. They also have a support arm that swivels 360° and a tool positioner that slides along the length of the arm. The support arm is made of 1″ square, 18-ga. steel tubing with a polished chrome finish and has a load capacity of 7 lbs. You can position the support arm at any height along the column. The base of the column has a 3″ Lg. × 3″ Wd. steel mounting plate with four 9/32″ dia. holes (mounting fasteners included).

Optional bench clamp allows you to quickly mount the support on workbenches up to 2 1/2″ thick. It's a good alternative to bolting the support directly on your workbench.

Arm Lg.		Each
18″	6139T23	$104.18
24″	6139T24	108.55
Optional Bench Clamp	6139T29	41.39

Floor-Mount Supports

Supports have a 9-ft. high vertical column and a support arm that swivels 180°; you can position the support arm at any height along the column. The base of the column has a mounting plate with four 17/32″ dia. holes (mounting fasteners not included). Furnished with a tool positioner that slides along the length of the arm and a hose/cable end clamp.

49385T22 has a vertical column that's made of 1 5/8″ square, 12-ga. steel track. T32 has a vertical column that's made of 3 1/2″ dia., 13-ga. steel tube; it also includes a hose/cable trolley.

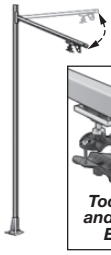

Tool Positioner and Hose/Cable End Clamp

Arm Lg.	Arm Material	Load Cap., lbs.	Mounting Plate Size, Lg. × Wd.		Each
3 ft.	1 1/4″ × 1 1/4″, 16-ga. Steel	30	6″ × 5″	49385T22	$389.33
6 ft.	1 5/8″ × 1 21/32″, 12-ga. Steel	50	6″ × 6″	49385T32	775.11

Wall-Mount Supports

Both have an arm that swivels 180°, a hose/cable end clamp, and a tool positioner that slides along the length of the arm. 49385T21 has a mounting plate with two 7/16″ dia. holes; T31 has a mounting plate with six 17/32″ dia. holes. Mounting fasteners are not included.

Arm Lg.	Arm Material	Load Cap., lbs.	Mounting Plate Size, Lg. × Wd.		Each
3 ft.	1 1/4″ × 1 1/4″, 16-ga. Steel	30	4 1/4″ × 1 1/2″	49385T21	$260.84
6 ft.	1 5/8″ × 1 21/32″, 12-ga. Steel	50	10″ × 5″	49385T31	426.58

Spring-Powered Return Reels

Stem Mount

Shaft Mount

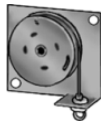

Bracket Mount

Covered Bracket Mount

Once they're mounted, these returns can handle a variety of counterbalancing, retrieving, returning, and other long-retraction functions. Mounting fasteners are not included. *Note:* Reels do not lock in place after the load is attached.

Stem Mount — Have a high-carbon steel spring, zinc-coated steel case, 5 1/16″ dia. cable reel, and 1 1/2″ Wd. × 8 3/4″ Ht. mounting stem. The cable measures 3/32″ in diameter and is made of nylon-coated galvanized steel.

Shaft Mount — Have a high-carbon steel spring, 3 3/8″ dia. cable reel, and mount directly on a 5/16″ square arbor (except 6653A25 has a 5″ dia. cable reel and mounts on a 7/16″ arbor and A26 has a 6″ dia. reel and mounts on a 7/16″ arbor). The cable measures 3/32″ in diameter and is made of nylon-coated galvanized steel.

Bracket Mount — Has a Type 301 stainless steel spring and 2 1/32″ Ht. × 2 3/8″ Wd. × 23/32″ Dp. zinc-coated steel bracket with two 0.238″ dia. mounting holes. The cable measures 0.034″ in diameter and is made of nylon-coated stainless steel.

Covered Bracket Mount — Have a 300 series stainless steel spring and 3 21/32″ Ht. × 2 13/32″ Wd. × 1 1/8″ Dp. aluminum bracket with four 3/16″ dia. mounting holes. The cable measures 0.035″ in diameter and is made of plastic-coated stainless steel.

Cable Travel	Max. Load, lbs.		Each
Stem Mount			
126″	10	61095A4	$164.04
126″	12	61095A5	168.85
126″	15	61095A6	177.47
Shaft Mount			
60″	8	6653A27	91.76
60″	12	6653A22	84.44
60″	18	6653A24	132.15
90″	6	6653A21	66.07
108″	35	6653A26	176.20
120″	24	6653A25	165.18
Bracket Mount			
64″	1.5	61245A13	92.91
Covered Bracket Mount			
30″	4	61215A64	130.46
40″	3	61215A63	133.29
50″	2	61215A62	137.43
60″	1	61215A61	120.22
100″	0.5	61215A65	120.22

Constant-Force Spring-Powered Return Reels

An alternative to electric motors, counter-weights, and power springs, these returns provide constant force (torque) through the spring's cable travel of extension and retraction.

Returns have a strip of Type 301 stainless steel spring that's wound into a coil. This coil is stored in one or two nylon storage drums (see table below) and one output drum with an integral cable reel. When you attach a tool or other weighted object to the cable, the storage drums release the spring until it's counterbalanced.

61115A1 has a stainless steel base, 0.015″ dia. nylon cable, and no mounting holes. All others have a zinc-plated steel base, 0.024″ dia. stainless steel cable, and four 0.177″ dia. mounting holes (fasteners not included).

With Two Storage Drums

Cable Tension, lbs.	Cable Travel	Spring Torque, lb./in.	Ht. × Wd. × Dp.		Each
With One Storage Drum					
0.375	36″	0.10	1 5/8″ × 1″ × 5/8″	61115A1	$94.55
1	72″	0.78	3 3/4″ × 2 1/2″ × 1 3/16″	61115A2	98.18
2	72″	1.56	3 3/4″ × 2 1/2″ × 1 3/16″	61115A3	99.74
With Two Storage Drums					
3	72″	2.33	3 3/4″ × 2 7/8″ × 1 3/16″	61115A4	129.09
4	72″	3.12	3 3/4″ × 2 7/8″ × 1 3/16″	61115A5	134.55
5	72″	3.90	3 3/4″ × 2 7/8″ × 1 3/16″	61115A6	149.09

Spring Counterbalances

Side Style

Overhead Style

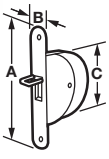

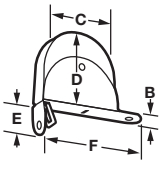

Use these counterbalances for components that must be suspended, lifted, or retracted, such as tools, windows, and doors. Once your tool or other weighted object is attached to the load clip, the spring is released until counterbalanced. All units have a strip of Type 430 stainless steel spring that's wound into a coil on a steel drum and enclosed in a steel housing. Counterbalances with a 46″ travel have two 3/16″ dia. mounting holes; units with a 54″ or 60″ travel have two 1/4″ dia. mounting holes. All include mounting fasteners.

Note: When using counterbalances on windows, two counterbalances are required for each sash. However, the load capacity shown is for one counterbalance.

***Side Style*—**Mounts on a vertical frame.

***Overhead Style*—**Mounts in the corner of a horizontal frame.

Travel	Load Cap., lbs.	Dimensions (A)	(B)	(C)	(D)	(E)	(F)
46″	2 -14.5	6″	1″	3 7/16″	3 7/16″	1 5/16″	4 11/16″
54″	15 -27	7 7/16″	1 3/8″	4 7/16″	4 3/8″	1 1/2″	5 7/8″
60″	38.5-40	8 3/4″	1 3/4″	5 13/16″	5 7/16″	1 1/2″	7 1/4″

Load Cap., lbs.	Side Style	Each	Overhead Style	Each
46″ Travel				
2 -2.5	1053A11	$29.37	1053A25	$29.37
3.5-4.5	1053A13	30.47	1053A27	30.47
4.5-5.5	1053A14	30.47	1053A28	30.47
5.5-6.5	1053A15	30.47	1053A29	30.47
6.5-7.5	1053A16	30.47	1053A31	30.47
7.5-8.5	1053A17	30.47	1053A32	30.47
46″ Travel (Cont.)				
8.5- 9.5	1053A18	$32.29	1053A33	$32.29
9.5-10.5	1053A19	32.29	1053A34	32.29
10.5-11.5	1053A21	32.29	1053A35	32.29
11.5-12.5	1053A22	35.60	1053A36	35.60
13.5-14.5	1053A24	35.60	1053A38	35.60
54″ Travel				
15 -16	1053A44	$56.00	1053A57	$56.00
18 -19	1053A46	56.00	1053A59	56.00
21 -22	1053A48	53.67	1053A62	53.67
26 -27	1053A52	53.67	1053A65	53.67
60″ Travel				
38.5-40	1053A74	99.42	1053A89	99.42

Tool Retractors

A

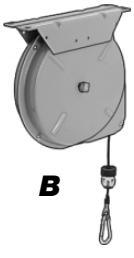
B

C

D

E

F

G

These retractors have a cable that retracts automatically, so you can always have the tool you need nearby. Just pull the tool down when you're ready to work and let go of it when you're finished. The cable will automatically pull your tool back up as it retracts into the housing.

All retractors have an adjustable tension control. This lets you set the cable tension and slow down the rate of retraction. This feature also allows the retractors to hold your tool in a set position without any pull on the cable.

Tool retractors do not counterbalance the weight of your tool. However, *retractors with ratchet lock* have a ratchet mechanism that slows down the cable retraction and halts the retractor at set positions so you can control the movement of the tool. Just tug on the cable to release the lock.

All of these retractors mount at the top and have an adjustable cable stop with snap-style tool clip for quick tool changes. For the best performance, choose a unit where the total weight supported by the unit falls in the middle of the capacity range. The total weight should include such things as the tool fittings, hose, and cord.

***Style A*—**Has a fixed shackle with 1/2″ opening. Adjust tension with a wrench or pliers.

***Style B*—**Has a 8 5/8″ Lg. × 2 1/2″ Wd. mounting bracket with four 3/8″ dia. mounting holes (fasteners not included). Adjust tension with a wrench or pliers.

***Style C*—**Have a shackle with 3/4″ opening that swivels 360°. Adjust tension with a wrench or pliers.

***Style D*—**Have a mounting hanger with 13/16″ shackle that swivels 360°. Adjust tension by simply turning the hand knob.

***Style E*—**Have a hanger for mounting. Wind drum to adjust tension. Release tension with lever.

***Style F*—**Have a swivel hook with 5/8″ opening. Adjust tension by turning the hand knob.

***Style G*—**Have a 5/8″ opening for mounting. Adjust tension using the included tool.

	Load Cap., lbs.	Cable Travel	Cable Dia.	Cable Material	Lg.■ × Wd.	Housing Material		Each
With Ratchet Lock								
A	1 -15	15′	3/32″	Steel	13 7/8″ × 8 5/8″	Steel	6652A22	$383.69
B	1 -15	15′	3/32″	Steel	13 3/16″ × 8 5/8″	Steel	6652A23	433.08
C	2 - 7	8′	3/32″	Steel	15 1/4″ × 9 5/8″	Aluminum	66765A5	391.49
D	4 - 6	6.6′	1/8″	Steel●	13″ × 5 1/2″	Composite	6703A67	110.32
C	4 -10	8′	3/32″	Steel	15 1/4″ × 9 5/8″	Aluminum	66765A6	398.02
D	6 - 8	6.6′	1/8″	Steel●	13″ × 5 1/2″	Composite	6703A68	135.63
C	8 -15	8′	3/32″	Steel	15 1/4″ × 9 5/8″	Aluminum	66765A7	398.02
C	16 -22	8′	3/32″	Steel	15 1/4″ × 9 5/8″	Aluminum	66765A8	398.02
Without Ratchet Lock								
E	0 - 2.5	5′	1/16″	Nylon	7 1/2″ × 3″	Aluminum	6651A5	40.33
F	0.5- 1.5	6′	1/16″	Steel●	9 1/4″ × 2 7/8″	ABS Plastic	7433A12	41.27
D	1 - 2	5.2′	1/16″	Nylon	10 3/8″ × 4″	Composite	6495A61	51.04
G	1 - 3.5	8′	3/32″	Steel	9 3/4″ × 4 1/8″	Steel	6696A11	72.79
F	1.5- 3	6′	1/16″	Steel●	9 1/4″ × 2 7/8″	ABS Plastic	7433A14	41.27
E	1.5- 5	5′	1/16″	Nylon	7 1/2″ × 3″	Aluminum	6651A6	40.33
D	2 - 4	5.2′	1/16″	Nylon	10 3/8″ × 4″	Composite	6495A62	49.55
G	2 - 4.5	8′	3/32″	Steel	9 3/4″ × 4 1/8″	Steel	6696A16	80.69
F	3 - 5	6′	1/16″	Steel●	9 1/4″ × 2 7/8″	ABS Plastic	7433A16	41.26
D	4 - 6	6.6′	1/8″	Steel●	13″ × 5 1/2″	Composite	6703A65	86.90
G	4.5- 8	8′	3/32″	Steel	9 3/4″ × 4 1/8″	Steel	6696A17	83.96
E	4.5-10	5′	1/16″	Nylon	7 1/2″ × 3″	Aluminum	6651A7	62.59
D	6 - 8	6.6′	1/8″	Steel●	13″ × 5 1/2″	Composite	6703A66	112.18
G	6.5-13.5	8′	3/32″	Steel	12 1/8″ × 5 7/8″	Steel	6696A13	136.58
G	11 -19	8′	3/32″	Steel	12 1/8″ × 5 7/8″	Steel	6696A14	144.11
G	18 -25	8′	3/32″	Steel	12 1/8″ × 5 7/8″	Steel	6696A18	154.89

■ From center of mounting hook to bottom of tool hook in retracted position.
● Nylon coated.

Mini Tool Retractors

Designed to hold your tool out of the way until it's needed. When you're ready to work, just pull the tool down. After you've finished working, let go of the tool and the cable will automatically retract into the housing and pull the tool back up. All units mount at the top and have a 1″ stainless steel split ring for quick tool changes. 30155T11 and T12 have a belt loop for belts up to 2¼″ wide. T11 also has a strap with snap-style mounting hook with 1⁵⁄₁₆″ opening. T13 has a stainless steel belt clip.

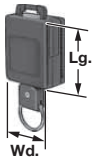

Style	Load Cap., lbs.	Cable Travel	Cable Dia.	Cable Material	Lg. × Wd.	Housing Material		Each
With Belt Loop and Strap	1.25	1.7′	5⁄64″	Nylon	2½″ × 2⅛″	Plastic	30155T11	$29.44
With Belt Loop	1.25	1.7′	5⁄64″	Nylon	2½″ × 2⅛″	Plastic	30155T12	29.44
With Belt Clip	1.25	1.7′	5⁄64″	Nylon	2½″ × 2⅛″	Plastic	30155T13	34.87

Tool Positioner

This unit allows you to place your tool at any position along the cable travel length and holds the tool in that position the entire time you're working. When you've finished working, just lift the tool up until the cable retracts into the housing.

Positioner has a top mounting hanger with ½″ shackle and an adjustable cable stop with snap-style tool clip for quick tool changes. Adjust tension by using a screwdriver to turn the slot on the shaft.

Note: The total weight for the load capacity may include tool, air hose, and fittings.

Load Cap., lbs.	Cable Travel	Cable Dia.	Cable Material	Lg. × Wd.	Housing Material		Each
1-12	4.7′	3⁄64″	Nylon	5⅛″ × 2¼″	Composite	6739A41	$21.06

Tool Balancers

The preferred choice for continuous tool use, these balancers are designed to support the full weight of your tool and prevent hand fatigue. Balancers make your tool "weightless" so you can reposition it with minimal effort. All have an internal spring wrapped around a tapered drum that counterbalances the entire weight of the tool attached to the cable. Units mount at the top and include a cable stop with snap-style tool clip for quick tool changes (cable stop is adjustable for Style A). For the best performance, choose a balancer where the total weight it will support falls in the middle of the capacity range. The total weight should include such things as the tool fittings, hose, and cord.

Balancers with ratchet lock have a ratchet mechanism that slows down the cable retraction and halts the balancer at set positions so you can control the movement of the tool. Just tug on the cable to release the lock.

Style A— Have a mounting hanger with ¾″ shackle that swivels 360°. Adjust tension with a wrench or pliers.

Style B— Have a mounting hanger with 1¹⁄₁₆″ shackle that swivels 360°. Manually lock the drum to replace a tool. Loads are secured by an automatic lock. Adjust tension with a wrench or pliers.

Styles C & D— Just like Style B with the addition of a four-roller cable guide that prevents excessive wear on the cable and drum. They also have an internal mechanism that prevents spring damage.

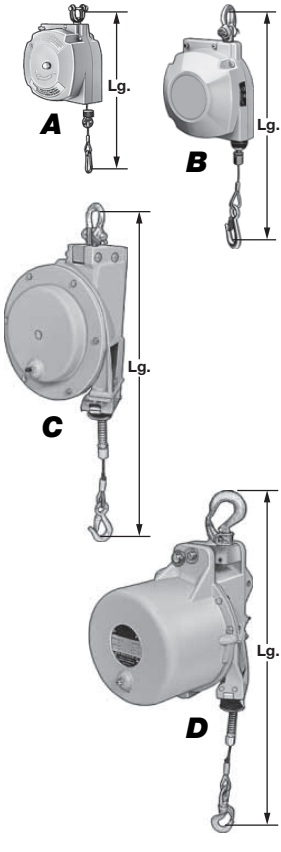

	Load Cap., lbs.	Cable Travel	Cable Dia.	Cable Material	Lg. × Wd.	Housing Material		Each
With Ratchet Lock								
A	6- 9	6.6′	3⁄32″	Steel	13¾″ × 6⅞″	Composite	6704A71	$196.83
A	9- 13	6.6′	3⁄32″	Steel	13¾″ × 6⅞″	Composite	6704A72	213.05
A	13- 18	6.6′	3⁄32″	Steel	13¾″ × 6⅞″	Composite	6704A73	232.70
A	18- 24	6.6′	3⁄32″	Steel	13¾″ × 6⅞″	Composite	6704A74	255.17
B	25- 35	6.6′	⅛″	Steel	20¾″ × 7¾″	Aluminum	6644A45	824.48
B	35- 45	6.6′	⅛″	Steel	20¾″ × 7¾″	Aluminum	6644A46	824.48
Without Ratchet Lock								
A	6- 9	6.6′	3⁄32″	Steel	13¾″ × 6⅞″	Composite	6704A61	160.07
A	9- 13	6.6′	3⁄32″	Steel	13¾″ × 6⅞″	Composite	6704A62	174.12
A	13- 18	6.6′	3⁄32″	Steel	13¾″ × 6⅞″	Composite	6704A63	185.48
A	18- 24	6.6′	3⁄32″	Steel	13¾″ × 6⅞″	Composite	6704A64	214.70
B	18- 25	6.6′	⅛″	Steel	20¾″ × 7¾″	Aluminum	6644A51	790.74
B	25- 35	4.9′	⅛″	Steel	20¾″ × 7¾″	Aluminum	6644A42	690.24
B	25- 35	6.6′	⅛″	Steel	20¾″ × 7¾″	Aluminum	6644A52	790.74
B	35- 45	6.6′	⅛″	Steel	20¾″ × 7¾″	Aluminum	6644A53	790.74
B	35- 48	4.9′	⅛″	Steel	20¾″ × 7¾″	Aluminum	6644A43	690.08
B	45- 60	4.9′	⅛″	Steel	20¾″ × 7¾″	Aluminum	6644A58	690.21
C	53- 70	7′	3⁄16″	Steel	28″ × 12″	Aluminum	6644A11	1,318.92
C	68- 86	7′	3⁄16″	Steel	28″ × 12″	Aluminum	6644A12	1,318.92
C	79- 90	7′	3⁄16″	Steel	28″ × 12″	Aluminum	6644A32	1,319.77
C	84-115	7′	3⁄16″	Steel	28″ × 12″	Aluminum	6644A26	1,558.03
C	125-135	7′	3⁄16″	Steel	28″ × 12″	Aluminum	6644A38	1,558.03
C	145-155	7′	3⁄16″	Steel	28″ × 12″	Aluminum	6644A31	1,558.03
D	174-210	7′	3⁄16″	Steel	27½″ × 12″	Aluminum	6644A91	2,271.45
D	209-236	7′	3⁄16″	Steel	27½″ × 12″	Aluminum	6644A92	2,271.45
D	234-250	7′	3⁄16″	Steel	27½″ × 12″	Aluminum	6644A93	2,271.45

Air-Controlled Tool Counterbalancer

For precise tool counterbalancing, this balancer has a built-in air regulator for adjusting tension. Once tension is set, it remains constant throughout the 5-ft. cable travel range.

Balancer is 20⅛″ Lg. × 10¼″ Wd. It has a steel housing, ⅛″ dia. steel cable, and load capacity of 50 lbs. Maximum air pressure is 100 psi. Air inlet connection is ¼″ NPT.

Balancer has a top mounting hook with 1″ opening that swivels 360°. It also includes a snap-style tool clip for quick tool changes.

48005T86 ..... **Each** $1,026.48

Air-Tool Counterbalancers with Built-In Hose Reel

Tired of the clutter and tangles caused by air tools that require a balancer with cable and separate air hose? These balancers have their own retractable braided air hose so you can attach your air tool right to them.

All are 10″ Lg. × 7½″ Wd. and have a high-impact ABS plastic housing. Maximum air pressure is 145 psi. Air inlet connection is ¼″ hose barb. Air tool connection is ¼″ NPT. Balancers have a top mounting hook with ½″ opening that swivels 360°. Manually adjust tension.

Load Cap., lbs.	Air Hose Travel	Air Hose Dia.	Air Hose Material		Each
1.1- 3.3	4.2′	3⁄8″	Urethane	5740T76	$332.44
3.3- 6.6	4.2′	3⁄8″	Urethane	5740T77	333.16
6.6-11	4.2′	3⁄8″	Urethane	5740T78	344.23

Ultra-Force Steel C-Clamps

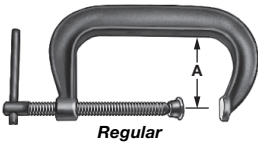

Regular

Square

Heavy Duty

Extra Heavy Duty

The strongest clamps we offer. Clamps have a forged premium steel frame with a black finish and a heat-treated steel screw and handle for maximum strength and durability.

Regular— The most popular style, these clamps have a swivel pad and a sliding-pin handle.

Square— Built just like the *regular* clamps, but with a squared off frame for an even larger throat depth (A).

Heavy Duty— Superior holding power in a space-saving shape. Use when you don't need the large throat depth of the *regular* and *square* styles, or the high strength of the *extra heavy duty*. All have a swivel pad and a sliding-pin handle.

Extra Heavy Duty— The strongest of the strong, these clamps offer the maximum holding capacity. The screws have a hardened tip and a square head that must be tightened with a wrench.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
Regular						
1 1/2"	0"	1 5/8"	1,400	3/8"	5027A11	$14.15
2"	0"	2 5/16"	3,500	1/2"	5027A12	15.61
3"	0"	2 3/4"	3,500	1/2"	5027A13	18.63
4"	0"	3 3/16"	6,200	3/4"	5027A14	23.16
6"	0"	4 1/16"	6,900	3/4"	5027A15	31.97
8"	0"	5"	8,000	3/4"	5027A16	42.22
10"	0"	5 15/16"	8,000	3/4"	5027A23	54.91
10"	3"	5 15/16"	8,000	3/4"	5027A17	53.55
12"	0"	6 3/8"	9,300	7/8"	5027A25	80.39
12"	4"	6 3/8"	9,300	7/8"	5027A18	72.74
Square						
3"	0"	3 1/4"	3,500	1/2"	5072A4	33.64
4"	0"	4 3/8"	4,100	3/4"	5072A1	33.64
6"	0"	6 3/8"	5,400	3/4"	5072A2	58.57
8"	0"	8 7/16"	5,900	3/4"	5072A3	76.92
Heavy Duty						
2"	0"	1 5/8"	7,500	1/2"	5028A1	48.88
3"	0"	2 1/8"	8,750	5/8"	5028A2	55.41
4"	0"	2 1/2"	10,000	3/4"	5028A3	63.35
6"	0"	2 11/16"	11,250	3/4"	5028A42	90.31
6"	2"	2 11/16"	11,250	3/4"	5028A4	76.56
8"	0"	2 3/4"	12,500	3/4"	5028A43	108.56
8"	4"	2 3/4"	12,500	3/4"	5028A5	90.82
10"	0"	2 7/8"	13,750	3/4"	5028A44	127.96
10"	6"	2 7/8"	13,750	3/4"	5028A6	104.91
12"	0"	3"	15,000	7/8"	5028A45	152.15
12"	8"	3"	15,000	7/8"	5028A7	119.27
15"	0"	3 3/16"	16,250	7/8"	5028A46	210.71
15"	10"	3 3/16"	16,250	7/8"	5028A8	179.26
18"	0"	3 3/8"	17,500	7/8"	5028A47	269.31
18"	13"	3 3/8"	17,500	7/8"	5028A9	229.07
Extra Heavy Duty						
13/16"	0"	3/4"	2,800	3/8"	5029A11	14.27
1 5/16"	0"	1 3/32"	5,600	7/16"	5029A12	22.25
1 3/4"	0"	1 23/32"	8,750	5/8"	5029A13	35.47
2 3/8"	0"	1 15/16"	12,500	3/4"	5029A31	58.80
2 3/8"	1/2"	1 15/16"	12,500	3/4"	5029A14	46.91
3 5/16"	0"	2 3/8"	16,250	7/8"	5029A32	76.92
3 5/16"	5/8"	2 3/8"	16,250	7/8"	5029A15	67.36
4 5/8"	0"	2 15/16"	20,000	1"	5029A33	98.75
4 5/8"	1"	2 15/16"	20,000	1"	5029A16	78.24
5 3/8"	0"	3 5/16"	23,800	1"	5029A34	122.08
5 3/8"	1 1/4"	3 5/16"	23,800	1"	5029A17	94.65
6 5/8"	0"	3 15/16"	27,500	1 1/8"	5029A35	150.04
6 5/8"	2 1/2"	3 15/16"	27,500	1 1/8"	5029A18	125.79
8 1/4"	0"	3 7/8"	31,250	1 1/4"	5029A36	209.77
8 1/4"	2 1/4"	3 7/8"	31,250	1 1/4"	5029A19	169.50
10 3/8"	0"	3 3/4"	35,000	1 1/4"	5029A37	285.53
10 3/8"	4 1/4"	3 3/4"	35,000	1 1/4"	5029A21	229.72
12 1/2"	0"	4 1/8"	40,000	1 1/4"	5029A38	377.28
12 1/2"	6 3/8"	4 1/8"	40,000	1 1/4"	5029A22	308.85

High-Visibility Ultra-Force Steel C-Clamps

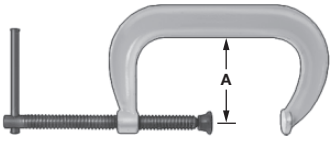

Similar to our regular-style Ultra-Force Steel C-Clamps, but with a brightly colored finish for better visibility and safety. Offered in safety yellow and safety orange, so you can also use them to color code your work.

Clamps have a high-strength, forged steel frame with a tough, baked-on enamel finish. The screw and sliding-pin handle are steel with a black finish. All have a swivel pad.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.	***Safety Yellow***	***Safety Orange***	
1 1/2"	0"	1 5/8"	1,400	3/8"	50295A58	50295A59	$18.40
2"	0"	2 5/16"	3,500	1/2"	50295A71	50295A61	20.27
3"	0"	2 3/4"	3,500	1/2"	50295A72	50295A62	24.15
4"	0"	3 3/16"	6,200	3/4"	50295A65	50295A68	26.78
6"	0"	4 1/16"	6,900	3/4"	50295A66	50295A69	36.99
8"	0"	5"	8,000	3/4"	50295A67	50295A7	48.78
10"	3"	5 15/16"	8,000	3/4"	50295A73	50295A63	69.47
12"	4"	6 3/8"	9,300	7/8"	50295A74	50295A64	94.39

High-Force Steel C-Clamps

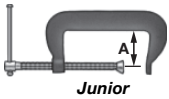

Junior

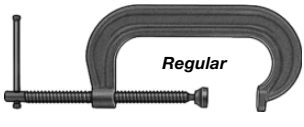
Regular

Extra Deep

Stronger than our Medium-Force Iron C-Clamps, but not as strong as our Ultra-Force Iron C-Clamps. Clamps have a high-strength, forged steel frame with a rust-resistant, gray powder-coated finish (unless noted). All have a swivel pad, and a steel screw and sliding-pin handle.

Junior— A narrow profile makes these clamps ideal for smaller-sized clamping jobs. The screw and handle are zinc plated for added rust resistance.

Regular— The most popular C-clamp design, these clamps are good for general-purpose holding.

Extra Deep— Clamps have a larger throat depth (A) than our other clamps, which provides more space for reaching around your workpiece.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
Junior						
1"	0"	1"	500	1/4"	5031A1★	$4.94
1"	0"	1 1/2"	500	1/4"	5031A2★	5.32
1 1/4"	0"	1 1/4"	800	1/4"	5031A3★	5.42
1 1/2"	0"	1 1/2"	800	5/16"	5031A4★	6.29
2"	0"	1 1/4"	875	5/16"	5031A5★	9.70
2 1/2"	0"	2 1/2"	850	3/8"	5031A7★	10.25
3"	0"	1 3/8"	1,100	3/8"	5031A6★	10.59
Regular						
2"	0"	1 13/16"	2,700	9/16"	5026A1	20.10
3"	0"	1 15/16"	3,000	9/16"	5026A2	24.12
4"	0"	2 5/16"	3,700	5/8"	5026A3	26.73
6"	0"	2 15/16"	4,500	5/8"	5026A4	42.32
8"	0"	3 7/16"	5,200	3/4"	5026A8	57.37
10"	1 1/2"	3 3/4"	6,000	3/4"	5026A9	81.27
12"	1 1/8"	3 7/8"	8,000	3/4"	5026A11	117.13
Extra Deep						
6"	0"	8"	2,200	3/4"	5025A1	171.50
8"	0"	12"	1,800	3/4"	5025A2	188.52
12"	0"	16"	1,500	3/4"	5025A4	264.58

★ Black powder-coated finish.

Medium-Force Iron C-Clamps

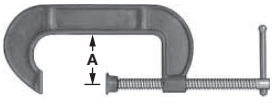

Regular

Deep

Extra Deep

Heavy Duty

Iron clamps offer good strength and durability. All are heat treated (unless noted) and have a steel screw, sliding-pin handle, and replaceable swivel pad. All, except 5033A9 and heavy duty, are ribbed to resist side strain.

Regular, also called carriage clamps, are basic C-clamps with a plain finish (unless noted).

Deep and ***extra deep*** give you more clearance around all sides of the workpiece. *Deep clamps* have a black baked-enamel finish; *extra-deep clamps* have a plain finish.

Heavy duty have more holding capacity than the other clamps. They have a black baked-enamel finish.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
Regular						
2½″	0″	1¾″	1,400	9/16″	5033A1	$9.46
3″	0″	1⅞″	1,800	9/16″	5033A2	9.76
4″	0″	2⅛″	2,400	⅝″	5033A3	12.98
5″	0″	2½″	2,400	⅝″	5033A4	17.74
6″	0″	2¾″	2,400	⅝″	5033A5	18.34
8″	0″	3¼″	2,400	¾″	5033A61	26.36
10″	1½″	3⅝″	2,400	13/16″	5033A71	37.46
12″	3 7/16″	3⅝″	2,400	13/16″	5033A81	47.24
14″	0″	3¾″	2,850	⅞″	5033A9♣	58.32
Deep						
2″	0″	2⅜″	2,500	9/16″	5034A11	13.79
3″	0″	2¾″	4,000	9/16″	5034A2	15.60
4″	0″	3⅛″	4,000	⅝″	5034A3	23.46
5″	0″	3⅝″	4,000	⅝″	5034A4	26.31
6″	0″	3⅞″	4,000	⅝″	5034A5	27.27
8″	0″	4½″	4,000	¾″	5034A66	40.85
10″	2″	4¾″	5,000	13/16″	5034A7	54.02
12″	4″	5″	6,000	13/16″	5034A8	62.19
Extra Deep						
4″	0″	4⅞″	2,200	⅝″	5036A1	25.46
5″	0″	6″	1,600	⅝″	5036A21	33.00
6″	0″	7⅛″	1,600	⅝″	5036A31	37.19
Heavy Duty						
2″	0″	2½″	7,200	13/16″	5030A1	31.38
3″	0″	2½″	7,200	13/16″	5030A2	33.85
4″	0″	2½″	7,200	13/16″	5030A3	36.11
5″	0″	2½″	7,200	13/16″	5030A4	40.60
6″	0″	2½″	7,200	13/16″	5030A5	42.28
8″	0″	2½″	7,200	13/16″	5030A6	49.66
10″	2″	2½″	7,200	13/16″	5030A7	55.83
12″	4″	2½″	7,200	13/16″	5030A8	63.11

♣ Not heat treated; has a gray powder-coated finish.

Heat-Activated Clamping Compound

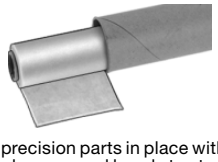

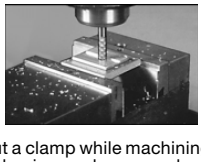

Hold precision parts in place without a clamp while machining. Heat-activated compound bonds to steel, aluminum, glass, wood, and most plastics. Ideal for thin and hard-to-hold parts, it allows for machining on five sides of the workpiece.

Compound is coated on a 0.0005″ thick release liner and has a holding force of 40 psi. To use, apply compound and position the part. Heat the part to 180°-200° F; when finished, reheat to 180°-200° F to release the part. Can be used with a water-based coolant and cleans up easily with rubbing alcohol.

	Roll	
12″ × 5-ft. Roll	50245A21	$40.18
12″ × 25-ft. Roll	50245A22	150.50

Light-Force Iron C-Clamps

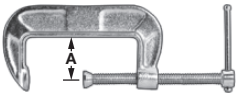

Regular

Regular with Nylon Tips

Deep

Clamps have an iron frame with a steel screw and swivel pad; the swivel pads are replaceable (unless noted).

Regular— All have a steel sliding-pin handle and a zinc-plated finish for rust resistance (unless noted).

Regular with Nylon Tips— Nylon pads on the clamping surfaces prevent marring. Clamps have a steel thumbscrew handle and a plain finish. The swivel pads are not replaceable.

Deep— A deeper throat than regular clamps provides more space for reaching around your workpiece. They have a steel sliding-pin handle (unless noted) and a rust-resistant, zinc-plated finish.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
Regular						
1″	0″	1″	400	¼″	5133A11	$1.63
1″	0″	1⅛″	900	¼″	5075A21	3.41
1½″	0″	1½″	400	5/16″	5133A12	2.74
1½″	0″	1½″	800	5/16″	5075A23	5.06
2″	0″	1″	400	5/16″	5133A13	2.26
2″	0″	1″	1,000	5/16″	5075A22	4.89
2½″	0″	1⅜″	600	⅜″	5133A21	4.00
2½″	0″	2½″	600	⅜″	5133A14	4.36
2½″	0″	1⅜″	1,000	⅜″	5075A24	6.94
2½″	0″	2½″	1,600	⅜″	5075A26	9.25
3″	0″	2″	800	⅜″	5133A15	4.47
3″	0″	1⅜″	1,800	⅜″	5075A25	8.70
4″	0″	3″	1,200	9/16″	5133A16■	7.35
5″	0″	3¼″	1,200	⅝″	5133A17■	9.65
6″	0″	3½″	1,200	⅝″	5133A18■	10.75
8″	0″	4″	1,200	¾″	5133A19■	16.55
Regular with Nylon Tips						
1¼″	0″	1 3/16″	550	⅜″	5134A13	6.13
2½″	0″	2 5/16″	550	⅜″	5134A15	9.63
Deep						
⅝″	0″	⅞″	1,000	#12	5038A5●	2.98
1″	0″	3½″	300	¼″	5038A1♠	6.39
1½″	0″	3½″	300	5/16″	5038A2	8.09
2½″	0″	4¾″	1,200	⅜″	5038A7	18.49
2½″	0″	6¼″	1,200	⅜″	5038A8	21.59

■ Plain finish. ● Knurled handle. ♠ Thumb-screw handle.

Light-Force Aluminum C-Clamps

Hold delicate items gently, yet securely with these aluminum alloy clamps. They have a sliding-pin handle and the screw and swivel pad are copper-plated steel to resist weld spatter. Not rated for holding capacity.

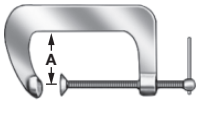

Opening Max.	Opening Min.	(A)	Screw Dia.		
1 5/16″	0″	1 3/16″	7/16″	5041A11	$15.21
2 5/16″	0″	1½″	7/16″	5041A12	16.44
2⅞″	0″	1⅝″	7/16″	5041A13	16.94
3 13/16″	0″	1⅝″	7/16″	5041A14	20.21
4¾″	0″	2⅛″	⅝″	5041A15	30.62
5¾″	0″	2⅜″	⅝″	5041A16	32.17

Three-Way Iron C-Clamp

Three screws let you apply pressure on three sides of your workpiece. Great for gluing, welding, trimming, and cutting applications. Clamp has two sliding-pin handles and one thumbscrew handle. Made of zinc-plated malleable iron with steel screws and swivel pads.

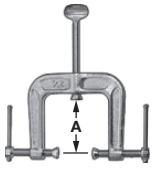

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
2½″	0″	2½″-0″	800	⅜″	5143A11	$10.50

Corrosion-Resistant Type 316 Stainless Steel C-Clamps

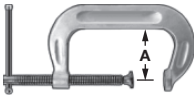

Forged

Cast

Extreme environments are no problem for these corrosion-resistant clamps—use them anywhere, from clean rooms to marinas. They're made of Type 316 stainless steel.

Forged Stainless Steel—Have a polished finish, a swivel pad, and a sliding-pin handle.

Cast Stainless Steel—Are smaller than the *forged stainless steel* clamps. These compact clamps have a swivel pad and thumbscrew handle. Not rated for holding capacity.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
Forged Stainless Steel						
2″	0″	2 9/64″	1,400	1/2″	3509A11	$39.48
3″	0″	2 27/64″	1,400	39/64″	3509A12	52.94
4″	0″	2 53/64″	2,600	47/64″	3509A13	83.64
6″	0″	3 25/32″	2,800	47/64″	3509A14	142.28
8″	0″	4 11/16″	2,800	47/64″	3509A15	204.46
10″	0″	5 33/64″	3,200	55/64″	3509A16	266.50
12″	0″	5 29/32″	3,800	55/64″	3509A17	401.20
Cast Stainless Steel						
1/4″	0″	1/4″	—	1/4″	3959A11	8.90
1/2″	0″	11/32″	—	7/32″	3959A12	10.12
3/4″	0″	1/2″	—	19/64″	3959A13	11.00
1″	0″	5/8″	—	19/64″	3959A14	17.31
1 1/2″	0″	51/64″	—	3/8″	3959A15	26.33
2″	0″	1″	—	3/8″	3959A16	37.19

Low-Profile C-Clamps

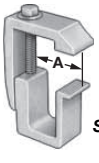

Standard

Pivot Action

The low-profile design allows these clamps to fit into tight spaces. They're aluminum with textured pads and a steel screw.

Pivot Action—A ball-and-socket bolt provides added leverage and easier positioning.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
Standard						
1″	0″	1 3/16″	1,000	3/8″	1705A12	$8.00
1 1/2″	0″	1 3/16″	1,000	3/8″	1705A11	8.17
Pivot Action						
5/8″	0″	1 1/2″	950	3/8″	1705A21	8.06
1 3/8″	5/8″	1 1/2″	950	3/8″	1705A22	8.14

Rapid-Action Iron C-Clamps

Quick-Release Button

Get the quick adjustment of a bar clamp in a C-clamp design. Simply push the quick-release button, position the clamp, then let go of the button. Final pressure is applied by turning the screw. Made of malleable cast iron with a chrome-plated steel screw and sliding-pin handle and a steel swivel pad.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
3″	0″	1 3/4″	1,500	1/2″	50275A76	$10.15
4″	0″	2 1/4″	1,500	1/2″	50275A77	11.03
6″	0″	3 7/8″	1,500	1/2″	50275A78	14.45

Corrosion-Resistant Fiber-Reinforced C-Clamps

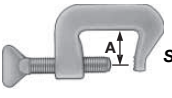

Screw Tip

Swivel Pad Tip

Made from fiber-reinforced plastic, these clamps are corrosion resistant as well as strong. Resistant to acids, alkalies, and boiling water, they are ideal for all plating and anodizing applications, as well as for general clamping. Clamps have a thumbscrew handle. Select clamps with either a screw tip or a swivel pad tip. Minimum opening is 0″.

(A)	Holding Cap., lbs.	Screw Dia.	Screw Tip: Max. Opening	Screw Tip		Swivel Pad Tip: Max. Opening	Swivel Pad Tip	
3/4″	80	9/16″	1 1/8″	6184A11	$9.58	3/4″	6184A41	$10.69
1 1/4″	140	5/8″	1 3/4″	6184A13	11.78	1 7/16″	6184A43	12.89
1 1/2″	215	5/8″	2 3/8″	6184A15	21.11	1 7/8″	6184A45	22.22
1 3/4″	290	3/4″	3 13/16″	6184A16	41.62	3 7/16″	6184A46	42.73

EZ-Grip Corrosion-Resistant C-Clamps

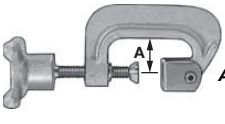

Aluminum

An extra-large handle lets you easily tighten and loosen these corrosion-resistant clamps. Face on the clamp frame swivels.

Aluminum—Strong and lightweight with a four-sided handle.

Type 303 Stainless Steel—With better corrosion resistance than aluminum, this clamp can withstand the harshest environments, including washdown applications. Handle is five-sided.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.	Aluminum		Stainless Steel	
1 3/8″	0″	1 3/16″	1,000	7/16″	5073A3	$46.12	5073A2	$88.50

Welders' Steel C-Clamps

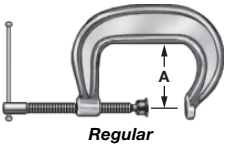

Regular

Deep

With moving parts protected from weld spatter, these clamps are perfect for welding.

Regular with Copper-Plated Components—Have the traditional C-clamp design with a copper-plated steel screw, swivel pad, and sliding-pin handle to resist weld spatter. Frames are heat-treated steel for strength and durability.

Deep with Zinc-Plated Components—Clamps have a deeper throat than the *regular* clamps, which provides more space for reaching around your workpiece. Screw, swivel pad, and sliding-pin handle are zinc-plated steel for weld spatter resistance. Frames are heat-treated steel for strength and durability.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
Regular with Copper-Plated Components						
2″	0″	2″	3,500	1/2″	5165A22	$20.02
3″	0″	2 3/8″	3,500	1/2″	5165A23	25.23
4″	0″	2 3/4″	6,500	3/4″	5165A24	31.93
6″	0″	3 5/8″	6,900	3/4″	5165A25	42.72
8″	0″	4 1/2″	6,900	3/4″	5165A26	58.18
10″	0″	5 3/8″	8,000	3/4″	5165A27	74.78
12″	0″	5 3/4″	9,500	7/8″	5165A28	105.91
Deep with Zinc-Plated Components						
4″	0″	4 1/2″	4,100	3/4″	5119A14	41.50
6″	0″	6 1/2″	5,400	3/4″	5119A16	61.34
8″	0″	8 1/2″	5,900	3/4″	5119A18	79.89

Cantilever C-Clamps

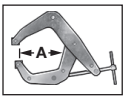

Detail of V-Groove

T-Handle

Round Knurled Handle

T-Handles and Three-Way Jaws

Cantilever clamp jaws pivot to keep clamping surfaces parallel so your work won't twist off-center under pressure.

Steel— Have corrosion-resistant, zinc-plated frames and copper-plated screws and jaws that resist weld spatter. Clamping surfaces are V-grooved for holding round stock or have a smooth nylon pad to prevent marring. *T-handles* are easy to grasp. *Round knurled handles* are best for confined spaces. Clamp with *three-way jaws* has two T-handles, two V-grooved jaws, and a smooth swivel pad for exerting pressure on the top, bottom, and side of the workpiece.

Type 303 Stainless Steel— Clamps are corrosion resistant, have a T-handle for easy gripping, and aren't magnetic. Clamping surfaces are V-grooved for holding round stock.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.	Clamping Surface		
Steel with T-Handle and Standard Jaws							
7/8″	0″	1/2″	350	3/16″	Nylon Pad	5046A27	$15.77
1″	0″	1/2″	350	3/16″	V-Grooved	5046A11	10.22
1 3/4″	0″	1 1/8″	800	1/4″	Nylon Pad	5046A28	17.46
2″	0″	1 1/8″	800	1/4″	V-Grooved	5046A12	12.36
2 7/16″	0″	2″	700	1/4″	V-Grooved	5046A61	13.61
2 3/4″	0″	1 1/4″	1,500	3/8″	Nylon Pad	5046A29	21.96
3″	0″	1 1/4″	1,500	3/8″	V-Grooved	5046A13	17.66
4 1/4″	0″	2 1/4″	1,700	3/8″	Nylon Pad	5046A31	24.06
4 1/2″	0″	2 1/4″	1,700	3/8″	V-Grooved	5046A18	18.89
6″	0″	2 1/8″	2,000	1/2″	V-Grooved	5046A14	28.80
6″	0″	4 1/2″	2,000	1/2″	V-Grooved	5046A15	31.42
9″	0″	3 3/8″	2,500	5/8″	V-Grooved	5046A16●	79.19
10″	0″	6″	3,500	5/8″	V-Grooved	5046A19●	117.55
12″	1″	5″	6,000	3/4″	V-Grooved	5046A25●	130.47
Steel with Round Knurled Handle and Standard Jaws							
3/4″	0″	3/8″	200	5/32″	V-Grooved	5046A41	9.88
1″	0″	1/2″	350	3/16″	V-Grooved	5046A42	11.06
2″	0″	1 1/8″	800	1/4″	V-Grooved	5046A43	14.29
Steel with T-Handles and Three-Way Jaws							
6″	0″	2 1/8″	2,000	1/2″	V-Grooved	5046A51	40.21
Type 303 Stainless Steel with T-Handle and Standard Jaws							
2″	0″	1 1/8″	700	1/4″	V-Grooved	5046A26	28.35
3″	0″	1 1/4″	1,200	3/8″	V-Grooved	5046A23	39.55
4 1/2″	0″	2 1/4″	1,500	3/8″	V-Grooved	5046A24	45.79

● Handle is L-shaped.

Replacement Swivel Pads for C-Clamps

Replacing clamp pads couldn't be easier—the clamp's own pressure forces the pad onto the end of the screw. Made of steel with a steel-toothed washer inside to ensure a tight grip. Pads are flat except for 5076A5, which is V-grooved.

To determine which pad you need, remove the existing pad from your clamp. Measure the ball diameter and refer to the ball diameter ranges listed.

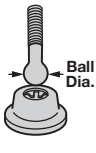

Pad Dia.	Ball Dia. Range		
1″	0.395″-0.400″ (25/64″)	5076A1	$2.75
1 1/4″	0.395″-0.400″ (25/64″)	5076A41	3.71
1 1/4″	0.452″-0.457″ (29/64″)	5076A21	4.77
1 3/8″	0.570″-0.575″ (37/64″)	5076A31	3.71
1 3/8″	0.570″-0.575″ (37/64″)	5076A5▲	5.42

▲ V-grooved.

Quick-Adjustment Steel Bar Clamps for Recessed Areas

Get into those hard to reach places. The J-shape of these clamps provides extra reach into recessed areas up to 4″ deep. Plus, the sliding head allows for fast clamping—simply slide head into position and turn the handle to tighten. Clamp is heat-treated, cold-drawn galvanized steel and has a sliding-pin handle and a swivel clamp. Clamping surfaces are smooth to prevent marring.

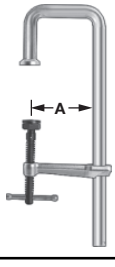

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
12″	0″	5 1/2″	2,660	3/4″	7543A11	$141.38
20″	0″	7″	4,880	3/4″	7543A14	280.19

Quick-Adjustment Steel Bar Clamps

With Ratchet Handle

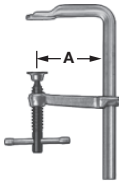

With Sliding-Pin Handle

The best of both worlds—the quick adjustability of a bar clamp and the jaw depth of a C-clamp. Just slide the head into position and either squeeze the ratchet handle or turn the screw to tighten. All clamping surfaces are smooth.

Clamps with Ratchet Handle— Clamps stay firmly in place making them ideal in applications where vibrations could cause clamp to move. Frame and sliding arm are forged steel. Ratchet mechanism and handle are steel.

Clamps with Sliding-Pin Handle— Sliding handle provides a secure grip as you tighten and loosen the clamp. Frame, head, and handle are a heat-treated alloy steel that is zinc plated for added durability. Screw is steel.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Degrees of Pad Swivel	Screw Dia.		
Clamps with Ratchet Handle							
Medium Duty							
8″	0″	4″	660	35°	—	6126A14	$73.48
12″	0″	5 1/2″	1,200	35°	—	6126A16	99.74
20″	0″	5″	1,200	35°	—	6126A17	111.40
Clamps with Sliding-Pin Handle							
Light Duty							
8″	0″	4″	1,000	20°	5/8″	5106A36■	51.59
Medium Duty							
6″	0″	4 3/4″	1,330	18°	5/8″	5106A75	35.41
8″	0″	5 1/2″	2,660	35°	3/4″	5106A76	63.13
8″	0″	5 1/2″	2,800	35°	3/4″	5106A22	104.47
12″	0″	5 1/2″	2,660	35°	3/4″	5106A13	82.06
12″	0″	5 1/2″	2,800	35°	3/4″	5106A23	119.61
20″	0″	5 1/2″	2,660	35°	3/4″	5106A19	95.14
20″	0″	5 1/2″	2,800	35°	3/4″	5106A24	147.88
36″	0″	5 1/2″	2,800	35°	3/4″	5106A25	209.00
60″	0″	5 1/2″	2,800	35°	3/4″	5106A26	274.50
Heavy Duty							
12″	0″	7″	4,880	18°	7/8″	5106A81	174.85
12″	0″	7″	4,880	35°	7/8″	5106A16	209.10
18″	0″	7″	4,880	18°	7/8″	5106A82	204.23
18″	0″	7″	4,880	35°	7/8″	5106A17	233.82
36″	0″	7″	4,880	18°	7/8″	5106A83	235.14
36″	0″	7″	4,880	35°	7/8″	5106A18	283.42
Extra-Heavy Duty							
12″	0″	8″	7,700	35°	15/16″	5106A27	503.96
18″	0″	8″	7,700	35°	15/16″	5106A28	540.42
39″	0″	8″	7,700	35°	15/16″	5106A29	621.83

■ Screw has a copper-plated finish.

Rugged-Service Steel Bar Clamps/Spreaders

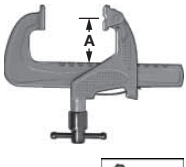

With a frame and head made of epoxy-coated steel, these clamps are strong and durable. Plus, they combine the wide-opening capability of a bar clamp with the rugged construction of a C-clamp. Just slide the spring-loaded head to the nearest notch, then turn the handle for final hand tightening. Simply reverse the spring-loaded head to use clamp as a spreader.

The handle is a sliding pin that's positioned to remain out of your way and shielded from weld spatter. A V-grooved swivel pad accommodates round stock.

Detail of V-Groove

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.		
6″ (5 7/8″)	0″ (1 13/16″)	2 3/8″	2,500	5011A41	$80.07
10″ (10 7/8″)	0″ (2 13/16″)	4 3/4″	1,500	5011A43	113.19
12″ (11 7/8″)	0″ (1 13/16″)	2 3/8″	2,500	5011A42	96.96
18″ (19″)	0″ (3 1/8″)	8″	2,000	5011A47	349.71
24″ (24 3/4″)	0″ (4 1/4″)	4 1/2″	6,000	5011A52	552.67
36″ (36″)	0″ (4 1/4″)	4 1/2″	6,000	5011A53	607.63
54″ (54″)	0″ (4 1/4″)	4 1/2″	6,000	5011A54	718.84

♣ Size in parentheses indicates spreading range when head is reversed.

High-Force Cast Iron Bar Clamps

End Profile of Bar Clamp

Strong and durable, yet simple and easy to use. Just slide the jaw into position and turn the crank handle to tighten the screw. Clamps have a bar that's shaped like an I-beam, which provides reinforcement for maximum holding capacity. They have a clutch in the sliding jaw that holds position anywhere along the bar. Clamps are made of malleable iron with a steel bar and screw; screw has Acme threads. The clamping surfaces are smooth to prevent marring.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
24″	0″	2″	7,000	5/8″	5078A1	$35.31
30″	0″	2″	7,000	5/8″	5078A2	37.18
36″	0″	2″	7,000	5/8″	5078A3	39.48
48″	0″	2″	7,000	5/8″	5078A4	43.49
60″	0″	2″	7,000	5/8″	5078A5	45.93
72″	0″	2″	7,000	5/8″	5078A6	49.74
84″	0″	2″	7,000	5/8″	5078A7	54.27
96″	0″	2″	7,000	5/8″	5078A8	59.57

Nonmarring Bar Clamps/Spreaders

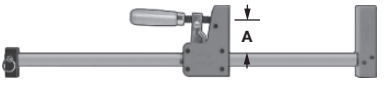

Simply reverse the head on these clamps and you can use them as a spreader. Extra-large nonmarring plastic-covered jaws remain parallel to keep your workpiece tight in the jaws without lifting, bowing, denting, or marking. Clamps have an easy-to-adjust sliding head and an end stop. A built-in stand allows clamp to sit upright. Made of steel with a maple handle.

Opening♣ Max.	Opening♣ Min.	(A)	Holding Cap., lbs.		
12″ (18″)	0″ (8″)	3″	1,000	5022A11	$44.35
18″ (24″)	0″ (8″)	3″	1,000	5022A13	47.11
24″ (30″)	0″ (8″)	3″	1,000	5022A15	49.61
36″ (42″)	0″ (8″)	3″	1,000	5022A17	57.37
48″ (54″)	0″ (8″)	3″	1,000	5022A18	62.56

♣ Size in parentheses indicates spreading range when head is reversed.

Quick-Grip Bar Clamps

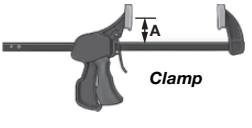

Clamp

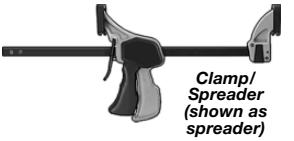

Clamp/ Spreader (shown as spreader)

It doesn't get easier or quicker than one-hand clamping. You simply squeeze the pistol-grip handle to lock clamp in place and press the release trigger to open it instantly. Made of strong, lightweight, glass-reinforced resin with a steel bar. All have smooth rubber pads to protect work surfaces from marring. ***Clamps/spreaders*** can be used as a bar clamp or as a spreader by reversing the jaws to apply outward pressure. Great for glued joints.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.		
Clamps					
6″	0″	1 1/2″	150	5039A51	$16.15
12″	0″	1 3/4″	150	5039A52	19.30
Clamps/Spreaders—*Size in parentheses indicates spreading range.*					
4 1/4″ (8″)	0″ (3 1/4″)	25/32″	50	51755A2	11.82
6″ (13 5/16″)	0″ (7 11/16″)	2 1/4″	300	51755A6	23.39
12″ (19 3/16″)	0″ (7 11/16″)	2 1/4″	300	51755A7	27.49
12″ (20 11/16″)	0″ (9 1/16″)	2 3/4″	600	51755A22	37.59
18″ (25 3/16″)	0″ (7 11/16″)	2 1/4″	300	51755A11	29.58
18″ (26 13/16″)	0″ (9 1/16″)	2 3/4″	600	51755A23	39.02
24″ (31 3/16″)	0″ (7 11/16″)	2 1/4″	300	51755A12	31.56
24″ (32 1/2″)	0″ (9 1/16″)	2 3/4″	600	51755A24	39.48
36″ (43 3/16″)	0″ (7 11/16″)	2 1/4″	300	51755A13	35.92
36″ (44 1/2″)	0″ (9 1/16″)	2 3/4″	600	51755A25	46.55
50″ (58 5/16″)	0″ (9 1/16″)	2″	600	51755A26	46.82

Medium-Force Cast Iron Bar Clamps

With Maple Handle

With Sliding-Pin Handle

When a little strength is not enough and a lot is too much, these clamps will handle the job. All adjustments are made with the sliding head, making these clamps easy to position and suitable for close-quarters work. Clamps are made of malleable iron with a steel bar, screw, and swivel pad for strength. The clamping surfaces are smooth to prevent marring.

Clamps with maple handle have a clutch in the sliding head to securely grip the bar.

Clamps with steel sliding-pin handle have a locking mechanism to engage the bar when the sliding head is tightened against the workpiece.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
With Maple Handle						
6″	0″	2 1/2″	600	1/2″	5090A13	$9.21
6″	0″	5″	1,200	5/8″	5032A49	31.03
8″	0″	5″	1,200	5/8″	5032A51	31.24
12″	0″	2 1/2″	600	1/2″	5090A15	10.60
12″	0″	5″	1,200	5/8″	5032A52	32.98
18″	0″	2 1/2″	600	1/2″	5090A17	12.10
18″	0″	5″	1,200	5/8″	5032A53	35.75
24″	0″	2 1/2″	600	1/2″	5090A19	13.63
24″	0″	5″	1,200	5/8″	5032A54	40.67
30″	0″	2 1/2″	600	1/2″	5090A21	14.78
30″	0″	5″	1,200	5/8″	5032A55	43.44
36″	0″	2 1/2″	600	1/2″	5090A22	16.67
36″	0″	5″	1,200	5/8″	5032A56	46.58
48″	0″	5″	1,200	5/8″	5032A57	52.53
60″	0″	5″	1,200	5/8″	5032A58	54.93
With Steel Sliding-Pin Handle						
8″	0″	9″	1,200	13/16″	5037A51	67.07
12″	0″	9″	1,200	13/16″	5037A52	70.42
18″	0″	9″	1,200	13/16″	5037A53	74.07
24″	0″	9″	1,200	13/16″	5037A54	79.05
36″	0″	9″	1,200	13/16″	5037A55	87.56
48″	0″	9″	1,200	13/16″	5037A56	96.69
60″	0″	9″	1,200	13/16″	5037A57	105.53

Light-Force Cast Iron Bar Clamps

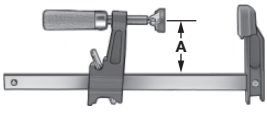

These lightweight clamps are perfect for jobs that require a low holding capacity with minimal clamping force. Slide the head into position and tighten the screw to clamp. Clutch in sliding head holds position anywhere along the bar. Clamp is cast iron with a steel bar, screw, and swivel pad. Handle is maple. Clamping surfaces are smooth and nonmarring.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
4″	0″	2″	300	5/16″	6545A2	$6.49
6″	0″	2″	300	5/16″	6545A4	6.71
8″	0″	2″	300	5/16″	6545A6	6.98
12″	0″	2″	300	5/16″	6545A8	7.69

Press Screws

With a screw nut that mounts into a drilled 1″ hole allowing the threaded rod to move in or out, these clamps are great for veneering, gluing, and welding.

Made of iron with a steel screw. Include a crank handle and a 1 3/8″ Ht. × 1 5/8″ Wd. swivel pad that can be removed for easy installation. Clamping surface is smooth.

Max. Screw Lg.	Holding Cap., lbs.	Screw Dia.		
9″	300	11/16″	5096A14	$15.72
12″	300	11/16″	5096A16	19.76
18″	300	11/16″	5096A18	25.92

Mini Brass Bar Clamps

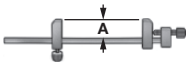

When other bar clamps are too big, these miniature clamps handle the job. Include thumbwheels and wing-nuts for easy adjusting. Clamps are made entirely of brass for corrosion resistance, durability, precision, and appearance. Clamping surfaces are smooth to prevent marring. Not rated for holding capacity.

Opening Max.	Opening Min.	(A)	O'all Lg.		
3″	0″	1/2″	3 3/4″	7084A36	$14.41
3 3/4″	0″	1/2″	4 3/4″	7084A37	15.55
6″	0″	1/2″	7″	7084A38	16.32
10 1/2″	0″	1/2″	12″	7084A39	19.05

Welders' Cast Iron Bar Clamps

With a copper-plated steel screw, wing-nut handle, and swivel pad for weld spatter and flux resistance, these cast iron clamps are the perfect choice for welders. They also have a malleable iron head that slides along the steel bar and holds at any position. Clamping surfaces are smooth to prevent marring.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
8″	0″	7″	1,200	5/8″	5158A47	$44.66
12″	0″	7″	1,200	5/8″	5158A48	47.22
18″	0″	7″	1,200	5/8″	5158A49	50.42
24″	0″	7″	1,200	5/8″	5158A51	54.13
30″	0″	7″	1,200	5/8″	5158A52	57.19
36″	0″	7″	1,200	5/8″	5158A53	61.08
48″	0″	7″	1,200	5/8″	5158A54	70.05
60″	0″	7″	1,200	5/8″	5158A55	76.67

Adjustable-Angle Bar Clamps

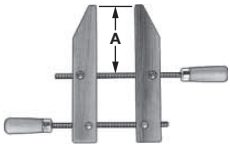

Also called handscrews, these clamps have jaws that tilt to accommodate odd shapes and parallel work. The screws turn independently and are threaded into pivoting nuts to allow the jaws to move in and out or at an angle.

Spindles and nuts are cold-drawn steel; screw handles are made of hardwood with steel ferrules. Jaws are hard maple with an oil finish and have smooth clamping surfaces to prevent marring delicate workpieces.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Screw Dia.		
3″	0″	3″	500	5/16″	5104A13	$18.70
4 1/2″	0″	4″	500	3/8″	5104A15	21.00
6″	0″	5″	500	7/16″	5104A16	22.28
8 1/2″	0″	6″	500	7/16″	5104A17	25.53
10″	0″	7″	500	7/16″	5104A18	30.12
12″	0″	8″	500	1/2″	5104A19	33.51
17″	0″	12″	500	1/2″	5104A23	83.34

Parallel Bar Clamps

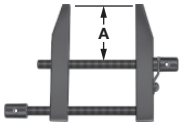

These clamps include a spring clip and retaining ring to keep jaws parallel when opening. Use during tapping, drilling, and other machine setups. Screw heads are drilled to allow use of a pin for better tightening. Clamps are made of case-hardened steel. Clamping surfaces are chamfered for clamping under shoulders and in recessed areas. Not rated for holding capacity.

Opening Max.	Opening Min.	(A)	Screw Dia.		
1 1/4″	0″	3/4″	3/16″	5008A51	$8.78
2 1/4″	0″	1 1/8″	7/32″	5008A52	10.33
3″	0″	1 3/4″	19/64″	5008A53	13.78

Sure-Joint Fastener Clamp

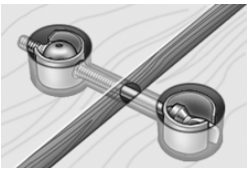

Create a secure joint between two pieces of wood without glue. Clamp installs permanently into the two pieces of wood, yet can be easily separated. Use on any 3/4″-thick panels, boards, or countertops. Clamp is made of zinc-plated steel and is set into your workpiece below the surface when installed.

Clamping size is adjustable from 2″ to 3 1/2″ center to center. The draw bolt is 4 1/16″ long. Box includes 25 clamps, a boring bit for drilling 7/8″ Dia. × 5/8″ Dp. holes, a guide to ensure correct installation, and a tightening tool. Not rated for holding capacity.

5079A55 ..... Box $53.65

Build-Your-Own Bar Clamps

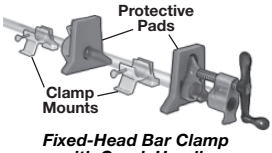

Fixed-Head Bar Clamp with Crank Handle shown with Optional Clamp Mounts

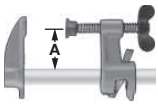

Sliding-Head Bar Clamp

Just add a pipe to create these customized clamps, also known as pipe clamps. Clamps require a minimum pipe length of 12″; the pipe must be threaded at both ends. Pipe is not included. All have smooth clamping surfaces to prevent marring. Protective pads can also be used to provide a cushion between the clamp and your work surface (see 5156A sold separately on this page). All have a steel screw and are made of malleable iron with a powder-coated finish, unless noted.

***Fixed-Head Bar Clamps*—**Just slide the moveable jaw into position and turn the handle on the fixed head to apply final clamping pressure. Clamp *with crank handle* has an enamel finish.

***Sliding-Head Bar Clamp*—**All adjustments are made with the sliding head; the other end is stationary and flush with the pipe end, making it ideal for confined spaces. Clamp has a wing-nut handle.

***Optional Clamp Mounts*—**Have a thumb screw for holding 3/4″ pipe. Set includes four mounts. Each mount has two 5/16″ holes for mounting; hardware is included.

For Pipe Size	(A)	Holding Cap., lbs.★	Screw Dia.		Each
Fixed-Head Bar Clamp with Sliding-Pin Handle					
1/2″	1 1/2″	1,900	1/2″	5063A31	$12.38
Fixed-Head Bar Clamp with Crank Handle					
3/4″	1 3/4″	3,800	5/8″	5063A11	15.56
Sliding-Head Bar Clamp					
3/4″	2 1/2″	3,000	5/8″	5063A21	18.33
Optional Clamp Mounts				50085A4	Set $14.00

★ With 12″ long Schedule 40 pipe.

Protective Pads for Bar Clamps

Soft, durable plastic pads slip over the clamping surfaces of bar clamps and pipe clamp fixtures to protect finished surfaces. Pads fit clamping surfaces 1 1/2″-1 3/4″ Wd. × 2″ Ht. × 1/4″ Thick. Overall size is 2 1/4″ Wd. × 2 1/8″ Ht. × 1/2″ Thick; they may be trimmed. Set contains four pads.

5156A11 ..... Set $5.12

Easy-Tighten Band Clamps

Light Duty with Twist Handle

Light Duty with Ratchet Handle

Heavy Duty

An easy-to-tighten band encircles and holds round and odd-shaped objects with even pressure. A lock holds and releases the band.

***Light Duty*—**Clamps are metal and plastic with 1″ wide band. Include four removable jaws. To tighten clamps either turn the *twist handle* or squeeze the grips on the *ratchet handle*. Not rated for holding capacity.

***Heavy Duty*—**Clamps are iron with 2″ wide band. To tighten clamps simply turn the crank handle.

Clamps

Band Material	Band Lg.	Holding Cap., lbs.		
Light Duty with Twist Handle				
Nylon	13 ft.	—	5116A3	$28.85
Light Duty with Ratchet Handle				
Nylon	16 ft.	—	5116A5	26.52
Heavy Duty				
Canvas	10 ft.	1,000	5103A11	77.72
Canvas	15 ft.	1,000	5103A12	89.93
Canvas	25 ft.	1,000	5103A14	116.55

Replacement Band for Heavy Duty Clamps

		Per Ft.
2″ Wd. Canvas	5103A28	$2.45

Corner Clamps

Light Duty

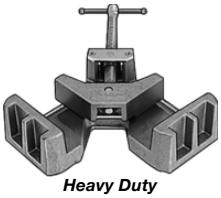

Heavy Duty

Perfect for gluing, welding, soldering, and other assembly operations.

Light Duty— An economical choice for holding lightweight, angled pieces. All are adjustable, which allows you to make miter and butt joints at any angle from 0° to 180°. Made of die cast aluminum. Clamps have a sliding-pin handle and two 5/32″ dia. holes in the base for mounting to your workbench (fasteners not included).

Heavy Duty— Align and hold heavy parts at a 90° angle for easy welding and soldering. The inner jaw pivots to allow simultaneous clamping of materials with unequal thicknesses. Made of cast iron with a painted finish. Clamps have a sliding-pin handle, a screw that's copper plated for protection from weld spatter, and two 7/16″ Wd. × 2 1/2″ Lg. slots for mounting (fasteners not included).

Opening Max.	Opening Min.	Clamping Surface Ht.	Holding Cap., lbs.	Screw Dia.		
Light Duty Adjustable						
3″	0″	5/8″	100	5/16″	5100A13	$10.82
Heavy Duty Fixed						
3 11/32″	0″	1 3/8″	1,000	5/8″	5017A11	101.94
4 3/8″	0″	2 3/8″	1,250	3/4″	5017A21	178.96

Base-Mounted Spring Clamp

Working like a third hand, this mounted spring clamp holds your workpiece at any angle for soldering, gluing, and assembling. It's a self-closing general purpose clamp that is made of 400 series stainless steel. Clamp has a smooth grip with straight blunt tips, which are serrated on the inside. Base is 3 7/16″ dia.

	Lg.		
Base-Mounted Spring Clamp	6 1/2″	6179A4	$22.71
Replacement Spring Clamp	6 1/2″	5799A14	5.35

Miter Joint Frame Clamps

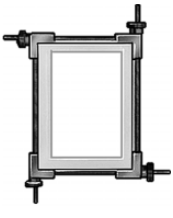

Hold all four corners of square and rectangular frames at 90° angles with one clamp. Clamping surface height is 1″. Clamps have polycarbonate corner blocks and 1/4″ dia. steel threaded rods with zinc alloy adjusting nuts.

Opening Max.	Opening Min.	Holding Cap., lbs.		
24″ × 24″	2″ × 2″	100	5092A25	$19.67
48″ × 48″	2″ × 2″	100	5092A27	28.30

Magnetic Quick Clamps

Economy

Heavy Duty with T-Handle

Heavy Duty with Magnetic-Release Switch

Hold ferrous metals for welding, brazing, and assembly jobs. All clamps, except *heavy duty with magnetic-release switch*, have mounting holes so you can build the clamp into a jig or bolt several together for a stronger hold.

Economy Clamp— Has a compact design that's great for small jobs. Will hold work at 30°, 45°, 60°, 75°, 90°, and 180° angles.

Heavy Duty Clamps— Magnet is completely enclosed to prevent damage from oil, dirt, and dust. Will hold work at 45°, 90°, and 135° angles (unless noted). *Clamp with T-handle* quickly disengages the magnet from your workpiece. *Clamps with magnetic-release switch* allow for the easiest placement and release. Hold work at 45° and 90° angles.

Pull, lbs.	Overall Size, Wd. × Ht. × Thick.	Mount. Holes Qty.	Mount. Holes Size		
Economy					
22	4″ × 2 1/2″ × 1/2″	2	13/64″	5167A25	$11.86
Heavy Duty					
112	3 3/4″ × 4 3/8″ × 3/4″	2	1/4″	5021A86	23.20
Heavy Duty with T-Handle					
100	8″ × 8″ × 1 5/8″	6	19/64″	5021A87	103.23
Heavy Duty with Magnetic-Release Switch					
50	4 3/8″ × 3 3/4″ × 1″	—	—	5021A41	37.50
75	6″ × 5 1/8″ × 1 1/4″	—	—	5021A43	69.17
80	4 3/8″ × 3 3/4″ × 1 1/8″	—	—	5021A42	42.76
140	6″ × 5 1/8″ × 1 7/16″	—	—	5021A44	83.26

Heavy Duty Three-Axis Corner Clamp

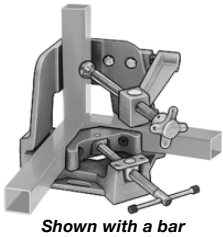

Shown with a bar in each axis.

Now you can hold a workpiece in the third axis—ideal for quick set-up and welding. Clamp aligns and holds up to three heavy parts at 90° angles. Plus, making adjustments couldn't be easier, simply press a button to rapidly move the threaded hold-down spindles in or out. The third-axis clamping arm swings out of the way for easy material removal. Clamp is steel and cast iron with copper-coated screws that resist weld spatter, and it has two 1 1/2″ × 7/16″ mounting slots (fasteners not included).

Opening Max.	Opening Min.	Clamping Surface Ht.	Holding Cap., lbs.	Screw Dia.		
3 3/4″	0″	1 3/8″	650	5/8″	6557A14	$202.31

Pipe-Welding Chain Clamps

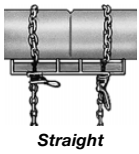

Straight

Flange

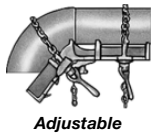

Adjustable

The combination of support bars and chain allows these versatile clamps to hold a wide range of pipe sizes. Unlike other pipe clamps that only allow tack welding, the open design of these clamps permits welding around almost the entire circumference. Clamps resist strain, heat, and abuse while keeping perfect alignment. Not rated for holding capacity.

Aluminum clamps are lightweight for easier handling than the *malleable iron clamps*.

Malleable iron clamps handle heavy duty clamping jobs.

Pipe OD Range	Aluminum		Malleable Iron	
Straight— *For two lengths of straight pipe and for eccentric reducers*				
1/2″-8″	5053A1	$164.00	5053A2	$149.00
8″-16″	5053A3	327.00	5053A4	310.00
Flange— *For standard or extra-heavy neck flanges to straight pipe*				
2 1/2″-8″	5053A5	229.00	—	—
Adjustable— *For straight pipe, elbows, tees, angles, reducers, and risers*				
2 1/8″-8″	5053A7	484.00	—	—

Expansion Clamps

Clamp with Key

Also known as quoin and wedge clamps. Just insert the T-handle key (sold separately below) and twist—clamps expand evenly along the long edge to hold small workpieces firmly in place. They expand from approximately 11/16″ wide to 27/32″ wide.

They're ideal for a variety of applications including letterpress setups. Made of steel.

Clamp Length	Clamp Height		
3″	11/16″	5003A12	$78.50
9″	11/16″	5003A21	91.92
T-Handle Key		5003A34	41.91

Spring Clamps

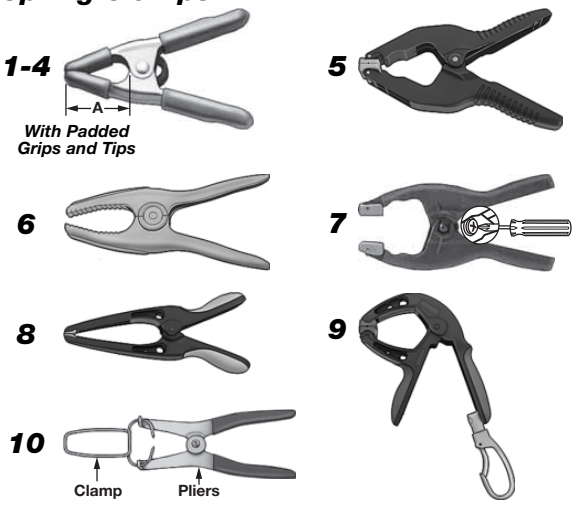

Quick and easy, simply squeeze the handles to open and a spring closes the jaws automatically. The jaws are parallel when fully opened (except steel wire clamp) and are contoured to accommodate both curved and flat objects. All have a tempered steel spring, except 50065A21, A22, and A23, which have a music wire spring and 4954A21, A24, and 6105A24, which have a 300 series stainless steel spring.

(1-3) Nickel-Plated Steel— Offered plain, with orange polyvinyl padded tips, and with orange polyvinyl padded grips and tips.

(4) Type 316 Stainless Steel— Corrosion resistant and good for plating and anodizing applications. With plain tips and vinyl padded grips.

(5-9) Plastic— Clamps with *molded grips and plastic tips* have jaw ends that pivot for extra flexibility. *Corrosion-resistant clamp* has a fiber-reinforced body for extra strength. Ideal for plating and anodizing applications. *Adjustable-force clamp* has a screw to adjust spring force from 1 to 50 lbs. of pressure. Clamps are glass-filled nylon and have soft, pivoting jaw pads. *Extended-reach clamp* has extra long and narrow arms for confined spaces. Includes nonslip grips and tips. *Pistol-grip clamp* is great for overhead work. Has a fold-up clasp that rotates 360°, pivoting jaw ends, and a nonslip grip.

(10) Steel Wire— Has pointed tips to bite into workpiece, ensuring a strong grip. Ideal for awkward shapes or a mitered corner. Use with most nonmetallic materials, such as wood, plastic, and leather. Clamp is made of alloy spring steel. The *clamp pliers* make them easier to open. Pliers are aluminum with cushion grips. Size is 6½″ long.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	Clamping Surface Wd.	O'all Length		
(1) Nickel-Plated Steel							
1″	0″	1¼″	38-40	¾″	4″	**5107A1**	$1.22
2″	0″	2″	45-51	1″	6″	**5107A2**	2.35
3″	0″	3″	39-44	1¼″	9″	**5107A3**	6.30
4″	0″	4″	52-57	1¼″	12″	**5107A4**	12.93
(2) Nickel-Plated Steel with Padded Tips							
1″	0″	1¼″	38-40	¾″	4″	**5107A6**	1.58
2″	0″	2″	45-51	1″	6″	**5107A5**	2.60
3″	0″	3″	39-44	1¼″	9″	**5107A91**	6.89
4″	0″	4″	52-57	1¼″	12″	**5107A92**	13.89
(3) Nickel-Plated Steel with Padded Grips and Tips							
1″	0″	1¼″	38-40	¾″	4″	**5107A7**	2.04
2″	0″	2″	45-51	1″	6″	**5107A8**	3.06
3″	0″	3″	39-44	1¼″	9″	**5107A93**	7.52
4″	0″	4″	52-57	1¼″	12″	**5107A94**	14.85
(4) Type 316 Stainless Steel with Padded Grips							
2¼″	0″	2⅛″	35	1⅛″	6″	**4954A21**	26.79
2¼″	0″	2⅛″	45	1⅛″	6″	**4954A24**	28.83
(5) Plastic with Molded Grips and Plastic Tips							
¾″	0″	1⅜″	♣	9/16″	3¼″	**50065A19**	1.76
1″	0″	1¾″	♣	1″	4½″	**50065A21**	2.19
2″	0″	2½″	♣	1¼″	6″	**50065A22**	2.97
3″	0″	3½″	♣	1¼″	9″	**50065A23**	6.32
(6) Plastic Corrosion Resistant							
2½″	1″	2½″	60	⅝″	8¼″	**6105A24**	12.70
(7) Plastic Adjustable Force							
1″	0″	1¼″	♣	⅞″	4½″	**51115A14**	3.94
2″	0″	2⅛″	♣	1¼″	6½″	**51115A16**	5.23
(8) Plastic Extended Reach with Nonslip Grips and Tips							
2½″	0″	4″	♣	⅜″	8½″	**6109A24**	2.93
(9) Plastic Pistol Grip with Nonslip Grip							
2″	0″	3″	♣	1¼″	7″	**50065A56**	3.17
(10) Steel Wire and Clamp Pliers							
2″	0″	⅞″	♣	—	3¾″	**4562A12**	3.66
Clamp Pliers						**4562A31**	17.76

♣ Not rated for holding capacity.

Spring Clamps with Flexible Arm

Need an extra hand to hold a flashlight, tools, or instructions? These clamps handle the job. They're steel with a flexible, nickel-plated tube. Clamping surfaces have smooth rubber tips to prevent marring. Not rated for holding capacity. ***Dual clamp*** has a clamp on each end. ***Magnetic base clamp*** has a clamp on one end and a magnetic base on the other.

	Opening Max.	Opening Min.	(A)	Clamping Surface Wd.	O'all Lg.		
Dual	2″	0″	2¼″	1″	25″	**50855A65**	$34.12
Magnetic Base	2″	0″	2¼″	1″	22″	**50855A66**	34.12

Mini Spring Clamps

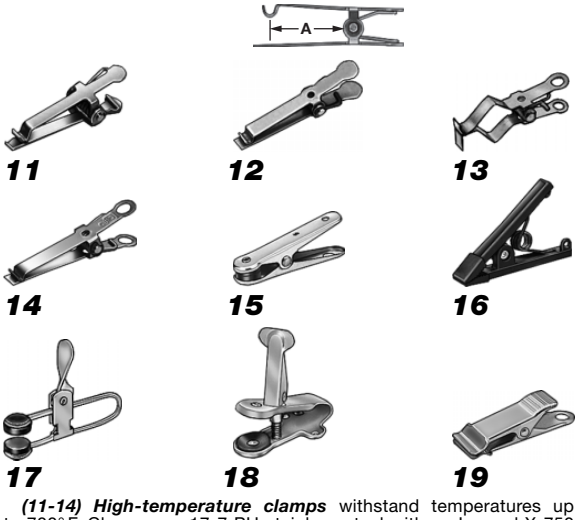

(11-14) High-temperature clamps withstand temperatures up to 700° F. Clamps are 17-7 PH stainless steel with an Inconel X-750 spring. All have a smooth clamping surface to prevent marring.

(15) Soft-jaw clamp has smooth, rubber-padded jaws to hold work firmly but gently. Great for small parts. Made of corrosion-resistant, zinc-plated steel with a zinc-plated steel spring. Handle has a ¼″ dia. hole on one side and an ⅛″ dia. hole on the other for mounting (fasteners not included).

(16) Antistatic clamp is made of nonconductive, fiberglass-reinforced nylon with a tempered steel spring. It's chemically inert to most solvents. Ideal for clean rooms and PC board applications. Has ¼″ dia. hole in each handle for grounding. Clamping surfaces are serrated.

(17) Locking clamp has a cam lever that locks quickly and securely onto sheet metal, plastic, fiberglass, and other flat stock. Made of corrosion-resistant, zinc-plated steel with smooth neoprene pads that apply uniform pressure to prevent marring delicate materials.

(18) Adjustable locking clamp allows you to adjust opening size by turning the lever—just press the lever down to lock the clamp in place. Securely holds paper, plastic, sheet metal, and many other thin materials. Made of corrosion-resistant, zinc-plated spring steel with smooth neoprene pads to protect delicate surfaces from damage. Has two mounting holes that require #5 wood screws or ⅛″ dia. rivets (not included).

(19) Corrosion-resistant clamp is made of 300 series stainless steel and is nonstick. Ideal for corrosive environments and soldering. Clamping surfaces are smooth to prevent marring. Comes in a package of 6.

	Opening Max.	Opening Min.	(A)	Hold. Cap., lbs.	Clamping Surface Wd.	O'all Lg.		Each 1-9	Each 10-Up
11	⅝″	0″	¾″	½	5/32″	1¾″	**5015A1**	$25.45	$21.82
12	⅝″	0″	1½″	1	¼″	2½″	**5015A2**	25.46	21.81
13	¾″	0″	1 19/64″	1½	⅜″	3″	**5015A3**	25.46	21.81
14	½″	0″	1½″	1½	⅜″	3¼″	**5015A4**	25.46	21.81
15	5/16″	0″	½″	10	½″	2⅝″	**5094A51**	21.84	19.03
16	1¼″	0″	1½″	80	¾″	4¾″	**5083A81**	5.32	4.77
17	5/16″	0″	1″	20	9/16″	3⅛″	**5101A32**	3.57	3.23
									Each
18	½″	0″	13/16″	30	⅝″	2¼″	**5164A41**		$11.59
									Pkg.
19	5/16″	0″	17/32″	♣	½″	1⅝″	**6076A17**		$10.82

♣ Not rated for holding capacity.

Plier-Activated Mini Spring Clamp Systems

These spring-loaded clamps are smaller and quicker to use than standard C-clamps. Grip sheet material for gluing, fastening, riveting, and soldering. Several of them can be used together. Made of steel with a steel spring. Require special pliers (sold separately) for positioning and removal.

(1) Edge-Grip Clamps— Use to grip the edges of the workpiece.

Opening Max.	Opening Min.	Jaw Depth	Holding Cap., lbs.	Overall Length		
1/2″	0″	1″	100	2 1/2″	5099A41	$4.06
3/4″	0″	1″	100	2 1/2″	5099A44	4.06

(2) Hole-Grip Clamps— Use in drilled holes to grip and align material. Use with workpieces up to 1/4″ thick. Holding capacity is 50 lbs.

Fits Hole Dia.	Drill Size	O'all Lg.		
3/32″	#40	2 5/16″	5099A29	$1.47
1/8″	#30	2 5/16″	5099A32	1.47
5/32″	#20	2 5/16″	5099A34	1.36
3/16″	#10	2 5/16″	5099A33	1.47
1/4″	1/4″	2 5/16″	5099A31	3.34

(3) Pliers— Required for positioning and removal of clamps. Pliers have comfort grip handles and are made of drop-forged, carbon steel with a black-oxide finish. Overall length is 7 1/2″.
5099A51 ..... $9.95

Clamp Set— Includes pliers, two 1/2″ edge-grip clamps, one of each size hole-grip clamps except 5/32″, and a plastic case.
5099A21 ..... $34.67

Edge-Grip Clamp Set— Includes pliers, six of each size edge-grip clamps, and a plastic case.
5099A25 ..... $70.13

Hole-Grip Clamp Set— Includes pliers, 10 of each size hole-grip clamps, and a plastic case.
5099A27 ..... $71.70

Multiposition Clamping System

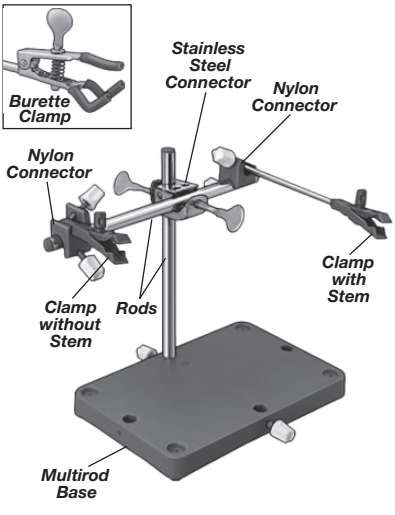

Create a clamping system for lightweight holding in the lab and shop. Components sold separately. First select a base, then select the appropriate number of rods. You can join two rods together at a 90° angle with a stainless steel connector. Finally, select the clamp(s). Clamps require a stainless steel or a nylon connector for attachment to rods. Not rated for holding capacity.

Bases

Single Rod— Base is nylon and 2 1/2″ dia. Includes a thumb screw to secure a 1/2″ dia. rod and three 1/4″ dia. mounting holes.
50165A11 ..... $9.46

Multirod— Base is nylon and 6″ Wd. × 9″ Lg. Holds four 1/2″ dia. rods. Includes two locking thumb screws.
50165A12 ..... $67.36

Rods

Rods are 1/2″ dia., corrosion-resistant Type 304 stainless steel with sealed ends.

Length		
6″	50165A21	$18.91
10″	50165A22	22.45
20″	50165A23	30.73
24″	50165A24	34.27

Connectors

Nylon— Has good resistance to chemicals. Use to connect a clamp to a rod. It has two thumb screws for fastening.
50165A31 ..... $8.27

Type 304 Stainless Steel— Is corrosion resistant. Use to hold two rods together at a 90° angle, as well as to connect a clamp to a rod. Has two wing-nut screws for fastening.
50205A6 ..... $42.33

Burette Clamp

Clamp is corrosion-resistant Type 304 stainless steel with rubber nonmarring pads. Opening size is 1″ max., 0″ min.; turn the wing-nut screw to adjust. Overall length is 10″. Requires a connector for attaching to a rod.
50205A61 ..... $62.17

Clamps

Clamps are made of reinforced nylon, so they won't mar delicate surfaces. Opening size is adjusted by turning a thumb screw. Clamps require a connector for attaching to a rod.

Opening Max.	Opening Min.	Stem Lg.	With Stem		Without Stem	
5/8″	0″	5″	50165A41	$39.99	50165A51	$31.91
1 3/4″	0″	6″	50165A42	48.10	50165A52	38.02
3 1/3″	1/8″	6″	50165A43	61.02	50165A53	47.15

Mini Spring Clamp Systems

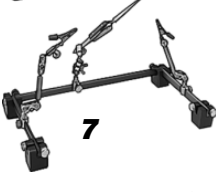

Keep your hands free to work—these clamps are mounted to swivel arms attached to a base. Great for soldering, gluing, and assembling applications. Clamps are rust-resistant, nickel-plated steel. Maximum jaw opening is 1/2″; minimum jaw opening is 0″; throat depth is 3/4″. Not rated for holding capacity.

(4) Single-clamp system has a spring clamp on a 2″ arm; holds small objects securely at any angle. ***(5&6) Double-clamp systems*** have two spring clamps mounted on a 5 1/2″ adjustable cross arm. Offered with and without a 2 1/2″ dia. magnifier mounted on a third arm. ***(7) Triple-clamp system*** has two spring clamps and a self-locking tweezer mounted to 6″ and 12″ adjustable rails and blocks.

4	Single-Clamp System	5007A11	$12.00
5	Double-Clamp System	5007A12	18.00
6	Double-Clamp System with Magnifier	5007A14	26.40
7	Triple-Clamp System	5007A28	47.98

Temporary Joint Clamps

Commonly called pinch dogs, these clamps are driven into wood to hold joints together while glue is setting. They're made of steel and are reusable. Not rated for holding capacity.

Length		
1″	92187A212	$5.14
1 1/2″	92187A214	5.14
2″	92187A215	5.63
3″	92187A218	6.87

Fast-Action Clamping Handles

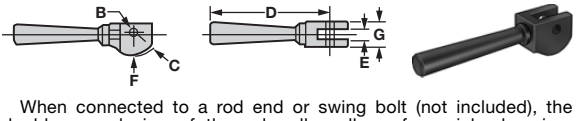

When connected to a rod end or swing bolt (not included), the double-cam design of these handles allows for quick clamping. They're made from heat-treated steel with a black-oxide finish that provides corrosion resistance when used in indoor applications only. The bore is precision reamed.

Bore (B)	(C)	(D)	(E)	(F)	(G)		
3/16″	1/16″	2 1/2″	1/4″	9/16″	9/16″	61525K11	$13.41
1/4″	1/16″	3 1/2″	5/16″	11/16″	5/8″	61525K12	16.04
3/8″	7/64″	5″	1/2″	15/16″	1 1/8″	61525K13	20.53
5/8″	9/64″	5 3/8″	5/8″	1 3/16″	1 1/4″	61525K14	23.26

Vise-Grip Plier Clamps

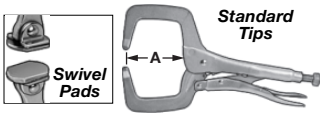

Small, smooth clamping points apply precise force. Turn the adjustment knob to change the opening size; squeeze handle to lock clamp in place. Fingertip pressure on release trigger opens clamp. Made of nickel-plated steel. Use ***clamps with swivel pads*** on uneven surfaces. ***5-piece set*** includes 2 (6R) 5105A14, 2 (11R) 5105A11, and 1 (10R) 10″ locking plier (5369A2 on page 2761).

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	O'all Lg.	Mfr. No.		
With Standard Tips							
2⅛″	0″	1½″	500	6″	6R	**5105A14**	$7.98
2⅛″	0″	1½″	500	6½″	6R	**5105A63**♣	8.61
3⅜″	0″	2⅝″	900	11″	11R	**5105A11**	15.38
3⅜″	0″	2⅝″	900	10¾″	11R	**5105A64**♣	16.57
4½″	0″	4¾″	300	9″	9DR	**5105A12**	16.22
7½″	0″	9½″	250	18″	18DR	**5105A18**	25.76
8″	0″	9½″	300	18″	18R	**5105A16**	22.38
10″	0″	15½″	150	24″	24R	**5105A31**	28.15
With Swivel Pads							
1⅝″	0″	1¼″	450	4″	4SP	**5105A13**	9.00
2⅛″	0″	1½″	500	6″	6SP	**5105A21**	8.99
3⅜″	0″	2⅝″	900	11″	11SP	**5105A19**	17.14
4½″	0″	4¾″	300	9″	9SP	**5105A23**	15.42
8″	0″	9½″	300	18″	18SP	**5105A17**	23.51
10″	0″	15½″	150	24″	24SP	**5105A32**	29.34
5-Piece Set						**5105A36**	$57.04

♣ Includes a no-pinch, fast-release cushioned grip.

Heavy Duty Plier Clamps

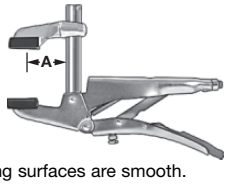

Odd-shaped items are no problem for these rugged clamps. Constructed of nickel-plated steel, both have a sliding-head design for easy size adjustment. An adjusting screw changes the angle of the jaws up to 7° for clamping tapered parts. Just squeeze the handle to lock the clamp; fingertip pressure on the release trigger opens the clamp. Include removable plastic pads for holding delicate items. Clamping surfaces are smooth.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	O'all Lg.		
4″	0″	2″	440	10¼″	**5047A21**	$69.67
8″	0″	2″	440	10¼″	**5047A22**	79.69

Vise-Grip Plier Clamps for Sheets

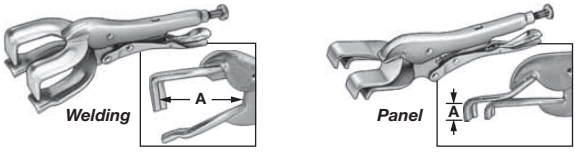

Get a secure grip on thin sheets and panels with the finger-shaped clamping points on these clamps. Adjust the opening size by turning the knob, then squeeze the handle to lock the clamp in place. Fingertip pressure on the release trigger opens the clamp. Clamps are made of nickel-plated steel and have smooth clamping surfaces.

Welding clamp grips sheet metal, bars, pipe, and parts.

Panel clamp's bottom jaw moves forward to clamp panels and sheets at a 90° angle.

Clamp	Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	O'all Lg.	Mfr. No.		
Welding	1⅝″	0″	2¾″	500	9″	9R	**5084A11**	$16.90
Panel	⅜″	0″	½″	500	9″	9AC	**5084A12**	19.10

Rapid-Action Plier Clamps

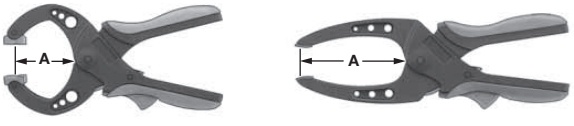

4972A1 *4972A2*

Ratchet action gives you a rapid-adjusting, positive-clamping force and a secure hold. A release trigger opens clamps instantly. Clamps have plastic-covered handles and reinforced-nylon jaw pads to prevent marring and are not rated for holding capacity. Pads swivel for use on uneven surfaces (unless noted).

Opening Max.	Opening Min.	(A)	O'all Lg.	Clamp Material		
2″	1/16″	2⅜″	8¾″	Reinforced Nylon	**4972A1**	$4.96
2¾″	1/16″	3⅝″	9⅞″	Reinforced Nylon	**4972A2**★	4.96

★ Pads do not swivel.

Long-Reach Plier Clamps

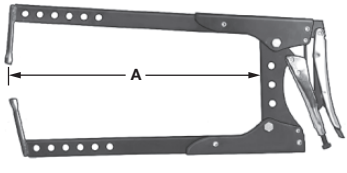

Extra-deep jaws allow you to clamp around large items. Just turn the adjustment knob to set the jaw opening to the size you need and squeeze the handle to lock the clamp in place. Clamps are made of steel and open quickly with a touch of the release trigger. The clamping surfaces are smooth. Not rated for holding capacity.

Max. Opening	Min. Opening	(A)	O'all Lg.		
3 15/16″	0″	19¾″	26 31/32″	**5058A41**	$99.74
6½″	0″	31½″	38 25/32″	**5058A45**	135.82

Right-Angle Toggle Plier Clamp

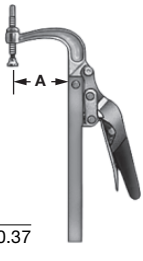

Weld or bolt to a fixture anywhere along this forged-steel clamp's frame, then push the PVC-coated handle down for quick clamping. Handle has a fast-acting trigger release. The jaw tilts back 86° to easily remove workpiece. Has swivel-foot spindle that's M10×3″ Lg. Minimum clamping thickness varies depending on how you mount the clamp. Maximum opening is the maximum distance that spindle face and mounting surface remain parallel.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs	O'all Lg.		
10⅛″	0″	2 11/16″	800	10 55/64″	**5149A71**	$80.37

Quick-Grip Plier Clamps

Simply squeeze the handle for quick clamping. To release the clamp, just apply fingertip pressure to the trigger. Clamps are made of lightweight resin with nonmarring swivel pads for holding odd-shaped items.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	O'all Lg.		
1½″	0″	1½″	25	4¾″	**5070A11**	$5.10
2″	0″	2″	50	7½″	**5070A12**	7.69
4″	0″	3″	25	9½″	**5070A16**	10.23

Base-Mount Plier Clamp

Clamp mounts to most drilling tables and workbenches for convenient use in almost any position. It has an offset handle that locks closed when squeezed and opens with a release trigger. Includes an adjustment knob to change the opening size and a swivel pad to hold tapered work and irregularly shaped parts. Clamp is steel with five ⅜″ dia. mounting holes. Not rated for holding capacity.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	O'all Lg.		
4″	0″	3½″	—	11 13/16″	**4987A84**	$57.69

Plier Clamp with Portable Base

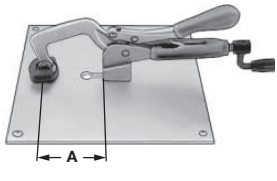

A portable base allows this steel clamp to be easily removed. Use it as a tabletop clamp or rout the base plate into your work space for a flush-mount surface. The clamp has a locking plier grip, swivels 360°, has a steel jaw with a plastic nonmarring pad, and can be removed from the keyhole slot in the base. Made of steel. Not rated for holding capacity. The base plate is 10″ Lg.×10″ Wd.×¼″ Thick. and includes mounting fasteners.

Opening Max.	Opening Min.	(A)	O'all Lg.		
3¾″	0″	3⅛″	11½″	**5060A11**	$56.23

Squeeze-Action Toggle Plier Clamps

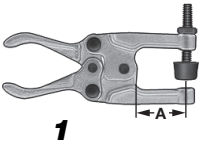

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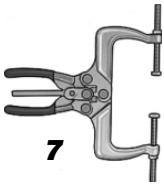

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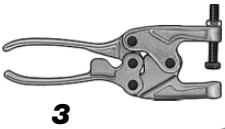

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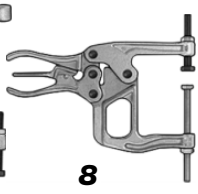

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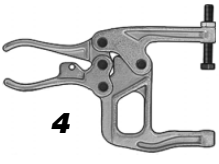

4

5 Double Neoprene-Tipped Spindle

9

Portable handheld clamps are ideal for fast, positive-lock clamping where stationary toggle clamps can't be used. Clamps are made of forged alloy steel (unless noted) and won't deform under clamping pressure. The spindles are threaded to easily adjust for workpiece thickness.

Use *PVC-tipped* and *neoprene-tipped* spindles to prevent marring the workpiece; *hex head cap screw* spindles for heavy duty clamping applications. For replacement neoprene-tipped spindles, see page 2593. For replacement hex head cap screw spindles, see pages 3134-3159.

(1-5) Standard— Open by pulling handles apart. *Style 2* is made of steel with spring steel jaws.

(6-8) Trigger Release— Open by pulling the two-way trigger up or down. The bottom jaw on *Styles 7* and *8* releases to swing in the open position.

(9) Right Angle— For use when space is restricted. Open by pulling handles apart.

	Opening Max.★	Opening Min.	(A)	Holding Cap., lbs.	O'all Lg.	Spindle Screw Size, Thread×O'all Lg.		
Standard								
Single PVC-Tipped Spindle								
1	9/16″	0″	1 3/16″	400	4 3/4″	1/4″-20×1 9/16″	5122A3	$14.10
Single Neoprene-Tipped Spindle								
1	1″	0″	1 5/64″	200	4 1/2″	M6×1 1/2″	5122A74▲	16.85
2	3/4″	0″	2 15/16″	100	6 7/8″	M6×1 1/2″	5057A65▲	30.80
Single Hex Head Cap Screw Spindle								
3	23/32″	0″	1 3/16″	400	4 3/4″	1/4″-20×1 9/16″	5122A5	15.21
3	1 7/32″	0″	2 1/4″	1,200	8 3/8″	3/8″-24×2 19/32″	5122A53	26.32
3	1 7/32″	0″	8″	300	14 7/16″	3/8″-24×2 19/32″	5052A23	71.12
3	1 1/4″	0″	1 1/4″	2,400	8 3/4″	3/8″-24×2 19/32″	5122A52	38.52
3	1 1/4″	0″	1 3/4″	350	6″	M8×1 15/16″	5122A75	22.24
4	3″	1 25/32″	2 1/4″	1,200	8 3/8″	3/8″-24×2 19/32″	5122A55	33.70
4	4″	2 25/32″	2 1/4″	1,200	8 3/8″	3/8″-24×2 19/32″	5122A56	41.59
Double Neoprene-Tipped Spindle								
5	1″	0″	1 5/64″	200	4 1/2″	M6×1″	5122A41▲	21.32
Double Hex Head Cap Screw Spindle								
5	1 1/4″	0″	1 3/4″	350	6″	M8×1″	5122A42▲	29.67
Trigger Release								
Single Hex Head Cap Screw Spindle								
6	1 3/4″	0″	2 3/4″	700	8 15/32″	M10×3″	5062A63▲♠	31.70
Double Hex Head Cap Screw Spindle								
7	3″	0″	2 3/4″	700	8 15/32″	M10×3″	5062A67▲●	36.30
7	6″	0″	2 9/16″	1,000	9 1/16″	M10×4 1/4″	5062A68▲	65.81
8	3 17/32″	0″	2 1/4″	1,200	8 3/8″	3/8″-24×2 19/32″	5062A69	51.48
Right Angle								
Single Hex Head Cap Screw Spindle								
9	6″	0″	2 1/4″	1,200	8 11/16″	3/8″-24×7 9/32″	5130A23	46.74
Round Head Spindle								
9	6 1/8″	0″	3 1/4″	2,400	14 3/4″	5/8″-18×9 1/8″	5130A11	101.44

★ Maximum distance that spindle faces remain parallel. ▲ Handle has vinyl grips.
♠ Has swivel-tip spindle. ● Has one hex head spindle; one swivel-tip spindle.

Heavy Duty Hold-Down Toggle Clamps

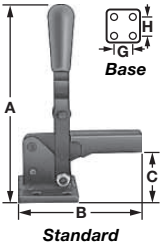

Standard

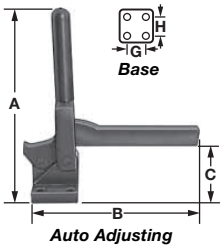

Auto Adjusting

High holding capacities and rugged, solid steel construction make these clamps perfect for your most demanding applications. Toggle clamps offer exceptional clamping force with minimal hand pressure and can be used in any position. Pressure on the handle forces clamp down on the workpiece. Handle is vertical when clamp is engaged. When disengaged, arm opens a minimum of 90° for easy work removal, unless noted. Both illustrations show clamps in engaged position.

Solid arm allows for the addition of spindle (not included) or other clamping device at any point along the arm for flexible clamping options. Clamps are screw mount.

Standard clamp has a vinyl-covered handle for a comfortable grip.

Auto-adjusting clamps compensate for slightly different heights of workpieces while maintaining proper clamping pressure so you'll need to make fewer adjustments.

Holding Capacity, lbs.	O'all Ht. (A)	O'all Lg. (B)	Baseline to Arm (C)	MOUNTING HOLES Ctr. to Ctr. (G)	MOUNTING HOLES Ctr. to Ctr. (H)	MOUNTING HOLES Dia.		
Standard								
750	6 23/32″	4 3/16″	1 1/2″	1″	1 1/2″	9/32″	5145A12	$127.68
Auto Adjusting								
475	5″	4 23/64″	1 7/16″	3/4″	1 1/4″	7/32″	50215A3♥	87.56
1,000	8 1/2″	5 21/32″	2 3/16″	1 3/8″	1 7/8″	11/32″	50215A7	176.59
1,600	9 1/2″	6 13/16″	2 1/2″	1 5/8″	2 1/8″	13/32″	50215A9♥	216.10

♥ When disengaged, arm opens 80°.

Hold-Down Toggle Clamps for Angled Surfaces

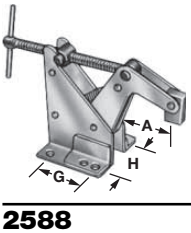

Pivoting jaw keeps the clamping surface parallel with the angled surfaces on the workpiece. Jaw also moves out of the way to provide clearance for work positioning. Mount on drill presses, milling tables, and workbenches (mounting hardware is not included). Made of steel with a copper-plated screw and zinc-plated body and frame.

Opening Max.	Opening Min.	(A)	Holding Cap., lbs.	O'all Ht.	MOUNTING HOLES Ctr. to Ctr. (G)	MOUNTING HOLES Ctr. to Ctr. (H)	MOUNTING HOLES Dia.		
3″	0″	2″	1,500	3 3/4″	1 9/16″	2″	1/4″	5012A71	$19.87
6″	0″	3 9/16″	3,200	7″	2 5/8″	2 15/16″	5/16″	5012A72	38.00

Hold-Down Toggle Clamps

Exceptional clamping force with minimal hand pressure makes these clamps a favorite in milling, drilling, and welding. Pressure on the handle activates downward force on the workpiece. Clamps can be used in any position. When mounted to a horizontal surface, the handle is vertical when clamp is engaged. When disengaged, the spindle arm opens a minimum of 90° for easy workpiece removal. All illustrations show clamps in engaged position.

Clamps have vinyl-covered handles for a comfortable, sure grip. All have a steel hex head cap screw spindle (great for heavy duty work and welding), except those marked with a ♦ which have a molded neoprene-tipped spindle (nonmarring), with a ★ which have a hex head cap screw spindle with PVC cap, or with a ♣ which have a hex head cap screw spindle with neoprene cap. For replacement hex head cap screw spindles, see pages 3134-3159. For replacement neoprene-tipped spindles, see page 2593.

Open Arm for Spindle Positioning—Spindle moves easily to any position along the U-shaped arm.

Double locking have a locking lever to keep the spindle arm in the locked position. Lever must be released before the clamp can open. Ideal for high-vibration and overhead applications. ***Auto adjusting*** compensate for varying thicknesses of workpieces while maintaining proper clamping pressure. ***15° angled arm*** swings farther away from the workpiece, allowing easier removal of parts from the fixture.

Cut-to-Length Solid Arm with Weld-On Spindle Holder—Use as is, or cut arm to desired length and weld the spindle holder (included) to the end of the arm for custom work-holding applications.

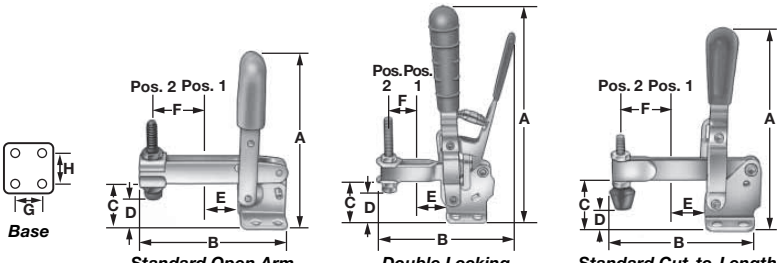

Holding Capacity, lbs. Pos. 1	Pos. 2	O'all Ht. (A)	O'all Lg. (B)	Baseline to Arm (C)	Spindle (D)	Base to Spindle Pos. 1 (E)	Spindle Pos. 1 to Pos. 2 (F)	Spindle Screw Size, Thread	O'all Lg.	MOUNTING HOLES Ctr. to Ctr. (G)	(H)	Dia.		
Open Arm for Spindle Positioning														
Standard (Steel)														
—	200	4 7/32"	2 5/16"	15/16"	19/32"	1 1/16"	—	1/4"-20	× 1 15/16"	1/2"	1 1/16"	7/32"	**5126A52**	$10.94
100	55	3 1/32"	2 1/64"	5/8"	3/32"	13/64"	47/64"	10-32	× 1 3/8"	5/8"	15/16"	11/64"	**5126A19** ♦	11.41
100	55	3 1/32"	2 1/64"	5/8"	23/64"	13/64"	47/64"	10-32	× 1 3/32"	5/8"	15/16"	11/64"	**5126A36**	9.98
200	110	4 13/64"	2 47/64"	15/16"	1/4"	1/2"	1"	1/4"-20	× 1 5/8"	1/2"	1 1/16"	7/32"	**5126A21** ♦	11.43
200	110	4 21/64"	2 47/64"	15/16"	1/4"	1/2"	1"	1/4"-20	× 1 7/8"	1/2"	1 1/16"	7/32"	**5126A37**	10.96
200	125	4 21/64"	3 17/64"	15/16"	9/64"	1/2"	1 35/64"	1/4"-20	× 1 5/8"	1/2"	1 1/16"	7/32"	**5126A53** ♦	12.99
230	100	4"	3 11/32"	7/8"	1/4"	3/4"	1 1/4"	1/4"-20	× 1 63/64"	1/2"	1 1/16"	13/64"	**5126A17** ★	10.54
375	150	6 57/64"	5 27/64"	1 1/4"	13/16"	9/16"	3"	5/16"-18	× 2 3/4"	3/4"	1 1/4"	9/32"	**5126A55**	16.50
375	225	5 21/32"	3 3/4"	1 1/4"	1/4"	39/64"	1 19/64"	5/16"-18	× 3"	3/4"	1 1/4"	9/32"	**5126A46** ♦	19.17
375	225	5 21/32"	3 3/4"	1 1/4"	23/32"	39/64"	1 19/64"	5/16"-18	× 2 3/4"	3/4"	1 1/4"	9/32"	**5126A33**	18.11
375	225	6 57/64"	3 11/16"	1 1/4"	23/32"	9/16"	1 19/64"	5/16"-18	× 2 3/4"	3/4"	1 1/4"	9/32"	**5126A54**	14.22
480	200	6 9/16"	4 3/16"	1 1/4"	21/64"	3/4"	1 7/8"	5/16"-18	× 3 1/4"	3/4"	1 3/8"	17/64"	**5126A11** ♣	13.30
600	290	8 5/32"	5 17/32"	1 43/64"	13/32"	57/64"	2 13/32"	3/8"-16	× 3 1/2"	1 1/4"	1 25/32"	21/64"	**5126A47** ♦	25.69
600	290	8 5/32"	5 17/32"	1 43/64"	1 1/4"	57/64"	2 13/32"	3/8"-16	× 3"	1 1/4"	1 25/32"	21/64"	**5126A35**	23.87
1,000	480	8 11/16"	6 7/8"	2"	15/64"	1 19/64"	3 5/64"	1/2"-13	× 3 7/8"	1 1/4"	1 25/32"	11/32"	**5126A22** ♦	34.50
1,000	480	8 11/16"	7"	2"	15/64"	1 19/64"	3 5/64"	1/2"-13	× 3 5/16"	1 1/4"	1 25/32"	11/32"	**5126A38**	34.72
1,050	400	8"	6 1/8"	2"	1 1/16"	29/32"	2 7/8"	5/16"-18	× 3 1/4"	1 1/8"	1 3/8"	1/4"	**5126A12** ♣ ●	17.44
1,200	600	11 7/8"	8 59/64"	3 5/64"	2 1/2"	1 7/16"	4"	5/8"-11	× 4 3/8"	2"	2 3/4"	31/64"	**5126A18**	55.24
1,200	820	12"	9"	3 1/4"	2 1/2"	1 7/16"	4 1/4"	5/8"-11	× 5"	2"	2 3/4"	31/64"	**5126A39** ♦	55.82
1,700	800	9 27/32"	7 7/16"	2 5/32"	1 15/64"	2"	2 3/4"	1/2"-13	× 3 13/16"	7/8"	2"	21/64"	**5126A14**	26.25
2,570	1,200	14 11/16"	9 7/8"	3 1/8"	2"	2 19/32"	3 9/16"	5/8"-11	× 5 27/64"	1 1/2"	2 1/4"	25/64"	**5126A15**	39.30
4,000	2,000	14 7/8"	10"	3 7/32"	2"	3"	3 3/8"	5/8"-11	× 5 15/32"	2 1/4"	2 1/4"	25/64"	**5126A16**	153.50
Standard (300 Series Stainless Steel)														
—	250	4 17/64"	2 5/16"	15/16"	19/32"	1 1/16"	—	1/4"-20	× 1 11/16"	1/2"	1 1/16"	7/32"	**5126A51**	31.18
125	60	3 1/32"	2 1/64"	5/8"	5/16"	13/64"	47/64"	10-32	× 1 1/8"	5/8"	15/16"	11/64"	**5126A29**	24.79
125	60	3 1/32"	2 1/64"	5/8"	5/16"	13/64"	47/64"	10-32	× 1 3/8"	5/8"	15/16"	11/64"	**5126A41** ♦	26.24
230	100	4"	3 11/32"	7/8"	1/4"	3/4"	1 1/4"	1/4"-20	× 1 63/64"	1/2"	1 1/16"	13/64"	**5126A57** ★	25.79
250	140	4 13/64"	2 23/32"	15/16"	9/64"	1/2"	63/64"	1/4"-20	× 1 5/8"	1/2"	1 1/16"	7/32"	**5126A42** ♦	31.08
250	140	4 13/64"	2 23/32"	15/16"	17/32"	1/2"	63/64"	1/4"-20	× 1 11/16"	1/2"	1 1/16"	7/32"	**5126A23**	31.18
450	240	5 5/8"	4 3/8"	1 1/4"	13/64"	5/8"	2 1/8"	5/16"-18	× 3"	3/4"	1 1/4"	9/32"	**5126A43** ♦	42.55
450	240	5 5/8"	4 3/8"	1 1/4"	49/64"	5/8"	2 1/8"	5/16"-18	× 2 1/2"	3/4"	1 1/4"	9/32"	**5126A25**	42.65
480	200	6 9/16"	4 3/16"	1 1/4"	21/64"	3/4"	1 7/8"	5/16"-18	× 3 1/4"	3/4"	1 3/8"	17/64"	**5126A58** ♣ ●	35.15
750	360	7 37/64"	5 17/32"	1 11/16"	21/64"	23/32"	2 9/16"	3/8"-16	× 3 1/4"	1 1/4"	1 25/32"	21/64"	**5126A44** ♦	60.10
750	360	7 37/64"	5 17/32"	1 11/16"	17/64"	23/32"	2 9/16"	3/8"-16	× 2 49/64"	1 1/4"	1 25/32"	21/64"	**5126A27**	60.14
Double Locking (Steel)														
375	225	7 1/8"	4 1/2"	1 1/4"	5/16"	39/64"	1 5/16"	5/16"-18	× 3"	3/4"	1 1/4"	9/32"	**51325A41** ♦	39.36
375	225	7 1/8"	4 1/2"	1 1/4"	13/16"	39/64"	1 5/16"	5/16"-18	× 2 3/4"	3/4"	1 1/4"	9/32"	**51325A65**	38.09
600	290	8 7/64"	6 11/16"	1 11/16"	7/16"	57/64"	2 13/32"	3/8"-16	× 3 1/2"	1 1/4"	1 3/4"	21/64"	**51325A42** ♦	54.91
600	290	8 7/64"	6 11/16"	1 11/16"	1 1/4"	57/64"	2 13/32"	3/8"-16	× 3"	1 1/4"	1 3/4"	21/64"	**51325A66**	52.72
Auto Adjusting (Steel)														
1,000	500	10 5/16"	7 1/8"	2 3/64"	5/16"	1 15/16"	2 3/4"	1/2"-13	× 3 7/8"	7/8"	2"	21/64"	**5127A5** ♦ ♥	91.73
1,000	500	10 5/16"	7 1/8"	2 3/64"	1 9/32"	1 15/16"	2 3/4"	1/2"-13	× 3 5/16"	7/8"	2"	21/64"	**5127A4** ♥	92.61
2,200	1,200	14 5/8"	9 7/8"	3 1/8"	1 63/64"	3 1/8"	3 1/16"	5/8"-11	× 5 15/32"	1 1/2"	2 1/4"	25/64"	**5127A2** ✓	63.24
15° Angled Arm (Steel)														
1,050	400	7 15/64"	6"	2 13/32"	45/64"	1 7/8"	2 7/8"	5/16"-18	× 3 5/8"	1 3/8"	1 1/2"	17/64"	**5126A13** ♣	22.56
Cut-to-Length Solid Arm with Weld-On Spindle Holder														
Standard (Steel)														
500	350	5 49/64"	3 3/4"	1 1/4"	3/8"	39/64"	1 41/64"	5/16"-18	× 2 1/4"	3/4"	1 1/4"	9/32"	**7852A21** ♦	19.26
500	350	5 49/64"	3 3/4"	1 1/4"	3/8"	39/64"	1 41/64"	5/16"-18	× 2 3/4"	3/4"	1 1/4"	9/32"	**7852A64**	17.50
750	500	8 7/64"	5 23/64"	1 11/16"	7/16"	57/64"	2 45/64"	3/8"-16	× 3"	1 1/4"	1 25/32"	21/64"	**7852A65**	25.93
750	500	8 7/64"	5 23/64"	1 11/16"	7/16"	57/64"	2 45/64"	3/8"-16	× 3 1/4"	1 1/4"	1 25/32"	21/64"	**7852A23** ♦	26.17
1,000	650	8 11/16"	7"	2"	1 3/8"	1 19/64"	3 37/64"	1/2"-13	× 2 3/4"	1 1/4"	1 25/32"	11/32"	**7852A25**	38.27
1,000	650	8 11/16"	7"	2"	1 3/8"	1 19/64"	3 37/64"	1/2"-13	× 3 7/8"	1 1/4"	1 25/32"	11/32"	**7852A66** ♦	39.70
1,200	820	11 7/8"	8 7/8"	3 5/64"	2 5/16"	1 63/64"	4 5/32"	5/8"-11	× 4 3/8"	2"	2 3/4"	31/64"	**5161A27**	87.12
1,200	820	11 7/8"	8 7/8"	3 5/64"	2 5/16"	1 63/64"	4 5/32"	5/8"-11	× 5"	2"	2 3/4"	31/64"	**5161A54** ♦	88.67

♦ Has molded neoprene-tipped spindle. ★ Has hex head cap screw spindle with PVC cap. ♣ Has hex head cap screw spindle with neoprene cap.
● Can also be mounted using 5/16" dia. mounting holes. (G) is 1 1/4" and (H) is 1 3/4". ♥ Cam action allows workpiece thickness variation of 5/16".
✓ Cam action allows workpiece thickness variation of 7/16".

Low-Profile Hold-Down Toggle Clamps

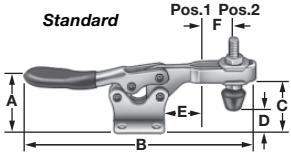

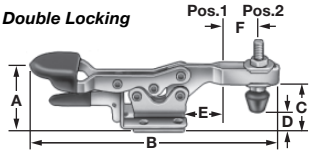

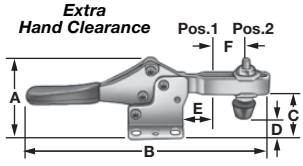

Base Styles

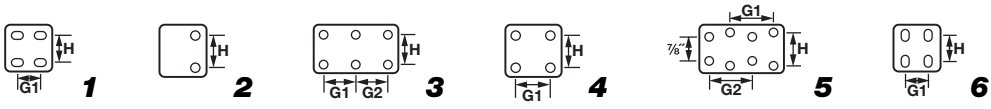

Get the same fast clamping action of hold-down toggle clamps with the advantage of greater clearance over the workpiece. When mounted to a horizontal surface, handle is horizontal when clamp is engaged. When disengaged, spindle arm opens a minimum of 90° for easy workpiece removal. All illustrations show clamps in engaged position.

Clamps have a U-shaped, open spindle arm—spindle can be moved to any position along the arm (unless noted). They also have vinyl-covered handles for a comfortable, secure grip (unless noted). All have a hex head cap screw spindle (great for heavy duty work and welding), except those marked with a ♦ which have a molded neoprene-tipped spindle (non-marring). For replacement hex head cap screw spindles, see pages 3134-3159. For replacement neoprene-tipped spindles, see page 2593.

Double-Locking Clamps—A locking lever keeps the spindle arm in the locked position and must be released before the clamp can open. Ideal for high-vibration and overhead applications.

Extra Hand-Clearance Clamps—Allow extra clearance between the spindle arm and the handle when clamp is fully open.

Holding Capacity, lbs. Pos. 1	Pos. 2	O'all Ht. (A)	O'all Lg. (B)	Baseline to Arm (C)	Baseline to Spindle (D)	Base to Spindle Pos. 1 (E)	Spindle Pos. 1 to Pos. 2 (F)	Spindle Screw Size, Thread	× O'all Lg.	Base Style	MOUNTING HOLES Ctr. to Ctr. (G1)	(G2)	(H)	Size		
Standard (Steel)																
60	—	43/64"	2 25/32"	3/8"	5/64"	45/64"	—	8-32	× 55/64"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A67●★	$8.44
60	—	43/64"	2 25/32"	3/8"	1/8"	45/64"	—	M4	× 7/8"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A27♦	8.43
60	50	43/64"	2 21/32"	5/16"	1/64"	7/32"	3/8"	8-32	× 55/64"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A14●	8.44
60	50	43/64"	2 21/32"	5/16"	1/16"	7/32"	3/8"	M4	× 7/8"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A26♦	8.43
150	100	15/16"	2 7/8"	9/16"	19/64"	9/16"	5/16"	8-32	× 1 5/16"	2	—	—	5/8"	5/32" dia.	5128A15♥	7.42
200	80	1 17/32"	5 1/2"	1"	7/32"	2 5/32"	1 1/4"	1/4"-20	× 1 5/8"	1	1 1/16"	—	7/8"	1 3/64" × 1 5/64"	5128A16♦	11.34
200	80	1 17/32"	5 1/2"	1"	5/8"	2 5/32"	1 1/4"	1/4"-20	× 1 15/16"	1	1 1/16"	—	7/8"	1 3/64" × 1 5/64"	5128A28	10.88
360	200	1 11/16"	5"	15/16"	19/64"	5/8"	7/8"	1/4"-20	× 2"	3	9/16"	1/2"	7/8"	1 3/64" dia.	5128A11♥	9.01
500	250	1 27/32"	6 45/64"	1 21/64"	55/64"	1 5/64"	1 25/64"	5/16"-18	× 1 3/4"	4	1"	—	7/8"	1 7/64" dia.	5128A29	12.52
500	250	1 27/32"	6 45/64"	1 21/64"	9/32"	1 5/64"	1 25/64"	5/16"-18	× 2 1/4"	4	1"	—	7/8"	1 7/64" dia.	5128A18♦	12.96
750	300	2 35/64"	10 7/8"	1 3/4"	1 3/16"	1 39/64"	2 9/32"	3/8"-16	× 3"	4	1 5/8"	—	1 5/8"	2 1/64" dia.	5128A31	20.95
750	300	2 35/64"	10 7/8"	1 3/4"	25/64"	1 39/64"	2 9/32"	3/8"-16	× 3 1/4"	4	1 5/8"	—	1 5/8"	2 1/64" dia.	5128A19♦	21.93
880	400	1 31/32"	6 13/16"	1 1/8"	1/2"	13/16"	1 5/16"	1/4"-20	× 2"	5	1 1/4"	1"	1"	1 7/64" dia.	5128A12♥	10.34
1,600	600	3 1/16"	9 15/32"	1 21/32"	1 13/64"	1"	2 5/16"	5/16"-18	× 2 7/8"	4	2"	—	1 5/16"	1 7/64" dia.	5128A53◢	17.62
Standard (300 Series Stainless Steel)																
75	65	43/64"	2 39/64"	5/16"	1/64"	7/32"	3/8"	8-32	× 55/64"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A41■	18.41
75	65	43/64"	2 3/4"	3/8"	3/32"	45/64"	—	8-32	× 55/64"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A48■	18.80
75	65	43/64"	2 39/64"	5/16"	0"	7/32"	3/8"	8-32	× 1"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A32♦■	19.96
100	50	1 1/16"	2 11/16"	13/32"	7/64"	3/8"	27/64"	8-32	× 55/64"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A42	28.07
100	50	1 1/16"	2 47/64"	49/64"	27/64"	29/64"	11/32"	8-32	× 55/64"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A49	28.07
100	50	1 1/16"	2 11/16"	13/32"	0"	3/8"	27/64"	8-32	× 1"	1	17/32"	—	5/8"	1 1/64" × 17/64"	5128A33♦	28.83
150	100	15/16"	2 7/8"	9/16"	19/64"	9/16"	5/16"	8-32	× 1 5/16"	2	—	—	5/8"	5/32" dia.	5128A21◢	14.38
250	110	1 17/32"	5 15/32"	1"	13/64"	2 5/32"	1 1/4"	1/4"-20	× 1 5/8"	1	1 1/16"	—	7/8"	1 3/64" × 1 5/64"	5128A34♦■	27.30
250	110	1 17/32"	5 15/32"	1"	9/16"	13/16"	1 1/4"	1/4"-20	× 1 11/16"	1	1 1/16"	—	7/8"	1 3/64" × 1 5/64"	5128A43■	26.04
360	200	1 11/16"	5"	15/16"	19/64"	5/8"	7/8"	1/4"-20	× 2"	3	9/16"	1/2"	7/8"	1 3/64" dia.	5128A23♥	23.88
600	300	1 27/32"	6 19/32"	1 19/64"	1/4"	1 7/64"	1 25/64"	5/16"-18	× 2 1/4"	4	1"	—	7/8"	1 7/64" dia.	5128A35♦■	35.97
600	300	1 27/32"	6 19/32"	1 19/64"	13/16"	1 7/64"	1 25/64"	5/16"-18	× 2 1/2"	4	1"	—	7/8"	1 7/64" dia.	5128A45■	36.06
850	360	2 35/64"	10 7/8"	1 3/4"	1 9/64"	1 35/64"	2 9/32"	3/8"-16	× 2 3/4"	4	1 5/8"	—	1 5/8"	2 1/64" dia.	5128A47	62.28
850	360	2 35/64"	10 7/8"	1 3/4"	25/64"	1 35/64"	2 9/32"	3/8"-16	× 3 1/4"	4	1 5/8"	—	1 5/8"	2 1/64" dia.	5128A36♦	61.53
880	400	1 31/32"	6 13/16"	1 1/8"	1/2"	13/16"	1 5/16"	1/4"-20	× 2"	5	1 1/4"	1"	1"	1 7/64" dia.	5128A25♥	32.13
Double Locking (Steel)																
500	250	1 59/64"	7 9/64"	1 19/64"	55/64"	1 1/16"	1 11/32"	5/16"-18	× 1 3/4"	4	1"	—	7/8"	1 7/64" dia.	5128A37	33.33
500	250	1 59/64"	7 9/64"	1 21/64"	9/32"	1 1/16"	1 23/64"	5/16"-18	× 2 1/4"	4	1"	—	7/8"	1 7/64" dia.	5128A66♦	34.12
750	300	2 35/64"	10 17/32"	1 45/64"	1 9/64"	1 35/64"	2 9/32"	3/8"-16	× 3"	4	1 5/8"	—	1 5/8"	2 1/64" dia.	5128A38	52.93
750	300	2 35/64"	10 17/32"	1 45/64"	21/64"	1 35/64"	2 9/32"	3/8"-16	× 3 1/4"	4	1 5/8"	—	1 5/8"	2 1/64" dia.	5128A65♦	56.01
Extra Hand Clearance (Steel)																
150	70	1 25/64"	4 1/8"	23/32"	29/64"	25/64"	27/32"	10-32	× 1 3/32"	6	17/32"	—	45/64"	1 1/64" dia.	5091A43	10.21
150	70	1 25/64"	4 1/8"	23/32"	3/16"	25/64"	55/64"	10-32	× 1 3/8"	6	17/32"	—	45/64"	1 1/64" dia.	5091A32♦	11.05
200	80	1 61/64"	6 19/32"	15/16"	5/32"	1 9/32"	1 31/64"	1/4"-20	× 1 5/8"	6	1 1/32"	—	1 3/16"	7/32"	× 1 1/32"	5091A33♦	14.29
200	80	1 61/64"	6 9/16"	15/16"	17/32"	39/64"	1 1/2"	1/4"-20	× 1 15/16"	6	1 1/32"	—	1 3/16"	7/32"	× 1 1/32"	5091A44	13.91
500	225	2 7/16"	7 9/16"	1 17/64"	53/64"	57/64"	1 33/64"	5/16"-18	× 1 15/16"	6	1 1/32"	—	1 7/32"	1 7/64"	× 3/8"	5091A45	15.32
500	225	2 7/16"	7 39/64"	1 17/64"	1/4"	51/64"	1 33/64"	5/16"-18	× 2 1/4"	6	1 1/32"	—	1 7/32"	1 7/64"	× 3/8"	5091A34♦	15.77
750	290	3 13/64"	10 43/64"	1 5/8"	1 1/16"	31/32"	2 3/4"	3/8"-16	× 3"	6	1 5/8"	—	1 11/16"	1 1/32"	× 2 7/64"	5091A46	25.20
750	290	3 13/64"	10 45/64"	1 5/8"	17/64"	61/64"	2 3/4"	3/8"-16	× 3 1/4"	6	1 5/8"	—	1 11/16"	1 1/32"	× 2 7/64"	5091A35♦	26.55
1,000	400	4 1/4"	12 21/64"	2 1/4"	13/32"	1 23/64"	3 9/64"	1/2"-13	× 3 7/8"	4	1 5/8"	—	1 5/8"	1 1/32"	dia.	5091A47♦	43.83
Extra Hand Clearance (300 Series Stainless Steel)																
150	70	1 25/64"	4 1/8"	23/32"	11/64"	25/64"	27/32"	10-32	× 1 3/8"	6	17/32"	—	45/64"	1 1/64"	× 1 3/64"	5091A48♦	26.67
150	70	1 25/64"	4 1/8"	23/32"	7/16"	25/64"	55/64"	10-32	× 1 3/8"	6	17/32"	—	45/64"	1 1/64"	× 1 3/64"	5091A36	25.41
250	100	1 61/64"	6 9/16"	15/16"	9/64"	39/64"	1 1/2"	1/4"-20	× 1 5/8"	6	1 1/32"	—	1 3/16"	7/32"	× 1 1/32"	5091A49♦	32.27
250	100	1 61/64"	6 19/32"	15/16"	17/32"	19/32"	1 31/64"	1/4"-20	× 1 21/32"	6	1 1/32"	—	1 3/16"	7/32"	× 1 1/32"	5091A37	30.73
600	270	2 7/16"	7 9/16"	1 17/64"	7/32"	57/64"	1 33/64"	5/16"-18	× 2 1/4"	6	1 1/32"	—	1 17/32"	1 7/64"	× 3/8"	5091A51♦	40.57
600	270	2 7/16"	7 39/64"	1 17/64"	29/32"	51/64"	1 33/64"	5/16"-18	× 2 1/2"	6	1 1/32"	—	1 17/32"	1 7/64"	× 3/8"	5091A58	40.57

● Has nylon hex spindle tip. ★ Has solid spindle arm (not illustrated). Spindle position is not available. ♦ Has neoprene-tipped spindle.
♥ Has PVC-tipped spindle. ◢ Has hex head cap screw spindle with PVC cap. ■ Handles are not vinyl covered.

Compact Hold-Down Toggle Clamps

Big things do come in small packages. These clamps have exceptional holding power for their size and are ideal for circuit boards, gluing, assembling, and light machining. Include a low-profile handle with vinyl grip. Spindle can be easily moved to any position along the open-style arm. Have a neoprene-tipped spindle, unless noted. For replacement neoprene-tipped spindles, see page 2593. For replacement hex head cap screw spindles, see pages 3134-3159.

Double-Locking—Built-in lock/release lever prevents accidental openings.

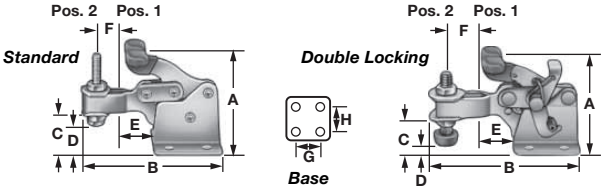

Holding Capacity, lbs. Pos. 1	Pos. 2	O'all Ht. (A)	O'all Lg. (B)	Baseline to Arm (C)	Baseline to Spindle (D)	Base to Spindle Pos. 1 (E)	Spindle Pos. 1 to Pos. 2 (F)	Spindle Screw Size, Thread × O'all Lg.	Mounting Holes Ctr. to Ctr. (G)	(H)	Dia.		
Standard (Steel)													
150	110	1 3/8"	2 7/32"	1/2"	0"	17/32"	1/2"	10-32 × 1 3/8"	17/32"	5/8"	3/16"	5004A82	$10.81
150	110	1 3/8"	2 7/32"	1/2"	3/16"	17/32"	1/2"	10-32 × 1 7/64"	17/32"	5/8"	3/16"	5004A45♠	10.07
350	260	2 13/32"	3 19/32"	7/8"	0"	13/16"	51/64"	5/16"-18 × 2 1/4"	29/32"	1 5/32"	9/32"	5004A83	16.27
350	260	2 13/32"	3 19/32"	7/8"	13/32"	13/16"	51/64"	5/16"-18 × 1 31/32"	29/32"	1 9/64"	9/32"	5004A46♠	15.62
750	530	3 9/16"	5 3/16"	1 19/64"	33/64"	1 17/64"	1 1/16"	3/8"-16 × 2 23/32"	1 3/8"	1 1/2"	21/64"	5004A84♣	32.73
Standard (Type 302/304 Stainless Steel)													
200	150	1 29/64"	2 7/32"	1/2"	0"	17/32"	1/2"	10-32 × 1 3/8"	17/32"	5/8"	3/16"	5004A75	25.78
200	150	1 29/64"	2 7/32"	1/2"	3/16"	17/32"	1/2"	10-32 × 1 23/64"	17/32"	5/8"	3/16"	5004A92♠	24.27
350	260	2 13/32"	3 19/32"	7/8"	0"	13/16"	51/64"	5/16"-18 × 2 1/4"	29/32"	1 5/32"	9/32"	5004A76	39.12
350	260	2 13/32"	3 19/32"	7/8"	13/32"	13/16"	51/64"	5/16"-18 × 2 23/32"	29/32"	1 5/32"	9/32"	5004A93♠	39.24
750	530	3 9/16"	5 3/16"	1 19/64"	3/4"	1 17/64"	1 1/16"	3/8"-16 × 2 3/4"	1 3/8"	1 1/2"	21/64"	5004A94♣	59.11
Double Locking (Steel)													
150	110	1 3/8"	2 7/32"	1/2"	0"	17/32"	1/2"	10-32 × 1 3/8"	17/32"	5/8"	11/64"	4961A66	26.03
350	260	2 13/32"	3 19/32"	7/8"	0"	7/8"	51/64"	5/16"-18 × 2 1/4"	29/32"	1 5/32"	9/32"	4961A67	34.93
750	530	3 9/16"	5 3/16"	1 5/16"	1/16"	1 17/64"	1 1/16"	3/8"-16 × 3 1/4"	1 3/8"	1 1/2"	21/64"	4961A68	56.70

♠ Has hex head cap screw spindle. ♣ Has hex head cap screw spindle with slip-on neoprene cap.

Dual-Mount Hold-Down Toggle Clamps

Why be forced to choose between vertical or horizontal mounting? These versatile clamps feature a dual-mount base for mounting either way. When the clamp is disengaged, the clamping arm completely clears the work area to provide more room for loading and unloading parts. Handle extends 2" below the base when clamp is engaged. Illustration shows clamp in engaged position.

Clamps have a U-shaped, open spindle arm and a spindle which easily moves to any position along the arm. Made of steel with a vinyl-covered handle for a comfortable, secure grip.

Neoprene tip spindle has a 5/16"-18 × 3" Lg. screw. *Hex head* spindle has a 5/16"-18 × 2 3/4" Lg. screw.

For replacement neoprene-tipped spindles see page 2593. For replacement hex head cap screw spindles, see pages 3134-3159.

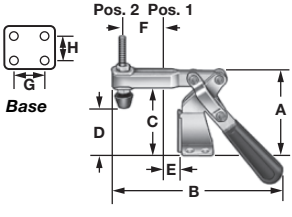

Spindle Type	Holding Capacity, lbs. Pos. 1	Pos. 2	O'all Ht. (A)	O'all Lg. (B)	Baseline to Arm (C)	Baseline to Spindle (D)	Base to Spindle Pos. 1 (E)	Spindle Pos. 1 to Pos. 2 (F)	Mounting Holes Ctr. to Ctr. (G)	(H)	Dia.		
Neoprene Tip	375	200	5 5/8"	6 3/32"	2 21/32"	1 21/32"	19/64"	1 15/16"	5/8"	1"	17/64"	50225A11	$23.18
Hex Head	375	200	5 5/8"	6 3/32"	2 21/32"	2 9/64"	19/64"	1 15/16"	5/8"	1"	17/64"	50225A31	22.45

360° Rotating Hold-Down Clamps

Easy to set up and position—clamps rotate 360° around the mounting bolt and mount anywhere on a bench or table top. Include sliding-pin handle, swivel pad, all mounting hardware, and baked-enamel finish. Made of malleable iron.

Clamp with machine bolt has a slot in the clamp's base for a 3/8"-16 × 3 1/2" Lg. machine bolt (included). Clamp is 5 1/2" Lg. × 2 1/4" Wd. × 6" Ht. ***Clamp with T-slot bolt and machine bolt*** includes a 8 1/8" Lg. T-slot bolt and a 5/8"-11 × 9" Lg. machine bolt—both slide through the frame for mounting. Clamp is 7 1/2" Lg. × 2 3/4" Wd. × 9" Ht.

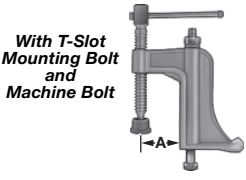

Mounting Bolt Style	Holding Cap., lbs.	Opening Max.	Opening Min.	(A)	Screw Dia.		
Machine Bolt	2,000	3"	0"	1 3/4"	9/16"	5024A11	$17.75
T-Slot Bolt and Machine Bolt	6,000	3 7/8"	0"	2 1/2"	13/16"	5024A14	103.27

Variable Fast-Action Plunger Clamps

Ideal when quick clamping action is needed and there are large size variations between clamped pieces. Push the plunger forward until it contacts the workpiece, then rotate the locking lever handle to apply clamping force and lock the plunger. Mounting base is aluminum, knobs are plastic, and all other parts are steel. The ***base-mount*** clamp mounts to a flat surface; drill a hole to mount ***flange-mount*** clamp into surface.

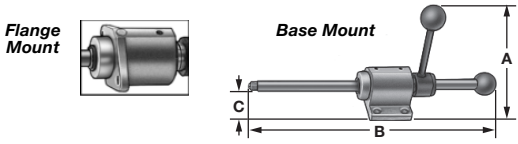

Mount. Style	Holding Cap., lbs.	O'all Ht. (A)	O'all Lg. (B)	Baseline to Plunger (C)	Plunger Travel	Plunger Dia.	Internal Thread	Mounting Holes Ctr. to Ctr.	Dia.		
Base	2,000	6 5/16"	14 3/64"	1 3/16"	7 7/8"	5/8"	M8	2 3/4" × 1 37/64"	23/64"	5010A92	$314.29
Flange	600	4 7/64"	13 15/64"	—	7 7/8"	15/32"	M6	2 3/64"	1/4"	5010A91	257.46

Push/Pull-Action Toggle Clamps

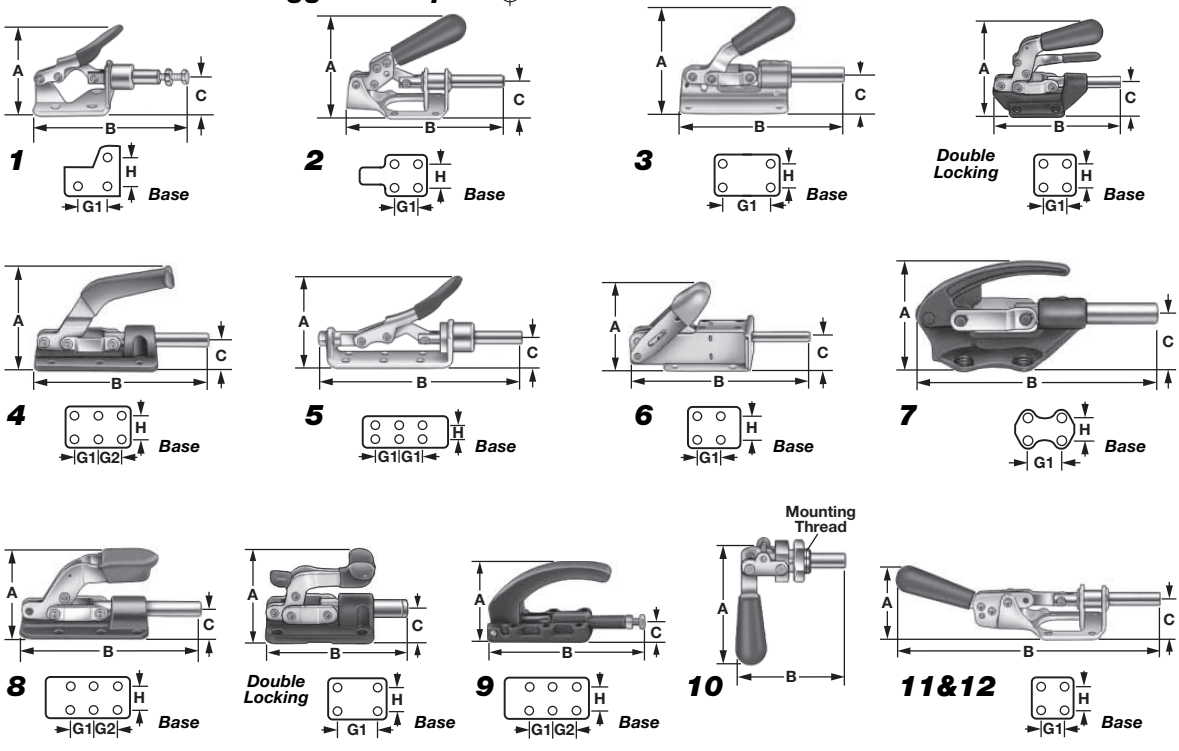

Fast, push/pull clamping action is perfect for assembly areas, machining, and welding. All can be used as push-action clamps. Clamps that lock in extended and retracted positions can also be used as pull-action clamps—simply move handle in the opposite direction.

Plungers are drilled and tapped to accommodate standard threaded spindles (not included, unless specified) and other threaded fixtures. For hex head cap screw spindles, see pages 3134-3159. For neoprene-tipped spindles, see page 2593.

Clamps are steel (unless noted). Cast bases are more durable than formed while forged are more durable than cast. Unless noted, handles are vinyl covered for a comfortable, secure grip. All illustrations show clamps in extended (engaged) position.

Forward-Action Handle— Moving handle forward moves plunger forward; clamps lock in position at the end of travel.

(1) Our smallest push-action toggle clamps are ideal for electronics and other light duty work. Lock in extended and retracted positions. 5093A55 has a nylon spindle assembly, 5093A68 has a hex head cap screw spindle, 5093A41 has a neoprene-tipped bonded spindle assembly, and 5093A54 has an externally threaded 1/4″-20 plunger tip.

(2) General purpose clamp. Locks in extended and retracted positions.

(3) These low-profile clamps are easy to work with in tight and restricted areas. Lock in both extended and retracted positions.

(4) Maximum capacity for their size. Lock in extended and retracted positions. 5093A75 has a square plunger that resists rotating forces.

(5) Base is extra narrow—perfect where other clamps won't fit. Locks in extended position only.

(6) Exerts 800 lbs. of force during travel of the plunger and 1,200 lbs. when locked. Locks in extended position only.

(7) Super duty clamp offers the greatest holding capacity. Locks in extended and retracted positions.

(8) Clamps have a larger handle pad than the other clamps, so they're more comfortable to use. Lock in extended position only.

(9) Low-profile clamps for tight clearances. Lock in extended and retracted positions.

Reverse-Action Handle— Moving the handle back (or downward) moves plunger forward; clamps lock in position at the end of travel.

(10) These fully retractable clamps have threads at the base of the plunger—can be mounted through a panel with a jam nut on the work side, or drill and tap a hole for flush mounting. Lock in extended and retracted positions.

(11) General purpose clamp. Locks in extended position only.

(12) When clamp is engaged, the handle is in a near horizontal position. Good for areas where the handle would normally cause interference. Locks in extended position only.

Double Locking— Built-in lock/release lever prevents accidental openings. Good for high-vibration and overhead applications. Offered in *Styles 3, 8,* and *10*.

	Holding Cap., lbs.	O'all Ht. (A)	O'all Lg. (B)	Baseline to Plunger (C)	PLUNGER Travel	PLUNGER Dia.	PLUNGER Internal Thread Size	PLUNGER Internal Thread Depth	Base Type	MOUNTING HOLES Ctr. to Ctr. (G1)	MOUNTING HOLES Ctr. to Ctr. (G2)	MOUNTING HOLES Ctr. to Ctr. (H)	MOUNTING HOLES Dia.		
Forward-Action Handle															
1	100	1 3/16″	2 61/64″	1/2″	5/8″	1/4″	8-32	1/2″	Formed	5/8″	—	5/8″	11/64″	**5093A55**	$11.15
1	100	1 3/16″	2 61/64″	1/2″	5/8″	1/4″	8-32	1/2″	Formed	5/8″	—	5/8″	11/64″	**5093A68**■★	27.46
1	100	1 3/16″	2 61/64″	1/2″	5/8″	1/4″	M4	1/2″	Formed	5/8″	—	5/8″	11/64″	**5093A41**	14.06
1	100	1 3/16″	2 55/64″	1/2″	5/8″	1/4″	1/4″-20	1/2″	Formed	5/8″	—	5/8″	11/64″	**5093A54**▲	12.13
2	300	3 5/32″	5 15/32″	3 1/32″	1 1/4″	7/16″	5/16″-18	1″	Formed	1 3/8″	—	1 5/8″	7/32″	**5093A84**	16.52
3	300	3 1/4″	5 31/64″	3 1/32″	1 1/4″	7/16″	5/16″-18	1″	Formed	1 3/8″	—	1 5/8″	17/64″	**5093A57**	20.40
3	600	3 9/32″	4 45/64″	3 1/32″	1 1/4″	7/16″	5/16″-18	1″	Forged	1 7/16″	—	1 5/16″	17/64″	**5093A58**	21.05
3	600	3 9/32″	4 45/64″	3 1/32″	1 1/4″	7/16″	M8	1″	Forged	1 7/16″	—	1 5/16″	17/64″	**5093A43**	24.27
3	840	3 9/32″	4 45/64″	3 1/32″	1 1/4″	7/16″	5/16″-18	1″	Formed	1 7/16″	—	1 5/16″	17/64″	**5093A21**★	55.37
4	800	3 19/32″	6 1/64″	1 1/16″	1 5/8″	1/2″	5/16″-18	1″	Forged	1 5/8″	1 3/8″	1 5/8″	9/32″	**5093A65**	32.26
4	800	3 19/32″	6 1/64″	1 1/16″	1 5/8″	1/2″ sq.	5/16″-18	1″	Forged	1 5/8″	1 3/8″	1 5/8″	9/32″	**5093A75**	50.90
4	800	4 3/8″	6 23/32″	1 45/64″	1 5/8″	5/8″	3/8″-16	1″	Formed	1 5/8″	—	1 5/8″	11/32″	**5093A11**♣	29.63
4	850	4 3/64″	6 1/8″	1 1/4″	1 5/8″	5/8″	3/8″-16	1 1/4″	Forged	1 5/8″	—	1 5/8″	21/64″	**5093A67**♣	37.05
4	2,500	3 3/32″	7 1/32″	13/16″	2″	5/8″	3/8″-16	1 1/4″	Forged	1 5/8″	1 3/8″	1 5/8″	11/32″	**5093A59**	39.46
4	7,500	4 3/8″	12 21/32″	1 1/4″	4″	7/8″	1/2″-13	2″	Forged	3 9/16″	3 9/16″	2 1/8″	13/32″	**5093A66**	108.77
5	450	2 1/8″	6 23/32″	7/8″	1 9/16″	7/16″	5/16″-18	1″	Formed	1 1/4″	—	5/8″	13/64″	**5093A73**	31.54

■ Handle is not vinyl covered. ★ 300 series stainless steel. ▲ Plunger has external threads. ♣ Base has four holes.

(Continued on following page)

Push/Pull-Action Toggle Clamps *(Continued from previous page)*

Holding Cap., lbs.	O'all Ht. (A)	O'all Lg. (B)	Baseline to Plunger (C)	PLUNGER Travel	PLUNGER Dia.	Internal Thread Size	Internal Thread Depth	Base Type	MOUNTING HOLES Ctr. to Ctr. (G1)	(G2)	(H)	Dia.		
Forward-Action Handle (Cont.)														
6	1,200	2½"	6¼"	⅞"	1¼"	⅜"	¼"-20	½"	Formed	2"	—	1½"	17/64"	**5093A71** $23.71
7	16,000	4⅞"	11¼"	2¼"	3"	1"	⅝"-11	2"	Forged	2¾"	—	2¼"	13/32"	**5093A61**■ 127.50
8	560	1 39/64"	2 61/64"	½"	45/64"	⅜"	M6	¾"	Cast	1¾"	—	⅞"	7/32"	**5093A26**♣ 28.27
8	630	1 39/64"	2 61/64"	½"	45/64"	⅜"	M6	¾"	Formed	1¾"	—	⅞"	7/32"	**5093A27**♣★ 52.31
8	2,500	3 1/16"	7 1/32"	13/16"	2"	⅝"	⅜"-16	1¼"	Forged	1⅝"	1⅜"	1⅝"	11/32"	**5093A77** 93.21
9	550	2⅜"	4 11/64"	1 9/64"	1 1/32"	25/64"	M6	1"	Cast	63/64"	63/64"	63/64"	7/32"	**5093A22**■ 41.80
9	1,100	2 53/64"	5 55/64"	2 5/64"	1½"	35/64"	M8	1"	Cast	1⅜"	1⅜"	1⅜"	17/64"	**5093A23**■ 64.74
9	1,650	3 7/32"	7 31/64"	3 5/64"	1 31/32"	¾"	M12	1 37/64"	Cast	1 49/64"	1 49/64"	1 49/64"	21/64"	**5093A24**■ 106.97
9	3,965	3 9/16"	9 11/64"	⅝"	2 23/64"	⅞"	M12	1 37/64"	Cast	2 11/64"	2 11/64"	2 11/64"	13/32"	**5093A25**■ 118.86
Reverse-Action Handle														
10	200	3 9/64"	2 7/16"	—	¾"	⅜"	¼"-20	⅝"	—	—	—	—	⅝"-18●	**5093A56** 15.77
10	200	3 9/64"	2 7/16"	—	¾"	⅜"	¼"-20	⅝"	—	—	—	—	⅝"-18●	**5093A72**★ 60.09
10	200	3 9/64"	2 7/16"	—	¾"	⅜"	M6	⅝"	—	—	—	—	M16-1.5●	**5093A42** 19.36
10	300	4 5/32"	4 25/32"	—	1½"	7/16"	5/16"-18	1"	—	—	—	—	¾"-16●	**5093A63** 17.64
10	400	4 5/32"	4 25/32"	—	1½"	7/16"	5/16"-18	1"	—	—	—	—	¾"-16●	**5093A69**★ 53.72
10	450	4⅛"	5⅝"	—	1½"	½"	5/16"-18	1"	—	—	—	—	¾"-16●	**5093A81**♦ 31.89
10	700	5⅝"	6 11/16"	—	2⅝"	⅝"	⅜"-16	1¼"	—	—	—	—	1"-14●	**5093A64** 37.12
10	700	5⅝"	6 11/16"	—	2⅝"	⅝"	⅜"-16	1¼"	—	—	—	—	1"-14●	**5093A76**★ 112.17
11	300	2 9/32"	8 17/32"	31/32"	31/32"	7/16"	5/16"-18	1"	Formed	1⅜"	—	1⅝"	7/32"	**5093A62** 30.34
12	600	2¼"	11 45/64"	1 43/64"	17/64"	⅝"	⅜"-16	1"	Formed	1⅝"	—	1⅝"	11/32"	**5093A74** 44.49
Double-Locking Forward-Action Handle														
3	600	3 27/64"	4 11/16"	31/32"	1¼"	7/16"	5/16"-18	¾"	Forged	1 7/16"	—	1 5/16"	17/64"	**6124A21** 46.67
8	560	1 19/32"	2 61/64"	½"	45/64"	⅜"	M6	⅝"	Cast	1¾"	—	⅞"	7/32"	**6124A24** 44.30
Double-Locking Reverse-Action Handle														
10	750	4 25/32"	6⅞"	—	2⅝"	⅝"	⅜"-16	1¼"	—	—	—	—	1"-14●	**6124A27** 64.13

■ Handle is not vinyl covered. ♣ Base has four holes. ★ 300 series stainless steel. ● Mounting threads at base of plunger.
♦ Clamp linkage protected by steel covering.

Replacement Spindle Components for Toggle Clamps

Replace worn parts or customize your clamps. For replacement hex head cap screw spindles, see pages 3134-3159.

(A-D) Spindles

Replace hex head spindles, as well as spindles with push-on or screw-on caps. All include two hex nuts.
(A-C) Neoprene Tipped—Prevent marring. Tips are bonded to threaded spindles.
(D) Steel Swivel Tip—Ensure positive contact with workpiece.

Screw Size, Thread × Lg.	O'all Lg.	Tip Dia.		1-11	12-Up
(A) Neoprene Flat-Tipped—*Steel*					
8-32 × 11/16"	1"	9/16"	**5147A56**	$2.29	$1.71
8-32 × 15/16"	1¼"	9/16"	**5147A57**	2.43	1.82
10-32 × 1"	1⅜"	9/16"	**5147A61**	2.03	1.52
¼"-20 × ⅝"	1"	21/32"	**5147A58**	2.26	1.70
¼"-20 × 1 3/32"	1⅝"	⅝"	**5147A62**	2.42	1.82
¼"-20 × 1⅛"	1½"	21/32"	**5147A59**	2.26	1.70
¼"-20 × 1 19/32"	2⅛"	⅝"	**5147A63**	2.86	2.15
5/16"-18 × 1 17/32"	2¼"	53/64"	**5147A64**	2.86	2.15
5/16"-18 × 2 9/32"	3"	53/64"	**5147A65**	2.90	2.18
⅜"-16 × 2 5/16"	3¼"	1 1/64"	**5147A66**	3.81	2.86
⅜"-16 × 2½"	3½"	⅞"	**5147A67**	4.21	3.16
⅜"-16 × 4 25/32"	5¾"	1 1/64"	**5147A68**	5.13	3.83
½"-13 × 2¾"	3⅞"	1 3/16"	**5147A69**	5.74	4.30
⅝"-11 × 3⅝"	5"	1⅜"	**5147A71**	6.78	5.09
M4 × 1 3/16"	1¼"	5/16"	**5147A21**	2.10	1.58
M6 × 1 3/16"	1 47/64"	⅝"	**5147A23**	2.59	1.94
M6 × 1 9/16"	2⅛"	⅝"	**5147A24**	2.90	2.18
M8 × 1⅜"	2 3/32"	53/64"	**5147A25**	2.90	2.18
M8 × 2 9/16"	3 17/64"	53/64"	**5147A26**	3.07	2.31
(A) Neoprene Flat-Tipped—*300 Series Stainless Steel*					
8-32 × 11/16"	1"	9/16"	**5147A88**	3.55	2.66
10-32 × 1"	1⅜"	9/16"	**5147A16**	3.55	2.66

Screw Size, Thread × Lg.	O'all Lg.	Tip Dia.		1-11	12-Up
(A) Neoprene Flat-Tipped—*300 Series Stain. Steel (Cont.)*					
¼"-20 × 1 3/32"	1⅝"	⅝"	**5147A17**	$3.98	$2.98
¼"-20 × 1 19/32"	2⅛"	⅝"	**5147A18**	5.14	3.85
5/16"-18 × 1 17/32"	2¼"	53/64"	**5147A19**	5.32	3.99
5/16"-18 × 2 9/32"	3"	53/64"	**5147A84**	5.31	3.99
⅜"-16 × 2 5/16"	3¼"	1 1/64"	**5147A85**	6.43	4.82
(B) Neoprene Large-Diameter Swivel Flat-Tipped—*Steel*					
¼"-20 × 1½"	2⅝"	1"	**5147A72**	10.90	8.18
5/16"-18 × 1 15/16"	3"	1½"	**5147A73**	12.12	9.09
⅜"-16 × 2 7/16"	3⅝"	2"	**5147A74**	13.07	9.81
(C) Neoprene Cone-Tipped—*Steel*					
10-32 × 1"	1½"	9/16"	**5147A81**	2.42	1.82
¼"-20 × 1 9/16"	2¼"	¾"	**5147A82**	2.96	2.22
5/16"-18 × 2¼"	3"	¾"	**5147A83**	3.07	2.31
(D) Steel Swivel Tip—*Steel*					
¼"-20 × 2"	2⅜"	½"	**5147A28**	5.13	3.83
5/16"-18 × 1 15/16"	2¾"	9/16"	**5147A29**	5.43	4.07
⅜"-16 × 1 59/64"	3 1/16"	⅝"	**5147A31**♠	5.73	4.31
⅜"-16 × 2 7/16"	3⅜"	⅝"	**5147A32**	6.19	4.64
½"-13 × 3½"	4⅝"	1"	**5147A33**	9.60	7.19

♠ Knurl on end of thread.

Spindles

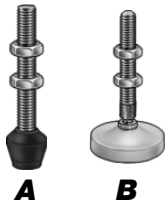

A B

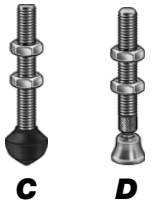

C D

Spindle Caps

Caps give a tight, nonmarring grip on delicate surfaces that could be damaged by hex head spindles. They also compensate for slight variations in material thickness. ***Push-on caps*** slip over the hex head of a bolt-style spindle. ***Screw-on caps*** have internal threads and screw onto the headless end of a spindle.

For Spindle Screw Size		1-47	48-Up
Rounded Push-On Caps—*PVC*			
8-32	**5147A11**	$0.72	$0.55
¼"-20	**5147A12**	.78	.60
Rounded Push-On Caps—*Neoprene*			
10-32	**5147A89**	.81	.61
5/16"-18, 5/16"-24	**5147A15**	.85	.64
⅜"-16	**5147A13**	1.00	.75
Flat-Tipped Screw-On Caps—*Polyurethane*			
¼"-20	**5147A34**	1.83	1.38
5/16"-18	**5147A35**	1.79	1.35
⅜"-16	**5147A36**	2.04	1.54
Cone-Tipped Screw-On Caps—*Polyurethane*			
¼"-20	**5147A37**	1.81	1.36
5/16"-18	**5147A38**	1.81	1.36
⅜"-16	**5147A39**	2.04	1.54

Flanged Washers

These washers can be used on U-shaped open spindle arms to support the spindle.

For Spindle Screw Size	Inside Width Btw. Flanges		1-11	12-Up
Steel				
8	0.33"	**5147A41**	$0.46	$0.35
10	0.38"	**5147A42**	.50	.38
¼"	0.50"	**5147A43**	.50	.38
5/16"	0.60"	**5147A44**	.58	.42
⅜"	0.75"	**5147A45**	.67	.50
½"	0.91"	**5147A46**	1.14	.86
⅝"	1.03"	**5147A47**	1.57	1.17
300 Series Stainless Steel				
8	0.33"	**5147A48**	.69	.51
10	0.38"	**5147A49**	.60	.44
¼"	0.50"	**5147A51**	.60	.44
5/16"	0.60"	**5147A52**	1.09	.82
⅜"	0.75"	**5147A53**	1.52	1.14

Spindle Caps

Rounded Push-On

Flat-Tipped Screw-On

Cone-Tipped Screw-On

Flanged Washer

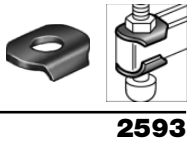

Pull-Action Toggle Clamps

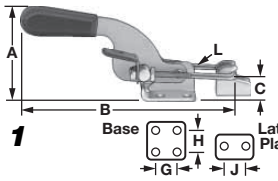

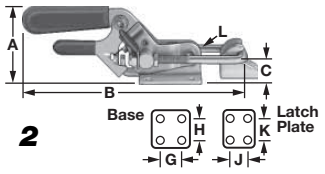

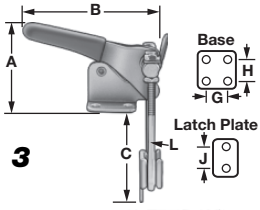

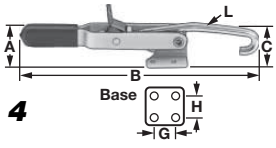

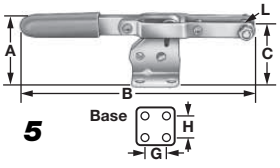

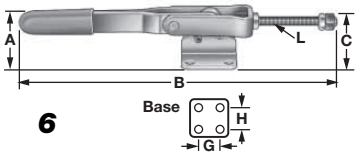

Pull handle back to pull the draw arm back—ideal for clamping lids and doors to drums, containers, and molds. There are four types of draw arms: U-bolt (*Styles 1-3*), J-hook (*Style 4*), latch (*Style 5*), and threaded spindle (*Style 6*). All clamps except *Style 5* allow you to adjust the length of the draw arm (unless noted). *Styles 1-3* include a latch plate (unless noted; latch plate sold separately below). All handles are vinyl covered (unless noted). Stainless steel clamps are 300 series stainless steel.

Double-locking clamps prevent accidental openings with a locking lever that keeps the draw arm in the locked position until released. Perfect for high-vibration and overhead applications.

180° (Horizontal) Clamps— Hold two flat surfaces together. Ideal for doors, two-piece molds, and other pressure vessels.

90° (Perpendicular) Clamps— Secure workpieces that are at right angles to each other, such as lids to containers and covers to drums.

Holding Cap., lbs.	O'all Ht. (A)	O'all Lg. (B)	Baseline to Draw Arm Ctr. (C)	Draw Arm Travel	Draw Arm Adjustment	Base Mounting Holes Ctr. to Ctr. (G)	Base Mounting Holes Ctr. to Ctr. (H)	Base Mounting Holes Dia.	Latch Plate Mounting Holes Ctr. to Ctr. (J)	Latch Plate Mounting Holes Ctr. to Ctr. (K)	Latch Plate Mounting Holes Dia.	Dia. (L)	Clamp Material		
(1) U-Bolt Arm— *180° (Horizontal)*															
360	1 1/8"	4"	15/32"	1 13/16"	31/64"	5/8"	3/4"	11/64"	25/64"	—	11/64"	1/8"	Steel	5071A51	$12.07
360	1 1/8"	4"	15/32"	1 13/16"	31/64"	5/8"	3/4"	11/64"	25/64"	—	11/64"	1/8"	SS	5071A57	30.44
700	1 61/64"	5 31/32"	21/32"	1 3/4"	19/32"	3/4"	1 1/4"	17/64"	9/16"	—	17/64"	11/64"	Steel	5071A52	16.09
700	1 61/64"	5 31/32"	21/32"	1 3/4"	19/32"	3/4"	1 1/4"	17/64"	9/16"	—	17/64"	11/64"	SS	5071A58	36.50
2,000	2 57/64"	7 1/2"	15/16"	2 1/2"	49/64"	1 5/8"	1 1/2"	21/64"	3/4"	—	21/64"	5/16"	Steel	5071A53	25.05
2,000	2 57/64"	7 1/2"	15/16"	2 1/2"	49/64"	1 5/8"	1 1/2"	21/64"	3/4"	—	21/64"	5/16"	SS	5071A59	65.86
4,000	4 3/16"	9 5/8"	1 1/8"	3 1/2"	11/16"	2 1/4"	2 1/4"	13/32"	—	—	—	25/64"	Steel	5071A54 ✓	56.36
7,500	3 5/8"	8 3/4"	1 1/8"	2 3/16"	1 1/16"	2 1/4"	2 1/4"	13/32"	—	—	—	15/32"	Steel	5071A55 ✓★	73.51
7,500	1 15/16"	9 5/32"	1 1/8"	2 3/16"	1 1/16"	2 1/4"	2 1/4"	13/32"	—	—	—	15/32"	Steel	5071A61 ✓★	88.65
(2) U-Bolt Arm/Double Locking— *180° (Horizontal)*															
700	2 5/64"	5 31/32"	21/32"	1 3/4"	19/32"	3/4"	1 1/4"	17/64"	9/16"	—	17/64"	11/64"	Steel	51335A65 ♣	33.52
700	2 5/64"	5 31/32"	21/32"	1 3/4"	19/32"	3/4"	1 1/4"	17/64"	9/16"	—	17/64"	11/64"	SS	51335A67 ♣	59.20
2,000	2 57/64"	7 1/2"	15/16"	2 1/2"	49/64"	1 5/8"	1 1/2"	21/64"	3/4"	—	21/64"	5/16"	Steel	5071A62 ♣	49.17
2,000	2 57/64"	7 1/2"	15/16"	2 1/2"	49/64"	1 5/8"	1 1/2"	21/64"	3/4"	—	21/64"	5/16"	SS	51335A68 ♣	98.07
4,000	4 3/16"	9 5/8"	1 1/8"	3 1/2"	11/16"	2 1/4"	2 1/4"	13/32"	—	—	—	25/64"	Steel	51335A66 ✓	85.73
7,500	3 5/8"	8 3/4"	1 1/8"	2 3/16"	1 1/16"	2 1/4"	2 1/4"	13/32"	1 3/8"	2 1/4"	13/32"	15/32"	Steel	5071A63	124.87
(3) U-Bolt Arm— *90° (Perpendicular)*															
500	2"	3 11/32"	1 63/64" ♠	1 17/32"	1/2"	1/2"	7/8"	13/64"	9/16"	—	11/64"	9/64"	Steel	5135A23	18.14
500	2"	3 11/32"	1 63/64" ♠	1 17/32"	1/2"	1/2"	7/8"	13/64"	9/16"	—	11/64"	9/64"	SS	5135A33	39.59
1,000	2 7/16"	4 1/4"	2 59/64" ♠	2"	51/64"	3/4"	1"	9/32"	13/16"	—	7/32"	1/4"	Steel	5135A25	22.52
1,000	2 7/16"	4 1/4"	2 59/64" ♠	2"	51/64"	3/4"	1"	9/32"	13/16"	—	7/32"	1/4"	SS	5135A35	46.66
2,000	3 1/4"	5 11/32"	4 11/64" ♠	2 1/2"	1 17/64"	1 1/4"	1 7/16"	11/32"	1 1/16"	—	11/32"	5/16"	Steel	5135A27	34.11
2,000	3 1/4"	5 11/32"	4 11/64" ♠	2 1/2"	1 17/64"	1 1/4"	1 7/16"	11/32"	1 1/16"	—	11/32"	5/16"	SS	5135A37	78.79
4,000	2 43/64"	5 11/16"	5 1/8" ♠	1 3/4"	2 1/32"	1 1/4"	1 1/2"	13/32"	—	—	—	25/64"	Steel	5135A28 ✓	128.32
(4) J-Hook Arm— *180° (Horizontal)*															
200	1"	5 9/16"	9/16"	2 5/16"	1/4"	1/2"	1 7/32"	7/32"	—	—	—	3/16"	Steel	5136A76	14.32
200	1"	5 9/16"	9/16"	2 5/16"	1/4"	1/2"	1 7/32"	7/32"	—	—	—	3/16"	SS	5136A77	30.21
375	1 7/16"	8 9/16"	3/4"	4"	7/16"	3/4"	1 3/8"	13/64"	—	—	—	5/16"	Steel	5136A13	12.27
450	1 7/16"	8 9/16"	3/4"	4"	7/16"	3/4"	1 3/8"	13/64"	—	—	—	5/16"	SS	5136A12	30.73
750	2 3/16"	12"	1 27/64"	5 3/8"	13/16"	1 1/4"	1 15/16"	11/32"	—	—	—	25/64"	Steel	5136A14	29.46
750	2 3/16"	12"	1 27/64"	5 3/8"	13/16"	1 1/4"	1 15/16"	11/32"	—	—	—	25/64"	SS	5136A17	78.21
1,000	2 5/8"	13 9/32"	1 13/16"	6 1/8"	15/16"	1 1/8"	2 3/8"	13/32"	—	—	—	15/32"	Steel	5136A15	34.16
(4) J-Hook Arm/Double Locking— *180° (Horizontal) (not shown)*															
375	1 7/16"	9 11/16"	3/4"	4"	7/16"	3/4"	1 3/8"	7/32"	—	—	—	5/16"	Steel	5136A65	30.84
750	2 1/4"	12 7/8"	1 27/64"	5 3/8"	13/16"	1 1/4"	1 15/16"	11/32"	—	—	—	25/64"	Steel	5136A66	57.95
(5) Latch Arm— *180° (Horizontal)*															
375	1 29/32"	8 25/64"	1 5/8"	4"	—	3/4"	1 1/4"	9/32"	—	—	—	3/8"	Steel	5138A16	19.86
450	1 29/32"	8 25/64"	1 5/8"	4"	—	3/4"	1 1/4"	9/32"	—	—	—	3/8"	SS	5138A17	53.33
1,200	2 7/16"	9 33/64"	2 1/16"	3 3/8"	—	1 1/4"	1 25/32"	21/64"	—	—	—	3/8"	Steel	5138A23	38.95
2,000	2 1/16"	9 3/4"	1 7/16"	2 1/2"	1/8"	1 3/8"	1 3/4"	21/64"	—	—	—	5/8"	Steel	5138A11 ■	25.66
(6) Threaded-Spindle Arm— *180° (Horizontal)*															
2,000	1 7/8"	11 5/16"	1 7/16"	2 1/2"	9/16"	1 3/8"	1 3/4"	21/64"	—	—	—	3/8"-24 ▲	Steel	5138A12	23.78
Latch Plate for 5071A54, A55, A61, and 51335A66						—	—	—	1 3/8"	2 1/4"	13/32"	—	—	5071A56	17.36

✓ Does not include latch plate. ★ Handle is not vinyl covered. ♣ Latch plate has two mounting holes.
♠ Maximum length when draw arm is engaged. ■ Length of draw arm is adjustable. ▲ Spindle is 3 5/8" long and includes four nuts.

Hold-Down Toggle Clamps for Lids and Containers

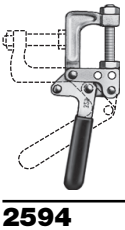

No more leaks and spills, simply weld or bolt these clamps onto lids and containers to keep them shut tight. Also great for sheet metal work and as temporary fixtures. Clamps have a forged steel jaw that moves 90° away from the work surface for easy access.

For replacement hex head cap screw spindles, see pages 3134-3159. For replacement neoprene-tipped spindles, see page 2593. Maximum opening is 1 25/32", overall length is 8 45/64", overall width is 2 15/16", and the spindle screw size is M12×1.75, unless noted.

	Holding Cap., lbs.	With Hex Head Cap Screw Spindle		With Neoprene-Tipped Spindle	
Steel Clamp	800	5112A14	$25.24	5112A24 ♦	$27.10
300 Series Stainless Steel Clamp	800	5112A15	77.33	—	—

♦ Overall length is 9 55/64" and spindle screw size is 1/2"-13.

Air-Powered Toggle Clamps

Base for Hold-Down Clamps

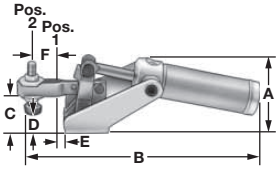

Hold-Down Clamp 5174A

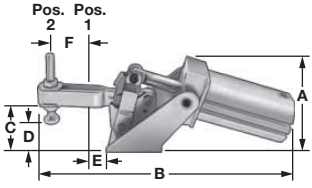

Hold-Down Clamp 5129A

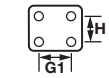

Base for 5137A51 & 5137A53

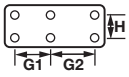

Base for 5137A52

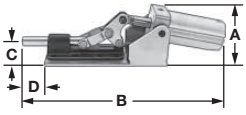

Push/Pull-Action Clamp

Reduce operator fatigue and increase productivity with these air-powered clamps. Simply use fittings with appropriate threads (not included) to connect the clamp's two female ports to a control valve and an air line. Clamps lock against the workpiece and maintain the full-rated holding capacity—even a total loss of pressure won't cause them to open. Multiple clamps can be used simultaneously or sequentially. Illustrations show clamps in engaged position.

Made of steel with an operating temperature range of 14° to 194° F, unless noted. For repl. hex head cap screw spindles, see pages 3134-3159. For repl. neoprene-tipped spindles, see page 2593.

Hold-Down Clamps

When clamp is disengaged, spindle arm opens a min. of 88° for easy workpiece removal. Spindle moves easily to any position along the U-shaped, open spindle arm. 5174A35 and 5129A21 have a molded neoprene-tipped spindle; 5129A22, 5129A23, and 5129A24 a hex head cap screw spindle.

Holding Capacity, lbs. Pos. 1	Pos. 2	O'all Ht. (A)	O'all Lg. (B)	Baseline to Arm (C)	Baseline to Spindle (D)	Base to Spindle Pos. 1 (E)	Spindle Pos. 1 to Pos. 2 (F)	Spindle Screw Size, Thread × O'all Lg.	Mounting Holes Ctr. to Ctr. (G)	(H)	Dia.	Max. psi	Port Size		
150	60	1 9/16"	5 19/32"	1 1/16"	5/32"	7/64"	4 7/64"	M5 × 1 9/64"	5/8"	15/16"	1 1/64"	43	10-32	5174A35★	$98.89
200	110	2 35/64"	7 47/64"	1 1/16"	5/16"	1/2"	1"	M6 × 1 47/64"	1/2"	1 1/16"	7/32"	32	1/8" NPT	5129A21	105.39
375	200	3"	9 21/64"	1 3/8"	29/32"	21/64"	1 29/32"	5/16"-18 × 2 3/4"	3/4"	1 1/4"	9/32"	47	1/8" NPT	5129A22	116.49
600	290	3 51/64"	11 45/64"	1 51/64"	1 13/64"	55/64"	2 11/32"	3/8"-16 × 3"	1 1/4"	1 51/64"	21/64"	50	1/8" NPT	5129A23	190.99
1,000	480	4 13/32"	15 1/4"	2 1/4"	17/16"	1 3/8"	3 3/64"	1/2"-13 × 3 23/64"	1 1/4"	1 25/32"	11/32"	76	1/8" NPT	5129A24	351.58

★ Operating temperature range is –20° to +150° F.

Push/Pull-Action Clamps

For repetitive machining operations, pressure testing, gluing, and whenever side clamping may be desired. Plunger end is drilled and tapped to accommodate standard threaded spindles and other threaded fixtures (not included). Clamps lock in extended position only.

Holding Cap., lbs.	O'all Ht. (A)	O'all Lg. (B)	Baseline to Plunger (C)	Base to Plunger (D)	Plunger Travel	Plunger Dia.	Plunger Internal Thread	Mounting Holes Ctr. to Ctr. (G1)	(G2)	(H)	Dia.	Max. psi	Port Size		
600	2 15/16"	9 55/64"	1 3/32"	2 5/32"	53/64"	7/16"	5/16"-18	1 7/16"	—	1 5/16"	17/64"	64	1/8" NPT	5137A51	$150.57
2,500	3 3/8"	13 7/16"	1 1/16"	1 31/32"	1 1/4"	5/8"	3/8"-16	1 3/8"	1 5/8"	1 5/8"	11/32"	145	1/8" NPT	5137A52	250.20
16,000	7 7/32"	20 19/32"	2 5/8"	4 35/64"	2"	1"	5/8"-11	2 3/4"	—	2 1/4"	13/32"	145	1/4" NPT	5137A53	455.54

Air-Powered Swing Clamps

Relax and let the clamp do the work. These air-powered clamps provide quick swing-and-clamp action, exerting the exact force required for your application without damaging delicate parts. Ideal for repetitive clamping situations and for reducing operator fatigue. Use fittings with standard threads (not included) to connect the clamp's ports to a control valve and an air line.

The clamping arm has two motions each time it engages. First it rotates 90° to a position over the workpiece and travels down to a preclamp position. Second, it moves straight down to clamp the workpiece (vertical clamp stroke). The swing of the arm provides unobstructed loading and unloading of the workpiece. The downward clamp stroke allows for various workpiece sizes, since it adjusts for inconsistencies every cycle. (Right-swinging arms swing to the right as they disengage; left-swinging arms swing to the left.) Illustrations show clamps in disengaged position.

Clamps are red anodized aluminum and operate at –40° to +250° F. Include a hex head cap screw spindle, unless noted. For repl. hex head cap screw spindles, see pages 3134-3159. For molded neoprene-tipped spindles, see page 2593.

Optional Mounting Block for Threaded-Body Clamps

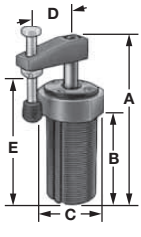

Threaded-Body Clamp

Block-Style Clamp Base

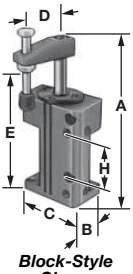

Block-Style Clamp

Threaded-Body Clamps

Can be screwed into a tapped hole in the fixture, or, to allow easy resetting of clamp height, into a mounting block (sold separately below).

Vertical Travel During Rotation	Max. Vertical Clamp Stroke	O'all Ht. (A)	Threaded Body Size Dia.	Threaded Body Size Lg. (B)	Unthreaded Body Dia. (C)	Piston Ctr. to Spindle Ctr. (D)	Baseline to Spindle (E)	Spindle Screw Size, Thread × O'all Lg.	Port Size	Right-Swinging Arm	Left-Swinging Arm	
15/32"	3/8"	4 7/8"	1 1/8"-16	2 7/8"	1 1/4"	1 1/8"	4 17/64"	10-32 × 1"	10-32	50185A18	50185A19	$269.73
3/4"	1/2"	6 9/64"	1 3/4"-12	3 11/64"	2 1/8"	1 9/16"	4 15/16"	3/8"-16 × 2 63/64"	1/8" NPT	50185A15♥	50185A16♥	327.86

♥ Spindle has a slip-on neoprene cap.

Optional Mounting Blocks for Threaded-Body Clamps

Use above or below the work surface to hold a threaded-body clamp in an untapped hole. Blocks have four mounting holes.

For Clamps	Lg.	Wd.	Mounting Holes Ctr. to Ctr.	Mounting Holes Dia.	Mounting Holes Depth		
50185A18 and 50185A19	1 3/8"	1 3/8"	1 5/64"	13/64"	1/2"	50185A21	$39.32
50185A15 and 50185A16	2"	2"	1 39/64"	9/32"	1/2"	50185A44	40.36

Block-Style Clamps

Have four horizontal holes for mounting to the side or front of a fixture, or for fastening clamps back to back for simultaneous or sequential operation. The base also has two vertical mounting holes.

Vertical Travel During Rotation	Max. Vertical Clamp Stroke	Overall Size Ht. (A)	Overall Size Dp. (B)	Overall Size Wd. (C)	Piston Ctr. to Spindle Ctr. (D)	Baseline to Spindle (E)	Spindle Screw Size, Thread × O'all Lg.	Mounting Holes Base Holes, Ctr. to Ctr. (F)	(G)	Side Holes, Ctr. to Ctr. (H)	Dia.	Port Size	Right-Swinging Arm	Left-Swinging Arm	
15/32"	3/8"	4 7/8"	1 1/4"	1 1/4"	1 1/8"	4 17/64"	10-32 × 1"	15/16"	15/16"	1"	13/64"	10-32	50185A51	50185A52	$254.34
3/4"	1/2"	6 23/64"	2"	3"	2"	5 5/32"	3/8"-16 × 2 63/64"	2 7/16"	1 7/16"	2 1/4"	21/64"	1/8" NPT	50185A33♥	50185A34♥	347.10

♥ Spindle has a slip-on neoprene cap.

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Forged Steel Setup Clamps

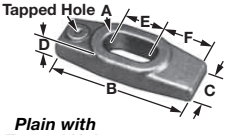

Plain with Tapped Hole

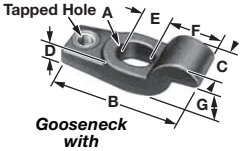

Gooseneck with Tapped Hole

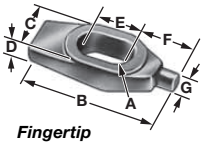

Fingertip

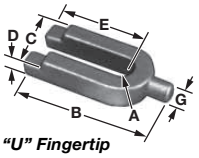

"U" Fingertip

Also known as strap clamps, these extremely strong, slip-resistant clamps are made of forged steel with a gray finish. Use them to hold down dies and fixtures on planers, punch presses, milling machines, boring mills, and drill presses.

Stud Size (A)	Lg. (B)	Wd. (C)	Ht. (D)	Slot Lg. (E)♦	Edge to Slot (F)	(G)	Tapped Hole Thread Size		
Plain Clamps									
5/8"	4"	1 5/8"	3/4"	11/16"	1 23/32"	—	—	4997A11	$5.29
5/8"	6"	1 3/4"	7/8"	1 5/16"	2 3/8"	—	—	4997A12	9.18
3/4"	8"	2 1/8"	1 1/8"	1 15/16"	3 3/32"	—	—	4997A13	14.40
7/8"	10"	2 1/2"	1 3/8"	2 21/32"	3 23/32"	—	—	4997A14	27.59
Plain Clamps with Tapped Hole and Set Screw									
5/8"	4"	1 5/8"	3/4"	11/16"	1 23/32"	—	1/2"-13	4997A21	14.26
5/8"	6"	1 3/4"	7/8"	1 5/16"	2 3/8"	—	5/8"-11	4997A22	20.32
3/4"	8"	2 1/8"	1 1/8"	1 15/16"	3 3/32"	—	3/4"-10	4997A23	29.51
Gooseneck Clamps									
5/8"	4"	1 5/8"	3/4"	3/16"	1 31/32"	3/4"	—	4997A25	5.68
5/8"	6"	1 3/4"	7/8"	1"	2 17/32"	1 5/16"	—	4997A36	10.56
3/4"	8"	2 1/8"	1 1/8"	1 5/8"	3 9/32"	1 1/8"	—	4997A27	15.28
Gooseneck Clamps with Tapped Hole and Set Screw									
5/8"	4"	1 5/8"	3/4"	3/16"	1 31/32"	3/4"	5/8"-11	4997A46	16.18
5/8"	6"	1 3/4"	7/8"	1"	2 17/32"	1 5/16"	5/8"-11	4997A47	22.95
3/4"	8"	2 1/8"	1 1/8"	1 5/8"	3 9/32"	1 1/8"	5/8"-11	4997A48	32.53
Fingertip Clamps									
5/8"	4"	1 5/8"	3/4"	21/32"	1 21/32"	1/2"	× 1/2"★	4997A41	5.29
5/8"	6"	1 3/4"	7/8"	1 3/16"	2 13/32"	5/8"	× 5/8"★	4997A42	9.18
3/4"	8"	2 1/8"	1 1/8"	1 11/16"	3 1/8"	3/4"	× 1 3/16"★	4997A43	14.40
"U" Fingertip Clamps									
5/8"	4"	1 3/4"	3/4"	2 9/16"	—	5/8"	× 5/8"★	4997A2	5.29
5/8"	6"	2"	7/8"	4 5/16"	—	3/4"	× 3/4"★	4997A16	9.18
3/4"	8"	2 3/8"	1 1/8"	6 1/16"	—	1 3/16"	× 2 7/32"★	4997A17	14.40
7/8"	10"	2 3/4"	1 1/4"	7 21/32"	—	1 5/16"	× 1"★	4997A18	22.99
1"	12"	3 1/4"	1 3/8"	9 11/32"	—	1 1/32"	× 1 3/32"★	4997A19	31.65

♦ Slot length is measured center-to-center. ★ Finger size (Dia. × Lg.).

Setup Clamping Kits

Standard Kit with Metal Wall-Mount Holder

Never waste time looking for a clamp, block, stud, or nut again—these kits have a full array of them packed in an easy-access holder. Clamps and nuts are case-hardened steel with a black-oxide finish; blocks are pressed steel with a gray finish.

Kits include 24 studs—four each in 3", 4", 5", 6", 7", and 8" lengths or 80 mm, 110 mm, 140 mm, 150 mm, 175 mm, and 200 mm lengths (unless noted). Also include four T-slot nuts, four flange nuts, four coupling nuts, six step blocks, and six step clamps.

Standard kits with metal wall-mount holder include everything listed above plus a T-slot cleaner and two additional T-slot nuts and flange nuts (unless noted).

Stud Thread Size	Table Slot Size	T-Slot Nut Wd.	*Wood and Metal Tray Holder*		*Metal Wall-Mount Holder*	
Economy Kit						
1" Wide Blocks, 3/4" to 6" Height Range						
1/2"-13	5/8"	1"	—	—	31255A89▲♠	$114.80
Standard Kits						
1" Wide Blocks, 3/4" to 6" Height Range						
5/16"-18	3/8"	5/8"	8957A19	$147.31	—	—
3/8"-16	1/2"	7/8"	8957A21	198.50	8957A41	173.31
1/2"-13	9/16"	7/8"	8957A11	221.44	8957A42	183.11
1/2"-13	5/8"	1"	8957A12♠	221.44	8957A43♠	184.69
5/8"-11	11/16"	1 1/8"	8957A14	253.50	8957A45	227.28
5/8"-11	3/4"	1 1/4"	8957A15	256.94	8957A46	229.72
1 1/2" Wide Blocks, 1 1/2" to 9" Height Range						
1/2"-13	5/8"	1"	—	—	8957A52♠●	308.24
1 1/2" Wide Blocks, 1 3/4" to 9" Height Range						
3/4"-10	7/8"	1 1/2"	8957A22	326.85	—	—
25 mm Wide Blocks, 19 mm to 152 mm Height Range						
M10×1.5	12 mm	19 mm	8957A61	211.70	8957A71■	235.02
M12×1.75	14 mm	22 mm	8957A62	237.37	8957A72■	263.00

▲ Holder is plastic. ♠ Use with Bridgeport style milling machines.
● Does not include the two additional flange nuts.
■ Includes 125 mm studs instead of 140 mm studs.

Self-Positioning Iron Setup Clamps

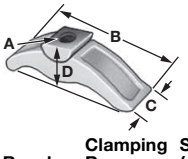

The swivel rocker design of these clamps allows them to pivot to any position and self-adjust instantly within a wide clamping range. Simply secure through the center with a T-nut and stud (not included). Clamps are made of ductile cast iron. Clamps with short reach are great for close setups.

Reach	Clamping Range	Stud Size (A)	Lg. (B)	Wd. (C)	Ht. (D)		
Standard	0"-1 1/4"	3/8"	3 1/2"	1 1/8"	1 3/32"	31415A11	$31.04
Standard	0"-2 1/2"	1/2"	5 3/4"	1 7/16"	1 13/32"	31415A12	33.89
Standard	0"-3 1/2"	5/8"	6 3/4"	1 7/8"	1 1/2"	31415A13	40.14
Standard	0"-5"	3/4"	9"	2 1/8"	2 3/8"	31415A14	58.68
Standard	0"-5"	1"	11 1/8"	2 7/8"	3 5/16"	31415A15	97.81
Short	0"-1"	3/8"	3"	1 1/8"	1 3/32"	31415A21	30.26
Short	0"-1 3/4"	1/2"	4 1/4"	1 3/8"	1 13/32"	31415A22	33.26
Short	0"-2 3/4"	5/8"	5 1/2"	1 7/8"	1 1/2"	31415A23	39.21
Short	0"-3 1/2"	3/4"	7"	2"	2 3/8"	31415A24	58.35

Stainless Steel Setup Clamps

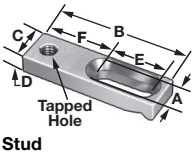

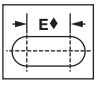

Similar to the Forged Steel Setup Clamps on this page, except these clamps are made of 300 series stainless steel so they resist corrosion and are nonmagnetic.

Stud Size (A)	Lg. (B)	Wd. (C)	Ht. (D)	Slot Lg. (E)♦	Edge to Slot (F)	Tapped Hole Thread Size		
3/16"	1 1/2"	1/2"	1/4"	5/16"	7/8"	10-32	8525A11	$10.26
3/16"	1 3/4"	1/2"	1/4"	7/16"	1"	10-32	8525A12	10.85
1/4"	2"	5/8"	5/16"	1/2"	1 1/8"	1/4"-20	8525A13	13.55
1/4"	2 1/2"	5/8"	5/16"	11/16"	1 7/16"	1/4"-20	8525A14	15.00
5/16"	2"	3/4"	3/8"	1/2"	1 1/8"	5/16"-18	8525A15	13.99
5/16"	3"	3/4"	3/8"	7/8"	1 11/16"	5/16"-18	8525A16	15.33
3/8"	3"	7/8"	1/2"	3/4"	1 11/16"	3/8"-16	8525A17	19.92
3/8"	4"	7/8"	1/2"	1 1/8"	2 3/8"	3/8"-16	8525A18	22.21

♦ Slot length is measured center-to-center.

For an index of fixturing components, see page 2596.

Adjustable Height Serrated Step Blocks

Not only do step blocks support clamps on machine beds, but they also have nonslip serrations for adjusting height in 1/8″ vertical and 1/16″ horizontal increments. Made of pressed steel with a gray finish. Sold in pairs of identical half blocks.

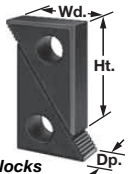

Blocks with Holes

Height Range	Ht. × Wd. × Dp.	Hole Dia.		Pair
3/4″-1 5/8″	1 11/16″ × 11/16″ × 1″	—	5002A6	$4.91
1 1/8″-2 1/2″	1 39/64″ × 1 11/16″ × 1″	—	5002A2	6.76
1 3/4″-4″	2 17/32″ × 1 43/64″ × 1 1/2″	—	5002A7	11.48
2 1/2″-6″	3 3/4″ × 2 15/32″ × 1″	1″	5002A3	15.74
2 1/2″-6″	3 3/4″ × 2 15/32″ × 1 1/2″	1″	5002A8	22.00
3 1/2″-9″	5 21/64″ × 3 7/16″ × 1 1/2″	1 5/8″	5002A11	39.30

Alignment Pins

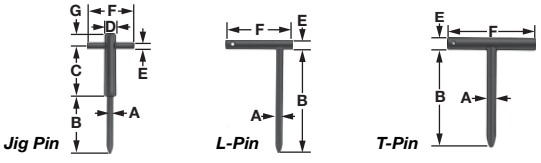

Close tolerances (+0.0000″, –0.0010″) mean precision alignment of holes in mating pieces of material. Pins are ground, heat-treated steel with a black-oxide finish. Rockwell hardness is 58-64RR.

(A)	(B)	(C)	(D)	(E)	(F)	(G)		
Jig Pins—*Handle converts to an "L" or a "T".*								
0.2500″	2″	1 5/8″	3/8″	3/16″	2 1/2″	3/8″	98021A231	$9.85
0.3375″	5″	2 5/8″	5/8″	1/4″	3″	1/2″	98021A235	12.60
L-Pins—*Handle has hole to connect jig or fixture with cable.*								
0.1875″	3″	—	—	5/16″	2 1/2″	—	98021A313	2.46
0.2500″	3″	—	—	3/8″	2 1/2″	—	98021A315	2.96
0.2500″	4″	—	—	3/8″	2 1/2″	—	98021A317	2.96
0.3125″	3 1/2″	—	—	7/16″	3″	—	98021A321	3.44
0.3750″	4″	—	—	1/2″	3 1/2″	—	98021A323	3.94
0.5000″	4″	—	—	5/8″	3 1/2″	—	98021A327	4.84
T-Pins—*Handle has hole to connect jig or fixture with cable.*								
0.1250″	2 1/2″	—	—	1/4″	1 1/2″	—	98021A412	2.70
0.1875″	3″	—	—	5/16″	2 1/2″	—	98021A415	2.40
0.2500″	3″	—	—	3/8″	2 1/2″	—	98021A419	2.96
0.3750″	4″	—	—	1/2″	3 1/2″	—	98021A432	3.70
0.3750″	6″	—	—	1/2″	3 1/2″	—	98021A435	4.04
0.5000″	4″	—	—	5/8″	3 1/2″	—	98021A437	4.80
0.5000″	6″	—	—	5/8″	3 1/2″	—	98021A439	5.61

Forged Steel Wedges

Make quick height adjustments on planers, shapers, and milling machines with these durable forged steel wedges. Use in pairs for parallel adjustment. A U-shaped groove on the 5″, 6″, and 8″ wedges lets chips slide under the workpiece so they don't interfere with wedge adjustment.

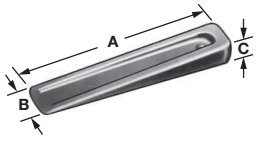

Lg. (A)	Wd. (B)	Ht. (C)			Lg. (A)	Wd. (B)	Ht. (C)		
3″	1″	1/4″	5081A1	$3.70	6″	1 1/4″	3/4″	5081A3	$5.77
5″	1″	1/2″	5081A2	5.03	8″	1 5/8″	1″	5081A4	9.74

T-Slot Nut and Stud Setup Kits

Kits contain 24 studs (four each in 3″, 4″, 5″, 6″, 7″, and 8″ lengths); four T-slot nuts; four flange nuts; four coupling nuts; a T-slot cleaner; and a wood holder. Studs and nuts are low carbon steel with a black-oxide finish.

Stud Thread Size	Table Slot Size	T-Slot Nut Wd.		
5/16″-18	3/8″	5/8″	3396A11	$63.54
3/8″-16	7/16″	11/16″	3396A12	64.78
3/8″-16	1/2″	7/8″	3396A13	67.17
1/2″-13	9/16″	7/8″	3396A14	73.39
1/2″-13	5/8″	1″	3396A15 ♠	76.22
5/8″-11	11/16″	1 1/8″	3396A16	97.25
5/8″-11	3/4″	1 1/4″	3396A17	98.69
3/4″-10	7/8″	1 1/2″	3396A19	145.43

♠ Use with Bridgeport style milling machines.

Plain and Step Clamps

These general purpose clamps are made of case-hardened steel with a black-oxide finish. ***Plain clamps*** mount to the top of a pair of step blocks or straddle over workpieces that have a mounting hole. ***Step clamps*** have one serrated end to fit into serrated step blocks.

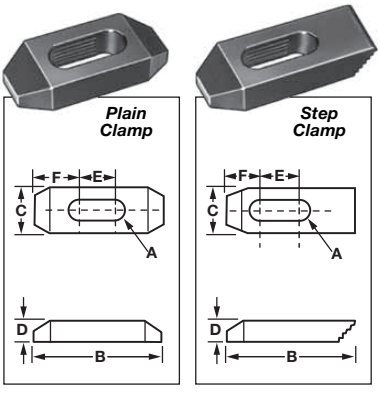

Stud Size (A)	Lg. (B)	Wd. (C)	Ht. (D)	Slot Lg. (E) ♦	Edge to Slot (F)	Plain Clamps		Step Clamps	
5/16″, 3/8″	2 1/2″	1″	1/2″	13/16″	27/32″	84945A31	$7.98	4999A27	$8.71
5/16″, 3/8″	4″	1″	5/8″	1 7/16″	1 1/32″	84945A32	10.75	4999A28	11.92
5/16″, 3/8″	6″	1 1/8″	3/4″	2 3/16″	1 5/32″	84945A33	14.08	4999A29	15.00
1/2″	2 1/2″	1 1/8″	1/2″	11/16″	29/32″	84945A34	9.31	4999A31	9.96
1/2″	4″	1 1/4″	3/4″	1 5/16″	1 5/32″	84945A35	12.52	4999A32	14.21
1/2″	6″	1 1/4″	7/8″	2 1/16″	1 9/32″	84945A36	15.37	4999A33	17.29
5/8″	2 1/2″	1 1/4″	5/8″	9/16″	31/32″	84945A37	10.92	4999A34	12.58
5/8″	4″	1 1/2″	3/4″	1 3/16″	1 9/32″	84945A38	13.65	4999A35	17.40
5/8″	6″	1 1/2″	7/8″	1 15/16″	1 13/32″	84945A39	17.63	4999A36	20.62
3/4″	4″	1 1/2″	3/4″	1 1/16″	1 11/32″	84945A41	14.73	4999A37	18.04
3/4″	6″	1 1/2″	1″	1 15/16″	1 15/32″	84945A42	22.31	4999A38	26.27
3/4″	8″	1 3/4″	1 1/8″	2 3/16″	1 29/32″	84945A43	29.98	4999A39	36.10
7/8″, 1″	6″	2″	1 1/4″	1 11/16″	1 27/32″	84945A44	36.50	4999A41	40.23
7/8″, 1″	8″	2″	1 3/8″	1 15/16″	2 1/32″	84945A45	46.71	4999A42	49.96
7/8″, 1″	10″	2″	1 1/2″	2 15/16″	2 1/32″	84945A46	58.94	4999A43	58.92

♦ Slot length is measured center-to-center.

Edge Holding Clamps

Also known as toe clamps, they securely grip a workpiece's edge while leaving its top surface free for milling, boring, and cutting. These low-profile clamps have a dual-action, serrated nose that exerts clamping force both downwards and at a 45° angle when tightened. Made of heat-treated steel with a black-oxide finish. ***Standard-grip clamps*** have taller nose height to increase contact with the workpiece for more holding power. Come with a removable aluminum nose cap that prevents damage to workpieces. ***Low-grip clamps*** grip close to the bottom of a workpiece for more clearance for machining.

Stud Size (A)	Lg. (B)	Wd. (C)	Ht. (D)	Slot Lg. (E) ♦	Edge to Slot (F)	Standard Grip Nose Ht. (G)		Low Grip Nose Ht. (G)	
5/16″	1 7/8″	1″	5/8″	1/4″	13/32″	5/8″	8958A61	$40.92	1/8″	8958A11	$39.73
3/8″	2 5/16″	1 1/4″	5/8″	3/8″	7/16″	5/8″	8958A67	42.85	1/4″	8958A17	40.27
3/8″	4 1/8″	1 1/4″	5/8″	2″	11/16″	5/8″	8958A68	47.22	1/4″	8958A18	41.81
1/2″	4 1/32″	1 1/2″	7/8″	1 1/4″	1/2″	7/8″	8958A64	43.21	1/4″	8958A14	40.70
1/2″	5 5/16″	1 1/2″	7/8″	2″	7/8″	7/8″	8958A65	46.06	1/4″	8958A15	43.65
1/2″	7 1/4″	1 1/2″	7/8″	3″	1 3/8″	7/8″	8958A66	48.67	1/4″	8958A16	46.24

♦ Slot length is measured center-to-center.

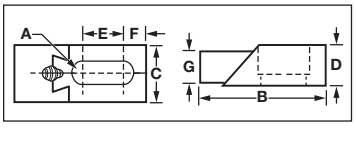

For an index of fixturing components, see page 2596.

Swivel-Hook Clamps

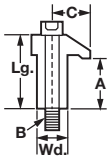

Also known as swing or hook clamps, these clamps have a steel hook that rides on a spring-loaded socket head cap screw. This allows the clamp to hold workpieces securely, yet be swiveled out of the way for a quick release. The screw sets flush with the top of the clamp, permitting use in tight spaces. Clamp body is heat-treated steel. Great for a variety of jig and fixturing applications.

Hook to Base (A)	Clamp Lg.	Wd.	Screw Size (B)	Hook Lg. (C)	Hex Key Size		
7/8″	1 3/8″	5/8″	5/16″-18	1 3/4″	11/16″	1/4″	**8954A11** $25.76
1 5/8″	2 1/4″	7/8″	3/8″-16	3″	1″	5/16″	**8954A12** 28.11
1 5/8″	2 1/4″	7/8″	1/2″-13	3″	1″	3/8″	**8954A13** 28.11
1 13/16″	2 3/4″	1 1/8″	5/8″-11	3 1/2″	1 7/16″	1/2″	**8954A15** 30.16

Set Screw Adjustable Height Serrated Grippers

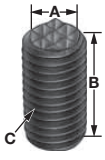

A threaded body allows you to adjust gripper height. An internal hex opening is opposite the serrated face, so you can use a hex key to thread it into a hole. Made of carbide-tipped tool steel. Teeth are placed 0.125″ apart (unless noted).

Size (A)	Ht. (B)	Thread Size (C)	Hex Key Size		
1/4″	1/2″	3/8″-16	3/16″	**4993A11**♠	$12.50
1/4″	1″	3/8″-16	3/16″	**4993A12**♠	12.65
1/4″	2″	3/8″-16	3/16″	**4993A13**♠	12.92
3/8″	1″	1/2″-13	1/4″	**4993A14**	11.69
3/8″	2″	1/2″-13	1/4″	**4993A15**	12.10
1/2″	1″	3/4″-10	3/8″	**4993A16**	13.87
1/2″	2″	3/4″-10	3/8″	**4993A17**	14.27

♠ Teeth are placed 0.094″ apart.

Low-Profile Clamps

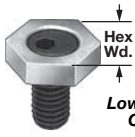

Low-Profile Clamp

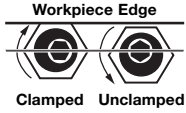

Just give the offset screw a half-turn and it presses the hex head against the workpiece. This simple design creates cam-action to quickly and effectively fasten components. Use these clamps in tapped holes. They have a hardened steel socket head cap screw with a black-oxide finish and a hexagonal brass hex head, except where noted.

Clamps are often used in conjunction with T-slot nuts (sold separately below). ***T-slot nuts*** have a lock-down screw to hold in the T-slot.

Low-Profile Clamps

Screw Thread Size	Hex Ht.	Wd.	Head Movement	Clamp Force, lbs.	Max. Hex Key Size		
8-32	1 1/32″	0.11″ × 5/16″	0.03″	205	5/64″	**84865A31**	$6.56
1/4″-20	1 5/32″	3/16″ × 5/8″	0.04″	800	1/8″	**84865A35**●	23.24
1/4″-20	1 5/32″	3/16″ × 5/8″	0.04″	800	1/8″	**84865A12**	6.93
5/16″-18	1 5/32″	3/16″ × 13/16″	0.04″	800	3/16″	**84865A34**	7.24
5/16″-24	1 5/32″	3/16″ × 13/16″	0.04″	800	3/16″	**84865A33**	7.24
3/8″-16	2 3/32″	1/4″ × 13/16″	0.05″	2,000	3/16″	**84865A14**	7.91
1/2″-13	2 9/32″	3/8″ × 1″	0.10″	4,000	5/16″	**84865A15**	10.61

● Screw and hex head are 300 series stainless steel.

T-Slot Nuts

For Slot Width	Fits Clamps		
3/8″	84865A35 & A12	**84865A22**	$16.80
7/16″	84865A34	**84865A24**	16.80
1/2″	84865A14	**84865A26**	16.80
9/16″	84865A14	**84865A42**	16.80
5/8″	84865A15	**84865A44**	16.80
11/16″	84865A15	**84865A46**	16.80

Low-Profile Edge-Gripping Clamps

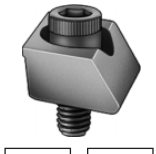

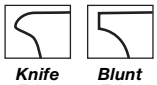

Knife Edge *Blunt Edge*

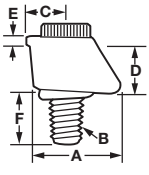

Small, but strong, these tool steel clamps hold tight in vertical and horizontal clamping applications. Plus, they grip a workpiece's edge, keeping the surface free for milling, boring, and cutting.

Clamp Width (A)	Screw Thread Size (B)	(C)	(D)	(E)	(F)	Clamp Force, lbs.	Torque, lbs.	Total Movement	Hex Key Size		
Knife Edge											
1/2″	8-32	0.2″	0.187″	0.1″	0.39″	1,500	5	0.016″	9/64″	**2172A14**	$11.05
3/4″	1/4″-20	0.3″	0.28″	0.15″	0.57″	3,600	200	0.024″	3/16″	**2172A17**	14.20
1″	3/8″-16	0.4″	0.45″	0.25″	0.71″	6,000	360	0.05″	5/16″	**2172A21**	22.80
Blunt Edge											
1/2″	8-32	0.2″	0.187″	0.1″	0.39″	1,500	50	0.016″	9/64″	**2172A15**	11.05
3/4″	1/4″-20	0.3″	0.28″	0.15″	0.57″	3,600	200	0.024″	3/16″	**2172A18**	14.20
1″	3/8″-16	0.4″	0.45″	0.25″	0.71″	6,000	360	0.05″	5/16″	**2172A22**	22.80

Low-Profile Serrated Edge Grippers

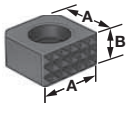

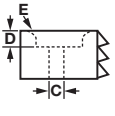

Grippers have a serrated edge for extra gripping power and a slim body that is ideal for use in low-profile jig, fixture, and vise gripping applications. Attach to the top or sides of your fixture—a mounting hole lets grippers mount to the sides of fixtures. Mounting hole is counterbored for a socket head cap screw (not included). Made of high-speed tool steel. Teeth are placed 0.125″ apart (unless noted).

Square Size (A)	Thick (B)	*Mounting Hole* Fits Screw Size (C)	Counterbore Dp. (D)	Chamfer (E)		
3/8″	1/4″	#6	0.146″	1/16″ × 45°	**3783A11**♠	$8.71
3/8″	3/8″	#6	0.146″	1/16″ × 45°	**3783A12**♠	8.96
1/2″	1/4″	#8	0.170″	3/32″ × 45°	**3783A13**	10.46
1/2″	3/8″	#8	0.175″	3/32″ × 45°	**3783A14**	10.69
5/8″	1/4″	1/4″	0.130″	1/8″ × 45°	**3783A15**	13.19
5/8″	3/8″	1/4″	0.130″	1/8″ × 45°	**3783A16**	13.44
3/4″	1/4″	5/16″	0.161″	1/8″ × 45°	**3783A17**	14.81
3/4″	3/8″	5/16″	0.161″	1/8″ × 45°	**3783A18**	15.06
3/4″	1/2″	5/16″	0.161″	1/8″ × 45°	**3783A19**	15.31
1″	3/8″	3/8″	0.194″	1/8″ × 45°	**3783A21**	20.21
1″	1/2″	3/8″	0.194″	1/8″ × 45°	**3783A22**	20.46

♠ Teeth are placed 0.094″ apart.

Hex Head Adjustable Height Serrated Grippers

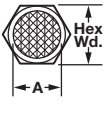

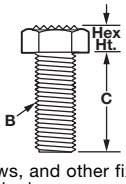

Attach grippers to clamps, jaws, and other fixturing devices to increase their gripping power and prevent wear caused by gripping. Fully threaded body allows you to adjust the height of the gripper. Made of carbide-tipped alloy steel. Teeth are placed 0.125″ apart (unless noted).

Size (A)	Hex Ht.	Wd.	Thread Size (B)	Shank Lg. (C)		
5/16″	13/64″	× 7/16″	1/4″-20	1/2″	**8523A11**♠	$6.09
5/16″	13/64″	× 7/16″	1/4″-20	1″	**8523A12**♠	6.22
3/8″	1/4″	× 1/2″	5/16″-18	1/2″	**8523A31**	6.26
3/8″	1/4″	× 1/2″	5/16″-18	1″	**8523A32**	6.41
1/2″	9/32″	× 9/16″	3/8″-16	1/2″	**8523A34**	7.19
1/2″	9/32″	× 9/16″	3/8″-16	1″	**8523A35**	7.31
1/2″	9/32″	× 9/16″	3/8″-16	1 1/2″	**8523A36**	7.55
5/8″	23/64″	× 3/4″	1/2″-13	1″	**8523A37**	9.16
5/8″	23/64″	× 3/4″	1/2″-13	1 1/2″	**8523A38**	9.45
3/4″	7/16″	× 15/16″	5/8″-11	1″	**8523A39**	11.90
3/4″	7/16″	× 15/16″	5/8″-11	2″	**8523A41**	12.21

♠ Teeth are placed 0.094″ apart.

For an index of fixturing components, see page 2596.

Serrated Grippers

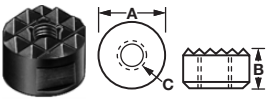

Standard Round Gripper

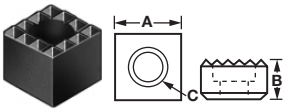

Counterbored Square Gripper

Boost the gripping power of chuck jaws, clamps, and other fixturing devices by attaching these grippers. Made of high-speed tool steel. Tolerance for (A) and (B) dimensions is –0.005″. ***Standard*** have a threaded hole (unless noted) for fast mounting and replacement. Mount from rear using standard cap screw (not included). They also have flat notches on the side for set screw mounting. Thread size (C) is 10-32 (unless noted). *Carbide-tipped* has greater wearability in nonshock settings. ***Counterbored*** mount from front using a socket head cap screw (not included).

To Order Please specify fine or extra-fine pattern, except where noted. Fine has teeth spaced 0.125″ apart; extra-fine are 0.094″.

Standard

Size (A)	Ht. (B)	Round		Round Carbide-Tipped★		Square	
3/8″	3/8″	84905A41♣	$7.35	84885A31♣	$7.87	84905A55♣	$8.10
1/2″	3/8″	84905A12	7.67	84885A22	7.50	84905A52	10.12
1/2″	1/2″	—	—	84885A26	7.85	—	—
5/8″	3/8″	84905A13♥	10.46	84885A23♥	9.06	—	—
3/4″	3/8″	84905A14♥	11.56	84885A24♥	10.67	84905A53	14.00
1″	3/8″	84905A15♥	14.00	84885A25♥	17.98	84905A54♥	19.56

★ Mounting hole is a minimum 3/16″ deep blind hole.
♣ Available in extra-fine pattern only. ♥ Thread size (C) is 1/4″-28.

Counterbored

Size (A)	Ht. (B)	Fits Screw Size (C)	Round		Square	
1/2″	3/8″	#8	31305A41	$7.88	31305A48♦	$10.46
1/2″	1/2″	#8	31305A42	8.21	31305A49♦	10.73
5/8″	3/8″	#8	31305A43	10.79	—	—
5/8″	1/2″	#8	31305A44	11.08	—	—
3/4″	3/8″	#10	31305A45	12.10	—	—
3/4″	1/2″	#10	31305A46	12.42	—	—
3/4″	1/2″	1/4″	—	—	31305A51	14.94
1″	1/2″	1/4″	31305A47	14.94	31305A52	20.12

♦ Fits screw size #10.

Swivel Pads

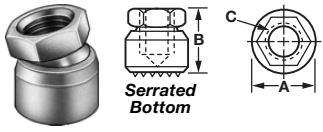

Also known as toggle or swivel-foot pads, these pads apply uniform clamping pressure on uneven and angular surfaces. They are self-aligning, and tilt up to 10° to clamp against the workpiece. Thread them onto clamp bolts or studs that have a matching thread size. Choose from pads with a plain, serrated, and acetal bottom.

Serrated bottom improves the grip on rough surfaces. ***Acetal bottom*** won't mar soft metals or polished surfaces.

Steel— Have a steel nut and base with a zinc-plated finish.

Stainless Steel— Resistant to rust and corrosion, they have a Type 303 stainless steel nut and base.

Pad Dia. (A)	Ht. (B)	Thread Size (C)	Steel Nut and Base		Stainless Steel Nut and Base	
Plain Bottom						
5/8″	5/8″	1/4″-20	8955A11	$4.30	89585A1	$7.77
11/16″	3/4″	5/16″-18	8955A12	4.42	89585A2	7.87
3/4″	13/16″	3/8″-16	8955A13	4.60	89585A3	8.13
7/8″	15/16″	1/2″-13	8955A14	4.98	89585A4	9.47
1″	1″	5/8″-11	8955A15	5.24	89585A5	9.77
1 1/4″	1 11/32″	3/4″-10	8955A16	7.25	89585A6	13.87
1 5/8″	1 53/64″	1″-8	8955A17	12.00	89585A7	23.03
Serrated Bottom						
5/8″	5/8″	1/4″-20	8955A21	4.79	89585A21	8.50
11/16″	3/4″	5/16″-18	8955A22	4.83	89585A22	8.67
3/4″	13/16″	3/8″-16	8955A23	4.98	89585A23	8.93
7/8″	15/16″	1/2″-13	8955A24	5.55	89585A24	10.47
1″	1″	5/8″-11	8955A25	5.78	89585A25	10.57
1 1/4″	1 11/32″	3/4″-10	8955A26	7.97	89585A26	15.23
1 5/8″	1 53/64″	1″-8	8955A27	13.28	89585A27	25.33
Acetal Bottom						
5/8″	5/8″	1/4″-20	84875A41	5.35	89585A8	11.06
11/16″	3/4″	5/16″-18	84875A42	5.44	89585A9	10.67
3/4″	13/16″	3/8″-16	84875A43	5.65	89585A11	11.64
7/8″	15/16″	1/2″-13	84875A44	6.19	89585A12	13.56
1″	1″	5/8″-11	84875A45	6.47	89585A13	13.90
1 1/4″	1 11/32″	3/4″-10	84875A46	8.91	89585A14	19.83
1 5/8″	1 53/64″	1″-8	84875A47	14.81	89585A15	32.27

Shoulder-Style Locating Pins

A shoulder on these pins resists force from above to keep the pins from being pressed through the fixture.

Use ***round pins*** and ***diamond pins*** to locate and align parts. Diamond pins have a four-flat diamond pattern that minimizes contact with workpiece to reduce sticking and jamming. When used together, round and diamond pins provide accurate locations from hole-to-hole on the workpiece.

Press-fit locating pins have a tapered end for an easy press-fit installation. Made of heat-treated, ground steel with a black-oxide finish. Rockwell hardness is C60-C64. Tolerance for dimensions (A) and (B) is –0.0005″.

Removable locating pins are also known as slip-fit and lockscrew locating pins. They're the perfect choice when you need to remove pins and reinstall them. Made of steel. Rockwell hardness is C74-C77. Tolerance for dimensions (A) and (B) is –0.0002″.

Round Press Fit

Diamond Press Fit

Round Removable

Diamond Removable

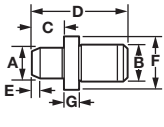

Diamond

Dia. (A)	Dia. (B)	(C)	(D)	(E)	Dia. (F)	(G)	Round		Diamond	
Press-Fit Locating Pins										
0.1245″	0.3135″	7/16″	1 3/16″	3/32″	5/8″	17/64″	31375A23	$8.82	31375A24	$10.19
0.1870″	0.3125″	7/16″	1 3/16″	3/32″	5/8″	17/64″	31375A25	8.83	31375A26	9.98
0.2495″	0.3125″	7/16″	1 3/16″	3/32″	5/8″	17/64″	31375A27	8.83	31375A28	9.98
0.3110″	0.5010″	1/2″	1 1/2″	1/8″	7/8″	17/64″	31375A11	8.83	31375A51	9.98
0.3120″	0.3125″	7/16″	1 3/16″	3/32″	5/8″	17/64″	31375A29	8.83	31375A31	9.98
0.3120″	0.5010″	1/2″	1 1/2″	1/8″	7/8″	17/64″	31375A12	8.83	31375A52	9.98
0.3428″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	31375A13	8.83	31375A53	9.98
0.3730″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	31375A14	8.83	31375A54	9.98
0.3740″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	31375A15	8.83	31375A55	9.98
0.4053″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	31375A16	8.83	31375A56	9.98
0.4980″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	31375A21	8.83	31375A61	9.98
0.4990″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	31375A22	8.83	31375A62	9.98
0.5615″	0.7500″	11/16″	1 15/16″	3/16″	1 1/8″	17/64″	31375A35	14.40	31375A36	14.40
0.6240″	0.7500″	11/16″	1 15/16″	3/16″	1 1/8″	17/64″	31375A37	14.40	31375A38	14.40
0.7490″	0.7500″	11/16″	1 15/16″	3/16″	1 1/8″	17/64″	31375A42	14.40	31375A43	14.40
Removable Locating Pins										
0.1245″	0.3125″	7/16″	1 3/16″	1/32″	5/8″	17/64″	2397A11	9.00	2397A51	10.10
0.1870″	0.3125″	7/16″	1 3/16″	1/16″	5/8″	17/64″	2397A12	9.00	2397A52	10.10
0.2495″	0.3125″	7/16″	1 3/16″	3/32″	5/8″	17/64″	2397A13	9.00	2397A53	10.10
0.3115″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	2397A15	9.19	2397A55	10.10
0.3120″	0.3125″	7/16″	1 3/16″	3/32″	5/8″	17/64″	2397A14	9.00	2397A54	10.10
0.3428″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	2397A16	9.19	2397A56	12.20
0.3740″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	2397A17	9.19	2397A57	12.20
0.4053″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	2397A18	9.19	2397A58	12.20
0.4365″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	2397A19	9.19	2397A59	12.20
0.4980″	0.7500″	11/16″	1 15/16″	3/16″	1 1/8″	17/64″	2397A22	13.20	2397A62	16.15
0.4990″	0.5000″	1/2″	1 1/2″	1/8″	7/8″	17/64″	2397A21	9.19	2397A61	16.36
0.5605″	0.7500″	11/16″	1 15/16″	3/16″	1 1/8″	17/64″	2397A23	13.20	2397A63	16.15
0.6230″	0.7500″	11/16″	1 15/16″	3/16″	1 1/8″	17/64″	2397A24	13.20	2397A64	16.15
0.6855″	0.7500″	11/16″	1 15/16″	3/16″	1 1/8″	17/64″	2397A25	13.20	2397A65	16.15
0.7480″	0.7500″	11/16″	1 15/16″	3/16″	1 1/8″	17/64″	2397A26	13.20	2397A66	16.15

Locating Pins

For an index of fixturing components, see page 2596.

Press-Fit Locating Pins

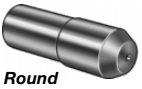

Round

Diamond

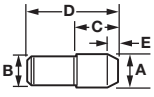

Diamond

These pins are an economical alternative to shoulder-style pins. Made of steel. Rockwell hardness is C60-C64. Use ***round pins*** and ***diamond pins*** to locate and align parts. Diamond pins have a four-flat diamond pattern that minimizes contact with workpiece to reduce sticking and jamming. When used together, round and diamond pins provide accurate locations from hole-to-hole on the workpiece.

Dia. (A)	Dia. (B)	(C)	(D)	(E)	Round: Dia. Tolerance			Diamond: Dia. Tolerance		
0.25″	0.1875″	11/32″	3/4″	3/32″	–0.0005″ to –0.0008″	8472A11	$2.08	–0.0007″ to –0.0001″	8472A19	$3.27
0.3125″	0.25″	13/32″	7/8″	3/32″	–0.0005″ to –0.0008″	8472A12	2.08	–0.0007″ to –0.0001″	8472A21	3.33
0.375″	0.3125″	1/2″	1″	1/8″	–0.0005″ to –0.0008″	8472A13	2.29	–0.0007″ to –0.0001″	8472A22	3.33
0.4375″	0.375″	19/32″	11/4″	5/32″	–0.0005″ to –0.0008″	8472A14	2.60	–0.0007″ to –0.0001″	8472A23	3.54
0.5″	0.4375″	21/32″	13/8″	5/32″	–0.0005″ to –0.0008″	8472A15	3.21	–0.0007″ to –0.0001″	8472A24	4.41
0.5625″	0.5″	3/4″	11/2″	3/16″	–0.0005″ to –0.0008″	8472A16	3.27	–0.001″ to –0.0015″	8472A25	4.62
0.625″	0.5625″	27/32″	13/4″	7/32″	–0.001″ to –0.0013″	8472A17	3.41	–0.001″ to –0.0015″	8472A26	5.31
0.6875″	0.625″	29/32″	2″	7/32″	–0.001″ to –0.0013″	8472A31	4.00	–0.001″ to –0.0015″	8472A41	5.86
0.75″	0.6875″	1″	21/8″	1/4″	–0.001″ to –0.0013″	8472A18	4.29	–0.001″ to –0.0015″	8472A27	7.21
0.8125″	0.75″	13/32″	21/4″	9/32″	–0.001″ to –0.0013″	8472A32	4.29	–0.001″ to –0.0015″	8472A42	8.77
0.875″	0.8125″	15/32″	21/2″	9/32″	–0.001″ to –0.0013″	8472A33	4.46	–0.001″ to –0.0015″	8472A43	9.91
0.9375″	0.875″	11/4″	23/4″	5/16″	–0.001″ to –0.0013″	8472A34	5.48	–0.001″ to –0.0015″	8472A44	10.15
1″	0.9375″	15/16″	27/8″	5/16″	–0.0015″ to –0.002″	8472A35	6.23	–0.002″ to –0.0028″	8472A45	10.42

Metric Press-Fit Locating Pins

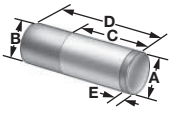

Locating Pin

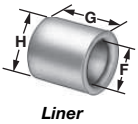

Liner

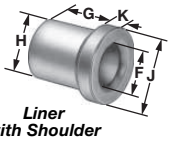

Liner with Shoulder

Dia., mm (A)	(A) Tolerance, mm	Dia., mm (B)	(B) Tolerance, mm	(C), mm	(D), mm	(E), mm	Locating Pins	
5	+0.02	5	–0.012	7	10	1.5	2336A21	$16.22
5	+0.02	5	–0.012	10	15	1.5	2336A22	16.26
5	+0.02	5	–0.012	13	20	1.5	2336A23	16.26
6	+0.02	6	–0.012	7	10	1.5	2336A24	17.09
6	+0.02	6	–0.012	10	15	1.5	2336A25	17.12
6	+0.02	6	–0.012	13	20	1.5	2336A26	17.12
8	+0.024	8	–0.015	13	20	2	2336A27	17.26
8	+0.024	8	–0.015	16	25	2	2336A28	17.26
8	+0.024	8	–0.015	19	30	2	2336A29	17.31
10	+0.024	10	–0.015	16	25	2	2336A31	18.21
10	+0.024	10	–0.015	19	30	2	2336A32	18.24

Here's a metric alternative to other locating pins. Use these round press-fit pins to locate parts. Made of steel. Rockwell hardness is C58. Use liners to keep pins from bending or wandering. To select a liner, choose any liner with the same diameter (F) as the locating pin diameter (A). All liners are steel with a Rockwell hardness of C60.

Liners sit flush in workpiece. ***Liners with shoulder*** resist force from above to keep the pins from being pressed through the fixture.

Dia., mm (F)	(F) Tolerance, mm	(G), mm	(H), mm	Liners		Liners with Shoulder: (J), mm	(K), mm		
5	+0.12	8	10	2336A41	$29.97	14	3	2336A71	$43.45
5	+0.12	10	10	2336A42	29.97	14	3	2336A72	43.52
5	+0.12	12	10	2336A43	30.00	14	3	2336A73	43.52
6	+0.12	8	10	2336A45	28.21	14	3	2336A75	43.45
6	+0.12	10	10	2336A46	28.21	14	3	2336A76	43.45
6	+0.12	12	10	2336A47	28.21	14	3	2336A77	43.52
8	+0.14	10	12	2336A49	28.21	16	4	2336A79	43.52
8	+0.14	12	12	2336A51	28.26	16	4	2336A81	43.61
8	+0.14	16	12	2336A52	28.26	16	4	2336A82	43.67
10	+0.14	10	15	2336A54	30.05	19	4	2336A84	48.10
10	+0.14	12	15	2336A55	30.09	19	4	2336A85	48.15
10	+0.14	16	15	2336A56	30.15	19	4	2336A86	48.21

Bullet-Nose Aligning Dowels and Pins

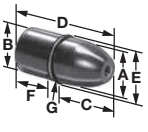

Dowel

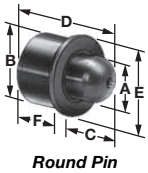

Round Pin

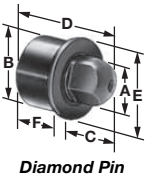

Diamond Pin

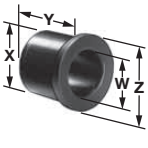

Liner

Install a dowel or pin in your jig plate and a liner in the tooling that holds the workpiece to keep fixtures and jigs aligned with other tool parts. Made of steel. Rockwell hardness is C60-C64.

Dowels— Have a long, tapered nose for easy entry into the liner. Tolerance for (A) dimension is –0.0005″; –0.0003″ for (B).

Pins— The pin shank diameter (B) and liner OD (X) are the same size, so fixture pieces can be drilled at the same time. Tolerance for (A) and (B) dimensions is –0.0003″. Use ***round pins*** and ***diamond pins*** to locate and align parts. Diamond pins have a four-flat diamond pattern that minimizes contact with workpiece to reduce sticking and jamming. When used together, round and diamond pins provide accurate locations from hole-to-hole on the workpiece.

Liners— Have a tolerance of +0.0004″ for (W) dimension; –0.0003″ for (X).

Dowels and Liners

Dowel Dia. (A)	(B)	(C)	(D)	(E)	(F)	(G)	Dowels		(W)	(X)	(Y)	(Z)	Liners	
0.2499″ (1/4″)	0.2516″	0.375″	0.907″	0.28″	0.5″	0.032″	31445A111	$2.69	0.2501″	0.5017″	3/8″	5/8″	31445A116	$5.14
0.3124″ (5/16″)	0.3141″	0.407″	0.939″	0.344″	0.5″	0.032″	31445A112	2.83	0.3126″	0.5017″	3/8″	5/8″	31445A117	5.36
0.3749″ (3/8″)	0.3766″	0.5″	1.03″	0.407″	0.5″	0.032″	31445A113	2.93	0.3751″	0.6267″	1/2″	3/4″	31445A118	5.52
0.4999″ (1/2″)	0.5017″	0.562″	1.09″	0.532″	0.5″	0.032″	31445A114	3.12	0.5001″	0.7518″	5/8″	7/8″	31445A119	5.79

Pins and Liners

Pin Dia. (A)	(B)	(C)	(D)	(E)	(F)	Round Pins		Diamond Pins		(W)	(X)	(Y)	(Z)	Liners	
0.2499″ (1/4″)	0.4078″	7/32″	21/32″	9/16″	3/8″	31335A11	$3.38	31335A31	$7.81	0.2501″	0.4078″	7/16″	9/16″	31335A51	$5.35
0.3124″ (5/16″)	0.5017″	9/32″	23/32″	5/8″	3/8″	31335A12	4.64	31335A32	10.22	0.3126″	0.5017″	7/16″	5/8″	31335A52	5.62
0.3748″ (3/8″)	0.6267″	5/16″	7/8″	3/4″	1/2″	31335A13	4.85	31335A33	9.62	0.3751″	0.6267″	7/16″	3/4″	31335A53	5.78
0.4998″ (1/2″)	0.7518″	13/32″	31/32″	7/8″	1/2″	31335A14	6.16	31335A34	9.60	0.5001″	0.7518″	1/2″	7/8″	31335A54	6.14
0.6248″ (5/8″)	0.8768″	7/16″	11/16″	1″	1/2″	31335A16	6.18	31335A18	9.11	0.6252″	0.8768″	1/2″	1″	31335A21	6.43
0.7498″ (3/4″)	1.0018″	9/16″	17/16″	11/8″	3/4″	31335A15	6.57	31335A35	13.22	0.7502″	1.0018″	1/2″	11/8″	31335A55	6.30
0.9998″ (1″)	1.3771″	3/4″	15/8″	11/2″	3/4″	31335A17	10.10	31335A19	17.31	1.0002″	1.3771″	11/16″	11/2″	31335A22	6.35

For an index of fixturing components, see page 2596. For information about spring plungers, see page 2602.

Tooling Balls

Determine hole centerlines and distances between hole centerlines, using tooling balls to establish a precise reference point for critical machining operations. Tool balls are also known as construction balls. Manufactured from one piece of heat-treated, hardened, ground alloy steel so that the ball won't dislodge from the shank. Balls have a ground-luster finish. Balls and shanks are concentric within +0.0002″. Tolerances for (A) and (C) dimensions are ±0.0002″. Rockwell hardness is C58-C62 (unless noted).

Shoulder tooling balls have a precision height-reference shoulder to locate the ball in three dimensions.

Install the ***shoulder ball with internal thread*** by inserting a cap screw (not included) into the 6-32×1/4″ deep tapped hole in shank and then pulling through a bushing or hole. The screw will pull the shank through bushing or hole without marring the ball or changing the ball's location.

Slip Fit—Slightly undersized for temporary mounting. Tolerance for (B) dimension is +0.0000″ to –0.0004″.

Press Fit—Slightly oversized for permanent mounting. Tolerance for (B) dimension is +0.0003″ to –0.0000″.

Tooling ball cover prevents jarring and bumping, protecting your tooling balls when not in use. Made of cast zinc alloy. Fits all balls listed here.

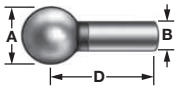

Standard Ball

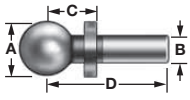

Shoulder Ball

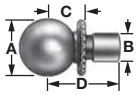

Shoulder Ball with Internal Thread

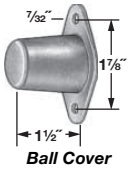

Ball Cover

Ball Dia. (A)	Shank Dia. (B)	(C)	(D)	Slip Fit		Press Fit	
Standard Tooling Balls							
1/4″	1/8″	—	9/16″	8484A11	$12.07	8484A16	$13.03
3/8″	3/16″	—	3/4″	8484A12	13.98	8484A17	13.98
1/2″	1/4″	—	15/16″	8484A13	11.60	8484A18	11.62
1/2″	1/4″	—	1 1/2″	8484A14	13.35	8484A19	13.35
1/2″	3/8″	—	1 1/2″	8484A15	16.77	8484A21	16.77
Shoulder Tooling Balls							
1/4″	1/8″	0.2″	9/16″	8481A25	17.90	8481A32	17.90
3/8″	3/16″	0.3″	3/4″	8481A26	17.62	8481A33	17.62
1/2″	1/4″	0.4″	15/16″	8481A27	17.62	8481A34	17.62
1/2″	1/4″	1/2″	1 3/8″	8481A28	20.40	8481A35	20.40
3/4″	3/8″	1/2″	1 1/4″	8481A29	27.98	8481A36	27.98
Shoulder Ball with Internal Thread—*Rockwell hardness is C60-C67.*							
1/2″	1/4″	5/16″	5/8″	31325A27	20.83	—	—
Tooling Ball Cover						8319A11	$2.40

Fixture Supports

Use with jigs and fixtures to support and position workpieces. Made of hardened steel with a black-oxide finish. ***Press-fit supports*** simply press into your jig or fixture without any hole tapping. ***Circular head supports*** are counterbored for mounting with socket head cap screws (not included). ***Threaded hex-head supports*** have a six-flat hex design and are threaded for easy installation and a secure fit.

Press-Fit Support

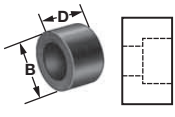

Circular Head Support

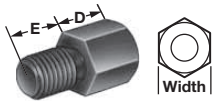

Threaded Hex-Head Support

Press-Fit Supports

Dia. (A)★	Dia. (B)	Lg. (C)	Lg. (D)		
0.1885″	1/4″	7/32″	1/4″	8511A11	$1.96
0.1885″	3/8″	7/32″	1/4″	8511A12	1.96
0.1885″	3/8″	3/8″	1/2″	8511A23	1.93
0.251″	1/2″	1/2″	1/4″	8511A24	1.93
0.251″	1/2″	1/2″	3/8″	8511A25	1.93
0.251″	1/2″	1/2″	1/2″	8511A26	2.15
0.376″	5/8″	15/32″	1/4″	8511A16	2.23
0.376″	5/8″	1/2″	3/8″	8511A28	2.23
0.376″	5/8″	1/2″	1/2″	8511A29	2.30
0.376″	5/8″	1/2″	5/8″	8511A31	2.30
0.376″	5/8″	1/2″	3/4″	8511A32	2.56
0.376″	5/8″	1/2″	1″	8511A33	2.56
0.501″	3/4″	1/2″	1 1/2″	8511A35	3.00

★ Diameter tolerance is ±0.0005″.

Circular Head Supports

Dia. (B)	Lg. (D)■	For Screw Size			
1/2″	1/2″	#10	8506A16	$1.73
5/8″	3/8″	1/4″	8506A14	2.00
5/8″	1/2″	1/4″	8506A17	2.04
5/8″	5/8″	1/4″	8506A18	2.06
5/8″	3/4″	1/4″	8506A31	2.18
5/8″	1″	1/4″	8506A32	2.42
3/4″	1/2″	5/16″	8506A19	2.19
3/4″	5/8″	5/16″	8506A21	2.19
3/4″	3/4″	5/16″	8506A22	2.24
15/16″	5/8″	3/8″	8506A23	2.37
15/16″	3/4″	3/8″	8506A24	2.54
15/16″	1″	3/8″	8506A26	2.75
1 1/4″	7/8″	1/2″	8506A27	2.77

■ Length tolerance is ±0.001″.

Threaded Hex-Head Supports

Hex Head Lg. (D)	Hex Head Wd.	Thread Size×Lg. (E)		
1/4″	3/8″	1/4″-28×5/16″	8479A11	$2.29
1/4″	1/2″	3/8″-24×7/16″	8479A37	2.56
3/8″	3/8″	1/4″-28×5/16″	8479A12	2.29
3/8″	1/2″	3/8″-24×7/16″	8479A38	2.56
1/2″	1/2″	3/8″-24×1/2″	8479A4	2.40
1/2″	5/8″	1/2″-20×1/2″	8479A7	2.80
1/2″	3/4″	1/2″-20×9/16″	8479A68	2.96
3/4″	3/8″	1/4″-28×3/8″	8479A2	2.23
3/4″	1/2″	3/8″-24×1/2″	8479A5	2.50
3/4″	5/8″	1/2″-20×1/2″	8479A8	3.00
1″	3/8″	1/4″-28×3/8″	8479A3	2.33
1″	1/2″	3/8″-24×1/2″	8479A6	2.77
1″	5/8″	1/2″-20×1/2″	8479A9	3.17

Fixture Blocks for Socket Head Screws

Also known as fixture keys, these blocks quickly and accurately align jig and fixture components on machine tables. Mount block on fixture plate with a socket head cap screw (not included). Made of case-hardened steel with a black-oxide finish. Width is precision ground to a tolerance of –0.001″.

Table Slot Wd.	Key Lg.	Key Ht.	For Socket Head Screw Size		
1/2″	3/4″	1/2″	1/4″	8961A65	$4.71
9/16″	3/4″	1/2″	1/4″	8961A66	4.93
5/8″	3/4″	1/2″	5/16″	8961A67	5.29
11/16″	1″	1/2″	5/16″	8961A68	5.45
3/4″	1 1/4″	1/2″	5/16″	8961A69	5.67
13/16″	1 1/4″	1/2″	5/16″	8961A7	5.86

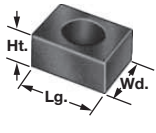

Flush-Mount Ball-Nose Spring Plungers

The collarless design on these spring plungers makes them ideal for a flush surface mount or when you won't need to remove the spring plunger. They have precise body diameter dimensions for press-fit installation. ***Single-ball*** plungers have a 300 series stainless steel body with Type 440 stainless steel ball and spring. ***Double-ball*** plungers have a ball at either end to provide spring-pressure connections at both ends. They have a knurled band around the middle and a brass body with Type 440 stainless steel balls and spring. The brass body can complete a circuit, making these plungers great for use in electrical applications such as a contact switch. For Push-Fit Ball-Nose Spring Plungers, see page 2603.

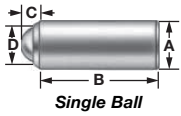

Single Ball

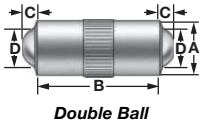

Double Ball

Ball Style	Body Dia., mm (A)	Body Lg., mm (B)	Ball Projection (C), mm	Dia., mm (D)	Knurled Dia., mm	End Force, lbs. Initial	End Force, lbs. Final		
Single	3	7	0.65	2	—	1	1.7	8262A21	$2.86
Single	3.5	9	0.8	2.5	—	1.3	3.2	8262A22	2.83
Single	4	11	0.9	3	—	1.8	3.2	8262A23	2.86
Single	4.5	12	0.95	3.2	—	2.1	3.7	8262A24	2.94
Single	5	13	1	3.5	—	2.5	4	8262A25	3.12
Single	5.5	14	1.2	4	—	3.5	5.6	8262A26	3.15
Single	6	15	1.5	4.5	—	4	7	8262A27	3.18
Double	2.5	5.3	0.65	2	2.52	0.3	0.6	8272A31	4.56
Double	3	7.3	0.8	2.5	3.02	0.4	1	8272A32	4.56
Double	4	9	0.9	3	4.03	0.6	1.7	8272A33	4.71
Double	5	10.8	1.2	4	5.03	0.8	1.8	8272A34	4.68
Double	7	14	2	6	7.03	0.9	2.7	8272A35	5.18
Double	8	18	2.1	6.5	8.03	1.3	3.4	8272A36	5.68

About Spring Plungers

Spring plungers can repeatedly project the plunger nose to apply accurate, consistent pressure to workpieces. Use them for positioning, locking, indexing, and ejecting. They can also function as a detent catch. *Ball-nose spring plungers* are more compact for higher strength in side-load applications. *Round-nose spring plungers* provide long travel ranges and smooth operation.

End Force— The pressure of the spring holds the plunger nose in place until acted upon by an *initial end force* (the force in pounds required to begin to retract the plunger nose). The nose can be depressed until it reaches *final end force* (the force in pounds required to depress the plunger nose so it sets flush with the end of the plunger body). The range of movement, or *travel*, of the plunger is equal to the ball projection or nose length. You can select the desired force or "feel" for your application. You can vary the side force required to release your component by changing the size of the detent hole or groove into which the plunger nose fits. Lighter end forces and smaller holes will release more easily, while heavier end forces and larger holes will increase the force required for release.

Thread-Locking Element— Most of our spring plungers can be ordered with a thread-locking element that compresses into the threads of a tapped hole to resist vibration and to eliminate the need for checknuts and thread-locking adhesives. Most ball-nose and round-nose spring plungers with thread sizes of 1/4″ or less have a bonded patch; most thread sizes greater than 1/4″ have a press-fit pellet. Hand-retractable spring plungers have a bonded patch regardless of size. It is not recommended for use on aluminum or other soft materials.

Catches for Ball-Nose Spring Plungers

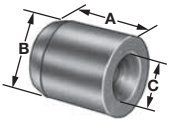

Also known as ball buttons, these catches are the ideal mate for ball-nose spring plungers. A half-round indentation acts as a detent or stop, providing a hardened striker plate that withstands side loads and prevents fixture damage. Their tapered end press-fits into reamed holes. Made of hardened, ground 440C stainless steel. Outside diameter tolerance is –0.0000″ to +0.0002″.

Fits Ball Dia.	Lg. (A)	OD (B)	Detent Dia. (C)		
0.062″	0.125″	0.1075″	0.056″	33545A21	$3.21
0.078″	0.125″	0.1175″	0.061″	33545A28	3.38
0.094″	0.1875″	0.1614″	0.069″	33545A22	3.21
0.125″	0.25″	0.2034″	0.111″	33545A23	3.21
0.156″	0.3125″	0.2659″	0.139″	33545A24	$3.31
0.188″	0.375″	0.3284″	0.164″	33545A25	3.31
0.281″	0.5″	0.4378″	0.241″	33545A26	3.77
0.375″	0.625″	0.5472″	0.330″	33545A27	4.25

Ball-Nose Spring Plungers

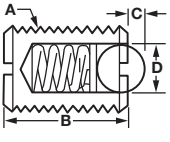

To Order For steel and stainless steel body plungers, please specify ***with or without a nylon thread-locking element.*** When threading into aluminum and other soft materials, select a plunger without the nylon thread-locking element.

The ball nose in these spring plungers rolls freely to minimize wear on materials before being clamped or locked down. They have a short travel range and high strength in side-load applications. Also function as a latch, holding point, or as a detent by using indentations (*e.g.* on a gear rack or multiposition switch) as stop points. A slot in the body allows installation with a screwdriver or plunger wrench (sold separately on page 2606).

Max. temperature for steel and stainless steel plungers with stainless steel ball is 250° F and 180° F with nylon ball. Max. temperature for acetal plungers with stainless steel ball is 190° F and 180° F with nylon ball.

Stainless steel plungers are made of corrosion-resistant 300 series stainless steel, making them a good choice for corrosive environments. ***Acetal plungers*** are lightweight yet durable and have electrical insulating properties. Best suited for use with plastic components.

Stainless steel balls are 440C stainless steel. *Nylon balls* resist moisture and solvents, and act as an electrical insulator.

Inch Sizes—Class 2A threads

Thread Size (A)	Body Lg. (B)	Ball Projection (C)	Ball Dia. (D)	End Force, lbs. Initial	Final	STEEL BODY Stainless Steel Ball		STEEL BODY Nylon Ball		STAINLESS STEEL BODY Stainless Steel Ball		STAINLESS STEEL BODY Nylon Ball	
4-48	0.187″	0.020″	0.062″	0.125	0.5	3408A65	$3.68	84805A51	$5.58	3408A88	$4.23	34085A35	$5.81
5-40	0.250″	0.020″	0.062″	0.25	0.75	3408A66	3.53	84805A52	5.32	3408A89	4.06	34085A36	5.53
6-40	0.312″	0.023″	0.078″	0.5	1	3408A67	3.28	84805A53	4.94	3408A9	3.59	34085A37	5.19
8-32	0.344″	0.025″	0.094″	0.5	1.25	3408A68	3.28	84805A54	4.72	3408A91	3.59	34085A5	4.95
8-36	0.344″	0.025″	0.094″	0.5	1.25	3408A69	3.28	84805A55	4.72	3408A92	3.59	34085A38	4.95
10-24	0.513″	0.025″	0.094″	2	5	3408A521	3.86	—	—	3408A621	4.44	—	—
10-32	0.513″	0.025″	0.094″	0.5	1.5	3408A7	3.59	84805A63	4.98	3408A93	3.90	34085A39	5.53
10-32	0.513″	0.025″	0.094″	1.5	3	3408A71	3.59	84805A56	5.40	3408A94	3.95	34085A41	5.53
10-32	0.513″	0.025″	0.094″	2	5	3408A72	3.59	84805A64	4.98	3408A95	3.95	34085A42	5.53
1/4″-20	0.531″	0.035″	0.125″	2	4	3408A73	3.62	84805A65	5.12	3408A96	3.95	34085A43	5.94
1/4″-20	0.531″	0.035″	0.125″	3	7	3408A74	3.62	84805A57	5.54	3408A97	3.95	34085A44	5.94
1/4″-20	0.531″	0.035″	0.125″	4	12	3408A75	3.62	84805A66	5.12	3408A98	3.95	34085A45	5.94
1/4″-28	0.531″	0.035″	0.125″	4	12	3408A531	3.69	—	—	3408A631	4.11	—	—
5/16″-18	0.578″	0.040″	0.156″	2	4.5	3408A76	3.62	84805A67	5.52	3408A99	4.17	34085A46	6.32
5/16″-18	0.578″	0.040″	0.156″	4	9	3408A77	3.62	84805A58	6.00	3408A1	4.17	34085A47	6.32
5/16″-18	0.578″	0.040″	0.156″	6	17	3408A78	3.62	84805A68	5.52	3408A2	4.17	34085A48	6.32
5/16″-24	0.578″	0.040″	0.156″	6	17	3408A541	3.69	—	—	3408A641	4.69	—	—
3/8″-16	0.625″	0.048″	0.188″	2.5	5	3408A79	3.71	84805A69	6.12	3408A3	4.70	34085A49	7.23
3/8″-16	0.625″	0.048″	0.188″	5	10	3408A8	3.71	84805A59	6.64	3408A5	4.70	34085A51	7.23
3/8″-16	0.625″	0.048″	0.188″	6	21	3408A81	3.71	84805A7	6.12	3408A6	4.70	34085A52	7.23
3/8″-24	0.625″	0.048″	0.188″	6	21	3408A551	3.86	—	—	3408A651	5.40	—	—
1/2″-13	0.750″	0.072″	0.281″	3	6	3408A82	4.11	84805A71	6.78	3408A51	5.87	34085A53	8.18
1/2″-13	0.750″	0.072″	0.281″	6	12	3408A83	4.11	84805A61	7.36	3408A55	5.87	34085A54	8.18
1/2″-13	0.750″	0.072″	0.281″	6	30	3408A84	4.11	84805A72	6.78	3408A56	5.87	34085A1	8.18
1/2″-20	0.750″	0.072″	0.281″	6	30	3408A561	4.27	—	—	3408A661	6.10	—	—
5/8″-11	0.984″	0.096″	0.375″	4.5	9	3408A85	4.84	84805A73	7.74	3408A57	7.98	34085A2	10.60
5/8″-11	0.984″	0.096″	0.375″	7	50	3408A87	4.84	84805A74	7.74	3408A59	7.98	34085A4	10.60
5/8″-11	0.984″	0.096″	0.375″	9	18	3408A86	4.84	84805A62	8.40	3408A58	7.98	34085A3	10.60
						ACETAL BODY Stainless Steel Ball		ACETAL BODY Nylon Ball					
1/4″-20	0.531″	0.027″	0.125″	1	2.5	84775A42	$3.96	84775A52	$3.97	—	—	—	—
1/4″-20	0.531″	0.027″	0.125″	2	5	84775A41	3.96	84775A51	3.97	—	—	—	—
5/16″-18	0.578″	0.039″	0.156″	2	4.5	84775A44	3.96	84775A56	3.97	—	—	—	—
5/16″-18	0.578″	0.039″	0.156″	4	9	84775A43	3.96	84775A55	3.97	—	—	—	—
3/8″-16	0.625″	0.053″	0.187″	2.5	5	84775A46	4.14	84775A54	4.14	—	—	—	—
3/8″-16	0.625″	0.053″	0.187″	5	10	84775A45	4.14	84775A53	4.14	—	—	—	—

(Continued on following page)

For an index of fixturing components, see page 2596. For information about spring plungers, see page 2602.

Ball-Nose Spring Plungers *(Continued from previous page)*

To Order: Please specify ***with or without nylon thread-locking element.*** Select a plunger without nylon thread-locking element when threading into aluminum and other soft materials. For information about nylon thread-locking elements, see page 2602.

Metric Sizes—Class 6G threads

Thread Size (A)	Body Lg. (B)	Ball Projection (C)	Ball Dia. (D)	End Force, lbs. Initial	End Force, lbs. Final	STEEL BODY S.S. Ball		STEEL BODY Nylon Ball		STAINLESS STEEL BODY S.S. Ball		STAINLESS STEEL BODY Nylon Ball	
M4 ×0.7	9 mm	0.8 mm	2.5 mm	0.9	2.25	3391A31	$4.38	2191A11	$4.83	85015A46	$6.24	2277A51	$6.71
M6 ×1.0	14 mm	1 mm	3.5 mm	0.45	1.35	3391A33	4.46	2191A13	4.91	85015A48	6.39	2277A53	6.89
M6 ×1.0	14 mm	1 mm	3.5 mm	2.02	2.92	3391A32	4.46	2191A12	4.91	85015A47	6.39	2277A52	6.89
M6 ×1.0	14 mm	1 mm	3.5 mm	6.3	9	3391A34	4.46	2191A14	4.91	85015A49	6.39	2277A54	6.89
M8 ×1.25	16 mm	1.5 mm	5 mm	1.12	2.25	3391A36	4.66	2191A16	5.11	85015A52	6.65	2277A56	7.17
M8 ×1.25	16 mm	1.5 mm	5 mm	3.37	6.75	3391A35	4.66	2191A15	5.11	85015A51	6.65	2277A55	7.17
M8 ×1.25	16 mm	1.5 mm	5 mm	9	13.5	3391A37	4.66	2191A17	5.11	85015A53	6.65	2277A57	7.17
M10×1.5	19 mm	2 mm	6 mm	1.8	3.37	3391A39	4.98	2191A19	5.49	85015A55	6.73	2277A59	7.69
M10×1.5	19 mm	2 mm	6 mm	4.5	7.87	3391A38	4.81	2191A18	5.49	85015A54	6.73	2277A58	7.69
M10×1.5	19 mm	2 mm	6 mm	13.5	20.23	3391A41	4.81	2191A21	5.49	85015A56	6.73	2277A61	7.69
M12×1.75	22 mm	2.5 mm	8 mm	2.25	4.5	3391A43	5.35	2191A23	5.66	85015A58	7.19	2277A63	7.90
M12×1.75	22 mm	2.5 mm	8 mm	6.75	12.36	3391A42	5.62	2191A22	5.66	85015A57	7.19	2277A62	7.90
M12×1.75	22 mm	2.5 mm	8 mm	16.86	25.85	3391A44	5.62	2191A24	5.66	85015A59	7.19	2277A64	7.90
M16×2	25.4 mm	2.4 mm	9.5 mm	4.4	8.81	3391A48	6.10	—	—	85015A43	8.26	—	—

Brass and Type 316 Stainless Steel Ball-Nose Spring Plungers

Similar to our other ball-nose spring plungers, but these are made of brass or Type 316 stainless steel for use in more corrosive applications. A slot in the body allows installation with a screwdriver or plunger wrench (sold separately on page 2606). All have Class 2A threads and are nonmagnetic. Max. temperature for all spring plungers is 170° F.

Brass plungers offer good corrosion resistance and have a decorative brass finish. They are great for use in marine environments. They have a brass ball.

Stainless steel plungers are Type 316 stainless steel for excellent corrosion resistance. They have a stainless steel ball.

To Order: Please specify ***with or without acrylic thread-locking element.*** When threading into aluminum and other soft materials, select a plunger without the acrylic thread-locking element. For information about thread-locking elements, see page 2602.

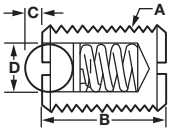

Thread Size (A)	Body Lg. (B)	Ball Proj. (C)	Ball Dia. (D)	End Force, lbs. Initial	End Force, lbs. Final	Brass		Stainless Steel	
4-48	0.187″	0.020″	0.062″	0.125	0.5	8687A11	$7.96	8686A11	$11.38
5-40	0.250″	0.020″	0.062″	0.25	0.75	8687A12	7.96	8686A12	11.38
6-40	0.312″	0.023″	0.078″	0.5	1	8687A13	7.96	8686A13	10.65
8-32	0.344″	0.025″	0.094″	0.5	1.25	8687A14	7.47	8686A14	10.65
8-36	0.344″	0.025″	0.094″	0.5	1.25	8687A15	7.35	8686A15	10.65
10-32	0.513″	0.025″	0.094″	1.5	3	8687A16	7.36	8686A16	10.65
10-32	0.513″	0.025″	0.094″	2	5	8687A17	7.36	8686A17	10.65
1/4″-20	0.531″	0.035″	0.125″	2	4	8687A18	8.12	8686A18	11.66
1/4″-20	0.531″	0.035″	0.125″	4	12	8687A19	8.12	8686A19	11.66
5/16″-18	0.578″	0.040″	0.156″	6	17	8687A21	9.05	8686A21	12.91
3/8″-16	0.625″	0.048″	0.188″	5	10	8687A22	10.10	8686A22	14.43
1/2″-13	0.750″	0.072″	0.281″	6	30	8687A23	13.53	8686A23	19.35
5/8″-11	0.984″	0.096″	0.375″	7	50	8687A24	16.75	8686A24	23.90

Push-Fit Ball-Nose Spring Plungers

No special tools are needed for installation—just push these spring plungers into unthreaded holes. They have a tapered end and smooth body for easy installation. Great for use in wood, soft plastic, and aluminum. Maximum temperature is 250° F except for stainless steel body plungers with a nylon ball, which is 180° F. Body diameter tolerance is –0.000″ to +0.002″, unless noted.

Steel body plungers have a black-oxide finish. ***Stainless steel body*** plungers are made of corrosion-resistant 300 series stainless steel, so they're a good choice for corrosive environments. *Stainless steel balls* are 400 series stainless steel. *Nylon balls* resist moisture and solvents, and also act as an electrical insulator.

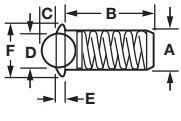

Body Dia. (A)	Body Lg. (B)	Ball Proj. (C)	Ball Dia. (D)	Flange Thick. (E)	Flange Dia. (F)	End Force, lbs. Initial	End Force, lbs. Final	STEEL BODY Stainless Steel Ball		STAINLESS STEEL BODY Stainless Steel Ball		STAINLESS STEEL BODY Nylon Ball	
0.125″	0.252″	0.035″	0.093″	0.032″	0.187″	2	5	84835A21	$2.85	84895A31	$4.58	8483A41●	$4.29
0.125″	0.252″	0.035″	0.094″	0.032″	0.187″	0.4	1.3	84835A41	2.83	84895A61	4.18	8483A24	4.22
0.125″	0.252″	0.035″	0.094″	0.032″	0.187″	0.75	2.5	84835A33	2.83	84895A56	4.18	8483A25	4.22
0.157″	0.160″	0.030″	0.120″	0.040″	0.180″	0.56	1.35	—	—	84895A71★	3.09	—	—
0.188″	0.394″	0.058″	0.156″	0.040″	0.250″	1	2.5	84835A42	2.60	84895A62	3.84	8483A26	3.90
0.188″	0.394″	0.058″	0.156″	0.040″	0.250″	2	5	84835A11	2.60	84895A21	3.84	8483A27	3.90
0.188″	0.405″	0.058″	0.156″	0.035″	0.250″	4	10	84835A22	2.85	84895A32	4.58	8483A42●	4.12
0.197″	0.200″	0.040″	0.160″	0.040″	0.220″	0.67	1.46	—	—	84895A72★	3.36	—	—
0.236″	0.240″	0.060″	0.200″	0.040″	0.260″	1.24	2.59	—	—	84895A73★	3.36	—	—
0.250″	0.471″	0.070″	0.187″	0.045″	0.312″	1.5	3.5	84835A43	2.71	84895A63	4.00	8483A28	4.12
0.250″	0.471″	0.070″	0.187″	0.045″	0.312″	3	7	84835A12	2.71	84895A22	4.00	8483A29	4.12
0.250″	0.481″	0.070″	0.187″	0.044″	0.312″	6	13	84835A23	2.83	84895A33	4.18	8483A43●	4.48
0.312″	0.643″	0.090″	0.250″	0.045″	0.375″	2	5	84835A44	2.83	84895A64	4.18	8483A31	4.22
0.312″	0.643″	0.090″	0.250″	0.045″	0.375″	4	10	84835A36	2.83	84895A58	4.18	8483A32	4.22
0.312″	0.643″	0.090″	0.250″	0.045″	0.375″	8	16	84835A24	2.82	84895A34	5.00	8483A44●	4.69
0.315″	0.310″	0.070″	0.260″	0.040″	0.335″	1.57	2.81	—	—	84895A74★	4.00	—	—
0.375″	0.785″	0.110″	0.312″	0.078″	0.500″	10	18	84835A25	3.12	84895A35	4.18	8483A45●	4.83
0.375″	0.786″	0.110″	0.312″	0.078″	0.500″	2.5	7	84835A45	2.83	84895A65	4.18	8483A33	4.22
0.375″	0.786″	0.110″	0.312″	0.078″	0.500″	5	14	84835A13	2.83	84895A23	4.18	8483A34	4.22
0.500″	1.100″	0.161″	0.437″	0.110″	0.688″	4	9	84835A46	3.20	84895A66	4.48	8483A35	4.54
0.500″	1.100″	0.161″	0.437″	0.110″	0.688″	8	18	84835A14	3.20	84895A24	4.62	8483A36	4.54
0.500″	1.130″	0.161″	0.437″	0.088″	0.688″	12	23	84835A26	4.15	84895A36	8.31	8483A46●	7.57

● Ball is made of acetal to prevent marring aluminum, brass, and other soft materials. ★ Body dia. tolerance is –0.000″ to +0.004″.

Round-Nose Spring Plungers

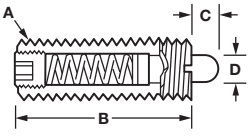

To Order: Please specify ***with or without nylon thread-locking element,*** except where noted. When threading into aluminum and other soft materials, select a plunger without the nylon thread-locking element. For information about nylon thread-locking elements, see page 2602.

The round, cylindrical nose of these plungers allows long travel plus the large bearing surface provides a smooth ride inside the plunger body. A single plunger can serve as an indexing stop on a rotary switch or as a latch on a cabinet door; a number of plungers can hold a door onto a cabinet. They are also used for proper positioning in fixtures and to eject parts from a punch press or forging die. A slot in the body allows installation with a plunger wrench (sold separately on page 2606); the short length plungers have a slot in the rear so they can also be installed with a screwdriver.

Choose from standard and short length plungers. Also known as stubby, ***short length*** plungers combine the short body of a ball-nose spring plunger with the longer nose of a round-nose spring plunger. They can be used in thinner materials and tight spaces while still providing ample plunger travel and high end forces.

Body Materials— Choose from steel and stainless steel. *Standard length steel plungers* have a black-oxide finish, unless noted. *Short length steel plungers* are zinc plated with a clear chromate finish, unless noted. Color is silver. *Stainless steel plungers* are made of corrosion-resistant 300 series stainless steel, so they're a good choice for food processing applications.

Nose Materials— Choose from heat-treated steel, 300 series stainless steel, acetal, and phenolic. *Acetal* and *phenolic* won't mar softer materials such as aluminum and brass. Phenolic has higher tensile strength and good dielectric and impact strength. It is also a good insulator and resists heat. Maximum temperature of steel, phenolic, and stainless steel nose plungers is 250° F. Maximum temperature for acetal is 190° F, unless noted.

Inch Sizes—Class 2A threads

Thread Size (A)	Body Lg. (B)	Nose Lg. (C)	Nose Dia. (D)	End Force, lbs. Initial	End Force, lbs. Final	STEEL BODY Steel Nose		STEEL BODY Acetal Nose		STEEL BODY Phenolic Nose		STAINLESS STEEL BODY Stainless Steel Nose		STAINLESS STEEL BODY Acetal Nose	
Standard Length															
6-32	0.375″	0.063″	0.045″	1	1.6	3126A2	$3.95	—	—	—	—	84975A37	$5.05	—	—
6-32	0.375″	0.063″	0.046″	0.5	3.5	3126A75	5.14	8499A48	$5.14	—	—	—	—	—	—
6-32	0.531″	0.063″	0.045″	0.5	1.5	3126A1	3.95	8499A46▲	5.12	—	—	84975A36	5.05	—	—
6-32	0.531″	0.063″	0.045″	1.5	4.5	3126A3	3.95	8499A47▲	5.12	—	—	84975A39	5.05	—	—
8-32	0.625″	0.094″	0.07″	0.7	2.3	3126A4	3.95	8499A11	4.41	8490A19	$4.98	84975A42	5.09	84765A71	$5.57
8-32	0.625″	0.094″	0.07″	2.7	7.3	3126A5	3.95	8499A12	4.41	8490A11	4.92	84975A44	5.09	84765A61	5.57
10-32	0.75″	0.125″	0.092″	1.3	2.7	3126A6	3.94	8499A13	4.17	8490A21	4.98	84975A46	5.05	84765A72	5.57
10-32	0.75″	0.125″	0.092″	2.9	11.1	3126A7	3.95	8499A14	4.17	8490A12	4.92	84975A48	5.05	84765A62	5.57
1/4″-20	0.75″	0.125″	0.118″	2	9	3126A25	3.89	—	—	—	—	84975A53	4.60	84765A65	5.08
1/4″-20	0.75″	0.125″	0.119″	0.25	2	3126A68●	3.88	—	—	—	—	—	—	—	—
1/4″-20	1″	0.188″	0.118″	1	4	3126A9	3.90	8499A15	4.33	8490A22	4.70	84975A51	4.93	84765A73	5.41
1/4″-20	1″	0.188″	0.118″	3	13	3126A26	4.10	8499A16	4.33	8490A13	4.70	84975A55	4.93	84765A63	5.41
1/4″-28	1″	0.188″	0.118″	1	4	3126A27♥	5.58	8499A17	4.33	8490A23	4.70	84975A57	4.93	84765A74	5.41
1/4″-28	1″	0.188″	0.118″	3	13	3126A28	4.10	8499A18	4.33	8490A14	4.70	84975A59	4.93	84765A64	5.41
5/16″-18	1″	0.188″	0.135″	1.5	4.5	3126A29	4.11	8499A19	4.33	8490A24	4.70	84975A62	4.90	84765A75	5.41
5/16″-18	1″	0.188″	0.135″	3	15	3126A43	3.90	8499A21	4.33	8490A15	4.70	84975A64	4.90	84765A66	5.41
3/8″-16	1.125″	0.188″	0.187″	2.8	7.2	3126A44	3.90	8499A22	4.06	8490A25	4.70	84975A66	5.57	84765A76	6.08
3/8″-16	1.125″	0.188″	0.187″	5.5	14.5	3126A45	3.90	8499A23	4.06	8490A16	4.70	84975A68	5.57	84765A67	6.06
1/2″-13	1.25″	0.25″	0.248″	2.7	9.3	3126A46	3.90	8499A24	4.31	8490A26	4.70	84975A71	6.85	84765A77	7.57
1/2″-13	1.25″	0.25″	0.248″	6.6	17.4	3126A47	3.90	8499A25	4.53	8490A17	4.70	84975A73	6.85	84765A68	7.57
5/8″-11	1.5″	0.313″	0.31″	3.5	10.5	3126A48	5.53	8499A26	5.23	8490A27	6.18	84975A75	12.70	84765A78	14.04
5/8″-11	1.5″	0.313″	0.31″	10.5	25.5	3126A49	5.53	8499A27	5.23	8490A18	6.18	84975A86	12.70	84765A69	14.04
3/4″-10	1.75″	0.312″	0.374″	4	16	3126A39●	5.41	—	—	—	—	—	—	—	—
3/4″-10	1.75″	0.313″	0.374″	6.7	37.3	3126A61	6.15	—	—	—	—	84975A77	19.63	—	—
1″-8	2.406″	0.5″	0.498″	4	31	3126A72	12.21	—	—	—	—	84975A79	34.18	—	—
1″-8	2.406″	0.5″	0.498″	16	68	3126A73	12.21	—	—	—	—	84975A83	34.18	—	—
Short Length															
6-32	0.375″	0.036″	0.046″	0.5	1.5	3126A69●★	4.11	8499A52●★	4.32	—	—	—	—	—	—
8-32	0.437″	0.052″	0.07″	0.5	1.5	3126A76	3.90	8499A28	3.92	—	—	84985A41	4.90	84765A11	5.22
8-32	0.437″	0.052″	0.07″	1.5	4.75	3126A77	3.90	8499A29	3.92	—	—	84985A43	4.90	84765A14	5.22
8-32	0.437″	0.093″	0.07″	1	3.25	3126A211★	4.26	8499A811★	4.42	—	—	84985A11	5.30	84765A311	4.92
8-32	0.5″	0.094″	0.07″	0.5	2	3126A78★	5.14	8499A49★	5.14	—	—	—	—	—	—
8-32	0.5″	0.094″	0.07″	0.5	4	3126A79★	5.14	8499A51★	5.14	—	—	—	—	—	—
8-36	0.437″	0.052″	0.07″	0.5	1.5	3126A81	3.90	8499A31	3.92	—	—	84985A45	4.90	84765A17	5.22
8-36	0.437″	0.052″	0.07″	1.5	4.75	3126A82	3.90	8499A32	3.92	—	—	84985A47	4.90	84765A81	5.22
8-36	0.437″	0.093″	0.07″	1	3.25	3126A221★	4.26	8499A821★	4.42	—	—	84985A12	5.30	84765A321	4.92
10-32	0.468″	0.065″	0.093″	0.75	2.5	3126A83	3.71	8499A33	3.47	—	—	84985A49	4.60	84765A84	4.92
10-32	0.468″	0.065″	0.093″	1.75	6.25	3126A84	3.71	8499A34	3.47	—	—	84985A52	4.60	84765A87	4.92
10-32	0.469″	0.125″	0.093″	1.25	4.25	3126A231★	4.06	8499A831★	4.23	—	—	84985A13	4.97	84765A331	4.92
1/4″-20	0.531″	0.078″	0.119″	1	3.5	3126A85	3.55	8499A35	3.47	—	—	84985A54	4.50	84765A91	4.80
1/4″-20	0.531″	0.078″	0.119″	3	10.5	3126A86	3.55	8499A36	3.47	—	—	84985A56	4.50	84765A94	4.80
1/4″-20	0.531″	0.187″	0.119″	2	7	3126A241★	3.88	8499A841★	4.02	—	—	84985A14	4.86	84765A341	4.82
5/16″-18	0.562″	0.084″	0.135″	1.25	4	3126A87	3.54	8499A37	3.64	—	—	84985A58	4.50	84765A97	4.80
5/16″-18	0.562″	0.084″	0.135″	3.75	15.5	3126A89	3.54	8499A38	3.64	—	—	84985A61	4.50	84765A101	4.80
5/16″-18	0.563″	0.084″	0.135″	1.5	4	3126A65●★	3.92	8499A53●★	3.89	—	—	—	—	—	—
5/16″-18	0.563″	0.187″	0.135″	2.5	10.5	3126A251★	3.88	8499A851★	4.02	—	—	84985A15	4.98	84765A351	5.02
3/8″-16	0.625″	0.11″	0.186″	1.5	5	3126A91	3.70	8499A39	3.64	—	—	84985A63	5.31	84765A104	5.65
3/8″-16	0.625″	0.11″	0.186″	4.5	18.5	3126A92	3.70	8499A41	3.64	—	—	84985A65	5.31	84765A107	5.65
3/8″-16	0.625″	0.187″	0.186″	3	12.5	3126A261★	4.22	8499A861★	4.22	—	—	84985A16	5.75	84765A361	5.65
1/2″-13	0.75″	0.151″	0.248″	1.75	5.5	3126A93	4.11	8499A42	4.53	—	—	84985A83	5.79	84765A111	5.88
1/2″-13	0.75″	0.151″	0.248″	5	28	3126A94	3.91	8499A43	4.53	—	—	84985A85	6.66	84765A114	5.88
1/2″-13	0.75″	0.25″	0.248″	3.5	19	3126A271★	4.22	8499A871★	4.44	—	—	84985A17	5.95	84765A371	6.51
5/8″-11	1.062″	0.215″	0.31″	2	8.5	3126A95	4.84	8499A44	5.81	—	—	84985A87	6.89	84765A117	7.35
5/8″-11	1.062″	0.215″	0.31″	7	50	3126A96	4.84	8499A45	5.81	—	—	84985A89	7.85	84765A121	6.98
5/8″-11	1.063″	0.312″	0.31″	4.5	33.5	3126A281★	4.98	8499A881★	5.20	—	—	—	—	—	—

▲ Nose is 0.046″ dia. ● Available only with a nylon thread-locking element. ♥ Nose is 0.119″ dia. ★ Black-oxide finish.

(Continued on following page)

For an index of fixturing components, see page 2596. For information about spring plungers, see page 2602.

Round-Nose Spring Plungers *(Continued from previous page)*

To Order: Please specify ***with or without nylon thread-locking element.*** Select a plunger without the nylon thread-locking element when threading into aluminum and other soft materials. For information about nylon thread-locking elements, see page 2602.

Metric Sizes—Class 6G threads

Thread Size (A)	Body Lg. (B)	Nose Lg. (C)	Nose Dia. (D)	End Force, lbs. Initial	End Force, lbs. Final	STEEL BODY Steel Nose		STEEL BODY Acetal Nose ♦		STAINLESS STEEL S.S. Nose		STAINLESS STEEL Acetal Nose ♦	
Standard Length													
M4 ×0.7	15 mm	1.5 mm	1.5 mm	1	3.6	—	—	8281A12	$5.57	—	—	8339A12	$9.75
M5 ×0.8	18 mm	2.3 mm	2.4 mm	1.3	4.3	—	—	8281A13	5.58	—	—	8339A13	9.75
M6 ×1	20 mm	2.5 mm	2.7 mm	1.3	4.3	—	—	8281A14	5.57	—	—	8339A14	9.75
M6 ×1	20 mm	2.5 mm	2.7 mm	1.57	4.5	84995A41	$5.20	—	—	8502A21	$7.36	—	—
M6 ×1	20 mm	2.5 mm	2.7 mm	4.05	11.24	84995A43	5.04	—	—	8502A23	7.36	—	—
M6 ×1	25 mm	5 mm	3 mm	1.1	3.96	84995A19♣	5.26	—	—	—	—	—	—
M8 ×1.25	22 mm	3 mm	3.5 mm	2.02	7.87	84995A45	5.26	—	—	8502A25	7.51	—	—
M8 ×1.25	22 mm	3 mm	3.5 mm	2.2	8.7	—	—	8281A15	6.31	—	—	8339A15	11.09
M8 ×1.25	22 mm	3 mm	3.5 mm	5.62	15.74	84995A47	5.26	—	—	8502A27	7.51	—	—
M10×1.5	22 mm	3 mm	4 mm	2.02	7.87	84995A49	5.62	—	—	8502A29	7.65	—	—
M10×1.5	22 mm	3 mm	4 mm	2.2	8.7	—	—	8281A16	6.42	—	—	8339A16	11.56
M10×1.5	22 mm	3 mm	4 mm	5.62	15.74	84995A52	5.62	—	—	8502A32	8.05	—	—
M12×1.75	28 mm	4 mm	6 mm	2.25	12.36	84995A54	6.58	—	—	8502A34	8.21	—	—
M12×1.75	28 mm	4 mm	6 mm	2.7	11.9	—	—	8281A17	8.72	—	—	8339A17	16.91
M12×1.75	28 mm	4 mm	6 mm	10.12	24.73	84995A56	6.58	—	—	8502A36	8.21	—	—
M16×2	32 mm	5 mm	7.5 mm	10.1	22.5	—	—	8281A18	12.56	—	—	8339A18	30.22
M16×2	38 mm	8 mm	7.87 mm	10.43	25.3	84995A14	7.23	—	—	8502A11	8.90	—	—

♦ Maximum temperature for acetal nose is 122° F. ♣ Zinc-plated finish.

Brass and Type 316 Stainless Steel Round-Nose Spring Plungers

Similar to our other round-nose spring plungers, except these are made of brass or Type 316 stainless steel. A slot in the body allows installation with a screwdriver or plunger wrench (sold separately on page 2606). All have Class 2A threads and are nonmagnetic. Max. temperature is 170° F.

Brass plungers have good corrosion resistance and a decorative finish. They are great in marine environments.

Stainless steel plungers are Type 316 stainless steel and offer superior corrosion resistance.

Short Length—These plungers combine the short body of a ball-nose spring plunger with the longer nose of a round-nose spring plunger. Good for use in thinner materials and tight spaces.

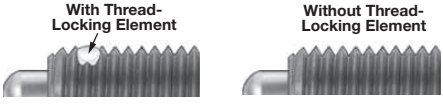

To Order: Please specify ***with or without acrylic thread-locking element.*** When threading into aluminum and other soft materials, select a plunger without the acrylic thread-locking element. For information about thread-locking elements, see page 2602.

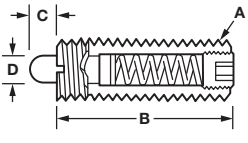

Thread Size (A)	Body Lg. (B)	Nose Lg. (C)	Nose Dia. (D)	End Force, lbs. Initial	End Force, lbs. Final	BRASS BODY Brass Nose		STAINLESS STEEL BODY Stainless Steel Nose	
Standard Length									
6-32	0.375″	0.063″	0.045″	1	1.6	8689A11	$11.70	8688A11	$19.12
8-32	0.625″	0.094″	0.069″	0.7	2.3	8689A12	11.71	8688A12	17.20
8-32	0.625″	0.094″	0.069″	2.7	7.3	8689A13	11.71	8688A13	17.20
10-32	0.750″	0.125″	0.092″	1.3	2.7	8689A14	11.38	8688A14	16.75
1/4″-20	1.000″	0.188″	0.118″	3	13	8689A15	11.33	8688A15	16.65
1/4″-28	1.000″	0.188″	0.118″	1	4	8689A16	11.33	8688A16	16.65
1/4″-28	1.000″	0.188″	0.118″	3	13	8689A17	11.33	8688A17	16.65
5/16″-18	1.000″	0.188″	0.134″	3	15	8689A18	11.68	8688A18	17.15
3/8″-16	1.125″	0.188″	0.186″	5.5	14.5	8689A19	12.81	8688A19	18.82
1/2″-13	1.250″	0.250″	0.248″	6.6	17.4	8689A21	13.25	8688A21	19.49
5/8″-11	1.500″	0.313″	0.311″	10.5	25.5	8689A22	21.68	8688A22	31.89
3/4″-10	1.750″	0.313″	0.373″	6.7	37.3	8689A23	34.46	8688A23	45.64
1″-8	2.406″	0.500″	0.498″	16	68	8689A24	58.53	8688A24	81.15
Short Length									
8-32	0.437″	0.052″	0.070″	1.5	4.7	8689A31	12.88	8688A31	18.93
8-32	0.500″	0.094″	0.070″	0.5	2	8689A32	12.88	8688A32	18.93
10-32	0.468″	0.065″	0.093″	1.7	6.2	8689A33	11.56	8688A33	14.75
1/4″-20	0.531″	0.078″	0.119″	3	10.5	8689A34	11.56	8688A34	14.75
5/16″-18	0.562″	0.084″	0.135″	1.25	4	8689A35	11.73	8688A35	14.97
3/8″-16	0.625″	0.110″	0.186″	4.5	18.5	8689A36	12.72	8688A36	18.70
1/2″-13	0.750″	0.151″	0.248″	5	28.5	8689A37	16.70	8688A37	23.88
5/8″-11	1.062″	0.215″	0.310″	2	8.5	8689A38	19.10	8688A38	28.07
5/8″-11	1.062″	0.215″	0.310″	7	50	8689A39	19.10	8688A39	28.07

Mounting Base for Spring Plungers

Also known as tooling flanges, these mounting bases let you mount ball-nose and round-nose spring plungers. Bases have two holes for mounting to fixture surfaces (fasteners not included) and a threaded hole to insert the spring plunger. Ideal for fixtures that require a horizontal application.

Stainless steel bases are made of 300 series stainless steel for excellent corrosion resistance.

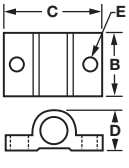

Style 1

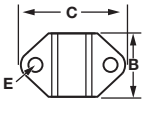

Style 2

For Thread Size	Dp. (B)	Wd. (C)	Ht. (D)	Mounting Holes Hole Dia. (E)	Mounting Holes Ctr.-to-Ctr.	Steel		Stainless Steel	
Style 1									
8-32	1/2″	11/16″	1/4″	0.125″	0.484″	8685A14	$10.65	1942A41	$16.53
10-32	1/2″	11/16″	1/4″	0.125″	0.484″	8685A15	13.29	1942A42	21.04
5/16″-18	5/8″	15/16″	13/32″	0.136″	0.703″	8685A16	15.96	1942A44	25.53
3/8″-16	3/4″	1 1/8″	15/32″	0.156″	0.844″	8685A17	18.63	1942A45	29.54
1/2″-13	1″	1 1/2″	5/8″	0.203″	1.125″	8685A12	11.34	1942A46	31.42
5/8″-11	1 1/4″	1 7/8″	51/64″	0.265″	1.406″	8685A18	21.19	1942A47	33.80
Style 2									
1/4″-20	11/16″	7/8″	13/32″	0.141″	0.656″	8685A11	6.82	1942A43	23.71

For an index of fixturing components, see page 2596. For information about spring plungers, see page 2602.

High-Torque Round-Nose Spring Plungers

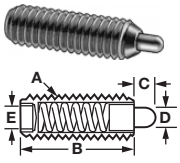

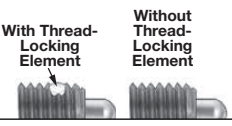

To Order: Please specify ***with or without a nylon thread-locking element.*** When threading into aluminum and other soft materials, select a plunger without the nylon thread-locking element. For information about nylon thread-locking elements, see page 2602.

One-piece body with a machined-in hex drive withstands high torque. Easy to install with a hex key (not included). All plungers have Class 2A threads. Maximum temperature is 250° F (unless noted). ***Steel*** plungers have a black-oxide finish. ***Stainless steel*** plungers are made of corrosion-resistant 300 series stainless steel.

Acetal nose prevents marring on soft materials such as aluminum and brass. Max. temp. is 160° F.

Thread Size (A)	Body Lg. (B)	Nose Lg. (C)	Nose Dia. (D)	Hex Key Size (E)	*End Force, lbs.* Initial	Final	STEEL BODY Steel Nose		Acetal Nose		STAINLESS STEEL BODY S.S. Nose		Acetal Nose	
6-32	0.531″	0.063″	0.045″	0.050″	0.5	1.5	8495A19	$4.35	—	—	8476A41	$5.46	2177A41●	$7.20
6-32	0.531″	0.063″	0.045″	0.050″	1	1.6	8495A12	4.35	—	—	8476A33	5.46	—	—
6-32	0.531″	0.063″	0.045″	0.050″	1.5	4.5	8495A11	4.35	—	—	8476A32	5.24	2177A42●	7.20
8-32	0.625″	0.094″	0.07″	1/16″	0.7	2.3	8495A21	4.38	2467A13♣	$5.10	8476A42	5.46	2177A43♣	6.03
8-32	0.625″	0.094″	0.07″	1/16″	2.7	7.3	8495A13	4.38	2467A14♣	5.10	8476A34	5.46	2177A44♣	6.03
10-32	0.750″	0.125″	0.092″	1/16″	1.3	2.7	8495A22	4.38	2467A15♦	5.10	8476A43	5.46	2177A45♦	6.76
10-32	0.750″	0.125″	0.092″	1/16″	2.9	11.1	8495A14	4.38	2467A16♦	5.10	8476A35	5.46	2177A46♦	6.76
1/4″-20	0.750″	0.125″	0.118″	5/64″	2	9	8495A17	4.50	—	—	8476A38	5.57	—	—
1/4″-20	1.000″	0.1875″	0.118″	5/64″	1	4	8495A23	4.55	2467A17▲	5.10	8476A44	5.58	2177A47▲	6.81
1/4″-20	1.000″	0.1875″	0.118″	5/64″	3	13	8495A15	4.55	2467A18▲	5.10	8476A36	5.58	2177A48▲	6.81
1/4″-28	1.000″	0.1875″	0.118″	5/64″	1	4	8495A24	4.55	2467A19▲	5.09	8476A45	7.41	2177A49▲	7.14
1/4″-28	1.000″	0.1875″	0.118″	5/64″	3	13	8495A16	4.55	2467A21▲	5.09	8476A37	7.37	2177A52▲	7.14
5/16″-18	1.000″	0.1875″	0.135″	3/32″	1.5	4.5	8495A25	4.74	2467A22♠	5.25	8476A46	5.93	2177A53♠	6.28
5/16″-18	1.000″	0.1875″	0.135″	3/32″	3	15	8495A18	4.74	2467A23♠	5.25	8476A39	5.67	2177A54♠	6.28
3/8″-16	1.125″	0.1875″	0.186″	3/16″	2.8	7.2	8495A51	4.81	2467A24	5.29	8476A57	7.49	2177A55	7.30
3/8″-16	1.125″	0.1875″	0.186″	3/16″	5.5	14.5	8495A64	4.81	2467A25	5.29	8476A61	7.49	2177A56	7.30
1/2″-13	1.250″	0.250″	0.248″	1/4″	2.7	9.3	8495A52	4.82	2467A26	5.57	8476A58	8.21	2177A57	8.70
1/2″-13	1.250″	0.250″	0.248″	1/4″	6.6	17.4	8495A65	4.82	2467A27	5.57	8476A62	8.21	2177A58	8.70
5/8″-11	1.500″	0.3125″	0.310″	5/16″	3.5	10.5	8495A53	5.42	2467A28	6.49	8476A59	9.16	2177A59	9.17
5/8″-11	1.500″	0.3125″	0.310″	5/16″	10.5	25.5	8495A66	5.42	2467A29	6.49	8476A63	9.16	2177A62	9.17

● Hex key size (E) is 3/64″. ♣ Hex key size (E) is 5/64″. ♦ Hex key size (E) is 3/32″. ▲ Hex key size (E) is 1/8″. ♠ Hex key size (E) is 5/32″.

Push-Fit Round-Nose Spring Plungers

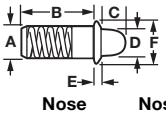

Designed with a rounded cylindrical nose, these spring plungers offer longer travel and a larger bearing surface than push-fit ball-nose plungers. They have a tapered end and smooth body to easily push them into unthreaded holes. Good for use in wood, soft plastic, and aluminum. All have 440C series stainless steel noses (unless noted). ***Steel*** plungers have a black-oxide finish. ***Stainless steel*** plungers are 300 series stainless steel and offer excellent corrosion resistance.

Body Dia. (A)	Body Lg. (B)	Nose Lg. (C)	Nose Dia. (D)	Flange Thick. (E)	Flange Dia. (F)	*End Force, lbs.* Initial	Final	Steel Body		Stainless Steel Body	
0.125″	0.252″	0.062″	0.070″	0.032″	0.187″	1	2	8683A67■	$2.92	8682A57■	$4.40
0.188″	0.441″	0.094″	0.121″	0.044″	0.250″	0.75	2	8683A11	3.40	8682A61	4.75
0.188″	0.441″	0.094″	0.121″	0.044″	0.250″	1.5	4.5	8683A21	3.40	8682A71	4.75
0.250″	0.521″	0.125″	0.168″	0.055″	0.312″	1.25	3	8683A12	3.36	8682A62	4.70
0.250″	0.521″	0.125″	0.168″	0.055″	0.312″	2.5	6	8683A22	3.36	8682A72	4.97
0.312″	0.643″	0.151″	0.186″	0.045″	0.375″	4	10	8683A66■	3.40	8682A56■	4.80
0.375″	0.786″	0.187″	0.234″	0.096″	0.500″	2.5	7	8683A13	3.69	8682A63	7.15
0.375″	0.786″	0.187″	0.234″	0.096″	0.500″	5	14	8683A23	3.69	8682A73	7.51
0.500″	1.100″	0.250″	0.332″	0.134″	0.688″	4	9	8683A14	3.96	8682A64	7.02
0.500″	1.100″	0.250″	0.332″	0.134″	0.688″	8	18	8683A24	3.96	8682A74	5.84

■ Nose is Type 303 stainless steel.

Hex-Nose Spring Plungers

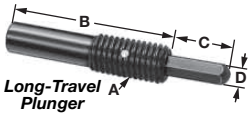

Long-Travel Plunger

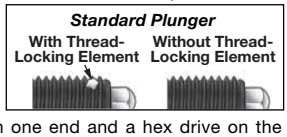

With a hex-shaped nose on one end and a hex drive on the other, these plungers are easy to install and adjust with either a standard wrench for the plunger end or a hex key for the hex drive end (hex key not included). The nose has a rounded tip. Body and nose are steel with a black-oxide finish (unless noted). Maximum temperature is 250° F.

Standard Plungers— Use as parts ejectors, positioners, locks, and supports for die fixtures. **To Order:** Please specify ***with or without nylon thread-locking element.*** Select a plunger without the nylon thread-locking element when threading into aluminum and other soft materials. For information about nylon thread-locking elements, see page 2602.

Long-Travel Plungers— Ideal for large sheet metal forming dies, the long plunger stroke lifts formed sheets clear of the die for easy access and removal. Come with a nylon thread-locking element. Not recommended for use in aluminum or other soft materials.

Thread Size (A)	Body Lg. (B)	Nose Lg. (C)	Nose Wd.★(D)	*End Force, lbs.* Initial	Final	Hex Key Size	
Standard							
1/4″-20	1″	0.1875″	0.125″	1	4	5/64″	3360A54 $5.14
1/4″-20	1″	0.1875″	0.125″	3	13	5/64″	3360A31 5.14
5/16″-18	1″	0.1875″	0.125″	1.5	4.5	3/32″	3360A61 5.30
5/16″-18	1″	0.1875″	0.125″	3	15	3/32″	3360A34 5.30
3/8″-16	1.125″	0.1875″	0.1875″	2.8	7.2	3/16″	3360A57 5.58
3/8″-16	1.125″	0.1875″	0.1875″	5.5	14.5	3/16″	3360A37 5.58
1/2″-13	1.25″	0.25″	0.25″	2.7	9.3	1/4″	3360A62 7.58
1/2″-13	1.25″	0.25″	0.25″	6.6	17.4	1/4″	3360A41 7.58
5/8″-11	1.5″	0.3125″	0.3125″	3.5	10.5	5/16″	3360A63 8.58
5/8″-11	1.5″	0.3125″	0.3125″	10.5	25.5	5/16″	3360A44 8.58
3/4″-10	1.75″	0.3125″	0.375″	6.7	37.3	3/8″	3360A47 14.11
1″-8	2.406″	0.5″	0.5″	4	31	3/8″	3360A77 19.04
1″-8	2.406″	0.5″	0.5″	16	68	3/8″	3360A51 19.04
Long Travel							
5/8″-11	3.12″	1″	0.31″	4	20	5/16″	33705A11 29.50
3/4″-10	3.75″	1″	0.38″	4	35	3/8″	33705A21 36.10
1″-8	5″	1.5″	0.5″	4	31	3/8″	33705A61♥ 51.28
1″-8	5″	1.5″	0.5″	16	68	3/8″	33705A41 51.28

★ Measured across the flats. ♥ Nose is steel with a zinc-plated finish.

Wrenches for Ball-Nose and Round-Nose Spring Plungers

Install and remove ball-nose and round-nose spring plungers with these wrenches. They work better than screwdrivers because their center hole lets the ball- or round-nose pass through to avoid damaging or overloading the spring.

For Thread Size		
6-32	3382A11	$4.87
8-32 and M4	3382A12	5.18
10-32 and M5	3382A13	5.32
1/4″-20, 1/4″-28, and M6	3382A14	5.45
5/16″-18 and M8	3382A15	5.45

For Thread Size		
3/8″-16 and M10	3382A16	$5.95
1/2″-13 and M12	3382A17	5.95
5/8″-11	3382A18	7.84
3/4″-10	3382A19	8.79
1″-8	3382A21	9.55

For an index of fixturing components, see page 2596. For information about spring plungers, see page 2602.

Spring-Loaded Side Thrust Pins

Also known as spring locating pins, these side thrust pins have a spring-loaded head that moves from side to side. They are often used to hold, clamp, and position components for machining operations and assembly. Their compact design makes them especially useful when clamping small parts and for use in tight spaces. To install, simply press the knurled body into a drilled hole. Thrust pin is made of hardened zinc-plated steel; thrust pin body is aluminum.

Pin Dia. (A)	Pin Lg. (B)	Body Dia. (C)	Body Lg. (D)	Sideways Pin Movement	End Force, lbs. Initial	End Force, lbs. Final		
0.12″	0.16″	0.24″	0.28″	0.04″	2.25	2.47	8485A11	$7.25
0.12″	0.16″	0.24″	0.28″	0.04″	4.50	4.95	8485A12	7.25
0.12″	0.16″	0.24″	0.28″	0.04″	9.00	9.90	8485A41	7.25
0.20″	0.26″	0.39″	0.43″	0.06″	4.50	4.95	8485A13	7.96
0.20″	0.26″	0.39″	0.43″	0.06″	11.25	12.37	8485A14	7.96
0.20″	0.26″	0.39″	0.43″	0.06″	22.50	24.75	8485A42	7.96
0.24″	0.42″	0.39″	0.43″	0.08″	9.00	9.90	8485A15	8.75
0.24″	0.42″	0.39″	0.43″	0.08″	16.87	18.55	8485A16	8.75
0.24″	0.42″	0.39″	0.43″	0.08″	33.75	37.12	8485A43	8.75
0.31″	0.55″	0.47″	0.51″	0.10″	11.25	12.37	8485A17	9.62
0.31″	0.55″	0.47″	0.51″	0.10″	22.50	24.75	8485A18	9.62
0.31″	0.55″	0.47″	0.51″	0.10″	45.00	49.50	8485A44	9.62
0.39″	0.66″	0.63″	0.67″	0.13″	22.50	24.75	8485A45	10.90
0.39″	0.66″	0.63″	0.67″	0.13″	45.00	49.50	8485A19	10.90
0.39″	0.66″	0.63″	0.67″	0.13″	67.50	74.25	8485A46	10.90

Brass and Type 316 Stainless Steel Hand-Retractable Spring Plungers

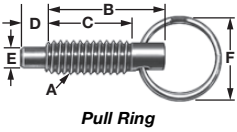

Pull Ring

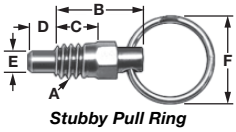

Stubby Pull Ring

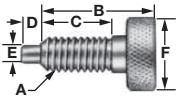

Knurled Knob

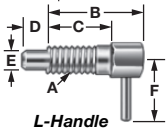

L-Handle

Made of brass or Type 316 stainless steel, these spring plungers are great for use in corrosive applications. To retract the nose, just pull the knob, ring, or L-handle. All have Class 2A threads and are nonmagnetic. Maximum temperature is 170°F.

Brass has good corrosion resistance, a decorative finish, and is good for use in marine applications. *Type 316 stainless steel* has superior corrosion resistance.

Plungers with Locking Nose—Lock the nose into the retracted position by pulling the knob, ring, or L-handle and rotating it 90°. The plunger nose catches on the notched body and locks into position until you turn back the knob, ring, or L-handle.

To Order: Please specify ***with or without acrylic thread-locking element.*** When threading into aluminum and other soft materials, select a plunger without the acrylic thread-locking element. For information about thread-locking elements, see page 2602.

Thread Size (A)	Body Lg. (C)	Nose Lg. (D)	Nose Dia. (E)	Knob/Ring Handle Size (F)	End Force, lbs. Initial	End Force, lbs. Final	With Nonlocking Nose Lg. (B)			With Locking Nose Lg. (B)		
Brass												
Pull Ring—*Ring is nickel-plated steel.*												
1/4″-20	0.8″	0.25″	0.155″	0.875″	1	2.5	1.17″	8482A41	$9.41	1.14″	8482A12	$9.40
3/8″-16	1.2″	0.375″	0.233″	0.875″	2	4	1.7″	8482A42	10.77	1.68″	8482A13	11.10
1/2″-13	1.4″	0.5″	0.312″	1″	2.5	5	1.92″	8482A43	12.77	2″	8482A14	13.12
5/8″-11	2.27″	0.55″	0.312″	1.25″	3	6	3.08″	8482A44	13.59	3.35″	8482A22	13.98
3/4″-10	2.69″	0.65″	0.43″	1.4″	5	10	3.46″	8482A45	21.32	4.06″	8482A23	21.97
1″-8	3.25″	0.9″	0.68″	1.4″	8	20	4.03″	8482A46	33.50	4.63″	8482A24	33.51
Stubby Pull Ring—*Ring is nickel-plated steel.*												
1/4″-20	0.31″	0.19″	0.16″	0.75″	0.5	2	0.62″	8482A31	9.37	0.62″	8482A71	9.97
3/8″-16	0.44″	0.28″	0.25″	0.75″	0.75	3	0.82″	8482A32	10.78	0.83″	8482A72	11.41
1/2″-13	0.56″	0.38″	0.31″	1″	1	4	1.06″	8482A33	12.78	1.03″	8482A73	13.53
5/8″-11	0.69″	0.44″	0.38″	1″	1.25	5	1.31″	8482A34	13.58	1.27″	8482A74	14.39
3/4″-10	0.88″	0.5″	0.437″	1.125″	1.5	6	1.5″	8482A35	21.32	1.45″	8482A75	22.58
1″-8	1″	0.63″	0.5″	1.125″	1.75	7	1.75″	8482A36	33.51	1.75″	8482A76	35.48
Knurled Knob												
10-32	0.4″	0.09″	0.104″	0.375″	0.5	3	0.65″	8471A24	7.93	0.65″	8471A15	7.93
1/4″-20	0.5″	0.13″	0.124″	0.5″	1	4	0.813″	8471A25	8.76	0.813″	8471A16	8.76
5/16″-18	0.63″	0.19″	0.155″	0.625″	1	5	1″	8471A26	9.57	1″	8471A17	9.57
3/8″-16	0.75″	0.22″	0.186″	0.75″	1	8	1.25″	8471A27	10.35	1.25″	8471A18	10.35
1/2″-13	0.88″	0.25″	0.249″	1″	1	10	1.5″	8471A28	11.53	1.5″	8471A19	11.53
5/8″-11	1″	0.32″	0.312″	1.25″	1.5	12	1.75″	8471A22	15.57	1.75″	8471A21	15.57
3/4″-10	1.2″	0.45″	0.375″	1.5″	1.5	16	2″	8471A29	19.05	2″	8471A23	19.05
Type 316 Stainless Steel												
Knurled Knob												
10-32	0.4″	0.09″	0.104″	0.375″	0.5	3	0.65″	8692A11	14.95	0.65″	8692A21	14.95
1/4″-20	0.4″	0.13″	0.124″	0.5″	1	4	0.813″	8692A12	15.95	0.813″	8692A22	15.95
5/16″-18	0.63″	0.19″	0.155″	0.625″	1	5	1″	8692A13	18.78	1″	8692A23	18.78
3/8″-16	0.75″	0.22″	0.186″	0.75″	1	8	1.25″	8692A14	20.13	1.25″	8692A24	20.13
1/2″-13	0.88″	0.25″	0.249″	1″	1	10	1.5″	8692A15	21.80	1.5″	8692A25★	21.80
5/8″-11	0.85″	0.38″	0.312″	1.25″	1.5	12	1.75″	8692A16	29.40	1.75″	8692A26	29.40
3/4″-10	1.2″	0.45″	0.375″	1.5″	1.5	16	2″	8692A17	35.98	2″	8692A27	35.98
L-Handle												
1/4″-20	0.5″	0.2″	0.16″	0.525″	0.12	0.5	0.75″	8691A21	17.75	0.75″	8691A11	17.75
1/4″-20	0.8″	0.38″	0.16″	0.625″	0.5	2.5	1.25″	8691A22	18.12	1.25″	8691A12	18.12
3/8″-16	0.75″	0.3″	0.25″	0.75″	0.25	1.25	1.13″	8691A23	18.12	1.13″	8691A13	18.12
3/8″-16	1.31″	0.56″	0.25″	0.94″	0.75	3.75	2″	8691A24	18.23	2″	8691A14	18.23
1/2″-13	1″	0.4″	0.31″	1″	0.5	2	1.5″	8691A25	22.48	1.5″	8691A15	22.48
1/2″-13	1.25″	0.75″	0.31″	1.25″	1	5	2.11″	8691A26	23.52	2.11″	8691A16	23.52
5/8″-11	1.25″	0.5″	0.38″	1.19″	0.75	2.5	1.88″	8691A27	31.70	1.88″	8691A17	31.71
5/8″-11	2″	1″	0.38″	1.31″	1	5	3.05″	8691A28	32.42	3.05″	8691A18	32.42

★ Body length is 0.65″.

For an index of fixturing components, see page 2596. For information about spring plungers, see page 2602.

Hand-Retractable Spring Plungers

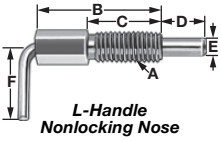

L-Handle Nonlocking Nose

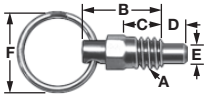

Stubby Pull-Ring Nonlocking Nose

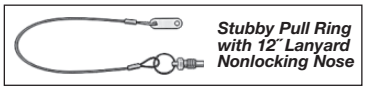

Stubby Pull Ring with 12″ Lanyard Nonlocking Nose

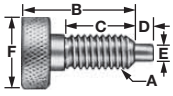

Knurled Knob Nonlocking Nose

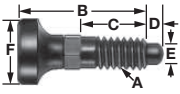

Acetal Knob Nonlocking Nose

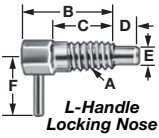

L-Handle Locking Nose

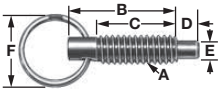

Pull-Ring Locking Nose

To Order: Please specify ***with or without thread-locking element.*** Element is nylon, except for 8690A11-A18 and 3403A31-A34, which is acrylic. When threading into aluminum and other soft materials, select a plunger without the thread-locking element. For information about thread-locking elements, see page 2602.

Retract the nose by pulling the handle, ring, or knob or by connecting them to a mechanism for automated operation. Use as locking pins on tables and platforms with adjustable-height legs; as a stop lock for components that index to different positions; and for other fastening, positioning, latching, and quick-disconnect applications. Inch sizes have Class 2A threads; metric sizes have Class 6G threads. Max. temp. is 250° F, except for acetal knob plungers which have a max. temp. of 190° F, plungers with an acetal nose which have a max. temp. of 180° F, and 8690A11-A18 and 3403A31-A34, which have a max. temp. of 170° F.

Plungers with Locking Nose— Lock the nose into the retracted position by pulling the handle, ring, or knob and rotating it 90°. The nose catches on the notched body and locks into position until you turn back the handle, ring, or knob.

Steel plungers with *L-handle*, *stubby pull ring*, *pull ring*, and *T-handle* have a zinc-plated finish. *Low-profile hex-drive handle* style has a countersunk knob with a hex drive for quicker installation than other hand-retractable plungers and a gold, zinc-chromate finish. *Knurled knob* style has a zinc-chromate finish. *Acetal knob* style has a black-oxide finish on the body and a black knob. ***Stainless steel plungers*** are made of 300 series stainless steel. *Acetal knob* style has a white knob.

Thread Size (A)	Lg. (B)	Body Lg. (C)	Nose Lg. (D)	Nose Dia. (E)	Handle/Ring/ Knob Size (F)	End Force, lbs. Initial	Final	Steel		Stainless Steel	
With Nonlocking Nose											
L-Handle											
¼″-20	0.75″	0.5″	0.2″	0.16″	0.525″	0.12	0.5	8498A61	$9.03	8690A11	$12.43
¼″-20	1.25″	0.8″	0.38″	0.16″	0.625″	0.5	2.5	8498A62	9.03	8690A12	12.43
⅜″-16	1.13″	0.75″	0.3″	0.25″	0.75″	0.25	1.25	8498A63	11.36	8690A13	12.87
⅜″-16	2″	1.31″	0.56″	0.25″	0.94″	0.75	3.75	8498A64	11.75	8690A14	12.87
½″-13	1.5″	1″	0.4″	0.31″	1″	0.5	2	8498A65	12.61	8690A15	16.13
½″-13	2.11″	1.25″	0.75″	0.31″	1.25″	1	5	8498A66	12.94	8690A16	16.13
⅝″-11	1.88″	1.25″	0.50″	0.38″	1.19″	0.75	2.5	8498A67	15.69	8690A17	19.26
⅝″-11	3.05″	2.0″	1.0″	0.38″	1.31″	1	5	8498A68	16.22	8690A18	19.26
Stubby Pull Ring— *Steel plungers have a nickel-plated steel ring; stainless steel plungers have a stainless steel ring.*											
¼″-20	0.62″	0.31″	0.19″	0.16″	0.62″	0.5	2	8487A24	9.50	8500A27	13.27
¼″-20	0.62″	0.31″	0.19″	0.16″	0.75″	0.5	2	8487A25	9.50	8500A28	13.27
⅜″-16	0.82″	0.44″	0.28″	0.25″	0.75″	0.75	3	8487A26	10.29	8500A29	14.97
½″-13	1.06″	0.56″	0.38″	0.31″	1.0″	1	4	8487A27	12.23	8500A34	17.92
⅝″-11	1.31″	0.69″	0.44″	0.38″	1.0″	1.25	5	8487A28	14.05	8500A35	20.35
Stubby Pull Ring with 12″ Lanyard— *Ring is nickel-plated steel and lanyard is plastic-coated stainless steel with an aluminum tab.*											
¼″-20	0.437″	0.281″	0.187″	0.156″	0.75″	0.5	2	2333A11	17.64	2362A21	23.53
⅜″-16	0.625″	0.437″	0.281″	0.250″	0.75″	0.75	3	2333A12	19.10	2362A22	23.67
½″-13	0.812″	0.562″	0.375″	0.312″	1″	1	4	2333A13	21.65	2362A23	30.14
⅝″-11	1″	0.687″	0.437″	0.375″	1″	1.25	5	2333A14	23.89	2362A24	30.14
Knurled Knob											
10-32	0.650″	0.400″	0.094″	0.105″	0.38″	0.5	3	84915A44	12.95	84935A36	15.24
¼″-20	0.813″	0.500″	0.125″	0.124″	0.50″	1	4	84915A45	7.27	84935A37	11.97
5/16″-18	1.000″	0.625″	0.188″	0.155″	0.63″	1	6	84915A46	7.89	84935A38	12.73
⅜″-16	1.250″	0.750″	0.218″	0.186″	0.75″	1	8	84915A47	8.65	84935A39	14.24
½″-13	1.500″	0.875″	0.250″	0.249″	1.00″	1	10	84915A48	9.21	84935A41	15.93
Metric Knurled Knob											
M5 ×0.8	16 mm	10 mm	2 mm	2.5 mm	9 mm	0.5	3	84915A51	9.62	84935A61	13.31
M6 ×1.0	21 mm	13 mm	3 mm	3 mm	13 mm	1	4	84915A52	9.92	84935A62	13.50
M10×1.5	32 mm	19 mm	6 mm	5 mm	19 mm	1	8	84915A53	14.93	84935A63	16.02
M12×1.75	39 mm	23 mm	6 mm	6 mm	25 mm	1	10	84915A54	12.56	84935A64	17.98
Acetal Knob											
¼″-20	0.97″	0.50″	0.13″	0.16″	0.50″	0.12	0.36	8497A31	8.82	3350A14	13.21
⅜″-16	1.4″	0.75″	0.18″	0.25″	0.75″	0.25	2	8497A34	9.44	3350A15	14.93
½″-13	1.9″	1.0″	0.25″	0.31″	1.0″	0.5	1.75	8497A37	10.62	3350A16	16.74
With Locking Nose											
L-Handle											
¼″-20	0.75″	0.50″	0.20″	0.16″	0.525″	0.12	0.5	3403A11	9.58	3403A31	13.32
¼″-20	1.25″	0.80″	0.38″	0.16″	0.625″	0.5	2.5	3403A12	9.58	3403A19	12.25
⅜″-16	1.13″	0.75″	0.30″	0.25″	0.75″	0.25	1.25	3403A13	11.72	3403A32	13.39
⅜″-16	2.00″	1.31″	0.56″	0.25″	0.94″	0.75	3.75	3403A14	12.11	3403A21	15.53
½″-13	1.50″	1.0″	0.40″	0.31″	1.00″	0.5	2	3403A15	12.69	3403A33	15.44
½″-13	2.11″	1.25″	0.75″	0.31″	1.18″	1	5	3403A16	12.69	3403A22	16.78
⅝″-11	1.88″	1.25″	0.50″	0.38″	1.19″	0.75	2.5	3403A17	15.86	3403A34	23.82
⅝″-11	3.05″	2.00″	1.00″	0.38″	1.31″	1	5	3403A18	16.39	3403A23	27.14
L-Handle with Acetal Nose											
¼″-20	1.25″	0.625″	0.375″	0.156″	0.625″	0.5	2.5	2383A41	12.72	2372A46	16.92
⅜″-16	2″	1.0625″	0.5625″	0.250″	0.938″	0.75	3.75	2383A42	14.35	2372A47	22.40
½″-13	2.125″	1.125″	0.75″	0.312″	1.25″	1	5	2383A43	17.08	2372A48	26.09
⅝″-11	3″	1.75″	1″	0.375″	1.3125″	1	5	2383A44	19.62	2372A49	39.51
Metric L-Handle											
M6 ×1.0	32 mm	20 mm	10 mm	4 mm	16 mm	0.5	2.5	8501A54	13.10	8501A57	17.50
M10×1.5	51 mm	33 mm	14 mm	6 mm	24 mm	0.75	3.75	8501A55	14.02	8501A58	19.55
M12×1.75	54 mm	32 mm	19 mm	7 mm	31 mm	1	5	8501A56	16.71	8501A59	23.39
Pull Ring— *Steel plungers have a nickel-plated steel ring; stainless steel plungers have a stainless steel ring.*											
¼″-20	1.14″	0.8″	0.250″	0.155″	0.62″	1	2.5	8487A21	11.12	8500A21	14.76
⅜″-16	1.68″	1.2″	0.375″	0.233″	0.98″	2	4	8487A22	12.62	8500A22	17.16
½″-13	2.00″	1.4″	0.500″	0.312″	1.26″	2.5	5	8487A23	14.31	8500A23	19.99

(Continued on following page)

For an index of fixturing components, see page 2596. For information about spring plungers, see page 2602.

Hand-Retractable Spring Plungers *(Continued from previous page)*

To Order: Please specify ***with or without nylon thread-locking element.*** When threading into aluminum and other soft materials, select a plunger without the nylon thread-locking element. For information about nylon thread-locking elements, see page 2602.

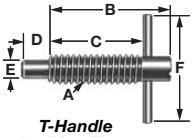

T-Handle Locking Nose

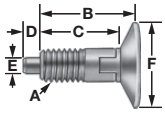

Low-Profile Hex-Drive Handle Locking Nose

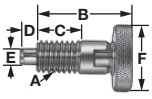

Knurled Knob Locking Nose

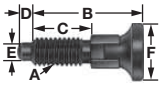

Acetal Knob Locking Nose

Thread Size (A)	Lg. (B)	Body Lg. (C)	Nose Lg. (D)	Nose Dia. (E)	Handle/Ring/ Knob Size (F)	End Force, lbs. Initial	Final	Steel		Stainless Steel	
With Locking Nose (Cont.)											
T-Handle											
1/4″-20	1.14″	0.8″	0.250″	0.155″	1.13″	1	2.5	31265A16	$11.05	31265A56	$13.55
3/8″-16	1.68″	1.2″	0.375″	0.233″	1.50″	2	4	31265A26	12.39	31265A66	15.69
1/2″-13	2.00″	1.4″	0.500″	0.312″	2.00″	2.5	5	31265A36	14.47	31265A76	18.21
5/8″-11	2.38″	1.7″	0.625″	0.375″	2.50″	2.5	5	31265A46	16.79	31265A86	24.55
Low-Profile Hex-Drive Handle											
1/4″-20	0.805″	0.525″	0.125″	0.123″	0.750″	1	4	2375A31	7.96	—	—
5/16″-18	1.07″	0.717″	0.187″	0.154″	0.875″	1	6	2375A32	8.88	—	—
3/8″-16	1.26″	0.970″	0.220″	0.185″	1″	1	8	2375A33	9.55	—	—
1/2″-13	1.38″	0.900″	0.250″	0.248″	1.250″	1	10	2375A34	10.31	—	—
Knurled Knob											
10-32	0.687″	0.406″	0.094″	0.104″	0.375″	1	3.5	84915A55	7.75	84935A65	12.38
1/4″-20	0.805″	0.400″	0.125″	0.124″	0.50″	0.5	2	84915A41	8.80	84935A33	11.22
5/16″-18	1.094″	0.625″	0.187″	0.155″	0.625″	1.5	6	84915A56	8.36	84935A66	14.27
3/8″-16	1.26″	0.750″	0.22″	0.186″	0.75″	0.5	3	84915A42	8.65	84935A34	13.21
1/2″-13	1.38″	0.650″	0.25″	0.249″	1.0″	0.5	4	84915A43	9.21	84935A35	16.34
5/8″-11	1.719″	1″	0.312″	0.311″	1.125″	5	10	84915A57	11.08	84935A67	18.05
Knurled Knob with Acetal Nose											
1/4″-20	0.875″	0.50″	0.125″	0.144″	0.50″	1	5	2387A61	9.42	2369A41	16.16
5/16″-18	1.09″	0.625″	0.1875″	0.179″	0.625″	1.5	6	2387A62	10.17	2369A42	17.34
3/8″-16	1.28″	0.75″	0.218″	0.216″	0.75″	1.5	8	2387A63	11.34	2369A43	20.08
1/2″-13	1.50″	0.875″	0.25″	0.310″	1.0″	2.5	10	2387A64	12.19	2369A44	22.98
5/8″-11	1.72″	1″	0.3125″	0.373″	1.125″	5	10	2387A65	15.34	2369A45	25.05
Acetal Knob											
1/4″-20	0.97″	0.50″	0.13″	0.16″	0.50″	0.12	0.36	8497A41	10.91	3350A11	16.32
3/8″-16	1.4″	0.75″	0.18″	0.25″	0.75″	0.25	2	8497A44	12.52	3350A12	18.80
1/2″-13	1.9″	1.0″	0.25″	0.31″	1.0″	0.5	1.75	8497A47	14.77	3350A13	22.16

Add-Your-Own-Handle Hand-Retractable Spring Plungers

Attach the knob or handle of your choice to the threaded spindle (see pages 2206-2230 for knobs and handles). You can screw the threaded body directly into the fixture or workpiece. Maximum temperature is 250° F. All plungers come with a locking nose—pull the nose back and turn it 90° to lock the plunger in the retracted position. ***300 series stainless steel*** plungers provide better corrosion resistance than steel.

To Order: Please specify ***with or without nylon thread-locking element.*** When threading into aluminum and other soft materials, select a plunger without the nylon thread-locking element. For information about nylon thread-locking elements, see page 2602.

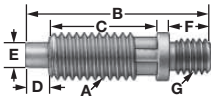

Thread Size (A)	Lg. (B)	Body Lg. (C)	Nose Lg. (D)	Nose Dia. (E)	End Force, lbs. Initial	Final	Spindle Lg. (F)	Spindle Thread (G)	Steel		Stainless Steel	
10-32	29/32″	1/2″	3/32″	0.104″	1	3	15/64″	10-32	7805A11	$9.84	7806A11	$17.94
1/4″-20	1 1/16″	5/8″	1/8″	0.124″	1	5	15/64″	10-32	7805A12	9.84	7806A12	17.94
5/16″-18	1 7/16″	13/16″	3/16″	0.155″	1.5	6	11/32″	1/4″-20	7805A13	10.61	7806A13	19.21
3/8″-16	1 11/16″	31/32″	7/32″	0.186″	1.5	8	13/32″	5/16″-18	7805A14	11.86	7806A14	22.24
1/2″-13	1 15/16″	1 1/8″	1/4″	0.249″	2.5	10	7/16″	3/8″-16	7805A15	12.74	7806A15	25.50

Spring Stops

Mount these spring stops on flat surfaces to hold workpieces. The face is steel (unless noted) and the body is cast aluminum. ***Flat face*** stops have a large contact surface. ***Flat face with tang*** stops have a tang to prevent thin stock from sliding under the stop. Set the tang in a hole or slot below the working surface of the table or fixture. ***Flat face with chamfered bottom*** stops have a chamfered bottom to provide extra corner clearance for metal workpieces that have a weld bead or imperfection. ***Round face*** stops locate parts in jigs and fixtures. Ideal for curved or contoured surfaces. ***Acetal round face*** stops are the same as round face stops above, but with a nonmarring acetal face.

Flat Face

Flat Face with Tang

Flat Face with Chamfered Bottom

Round Face

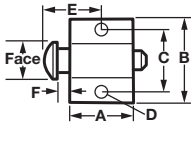

(A)	(B)	(C)	(D)	(E)	(F)	Face Size	End Force, lbs. Initial	Final		
Flat Face										
0.688″	0.875″	0.656″	0.136″	0.656″	0.125″	0.625″ Sq.	5.13	14.58	3351A13♣	$7.34
1.00″	1.50″	1.125″	0.203″	0.938″	0.1875″	0.875″ Sq.	2.25	25.75	3351A16	8.81
1.375″	2.00″	1.50″	0.266″	1.312″	0.25″	1.250″ Sq.	16.5	47.5	3351A19	15.72
Flat Face with Tang										
0.688″	0.875″	0.656″	0.136″	0.656″	0.125″	0.625″ Sq.	5.13	14.58	3351A12♣	7.70
1.00″	1.50″	1.125″	0.203″	0.938″	0.1875″	0.875″ Sq.	2.25	25.75	3351A15	9.25
1.375″	2.00″	1.50″	0.266″	1.312″	0.25″	1.250″ Sq.	16.5	47.5	3351A18	18.51
Flat Face with Chamfered Bottom										
0.688″	0.875″	0.656″	0.136″	0.656″	0.125″	0.625″ Sq.	5.13	14.58	3351A21♣	8.96
1.00″	1.50″	1.125″	0.203″	0.938″	0.1875″	0.875″ Sq.	2.25	25.75	3351A22	9.73
1.375″	2.00″	1.50″	0.266″	1.312″	0.25″	1.250″ Sq.	16.5	47.5	3351A23	17.33
Round Face										
0.688″	0.875″	0.656″	0.136″	0.593″	0.125″	0.375″ Dia.	5.13	14.58	3351A11♣	6.09
1.00″	1.50″	1.125″	0.203″	0.875″	0.1875″	0.562″ Dia.	2.25	25.75	3351A14	7.34
1.375″	2.00″	1.50″	0.266″	1.218″	0.25″	0.812″ Dia.	16.5	47.5	3351A17	12.23
Acetal Round Face										
0.688″	0.875″	0.656″	0.136″	0.593″	0.125″	0.375″ Dia.	5.13	14.58	3351A36♣	6.08
1.00″	1.50″	1.125″	0.203″	0.875″	0.1875″	0.562″ Dia.	2.25	25.75	3351A37	7.33
1.375″	2.00″	1.50″	0.266″	1.218″	0.25″	0.812″ Dia.	16.5	47.5	3351A38	12.23

♣ Mounting base is triangular (versus rectangular as illustrated at right).

Hand-Retractable Spring Plungers for Thin Material

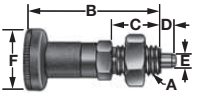

Nylon Knob *Threaded Spindle*

When holes aren't deep enough to fit the entire plunger body, use a hand-retractable plunger with locknut to adjust plunger depth. Locknut prevents loosening and increases holding power, especially in thinner materials. Body is steel with a black-oxide finish; plunger nose is hardened steel.

With Nonlocking Nose— Choose plungers with a nylon knob or a threaded spindle. *Plungers with threaded spindle* can be threaded onto machinery or topped with the knob or handle of your choice (see pages 2206-2230).

With Locking Nose— Lock nose into the retracted position by pulling the knob and rotating it 90°. The plunger pin catches on the notched body locking it into position until you lift and turn back the knob.

Thread Size (A)	Body Lg. (C)	Nose Lg. (D)	Nose Dia. (E)	*End Force, lbs.* Initial	Final	*With Nylon Knob* O'all Lg. (B)	Knob Dia. (F)			*With Threaded Spindle* O'all Lg. (B)	Spindle Lg. (G)	Spindle Thread (H)		
With Nonlocking Nose														
3/8"-24	0.67"	0.2"	0.2"	1.56	3.57	1.77"	0.83"	8507A11	$13.56	1.11"	0.24"	M5×0.8	8507A14	$12.73
1/2"-13	0.79"	0.24"	0.24"	1.45	3.35	2.15"	0.98"	8507A12	14.61	1.42"	0.39"	M6×1.0	8507A15	13.75
5/8"-11	1.02"	0.31"	0.31"	2.68	6.92	2.72"	1.22"	8507A13	17.95	1.80"	0.47"	M8×1.25	8507A16	15.93
With Locking Nose														
3/8"-24	0.67"	0.2"	0.2"	1.5	3.5	2.01"	0.83"	8480A1	17.50	—	—	—	—	—
1/2"-13	0.79"	0.24"	0.24"	1.5	3.5	2.40"	0.98"	8480A2	18.95	—	—	—	—	—
5/8"-11	1.02"	0.28"	0.31"	2.7	7	2.97"	1.22"	8480A3	23.91	—	—	—	—	—

Plate-Mount Hand-Retractable Spring Plungers

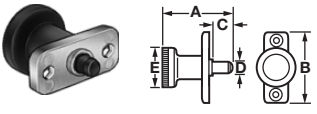

Plate-mount plungers offer an alternative to threaded styles when mounting to flat surfaces. Plate has two countersunk holes for mounting to a flat surface (fasteners not included). To lock plungers with locking nose, pull knob to retract, then rotate 90°. Notches located on opposite positions of plunger head will prevent plunger from slipping back to its forward position. Mounting plate is made of zinc-plated, die cast zinc; plunger nose is made of hardened steel; knob is black nylon.

O'all Lg. (A)	Plate Wd. (B)	Nose Lg. (C)	Nose Dia. (D)	Knob Dia. (E)	*End Force, lbs.* Initial	Final	*Mounting Holes* Hole Dia.	Ctr.-to-Ctr.	Max. Temp.		***With Nonlocking Nose***	***With Locking Nose***
1.46"	1.57"	0.24"	0.24"	0.98"	1.9	5.0	0.17"	1.18"	230° F	8478A1	$12.64	8478A3 $14.26
1.73"	1.81"	0.31"	0.31"	1.22"	3.5	6.3	0.21"	1.34"	230° F	8478A2	14.57	8478A4 16.60
1.77"	1.57"	0.55"	0.24"	0.98"	1.9	5.0	0.17"	1.18"	230° F	8478A7	13.54	8478A5 14.85
2.13"	1.81"	0.71"	0.31"	1.22"	3.5	6.3	0.21"	1.34"	230° F	8478A8	15.72	8478A6 17.80

Removable Drill Bushings

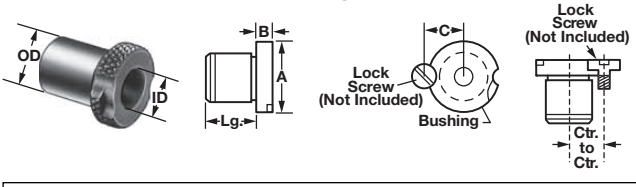

Also known as slip-fixed ("SF") renewable bushings, these bushings are easy to replace and are ideal for multi-step operations such as drilling, reaming, and tapping. Bushings are held in place by a lock screw or locking liner (lock screws and locking liners sold separately on page 2611). Just unscrew the lock screw to remove. Bushings can also be used with liners that are permanently mounted in jig plates and fixtures. Liners are sold separately on pages 2611-2614. Made of hardened steel. Rockwell hardness is C61-C65. Dimensions meet ANSI standards. Length tolerance is ±0.015".

Note: By measuring from centerline of bushing to centerline of lock screw, you can determine the exact location of hole for lock screw.

Also Available: Other sizes. Please ask for 8493A999 and specify ID, OD, and length.

♦ *Prices shown are for 1-5 bushings of same ID, OD, and length. Deduct 15% for same size orders of 6-11 bushings and 25% for same size orders of 12 or more.*

Dimensions OD	(A)	(B)	(C)	OD	(A)	(B)	(C)
3/16"	5/16"	3/16"	17/64"	5/8"	7/8"	1/4"	37/64"
1/4"	7/16"	1/4"	23/64"	3/4"	1 3/64"	1/4"	3/4"
5/16"	35/64"	1/4"	1/2"	7/8"	1 1/4"	3/8"	53/64"
3/8"	5/8"	1/4"	29/64"	1"	1 27/64"	3/8"	59/64"
7/16"	5/8"	1/4"	29/64"	1 1/4"	1 5/8"	3/8"	1 1/64"
1/2"	51/64"	1/4"	5/8"	1 3/8"	1 51/64"	3/8"	1 7/64"

OD	OD Tolerance
3/16"-1"	−0.0002"
1 3/8"	−0.0003"

ID	ID Tolerance
0.0625"-0.25"	+0.0001" to +0.0004"
0.257"-0.75"	+0.0001" to +0.0005"
0.7812"-1"	+0.0002" to +0.0006"

OD	Lg.		Each ♦
0.0625" ID (Drill Size: 1/16")			
5/16"	3/4"	8493A021	$18.80
0.0785" ID (Drill Size: 47)			
3/16"	1/2"	8493A309	10.13
0.0938" ID (Drill Size: 3/32")			
5/16"	3/8"	8493A036	12.21
5/16"	1/2"	8493A056	12.73
5/16"	3/4"	8493A076	14.59
5/16"	1"	8493A083	17.27
0.098" ID (Drill Size: 40)			
5/16"	1"	8493A022	16.32
0.1094" ID (Drill Size: 7/64")			
1/4"	1/4"	8493A001	11.96
5/16"	1/2"	8493A057	12.73
0.125" ID (Drill Size: 1/8")			
1/4"	1/4"	8493A002	11.96
1/4"	1/2"	8493A012	12.73
1/4"	3/4"	8493A413	24.32
5/16"	3/8"	8493A038	12.21
5/16"	1/2"	8493A058	12.73
5/16"	3/4"	8493A078	14.59
5/16"	1"	8493A084	17.27
5/16"	1 3/8"	8493A414	25.98
0.1285" ID (Drill Size: 30)			
1/4"	1/4"	8493A372	13.70
1/4"	1/2"	8493A227	12.61
5/16"	1/2"	8493A023	14.71
0.1360" ID (Drill Size: 29)			
1/4"	1/4"	8493A403	16.57
1/4"	3/8"	8493A404	17.06
1/4"	1/2"	8493A401	18.00
0.1360" ID (Drill Size: 29) (Cont.)			
1/4"	1"	8493A402	$41.56
5/16"	1/2"	8493A024	14.71
0.1406" ID (Drill Size: 9/64")			
5/16"	1/2"	8493A226	12.61
0.144" ID (Drill Size: 27)			
5/16"	1/2"	8493A025	14.71
0.147" ID (Drill Size: 26)			
5/16"	3/4"	8493A228	14.51
0.154" ID (Drill Size: 23)			
5/16"	1/2"	8493A026	14.71
0.1562" ID (Drill Size: 5/32")			
5/16"	3/8"	8493A041	12.21
5/16"	1/2"	8493A061	12.73
5/16"	3/4"	8493A081	14.59
5/16"	1"	8493A085	17.27
1/2"	1/2"	8493A027	12.37
0.157" ID (Drill Size: 22)			
5/16"	1"	8493A028	16.32
0.159" ID (Drill Size: 21)			
5/16"	3/8"	8493A373	13.67
5/16"	1/2"	8493A31	12.73
0.1719" ID (Drill Size: 11/64")			
5/16"	3/8"	8493A042	12.22
5/16"	1/2"	8493A062	12.73
0.173" ID (Drill Size: 17)			
5/16"	1/2"	8493A311	12.73
0.185" ID (Drill Size: 13)			
5/16"	1"	8493A029	16.32
1/2"	1/2"	8493A234	10.29
0.1875" ID (Drill Size: 3/16")			
5/16"	1/4"	8493A374	$19.57
5/16"	3/8"	8493A375	13.67
5/16"	1/2"	8493A376	14.66
5/16"	3/4"	8493A377	16.61
1/2"	1/2"	8493A122	9.99
1/2"	3/4"	8493A142	11.48
1/2"	1"	8493A162	13.21
0.1935" ID (Drill Size: 10)			
1/2"	1/2"	8493A229	9.23
1/2"	1"	8493A233	11.41
0.201" ID (Drill Size: 7)			
3/8"	1/4"	8493A092	8.04
3/8"	5/8"	8493A112	9.91
3/8"	3/4"	8493A086	10.14
1/2"	3/4"	8493A312	10.14
0.2031" ID (Drill Size: 13/64")			
1/2"	1/2"	8493A123	8.89
1/2"	3/4"	8493A143	10.14
1/2"	1"	8493A163	11.48
0.213" ID (Drill Size: 3)			
1/2"	1/2"	8493A324	9.41
1/2"	1"	8493A325	11.48
0.2188" ID (Drill Size: 7/32")			
3/8"	1/4"	8493A093	8.04
3/8"	1/2"	8493A103	9.58
3/8"	3/4"	8493A088	10.14
3/8"	1"	8493A089	11.48
1/2"	1/2"	8493A133	9.41
1/2"	3/4"	8493A322	10.14
1/2"	1"	8493A323	11.48
0.221" ID (Drill Size: 2)			
1/2"	1/2"	8493A031	$10.99
0.228" ID (Drill Size: 1)			
1/2"	1/2"	8493A032	10.99
1/2"	3/4"	8493A033	10.99
1/2"	1"	8493A034	13.50
0.2344" ID (Drill Size: 15/64")			
1/2"	1/2"	8493A125	9.37
1/2"	3/4"	8493A145	10.14
0.238" ID (Drill Size: B)			
1/2"	1/2"	8493A035	10.99
0.25" ID (Drill Size: 1/4")			
7/16"	1/2"	8493A326	9.58
7/16"	3/4"	8493A411	13.20
1/2"	3/8"	8493A412	10.83
1/2"	1/2"	8493A126	8.89
1/2"	3/4"	8493A146	9.63
1/2"	1"	8493A166	11.48
1/2"	1 3/8"	8493A235	13.76
0.257" ID (Drill Size: F)			
1/2"	1/2"	8493A127	9.41
1/2"	3/4"	8493A147	10.14
0.2656" ID (Drill Size: 17/64")			
1/2"	1/2"	8493A128	9.40
1/2"	3/4"	8493A148	10.14
1/2"	1"	8493A168	11.48

(Continued on following page)

For an index of fixturing components, see page 2596.

Removable Drill Bushings *(Continued from previous page)*

♦ *Prices shown are for 1-5 bushings of same ID, OD, and length. Deduct 15% for same size orders of 6-11 bushings and 25% for same size orders of 12 or more.*

OD	Lg.		Each ♦
0.2812″ ID (Drill Size: 9/32″)			
1/2″	1/2″	8493A129	$9.41
1/2″	3/4″	8493A149	10.14
1/2″	1″	8493A169	11.48
0.2969″ ID (Drill Size: 19/64″)			
1/2″	1/2″	8493A237	9.23
0.302″ ID (Drill Size: N)			
1/2″	1/2″	8493A044	10.99
0.3125″ ID (Drill Size: 5/16″)			
1/2″	1/4″	8493A378	15.99
1/2″	3/8″	8493A379	10.52
1/2″	1/2″	8493A131	8.89
1/2″	3/4″	8493A151	10.14
1/2″	1″	8493A171	10.86
3/4″	1/2″	8493A241	10.60
3/4″	3/4″	8493A251	11.45
3/4″	1″	8493A261	11.54
0.316″ ID (Drill Size: O)			
1/2″	1/2″	8493A045	10.99
0.3281″ ID (Drill Size: 21/64″)			
1/2″	3/8″	8493A405	10.83
1/2″	1/2″	8493A406	11.19
1/2″	1″	8493A407	13.86
0.3320″ ID (Drill Size: Q)			
1/2″	3/8″	8493A408	10.83
1/2″	1/2″	8493A409	11.19
0.3438″ ID (Drill Size: 11/32″)			
1/2″	1/2″	8493A132	9.41
1/2″	3/4″	8493A152	10.14
1/2″	1″	8493A172	11.48
3/4″	1 3/8″	8493A286	13.76
0.3594″ ID (Drill Size: 23/64″)			
3/4″	1 3/8″	8493A238	13.76

★ Extra thin bushing wall.

OD	Lg.		Each ♦
0.375″ ID (Drill Size: 3/8″)			
5/8″	3/8″	8493A211	$9.15
5/8″	1/2″	8493A221	9.15
5/8″	5/8″	8493A381	13.25
5/8″	3/4″	8493A231	9.40
5/8″	1″	8493A224	10.35
3/4″	1/2″	8493A242	10.60
3/4″	3/4″	8493A252	11.45
3/4″	1″	8493A262	12.13
0.3906″ ID (Drill Size: 25/64″)			
5/8″	1/2″	8493A046	9.59
5/8″	3/4″	8493A047	10.34
5/8″	1″	8493A048	10.90
3/4″	1/2″	8493A243	10.60
3/4″	3/4″	8493A253	11.71
3/4″	1″	8493A263	13.01
0.4062″ ID (Drill Size: 13/32″)			
5/8″	3/8″	8493A212	9.15
5/8″	1/2″	8493A222	8.71
5/8″	3/4″	8493A232	9.91
5/8″	1″	8493A225	10.35
3/4″	1/2″	8493A244	10.56
3/4″	3/4″	8493A254	11.71
0.4219″ ID (Drill Size: 27/64″)			
3/4″	1/2″	8493A245	10.60
3/4″	3/4″	8493A255	11.45
3/4″	1″	8493A265	14.60
0.4375″ ID (Drill Size: 7/16″)			
3/4″	1/2″	8493A246	10.60
3/4″	3/4″	8493A256	11.45
3/4″	1″	8493A266	12.13
3/4″	1 3/8″	8493A279	15.26
0.4531″ ID (Drill Size: 29/64″)			
3/4″	1″	8493A329	10.32

OD	Lg.		Each ♦
0.4688″ ID (Drill Size: 15/32″)			
3/4″	1/2″	8493A247	$10.60
3/4″	3/4″	8493A257	11.71
3/4″	1″	8493A267	13.01
3/4″	1 3/4″	8493A271	15.90
0.5″ ID (Drill Size: 1/2″)			
3/4″	3/8″	8493A382	10.72
3/4″	1/2″	8493A248	10.52
3/4″	5/8″	8493A383	18.99
3/4″	3/4″	8493A258	10.83
3/4″	1″	8493A268	11.54
3/4″	1 3/8″	8493A299	14.50
3/4″	1 3/4″	8493A384	18.03
1″	3/4″	8493A278	13.15
1″	1″	8493A288	13.96
1″	1 3/8″	8493A298	15.16
1″	1 1/2″	8493A301	17.84
0.5156″ ID (Drill Size: 33/64″)			
3/4″	1″	8493A049	11.05
0.5312″ ID (Drill Size: 17/32″)			
3/4″	1/2″	8493A249	10.60
3/4″	3/4″	8493A259	11.45
1″	3/4″	8493A273	13.07
0.5625″ ID (Drill Size: 9/16″)			
3/4″	3/4″	8493A313	11.15
3/4″	1″	8493A314	12.57
1″	3/4″	8493A315	13.86
0.6094″ ID (Drill Size: 39/64″)			
1″	1″	8493A283	14.05
0.625″ ID (Drill Size: 5/8″)			
7/8″	1/2″	8493A385	13.68
7/8″	3/4″	8493A386	14.30
7/8″	1″	8493A387	14.97

OD	Lg.		Each ♦
0.625″ ID (Drill Size: 5/8″) (Cont.)			
1″	3/4″	8493A274	$13.07
1″	1″	8493A284	13.96
1″	1 3/8″	8493A294	15.16
1″	1 1/2″	8493A302	17.61
0.6562″ ID (Drill Size: 21/32″)			
1″	3/4″	8493A275	13.07
1″	1″	8493A285	14.05
0.6875″ ID (Drill Size: 11/16″)			
1″	1/2″	8493A051	12.07
1″	3/4″	8493A316	15.51
1″	1″	8493A052	13.50
0.75″ ID (Drill Size: 3/4″)			
1″	1/2″	8493A282	12.38
1″	3/4″	8493A277	12.41
1″	1″	8493A287	13.96
1″	1 1/4″	8493A388	13.77
1″	1 3/8″	8493A297	15.16
1″	1 1/2″	8493A303	17.61
0.7812″ ID (Drill Size: 25/32″)			
1″	3/4″	8493A272	13.07
0.8125″ ID (Drill Size: 13/16″)			
1″	3/4″	8493A317★	13.98
1 3/8″	1″	8493A318	23.39
0.875″ ID (Drill Size: 7/8″)			
1 3/8″	3/4″	8493A304	18.35
1 3/8″	1″	8493A327	20.03
0.9375″ ID (Drill Size: 15/16″)			
1 3/8″	1″	8493A319	23.39
1.000″ ID (Drill Size: 1″)			
1 3/8″	1/2″	8493A389	23.61
1 3/8″	3/4″	8493A391	19.27
1 3/8″	1″	8493A321	22.92

Lock Screws for Removable Drill Bushings

To secure removable bushings, insert lock screws into the notches on the head of the bushings. Made of case-hardened steel. See Removable Drill Bushings on page 2610 for information on how to determine hole location for lock screws. Pkg. quantity is 10.

Fits Removable Bushing OD	Thread Size	(A)	(B)	(C)	(D)	(E)		Pkg.
Slotted Head								
3/16″	8-32	5/16″	7/16″	3/16″	0.100″	3/16″	8496A26	$8.34
1/4″, 3/8″, 7/16″, 9/16″, 5/8″	10-32	3/8″	1/2″	1/4″	0.138″	1/4″	8496A12	8.39
5/16″, 1/2″, 3/4″	5/16″-18	5/8″	5/8″	1/4″	0.138″	3/8″	8496A13	8.03
7/8″, 1 1/8″, 1 1/4″, 1 1/2″	5/16″-18	5/8″	3/4″	3/8″	0.200″	3/8″	8496A14	8.39
1″, 1 3/8″	5/16″-18	5/8″	7/8″	3/8″	0.200″	3/8″	8496A15	8.34
Hex Socket Head								
5/16″, 1/2″, 3/4″	5/16″-18	5/8″	5/8″	1/4″	0.138″	3/8″	8496A31♣	12.17
1″, 1 3/8″	5/16″-18	5/8″	7/8″	3/8″	0.200″	3/8″	8496A32♣	12.17
1 3/4″, 2 1/4″	3/8″-16	3/4″	1″	3/8″	0.200″	7/16″	8496A33●	12.17

♣ Hex size is 3/16″. ● Hex size is 7/32″.

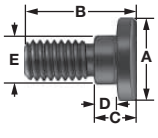

Locking Liners for Removable Drill Bushings

The locking flange on these liners will keep removable ("SF") bushings in place. Install the liner in a jig plate and place bushings inside the liner; a slight twist holds bushing. Made of hardened steel. Rockwell hardness is C61-C65.

Fits Removable Bushing OD	ID Tolerance	OD	Lg.	Head Dia.	Flange Dist.		
3/16″	+0.0001″ to +0.0004″	5/16″	1/2″	23/64″	1/4″	31425A34	$15.77
5/16″	+0.0001″ to +0.0004″	1/2″	1/2″	9/16″	3/8″	31425A21	16.02
1/2″	+0.0002″ to +0.0005″	3/4″	1/2″	13/16″	1/2″	31425A22	16.97

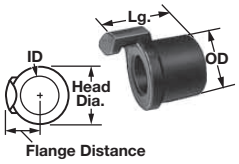

Press-Fit Liners with Head

The head flange stops liners from pushing through jig plates. Also known as "HL" liners, they are compatible with removable bushings (see page 2610) and locating pins (see pages 2599-2600). Made of hardened steel. Rockwell hardness is C61-C65.

Dimensions OD	(A)	(B)
1/2″	5/8″	3/32″
3/4″	7/8″	3/32″
1″	1 1/8″	1/8″
1 3/8″	1 1/2″	1/8″
1 3/4″	1 7/8″	3/16″

ID	ID Tolerance
0.3125″	+0.0001″ to +0.0004″
0.5″	+0.0002″ to +0.0005″
0.75″	+0.0003″ to +0.0006″
1″	+0.0004″ to +0.0007″
1.375″	+0.0006″ to +0.0010″
Lg.	**Lg. Tolerance**
7/32″-1 5/8″	±0.015″

OD	OD Tolerance
1/2″	+0.0014″ to +0.0017″
3/4″, 1″	+0.0015″ to +0.0018″
1 3/8″	+0.0018″ to +0.0022″
1 3/4″	+0.0022″ to +0.0026″

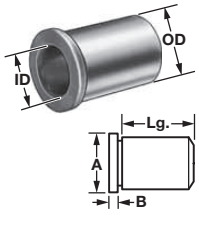

OD	Lg.		
0.3125″ ID (Drill Size: 5/16″)			
1/2″	7/32″	31435A011	$8.59
1/2″	9/32″	31435A013	8.87
1/2″	13/32″	31435A015	8.87
1/2″	21/32″	31435A016	9.19

OD	Lg.		
0.5″ ID (Drill Size: 1/2″)			
3/4″	21/32″	31435A211	$9.49
3/4″	29/32″	31435A213	10.99
3/4″	1 9/32″	31435A215	12.84

OD	Lg.		
0.75″ ID (Drill Size: 3/4″)			
1″	3/8″	31435A311	$10.41
1″	5/8″	31435A312	11.04
1″	7/8″	31435A313	11.81
1″	1 5/8″	31435A319	15.69

OD	Lg.		
1″ ID (Drill Size: 1″)			
1 3/8″	7/8″	31435A411	$15.55
1 3/8″	1 5/8″	31435A415	19.60
1.375″ ID (Drill Size: 1 3/8″)			
1 3/4″	9/16″	31435A612	19.00
1 3/4″	13/16″	31435A711	20.11

For an index of fixturing components, see page 2596.

Carbide Press-Fit Drill Bushings

Made of durable, wear-resistant tungsten carbide, these headless bushings outlast ordinary steel bushings. Rockwell hardness is A91. Also known as "PC" bushings. **Also Available:** Other sizes. Please ask for 33455A999 and specify ID, OD, and length.

OD	Lg.		Each
0.0938″ ID (Drill Size: 3/32″)			
13/64″	1/2″	33455A123	$34.70
0.125″ ID (Drill Size: 1/8″)			
1/4″	5/16″	33455A145	29.56
1/4″	1/2″	33455A205	30.39
5/16″	1/2″	33455A305	34.70
0.1875″ ID (Drill Size: 3/16″)			
5/16″	5/16″	33455A265	$31.32
5/16″	1/2″	33455A385	34.70
0.25″ ID (Drill Size: 1/4″)			
13/32″	1/2″	33455A455	37.30
1/2″	1/2″	33455A545	38.34
1/2″	3/4″	33455A675	46.69
0.3125″ ID (Drill Size: 5/16″)			
1/2″	1/2″	33455A585	$38.34
1/2″	1″	33455A587	56.99
5/8″	3/4″	33455A725	49.42
0.5″ ID (Drill Size: 1/2″)			
3/4″	1/2″	33455A645	46.69
3/4″	3/4″	33455A795	62.96
3/4″	1″	33455A805	73.14

ID	ID Tolerance
0.0938″-0.25″	+0.0001″ to +0.0004″
0.3125″-0.5″	+0.0001″ to +0.0005″
OD	**OD Tolerance**
13/64″-1″	+0.0012″ to +0.0018″
Lg.	**Lg. Tolerance**
5/16″-1″	±0.010″

Steel Press-Fit Drill Bushings/Liners

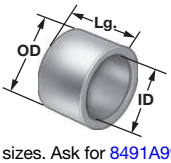

Keep drill bits from wandering with these headless bushings, also known as "P" bushings. They mount flush with jig plates and have a beveled end for an easy press fit. Suitable for spacers, shims, and machinery bushings. Made of case-hardened steel. Rockwell hardness is C61-C65. Dimensions meet ANSI standards. Sizes with IDs smaller than 1″ also work as liners for removable bushings (see pages 2610-2611). **Also Available:** Other sizes. Ask for 8491A999 and specify ID, OD, and length. For 1″ and greater IDs, ask for 8494A999 and specify ID (1″ min.), OD, and length.

♦ *Prices shown are for 1-5 bushings of same ID, OD, and length. Deduct 15% for same size orders of 6-11 bushings; 25% for same size orders of 12 or more.*

ID (Drill Size)	ID Tolerance
55-1/4″	+0.0001″ to +0.0004″
F-3/4″	+0.0001″ to +0.0005″
25/32″-1 7/16″	+0.0002″ to +0.0006″
1 1/2″-1 3/4″	+0.0003″ to +0.0007″
Lg.	**Lg. Tolerance**
1/8″-2 1/8″	±0.015″

OD	OD Tolerance
3/16″	+0.0013″ to +0.0016″
13/64″	+0.0012″ to +0.0015″
1/4″-13/32″	+0.0013″ to +0.0016″
7/16″-5/8″	+0.0014″ to +0.0017″
3/4″-1″	+0.0015″ to +0.0018″
1 1/8″-1 1/4″	+0.0017″ to +0.0020″
1 3/8″-1 5/8″	+0.0018″ to +0.0022″
1 3/4″	+0.0019″ to +0.0023″
2 1/4″	+0.0021″ to +0.0026″

OD	Lg.		Each ♦
0.052″ ID (Drill Size: 55)			
3/16″	1/4″	8491A001	$20.44
0.0595″ ID (Drill Size: 53)			
3/16″	1/4″	8491A652	20.44
0.0625″ ID (Drill Size: 1/16″)			
3/16″	1/4″	8491A002	20.44
3/16″	3/8″	8491A012	21.80
3/16″	1/2″	8491A022	21.12
3/16″	3/4″	8491A043	24.00
0.0635″ ID (Drill Size: 52)			
3/16″	1/4″	8491A801	13.12
0.067″ ID (Drill Size: 51)			
3/16″	1/4″	8491A655	9.32
0.07″ ID (Drill Size: 50)			
3/16″	1/4″	8491A003	9.32
3/16″	3/8″	8491A013	11.00
3/16″	1/2″	8491A023	11.40
0.0781″ ID (Drill Size: 5/64″)			
3/16″	1/4″	8491A004	9.32
3/16″	3/8″	8491A014	11.00
3/16″	1/2″	8491A024	11.40
3/16″	3/4″	8491A045	12.56
1/4″	1/2″	8491A802	15.96
0.081″ ID (Drill Size: 46)			
3/16″	1/4″	8491A005	10.72
3/16″	3/8″	8491A015	11.00
0.086″ ID (Drill Size: 44)			
3/16″	1/4″	8491A006	9.32
0.089″ ID (Drill Size: 43)			
3/16″	1/4″	8491A007	9.32
3/16″	3/8″	8491A017	11.00
3/16″	1/2″	8491A027	11.40
0.0935″ ID (Drill Size: 42)			
3/16″	1/4″	8491A008	9.32
3/16″	3/8″	8491A018	11.00
0.0938″ ID (Drill Size: 3/32″)			
3/16″	1/4″	8491A009	8.84
3/16″	3/8″	8491A019	10.07
3/16″	1/2″	8491A029	10.88
3/16″	3/4″	8491A048	12.56
0.0960″ ID (Drill Size: 41)			
3/16″	1/2″	8491A803	16.12
0.098″ ID (Drill Size: 40)			
3/16″	1/4″	8491A782	10.32
3/16″	1/2″	8491A783	12.70
13/64″	1/4″	8491A592	6.99
13/64″	5/16″	8491A598	7.91
13/64″	1/2″	8491A599	8.66
1/4″	1/4″	8491A031	8.64
1/4″	3/8″	8491A051	9.88
1/4″	1/2″	8491A071	10.48
1/4″	3/4″	8491A049	10.73
1/4″	1″	8491A784	14.27
0.0995″ ID (Drill Size: 39)			
1/4″	1/2″	8491A804	14.52
1/4″	3/4″	8491A805	16.16
0.1015″ ID (Drill Size: 38)			
1/4″	3/4″	8491A781	14.00
0.1065″ ID (Drill Size: 36)			
1/4″	1/4″	8491A033	8.64
1/4″	3/8″	8491A053	9.88
1/4″	1/2″	8491A073	10.48
0.1065″ ID (Drill Size: 36) (Cont.)			
1/4″	3/4″	8491A063	$11.72
0.1094″ ID (Drill Size: 7/64″)			
1/4″	1/4″	8491A034	8.64
1/4″	3/8″	8491A054	9.88
1/4″	1/2″	8491A074	10.48
1/4″	3/4″	8491A064	11.72
0.111″ ID (Drill Size: 34)			
1/4″	1/4″	8491A035	8.64
1/4″	3/8″	8491A594	7.46
1/4″	1/2″	8491A075	10.48
0.113″ ID (Drill Size: 33)			
1/4″	3/8″	8491A025	9.88
1/4″	1/2″	8491A026	13.28
0.12″ ID (Drill Size: 31)			
1/4″	1/4″	8491A036	8.64
1/4″	3/8″	8491A056	9.88
1/4″	1/2″	8491A076	10.48
1/4″	3/4″	8491A065	11.72
0.125″ ID (Drill Size: 1/8″)			
1/4″	1/4″	8491A037	8.24
1/4″	5/16″	8491A595	6.85
1/4″	3/8″	8491A057	9.44
1/4″	1/2″	8491A077	9.96
1/4″	3/4″	8491A066	11.08
1/4″	1″	8491A711	14.27
5/16″	1/4″	8491A596	6.42
5/16″	3/8″	8491A091	6.80
5/16″	1/2″	8491A101	7.84
5/16″	3/4″	8491A111	9.00
0.1285″ ID (Drill Size: 30)			
1/4″	1/4″	8491A038	8.24
1/4″	5/16″	8491A597	6.85
1/4″	3/8″	8491A058	9.88
1/4″	1/2″	8491A078	9.96
1/4″	3/4″	8491A067	11.72
1/4″	1″	8491A779	14.27
5/16″	1/2″	8491A032	8.24
0.136″ ID (Drill Size: 29)			
1/4″	1/4″	8491A039	8.24
1/4″	3/8″	8491A059	9.88
1/4″	1/2″	8491A079	10.48
1/4″	3/4″	8491A068	11.72
0.1405″ ID (Drill Size: 28)			
1/4″	1/4″	8491A041	8.64
1/4″	1/2″	8491A081	10.48
0.1406″ ID (Drill Size: 9/64″)			
1/4″	1/4″	8491A042	8.24
1/4″	3/8″	8491A062	9.88
1/4″	1/2″	8491A082	10.48
1/4″	3/4″	8491A069	11.72
5/16″	1/4″	8491A083	7.16
5/16″	1/2″	8491A084	7.84
5/16″	3/4″	8491A085	9.00
0.144″ ID (Drill Size: 27)			
5/16″	1/2″	8491A777	8.24
0.147″ ID (Drill Size: 26)			
5/16″	3/8″	8491A092	7.92
5/16″	1/2″	8491A102	8.24
0.1495″ ID (Drill Size: 25)			
5/16″	3/8″	8491A656	7.92
5/16″	1/2″	8491A028	8.24
0.1495″ ID (Drill Size: 25) (Cont.)			
5/16″	5/8″	8491A046	$10.12
0.1520″ ID (Drill Size: 24)			
5/16″	3/8″	8491A123	7.92
0.1562″ ID (Drill Size: 5/32″)			
5/16″	3/8″	8491A093	7.44
5/16″	1/2″	8491A103	7.84
5/16″	3/4″	8491A113	9.00
0.157″ ID (Drill Size: 22)			
5/16″	1/4″	8491A121	7.16
0.159″ ID (Drill Size: 21)			
5/16″	3/8″	8491A094	7.44
5/16″	1/2″	8491A104	7.84
5/16″	3/4″	8491A114	9.00
0.161″ ID (Drill Size: 20)			
5/16″	3/8″	8491A095	7.92
5/16″	1/2″	8491A105	8.24
0.166″ ID (Drill Size: 19)			
5/16″	5/16″	8491A602	8.48
5/16″	1/2″	8491A776	8.24
0.1719″ ID (Drill Size: 11/64″)			
5/16″	3/8″	8491A096	7.92
5/16″	1/2″	8491A106	8.24
5/16″	3/4″	8491A116	9.00
0.173″ ID (Drill Size: 17)			
5/16″	3/8″	8491A604	5.14
5/16″	1/2″	8491A658	8.24
0.177″ ID (Drill Size: 16)			
5/16″	1/2″	8491A775	11.40
0.1800″ ID (Drill Size: 15)			
1/4″	3/4″	8491A806	30.67
1/4″	1″	8491A807	33.51
5/16″	3/8″	8491A808	11.04
5/16″	1/2″	8491A809	11.44
0.1875″ ID (Drill Size: 3/16″)			
5/16″	1/8″	8491A811	11.22
5/16″	1/4″	8491A122	6.80
5/16″	3/8″	8491A097	7.44
5/16″	1/2″	8491A107	7.84
5/16″	5/8″	8491A132	8.64
5/16″	3/4″	8491A117	8.56
5/16″	1″	8491A142	8.34
3/8″	1/2″	8491A812	9.52
13/32″	1/4″	8491A712	6.30
13/32″	1/2″	8491A052	5.98
13/32″	3/4″	8491A713	7.15
1/2″	1/4″	8491A124	6.91
1/2″	3/8″	8491A241	7.00
1/2″	1/2″	8491A261	7.00
1/2″	3/4″	8491A281	7.44
1/2″	1″	8491A605	6.85
0.189″ ID (Drill Size: 12)			
5/16″	1/4″	8491A773	8.52
5/16″	1/2″	8491A774	8.24
0.191″ ID (Drill Size: 11)			
5/16″	1/4″	8491A086	6.80
5/16″	3/8″	8491A047	9.24
5/16″	1/2″	8491A087	8.24
5/16″	3/4″	8491A088	9.00
5/16″	1″	8491A089	9.32
13/32″	1/4″	8491A847	6.13
13/32″	1/2″	8491A072	6.25
0.191″ ID (Drill Size: 11) (Cont.)			
1/2″	1/2″	8491A772	$6.30
0.1935″ ID (Drill Size: 10)			
5/16″	5/16″	8491A768	6.82
5/16″	1/2″	8491A607	6.22
3/8″	3/8″	8491A769	6.30
3/8″	3/4″	8491A771	7.15
13/32″	1/2″	8491A608	5.43
1/2″	3/8″	8491A242	6.60
1/2″	1/2″	8491A262	7.05
0.196″ ID (Drill Size: 9)			
13/32″	1/2″	8491A786	8.36
1/2″	3/8″	8491A243	7.00
1/2″	1/2″	8491A263	7.16
1/2″	3/4″	8491A283	7.92
0.1990″ ID (Drill Size: 8)			
3/8″	1/2″	8491A813	9.92
0.201″ ID (Drill Size: 7)			
3/8″	3/8″	8491A151	6.60
3/8″	1/2″	8491A161	6.26
3/8″	5/8″	8491A659	7.00
3/8″	3/4″	8491A171	7.24
13/32″	1/2″	8491A785	8.36
1/2″	1/4″	8491A126	6.91
1/2″	3/8″	8491A244	7.00
1/2″	1/2″	8491A264	7.16
1/2″	3/4″	8491A284	7.92
1/2″	2″	8491A814	30.42
0.2031″ ID (Drill Size: 13/64″)			
3/8″	1/4″	8491A098	5.88
3/8″	3/8″	8491A152	6.60
3/8″	1/2″	8491A162	6.26
3/8″	3/4″	8491A172	7.24
1/2″	3/8″	8491A245	7.00
1/2″	1/2″	8491A265	6.80
1/2″	3/4″	8491A285	7.92
0.213″ ID (Drill Size: 3)			
3/8″	1/2″	8491A061	8.32
1/2″	3/8″	8491A246	7.00
1/2″	1/2″	8491A266	7.16
1/2″	1″	8491A778	10.07
0.2188″ ID (Drill Size: 7/32″)			
3/8″	1/4″	8491A714	7.44
3/8″	3/8″	8491A715	8.84
13/32″	3/8″	8491A716	6.30
13/32″	1/2″	8491A609	5.43
1/2″	3/8″	8491A247	7.00
1/2″	1/2″	8491A267	7.16
1/2″	3/4″	8491A287	7.92
1/2″	1″	8491A61	8.24
0.221″ ID (Drill Size: 2)			
3/8″	1/2″	8491A815	9.92
13/32″	1″	8491A816	11.67
1/2″	3/8″	8491A248	7.00
1/2″	1/2″	8491A268	7.16
1/2″	3/4″	8491A288	7.24
0.228″ ID (Drill Size: 1)			
3/8″	1/4″	8491A127	7.28
3/8″	1/2″	8491A128	8.32

(Continued on following page)

For an index of fixturing components, see page 2596.

Steel Press-Fit Drill Bushings/Liners *(Continued from previous page)*

♦ *Prices shown are for 1-5 bushings of same ID, OD, and length. Deduct 15% for same size orders of 6-11 bushings and 25% for same size orders of 12 or more.*

OD	Lg.		Each ♦
0.228" ID (Drill Size: 1) (Cont.)			
3/8"	3/4"	8491A131	$9.20
1/2"	1/4"	8491A133	7.28
1/2"	1/2"	8491A143	8.32
1/2"	3/4"	8491A144	9.20
0.2344" ID (Drill Size: 15/64")			
7/16"	3/8"	8491A221	7.00
7/16"	1/2"	8491A231	7.16
7/16"	3/4"	8491A118	7.92
0.25" ID (Drill Size: 1/4")			
3/8"	1/4"	8491A099	5.88
3/8"	5/16"	8491A612	4.83
3/8"	3/8"	8491A66	6.60
3/8"	1/2"	8491A108	7.84
3/8"	5/8"	8491A169	5.64
3/8"	3/4"	8491A109	6.80
3/8"	1"	8491A817	9.08
13/32"	1/4"	8491A183	5.38
13/32"	5/16"	8491A229	5.56
13/32"	3/8"	8491A193	6.04
13/32"	1/2"	8491A203	6.22
13/32"	3/4"	8491A207	7.24
13/32"	1"	8491A181	6.85
7/16"	1/4"	8491A212	5.38
7/16"	5/16"	8491A182	4.83
7/16"	3/8"	8491A222	6.60
7/16"	1/2"	8491A232	6.60
7/16"	5/8"	8491A717	10.52
7/16"	3/4"	8491A119	7.44
7/16"	1"	8491A661	9.04
1/2"	1/4"	8491A302	5.88
1/2"	5/16"	8491A312	6.40
1/2"	3/8"	8491A252	7.00
1/2"	1/2"	8491A272	5.25
1/2"	3/4"	8491A292	7.44
1/2"	1"	8491A322	8.64
0.2510" ID			
7/16"	1/2"	8491A841	9.92
0.2520" ID			
1/2"	1/2"	8491A842	9.92
0.2530" ID			
3/8"	1/2"	8491A843	16.88
0.2540" ID			
7/16"	1/4"	8491A844	13.12
0.257" ID (Drill Size: F)			
13/32"	1/2"	8491A614	5.43
7/16"	1"	8491A787	8.29
1/2"	1/4"	8491A129	6.91
1/2"	3/8"	8491A253	7.00
1/2"	1/2"	8491A273	7.16
1/2"	3/4"	8491A293	7.92
0.261" ID (Drill Size: G)			
1/2"	1/2"	8491A615	5.43
0.2656" ID (Drill Size: 17/64")			
1/2"	1/4"	8491A134	6.91
1/2"	3/8"	8491A255	6.41
1/2"	1/2"	8491A275	6.80
1/2"	3/4"	8491A295	7.92
1/2"	1"	8491A718	10.07
0.272" ID (Drill Size: I)			
1/2"	1/2"	8491A651	7.22
0.277" ID (Drill Size: J)			
1/2"	1/2"	8491A145	8.32
1/2"	3/4"	8491A146	9.20
0.2812" ID (Drill Size: 9/32")			
7/16"	1/4"	8491A719	7.40
7/16"	1/2"	8491A721	7.53
7/16"	3/4"	8491A722	9.48
1/2"	1/4"	8491A135	6.55
1/2"	3/8"	8491A256	7.00
1/2"	1/2"	8491A276	7.16
1/2"	3/4"	8491A296	7.92
1/2"	1"	8491A723	10.07
0.2969" ID (Drill Size: 19/64")			
1/2"	3/4"	8491A662	7.92
0.302" ID (Drill Size: N)			
1/2"	1/2"	8491A147	8.32
1/2"	3/4"	8491A148	9.20
0.3125" ID (Drill Size: 5/16")			
1/2"	1/4"	8491A304	5.88
1/2"	5/16"	8491A314	6.04
1/2"	3/8"	8491A257	7.00
1/2"	1/2"	8491A277	6.80
1/2"	3/4"	8491A297	7.44
1/2"	1"	8491A324	8.64
1/2"	1 1/2"	8491A724	9.78
0.3125" ID (Drill Size: 5/16") (Cont.)			
9/16"	3/8"	8491A325	$6.52
9/16"	1/2"	8491A326	6.52
9/16"	3/4"	8491A327	6.52
5/8"	1/4"	8491A136	6.64
5/8"	1/2"	8491A331	6.52
5/8"	5/8"	8491A351	6.60
5/8"	3/4"	8491A818	9.92
5/8"	1 3/8"	8491A371	10.24
3/4"	3/4"	8491A819	10.52
3/4"	1"	8491A821	11.44
0.316" ID (Drill Size: O)			
1/2"	3/8"	8491A788	6.31
1/2"	1/2"	8491A188	5.43
1/2"	3/4"	8491A149	6.94
1/2"	1"	8491A208	8.08
0.323" ID (Drill Size: P)			
1/2"	3/8"	8491A211	11.77
1/2"	1/2"	8491A224	11.93
0.3281" ID (Drill Size: 21/64")			
5/8"	1/4"	8491A137	6.64
5/8"	1/2"	8491A333	6.20
5/8"	5/8"	8491A353	7.00
5/8"	1 3/8"	8491A373	10.24
0.332" ID (Drill Size: Q)			
1/2"	1/2"	8491A226	11.93
1/2"	3/4"	8491A227	13.22
0.3390" ID (Drill Size: R)			
1/2"	3/4"	8491A823	20.81
5/8"	3/4"	8491A822	9.92
0.3438" ID (Drill Size: 11/32")			
5/8"	1/4"	8491A138	6.64
5/8"	1/2"	8491A336	6.52
5/8"	5/8"	8491A356	7.00
5/8"	3/4"	8491A663	7.20
5/8"	1 3/8"	8491A376	9.37
0.375" ID (Drill Size: 3/8")			
1/2"	1/4"	8491A725	6.52
1/2"	3/8"	8491A726	6.64
1/2"	1/2"	8491A191	4.92
1/2"	3/4"	8491A664	6.80
1/2"	1"	8491A727	9.63
9/16"	1/2"	8491A728	13.37
9/16"	1"	8491A729	17.87
5/8"	1/4"	8491A139	6.27
5/8"	5/16"	8491A201	4.68
5/8"	3/8"	8491A202	4.92
5/8"	1/2"	8491A338	6.20
5/8"	5/8"	8491A358	6.60
5/8"	3/4"	8491A392	6.80
5/8"	1"	8491A402	7.16
5/8"	1 1/4"	8491A412	10.24
5/8"	1 3/8"	8491A378	10.24
5/8"	2"	8491A824	22.57
3/4"	3/8"	8491A421	7.16
3/4"	1/2"	8491A431	7.16
3/4"	5/8"	8491A441	7.48
3/4"	3/4"	8491A451	7.48
3/4"	1"	8491A461	8.20
3/4"	1 3/8"	8491A471	10.44
3/4"	1 3/4"	8491A157	11.01
3/4"	2 1/2"	8491A825	33.55
0.377" ID (Drill Size: V)			
5/8"	3/8"	8491A228	7.68
5/8"	1/2"	8491A206	4.92
5/8"	5/8"	8491A789	6.30
5/8"	3/4"	8491A234	8.32
0.3906" ID (Drill Size: 25/64")			
5/8"	1/4"	8491A153	7.20
5/8"	1/2"	8491A339	6.20
5/8"	5/8"	8491A359	7.00
5/8"	1"	8491A731	9.04
5/8"	1 3/8"	8491A379	10.24
0.4062" ID (Drill Size: 13/32")			
5/8"	1/4"	8491A154	7.20
5/8"	1/2"	8491A341	5.67
5/8"	5/8"	8491A361	7.00
5/8"	1"	8491A732	9.04
5/8"	1 3/8"	8491A381	10.24
0.4219" ID (Drill Size: 27/64")			
5/8"	1/2"	8491A342	6.52
5/8"	5/8"	8491A362	7.00
5/8"	1 3/8"	8491A382	10.24
3/4"	1"	8491A209	6.19
0.4375" ID (Drill Size: 7/16")			
5/8"	1/4"	8491A156	$7.20
5/8"	3/8"	8491A616	4.92
5/8"	1/2"	8491A343	6.20
5/8"	5/8"	8491A363	6.60
5/8"	3/4"	8491A393	6.80
5/8"	1"	8491A403	5.31
5/8"	1 1/4"	8491A413	10.24
5/8"	1 3/8"	8491A383	10.24
3/4"	1/2"	8491A158	7.16
3/4"	3/4"	8491A159	7.48
3/4"	1"	8491A163	7.51
3/4"	1 3/4"	8491A164	13.00
0.4531" ID (Drill Size: 29/64")			
3/4"	1/2"	8491A235	8.32
3/4"	3/4"	8491A236	8.80
0.4688" ID (Drill Size: 15/32")			
3/4"	5/16"	8491A733	6.82
3/4"	1/2"	8491A213	5.43
0.4844" ID (Drill Size: 31/64")			
3/4"	1/2"	8491A734	6.43
0.5" ID (Drill Size: 1/2")			
5/8"	3/8"	8491A665	6.20
5/8"	1/2"	8491A214	5.39
5/8"	5/8"	8491A735	8.36
5/8"	3/4"	8491A666	6.84
5/8"	1"	8491A736	9.04
3/4"	1/4"	8491A737	9.04
3/4"	3/8"	8491A422	6.80
3/4"	1/2"	8491A432	6.80
3/4"	5/8"	8491A442	7.48
3/4"	3/4"	8491A452	7.16
3/4"	1"	8491A462	8.20
3/4"	1 3/8"	8491A472	12.89
3/4"	1 1/2"	8491A738	13.03
3/4"	1 3/4"	8491A165	13.00
3/4"	2 1/8"	8491A739	15.14
7/8"	1/2"	8491A198	8.41
7/8"	3/4"	8491A199	8.16
7/8"	1"	8491A204	8.16
7/8"	1 1/2"	8491A741	12.05
7/8"	1 3/4"	8491A205	12.26
1"	1/2"	8491A541	9.05
1"	5/8"	8491A174	9.24
1"	3/4"	8491A551	9.02
1"	1"	8491A561	9.60
1"	1 3/4"	8491A175	13.62
0.5010" ID			
3/4"	1/2"	8491A845	9.07
3/4"	1"	8491A846	10.46
0.5156" ID (Drill Size: 33/64")			
3/4"	5/8"	8491A654	6.84
0.5312" ID (Drill Size: 17/32")			
3/4"	1/2"	8491A237	7.61
3/4"	3/4"	8491A453	6.84
3/4"	1"	8491A463	7.51
3/4"	1 3/8"	8491A473	10.11
1"	3/4"	8491A742	8.30
0.5625" ID (Drill Size: 9/16")			
3/4"	1/2"	8491A743	6.57
7/8"	1/2"	8491A481	8.21
7/8"	5/8"	8491A491	9.05
7/8"	3/4"	8491A501	9.05
7/8"	1 3/4"	8491A167	12.92
0.5938" ID (Drill Size: 19/32")			
7/8"	1"	8491A513	9.38
0.625" ID (Drill Size: 5/8")			
3/4"	1/2"	8491A744	7.79
3/4"	5/8"	8491A826	19.70
3/4"	3/4"	8491A745	9.63
3/4"	1"	8491A746	8.96
3/4"	1 1/2"	8491A827	19.28
3/4"	2"	8491A667	25.26
7/8"	3/8"	8491A215	10.22
7/8"	1/2"	8491A483	8.61
7/8"	5/8"	8491A493	9.05
7/8"	3/4"	8491A503	8.56
7/8"	1"	8491A511	8.89
7/8"	1 1/4"	8491A521	9.73
7/8"	1 3/8"	8491A531	10.25
7/8"	1 1/2"	8491A747	12.05
7/8"	1 3/4"	8491A173	12.61
1"	1/2"	8491A542	9.05
1"	5/8"	8491A176	9.04
0.625" ID (Drill Size: 5/8") (Cont.)			
1"	3/4"	8491A552	$9.02
1"	1"	8491A562	9.60
1"	1 3/4"	8491A177	13.31
0.6406" ID (Drill Size: 41/64")			
7/8"	1/2"	8491A748	8.59
0.6562" ID (Drill Size: 21/32")			
1"	1/2"	8491A178	9.47
1"	3/4"	8491A179	9.47
1"	1"	8491A184	10.05
1"	1 1/2"	8491A216	10.35
0.6719" ID (Drill Size: 43/64")			
1"	1 1/4"	8491A749	12.48
0.6875" ID (Drill Size: 11/16")			
1"	1/2"	8491A751	8.30
1"	3/4"	8491A752	8.30
1"	1"	8491A753	8.59
1"	1 1/4"	8491A571	10.25
1"	1 1/2"	8491A754	12.48
0.75" ID (Drill Size: 3/4")			
7/8"	1"	8491A668	13.68
1"	1/2"	8491A544	8.56
1"	5/8"	8491A829	9.51
1"	3/4"	8491A554	8.56
1"	1"	8491A564	9.08
1"	1 1/4"	8491A573	9.92
1"	1 3/8"	8491A583	10.25
1"	1 1/2"	8491A593	10.25
1"	1 3/4"	8491A755	14.85
1 3/8"	1"	8491A756	10.75
0.7812" ID (Drill Size: 25/32")			
1 1/8"	3/4"	8491A217	10.56
1 1/8"	1"	8491A218	12.35
0.8125" ID (Drill Size: 13/16")			
1 1/4"	3/4"	8491A669	17.09
0.875" ID (Drill Size: 7/8")			
1 1/4"	3/4"	8491A186	11.35
1 1/4"	1"	8491A601	13.70
1 1/4"	1 1/4"	8491A757	16.62
1 1/4"	1 1/2"	8491A611	13.60
1 1/4"	2"	8491A621	21.07
1 3/8"	1"	8491A219	12.61
1 3/8"	1 3/8"	8491A238	13.72
0.9375" ID (Drill Size: 15/16")			
1 1/4"	3/4"	8491A189	12.38
1 1/4"	1"	8491A603	13.67
1 1/4"	1 1/2"	8491A613	16.77
1 1/4"	2"	8491A623	21.07
1 3/8"	1"	8491A758	10.75
1.000" ID (Drill Size: 1")			
1 1/4"	5/8"	8491A831	25.53
1 1/4"	3/4"	8491A759	11.16
1 1/4"	1"	8491A7	18.75
1 1/4"	1 1/2"	8491A761	15.76
1 3/8"	1/2"	8491A633	15.19
1 3/8"	3/4"	8491A195	11.18
1 3/8"	1"	8491A196	13.25
1 3/8"	1 3/8"	8491A643	14.53
1 3/8"	1 1/2"	8491A71	16.42
1 3/8"	1 3/4"	8491A197	18.31
1 3/8"	2"	8491A653	21.67
1 3/8"	3"	8491A223	29.84
1.125" ID (Drill Size: 1 1/8")			
1 1/2"	1"	8491A762	14.84
1 1/2"	2"	8491A763	20.50
1.25" ID (Drill Size: 1 1/4")			
1 1/2"	1"	8491A832	45.05
1 1/2"	2"	8491A833	45.80
1 3/4"	3/4"	8491A764	14.83
1 3/4"	1"	8491A72	14.99
1 3/4"	1 3/8"	8491A765	14.83
1 3/4"	1 1/2"	8491A766	17.21
1.375" ID (Drill Size: 1 3/8")			
1 5/8"	2"	8491A73	49.11
1 3/4"	1"	8491A239	14.08
1 3/4"	1 1/2"	8491A251	17.14
1.4375" ID (Drill Size: 1 7/16")			
1 3/4"	3"	8491A74	96.23
1.500" ID (Drill Size: 1 1/2")			
1 3/4"	1 1/2"	8491A834	28.91
2 1/4"	2 1/2"	8491A835	39.99
1.6250" ID (Drill Size: 1 5/8")			
2 1/4"	1 1/2"	8491A836	29.82
1.75" ID (Drill Size: 1 3/4")			
2 1/4"	1 3/8"	8491A767	25.66
2 1/4"	1 1/2"	8491A225	24.59

For an index of fixturing components, see page 2596.

Metric Steel Press-Fit Drill Bushings/Liners

Keep drill bits from wandering with these headless metric bushings, also known as "PM" bushings. They mount flush with jig plates and have a beveled end for an easy press fit. Also suitable for spacers, shims, and machinery bushings. Made of hardened steel. Rockwell hardness is C61-C65. Dimensions meet ANSI standards.

Also Available: Other sizes. Please ask for 8486A999 and specify ID, OD, and length.

♦ *Prices shown are for 1-5 brushings of same ID, OD, and length. Deduct 15% for same size orders of 6-11 bushings and 25% for same size orders of 12 or more.*

ID	ID Tolerance
1.25- 3 mm	+0.002 to +0.016 mm
3.1- 6 mm	+0.004 to +0.022 mm
6.25-10 mm	+0.005 to +0.028 mm
10.5-18 mm	+0.006 to +0.017 mm
20-30 mm	+0.007 to +0.020 mm
Lg.	**Lg. Tolerance**
5-45 mm	±0.4 mm

OD	OD Tolerance
4- 6 mm	+0.004 to +0.027 mm
7-10 mm	+0.006 to +0.032 mm
12-18 mm	+0.007 to +0.039 mm
22-30 mm	+0.035 to +0.048 mm
35-42 mm	+0.043 to +0.059 mm

ID, mm	OD, mm	Lg., mm		Each ♦
1.25	4	9	8486A11	$28.40
1.6	4	9	8486A13	28.40
1.65	4	9	8486A14	28.40
1.8	5	9	8486A17	11.81
2	5	9	8486A18	11.81
2.4	5	9	8486A421	11.93
2.5	5	9	8486A22	11.81
2.9	6	12	8486A24	11.21
3	6	12	8486A25	11.21
3.1	6	12	8486A423	11.29
3.2	6	12	8486A26	11.21
3.3	6	12	8486A27	11.21
3.5	7	12	8486A28	8.81
3.6	7	12	8486A425	11.74
3.75	7	12	8486A29	8.80
3.9	7	12	8486A427	8.89
4	7	12	8486A31	8.80
4.1	8	16	8486A32	9.81
4.24	8	12	8486A429	9.89
4.5	8	16	8486A33	9.81
4.6	8	16	8486A34	9.81
4.75	8	12	8486A431	$9.89
5	8	8	8486A83	9.78
5	8	12	8486A411	13.04
5	8	14	8486A84	11.60
5	8	16	8486A35	9.81
5.25	10	16	8486A433	9.87
5.5	10	16	8486A36	14.03
5.7	10	16	8486A435	9.87
6	8	12	8486A413	14.40
6	10	5	8486A85	8.91
6	10	6	8486A415	14.20
6	10	10	8486A417	12.80
6	10	16	8486A37	9.81
6.25	12	16	8486A437	9.88
6.4	12	16	8486A439	9.88
6.5	12	16	8486A38	7.67
6.7	12	16	8486A441	9.88
7	12	16	8486A39	7.67
7.3	12	16	8486A41	7.67
7.5	12	16	8486A42	7.67
7.7	12	16	8486A443	9.88
8	12	6	8486A87	$8.91
8	12	12.7	8486A88	12.44
8	12	16	8486A43	7.67
8.25	15	20	8486A445	9.56
8.5	15	20	8486A44	7.67
9	15	20	8486A47	7.67
9.2	15	20	8486A48	7.67
9.4	15	20	8486A447	9.56
9.6	15	20	8486A449	9.56
10	14	25	8486A89	20.87
10	15	12	8486A91	7.67
10	15	13	8486A419	9.40
10	15	20	8486A49	7.67
10	18	12	8486A92	7.67
10	18	20	8486A93	8.04
10.5	18	20	8486A51	8.04
10.75	18	20	8486A52	8.04
11.8	18	20	8486A53	8.04
12	18	12	8486A94	5.56
12	18	20	8486A54	8.04
12.5	22	28	8486A55	10.06
13	22	28	8486A56	$10.06
13.2	22	28	8486A57	10.06
13.5	22	28	8486A58	10.11
14	22	12	8486A95	9.90
14	22	28	8486A59	10.11
14.5	22	28	8486A61	10.11
15	22	28	8486A63	10.11
15.25	26	28	8486A64	10.11
15.5	26	28	8486A65	10.16
16	26	28	8486A66	10.16
16.5	26	28	8486A67	10.16
17	26	28	8486A69	10.16
17.5	26	28	8486A72	10.16
18	26	28	8486A73	10.16
20	30	36	8486A76	12.41
22	30	36	8486A78	12.41
24	35	36	8486A79	18.19
25	35	36	8486A96	18.19
27	42	45	8486A81	21.34
30	42	45	8486A82	21.34

Finish-Your-Own Steel Drill Bushings

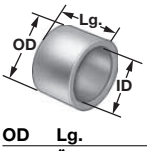

These headless bushings have the same high-precision ground IDs as the Steel Press-Fit Drill Bushings on pages 2612-2613, plus an oversized OD to allow you to finish them to your specifications. 2½″ and 4″ long bushings can be cut to fit your application. Bushings should be machine ground. Made of hardened steel. Rockwell hardness is C62-C64.

ID (Drill Size)	ID Tolerance
0.0938″-0.25″	+0.0001″ to +0.0004″
0.252″-0.75″	+0.0001″ to +0.0005″
1″	+0.0002″ to +0.0006″

OD	OD Tolerance
3/16″-1⅜″	+0.0009″ to +0.016″
Lg.	**Lg. Tolerance**
¼″-4″	±0.015″

OD	Lg.		
0.0938″ ID (Drill Size: 3/32″)			
3/16″	½″	4315A11	$10.87
0.125″ ID (Drill Size: 1/8″)			
¼″	¼″	4315A12	8.10
¼″	½″	4315A14	9.82
¼″	2½″	4315A401★	94.00
5/16″	½″	4315A16	7.76
0.1285″ ID (Drill Size: 30)			
¼″	¼″	4315A17	8.10
¼″	½″	4315A18	9.82
0.1562″ ID (Drill Size: 5/32″)			
5/16″	⅜″	4315A21	7.42
5/16″	½″	4315A22	7.76
0.159″ ID (Drill Size: 21)			
5/16″	⅜″	4315A23	7.42
5/16″	½″	4315A24	7.76
0.1875″ ID (Drill Size: 3/16″)			
5/16″	¼″	4315A25	6.71
5/16″	½″	4315A27	7.76
5/16″	¾″	4315A28	8.44
5/16″	2½″	4315A402★	79.73
0.191″ ID (Drill Size: 11)			
5/16″	½″	4315A31	7.76
0.201″ ID (Drill Size: 7)			
⅜″	⅜″	4315A32	6.58
0.25″ ID (Drill Size: 1/4″)			
⅜″	¼″	4315A34	$5.86
⅜″	⅜″	4315A36	6.58
⅜″	½″	4315A37	6.71
⅜″	¾″	4315A39	7.42
⅜″	1″	4315A41	8.62
½″	½″	4315A45	6.71
½″	¾″	4315A46	7.42
½″	1″	4315A47	8.62
½″	4″	4315A403★	174.58
0.252″ ID			
½″	½″	4315A49	6.92
0.257″ ID (Drill Size: F)			
½″	½″	4315A52	6.71
0.2812″ ID (Drill Size: 9/32″)			
½″	½″	4315A53	6.71
0.3125″ ID (Drill Size: 5/16″)			
½″	½″	4315A56	6.71
½″	¾″	4315A57	7.42
½″	1″	4315A58	8.62
½″	4″	4315A404★	153.93
0.316″ ID (Drill Size: O)			
½″	½″	4315A59	6.71
0.375″ ID (Drill Size: 3/8″)			
½″	¼″	4315A62	5.86
0.375″ ID (Drill Size: 3/8″) (Cont.)			
½″	½″	4315A64	$6.71
½″	¾″	4315A65	7.42
½″	1″	4315A66	8.62
½″	4″	4315A405★	209.02
⅝″	½″	4315A69	6.19
⅝″	¾″	4315A72	6.71
⅝″	1″	4315A73	7.07
⅝″	4″	4315A406★	138.92
0.377″ ID (Drill Size: V)			
⅝″	½″	4315A75	6.19
0.4062″ ID (Drill Size: 13/32″)			
⅝″	½″	4315A77	6.19
0.4375″ ID (Drill Size: 7/16″)			
⅝″	½″	4315A78	6.19
⅝″	1″	4315A81	7.07
0.5″ ID (Drill Size: 1/2″)			
⅝″	½″	4315A83	6.19
⅝″	¾″	4315A84	6.71
⅝″	1″	4315A85	7.07
¾″	½″	4315A87	6.71
¾″	¾″	4315A89	7.07
¾″	1″	4315A91	7.76
¾″	1½″	4315A92	10.51
¾″	4″	4315A407★	132.55
0.5625″ ID (Drill Size: 9/16″)			
¾″	½″	4315A97	$17.62
0.625″ ID (Drill Size: 5/8″)			
¾″	½″	4315A98	6.71
¾″	¾″	4315A99	7.07
¾″	1″	4315A101	7.76
¾″	4″	4315A408★	122.02
⅞″	½″	4315A102	6.71
⅞″	¾″	4315A103	8.44
⅞″	1″	4315A104	8.79
⅞″	4″	4315A409★	95.93
0.75″ ID (Drill Size: 3/4″)			
1″	½″	4315A107	8.44
1″	¾″	4315A108	8.44
1″	1″	4315A109	8.98
1″	1¼″	4315A201	9.66
1″	1½″	4315A202	10.87
1″	4″	4315A411★	107.08
1″ ID (Drill Size: 1″)			
1¼″	¾″	4315A205	21.02
1¼″	1″	4315A206	23.60
1¼″	1½″	4315A207	26.88
1¼″	4″	4315A412★	107.08
1⅜″	¾″	4315A209	11.02
1⅜″	1″	4315A301	13.22

★ ID tolerance shown above applies to the ends of the bushing (up to 1″ from each end); tolerance is +0.0015″ or better at the center of the bushing.

Removable Drill Bushings for Thin-Gauge Material

Bushing

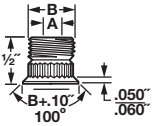

Lock Ring

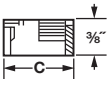

Unlike standard press-fit bushings, these won't buckle the material or distort the hole. Designed for simple installation in thin-gauge aluminum and cold-rolled steel plates (1/64″ to ⅜″ thick). Insert bushing into drilled hole and twist the lock ring (sold separately) to secure. No pneumatic or hydraulic clinching or hammering tools required. Bushings and lock rings can be removed and reused. Left-handed thread prevents bushing from loosening while drilling. ***Bushings*** are made of C1144 carbon steel. Rockwell hardness is C59-C64. Bushing ID tolerance is +0.0001″ to +0.0015″; bushing flange OD tolerance is +0.003″ to +0.005″. ***Lock rings*** are aluminum.

Thread Size	Bushings ID (A)	Bushings OD (B)			Lock Rings OD (C)		
⅜″-24	1/16″ (0.0625″)	⅜″	8509A41	$3.20	½″	8509A31	$1.60
⅜″-24	3/32″ (0.0937″)	⅜″	8509A42	3.20	½″	8509A31	1.60
⅜″-24	⅛″ (0.1250″)	⅜″	8509A11	3.20	½″	8509A31	1.60
⅜″-24	30 (0.1285″)	⅜″	8509A12	3.20	½″	8509A31	1.60
⅜″-24	9/64″ (0.1406″)	⅜″	8509A43	3.20	½″	8509A31	1.60
⅜″-24	5/32″ (0.1562″)	⅜″	8509A13	3.20	½″	8509A31	1.60
⅜″-24	3/16″ (0.1875″)	⅜″	8509A14	3.20	½″	8509A31	1.60
⅜″-24	10 (0.1935″)	⅜″	8509A15	3.20	½″	8509A31	1.60
½″-20	7/32″ (0.2187″)	½″	8509A17	3.60	⅝″	8509A32	1.75
½″-20	¼″ (0.2500″)	½″	8509A18	3.60	⅝″	8509A32	1.75
½″-20	17/64″ (0.2656″)	½″	8509A21	3.60	⅝″	8509A32	1.75
½″-20	9/32″ (0.2812″)	½″	8509A22	3.60	⅝″	8509A32	1.75
½″-20	5/16″ (0.3125″)	½″	8509A23	3.60	⅝″	8509A32	1.75
⅝″-18	⅜″ (0.3750″)	⅝″	8509A25	4.65	¾″	8509A33	2.40

For an index of fixturing components, see page 2596.

Stainless Steel Press-Fit Drill Bushings

Same as our Steel Press-Fit Drill Bushings on pages 2612-2613, except these headless bushings are made of stainless steel for corrosion resistance. Use as drill guides, spacers, shims, and machinery bushings. Dimensions meet ANSI standards (unless noted).

Type 303 stainless steel bushings provide excellent corrosion resistance in chemical and marine environments. They're non-hardened and have reduced wearability compared to hardened steel bushings.

Type 440C stainless steel bushings are hardened to Rockwell C56 for better wearability, but provide less corrosion resistance than Type 303 stainless steel bushings. Compared to steel bushings they have less wearability, but are more corrosion resistant.

Also Available: Other sizes. Please ask for 8504A999 and specify ID, OD, and length.

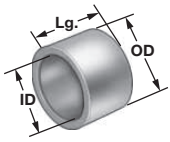

ID (Drill Size)	Tolerance
0.25″	+0.0001″ to +0.0004″
0.3125″-0.75″	+0.0001″ to +0.0005″
1″	+0.0002″ to +0.0006″

Lg.	Lg. Tolerance
¼″-1½″	±0.016″

OD	Tolerance
⅜″	+0.0013″ to +0.0016″
½″-⅝″	+0.0015″ to +0.0022″
¾″-1″	+0.0015″ to +0.0023″
1¼″	+0.0019″ to +0.0023″
1⅜″	+0.0019″ to +0.0025″

Type 303 Stainless Steel

OD	Lg.		
0.25″ ID (Drill Size: ¼″)			
⅜″	¼″	8504A111	$23.84
⅜″	⅜″	8504A113	25.66
⅜″	½″	8504A114	26.02
⅜″	¾″	8504A116	27.86
½″	⅜″	8504A117	25.66
½″	½″	8504A118	26.02
½″	¾″	8504A119	27.86
½″	1″	8504A121	30.94
0.3125″ ID (Drill Size: 5/16″)			
½″	¼″	8504A131	23.84
½″	⅜″	8504A132	25.66
½″	½″	8504A133	26.02
½″	¾″	8504A134	27.86
0.375″ ID (Drill Size: ⅜″)			
½″	⅜″	8504A141	25.66
½″	½″	8504A142	26.02
½″	¾″	8504A143	27.86
½″	1″	8504A144	30.94
⅝″	¼″	8504A145	26.02
⅝″	⅜″	8504A146	24.68
⅝″	½″	8504A147	24.68
⅝″	⅝″	8504A148	25.66
⅝″	1″	8504A151	26.96
0.5″ ID (Drill Size: ½″)			
⅝″	⅜″	8504A161	24.68

OD	Lg.		
0.5″ ID (Drill Size: ½″) (Cont.)			
⅝″	½″	8504A162	$24.68
⅝″	¾″	8504A163	26.02
⅝″	1″	8504A164	26.96
¾″	⅜″	8504A165	26.02
¾″	½″	8504A166	26.02
¾″	⅝″	8504A167	26.96
¾″	¾″	8504A168	26.96
¾″	1″	8504A169	28.72
0.625″ ID (Drill Size: ⅝″)			
¾″	½″	8504A181	26.02
¾″	1″	8504A182	28.72
⅞″	½″	8504A183	29.60
⅞″	¾″	8504A184	26.02
⅞″	1″	8504A185	31.40
0.75″ ID (Drill Size: ¾″)			
⅞″	1″	8504A191	31.40
1″	½″	8504A192	30.46
1″	¾″	8504A193	30.46
1″	1″	8504A194	31.84
1″	1¼″	8504A195	33.62
1″ ID (Drill Size: 1″)			
1¼″	¾″	8504A201♣	37.12
1¼″	1″	8504A202♣	42.80
1¼″	1½″	8504A203♣	49.74
1⅜″	½″	8504A204	42.80

♣ Wall thickness does not meet ANSI standards.

Type 440C Stainless Steel

OD	Lg.		
0.25″ ID (Drill Size: ¼″)			
⅜″	¼″	4208A11	$30.38
⅜″	⅜″	4208A12	31.34
⅜″	½″	4208A13	32.32
⅜″	¾″	4208A14	33.22
½″	⅜″	4208A15	31.94
½″	½″	4208A16	32.82
½″	¾″	4208A17	33.92
½″	1″	4208A18	35.10
0.3125″ ID (Drill Size: 5/16″)			
½″	¼″	4208A19	31.58
½″	½″	4208A22	32.82
½″	¾″	4208A23	33.92
0.375″ ID (Drill Size: ⅜″)			
½″	⅜″	4208A24	32.12
½″	½″	4208A25	33.00
½″	¾″	4208A26	34.12
½″	1″	4208A27	35.18
⅝″	¼″	4208A28	32.82
⅝″	⅜″	4208A29	33.16
⅝″	½″	4208A31	33.68
⅝″	⅝″	4208A32	34.64
⅝″	1″	4208A33	36.46
0.5″ ID (Drill Size: ½″)			
⅝″	½″	4208A35	34.14
⅝″	¾″	4208A36	35.56

OD	Lg.		
0.5″ ID (Drill Size: ½″) (Cont.)			
⅝″	1″	4208A37	$37.16
¾″	⅜″	4208A38	33.72
¾″	½″	4208A39	34.98
¾″	⅝″	4208A41	35.86
¾″	¾″	4208A42	36.94
¾″	1″	4208A43	39.04
0.625″ ID (Drill Size: ⅝″)			
¾″	½″	4208A44	36.14
¾″	1″	4208A45	40.28
⅞″	½″	4208A46	37.00
⅞″	¾″	4208A47	38.94
⅞″	1″	4208A48	41.40
0.75″ ID (Drill Size: ¾″)			
⅞″	1″	4208A49	42.30
1″	½″	4208A51	38.66
1″	¾″	4208A52	41.02
1″	1″	4208A39	43.84
1″	1¼″	4208A54	46.78
1″ ID (Drill Size: 1″)			
1¼″	¾″	4208A55	43.88
1¼″	1″	4208A56	47.54
1¼″	1½″	4208A58	53.96
1⅜″	½″	4208A59	43.02
1⅜″	1″	4208A57	49.74

Drill Bushings for Soft Materials

ID (Drill Size)	ID Tolerance
0.125″-0.25″	+0.0001″ to +0.0004″
0.2656″-0.6875″	+0.0001″ to +0.0005″

OD	OD Tolerance
Serrated Press	
5/16″-¾″	–0.0002″
Serrated & Diamond Groove	
¼″-1″	+0.010″ to +0.015″

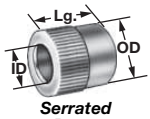

Serrated Press

Serrated Groove

Diamond Groove

Serrations grip soft materials to prevent rotation and spin out. Dimensions meet ANSI standards. Rockwell hardness is C61-C65. ***Serrated press*** have one row of serrations. ***Serrated groove*** and ***diamond groove*** that are 5/16″-½″ long have two rows of serrations; bushings ¾″ and longer have three rows of serrations and two grooves.

Serrated Press Bushings— Press-fit into magnesium, aluminum, and masonite wood. ***Serrated Groove Bushings—*** Great for encasing into plastic jigs. ***Diamond Groove Bushings—*** Knurls resist force and provide holding strength. Use for encasing into plastic jigs.

Also Available: Other sizes. Please ask for: 3377A999 for serrated press bushings; 3378A999 for serrated groove bushings; 3379A999 for diamond groove bushings. Specify ID, OD, and length.

OD	Lg.		
Serrated Press			
0.125″ ID (Drill Size: ⅛″)			
5/16″	5/16″	3377A111	$10.81
5/16″	½″	3377A114	8.72
0.1562″ ID (Drill Size: 5/32″)			
5/16″	5/16″	3377A112	10.81
5/16″	½″	3377A115	8.72
0.1875″ ID (Drill Size: 3/16″)			
5/16″	5/16″	3377A113	10.81
5/16″	½″	3377A116	8.72
½″	5/16″	3377A117	6.80
½″	½″	3377A122	7.62
0.1935″ ID (Drill Size: 10)			
5/16″	⅜″	3377A171	10.81
5/16″	½″	3377A172	11.32
0.2188″ ID (Drill Size: 7/32″)			
½″	½″	3377A153	15.11
0.25″ ID (Drill Size: ¼″)			
13/32″	⅜″	3377A174	9.49
½″	5/16″	3377A118	6.80
½″	½″	3377A123	7.28
0.2656″ ID (Drill Size: 17/64″)			
½″	½″	3377A182	10.81
0.2812″ ID (Drill Size: 9/32″)			
½″	½″	3377A155	15.11

OD	Lg.		
Serrated Press (Cont.)			
0.3125″ ID (Drill Size: 5/16″)			
½″	5/16″	3377A121	$6.80
½″	½″	3377A125	6.81
½″	¾″	3377A175	10.85
⅝″	¾″	3377A131	7.62
0.375″ ID (Drill Size: ⅜″)			
⅝″	½″	3377A128	6.60
⅝″	¾″	3377A133	7.62
¾″	½″	3377A135	7.62
0.5″ ID (Drill Size: ½″)			
¾″	½″	3377A137	7.62
¾″	¾″	3377A142	7.96
Serrated Groove			
0.125″ ID (Drill Size: ⅛″)			
5/16″	5/16″	3378A111	6.00
5/16″	½″	3378A114	6.55
0.1875″ ID (Drill Size: 3/16″)			
5/16″	5/16″	3378A113	6.00
½″	½″	3378A122	6.00
0.25″ ID (Drill Size: ¼″)			
13/32″	¾″	3378A173	8.47
½″	5/16″	3378A118	7.23
½″	½″	3378A123	6.00
½″	¾″	3378A174	10.69

OD	Lg.		
Serrated Groove (Cont.)			
0.2969″ ID (Drill Size: 19/64″)			
½″	½″	3378A153	$8.42
0.3125″ ID (Drill Size: 5/16″)			
½″	½″	3378A125	6.00
0.375″ ID (Drill Size: ⅜″)			
⅝″	½″	3378A128	7.23
⅝″	¾″	3378A133	7.87
0.4062″ ID (Drill Size: 13/32″)			
⅝″	¾″	3378A157	8.42
0.4375″ ID (Drill Size: 7/16″)			
⅝″	¾″	3378A159	8.60
0.5″ ID (Drill Size: ½″)			
¾″	½″	3378A137	6.12
¾″	¾″	3378A142	6.00
Diamond Groove			
0.098″ ID (Drill Size: 40)			
¼″	½″	3379A154	11.15
0.125″ ID (Drill Size: ⅛″)			
5/16″	½″	3379A114	6.00
0.1562″ ID (Drill Size: 5/32″)			
½″	½″	3379A158	9.53
0.1875″ ID (Drill Size: 3/16″)			
½″	½″	3379A122	6.00

OD	Lg.		
Diamond Groove (Cont.)			
0.1935″ ID (Drill Size: 10)			
5/16″	⅜″	3379A163	$9.03
0.2188″ ID (Drill Size: 7/32″)			
13/32″	½″	3379A164	8.51
0.25″ ID (Drill Size: ¼″)			
13/32″	½″	3379A167	8.51
½″	5/16″	3379A118	5.15
½″	½″	3379A123	6.81
½″	¾″	3379A168	9.19
0.2812″ ID (Drill Size: 9/32″)			
½″	½″	3379A124	7.15
0.3125″ ID (Drill Size: 5/16″)			
½″	½″	3379A125	7.15
⅝″	¾″	3379A131	7.19
0.375″ ID (Drill Size: ⅜″)			
⅝″	½″	3379A128	6.85
⅝″	¾″	3379A133	7.19
0.5″ ID (Drill Size: ½″)			
¾″	½″	3379A169	8.47
¾″	¾″	3379A142	7.19
0.5625″ ID (Drill Size: 9/16″)			
⅞″	¾″	3379A171	9.39
0.625″ ID (Drill Size: ⅝″)			
1″	¾″	3379A151	12.21

For an index of fixturing components, see page 2596.

Press-Fit Drill Bushings with Head

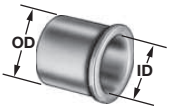

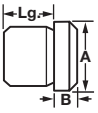

Also known as "H" bushings, these bushings have a head to prevent them from being pushed through the jig when drilling pressure is extreme. Made of hardened steel. Rockwell hardness is C61-C65. Dimensions meet ANSI standards.

Also Available: Other sizes. Please ask for 8492A999 and specify ID, OD, and length.

♦ *Prices shown are for 1-5 bushings of same ID, OD, and length. Deduct 15% for same size orders of 6-11 bushings and 25% for same size orders of 12 or more.*

Dimensions

OD	(A)	(B)	OD	(A)	(B)
13/64"	19/64"	3/32"	5/8"	51/64"	7/32"
1/4"	23/64"	3/32"	3/4"	59/64"	7/32"
5/16"	27/64"	1/8"	7/8"	1 7/64"	1/4"
3/8"	1/2"	3/32"	1"	1 15/64"	5/16"
13/32"	1/2"	5/32"	1 1/4"	1 1/2"	1/4"
7/16"	9/16"	3/32"	1 3/8"	1 39/64"	3/8"
1/2"	39/64"	7/32"	1 3/4"	1 63/64"	3/8"

ID	ID Tolerance
0.086"-0.25"	+0.0001" to +0.0004"
0.257"-0.75"	+0.0001" to +0.0005"
0.7656"-1.25"	+0.0002" to +0.0006"

Lg.	Lg. Tolerance
1/4"-3"	±0.015"

OD	Lg. Tolerance
13/64"	+0.0012" to +0.0015"
1/4"-13/32"	+0.0013" to +0.0016"
7/16"-1/2"	+0.0014" to +0.0016"
5/8"	+0.0014" to +0.0017"
3/4"-1"	+0.0015" to +0.0018"
1 1/4"	+0.0017" to +0.0020"
1 3/8"	+0.0018" to +0.0022"
1 3/4"	+0.0019" to +0.0023"

OD	Lg.		Each ♦
0.086" ID (Drill Size: 44)			
13/64"	1/4"	8492A001	$10.52
0.089" ID (Drill Size: 43)			
13/64"	1/4"	8492A002	10.52
0.0938" ID (Drill Size: 3/32")			
13/64"	1/4"	8492A003	10.52
13/64"	3/8"	8492A013	11.39
13/64"	1/2"	8492A023	11.63
0.098" ID (Drill Size: 40)			
1/4"	1/4"	8492A031	9.13
1/4"	1/2"	8492A051	10.52
0.1015" ID (Drill Size: 38)			
1/4"	1/4"	8492A015	10.59
1/4"	1/2"	8492A016	12.37
0.1094" ID (Drill Size: 7/64")			
1/4"	1/4"	8492A033	9.13
1/4"	1/2"	8492A053	10.52
0.125" ID (Drill Size: 1/8")			
1/4"	1/4"	8492A034	8.67
1/4"	3/8"	8492A044	10.21
1/4"	1/2"	8492A054	10.52
1/4"	3/4"	8492A056	13.00
1/4"	1"	8492A017	19.55
5/16"	3/8"	8492A061	8.43
5/16"	1/2"	8492A071	8.60
5/16"	3/4"	8492A081	8.96
0.1285" ID (Drill Size: 30)			
1/4"	1/4"	8492A371	12.61
1/4"	3/8"	8492A046	10.21
0.136" ID (Drill Size: 29)			
1/4"	1/4"	8492A032	9.13
1/4"	3/8"	8492A042	10.21
1/4"	1/2"	8492A052	10.52
5/16"	1"	8492A323	12.53
0.1406" ID (Drill Size: 9/64")			
1/4"	1/4"	8492A035	9.13
1/4"	3/8"	8492A045	10.21
1/4"	1/2"	8492A055	10.52
0.1495" ID (Drill Size: 25)			
5/16"	1/4"	8492A018	8.85
5/16"	1/2"	8492A019	10.04
0.1562" ID (Drill Size: 5/32")			
5/16"	3/8"	8492A062	8.43
5/16"	1/2"	8492A072	8.60
5/16"	3/4"	8492A082	8.96
0.159" ID (Drill Size: 21)			
5/16"	3/8"	8492A372	11.84
0.166" ID (Drill Size: 19)			
5/16"	1/4"	8492A021	8.85
5/16"	1/2"	8492A022	10.04
0.1719" ID (Drill Size: 11/64")			
5/16"	3/8"	8492A024	9.90
0.1875" ID (Drill Size: 3/16")			
5/16"	1/4"	8492A373	10.77
5/16"	3/8"	8492A374	11.84
5/16"	1/2"	8492A058	8.60
5/16"	3/4"	8492A375	12.51
5/16"	1"	8492A401	17.11
5/16"	1 3/8"	8492A402	25.37
1/2"	1/4"	8492A151	6.49
1/2"	3/8"	8492A161	7.84
1/2"	1/2"	8492A171	7.53
0.1875" ID (Drill Size: 3/16") (Cont.)			
1/2"	3/4"	8492A403	$10.14
1/2"	1"	8492A404	12.09
0.1935" ID (Drill Size: 10)			
5/16"	3/8"	8492A063	8.46
5/16"	1/2"	8492A073	8.60
0.199" ID (Drill Size: 8)			
5/16"	1/4"	8492A025	46.10
5/16"	1/2"	8492A026	40.91
0.201" ID (Drill Size: 7)			
3/8"	3/8"	8492A091	7.84
3/8"	1/2"	8492A101	7.91
1/2"	1/4"	8492A152	6.90
1/2"	3/8"	8492A162	7.84
1/2"	1/2"	8492A172	7.91
0.2031" ID (Drill Size: 13/64")			
1/2"	1/4"	8492A153	6.90
1/2"	3/8"	8492A163	7.84
1/2"	1/2"	8492A173	7.91
0.204" ID (Drill Size: 6)			
13/32"	1/2"	8492A105	15.36
0.213" ID (Drill Size: 3)			
3/8"	1/2"	8492A104	7.91
3/8"	3/4"	8492A027	9.90
3/8"	1"	8492A028	11.81
0.2188" ID (Drill Size: 7/32")			
3/8"	1/4"	8492A059	6.78
3/8"	3/8"	8492A092	7.46
3/8"	1/2"	8492A102	7.91
3/8"	3/4"	8492A112	8.43
0.221" ID (Drill Size: 2)			
3/8"	1/2"	8492A029	9.37
3/8"	3/4"	8492A036	9.90
0.25" ID (Drill Size: 1/4")			
13/32"	1/4"	8492A065	7.84
13/32"	1/2"	8492A066	7.85
13/32"	1"	8492A405	12.09
13/32"	1 3/8"	8492A406	12.64
7/16"	1/4"	8492A407	8.26
7/16"	3/8"	8492A121	7.46
7/16"	1/2"	8492A131	7.53
7/16"	3/4"	8492A141	8.43
7/16"	1"	8492A133	10.00
1/2"	1/4"	8492A154	6.49
1/2"	3/8"	8492A164	7.84
1/2"	1/2"	8492A174	7.53
1/2"	3/4"	8492A181	8.43
1/2"	1"	8492A191	10.04
1/2"	1 3/8"	8492A201	10.80
0.257" ID (Drill Size: F)			
1/2"	1/4"	8492A155	6.90
1/2"	3/8"	8492A165	7.84
1/2"	1/2"	8492A175	7.91
0.2656" ID (Drill Size: 17/64")			
7/16"	3/8"	8492A122	7.84
7/16"	1/2"	8492A132	7.91
1/2"	1/2"	8492A064	6.50
0.2812" ID (Drill Size: 9/32")			
1/2"	1/4"	8492A156	6.90
1/2"	3/8"	8492A166	7.84
1/2"	1/2"	8492A176	7.91
0.3125" ID (Drill Size: 5/16")			
1/2"	1/4"	8492A157	$6.49
1/2"	3/8"	8492A167	7.53
1/2"	1/2"	8492A177	7.53
1/2"	3/4"	8492A158	7.98
1/2"	1"	8492A159	9.97
1/2"	1 3/8"	8492A168	12.01
5/8"	1/4"	8492A211	7.84
5/8"	3/8"	8492A221	7.15
5/8"	1/2"	8492A231	7.15
5/8"	3/4"	8492A206	7.84
0.3281" ID (Drill Size: 21/64")			
5/8"	1/4"	8492A212	7.84
5/8"	3/8"	8492A222	7.15
5/8"	1/2"	8492A232	7.15
5/8"	3/4"	8492A207	7.84
0.3438" ID (Drill Size: 11/32")			
5/8"	1/4"	8492A213	7.84
5/8"	1/2"	8492A233	7.15
0.3594" ID (Drill Size: 23/64")			
5/8"	3/4"	8492A241	7.84
0.375" ID (Drill Size: 3/8")			
5/8"	1/4"	8492A214	7.46
5/8"	3/8"	8492A224	6.82
5/8"	1/2"	8492A234	6.82
5/8"	5/8"	8492A377	10.91
5/8"	3/4"	8492A242	7.46
5/8"	1"	8492A252	8.43
5/8"	1 3/8"	8492A262	12.18
3/4"	1/2"	8492A271	9.05
3/4"	3/4"	8492A281	9.74
3/4"	1 3/8"	8492A291	13.38
0.3906" ID (Drill Size: 25/64")			
5/8"	1/2"	8492A068	9.41
5/8"	3/4"	8492A069	9.38
0.4062" ID (Drill Size: 13/32")			
5/8"	3/8"	8492A113	7.07
5/8"	1/2"	8492A324	8.40
5/8"	3/4"	8492A351	9.02
0.4375" ID (Drill Size: 7/16")			
5/8"	1/4"	8492A215	7.84
5/8"	3/8"	8492A225	7.15
5/8"	1/2"	8492A235	7.15
5/8"	3/4"	8492A243	7.84
5/8"	1"	8492A253	8.43
3/4"	1/2"	8492A014	7.42
3/4"	3/4"	8492A037	9.90
0.4531" ID (Drill Size: 29/64")			
3/4"	1/2"	8492A272	8.42
3/4"	3/4"	8492A282	9.74
3/4"	1 3/8"	8492A292	13.38
0.4844" ID (Drill Size: 31/64")			
3/4"	1/2"	8492A273	9.05
3/4"	1"	8492A279	10.52
0.5" ID (Drill Size: 1/2")			
3/4"	1/4"	8492A038	8.16
3/4"	3/8"	8492A378	8.99
3/4"	1/2"	8492A274	7.96
3/4"	5/8"	8492A379	9.34
3/4"	3/4"	8492A284	8.59
0.5" ID (Drill Size: 1/2") (Cont.)			
3/4"	1"	8492A287	$9.26
3/4"	1 1/4"	8492A039	11.24
3/4"	1 3/8"	8492A294	12.50
3/4"	1 1/2"	8492A115	12.01
3/4"	1 3/4"	8492A381	16.35
7/8"	1/2"	8492A408	13.21
7/8"	3/4"	8492A041	9.74
7/8"	1"	8492A409	14.77
1"	1/2"	8492A411	12.58
1"	1 3/4"	8492A325	17.00
0.5156" ID (Drill Size: 33/64")			
3/4"	1/2"	8492A275	8.42
3/4"	3/4"	8492A285	9.74
3/4"	1"	8492A288	10.52
0.5312" ID (Drill Size: 17/32")			
3/4"	1/2"	8492A276	9.05
3/4"	3/4"	8492A286	9.74
3/4"	1"	8492A289	10.52
0.5469" ID (Drill Size: 35/64")			
7/8"	1/2"	8492A116	10.89
0.5625" ID (Drill Size: 9/16")			
7/8"	1/2"	8492A326	10.89
0.625" ID (Drill Size: 5/8")			
3/4"	1"	8492A327	12.75
7/8"	1/2"	8492A297	10.09
7/8"	3/4"	8492A298	10.28
7/8"	1"	8492A299	10.72
7/8"	1 1/4"	8492A303	11.78
1"	1 1/2"	8492A047	12.70
0.6875" ID (Drill Size: 11/16")			
1"	1/2"	8492A048	9.40
1"	3/4"	8492A049	9.40
0.75" ID (Drill Size: 3/4")			
1"	1/2"	8492A302	9.86
1"	3/4"	8492A312	9.86
1"	1"	8492A304	11.26
1"	1 1/4"	8492A382	14.19
1"	1 3/8"	8492A322	12.18
1"	1 1/2"	8492A383	16.46
1"	2 1/2"	8492A412	28.01
0.7656" ID (Drill Size: 49/64")			
1"	1/2"	8492A305	11.38
1"	3/4"	8492A306	11.65
1"	1"	8492A307	12.30
0.875" ID (Drill Size: 7/8")			
1 1/4"	1"	8492A329	17.15
1 1/4"	1 3/8"	8492A328	27.82
1" ID (Drill Size: 1")			
1 3/8"	1/2"	8492A384	16.40
1 3/8"	3/4"	8492A331	16.69
1 3/8"	1 3/8"	8492A33	16.69
1 3/8"	1 3/4"	8492A074	16.38
1 3/8"	3"	8492A413	52.33
1 3/4"	1"	8492A414	27.04
1 3/4"	3"	8492A415	59.52
1.125" ID (Drill Size: 1 1/8")			
1 3/4"	1"	8492A075	15.56
1.25" ID (Drill Size: 1 1/4")			
1 3/4"	3/4"	8492A076	17.31
1 3/4"	1"	8492A077	15.56

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Cylinder Hones	2685
Lapping & Polishing Compounds	2687
Buffing & Polishing Tools	2689
Mass Finishing Media & Machines	2694
Power Brushes	2696
Wire Brushes	2704

Parts Cleaning & Treating

Abrasive Blasting Equipment & Media	2713
Ultrasonic Cleaners	2717
Parts Washers	2719
Wire Baskets	2721
Static Eliminators	2723
Air Knives & Blowoff Nozzles	2725
Blowguns	2727
Heat Guns, Blowers & Dryers	2732
Heaters, Ovens & Furnaces	2736
Melting Pots	2739
Hot Plates	2740

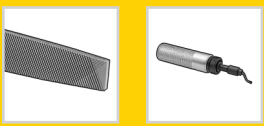
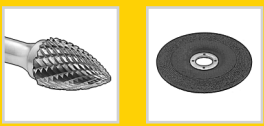

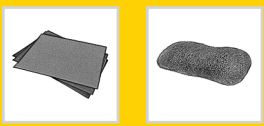

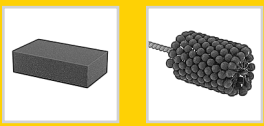
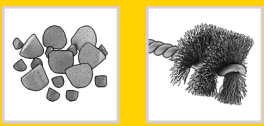

Hand Files

For file handles, see page 2624.

About Files

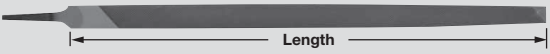

When choosing between files, it is important to consider the file's pattern and what type of filing work needs to be done.

Hand files, also known as American-pattern, machinists', and engineer's files, are used to remove material quickly. Choose from coarse, medium, and fine cut. *Coarse* cut, also known as bastard cut, provides heavy removal with a rough finish. *Medium* cut, also known as second cut, provides light removal with a fair finish. *Fine* cut, also known as smooth cut, provides a smooth finish.

Precision hand files, also known as Swiss-pattern files, are especially useful for finishing delicate and intricate parts. These are made to measurements that are more exact to ensure precision and smoothness. They are excellent for removing burs, shaping, enlarging small holes, and finishing narrow grooves and keyways.

Coarseness of Cut

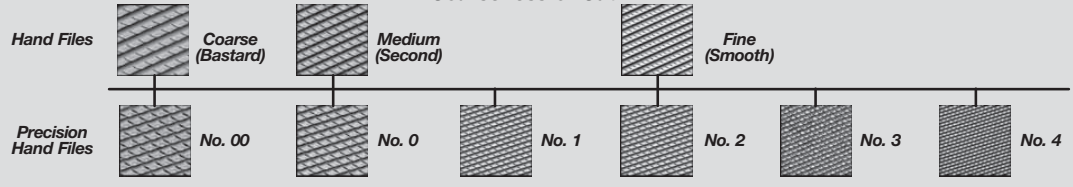

Hand File Cuts

Double Cut—Diagonal rows of teeth run across the width of the file in opposite directions. Use with heavier pressure than single-cut style for faster, rougher-finish cutting and more rapid material removal.

Single Cut—A single set of parallel teeth runs diagonally across the width of the file. Use with light pressure for smooth finishes and to sharpen tool cutting surfaces.

Rectangular Hand Files

Double-Cut Straight

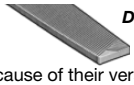
Double-Cut Tapered

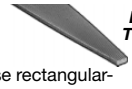
Double-Cut Thin-Tapered

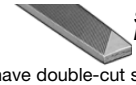
Single-Cut Plain Edge

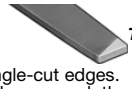
Single-Cut Tapered Edge

The most popular files because of their versatility, these rectangular-profiled files can debur, sharpen, and polish.

Double-Cut Straight Files—Also known as hand files. One edge is plain (without teeth), allowing you to file one surface without damaging the adjoining surface. Files do not taper and all are double cut on sides and edge except 4242A12, which has a single-cut edge.

Double-Cut Tapered Files—Also known as flat files, these taper to fit into tight spots. Double cut on both sides and single cut on both edges.

Double-Cut Thin-Tapered Files—Also known as warding files. Use these very thin files in narrow spaces. Files taper extremely toward the point and have double-cut sides and single-cut edges.

Single-Cut Plain Edge Files—Also known as lathe files. Use for filing material that is rotating on a lathe and for bench filing soft metals such as aluminum. Single cut on sides; edges are plain (without teeth) to protect adjacent surfaces. Files taper slightly to the point.

Single-Cut Tapered Edge Files—Also known as mill files. Use for sharpening mill and circular saws, drawfiling, and finishing metals. Files have two square edges (unless noted). They are single cut and slightly tapered in width to the point.

Lg.	Wd.	Thick.	Coarse Cut	Each	Medium Cut	Each	Fine Cut	Each
Double-Cut Straight								
6″	19/32″	9/64″	4254A6	$7.14	4254A7	$7.47	4254A8	$8.77
8″	15/32″	1/8″	4242A12	11.23				
8″	25/32″	3/16″	4254A9	8.40	4254A11	10.12	4254A12	10.30
10″	31/32″	13/64″	4254A13	11.67	4254A21	13.77	4254A26	14.74
12″	1 5/32″	1/4″	4254A27	16.44	4254A28	17.81	4254A29	18.56
Double-Cut Tapered								
4″	29/64″	5/64″	4219A11	6.65	4219A19	7.07	4219A31	8.26
6″	19/32″	1/8″	4219A12	7.00	4219A22	7.35	4219A32	8.79
8″	3/4″	1/8″	4219A13	8.70	4219A23	9.58	4219A33	10.28
10″	15/16″	5/32″	4219A14	10.81	4219A24	12.42	4219A34	13.56
12″	1 5/32″	13/64″	4219A15	14.74	4219A25	16.63	4219A35	18.44
14″	1 5/16″	15/64″	4219A16	20.21	4219A26	23.26	4219A36	25.58
16″	1 1/2″	17/64″	4219A37	26.77				
Double-Cut Thin-Tapered								
4″	15/32″	3/64″	4230A11	8.35	4230A21	9.14	4230A31	9.93
6″	5/8″	5/64″	4230A12	9.14	4230A22	10.40	4230A32	11.49
8″	25/32″	3/32″	4230A13	11.49	4230A23	13.09	4230A33	14.47
Double-Cut Thin-Tapered (Cont.)								
10″	15/16″	7/64″	4230A34	$15.42				
Single-Cut Plain Edge								
10″	31/32″	13/64″	4223A1	14.16				
12″	1 5/32″	1/4″	4223A2	19.12				
14″	1 5/16″	17/64″	4223A3	25.81				
Single-Cut Tapered Edge								
4″	29/64″	5/64″	4225A11	4.77			4225A31	$7.21
6″	19/32″	7/64″	4225A12	4.77	4225A22	$6.86	4225A32	7.23
8″	3/4″	1/8″	4225A13	5.60	4225A23	7.70	4225A33	8.56
8″	25/32″	9/64″	4270A13★	8.88				
10″	15/16″	5/32″	4225A14	7.26	4225A24	9.81	4225A34	10.49
10″	31/32″	11/64″	4270A14★	11.37				
12″	1 9/64″	13/64″	4270A15★	14.65				
12″	1 5/32″	13/64″	4225A15	11.93	4225A25	12.95	4225A35	14.23
14″	1 5/16″	15/64″	4225A16	16.12			4225A36	19.77
16″	1 1/2″	17/64″	4225A37	25.05				

★ Has one square edge and one round edge.

Half-Round Hand Files

Use on concave, convex, and flat surfaces. All files are double cut on the flat side, unless noted. ***Double-cut files*** are also double cut on the convex side. ***Single-cut files*** are single cut on the convex side.

Lg.	Wd.	Thick.	Coarse Cut	Each	Medium Cut	Each	Fine Cut	Each
Double Cut								
4″	7/16″	9/64″	4221A11	$9.95	4221A21	$9.28		
6″	19/32″	11/64″	4221A12	10.30				
8″	3/4″	7/32″	4221A13	12.47	4221A23	13.77		
10″	31/32″	9/32″	4221A14	15.42	4221A24	18.16		
12″	1 1/8″	11/32″	4221A15	19.84	4221A25	21.63		
14″	1 21/64″	3/8″	4221A16	25.84	4221A26	27.86		
16″	1 1/2″	7/16″	4221A37	33.84				
Single Cut								
4″	7/16″	9/64″					4221A31	$11.53
6″	19/32″	11/64″			4221A22	11.74	4221A32	12.14
8″	3/4″	7/32″					4221A33	14.74
10″	31/32″	9/32″					4221A34	17.63
12″	1 1/8″	11/32″					4221A35	22.72
14″	1 21/64″	3/8″	4221A17♦	17.88			4221A36	30.07

♦ Is a pipeline/welder's file and single cut on both sides.

Round Hand Files

For filing holes and concave surfaces. Files are tapered slightly toward the point. All are single cut except the 14″ file, which is double cut.

Lg.	Dia.	Coarse Cut	Each	Medium Cut	Each	Fine Cut	Each
4″	1/8″	4233A11	$5.70	4233A17	$6.28	4233A24	$6.86
6″	1/4″	4233A12	5.72	4233A18	6.51	4233A25	7.14
8″	5/16″	4233A13	6.56	4233A19	7.56	4233A26	8.47
10″	3/8″	4233A14	8.47	4233A21	10.00	4233A27	10.98
12″	1/2″	4233A15	11.72	4233A22	13.37	4233A28	14.53
14″	5/8″	4233A16	16.67				

Round Hand Files for Chain Saws

Get between the round and hooded teeth of chain saws with these untapered files. Files feature a knurled cut, similar to a double cut.

Lg.	Dia.	Each	Lg.	Dia.	Each
6″	1/8″	4246A8 $1.28	8″	1/4″	4246A3 $1.49
6″	5/32″	4246A9 1.28	8″	5/16″	4246A4 2.21
8″	3/16″	4246A1 1.23	8″	3/8″	4246A6 2.20
8″	7/32″	4246A2 1.23			

For information about hand files, see page 2618. For file handles, see page 2624.

Triangular Hand Files

With three sides of filing surface and a triangular shape, these files can reach spots other files can't.

Double-cut files have sharp corners and teeth cut to a point. With sides that taper toward the point, they are ideal for filing grooves and corners. Not suitable for filing saws.

Single-cut files provide a smoother finish than double-cut files and are ideal for filing between saw teeth. *Standard taper* is for saws with 6 to 8 teeth per inch. Use *slim taper* on saws with 8 to 12 teeth per inch, and *extra-slim taper* on saws with 8 to 16 teeth per inch.

Double Cut

Single Cut

Double-Cut Files

Lg.	Wd.	Coarse Cut	Each	Medium Cut	Each	Fine Cut	Each
6″	15/32″	4234A11	$9.51	4234A15	$10.63	4234A18	$10.74
8″	5/8″	4234A12	11.26	4234A16	12.81	4234A19	13.51
10″	3/4″	4234A13	14.07	4234A17	15.26	4234A29	16.14

Single-Cut Files

		Standard		Slim		Extra-Slim	
Lg.	Wd.		Each	Wd.	Each	Wd.	Each
4″	15/64″	4229A11	$4.12	3/16″	4229A17	$4.51	—
5″	—	—	—	—	—	3/16″	4229A25 $4.56
6″	21/64″	4229A13	4.47	17/64″	4229A21	4.70	15/64″ 4229A26 4.77
7″	25/64″	4229A14	5.58	—	—	—	—
8″	15/32″	4229A15	6.58	25/64″	4229A23	6.58	19/64″ 4229A28 6.67

Square Hand Files

With a square shape and four sides of filing surfaces, these tools are ideal for filing slots, keyways, grooves, and corners. Files are double cut and tapered slightly toward the point.

Lg.	Wd.	Coarse Cut	Each	Medium Cut	Each	Fine Cut	Each
4″	5/32″	4235A11	$7.35	4235A17	$6.40	4235A24	$8.72
6″	1/4″	4235A12	7.74	4235A18	8.72	4235A25	9.14
8″	5/16″	4235A13	9.21	4235A19	10.40	4235A26	11.42
10″	3/8″	4235A14	12.09	4235A21	13.95	4235A27	14.95
12″	1/2″	4235A15	17.19	4235A22	19.23	4235A28	21.19
14″	5/8″	4235A29	22.65	—	—	—	—

Knife-Shaped Hand Files

Easily file tight angles, corners, and slots with these knife-like, wedge-shaped files. All have double-cut sides, a single-cut sharp edge, and a plain back (without teeth).

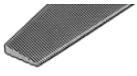

Lg.	Wd.	Thick.	Coarse Cut	Each	Medium Cut	Each	Fine Cut	Each
4″	31/64″	7/64″	4236A11	$12.35	4236A15	$13.09	4236A19	$13.56
6″	43/64″	5/32″	4236A12	14.16	4236A16	16.14	4236A21	17.42
8″	53/64″	3/16″	4236A13	16.56	4236A17	18.23	4236A22	18.70
10″	1 3/64″	15/64″	4236A14	19.98	4236A18	22.95	4236A23	24.40
12″	1 15/64″	17/64″	4236A25	25.00	—	—	—	—

Versi-Cut Rectangular Hand Files

Remove material quickly and leave a smooth finish in the same stroke thanks to these files' unique chip-breaking pattern. Files are single cut and tapered slightly toward the point in width. Also known as all-purpose flat files and machinists' files.

Lg.	Wd.	Thick.	Each
8″	25/32″	3/16″	4224A11 $8.89
10″	31/32″	1/4″	4224A12 11.61
12″	1 5/32″	9/32″	4224A13 15.46
14″	1 11/32″	5/16″	4224A14 20.83

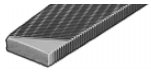

Hand File Sets

5-Piece Set with Wood File Handles

13-Piece Set with Wood File Handles

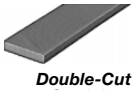

Double-Cut Straight

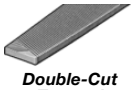

Double-Cut Tapered

Double-Cut Thin-Tapered

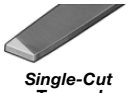

Single-Cut Tapered

Half-Round

Round

Double-Cut Triangular

Single-Cut Triangular

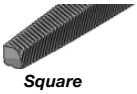

Square

Knife

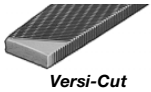

Versi-Cut

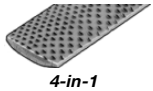

4-in-1 File/Rasp

The popular ones always travel together. Each set is made up of some of our popular files packaged in a canvas roll pouch, unless noted.

3-Piece Welders' File Set— Includes one each of the following files (canvas roll pouch is not included):
10″ single-cut tapered file, fine cut
12″ half-round file, coarse cut
14″ half-round single-cut file, coarse cut
Set without File Handles ..... **42255A11** **Per Set** $45.91

5-Piece Combination File Set— Includes one each of the following files:
8″ single-cut tapered file, coarse cut
8″ half-round file, coarse cut
8″ round file, coarse cut
8″ square file, coarse cut
8″ versi-cut file
Set with Wood File Handles ..... **8181A12** **Per Set** $50.90

5-Piece Combination File Set with Ergonomic Handles— Includes one each of the following files with rubber-coated ergonomic file handle, furnished in a plastic pouch:
8″ double-cut tapered file, coarse cut
8″ single-cut tapered file, coarse cut
10″ single-cut tapered file, coarse cut
10″ half-round, coarse cut file
6″ single-cut triangular file
Set with Ergonomic Cushion File Handles .... **8181A21** **Per Set** $59.37

6-Piece Medium-Cut Combination File Set— Includes one each of the following medium-cut files furnished in a metal case:
4″ double-cut straight file
4″ double-cut tapered file
4″ half-round file
4″ round file
4″ double-cut triangular file
4″ square file
Set with Wood File Handles ..... **8171A11** **Per Set** $45.27

6-Piece Fine-Cut Combination File Set— Includes one each of the following fine-cut files:
4″ double-cut tapered file
4″ double-cut thin-tapered file
4″ half-round file
4″ round file
4″ single-cut triangular file
4″ square file
Set without File Handles ..... **8192A11** **Per Set** $52.02
Set with Wood File Handles ..... **8192A12** **Per Set** $55.89

6-Piece Rectangular and Half-Round File Set— Includes one each of the following files:
10″ double-cut tapered file, coarse cut
10″ double-cut tapered file, medium cut
10″ double-cut tapered file, fine cut
10″ half-round file, coarse cut
10″ half-round file, medium cut
10″ half-round file, fine cut
Set with Wood File Handles ..... **42415A41** **Per Set** $86.02

9-Piece Combination File Set— Includes one each of the following files and a file cleaner:
10″ double-cut tapered file, coarse cut
10″ double-cut tapered file, fine cut
10″ single-cut tapered file, coarse cut
10″ half-round file, coarse cut
10″ round file, coarse cut
7″ single-cut triangular file
10″ square file, coarse cut
10″ 4-in-1 file/rasp
Set without File Handles ..... **8173A11** **Per Set** $94.84
Set with Wood File Handles★ ..... **8173A12** **Per Set** $101.98
★ The 4-in-1 file/rasp does not have a handle.

10-Piece Combination File Set— Includes one each of the following files:
10″ double-cut tapered file, coarse cut
10″ double-cut tapered file, medium cut
10″ half-round file, coarse cut
10″ half-round file, medium cut
10″ round file, coarse cut
10″ round file, medium cut
10″ square file, coarse cut
10″ square file, medium cut
6″ knife file, coarse cut
6″ knife file, medium cut
Set with Wood File Handles ..... **42415A43** **Per Set** $131.80

13-Piece Combination File Set— Includes one each of the following files and a file cleaner:
10″ double-cut tapered file, coarse cut
10″ double-cut tapered file, fine cut
10″ double-cut tapered file for aluminum
10″ single-cut tapered file, coarse cut
10″ single-cut tapered file, fine cut
10″ half-round file, coarse cut
10″ half-round file, fine cut
10″ round file, coarse cut
10″ round file, fine cut
8″ double-cut triangular file, medium cut
10″ square file, medium cut
10″ versi-cut file
Set without File Handles ..... **8176A11** **Per Set** $144.16
Set with Wood File Handles ..... **8176A12** **Per Set** $155.02

For information about hand files, see page 2618. For file handles, see page 2624.

Black-Oxide Hand Files

When durability is a necessity, black-oxide coating is the answer. These files resist clogging and rusting, and keep the sharp edge on their teeth better than other standard files.

Files

Lg.	Wd.	Thick.		Each
Rectangular Files—*Double Cut*				
Coarse Cut				
6″	19/32″	7/64″	42605A31	$6.29
8″	25/32″	9/64″	42605A32	7.90
10″	31/32″	11/64″	42605A33	9.76
12″	1 5/32″	7/32″	42605A34	13.38
14″	1 11/32″	5/16″	42605A35	18.35
Fine Cut				
6″	19/32″	7/64″	42605A36	7.98
8″	25/32″	9/64″	42605A37	9.32
10″	31/32″	11/64″	42605A38	12.29
12″	1 5/32″	7/32″	42605A39	16.74
Rectangular Files—*Single Cut*				
Coarse Cut				
6″	19/32″	7/64″	42605A62	4.33
8″	25/32″	9/64″	42605A63	5.08
10″	31/32″	11/64″	42605A64	6.62
12″	1 5/32″	7/32″	42605A65	10.83
14″	1 5/16″	1/4″	42605A66	14.71

Lg.	Wd.	Thick.		Each
Rectangular Files—*Single Cut (Cont.)*				
Medium Cut				
6″	19/32″	7/64″	42605A67	$6.22
8″	25/32″	9/64″	42605A68	7.00
10″	31/32″	11/64″	42605A69	8.98
Fine Cut				
6″	19/32″	7/64″	42605A71	6.58
8″	25/32″	9/64″	42605A72	7.76
10″	31/32″	11/64″	42605A73	9.54
Half-Round Files—*Double Cut*				
Coarse Cut				
6″	19/32″	5/32″	42605A41	9.52
8″	3/4″	7/32″	42605A42	11.54
10″	15/16″	9/32″	42605A43	14.31
12″	1 1/8″	11/32″	42605A44	18.35
14″	1 9/32″	13/32″	42605A45	23.92
Fine Cut				
6″	19/32″	5/32″	42605A46	11.20
8″	3/4″	7/32″	42605A47	13.66
10″	15/16″	9/32″	42605A48	16.35

Lg.	Wd.	Thick.		Each
Round Files—*Double Cut*				
Coarse Cut				
6″	7/32″	—	42605A53	$5.28
8″	5/16″	—	42605A54	6.12
10″	3/8″	—	42605A55	7.90
12″	1/2″	—	42605A56	10.87
Fine Cut				
6″	7/32″	—	42605A57	6.63
8″	5/16″	—	42605A58	7.90
Triangular Files—*Double Cut*				
Coarse Cut				
6″	7/16″	—	42605A59	8.84
8″	5/8″	—	42605A61	10.57
Knife Files—*Double Cut*				
Coarse Cut				
6″	11/16″	3/64″-11/64″	42605A49	11.92
8″	7/8″	3/64″-13/64″	42605A51	14.22

File Sets—Furnished in a cloth pouch.

5-Piece Combination File Set—Includes one each of the following coarse-cut files with an ergonomic rubber handle:

8″ single-cut rectangular file with chipbreakers
8″ single-cut rectangular file
8″ double-cut half-round file
8″ double-cut round file
8″ double-cut square file

42605A81 ..... **Per Set** $58.69

9-Piece Combination File Set—Includes one each of the following files with an ergonomic rubber grip handle (unless noted). All are coarse cut, unless otherwise stated:

10″ all-purpose rectangular file, one side double cut, one side single cut, with integrated handle
10″ double-cut rectangular file
10″ single-cut rectangular file with chipbreakers
10″ single-cut rectangular file
10″ single-cut rectangular file, fine cut
10″ single-cut half-round file with chipbreakers
10″ double-cut half-round file
10″ double-cut round file
6″ double-cut slim-taper file

42605A82 ..... **Per Set** 95.51

Smooth-Finish Milled-Tooth Hand Files

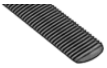

Half-Round

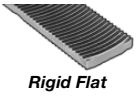

Rigid Flat

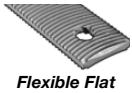

Flexible Flat

Two-Hand File Holder

Also known as auto body files, these tools have large, knife-like teeth that leave smooth, groove-free surface finishes and provide easy chip clearance. For use on sheet steel, aluminum, cast iron, bronze, lead, and plastics. All have tangs, unless noted. ***Half-round file*** is for concave surfaces and bearings. ***Flexible flat files*** have no tangs. The 14″ files fit the ***two-hand file holder*** (sold separately).

Lg.	Wd.	Thick.	Teeth Per Inch		Each
Half-Round File					
8″	11/16″	7/32″	14	4325A11	$22.71
Rigid Flat Files					
8″	25/32″	11/64″	14	4282A11	18.33
10″	1″	7/32″	12	4282A12	21.33
12″	1 5/32″	17/64″	10	4282A13	26.66
14″	1 11/32″	5/16″	8	4282A14	31.65
Flexible Flat Files					
12″	1 9/64″	3/16″	10	4283A14	36.55
14″	1 11/32″	3/16″	8	4283A15	38.66
14″	1 11/32″	11/64″	12	4283A16	47.43

Two-Hand File Holder for 4283A15 and A16 ..... 4316A12 **Each** $58.53

Electrical Contact Hand File

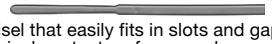

With a small chisel that easily fits in slots and gaps, this file is ideal for renewing electrical contact surfaces such as spark plugs, ignition points, and magnetos. File is also especially useful for dressing points tipped with platinum, tungsten, and similar metals. File is double cut and 0.044″ thick. Overall length is 5 1/4″. Width is 5/16″.

4275A2 ..... **Each** $4.98

Three-in-One Hand File

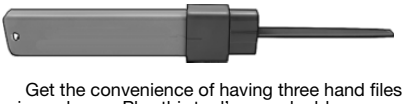

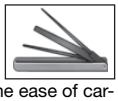

Get the convenience of having three hand files with the ease of carrying only one. Plus this tool's case doubles as a comfortable handle. All files have a black-oxide coating for extra durability. Tool includes three 6″ coarse-cut files in the following shapes: flat, round, and square.

42525A7 ..... **Each** $26.28

Integrated Handle Black-Oxide Hand Files

The built-in handle allows you to safely use these files without having to spend money on a separate file holder. The black-oxide coating resists clogging and rust and helps the teeth stay sharper for longer.

Combination Files—Untapered with coarse teeth, one side is double cut for fast removal and one side is single cut for smoother finishes.

Versi-Cut Rectangular File—The coarse teeth remove metal quickly, while the chipbreaking tooth pattern leaves a smooth finish. File tapers toward the point for detail work.

	Lg.	Wd.	Thick.		Each
Combination File	8″	31/32″	3/16″	42405A45	$12.16
Combination File	10″	31/32″	3/16″	42405A44	15.27
Flat, Coarse-Cut File	10″	31/32″	3/16″	42405A42	11.73
Versi-Cut Rectangular File	10″	31/32″	3/16″	42405A41	13.34
Mill, Coarse-Cut File	10″	31/32″	3/16″	42405A43	10.64

3-Piece File Set—Consists of one each 10″ mill, 10″ flat, and 10″ versi-cut rectangular file in a canvas pouch.

42405A46 ..... **Per Set** $43.02

Hand Files for Laminates and Plastics

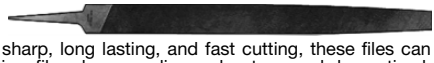

Extra sharp, long lasting, and fast cutting, these files can be used on plastics, fiberglass, acrylics, polyesters, and decorative laminates. Ideal for edge finishing.

			Coarse Cut	***Fine Cut***
Lg.	Wd.	Thick.	Each	Each
8″	25/32″	9/64″	—	8189A11 $11.52
10″	31/32″	11/64″	8189A15 $20.80	8189A12 15.61
12″	1 5/32″	7/32″	8189A16 27.81	8189A13 21.23
14″	1 11/32″	5/16″	8189A17 37.42	8189A14 30.48

Rectangular and Half-Round Files for Aluminum

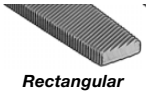

Rectangular

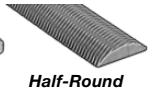

Half-Round

Specially designed teeth prevent shavings from clogging these files, making them ideal for work on aluminum and soft metals. Files are tapered and double cut.

	Rectangular Files			***Half-Round Files***		
Lg.	Wd.	Thick.	Each	Wd.	Thick.	Each
8″	3/4″	3/16″	4218A12 $12.09	3/4″	7/32″	4218A16 $10.76
10″	31/32″	1/4″	4218A13 11.25	15/16″	9/32″	4218A17 14.33
12″	1 5/32″	9/32″	4218A14 13.32	1 1/8″	11/32″	4218A18 20.23

For information about hand files, see page 2618. For file handles, see page 2624.

Precision Hand Files

Rectangular | Half-Round | Round-Tapered | Triangular | Thin-Tapered

Manufactured to precise production standards, these files, also known as Swiss-pattern files, offer better accuracy and finer results than regular hand files.

Rectangular Files— Also known as regular pillar files, they are similar to hand files, but only ⅔ as wide. Great for general purpose filing on flat surfaces as well as filing slots, keyways, and other narrow work. Sides are double cut and edges are plain (without teeth).

Half-Round Files— Use for filing flat and curved surfaces, holes, and corners. Tapered to a point in both width and thickness and double cut.

Round-Tapered Files— Use these files for enlarging holes and rounding off radii. Files are tapered gradually in length to a fine point and are double cut.

Triangular Files— Use for filing corners, angles, grooves, notches, and other areas where a sharp edge must be held. Files have a 60° angle, are tapered to a point, and are double cut on all sides.

Thin-Tapered Files— Also known as warding files. Use in narrow spaces where other files won't fit. The width is tapered slightly to a point. Sides are double cut and edges are single cut.

Cut No.	4″ Long Size		Each	6″ Long Size		Each	8″ Long Size		Each
Rectangular Files									
00	3/8″ Wd. × 7/64″ Thick.	4251A18	$11.57	15/32″ Wd. × 9/64″ Thick.	4251A26	$13.22	5/8″ Wd. × 13/64″ Thick.	4251A34	$17.61
0	3/8″ Wd. × 7/64″ Thick.	4251A19	11.57	15/32″ Wd. × 9/64″ Thick.	4251A27	13.22	5/8″ Wd. × 13/64″ Thick.	4251A35	17.61
1	—		—	15/32″ Wd. × 9/64″ Thick.	4251A28	13.55	19/32″ Wd. × 13/64″ Thick.	4251A36	21.26
2	3/8″ Wd. × 7/64″ Thick.	4251A22	11.57	15/32″ Wd. × 9/64″ Thick.	4251A29	13.55	5/8″ Wd. × 13/64″ Thick.	4251A37	18.80
4	3/8″ Wd. × 7/64″ Thick.	4251A23	13.22	15/32″ Wd. × 9/64″ Thick.	4251A31	15.78	19/32″ Wd. × 13/64″ Thick.	4251A38	25.77
Half-Round Files									
00	15/32″ Wd. × 9/64″ Thick.	4248A21	21.50	19/32″ Wd. × 3/16″ Thick.	4248A26	27.37	3/4″ Wd. × 3/16″ Thick.	4248A34	34.73
0	15/32″ Wd. × 9/64″ Thick.	4248A22	23.50	35/64″ Wd. × 1/8″ Thick.	4248A27	25.02	3/4″ Wd. × 3/16″ Thick.	4248A35	34.73
1	—		—	35/64″ Wd. × 1/8″ Thick.	4248A28	28.00	3/4″ Wd. × 3/16″ Thick.	4248A36	38.77
2	15/32″ Wd. × 9/64″ Thick.	4248A23	25.58	35/64″ Wd. × 1/8″ Thick.	4248A29	29.44	13/16″ Wd. × 15/64″ Thick.	4248A37	43.20
3	15/32″ Wd. × 9/64″ Thick.	4248A24	27.02	35/64″ Wd. × 1/8″ Thick.	4248A31	30.88	13/16″ Wd. × 15/64″ Thick.	4248A38	35.46
4	15/32″ Wd. × 9/64″ Thick.	4248A25	28.35	35/64″ Wd. × 1/8″ Thick.	4248A32	32.48	13/16″ Wd. × 15/64″ Thick.	4248A39	52.41
Round-Tapered Files									
00	5/32″ Dia.	4256A18	11.49	3/16″ Dia.	4256A26	14.09	1/4″ Dia.	4256A41	20.36
0	1/8″ Dia.	4256A19	12.53	3/16″ Dia.	4256A27	14.09	5/16″ Dia.	4256A35	17.18
1	—		—	1/4″ Dia.	4256A28	16.03	1/4″ Dia.	4256A36	21.56
2	5/32″ Dia.	4256A22	14.04	3/16″ Dia.	4256A29	15.53	1/4″ Dia.	4256A37	21.56
4	5/32″ Dia.	4256A24	21.60	1/4″ Dia.	4256A32	19.67	1/4″ Dia.	4256A39	22.65
Triangular Files									
00	9/32″ Wd.	4258A17	16.96	3/8″ Wd.	4258A24	18.59	1/2″ Wd.	4258A31	27.78
0	9/32″ Wd.	4258A18	17.26	3/8″ Wd.	4258A25	17.78	1/2″ Wd.	4258A32	25.12
1	—		—	3/8″ Wd.	4258A26	20.12	1/2″ Wd.	4258A33	26.71
2	9/32″ Wd.	4258A21	17.60	11/32″ Wd.	4258A27	18.39	1/2″ Wd.	4258A34	27.19
Thin-Tapered Files									
00	1/2″ Wd. × 3/64″ Thick.	4259A15	14.78	5/8″ Wd. × 5/64″ Thick.	4259A18	19.32	25/32″ Wd. × 5/64″ Thick.	4259A23	22.53
0	1/2″ Wd. × 3/64″ Thick.	4259A16	14.44	5/8″ Wd. × 1/16″ Thick.	4259A19	16.60	7/8″ Wd. × 7/64″ Thick.	4259A24	28.00
2	29/64″ Wd. × 3/64″ Thick.	4259A17	13.78	5/8″ Wd. × 1/16″ Thick.	4259A21	19.04	7/8″ Wd. × 7/64″ Thick.	4259A25	30.14

Precision Hand File Sets

When one just won't cut it, try buying sets of some of our most popular precision hand files.

5-Piece 8½″ File Sets— For in-between jobs that are too big for needle files, but require finer control and better finish than larger, heavier files. Files have a built-in handle. Length of cut is 4″. Sets come in a vinyl pouch and include one each of the following: rectangular, half-round, round, triangular, and square files.

		Per Set
Cut No. 00 File Set	8194A11	$74.07
Cut No. 1 File Set	8194A12	74.32

6-Piece 6″ File Sets— These standard files with tangs are double cut and come in a plastic pouch. Sets include one each of the following: rectangular, half-round, round-tapered, knife, triangular, and thin-tapered files.

		Per Set
Cut No. 0 File Set	42365A21	$77.60
Cut No. 2 File Set	42365A22	89.00

Bendable Precision Needle Files

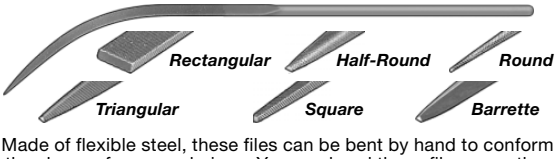

Made of flexible steel, these files can be bent by hand to conform to the shape of your workpiece. You can bend these files more than 100 times before they will break. All files are Cut No. 2 and have a 1/8″ dia. handle. Overall length is 6¼″.

Shape		Each	Shape		Each
Rectangular	8178A21	$31.38	Triangular	8178A25	$31.38
Half-Round	8178A23	31.38	Square	8178A24	31.38
Round	8178A22	31.38	Barrette	8178A26	31.38

6-Piece File Set— Includes one each of the files listed above in a vinyl pouch.

8178A31 ..... **Per Set** $132.35

Files for Stainless Steel

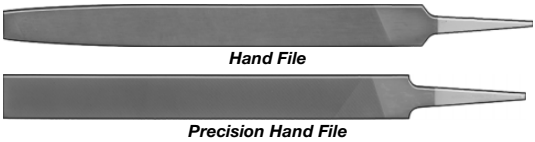

Hand File

Precision Hand File

Rectangular | Half-Round | Round | Triangular | Square

Coated to eliminate corrosive residue on the workpiece, these files also resist clogs and are ideal for use on stainless steel and other hard-to-file metals. Surface hardness is Rockwell 72 HRC. Files are double cut. Choose from hand files, also known as American-pattern files, and precision hand files, also known as Swiss-pattern files.

Lg.	Wd.	Thick.	Hand Files Cut		Each	Precision Hand Files Cut No.		Each
Rectangular								
6″	5/8″	5/32″	Coarse	8248A11●	$9.45	00	8184A11●	$19.31
6″	5/8″	5/32″	Med.	8248A12●	10.21	0	8184A12●	19.77
8″	25/32″	7/32″	Coarse	8248A13●	13.03	00	8184A31●	26.77
8″	25/32″	7/32″	Med.	8248A14●	14.05	0	8184A32●	28.04
8″	25/32″	7/32″	Fine	8248A15●	14.78	2	8184A33●	31.40
Half-Round								
6″	19/32″	5/32″	Med.	8248A16	20.78	0	8184A13	32.78
8″	3/4″	7/32″	Fine	8248A17	18.38	2	8184A14	47.77
Round								
8″	5/16″ Dia.	—	Med.	8248A18	15.08	0	8184A15	22.17
8″	5/16″ Dia.	—	Fine	8248A19	14.04	2	8184A16	24.97
Triangular								
8″	5/8″	—	Med.	8248A21	18.47	0	8184A17	29.90
8″	5/8″	—	Fine	8248A22	16.09	2	8184A18	32.35
Square								
6″	7/32″	—	Med.	8248A23	14.63	0	8184A19	19.77
6″	7/32″	—	Fine	8248A24	10.97	2	8184A21	22.00

● One edge is plain.

Precision & Diamond Hand Files

For information about hand files, see page 2618. For file handles, see page 2624.

Precision Needle Files

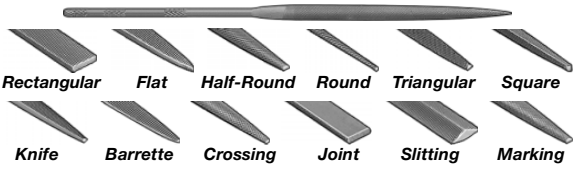

The small tips of these files allow you to get into tight spots. Buy them individually or in sets. All shapes taper to the point, except rectangular, joint, and slitting. Files have 1/8″ dia. round knurled handles.

Standard Needle Files and File Sets— Individual files are 6¼″ long. Sets contain one of each shape illustrated above in a plastic pouch. In the 4″ length, an oval file replaces the crossing file.

Economy Needle File Sets— Contain one of each file shape illustrated above. Sets include a plastic pouch.

Standard Needle Files

Shape	Wd., mm	Cut No. 0	Cut No. 2	Cut No. 4	Each
Rectangular	5.6	4261A57	4261A58	4261A59	$12.94
Flat	5.6	4261A35	4261A36	4261A37	12.94
Half-Round	6.0	4261A31	4261A32	4261A33	12.94
Round	3.0 Dia.	4261A26	4261A27	4261A28	12.94
Triangular	4.0	4261A53	4261A54	4261A55	12.94
Square	2.8	4261A48	4261A49	4261A51♠	12.94
Knife	5.6	4261A44	4261A45	4261A46■	12.94
Barrette	5.2	4261A62	4261A63	4261A64	12.94
Crossing	5.2	4261A39	4261A41	4261A42	12.94
Joint	5.6	4261A66	4261A67	4261A68	13.39
Slitting	6.1	4261A71♦	4261A74	4261A73	12.94
Marking	5.6	4261A75	4261A76	4261A77	13.39

♠2.4 mm Wd. ■ 5.2 mm Wd. ♦6.4 mm Wd.

12-Piece Needle File Sets

Cut No.	4″ Long	Per Set	5½″ Long	Per Set	6¼″ Long	Per Set
Standard Sets						
0	4261A11	$135.26	4261A16	$137.88	4261A22	$150.43
2	4261A12	135.26	4261A17	137.88	4261A23	150.43
4	____	____	4261A18	137.88	4261A24	150.43
6	____	____	____	____	4261A25	150.43
Economy Sets						
0	____	____	8174A41	18.00	8174A45	20.00
2	____	____	8174A42	18.00	8174A46	20.00
4	____	____	____	____	8174A47	20.00

Integrated-Handle Diamond File

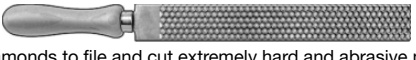

Use diamonds to file and cut extremely hard and abrasive materials. File is nickel plated to resist rust. Cuts carbide, hardened steel, ceramics, glass, reinforced plastic, tungsten, composites, and hard alloys.

File has a coarse 100 grit side for fast material removal and a fine 220-240 grit side for finishing. Edges are plain. Handle is hardwood. Diamond surface length is 8″; overall size is 13″ Lg.×1″ Wd.×0.25″ Thick.

42345A11 ..... **Each** $64.93

Precision Detail Files

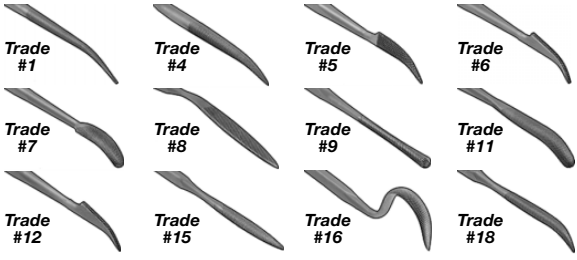

Also known as riffler files, these tools are made in a variety of shapes for reaching into the smallest nooks and crannies. Use in die and mold finishing, delicate instrument work, and for other fine filing jobs. Files are double ended with a smooth portion in the middle for a comfortable handhold. All files are 6″ long. Choose from Cut No. 0 and Cut No. 2.

Note: Simonds trade numbers are preceded by the letters "DS."

Trade Numbers: Nicholson and Simonds	Grobet	Wd.	Cut No. 0	Each	Cut No. 2	Each
#1	ZA981	0.122″ Dia.	4278A24	$25.67	4278A25	$25.67
#4	ZA961	0.175″	4278A27	33.56	4278A28	33.56
#5	ZA955	0.192″	4278A31	42.71	4278A32	42.71
#6	ZA956	0.058″	4278A34	28.80	4278A35	28.80
#7	ZA965	0.200″	4278A37	25.67	4278A38	25.67
#8	ZA964	0.183″	4278A41	25.67	4278A42	25.67
#9	ZA982	0.122″ Dia.	4278A44	25.67	4278A45	25.67
#11	ZA963	0.183″	4278A47	35.36	4278A48	35.36
#12	ZA957	0.048″	4278A51	32.16	4278A52	32.16
#15	ZA973	0.150″	4278A54	28.51	4278A55	28.51
#16	ZA975	0.150″	4278A57	28.51	4278A58	28.51
#18	ZA972	0.153″	4278A61	29.60	4278A62	29.60

12-Piece File Sets— Contain one of each of the 12 shapes illustrated above. Furnished in a vinyl pouch.

Cut No. 0 ..... 4278A1 **Per Set** $282.28
Cut No. 2 ..... 4278A2 **Per Set** 282.28

Wide-Face Diamond Files

File with Holder (Sold Separately)

Both thin and wide, these files are ideal for working in small slots and other narrow spaces. ***File holder*** is required and sold separately.

Diamond Surface, mm	Grit	File Thick., mm		Each
15×15	170/200	1.0	8142A11	$14.95
15×15	120/140	1.2	8142A12	14.95
25×25	170/200	1.0	8142A13	24.98
25×25	120/140	1.2	8142A14	24.98

File Holder ..... 8142A21 **Each** $44.26

5-Piece Set— Includes one each of the files listed above and one holder. Furnished in a plastic case.

8142A31 ..... **Per Set** $125.37

Diamond Hand Files

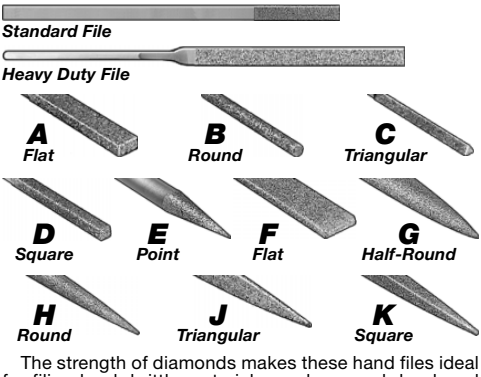

The strength of diamonds makes these hand files ideal for filing hard, brittle materials, such as work-hardened steels, ceramics, carbides, plastics, and composites.

Standard Files— All have a 1½″ long diamond surface (unless noted). Overall length is 6″.

Heavy Duty Files— Diamond surface is 4 5/16″ long; overall length of each file is 8⅝″.

Files

Wd.	Thick.	Coarse Cut (80/100 Grit)	Each	Medium Cut (120 Grit)	Each	Fine Cut (220 Grit)	Each
Standard Files							
A 0.250″	0.125″	____	____	8168A32	$25.51	8168A22	$25.51
A 0.375″	0.125″	____	____	8168A33	25.51	8168A23	25.51
B 0.125″ Dia.	____	____	____	8168A34	25.51	8168A24	25.51
C 0.125″	____	____	____	8168A35	25.51	8168A25	25.51
D 0.125″	____	____	____	8168A31	25.51	8168A21	25.51
E 0.125″	____	____	____	8168A36★	21.41	8168A26★	21.41
E 0.250″	____	____	____	8168A37★	23.21	8168A28★	23.21
Heavy Duty Files							
F 0.409″	0.110″	4243A24	$51.07	4243A22●	51.07	____	____
G 0.496″	0.154″	4243A34	51.07	4243A32●	51.07	____	____
H 0.268″ Dia.	____	4243A44	35.65	4243A42●	35.65	____	____
J 0.382″	____	4243A64	56.80	4243A62●	56.80	____	____
K 0.240″	____	4243A54	45.22	4243A52●	45.22	____	____

★ Diamond surface is on the taper only and ½″-⅞″ long. ● 120/140 grit.

File Sets

Standard 6-Piece Sets— Include one of each standard file listed above (except the 0.250″ wide style E) in a vinyl pouch.

Medium ..... 8168A38 **Per Set** $120.19
Fine ..... 8168A27 **Per Set** $120.19

Heavy Duty 5-Piece Sets— Include one of each heavy duty file above. Furnished in a vinyl pouch.

Coarse ..... 4243A72 **Per Set** $217.84
Medium ..... 4243A71 **Per Set** $217.84

For information about hand files, see page 2618. For file handles, see page 2624.

Diamond Needle Files

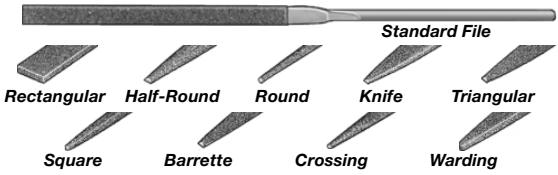

Small, diamond-covered tips make these files excellent for detailed work on carbide, hardened steel, ceramic, glass, and other hard-to-machine materials. Grades—*Coarse:* 80/100 grit. *Medium:* 120/140 grit. *Fine:* 170/200 grit. All shapes except rectangular are tapered to a point. Files have diamonds on all surfaces except the standard barrette, which has diamonds on only one side.

Standard Files— Have a diamond surface length of approximately 2¾″. Overall length is 5½″. Shank diameter is ⅛″.

Miniature Files— Also called escapement files. Diamond surface is 1⁹⁄₁₆″ long; overall length is 5½″.

Files

Shape	Wd., mm	Thick., mm	Coarse Cut	Medium Cut	Fine Cut	Each
Standard						
Rectangular	5.1	1.4	4279A18	4279A9	4279A1	$17.91
Half-Round	5.4	1.9	4279A19	4279A12	4279A2	17.91
Round	3.0 Dia.	—	4279A22	4279A15	4279A5	17.91
Knife	5.4	1.6	4279A23	4279A16	4279A6	17.91
Triangular	3.9	—	4279A21	4279A13	4279A3	17.91
Barrette	5.0	1.7	4279A39	4279A38	4279A37	17.91
Warding	5.2	1.4	4279A43	4279A42	4279A41	17.91
Miniature						
Rectangular	3.9	1.1	4252A36	4252A35	4252A34	18.78
Half-Round	4.3	1.8	4252A56	4252A55	4252A54	18.78
Round	1.7 Dia.	—	4252A26	4252A25	4252A24	18.78
Triangular	3.1	—	4252A46	4252A45	4252A44	18.78
Square	2.0	—	4252A66	4252A65	4252A64	18.78
Barrette	3.9	1.4	4252A86	4252A85	4252A84	18.78
Crossing	4.2	1.8	4252A76	4252A75	4252A74	18.78

6-Piece Standard File Sets

Include one each of the following files: rectangular, half-round, round, triangular, square, and crossing. Sets come in a vinyl case.

Coarse (80/100 Grit) File Set	4330A13	Per Set	$99.31
Medium (120/140 Grit) File Set	4330A12	Per Set	$99.31
Fine (170/200 Grit) File Set	4330A11	Per Set	$99.31

File Cleaners

File Cleaner

File Cleaner with Brush

Also known as file cards, these file cleaners have sharp steel bristles that clear metal shavings and other debris from the teeth of your files. Offered with and without a polypropylene bristle brush on the flip side for cleaning fine-cut files.

	O'all Lg.		Each 1-11	Each 12-Up
File Cleaner Only	8¼″	4332A12	$4.68	$3.90
File Cleaner with Brush	10″	4333A14	7.12	5.70

Tungsten Carbide Grit Hand Files

Loaded on both sides with tungsten carbide, which is second to only diamonds in hardness, these files outlast standard files by up to 100 times. Tungsten carbide is bonded onto the steel body. All files are 60 grit.

Shape	Lg.	Wd.	Thick.		Each
Flat	8″	¼″	⅛″	81725A11	$13.89
Flat	8″	½″	⅛″	81725A12	15.00
Flat	10″	½″	⅛″	81725A13	16.53
Flat	10″	¾″	⅛″	81725A14	24.02
Flat	10″	1″	⅛″	81725A15	24.00
Flat	12″	½″	⅛″	81725A16	24.49
Half-Round	6″	⅝″	15⁄64″	81725A19	23.27
Half-Round	8″	13⁄16″	9⁄32″	81725A21	23.27
Round	8″	1⁄16″ Dia.	—	81725A17	13.89
Round	8″	⅛″ Dia.	—	81725A18	13.89

Integrated-Handle Tungsten Carbide Grit Files

Tough and durable but easy on your hands. These files last longer than standard files and have an integrated plastic handle for a sure grip. Files are flat and made of carbide grit bonded to both sides and edges. ***Combination file*** has a 46 grit surface on one side and 80 grit on the other side. ***Heavy duty file*** has a 24 grit surface on both sides.

	Lg.	Wd.	Thick.		Each
Combination	14″	1″	⅛″	4337A11	$25.23
Heavy Duty	14″	1″	3⁄16″	4337A12	30.40

Tungsten Carbide Grit Needle Files

Second only to diamonds in hardness, these tungsten carbide files provide nearly the same results as diamond needle files but at a lower cost. Ideal for precise detailed work. Use on a variety of hard and soft materials including wood, plastic, glass, ceramic, acrylic, stone, marble, and Kevlar. Files consist of medium 280-grit tungsten carbide metallurgically bonded onto steel blanks.

6-piece sets include the five file shapes plus one file handle.

To Order: For individual files, please specify shape: rectangular, round, knife, triangular, or square.

Shank Dia.	O'all Lg.		Files Each	6-Piece Sets Per Set
⅛″	5½″	4288A4	$12.51	4288A16 $55.09
3⁄16″	7⅛″	4288A5	14.51	4288A26 63.29

Rasps

With their sharp, raised teeth, these rasps can aggressively file soft, clog-prone materials better than regular files. Use on wood, leather, plastic, and soft metals.

A Flat Fast-Cut Rasp— Has rasp teeth on one side, double-cut file teeth on the other, and single-cut file teeth on the edges. Also has sharper teeth than deep-cut rasps.

B Flat Deep-Cut Rasp— Has rasp teeth on one side, double-cut file teeth on the other, and single-cut file teeth on the edges. Also has narrow chipbreaker teeth.

C Double-Ended Flat Rasp— Has rasp teeth on both ends of one side, double-cut file teeth on both ends of the other side, and single-cut file teeth on the edges.

D Half-Round Coarse-Cut Rasps— Have single-cut file teeth on the edges.

E Half-Round Medium-Cut Rasps— Have single-cut file teeth on the edges and a flatter curve than standard half-round rasps.

F Double-Ended Half-Round Rasps— Also called shoe rasps. Each side has rasp teeth on one end and double-cut file teeth on the other. Edges are plain.

G Round Coarse-Cut Rasp— Has a slightly tapered, slim round shape and a square tang.

	Lg.	Wd.	Thick.		Each
A	14″	1¾″	9⁄32″	42355A11	$24.43
B	14″	1¾″	9⁄32″	42355A12	24.43
C	14″	1½″	⅜″	4277A14	20.24
D	8″	¾″	23⁄64″	4239A12	11.26
D	10″	31⁄32″	27⁄64″	4239A14	15.35
D	12″	1 3⁄32″	7⁄16″	4239A16	23.70
E	10″	1⅛″	9⁄32″	4239A18	$19.35
E	12″	1 11⁄32″	⅜″	4239A19	24.80
F	8″	⅞″	¼″	4263A1	9.70
F	10″	1 1⁄16″	5⁄16″	4263A3	12.28
G	10″	⅜″ Dia.	—	4285A31	19.52

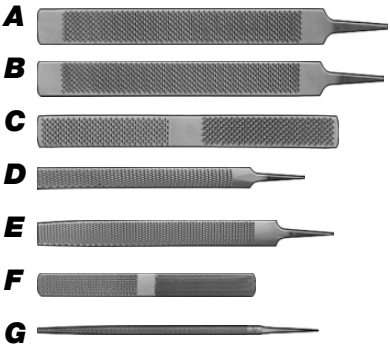

File Handles

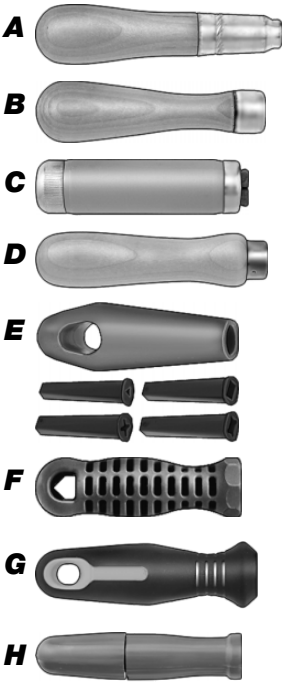

Attach these handles to files to enjoy both comfort and ease of use when filing.

A Long-Ferrule File Handles—These top-quality hardwood handles have a heavy-gauge steel ferrule.

B Screw-On File Handles—A threaded steel insert securely holds the file and prevents these hardwood handles from splitting. Ferrule is heavy-gauge steel.

C All-Purpose File/Tool Handle—Just turn the bottom knob to lock and unlock the gripping jaws. The chuck-style jaws grip files as well as oval- and round-shank tools. Handle is made of plastic.

D Short-Ferrule File Handles—These economical hardwood handles have a metal ferrule and securely hold the file.

E Insert-a-Grip File Handle—This comfortable, molded handle has four interchangeable inserts. Handle is made of tough, durable plastic with a textured finish.

F Ergonomic File Handles—These plastic handles are designed to fit the natural contour of your hand. Air vents absorb hand moisture.

G Rubber-Coated Ergonomic File Handle—The rubber coating and shape of the handle provides comfort and control. Cushion inserts provide a strong grip.

H Needle-File Handle—Twist the upper and lower halves to open, then twist back to clamp the file and lock it in place. Accepts round handles 3 mm (1/8″) in diameter. Handle is made of plastic.

For Files	Handle Lg.		Each
(A) Long-Ferrule File Handles			
3″- 6″ Long	4″	4318A1	$1.66
6″- 8″ Long	4 1/2″	4318A2	1.79
8″-12″ Long	5″	4318A3	2.18
12″-16″ Long	5 1/2″	4318A4	2.41
16″-20″ Long	6″	4318A5	2.63
(B) Screw-On File Handles			
Up to 4″ Long	3 1/2″	4322A1	1.78
4″ Long	3 1/2″	4322A2	1.78
5″ Long	4″	4322A3	1.88
6″ Long	4″	4322A4	1.88
8″ Long	4 1/2″	4322A5	2.22
10″ Long	4 1/2″	4322A6	2.22
12″ Long	5″	4322A7	2.39
14″ Long	5″	4322A8	2.39
(C) All-Purpose File/Tool Handle			
Up to 14″ Long	4 1/8″	4255A12	7.37

For Files	Handle Lg.		Each
(D) Short-Ferrule File Handles			
3″ - 4″ Long	3 1/2″	4320A51	$0.79
4″ - 6″ Long	4″	4320A52	.89
6″ - 8″ Long	4 1/4″	4320A53	.97
8″ -10″ Long	4 3/4″	4320A54	1.02
10″ -14″ Long	5″	4320A55	1.12
(E) Insert-A-Grip File Handle			
6″ -10″ Long	4″	8163A11	3.73
(F) Ergonomic File Handles			
4″ - 6″ Long	3 1/2″	42215A11	2.66
8″ -10″ Long	4 23/64″	42215A12	2.76
12″ -16″ Long	4 3/4″	42215A13	3.00
(G) Rubber-Coated Ergonomic File Handle			
6″ -10″ Long★	4 1/2″	42215A21	3.88
(H) Needle-File Handle			
5 1/2″- 8″ Long★	3 3/4″	42215A24	3.84

★ Fits most files with these lengths.

Air-Powered Filing and Finishing Tools

Their reciprocating action and vibration-free design keep the strain off your arms while providing quick results. Both tools have a 1/4″ NPT female air inlet. They come with four round-shank files (flat, half round, round, and triangular) plus a 3/8″ air hose and hex wrench.

Economy—For light, intermittent use. Recommended operating pressure is 90 psi; air consumption is 4 cfm; weighs 2.25 lbs.

Heavy Duty—For heavy, continuous use. Recommended operating pressure is 85 psi; air consumption is 8.5 cfm; weighs 2.4 lbs.

Tools

	Strokes per Minute	Stroke Lg.	O'all Lg.	Shank Dia.		Each
Economy	9,000	1/4″	7″	1/4″	42185A21	$140.42
Heavy Duty	3,700	23/64″	6 27/32″	3/16″	4231A26	267.46

Replacement Files for Economy Tool

Shape	Lg.	Wd.	Thick.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Rectangular	4 5/32″	3/8″	1/8″	3	42185A51	$7.63	$6.10
Half-Round	4 5/32″	3/8″	1/8″	3	42185A54	8.75	7.00
Round	4 3/16″	1/4″ Dia.	—	3	42185A52	7.63	6.10
Triangular	4 3/16″	1/4″	1/4″	3	42185A53	7.63	6.10

Replacement Files for Heavy Duty Tool

Shape	Lg.	Wd.	Thick.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Rectangular	4 1/8″	5/16″	1/8″	5	4231A34	$7.63	$6.10
Half-Round	4 1/8″	5/16″	1/8″	5	4231A33	8.75	7.00
Round	4 1/8″	7/32″ Dia.	—	5	4231A31	7.63	6.10
Triangular	4 1/8″	1/4″	1/4″	5	4231A32	7.63	6.10

Accessories

		Each
Rounded-Tip Rubber Sanding Pad with 13/16″ Wd. × 2 11/16″ Lg. Sanding Surface	4231A35 ♦	$10.00
Sanding Pad Mandrel	4231A37	17.75

♦ Must be used with 4231A37 mandrel.

Disposable Economy Deburring Tool

Blade swivels 360° to remove burs from steel and aluminum. Overall length is 5 1/2″.

4286A14 ..... **Each** 1-9 $3.64 10-Up $3.09

Quick-Change Hex Shank Deburring Bits

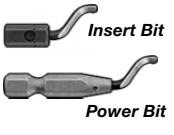

The 1/4″ hex body allows you to easily change bits. Use the ***insert bit*** with hand screwdriver bit holders and the ***power bit*** with power tools. Made from high-speed steel, these bits swivel to follow the edges and contours of your workpiece. Hex body is made of steel.

	Blade Lg.	O'all Lg.		Each
1/4″ Hex Insert Bit	1/2″	1 1/8″	7811A18	$2.83
1/4″ Hex Power Bit	1/2″	1 3/4″	7811A19	2.83
Hand Driver for Insert Bit			7811A21	8.36

Small Hole Deburring Tools

Debur the front and back edges of a hole with just one tool. Pivoting, triangular-shaped blades give these tools added versatility. They have an all-steel body with an aluminum push-button that reverses the blades. Blades are high-speed steel and cut clockwise and counterclockwise.

Hole Dia. Range	O'all Lg.	*Deburring Tools*	Each	*Repl. Blades*	Each
0.118″-0.217″	3 3/8″	7815A21	$17.96	7815A41	$8.70
0.197″-0.394″	4 3/4″	7815A22	17.96	7815A42	9.42
0.394″-0.866″	6 3/4″	7815A23	21.38	7815A43	11.76

Double-Blade Sheet-Metal Deburring Tool

With its dual, circular-shaped blades, this tool can remove burs from both sides of 1/32″ to 1/2″ thick sheet metal in one motion.

Blades can be rotated and reversed. To use on straight edges of steel blocks, place a single roller blade in the center of the holder.

Tool includes a safety guard and two high-speed steel blades (when ordering replacement blades, two blades are required). Use M42 cobalt steel blades (optional; sold separately below) for stainless steel.

4247A33 ..... **Each** $19.21

Blades		Each 1-9	Each 10-Up
Replacement High-Speed Steel	4247A35	$4.80	$4.54
Optional M42 Cobalt Steel	4247A37	7.13	5.63

Deburring Tools and Blades

The smooth 360° swivel action of these blades allows them to rotate freely to follow the contours and edges of any workpiece. Store additional blades in the tools' handles. Handles are made of plastic and blades are high-speed steel, unless noted.

Deburring Tools

The pull-down locking collar on these tools makes changing blades a snap. *Telescoping tools* have adjustable blade holders that lock at various lengths and reach into holes up to 5″ deep. *Nontelescoping tools* have blades that fit directly into the handle.

Standard Duty Tools— Use with standard duty blades only. Include one B-10 and one B-20 blade.

Heavy Duty Tools— Use with heavy duty blades only.

Three-blade tools come with three heavy duty blades; 4289A34 includes E-100A, E-200, and E-300 blades; 4289A71 includes E-100, E-200, and E-350 blades. *Five-blade tool* includes one each of E-100, E-101, E-102, E-200, and E-350 blades.

		Each
Standard Duty Tools		
Two-Blade Telescoping	4289A33	$9.42
Two-Blade Telescoping	4289A11 ♦	14.06
Two-Blade Nontelescoping	4289A35	7.15
Heavy Duty Tools		
Three-Blade Telescoping	4289A34	10.11
Three-Blade Nontelescoping	4289A71	10.44
Five-Blade Nontelescoping	4253A16	10.67

♦ Handle is aluminum (knurled). Blade can be inserted at 90° for cross hole deburring.

Standard Duty Two-Blade Telescoping Tool

Deburring Blades

Standard Duty Blades— For use with all standard duty tools. Blades are 0.102″ dia.

Heavy Duty Blades— For use with heavy duty tools. Blades are 0.123″ dia.

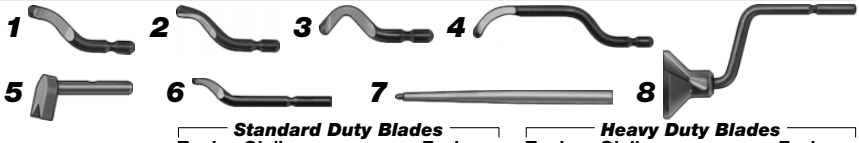

Blade Used For	Standard Duty Blades Trade No.	O'all Lg.		Each 1-9	Each 10-Up	Heavy Duty Blades Trade No.	O'all Lg.		Each 1-9	Each 10-Up
1.. Steel and Aluminum	B-10	0.86″	4289A12	$1.67	$1.36	E-100	1.85″	4289A14	$2.26	$1.83
1.. Plastic	B-10A	1.00″	4289A61	1.86	1.50	E-250	1.77″	4289A89	3.00	2.54
1.. Solid Carbide for Hardened Material	B-10C	0.86″	4289A63	6.09	5.38	E-100C	1.96″	4289A91	9.48	8.30
1.. Diamond Coated for Carbide and Glass	B-10D	0.98″	4289A46	12.53	11.28	E-100D	1.96″	4289A67	14.00	12.60
1.. Steel and Aluminum for Left-Handed Users	B-10L	0.98″	4289A47	2.41	2.04	E-100L	1.96″	4289A68	3.32	2.81
1.. TiN Coated for High Wear Resistance	B-10P	0.98″	4289A48	4.50	3.81	E-100P	1.96″	4289A69	6.04	5.12
1.. M42 Cobalt for Stainless Steel	B-10S	0.98″	4289A66	1.88	1.55	E-100A	1.85″	4289A64	2.39	2.04
2.. Brass and Cast Iron	B-20	0.86″	4289A13	1.67	1.36	E-200	1.85″	4289A15	2.37	1.93
2.. Solid Carbide for Hardened Material	B-20C	0.86″	4289A65	5.87	5.38	E-200C	1.96″	4289A92	9.48	8.30
3.. Tubing and Sheet Metal	B-30	0.86″	4289A16	1.88	1.64	E-300	1.85″	4289A17	2.45	2.08
4.. Internal, Deep, and Cross-Drilled Holes	B-60	1.73″	4289A41	2.72	2.39	E-600	2.56″	4289A53	3.26	3.03
5.. Sheet Metal up to 1/8″ Thick	B-70	0.78″	4289A86★	8.42	7.12	—	—	—	—	—
6.. Straight Edges on Steel and Aluminum	B-1	0.98″	4289A87	2.28	1.92	E-350	1.85″	4289A51	2.37	1.92
6.. Small Holes in Steel and Aluminum	B-11	0.78″	4289A88	2.41	2.04	E-101	1.70″	4253A24	2.40	2.08
6.. Small Holes in Brass and Cast Iron	—	—	—	—	—	E-102	1.70″	4253A25	2.49	2.15
7.. Carbide-Tipped Scriber	B-50	1.89″	4289A72	6.13	5.62	—	—	—	—	—
8.. Steel, Aluminum, Plastic, and OD of Rods and Tubes	—	—	—	—	—	RDE-18	2.36″	4289A83	10.92	9.92

★ Only compatible with 4289A11.

Telescoping Blade Holders— 5 1/8″ long

For Standard Duty Tools (Trade No. B)	4289A26	**Each**	$4.99
For Heavy Duty Tools (Trade No. E)	4289A29	**Each**	$5.41

Specialty Tool Blades and Holders

Unusual applications call for unusual shapes. ***Telescoping blade holders*** (required) fit into the standard duty tools listed at the top of the page.

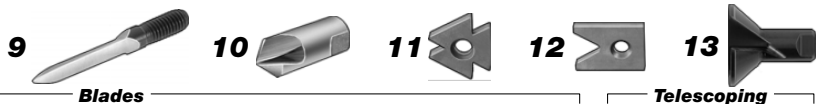

Blade Description	Blades Trade No.	O'all Lg.		Each 1-4	Each 5-Up	Telescoping Blade Holders O'all Lg.		Each
9. High-Speed Steel Triangular Scraper Blade (5/32″ wide)	C-40	1 1/2″	4289A18	$6.82	$5.82	4 1/2″	4289A27	$5.56
9. High-Speed Steel Triangular Scraper Blade (5/16″ wide)	C-42	1 3/4″	4289A19	12.58	11.10	4 1/2″	4289A27	5.56
10. High-Speed Steel Countersink Blade (3/4″ diameter)	F-20	1 1/8″	4289A24	16.48	14.13	5″	4289A31	5.56
10. High-Speed Steel Countersink Blade (1/2″ diameter)	F-12	1 1/8″	4289A23	13.21	12.26	5″	4289A31	5.56
10. High-Speed Steel Countersink Blade (1″ diameter)	F-30	1 3/4″	4289A73	37.30	33.16	5″	4289A31	5.56
11. Solid-Carbide Scraper Blade for Sheets Up to 5/32″ Thick	D-80	5/8″	4289A45	7.45	6.38	5 1/4″	4289A28	5.56
12. Solid-Carbide Scraper Blade for Sheets Up to 11/32″ Thick	D-82	3/4″	4289A22	13.10	11.80	5 1/4″	4289A28	5.56
13. High-Speed Steel Chamfering Blade for Pipe and Tubing Up to 1″ Dia.	F-26X	1 1/8″	4289A74	29.85	26.53	5″	4289A31	5.56

Deburring Tool Sets

7-Piece Set— Comes in a plastic case. Includes one handle, one O-ring blade with 0-3 mm groove width, one 16.5 mm countersink, one RDE-18 countersink, one thread cleaner blade, one E-100A blade, and one blade for holes up to 1.5 mm in diameter.

4289A78 ..... **Per Set** $62.80

11-Piece Set— Comes in a plastic case. Includes two handles, one holder, one reversible countersink, one 3.2 mm countersink, one 10.4 mm countersink, one 16.5 mm countersink, one RDE-18 countersink, one E-100 blade, one E-200 blade, and one E-300 blade.

4289A79 ..... **Per Set** $114.54

28-Piece Set

28-Piece Set— Comes in a hardwood box. Includes one aluminum handle, five telescoping holders, one 1/2″ (F-12) countersink, one 3/4″ (F-20) countersink, two wrenches, and the following blades:

Standard blades: three B-10, two B-20, and one each of B-30, B-50, and B-70. *Heavy duty blades:* two E-100 and one each of E-200, E-300, E-600, and E-601. *Specialty tool blades:* one each of C-40, C-42, D-80, and D-82.

4289A36 ..... **Per Set** $133.10

Colored-Handle Deburring Tools

In a cluttered tool box, these tools' colored handles stand out. Tools have a twist-lock blade release for quick blade changes and a pocket clip for added convenience. Handles have room to store blades (except 4493A44). Blade pivots 360°. Handles are plastic.

Individual Tools— Furnished with one blade. **To Order:** Please specify handle color: blue, green, red, or yellow.

4-Piece Sets— Contain one each of blue, green, red, and yellow handles each furnished with one blade.

Heavy Duty 4-Handle/4-Blade Set— Contains one each of blue, green, red, and yellow handles and one each of E-100, E-100A, E-150, and E-200 blades. Overall length is 4 3/4″.

	Handle Lg.	Blade	Individual Tools	Each	4-Piece Sets	Per Set
Standard Duty	4 3/4″	B-10	4493A21	$3.19	4493A41	$9.97
Heavy Duty	5 1/8″	E-100	4493A31	3.19	4493A42	10.03
Heavy Duty 4-Handle/4-Blade Set			4493A44	**Per Set**	$9.04	

Carbide Burs

Carbide burs are harder and stay sharper longer than high-speed steel. Burs with head dia. larger than shank dia. have a steel shank and carbide head. All others are solid carbide. Approx. overall length is 1½″ for 3/32″ shank tools; 1½″-2⅛″ for ⅛″ shank; 2″ for 3/16″ shank; and 2″-3⅜″ for ¼″ shank.

Double cut removes metal faster and gives a coarser finish than single cut. ***Single cut*** is for gradual removal and finer finishes.

Cylindrical—Flat End

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	Double Cut	Single Cut	Each
3/32″	1/16″	1/4″	SA-61	4284A21	4284A32	$6.13
3/32″	3/32″	3/8″	SA-63	4284A22	4284A33	6.13
1/8″	1/16″	1/4″	SA-41	8175A14	42955A11	5.37
1/8″	3/32″	7/16″	SA-42	8175A12	42955A12	5.37
1/8″	1/8″	9/16″	SA-43	8175A11	42955A13	5.37
1/8″	5/32″	1/2″	SA-52	8175A15	42955A14	10.83
1/8″	3/16″	1/2″	SA-53	8175A16	42955A15	9.17
1/8″	1/4″	1/2″	SA-51	8175A13	42955A16	9.17
3/16″	3/16″	1/2″	SA-81	4287A21	4287A31	13.42
1/4″	1/8″	1/2″	SA-11	4292A12	43035A11	13.03
1/4″	1/8″	5/8″	SA-12	4292A101	43035A201	13.03
1/4″	5/32″	5/8″	SA-13	4292A102	43035A202	13.42
1/4″	3/16″	5/8″	SA-14	4292A19	43035A12	13.42
1/4″	1/4″	5/8″	SA-1	4292A11	43035A13	11.50
1/4″	1/4″	1″	SA-1L	4292A22	43035A14	16.67
1/4″	5/16″	3/4″	SA-2	4292A103	43035A203	12.83
1/4″	3/8″	3/4″	SA-3	4292A13	43035A15	14.00
1/4″	3/8″	1″	SA-3L	4292A27	43035A16	19.23
1/4″	3/8″	1½″	SA-3X	4292A141	43035A241	26.83
1/4″	7/16″	1″	SA-4	4292A104	43035A204	22.00
1/4″	1/2″	1″	SA-5	4292A14	43035A17	23.00
1/4″	5/8″	1″	SA-6	4292A15	43035A18	32.64
1/4″	3/4″	1/2″	SA-15	4292A28	43035A19	47.33
1/4″	3/4″	3/4″	SA-16	4292A105	43035A205	52.06
1/4″	3/4″	1″	SA-7	4292A17	43035A21	56.33
1/4″	1″	1″	SA-9	4292A18	43035A22	82.33
6 mm	6 mm	16 mm	SA-1M	4210A11	4210A31	8.11
6 mm	9.5 mm	19 mm	SA-3M	4210A12	4210A32	11.43
6 mm	12.7 mm	25 mm	SA-5M	4210A13	4210A33	17.82

Cylindrical—Flat End, End Cut

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	Double Cut	Single Cut	Each
1/8″	1/16″	1/4″	SB-41	8175A25	42955A51	5.90
1/8″	3/32″	7/16″	SB-42	8175A26	42955A52	5.90
1/8″	1/8″	9/16″	SB-43	8175A27	42955A53	5.90
1/8″	1/4″	3/16″	SB-51	8175A17	42955A17	9.17
1/4″	1/8″	1/2″	SB-11	4292A106	43035A206	14.57
1/4″	1/8″	5/8″	SB-12	4292A107	43035A207	14.57
1/4″	5/32″	5/8″	SB-13	4292A108	43035A208	14.57
1/4″	3/16″	5/8″	SB-14	4292A109	43035A209	14.57
1/4″	1/4″	5/8″	SB-1	4292A29	43035A23	12.27
1/4″	1/4″	1″	SB-1L	4292A111	43035A211	18.33
1/4″	5/16″	3/4″	SB-2	4292A112	43035A212	14.17
1/4″	3/8″	3/4″	SB-3	4292A38	43035A24	14.17
1/4″	7/16″	1″	SB-4	4292A113	43035A213	25.00
1/4″	1/2″	1″	SB-5	4292A39	43035A25	26.33
1/4″	5/8″	1″	SB-6	4292A46	43035A26	36.30
1/4″	3/4″	1″	SB-7	4292A47	43035A27	51.67
1/4″	3/4″	1/2″	SB-15	4292A114	43035A214	49.74
1/4″	3/4″	3/4″	SB-16	4292A115	43035A215	49.74
1/4″	1″	1″	SB-9	4292A48	43035A28	91.40

Cylindrical—Radius End

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	Double Cut	Single Cut	Each
3/32″	3/32″	3/8″	SC-61	4284A23	4284A34	6.13
1/8″	3/32″	7/16″	SC-41	8175A22	42955A18	5.37
1/8″	1/8″	9/16″	SC-42	8175A21	42955A19	5.37
1/8″	5/32″	1/2″	SC-52	8175A28	42955A54	11.00
1/8″	3/16″	1/2″	SC-53	8175A24	42955A21	11.00
1/8″	1/4″	1/2″	SC-51	8175A23	42955A22	9.17
3/16″	3/16″	1/2″	SC-81	4287A22	4287A32	13.42
1/4″	1/8″	1/2″	SC-11	4292A49	43035A29	13.03
1/4″	1/8″	5/8″	SC-12	4292A116	43035A216	13.42
1/4″	5/32″	5/8″	SC-13	4292A117	43035A217	13.42
1/4″	3/16″	5/8″	SC-14	4292A56	43035A31	13.04
1/4″	1/4″	5/8″	SC-1	4292A21	43035A32	12.45
1/4″	1/4″	1″	SC-1L	4292A57	43035A33	16.48
1/4″	5/16″	3/4″	SC-2	4292A118	43035A218	13.00
1/4″	3/8″	3/4″	SC-3	4292A23	43035A34	15.67
1/4″	3/8″	1″	SC-3L	4292A58	43035A35	20.12
1/4″	3/8″	1½″	SC-3X	4292A142	43035A242	26.19
1/4″	7/16″	1″	SC-4	4292A119	43035A219	20.33
1/4″	1/2″	1″	SC-5	4292A24	43035A36	24.53
1/4″	5/8″	1″	SC-6	4292A25	43035A37	36.66
1/4″	3/4″	1/2″	SC-15	4292A59	43035A38	45.84
1/4″	3/4″	3/4″	SC-16	4292A149	43035A249	55.00
1/4″	3/4″	1″	SC-7	4292A26	43035A39	47.33
1/4″	1″	1″	SC-9	4292A61	43035A41	88.33
6 mm	6 mm	16 mm	SC-1M	4210A14	4210A34	9.41
6 mm	9.5 mm	19 mm	SC-3M	4210A15	4210A35	12.73
6 mm	12.7 mm	25 mm	SC-5M	4210A16	4210A36	19.99

Tree—Pointed End

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	Double Cut	Single Cut	Each
3/32″	3/32″	1/4″	SG-61	4284A27	4284A37	$6.13
1/8″	1/8″	1/4″	SG-41	8175A91	42955A29	5.37
1/8″	1/8″	1/2″	SG-44	8175A93	42955A31	5.37
1/8″	1/4″	1/2″	SG-51	8175A92	42955A32	9.17
1/8″	1/8″	5/16″	SG-42	8175A37	42955A58	5.37
1/8″	1/8″	3/8″	SG-43	8175A38	42955A59	5.37
1/8″	3/16″	1/2″	SG-53	8175A39	42955A61	11.00
3/16″	3/16″	1/2″	SG-81	4287A26	4287A35	14.17
1/4″	1/4″	5/8″	SG-1	4292A51	43035A59	11.55
1/4″	5/16″	3/4″	SG-2	4292A125	43035A225	13.67
1/4″	3/8″	3/4″	SG-3	4292A52	43035A61	15.33
1/4″	1/2″	3/4″	SG-13	4292A79	43035A62	22.00
1/4″	1/2″	1″	SG-5	4292A53	43035A63	22.33
1/4″	5/8″	1″	SG-6	4292A54	43035A64	31.33
1/4″	3/4″	1″	SG-7	4292A55	43035A65	40.00
1/4″	3/4″	1½″	SG-15	4292A126	43035A226	63.00
6 mm	6 mm	16 mm	SG-1M	4210A24	4210A44	9.86
6 mm	9.5 mm	19 mm	SG-3M	4210A25	4210A45	13.25
6 mm	12.7 mm	25 mm	SG-5M	4210A26	4210A46	18.05

Tree—Radius End

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	Double Cut	Single Cut	Each
3/32″	3/32″	1/4″	SF-61	4284A26	4284A36	6.13
1/8″	1/8″	1/4″	SF-41	8175A35	42955A56	5.37
1/8″	1/8″	1/2″	SF-42	8175A81	42955A27	5.37
1/8″	3/16″	1/2″	SF-53	8175A36	42955A57	11.00
1/8″	1/4″	1/2″	SF-51	8175A82	42955A28	9.17
3/16″	3/16″	1/2″	SF-81	4287A25	4287A34	14.17
1/4″	1/8″	1/2″	SF-11	4292A75	43035A49	12.45
1/4″	1/4″	5/8″	SF-1	4292A41	43035A51	14.00
1/4″	3/8″	3/4″	SF-3	4292A42	43035A52	14.83
1/4″	7/16″	1″	SF-4	4292A124	43035A224	22.00
1/4″	1/2″	3/4″	SF-13	4292A76	43035A53	22.33
1/4″	1/2″	1″	SF-5	4292A43	43035A54	23.33
1/4″	5/8″	1″	SF-6	4292A44	43035A55	31.67
1/4″	3/4″	1″	SF-7	4292A45	43035A56	38.17
1/4″	3/4″	1¼″	SF-14	4292A77	43035A57	52.44
1/4″	3/4″	1½″	SF-15	4292A78	43035A58	54.71

Ball

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	Double Cut	Single Cut	Each
3/32″	3/32″	3/32″	SD-61	4284A24	4284A35	6.13
1/8″	3/32″	3/32″	SD-41	8175A73	42955A23	5.37
1/8″	1/8″	1/8″	SD-42	8175A71	42955A24	5.37
1/8″	5/32″	5/32″	SD-52	8175A29	42955A55	11.00
1/8″	3/16″	3/16″	SD-53	8175A74	42955A25	11.00
1/8″	1/4″	1/4″	SD-51	8175A72	42955A26	9.17
3/16″	3/16″	3/16″	SD-81	4287A23	4287A33	12.45
1/4″	1/8″	3/32″	SD-11	4292A121	43035A221	12.65
1/4″	3/16″	1/8″	SD-14	4292A31	43035A42	12.65
1/4″	1/4″	3/16″	SD-1	4292A32	43035A43	11.55
1/4″	5/16″	1/4″	SD-2	4292A33	43035A44	11.33
1/4″	3/8″	5/16″	SD-3	4292A34	43035A45	12.67
1/4″	7/16″	3/8″	SD-4	4292A122	43035A222	17.50
1/4″	1/2″	7/16″	SD-5	4292A35	43035A46	18.00
1/4″	5/8″	9/16″	SD-6	4292A36	43035A47	21.33
1/4″	3/4″	11/16″	SD-7	4292A37	43035A48	31.67
1/4″	1″	15/16″	SD-9	4292A123	43035A223	58.66
6 mm	6 mm	5 mm	SD-1M	4210A17	4210A37	8.67
6 mm	9.5 mm	8 mm	SD-3M	4210A18	4210A38	10.45
6 mm	12.7 mm	11 mm	SD-5M	4210A19	4210A39	14.06

Flame

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	Double Cut	Single Cut	Each
1/8″	1/8″	1/4″	SH-41	8175A18	42955A36	5.37
1/8″	3/16″	3/8″	SH-53	8175A19	42955A37	11.00
1/4″	1/4″	5/8″	SH-1	4292A82	43035A71	12.65
1/4″	5/16″	3/4″	SH-2	4292A83	43035A72	13.67
1/4″	1/2″	1¼″	SH-5	4292A84	43035A73	28.33
1/4″	5/8″	17/16″	SH-6	4292A85	43035A74	40.34
1/4″	3/4″	15/8″	SH-7	4292A86	43035A75	68.56

Oval/Egg

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	Double Cut	Single Cut	Each
3/32″	3/32″	1/8″	SE-61	4284A25	4284A38	6.13
1/8″	1/8″	7/32″	SE-41	8175A41	42955A33	5.37
1/8″	3/16″	9/32″	SE-53	8175A43	42955A34	11.00
1/8″	1/4″	3/8″	SE-51	8175A42	42955A35	9.17
1/4″	3/16″	5/16″	SE-11	4292A127	43035A227	15.00
1/4″	1/4″	3/8″	SE-1	4292A65	43035A67	12.65
1/4″	3/8″	5/8″	SE-3	4292A128	43035A228	16.67
1/4″	1/2″	7/8″	SE-5	4292A62	43035A68	23.00
1/4″	5/8″	1″	SE-6	4292A63	43035A69	34.00
1/4″	3/4″	1″	SE-7	4292A129	43035A229	48.59

(Continued on following page)

Carbide Burs *(Continued from previous page)*

Cone

Shank Dia.	Head Dia.	Lg. of Cut	Cut Angle	Trade No.	Double Cut	Single Cut	Each
3/32"	3/32"	1/4"	10°	SM-61	4284A41	4284A42	$6.13
1/8"	1/8"	1/16"	90°	SK-42	8175A48♣	42955A66♣	5.77
1/8"	1/8"	1/8"	60°	SJ-42	8175A31♣	42955A44♣	6.67
1/8"	1/8"	11/32"	12°	SM-41	8175A33	42955A45	5.37
1/8"	1/8"	7/16"	14°	SM-42	8175A45	42955A63	5.37
1/8"	1/8"	5/8"	7°	SM-43	8175A46	42955A64	5.37
1/8"	3/16"	1/2"	16°	SM-53	8175A47	42955A65	11.00
1/8"	1/4"	1/2"	22°	SM-51	8175A34	42955A46	9.17
1/4"	1/4"	1/8"	90°	SK-1	4292A95	43035A96	11.55
1/4"	1/4"	3/16"	60°	SJ-1	4292A66	43035A92	11.55
1/4"	1/4"	1/2"	22°	SM-1	4292A71	43035A88	11.88
1/4"	1/4"	3/4"	14°	SM-2	4292A131	43035A231	12.65
1/4"	1/4"	1"	10°	SM-3	4292A147	43035A247	12.65
1/4"	3/8"	3/16"	90°	SK-3	4292A96	43035A97	12.83
1/4"	3/8"	5/16"	60°	SJ-3	4292A67	43035A93	12.83
1/4"	3/8"	5/8"	28°	SM-4	4292A72	43035A89	17.50
1/4"	1/2"	1/4"	90°	SK-5	4292A97	43035A98	15.83
1/4"	1/2"	7/16"	60°	SJ-5	4292A68	43035A94	16.33
1/4"	1/2"	7/8"	28°	SM-5	4292A73	43035A9	21.67
1/4"	5/8"	5/16"	90°	SK-6	4292A133	43035A233	25.00
1/4"	5/8"	1/2"	60°	SJ-6	4292A132	43035A232	21.50
1/4"	5/8"	1"	31°	SM-6	4292A74	43035A91	30.61
1/4"	3/4"	3/8"	90°	SK-7	4292A98	43035A99	29.17
1/4"	3/4"	11/16"	60°	SJ-7	4292A69	43035A95	29.34
1/4"	1"	1/2"	90°	SK-9	4292A148	43035A248	46.33
1/4"	1"	15/16"	60°	SJ-9	4292A146	43035A246	48.33

Inverted Cone

Shank Dia.	Head Dia.	Lg. of Cut	Cut Angle	Trade No.	Double Cut	Single Cut	Each
3/32"	3/32"	1/8"	—	SN-61	4284A29	4284A39	6.13
1/8"	3/32"	1/8"	—	SN-41	8175A53	42955A38	5.37
1/8"	1/8"	3/16"	—	SN-42	8175A51	42955A39	5.37
1/8"	3/16"	1/4"	—	SN-53	8175A54	42955A41	11.00

Inverted Cone (Cont.)

Shank Dia.	Head Dia.	Lg. of Cut	Cut Angle	Trade No.	Double Cut	Single Cut	Each
1/8"	1/4"	1/4"	—	SN-51	8175A52	42955A47	$9.17
3/16"	3/16"	1/4"	—	SN-81	4287A28	4287A37	12.29
1/4"	1/4"	5/16"	—	SN-1	4292A88	43035A76	12.27
1/4"	3/8"	3/8"	—	SN-2	4292A89	43035A77	15.33
1/4"	1/2"	1/2"	—	SN-4	4292A143	43035A243	20.83
1/4"	1/2"	1/2"	—	SN-5	4292A99	43035A78	20.67
1/4"	5/8"	3/4"	—	SN-6	4292A81	43035A79	28.37
1/4"	3/4"	5/8"	—	SN-7	4292A144	43035A244	34.00

14° Taper—Radius End

Shank Dia.	Head Dia.	Lg. of Cut	Cut Angle	Trade No.	Double Cut	Single Cut	Each
1/8"	1/8"	3/8"	—	SL-41	8175A61★	42955A42★	5.37
1/8"	1/8"	1/2"	—	SL-42	8175A44★	42955A62★	5.37
1/8"	3/16"	1/2"	—	SL-53	8175A62	42955A43	11.00
3/16"	3/16"	7/16"	—	SL-81	4287A27	4287A38	14.17
1/4"	1/4"	5/8"	—	SL-1	4292A94	43035A82	12.27
1/4"	5/16"	7/8"	—	SL-2	4292A91	43035A83	15.00
1/4"	3/8"	11/16"	—	SL-3	4292A92	43035A84	18.00
1/4"	1/2"	1 1/8"	—	SL-4	4292A93	43035A85	24.00
1/4"	5/8"	1 3/16"	—	SL-5	4292A992	43035A86	42.67
1/4"	5/8"	1 5/16"	—	SL-6	4292A145	43035A245	43.26
1/4"	3/4"	1 1/2"	—	SL-7	4292A993	43035A87	66.00

Thin Disc

Shank Dia.	Head Dia.	Lg. of Cut	Single-Cut Square Edge	Each	Single-Cut Radius Edge	Each
1/8"	1/4"	3/32"	4241A51	$16.77	4241A61	$21.14
1/4"	5/16"	3/32"	4241A52	19.74	4241A62	25.07
1/4"	3/8"	1/8"	4241A53	23.57	4241A63	29.46
1/4"	1/2"	1/8"	4241A54	25.07	4241A64	31.23
1/4"	5/8"	1/8"	4241A55	27.66	4241A65	34.73
1/4"	3/4"	5/32"	4241A56	40.68	4241A66	51.55
1/4"	1"	3/16"	4241A57	50.93	4241A67	63.89

♣ Double-end style (has a cutting edge on each end of the bur). ★ 8° taper.

1/4" Shank Carbide Bur Sets

Popularity has its perks. Furnished in a wood box, these sets feature some of our most demanded burs. All of the burs illustrated below are double cut. For illustrations of single-cut burs, please see the specific bur listings above and on the previous page.

5-Piece Set

Approx. Overall Length:	2"				
Head Dia.:	1/4"	1/4"	1/4"	1/4"	1/4"
Lg. of Cut:	5/8"	5/8"	5/8"	3/16"	1/2"

Double Cut ..... **4308A1** **Per Set** $58.30
Single Cut ..... **4308A15** **Per Set** $58.30

8-Piece Set

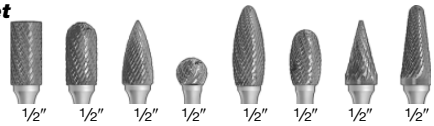

Approx. Overall Length:	2 1/4"-3"							
Head Dia.:	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Lg. of Cut:	1"	1"	1"	7/16"	1 1/4"	7/8"	7/8"	1 1/8"

Double Cut ..... **43125A11** **Per Set** $129.80
Single Cut ..... **43125A18** **Per Set** $129.80

8-Piece Set

Approx. Overall Length:	2"-3"							
Head Dia.:	1/2"	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	1/2"
Lg. of Cut:	1"	5/8"	3/4"	5/8"	5/16"	1 1/4"	7/8"	1/4"

Double Cut ..... **4308A2** **Per Set** $108.90
Single Cut ..... **4308A16** **Per Set** $108.90

8-Piece Set

Approx. Overall Length:	2"-3"							
Head Dia.:	1/4"	1/2"	1/4"	3/8"	1/2"	1/2"	3/8"	1/2"
Lg. of Cut:	5/8"	1"	5/8"	3/4"	1"	1"	1 1/16"	1 1/8"

Double Cut ..... **4308A14** **Per Set** $140.00
Single Cut ..... **4308A19** **Per Set** $140.00

8-Piece Set

Approx. Overall Length:	2"-3"							
Head Dia.:	1/4"	3/8"	3/8"	1/2"	5/16"	1/2"	1/2"	1/2"
Lg. of Cut:	5/8"	3/4"	3/4"	1"	1/4"	7/8"	7/8"	1 1/8"

Double Cut ..... **4308A13** **Per Set** $132.00
Single Cut ..... **4308A17** **Per Set** $132.00

9-Piece Set

Approx. Overall Length:	2"-2 3/4"								
Head Dia.:	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"
Lg. of Cut:	5/8"	3/4"	1"	5/8"	3/4"	1"	5/8"	3/4"	1"

Double Cut ..... **4308A12** **Per Set** $109.71
Single Cut ..... **4308A21** **Per Set** $109.71

16-Piece Set

Approx. Overall Length:	2"-3"														
Head Dia.:	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"	1/4"	3/8"	1/4"	3/8"	1/2"	3/8"	1/2"	3/8"	3/8"	1/2"
Lg. of Cut:	5/8"	3/4"	1"	5/8"	3/4"	1"	5/8"	3/4"	5/8"	3/4"	1"	5/16"	7/16"	5/8"	1 1/16"	1 1/8"

Double Cut ..... **4308A31** **Per Set** $209.00
Single Cut ..... **4308A32** **Per Set** $209.00

1/8″ Shank Carbide Bur Sets

Furnished in a wood box.

9-Piece Set

Approx. Overall Length: 1 11/16″-2″									
Head Dia.:	1/4″	1/4″	1/4″	1/4″	1/4″	1/4″	1/4″	1/4″	1/4″
Lg. of Cut:	1/2″	3/16″	1/2″	1/2″	1/2″	7/32″	3/8″	1/2″	1/4″

Double Cut ..... 8177A11 Per Set $67.13
Single Cut ..... 8177A13 Per Set $67.13

12-Piece Set

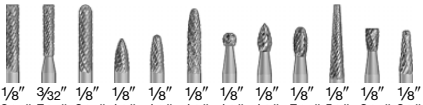

Approx. Overall Length: 1 1/2″												
Head Dia.:	1/8″	3/32″	1/8″	1/8″	1/8″	1/8″	1/8″	1/8″	1/8″	1/8″	1/8″	1/8″
Lg. of Cut:	9/16″	7/16″	9/16″	1/4″	1/4″	1/2″	1/8″	1/4″	7/32″	5/8″	3/16″	3/8″

Double Cut ..... 8177A12 Per Set $56.86
Single Cut ..... 8177A14 Per Set $56.86

Extra-Long Carbide Burs

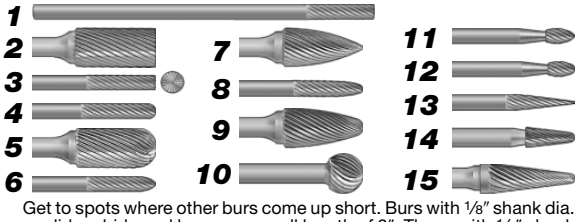

Get to spots where other burs come up short. Burs with 1/8″ shank dia. are solid carbide and have an overall length of 3″. Those with 1/4″ shank dia. have a 6″ long steel shank with a brazed-on solid-carbide head.

Double-cut burs remove metal faster and give a coarser finish than single-cut burs. ***Single-cut burs*** are best when slow material removal is acceptable and a finer finish is required.

Individual Burs

	Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	*Double Cut*	*Single Cut*	Each
1	1/8″	1/16″	1/4″	SA-41L3	4313A15	4313A17	$7.85
1	1/8″	3/32″	7/16″	SA-42L3	4313A16	4313A18	7.85
1	1/8″	1/8″	9/16″	SA-43L3	4313A31	4313A51	7.85
2	1/4″	1/4″	1/2″	SA-1L6	4324A21	4324A71	13.10
2	1/4″	3/8″	3/4″	SA-3L6	4324A22	4324A72	17.47
2	1/4″	1/2″	1″	SA-5L6	4324A23	4324A73	23.42
3	1/8″	1/16″	1/4″	SB-41L3	4313A61	4313A71	8.58
3	1/8″	3/32″	7/16″	SB-42L3	4313A63	4313A73	8.58
3	1/8″	1/8″	9/16″	SB-43L3	4313A65	4313A75	8.58
4	1/8″	1/8″	9/16″	SC-42L3	4313A32	4313A52	8.10
5	1/4″	1/4″	1/2″	SC-1L6	4324A24	4324A84	13.92
5	1/4″	3/8″	3/4″	SC-3L6	4324A25	4324A85	16.08
5	1/4″	1/2″	1″	SC-5L6	4324A26	4324A86	23.42
6	1/8″	1/8″	1/2″	SG-44L3	4313A36	4313A56	8.10
7	1/4″	1/4″	1/2″	SG-1L6	4324A37	4324A87	13.92
7	1/4″	3/8″	3/4″	SG-3L6	4324A38	4324A88	16.46
7	1/4″	1/2″	1″	SG-5L6	4324A39	4324A89	21.52
8	1/8″	1/8″	1/2″	SF-42L3	4313A35	4313A55	8.10
9	1/4″	1/4″	1/2″	SF-1L6	4324A34	4324A74	14.56
9	1/4″	3/8″	3/4″	SF-3L6	4324A35	4324A75	16.46
9	1/4″	1/2″	1″	SF-5L6	4324A36	4324A76	22.15
10	1/8″	1/8″	1/8″	SD-42L3	4313A33	4313A53	8.10
10	1/4″	1/4″	7/32″	SD-1L6	4324A27	4324A77	13.29
10	1/4″	3/8″	5/16″	SD-3L6	4324A28	4324A78	13.92
10	1/4″	1/2″	5/16″	SD-5L6	4324A29	4324A79	16.84
11	1/8″	1/8″	1/4″	SH-41L3	4313A37	4313A57	8.10
11	1/4″	5/16″	3/4″	SH-2L6	4324A41	4324A94	17.47
11	1/4″	1/2″	1 1/4″	SH-5L6	4324A42	4324A95	28.35
12	1/8″	1/8″	7/32″	SE-41L3	4313A34	4313A54	7.85
12	1/4″	1/4″	3/8″	SE-1L6	4324A31	4324A91	14.18
12	1/4″	3/8″	5/8″	SE-3L6	4324A32	4324A92	17.72
12	1/4″	1/2″	7/8″	SE-5L6	4324A33	4324A93	22.28
13	1/8″	1/8″	7/16″	SM-42L3	4313A39	4313A59	8.10
13	1/8″	1/8″	1/2″	SL-42L3	4313A38★	4313A58★	8.10
14	1/4″	1/4″	5/8″	SL-1L6	4324A43♣	4324A81♣	14.56
15	1/4″	3/8″	1 1/16″	SL-3L6	4324A44	4324A82	18.99
15	1/4″	1/2″	1 1/8″	SL-4L6	4324A45	4324A83	25.82

★ Has an 8° taper. ♣ Has a 14° taper.

8-Piece Extra-Long Bur Sets—Furnished in a wood box.

You'll get one each of the following (Head Dia.×Lg. of Cut): 1/4″×1/2″ and 1/2″×1″ cylindrical—flat end, 1/4″×1/2″ and 1/2″×1″ cylindrical—radius end, 1/4″×1/2″ tree—pointed end, 1/4″×1/2″ tree—radius end, 1/4″×3/16″ ball, and 1/4″×5/8″ 14° taper—radius end.

Double-Cut Set ..... 4324A51 Per Set $189.87
Single-Cut Set ..... 4324A52 Per Set $189.87

TiAlN-Coated Carbide Burs

A special coat provides these burs with resistance to heat and wear, giving them extra long life. Overall length is 2″ to 2 7/8″. ***Double-cut burs*** remove metal faster and give a coarser finish. ***Single-cut burs*** are for slow material removal and producing a finer finish.

Shank Dia.	Head Dia.	Lg. of Cut	Trade No.	*Double Cut*	*Single Cut*	Each
Cylindrical—Flat End						
1/4″	1/4″	5/8″	SA-1	4290A11	4290A31	$15.00
1/4″	3/8″	3/4″	SA-3	4290A12	4290A32	17.20
1/4″	1/2″	1″	SA-5	4290A13	4290A33	24.20
Cylindrical—Radius End						
1/4″	1/4″	5/8″	SC-1	4290A14	4290A34	15.60
1/4″	3/8″	3/4″	SC-3	4290A15	4290A35	17.50
1/4″	1/2″	1″	SC-5	4290A16	4290A36	24.40
Tree—Pointed End						
1/4″	1/4″	5/8″	SG-1	4290A21	4290A41	15.00
1/4″	3/8″	3/4″	SG-3	4290A22	4290A42	17.40
1/4″	1/2″	3/4″	SG-5	4290A23	4290A43	22.40
Ball						
1/4″	1/4″	7/32″	SD-1	4290A17	4290A37	15.20
1/4″	3/8″	5/16″	SD-3	4290A18	4290A38	15.20
1/4″	1/2″	7/16″	SD-5	4290A19	4290A39	20.00

Clog-Free Carbide Burs

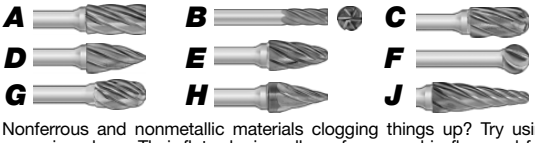

Nonferrous and nonmetallic materials clogging things up? Try using these unique burs. Their flute design allows for easy chip flow and fast material removal, making them ideal for use on aluminum, magnesium, plastics, fiberglass, hard rubber, and other soft "sticky" materials.

All have brazed-on steel shanks except those with a 1/4″ head dia., which are solid carbide. Shank dia. is 1/4″. Overall length is 2″ to 3 3/8″.

Style ***H*** has a 28° included angle, unless noted.

	Head Dia.	Lg. of Cut		Each
A	1/4″	5/8″	4295A51	$10.48
A	3/8″	3/4″	4295A52	15.33
A	1/2″	1″	4295A53	22.78
A	5/8″	1″	4295A54	31.11
A	3/4″	1″	4295A56	42.22
B	1/4″	5/8″	4295A58	12.86
C	1/4″	5/8″	4295A12	12.78
C	3/8″	3/4″	4295A13	16.67
C	1/2″	1″	4295A14	22.78
C	5/8″	1″	4295A15	33.33
C	3/4″	1″	4295A16	49.13
D	1/4″	5/8″	4295A33	12.78
D	3/8″	3/4″	4295A34	16.33
D	1/2″	1″	4295A35	21.67
E	1/4″	5/8″	4295A29	12.78
E	3/8″	3/4″	4295A31	16.11
E	1/2″	1″	4295A32	21.11
E	5/8″	1″	4295A87	33.33
E	3/4″	1 1/4″	4295A88	37.78
F	1/4″	7/32″	4295A19	$12.78
F	3/8″	5/16″	4295A21	12.00
F	1/2″	7/16″	4295A22	18.89
F	5/8″	9/16″	4295A68	33.33
F	3/4″	1 1/16″	4295A69	55.56
G	3/8″	5/8″	4295A71	16.11
G	1/2″	7/8″	4295A73	20.00
G	5/8″	1″	4295A75	37.78
G	3/4″	1″	4295A77	51.31
H	1/4″	1/2″	4295A38♦	13.11
H	3/8″	5/8″	4295A39	24.16
H	1/2″	7/8″	4295A41	25.56
H	5/8″	1″	4295A42■	36.00
J	1/4″	5/8″	4295A61	12.67
J	3/8″	1 1/16″	4295A62	20.00
J	1/2″	1 1/8″	4295A63	26.44
J	5/8″	1 3/16″	4295A64	45.71
J	5/8″	1 5/16″	4295A65	60.44
J	3/4″	1 1/2″	4295A66	67.22

♦ Has 22° included angle. ■ Has 31° included angle.

Diamond-Cut Carbide Burs

With their raised, diamond-cut tooth pattern, these burs create a powder-like chip and leave a fine finish. Use to debur die and mold steels and other hard materials. Shank dia. is 1/4″. Overall length is 2″ to 2 7/8″.

Head Dia.	Lg. of Cut		Each
Cylindrical—Flat End			
1/4″	5/8″	4197A11	$13.60
3/8″	3/4″	4197A12	18.54
1/2″	1″	4197A13	29.06
Cylindrical—Radius End			
1/4″	5/8″	4197A14	15.49
3/8″	3/4″	4197A15	20.54
1/2″	1″	4197A16	32.29
Tree—Pointed End			
1/4″	5/8″	4197A24	16.66
3/8″	3/4″	4197A25	21.20
1/2″	1″	4197A26	29.86
Tree—Radius End			
1/4″	5/8″	4197A21	$16.66
3/8″	3/4″	4197A22	21.20
1/2″	1″	4197A23	29.86
Ball			
1/4″	7/32″	4197A17	14.94
3/8″	5/16″	4197A18	17.03
1/2″	7/16″	4197A19	23.46

High-Speed Steel Burs

Stronger than carbide burs, but not as sharp, these burs are for use on mild steel and softer, nonferrous materials. Also known as rotary files.

All burs listed below are standard, medium cut. Tools with a 1/8″ shank have an overall length of 1 1/4″-1 1/2″. Those with a 1/4″ shank have an overall length of 1 5/8″-3 1/4″.

Shank Dia.	Head Dia.	Lg. of Cut	Machine Ground	Each	Hand Chiseled	Each
Cylindrical—Flat End						
1/8″	1/8″	5/8″	4238A119	$6.35	4314A219	$20.50
1/8″	1/4″	1/2″	4238A121	10.14	4314A221	21.27
1/4″	1/8″	1/2″	4238A122	7.82	4314A222	19.42
1/4″	1/4″	1″	4238A123	9.02	4314A223	36.06
1/4″	1/4″	1 1/2″	4238A124	14.86	4314A224	25.41
1/4″	3/8″	1″	4238A125	12.55	4314A225	25.92
1/4″	3/8″	1 1/2″	4238A126	16.23	4314A226	26.48
1/4″	1/2″	1″	4238A127	15.69	4314A227	29.44
1/4″	5/8″	1″	4238A128	18.23	4314A228	30.81
1/4″	3/4″	1/2″	4238A129	20.45	—	—
1/4″	3/4″	3/4″	4238A131	20.29	4314A231	33.36
1/4″	1″	1″	4238A132	33.78	4314A232	46.31
Cylindrical—Radius End						
1/8″	1/8″	5/8″	4238A111	6.35	4314A211	35.57
1/4″	1/8″	1/2″	4238A112	7.82	4314A212	29.76
1/4″	1/4″	1″	4238A113	9.41	4314A213	30.77
1/4″	1/4″	1 1/2″	4238A114	12.16	4314A214	34.34
1/4″	3/8″	1″	4238A115	12.95	4314A215	34.34
1/4″	3/8″	1 1/2″	4238A116	16.28	4314A216	34.22
1/4″	1/2″	1″	4238A117	16.28	4314A217	39.70
1/4″	3/4″	1 1/4″	4238A118	23.36	4314A218	68.32
Tree—Pointed End						
1/4″	1/4″	3/4″	4238A175	9.81	4314A275	32.02
1/4″	3/8″	3/4″	4238A176	12.22	4314A276	36.56
1/4″	1/2″	3/4″	4238A194	14.69	4314A294	53.27
1/4″	1/2″	1 1/8″	4238A177	17.31	4314A277	60.89
Tree—Radius End						
1/4″	1/4″	3/4″	4238A171	9.81	4314A271	32.74
1/4″	3/8″	3/4″	4238A172	12.22	4314A272	38.39
1/4″	1/2″	1 1/8″	4238A173	16.82	4314A273	54.97
1/4″	3/4″	1 1/4″	4238A174	25.22	4314A274	75.97
Ball						
1/8″	1/4″	1/4″	4238A133	10.14	4314A233	35.59
1/8″	3/8″	3/8″	4238A134	10.65	4314A234	44.59
1/4″	1/8″	1/8″	4238A192	7.29	4314A292	37.70
1/4″	3/16″	3/16″	4238A135	7.49	4314A235	27.80
1/4″	1/4″	1/4″	4238A136	8.62	4314A236	34.38
1/4″	5/16″	5/16″	4238A137	9.41	4314A237	47.08
1/4″	3/8″	3/8″	4238A138	10.83	4314A238	38.14
1/4″	1/2″	1/2″	4238A139	14.75	4314A239	43.89
1/4″	5/8″	5/8″	4238A141	16.28	4314A241	43.04
1/4″	3/4″	3/4″	4238A142	21.89	4314A242	83.68
1/4″	1″	1″	4238A143	35.76	4314A243	103.70
Flame						
1/8″	1/4″	1/2″	4238A163	10.14	4314A263	41.05
1/4″	5/8″	1 7/16″	4238A164	38.81	4314A264	96.70
1/4″	3/4″	1 5/8″	4238A165	43.20	4314A265●	81.03

● 1 3/4″ length of cut. ★ 1 1/8″ length of cut. ♦ 1″ length of cut. ■ 7/8″ length of cut.

Machine-Ground Burs—Machine cut with a series of unbroken flutes. Ideal for mild steel and ductile, stringy materials such as aluminum, brass, magnesium, plastics, and composites.

Hand-Chiseled Burs—Hand cut to form an irregular pattern of staggered teeth, these burs are ideal for use on tougher, denser materials.

Shank Dia.	Head Dia.	Lg. of Cut	Machine Ground	Each	Hand Chiseled	Each
Oval/Egg						
1/8″	1/4″	1/2″	4238A144	$10.14	4314A244	$39.19
1/4″	1/4″	1/2″	4238A145	9.09	4314A245	31.41
1/4″	3/8″	5/8″	4238A146	12.36	4314A246	36.89
1/4″	1/2″	7/8″	4238A147	16.63	4314A247	49.38
1/4″	5/8″	1″	4238A148	19.77	4314A248	65.00
1/4″	3/4″	1″	4238A149	26.16	4314A249★	89.00
1/4″	1″	1 3/8″	4238A151	41.90	4314A251	109.30
Barrel						
1/4″	1/2″	1″	4238A166	38.39	4314A266	49.51
Convex-Concave						
1/4″	1/4″	7/8″	4238A169	13.24	4314A269★	38.72
Cone						
1/8″	1/8″	9/16″	4238A152	7.53	4314A252	21.76
1/8″	1/4″	1/2″	4238A153	10.14	4314A253	37.51
1/4″	1/4″	1/2″	4238A154	9.41	4314A254	26.41
1/4″	1/4″	3/4″	4238A156	10.68	4314A256	28.35
1/4″	1/4″	1″	4238A158	12.90	4314A258	33.35
1/4″	5/16″	3/4″	4238A159	11.09	4314A259♦	34.68
1/4″	1/2″	1″	4238A161	16.63	4314A261■	41.01
1/4″	5/8″	1″	4238A162	20.76	4314A262	53.86
90° Cone						
1/4″	1/2″	1/4″	4238A181	14.69	4314A281	38.07
1/4″	5/8″	5/16″	4238A182	16.63	4314A282	49.74
1/4″	3/4″	3/8″	4238A183	19.77	4314A283	53.76
1/4″	1″	1/2″	4238A184	35.24	4314A284	64.65
Inverted Cone						
1/4″	1/2″	1/2″	4238A178	12.14	—	—
1/4″	3/4″	5/8″	4238A179	19.22	4314A279	57.22
Taper—Radius End						
1/4″	5/16″	5/8″	4238A185	11.62	4314A285	32.02
1/4″	5/16″	1 1/4″	4238A186	14.05	4314A286	45.85
1/4″	3/8″	1 7/8″	4238A187	22.97	4314A287●	70.49
1/4″	5/8″	1 1/8″	4238A188	21.62	—	—
Thin Disc—Square Edge						
1/8″	5/8″	1/8″	4238A168	16.71	4314A268	29.11
Thin Disc—Radius Edge						
1/8″	5/8″	1/8″	4238A167	16.71	4314A267	28.05

High-Speed Steel Bur Sets

8-Piece Sets with 1/4″ Shank Diameter—Each set includes one of each tool listed below in a wood box.

Sets include: (Head Dia.×Lg. of Cut) 3/8″×1 1/2″ and 3/4″×3/4″ cylindrical—flat end, 3/4″×3/8″ ball, 5/8″×1″ oval/egg, 5/16″×1 1/8″ convex-concave, 3/4″×5/8″ inverted cone with 34° included angle, 5/8″×13/16″ taper—radius end with 36° included angle, and 5/16″×5/8″ taper—radius end with 19° included angle.

		Per Set
Machine-Ground Set	4306A2	$205.32
Hand-Chiseled Set	4306A1	253.12

12-Piece Sets with 1/8″ Shank Diameter—Each set includes one of each tool listed below in a wood box.

Sets include: (Head Dia.×Lg. of Cut) 1/8″×5/8″ and 1/4″×1/2″ cylindrical—flat end, 1/8″×5/8″ cylindrical—radius end, 1/4″×1/2″ tree—pointed end, 1/4″×1/4″ and 3/8″×3/8″ ball, 1/4″×1/2″ oval/egg, 1/8″×9/16″ cone with 91/2° included angle, 1/4″×1/2″ cone with 24° included angle, 3/8″×3/8″ cone with 51° included angle, 5/8″×1/8″ thin disc—square edge, and 5/8″×1/8″ thin disc—radius edge.

		Per Set
Machine-Ground Set	4312A28	190.76
Hand-Chiseled Set	4304A26	267.77

Sheet Metal Edging Bur

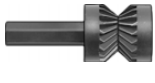

Mounts quickly, and gets the job done fast. With its 5/16″ hex shank, you can easily use this tool with an electric or cordless drill. Its v-shape means you can debur the edges of sheet metal or both sides of a hole in just one stroke. Made from hardened tool steel, it debur holes 3/4″ dia. and larger in up to 10-ga. mild and stainless steel, copper, brass, and aluminum. Bur also includes one pair of replacement cutters. Overall length is 2″.

Sheet Metal Edging Bur	4982A11	Each	$24.62
Replacement Cutters (3 Pairs/Pkg.)	4982A22	Per Pkg.	$19.24

General Purpose Grinding Bits

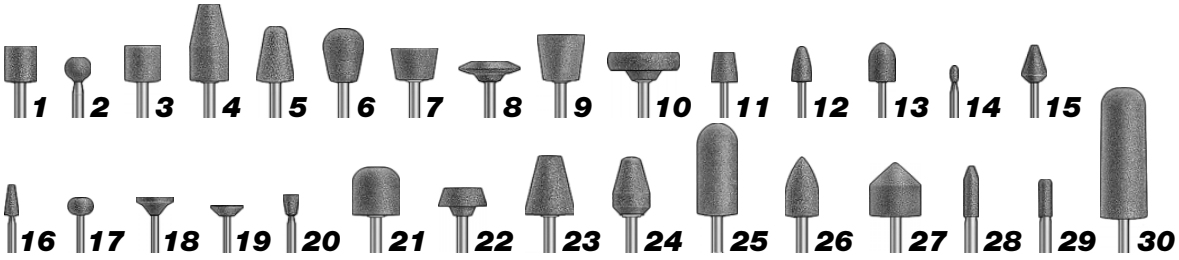

Use these abrasive bits for light to medium stock removal on most metals. Also known as mounted points, they are made of aluminum oxide with a vitrified (clay) bond. All have 1½″ long shanks. Pkg. qty. is 5. ***60-Grit Bits—*** Medium grit. Color is burnt orange. ***120-Grit Bits—*** Fine grit. Color is blue.

⅛″ Shank Dia.

	Head Dia.	Head Lg.	Max. rpm (See Note)	Shape No.	*60 Grit*	*120 Grit*	Per Pkg.
1	3/32″	1/4″	105,000	W142	4485A123	8921A149	$3.97
1	1/8″	1/8″	105,000	W143	4485A211	8921A151	3.97
1	1/8″	1/4″	105,000	W144	4485A121	8921A152	3.97
1	1/8″	3/8″	105,000	W145	4485A301	8921A153	4.54
1	1/8″	1/2″	105,000	W146	4485A122	8921A154	4.54
1	3/16″	1/4″	105,000	W152	4485A302	8921A155	3.97
1	3/16″	3/8″	80,850	W153	4485A303	8921A156	4.54
1	3/16″	1/2″	70,500	W154	4485A304	8921A157	4.54
1	1/4″	1/4″	81,370	W160	4485A124	8921A158	3.97
1	1/4″	3/8″	68,400	W162	4485A125	8921A159	4.54
1	1/4″	1/2″	60,000	W163	4485A126	8921A161	4.54
1	1/4″	3/4″	45,900	W164	4485A306	8921A162	4.68
1	5/16″	1/2″	52,500	W170	4485A131	8921A163	4.54
1	5/16″	3/4″	37,120	W171	4485A677	8921A164	4.68
1	3/8″	1/4″	69,000	W174	4485A132	8921A165	3.97
1	3/8″	3/8″	54,000	W175	4485A133	8921A166	4.54
1	3/8″	1/2″	45,370	W176	4485A134	8921A167	4.54
1	3/8″	3/4″	33,750	W177	4485A213	8921A168	4.68
1	3/8″	1″	26,250	W178	4485A136	8921A169	4.97
1	1/2″	1/8″	73,500	W182	4485A307	8921A171	4.54
1	1/2″	1/4″	51,750	W183	4485A308	8921A172	4.54
1	1/2″	3/8″	41,020	W184	4485A138	8921A173	4.54
1	1/2″	1/2″	34,500	W185	4485A139	8921A174	4.54
1	1/2″	3/4″	26,250	W186	4485A141	8921A175	4.68
1	1/2″	1″	20,620	W187	4485A142	8921A176	4.97
1	5/8″	3/4″	22,120	W195	4485A311	8921A177	4.97
1	3/4″	1/8″	50,930	W200	4485A145	8921A178	4.54
1	3/4″	1/4″	38,250	W201	4485A147	8921A179	4.54
1	1″	1/8″	38,200	W215	4485A312	8921A181	4.68
1	1″	1/4″	30,520	W216	4485A156	8921A182	4.68
2	1/8″	1/8″	105,000	B124	4487A56	8921A119	4.97
2	3/16″	3/16″	104,250	B123	4487A57	8921A117	4.97
2	1/4″	1/4″	81,370	B123SS	4489A115	8921A118	8.66
2	3/8″	3/8″	61,650	B122	4487A24	8921A116	5.53
2	1/2″	1/2″	45,370	B121	4487A17	8921A115	5.53
3	1/4″	5/16″	77,250	B136	4487A51	8921A127	4.54
3	1/4″	1/2″	60,000	B135	4487A52	8921A126	4.54
3	5/16″	3/8″	61,650	B134	4487A53	8921A125	4.54
3	3/8″	1/2″	45,370	B132	4487A55	8921A124	4.54
3	1/2″	1/2″	34,500	B131	4487A11	8921A123	4.54
4	3/8″	3/4″	33,750	B54SS	4489A111	8921A111	7.52
5	5/8″	5/8″	33,750	B41	4487A33	8921A112	6.24
6	3/8″	1/2″	45,370	B112	4487A64	8921A114	5.53
6	7/16″	11/16″	33,750	B111	4487A65	8921A113	5.96
7	5/8″	11/16″	33,750	B101	4487A63	8921A121	6.24
8	3/4″	1/8″	50,930	B72SS	4489A127	8921A122	9.36
9	5/8″	11/16″	22,120	B104SS	4489A121	8921A128	8.66
10	3/4″	5/16″	38,250	B61	4487A31	8921A129	5.96
11	1/4″	1/4″	81,370	B92	4487A61	8921A143	4.97
11	1/2″	5/8″	34,500	B91	4487A62	8921A142	5.96
12	3/16″	5/16″	104,250	B45	4487A41	8921A134	5.53
12	7/32″	3/8″	68,400	B44	4487A15	8921A133	5.53
12	3/8″	3/4″	45,370	B52	4487A28	8921A135	5.96
13	1/4″	5/16″	81,370	B43	4487A13	8921A132	5.53
13	1/2″	3/4″	33,750	B42	4487A26	8921A131	5.96
14	1/8″	5/16″	105,000	B46	4487A16	8921A136	5.53
15	7/16″	3/4″	45,370	B51	4487A67	8921A137	5.96
16	3/32″	1/4″	105,000	B98	4487A42	8921A146	4.97
16	1/8″	1/4″	105,000	B96	4487A59	8921A144	4.97
16	1/8″	3/8″	105,000	B97	4487A58	8921A145	5.53
16	1/4″	5/8″	60,000	B53	4487A66	8921A138	5.96
17	1/2″	3/8″	41,020	B62	4487A68	8921A139	5.53
18	3/4″	3/16″	50,930	B81	4487A19	8921A141	5.53
19	5/8″	1/4″	61,120	B103	4487A22	8921A147	5.53
20	5/16″	3/8″	68,400	B104	4487A71	8921A148	5.53

¼″ Shank Dia.

	Head Dia.	Head Lg.	Max. rpm (See Note)	Shape No.	*60 Grit*	*120 Grit*	Per Pkg.
1	1/4″	3/4″	66,000	W164	4485A351	8921A343	$4.68
1	5/16″	1/2″	81,000	W170	4485A167	8921A344	4.54
1	3/8″	3/8″	81,000	W175	4485A169	8921A345	4.54
1	3/8″	1/2″	81,000	W176	4485A171	8921A346	4.54
1	3/8″	3/4″	66,000	W177	4485A252	8921A347	4.68
1	3/8″	1″	55,200	W178	4485A264	8921A348	4.97
1	3/8″	1 1/4″	45,750	W179	4485A278	8921A349	6.24
1	1/2″	1/2″	61,500	W185	4485A176	8921A351	4.54
1	1/2″	3/4″	51,000	W186	4485A177	8921A352	4.68
1	1/2″	1″	40,500	W187	4485A178	8921A353	4.97
1	1/2″	1 1/2″	30,370	W188	4485A355	8921A354	7.52
1	1/2″	2″	24,000	W189	4485A356	8921A355	9.22
1	5/8″	3/4″	46,500	W195	4485A358	8921A356	4.97
1	5/8″	1″	35,250	W196	4485A182	8921A357	5.53
1	5/8″	2″	21,000	W197	4485A359	8921A358	9.65
1	3/4″	3/8″	50,930	W202	4485A185	8921A359	4.68
1	3/4″	3/4″	42,750	W204	4485A187	8921A361	4.97
1	3/4″	1″	34,500	W205	4485A188	8921A362	5.53
1	3/4″	1 1/4″	28,720	W206	4485A844	8921A363	6.39
1	3/4″	1 1/2″	24,000	W207	4485A189	8921A364	7.80
1	3/4″	2″	18,750	W208	4485A855	8921A365	9.65
1	1″	1/4″	38,200	W216	4485A194	8921A366	4.68
1	1″	3/8″	38,200	W217	4485A887	8921A367	4.97
1	1″	1/2″	38,200	W218	4485A196	8921A368	4.97
1	1″	3/4″	35,100	W219	4485A197	8921A369	5.53
1	1″	1″	25,500	W220	4485A214	8921A371	5.96
1	1″	1 1/2″	19,120	W221	4485A899	8921A372	8.23
1	1″	2″	15,900	W222	4485A215	8921A373	9.93
1	1 1/4″	1/2″	30,560	W227	4485A911	8921A374	5.96
1	1 1/4″	1 1/4″	20,400	W230	4485A216	8921A375	8.23
1	1 1/4″	2″	14,250	W232	4485A922	8921A376	11.92
1	1 1/2″	1/4″	25,470	W235	4485A363	8921A377	5.96
1	1 1/2″	1/2″	25,470	W236	4485A199	8921A378	6.10
1	1 1/2″	1″	22,500	W237	4485A201	8921A379	7.52
1	1 1/2″	1 1/2″	15,600	W238	4485A933	8921A381	9.93
1	2″	1″	19,100	W242	4485A364	8921A382	8.94
2	5/8″	5/8″	61,120	A26	4486A33	8921A331	6.24
2	1″	1″	35,620	A25	4486A15	8921A329	6.95
3	3/4″	3/4″	47,250	A39	4486A23	8921A339	4.97
3	1″	1″	34,500	A38	4486A42	8921A338	5.96
4	3/4″	2 1/2″	19,800	A1	4486A11	8921A311	14.47
4	13/16″	1 3/4″	18,750	A1SS	4489A112	8921A312	18.30
4	1″	2 1/2″	16,100	A1SS	4489A114	8921A313	18.87
5	3/4″	1 1/8″	45,000	A5	4486A14	8921A317	8.51
5	1 1/4″	1 1/4″	30,560	A4	4486A13	8921A316	9.93
6	3/4″	1″	39,370	A23	4486A18	8921A326	6.39
7	1″	5/8″	38,200	A32	4486A24	8921A333	6.39
7	1 3/8″	1″	27,780	A31	4486A19	8921A332	8.51
8	1 1/4″	1/4″	30,560	A37	4486A22	8921A337	6.39
8	1 3/4″	3/8″	23,520	A36	4486A41	8921A336	8.51
9	1″	1″	25,500	A41SS	4489A122	8921A341	9.22
10	1 1/2″	3/8″	25,470	A43SS	4489A125	8921A342	10.93
21	3/4″	5/8″	50,930	A22	4486A37	8921A325	6.24
21	1″	1″	34,500	A21	4486A38	8921A324	6.95
22	1″	3/8″	38,200	A35	4486A39	8921A335	6.24
22	1 1/2″	3/8″	25,470	A34	4486A21	8921A334	7.52
23	1″	1 1/4″	38,200	A2	4486A31	8921A314	8.94
24	3/4″	1 1/8″	39,000	A6	4486A51	8921A318	8.51
25	7/8″	2″	19,860	A11	4486A16	8921A319	10.78
26	11/16″	1 1/4″	48,000	A12	4486A17	8921A321	8.51
27	1 1/8″	1 1/8″	33,950	A13	4486A32	8921A322	9.93
28	1/4″	1 1/16″	72,750	A15	4486A35	8921A323	8.23
29	1/4″	3/4″	76,500	A24	4486A36	8921A328	5.96
30	1″	2 3/4″	16,100	A3	4486A12	8921A315	15.61

Maximum rpm Safety Note: The rpm ratings for grinding bits follow ANSI standard B7.1 for maximum safe operating speeds with ½″ or less of exposed shank between the chuck or collet and the abrasive bit. ***Caution:*** As the shank of the abrasive bit is extended beyond ½″, maximum safe rpm decreases significantly. Refer to ANSI standard B7.1 for safety requirements.

General Purpose Grinding Bit Sets

Each of these sets contains a selection of our most popular medium grit (approximately 60 grit) grinding bits. Bits are aluminum oxide with a vitrified (clay) bond and are burnt orange in color. Shanks are 1½″ long. Furnished in a foam block stand.

For dimensions, illustrations, and max. rpms for these bits, see page 2630. *Note:* For maximum rpm safety information, see note on this page.

Shank Dia.	No. of Pieces	Set Contents	Per Set
⅛″	12	2 each: B42, B44, B46, B52, B53, B103	6165A11 $15.47
⅛″	12	2 each: W144, W146, W154, W163, W176, W185	6165A13 $12.18
⅛″	50	2 each: B97; and 6 each: B44, W144, W145, W154, W163, W170, W176, W185	4524A12 $40.52
⅛″	144	9 each: B44, B52, B97, B121, W142, W144, W145, W153, W154, W162, W163, W170, W175, W176, W185, W200	4524A11 $118.00
¼″	12	2 each: A1, A3, A11, A12, A24, A38	6165A12 $25.84
¼″	12	2 each: W164, W176, W185, W187, W220, W242	6165A14 $15.22
¼″	50	5 each: A2, A5, A12, A37, A38, W185, W186, W187, W205, W219	8718A12 $56.67
⅛″, ¼″	100	5 each: B42, B44, B52, B53, B111, B131, W144, W154, W163, and W185 with ⅛″ shank; A1, A3, A4, A11, A12, A24, A38, W164, W185, and W220 with ¼″ shank	4559A21 $122.82

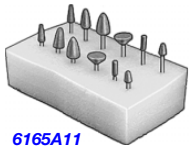
6165A11

8718A12

Coarse-Finish Grinding Bits

A coarse grit makes these abrasives perfect for aggressive deburring and grinding of most metals, including carbon steel and alloy steel. All shanks are ¼″ Dia.×1½″ Lg. For illustrations of these bits, see page 2630.

Aluminum oxide bits can be used on most metals, including carbon steel and alloy steel. All are 36 grit and clay-bonded (vitrified). Color is blue-gray. ***Zirconia alumina*** bits are for heavy duty stock removal. Ideal for use on heat-sensitive materials such as stainless steel. All are 30 grit and resin-bonded. Color is gray-brown.

	Head Dia.	Head Lg.	Max. rpm (See Note)	Shape No.		Each
Aluminum Oxide						
1	½″	1″	40,500	W187	4393A24	$0.90
1	¾″	1″	34,500	W205	4393A41	1.11
1	¾″	1½″	24,000	W207	4393A11	1.59
1	1″	1″	25,500	W220	4393A12	1.20
1	1″	1½″	19,120	W221	4393A42	1.68
1	1″	2″	15,900	W222	4393A13	2.04
1	1½″	½″	25,470	W236	4393A14	1.26
1	1½″	1″	22,500	W237	4393A43	1.50
1	1½″	1½″	15,600	W238	4393A15	2.04
1	2″	1″	19,100	W242	4393A16	1.89
3	1″	1″	34,500	A38	4393A37	1.20
4	¾″	2½″	19,800	A1	4393A31	2.87
5	¾″	1⅛″	45,000	A5	4393A18	1.74
5	1¼″	1¼″	30,560	A4	4393A33	2.04
8	1¼″	¼″	30,560	A37	4393A36	1.29
8	1⅝″	⅜″	23,520	A36	4393A35	1.74
30	1″	2¾″	16,100	A3	4393A17	3.24
25	⅞″	2″	19,860	A11	4393A19	2.22
26	11/16″	1¼″	48,000	A12	4393A21	1.74
29	¼″	¾″	76,500	A24	4393A23	1.20
Zirconia Alumina						
1	¼″	¾″	66,000	W164	44005A24	2.01
1	½″	2″	24,000	W189	44005A15	3.03
1	⅝″	2″	21,000	W197	44005A16	3.12
1	¾″	1½″	24,000	W207	44005A17	2.64
1	¾″	2″	18,750	W208	44005A18	3.12
1	1″	1″	25,500	W220	44005A22	2.40
1	1″	1½″	19,120	W221	44005A19	2.70
1	1″	2″	15,900	W222	44005A21	3.18
4	¾″	2½″	19,800	A1	44005A11	4.47
5	¾″	1⅛″	45,000	A5	44005A13	3.12
30	1″	2¾″	16,100	A3	44005A12	4.80
25	⅞″	2″	19,860	A11	44005A14	3.60

18-Piece Aluminum Oxide Set— You'll get three each of A3, A5, A11, A12, W207, and W220 bits in a foam block stand.

4393A51 ..... **Per Set** $35.68

Hex-Shank Grinding Bits

Bits fit into any drill chuck or screwdriver that accepts their ¼″ hex, 1½″ long shank. Use for light to medium material removal on most metals. Bits are aluminum oxide, medium (60) grit with a vitrified (clay) bond. Color is gray-blue.

	Head Dia.	Head Lg.	Max. rpm (See Note)	Shape No.		Each
31	¾″	1⅛″	45,000	A5	4087A12	$1.97
32	11/16″	1¼″	48,000	A12	4087A13	1.97
33	¼″	1 1/16″	72,750	A15	4087A14	1.69
34	1″	1″	34,500	A21	4087A15	1.57
35	¼″	¾″	76,500	A24	4087A16	1.57
36	1″	1″	34,500	A38	4087A17	1.69
37	⅜″	1″	55,200	W178	4087A18	1.49
38	1″	½″	38,200	W218	4087A19	1.40

12-Pc. Set— Contains two each of shape nos. A21, A24, A38, and W218 and one each of A5, A12, A15, and W178 in a cardboard stand.

4087A21 ..... **Per Set** $18.43

Miniature Grinding Bits

With a small 3/32″ shank diameter, these miniature abrasives are just right for precise and intricate jobs. Their fine grits also produce an extra-smooth finish. Made of aluminum oxide, these bits can be used on most metals, including carbon steel and alloy steel. All are vitrified-bonded. Shanks are 1½″ long. Maximum rpm is 35,000. *Note:* For maximum rpm safety information, see note on this page.

Fine bits are brown. ***Extra fine*** bits are white.

	Head Dia.	Head Lg.	***Fine*** Grit		Each	***Extra Fine*** Grit		Each
39	0.250″	0.078″	120	4407A51	$2.38	400	4407A71	$2.38
40	0.125″	0.406″	120	4407A52	2.38	400	4407A72	2.38
41	0.250″	0.250″	100	4407A53	2.38	400	4407A73	2.38
42	0.125″	0.218″	120	4407A54	2.38	400	4407A74	2.38
43	0.187″	0.531″	80	4407A55	2.38	400	4407A75	2.38
43	0.250″	0.500″	80	4407A56	2.38	400	4407A76	2.38
44	0.312″	0.031″	120	4407A57	2.38	400	4407A77	2.38
45	0.500″	0.062″	80	4407A58	2.38	400	4407A78	2.38

Miniature Tool Sets

134-Piece Assortment with ⅛″ Shank Diameter— You'll get six aluminum oxide and four silicon carbide grinding bits in various shapes; six ⅞″ Dia.×⅛″ Thick. aluminum oxide grinding wheels; 36 15/16″ Dia.×0.025″ Thick., 20 15/16″ Dia.×0.040″ Thick., six 1½″ Dia.×0.040″ Thick., and two fiberglass-reinforced 1¼″ Dia.×0.040″ Thick. cutoff discs; 16 ½″ dia. aluminum oxide sanding bands (fine and coarse); one rubber drum for sanding bands; 36 ¾″ dia. sanding discs; and one ⅛″ shank dia. mandrel for cutoff and sanding discs. Furnished in a plastic case. Maximum rpm is 30,000.

4475A13 ..... **Per Asst.** $49.66

34-Piece Assortment with 3/32″ and ⅛″ Shank Diameter— You'll get six 3/32″ shank dia. aluminum oxide grinding bits; five 3/32″ shank dia. steel burs; three ⅛″ shank dia. felt bobs; six 3/32″ and one ⅛″ shank dia. hair-and-wire wheel brushes; one 3/32″ shank dia. mandrel; two aluminum oxide sanding bands mounted on rubber drums (⅛″ shank dia.); one 3/32″ shank dia. rubber-bonded grinding bit; two rubber-bonded disc/wheels; two felt wheels; one cloth wheel; one cutoff wheel; and three grinding wheels. Maximum rpm is 20,000.

34-Piece Assortment

4475A11 ..... **Per Asst.** $51.53

Maximum rpm Safety Note: The rpm ratings for grinding bits follow ANSI standard B7.1 for maximum safe operating speeds with ½″ or less of exposed shank between the chuck or collet and the abrasive bit. ***Caution:*** As the shank of the abrasive bit is extended beyond ½″, maximum safe rpm decreases significantly. Refer to ANSI standard B7.1 for safety requirements.

Smooth-Finish Rubber-Bonded Grinding Bits and Wheels

A durable rubber bond holds the abrasive together, cushioning the grinding operation. As a result, these bits produce smooth finishes and are perfect for blending, finishing, and deburring. ***Aluminum oxide*** bits can be used on most metals, including carbon steel and alloy steel. ***Silicon carbide*** bits are ideal for nonferrous metals such as aluminum, brass, bronze, and magnesium.

Aluminum Oxide Bits

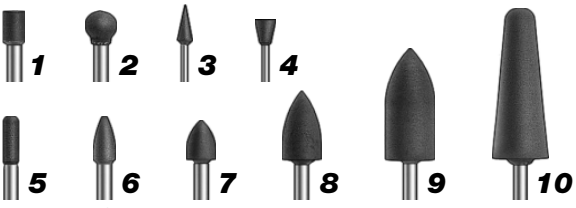

All have 1½″ long shanks. **To Order:** Please specify grit: extra-fine (180, red); fine (120, green); medium (70, black); or coarse (46, brown).

	Head Dia.	Head Lg.	Max. rpm (See Note)	Shape No.		Each
⅛″ Shank Dia.						
1	⅛″	⅜″	105,000	W145	**4919A311**	$5.07
1	3/16″	½″	70,500	W154	**4919A312**	5.26
1	¼″	¼″	81,370	W160	**4919A313**	5.13
1	¼″	½″	60,000	W163	**4919A314**	6.03
1	¼″	¾″	45,900	W164	**4919A461**	6.41
1	⅜″	⅜″	54,000	W175	**4919A316**	6.01
1	⅜″	1″	26,250	W178	**4919A317**	7.44
1	½″	⅜″	41,020	W184	**4919A319**	6.25
1	½″	½″	34,500	W185	**4919A321**	6.85
2	3/16″	3/16″	104,250	B123	**4919A327**	6.16
3	¼″	⅝″	60,000	B53	**4919A324**	7.52
4	5/16″	⅜″	68,400	B104	**4919A325**	7.52
¼″ Shank Dia.						
1	⅜″	½″	81,000	W176	**4919A381**	6.25
1	½″	½″	61,500	W185	**4919A531**	6.85
1	½″	1″	40,500	W187	**4919A561**	7.85
1	¾″	1″	34,500	W205	**4919A565**	9.42
1	1″	1″	25,500	W220	**4919A472**	10.88
1	2″	1″	19,100	W242	**4919A571**	18.77
2	½″	½″	76,390	B121	**4919A326**	7.52
5	¼″	¾″	76,500	A24	**4919A173**	7.52
6	⅜″	¾″	81,000	B52	**4919A323**	7.52
7	½″	¾″	61,120	B42	**4919A322**	7.52
8	11/16″	1¼″	48,000	A12	**4919A172**	12.57
9	⅞″	2″	19,860	A11	**4919A171**	16.89
10	1″	2¾″	16,100	A3	**4919A351**	24.40

Silicon Carbide Unmounted Bits

Sizes 9/32″-¼″ head dia. are furnished in packages of 25. ***Mandrels*** sold separately.

To Order: Please specify grit: extra-fine (240, blue); fine (180, red); medium (120, gray-brown); or coarse (46, green).

Unmounted Bits					Mandrels		
Head Dia.	Head Lg.	Max. rpm (See Note)		Per Pkg.	Shank Dia.		Each
11 9/32″	1″	20,000	**4777A61**	$14.13	⅛″	**4777A34**	$3.99
11 ⅜″	⅝″	20,000	**4777A66**	14.90	⅛″	**4777A34**	3.99
11 ⅜″	1″	20,000	**4777A67**	21.46	⅛″	**4777A36**	4.58
12 ¼″	⅞″	20,000	**4777A62**	14.13	⅛″	**4777A34**	3.99
				Each			
12 ⅞″	1″	20,000	**4777A63**	$9.64	¼″	**4777A71**	6.75
13 ⅞″	1¼″	20,000	**4777A64**	9.64	¼″	**4777A71**	6.75
14 ⅞″	1¼″	20,000	**4777A65**	9.26	¼″	**4777A71**	6.75

Wheels

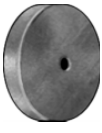

All are made of a combination of aluminum oxide and silicon carbide, unless noted. Not for use on a tapered spindle. Wheels ⅝″-1″ dia. are furnished in packages of 25. ***Mandrels*** sold separately.

To Order: Please specify grit: extra-fine (240, blue); fine (180, red); medium (120, gray-brown); or coarse (46, green).

Wheels					Mandrels		
Dia. × Thick.	Arbor Hole	Max. rpm (See Note)		Per Pkg.	Shank Dia.		Each
⅝″ × ¼″	1/16″	20,000	**4826A41**	$15.09	⅛″	**4770A14**	$4.34
⅞″ × ¼″	1/16″	24,000	**4826A51** ♠	22.24	⅛″	**4770A14**	4.34
1″ × ¼″	⅛″	20,000	**4826A61** ♠	25.40	⅛″	**4770A15**	4.99
				Each			
1½″ × ½″	¼″	15,000	**4824A81**	$12.97	¼″	**4770A11**	$8.91
2″ × ⅜″	¼″	10,500	**4824A82** ▲	12.97	¼″	**4770A11**	8.91
3″ × ½″	¼″	7,000	**4824A83** ▲	24.10	¼″	**4770A11**	8.91

♠ Available in less than full package quantity.
▲ Made of silicon carbide only.

Assortment

200-Piece Assortment— You'll get 48 silicon carbide and 16 aluminum oxide ⅞″ Dia. × ⅛″ Thick. straight wheels, 48 silicon carbide and 16 aluminum oxide ⅞″ dia. tapered-edge wheels, and 48 silicon carbide and 16 aluminum oxide 15/16″ Lg. × ¼″ Wd. bits; grits range from medium (120) to extra fine (240). Also includes four ⅛″ dia. mandrels, two spiral mandrels with hex nut, one 3/32″ collet, and one 1″ Lg. × ½″ Wd. block. Maximum rpm is 21,000.

4772A15 ..... **Per Asst.** $83.72

Tungsten Carbide Grinding Bits for Nonmetals

More economical than diamond abrasives, these tungsten carbide bits grind nonmetals such as fiberglass, ceramics, composites, and plastics.

Abrasive-Grit Bits

The grit is bonded to steel. All have a medium (36) grit. Shank lengths vary from ⅞″-1″. Color is bronze.

	Head Dia.	Head Lg.	Max. rpm (See Note)		Each
⅛″ Shank Dia.					
15	5/32″	13/16″	20,000	**4931A31**	$14.06
16	5/16″	11/16″	20,000	**4931A33**	14.06
17	13/32″	21/32″	20,000	**4931A35**	14.06
18	13/32″	13/32″	20,000	**4931A37**	14.06
19	⅝″	11/16″	20,000	**4931A39**	14.06
¼″ Shank Dia.					
15	¼″	1½″	23,000	**4437A21**	18.58
16	⅛″	1½″	23,000	**4437A23**	18.94
17	⅝″	1″	23,000	**4437A25**	23.16
18	¾″	¾″	23,000	**4437A28**	23.69
19	¾″	1″	23,000	**4437A29**	21.91
20	⅛″	1¼″	23,000	**4437A27**	18.41

Sharp-Tooth Bits

Tooth Detail—Coarse Grade

These bits have structurally aligned pointed teeth that last longer and leave a smoother finish than abrasive-grit bits. Shank lengths vary from 1″ to 1¼″. Shank diameter is ¼″. Choose coarse grade for rapid stock removal; color is red. Choose fine grade for detailed finishing work; color is blue.

To Order: Please specify grade: coarse or fine.

	Head Dia.	Head Lg.	Max. rpm (See Note)		Each
21	9/16″	¾″	25,000	**4257A18**	$17.85
21	13/16″	1¼″	10,000	**4257A83**	19.29
22	5/16″	1½″	25,000	**4257A14**	17.85
22	9/16″	1″	25,000	**4257A15**	17.85
22	13/16″	1⅜″	10,000	**4257A91**	19.29
23	9/16″	9/16″	25,000	**4257A11**	17.85
23	⅞″	⅞″	10,000	**4257A28**	24.10
24	5/16″	1¾″	25,000	**4257A21**	17.85
24	9/16″	¾″	25,000	**4257A22**	17.85
24	13/16″	1¼″	10,000	**4257A77**	19.29
25	⅜″	¾″	25,000	**4257A27**	16.88

Maximum rpm Safety Note: The rpm ratings for grinding bits follow ANSI standard B7.1 for maximum safe operating speeds with ½″ or less of exposed shank between the chuck or collet and the abrasive bit. ***Caution:*** As the shank of the abrasive bit is extended beyond ½″, maximum safe rpm decreases significantly. Refer to ANSI standard B7.1 for safety requirements.

Diamond-Plated Grinding Bits for Carbides, Ceramics, and Glass

Not only are these diamond abrasives harder than tungsten carbide, they also last longer and make more aggressive cuts. Use for grinding very hard nonmetals such as carbides, ferro-ceramics, ceramics, reinforced plastic, sapphire, glass, abrasive composites, and cemented carbides. All bits have a hardened, stainless steel shank to minimize deflection. Color is silver.

For extended tool life and improved finish, a water- or oil-soluble mist or flood coolant is recommended.

1 2 3 4 5 6 7 8 9 10

	Head Dia.	Head Lg.	Max. rpm	O'all Lg.	Grit		Each
1/8″ Shank Diameter							
1	0.029″	0.079″	100,000	2 1/4″	220	**4376A11**	$7.56
1	0.030″	3/16″	96,000	2 1/4″	120	**4490A75**	14.84
1	0.039″	0.079″	100,000	2 1/4″	220	**4376A12**	7.56
1	0.040″	3/16″	96,000	2 1/4″	120	**4490A76**	14.16
1	0.045″	3/16″	96,000	2 1/4″	120	**4490A77**	13.16
1	0.049″	0.079″	100,000	2 1/4″	120	**4376A13**	7.56
1	0.059″	0.118″	100,000	2 1/4″	120	**4376A31**	7.88
1	1/16″	1/4″	96,000	2 1/4″	120	**4490A14**	14.84
1	0.069″	0.118″	100,000	2 1/4″	120	**4376A15**	8.38
1	5/64″	1/4″	96,000	2 1/4″	120	**4490A15**	15.53
1	0.079″	0.157″	100,000	2 1/4″	120	**4376A16**	8.75
1	0.089″	0.157″	100,000	2 1/4″	120	**4376A17**	9.00
1	0.099″	0.157″	100,000	2 1/4″	120	**4376A18**	9.19
1	0.109″	0.157″	60,000	2 1/4″	120	**4376A19**	9.38
1	0.118″	0.157″	60,000	2 1/4″	120	**4376A21**	9.50
1	1/8″	1/4″	96,000	2 1/4″	120	**4490A17**	17.26
1	0.130″	0.197″	60,000	2 1/4″	120	**4376A22**	10.31
1	0.140″	0.197″	60,000	2 1/4″	120	**4376A23**	11.75
1	5/32″	1/4″	96,000	2 1/4″	120	**4490A79**	21.37
1	0.157″	0.197″	60,000	2 1/4″	120	**4376A24**	12.88
1	3/16″	5/16″	96,000	2 1/4″	120	**4490A21**	21.74
1	1/4″	5/16″	46,500	2 1/4″	120	**4490A23**	24.74
1	5/16″	5/16″	46,500	2 1/4″	120	**4490A66**	27.68
2	1/16″	—	96,000	2 1/4″	120	**4490A42**	14.58
2	3/32″	—	96,000	2 1/4″	120	**4490A44**	15.11
2	1/8″	—	96,000	2 1/4″	120	**4490A45**	15.89
2	3/16″	—	96,000	2 1/4″	120	**4490A46**	16.47
2	1/4″	—	46,500	2 1/4″	120	**4490A47**	17.58
2	3/8″	—	46,500	2 1/4″	120	**4490A49**	20.16
3	1/16″	1/4″	96,000	2 1/4″	120	**4490A68**	15.95
3	1/8″	1/4″	96,000	2 1/4″	120	**4490A34**	18.95
3	1/4″	5/16″	46,500	2 1/4″	120	**4490A36**	26.32
3	5/16″	5/16″	46,500	2 1/4″	120	**4490A67**	29.63
4	1/4″	1/32″	46,500	2 1/4″	120	**4490A53**	14.00
4	1/4″	1/16″	46,500	2 1/4″	120	**4490A55**	15.11

	Head Dia.	Head Lg.	Max. rpm	O'all Lg.	Grit		Each
1/8″ Shank Diameter (Cont.)							
4	1/4″	1/8″	46,500	2 1/4″	120	**4490A57**	$17.58
5	1/16″	5/16″	96,000	2 1/4″	120	**4490A71**	14.00
5	0.082″	5/16″	96,000	2 1/4″	120	**4490A72**	15.11
5	0.110″	5/16″	96,000	2 1/4″	120	**4490A64**	16.47
6	0.138″	5/16″	96,000	2 1/4″	120	**4490A65**	17.58
7	11/64″	9/64″	96,000	2 1/4″	120	**4490A58**	14.00
8	5/32″	15/64″	96,000	2 1/4″	120	**4490A59**	14.00
9	3/16″	3/8″	96,000	2 1/4″	120	**4490A61**	16.47
1/4″ Shank Diameter							
1	1/16″	1/4″	96,000	2 1/4″	120	**4490A11**	14.84
1	5/64″	1/4″	96,000	2 1/4″	120	**4490A12**	15.53
1	3/32″	1/4″	96,000	2 1/4″	120	**4490A78**	16.16
1	1/8″	1/4″	96,000	2 1/4″	120	**4490A13**	17.26
1	3/16″	5/16″	96,000	2 1/4″	120	**4490A16**	21.74
1	0.197″	0.236″	60,000	2 1/4″	120	**4376A28**	14.50
1	0.236″	0.275″	60,000	2 1/4″	120	**4376A27**	16.56
1	1/4″	5/16″	46,500	2 1/4″	120	**4490A18**	24.74
1	0.256″	0.275″	60,000	2 1/4″	120	**4376A41**	18.13
1	5/16″	5/16″	46,500	2 1/4″	120	**4490A19**	27.68
1	0.315″	0.315″	30,000	2 1/4″	120	**4376A42**	19.50
1	0.335″	0.315″	30,000	2 1/4″	120	**4376A43**	20.69
1	3/8″	5/16″	46,500	2 1/4″	120	**4490A22**	31.37
1	0.394″	0.394″	30,000	2 1/4″	120	**4376A44**	24.81
1	0.473″	0.394″	30,000	2 1/4″	120	**4376A45**	28.06
1	1/2″	5/16″	30,000	2 1/4″	120	**4490A24**	37.63
1	0.591″	0.394″	20,000	2 1/4″	120	**4376A46**	35.44
1	0.730″	0.394″	20,000	2 1/4″	120	**4376A47**	51.75
2	1/2″	1/4″	30,000	2 1/4″	120	**4490A27**	32.68
2	3/4″	1/2″	18,600	2 1/4″	120	**4490A28**	51.32
3	3/8″	5/16″	46,500	2 1/4″	120	**4490A25**	33.42
3	1/2″	5/16″	30,000	2 1/4″	120	**4490A26**	39.63
10	3/16″	0.100″	18,600	2″	120	**4490A29**	20.83
10	1/4″	0.100″	18,600	2″	120	**4490A31**	23.81
10	1/2″	0.200″	30,000	2″	120	**4490A32**	51.72

CBN Grinding Bits for Steel and Alloy Steels

Even hard metals can't stand up to abrasion from these extremely hard grinding bits. Made of cubic boron nitride, they work well on stainless steel, work-hardened steel, alloy steels, and cast iron. Also known as jig grinding pins or mandrels, they're excellent for internal, jig, and contour grinding jobs. All points have a hardened stainless steel shank to minimize deflection. Color is silver.

For longer tool life and improved finish, a sulpho-chlorinated oil coolant is recommended.

Head Dia.	Head Lg.	Max. rpm	O'all Lg.	Grit		Each
1/8″ Shank Diameter						
0.029″	0.079″	100,000	2 1/4″	220	**4338A12**	$7.56
0.039″	0.079″	100,000	2 1/4″	220	**4338A11**	7.56
0.049″	0.079″	100,000	2 1/4″	120	**4338A13**	7.56
0.059″	0.118″	100,000	2 1/4″	120	**4338A14**	7.88
0.069″	0.118″	100,000	2 1/4″	120	**4338A17**	8.38
0.079″	0.157″	100,000	2 1/4″	120	**4338A15**	8.75
0.089″	0.157″	100,000	2 1/4″	120	**4338A16**	9.00
0.099″	0.157″	100,000	2 1/4″	120	**4338A18**	9.19
0.109″	0.157″	60,000	2 1/4″	120	**4338A19**	9.38
0.118″	0.157″	60,000	2 1/4″	120	**4338A41**	9.50
0.130″	0.197″	60,000	2 1/4″	120	**4338A42**	10.31
0.140″	0.197″	60,000	2 1/4″	120	**4338A21**	11.75
0.157″	0.197″	60,000	2 1/4″	120	**4338A22**	12.88
1/4″ Shank Diameter						
0.197″	0.236″	60,000	2 1/4″	120	**4338A24**	14.50
0.236″	0.275″	60,000	2 1/4″	120	**4338A43**	16.56
0.256″	0.275″	60,000	2 1/4″	120	**4338A26**	18.13
0.315″	0.315″	30,000	2 1/4″	120	**4338A27**	19.50
0.335″	0.315″	30,000	2 1/4″	120	**4338A28**	20.69
0.394″	0.394″	30,000	2 1/4″	120	**4338A44**	24.81
0.473″	0.394″	30,000	2 1/4″	120	**4338A3**	28.06
0.591″	0.394″	20,000	2 1/4″	120	**4338A45**	35.44
0.730″	0.394″	20,000	2 1/4″	120	**4338A32**	51.75

Caution: ***Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.***

Air-Powered Grinders for Bits and Burs

A

B

C

D

E

F

G

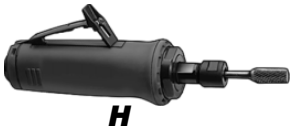
H

J

K

L

M

Also known as die grinders, these tools can be used with shank-mounted grinding bits as well as carbide burs, felt bobs, sanding drums, and other shank-mounted accessories. All operate on 90 psi air pressure. They have an NPT female air inlet and lever throttle (except Styles C, K, L, and M) to regulate air flow. Furnished with a collet (except Style E) and at least one collet wrench.

***A-C Economy Grinders*—**Designed for light duty, intermittent use, these grinders are the perfect choice for occasional grinding, deburring, and finishing jobs.

Style A is our most economical die grinder.

Style B have a lever lock to prevent accidental start-up.

Style C has the high-speed capabilities to handle numerous grinding applications. It has a ring-style throttle to regulate air flow and comes with a 5-ft. air hose.

***D-F Maintenance Grinders*—**More durable than our economy grinders, these grinders are designed for more frequent use. All have a lever lock to prevent accidental start-up.

Style E also includes a 1/4″ Jacobs drill chuck instead of a collet.

Style F has a long spindle for grinding in hard-to-reach areas.

***G-M Heavy Duty Grinders*—**Rated for continuous use, these grinders can take on your tough jobs. They have high-quality bearings for long spindle life and are ergonomically designed for optimal comfort.

Style H feature a high-profile flange that protects your hand and prevents accidental start-up. The exhaust can be changed from the rear to the front. *Model* 4426A25 also has a lever lock to prevent accidental start-up.

Style J is just like Style H shown above, but with a long-nose spindle for hard-to-reach spots.

Styles K and ***L*** are high-speed, lightweight, pencil-sized tools. Choose from straight (K) and angled (L) models. Both have a ring-style throttle to regulate air flow and include a 5-ft. air hose.

Style M is an air-turbine grinder. It's totally oil-free and has no gears to maintain. It sustains constant speed under load; operates at high speeds for long cutting-tool life; and features a lightweight, ergonomic design to reduce operator fatigue. Furnished with a 5-ft. hose with shut-off valve and 1/4″ NPT female coupling.

	No-Load rpm	hp	Collet Size	Avg. cfm @ 90 psi	Exhaust Style	O'all Lg.	Air Inlet, NPT	Rec. Hose Size	Wt., lbs.	Grinders	Each	Replacement Collets	Each
Economy Grinders													
A	22,000	0.50	1/4″	4	Rear	6 3/4″	1/4″	3/8″	1 1/8	4484A16	$46.75	4484A51	$16.73
B	22,000	0.40	1/4″	6.5	Rear	5 3/4″	1/4″	3/8″	1 1/4	4484A31	71.48	4484A61	13.88
B	22,000	0.50	1/4″	4	Rear	6 5/8″	1/4″	3/8″	1 3/8	4356A13	70.33	4356A31	12.88
C	70,000	0.10	1/8″	5.3	Rear	5 19/64″	1/4″	3/8″	1/4	8755A21	133.86	8755A22	8.08
Maintenance Grinders													
D	24,000	0.50	1/4″	5.75	Rear	5 3/4″	1/4″	3/8″	1 1/4	4599A11	176.82	4484A61	13.88
E	25,000	0.50	1/4″ Chuck	5	Front	6 1/2″	1/4″	3/8″	1 1/4	4599A12	228.48	———	———
F	22,000	0.90	1/4″	5.5	Rear	12″	1/4″	3/8″	2 13/32	43575A21	259.10	43575A61	35.37
Heavy Duty Grinders													
G	18,000	0.60	1/4″	30	Rear	6 29/32″	1/4″	5/16″	1 13/32	46045A11	369.47	46045A31	20.21
G	25,000	0.30	1/4″	24	Rear	6″	1/4″	1/4″	51/64	46045A12	302.21	46045A32	22.41
H	18,000	0.80	1/4″	36	Rear/Front	7 3/8″	1/4″	3/8″	1 19/32	4426A27	454.51	4426A71	13.50
H	25,000	0.40	1/4″	20	Rear/Front	6 1/8″	1/4″	5/16″	29/32	4426A19	349.06	4426A72	11.67
H	25,000	0.80	1/4″	36	Rear/Front	7 3/8″	1/4″	3/8″	1 5/8	4426A22	454.44	4426A71	13.50
H	35,000	0.40	1/4″	25	Rear/Front	6 1/8″	1/4″	5/16″	29/32	4426A25	349.00	4426A72	11.67
J	25,000	0.80	1/4″	36	Rear/Front	12 1/8″	1/4″	3/8″	2 11/16	4426A26	697.42	4426A71	13.50
K	60,000	0.10	1/8″	7	Rear	5 51/64″	1/8″	3/16″	11/32	4343A81	338.18	4343A83	24.65
L	80,000	0.10	1/8″	7	Rear	5 1/2″	1/8″	3/16″	19/64	4343A82	380.77	4343A84	32.28
M	50,000	0.30	1/8″	10	Rear	5 5/8″	1/4″	1/4″	11/32	4591A11	379.19	4591A68	39.19

***1/4″ to 1/8″ Collet Reducer Bushing*—**Reduces collet size from 1/4″ to 1/8″ ..... **46115A31** **Each** $6.73

Economy Air-Powered Bit and Bur Grinder Kits

1

2

Each kit we offer comes furnished with an economy grinder, two wrenches, a collet, a plastic carrying case, and the accessories mentioned below. The kits are intended for light, intermittent use.

***1 Grinder and Bit Kit*—**This kit includes 10 grinding bits (five with 1/8″ dia. shank, five with 1/4″ dia. shank).

***2 Grinder and Bur Kit*—**This kit includes seven solid carbide, double-cut burs with 1/4″ dia. shanks.

Kit	No-Load rpm	hp	Collet Size	Avg. cfm @ 90 psi	Exhaust Style	O'all Lg.	Air Inlet, NPT	Rec. Hose Size	Wt., lbs.		Each
1	22,000	0.50	1/4″, 1/8″ ♦	6	Rear	6 3/4″	1/4″	3/8″	1 3/8	4405A21	$61.22
2	22,000	0.50	1/4″	4	Rear	6 3/4″	1/4″	3/8″	1 3/8	8179A11	166.39

♦ Includes a 1/4″ collet and a 1/4″ to 1/8″ collet reducer bushing.

Caution: Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.

Air-Powered Angle Grinders for Bits and Burs

For a different slant on your grinding operation, try one of these angle grinders. Also known as die grinders, they operate on 90 psi air pressure and are for use with grinding bits, burs, and other shank-mounted accessories. They have an NPT female air inlet, lever throttle, and come furnished with a collet and a collet wrench.

A

A ***Economy Grinders—*** Designed for light, intermittent use, these grinders are perfect for occasional grinding, deburring, and finishing jobs. They have a lever lock to prevent accidental start-up.

B&C ***Maintenance Grinders—*** More durable than our economy grinder, these grinders are designed for more frequent use. All have a lever lock to prevent accidental start-up.

Style C has a 60° angled head to get into spots a right-angle grinder can't reach and a soft grip to reduce vibration.

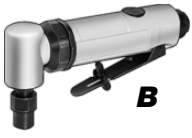
B

D&E ***Heavy Duty Grinders—*** Rated for continuous use, these grinders can take on your tough jobs. They have high-quality bearings and collets for long spindle life.

Style D have lubricated gears for long wear. They also have sealed bearings to minimize maintenance.

Style E feature heavy duty gears and precision collets for smooth operation and long tool life. A high-profile flange protects your hand and prevents accidental start-up. Exhaust can be changed from rear to front.

C

No-Load rpm	hp	Collet Size	Avg. cfm @ 90 psi	Exhaust Style	O'all Lg.	Air Inlet, NPT	Rec. Hose Size	Wt., lbs.		Each
Economy Grinders										
A 25,000	0.33	1/4″	4	Rear	6 1/8″	1/4″	3/8″	1 5/64	**4576A51**	$57.50
A 20,000	0.25	1/4″	3	Front	5″	1/4″	3/8″	1	**4576A61**	65.93
Maintenance Grinders										
B 25,000	0.30	1/4″	3	Rear	6″	1/4″	3/8″	1 1/8	**4576A88**	159.96
B 18,000	0.33	1/4″	3	Front	5 1/4″	1/4″	3/8″	1	**4576A68**	112.88
C 18,000	0.50	1/4″	3.3	Rear	6 3/4″	1/4″	3/8″	1 3/4	**4341A21**	156.42
Heavy Duty Grinders										
D 20,000	0.40	1/4″	11	Front	6 5/8″	1/4″	1/4″	1 1/8	**45105A11**	489.32
D 12,000	0.40	1/4″	11	Front	6 5/8″	1/4″	1/4″	1 1/8	**45105A12**	489.32
E 20,000	0.40	1/4″	25	Rear/Front	6″	1/4″	5/16″	1 3/32	**8703A13**	511.38
E 12,000	0.40	1/4″	19	Rear/Front	6″	1/4″	5/16″	1 3/32	**8703A14**	511.38
E 18,000	0.80	1/4″	36	Rear/Front	7 1/4″	1/4″	3/8″	2 5/16	**8703A11**	692.56
E 12,000	0.80	1/4″	36	Rear/Front	7 3/4″	1/4″	3/8″	2 5/16	**8703A12**	748.91

D

E

Economy Grinder and Grinding Bit Kit

You'll get the economy grinder 4576A61 listed above, plus 10 grinding bits (five with 1/4″ dia. shank, five with 1/8″ dia. shank), a 1/8″ collet, two wrenches, and a plastic carrying case.

4576A62 ..... **Each** $70.32

Electric Grinders for Bits and Burs

F G H J K

Also known as die grinders, these tools are for use with grinding bits, burs, and other shank-mounted accessories. Grinders are double insulated (except 43805A61) and come furnished with one collet, at least one collet wrench, and power cord with two-prong plug (unless noted). All are UL listed.

F ***Makita Grinder—*** Has a thumb-slide on/off switch.

G ***DeWalt Grinder—*** Has a paddle on/off switch and speed lock-on button. CSA certified.

H ***Milwaukee Grinder—*** Has a toggle on/off switch. CSA certified. An optional 1/8″ collet is sold separately below.

J ***Bosch Grinder—*** Our most powerful grinder for your heavy duty jobs. It has a trigger bar with lock-off switch to prevent accidental start-up. Also has a speed lock-on button.

K ***Dumore Grinder Kit—*** Comes with precision 1/4″ and 1/8″ collets, eight grinding bits, a dressing stone, and carrying case. Grinder has a toggle on/off switch.

No-Load rpm	Collet Size	Volts	Current	Hz	Amps	O'all Lg.	Wt., lbs.	Manufacturer and Model No.	Cord Lg.		Each
F 25,000	1/4″	120	AC/DC	50/60	3.5	14 1/8″	3 1/2	Makita GD0601	8′	**4400A16**	$116.40
G 25,000	1/4″	120	AC/DC	60	3.0	13″	3 1/4	DeWalt DW887	7′	**4577A71**★	172.68
H 21,000	1/4″	120	AC/DC	20-60	4.5	13 1/2″	4 1/2	Milwaukee 5192	7′	**4375A21**	236.25
J 16,000	1/4″	120	AC/DC	60	8.4	21″	6 1/2	Bosch 1209	7′	**4372A41**	432.50
K 22,000	1/4″, 1/8″	115	AC/DC	60	1.2	8 1/2″	3 1/8	Dumore 10-355V	7′	**43805A61**■	320.45
Optional 1/8″ Collet for Milwaukee Grinder No. 5192										**4375A26**	31.32

★ Also includes a 1/8″ bushing in addition to collet. ■ Grounded tool. Furnished with power cord with three-prong plug.

Economy Electric Flexible-Shaft Grinder for Bits and Burs

Perfect for light duty applications. Grinder has a 1/8-hp, 110-120 VAC, 50/60 Hz motor; 38″ long flexible shaft; a foot-operated speed control that operates at no-load speeds from 0 to 18,000 rpm; a permanently lubricated 1″ Dia.×5″ Lg. handpiece; one 1/8″ and one 1/4″ collet; a wrench; 3/4 oz. of lubricant; 6-ft. power cord with three-prong plug; and a hanging bail. Do not bend shaft to less than a 6″ radius (see illustration).

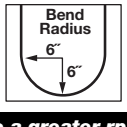

		Each
Complete Unit	**4447A95**	$220.76
Replacement Parts		
Flexible Shaft	**4447A96**	$7.24
Sheath	**4447A97**	9.45
1/8″ Collet	**4447A59**	5.51
1/4″ Collet	**4447A62**	5.51

Jacobs Chuck for Bit and Bur Grinders

Get a firm grip on grinding bits, burs, and other grinding accessories used in air-powered and electric grinders. The chuck and compatible rubber flex collets are sold separately below.

Chuck mount is 3/8″-24. Jacobs No. 100-61. ***Rubber flex collets*** have rubber-cushioned steel jaws that provide a gripping force two to three times that of most steel collets.

Chuck

43525A31 ..... **Each** $86.26

Rubber Flex Collets

Capacity Range Min.	Max.		Each
0.094″	0.177″	**25305A71**	$46.28
0.177″	0.256″	**25305A72**	46.28

Caution: ***Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.***

Electric and Cordless Dremel Light Duty Grinders for Bits and Burs

Model 100-N/7

Model 8000-03

Versatile and compact, these tools are great for light grinding, sanding, finishing, and polishing. They accept a multitude of accessories, including grinding bits, burs, drill bits, polishing wheels, drum sanders, sanding bands, and wire brushes. **Also Available:** Replacement parts. Ask for 4344A82 and specify part.

Grinder Kits

Electric Grinder Kits— All have a shaft lock for easy tool changes and a two-prong plug with 6-ft. power cord, unless noted. *Models 4000-2/30* and *3000-1/24* can be run at variable speeds. *Model 4000-2/30* is furnished with a circle cutter, 30 assorted accessories, and a plastic storage case. *Model 3000-1/24* is furnished with 24 assorted accessories and a plastic storage case. *Model 100-N/7*, a single-speed grinder, is furnished with a 7-piece accessory kit and has a 10-ft. power cord.

Cordless Grinder Kit— With its powerful 10.8-volt lithium-ion battery, this grinder works like a corded tool. Plus, it can be run at variable speeds. Grinder features a shaft lock for easy accessory changes and a battery fuel gauge. Furnished with a battery, 3-hour charger, 40 assorted accessories, collet wrench, and a plastic storage case.

Model No.	No-Load rpm	Collet Size	Motor Volts	Motor Current	Motor Hz	Motor Amps	O'all Lg.	Wt., lbs.	Meets Listing		Each
Electric Grinder Kits											
4000-2/30	5,000-35,000	1/8″	120	AC	50/60	1.6	9″	1.2	CSA	**4344A15**	$119.47
3000-1/24	5,000-32,000	1/8″	120	AC	50/60	1.2	7½″	1.2	CSA	**4344A76**	89.84
100-N/7	35,000	1/8″	120	AC	50/60	1.15	7½″	1.0	UL & CSA	**4370A6**	49.15
Cordless Grinder Kit											
8000-03	5,000-35,000	1/8″	10.8	DC	—	—	13½″	5.0	CSA	**43435A61**	85.24

Accessories— Do not use over 35,000 rpm.

Flexible Shaft

Tool Hanger

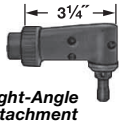

Right-Angle Attachment

Safety Shield

Flexible Shaft— Shaft is 36″ long. Do not bend to less than a 6″ radius. Handpiece is 1″ dia.

Tool Hanger— Clamps onto workbenches up to 1¾″ thick. Holds up to 13 bits and has storage for one wrench. Adjustable shaft extends up to 42″.

Right-Angle Attachment— Quick-connect system allows attachment without tools.

Safety Shield— This 360° shield has a self-closing design. Accepts up to 1½″ diameter cutoff wheels. Furnished with a mandrel and a 1½″ wheel.

10.8-Volt Battery Pack— This lithium-ion battery provides long-lasting power.

3-Hr. Battery Charger— For use with the 10.8-volt battery shown above.

	For Dremel No.		Each
Flexible Shaft	All models above, 285, 3965-02, 7800-02	**4370A5**	$35.29
Tool Hanger	All with Flex Shaft	**4344A71**	17.54
Right-Angle Attachment	All models above, 285, 3965-02	**4344A74**	24.70
Safety Shield	All models above, 3965-02, 3981-01, 7800-01 & 02	**4344A92**	22.20
10.8-Volt Battery Pack	8000-03	**43435A73**	41.79
3-Hr. Battery Charger	8000-03	**43435A13**	27.50

Electric Flexible-Shaft Grinders for Bits and Burs

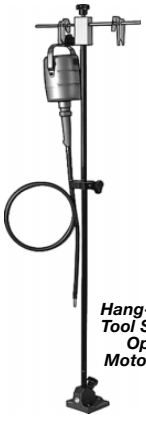

Hang-Up-Style Tool Shown on Optional Motor Hanger

Bench-Style Tool with Foot-Operated Speed Control

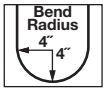

Standard Collet-Style Handpiece

Slimline Collet-Style Handpiece

Three-Jaw Chuck-Style Handpiece

Our handy flexible-shaft grinders have a variable-speed control so you can select the right speed for your accessory or application. All have a 110-130 volt, AC/DC, 50/60 Hz motor and foot-operated speed control (except where noted). Grinders and handpieces are sold separately.

Grinders come in hang-up and bench (with iron base and swivel assembly) styles, both with a 6-ft. power cord. To prevent premature wear and shaft failure, do not bend shafts to less than a 4″ radius (see illustration). For proper operation, clean and lubricate shafts every 50 hours of use.

Maintenance duty grinders can handle most jobs. Both have a ball-bearing motor, 5/32″ diameter shaft, and a protective steel-lined sheath with silencer. 4454A75 is UL listed and CSA certified. 4454A49 is CSA certified. *Heavy duty* grinders are built for continuous use. They have a ball-bearing motor, 15/32″ diameter shaft, and heavy duty protective sheath. CSA certified.

Handpieces run smoothly, eliminating the vibration, noise, and heat found in other hand-held power tools. All are 1″ in diameter (except where noted) and measure approximately 5″ to 6″ long. Handpieces for maintenance duty and heavy duty tools are not interchangeable.

Standard collet style have a tapered front grip; 3/32″, 1/8″, and 1/4″ collets; a pin; and a wrench. *Slimline collet style* is for use with maintenance duty tools only. Handpiece is just 3/4″ in diameter so it comfortably fits smaller hands. Perfect for fine, detailed applications. Furnished with 3/32″ and 1/8″ collets. *Three-jaw chuck style* accepts shank diameters up to 5/32″. Furnished with a chuck key.

Replacement shafts include inner shaft and outer sheath.

Grinders and Handpieces

Duty Rating	hp■	No-Load rpm	Shaft Lg.	Grinders Without Handpiece	Each	Handpieces: Standard Collet Style	Each	Slimline Collet Style	Each	Three-Jaw Chuck Style	Each	Replacement Shafts	Each
Hang-Up Style													
Maintenance	1/6	500-18,000	39″	**4454A75**	$231.72	**4454A55**	$56.41	**4454A82**	$58.52	**4454A31**	$63.38	**4454A41**	$32.73
Heavy	1/3	300-15,000	60″	**8713A97**	302.19	**8713A34**	61.49	—	—	**8713A32**	69.42	**8713A93**	60.00
Bench Style													
Maintenance	1/6	500-18,000	39″	**4454A49** ♦	264.49	**4454A55**	56.41	**4454A82**	58.52	**4454A31**	63.38	**4454A41**	32.73
Heavy	1/3	300-15,000	60″	**8713A98**	341.73	**8713A34**	61.49	—	—	**8713A32**	69.42	**8713A93**	60.00

■ Rating under load. ♦ Has speed-control dial in the base.

Accessories

Seven-Piece Collet Set— For use with standard collet-style handpieces. You'll get 3/32″, 3 mm, 1/8″, 5/32″, 3/16″, 6 mm, and 1/4″ collets in a plastic case.

4454A56 ..... **Each** $45.48

Motor Hanger— Screws onto the top or side of your workbench for suspending hang-up-style tools. It features full-swivel capability and a locking screw. A T-rod lets you hang two tools from one hanger.

4454A78 ..... **Each** $58.51

Caution: Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.

Flexible Shaft Conversion Kits

Simply attach these flexible shafts to your power drill or bench-mount motor, and you've got a tool for all your grinding, deburring, and sanding jobs.

Light duty shaft is 39″ long. Furnished with handpiece, 1/8″ and 1/4″ collets, wrench, and lockpin. Maximum rpm is 18,000. For proper operation, do not bend shaft to less than a 4″ radius (see illustration).

Heavy duty shaft works with any 1/4- to 1/2-hp motor (maximum rpm is 3,450). Its built-in slip clutch prevents overload and damage to the rotating shaft. Measuring 60″ in length, the shaft comes furnished with a ball-bearing handpiece and motor coupling. The handpiece end has a 1/2″-20 spindle thread, two 1 7/8″ dia. flanges, and two hex nuts. The end that attaches to your motor has a 1/2″ female coupling with two set screws. For proper operation, do not bend shaft to less than a 7″ radius (see illustration).

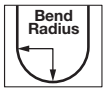

Flexible Shafts

		Each
Light Duty	4587A22	$94.44
Heavy Duty	4472A14	375.00

Replacement Parts for Heavy Duty Flexible Shaft

		Each
Slip Clutch	4472A16	$69.31
Handpiece	4472A17	117.15
Inner Shaft	4472A18	77.08
Casing Sheath Assembly	4472A21	115.38
Motor Coupling	4472A22	133.97

Grinding Discs

Also known as Type 27 or raised-hub wheels, these grinding discs are designed for use in pneumatic and electric right-angle grinders. They're ideal for smoothing metal surfaces, removing weld seams, and other light grinding. The ***1/8″ thick discs*** can also be used for notching, cutting off, and occasional light side grinding applications. Discs are 30 grit, except where noted. The ***1/4″ thick discs*** work best for aggressive metal removal, but cannot be used for cutting off or notching. Discs are 24 grit, except where noted. Color is black.

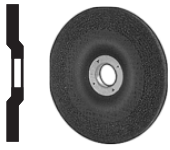

Grinding Discs

Aluminum Oxide— A good value for everyday use, these resin-bonded aluminum oxide wheels offer an economical balance between aggressive stock removal and long life when grinding a variety of ferrous metals. ***Aluminum Oxide/Zirconia Alumina Blend—*** With a more aggressive abrasive and a superior bond, these discs last nearly twice as long as the aluminum oxide discs when grinding stainless steel, steel alloys, and iron. ***Ceramic Alumina/Zirconia Alumina Blend—*** An advanced, patented combination of abrasive grain and bond in these discs results in a 50% more aggressive cutting rate and up to nine times the life span of the aluminum oxide discs. Perfect for grinding stainless steel and hard-to-grind alloys.

			Aluminum Oxide			Aluminum Oxide/ Zirconia Alumina Blend			Ceramic Alumina/ Zirconia Alumina Blend		
				Each			Each			Each	
Dia.	Arbor	Max. rpm	Pkg. Qty.	Partial Pkg.	Full Pkg.	Pkg. Qty.	Partial Pkg.	Full Pkg.	Pkg. Qty.	Partial Pkg.	Full Pkg.
1/8″ Thick Discs with Plain Arbor (Unless Noted)											
3″	3/8″	18,000	25 4569A34♣	$1.93	$1.76	—	—	—	20 44355A31	$5.89	$5.34
4″	3/8″	15,280	20 4569A35	2.26	2.07	20 44435A39	$3.82	$3.42	20 44355A34	6.91	6.27
4″	5/8″	15,280	20 4569A36	2.16	1.97	20 44435A41	3.82	3.42	20 44355A35	6.91	6.27
4 1/2″	7/8″	13,580	20 4569A37	1.82	1.65	20 44435A43	3.83	3.43	20 44355A39	7.39	6.70
4 1/2″	7/8″	13,580	20 4569A38▲♠	2.05	1.87	—	—	—	20 44355A42▲♠	7.91	7.19
5″	7/8″	12,225	20 4569A39▲	3.05	2.79	20 44435A47	4.95	4.44	20 44355A45	8.85	8.03
6″	7/8″	10,000	25 8729A21	3.03	2.76	10 44435A74	5.61	5.06	—	—	—
7″	7/8″	8,600	20 8729A12	3.96	3.60	20 44435A52	6.26	5.61	20 44355A11	10.25	9.31
9″	7/8″	6,600	20 8729A13	5.32	4.83	20 44435A66	9.35	8.37	—	—	—
1/8″ Thick Discs with Threaded Arbor											
4 1/2″	5/8″-11	13,580	20 4569A51	3.20	2.93	20 44435A44	4.95	4.44	20 44355A41	8.46	7.67
5″	5/8″-11	12,000	10 4569A56	3.12	2.85	20 44435A48	5.97	5.34	20 44355A13	10.01	9.09
6″	5/8″-11	10,000	10 8729A22	4.05	3.68	10 44435A72▲	8.80	7.89	—	—	—
7″	5/8″-11	8,600	10 8729A14	5.78	5.25	10 44435A53	7.90	7.07	10 44355A48	12.10	10.98
9″	5/8″-11	6,600	10 8729A15	7.20	6.54	10 44435A57	10.95	9.81	10 44355A53	15.48	14.04
1/4″ Thick Discs with Plain Arbor											
3″	3/8″	18,000	20 4569A41	2.47	2.26	—	—	—	20 44355A32	7.31	6.63
4″	3/8″	15,280	20 4569A42	2.46	2.25	20 44435A61	3.93	3.52	20 44355A36	8.26	7.50
4″	5/8″	15,280	20 4569A45	2.34	2.14	20 44435A42	3.93	3.52	20 44355A37	8.26	7.50
4 1/2″	7/8″	13,580	20 4569A43	1.87	1.70	20 44435A45	3.98	3.57	20 44355A43	8.52	7.73
5″	7/8″	12,225	20 4569A44	3.14	2.87	20 44435A49	5.75	5.15	20 44355A46	9.88	8.97
6″	7/8″	10,000	25 4569A61●	3.61	3.31	20 44435A21	6.72	6.02	20 44355A12	12.02	10.90
7″	7/8″	8,600	20 4569A21	4.29	3.92	20 44435A54	6.95	6.23	20 44355A49	12.64	11.48
9″	7/8″	6,600	20 4569A29	6.17	5.65	20 44435A58	10.29	9.21	20 44355A54	17.12	15.53
1/4″ Thick Discs with Threaded Arbor											
4 1/2″	5/8″-11	13,580	20 4569A52	3.33	3.06	20 44435A46	5.08	4.55	20 44355A44	9.65	8.76
5″	5/8″-11	12,225	—	—	—	20 44435A51	6.72	6.01	20 44355A14	10.85	9.84
6″	5/8″-11	10,000	10 4569A62●	4.59	4.20	10 44435A22	7.80	6.98	—	—	—
7″	5/8″-11	8,600	10 4569A31	6.04	5.52	10 44435A55	8.58	7.69	10 44355A51	14.14	12.83
9″	5/8″-11	6,600	10 4569A32	8.13	7.45	10 44435A59	11.92	10.68	10 44355A55	18.61	16.89

♣ Max. rpm is 20,000. ▲ 24 grit. ♠ 3/16″ thick. ● 30 grit.

Application-Specific Grinding Discs

Special abrasives and bonds make these 1/4″ thick, 24-grit discs particularly well-suited for certain applications. ***Silicon Carbide for Masonry—*** When grinding concrete, masonry, and stone, this abrasive cuts faster and lasts longer. ***Aluminum Oxide for Aluminum—*** Bonded without any wax or rubber filler, these discs resist loading and are ideal for grinding aluminum and other soft metals. ***Clean-Bond Aluminum Oxide for Stainless Steel—*** The absence of any iron, sulfur, or chlorine in these discs means they won't contaminate stainless steel. Also known as INOX wheels.

			Silicon Carbide for Masonry			Aluminum Oxide for Aluminum			Clean-Bond Aluminum Oxide for Stainless Steel		
				Each			Each			Each	
Dia.	Arbor	Max. rpm	Pkg. Qty.	Partial Pkg.	Full Pkg.	Pkg. Qty.	Partial Pkg.	Full Pkg.	Pkg. Qty.	Partial Pkg.	Full Pkg.
With Plain Arbor											
4″	5/8″	15,000	25 44425A19	$2.66	$2.41	20 44165A11	$5.77	$5.22	—	—	—
4 1/2″	7/8″	13,580	10 44425A23	1.91	1.73	20 44165A12	5.60	5.06	20 4408A11	$3.14	$2.83
7″	7/8″	8,500	5 44425A17	4.77	4.27	20 44165A13	7.65	6.92	25 4408A22	4.76	4.31
With Threaded Arbor											
4 1/2″	5/8″-11	13,580	5 44425A16	2.89	2.62	20 44165A21	7.24	6.55	20 4408A13	4.38	3.95
7″	5/8″-11	8,600	5 44425A27	5.03	4.55	10 44165A14	9.38	8.49	—	—	—
9″	5/8″-11	6,600	5 44425A32	7.17	6.48	10 44165A16	12.18	11.01	—	—	—

Coarse-Finish Grinding Cups

Side View

Coarse grits make these resin-bonded cups ideal for aggressive stock removal. Frequently used for smoothing weld seams and removing flaws from castings, they are also known as snagging wheels, flared-cup wheels, and cup stones. Cups mount on right-angle grinders with a male 5/8″-11 threaded arbor. A special wheel guard is recommended. Color is black.

Note: Cup dia. shown is large dia./small dia.

Steel-back cups have a steel plate on the back for added safety. ***Aluminum oxide cups*** are suitable for use on most ferrous metals, including stainless steels and some cast iron. Grit is 16. ***Zirconia alumina cups*** produce finer finishes than aluminum oxide. They also last longer and make faster cuts on stainless steel and other ferrous metals. Grit is 24. ***Silicon carbide cups*** work best on concrete, masonry, and some nonferrous metals. Grit is 16.

Cup Size, Dia. × Thick. × Face	Max. rpm	Standard	Each	Steel Back	Each
Aluminum Oxide Cups					
4″/3″ × 2″ × 1″	9,070	4473A3	$11.78	4473A4	$13.80
5″/4″ × 2″ × 1 1/2″	7,260	4473A1	15.44	4473A5	17.52
6″/4 3/4″ × 2″ × 1 1/2″	6,050	4473A2	17.26	4473A6	19.36
6″/4 3/4″ × 2 1/2″ × 1 1/2″	6,050	4473A7	19.86	4473A8	22.02
Zirconia Alumina Cups					
4″/3″ × 2″ × 1″	9,070	4354A27	19.16	4354A31	21.28
5″/4″ × 2″ × 1 1/2″	7,260	4354A28	25.16	4354A32	27.34
6″/4 3/4″ × 2″ × 1 1/2″	6,050	4354A29	28.16	4354A33	30.38
Silicon Carbide Cups					
4″/3″ × 2″ × 1″	9,070	8728A1	12.62	8728A4	14.68
5″/4″ × 2″ × 1 1/2″	7,260	8728A2	16.56	8728A5	18.62
6″/4 3/4″ × 2″ × 1 1/2″	6,050	8728A3	18.50	8728A6	20.62
6″/4 3/4″ × 2 1/2″ × 1 1/2″	6,050	8728A7	21.28	8728A8	23.44

Saucer-Shaped Grinding Discs

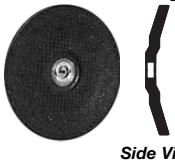

Side View

These saucer-shaped grinding discs are designed to be held at shallower angles than standard Type 27 raised-hub discs, so they're easier to use. Also known as Type 28 raised-hub wheels, they are made of aluminum oxide and are for use on right-angle grinders. All are 24 grit. Color is black. Use on alloy steel and other ferrous metals.

Disc Size, Dia. × Thick. × Arbor	Max. rpm	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4 1/2″ × 1/4″ × 5/8″-11	13,300	10	4477A3	$5.25	$4.75
4 1/2″ × 1/4″ × 7/8″	13,300	25	4477A4	3.49	3.14
7″ × 1/4″ × 5/8″-11	8,600	10	4477A11	8.43	7.61
7″ × 1/4″ × 7/8″	8,600	20	4477A1	6.76	6.12
9″ × 1/4″ × 5/8″-11	6,600	10	4477A12	11.84	10.69
9″ × 1/4″ × 7/8″	6,600	20	4477A2	10.15	9.16

See-Through Grinding Discs

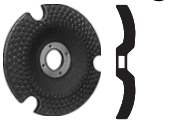

Side View

Slots along the perimeter of these grinding discs allow you a clear view of your work surface as the disc spins. Plus, their upside-down dish shape provides a large contact area, yielding a smooth finish. Also known as AVOS Type 29 wheels, they are made of aluminum oxide and have a raised hub for use on right-angle grinders. Color is black.

Use 36-grit and 60-grit discs on ferrous metals. Use 46-grit discs on aluminum and other nonferrous metals, or when loading is a problem.

Disc Size, Dia. × Thick. × Arbor	Grit	Max. rpm	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
4 1/2″ × 1/8″ × 7/8″	36	13,580	20	5606A22	$4.60	$4.25
4 1/2″ × 1/8″ × 7/8″	46	13,580	20	5606A23	4.62	4.16
4 1/2″ × 1/8″ × 7/8″	60	13,580	20	5606A24	4.60	4.25
5″ × 1/8″ × 7/8″	36	12,225	20	5606A25	5.47	5.04

Contour-Cutting Semiflexible Grinding Discs

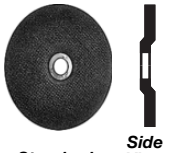

Standard — Side View

A flexible backing allows these aluminum oxide discs to conform to curved or rough surfaces and leave a smooth, swirl-free finish. Use on ferrous metals. All have a raised hub for use with right-angle grinders. ***Backup pads*** are required, unless noted.

Standard Discs— Use for grinding, descaling, polishing, blending, and finishing. These discs are reinforced with a top layer of woven cloth and an internal layer of fiberglass. Color is black. **To Order:** Please specify 36, 46, 60, or 80 grit.

Spiral-Rib Discs— Geometrically designed to make aggressive cuts. Discs have a fiber back and heat-dissipating holes for long life with minimal loading. Color is red. **To Order:** Please specify 24, 36, 50, or 60 grit.

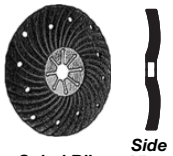

Spiral Rib — Side View

Disc Size, Dia. × Thick. × Arbor	Max. rpm	Grinding Discs Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.	Backup Pads	Each
Standard Discs							
4″ × 1/8″ × 5/8″	13,700	20	8731A112	$2.50	$2.04	8731A71	$0.86
4 1/2″ × 1/8″ × 7/8″	13,300	25	8731A113	3.98	3.24	8731A73	.99
7″ × 1/8″ × 7/8″	8,500	10	8731A115	5.07	4.13	8731A72	1.10
7″ × 1/8″ × 5/8″-11	8,500	25	8731A116 ●	7.16	5.83	—	—
9″ × 1/8″ × 5/8″-11	6,500	20	8731A117 ●▲	10.64	8.67	—	—
Spiral-Rib Discs							
4 1/2″ Dia. × 7/8″ Arbor	13,300	5	4879A111	7.37	6.14	4655A7	13.88
7″ Dia. × 7/8″ Arbor	8,500	5	4879A113	8.92	7.43	4655A1	23.68

● Has metal hub. No backup pad necessary. ▲ Not available in 80 grit.

Air-Powered Right-Angle Grinders for Grinding and Sanding Discs

4″ Economy

7″ Maintenance

4 1/2″ Heavy Duty

These air-powered grinders have a threaded spindle and wheel guard for use with raised-hub grinding discs (see page 2637 for grinding discs). They can also be used with sanding discs, wire cup brushes, and wire wheel brushes. All operate on 90 psi air pressure. Grinders have an NPT female air inlet, lever throttle to regulate air flow, and include a wrench.

Economy Grinder— Designed for light, intermittent use, this grinder is perfect for occasional grinding, deburring, and finishing jobs. It has a lever lock to prevent accidental start-up and includes a side handle.

Maintenance Grinders— More durable than our economy grinder, these grinders are designed for more frequent use. They feature a good power-to-weight ratio, have a lever lock to prevent accidental start-up, and include a side handle. *Model* 43605A22 includes a wheel nut and flange.

Heavy Duty Grinders— Rated for continuous use, these grinders can take on your tough jobs. They feature heavy duty gears for smooth operation and long tool life. A high-profile flange protects your hand and prevents accidental starts. Exhaust can be changed from rear to front. Furnished with a wheel nut and flange.

Disc Size	No-Load rpm	hp	Spindle Size	Avg. cfm @ 90 psi	Exhaust Style	O'all Lg.	Air Inlet, NPT	Rec. Hose Size	Wt., lbs.		Each
Economy Grinder											
4″	11,000	0.60	3/8″-24	17	Front	9″	1/4″	3/8″	4	43605A23	$155.24
Maintenance Grinders											
4″	11,000	0.75	3/8″-24	12	Front	8″	1/4″	3/8″	4	43605A21	289.76
7″	4,500	1.00	5/8″-11	12	Front	12 1/2″	1/4″	3/8″	5 3/4	43605A22	323.01
Heavy Duty Grinders											
3″	18,000	0.80	3/8″-24	36	Rear/Front	7 3/4″	1/4″	3/8″	3 3/32	4435A21	705.56
4″	12,000	0.80	3/8″-24	36	Rear/Front	7 3/4″	1/4″	3/8″	3	4435A22	645.53
4 1/2″	12,000	0.80	5/8″-11	36	Rear/Front	7 3/4″	1/4″	3/8″	3 13/64	4435A23	682.07

Caution: ***Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.***

Smooth-Finish Cotton-Laminate Grinding Discs

With a perfect blend of cotton laminate and aluminum oxide abrasive, these grinding discs leave smooth surfaces and allow you to grind and finish in one operation. They're shaped like raised-hub Type 27 discs for use on right-angle grinders.

24-grit discs are perfect for light to medium weld removal on aluminum, steel, and stainless steel. Color is brown. ***36-grit discs*** are great for finishing stainless steel and can also be used on brass, bronze, copper, and mild steel. Color is white.

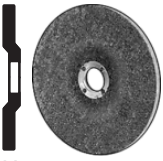

Side View

Disc Size, Dia. × Thick. × Arbor	Max. rpm	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
24-Grit Discs					
3″ × 1/4″ × 3/8″	18,000	10	**8730A11**	$8.17	$7.49
4″ × 1/4″ × 3/8″	15,300	10	**8730A12**	11.42	10.46
4″ × 1/4″ × 5/8″	15,300	10	**8730A16**	11.42	10.46
4 1/2″ × 1/4″ × 5/8″-11	13,300	10	**8730A17**	13.75	12.60
4 1/2″ × 1/4″ × 7/8″	13,300	10	**8730A13**	11.55	10.59
7″ × 1/4″ × 5/8″-11	8,500	5	**8730A18**	16.95	15.53
7″ × 1/4″ × 7/8″	8,500	5	**8730A14**	14.76	13.53
36-Grit Discs					
3″ × 1/8″ × 3/8″	18,000	10	**8730A21**	$5.11	$4.68
4″ × 1/8″ × 3/8″	15,300	10	**8730A22**	7.24	6.63
4 1/2″ × 1/8″ × 5/8″-11	13,300	10	**8730A24**	9.49	8.70
4 1/2″ × 1/8″ × 7/8″	13,300	10	**8730A23**	7.31	6.70
7″ × 3/16″ × 5/8″-11	8,500	5	**8730A27**	15.02	13.76
7″ × 3/16″ × 7/8″	8,500	5	**8730A25**	12.86	11.79

Electric Right-Angle Grinders for Grinding and Sanding Discs

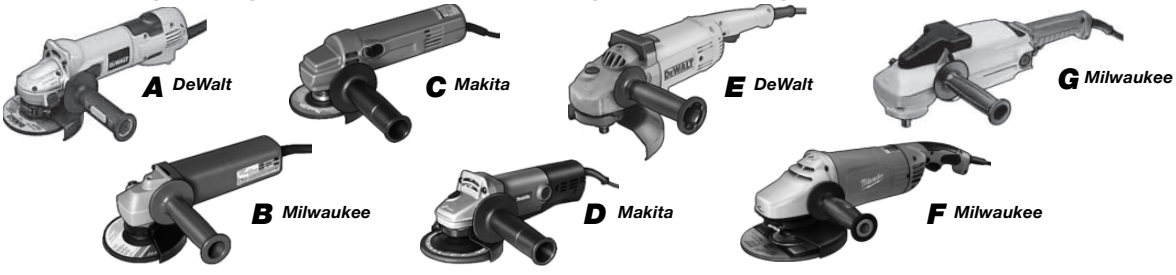

The threaded spindles of these grinders accept raised-hub grinding discs. Grinders can also be used with sanding discs, wire cup brushes, and wire wheel brushes. All have a spindle lock for fast wheel changes and a side handle. All are UL listed. Styles B and F are also C-UL listed. Styles A, E, F, and G are also CSA certified.

The ***4″, 4 1/2″, 5″, and 6″ tools (A-D)*** are double insulated and include a grinding wheel, wheel guard, flange for use with 7/8″ arbor discs, wrench, and power cord with two-prong plug, unless noted.

The ***7″ and 9″ tools (E-G)*** are more powerful. All are double-insulated and furnished with a two-prong plug and wheel guard, unless noted.

A ***DeWalt 4 1/2″, 5″, and 6″ Grinder-Sanders—*** Have a speed lock-on button. 8705A61, *A77*, and *A78* have a paddle-style on/off switch; 8705A64 has a thumb-slide switch; 8705A65 has a trigger-style switch. Grinding wheel is not included for 8705A61 and A64 (see grinding discs on page 2637).

B ***Milwaukee 4 1/2″ and 5″ Grinder-Sanders—*** Have a five-position wheel guard and paddle-style on/off switch. 46225A23 and *A72* also have a speed lock-on button.

C&D ***Makita 4″, 4 1/2″, and 5″ Grinder-Sanders—*** *Style C* have a thumb-slide on/off switch. 8721A62 has variable speeds. *Style D* have a paddle-style switch and speed lock-on button.

E-G ***DeWalt and Milwaukee 7″ and 9″ Grinder-Sanders—*** All have a speed lock-on button. ***Style E*** have a trigger-style on/off switch. 4395A19 comes with a 7″ grinding wheel. ***Style F*** can be used with grinding cups. It has a trigger-style on/off switch and comes with 7″ and 9″ wheel guards. ***Style G*** can be used with grinding cups. It has a paddle-style switch and variable speeds with dial control. Wheel guard not included (sold separately below).

	Disc Size	No-Load rpm	Volts	Current	Hz	Amps	Spindle Size	O'all Lg.	Wt., lbs.	Cord Lg.	Manufacturer and Model No.		Each
A	4 1/2″	11,000	120	AC/DC	50-60	10.0	5/8″-11	11 1/4″	4.6	8-ft.	DeWalt D28402	**8705A61**	$99.50
A	4 1/2″	11,000	120	AC/DC	50-60	10.0	5/8″-11	11 1/4″	4.6	8-ft.	DeWalt D28112	**8705A64**	101.29
A	5″	10,000	120	AC/DC	50-60	12.0	5/8″-11	14 3/8″	7.4	8-ft.	DeWalt DW831	**8705A65**	150.56
A	5″	11,000	120	AC	60	13.0	5/8″-11	13″	4.6	8-ft.	DeWalt D28114	**8705A77**	165.00
A	6″	9,000	120	AC	60	13.0	5/8″-11	13″	4.6	8-ft.	DeWalt D28144	**8705A78**	197.21
B	4 1/2″	10,000	120	AC	60	7.5	5/8″-11	11 3/4″	5	8-ft.	Milwaukee 6140-30	**46225A23**	86.88
B	4 1/2″	11,000	120	AC	60	11.0	5/8″-11	11 9/16″	5.4	8-ft.	Milwaukee 6146-31	**46225A24**	107.50
B	5″	11,000	120	AC	50-60	13.0	5/8″-11	12 3/16″	5.7	8-ft.	Milwaukee 6117-30	**46225A72**	137.50
C	4″	11,000	120	AC	50-60	6.0	M10 × 1.25	10 1/2″	3.1	8-ft.	Makita GA4030K	**8721A21** ♦	58.21
C	4 1/2″	2,800-10,500	120	AC	50-60	13.0	5/8″-11	11 3/4″	4	8-ft.	Makita 9564CV	**8721A62**	167.32
D	4 1/2″	10,000	115	AC	50-60	7.5	5/8″-11	10 3/4″	3.5	8-ft.	Makita 9557PB	**8721A31**	82.94
D	5″	10,000	115	AC	50-60	7.5	5/8″-11	10 3/4″	3.5	8-ft.	Makita 9558PB	**8721A41**	101.27
E	7″	6,000	120	AC/DC	50-60	15.0	5/8″-11	19 3/16″	13.15	8-ft.	DeWalt D28494S	**4395A16**	209.57
E	7″	8,000	120	AC/DC	50-60	15.0	5/8″-11	19 3/16″	13.15	8-ft.	DeWalt D28474W	**4395A19**	176.81
E	9″	6,000	120	AC/DC	50-60	15.0	5/8″-11	19 3/16″	13.6	8-ft.	DeWalt D28494N	**4395A18**	209.57
F	7″ & 9″	6,000	120	AC/DC	50-60	15.0	5/8″-11	21″	13.7	8-ft.	Milwaukee 6088-30	**46305A14**	182.80
G	7″ & 9″	0-6,000	120	AC	60	13.0	5/8″-11	17″	9.3	10-ft.	Milwaukee 6078	**4656A21**	215.00

♦ Included flange is for use with 5/8″ arbor discs.

Backup Pads— Required for use with sanding discs only.

Pads for 4″, 4 1/2″, and 5″ Grinder-Sanders— Furnished with a disc nut. ***Milwaukee*** pads are also furnished with two sanding discs.

For Disc Size	*DeWalt*	Each	*Milwaukee*	Each	*Makita*	Each
4″	—	—	—	—	**8721A22**	$14.38
4 1/2″	**8705A71**	$9.40	**46225A73**	$12.32	**8721A32**	29.10
5″ and DeWalt 6″	**8705A71**	9.40	**46225A74**	12.67	**8721A42**	24.25

Pads for 7″ and 9″ Grinder-Sanders— Furnished with a backing plate and a 5/8″-11 pad nut. ***Round*** style reduces heat buildup and prevents gumming. ***Octagon*** style has a unique shape that continually resharpens the disc, making it last longer.

For Disc Size	*Round*	Each	*Octagon*	Each
7″	**4395A21**	$31.06	**4395A23**	$29.36
7″	**4395A25**♣	31.06	—	—
9″	**4395A22**	33.38	**4395A24**	30.81

♣ Includes 14 mm (M14) pad nut.

Flange Adapter Set

Use to mount 6″ to 9″ dia. grinding discs that are 1/16″ to 1/4″ thick with a 5/8″ or 7/8″ arbor hole. Fits most right-angle grinders with a 5/8″-11 threaded spindle. Set includes flange, two spacers, mounting nut, and hex key.

46225A22 ..... **Per Set** $21.44

Wheel Guards for Milwaukee Grinders

Required when using grinding discs and cups.

For Disc/ Cup Size	For Grinder Part No.		Each
Guards for Grinding Cups			
4″	46305A14 & 4656A21	**46305A61**	$61.57
5″	46305A14 & 4656A21	**46305A62**	74.08
Guards for Grinding Discs			
7″	4656A21	**46305A21**	26.72
9″	4656A21	**46305A22**	30.45

Caution: ***Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.***

Heavy Duty Paint and Rust Grinders

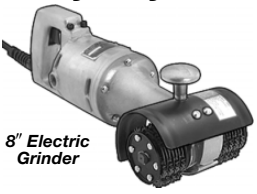

8″ Electric Grinder

Featuring a rotating head with multi-tooth, hardened-steel cutting wheels, these grinders remove paint and rust from hard surfaces. Cutting depth is adjustable for a uniform surface.

Electric grinders operate on 115 VAC/DC, 50/60 Hz. They have a speed lock-on button and 15-ft. power cord with three-prong plug. ***Pneumatic grinders*** operate on 70-100 psi and have an NPT female air inlet. ***Replacement cutters*** are furnished two per set.

Electric Grinders

Wheel Size	No-Load rpm	Amps	O'all Lg.	Wt., lbs.		Each
5″	2,200	2.1	15″	9	7700T1	$668.57
8″	2,200	6.9	17″	21	7700T2	931.43

Pneumatic Grinders

Wheel Size	No-Load rpm	hp	Avg. cfm @ 90 psi	O'all Lg.	Air Inlet, NPT	Rec. Hose Size	Wt., lbs.		Each
5″	2,400	0.75	42	13″	1/4″	3/8″	6	7700T11	$954.29
8″	2,200	2.5	43	17″	1/2″	1/2″	17	7700T21	1,131.43

Replacement Cutters for Electric and Pneumatic Grinders

Wheel Size		Per Set
5″	7700T3	$63.61
8″	7700T4	136.42

Paint- and Rust-Grinding Attachments

6″ Dia. Attachment

Use with standard electric drills and right-angle grinders to remove paint, rust, concrete, and barnacles. All have hardened-steel cutting discs and a built-in safety guard. Recommended operating speed is 1,500 to 5,000 rpm.

3″ dia. attachment includes a drive adapter to fit 3/8″ and 1/2″ drill chucks. It has 15 cutters. ***6″ dia. attachment*** is designed for use with 7″ or 9″ right-angle grinders and sanders with a 5/8″-11 spindle thread. It has 49 cutters.

	Attachments	Each	Repl. Cutters	Per Set
3″ Dia.	9562T14	$80.68	9562T18■	$11.47
6″ Dia.	9562T12	163.64	9562T16▲	32.80

■ 15 per set. ▲ 49 per set.

Coarse-Finish Straight Grinding Wheels

With their coarse grits and reinforced fiberglass construction, these wheels are perfect for aggressive stock removal. Made of resin-bonded aluminum oxide, they are ideal for cleaning before welding, smoothing weld seams, and preparing metal surfaces for plating and painting. For use on ferrous metals such as stainless steel and cast iron. Use with portable straight-wheel grinders and bench grinders. Also known as Type 1 snagging wheels.

Wheel Size, Dia. × Thick. × Arbor	Max. rpm	Grit	Color		Each
2″ × 1/4″ × 1/4″	30,550	36	Black	8733A31	$2.34
2″ × 1/4″ × 3/8″	30,550	36	Black	8733A32	2.34
2″ × 3/8″ × 3/8″	27,120	36	Black	8733A33	3.09
2″ × 1/2″ × 3/8″	27,120	36	Black	8733A34	3.31
3″ × 1/4″ × 3/8″	20,370	36	Black	8733A35	3.48
3″ × 3/8″ × 3/8″	18,080	36	Black	8733A36	4.10
3″ × 1/2″ × 3/8″	18,080	24	Black	8733A11	4.47
4″ × 1/2″ × 3/8″	13,560	24	Black	8733A12	4.68
4″ × 1/2″ × 1/2″	13,560	24	Black	8733A22	4.80
5″ × 1/2″ × 1/2″	10,848	20	Black	8733A13	8.15
5″ × 3/4″ × 1/2″	10,848	24	Black	8733A14	11.49
5″ × 1″ × 5/8″	9,550	24	Black	8733A52	15.30
6″ × 1″ × 5/8″	7,958	16	Black	8733A15	18.18

Smooth-Finish Cotton-Laminate Straight Grinding Wheels

The combination of cotton laminate and aluminum oxide abrasive yields such a smooth surface that these wheels allow you to grind and finish in one operation. Ideal for light grinding, corner blending, deburring, and finishing ferrous metals such as stainless steel and nonferrous metals such as aluminum. Also known as Type 1 wheels, they are for use on portable straight-wheel grinders.

To Order: Please specify grit: medium (54), fine (80), or extra fine (120); and grade: medium (for light deburring; color is tan) or hard (for light grinding and blending; color is brown).

Wheel Size, Dia. × Thick. × Arbor	Max. rpm		Each
2″ × 1/16″ × 1/4″	27,120	8736A291	$3.84
2″ × 1/8″ × 1/4″	27,120	8736A292	3.84
2″ × 1/4″ × 1/4″	27,120	8736A293	6.67
3″ × 1/16″ × 3/8″	18,080	8736A391	5.81
3″ × 1/8″ × 3/8″	18,080	8736A392	5.80

Air-Powered Grinders for Straight Grinding Wheels

A

B

Use these air-powered grinders with straight (Type 1) grinding wheels and wire wheel brushes. Furnished with an adjustable wheel guard, they operate on 90 psi air pressure. They have an NPT female air inlet and lever throttle to regulate air flow.

Style A have a high-profile flange that protects your hand and prevents accidental start-up. Exhaust can be changed from the rear to the front.

Style B feature a regulator that maintains constant speed when grinding.

	Wheel Size	No-Load rpm	hp	Spindle Size	Avg. cfm @ 90 psi	Exhaust Style	O'all Lg.	Air Inlet, NPT	Rec. Hose Size	Wt., lbs.		Each
A	3″	18,000	0.80	3/8″-24	36	Rear/Front	8 5/8″	1/4″	3/8″	2.5	45405A12	$625.24
B	2″	11,000	0.90	3/8″-24	18	Side	14 1/4″	3/8″	3/8″	3	45405A41	476.03
B	4″	7,000	1.30	5/8″-11	43	Side	18 1/2″	3/8″	1/2″	6	45405A42	785.60
B	6″	6,000	2.00	5/8″-11	61	4 Position	19 3/4″	1/2″	1/2″	14	45405A45	1,114.64

Electric Grinders for Straight Grinding Wheels

C *DeWalt*

D *DeWalt*

E *Milwaukee*

Designed for use with straight (Type 1) grinding wheels, these electric tools can also be used with wire wheel brushes. All come furnished with a wheel guard and have a trigger on/off switch. ***Styles C*** and ***D*** have a speed lock-on button. They come with a power cord and three-prong plug. CSA certified. ***Style E*** is double insulated and has a power cord with two-prong plug. Includes a grinding wheel.

	Max. Wheel Size	No-Load rpm	Volts	Current	Hz	Amps	Spindle Size	O'all Lg.	Wt., lbs.	Cord Lg.	Manufacturer and Model No.		Each
C	2 1/2″	19,000	120	AC/DC	60	5.0	3/8″-24	18 1/2″	6.8	8-ft.	DeWalt DW880	43815A45	$269.38
D	6″	5,700	120	AC/DC	60	13.0	5/8″-11	24 3/8″	14.8	8-ft.	DeWalt DW882	43815A51	379.89
E	5″	7,000	120	AC/DC	20-60	12.0	5/8″-11	20″	10.3	8-ft.	Milwaukee 5223	4425A38	367.50

Caution: ***Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.***

Coarse-Finish Grinding Cones and Plugs

Use these abrasives for aggressive stock removal on flat and curved surfaces, in corners, and inside castings. All are made of aluminum oxide with a resin bond. Also called cone and plug wheels, they have a female threaded arbor for attaching to your straight-wheel grinder. Use on ferrous metals. Color is gray-brown.

	Size, Dia. × Lg.	Grit	Max. rpm		Each
With 3/8″-24 Arbor					
1	1½″×2½″	24	24,192	**8732A25**	$5.73
1	1½″×3″	16	24,192	**8732A12**	6.20
2	1½″×3″	16	24,192	**8732A15**	6.50
3	1½″×2½″	20	24,192	**8732A21**	4.84
3	1½″×3″	24	24,192	**8732A46**	5.41
4	1½″×2½″	16	24,192	**8732A51**	7.07
5	1½″×3″	16	24,192	**8732A28**	6.50
With 5/8″-11 Arbor					
1	1½″×2½″	24	24,192	**8732A11**	6.00
1	1½″×3″	16	24,192	**8732A32**	6.20
1	1¾″×3″	20	20,735	**8732A33**	7.17
1	2″ ×3″	16	18,144	**8732A34**	6.84
1	2¾″×3½″	16	13,195	**8732A14**	10.37
2	2″ ×4″	16	18,144	**8732A36**	8.90
3	1½″×2½″	16	24,192	**8732A22**	4.84
3	1½″×3″	24	24,192	**8732A47**	5.41
3	2″ ×3″	16	18,144	**8732A23**	5.98
3	2″ ×4″	20	18,144	**8732A48**	7.38
3	2½″×3″	16	14,515	**8732A24**	7.47
4	1½″×2½″	16	24,192	**8732A26**	5.73
4	2″ ×4″	16	18,144	**8732A27**	8.93
5	2″ ×4″	16	18,144	**8732A49**	8.90

Smooth-Finish Rubber-Bonded Bench and Pedestal Grinding Wheels

The silicon carbide abrasive in these wheels is suspended in rubber for a cushioned grind that leaves a finer finish but removes less stock than vitrified-bonded wheels. Ideal for finishing, polishing, and deburring nonferrous metals such as aluminum, brass, bronze, and magnesium. For bench and pedestal grinders. **To Order:** Please specify grit: 46 (green), 120 (brown), 180 (red), or 240 (blue).

Wheel Size, Dia. × Thick. × Arbor	Max. rpm		Each
4″×½″×½″	5,250	**4824A84**	$36.11
6″×½″×½″	3,600	**4824A85**	70.47
6″×¾″×½″	3,600	**4824A86**	85.52

Air-Powered Grinders for Cones and Plugs

These grinders have a threaded spindle, a lever throttle to regulate air flow, and a built-in speed regulator. Operate on 90 psi air pressure. Inlet is ½″ NPT female; recommended hose size is ½″. Have a side exhaust.

Caution: Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.

No-load rpm	hp	Spindle Size	Avg. cfm @ 90 psi	O'all Lg.	Wt., lbs.		Each
12,000	1.30	3/8″-24	40	13″	4.3	**8710A61**	$940.50
12,000	1.70	5/8″-11	50	17″	6.3	**8710A62**	1,111.50

Arbor Attachment for Electric Motors

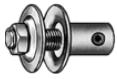

Convert your bench-mount motor into a grinder-buffer. Fit this attachment onto the motor shaft and then mount wire wheel brushes, grinding wheels, and more. Shaft thread is right hand. Flanges and hex nut are included.

Fits Shaft Dia.	Wheel Arbor Size	Max. Wheel Wd.	Flange Dia.	O'all Lg.		Each
1/4″	3/8″-24	1/2″	1¼″	2″	**43555A21**	$3.88
5/16″	3/8″-24	1/2″	1¼″	2″	**43555A22**	3.88
3/8″	3/8″-24	1/2″	1¼″	2″	**43555A23**	3.88
1/2″	1/2″-20	1¼″	1⅝″	3½″	**43555A24**	4.80
5/8″	1/2″-20	1¼″	1⅝″	3½″	**43555A25**	4.80

Diamond Bench and Pedestal Grinding Wheels

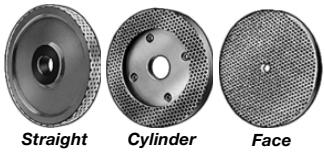

Their honeycomb pattern enables these wheels to cut carbide, ceramics, glass, and other nonferrous materials without the need for dressing. Made of perforated diamond-coated steel molded onto plastic, they can be used wet or dry. Use on bench and pedestal grinders. **To Order:** Please specify grit: 100 (red), 180 (blue), or 320 (orange/yellow).

Wheel Style	Wheel Size, Dia. × Thick. × Arbor	Max. rpm		Each
Straight	6″ × ¾″×1¼″	3,820	**8725A81**	$110.00
Straight	6″×1″ ×1¼″	3,820	**8725A82**	120.00
Cylinder	6″ × ¾″×1¼″	3,820	**8725A91**	118.00
Face	6″ × ½″× ½″	3,820	**8725A92**	146.00

Bench and Pedestal Grinding Wheels

Use these wheels on bench and pedestal grinders for deburring, sharpening, and grinding. They include one of each reducer bushing listed. The smallest bushing ID shown for each size is the smallest allowed for that size wheel. All have a vitrified (clay) bond.

Aluminum oxide wheels are for use on steel and other ferrous metals. Color of *economy wheels* is gray. Color of *premium wheels* is brown. ***Silicon carbide*** wheels are for use on cemented carbide cutting tools and other nonferrous metals such as aluminum, brass, and bronze. Color is green.

Economy wheels— For general purpose use. **To Order:** For aluminum oxide, please specify 24, 36, or 60 grit. For silicon carbide, please specify 60, 80, or 120 grit.

Premium wheels— Designed to stand up to heavy use. **To Order:** For aluminum oxide, please specify 36, 46, 60, 80, or 100 grit, unless noted. For silicon carbide, please specify 60, 80, or 120 grit.

Also Available: Replacement reducer bushings (nested sets as listed). Please ask for 4461A8 and specify wheel diameter and thickness.

Also Available: Bushing to reduce a 1¼″ arbor hole down to 7/8″. Please ask for 4461A9. *Note:* Order two bushings per wheel.

Wheel Size, Dia. × Thick. × Arbor	Reducer Bushing Sizes Included, ID	ECONOMY Max. rpm	Aluminum Oxide	Each	Silicon Carbide	Each	PREMIUM Max. rpm	Aluminum Oxide	Each	Silicon Carbide	Each
4″× ½″× ½″	None	6,210	**4463A411**	$7.65	**4988A111**	$9.53	—	—	—	—	—
4″× ½″×1″	7/8″, 3/4″, 5/8″, ½″, 3/8″	—	—	—	—	—	8,120	**44611A711**	$12.87	**44621A311**	$18.87
4″× ¾″× ½″	None	6,210	**4463A412**	8.21	**4988A121**	10.36	—	—	—	—	—
5″× ½″×1″	¾″, 5/8″, ½″	4,970	**4463A414**	8.61	**4988A131**	11.18	—	—	—	—	—
5″× ¾″×1″	¾″, 5/8″, ½″	4,970	**4463A415**	9.63	**4988A141**	11.82	—	—	—	—	—
6″× ½″×1″	¾″, 5/8″, ½″	4,140	**4463A417**	13.38	**4988A211**	16.58	5,410	**44611A714**♣	16.97	**44621A314**♣	23.68
6″× ¾″×1″	¾″, 5/8″, ½″	4,140	**4463A418**	15.26	**4988A311**	19.71	5,410	**44611A715**♣	19.81	**44621A315**♣	25.45
6″×1″ ×1″	¾″, 5/8″, ½″	4,140	**4463A419**	16.95	**4988A411**	21.51	5,410	**44611A716**♣	21.41	**44621A316**♣	25.32
6″×1¼″×1″	¾″, 5/8″, ½″	4,140	**4463A421**	20.29	**4988A321**	24.93	—	—	—	—	—
7″× ¾″×1″	7/8″, ¾″, 5/8″, ½″	—	—	—	—	—	3,600	**44611A717**★	23.84	**44621A318**	40.51
7″×1″ ×1″	¾″, 5/8″, ½″	3,600	**4463A422**	21.13	**4988A511**	24.60	3,600	**44611A718**♣	24.64	**44621A319**♣	42.57
8″× ¾″×1″	7/8″, ¾″, 5/8″	—	—	—	—	—	3,600	**44611A211**	26.44	**44621A281**	49.27
8″×1″ ×1″	7/8″, ¾″, 5/8″	—	—	—	—	—	3,600	**44611A221**	31.23	**44621A291**	50.66
8″×1″ ×1¼″	1″, ¾″, 5/8″	3,600	**4463A424**	24.97	**4988A611**	28.66	—	—	—	—	—
8″×1¼″×1¼″	1″, ¾″, 5/8″	3,600	**4463A425**	28.13	**4988A341**	34.55	—	—	—	—	—
10″×1″ ×1¼″	1″, ¾″	2,485	**4463A426**	38.18	**4988A711**	49.41	3,250	**44611A724**♣	48.74	**44621A324**♣	73.93
10″×1¼″×1¼″	1″, ¾″	2,485	**4463A428**	37.42	**4988A721**	42.26	3,250	**44611A731**♣	53.98	**44621A325**♣	80.80
10″×1½″×1¼″	1″, ¾″	2,485	**4463A427**	51.16	**4988A351**	75.58	3,250	**44611A726**♣	63.41	**44621A326**♣	87.19
12″×1½″×1½″	1¼″, 1″	1,910	**4463A429**	62.94	**4988A731**	86.47	2,710	**44611A728**	85.46	**44621A328**	116.59
12″×2″ ×1½″	1¼″, 1″	1,910	**4463A431**	76.24	**4988A741**	130.06	2,710	**44611A729**	94.62	**44621A329**	174.51
14″×2″ ×1½″	1¼″, 1″	1,637	**4463A432**	104.10	**4988A751**	181.18	2,320	**44611A733**	134.58	**44621A331**	242.73

♣ Also includes a 7/8″ bushing. ★ Not available in 36 grit.

Norton Toolroom Grinding Wheels

Also known as type 1 wheels, these straight wheels have a vitrified (clay) bond. The size listed is wheel dia.x thick. x arbor hole. Rpm listed is the maximum. Truing and dressing before first use is recommended. Wheels come in a variety of grits, ranging from 46 (coarse) to 150 (fine), and grades ranging from F (soft) to M (hard).

White Aluminum Oxide (38A)—This brittle abrasive makes cool cuts. Use for light grinding on steel. Bond is VBE.

Blue Aluminum Oxide (32A)—A popular choice for general purpose grinding of most steels. Bond is VBE.

Light Gray Aluminum Oxide (32AA)—Made of a blend of aluminum oxide and ceramic aluminum oxide grains, this versatile abrasive is slightly more aggressive than 32A and lasts up to twice as long. Use for moderate to heavy stock removal on steel. Bond is VTR.

Blue Ceramic Aluminum Oxide (5SG)—The most durable abrasive. Use for moderate to very heavy stock removal on even tough-to-cut steel. Bond is VS.

About Norton Part Numbers

To reorder a wheel using a Norton part number, match the abrasive type, grit, and grade. Bond is determined by the abrasive type.

Example:

38A60-MVBE

Abrasive Type — Grit — Grade — Bond

White Aluminum Oxide (38A)

Grit	Grade		Each
Size: 3″ × 1/2″; 10,825 rpm			
60	M	4397A311	$8.74
80	M	4397A312	9.95
Size: 6″ × 1/2″ × 1 1/4″; 4,140 rpm			
60	K	4397A17	17.81
80	K	4397A18	17.81
Size: 7″ × 1/4″ × 1 1/4″; 3,600 rpm			
46	I	4397A19	19.34
60	I	4397A22	18.65
60	J	4397A23	18.65
60	K	4397A314	19.32
80	I	4397A24	18.65
80	K	4397A25	18.65
100	I	4397A26	18.65
100	J	4397A27	18.65
100	K	4397A316	21.22
120	K	4397A28	18.65
150	K	4397A317	35.96
150	L	4397A318	35.96
Size: 7″ × 1/2″ × 1 1/4″; 3,600 rpm			
46	H	4397A29	23.24
46	I	4397A31	23.24
46	J	4397A319	25.57
46	K	4397A32	25.57
60	H	4397A33	22.90
60	I	4397A34	22.90
60	J	4397A321	25.57
60	K	4397A322	23.24
80	H	4397A36	22.90
80	I	4397A37	22.90
Size: 7″ × 1/2″ × 1 1/4″ (Cont.)			
80	J	4397A323	$23.24
80	K	4397A324	23.24
100	I	4397A39	22.90
Size: 8″ × 1/4″ × 1 1/4″; 3,600 rpm			
60	I	4397A42	22.12
80	I	4397A44	22.12
100	I	4397A326	22.46
100	K	4397A46	22.12
Size: 8″ × 1/2″ × 1 1/4″; 3,600 rpm			
46	H	4397A48●	27.47
46	I	4397A49●	27.47
46	J	4397A51	27.47
46	K	4397A327	27.47
60	I	4397A53	27.47
60	J	4397A54	27.47
60	K	4397A55	27.47
80	I	4397A328	27.47
80	K	4397A57	27.47
Size: 8″ × 3/4″ × 1 1/4″; 3,600 rpm			
46	K	4397A61	32.71
60	I	4397A63	32.71
Size: 10″ × 3/4″ × 3″; 2,485 rpm			
46	J	4397A67	51.02
Size: 12″ × 1″ × 3″; 2,070 rpm			
46	H	4397A329	81.13
46	I	4397A331	77.66
46	J	4397A332	81.13
Size: 12″ × 1″ × 5″; 2,070 rpm			
46	I	4397A333	90.60

● 3,105 max. rpm.

Blue Aluminum Oxide (32A)

Grit	Grade		Each
Size: 6″ × 1/2″ × 1 1/4″; 4,140 rpm			
46	K	47145A115	$22.17
60	K	47145A117	22.17
80	J	47145A118	22.17
Size: 7″ × 1/4″ × 1 1/4″; 3,600 rpm			
46	H	47145A119	21.30
46	I	47145A121	21.30
60	H	47145A122	21.30
60	I	47145A123	21.30
60	J	47145A124	22.59
60	K	47145A125	21.30
80	I	47145A126	24.04
80	J	47145A127	24.04
80	K	47145A128	21.30
100	I	47145A129	24.04
100	J	47145A211	21.30
120	K	47145A131	21.30
Size: 7″ × 3/8″ × 1 1/4″; 3,600 rpm			
60	H	47145A213	25.13
60	I	47145A214	25.13
80	K	47145A224	27.03
Size: 7″ × 1/2″ × 1 1/4″; 3,600 rpm			
46	H	47145A134	26.52
46	I	47145A136	26.52
46	J	47145A342	29.94
46	K	47145A137	26.52
60	H	47145A139	26.52
60	I	47145A141	26.52
60	J	47145A142	26.52
60	K	47145A143	26.52
80	I	47145A144	26.52
80	J	47145A345	26.52
80	K	47145A145	26.52
100	I	47145A146	26.52
120	L	47145A147	26.52
Size: 7″ × 3/4″ × 1 1/4″; 3,600 rpm			
46	H	47145A148	31.75
60	K	47145A152	31.75
Size: 7″ × 1″ × 1 1/4″; 3,600 rpm			
46	H	47145A216	$36.48
60	I	47145A217	36.48
Size: 8″ × 1/4″ × 1 1/4″; 3,600 rpm			
46	H	47145A153●	25.67
60	I	47145A154	25.67
60	K	47145A155	25.67
80	K	47145A157	25.67
100	I	47145A158	27.22
Size: 8″ × 1/2″ × 1 1/4″; 3,600 rpm			
46	H	47145A161●	31.75
46	I	47145A163●	31.75
46	J	47145A346	35.84
46	K	47145A165	31.75
60	H	47145A166	31.75
60	I	47145A167	31.75
60	J	47145A168	31.75
60	K	47145A169	31.75
80	I	47145A171	33.66
80	K	47145A348	31.75
Size: 8″ × 3/4″ × 1 1/4″; 3,600 rpm			
46	H	47145A174●	40.17
46	I	47145A219●	37.87
46	J	47145A175	37.87
46	K	47145A349	37.87
60	J	47145A176	37.87
60	K	47145A221	37.87
Size: 8″ × 1″ × 1 1/4″; 3,600 rpm			
46	K	47145A351	50.42
60	I	47145A352	50.42
Size: 10″ × 3/4″ × 3″; 2,485 rpm			
46	I	47145A177	71.30
60	I	47145A178	71.30
Size: 10″ × 1″ × 3″; 2,485 rpm			
46	H	47145A179	83.11
46	I	47145A181	83.11
46	K	47145A182	83.11
60	I	47145A183	83.11
60	K	47145A184	83.11

● 3,105 max. rpm.

Blue Aluminum Oxide (32A)

Grit	Grade		Each
Size: 12″ × 3/4″ × 3″; 2,070 rpm			
46	I	47145A185	$102.45
60	I	47145A186	102.45
Size: 12″ × 1″ × 3″; 2,070 rpm			
46	H	47145A187	116.54
46	I	47145A188	116.54
46	J	47145A223	120.08
46	K	47145A189	120.08
60	I	47145A191	120.08
Size: 12″ × 1″ × 5″; 2,070 rpm			
46	H	47145A355	127.82
60	K	47145A356	116.54
60	L	47145A357	132.23
Size: 12″ × 1 1/2″ × 3″; 2,070 rpm			
46	I	47145A358	177.39
60	J	47145A359	177.39
Size: 12″ × 1 1/2″ × 5″; 2,070 rpm			
46	H	47145A361	161.74
46	I	47145A362	161.74
46	J	47145A363	177.39
60	K	47145A365	177.39
Size: 12″ × 2″ × 1 1/4″; 2,070 rpm			
46	K	47145A366	$227.11
Size: 14″ × 1″ × 5″; 1,800 rpm			
46	I	47145A192	160.77
60	J	47145A367	171.15
60	K	47145A193	156.04
80	K	47145A368	156.04
Size: 14″ × 1 1/2″ × 5″; 1,800 rpm			
46	H	47145A194	215.99
46	I	47145A195	215.99
46	J	47145A372	236.89
46	K	47145A373	215.99
60	H	47145A374	215.99
Size: 14″ × 2″ × 5″; 1,800 rpm			
46	I	47145A376	302.39
46	J	47145A377	302.39
46	K	47145A378	302.39
60	K	47145A379	302.39

Light Gray Aluminum Oxide (32AA)

Grit	Grade		Each
Size: 6″ × 1/4″ × 1 1/4″; 4,140 rpm			
80	K	44475A22	$43.58
Size: 6″ × 1/2″ × 1 1/4″; 4,140 rpm			
46	K	44475A23	31.34
60	K	44475A24	31.34
Size: 7″ × 1/4″ × 1 1/4″; 3,600 rpm			
46	I	44475A25	30.06
80	I	44475A29	29.94
80	K	44475A31	30.06
Size: 7″ × 1/2″ × 1 1/4″; 3,600 rpm			
46	I	44475A32	32.58
46	J	44475A33	32.58
46	K	44475A34	32.58
60	I	44475A35	32.58
60	J	44475A36	32.58
60	K	44475A37	32.58
80	I	44475A38	32.58
80	K	44475A39	32.58
Size: 8″ × 1/4″ × 1 1/4″; 3,600 rpm			
60	I	44475A41	$31.52
80	K	44475A43	31.52
Size: 8″ × 1/2″ × 1 1/4″; 3,600 rpm			
46	I	44475A44	39.01
46	K	44475A45	39.01
60	I	44475A46	39.01
60	J	44475A47	39.01
80	K	44475A49	39.01
Size: 8″ × 3/4″ × 1 1/4″; 3,600 rpm			
46	J	44475A51	40.09
60	J	44475A52	46.47
Size: 10″ × 1″ × 3″; 2,485 rpm			
46	I	44475A53	96.40
Size: 12″ × 1″ × 3″; 2,070 rpm			
46	I	44475A55	127.57
60	I	44475A56	127.57

Blue Ceramic Aluminum Oxide (5SG)

Grit	Grade		Each
Size: 7″ × 1/4″ × 1 1/4″; 3,600 rpm			
46	I	44595A11	$47.13
60	I	44595A34	45.12
60	J	44595A35	46.42
60	K	44595A36	45.12
80	K	44595A39	45.12
100	K	44595A23	45.75
Size: 7″ × 1/2″ × 1 1/4″; 3,600 rpm			
46	I	44595A44	57.86
46	J	44595A45	57.86
46	K	44595A46	63.45
60	I	44595A47	57.86
60	J	44595A48	57.86
60	K	44595A49	56.22
80	J	44595A82	57.86
80	K	44595A83	57.02
80	L	44595A84	57.02
Size: 7″ × 3/4″ × 1 1/4″; 3,600 rpm			
46	K	44595A12	68.28
60	K	44595A13	68.28
Size: 8″ × 1/2″ × 1 1/4″; 3,600 rpm			
46	I	44595A53●	69.28
46	J	44595A54	69.28
60	I	44595A55	69.28
60	J	44595A56	67.33
80	K	44595A88	68.28
Size: 8″ × 3/4″ × 1 1/4″; 3,600 rpm			
46	J	44595A59	$86.25
60	J	44595A63	82.57
Size: 10″ × 1″ × 3″; 2,485 rpm			
46	J	44595A16	139.07
60	K	44595A18	137.06
Size: 12″ × 3/4″ × 3″; 2,070 rpm			
60	I	44595A19	121.14
Size: 12″ × 1″ × 3″; 2,070 rpm			
46	I	44595A91	186.81
46	K	44595A92	186.81
60	I	44595A94	186.81
60	J	44595A95	186.81
Size: 12″ × 1″ × 5″; 2,070 rpm			
46	J	44595A25	186.81
60	J	44595A27	186.81
60	K	44595A28	192.39
Size: 14″ × 1/2″ × 5″; 1,800 rpm			
80	K	44595A98	165.52
Size: 14″ × 1″ × 3″, 1,800 rpm			
46	I	44595A21	250.09
Size: 14″ × 1″ × 5″; 1,800 rpm			
46	J	44595A68	250.09
60	J	44595A69	250.09
Size: 14″ × 1 1/2″ × 5″; 1,800 rpm			
60	I	44595A76	346.06

● 3,105 max. rpm.

Cupped and Dished Norton Toolroom Grinding Wheels

The special shapes of these wheels provide more clearance than typical straight wheels and are great for grinding flute and point angles in cutting tools. All have a vitrified (clay) bond. The size listed is wheel dia. × thick. × arbor hole. For information on abrasives and Norton part numbers, see the toolroom wheels on page 2642.

Recessed

Straight Cup

Flared Cup

Dish

Abrasive	Grit	Grade	Each
Recessed Wheels— *Type 5 (unless noted)*			
Size: 7″ × 3/4″ × 1 1/4″; 3,600 Max. rpm			
Recessed one side 2 3/4″ × 1/4″			
32A	46	I 4403A231	$40.40
32A	60	I 4403A232	36.30
32AA	46	I 44475A68	43.78
Size: 7″ × 1″ × 1 1/4″; 3,600 Max. rpm			
Recessed one side 2 3/4″ × 1/2″			
32A	46	H 4403A233	45.71
32A	46	I 4403A235	45.71
32A	60	I 4403A236	41.67
32AA	46	I 44475A71	49.75
5SG	46	I 44595A761	85.30
5SG	46	J 44595A762	86.56
5SG	60	J 44595A763	85.30
Recessed one side 3″ × 1/2″			
38A	46	I 4397A97	37.19
38A	46	K 4397A98	34.97
Size: 8″ × 1″ × 1 1/4″; 3,600 Max. rpm			
Recessed one side 3 1/4″ × 1/2″			
32A	46	I 4403A237●	50.49
32A	60	I 4403A238	50.49
Size: 12″ × 1 1/2″ × 5″; 2,070 Max. rpm			
Recessed one side 7 1/2″ × 1/2″			
32A	46	I 4403A331	173.63
32A	46	K 4403A333	187.63
32A	60	K 4403A334	187.63
Size: 12″ × 2″ × 3″; 2,070 Max. rpm			
Recessed two sides 5 1/2″ × 3/8″			
32A	46	I 4403A363▲	247.61

● 3,105 max. rpm. ▲ Type 7. ★ Dia. shown is large dia./small dia.

Abrasive	Grit	Grade	Each
Recessed Wheels (Cont.)			
Size: 12″ × 2″ × 3″; 2,070 Max. rpm (Cont.)			
Recessed two sides 7 1/4″ × 1/2″			
32A	46	H 4403A373▲	$247.61
32A	46	J 4403A375▲	247.61
Size: 14″ × 1 1/2″ × 5″; 1,800 Max. rpm			
Recessed one side 8″ × 1/2″			
32A	46	I 4403A341	228.72
32A	60	K 4403A345	228.72
5SG	46	I 44595A743	353.99
5SG	60	I 44595A745	353.99
Size: 14″ × 2″ × 5″; 1,800 Max. rpm			
Recessed one side 8″ × 1″			
32A	60	K 4403A355	312.63
Straight-Cup Wheels— *Type 6*			
Size: 5″ × 1 1/2″ × 1 1/4″; 4,585 Max. rpm			
38A	46	K 4397A81	33.30
38A	60	K 4397A82	33.30
32A	46	K 4403A216	43.65
32A	60	K 4403A217	43.65
Flared-Cup Wheels★— *Type 11*			
Size: 3″/2 1/4″ × 1 1/4″ × 3/4″; 7,640 Max. rpm			
32A	60	K 4403A253	15.35
Size: 4″/3″ × 1 1/2″ × 1 1/4″; 5,730 Max. rpm			
38A	60	K 4397A86	26.85
32A	46	K 4403A213	31.01
32A	60	J 4403A214	27.31
32A	60	K 4403A215	31.01
32A	80	K 4403A259	27.71

Abrasive	Grit	Grade	Each
Flared-Cup Wheels (Cont.)★			
Size: 4″/3″ × 1 1/2″ × 1 1/4″; 5,730 Max. rpm (Cont.)			
32AA	46	K 44475A61	$22.59
32AA	60	J 44475A62	22.59
32AA	60	K 44475A63	30.19
5SG	60	J 44595A66	49.54
5SG	60	L 44595A67	49.41
5SG	80	J 44595A671	48.70
Size: 5″/3 3/4″ × 1 3/4″ × 1 1/4″; 4,585 Max. rpm			
38A	46	K 4397A89	36.79
38A	60	K 4397A92	36.79
32A	46	J 4403A218	44.46
32A	46	K 4403A219	44.46
32A	60	J 4403A221	44.46
32A	60	K 4403A222	44.46
32AA	60	J 44475A65	52.29
5SG	60	K 44595A73	88.47
Size: 6″/4 1/2″ × 2″ × 1 1/4″; 3,820 Max. rpm			
32A	46	K 4403A393	63.46
32A	60	J 4403A396	65.36
Dish Wheels— *Type 12*			
Size: 6″ × 1/2″ × 1 1/4″; 4,140 Max. rpm			
32A	60	K 4403A224	27.88
32AA	60	K 44475A67	34.04
5SG	60	L 44595A791	59.35
Size: 6″ × 3/4″ × 1 1/4″; 4,140 Max. rpm			
32A	46	K 4403A227	31.87
Size: 7″ × 1/2″ × 1 1/4″; 3,600 Max. rpm			
32A	46	K 4403A263	33.26
32A	60	K 4403A265	37.02

Aggressive-Cutting Porous-Bond Norton Toolroom Grinding Wheels

Chips and coolant flow more easily through these wheels because their bond leaves more space between abrasive grains. Good for heavy stock removal and require less frequent dressing. Bond is vitrified (clay). Size listed is wheel dia. × thick. × arbor hole. For information on abrasives and Norton part numbers, see the toolroom wheels on page 2642.

Straight

Cylinder

Recessed

Abrasive	Grit	Grade	Each
Straight Wheels— *Type 1*			
Size: 7″ × 1/2″ × 1 1/4″; 3,600 Max. rpm			
32A	46	F 47145A132	$26.52
32A	46	G 47145A133	26.52
32A	46	H 47145A135	26.52
32A	60	G 47145A138	26.52
32A	60	H 47145A343	29.94
5SG	46	G 44595A77	66.53
5SG	60	G 44595A79	66.53
Size: 8″ × 1/2″ × 1 1/4″; 3,600 Max. rpm			
32A	46	G 47145A159●	33.66
32A	46	H 47145A162	31.75
Size: 12″ × 1″ × 3″; 2,070 Max. rpm			
32A	46	H 47145A375	127.82
Size: 12″ × 1 1/2″ × 5″; 2,070 Max. rpm			
5SG	60	G 44595A97	298.06
Size: 14″ × 1″ × 5″; 1,800 Max. rpm			
5SG	46	G 44595A64	287.68
Size: 14″ × 1 1/2″ × 5″; 1,800 Max. rpm			
5SG	46	G 44595A733	398.06
Recessed Wheels— *Type 5*			
Size: 7″ × 1″ × 1 1/4″; 3,600 Max. rpm			
Recessed one side 2 3/4″ × 1/2″			
32A	46	G 4403A273	45.71
32A	46	H 4403A234	45.71
Cylinder Wheels— *Type 35*			
Size: 9″ × 2″ × 4 5/16″; 2,550 Max. rpm			
Abrasive Wd.: 2 1/32″			
32A	70	J 4403A428	219.97

● 3,105 max. rpm.

Diamond Toolroom Grinding Wheels for Carbide, Ceramics, and Glass

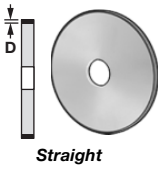

Straight

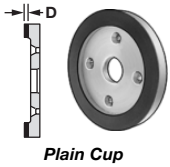

Plain Cup

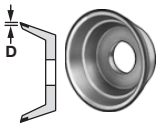

Flared Cup

A synthetic diamond grit makes these wheels extremely hard and wear resistant. They're great for grinding and sharpening hard, non-ferrous materials such as carbide, ceramics, and glass. Not recommended for use on ferrous metals.

Wheels are resin-bonded and nickel-coated. Color is silver. All have a 1 1/4″ arbor hole to fit most toolroom grinders. ***Plain-cup wheels*** also have four 9/32″ countersunk bolt holes on a 3 1/4″ circle.

To Order: Please specify coarse (100), medium (150), or fine (220) grit.

Dia.	Thick.	Diamond Wd. (D)	Max. rpm		Each
Straight Wheels— *Type 1A1*					
4″	1/8″	1/8″	9,050	4571A161	$96.00
4″	1/4″	1/8″	9,050	4571A162	125.55
6″	1/8″	1/8″	6,025	4571A163	115.42
6″	1/4″	1/8″	6,025	4571A164	134.44
6″	3/8″	1/8″	6,025	4571A165	150.44
6″	1/2″	1/8″	6,025	4571A166	164.69
7″	1/8″	1/8″	5,175	4571A167	124.94
7″	1/4″	1/8″	5,175	4571A168	146.63
7″	3/8″	1/8″	5,175	4571A169	163.08
7″	1/2″	1/8″	5,175	4571A171	181.32
Plain-Cup Wheels— *Type 6A2C*					
6″	3/4″	1/16″	6,025	4571A141	165.48
6″	3/4″	1/8″	6,025	4571A143	185.19
Flared-Cup Wheels★— *Type 11V9*					
3 3/4″/2 5/16″	1 1/2″	1/16″	9,675	4571A151	123.58
3 3/4″/2 5/16″	1 1/2″	1/8″	9,675	4571A152	138.89
5″/3 1/4″	1 3/4″	1/8″	7,250	4571A154	165.86

★ Dia. shown is large dia./small dia.

Silicon Carbide Norton Toolroom Grinding Wheels for Nonferrous Metals

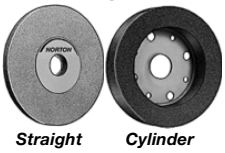

Straight *Cylinder*

Unlike aluminum oxide wheels, these silicon carbide wheels won't clog when used on nonferrous metals. They also grind faster, so there is less burning and discoloration on your workpiece. Great for use on carbide tools, titanium, aluminum, brass, and bronze. Abrasive is type 39C; color is green (unless noted). All have a vitrified (clay) VK bond. Rpm listed is the maximum.

Straight wheel size is dia. × thick. × arbor. *Cylinder wheel* size is dia. × thick. × arbor × abrasive wd.

Grit	Grade		Each
***Straight Wheels—** Type 1*			
3″ × 1/2″ × 1/2″; 10,825 rpm			
60	M	4422A09●	$12.03
7″ × 1/2″ × 1 1/4″; 3,600 rpm			
60	I	4422A21	44.13
80	I	4422A23	44.13
100	I	4422A25	44.13
120	I	4422A27	44.13
7″ × 1″ × 1 1/4″; 3,600 rpm			
60	I	4422A31	67.97
8″ × 1/2″ × 1 1/4″; 3,600 rpm			
100	I	4422A35	59.22
8″ × 3/4″ × 1 1/4″; 3,600 rpm			
60	J	4422A37	70.31

● Abrasive is 37C; color is black.

Grit	Grade		Each
Straight Wheels (Cont.)			
8″ × 1″ × 1 1/4″; 3,600 rpm			
60	J	4422A42	$83.29
80	I	4422A44	83.29
100	I	4422A46	83.29
***Cylinder Wheels—** Type 2*			
6″ × 1″ × 1 1/4″ × 1″; 3,600 rpm			
60	I	4468A11	97.58
80	I	4422A66	109.36
120	I	4468A21	97.58
7″ × 1 1/2″ × 1 3/4″ × 1″; 3,600 rpm			
60	I	4468A14	139.62
120	I	4468A24	134.98
10″ × 1 1/2″ × 2″ × 2″; 2,100 rpm			
60	H	4422A72	331.62

Hand-Held Diamond Dressers

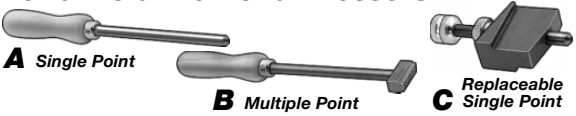

A *Single Point* **B** *Multiple Point* **C** *Replaceable Single Point*

Designed for light duty use, these hand-held dressers expose new, sharp grains on vitrified (clay) bonded bench and pedestal wheels.

Styles A&B have a 5″ long wood handle with 7/16″ Dia. × 6″ Lg. steel shank. Not resettable. *Style A* has a diamond with a single point for more aggressive stock removal than multiple-point dressers. *Style B* has multiple points for a finer finish than single-point dressers. A wide diamond section (3/8″ × 1 1/2″) provides better control.

Style C has a cast iron guide block with a steel handle. A knurled adjustment knob advances the single-point diamond. Diamond is replaceable. Overall size is 5 1/8″ Lg. × 2 1/2″ Wd.

Style A—Single Point

For Wheel Dia.	Approx. Carat Wt.		Each
4″- 6″	1/4	4542A1	$30.22
6″- 8″	1/3	4542A2	34.44
8″-10″	1/2	4542A3	41.11
8″-10″	3/4	4542A4	58.61
12″	1	4542A5	87.26
14″	1 1/4	4542A6	99.79

Style B—Multiple Point

		Each
Rough Finish (Whole Diamonds)	4579A61	$153.33
Fine Finish (1/8″ Deep Diamond Particles)	4579A62	126.67

Style C—Replaceable Single Point

		Each
Dresser	8715A11	$69.09
Replacement Diamond Tip	8715A12	$40.00

Truing Devices for Diamond Toolroom Grinding Wheels

Angle Style

Brake-Controlled Style

Reshape worn diamond and CBN grinding wheels with these truing devices, which mount on your surface grinder. After truing, grinding wheels must be dressed with an aluminum oxide dressing stick (not included; see 4563A on this page).

Angle style device is easy and inexpensive. It mounts in a T-slot and features an angled dressing wheel. Use on wheels up to 8″ dia.

Brake-controlled style device provides constant drag and maintains an appropriate speed for efficiency and minimal diamond loss. Use on wheels up to 10″ dia.

Angle Style

Size is 3″ Lg. × 2 1/4″ Wd. × 3 3/16″ Ht. Furnished with one medium-grit silicon carbide wheel for truing 100-grit and finer wheels. *Optional coarse-grit wheel* is for wheels coarser than 100 grit.

		Each
Angle Style Truing Tool	6166A11	$90.20
Replacement 2 1/2″ × 1/2″ × 1 1/8″ Medium-Grit Wheel	6166A12	9.76
Optional 2 1/2″ × 1/2″ × 1 1/8″ Coarse-Grit Wheel	6166A14	9.76

Brake-Controlled Style

Size is 7″ Lg. × 4 1/2″ Wd. × 3 1/2″ Ht. Furnished with two medium-grit silicon carbide wheels for use on 100-grit and finer grinding wheels.

		Each
Brake-Controlled Style Truing Tool	6167A21	$536.58
Replacement 3″ × 1″ × 1/2″ Medium-Grit Wheel	6167A22	16.56
Replacement 5″ × 1/2″ × 1/2″ Medium-Grit Wheel	6167A24	27.59

Hand-Held Dressing Sticks

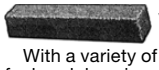

Stick

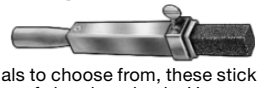

Rectangular Holder

With a variety of materials to choose from, these sticks are perfect for hand dressing a number of abrasive wheels. Use on wheels with a vitrified (clay) bond, unless noted. All are rectangular, unless noted.

Silicon Carbide Sticks—Use the *80-320 grit sticks* on metal-bonded diamond wheels.

Aluminum Oxide Sticks—For use on diamond and CBN wheels.

Boron Carbide Stick—Very hard and long lasting.

Round Silicon Carbide Stick with Holder—Comes with a disposable plastic holder with handle. Overall length is 7 1/2″.

Rectangular holder is for use with 1″ × 1″ × 6″ sticks. Thumb screw holds stick in place. Furnished with a 24-grit silicon carbide stick. Overall length is 12″.

Grit	Stick Size				Each
Silicon Carbide Sticks					
24	1″	× 1″	× 6″	4520A2	$3.53
80	1″	× 1″	× 6″	4460A16	9.28
150	1″	× 1″	× 6″	4460A17	9.28
220	1″	× 1″	× 6″	4460A18	9.28
320	1″	× 1″	× 6″	4460A19	11.16
Aluminum Oxide Sticks					
150	1″	× 1″	× 6″	4563A14	5.64
220	1″	× 1″	× 6″	4563A16	7.44
Boron Carbide Stick					
900	1/4″	× 7/16″	× 3″	43645A21	45.97
Round Silicon Carbide Stick with Holder					
36	1 1/2″ Lg. × 1/2″ Dia.			5246A21	10.67
Rectangular Holder				4387A71	28.64

Hand-Held Carbon Steel Hooded Dressers

Spur Style

Spiral Style

4526A16 & A18

4526A12, A14 & A21

Expose the grit, not your hand. These carbon steel dressers reveal new layers of sharp abrasive while the hooded design protects you from flying chips. Dressers are for use on grinding wheels with a vitrified (clay) bond.

Spur-style dressers are for quick, everyday use. They have multipiece cutters made of carbon steel. Also known as Huntington Pattern Dressers. ***Spiral-style*** dressers are for heavy duty use. They have one-piece, hardened-steel cutters that are formed in a continuous spiral for smoother cutting and finer finishes than spur-style cutters. An oil hole in the shaft provides access for lubrication.

Replacement cutters include everything you need to replace the cutters on one dresser.

Dressing Recommendations For Wheel Size	Finish Produced	Cutter Wd.	Head Wd	O'all Lg.	*Complete Dressers*	Each	*Repl. Cutters*	Set
Spur Style								
Up to 10″ Dia.	Medium	1/2″	1 1/2″	11″	4528A1	$11.69	4530A1	$1.93
10″-16″ Dia.	Medium	1/2″	1 7/8″	11″	4528A2	15.49	4530A4	2.42
16″-36″ Dia.	Medium	7/8″	2 1/2″	15″	4528A4	21.72	4530A6	6.07
Spiral Style								Each
Up to 2″ Thick	Coarse	1 1/16″	2 3/8″	11 1/8″	4526A15	68.93	4526A16	$25.49
Up to 2″ Thick	Fine	1 1/16″	2 3/8″	11 1/8″	4526A13	65.13	4526A14	21.29
Up to 2″ Thick	Very Fine	1 1/16″	2 3/8″	11″	4526A11	66.67	4526A12	22.90
2″ Thick and Up	Coarse	2 1/8″	3 9/16″	14″	4526A17	89.51	4526A18	35.78
2″ Thick and Up	Fine	2 1/8″	3 9/16″	14″	4526A19	87.00	4526A21	33.40

Diamond Dressers

Single Point

Multiple Point

Impregnated

Keep your grinding wheels sharp with these dressers. Multiple-point and impregnated dressers have more diamonds than single-point dressers for faster, more consistent wheel dressing.

Single-Point Dressers—Overall length is 2″. *Nonresettable* dressers have a diamond with one point. Discard these tools when worn. *Resettable* dressers have a diamond with two points and may be reset once. **To Order:** Please specify 3/8″, 7/16″, or 1/2″ shank diameter.

Multiple-Point Dressers—Use for straight-face dressing of wide-face, large-diameter wheels as well as hard, coarse-grit wheels on cylindrical or surface grinders. Length is 1 1/2″; shank dia. is 7/16″. Not resettable.

Impregnated Dressers—Use for general purpose dressing on all grinders. A uniform diamond grit provides maximum cutting efficiency. Overall length is 1 5/8″; shank dia. is 7/16″. Not resettable.

Single-Point Dressers

For Wheel Dia.	Carat Wt.	Nonresettable	Each	Resettable	Each
4″-6″	1/4	4533A151	$36.69	4533A111	$42.75
6″-8″	1/3	4533A152	39.59	4533A112	47.48
8″-10″	1/2	4533A153	46.15	4533A113	75.59
8″-10″	3/4	4533A154	80.00	4533A114	122.10
12″	1	4533A155	127.66	4533A115	174.96
14″	1 1/4	4533A156	131.03	4533A116	232.64
18″	1 1/2	4533A157	158.62	4533A117	306.77
24″-36″	2	4533A158	228.83	4533A118	409.94

Multiple-Point Dressers

No. of Stones	For Wheel Dia.	Head Dia.		Each
Three	Up to 18″	5/8″	4531A1	$33.11
Five	18″-24″	5/8″	4531A2	40.22
Seven	24″-36″	5/8″	4531A3	48.44

Impregnated Dressers

For Wheel Dia.	Head Dia.		Each
Up to 12″	5/16″	4589A12	$37.10
12″-20″	3/8″	4589A13	42.91

Holder

Fits diamond dressers with a 7/16″ diameter shank. A collet holds the dresser in the tube. O'all length is 10″.

Note: Holders are not available for 3/8″ and 1/2″ shank diameter tools.

4533A9 ..... Each $27.69

Radius-Forming Diamond Dressers

Convex Radius

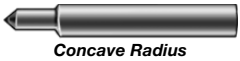
Concave Radius

Dress rounded shapes into the corner of your toolroom grinding wheels with these concave- and convex-radius tools. Dressers have a single-point diamond and are not resettable. For wheels up to 8″ diameter. ***Convex radius*** dressers, or phonopoint dressers, are for wheels of medium to fine grit and medium to soft hardness. Min. radius listed for ***concave radius*** dressers is the smallest corner radius the tool will form on the grinding wheel.

Convex Radius

Included Angle	1/8″ Shank Dia. × 1″ Lg.	Each	1/4″ Shank Dia. × 1 1/2″ Lg.	Each
60°	44045A61	$8.75	44045A64	$11.25
75°	44045A71	8.50	44045A74	10.75
90°	44045A81	8.00	44045A84	10.38

Concave Radius—3/8″ Shank Dia. × 3″ Lg.

Min. Radius		Each	Min. Radius		Each
0.010″	4532A1	$25.00	0.031″	4532A5	$27.50
0.015″	4532A2	25.00	0.062″	4532A6	27.50
0.020″	4532A3	25.00	0.125″	4532A7	32.50
0.025″	4532A4	25.00			

Adjustable-Height Pedestals

These pedestals work with a variety of tools, including grinders, buffers, and electric motors. Made of 10-gauge steel, they are fully adjustable from 22″ to 43″ high and have a 17″ Wd. × 17″ Dp. base with four nonskid feet.

Grinder Pedestal—For grinders and buffers up to 14″. The mounting plate is 9 1/2″ Wd. × 8 1/2″ Dp. with two 1 5/8″ Lg. × 5/16″ Wd. mounting slots. Includes two 5/16″ Dia. × 2 1/4″ Lg. bolts with nuts. Weight is 19 1/2 lbs.

44665A33 ..... Each $106.64

Universal Tool Pedestal—For small bench-top tools. The table is 20″ Wd. × 17″ Dp. Weight is 26 1/2 lbs.

44665A43 ..... Each $136.96

Grinder Pedestal

Diamond Dresser for Surface Grinders

Mount this dresser to the T-slot of your surface grinder, or secure it to a magnetic chuck. It has a base size of 2 1/2″ × 6″ and holds a 1/4-carat, single-stone diamond with a 7/16″ dia. shank at a 15° angle. It is resettable. Use on 2″-6″ diameter wheels.

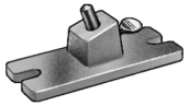

		Each
Complete Dresser (Holder with Diamond Dresser)	4541A11	$60.01
Holder without Diamond Dresser	4541A2	27.93
Replacement 1/4-Carat Diamond Dresser	4541A12	36.25

Toolroom Grinding Wheel Mounting Adapters

Mount toolroom grinding wheels with a 1 1/4″ arbor to most surface grinders with these taper wheel adapters. They can also be used on similar machines that have a spindle with a 3″ taper per foot and a 1″ opening at the large end of the taper.

Adapters are made of hardened and ground steel and consist of a hub, adapter nut, and lock washer. They are 2 1/4″ in diameter. Choose ***left-hand thread*** (for clockwise spindle rotation) or ***right-hand thread*** (for counterclockwise spindle rotation).

Optional *spanner/socket wrench* installs and removes spindle and adapter nuts. Optional *puller bushing* removes adapter from spindle.

For Wheel Thick.	Left-Hand Thread	Right-Hand Thread	Each
Adapters			
1/4″ to 1/2″	43745A21	43745A22	$53.62
1/2″ to 3/4″	43745A23	43745A24	73.67
3/4″ to 1″	43745A25	43745A26	93.17

Optional Accessories and Replacement Parts		Each
Spanner/Socket Wrench	43745A58	$42.25
Puller Bushing	43745A51	14.62
Replacement Spindle Hex Nut (1/2″-13) Left Hand	43745A56	9.32
Replacement Spindle Hex Nut (1/2″-13) Right Hand	43745A57	9.32
Replacement Adapter Nut (1 1/4″-16) Left Hand	43745A54	15.95
Replacement Adapter Nut (1 1/4″-16) Right Hand	43745A55	15.95
Replacement Lock Washer (1/32″ × 2 1/4″ OD)	43745A52	2.15
Replacement Lock Washer (1/16″ × 2 1/4″ OD)	43745A53	2.15

Accessories for Heavy Duty Grinders

All are for use with heavy duty grinders and grinder-buffers offered on page 2646.

		Each
Pedestals		
A.....Standard style for 6″-10″ grinders. Cast iron and steel construction; 32 7/8″ Ht.; 15 3/4″ Wd. × 14″ Dp. base; 62 lbs.	4423A3	$336.12
B....Three-shelf style for 6″-10″ grinders. Steel construction; 34 1/2″ Ht.; 14″ Wd. × 14″ Dp. base; 64 lbs.	4420A12	248.24
C....Heavy duty style for 8″-14″ grinders. Cast iron and steel construction; 30″ Ht.; 20″ Wd. × 17″ Dp. base; 125 lbs.	4603A4	511.37
Tool Tray		
D....For heavy duty style pedestal (4603A4). Cast iron construction; 12″ Wd. × 6″ Dp. overall size; 6 lbs.	4603A9	49.67
Water Pots		
E.....1 1/2-pint size with swivel arm and mounting bracket; 1 lb.	4366A12	33.19
F.....3-pint size for use with heavy duty style pedestal (4603A4); 7 lbs.	4603A8	49.67
Eye Shields—*Furnished with mounting arm and fittings.*		Per Pair
G....Standard style for 7″-14″ grinders. Has a 6″ × 4″ acrylic panel that swivels up and down. Furnished in pairs.	4604A1	$41.31
H....Lighted style for 6″-14″ grinders. Has a 5 1/2″ × 3 3/4″ acrylic panel in aluminum frame. It operates on 115 VAC, includes a cord with three-prong plug, and uses a 60-watt light bulb (not included). UL Listed and CSA Certified.	4604A2	Each $73.17

Bench Grinders and Grinder-Buffers

General Purpose Grinder

Deluxe Heavy Duty Grinder

Our bench grinders feature a totally enclosed motor, vented-exhaust wheel guards (unless noted), adjustable tool rests, adjustable eye shields, and spark breakers. They're furnished with one coarse-grit and one medium-grit grinding wheel, except grinder-buffers, which are furnished with one coarse-grit grinding wheel and a wire wheel brush. All have an 8-ft. power cord with three-prong plug, except three-phase tools and 4452A21, which have leads for hardwiring. UL listed, unless noted. The 115/230-volt models are wired for 115-volt service.

General purpose grinders are a good choice for everyday bench grinding, tool resharpening, and buffing. They feature a base-mounted on/off switch (guarded on 8″ and 10″ models) and oval exhaust vents.

All ***heavy duty*** models are made of durable cast iron and cast aluminum and have lifetime-lubricated ball bearings. All meet OSHA requirements. *Deluxe* models also include illuminated eye shields, a tool tray, and a water pot. For more accessories, see page 2645.

Bench Grinders and Grinder-Buffers

Wheel Size, Dia.×Thick.×Arbor	hp	No-Load rpm	Volts	Hz	ph.	Exhaust Vent Dia.	Wt., lbs.		Each
General Purpose Grinders									
6″× ¾″× ½″	½	3,450	115	60	1	5½″× 3½″	32	4583A88	$164.36
8″×1″ × ⅝″	1	3,450	115	60	1	6″ × 4″	54	4583A91	250.15
10″×1″ ×1″	1½	1,725	115	60	1	6½″× 4½″	110	4583A92	529.19
Heavy Duty Grinders									
6″× ¾″× ½″	¼	1,800	115	60	1	2″	47	4601A11▲	412.02
6″× ¾″× ½″	⅓	3,600	115	60	1	—	30	4601A54♣♦	288.52
6″× ¾″× ½″	⅓	3,600	115	60	1	2″	47	4601A15	412.02
6″× ¾″× ½″	⅓	3,600	115	60	1	3″	30	4601A33♦	263.35
7″×1″ × ⅝″	½	1,800	115/230	60	1	3″	71	4601A16	559.49
7″×1″ × ⅝″	½	3,600	115/230	60	1	3″	70	4601A23♦	561.52
7″×1″ × ⅝″	½	3,600	208-230/460	50/60	3	3″	72	4601A25♦	559.49
8″×1″ × ¾″	¾	1,800	115/230	60	1	3″	99	4602A11	904.19
8″×1″ × ¾″	¾	1,800	208-230/460	50/60	3	3″	98	4602A12♦	876.90
8″×1″ × ¾″	¾	3,600	115/230	60	1	3″	99	4601A19	904.19
8″×1″ × ¾″	¾	3,600	208-230/460	50/60	3	3″	99	4601A21♦	880.08
10″×1″ × ⅞″	1	1,800	115/230	60	1	4″	133	4602A15	1,155.87
10″×1″ × ⅞″	1½	1,800	208-230/460	50/60	3	4″	134	4602A21♦	1,138.22
Deluxe Heavy Duty Grinders									
6″× ¾″× ½″	⅓	3,600	115	60	1	2″	61	4452A29▲	556.32
7″×1″ × ⅝″	½	1,800	115/230	60	1	3″	84	4452A3	723.00
7″×1″ × ⅝″	½	3,600	115/230	60	1	3″	83	4452A4	723.00
8″×1″ × ¾″	¾	1,800	115/230	60	1	3″	110	4452A11	1,034.00
8″×1″ × ¾″	¾	3,600	115/230	60	1	3″	111	4452A12	1,034.00
10″×1″ × ⅞″	1	1,800	115/230	60	1	4″	145	4452A21	1,325.78
10″×1″ × ⅞″	1½	1,800	208-230/460	50/60	3	4″	146	4452A22♦	1,304.92
Heavy Duty Grinder-Buffers									
6″× ¾″× ½″	⅓	3,600	115	60	1	2″	43	4600A1♦	362.32
7″×1″ × ⅝″	½	3,600	115/230	60	1	3″	68	4600A2♦	559.49
8″×1″ × ¾″	¾	3,600	115/230	60	1	3″	97	4600A3	904.19

▲ Not UL listed. ♣ Has solid wheel guards without exhaust vent. ♦ CSA certified.

Replacement Tool Rests

Tool rests for *heavy duty grinders* are suitable for right- or left-hand mounting.

For Grinder Size	FOR GENERAL PURPOSE GRINDERS Left-Hand	Each	Right-Hand	Each	FOR HEAVY DUTY GRINDERS	Each
6″–7″	4583A31	$15.10	4583A32	$15.10	4601A62●	$34.33
8″	4583A41	15.10	4583A42	15.10	4601A64	38.38
10″	4583A51	21.69	4583A52	21.69	4601A64	38.38

● Does not fit 4601A54, 4601A33, or 4600A1.

Replacement Eye Shield

For *general purpose grinders*. Includes left- and right-hand shields, brackets, and mounting hardware.

4583A64 ..... **Per Set** $39.46

Optional Pedestal Stand

For *general purpose grinders*. Has a water pot and a tool tray. Overall height is 31″. Mounting surface is 11″ Lg.×10″ Wd. Weight is 46 lbs.

4583A93 ..... **Each** $105.75

Heavy Duty 12″ Pedestal Grinders

Made of steel with a cast iron pedestal, these powerful grinders accept 12″ Dia.× 2″ Wd.×1¼″ grinding wheels (sold separately, see pages 2641 and 2642). Pedestals are 30″ high with a 20″ Wd.× 17″ Dp. base.

Grinders feature overload-protected manual starters. All come furnished with cast iron wheel guards with a 5″ dia. vent exhaust; adjustable tool rests and spark breakers; two tool trays; a water pot; and two lighted, adjustable, acrylic eye shields (60-watt light bulbs required, but not included).

All include leads for hardwiring and meet OSHA requirements.

hp	No-Load rpm	Volts	Hz	ph.	Wt., lbs.		Each
2	1,800	115/230	60	1	472	4606A41	$3,167.28
2	1,800	208-230/460	50/60	3	466	4606A51	3,038.14
3	1,800	208-230/460	50/60	3	467	4606A61	3,097.74

Steel-Frame Eye Shields

Protect yourself by mounting these shields on small bench grinders and buffers, lathes, planers, and spot welders. Frame is heavy-gauge steel; panel is clear polycarbonate. Shields swivel up and down. Mounting clamp and bracket included.

Panel Size	Shields	Each	Extra Panels	Each
5″×6″	4411A1	$23.90	4411A2	$7.30
6″×8″	4411A3	27.70	4411A4	9.70

Dust Collectors for Heavy Duty Grinders

Mount these dust collectors on heavy duty 7″-12″ pedestal grinders and grinder-buffers. All have a ½-hp, 115 VAC, 60 Hz, 1-phase totally enclosed fan-cooled (TEFC) motor. Include an air-control valve that directs power to the wheel in use (required by OSHA for 10″ and 12″ grinders); heavy-gauge steel housing; powerful maintenance-free fan; hoses; fittings; brackets; switch; 8-ft. power cord with three-prong plug; and flame-retardant, reusable cloth filter bag with 4″ dia. opening. Approx. weight is 60 lbs.

For Grinder Size	Air Movement, cu. ft./min. Unit Total	OSHA Rqmt. Per Wheel		Each
7″	440	220	4578A51	$934.63
8″	440	220	4578A52	934.63
10″	440	390	4578A53	934.63
12″	440	390	4578A54	1,019.62
Replacement Filter Bag			4578A61	60.93

Dust-Collecting Pedestal for Bench Grinders

The top is 15″ Lg.×11″ Dp. for mounting bench grinders and buffers with a 5″-10″ wheel dia. Base is 18⅜″ Lg.×15¾″ Wd. Pedestal has a ⅓ hp motor. Operates on 120 VAC, 60 Hz and has a 5′8″ cord with 3-prong plug. Includes two expandable, 3⅛″ ID universal hoses; hose clamps; and filter.

		Each
Dust Collector	4552A21	$1,027.43
Repl. Filter	4552A31	$24.00
Repl. Spark Arrestor	4552A22	35.42

Caution: *Use only accessories that have a greater rpm rating than the no-load rpm of the grinder you choose.*

Bench-Top Disc Sanders

Designed for use with adhesive-backed sanding discs, these sanders are furnished with an 80-grit aluminum oxide sanding disc, tilting disc table, and power cord with three-prong plug. For sanding discs, see pages 2662-2663. No-load rpm is 1,725.

General Purpose— With a built-in dust fan and hose, this sander runs clean. Hose has a 2¼″ ID connector that attaches to any standard shop vacuum. Furnished with a 6-ft. power cord. UL listed. ***Optional miter gauge*** lets you perform angled sanding operations and has adjustable positive-stop locks at 90° and 45°.

Heavy Duty— These sanders stand up to heavy use. They include a totally enclosed fan-cooled motor, wrap-over guard, miter gauge for angled sanding operations, on/off switch, and 8-ft. power cord.

General Purpose

Heavy Duty

Disc Dia.	Electrical Specifications VAC	Hz	Amps	Motor rpm	hp	ph.	Table Size	Table Tilt Up	Table Tilt Down	Wt., lbs.		Each
General Purpose												
12″	120	60	7.2	1,725	½	1	6¼″×17¼″	45°	45°	72	4615A21	$275.36
Heavy Duty												
10″	110/220♦	60	7.4	1,725	½	1	6″ ×11″	15°	45°	48	4737A14	458.17
12″	110/220♦	60	12.8	1,725	1	1	8″ ×14″	0°	45°	85	4737A21	775.52
Optional Miter Gauge for General Purpose Sander											4615A22	$94.07

♦ Wired for 110 volts.

Combination Belt and Disc Sanders

Get the convenience of a belt and disc sander in one tool. Belt tilts to operate in the horizontal position, vertical position, and at any angle in between. Sanders have a totally enclosed fan-cooled motor, adjustable belt tracking control, tilting belt and disc tables, and a dust port for connecting the unit to a dust collector or vacuum system. All are furnished with a miter gauge for angled sanding operations, on/off switch, and power cord with three-prong plug (unless noted).

For sanding belts, see pages 2665-2668 and page 2676. For sanding discs, see pages 2662-2663.

A Standard Duty Bench-Top 6″×48″ Belt and 9″ Disc Sander— This direct drive unit has a cast aluminum belt table and a cast iron disc table; both tilt 45° down. Also includes a 4″ dia. dust port, 80-grit aluminum oxide sanding belt, 60-grit aluminum oxide sanding disc, and 5-ft. power cord. Not for sanding metals. ***Optional floor stand*** is 28½″ Ht.×16″ Wd.×29″ Dp.

B Heavy Duty Floor Model 6″×48″ Belt and 12″ Disc Sanders— These hefty V-belt drive sanders have an upper guard and an adjustable platen that can be removed for contour sanding. The belt and disc tables are made of cast iron and tilt 20° up and 45° down. Both have a one-piece heavy duty steel stand and a UL listed/CSA certified motor. Include a 3″ dia. dust port, dust deflector, belt guard, 80-grit aluminum oxide sanding belt, 50-grit aluminum oxide sanding disc, and 6-ft. power cord.

Also Available: Replacement parts. Please ask for 4739A4 and specify part.

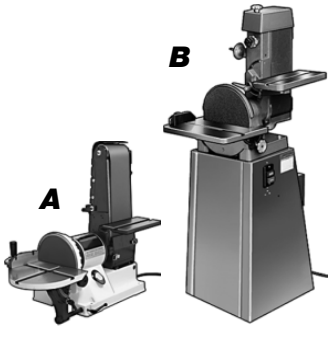

	Belt Size	Disc Dia.	No-Load Speed Belt sfpm●	Disc, rpm	Electrical Specifications VAC	Hz	Amps	Motor rpm	hp	ph.	Table Size Belt	Disc	Platen Size	Wt., lbs.		Each
A	6″×48″	9″	2,258	1,725	115	60	9	1,725	¾	1	5½″×11″	10″×12″	7″ ×15″	131	4566A31	$558.10
B	6″×48″	12″	2,850	1,960	115/230♠	60	20	1,725	1½	1	7⅜″×14¾″	12″×16⅜″	6¼″×14¾″	250	4739A11	1,836.61
B	6″×48″	12″	2,850	1,960	230/460▲	60	5.2	1,725	1½	3	7⅜″×14¾″	12″×16⅜″	6¼″×14¾″	250	4739A22■	1,836.61
Optional Floor Stand for Style A															4566A32	$136.71

● Surface feet per minute. ♠ Wired for 115 volts. ▲ Wired for 230 volts. ■ Plug is not included.

Belt Sanders

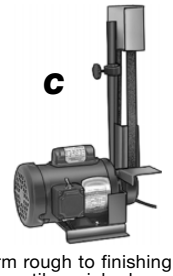

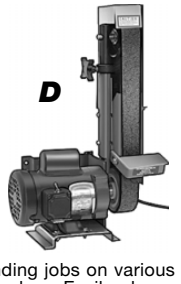

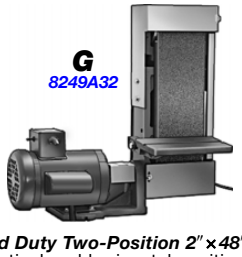

Optional Floor Stand

Perform rough to finishing sanding jobs on various surfaces with these versatile quick-change sanders. Easily change belts in just minutes to reduce downtime. Sanders include a totally enclosed fan-cooled motor, belt control for proper tension, on/off switch (unless noted), belt guard, 80-grit aluminum oxide sanding belt, and power cord with three-prong plug (unless noted). For sanding belts, see pages 2665-2668 and page 2676.

Styles C&D include a contact wheel and a platen that detaches for contour sanding. ***Styles E-G*** have an aluminum or cast iron drive wheel.

Optional floor stand (sold separately) is 32″ Ht.×21″ Wd.×12″ Dp.

C Light Duty Vertical 1″×42″ Belt Sander— Weighing just 32 lbs., this sander is an economical choice for any sanding application. Work table is steel and tilts 20° up and 45° down.

D Standard Duty Two-Position 2″×48″ Belt Sander— Sander operates in vertical and horizontal positions. It has a steel work table that tilts 20° up and 45° down. A full-length hinge on the belt guard gives you easy access to the belt.

E&F Heavy Duty Two-Position 4″×36″ Belt Sanders— Sanders operate in vertical and horizontal positions. They have a steel work table that tilts 20° up and 45° down. ***Style F*** is mounted on a 100 cfm self-contained dust collector. Dust collector is 32″ Ht. ×14″ Wd. ×12″ Dp.

G Heavy Duty Multiposition 6″×48″ Belt Sanders— The belt on these sanders operates in a horizontal position, a vertical position, and at any angle in between. Sanders have a reversible belt platen and a cast iron work table that tilts 15° up and 45° down.

	Belt Size	No-Load sfpm●	Electrical Specifications VAC	Hz	Amps	Motor rpm	hp	ph.	Table Size	Platen Size	Cord Lg.	Wt., lbs.		Each
C	1″×42″	1,800	115/208-230♠	60	5.4/2.7	1,725	⅓	1	3″ × 3″	2″ × 5″	8 ft.	32	4715A61	$262.13
D	2″×48″	4,500	115/208-230♠	60	7/3.5	3,450	½	1	2½″× 5″	3″ × 8″	8 ft.	48	46275A71	431.91
E	4″×36″	3,615	115/208-230♠	60	7	3,450	½	1	2½″× 5″	4½″× 7½″	8 ft.	50	4625A12	626.62
F	4″×36″	3,615	115/208-230♠	60	7	3,450	½	1	2½″× 5″	4½″× 7½″	8 ft.	120	4625A11	1,133.52
G	6″×48″	3,500	115/230♠	60	24	3,450	3	1	6″ ×10″	6½″×14″	6 ft.	150	8249A32	1,286.92
G	6″×48″	3,500	220/440♣	60	6.4	3,450	3	3	6″ ×10″	6½″×14″	—	150	8249A34★	1,286.92
Optional Floor Stand for Styles C, D, E, and G													8239A26	$165.00

● Surface feet per minute. ♠ Wired for 115 volts. ♣ Wired for 220 volts. ★ Does not include power cord, plug, or on/off switch.

Electric Belt Sanders

A *Makita*

B *Porter-Cable*

Powerful motors allow you to take on big sanding jobs. Sanders have positive belt tracking to keep the belt from shifting sideways and a lever or button release for fast belt changes. Sanders come with a dust bag and 100-grit ceramic aluminum sanding belt, unless noted. UL listed and CSA certified. For sanding belts, see pages 2665-2668 and page 2676.

***A** Makita Sander—*This double-insulated sander has a speed control dial and power cord with two-prong plug.

***B** Porter-Cable Sanders—*Dust bag swivels 360° for easy operation. Sanders have a speed control dial and power cord with three-prong plug.

	Belt Size	No-Load sfpm●	Electrical Specifications VAC	Hz	Amps	O'all Lg.	Wt., lbs.	Cord Lg., ft.	Manufacturer	Model No.		Each
A	3″×21″	690-1,440	115	60	8.8	11⅝″	9½	16.4	Makita	9903	4892A21■	$238.86
B	3″×24″	1,000-1,500	120	60	12.0	14″	14½	9	Porter-Cable	360VS	46235A14	285.69
B	4″×24″	1,000-1,500	120	60	12.0	14″	15½	9	Porter-Cable	362V	46235A15	297.45

● Surface feet per minute. ■ Sanding belt is 80-grit aluminum oxide.

Electric Narrow-Belt Sanders

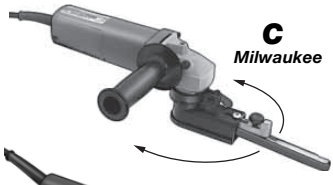

C *Milwaukee*

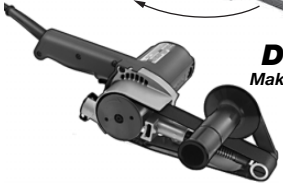

D *Makita*

Turn to these compact sanders for sanding and deburring in cramped quarters. Every sander comes with 10 aluminum oxide sanding belts of varying grits. Belt changes are fast and easy. Sanders are double insulated and include a power cord with two-prong plug. All are UL listed, CSA certified, and meet OSHA requirements. For sanding belts, see pages 2665-2668 and page 2676.

***C** Milwaukee Sander—*With its ½″ wide sanding belt, this sander is hard to beat when it comes to intricate work. It has an adjustable head (180°), three-position handle, a spindle lock that releases tension for fast belt changes, and a paddle switch. Operates on 120 VAC, 60 Hz, 5.5 amps.

***D** Makita Sander—*Belt speed is adjustable, so you can use this sander on a variety of materials. It has a removable multiposition side handle, speed lock-on button for continuous operation, and a trigger switch. Operates on 115 VAC, 60 Hz, 5.0 amps.

	Belt Size	No-Load sfpm●	O'all Lg.	Wt., lbs.	Cord Lg., ft.	Manufacturer	Model No.		Each
C	½″ ×18″	2,300	18½″	6	8	Milwaukee	6101-6	46215A21	$221.25
D	1³⁄₁₆″×21″	656-3,280	15″	4.6	8	Makita	9031	8235A14	261.90
Accessory for Milwaukee Sander									
Optional Contact Arm for Curved Surfaces								46215A31	$52.67

● Surface feet per minute.

Air-Powered Narrow-Belt Sanders

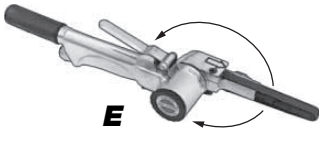

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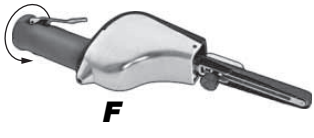

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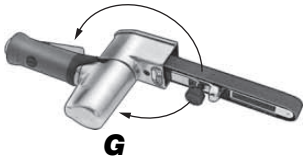

G

The narrow belts on these air-powered tools can reach into corners and other tight spots. Sanders have positive belt tracking and belts are easy to change. All operate on 90 psi and have a ¼″ NPT female air inlet. Recommended hose size is ⅜″ ID. For sanding belts, see pages 2665-2668 and page 2676.

***E** Maintenance Sanders—*The head on these sanders rotates a full 360° and locks in place. They have a rear exhaust, an exhaust silencer, and a variable-speed throttle control lever. All include one 120-grit aluminum oxide sanding belt.

***F&G** Dynabrade Heavy Duty Sanders—*These top-rated tools sand, debur, blend, and polish. Their lightweight, insulated composite housing reduces vibration and won't transmit cold air to the operator's hand. They have a front exhaust and a control screw for speed adjustment.

(F) Dynafile I—Handle adjusts to let you choose the most comfortable position. Includes a variable-speed throttle control lever. Furnished with one 60-grit and one 120-grit zirconia alumina sanding belt.

(G) Dynafile II—Head pivots a full 360° for reaching difficult spots. Model 4669A12 comes with one 60-grit, one 80-grit, and one 120-grit zirconia alumina sanding belt and one nylon mesh sanding belt. Model 4669A13 comes with one 60-grit and one 80-grit zirconia alumina sanding belt.

	Belt Size	No-Load sfpm●	hp	Motor rpm	Avg. cfm	O'all Lg.	Wt., lbs.		Each
Maintenance Sanders									
E	⅜″×13″	3,900	0.37	16,000	14.2	15¾″	1.5	46505A45	$287.56
E	½″×24″	3,900	0.37	16,000	14.2	21⅜″	1.5	46505A48	270.88
E	¾″×20½″	8,240	0.45	16,000	18.4	18½″	3	46505A46	385.80
Dynabrade Heavy Duty Sanders									
F	½″×24″	5,800	0.50	20,000	4	14⅝″	3.1	4669A11	483.65
G	¾″×18″	4,550	0.50	20,000	4	14¼″	2.5	4669A12	473.19
G	¾″×20½″	4,550	0.50	20,000	4	14¼″	2.5	4669A13	494.17

● Surface feet per minute.

Electric Sheet Sanders

H *Porter-Cable*

K *Bosch*

J *Makita*

Operate in an orbital motion and accept standard sanding sheets. Include a power cord with two-prong plug. Sanders are UL listed and meet OSHA requirements. For sanding sheets, see pages 2652-2653 and page 2674.

***H** Porter-Cable Sander—*Has a palm-grip design for easy handling. Can also be used with adhesive-backed sanding sheets. Includes a dust bag and sandpaper punch. Operates on 120 VAC, 50-60 Hz, 2.0 amps. CSA certified.

***J** Makita Sander—*The palm-grip design allows easy handling. Includes a dust bag; sandpaper punch; one 60-grit, one 100-grit, and one 150-grit aluminum oxide sanding sheets; and plastic carrying case. Operates on 110 VAC, 60 Hz, 2.0 amps.

***K** Bosch Sander—*Designed for one- or two-hand operation. Can also be used with adhesive-backed sanding sheets. Includes a built-in dust collector. Operates on 120 VAC, 60 Hz, 3.2 amps.

	Sheet Size	No-Load Orbits/Minute	O'all Lg.	Wt., lbs.	Cord Lg., ft.	Manufacturer	Model No.	Sanders	Each	Repl. Backup Pads	Each
H	4¼″× 4½″	13,500	9″	2.3	8	Porter-Cable	380	8222A52	$49.03	8222A62	$16.10
J	4½″× 5½″	14,000	5⁹⁄₁₆″	2.4	6	Makita	BO4556K	82405A34	60.37	82405A36	3.44
K	4½″×11″	11,000	17″	6.3	8	Bosch	1293D	4479A12	173.16	4479A14	28.08

Air-Powered Sheet Sanders

Economy

Also known as jitterbug sanders, these tools are similar to the sanders on page 2648, only air powered. They operate in an orbital motion for a consistent finish. Sanders accept standard sanding sheets (not included) and come with a backup pad. All operate on 90 psi and have a 1/4″ NPT female air inlet and built-in air speed regulator with rear exhaust. Recommended hose size is 3/8″. For sanding sheets, see pages 2652-2653 and page 2674.

Economy Sander— For occasional use and light sanding jobs. Motor is 0.25 hp; average cfm is 4. Sander is 8″ long and weighs 4 1/2 lbs.

Maintenance Sander— More durable than the economy sander, this sander can handle most applications. Motor is 0.30 hp; avg. cfm is 6. Sander is 7″ long and weighs 4 3/8 lbs.

	Sheet Size	No Load Orbits/ Minute	Sanders	Each	Replacement Backup Pads	Each
Economy	3 2/3″×9″	6,500	4624A1	$110.66	4624A2	$20.70
Maintenance	3 2/3″×9″	8,000	4624A51	136.01	4624A61	25.01

Sanding Belt, Disc, and Drum Cleaners

1

2

3

Remove resin, embedded wood, and metal chips from a moving belt, disc, or drum in seconds. These cleaners remove glass, plastics, and composites and extend sandpaper life up to five times.

(1) Hand-Held Cleaners— For use on stationary and portable tools.

(2) Bench-Mount Cleaner— Use with portable tools. It has mounting holes and includes four 3/16″ screws.

(3) Disc-Sander Cleaner— While your disc sander is running, just set it on this free-spinning pad and let it remove most of the debris.

Lg.×Wd.×Thick.		Each
(1) Hand-Held Cleaners		
6″×1″ ×1″	4836A32	$4.42
8″×1 1/2″×1 1/2″	4836A31	8.34
12″×2″ ×2″	4836A33	20.39
(2) Bench-Mount Cleaner		
3″×3″ ×1 1/2″	4836A34	16.46

For Disc Dia.		Each
(3) Disc-Sander Cleaner		
5″	4836A41	$23.00
6″	4836A42	29.90
5″ Repl. Pad	4836A43	3.67
6″ Repl. Pad	4836A44	5.50

Swirl-Free Electric Disc Sanders

These tools operate in a random-orbital pattern to produce fine, swirl-free finishes. Sanders are double insulated and come with a 120-grit aluminum oxide sanding disc, variable-speed control dial, and backup pad. All are UL listed and meet OSHA requirements. For sanding discs, see pages 2662-2664.

A Porter-Cable Sander— This right-angle sander includes a 10-ft. power cord with two-prong plug. Operates on 120 VAC, 60 Hz, 4.5 amps.

B Bosch Sander— Has a speed lock-on button, soft-grip top, and removable front handle. Includes a dust-collection canister and a 6-ft. power cord with two-prong plug. Operates on 120 VAC, 60 Hz, 3.3 amps. CSA certified.

A Porter-Cable

B Bosch

	Disc Dia.	Type of Sanding Disc Used	No Load Orbits/Minute	O'all Lg.	Wt., lbs.	Manufacturer	Model No.	Sanders	Each	Replacement Backup Pads	Each
A	6″	Plain Adhesive Back	2,500- 6,800	11″	5	Porter-Cable	7346	4712A72	$153.71	4709A42	$23.92
B	5″	Hook-and-Loop, 8-Hole Pattern	4,500-12,000	12″	5.1	Bosch	3725DEVS	46405A41	141.98	46405A42	13.24

Air-Powered Disc Sanders

C

D

E

F

G&H

J

No matter where or what you need to sand, these sanders take the work out of your hands. All operate on 90 psi and have a 1/4″ NPT female air inlet. All come with one backup pad (unless noted). For sanding discs, see page 2657 and pages 2660-2664.

C-E Economy Sanders— Designed for occasional use and light sanding applications.

(C) Rotary-Action Sander— This compact sander is designed to get into tight spaces and has a built-in speed regulator. Use with quick-change style discs.

(D) High-Speed Rotary-Action Sander— This pistol-grip sander comes with three backup pads. Use with standard fiber-back sanding discs.

(E) Dual-Action Sander— Rotary and orbital action combine to produce a scratch-free, flawless finish. Sander has a built-in speed regulator. Use with adhesive-back sanding discs.

F-J Heavy Duty Sanders— Rated for continuous use.

(F) Rotary-Action Right-Angle Sander— Lightweight and compact for use in tight spots. Use with quick-change style metal fastener discs.

(G) Swirl-Free Sanders— You'll get a super-fine finish from these ergonomically designed tools. Also known as random orbital sanders, they have a speed control lever and low-profile pad for better control. Use with adhesive-back sanding discs.

(H) Dust-Collecting Swirl-Free Sanders— Just like Style G, but with a self-generating vacuum that comes ready to hook up to a portable self-contained dust-collection system (sold separately).

(J) Large Swirl-Free Sander— Provides the same swirl-free finish as Style G sanders, but uses a larger disc for faster work. Sander has a safety-lock lever switch and side handle for left- or right-hand operation. Use with 11 1/4″ hook and loop sanding discs.

	Disc Dia.	No Load rpm	hp	Spindle Size	Exhaust	Avg. cfm	Rec. Hose Size	O'all Lg.	Wt., lbs.	Sanders	Each	Replacement Backup Pads	Each
Economy Sanders													
C	2″	15,000	0.30	1/4″-20 Male	Rear	3	3/8″	3 11/16″	1.5	4582A11	$109.25	4582A12	$8.78
D	3″, 4 1/2″, 5″	20,000	0.30	7/16″-20 Male	Front	4	3/8″	8 1/4″	4	4639A31	59.72	4639A32	7.72
E	6″	10,000	0.30	5/16″-24 Female	Bottom	4	3/8″	9 1/2″	4	4645A11	77.71	4645A12	24.27
Heavy Duty Sanders													
F	3″	20,000	0.40	★	Rear	11	1/4″	6 5/8″	1.1	46965A15♦	454.37	4701A73	15.30
G	5″	12,000	0.25	5/16″-24 Female	Rear	16	1/4″	6 1/2″	1.4	82355A71	165.38	82355A73	23.05
G	6″	12,000	0.25	5/16″-24 Female	Rear	16	1/4″	7″	1.5	82355A72	165.38	82355A74	25.83
H	5″ (5-Hole Pattern)	12,000	0.25	5/16″-24 Female	Rear	16	1/4″	8 1/2″	1.5	82355A81	167.88	82355A83	22.83
H	6″ (6-Hole Pattern)	12,000	0.25	5/16″-24 Female	Rear	16	1/4″	9″	1.6	82355A82	167.88	82355A84	25.56
J	11″	2,400	0.70	♥	Rear	27	3/8″	17″	9.1	82355A91	570.56	82355A92	79.67

Dust-Collection System for Style H ..... 82355A85 **Each** $47.60

★ Has a 1/4″ collet. ♦ Does not include backup pad. ♥ Screw mount.

Pole Sanders

If your sanding job seems unreachable, try one of these long pole sanders. They're ideal for use on ceilings and high walls.

Standard Pole Sander and Sanding Sheets

With a 48″ long hardwood handle and an aluminum base plate, this sander is both economical and durable. Designed for use with 4 3/16″ × 11 1/4″ sanding sheets (sold separately).

		Each
Standard Pole Sander	8227A11	$15.29
Replacement Pole	8227A13	$8.73

Sanding sheets are silicon carbide and measure 4 3/16″ × 11 1/4″.

Screencloth sheets have abrasive grit on both sides and an open-mesh backing that resists clogging when used on plaster and wood. Use wet or dry.

Paper sheets have a moderately stiff backing.

	Grit No.	Pkg. Qty.		Per Pkg.
Screencloth	120	5	8227A42	$8.04
Screencloth	220	5	8227A52	7.74
Paper	80	25	8227A22	7.52
Paper	100	25	8227A32	6.73

Dust-Free Orbital Pole Sander and Sanding Sheets

Designed to work with our no-filter-change wet/dry vacuums, this pole sander uses the suction from the vacuum to both drive the orbital head and extract drywall dust. For vacuum, see 7034T11 on page 2069. Sander comes with an orbital head; 85″ chrome-plated steel extension pole; three 3 1/4″ × 8 1/4″ sanding sheets in 120, 150, and 180 grits; bearing oil; hose adapter for 1 1/2″ hose; and hand sander adapter.

8204A21 ..... **Each** $119.96

Sanding sheets are aluminum oxide and treated to resist loading. Size is 3 1/4″ × 8 1/4″. Package quantity is 5.

To Order: Please specify grit: 100, 120, 150, 180, or 220.

8204A31 ..... **Per Pkg.** $5.80

Electric Spindle Sanders

Finally there's an easier way to sand curved surfaces. The spindles on these sanders rotate and oscillate for aggressive material removal.

Stationary Bench-Top Sander

The table on this sander tilts down 45 degrees for easy bevel sanding. It has a built-in 2″ dust port and comes with five drum assemblies and sleeves, one in each of the following diameters: 1/4″, 1/2″, 5/8″, 1 1/2″, and 2″. Has a 6-ft. power cord with three-prong plug. Table size is 14 1/2″ × 14 1/2″. No-load rpm is 1,725; spindle oscillates 30 times per minute. Motor is 1/2 hp, 1 phase, 110 VAC, 60 Hz, 7.5 amps. Weight is 77 lbs. For sanding sleeves see 4719A on page 2670.

8216A21 ..... **Each** $530.75

Portable Hand-Held Sander, Drum Kit, and Sanding Sleeves

Portable Hand-Held Sander— This Porter-Cable Model 121 sander is double insulated and perfect for use on edges. It comes with a 2″ sanding drum, 150-grit aluminum oxide sanding sleeve, adjustable edge guide, vacuum attachment, and 7-ft. power cord with two-prong plug. Sander is variable speed; no-load rpm is 2,400-3,600. Spindle oscillates 38-60 times per minute. Operates on 120 VAC, 25-60 Hz, 6 amps. UL listed. Meets OSHA requirements. Weight is 10 lbs.

8244A11 ..... **Each** $328.95

Quick-Release Drum Kit— Includes three drum/adapter pairs, one in each diameter: 3/4″, 1″, and 1 1/2″.

8244A41 ..... **Each** $50.77

Sanding Sleeves— **To Order:** Please specify grit: 50, 150, or 220.

Size, Dia. × Ht.	Pkg. Qty.		Per Pkg.
1/2″ × 4 1/2″	4	8244A31	$8.89
3/4″ × 4 1/2″	3	8244A32	7.48
1″ × 4 1/2″	3	8244A33	7.14
1 1/2″ × 4 1/2″	2	8244A34	7.77
2″ × 4 1/2″	2	8244A35	8.63

Electric Triangular Pad Detail Sander and Sanding Sheets

Sander

Eliminate the need for hand sanding with this electric detail sander. It uses triangular hook and loop sanding sheets to smooth surfaces in confined areas. Sander is double insulated and has a variable-speed control dial, long-lasting three-position backup pad, soft-grip handle, dust extraction port, and 6-ft. power cord with two-prong plug. It includes 20 triangular sanding sheets, four sanding plates, a polishing pad, one flat extension, one oval extension, and a plastic case. Operates on 120 VAC, 50-60 Hz, 2.6 amps. UL listed, CSA certified, and meets OSHA requirements.

No Load Orbits/Minute	Lg.	Wt., lbs.	Manufacturer & Model No.		Each
13,000-19,000	11″	2.4	Bosch 1294VSK	4711A51	$131.67
Replacement Backup Pad				4711A61	$14.30

Sanding Sheets

Specially treated to resist clogging, these triangular sheets are made of aluminum oxide. Use for general purpose sanding on metal and wood. Package quantity is 5.

To Order: Please specify 40, 60, 80, 100, 120, 180, 240, 320, or 400 grit.

For Sander Model	Side Lg.	Adhesive Backed	Per Pkg.	Hook and Loop	Per Pkg.
Bosch 1294VSK & 3307	3 3/4″	—	—	4708A8	$2.05
Fein MSX636-11	3 1/2″	4708A2	$2.04	4708A7	2.05
Milwaukee 6030 & 6035	4 1/4″	—	—	4708A9	2.06
Ryobi DS1000 & DS1100	3″	4708A1	2.04	4708A6	2.05

Wide-Face Electric Finishing/Sanding Tool

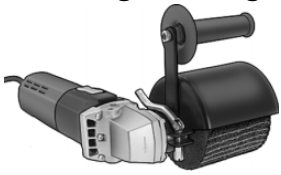

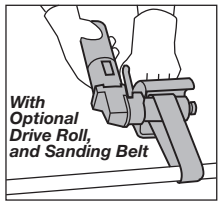

Even the largest surfaces are no match for this wide-face tool. Use it to debur, dull, roughen, sand, brush, and polish.

A variable-speed control dial lets you choose no-load speeds from 950-3,700 rpm. A built-in electronic control keeps speed constant under load for a uniform finish. Includes a solid safety guard to protect your hands. Tool also includes an 80/100-grit flap wheel and a 10″ power cord with two-prong plug. Motor operates on 110 VAC, 60 Hz, 12.27 amps. Tool is 17″ long and weighs 7.25 lbs.

Finishing/Sanding Tool

		Each
Finishing/Sanding Tool	48015A11	$931.64

Sanding and Nylon Mesh Abrasive Flap Wheels

Sanding Wheels— Aluminum oxide. 4″ Dia. × 2″ Wd.

To Order: Please specify 50, 60, 80, 120, 180, or 240 grit.

48015A2 ..... **Each** $25.93

Nylon Fleece Abrasive Wheels— Aluminum oxide. 4″ Dia. × 4″ Wd.

To Order: Please specify grit: 180 or 280.

48015A3 ..... **Each** $47.09

Combination Sanding and Nylon Mesh Abrasive Wheels— Aluminum oxide. 4″ Dia. × 4″ Wd.

To Order: Please specify 80 or 180 grit.

48015A4 ..... **Each** $49.62

Optional Accessories

Drive Roll— With this attachment, you can easily sand around the outside of pipe, tubing, and metal railing systems. Use with sanding belts (sold separately).

48015A16 ..... **Each** $111.27

Belts— Zirconia alumina are 1 5/8″ Wd. × 24″ Lg; nylon 1 3/16″ × 26″ Lg.

Zirconia Alumina Belts

Grit		Each
36	48015A72	$4.82
60	48015A73	4.57
120	48015A74	4.16
240	48015A75	3.78

Nylon Mesh Belts

Grit		Each
Coarse	48015A81	$13.98
Medium	48015A84	13.98
Fine	48015A85	13.98
Extra Fine	48015A86	13.98

About Sanding Abrasives

UNDERSTANDING GRIT NUMBERS

The following information applies to sanding abrasives. For information about nylon mesh abrasives, see page 2674.

Sanding is often a process of using progressively finer grit sizes to achieve a smooth finish. Each finer grit size removes scratches from the previous grit size. If your job involves material removal with little concern for the finish, a single grit may be all you need. If material removal and producing a fine finish are important, use a sequence of grit sizes.

Grit numbers represent the size of abrasive grain particles used in sanding products. The lower the grit number, the larger the particle size and the rougher the finish. The larger the number, the smaller the particle size and the finer the finish.

Grits	Grade	General Guidelines
16, 24	Extra Coarse	***Heaviest Roughing and Shaping—*** For very heavy, rough sanding. These grits remove the greatest amount of material from the workpiece in the shortest amount of time.
36, 40, 50	Coarse	***Intermediate Sanding—*** For further deburring and shaping. *Coarse* grades are for fairly heavy material removal and sanding deep imperfections. *Medium* grades are for surface preparation, rounding corners, and rough sharpening. Also for removing shallow imperfections, depressions, scratches, blemishes, and sanding marks.
60, 80, 100	Medium	
120, 150, 180	Fine	***Smoothing—*** The final step in many sanding jobs. Use for finishing before painting and staining as well as between coatings (varnish, lacquer, or paint) on wood and paint finishes.
220, 240, 280	Very Fine	
320, 360, 400	Extra Fine	***Polishing—*** For blending and producing a high sheen on surfaces. Also for use with wood and paint finishes; use as a step between finish coats or after the final coat.
500, 600, 800	Super Fine	
1200, 1500, 2500	Ultra Fine	***Final Finishing—*** Produce uniform, precision finishes.

ABRASIVE GRAINS

Aluminum Oxide— The most common abrasive. It's extremely tough and fracture resistant. Use for material removal and finishing on metal and wood. More durable than silicon carbide.

Zirconia Alumina— The best abrasive for rugged, heavy material removal on metal and wood. The grit particles continuously produce new sharp points.

Ceramic Aluminum Oxide— Harder, tougher, and more dense than aluminum oxide. Like zirconia alumina, the grit particles continuously produce new sharp cutting edges. Best for medium to heavy material removal on carbon steels, aerospace alloys, nickel alloys, aluminum, cast iron, forgings, and some stainless steels.

Silicon Carbide— A superior abrasive for penetrating and cutting fast under light pressure. Use it on aluminum, brass, bronze, magnesium, titanium, glass, rubber, plastics, soft woods, and enamel. Wears out faster than aluminum oxide if used on wood.

Garnet— Cuts slower, but produces a smoother surface on wood than aluminum oxide of the same grit number. It's widely used in woodworking, particularly for finishing. Not for metalworking because the grains dull too rapidly.

Emery— Blocky-shaped grit particles cut slowly, producing a polished surface. Use on metal.

Crocus— With fine grains, crocus is primarily used for cleaning corrosion off polished metals. Also excellent for polishing gold and other soft metals where minimal material removal is desired.

BACKINGS

Abrasive grain is applied to backings made of fiber, cloth, paper, and plastic. ***Fiber backings***, the most durable backings, are very hard, but not as flexible as paper or cloth. ***Cloth backings*** are more durable than paper; they resist tearing and better tolerate continual bending and flexing during use. Products with ***paper backings*** are generally more flexible than cloth. ***Plastic backings*** are very uniform, making them good for polishing, lapping, and precision surface finishing.

GRAIN COVERAGE

Most sanding products are made with grit particles covering 100% of the backing. This results in longer abrasive life and better quality finishes. Clog-resistant sanding products are different because they have gaps or open spaces between grit particles. These gaps give sanding dust and debris a place to collect, improving sanding efficiency on materials such as wood, plaster, soft metals, and fiberglass. Some clog-resistant products also have an additional surface treatment (zinc stearate) to further resist clogging.

	ABRASIVE GRAINS AND GRITS																		
	Aluminum Oxide, Zirconia Alumina, Ceramic Aluminum Oxide, Silicon Carbide							Waterproof Silicon Carbide Paper					Garnet Paper				Emery		Crocus
	16-24	36-50	60-100	120-180	220-280	320-1500	2500	60-100	120-180	220-280	320-400	500-600	40-80	100-120	150-180	220-280	Extra Coarse-Medium	Fine	
Metals																			
Heavy Material Removal	●	●																	
Medium Material Removal			●																
Light Material Removal			●	●				●	●										
Finishing					●	●	●			●	●	●							●
Polishing						●	●				●	●						●	●
Rust, Corrosion, and Paint Removal		●	●	●													●		●
Deburring			●														●		
Cleaning			●	●														●	
Before Priming			●	●	●													●	
After Priming					●	●	●			●									
Between Finish Coats						●	●				●	●							
After Final Finish Coat											●	●							
Wood, Paint, and Finishes																			
Heavy Material Removal	●	●											●						
Paint or Finish Removal			●																
Moderate Material Removal			●					●						●					
Light Paint or Finish Removal			●	●					●										
Before Priming, Staining, and Sealing				●	●										●	●			
After Priming, Staining, and Sealing					●	●				●	●	●				●			
Between Finish Coats					●						●	●							
After Final Finish Coat						●					●	●							
Plastics and Fiberglass																			
Shaping		●	●					●											
Smoothing			●	●					●										
Before Priming					●					●									
After Priming						●					●								
Between Finish Coats						●					●	●							

Sanding Sheets

For information about sanding abrasives, see page 2651.

Aluminum Oxide Cloth Sanding Sheets

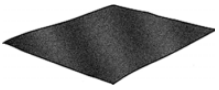

The most popular choice for general purpose sanding of metal and wood. All are 9″×11″.
Dry Sheets—36-60 grits have a strong, stiff backing; 80-500 grits have a flexible backing.
Waterproof Sheets—Unlike dry sheets, these products resist water as well as grease, chemicals, cutting fluids, and other solvents that may be present when sanding, deburring, cleaning, or polishing. Backing is flexible.

Sheets

Grit	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
Dry Sheets						
36	25	4671A23	$39.07	5	4671A79	$10.97
40	25	4671A22	36.32	10	4671A78	15.15
50	25	4671A21	34.81	10	4671A77	14.61
60	25	4671A59	32.17	10	4671A76	13.49
80	25	4671A58	25.93	10	4671A69	11.27
100	50	4671A17	49.85	10	4671A68	10.59
120	50	4671A16	49.07	10	4671A67	10.59
150	50	4671A15	49.07	10	4671A38	11.00
180	50	4671A14	49.07	10	4671A37	10.59
220	50	4671A28	49.07	10	4671A36	10.59
240	50	4671A13	49.07	10	4671A35	10.59
280	50	4671A27	49.07	10	4671A34	10.59
320	50	4671A12	49.07	10	4671A33	10.59

Grit	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
Dry Sheets (Cont.)						
400	50	4671A11	$49.07	10	4671A32	$10.59
500	50	4671A26	51.41	10	4671A31	10.80
Waterproof Sheets						
60	50	8270A58	57.75	10	8270A78	13.57
80	50	8270A57	53.42	10	8270A77	12.72
100	50	8270A56	50.64	10	8270A76	12.19
120	50	8270A55	50.64	10	8270A75	12.19
150	50	8270A54	50.64	10	8270A74	12.19
180	50	8270A53	50.64	10	8270A73	12.19
220	50	8270A31	50.64	10	8270A32	12.19
240	50	8270A52	50.64	10	8270A72	12.19
320	50	8270A51	50.64	10	8270A71	12.19

60-Piece Dry Sheet Assortment

Excellent for maintenance and small jobs, this assortment contains 10 sheets in each of the following grits: 80, 120, 150, 180, 240, and 320.

4660A14 ..... **Per Asst.** $47.38

Aluminum Oxide Paper Sanding Sheets

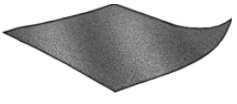

When your sanding jobs involve shapes and contours, paper sheets are a great choice. They're more flexible than cloth sheets, so they conform to surfaces better. Use for general purpose sanding of metal and wood. All are 9″×11″. Paper weights are graded on a scale from D to A. D-weight paper is the strongest and most tear resistant; A-weight paper is the most flexible.
Clog-Resistant Sheets—Resist clogging when sanding wood, soft metals, and fiberglass.
Extra Clog-Resistant Sheets—Have a zinc stearate treatment for additional clog resistance.
Waterproof Sheets—Formulated to resist deterioration when used wet.

Sheets

Grit	Paper Weight	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
Clog-Resistant Sheets							
36	D	25	4673A27	$38.35	10	4673A77	$12.98
40	D	25	4673A26	33.15	10	4673A76	11.56
50	D	50	4673A25	58.50	15	4673A75	14.50
60	D	50	4673A24	49.40	15	4673A74	13.36
80	D	50	4673A23	44.20	15	4673A73	11.55
100	C	100	4673A22	78.75	15	4673A72	10.43
120	C	100	4673A21	78.00	15	4673A71	10.43
150	C	100	4673A19	78.00	15	4673A69	10.43
180	A	100	4692A5	42.92	15	4692A75	6.52
220	A	100	4692A4	43.12	15	4692A74	6.52
240	A	100	4692A3	30.87	15	4692A73	6.67
320	A	100	4692A1	29.48	15	4692A71	6.52

Grit	Paper Weight	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
Extra Clog-Resistant Sheets							
80	A	50	47025A59	$29.89	15	47025A89	$11.29
100	A	100	47025A58	53.14	15	47025A88	10.38
120	A	100	47025A57	53.14	15	47025A87	10.38
150	A	100	47025A56	53.14	15	47025A86	10.38
180	A	100	47025A55	53.14	15	47025A85	10.09
220	A	100	47025A54	53.14	15	47025A84	10.09
240	A	100	47025A53	53.14	15	47025A83	10.09
320	A	100	47025A51	53.14	15	47025A81	10.09
Waterproof Sheets							
220	B	50	6835A21	29.30	15	6835A41	10.28
320	B	50	6835A17	29.30	15	6835A37	10.28
400	B	50	6835A16	29.30	15	6835A36	10.28
600	B	50	6835A15	29.30	15	6835A35	10.28

50-Piece Clog-Resistant Sheet Assortment

You'll get 10 sheets in each of the following grits: 60, 80, 120, 180, and 220. 60 and 80 grits are on D-weight paper; 120 grit is on C-weight paper; 180 and 220 grits are on A-weight paper.

8234A41 ..... **Per Asst.** $27.77

Adhesive-Back and Hook and Loop Aluminum Oxide Paper Sanding Sheets

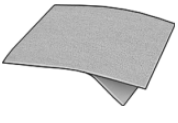

Attach sandpaper to almost any surface to make your own custom sanding device. Choose peel-and-stick adhesive or hook and loop backing. Sheets are 4½″×4¼″ and are zinc-stearate treated for clog resistance. Use for general purpose sanding of metal and wood.

Grit	Paper Weight	Pkg. Qty.	***Adhesive Back***	Per Pkg.	***Hook and Loop Back***	Per Pkg.
60	C	10	46585A28	$7.06	8223A28	$8.47
80	C	10	46585A27	6.35	8223A27	7.63
100	C	10	46585A26	5.88	8223A26	7.05
120	C	10	46585A25	5.88	8223A25	7.05
150	C	10	46585A24	5.88	8223A24	7.05
180	C	10	46585A23	5.88	8223A23	7.05
220	C	10	46585A22	5.88	8223A22	7.05
320	C	10	46585A21	5.88	8223A21	7.05

Clog-Resistant Silicon Carbide Screen Cloth Sanding Sheets

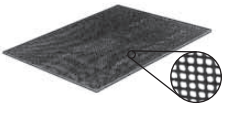

A screen cloth backing allows sanding dust and debris to escape without clogging. Backing is made of flexible meshed nylon. These sheets are particularly good for use on materials such as plaster and wood, and can also be used on nonferrous metals, glass, rubber, plastics, and enamel. Sheets are 9″×11″. Cloth has abrasive on both sides. Use wet or dry.

Grit	***25/Pkg.***	Per Pkg.	***5/Pkg.***	Per Pkg.
80	4677A19	$58.72	4677A69	$14.68
100	4677A18	48.51	4677A68	12.13
120	4677A17	41.70	4677A67	10.43
150	4677A16	39.35	4677A66	9.84
180	4677A14	37.00	4677A65	9.25
220	4677A15	37.00	4677A64	9.25
240	4677A13	37.00	4677A63	9.25
320	4677A12	37.00	4677A62	9.25
400	4677A11	37.72	4677A61	9.43

For information about sanding abrasives, see page 2651.

Silicon Carbide Paper Sanding Sheets

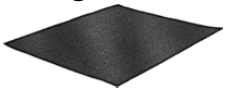

Known as the hardest and sharpest abrasive grain, silicon carbide cuts faster under light pressure than aluminum oxide. Ideal for finishing nonferrous metals such as aluminum, brass, bronze, magnesium, and titanium, as well as other soft metals. Also used on rubber, glass, plastics, soft woods, and enamel. Sheets are 9″×11″.

Clog-Resistant Sheets—Treated with zinc stearate for maximum clog resistance. B-weight paper provides a good balance between flexibility and strength.

Waterproof Sheets—The best choice for wet sanding. C-weight paper is stiff and tear resistant. A-weight paper is more flexible.

Clog-Resistant Sheets

Grit	Paper Weight	100/Pkg.	Per Pkg.	15/Pkg.	Per Pkg.
100	B	4649A19	$46.89	4649A39	$8.91
120	B	4649A18	46.89	4649A38	8.91
150	B	4649A17	46.89	4649A37	8.91
180	B	4649A16	46.89	4649A36	8.91
220	B	4649A15	46.89	4649A35	8.91
240	B	4649A14	46.89	4649A34	8.91
320	B	4649A13	46.89	4649A33	8.91
400	B	4649A12	46.89	4649A32	8.91

Waterproof Sheets

Grit	Paper Weight	50/Pkg.	Per Pkg.	5/Pkg.	Per Pkg.
60	C	4681A23	$76.06	4681A7	$8.03
80	C	4681A22	66.87	4681A6	6.78
100	C	4681A21	57.63	4681A5	6.01
120	C	4681A19	49.63	4681A4	5.14
150	C	4681A18	46.15	4681A3	5.00
180	C	4681A17	44.98	4681A2	5.01
220	A	4680A17	29.22	4680A9	4.94
240	A	4680A16	29.22	4680A8	4.94
280	A	4680A18	29.22	4680A7	4.94
320	A	4680A15	29.22	4680A6	4.94
360	A	4680A14	29.22	4680A5	4.94
400	A	4680A13	29.22	4680A4	4.94
500	A	4680A12	29.22	4680A3	4.94
600	A	4680A11	29.22	4680A1	4.94
1200	B	4680A64	43.64	4680A65	5.66
1500	B	4680A66	43.64	4680A67	5.66

Waterproof Sheet Assortments

You'll get 10 sheets in each of the grits listed.

Total Sheets	Paper Weight	Grits		Per Asst.
50	A	220, 240, 320, 400, 600	4674A36	$30.38
60	C	60, 80, 100, 120, 150, 180	4674A31	49.46

Microfinish Cushioned Silicon Carbide Cloth Sanding Sheets

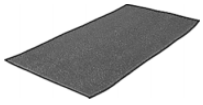

Get precise, uniform finishes on metal surfaces. Unlike paper- or plastic-backed sanding sheets, these have a flexible cloth backing and a cushioned layer of latex bonded with silicon carbide crystals (unless noted). Use wet or dry. Sheets are 6″×12″. Grit number in parentheses is marked on the sheet.

Grit		Each	Grit		Each
230 (60MX)	4611A329	$9.52	800 (320MX)	4611A314	9.52
280 (80MX)	4611A318	9.52	1200 (360MX)	4611A313	9.52
320 (100MX)	4611A317	9.52	1500 (600MX)	4611A312	9.52
400 (180MX)	4611A316	9.52	2500 (1,200MX)	4611A311★	9.52
600 (240MX)	4611A315	9.52			

★ Abrasive is aluminum oxide.

Microfinish Diamond Sanding Sheets

For precise, uniform finishes on extremely hard materials, these polyester plastic-backed diamond sanding sheets are your best bet. Use on glass, ceramics, hardened metals, and composites. A clean alternative to messy compounds and slurries, they also produce a more consistent finish. Use wet or dry. Sheets are 9″×11″. Backing is 3 mils thick.

Grain Size, microns (0.001 mm)	Approx. Grit	Color		Each
30.0	360	Green	8258A19	$45.27
15.0	700	Orange	8258A18	34.86
9.0	1000	Blue	8258A17	34.86
6.0	1200	Brown	8258A16	34.86
3.0	1500	Pink	8258A15	34.86
1.5	____	Light Green	8258A14	34.86
1.0	2000	Lavender	8258A13	34.86
0.5	____	White	8258A12	34.86
0.1	____	Green	8258A11	34.86

Garnet Paper Sanding Sheets for Wood

Sharp cutting edges make garnet paper ideal for use on wood. Not for use on metal because the grains dull too rapidly. Sheets are clog resistant and measure 9″×11″. D-weight and C-weight papers are strong and tear resistant. A-weight paper is more flexible.

Grit	Paper Weight	100/Pkg.	Per Pkg.	15/Pkg.	Per Pkg.
40	D	4693A26●	$17.06	4693A76	$10.07
50	D	4693A25■	29.05	4693A75	12.49
60	C	4693A24■	25.45	4693A74	10.94
80	C	4693A23■	22.06	4693A73	9.49
80	A	4693A18■	16.04	4693A68	6.90
100	C	4693A22	40.60	4693A72	10.15
100	A	4693A17	28.35	4693A67	7.09
120	C	4693A21	40.60	4693A71	9.24
120	A	4693A16	28.35	4693A66	7.09
150	C	4693A19	40.60	4693A69	10.15
150	A	4693A15	28.35	4693A65	7.09
180	A	4693A14	28.35	4693A64	7.09
220	A	4693A13	28.35	4693A63	7.09
280	A	4693A11	28.35	4693A61	7.09

● 25/pkg. ■ 50/pkg.

Emery and Crocus Cloth Sanding Sheets

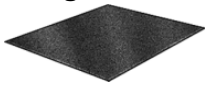

All have a flexible cloth backing and measure 9″×11″. ***Emery*** has blocky-shaped grit particles that cut slowly. Good for polishing metals. ***Crocus cloth*** has a soft abrasive. Use for fine hand-polishing of soft nonferrous metals.

Sheets

	25/Pkg.	Per Pkg.	10/Pkg.	Per Pkg.
Emery				
Extra Coarse	4672A4	$44.77	4672A74	$26.86
Coarse	4672A3	26.87	4672A63	16.12
Medium	4672A2	24.61	4672A62	14.77
Fine	4672A1	23.63	4672A61	14.18
Crocus Cloth				
Crocus Cloth	4672A5■	88.74	4672A65	20.41

■ 50/pkg.

40-Sheet Assortment

You'll get 10 each of coarse, medium, and fine emery sheets, plus 10 crocus cloth sheets.

8233A21 ..... Per Asst. $40.56

Paper Sheets for Sheet Sanders

Tired of ripping up large sanding sheets and ruining your scissor blades? These sheets are conveniently cut to size to fit in common sheet sanders. For sanders, see pages 2634-2635. D-weight and C-weight papers are strong and tear resistant. A-weight paper is more flexible.

Clog-Resistant Aluminum Oxide Dry Sheets—Resist clogging when sanding wood, soft metals, and fiberglass.

Waterproof Silicon Carbide Sheets—The best choice for wet sanding. Ideal for finishing nonferrous metals such as aluminum, brass, bronze, magnesium, and titanium, as well as other soft metals. Also used on rubber, glass, plastics, soft woods, and enamel.

Clog-Resistant Aluminum Oxide Dry Sheets

Grit	Paper Weight	3²/₃″×9″ (50/Pkg.)	Per Pkg.	4½″×5½″ (50/Pkg.)	Per Pkg.	4½″×11″ (25/Pkg.)	Per Pkg.
36	D	4692A48♦	$21.81	4692A58♦	$16.38	4692A68	$14.89
40	D	4692A47♦	19.43	4692A57	14.60	4692A67	13.27
50	D	4692A46♦	16.85	4692A56	12.81	4692A66	11.64
60	D	4692A45	14.76	4692A55	11.26	4692A65	10.22
80	D	4692A44	12.80	4692A54	9.73	4692A64	8.84
100	C	4692A43	11.32	4692A53	8.68	4692A63	7.89
120	C	4692A42	11.32	4692A52	8.68	4692A62	7.89
220	A	4692A41	8.57	4692A51	6.42	4692A61	5.84

♦ Available in less than full-pkg. quantities. Prices are 20% higher.

Waterproof Silicon Carbide Sheets

Grit	Paper Weight	3²/₃″×9″ (50/Pkg.)	Per Pkg.	4½″×5½″ (50/Pkg.)	Per Pkg.	4½″×11″ (25/Pkg.)	Per Pkg.
60	C	4680A36●	$11.91	4680A43●	$8.81	4680A49♣	$7.69
80	C	4680A35●	10.26	4680A82	15.10	4680A88	15.07
100	C	4680A34●	8.98	4680A81	13.25	4680A87	13.22
120	C	4680A73	15.44	4680A79	11.38	4680A86	11.36
150	C	4680A72	14.58	4680A78	10.75	4680A85	10.71
180	C	4680A71	13.70	4680A77	10.06	4680A84	10.06
220	A	4680A54	11.44	4680A58	8.72	4680A63	8.92
320	A	4680A53	11.44	4680A57	8.72	4680A62	8.92
400	A	4680A52	11.44	4680A56	8.72	4680A61	8.92
600	A	4680A51	11.44	4680A55	8.72	4680A59	8.92

● 25/pkg. ♣ 10/pkg.

For information about sanding abrasives, see page 2651.

Hand Sanding Block

Easy on the hands, this rubber block uses 2¾″×9″ sanding sheets (sold separately) to sand flat and curved surfaces. Slits on both ends of the block allow you to attach sheets over the flat or curved side.

4731A2	Each	$3.57

Designed for use with our hand sanding block, these 2¾″×9″ paper sanding sheets have aluminum oxide abrasive and resist clogging. Use for general purpose sanding of metal and wood. Package quantity is 15.

Grit	Paper Weight		Per Pkg.	Grit	Paper Weight		Per Pkg.
80	D	4731A54	$3.14	120	C	4731A52	$2.74
100	C	4731A53	2.76	150	C	4731A51	2.74

Easy-Feed Hand Sanding Blocks

Store an adhesive-back sanding roll in this block—simply cut off worn abrasive and pull out new abrasive as needed. (Rolls sold separately.) Blocks have a cushioned pad and molded hand grip. The flat surface sands corners and the rounded end sands curves.

Block Size, Wd.×Lg.		Each
2½″×5″	8224A11	$14.22
3¼″×5¾″	8224A12	20.60

Designed for use with our Easy-Feed Hand Sanding Blocks, these adhesive-back paper sanding rolls have silicon carbide abrasive and resist clogging. Use on nonferrous metals, glass, rubber, plastics, soft woods, enamel, and other soft materials.

Grit	Roll Lg.	*For 2½″ Block*	Per Roll	*For 3¼″ Block*	Per Roll
100	55″	8224A25	$4.07	8224A35	$4.45
120	70″	8224A24	4.07	8224A34	4.45
180	85″	8224A23	4.07	8224A33	4.45
240	100″	8224A22	4.27	8224A32	4.86
280	115″	8224A21	4.27	8224A31	4.86

Sponge-Back Aluminum Oxide Perforated Sanding Rolls

A separate ⅛″ thick foam backing behind the paper backing provides even pressure, particularly around contours. The foam is also absorbent and good for wet sanding. Rolls are perforated into 200 sheets, each 4½″×5″. All have aluminum oxide abrasive and are zinc stearate coated to resist clogging. Grit number in parentheses is marked on the roll.

Grit		Per Roll	Grit		Per Roll
120 (P150)	8271A11	$62.84	320 (P400)	8271A15	$62.84
180 (P180)	8271A12	62.84	360 (P500)	8271A16	62.84
240 (P240)	8271A13	62.84	400 (P800)	8271A17	62.84
280 (P320)	8271A14	62.84			

Sanding Sponges

Easily sand around curves with these flexible abrasive sponges.

Silicon Carbide Sponges

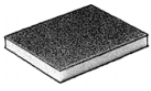

Abrasive is on the top and bottom. Use on nonferrous metals, glass, rubber, plastics, soft woods, enamel, and other soft materials.

Grit	Size		Each
100	4¾″×3¾″×½″	46355A55	$1.53
150	4¾″×3¾″×½″	46355A45	1.53
220	4¾″×3¾″×½″	46355A35	1.53

Aluminum Oxide Sponges

Abrasive is one grit on the top and one side, and a different grit on the bottom and other side. Use for general purpose sanding of metal and wood.

Grit	Pkg. Qty.		Per Pkg.
3¾″×2¾″×1″			
46, 80	3	4023A77	$5.06
80, 120	3	4023A73	5.06
80, 120	24	4023A75	35.21
5″×3″×1″			
80, 120	3	4023A79	6.98
80, 120	3	4023A81■	8.03
9″×3 5/16″×1″			
80, 120	1	4023A83	4.44

■ 75° angled sides.

Super Flexible Aluminum Oxide Sponges

Abrasive is on the top. Sponges conform exceptionally well to small contoured surfaces. Use for general purpose sanding of metal and wood.

Grit	Size	Pkg. Qty.		Per Pkg.
100	5½″×4½″×3/16″	2	4023A63	$2.52
150	5½″×4½″×3/16″	2	4023A62	2.52
220	5½″×4½″×3/16″	2	4023A61	2.52

Clog-Resistant Sponges

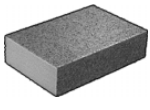

Abrasive is on the top, bottom, and two sides. Grains are coated for clog resistance and long life. 36 and 60 grits are silicon carbide. Use for paint stripping. 80-150 grits are ceramic aluminum oxide. Use for bare surface sanding. 180 and 320 grits are aluminum oxide. Use for sanding between coats.

Grit	Size		Each
36	3¾″×2⅝″×1″	8221A11	$3.64
60	3¾″×2⅝″×1″	8221A12	3.63
80	3¾″×2⅝″×1″	8221A13	3.64
100	3¾″×2⅝″×1″	8221A14	3.63
150	3¾″×2⅝″×1″	8221A15	3.63
180	3¾″×2⅝″×1″	8221A16	3.64
320	3¾″×2⅝″×1″	8221A17	3.64

Heavyweight Aluminum Oxide Sanding Rolls

Compared to other aluminum oxide rolls, these have a heavier, stiffer backing for added strength. Use for general purpose sanding of metal and wood.

Paper rolls are more flexible than cloth. Paper weight is F for durability.

Cloth rolls are more durable. They resist tearing and can withstand continual bending and flexing during use.

Paper Rolls—50-Yard Lg.

Grit	*2″ Width*	Per Roll	*3″ Width*	Per Roll	*4″ Width*	Per Roll	*6″ Width*	Per Roll	*12″ Width*	Per Roll	*24″ Width*	Per Roll
60	4684A061	$59.20	4684A76	$81.21	4684A131	$113.87	4684A231	$168.54	4684A431	$333.67	4684A88	$688.52
80	4684A051	52.38	4684A75	71.85	4684A121	99.74	4684A221	146.85	4684A421	289.27	4684A87	609.19
100	4684A041	46.18	4684A74	67.15	4684A111	87.96	4684A211	129.85	4684A411	255.27	4684A86	537.15
120	4684A031	47.80	4684A73	69.48	4684A181	91.02	4684A281	134.40	4684A481	264.21	4684A85	555.94
180	4684A62	46.32	4684A63	69.50	4684A64	88.25	4684A65	130.25	4684A66	264.21	4684A83	555.94
220	4684A011	47.80	4684A71	69.50	4684A161	91.04	4684A261	134.40	4684A461	264.21	4684A82	555.94
320	4684A52	46.10	4684A53	69.12	4684A54	87.83	4684A55	129.62	4684A56	262.95	4684A81	553.31

Cloth Rolls

Roll Width	*60 GRIT* 25-yard Lg.	Per Roll	50-yard Lg.	Per Roll	*80 GRIT* 25-yard Lg.	Per Roll	50-yard Lg.	Per Roll	*100 GRIT* 25-yard Lg.	Per Roll	50-yard Lg.	Per Roll
3″	4683A95	$80.35	4683A43	$146.06	4683A91	$75.20	4683A42	$136.74	4683A86	$71.49	4683A41	$129.98
4″	4683A96	98.14	4683A13	178.43	4683A92	91.45	4683A12	166.30	4683A87	85.87	4683A11	156.13
6″	4683A97	146.67	4683A23	266.69	4683A93	136.41	4683A22	248.05	4683A88	127.81	4683A21	232.40
8″	4683A98	185.55	4683A33	337.36	4683A94	180.21	4683A32	327.65	4683A89	170.12	4683A31	309.31

Roll Width	*120 GRIT* 25-yard Lg.	Per Roll	50-yard Lg.	Per Roll	*180 GRIT* 25-yard Lg.	Per Roll	50-yard Lg.	Per Roll	*220 GRIT* 25-yard Lg.	Per Roll	50-yard Lg.	Per Roll
3″	4683A71	$71.49	4683A75	$129.98	4683A81	$58.88	4683A4	$129.98	4683A61	$71.49	4683A65	$129.98
4″	4683A72	85.87	4683A76	156.13	4683A82	70.72	4683A01	156.13	4683A62	85.87	4683A66	156.13
6″	4683A73	127.81	4683A77	232.40	4683A83	105.25	4683A02	232.40	4683A63	127.81	4683A67	232.40
8″	4683A74	170.12	4683A78	309.31	4683A84	170.12	4683A03	309.31	4683A64	170.12	4683A68	309.31

For information about sanding abrasives, see page 2651.

Aluminum Oxide Cloth Sanding Rolls

Just pull out the length of abrasive you need and tear it off. Also called shop, utility, and handy rolls, they come in a dispenser pack (unless noted). For use on metal and wood.

Dry Rolls— 36-50 grits have a strong, stiff backing; 60-400 grits have a more flexible backing. 25-yard rolls come on a ribbon-style spool. *Note:* 50-yard lengths in ½″ and ¾″ widths come in two side-by-side 25-yard rolls.

Waterproof Rolls— Unlike dry rolls, these products resist water as well as grease, chemicals, cutting fluids, and other solvents that may be present when sanding, deburring, cleaning, or polishing. Backing is flexible.

Three-Roll Assortments— You'll get three rolls in different grits, furnished in one dispenser pack.

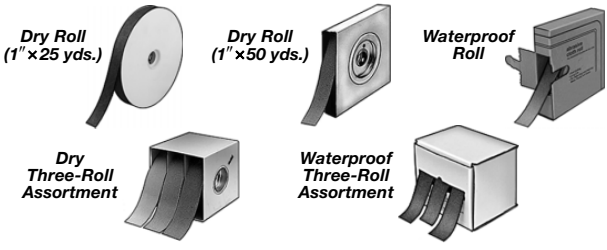

Dry Rolls

Grit	½″ WIDTH 25-yard Lg. Per Roll		½″ WIDTH 50-yard Lg.★ Per Roll		¾″ WIDTH 25-yard Lg. Per Roll		¾″ WIDTH 50-yard Lg.★ Per Roll		1″ WIDTH 25-yard Lg. Per Roll		1″ WIDTH 50-yard Lg. Per Roll	
36	4687A111	$13.83	4687A825	$23.05	4687A131	$18.11	4687A865	$30.18	4687A915	$16.24	4687A23	$27.07
40	4687A112	13.49	4687A824	22.48	4687A132	17.66	4687A864	29.43	4687A914	15.26	4687A22	25.44
50	4687A113	12.33	4687A823	20.55	4687A133	16.77	4687A863	27.95	4687A913	14.49	4687A21	24.15
60	4687A114	11.63	4687A822	19.38	4687A134	15.23	4687A862	25.39	4687A912	13.69	4687A19	22.82
80	4687A115	10.36	4687A821	17.27	4687A135	13.58	4687A861	22.64	4687A911	12.20	4687A18	20.34
100	4687A116	9.90	4687A819	16.50	4687A136	12.91	4687A859	21.52	4687A899	11.65	4687A17	19.41
120	4687A117	9.90	4687A818	16.50	4687A137	12.91	4687A858	21.52	4687A898	11.65	4687A16	19.41
150	4687A118	9.90	4687A817	16.50	4687A138	12.91	4687A857	21.52	4687A897	11.65	4687A15	19.41
180	4687A119	9.90	4687A816	16.50	4687A139	12.91	4687A856	21.52	4687A896	11.65	4687A14	19.41
220	4687A121	9.90	4687A815	16.50	4687A141	12.90	4687A855	21.50	4687A895	11.65	4687A76	19.41
240	4687A122	9.90	4687A814	16.50	4687A142	12.91	4687A854	21.52	4687A894	11.65	4687A13	19.41
320	4687A124	9.90	4687A812	16.50	4687A144	12.91	4687A852	21.52	4687A892	11.65	4687A12	19.41
400	4687A125	9.90	4687A811	16.50	4687A145	12.91	4687A851	21.52	4687A891	11.65	4687A11	19.41

★ Two 25-yard rolls per dispenser.

Grit	1½″ WIDTH 25-yard Lg. Per Roll		1½″ WIDTH 50-yard Lg. Per Roll		2″ WIDTH 25-yard Lg. Per Roll		2″ WIDTH 50-yard Lg. Per Roll		2½″ WIDTH 25-yard Lg. Per Roll		2½″ WIDTH 50-yard Lg. Per Roll	
36	4687A935	$23.69	4687A42	$39.48	4687A955	$31.10	4687A62	$51.83	4687A975	$39.61	4687A75	$66.01
40	4687A934	22.14	4687A41	36.90	4687A954	29.08	4687A61	48.47	4687A974	36.80	4687A74	61.33
50	4687A933	20.77	4687A39	34.61	4687A953	27.31	4687A59	45.51	4687A973	34.34	4687A73	57.23
60	4687A932	19.31	4687A38	32.19	4687A952	25.67	4687A58	42.79	4687A972	32.09	4687A72	53.48
80	4687A931	17.45	4687A37	29.09	4687A951	22.49	4687A57	37.49	4687A971	29.62	4687A71	49.36
100	4687A929	16.55	4687A36	27.58	4687A949	21.79	4687A56	36.32	4687A969	27.98	4687A69	46.63
120	4687A928	16.55	4687A35	27.58	4687A948	21.79	4687A55	36.32	4687A968	27.98	4687A68	46.63
150	4687A927	16.55	4687A34	27.58	4687A947	21.79	4687A54	36.32	4687A967	27.98	4687A67	46.63
180	4687A926	16.55	4687A33	27.58	4687A946	21.79	4687A53	36.32	4687A966	27.98	4687A66	46.63
220	4687A925	16.55	4687A77	27.58	4687A945	21.79	4687A78	36.32	4687A965	27.98	4687A79	46.63
240	4687A924	16.55	4687A32	27.58	4687A944	21.79	4687A52	36.32	4687A964	27.98	4687A65	46.63
320	4687A922	16.55	4687A31	27.58	4687A942	21.79	4687A51	36.32	4687A962	27.98	4687A64	46.63
400	4687A921	16.55	4687A29	27.58	4687A941	21.79	4687A49	36.32	4687A961	27.98	4687A63	46.63

Waterproof Rolls

Grit	½″ WIDTH 25-yard Lg. Per Roll		½″ WIDTH 50-yard Lg. Per Roll		¾″ WIDTH 25-yard Lg. Per Roll		¾″ WIDTH 50-yard Lg. Per Roll		1″ WIDTH 25-yard Lg. Per Roll		1″ WIDTH 50-yard Lg. Per Roll	
60	8225A44	$9.35	8225A64	$15.58	8225A814	$12.53	8225A834	$20.89	8225A854	$14.59	8225A34	$24.31
80	8225A45	8.03	8225A65	13.38	8225A815	10.75	8225A835	17.91	8225A855	13.27	8225A17	22.12
100	8225A46	7.70	8225A66	12.83	8225A816	10.30	8225A836	17.17	8225A856	12.74	8225A16	21.24
120	8225A47	7.70	8225A67	12.83	8225A817	10.30	8225A837	17.17	8225A857	12.74	8225A15	21.24
150	8225A48	7.70	8225A68	12.83	8225A818	10.30	8225A838	17.17	8225A858	12.74	8225A14	21.24
180	8225A49	7.70	8225A69	12.83	8225A819	10.30	8225A839	17.17	8225A861	12.74	8225A13	21.24
220	8225A51	7.70	8225A71	12.83	8225A821	10.30	8225A841	17.17	8225A862	12.74	8225A131	21.24
240	8225A52	7.70	8225A72	12.83	8225A822	10.30	8225A842	17.17	8225A863	12.74	8225A12	21.24
320	8225A54	7.70	8225A74	12.83	8225A824	10.30	8225A844	17.17	8225A865	12.74	8225A11	21.24

Grit	1½″ WIDTH 25-yard Lg. Per Roll		1½″ WIDTH 50-yard Lg. Per Roll		2″ WIDTH 25-yard Lg. Per Roll		2″ WIDTH 50-yard Lg. Per Roll		2½″ WIDTH 25-yard Lg. Per Roll		2½″ WIDTH 50-yard Lg. Per Roll	
60	8225A874	$21.08	8225A35	$35.13	8225A894	$27.88	8225A36	$46.47	8225A924	$34.87	8225A944	$58.11
80	8225A875	18.58	8225A25	30.96	8225A895	23.88	8225A33	39.80	8225A925	29.88	8225A945	49.80
100	8225A876	17.87	8225A24	29.78	8225A896	22.96	8225A32	38.27	8225A926	28.69	8225A946	47.82
120	8225A877	17.87	8225A23	29.78	8225A897	22.96	8225A31	38.27	8225A927	28.69	8225A947	47.82
150	8225A878	17.87	8225A22	29.78	8225A898	22.96	8225A29	38.27	8225A928	28.69	8225A948	47.82
180	8225A879	17.87	8225A21	29.78	8225A899	22.96	8225A28	38.27	8225A929	28.69	8225A949	47.82
220	8225A881	17.87	8225A211	29.78	8225A911	22.96	8225A281	38.27	8225A931	28.69	8225A951	47.82
240	8225A882	17.87	8225A19	29.78	8225A912	22.96	8225A27	38.27	8225A932	28.69	8225A952	47.82
320	8225A884	17.87	8225A18	29.78	8225A914	22.96	8225A26	38.27	8225A934	28.69	8225A954	47.82

Three-Roll Assortments

Roll Widths	Grits	DRY 10-yard Lgs.	Per Asst.	DRY 25-yard Lgs.	Per Asst.	Grits	WATERPROOF 10-yard Lgs.	Per Asst.
1″	80, 120, 180	4664A24	$12.75	4664A14	$37.49	80, 120, 150	4725A22	$15.56
1″	120, 180, 240	4664A21	12.75	4664A11	37.49	180, 240, 320	4725A21	15.35
1½″	80, 120, 150	4664A18	15.78	4664A28	46.40	80, 120, 150	4725A42	21.79
1½″	180, 240, 320	4664A17	15.02	4664A27	44.18	180, 240, 320	4725A33	21.51
2″	80, 120, 180	4664A26	25.07	4664A16	73.74	80, 120, 180	4725A52	28.00
2″	120, 180, 240	4664A23	23.75	4664A13	69.86	180, 240, 320	4725A51	27.63

For information about sanding abrasives, see page 2651.

Silicon Carbide Paper Sanding Rolls

These waterproof rolls are an excellent choice for wet sanding. Abrasive is silicon carbide, which cuts faster than aluminum oxide—even under light pressure. Use on nonferrous metals, glass, rubber, plastics, soft woods, enamel, and other soft materials.

Grit	Paper Weight	Roll Size, Wd.×Lg.		Per Roll
180	C	3″×25 yds.	47415A35	$28.27
240	C	3″×25 yds.	47415A34	28.27
320	C	3″×25 yds.	47415A33	28.27
400	C	3″×25 yds.	47415A32	28.27
600	C	3″×25 yds.	47415A31	28.27
800	C	3″×25 yds.	47415A29	37.25

Adhesive-Back Aluminum Oxide Cloth Sanding Strips

Cloth Strip on Optional Holder

A pressure-sensitive adhesive backing allows these sanding strips to stick to any holder. Backing is strong, stiff cloth. Use for general purpose sanding of metal and wood. Size is 1″×11″.

Grit	Pkg. Qty.		Per Pkg.	Grit	Pkg. Qty.		Per Pkg.
60	25	4647A68	$11.92	180	25	4647A63	$11.26
80	25	4647A67	11.66	240	25	4647A62	11.26
100	25	4647A66	11.26	320	25	4647A61	11.26
120	25	4647A65	11.26				

Optional Holder ..... 4647A57 Each $5.96

Emery and Crocus Cloth Sanding Rolls

All of these rolls have a flexible cloth backing.
Emery has blocky-shaped grit particles that cut slowly. Good for polishing metals.
Crocus cloth has a soft abrasive. Use for fine hand-polishing of soft nonferrous metals.

	1″×20 Yds. Per Roll		1″×50 Yds. Per Roll		1½″×20 Yds. Per Roll		1½″×50 Yds. Per Roll		2″×20 Yds. Per Roll		2″×50 Yds. Per Roll	
Emery												
Coarse	8238A51	$10.70	8238A55	$22.28	8238A43	$15.80	8238A47	$30.00	8238A61	$19.24	8238A65	$40.11
Medium	8238A52	9.75	8238A56	20.30	8238A42	13.12	8238A46	27.35	8238A62	17.57	8238A66	36.56
Fine	8238A53	9.37	8238A57	19.51	8238A41	12.61	8238A45	26.27	8238A63	16.88	8238A67	35.12
Crocus Cloth												
Crocus Cloth	8238A54	16.07	8238A58	33.47	8238A44	20.10	8238A48	45.19	8238A64	28.89	8238A68	60.22

Clog-Resistant Silicon Carbide Screen Cloth Sanding Rolls

Roll

Three-Roll Assortment

A screen cloth backing allows sanding dust and debris to escape without clogging. Backing is made of flexible meshed nylon. These rolls are particularly good for use on plaster and wood, and can also be used on nonferrous metals, glass, rubber, plastics, enamel, and other soft materials. Cloth has abrasive on both sides. Use wet or dry.

Rolls

Grit	1″×25 Yds.	Per Roll	1½″×25 Yds.	Per Roll	2″×25 Yds.	Per Roll	4″×25 Yds.	Per Roll
80	8230A27	$30.91	8230A77	$44.77	8230A37	$59.04	8230A51	$114.89
100	8230A26	25.62	8230A76	37.22	8230A36	49.22	8230A52	94.71
120	8230A25	22.03	8230A75	32.03	8230A35	42.41	8230A53	81.60
150	8230A24	20.81	8230A74	30.00	8230A34	39.63	8230A54	76.85
180	8230A23	19.62	8230A73	28.41	8230A33	37.25	8230A55	73.22
220	8230A22	19.62	8230A72	28.41	8230A32	37.25	8230A56	73.22
240	8230A81	19.62	8230A82	28.41	8230A83	37.25	8230A87	73.22
320	8230A21	19.62	8230A71	28.41	8230A31	37.25	8230A57	73.22
400	8230A61	20.38	8230A62	29.52	8230A63	39.11	8230A67	76.10

Three-Roll Assortments

You'll get one roll each of 80, 120, and 180 grits in one easy-to-use dispenser pack.

Roll Size, Wd.×Lg.		Per Asst.
1″ ×10 yds.	4704A19	$20.91
1½″ ×10 yds.	4704A29	30.35
2″ ×10 yds.	4704A39	40.13

Adhesive-Back and Hook and Loop Paper Sanding Rolls

Attach sandpaper to almost any surface to make your own custom sanding device. Choose peel-and-stick adhesive or hook and loop backing. Rolls are aluminum oxide, and zinc-stearate treated for clog resistance. Use for general purpose sanding of metal and wood.

Grit	Paper Weight	Roll Size, Wd.×Lg.	Adhesive Back	Per Roll	Hook and Loop Back	Per Roll
60	C	4½″×10 yds.	46585A18	$32.67	8223A31	$39.12
80	C	4½″×10 yds.	46585A17	30.74	8223A32	35.16
100	C	4½″×10 yds.	46585A16	28.36	8223A33	32.56
120	C	4½″×10 yds.	46585A15	28.42	8223A34	32.56
150	C	4½″×10 yds.	46585A14	28.44	8223A35	32.56
180	C	4½″×10 yds.	46585A13	28.44	8223A36	32.56
220	C	4½″×10 yds.	46585A12	28.44	8223A37	32.56
320	C	4½″×10 yds.	46585A11	28.44	8223A38	32.56

Hook and Loop Tape Strips— Use with hook and loop rolls above. Stick the tape side to your sanding tool and use the hook and loop side to attach sandpaper.

Size, Wd.×Lg.		Each
4½″×36″	8223A62	$14.88

Holder for 1″ Abrasive Strips

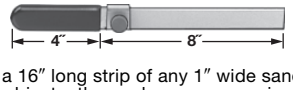

Simply attach a 16″ long strip of any 1″ wide sanding roll material to this holder, and instantly you have a convenient abrasive file. A screw-down clamp keeps the strip in place. Holder is 12″ long, made of zinc-plated steel, and has a cushion-grip handle.

4558A21 ..... Each $10.87

Miniature Sanding Cords and Rolls

Round Sanding Cord

Flat Sanding Roll

The "dental floss" of abrasives, these cords and rolls slip into areas that standard abrasives cannot. Use them for deburring and polishing small-diameter holes, narrow slots, keyways, and grooves. Furnished in 50-foot spools. *Flat sanding rolls* have grit on both the top and bottom.

Aluminum Oxide— More durable than silicon carbide. For general purpose sanding of metal and wood.

Silicon Carbide— Cuts faster under light pressure than aluminum oxide. Use on nonferrous metals, glass, rubber, plastics, soft woods, enamel, and other soft materials.

Crocus Cloth— For polishing metal. Leaves an ultra-smooth finish.

Size	Grit	Aluminum Oxide	Each	Silicon Carbide	Each
Round Sanding Cords					
0.012″	280	———	——	47015A51	$30.14
0.015″	200	———	——	47015A35	12.47
0.018″	200	———	——	47015A36	12.24
0.025″	180	———	——	47015A37	12.24
0.030″	180	47015A16	$10.94	47015A39	18.39
0.040″	180	47015A18	10.94	47015A41	17.14
0.055″	120	47015A23	10.88	47015A43	17.14
0.055″	150	47015A21	10.88	47015A42	17.14
0.070″	180	47015A26	18.45	47015A44	24.04
0.082″	120	47015A27	21.47	47015A28	27.41
0.093″	150	47015A29	33.69	———	——
0.055″ Crocus Cloth		47015A24	Each	$16.73	
Flat Sanding Rolls			Each		Each
1/16″	150	47015A31	$12.80	47015A45	$18.57
3/32″	150	47015A32	11.35	47015A46	17.33
1/8″	150	47015A33	11.55	47015A47	17.67
3/16″	150	47015A34	13.35	47015A48	19.16
1/4″	150	47015A38	15.47	47015A49	21.45
3/32″ Crocus Cloth		47015A52	Each	17.04	

For information about sanding abrasives, see page 2651.

Heavy Duty Fiber-Back Sanding Discs

A heavy duty fiber backing makes these discs very durable and aggressive—the best choice for heavy stock removal. All have a 7/8″ dia. arbor hole, except the 4″ dia. discs, which have a 5/8″ dia. arbor hole, and the quick-change discs, which have a metal arbor that threads directly onto a 5/8″-11 threaded spindle. All discs require a backup pad (sold separately; see 4728A on this page and 4655A on page 2658). Use on right-angle grinders.

Aluminum Oxide Discs—*Standard* and *quick-change discs* are for general purpose sanding on a wide range of metals. Use *clog-resistant discs* on soft metals, fiberglass, and other materials where clogging is a concern.

Zirconia Alumina Discs—*Standard* and *quick-change discs* cut faster and last longer than aluminum oxide discs. Use on metal and hard wood. *Premium discs* have premium grains and a special coating that reduces heat and discoloration. Good for grinding stainless steel and other heat-sensitive materials.

Ceramic Discs—Harder and tougher than aluminum oxide and zirconia alumina, these discs are for medium to heavy material removal on carbon steels, aerospace alloys, nickel alloys, aluminum, and cast iron.

Standard Disc

Quick-Change Disc

Aluminum Oxide Discs

Grit	Pkg. Qty.	4″ Dia.	Per Pkg.	4 1/2″ Dia.	Per Pkg.	5″ Dia.	Per Pkg.	7″ Dia.	Per Pkg.	9″ Dia.	Per Pkg.
Standard Discs											
16	5	—	—	—	—	4699A58	$9.77	4699A11	$11.24	4699A82	$13.92
24	5	4699A49	$7.64	4699A37	$6.24	4699A57	7.56	4699A12	8.66	4699A81	10.48
36	5	4699A48	7.56	4699A36	6.17	4699A56	7.40	4699A14	8.50	4699A79	10.26
50	5	4699A47	7.09	4699A35	5.78	4699A55	6.94	4699A15	7.95	4699A78	9.64
60	5	4699A46	6.67	4699A34	5.45	4699A54	6.55	4699A16	7.58	4699A77	9.21
80	5	4699A19	6.20	4699A33	5.22	4699A53	6.26	4699A17	7.17	4699A74	8.55
100	5	4699A21	6.20	4699A32	5.22	4699A52	6.26	4699A18	7.17	4699A75	8.55
120	5	4699A22	6.20	4699A31	5.22	4699A51	6.26	4699A41	7.17	4699A76	8.55
Clog-Resistant Discs											
16	10	—	—	—	—	46725A17	12.68	46725A22 ♦	18.23	46725A26 ♦	25.25
24	10	—	—	46725A13	10.01	46725A16	11.57	46725A21 ♦	16.65	46725A25 ♦	23.02
36	10	—	—	46725A12	9.82	46725A15	11.34	46725A19 ♦	16.29	46725A24 ♦	22.55
50	10	—	—	46725A11	9.19	46725A14	10.60	46725A18 ♦	15.26	46725A23 ♦	21.11
60	10	—	—	46725A31	8.52	46725A34	9.85	46725A37 ♦	15.28	46725A41 ♦	21.10
80	10	—	—	46725A32	8.10	46725A35	9.35	46725A38 ♦	15.31	46725A42 ♦	21.19
120	10	—	—	46725A33	8.10	46725A36	9.35	46725A39 ♦	15.31	—	—
Quick-Change Discs											
16	25	—	—	4728A65 ♦	46.10	4728A66 ♦	48.11	4728A67 ♦	75.82	—	—
24	25	—	—	4728A57 ♦	36.27	4728A12 ♦	38.29	4728A22 ♦	57.92	—	—
36	25	—	—	4728A56 ♦	35.26	4728A13 ♦	36.52	4728A23 ♦	56.17	—	—
50	25	—	—	4728A55 ♦	33.49	4728A14 ♦	35.01	4728A24 ♦	54.41	—	—
60	25	—	—	4728A54 ♦	31.49	4728A15 ♦	33.00	4728A25 ♦	50.13	—	—
80	25	—	—	4728A53 ♦	29.97	4728A16 ♦	31.24	4728A26 ♦	47.34	—	—
100	25	—	—	4728A52 ♦	29.97	4728A17 ♦	31.24	4728A27 ♦	47.30	—	—
120	25	—	—	4728A51 ♦	29.97	4728A18 ♦	31.24	4728A28 ♦	47.30	—	—

♦ Discs are available in less than full-package quantities. Prices are approximately 20% higher.

Zirconia Alumina Discs

Grit	Pkg. Qty.	4 1/2″ Dia.	Per Pkg.	5″ Dia.	Per Pkg.	7″ Dia.	Per Pkg.	9 1/8″ Dia.	Per Pkg. ♦
Standard Discs									
24	5	4732A15	$10.25	4732A23	$12.27	4732A35	$15.01	4732A54	$24.34
36	5	4732A14	10.07	4732A22	11.97	4732A34	14.66	4732A53	23.91
50	5	4732A13	8.95	4732A21	10.75	4732A33	13.18	4732A52	21.10
60	5	4732A12	8.52	4732A17	10.25	4732A32	12.55	4732A51	20.38
80	5	4732A11	7.70	4732A16	9.09	4732A31	11.18	—	—
Premium Discs									
24	20	4319A11 ♦	41.96	4319A16 ♦	43.93	4319A22 ♦	52.45	—	—
36	20	4319A12 ♦	41.31	4319A17 ♦	42.62	4319A23 ♦	51.48	—	—
50	25	4319A13 ♦	49.18	4319A18 ♦	50.41	4319A24 ♦	60.66	—	—
60	25	4319A14 ♦	46.71	4319A19 ♦	47.94	4319A25 ♦	56.97	—	—
80	25	4319A15 ♦	43.85	4319A21 ♦	45.07	4319A26 ♦	52.87	—	—
Quick-Change Discs									
24	5	4743A21	14.29	4743A26	14.58	4743A32 ♦	16.51	—	—
36	5	4743A22	14.15	4743A27	15.52	4743A33 ♦	15.00	—	—
50	5	4743A23	13.34	4743A28	13.58	4743A34 ♦	15.10	—	—
60	5	4743A24	12.73	4743A29	13.25	4743A35 ♦	15.10	—	—
80	5	4743A25	12.39	4743A31	12.82	4743A36	14.49	—	—

♦ Discs are available in less than full-package quantities. Prices are approximately 20% higher.

Ceramic Discs

Grit	Pkg. Qty.	4 1/2″ Dia.	Per Pkg.	5″ Dia.	Per Pkg.	7″ Dia.	Per Pkg. ♦	9″ Dia.	Per Pkg. ♦
24	5	46375A55	$10.14	46375A65	$12.04	46375A75	$18.40	46375A85	$25.24
36	5	46375A54	9.94	46375A64	11.79	46375A74	18.04	46375A84	24.74
50	5	46375A53	9.30	46375A63	11.02	46375A73	15.96	46375A83	23.09
60	5	46375A52	8.87	46375A62	10.49	46375A72	16.07	46375A82	21.83
80	5	46375A513	8.36	46375A613	9.89	46375A713	14.84	46375A812	20.67
100	5	46375A512	8.36	46375A612	9.89	46375A712	14.84	46375A813	20.67
120	5	46375A511	8.36	46375A611	9.89	46375A711	14.84	46375A811	20.67

♦ Discs are available in less than full-package quantities. Prices are approximately 20% higher.

Backup Pads and Pad Adapters

Backup pads fit all right-angle grinders with a 5/8″-11 spindle thread. Disc nut included.

For Disc Dia.	Max. rpm		Each
4 1/2″	18,000	4728A29	$39.49
5″	18,000	4728A31	39.49
7″	8,600	4728A42	44.38
9″, 9 1/8″	7,000	4728A43	60.60

Pad adapters let you convert from a 5/8″-11 spindle thread to the spindle thread listed below.

Female End		Each
3/8″-24	4728A61	$8.30
10 × 1.25 mm	4728A62	10.05
10 × 1.50 mm	4728A63	10.05
1/2″-13	4728A64	24.59

Backup Pad

For information about sanding abrasives, see page 2651.

Cool-Sanding Backup Pads for Fiber-Back Sanding Discs

The spiral rib design forms air flow channels that prevent overheating and extend disc life. These pads are made of extra strong rubber, fabric, and fiberboard.

Disc nuts (sold separately) are necessary for attaching backup pads. Pad adapters (sold separately) let you use these pads on power tools with a 3/8″-24 or 7/16″-20 male spindle thread.

For Disc Dia.	Arbor Hole	Max. rpm	Flexible	Medium	Rigid	Each
4″	5/8″-11	12,000	4655A11	4655A5	4655A21	$13.88
4 1/2″	5/8″	11,000	4655A17	4655A7	4655A33	13.88
5″	5/8″-11	10,000	4655A12	4655A3	4655A22	15.75
7″	5/8″-11	8,500	4655A16■	4655A1	4655A24	23.68
9″	5/8″-11	6,500	4655A15	4655A2	4655A26	28.35
Disc Nut (5/8″-11 Thread) for 4″, 4 1/2″, and 5″ Dia. Pads					4655A27	5.50
Disc Nut (5/8″-11 Thread) for 7″ and 9″ Dia. Pads					4655A28	5.50
3/8″-24 to 5/8″-11 Pad Adapter					4655A31	8.75
7/16″-20 to 5/8″-11 Pad Adapter					4655A32	8.75

■ Max. rpm is 7,000.

Flap Sanding Discs

Angle Flap Disc

Angle Flap Disc

Flat Flap Disc

Made from overlapping pieces of cloth sanding strips bonded to fiberglass hub, these flap discs provide consistent material removal and even finishes in one operation. As the top layer of sanding strips wears away, a new layer is exposed. These discs run cooler than others and do not require backup pads.

Use on right-angle grinders for grinding, deburring, finishing, and blending welds. ***5/8″ arbor*** and ***7/8″ arbor*** discs have unthreaded arbor holes. ***5/8″-11 arbor*** discs have threaded arbor holes that permit quick mounting and removal from the grinder spindle.

Angle Flap Discs— Also known as Type 29 discs, they provide maximum contact with the work surface. They're more aggressive than flat flap discs and work well on curves and contours. Normally operated at a 5° to 15° angle.

Flat Flap Discs— Also known as Type 27 discs, these discs operate more smoothly than angle discs and are less aggressive. They're the best choice for flat surface work. Normally operated at a 0° to 15° angle. *Extra thick discs* have more flaps than standard flap discs to conform to surfaces better. They also last 30% to 40% longer. Use on contoured and irregular surfaces in addition to flat surfaces. *Extra thick aluminum oxide discs for stainless steel* have specially formulated additives for cool cutting and long disc life.

	4″ Dia. (15,300 Max. rpm)		4 1/2″ Dia. (13,000 Max. rpm)				5″ Dia. (12,000 Max. rpm)				7″ Dia. (8,600 Max. rpm)			
	5/8″ Arbor		5/8″-11 Arbor		7/8″ Arbor		5/8″-11 Arbor		7/8″ Arbor		5/8″-11 Arbor		7/8″ Arbor	
Grit		Each		Each		Each		Each		Each		Each		Each
Angle Flap Discs														
Aluminum Oxide														
36	4644A41	$5.28	4644A52	$7.61	4644A42	$6.13	4644A62	$8.06	4644A72	$6.55	4644A82	$12.32	4644A43	$12.62
40	4644A871	5.28	4644A53	7.61	4644A881	6.13	4644A63	8.06	4644A73	6.55	4644A83	12.32	4644A891	12.62
60	4644A872	5.28	4644A54	7.61	4644A882	6.13	4644A64	8.06	4644A74	6.55	4644A84	12.32	4644A892	12.62
80	4644A873	5.28	4644A55	7.61	4644A883	6.13	4644A65	8.06	4644A75	6.55	4644A85	12.32	4644A893	12.62
120	4644A874	5.28	4644A56	7.61	4644A32	6.13	4644A66	8.06	4644A76	6.55	4644A86	12.32	4644A33	12.62
Zirconia Alumina														
36	47055A73	6.24	47055A22	8.86	47055A76	7.13	47055A32	9.41	47055A52	7.74	47055A62	14.14	47055A79	12.61
40	47055A41	6.24	47055A23	8.86	47055A43	7.13	47055A33	9.41	47055A53	7.74	47055A63	14.14	47055A45	12.61
60	47055A72	6.24	47055A24	8.86	47055A75	7.13	47055A34	9.41	47055A54	7.74	47055A64	14.14	47055A78	12.61
80	47055A71	6.24	47055A25	8.86	47055A74	7.13	47055A35	9.41	47055A55	7.74	47055A65	14.14	47055A77	12.61
120	47055A42	6.24	47055A26	8.86	47055A44	7.13	47055A36	9.41	47055A56	7.74	47055A66	14.14	47055A46	12.61
Ceramic Aluminum Oxide														
36	4750A17	6.93	4750A27	10.38	4750A37	8.11	4750A47	10.93	4750A57	8.54	4750A67	15.63	4750A77	14.60
40	4750A16	6.93	4750A26	10.38	4750A36	8.11	4750A46	10.93	4750A56	8.54	4750A66	15.63	4750A76	14.60
60	4750A15	6.93	4750A25	10.38	4750A35	8.11	4750A45	10.93	4750A55	8.54	4750A65	15.63	4750A75	14.60
80	4750A14	6.93	4750A24	10.38	4750A34	8.11	4750A44	10.93	4750A54	8.54	4750A64	15.63	4750A74	14.60
100	4750A13	6.93	4750A23	10.38	4750A33	8.11	4750A43	10.93	4750A53	8.54	4750A63	15.63	4750A73	14.60
Silicon Carbide														
80	4609A116	8.10	4609A141	12.10	4609A126	9.45	4609A161	12.71	4609A171	10.03	4609A151	19.11	4609A136	16.96
120	4609A115	8.10	4609A142	12.10	4609A125	9.45	4609A162	12.71	4609A172	10.03	4609A152	19.11	4609A135	16.96
220	4609A214	8.11	4609A243♣	12.10	4609A224♣	9.42	4609A263	12.72	4609A273	10.04	4609A253	19.11	4609A234	16.97
320	4609A113	8.10	4609A144	12.10	4609A123	9.45	4609A164	12.71	4609A174	10.03	4609A154	19.11	4609A133	16.96
400	4609A112	8.10	4609A145	12.10	4609A122	9.45	4609A165	12.71	4609A175	10.03	4609A155	19.11	4609A132	16.96
600	4609A111	8.10	4609A146	12.10	—	—	4609A166	12.71	4609A176	10.03	4609A158	19.11	4609A131	16.96
Flat Flap Discs														
Aluminum Oxide														
40	4745A41	5.31	4745A114	8.56	4745A124	6.00	4745A51	8.90	4745A55	6.76	4745A134	13.50	4745A144	11.33
60	4745A42	5.31	4745A113	8.56	4745A123	6.00	4745A52	8.90	4745A56	6.76	4745A133	13.50	4745A143	11.33
80	4745A43	5.31	4745A112	8.56	4745A122	6.00	4745A53	8.90	4745A57	6.76	4745A132	13.50	4745A142	11.33
120	4745A44	5.31	4745A111	8.56	4745A121	6.00	4745A54	8.90	4745A58	6.76	4745A131	13.50	4745A141	11.33
Extra Thick Aluminum Oxide														
40	4793A11	6.88	4793A514●	11.15	4793A524●	10.07	4793A21	11.87	4793A31	9.65	4793A534	19.27	4793A544	17.73
60	4793A12	6.88	4793A513●	11.15	4793A523●	10.07	4793A22	11.87	4793A32	9.65	4793A533	19.27	4793A543	17.73
80	4793A13	6.88	4793A512●	11.15	4793A522●	10.07	4793A23	11.87	4793A33	9.65	4793A532	19.27	4793A542	17.73
120	4793A14	6.88	4793A511●	11.15	4793A521●	10.07	4793A24	11.87	4793A34	9.65	4793A531	19.27	4793A541	17.73
Extra Thick Ceramic for Stainless Steel														
60	—	—	8264A912●	12.72	8264A922●	11.08	—	—	—	—	8264A932	22.22	8264A942	20.62
80	—	—	8264A911●	12.72	8264A921●	11.08	—	—	—	—	8264A931	22.22	8264A941	20.62
Zirconia Alumina														
40	4745A45	5.68	4745A314	8.56	4745A324	6.00	4745A61	9.53	4745A65	7.35	4745A334	13.50	4745A344	11.33
60	4745A46	5.68	4745A313	8.56	4745A323	6.00	4745A62	9.53	4745A66	7.35	4745A333	13.50	4745A343	11.33
80	4745A47	5.68	4745A312	8.56	4745A322	6.00	4745A63	9.53	4745A67	7.35	4745A332	13.50	4745A342	11.33
120	4745A48	5.68	4745A311	8.56	4745A321	6.00	4745A64	9.53	4745A68	7.35	4745A331	13.50	4745A341	11.33
Extra Thick Zirconia Alumina														
40	4793A15	7.29	4793A714●	11.15	4793A724●	10.07	4793A25	12.72	4793A35	10.34	4793A734	19.27	4793A744	17.73
60	4793A16	7.29	4793A713●	11.15	4793A723●	10.07	4793A26	12.72	4793A36	10.34	4793A733	19.27	4793A743	17.73
80	4793A17	7.29	4793A712●	11.15	4793A722●	10.07	4793A27	12.72	4793A37	10.34	4793A732	19.27	4793A742	17.73
120	4793A18	7.29	4793A711●	11.15	4793A721●	10.07	4793A28	12.72	4793A38	10.34	4793A731	19.27	4793A741	17.73

♣ Max. rpm is 13,300. ● Max. rpm is 12,000.

For information about sanding abrasives, see page 2651.

Cool-Grinding Flap Sanding Discs

These discs have overlapping cloth flaps that alternate between zirconia alumina abrasive and lubricating agents. The abrasive flaps aggressively remove material while the lubricating flaps minimize heat to reduce discoloration of the work surface. The flaps are bonded to a fiberglass hub in a circular pattern to enable grinding and finishing in one operation. Backup pads not required.

Angle Flap Discs— Also known as Type 29 discs, they provide maximum contact with the work surface and work well on contours and curves.

Flat Flap Discs— Also known as Type 27 discs, they grind more smoothly than angle discs, but are less aggressive. Great for flat surfaces.

Angle Flap Disc

Angle Flap Disc

Flat Flap Disc

	4½″ DIA. (MAX. RPM 13,300)				5″ DIA. (MAX. RPM 12,200)			
	5/8″-11 Arbor		7/8″ Arbor		5/8″-11 Arbor		7/8″ Arbor	
Grit		Each		Each		Each		Each
Angle Flap Discs								
40	4481A123	$11.79	4481A113	$10.54	4481A143	$12.80	4481A133	$11.56
60	4481A122	11.79	4481A112	10.54	4481A142	12.80	4481A132	11.56
80	4481A121	11.79	4481A111	10.54	4481A141	12.80	4481A131	11.56
Flat Flap Discs								
40	4481A223	11.79	4481A213	10.54	4481A243	12.80	4481A233	11.56
60	4481A222	11.79	4481A212	10.54	4481A242	12.80	4481A232	11.56
80	4481A221	11.79	4481A211	10.54	4481A241	12.80	4481A231	11.56

Long-Lasting Plastic Hub Flap Discs

Short-lived flap discs wearing you down? Unlike fiberglass, the plastic hub on these discs can be sheared away with your workpiece as the abrasive flaps wear down, resulting in longer disc life. Abrasive is cloth-backed zirconia alumina for aggressive material removal.

To Order: Please specify grit: 40, 60, 80, or 120.

Disc Dia.	Arbor Hole	Max. rpm		Each
4½″	5/8″-11	13,300	4216A11	$14.72
4½″	7/8″	13,300	4216A12	14.72
5″	5/8″-11	12,200	4216A13	19.08
7″	7/8″	8,600	4216A14	30.25

Floor-Sanding Silicon Carbide Discs

When used with commercial floor-buffing machines, these resin-bonded discs are ideal for rough-to-finish sanding of wood floors. Also used for stripping tape from concrete floors. All discs have a 2″ slotted center hole.

The ***20-grit*** discs resist clogging and have a combination cloth and paper backing. The ***36-grit*** and ***80-grit*** discs have a strong paper backing.

	15″ Dia.		16″ Dia.	
Grit		Each		Each
20	47305A244	$6.36	47305A254	$7.28
36	47305A243	4.98	47305A253	5.71
80	47305A241	3.39	47305A251	3.89

Smooth-Finish Cotton-Fiber Sanding Discs

Multiple layers of cotton fiber impregnated with aluminum oxide grain allow these quick-change discs to grind and finish in one step. Discs resist clogging and provide a fine finish on metals. They outlast standard quick-change cloth sanding discs 10 to 1.

Use these discs on right-angle die grinders for grinding welds and blending on flat and contoured surfaces. For best results, use a disc that is one or two grits coarser than a standard cloth sanding disc. A plastic fastener (3M Roloc/Norton Speed-Lok TR style) allows for easy disc changes. Use with disc holders sold below.

Disc holders have a ¼″ diameter shank.

To Order: For discs, please specify grit: 24, 36, 54, 80, 120, 180, or 320.

Discs			Disc Holders		
Dia.		Each	Max. rpm		Each
1″	43835A71	$2.56	40,000	46465A72	$9.79
1½″	43835A72	2.71	30,000	46325A91	9.85
2″	43835A73	3.19	30,000	46325A92	10.85
3″	43835A74	3.77	20,000	46325A93	11.92

Fast-Sanding Aluminum Hub Flap Discs

The rigid aluminum backing plate on these discs provides more support than standard fiberglass backing plates for very aggressive material removal. Abrasive is cloth-backed zirconia alumina, which is aggressive and long lasting. Also known as Type 29 discs.

To Order: Please specify grit: 36, 40, 60, 80, or 120.

Disc Dia.	Arbor Hole	Max. rpm		Each
4″	5/8″	15,000	4384A21	$7.31
4½″	5/8″-11	13,000	4384A23	9.93
4½″	7/8″	13,000	4384A22	8.19
5″	7/8″	12,000	4384A24	9.41
7″	5/8″-11	8,600	4384A26	17.88
7″	7/8″	8,600	4384A25	16.41

Corner-Sanding Flexi-Flap Discs

The abrasive flaps on these discs are set at an angle and more widely spaced than standard discs, allowing them to reach into corners. Backing plate is fiberglass; backing is cloth.

Aluminum Oxide— The most popular abrasive for general purpose work on a wide range of metals.

Zirconia Alumina— This long-lasting premium abrasive provides aggressive material removal.

To Order: Please specify grit: 36, 40, 60, 80, or 120.

Disc Dia.	Arbor Hole	Max. rpm		Each
Aluminum Oxide				
4½″	5/8″-11	13,300	4326A12	$6.45
4½″	7/8″	13,300	4326A11	4.86
7″	5/8″-11	8,600	4326A14	10.95
7″	7/8″	8,600	4326A13	9.37
Zirconia Alumina				
4½″	5/8″-11	13,300	4326A16	6.99
4½″	7/8″	13,300	4326A15	5.40
7″	5/8″-11	8,600	4326A18	11.99
7″	7/8″	8,600	4326A17	10.40

Sanding Disc Trimmer

Save the usable inner part of a worn disc—this tool works like a can opener to trim the perimeter of the disc down to the next smaller size. Works on paper, cloth, and fiber discs from 3″ to 9″ with a 7/8″ center hole.

Trimmer has two 11/32″ holes for bench mounting (screws not included).

Note: Not for use with flap discs.

		Each
Trimmer	4710A12	$109.67
Repl. Upper Cutting Blade	4710A13	21.91
Repl. Lower Cutting Blade	4710A14	21.91

For information about sanding abrasives, see page 2651.

Quick-Change Cloth Sanding Discs

Style A
Metal (unless noted) fastener equivalent to Standard Abrasive SocAtt, Norton Speed-Lok TS, and 3M TSM styles.

Style B
Plastic fastener equivalent to 3M Roloc and Norton Speed-Lok TR styles.

Style C
Plastic snap-on fastener equivalent to Merit Power-Lock Type I style.

The fastener on the back of these discs allows you to easily swap one disc for another. Choose from three types of disc fasteners: *Style A* is a metal (unless noted) fastener equivalent to Standard Abrasive SocAtt, Norton Speed-Lok TS, and 3M TSM styles; *Style B* is a plastic fastener equivalent to 3M Roloc and Norton Speed-Lok TR styles; and *Style C* is a plastic snap-on fastener equivalent to Merit Power-Lock Type I style. Disc holder required (sold separately below).

Discs have a strong cloth backing and are normally used on right-angle die grinders.

Aluminum Oxide Discs— The most popular abrasive for general purpose work on metal and wood. ***Long-Lasting Multilayer Aluminum Oxide Discs—*** Grains are compacted for longer disc life and uniform finishes. ***Silicon Carbide Discs—*** For nonferrous metals, glass, rubber, plastics, soft woods, enamels, and other soft materials. ***Zirconia Alumina Discs—*** Grit particles continuously produce new sharp cutting points, resulting in longer disc life. Perfect for aggressive cutting and heavy material removal on all types of metals and hard woods. ***Ceramic Discs—*** Similar to zirconia alumina discs, but provide a more consistent finish. Use for medium to heavy material removal on carbon steels, aerospace alloys, nickel alloys, aluminum, cast iron, forgings, and some stainless steels. ***Premium Ceramic Discs—*** Similar to ceramic discs, these discs have sharper abrasive grains and a special coating that allow them to remove material more aggressively and last up to 200% longer.

To Order: Please specify fastener style: Style A (Metal, unless noted); Style B (Plastic); or Style C (Plastic Snap-On), unless noted. See fastener descriptions and illustrations at left.

Discs

Grit	3/4″ Dia. (25/Pkg.)	Per Pkg.	1″ Dia. (25/Pkg.)	Per Pkg.	1 1/2″ Dia. (25/Pkg.)	Per Pkg.	2″ Dia. (10/Pkg.)	Per Pkg.	3″ Dia. (10/Pkg.)	Per Pkg.	4″ Dia. (10/Pkg.)	Per Pkg.
Aluminum Oxide Discs												
36	46465A921	$7.75	46465A932	$8.57	46465A943	$9.78	46465A954	$6.27	46465A965	$9.59	46465A976	$15.89
40	46465A919	7.76	46465A931	8.35	46465A942	9.57	46465A953	5.97	46465A964	9.22	46465A975	15.81
50	46465A918●	7.76	46465A929	8.05	46465A941	9.46	46465A952	5.76	46465A963	8.97	46465A974●	15.22
60	46465A917	7.76	46465A928	7.97	46465A939	9.22	46465A951	6.17	46465A962	8.73	46465A973	14.73
80	46465A916	7.51	46465A927	7.62	46465A938	9.08	46465A949	5.55	46465A961	8.41	46465A972●	14.19
100	46465A915●	7.51	46465A926	7.62	46465A937	9.08	46465A948	5.47	46465A959	8.16	46465A971	13.81
120	46465A914	7.51	46465A925	7.62	46465A936	9.08	46465A947	5.38	46465A958	8.50	46465A969●	13.81
180	46465A913	7.51	46465A924	7.62	46465A935	9.08	46465A946	5.38	46465A957	8.16	46465A968	13.81
240	46465A912	7.51	46465A923	7.62	46465A934	9.08	46465A945	5.38	46465A956	8.16	46465A967	13.81
320	46465A911	7.51	46465A922	7.62	46465A933	9.08	46465A944	5.38	46465A955	8.16	46465A966	13.81
Long-Lasting Multilayer Aluminum Oxide Discs *(Style A Fasteners are Plastic; Not Offered with Style C Fasteners)*												
80	—	—	—	—	4293A11	11.16	4293A18	6.02	4293A26	8.15	—	—
120	—	—	—	—	4293A12	11.16	4293A19	5.83	4293A27	7.76	—	—
180	—	—	—	—	4293A13	11.16	4293A21	5.83	4293A28	7.76	—	—
240	—	—	—	—	4293A14	11.16	4293A22	5.83	4293A29	7.76	—	—
320	—	—	—	—	4293A15	11.16	4293A23	5.83	4293A31	7.76	—	—
400	—	—	—	—	4293A16	11.16	4293A24	5.83	4293A32	7.76	—	—
Silicon Carbide Discs *(Not Offered with Style C Fasteners)*												
36	—	—	8237A659★	14.64	8237A769●	16.12	8237A879	10.70	8237A989	13.45	—	—
40	—	—	—	—	8237A759★	15.90	8237A869●	10.19	8237A979●	13.05	—	—
50	—	—	8237A639●	13.74	8237A749●	15.90	8237A859	9.92	8237A969●	12.30	—	—
60	—	—	8237A629★	13.39	8237A739★♦	16.29	8237A849	9.53	8237A959	12.30	—	—
80	—	—	—	—	8237A729★♦	16.06	8237A839	9.41	8237A949	12.03	—	—
100	8237A16●	12.26	8237A579●	12.94	—	—	8237A829	9.23	—	—	8237A36●♦	21.95
120	8237A17●	12.26	8237A569	12.94	8237A709♦	16.06	8237A819	9.23	8237A929	11.77	8237A37♦	22.84
150	—	—	8237A559★	12.94	—	—	8237A799●	9.23	8237A919★	11.77	—	—
180	—	—	8237A549●	12.94	8237A679★♦	16.07	8237A789●	8.87	8237A899★	11.77	8237A39●♦	21.95
240	—	—	—	—	8237A669●♦	16.22	8237A779●	9.23	8237A889●	11.77	—	—
Zirconia Alumina Discs												
24	—	—	4635A487	12.55	4635A294	15.07	4635A387	10.22	4635A395	15.43	4635A488♦	27.52
36	—	—	4635A286	10.93	4635A293	13.15	4635A386	8.90	4635A394	13.45	4635A486♦	23.95
50	—	—	4635A285	10.32	4635A292	12.72	4635A385	9.85	4635A393	13.45	4635A485♦	23.95
60	—	—	4635A284	9.97	4635A291	12.88	4635A384	7.90	4635A392	11.95	4635A484♦	21.62
80	—	—	4635A283	9.70	4635A289	12.72	4635A383	7.83	4635A391	11.70	4635A483♦	20.92
100	—	—	4635A282	9.70	4635A288	12.72	4635A382	7.86	4635A389	11.70	4635A482♦	20.90
120	—	—	4635A281	9.70	4635A287	12.72	4635A381	7.83	4635A388	11.70	4635A481♦	20.90
Ceramic Discs *(Not Offered with Style C Fasteners)*												
36	—	—	—	—	46395A85★	15.25	46395A91	10.40	46395A96	13.07	—	—
50	—	—	—	—	46395A84	14.88	46395A89	9.64	46395A95●	12.28	—	—
60	—	—	—	—	46395A83	14.36	46395A88	9.27	46395A94	11.95	—	—
80	—	—	—	—	46395A82	16.03	46395A87	9.15	46395A93	11.70	—	—
120	—	—	—	—	46395A81★	16.10	46395A86	9.33	46395A92	11.43	—	—
Premium Ceramic Discs *(Not Offered with Style C Fasteners)*												
36	—	—	—	—	4212A11♦	20.12	4212A21	13.13	4212A31♦	17.03	—	—
50	—	—	—	—	4212A12♦	19.42	4212A22	12.52	4212A32♦	16.07	—	—
60	—	—	—	—	4212A13♦	18.73	4212A23	11.95	4212A33♦	15.76	—	—
80	—	—	—	—	4212A14♦	18.73	4212A24	11.95	4212A34♦	15.76	—	—

● Not offered with Style A fasteners. ★ Not offered with Style B fasteners.
♦ Available in less than full-package quantities. Prices are approximately 20% higher.

Disc Holders

For Disc Dia.	Shank Dia.	Max. rpm	For Discs with Style A Fastener	Each	For Discs with Style B Fastener	Each	For Discs with Style C Fastener	Each
3/4″	1/4″	40,000	4701A77	$13.41	46465A71	$9.91	47045A81	$10.00
1″	1/4″	40,000	4701A75	12.10	46465A72	9.79	47045A82	10.00
1 1/2″	1/4″	30,000	4701A71	12.71	46325A91	9.85	47045A51	10.24
2″	1/4″	30,000	4701A72	14.17	46325A92	10.85	47045A52	11.28
3″	1/4″	20,000	4701A73	15.30	46325A93	11.92	47045A53	12.60
4″	1/4″	15,000	4701A74	23.25	46325A94	17.56	47045A54	18.28

123-Piece Aluminum Oxide Quick-Change Disc Assortment

The most commonly used discs and holders in one convenient assortment. You'll get 10 each of the 36, 60, 80, and 120 grit aluminum oxide discs (in 1″, 2″, and 3″ sizes) with a Style A (Norton Speed-Lok TS, Standard Abrasive SocAtt, and 3M TSM styles) disc fastener, plus one each of 1″, 2″, and 3″ disc holders with 1/4″ dia. shank.

4701A61 ..... **Per Asst.** $115.69

For information about sanding abrasives, see page 2651.

Quick-Change Flap Sanding Discs

The plastic fastener (3M Roloc/Norton Speed-Lok TR style) on these discs allows for quick disc changes. Fasteners attach to a disc holder with a 1/4″ dia. shank (disc holder required; sold separately). Discs are made of cloth sanding strips, and are typically used on right-angle die grinders.

Angle flap discs have a longer flap than flat discs. The flaps extend over the disc's edge and are set at a higher angle for more flexibility when sanding corners and irregular shapes. ***Flat flap discs*** are stiffer than angle discs for work on flat surfaces.

Aluminum oxide is for general purpose work on metal and wood. ***Zirconia alumina*** is a premium abrasive for faster, more aggressive material removal on metal and wood. Grit particles continuously produce new sharp cutting points.

Zirconia Alumina Flat Flap Disc

Angle Flap Disc

Flat Flap Disc

	ANGLE FLAP DISCS				FLAT FLAP DISCS			
	2″ Dia.		3″ Dia.		2″ Dia.		3″ Dia.	
Grit		Each		Each		Each		Each
Aluminum Oxide								
36	8231A115	$3.96	8231A215	$4.62	____	____	____	____
40	8231A114	3.96	8231A214	4.62	____	____	____	____
60	8231A113	3.96	8231A213	4.62	____	____	____	____
80	8231A112	3.96	8231A212	4.62	____	____	____	____
120	8231A111	3.96	8231A211	4.62	____	____	____	____
Zirconia Alumina								
36	8231A135	4.13	8231A235	5.13	8228A49	$3.29	8228A89	$4.14
40	8231A134	4.13	8231A234	5.13	8228A47	3.29	8228A87	4.14
60	8231A133	4.13	8231A233	5.13	8228A45	3.29	8228A85	4.14
80	8231A132	4.13	8231A232	5.13	8228A43	3.29	8228A83	4.14
120	8231A131	4.13	8231A231	5.13	8228A41	3.29	8228A81	4.14

Disc Holder for 2″ Dia. Discs (30,000 Max. rpm) ..... 46325A92 **Each** $10.85

Disc Holder for 3″ Dia. Discs (20,000 Max. rpm) ..... 46325A93 **Each** $11.92

Heavy Duty Quick-Change Fiber-Back Sanding Discs

A strong fiber backing and ceramic abrasive grains make these discs last longer than aluminum oxide discs when used for medium to heavy material removal. Use on carbon steels, aerospace alloys, nickel alloys, aluminum, cast iron, forgings, and some stainless steels. For use on right-angle die grinders.

A quick-change fastener secures the discs to the required disc holder (sold separately). Choose from two types of disc fasteners: *Style A* is a metal fastener equivalent to Standard Abrasive SocAtt and Norton Speed-Lok TS styles. *Style B* is a plastic fastener equivalent to 3M Roloc and Norton Speed-Lok TR styles.

To Order: For discs, please specify type of fastener: Style A (Metal) or Style B (Plastic).

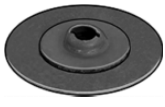

Style A Metal Fastener

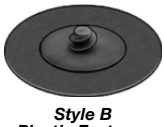

Style B Plastic Fastener

Discs

Grit No.	Pkg. Qty.	1 1/2″ Discs Per Pkg. ♦		2″ Discs Per Pkg. ♦		3″ Discs Per Pkg. ♦	
36	25	47035A36	$18.51	47035A16	$28.08	47035A26	$37.37
50	25	47035A35	17.84	47035A15	26.03	47035A25	35.15
60	25	47035A34	17.40	47035A14	24.96	47035A24	34.15
80	25	47035A33	17.21	47035A13	24.68	47035A23	33.41
100	25	47035A32	17.17	47035A12	24.72	47035A22	33.44
120	25	47035A31	17.60	47035A11	25.30	47035A21	34.35

♦ Discs are available in less than full-package quantities. Prices are 20% higher.

Disc Holders

For Disc Dia.	Shank Dia.	Max. rpm	For Discs with Style A Fastener Each		For Discs with Style B Fastener Each	
1 1/2″	1/4″	30,000	4701A71	$12.71	46325A91	$9.85
2″	1/4″	30,000	4701A72	14.17	46325A92	10.85
3″	1/4″	20,000	4701A73	15.30	46325A93	11.92

Flexible-Edge Quick-Change Cloth Sanding Discs

The outer 3/8″ edge of these discs is very flexible so it won't mar or gouge your work. Use discs for sanding a radius or contour where the stiff edge of a regular disc would gouge. Choose from two types of disc fasteners: *Style A* is a metal fastener equivalent to Norton Speed-Lok TS, Standard Abrasive SocAtt, and 3M TSM styles; and *Style C* is a plastic snap-on fastener equivalent to Merit Power-Lock Type I style. Fasteners attach to a disc holder with a 1/4″ dia. shank (disc holder required; sold separately). Discs have a cloth backing and are typically used on right-angle die grinders.

Aluminum oxide is for general purpose work on metal and wood. ***Zirconia alumina*** is a premium abrasive for faster, more aggressive material removal on metal and wood. Grit particles continuously produce new sharp cutting points.

To Order: Please specify disc fastener style: Style A (Metal) or Style C (Plastic Snap-On).

Disc's flexible outer edge overhangs disc holder

Discs

Grit	1″ Dia. 25/Pkg. Per Pkg.		1 1/2″ Dia. 25/Pkg. Per Pkg.		2″ Dia. 10/Pkg. Per Pkg.		3″ Dia. 10/Pkg. Per Pkg.		4″ Dia. 10/Pkg. Per Pkg. ♦	
Aluminum Oxide										
60	47045A411	$9.81	47045A416	$11.91	47045A422	$7.37	47045A427	$10.51	47045A433	$19.97
80	47045A412	9.53	47045A417	11.91	47045A423	7.32	47045A428	10.51	47045A434	19.29
100	47045A413	9.53	47045A418	11.91	47045A424	7.32	47045A429	10.51	47045A435	19.29
120	47045A414	9.53	47045A419	11.91	47045A425	7.32	47045A431	10.51	47045A436	19.29
180	47045A415	9.53	47045A421	11.91	47045A426	7.32	47045A432	10.51	47045A437	19.29
Zirconia Alumina										
60	4698A61	11.02	4698A65	13.98	4698A69	8.60	4698A74	12.10	4698A78	20.50
80	4698A62	10.50	4698A66	13.81	4698A71	8.48	4698A75	11.64	4698A79	19.63
100	4698A63	10.50	4698A67	13.81	4698A72	8.48	4698A76	11.64	4698A81	19.63
120	4698A64	10.50	4698A68	13.81	4698A73	8.48	4698A77	11.64	4698A82	19.63

♦ Discs are available in less than full-package quantities. Prices are 20% higher.

Style A Metal Fastener

Style C Plastic Snap-On Fastener

Disc Holders

Disc Fastener Style	For 1″ Discs (40,000 Max. rpm) Each		For 1 1/2″ Discs (40,000 Max. rpm) Each		For 2″ Discs (30,000 Max. rpm) Each		For 3″ Discs (30,000 Max. rpm) Each		For 4″ Discs (20,000 Max. rpm) Each	
A	4701A92	$13.41	4701A93	$12.10	4701A94	$12.71	4701A95	$15.33	4701A95	$15.33
C	47045A83	10.00	47045A84	10.00	47045A85	10.24	47045A86	12.11	47045A86	12.11

Sanding Disc Adhesive and Cleaner

Adhesive— Attach your paper- or fiber-back sanding discs to backup pads with this heat-resistant (up to 140° F) adhesive. Not for use with cloth-back discs.

5-oz. Tube ..... 4705A5 **Each** $19.16

Adhesive Cleaner— Remove adhesive from sanding pads and platens and get a clean surface for new discs. This citrus-based cleaner removes grease, tar, oil, solvent-based residue, and other residual dirt. This product is compliant under all state VOC rules in effect on October 1, 2008.

32-oz. Bottle ..... 7984T13 **Each** $9.77

For information about sanding abrasives, see page 2651.

Adhesive-Back Cloth Sanding Discs

Disc and Disc Holder

A coating of pressure-sensitive adhesive (PSA) allows these discs to stick to a backup pad, machine platen, disc holder, or hand sanding pad (holders and pads sold separately). *Note:* To maintain strong adhesion, clean the holder/pad surface with a mild alcohol before applying. Do not use aggressive cleaning solvents such as MEK or acetone, which can damage the adhesive.

Aluminum Oxide Discs— For general purpose work on metal and wood. ***Clog-Resistant Aluminum Oxide Discs—*** Prevent clogging on soft metals, soft woods, fiberglass, and similar materials. ***Silicon Carbide Discs—*** Cut faster under light pressure than aluminum oxide discs. Use on nonferrous metals, glass, rubber, plastics, soft woods, enamel, and other soft materials. ***Zirconia Alumina Discs—*** A long-life abrasive for aggressive material removal on metal and wood.

Disc Dia.	Pkg. Qty.	36 Grit	Per Pkg.	40 Grit	Per Pkg.	50 Grit	Per Pkg.	60 Grit	Per Pkg.	80 Grit	Per Pkg.	100 to 400 Grit♠	Per Pkg.
Aluminum Oxide Discs													
1/2"	100	4700A209	$4.27	4700A202	$5.49	4700A195	$5.49	4700A188	$5.49	4700A181	$5.49	4700A111	$5.49
3/4"	100	4700A21	6.78	4700A203	6.78	4700A196	6.78	4700A189	6.78	4700A182	6.78	4700A112	6.78
1"	100	4700A211	11.71	4700A204	10.55	4700A197	10.55	4700A19	10.55	4700A183	10.55	4700A113	10.55
1 1/2"	50	4700A212	7.47	4700A205	7.12	4700A198	6.79	4700A191	6.79	4700A184	6.79	4700A114	6.79
2"	50	4700A213	10.49	4700A206	9.91	4700A199	9.40	4700A192	9.02	4700A185	8.57	4700A115	8.17
3"	25	4700A214	7.43	4700A207	8.61	4700A2	8.16	4700A193	7.83	4700A186	7.54	4700A116	7.24
4"	10	4700A215	6.98	4700A208	6.57	4700A201	6.29	4700A194	5.96	4700A187	5.62	4700A117	5.38
5"	10	4700A271	7.74	4700A261	7.33	4700A251	7.16	4700A241	6.57	4700A231	8.32	4700A118	7.84
6"	10	4700A272	11.16	4700A262	9.94	4700A252	9.94	4700A242	9.27	4700A232	8.85	4700A119	11.01
7"	5	4700A461	8.13	4700A462	7.18	4700A463	6.77	4700A464	6.33	4700A465	6.01	4700A121■◆	11.16
8"	5	4700A162	10.33	4700A161	9.82	4700A16	9.38	4700A159	8.51	4700A158	8.92	4700A142	8.12
9"	5	4700A229	11.69	4700A173	12.01	4700A172	11.34	4700A171	10.69	4700A17	10.11	4700A143	9.54
10"	5	4700A275	15.35	4700A265	15.05	4700A255	14.19	4700A245	13.37	4700A235	12.74	4700A124	12.59
12"	5	4700A276◆	21.16	4700A266◆	19.97	4700A256◆	18.83	4700A246◆	17.76	4700A236◆	16.92	4700A125◆	16.78
15"	5	4700A312◆	40.93	4700A311◆	38.60	4700A31◆	36.40	4700A309◆	34.35	4700A308◆	32.40	4700A146◆	30.57
16"	5	4700A324◆	46.98	4700A323◆	44.31	4700A322◆	41.81	4700A321◆	39.44	4700A32◆	37.20	4700A147◆	35.12
18"	5	4700A336◆	59.57	4700A335◆	56.21	4700A334◆	53.03	4700A333◆	50.02	4700A332◆	47.19	4700A148◆	44.52
20"	5	4700A23◆	60.51	4700A164◆	57.10	4700A15◆	53.85	4700A14◆	50.82	4700A13◆	47.94	4700A149◆	45.21
24"	5	4700A278◆	95.11	4700A268◆	88.89	4700A258◆	83.53	4700A248◆	78.62	4700A238◆	73.15	4700A131◆	69.58
30"	5	4700A66◆	129.12	4700A65◆	121.93	4700A67◆	116.26	4700A63◆	114.64	4700A62◆	113.12	4700A61◆	110.58
Clog-Resistant Aluminum Oxide Discs		40 Grit		60 Grit		80 Grit		100 Grit		120 Grit		180 Grit	
1/2"	100	4675A16	7.29	4675A15	7.29	4675A14	7.29	4675A13	7.29	4675A12	7.29	4675A11	7.29
3/4"	100	4675A83	8.67	4675A82	8.67	4675A81	8.67	4675A19	8.67	4675A18	8.67	4675A17	8.67
1"	50	4675A89	8.08	4675A88	7.41	4675A87	7.41	4675A86	7.41	4675A85	7.41	4675A84	7.41
1 1/2"	50	4675A916	9.01	4675A915	9.00	4675A914	9.00	4675A913	9.00	4675A912	9.00	4675A911	9.00
2"	25	4675A71	8.01	4675A61	7.36	4675A51	6.92	4675A41	7.00	4675A31	7.00	4675A21	7.00
3"	25	4675A72	8.09	4675A62	7.76	4675A52	7.47	4675A42	7.22	4675A32	7.22	4675A22	7.22
5"	10	4675A73	7.79	4675A63	6.97	4675A53	6.66	4675A43	6.29	4675A33	6.29	4675A23	6.29
6"	10	4675A74★	7.11	4675A64	9.79	4675A54	9.40	4675A44	8.77	4675A34	8.77	4675A24	8.77
8"	5	4675A75	9.61	4675A65	9.44	4675A55	8.30	4675A45	7.98	4675A35	7.98	4675A25	7.98
9"	5	4675A76	13.60	4675A66	12.64	4675A56	12.60	4675A46	10.72	4675A36	10.72	4675A26	10.72
10"	5	4675A77	15.31	4675A67	14.44	4675A57	13.64	4675A47	12.82	4675A37	12.82	4675A27	12.82
12"	5	4675A78◆	26.33	4675A68◆	22.45	4675A58◆	22.38	4675A48◆	18.88	4675A38◆	18.88	4675A28◆	18.88
15"	5	4675A923◆	44.14	4675A922◆	39.27	4675A921◆	37.74	4675A919◆	35.79	4675A918◆	35.79	4675A917◆	35.79
16"	5	4675A929◆	50.80	4675A928◆	45.10	4675A927◆	42.54	4675A926◆	40.14	4675A925◆	40.14	4675A924◆	40.14
18"	5	4675A936◆	65.84	4675A935◆	58.56	4675A934◆	54.18	4675A933◆	49.06	4675A932◆	49.06	4675A931◆	49.06
20"	5	4675A943◆	79.07	4675A942◆	64.66	4675A941◆	60.57	4675A939◆	57.45	4675A938◆	57.45	4675A937◆	57.45
24"	5	4675A949◆	107.73	4675A948◆	95.56	4675A947◆	86.35	4675A946◆	84.55	4675A945◆	84.55	4675A944◆	84.55
Silicon Carbide Discs		40 Grit		60 Grit		80 Grit		100 Grit		120 Grit		180 Grit	
2"	50	4678A71◆	18.27	4678A61◆	17.72	4678A51◆	16.28	4678A41◆	16.29	4678A31◆	16.29	4678A21◆	16.29
3"	50	4678A72◆	19.51	4678A62◆	17.72	4678A52◆	17.05	4678A42◆	16.49	4678A32◆	16.49	4678A22◆	16.49
5"	10	4678A73	9.46	4678A63	9.36	4678A53	8.08	4678A43	7.64	4678A33	7.64	4678A23	7.64
6"	10	4678A74	13.70	4678A64	11.89	4678A54	11.41	4678A44	10.65	4678A34	10.65	4678A24	10.65
8"	5	4678A75	11.88	4678A65	11.67	4678A55	10.28	4678A45	9.87	4678A35	9.87	4678A25	9.87
9"	5	4678A76	15.51	4678A66◆	15.65	4678A56◆	15.65	4678A46	13.25	4678A36	13.25	4678A26	13.25
10"	5	4678A77◆	21.07	4678A67◆	17.14	4678A57◆	16.92	4678A47◆	16.04	4678A37◆	16.04	4678A27◆	16.04
12"	5	4678A78◆	31.08	4678A68◆	26.50	4678A58◆	26.39	4678A48◆	22.27	4678A38◆	22.27	4678A28◆	22.27
Zirconia Alumina Discs		36 Grit	Each	40 Grit	Each	50 Grit	Each	60 Grit	Each	80 Grit	Each	120 Grit	Each
5"		47125A11	$1.00	47125A12	$0.95	47125A13	$0.89	47125A14	$0.84	47125A15	$0.82	47125A81	$0.78
6"		47125A16	1.51	47125A17	1.43	47125A18	1.34	47125A19	1.25	47125A21	1.19	47125A82	1.16
8"		47125A211	3.12	47125A212	2.97	47125A213	2.91	47125A214	2.84	47125A215	2.68	47125A216	2.57
9"		47125A221	3.93	47125A222	3.70	47125A223	3.47	47125A224	3.28	47125A225	3.12	47125A226	2.92
10"		47125A22	4.25	47125A23	4.01	47125A24	3.78	47125A25	3.56	47125A26	3.41	47125A83	3.37
12"		47125A31	6.13	47125A32	5.77	47125A33	5.18	47125A34	5.17	47125A35	5.12	47125A84	4.75
14"		47125A36	9.42	47125A37	8.89	47125A38	8.40	47125A39	7.94	47125A41	7.45	47125A85	7.18
15"		47125A42	9.66	47125A43	9.20	47125A44	9.18	47125A45	7.81	47125A46	7.39	47125A86	8.62
16"		47125A47	10.87	47125A48	10.17	47125A49	9.68	47125A51	9.07	47125A52	8.21	47125A87	9.28
18"		47125A53	13.38	47125A54	12.01	47125A55	11.94	47125A56	11.32	47125A57	10.61	47125A88	12.59
20"		47125A58	17.76	47125A59	16.89	47125A61	14.51	47125A62	13.80	47125A63	12.93	47125A89	11.70
24"		47125A64	23.80	47125A65	21.33	47125A66	21.22	47125A67	20.11	47125A68	18.85	47125A91	17.87

♠ **To Order:** Please specify grit: 100, 120, 180, 220, 240, 320, or 400. ■ Package quantity is 10.
◆ These sizes are available in less than full-package quantities. Prices are approximately 20% higher.

Disc Holders

For Disc Dia.	Shank Dia.	Max. rpm		Each
1/2"	1/8"	22,000	4702A61	$3.61
1/2"	1/4"	22,000	4702A62	3.61
3/4"	1/8"	22,000	4702A63	3.84
3/4"	1/4"	22,000	4702A64	3.84
1"	1/8"	22,000	4702A65	4.22
1"	1/4"	22,000	4702A66	4.22
1 1/2"	1/8"	30,000	4702A44	5.89
1 1/2"	1/4"	30,000	4702A45	$5.89
2"	1/4"	28,000	4702A54	6.47
3"	1/4"	20,000	4702A71	10.35
4"	1/4"	16,000	4702A74	11.42
4"	3/8"	16,000	4702A75	11.42
5"	1/4"	12,000	4702A76	15.86
5"	3/8"	12,000	4702A77	15.86

Hand Sanding Pads

Flexible Pad

Palm-Grip Pad

For use with adhesive-backed discs. ***Flexible*** pads are 3/8" thick neoprene foam with hand strap. ***Palm-grip*** pads are tough polyurethane.

Disc Dia.	Flexible	Each	Palm Grip	Each
5"	4738A21	$5.46	4738A23	$11.18
6"	4738A22	5.75	4738A24	12.37

For information about sanding abrasives, see page 2651.

Adhesive-Back Paper Sanding Discs

Furnished on rolls for your convenience, these discs have a pressure-sensitive adhesive (PSA) coating for simple disc changes. Paper backings provide more flexibility than cloth backings. All except the ceramic aluminum oxide discs have a zinc stearate treatment for clog resistance. Backup pads required (sold separately). For use on portable disc sanders.

Clog-Resistant Aluminum Oxide Discs— The most popular abrasive for general purpose work on metal and wood. Backing is heavy duty paper. Choose discs without holes or discs with 3/8″ holes that aid vacuum sanders in dust removal.

Clog-Resistant Premium Aluminum Oxide Discs— Cut faster, last longer, and produce more consistent finishes than standard aluminum oxide discs. Backing is lightweight paper. Choose discs without holes or discs with 3/8″ holes that aid vacuum sanders in dust removal.

Clog-Resistant Silicon Carbide Discs— Cut faster under light pressure than aluminum oxide discs, but less durable. Backing is latex paper.

Disc with No Holes

Disc with Five Holes

Disc with Six Holes

Ceramic Aluminum Oxide Discs— Made of high-performance abrasive to produce the most consistent finish from beginning to end. Grain particles continuously produce new sharp cutting points. Backing is strong paper.

Clog-Resistant Aluminum Oxide and Premium Aluminum Oxide Discs

	ALUMINUM OXIDE						PREMIUM ALUMINUM OXIDE					
	5″ Dia.			6″ Dia.			5″ Dia.			6″ Dia.		
Grit	No Holes	Five Holes	Per Roll	No Holes	Six Holes	Per Roll	No Holes	Five Holes	Per Roll	No Holes	Six Holes	Per Roll
100 Discs Per Roll												
80	4707A69	4707A11	$23.13	4707A79	4707A21	$31.59	47805A51	47805A53	$38.72	47805A52	47805A54	$58.81
100	4707A68	4707A12	20.09	4707A78	4707A22	27.47	47805A431	47805A471	35.99	47805A451	47805A491	54.29
120	4707A67	4707A13	20.09	4707A77	4707A23	27.47	47805A432	47805A472	35.99	47805A452	47805A492	54.29
150	4707A66	4707A14	20.09	4707A76	4707A24	27.47	47805A421	47805A461	35.99	47805A441	47805A481	54.29
180	4707A65	4707A15	20.09	4707A75	4707A25	27.47	47805A422	47805A462	35.99	47805A442	47805A482	54.29
220	4707A64	4707A16	20.09	4707A74	4707A26	27.47	47805A423	47805A463	35.99	47805A443	47805A483	54.29
240	4707A63	4707A17	20.09	4707A73	4707A27	27.47	47805A424	47805A464	35.99	47805A444	47805A484	54.29
280	4707A62	4707A18	20.09	4707A72	4707A28	27.47	47805A425	—	35.75	47805A445	47805A485	54.29
320	4707A61	4707A19	20.09	4707A71	4707A29	27.47	47805A426	47805A466	35.99	47805A446	47805A486	54.29
400	4707A6	4707A2	20.09	4707A7	4707A3	27.47	47805A428	47805A467	35.99	47805A448	47805A487	54.29
25 Discs Per Roll												
80	4707A31	4707A42	8.26	4707A53	4707A87	11.19	47805A62	47805A65	10.55	47805A68	47805A72	13.23
100	4707A32	4707A43	7.05	4707A54	4707A88	9.58	47805A622	47805A652	9.79	47805A682	47805A722	12.29
120	4707A33	4707A44	7.05	4707A55	4707A89	9.58	47805A621	47805A651	9.79	47805A681	47805A721	12.29
150	4707A34	4707A45	7.05	4707A56	4707A91	9.58	47805A617	47805A647	9.79	47805A677	47805A717	12.29
180	4707A35	4707A46	7.05	4707A57	4707A92	9.58	47805A616	47805A646	9.79	47805A676	47805A716	12.29
220	4707A36	4707A47	7.05	4707A58	4707A93	9.58	47805A615	47805A645	9.79	47805A675	47805A715	12.29
240	4707A37	4707A48	7.05	4707A98	4707A94	9.58	47805A614	47805A644	9.79	47805A674	47805A714	12.29
280	4707A38	4707A49	7.05	4707A59	4707A95	9.58	—	—	—	—	—	—
320	4707A39	4707A51	7.05	4707A85	4707A96	9.58	47805A612	47805A642	9.79	47805A672	47805A712	12.29
400	4707A41	4707A52	7.05	4707A86	4707A97	9.58	47805A611	47805A641	9.79	47805A671	47805A711	12.29

Clog-Resistant Silicon Carbide Discs

Grit	5″ Dia. No Holes	Per Roll	6″ Dia. No Holes	Per Roll
100 Discs Per Roll				
150	4722A76	$29.50	—	—
180	4722A75	29.50	4722A65	$40.15
220	4722A74	29.50	4722A64	40.15
240	4722A73	29.50	—	—
320	4722A71	29.50	4722A61	40.15

Ceramic Aluminum Oxide Discs

Grit	5″ Dia. No Holes	Per Roll	6″ Dia. No Holes	Per Roll
100 Discs Per Roll				
60	47085A15	$99.92	47085A25	$137.20
80	47085A14	90.68	47085A24	123.23
100	47085A13	83.70	—	—
120	47085A12	83.70	47085A22	113.95

Backup Pads

All have a 5/16″-24 male threaded spindle. Max. rpm is 13,000.

For Disc		Each
5″ Dia. (No Holes)	4709A41	$21.35
5″ Dia. (Five Holes)	4709A51	21.35
6″ Dia. (No Holes)	4709A42	23.92
6″ Dia. (Six Holes)	4709A52	23.92

Microfinish Cushioned Adhesive-Back Cloth Sanding Discs

Achieve precise, uniform finishes on metal surfaces. Made with a flexible cloth backing and a cushioned layer of latex bonded with silicon carbide crystals (except 2500 grit, which has aluminum oxide crystals). Discs have a pressure-sensitive adhesive (PSA) coating for simple disc changes. Use wet or dry on a portable disc sander.

To Order: Please specify grit: 230 (60MX), 280 (80MX), 320 (100MX), 400 (180MX), 600 (240MX), 800 (320MX), 1200 (360MX), 1500 (600MX), or 2500 (1200MX). *Note:* Grit number in parentheses is marked on the disc.

Dia.	Pkg. Qty.		Per Pkg.	Dia.	Pkg. Qty.		Per Pkg.
2″	50	4611A11 ♦	$30.54	6″	10	4611A16 ♦	$24.18
3″	10	4611A12	10.48	7″	10	4611A17 ♦	31.01
4″	10	4611A13	13.72	9″	10	4611A18 ♦	59.36
4½″	10	4611A14 ♦	15.54	10″	10	4611A19 ♦	70.55
5″	10	4611A15 ♦	16.32	12″	10	4611A21 ♦	103.95

♦ Available in less than full-package quantities. Prices are approximately 20% higher.

Ultra-Fine Adhesive-Back Plastic Sanding Discs

Get extremely consistent finishes with these plastic film-back discs that are tear resistant, durable, and perfect for dry- and wet-sanding applications. Pressure-sensitive adhesive (PSA) coating makes disc changes easy. Zinc stearate coated to resist clogging. Has aluminum oxide abrasive. Use on portable disc sanders.

Grit	Pkg. Qty.	5″ Dia.	Per Pkg.	6″ Dia.	Per Pkg.
240	10	4184A37	$5.61	4184A47	$8.54
320	10	4184A38	5.61	4184A48	8.54
400	10	4184A39	5.61	4184A49	8.54
600	10	4184A61	5.61	4184A51	8.54
800	10	4184A62	6.58	4184A52	9.76
1000	10	4184A63	6.83	4184A53	10.24
1200	10	4184A64	6.83	4184A54	10.24
1500	10	4184A65	6.83	4184A55	10.24
2000	10	4184A66	6.83	4184A56	10.24

Adhesive-Back Silicon Carbide Paper Sanding Discs

A paper backing gives these adhesive-backed discs more flexibility than discs with a cloth backing. Abrasive is silicon carbide for faster cutting under light pressure than aluminum oxide. Use wet or dry on nonferrous metals, glass, plastics, soft woods, enamel, and other soft materials. Discs are normally used on stationary disc sanders.

Grit	Pkg. Qty.	8″ Dia.	Per Pkg.	9″ Dia.	Per Pkg.	10″ Dia.	Per Pkg.	12″ Dia.	Per Pkg. ♦	20″ Dia.	Per Pkg. ♦
60	5	47185A59	$8.06	47185A61	$12.16	47185A41	$14.16	47185A79	$15.62	47185A81	$44.85
80	5	47185A58	7.45	47185A62	11.98	47185A42	13.94	47185A78	15.32	47185A82	44.10
120	5	47185A56	7.67	47185A63	11.63	47185A43	13.48	47185A76	14.76	47185A83	42.66
180	5	47185A55	6.99	47185A64	10.24	47185A44	11.60	47185A75	12.72	47185A84	36.72
240	5	47185A54	6.77	47185A65	10.19	47185A45	11.60	47185A74	12.72	47185A85	36.74
400	5	47185A52	6.98	47185A66	10.23	47185A46	11.60	47185A72	12.72	47185A86	36.74
600	5	47185A51	6.98	47185A67	10.23	47185A47	11.60	47185A71	12.72	47185A87	36.74

♦ Available in less than full-package quantities. Prices are approximately 20% higher.

For information about sanding abrasives, see page 2651.

Hook and Loop Paper Sanding Discs

Disc with No Holes

Disc with 5 Holes

Disc with 6 Holes

Disc with 8 Holes

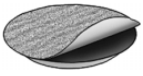
Disc and Backup Pad

Switch discs without tearing them. Unlike adhesive-backed discs, these hook and loop discs can be peeled off and reused. They hold securely to a backup pad (required; sold separately). Choose discs without holes or discs with 7/16″ holes that aid vacuum sanders in dust removal. Discs have a light, flexible paper backing and a zinc stearate treatment for clog resistance. Use on portable disc sanders.

Aluminum Oxide—The most popular abrasive for general purpose work on metal and wood.

Silicon Carbide—Cuts faster under light pressure than aluminum oxide, but is less durable. Use on nonferrous metals, glass, rubber, plastics, soft woods, enamel, and other soft materials.

Premium Aluminum Oxide—Made with a superior grain that lasts longer, cuts faster, and produces a more consistent finish than standard aluminum oxide.

Discs

		ALUMINUM OXIDE								SILICON CARBIDE			
		5″ Dia.			6″ Dia.			11¼″ Dia.		5″ Dia.		6″ Dia.	
Grit	Pkg. Qty.	No Holes	Five Holes	Eight Holes Per Pkg.	No Holes	Six Holes Per Pkg.		No Holes Per Pkg.		No Holes Per Pkg.		No Holes Per Pkg.	
60	25	4724A111	4724A112	4724A113	$8.94	4724A114	4724A115	$12.25	4724A411★	$13.99			
80	25	4724A31	4724A51	4724A61	8.39	4724A81	4724A71	10.75	4724A412★	7.88	4724A11	$8.39	4724A21	$11.09
100	25	4724A32	4724A52	4724A62	8.11	4724A82	4724A72	10.74	4724A413★	7.27	4724A12	8.12	4724A22	10.74
120	25	4724A33	4724A53	4724A63	7.97	4724A83	4724A73	10.58	4724A414★	7.27	4724A13	7.98	4724A23	10.58
150	25	4724A34	4724A54	4724A64	7.77	4724A84	4724A74	10.26	4724A415★	7.27	4724A14	7.78	4724A24	10.26
180	25	4724A35	4724A55	4724A65	7.48	4724A85	4724A75	9.97	4724A416★	7.27	4724A15	7.48	4724A25	9.97
220	25	4724A36	4724A56	4724A66	7.48	4724A86	4724A76	9.97	4724A417★	7.27	4724A16	7.48	4724A26	9.97
240	25	4724A37	4724A59	4724A67	7.48	4724A87	4724A77	9.97	4724A418★	7.27	4724A17	7.48	4724A27	9.97
320	25	4724A38	4724A58	4724A68	7.48	4724A88	4724A78	9.97	4724A419★	7.27	4724A18	7.48	4724A28	9.97
400	25	4724A39	4724A57	4724A69	7.48	4724A89	4724A79	9.97	4724A421★	7.27	4724A19	7.48	4724A29	9.97

★ Pkg. qty. is 5.

		PREMIUM ALUMINUM OXIDE					
		5″ Dia.			6″ Dia.		
Grit	Pkg. Qty.	No Holes	Five Holes	Eight Holes Per Pkg.	No Holes	Six Holes Per Pkg.▲	
80	25	8261A19	8261A31	8261A61	$11.90	8261A42	8261A53	$17.38
100	25	8261A18	8261A29	8261A62	10.74	8261A41	8261A52	15.99
120	25	8261A17	8261A28	8261A63	10.74	8261A39	8261A51	15.99
150	25	8261A16	8261A27	8261A64	10.74	8261A38	8261A49	15.99
180	25	8261A15	8261A26	8261A65	10.74	8261A37	8261A48	15.99
220	25	8261A14	8261A25	8261A66	10.74	8261A36	8261A47	15.99
240	25	8261A13	8261A24	8261A67	10.74	8261A35	8261A46	15.99
320	25	8261A12	8261A23	8261A68	10.74	8261A34	8261A45	15.99
400	25	8261A11	8261A22	8261A69	10.74	8261A33	8261A44	15.99

▲ Available in less than full-package quantities. Prices are 25% higher.

Backup Pads

All have a 5/16″-24 male threaded spindle, unless noted. Max. rpm is 10,000, unless noted.

For Disc		Each
5″ (No Holes)	4724A47	$16.36
5″ (Five Holes)	4724A94	16.24
5″ (Eight Holes)	4724A95	19.84
6″ (No Holes)	4724A48	14.88
6″ (Six Holes)	4724A49	18.00
11¼″ (No Holes)	82355A92●	79.67

● Screw mount. Designed for use with Large Swirl-Free Sander on page 2649. Max. rpm is 2,400.

Ultra-Fine Hook and Loop Plastic Sanding Discs

Disc without Holes

A plastic backing means these discs produce extremely consistent finishes. They're durable, tear resistant, and perfect for wet-sanding applications. Choose discs without holes or discs with 7/16″ holes that aid vacuum sanders in dust removal. Hook and loop allows for simple disc changes. Abrasive is aluminum oxide; discs are zinc stearate coated to resist clogging. Use wet or dry on portable disc sanders.

Discs without Holes

Grit	Pkg. Qty.	5″ Dia. No Holes	Per Pkg.	6″ Dia. No Holes	Per Pkg.
180	10	4321A71	$5.55	4321A73	$8.43
220	10	4321A72	5.55	4321A74	8.43
240	10	4321A17	5.61	4321A27	8.54
320	10	4321A18	5.61	4321A28	8.54
400	10	4321A19	5.61	4321A29	8.54
600	10	4321A41	5.61	4321A31	8.54
800	10	4321A42	6.59	4321A32	9.76
1000	10	4321A43	6.83	4321A33	10.24
1200	10	4321A44	6.83	4321A34	10.24
1500	10	4321A45	6.83	4321A35	10.24
2000	10	4321A46	6.83	4321A36	10.24

Discs with Holes

Grit	Pkg. Qty.	5″ Dia. 5 Holes	Per Pkg.	6″ Dia. 6 Holes	Per Pkg.
180	10	4321A75	$5.55	4321A77	$8.43
220	10	4321A76	5.55	4321A78	8.43
240	10	4321A51	5.55	4321A61	8.43
320	10	4321A52	5.55	4321A62	8.43
400	10	4321A53	5.55	4321A63	8.43
600	10	4321A54	5.55	4321A64	8.43
800	10	4321A55	6.51	4321A65	9.65
1000	10	4321A56	6.76	4321A66	10.13
1200	10	4321A57	6.75	4321A67	10.13
1500	10	4321A58	6.75	4321A68	10.13
2000	10	4321A59	6.75	4321A69	10.13

Dust- and Clog-Free Hook and Loop Cloth Sanding Discs

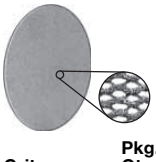

The mesh cloth backing on these discs allows for very efficient dust removal, eliminates clogging, and extends disc life. Hook and loop allows for simple disc changes. Abrasive is aluminum oxide. Use on portable disc sanders with multihole backup pads (sold separately), or use with five-, six-, and eight-hole vacuum sanders.

Grit	Pkg. Qty.	5″ Dia.	Per Pkg.♦	6″ Dia.	Per Pkg.♦
80	50	4195A11	$46.15	4195A31	$53.42
100	50	4195A12	40.52	4195A32	48.32
120	50	4195A13	40.52	4195A33	48.32
150	50	4195A14	40.52	4195A34	48.32
180	50	4195A15	40.52	4195A35	48.32
220	50	4195A16	40.52	4195A36	48.32
240	50	4195A17	40.52	4195A37	48.32
320	50	4195A18	40.52	4195A38	48.32
400	50	4195A19	40.52	4195A39	48.32
600	50	4195A21	40.52	4195A41	48.32
800	50	4195A22	40.52	4195A42	48.32
1000	50	4195A23	40.52	4195A43	48.32

5″ Multihole Backup Pad	4195A51	Each	$27.89
6″ Multihole Backup Pad	4195A52	Each	$28.60

♦ Available in less than full-package quantities. Prices are 20% higher.

Contour-Conforming Hook and Loop Foam Sanding Discs

Made of flexible foam, these sanding discs conform to contoured shapes, corners, and sharp edges. They also apply even pressure, resulting in consistent finishes. Hook and loop allows for simple disc changes. Discs are 6″ dia. Abrasive is silicon carbide. Use wet or dry on portable disc sanders.

Grit		Each	Grit		Each
180	4205A21	$3.97	1000	4205A24	$3.97
360	4205A22	3.97	2000	4205A25	3.97
500	4205A23	3.97	4000	4205A26	3.97

For information about sanding abrasives, see page 2651.

Ceramic Aluminum Oxide Sanding Belts

Advanced ceramic aluminum oxide (also known as seeded gel abrasive) allows these belts to remove material at a consistent cut rate because the grit particles continuously produce new sharp cutting edges. A special coating reduces clogging and results in less burn. Use on carbon steels, aerospace alloys, nickel alloys, aluminum, cast iron, forgings, and some stainless steels. The belts have a strong cloth backing. Use wet and dry.

Belt Size, Wd.×Lg.	Pkg. Qty.	50 Grit	Each ♦	60 Grit	Each ♦	80 Grit	Each ♦	120 Grit	Each ♦
3/8″ ×13″	25	46475A112	$3.16	46475A113	$3.12	46475A114	$2.99	46475A115	$2.97
1/2″ ×12″	25	46475A17	2.38	46475A16	2.27	46475A15	2.17	46475A14	2.28
1/2″ ×18″	25	—	—	46475A26	2.49	46475A25	2.39	46475A24	2.38
1/2″ ×24″	25	46475A37	2.62	46475A36	2.70	46475A35	2.49	46475A34	2.49
1/2″ ×42″	25	—	—	—	—	46475A45	3.18	46475A44	3.16
3/4″ ×20 1/2″	25	46475A57	2.90	46475A56	2.82	46475A55	2.72	46475A54	2.68
1″ ×30″	25	46475A77	4.34	46475A76	4.18	46475A75	4.04	46475A74	3.95
1″ ×42″	25	46475A87	5.09	46475A86	5.11	46475A85	4.83	46475A84	4.57
1 1/8″ ×21″	10	46475A117	5.34	46475A118	5.22	46475A119	4.98	46475A121	4.87
2″ ×48″	10	46475A123	9.93	46475A124	9.52	46475A125	8.80	46475A126	8.51
3″ ×21″	10	46475A128	7.62	46475A129	7.40	46475A131	6.92	46475A132	6.69
3 1/2″ ×15 1/2″	10	—	—	46475A96	7.50	46475A95	6.82	46475A94	6.68
4″ ×24″	10	46475A612	13.36	46475A613	12.98	46475A614	12.16	46475A615	11.84
4″ ×36″	10	46475A617	16.42	46475A618	15.86	46475A619	14.75	46475A621	14.32
6″ ×48″	10	46475A623	29.16	46475A624	28.05	46475A625	25.92	46475A626	25.07

♦ Prices are 15% lower when you buy in full-package quantities.

Premium Ceramic Aluminum Oxide Sanding Belts

With the most advanced ceramic aluminum oxide abrasive (also known as seeded gel abrasive), these belts last longer, cut faster, and cut cooler than standard ceramic aluminum oxide belts. A special coating improves performance on tough materials, such as stainless steel and Inconel. Belts have a strong cloth backing and can be used wet and dry.

Belt Size, Wd.×Lg.	Pkg. Qty.	36 Grit	Each ♦	40 Grit	Each ♦	50 Grit	Each ♦	60 Grit	Each ♦	80 Grit	Each ♦
1/2″× 12″	50	4168A11	$4.32	4168A12	$3.84	4168A13	$3.77	4168A14	$3.74	4168A15	$3.57
1/2″× 18″	50	4168A21	4.61	4168A22	5.18	4168A23	4.04	4168A24	3.96	4168A25	3.79
1/2″× 24″	50	4168A31	4.95	4168A32	4.35	4168A33	4.29	4168A34	4.22	4168A35	4.04
3/4″× 18″	50	4168A41	5.09	4168A42	4.46	4168A43	4.37	4168A44	4.31	4168A45	4.11
3/4″× 20 1/2″	50	4168A51	5.30	4168A52	4.66	4168A53	4.57	4168A54	4.46	4168A55	4.27
1″ × 30″	50	4168A61	7.95	4168A62	6.91	4168A63	6.73	4168A64	6.61	4168A65	6.27
2″ ×132″	50	4168A71	31.63	4168A72	26.68	4168A73	25.27	4168A74	23.97	4168A75	21.77
3″ ×132″	50	4168A81	46.67	4168A82	39.39	4168A83	37.17	4168A84	35.31	4168A85	32.13

♦ Prices are 15% lower when you buy in full-package quantities.

Long-Life Aluminum Oxide and Ceramic Blend Sanding Belts

The mix of aluminum oxide and ceramic aluminum oxide gives these belts long life and a consistent cut rate. A special coating reduces clogging and heat buildup. Use on wood, and for medium to heavy material removal on carbon steels, aerospace alloys, nickel alloys, aluminum, cast iron, forgings, and some stainless steels. Belts have a strong cloth backing. Color is purple.

Belt Size, Wd.×Lg.	Pkg. Qty.	50 Grit	Each ♦	60 Grit	Each ♦	80 Grit	Each ♦	100 Grit	Each ♦	120 Grit	Each ♦	150 Grit	Each ♦
3″×18″	5	8260A56	$3.64	8260A55	$3.52	8260A54	$3.41	8260A53	$3.32	8260A52	$3.32	8260A51	$3.32
3″×21″	5	8260A63	3.90	8260A62	3.78	8260A61	3.65	8260A59	3.54	8260A58	3.54	8260A57	3.54
3″×24″	5	8260A69	4.16	8260A68	4.03	8260A67	3.90	8260A66	3.78	8260A65	3.78	8260A64	3.78
4″×24″	5	8260A78	6.93	8260A75	6.71	8260A74	6.49	8260A73	6.31	8260A72	6.31	8260A71	6.31

♦ Prices are 15% lower when you buy in full-package quantities.

Zirconia Alumina Sanding Belts

Zirconia alumina abrasive grains are sharper than aluminum oxide, allowing for more aggressive material removal. Ideal for heavy material removal on metal and wood. The zirconia alumina abrasive continuously produces new sharp cutting points, resulting in longer life. Belts have a strong polyester cloth backing. Use wet and dry.

Also Available: Other belt sizes and grits. Please ask for 4714A999 and specify belt size and grit.

Belt Size, Wd.×Lg.	Pkg. Qty.	24 Grit	Each ♦	36 Grit	Each ♦	40 Grit	Each ♦	50 Grit	Each ♦	60 Grit	Each ♦	80 Grit	Each ♦	120 Grit	Each ♦
3/8″ ×13″	25	4714A371	$0.93	4714A372	$0.91	4714A373	$0.88	4714A374	$0.84	4714A375	$0.82	4714A376	$0.80	4714A377	$0.77
1/2″ ×18″	25	4714A378	1.20	4714A379	1.16	4714A381	1.10	4714A382	1.06	4714A383	1.01	4714A384	.99	4714A385	.94
1/2″ ×24″	25	4714A386	1.34	4714A387	1.27	4714A388	1.20	4714A389	1.16	4714A391	1.10	4714A392	1.07	4714A393	1.01
3/4″ ×18″	25	4714A394	1.58	4714A395	1.51	4714A396	1.43	4714A397	1.37	4714A398	1.30	4714A399	1.27	4714A401	1.22
3/4″ ×20 1/2″	25	4714A402	1.65	4714A403	1.59	4714A404	1.48	4714A405	1.43	4714A406	1.36	4714A407	1.32	4714A408	1.26
1″ ×30″	25	4714A409	2.56	4714A411	2.43	4714A412	2.23	4714A413	2.13	4714A414	2.00	4714A415	1.93	4714A416	1.84
1″ ×42″	25	4714A16	5.28	4714A15	4.98	4714A14	3.35	4714A13	3.37	4714A12	3.14	4714A11	2.63	4714A451	2.10
1 1/2″ ×60″	10	4714A29	7.94	4714A28	4.09	4714A27	7.20	4714A19	3.74	4714A18	3.57	4714A17	3.44	4714A452	3.93
2″ ×36″	10	4714A417	5.20	4714A418	4.84	4714A419	4.40	4714A421	4.23	4714A422	3.83	4714A423	3.70	4714A424	3.53
2″ ×42″	10	4714A271	8.88	4714A261	8.18	4714A251	7.48	4714A231	7.21	4714A221	6.63	4714A211	6.02	4714A453	3.76
2″ ×48″	10	4714A26	8.26	4714A25	4.65	4714A24	4.46	4714A23	4.05	4714A22	3.89	4714A21	3.53	4714A454	4.04
2″ ×60″	10	4714A249	10.03	4714A248	9.10	4714A247	4.72	4714A246	7.85	4714A245	4.14	4714A244	3.73	4714A455	4.64
2″ ×72″	10	4714A36	11.19	4714A35	7.36	4714A34	6.93	4714A33	6.37	4714A32	6.06	4714A31	5.51	4714A456	5.20
2 1/2″ ×48″	10	4714A425	7.40	4714A426	6.80	4714A427	6.07	4714A428	5.77	4714A429	5.23	4714A431	4.90	4714A432	4.70
2 1/2″ ×60″	10	4714A56	12.22	4714A55	6.75	4714A54	6.40	4714A53	5.86	4714A52	5.59	4714A51	5.09	4714A457	5.40
3″ ×21″	10	4714A549	8.24	4714A548	7.73	4714A547	3.10	4714A546	6.97	4714A545	3.50	4714A544	2.55	4714A458	3.37
3″ ×24″	10	4714A66	7.29	4714A65	3.65	4714A64	3.37	4714A63	3.10	4714A62	3.75	4714A61	3.44	4714A459	3.66
3″ ×79″	10	4714A272	20.97	4714A262	18.90	4714A252	17.10	4714A232	16.21	4714A222	14.92	4714A212	13.52	4714A461	7.47
3 1/2″ ×15 1/2″	10	4714A273	9.07	4714A263	8.59	4714A253	7.95	4714A233	7.73	4714A223	4.81	4714A213	4.28	4714A462	3.37
4″ ×24″	10	4714A69	10.71	4714A68	10.05	4714A67	5.35	4714A59	5.00	4714A58	6.11	4714A57	5.68	4714A463	4.60
4″ ×36″	10	4714A76	13.61	4714A75	12.46	4714A74	11.45	4714A73	6.13	4714A72	5.87	4714A71	5.39	4714A464	5.60
4″ ×48″	10	4714A274	19.35	4714A264	17.67	4714A254	16.13	4714A234	15.39	4714A224	14.26	4714A214	13.00	4714A465	6.73
4″ ×54″	10	4714A89	18.38	4714A88	9.04	4714A87	15.23	4714A79	10.38	4714A78	7.54	4714A77	6.87	4714A466	7.30
4″ ×59″	10	4714A275	22.34	4714A265	20.35	4714A255	18.56	4714A235	17.64	4714A225	16.31	4714A215	14.80	4714A467	7.80
4″ ×60″	10	4714A276	22.76	4714A266	20.64	4714A256	18.74	4714A236	17.89	4714A226	16.47	4714A216	15.00	4714A468	7.86
6″ ×48″	5	4714A86	25.20	4714A85	17.12	4714A84	15.59	4714A83	14.89	4714A82	13.77	4714A81	12.56	4714A469	10.84
6″ ×60″	5	4714A949	29.53	4714A948	26.76	4714A947	24.36	4714A946	23.28	4714A945	21.37	4714A944	19.42	4714A471	12.40
10″ ×70 1/2″	5	4714A96	55.61	4714A95	48.80	4714A94	44.38	4714A93	42.20	4714A92	39.91	4714A91	35.81	4714A472	23.43

♦ Prices are 15% lower when you buy in full-package quantities.

Don't see the belt size you're looking for? Just tell us what you're looking for and we'll get it for you.

Aluminum Oxide Sanding Belts

The most popular choice for general purpose sanding of metal and wood. These belts contain aluminum oxide grains, which are extremely tough and fracture resistant. Belts have a strong cloth backing that resists tearing and is flexible.

To Order: Where applicable, please specify grit.

Belt Size, Wd. x Lg.	Pkg. Qty.	36 Grit	Each ♦	40 Grit	Each ♦	50 Grit	Each ♦	60 Grit	Each ♦	80 Grit	Each ♦	100, 120, 150, 180, 240, 320, 400 Grit	Each ♦
1/8" x 12"	25		—	4744A654	$1.02	4744A653	$0.98	4744A652	$0.92	4744A651	$0.92	4744A641★	$0.90
1/8" x 18"	25		—	4744A685	1.00	4744A684	1.08	4744A683	1.00	4744A682	.98	4744A688★	.92
1/8" x 24"	25		—	4744A701	1.06	4744A7	1.02	4744A699	1.02	4744A698	1.02	4744A691★	1.00
1/4" x 12"	25		—	4744A744	1.02	4744A743	.98	4744A742	.92	4744A741	.92	4744A733♠	1.04
1/4" x 18"	25		—	4744A759	1.00	4744A749	1.06	4744A748	.98	4744A747	.98	4744A751★	.94
1/4" x 24"	25		—	4744A657	1.06	4744A656	1.04	4744A637	1.02	4744A632	1.02	4744A777★	1.16
3/8" x 13"	25	4744A665	$1.72	4744A565	1.02	4744A465	1.02	4744A365	1.00	4744A265	1.00	4744A778	1.00
3/8" x 21"	25		—	5142A672	1.38	5142A673	1.37	5142A674	1.35	5142A675	1.33	5142A61	1.31
3/8" x 24"	25		—	5142A677	1.59	5142A678	1.41	5142A679	1.40	5142A681	1.50	5142A62	1.35
1/2" x 12"	25		—	4744A011	1.00	4744A134	.98	4744A13	.87	4744A128	.87	4744A108	.90
1/2" x 13"	25		—	5142A683	1.30	5142A684	1.28	5142A685	1.26	5142A686	1.23	5142A63	1.22
1/2" x 18"	25	4744A664	1.82	4744A564	.98	4744A464	1.06	4744A364	.94	4744A264	.92	4744A779	.94
1/2" x 24"	25	4744A663	1.92	4744A563	1.02	4744A463	1.00	4744A363	1.00	4744A263	.98	4744A781	1.00
1/2" x 34"	25	5142A341	1.47	5142A311	1.35	5142A271	1.23	5142A241	1.25	5142A211	1.10	5142A011	1.02
3/4" x 18"	25	4744A662	1.96	4744A562	1.45	4744A462	1.37	4744A362	1.41	4744A262	1.37	4744A782	1.33
3/4" x 20 1/2"	25	4744A666	2.08	4744A566	1.33	4744A466	1.31	4744A366	1.29	4744A266	1.27	4744A783	1.30
3/4" x 24"	25	4744A649	2.41	4744A569	1.40	4744A469	1.55	4744A369	1.51	4744A269	1.41	4744A784	1.39
1" x 12"	25		—	4744A153	3.34	4744A152	3.30	4744A15	3.26	4744A149	3.22	4744A012	2.97
1" x 18"	25	4744A648	2.49	4744A568	1.92	4744A468	1.90	4744A368	1.90	4744A268	1.84	4744A785	1.76
1" x 18 15/16"	25	5142A342	3.23	5142A312	3.13	5142A272	2.86	5142A242	2.81	5142A212	2.74	5142A021	2.70
1" x 24"	25	5142A687	1.39	5142A688	1.85	5142A689	1.82	5142A691	1.79	5142A692	1.74	5142A64	1.72
1" x 30"	25	4744A603	2.16	4744A536	2.08	4744A436	1.90	4744A336	1.74	4744A236	1.61	4744A786	1.62
1" x 42"	25	4744A604	2.39	4744A561	2.33	4744A451	2.14	4744A351	2.00	4744A261	1.76	4744A787	1.76
1" x 44"	25	4744A605	2.45	4744A502	2.35	4744A402	2.05	4744A302	2.02	4744A202	1.83	4744A788	1.74
1" x 60"	25	4744A606	2.78	4744A537	2.69	4744A437	2.70	4744A337	2.32	4744A237	2.10	4744A789	1.97
1" x 90"	25	5142A344	3.84	5142A314	3.80	5142A274	3.43	5142A244	3.30	5142A214	3.12	5142A041	3.02
1 1/8" x 21"	10	4744A95	3.27	4744A761	2.68	4744A669	2.62	4744A762	2.59	4744A763	1.58	4744A667	2.45
1 3/16" x 21 1/4"	10	4744A96	3.32	4744A176	2.86	4744A678	2.76	4744A175	2.70	4744A174	2.61	4744A681	2.61
1 1/2" x 18 3/4"	10	4744A97	3.38	4744A191	2.04	4744A19	1.88	4744A189	1.74	4744A188	1.58	4744A182	3.49
1 1/2" x 18 15/16"	10	8242A71	2.48	8242A21	2.42	8242A22	2.35	8242A72	2.48	8242A73	2.48	8242A7	2.48
1 1/2" x 24"	10	5142A345	2.27	5142A315	2.18	5142A275	2.00	5142A245	1.84	5142A215	1.72	5142A051	1.58
1 1/2" x 60"	10	4744A223	3.41	4744A222	3.30	4744A21	3.02	4744A208	2.84	4744A2	2.59	4744A193	2.39
2" x 18 15/16"	10	8242A81	2.77	8242A11	2.69	8242A12	2.60	8242A82	2.77	8242A83	2.77	8242A8	2.77
2" x 30"	10	4744A359	2.82	4744A358	2.68	4744A357	2.47	4744A356	2.31	4744A355	2.08	4744A661	2.27
2" x 36"	10	4744A609	3.02	4744A543	2.96	4744A443	2.70	4744A343	2.47	4744A243	2.29	4744A791	2.15
2" x 42"	10	4744A25	3.30	4744A249	3.18	4744A248	2.96	4744A021	2.70	4744A02	2.45	4744A228	2.33
2" x 48"	10	4744A612	3.59	4744A544	3.41	4744A444	3.16	4744A344	2.96	4744A244	2.64	4744A792	2.47
2" x 53 3/4"	10	4744A585	3.80	4744A584	3.56	4744A583	3.37	4744A555	3.12	4744A549	2.84	4744A51	2.64
2" x 60"	10	4744A613	4.05	4744A532	3.96	4744A432	3.61	4744A332	3.33	4744A232	3.02	4744A793	2.86
2" x 72"	10	4744A614	4.59	4744A542	4.39	4744A442	4.05	4744A342	3.95	4744A242	3.39	4744A794	3.21
2" x 132"	10	5142A481	13.85	5142A482	13.02	5142A483	12.28	5142A484	11.61	5142A485	10.88	5142A41	10.37
2 1/2" x 16"	10	5142A348	3.84	5142A318	3.74	5142A278	3.60	5142A248	3.49	5142A218	2.08	5142A081	3.31
2 1/2" x 48"	10	4744A285	4.47	4744A284	4.33	4744A283	3.98	4744A282	3.66	4744A281	3.31	4744A023	3.12
2 1/2" x 60"	10	4744A615	5.13	4744A503	4.90	4744A403	4.53	4744A303	4.15	4744A203	3.80	4744A795	3.60
2 1/2" x 72"	10	5142A491	10.53	5142A492	9.95	5142A493	9.49	5142A494	9.05	5142A495	8.53	5142A42	8.20
2 3/4" x 15 1/2"	10	4744A671	2.78	4744A668	2.74	4744A686	2.41	4744A769	2.42	4744A659	2.41	4744A63	2.41
3" x 10 11/16"	10	4744A072	2.67	4744A073	2.60	4744A074	2.53	4744A077	2.47	4744A078	2.40	4744A08	2.35
3" x 18"	10	4744A617	3.41	4744A504	2.84	4744A404	2.11	4744A304	2.84	4744A204	1.99	4744A796	2.39
3" x 18 15/16"	10	8242A91	3.37	8242A13	3.25	8242A14	3.13	8242A92	3.37	8242A93	3.37	8242A9	3.37
3" x 21"	10	4744A618	3.63	4744A505	2.38	4744A405	2.29	4744A305	2.58	4744A205	2.11	4744A797	2.53
3" x 23 3/4"	10	4744A619	3.80	4744A506	3.66	4744A406	3.01	4744A306	3.12	4744A206	2.84	4744A798	2.64
3" x 24"	10	4744A621●	3.13	4744A507	2.58	4744A407	2.48	4744A307	2.77	4744A207	2.28	4744A799	2.59
3" x 27"	10	4744A622	4.80	4744A509	3.59	4744A409	3.57	4744A309	3.30	4744A209	2.98	4744A801	2.65
3" x 48"	10	5142A351	5.25	5142A321	5.11	5142A281	4.70	5142A251	4.32	5142A221	4.00	5142A101	3.68
3" x 72"	10	4744A639	6.88	4744A531	6.60	4744A431	6.09	4744A331	5.65	4744A231	5.15	4744A802	4.80
3" x 79"	10	5142A352	8.47	5142A322	8.33	5142A282	7.84	5142A252	7.50	5142A222	7.15	5142A111	6.81
3" x 90"	10	5142A501	14.90	5142A502	14.08	5142A503	13.33	5142A504	12.67	5142A505	11.94	5142A43	11.46
3" x 120"	10	5142A511	18.82	5142A512	17.69	5142A513	16.72	5142A514	15.87	5142A515	14.86	5142A44	14.22
3" x 132"	10	5142A354	12.38	5142A324	12.17	5142A284	11.48	5142A254	10.93	5142A224	10.46	5142A131	10.07
3 1/2" x 15 1/2"	10	4744A031	3.80	4744A334	5.90	4744A03	5.54	4744A33	3.38	4744A328	3.20	4744A301	5.36
4" x 21"	10	4744A624	4.80	4744A513	4.65	4744A413	4.33	4744A313	3.98	4744A213	3.55	4744A803	3.38
4" x 21 3/4"	10	4744A625	4.90	4744A551	4.68	4744A414	4.35	4744A314	4.01	4744A214	3.66	4744A804	3.42
4" x 24"	10	4744A626	5.13	4744A515	4.80	4744A415	4.53	4744A315	4.17	4744A215	3.74	4744A805	3.52
4" x 27"	10	4744A627	5.35	4744A516	4.86	4744A416	4.70	4744A316	4.37	4744A216	4.00	4744A806	3.74
4" x 36"	10	4744A628	6.09	4744A517	5.86	4744A417	5.43	4744A317	5.00	4744A217	4.55	4744A807	4.32
4" x 38"	10	4744A371	6.13	4744A37	5.89	4744A35	5.56	4744A349	5.17	4744A348	4.67	4744A032	4.39
4" x 42"	10	5142A355	6.50	5142A325	6.37	5142A285	5.81	5142A255	5.36	5142A225	4.59	5142A141	4.60
4" x 48"	10	4744A423	7.11	4744A422	6.88	4744A412	6.33	4744A037	5.82	4744A41	5.31	4744A288	4.98
4" x 52 1/2"	10	4744A629	7.52	4744A518	7.21	4744A418	6.66	4744A318	6.15	4744A218	5.58	4744A808	5.26
4" x 54"	10	4744A631	7.11	4744A519	7.33	4744A419	6.80	4744A319	6.27	4744A219	5.71	4744A809	5.34
4" x 59"	10	5142A356	4.59	5142A326	7.66	5142A286	7.05	5142A256	6.50	5142A226	5.93	5142A151	5.58
4" x 60"	10	5142A357	8.03	5142A327	7.73	5142A287	7.11	5142A257	6.68	5142A227	6.07	5142A161	5.62
4" x 72"	5	4744A597	9.17	4744A596	8.82	4744A595	8.12	4744A594	7.52	4744A593	6.86	4744A55	6.42
4" x 84"	5	4744A458	11.78	4744A457	10.82	4744A456	10.93	4744A455	10.43	4744A454	9.93	4744A043	9.54

♦ Prices are 15% lower when you buy in full-package quantities. ★ Not available in 400 grit.
♠ Not available in 150 or 400 grit. ● Package quantity is 5.

(Continued on following page)

For information about sanding abrasives, see page 2651.

Aluminum Oxide Sanding Belts *(Continued from previous page)*

Belt Size, Wd.xLg.	Pkg. Qty.	36 Grit Each ♦	40 Grit Each ♦	50 Grit Each ♦	60 Grit Each ♦	80 Grit Each ♦	100, 120, 150, 180, 240, 320, or 400 Grit ♠ Each ♦
4″ × 90″	5	4744A477 $12.38	—	—	4744A474 $10.93	4744A473 $10.46	4744A459 $10.07
4″ × 120″	5	4744A489 15.34	4744A488 $15.01	4744A487 $14.21	4744A486 13.56	4744A485 12.97	4744A478 12.11
4″ × 132″	5	4744A633 16.50	4744A521 16.18	4744A421 15.34	4744A321 14.60	4744A221 13.99	4744A811 13.37
4″ × 144″	5	5142A359 17.45	5142A329 17.11	5142A289 15.43	5142A259 15.43	5142A229 14.75	5142A181 14.16
4½″ × 26″	10	4744A634 5.90	4744A524 5.71	4744A424 4.92	4744A324 4.86	4744A224 4.39	4744A812 3.90
6″ × 48″	5	4744A635 10.74	4744A525 10.25	4744A425 9.49	4744A325 8.80	4744A225 7.98	4744A813 7.52
6″ × 54″	10	5142A521 20.22	5142A522 19.25	5142A523 18.38	5142A524 17.59	5142A525 16.70	5142A45 16.12
6″ × 54½″	5	4744A636 11.54	4744A526 11.09	4744A426 10.23	4744A326 9.47	4744A226 8.58	4744A814 7.59
6″ × 60″	5	4744A501 12.23	4744A5 11.78	4744A499 10.84	4744A498 10.07	4744A497 9.13	4744A49 8.56
6″ × 79″	5	4744A047 16.97	4744A534 16.64	4744A046 15.72	4744A53 14.97	4744A528 14.29	4744A508 13.75
6″ × 80″	10	5142A531 26.94	5142A532 25.50	5142A533 24.22	5142A534 23.06	5142A535 21.74	5142A46 20.88
6″ × 89″	5	4744A567 22.83	4744A56 18.09	4744A559 17.11	4744A558 16.30	4744A557 15.54	4744A54 14.95
6″ × 132″	10	5142A541 40.42	5142A542 38.00	5142A543 35.88	5142A544 34.00	5142A545 31.80	5142A47 30.36
8″ × 107″	5	4744A581 28.10	4744A58 27.58	4744A579 26.06	4744A578 24.87	4744A577 23.75	4744A57 22.83
9″ × 48″	5	4744A611 18.58	4744A61 18.21	4744A602 15.44	4744A601 16.44	4744A6 15.66	4744A42 15.07
10″ × 70½″	5	4744A638 26.16	4744A529 25.69	4744A429 24.28	4744A329 23.16	4744A229 22.08	4744A815 21.26

♦ Prices are 15% lower when you buy in full-package quantities. ♠ **To Order:** Please specify grit.

Clog-Resistant Aluminum Oxide Sanding Belts

Open space between the abrasive grains prevents sanding dust from clogging the belt. Also known as open-coat sanding belts, they have a strong cloth backing, and are particularly good for use on soft, clog-prone materials such as wood, fiberglass, and some soft metals. **Also Available:** Other belt sizes and grits. Please ask for 46495A999 and specify belt size and grit.

Belt Size, Wd.xLg.	Pkg. Qty.	50 Grit Each ♦	60 Grit Each ♦	80 Grit Each ♦	100 Grit Each ♦	120 Grit Each ♦
⅜″ × 13″	25	46495A711 $1.84	46495A712 $1.81	46495A713 $1.77	46495A714 $1.76	46495A715 $1.76
½″ × 18″	25	46495A716 1.94	46495A717 1.91	46495A718 1.87	46495A719 1.84	46495A721 1.84
½″ × 24″	25	46495A722 1.94	46495A723 1.91	46495A724 1.87	46495A725 1.84	46495A726 1.84
¾″ × 18″	25	46495A727 1.94	46495A728 1.91	46495A729 1.87	46495A731 1.84	46495A732 1.84
¾″ × 20½″	25	46495A733 2.03	46495A734 2.00	46495A735 1.96	46495A736 1.94	46495A737 1.94
1″ × 30″	25	46495A55 2.56	46495A45 2.50	46495A35 2.43	46495A25 2.39	46495A15 2.39
1″ × 42″	25	46495A56 2.93	46495A46 2.85	46495A36 2.75	46495A26 2.70	46495A16 2.70
1″ × 60″	25	46495A262 3.55	46495A222 3.45	46495A182 3.34	46495A142 3.26	46495A102 3.26
1⅛″ × 21″	10	46495A738 2.68	46495A739 2.62	46495A741 2.57	46495A742 2.53	46495A743 2.53
1½″ × 60″	10	46495A265 5.09	46495A225 4.88	46495A185 4.65	46495A145 4.51	46495A105 4.51
2″ × 36″	10	46495A266 4.58	46495A226 4.43	46495A186 4.25	46495A146 4.12	46495A106 4.12
2″ × 42″	10	46495A267 4.49	46495A227 4.47	46495A187 4.45	46495A147 4.31	46495A107 4.31
2″ × 48″	10	46495A57 4.94	46495A47 4.75	46495A37 4.53	46495A27 4.38	46495A17 4.38
2″ × 60″	10	46495A58 5.44	46495A48 5.21	46495A38 4.95	46495A28 4.78	46495A18 4.78
2″ × 72″	10	46495A59 5.89	46495A49 5.56	46495A39 5.35	46495A29 5.15	46495A19 5.15
2½″ × 48″	10	46495A269 6.18	46495A229 5.93	46495A189 5.65	46495A149 5.46	46495A109 5.46
2½″ × 60″	10	46495A271 7.59	46495A231 7.26	46495A191 6.89	46495A151 6.63	46495A111 6.63
2¾″ × 15½″	10	46495A272 3.64	46495A232 3.54	46495A192 3.41	46495A152 3.34	46495A112 3.34
3″ × 18″	10	46495A6 3.36	46495A5 3.27	46495A4 3.14	46495A3 3.06	46495A2 3.06
3″ × 21″	10	46495A61 3.83	46495A51 3.71	46495A41 3.55	46495A31 3.46	46495A21 3.46
3″ × 24″	10	46495A62 4.12	46495A52 3.99	46495A42 3.80	46495A32 3.69	46495A22 3.69
3″ × 72″	10	46495A274 7.96	46495A234 7.53	46495A194 7.25	46495A154 6.97	46495A114 6.97
3½″ × 15½″	10	46495A276 5.00	46495A236 4.89	46495A196 4.78	46495A156 4.67	46495A116 4.67
4″ × 21″	10	46495A277 5.94	46495A237 5.77	46495A197 5.23	46495A157 5.11	46495A117 5.11
4″ × 21¾″	10	46495A278 6.06	46495A238 5.88	46495A198 5.33	46495A158 5.20	46495A118 5.20
4″ × 24″	10	46495A63 6.29	46495A53 6.09	46495A43 5.51	46495A33 5.37	46495A23 5.37
4″ × 36″	10	46495A69 7.75	46495A68 7.45	46495A67 7.15	46495A66 6.92	46495A65 6.92
4″ × 48″	10	46495A279 10.82	46495A239 10.36	46495A199 9.88	46495A159 9.53	46495A119 9.53
4″ × 52½″	10	46495A281 11.46	46495A241 10.96	46495A201 10.44	46495A161 10.06	46495A121 10.06
4″ × 54″	10	46495A282 11.24	46495A242 10.73	46495A202 10.22	46495A162 9.84	46495A122 9.84
4″ × 132″	5	46495A284 27.89	46495A244 26.33	46495A204 24.74	46495A164 23.57	46495A124 23.57
6″ × 48″	5	46495A64 15.53	46495A54 14.87	46495A44 14.17	46495A34 13.67	46495A24 13.67
6″ × 60″	5	46495A285 18.00	46495A245 17.19	46495A205 16.31	46495A165 15.72	46495A125 15.72
6″ × 79″	5	46495A286 28.91	46495A246 27.49	46495A206 25.97	46495A166 24.93	46495A126 24.93
6″ × 89″	5	46495A287 30.41	46495A247 28.88	46495A207 27.22	46495A167 26.10	46495A127 26.10
8″ × 107″	5	46495A291 46.65	46495A251 44.23	46495A211 41.56	46495A171 39.83	46495A131 39.83
10″ × 70½″	5	46495A292 42.73	46495A252 40.70	46495A212 38.50	46495A172 37.01	46495A132 37.01

♦ Prices are 15% lower when you buy in full-package quantities.

Waterproof Aluminum Oxide Sanding Belts

With a tough polyester cloth backing, these belts stand up to use in wet and dry applications. Belts have a premium aluminum oxide grain. Moderately flexible, and great for use on carbon steels, alloy steels, tough bronzes, and hard woods.
Also Available: Other belt sizes and grits. Please ask for 4713A999 and specify belt size and grit.

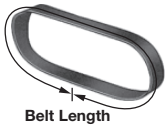

Belt Size, Wd.xLg.	Pkg. Qty.	36 Grit Each ♦	40 Grit Each ♦	60 Grit Each ♦	80 Grit Each ♦	100, 120, 180, 220, 240, or 320 Grit ♠ Each ♦
½″ × 24″	25	4713A365 $2.83	4713A361 $2.77	4713A355 $1.00	4713A351 $1.00	4713A311 $1.00
1″ × 42″	25	4713A081 3.15	4713A061 2.83	4713A041 3.27	4713A021 2.35	4713A011 2.35
2″ × 42″	10	4713A367 8.29	4713A363 7.29	4713A357 6.13	4713A353 5.83	4713A331 5.65
2″ × 48″	10	4713A082 4.63	4713A062 4.50	4713A042 3.50	4713A022 6.19	4713A012 6.12
2″ × 132″	10	4713A155 10.77	4713A145 10.58	4713A135 13.56	4713A125 13.00	4713A013 11.63
2½″ × 60″	10	4713A085 6.63	4713A065 6.21	4713A045 9.52	4713A025 9.06	4713A014 8.73
3″ × 24″	10	4713A086 3.73	4713A066 5.94	4713A046 5.54	4713A026 5.31	4713A015 5.15
3″ × 132″	10	4713A157 16.13	4713A147 16.48	4713A137 19.92	4713A127 17.96	4713A016 18.35
4″ × 36″	10	4713A088 7.98	4713A068 7.71	4713A048 11.06	4713A028 10.56	4713A017 10.25
4″ × 60″	5	4713A158 9.98	4713A148 9.98	4713A138 14.12	4713A128 14.30	4713A018 12.90
6″ × 48″	5	4713A089 13.98	4713A069 13.44	4713A049 19.54	4713A029 18.63	4713A019 18.02

♦ Prices are 15% lower when you buy in full-package quantities. ♠ **To Order:** Please specify grit.

For information about sanding abrasives, see page 2651.

Long-Life Structured Aluminum Oxide Sanding Belts

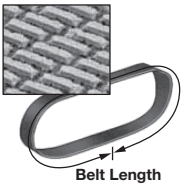

With larger and thicker abrasive grain patterns, these belts last longer than other structured abrasive belts while providing consistent finishes from beginning to end. Backing is made of a flexible cotton. Use on stainless steel, brass, aluminum, titanium, cobalt chrome, and alloys.

Belt Size, Wd. × Lg.	Pkg. Qty.	80 Grit	Each ♦	120 Grit	Each ♦	220 Grit	Each ♦	240 Grit	Each ♦	320 Grit	Each ♦
½″ × 24″	20	4172A11	$2.27	4172A12	$2.27	4172A13	$2.27	4172A14	$2.27	4172A15	$2.27
2″ × 60″	5	4172A21	7.77	4172A22	7.77	4172A23	7.77	4172A24	7.77	4172A25	7.77
2″ × 72″	5	4172A31	8.74	4172A32	8.74	4172A33	8.74	4172A34	8.74	4172A35	8.74
2″ × 132″	5	4172A41	13.60	4172A42	13.60	4172A43	13.60	4172A44	13.60	4172A45	13.60
3″ × 132″	5	4172A51	20.40	4172A52	20.40	4172A53	20.40	4172A54	20.40	4172A55	20.40

♦ Prices are 15% lower when you buy in full-package quantities.

Fine Finishing Structured Aluminum Oxide Sanding Belts

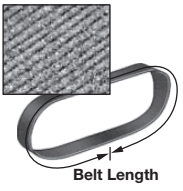

The multilayered grain structure on these belts is spaced in a pattern, resulting in extremely consistent finishes and long life. They have a fine grit on a flexible cotton backing. Ideal for use on stainless steel, carbon steel, brass, and aluminum.

Belt Size, Wd. × Lg.	Pkg. Qty.	Grit Range 200-240★	Each ♦	Grit Range 240-280★	Each ♦	Grit Range 360-400★	Each ♦	Grit Range 400-500★	Each ♦
½″ × 12″	25	4823A244	$2.03	4823A243	$2.03	4823A242	$2.03	4823A241	$2.04
½″ × 18″	25	4823A254	2.15	4823A253	2.15	4823A252	1.93	4823A251	1.93
½″ × 24″	25	4823A264	1.97	4823A263	1.97	4823A262	2.22	4823A261	1.96
1″ × 42″	25	4823A114	3.47	4823A113	3.47	4823A112	3.47	4823A111	3.47
1½″ × 60″	10	4823A124	4.93	4823A123	4.93	4823A122	4.93	4823A121	4.93
2″ × 42″	10	4823A134	4.78	4823A133	4.78	4823A132	4.78	4823A131	4.78
2″ × 48″	10	4823A144	5.12	4823A143	5.12	4823A142	5.12	4823A141	5.12
2″ × 60″	10	4823A154	5.88	4823A153	5.88	4823A152	5.88	4823A151	5.88
2″ × 72″	10	4823A164	6.58	4823A163	6.58	4823A162	6.58	4823A161	6.58
2″ × 132″	10	4823A174	11.20	4823A173	11.20	4823A172	11.20	4823A171	11.20
2½″ × 60″	10	4823A184	7.36	4823A183	7.36	4823A182	7.36	4823A181	7.36
3″ × 132″	10	4823A194	15.40	4823A193	15.40	4823A192	15.40	4823A191	15.40
4″ × 36″	10	4823A214	8.78	4823A213	8.78	4823A212	8.78	4823A211	8.78
4″ × 132″	5	4823A224	20.53	4823A223	20.53	4823A222	20.53	4823A221	20.53
6″ × 48″	5	4823A234	15.40	4823A233	15.40	4823A232	15.40	4823A231	15.40

★ Not actual grit sizes. Ranges are intended as a guide to indicate the type of finish that can be achieved.
♦ Prices are 15% lower when you buy in full-package quantities.

Waterproof Silicon Carbide Sanding Belts

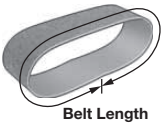

Sharper than aluminum oxide yet more brittle. Ideal for sanding on glass, ceramics, nonferrous metals, rubber, plastics, and soft wood. Strong, polyester cloth backing results in long life and consistent finishes. Use wet and dry.

Belt Size, Wd. × Lg.	Pkg. Qty.	60 Grit	Each ♦	80 Grit	Each ♦	120 Grit	Each ♦	180 Grit	Each ♦
1″ × 30″	25	46455A61	$3.76	46455A51	$3.65	46455A41	$3.61	46455A31	$3.61
1⅛″ × 21″	10	46455A62	3.57	46455A52	3.48	46455A42	3.46	46455A32	3.46
3″ × 21″	10	46455A63	5.04	46455A53	4.81	46455A43	4.71	46455A33	4.71
3″ × 24″	10	46455A64	5.29	46455A54	4.99	46455A44	5.04	46455A34	5.04
4″ × 36″	10	46455A66	10.86	46455A56	10.37	46455A46	10.06	46455A36	10.06
6″ × 48″	5	46455A68	19.17	46455A58	18.27	46455A48	17.62	46455A38	17.62

♦ Prices are 15% lower when you buy in full-package quantities.

Diamond Sanding Belts for Ceramics and Glass

Consisting of synthetic diamond abrasive grains, these sanding belts are ideal for hard-to-sand materials such as ceramics and glass as well as on high nickel alloys and carbides. Belts have a flexible cloth backing.

Belt Size, Wd. × Lg.	40-50 Grit	Each	60-80 Grit	Each	80-100 Grit	Each	100-120 Grit	Each
½″ × 18″	4150A11	$106.67	4150A12	$97.50	4150A13	$97.50	4150A14	$97.50
½″ × 24″	4150A21	110.00	4150A22	100.83	4150A23	100.83	4150A24	100.83
1″ × 42″	4150A31	146.67	4150A32	134.17	4150A33	134.17	4150A34	134.17
1½″ × 60″	4150A71	248.33	4150A72	227.50	4150A73	227.50	4150A74	227.50
2″ × 48″	4150A51	368.33	4150A52	337.50	4150A53	337.50	4150A54	337.50
6″ × 48″	4150A61	1,088.33	4150A62	997.50	4150A63	997.50	4150A64	997.50

Belt Sanding Rubber Contact Wheels

The serrations on these wheels prevent heat buildup, allowing for fast, aggressive cutting and longer belt life. Wheels have an aluminum hub and a rubber tire with a medium durometer hardness of 50A-60A. Balanced for smooth, vibration-free operation. Arbor hole accepts a shaft of similar size. For sanding belts, see pages 2665-2668.

Also Available: Other wheel sizes, widths, and durometers as well as replacement serrated tires. Please ask for 46425A999 and specify wheel diameter and width, arbor size, plain or serrated face, and rubber hardness. For replacement serrated tires, please ask for 46425A1 and specify wheel diameter and width.

Wheel Dia.	Arbor Hole	Max. rpm	2″ Wd. Wheels	Each	3″ Wd. Wheels	Each	4″ Wd. Wheels	Each
6″	¾″	3,475	46425A11	$239.00	46425A51	$243.33	46425A24	$258.00
8″	¾″	3,275	46425A12	288.79	46425A52	314.00	46425A25	326.00
10″	¾″	3,130	46425A13	402.15	46425A53	432.67	46425A26	451.33
12″	1¼″	2,985	46425A14	469.36	46425A54	487.33	46425A27	507.33
14″	1¼″	2,850	46425A15	547.07	46425A55	552.67	46425A28	572.67

Belt Sanding Wheels for Bench and Pedestal Grinders

Turn your 6″ bench grinder into a sander. As the wheel rotates, the rubber expands and holds the sanding belt in place. All have a 1″ arbor hole and a durometer hardness of 60A. See page 2666 for sanding belts.

Reducer bushings (sold separately) reduce arbor hole. **To Order:** Please specify bushing ID: ½″, ⅝″, ¾″, or ⅞″.

Wheel Size, Dia. × Wd.	Use with Belt Size	Max. rpm	Wheels	Each	Reducer Bushings	Each
6″ × 1″	1″ × 18 15/16″	3,650	8242A42	$184.94	8242A75	$15.00
6″ × 1½″	1½″ × 18 15/16″	3,650	8242A44	187.68	8242A76	15.00
6″ × 2″	2″ × 18 15/16″	3,650	8242A46	193.14	8242A76	15.00
6″ × 3″	3″ × 18 15/16″	3,650	8242A48	220.62	8242A76	15.00

For information about sanding abrasives, see page 2651.

Surface-Conforming Belt Sanding Wheels for Portable Grinders

Achieve fast, even sanding on any shape workpiece with these inflatable wheels. Slip your belt onto the wheel and inflate to desired hardness to achieve any finish. Hub has a threaded air valve. Choose from aluminum and composite hubs. ***Aluminum*** hubs are strong and heavy duty. ***Composite*** hubs are lightweight, but not as strong as aluminum.

Wheel Size, Dia. × Wd.	Hub Material	Use with Belt Size	Max. rpm	With 1/2"-13 Arbor Hole	Each	With 5/8"-11 Arbor Hole	Each	Replacement Rubber Wheels Only	Each
3 1/4" × 3"	Aluminum	3" × 10 11/16"	7,000	4646A21	$125.77	———	———	4646A73	$56.88
3 1/4" × 3"	Aluminum	3" × 10 11/16"	7,000	———	———	4646A22	$86.15	4646A75	43.67
5" × 2 3/4"	Composite	2 3/4" × 15 1/2"	3,500	———	———	4646A71	84.02	4646A67	43.55
5" × 3 1/2"	Aluminum	3 1/2" × 15 1/2"	3,500	———	———	4646A29	106.91	4646A68	45.09
5" × 3 1/2"	Composite	3 1/2" × 15 1/2"	3,500	———	———	4646A72	84.02	4646A68	45.09

Replaceable-Cap Aluminum Oxide Sanding Bits

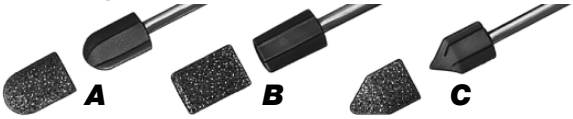

Looking for an easy way to finish recessed and hard-to-reach areas? Just slip one of these seamless sanding caps onto the shank bit's slotted rubber head and you're ready to work. Designed for use on die grinders. Caps are aluminum oxide for general purpose sanding on metals and woods.

All shank bits include a rubber head. Shank bits with 1/8" dia. are 1" long. Shank bits with 1/4" dia. are 1 1/2" long. Sanding caps are sold separately.

To Order: For sanding caps, please specify 60, 150, or 280 grit (unless noted).

Body Size, Dia. × Lg.	Max. rpm	Shank Bits	Each	Sanding Caps Pkg. Qty.		Per Pkg.
1/8" Dia. Shank Bits						
A 3/16" × 7/16"	40,000	4847A81	$2.60	10	4847A111★	$6.84
A 9/32" × 1/2"	30,000	4847A82	2.82	10	4847A112	6.84
A 3/8" × 5/8"	20,000	4847A83	2.87	10	4847A113	7.88
B 3/16" × 3/8"	40,000	4847A84	2.60	10	4847A114★	6.84
B 9/32" × 1/2"	30,000	4847A85	2.82	10	4847A115	6.84
B 3/8" × 5/8"	20,000	4847A86	2.87	10	4847A116	7.88
C 3/16" × 7/16"	40,000	4847A87	2.56	10	4847A117★	6.84
C 9/32" × 1/2"	30,000	4847A88	2.82	10	4847A118	6.84
C 3/8" × 5/8"	20,000	4847A89	2.87	10	4847A119	7.88
1/4" Dia. Shank Bits						
A 1/4" × 5/8"	40,000	4847A2	3.49	10	4847A121★	7.88
A 7/16" × 1"	20,000	4847A14	3.60	10	4847A122	9.28
A 1/2" × 11/16"	16,000	4847A11	2.85	10	4847A123	9.28
A 5/8" × 1"	12,000	4847A12	2.63	10	4847A124	9.28
A 5/8" × 1 1/4"	12,000	4847A13	3.66	10	4847A125	9.28
A 27/32" × 1 9/16"	9,500	4847A15	5.32	10	4847A126	13.50
B 1/2" × 11/16"	16,000	4847A16	2.85	10	4847A127	9.28
B 5/8" × 1"	12,000	4847A17	2.94	10	4847A128	9.28
C 1/2" × 11/16"	16,000	4847A18	2.85	10	4847A129	9.28
C 5/8" × 1"	12,000	4847A19	2.94	10	4847A131	9.28

★ Available in 80, 150, and 280 grit.

Belt Sanding Sticks

Easily reach small, compact areas with these belt sticks. They're spring-loaded to hold a small sanding belt taut, but also allow you to rotate the belt when it becomes worn.

Belt sticks include one 120 grit aluminum oxide sanding belt with a flexible cloth backing.

Sanding belts are made of aluminum oxide. They are ideal for general purpose sanding on metal and wood. All have a flexible cloth backing, except for the 600 grit, which has a stiff cloth backing. **To Order:** Please specify 80, 120, 180, 240, 320, 400, or 600 grit.

Belt Size, Wd. × Lg.	Belt Sticks	Each	Sanding Belts Pkg. Qty.		Per Pkg.
1/4" × 6"	46655A111	$1.92	10	46655A511	$7.08
1/2" × 8"	46655A112	3.02	10	46655A512	9.79
3/4" × 10"	46655A113	3.92	10	46655A513	12.29

Rubber Drum and Sanding Sleeve Assortments

Our assortments contain the most popular expanding rubber sanding drum sizes and aluminum oxide sanding sleeves. Rubber drums resist cracking and will last longer than plastic drums. Drums are secured with a hex fitting. For individual sleeves, see page 2670.

Four 1/4" Shank Diameter Drums with Eight Sleeves— You'll get the following drums (Dia. × Wd.): 1/2" × 2", 3/4" × 2", 1" × 2", and 1 1/2" × 2" plus one 50-grit and one 120-grit sleeve for each size.

4648A13 ..... **Each** $11.46

Five 1/4" Shank Diameter Drums with 10 Sleeves— You'll get the following drums (Dia. × Wd.): 1/2" × 1/2", 3/4" × 1", 1" × 1", 1 1/2" × 1 1/2", and 2" × 1 1/2" plus one 50-grit and one 120-grit sleeve for each size. *Note:* The 1/2" × 1/2" drum has a 1/8" dia. shank.

4648A12 ..... **Each** $12.82

Five 1/8" Shank Diameter Drums with 10 Sleeves— You'll get the following drums (Dia. × Wd.): 3/8" × 1/2", 1/2" × 1/2", 1/2" × 3/4", 3/4" × 1/2", and 3/4" × 3/4" plus one 50-grit and one 120-grit sleeve for each size.

4648A14 ..... **Each** $6.75

Six 1/4" Shank Diameter Drums with 90 Sleeves— You'll get the following drums (Dia. × Wd.): 1/2" × 1/2", 3/4" × 1", 1" × 1", 1 1/2" × 1 1/2", 2" × 1 1/2", and 3" × 1" plus five 36-grit, five 50-grit, and five 120-grit sleeves for each size. *Note:* The 1/2" × 1/2" drum has a 1/8" dia. shank and the 3" × 1" drum has a hollow shank to fit on a 1/2" motor shaft.

4735A11 ..... **Each** $60.41

Tungsten Carbide Sanding Sleeves for Plastics and Fiberglass

Tungsten carbide grit bonded to a steel sleeve provides superior durability when used on plastics and other nonmetallic materials. These sleeves are a good choice for shaping, hole sizing, and general sanding. Mount them on rubber drums (sold separately on page 2670). For use on die grinders and similar portable tools.

To Order: Please specify 24, 36, or 60 grit.

Inside Dia.	Wd.		Each
1"	1"	4727A41	$30.55
2"	1 1/2"	4727A42	39.89
3"	3"	4727A43	52.02

Long-Life Aluminum Oxide Flap Sanding Sleeves

Experience the best of both worlds with these flap sanding sleeves. Like flap wheels, these sleeves have tightly packed flaps of abrasive material that wear down evenly for long life. Yet, they also aggressively remove material and are replaceable like sanding sleeves. Mount on rubber drums (sold separately below). Use on die and straight grinders.

To Order: Please specify 36, 50, 80, 120, 180, 240, 320, or 400 grit.

Sleeves Dia. × Wd.		Each	Drums Shank Dia.	Max. rpm		Each
1 1/4" × 3/4"	4597A11	$11.38	1/4"	26,000	4597A31	$19.85
1 3/4" × 3/4"	4597A12	11.98	1/4"	19,100	4597A32	21.85
1 3/4" × 1 3/16"	4597A13	13.12	1/4"	19,100	4597A33	23.90
2 1/2" × 1 3/16"	4597A14	18.24	1/4"	12,700	4597A34	26.95
3 1/2" × 1 3/16"	4597A15	25.02	3/8"	7,600	4597A35	32.93

For information about sanding abrasives, see page 2651.

Sanding Sleeves

Also known as spiral bands, these sleeves are perfect for use on flat and irregular surfaces. All have a strong, stiff cloth backing and a cloth inner liner. Mount them on rubber drums (sold below) and on die grinders and similar portable tools (unless noted).

Aluminum oxide is the most popular abrasive for general purpose sanding on a wide range of metals and woods. **To Order:** Please specify 36, 50, 60, 80, 120, 180, 240, or 320 grit.

Zirconia alumina is a premium grain that's designed for all types of metals and woods where an aggressive cutting action and higher material removal rates are needed. Grains are self-sharpening for extended sleeve life. **To Order:** Please specify 36, 50, 80, or 120 grit.

Ceramic aluminum oxide is a long-life premium grain that produces outstanding results in medium to heavy material removal on carbon steels, aerospace alloys, nickel alloys, aluminum, cast iron, forgings, and some stainless steels. **To Order:** Please specify 50, 60, 80, or 120 grit.

Silicon carbide is for use with nonferrous metals, glass, rubber, plastics, fibrous woods, enamels, and other soft materials. Ideal for penetrating and cutting fast under light pressure. **To Order:** Please specify 36, 50, 80, 120, or 180 grit.

100-Piece Aluminum Oxide Sleeve Assortment—You'll get 10 of both the 50- and 120-grit sleeves in each of the following sizes (ID×Wd.): ½"×½", ¾"×1", 1"×1", 1½"×1½", and 2"×1½".

4719A81 ..... **Per Asst.** $31.18

Inside Dia.	Wd.	Pkg. Qty.		Per Pkg.
Aluminum Oxide				
¼"	½"	25	**4719A188**	$3.79
¼"	¾"	25	**4719A141**	4.54
¼"	1"	25	**4719A231**	5.30
¼"	6"	10	**4719A46**▲	9.80
⅜"	½"	25	**4719A191**	3.79
⅜"	1"	25	**4719A192**	6.06
½"	½"	25	**4719A211**	3.79
½"	¾"	25	**4719A631**	6.06
½"	1"	25	**4719A212**	6.06
½"	1½"	25	**4719A251**	6.81
½"	2"	25	**4719A213**	8.33
½"	4½"	10	**4719A535**	8.48
½"	6"	10	**4719A531**▲	12.19
⅝"	½"	25	**4719A195**	4.54
⅝"	1"	25	**4719A197**	6.81
⅝"	6"	10	**4719A532**▲	12.19
¾"	½"	25	**4719A691**	5.30
¾"	¾"	25	**4719A791**	6.06
¾"	1"	25	**4719A214**	6.81
¾"	1½"	25	**4719A351**	7.57
¾"	2"	25	**4719A215**	9.09
¾"	4½"	10	**4719A536**	9.27
1"	½"	25	**4719A361**	6.81
1"	¾"	25	**4719A371**	6.81
1"	1"	25	**4719A216**	7.57
1"	1½"	25	**4719A217**	9.09
1"	2"	25	**4719A218**	9.84
1"	3"	25	**4719A261**	15.51
1"	4½"	10	**4719A537**	11.39
1¼"	1"	25	**4719A281**	8.33
1¼"	2"	25	**4719A291**	12.87
Aluminum Oxide (Cont.)				
1½"	1"	25	**4719A219**	$9.09
1½"	1½"	25	**4719A221**	12.11
1½"	2"	25	**4719A222**	14.39
1½"	4½"	10	**4719A538**	12.19
1½"	5½"	10	**4719A533**▲	14.30
2"	1"	25	**4719A223**	12.11
2"	1½"	25	**4719A224**	14.39
2"	2"	10	**4719A225**	7.57
2"	4½"	10	**4719A539**	13.78
2"	5½"	10	**4719A534**▲	14.79
3"	1"	10	**4719A226**	7.27
3"	2"	10	**4719A227**	10.90
3"	3"	10	**4719A228**	14.54
Zirconia Alumina				
¼"	½"	25	**4756A71**	6.67
⅜"	½"	25	**4756A72**	7.00
½"	½"	25	**4756A31**	9.87
½"	¾"	25	**4756A73**	7.25
½"	1"	25	**4756A32**	10.45
½"	2"	10	**4756A33**	6.20
⅝"	1"	25	**4756A74**	7.74
¾"	¾"	25	**4756A75**	7.33
¾"	1"	25	**4756A34**	10.69
¾"	2"	25	**4756A76**	11.78
1"	1"	25	**4756A35**	11.39
1"	1½"	25	**4756A77**	9.47
1"	2"	10	**4756A36**	6.00
1½"	1"	25	**4756A78**	9.47
1½"	1½"	10	**4756A37**	5.90
1½"	2"	10	**4756A38**	6.23
2"	1"	25	**4756A79**	10.88
Zirconia Alumina (Cont.)				
2"	1½"	25	**4756A81**	$12.69
2"	2"	10	**4756A39**	9.28
3"	1"	10	**4756A41**	6.53
3"	3"	5	**4756A42**	7.60
Ceramic Aluminum Oxide				
½"	1"	50	**8257A31**◆■	31.48
1"	1"	50	**8257A32**◆	32.67
2"	1"	50	**8257A33**◆●	37.04
3"	1"	50	**8257A34**◆■●	44.51
Silicon Carbide				
¼"	½"	25	**4756A51**	6.80
⅜"	½"	25	**4756A52**	7.13
½"	½"	25	**4756A11**	7.06
½"	¾"	25	**4756A53**	7.31
½"	1"	25	**4756A12**	7.30
½"	2"	25	**4756A13**	10.83
⅝"	1"	25	**4756A54**	7.70
¾"	¾"	25	**4756A55**	7.81
¾"	1"	25	**4756A14**	7.64
¾"	2"	25	**4756A56**	11.67
1"	1"	25	**4756A15**	8.15
1"	1½"	25	**4756A57**	9.32
1"	2"	25	**4756A16**	12.84
1½"	1"	25	**4756A58**	8.99
1½"	1½"	25	**4756A17**	10.41
1½"	2"	25	**4756A18**	13.93
2"	1"	25	**4756A59**	10.74
2"	1½"	25	**4756A61**	12.93
2"	2"	10	**4756A19**	6.85
3"	1"	10	**4756A21**	4.66
3"	3"	10	**4756A22**	13.21

▲ For use on stationary spindle sanders. ◆ Available in less than full-package quantities. Prices are approximately 20% higher.
■ 120 grit not available. ● 50 grit not available.

Rubber Drums for Sanding Sleeves

Standard *Twist-n-Lock*

Pair these drums with cloth, tungsten carbide, and nylon mesh sanding sleeves (sold separately above) for sanding operations on flat and irregular surfaces. All hold sleeves without adhesives—simply slide a sleeve on the drum and tighten. Drums are designed for use on die grinders and similar portable tools.

Standard drums have a hex fitting on the bottom of the drum (unless noted) that, when tightened with a wrench, causes the drums to expand and securely hold a sleeve. ***Twist-n-lock*** drums do not require any tools to secure sleeves. Just rotate the rubber cylinder by hand while holding the shank to tighten or loosen a sleeve.

Drums with a solid shank fit in the collets and chucks of die grinders and similar tools.

Drums with a hollow shank and set screws are for use with straight unthreaded shafts and arbors of bench and pedestal grinders.

Drums with a female threaded arbor are for use with straight threaded shafts and arbors of bench and pedestal grinders.

Drum Size, Dia.×Wd.	Shank Dia.	Max. rpm	***Standard***	Each	***Twist-n-Lock***	Each
Drums with a Solid Shank						
¼"×½"	⅛"	30,000	**4650A41**★	$2.34	—	—
¼"×¾"	⅛"	22,000	**4650A61**★	2.66	—	—
¼"×1"	⅛"	20,000	**4650A62**★	2.66	—	—
⅜"×½"	⅛"	30,000	**4650A43**	1.16	—	—
⅜"×1"	⅛"	18,000	**4650A44**★	2.66	—	—
½"×½"	⅛"	30,000	**4651A6**	1.73	**46715A51**	$3.69
½"×½"	¼"	30,000	**4650A21**	1.31	**46715A11**	3.69
½"×¾"	⅛"	18,000	**4650A63**	1.66	—	—
½"×¾"	¼"	25,000	**4650A46**	1.66	**46715A52**	3.69
½"×1"	¼"	20,000	**4650A22**	1.66	**46715A13**	3.69
½"×1½"	¼"	14,000	**4650A64**	2.34	**46715A81**	4.69
½"×2"	¼"	10,000	**4650A31**	2.50	**46715A15**	4.69
⅝"×½"	¼"	27,000	**4650A47**	1.69	**46715A53**	4.00
⅝"×1"	¼"	19,000	**4650A49**	1.69	**46715A54**	4.00
¾"×1½"	¼"	27,000	**4650A51**	1.66	**46715A55**	4.00
¾"×¾"	¼"	24,000	**4650A52**	1.66	**46715A56**	4.00
¾"×1"	¼"	19,000	**4650A23**	1.66	**46715A19**	4.00
¾"×1½"	¼"	12,000	**4650A65**	2.50	**46715A82**	5.28
¾"×2"	¼"	9,000	**4650A32**	2.66	**46715A22**	5.34
1"×½"	¼"	18,000	**4650A66**	1.84	**46715A83**	4.00
1"×¾"	¼"	15,000	**4650A67**	1.84	**46715A61**	4.00
1"×1"	¼"	15,000	**4650A11**	1.84	**46715A26**	4.00
1"×1½"	¼"	10,000	**4650A24**	2.19	**46715A27**	4.69
1"×2"	¼"	8,000	**4650A33**	3.00	**46715A29**	5.34
Drums with a Solid Shank (Cont.)						
1"×3"	¼"	5,000	**4650A68**	$5.84	**46715A84**	$9.84
1¼"×1"	¼"	14,000	**4650A69**	2.19	**46715A62**	5.06
1¼"×2"	¼"	7,000	**4650A71**	3.69	**46715A63**	5.69
1½"×1"	¼"	14,000	**4650A25**	2.19	**46715A32**	4.81
1½"×1½"	¼"	10,000	**4650A26**	3.19	**46715A33**	5.44
1½"×2"	¼"	7,000	**4650A34**	3.69	**46715A35**	5.69
2"×1"	¼"	11,000	**4650A12**	3.22	**46715A37**	5.75
2"×1½"	¼"	8,000	**4650A27**	3.69	**46715A38**	6.97
2"×2"	¼"	6,000	**4650A13**	3.88	**46715A39**	8.16
3"×1"	¼"	3,000	**4650A81**✓	12.62	**46715A42**	11.78
3"×1"	⅜"	3,000	**4650A72**✓	12.62	**46715A64**	12.41
3"×2"	¼"	3,000	**4650A82**✓	16.72	**46715A44**	17.66
3"×2"	⅜"	3,000	**4650A73**✓	16.72	**46715A65**	18.22
3"×3"	⅜"	3,000	**4651A5**✓	21.00	**46715A47**	19.41
Drums with a Hollow Shank and Set Screws						
2"×2"	½"	6,000	**4650A14**✓	24.78	—	—
3"×1"	½"	3,000	**4650A15**✓	18.53	—	—
3"×2"	½"	3,000	**4650A16**✓	19.41	—	—
3"×3"	½"	3,000	**4650A17**✓	20.22	—	—
3"×3"	⅝"	3,000	**4651A13**✓	18.48	—	—
3"×3"	¾"	3,000	**4651A14**✓	18.48	—	—
Drums with a Female Threaded Arbor						
3"×3"	½"-20♠	3,000	**4651A2**	18.31	—	—
3"×3"	⅝"-11♠	3,000	**4651A1**	18.86	—	—

★ Has a slotted screw head fitting. ✓ Has a hex fitting on the top of the drum. ♠ Internal thread size.

For information about sanding abrasives, see page 2651.

Spiral-Wound Sanding Rolls

Designed to constantly renew themselves, these rolls feature a tightly wound, one-piece layered construction. As the outer layer wears away, new abrasive is exposed. Also known as cartridge rolls, they have a strong cloth backing. Use on straight die grinders and flexible shaft tools. Rolls fit the mandrels sold separately. Max. rpm is 26,000 rpm for 1/4″-1/2″ diameter sizes; 18,000 rpm for 5/8″-3/4″ diameter sizes; 16,500 rpm for 7/8″ diameter size; and 15,000 rpm for 1″ diameter sizes.

Straight rolls are for use in channels, fillets, recesses, contours, sidewalls, and other hard-to-reach spots.

Tapered rolls are for use on angles, corners, concave contours, funnel-shaped recesses, and other intricate shapes. The diameter listed is for the large end of the roll.

Aluminum oxide rolls are for sanding on metal and wood. ***Zirconia alumina rolls*** are for when aggressive cutting action and higher material removal rates are needed on metal and wood. ***Ceramic aluminum oxide rolls*** are tougher and harder than aluminum oxide rolls because the grains continuously produce sharp new cutting points. Rolls are for medium to heavy material removal on carbon steels, aerospace alloys, nickel alloys, aluminum, cast iron, forgings, and some stainless steels.

Straight

Tapered

Mandrel

122-Piece Roll Kit

Aluminum Oxide Rolls

Dia. × Lg. × Arbor Hole	Pkg. Qty.	50 Grit	60 Grit	80 Grit	120 Grit	180 Grit	240 Grit	320 Grit	Per Pkg.
Straight Rolls									
1/4″ × 1″ × 1/8″	25	4690A351	4690A171	4690A172	4690A173	4690A174	4690A331	4690A311	$6.20
1/4″ × 1 1/2″ × 1/8″	25	4690A352	4690A181	4690A182	4690A183	4690A184	4690A332	4690A312	7.45
5/16″ × 1″ × 1/8″	25	4690A572	4690A562	4690A552	4690A542	4690A532	4690A522	4690A512	6.73
5/16″ × 1 1/2″ × 1/8″	25	4690A573	4690A563	4690A553	4690A543	4690A533	4690A523	4690A513	8.77
3/8″ × 1″ × 1/8″	25	4690A353	4690A111	4690A112	4690A113	4690A114	4690A333	4690A313	6.73
3/8″ × 1 1/2″ × 1/8″	25	4690A354	4690A121	4690A122	4690A123	4690A124	4690A334	4690A314	8.44
1/2″ × 3/4″ × 1/8″	25	4690A575	4690A565	4690A555	4690A545	4690A535	4690A525	4690A515	6.73
1/2″ × 1″ × 1/8″	25	4690A355	4690A131	4690A132	4690A133	4690A134	4690A335	4690A315	7.74
1/2″ × 1 1/2″ × 1/8″	25	4690A356	4690A141	4690A142	4690A143	4690A144	4690A336	4690A316	10.62
5/8″ × 1″ × 3/16″	10	4690A577	4690A567	4690A557	4690A547	4690A537	4690A527	4690A517	4.78
5/8″ × 1 1/2″ × 3/16″	10	4690A357	4690A146	4690A147	4690A148	4690A149	4690A337	4690A317	6.08
5/8″ × 2″ × 3/16″	10	4690A578	4690A568	4690A558	4690A548	4690A538	4690A528	4690A518	7.31
3/4″ × 1″ × 3/16″	10	4690A358	4690A151	4690A152	4690A153	4690A154	4690A338	4690A318	5.53
3/4″ × 1 1/2″ × 3/16″	10	4690A359	4690A161	4690A162	4690A163	4690A164	4690A339	4690A319	6.95
3/4″ × 2″ × 3/16″	10	4690A579	4690A569	4690A559	4690A549	4690A539	4690A529	4690A519	9.20
1″ × 1″ × 3/16″	10	4690A361	4690A471	4690A472	4690A473	4690A474	4690A341	4690A321	10.50
1″ × 1 1/2″ × 3/16″	10	4690A362	4690A166	4690A167	4690A168	4690A169	4690A342	4690A322	12.52
1″ × 2″ × 3/16″	10	4690A58	4690A57	4690A56	4690A55	4690A54	4690A53	4690A52	15.26
Tapered Rolls									
3/8″ × 1″ × 1/8″	25	4688A331	4688A421	4688A422	4688A423	4688A424	4688A321	4688A311	12.02
3/8″ × 1 1/2″ × 1/8″	25	4688A332	4688A111	4688A112	4688A113	4688A114	4688A322	4688A312	13.60
1/2″ × 1″ × 1/8″	25	4688A511	4688A391	4688A381	4688A371	4688A361	4688A351	4688A341	13.22
1/2″ × 1 1/2″ × 1/8″	25	4688A333	4688A121	4688A122	4688A123	4688A124	4688A323	4688A313	14.73
5/8″ × 1″ × 1/8″	10	4688A513	4688A393	4688A383	4688A373	4688A363	4688A353	4688A343	6.46
5/8″ × 1 1/2″ × 1/8″	10	4688A334	4688A131	4688A132	4688A233	4688A134	4688A324	4688A314	7.62
3/4″ × 1 1/2″ × 3/16″	10	4688A335	4688A141	4688A142	4688A243	4688A144	4688A325	4688A315	8.10
3/4″ × 2″ × 3/16″	10	4688A514	4688A394	4688A384	4688A374	4688A364	4688A354	4688A344	9.16
7/8″ × 1 1/2″ × 3/16″	10	4688A336	4688A151	4688A152	4688A253	4688A154	4688A326	4688A316	8.63
1″ × 1″ × 3/16″	10	4688A515	4688A395	4688A385	4688A375	4688A365	4688A355	4688A345	8.63
1″ × 1 1/2″ × 3/16″	10	4688A337	4688A161	4688A162	4688A263	4688A164	4688A327	4688A317	11.77
1″ × 2″ × 3/16″	10	4688A516	4688A396	4688A386	4688A376	4688A366	4688A356	4688A346	13.75

Zirconia Alumina Rolls—Straight Rolls

Package quantity is 25 for 1/2″ diameter sizes; 10 for all other sizes.

Dia. × Lg. × Arbor Hole	36 Grit	50 Grit	60 Grit	80 Grit	Per Pkg.
1/2″ × 1″ × 1/8″	46565A21	46565A22	46565A23	46565A24	$11.61
1/2″ × 1 1/2″ × 1/8″	46565A31	46565A32	46565A33	46565A34	15.91
5/8″ × 1″ × 3/16″	46565A41	46565A42	46565A43	46565A44	7.60
5/8″ × 1 1/2″ × 3/16″	46565A51	46565A52	46565A53	46565A54	9.66
3/4″ × 1″ × 3/16″	46565A61	46565A62	46565A63	46565A64	8.29
3/4″ × 1 1/2″ × 3/16″	46565A71	46565A72	46565A73	46565A74	10.40

Ceramic Aluminum Oxide Rolls—Straight Rolls

Package quantity is 50.

Dia. × Lg. × Arbor Hole	Max. rpm	60 Grit	80 Grit	120 Grit	Per Pkg. ♦
1/4″ × 1″ × 1/8″	24,000	—	8268A31	—	$24.65
3/8″ × 1″ × 1/8″	24,000	8268A34	8268A33	8268A32	26.24
1/2″ × 1 1/2″ × 1/8″	24,000	8268A37	8268A36	8268A35	38.82
3/4″ × 1 1/2″ × 1/8″	16,000	—	8268A38	—	55.09

♦ Available in less than full-package quantities. Prices are approximately 20% higher.

Mandrels for Straight and Tapered Rolls

Roll Arbor Hole	Shank Dia.	For 3/4″ to 1″ Lg. Rolls O'all Lg.	Each	For 1 1/2″ Lg. Rolls O'all Lg.	Each	For 2″ Lg. Rolls O'all Lg.	Each
1/8″	1/8″	2 3/4″	$1.85	3″	$1.85	—	—
1/8″	1/4″	2 1/2″	1.66	2 3/4″	1.66	—	—
1/8″	1/4″	4″	3.27	4″	3.27	—	—
1/8″	1/4″	6″	4.73	6″	4.73	—	—
3/16″	1/4″	2 3/4″	1.85	3″	2.09	3 1/2″	$1.85
		4690A21		4690A24		4690A87	
		4690A81		4690A82			
		4690A83		4690A85			
		4690A84		4690A86			
		4690A28		4690A29			

122-Piece Roll Kit

You'll get 120 of the most popular 80- and 120-grit, straight and tapered aluminum oxide rolls from 1/4″ to 1/2″ diameter sizes in 1″ and 1 1/2″ lengths, plus two mandrels. Kit is furnished in a compartmented plastic case.

4690A91 ..... **Each** $70.12

High-Performance Flap Sanding Wheels

Sharp abrasive grains allow these wheels to withstand the most demanding applications. Ideal for grinding, finishing, and deburring. Backing is stiff cloth, except ***silicon carbide***, which is flexible. Use on die grinders. ***Wheels with a 1/4″-20 male quick-change threaded spindle*** are easy to install and remove. For shank adapters, see 4734A on page 2673. ***Zirconia alumina*** flap wheels have an aggressive cutting action and remove more material than aluminum oxide. Use on all types of metals and woods. ***Ceramic aluminum oxide*** flap wheels cut faster and last longer than aluminum oxide flap wheels and give a consistent finish. Use on carbon steels, cast iron forgings, nickel alloys, aerospace alloys, and some stainless steels. ***Silicon carbide*** flap wheels cut faster than aluminum oxide while under light pressure, but are not as durable. Use on nonferrous metals, glass, rubber, plastics, fibrous woods, enamels, and other soft materials.

With 1/4″ Dia. Shank

With 1/4″-20 Threaded Spindle

To Order: Please specify 60, 80, or 120 grit.

Wheel Size, Dia. × Wd.	Max. rpm	Zirconia Alumina	Each	Ceramic Aluminum Oxide	Each	Silicon Carbide	Each
With 1/4″ Shank Diameter							
1″ × 1″	30,000	3393A11	$9.20	4613A11	$6.62	3387A11	$5.33
2″ × 1″	25,000	3393A12	13.87	4613A12	10.27	3387A12	8.67
3″ × 1″	20,000	3393A13	17.96	4613A13	16.38	3387A13	10.65
With 1/4″-20 Quick-Change Threaded Spindle							
1″ × 1″	30,000	3393A21	9.35	4613A21	6.51	3387A21	5.44
2″ × 1″	25,000	3393A22	14.05	4613A22	10.27	3387A22	8.67
3″ × 1″	20,000	3393A23	18.22	4613A23	16.11	3387A23	10.63

Flap Sanding Wheels, Tools & Pads

For information about sanding abrasives, see page 2651.

Aluminum Oxide Arbor-Mount Flap Sanding Wheels

A steel center holds the flaps of these tools in place, giving them extra strength. Flaps are flexible, allowing them to conform to curves and contours while providing consistent, gouge-free finishes when sanding. As the flaps wear, new abrasive is exposed. They can be used as an alternative to wire wheels.

Flaps are made of aluminum oxide and have a strong cloth backing. Use on straight-shaft power tools, bench grinders, and pedestal grinders. Optional 1/4″ shank adapter listed below gives wheels added versatility.

Flap Wheels

Wheel Size, Dia.×Wd.	Arbor Hole	Max. rpm	40 Grit	Each	50 Grit	Each	60 Grit	Each	80 Grit	Each	120 Grit	Each	180 Grit	Each
3 1/2″ × 1″	5/8″	12,000	4654A564	$11.72	4654A551	$11.72	4654A19	$12.32	4654A21	$13.00	4654A22	$13.75	4654A23	$14.40
3 1/2″ × 2″	5/8″	12,000	4654A565	17.70	4654A552	17.70	4654A65	19.12	4654A66	19.83	4654A67	21.08	4654A68	22.98
4″ × 1″	5/8″	12,000	4654A566	13.05	4654A553	13.05	4654A81	13.75	4654A82	14.55	4654A83	15.52	4654A89	16.43
4″ × 2″	5/8″	12,000	4654A567	18.35	4654A554	18.35	4654A28	19.35	4654A29	20.02	4654A31	21.92	4654A32	23.12
5″ × 1 1/2″	5/8″	12,000	4654A568	19.44	4654A555	19.44	4654A84	20.78	4654A85	21.73	4654A86	23.63	4654A87	25.30
6″ × 1/2″	1″	6,000	4654A631	17.73	4654A632	17.40	4654A633	18.18	4654A634	18.99	4654A635	20.53	4654A636	22.72
6″ × 1″	1″	6,000	4654A569	21.58	4654A556	21.58	4654A34	22.77	4654A35	23.95	4654A36	25.95	4654A37	28.95
6″ × 2″	1″	6,000	4654A571	35.81	4654A557	35.81	4654A38	37.58	4654A39	39.92	4654A42	43.67	4654A43	48.58
6″ × 3″	1″	6,000	4654A572	42.39	4654A558	42.39	4654A94	45.50	4654A95	48.38	4654A96	53.13	4654A24	60.92
8″ × 1″	1″	4,500	4654A573	31.66	4654A559	31.66	4654A44	33.73	4654A45	35.85	4654A46	39.80	4654A47	42.88
8″ × 2″	1″	4,500	4654A574	55.70	4654A561	55.70	4654A58	59.13	4654A59	63.63	4654A61	71.30	4654A62	77.65
10″ × 1″	1 3/4″	4,000	4654A575	46.53	4654A562	46.53	4654A71	51.73	4654A74	55.75	4654A77	61.95	4654A25	69.67
12″ × 2″	1 3/4″	3,000	4654A576	116.28	4654A563	116.28	4654A49	125.53	4654A76	130.03	4654A79	140.43	4654A26	165.20

Optional 1/4″ Shank Adapters

Allow wheels to be used on portable tools that accept a 1/4″ dia. shank. Includes an adapter, hex key, and three fasteners for different wheel widths.

For Wheel Dia.		Each
3 1/2″	4654A33	$10.47
4″–8″	4654A64 ♦	10.17

♦ Not for use with 3″ wide wheels.

Reducer Bushings

For 6″ and 8″ dia. wheels with a 1″ arbor hole.

Arbor Hole		Per Pair
3/8″	4654A51	$1.17
1/2″	4654A52	1.17
5/8″	4654A53	1.17
3/4″	4654A55	1.17
7/8″	4654A54	1.17

Reducer Bushings

For 10″ and 12″ dia. wheels with a 1 3/4″ arbor hole.

Arbor Hole		Per Pair
3/4″	4654A91	$10.08
1″	4654A92	10.08
1 1/4″	4654A93	10.08

Super-Flex Aluminum Oxide Flap Sanding Wheels

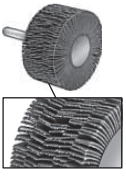

The flaps on these wheels are slit into narrow strips for a level of flexibility not found with other flap wheels. Use them on straight die grinders and other portable tools for finishing, polishing, and deburring work on difficult contours and irregular shapes.

Wheels are made of aluminum oxide for use on metal, plastic, and wood. All have a semi-flexible cloth backing and are mounted to a 1/4″ dia. shank.

Wheel Size, Dia.×Wd.	Max. rpm	120 Grit	Each	180 Grit	Each	240 Grit	Each	320 Grit	Each
2″ × 1″	20,000	47065A151	$8.04	47065A152	$8.04	47065A153	$8.04	47065A154	$8.04
2 1/2″ × 1 1/2″	18,000	47065A141	11.62	47065A142	11.62	47065A143	11.62	47065A144	11.62
3″ × 2″	9,600	47065A131	16.18	47065A132	16.18	47065A133	16.18	47065A134	16.18

Flap Sanding Tools for Internal Sanding

3-Flap Bundles

4-Flap Bundles

8-Flap Bundles

Mandrel

Polish, clean, and debur deep inside tubes and cylinders. Flaps automatically adjust (within the workpiece ID range) to the inside diameter of your workpiece and apply equal pressure to the interior walls for uniform finishes. Made of aluminum oxide with a strong cloth backing for general sanding on metal and wood (unless noted). Use on die grinders and drills.

Cloth sanding flap tools remove material aggressively. ***Combination nylon mesh and cloth sanding flap*** tools are more flexible than standard tools and provide a finer, more polished finish. **To Order:** Please specify 60, 80, 120, 180, or 240 grit.

Mandrels have a 1/4″ shank dia. Required for tools with 3- and 4-flap bundles. ***Extensions*** required for 8-flap bundle tools.

Sanding Tools and Mandrels

Workpiece ID Range	Flap Bundles	Flap Lg.	Max. rpm	Sanding Tools	Each	Mandrels	Each
Cloth Sanding Flap							
5/8″ to 1″	3	1/2″	25,000	8240A61	$4.57	8240A38	$4.25
1″ to 1 1/2″	4	3/4″	22,000	8240A33	8.57	8240A41	6.06
1 1/2″ to 2″	4	1 1/8″	20,000	8240A34	8.90	8240A41	6.06
2″ to 2 1/2″	8	1 1/8″	16,000	8240A64	15.39	—	—
2 1/8″ to 2 1/2″	4	1 5/8″	16,000	8240A35	9.31	8240A41	6.06
2 1/2″ to 3″	4	2 1/8″	15,000	8240A36	9.82	8240A41	6.06
2 5/8″ to 3″	8	1 5/8″	15,000	8240A65	16.25	—	—
3 1/8″ to 4″	4	2 5/8″	10,000	8240A37	10.14	8240A41	6.06
3 1/8″ to 4″	8	2 1/8″	10,000	8240A66	17.02	—	—
4 1/4″ to 5 1/4″	8	2 5/8″	8,000	8240A62	18.63	—	—
5 1/4″ to 5 7/8″	8	3 1/8″	8,000	8240A63	19.37	—	—
Combination Nylon Mesh and Cloth Sanding Flap— *Not for use on wood.*							
1″ to 1 1/2″	4	3/4″	22,000	6335A11	5.49	8240A41	6.06
1 1/2″ to 2″	4	1 1/8″	20,000	6335A21	8.60	8240A41	6.06
2 1/8″ to 2 1/2″	4	1 5/8″	16,000	6335A31	8.89	8240A41	6.06
2 1/2″ to 3″	4	2 1/8″	15,000	6335A41	9.05	8240A41	6.06

Internal Sanding Tool Kit

Includes 10 inner-diameter polishers and two mini flap wheels in assorted sizes and grits for 1″ to 5″ IDs, plus mandrels.

4695A12 ..... **Each** $94.10

Extensions

Use with all tools except 3-flap bundle tools. To use with 4-flap bundle tools, use the appropriate mandrel. To use with 8-flap bundle tools, thread extensions directly into the hub. No mandrels necessary.

Dia.×Lg.		Each
1/4″ × 2″	8240A39	$1.22
1/4″ × 4″	8240A42	3.20
1/4″ × 6″	8240A43	3.51
1/4″ × 8″	8240A44	5.82

Aluminum Oxide Square and Cross Sanding Pads

Square Pad

Cross Pad

With folded over bands of cloth-backed sanding abrasive, these pads can work on interior surfaces of pipes and tubes as well as on an angle to reach into corners and slots. Pads are made of aluminum oxide. Use on die grinders and drills.

Square pads provide fast cutting and won't leave swirl marks because of the alternating stroke of the pad corners.

Cross pads allow you to see through the pad when in motion to better control stock removal.

To Order: Please specify 60, 80, or 120 grit.

Mandrels required. All have a 1/4″ dia. shank.

Pad Size, Lg.×Wd.×Thick.	Fits Mandrel Size	Max. rpm	Pads	Each	Mandrels	Each
Square Pads						
1 1/2″ × 1 1/2″ × 1/2″	1/4″-20	23,000	8219A21	$2.64	46665A32	$4.29
2″ × 2″ × 1/2″	1/4″-20	23,000	8219A22	3.46	46665A32	4.29
3″ × 3″ × 1/2″	1/4″-20	14,000	8219A23	5.48	46665A32	4.29
Cross Pads						
1 1/2″ × 1 1/2″ × 1/4″	8-32	23,000	8219A11	1.07	46665A31	4.29
2″ × 2″ × 1/4″	8-32	23,000	8219A12	1.17	46665A31	4.29
3″ × 3″ × 1/4″	1/4″-20	14,000	8219A13	1.98	46665A32	4.29

For information about sanding abrasives, see page 2651.

Aluminum Oxide Shank-Mount Flap Sanding Wheels

Reduce gouging and other surface deformations while achieving a uniform finish with these flexible flap wheels. As flaps wear, new abrasive is exposed. Wheels are made of aluminum oxide for sanding on metal and wood. Use on die grinders and similar portable tools. Wheels with a 1/8″ shank dia. have a flexible cloth backing; all others have a stiff cloth backing.

Wheels with quick-change threaded spindle are easy to install and remove without tools. They have a 1/4″-20 male threaded spindle. Shank adapters are required and sold separately below.

Shank Mount

Quick Change

Adapter for Drill Chucks and Collets

Adapter for Motor Spindles

11-Pc. Quick-Change Threaded Spindle Assortment

Flap Sanding Wheels

Wheel Size, Dia. × Wd.	Max. rpm	60 Grit	80 Grit	120 Grit	180 Grit	240 Grit	320 Grit	Each 1-9	Each 10-Up
Wheels with 1/8″ Shank Diameter									
3/8″ × 3/8″	40,000	4734A861	4734A611	4734A617	4734A624	4734A631	4734A637	$4.10	$3.43
5/8″ × 5/8″	37,000	4734A862	4734A541	4734A542	4734A543	4734A544	4734A545	4.17	3.54
5/8″ × 3/4″	37,000	4734A863	4734A612	4734A618	4734A625	4734A632	4734A638	4.38	3.67
3/4″ × 3/16″	35,000	4734A864	4734A613	4734A619	4734A626	4734A633	4734A639	4.17	3.50
3/4″ × 3/8″	35,000	4734A865	4734A547	4734A548	4734A549	4734A551	4734A552	4.17	3.50
3/4″ × 1/2″	35,000	4734A866	4734A614	4734A621	4734A627	4734A634	4734A641	4.38	3.72
3/4″ × 5/8″	35,000	4734A867	4734A554	4734A556	4734A557	4734A558	4734A559	4.38	3.67
3/4″ × 3/4″	35,000	4734A868	4734A615	4734A622	4734A628	4734A635	4734A642	4.50	3.77
13/16″ × 1/8″	30,000	4734A869	4734A561	4734A562	4734A563	4734A564	4734A565	4.29	3.60
13/16″ × 3/16″	30,000	4734A871	4734A567	4734A568	4734A569	4734A571	4734A572	4.29	3.64
13/16″ × 3/8″	30,000	4734A872	4734A616	4734A623	4734A629	4734A636	4734A643	4.23	3.63
Wheels with 1/4″ Shank Diameter									
1″ × 5/8″	30,000	4734A651	4734A659	4734A668	4734A911	_____	4734A818	4.02	3.41
1″ × 1″	30,000	4734A652	4734A661	4734A669	4734A677	_____	4734A819	4.42	3.76
13/16″ × 1/4″	25,000	4734A922	4734A923	4734A924	4734A925	_____	4734A828	4.65	3.95
13/16″ × 1/2″	25,000	4734A653	4734A662	4734A671	4734A678	_____	4734A829	4.79	4.07
13/8″ × 5/8″	30,000	4734A574	4734A575	4734A576	4734A912	_____	4734A837	4.29	3.64
11/2″ × 1/2″	25,000	4734A461	4734A462	4734A463	4734A464	_____	4734A838	5.17	4.39
11/2″ × 1″	25,000	4734A654	4734A663	4734A672	4734A679	_____	_____	5.73	4.87
2″ × 1/2″	25,000	4734A471	4734A472	4734A473	4734A913	_____	4734A839	6.02	5.11
2″ × 3/4″	25,000	4734A655	4734A664	4734A673	4734A681	_____	4734A847	6.54	5.55
2″ × 1″	25,000	4734A656	4734A665	4734A674	4734A682	_____	4734A848	7.10	6.02
2″ × 1 1/2″	25,000	4734A581	4734A583	4734A584	4734A451	_____	4734A858	8.15	6.92
2 1/2″ × 1″	20,000	4734A657	4734A666	4734A675	4734A683	_____	4734A859	8.00	6.79
2 1/2″ × 1 1/2″	20,000	4734A586	4734A587	4734A588	_____	_____	4734A918	8.71	7.40
3″ × 1/2″	20,000	4734A475	4734A476	4734A477	4734A914	_____	4734A919	6.88	5.84
3″ × 1″	20,000	4734A658	4734A667	4734A676	4734A684	_____	4734A926	8.65	7.35
3″ × 2″	12,000	4734A932	4734A933	4734A934	4734A935	_____	4734A927	14.81	12.57
Wheels with Quick-Change Threaded Spindle									
1″ × 5/8″	30,000	4734A591	4734A592	4734A593	4734A594	4734A411	4734A412	4.29	3.64
1″ × 1″	30,000	4734A11	4734A21	4734A31	4734A41	4734A71	4734A413	4.42	3.76
13/8″ × 5/8″	30,000	4734A12	4734A22	4734A32	4734A42	4734A414	_____	4.29	3.64
15/8″ × 1/2″	25,000	4734A812	4734A813	4734A814	4734A815	4734A816	4734A817	5.17	4.39
15/8″ × 1″	25,000	4734A13	4734A23	4734A33	4734A43	4734A415	4734A416	5.71	4.85
2″ × 1/2″	25,000	4734A14	4734A24	4734A34	4734A44	4734A417	4734A418	6.02	5.11
2″ × 3/4″	25,000	4734A822	4734A823	4734A824	4734A825	4734A826	4734A827	6.54	5.55
2″ × 1″	25,000	4734A15	4734A25	4734A35	4734A45	4734A72	4734A419	7.10	6.02
2″ × 1 1/2″	25,000	4734A596	4734A597	4734A598	4734A421	4734A915	4734A916	8.27	7.02
2 1/2″ × 1/4″	20,000	4734A832	4734A833	4734A834	4734A835	4734A836	_____	5.79	4.91
2 1/2″ × 3/8″	20,000	4734A842	4734A843	4734A844	4734A845	4734A846	_____	5.98	5.08
2 1/2″ × 1/2″	20,000	4734A16	4734A26	4734A36	4734A46	4734A73	4734A917	6.42	5.45
2 1/2″ × 1″	20,000	4734A17	4734A27	4734A37	4734A47	4734A74	4734A422	8.00	6.79
3″ × 1/2″	20,000	4734A18	4734A28	4734A38	4734A48	4734A423	4734A424	7.00	5.94
3″ × 3/4″	20,000	4734A852	4734A853	4734A854	4734A855	4734A856	4734A857	8.00	6.79
3″ × 1″	20,000	4734A19	4734A29	4734A39	4734A49	4734A75	4734A425	8.63	7.33

5-Pc. 1/8″ Shank Dia. Assortment

Contains five commonly used 3/8″ to 13/4″ dia. flap wheels in various grits.

4694A41 ..... **Each** $25.98

10-Pc. 1/4″ Shank Dia. Assortment

Contains 10 commonly used 1″ to 3″ dia. flap wheels in various grits.

4694A42 ..... **Each** $63.74

11-Pc. Quick-Change Threaded Spindle Assortment

Contains 10 popular 1″ to 3″ dia. flap wheels in various grits, plus a 1/4″ shank adapter (4734A51 shown below).

4694A12 ..... **Each** $59.06

Shank Adapters for Quick-Change Spindles

Fit Drill Chucks and Collets

Shank Dia.	Female Thread Size	Lg.		Each
1/8″	1/4″-20	15/16″	4734A54	$3.50
1/4″	1/4″-20	15/16″	4734A51	1.33
1/4″	1/4″-20	4 7/16″	4734A55	5.35

Fit Drill Chucks and Collets

Shank Dia.	Female Thread Size	Lg.		Each
1/4″	1/4″-20	6 1/2″	4734A56	$5.87
1/4″	1/4″-20	8 1/2″	4734A57	8.94

Thread Directly to Motor Spindle

Female Thread Sizes	Lg.		Each
1/4″-20 and 1/4″-20	1 5/8″	4734A53	$5.75
3/8″-24 and 1/4″-20	1 5/8″	4734A52	5.75

Fine-Finish Aluminum Oxide and Nylon Mesh Flap Sanding Wheels

With alternating cloth sanding and nylon mesh abrasive flaps, these wheels are more flexible and produce finer finishes than ordinary all-cloth flap sanding wheels. Use for light deburring, finishing, and polishing on metal and wood.

High-density wheels have a 4:1 ratio of cloth sanding flaps to nylon mesh flaps, providing a more aggressive cutting action and greater material removal than medium-density wheels.

Medium-density wheels have a 1:1 ratio of cloth sanding flaps to nylon mesh flaps for an extra-smooth blending action.

To Order: For cloth sanding flaps, please specify 60, 80, 120, 180, 240, or 320 grit.

Wheel with a 1/4″ Shank

Wheel with Arbor Hole

Flap Wheels

Wheel Size, Dia. × Wd. × Shank/Arbor Hole	Max. rpm	High Density	Medium Density	Each
2″ × 1″ × 1/4″ Shank	12,000	4634A612	4653A712	$9.30
2″ × 1 1/2″ × 1/4″ Shank	12,000	4634A622	4653A721	7.45
3″ × 1″ × 1/4″ Shank	12,000	4634A631	4653A731	11.46
3″ × 2″ × 3/8″ Arbor	12,000	4634A671	4653A481	11.48
4″ × 2″ × 5/8″ Arbor	12,000	4634A541	4653A441	28.16
6″ × 1″ × 1″ Arbor	6,000	4634A551	4653A451	34.10
6″ × 2″ × 1″ Arbor	6,000	4634A561	4653A461	38.00
6″ × 3″ × 1″ Arbor	6,000	4634A571	4653A471	37.22

Optional 1/4″ Shank Adapter

Allows you to use plain arbor hole wheels on portable tools that accept a 1/4″ dia. shank. Not for 3″ wide wheels.

For Wheel Dia.		Each
4″ to 6″	4654A64	$10.17

Reducer Bushings

Designed for 6″ wheels with a 1″ arbor hole.

Arbor Hole		Per Pair	Arbor Hole		Per Pair
3/8″	4654A51	$1.17	3/4″	4654A55	$1.17
1/2″	4654A52	1.17	7/8″	4654A54	1.17
5/8″	4654A53	1.17			

About Nylon Mesh Abrasives

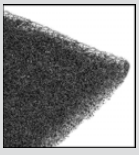

Nylon mesh abrasives are used mainly as surface finishing products. They change the work surface without removing or damaging the base material. You can use them as an alternative to wire brushes, steel wool, sandblasting, buffs and compounds, rubber bonded abrasives, and sandpaper.

Also known as nonwoven abrasives, they are made of abrasive grain and nylon fibers. Flexibility depends on the density of the mesh. Densities range from soft (hand pads and rolls) to hard (wheels and some discs). Use wet and dry. They are long lasting, nonrusting, nonconductive, and clog resistant.

Nylon mesh products are embedded with either aluminum oxide or silicon carbide abrasive grains. ***Aluminum oxide*** is more durable and more aggressive on hardened steel parts. ***Silicon carbide*** cuts faster and produces a finer finish on most materials.

The following chart is a general guide as to which pads are best suited for certain applications. However, depending on the condition of the workpiece, it may be necessary to use several grades in a multistep process to achieve your desired result.

	Aluminum Oxide			***Silicon Carbide***				
	Coarse Grade	**Medium Grade**	**Fine/Very Fine Grade**	**Extra Coarse Grade**	**Coarse Grade**	**Medium Grade**	**Fine/Very Fine Grade**	**Ultra/Micro Fine Grade**
Ferrous Metals								
Heavy Cleaning	●			●	●			
Deburring	●		●		●		●	
Removing Paint and Rust		●				●		
Blending		●	●			●	●	●
Finishing/Polishing			●				●	●
Nonferrous Metals, Plastic, Wood								
Heavy Cleaning	●			●	●			
Deburring	●		●		●	●		
Removing Paint and Rust		●				●	●	
Blending			●			●		●
Finishing/Polishing			●				●	●

3M Scotchbrite Nylon Mesh Abrasive Hand Pads

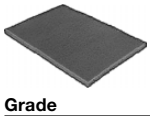

Use these premium Scotchbrite hand pads for cleaning, deburring, blending, and finishing applications. Either use by hand or cut them to size to use with portable sanders. Pads are 6″×9″ and approximately ¼″ thick.

Grade	3M No.	Color	Applications	Pkg. Qty.		Per Pkg.♦
Aluminum Oxide						
Heavy Duty (Medium)	7440	Tan	Aggressive action for deburring, blending, and removing rust.	10	46365A36	$29.71
Clean/Scour (Very Fine)	96	Green	For removing light stains, corrosion, and oxidation.	20	46365A31	18.63
All Purpose (Very Fine)	7447	Maroon	More abrasive than Clean/Scour. For light deburring and general cleaning.	20	46365A33	22.54
Silicon Carbide						
Blending (Medium)	7446	Gray	Aggressive action for cleaning, blending, and light deburring.	10	46365A38	19.76
Clean/Finish (Ultra Fine)	6448	Dk. Gray	A good choice for light cleaning and blending jobs.	20	46365A35	24.10
Final Finish (Ultra Fine)	7448	Lt. Gray	For final finishing and light cleaning.	20	46365A32	24.57

♦ Available in less than full-package quantities. Prices are approximately 15% higher.

Nylon Mesh Abrasive Hand Pads

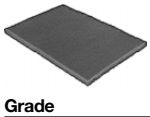

Sand, scrub, debur, and finish with these hand pads. Similar to the other pads shown on this page, these hand pads can also be cut to size to use with portable sanders. Pads are 6″×9″ and approximately ¼″ to ½″ thick.

Hand-pad holder grips hand pads firmly. Pads must be cut to 3″×6″ to fit holder.

21-piece hand-pad kit includes five Heavy Duty aluminum oxide pads, five Clean/Scour aluminum oxide pads, five All Purpose aluminum oxide pads, five Clean/Finish silicon carbide pads, and one hand-pad holder.

Grade	Color	Applications	Pkg. Qty.		Per Pkg.♦
Aluminum Oxide					
Heavy Duty (Medium)	Brown	Aggressive action for deburring, blending, and removing rust.	20	46365A86	$39.72
Clean/Scour (Very Fine)	Green	For removing light stains, corrosion, and oxidation.	20	46365A71	14.94
All Purpose (Very Fine)	Maroon	More abrasive than Clean/Scour grade. For light deburring and general cleaning.	20	46365A73	14.79
Long Life (Very Fine)	Maroon	Less flexible than All-Purpose grade. For cleaning and deburring.	20	46365A79	13.56
Silicon Carbide					
Blending (Medium)	Gray	For aggressive cleaning, blending, and light deburring.	20	46365A78	24.83
All Purpose (Very Fine)	Gray	For removing rust and oxidation and blending around welds.	20	46365A87	22.62
Clean/Finish (Ultra Fine)	Gray	A good choice for blending and general cleaning jobs.	20	46365A85	16.03
Final Finish (Micro Fine)	Gray	For final finishing and light cleaning.	20	46365A72	14.94
Hand-Pad Holder				46635A71 Each	$4.78
21-Piece Hand-Pad Kit				46635A75 Each	$32.02

♦ Available in less than full-package quantities. Prices are approximately 15% higher.

Nylon Mesh Abrasive Rolls

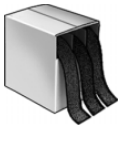

You can tear these nylon mesh rolls and use them by hand or cut them to size for use on portable sanders.

Roll assortment comes with three of the most popular rolls in a dispenser pack. Includes one Long-Life (Fine) aluminum oxide roll, one All-Purpose (Very Fine) aluminum oxide roll, and one Final Finish (Micro Fine) silicon carbide roll. All rolls are 2″ Wd.×15 ft. long.

Grade	Color	***2″×30-ft. Rolls***	Per Roll	***4″×30-ft. Rolls***	Per Roll	***6″×30-ft. Rolls***	Per Roll
Aluminum Oxide							
Heavy Duty (Medium)	Maroon	4659A69	$26.16	4659A85■	$105.43	4659A87	$167.73
Long Life (Fine)	Maroon	4659A68★	15.52	4659A59	46.88	4659A86	90.26
Clean/Scour (Very Fine)	Green	4659A41	14.03	4659A84	39.62	4659A51	42.08
All Purpose (Very Fine)	Maroon	4659A42	17.97	4659A71	35.84	4659A73	66.42
High Strength (Very Fine)	Maroon	4659A81	27.45	4659A82	66.27	4659A83	95.83
Silicon Carbide							
Blending (Medium)	Gray	4659A46	20.82	4659A88	91.65	4659A52	62.07
All Purpose (Very Fine)	Gray	4659A45	16.08	4659A72	42.56	4659A74	63.47
Clean/Finish (Ultra Fine)	Gray	4659A44	18.08	4659A62	42.63	4659A91	81.74
Final Finish (Micro Fine)	Gray	4659A43	14.55	4659A61	28.28	4659A89	80.94
Roll Assortment						46335A21 Each	$56.70

★ Grade is Long Life (Very Fine). ■ Color is brown.

For information about nylon mesh abrasives, see page 2674.

Nylon Mesh Abrasive Heavy Stripping and Cleaning Discs

Made with extra coarse nylon mesh, these black heavy duty discs handle the toughest cleaning jobs. All discs are impregnated with silicon carbide.

Standard discs aggressively remove surface coatings and clean welds. Use on metal, rubber, plastic, hard plastic, and wood.

Discs for stainless steel eliminate discoloration from heat buildup. Can also be used on titanium and Inconel.

(A) Right-Angle Discs— Have nylon mesh bonded to a rigid fiberglass backing. Use with right-angle grinders on flat and curved surfaces.

(B) Quick-Change Discs— A 3M Roloc-style plastic fastener on the disc allows quick changes from one disc to another. Discs attach to a 1/4″ dia. shank disc holder (required; sold separately). Use with right-angle die grinders on flat or curved surfaces.

(C) Shank-Mount Discs— Come mounted on 1/4″ dia. shank. Use on drills.

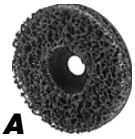
A

B

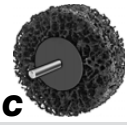
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(A) Right-Angle Discs

Disc Dia.	Arbor Hole	Max. rpm		Each
Standard				
4″	5/8″	12,400	4748A31	$9.55
4 1/2″	7/8″	11,000	4748A28	11.02
5″	7/8″	9,800	4748A34	12.15
7″	7/8″	7,000	4748A35	17.51
For Stainless Steel				
4 1/2″	7/8″	11,000	8236A13	16.75

(B) Quick-Change Discs

Disc Dia.	Max. rpm		Each
Standard			
2″	18,000	4729A11	$3.68
3″	15,000	4729A12	7.00
For Stainless Steel			
2″	10,500	8236A11	3.13
3″	7,000	8236A12	5.04
Disc Holder for 2″ Dia. Disc		46325A92	10.85
Disc Holder for 3″ Dia. Disc		46325A93	11.92

(C) Shank-Mount Discs— 1/4″ dia. shank

Disc Dia. × Thick.	Max. rpm		Each
Standard			
3″ × 1/2″	10,500	4718A21	$7.53
3″ × 1″	10,500	4718A22	11.13
4″ × 1/2″	8,000	4718A23	7.16
4″ × 1″	8,000	4718A24	17.72

Nylon Mesh Abrasive Raised-Hub Discs

A raised hub gives these discs the necessary room to work on right-angle grinders. Made of multiple layers of compressed nylon mesh bonded together and cut to shape. Discs are 1/2″ thick.

Aluminum Oxide— More durable than silicon carbide, causes less discoloration on aluminum, and acts more aggressively on hardened steel. Ideal for removing heavy material such as rust and surface imperfections, and for deburring. Use on metal.

Silicon Carbide— Cuts faster than aluminum oxide and gives a finer finish on most surfaces. Use on nonferrous metals, glass, rubber, plastics, soft woods, enamel, and other soft materials.

Soft and *medium density* discs conform to surfaces better than hard density. Use for blending tool marks and giving a bright surface finish. *Hard density* discs are more durable for aggressive material removal.

Disc Dia.	Arbor Hole	Grade	Density	Max. rpm		Each
Aluminum Oxide (Light Gray)						
4 1/2″	7/8″	Coarse	Hard	10,000	4721A15	$25.29
4 1/2″	7/8″	Medium	Hard	10,000	4721A14	25.29
Silicon Carbide (Dark Gray)						
4 1/2″	7/8″	Medium	Hard	10,000	4721A13	25.29
4 1/2″	7/8″	Fine	Medium	10,000	4721A12	21.21
4 1/2″	7/8″	Fine	Soft	10,000	4721A11	19.41

Nylon Mesh Abrasive Raised-Hub Flap Discs

A nylon mesh version of our popular flap sanding discs, these discs have overlapping flaps of nylon mesh abrasive material that are impregnated with aluminum oxide and mounted in layers on a fiberglass hub. This creates a cushioned effect that makes these discs ideal for blending and other finishing tasks. Raised-hub design allows you to use these discs on right-angle grinders.

Disc Dia.	Arbor Hole	Grade	Color	Max. rpm		Each
4 1/2″	7/8″	Coarse	Brown	13,300	4661A23	$15.57
4 1/2″	7/8″	Medium	Maroon	13,300	4661A22	15.57
4 1/2″	7/8″	Very Fine	Blue	13,300	4661A21	15.57

Nylon Mesh Abrasive Quick-Change Discs

Make quick and simple changes from one disc to another. All discs are impregnated with aluminum oxide. For use on wood and metal with right-angle die grinders. Discs and the required disc holders are sold separately.

Choose from the following grades: ***Coarse—*** For light deburring and removal of heavy rust and surface imperfections. ***Medium—*** For cleaning, blending, and rust removal. ***Very Fine*** and ***Fine—*** For light scratch removal, finishing, and polishing.

Surface-Conditioning Discs for Flat Surfaces— The best choice for most surface preparation work. The extra stiffness makes these discs more aggressive than finishing and polishing discs. Great for cleaning and light deburring.

Finishing and Polishing Discs for Contoured and Flat Surfaces— Thicker, more pliable, and less aggressive than surface-conditioning discs, these discs are best suited for light duty work.

To Order: Please specify the type of disc fastener: Style A (Metal) or Style B (Plastic). *Style A* is a metal fastener equivalent to Standard Abrasive SocAtt, Norton Speed-Lok TS, and 3M TSM styles. *Style B* is a plastic fastener equivalent to 3M Roloc and Norton Speed-Lok TR styles.

Disc with Plastic Fastener

Surface-Conditioning Disc

Finishing and Polishing Disc

Discs

Disc Dia.	Pkg. Qty.	Coarse (Brown) Partial Pkg.	Coarse (Brown) Full Pkg.	Medium (Maroon) Partial Pkg.	Medium (Maroon) Full Pkg.	Very Fine (Blue) Partial Pkg.	Very Fine (Blue) Full Pkg.
Surface-Conditioning Discs for Flat Surfaces							
1 1/2″	50	46325A649	$0.49	$0.39	46325A645	$0.55	$0.44	46325A641	$0.55	$0.44
2″	50	46325A651	1.12	.95	46325A646	1.04	.88	46325A642	1.04	.88
3″	25	46325A652	1.80	1.53	46325A647	1.68	1.43	46325A643	1.68	1.43
4″	10	46325A653	2.91	2.48	46325A648	2.46	2.10	46325A644	2.48	2.11
Finishing and Polishing Discs for Contoured and Flat Surfaces		Coarse (Maroon)		Medium (Maroon)		Fine (Maroon)	
1 1/2″	50	46325A669	.68	.55	46325A665	.46	.37	46325A661	.45	.36
2″	50	46325A671	1.09	.93	46325A666	.84	.71	46325A662	.79	.67
3″	25	46325A672	1.95	1.57	46325A667	1.74	1.47	46325A663	1.64	1.39
4″	10	46325A673	1.93	1.63	46325A668	1.50	1.27	46325A664	1.32	1.12

Choose from two styles of disc fasteners:

Style A Metal Fastener

Style B Plastic Fastener

Disc Holders

Holders have a rubber backing and 1/4″ dia. shank.

For Disc Dia.	Max. rpm	Backing Density	For Discs with Style A Fastener	Each	For Discs with Style B Fastener	Each
1 1/2″	30,000	Medium	4701A71	$12.71	46325A91	$9.85
2″	30,000	Soft	4701A72	14.17	46325A92	10.85
3″	20,000	Soft	4701A73	15.30	46325A93	11.92
4″	15,000	Medium	4701A74	23.25	46325A94	17.56

26-Piece Aluminum Oxide Surface-Conditioning Disc Kits

Each kit comes with 24 discs (four each of coarse, medium, and very fine grades in 2″ and 3″ dia. sizes) plus one each of 2″ and 3″ dia. disc holders with 1/4″ dia. shank.

Fastener Style		Per Kit
Style A (Metal)	4799A91	$43.44
Style B (Plastic)	4799A92	44.25

Nylon Mesh Abrasive Discs, Wheels & Belts

For information about nylon mesh abrasives, see page 2674.

Aggressive Nylon Mesh Abrasive Quick-Change Discs

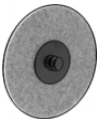

Embedded with sharp, fast-sanding ceramic aluminum oxide, these discs debur, clean, and blend faster than other discs. Grain particles continuously produce new sharp cutting edges. For use on carbon steels, aerospace alloys, nickel alloys, aluminum, cast iron forgings, and some stainless steels. Have a plastic fastener equivalent to 3M Roloc and Norton Speed-Lok TR styles. Use on right-angle die grinders. Color is blue.

Disc holders are required and sold separately. All have a medium density rubber backing and 1/4″ dia. shank.

Choose from the following grades: ***Coarse—*** For deburring and removing heavy rust and surface imperfections. ***Medium—*** For moderate to light cleaning, blending, and surface material removal.

Disc Dia.	Coarse Discs	Medium Discs	Each	Disc Holders Max. rpm		Each
2″	4682A12	4682A11	$1.41	30,000	46325A92	$10.85
3″	4682A14	4682A13	2.88	20,000	46325A93	11.92

See-Thru Nylon Mesh Abrasive Discs

The holes in these discs allow you to see the surface as you're sanding it, so you can work faster and more accurately. Discs are made of aluminum oxide and are for use on metal and wood. Use on right-angle grinders that have a 5/8″-11 spindle.

Backup pads (required; sold separately) include a 5/8″-11 locknut.

Choose from the following grades: ***Coarse—*** Excellent for deburring and removing heavy rust and surface imperfections. Color is brown. ***Medium—*** For moderate to light cleaning and removing rust. Color is maroon. ***Very Fine—*** For finishing, polishing, and preparing surfaces for painting. Color is blue.

To Order: Please specify coarse, medium, or very fine grade.

Discs Disc Dia.		Each 1-9	10-Up	Backup Pads Max. rpm		Each
4 1/2″	46795A64	$2.76	$2.48	13,000	46795A24	$10.52
5″	46795A65	3.06	2.75	13,000	46795A25	16.35
7″	46795A66	4.90	4.41	8,600	46795A26	24.41

Nylon Mesh Abrasive Hook and Loop Discs

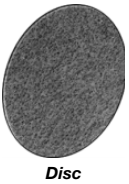

Disc

Backup Pad with Disc

The hook-and-loop style fasteners on these discs serve as an alternative to traditional disc fasteners by securely grabbing the backup pad (required; sold separately). Discs are flexible and work best on flat, curved, and contoured surfaces. They are embedded with aluminum oxide. Use on metal and wood with right-angle grinders, right-angle die grinders, and dual-action sanders.

Choose from the following grades: ***Coarse—*** For deburring and removing heavy rust and surface imperfections. Color is brown. ***Medium—*** For moderate to light cleaning, blending, and removing surface material. Color is maroon. ***Very Fine—*** For removing fine scratch marks and lines, final finishing, polishing, and preparing surfaces for painting. Color is blue.

To Order: Please specify coarse, medium, or very fine grade.

Discs

Disc Dia.	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
2″	80	46555A51	$0.89	$0.75
3″	60	46555A52	1.65	1.40
4″	40	46555A53	2.24	1.90
4 1/2″	40	46555A58	2.73	2.32
5″	40	46555A54	2.64	2.24
6″	30	46555A55	3.98	3.37
7″	25	46555A56	5.58	4.74
8″	20	46555A57	6.97	5.92

26-Piece Disc Kit

Contains 24 discs (four each of coarse, medium, and very fine grades in 2″ and 3″ dia.) plus one 2″ and one 3″ dia. backup pad with 1/4″ dia. shank.

4799A88 ..... **Per Kit** $39.85

Backup Pads

Use for easy press-on mounting of discs.

For Disc Dia.	Max. rpm		Each
With 1/4″ Shank			
1 1/2″	25,000	46595A31	$6.19
2″	23,000	46595A32	6.19
3″	20,000	46595A33	7.29
4″	18,000	46595A34	8.56
With 5/16″-24 Male Threaded Shank			
4″	10,000	46595A35	14.60
5″	10,000	46595A36	16.60
6″	10,000	46595A39	17.88
With 5/8″-11 Female Threaded Arbor			
4 1/2″	10,000	46595A43	23.40
5″	8,000	46595A37	23.40
6″	8,000	46595A38	24.15
7″	6,000	46595A41	24.92
8″	6,000	46595A42	26.17

Nylon Mesh Abrasive Shank-Mount Flap Wheels

The flexibility of these wheels makes them ideal for uneven and irregular surfaces. Wheels are impregnated with aluminum oxide, and are less aggressive than standard flap sanding wheels. Use on metal and wood. They're mounted on a 1/4″ diameter shank for use on straight die grinders. Color is maroon.

Choose from the following grades: ***Medium—*** For cleaning, removing oxides, and deglossing plastic. ***Very Fine—*** Gives uniform finishes.

Wheel Size, Dia. × Thick.	Max. rpm	Medium	Very Fine	Each
2″ × 1″	12,000	46735A42	46735A41	$9.22
3″ × 1″	12,000	46735A44	46735A43	12.18
3″ × 2″	12,000	46735A45	———	25.17

Nylon Mesh Abrasive Belts

Belt Length

Use these nylon mesh belts with belt sanders to debur, clean, finish, and polish metal and wood. Belts are made of aluminum oxide and are waterproof.

Choose from the following grades: ***Coarse—*** For deburring and removing heavy rust and surface imperfections. ***Medium—*** For light cleaning and blending. ***Very Fine—*** For removing fine scratch marks and lines, final finishing, polishing, and preparing surfaces for painting.

Belt Size, Wd. × Lg.	Coarse (Brown)	Each	Medium (Maroon)	Very Fine (Blue)	Each
1/4″ × 18″	47505A413	$3.97	47505A412	47505A411	$3.40
1/4″ × 24″	47505A416	4.73	47505A415	47505A414	3.80
3/8″ × 13″	47505A419	3.74	47505A418	47505A417	3.40
1/2″ × 12″	47505A553	4.67	47505A552	47505A551	4.67
1/2″ × 18″	47505A311	5.11	47505A211	47505A111	5.11
1/2″ × 24″	47505A312	5.46	47505A212	47505A112	5.46
3/4″ × 18″	47505A313	7.75	47505A213	47505A113	7.62
3/4″ × 20 1/2″	47505A314	8.17	47505A214	47505A114	8.17
1″ × 18″	47505A423	6.60	47505A422	47505A421	6.06
1″ × 30″	47505A315	10.70	47505A215	47505A115	10.70
1″ × 42″	47505A316	12.38	47505A216	47505A116	12.38
1 1/8″ × 21″	47505A611	7.15	47505A612	47505A613	6.30
1 1/2″ × 60″	47505A614	22.62	47505A615	47505A616	17.41
2″ × 18 15/16″	47505A426	11.14	47505A425	47505A424	11.47
2″ × 42″	47505A617	14.66	47505A618	47505A619	15.24
2″ × 48″	47505A318	21.73	47505A218	47505A118	18.58
2″ × 60″	47505A319	23.13	47505A219	47505A119	22.77
2″ × 72″	47505A559	$25.98	47505A558	47505A557	$25.98
2″ × 132″	47505A563	48.08	47505A562	47505A561	49.62
2 1/2″ × 60″	47505A322	33.59	47505A222	47505A122	31.93
2 3/4″ × 15 1/2″	47505A346	18.71	47505A246	47505A146	16.45
3″ × 10 11/16″	47505A429	15.16	47505A428	47505A427	12.42
3″ × 18″	47505A433	14.51	47505A432	47505A431	13.04
3″ × 21″	47505A621	16.08	47505A622	47505A623	14.18
3″ × 24″	47505A324	18.98	47505A224	47505A124	16.61
3″ × 132″	47505A569	67.02	47505A568	47505A567	65.28
3 1/2″ × 15 1/2″	47505A348	19.95	47505A248	47505A148	19.95
4″ × 24″	47505A327	26.78	47505A227	47505A127	26.78
4″ × 36″	47505A352	33.90	47505A252	47505A152	31.22
4″ × 54″	47505A443	45.50	47505A442	47505A441	38.81
4″ × 60″	47505A446	48.15	47505A445	47505A444	41.00
4″ × 132″	47505A436	91.48	47505A435	47505A434	87.00
6″ × 48″	47505A329	56.42	47505A229	47505A129	56.42

For information about nylon mesh abrasives, see page 2674.

Nylon Mesh Abrasive Shank-Mount Bits

A B C D

Mounted on a shank, these bits are ready to debur, clean, blend, and polish when used on die and straight-shaft grinders. Bits are 1½″ long.

Choose from the following grades: ***Coarse***—Aggressive for tough deburring and cleaning. Bits are hard density. Abrasive is aluminum oxide. Color is dark gray. ***Medium***—For deburring and polishing. Bits are hard density. Abrasive is aluminum oxide. Color is blue. ***Fine***—For blending tool marks, scratches, and producing a high luster finish. Bits are medium density. Abrasive is silicon carbide. Color is black.

To Order: Please specify coarse, medium, or fine grade.

	Shape No.	Head Dia.	Head Lg.	Max. rpm		Each
With 1/8″ Shank Bit						
A	B90	1/2″	1/2″	34,500	**4630A14**	$3.52
B	B121	1/2″	1/2″	45,300	**4630A15**	3.88
C	B52	3/8″	3/4″	45,300	**4630A13**	3.45
D	W160	1/4″	1/4″	81,300	**4630A16**	2.21
D	W163	1/4″	1/2″	60,000	**4630A17**	2.62
D	W183	1/2″	1/4″	51,700	**4630A18**	2.79
D	W185	1/2″	1/2″	34,500	**4630A19**	3.55
With 1/4″ Shank Bit						
A	A21	1″	1″	34,500	**4630A11**	9.07
B	A25	1″	1″	35,600	**4630A12**	9.00
D	W220	1″	1″	25,500	**4630A21**	7.90

Nylon Mesh Abrasive Sleeves

Mount these sleeves on rubber drums (see page 2670) to debur, blend, and polish both flat and curved surfaces. Sleeves are made of aluminum oxide, and are for use on metal and wood. Use wet and dry.

Choose from the following grades: ***Coarse***—For deburring and removing heavy rust and surface imperfections. ***Medium***—For light cleaning, blending, and removing rust. ***Very Fine***—For finishing and polishing.

Size, ID×Wd.	Coarse (Brown)	Each	Medium (Maroon)	Each	Very Fine (Green)	Each
1″ ×1″	**4657A13**	$1.93	**4657A12**	$1.67	**4657A11**	$1.67
1″ ×1½″	**4657A16**	2.87	**4657A15**	2.45	**4657A14**	2.45
1½″×1″	**4657A19**	2.69	**4657A18**	2.28	**4657A17**	2.28
1½″×1½″	**4657A23**	4.00	**4657A22**	3.42	**4657A21**	3.42
2″ ×1″	**4657A26**	3.49	**4657A25**	2.94	**4657A24**	2.94
2″ ×1½″	**4657A29**	5.23	**4657A28**	4.38	**4657A27**	4.38
3″ ×1″	**4657A33**	5.11	**4657A32**	4.26	**4657A31**	4.26
3″ ×3″	**4657A36**	14.79	**4657A35**	12.63	**4657A34**	12.63

Nylon Mesh Abrasive Shank-Mount Tools for Internal and Irregular Surfaces

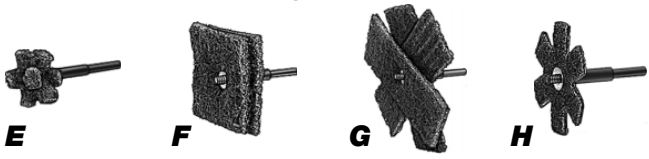

E F G H

With their flexibility and unique shapes, these tools conform to the inside of hard-to-reach spots. Made of aluminum oxide. Use with straight-shaft grinders and drills to clean and finish metal and wood. Mandrels (required; sold separately) are 3″ long with a 1/4″ dia. shank.

Style E—For inside tubing, cylinders, molds, and other cavities. Use with an 8-32 mandrel. Max. rpm is 20,000. *Medium* is blue. *Very fine* is red.

Style F—Best for working on channels, fillets, corners, and recesses. Use with a 1/4″-20 mandrel. Max. rpm is 8,000. Color is maroon.

Style G—Have three strips of nylon mesh to work on large inside diameters. Use with a 1/4″-20 mandrel. Max. rpm is 3,000. Color is maroon.

Style H—Fits inside pipe and tubing and other recessed areas. Use with a 1/4″-20 mandrel. Max. rpm is 22,000 (unless noted). *Coarse* is brown. *Medium* is maroon. *Very fine* is blue.

Choose from the following grades: ***Coarse***—For deburring and removing heavy material. ***Medium***—For light cleaning and blending. ***Very Fine***—For finishing.

	Tool Size× Thick.		Ply	Coarse	Each	Medium	Each	Very Fine	Each
E	1″ ×	5/8″	2	—	—	**46665A11**	$2.62	**46665A12**	$2.62
E	1½″×	3/4″	2	—	—	**46665A13**	3.99	**46665A14**	3.99
E	1½″×1″		3	—	—	**46665A15**	5.38	**46665A16**	5.38
F	3″ ×	3/4″	2	—	—	**46665A23**	5.38	**46665A24**	5.38
G	6″ ×	3/4″	3	—	—	**46665A21**	8.75	**46665A22**	6.13
H	1½″×	3/16″	1	**46685A213**	$1.81	**46685A212**	1.81	**46685A211**	1.81
H	2″ ×	3/16″	1	**46685A216**	2.12	**46685A215**	2.12	**46685A214**	2.12
H	3″ ×	1/4″	1	**46685A219**♠	3.40	**46685A218**♠	3.40	**46685A217**♠	3.40
H	4″ ×	3/16″	1	**46685A223**♦	5.28	**46685A222**♦	5.28	**46685A221**♦	5.28

Mandrel with 8-32 Thread ..... **46665A31** **Each** $4.29
Mandrel with 1/4″-20 Thread ..... **46665A32** **Each** $4.29

♠ Max. rpm is 20,000. ♦ Max. rpm is 12,000.

Nylon Mesh Abrasive Shank-Mount Wheels for Curved Surfaces

Easily reach within concave surfaces and follow contours with these dome-shaped wheels. Made with aluminum oxide-impregnated discs stacked and mounted on a 1/4″ dia. shank. Use on metal and wood. For use with die grinders, portable drills, and drill presses. Color is maroon.

Choose ***medium*** grade for moderate to light cleaning and deburring or ***fine*** grade for light blending and finishing.

Repl. discs available in medium (pkg. qty. 8) and fine (pkg. qty. 10) grade.

To Order: For wheels and repl. discs, please specify medium or fine grade.

Wheel Size, Dia.×Thick.	Max. rpm	Wheels	Each	Replacement Discs	Per Pkg.
2″×2″	12,000	**46835A35**	$27.56	**46835A36**	$11.85
3″×2″	8,500	**46835A37**	31.07	**46835A38**	14.67

Nylon Mesh Abrasive Shank-Mount Disc Wheels

Multiple discs compressed on an epoxy core allow these wheels to conform to a variety of tight spots and internal surfaces. Discs are aluminum oxide for use on metal and wood. Use with drill presses, straight-shaft grinders, and finishing tools. Color is maroon.

Choose from the following grades: ***Medium***—For moderate deburring and cleaning. ***Fine***—For light cleaning, blending, and finishing. ***Very Fine***—For polishing and final finishing to a satin or luster finish.

Wheel Size, Dia.×Thick.	Shank Dia.	Max. rpm	Medium	Each	Fine	Each	Very Fine	Each
1″ × 3/8″	1/8″	22,000	**4365A41**	$1.55	**4365A31**	$1.55	—	—
1″ × 1/2″	1/8″	22,000	**4365A42**	1.65	**4365A32**	1.65	—	—
1½″× 7/8″	1/8″	20,000	**4365A43**	2.73	**4365A33**	2.73	—	—
1½″×1″	1/8″	20,000	**4365A44**	3.36	**4365A34**	3.36	—	—
2″ ×1″	1/4″	12,000	**46925A32**	6.49	**46925A42**	3.73	**46925A52**	$6.47
2⅜″×2″	1/4″	12,000	**46925A72**	11.07	**46925A71**	11.07	**46925A69**	11.07
3″ × 1/2″	1/4″	8,000	**46925A26**	5.91	**46925A25**	4.13	**46925A24**	5.78
3″ ×1″	1/4″	8,000	**46925A23**	11.20	**46925A22**	9.50	**46925A21**	9.33
3″ ×2″	1/4″	8,000	**46925A74**	13.13	**46925A73**	13.13	**46925A68**	13.12
4″ ×1″	1/4″	6,000	**46925A36**	15.48	**46925A46**	7.91	**46925A56**	7.22
5″ ×1″	1/4″	4,000	**46925A38**	17.35	**46925A48**	8.86	**46925A58**	10.28

Nylon Mesh Abrasive Shaft-Mount Finishing Discs

Use one for intricate jobs, or several on a 1/4″ dia. shank mandrel (sold separately) or shaft for larger jobs. Made of aluminum oxide, discs are flexible to conform to the workpiece. Use with bench, pedestal, and straight-shaft grinders on metal and wood.

Choose from the following grades: ***Medium***—For moderate blending, cleaning, light deburring, and general finishing. Thickness is 1/2″. ***Fine***—For light cleaning and finishing. Thickness is 3/8″. ***Very Fine***—For polishing and final finishing. Thickness is 1/4″.

Dia.× Arbor Hole	Max. rpm	Medium (Maroon) Each 1-24	25-Up	Fine (Maroon) Each 1-24	25-Up	Very Fine (Maroon) Each 1-24	25-Up	Optional Mandrels Each
6″×1/4″	4,000	**46935A43**	$3.21	$2.88	**46935A42**	$2.06	$1.84	**46935A41**	$1.73	$1.55	**4568A21**	$2.70
6″×1/2″	4,000	**46935A16**	3.21	2.88	**46935A15**	2.06	1.84	**46935A14**	1.73	1.55	**46935A31**	2.58
8″×1/4″	3,000	**46935A53**	4.74	4.25	**46935A52**	3.24	2.90	**46935A51**	3.24	2.90	**4568A21**	2.70
8″×1/2″	3,000	**46935A19**	5.04	4.52	**46935A18**	3.24	2.90	**46935A17**	2.77	2.49	**46935A31**	2.58

Nylon Mesh Abrasive Wheels

For information about nylon mesh abrasives, see page 2674.

Rigid Nylon Mesh Abrasive Wheels for Bench and Pedestal Grinders

With tightly wrapped nylon mesh around a core, these large diameter wheels hold their shape while in use on bench and pedestal grinders. Also known as convolute wheels. ***Cleaning, Finishing, and Polishing Wheels—*** For cleaning, blending welds on stainless steel, and removing rust and oxidation. ***Deburring and Blending Wheels—*** For light deburring, blending scratches, and removing rust.

Soft Density— For general cleaning, blending welds, and removing rust and oxidation. Not recommended for deburring. ***Medium Density—*** Ideal for light deburring, blending scratches, and removing rust. ***Hard Density—*** Cuts more aggressively than medium density. ***Extra-Hard Density—*** Use to remove burs and surface contaminants, radius edges, and polish welds.

Silicon Carbide for Exotic Metals— Will not gouge most high alloy metals. Use to debur and finish titanium, Inconel, and other heat-sensitive metals.

Wheels

Dia. × Thick. × Arbor Hole	Grade	Density	Max. rpm		Each
Cleaning, Finishing, and Polishing Wheels					
Aluminum Oxide (Red)					
6″ × 1″ × 1″	Medium	Extra Hard	6,000	**4670A11**	$62.82
6″ × 2″ × 1″	Medium	Extra Hard	6,000	**4670A12**	101.77
8″ × 1″ × 3″	Medium	Extra Hard	4,500	**4670A13**	85.24
8″ × 2″ × 3″	Medium	Extra Hard	4,500	**4670A14**	139.85
12″ × 1″ × 5″	Medium	Extra Hard	3,000	**4670A15**	115.55
12″ × 2″ × 5″	Medium	Extra Hard	3,000	**4670A16**	221.61
Silicon Carbide (Gray)					
4″ × 1″ × 1″	Medium	Soft	4,000	**4763A29**	20.16
4″ × 1″ × 1″	Fine	Soft	4,000	**4763A28**	19.32
6″ × 1″ × 1″	Medium	Soft	3,000	**4763A32**	31.89
6″ × 1″ × 1″	Fine	Soft	3,000	**4763A31**	29.71
6″ × 2″ × 1″	Medium	Soft	3,000	**4763A73**	50.74
6″ × 2″ × 1″	Fine	Soft	3,000	**4763A72**	50.47
8″ × 1″ × 3″	Medium	Soft	2,500	**4763A71**	47.34
8″ × 1″ × 3″	Fine	Soft	2,500	**4763A62**	38.34
8″ × 2″ × 3″	Medium	Soft	2,500	**4763A75**	72.89
8″ × 2″ × 3″	Fine	Soft	2,500	**4763A74**	83.90
Deburring and Blending Wheels					
Aluminum Oxide (Tan)					
6″ × 1″ × 1″	Medium	Medium	6,000	**46575A49**	51.45
6″ × 1″ × 1″	Medium	Hard	6,000	**4628A43**	54.34
6″ × 1″ × 1″	Medium	Extra Hard	6,000	**4628A63**	51.10
6″ × 1″ × 1″	Fine	Medium	6,000	**46575A48**	57.06
6″ × 1″ × 1″	Fine	Hard	6,000	**4628A42**	53.16
6″ × 1″ × 1″	Fine	Extra Hard	6,000	**4628A62**	55.40
6″ × 2″ × 1″	Medium	Hard	6,000	**4628A45**	90.11
8″ × 1″ × 3″	Medium	Medium	4,500	**46575A75**	72.34
8″ × 1″ × 3″	Medium	Hard	4,500	**4628A48**	66.87
8″ × 1″ × 3″	Fine	Extra Hard	4,500	**4628A65**	66.98
8″ × 2″ × 3″	Medium	Hard	4,500	**4628A51**	106.02
8″ × 2″ × 3″	Medium	Extra Hard	4,500	**4628A66**	120.50

Dia. × Thick. × Arbor Hole	Grade	Density	Max. rpm		Each
Deburring and Blending Wheels (Cont.)					
Aluminum Oxide (Tan) (Cont.)					
8″ × 2″ × 3″	Fine	Extra Hard	4,500	**4628A29**	$91.18
10″ × 2″ × 5″	Medium	Extra Hard	3,600	**4628A67**	138.98
12″ × 1″ × 5″	Medium	Hard	3,000	**4628A55**	78.89
12″ × 1″ × 5″	Fine	Hard	3,000	**4628A54**	62.00
Silicon Carbide (Gray)					
6″ × 1″ × 1″	Medium	Medium	6,000	**46575A46**	54.73
6″ × 1″ × 1″	Medium	Hard	6,000	**4628A21**	41.03
6″ × 1″ × 1″	Medium	Extra Hard	6,000	**4628A61**	52.90
6″ × 1″ × 1″	Fine	Medium	6,000	**46575A71**	51.27
6″ × 1″ × 1″	Fine	Hard	6,000	**4628A41**	35.84
6″ × 1″ × 1″	Fine	Extra Hard	6,000	**4628A25**	50.66
6″ × 1″ × 1″	Very Fine	Medium	6,000	**46575A45**	44.76
6″ × 2″ × 1″	Medium	Medium	6,000	**46575A72**	70.61
6″ × 2″ × 1″	Medium	Hard	6,000	**4628A22**	85.71
6″ × 2″ × 1″	Fine	Hard	6,000	**4628A44**	93.27
8″ × 1″ × 3″	Medium	Medium	4,500	**46575A74**	66.77
8″ × 1″ × 3″	Medium	Hard	4,500	**4628A23**	48.50
8″ × 1″ × 3″	Medium	Extra Hard	4,500	**4628A64**	67.42
8″ × 1″ × 3″	Fine	Medium	4,500	**46575A73**	68.24
8″ × 1″ × 3″	Fine	Hard	4,500	**4628A46**	50.45
8″ × 1″ × 3″	Fine	Extra Hard	4,500	**4628A26**	69.19
8″ × 2″ × 3″	Medium	Hard	4,500	**4628A24**	114.98
8″ × 2″ × 3″	Fine	Hard	4,500	**4628A49**	123.94
8″ × 2″ × 3″	Fine	Extra Hard	4,500	**4628A27**	117.40
12″ × 1″ × 5″	Fine	Extra Hard	3,000	**4628A28**	98.03
12″ × 2″ × 5″	Medium	Extra Hard	3,000	**4628A72**	165.84
12″ × 2″ × 5″	Fine	Extra Hard	3,000	**4628A71**	174.81
Silicon Carbide for Exotic Metals (Gray)					
6″ × 1″ × 1″	Fine	Hard	6,000	**46545A62**	54.29
6″ × 2″ × 1″	Fine	Hard	6,000	**46545A64**	78.82
8″ × 1″ × 3″	Fine	Hard	4,500	**46545A66**	79.92
8″ × 2″ × 3″	Fine	Hard	4,500	**46545A68**	108.60

Wheel Reducer Bushings

To Order: Please specify bushing ID size.

For Wheel Size, Dia. × Arbor	Available Bushing IDs		Per Pair
6″ × 2″	½″, ⅝″, ¾″, 1″, 1¼″	**47335A31**	$1.44
8″ × 3″	½″, ⅝″, ¾″, 1″, 1¼″	**47335A32**	22.92
10″ & 12″ × 5″	1″, 1¼″, 1½″, 1¾″, 2″	**47335A33**	76.98

Bushing Set— For use with 4″ and 6″ diameter wheels that have a 1″ arbor. Set includes ½″, ⅝″, and ¾″ reducer bushings nested together.

47335A29 ..... **Per Set** $1.18

Rigid Nylon Mesh Abrasive Wheels for Portable Tools

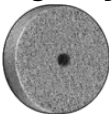

Also known as unified wheels, these small diameter wheels are formed from multiple layers of compressed nylon mesh, which allows them to hold their shape and last longer. Use on die and straight-shaft grinders for deburring, blending, and finishing.

Coarse Grade, Hard Density— For deburring, rounding sharp edges, and removing rust and oxidation. Has good tear resistance.

Medium Grade, Soft Density— Conforms best to intricate shapes. Use for general cleaning, removing light rust, and polishing.

Medium and Fine Grades, Extra-Hard Density— The fastest cutting, smoothest finishing, and longest lasting. For high speed deburring and cleaning hard metals. Use fine grade to achieve a finer finish than medium grade.

Fine Grade, Medium Density— Similar to soft-density wheels, but these cut faster and give a finer finish.

Wheels

Dia. × Thick. × Arbor Hole	Grade	Density	Max. rpm		Each
Aluminum Oxide (Red)					
2″ × ¼″ × ¼″	Coarse	Hard	11,000	**46605A42**	$3.30
2″ × ½″ × ¼″	Coarse	Hard	11,000	**46605A43**	3.34
3″ × ¼″ × ¼″	Coarse	Hard	8,000	**46605A46**	6.02
3″ × ½″ × ¼″	Coarse	Hard	8,000	**46605A49**	5.95
Aluminum Oxide (Gray)					
2″ × ¼″ × ¼″	Medium	Soft	18,000	**46605A41**	3.04
3″ × ¼″ × ¼″	Medium	Soft	12,000	**46605A45**	4.03
3″ × ½″ × ¼″	Medium	Soft	12,000	**46605A48**	8.82
Aluminum Oxide (Tan)					
2″ × ¼″ × ¼″	Medium	Extra Hard	20,000	**46615A26**	3.79
2″ × ¼″ × ¼″	Fine	Extra Hard	20,000	**46615A25**	3.48
2″ × ½″ × ¼″	Medium	Extra Hard	20,000	**46615A28**	5.38
2″ × ½″ × ¼″	Fine	Medium	11,000	**46605A81**	3.84
3″ × ¼″ × ¼″	Fine	Medium	8,000	**46605A44**	5.58

Dia. × Thick. × Arbor Hole	Grade	Density	Max. rpm		Each
Aluminum Oxide (Tan) (Cont.)					
3″ × ¼″ × ¼″	Fine	Extra Hard	18,000	**46615A31**	$5.98
3″ × ¼″ × ¼″	Medium	Extra Hard	18,000	**46615A41**	6.67
3″ × ½″ × ¼″	Fine	Medium	8,000	**46605A47**	6.30
3″ × ½″ × ¼″	Fine	Extra Hard	18,000	**46615A33**	6.67
3″ × ¾″ × ¼″	Fine	Medium	8,000	**46605A83**	8.93
3″ × ¾″ × ¼″	Fine	Extra Hard	18,000	**46615A34**	10.78
Silicon Carbide (Gray)					
2″ × ½″ × ¼″	Fine	Medium	18,000	**46605A92**	4.87
2″ × ½″ × ¼″	Fine	Medium	22,100	**46605A82**	4.10
2″ × ½″ × ¼″	Fine	Extra Hard	20,000	**46615A27**	4.78
3″ × ¼″ × ¼″	Fine	Extra Hard	18,000	**46615A29**	6.45
3″ × ½″ × ¼″	Fine	Medium	8,000	**46605A52**	6.93
3″ × ½″ × ¼″	Fine	Extra Hard	18,000	**46615A32**	9.27
3″ × ¾″ × ¼″	Fine	Medium	8,000	**46605A84**	8.18

Mandrel Kits

For use with 2″ or 3″ diameter wheels. Kits have a mandrel, a nut, and two washers to adapt wheels for use on die grinders and drills. Length tolerance is ±1/32″.

For Wheel Size	Shank Dia.	Washer Dia.	Lg.		Each
2″	¼″	⅝″	2½″	**46605A35**	$6.66
3″	¼″	1″	2½″	**46605A36**	6.66

Steel Wool

Offered in grades from extra coarse to super fine, steel wool is handy for many surface preparation tasks from removing paint and rust to polishing for a fine finish. Pads are approximately 4″×2¾″×¾″. The reels are approximately 4″ Wd.×¼″ Thick.

Grade 4— Aggressively remove rust and dirt. ***Grade 3—*** Strip lacquer and paint. ***Grade 2—*** Remove rust, wax buildup on floors, and paint on moulding; clean glass, brick, rough metal, and stone surfaces. ***Grade 1—*** Clean cast and wrought iron, copper pipes and fittings, and prepare wood for first coat of paint. ***Grade 0—*** Clean bare metals, porcelain, and tile as well as remove rust from metal. ***Grade 00—*** Remove old finishes, restore aluminum, and prepare surfaces before painting. ***Grade 000—*** Polish metal, buff cabinets, and remove paint from wood and rust from chrome. ***Grade 0000—*** Buff woodwork, lacquer, varnish, and clean precision instruments and tools.

Grade	16-Pad Packages Per Pkg.	1-11	12-Up	1-lb. Bags Each	1-11	12-Up	5-lb. Reels Approx. Lg., ft.	Each	20-lb. Reels Approx. Lg., ft.	Each
4 Extra Coarse				7363T18	$6.82	$5.77	60	7363T48 $19.18	240	7363T58 $113.69
3 Coarse	7363T22	$3.65	$3.02	7363T17	6.82	5.77	70	7363T47 19.18	280	7363T57 89.47
2 Medium Coarse	7363T23	3.65	3.02	7363T16	6.81	5.77	70	7363T46 19.18	280	7363T56 113.69
1 Medium	7363T24	3.65	3.02	7363T15	6.82	5.77	90	7363T45 19.18	360	7363T55 117.46
0 Medium Fine	7363T25	3.65	3.02	7363T14	6.81	5.77	90	7363T44 19.18	360	7363T54 116.27
00 Fine	7363T26	3.67	3.04	7363T13	6.81	5.77	110	7363T43 19.18	440	7363T53 89.47
000 Extra Fine	7363T27	3.67	3.04	7363T12	6.81	5.77	125	7363T42 19.18	500	7363T52 125.12
0000 Super Fine	7363T28	3.71	3.07	7363T11	6.82	5.77	150	7363T41 19.18	600	7363T51 89.47

Rustless Metal Wool

Unlike steel wool, these metal wools won't leave small fibers that cause rust. Pads are approximately 4″×2¾″×¾″; reels are approximately 4″ Wd.×⅛″-¼″ Thick.

Bronze— Good for use on hardwood and brass. Approximate length for a 5-lb. reel is 125 ft.

Type 434 Stainless Steel— Good for general purpose use on stainless steel. Approximate length for a 5-lb. reel is 125 ft.

Type 316 Stainless Steel— Provides even better corrosion resistance than Type 434. Approximate length for a 1-lb. reel is 20-25 ft. and 100-120 ft. for a 5-lb. reel.

Aluminum— Lighter, softer, and leaves a finer finish than other rustless metal wools. Good for cleaning and finishing aluminum. Approximate length for a 1-lb. reel is 40-45 ft. and 200-225 ft. for a 5-lb. reel.

Coarse grade is comparable to steel wool grades 3-4. *Medium* grade is comparable to steel wool grades 1-2. *Fine* grade is comparable to steel wool grades 0-00.

Grade	3-Pad Pkgs. Per Pkg.	1-lb. Reels Each	5-lb. Reels Each
Bronze			
Coarse	7364T73 $4.12		7364T43 $159.57
Medium	7364T72 4.12		7364T42 159.57
Fine	7364T71 4.12		7364T41 159.57
Type 434 Stainless Steel			
Coarse			7364T46 75.96
Medium			7364T45 75.96
Fine			7364T44 75.96
Type 316 Stainless Steel			
Coarse	7364T76 6.41	7364T83 $45.90	7364T86 224.66
Medium	7364T75 6.41	7364T82 45.90	7364T85 224.66
Fine	7364T74 6.41	7364T81 45.90	7364T84 224.66
Aluminum			
Coarse	7364T79 3.05	7364T93 32.39	7364T96 178.98
Medium	7364T78 3.05	7364T92 32.39	7364T95 178.98
Fine	7364T77 3.05	7364T91 32.39	7364T94 178.98

Rustless Metal Gauze

Made of knit strands of rust-resistant metal, these rolls of mesh gauze won't snag or leave strands on your work surface. Rolls are 5″ Wd.×100′ Lg. and can be cut easily to desired length.

Copper gauze is nonsparking and cleans production equipment, molds, punches, dies, and plastics processing equipment without harming the finish. ***Type 304 stainless steel gauze*** is suitable for food processing and tough cleaning jobs.

		Each
Copper Gauze	6361T12	$95.93
Type 304 Stainless Steel Gauze	6361T14	70.92

Synthetic Wool Pads

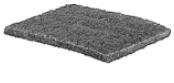

Replace your steel wool with these nylon mesh pads that won't rust, splinter, or shed. Use wet or dry. Pads are 4⅜″×5½″.

Grade	Color	Pad Thick.	Pkg. Qty.		Per Pkg.
3 Extra Coarse	Green	¾″	1	44225A86	$3.15
2 Coarse	Blue	¾″	1	44225A85	3.15
1 Medium	Charcoal	¼″	2	44225A84	3.53
0 Fine	Green	¼″	2	44225A83	3.53
000 Extra Fine	Gray	¼″	2	44225A82	3.53
0000 Super Fine	White	¼″	2	44225A81	3.53

Smooth-Finish Abrasive Blocks

Rubber Bonded

Cotton Laminate

Rubber or cotton bonds cushion the abrasive in these blocks so they polish smoothly without gouging your work surface. They're excellent for cleaning and polishing metal and removing rust, stains, and heat marks.

Rubber-bonded blocks are more flexible and long lasting. *Aluminum oxide* is for use on ferrous metals and tough materials such as carbon and high-speed steel. Color is brown. *Silicon carbide* is for use on iron, carbide, and hard alloys. Shape is rectangular. Color varies.

Cotton laminate blocks leave a finer finish. Abrasive is aluminum oxide. Color is light gray.

Rubber Bonded—Aluminum Oxide

Size	Medium, 70 Grit	Fine, 120 Grit	Extra Fine, 180 Grit	Each
Rectangular				
3″×5/8″×¼″	4827A21	4827A11		$5.70
4″×½″×½″	4827A22	4827A12		8.19
4″×¾″×½″	4827A25	4827A15		12.94
6″×¾″×½″	4827A26	4827A16		15.95
Round				
6″×5/16″	4825A31	4825A21	4825A19	8.22
Holder for Round Sticks			4825A11	Each $8.22

Rubber Bonded—Silicon Carbide

Size	Coarse, 46 Grit	Medium, 80 Grit	Fine, 150 Grit	Extra Fine, 240 Grit	Each
2¼″×1⅛″×⅜″	4828A31	4828A21	4828A11		$5.07
3¼″×2″ ×¾″	4828A34●		4828A24♦	4828A14	8.78

● 60 grit. ♦ 120 grit.

Cotton Laminate—Aluminum Oxide

Size	Medium, 80 Grit	Fine, 120 Grit	Extra Fine, 180 Grit	Each	Super Fine, 320 Grit	Each
Square						
4″× ¼″× ¼″	4451A39	4451A44	4451A65	$4.70	4451A25	$4.92
4″× ⅜″× ⅜″	4451A41	4451A45	4451A66	4.99	4451A26	5.13
4″× ½″× ½″	4451A42	4451A46	4451A53	5.30	4451A54	5.50
6″× ½″× ½″	4451A43	4451A47	4451A67	5.59	4451A55	5.82
6″×1″ ×1″	4451A51	4451A52	4451A68	13.41	4451A27	13.91
Round						
4″× ¼″	4451A31	4451A35	4451A61	9.06	4451A21	9.37
4″× ⅜″	4451A32	4451A36	4451A62	9.32	4451A22	9.72
4″× ½″	4451A33	4451A37	4451A63	10.08	4451A23	10.41
6″× ½″	4451A34	4451A38	4451A64	13.73	4451A24	14.28

Coarse-Finish Abrasive Blocks

Rub down concrete and remove mold marks with these extra coarse (24) grit silicon carbide blocks. Color is dark gray.

Size		Each
6″×3″ ×1″	4509A2	$16.79
8″×3½″×1½″	4509A1	21.58

Medium-Finish Abrasive Block

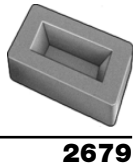

This abrasive block wears evenly to maintain its flat surface. Blocks are made of medium (180) grit silicon carbide abrasive. They quickly eliminate burs, and are great for cleaning magnetic chucks. Size is 6¼″×4⅛″×1⅝″. Color is light gray.

42685A55 ..... **Each** $56.29

About Abrasive Files and Sharpening Stones

Abrasives

Aluminum oxide (also called India) creates durable, smooth cutting edges and is preferred for close tolerances. ***Alumina ceramic*** is extremely hard and wear resistant. It sharpens hardened and tempered metals to a fine edge. ***Silicon carbide*** (also called Crystolon) sharpens quickly but doesn't produce as fine a cutting edge. ***Soft Arkansas*** (extra-fine grit) yields an even, polished surface and is often used after sharpening with aluminum oxide and silicon carbide stones. ***Hard Arkansas*** (ultra-fine grit) produces precise finishes with polished, razor-like edges.

Lubrication

Most stones are porous and need lubrication to work effectively. Those that aren't oil filled must be oiled before use, except alumina ceramic stones which require no lubrication. ***Oil-filled*** stones do not need extra lubrication.

For sharpening-stone oil, see page 2178.

Grit Size

Coarse grit cuts quickly. Great for restoring badly worn edges. ***Medium grit*** produces a smooth edge. ***Fine grit*** yields a slightly sharper edge than medium grit. Perfect for cutting tools. ***Extra-fine grit*** is commonly used following the fine grit to achieve an even sharper edge. ***Ultra-fine grit*** produces the sharpest edge possible.

Grit Sizes

	Aluminum Oxide	Alumina Ceramic	Silicon Carbide	Arkansas
Coarse	100	N/A	100	N/A
Medium	240	400 to 600	150	N/A
Fine	320	1800	280	N/A
Extra Fine	N/A	N/A	N/A	400 to 600
Ultra Fine	N/A	N/A	N/A	800 to 1200

Abrasive Files

These files hold their shape while providing a fine, uniform finish on precision machine parts and cutting tools, and in tool- and die-making. Use for sharpening, deburring, cleaning, chamfering, radiusing, honing, and lapping. Choose the file shape that best matches the contour of the work surface.

Aluminum Oxide Oil-Filled Files

Size	Coarse, 100 Grit Dark Gray	Medium, 240 Grit Brown	Fine, 320 Grit Orange	Each
Square				
4″ × 1/4″	4497A13	4497A12	4497A11	$6.54
4″ × 3/8″	4497A33	4497A32	4497A31	6.54
4″ × 1/2″	4497A43	4497A42	4497A41	6.54
6″ × 1/2″	4497A63	4497A62	4497A61	10.61
6″ × 3/4″	4497A53	4497A52	4497A51	11.39
6″ × 1″	4497A73	4497A72	4497A71	12.72
Triangular				
4″ × 1/4″	4498A13	4498A12	4498A11	8.46
4″ × 3/8″	4498A33	4498A32	4498A31	9.24
4″ × 1/2″	4498A43	4498A42	4498A41	9.24
6″ × 1/2″	4498A63	4498A62	4498A61	12.22
6″ × 3/4″	4498A73	4498A72	4498A71	12.50
6″ × 1″	4498A83	4498A82	4498A81	14.20
Round				
4″ × 1/4″	4499A13	4499A12	4499A11	10.84
4″ × 3/8″	4499A33	4499A32	4499A31	11.64
4″ × 1/2″	4499A43	4499A42	4499A41	11.64
6″ × 1/2″	4499A53	4499A52	4499A51	14.51
6″ × 3/4″	4499A63	4499A62	4499A61	12.72
6″ × 1″	4499A73	4499A72	4499A71	13.23
Half Round				
4″ × 1/4″	4500A13	4500A12	4500A11	7.54
4″ × 5/16″	4500A23	4500A22	4500A21	7.54
4″ × 3/8″	4500A33	4500A32	4500A31	8.22
4″ × 1/2″	4500A43	4500A42	4500A41	9.86
Round Tapered				
4″ × 1/2″ × 1/4″	8742A13	8742A12	8742A11	14.72
Round Pointed				
3″ × 5/16″ base	8743A13	8743A12	8743A11	16.88
Flat				
4″ × 1/2″ × 1/16″	4507A3	4507A2	4507A1	12.42
Diamond				
4″ × 9/16″ × 3/16″	4507A63	4507A62	4507A61	14.06
Oval Tapered				
4″ × 1/2″- 3/16″ × 3/16″-1/16″	4507A6	4507A5	4507A7●	9.90
Rectangular Tapered				
4″ × 5/16″ × 3/16″-1/16″	4507A23	4507A22	4507A21	9.90
Round-Corner Rectangular Tapered				
4″ × 7/16″ × 3/16″-1/8″	4507A33	4507A32	4507A31	9.90
Round-Corner Rectangular Double-Tapered				
4″ × 3/8″- 3/16″ × 1/8″-1/16″	4507A13	4507A12	4507A11	9.90
Triangular Tapered				
4″ × 1/2″ × 1/4″	4507A53	4507A52	4507A51	9.90

● Size is 4″ × 1/2″-1/4″ × 5/16″-1/8″.

Alumina Ceramic Files

No lubrication needed for these fine (1800) grit files. Color is white.

Shape	Size		Each
Square	5″ × 1/4″	4456A16	$17.51
Triangular	5″ × 1/4″	4456A15	17.51

Four-Piece Alumina Ceramic File Set — Includes three 5″ × 1/4″ files in square, triangular, and round shapes, plus a 5″ slip stone in a suede sheath.

4456A17 ..... **Per Set** $68.40

Silicon Carbide Files

Size	Medium, 150 Grit Dark Gray	Fine, 280 Grit Black	Each
Square			
4″ × 1/4″	4345A22	4345A21	$5.65
4″ × 3/8″	4345A24	4345A23	5.65
4″ × 1/2″	4345A26 ♦	4345A25 ♦	7.00
Triangular			
4″ × 1/4″	4346A12	4346A11	7.21
4″ × 3/8″	4346A14	4346A13	7.80
4″ × 1/2″	4346A16	4346A15	7.80
Round			
4″ × 1/4″	4347A42 ♦	4347A41 ♦	11.33
4″ × 3/8″	4347A44	4347A43	10.13
4″ × 1/2″	4347A46	4347A45	10.13

♦ Oil filled.

Arkansas Files

Ultra-fine (800-1000) grit. Color is light gray.

Shape	Size		Each
Square	4″ × 1/4″	4433A12	$11.11
Square	4″ × 3/8″	4433A11	12.55
Square	4″ × 1/2″	4433A13	16.14
Square	6″ × 3/8″	4433A14	18.26
Square	6″ × 1/2″	4433A15	23.59
Triangular	4″ × 1/4″	4433A22	12.19
Triangular	4″ × 3/8″	4433A21	12.58
Triangular	4″ × 1/2″	4433A23	17.18
Triangular	6″ × 3/8″	4433A24	19.42
Triangular	6″ × 1/2″	4433A25	22.77
Round	4″ × 1/4″	4433A31	14.29
Round	6″ × 3/8″	4433A32	24.61
Round	6″ × 1/2″	4433A33	29.78
Flat	4″ × 1/2″ × 3/16″	4433A34	13.27
Diamond	4″ × 1/2″ × 3/16″	4433A36	21.28
Bevel	4″ × 1/2″ × 3/16″	4433A35	12.40
Oval	4″ × 1/2″ × 3/16″	4433A37	18.03
Point	3″ × 5/16″ base	4433A38	21.28
Knife Edge	3″ × 1″ × 1/4″ back	4433A39	19.39

Arkansas Rectangular Files — Use for sharpening small cutting tools and knives. Color is off-white.

Size	Grit		Each
3″ × 1″ × 3/8″	Ultra Fine (800-1200)	4348A11	$25.29
3″ × 1″ × 3/8″	Extra Fine (400-600)	4348A12	10.40
4″ × 1″ × 3/8″	Ultra Fine (800-1200)	4348A13	30.35
4″ × 1″ × 3/8″	Extra Fine (400-600)	4348A14	9.63

Four-Piece Arkansas Oil-Filled File Sets — Ultra-fine (800-1000) grit stones come in a pine box. *4″ long* set includes one each of: 1/4″ square, 1/4″ × 1″ knife edge, 1/4″ triangular, and 1/4″ round files. *6″ long* set includes one each of: 3/8″ square, 3/8″ × 1″ knife edge, 3/8″ triangular, and 3/8″ round files. Color is off-white.

Stone Length		Per Set
4″	4433A41	$43.53
6″	4433A42	71.76

Arkansas Rectangular File Kit — Includes a 4″ × 1 5/8″ × 1/2″ extra-fine (600-800) grit pink file, a 3″ × 1″ × 1/4″ ultra-fine (800-1000) grit white file, 3 oz. of honing oil, and a 23° angle guide.

4804A12 ..... **Each** $21.57

For information about sharpening stones, see page 2680.

Thin Abrasive Polishing Files

With these thin files, you'll get extra smooth finishes in even the tightest spaces. Perfect for tough steels and die and mold work.

All are made of aluminum oxide and are treated to wear evenly and make fast cuts. Files can be used by hand or in reciprocating profiling tools. We recommend using them with a water- or mineral-based lubricant.

In general, 100 and 150 grits are considered coarse, 180 and 220 grits are medium, 320 and 400 grits are fine, and 600 grit is extra fine.

To Order: Where applicable, please specify grit size.

General Purpose Files—These files work on all types of steel. Color is gray.

Scale Removal Files—Designed to remove surface scale left by the EDM (electrical discharge machining) process on all types of steel. Color is brown.

Mold Steel and Stainless Steel Files—Specially treated for use on high-grade mold steels such as P-20, H-13, and Type 420 stainless steel. Color is blue.

Aluminum and Soft Metal Files—Ideal for polishing aluminum and other soft metals. Color is tan.

Water-Based Lubricant

This nonhazardous solution cleans, lubricates, and prevents file loading. Comes in a one-gallon container.

44555A77 ..... Each $17.20

File Holders

Hand-Held Holder—For files too short to hold by hand; fits 1/4″×1/8″, 1/2″×1/8″, and 1/4″×1/4″ files.

Hand-Held Holder

47465A82 ..... Each $6.46

Mounted-File Holder—Holds 1/4″×1/8″ files in a file tool. Has a 1/8″ shank.

Mounted-File Holder

4394A21 ..... Each $6.67

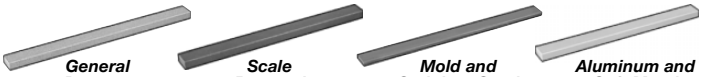

General Purpose — *Scale Removal* — *Mold and Stainless Steel* — *Aluminum and Soft Metal*

Files

Size, Lg.×Wd.×Thick.	100, 150, 180, and 220 Grit Each	320 and 400 Grit Each	600 Grit Each
General Purpose Files			
6″× 1/4″ ×1/8″	47465A911 $2.70	47465A917 $3.04	47465A858 $3.56
6″× 1/4″ ×1/4″	47465A913 2.85	47465A919 3.24	47465A866 3.81
6″× 1/2″ ×1/8″	47465A912 2.96	47465A918 3.48	47465A54 4.17
6″× 1/2″ ×1/4″	47465A914 3.65	47465A921 4.17	47465A63 5.12
6″×1″ ×1/4″	47465A915 5.29	47465A922 6.09	47465A72 8.52
6″×1″ ×1/2″	47465A916 7.10	47465A923 9.12	47465A81 15.56
Scale Removal Files			
6″× 5/32″×5/32″	47465A936■ 2.22	47465A946 2.57	47465A811 2.93
6″× 1/4″ ×1/16″	47465A931▲ 2.33	47465A941 2.57	47465A827 3.02
6″× 1/4″ ×1/8″	47465A933 2.33	47465A943 2.76	47465A27 3.09
6″× 1/4″ ×1/4″	47465A937 2.67	47465A947 3.10	47465A843 3.59
6″× 1/2″ ×1/16″	47465A932 2.44	47465A942 2.67	47465A18 3.09
6″× 1/2″ ×1/8″	47465A934 2.76	47465A944 3.10	47465A36 3.45
6″× 1/2″ ×1/4″	47465A938 3.59	47465A948 4.14	47465A45 4.82
6″×1″ ×1/8″	47465A935 3.88	47465A945 4.38	47465A835 4.98
6″×1″ ×1/4″	47465A939 5.16	47465A949 6.04	47465A851 7.23
Mold Steel and Stainless Steel Files			
6″× 1/2″ ×1/8″	47465A951★ 2.85	47465A954 3.38	47465A875 4.05
6″× 1/2″ ×1/4″	47465A952★ 3.77	47465A955 4.81	47465A881 5.98
6″×1″ ×1/2″	47465A953★ 9.01	47465A956 10.67	47465A886 12.87
Aluminum and Soft Metal Files			
6″× 1/4″ ×1/8″	47465A961★ 2.66	47465A965 3.25	47465A991 3.69
6″× 1/4″ ×1/4″	47465A963★ 2.85	47465A967 3.38	47465A993 4.05
6″× 1/2″ ×1/8″	47465A962★ 2.85	47465A966 3.38	47465A992 4.05
6″× 1/2″ ×1/4″	47465A964★ 3.77	47465A968 4.81	47465A994 5.98

■ Not offered: 150 grit. ▲ Offered in 120 grit vs. 100 grit. ★ Not offered: 100 or 180 grit.

Semiflexible Ceramic Abrasive Polishing Files

File

Hand-Held Holder

These ceramic files are thinner and stronger than traditional abrasive files or mold and diemakers' files, allowing you access to tight spots. Perfect for ribs and slots. Use by hand or in reciprocating file tools.

Extra-coarse (180) grit is light brown. ***Coarse (220) grit*** is orange. ***Medium (320) grit*** is brown-black. ***Fine (400) grit*** is blue. ***Extra-fine (800) grit*** is white. ***Ultra-fine (1000) grit*** is red. **To Order:** For files, please specify grit.

File Size, Lg.×Wd.×Thick.	180, 220, and 320 Grit	Each	400, 800, and 1000 Grit	Each
3 15/16″×15/64″×0.0197″	4805A11	$33.16	4805A12	$32.13
3 15/16″×15/64″×0.0394″	4805A13	33.16	4805A14	32.13
3 15/16″×25/64″×0.0394″	4805A15	43.01	4805A16	41.45
2″ Lg. ×1/8″ Dia.	4805A17♠	22.28	4805A18	21.25
Hand-Held Holder for 0.2362″ Wd. Files			4805A31	6.26
Hand-Held Holder for 0.3937″ Wd. Files			4805A32	6.83
Hand-Held Holder for 0.1181″ Dia. Files			4805A33	9.96
1/8″-Shank Holder for File Tools for 4805A11-A16			4805A34	33.10

♠ Not available in 180 grit.

Pocket-Size Abrasive Contact Files

Holder with Six Files

Remove corrosion on relay and switch contacts. These tools extend the life of sensitive connections, particularly those made of precious metals. Files and rods are made of diamond particles uniformly embedded in a nonchipping, nonconductive material; color is silver. Holders are plastic.

4575A73 includes six files plus six ball-end rods for cleaning pits on contacts; rods are 1 1/4″ Lg×0.020″ Dia.

Holders with Files

File Size, Lg.×Wd.×Thick.	Handle Lg.		Each
Holders with Six Files			
1 1/2″×3/16″×0.007″	3″	4575A71	$33.12
1 1/2″×3/16″×0.0035″	3″	4575A72	33.12
Holder with Six Files and Six Rods			
1 1/2″×3/16″×0.0035″	3″	4575A73	41.12

Replacement Files and Rods

	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
Repl. Files for 4575A71	25	4575A75	$0.89	$0.78
Repl. Files for 4575A72 and 4575A73	25	4575A76	.89	.78
Repl. Rods for 4575A73	25	4575A77	1.10	.99

Reciprocating Abrasive File Tools

A

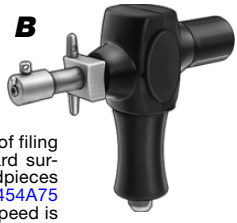

B

Let these tools take the hard work out of filing and finishing dies, molds, and other hard surfaces. Also known as profilers, these handpieces must be used with flexible-shaft grinder 4454A75 or A49 on page 2636. Maximum motor speed is 10,000 rpm. Furnished in a plastic case.

	For Shank Dia.	Stroke Lg.	Strokes Per Min.	Weight, lbs.		Each
A	1/8″	0.0394″	500-10,000	1/4	4394A41	$745.00
B	1/8″	0.2362″	500-10,000	2	4394A42	2,080.00

Flexible Abrasive Contact Files

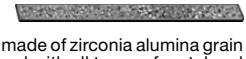

Designed for cleaning contacts and relays, these files can be bent and twisted into hard-to-reach spots. They're made of zirconia alumina grain pressed into a flexible core and can be used with all types of metal and plastic. Files are nonchipping and nonconductive. Pkg. quantity is 12.

Grade	Grit	Size, Lg.×Wd.×Thick.	Color		Each Partial Pkg.	Full Pkg.
Coarse	80	4 3/4″×3/8″×0.040″	Gray	4610A28	$1.25	$1.03
Coarse	80	4 3/4″×1/2″×0.040″	Gray	4610A11	1.25	1.03
Coarse	80	4 3/4″×7/8″×0.030″	Gray	4610A23	1.25	1.03
Medium	120	4 3/4″×3/8″×0.025″	Gray	4610A12	1.25	1.03
Medium	120	4 3/4″×1/2″×0.040″	Gray	4610A17	1.25	1.03
Medium	120	4 3/4″×1/2″×0.080″	Gray	4610A16	1.57	1.30
Medium	120	4 3/4″×7/8″×0.030″	Gray	4610A24	1.25	1.03
Fine	180	4 3/4″×3/8″×0.040″	Gray	4610A29	1.25	1.03
Fine	180	4 3/4″×1/2″×0.025″	Gray	4610A13	1.25	1.03
Fine	180	4 3/4″×1/2″×0.040″	Gray	4610A19	1.25	1.03
Fine	180	4 3/4″×1/2″×0.080″	Gray	4610A18	1.57	1.30
Fine	180	4 3/4″×7/8″×0.030″	Gray	4610A25	1.25	1.03
Extra Fine	240	4 3/4″×3/8″×0.025″	Gray	4610A14	1.25	1.03
Extra Fine	240	4 3/4″×3/8″×0.032″	Gray	4610A31	1.25	1.03
Extra Fine	240	4 3/4″×7/8″×0.030″	Gray	4610A26	1.25	1.03
Polish	320	4 3/4″×3/8″×0.015″	Tan	4610A15	1.25	1.03
Polish	320	4 3/4″×3/8″×0.025″	Tan	4610A22	1.25	1.03
Polish	320	4 3/4″×3/8″×0.040″	Tan	4610A33	1.25	1.03
Polish	320	4 3/4″×1/2″×0.030″	Tan	4610A21	1.25	1.03
Polish	320	4 3/4″×7/8″×0.030″	Tan	4610A27	1.25	1.03

Sharpening Stones

For information about sharpening stones, see page 2680.

Single-Grit Sharpening Stones

Aluminum Oxide, Silicon Carbide, and Alumina Ceramic

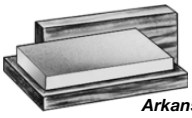

Arkansas

The most basic and economical tools for quickly resharpening straight-edged tools such as chisels, plane blades, and draw knives.

Aluminum Oxide and Silicon Carbide Oil-Filled Stones

Aluminum Oxide—Coarse (100) grit is dark gray, medium (240) grit is brown, and fine (320) grit is orange.

Silicon Carbide—Coarse (100), medium (150), and fine (280) grits are dark gray.

To Order: Specify grit: coarse, medium, or fine (unless noted).

Size	Aluminum Oxide	Each	Silicon Carbide	Each
4″×1″× 1/4″	4501A11	$7.40	4399A31	$7.76
4″×1″× 1/2″	4501A12	10.33	4399A32	10.82
5″×2″× 5/8″	4501A13★	19.73	4399A33★	20.65
6″×2″×1″	4501A14	23.39	4399A34	24.51
8″×2″×1″	4501A15	27.40	4399A35	28.67

★ Not offered in coarse grit.

Alumina Ceramic Stones—Furnished in a plastic case.

No lubrication needed. ***Medium*** (400-600) grit is brown. ***Fine*** (1800) grit is white.

Size	Medium	Each	Fine	Each
8″×2″×1/2″	4456A13	$60.92	4456A12	$60.92

Arkansas Stones—Furnished in a hardwood box.

Extra-fine (600-800) grit is soft Arkansas; color is gray. ***Ultra-fine*** (800-1000) grit is hard Arkansas; color is white.

Size	Extra Fine	Each	Ultra Fine	Each
4″×2″×3/4″-1″	8741A12	$29.24	4496A1	$25.88
6″×2″×3/4″-1″	8741A13	38.58	4496A3	46.13
8″×2″×3/4″-1″	8741A14	52.34	4496A4	65.04
10″×2″×3/4″-1″	8741A15	81.20	4496A5	106.79

Contoured-Edge Sharpening Stones

Round Edge

Also known as slip stones, these abrasives combine a broad face with contoured edges for sharpening irregularly shaped tools such as chisels and moulding plane blades.

Aluminum Oxide Oil-Filled Stones

Preferred for use on tool steels. *Round-edge* stones sharpen curved blades and tools. *Knife-edge* stones sharpen the points of cutting tools.

Coarse (100) grit is dark gray. ***Medium*** (240) grit is brown. ***Fine*** (320) grit is orange.

Size	Coarse	Medium	Fine	Each
Round Edge				
4″ ×1″ ×7/16″ ×3/16″	—	4620A22	4620A21	$9.51
4 1/2″ ×1 3/4″ ×1/4″ ×3/32″	4620A53	4620A52	4620A51	11.69
4 1/2″ ×1 3/4″ ×3/8″ ×1/8″	4620A63	4620A62	4620A61	11.69
4 1/2″ ×1 3/4″ ×1/2″ ×3/16″	4620A33	4620A32	4620A31	11.69
5″ ×1″ ×5/16″ ×3/32″	—	4620A42	4620A41	11.69
Knife Edge				
4″ ×1″ ×1/8″ ×1/16″	4415A13	4415A12	4415A11	12.86

Hard Arkansas Stones

Their ultra-fine (800-1200) grit produces the sharpest edge possible. Stones have a round edge. Color is white.

Size	Each
3″×1 3/4″×1/4″×1/16″	4504A1 $51.07
4″×1 1/4″×1/4″×1/8″	4504A3 49.84
4″×1 3/4″×3/8″×1/8″	4504A2 83.21

Wood-Handled Sharpening Stones

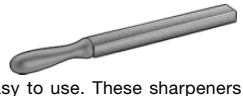

Easy to carry, easy to use. These sharpeners are made of silicon carbide abrasive mounted on wood handles. Perfect for blades such as post hole diggers that are permanently mounted and cannot be removed for sharpening. Color is dark gray.

Grit	Stone Size		Each
Coarse (100)	9″×1 1/4″×1″	4513A13●	$20.63
Medium (150)	10″×1 1/4″× 3/4″	4513A22	16.98
Coarse (100)/Fine (280)	10″×1 1/4″× 3/4″	4513A23	21.79

● Stone has a tapered end; dimensions given are for smaller end.

Dual-Grit Sharpening Stones

Coarse grit on one side and fine grit on the other allow you to sharpen and hone. All stones are oil filled, unless noted. ***Alumina ceramic*** stone comes in a leather case. ***Arkansas*** stones come in a wood box.

Size	Coarse	Fine		Each
Round Stones				
Aluminum Oxide				
4″ ×1″	100 (brown)	320 (orange)	4506A1	$22.93
Silicon Carbide				
4″ ×1″	100 (dark gray)	280 (light gray)	8739A11	22.96
Rectangular Stones				
Aluminum Oxide				
4″ ×1 3/4″× 5/8″	100 (brown)	320 (orange)	4506A4	14.52
6″ ×2″ ×1″	100 (brown)	320 (orange)	4506A2	22.00
8″ ×2″ ×1″	100 (brown)	320 (orange)	4506A3	26.86
11 1/2″×2 1/2″×1″	100 (brown)	320 (orange)	4506A5	54.20
Silicon Carbide				
4″ ×1 3/4″× 5/8″	100 (dark gray)	280 (light gray)	8739A12	14.50
6″ ×2″ ×1″	100 (dark gray)	280 (light gray)	8739A13	22.11
8″ ×2″ ×1″	100 (dark gray)	280 (light gray)	8739A14	26.86
11 1/2″×2 1/2″×1″	100 (dark gray)	280 (light gray)	8739A15	54.18
Coarse Side: Silicon Carbide, Fine Side: Aluminum Oxide				
6″ ×2″ ×1″	150 (gray)	320 (orange)	8738A33	37.11
11 1/2″×2 1/2″×1″	150 (gray)	320 (orange)	8738A54	74.50
Coarse Side: Aluminum Oxide, Fine Side: Soft Arkansas				
6″ ×2″ ×1″	100 (brown)	400-600 (white)	8738A11 ♦	58.62
Alumina Ceramic				
5″ ×1″ × 1/4″	400-600 (brown)	1800 (white)	4456A18	42.97
Arkansas				
4″ ×2″ × 1/2″	400 (gray)	700-800 (white)	6160A41 ♦	26.50
6″ ×2″ × 1/2″	400 (gray)	700-800 (white)	6160A43 ♦	45.41
8″ ×2″ × 1/2″	400 (gray)	700-800 (white)	6160A45 ♦	61.27
10″ ×2″ × 1/2″	400 (gray)	700-800 (white)	6160A46 ♦	76.15

♦ Not oil filled.

Three-Grit Sharpening Stones

Standard

Deluxe Oil Bath

These coarse, medium, and fine abrasive stones work together.

Standard sharpener has three stones mounted on a triangular wood block: one 180-grit silicon carbide stone (gray), one Arkansas 220-grit stone (pink), and one Arkansas 320-grit stone (white). Includes a wood base for the stone holder and a 1 oz. bottle of honing oil.

Deluxe oil-bath sharpeners include a nonskid base with a built-in reservoir for honing oil. Just rotate the stones into the bath to keep them clean and oiled. Includes one 100-grit silicon carbide stone (dark gray), one 150-grit silicon carbide stone (dark gray), and one 320-grit aluminum oxide stone (orange). 4505A6 is furnished with 4 oz. of honing oil, 4505A1 with 1 pt. of honing oil.

Stone Size	Sharpeners	Each	REPLACEMENT STONES Coarse	Medium	Fine	Each
Standard						
6″ ×1 5/8″×1/2″	4549A21	$43.44	—	—	—	—
Deluxe Oil Bath						
6″ ×2″ ×1/2″	4505A6	97.69	4505A71	4505A72	4505A73	$13.13
11 1/2″×2 1/2″×1/2″	4505A1	228.70	4505A2	4505A3	4505A4	35.51

Sharpening Stone for Machine-Mount Blades

A groove around this fast-cutting silicon carbide stone protects your fingers for safe sharpening of machine-mounted knives. Also ideal for cleaning and reflattening machinery tables. One side is coarse (120 grit, dark gray); the other is fine (280 grit, gray). Size is 4″ Dia.×1 1/2″ Thick.

4474A4 ..... **Each** $22.54

No-Dust Smooth-Finish Abrasive Blocks

With these semiflexible blocks, you can clean, finish, and polish any metal without producing dust. Made of fine (100) grit aluminum oxide. Nonconductive and nonloading. Color is red-brown.

Size		Each	Size		Each
5″× 1/2″×3/8″	4512A1	$11.26	5″×1″× 5/8″	4512A3	$25.50
5″× 3/4″×3/8″	4512A2	14.17	5″×2″×1″	4512A4	51.36
5″×1″ ×1/8″	4512A6	10.81	5″×4″×1″	4512A5	84.00

Diamond Sharpening Stones

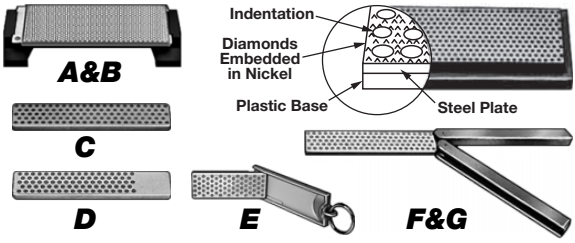

Long-lasting diamond stones sharpen cutting tools such as knives, machinists' and cabinetmakers' tools, and garden tools. They can also be used for edging glass, ceramics, and stone.

Stones consist of synthetic diamonds embedded in nickel, electroplated to a perforated steel plate, then molded to a plastic base. Small indentations collect filings and keep the surface clean for fast sharpening. Stones stay flat and sharpen with little effort. Use dry or with water; no messy oil lubricants are needed. To clean, just rinse with water.

These stones are offered in four grits and are color coded for easy identification. ***Extra-coarse, 220 grit*** is for heavy cutting tools such as axes, chisels, and mower blades. Color is black. ***Coarse, 325 grit*** is for everyday tools like scissors and knives. Color is blue. ***Fine, 600 grit*** produces a razor-sharp edge on cutlery and woodworking tools that are regularly sharpened. Color is red. ***Extra-fine, 1200 grit*** is used after fine grit to get the sharpest edge possible. Color is green.

To Order: For stones, please specify grit: extra coarse, coarse, fine, or extra fine.

(A&B) Bench Stones— Come in a wooden case. ***Style A*** is single-sided. ***Style B*** are double-sided, with a different grit on each side. **To Order:** For double-sided, please specify extra-coarse/coarse, coarse/fine, coarse/extra-fine, or fine/extra-fine grit combination.

(C) Pocket Stone— Furnished with a leather sheath. Not offered in extra-fine grit.

(D) Machinists' Stone— Identical to the pocket stone above, but instead of having a perforated pattern across the entire face, one end has a 1″ continuous diamond surface for sharpening pointed carbide and tool steel bits. Not offered in extra-coarse or extra-fine grit.

(E) Mini Folding Stone— Folds into a 3½″×1 1/16″ plastic case with key chain.

(F&G) Folding-Handle Stones— The folding handle serves as a storage case. ***Style F*** is single-sided. ***Style G*** is double-sided, with a different grit on each side. **To Order:** For double-sided, please specify extra-coarse/coarse, coarse/fine, or fine/extra-fine grit combination.

Stones

	Diamond Area		Each
A	6″	×2″	4598A4 ... $57.55
B	8″	×2 5/8″	4598A82 ... 112.74
B	10″	×4″	4598A92 ... 155.53
C	4 11/32″	× 7/8″	4598A2 ... 25.04
D	4 11/32″	× 7/8″	4598A3 ... 26.87
E	2 11/16″	× 15/16″	4598A1 ... 11.13
F	4 11/32″	× 7/8″	4598A7 ... 24.53
G	4 11/32″	× 7/8″	4598A8 ... 41.17

Four-Piece Stone Set

Contains two ***pocket stones (C)***, in extra-coarse and coarse grits, and two ***machinists' stones (D)***, in fine and extra-fine grits. All are 4 11/32″×7/8″ and come in a fabric roll pouch.

4598A48 ... **Per Set** $72.75

Butcher Steels

Quickly sharpen all types of straight-edge (nonserrated) knives. All have a hand guard to protect you from sharp blade edges.

Carbon steels are made of stain-free, hardened high-carbon steel. Handle is polypropylene.

Diamond-coated steel is made of fine (600) grit diamond bonded to a stainless steel rod. Has a plastic handle and comes with a leather sheath.

Rod Lg.	O'all Lg.	Rod Dia.		Each
Carbon Steels				
10″	15″	½″	3846A44	$26.19
12″	17″	½″	3846A45	25.81
14″	19″	½″	3846A46	30.59
Diamond-Coated Steel				
10 3/8″	16 1/8″	7/16″	3790A11	37.87

Handy Knife and Shears Sharpener

Easy on your fingers and your wallet, this hand-held sharpener is perfect for a quick touch-up on dull knife and shear blades. Blades are made of tungsten carbide, and are reversible for extended use.

Sharpener	3663A41	**Each**	$8.29
Repl. Carbide Blades (Set of Two)	3663A42	**Per Set**	$3.71

Pocket-Size Diamond Sharpening Tools

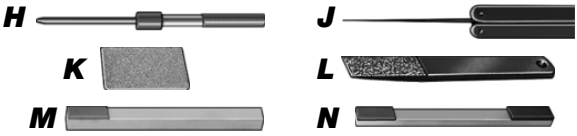

Conventional stones and ceramic sticks can't debur, sharpen, or hone as quickly as these economical diamond tools. They're perfect for tools such as serrated and straight-edge knives, axes, router bits, saw blades, and carbide bits.

(H) Retractable Sharpener— The ¼″ Dia.×3¾″ Lg. rod stores in the brass handle. Includes a leather pouch with belt loop.

(J) Folding-Handle Sharpeners— Excellent for use on serrated and curved blades. Diamond rod is 4″ long and tapers from ¼″ to 1/16″ diameter. Handle folds to enclose the rod. Overall length is 9½″.

(K) Wallet-Size Sharpeners— Diamond crystals are bonded with a stainless steel alloy. Size is 2″×3¼″×1/16″.

(L) Colored-Handle Sharpeners— Color-coded plastic handles help you identify grit size. Diamond particles are embedded in a stainless steel alloy and bonded to a metal base for long tool life. Diamond area is ¾″×2″. Overall length is 6″.

(M&N) Sharpeners for Carbide Tools— Extend the life of carbide cutting tools as well as other tools with these sharpeners. Their diamonds are embedded in a resin-bonded matrix in 1″×3/8″×1/16″ areas. The aluminum alloy handle is 5″×3/8″×3/8″. ***Style M*** has one diamond area. ***Style N*** has two diamond areas, one on each end.

	Grit		Each
H	Fine, 600	4353A11	$20.61
J	Coarse, 325	4353A15	28.29
J	Fine, 600	4353A14	28.29
K	Extra Coarse, 150	43735A65	21.07
K	Coarse, 250	43735A64	16.85
K	Medium, 400	43735A63	13.70
K	Fine, 600	43735A62	10.52
L	Coarse, 250 (Black Handle)	43545A54	9.45
L	Medium, 400 (Purple Handle)	43545A53	7.72
L	Fine, 600 (Red Handle)	43545A52	5.88
L	Extra Fine, 1200 (Blue Handle)	43545A51	5.88
M	Coarse, 100	4511A11	30.22
M	Coarse, 150	4511A12	30.22
M	Medium, 220	4511A13	30.22
M	Medium, 320	4511A14	30.22
M	Fine, 400	4511A15	30.22
N	Coarse, 100/Medium, 320	4511A17	44.22
N	Coarse, 150/Medium, 320	4511A18	44.22
N	Medium, 220/Medium, 320	4511A19	44.22
N	Medium, 320/Fine, 400	4511A21	44.22
N	Medium, 320/Fine, 600	4511A22	44.22

Pocket-Size Boron Carbide Sharpener

Sharpen carbide and high-speed steel cutting tools with this boron carbide abrasive stone. It has a thick working surface for twice the life of diamond hones and five to ten times the life of silicon carbide stones. Overall length is 7″ with a 1 5/8″×½″×3/16″ boron carbide section. Handle has a built-in 2X magnifier. Color is dark gray.

To Order: Please specify coarse (240), medium (320), or fine (400) grit.

8737A7 ... **Each** $35.18

Precision Knife Sharpeners

Four-Stone Diamond Kit

These kits come with knife clamp/angle guides for more accurate and effective knife sharpening than free-hand sharpeners or butcher steels can provide. Kits also come with guide rods, honing oil, and a carrying case. Each stone is mounted on a holder.

All kits include coarse-, medium-, and fine-grit stones. ***Five-stone aluminum oxide kit*** also includes an extra-coarse-grit stone and a V-shaped, fine-grit stone for serrated blades. ***Four-stone diamond kit*** has stones that last longer than aluminum oxide. Also comes with a V-shaped, aluminum oxide fine-grit stone for serrated blades.

Optional universal mount holds knife clamp/angle guide. It has drilled holes in the base for mounting.

Optional V-shaped fine-grit stone sharpens knives with serrated blades. Made of aluminum oxide.

		Each
Three-Stone Aluminum Oxide Kit	4555A16	$36.91
Five-Stone Aluminum Oxide Kit	4555A14	51.52
Four-Stone Diamond Kit	4555A17	92.04
Optional Universal Mount	4555A18	$8.32
Optional V-Shaped Fine-Grit Stone	4555A19	11.43

Heavy Duty Shear Sharpener

With this sharpener, your carbon and stainless steel shears will be two to four times sharper than they were the day you bought them. It works on straight and curved blades up to 14″ long, as well as on pinking shears.

Includes a scissors clamp that adjusts for blade taper, wheel shields and finger guards for safety, and an angle guide that lets you set the sharpening angle from 0° to 55°. It has a ¼-hp, 3,450-rpm motor and operates on 110 VAC, 60 Hz. Furnished with a 5″×½″×½″, 100-grit sharpening wheel and a 5″×½″×½″ buffing wheel. Also includes safety glasses, breathing mask, lubricant, wheel dresser, and 8-ft. power cord with three-prong plug.

		Each
Sharpener	**4515A21**	$419.48
Replacement Sharpening Wheel	**4515A22**	19.52
Replacement Buffing Wheel	**4515A23**	53.05

Landscaping Equipment Sharpeners

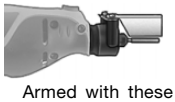

Chain Saw Sharpener

Tool and Blade Sharpener

Armed with these kits and a Dremel-style tool, you'll be able to sharpen chain saws, hoes, lawnmower blades, and more.

Chain Saw Sharpening Kit— Includes a sharpening attachment, three diamond-coated stones with a ⅛″ shank, and two spacers.

Tool and Blade Sharpening Kit— With three guides for different angles (22°, 33°, and 45°), this kit sharpens blades of different thicknesses from knives to lawnmower blades. Also includes an aluminum oxide grinding bit with a ⅛″ shank.

		Each
Chain Saw Sharpening Kit	**4471A11**	$9.62
Tool and Blade Sharpening Kit	**4471A12**	9.20

Quick and Easy Drill Bit Sharpener

This economical machine makes sharpening drill bits as easy as sharpening a pencil. Sharpen your bit in three quick steps—determine the type and angle of the drill bit being sharpened, align the bit in the chuck, and sharpen. Sharpener will also split the point if necessary.

This machine has a 1″ Dia.×¾″ Thick., 180-grit diamond sharpening wheel and works on high-speed steel, cobalt, and carbide drills in sizes 3⁄32″-¾″, A-Z, 1-42, and 2.5-19 mm. It sharpens standard, split-point, and masonry drills to 118°, 135°, and custom angles; it can even turn 118° points into 135° split points. Use on drills of any length.

Sharpener has a 1.75-amp, 15,000-rpm motor that runs on 120 VAC, 60 Hz. It includes a plastic carrying case and a 6-ft. power cord with three-prong plug. Size is 5″ Lg.×7¾″ Wd.×4½″ Ht. UL listed.

		Each
Drill Bit Sharpener	**4440A41**	$175.80
Replacement 180-Grit Sharpening Wheel	**4440A42**	23.28
Optional 100-Grit Sharpening Wheel	**4440A43**	23.28
Replacement Chuck	**4440A44**	45.68

Professional Quick and Easy Drill Bit Sharpener

Whether you're an expert or a first-time user, this sharpener gives you professional results. It works in three simple steps: select point angle, align the drill bit, and sharpen. Sharpener will also split the point if necessary. It sharpens a typical ⅛″ drill bit in just 15 seconds and a ¾″ drill bit in only 60 seconds. It has a super-abrasive CBN (cubic boron nitride) wheel that doesn't require coolants and never needs truing or dressing. Material removal is adjustable.

Sharpener handles all high-speed and cobalt steel standard two-flute twist bits such as regular and parabolic flute, straight shank, and reduced shank. It sharpens drill bit sizes ⅛″-¾″, A-Z, 1-30, 3-19 mm, and standard and split points from 118° to 140°. Use on drills 1½″ and longer. Has a 4.5-amp, 115 VAC, 60 Hz, 3,450-rpm motor and includes a 6-ft. power cord with three-prong plug. To sharpen carbide drill bits, see optional diamond wheel (4432A13) below.

		Each
Drill Bit Sharpener	**4432A11**	$1,492.67
Replacement 180-Grit CBN Wheel	**4432A12**	182.00
Optional 180-Grit Diamond Wheel	**4432A13**	197.17

Quick and Easy Knife and Shear Sharpeners

Standard Duty Knife Sharpener

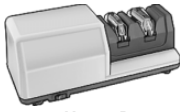

Heavy Duty Knife Sharpener

Shear Sharpener

Simply slide your knife and shear blades along the built-in guides and the internal diamond abrasives restore razor-sharp edges. Sharpeners operate on 120 VAC, 60 Hz and have a 7-ft. power cord with two-prong plug (unless noted). UL listed.

Standard duty knife sharpener creates a strong, triple-bevel edge. Size is 9″ Lg.×3⅝″ Wd.×4⅜″ Ht.

Heavy duty knife sharpener produces a very durable double-bevel edge on straight-edge and serrated blades. Plus, the sharpening segment slides off the base for easy cleaning. Size is 12″ Lg.×5″ Wd.×5″ Ht. Power cord has a three-prong plug.

Shear sharpener is 7⅞″ Lg.×3 9⁄16″ Wd.×3⅞″ Ht. Not for serrated blades, such as pinking or scallop-edge shears, or barbers' scissors.

		Each
Standard Duty Knife Sharpener	**45605A82**	$91.67
Heavy Duty Knife Sharpener	**45605A83**	355.33
Shear Sharpener	**45605A84**	86.67
Replacement Sharpening Module for 45605A83	**45605A91**	120.00
Replacement Guides (Set of Two) for 45605A83	**45605A94**	8.00

Bench-Top Diamond Lapping Machine

Lapping Machine

Grind and polish glass, ceramics, composites, and natural stone with this machine. It uses 12″ dia. magnetic-backed discs (sold separately) so it's easy to change discs quickly. Best used with water, this machine has both recirculating and direct water supply connections. A splash guard brush allows large pieces to pass through while keeping the spray inside the unit.

Powered by a ⅓ hp direct drive motor with a variable speed control from 400 to 1,100 rpm. Motor operates on 115 VAC, 60 Hz.

4413A11 ..... **Each** $1,690.31

Diamond Discs

These diamond-grit discs are flexible, magnetic, and have no arbor hole. Size is 12″ diameter.

Grit		Each
Diamond-Plated Grinding Discs		
120	**4413A21**	$364.29
220	**4413A22**	308.57
400	**4413A23**	263.57
600	**4413A24**	246.43
Diamond Resin Polishing Discs		
600	**4413A31**	238.93
800	**4413A32**	238.93
1800	**4413A33**	238.93
3500	**4413A34**	251.79

Mirror-Finish Shank-Mount Buffing Ball

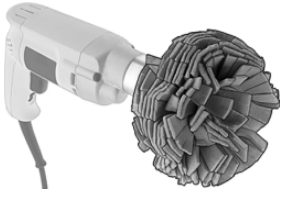

Made of very soft, synthetic felt, this buff leaves a fine finish. The felt is cut into small sections that get into hard-to-reach spots. Great for use on curves and textured surfaces like diamond-pattern tread. Buff is 6″ dia.; shank is 5⁄16″ dia. Buff material is machine washable and can be washed up to 30 times. Max. rpm is 2,000. Color is orange.

3813A11 ..... **Each** $28.84

Flexible Cylinder Hones

The silicon carbide abrasive in these tools is embedded in balls at the ends of flexible plastic spindles. As a result, they remove material rapidly and leave a smooth, even finish. Use on mild steel, stainless steel, and cast iron.

Hones are produced slightly oversized to provide optimum cutting pressure. *Note:* When your cylinder ID falls between two sizes listed below, order the larger size hone.

Hones should be rotating when inserted into or removed from cylinders. Recommended speed is 800-1,200 rpm for 4 mm-3/16″ cylinder IDs, 700-900 rpm for 1/2″-1 7/8″, 600-800 rpm for 2″-3 3/4″, 400-600 rpm for 4″-7″, 300-500 rpm for 8″-11″, and 80-350 rpm for 12″-16″.

Hones are often used with portable drills, drill presses, and CNC machines. All have twisted wire stems, except those for 9″ and larger cylinder IDs, which have hex shanks.

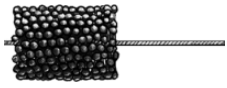

Color-coding on the stem identifies the grit. ***Coarse*** grit has no color, ***medium*** grit is red, ***fine*** grit is blue, ***extra-fine*** grit is white, and ***ultra-fine*** grit is pink.

Also Available: Hones in larger sizes and with other abrasives: 20- to 800-grit aluminum oxide or boron carbide. Please ask for 4424A999 and specify cylinder ID, abrasive, and grit.

For Cylinder ID	Stem Dia.	O'all Lg.	Abrasive Lg.	Coarse, 120 Grit	Each	Medium, 180 Grit	Each	Fine, 240 Grit	Each	Extra Fine, 320 Grit	Each	Ultra Fine, 600 Grit	Each
4 mm	0.055″	6″	3/4″	—	—	4424A111	$18.51	4424A112	$19.62	4424A113	$27.77	4424A421	$33.33
4.5 mm	0.055″	6″	3/4″	—	—	4424A114	18.22	4424A115	19.31	4424A116	27.33	4424A422	32.79
5 mm	0.083″	8″	1 1/2″	4424A117	$17.36	4424A118	17.36	4424A119	18.40	4424A121	26.04	4424A423	31.24
5.5 mm	0.083″	8″	1 1/2″	4424A122	17.64	4424A123	17.64	4424A124	18.71	4424A125	26.47	4424A424	31.78
6.4 mm (1/4″)	0.112″	8″	1 1/2″	4424A257	11.63	4424A54	11.63	4424A256	12.31	4424A255	17.46	4424A425	20.95
7 mm	0.125″	8″	2″	4424A126	11.75	4424A127	11.75	4424A128	12.42	4424A129	17.56	4424A426	21.08
8 mm	0.140″	8″	2″	4424A264	12.30	4424A263	12.30	4424A262	13.05	4424A261	18.43	4424A427	22.11
9 mm	0.140″	8″	2″	4424A267	12.81	4424A55	12.81	4424A266	13.58	4424A265	19.22	4424A428	23.04
9.5 mm	0.140″	8″	2″	4424A131	13.59	4424A132	13.59	4424A133	14.42	4424A134	20.37	4424A429	24.46
10 mm	0.140″	8″	2″	4424A271	13.74	4424A51	13.74	4424A269	14.53	4424A268	20.59	4424A431	24.72
11 mm	0.140″	8″	2″	4424A275	14.03	4424A274	14.03	4424A273	14.87	4424A272	21.03	4424A432	25.24
14 mm	0.190″	8″	2 1/2″	4424A278	14.67	4424A52	14.67	4424A277	15.54	4424A276	22.01	4424A433	26.42
18 mm	0.190″	8″	2 1/2″	4424A283	15.91	4424A41	15.91	4424A282	16.86	4424A281	23.86	4424A434	28.62
20 mm	0.190″	8″	2 1/2″	4424A285	16.41	4424A42	16.41	4424A57	17.37	4424A284	24.59	4424A435	29.52
3/16″	0.073″	6″	3/4″	—	—	4424A352	17.94	4424A353	19.02	4424A354	26.91	4424A436	33.90
1/2″	0.168″	8″	2 1/2″	4424A61	14.62	4424A11	14.62	4424A12	15.46	4424A21	21.87	4424A437	26.22
5/8″	0.190″	8″	2 1/2″	4424A64	15.50	4424A43	15.50	4424A63	16.43	4424A62	23.24	4424A438	27.90
3/4″	0.190″	8″	2 1/2″	4424A67	16.33	4424A13	16.33	4424A66	17.27	4424A65	24.48	4424A439	29.37
7/8″	0.220″	8″	3″	4424A69	16.49	4424A23	16.49	4424A22	17.48	4424A68	24.73	4424A441	29.68
15/16″	0.220″	8″	3″	4424A355	17.05	4424A356	17.05	4424A357	18.08	4424A358	25.58	4424A442	30.69
1″	0.220″	8″	3″	4424A14	17.59	4424A24	17.59	4424A72	18.67	4424A71	26.39	4424A443	31.66
1 1/8″	0.245″	8″	3″	4424A75	18.51	4424A26	18.51	4424A74	19.63	4424A73	27.79	4424A444	33.38
1 1/4″	0.245″	8″	3″	4424A78	19.96	4424A15	19.96	4424A77	21.15	4424A76	29.98	4424A445	35.97
1 3/8″	0.245″	8″	3″	4424A82	20.49	4424A27	20.49	4424A81	21.75	4424A79	30.80	4424A446	36.95
1 1/2″	0.245″	8″	3″	4424A85	22.02	4424A28	22.02	4424A84	23.32	4424A83	32.99	4424A447	39.57
1 5/8″	0.245″	8″	3″	4424A88	22.03	4424A29	22.03	4424A87	23.32	4424A86	33.04	4424A448	39.66
1 3/4″	0.245″	8″	3″	4424A92	22.99	4424A31	22.99	4424A91	24.38	4424A89	34.52	4424A449	41.41
1 7/8″	0.245″	8″	3″	4424A361	23.42	4424A362	23.42	4424A363	24.84	4424A364	35.15	4424A451	42.18
2″	0.245″	8″	3″	4424A95	23.84	4424A32	23.84	4424A94	25.29	4424A93	35.80	4424A452	42.94
2 1/8″	0.245″	5″	1 1/2″	4424A314	24.26	4424A313	24.26	4424A312	25.70	4424A311	36.38	4424A453	43.67
2 1/8″	0.245″	8″	3″	4424A365	24.84	4424A366	24.84	4424A367	26.32	4424A368	37.25	4424A454	44.69
2 1/4″	0.245″	8″	3″	4424A98	25.83	4424A44	25.83	4424A97	27.37	4424A96	38.73	4424A455	46.49
2 3/8″	0.245″	8″	3″	4424A371	26.84	4424A372	26.84	4424A373	28.45	4424A374	40.25	4424A456	48.30
2 1/2″	0.245″	5″	1 1/2″	4424A213	26.64	4424A16	26.64	4424A212	28.21	4424A211	39.92	4424A457	47.91
2 1/2″	0.245″	8″	3″	4424A216	27.82	4424A33	27.82	4424A215	29.49	4424A214	41.72	4424A458	49.74
2 5/8″	0.245″	8″	3″	4424A375	29.29	4424A376	29.29	4424A377	31.05	4424A378	43.93	4424A459	52.71
2 3/4″	0.245″	8″	3″	4424A219	30.71	4424A45	30.71	4424A218	32.54	4424A217	46.07	4424A461	55.29
2 7/8″	0.245″	8″	3″	4424A381	33.19	4424A382	33.19	4424A383	35.17	4424A384	49.78	4424A462	59.73
3″	0.245″	8″	3″	4424A223	35.62	4424A17	35.62	4424A222	37.81	4424A221	53.49	4424A463	64.17
3 1/8″	0.245″	5″	1 1/2″	4424A226	35.60	4424A46	35.60	4424A225	37.75	4424A224	53.34	4424A464	64.01
3 1/4″	0.310″	13 1/2″	3 1/2″	4424A229	40.22	4424A47	40.22	4424A228	42.66	4424A227	60.33	4424A465	72.41
3 1/2″	0.310″	13 1/2″	5″	4424A34	42.86	4424A18	42.86	4424A232	45.42	4424A231	64.34	4424A466	77.20
3 3/4″	0.310″	13 1/2″	5″	4424A48	46.15	4424A19	46.15	4424A234	48.93	4424A233	69.25	4424A467	83.09
4″ ■	0.310″	13 1/2″	6″	4424A35	70.92	4424A237	70.92	4424A236	75.18	4424A235	106.35	4424A468	127.61
4 1/8″	0.310″	13 1/2″	4″	4424A36	49.10	4424A37	49.10	4424A239	52.05	4424A238	73.69	4424A469	88.43
4 1/2″ ■	0.310″	13 1/2″	6″	4424A38	80.69	4424A243	80.69	4424A242	85.51	4424A241	121.01	4424A471	145.24
4 5/8″	0.310″	13 1/2″	4″	4424A246	54.73	4424A49	54.73	4424A245	57.99	4424A244	82.10	4424A472	98.51
5″ ■	0.350″	17 1/2″	6″	4424A53	91.81	4424A249	91.81	4424A248	97.33	4424A247	137.72	4424A473	165.25
5 1/2″ ■	0.350″	17 1/2″	6″	4424A318	99.74	4424A317	99.74	4424A316	106.73	4424A315	151.09	4424A474	181.30
6″ ■	0.420″	17 1/2″	6 1/4″	4424A254	109.11	4424A253	109.11	4424A252	115.64	4424A251	163.69	4424A475	196.45
6 1/2″ ■	0.420″	17 1/2″	6 1/4″	4424A323	117.59	4424A342	117.59	4424A341	124.66	4424A319	176.40	4424A476	209.71
7″ ■	0.420″	17 1/2″	7″	4424A327	128.22	4424A326	128.22	4424A325	135.90	4424A324	192.34	4424A477	230.83
8″ ■	0.420″	17 1/2″	7 1/4″	4424A511	164.40	4424A523	164.40	4424A535	174.28	4424A547	246.64	—	—
9″ ■	1/2″ Hex	34″	8″	4424A512	298.00	4424A524	298.00	4424A536	315.89	4424A548	447.00	—	—
10″ ■	1/2″ Hex	34″	8″	4424A513	298.74	4424A525	298.74	4424A537	319.18	4424A549	451.67	—	—
11″ ■	1/2″ Hex	34″	9″	4424A514	393.41	4424A526	393.41	4424A538	417.01	4424A551	590.12	—	—
12″ ■	1/2″ Hex	34″	9″	4424A515	402.89	4424A527	402.89	4424A539	427.06	4424A552	604.34	—	—
13″ ■	5/8″ Hex	34″	10″	4424A516	612.33	4424A528	612.33	4424A541	649.07	4424A553	918.52	—	—
14″ ■	5/8″ Hex	34″	10″	4424A517	662.09	4424A529	662.09	4424A542	701.81	4424A554	993.13	—	—
15″ ■	5/8″ Hex	34″	12″	4424A518	831.81	4424A531	831.81	4424A543	881.71	4424A555	1,247.72	—	—
16″ ■	5/8″ Hex	34″	12″	4424A519	855.08	4424A532	855.08	4424A544	906.36	4424A556	1,282.61	—	—

■ May also be used on cylinder IDs up to 1/2″ smaller than size listed.

Clean-n-Polish Adjustable Hones for Small Cylinders

A knurled knob on these hones lets you control the amount of pressure exerted on the cylinder so you can adjust the amount of material to remove. The silicon carbide stones have a square end and can hone to the end in step-cut and blind-end cylinders. A 1/4″ diameter flexible drive shaft lets you reach areas normally inaccessible with a rigid shaft. Use with 1/4″, 3/8″, and 1/2″ portable drills. Overall length is 8″. Medium (240) grit stones are 1 1/8″ long; fine (400) grit stones are 1″ long.

For Cylinder Size	No. of Stones Included	Grit	Hones	Each	Replacement Stones	Per Set
11/16″-2 1/2″	2	Medium	6713A21	$15.72	6713A22	$4.31
27/32″-2″	3	Medium	6713A12	16.76	6713A14	5.33
1 1/2″-3 1/8″	3	Fine	6713A16	17.21	6713A17	6.80

Precision Cylinder Hone

Featuring an adjustable micrometer knob for quick and precise cylinder sizing, this hone fits a wide range of cylinder sizes. To use, simply clip two stones and two wipers onto the four racks. Stones are silicon carbide and 5″ long; cleaning wipers are made of felt. Use a portable drill with a ½″ or larger chuck to power the drive shaft. Overall length is 17″.

Hone Set for 3″-4¼″ Cylinders

Includes cylinder hone body, ½″ dia. driver extension, two 80-grit stones, two 180-grit stones, four wipers, four racks, cleaning brush, dressing paddle, and carrying case. (Hones can be used on larger cylinders, but a larger rack set is required. Sold separately.)

6673A12 ..... **Per Set** $228.35

Optional and Replacement Rack Sets

Each set includes four racks: two for stones and two for wipers.

Cylinder Size		Per Set	Cylinder Size		Per Set
2¾″-3¾″	**6673A21**	$26.12	4″-6¼″	**6673A18**	$26.12
3″-4¼″	**6673A17**●	26.12	6⅛″-10¼″	**6673A19**	30.92

● Replacement set; included with 6673A12.

Optional and Replacement Stone and Wiper Sets

Each set includes two stones and two wipers.

Cylinder Size	*Coarse, 80 Grit*	*Medium, 180 Grit*	*Fine, 280 Grit*	*Extra Fine, 500 Grit*	Per Set
2¾″-3¾″	**6673A27**	**6673A26**	**6673A25**		$22.25
3″-10¼″	**6673A16**●	**6673A14**●	**6673A13**	**6673A15**	18.76

● Replacement set; included with 6673A12.

Glaze-Breaker Cylinder Hone

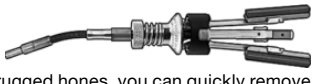

With these rugged hones, you can quickly remove the smooth glaze that cylinders develop over time. Hones have a knurled knob that lets you control the amount of pressure exerted on the cylinder and a flexible drive shaft for reaching areas normally inaccessible with a rigid driver.

An adjustable stop collar lets you select 2″-4″ or 4″-7″ cylinder size range. Hone has an overall length of 13″. Use with a portable drill with a ¼″, ⅜″, or ½″ chuck. Sets include three 3″ long silicon carbide stones.

Optional stones are for use after glazing has been removed.

	Grit		Per Set
Cylinder Hone Set	Medium (220)	**6678A12**	$32.91
Replacement Stone Set	Medium (220)	**6678A13**	8.98
Optional Stone Set	Fine (240)	**6678A14**	8.98

Precision Hone for Small Cylinders

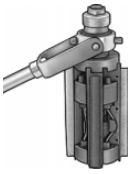

Just like our precision hone, but smaller and with shorter stones for greater accuracy. Designed for 1¾″ to 2¾″ cylinders, this hone uses 3½″ long silicon carbide stones and felt wipers that screw on for quick changes. Use a portable drill with a ½″ or larger chuck to power the drive shaft. Overall length is 14″.

Hone Set

Furnished in a sturdy plastic storage case with a drive shaft, six medium (180) grit stones, a dressing paddle, and two wipers in each of the following size ranges: 1.75″-2.20″, 2.05″-2.50″, 2.35″-2.75″.

7362A45 ..... **Per Set** $234.22

Replacement and Optional Stone and Wiper Sets

Each set includes two stones and two wipers.

For Cylinder Size	*Medium, 180 Grit (Repl.)*	*Coarse, 80 Grit (Optional)*	*Fine, 280 Grit (Optional)*	Per Set
1.75″-2.20″	**7362A51**	**7362A61**	**7362A71**	$23.76
2.05″-2.50″	**7362A52**	**7362A62**	**7362A72**	23.76
2.35″-2.75″	**7362A53**	**7362A63**	**7362A73**	23.76

Miniature Steel Cylinder Laps

Precision lapping of small through holes is easy with these miniature steel tools. They have an eye like a needle and include an expander that quickly enlarges the eye to the next biggest size.

To Order: Please specify size from those listed (where applicable).

For Hole Dia. Sizes	Eye Lg.	Lap Lg.	Pkg. Qty.		Per Pkg.
0.032″, 0.036″, 0.040″, 0.046″, 0.054″	1 1/32″	2½″	12	**4545A42**	$5.59
0.062″	31/64″	2 51/64″	12	**4545A16**	5.59
0.070″, 0.079″	29/64″	3″	12	**4545A43**	5.59
0.090″	29/64″	3″	12	**4545A19**	7.44
0.104″, 0.120″, 0.135″ ♦	37/64″	3 19/64″	12	**4545A44**	7.44
0.155″	1″	3 19/64″	12	**4545A24**	8.68
0.170″, 0.187″	1″	4 13/64″	12	**4545A45**	8.68
0.218″	1 5/32″	4 13/64″	12	**4545A27**	10.53
0.250″	1 19/64″	4″	12	**4545A28**	11.12

♦ Eye lg. is 19/32″.

***18-Piece Lap Set*—**Contains one each of sizes 0.032″-0.250″ and one lap-expander tool.

4545A29 ..... **Per Set** $9.73

Expandable Brass Cylinder Laps

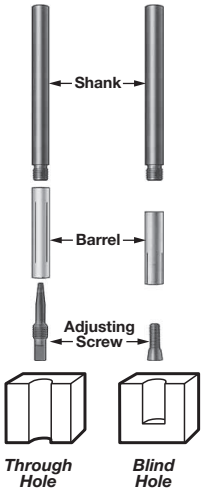

Lap and polish the inside of holes with these brass laps. They expand up to 15% for slightly oversized holes and are used for precision lapping, deburring, and polishing of holes in all metals. Laps have a steel shank (arbor), solid brass barrel, and steel adjusting screw.

Use ***through-hole*** laps for long and short holes. ***Blind-hole*** laps permit lapping closed-end holes to the very bottom.

Also Available: Metric size through-hole laps and replacement barrels. Please ask for 4548A8 and specify complete lap or replacement barrel, and exact hole dia. size: 3 mm, 5 mm, 6 mm, 7 mm, 8 mm, 10 mm, 12 mm, 14 mm, 15 mm, 17 mm, 20 mm, or 25 mm.

Also Available: Replacement adjusting screws for all laps listed below. Please ask for 4548A71 and specify adjusting screw for through-hole or blind-hole lap, and lap size.

For Hole Dia.	COMPLETE LAPS — Through Hole: Barrel Lg.	O'all Lg.		Each	Blind Hole: Barrel Lg.	O'all Lg.		Each	REPLACEMENT BARRELS — Through Hole	Each	Blind Hole	Each
1/8″	5/8″	2 15/32″	**4548A31**	$5.37	1/2″	2 11/32″	**4380A41**	$5.87	**4548A66**	$2.38	**4380A43**	$2.66
5/32″	19/32″	2 61/64″	**4548A32**	5.59	1/2″	2 27/32″	**4380A42**	6.20	**4548A67**	2.40	**4380A44**	2.80
3/16″	15/16″	3 15/16″	**4548A11**	5.71	57/64″	3 29/32″	**4380A21**	6.52	**4548A51**	2.45	**4380A45**	2.50
7/32″	1 3/32″	4 3/32″	**4548A12**	6.08	15/16″	3 15/16″	**4380A22**	7.06	**4548A52**	2.66	**4380A46**	2.89
1/4″	1 1/4″	4 1/4″	**4548A13**	6.19	1 1/8″	4 1/8″	**4380A23**	7.11	**4548A53**	2.80	**4380A47**	3.22
9/32″	1 13/32″	4 13/32″	**4548A14**	6.41	1 3/16″	4 3/16″	**4380A24**	7.17	**4548A54**	3.08	**4380A48**	2.82
5/16″	1 9/16″	4 1/2″	**4548A15**	6.79	1 9/32″	4 9/32″	**4380A25**	7.60	**4548A55**	3.22	**4380A49**	2.88
11/32″	1 45/64″	5 13/64″	**4548A16**	7.01	1 3/8″	4 7/8″	**4380A26**	7.82	**4548A56**	3.50	**4380A51**	3.78
3/8″	1 27/32″	5 3/8″	**4548A17**	7.22	1 1/2″	5″	**4380A27**	8.15	**4548A57**	3.64	**4380A52**	3.36
13/32″	2″	5 15/16″	**4548A41**	7.44	1 5/8″	5 1/2″	**4380A61**	8.48	**4548A45**	4.06	**4380A64**	3.48
7/16″	2 13/64″	6″	**4548A19**	7.93	1 3/4″	5 5/8″	**4380A29**	8.80	**4548A58**	4.06	**4380A53**	4.27
1/2″	2 1/2″	6 1/2″	**4548A22**	8.80	2″	6″	**4380A32**	9.35	**4548A59**	4.90	**4380A54**	4.32
9/16″	2 51/64″	6 51/64″	**4548A23**	9.45	2″	6″	**4380A33**	10.21	**4548A61**	6.02	**4380A55**	5.40
5/8″	3 1/8″	7 3/8″	**4548A24**	12.76	2″	6 1/4″	**4380A34**	13.08	**4548A62**	6.44	**4380A56**	5.76
11/16″	3 1/8″	7 3/8″	**4548A42**	14.12	2″	6″	**4380A62**	13.25	**4548A46**	8.26	**4380A65**	7.08
3/4″	3 1/8″	7 3/8″	**4548A26**	15.10	2″	6 1/4″	**4380A36**	15.80	**4548A63**	8.31	**4380A57**	7.80
7/8″	3 1/8″	7 3/8″	**4548A27**	15.80	2″	6 1/4″	**4380A37**	16.51	**4548A64**	10.43	**4380A58**	9.36
1″	3 1/8″	7 3/8″	**4548A29**	17.16	2″	6 1/4″	**4380A39**	17.16	**4548A65**	12.88	**4380A59**	11.64
1 1/8″	3 1/4″	8 1/8″	**4548A43**	21.72	2 1/2″	7 1/2″	**4380A63**	19.01	**4548A47**	15.75	**4380A66**	13.50
1 1/2″	3 1/4″	8 1/8″	**4548A44**	30.41					**4548A48**	22.26		

Super-Finish Diamond Lapping Pastes

When it comes to lapping, diamonds are your best friend. These long-lasting pastes are made of pure, uniform diamond particles suspended in a high-stability base. They remove material quickly, produce exceptionally high-luster finishes, and leave no scratches. Diamond particles have been tested for quality and accuracy of sizing. Use on steel, ceramic, glass, silicon, and other hard surfaces. Furnished in a disposable plastic syringe applicator with protective air-seal cap. Grades 45-3 are color coded for easy identification.

Oil-soluble pastes are good for most applications. Use ***water-soluble*** pastes where oil may contaminate the work surface.

Preparatory lapping grades are used for light stock removal. ***Fine finishing*** grades are for dies, molds, seals, and general flat lapping. ***Extra-fine finishing*** grades are for metallography, semiconductors, ferrite, and optical work.

Grade	Color	Mesh Equivalent	Grain Size, microns (0.001 mm)	OIL SOLUBLE 5 gram	Each	OIL SOLUBLE 18 gram	Each	WATER SOLUBLE 5 gram	Each	WATER SOLUBLE 18 gram	Each
Preparatory Lapping											
45	Brown●	400	30-60	4776A37	$22.53	4776A47	$75.86	4428A19	$22.53	4428A39	$75.86
30	Red	575	20-40	4776A36	22.53	4776A46	75.86	4428A18	22.53	4428A38	75.86
15	Blue	1,200	10-20	4776A35	18.64	4776A45	63.37	4428A17	18.64	4428A37	63.37
Fine Finishing											
10	Green	1,700	8-12	4776A34	18.64	4776A44	63.37	4428A16	18.64	4428A36	63.37
6	Orange	3,000	4- 8	4776A33	18.64	4776A43	63.37	4428A15	18.64	4428A35	63.37
3	Yellow	8,000	2- 4	4776A32	14.94	4776A42	50.81	4428A14	14.94	4428A34	50.81
Extra-Fine Finishing											
1	Light Gray	14,000	0- 2	4776A31	8.25	4776A41	29.70	4428A13	8.25	4428A33	29.70
½	Light Gray	60,000	0- 1	4776A55	10.40	4776A56	34.92	4428A12	10.40	4428A32	34.92
¼	Light Gray	100,000	0- 0.5	4776A51	13.39	4776A52	38.57	4428A11	13.39	4428A31	38.57

● Also known as mahogany.

6-Piece Kits— These mixtures meet most lapping needs. Kits contain six 5-gram jars of paste: one each of grades #45, #30, #15, #9, #6, and #3.

		Per Kit
Oil-Soluble Kit	4752A22	$116.51
Water-Soluble Kit	4752A21	$116.51

Boron Carbide Lapping Pastes for Hard Surfaces

Second in hardness only to diamonds, boron carbide grains are an economical alternative. These pastes work well for most applications, especially on hard materials such as heat-treated tool steels, tungsten carbide, Stellite, and aerospace alloys. Furnished in ¼-lb. jars. Color is black.

Grit		Each	Grit		Each	Grit		Each	Grit		Each
46	4921A56	$49.74	150	4921A58	$49.74	280	4921A59	$49.74	600	4921A71	$66.63
80	4921A62	49.74	180	4921A64	49.74	320	4921A67	60.87	800	4921A72	66.63
100	4921A63	49.74	220	4921A65	49.74	400	4921A68	60.87	1000	4921A73	66.63
120	4921A57	49.74	240	4921A66	49.74	500	4921A69	66.63	1200	4921A74	66.63

General Purpose Lapping Paste

Carefully graded abrasive particles are suspended in a soft paste that reduces to a thin, smooth film when subjected to friction. These pastes are typically used when making molds and dies or wherever a fine, scratch-free surface is required. Use for precision lapping and polishing of all metals, including steel, chrome, and hard alloys.

Pastes are nontoxic, noncorrosive to all metals, and even inhibit rust on steel. They resist heat breakdown, so they won't seize during aggressive lapping. Residue removes easily with any alkaline cleaner.

Grit	Abrasive★	Grain Size, microns (0.001 mm)	Color	Applications	2-oz. Jar	Each	12-oz. Jar	Each
90	SC	N/A	Black	Fast Stock Removal	4807A21	$8.11	4807A61	$23.00
220	SC	N/A	Black	Roughing	4807A22	8.67	4807A62	24.44
320	SC	36	Black	Semifinishing Hard Metals	4807A24	10.34	4807A64	31.22
400	SC	26	Black	Semifinishing Hard Metals	4807A25	11.16	4807A65	33.00
500	AO	22	White	Semifinishing Chrome, Stainless and Tool Steels	4807A27	10.22	4807A67	30.67
600	AO	16	White	Semifinishing Chrome, Stainless and Tool Steels	4807A28	10.22	4807A68	30.67
800	SC	12	Gray	Very Fine Dull Finish on Hard Metals, Stainless and Tool Steels	4807A32	13.45	4807A72	40.32
900	AO	12	White	High Luster Finish on Chrome and Tool Steels	4807A33	26.22	4807A73	99.22
1000	SC	10	Gray	Very Fine Dull Finish on Hard Metals, Stainless and Tool Steels	4807A35	12.44	4807A75	49.74
1200	CAO	9.5	Gray	For Use on Most Steels	4807A36	10.34	4807A76	39.78
1600	SC	9	Gray	Very Fine Dull Finish on Hard Metals, Stainless and Tool Steels	4807A37	17.11	4807A77	58.44
2600	SC	7.5	Gray	Very Fine Dull Finish on Hard Metals, Stainless and Tool Steels	4807A41	17.11	4807A81	58.44
3000	CAO	5	Gray	For Use on Most Steels	4807A43	11.77	4807A83	44.12
8000	A	1	White	Fine Finish on Harder Steels	4807A45	12.67	4807A85	53.22
____	LA	4	White	Fine High Polish for Precision Parts	4807A47	11.34	4807A87	46.23
____	COA	2	Green	Same as LA above, but produces a finer finish	4807A49	13.34	4807A89	39.90

★ SC=Silicon Carbide, AO=Aluminum Oxide, CAO=Corundum Aluminum Oxide, A=Alumina, LA=Levigated Alumina, COA=Chrome Oxide Alumina.

Timesaving Lapping and Polishing Powders

These hardworking powders function first as an abrasive and then as a polish. Plus, they're guaranteed not to embed in any metal surface. Perfect for fitting and smoothing the bearing or contact surfaces of rotating, oscillating, and sliding parts.

To use, mix with a thin machine oil (SAE 10 or 20) or heavy gear oil (see page 2174). Powders do not contain harsh abrasives.

Soft-metal grade is for use on brass, bronze, aluminum, copper, tin, and other soft metals. ***Hard-metal grade*** is for use on steel, cast iron, stainless steel, and other hard metals.

To Order: Please specify grit: coarse (80 for soft metal and 40 for hard metal), medium (120 for soft metal and 80 for hard metal), fine (220 for soft and hard metal), or extra fine (320 for soft and hard metal).

	1-lb. Cans	Each	5-lb. Cans	Each
Soft-Metal Grade	4781A4	$25.24	4781A5	$111.43
Hard-Metal Grade	4781A6	25.24	4781A7	111.43

8-Can Trial Kit— One 3-oz. can of each soft-metal and hard-metal grit.
4781A61 ..... Per Kit $73.10

Precision Cast Iron Lapping Plates

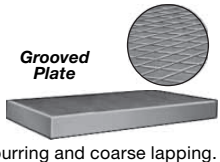

Use these precision-ground cast iron plates for final lapping of metal surfaces. They're particularly well-suited for lapping joints and other mating parts to ensure a tight, level fit.

Plates with ***smooth*** surfaces are for fine, precision lapping and are precision ground flat within 0.001″ on both sides.

Plates with ***grooved*** surfaces are for deburring and coarse lapping. Grooves are 1/16″ Wd. × 1/16″ Dp., spaced ½″ apart in a grid pattern. Only one side is grooved; it's precision ground flat within 0.0005″ per 12″.

Combination plate has one smooth side and one grooved side; both are precision ground flat within 0.001″.

Surface	Size, Lg. × Wd.	Thick.	Wt.		Each
Smooth	5″ × 3″	¾″	5 lbs.	2352A11	$102.67
Grooved	18″ × 12″	4″	140 lbs.	2238A1	470.14
Grooved	24″ × 18″	4″	220 lbs.	2238A2	814.46
Grooved	24″ × 24″	4″	300 lbs.	2238A3	1,144.59
Grooved	36″ × 24″	4″	365 lbs.	2238A4	1,470.95
Combination	8″ × 8″	1″	20 lbs.	2352A12	166.83

Clover Silicon Carbide Lapping Pastes

Silicon carbide pastes are great for lapping, grinding, cleaning, honing, and sharpening most metal surfaces to enable smooth mating of metal parts. These pastes work quickly to produce a flat (but usually not polished) surface on all but the hardest, toughest metals. Furnished in 1-lb. cans. Color is gray.

Grease-mix pastes are made with petroleum grease. They have the best lubrication qualities and leave a rust-preventive surface on lapped parts.

Water-mix pastes clean up easily with water.

Grade	Grit	Grain Size, microns (0.001 mm)	Grease Mix	Each	Water Mix	Each
G Coarse	80	267	4779A86	$24.80	4908A56	$26.64
F Coarse	100	173	4779A52	24.80	4908A55	26.64
E Coarse	120	142	4779A46	24.80	—	—
D Medium	180	86	4779A41	24.80	4908A52	26.64
C Med. Fine	220	66	4779A35	24.80	4908A51	26.64
B Med. Fine	240	63	4779A29	24.80	—	—
A Fine	280	44	4779A24	24.80	4908A48	27.90
1A Fine	320	33	4779A18	26.04	4908A47	32.87
2A Very Fine	400	23	4779A13	26.04	4908A46	33.85
4A Very Fine	600	14	4779A76	41.20	4908A44	52.87
5A Extra Fine	800	9	4779A96	41.20	4908A43	53.95
6A Extra Fine	1000	5	—	—	4908A42	52.87
7A Extra Fine	1200	3	4779A98	57.13	4908A41	64.53

Grease-Mix Paste Assortment— Contains two grades in one double-ended can: 2 oz. of E Coarse (120 grit) and 2 oz. of A Fine (280 grit).

4779A42 ..... **Each** $10.06

Mirror-Luster Synthetic Sapphire Lapping Paste

Whatever the material, these fine-grit synthetic sapphires can polish your work surface to a mirror finish. Particles are very uniform with high purity and medium hardness. Use on all types of metal, ferrite, plastic, and even varnished wood.

Furnished in a soft, oil-soluble paste in a 1.0 micron grain size for light material removal and final finishing (average particle size is 0.001 mm). Cleans up with any water-based cleaner. Furnished ready-to-use in a 1-lb. plastic container. Color is white.

4778A5 ..... **Each** $62.91

Glass and Plastic Scratch Removal Kits

Plastic Scratch Removal Kit

In these kits, you'll find everything you need to remove scratches from glass or plastic surfaces.

Glass Scratch Removal Kit— Effectively removes scratches, scuffs, cloudy surfaces, and hard water etching from glass. Includes cushioned backing pad with ¼″ diameter shank and five color-coded 3″ dia. adhesive-backed discs (two medium grit, two fine grit, and one ultra-fine (polish) grit). Also comes with a 24-oz. plastic spray bottle.

		Each
Glass Scratch Removal Kit	4416A21	$41.15
Pink (Medium Coarse Grit) Replacement Disc	4416A31	2.27
Blue (Medium Grit) Replacement Disc	4416A32	2.27
Salmon (Fine Grit) Replacement Disc	4416A33	2.27
White (Ultra Fine Grit) Replacement Disc	4416A34	6.15
Replacement Backing Pad	4416A35	28.13

Plastic Scratch Removal Kit— Erases scratches, haze, yellowing, scuffs, and hard water etching from all plastic acrylic surfaces. Includes a cushioned backing pad with ¼″ diameter shank, 3″ foam polishing pad, 3″ felt pad, and a 3-oz. jar of restoration paste.

4416A22 ..... **Each** $35.94

Polishing Pads for Glass Surfaces

Made of flexible foam, these pads are specifically engineered for precision polishing of lenses, mirrors, and other glass and ceramic surfaces. They're impregnated with cerium oxide for quick polishing. Grain size is approx. 1 micron (0.001 mm). Pads are 0.050″ thick and have an adhesive backing. Color is brown.

Pad Dia.		Each	Pad Dia.		Each
10″	4342A11	$32.36	18″	4342A15	$104.77
12″	4342A12	70.48	20″	4342A16	119.22
14″	4342A13	91.68	22″	4342A17	134.02
16″	4342A14	97.80	24″	4342A18	166.72

No-Mess Lapping Film

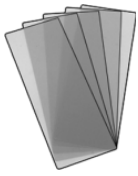

With these films, you can polish your surface without making a mess. They're also impervious to most solvents, so they can be used wet or dry. Films are made of abrasives bonded to a polyester backing.

Aluminum Oxide Abrasive Film— Use on fiber optic connectors, hardwood, glass, plastics, and metals including aluminum. Leaves an ultra-fine finish.

Diamond Abrasive Film— Use on hard surfaces such as titanium and carbides, as well as ceramic connectors and other metals. Leaves a coarse finish.

To Order: Please specify grain size from those listed (where applicable): 60 (light brown), 40 (blue), 30 (light green), 20 (tan).

Sheet Size	Avail. Grain Sizes, microns (0.001 mm)■	Backing Thick.	Pkg. Qty.		Per Pkg.
Aluminum Oxide Abrasive Film					
3″× 8″	60, 40, 30, 20	3 mil	5	4837A11	$1.97
9″×11″	60, 40, 30, 20	3 mil	5	4837A12	11.82
Diamond Abrasive Film					**Each**
3″× 6″	30	3 mil	—	4837A13	$17.48

■ The following are micron (μ)/grit equivalents: 60μ = 220 grit, 40μ = 240 grit, 30μ = 320 grit, and 20μ = 400 grit.

General Purpose Abrasive Grains and Powders

Create your own lapping and polishing compounds by mixing these grains and powders with water, oil, or grease. They can also be used in blasting operations. Furnished in 5-lb. containers.

Grit sizes 16 to *240* are considered grains and their size is controlled by screen tests in accordance with American National Standards Institute (ANSI) B74.12-1976. *Grit sizes 280* to *1200* are considered powders and their size is tested by sedimentation or microscopic methods to conform to established standards.

Aluminum Oxide— For grinding and polishing hard, high-tensile materials such as carbon steels, alloy and high-speed steels, annealed-malleable iron, wrought iron, and bronzes. *Brown (95% Al_2O_3)*—A high-quality general purpose grade. *White (99.5% Al_2O_3)*—Purer and sharper than brown and can accept a dye if necessary.

Black Silicon Carbide (98% SiC)— For brittle materials such as chilled gray iron, cemented carbide tools, hard alloys, glass, marble, stone, and ceramics. Also for low-tensile substances such as brass, soft bronze, aluminum, copper, rubber, and leather.

Grit		Each	Grit		Each
Brown Aluminum Oxide			***White Aluminum Oxide (Cont.)***		
16	4780A74	$43.19	150	4780A65	$60.87
20	4780A75	43.19	180	4780A66	60.87
24	4780A76	43.19	240	4780A67	60.88
36	4780A77	43.19	280	4780A68	76.92
46	4780A78	44.66	320	4780A69	76.92
60	4780A79	44.66	500	4780A71	89.89
80	4780A12	44.66	600	4780A72	105.60
100	4780A13	44.66	1200	4780A73	105.60
120	4780A22	44.66	***Black Silicon Carbide***		
150	4780A14	44.66	16	4780A34	52.97
180	4780A16	45.05	60	4780A36	52.97
220	4780A17	45.05	80	4780A38	52.97
240	4780A37	45.05	100	4780A42	52.97
280	4780A18	59.67	120	4780A44	52.97
320	4780A21	61.32	150	4780A46	52.97
500	4780A23	70.88	180	4780A48	52.97
600	4780A81	74.73	220	4780A52	58.68
White Aluminum Oxide			240	4780A82	62.75
16	4780A57	54.18	280	4780A54	62.75
24	4780A59	54.18	320	4780A83	72.64
36	4780A61	54.18	400	4780A56	87.80
80	4780A62	54.40	600	4780A58	103.63
100	4780A63	54.40	800	4780A85	124.84
120	4780A64	54.40	1000	4780A86	147.03

Polishing Compounds for Glass Surfaces

Great for polishing optics and lenses, these compounds also work well on other glass and ceramic surfaces. Grain size is given in microns (1 micron = 0.001 mm).

Cerium Oxide Powder— A tight particle distribution produces ultra-fine finishes. Mix with water. Grain size is 0.6-0.7 microns. Furnished in a 1-lb. jar. Color is off-white.

Zirconium Slurry— Use on infrared materials as well as glass, marble, and granite. Grain size is 0.68 microns. Furnished in a 1-gal. bottle. Color is white.

Optical Pitch— Great for removing scratches in glass lapping surfaces. Furnished in a 2.2-lb. tube. Color is black.

		Each
Cerium Oxide Powder	4335A18	$82.81
Zirconium Slurry	4335A17	170.77
Optical Pitch	4335A16	34.28

Heavy Duty Pleated Cotton Buffs

More material than our other cotton buffs makes these heavy duty buffs more aggressive. Material is cut on the bias to prevent fraying and extend the buff life. Use on all metals and plastics and on straight arbor shafts. All are approximately 1/2″ thick. Mount multiple buffs side-by-side for wider buffing surface area. Color is off-white.

Note: These buffs must be used with flanges. See 4899A on this page.

Ventilated— A ventilated metal center allows cooling air to flow throughout the buff. This increases buff life and allows buffs to be run at high speeds. Also known as airflex buffs.

High Density— Eliminate streaks and marks with these dense buffs. They're made of pleated cloth pressed into a heavy duty fiber center that won't fray or unravel. The pleats create pockets that hold the compound for fast, effective cut-and-color buffing and satin finishing. When run at slow speeds, these buffs are great for plastic and delicate parts that require low heat.

Ventilated

High Density

Dia.	Arbor	Center Hub Dia.	Max. rpm	Flange OD Required	No. of Plies		Each
Ventilated							
8″	5/8″	3″	3,600	4 1/2″	16	4833A21	$8.92
8″	3/4″	3″	3,600	4 1/2″	16	4833A22	8.92
10″	3/4″	3″	3,000	4 1/2″	16	4833A11	10.72
10″	7/8″	3″	3,000	4 1/2″	16	4833A17	11.06
10″	1 1/4″	3″	3,000	4 1/2″	16	4833A13	10.72
12″	1/2″	5″	2,400	6 1/2″	16	4833A23	15.49
12″	3/4″	5″	2,400	6 1/2″	16	4833A24	15.49
12″	7/8″	5″	2,400	6 1/2″	16	4833A25	15.49
12″	1″	5″	2,400	6 1/2″	16	4833A26	15.49
12″	1 1/4″	5″	2,400	6 1/2″	16	4833A14	15.50
14″	1 1/4″	5″	2,000	6 1/2″	16	4833A15	16.02
16″	1 1/4″	7″	1,800	8 1/2″	16	4833A16	18.17
High Density							
8″	5/8″	2 1/2″	2,800	4 1/2″	15	4822A21	11.76
8″	3/4″	2 1/2″	2,800	4 1/2″	15	4822A11	11.76
10″	3/4″	4 1/2″	2,800	4 1/2″	15	4822A22	13.46
10″	7/8″	4 1/2″	2,800	4 1/2″	15	4822A23	13.46
10″	1 1/4″	4 1/2″	2,800	4 1/2″	15	4822A24	13.46
12″	1/2″	6 1/2″	2,400	8 1/2″	15	4822A12	24.68
12″	3/4″	6 1/2″	2,400	8 1/2″	15	4822A14	24.68
12″	7/8″	6 1/2″	2,400	8 1/2″	15	4822A16	24.68
12″	1″	6 1/2″	2,400	8 1/2″	15	4822A13	24.68
12″	1 1/4″	6 1/2″	2,400	8 1/2″	15	4822A15	24.68
14″	1 1/4″	8 1/2″	1,800	6 1/2″	14	4822A25	27.89
16″	1 1/4″	8 1/2″	1,800	8 1/2″	14	4822A26	34.11

Aggressive-Polishing Cotton Buffs

Individual spiral-sewn, high-grade cotton pieces are cemented together and covered with an outer layer of heavy canvas duck to create these rigid buffs. They work aggressively to remove gouges and scratches and are great for the first step in any buffing operation. Use on all metals.

Also known as setup and polishing wheels, they can be coated with polishing cement and abrasive grain, or used with buffing compounds. Max. rpm is 5,000. For use on straight arbor shafts. Color is off-white.

Medium Density— Have 3/8″ spiral sewing and are softer than the hard-density buffs to conform to irregular surfaces.

Hard Density— Have 1/4″ spiral sewing that allows for aggressive polishing of flat surfaces.

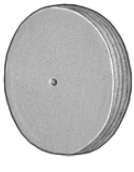

Dia. × Thick. × Arbor	Medium Density	Each	Hard Density	Each
6″ × 1/2″ × 1/2″	4832A11	$15.50	4813A11	$10.73
6″ × 1″ × 1/2″	4832A15	15.11	4813A21	15.81
6″ × 1″ × 5/8″	4832A151	15.11	—	—
6″ × 1″ × 3/4″	4832A152	15.11	—	—
6″ × 1 1/2″ × 1/2″	4832A19	30.50	4813A31	29.14
6″ × 2″ × 1/2″	4832A24	30.08	4813A41	35.82
8″ × 1/2″ × 1/2″	4832A12	22.11	4813A12	15.73
8″ × 1″ × 1/2″	4832A16	23.84	4813A22	25.22
8″ × 1″ × 5/8″	4832A161	23.84	4813A23	26.51
8″ × 1″ × 3/4″	4832A162	23.84	4813A24	26.51
8″ × 1 1/2″ × 1/2″	4832A21	43.29	4813A32	41.97
8″ × 2″ × 1/2″	4832A25	44.67	—	—
10″ × 1″ × 5/8″	4832A32	43.17	4813A52	41.95
10″ × 2″ × 5/8″	4832A34	58.38	4813A54	64.36
12″ × 2″ × 1 1/4″	4832A28	77.68	4813A61	85.92

Polishing Cement, 1-gal. pail ..... 4796A1 Each $22.89

Nylon Mesh Abrasive Buffs

With these buffs, you won't need messy compounds to achieve a satin finish. They're made of nonwoven nylon fibers impregnated with aluminum oxide. Use on all metals, glass, plastic, wood, and more. Mount multiple buffs side-by-side for wider buffing surface area. Color is maroon.

Buffs for Mounting on Tapered Spindles

Use ***medium*** buffs for aggressive cleaning and ***fine*** for light cleaning. ***Extra fine*** buffs leave a very smooth finish on intricate parts.

The 2-ply buffs are 1/2″-7/8″ thick; 3-ply are 7/8″-1 1/4″ thick. Max. rpm is 4,500 for the 3″ and 4″ buffs and 3,400 for 6″.

For tapered spindles, see page 2693.

Dia.	Arbor	No. of Plies	Medium, 120 Grit	Each	Fine, 180 Grit	Each	Extra Fine, 240 Grit	Each
3″	1/4″	3	4853A43	$7.11	4853A42	$5.68	4853A41	$5.68
4″	1/4″	2	4853A46	7.11	4853A45	5.59	4853A44	5.59
6″	1/4″	2	4853A49	9.79	4853A48	7.24	4853A47	7.24
6″	1/4″	3	4853A53	13.13	4853A52	9.36	4853A51	9.36

Buffs for Mounting on Straight Shafts

Pleats in these buffs provide flexibility. Buffs have a metal center.

Coarse buffs are used for aggressive cleaning and are 2-ply. Thickness is approximately 1 1/4″. ***Medium*** buffs work well for most blending jobs and are 4-ply. Thickness is approximately 2 1/4″. ***Fine*** buffs produce the smoothest finish and are 4-ply. Thickness is approximately 1 1/4″.

Max. rpm is 1,700 for the 8″ buff, 1,500 for 10″, 1,200 for 12″, and 1,000 for 14″.

Note: These buffs must be used with flanges. See 4899A on this page.

Dia.	Arbor	Center Hub Dia.	Coarse, 80 Grit	Each	Medium, 120 Grit	Each	Fine, 180 Grit	Each
8″	3/4″	3″	4849A23	$15.68	4849A22	$21.84	4849A21	$16.16
10″	1 1/4″	5″	4849A28	20.00	4849A27	27.39	4849A26	20.43
12″	1 1/4″	5″	4849A32	27.73	4849A31	38.52	4849A29	28.98
14″	1 1/4″	7″	4849A37	32.84	4849A36	44.20	4849A35	33.75

Surface-Smoothing Sisal Buffs

Made of tough woven sisal fiber, these buffs remove coarse surface imperfections. Ideal for initial buffing on hard, ferrous metals such as cast iron and stainless steel. Use with steel-cutting compound (see page 2692).

Buffs are made of 5-ply cloth that's approximately 3/8″-1/2″ thick and 1/4″ spiral sewn to compress material and resist fraying. All are for use on straight arbor shafts. Mount multiple buffs side-by-side for wider buffing surface area. Color is yellow.

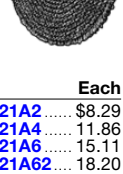

To Order: Specify arbor size from those listed.

Dia.	Available Arbor Sizes	Max. rpm		Each
6″	1/2″, 5/8″	3,000	4821A2	$8.29
8″	1/2″, 5/8″, 3/4″	2,800	4821A4	11.86
10″	5/8″, 3/4″, 7/8″, 1″, 1 1/4″	2,600	4821A6	15.11
12″	1 1/4″	2,400	4821A62	18.20

Flexible Cotton and Sisal Strip Buffs

Alternating strips of cotton and woven sisal make these buffs more versatile than all-sisal buffs. They're more flexible for better buffing of irregular shapes and hard-to-reach areas. They also remove less material and leave fewer scratches. Buffs have a metal center and are for use on straight arbor shafts. Use on all types of metal. Also known as finger-style buffs. Color is yellow.

Note: These buffs must be used with flanges. See 4899A on this page.

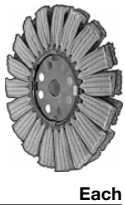

Dia.	Arbor	Center Hub Dia.	Max. rpm		Each
10″	3/4″	3″	2,400	4358A11	$20.13
12″	1 1/4″	5″	1,800	4358A12	23.77
14″	1 1/4″	5″	1,800	4358A13	25.43
16″	1 1/4″	7″	1,800	4358A14	34.37

Flanges for Metal- and Fiber-Center Buffs

Make your buffs OSHA safe with these ventilated steel flanges. *Note:* The flange OD should be at least 1″ larger than the center hub diameter.

For Buff w/ Center Hub Dia.	Arbor	Flange OD	Flange Thick.		Per Pair
2 1/2″-3″	3/4″	4″	1/4″	4899A44	$29.32
3″	1 1/4″	4″	1/4″	4899A43	29.32
5″	1 1/4″	6″	3/8″	4899A51	49.52
6 1/2″-7″	1 1/4″	8″	3/8″	4899A52	75.85

High-Luster Cotton Buffs

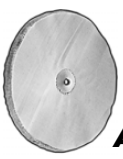
A

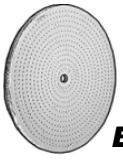
B

C

These muslin cotton buffs are a longtime favorite for producing smooth finishes on metal and plastic. Mount multiple identical buffs side-by-side for wider buffing surface area. Color is off-white.

A Loose Buffs— Soft and flexible. Use these buffs for uneven surfaces and irregular shapes. They're well-suited for light buffing and producing a bright finish. Use on straight arbor shafts. Buffs are 1/4″-1/2″ thick, 20-ply, with one row of stitching around the arbor hole. Max. rpm is 3,000 for the 6″ buff, 2,800 for 8″, 2,600 for 10″, 2,400 for 12″, and 2,000 for 14″.

B Sewn Buffs— More rigid than loose buffs, these are 1/4″ spiral sewn for removing mild scratches and producing a bright finish. Use on flat and easily accessible surfaces. Mount on straight arbor shafts. Buffs are approximately 3/8″ thick and 30-ply. Max. rpm is 3,600 for the 6″ buffs, 3,000 for 8″, 2,500 for 10″, and 1,800 for 12″.

C Miniature Buffs— For buffing small and hard-to-reach areas. The 7/8″-1 1/2″ buffs attach to 1/8″ shank mandrels (listed below) and all sizes can be used with a tapered spindle (see 48885A on page 2693). Use on portable tools. Buffs are approximately 3/16″ thick and 16-ply. Max. rpm is 6,000.

Dia.	Arbor		Each
(A) Loose Buffs			
6″	1/2″	4820A11	$3.16
8″	1/2″	4820A12	5.58
8″	3/4″	4820A13	5.58
10″	5/8″	4820A17	8.98
10″	3/4″	4820A15	8.98
12″	1″	4820A21	11.79
12″	1 1/4″	4820A16	11.79
14″	1 1/4″	4820A23	14.77
(B) Sewn Buffs			
6″	1/2″	4819A11	4.03
6″	5/8″	4819A21	4.03
8″	1/2″	4819A12	5.73
8″	5/8″	4819A13	5.73
8″	3/4″	4819A16	5.73
8″	1″	4819A22	5.73
10″	5/8″	4819A14	9.79

Dia.	Arbor		Each
(B) Sewn Buffs (Cont.)			
10″	3/4″	4819A23	$9.79
10″	7/8″	4819A24	9.79
10″	1″	4819A25	9.79
12″	1″	4819A26	11.07
12″	1 1/8″	4819A31	11.07
(C) Miniature Buffs			
7/8″	—	4920A14	.89
1″	—	4920A15	.96
1 1/4″	—	4920A16	1.22
1 1/2″	—	4920A17	1.22
2″	—	4920A18	1.78

1/8″ Shank Mandrels— For use with miniature buffs.

		Each
For 7/8″, 1″, & 1 1/4″	4920A19	$1.02
For 1 1/4″ & 1 1/2″	4910A52	.71

Satin-Finish Cotton-String Buffs

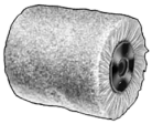

Densely packed with a soft white cotton yarn, these buffs are ideal for satin finishing large stainless steel surfaces and blending tool marks after fabrication. They're soft and easy to work with, especially on irregular surfaces. For use on straight arbor shafts. Use with satin-finish greaseless compounds. Color is off-white.

Dia.	Thick.	String Lg.	Arbor Dia.	Max. rpm		Each
4″	1″	1 1/4″	1/2″	3,600	47775A71	$22.13
4″	2″	1 1/4″	1/2″	3,600	47775A72	45.42
4″	3″	1 1/4″	1/2″	3,600	47775A73	58.97
4″	4″	1 1/4″	1/2″	3,600	47775A74	85.55
6″	1″	1 3/4″	1/2″	3,600	47775A75	47.00
6″	2″	1 3/4″	1/2″	3,600	47775A76	62.07
6″	3″	1 3/4″	1/2″	3,600	47775A77	77.39
6″	4″	1 3/4″	1/2″	3,600	47775A78	100.75
6″	6″	1 3/4″	1/2″	3,600	47775A79	133.69
8″	2″	2 1/4″	3/4″	3,000	47775A81	80.62
8″	4″	2 1/4″	3/4″	3,000	47775A82	120.84
8″	6″	2 1/4″	3/4″	3,000	47775A83	141.38

Mirror-Finish Flannel Buffs

Loose Buff

Sewn Buff

Softer than our other cotton buffs, these buffs leave very fine, high-luster finishes. Known as Canton flannel buffs, they're good for producing a bright finish on precious metals and light buffing on plastics. Mount on straight arbor shafts. Color is off-white.

Loose Buffs— Especially soft and flexible for use on uneven surfaces and irregular shapes. Approximately 3/4″ thick. The 4″, 6″, and 8″ buffs have one row of stitching around the arbor hole; the 10″ and 12″ buffs have two rows. All are 20-ply.

Sewn Buffs— Firm yet soft, these buffs are for use on flat and curved surfaces. Approximately 3/4″-1″ thick with 3/4″ concentric sewing. All are 30-ply. Also known as jewelers' buffs.

Dia.	Arbor	Max. rpm	***Loose Buffs***	Each	***Sewn Buffs***	Each
4″	1/2″	3,200	4817A11	$3.70	4818A11	$5.27
6″	1/2″	3,000	4817A13	6.02	4818A12	8.43
8″	1/2″	2,800	4817A15	7.76	4818A13	13.39
10″	5/8″	2,600	4817A21	11.18	4818A17	18.43
12″	3/4″	2,400	4817A27	19.37	4818A16	24.53

Rounded Cotton Buff for Right-Angle Grinders

With a 5/8″-11 female thread on the hub, this buff can be used with standard right-angle grinders. The hub is made of durable aluminum, allowing you to replace only the buff when it wears out. The buff flares while spinning for use on depressions and contoured surfaces. Use on metal, fiberglass, and plastic. Max. rpm is 5,000. Color is off-white.

	Dia.		Each
Cotton Buff with Hub	5″	4402A11	$54.00
Replacement Cotton Buff	5″	4402A12	30.86

Shank-Mounted Cotton Buffs

Flat-Face Buff

Round-Face Buff

Designed for use with portable power tools, these buffs have a 1/4″ Dia., 1 1/2″-1 3/4″ Lg. shank. Color is off-white.

Flat-Face Buffs— These economical buffs work well on flat and curved surfaces. Made of 40-ply cotton sheets, they are 1/2″ thick and have one row of stitching for flexibility. Use on all metals.

Round-Face Buffs— Their unique shape makes these buffs perfect for use on internal cylinders, uneven surfaces, and other irregular shapes.

Dia.	***Flat-Face Buffs*** Max. rpm		Each	***Round-Face Buffs*** Max. rpm		Each
2″	5,000	49025A31	$4.70	—	—	—
2 1/2″	—	—	—	10,000	4349A11	$5.35
3″	5,000	49025A32	5.60	10,000	4349A12	6.12
4″	5,000	49025A33	7.49	10,000	4349A14	8.33
5 3/4″	—	—	—	10,000	4349A15	9.05

Buff-Cleaning Rake

Recondition and reshape any kind of polishing wheel or buff with this rake. It removes dried compound and eliminates glaze. Perfect for preparing felt polishing wheels to accept polishing cement and abrasive grains. Made of cold-rolled steel, rake is 4 1/2″ Lg. × 2 1/8″ Wd. Handle is wood and 15″ long.

		Each
Buff-Cleaning Rake with Handle	4764A51	$25.48
Replacement Rake	4764A1	10.09

Internal-Surface Cotton Buffs

D

E

F

G

Buff the insides of cylinders, stampings, and tapered objects with these buffs. For use on both metals and plastics. ***Round-end*** and ***square-end*** styles use both the end and the edge to buff the bottom of your object.

Length is approximately the same as diameter (for tapered buffs, at large end). All buffs are for mounting on a tapered spindle or arbor (see page 2693 for tapered spindles and arbors 4762A12 and A14). Color is off-white. Use with tripoli, rouge, greaseless, and other compounds. Max. rpm is 2,400 for the 6″ buffs and 3,600 for all other sizes.

	Shape	***2″ Dia.***	Each	***3″ Dia.***	Each	***4″ Dia.***	Each	***6″ Dia.***	Each
D	Cylinder	4903A11	$15.09	4903A15	$19.60	—	—	—	—
E	Round End	4903A12	11.07	4903A16	13.19	4903A19	$18.18	4903A22	$33.49
F	Square End	4903A13	11.07	4903A17	13.19	4903A21	19.18	4903A23	33.49
G	Taper	4903A14	15.02	4903A18	19.60	—	—	—	—

Quick-Change Felt Buffing Discs

Designed for easy mounting, these discs are perfect for final buffing when used with a metal polish or compound. Discs are flexible to conform to contoured and internal surfaces. They're also cool running. Must be mounted on a disc holder (sold separately). Thickness is 3/8″. Color is dark gray.

Style A have a 3M Roloc/Norton Speed-Lok TR-Style plastic disc fastener. ***Style B*** have a Standard Abrasive/Norton Speed-Lok TS-Style metal disc fastener.

Disc holders have a 1/4″ dia. shank.

	Dia.	Max. rpm	Discs	Each	Disc Holders	Each
A	2″	20,000	46205A22	$3.98	46325A92	$10.85
A	3″	18,000	46205A23	5.92	46325A93	11.92
B	1″	20,000	46205A31	1.76	4701A75	12.10
B	2″	20,000	46205A32	3.97	4701A72	14.17
B	3″	18,000	46205A33	5.92	4701A73	15.30

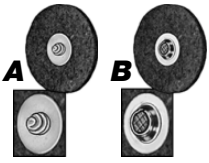

Fine-Finish Polishing Bobs

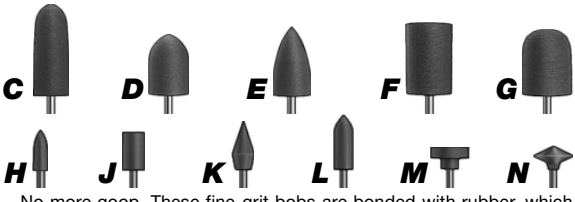

No more goop. These fine-grit bobs are bonded with rubber, which cushions while polishing and eliminates the need for messy compounds. Styles C-G have 1 1/4″ long shanks; styles H-N have 1 1/2″ long shanks.

Aluminum oxide bobs work on most metals, including carbon and alloy steel. **To Order:** Please specify grit: 240 (brown), or 400 (white).

Silicon carbide bobs are ideal for use on nonferrous metals such as aluminum, brass, bronze, and magnesium. **To Order:** Please specify grit: 240 (black), 320 (green), or 400 (red).

	Shank Dia.	Head Dia.	Head Lg.	Max. rpm	Aluminum Oxide	Each	Silicon Carbide	Each
C	1/8″	3/8″	1″	4,500	4944A15	$4.39	4944A25	$4.39
D	1/8″	25/64″	5/8″	4,500	4944A12	4.39	4944A22	4.39
E	1/8″	27/64″	3/4″	4,500	4944A14	4.39	4944A24	4.39
F	1/8″	1/2″	3/4″	4,500	4944A13	4.39	4944A23	4.39
G	1/8″	35/64″	11/16″	4,500	4944A11	4.39	4944A21	4.39
H	3/32″	5/32″	7/16″	30,000	4958A46	2.02	4958A56	2.02
J	3/32″	15/64″	7/16″	30,000	4958A43	2.02	4958A53	2.02
K	3/32″	15/64″	1/2″	30,000	4958A44	2.02	4958A54	2.02
L	3/32″	15/64″	5/8″	30,000	4958A45	2.02	4958A55	2.02
M	3/32″	27/64″	1/8″	30,000	4958A41	2.02	4958A51	2.02
N	3/32″	7/16″	3/16″	30,000	4958A42	2.02	4958A52	2.02

Polishing Pads for Portable Polishing Tools

Bonnets and Cleaning Tool

Made from real leather sheepskin, these lambswool bonnets won't leave swirl marks and scratches when buffing waxed surfaces. Great for basecoat and clearcoat finishes. Bonnets have a drawstring that attaches to the backup pad on your portable polishing tool. Order one size larger than the backup pad. Pile height is 1 1/4″ for 7 1/2″ dia. bonnet; 1″ for all others. Max. rpm is 1,800.

Bonnet cleaning tool has a multiprong wheel that removes glaze buildup and fluffs packed wool to extend the life of polishing bonnets. Made of rust-resistant plated steel.

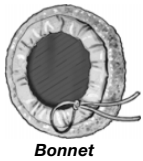

Bonnet

Bonnet Cleaning Tool

Dia.		Each
4 1/2″	4831A1	$6.49
5 1/2″	4831A2	8.60
7 1/2″	4831A4	14.60
9″	4831A5	20.84
Bonnet Cleaning Tool	4922A11	19.33

Foam Pad

Just what you need for most buffing and polishing jobs on acrylic enamel and clearcoat finishes. Use this pad with fine liquid compounds. It's washable and reusable. Pad is 8″ Dia.×2″ Thick and has a 5/8″-11 female spindle thread for use on right-angle polishers. Max. rpm is 2,000.

47855A21 ..... **Each** $14.98

Felt Polishing Wheels

Uniform density makes these highly resilient wool felt wheels better balanced than cotton wheels. Use to polish and buff metal, glass, and stone.

Small-Diameter Wheels

The square edge on these wheels works well on right-angle corners and other tough-to-reach spots. They have a pin hole center for mounting on mandrels or tapered spindles (see 48885A on page 2693). Furnished in medium-hard density. Max. rpm is 1,750.

Dia.×Thick.		Each	Dia.×Thick.		Each	Dia.×Thick.		Each
1″ ×1/8″	4910A34	$0.46	1 1/2″×1/2″	4910A39	$2.50	3″× 3/4″	4910A45	$17.75
1″ ×1/4″	4910A35	.97	2″ ×1/4″	4910A41	1.54	4″× 1/2″	4910A47	18.92
1 1/4″×1/4″	4910A36	1.05	2″ ×3/8″	4910A42	2.34	4″× 3/4″	4910A48	20.50
1 1/2″×1/4″	4910A37	1.10	2″ ×1/2″	4910A43	3.43	4″×1″	4910A49	24.44
1 1/2″×3/8″	4910A38	1.90	3″ ×1/2″	4910A44	6.55			

Knife-Edge Wheels

With a tapered edge, these wheels easily polish joints, grooves, and crevices. They have a pin hole center for mounting on mandrels or tapered spindles (see 48885A on page 2693). Furnished in hard density. Max. rpm is 3,450.

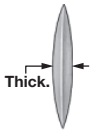

Dia.×Thick.		Each	Dia.×Thick.		Each
1″ ×1/4″	4900A23	$1.12	2 1/2″×3/8″	4900A26	$3.33
1 1/2″×1/4″	4900A24	1.40	3″ ×13/32″	4900A27	4.12
2″ ×1/4″	4900A25	2.12			

Mandrels

For small-diameter and knife-edge wheels. Mandrels have a 1/8″ shank. Use on wheels up to 1 1/2″ in diameter. For 2″-4″ dia. wheels, use 48885A tapered spindles on page 2693.

For 1″-1 1/4″ Diameter Wheels—Mandrel head has a 3/8″ long thread that screws into shank for wheel mounting.

4920A19 ..... **Each** $1.02

For 1 1/4″-1 1/2″ Diameter Wheels—Mandrel has 3/8″ long threaded and tapered end for wheel mounting.

4910A52 ..... **Each** $0.71

Large-Diameter Wheels

Wheels have a square edge and a 1/2″ arbor hole for mounting on straight shafts and tapered mandrels. Max. rpm is 3,400.

Choose ***medium density*** wheels for producing a high-polish finish on soft metals such as aluminum and brass, and ***hard density*** wheels for finishing hard metals like steel and iron.

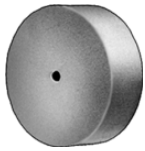

Dia.×Thick.	Medium Density	Each	Hard Density	Each
6″× 1/4″	4815A11	$14.34	4815A25	$16.51
6″× 1/2″	4815A12	27.98	4815A26	33.02
6″× 3/4″	4815A13	43.02	4815A27	49.54
6″×1″	4815A14	56.92	4815A28	66.05
6″×1 1/2″	4815A15	85.38	4815A29	99.11
6″×2″	4815A16	113.93	4815A31	132.18
8″× 1/4″	4815A17	25.29	4815A32	29.37
8″× 1/2″	4815A18	50.62	4815A33	58.96
8″× 5/8″	4815A19	63.27	4815A34	73.43
8″× 3/4″	4815A21	74.95	4815A35	88.12
8″×1″	4815A22	99.74	4815A36	117.54
8″×1 1/2″	4815A23	153.30	4815A37	176.24
10″×1″	4815A24	157.90	4815A38	183.89

Felt Polishing Bob and Wheel Assortment

This 20-piece kit contains bobs, wheels, and compounds in a clear plastic case. Kit includes 7 medium-density bobs mounted on 1/8″ shanks in the following shapes and sizes (size is head dia.×head lg.): cylindrical 1/2″×1/2″, conical 1/2″×1″, oval 1/2″×1/2″, flame 1/2″×1″, flat-end conical 1/2″×3/4″, flared-end oval 1/2″×3/4″, and ball 1/2″×1/2″. Also includes 4 square-edge wheels, each 3/4″ dia.×1/8″ thick; 4 knife-edge wheels, each 3/4″ dia.×1/8″ thick; a 1/8″ screw-on shank; and 4 polishing compounds, 1 each of tripoli (brown rouge), red rouge, white rouge, and black emery.

4791A71 ..... **Each** $27.45

Polishing Cement

Prepare your polishing wheels for use with abrasive grains. Just coat the wheel with this polishing glue and then apply the abrasive. For use on cloth, canvas, and felt materials. Furnished in a 1-gallon pail.

4796A1 ..... **Each** $22.89

Felt Polishing Bobs

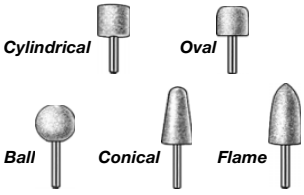

Buff, polish, and lap small areas and tough-to-reach spots with these felt bobs. They are mounted on 1/8″ or 1/4″ dia.×1 1/2″ long steel shanks for use in high-speed portable tools. Use with compounds and abrasive grains. Max. rpm is 15,000.

Choose ***soft density*** for polishing gold, silver, brass, bronze, aluminum, polycarbonate, and acrylic; ***medium density*** for light material removal on nonferrous metals and for finishing tool steel, dies, and other ferrous metals; ***hard density*** for deburring sharp edges and light material removal on hard materials like steel, glass, and crystal; and ***rock-hard density*** for light material removal on very hard materials such as carbide and titanium.

Head Dia.	Head Lg.	Shank Dia.	Soft Density	Each	Medium Density	Each	Hard Density	Each	Rock-Hard Density	Each
Cylindrical										
1/4″	1/4″	1/8″	4811A15	$1.26	4811A25	$1.23	4811A51	$1.23	4811A57	$1.23
3/8″	1/2″	1/8″	4811A16	1.37	4811A26	1.33	4811A52	1.35	4811A58	1.35
1/2″	1/2″	1/8″	4811A721	1.52	4811A69	1.46	4811A71	1.43	4811A72	1.52
1/2″	3/4″	1/8″	4811A722	1.68	4811A17	1.62	4811A37	1.68	4811A59	1.68
1/2″	1″	1/8″	4811A723	1.88	4811A27	1.76	4811A53	1.88	4811A61	1.88
3/4″	3/4″	1/8″	4811A724	2.12	4811A19	2.01	4811A39	2.11	4811A62	2.12
3/4″	1″	1/8″	4811A725	2.25	4811A21	2.12	4811A41	2.17	4811A63	2.25
1″	1″	1/4″	4811A726	4.05	4811A23	3.53	4811A43	3.95	4811A64	4.05
1″	2″	1/4″	4811A727	4.36	4811A28	4.10	4811A54	4.26	4811A65	4.36
1 1/4″	1 1/4″	1/4″	4811A728	4.13	4811A29	3.91	4811A55	4.05	4811A66	3.95
1 1/2″	1″	1/4″	4811A729	4.28	4811A24	4.05	4811A49	4.18	4811A67	4.28
1 1/2″	1 1/2″	1/4″	4811A731	5.67	4811A31	5.28	4811A56	5.48	4811A68	5.67
Oval										
1/2″	1/2″	1/8″	4812A724	2.11	4812A18	1.86	4812A22	1.96	4812A49	2.11
3/4″	3/4″	1/8″	4812A725	3.58	4812A63	2.98	4812A73	3.10	4812A51	3.58
1″	1″	1/4″	4812A726	6.30	4812A64	5.48	4812A74	5.62	4812A52	6.33
Ball										
1/2″	1/2″	1/8″	4812A731	2.25	4812A42	2.11	4812A45	2.12	4812A56	2.25
3/4″	3/4″	1/4″	4812A732	3.55	4812A67	2.96	4812A77	3.25	4812A57	3.53
1″	1″	1/4″	4812A733	6.33	4812A68	5.48	4812A78	5.62	4812A58	6.33
Conical										
1/2″	1″	1/8″	4812A721	2.50	4812A12	1.98	4812A15	2.08	4812A46	2.50
3/4″	1 1/2″	1/4″	4812A722	4.05	4812A61	3.15	4812A71	3.50	4812A47	4.05
1″	2″	1/4″	4812A723	5.28	4812A62	4.50	4812A72	4.83	4812A48	5.28
Flame										
1/2″	1″	1/8″	4812A727	2.50	4812A25	1.96	4812A28	2.08	4812A53	2.50
3/4″	1 1/2″	1/4″	4812A728	4.05	4812A65	3.15	4812A75	3.50	4812A54	4.05
1″	2″	1/4″	4812A729	5.28	4812A66	4.50	4812A76	4.83	4812A55	5.11

No-Mess Felt Polishing Bobs

With these bobs, there's no need to mess around with polishing cement or compound. Bobs are impregnated with silicon carbide abrasive particles for use on aluminum and other nonferrous metals. All are medium density. To expose fresh abrasive grains, dress the bob with a wire brush. Shank length is 1 1/2″. Max. rpm is 15,000.

Shape	Head Dia.	Head Lg.	Shank Dia.		Each
Cylindrical	1/2″	1/2″	1/8″	4564A11	$4.21
Cylindrical	3/4″	3/4″	1/8″	4564A12	5.88
Conical	1/2″	1″	1/8″	4564A13	5.76
Conical	3/4″	1 1/2″	1/4″	4564A14	9.22

Satin-Finish Buffing Compounds

Made of high-quality glue and aluminum oxide grains, these compounds produce a satin finish without leaving a greasy residue. Use on all metals.

Coarse-grit compounds leave a dull satin finish; the finer the grit, the finer the finish it produces. Tube size is approx. 2 1/2″ Dia.×8 1/2″ Lg.

Grit		Each
Extra Coarse, 80	4795A12	$6.30
Coarse, 120	4795A14	6.30
Medium, 150	4795A21	6.30
Medium Fine, 180	4795A15	6.49
Fine, 240	4795A16	6.30
Extra Fine, 300	4795A18	6.14
Ultra Fine, 400	4795A23	7.41

Buffing Bars

Buffing produces a smooth, uniform, lustrous finish by bringing a revolving buff loaded with compound into contact with your part. Most buffing processes have two steps: cutting and coloring. The first step, ***cutting,*** removes scratches and surface imperfections using a fast-cutting compound. It yields a smooth, uniform finish. The second process, ***coloring,*** uses a milder compound to give a bright, mirror-like luster. ***Cut and color*** compounds remove scratches and give a bright finish, all in one step.

Bars are 8″ Lg.×3″ Wd.×2″ Ht. Weight is approximately 2 1/2 lbs.

Compound	Color	For Use On		Each
Cutting				
Steel	Dark Gray	Steel, stainless steel, and iron.	4784A1	$9.81
Tripoli	Brown	Nonferrous metals, such as aluminum, brass, and copper.	4786A1	$6.15
Plastic	Off White	All types of plastic and hard rubber.	4801A1	$7.11
Emery Cake	Black	Nonferrous metals; it gives them a satin finish.	4788A1	$7.74
Coloring				
Steel	Green	Steel and stainless steel.	47955A71	$13.52
White Rouge	Off White	Aluminum, brass, and other nonferrous die cast metals.	4787A1	$5.81
Chrome	White	Chromium-plated work, as well as steel and stainless steel.	4785A2	$14.28
Red Rouge	Red	Brass, copper, and other nonferrous metals.	4783A3	$8.44
Plastic	Off White	All types of plastics and hard rubber.	4801A2	$7.04
Fiberglass	White	Fiberglass, as well as nonferrous metals.	4801A3	$10.00
Cut and Color				
Steel	Yellow	Steel, stainless steel, and aluminum.	4784A2	$10.89
Tripoli	Brown	Nonferrous metals such as aluminum, brass, and copper.	4786A3	$5.96
Chrome	White	Chromium-plated work, as well as steel and stainless steel.	4785A1	$12.12

6-Bar Kit— Includes one bar each of the following compounds: plastic cutting, white-rouge coloring, chrome coloring, red-rouge coloring, steel cut and color, and tripoli cut and color.

4802A14 ..... **Per Kit** $51.81

4-Bar Kit— Includes 4-oz. bars of the following compounds: emery-cake cutting, white-rouge coloring, red-rouge coloring, and tripoli cut and color.

4794A1 ..... **Per Kit** $5.98

Buffing Starter Kit

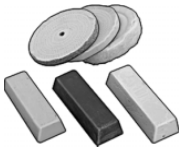

All you need to get started polishing steel and stainless steel is this kit and a bench-mount motor. Kit includes one sisal and one high-luster sewn cotton 6″ Dia.×½″ Thick.×½″ Arbor buff and one 6″ Dia.×1″ Thick.×½″ Arbor sewn flannel buff. Max. rpm is 3,600. Also includes one each of three 1-lb. buffing bars: cut (gray), color (yellow), and luster (white).

4518A21 ..... **Each** $61.51

Heavy Duty Buffer/Polishers

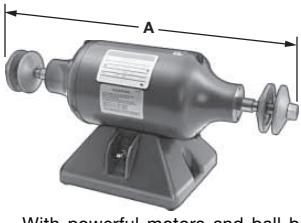

Optional Right-Hand Buffer Hood

With powerful motors and ball bearings sealed to keep out contaminants, these machines are designed to operate smoothly and last a long time.

Units are equipped with flanges and a stop-start toggle switch. Motors are 115/230 VAC (wired for 115), 60 Hz, one phase, except 4757A1 and 4757A11, which are 115 VAC only. All come with an 8-ft. power cord and three-prong plug, except 4757A17, which includes leads for hardwiring. 4757A17 also includes slide-on spacers that enable you to use wheels of various thicknesses.

See pages 2675-2677 for buffs and polishing wheels.

For Wheel Size, Dia.×Thick.	(A)	hp	No-Load rpm	Shaft Dia.	Wt., lbs.		Each
6″×½″- ¾″	17 5/16″	¼	1,800	½″	24	**4757A1**	$307.30
6″×½″- ¾″	17 5/16″	⅓	3,600	½″	25	**4757A11**	307.30
8″×⅜″-1¼″	28⅜″	¾	1,800	¾″	55	**4757A12**	607.46
8″×⅜″-1¼″	28⅜″	¾	3,600	¾″	56	**4757A15**	607.46
10″×½″-1¼″	29 15/16″	1½	3,600	⅞″	61	**4757A17**	794.07

Universal Pedestal—For machines above. Made of cast iron and steel. Height is 32⅞″; base is 15¾″ Wd.×14″ Dp. Weight is 62 lbs.

Note: A picture of this pedestal is shown on page 2645.

4423A3 ..... **Each** $336.12

Optional Buffer Hoods—Protect your work area from flying debris with these vented buffer hoods. They're made of steel and easy to mount. Hoods are designed to fit only the buffer/polishers sold above. **To Order:** Please specify left- or right-hand hood.

Note: 4757A6 can be used only if the buffer is on a pedestal.

For Buffer/Polisher No.	Hood Size, Dia.×Wd.	Outlet Dia.		Each
4757A1 and A11	7″×4″	3″	**4757A6**	$110.40
4757A12 and A15	9″×7″	4″	**4757A7**	132.25
4757A17	11″×7½″	4″	**4757A8**	151.80

DeWalt Electric Right-Angle Polisher

A speed-control dial on this high-performance 7″ variable-speed polisher allows you to set the desired no-load rpm: 0-1,000 or 0-3,000. Polisher is double insulated and has a spindle lock for easy removal of pads. Spindle thread is ⅝″-11. Operates on 120 VAC, 50/60 Hz at 8 amps. Polisher is 17 5/16″ long and weighs 8¼ lbs. Includes two-position side handle for left- and right-hand operation, 7″ diameter rubber backing pad, and an 8-ft. power cord with two-prong plug. UL listed and CSA certified. Meets OSHA requirements.

		Each
DeWalt DW849 7″ Polisher	**4814A16**	$248.65
Replacement Backup Pad	**4814A21**	35.00

Air-Powered Right-Angle Polisher

This 7″ polisher has a regulator for positive speed control. Operates on 90 psi air pressure. Exhaust system is muffled for quieter operation. Spindle thread is ⅝″-11. Air inlet is ¼″ NPT female. Recommended hose size is ⅜″. No-load rpm is 2,500. Motor is 1 hp. Avg. cfm @ 90 psi is 12. Overall length is 16″. Weight is 5 lbs. Includes two-position side handle for left- and right-hand operation and 7″ dia. rubber backing pad.

44545A37 ..... **Each** $242.47

Miniature Light Duty Buffer/Grinder

This handy buffer/grinder is perfect for occasional tool sharpening, cleaning, and touch-up work. It features a dial-operated speed control that adjusts rpm from 1,800 to 7,000. The motor is ⅙-hp, 115 VAC, 50/60 Hz, one phase. Machine is 5⅛″ high and 13″ long from the end of one spindle to the other. Base is 6″ Lg.×5″ Wd. The motor shaft is 5/16″ dia. and extends 1 1/16″ from the housing. Weight is 7½ lbs. *Note:* Maximum buff size is 4″ dia. Maximum grinding wheel size is 2″ dia.

Furnished with 3″ dia. cotton buff, 1¾″ dia. 60-grit aluminum oxide grinding wheel, tapered spindle, ¼″ dia. wheel arbor, and 6-ft. power cord with three-prong plug. CSA certified.

		Each
Mini Buffer/Grinder	**4755A6**	$244.36
Replacement 3″ Dia. Cotton Buff	**4755A62**	4.28
Replacement 1¾″ Dia., 60-grit Grinding Wheel	**4755A61**	5.76

Electric Swirl-Free Polisher

Eliminate swirl marks without damaging painted surfaces. Also known as a random-orbital polisher, it features a counterbalanced bottom plate to reduce vibration. It has a comfort-grip side handle and an impact-resistant housing. Includes two terry cloth application bonnets, two terry cloth polishing bonnets, two lambswool polishing bonnets, a wool-blend wash mitt, and a plastic case. Operates on 120 VAC, 60 Hz. UL listed. Additional bonnets are sold separately below.

Polisher

Pad Dia.	Orbits/ Min.	Amps	Wt., lbs.	Cord Lg.	Plug Type		Each
10″	3,200	0.75	6	6 ft.	2 Prong	**4843A1**	$39.69

Bonnets

	Lambswool Dia.	Lambswool Pile Ht.		Terry Cloth Dia.	Terry Cloth Pkg. Qty.		Per Pkg.
Polishing Bonnets							
	10″	½″	**4843A53** $8.96	10″	2	**4843A54**	$5.97
Applicator Bonnet							
	—	—	—	10″	2	**4843A55**	5.97

Buffing Spindles, Arbors, and Chuck

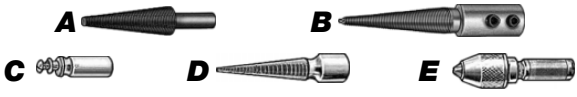

Secure buffing wheels to your existing bench-mount motor or replace worn-out spindles on your buffer.

A&B ***Tapered Spindles***—Using centrifugal force, these spindles secure soft-center wheels such as muslin buffs, felt polishing wheels, and wheel brushes. *Straight-shank tapered spindles (Style A)* can be used with wheels that have up to a ¼″ arbor hole. *Hollow-shank tapered spindles (Style B)* fit on straight shafts and are held with two set screws. Can be used with wheels that have up to a ½″ arbor hole, unless noted.

C-E ***Brass Wheel Arbors and Steel Chuck***—For use with polishing lathes and buffing machines that have tapered shafts. All have a 0.370″ mounting hole.

(A) Straight-Shank Tapered Spindles—Right Hand

Shank Dia.	O'all Lg.	Max. Taper Dia.	Taper Lg.	Thread Lg.		Each
¼″	2½″	7/16″	1½″	1½″	**48885A77**	$4.00
¼″	4″	7/16″	1½″	1½″	**48885A78**	4.68
¼″	6″	7/16″	1½″	1½″	**48885A79**	5.34

(B) Hollow-Shank Tapered Spindles

Fits Shaft Size	O'all Lg.	Max. Taper Dia.	Taper Lg.	*Right Hand*	Each	*Left Hand*	Each
⅜″	4⅜″	¾″	2½″	**48885A71**	$6.12	**48885A74**	$6.12
½″	4⅜″	¾″	2½″	**48885A72**	6.40	**48885A75**	6.40
⅝″	4⅜″	⅞″	2½″	**48885A73**●	7.50	**48885A76**●	7.50

● Can be used with wheels that have up to a ⅝″ arbor hole.

(C-E) Wheel Arbors and Chuck

		Arbor/Shank Capacity		Each
Brass Wheel Arbors				
C	Right Hand for Hard Wheel	¼″ Arbor	**4762A11**▲	$12.04
C	Left Hand for Hard Wheel	¼″ Arbor	**4762A13**▲	12.04
D	Right Hand for Soft Wheel	Pinhole to ½″	**4762A12**	13.28
D	Left Hand for Soft Wheel	Pinhole to ½″	**4762A14**	13.28
Steel Chuck with Brass Shaft				
E	Burr Chuck, Right Hand	¼″ Shank	**4762A22**	20.90

▲ Maximum wheel width is ¼″.

About Finishing Media

There are a number of variables involved in any mass finishing process. The following information provides some suggestions regarding applications and quantities of each media, but some adjustment will be required to produce the desired finish.

***Ceramic*—**The best media for removing large amounts of material. Great for rapid deburring, it can also be used for polishing. Ratios of media to parts are as follows: 2 to 1 for heavy material removal, 4 to 1 for deburring, and 5 to 1 for polishing.

***Plastic*—**Produces a smoother finish than ceramic and can also be used for deburring. Ratio of media to parts is 4 to 1.

***Porcelain*—**Good for burnishing and polishing. Ratio of media to parts is 5 or 6 to 1.

***Organic*—**Leaves the finest finish. Can also be used for deburring. Ratio of media to parts is 3 or 4 to 1.

For more information about organic media and steel shot, see page 2716.

Ceramic and Plastic Media Shapes

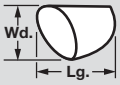

V-Cylindrical
The most popular shape for all-purpose use, it has sharp edges for efficient deburring and a curved radius for producing a fine finish. Penetrates recesses and holes without lodging.

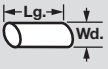

Cylindrical
Excellent for deburring holes and for putting the smoothest finish on parts. The ends are cut on a 22° or 45° diagonal.

Triangular
For fast deburring. The edges reach into corners and slotted areas, while the flat sides allow extensive surface contact for a good finish. The ends are cut on a 25°, 45°, or 60° diagonal.

Ceramic Media

Ceramic media makes for dependable deburring, edge rounding, polishing, and blending on all metals. Choose media in a size that's large enough not to lodge in recesses or holes in the parts you want to finish. Density is 90 lbs./cu. ft, except high energy, which is 108 lbs./cu. ft.

***Coarse*—**For fast removal of tough burrs and blending grind lines. Use with #1 Liquid Cleaner (4918A31), sold separately on this page.

***Fine*—**Designed for light material removal, this media produces a matte finish on all metals and can be used for light deburring, edge rounding, and before plating. Use with #1 Liquid Cleaner (4918A31) or #2 Liquid Burnisher (4918A32), both sold separately on this page.

***Polishing*—**Nonabrasive material for burnishing and coloring. Use with #2 Liquid Burnisher (4918A32), sold separately on this page.

***High Energy*—**Contains ultra-fine abrasives that produce a light matte finish and resist fractures for long life. Ideal for use in centrifugal finishing machines. Use with #1 Liquid Cleaner (4918A31), sold separately on this page.

			COARSE						FINE					
			10-lb. Pkgs.		25-lb. Pkgs.		50-lb. Pkgs.		10-lb. Pkgs.		25-lb. Pkgs.		50-lb. Pkgs.	
Shape	Lg. × Wd.			Per Pkg.		Per Pkg.		Per Pkg.		Per Pkg.		Per Pkg.		Per Pkg.
V-Cylind.	1/2″ × 1/2″		4918A911	$29.52	4918A55	$55.17	4918A43	$93.10	4918A931	$28.29	4918A54	$52.30	4918A42	$87.36
V-Cylind.	5/8″ × 5/8″		4918A912	29.52	4918A58	55.17	4918A13	93.10	4918A932	28.29	4918A57	52.30	4918A12	87.36
V-Cylind.	1″ × 1″		4918A913	28.77	4918A62	53.45	4918A16	89.66	4918A933	27.80	4918A61	51.15	4918A15	85.06
Cylind.–22°	3/8″ × 3/16″		4918A914	35.61	4918A65	69.54	4918A46	121.84	4918A934	34.63	4918A64	67.24	4918A45	117.24
Cylind.–22°	3/4″ × 5/16″		4918A915	31.22	4918A68	59.20	4918A19	101.15	4918A935	30.00	4918A67	56.32	4918A18	95.40
Cylind.–45°	7/8″ × 3/8″		4918A916	31.22	4918A72	59.20	4918A23	101.15	4918A936	30.00	4918A71	56.32	4918A22	95.40
Triang.–22°	5/16″ × 3/8″		4918A917	32.93	4918A75	63.22	4918A49	109.20	4918A937	31.47	4918A74	59.77	4918A48	102.30
Triang.–22°	5/16″ × 7/8″		4918A918	29.52	4918A78	55.17	4918A26	93.10	4918A938	28.29	4918A77	52.30	4918A25	87.36
Triang.–45°	1/2″ × 5/8″		4918A919	29.52	4918A82	55.17	4918A29	93.10	4918A939	28.29	4918A81	52.30	4918A28	87.36
Triang.–60°	3/8″ × 3/8″		4918A921	35.61	4918A85	69.54	4918A53	121.84	4918A941	34.15	4918A84	66.09	4918A52	114.94

			POLISHING						HIGH ENERGY					
			10-lb. Pkgs.		25-lb. Pkgs.		50-lb. Pkgs.		10-lb. Pkgs.		25-lb. Pkgs.		50-lb. Pkgs.	
Shape	Lg. × Wd.			Per Pkg.		Per Pkg.		Per Pkg.		Per Pkg.		Per Pkg.		Per Pkg.
V-Cylind.	1/2″ × 1/2″		4918A951	$28.29	4918A35	$52.30	4918A41	$87.36	4918A851	$30.50	4918A871	$57.47	4918A882	$97.70
V-Cylind.	5/8″ × 5/8″		4918A952	28.29	4918A56	52.30	4918A11	87.36	4918A852	30.50	4918A872	57.47	4918A883	97.70
V-Cylind.	1″ × 1″		4918A953	27.80	4918A59	51.15	4918A14	85.06	4918A853	29.75	4918A873	55.75	4918A884	94.25
Cylind.–22°	3/8″ × 3/16″		4918A954	34.63	4918A63	67.24	4918A44	117.24	4918A854	36.59	4918A874	71.84	4918A885	126.44
Cylind.–22°	3/4″ × 5/16″		4918A955	30.00	4918A66	56.32	4918A17	95.40	4918A855	32.20	4918A875	61.49	4918A886	105.75
Cylind.–45°	7/8″ × 3/8″		4918A956	30.00	4918A69	56.32	4918A21	95.40	4918A856	32.20	4918A876	61.49	4918A887	105.75
Triang.–22°	5/16″ × 3/8″		4918A957	31.47	4918A73	59.77	4918A47	102.30	4918A857	33.90	4918A877	65.52	4918A888	113.79
Triang.–22°	5/16″ × 7/8″		4918A958	28.29	4918A76	52.30	4918A24	87.36	4918A858	30.50	4918A878	57.47	4918A889	97.70
Triang.–45°	1/2″ × 5/8″		4918A959	28.29	4918A79	52.30	4918A27	87.36	4918A859	30.50	4918A879	57.47	4918A891	97.70
Triang.–60°	3/8″ × 3/8″		4918A961	34.15	4918A83	66.09	4918A51	114.94	4918A861	36.59	4918A881	71.84	4918A892	126.44

Featherweight Plastic and Ceramic Fine-Finish Media

Their light weight means these media have mild abrasive properties and yield smooth finishes. For an even finer finish, follow with a dry polish. Use on all metals for deburring and before plating.

***Plastic*—**Produces a smooth surface. Extra light weight means it's perfect for use on gold. Density is 60 lbs./cu. ft. Use with #1 Liquid Cleaner (4918A31), sold separately on this page.

***Lightweight Ceramic*—**This media resists foaming and won't leave a residue. Density is 70 lbs./cu. ft. Use with #1 Liquid Cleaner (4918A31) or #2 Liquid Burnisher (4918A32), both sold separately on this page.

			25-lb. Pkgs.		50-lb. Pkgs.	
Shape	Lg. × Wd.			Per Pkg.		Per Pkg.
Plastic						
V-Cylind.	1/2″ × 1/2″		47755A31	$101.67	47755A11	$168.00
V-Cylind.	5/8″ × 5/8″		47755A32	94.29	47755A12	154.70
Triang.–45°	1/4″ × 1/4″		47755A33	165.11	47755A17	282.20
Triang.–45°	1/2″ × 7/8″		47755A34	94.29	47755A18	154.70
Lightweight Ceramic						
V-Cylind.	1/2″ × 1/2″		47755A41	75.50	47755A45	126.00
V-Cylind.	5/8″ × 5/8″		47755A42	74.60	47755A46	124.20
Triang.–45°	1/4″ × 1/4″		47755A43	90.80	47755A47	156.60
Triang.–45°	5/16″ × 7/8″		47755A44	74.60	47755A48	124.20

Liquid Compounds for Media

Keep media and liquid solutions clean, rust free, and fast acting. Mix 1-2 oz. of compound with 1 gallon of water, and then add the solution to your media. Sold in 5-gallon pails. **Also Available:** 55-gallon drums. Please ask for 4918A999 and specify compound type and 55-gallon drum.

***#1 Liquid Cleaner*—**For use on all metals. It conditions water, washes away soils that might limit the effectiveness of the media, and is free rinsing. Contains a rust inhibitor. Use with any media.

4918A31 ..... **Each** $74.09

***#2 Liquid Burnisher*—**Highly concentrated neutral liquid puts the brightest finish on metal. Provides some rust protection. Use with ceramic, plastic, and porcelain media.

4918A32 ..... **Each** $93.43

***#3 Liquid Burnisher*—**This mildly acidic compound is primarily used with steel media to impart brilliant color to all metals except zinc. When used with ceramic and plastic media, it removes light heat-treat scale. Provides good short-term rust protection.

4918A33 ..... **Each** $127.72

***#4 Rust Inhibitor/Cleaner*—**Concentrated alkaline rust inhibitor for ferrous metals. Great for dip tanks and vibratory and barrel tumblers. Use with any media.

4918A34 ..... **Each** $102.28

Porcelain Burnishing Media

For a bright finish on metal, try this porcelain media. Often used as a second step after ceramic or plastic, it's ideal for fragile parts and won't contaminate nonferrous materials. Use as an alternative to steel or stainless steel media. Density is 100 lbs./cu. ft. Use with #2 or #3 Liquid Burnisher (4918A32 or A33), both sold separately on this page. Furnished in 5-lb. packages.

Dia.		Per Pkg.	Dia.		Per Pkg.
1 mm	4334A31	$48.92	4 mm	4334A34	$47.80
2 mm	4334A32	48.92	6 mm	4334A35	47.80
3 mm	4334A33	47.80			

Organic Superfine Finishing Media

Use organic media as a final step for an exceptionally lustrous finish. Media remove tarnish and oxidation without scratching. Run dry. For more information about media, see page 2694.

Corn Cob— A popular and economical choice for removing tarnish and small scratches, corn cob is perfect for parts with fine detail or engraving. It's treated with polishing compound and leaves a finer finish than walnut shells. Use on aluminum, nickel, brass, and silver. Density is 32 lbs./cu. ft.

Walnut Shell— Treated with red rouge. Use on colored metals such as brass and gold. Density is 36 lbs./cu. ft.

	Pkg. Wt., lbs.		Per Pkg.
Corn Cob	15	47575A81	$64.92
Walnut Shell	10	4947A21	62.80

About Mass Finishing Machines

There are three types of mass finishing machines: barrel tumblers, vibratory machines, and centrifugal machines. The primary difference between them is the amount of time it takes each one to complete a cycle. In general, the same results are produced by a barrel tumbler in 100 minutes, a vibratory machine in 10 minutes, and a centrifugal machine in 1 minute.

Rotary Barrel Tumblers— Gravitational force causes abrasion as the barrel rotates. Good for flat parts. Operate at 50-60% capacity. For wet use, fill with liquid up to the level of the parts and media.

Vibratory Finishing Machines— Different weights attached to the sides of the bowl cause it to vibrate. These machines work well on recessed areas, large parts, and delicate parts that require close tolerances. Operate at 100% capacity. For wet use, use just enough liquid to keep the parts and media wet.

Quick-Finish Centrifugal Finishing Machines— A spinning disk at the bottom of these machines forces material upward for extremely fast abrasion. Use for small parts. Operate at 40-50% capacity. For wet use, adjust the included flow control device for a steady drip.

Rotary Barrel Tumblers

The rotation of these watertight barrels allows both wet and dry deburring, burnishing, and polishing of different sized parts. Particularly useful for flat parts that can stick together in other machines. Operate on 115-120 VAC, 60 Hz.

General Purpose— Molded rubber barrels and 1/75-hp (unless noted) electric motors result in economic, quiet, and efficient operation for tumbling small parts. Include a 6-ft. power cord with two-prong plug.

Heavy Duty— Bigger barrels and more powerful (1/3 hp) motors than our general purpose tumblers. Rubber-lined steel barrels and superior bearings result in quiet operation. Have a 7-ft. power cord with three-prong plug.

General Purpose

Heavy Duty

Capacity, cu. ft.	O'all Size, Ht. × Wd. × Dp.	Inside Barrel Size★	Barrel rpm	Wt., lbs.	Tumblers	Each	Replacement Barrels	Each
General Purpose								
0.033	7½″ × 7″ × 8½″	4¼″ Dia. × 4″ Dp.	32-36	4½	48095A53	$123.38	48095A63	$23.90
0.067	7½″ × 12″ × 8½″	4¼″ Dia. × 4″ Dp.	32-36	6	48095A54●	149.27	48095A63	23.90
0.1	10″ × 7″ × 11″	7″ Dia. × 4″ Dp.	24-28	6	48095A55	172.00	48095A65	68.94
0.167	11½″ × 12″ × 11″	6½″ Hex × 8″ Dp.	20-22	13½	48095A57■	240.18	48095A66	121.08
Replacement Drive Belt							3044K122	5.38
Heavy Duty								
0.22	16¾″ × 18¼″ × 15¾″	7½″ Hex × 7⅞″ Dp.	36	58	4893A41	693.33	4893A32	306.07
0.48	16¾″ × 25¾″ × 18¼″	9″ Hex × 11⅞″ Dp.	36	76	4893A56	790.83	4893A18	376.73

★ Hex is measured across the flats. ● Two-barrel tumbler with barrels mounted side-by-side. ■ Motor is 1/50 hp.

Vibratory Finishing Machines

Unlike rotary barrel tumblers, these machines keep parts and media in constant motion for faster finishing and more aggressive deburring. All units have a polyethylene bowl for wet and dry operation.

General Purpose— Have a removable bowl with lid, steel base, on/off switch, motor, and 6-ft. power cord with three-prong plug. Not recommended for use with steel media. *Model* 48165A24 has an adjustable vibration feature that increases bowl movement for more aggressive, faster finishing. **Also Available:** Replacement bowls and motors. Please ask for 48165A61 and specify bowl or motor, voltage, and capacity.

Heavy Duty— With a thicker bowl than general purpose machines, these models accommodate steel media in addition to ceramic and plastic. The bowl has a clear plastic lid that reduces noise while letting you see work in progress, and a drain for easy cleanup. Machines also have a metal base and an on/off timer. Vibration can be adjusted for use with steel media and other heavy loads. They include a 5-ft. power cord with three-prong plug.

General Purpose

Heavy Duty

Capacity, cu. ft.	O'all Size, Dia. × Ht.	Inside Bowl Size, Dia. × Ht.	Motor	Wt., lbs.		Each
General Purpose						
0.1	10″ × 11″	9½″ × 4″	115 VAC, 60 Hz, 1/30 hp	8	48165A19	$240.79
0.2	11½″ × 12½″	10¾″ × 4¼″	115 VAC, 60 Hz, 1/20 hp	15	48165A22	275.72
0.2	11½″ × 12¾″	10¾″ × 4¼″	220 VAC, 50/60 Hz, 1/20 hp	15	48165A26	298.74
0.6	17″ × 18″	16¼″ × 6½″	115 VAC, 60 Hz, 1/20 hp	22¾	48165A24	544.20
Heavy Duty						
0.25	14″ × 19½″	12¾″ × 6″	115 VAC, 60 Hz, 1/4 hp	36	45055A36	805.74
0.5	17″ × 21″	15¾″ × 7½″	115 VAC, 60 Hz, 1/3 hp	45	45055A46	1,226.35
1.0	20″ × 22½″	18¾″ × 9″	115 VAC, 60 Hz, 1/2 hp	63	45055A56	1,849.66

Quick-Finish Centrifugal Finishing Machines

Perfect for cleaning and polishing small parts, these machines have a spinning disk in the base that generates more energy than rotary tumblers or vibratory machines to drastically shorten the finishing process. All operate on 115 VAC, 50/60 Hz and have a 3-ft. power cord with three-prong plug.

General Purpose— Designed for use with delicate workpieces, these machines feature a 12-hour timer. Overall size is 9½″ Dia. × 13½″ Ht.

Dry machine comes with 2.2 lbs. of coarse walnut media, 2.2 lbs. of fine walnut media, and 7 oz. of polishing paste. *Wet machine* is for use with plastic media and ceramic media no smaller than 3 mm. It comes with 2.9 lbs. of fine plastic pyramid grinding chips, 2.9 lbs. of fine plastic cone grinding chips, 1 qt. of grinding compound, and a plastic tank for waste water.

Heavy Duty— A replaceable bowl system enables dry, wet, and magnetic finishing processes on the same machine. Power base and bowls sold separately.

Power base features a 60-minute timer, digital speed control, and a sensor that automatically adjusts the machine for the appropriate process. Base is 10⅝″ Ht. × 14 3/16″ Wd. × 13 13/16″ Dp. *Wet bowl* is furnished with pump and recirculating tub. Use with plastic or ceramic media. *Magnetic bowl* is used for magnetic pin burnishing. It comes with 0.44 lbs. of steel pin media and 1 qt. of burnishing compound.

General Purpose Wet Machine

Heavy Duty Power Base

Heavy Duty Magnetic Bowl

	Capacity, cu. ft.	Weight, lbs.		Each
General Purpose				
Dry Machine	0.071	9	4328A11	$1,103.08
Wet Machine	0.071	9	4328A12	1,515.00
Heavy Duty				
Power Base	——	57	4328A21	3,250.31
Dry Bowl	0.212	—	4328A22	634.62
Wet Bowl	0.212	—	4328A23	1,293.75
Magnetic Bowl	0.212	—	4328A24	1,592.31

About Power Brushes

This alternative to abrasive wheels, sandblasting, and other methods of removing surface contamination does not change the workpiece's dimensional tolerances, tensile strength, or resistance to heat or other elements. Brushes are made with wires and filaments, so they don't leave abrasive dust, which reduces the need to clean workpieces.

Safety Note: Do not exceed the maximum speed listed for each brush. The maximum rpm ratings listed are the maximum speed at which the brush should be run with no work applied (spinning free).

Metal Bristle Types

Rigid Bristle— Partial Twist

Rigid Bristle— Full Twist

Rigid Bristle— Extra Tight Full Twist

Flexible Bristle

Rigid Bristle— Also known as knot wire. Multiple bristles are twisted together for maximum impact in heavy duty applications. *Partial twist* has a slight tuft on the end to give some flexibility on irregular surfaces. *Full twist* is twisted to the end of the bristles for very aggressive cutting. *Extra tight full twist* is also called stringer bead twist knot. Fewer bristles in each twist result in the fastest, most aggressive, and highest-impact finishing. The tight twists also form a narrow face that can fit into small spaces.

Flexible Bristle— Also known as crimped wire, these bristles are bent to support each other. Use for light to medium duty brushing on irregular surfaces or those that could be damaged by the impact of rigid bristles.

Coated Bristle— Also known as encapsulated. Only the bristle tips are exposed; the rest of the bristle is encased in a synthetic compound to limit flexing and maximize cutting action.

Brush Types

(A) Brush Diameter
(B) Bristle Length— also called trim length
(C) Arbor Hole
(D) Shank Diameter
(E) Wheel Thickness

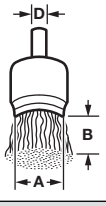

Shank-Mount Brush

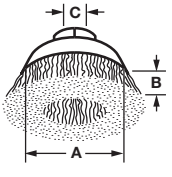

Cup Brush

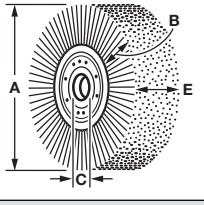

Wheel Brush

Materials and Applications

Bristle Material	Features and Benefits	Applications
Carbon Steel	Most widely used bristle material. Combines cutting ability and fatigue resistance for long brush life at a low cost. Wire is heat treated and tempered, unless noted.	General purpose cleaning, rust removal, deburring, edge blending, weld preparation, and roughing for adhesion.
Stainless Steel	Highly corrosion and heat resistant. Unlike carbon steel, stainless steel does not leave deposits that can cause rust when used on stainless steel, aluminum, and other high-strength alloys. However, once used on carbon steel workpieces, do not use on stainless steel or rusting can occur.	Use in corrosive environments for general purpose cleaning, rust removal, deburring, edge blending, and roughing for adhesion.
Brass	Nonsparking wire offers protection in flammable conditions. Brass is softer, more flexible, and has better nonscratching characteristics than carbon steel. *Note:* Brush hubs and other devices that hold the bristle on the brush are not made of brass and will not provide 100% nonsparking protection.	Light to medium cleaning and luster finishing.
Abrasive Nylon	Flexible nylon bristles are impregnated with silicon carbide or aluminum oxide grain. These bristles reach surfaces metal wires can't because the sides of the bristles act as flexible files to do most of the work, where wire brushes use only the bristle tips.	Use wet or dry for deburring, edge breaking, blending, dulling surfaces, and stain removal. Suitable for finishing hard metals and advanced composites.
Nylon	Resistant to most acids and alkalies.	Use dry, wet, or with an abrasive slurry for cleaning, polishing, buffing, and scrubbing. *Note:* Wet scrubbing above 120°F will cause a loss of stiffness and accelerate brush wear.
Horsehair	A very durable material for scratch-free dry brushing. Not resistant to acids or alkalies.	Buffing, cleaning, dusting, and finishing.
Tampico	Heat, alkali, and acid resistant. Porous fibers absorb water and work wet or dry. More aggressive than nylon and horsehair.	Removing surface particles and tool marks, dusting, wet scrubbing, cleaning, and spreading liquids. Excellent for removing light feather burrs and for light edge blending when used with a compound.

Bristle Coarseness Guide

	Extra Fine	Fine	Medium	Medium Coarse	Coarse
Metal Bristle Dia.	0.003″-0.005″	0.006″-0.008″	0.0104″-0.012″	0.014″-0.020″	0.023″-0.035″
Abrasive Nylon Grit	1000, 600, 400, 320, 300	220, 180	120	80, 60	50, 46, 36

For information about power brushes, see page 2696.

Rigid-Bristle Shank-Mount Brushes

Made for areas with limited accessibility, these brushes have partial-twist bristles for more aggressive brushing than flexible bristles. Brushes are shank mounted for quick installation into chucks and collets. Shank diameter is 1/4″. Applications include weld cleaning, tool and die work, and mold and pipe cleaning. Use with straight and right-angle die grinders, drills, drill presses, and some CNC machines. Choose bristles made of carbon steel or Type 302 stainless steel.

1/4″ dia. brushes are made of a single twist of bristles and work well in even the tiniest spots.

Brush Dia.	Bristle Dia.	Bristle Lg.	Shank Lg.	Max. rpm	Carbon Steel		Type 302 SS	
1/4″	0.006″	1″	3/4″	20,000	4458A11	$10.70	4458A21	$11.91
1/4″	0.014″	1″	3/4″	20,000	4458A12	9.35	4458A22	10.17
1/4″	0.020″	1″	3/4″	20,000	4458A13	8.92	4458A23	9.62
1/2″	0.006″	1 1/8″	3/4″	22,000	4863A81	14.86	4863A83	15.25
1/2″	0.0104″	1 1/8″	3/4″	22,000	4863A82	11.27	4863A84	13.60
1/2″	0.014″	1 1/8″	3/4″	22,000	4863A72	11.43	4863A73	15.93
3/4″	0.006″	1 1/8″	3/4″	20,000	4863A85	16.17	4863A87	16.11
3/4″	0.0104″	1 1/8″	3/4″	20,000	4863A71	15.39	4863A31	12.95
3/4″	0.014″	7/8″	3/4″	22,000	4863A8	12.48	4863A41	16.28
3/4″	0.020″	7/8″	3/4″	22,000	4863A9	12.28	4863A42	15.60
1″	0.006″	1 1/8″	11/16″	20,000	4863A86	17.09	4863A88	19.98
1″	0.014″	1″	11/16″	20,000	4863A1	11.47	4863A5	17.43
1″	0.020″	1″	11/16″	20,000	4863A3	10.41	4863A32✓	17.51
1 1/8″	0.006″	1 1/8″	5/8″	20,000	4863A6	29.73	4863A7♣	31.70
1 1/8″	0.014″	7/8″	5/8″	22,000	4863A4	10.70	4863A43	20.31
1 1/8″	0.020″	7/8″	5/8″	22,000	4863A2	10.54	4863A44	18.22

✓ Max. rpm is 22,000. ♣ Housing has a plastic coating to protect workpieces.

1/4″ Brush Dia.

1″ Brush Dia.

Flexible-Bristle Shank-Mount Brushes

A small surface area makes these brushes perfect for detailed cleaning, deburring, blending, and polishing. They also work well in hard-to-reach places. Bristles are crimped, unless noted.

1/8″ Shank Brushes— Designed for precise, light jobs, these brushes have a small shank for use in flexible shaft tools, die grinders, and Dremel-style rotary tools. Shanks are 1 1/4″ long. Package quantity is 12.

1/4″ Shank Brushes— Use with larger die grinder collets, drill chucks, and some CNC machines to brush larger surfaces. *Coated housing* brushes have a plastic coating to protect workpieces from marks and scratches. *Vari-trim* brushes have removable nylon rings and are extra aggressive. Adjust rings to change bristle length. Shanks are 3/4″-7/8″ long.

1/8″ Shank

1/4″ Shank

1/4″ Shank Coated Housing

1/4″ Shank Vari-Trim

1/4″ Shank Abrasive Nylon

1/8″ Shank Dia. Brushes

Brush Dia.	Bristle Dia.	Bristle Lg.	Max. rpm		Each Partial Pkg.	Each Full Pkg.
Carbon Steel						
3/16″	0.003″	1/4″	37,000	4888A1●	$1.77	$1.53
1/4″	0.005″	7/16″	37,000	4888A12	3.98	3.44
5/16″	0.005″	9/16″	25,000	4888A3	3.70	3.15
Type 302 Stainless Steel						
3/16″	0.003″	1/4″	37,000	4916A11●	2.58	2.23
1/4″	0.005″	7/16″	37,000	4916A12	4.06	3.52
5/16″	0.005″	9/16″	25,000	4916A13	4.47	3.87
Brass						
3/16″	0.003″	1/4″	37,000	4792A31●	1.40	1.21
1/4″	0.005″	7/16″	37,000	4792A32	3.00	2.58
Abrasive Nylon (600-Grit Aluminum Oxide)						
3/16″	0.014″	7/16″	6,000	44465A73	$1.91	$1.72
1/4″	0.014″	7/16″	6,000	44465A75	3.87	3.48
5/16″	0.014″	7/16″	6,000	44465A77	4.25	3.82
Horsehair (Stiff)						
3/16″	———	1/4″	37,000	4890A21●	1.03	.86
1/4″	———	3/8″	37,000	4890A11●	1.65	1.39
5/16″	———	9/16″	25,000	4890A22●	2.10	1.77
Goat Hair (Soft)						
3/16″	———	1/4″	37,000	4890A23●	2.02	1.70

● Bristles are straight, not crimped.

1/4″ Shank Dia. Brushes

Bristle Dia.	Bristle Lg.	1/2″ Dia. Brushes Max. rpm			3/4″ Dia. Brushes Max. rpm			1″ Dia. Brushes Max. rpm		
Carbon Steel										
0.006″	7/8″	25,000	4865A11★	$5.44	22,000	4865A16★	$7.94	22,000	4865A29★	$10.63
0.0104″	7/8″	25,000	4865A12★	4.73	22,000	4865A17★	5.87	22,000	4865A3★	6.80
0.014″	7/8″	25,000	4865A13★	4.71	22,000	4865A18★	5.69	22,000	4865A31★	6.81
0.020″	7/8″	25,000	4865A22★	4.44	22,000	4865A19★	5.35	22,000	4865A32★	6.46
Carbon Steel with Coated Housing										
0.006″	7/8″	25,000	4911A11	9.95	22,000	4911A12	14.42	22,000	4911A15	15.51
0.0104″	7/8″	25,000	4911A51	9.46	22,000	4911A52	11.00	22,000	4911A21	11.63
Vari-Trim Carbon Steel										
0.006″	9/16″	20,000	4911A39	11.91	20,000	4911A17■	16.77	10,000	4911A33▲	27.60
0.0104″	9/16″	25,000	4911A71	10.21	20,000	4911A72♥	14.49	10,000	4911A34▲	16.97
Type 302 Stainless Steel										
0.006″	7/8″	25,000	4885A11★	7.36	22,000	4885A21★	9.86	22,000	4885A31★	15.16
0.0104″	7/8″	25,000	4885A17★	6.36	22,000	4885A27★	8.78	22,000	4885A37★	12.96
0.014″	7/8″	25,000	4885A13★	6.36	22,000	4885A22★	8.80	22,000	4885A33★	12.70
0.020″	7/8″	25,000	4885A38★	6.27	22,000	4885A39★	8.66	22,000	4885A41★	12.48
Type 302 Stainless Steel with Coated Housing										
0.006″	7/8″	25,000	4911A13	12.49	22,000	4911A14	15.06	22,000	4911A16	16.63
0.0104″	7/8″	25,000	4911A61	11.20	22,000	4911A62	13.45	22,000	4911A25	19.31
Vari-Trim Type 302 Stainless Steel										
0.006″	9/16″	20,000	4911A18	15.37	20,000	4911A43■	16.88	10,000	4911A35▲	27.23
0.0104″	3/8″	20,000	4911A79	11.09	20,000	4911A82	15.63	10,000	4911A36▲	22.35
Brass										
0.006″	1″	20,000	48185A71	10.55	20,000	48185A75	18.06	20,000	48185A79	20.24
0.0104″	1″	20,000	48185A72	9.45	20,000	48185A76	12.30	20,000	48185A81	15.06
0.014″	1″	20,000	48185A73	9.09	20,000	48185A77	11.79	20,000	48185A82	12.76
0.020″	1″	20,000	48185A74	9.09	20,000	48185A78	11.79	20,000	48185A83	12.76
Vari-Trim Brass										
0.005″	1/2″	20,000	4871A11	15.59	20,000	4871A13	21.12	20,000	4871A12	25.53
0.0104″	1/2″	20,000	4871A14	13.79	20,000	4871A15	16.69	20,000	4871A16	19.62
0.020″	1/2″	20,000	4871A17	13.79	20,000	4871A18	16.69	20,000	4871A19	18.22
Abrasive Nylon (Silicon Carbide)										
0.022″ (320 Grit)	7/8″	———	———	———	10,000	4914A39	9.32	10,000	4914A43	12.50
0.035″ (180 Grit)	7/8″	———	———	———	10,000	4914A38	9.32	10,000	4914A42	12.23
0.040″ (120 Grit)	7/8″	———	———	———	10,000	4914A37	9.32	10,000	4914A41	12.23

★ Prices are 15% lower when you buy in quantities of 12. ■ Bristle lg.: 7/16″. ▲ Bristle lg.: 5/16″. ♥ Bristle lg.: 3/8″.

For information about power brushes, see page 2696.

Flexible-Bristle Shank-Mount Cup Brushes

1/8″ Shank

1/4″ Shank

1/4″ Shank Abrasive Nylon

Featuring a larger brush diameter than most shank-mount brushes, these cup brushes work well for deburring, cleaning, and finishing large surface areas. Bristles are crimped, except for horsehair and goat hair.

1/8″ Shank Dia. Brushes—Have a small shank for use in flexible shaft tools, die grinders, and Dremel-style rotary tools.

1/4″ Shank Dia. Brushes—Fit into larger die grinder collets and drill chucks for brushing large surfaces.

1/8″ Shank Dia. Brushes—Shanks are 1½″ long.

Brush Dia.	Bristle Dia.	Bristle Lg.	Max. rpm		1-11	12-Up
Carbon Steel						
5/8″	0.003″	1/4″	37,000	4888A21	$2.44	$2.08
5/8″	0.005″	1/4″	37,000	4888A4	2.11	1.79
Type 302 Stainless Steel						
5/8″	0.005″	1/4″	37,000	4916A14	4.27	3.69
Brass						
5/8″	0.005″	1/4″	37,000	4792A41	1.92	1.66
Abrasive Nylon (600-Grit Aluminum Oxide)						
9/16″	0.014″	1/4″	6,000	44465A63	3.07	2.76
Horsehair (Stiff)						
9/16″	—	1/4″	37,000	4890A12	1.21	1.02
1″	—	7/16″	25,000	4890A31	5.11	4.30
Goat Hair (Soft)						
9/16″	—	1/4″	37,000	4890A32	1.32	1.12
1″	—	7/16″	25,000	4890A33	5.24	4.41

1/4″ Shank Dia. Brushes

Brush Dia.	Bristle Dia.	Bristle Lg.	Shank Lg.	Max. rpm		
Carbon Steel						
1 3/4″	0.006″	1 1/16″	1 1/8″	13,000	4887A1	$7.08
1 3/4″	0.011″	1 1/16″	1 1/8″	13,000	4887A2	5.17
2″	0.008″	7/8″	3/4″	13,000	4887A3	7.15
2″	0.011″	7/8″	3/4″	13,000	4887A5	5.89
2 1/2″	0.008″	7/8″	1 1/8″	13,000	4887A6	8.10
2 1/2″	0.011″	7/8″	1 1/8″	13,000	4887A7	6.91

1/4″ Shank Dia. Brushes (Cont.)

Brush Dia.	Bristle Dia.	Bristle Lg.	Shank Lg.	Max. rpm		
Carbon Steel (Cont.)						
2 3/4″	0.0118″	7/8″	3/4″	6,000	4887A8	$9.76
Type 302 Stainless Steel						
1 3/4″	0.006″	1/2″	7/8″	13,000	4887A26	11.01
1 3/4″	0.0118″	3/4″	7/8″	13,000	4887A25	13.17
2″	0.008″	5/8″	3/4″	10,500	4887A21	23.45
2″	0.0104″	5/8″	3/4″	10,500	4887A22	23.02
2 1/2″	0.008″	5/8″	3/4″	4,500	4887A23	28.02
2 1/2″	0.0104″	5/8″	3/4″	4,500	4887A24	25.04
Brass						
1 3/4″	0.006″	3/4″	7/8″	10,500	4868A71	15.47
1 3/4″	0.0104″	3/4″	7/8″	10,500	4868A72	14.27
1 3/4″	0.014″	3/4″	7/8″	10,500	4868A73	13.80
2″	0.006″	3/4″	7/8″	10,500	4868A74	22.77
2″	0.0104″	3/4″	7/8″	10,500	4868A75	21.73
2″	0.014″	3/4″	7/8″	10,500	4868A76	21.05
2 3/4″	0.006″	3/4″	7/8″	8,000	4868A77	30.35
2 3/4″	0.0104″	3/4″	7/8″	8,000	4868A78	28.72
2 3/4″	0.014″	3/4″	7/8″	8,000	4868A79	28.00
Abrasive Nylon (80-Grit Silicon Carbide)						
2″	0.043″	3/4″	1 1/8″	5,000	44445A36	10.65
3″	0.050″	7/8″	1″	5,000	44445A56	11.70
Abrasive Nylon (180-Grit Silicon Carbide)						
2″	0.040″	3/4″	1 1/8″	5,000	44445A46	10.65
3″	0.039″	7/8″	1″	5,000	44445A66	11.70

Flexible- and Rigid-Bristle Shank-Mount Wheel Brushes

1/8″ Shank

1/4″ Shank Flexible Bristle

1/4″ Shank Abrasive Nylon

1/4″ Shank Rigid Bristle–Partial Twist

Their slim wheel shape enables these brushes to fit into slots, corners, and contoured surfaces. Perfect for light- to medium-duty cleaning, deburring, finishing, and blending jobs. ***Flexible bristles*** are crimped, except horsehair and goat hair; ***rigid bristles*** are not.

1/8″ Shank Dia. Brushes—Have a small shank for use with flexible shaft tools, die grinders, and Dremel-style rotary tools for precise work. Shanks are 1½″ long. Package quantity is 12.

1/4″ Shank Dia. Brushes—Fit into larger die grinder collets, drill chucks, and some CNC machines. Use on larger surfaces. Shanks are 7/8″-1″ long.

1/8″ Shank Dia. Brushes—Flexible Bristle

Brush Dia.	Bristle Dia.	Bristle Lg.	Wheel Thick.	Max. rpm		Each Partial Pkg.	Each Full Pkg.
Carbon Steel							
5/8″	0.005″	1/8″	1/16″	37,000	4888A5	$1.90	$1.61
3/4″	0.005″	3/16″	1/16″	37,000	4888A6	2.33	1.98
1″	0.005″	5/16″	1/8″	37,000	4888A7	2.47	2.09
1 1/4″	0.005″	3/8″	1/8″	37,000	4888A8	4.60	3.90
1 1/2″	0.005″	1/2″	1/8″	25,000	4888A9	4.87	4.13
Type 302 Stainless Steel							
5/8″	0.005″	1/8″	1/16″	37,000	4916A25	2.92	2.53
3/4″	0.005″	3/16″	1/16″	37,000	4916A16	3.00	2.59
1″	0.003″	5/16″	1/8″	37,000	4916A19	3.65	3.15
1″	0.005″	5/16″	1/8″	25,000	4916A21	3.76	3.29
1 1/2″	0.005″	1/2″	1/8″	25,000	4916A18	8.72	7.51
Brass							
3/4″	0.005″	3/16″	1/16″	37,000	4792A21★	1.84	1.58
1″	0.005″	5/16″	1/8″	37,000	4792A22	1.92	1.66
Abrasive Nylon (600-Grit Aluminum Oxide)							
3/4″	0.013″	3/16″	1/16″	6,000	44465A51	3.04	2.76
1″	0.015″	1/4″	1/16″	6,000	44465A53	3.29	2.98
1 1/4″	0.015″	3/8″	1/16″	6,000	44465A55	4.49	4.07
1 1/2″	0.015″	1/2″	1/16″	6,000	44465A57	4.59	4.17
Horsehair (Stiff)							
3/4″	—	3/16″	1/16″	37,000	4890A13	1.21	1.02
Goat Hair (Soft)							
3/4″	—	3/16″	1/16″	37,000	4890A14★	1.17	.97

★ Shank is 3/32″ dia.

1/4″ Shank Dia. Brushes—Flexible Bristle

Brush Dia.	Bristle Dia.	Bristle Lg.	Wheel Thick.	Max. rpm		Each
Carbon Steel						
1 1/4″	0.006″	1/4″	1/4″	20,000	7077A11	$7.64
1 1/2″	0.006″	3/8″	1/4″	20,000	7077A12	8.80
1 1/2″	0.0104″	3/8″	1/4″	20,000	7077A13	7.16
1 3/4″	0.006″	3/8″	11/32″	20,000	7077A14	9.20
1 3/4″	0.0104″	3/8″	11/32″	20,000	7077A15	7.67
2″	0.006″	7/16″	11/32″	20,000	7077A16	10.30
2″	0.0118″	7/16″	3/8″	20,000	7077A17	7.23
2 1/2″	0.008″	9/16″	11/32″	20,000	7077A18	8.97
2 1/2″	0.0118″	9/16″	11/32″	20,000	7077A19	7.39
3″	0.008″	13/16″	1/2″	20,000	7077A21	9.44
3″	0.0118″	13/16″	1/2″	20,000	7077A22	7.51

1/4″ Shank Dia. Brushes (Cont.)—Flexible Bristle

Brush Dia.	Bristle Dia.	Bristle Lg.	Wheel Thick.	Max. rpm		Each
Type 302 Stainless Steel						
1 1/4″	0.006″	1/4″	1/4″	20,000	7077A31	$11.70
1 1/2″	0.006″	3/8″	3/16″	20,000	7077A32	12.37
1 1/2″	0.0104″	3/8″	11/32″	20,000	7077A33	10.80
1 3/4″	0.006″	3/8″	11/32″	20,000	7077A34	11.94
1 3/4″	0.0118″	3/8″	11/32″	20,000	7077A35	10.73
2″	0.006″	7/16″	11/32″	20,000	7077A36	12.10
2″	0.0104″	7/16″	3/8″	20,000	7077A37	10.87
3″	0.0104″	13/16″	1/2″	20,000	7077A38	11.27
3″	0.014″	13/16″	1/2″	20,000	7077A39	10.86
Brass						
1 1/2″	0.014″	1/4″	5/16″	20,000	44455A53	14.39
2″	0.006″	3/8″	5/16″	20,000	44455A61	16.39
2″	0.0104″	3/8″	5/16″	20,000	44455A62	14.13
2″	0.014″	3/8″	5/16″	20,000	44455A63	13.45
2 1/2″	0.006″	5/8″	3/8″	20,000	44455A64	17.51
2 1/2″	0.0104″	5/8″	3/8″	20,000	44455A65	16.86
2 1/2″	0.014″	5/8″	3/8″	20,000	44455A66	16.18
3″	0.006″	5/8″	3/8″	20,000	44455A67	19.48
3″	0.014″	5/8″	3/8″	20,000	44455A69	17.51
3″	0.020″	5/8″	3/8″	20,000	44455A71	16.85
Abrasive Nylon (80-Grit Silicon Carbide)						
3″	0.058″	5/8″	1/4″	6,000	43535A33	11.48
4″	0.054″	7/8″	3/8″	6,000	43535A53	13.74
Abrasive Nylon (180-Grit Silicon Carbide)						
3″	0.039″	5/8″	1/4″	6,000	43535A43	11.48
4″	0.039″	7/8″	3/8″	6,000	43535A63	13.74

1/4″ Shank Dia. Brushes—Rigid Bristle, Partial Twist

Brush Dia.	Bristle Dia.	Bristle Lg.	Wheel Thick.	Max. rpm		Each
Carbon Steel						
3″	0.0118″	5/8″	3/8″	25,000	47475A61	$16.85
3″	0.014″	5/8″	3/8″	25,000	47475A64	16.03
3″	0.020″	5/8″	3/8″	25,000	47475A67	15.56
4″	0.0118″	7/8″	1/2″	20,000	47475A71	18.07
4″	0.014″	7/8″	1/2″	20,000	47475A74	16.55
4″	0.020″	7/8″	1/2″	20,000	47475A77	16.46
Type 302 Stainless Steel						
3″	0.014″	5/8″	3/8″	25,000	47475A44	20.09
4″	0.014″	7/8″	1/2″	20,000	47475A49	21.00

For information about power brushes, see page 2696.

Flared Flexible-Bristle Shank-Mount Brushes

Flared

Circular Flared

Concave Flared

When you need a brush that conforms to curves, corners, holes, and other irregular surfaces, these flared brushes are just what you're looking for. Brushes have crimped bristles and 1/4″ dia. shanks for use with die grinders, drills, drill presses, and CNC machines.

Flared and ***Circular Flared Brushes—*** Good for use in blind holes. Shanks are 3/4″-7/8″ long.

Concave Flared Brushes— Similar to wheel brushes, but more flexible for use on irregular surfaces. Shanks are 1″ long.

Flared Brushes

Brush Dia.	Bristle Dia.	Max. rpm	Carbon Steel		Type 302 Stainless Steel	
1″	0.020″	25,000	4884A13	$6.94	4884A32 ♦	$12.46
1 1/2″	0.014″	15,000	4884A71	6.07	4884A72	9.10
1 1/2″	0.020″	15,000	4884A26	5.33	4884A66	13.21
2 3/4″	0.020″	16,000	4884A56	12.09	4884A69 ♦	23.81
3″	0.014″	15,000	4884A18	6.59	4884A38	16.17
3″	0.020″	16,000	4884A19 ♦	7.98	4884A39	22.51
					Brass	
1″	0.005″	15,000			47975A71	$13.03
1″	0.0104″	15,000			47975A72	12.10
1″	0.020″	15,000			47975A73	11.94
1 1/2″	0.020″	15,000			47975A76	13.52
3″	0.020″	15,000			47975A79	21.58
4″	0.020″	15,000			47975A83	25.35

♦ Max. rpm is 15,000.

Circular Flared Brushes

Brush Dia.	Bristle Dia.	Max. rpm	Carbon Steel		Type 302 Stainless Steel	
1″	0.006″	25,000	4884A11	$9.11	4884A31	$13.38
1″	0.008″	25,000	4884A81	7.22	4884A83	13.26
1 1/4″	0.006″	20,000	4884A51	10.89	4884A33	17.22
1 1/2″	0.006″	20,000	4884A14	10.49	4884A34	17.80
2″	0.0104″	15,000	4884A27	13.78	4884A47	16.33
2 3/4″	0.008″	16,000	4884A55	14.57	4884A62	27.00
3″	0.006″	16,000	4884A17	18.55	4884A67	22.13
3″	0.008″	16,000	4884A82	12.76	4884A84	24.16
4″	0.008″	15,000	4884A21	22.15	4884A41	31.52
					Brass	
1 1/2″	0.005″	15,000			47975A74	$18.96
1 1/2″	0.0104″	15,000			47975A75	13.71
3″	0.0104″	15,000			47975A78	23.07
4″	0.005″	15,000			47975A81	40.56
4″	0.0104″	15,000			47975A82	26.84

Concave Flared Brushes

Brush Dia.	Bristle Dia.	Bristle Lg.	Max. rpm	Carbon Steel		Type 302 Stainless Steel	
1 1/2″	0.006″	3/8″	20,000	4797A11	$7.91	4797A31	$10.84
1 1/2″	0.0118″	3/8″	20,000	4797A12	6.17	4797A32	10.12
2″	0.008″	1/2″	20,000	4797A13	8.06	—	—
2″	0.014″	1/2″	20,000	4797A14	7.13	4797A33	11.01
2″	0.020″	1/2″	20,000	4797A22	7.45	—	—
2 1/2″	0.006″	5/8″	20,000	4797A25	10.17	—	—
2 1/2″	0.014″	5/8″	20,000	4797A16	7.62	—	—
2 1/2″	0.020″	5/8″	20,000	4797A43	8.03	—	—
3″	0.006″	15/16″	20,000	4797A27	11.04	4797A54	17.59
3″	0.008″	15/16″	20,000	4797A28	10.85	—	—
3″	0.014″	15/16″	20,000	4797A18	8.14	4797A55	13.94
3″	0.020″	15/16″	20,000	4797A44	8.49	—	—
4″	0.008″	1 1/4″	20,000	4797A29	11.42	4797A57 ♠	18.20
4″	0.014″	1 1/4″	20,000	4797A41	11.62	4797A59	19.71

♠ Bristle size is 0.006″.

Flexi-Reach Coil Spring Shank-Mount Brushes

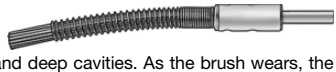

A flexible coil spring on these brushes surrounds the bristles to enable easy cleaning in hard-to-reach corners and deep cavities. As the brush wears, the spring can be trimmed. Bristles are carbon steel. Shanks are 1″ long.

CAUTION: Insert brush into the workpiece before turning on the power tool. If used outside a hole, the brush could break off and become a dangerous projectile.

Brush Dia.	Bristle Dia.	Shank Dia.	O'all Lg.	Max. rpm		
3/8″	0.014″	1/4″	6 1/4″	1,800	4864A1	$16.55
1/2″	0.014″	1/4″	6 1/4″	1,800	4864A2	16.88

Aggressive Coated-Bristle Shank-Mount Brushes

A

B

The tough, synthetic compound that encases the bristles wears away gradually to expose unused bristles. As a result, these brushes are very aggressive and long lasting. Great for heavy duty cleaning. Bristles are crimped, but not flexible. Shanks are 1/4″ Dia. × 3/4″ Lg. for use with die grinders and drills.

Style A— Works well on edges and large areas.

Style B— Great for cleaning corners and other hard-to-reach areas.

Brush Dia.	Bristle Dia.	Bristle Lg.	Max. rpm		
Carbon Steel					
A 1 3/4″	0.0104″	7/8″	25,000	4835A14	$15.67
A 1 3/4″	0.020″	7/8″	25,000	4835A17	21.36
A 2″	0.020″	1″	20,000	4835A23	17.39
A 2 3/4″	0.020″	1 1/2″	16,000	4835A29	21.11
Type 302 Stainless Steel					
A 1 3/4″	0.0104″	7/8″	25,000	4835A31	15.97
A 2″	0.0104″	1″	20,000	4835A32	25.83
Carbon Steel					
B 11/16″	0.020″	1″	18,000	4913A12	13.15
B 15/16″	0.006″	1″	15,000	4913A13	20.29
B 1 3/16″	0.020″	1″	13,000	4913A16	19.00
Type 302 Stainless Steel					
B 11/16″	0.005″	1″	18,000	4913A17	15.94
B 15/16″	0.0104″	1″	15,000	4913A18	18.88
B 1 3/16″	0.0104″	1″	13,000	4913A21	23.83

Drilled Hole Deburring Shank-Mount Brushes

Simply insert the pilot into a hole, and these brushes remove burrs and sharp edges around the hole's surface. Perfect for cleaning the edges of holes prior to installing rivets or other fasteners.

Bristles are made of Type 302 stainless steel; cup is zinc-plated steel. Outer diameter is 1/16″ larger than brush diameter. Exposed bristle length is 1/8″. All shanks are 1/4″ dia. and 3/4″-7/8″ long.

Brush Dia.	Bristle Dia.	Pilot Dia.	Max. rpm		
1/2″	0.005″	3/32″	20,000	4912A21	$24.58
1/2″	0.005″	1/8″	20,000	4912A22	24.58
1/2″	0.005″	5/32″	20,000	4912A23	24.58
1/2″	0.005″	3/16″	20,000	4912A24	24.58
1/2″	0.005″	1/4″	20,000	4912A25	26.48
3/4″	0.005″	1/8″	20,000	4912A32	41.68
3/4″	0.005″	3/16″	20,000	4912A35	41.68
3/4″	0.005″	1/4″	20,000	4912A39	48.21
1″	0.005″	1/4″	14,000	4912A44	50.71

Scratchless Ceramic Bristle Shank-Mount Brushes

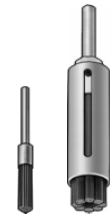
C D

The ceramic fiber bristles in these brushes are designed for deburring, but they also leave a smooth, scratch-free finish. Shanks are 1 1/8″ long.

Style C— Has a 1/8″ dia. shank for use with rotary hand tools.

Style D— Adjust the protrusion of the bristles when the ends wear down. Bristle length listed is the maximum recommended exposed length. All have a 15/64″ dia. shank for use with milling and similar machines.

Brush Dia.	Bristle Thick.	Bristle Lg.	Max. rpm		
C 15/64″	0.010″	3/4″	10,000	4960A11	$50.27
C 15/64″	0.016″	3/4″	10,000	4960A12	50.27
D 15/64″	0.010″	3/8″	10,000	4960A13	123.08
D 15/64″	0.016″	3/8″	10,000	4960A14	123.08
D 19/32″	0.010″	1/2″	6,000	4960A15	279.20
D 19/32″	0.016″	1/2″	6,000	4960A16	279.20

Flexible Hone-Style Shank-Mount Brushes

Made of balls of zirconia alumina abrasive attached to flexible plastic stems, these hone-style brushes are self sharpening, long lasting, and leave a smooth finish. For use on all metals. The 0.281″ Dia. × 7/8″ Lg. shank fits 3/8″ and larger drills.

Brush Dia.	Grit	Max. rpm		
2 1/2″	Coarse (60)	1,000	4361A11	$44.69
2 1/2″	Medium (120)	1,000	4361A12	44.69
2 1/2″	Fine (240)	1,000	4361A13	44.69

For information about power brushes, see page 2696.

Rigid-Bristle Threaded-Arbor Cup Brushes

Partial Twist

Partial Twist—with Built-In Guard

Partial Twist—with Collar

Rigid bristles work more aggressively than flexible ones for fast, heavy duty brushing. Great for weld cleaning. Use with right-angle grinders.

Double row brushes have two rows of twisted bristles that provide a larger bristle surface area.

Brushes ***with built-in guard*** have protective flaps that surround the bristles and keep dust, particles, and flying bristles away from the user.

Brushes ***with collar*** have a metal band around the bristles to limit flaring. Band can be removed when bristle tips wear down.

Every other bristle twist in ***alternating*** brushes is twisted in the opposite direction, resulting in longer life and smoother surface finishes.

Brush Dia.	Bristle Dia.	Arbor Hole	Bristle Lg.	Max. rpm		
Carbon Steel, Partial Twist						
2¾″	0.020″	3/8″-24	1″	14,000	4771A38	$14.51
2¾″	0.020″	1/2″-13	1″	14,000	4771A32	14.51
2¾″	0.020″	5/8″-11	1″	14,000	4771A31	14.51
2¾″	0.020″	10×1.25 mm	1″	14,000	4771A33	14.51
2¾″	0.020″	10×1.5 mm	1″	14,000	4771A34	14.51
2¾″	0.020″	14×2.0 mm	1″	14,000	4771A35	14.51
3½″	0.023″	3/8″-24	7/8″	13,000	4771A43	16.74
3½″	0.023″	1/2″-13	7/8″	13,000	4771A42	16.74
3½″	0.023″	5/8″-11	7/8″	13,000	4771A41	16.74
3½″	0.023″	10×1.25 mm	7/8″	13,000	4771A44	16.74
3½″	0.023″	10×1.5 mm	7/8″	13,000	4771A45	16.74
3½″	0.023″	14×2.0 mm	7/8″	13,000	4771A46	16.74
4″	0.014″	5/8″-11	1¼″	9,000	4852A24	24.98
4″	0.023″	5/8″-11	1¼″	9,000	4852A25	22.45
5″	0.023″	5/8″-11	1⅜″	7,000	4852A27	34.88
6″	0.014″	5/8″-11	1⅜″	6,600	4852A51	46.29
6″	0.023″	5/8″-11	1⅜″	6,600	4852A29	42.69
6″	0.035″	5/8″-11	1⅜″	6,600	4852A26	40.78
Carbon Steel, Full Twist						
4″	0.023″	5/8″-11	1¼″	9,000	4852A52	23.49
Carbon Steel, Partial Twist—*Double Row*						
4″	0.020″	5/8″-11	1¼″	9,000	4852A63	31.90
4″	0.020″	5/8″-11	1⅜″	9,000	4852A41	28.27
6″	0.020″	5/8″-11	1½″	6,000	4852A64	69.24
6″	0.023″	5/8″-11	1⅜″	6,600	4852A44	58.53
Carbon Steel, Partial Twist—*with Built-In Guard*						
2¾″	0.015″	5/8″-11	¾″	15,000	4676A21 ♦	16.05
2¾″	0.020″	5/8″-11	¾″	15,000	4676A22 ♦	16.05
4″	0.020″	5/8″-11	1⅛″	8,500	4676A23 ♦	22.80
Carbon Steel, Partial Twist—*with Collar*						
2¾″	0.014″	5/8″-11	⅝″	12,500	4427A11	15.96
2¾″	0.020″	5/8″-11	⅝″	12,500	4427A12	15.21
4″	0.023″	5/8″-11	7/8″	9,000	4427A13	26.11

♦ Also fits 14×2.0 mm spindles.

Brush Dia.	Bristle Dia.	Arbor Hole	Bristle Lg.	Max. rpm		
Carbon Steel, Partial Twist—*Alternating*						
2¾″	0.020″	5/8″-11	7/8″	14,000	4453A11	$15.84
4″	0.023″	5/8″-11	1¼″	9,000	4453A12	25.25
5″	0.023″	5/8″-11	1⅜″	7,000	4453A13	34.01
6″	0.023″	5/8″-11	1½″	6,000	4453A14	49.74
Type 302 Stainless Steel, Partial Twist						
2¾″	0.020″	3/8″-24	1″	14,000	4771A39	24.09
2¾″	0.020″	1/2″-13	1″	14,000	4771A22	24.09
2¾″	0.020″	5/8″-11	1″	14,000	4771A21	24.09
2¾″	0.020″	10×1.25 mm	1″	14,000	4771A23	24.09
3½″	0.023″	3/8″-24	7/8″	13,000	4771A53	33.13
3½″	0.023″	1/2″-13	7/8″	13,000	4771A52	33.13
3½″	0.023″	5/8″-11	7/8″	13,000	4771A51	33.13
3½″	0.023″	10×1.25 mm	7/8″	13,000	4771A54	33.13
4″	0.014″	5/8″-11	1¼″	9,000	4852A31	47.71
4″	0.023″	5/8″-11	1¼″	9,000	4852A55	45.59
6″	0.014″	5/8″-11	1⅜″	6,600	4852A56	91.61
6″	0.023″	5/8″-11	1⅜″	6,600	4852A33	81.43
Type 302 Stainless Steel, Partial Twist—*Double Row*						
4″	0.020″	5/8″-11	1⅜″	9,000	4852A45	49.88
6″	0.023″	5/8″-11	1⅜″	6,600	4852A46	85.71
Type 302 Stainless Steel, Partial Twist—*with Collar*						
2¾″	0.020″	5/8″-11	⅝″	12,500	4427A14	24.68
Type 302 Stainless Steel, Partial Twist—*Alternating*						
2¾″	0.020″	5/8″-11	7/8″	14,000	4453A21	26.53
4″	0.023″	5/8″-11	1¼″	9,000	4453A22	56.50
5″	0.023″	5/8″-11	1⅜″	7,000	4453A23	70.82
6″	0.023″	5/8″-11	1½″	6,000	4453A24	88.95
Brass, Partial Twist						
4″	0.020″	5/8″-11	1¼″	7,000	48955A78	88.89
Brass, Full Twist						
2¾″	0.014″	5/8″-11	7/8″	12,500	48955A77	43.75
2¾″	0.020″	3/8″-24	7/8″	12,500	48955A86	43.75
2¾″	0.020″	5/8″-11	7/8″	12,500	48955A81	43.75

Flexible-Bristle Threaded-Arbor Cup Brushes

Carbon Steel

Brass Coated with Built-In Guard—Multistrand Crimped

Less aggressive than their rigid-bristle counterparts, these brushes are perfect for light to medium duty deburring, blending, and finishing tasks. Bristles are crimped. Use with right-angle grinders.

Brass-coated brushes with built-in guard are made of carbon steel and coated with brass for corrosion resistance. Protective flaps keep particles and flying bristles away from the user. *Multistrand crimped* brushes have 12 wires twisted into each bristle for longer brush life.

Brush Dia.	Bristle Dia.	Arbor Hole	Bristle Lg.	Max. rpm		
Carbon Steel						
2¾″	0.0118″	1/2″, 3/8″●	¾″	12,500	4862A81	$15.69
2¾″	0.014″	3/8″-24	1″	14,000	4773A36	11.13
2¾″	0.014″	1/2″-13	1″	14,000	4773A32	11.13
2¾″	0.014″	5/8″-11	1″	14,000	4773A31	11.13
2¾″	0.014″	10×1.25 mm	1″	14,000	4773A33	11.13
2¾″	0.014″	10×1.5 mm	1″	14,000	4773A44	11.13
2¾″	0.014″	14×2.0 mm	1″	14,000	4773A45	11.13
3½″	0.014″	3/8″-24	7/8″	12,000	4773A53	16.35
3½″	0.014″	1/2″-13	7/8″	12,000	4773A52	16.35
3½″	0.014″	5/8″-11	7/8″	12,000	4773A51	16.35
3½″	0.014″	10×1.25 mm	7/8″	12,000	4773A54	16.35
3½″	0.014″	10×1.5 mm	7/8″	12,000	4773A55	16.35
3½″	0.014″	14×2.0 mm	7/8″	12,000	4773A56	16.35
4″	0.014″	5/8″-11	1⅜″	9,000	4862A71	19.06
4″	0.020″	5/8″-11	1⅛″	9,000	4862A83	17.64
5″	0.014″	5/8″-11	1¼″	8,000	4862A84	26.38
5″	0.020″	5/8″-11	1¼″	8,000	4862A69	24.60
6″	0.014″	5/8″-11	1¼″	6,600	4862A72	33.70
6″	0.020″	5/8″-11	1¼″	6,600	4862A73	30.46
Type 302 Stainless Steel						
3½″	0.0104″	5/8″-11	1″	9,000	4872A11	30.18
3½″	0.014″	3/8″-24	7/8″	12,000	4894A76	31.88
3½″	0.014″	1/2″-13	7/8″	12,000	4894A72	31.88
3½″	0.014″	5/8″-11	7/8″	12,000	4894A71	31.88
3½″	0.014″	10×1.25 mm	7/8″	12,000	4894A75	31.88
3½″	0.014″	14×2.0 mm	7/8″	12,000	4894A73	31.88
4″	0.014″	5/8″-11	1¼″	9,000	4872A13	47.07

● Arbor not threaded. ♦ Also fits 14×2.0 mm spindles.

Brush Dia.	Bristle Dia.	Arbor Hole	Bristle Lg.	Max. rpm		
Type 302 Stainless Steel (Cont.)						
4″	0.020″	5/8″-11	1⅜″	9,000	4872A15	$39.48
5″	0.014″	5/8″-11	1¼″	8,000	4872A17	51.06
5″	0.020″	5/8″-11	1½″	8,000	4872A14	59.89
6″	0.014″	5/8″-11	1¼″	6,600	4872A18	65.18
6″	0.020″	5/8″-11	1½″	7,000	4872A16	74.13
Brass						
2¾″	0.014″	5/8″-11	¾″	12,500	4870A64	34.84
2¾″	0.020″	5/8″-11	¾″	12,500	4870A65	34.84
4″	0.008″	5/8″-11	1¼″	9,000	4870A71	83.18
4″	0.0104″	5/8″-11	1¼″	9,000	4870A68	85.71
4″	0.014″	5/8″-11	1¼″	9,000	4870A72	67.26
4″	0.020″	5/8″-11	1¼″	9,000	4870A73	67.26
5″	0.014″	5/8″-11	1½″	8,000	4870A77	95.90
6″	0.014″	5/8″-11	1⅝″	6,000	4870A75	121.79
6″	0.020″	5/8″-11	1⅝″	6,000	4870A76	121.79
Brass Coated with Built-In Guard						
3″	0.012″	5/8″-11	7/8″	13,000	4676A31 ♦	15.15
4″	0.012″	5/8″-11	1 3/16″	8,500	4676A33 ♦	22.27
Brass Coated with Built-In Guard—*Multistrand Crimped*						
3″	0.009″	5/8″-11	7/8″	13,000	4676A32 ♦	17.40
4″	0.009″	5/8″-11	1 3/16″	8,500	4676A34 ♦	26.02
Abrasive Nylon—*Silicon Carbide (Grit number in parentheses)*						
4″	0.023″ (320)	5/8″-11	1½″	6,000	4782A21	44.79
4″	0.038″ (80)	5/8″-11	1½″	6,000	4782A23	44.79
4″	0.050″ (120)	5/8″-11	1½″	6,000	4782A22	44.79
6″	0.024″ (320)	5/8″-11	1½″	6,000	4782A11	61.31
6″	0.044″ (120)	5/8″-11	1½″	6,000	4782A12	61.31
6″	0.050″ (80)	5/8″-11	1½″	6,000	4782A13	51.53

For information about power brushes, see page 2696.

Miniature Diamond Abrasive Shank-Mount Brushes for Composites

With diamond-impregnated flexible bristles, these brushes produce smooth, polished finishes on composite materials. All have a 3/32″ shank dia. Max. rpm is 3,000.

A B

	Brush Dia.	Bristle Dia.	Bristle Lg.	O'all Lg.	Shank Lg.		
A	3/16″	0.008″	9/64″	15/16″	9/16″	4357A12	$10.50
A	1/4″	0.008″	9/64″	1″	5/8″	4357A11	10.50
B	5/32″	0.008″	1/4″	1 3/16″	9/16″	4357A13	10.50

Abrasive-Bristle Cup Brushes

Flexible nylon bristles impregnated with silicon carbide allow these brushes to debur and remove corrosion around contours in your workpiece. Plus, they won't leave scratches like metal bristles. All have a 7/8″ arbor hole. Each requires a backup pad and retaining nut, both sold separately. Bristle length is 3/4″.

Retaining nuts have a 5/8″-11 thread.

To Order: For brushes, please specify grit: 46 (coarse), 60 (medium coarse), 80 (medium coarse), 120 (medium), 180 (fine), or 320 (extra fine).

Disc Dia.	Max. rpm	Cup Brushes		Backup Pad		Retaining Nut	
5″	10,000	44565A11	$37.02	44565A82	$18.90	4655A27	$5.50
7″	6,000	44565A21	69.85	44565A84	28.42	4655A28	5.50

Abrasive-Bristle Discs

Made of plastic and impregnated with aluminum oxide abrasive (unless noted), these bristles can reach into tight spots. They wear down evenly to expose new abrasive and produce uniform finishes. Use for light to medium deburring, cleaning, blending, and polishing. Use with die grinders, unless noted. Grit is designated by color of bristles: 36 is dark brown, 50 is green, 80 is yellow, 120 is white, 220 is red, and 400 is blue.

Quick-Change Discs—Have a 3M Roloc style fastener that mounts to a disc holder, sold separately.

Mandrel-Mount Discs—Require a mandrel, sold separately.

Cup-style discs work well in corners and on uneven surfaces. Typically used with right-angle die grinders, unless noted.

Flat-style discs work well in grooves, on small parts, and in hard to reach areas.

Bench and Pedestal Discs—For use on bench and pedestal grinders and similar machines. Abrasive is ceramic aluminum oxide.

Quick-Change Cup-Style Disc

Quick-Change Flat-Style Disc

Mandrel-Mount Flat-Style Disc

Quick-Change Discs

To Order: Please specify grit from those available.

Disc Size, Dia.×Thick.	Available Grits	Max. rpm	Discs		1/4″ Shank Disc Holders	
Cup Style						
1″ ×5/8″	50, 80, 120	30,000	4480A2	$4.85	46465A72	$9.79
2″ ×5/8″	50, 80, 120	25,000	4480A4	7.65	46325A92	10.85
3″ ×5/8″	50, 80, 120	15,000	4480A5	11.83	46325A93	11.92
4 1/2″ ×3/4″	50, 80, 120	12,000	4480A6▲	24.46	—	—
Flat Style						
3″ ×1/8″	50	25,000	4483A32	7.33	46465A72	9.79
3″ ×1/8″	80	25,000	4483A34	7.33	46465A72	9.79
3″ ×1/8″	120	25,000	4483A36	7.33	46465A72	9.79

▲ Has a 5/8″-11 threaded arbor for use on right-angle grinders.

Mandrel-Mount Discs—Flat Style

To Order: Please specify grit from those available.

Disc Size, Dia.×Thick.	Available Grits	Max. rpm		
9/16″ ×1/16″	120, 220, 400	35,000	4494A51	$1.04
3/4″ ×1/16″	80, 220, 400	35,000	4494A52	1.08
1″ ×1/16″	36, 50, 80, 120	35,000	4494A53	1.32
2″ ×1/16″	80, 120, 220, 400	30,000	4494A54	2.45
3″ ×1/16″	80, 120, 220, 400	20,000	4494A55	2.69

Mandrels for Mandrel-Mount Discs

Shank Dia.	For Use With		
3/32″	9/16″ and 3/4″ dia. discs	4494A44	$1.97
1/8″	1″ dia. discs	4494A45	3.70
1/4″	2″ and 3″ dia. discs	4494A46	18.53

Bench and Pedestal Discs

To Order: Please specify grit from those available.

Disc Size, Dia.×Thick.×Arbor	Available Grits	Max. rpm		
6″ × 1/2″ ×1″	36, 50, 80	10,000	4323A11	$46.01
8″ ×1″ ×1 1/4″	50, 80, 120	6,000	4323A12	140.73

Small-Space Shank-Mount Brushes

Clean tight, constricted spaces with these brushes. Tube is steel. Bristles are 0.010″ dia. and extend the length of the tube. As the brush wears, trim the tube with a pipe cutter to expose new bristles. Max. rpm is 8,000.

Brush Dia.	Bristle Lg.	Shank Dia.	O'all Lg.	Carbon Steel		Type 302 SS	
1/4″	1/4″	1/4″	3 1/4″	4886A1	$13.87	4886A9	$15.42
3/8″	3/8″	3/8″	3 3/8″	4886A2	14.87	4886A3	17.61

Edge and Corner Cleaning Threaded-Arbor Cup Brushes

Clean around edges, corners, and contours with these dish-shaped brushes. All have rigid bristles for fast, aggressive deburring and cleaning (unless noted). Max. rpm is 12,500. **To Order:** Please specify arbor size: 3/8″-24, 1/2″-13, 5/8″-11, 10×1.25 mm, 10×1.50 mm, or 14×2.0 mm (unless noted).

Brush Dia.	Bristle Dia.	Bristle Lg.	Carbon Steel		Type 302 SS	
3 3/8″	0.0118″	1/2″	48085A41■	$13.22	—	—
4″	0.014″	3/4″	4775A11	15.77	4775A21♠	$25.23
4″	0.020″	3/4″	4775A12	15.62	4775A22	24.98
4 1/2″	0.014″	1″	4775A13	17.83	4775A23★	28.48
4 1/2″	0.020″	1″	4775A14★	17.69	4775A24♠	28.25

■ Has flexible, crimped bristles. Not available with 3/8″-24 arbor.
♠ Not available with 1/2″-13 arbor.
★ Not available with 3/8″-24 or 1/2″-13 arbor.

Flexible-Bristle Wheel Brushes for Tapered-Spindle Buffer/Grinders

Wood hubs with lead-filled centers make these brushes easy to mount on tapered spindles (sold separately on page 2693). Bristles are extra-fine, long, and flexible for soft brushing.

Carbon steel and ***brass*** bristles are crimped for cleaning nonferrous and precious metals and producing fine-satin and brushed finishes. Use ***horsehair*** bristles for scratch-free cleaning.

Brush Dia.	Bristle Dia.	Arbor Hole	Bristle Lg.	Wheel Thick.	Max. rpm		
Carbon Steel							
3″	0.003″	1/4″	7/8″	1/2″	3,000	4848A32	$18.68
4″	0.004″	1/2″	1 1/4″	1″	3,000	4848A33	46.05
6″	0.004″	1/2″	1 3/4″	1″	3,000	4848A35	62.50
Brass							
3″	0.003″	1/4″	7/8″	1/2″	3,000	4848A52	20.39
4″	0.004″	1/2″	1 1/4″	1″	3,000	4848A53	48.68
6″	0.004″	1/2″	1 3/4″	1″	3,000	4848A55	69.74
Horsehair							
4″	—	1/2″	1 1/4″	1″	3,000	4880A1	26.25
4″	—	1/2″	1 1/4″	1 1/2″	3,000	4880A4	46.26

Adapters, Bushings, and Arbors for Wheel Brushes

Metal Adapter

Plastic Bushing

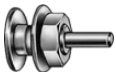

Metal Arbor

Snap-in metal arbor adapters and ***plastic arbor-reducer bushings*** reduce the arbor hole of the brush to fit the shaft on your machine.

Metal arbors hold brushes between two washers. Use to mount brushes in tool chucks or collets.

Snap-in Metal Arbor Adapters

Reduce Arbor Hole	For Wheel Dia.		Pair
From 2″ to 1/2″	6″	4844A28	$1.13
From 2″ to 5/8″	6″ and 8″	4844A29	1.13
From 2″ to 3/4″	6″, 8″, and 10″	4844A31	1.13
From 2″ to 7/8″	6″, 8″, and 10″	4844A32	1.13
From 2″ to 1″	Up to 12″	4844A33	1.13
From 2″ to 1 1/4″	Up to 12″	4844A34	1.13
From 2″ to 1 1/2″	Up to 12″	4844A35	1.13

Plastic Arbor-Reducer Bushings

Reduce Arbor Hole	Pkg. Qty.		Pkg.
From 1/2″ to 1/4″	12	4873A21	$3.21
From 1/2″ to 3/8″	12	4873A22	3.45
From 5/8″ to 1/2″	12	4873A23	3.21

Metal Arbors

Fits Arbor Hole	Max. Wheel Thick.	Shank Dia.	O'all Lg.		Each
1/4″	3/4″	3/16″	1 3/4″	4875A18	$1.52
3/8″	3/8″	1/4″	1 5/8″	4875A11	1.34
1/2″	3/8″	1/4″	1 7/8″	4875A12	1.75

For information about power brushes, see page 2696.

Rigid-Bristle Wheel Brushes

Partial Twist

Full Twist

Extra-Tight Full Twist

When your job calls for fast cutting and maximum cleaning, these strong twisted wire brushes are a powerful choice. Applications include heavy duty deburring and removing rust, scale, and weld spatter. Also for surface conditioning and roughing.

Partial twist brushes work well on irregular surfaces. Every other bristle twist in *alternating partial twist* brushes is twisted in the opposite direction, resulting in longer brush life. ***Full twist*** brushes have bristles twisted all the way to the ends and are more aggressive than partial twist brushes. ***Extra-tight full twist*** brushes, also called stringer bead brushes, have smaller, tighter bristle twists for the fastest and most aggressive finishing.

Note: Brushes with a 2″ arbor hole require snap-in metal adapters if a smaller hole is needed. For adapters, see 4844A sold separately below.

Brush Dia.	Bristle Dia.	Arbor Hole	Bristle Lg.	Wheel Thick.	Max. rpm	Carbon Steel		Type 302 Stainless Steel	
Partial Twist, Unthreaded Arbor									
3″	0.0118″	1/2″, 3/8″ ♦	5/8″	3/8″	25,000	4877A72	$18.26	4855A62	$26.85
3″	0.014″	1/2″, 3/8″ ♦	5/8″	3/8″	25,000	4877A34	13.54	4855A16	25.59
3″	0.014″	1/2″, 3/8″ ♦	7/8″	3/4″	22,000	—	—	4855A75	55.04
3″	0.020″	1/2″, 3/8″ ♦	5/8″	3/8″	25,000	4877A38	13.35	4855A63	23.04
4″	0.0118″	1/2″, 3/8″ ♦	7/8″	1/2″	20,000	4877A73	20.33	4855A15	28.87
4″	0.014″	1/2″, 3/8″ ♦	7/8″	1/2″	20,000	4877A28	15.17	4855A71	28.26
4″	0.020″	1/2″, 3/8″ ♦	7/8″	1/2″	20,000	4877A54	14.57	4855A73	26.07
6″	0.0118″	5/8″, 1/2″ ♦	1 3/8″	1/2″	9,000	4877A74	32.39	4855A93	59.50
6″	0.0118″	2″	1 3/8″	7/8″	8,000	4844A56	52.22	4855A17	106.50
6″	0.014″	5/8″, 1/2″ ♦	1 3/8″	1/2″	9,000	4877A26	24.04	4855A18	54.04
6″	0.016″	5/8″, 1/2″ ♦	1 3/8″	1/2″	9,000	4877A75	29.65	4855A41	51.89
6″	0.023″	5/8″, 1/2″ ♦	1 3/8″	1/2″	9,000	4877A27	19.61	4855A19	54.04
6″	0.035″	5/8″, 1/2″ ♦	1 3/8″	1/2″	9,000	4877A55	22.98	—	—
7″	0.014″	5/8″	1 7/8″	5/8″	9,000	4877A24	31.65	—	—
8″	0.0118″	5/8″	1 5/8″	5/8″	6,000	4877A76	49.74	4855A91	89.35
8″	0.0118″	2″	1 5/8″	1″	6,000	4844A24	75.83	4855A21	161.93
8″	0.014″	5/8″	1 5/8″	5/8″	6,000	4877A52	36.67	4855A22	79.65
8″	0.016″	5/8″	1 5/8″	5/8″	6,000	4877A64	35.52	4855A31	74.80
10″	0.0118″	2″	1 3/4″	1 1/4″	4,500	4844A73	107.36	4855A23	231.52
10″	0.014″	3/4″	1 3/4″	3/4″	4,500	4877A48	51.13	4855A24 ♠	109.17
10″	0.014″	1 1/4″ ●	1 3/4″	3/4″	4,500	4877A71	51.13	4855A25 ♠	109.17
12″	0.0118″	2″	2 3/4″	1 1/4″	3,600	4844A72	131.96	4855A26	281.78
12″	0.014″	1 1/4″ ●	2 3/4″	3/4″	3,600	4877A44	63.26	4855A27	135.11
12″	0.020″	1 1/4″ ●	2 3/4″	5/8″	4,500	4877A46	77.28	4855A28	165.09
Partial Twist, Threaded Arbor									
4″	0.014″	3/8″-24	7/8″	1/2″	20,000	4933A31	16.59	4898A81	25.71
4″	0.014″	1/2″-13	7/8″	1/2″	20,000	4933A32	16.59	4898A82	25.71
4″	0.014″	5/8″-11	7/8″	1/2″	20,000	4933A34	16.59	4898A84	25.71
4″	0.014″	10×1.25 mm	7/8″	1/2″	20,000	4933A36	16.59	4898A86	25.71
4″	0.014″	14×2.0 mm	7/8″	1/2″	20,000	4933A39	16.59	4898A89	25.71
6″	0.016″	5/8″-11	1 3/8″	1/2″	9,000	4877A77	30.75	4855A42	51.89
8″	0.016″	5/8″-11	1 5/8″	5/8″	6,000	4877A78	45.72	4855A32	75.87
Alternating Partial Twist, Threaded Arbor									
4″	0.014″	5/8″-11	7/8″	5/8″	20,000	4281A11	18.71	4281A21	32.60
4″	0.020″	5/8″-11	7/8″	5/8″	20,000	4281A12	18.02	4281A22	35.11
6″	0.016″	5/8″-11	1 1/8″	5/8″	9,000	4281A13	29.30	4281A23	59.27
6″	0.023″	5/8″-11	1 1/8″	5/8″	9,000	4281A14	23.77	4281A24	47.88
Full Twist, Unthreaded Arbor									
4″	0.020″	1/2″, 3/8″ ♦	7/8″	1/4″	20,000	4856A15	15.30	4855A43	25.87
6″	0.023″	5/8″, 1/2″ ♦	1 3/8″	3/8″	9,000	4856A132	19.96	4855A79	42.07
8″	0.023″	5/8″	1 5/8″	1/2″	6,000	4856A23	35.98	4855A44	76.83
8″	0.023″	3/4″	1 5/8″	1/2″	6,000	4856A152	35.98	4855A45	76.83
10″	0.023″	3/4″	1 3/4″	1/2″	4,500	4856A31	44.30	4855A46	94.57
10″	0.023″	1″ ●	1 3/4″	1/2″	4,500	4856A22	44.30	4855A47	94.57
Full Twist, Threaded Arbor									
4″	0.020″	3/8″-24	7/8″	1/4″	20,000	4768A46	16.30	4897A76	23.15
4″	0.020″	1/2″-13	7/8″	1/4″	20,000	4768A32	16.30	4897A72	23.15
4″	0.020″	5/8″-11	7/8″	1/4″	20,000	4768A31	16.30	4897A71	23.15
4″	0.020″	10×1.25 mm	7/8″	1/4″	20,000	4768A33	16.30	—	—
4″	0.020″	10×1.5 mm	7/8″	1/4″	20,000	4768A44	16.30	4897A74	23.15
4″	0.020″	14×2.0 mm	7/8″	1/4″	20,000	4768A45	16.30	4897A73	23.15
5″	0.020″	5/8″-11	1″	1/4″	12,000	4753A27	15.59	—	—
Extra-Tight Full Twist, Unthreaded Arbor									
4″	0.020″	1/2″, 3/8″ ♦	7/8″	3/16″	20,000	4753A26	13.43	4753A36	22.57
Extra-Tight Full Twist, Threaded Arbor									
4″	0.020″	3/8″-24	7/8″	3/16″	20,000	4767A41	13.43	4767A42	22.89
4″	0.020″	1/2″-13	7/8″	3/16″	20,000	4767A32	13.43	4767A22	22.89
4″	0.020″	5/8″-11	7/8″	3/16″	20,000	4767A31	13.43	4767A21	22.89
4″	0.020″	10×1.25 mm	7/8″	3/16″	20,000	4767A33	13.43	4767A23	22.89
4″	0.020″	10×1.5 mm	7/8″	3/16″	20,000	4767A34	13.43	4767A36	22.89
5″	0.020″	5/8″-11	1″	3/16″	12,000	—	—	4753A37	25.26
6″	0.020″	5/8″-11	1 3/8″	3/16″	12,500	4753A24	17.89	4753A34	31.76
6″	0.023″	5/8″-11	1 3/8″	1/2″	12,500	4856A172	18.43	4855A83	41.83
6 7/8″	0.020″	5/8″-11	1 1/8″	3/16″	9,000	4753A11	20.74	4753A13	35.46

♦ Furnished with reducer bushing to accommodate both arbor sizes. ♠ Bristle dia.: 0.016″. ● Has double keyways for shafts with keyway.

Snap-In Metal Arbor Adapters—For use with brushes that have a 2″ arbor hole.

Reduce Arbor Hole	For Wheel Dia.		Pair
From 2″ to 1/2″	6″	4844A28	$1.13
From 2″ to 5/8″	6″ and 8″	4844A29	1.13
From 2″ to 3/4″	6″, 8″, and 10″	4844A31	1.13
From 2″ to 7/8″	6″, 8″, and 10″	4844A32	1.13
From 2″ to 1″	Up to 12″	4844A33	$1.13
From 2″ to 1 1/4″	Up to 12″	4844A34	1.13
From 2″ to 1 1/2″	Up to 12″	4844A35	1.13

For information about power brushes, see page 2696.

Flexible-Bristle Wheel Brushes

Flexible bristles make these brushes less aggressive than rigid-bristle brushes. Use for light to medium duty deburring, cleaning, blending, and finishing. Bristles are crimped (unless noted).

Economy carbon steel brushes are for use in light duty operations. Bristles are not heat treated or tempered.

Note: Brushes with a 2″ arbor hole require snap-in metal arbor adapters if a smaller hole is needed. For adapters, see 4844A on page 2702.

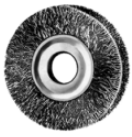

Brush Dia.	Bristle Dia.	Arbor Hole	Bristle Lg.	Wheel Thick.	Max. rpm		
Carbon Steel							
1″	0.006″	1/4″	1/4″	3/16″	20,000	4850A12	$5.31
1 1/4″	0.003″	1/4″	3/8″	1/4″	20,000	4850A14	7.60
1 1/4″	0.006″	1/4″	3/8″	1/4″	20,000	4850A15	5.40
1 1/4″	0.006″	3/8″	9/32″	1/2″	20,000	4858A1	24.30
1 3/8″	0.008″	1/4″	3/8″	1/4″	20,000	4850A18	4.62
1 1/2″	0.008″	1/4″	1/4″	3/4″	20,000	4858A2	27.51
1 1/2″	0.0118″	3/8″	7/16″	1/4″	20,000	4850A21	4.29
1 3/4″	0.011″	1/2″	5/16″	1 3/4″	20,000	4858A3	45.77
2″	0.006″	1/2″, 3/8″ ◆	1/2″	3/8″	20,000	4850A25	6.32
2″	0.006″	1/2″	7/16″	2″	20,000	4858A4	72.60
2″	0.008″	1/2″, 3/8″ ◆	1/2″	3/8″	20,000	4850A28	5.54
2″	0.0104″	1/2″	1/2″	3/8″	20,000	4850A81	5.13
2″	0.0118″	1/2″, 3/8″ ◆	1/2″	3/8″	20,000	4850A32	4.89
2″	0.014″	1/2″, 3/8″ ◆	1/2″	3/8″	20,000	4850A35	4.66
2 1/2″	0.0118″	1/2″, 3/8″ ◆	3/4″	1/2″	20,000	4850A47	5.37
3″	0.006″	1/2″, 3/8″ ◆	1″	5/8″	20,000	4850A58	7.26
3″	0.0118″	1/2″, 3/8″ ◆	1″	5/8″	20,000	4850A69	5.71
3″	0.014″	1/2″, 3/8″ ◆	1″	5/8″	20,000	4850A74	5.44
4″	0.006″	5/8″, 1/2″ ◆	7/8″	1/2″	12,500	4840A17	15.73
4″	0.0118″	5/8″, 1/2″ ◆	7/8″	1/2″	12,500	4840A18	13.00
4″	0.014″	1/2″, 3/8″ ◆	7/8″	1/2″	12,500	4840A23	12.16
4″	0.014″	Threaded ♥	7/8″	1/2″	14,000	4896A77	13.05
6″	0.006″	5/8″, 1/2″ ◆	1 1/16″	1/2″	6,000	4840A44	25.33
6″	0.006″	2″	1 1/8″	1″	6,000	4840A24	49.24
6″	0.008″	5/8″, 1/2″ ◆	1 1/16″	1/2″	6,000	4840A26	15.10
6″	0.0118″	5/8″, 1/2″ ◆	1 7/16″	3/4″	6,000	4840A33	16.46
6″	0.0118″	1″ ●	1 7/16″	3/4″	6,000	4840A45	19.31
6″	0.0118″	2″	1 1/8″	1″	6,000	4840A27	22.10
6″	0.014″	5/8″, 1/2″ ◆	1 1/16″	1/2″	6,000	4840A29	13.56
6″	0.014″	2″	1 1/8″	1 1/4″	6,000	4840A32	28.93
8″	0.006″	5/8″	2 1/16″	3/4″	6,000	4840A39	40.45
8″	0.006″	2″	1 3/8″	1 1/2″	4,000	4840A35	98.20
8″	0.0104″	5/8″	2 1/16″	3/4″	6,000	4840A48	21.88
8″	0.0104″	3/4″	2 1/16″	3/4″	6,000	4840A41	24.78
8″	0.0118″	1″ ●	2 1/16″	3/4″	6,000	4840A52	28.20
8″	0.0118″	2″	1 3/8″	1 1/2″	4,000	4840A51	58.61
8″	0.014″	5/8″	2 1/16″	3/4″	6,000	4840A55	18.30
8″	0.014″	2″	1 3/8″	1″	4,000	4840A62	42.52
8″	0.014″	2″	1 3/8″	1 1/2″	4,000	4840A63	55.45
8″	0.020″	2″	1 3/8″	1 1/2″	4,000	4840A64	54.59
10″	0.0104″	3/4″	2 1/2″	3/4″	4,000	4840A56	29.62
10″	0.0104″	7/8″	2 1/2″	3/4″	4,000	4840A79	29.62
10″	0.0104″	2″	1 7/8″	1 5/8″	4,000	4840A57	79.87
10″	0.0118″	2″	1 7/8″	1 5/8″	4,000	4840A59	105.80
10″	0.014″	1″ ●	2 1/2″	3/4″	4,000	4840A61	29.20
10″	0.014″	1 1/4″	2 1/2″	3/4″	4,000	4840A65	29.20
10″	0.014″	2″ ●	2″	1 1/8″	3,600	4840A66	62.75
10″	0.020″	2″	1 7/8″	1 5/8″	4,000	4840A71	98.47
10″	0.020″	2″ ●	2″	1 1/8″	3,600	4840A68	62.40
12″	0.0118″	2″ ●	3″	1 1/4″	3,600	4840A72	77.50
12″	0.014″	1 1/4″ ●	2 15/16″	3/4″	3,000	4840A69	38.38
12″	0.014″	2″	2 7/8″	1 5/8″	3,000	4840A75	118.97
12″	0.020″	2″	2 7/8″	1 3/4″	3,000	4840A77	117.00
12″	0.020″	2″ ●	3″	1 1/4″	3,600	4840A76	74.22
Economy Carbon Steel							
8″	0.006″	5/8″	2 1/16″	3/4″	6,000	4846A59	29.21
8″	0.0118″	5/8″	2 1/16″	3/4″	6,000	4846A54	20.23
8″	0.0118″	3/4″	2 1/16″	3/4″	6,000	4846A48	20.23
8″	0.0118″	1″ ●	2 1/16″	3/4″	6,000	4846A44	20.23
8″	0.014″	3/4″	2 1/16″	3/4″	6,000	4846A29	19.02
Type 302 Stainless Steel							
1″	0.005″	1/4″	1/4″	3/16″	20,000	4873A31	9.48
1 1/4″	0.006″	1/4″	3/8″	1/4″	20,000	4873A34	9.55
1 1/4″	0.008″	1/4″	3/8″	1/4″	20,000	4873A37	7.77
1 1/2″	0.005″	3/8″	3/8″	7/32″	20,000	4873A5	5.95
1 1/2″	0.008″	3/8″	7/16″	1/4″	20,000	4873A6	6.43
2″	0.005″	1/2″, 3/8″ ◆	1/2″	1/4″	20,000	4873A11	9.03
2″	0.0104″	1/2″	1/2″	3/8″	20,000	4873A12	8.10
3″	0.006″	1/2″, 3/8″ ◆	1″	5/8″	20,000	4873A13	12.65
3″	0.0104″	1/2″, 3/8″ ◆	1/2″	7/16″	6,000	4842A12	22.34
3″	0.014″	1/2″, 3/8″ ◆	1″	5/8″	20,000	4873A14	8.05
4″	0.006″	1/2″, 3/8″ ◆	7/8″	1/2″	6,000	4842A22	25.50
4″	0.0104″	5/8″, 1/2″ ◆	1 3/16″	3/8″	6,000	4842A74	18.71
Type 302 Stainless Steel (Cont.)							
4″	0.0118″	5/8″, 1/2″ ◆	7/8″	1/2″	6,000	4842A24	$21.42
6″	0.006″	5/8″, 1/2″ ◆	1 7/16″	3/4″	6,000	4842A38	40.32
6″	0.006″	2″	1 1/8″	1 1/4″	6,000	4842A61	112.53
6″	0.008″	2″	1″	7/8″	6,000	4842A75	50.32
6″	0.0104″	5/8″, 1/2″ ◆	1 7/16″	3/4″	6,000	4842A46	35.11
6″	0.0118″	2″	1 1/8″	1″	6,000	4842A63	53.53
6″	0.014″	2″	1″	7/8″	6,000	4842A76	47.26
8″	0.006″	5/8″	2 1/16″	3/4″	6,000	4842A48	56.84
8″	0.006″	2″	1 3/8″	1″	4,000	4842A65	101.61
8″	0.008″	2″ ●	1 1/2″	5/8″	4,500	4842A77	51.79
8″	0.0104″	5/8″	2 1/16″	3/4″	6,000	4842A54	40.34
8″	0.0118″	2″	1 3/8″	1″	4,000	4842A67	66.74
8″	0.014″	2″ ●	1 1/2″	5/8″	4,500	4842A78	54.55
10″	0.0118″	2″ ●	2″	1 1/8″	3,600	4842A68	112.89
12″	0.006″	2″ ●	2 15/16″	3/4″	3,000	4842A641	126.55
12″	0.0104″	2″ ●	2 15/16″	3/4″	3,000	4842A66	73.95
Brass							
1 1/2″	0.006″	3/8″	3/8″	5/16″	20,000	48155A71	12.07
1 1/2″	0.014″	3/8″	3/8″	5/16″	20,000	48155A72	10.04
2″	0.006″	1/2″, 3/8″ ◆	1/2″	5/16″	15,000	48155A74	12.54
2″	0.014″	1/2″, 3/8″ ◆	1/2″	5/16″	15,000	48155A76	11.50
2 1/2″	0.006″	3/8″	7/8″	3/8″	15,000	48155A77	13.96
2 1/2″	0.006″	1/2″	5/8″	3/8″	15,000	48155A78	13.96
2 1/2″	0.014″	3/8″	7/8″	3/8″	15,000	48155A79	13.08
2 1/2″	0.014″	1/2″	5/8″	3/8″	15,000	48155A81	13.08
3″	0.014″	1/2″	1″	5/8″	20,000	48155A83	14.72
4″	0.005″	5/8″	5/8″	7/16″	6,000	4909A16	48.00
4″	0.014″	5/8″, 1/2″ ◆	5/8″	7/16″	6,000	4909A18	36.90
4″	0.020″	5/8″	5/8″	7/16″	6,000	4909A19	36.90
6″	0.005″	5/8″, 1/2″ ◆	1 1/2″	1/2″	6,000	4909A55	51.17
6″	0.005″	5/8″	1 21/32″	1″	6,000	4909A29	101.12
6″	0.010″	5/8″	1 1/2″	1/2″	6,000	4909A26	45.38
6″	0.010″	5/8″	1 21/32″	1″	6,000	4909A31	88.30
6″	0.014″	5/8″, 1/2″ ◆	1 1/2″	1/2″	6,000	4909A57	41.38
6″	0.014″	5/8″	1 21/32″	1″	6,000	4909A32	80.07
6″	0.020″	5/8″	1 1/2″	1/2″	6,000	4909A28	40.30
6″	0.020″	5/8″	1 21/32″	1″	6,000	4909A33	80.07
8″	0.005″	5/8″	1 3/4″	1/2″	4,500	4909A34	113.60
8″	0.005″	3/4″	1 3/4″	1/2″	4,500	4909A64	113.60
8″	0.010″	5/8″	1 3/4″	1/2″	4,500	4909A35	105.40
8″	0.014″	5/8″	1 3/4″	1/2″	4,500	4909A36	101.53
8″	0.020″	5/8″	1 3/4″	1/2″	4,500	4909A37	99.74
Abrasive Nylon (Silicon Carbide)— **To Order:** Please specify grit: 80 (Medium Coarse), 120 (Medium), 180 (Fine), or 320 (Extra Fine)							
1 1/2″	_____	1/2″	1/4″	1/4″	20,000	4901A51★■	7.69
2″	_____	5/8″	7/16″	3/8″	15,000	4901A52★■	8.86
2 1/2″	_____	5/8″	1 1/16″	3/8″	15,000	4901A53★■	9.60
3″	_____	5/8″	5/8″	1/2″	20,000	4901A54	23.14
4″	_____	5/8″	3/4″	5/8″	12,000	4901A55	26.83
6″	_____	2″	1 1/16″	7/8″	6,000	4901A56	46.71
8″	_____	2″ ●	1 1/2″	7/8″	4,500	4901A57	74.08
10″	_____	2″ ●	2 1/16″	1″	3,600	4901A58	96.79
12″	_____	2″ ●	2 1/8″	1″	3,000	4901A59	119.15
Nylon— *Color is black.*							
1″	0.006″	1/4″	1/4″	1/4″	20,000	4747A61	7.23
2″	0.006″	1/2″	9/16″	3/8″	20,000	4747A62	12.37
2″	0.010″	1/2″	9/16″	3/8″	20,000	4747A63	12.37
3″	0.006″	1/2″	1″	1/2″	20,000	4747A64	12.68
3″	0.010″	5/8″	1″	1/2″	20,000	4747A65	12.69
4″	0.006″	1/2″	1 1/2″	1/2″	20,000	4747A66	13.36
4″	0.010″	5/8″	1 1/2″	1/2″	20,000	4747A67	13.73
Tampico (Untreated)							
2″	_____	3/8″, 1/4″ ◆	5/8″	5/16″	15,000	4808A22■	4.12
2 1/2″	_____	1/2″, 3/8″ ◆	3/4″	3/8″	15,000	4808A24■	4.58
3″	_____	1/2″, 3/8″ ◆	1″	3/8″	15,000	4808A26■	4.69
4″	_____	1 1/4″	1″	1/2″	10,000	4808A29■	14.27
6″	_____	5/8″, 1/2″ ◆	1 1/2″	1/2″	6,000	4774A21■	28.69
8″	_____	5/8″	1 3/4″	1/2″	4,500	4774A41■	35.46
8″	_____	1″	1 3/4″	1/2″	4,500	4774A52■	35.46
10″	_____	3/4″	2 3/4″	1/2″	3,600	4774A54■	38.31
10″	_____	1″	2 3/4″	1/2″	3,600	4774A42■	38.31
12″	_____	1″	3 3/4″	1/2″	3,000	4774A55■	41.59
12″	_____	1 1/4″	3 3/4″	1/2″	3,000	4774A56■	41.59

◆ Furnished with reducer bushing to accommodate both arbor sizes.
♥ **To Order:** Please specify thread: 3/8″-24, 1/2″-13, 5/8″-11, 10×1.25 mm, or 14×2.0 mm.
● Has double keyways for shafts with keyway. ★80 grit is not available. ■Bristles are not crimped.

About Twisted-Wire Brushes

Also known as tube, hole, and side-action brushes, these brushes have bristles twisted onto the stem for cleaning, deburring, and finishing the insides of tubes and cylinders. Always rotate the brush in a clockwise direction. Reversing the direction may loosen the stem wires.

BRUSH CONSTRUCTION

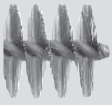

Single-Spiral Single-Stem— Bristles are twisted between two stem wires to create a single spiral. A good economical choice.

Single-Spiral Double-Stem— Similar to single-spiral single-stem, but with four stem wires instead of two. The extra stem wires make these brushes stronger, more rigid, and more aggressive.

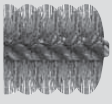

Double-Spiral Double-Stem— Bristles twisted between the four stem wires creates two spirals in different directions. The stem wires form a rigid core, and the double spiral holds more bristles than a single spiral, making these brushes the most aggressive.

BRUSH TYPES

Twisted-Wire Power Brushes— Normally used in air, electric, and cordless drills; drill presses; and some CNC machines.

Threaded-Shank Twisted-Wire Brushes— Use 1/4″ to 1″ dia. threaded-shank brushes with handles and extension rods (see page 2706) or powered tube cleaners (see page 2032). The 1 1/4″ dia. and larger brushes are normally used with handles and extension rods and drain-cleaning machines. Choose brush thread based on handle connection. For example, male threaded brush mates with female handle.

BRISTLE MATERIALS

Carbon Steel— Strong wire bristles for aggressive brushing. ***Stainless Steel—*** Strong and corrosion resistant. Unlike carbon steel, bristles won't leave small fibers that can cause rust. Good for use on stainless steel and aluminum. ***Brass—*** Soft, fine wire bristles that won't scratch or mar surfaces. ***Nylon*** and ***Polypropylene—*** Synthetic bristles withstand corrosive acids and alkalies. Also for light dusting. Wet brushing with *nylon* at temperatures above 120° F results in brush wear and some loss of stiffness. *Polypropylene* is more durable than nylon and can be used with strong solvents and in temperatures up to 210° F. ***Abrasive Nylon—*** Bristles are impregnated with an abrasive grain. Use wet or dry. ***Tampico—*** A natural fiber for scrubbing and cleaning jobs. Use with a compound for light deburring and finishing. ***Horsehair—*** For dry, scratch-free cleaning and dusting.

Single- and Double-Spiral Power Brushes

Single Spiral

Double Spiral

Max. rpm is 2,000. Package quantity is 12, unless noted. ***Abrasive nylon*** bristles are impregnated with 120-grit silicon carbide.

Brush Dia.	Brush Lg.	O'all Lg.	Stem Dia.	Bristle Dia.	Carbon Steel Each Partial Pkg.	Carbon Steel Each Full Pkg.	Type 302 SS Each Partial Pkg.	Type 302 SS Each Full Pkg.	Brass Each Partial Pkg.	Brass Each Full Pkg.	Abrasive Nylon Each Partial Pkg.	Abrasive Nylon Each Full Pkg.
Single-Spiral Single-Stem Brushes— *Stems are stainless steel.*												
1/4″	1″	3 1/2″	0.113″	0.004″	**4810A11**	$3.38	$2.67	**4810A21**	$3.54	$2.81	**4810A31**	$3.44	$2.73	**4810A51**♥	$3.89	$3.09
5/16″	1″	3 1/2″	0.113″	0.004″	**4810A42**	3.45	2.73	**4810A41**	3.38	2.67	**4810A43**	3.41	2.70	**4810A52**♥	4.16	3.29
3/8″	1″	3 1/2″	0.113″	0.004″	**4810A12**	3.37	2.67	**4810A22**	3.53	2.80	**4810A32**	3.49	2.76	**4810A53**♥	4.32	3.42
1/2″	1″	3 1/2″	0.168″	0.005″	**4810A13**	3.04	2.41	**4810A23**	3.27	2.59	**4810A33**	3.19	2.52	**4810A54**♥	4.68	3.71
5/8″	1″	3 1/2″	0.168″	0.005″	**4810A14**	2.79	2.21	**4810A24**	3.43	2.72	**4810A34**	3.10	2.45	**4810A55**▲	4.95	3.92
3/4″	1″	3 1/2″	0.220″	0.006″	**4810A15**	3.48	2.76	**4810A25**	3.67	2.90	**4810A35**	3.68	2.91	**4810A56**▲	5.24	4.15
7/8″	1″	3 1/2″	0.220″	0.006″	**4810A16**	3.45	2.73	**4810A26**	3.55	2.81	**4810A36**	3.68	2.91	**4810A57**▲	5.45	4.31
1″	1″	3 1/2″	0.248″	0.008″	**4810A17**	3.94	3.12	**4810A27**	4.26	3.37	**4810A37**	4.71	3.73	**4810A58**▲	5.61	4.44
1 1/8″	1″	3 1/2″	0.248″	0.008″	**4810A18**	3.94	3.12	**4810A28**	4.26	3.37	**4810A38**	4.02	3.19	**4810A59**▲	5.87	4.65
1 1/4″	1″	3 1/2″	0.248″	0.008″	**4810A19**	3.94	3.12	**4810A29**	4.26	3.37	**4810A39**	4.14	3.27	**4810A61**▲	6.08	4.81
Double-Spiral Double-Stem Brushes (unless noted)— *Stems are galvanized steel (unless noted).*												
1/4″	1 1/2″	4″	0.095″	0.005″	**4917A16**	6.08	4.97	**4917A25**	6.40	5.24	**48055A51**	6.72	5.40	**4810A71**♣♥	4.52	3.59
5/16″	1 1/2″	4″	0.125″	0.005″	**4917A17**	6.21	5.09	**4917A26**	6.59	5.40	**48055A52**	6.72	5.40	**4810A72**♣♥	4.68	3.71
3/8″	1 1/2″	4″	0.125″	0.005″	**4917A18**	6.35	5.20	**4917A27**	6.65	5.44	**48055A53**	6.87	5.47	**4810A73**♣♥	4.81	3.81
1/2″	2″	5″	0.162″	0.006″	**4917A11**●	8.67	7.51	**4917A19**★	9.21	7.29	**48055A54**	7.97	6.40	**4810A74**♣♥	5.18	4.11
5/8″	2″	5″	0.208″	0.005″	**4917A12**●	9.53	8.25	**4917A21**✓	9.29	7.35	**48055A55**	8.27	6.58	**4810A75**♣▲	4.79	3.79
3/4″	2 1/2″	5 1/2″	0.237″	0.006″	**4917A13**●	9.39	8.11	**4917A22**♠	10.08	7.98	**48055A56**	8.21	6.60	**4810A76**♣▲	5.66	4.48
7/8″	2 1/2″	5 1/2″	0.237″	0.006″	**4917A14**●	10.04	8.69	**4917A23**♠	7.61	6.02	**48055A57**	8.41	6.76	**4810A77**♣▲	6.13	4.85
1″	2 1/2″	5 1/2″	0.237″	0.006″	**4917A15**●	10.31	8.91	**4917A24**♠	10.47	8.29	**48055A58**	8.73	7.01	**4810A78**♣▲	6.98	5.52
1 1/8″	2 1/2″	5 1/2″	0.237″	0.006″	**4917A32**	8.15	6.67	**4917A31**	8.57	7.02	**4917A33**	8.55	7.00	**4810A79**♣▲	7.29	5.77
1 1/4″	2 1/2″	5 1/2″	0.237″	0.006″	**4917A35**	8.36	6.84	**4917A34**	8.80	7.21	**4917A36**	8.73	7.14	**4810A81**♣▲	7.29	5.77

♥ Bristle dia. is 0.022″. ▲ Bristle dia. is 0.040″. ♣ Single spiral with heavy gauge stainless steel single stem. ● Pkg. qty. is 10.
★ Bristle dia. is 0.004″. ✓ Bristle dia. is 0.006″. ♠ 5″ o'all lg.; bristle dia. is 0.010″.

Single-Spiral Heavy Duty Abrasive Nylon Power Brushes

With flexible nylon bristles impregnated with 80-grit silicon carbide/aluminum oxide abrasive, these double-stem brushes wear evenly for uniform finishes. Stems are galvanized steel. Max. rpm is 2,000.

Brush Dia.	Brush Lg.	O'all Lg.	Stem Dia.	Bristle Dia.		1-11	12-Up
3/8″	2″	5″	3/16″	0.040″	**4895A11**	$6.27	$5.04
1/2″	2″	5″	3/16″	0.040″	**4895A12**	5.78	4.64
5/8″	2″	5″	15/64″	0.040″	**4895A13**	5.78	4.64
3/4″	2 1/2″	5 1/2″	15/64″	0.040″	**4895A14**	$5.87	$4.72
1″	2 1/2″	5 1/2″	15/64″	0.040″	**4895A21**	5.87	4.72
1 1/4″	2 1/2″	5 1/2″	15/64″	0.040″	**4895A17**	6.72	5.40

Single-Spiral Hex- and Round-Shank Power Brushes

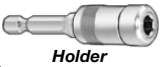
Holder

Brushes with a 1/4″ hex shank can be used with the optional holder (sold separately) for quick changes. Brushes are single stem; stems are galvanized steel. Max. rpm is 2,000.

Plumbing Tube/Fitting Size, ID	Refrigeration Tube/Fitting Size, OD	Brush Dia.	Brush Lg.	O'all Lg.	Shank	Bristle Dia.	Pkg. Qty.	Carbon Steel Each Partial Pkg.	Carbon Steel Each Full Pkg.	Type 302 Stainless Steel Each Partial Pkg.	Type 302 Stainless Steel Each Full Pkg.
1/4″	3/8″	7/16″	3/4″	2 1/2″	1/4″ Hex	0.004″	12	**63505T61**	$3.51	$2.80	**63505T71**	$3.69	$2.93
3/8″	1/2″	9/16″	3/4″	2 1/2″	1/4″ Hex	0.004″	12	**63505T62**	3.51	2.80	**63505T72**	3.69	2.93
1/2″	5/8″	11/16″	3/4″	2 1/2″	1/4″ Hex	0.004″	12	**63505T63**	3.51	2.80	**63505T73**	3.69	2.93
5/8″	3/4″	13/16″	3/4″	2 1/2″	1/4″ Hex	0.004″	12	**63505T64**	3.51	2.80	**63505T74**	3.69	2.93
3/4″	7/8″	15/16″	3/4″	2 1/2″	1/4″ Hex	0.006″	12	**63505T65**	3.54	2.82	**63505T75**	3.74	2.98
7/8″	1″	1 1/16″	3/4″	2 1/2″	1/4″ Hex	0.006″	12	**63505T66**	3.74	2.98	**63505T76**	3.91	3.11
1″	1 1/8″	1 3/16″	3/4″	2 1/2″	1/4″ Hex	0.006″	12	**63505T67**	3.74	2.98	**63505T77**	3.91	3.11
1 1/4″	1 1/4″	1 7/16″	1 1/2″	2 7/8″	3/8″ Round	0.008″	10	**63005T44**	9.50	7.92	____	____	____
1 1/2″	1 1/2″	1 3/4″	1 1/2″	2 7/8″	3/8″ Round	0.008″	10	**63005T45**	10.00	8.33	____	____	____
2″	2″	2 1/4″	1 1/2″	2 7/8″	3/8″ Round	0.008″	10	**63005T46**	10.60	8.83	____	____	____

Optional 1/4″ Hex Shank Quick-Change Holder— Use with 1/4″ hex shank brushes above. **7179A11** Each $10.59

For information about twisted-wire brushes and bristle materials, see page 2704.

Miniature Single-Spiral Power Brushes

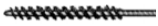

With very small diameters, these brushes fit into the smallest holes. All have stainless steel stems and an o'all length of 3″, unless noted. Max. rpm is 1,200, unless noted. ***Abrasive nylon*** bristles are impregnated with 600-grit aluminum oxide, unless noted.

Brush Dia.	Brush Lg.	Stem Dia.	Bristle Dia.	Type 302 SS	1-11	12-Up	Brass	1-11	12-Up
Inch Brushes									
0.024″	1/4″	0.015″	0.003″	4754A31	$5.12	$4.06	4754A71♠	$4.31	$3.44
0.032″	5/8″	0.016″	0.002″	4754A32	4.11	3.25	4754A52♦	4.00	3.20
0.047″	3/4″	0.026″	0.002″	4754A33	3.76	2.98	4754A53	3.86	3.09
0.054″	3/4″	0.026″	0.002″	4754A34	3.76	2.98	4754A54	2.92	2.33
0.063″	3/4″	0.034″	0.003″	4754A35	3.25	2.58	4754A55	2.92	2.33
0.079″	3/4″	0.034″	0.003″	4754A36	3.25	2.58	4754A56	2.92	2.33
0.094″	3/4″	0.043″	0.003″	4754A37	3.25	2.58	4754A57	2.86	2.29
0.109″	3/4″	0.055″	0.003″	4754A38	3.25	2.58	4754A58	2.61	2.09
0.125″	1″	0.055″	0.003″	4754A39	3.25	2.58	4754A59	2.36	1.89
0.142″	1″	0.072″	0.003″	4754A41	3.25	2.58	4754A61	2.33	1.87
0.156″	1″	0.072″	0.003″	4754A42	3.25	2.58	4754A62	2.33	1.87
0.172″	1″	0.083″	0.003″	4754A43	3.25	2.58	4754A63	2.33	1.87
0.189″	1″	0.083″	0.003″	4754A44	3.25	2.58	4754A64	2.28	1.82
Metric Brushes									
1.0 mm	5/8″	0.016″	0.002″	4905A51	4.80	3.86	4905A11▲	3.73	3.00
1.5 mm	5/8″	0.026″	0.002″	4905A52	4.31	3.45	4905A12▲	2.65	2.13
2.0 mm	3/4″	0.034″	0.003″	4905A53	3.80	3.05	4905A13	2.65	2.13
2.5 mm	3/4″	0.043″	0.003″	4905A54	3.80	3.05	4905A14	2.66	2.13
3.0 mm	1″	0.055″	0.003″	4905A55	3.80	3.05	4905A15	2.16	1.74
3.5 mm	1″	0.055″	0.003″	4905A56	3.80	3.05	4905A16	2.16	1.74
4.0 mm	1″	0.072″	0.003″	4905A57	3.80	3.05	4905A17	2.16	1.74
4.5 mm	1″	0.083″	0.003″	4905A58	3.80	3.05	4905A18	2.16	1.74
5.0 mm	1″	0.083″	0.003″	4905A59	4.02	3.23	4905A19	2.17	1.75
5.5 mm	1″	0.110″	0.003″	4905A61	4.16	3.34	4905A21	2.17	1.75
6.0 mm	1″	0.110″	0.003″	4905A62	4.26	3.43	4905A22	2.17	1.75
6.5 mm	1″	0.110″	0.003″	4905A63	4.39	3.53	4905A23	2.05	1.65

Brush Dia.	Brush Lg.	Stem Dia.	Bristle Dia.	Abrasive Nylon	1-11	12-Up
Inch Brushes						
0.035″	5/8″	0.016″	0.008″	4754A11■	$6.34	$5.03
0.052″	3/4″	0.026″	0.008″	4754A23■	6.08	4.81
0.059″	3/4″	0.026″	0.008″	4754A12■	5.94	4.71
0.069″	3/4″	0.026″	0.012″	4754A24	4.06	3.22
0.087″	3/4″	0.034″	0.012″	4754A13	4.06	3.22
0.103″	3/4″	0.043″	0.012″	4754A14	4.06	3.22
0.120″	3/4″	0.055″	0.012″	4754A15	4.06	3.22
0.138″	1″	0.055″	0.012″	4754A16	4.39	3.48
0.156″	1″	0.055″	0.012″	4754A17	4.39	3.48
0.172″	1″	0.072″	0.012″	4754A25	4.39	3.48
0.189″	1″	0.072″	0.012″	4754A18	4.39	3.48
0.208″	1″	0.072″	0.012″	4754A19	4.39	3.48
0.260″	1″	0.115″	0.012″	4838A21♥	3.95	3.02
0.325″	1″	0.115″	0.012″	4838A22♥	3.95	3.02
Metric Brushes						
1.1 mm	5/8″	0.016″	0.008″	4905A64■	7.40	5.96
1.7 mm	5/8″	0.026″	0.008″	4905A65■	7.26	5.83
2.2 mm	3/4″	0.034″	0.012″	4905A66	4.74	3.81
2.7 mm	3/4″	0.043″	0.012″	4905A67	4.74	3.81
3.3 mm	1″	0.055″	0.012″	4905A68	5.13	4.12
3.9 mm	1″	0.055″	0.012″	4905A69	5.13	4.12
4.4 mm	1″	0.055″	0.012″	4905A71	5.13	4.12
5.0 mm	1″	0.072″	0.012″	4905A72	5.13	4.12
5.5 mm	1″	0.072″	0.012″	4905A73	5.11	4.10
6.1 mm	1″	0.110″	0.012″	4905A74	6.67	5.35
6.6 mm	1″	0.110″	0.012″	4905A75	6.67	5.35
7.1 mm	1″	0.110″	0.012″	4905A76	6.67	5.35

♠ Bristle dia.: 0.002″. ■ Abrasive is superfine silicate. ♦ Brush lg.: 1/2″. ♥ Galvanized steel stem; 5″ o'all lg.; max. rpm is 5,000. ▲ Bristle dia.: 0.003″.

Side-Action Power Brushes

Flat sides concentrate the bristles on these single-stem brushes to improve chip removal. Overall length is 2 1/8″ to 2 1/4″. All have stainless steel stems, unless noted. Max. rpm is 2,000. Package quantity is 12, unless noted.

Brush Dia.	Brush Lg.	Stem Dia.	Bristle Dia.	Carbon Steel	Each Partial Pkg.	Each Full Pkg.	Type 302 SS	Each Partial Pkg.	Each Full Pkg.	Brass	Each Partial Pkg.	Each Full Pkg.
1/4″	9/16″	3/32″	0.005″	4859A13♣	$2.66	$2.12	4859A67♣	$4.26	$3.40	4859A77	$2.21	$1.77
5/16″	9/16″	3/32″	0.003″	4859A17♣	3.45	2.68	4859A23	2.57	2.06	4859A75	2.59	2.08
3/8″	9/16″	3/32″	0.005″	4859A22♣	3.10	2.47	4859A68♣	4.26	3.40	4859A78	2.38	1.90
7/16″	9/16″	3/32″	0.005″	4859A25	2.48	1.96	4859A24	2.44	1.95	4859A82	2.47	1.97
1/2″	9/16″	3/32″	0.005″	4859A34♣	3.12	2.49	4859A69♣	4.26	3.40	4859A83	2.49	1.99
1/2″	5/8″	5/32″	0.008″	4859A39	2.40	1.92	4859A26	2.54	2.04	4859A27	2.57	2.04
5/8″	5/8″	1/8″	0.005″	4859A46	4.66	3.92	4859A71♣	5.21	4.25	4859A28	2.82	2.25
3/4″	5/8″	1/8″	0.005″	4859A48♣	3.80	2.95	4859A73♣	5.20	4.14	4859A79	2.93	2.35
3/4″	5/8″	1/8″	0.008″	4859A49♣	3.34	2.66	4859A29	2.86	2.28	4859A31	2.61	2.06
7/8″	5/8″	1/8″	0.005″	4859A51♣	3.88	3.01	4859A74♣	5.31	4.12	4859A84	3.04	2.43
1″	5/8″	1/8″	0.005″	4859A55♣	3.81	3.03	4859A76♣	5.34	4.25	4859A81	3.08	2.47
1″	5/8″	1/8″	0.008″	4859A56♣	3.42	2.72	4859A32	3.17	2.53	4859A33	3.19	2.55

♣ Galvanized steel stem. Package quantity is 10.

Brush

Brush with Holder

Brush Holders— Just slip brush stem into holder for enhanced strength and stability. Holder has a shank dia. of 1/4″.

For Stem Dia.	O'all Lg.		Each
3/32″	3 1/8″	4859A91	$7.08
1/8″, 5/32″	3 3/8″	4859A92	8.47

Single-Spiral Threaded-Shank Brushes

All are double stem (unless noted); stems are galvanized steel. Overall lengths are approximately 2″-3″ longer than stated brush lengths. Max. rpm is 1,750. ***1 1/4″ dia. and larger brushes*** have a 1/2″ loop at the tip.
★ **To Order:** For brushes with 1/4″ to 1″ diameters, please specify female or male thread.

Brush Dia.	Brush Lg.	Female Thread★	Male Thread★	Type 302 SS Bristle Dia.		1-11	12-Up	Brass Bristle Dia.		1-11	12-Up	Nylon Bristle Dia.		1-11	12-Up
1/4″	3″	8-32	8-32	0.005″	7230T41	$7.33	$5.87	0.004″	7231T41	$6.46	$5.18	0.014″	7043T54●	$3.36	$2.66
3/8″	4″	12-24	8-32	0.005″	7230T27	7.89	6.31	0.004″	7231T27	7.05	5.65	0.016″	7043T23●	3.47	2.74
7/16″	4″	12-24	1/4″-28	0.005″	7230T43	7.89	6.31	0.005″	7231T43	7.05	5.65	0.016″	7043T55●	3.37	2.67
1/2″	4″	12-24	1/4″-28	0.006″	7230T44	7.89	6.31	0.006″	7231T44	7.35	5.89	0.018″	7043T44●	3.37	2.67
9/16″	4″	12-24	1/4″-28	0.006″	7230T45	8.56	6.84	0.005″	7231T45	7.90	6.31	0.018″	7043T45●	3.53	2.79
5/8″	4″	12-24	1/4″-28	0.006″	7230T46	8.56	6.84	0.005″	7231T46	7.35	5.89	0.018″	7043T46●	3.53	2.79
11/16″	4″	12-24	1/4″-28	0.006″	7230T47	8.56	6.84	0.006″	7231T47	7.35	5.89	0.020″	7043T47●	3.59	2.84
3/4″	4″	12-24	1/4″-28	0.006″	7230T48	8.72	6.98	0.006″	7231T48	7.66	6.13	0.020″	7043T48●	3.64	2.88
13/16″	4″	12-24	1/4″-28	0.007″	7230T49	8.72	6.98	0.006″	7231T49	7.66	6.13	0.020″	7043T49●	3.64	2.88
7/8″	4″	12-24	1/4″-28	0.007″	7230T51	8.72	6.98	0.008″	7231T51	7.66	6.13	0.022″	7043T51●	3.64	2.88
15/16″	4″	12-24	1/4″-28	0.009″	7230T52	9.00	7.20	0.008″	7231T52	8.02	6.42	0.022″	7043T52●	3.81	3.01
1″	4″	12-24	1/4″-28	0.009″	7230T53	9.00	7.20	0.008″	7231T53	8.02	6.42	0.022″	7043T53●	3.81	3.01
1 1/4″	4 1/2″	—	1/4″ NPT	0.009″	7230T14	9.58	7.67	0.006″	7231T14	8.22	6.58	0.018″	7043T14✓	7.50	5.93
1 1/2″	4 1/2″	—	1/4″ NPT	0.009″	7230T15	9.92	7.93	0.006″	7231T15	9.08	7.27	0.020″	7043T15✓	8.35	6.60
1 3/4″	4 1/2″	—	1/4″ NPT	0.009″	7230T16	10.92	8.73	0.006″	7231T16	9.47	7.58	0.022″	7043T16✓	8.79	6.95
2″	4 1/2″	—	1/4″ NPT	0.009″	7230T17	11.67	9.33	0.008″	7231T17	9.83	7.87	0.025″	7043T17✓	9.18	7.26
2 1/4″	4 1/2″	—	1/4″ NPT	0.009″	7230T18	12.28	9.82	0.008″	7231T18	9.94	7.96	0.025″	7043T18✓	9.62	7.60
2 1/2″	4 1/2″	—	1/4″ NPT	0.009″	7230T19	12.72	10.18	0.008″	7231T19	10.58	8.47	0.028″	7043T19✓	10.03	7.93
2 3/4″	4 1/2″	—	1/4″ NPT	0.013″	7230T21	13.14	10.51	0.008″	7231T21	11.36	9.09	0.036″	7043T21✓	10.44	8.26
3″	4 1/2″	—	1/4″ NPT	0.013″	7230T22	14.03	11.22	0.008″	7231T22	11.64	9.31	0.036″	7043T22✓	10.88	8.60
3 1/2″	4 1/2″	—	1/4″ NPT	0.013″	7230T24	14.92	11.93	0.012″	7231T24	13.06	10.44	0.036″	7043T41✓	11.71	9.26
4″	4 1/2″	—	1/4″ NPT	0.016″	7230T26	15.78	12.62	0.012″	7231T26	14.25	11.40	0.036″	7043T43✓	12.53	9.91

● Single stem. ✓ 5″ brush length.

Threaded-Shank Twisted-Wire Brushes

For information about twisted-wire brushes and bristle materials, see page 2704.

Double-Spiral Threaded-Shank Brushes

Built to handle the toughest jobs, these double-stem brushes have more bristles than single-spiral brushes. Stems are galvanized steel. Brushes have 1/4″ NPT male threads, unless noted. Brush length is approximately 4 1/2″. Overall length is approximately 7 1/2″. Max. rpm is 1,750.

Brush Dia.	Carbon Steel Bristle Dia.		1-11	12-Up	Type 302 Stainless Steel Bristle Dia.		1-11	12-Up
3/4″	0.0118″	7232T11	$13.74	$10.93	0.006″	7267T25●	$13.77	$10.95
1″	0.0118″	7232T12	12.49	9.93	0.009″	7267T24●	14.03	11.16
1 1/4″	0.0128″	7232T13	10.03	7.98	0.007″	7267T11	13.14	10.45
1 1/2″	0.0128″	7232T14	10.17	8.09	0.007″	7267T12	13.46	10.70
1 3/4″	0.0128″	7232T15	10.29	8.18	0.007″	7267T13	13.80	10.98
2″	0.0128″	7232T16	10.14	8.07	0.009″	7267T14	14.06	11.18
2 1/4″	0.0128″	7232T17	10.46	8.32	0.009″	7267T15	14.43	11.48

● 12-24 female thread; 6″ overall length.

Brush Dia.	Carbon Steel Bristle Dia.		1-11	12-Up	Type 302 Stainless Steel Bristle Dia.		1-11	12-Up
2 1/2″	0.0128″	7232T18	$10.71	$8.52	0.009″	7267T16	$14.89	$11.84
2 3/4″	0.014″	7232T19	10.83	8.61	0.012″	7267T17	15.43	12.27
3″	0.014″	7232T21	11.09	8.82	0.013″	7267T18	16.34	13.00
3 1/4″	0.014″	7232T22	11.26	8.95	0.013″	7267T19	17.34	13.80
3 1/2″	0.0181″	7232T23	11.40	9.07	0.013″	7267T21	18.26	14.52
3 3/4″	0.0181″	7232T24	11.54	9.18	0.016″	7267T22	19.23	15.30

Food-Grade Nylon Threaded-Shank Brushes

Food-grade white nylon bristles and stainless steel threaded stems make these brushes ideal for food, beverage, and pharmaceutical applications. All are single spiral, double stem. Stems are Type 304 stainless steel and have 1/4″ NPT male threads. Brush length is 4 1/2″. Overall length is 7″. Max. rpm is 1,750.

Nylon extension rod is 48″ long and has a 1/4″ NPT male thread fitting on one end and a 1/4″ NPT female thread fitting on the other end. Fittings are stainless steel.

Brush Dia.	Bristle Dia.		
1″	0.018″	4160A11	$26.22
1 1/2″	0.020″	4160A12	26.42
2″	0.022″	4160A13	26.62
2 1/2″	0.025″	4160A14	26.82
3″	0.025″	4160A15	27.02
4″	0.036″	4160A16	27.22
5″	0.036″	4160A17	27.42
6″	0.045″	4160A18	27.62
8″	0.060″	4160A19	33.60
Nylon Extension Rod		4160A21	22.37

Handles and Extension Rods for Threaded-Shank Brushes

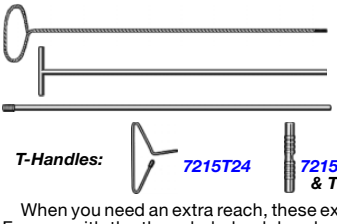

When you need an extra reach, these extension rods go the distance. For use with the threaded-shank brushes on this page and the previous page. To connect rods, brushes, and handles, match the male or female thread with the opposite thread of the same size. Rods are rigid, unless noted.

Rods with T-Handle and ***T-handles*** have one threaded end and one end with a handle. ***Double-threaded rods*** have one female-threaded end and one male-threaded end for use with brushes, handles, and other rods. Both threads are the same size. ***T-handles*** 7215T24 and T13 will accept the female-threaded end of a brush or rod. T13 comes with a screw. 7215T23 and T25 will accept the male-threaded end of a brush or rod.

Thread	Dia.	Lg.	Material		
Rod with Looped Handle					
8-32 male	0.162″	48″	Steel	7215T18	$7.24
Rods with T-Handle					
1/8″ NPT female	3/8″	60″	Steel	7215T31	33.52
1/4″ NPT female	3/8″	36″	Steel	7215T51	31.05
1/4″ NPT female	3/8″	48″	Steel	7215T61	32.17
1/4″ NPT female	3/8″	60″	Steel	7215T71	33.52
1/2″ NPT male	3/8″	60″	Steel	7215T41	33.52
5/8″-11 female	9/16″	60″	Steel	7215T21	37.80

Double-Threaded Rods Thread	Dia.	Lg.	Material			T-Handles	
8-32	0.162″	24″	Steel	7215T14	$7.65	7215T24	$6.10
12-24	5/16″	24″	Aluminum	7215T15	7.41	7215T13	6.49
12-24	5/16″	36″	Aluminum	7215T17	9.05	7215T13	6.49
1/4″-28	1/4″	36″	Steel	7215T27	9.05	7215T23	6.49
1/4″ NPT	21/64″	60″	Steel	7215T16◆	9.76	7215T25	10.28
1/4″ NPT	0.35″	48″	Fiberglass	7215T19	6.30	7215T25	10.28
1/4″ NPT	3/8″	36″	Steel	7215T52	24.31	7215T25	10.28
1/4″ NPT	3/8″	48″	Steel	7215T62	25.66	7215T25	10.28
1/4″ NPT	3/8″	60″	Steel	7215T72	26.77	7215T25	10.28

◆ Made of flexible twisted wire.

Single-Spiral Abrasive Nylon Threaded-Shank Brushes

Nylon bristles are impregnated with 320-grit silicon carbide abrasive to clean without scratching. A vinyl tip at the end of the stem also protects against scratches. Bristle dia. is 0.022″. Brushes are single stem; stems are galvanized steel. Max. rpm is 1,750.

▲ **To Order:** Please specify female or male thread.

Brush Dia.	Approx. Brush Lg.	O'all Lg.	Female Thread▲	Male Thread▲		1-11	12-Up
1/2″	3″	4 3/4″	8-32	8-32	6482T1	$6.06	$4.85
3/4″	4″	6 1/2″	12-24	1/4″-28	6482T2	6.16	4.92
1″	4″	6 1/2″	12-24	1/4″-28	6482T3	6.28	5.03
1 1/4″	4″	6 1/2″	12-24	1/4″-28	6482T4	6.69	5.35

Duct and Flue Threaded-Shank Brushes

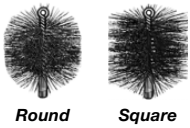

Round *Square*

Clean dust, soot, and carbon deposits out of chimneys, ducts, and flues. Brushes have galvanized steel stems with 1/4″ NPT male threads. Extension rods and handles are sold separately.

Carbon Steel Bristle Brushes— Double spiral, double stem. *Round brushes* are 4 1/2″ long. Overall length is 7 1/2″. Max. rpm is 1,200. *Square brushes* are 6″ long. Overall length is 9″. Designed for hand use.

Polypropylene Bristle Brushes— Single spiral, double stem. Bristles remove dust better than carbon steel bristles. Brush length is 6″. Overall length is 8 3/4″. Max. rpm is 1,200.

Tampico Bristle Brushes— Single spiral, double stem. Brush length is 4 1/2″. Overall length is 8″. Designed for hand use.

Flexible Extension Rods— Fasten to the brushes listed below. Rods have a 1/4″ NPT male thread fitting on one end and a 1/4″ NPT female thread fitting on the other end.

Carbon Steel Bristle Brushes

Round Brushes Brush Dia.	Bristle Dia.			Round Brushes Brush Dia.	Bristle Dia.		
4″	0.018″	6355T12	$10.76	8″	0.028″	6355T29	$15.68
4 1/2″	0.018″	6355T14	11.68	8 1/2″	0.028″	6355T32	16.71
5″	0.018″	6355T16	14.09	9″	0.028″	6355T34	17.39
5 1/2″	0.018″	6355T18	14.11	10″	0.028″	6355T38	19.45
6″	0.018″	6355T21	14.03	11″	0.028″	6355T41	19.58
6 1/2″	0.018″	6355T23	14.50	12″	0.028″	6355T43	22.11
7″	0.028″	6355T25	14.87	13″	0.028″	6355T44	23.11

Square Brushes Brush Size	Bristle Dia.			Square Brushes Brush Size	Bristle Dia.		
6″×6″	0.028″	7374T21	$15.70	8″× 8″	0.028″	7374T23	$18.65
7″×7″	0.028″	7374T22	17.04	10″×10″	0.028″	7374T24	23.46

Polypropylene Bristle Brushes

Round Brushes Brush Dia.	Bristle Dia.			Square Brushes Brush Size	Bristle Dia.		
8″	0.030″	73205T32	$11.43	8″× 8″	0.030″	73205T36	$29.70
12″	0.030″	73205T33	18.37	12″×12″	0.030″	73205T37	42.07
18″	0.030″	73205T34	25.25	18″×18″	0.030″	73205T38	47.37
24″	0.060″	73205T35	35.69	24″×24″	0.060″	73205T39	66.64

Tampico Bristle Brushes

Round Brushes Brush Dia.		
2 1/2″	6413T33	$10.19
3″	6413T34	10.62
4″	6413T35	11.10
5″	6413T36	11.55
6″	6413T37	11.96
7″	6413T38	12.63
8″	6413T39	13.69

Flexible Extension Rods

Rod Lg.		
Nylon		
48″	73205T41	$12.30
Twisted Steel		
36″	6413T41	6.72
48″	6413T42	7.14
72″	6413T43	10.67
T-Handle	7215T25	10.28

For information about twisted-wire brushes and bristle materials, see page 2704.

Stainless Steel and Brass Loop-Handle Brushes

A loop handle makes it easier to perform cleaning jobs by hand. ***Type 304 stainless steel brushes*** have stainless steel stems. ***Type 302/304 stainless steel*** and ***brass brushes*** have galvanized steel stems, unless noted.

Brush Dia.	Brush Lg.	O'all Lg.	Stem Dia.	Bristle Dia.	Type 304 SS	1-11	12-Up	Type 302/304 SS	1-11	12-Up	Brass	1-11	12-Up
Single-Spiral Single-Stem Brushes													
1/32″	1/2″	4″	0.022″	0.003″	7353T701	$4.60	$3.83	7353T32	$4.13	$3.43	7353T709●	$4.60	$3.83
1/16″	1/2″	4″	0.032″	0.003″	7353T702	4.26	3.55	7353T33	3.57	2.98	7353T501●	4.26	3.55
3/32″	3/4″	4″	0.042″	0.003″	7353T703	3.77	3.14	7353T34	3.51	2.93	7353T502●	3.77	3.14
1/8″	3/4″	4″	0.062″	0.003″	7353T704	2.94	2.45	7353T35	2.69	2.24	7353T503●	2.94	2.45
1/8″	1″	6″	0.088″	0.003″	7353T714	2.17	1.81	7353T411	2.03	1.69	7353T517	1.80	1.50
5/32″	3/4″	4″	0.062″	0.003″	7353T705	2.94	2.45	7353T36	2.69	2.24	7353T504●	2.94	2.45
3/16″	3/4″	4″	0.062″	0.003″	7353T706	2.94	2.45	7353T37	2.69	2.24	7353T505●	2.94	2.45
3/16″	1 1/2″	7″	0.088″	0.003″	7353T715	2.20	1.83	7353T412	2.03	1.69	7353T518	1.86	1.55
7/32″	3/4″	4″	0.062″	0.003″	7353T707	2.94	2.45	7353T38	2.63	2.19	7353T506●	2.94	2.45
1/4″	3/4″	4″	0.062″	0.003″	7353T708	2.94	2.45	7353T39	2.63	2.19	7353T507●	2.94	2.45
1/4″	1 1/2″	7″	0.088″	0.005″	7353T716	2.20	1.83	7353T413	2.00	1.67	7353T519	1.86	1.55
1/4″	3″	27″	0.130″	0.005″	7353T21	5.06	4.21	7353T11	5.18	4.78	7353T311	6.29	5.58
5/16″	1 1/2″	7″	0.088″	0.006″	7353T717	2.31	1.93	7353T414	2.00	1.67	7353T611	1.86	1.55
3/8″	2″	8″	0.120″	0.006″	7353T718	2.17	1.81	7353T415	2.00	1.67	7353T612	1.89	1.57
3/8″	3″	27″	0.145″	0.005″	7353T22	5.09	4.24	7353T12	5.18	4.78	7353T312	6.29	5.58
7/16″	2″	8″	0.120″	0.006″	7353T719	2.20	1.83	7353T416	2.03	1.69	7353T613	1.94	1.62
1/2″	2″	8″	0.120″	0.006″	7353T811	2.06	1.71	7353T417	2.03	1.69	7353T614	1.97	1.64
1/2″	3″	27″	0.165″	0.006″	7353T23	5.11	4.26	7353T13	5.18	4.78	7353T313	6.29	5.58
9/16″	2 1/2″	9″	0.150″	0.008″	7353T812	2.63	2.19	7353T418	2.31	1.93	7353T615	2.23	1.86
5/8″	2 1/2″	9″	0.150″	0.008″	7353T813	2.63	2.19	7353T419	2.31	1.93	7353T616	2.26	1.88
5/8″	3″	27″	0.190″	0.006″	7353T24	5.14	4.29	7353T14	5.33	4.91	7353T314	6.29	5.58
11/16″	2 1/2″	9″	0.150″	0.008″	7353T814	2.77	2.31	7353T511	2.37	1.98	7353T617	2.31	1.93
3/4″	2 1/2″	9″	0.150″	0.008″	7353T815	2.83	2.36	7353T512	2.49	2.07	7353T618	2.40	2.00
3/4″	3″	27″	0.190″	0.007″	7353T25	5.17	4.31	7353T15	5.33	4.91	7353T315♣	6.67	5.91
13/16″	3″	10″	0.172″	0.008″	7353T816	3.43	2.86	7353T513	2.91	2.43	7353T619	2.80	2.33
7/8″	3″	10″	0.172″	0.008″	7353T817	3.43	2.86	7353T514	2.97	2.48	7353T711	2.80	2.33
7/8″	3″	27″	0.190″	0.007″	7353T26	5.43	4.52	7353T16	5.59	5.16	7353T316♣	6.67	5.91
1″	3″	10″	0.172″	0.008″	7353T819	3.57	2.98	7353T516	3.09	2.57	7353T713	2.91	2.43
1″	3″	27″	0.190″	0.007″	7353T27	5.46	4.55	7353T17	5.59	5.16	7353T317♣	6.67	5.91
1 1/4″	3″	27″	0.190″	0.008″	7353T28	6.00	5.00	7353T18	5.78	5.33	7353T318	7.03	6.23
1 1/2″	3″	27″	0.190″	0.010″	7353T29	6.20	5.17	7353T19	7.66	6.38	7353T319★	7.65	6.78
Double-Spiral Double-Stem Brushes													
1/4″	1 1/2″	5 1/2″	0.107″	0.003″	73075T41	6.80	5.67	73075T61	6.14	5.12	73075T81	5.94	4.95
1/4″	1 1/2″	18″	0.107″	0.003″	73075T42	10.46	8.71	73075T62	8.20	6.83	73075T82	7.94	6.62
3/8″	1 1/2″	5 1/2″	0.125″	0.005″	73075T43	6.94	5.79	73075T63	6.34	5.29	73075T83	6.11	5.10
3/8″	1 1/2″	18″	0.125″	0.003″	73075T44	10.51	8.76	73075T64	8.17	6.81	73075T84	7.94	6.62
1/2″	2″	5 1/2″	0.162″	0.006″	73075T45	7.97	6.64	73075T65	7.14	5.95	73075T85	7.03	5.86
1/2″	2″	18″	0.162″	0.004″	73075T46	10.51	8.76	73075T66	8.17	6.81	73075T86	7.94	6.62
5/8″	2″	18″	0.208″	0.005″	73075T48	10.51	8.76	73075T68	8.17	6.81	73075T88	7.94	6.62
3/4″	2 1/2″	5 1/2″	0.237″	0.010″	73075T49	8.51	7.10	73075T69	7.14	5.95	73075T89	7.17	5.98
3/4″	2 1/2″	18″	0.237″	0.006″	73075T51	12.03	10.02	73075T71	8.77	7.31	73075T91	8.77	7.31
7/8″	2 1/2″	18″	0.237″	0.006″	73075T53	12.20	10.05	73075T73	8.97	7.48	73075T93	9.00	7.50
1″	2 1/2″	5 1/2″	0.237″	0.010″	73075T54	8.77	7.31	73075T74	7.26	6.05	73075T94	7.40	6.17
1″	2 1/2″	18″	0.237″	0.006″	73075T55	12.20	10.05	73075T75	8.97	7.48	73075T95	9.00	7.50

● Stainless steel stem. ♣ Bristle dia. is 0.006″. ★ Bristle dia. is 0.008″.

Nylon and Horsehair Loop-Handle Brushes

All are single spiral, single stem and have galvanized steel stems, unless noted.

Brush Dia.	Brush Lg.	O'all Lg.	Bristle Dia.	Nylon	1-11	12-Up	Horsehair	1-11	12-Up
1/32″	1/2″	4″	0.003″	7221T29●	$3.65	$2.96			
1/16″	1/2″	4″	0.003″	7221T31●	2.51	1.87			
3/32″	3/4″	4″	0.003″	7221T32●	2.19	1.70			
1/8″	3/4″	4″	0.003″	7221T33●	2.05	1.55			
5/32″	3/4″	4″	0.003″	7221T34●	2.05	1.55			
3/16″	3/4″	4″	0.003″	7221T35●	2.04	1.52			
7/32″	3/4″	4″	0.003″	7221T36●	1.93	1.50			
1/4″	3/4″	4″	0.003″	7221T37●	2.04	1.52			
1/4″	2″	6 1/4″	0.006″	7221T11	1.81	1.44	7224T15	$2.18	$1.74
1/4″	4″	26″	0.006″	7221T17	3.19	2.56	7224T12	4.00	3.18
5/16″	1 1/2″	9″	0.006″	7221T38	2.00	1.60	7224T16	2.48	1.97
3/8″	4″	26″	0.006″	7221T19	3.53	2.82	7224T13	4.39	3.49
1/2″	1 1/2″	7 1/2″	0.012″	7221T18	2.06	1.64	7224T11	2.52	2.00
1/2″	3″	8 1/2″	0.012″	7221T12	2.22	1.78	7224T22	2.70	2.15
1/2″	4″	26″	0.012″	7221T21	3.58	2.87	7224T14	4.45	3.54
1/2″	4 1/2″	42″	0.012″	7221T22	5.42	4.33	7224T1	6.71	5.33
5/8″	4 1/2″	42″	0.012″	7221T23	5.47	4.38	7224T2	6.77	5.38
3/4″	3″	8 1/2″	0.012″	7221T13	2.19	1.76	7224T17	2.67	2.13
3/4″	4 1/2″	42″	0.014″	7221T24	5.53	4.42	7224T3	6.60	5.24
1″	4″	12 1/4″	0.012″	7221T14	2.97	2.38	7224T18	3.67	2.74
1″	4 1/2″	40 1/2″	0.014″	7221T25	5.46	4.37	7224T4	6.38	5.07
1 1/4″	4″	13″	0.014″	7221T15	3.11	2.49	7224T21	3.84	3.05
1 1/4″	4 1/2″	40 1/2″	0.014″	7221T26	5.69	4.56	7224T5	6.60	5.24
1 1/4″	5″	12″	0.014″	7221T16◆	3.36	2.69	7224T19◆	4.16	3.31
1 1/2″	4 1/2″	40 1/2″	0.014″	7221T27	6.25	5.00	7224T6	7.23	5.75
2″	4 1/2″	40 1/2″	0.014″	7221T28	6.94	5.56	7224T7	8.39	6.67

● Stainless steel stem. ◆ Brush diameter tapers from 1 1/4″ to 3/4″.

Loop-Handle Brush Sets

We've packaged our most popular sizes together for your convenience. All brushes are single spiral, single stem. Choose stainless steel, brass, or nylon bristles.

Tube-Diameter Sets— Include four brushes in 1/8″, 1/4″, 3/8″, and 1/2″ brush diameters. *Type 302/304 stainless steel brush set* has stainless steel stems; *brass* and *nylon brush sets* have galvanized steel stems. Brushes are 1 1/2″ to 2″ long.

Screw Size Sets— You'll get one brush in each of the following screw sizes: 0.060″, 0.086″, 0.112″, 0.138″, 0.164″, 0.190″, 1/4″, 5/16″, 3/8″, 1/2″, and 3/4″. Brushes are 3/4″ to 1 1/2″ long. Stems are stainless steel.

Miniature Sets— *Type 302/304 stainless steel* and *brass sets* include 0.040″, 0.047″, 0.063″, 0.072″, and 0.094″ brush diameters. *Nylon set* includes 0.032″, 0.040″, 0.047″, 0.063″, 0.072″, and 0.094″ brush diameters. Brushes are 1/2″ to 3/4″ long. All have stainless steel stems.

Wire/Bristle Material		Set
Tube-Diameter Sets— *Overall lengths are 8″.*		
Type 302/304 Stainless Steel	7430T64	$11.58
Brass	7430T65	11.58
Nylon	7430T63	10.21
Screw Size Sets— *Overall lengths are 4″ to 6″.*		
Type 302/304 Stainless Steel	7464T53■	39.70
Brass	7464T54■	38.19
Nylon	7464T52■	33.71
Miniature Sets— *Overall lengths are 4″.*		
Type 302/304 Stainless Steel	7396T72	19.29
Brass	7396T73	19.29
Nylon	7396T71	22.89

■ Includes a combination of loop-handle and plain twisted-stem brushes.

For information about bristle materials, see page 2704.

Refrigeration and Plumbing Hand Brushes

Precisely sized for common plumbing and refrigeration applications.

Tube/Fitting Brushes

Brushes are double-spiral double-stem with Type 302 stainless steel bristles, galvanized steel stems, and plastic grips.

For Tube/ Fitting Size	Brush Dia.	Brush Lg.	O'all Lg.	Bristle Dia.		1-11	12-Up
Refrigeration—OD							
1/4"	9/32"	1"	6 1/2"	0.005"	63015T21	$2.85	$2.26
3/8"	7/16"	1"	6 1/2"	0.006"	63015T22	5.04	4.00
1/2"	9/16"	1"	6 1/2"	0.006"	63015T23	5.04	4.00
5/8"	11/16"	1"	6 1/2"	0.006"	63015T24	5.04	4.00
3/4"	13/16"	1"	6 1/2"	0.006"	63015T25	5.23	4.15
7/8"	15/16"	1"	6 1/2"	0.006"	63015T26	5.23	4.15
1"	1 3/16"	1"	6 1/2"	0.008"	63015T27	5.40	4.28
Plumbing—ID							
1/4"	7/16"	1"	6 1/2"	0.006"	63015T31	4.60	4.09
3/8"	9/16"	1"	6 1/2"	0.006"	63015T32	4.60	4.09
1/2"	11/16"	1"	6 1/2"	0.006"	63015T33	4.60	4.18
3/4"	13/16"	1"	6 1/2"	0.006"	63015T35	5.17	4.35
1"	1 3/16"	1"	6 1/2"	0.008"	63015T36	5.63	4.58
1 1/4"	1 7/16"	1"	6 1/2"	0.008"	63015T37	5.65	4.75
1 1/2"	1 3/4"	1"	6 1/2"	0.009"	63015T38	5.68	4.96
2"	2 1/4"	1"	6 1/2"	0.009"	63015T39	6.13	5.44

Double-End Tube and Fitting Brushes

Quadruple your cleaning power. Each tool handles two sizes of tubes and fittings and cleans them inside and outside. Brushes are single-spiral single-stem with plastic handles. Plumbing brush has high-carbon steel bristles; refrigeration brushes have Type 302 stainless steel bristles. Brushes are 1" long; overall length is 7 1/2". Bristle dia. is 0.006".

Application	For Tube/ Fitting Size	Brush Dia.		
Plumbing ID	1/2" and 3/4"	1/2" and 3/4"	6301T41	$12.67
Refrigeration OD	1/2" and 3/4"	1/2" and 3/4"	6301T42	12.67
Refrigeration OD	5/8" and 7/8"	5/8" and 7/8"	6301T43	12.67

Plumbing Brush Kit

Kit includes screwdriver-style wood handle and four interchangeable, single-spiral single-stem brushes. Brushes are for 3/8", 1/2", 3/4", and 1" IDs. Bristles are carbon steel, stems are galvanized steel. Bristle dia. ranges from 0.004" to 0.006". Brushes are 1/2" to 1" long. Overall lengths including handle are 5 3/4" to 6 1/2".

7354T11 ..... Kit $18.39

Tube-Exterior Cleaning Brushes

Clean the outside diameter of tubing for applications such as soldering. Brushes have a knurled easy-grip plastic surface surrounding carbon steel bristles.

For Tube/Fitting Size Refrig. OD	Plumbing ID		1-5	6-Up
3/8"	1/4"	7370T11	$3.98	$3.41
1/2"	3/8"	7370T12	3.66	3.13
5/8"	1/2"	7370T13	3.89	3.33
3/4"	5/8"	7370T17	3.94	3.19
7/8"	3/4"	7370T15	4.38	3.74
1"	7/8"	7370T14	4.51	3.86
1 1/8"	1"	7370T16	4.80	4.10

Nonmarring Cotton Hand Brushes

Cotton brushes are perfect for light dusting and lubrication. All are 1 5/8" long; overall length is 2 7/8". Stems are galvanized steel.

Optional Handle Kits— Include a T-handle and extension rods. 70065T48 kit has four steel rods for a max. length of 30". 70065T49 has three aluminum rods for a max. length of 34".

Brush Dia.	Thread Size	Cotton Brushes	1-9	10-Up	Optional Handle Kits	
15/64"	8-32 male	70065T43	$1.42	$1.19	70065T48	$14.49
3/8"	8-32 male	70065T44	1.42	1.19	70065T48	14.49
1/2"	8-32 male	70065T45	1.42	1.16	70065T48	14.49
7/8"	5/16"-27 male	70065T46	1.53	1.29	70065T49	19.38
1"	5/16"-27 male	70065T47	1.53	1.29	70065T49	19.38

Nozzle-Cleanout Tool

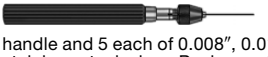

This device uses wire to clean small openings. Includes knurled handle and 5 each of 0.008", 0.015", and 0.025" dia., 2" long Type 304 stainless steel wires. Package of extra wires contains 5 of each size.

Nozzle-Cleanout Tool ..... 3160K11 ... Each $34.73
Package of Extra Wires ..... 3160K31 ... Pkg. $13.85

Square Power Brushes for Blind Holes

Clean the sides and bottoms of cylinders and holes in one operation. Bristles are carbon steel. Shanks are steel and 1/4" dia. Max. rpm is 4,500.

Size, Square	O'all Lg.	Bristle Dia.		
1"	3 1/4"	0.006"	4889A4	$16.00
1 1/16"	3 1/2"	0.006"	4889A2	16.03
1 1/4"	3 3/4"	0.006"	4889A5	15.97
1 1/2"	3 3/4"	0.006"	4889A6	19.56
1 3/4"	4"	0.006"	4889A7	20.83
1 7/8"	3 15/16"	0.006"	4889A3	18.56
2"	4"	0.010"	4889A71	25.50
2 1/4"	4 1/8"	0.010"	4889A72	27.00

High-Temperature Hand Brush

PTFE bristles handle temperatures up to 500° F and are chemical resistant. Brush has a galvanized steel stem and 4 5/8" long white plastic handle with hang-up hole.

Brush Dia.	Brush Lg.	O'all Lg.	Bristle Dia.		1-11	12-Up
1 3/8"	7 1/4"	28"	0.032"	73015T38	$27.48	$21.99

Flex-Shaft Polypropylene Hand Brushes

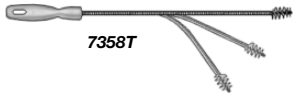

Extra flexible shafts make cleaning around corners easy. Bristles are polypropylene; bristle dia. is 0.020", unless noted. All have a plastic shaft, except for 7358T79, which has a galvanized spring steel shaft and a plastic handle with hang-up hole.

Brush Dia.	Shaft Lg.	Shaft Dia.	Brush Lg.		
5/8"	15 3/4"●	1/4"	3/4"	7358T79★	$5.00
4"	4 ft.	1/4"	1 1/2"	6434T57	20.64
4"	8 ft.	1/4"	1 1/2"	6434T58	26.36
4"	10 ft.	1/4"	1 1/2"	6434T59	28.67
4"	20 ft.	1/4"	1 1/2"	6434T61	29.23

● Overall length. ★ Bristle dia. is 0.010".

Hex-Shank Plumbing Power Brushes

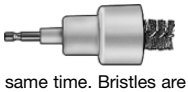

Clean tubes and fittings quickly. The 1/4" hex shank attaches easily to most power drills. Bristles inside the housing and a protruding brush clean the ID and OD of your pipes and fittings at the same time. Bristles are Type 302 stainless steel.

4-Piece Kit— Includes the three brushes shown plus a 1/4" hex quick-change holder.

Brush Dia.	Brush Lg.	O'all Lg.	Bristle Dia.	For Tube Size OD	ID		
11/16"	1"	6"	0.006"	5/8"	1/2"	7274T11	$12.84
15/16"	1"	6"	0.006"	7/8"	3/4"	7274T12	13.28
1 3/16"	1"	6"	0.006"	1 1/8"	1"	7274T13	13.38
4-Piece Kit						7274T14	32.72

Specialty Hand Brushes

Reach difficult spots. Brushes have twisted galvanized steel stems.

Domed-Head Brushes with Wire Loop Handles— Also known as bottle brushes, they clean the sides and bottoms of cylinders and holes simultaneously. Bristles are a blend of horsehair and nylon.

Brush Dia.	Brush Lg.	O'all Lg.		1-11	12-Up
2 3/4"	6"	18"	7222T1	$4.75	$3.80
3"	7"	18"	7222T2	7.73	6.18

Tapered Tampico Brush with Wood Handle— Also known as a spoke brush, the tapered design reaches into difficult spots.

Brush Dia. Large End	Small End	Brush Lg.	O'all Lg.		1-11	12-Up
2 1/2"	1 1/4"	9"	14"	7210T14	$6.72	$5.38

Long-Reach Wood Handle Brushes— Also called radiator brushes. The extra long handle reaches into small and awkward spaces.

Bristle Material	Brush Dia.	Brush Lg.	O'all Lg.		1-11	12-Up
Horsehair	2"	5"	30 1/2"	7238T14	$10.14	$7.98
Nylon	2"	5"	30 1/2"	7238T15	9.46	7.45

About Hand Brushes

Commonly called scratch brushes, toothbrush-style brushes, and welders', platers', and finishing brushes, hand brushes have a wide range of applications. Use them for applying liquids, cleaners, paint, and adhesives; for removing rust, solder, paint, dirt, and dust; and for scrubbing, polishing, deburring, weld cleaning, roughening, and metal finishing. Also good for clean room work and static electricity conduction and dissipation.

Most hand brushes have staple-set bristles. Exceptions to this are the hand-laced brushes and the pencil- and paint-brush-style brushes. *Hand-laced brushes* have bristle tufts tied into the brush head so they won't fall out, especially in wet environments. *Pencil-* and *paint-brush-style brushes* have bristles glued or crimped into the brush head.

BRISTLE MATERIALS

Carbon Steel—Use for light to aggressive material removal and finishing soft materials.

Stainless Steel—Resists corrosion better than carbon steel and withstands elevated temperatures. Unlike carbon steel, it does not leave deposits that can cause rust on stainless steel workpieces. Sold in a range of bristle diameters to handle everything from tough cleaning to working on delicate parts.

Brass—Nonsparking and softer than steel and stainless steel. Use for light to medium cleaning, polishing, deburring, material removal, and static reduction.

Bronze—Typically harder, tougher, and stiffer than brass. Resists salts better than brass.

Aluminum—Generally used on aluminum workpieces.

Nylon—The toughest, most durable synthetic material. It has good abrasion resistance for cleaning and scrubbing jobs and works well in wet applications. Nylon has poor to good resistance to dilute acids, good resistance to dilute alkalies, and good to excellent resistance to mild solvents. Maximum temperature is 200° F.

Polypropylene—Popular for wet or dry cleaning. It's nonbrittle, fungus resistant, and very stiff when wet. Has excellent resistance to dilute alkalies and acids, and fair to good resistance to mild solvents. Maximum temperature is 175° F.

Horsehair—Resilient, nonconductive, and durable. Ranges from soft to slightly stiff depending on bristle length. Use for dry polishing and scratch-free cleaning and dusting. Horsehair has poor resistance to dilute alkalies and acids, and poor to fair resistance to mild solvents. Maximum temperature is 300° F.

Goat Hair—Very soft, fine, and nonconductive. A great choice for fine polishing and cleaning delicate parts.

Hog Bristle—The stiffest of our natural material hair-type brushes, hog bristle also provides the best cleaning. It's nonconductive and works well with sticky, crusty materials and viscous fluids. Also known as Chun King or China bristle.

Tampico—A vegetable fiber with high absorbency for low abrasion scrubbing and washing. Use wet or dry. It has poor resistance to dilute acids, fair to good resistance to mild solvents, and good resistance to dilute alkalies. Maximum temperature is 283° F.

BRUSH DIMENSIONS

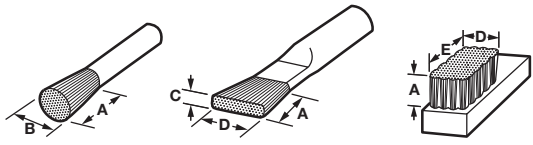

(A) Bristle Length, (B) Brush Diameter, (C) Brush Thickness, (D) Brush Face Width, (E) Brush Face Length

BRISTLE DIA. GUIDE

	Very Fine	Fine	Medium	Coarse
Bristle Dia.	0.002″ to 0.005″	0.006″ to 0.009″	0.012″ to 0.013″	0.014″ to 0.017″

Hand Brushes

Hand Brushes

From heavy duty rust, paint, and scale removal to delicate surface cleaning and polishing, these hand brushes get the job done.

A ***Brushes with Curved Wood Handles***—Brushes with fine (0.006″) and natural bristles, known as platers' brushes, are designed for delicate jobs. *V-shape-bristle brushes* have bristles that angle inward to form a very narrow face. Perfect for angles and slots.

B ***Brushes with Arched Handles***—Similar to (A), but with an arched handle (also called a shoe handle). Choose a wood or plastic handle.

C ***Wide-Face Brushes***—Have a wider, more square face than (A) or (B). Choose a wood or plastic handle.

D ***Finger-Guard Brushes***—A plastic wraparound handle protects your hands and fingers from scrapes.

E ***Two-Hand Plane-Style Brush with Plastic Handle***—Allows you to work with two hands for better control and more aggressive brushing.

Bristle Dia. and Type	Brush Face, Wd.×Lg.	Bristle Lg.	O'all Lg.		1-11	12-Up
(A) Brushes with Curved Wood Handles (unless noted)						
0.006″ Steel	5/8″ × 5 1/2″	1 1/8″	13 3/4″	**7190T4**	$9.30	$7.40
0.006″ Steel	3/4″ × 5 1/2″	1 1/8″	13 3/4″	**7190T1**	10.68	8.49
0.012″ Steel	1 1/4″ × 4 3/4″	3 1/4″	20″	**7187T35▲♦**	10.83	8.94
0.013″ Steel	3/8″ × 5 1/2″	1 1/8″	13 3/4″	**7187T5**	3.94	3.14
0.013″ Steel	5/8″ × 4″	1 1/8″	13 3/4″	**7187T6**	4.68	3.72
0.013″ Steel	5/8″ × 5 1/2″	1 1/8″	13 3/4″	**7187T1**	3.88	3.08
0.013″ Steel	5/8″ × 5 1/2″	1 1/8″	13 3/4″	**7187T7▲**	5.69	4.53
0.013″ Steel	5/8″ × 5 1/2″	1 1/8″	13 3/4″	**7187T9■**	4.26	3.39
0.013″ Steel	3/4″ × 5 1/2″	1 1/8″	13 3/4″	**7187T2**	4.35	3.45
0.013″ Steel	3/4″ × 5 1/2″	1 1/8″	13 3/4″	**7187T3▲**	6.60	5.26
0.014″ Steel	13 1/16″ × 5″	1 1/2″	11″	**7187T12▲♦**	8.43	6.71
0.006″ Stainless	5/8″ × 5 1/2″	1 1/8″	13 3/4″	**7190T6**	10.16	8.09
0.006″ Stainless	3/4″ × 5 1/2″	1 1/8″	13 3/4″	**7190T3**	12.89	10.26
0.012″ Stainless	5/8″ × 5 1/2″	1 1/8″	13 3/4″	**7187T4**	6.91	5.50
0.012″ Stainless	3/4″ × 5 1/2″	1 1/8″	13 3/4″	**7187T8**	7.97	6.34
0.006″ Brass	5/8″ × 5 1/2″	1 1/8″	13 3/4″	**7190T5**	8.08	6.43
0.006″ Brass	3/4″ × 5 1/2″	1 1/8″	13 3/4″	**7190T2**	10.49	8.34
0.012″ Bronze	3/4″ × 5 1/2″	1 1/8″	13 3/4″	**7187T11**	11.08	8.82
0.014″ Nylon	3/4″ × 5 1/2″	3/4″	13 3/4″	**7234T4**	6.37	4.97
Tampico	7/8″ × 5 1/2″	1″	12 7/8″	**7183T1**	4.81	3.75
(A) V-Shape-Bristle Brushes with Curved Wood Handles						
0.014″ Steel	1/4″ × 5 1/4″	1 1/2″	13 3/4″	**4446A77**	4.00	3.34
0.012″ Stainless	1/4″ × 5 1/4″	1 1/2″	13 3/4″	**4446A78**	5.61	4.69
(B) Brushes with Arched Wood Handles						
0.006″ Steel	5/8″ × 5″	1 1/8″	10″	**7190T7**	9.30	7.40
0.006″ Steel	3/4″ × 5″	1 1/8″	10″	**7190T8**	10.14	8.06
0.013″ Steel	3/8″ × 5″	1 1/8″	10 1/4″	**7188T6**	4.62	3.68
0.013″ Steel	5/8″ × 5″	1 1/8″	10 1/4″	**7188T1**	4.46	3.55
0.013″ Steel	3/4″ × 5″	1 1/8″	10″	**7188T2**	4.43	3.53
(B) Brushes with Arched Wood Handles (Cont.)						
0.013″ Steel	3/4″ × 5″	1 1/8″	10″	**7188T3▲**	$6.08	$4.84
0.006″ Stainless	3/4″ × 5″	1 1/8″	10″	**7190T12**	13.11	10.43
0.012″ Stainless	3/8″ × 5″	3/4″	10 3/16″	**7188T8**	6.84	5.44
0.012″ Stainless	3/8″ × 5″	1 1/8″	10 1/4″	**7188T9**	6.89	5.48
0.012″ Stainless	3/4″ × 5″	1 1/8″	10″	**7188T11**	8.03	6.39
0.006″ Brass	5/8″ × 5″	1 1/8″	10″	**7190T9**	9.03	7.18
0.006″ Brass	3/4″ × 5″	1 1/8″	10″	**7190T11**	9.92	7.89
0.012″ Bronze	3/4″ × 5″	1 1/8″	10″	**7188T13**	9.46	7.53
Tampico	1″ × 5″	1 1/8″	10 1/4″	**7183T2**	5.62	4.50
(B) Brushes with Arched Plastic Handles						
0.013″ Steel	3/4″ × 5″	1 1/8″	10″	**7188T12**	4.70	3.74
0.012″ Stainless	3/4″ × 5″	1 1/8″	10″	**7188T4**	8.62	6.86
(C) Wide-Face Brushes with Wood Handles						
0.008″ Brass	1 1/4″ × 2 1/2″	5/8″	6 3/4″	**7451T19**	4.76	3.81
0.008″ Brass	2 1/4″ × 3″	9/16″	8 7/8″	**7451T14**	10.36	8.28
0.008″ Aluminum	1 1/4″ × 2 1/2″	1/2″	6 3/4″	**7451T16**	4.37	3.49
0.016″ Nylon	1 1/4″ × 2 1/2″	5/8″	6 3/4″	**7451T17**	3.68	2.95
(C) Wide-Face Brushes with Plastic Handles						
0.008″ Brass	1 1/4″ × 2 1/2″	5/8″	7 1/4″	**7451T26**	4.26	3.41
0.008″ Brass	2 1/8″ × 3″	5/8″	8 7/8″	**7451T29**	6.47	5.18
0.008″ Brass	2 1/4″ × 2 7/8″	5/8″	10 5/8″	**7206T8▲**	5.26	4.20
0.008″ Brass	2 3/4″ × 4″	3/4″	20″	**7451T15**	10.52	8.77
0.025″ Nylon	1 1/4″ × 2 1/2″	5/8″	7″	**7241T39●**	4.13	3.58
(D) Finger-Guard Brushes						
0.014″ Steel	7/8″ × 6″	1 1/4″	12 1/4″	**7176T11**	8.56	___
0.014″ Steel	7/8″ × 6″	1 1/4″	13″	**7176T12▲**	9.22	___
0.013″ Stainless	7/8″ × 6″	1 1/4″	12 1/4″	**7176T13**	12.29	___
(E) Two-Hand Plane-Style Brush with Plastic Handle						
0.014″ Steel	1 1/8″ × 10″	1 1/4″	10″	**4280A21**	8.60	___

▲ Brush has a scraper. ♦ Handle is straight. ■ Handle is plastic. ● Also has three rows of 1/2″ long brass bristles angled forward from the tip.

For information about hand brushes and bristle materials, see page 2709.

Small Size Hand Brushes

A

B

C

D

E

F

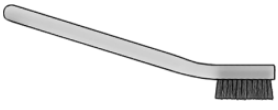
G

H

J

Their narrow face widths allow these brushes to fit into hard-to-reach areas. They're great for small workpieces. Use brushes with plastic or metal handles for electronics, clean rooms, and other applications where wood fibers or splinters might harm your work.

Curved and ***bent handles*** prevent scraped knuckles. ***Hand-laced*** brushes hold bristles securely so they won't fall out, making them ideal for wet applications.

D Hand-Laced Brushes with Bent Wood Handles— A severe bend in the handle enables you to brush at a different angle.

G Hand-Laced Titanium Brushes with Curved Acetal Handles— Crimped titanium bristles are immune to corrosion from salt water and marine atmospheres, and are resistant to acids, alkalies, water, and chemicals. Brushes are nonconductive and can be sterilized.

H Two-in-One Brushes with Polypropylene Handles— Have two brush faces with different bristle materials for all kinds of parts-cleaning tasks.

J Brushes with Wood Handles— An excellent brush for dusting and scrubbing. Widely used on circuit boards.

Bristle Dia. and Type ■	Brush Face, Wd. × Lg.	Bristle Lg.	O'all Lg.		1-11	12-Up
(A) Brushes with Curved Wood Handles						
0.006″ Stainless	5/16″ × 1 3/8″	7/16″	7 3/4″	7092T14	$1.79	$1.43
0.006″ Stainless	3/8″ × 2 7/8″	5/8″	8 5/8″	7206T5	2.40	1.96
0.006″ Brass	5/16″ × 1 3/8″	7/16″	7 3/4″	7327T21	1.76	1.40
0.006″ Bronze	5/16″ × 1 3/8″	7/16″	7 3/4″	7327T22	1.91	1.52
0.008″ Aluminum	3/8″ × 2 7/8″	1/2″	8 5/8″	7206T6	2.51	1.94
0.012″ Nylon	5/16″ × 1 3/8″	7/16″	7 3/4″	7327T23	1.91	1.52
Horsehair	5/16″ × 1 3/8″	7/16″	7 3/4″	71885T71	2.11	1.77
Horsehair	3/8″ × 1 3/4″	1/2″	7″	7235T2 ♦	2.89	2.25
Horsehair	1/2″ × 4 3/4″	3/4″	10 3/16″	71885T77 ♦	13.19	11.04
Hog Bristle	5/16″ × 1 3/8″	7/16″	7 3/4″	71885T72	2.31	1.93
Hog Bristle	7/8″ × 2 1/8″	3/4″	8 3/8″	71885T74	13.19	11.05
(B) Brushes with Curved Polypropylene Handles						
0.006″ Stainless	5/16″ × 1 3/8″	7/16″	7 1/4″	7092T18	1.72	1.37
0.005″ Brass	1/2″ × 1 1/8″	1/2″	6 1/8″	7373T11 ♦	2.43	1.88
0.006″ Brass	5/16″ × 1 3/8″	7/16″	7 1/4″	7092T15	1.69	1.35
0.008″ Brass	5/16″ × 1 5/8″	5/8″	7 1/4″	7206T3	2.00	1.59
0.006″ Bronze	5/16″ × 1 3/8″	7/16″	7 3/16″	7092T17	1.79	1.43
0.016″ Nylon	5/16″ × 1 3/8″	7/16″	7 1/4″	7092T16	1.59	1.27
0.018″ Nylon	3/8″ × 3 1/4″	5/8″	8 1/2″	7206T11	4.48	3.67
Horsehair	5/16″ × 1 3/8″	1″	7 3/16″	71885T76	2.38	2.01
(C) Hand-Laced Brushes with Curved Wood Handles						
0.003″ Stainless	1/8″ × 1 7/16″	7/16″	7 3/4″	4800A75	13.37	10.70
0.003″ Stainless	5/16″ × 1 3/8″	7/16″	7 3/4″	71885T81	9.61	8.05
0.003″ Stainless	5/16″ × 1 3/8″	7/16″	14″	4800A78	12.54	10.03
0.003″ Stainless	3/8″ × 1 3/8″	7/16″	7 3/4″	4800A76	11.46	9.17
0.003″ Stainless	3/4″ × 1 1/2″	3/4″	8 1/4″	7251T97	15.26	11.87
0.006″ Stainless	1/8″ × 1 7/16″	7/16″	7 3/4″	4800A32	11.60	9.28
0.006″ Stainless	1/4″ × 1 3/8″	7/16″	7 3/4″	4800A42	9.80	7.84
0.006″ Stainless	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A52	5.69	4.55
0.006″ Stainless	5/16″ × 1 3/8″	7/16″	14″	4800A62	9.71	7.77
0.003″ Brass	1/8″ × 1 3/8″	7/16″	7 3/4″	4800A81	13.37	10.70
0.003″ Brass	1/4″ × 1 3/8″	7/16″	7 3/4″	4800A82	11.43	9.14
0.003″ Brass	1/4″ × 1 3/8″	7/16″	14″	4800A84	12.54	10.03
0.003″ Brass	5/16″ × 1 3/8″	7/16″	7 3/4″	71885T73	9.08	7.61
0.006″ Brass	1/8″ × 1 7/16″	7/16″	7 3/4″	4800A33	11.60	9.28
0.006″ Brass	1/4″ × 1 3/8″	7/16″	7 3/4″	4800A43	9.80	7.84
0.006″ Brass	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A53	5.69	4.55
0.006″ Brass	5/16″ × 1 3/8″	7/16″	14″	4800A63	9.71	7.77
0.006″ Bronze	1/8″ × 1 7/16″	7/16″	7 3/4″	4800A34	11.60	9.28
0.006″ Bronze	1/4″ × 1 3/8″	7/16″	7 3/4″	4800A44	9.80	7.84
0.006″ Bronze	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A54	5.69	4.55
0.006″ Bronze	5/16″ × 1 3/8″	7/16″	14″	4800A64	9.71	7.77
0.012″ Nylon	1/8″ × 1 7/16″	7/16″	7 3/4″	4800A39	11.60	9.28
0.012″ Nylon	1/4″ × 1 3/8″	7/16″	7 3/4″	4800A49	9.80	7.84
0.018″ Nylon	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A59	5.00	4.00
0.018″ Nylon	5/16″ × 1 3/8″	7/16″	14″	4800A69	9.23	7.38
(C) Hand-Laced Brushes with Curved Wood Handles (Cont.)						
Horsehair	1/8″ × 1 7/16″	7/16″	7 3/4″	4800A36	$11.60	$9.28
Horsehair	1/4″ × 1 3/8″	7/16″	7 3/4″	4800A46	9.80	7.84
Horsehair	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A56	5.00	4.00
Hog Bristle	1/8″ × 1 7/16″	7/16″	7 3/4″	4800A37	11.60	9.28
Hog Bristle	3/16″ × 1 3/8″	7/16″	7 3/4″	4800A47	9.80	7.84
Hog Bristle	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A57	5.14	4.11
(D) Hand-Laced Brushes with Bent Wood Handles						
0.006″ Stainless	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A72	10.31	8.25
0.006″ Brass	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A73	10.31	8.25
0.006″ Bronze	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A74	10.31	8.25
0.018″ Nylon	5/16″ × 1 3/8″	7/16″	7 3/4″	4800A79	10.31	8.25
(E) Hand-Laced Brushes with Curved Aluminum Handles						
0.003″ Stainless	1/16″ × 1 3/16″	7/16″	6 7/16″	4740A41	13.51	10.81
0.003″ Stainless	1/4″ × 1 3/16″	7/16″	6 7/16″	4740A43	17.30	13.84
0.003″ Stainless	5/16″ × 1 3/16″	7/16″	6 7/16″	4740A45	23.65	18.92
0.003″ Brass	1/16″ × 1 3/16″	7/16″	6 7/16″	4740A47	13.51	10.81
0.003″ Brass	1/4″ × 1 3/16″	7/16″	6 7/16″	4740A49	17.30	13.84
0.003″ Brass	5/16″ × 1 3/16″	7/16″	6 7/16″	4740A52	23.65	18.92
Horsehair	1/8″ × 1 3/16″	7/16″	6 7/16″	4740A54	13.30	10.64
Horsehair	1/4″ × 1 3/16″	7/16″	6 7/16″	4740A56	17.30	13.84
Horsehair	5/16″ × 1 3/16″	7/16″	6 7/16″	4740A58	22.54	18.03
Hog Bristle	1/16″ × 1 3/16″	7/16″	6 7/16″	4740A61	13.30	10.64
Hog Bristle	1/4″ × 1 3/16″	7/16″	6 7/16″	4740A63	17.30	13.84
Hog Bristle	5/16″ × 1 3/16″	7/16″	6 7/16″	4740A65	22.54	18.03
(F) Hand-Laced Acetal Handles						
0.003″ Stainless	1/8″ × 1 1/4″	7/16″	6 1/2″	7448T65	7.19	5.75
0.003″ Stainless	3/16″ × 1 1/4″	7/16″	6 1/2″	7448T66	10.73	8.58
0.003″ Stainless	1/4″ × 1 1/4″	7/16″	6 1/2″	7448T67	15.30	12.24
0.012″ Nylon	1/8″ × 1 1/4″	7/16″	6 1/2″	7448T61	7.05	5.64
0.012″ Nylon	3/16″ × 1 1/4″	7/16″	6 1/2″	7448T62	8.43	6.75
0.012″ Nylon	1/4″ × 1 1/4″	7/16″	6 1/2″	7448T63	11.49	9.19
(G) Hand-Laced Brushes with Curved Acetal Handles						
0.008″ Titanium	3/16″ × 1 3/16″	7/16″	6 1/4″	7416T11	28.70	24.43
0.008″ Titanium	1/4″ × 1 3/16″	7/16″	6 1/4″	7416T12	44.69	38.02
0.008″ Titanium	5/16″ × 1 3/16″	7/16″	6 1/4″	7416T13	59.00	50.22
(H) Two-in-One Brushes with Polypropylene Handles						
0.006″ SS ★	5/16″ × 1 3/8″	7/16″	7 1/4″	44255A25	3.39	2.90
0.006″ Brass ★	5/16″ × 1 3/8″	7/16″	7 1/4″	44255A15	3.39	2.90
0.006″ Bronze ★	5/16″ × 1 3/8″	7/16″	7 1/4″	44255A45	3.39	2.90
0.006″ SS/Brass	5/16″ × 1 3/8″	7/16″	7 1/4″	44255A35	3.39	2.90
(J) Wood Handles						
Horsehair	5/16″ × 13/16″	1/2″	5 7/16″	71885T79	3.23	2.70
Horsehair	3/8″ × 1 3/4″	1/2″	5 7/16″	71885T86	13.40	11.32
Hog Bristle	5/16″ × 13/16″	1/2″	5 7/16″	71885T78	3.48	2.91
Hog Bristle	3/8″ × 1 3/4″	1/2″	5 7/16″	71885T84	13.40	11.32

■ Stainless steel bristles (SS) are Type 302/304. ♦ Handle is straight. ★ Bristles on second brush face are 0.016″ dia. nylon.

(Continued on following page)

For information about hand brushes and bristle materials, see page 2709.

Small Size Hand Brushes *(Continued from previous page)*

K ***Flat Brushes with Steel Handles—*** Coarse bristles make these brushes perfect for brushing hot metal and for removing rust, paint, dirt, and weld flux. Bristles are crimped into the handle.

L ***Round Clean Room Brushes with Acetal Handles—*** Nylon bristles are held in the brush with a high-temperature epoxy. Bristles won't fall out even when sterilized in an autoclave. Max. temperature is 180° F.

M ***Pencil-Style Oval Brushes with Stainless Steel Handles—*** Handles are Type 302/304 stainless steel. *Nylon* brushes are great for wet cleaning and scrubbing jobs. *Horsehair, hog bristle,* and *goat hair* brushes can be used in wet and dry static-sensitive environments.

N&P ***Flat and Angled-Head Brushes with Acetal Handles—*** The best choice for tight spots. Bristles are clamped into the end of the brush.

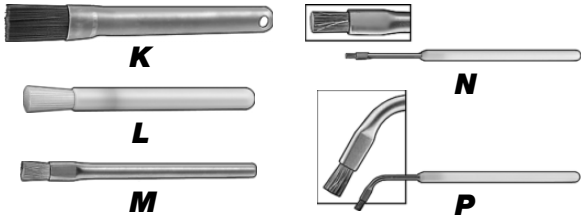

Bristle Dia. and Type■	Brush Face, Wd.×Thick.	Bristle Lg.	O'all Lg.		1-11	12-Up
(K) Flat Brushes with Steel Handles						
0.014″ Steel	1″ ×1/8″	1 5/8″	8 1/2″	7197T5	$7.66	$6.13
0.012″ Stainless	1″ ×1/8″	1 5/8″	8 1/2″	7197T6	11.40	9.12
(L) Round Clean Room Brushes with Acetal Handles						
0.008″ Nylon	3/16″ Dia.	3/8″	4 7/8″	7265T31	7.13	5.70
0.008″ Nylon	1/4″ Dia.	1/2″	5″	7265T32	8.22	6.58
0.008″ Nylon	3/8″ Dia.	3/4″	5 1/4″	7265T33	9.81	7.84
0.008″ Nylon	1/2″ Dia.	1″	5 1/2″	7265T34	12.22	9.78
(M) Pencil-Style Oval Brushes with Stainless Steel Handles						
0.003″ Stainless	1/8″ ×1/16″	1/8″	3 5/8″	7248T11	7.86	6.26
0.003″ Stainless	5/16″ ×3/16″	3/8″	5 1/8″	7248T13	9.86	7.85
0.003″ Brass	1/8″ ×1/16″	1/8″	3 5/8″	7248T15	7.86	6.26
0.003″ Brass	5/16″ ×3/16″	3/8″	5 1/8″	7248T17	9.86	7.85
0.003″ Nylon	1/8″ ×1/16″	1/8″	3 5/8″	7248T32	7.86	6.26

■ Stainless steel bristles are Type 302/304.

Bristle Dia. and Type■	Brush Face, Wd.×Thick.	Bristle Lg.	O'all Lg.		1-11	12-Up
(M) Pencil-Style Oval Brushes with Stainless Steel Handles (Cont.)						
0.003″ Nylon	5/16″ ×3/16″	3/8″	5 1/8″	7248T34	$9.86	$7.85
Horsehair	1/8″ ×1/16″	1/8″	3 5/8″	7248T19	7.86	6.26
Horsehair	5/16″ ×3/16″	3/8″	5 1/8″	7248T22	9.86	7.85
Goat Hair	1/8″ ×1/16″	1/8″	3 5/8″	33335K5	7.28	6.47
Goat Hair	5/16″ ×3/16″	3/8″	5 1/8″	7248T29	9.86	7.85
Hog Bristle	1/8″ ×1/16″	1/8″	3 5/8″	7248T24	7.86	6.26
Hog Bristle	5/16″ ×3/16″	3/8″	5 1/8″	7248T26	9.86	7.85
(N) Flat Brushes with Acetal Handles						
0.003″ Stainless	1/8″ ×1/16″	3/16″	5 3/4″	33335K2	12.50	11.11
0.003″ Nylon	1/8″ ×1/16″	3/16″	5 3/4″	33335K1	12.50	11.11
(P) Flat Angled-Head Brushes with Acetal Handles						
0.003″ Stainless	1/8″ ×1/16″	3/16″	5 1/2″	33335K4	13.12	11.67
0.003″ Nylon	1/8″ ×1/16″	3/16″	5 1/2″	33335K3	13.12	11.67

Rigid-Bristle Hand Brushes

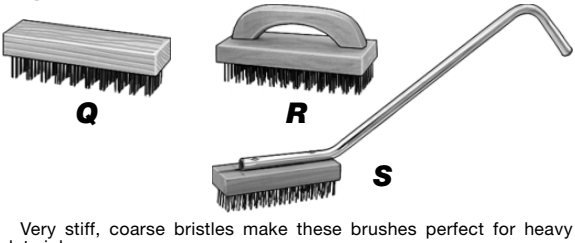

Very stiff, coarse bristles make these brushes perfect for heavy duty jobs.

Styles Q&S remove paint, rust, and scale. ***Style R*** works well on rust and scale, but is not recommended for paint removal. Has an arched handle for a comfortable grip. ***Style S*** has a 20 1/2″ long, tubular metal handle for reaching tight spots.

	Bristle Dia. and Type	Brush Face, Wd.×Lg.	Bristle Lg.	O'all Lg.		
Q	0.014″ Steel	1 3/4″ ×6 1/2″	1 3/4″	7 1/4″	7192T3	$6.30
Q	0.017″ Steel	2 1/8″ ×7″	1 1/4″	7 3/4″	7192T1	11.04
R	0.017″ Steel	3 3/16″ ×8 1/2″	1 1/4″	9 1/4″	7192T5	22.81
S	0.014″ Steel	1 3/4″ ×6 1/2″	1 3/4″	7 3/16″	7144T57	42.67
S	0.017″ Steel	2 1/8″ ×7 1/8″	1 1/4″	7 9/16″	7144T59	49.01

Flexible-Bristle Hand Brushes

Trust these brushes to clean delicate parts and surfaces. They have extra-fine, flexible bristles that won't leave scratches. ***Stainless*** steel bristles are Type 302/304.

Bristle Dia. and Type	Brush Face, Wd.×Lg.	Bristle Lg.	O'all Lg.		
0.003″ Stainless	1 7/8″ ×3 1/2″	3/4″	4 1/4″	44155A64	$42.77
0.005″ Stainless	1 7/8″ ×3 1/2″	3/4″	4 1/4″	44155A65	23.32
0.003″ Brass	1 7/8″ ×3 1/2″	3/4″	4 1/4″	44155A61	21.55
0.005″ Brass	1 7/8″ ×3 1/2″	3/4″	4 1/4″	44155A62	12.82
0.005″ Brass	2 1/4″ ×5 7/8″	3/4″	6 1/2″	44155A63	26.27
0.006″ Brass/Horsehair▲	1 15/16″ ×3 5/8″	3/4″	4 1/4″	44155A81	19.30
0.012″ Nylon	1 7/8″ ×3 1/2″	3/4″	4 1/4″	44155A71	11.12
0.012″ Nylon	1 7/8″ ×5 1/2″	1″	6″	44155A72	13.55
Horsehair	1 7/8″ ×3 1/2″	3/4″	4 1/4″	44155A66	8.97
Horsehair	1 7/8″ ×6 5/8″	1/4″	7 1/8″	44155A82	18.77
Horsehair	1 7/8″ ×6 5/8″	3/4″	7 1/8″	44155A84	17.82
Horsehair	1 7/8″ ×5 1/2″	1″	6″	44155A67	17.93
Hog Bristle	1 7/8″ ×3 1/2″	3/4″	4 1/4″	44155A68	14.25
Hog Bristle	1 7/8″ ×6 5/8″	1/4″	7 1/8″	44155A86	26.35
Hog Bristle	1 7/8″ ×6 5/8″	3/4″	7 1/8″	44155A88	23.70
Hog Bristle	1 7/8″ ×5 1/2″	1″	6″	44155A69	18.90

▲ Has brass bristles with an outer row of horsehair.

Surface-Conforming Rigid-Bristle Hand Brush

With a flexible polyethylene handle, this brush conforms to round and uneven surfaces of pipe, moldings, and machinery. Its tough steel bristles quickly remove paint, rust, and scale.

Bristle Dia. and Type	Brush Face, Wd.×Lg.	Bristle Lg.	O'all Lg.		
0.014″ Steel	2 9/16″ ×6 5/8″	1 1/4″	7″	4414A16	$10.12

Chip Brushes

Steel Brushes

T ***Flat All-Metal Brushes—*** Have a smooth, wire loop handle and 0.012″ crimped bristles. 7196T14 has carbon steel bristles; 7196T15 has Type 302 stainless steel bristles.

U ***Round All-Metal Brushes—*** Have a twisted-wire loop handle and crimped 0.005″ Type 302 stainless steel bristles.

V ***Rectangular Brush with Wood Handle—*** Has 0.008″ non-crimped carbon steel bristles staple-set in a 1 1/8″×2 3/4″ wood block.

	Brush Face, Wd.×Thick.	Bristle Lg.	O'all Lg.		1-11	12-Up
T	1 1/4″ ×1/8″	1 5/8″	5 1/2″	7196T14	$2.36	$1.90
T	1 1/4″ ×1/8″	1 5/8″	5 1/2″	7196T15	3.90	3.06
U	7/8″ Dia.	1 1/2″	9″	7273T22	5.71	4.57
U	7/8″ Dia.	1 1/2″	18″	7273T21	6.00	4.80
V	2 3/8″ ×7/8″	2 3/8″	8 5/8″	7091T12	6.78	5.77

Polypropylene Brushes

W ***Flat Chip and Oil Brushes—*** Perfect for removing small chips and for lubricating parts. Bristle dia. is 0.008″. Bristles are glued to a plastic handle.

X ***T-Slot Chip Brush—*** A T-slot scraper clears off the hard-to-reach debris, maintaining bristle strength for clearing large chips. Bristle dia. is 0.020″. Brush has an angled wood handle.

	Brush Face, Wd.×Thick.	Bristle Lg.	O'all Lg.		1-11	12-Up
W	1″ ×1/4″	1 13/16″	6 13/16″	7035T3	$1.90	$1.51
W	1 1/2″ ×1/4″	1 13/16″	7″	7035T4	2.35	1.88
W	2″ ×1/4″	1 13/16″	7 1/4″	7035T5	2.35	1.88
					Each	
X	5 1/2″ ×1 1/16″	2″	9 1/2″	71855T21	$11.79	

Applicator & Parts-Washing Brushes

For information about bristle materials, see page 2709.

Applicator Brushes

A

B

C&H

D

E

F

G

J

Small size makes these brushes ideal for applying flux and adhesives to small parts and pipes. Also used for dusting, cleaning, and work involving heat.

A-C ***Horsehair Brushes with Steel Handles***—Thick horsehair bristles provide excellent resistance to deterioration from heat and cleaning solvents. *Style A* is our most popular style. So economical, you can throw them away after each use. Also known as acid brushes. *Styles B* and *C* are good for use with oil. *Style B* is more densely filled than *Style A* and has a seamless handle. *Style C* has bristles on both ends.

D ***Horsehair Brush with Wood Handle***—Also known as a dope brush. Same as the horsehair brushes above, except with a wood handle.

E ***Nylon Brushes with Acetal Handles***—Resist most oils and non-acidic chemicals. Bristles are white nylon.

F ***Fiberglass Brush with Tin Handle***—More resistant to heat than horsehair. Bristles extend the entire length of the hollow handle and can be pulled out to any bristle length. Trim bristles as they wear.

G&H ***Hog Bristle Brushes with Zinc-Plated Steel Handles***—Made of the stiffest natural material, these brushes are good for sticky, crusty materials and viscous fluids. *Style G* has a seamless handle. *Style H* has bristles on both ends.

J ***Tampico Brushes with Wood Handles***—Ferrule is metal.

	Brush Face, Wd. × Thick.	Bristle Lg.	O'all Lg.	Trade No.	Pkg. Qty.		Pkg.
Horsehair Brushes with Steel Handles							
A	1/4″ × 1/8″	1/2″	3 1/4″	00	48	7237T81	$5.86
A	1/4″ × 3/16″	5/8″	6″	0	48	7237T82	6.37
A	3/8″ × 3/16″	3/4″	6″	1	48	7237T83	5.96
A	1/2″ × 1/4″	13/16″	6 1/16″	2	48	7237T84	7.87
A	9/16″ × 5/16″	13/16″	6 1/8″	3	48	7237T3	10.21
							Each
B	3/8″ × 1/4″	3/4″	5 1/4″	—	—	7431T91	$4.33
C	3/8″ × 3/16″	♥	4 15/16″	—	—	7431T92	6.32
Horsehair Brush with Wood Handle							
D	3/4″ × 3/8″	1″	7″	—	—	7116T14	1.08

	Brush Face, Wd. × Thick.	Bristle Lg.	O'all Lg.		Each 1-11	Each 12-Up
Nylon Brushes with Acetal Handles						
E	3/16″ Dia.	3/8″	4 7/8″	7465T92	$6.16	$4.88
E	1/4″ Dia.	1/2″	5″	7465T94	6.53	5.17
E	3/8″ Dia.	3/4″	5 1/4″	7465T96	7.84	6.21
E	1/2″ Dia.	1″	5 1/2″	7465T98	10.13	8.01
Fiberglass Brush with Tin Handle						
F	1/2″ × 5/16″	3/4″ ♣	6″	71955T55	2.62	2.23
Hog Bristle Brushes with Zinc-Plated Steel Handles						
G	3/8″ × 5/16″	3/4″	5 1/4″	7431T94	4.43	3.98
H	3/8″ × 3/16″	♥	4 15/16″	7431T95	6.63	5.96
Tampico Brushes with Wood Handles						
J	2″ × 1/2″	2 1/2″	9 1/4″	7804T3	7.66	6.12
J	3″ × 9/16″	2 5/8″	10″	7804T5	9.09	7.28

♥ Has 1/4″ long bristles on one end and 3/16″ long chisel-point bristles on the other. ♣ Exposed bristle length.

Refillable Pencil-Style Brushes

The slim-line design of these brushes allows them to go where others won't. As bristles wear, simply turn the top of the handle to expose more bristle. Handle is plastic.

Brush dia. is 3/16″. Overall bristle length is 1 1/4″. Overall length is 4 1/2″.

Bristle Dia. and Type	Brushes		Refills 1-23	Refills 24-Up
0.0047″ Steel	3430K48	$7.39	3430K68	$1.23	$1.03
0.0019″ Brass	3430K46	7.23	3430K66	1.11	.94
0.0098″ Nylon	3430K44	6.07	3430K64	.71	.60
0.0047″ Fiberglass	3430K42	5.62	3430K62	.72	.60

Parts-Washing Brushes

K

L, M&P

N

Q

R

S

T

Designed for use with liquid parts cleaning solutions. For parts washers, see pages 2719-2720.

K-P ***Standard Brushes***

(K) Steel Brush—Equally good for cleaning parts and machines. Bristles are crimped. Ferrule is polypropylene.

(L&M) Polypropylene Brushes—There's less dipping and more cleaning with these semi-blunt brushes because the crimped bristles hold fluid better. *Style M* has an extra-long handle for extended reach.

(N) Hog Bristle Brush—Has soft bristles and semi-blunt point for cleaning delicate parts.

(P) Tampico Brush—Has a semi-blunt tip for general purpose cleaning.

Q-T ***Flow-Through Brushes***

(Q) Straight Brush—Bristles are crimped. Handle is hollow, made of plastic, and has a slip-on connection to fit any 1/2″ dia. parts-washer spigot. Furnished with 12″ of clear plastic tubing.

(R) Small Straight Brushes—About the size of a ball-point pen. Handle is 3/8″ dia. and can be inserted into a rubber parts washing hose. Brushes have micro-sized nylon tubes intermingled with the bristles that allow liquid to flow through the brush.

(S&T) Comfort-Grip Brushes—A push-button control lets you regulate the flow of cleaning fluid. Handle has a nonslip grip and a special design to reduce wrist fatigue. Metal parts are stainless steel and brass. Furnished with a 2-ft. nitrile rubber hose for connecting to a 1/2″-19/32″ OD fluid supply connection.

Bristle Dia. and Type	Brush Dia.	Bristle Lg.	O'all Lg.	Handle Material		1-11	12-Up
Standard Brushes							
K 0.008″ Steel	13/16″	1 1/8″	6 5/8″	Polypropylene	7434T83	$5.00	$3.98
L 0.018″ Polypropylene	1″	2 1/2″	11″	Polypropylene	7191T1	3.12	2.66
M 0.020″ Polypropylene	1″	2 1/2″	16″	Wood	7191T2	5.03	4.01
N Hog Bristle	1 1/16″	2 1/4″	10 1/2″	Polypropylene	74825T25	4.05	3.45
P Tampico	1 1/4″	2 7/8″	11″	Polypropylene	7226T2	3.40	2.89
Flow-Through Brushes							
Q 0.015″ Nylon	1″	2 7/8″	9 3/4″	Plastic	7039T12	15.87	13.41
R 0.010″ Stainless Steel	3/8″	1/2″	5″	Stainless Steel	7115T57	14.66	____
R 0.010″ Brass	3/8″	1/2″	5″	Stainless Steel	7115T55	14.66	____
R 0.018″ Nylon	3/8″	1/2″	5″	Stainless Steel	7115T53	14.66	____
S 0.016″ Polyester	1 1/8″	2 1/2″	11 1/4″	Polypropylene	7107T4	34.89	____
T 0.016″ Polyester	2 3/8″ Wd. × 5/8″ Thick.	2 1/2″	10 1/2″	Polypropylene	7107T6	46.25	____

For abrasive blasting media, see page 2717.

About Abrasive Blasting

Effective for cleaning, finishing, and deburring most parts.

Suction-Feed Blasters— Use compressed air to create suction that draws or siphons blasting media into a blast gun and propels it onto the part at high speed. They allow continuous blasting without stopping for blasting media refills.

Pressure-Feed Blasters— Use compressed air and a pressurized tank to push the blasting media through the nozzle of the gun. It's faster and more efficient than suction feed. Ideal for heavier abrasive, blind holes, and deep pockets. However, units must be stopped periodically to allow the pressure tank to recharge.

Abrasive Blasting Cabinets with Dust Collector

Our most popular blasting cabinets, these suction-feed blasting units include a dust collector for removing dust from inside the cabinet. Use them with most types of dry abrasive blasting media. Not recommended for silica sand, steel shot and grit, baking soda, and plastic grit.

Cabinets have a foot-operated blast gun with a tungsten carbide nozzle and air jet. They are 14- and 11-ga. welded steel with an easy-to-change viewing window, a steel-screen work table, exterior fluorescent lighting, neoprene work gloves, and a bottom hopper door for media removal. A safety switch shuts off airflow when the cabinet door is opened. Guarded air inlets and gasketing on the doors, window, and flip-top opening keep abrasives inside the cabinet. Furnished with a blast hose, 3/8″ ID air hose, air regulator and gauge, and 7-ft. power cord with three-prong plug. Air inlet: 3/8″ NPT female. Air pressure: 10-120 psi. Air volume @ 80 psi: 25 cfm (12 cfm for 3283K5). Operate on 110 VAC, 60 Hz.

Top- and Side-Opening Cabinets— Have top-opening and side-access doors; 3283K9 has two side-opening doors.

Flip-Top Cabinets with Side Door— Top opens 85°-90° to accommodate large parts and has a lift-assistance mechanism for effortless opening and closing. All cabinets have a side-access door.

Accessories— *Turntable* rotates manually for easy access to parts. *Gun mount bracket* allows hands-free gun operation.

Top and Side Opening

Blasting Cabinets

Interior Size, Ht.×Wd.×Dp.	Overall Size, Ht.×Wd.×Dp.	Top Opening, Ht.×Wd.	Side Opening, Ht.×Wd.	Window Size, Ht.×Wd.	Dust Collector	Parts Key		
Top-Opening Cabinet								
23″×30″×24″	65″×33″×25″	13″×30″	None	11½″×12″	100 cfm	A	3283K5	$1,137.95
Top- and Side-Opening Cabinets								
23″×36″×24″	65″×39″×25″	13″×36″	11″×17″	12″ ×24″	100 cfm	B	3283K1	1,304.85
23″×48″×24″	65″×51″×25″	13″×48″	11″×17″	12″ ×24″	100 cfm	C	3283K9	1,481.62
Flip-Top Cabinets with Side Door								
23″×42″×24″	65″×45″×54″	24″×42″	11″×17″	12″ ×24″	100 cfm	D	3463K24	1,678.28
30″×40″×40″	72″×43″×77″	40″×40″	20″×30″	12″ ×24″	100 cfm	E	3463K26	2,286.59
40″×48″×48″	84″×51″×95″	48″×48″	20″×30″	12″ ×24″	100 cfm	F	3463K27	2,580.88
40″×60″×48″	84″×63″×95″	48″×60″	20″×30″	12″ ×24″	400 cfm	G	3463K28	4,038.60

Accessories and Replacement Parts— Match parts key letter below with corresponding parts key letter in the table above.

	Parts Key		Each
Accessories			
Turntable (20″ dia.; 2,000-lb. cap.)	A,B,C,D,E,F,G	3283K21	$331.51
Gun Mount Bracket (7¾″-12¾″ Lg.)	A,B,C,D,E,F,G	3283K22	33.48
Replacement Parts			
Dust Collector (100 cfm)	A,B,C,D,E,F	3283K23	335.17
Tungsten Carbide Nozzle (1/4″ ID)	A	3283K71	26.92
Tungsten Carbide Nozzle (5/16″ ID)	B,C,D,E,F,G	3283K72	29.55
Air Jet (1/8″ ID)	A	3283K68	12.42
Air Jet (5/32″ ID)	B,C,D	3283K73	12.42
Air Jet (5/32″ ID)	E,F,G	3463K84	19.90
Filter Bag	A,B,C,D,E,F	3283K86	32.85
Filter Foam	A,B,C,D,E,F	3283K25	8.89
Filter Cartridge	G	3463K41	67.32
Complete 12 cfm Gun Assembly	A	3283K69	65.00
Complete 25 cfm Gun Assembly	B,C,D	3283K89■	75.00
Complete 25 cfm Gun Assembly	E,F,G	3463K82■	110.82
Gun Body	B,C,D,E	3283K19	45.10
Acrylic Window	A	3283K64	15.16
Acrylic Window	B,C,D,E,F,G	3283K75	16.24
Foot Pedal Assembly	A,B,C,D,E,F,G	3283K17	68.55

■ Has pistol grip.

	Parts Key		Each
Replacement Parts (Cont.)			
Motor Assembly	A,B,C,D,E,F	3283K78	$127.84
Lampshield	A	3283K67	12.44
Lampshield	B,C,D,E,F,G	3283K77	15.67
3-Way Safety Switch Valve	A,B,C,D,E,F,G	3283K66	46.80
Siphon Tube	A,B,C,D,E,F,G	3283K15	21.67
5-ft. Hose Assembly	A,B,C,D,E,F	3283K14	15.56
5-ft. Clear Abrasive Hose	A,B,C,D,E,F,G	3283K18	10.20
Window Underlay (24″×120″ Roll)	A,B,C,D,E,F,G	3283K76	6.86
			Pkg.
Window Underlay (12″×24″ Sheet)	A,B,C,D,E,F,G	3283K13★	$15.56
Window Underlay (12″×24″ Sheet)	A,B,C,D,E,F,G	3283K53♣	8.38
			Pair
Gloves for 6″ Dia. Hole (24″ Lg.)	A,B,C,D	3283K74	$25.28
Gloves for 7″ Dia. Hole (33″ Lg.)	E,F,G	3463K56	37.02
			Per Ft.
Arm Hole Gasket	A,B,C,D,E,F,G	3283K12	$2.78
Door Gasket (1/2″ Thick.×1″ Wd.)	A,B,C,D,E,F,G	3283K45	2.78
Clear Abrasive Hose (5/8″ ID)	A,B,C,D,E,F,G	5233K69	1.10

★ Package quantity is 20. ♣ Package quantity is 10.

Bench-Top Abrasive Blasting Cabinets

These suction-feed blasting cabinets fit on your work bench and have a front opening door, a hopper door for removing media, a steel-screen work table, an easy-to-change window, exterior fluorescent lighting, and neoprene work gloves. Include a blast hose, 3/8″ ID air hose, and 7-ft. power cord with three-prong plug. Both are made of 14- and 11-ga. welded steel and recirculate blasting media. Use with most types of media. Not recommended for steel shot or grit, baking soda, plastic grit, and silica sand. Air pressure: 10-120 psi. Air volume @ 80 psi: 12 cfm. Operate on 110 VAC, 60 Hz.

Standard Cabinet— Has a trigger-operated blast gun with 1/4″ ID ceramic nozzle and 1/8″ ID steel air jet, and an adjustable steel stand (adjusts on 2″ centers). For dust collection, hook up a standard shop vacuum to the cabinet's 2½″ dia. intake port or use the optional shop-vacuum style dust collector (sold separately below).

Deluxe Cabinet— Includes a 55 cfm shop-vacuum style dust collector that removes dust from the interior of the cabinet. Also has a foot-operated blast gun with 1/4″ ID tungsten carbide nozzle and 1/8″ ID tungsten carbide air jet, an air regulator and gauge, and a welded-steel stand. A safety switch shuts off airflow when the cabinet door is opened. Includes 10 lbs. of glass bead media (mesh size 70-140). Air inlet: 3/8″ NPT female.

Deluxe

Blasting Cabinets

	Interior Size	Overall Size	Opening Size	Window Size		
Standard	23″ Ht.×23″ Wd.×19″ Dp.	40″ Ht.×24″ Wd.×20″ Dp.	13″ Ht.×24″ Wd.	11½″ Ht.×12″ Wd.	5527K27	$652.97
Deluxe	16″ Ht.×18″ Wd.×16″ Dp.	33″ Ht.×19″ Wd.×17″ Dp.	12″ Ht.×18″ Wd.	6″ Ht. ×12″ Wd.	3464K11	661.04

Accessories and Replacement Parts

	Standard Cabinet	Each	Deluxe Cabinet	Each
Reusable Cloth Filter	—	—	3464K53	$18.09
Fluorescent Bulb	3464K55	$8.67	3464K55	8.67
Viewing Window	3283K64	15.16	3464K57	7.91
Nozzle (1/4″ ID)	5527K81	19.81	3283K71	26.92
Complete Gun	5527K82	75.00	3283K69	65.00
Dust Collector	3464K71	121.15	3464K71	121.15

	Standard Cabinet	Each	Deluxe Cabinet	Each
Light Box Assembly	3464K21	$99.75	3464K21	$99.75
				Pkg.
Disposable Paper Filters (Pkg. of 3)	—	—	6679T62	$8.89
		Pair		**Pair**
Work Gloves	3283K74	$25.28	5415T465	$8.15

For information about abrasive blasting, see page 2713. For abrasive blasting media, see page 2717.

Dust Collector/Separator for Abrasive Blasting Cabinets

Prolong media life, increase blasting effectiveness, and improve visibility within your suction-feed blasting cabinet by extracting dust from your blasting media. This collector/separator has a two-stage filter to remove up to 99% of the dust, while a separator collects the reusable media. Works with all blasting media grits. A 4″ cleanout drain allows for easy removal of debris and spent media. Airflow is adjustable. Furnished with a 1½″ Dia.×6′ Lg. hose assembly that includes a 2¼″ cuff, 2½″ OD fitting for larger cabinets, and 2″ collar for smaller cabinets. Powered by a 1.3-hp motor.

Use collector/separator with any stationary abrasive dry-blasting cabinet that has a 2¼″ or 2½″ dia. intake port and an interior size up to 40″ Ht.×40″ Wd.×30″ Dp. Made of one-piece, molded, corrosion-resistant polyethylene. Operates on 120 VAC, 60 Hz and includes 9-ft. power cord with three-prong plug. Overall size is 47″ Ht.×15″ Dia.

		Each
Dust Collector/Separator	31205K21	$1,092.20
Repl. Air Filter	31205K23	103.82
Repl. Foam Silencer	31205K24	15.49
Repl. 120 VAC Electric Motor	31205K25	180.00
		Set
Repl. Motor Brush Set (2 per set)	31205K26	$13.39

Micro-Blast Abrasive Blasters

A

B

Perfect for cleaning small, delicate, precision parts that could be damaged by larger blasters. These pressure-feed units have an air filter/regulator, foot-operated on/off power control, and 64-oz. capacity tank. Use with all types of media. Air inlet: ¼″ quick-disconnect and barbed fittings. Air pressure: 0-100 psi. Air volume @ 100 psi: 1.75 cfm.

(A) Cabinet Blaster— Includes an impact-resistant resin cabinet, two tanks for 0.002″-0.004″ media, two different media hose sizes, 0.032″ and 0.048″ nozzles with sapphire crystal orifices, fluorescent illuminated viewing area, and nitrile work gloves. Operates on 115 VAC, 60 Hz and has a 6-ft. power cord with three-prong plug.

(B) Portable Blaster— Hooks up to any remote air source. Has a single tank and 0.048″ nozzle with sapphire crystal orifice.

Optional Accessories— *Dust collector* stands up to aluminum-oxide dust. Works with cabinet and portable blasters. Has a foot-operated on/off power control. Connects to blaster with a 2½″ OD hose (included) that expands up to 6 feet long. Operates on 110 VAC/VDC, 60 Hz and includes 6-ft. power cord with three-prong plug. Overall size is 24″ Ht.×20″ Wd.×11″ Dp. *Magnifiers* can be placed over the blaster's window to view small parts. 3″×5″ magnifier has suction cups for easy placement and removal. Use both with cabinet blaster.

	Interior Size, Ht.×Wd.×Dp.	O'all Size, Ht.×Wd.×Dp.	Window Size, Ht.×Wd.		Each
Blasters					
A	11″×19¾″×17¾″	16″ ×20″×18″	12″×16½″	3337K33	$1,397.74
B	—	10¼″× 6″× 8″	—	3337K31	590.91
Optional Accessories					
Dust Collector				3337K36	915.91
4¼″× 5½″ Magnifier for Cabinet Blaster Style A				3337K23	67.76
7″ ×10″ Magnifier for Cabinet Blaster Style A				3337K37	34.09
Optional Precision Nozzles, Carbide Orifice					
0.026″ ID (for 360 grit)				3337K41	31.62
0.036″ ID (for 120-220 grit)				3337K42	31.62
0.059″ ID (for 60-120 grit)				3337K43	31.62
Replacement Parts					
Containers for 0.001″-0.002″ Media				3337K45	81.82
Containers for 0.002″-0.004″ Media				3337K46	81.82
Containers for 0.0044″-0.010″ Media				3337K47	81.82
Dust Collector Bags				3337K76	12.67
Gloves				3337K72 **Pair**	$31.73
Replacement Nozzles, Sapphire Crystal Orifice					**Pair**
0.032″ ID (for 220-360 grit)				3337K64	$33.98
0.048″ ID (for 120-220 grit)				3337K65	33.98

Portable Abrasive Blasters

C D

Also known as suction-feed or siphon sandblasters, these blasters are less expensive than high-velocity pressure-feed units, but operate at slower speeds. They have a 28-ga. steel tank, blast hose (⅜″ Dia.×7-ft. Lg. for Style C; ⅜″ Dia.×10-ft. Lg. for Style D), gun, three steel nozzles (13⁄64″, ¼″, and 5⁄16″ dia.), three air jets (5⁄64″, ⅛″, and 5⁄32″ dia.), hood, and goggles. Air inlet: ¼″ NPT female. Air pressure: 80-125 psi. Air volume @ 80 psi: 7 cfm for 13⁄64″ nozzle, 15 cfm for ¼″ nozzle, and 20 cfm for 5⁄16″ nozzle. Use with all types of blasting media; not recommended for baking soda. For air-supplied hoods, see page 1826.

Style C is free standing with a 50-lb. capacity and a 40-minute blast time. Overall size is 9½″ Dia.×18″ Ht.

3425K11 ..... $137.86

Style D has a two-wheel stand for portability. It has a 90-lb. capacity and a 70- to 80-minute blast time. Overall size is 11¼″ Dia.×28″ Ht.

3425K12 ..... $176.64

Replacement ceramic and ***steel nozzles*** fit both blasters, replacing included steel nozzles. ***Replacement air jets*** also fit both blasters.

	Steel		Ceramic	
Replacement Nozzles				
13⁄64″	3425K51	$6.60	3425K54	$8.33
¼″	3425K52	6.60	3425K55	8.33
5⁄16″	3425K53	6.60	3425K56	8.33
Replacement Air Jets				
5⁄64″	3425K57	$4.62		
⅛″	3425K58	4.62		
5⁄32″	3425K59	4.62		

High-Velocity Portable Abrasive Blasters

3268K12

Faster and more aggressive than suction-feed blasters, these units (also known as pressure-feed blasters) blast media at higher velocities to maximize production. All have an ASME certified tank, adjustable abrasive-flow valve, pressure relief valves that meet OSHA requirements, pressure gauge, welded steel frame, rubber tires, blast hose, and blast nozzles (see table below). Air pressure is 80-125 psi. Use them with all types of blasting media; however, not recommended for baking soda.

Blasters with 65-lb. to 250-lb. tank capacities also have a manual pull-up tank closure and soft blast hood with protective cap and rear breather vents. The 600-lb. capacity blaster has an automatic tank closure, heavy canvas blast hood with protective cap and rear breather vents, pressure choke valve, and dual remote blast media valves. For replacement ceramic blast nozzles, see page 2716. For air-supplied hoods, see page 1826.

Blasters with Nozzle Shutoff— Releasing the nozzle control lever shuts off the abrasive flow at the nozzle, while the abrasive hose and tank remain pressurized.

Blasters with Nozzle and Tank Shutoff— Releasing the nozzle control lever shuts off the abrasive flow at the nozzle and the tank and relieves the hose of pressure for added safety.

Cap., lbs.	Tank Size, Dia.×Ht.	Min. cfm @ 80 psi	Included Nozzles, ID (Qty.)	Nozzle Material	Blast Time Per Load	Blast Hose Size, Dia.×Lg.	Air Inlet, NPT Female	Blasters with Nozzle Shutoff		Blasters with Nozzle and Tank Shutoff	
65	12″×17″	7	⅛″ (2), 3⁄32″ (1)	Ceramic	20-30 min.	½″×10 ft.	½″	3268K11	$768.75	3268K21	$1,048.20
110	12″×22″	7	⅛″ (2), 3⁄32″ (1)	Ceramic	35-50 min.	½″×10 ft.	½″	3268K12	836.62	3268K22	1,262.99
150	12″×27″	7	⅛″ (2), 5⁄32″ (1)	Ceramic	45-60 min.	½″×15 ft.	½″	3268K13 ●	837.63	3268K23 ●	1,439.13
250	16″×28″	7	⅛″ (2), 5⁄32″ (3)	Ceramic	1-2 hrs.	½″×25 ft.	½″	3268K14 ●	1,488.56	3268K24 ●	1,910.49
600	24″×39″	15	¼″ (1)	Tungsten Carbide	2-3 hrs.	1″ ×25 ft.	¾″	—	—	3268K25 ●	5,632.96

Replacement Soft Blast Hood for 65-lb. to 250-lb. Tank Cap. 3268K31 $44.92

Replacement Lens for Soft Blast Hood 3268K34 3.76

● Includes a moisture separator for improved media flow.

For information about abrasive blasting, see page 2713. For abrasive blasting media, see page 2717.

Portable Baking Soda Abrasive Blaster

Tough enough to remove difficult soils yet this blaster won't damage surfaces. It removes baked-on carbon, paint, grease, grime, and surface rust and other oxides and can be rinsed with water to remove media residue. Blast time is approximately 30 minutes. Blaster works with compressed air from 40 to 90 psi and has a quick-connect air inlet and pressure relief valve up to 125 psi. Media container and stand are steel. Includes a 5-ft. hose with 5/32″ dia. ceramic nozzle, a water filter to capture moisture in air lines, and a carrying handle.

Cap.	O'all Size		
Abrasive Blaster			
10 lbs.	29″ Ht.×8″ Wd.×12″ Dp.	8851T11	$329.85
Replacement Nozzles and Nozzle Kit			
Nozzle (3/32″ ID×1 1/4″ Lg.)		8851T51	6.12
Nozzle (7/64″ ID×1 1/4″ Lg.)		8851T52	6.12
Nozzle (1/8″ ID×1 1/4″ Lg.)		8851T53	6.12
Nozzle (5/32″ ID×1 1/4″ Lg.)		8851T54	6.12
6-Piece Nozzle Kit		8851T55	37.50

No-Mess Portable Abrasive Spot Blaster

Convenient and efficient, this blaster handles small, precise blasting jobs without a big mess. To operate, push the rubber bellows-style nozzle against the work surface, the abrasive media blasts surface and removes contaminants and is then vacuumed back in to the blaster. Usable media is then separated from dust and debris and recycled. Works with any type of abrasive media.

This high capacity, heavy duty air/electric-operated blaster has an integrated vacuum and filtration system for 99% dust-free work. A 4″ cleanout port allows easy media removal. Includes a gun with 9/32″ ID ceramic nozzle and rubber bellows, two brushes (one for irregular surfaces and one for inside 90° angles), 1 1/2″ Dia.× 20-ft. Lg. blast hose, and 20-ft. power cord with three-prong plug. It has a polyethylene tank and a tubular steel frame with two 8″ wheels. Motor is 1.3 hp and has a silencer that reduces noise below OSHA requirements. Operates on 120 VAC, 60 Hz, 9 amps. Recommended air pressure: 75-150 psi.

Cap., lbs.	O'all Size, Ht.×Wd.	Air Volume		
Abrasive Blaster				
50	56″×20″	8-20 cfm	3443K11	$1,963.64
Replacement Parts				
Complete Blast Gun			3443K33	282.18
Ceramic Nozzle (9/32″ ID, 5/8″ OD, 3 1/2″ Lg.)			3443K32	111.10
Straight Rubber Bellows			3443K35	30.28
Brush for Irregular Surfaces			3443K31	23.46
Brush for Inside 90° Angle Work			3443K34	49.55
Return Nozzle			3443K36	55.10
Air Nozzle			3443K37	7.96
Nozzle Lock			3443K38	7.97
Air Filter			31205K23	103.82

Hand-Held Abrasive Blasters

Excellent for small blasting jobs such as cleaning, etching glass, and removing rust and paint. All blasters include a media container.

Blasters— Both are gravity feed. *Standard* blaster is trigger-operated. Made of impact-resistant ABS plastic. It has a 3/16″ ID ceramic nozzle and 26-oz. polypropylene media container. Air volume @ 125 psi: 12 cfm. Ideal with black beauty grit and may be used with other abrasive media; not recommended for baking soda. *Optional spot blasting kit* includes four rubber cones that conform to various workpiece contours and a collection bag that recovers reusable media. *Pencil-grip* blaster is push-button operated. Designed for precision work on small, delicate parts. Made of plated brass with a plastic handle, it includes a 2-oz. aluminum media container, 0.023″ ID stainless steel nozzle, moisture trap, filter respirator mask, hanger, air hose, and 6 oz. of aluminum oxide media (220 grit). Air volume @ 40 psi: 0.5-1.0 cfm. Use with aluminum oxide media (below) or other abrasive media including baking soda.

Combination Blaster and Sprayers— These lever-operated guns are for blasting as well as for spraying liquids. Operate on a suction feed and are die cast zinc with a steel air jet and a 32-oz. painted steel media container. Air consumption: 6.65 cfm @ 80 psi. Choose 3/16″ ID ceramic or steel nozzle. Can be used with all types of abrasive media including baking soda. Not rated for air volume.

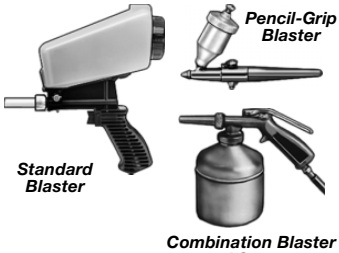

Blasters

	Recommended Media Grit Size	Air Inlet, NPT	Recommended Air Pressure		
Blaster					
Standard	14 and finer	1/4″ female	60-125 psi	31195K11	$64.54
Pencil Grip	220 and finer	1/8″ male	15- 65 psi	3210K11	105.47
Combination Blaster and Sprayer					
Ceramic Nozzle	16-1000	1/4″ female	60-150 psi	3158K41	66.61
Stainless Steel Nozzles (3)	16-1000	1/4″ female	60-150 psi	3158K11	72.08

Accessories and Replacement Parts

For Blasters

Optional Spot Blasting Kit for 31195K11	31195K12	$42.67
Ceramic Nozzle for 31195K11 (3/16″ ID)	31195K13	15.12
6 oz. Aluminum Oxide Media (220 grit) for 3210K11	3210K12	4.39
5 lbs. Aluminum Oxide Media (220 grit) for 3210K11	3210K13	20.65

For Comb. Blaster and Sprayers

Air Jet for 3158K41, 3158K11 (3/32″ ID)	3158K32	$3.89
Ceramic Nozzle for 3158K41 (3/16″ ID)	3158K44	16.67
Steel Nozzle for 3158K11 (3/16″ ID)	3158K31	9.17

Abrasive Blasting Guns

Whether you use them inside a blasting cabinet or outdoors on a job site, these suction-feed guns deliver a consistent, uniform spray pattern for quick surface cleaning and finishing. Guns are cast aluminum and include an air jet to increase air velocity for better suction of media.

Standard gun has a full-length trigger and a 1/4″ brass rod valve stem for durability. A 5/16″ nozzle and 5/32″ air jet (both hardened steel) are included. Air inlet: 1/4″ NPT female. Air pressure: 80-100 psi. Air volume @ 90 psi: 6 cfm for a 3/16″ ID nozzle; 18 cfm for a 5/16″ ID nozzle. Recommended hose size: 3/8″. *Gun kit* comes with a blasting gun, 3/16″ and 5/16″ hardened-steel nozzles, 3/32″ and 5/32″ air jets, blast hose, and 14″ long zinc-plated steel siphon tube for drawing media from a bucket or other container. ***Optional nozzles for standard gun*** are extra thick for long life. *Ceramic* and *tungsten carbide nozzles* are jacketed to prevent breakage.

Heavy duty gun has a built-in 5/8″ OD inlet tube that connects to a suction hose (not included). Includes a tungsten carbide 3/4″ OD×7/16″ ID nozzle and 7/32″ air jet. Air inlet: 1/4″ NPT female. Air pressure: 70-100 psi. Air volume @ 90 psi: 45 cfm.

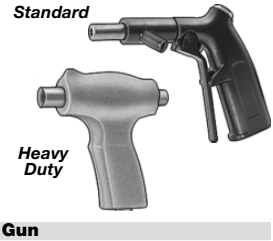

Standard Gun

Gun	3444K11	$71.73
Gun Kit with Siphon Tube	3444K71	82.50
Replacement Nozzle Kit	3444K66 ♦	36.64
Replacement 3/32″ Air Jet	3444K51	11.00
Replacement 5/32″ Air Jet	3444K52	11.00
Replacement Air Jet Seal	3444K67	2.93

♦ Includes nozzle holder, 5/16″ steel nozzle, and 5/32″ air jet.

Optional Nozzles for Standard Gun

Hardened Steel (3/16″ ID)	3444K21	$16.90
Hardened Steel (5/16″ ID)	3444K22	16.90
Ceramic (3/16″ ID)	3444K31	49.74
Ceramic (5/16″ ID)	3444K32	49.74
Tungsten Carbide (3/16″ ID)	3444K41	60.27
Tungsten Carbide (5/16″ ID)	3444K42	60.27

Heavy Duty Gun

Gun	3444K14	$136.73
Replacement 7/16″ ID Nozzle	3444K27	60.91
Replacement 7/32″ Air Jet	3444K28	43.63
5/16″ ID Nozzle (18 cfm @ 90 psi)	3444K35★	65.91
5/32″ Air Jet (18 cfm @ 90 psi)	3444K36★	43.63

★ 3444K35 and 3444K36 must be used together.

For information about abrasive blasting, see page 2713.

Mini Abrasive Blaster Kits

Deluxe Kit

Easily and effectively blast the smallest parts. Kits remove old paint and rust, as well as etch wood and glass. Connect blasters to an air line with the included air hose. Use with an abrasive grit of 220 or finer; aluminum oxide is recommended. Air pressure: 50-90 psi. Air consumption @ 30 psi: 0.25 cfm.

Standard kit includes abrasive gun with nozzle, 4 oz. suction-feed abrasive jar, 8-ft. hose with 1/4″ NPT female connection, mask, and 12 oz. of 220 grit aluminum oxide. ***Deluxe kit*** includes everything in the standard kit, plus a 250 mL can of air propellant and a propellant regulator. Use with included can of air propellant or compressed air.

Standard Kit	9558T11	$45.36
Deluxe Kit	9558T12	53.46
Replacement Nozzle	9558T91	5.36

Ceramic and Carbide Abrasive Blasting Nozzles

Tapered Ceramic

Straight Ceramic and Tungsten Carbide

Venturi Carbide

Tapered and ***straight ceramic nozzles*** fit most abrasive blasters. Great for light touch-up jobs and blasting small areas. Nozzle ID is maintained for up to 4 hours of continuous use. ***Straight tungsten carbide nozzles*** are ideal for spot blasting from a distance of 12″ or less. Yield a narrow pattern with little overblast. ***Venturi carbide nozzles*** are designed to enhance efficiency and handle larger areas than straight nozzles. Rated for up to 40 hours of continuous use (with aluminum oxide), these nozzles deliver a uniform blast pattern, reduce grit consumption, and boost productivity. They have a brass jacket and carbide liner. Threads are brass 1 1/4″ NPS male.

Nozzle ID	Base OD	Tip OD	O'all Lg.		
Tapered Ceramic Nozzles					
3/32″	7/16″	5/16″	1 5/16″	3426K31	$6.34
1/8″	7/16″	5/16″	1 5/16″	3426K36	6.34
1/8″	1 1/8″	5/8″	3 3/4″	3426K32	10.49
5/32″	1 1/8″	5/8″	3 3/4″	3426K33	10.49
3/16″	1 1/8″	5/8″	3 3/4″	3426K34	10.49
1/4″	1 1/8″	5/8″	3 3/4″	3426K35	10.49
5/16″	1 1/8″	5/8″	3 3/4″	3426K41	7.16

Nozzle ID	OD	O'all Lg.		
Straight Ceramic Nozzles				
1/4″	7/8″	1 3/8″	3426K62	$9.49
5/16″	7/8″	1 3/8″	3426K63	9.49
3/8″	7/8″	1 3/8″	3426K64	9.49
Straight Tungsten Carbide Nozzles				
3/16″	1/2″	1 9/16″	3283K51	33.05
1/4″	1/2″	1 9/16″	3283K52	33.05
1/4″	9/16″	1 7/8″	3283K71	26.92
1/4″	7/8″	1 3/8″	3283K46	37.46

Nozzle ID	OD	O'all Lg.		
Straight Tungsten Carbide Nozzles (Cont.)				
5/16″	3/4″	1 1/2″	3283K72	$29.55
5/16″	7/8″	1 3/8″	3283K47	37.46
3/8″	7/8″	1 3/8″	3283K48	37.46
7/16″	3/4″	1 7/8″	3283K41	30.84
Venturi Carbide Nozzles				
3/16″	1 5/8″	4 1/2″	3251K23	147.70
1/4″	1 5/8″	5 1/2″	3251K24	153.70
5/16″	1 5/8″	5 3/4″	3251K25	156.22
3/8″	1 5/8″	6 3/4″	3251K26	172.38

About Abrasive Blasting Media

We have media for all blasting needs. Shape and hardness are two factors to consider when purchasing media. Round particles leave a smooth finish, while sharp particles leave an etched or matte finish. The harder the abrasive, the deeper it penetrates and the faster it works. Media does not contain free silica, unless noted. Most abrasive media is graded by mesh size or grit.

Mesh size refers to the number of holes in a 1″ square screen. As the mesh number gets larger, the number of holes per inch increases, the size of each individual hole decreases, and the media becomes finer. For more information on mesh size, see page 409. ***Grit*** numbers refer to the coarseness; the lower the number the coarser the grit.

	Glass Bead	Ground Glass	Glass/ Alum. Oxide Grit	Alum. Oxide Grit	Silicon Carbide Grit	Black Beauty Grit	Steel Grit	Steel Shot	Cast S.S. Shot	Garnet Grit	Plastic Grit	Walnut Shells	Corn Cob	Baking Soda
Performance														
Working Speed	Med.	High	Med.-High	High	Very High	Med.-High	Med.-High	Med.	Med.	High	Med.	Med.	Med.	Med.
Ability to Recycle	Med.-High	Low	Med.	Med.-High	Low-Med.	Very Low	Very High	Very High	Very High	Med.	High	Low	Low	Very Low
Probability of Metal Removal	Very Low	Low-Med.	Med.	Med.-High	Med.-High	Low	Med.	Very Low	Very Low	Med.	Very Low	Very Low	Very Low	Very Low
Hardness, MOHS scale	5.5	5.5	5.5-9	8-9	9	7-7.5	8-9	6-7.5	8.5	7.5	3.5	1-4.5	Not Rated	2.5
Typical Blast Pressure, psi	20-60	20-50	20-60	40-100	20-90	90-110	20-90	20-90	40-90	80-120	20-90	10-50	20-60	10-60
Dust Factor	Low	Low	Med.	Med.	Med.	High	Very Low	Very Low	Very Low	Med.-High	Low	Low	Very Low	High
Applications— *1=Not Recommended, 2=Poor, 3=Good, 4=Better, 5=Best*														
Surface Rust on Ferrous Metals	4	4	5	5	5	5	3	3	5	2	2	2	2
Steel														
Etch	2	3	3	5	5	3	5	2	2	5	1	2	1	1
Peen	3	1	1	1	1	1	1	5	5	1	1	1	1	1
Debur	3	3	4	4	4	3	4	4	4	4	4	3	3	2
Remove Paint	3	4	4	5	5	4	5	2	2	5	4	3	2	3
Aluminum														
Etch	2	3	4	5	5	4	2	2	2	5	1	2	1	1
Peen	5	1	1	1	1	1	1	5	5	1	1	1	1	1
Debur	4	3	3	4	5	4	2	4	4	3	4	5	3	3
Remove Paint	4	4	3	5	5	4	2	2	2	4	4	3	3	4
Plastic														
Etch	4	5	4	5	5	3	2	2	2	4	1	1	1	1
Peen	5	1	1	1	1	1	1	5	5	1	4	2	1	1
Debur	5	3	3	4	5	3	2	4	4	4	5	4	4	4
Remove Paint	5	4	3	5	5	3	2	2	2	4	5	3	4	4

For information about abrasive blasting, see page 2713. For ultrasonic cleaning solutions, see page 2718.

Abrasive Blasting Media

Glass Bead—Spherical beads remove carbon and surface residue. This media is inert and leaves no residue.

Ground Glass—An alternative to sand and grit; leaves a rough surface.

Glass/Aluminum Oxide Grit—Mixture of glass bead and aluminum oxide removes tough corrosion in applications where 100% aluminum oxide is too aggressive. Contains less than 1% of free silica.

Aluminum Oxide Grit—Sharp, hard, and durable, it prepares surfaces for recoating. Use to frost glass, letter stone, and remove contaminants.

Black Beauty Grit—The best alternative to silica sand, it's also known as black diamond and black blast. Contains less than 0.1% free silica. Grit is inert and moisture free.

Silicon Carbide Grit—Quickly cleans granite, ceramics, silicon, quartz, cemented carbides, and other tough materials.

Steel Grit—Leaves a textured surface to enhance the bonding ability of paint and other coatings.

Steel Shot—Generates a high impact force to clean and peen heavy forgings and remove heat-treated scale. For steel and other cast metals.

Cast Stainless Steel Shot—Outlasts aluminum oxide, glass beads, and black beauty grit by a ratio of 1,000 to 1. Use to descale nonferrous metals.

Garnet Grit—More aggressive than other blasting media and cuts faster while producing less dust.

Plastic Grit—Easily removes coatings and build-up without marring and warping base material. Must be used with pressure feed blasting equipment; use with 3268K on page 2714.

Walnut Shells—These soft-grit shells clean, polish, and debur soft metals, fiberglass, plastic, wood, and stone.

Corn Cob—Cleans metal, wood, fiberglass, plastic, masonry, and electric insulators. Won't frost glass, pit aluminum, or damage surfaces.

Baking Soda—Scour almost any material. It can be used "wet" with water for removing grease. Baking soda is environmentally friendly.

Mesh Size	Grit Size	10-lb. Pkg.		50-lb. Pail	
Glass Bead					
40- 60	—	3398K11	$20.92	3386K71	$60.88
60-120	—	3398K12	20.92	3386K72	51.25
70-140	—	3398K13	20.92	3386K73	52.50
100-170	—	3398K14	20.92	3386K74	53.72
170-325	—	3398K15	20.92	3386K75	60.75
240-Up	—	3337K59■	29.09	—	—
Ground Glass		10-lb. Box		50-lb. Pail	
25- 40	—	34575K26	$13.75	34575K37	$40.34
Glass/Aluminum Oxide Grit		10-lb. Pkg.		50-lb. Pail	
50- 80	80	31075K57	$24.21	31075K22	$66.91
100-170	220	31075K58	24.21	31075K55	64.64
120-170	120	3398K41	29.68	—	—
170-230	180	3398K42◆	29.68	—	—
Aluminum Oxide Grit		10-lb. Pkg.		50-lb. Box	
18- 50	36	3418K46	$22.58	3418K71	$88.10
25- 70	46	3418K47	22.58	3418K72	88.10
35-100	60	3337K57■	38.15	—	—
35-100	60/70	3398K31	28.90	3418K81	88.10
45-140	80	3418K48	23.66	3418K82	83.64
70-270	120	3398K32	30.16	3418K91	91.25
70-270	120	3337K55■	38.15	—	—
80-325	150	3418K49	23.65	3418K83	91.25
100-400	180	3398K33	30.27	3418K92	86.25
120-450	220	3398K34	30.16	3418K93	97.68
120-450	220	3337K53■	39.64	—	—
—	280	3398K35	38.54	3418K94	123.75
—	320	3398K36	51.74	3418K96	123.75
—	360	3337K51■	53.52	—	—
—	400	3398K37	51.74	3418K98	137.50
Black Beauty		50-lb. Bag		80-lb. Bag	
12- 40	—	33145K36	$15.25	33145K11	$18.07
20- 40	—	33145K37	15.12	33145K12	19.60

■ 15-lb. Pkg. ◆ Two parts glass bead to one part aluminum oxide.

Mesh Size	Grit Size	10-lb. Bag		50-lb. Box	
Silicon Carbide Grit					
80-230	100/120	3398K21	$33.84	3441K82	$115.82
140-450	180/220	3398K22	38.36	3441K84	121.96
140-500	240/280	3398K23	44.82	3441K86	132.60
Steel Grit		25-lb. Bag		50-lb. Bag	
25- 40	25	3165K51	$36.52	3165K14	$69.69
50- 80	50	3165K52	37.70	3165K15	71.39
Steel Shot		25-lb. Bag		50-lb. Bag	
20- 35	—	3165K36	$36.01	3165K12	$68.99
35- 80	—	3165K37	38.55	3165K11	72.63
Cast Stainless Steel Shot		10-lb. Box		25-lb. Pail	
20- 40	—	33085K45	$101.54	33085K21	$137.73
25- 50	—	33085K46	101.54	33085K22	153.64
35- 70	—	33085K47	101.54	33085K23	162.73
50-140	—	33085K48	101.54	33085K24	162.73
Garnet Grit		10-lb. Box		50-lb. Box	
—	36	8072T41	$17.25	8072T66	$49.74
—	54	8072T42	17.25	8072T67	49.74
Plastic Grit		25-lb. Box		50-lb. Box	
12- 16	—	8104T37	$50.40	8104T44	$90.55
16- 20	—	8104T38	50.40	8104T45	90.55
20- 30	—	8104T39	50.40	8104T46	90.55
Walnut Shells		15-lb. Box		50-lb. Box	
8- 12	—	3393K28	$18.75	3393K2	$37.09
12- 20	—	3393K34	18.75	3393K3	37.09
20- 30	—	3393K41	18.75	3393K6	37.09
Corn Cob		10-lb. Box		40-lb. Bag	
10- 14	—	32725K42	$14.18	32725K61	$26.67
14- 20	—	32725K46	14.18	32725K63	26.67
20- 40	—	32725K48	14.18	32725K67	26.67
Baking Soda		10-lb. Pail		50-lb. Box	
—	40	8240T15	$32.20	8240T72	$58.26
—	60	8240T14	31.22	8240T71	55.60

About Ultrasonic Cleaning

Ultrasonic cleaners use sound waves to clean parts thoroughly, through a process called ultrasonic cavitation. During cavitation, sound waves travel through the cleaning solution causing millions of microscopic bubbles to form and then violently collapse. This creates scrubbing action that removes dirt from small crevices and between tightly spaced parts. Ultrasonic cleaning is powerful enough to remove heavy oils, greases, coolants, buffing compounds, rust, burned carbon, waxes, and proteins. It also penetrates to remove flux from circuit boards, yet is gentle enough to clean the tiniest precision parts.

Note: Parts should be placed in a basket or pan (not directly on the bottom of the cleaning tank) to prevent transducer damage.

Fast-Clean Ultrasonic Cleaners

These ultrasonic cleaners simultaneously produce multiple frequencies (high and low) for faster, more efficient cleaning than single-frequency units. Cleaning results are completely uniform at every tank location. An automatic degas function removes dissolved gases from the solution for increased cleaning effectiveness and allows use within three minutes of start-up. Use for metallic and ceramic applications; not for use with plastics. Cleaners are rated for continuous use. Never run cleaners dry (without solution) or damage could occur. ***80/40 kHz cleaners*** are best for removing normal industrial contaminants and for cleaning small, intricate parts. Choose ***40/25 kHz cleaners*** for removing stubborn contaminants such as rust and baked-on carbon soils. Baskets are sold separately below.

Cleaners include a stainless steel, pressure-tested tank and an ultrasonic generator. Tanks have a ¾″ dia. drain and a stainless steel cover. Ultrasonic generators are housed in a separate stainless steel cabinet and are connected to the tank by a 6-ft. radio frequency shielded cable. Cleaners have a digital timer that's programmable from 0.1 seconds to 999 hours. They also have two digital displays. One display shows the amount of time set for a specific cleaning cycle and the other display shows a countdown of the cleaning cycle. They also have a built-in heater with thermostat control and a digital display of the temperature. Heating temperature range is from room temperature to 180° F. Cleaners operate on 120 VAC, 50/60 Hz and include a 9-ft. power cord with three-prong plug. They will not operate if connected to a GFCI (ground fault circuit interrupter) circuit; cleaners generate signals which artificially trigger these sensitive devices.

Wire baskets are stainless steel with a 0.035″ wire diameter and ½″ opening size. Include handle.

Tank Cap., qts.	Inside Tank Size, Ht.×Wd.×Dp.★	Output, watts Peak	Output, watts Avg.	Amps●	80/40 kHz Cleaners		40/25 kHz Cleaners		Wire Basket Inside Dimensions, Ht.×Wd.×Dp.	Wire Basket Cap., lbs.		
8	9″×12″× 6″	300	150	7	3424K42	$2,075.05	3424K61	$2,075.05	3¾″× 9¼″×4¼″	10	3424K52	$143.00
16	10″×12″×10″	600	300	9	3424K44	2,700.87	3424K62	2,700.87	3¾″× 9¼″×8¼″	10	3424K54	154.90
28	12″×14″×10″	600	300	9	3424K46	3,263.45	3424K63	3,426.62	3¾″×11½″×7½″	10	3424K56	178.76
58	14″×20″×12″	1,200	600	15	3424K48	4,176.40	3424K64	4,524.43	5½″×17¼″×9¼″	20	3424K58	226.43

★ For approx. o'all dimensions, add 4½″ to the height, 6″ to the width, and 3″ to the depth. ● Represents average draw from the electrical plug.

For information about ultrasonic cleaning, see page 2717.

Ultrasonic Cleaners

Cleaner Styles 1-10

Cleaner Styles 11-15

Cleaner Style 16

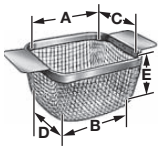

Wire Basket

Pan with 5/32″ Perforated Bottom

Solid Pan

Solid Pan with Handles

Get a powerful clean from the convenience of your bench top. All include a tank cover (unless noted). Units have an ultrasonic frequency of 40-45 kHz. They operate on 115-120 VAC, 50/60 Hz and have a power cord with three-prong plug. Baskets and pans are sold separately below.

Styles 1-10 have a mechanical timer that can be set for up to 60 minutes. Tank has a steel outer housing that's clad in vinyl to resist scratches and chemicals. All cleaners, except Styles 1 and 6, have a drain. All have a 6-ft. power cord, unless noted. *Styles 6-10* also include a heater for enhanced cleaning ability. The heater has a maximum temperature of 145° F, unless noted. For added safety, a thermostat shuts down the heater if the solution exceeds the maximum temperature.

Styles 11-15 have an easy-to-read LED display that keeps track of the time and temperature in Celsius degrees. They also have electronic touch-pad switches for operating the cleaning, temperature, timer, and degas settings. Degas is a function that removes dissolved gases from the cleaning solution for increased cleaning effectiveness. Units automatically shift from degas to cleaning after five minutes. To save time cleaners automatically reset to the last setting; just reload and start. Tank housing is made of impact-resistant plastic. A digital timer can be set from 1 to 99 minutes. Display shows the amount of time set for a specific cleaning cycle or a countdown of the time the cleaning cycle has run. The heater has a temperature range of 20° to 69° C (68° to 156° F). A built-in temperature sensor prevents overheating. All have a 7-ft. power cord. *Styles 11* and *12* have an indentation on the top drip flange for easy emptying. *Styles 13-15* include a quick-disconnect drain.

Style 16 has a larger tank for use with larger parts. Includes a rear-mounted drain and separate on/off switches for controlling cleaning and heat functions. Heater temperature is nonadjustable and stabilizes at 140° F. It has a 7-ft. power cord and a Radio Frequency Interference (RFI) filter to meet FCC standards. *Cover* is stainless steel and sold separately below.

Cleaners

Style	Tank Cap., qts.	Inside Tank Size, Ht. × Wd. × Dp.	Watts		
Cleaners with Timer					
1	2	5⅜″ × 5⅞″ × 4″	55	**3410K82**	$404.15
2	3⅜	5⅜″ × 9⅜″ × 4″	95	**3410K83**	525.40
3	6	6″ × 11¾″ × 6″	135	**3410K85**	839.09
4	14½	9¼″ × 11½″ × 8″	225	**3410K86**★	1,250.00
5	26	11¾″ × 19¾″ × 6½″	410	**3410K77**	2,098.00
Cleaners with Heater and Timer					
6	2	5⅜″ × 5⅞″ × 4″	103	**3410K27**	442.64
7	3⅜	5⅜″ × 9⅜″ × 4″	150	**3410K37**	566.77
8	6	6″ × 11¾″ × 6″	335	**3410K47**	892.98
9	14½	9¼″ × 11½″ × 8″	425	**3410K57**★◆	1,286.00
10	26	11¾″ × 19¾″ × 6½″	810	**3410K87**	2,134.00
Cleaners with Digital Readout, Heater, and Timer					
11	2	5½″ × 6″ × 4″	143	**3461K81**	490.00
12	3	5½″ × 9½″ × 4″	239	**3461K41**	644.00
13	6	6″ × 11½″ × 6″	335	**3461K51**	1,006.00
14	10	9½″ × 11½″ × 6″	469	**3461K61**	1,286.00
15	22	11½″ × 19½″ × 6″	881	**3461K71**	2,246.20
Cleaner with Heater and without Cover					
16	40	14″ × 16″ × 10½″	400	**3269K77**	4,140.64
Cover for Style 16				**3269K83**	110.62

★ Power cord is 6½ ft. long. ◆ Maximum temperature is 160° F.

Stainless Steel Baskets and Pans

Use with Cleaner Style	Inside Dimensions (A)	(B)	(C)	(D)	(E)	Cap., lbs.		
Wire Baskets—0.028″ wire dia. with 0.222″ opening size								
1, 6, 11	5¼″	4¼″	4¾″	3¾″	3″	5	**3410K43**	$49.74
2, 7, 12	8⅝″	7¾″	4¾″	3¾″	3⅛″	5	**3410K26**	56.62
3, 8, 13	10⅝″	9″	5¼″	4″	5″	5	**3410K52**	101.11
4, 9, 14	10¾″	8½″	8½″	7¼″	4⅞″	5	**3410K62**	112.68
5, 10	18½″	16½″	10⅜″	8¼″	5½″	5	**3410K73**	231.35
15	18¾″	16½″	10½″	8½″	4¾″	5	**3461K77**	160.70
16	15″	10″	13″	8″	9″	5	**3269K84**	250.62
Pans with 5/32″ Perforated Bottom								
1, 6, 11	4⅞″	4⅞″	4⅜″	4⅜″	2½″	5	**3461K17**	53.38
2, 7, 12	8¼″	8¼″	4 7/16″	4 7/16″	2½″	5	**3461K13**	72.74
3, 8, 13	10⅜″	10⅜″	4⅞″	4⅞″	4½″	10	**3461K23**	93.13
4, 9, 14	10⅜″	10⅜″	8¼″	8¼″	4½″	10	**3461K33**	113.08
15	17¾″	17¾″	10⅜″	10⅜″	4⅛″	12	**3461K43**	210.79
Solid Pans								
1, 6	5⅞″	5″	5⅜″	4½″	3⅞″	♣	**3410K44**	54.42
2, 7	9⅜″	8¼″	5⅜″	4½″	3⅞″	♣	**3410K24**	75.79
3, 8	11¾″	10½″	5⅞″	5⅛″	6″	♣	**3410K53**	101.06
4, 9	12¾″	11⅛″	10¾″	8⅝″	8″	♣	**3410K63**	135.85
5, 10	19½″	18″	11½″	10½″	6″	♣	**3410K64**	242.92
Solid Pans with Handles								
11	5¼″	4¼″	5¼″	4¼″	3″	4	**3461K16**	58.05
12	8¼″	7½″	4½″	3½″	3″	7	**3461K12**	78.30
13	9¼″	8¼″	5⅜″	4¼″	3⅞″	12½	**3461K22**	99.90
14	11⅝″	10½″	9⅜″	8¼″	6″	23	**3461K32**	128.25
15	19⅜″	17¼″	11½″	9¼″	6″	45	**3461K42**	183.60

♣ Not rated.

Ultrasonic Cleaning, Rinsing, and Disinfecting Solutions

Solvent-Free Water-Based (Aqueous) Solutions

These water-based solutions are furnished in a 1-gallon container.

General Purpose Degreaser Concentrate— Removes oil, light grease, and soil from metal, glass, and plastic. It's phosphate-free, nontoxic, noncaustic, nonflammable, and nonabrasive. Solution can be diluted with up to seven parts of water. Maximum temperature is 180° F. Rinse with water.

3175K55 ..... $29.80

Heavy Duty Degreaser Concentrate— Removes the same materials as the solution above as well as baked-on carbon soils. Solution can be diluted with 7 to 15 parts of water. Maximum temperature is 180° F. Aluminum may become discolored at temperatures above 140° F and cleaning times longer than two to three minutes. Rinse with water.

3175K45 ..... $61.02

Water-Based (Semi-Aqueous) Solutions

Designed for easier disposal than petroleum-based cleaners. Solutions consist of water and other naturally derived components, such as terpenes (citrus and pine oil-based components). Furnished in a 1-gallon container.

Alkaline Water-Soluble Concentrate— Removes wax, grease, oil, and buffing and polishing compounds from metal (except aluminum), glass, and plastic. Dilute with up to 10 parts of water. Maximum temperature is 180° F. Rinse with water.

3175K3 ..... $89.58

Water-Based (Semi-Aqueous) Solutions (Cont.)

Heavy Duty Ammoniated Concentrate— Removes soil, lapping compounds, rouge, and heavy grease from most metal and glass. For plastic, we recommend testing the material before use. Solution can be diluted with up to seven parts of water. Do not heat. Rinse with water.

3175K65 ..... $89.58

Ammonia-Free Concentrate— Handles heavy duty cleanup jobs such as removing heavy soils and grease from most metal and plastic. Solution can be diluted with up to seven parts of water. Maximum temperature is 180° F. Rinse with water.

3175K71 ..... $95.33

Petroleum-Based Cleaning and Rinsing Solutions

To prevent rust, these solutions must be used with a rinsing solution to remove residue and contaminants. Furnished in a 1-gallon container.

Ammonia-Free Solution— Use for cleaning all types of metal. It removes gummed oil, grease, oil-soluble cutting oil, asphalt, tar, carbon-based residue, sulfides, wax, flux, and fingerprints. Do not heat. Rinse with the rinsing solution sold below.

3175K16 ..... $45.62

Rinsing Solution— Dissolves any residue that's left behind from cleaning solutions. This solution is a blend of petroleum-based materials and contains no chlorinated solvents or other harmful ingredients. For plastic, we recommend testing the material before use. Do not heat.

3175K22 ..... $41.20

For information about ultrasonic cleaning, see page 2717. For parts-washing brushes, see page 2712.

Small Parts Ultrasonic Cleaners

Perfect for small parts, these cleaners combine power with quiet operation. With more than twice the capacity Style 2 is the perfect choice when you need more space. Tank and cover are stainless steel (unless noted). Furnished with a basket and a 6-ft. power cord with three-prong plug (unless noted). Operate on 117 VAC, 50/60 Hz.

Replacement Baskets— 32695K41 is made of stainless steel with 0.028″ wire diameter and 0.222″ opening size. 32695K48 is made of perforated ABS plastic with 1/4″ × 3/16″ opening size.

	Tank Cap., oz.	Inside Tank Size, Ht. × Wd. × Dp.	Frequency	Watts	Cleaners		Replacement Basket Inside Dimensions (A)	(B)	(C)	(D)	(E)	Cap., lbs.		
1	18	3 3/8″ × 4 3/4″ × 2 5/8″	55 kHz	22	32695K21	$206.08	3 1/2″	3 1/4″	2 3/4″	2 1/2″	2″	5	32695K41	$44.82
2	47.3	2″ × 7″ × 5 1/2″	42 kHz	60	32695K38★	141.00	6 1/2″	6 1/2″	5″	5″	2″	5	32695K48	17.02

★ Power cord is 5 ft. long with a two-prong plug. Cover is plastic with a clear plastic viewing window.

Tub- and Drum-Style Parts Washers

3&4 Washers for Solvent-Based Cleaning Solutions— Use with solvent-based (mineral spirit) cleaning solutions; do not use with other solvents such as gasoline, kerosene, or chlorinated solvents. Washers are made of high strength 16-ga. steel (unless noted) with a durable, corrosion-resistant, powder-coated finish. All include a fusible safety link that closes the cover at 165° F in the event of a fire; safety link is UL listed.

Washers have a thermal-overload-protected, self-priming pump that operates on 115 VAC, 60 Hz, single phase. Furnished with a 7-ft. power cord with three-prong plug.

(3) Tub-style washer is for use with solvents having a flash point greater than 100° F. It functions as a soak tank as well as a parts washer. To clean parts, either soak them in the tub or scrub them manually under the flexible metal hose. Unit includes a tank, steel floor stand with shelf, flexible metal hose, pump, screened strainer filter pad for removing sediment and larger particles, removable inside shelf, and 3/4″ drain with plug.

(4) Drum-style washers are for use with solvents having a flash point greater than 140° F. Designed for washing parts, not soaking them. Wash parts manually under the constant flow of solvent as it is pumped through the flexible metal hose. Cleaning solvent is stored inside the drum, so these washers have less solvent evaporation and fewer fumes than tub-style washers. Both include a tank, drum, pump, flexible metal hose, strainer basket for removing sediment and larger particles, and 3 1/2″ drain.

5&6 Washers for Water-Based Cleaning Solutions— Use only nonflammable, noncombustible water-based cleaning solutions; do not use solvent-based solvents such as gasoline, alcohol, or mineral spirits. Tough polyethylene construction means washers won't corrode. They have a triple-action filtration system (stainless steel strainer, filter basket, and replaceable filter cartridge) that prolongs the cleaning fluid life, while the large tank capacity makes fluid changes less frequent.

Cleaning fluid is pumped through the flow-through cleaning brush or the flexible stay-put hose by a noncorrosive submersible pump. Cleaners have a 1.4 kW heater with thermostat. For added safety, the heater and pump automatically shut down when fluid levels get low. In addition, the washer has a ground fault circuit interrupter and a fusible safety link that automatically closes the cover at 165° F in case of a fire. GFCI device is UL listed and CSA certified.

Pump and heater have a pilot light. Cover has a stainless steel hinge and a gas spring for easy lifting. Operate on a 115 VAC, 60 Hz, single phase motor. Furnished with an 8-ft. power cord with three-prong plug.

(5) Tub-style washer is for washing and soaking parts. Includes a stainless steel parts shelf. Maximum temperature is 120° F.

(6) Drum-style washer stores the cleaning solution inside the drum, so there are fewer fumes and less solution evaporation than the tub-style washer. Designed for washing parts, not soaking them. Maximum temperature is 110° F.

	Drum Cap., gal.	Tank Cap., gal.	Usable Inside Tank Size, Ht. × Wd. × Dp.	O'all Size, Ht. × Wd. × Dp.	Base Cap., lbs.	Washers		Repl. Pump	
Washers for Solvent-Based Cleaning Solutions									
3	—	14-30	16 5/8″ × 35″ × 23 1/2″	35 3/8″ × 35 3/4″ × 24 1/2″	200	3333K33	$971.72	9987K67	$87.06
4	16	8	8″ × 27″ × 15″	35″ × 28″ × 16″	100	3255K39▲	611.63	9987K67	87.06
4	30	20	7 1/2″ × 32″ × 24″	39″ × 34 1/2″ × 26 1/2″	200	3255K67	768.78	9987K67	87.06
Washers for Water-Based Cleaning Solutions									
5	—	30	17″ × 31″ × 22″	40″ × 43″ × 31″	300	32555K12	1,597.47	32555K91	208.07
6	30	20-30	9″ × 36″ × 22″	43″ × 39″ × 31″	300	32555K14	1,481.17	32555K91	208.07

Replacement Parts for Styles 3&4		
Filter Pad for 3333K33	3333K74	23.56
16-gallon Drum for 3255K39	4115T83	69.85
30-gallon Drum for 3255K67	4115T61	89.29
15 3/8″ Lg. Flexible Metal Hose for Styles 3&4	3139K42	16.95
Closure Assembly for All Washers for Styles 3&4 (has a spring, rod, fusible link, and closure body)	3333K77	45.00
Replacement Parts for Styles 5&6		
10″ Filter Cartridge	32555K5	5.32
Fusible Link	32555K21	8.72
Thermostat for Style 5	32555K8	132.89

▲ Made of 18-ga. steel.

Immersible Ultrasonic Transducer

Turn your tank into an efficient ultrasonic cleaning system. This system consists of an immersible ultrasonic transducer and a UL listed ultrasonic generator.

Tanks up to 100 gallons require one transducer for every 15 to 20 gallons of liquid. Transducer has a heavy-gauge Type 316 stainless steel housing that resists corrosion from solvents, detergents, and alkalies; and a 36″ watertight, flexible, stainless steel feed with 10-ft. coaxial cable extension. It operates continuously at solvent temperatures up to 220° F. Size is 18″ Lg. × 6 1/2″ Wd. × 3 1/2″ Ht.

Generator features automatic tuning, is fan cooled, and requires 120 VAC, 50/60 Hz, single phase. Furnished with a cord and grounded plug. Output is 25 kHz, 600 watts.

3182K1 ..... $3,965.65

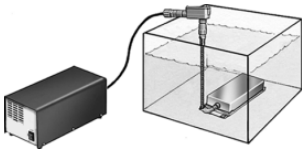

For parts-washing brushes, see page 2712.

Heavy Duty Tub-Style Parts Washers

16-42 gal.

These washers offer three tools for cleaning that can be used individually or simultaneously: a soaking tub with fluid agitator, a pistol-grip nozzle, and a flexible metal hose. The soaking tub with fluid agitator uses a pump and jet manifold to constantly move cleaning solution around parts. This process of constant agitation loosens dirt as the parts soak. The pistol-grip nozzle with neoprene hose lets you adjust the solvent flow from a light spray to a solid jet stream for effective manual cleaning. The flexible metal hose permits you to wash parts manually with your hands under the constant flow of solvent.

All washers use solvent-based cleaning solution with a flash point above 104° F. Do not use alcohol, gasoline, carburetor cleaners, metal strippers, or chlorinated solutions. They're made of 16- and 14-ga. steel and have full width legs; 16- to 42-gal. capacity unit includes casters. They have a powerful 1/3 hp centrifugal pump that operates on 115 VAC, 50/60 Hz, single phase. A fusible safety link closes the cover at 165° F in the event of a fire. All washers include a selector valve for choosing your cleaning method, a washable solvent filter screen, two bi-level work shelves, a drain plug, an on/off signal light, an on/off switch, and a 6-ft. power cord with three-prong plug except for 3187K6, which has an 8-ft. power cord with three-prong plug.

Tank Cap., gal.	Max. Liquid Level	Usable Inside Tank Size, Ht. × Wd. × Dp.	Overall Size, Ht. × Wd. × Dp.	Base Cap., lbs.	Shelf Cap., lbs.	Washers		Replacement Fusible Link		Repl. Fusible Link Spring Assembly	
16- 42	10½″	23¾″ × 32¼″ × 21″	36⅜″ × 44″ × 21½″	500	150	3187K2	$2,160.08	3187K81	$19.60	3187K83	$199.94
50- 85	16½″	29½″ × 30″ × 28⅞″	34″ × 41⅜″ × 29⅜″	500	150	3187K4	2,526.70	3187K81	19.60	3187K83	199.94
50-117	17″	33⅜″ × 38″ × 28½″	37⅜″ × 49″ × 31″	750	200	3187K6	3,070.98	3187K82	19.60	3187K84	262.67
Replacement 36″ Flexible Metal Hose (not interchangeable with other washers)										3187K62	$70.57
Replacement Filter Screen										3187K67	15.68

Soak-and-Scrub Tub-Style Parts Washers

With these versatile washers, you can either soak parts in the tub or scrub them under a flexible metal hose. Use with solvent-based solutions with a flash point above 105° F. Do not use with gasoline, acetone, alcohol, or lacquer thinners. A pump continuously recirculates fluid through a dual-element sludge collector and foam filter that traps particles and extends the life of the cleaning solution. A removable sloped metal shelf holds parts above the fluid.

Tank is made of 16-ga. steel and has a ¾″ dia. bottom drain. Washers have a fusible safety link that shuts the cover automatically at 165° F in the event of a fire. Electrical components are UL listed. The ***1/50-hp, 115 VAC*** washer includes a 6-ft. power cord with three-prong plug. The ***1/25-hp, 230 VAC*** washer includes a 6-ft. power cord without plug. It requires a NEMA style 6-15 or other compatible plug. See page 787 for plugs.

hp	VAC	Hz	Tank Cap., gal.	Max. Liquid Level	Usable Inside Tank Size, Ht. × Wd. × Dp.	Overall Size, Ht. × Wd. × Dp.	Base Cap., lbs.	Shelf Cap., lbs.		
1/50	115	50/60	8.5 to 15	6″	16″ × 29½″ × 15½″	38½″ × 36″ × 22″	300	100	3189K51	$784.13
1/25	230	50/60	8.5 to 15	6″	16″ × 29½″ × 15½″	38½″ × 36″ × 22″	300	100	3189K61	821.30
Replacement Pump for 1/50-hp, 115 VAC Washer									3189K34	238.02
Replacement Pump for 1/25-hp, 230 VAC Washer									3189K35	322.03
Replacement Fusible Link									3189K71	36.36
Replacement 30″ Flexible Metal Hose (not interchangeable with other washers)									3189K33	49.01

Dip, Soak, and Rinse Tubs

Single-Compartment Standard Tub

Roomy tubs make it easy to dip, soak, and rinse parts using solvent-based solutions.

Standard Tubs— Press the foot pedal to open the cover. An adjustable-rate air cylinder keeps the cover from slamming shut when the foot pedal is released. Made of 18-ga. steel, tubs have a corrosion-resistant coating and powder-coated finish for long life. Drain plug is ¾″ dia. All are FM approved. *Double-compartment standard tubs* let you clean parts in one chamber and rinse them in the other. Each chamber has its own drain plug.

Single-Compartment Extra-Deep Tub— Made of 16-ga. steel. A fusible safety link shuts the cover at 165° F in the event of a fire. Drain plug is 2″ dia. Includes an adjustable basket rack that you can set above or below liquid level.

Tub Cap., gal.	Overall Size, Ht. × Wd. × Dp.	Tub Depth	Tubs		Parts Basket: Basket Size, Lg. × Wd. × Ht.		Sediment Screen	
Single-Compartment Standard Tubs								
11	33″ × 24″ × 16″	8¾″	3401K2	$374.80	16″ × 13″ × 4″	3401K4	$46.34	3401K6	$31.75
22	33″ × 35¼″ × 16″	12″	3401K3	522.86	28″ × 13″ × 4″	3401K5	67.42	3401K7	56.23
Double-Compartment Standard Tubs— *Tub capacity is the total capacity. Each compartment holds half of the total.*								
8	33″ × 24″ × 16″	8¾″	3452K11	569.76	—	—	—	—	—
18	33″ × 35¼″ × 16″	12″	3452K21	611.66	—	—	—	—	—
Single-Compartment Extra-Deep Tub								
25	36″ × 24″ × 20″	18″	3416K12	723.46	13″ × 12″ × 5″	3416K13	154.93	—	—

Parts-Washing Cans

Safety Can with Perforated Drain Pan

Bench Can

Save space and cleaning solution with these compact cans. The perfect size for cleaning small parts, they also have a hinged cover to minimize evaporation. Made of steel, units have a corrosion-resistant coating and powder-coated finish for long life.

Safety Dip-and-Wash Cans— In the event of a fire, the fusible safety link on these cans closes the cover at 165° F. All are UL listed and FM approved.

Bench Cans— Simple to use. Just place parts on the spring-loaded, perforated drain plate; press plate down to submerge parts; agitate to clean; and release to the drain position. The drain plate also acts as a flame arrester in the event of a fire. FM approved.

Safety Dip-and-Wash Cans

Can Cap., gal.	With Perforated Steel Drain Pan: Can Size, ID × Ht.	Pan Size, ID × Dp.			Without Perforated Drain Pan: Can Size, ID × Ht.		
1	9¼″ × 9⅜″	7⅜″ × 3″	3397K22	$102.46	9¼″ × 4⅞″	3397K14	$61.89
2	11¼″ × 10⅝″	9¼″ × 3″	3397K23	119.84	9¼″ × 9⅜″	3397K15	61.57
3½	13⅝″ × 12⅜″	11½″ × 3¼″	3397K24	124.84	11¼″ × 10⅝″	3397K16	76.16
5	—	—	—	—	13⅝″ × 12⅜″	3397K17	78.40
6	15½″ × 13⅞″	13⅝″ × 3¼″	3397K25	134.09	—	—	—
8	—	—	—	—	15½″ × 13¾″	3397K18	89.49
Replacement Fusible Link						4573T44	6.96

Bench Cans

Can Cap., gal.	Can Size, OD × Ht.	Drain Plate Size, Dia.		
¼	4⅞″ × 5½″	4½″	3406K1	$42.48
½	9⅜″ × 3¼″	7½″	3406K2	48.16
1	9⅜″ × 4½″	7½″	3406K3■	61.20
1	9⅜″ × 4½″	7½″	3406K6	45.06
2	11½″ × 5⅞″	9¾″	3406K7	91.21
3	13½″ × 6″	12⅛″	3406K8	88.98

■ Has 6 7/16″ Dia. × 7/16″ Dp. parts basket.

Parts-Washing Solutions

Not recommended for use in cabinet spray washers or for pressure-spraying.

Water-Based (Aqueous) Solutions— These alkaline solutions wash away both organic soils (including grease, oil, and soft carbon) and inorganic soils (such as epoxy, hard-water residue, corrosion, oxides, paint, plating salts, and rust). For faster cleaning action, heat cleaners up to 180° F. Rinse with water.

Dilute *general purpose formula* with four to nine parts of water. These products are compliant under all state VOC rules in effect on January 1, 2011, except in the Los Angeles area.

Nonferrous metals formula is formulated for aluminum and other nonferrous metals. Mix three to eight ounces of this powder per gallon of water.

Solvent-Based Solutions— These solutions remove grease, motor oil, cutting oil, water-soluble oil, soft gummy deposits, and buffing and lapping compounds from metal, plastic, and painted surfaces. They have a mild odor and contain no chlorinated solvents. These products are compliant under all state VOC rules in effect on January 1, 2011, except in California. ***Caution:*** Do not heat. Use only at room temperature.

Solvent-plus-lanolin formula contains lanolin to reduce skin irritation and chapping. Leaves a corrosion-resistant film on parts. Nitrile gloves should be worn for prolonged use. Flash point is 105° F.

High-flash-point lanolin formula is for when local regulations require a higher flash point. It has a flash point of 141° F.

Water-Based (Aqueous) Solutions

Size			Size		
General Purpose Formula			***Nonferrous Metals Formula***		
5 gal.	3309K51	$57.72	25-lb. Ctn.	3309K63	$106.00
55 gal.	3309K55	510.84	100-lb. Drum	3309K66	313.78

Solvent-Based Solutions

Size			Size		
Solvent-Plus-Lanolin Formula			***High-Flash-Point Formula***		
5 gal.	3229K1	$95.22	5 gal.	3457K11	$91.92
50 gal.	3229K3	859.66	50 gal.	3457K23	812.63

Dipping Racks

Create your own dipping racks for painting, plating, cleaning, and drying. Select the length of frame you need, then choose crossbars and hooks to install on the frame. Crossbars have pegs that fit into holes on the frame; hooks lock securely into the crossbar so they won't fall out. Frames, crossbars, and hooks are steel. Hooks are 0.062″ dia. Frames are U-shaped and have one top center-mount support hook for hanging. Hanging parts only touch at one point. *Crossbars with holes for hooks* have holes on 1¼″ centers. *Crossbars with welded hooks* have permanently mounted 0.091″ dia. Type 304 stainless steel hooks.

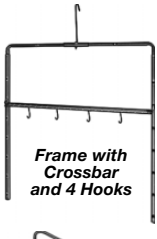

Frame with Crossbar and 4 Hooks

Crossbar with Welded Hooks

Frames

Lg.	Wd.	No. of Crossbars Frame Holds		
30″	30″	14	8342T11	$30.91
36″	30″	18	8342T13	27.12
42″	30″	20	8342T15	32.73

Crossbars

Lg.	No. of Hooks		
With Holes for 24 Hooks			
30″	—	8342T23	$7.09
With Welded Hooks			
30″	10	8342T47	7.27
30″	14	8342T48	7.95

Hooks

Lg.	Style	Pkg. Qty.		Pkg.
2″	V-Style	20	8342T61	$10.00
2″	C-Style	20	8342T63	10.00
4″	V-Style	20	8342T62	12.00
4″	C-Style	20	8342T64	12.00

Hooks for Tubing— Insert hook into tube; hook's spring action holds tube from the inside.

Lg.	For Tube ID	Pkg. Qty.		Pkg.
4″	½″- ¾″	20	8342T76	$12.00
5″	¾″-1″	20	8342T77	12.73

V-Style Hook

C-Style Hook

Hook for Tubing

About Wire Cloth Baskets

Stainless steel and carbon steel are two of the most popular metals used to make wire cloth baskets. ***Stainless steel*** offers superior corrosion resistance. *Type 304 stainless steel* is the most common. It has a melting point of 2600° F and a maximum temperature for continuous service of 1450° F. *Type 316 stainless steel* offers additional resistance to corrosion from acids and salt water. It has a melting point of 2500° F and a maximum temperature for continuous service of 1500° F. ***Carbon steel*** offers high tensile strength and durability at a low cost; use it for applications where resistance to abrasion and corrosion are less important.

Opening size refers to the size of the clear space between adjacent wires.

Wire diameter indicates the thickness of the wire.

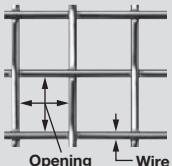

Stainless Steel Baskets for Small Parts

These miniature baskets are perfect for cleaning and storing small parts. They're constructed of corrosion-resistant Type 316 stainless steel and are electropolished and buffed to ensure a smooth and shiny finish that won't scratch equipment.

Round Baskets— Use with bench-top ultrasonic cleaners and for holding parts in beakers. Baskets have a swinging-loop handle that is approximately 3″ high. They have a 0.014″ wire dia. and a 0.027″ opening size. Outside diameter is 0.28″ larger than inside diameter. Optional *latching lids* keep materials contained.

Rectangular Baskets— Use with small ultrasonic cleaners and parts washers. Baskets stack for easy storage. Choose baskets with a nonremovable lid or without a lid. The outside dimensions for length (A) and depth (B) are 0.250″ larger than the inside dimensions. All have ½″ long legs and ⅞″ high handles.

Round

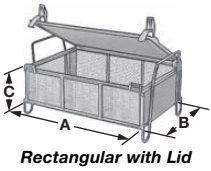

Rectangular with Lid

Round Baskets

Inside Size, Dia. × Dp.	For Beaker Size	Cap., lbs.	Baskets		Latching Lid	
2.27″ × 2.75″	100 ml	1	3292K12	$189.09	3292K22	$41.82
2.57″ × 3.00″	250 ml	5	3292K13	192.73	3292K23	41.82
3.17″ × 3.50″	400 ml	5	3292K14	196.36	3292K24	41.82
3.47″ × 3.75″	500 ml	5	3292K15	198.18	3292K25	43.64
3.57″ × 4.25″	600 ml	5	3292K16	203.64	3292K26	43.64
4.22″ × 5.00″	1,000 ml	10	3292K17	209.09	3292K27	43.64
5.53″ × 6.40″	2,000 ml	10	3292K18	214.55	3292K28	43.64

Rectangular Baskets

Inside Dimensions (A)	(B)	(C)	Cap., lbs.	With Lid		Without Lid	
0.014″ Dia. Wire; 0.027″ Opening Size							
4.75″	2.75″	0.8″	2	3304K111	$250.91	3304K141	$158.18
6.75″	4.75″	1.8″	5	3304K121	283.64	3304K151	178.18
8.75″	6.75″	2.8″	10	3304K131	383.64	3304K161	209.09
0.020″ Dia. Wire; 0.072″ Opening Size							
4.75″	2.75″	0.8″	2	3304K112	229.09	3304K142	149.09
6.75″	4.75″	1.8″	5	3304K122	261.82	3304K152	167.27
8.75″	6.75″	2.8″	10	3304K132	361.82	3304K162	196.36
0.028″ Dia. Wire; 0.225″ Opening Size							
6.75″	4.75″	1.8″	5	3304K123	249.09	3304K153	160.00
8.75″	6.75″	2.8″	10	3304K133	349.09	3304K163	189.09

Light Duty Stainless Steel Baskets

Designed for use with ultrasonic cleaners, these baskets are good for cleaning, rinsing, and dipping parts. Made of unpolished Type 304 stainless steel with a dull finish. ***Standard baskets*** have a 0.063″ wire diameter and a 0.187″ opening size. ***Extra-fine baskets*** hold the smallest parts. Wire diameter is 0.010″; opening size is 0.015″.

Inside Dimensions (A)	(B)	(C)	(D)	Cap., lbs.	Standard		Extra Fine	
10″	8″	3″	6″	40	3467K44	$133.42	3467K74	$136.31
14″	8″	6″	6″	40	3467K46	163.53	3467K76	169.67
15″	10″	3″	6″	40	3467K48	155.71	3467K78	159.33
16″	12″	6″	6″	40	3467K54	188.00	3467K84	187.49
18″	12″	4″	6″	40	3467K56	179.27	3467K86	208.33
20″	16″	6″	6″	40	3467K58	225.47	3467K88	216.04
22″	18″	6″	6″	40	3467K62	246.13	3467K92	236.38

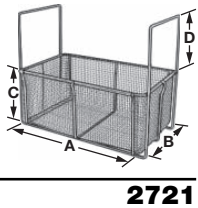

Wire Cloth Baskets

For information about wire cloth baskets, see page 2721.

Carbon Steel and Stainless Steel Baskets

Put all of your parts in the right basket. You choose the best wire diameter/opening size and handle style for your application. Baskets are made of woven wire cloth welded to a rod frame. 0.063″ wire dia. has a 0.187″ opening size, 0.047″ wire dia. has a 0.078″ opening size, and 0.012″ wire dia. has a 0.021″ opening size. Do not use sharp objects with 0.012″ wire dia. baskets.

Carbon steel with dull finish round and ***rectangular baskets*** are constructed of 1018 carbon steel. ***Stainless steel with dull finish round*** and ***rectangular baskets*** are made of Type 304 stainless steel.

Also Available: Custom size baskets. Please ask for 3287K999 and specify size, basket shape, handle style, wire diameter, and material.

Round Baskets

0.063″ and 0.047″ wire dia. baskets have a weight capacity of 50 lbs. 0.012″ wire dia. baskets have a weight capacity of 15 lbs.

To Order: Please specify wire diameter (0.063″, 0.047″, or 0.012″) and handle style (swinging loop, rigid loop, or dual grip).

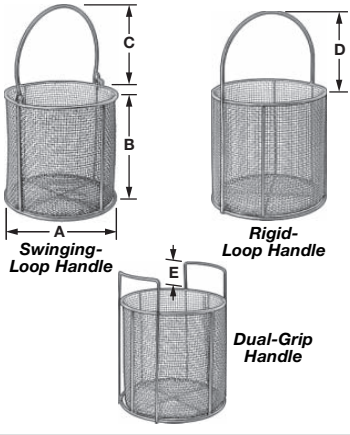

Swinging-Loop Handle *Rigid-Loop Handle* *Dual-Grip Handle*

Inside Dimensions (A)	(B)	(C)▲	(D)♣	(E)●		CARBON STEEL WITH DULL FINISH 0.063″ Wire Dia.	CARBON STEEL WITH DULL FINISH 0.047″ or 0.012″ Wire Dia.	STAINLESS STEEL WITH DULL FINISH 0.063″ Wire Dia.	STAINLESS STEEL WITH DULL FINISH 0.047″ or 0.012″ Wire Dia.
6″	6″	6½″	6″	3″	3290K61	$110.55	$128.94	3289K61	$132.85	$149.71
8″	6″	7½″	7″	3″	3290K62	118.38	134.96	3289K62	138.74	168.82
8″	8″	7½″	7″	3″	3290K63	118.55	135.86	3289K63	148.73	175.42
9″	9″	8″	7¾″	3″	3290K64	121.84	161.20	3289K64	156.11	202.09
9″	10″	8″	7¾″	3″	3290K65	127.67	165.36	3289K65	158.67	203.13
10″	6″	8½″	8″	3″	3290K66	122.80	161.27	3289K66	148.98	194.40
10″	8″	8½″	8″	3″	3290K67	118.36	162.00	3289K67	159.96	204.49
10″	10″	8½″	8″	3″	3290K68	125.95	154.34	3289K68	159.73	214.27
10″	12″	8½″	8″	3″	3290K69	134.68	165.02	3289K69	167.73	221.32
12″	10″	9½″	9″	3″	3290K71	154.66	187.29	3289K71	182.44	227.43
12″	12″	9½″	9″	3″	3290K72	164.82	201.62	3289K72	201.04	259.90
12″	15″	9½″	9″	3″	3290K73	171.98	213.28	3289K73	216.65	274.40
15″	12″	11″	11″	3″	3290K74	188.22	221.33	3289K74	230.82	282.72
18″	18″	12½″	12″	3″	3290K75	277.81	298.74	3289K75	363.66	444.90

▲ Applies to swinging-loop handle basket. ♣ Applies to rigid-loop handle basket.
● Applies to dual-grip handle basket.

Rectangular Baskets

All have a weight capacity of 40 lbs. **To Order:** Please specify wire diameter (0.063″, 0.047″, or 0.012″) and handle style (rigid loop, square, or dual grip).

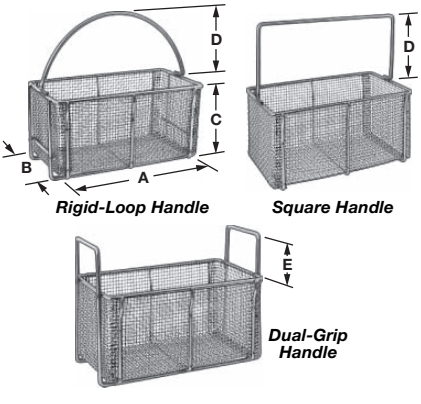

Rigid-Loop Handle *Square Handle* *Dual-Grip Handle*

Inside Dimensions (A)	(B)	(C)	(D)★	(E)●		CARBON STEEL WITH DULL FINISH 0.063″ Wire Dia.	CARBON STEEL WITH DULL FINISH 0.047″ or 0.012″ Wire Dia.	STAINLESS STEEL WITH DULL FINISH 0.063″ Wire Dia.	STAINLESS STEEL WITH DULL FINISH 0.047″ or 0.012″ Wire Dia.
10″	4″	4″	4″	3″	3294K61	$79.25	$96.47	3293K61	$126.94	$146.56
10″	10″	10″	10″	3″	3294K62	126.59	157.34	3293K62	199.74	219.66
12″	6″	6″	6″	3″	3294K63	102.09	114.78	3293K63	159.11	168.22
12″	8″	6″	6″	3″	3294K64	104.19	126.35	3293K64	171.18	177.40
12″	9″	6″	6″	3″	3294K65	115.70	115.29	3293K65	180.24	198.55
14″	8″	6″	6″	3″	3294K66	114.82	123.44	3293K66	169.57	181.87
14″	10″	6″	6″	3″	3294K67	111.53	116.80	3293K67	195.89	204.99
14″	12″	6″	6″	3″	3294K68	128.68	134.53	3293K68	195.93	199.74
16″	10″	6″	6″	3″	3294K69	120.52	120.40	3293K69	189.27	201.93
18″	12″	6″	6″	3″	3294K71	125.55	148.84	3293K71	228.07	223.94
18″	18″	6″	6″	3″	3294K72	133.33	161.09	3293K72	281.62	291.24
18″	18″	12″	12″	3″	3294K73	190.53	173.73	3293K73	311.28	350.99
20″	12″	6″	6″	3″	3294K74	141.65	135.33	3293K74	231.78	234.19
24″	24″	12″	12″	3″	3294K75	247.68	259.45	3293K75	397.14	432.21

★ Applies to rigid-loop and square handle baskets. ● Applies to dual-grip handle basket.

Light Duty Carbon Steel Baskets

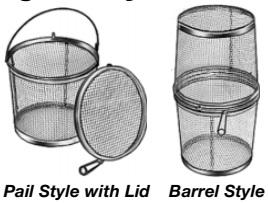

Pail Style with Lid *Barrel Style*

Clean and store parts in these economical, general purpose baskets. Made of 28-ga. galvanized steel with 0.025″ dia. wire and a 0.25″ opening size. Diameter at the widest point is 9″. Load capacity is 10 lbs.

Pail-style basket is 8¼″ deep and has a swinging-loop handle. Basket is tapered and nests for storing. *Optional lid for pail-style basket* locks in place on basket.

Barrel-style basket is 16½″ long when assembled. To assemble, snap the two halves together at the rim and lock with the clip (included).

Pail-Style Basket	32525K35	$13.40
Barrel-Style Basket	32525K25	18.11
Optional Lid for Pail-Style Basket	32525K45	7.13
Replacement Clip ♦	32525K55	.96

♦ Fits barrel-style basket and lid for pail-style basket.

Perforated Metal Baskets

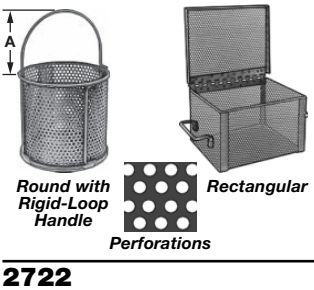

Round with Rigid-Loop Handle *Rectangular* *Perforations*

Stamped holes in these sheet metal baskets make them more rigid than wire baskets. Use them for degreasing, cleaning, plating, and rinsing parts. All are unfinished.

Round baskets have two bottom- and four side-reinforcing braces for extra rigidity. Have ¼″ dia. perforations.

To Order: Please specify handle style: swinging loop or rigid loop.

Rectangular baskets have 3/32″ dia. perforations and a hinged cover.

Inside Dimensions	Handle (A)	Cap., lbs.		
Round Baskets				
16-ga. Carbon Steel				
8″ Dia.× 8″ Dp.	4″	40	3211K47	$112.09
12″ Dia.×12″ Dp.	6″	40	3211K48	194.06
Type 304 Stainless Steel				
8″ Dia.× 8″ Dp.	4″	40	3211K57	188.89
12″ Dia.×12″ Dp.	6″	40	3211K59	282.32
Rectangular Baskets				
16-ga. Carbon Steel				
10″ Lg.×8″ Wd.×6″ Dp.	—	40	31165K66	140.07
Type 304 Stainless Steel				
10″ Lg.×8″ Wd.×6″ Dp.	—	40	31165K88	215.31

For information about wire cloth baskets, see page 2721.

Perforated Polypropylene Baskets

Resistant to temperatures up to 212°F, these round baskets are good for cleaning, dipping, and pickling parts. They withstand most acids and plating and chemical fluids. They're perforated on the sides and bottom, have top and bottom reinforcing rings, and have a swinging-loop handle.

Inside Size, Dia. × Dp.	O'all Size, Dia. × Dp.	Cap., lbs.	1/8″ Dia. Perforations		3/32″ Dia. Perforations	
5⅛″ × 5″	6″ × 6″	10	3228K4	$113.45	3228K5	$113.45
7¼″ × 6¾″	8″ × 8″	20	3228K1	122.18	3228K6	122.18
9¼″ × 9″	10″ × 10″	30	3228K2	128.00	3228K7	128.00
10⅝″ × 10¾″	12″ × 12″	40	3228K3♥	139.64	3228K8♥	139.64

♥ Has reinforcing cross pieces on the bottom.

Perforations

Long-Handle Nickel Steel Baskets

Keep hands clear of solutions as you wash, dip, and rinse parts with these long-handle baskets. Baskets are made of chrome-plated nickel steel with 0.087″ dia. wire and a 0.125″ opening size. Diameter listed below is for the top of the basket.

Inside Size, Dia. × Dp.	Handle Lg.		
8¼″ × 4½″	7½″	3218K22	$40.82
9¼″ × 4¾″	8½″	3218K33	43.44
10¾″ × 6″	10⅜″	3218K44	47.92
13½″ × 5½″	11½″	3218K55	60.46

Snap-Lid Steel Baskets

Baskets have a hinged lid that flips out of the way for filling and closes securely with a snap. Made of galvanized steel with a 0.025″ wire dia. and a 0.125″ opening size. They have a solid plastic top and bottom. To prevent opening, a hole through the lid's lips accepts a wire tie or other locking device. 3238K6 has a ¼″ dia. hole; K8 has a 5/16″ dia. hole.

Inside Size, Dia. × Dp.	Cap., lbs.		
2¼″ × 7¼″	2	3238K6	$9.38
4⅜″ × 7¼″	6	3238K8	12.65

Baskets for Miniature Parts

(1) Baskets have an open-top plastic frame and nylon mesh that won't scratch parts.

(2) All stainless steel construction with a shiny finish. These open-top baskets have a handle that can be bent so you can hang it over the edge of an ultrasonic cleaner.

(3) To open, squeeze the plastic handles on these stainless steel mesh round baskets. Mesh has a shiny finish.

(4) Basket consists of two halves that screw together to secure your tiniest parts. Made of very fine stainless steel mesh with a shiny finish and a brass frame.

	Basket Dia.	O'all Lg.	Approx. Mesh Opening Size		
1	2.50″	6″	0.051″	3353K42	$2.43
1	4.50″	9″	0.051″	3353K44	3.81
2	2.50″	6.75″	0.016″	3353K48	4.11
2	3″	7.25″	0.016″	3353K51	4.73
3	1.50″	6″	0.016″	3353K55	3.32
3	2.50″	6.50″	0.016″	3353K57	3.89
4	0.94″	1″■	0.020″	3353K63	4.46

■ Basket depth.

Slippery Plastic Surface Test Pens

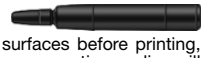

Also known as dyne pens, these test pens quickly and easily test the surface energy (dyne level) of films and other nonabsorbent surfaces before printing, coating, or laminating. Works like a felt tip marker—a continuous line will occur if the material is properly treated while insufficiently treated material will have air bubbles and a disappearing mark. Overall length is 5¼″.

Dynes/cm			Dynes/cm		
32	5590K11	$25.84	46	5590K18	$25.84
34	5590K12	25.84	48	5590K19	25.84
36	5590K13	25.84	50	5590K21	25.84
38	5590K14	25.84	52	5590K22	25.84
40	5590K15	25.84	54	5590K23	25.84
42	5590K16	25.84	56	5590K24	25.84
44	5590K17	25.84	58	5590K25	25.84

Slippery Plastic Surface Treater

Also known as a corona treater, this handheld device produces a high-voltage, high-frequency spark. This electric field created by the spark treats surface polymers with low-surface energy so the surface energy (dyne level) can be raised to a level that allows for printing and bonding.

Use in low volume lab and small parts surface treatment. Maximum continuous run time is 20 minutes. Operates on 120 VAC, 50/60 Hz and has a 6-ft. cord with three-prong plug. Power supply is 4⅛″ Lg. × 7¾″ Wd. × 3⅛″ Ht. Handpiece is 11″ Lg. × 2½″ Dia.

5693K14 ..... $550.34

About Static Eliminators

Static eliminators, also called ionizers, are designed to protect sensitive equipment from static charges, as well as to prevent equipment from producing static charges. Most static charges are caused by friction between two surfaces. When the surfaces separate, one loses electrons and becomes positively charged, while the other gains electrons and becomes negatively charged. This static charge causes the surfaces to resist separation (similar to "static cling"). It can cause machinery breakdowns, clogs, and hang-ups in plastic and paper processing, material slitting and converting, printing, conveying, and many other processes. An eliminator directs a flow of positive and negative particles at the machinery, neutralizing the static charge and allowing machinery to run at higher speeds without jams or clogs.

A discharge of a static charge can be destructive and dangerous to equipment. Known as ESD (electrostatic discharge), it's often seen and felt as small shocks that jump from our bodies in low-humidity conditions. ESD can destroy sensitive electrical and electronic equipment. Static eliminators minimize ESD for work on electronic equipment.

Static-Eliminating Bars— Use in close proximity applications where there is little or no air movement.

Static-Eliminators with Blowers— Use for larger applications where airflow is needed to cover a broader area.

Static Eliminators with Compressed Air— Whether with air knives or blowguns, compressed air allows for precision static elimination in hard-to-reach areas.

Static-Eliminating Bars

Also known as ionizing bars, these bars have shockless emitter points that concentrate ionization in one long, thin area to control the buildup of static electricity on conveyor and assembly lines. There's no blower to direct dirty air at the process, so the risk of outside contamination is minimized. Ideal mounting distance is 1″ to 3″ from the material.

Note: Do not mount directly over metal parts or rollers. The metal will absorb the ion charge and reduce the effectiveness of the equipment.

A complete system consists of bar, power supply, and power supply-to-bar connector cable (each sold separately). The ***power supply*** has a 6-ft. cord with three-prong plug and can run any number of bars. Two bars can be operated directly from a single power supply without the aid of the ***optional bar-to-bar connector cables***. Additional bars can be added using the bar-to-bar connector cables to connect the end of one bar to another. The ***optional bar tester*** is a pen size device that offers a quick means to determine if your static eliminator is operating. The neon light operates on an electrical current from the bar. No batteries required.

Max. Static Field, Wd. × Lg.	O'all Size, Ht. × Wd. × Dp.		
9″ × 3″	1⅜″ × 11⅝″ × 1¾″	2246K14	$167.57
12″ × 3″	1⅜″ × 14⅝″ × 1¾″	2246K15	186.59
24″ × 3″	1⅜″ × 26⅝″ × 1¾″	2246K16	259.08
36″ × 3″	1⅜″ × 38⅝″ × 1¾″	2246K17	327.75
48″ × 3″	1⅜″ × 50⅝″ × 1¾″	2246K18	406.45
60″ × 3″	1⅜″ × 62⅝″ × 1¾″	2246K19	480.14
Power Supply (115 VAC 50/60 Hz input)		2246K21	265.74
10-ft. Power Supply-to-Bar Connector Cable		2246K22	76.43
Optional 5-ft. Bar-to-Bar Connector Cable		2246K23	54.93
Optional Bar Tester		2246K25	30.00

For information about static eliminators, see page 2723. For air hose, see page 2732.

Static-Eliminating Blowers

2245K31

2245K43 and 2245K49 2245K45

2245K61

2245K16

Project a curtain-like stream of static-eliminating air. Blowers have variable controls to tailor airflow to your application, except 2245K61 which has three speeds. They have built-in power supplies for the enclosed static-eliminating bar, except 2245K31 which has a power supply included in a separate enclosure that can also power other devices such as additional static-eliminating bars (see 2246K on page 2723). All operate on 115/120 VAC, 50/60 Hz and have a 6-ft. cord with three-prong plug.

Blowers are used for process applications and where a flow of ionized air is desired. A filter keeps dust and dirt particles out of the airstream.

Blowers with heater reduce wind chill for extra comfort in cool areas. 2245K16 is for overhead use and includes built-in lights. *Adjustable floor stands* for 2245K43, K45, and K49 are sold separately below. Replacement *filter kits* are also sold separately below. 2245K44 consists of five filters and a holding frame and clips. 2245K62 consists of a replacement filter frame and one filter.

Air Volume Output, cfm	Max. Static Field, Wd. × Lg.	Overall Size, Ht. × Wd. × Dp.		Each
Blowers				
25-148	1½′ × 3′	7¾″ × 10 3/16″ × 9⅜″	2245K31	$1,050.10
100-255	2′ × 8′	6¼″ × 12″ × 10″	2245K43	981.97
110-300	2′ × 10′	9¾″ × 16⅜″ × 13¼″	2245K45	1,423.29
Blowers with Heater				
80-160	2½′ × 5′	6¼″ × 12″ × 10″	2245K49	588.89
70, 95, 120	3′ × 6′	4½″ × 15⅜″ × 8⅛″	2245K61	694.44
150-300	2′ × 4′	4″ × 42¾″ × 6¾″	2245K16	1,044.44
Accessories				
48″ to 72″ Ht. Floor Stands for 2245K43 and K49			2245K22	328.33
50″ to 74″ Ht. Floor Stands for 2245K45			2245K46	356.92
Repl. Filter Kit for 2245K43 and K49			2245K44 Pkg.	$51.67
Repl. Filter Kit for 2245K61			2245K62 Pkg.	$72.86
Repl. Filters for 2245K45 (20/Pkg.)			2245K26 Pkg.	$81.45

Static-Eliminating Blowguns

A

Power Supply for A

B

Included Power Supply for B

Neutralize static charges in seconds. These blowguns blow off dust and contamination. For best results, keep Style A's nozzle no more than 6″ from the surface of the part being cleaned and Style B's nozzle 2″ to 10″ from the part. Power supply sold separately below (unless noted). Blowguns require a clean, dry air supply. Features shockless operation. For a static charge detector, see page 1828. Both blowguns meet OSHA directive for maximum outlet pressure.

Caution: Do not use near flammable materials or gases.

A High-Force Blowgun— A strong blow-off force neutralizes static electricity up to 15 ft. Operates on compressed air. Includes a 10-ft. cable for connection to the required power supply. Air inlet: ¼″ NPT female. Maximum inlet pressure: 250 psi. Air consumption @ 40 psi: 11.5 cfm. Recommended air line filter size: 5 microns and smaller.

Power supply (sold separately below) accommodates two blowguns. It has a lighted on/off switch and a 6-ft. power cord with three-prong plug. Input: 115 VAC, 50/60 Hz. UL and C-UL listed.

		Each
Blowgun with Cable	5406K76	$406.74
Power Supply	52555K31	321.35
Optional 5-ft. Blowgun Extension Cable	52555K32	73.53

B Easy-Adjustment Blowgun— Has all the functionality built in to the gun. Functions include flow control, balanced adjustment for calibration, and two-level LED which indicates power and ionization. Has a 0.01-micron filter in the end of the blowgun that changes color when it needs replacement. Meets clean room Class 1000 requirements. Operates on compressed air or nitrogen.

Blowgun includes a 7-ft. cable for connection to power supply and a hanger for mounting. Air inlet: ⅛″ NPT female. Maximum inlet pressure: 100 psi. Air consumption @ 100 psi: 7.4 cfm. Power supply (included) has power-on light. Has a 6-ft. cord with three-prong plug. Input: 120 VAC, 50/60 Hz.

Blowgun with Cable/Hose and Power Supply	34405K77	Each	$869.53
Repl. Filters/Tips (Pkg. of 2)	34405K79	Pkg.	$81.08

Static-Eliminating Blowers for Large Areas

Create an extra wide field of ionized air, eliminating static electricity in applications that involve wide processing equipment and products. Suspend from a ceiling or mount on a wall, floor, bench, or machine frame. Include a variable air speed/volume control, an on/off switch, a pilot light, and a 6-ft. cord with three-prong plug. Operate on 110/120 VAC, 50/60 Hz. All are 3 9/16″ Ht. × 5⅜″ Dp. Optional ***air filters*** (sold separately) prevent contamination of the process or equipment.

Max. Air Vol. Output	Max. Static Field, Wd. × Lg.	Overall Size, Ht. × Wd. × Dp.	No. of Fans		Each
105 cfm	14″ × 8′	3 9/16″ × 20″ × 5⅜″	1	2241K49	$902.16
210 cfm	24″ × 8′	3 9/16″ × 30″ × 5⅜″	2	2241K51	1,016.74
315 cfm	34″ × 8′	3 9/16″ × 40″ × 5⅜″	3	2241K53	1,193.66
525 cfm	54″ × 8′	3 9/16″ × 60″ × 5⅜″	5	2241K55	1,494.54
Air Filters (Pkg. of 10)				2241K57 Pkg.	$15.48

Static-Eliminating Blower for Hard-to-Reach Areas

A concentrated flow of ionized compressed air removes static and dust at distances up to 15 feet away. Ideal for hard-to-reach areas and confined spaces. Includes a pivoting mounting stand for precise direction of the airstream. Blower produces up to 420 cfm @ 100 psi input pressure. Air consumption is 18.7 cfm @ 100 psi. Requires a power supply (sold separately below) for ion generation, as well as an existing source of compressed air operating from 5 to 100 psi max. (connection is ⅜″ NPT female). Overall size is 5 1/16″ Ht. × 6¼″ Wd. × 6 1/16″ Dp. ***Power supply*** (sold separately) includes a 6-ft. power cord with three-prong plug.

Blower	3150K82	$582.06
Power Supply (115 VAC, 50/60 Hz input)	52555K31	321.35

For air hose, see page 2732. For noise (decibel) information, see page 2727.

Workstation Static Eliminators

Small enough to place at your workstation or desktop for protection against ESD (electrostatic discharge) in a limited area.

Without Fan— No blower means it's ideal when airflow could stir up unwanted dust or displace lightweight components and paperwork. It maintains a static-safe environment from 6″ to 18″ for Class 2 and 3 ESD-sensitive equipment. Size is 5¼″ Ht.×4¾″ Wd.×2½″ Dp. Operates on 120 VAC, 50/60 Hz and has a 6-ft. power cord with three-prong plug.

2240K43 ..... $396.81

With Fan— Quickly control static over a 12″×48″ area. Includes a swivel stand that can be mounted anywhere. Fan has two speeds (21 and 42 cfm). Size is 5⅜″ Ht.×3⅞″ Wd.×2⅜″ Dp. Operates on 120 VAC, 50/60 Hz and has a 6-ft. cord with a three-prong plug.

2240K66 ..... $491.09

Compressed-Air Air Knives

Using compressed air, these air knives produce a high-volume, high-velocity sheet of air. They cool parts and blow liquids, chips, and dust from conveyors and moving webs. Air flows out through a gap set at 0.002″. Shims (sold separately) enlarge the gap to adjust the flow and force of air. Knives have no moving parts so they're maintenance free. Quieter and more efficient than open jets and drilled or slotted pipe, air knives reduce noise and use 40-90% less compressed air.

Air knives should be used with clean air. A 5-micron or smaller auto-drain filter is recommended. Air inlet: ¼″ NPT female. Maximum inlet pressure: 250 psi. Recommended operating air pressure is 80-100 psi. Meet OSHA 1910.242(b) for dead-end pressure and 1910.95(a) for noise level.

General Purpose Air Knives— Use where higher air consumption and noise levels are acceptable (86 dB @ 100 psi for standard; 78 dB @ 40 psi for static-eliminating). They amplify incoming air by a factor of 30 to 1. Air inlets are on the end of each knife. Air slot extends to within ½″ of end of air knife. *Standard aluminum knives* are 1 1/16″ Ht.×1⅜″ Dp. and withstand temperatures up to 180° F. *Static-eliminating aluminum knives* are 1 21/32″ Ht.×1⅜″ Dp. and withstand temperatures to 160° F. *300 series stainless steel* are 1″ Ht.×1¼″ Dp. and withstand corrosive environments and temperatures up to 800° F. Great for food and pharmaceutical applications.

High-Efficiency Air Knives— Use 18% less compressed air and are quieter than general purpose air knives (69 dB @ 80 psi). They amplify incoming air by a factor of 40 to 1. Air inlets are on both ends and in the bottom of the knife. Air slot extends full width of knife. *Standard aluminum knives* are 1 7/16″ Ht.×1¾″ Dp.; withstand temperatures up to 180° F. *Static-eliminating aluminum knives* are 1 27/32″ Ht.×2 15/64″ Dp.; withstand temperatures up to 160° F. *300 series stainless steel* are 1 1/32″ Ht.×1 7/16″ Dp.; withstand corrosive environments and temperatures up to 800° F. Great for food and pharmaceutical applications.

Static-eliminating air knives neutralize static charges and prevent ESD (electrostatic discharge) by flowing positive and negative ions onto the surface or part. Knives are aluminum with a shockless antistatic ionizing bar and a 5-ft. shielded cable for connection to the 5 kV power supply. Work up to 20 feet away. UL and C-UL recognized. Power supply (sold separately) has two ports to handle two air knives at the same time. Operates on 115 VAC, 50/60 Hz. Power supply is UL and C-UL listed.

Three-piece shim sets enlarge the gap to adjust the flow and force of air. Include plastic shims in sizes 0.001″, 0.003″, and 0.004″ for aluminum knives or three 0.002″ stainless steel shims for stainless steel knives.

Air filter/regulators combine a 5-micron auto-drain filter for clean air and a regulator for controlling the consumption, flow, and force of air.

Caution: Do not use near flammable materials or gases.

Universal mounting system has a 31″ reach and two locking swivels. It mounts to anything that has a ½″-13 UNC threaded hole.

General Purpose Air Knives

Air Slot Wd. ♦	Air Consumption @ 80 psi	STANDARD Aluminum	Each	STANDARD 300 Series Stainless Steel	Each	Air Consumption @ 50 psi	STATIC-ELIMINATING Aluminum	Each	THREE-PIECE SHIM SETS For Aluminum	Set	THREE-PIECE SHIM SETS For Stainless Steel	Set
3″	10.2 cfm	5191K81	$132.41	5191K82	$227.36	7.0 cfm	52555K41	$287.02	5191K83	$9.00	5191K84	$39.10
6″	20.4 cfm	5191K26	154.69	5191K44	271.70	14.1 cfm	52555K11	340.34	5191K36	9.71	5191K55	39.20
12″	40.8 cfm	5191K27	198.90	5191K45	397.84	28.2 cfm	52555K12	428.02	5191K37	12.69	5191K56	48.09
18″	61.2 cfm	5191K33	258.55	5191K46	539.58	42.3 cfm	52555K13	508.39	5191K39	15.65	5191K57	57.40
24″	81.6 cfm	5191K28	302.69	5191K47	622.39	56.4 cfm	52555K14	560.14	5191K38	18.96	5191K58	77.45
30″	102.0 cfm	5191K34	364.25	5191K48	760.05	70.5 cfm	52555K15	659.03	5191K41	22.88	5191K59	95.41
36″	122.4 cfm	5191K42	492.13	5191K35	888.97	84.6 cfm	52555K33	735.80	5191K43	24.90	5191K61	119.41

♦ For overall knife width, add 1″ to slot width.

High-Efficiency Air Knives

Air Slot Wd.	Air Consumption @ 80 psi	STANDARD Aluminum	Each	STANDARD 300 Series Stainless Steel	Each	Air Consumption @ 50 psi	STATIC-ELIMINATING Aluminum	Each	THREE-PIECE SHIM SETS For Aluminum	Set	THREE-PIECE SHIM SETS For Stainless Steel	Set
3″	8.7 cfm	6069K11	$190.65	6069K18	$298.74	6.0 cfm	6101K31	$359.05	6069K51	$10.68	6069K61	$42.33
6″	17.4 cfm	6069K12	216.51	6069K19	372.28	12.0 cfm	6101K32	425.00	6069K52	11.67	6069K62	46.53
9″	26.1 cfm	6069K26	268.72	6069K29	517.77	—	—	—	6069K58	14.77	6069K68	54.91
12″	34.8 cfm	6069K13	284.58	6069K21	523.79	24.0 cfm	6101K33	541.65	6069K53	14.96	6069K63	61.70
18″	52.2 cfm	6069K14	357.23	6069K22	666.28	36.0 cfm	6101K34	644.74	6069K54	19.07	6069K64	75.98
24″	69.6 cfm	6069K15	431.47	6069K23	822.04	48.0 cfm	6101K35	747.81	6069K55	22.35	6069K65	91.26
30″	87.0 cfm	6069K16	519.30	6069K24	1,001.05	60.0 cfm	6101K36	866.23	6069K56	25.26	6069K66	106.75
36″	104.4 cfm	6069K17	637.79	6069K25	1,203.16	72.0 cfm	6101K37	1,010.98	6069K57	29.74	6069K67	122.82

Accessories

		Each
Two-Port Power Supply for Static-Eliminating Air Knives	52555K31	$321.35
Repl. 5-ft. Extension Cable for 52555K31	52555K32	73.53
Universal Mounting System	5191K31	192.83

Air Filter/Regulators		Each
For 3″, 6″, 9″, and 12″ Air Slot Widths	5001K61	$70.65
For 18″ Air Slot Widths	5001K67	73.59
For 24″, 30″, and 36″ Air Slot Widths	5001K33	132.48

Blower-Driven Air Knives

When connected to a blower, these air knives provide high-speed airflow at low pressure. The airflow slot is adjustable from 3/64″ to 9/32″. Ideal for dust, chip, and water removal; drying; belt wiping; and controlling coating depth. They can also control the movement of smoke or fumes as well as function as a barrier to keep hot air in industrial ovens and cold air in freezers. Made of aluminum. Connect to round rigid duct, flexible duct, and air hose. Duct air hose fits over the 2½″ OD. *Note:* Knives are not rated for cfm.

Note: A standard system can be put together when purchasing an air knife and the correct optional blower (see below), threaded pipe (see page 6), hex bushing/reducer (see page 5), and hose fitting (see below). The hose fitting listed below is 3″ long with a 2½″ ID at one end for connecting to the air knife with a hose clamp (not included) and a 2″ NPT female threaded connection at the other end for connection to the blower using a reducer and threaded pipe (both not included).

Air Knives

Knife Wd.		
6″	1833K212	$281.60
12″	1833K214	328.00
18″	1833K216	396.80
24″	1833K217	454.40
30″	1833K218	497.74
36″	1833K219	556.80

Optional Equipment

	For Air Knife	Motor	Blower Air Output Connection		
Blower	6″	2.5 hp	1½″ NPT Female	9960K62	$991.71
Blower	12″-18″	5.5 hp	2″ NPT Female	9960K64	1,919.59
Blower	24″-36″	10.0 hp	2½″ NPT Female	9960K65	2,549.65
Smooth Hose Fitting				1833K41	36.57

For air hose, see page 2732. For noise (decibel) information, see page 2727.

Blowoff Nozzles

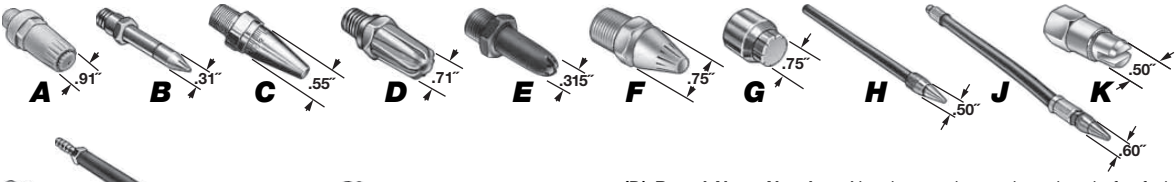

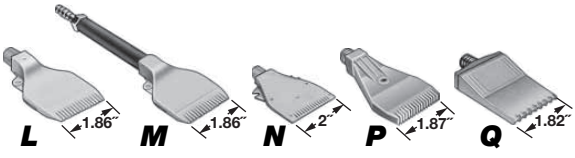

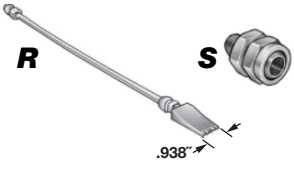

Airflow Pattern

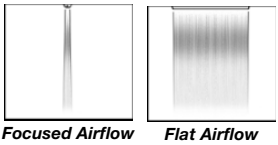

Focused Airflow *Flat Airflow*

Replace the noise and inefficiency of drilled pipe, open-air jets, and similar devices with the quiet, strong blowing force of these blowoff nozzles. They efficiently use compressed air, saving on energy costs. Use for drying, cleaning, sorting, and parts ejection. Build your own multiple nozzle air curtain—just team the nozzle of your choice with a manifold (see pages 220-221).

Nozzles A and ***L-N*** meet OSHA directive for maximum noise level.

Nozzles B-K and ***P-R*** meet OSHA directives for maximum noise and outlet pressure.

Focused Nozzles— Cone-shaped nose delivers concentrated air flow.

(A) Plastic Nozzles— Made of ABS plastic, they resist oils, lubricants, and solvents.

(B) Direct-Jet Nozzles— Narrow airstream gets into small, hard-to-reach areas.

(C) Adjustable-Flow Nozzles— Airflow and thrust can be adjusted by turning the internal set screw and rotating the nozzle tip.

(D) Broad-Nose Nozzles— Nozzles produce a broader shaft of air than other focused nozzles. Flanges protect exhaust ports. *Aluminum* resists higher temperatures than *zinc* and *zinc/aluminum*. *Plastic* is PEEK and is the best choice for chemical and corrosive environments.

(E) High-Heat/Corrosion-Resistant Plastic Nozzle— Made of PEEK plastic, it withstands temperatures up to 500° F, aggressive chemical environments, corrosive fluids, and has extremely high impact resistance.

(F&G) High-Force Nozzles— High-quality, high-powered nozzles generate two to four times the blowing force of most other nozzles listed here. *Style G* is made entirely of stainless steel and is corrosion and heat resistant.

(H) Tube Mounted Nozzles— Nozzle is permanently mounted on copper tubing. Overall length for 8451K31 is 6″; for K32 and K37 is 8″.

(J) Flexible-Hose Nozzles— Direct this nozzle exactly where it's needed. It's permanently mounted on a rubber hose. Overall length is 12″.

(K) Pipe Nozzles— Nozzles thread right onto male threaded pipe.

Flat Nozzles— The flat nose distributes air over a wide area.

(L-N) Plastic and ***Aluminum Nozzles—*** *Plastic* nozzles are made of acetal and resist oils, lubricants, and solvents. *Style M* has a steel extension tube for hard-to-reach areas and overall length is 7.87″. *Aluminum* nozzle withstands more severe temperatures.

(P) Recessed-Orifice Nozzles— The recessed orifice design prevents air outlets from being damaged or blocked. Nozzles resist oils, lubricants, and solvents. *Plastic* nozzle is made of ABS plastic.

(Q) Heavy Duty Nozzles— Durable nozzles emit a wide jet of air, making them well suited for parts ejection in punch presses and drying/transporting applications. Exhaust ports are protected by flanges. Nozzle width for 31875K19 is 15/16″.

(R) Tube Mounted Nozzles— Nozzles are mounted on chromated copper tubing. Offered with 1/4″ NPT connection or with an unthreaded end. Overall length is 12.13″.

Nozzle Swivels— Allow nozzles to swivel 30° left, right, up, and down.

(S) Stainless Steel Swivels— Use with nozzles that have a male air inlet connection to fine tune direction of airflow. They have the same size thread on both ends—one male and one female.

Nozzle Material	Blowing Force, lbs. @ 100 psi	dB @ 80 psi 3 ft. Away	Air Consumption @ 100 psi	Max. Inlet Pressure	Air Inlet Connection	Temperature Range	Nozzle Length		
Focused Airflow Nozzles									
A ... Plastic	0.79■	83■	17.2 cfm●	100 psi	1/8″ NPT Male	–40° to +122° F	2.17″	**5329K61**▲	$17.76
A ... Plastic	0.79■	83■	20 cfm●	100 psi	1/4″ NPT Male	–40° to +122° F	2.17″	**5329K62**▲	17.75
B ... Zinc/Steel	0.97	80.1	15.4 cfm	143 psi	1/8″ NPT Male	–4° to +158° F	1.88″	**31875K11**	27.11
B ... Stainless Steel	1.04	80.5	15.2 cfm	143 psi	1/8″ NPT Male	–4° to +752° F	1.25″	**31875K31**	64.74
C ... Aluminum	0.19-1.31	83.5	8-26 cfm	150 psi	1/8″ NPT Male	–40° to +140° F	1.50″	**8451K33**	16.22
C ... Stainless Steel	0.19-1.31	83.5	8-26 cfm	150 psi	1/8″ NPT Male	–40° to +800° F	1.50″	**8451K34**	47.91
D ... Zinc	1.04	80.5	15.2 cfm	143 psi	1/4″ NPT Male	–4° to +158° F	1.54″	**31875K12**	37.97
D ... Aluminum	1.04	80.5	15.2 cfm	143 psi	1/4″ NPT Male	–4° to +302° F	1.54″	**31875K13**	45.56
D ... Zinc/Aluminum	1.02	74	17.5 cfm	250 psi	1/4″ NPT Female	–4° to +158° F	1.75″	**31875K61**	36.85
D ... Plastic	1.02	74	17.5 cfm	250 psi	1/4″ NPT Female	–40° to +320° F	1.75″	**31875K64**	62.31
E ... Plastic	0.84	80	11.8 cfm	143 psi	1/8″ NPT Male	–85° to +500° F	0.94″	**31875K21**	47.70
F ... Aluminum	4.54	93.5	76.7 cfm	143 psi	3/8″ NPT Male	–4° to +238° F	1.42″	**31875K33**	62.43
G ... Stainless Steel	2.9	90.2	47.1 cfm	143 psi	1/2″ NPT Female	–4° to +752° F	1.14″	**31875K15**	194.17
G ... Stainless Steel	4.6	94.2	74.9 cfm	143 psi	1/2″ NPT Female	–4° to +752° F	1.14″	**31875K16**	233.22
H ... Copper/Brass	0.38	81	9 cfm	150 psi	1/4″ Copper Tube	–40° to +140° F	0.95″◤	**8451K31**	26.78
H ... Copper/Brass	0.56	76	13 cfm	150 psi	3/8″ Copper Tube	–40° to +140° F	1.43″	**8451K32**	37.56
H ... Copper/Brass	1.75	89	31 cfm	150 psi	3/8″ Copper Tube	–40° to +140° F	1.43″	**8451K37**	36.66
J ... Brass	0.56	76.5	13 cfm	150 psi	1/8″ NPT Male	+10° to +140° F	1.43″	**8451K36**	34.67
J ... Brass	1.75	89	31 cfm	150 psi	1/4″ NPT Male	+20° to +140° F	1.43″♥	**8451K41**	41.99
K ... Brass	1.13	80	19 cfm	250 psi	1/4″ NPT Female	–40° to +250° F	1.44″	**31875K71**	15.53
K ... Stainless Steel	1.13	80	19 cfm	250 psi	1/4″ NPT Female	–40° to +800° F	1.44″	**31875K72**	36.73
Flat Airflow Nozzles									
L ... Plastic	0.79■	85■	20 cfm●	100 psi	1/4″ NPT Male	–40° to +122° F	3.54″	**5329K63**▲	17.75
M ... Plastic	0.79■	85■	20 cfm●	100 psi	5/16″ Hose Barb	–40° to +122° F	3.54″	**5329K64**▲	46.18
N ... Aluminum	0.79■	86■	20 cfm●	217.5 psi	1/4″ NPT Male	–50° to +302° F	3.40″	**5329K65**▲	103.91
P ... Plastic	Not Rated	85	32.5 cfm	100 psi	1/4″ NPT Male	0° to +170° F	3.56″	**5329K51**	37.56
P ... Stainless Steel	Not Rated	85	32.5 cfm	150 psi	1/4″ NPT Male	0° to +500° F	3.56″	**5329K68**	174.46
Q ... Zinc	0.93	79.8	13.4 cfm	143 psi	1/8″ NPT Male	–4° to +158° F	1.73″★	**31875K19**	45.57
Q ... Zinc	1.74	82.5	24.6 cfm	143 psi	1/4″ NPT Male	–4° to +158° F	2.52″	**31875K14**	57.49
R ... Zinc	0.93	79.8	14.8 cfm	143 psi	1/4″ NPT Male	–4° to +158° F	1.73″	**31875K41**	73.00
R ... Zinc	0.93	79.8	14.8 cfm	143 psi	0.31″ Copper Tube	–4° to +158° F	1.73″	**31875K42**	73.00
Nozzle Swivels									
S ... Stainless Steel	Not Rated	Not Rated	Not Rated	143 psi	1/8″ NPT Male	–4° to +752° F	0.91″	**3101K21**	41.90
S ... Stainless Steel	Not Rated	Not Rated	Not Rated	143 psi	1/4″ NPT Male	–4° to +752° F	0.99″	**3101K22**	47.71

■ @ 72.5 psi. ● @ 75 psi. ▲ Do not meet OSHA dead-end pressure requirements. Must be used with a pressure regulator set at 30 psi or less to meet OSHA directives for maximum outlet pressure. ◤ Nozzle dia. is 0.34″. ♥ Nozzle dia. is 0.70″. ★ Nozzle width is 0.938″.

For air hose, see page 2732.

Circular-Flow Air Knives

Get a uniform 360° airstream with the circular design of these air knives. Used with compressed air, they're ideal for blowoff, drying, cleaning, and cooling of pipe, cable, extruded shapes, and hose. They're hinged for easy positioning around the material moving through them. All knives include two stainless steel shims to adjust air flow. Air inlet is 1/4″ NPT female. Meet or exceed OSHA noise and dead-end pressure requirements.

Aluminum is rated for temperatures up to 400° F.

Type 303 stainless steel is rated for temperatures up to 800° F.

Shim sets include two 0.002″ thick stainless steel shims.

Inside Dia.	Outside Dia.	Thick.	dB @ 80 psi 3 ft. Away	Air Consumption @ 80 psi	Max. Inlet Pressure	Aluminum	Each	Type 303 Stainless Steel	Each	Shim Sets	Set
1″	3 3/4″	1 1/8″	76	19.1 cfm	250 psi	6275A34	$298.74	6275A11	$694.26	6275A73	$12.69
2″	4 3/4″	1 1/8″	77	29.5 cfm	250 psi	6275A35	432.65	6275A12	954.26	6275A74	15.76
3″	5 3/4″	1 1/8″	79	39.8 cfm	250 psi	6275A36	699.77	6275A13	1,473.65	6275A75	18.80
4″	6 3/4″	1 1/8″	81	50.2 cfm	250 psi	6275A37	979.72	6275A14	2,027.16	6275A76	21.67

Flexible Blowoff Nozzles with Magnetic Bases

Adjust the hose on these nozzles to deliver air exactly where you need it. The magnetic base provides easy placement. All nozzles have a control valve for adjusting air flow.

Standard Duty— Have a modular plastic hose that snaps together and a polypropylene nozzle. Nozzle produces a concentrated air flow. In addition to air, these nozzles may be used with liquid coolants. Magnetic base pull: 38 lbs. Air inlet: 3/8″ hose barb. Max. inlet pressure: 60 psi. Hose length: 9″. Hose ID: 1/4″. For replacement hose and fittings, see Snap-Loc hose assemblies on page 2202. Not rated for blowing force, sound level, or air consumption.

Double Hose

Single Hose Nozzle	33345K7	$43.78
Double Hose Nozzle	33345K9	49.23

Heavy Duty— Has oil and abrasion resistant rubber hose and three times the magnetic base pull compared to the Standard Duty nozzles. Nozzle is zinc and delivers a broad cone-shaped air flow. Meets OSHA directive for maximum outlet pressure. Magnetic base pull: 120 lbs. Air inlet: 1/4″ NPT female. Max. inlet pressure: 150 psi. Blowing force @ 100 psi: 1.02 lbs. Sound level @ 100 psi: 78 dB. Air consumption @ 100 psi: 17.5 cfm. Hose length: 12″.

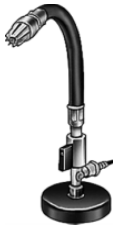

Single Hose Nozzle	31665K21	$166.82

About Blowguns

Blowguns use compressed air for industrial cleaning and drying. When selecting a blowgun consider blowing force, noise level, and air consumption and the tradeoffs between these features. For example, a gun with 2.1 lbs. of blowing force will have almost twice the blowing force as a gun with 1.2 lbs. of blowing force, but will be noisier (107 dB vs. 88 dB) and consume more air (24 cfm vs. 17 cfm).

The following are examples of decibel levels and related noises.

82- 90 dB: Manual Machine Tool, Handsaw
91- 95 dB: Electric Drill
96-104 dB: Factory Machinery
100-107 dB: Snow Blower
125-127 dB: Chain Saw

Note: Many blowguns, referred to as safety blowguns, meet the OSHA requirement for the use of blowguns by having vents in the tip to prevent pressure from exceeding 30 psi if tip becomes blocked. See OSHA standard 29CFR part 1910.242(b) and OSHA Instruction STD 1-13.1 (OSHA Directive #100-1) for more information. OSHA also has permissible daily noise exposure specifications which affect blowguns. See OSHA standard 29CFR Part 1910.95(a) for more information.

Lever-Handle Blowguns

1

2 *With Hose*

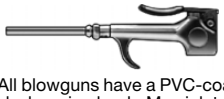

3

4

All blowguns have a PVC-coated lever handle, a vented safety nozzle, and a hanging hook. Max inlet pressure: 150 psi (unless noted). Air inlet: 1/4″ NPT female. Air outlet: 1/8″ NPT female (except 54405K35, which is 3/8″ SAE female). Meet OSHA directive for maximum outlet pressure.

(1) Economy blowgun and nozzles are nickel-plated, die cast zinc. Includes a safety nozzle and a nonsafety nozzle. Max. inlet pressure: 90 psi. *Note:* When using nonsafety nozzle, blowgun must be used with a pressure regulator set at 30 psi or less to conform to OSHA requirements.

(2) Standard blowguns have chrome-plated, die cast zinc bodies and all brass internal components. They are sold with and without nylon recoiling hose. Hose has 1/4″ ID and two 1/4″ NPT male fittings—one swivel and one rigid.

(3) 3″ extended reach blowgun has a chrome-plated, die cast zinc body and all brass internal components. It has a 3″ Lg.×5/16″ Dia. nickel-plated steel safety extension. Overall length is 6 3/4″.

(4) Air booster blowgun has multiple holes in the 2″ long safety nozzle to increase air volume. Body is chrome-plated, die cast zinc with all brass internal components.

	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi		
1	Not Rated	Not Rated	Not Rated	54405K35	$6.51
2	0.5 lbs.	84-86	10.5 cfm	5650K13	8.24
2 (w/12-ft. Hose)	0.5 lbs.	84-86	10.5 cfm	5650K11	22.68
2 (w/25-ft. Hose)	0.5 lbs.	84-86	10.5 cfm	5650K12	28.23
3	0.5 lbs.	84-86	11 cfm	5937K79	15.68
4	0.5 lbs.	84-86	11.5 cfm	5369K51	10.12

Pistol-Grip Blowguns

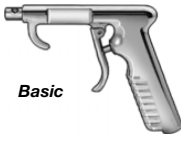

Basic

Deluxe

These guns are for all-around use and include a hang-up hook. Max. inlet pressure: 150 psi. Air inlet: 1/4″ NPT female. Meet OSHA directive for maximum outlet pressure.

Basic— Has a chrome-plated, die cast zinc body and brass nozzle. Air outlet: 1/8″-27 NPS female.

Deluxe— Body is polished, die cast aluminum with a nonslip, vinyl handle. Nozzle is nickel-plated brass. Air outlet: 1/8″ NPT female.

	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi		
Basic	Not Rated	Not Rated	10 cfm	5668K21	$20.22
Deluxe	0.5 lbs.	84-86	10.5 cfm	5668K11	24.61

Push-Button Blowgun

The ease of pushing a button, yet the force of other guns. Gun has a brass nozzle and a black polyurethane-coated, die cast zinc body. Includes a hang-up hook.

Maximum inlet pressure: 150 psi. Air inlet: 1/4″ NPT female. Air outlet: 1/8″ NPS female. Meets OSHA directive for maximum outlet pressure.

Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi		
0.5 lbs.	86	10 cfm	5467K14	$9.66

For information about blowguns, see page 2727. For blowgun accessories, see pages 2731-2732.

Extended-Reach Blowguns

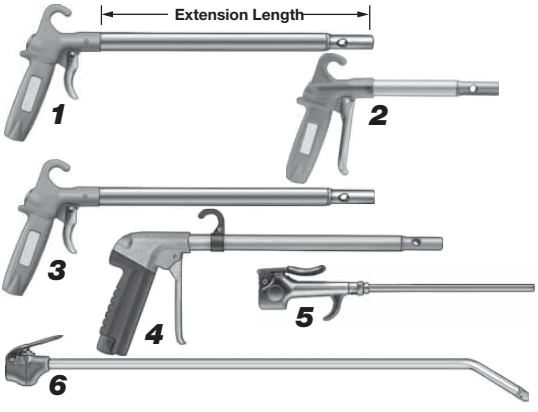

Lengths shown below are extension lengths. For overall length, add 3″ (unless noted). Max. inlet pressure: 120 psi. Meet OSHA directive for maximum outlet pressure (unless noted).

(1) Standard and ***(2) High Thrust Pistol Grips—*** Have an increased-flow nozzle, hang-up hook, cast aluminum body, nozzle, and extension. *High-thrust* blowguns have a unique internal design that delivers 50% more air volume and thrust than the *standard thrust* model.

(3) Quiet Air Pistol Grip— Three times quieter but with 50% less air thrust than *standard pistol-grip* blowguns. A cone-shaped nozzle with tiny air outlets around its circumference reduces noise and increases air flow. Made of cast aluminum. Add 4″ for overall length.

(4) Comfort-Grip Pistol Grip— A rubber handle and longer trigger provide the ultimate user control and comfort. Made of aluminum.

(5) Standard Lever Handle— Chrome-plated, die cast zinc body and all brass internal components ensure guns only blow air and not rust particles. Have a vinyl-coated lever handle with a hang-up hook. Each has a 5/16″ diameter nickel-plated steel straight-tube extension. Add 3 9/16″ for overall length.

(6) Angled-Nozzle Lever Handle— Angle into tight spots—the ends of these extra-long extension nozzles are bent 36°. Blowguns have a die cast zinc body with one brass nozzle and one rubber nozzle. Add 2 1/4″ for overall length. *Note:* When using the rubber nozzle, blowgun must be used with a pressure regulator set at 30 psi or less to conform to OSHA directive for maximum outlet pressure.

Blowguns and Replacement Extensions

Lg.	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi	Blowguns		Repl. Extension●	
(1) Standard Thrust Pistol Grip— *Air Inlet: 1/4″ NPT Female; Air Outlet: 5/8″-28 Female*							
6″	2.0 lbs.	109	34 cfm	5536K38	$25.86	5536K31	$11.68
12″	2.0 lbs.	109	34 cfm	5536K32	27.12	5536K17	13.19
18″	2.0 lbs.	109	34 cfm	5536K39	28.37	5536K55	15.67
24″	2.0 lbs.	109	34 cfm	5536K33	29.62	5536K18	16.39
36″	2.0 lbs.	109	34 cfm	5536K34	32.14	5536K19	19.39
48″	2.0 lbs.	109	34 cfm	5536K35	34.64	5536K2	22.13
60″	2.0 lbs.	109	34 cfm	5536K36	37.16	5536K22	25.21
72″	2.0 lbs.	109	34 cfm	5536K37	39.67	5536K23	28.22
(2) High Thrust Pistol Grip— *Air Inlet: 1/4″ NPT Female; Air Outlet: 5/8″-28 Female*							
6″	2.7 lbs.	108	54 cfm	5474K61	28.77	5536K31	11.68
12″	2.7 lbs.	108	54 cfm	5474K62	31.29	5536K17	13.19
18″	2.7 lbs.	108	54 cfm	5474K63	32.54	5536K55	15.67
24″	2.7 lbs.	108	54 cfm	5474K65	33.79	5536K18	16.39
36″	2.7 lbs.	108	54 cfm	5474K66	36.29	5536K19	19.39
48″	2.7 lbs.	108	54 cfm	5474K67	38.82	5536K2	22.13
60″	2.7 lbs.	108	54 cfm	5474K68	41.33	5536K22	25.21
72″	2.7 lbs.	108	54 cfm	5474K69	43.84	5536K23	28.22
(3) Quiet Air Pistol Grip— *Air Inlet: 1/4″ NPT Female; Air Outlet: 3/4″-32 Male*							
6″	1.5 lbs.	99	29 cfm	8316K31	27.82	8316K21	11.69
12″	1.5 lbs.	99	29 cfm	8316K32	29.08	8316K22	13.19
18″	1.5 lbs.	99	29 cfm	8316K33	30.33	8316K23	14.69
24″	1.5 lbs.	99	29 cfm	8316K34	31.59	8316K24	16.20
36″	1.5 lbs.	99	29 cfm	8316K35	34.09	8316K25	19.19
48″	1.5 lbs.	99	29 cfm	8316K36	36.60	8316K26	22.20
60″	1.5 lbs.	99	29 cfm	8316K37	39.12	8316K27	25.21
72″	1.5 lbs.	99	29 cfm	8316K38	41.63	8316K28	28.22

● Extension only; order nozzle separately.

Blowguns

Lg.	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi		
(4) Comfort-Grip Pistol Grip— *Air Inlet: 3/8″ NPT Female*					
12″	2.8 lbs.	104	49 cfm	5458K22	$36.84
12″	3.3 lbs.	101	66 cfm	5458K32	40.80
24″	2.8 lbs.	104	49 cfm	5458K24	39.35
24″	3.3 lbs.	101	66 cfm	5458K34	43.29
36″	2.8 lbs.	104	49 cfm	5458K25	41.87
36″	3.3 lbs.	101	66 cfm	5458K35	45.83
48″	2.8 lbs.	104	49 cfm	5458K26	44.38
48″	3.3 lbs.	101	66 cfm	5458K36	48.34
(5) Standard Lever Handle— *Air Inlet: 1/4″ NPT Female; Air Outlet: 1/8″ NPT Female*					
6″	0.5 lbs.	84-86	11 cfm	5937K81	16.66
8″	0.5 lbs.	84-86	11 cfm	5937K82	17.32
12″	0.5 lbs.	84-86	11 cfm	5937K84	20.18
18″	0.5 lbs.	84-86	11 cfm	5937K86	24.36
24″	0.5 lbs.	84-86	11 cfm	5937K87	30.36
36″	0.5 lbs.	84-86	11 cfm	5937K89	38.66
(6) Angled-Nozzle Lever Handle— *Air Inlet: 1/4″ NPT Female; Air Outlet: 7/16″-27 NPT Female* ♦					
24″	_____	86	10.5 cfm ★	5429K34	22.25
48″	_____	86	10.5 cfm ★	5429K35	26.73

♦ At extension end; 1/4″ NPT female at blowgun end.
★ With safety nozzle; 11.6 cfm @ 30 psi with rubber nozzle.

Accessories and Replacement Parts

Valve repair kits include valve stem assembly, seal, hex nut, spring, and gasket. *Optional nylon safety nozzles* (available for use with standard- and high-thrust pistol-grip blowguns) won't scratch delicate finishes.

	For Standard Thrust		For High Thrust		For Quiet Air	
Valve Repair Kit	5536K42	$7.20	5474K71	$6.29	5536K42	$7.20
Optional Nylon Safety Nozzle	5536K41	14.53	5474K15	14.53	_____	_____
Replacement Aluminum Safety Nozzle	5536K21	5.43	5474K21	6.93	8316K41	15.14
Replacement Brass Safety Nozzle for Angled Lever-Handle Blowgun					5429K11	$2.72
Replacement Rubber Nozzle for Angled Lever-Handle Blowgun					5418K63	3.96

Telescoping-Shaft Blowguns

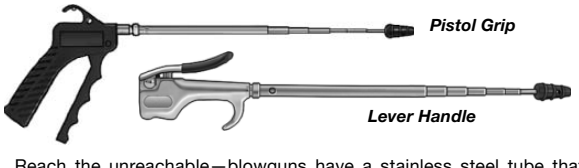

Reach the unreachable—blowguns have a stainless steel tube that telescopes from 8″ to 32″, which eliminates the need to have several blowguns in different lengths. Telescoping tube includes a 5/16″ dia. nozzle. Air consumption @ 100 psi: 11 cfm. Maximum inlet pressure: 150 psi. Air inlet: 1/4″ NPT female. Air outlet: 1/8″ NPS female. Meet OSHA directive for maximum outlet pressure. ***Pistol grip*** has a plastic body with nickel-plated brass air inlet threads. ***Lever handle*** has a chrome-plated die cast zinc body.

	Blowing Force @ 100 psi	dB @ 100 psi		
Pistol Grip	0.5 lbs.	85	3417K31	$36.62
Lever Handle	0.5 lbs.	85	3417K11	32.01
Repl. 8″-32″ Telescoping Extension			3417K12	$22.99

Extended-Reach Blowgun Holder

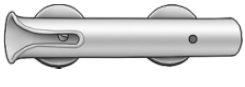

Finally, easy storage for your blowgun. This polyethylene holder has a magnetic base and is open at both ends making it ideal for blowguns with any length extension tubes. Holder is 12″ Lg. × 1 3/4″ ID and fits all guns on this page as well as any guns with up to a 1 3/4″ OD. Base is two 3 1/4″ dia. magnets with a combined holding force of 190 lbs.

8717K18 ..... $24.06

For information about blowguns, see page 2727. For blowgun accessories, see pages 2731-2732.

Flexible Nozzle Blowguns

Blow in any position—simply adjust the jointed 7″ extension tube. Great for space-restricted areas. 3390K41 has a glass-filled nylon body and K31 has a plastic body. Both have high-impact plastic extension tube and nozzle. Maximum inlet pressure: 150 psi. Air inlet: ¼″ NPT female. Air outlet: ⅛″ NPS female for 3390K41 and ⅛″ NPT female for 3390K31.

	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi		
Pistol Grip	0.5 lbs.	84-86	11 cfm	**3390K41**	$36.62
Lever Handle	0.5 lbs.	84-86	15 cfm	**3390K31**	30.94

Pressure-Regulated Blowguns

A built-in pressure regulator and safety screen allow a maximum discharge of 30 psi without letting particles through. Guns are die cast zinc. UL classified. Max. inlet pressure: 150 psi. Air inlet: ¼″ NPT female. Air outlet: ½″-27 UNS female. Meet OSHA directive for maximum outlet pressure.

Blowgun with extension nozzle includes a brass safety nozzle. Blowing force @ 100 psi: 0.25 lbs. Sound level @ 100 psi: 95 dB. Air consumption @ 100 psi: 5.5 cfm. Overall gun length is 5⅞″.

Blowgun with high-volume nozzle includes an aluminum safety nozzle with holes designed to increase air volume. Blowing force @ 100 psi: 0.39 lbs. Sound level @ 100 psi: 106 dB. Air consumption @ 100 psi: 18 cfm. Overall gun length is 4⅝″.

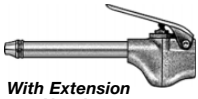

With Extension Nozzle

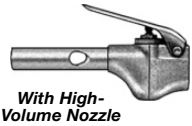

With High-Volume Nozzle

Blowgun with Extension Nozzle	**5457K51**	$13.40
Blowgun with High-Volume Nozzle	**5425K51**	13.69
Replacement Extension Nozzle for 5457K51	**5457K41**	4.91
Replacement Nozzle Tip for 5457K51	**5429K11**	2.72
Replacement High-Volume Nozzle for 5425K51	**5425K61**	6.38

Dual Inlet Blowguns

Two air inlets for twice the versatility. Use the top inlet when blowgun is suspended from an overhead hose; use the bottom inlet for bench and floor hoses. A plug seals off the unused inlet. Body is made of high-impact plastic and has a trigger that allows you to vary airflow from a puff to a blast. Air inlets: ¼″ NPT female. Air outlet: 7 mm male. Air consumption @ 100 psi: 13.2 cfm. Max. inlet pressure: 143 psi. Meet OSHA directive for maximum outlet pressure.

Blowgun with bent nozzle has a 4″ bent steel nozzle as well as a straight stainless steel nozzle.

Blowgun with hose has a 12″ flexible hose with nozzle. The hose has a copper core that can be bent and will hold the position.

With Bent Nozzle

	Blowing Force @ 100 psi	dB @ 100 psi		
With Bent Nozzle	0.89 lbs.	82.8	**5932K33**	$77.24
With Hose	0.89 lbs.	82.8	**5932K27**	132.76

Push-to-Activate Blowguns

Blowgun with Extension

Easily blow out lines, pipes, tubes, and other hard-to-reach areas. Just push to activate these blowguns, or use as standard blowguns by pulling back on the knurled nozzle. Blowguns are nickel-plated brass with a rubber conical tip. Max. inlet pressure: 125 psi. Air inlet: ¼″ NPT female.

	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi		
Blowgun	Not Rated	92	8 scfm	**3794K1**	$25.14
Blowgun with 12″ Extension				**3794K2**	31.02
Blowgun with 24″ Extension				**3794K3**	33.12
Blowgun with 36″ Extension				**3794K4**	35.12

Air Shield Blowguns

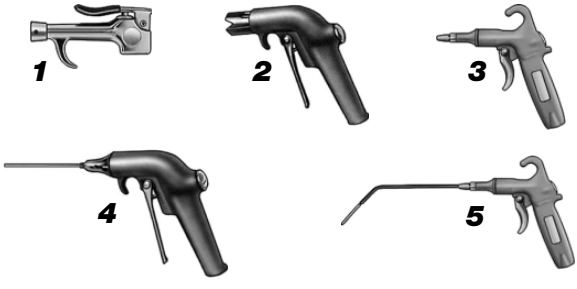

Center airstream blows away debris, while an outer air spray shields against flying chips and dirt. Blowguns have a cast aluminum body (unless noted) with a hang-up hook. Air inlet: ¼″ NPT female. Air outlet: ⅛″ NPT female (unless noted). Meet OSHA directive for maximum outlet pressure.

(1) Standard lever handle has a chrome-plated, die cast zinc body with brass internal components and a vinyl-coated lever handle.

(2) Tamper-resistant recessed-nozzle pistol grip has a tamper-resistant opening set back inside the nonremovable nozzle. Four vents around the end of the nozzle prevent pressure buildup.

(3) Adjustable air-blast pistol grip has a knurled adjusting nut that allows you to vary the air volume from a puff to a blast.

(4) Extension-nozzle pistol grip has an air shield nozzle plus a 3/16″ OD×6″ Lg. brass nozzle extension that can be bent to suit your application. Air outlet: ⅛″ NPS female.

(5) Blind-hole pistol grip has a 3/16″ OD×6″ Lg. brass extension with a ⅛″ OD×2″ Lg. flexible nylon tube attached to the end to clean out blind holes in workpieces.

Repair Kits for Pistol-Grip Blowguns— 5450K18 has a valve seal, spring, and gasket. 5450K61 has a valve stem assembly, flow control assembly, seal, spring, and gasket. 5536K42 has a valve stem assembly, seal, hex nut, spring, and gasket.

	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi	Max. Inlet Pressure		
1	0.5 lbs.	86	10.5 cfm	150 psi	**5939K69**	$14.73
2	Not Rated	94	18 cfm	150 psi	**5450K16★**	19.33
3	0.4 lbs.	102	35 cfm	120 psi	**5450K55**	23.88
4	Not Rated	90	17 cfm	120 psi	**5450K14**	22.81
5	0.1 lbs.	103	35 cfm	120 psi	**5450K35**	28.00

★ No air outlet because the tip is nonremovable.

Accessories

Repair Kit for Styles 2 and 4	**5450K18**	$3.03
Repair Kit for Style 3	**5450K61**	12.69
Repair Kit for Style 5	**5536K42**	7.20
Replacement 6″ Brass Extension for Style 4	**5450K22**	4.53

Pocket-Clip Blowguns

Clip these blowguns to your pocket so they're always within easy reach. Turning the knurled air nozzle adjusts airflow from off to full volume. Body is aluminum. Overall length is 4⅝″. Air consumption @ 100 psi: 15.9 cfm. Max. inlet pressure: 150 psi.

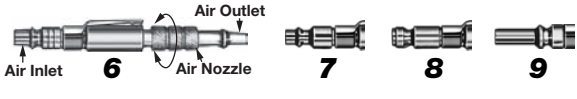

	Fits Coupler Bodies	Blowing Force @ 100 psi	dB @ 100 psi		
6	Milton "A" style or any ¼″ ARO (No. 210)	0.82 lbs.	107	**5270K26**	$6.89
7	Milton "M" style or any ¼″ basic size industrial interchange	0.82 lbs.	107	**5270K25**	6.89
8	Milton "T" style or any ¼″ Tru-Flate or Parker Hannifin	0.82 lbs.	107	**5270K27**	6.89
9	Milton "L" style or any ¼″ Lincoln	0.82 lbs.	107	**5270K28**	7.82

For information about blowguns, see page 2727. For blowgun accessories, see pages 2731-2732.

Lightweight Blowguns

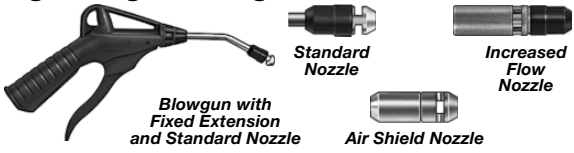

Lightweight, ergonomic design maximizes comfort and minimizes wrist strain. The easy-grip trigger varies airflow from a puff to a blast. A complete blowgun includes a body and a safety nozzle (each sold separately).

Bodies are high-impact plastic with a nickel-plated brass extension tube that has a groove near the end for clipping nozzles to it. All blowguns can be used without a nozzle attached. Maximum inlet pressure: 232 psi. Air inlet: 1/4″ NPT female. Air outlet: 5 mm×1 mm.

When used with the safety nozzles sold below, blowguns meet OSHA directive for maximum outlet pressure.

Body with fixed extension has a nonremovable extension to deter tampering. ***Bodies with removable extension*** have removable extension tubes that simply twist on or off so you can use various extensions with the same body.

Safety nozzles allow air to escape through radial holes to keep nozzle pressure below 30 psi if end of nozzle becomes blocked. Nozzles are aluminum and cannot be removed once they're clipped to the extension tube (unless noted). *Standard nozzle* is for general purpose use. *Increased-flow nozzle* amplifies the airflow by 100% compared to a standard nozzle. *Air-shield nozzle* is removable and creates an effective air curtain around the main airstream to reduce chip and dust blowback.

	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi		
Body with Fixed Extension					
4 1/4″ Bent	0.86 lbs.	101	21.3 cfm	5186K41	$14.90
Bodies with Removable Extension					
4 1/4″ Bent	0.86 lbs.	101	21.3 cfm	5186K51	15.84
12 1/2″ Straight	Not Rated	82	21.3 cfm	5186K42	27.58
19″ Straight	Not Rated	82	21.3 cfm	5186K43	29.90
Safety Nozzles					
Standard	0.86 lbs.	Not Rated	21.3 cfm	5186K44	6.66
Increased Flow	1.72 lbs.	Not Rated	21.3 cfm	5186K46	7.58
Air Shield	0.86 lbs.	Not Rated	21.3 cfm	5186K47	10.30
Repl. Parts and Accessories					
Repl. Removable 4 1/4″ Bent Tube Extension				5186K63	3.98
Repl. Removable 12 1/2″ Straight Tube Extension				5186K61	15.70
Repl. Removable 19″ Straight Tube Extension				5186K62	21.00

Nonmarring Blowguns

Nozzle is made of rubber so it won't mar paint or scratch delicate finishes. It also forms a leakproof connection when blowing out air and fluid lines. Blowguns are die cast zinc with a 4 5/16″ long brass extension for accessing hard-to-reach areas. Blowing force @ 100 psi: 0.77 lbs. Sound level @ 100 psi: 105 dB. Air consumption @ 100 psi: 11.4 cfm. Max. inlet pressure: 150 psi. Air inlet: 1/4″ NPT female. Air outlet: 1/2″-27 female.

Blowgun with Straight Extension (6 1/4″ o'all lg.)	5418K61	$11.15
Blowgun with Bent Extension (6 1/4″ o'all lg.)	5418K62	12.49
Repl. Straight Extension (3″ o'all lg.)	5418K11	5.06
Repl. Bent Extension (3″ o'all lg.)	5418K21	5.73
Repl. Rubber Nozzle (1 5/16″ o'all lg.)	5418K63	3.96

Blowgun with Quick-Change Nozzles

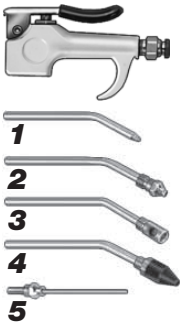

Get five blowguns in one. A complete blowgun includes a safety yellow die cast steel lever-handle body with a quick-change fitting for easy nozzle changes plus these five nozzles: ***(1) star*** for low noise (5 1/2″ Lg.); ***(2) air shield*** projects a cone of air around the main airstream to reduce chip and dust blowback (5 3/4″ Lg.); ***(3) air booster*** to boost air volume without exceeding safe air pressure (5 1/2″ Lg.); ***(4) rubber*** for blowing out molds and lines, and for delicate surfaces (6″ Lg.); ***(5) needle*** with a 1/4″ dia. for tight spaces (4″ Lg.).

Air consumption (1-3) @ 100 psi: 4 cfm. Air consumption (4-5) @ 30 psi: 2 cfm. Max. inlet pressure: 150 psi. Air outlet: 1/8″ NPT female. Not rated for blowing force or sound level. Meet OSHA directive for maximum outlet pressure except when used with nozzles 4&5 which must be used on air lines with a pressure regulator set at 30 psi or less to meet OSHA directive.

Also Available: Replacement nozzles; ask for 3321K4 and specify nozzle style.

	Air Inlet		
Complete Blowgun	1/4″ NPT Female	3321K3	$27.64
Replacement Needle Nozzle		3321K44	2.00
Optional 12″ Star Extension Nozzle		3321K5	7.89
Optional 18″ Star Extension Nozzle		3321K6	11.15

Flexible-Handle Blowguns

Squeeze handle to operate, release to stop airflow. Handle is molded chemical-resistant rubber with a ribbed thumb rest for positive gripping. Fittings are brass. Not rated for blowing force or sound level.

Rubber-nozzle blowguns won't scratch delicate surfaces. Overall length is 4 3/8″. Meet OSHA requirements for dead-end pressure. Air consumption @ 40 psi: 7 cfm.

Threaded-nozzle blowguns have a 5/16″-27 male thread for attaching the optional nozzles (sold separately). O'all length is 4 5/8″. Air consumption @ 40 psi: 11 cfm. The 3″ stainless steel extension nozzle has a brass cap and can be used with or without the optional brass safety nozzle.

Max. Inlet Pressure	Air Inlet	*Rubber Nozzle*		*Threaded Nozzle*	
125 psi	1/4″ NPT Female	5438K24	$23.22	5438K16	$24.64
125 psi	3/8″ NPT Female	5438K26	23.22	5438K17	24.64
3″ Stainless Steel Extension Nozzle for K16 and K17				5438K18	$3.09
Brass Safety Nozzle for K16 and K17				5438K25	4.11

Quiet-Air Blowgun

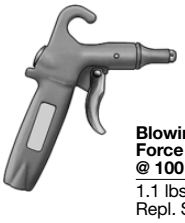

Aluminum nozzle has tiny air outlets around its circumference to increase thrust and reduce noise. Body is cast aluminum. Max. inlet pressure: 120 psi. Air inlet: 1/4″ NPT female. Meets OSHA directive for maximum outlet pressure.

Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi		
1.1 lbs.	93	21 cfm	54615K35	$22.36
Repl. Safety Nozzle			54615K21	14.64

Clean-Air Blowgun

A replaceable filter in this blowgun traps particles as small as 0.01 micron (rust, scale particles, and smoke) and absorbs up to 1 fluid oz. of moisture. Excellent for extra-clean, dry surface preparation. For critical applications, the filter should be changed weekly. Body is chrome-plated, die cast zinc with a brass safety nozzle. Includes a hang-up hook. Overall length is 8″.

Air consumption @ 100 psi: 30 cfm. Max. inlet pressure: 100 psi. Air inlet: 1/4″ NPT female. Air outlet: 1/4″ NPT female. Not rated for blowing force or sound level. Meets OSHA directive for maximum outlet pressure.

Blowgun with Filter	55135K45	$31.42
Replacement Filter	55135K65	13.19

For information about blowguns, see page 2727.

High-Force Blowguns

When you need more force, these blowguns handle the job. They're more powerful than almost all other blowguns we sell. All meet OSHA directive for maximum outlet pressure.

Pistol Grip— Multiple-jet nozzles deliver large volumes of air at high thrust. The trigger allows you to vary airflow and is extra long for comfort. Nozzles have safety air-flow vents. Made of cast aluminum with a rubber-coated handle and have a built-in hang-up hook.

Wide-Airflow Pistol Grip— The flat nozzle of this blowgun provides a wide stream of air for blowing a broader area. Handle is durable acetal rubber; nozzle is zinc.

Cannon-Barrel Lever Handle— An extra-large 4¼″ long safety nozzle distributes air over a wide area and the oval-shaped holes around the nozzle draw in additional air to increase flow. Gun is chrome-plated, die cast zinc.

Repl. Extensions and ***Nozzles for Pistol-Grip Blowguns—*** Fit only the pistol-grip blowguns, not the wide-airflow pistol grip or cannon-barrel lever handle blowguns.

Extension Length	Blowing Force @ 125 psi	dB @ 100 psi	Air Consumption @ 100 psi	Max. Inlet Pressure	Blowguns		Repl. Extension	
Pistol Grip— *Air Inlet: ⅜″ NPT Female; Air Outlet: ½″-27 UNF*								
2″	3.1 lbs.	80	44 cfm	150 psi	5456T11	$43.00	5456T21	$3.83
6″	3.1 lbs.	80	44 cfm	150 psi	5456T12	48.76	5456T22	6.32
12″	3.1 lbs.	80	44 cfm	150 psi	5456T13	50.85	5456T23	8.73
24″	3.1 lbs.	80	44 cfm	150 psi	5456T14	53.07	5456T24	11.20
36″	3.1 lbs.	80	44 cfm	150 psi	5456T15	56.48	5456T25	13.98
48″	3.1 lbs.	80	44 cfm	150 psi	5456T16	59.63	5456T26	17.08
Wide-Airflow Pistol Grip— *Air Inlet: ¼″ NPT Female*								
—	1.74 lbs.♣	85	24.6 cfm	143 psi	5213K21	75.64	—	—
Cannon-Barrel Lever Handle— *Air Inlet: ¼″ NPT Female; Air Outlet: ¼″ NPT Female*								
—	Not Rated	127.2	4.29 cfm■	150 psi	5444K14	39.54	—	—

Nozzles for Pistol-Grip Blowguns

Replacement Multi-Jet Nozzle	5456T29	$17.54
Optional Taper Point Nozzle	5456T31	4.56

♣ @ 100 psi. ■ @ 95 psi.

Ultra-Force Blowguns for Large Areas

The most powerful blowguns we sell. A specially designed nozzle causes air to speed up as it goes through the nozzle drawing in surrounding air for increased air power at the nozzle tip. The lightweight, heavy duty extension gets into hard-to-reach areas. For comfort and control, guns include an adjustable second handle for two-hand operation; handle can be mounted anywhere along the extension. Constructed of heavy duty aluminum with a large trigger for easy operation. Ideal for industrial and construction applications and for cleaning and blowing large areas and spaces. Meet OSHA directive for maximum outlet pressure. *Replacement adjustable handle* for two-hand operation fits any blowgun with an extension tube up to ⅞″ OD.

Lg.	Blowing Force @ 100 psi	dB @ 100 psi	Air Consumption @ 100 psi	Max. Inlet Pressure	Air Inlet	Blowguns		Repl. Extension	
Pistol-Grip Handle									
48″	10 lbs.	121	185 cfm	120 psi	¾″ NPT Female	9823K16	$198.86	9823K36	$109.56
72″	10 lbs.	121	185 cfm	120 psi	¾″ NPT Female	9823K18	206.90	9823K38	119.18
In-Line Handle									
48″	10 lbs.	121	185 cfm	120 psi	¾″ NPT Female	9823K64	213.78	9823K36	109.56
72″	10 lbs.	121	185 cfm	120 psi	¾″ NPT Female	9823K65	222.39	9823K38	119.18
Replacement Adjustable Handle								9823K51	$19.11

Cold-Air Blowgun

A quick and safe way to cool electronic components and other parts. Replaces freeze-type chemical sprays used for testing electronic/electrical components. When used with compressed air set at 80 psi, blowgun generates a –40° F (–40° C) stream of air. No moving parts means it's maintenance free. Has lever handle trigger. Overall length is 10¼″. For best results, set the nozzle within ⅛″ of the part being cooled. Recommended hose dia. is ⅜″ for hose up to 25 ft. long, and ½″ for hose longer than 25 ft. Use a clean air supply and a maximum 25 micron air filter (not included). Supplied with a ¼″ dia. nozzle. Air consumption @ 80 psi: 8.5 cfm. Air inlet: ¼″ NPT female. Sound level is 70 dB @ 80 psi. Not rated for blowing force.

Cold-Air Blowgun	5408K61	$292.55
Optional 1″ Wide Fan Nozzle	5408K62	4.39

Nozzles and Extension Nozzles for Blowguns

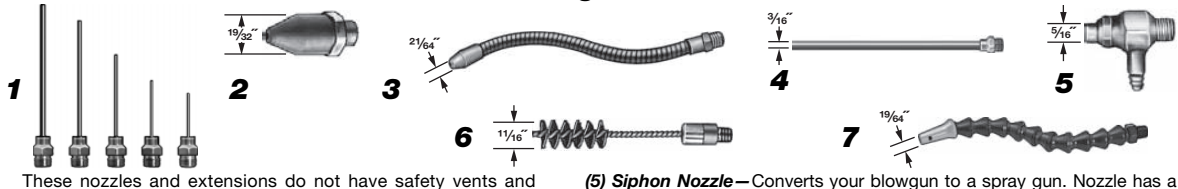

These nozzles and extensions do not have safety vents and do not meet OSHA directive for maximum outlet pressure unless used on air lines with a pressure regulator set at 30 psi or less. This doesn't apply to the *siphon nozzle*. All nozzles and extensions will fit any blowgun with a ⅛″ NPT female air outlet (unless noted).

(1) Five-Piece Needle Nozzle Set— Needle nozzles concentrate airflow into a pinpoint. Nozzles have a stainless steel tube and a nickel-plated brass fitting. Set includes tube sizes (Dia.×Lg.): 0.134″×2¾″, 0.095″×2 15/32″, 0.072″×1¾″, 0.050″×1 3/16″, and 0.042″×15/16″.

Also Available: Replacement nozzles. Please ask for 5446K7 and specify nozzle size.

(2) Rubber Nozzle— Forms an airtight connection for blowing out molds and lines, and won't scratch delicate surfaces.

(3) 8″ Flexible Extension Nozzle— Snakes into hard-to-reach areas. Made of 23/64″ dia. steel tubing with brass fitting and a 21/64″ dia. brass nozzle.

(4) 6″ Rigid Extension Nozzles— Choose ¼″ dia. steel or 3/16″ dia. brass tubing.

(5) Siphon Nozzle— Converts your blowgun to a spray gun. Nozzle has a barbed hose fitting and includes 7 ft. of ¼″ ID clear PVC tubing.

(6) Round Brush Nozzles— Brush and blow away debris in one step.

(7) Flexible Extension with Nozzle— Modular design for easy shortening by hand. Flexibility allows access to hard-to-reach areas. Made of acetal plastic.

			Set
1	Five-Piece Needle Nozzle Set	5446K45	$20.79
			Each
2	Rubber Nozzle	5446K43	$3.67
3	8″ Flexible Extension Nozzle	5446K53	31.82
4	6″ Rigid Steel Extension Nozzle	5446K49	5.95
4	6″ Rigid Brass Extension Nozzle	5450K22▲	4.53
5	Siphon Nozzle	5446K55	8.40
6	Round Steel Wire Brush Nozzle	5662K31	14.57
6	Round Horsehair Brush Nozzle	5662K33	13.64
6	Round Nylon Brush Nozzle	5662K32	14.02
7	Flexible Extension with Nozzle	3390K22	20.50

▲ Has NPS threads; fits blowgun 5450K14 on page 2729.

Safety Nozzles and Extension Nozzles for Blowguns

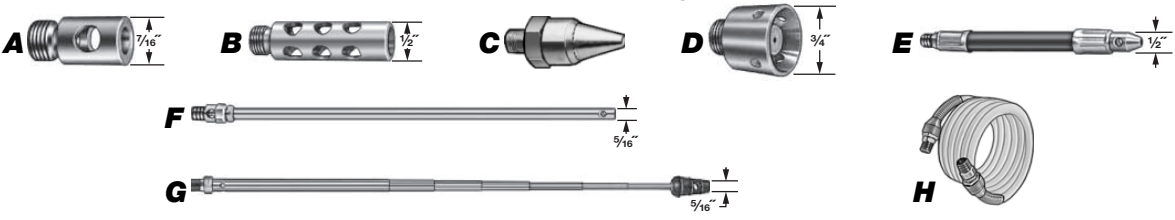

These nozzles and extensions meet OSHA 1910.242(b) directive 100-1 requirement for dead-end pressure. All of them will fit any blowgun with a 1/8″ NPT female air outlet.

(A) Standard Nozzle— This nickel-plated brass nozzle produces a concentrated airstream.

(B) Air Booster Nozzle— Multiple holes in this nozzle increase air volume. Made of nickel-plated brass.

(C) High-Thrust Air-Saver Nozzles— Consume little air while providing high thrust. Aluminum nozzle is 3/4″ dia.; nickel-plated brass is 27/64″ dia.

(D) Air Shield Nozzle— Produces a cone of air around the main airstream to reduce chip and dust blowback. Made of nickel-plated brass.

(E) Flexible Rubber Extension Nozzles— Flexibility and extra length improve access for hard-to-reach areas. Extensions consist of a 17/32″ dia. rubber hose with brass fitting and nozzle. Hose can be bent to any position and will maintain that position until moved.

(F) Rigid Extension Nozzles— Don't overextend yourself; use one of these extensions for jobs where a long reach is needed. They're made of nickel-plated steel and brass.

(G) 8″-32″ Telescoping Extension Nozzle— Has a stainless steel shaft that telescopes for access into hard-to-reach areas. Includes a 5/16″ dia. nozzle.

(H) Self-Retracting Nylon Air Hose with Fittings— Hose stretches and recoils to stay out of the way. It has brass 1/4″ NPT male fittings, rigid on one end and swivel on the other. Maximum working pressure is 170 psi. Coil ID is 3″.

A	Standard Nozzle	**5539K17**	$2.69
B	Air Booster Nozzle	**5369K55**	5.47
C	High-Thrust Air-Saver Nozzle—Aluminum	**5568K11**	11.90
C	High-Thrust Air-Saver Nozzle—Nickel-Plated Brass	**5568K21**	7.80
D	Air Shield Nozzle	**5934K74**	7.34
E	6″ Flexible Rubber Extension Nozzle	**5519K63**	12.26
E	12″ Flexible Rubber Extension Nozzle	**5519K64**	12.65
F	6″ Rigid Extension Nozzle	**5933K61**	7.84
F	8″ Rigid Extension Nozzle	**5933K62**	8.72
F	12″ Rigid Extension Nozzle	**5933K63**	$10.93
F	16″ Rigid Extension Nozzle	**5933K71**	14.54
F	18″ Rigid Extension Nozzle	**5933K64**	15.97
F	24″ Rigid Extension Nozzle	**5933K65**	21.34
F	30″ Rigid Extension Nozzle	**5933K72**	27.58
F	36″ Rigid Extension Nozzle	**5933K66**	32.64
G	8″-32″ Telescoping Extension Nozzle	**3417K12**	22.99
H	1/4″ ID × 12-ft. Lg. Air Hose (usable length is 9 ft.)	**5245K11**	17.04
H	1/4″ ID × 25-ft. Lg. Air Hose (usable length is 18 ft.)	**5245K12**	19.89

Standard Duty Heat Guns

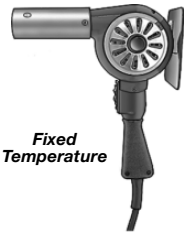

Fixed Temperature

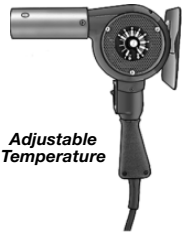

Adjustable Temperature

Temperature Dial for Adjustable-Temperature Heat Guns

J ***K*** ***L*** ***M***

A comfort-grip handle for hand use and a nonslip rubber-backed base plate for bench-top and table-top use make these versatile guns ideal for a variety of jobs. All guns have a mica-insulated ceramic heating element, a die cast aluminum housing, and a three-position (off/cold/hot) switch. Nozzles are approximately 9″-10″ long with a 1.2″ dia. opening. Temperatures measured 1″ from nozzle tip. Heat guns include a 6-ft. power cord with three-prong plug. Air velocity: 3,000 fpm. Air volume: 23 cfm.

Fixed-Temperature Heat Guns— Have an adjustable shutter to control air volume. Temperature cannot be set.

Adjustable-Temperature Heat Guns— A dial sets the selected temperature making these guns great for heating sensitive materials or any time you require specific temperatures.

120 VAC heat guns are UL listed. *Models 3149K11* and *K12* are also CSA certified.

120 VAC heat gun kits include gun, shrink tube nozzle, 2 1/4″ wide spreader nozzle, 7/8″ dia. reducer nozzle, and case.

230 VAC heat guns have a NEMA 6-15 plug (see page 787 for plug configurations).

Also Available: Heat gun replacement parts. Please ask for 3149K888 and specify part.

Heat Guns

Temperature Range	Watts	120 VAC, 60 Hz Amps	Heat Guns		Heat Gun Kits		Replacement Heating Element		230 VAC, 50/60 Hz Amps	Heat Guns		Replacement Heating Element	
Fixed-Temperature Heat Guns													
200°- 300°F★	600	5	**3149K11**	$95.33	**3149K41**	$136.42	**3149K31**	$21.95	3	**3149K15**	$110.09	**3149K25**	$21.95
300°- 500°F★	1,440	12	**3149K12**	95.33	**3149K42**	136.42	**3149K32**	21.95	6	**3149K16**	110.09	**3149K26**	21.95
500°- 750°F★	1,680	14	**3149K13**	95.33	**3149K43**	136.42	**3149K23**	21.95	7	**3149K17**	110.09	**3149K27**	21.95
750°-1000°F★	1,740	14.5	**3149K84**	95.33	**3149K44**	136.42	**3149K24**	21.52	9	**3149K18**	110.09	**3149K28**	21.95
Adjustable-Temperature Heat Guns													
Up to 750°F	1,680	—	—	—	—	—	—	—	7	**3260K61**	157.17	**3149K27**	21.95
Up to 1000°F	1,740	14.5	**3260K51**	136.40	**3260K46**	193.74	**3149K24**	21.52	—	—	—	—	—

★ Temperature is within this range when on the hot setting; air is room temperature when on the cold setting.

Heat Gun Nozzles and Accessories

J	Shrink-Tube Nozzle (For up to 3/4″ OD)	**3149K62**	$12.15
K	Shrink-Tube Nozzle (For 3/4″ to 2″ OD)	**3149K63**	12.15
L	3/8″ Dia. Pinpoint Nozzle	**3149K65**♦	12.15
M	7/8″ Dia. Reduction Nozzle	**3149K94**	$12.15
	Carrying Case (Not Shown)	**3149K64**	31.51

♦ Not recommended for use with heat guns 3149K84 and K18.

Heavy Duty Heat Guns

Durable and long lasting, these heat guns have a ceramic encapsulated heating element, an electronic temperature sensor (unless noted) that prevents the element from burning out, and a dual air intake. They feature a 120°F cool-air setting (except for 3433K74) that's great for drying, cleaning, and cooling. Guns have a cushioned-grip handle (except for 3433K74); a lightweight, impact-resistant plastic housing; and a 1¼″ OD nozzle with a 1″ opening. For hands-free use, place gun in an upright position on a bench or table. Guns operate at 120 VAC and include a 6-ft. power cord with two-prong plug, except where noted. UL listed and CSA certified.

(A) Fixed Temperature and Air Volume— Guns have either two or three temperature settings and the air volume will increase or decrease based on the temperature setting.

(B&C) Adjustable Temperature and Air Volume— *Style B* has a rotary dial for temperature adjustment and a three-step switch for air volume adjustment. *Style C* has an LCD display with digital temperature control that adjusts temperature in 10° increments with the push of a button.

(D&E) Programmable Temperature with Adjustable Air Volume— Guns have a digital temperature control that adjusts temperature in 10° increments with the push of a button. Digital display provides four programmed settings. A lockable override allows temperature to be "locked" so operators cannot change setting. *Style E* ensures safe operation at start-up—if the gun is in the "on" position when plugged in, it won't start until the switch is turned off and then back on. This prevents accidental burns.

A-E

Control for Style A

Control for Style B

Controls and LCD Display for Style C

Controls and LCD Display for Styles D&E

F

G

H

J

K

L

M

N

P

Q

R

S

Heat Guns

Temperature Range✓	Air Velocity, fpm	Air Volume, cfm	Watts	Amps	Hz	O'all Lg.	Heat Guns		Repl. Heating Element	
Fixed Temperature and Air Volume										
A 575°, 950°F	2,800	8.5, 14.8	1,300	10.8	60	9½″	3433K74●	$123.43	3433K12	$60.61
A 120°, 750°, 1100°F	3,200	3.6, 10, 15.9	1,400	11.7	60	9½″	3433K75●	149.98	3433K13	68.86
Adjustable Temperature and Air Volume										
B 120°-1100°F	3,500	3.6, 10, 17.6	1,500	12.5	60	10″	3433K86	253.00	3433K14	93.27
C 120°-1150°F	3,500	3.6, 10, 17.6	1,500	12.5	60	10″	3433K87	277.57	3433K14	93.27
Programmable Temperature with Adjustable Air Volume										
D 120°-1200°F	3,500	3.6-17.6	1,600	13.3	60	10″	3433K88	298.74	3433K15	103.35
D 120°-1200°F	3,500	3.6-17.6	1,600	13.3	60	10″	3433K82♠	314.21	3433K19	106.04
E 120°-1200°F	3,500	3.6-17.6	1,600	13.3	60	10″	3433K89	423.38	3433K15	103.35

✓ Measured ⅛″ from nozzle tip. ● Does not have an electronic temperature sensor. ♠ ESD-safe to prevent static shock.

Heat Gun Nozzles

		Use		
F	2″ Wd. Nozzle	For Wide Surfaces, Drying or Stripping Paint, and Shaping Plastics	3433K72	$19.95
F	3″ Wd. Nozzle	For Wide Surfaces, Drying or Stripping Paint, and Shaping Plastics	3433K32	17.35
G	3″ Wd. Nozzle	For Window Glazing, Protects Adjoining Areas from Overheating	3433K34	19.00
H	⅜″ Tip Dia. Nozzle	For Concentrated Airflow	3433K29▲	17.35
H	⅝″ Tip Dia. Nozzle	For Concentrated Airflow	3433K28▲	17.35
H	¾″ Tip Dia. Nozzle	For Concentrated Airflow	3433K31▲	17.35
J	⅜″ Wd. Nozzle	For Small Heat-Shrink Tubing	3433K37▲	26.98
K	9/16″ Wd. Nozzle	For Soldering Wire Connectors	3433K35▲	22.98
L	1½″ Wd. Nozzle	For Soldering Copper Pipe, Bending PVC Pipe, and Heating Shrink Tubing	3433K33	17.35
M	3″ Wd. Nozzle	For Soldering Copper Pipe, Bending PVC Pipe, and Heating Shrink Tubing	3433K46	28.11
N	3/16″ Tip Dia. Nozzle	For Speed Welding Flexible and Rigid Plastic Rods	3433K41♥	26.37
P	¾″ Wd. Nozzle	For Lap Welding Plastics	3433K43♥	17.35

▲ Nozzle does not fit Style A guns. ♥ Use with Nozzle 3433K29.

Heat Gun Accessories

Q	Safety Nozzle Shield for Styles B, C & D and for 3433K75 (Prevents Accidental Contact with Hot Nozzles)	3433K65	$18.02
R	3″ PTFE-Coated Disc for Heating PVC Pipe for Butt Welding	3433K44♣	36.51
S	Stand for Pistol-Grip Heat Guns (Heat Gun Not Included)	3433K66	40.25

♣ Use with Nozzle 3433K28.

Light Duty Heat Guns

A combination of performance and value, these heat guns are great for intermittent use. All have a high-impact plastic housing. Temperatures taken at nozzle tip. Not rated for air velocity. Operate on 120 VAC and include a 6-ft. power cord with three-prong plug. UL and C-UL listed. *Note:* The heating elements are not replaceable.

(T) Pistol-Grip Fixed-Temperature Heat Gun— Has a three-position (off/low/high) switch and hanging ring.

(U) Pistol-Grip Adjustable-Temperature Heat Gun— Has 12 temperature settings, a cool-down setting that automatically turns off the gun, touch-pad control panel with LED indicators, and hanging ring.

(V) Inline-Handle Fixed-Temperature Heat Gun— Has a tapered nozzle that keeps air flow focused and a built-in wire bracket that provides support during bench-top applications. It also has a two-position (on/off) switch.

Nozzle kit for Styles T and U heat guns comes with a ⅝″ dia. pinpoint nozzle, 2″ wide surface nozzle, and 4″ extra-wide scraper nozzle.

T&U

V

Controls for Style U

	Temperature	Air Volume, cfm	Watts	Amps	Hz	Nozzle Opening	Lg.		
T	750° and 1000°F	20.1	1,200	10	60	1⅛″	8½″	32605K44	$34.16
U	250°-1350°F	30	1,500	12	60	1″	10″	32605K55	58.06
V	650°F	8.6	360	3	50/60	½″	9½″	32605K33	33.74
Nozzle Kit for Styles T and U Heat Guns								32605K77	12.23

Nozzle Kit for Styles T and U Heat Guns

Low-Velocity Heat Guns

Shrink-Tube Nozzle

Pinpoint Nozzle

With an air velocity of 700 fpm, these guns will deliver the heat you need without blowing lightweight items all over your workstation. Guns measure 8⅞″ long and have an impact-resistant plastic housing (unless noted), brushless continuous-duty motor, three-position (off/cool/hot) switch, and 7-ft. power cord with three-prong plug.

They're furnished with a plug-in 650° F mica heating element (unless noted). To change the temperature, simply change the heating element (sold separately at right). Guns, except the 120 VAC ESD-safe gun, also include a 1″ OD shrink-tube nozzle and snap-on stand that holds the gun at a 15° angle for hands-free use. Air volume: 3.8 cfm. Nozzle opening: 1″.

120 VAC gun is UL listed and CSA certified.

120 VAC ESD-safe gun is grounded to eliminate electrostatic discharge and shield against EMI and RFI interference. Gun has a carbon fiber housing. Includes 800° F heating element. UL listed.

220 VAC gun has a NEMA 6-15 plug (see page 787 for plug configurations).

Heat Guns

VAC	Amps	Hz		
120	4.5	60	3414K11	$84.15
120 ESD Safe	4.5	60	3414K31	140.83
220	2.0	50/60	3414K21	93.03

Plug-In Heating Element

VAC	Temp.★	Watts		
120	500° F	340	3414K14	$27.00
120	650° F	475	3414K12	27.00
120	800° F	525	3414K15	27.00
220	650° F	450	3414K22	27.00
220	800° F	500	3414K25	27.00

★ Measured 1″ from nozzle tip.

Heat Gun Nozzles and Accessories

7/32″ Dia. Tip Pinpoint Nozzle	3414K13	$16.15
Repl. 1″ OD Shrink-Tube Nozzle	3414K53	11.84
Repl. Adjustable Bench Stand	3414K63	12.30

Inline Handle Heavy Duty Heat Guns

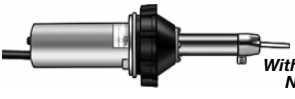

A

With Style F Nozzle

B

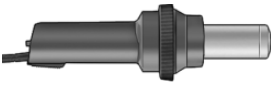

C

D

E

F

G

H

Electronic control with a rotary knob puts precise temperature adjustment at your fingertips, while an air slide or switch allows you to adjust air volume. All guns are double insulated and have a ceramic-reinforced heating element, impact-resistant plastic housing, and two-position (on/off) switch.

(A) The choice for welding thermoplastics, this gun has a removable 3/16″ dia. pinpoint nozzle (Style F) for maximum versatility. It also has built-in protection to safeguard the heating element and electronics against overheating. The air velocity ratings are based on using a 3/16″ dia. nozzle. Includes a 7-ft. power cord with two-prong plug. UL listed.

(B&C) These powerful heat guns have a much larger air volume than Style A, so they can handle your toughest jobs. Include a 7-ft. power cord. Style B includes a two-prong plug. Style C includes a continental European plug.

Heat Guns

	Temperature Range●	Air Velocity, fpm	Air Volume, cfm	Watts	Amps	Hz	Nozzle Opening	Lg.	Heat Guns		Replacement Heating Element	
120 VAC Heat Guns												
A	Up to 1200° F	8,200	7-9	1,600	14	50/60	3/16″	15″▲	7880A41	$473.79	7880A42	$102.27
B	80°-1100° F	Not Rated	21	1,750	14.6	60	1¼″	15″	3174K51	775.08	3174K61	116.82
230 VAC Heat Gun												
C	80°-1100° F	Not Rated	28	3,400	14.8	50	1 29/32″	15″	3174K52	831.92	3174K62	121.42

● Temperatures measured at the tip of the nozzle. ▲ With the 3/16″ dia. pinpoint nozzle attached.

Heat Gun Nozzles

		For Use with Style(s)		
D	3/16″ Tip Dia. Speed Welding Nozzle	A&B	7880A44♣	$81.10
E	Tacking Nozzle	A&B	7880A45♣	61.36
F	3/16″ Tip Dia. Pinpoint Nozzle	A&B	7880A43	60.00
G	1 9/16″ Wd. Angled Flathead Slit Nozzle	A&B	3174K63	50.72
H	2¾″ Wd. Surface Nozzle	C	3174K64	65.38

♣ Must be used with Style F nozzle.

Gentle-Heat Compressed-Air Blower

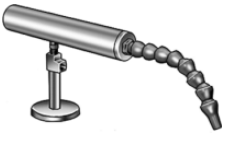

Generate a gentle flow of heated air that is adjustable up to 250° F. Blower uses filtered compressed air (no electricity) and has no moving parts. It has a portable magnetic base and flexible nozzle—perfect for spot heating in drying, warming, and curing applications. For best results, position nozzle within ½″ to ¾″ of your work surface.

Blower has a maximum air pressure of 150 psi of filtered factory air and permits air volume of 15 cfm. It comes furnished with a 5-micron filter. The tube is 1¾″ Dia.×9⅞″ Lg. Nozzle is 8″ long and has a ⅜″ opening. Air inlet is ¼″ NPT male. Not rated for air velocity. Meets OSHA directive for maximum noise level and outlet pressure.

34555K56 ..... $377.07

High-Heat Compressed-Air Blowers

Flameless hot air up to 1050° F (566° C) makes these blowers ideal for flash deburring plastics, curing laminates, heating materials for die cutting and stamping, and other jobs requiring continuous hot air. Both include an air regulator and pressure gauge, 5-ft. power cord with three-prong plug, and mounting bracket with 17/64″ holes on 2″ centers.

Air pressure: 1,500 watt unit: 1-6 psi; 2,200 watt unit: 1-4 psi. Blower tube is 2″ Dia.×12½″ Lg. Overall blower length is 16″.

Air Velocity, fpm	Air Volume, cfm	VAC	1,500 Watts Amps			2,200 Watts Amps		
3,700	37	120	12.5	8609T11	$765.42	18.3	8609T12	$780.26

Hot Air Blowers

These versatile blowers are designed for hand-held use as well as for bench and machine mounting. Plus, a nonslip rubber-backed base plate allows 90° rotation for multiposition applications. They have a mica heating element (unless noted) that's protected by a thermal fuse, so there's less chance of burnout. They also have a steel housing, three-position (off/cold/hot) switch, and 6-ft. power cord with three-prong plug.

Air volume: 47 cfm. Air velocity: 2,200 fpm. Nozzle opening: 1⅞″. Size: 12″ Lg.×6″ Wd.×9″ Ht. (except for *models* 3308K31 and *K32* which are 9″ Lg.×6″ Wd.×9″ Ht.).

120 VAC blowers are CSA certified (except 3308K33) and UL listed. *Model* 3308K35 comes with a NEMA 5-20 plug (see page 787 for plug configurations).

230 VAC blowers have a NEMA 6-15 plug (see page 787 for plug configurations).

Max. Temp.■	Watts	120 VAC, 60 Hz Amps	Blowers		Repl. Heating Element		230 VAC, 50/60 Hz Amps	Blowers		Repl. Heating Element	
300°F	1,200	10	3308K31 ♦	$198.75	3308K411	$20.02	5.0	3308K32 ♦	$206.13	3308K412	$20.02
500°F	1,680	14	3308K33	198.75	3308K413	27.03	7.2	3308K34	206.13	3308K414	27.03
750°F	2,160	18	3308K35	198.75	3308K415	27.03	9.4	3308K36	206.13	3308K416	33.93

Replacement Thermal Fuse with Terminals and Shrink Sleeve	3308K62	$7.28
Replacement Switch	3308K63	17.87
Replacement Mica Insulation Wrap for Heating Element on Models 3308K33 and 3308K35	3308K71	10.40

■ Measured 1″ from nozzle. ♦ Ceramic heating element.

High-Volume Low-Heat Blower

Need a lot of air, but not a lot of heat? This blower combines high volume with gentle heat and is adjustable (head pivots 180°) which means you can zero in on an exact spot—perfect for warming and low-heat drying jobs.

Blower operates on 110/120 VAC, 60 Hz and is rated for continuous use. It has a steel and aluminum housing, coil-wound mica heating element, three-position (off/low/high) switch, thermal limit switches, shaded-pole brushless motor for long life, and 8-ft. power cord with three-prong plug. Nozzle opening: 3″. Size: 13″ Lg.×9″ Wd.×18″ Ht.

Maximum Temperature★	Air Velocity, fpm	Air Volume, cfm	Watts	Amps		
105°/140°F	3,850	205	1,800	8/15	3092K97	$430.77

★ Measured at end of nozzle.

Heavy Duty Variable-Temperature Hot Air Blowers

Outstanding for production drying, heating, and heat shrinking applications, these heavy duty blowers are electronically controlled for adjustable heat. They're rated for continuous use and have an air-volume regulator, graduated temperature control, and electronically protected heating element to guard against overload. Plus, the air intake has a replaceable filter to keep debris out of the motor.

Operate on 230 VAC, 50/60 Hz, are double insulated, and have separate on/off switches for the blower and the heating element. Include nylon housing with removable top handle and a 7-ft. two-wire power cord (plug not included; see page 787 for plugs). Nozzle opening: 2⁷⁄₁₆″. Size: 13¾″ Lg.×6¾″ Wd.×3⅞″ Ht.

Also Available: Replacement heating elements. Please ask for 3396K9 and specify blower number.

Max. Temp.♠	Air Velocity, fpm	Air Volume, cfm	Watts	Amps		
1166°F	Not Rated	19.4	3,700	16	3396K2	$1,113.09
1346°F	Not Rated	12.4	3,100	14	3396K4	1,228.24

♠ Measured approximately ¾″ from nozzle.

Propane-Gas Heat-Shrink Blower

Connect this tool to a propane tank for a fast, even heat pattern that's 18″ wide. Excellent for shrink wrapping polyethylene film. Tool has a combustor head that's ventilated to pull air through, so tool and safety guard (included) stay cool. A latch prevents unintentional starts, while releasing the switch on the handle automatically shuts the tool off.

Furnished with a piezo ignitor, 25-ft. hose, set gas regulator with gauge, and steel carrying case. Use this tool with a propane tank (commonly used for plumber's torches, welding apparatus, and camp and trailer stoves). See page 3391 for empty bulk propane tanks and for tank-to-torch adapters. Output: 172,500 Btu/hr. at 22 psi. Propane consumption: 8 lbs./hr. Gas connection: ⁹⁄₁₆″-18 left hand NPT male. Length: 22″ (with safety guard). UL listed.

Max. Temperature✓	Air Velocity✓		
1120°F	2,100 fpm	30975K11	$884.62
Replacement Ignitor		30975K31	117.28

✓ Measured 6″ from nozzle.

High-Velocity Heatless Air Blowers/Vacuums

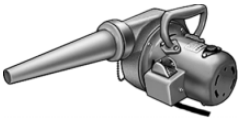

Cleanups are no sweat when you have the blasting power of one of our heatless blowers. They're great for cleaning machinery and coils, removing dust and debris from large areas, testing air ducts for leaks, and any number of drying applications. The heavy duty construction, including a cast aluminum housing, permanently lubricated sealed precision ball bearings, and baked enamel finish, let these tools stand up to the most demanding situations. All blowers include a detachable nozzle and a 21-ft. power cord with three-prong plug. Nozzle opening: ¾″.

One-speed blowers have a two-position (on/off) switch. *Model* 3144K15 is UL listed.

Two-speed blowers have a three-position (off/low/high) switch. *Model* 3144K35 is UL listed. *Model* 3144K36 has a NEMA 6-15 plug (see page 787 for plug configurations).

Suction cleaning kit converts blowers into hand-held vacuum cleaners. Kit includes dust bag, 4-ft. hose with swivel, 5¼″ long suction nozzle with slide-on brush, 11″ long crevice nozzle, and carrying strap.

Speed	Air Velocity, fpm	Air Volume, cfm	Watts	Amps	VAC	Hz	Lg.		
One Speed	27,050	109	517	5	115	60	15½″	3144K15	$496.28
One Speed	34,225	155	1,200	10.5	115	60	16½″	3144K25	549.18
Two Speed	29,600/33,570	150/196	1,265	11	115	60	18″	3144K35	703.28
Two Speed	29,600/33,570	150/196	1,265	5.5	230	60	18″	3144K36	648.93
Suction Cleaning Kit (Fits All Blowers)								3144K75	109.09

Small Parts Spin Dryers

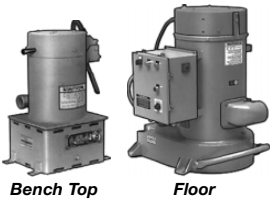

Bench Top Floor

Centrifugal force and a turbine fan allow these dryers to dry your parts in as little as 60 seconds. All are welded steel with separate on/off switches for rotation and heat. Heat is not adjustable; temperature will change based on the amount and type of workpiece in the basket and the length of the operation. An exhaust outlet allows direct connection to a drip pan (not included) or drain. Parts baskets are required (sold separately below). UL recognized.

Bench-Top Dryer— Perfect for small parts. It has a 1/8-hp direct-drive motor that spins at 1,100 rpm. Furnished with a 600-watt heating element and a 9-ft. power cord with three-prong plug.

Floor Dryer— Well suited for larger parts and loads. It has a cover that swivels in either direction for easy loading. A safety interlock turns the motor off when you open the cover, while a foot brake stops the spinning in an instant. Dryer has a 1-hp motor with a V-belt drive that spins at 825 rpm (rotation can be reversed to remove moisture from cup-shaped parts). Furnished with a 4,000-watt heating element. Power cord and plug are not included.

SPIN DRYERS							PARTS BASKET				
							Stainless Steel			Polypropylene	
	Max. Load	VAC	Hz	Phase	Amps		Size, ID×Inside Ht.			Size, ID×Inside Ht.	
Bench Top	7 lbs.	110/120	60	1	10.4	3442K17	5⅜″× 5¾″	3442K22	$176.00	5″ × 5″	3442K23 $150.86
Floor	75 lbs.	230	60	3	23.9	3442K18	10⅞″×11⅞″	3442K32	488.52	10½″ ×10¾″	3442K33 205.71
Replacement Heating Element for Floor Dryer											3442K42 $365.60

About Infrared Heating

Many factors affect the process of infrared heating, which is also known as radiant heating. These include: the material's ability to conduct, transmit, and absorb heat as well as the material's size (Lg.×Wd.×Thick.); the heater's temperature, radiant efficiency, and size (Lg.×Wd.×Ht.); and the presence of reflectors behind and on the sides of the heater. For heating on a moving line, the material's specific heat and exposure time are also key considerations.

Radiant heat is absorbed by objects, not open space, so infrared heaters are often used when contact between the heat source and the object being heated is not possible (conduction heat) or it's not practical with high-velocity air (convection heat). Applications include: conveyor ovens for drying or curing, removing surface water or absorbed moisture from paper and fabrics, localized heating of large parts or assemblies, and heating conveyor loads of similar parts or materials.

Infrared Quartz-Tube Heaters

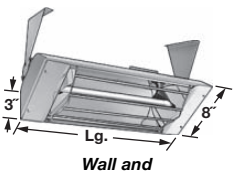

Wall and Ceiling Mount

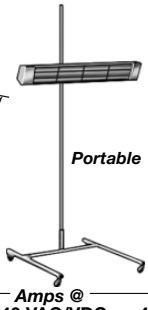

Portable

These heaters have a quartz-tube heating element and corrosion-resistant aluminum alloy reflector to create radiant heat for quick warming, curing, and drying. UL listed.

Note: Do not use in hazardous locations such as enclosed areas exposed to fumes.

Wall and Ceiling Mount— For horizontal mounting both indoors and out. Mounting brackets are included for attachment to walls, ceilings, and plant equipment. When brackets are used, you can tip heaters 60° from center of bracket swivel. You can also hang them from chains or other special brackets (not included). Heaters are insulated and have a wiring box (on top) with inlet hole that accepts standard ½″ conduit. Operating temperature is approximately 1400° F. Size is 8″ Ht.×5¾″ Dp.

Portable— Measuring 36″ Lg.×6″ Wd.×6″ Ht., these heaters move up and down on a sturdy 6-ft. high steel stand which has a 28″×30″ base and four casters. Designed for indoor use, all include a power cord with three-prong plug. Operating temp. range is approximately 1125° to 1325° F. The *2,000-watt heaters* have heads that rotate for use in horizontal and vertical positions. They also have a 60-minute timer with automatic shut-off.

To Order: For all heaters and replacement heating elements, please specify 120, 240, or 480 VAC/VDC where available.

Watts	Amps @ 120 VAC/VDC	Amps @ 240 VAC/VDC	Amps @ 480 VAC/VDC	Hz	Btu/hr.	Lg.	Heaters		Repl. Heating Element	
Wall and Ceiling Mount										
750	6.3	3.1	—	50/60	2,559	19½″	1737K33	$168.52	1737K73	$44.64
1,000	8.3	4.2	—	50/60	3,412	33″	1737K34	256.71	1737K74	61.79
1,500	12.5	6.3	—	50/60	5,118	33″	1737K35	256.71	1737K75	61.79
2,000	—	8.4	4.2	50/60	6,824	39″	1737K36	276.10	1737K76	80.07
3,000	—	12.5	6.3	50/60	10,236	61¼″	1737K37	319.65	1737K77	106.70
Portable										
1,500	12.5	6.5	—	50/60	5,118	36″	1825K24	224.62	1825K44	61.79
2,000	18	9	—	50/60	6,824	36″	1825K28	449.32	1825K48	68.61

Super-Efficient Infrared Heaters

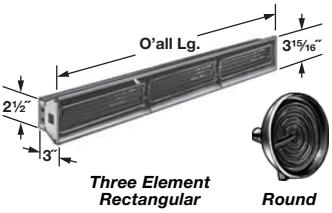

Three Element Rectangular Round

With twice the efficiency of infrared heaters with metal bodies, these infrared heaters have a nickel-chromium resistance wire embedded in the black-ceramic body that emits radiant energy. Use them for drying, curing, and warming. To use, start 6″-8″ away from the workpiece and adjust distance as needed. All heaters resist corrosion and oxidation. They operate on 220/230 VAC and have a wattage tolerance of ±5%. Components are UL recognized.

Note: Do not use in hazardous locations such as enclosed areas exposed to fumes.

Rectangular heaters have 6″ long electrical leads that are insulated by ceramic beads and a ring terminal that fits a #10 stud. Elements have a parabolic profile and are 9⅝″ Lg.×1 7/16″ Dp.×2⅜″ Ht. Furnished with mounting hardware, reflector, ceramic terminal blocks, and a wired insulated bus bar.

Note: Heaters with 650-watt elements last longer than those with 1,000-watt elements because they have thicker heating element wire and lower operating temperatures.

Round heater has a flat-profile element and is 5″ Dia.×4⅞″ Dp. Furnished with a light-bulb style, screw-in base receptacle and bell-shaped reflector.

O'all Lg.	No. of Elements	Watts Per Element	Total Watts	Average Surface Temp.	Max. Surface Temp.	Heaters		Repl. Heating Element	
Rectangular									
10″	1	650	650	842° F	1202° F	3110K17	$110.76	3110K71	$42.02
10″	1	1,000	1,000	1076° F	1436° F	3110K15	122.72	3110K72	42.02
19⅞″	2	650	1,300	842° F	1202° F	3110K27	190.16	3110K71	42.02
19⅞″	2	1,000	2,000	1076° F	1436° F	3110K25	207.84	3110K72	42.02
29¾″	3	650	1,950	842° F	1202° F	3110K37	274.19	3110K71	42.02
29¾″	3	1,000	3,000	1076° F	1436° F	3110K35	306.80	3110K72	42.02
39½″	4	1,000	4,000	1076° F	1436° F	3110K45	404.48	3110K72	42.02
49¼″	5	1,000	5,000	1076° F	1436° F	3110K48	470.72	3110K72	42.02
Round									
6″ Dia.	1	500	500	662° F	1022° F	3110K76	79.18	3110K83	56.99
Optional Low-Voltage (120 VAC) Heating Element for Round Heater								3110K74	$56.99

Easy-Positioning Drying and Curing Infrared Heaters

With a fully adjustable 42″ long extension arm, these lamps let you put heat exactly where you need it. Use them for drying paint and most other surface coatings and fillers. They are not rated for temperature. All lamps operate on 120 VAC, 60 Hz, 2 amps and have a 250-watt, BR40, 2,000-hour infrared bulb; vented shade; bulb guard; two-position (on/off) switch; and 6-ft. power cord with three-prong plug.

Lamp with Screw-Clamp Bracket— Simply clamp to the edge of a bench or table with a maximum thickness of 2¼″. The bracket is removable so the lamp can be used with the optional bases (sold separately below).

Lamp with Stationary Stand— In addition to a screw-clamp bracket (described above), this lamp has a 40½″ high stand with 15″ dia. pedestal base.

Lamp with Mobile Stand— In addition to a screw-clamp bracket (described above), this lamp has a 38½″ high stand with 24″ dia. base and five casters for mobility.

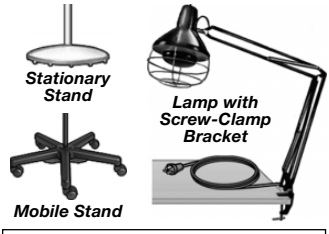

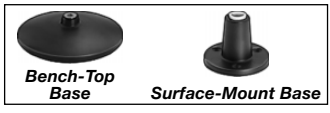

Lamp with Screw-Clamp Bracket	3349K51	$180.00
Lamp with Stationary Stand	3349K61	345.45
Lamp with Mobile Stand	3349K71	327.27
Optional 23-lb. Bench-Top Base	1461T27	72.21
Optional Surface-Mount Base	3349K91	28.00
Replacement Infrared Bulb	1547K15	15.75

Mobile Drying and Curing Infrared Heater

Casters allow you to take these heaters anywhere. Heater head is 18″ in diameter and can be positioned anywhere along the 6-ft. high steel stand. Stand has a 28″×30″ base and four casters. With seven infrared bulbs (sold separately below) and three switch controls, you choose the amount of heat you need. The first switch controls one bulb, second switch controls two other bulbs, and third switch controls the last four bulbs. Suitable for drying paint, adhesives, and many other surface coatings and fillers. *Note:* Not for use with water-based primers or paint.

Heater operates on 120 VAC/VDC, 50/60 Hz, 1,750 watts, 15 amps. It is not rated for temperature. Includes 6-ft. power cord with three-prong plug. UL listed.

Heat Lamp without Bulbs	3162K5	$187.18
R40 Infrared Bulb (250 watts, 5,000 hrs.)	1547K15	15.75
Replacement Stand	3162K81	92.26

Hand-Held Drying and Curing Heat Lamp

This handy lamp heats, dries, softens, and defrosts while illuminating your work surface. Temperature ranges from 300° F (12″ from the work surface) to 800° F (5″ from the work surface).

Lamp operates on 120 VAC, 60 Hz, 5.4 amps. It has a phenolic housing with aluminum reflector, insulated swivel handle, and two-position (on/off) switch. Furnished with a 600-watt quartz bulb that's rated for 75 hours, a pair of protective glasses, and a 10-ft. power cord with two-prong plug.

Optional stand is 6-ft. high and folds to 39″ for convenient storage.

Heat Lamp	3343K12	$145.10
Optional Steel Stand	3343K14	55.56
Replacement Quartz Bulb (600 watts, 75 hours)	3343K17	55.94
Replacement Reflector	3343K21	10.61

Forced-Air Ovens

Also known as mechanical convection ovens, these ovens have a blower to circulate equal amounts of air inside the oven to provide more uniform and accurate temperatures and faster processing than other ovens. An Incoloy-sheathed tubular heating element protects against short circuits. Exhaust is located on top of the oven.

Ovens have a stainless steel interior, stainless steel exterior (unless noted), and wide double doors with silicone-rubber gaskets. Plus, they include an adjustable thermostat, an excess-temperature controller with manual reset, an on/off indicator light, and adjustable nickel-plated wire shelves. Some models also include a 12-hour shutdown timer (see table below).

Ovens are 60 Hz, 1 phase. ***115 VAC*** ovens include a 4-ft. power cord with three-prong plug. ***230 VAC*** ovens do not include a cord or plug and must be hardwired.

Caution: Do not use with flammable solvents, vapors, or other volatile materials.

Standard-capacity ovens have two 20-lb. capacity shelves that adjust on 2″ centers. Ovens hold a maximum of seven shelves. Maximum oven load is 40 lbs.

Large-capacity ovens stand up to the demands of continuous production jobs. They have a separate contactor for controlling the heating element and a safety switch for blower airflow so you can operate blower without heat for cooling applications. Ovens have adjustable fresh-air intake and exhaust dampers as well as explosion-venting latches. They have two 50-lb. capacity shelves that adjust on 3″ centers; ovens hold a maximum of 10 shelves. Maximum oven load is 200 lbs. Meet National Fire Protection Association Standard 86, Industrial Risk Insurers, FM, and OSHA requirements. Side-access control panel is UL listed.

Stands for ovens are steel tables that raise the ovens either 31″ or 24″ off the ground.

Standard Capacity

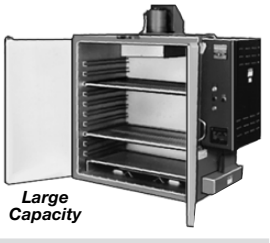
Large Capacity

Ovens

Working Space, cu. ft.	Timer	Max. Temp. °F	Max. Temp. °C	Temp. Accuracy °F	Temp. Accuracy °C	Chamber Size, Ht.×Wd.×Dp.	Overall Size, Ht.×Wd.×Dp.	Watts	115 VAC Amps		230 VAC Amps	
Standard-Capacity Ovens— *Minimum oven temperature is approximately 40° F above ambient temperature.*												
5.3	None	550°	288°	±15°	±8°	16″×26″×22″	23″×41″×30″	2,400	20.9	3302K41	13.0	3302K42♦ $3,606.49
5.3	12 Hr.	550°	288°	±15°	±8°	16″×26″×22″	23″×41″×30″	2,400	20.9	3302K53	13.0	3302K54♦ 3,882.25
7.0	None	350°	177°	±10°	±6°	18″×28″×24″	23″×41″×30″	2,000	17.4	3301K81	8.7	3301K86 2,073.42
7.0	12 Hr.	350°	177°	±10°	±6°	18″×28″×24″	23″×41″×30″	2,000	17.4	3301K83	8.7	3301K84 2,340.19
Large-Capacity Ovens— *Minimum oven temperature is approximately 50° F above ambient temperature.*												
15.8	None	400°	204°	±8°	±4.5°	36″×36″×21″	47″×40″×28″	4,400	—	—	22.7	3193K21★ 6,610.86
27.0	None	400°	204°	±8°	±4.5°	36″×36″×36″	47″×40″×43″	6,600	—	—	32.3	3193K22★ 7,155.44
36.0	None	400°	204°	±8°	±4.5°	36″×36″×48″	47″×40″×55″	6,600	—	—	32.3	3193K23★ 7,394.65

♦ 3,000 watts. ★ Exterior is painted steel.

Optional Floor Stands and Replacement Shelves

31″ High Stand for 5.3 and 7.0 cu. ft. Ovens	3301K24	$462.09
24″ High Stand for 15.8, 27.0, and 36.0 cu. ft. Ovens	3193K63	586.57
Shelf for 5.3 cu. ft. Ovens	3302K89	117.82
Shelf for 7.0 cu. ft. Ovens	3301K88	129.45
Shelf for 15.8 cu. ft. Oven	3193K82	$230.67
Shelf for 27.0 cu. ft. Oven	3193K84	252.00
Shelf for 36.0 cu. ft. Oven	3193K86	276.00

Ovens

Also known as gravity convection or laboratory ovens, these units are the best choice when temperature uniformity isn't critical. Through a process known as gravity convection (or natural convection), heat flows from the oven bottom up into the oven chamber and then out through top vents without a blower or fan. Compact, low-watt density, Incoloy-sheathed heating elements provide quick heating and recovery time and protection from short circuits. Temperature accuracy is ±15° F (±8.3° C).

Cabinets have a corrosion-resistant aluminized steel interior, a steel exterior with painted finish, and mineral wool insulation. Ovens have a hydraulic-control thermostat (except 0.7 cu. ft. ovens, which have a bimetal thermostat). Include a thermometer, on/off indicator light, and two 20-lb. capacity chrome-plated wire shelves that adjust on 2″ centers. Operate at 60 Hz, 1 phase and include a power cord with three-prong plug. Control components are UL and CSA recognized.

Caution: Do not use with flammable solvents, vapors, or other volatile materials.

Working Space, cu. ft.	Temp. Range °F	Temp. Range °C	Chamber Size, Ht.×Wd.×Dp.	Overall Size, Ht.×Wd.×Dp.	Watts	115 VAC Amps		230 VAC Amps			Repl. Shelf	
0.7	125°-437°	52°-225°	10″×12″×10″	17″×14″×12″	600	5.21	3258K21	2.61	3258K24	$497.09	3258K11	$39.35
1.3	125°-437°	52°-225°	13″×13″×13″	21″×15″×15″	750	6.95	3258K22	3.50	3258K25♠	582.55	3258K12	43.56
2.0	125°-437°	52°-225°	16″×18″×12″	25″×20″×14″	1,200	10.50	3258K23	5.20	3258K26	721.82	3258K13	50.25
3.0	125°-437°	52°-225°	21″×18″×14″	30″×20″×16″	1,500	12.50	3258K31	7.00	3258K32 ✓	772.00	3258K14	56.06

Replacement Bimetal Thermostat for 0.7 cu. ft. Ovens ..... 3258K9 ..... $40.29
Replacement Hydraulic-Control Thermostat for 1.3, 2.0, and 3.0 cu.ft. Ovens ..... 3258K7 ..... 101.25
Replacement Thermometer for all Above Ovens ..... 3258K6 ..... 72.17

♠ 800 watts. ✓ 1,600 watts.

High-Temperature Furnaces

A

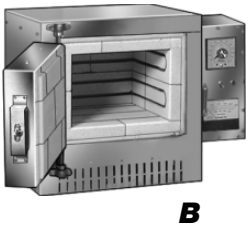

B

C

D

E

A&B ***Analog-Control Furnaces—*** Just turn the single-set control dial to the temperature you want. Once reached, the ovens will maintain that temperature. Ovens have a meter-style thermometer that shows the actual temperature in the oven in °F and °C, even with the power off. Include a 6-ft. power cord with three-prong plug.

(A) Small-Capacity Furnaces— Energy efficient furnaces have steel and stainless steel housings, ceramic brick heating plates, and aluminum and silicone oxide fiber insulation. Door lifts vertically. Operate at 50/60 Hz, single phase.

(B) Large-Capacity Furnace— The large work space handles more material and higher temperatures. Housing is stainless steel and has 3″ of firebrick insulation and 1″ of fiberboard in the walls to provide rapid heating. Heating elements are protected in recessed sidewall grooves. Swing-open door. Operates at 60 Hz, single phase.

C-E ***Digital and Digital Programmable-Control Bench-Top Furnaces—*** These cost- and energy-efficient furnaces are temperature controlled by push-button digital electronics. All operate at 50/60 Hz, single phase and include a 6-ft. power cord with three-prong plug.

(C) Small-Capacity Digital Furnaces— Have a single set-point digital controller. An LED display continuously shows work space temperature in °C (press the set button to display the set-point temperature). An indicator light stays on while the furnace warms up and flashes when it reaches the set temperature. Furnaces are rated for continuous temperatures up to 1800° F (982° C) and for intermittent use (under three hours) up to 2000° F (1093° C). A safety switch shuts off power to the heating elements if the door is opened. Furnaces have a welded steel housing and ceramic fiber insulation. Drop down door doubles as shelf for loading and unloading.

(D) Small-Capacity Digital Programmable-Control Furnaces— These furnaces allow you to build programs in three stages to manage time, temperature, and rate of temperature change. You can link two three-stage programs for a six-stage operation. A maximum of 10 programs can be stored in the memory with up to a seven-day delay start time for each program. An LCD display shows chamber temperature, countdown time, and program number. Furnace has six programmable parameters: 1) delay start, 2) heat/cool rate, 3) target temperature, 4) temperature timer, 5) memory to retrieve programs if oven is turned off, and 6) °C/°F digital display. Door lifts vertically.

(E) Large-Capacity Digital Programmable-Control Furnace— Uses the same controls as Style D, but has more than three times the working space (1,750 cu. in.). It includes a ceramic shelf that effectively doubles the capacity for small items. Door lifts vertically.

Caution: Do not use with flammable solvents, vapors, or other volatile materials.

Also Available: Replacement parts and heating elements for all of the furnaces listed. When ordering, please ask for the furnace part number listed in the table below, and specify the replacement part or heating element needed.

	Working Space, cu. in.	Temp. Range °F	Temp. Range °C	Temp. Accuracy °F	Temp. Accuracy °C	Chamber Size, Ht.×Wd.×Dp.	Overall Size, Ht.×Wd.×Dp.	Watts	Amps	VAC		
A	550	123°-2012°	50°-1100°	±45°	±25°	7 1/16″ × 9 1/16″ × 9 1/16″	16 1/8″×15 3/4″×17″	1,800	15.0	120	31605K55■	$1,438.36
A	550	123°-2012°	50°-1100°	±45°	±25°	7 1/16″ × 9 1/16″ × 9 1/16″	16 1/8″×15 3/4″×17″	2,400	10.0	200-240	31605K77■	1,494.95
B	1,536	50°-2350°	10°-1288°	±48°	±26°	8 3/4″ ×13″ ×13 1/2″	21 3/4″×21″ ×21 1/2″	3,600	15.0	240	3217K24	5,260.87
C	76	212°-2012°	100°-1100°	±0.5°★	±0.3°★	3 3/4″ × 4″ × 4 1/2″	13 7/8″× 8″ × 8 1/2″	1,050	8.8	120	3235K23	1,303.16
C	129	212°-2012°	100°-1100°	±0.9°★	±0.5°★	4 7/8″ × 4 11/16″× 5 19/32″	15 7/8″× 9 3/4″×11 1/8″	1,450	12.0	120	3235K12	1,638.00
D	550	122°-2012°	50°-1100°	±9°	±5°	7 1/16″ × 9 1/16″ × 9 1/16″	16 1/8″×15 3/4″×17″	1,800	15.0	120	3123K51■	2,270.38
D	550	122°-2012°	50°-1100°	±9°	±5°	7 1/16″ × 9 1/16″ × 9 1/16″	16 1/8″×15 3/4″×17″	2,400	10.0	200-240	3123K52■	2,324.22
E	1,750	122°-2012°	50°-1100°	±9°	±5°	9 13/16″×14 3/16″×12 5/8″	21 1/2″×24″ ×21 1/8″	4,600	20.0	230	3122K75▲	4,447.17

■ Height with door open is 24 13/16″. ★ Accuracy at 1832° F/1000° C. ▲ Height with door open is 32 1/8″.

Heat-Treating Compounds

Use these compounds to create a hard-wearing surface on steel. All compounds come in a powder form, except where noted.

Surface-Hardening Compound— Produces a hard-wearing surface on plain-carbon and low-alloy steel parts being heat-treated at 1650°-1700° F (899°-927° C). To use, sprinkle the compound over the heated part, heat again, and quench.

Pack-In Carburizer Compound— Rapidly forms a very dense, wear-hardening shell on all types of mild carbon steel for increased tensile strength. Designed for maximum efficiency at 1450° to 1750° F (788°-954° C), unless noted. Requires a tightly sealed steel or ceramic vented container able to withstand 1750° F (954° C) or the furnace temperature. *100-lb. drum* comes in grain form and is designed for maximum efficiency at 1500° to 1750° F (816°-954° C).

Size		
Surface-Hardening Compound		
1-lb. Jar	3204K5	$22.73
5-lb. Pail	3204K6	82.41
10-lb. Pail	3204K7	155.35
Pack-In Carburizer Compound		
3-lb. Pail	3399K12	42.31
10-lb. Pail	3399K14	117.14
100-lb. Drum	3201K4	166.44

Melting Pots and Tanks

The bottom and sidewalls of these pots and tanks have wraparound heating elements to ensure uniform heating and fast heat-up time. All units have a variable temperature range with adjustable thermostat control and "power on" indicator light. Melting pots with a ±25° F temperature accuracy have a control dial marked from 1 to 10; melting pots with a ±12.6° F temperature accuracy have a control dial marked from the lowest temperature to the highest temperature in its range. Outer housing is Type 304 stainless steel. All operate on 120 VAC, 50/60 Hz, single phase and include a 6-ft. power cord with three-prong plug, unless noted.

Note: Always wear safety apparatus and follow safety precautions while working with melting pots and tanks. Never operate them unattended. Pots and tanks cannot be used for melting salts.

Low-Heat Melting Pots and Tanks— Melt strippable hot-melt coatings, adhesives, waxes, resins, tar, and asphalt. Pots have fiberglass insulation (3″ thick in round pots; 2″ thick in rectangular tanks) and a cast aluminum liner for fast, even heat transfer. *Round pots* include an aluminum cover. *Rectangular tanks* have a Type 304 stainless steel cover. Do not use these pots and tanks with cerro alloys, acids, or other materials caustic to or incompatible with aluminum.

High-Heat Melting Pots and Tanks— Melt solder, tin, babbitt, and lead. Inner bowl is cast iron and has 2″ of refractory (heat-resistant) insulation. Pots and tanks do not include covers.

Low Heat Round

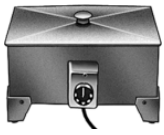

Low Heat Rectangular

Also Available: 220 VAC pots and tanks. Please ask for 3233K91 and specify pot style and capacity.

Pot Cap.	Temp. Range °F	Temp. Range °C	Temp. Accuracy °F	Temp. Accuracy °C	Inside Size	Watts		
Low-Heat Melting Pots and Tanks								
Round Pots								
1 pint	150°–550°	66°–288°	±25°	±14°	4″ Dia. × 3½″ Dp.	240	3233K74	$307.02
1 quart	150°–550°	66°–288°	±25°	±14°	4¾″ Dia. × 3¾″ Dp.	480	3233K81	315.79
2 quarts	60°–450°	16°–232°	±12.6°	±7°	5 15/16″ Dia. × 6½″ Dp.	720	3233K82	364.91
4 quarts	60°–450°	16°–232°	±12.6°	±7°	7½″ Dia. × 7″ Dp.	840	3233K83	436.84
8 quarts	60°–450°	16°–232°	±12.6°	±7°	10″ Dia. × 6″ Dp.	1,200	3233K84	824.56
12 quarts	60°–450°	16°–232°	±12.6°	±7°	10″ Dia. × 9″ Dp.	1,320	3233K25	866.67
20 quarts	60°–450°	16°–232°	±12.6°	±7°	14″ Dia. × 7″ Dp.	1,500	3233K26	957.89
28 quarts	60°–450°	16°–232°	±12.6°	±7°	14″ Dia. × 11″ Dp.	2,100	3233K28	1,224.56
Rectangular Tanks								
1 pint	150°–550°	66°–288°	±25°	±14°	4″ Lg. × 4″ Wd. × 2″ Dp.	240	3341K94	459.77
1 quart	150°–550°	66°–288°	±25°	±14°	8″ Lg. × 4″ Wd. × 2″ Dp.	360	3341K51	643.68
5.5 quarts	60°–450°	16°–232°	±12.6°	±7°	20″ Lg. × 4″ Wd. × 4″ Dp.	1,000	3341K55	781.61
6 quarts	60°–450°	16°–232°	±12.6°	±7°	12″ Lg. × 6″ Wd. × 5″ Dp.	1,080	3341K4	798.85
13.6 quarts	60°–450°	16°–232°	±12.6°	±7°	10″ Lg. × 8″ Wd. × 10″ Dp.	1,320	3341K17	1,220.31
High-Heat Melting Pots and Tanks								
Round Pots								
1½ lbs.	150°–900°	66°–482°	±25°	±14°	2¼″ Dia. × 1½″ Dp.	240	3245K41	336.00
5 lbs.	150°–900°	66°–482°	±25°	±14°	3¼″ Dia. × 2½″ Dp.	480	3245K42	470.00
10 lbs.	150°–900°	66°–482°	±12.6°	±7°	4¼″ Dia. × 3½″ Dp.	720	3245K43	520.00
40 lbs.	150°–900°	66°–482°	±12.6°	±7°	6½″ Dia. × 6½″ Dp.	1,200	3245K14	719.20
120 lbs.	150°–900°	66°–482°	±12.6°	±7°	9¾″ Dia. × 6″ Dp.	1,920	3245K16	1,158.18
250 lbs.	150°–900°	66°–482°	±12.6°	±7°	10″ Dia. × 9″ Dp.	3,100	3245K18●	1,985.45
Rectangular Tanks								
22 lbs.	150°–900°	66°–482°	±12.6°	±7°	8″ Lg. × 4″ Wd. × 2″ Dp.	1,200	3411K56	642.00
24 lbs.	150°–900°	66°–482°	±12.6°	±7°	6″ Lg. × 6″ Wd. × 2″ Dp.	1,200	3411K42	642.00
74 lbs.	150°–900°	66°–482°	±12.6°	±7°	12″ Lg. × 6″ Wd. × 3″ Dp.	1,680	3411K85	1,094.00

● Operates on 220 VAC and has a 6-ft. 3-wire power cord (plug not included—see page 787 for NEMA plugs).

Precise-Temperature Melting Pots

Get precise temperature control with these digitally controlled melting pots. Simply set the specific temperature you want—the LED display shows the set temperature and the actual current temperature. Use to melt solder, wax, or plastic for dipping applications. Choose pots with a standard cast iron crucible or with a ceramic-coated one for lead-free applications. Because solder and other materials will not stick to the ceramic-coated crucible it is easy to clean and allows you to use both lead-free and leaded solder. All operate on 120 VAC, 50/60 Hz and include a 6½-ft. power cord with three-prong plug.

Round Crucible

Crucible	Pot Cap., lbs.	Temp. Range	Temp. Accuracy	Inside Size	Watts	With Standard Crucible		With Ceramic-Coated Crucible	
Round	1¼	0°-1100° F	±3° F	2″ Dia. × 1½″ Dp.	250	8566T11	$1,411.15	8566T42	$1,468.22
Round	9½	0°- 900° F	±3° F	3⅛″ Dia. × 4¼″ Dp.	1,000	8566T13	1,736.00	8566T44	1,857.13
Square	4	0°- 850° F	±3° F	3″ Lg. × 3″ Wd. × 1½″ Dp.	350	8566T15	1,441.69	8566T46	1,568.67

Melting Pots for Solder and Lead

Styles A-C— Made of cast iron, pots are ideal for tinning, stripping, and dip soldering. All operate on 120 VAC, 50/60 Hz and include a 6-ft. power cord with three-prong plug. Not for use with flux core solder. *Style A* pots are set to a fixed temperature of 750° F (399° C). *Styles B* and *C* pots have an adjustable thermostat control that lets you select the optimum working temperature.

Style D— Perfect for melting lead. A pour spout on the bottom of the pot makes draining melted material even easier. Plus, there's 4″ of clearance below the pour spout to place molds. Melting time is less than 20 minutes. Housing is aluminum and inner pot is steel. Operate on 50/60 Hz. 3429K41 operates on 110 VAC and includes a 6-ft. power cord with two-prong plug. 3429K42 operates on 220 VAC. It includes a 6-ft. 3-wire power cord (plug not included—see page 787 for NEMA plugs).

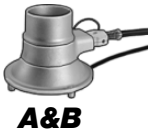

A&B

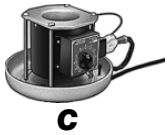

C

D

	Pot Cap., lbs.	Temp. Range °F	Temp. Range °C	Temp. Accuracy °F	Temp. Accuracy °C	Inside Size, Dia. × Dp.	Watts	Melting Pots		Repl. Heating Element		Repl. Power Cord w/3-Prong Plug		Repl. Thermostat	
A	¾	750°	399°	Not Rated		1 9/16″ × 1½″	200	3366K21	$199.06	3366K31	$37.96	3366K78	$65.52	—	—
A	2¼	750°	399°	Not Rated		2½″ × 1¾″	250	3366K23	219.08	3366K33	37.85	3366K78	65.52	—	—
B	¾	380°-650°	193°-343°	±25°	±25°	1 9/16″ × 1½″	250	3366K1	386.34	3366K71	37.81	3366K79	46.56	3366K83	$40.69
B	2¼	380°-625°	193°-329°	±25°	±25°	2½″ × 1¾″	250	3366K2	391.08	3366K71	37.81	3366K79	46.56	3366K83	40.69
B	5	380°-650°	193°-343°	±25°	±25°	3½″ × 1¾″	650	3366K3	329.50	3366K73	104.18	3366K79	46.56	3366K83	40.69
B	11¾	380°-650°	193°-343°	±25°	±25°	4¾″■ × 1¾″	650	3366K6	458.27	3366K73	104.18	3366K79	46.56	3366K83	40.69
C	9½	380°-900°	193°-482°	±25°	±25°	3⅛″ × 4¼″	1,000	3366K4	411.96	3366K74	115.24	3366K82	65.52	3366K83	40.69
D	10	450°-900°	232°-482°	±10%	±10%	2 29/32″ × 4″	500	3429K41	88.96	—	—	—	—	—	—
D	10	450°-900°	232°-482°	±10%	±10%	2 29/32″ × 4″	500	3429K42	93.58	—	—	—	—	—	—

■ Pot is square for dipping small assemblies and through-hole circuit boards.

Melting Pots for Lead-Free Solder

A porcelain-coated pot prevents solder from sticking, making these pots easy to clean and long lasting. The nonporous, nonstick porcelain coating also allows you to use both lead-free and leaded solder. Pots have a 2-lb. capacity. Inside pot size is 2½″ Dia. × 1½″ Dp. All are ESD protected; operate on 120 VAC, 60 Hz; and include a 5½-ft. power cord with three-prong plug.

Temp. Range °F	Temp. Range °C	Temp. Accuracy °F	Temp. Accuracy °C	Watts		
500°- 975°	260°-524°	±11°	±6°	350	8559T11	$448.46
500°-1100°	260°-593°	±11°	±6°	500	8559T21	466.41

Cast Iron Melting Pots

Without Pouring Lip

With Pouring Lip

Built for melting lead, solder, and babbitt, these melting pots have a round, cast iron bowl and a steel handle. Maximum temperature is 1800° F (982° C).

Pots with pouring lip also have a lifting eye with a hook-hole that provides support while tilting the pot.

Pot Cap.	Load Cap.	Inside Size, Dia. ♦ × Dp.		
Pots without Pouring Lip				
1 qt.	10 lbs.	4¾″ × 2¼″	3355K32	$52.64
1.35 qt.	20 lbs.	5¾″ × 3½″	3355K33	79.04
2 qt.	35 lbs.	7¼″ × 4″	3355K35	99.74
1.25 gal.	110 lbs.	9¾″ × 5¾″	3355K37	150.00
Pots with Pouring Lip				
1.25 gal.	110 lbs.	10¾″ × 5¾″	3355K43	161.57
2 gal.	175 lbs.	12¼″ × 7½″	3355K38	233.75
4.5 gal.	300 lbs.	14¾″ × 9½″	3355K41	553.57

♦ Measured at top (widest point) with lip if applicable.

Constant-Heat Melting Pots for Glue

A thermostat automatically maintains the temperature within a few degrees of 140° to 150° F (60° to 66° C) preventing overheating and underheating. Temperature accuracy is ±2° F (±1° C). Pots have steel exteriors, aluminum interiors, and a removable glue container. *1-* and *2-quart* pots also include a built-in wiper rod for removing glue from brushes. All operate on 115 VAC, 60 Hz and include a 6-ft. power cord with three-prong plug.

Pot Cap.	Inside Size, Dia. × Dp.	Watts	Glue Pots		Repl. Container	
1 qt.	4⅜″ × 4⅛″	144	3344K11	$153.60	3344K22	$66.25
2 qt.	5½″ × 4⅞″	240	3344K12	199.02	3344K23	94.53
4 qt.	6¾″ × 6½″	362	3344K13	276.12	3344K24	151.41

Crucibles

Made of clay-bonded graphite, these crucibles hold up against wear and thermal shock. They're also glazed to resist oxidation and have a molded-in pouring lip. Crucibles are ideal for melting brass, aluminum, copper, and precious metals. Maximum temperature is 2500° F.

Crucible No.	Cap., Red Brass	Size, OD★ × Ht.		
0000	1 lb.	2⅝″ × 3 1/16″	3226K51	$22.00
3	7 lbs.	4⅜″ × 5 3/16″	3226K54	35.00
6	14 lbs.	5 9/16″ × 6¾″	3226K56	46.00
10	32 lbs.	6⅝″ × 8⅛″	3226K11	70.00
16	47 lbs.	7⅜″ × 9 5/16″	3226K12	86.00
30	95 lbs.	9⅜″ × 11½″	3226K14	128.00

★ Measured at widest point (at top for 0000-6; in middle for 10-30).

Hot Plates

These general purpose hot plates work with all types of metal pans. They have individually controlled, coiled-element burners that lift up for easy cleaning. Housing is chrome-plated, seamless steel. Do not use for high-temperature heat treating of metals and solids. Hot plates operate on 120 VAC, 60 Hz and have a "power" indicator light. They come furnished with a 4-ft. power cord with three-prong plug. UL listed and NSF certified.

No. of Burners	Burner Dia.	Load Cap., lbs.	Temp. Range, °F	Temp. Accuracy, °F	Approx. Heat-Up Time	Overall Size, Ht. × Wd. × Dp.	Watts	Amps		
1	5½″	15	0°-475°	±20°	3 min.	3½″ × 11½″ × 11½″	1,100	9	3118K32	$113.04
2	5½″	15	0°-475°	±20°	3 min.	3½″ × 17½″ × 11½″	825/825	13.8	3118K34	171.32

Uniform-Heat Hot Plates

A

B

C

D

Made of aluminum to provide the most uniform temperatures, these hot plates also resist warping and buckling at low temperatures. Hot plates have a "power on" indicator light and 6-ft. power cord with three-prong plug, unless noted. Also include internal thermostat that monitors the heating surface. Housing is stainless steel. We recommend using glass containers; metal containers and sand baths should not be used. Metal foil or metal containers prevent the normal dissipation of heat. This may cause damage to the top plate.

(A) Compact hot plates are an economical choice when work space is tight. The housing is perforated so air circulates to protect the controls and work surface from excess heat. Do not have a "power on" indicator light. *120 VAC* unit has a 3-ft. power cord.

(B) General purpose hot plates are good for everyday lab work. *120 VAC* unit is UL listed.

(C) Large-capacity hot plates have a larger surface area and twice the load capacity of our general purpose plates. UL and C-UL listed.

(D) Heavy-load hot plates have supporting stainless steel rails on the bottom and an even larger surface area than our large-capacity hot plates. Ideal for heating assemblies, soldering, and glassmaking. ETL Testing Laboratories listed for conformance to ANSI/UL-499.

	Top Plate, Wd. × Dp.	Load Cap., lbs.	Temp. Range °F	Temp. Range °C	Temp. Accuracy °F	Temp. Accuracy °C	Approx. Heat-Up Time	Ht.	Watts	120 VAC, 50/60 Hz Amps			240 VAC, 50/60 Hz Amps		
A	3½″ Dia.	Not Rated	700°	371°	Not Rated		4.5 min.♥	3¾″	325	2.7	33255K31	$252.44	1.4	33255K62	$256.59
B	6¼″ × 6¼″	20	100°-700°	38°-371°	±5.3°	±3°	20 min.	4⅜″	750	6.2	3271K14	332.96	3.3	3271K64	361.88
C	12″ × 12″	40	100°-700°	38°-371°	±5.4°	±3°	20 min.	6⅛″	1,600	13.3	3273K1	984.38	6.7	3273K2	980.57
C	24″ × 12″	40	100°-700°	38°-371°	±6.3°	±3.5°	20 min.	6¼″	3,200	26.6	3273K3♣	1,314.02	13.3	3273K4♣	1,314.02
D	18″ × 24″	300	100°-550°	38°-288°	±15°	±8.3°	24 min.	6¾″	1,500	12.5	3273K51✓	897.82	8.3	3273K52▲●	935.55

♥ Time it takes to reach 500° F. ♣ Power cord not included; requires hardwiring to your power source. ✓ It takes 24 min. to reach 300° F, 46 min. to reach 450° F, and 93 min. to reach 550° F. ▲ 2,000 watts. ● It takes 24 min. to reach 450° F and 46 min. to reach 550° F.

Precise-Temperature Hot Plates and Hot Plates/Stirrers

Hot Plate

Digital display shows temperatures in 5° C increments providing precise temperature control for heating and drying jobs. Seamless ceramic tops stay flat at high temperatures for optimal heat transfer. Plus, they clean easily, resist acids and alkalies, and have a drip edge that protects the units from spills. Hot surface warning light protects against accidental burns.

Choose hot plates for heating or hot plates/stirrers for heating and stirring. We recommend using glass or metal containers to prevent damage to the ceramic tops; sand baths are not recommended. Keep top clean and remove spills promptly as acids and alkalies may damage top and cause unit failures. Units have a durable cast aluminum housing and a built-in ring stand holder that accommodates a ½″ dia. support rod (rod not included). Operate on 120 VAC, 50/60 Hz, and include a 6-ft. power cord with three-prong plug. All are CSA certified. ***Hot plates/stirrers*** have a strong magnet for stirring viscous solutions. They also have separate controls for heat and stirring. Stirring speed is 50-1,200 rpm.

Top Plate, Wd. × Dp.	Load Cap., lbs.	Temp. Range, °C	Approx. Heat-Up Time	Ht.	Watts	Amps	Hot Plates		Hot Plates/Stirrers	
4¼″ × 4¼″	15	5°-540°	8 min.	3.6″	410	3.4	31745K11	$257.90	31745K21	$459.19
7¼″ × 7¼″	25	5°-540°	8 min.	3.8″	1,040	8.6	31745K12	280.97	31745K22	491.69
10¼″ × 10¼″	35	5°-400°	8 min.	4″	1,440	12	31745K15	480.16	31745K25	645.81

Magnetic Stir Bars

Octagonal *Round* *Stir Bar Retriever*

Made with an Alnico 5 magnet encapsulated in a seamless PTFE shell, these stir bars are noncontaminating and resist corrosion, chemicals, heat, and cold. FDA compliant for food contact.

Octagonal bars with spinning ring spin well in small, flat-shaped containers because they have a larger surface area for greater turbulence.

Color-coded octagonal bars with spinning ring are easy to see in contrasting colored liquid. They spin well in small, flat-shaped containers. **To Order:** Please specify color: red, yellow, or blue.

Round bars with removable spinning ring can be used ringless to stir up contents at the bottom of larger containers. They have excellent centering and smooth-running characteristics.

Retriever has a magnet at one end for fishing stir bars out of containers. It's PTFE coated. Length is 13″.

Length inch	Length mm	OD♣ inch	OD♣ mm	Octagonal Stir Bars		Color-Coded Octagonal Stir Bars		Round Stir Bars	
1/2″	12.7	5/16″	8.0	5678K111	$3.96	8571T11	$6.75	5678K123♦	$3.66
5/8″	15.9	5/16″	8.0	5678K112	4.41	8571T21	7.03	5678K124♦♠	4.84
1″	25.4	5/16″	8.0	5678K143	5.42	8571T31	7.94	5678K154	5.08
1″	25.4	3/8″	9.5	5678K113	4.90	—	—	5678K125	4.66
1 1/2″	38.1	5/16″	8.0	5678K144	5.95	8571T41	9.65	5678K155	5.86
1 1/2″	38.1	3/8″	9.5	5678K114	5.74	—	—	5678K126	5.54
2″	50.8	5/16″	8.0	5678K145	8.17	8571T51	10.35	5678K156	8.48
2″	50.8	3/8″	9.5	5678K115	7.77	—	—	5678K127	7.44
2 1/2″	63.5	3/8″	9.5	5678K116	8.94	—	—	5678K128■	16.64
3″	76.2	1/2″	12.7	5678K117	17.10	8571T61	31.54	5678K129	16.28

Stir Bar Retriever 5725K85 $21.30

♣OD listed does not include spinning ring dia. ♦Does not have a spinning ring.
♠Length is 3/4″ (19.1 mm). ■OD is 5/8″ (15.9 mm).

Natural-Gas Burners

Single Row *Triple Row* *Rectangular*

Say goodbye to hot spots because you'll get even heat distribution with these burners. Burner design allows plenty of air to reach the burners for efficiency. All are made of cast iron.

Ring Burners— Each ring has two rows of gas ports as well as a separate venturi mixer and brass valve. Gas connection is NPT male. *Single-row model* has a built-in floor flange. *Double-* and *triple-row models* have a manifold for connecting to the gas supply line.

Rectangular Burners— Have a venturi mixer. 3318K14 has a brass valve and 3318K16 has a bronze valve. You can elevate burner height by replacing the included NPT nipple with a longer nipple between the elbow and the burner head. Gas connection is NPT female.

Gas Input, Btu/hr.	Gas Conn.	Burner Size	Overall Size, Lg.×Ht.		
Single-Row Ring Burner					
15,000	1/4″	4 1/2″ Dia.	15 1/2″×5 1/4″	3314K11	$279.59
Double-Row Ring Burner					
53,000	1″	8″ Dia.	15 1/2″×5 1/4″	3314K12	501.67
Triple-Row Ring Burner					
107,000	1″	12″ Dia.	15 1/2″×5 1/4″	3314K13	781.54
Rectangular Burners					
30,000	1/4″	8 1/4″×2 1/8″	16″ ×4 1/2″	3318K14	374.65
90,000	1/2″	16″ ×4 1/2″	28″ ×7″	3318K16	664.21

LP Gas Burners

Designed for outdoor use, these powerful low-pressure burners are made of 1/4″ thick cast iron for durability and long service life. Burners have 3/8″ male flare fittings and include three push turn control knobs for each burner. All are set for use with LP gas. Assembly required.

Optional 5-ft. hose has a low-pressure LP gas regulator with a 3/8″ female flare fitting on one end, and either a POL or a QCC end fitting on the other end.

Optional natural gas manifolds convert burners to natural gas.

With One Burner

POL End Fitting

QCC End Fitting

Gas Input, Btu/hr.	No. of Burners	Burner Dia.	Overall Size, Ht.×Wd.×Dp.		
35,000	1	7″	7 1/2″×13″×13″	3310K42	$75.08
70,000	2	7″	7 1/2″×27″×13″	3310K44	134.48

Optional 5-ft. Hose with POL End Fitting ..... 3310K32 ... 20.45
Optional 5-ft. Hose with QCC End Fitting ..... 3310K33 ... 20.00
Optional Natural Gas Manifold for 3310K42 ..... 3310K47 ... 13.51
Optional Natural Gas Manifold for 3310K44 ..... 3310K49 ... 30.29

High-Velocity Natural Gas Burners

Straight Burner

90° Angle Burner

Also known as venturi nozzles, these cast iron nozzles burn natural gas at atmospheric pressure in limited combustion chambers even with minimal secondary air. Designed to resist flashback, they can be safely turned down.

Use for drying, air heating, annealing, and melting soft metals. Also use them in heat-treating furnaces, in bake and core ovens, under electrotype furnaces, and in the conversion of large steam boilers. As a torch, they're suitable for singeing and heating. All burners have a venturi mixer and bronze valve, except as noted. Gas connection is NPT female.

Gas Input, Btu/hr.	Gas Conn.	Nozzle Dia.	Overall Size, Lg.×Ht.		
Straight Burners					
25,000	1/4″	1 5/8″	15″ Lg.	32565K731★	$326.19
100,000	1/2″	3 5/16″	26 1/2″ Lg.	32565K761	529.43
90° Angle Burners					
150,000	1″	4″	26 3/4″×17 1/4″	32565K811	776.69
250,000	1″	4 7/8″	31 1/4″×19 1/4″	32565K821	1,185.75

★ Has brass valve.

Gas Mixers and Valves

Pair mixers and valves to supply the right amount of natural or LP gas to your atmospheric burners. To choose the correct mixer and valve, determine the size of your burner pipe and gas input connection. For information about measuring pipe, see pages 2-3. If your gas line isn't the same size as the gas input connection, see our index for pipe adapters.

Mixers are made of heavy cast iron and have large, easy-to-adjust air openings. They slip over the burner pipe's end and attach with a set screw (included).

Mixing valves are brass and have a pilot hole. (You can easily drill the pilot hole larger to meet BTU requirements.) One end of the valve slips into the mixer; the other connects to your gas line.

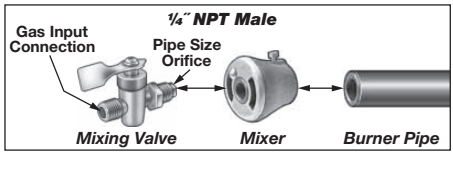

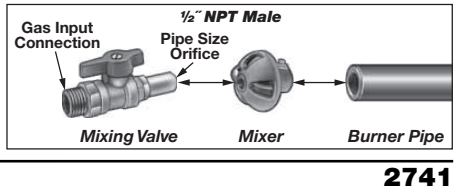

Fits Pipe Size	FOR 1/4″ NPT MALE GAS CONNECTION: Gas Mixers		Mixing Valves		FOR 1/2″ NPT MALE GAS CONNECTION: Gas Mixers		Mixing Valves	
1/2″	3322K16	$66.67	3322K22●	$49.12	—	—	—	—
3/4″	3322K17	68.42	3322K22●	49.12	—	—	—	—
1″	3322K18	71.93	3322K22●	49.12	3320K1	$77.19	3320K9	$86.85
1 1/4″	3322K19	70.18	3322K22●	49.12	3320K2	80.70	3320K9	86.85
1 1/2″	—	—	—	—	3320K3	85.96	3320K9	86.85

●Handle is steel.

Drilled-Pipe Gas Burners

All of these rugged iron-pipe burners have two rows of gas ports that are precision-drilled at 45° angles. They're good for use in ovens, sterilizers, vats, and tanks. Furnished with a gas mixer and brass valve. Gas connection is NPT male.

To Order: Please specify natural or LP gas orifice.

Gas Input, Btu/hr.	Gas Conn.	Burner Pipe Dia.	Overall Size, Lg. × Ht.	Flame Tube Lg.		
9,500	1/4″	1/2″	18″ × 17/8″	12″	3316K2	$186.67
24,000	1/2″	1″	291/2″ × 23/8″	18″	3316K4	258.33
42,000	1/2″	11/4″	49″ × 23/4″	36″	3316K6	298.33
66,000	1/2″	11/2″	741/2″ × 33/8″	60″	3316K8	426.67

Skimmers

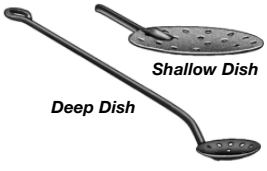

Shallow-dish skimmers have 5/16″ dia. holes. Handles are stub length, so you can weld them to a piece of pipe to create a handle as long as you need. Stubs on 6″ and 8″ dia. sizes fit inside 3/8″ pipe; stubs on 10″ and 12″ dia. sizes fit inside 1/2″ pipe.

Deep-dish skimmers have 1/4″ dia. holes and a welded-on steel handle.

Bowl Size, Dia. × Dp.	Handle Length	Carbon Steel		Type 304 Stainless Steel	
Shallow-Dish Skimmers					
6″ × 1/2″	31/2″	3276K11	$17.66	3276K21	$26.60
8″ × 5/8″	3″	3276K12	21.62	3276K22	37.25
10″ × 7/8″	3″	3276K13	29.33	3276K23	47.91
12″ × 11/4″	3″	3276K14	33.52	3276K24	60.82
Deep-Dish Skimmers					
3″ × 1/2″	18″	3362K1	18.61	———	———
5″ × 1″	28″	3362K3	27.42	———	———
8″ × 15/8″	33″	3362K5	38.84	———	———
10″ × 13/4″	42″	3362K6	47.33	———	———

Stainless Steel Cleaning and Restoring Pen

Easily clean weld-burns from stainless steel with this electrolytic pen that uses an electric current to chemically change the surface. Use instead of abrasives, pickling pastes, and gels, which are time consuming, labor intensive, and not very cost effective. Plus, pen forms a protective coating on the surface as it cleans. Pen uses *100 mL disposable electrolyte cartridges* (required, sold separately below) with cleaning tip and can be used for food service, restaurant, and piping applications.

The system is portable and ideal for small jobs, touch ups, and repairs. Includes one regular stainless steel insert with cleaning pad, one narrow stainless steel insert with cleaning pad, cleaning boot, hex key, grounded clamp, and case. System operates on 120 VAC, 50/60 Hz and includes an 8-ft. power cord with three-prong plug. Measures 81/4″ Ht. × 31/4″ Wd. × 63/4″ Dp.

Electrolyte solution neutralizer (sold separately below) is used to remove the electrolyte solution once cleaning is complete.

System	8910T22	$1,772.84
100 mL Electrolyte Cartridge	8910T35	12.49
500 mL Electrolyte Solution Neutralizer	8910T36	17.57

Replacement Parts

3/4″ wide Stainless Steel Insert	8910T31	$10.94
5/32″ thick Cleaning Pad for 8910T31	8910T32	11.56
3/8″ wide Stainless Steel Insert	8910T33	10.94
5/64″ thick Cleaning Pad for 8910T33	8910T34	7.74

Dry Heat Sterilizers

With Two Trays

Reach sterilizing temperatures of 320° F in 15 to 20 minutes. Plus, these sterilizers are easy to use—simply place unsterile items on tray and set timer. Items should heat for approximately one hour. Operate on 115 VAC, 60 Hz and include a 6-ft. power cord with three-prong plug. Use with metal only; not for use with rubber or plastic. FDA compliant.

No. of Trays	Watts	Tray Size, Wd. × Dp.	O'all Size, Ht. × Wd. × Dp.		
2	500	10″ × 6″	10″ × 15″ × 9″	9566T26	$589.72
3	735	11″ × 7″	14″ × 19″ × 11″	9566T27	868.57

Pouring Ladles

Steel ladles have pour spouts on both sides. Choose from flat and D-grip handle styles. ***Stainless steel ladles*** are cone shaped to give you easy pouring without spills. Ladles are made of Type 304 stainless steel; handles are flat-shaped mild steel.

Bowl Size, ID × Dp.	Handle Length	Capacity, fl. oz.		
Steel Ladles with Flat Handle				
3″ × 11/4″	11″	2	3359K2	$9.10
4″ × 15/8″	12″	6	3359K4	12.21
6″ × 21/2″	21″	19	3359K6	23.30
Steel Ladles with D-Grip Handle				
7″ × 31/4″	30″	32	3358K2	50.40
8″ × 33/4″	32″	51	3358K9	54.04
Stainless Steel Cone-Shaped Ladles with Flat Handle				
23/4″ × 1″	24″	2	3361K1	20.95
43/8″ × 2″	24″	10	3361K4	28.53
63/4″ × 5″	24″	48	3361K16	46.16

Electroplating Pen Kit

Pen Repl. Anode Handles

Portable and completely self-contained, this electroplating system is excellent for repairing printed circuit boards, electronic components, and lab instruments, as well as for general plating applications.

Kit includes 1 oz. each of liquid 24K gold, sterling silver, copper plating, alkaline copper, brass, and nickel. Also furnished with 1 oz. each of dulling compound and stainless steel plate, 4 oz. of chrome stripper, a plating pen, two anode handles, pair of gloves, spray bottle, and instructions. The plating pen plates metal at a thickness of 1.5-2 microns per pass (up to 20 microns); it includes three 1/8″ dia. tips. Anodes have washable covers and plate at a thickness of 4 microns. Using the anodes, plating can be built up to 50-60 microns. Operates on 120 VAC, 50/60 Hz, single phase and includes a power cord with two-prong plug. The power supply is UL listed.

3342K11 ..... Each $487.74

Replacement Parts

	Pkg. Qty.		Pkg.
Anode Handles	2	3342K12	$30.00
Anode Covers	6	3342K13	12.75
1/8″ Dia. Pen Tips	12	3342K15	9.38
Pen with 1/8″ Dia. Tip		3342K35	Each $41.07

	1-oz. Jar	Each	4-oz. Jar	Each
24K Gold Liquid	3342K18	$69.08	———	———
24K Gold Gel	3342K16★	69.08	3342K17★	$261.30
Sterling Silver	3342K21	78.75	3342K22	181.25
Copper Plating	3342K23	12.50	3342K24	30.00
Nickel	3342K27	12.50	3342K28	36.25
Stainless Steel Plating	3342K31	61.62	3342K32	28.75

★ An optional alternative to the kit's included 24K gold liquid.

Stainless Steel Cleaning and Restoring Gel

Also known as pickling gel, this gel safely removes weld scale, discoloration, and black oxides and other impurities from stainless steel without damage. Also restores the corrosion-resistant chromium layer to stainless steel. Apply gel directly to surface; no mixing required.

1-Quart Jar	8554T11	$57.91
1-Gallon Jar	8554T21	120.87

Compact Dry Heat Sterilizers

Sterilize small instruments safely and effectively. These sterilizers ensure instruments are free of pathogens (agents that cause disease) and microbial contaminants without using chemicals, gases, or flames.

To sterilize, place instruments into the glass beads contained in the sterilizer well. Temperature is set at 482° F (250° C) and requires 20 minutes to warm up. Complete sterilization occurs in about 20 seconds. Both include a bag of glass beads, well cover, and sterilization dish. Operate on 110 VAC, 60 Hz, 90 watts and include a 6-ft. power cord with three-prong plug.

Well Size, Dia. × Dp.	O'all Size, Ht. × Wd. × Dp.		Each
19/16″ × 35/32″	53/4″ × 47/8″ × 51/4″	8563T11	$560.00
19/16″ × 51/2″	81/8″ × 47/8″ × 51/4″	8563T38	686.67

Replacement Beads for 8563T11	8563T21	Pkg.	$23.85
Replacement Beads for 8563T38	8563T48	Pkg.	$47.69

Hand Tools

Picks, Tweezers & Retrievers	2744
Pliers	2749
Adjustable & Pipe Wrenches	2761
Spanner & Drum Wrenches	2765
Open-End Wrenches	2767
Combination Wrenches	2773
Box Wrenches	2777
Tool Sets	2782
Sockets, Socket Sets & Wrenches	2784
Impact Wrenches	2805
Torque Wrenches & Testers	2809
Powered Screwdrivers & Bits	2816
Screwdrivers	2828
Nutdrivers	2836
Hex Keys & Drivers	2838
Torx Keys & Drivers	2848
Screw Extractors	2851
Nonsparking Tools	2853
Hammers	2857
Pry Bars & Wedges	2871

Precision-Tip Picks

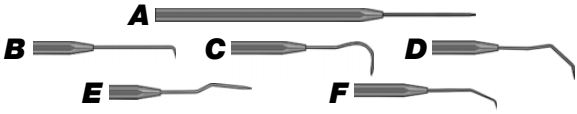

Use these needle-sharp picks for precision work around delicate circuits and components. Similar to dental instruments, they have wire tips that are nonrusting and noncontaminating. Handles are hex shaped for a good grip.

17-4 PH Stainless Steel Tips and Aluminum Handles— Have the lightest handles we offer.

	O'all Lg.		Each
0.010″ Tip Diameter			
Type 440A Stainless Steel Tips and Handles			
A	3″	5338A21	$6.73
B	3″	5338A22	6.73
C	3″	5338A23	6.73
D	3″	5338A24	6.73
Type 17-4 PH Stainless Steel Tips and Aluminum Handles			
A	5¾″	5338A31	11.47
B	5⅝″	5338A32	11.49
C	5⅜″	5338A34	12.40
D	5½″	5338A33	12.80
4-Piece Set (Includes 5338A31-A34)		**5338A36** **Set**	$47.29
0.017″ Tip Diameter			
Type 302 Stainless Steel Tips and Nickel-Plated Steel Handles			
A	7⅜″	5338A61	4.11
B	7¼″	5338A62	4.11
C	7⅛″	5338A64	4.11
E	7⅜″	5338A65	4.11
F	7¼″	5338A63	4.11
5-Piece Set (Includes 5338A61-A65)		**5338A69** **Set**	$17.98
0.025″ Tip Diameter			
Type 17-4 PH Stainless Steel Tips and Handles			
A	6″	5338A42	3.22
B	5¾″	5338A44	3.22
C	5⅝″	5338A45	3.22
D	5⅝″	5338A43	3.22
E	6″	5338A46	3.22
4-Piece Set (Includes 5338A42-A45)		**5338A55** **Set**	$13.00
5-Piece Set (Includes 5338A42-A46)		**5338A71** **Set**	$16.20

Miniature-Hook Picks

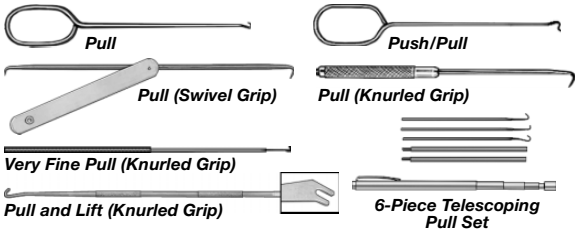

Also known as spring hooks, these picks adjust fine springs and other small parts in tight areas. Material is steel with a nickel-plated finish, unless otherwise indicated.

Pull (Swivel Grip)— Ends swivel out of the aluminum handle. Shaft is made of steel.

Pull (Knurled Grip)— Has a steel hook and an aluminum handle with a magnetic end (6-oz. pull).

	O'all Lg.		Each
Pull	6″	7426A32	$3.71
Push/Pull	6″	7426A33	3.71
Pull (Swivel Grip)	7⅞″	9493K32	8.80
Pull (Knurled Grip)	7″	9493K31	4.30
Heavy Duty Pull (Knurled Grip)	9½″	7426A41	5.21
Very Fine Pull	11″	7426A11	3.41
Very Fine Pull (Knurled Grip)	6⅞″	7426A34	3.28
Very Fine Push	11″	7426A12	3.41
Very Fine Push/Pull (Knurled Grip)	6⅝″	7426A42	3.40
Pull and Push/Pull (Knurled Grip)	7″	7426A44	3.98
Pull and Lift (Knurled Grip)	8⅛″	7426A36	3.45

4-Piece Set— Includes 7426A32, A33, A41, and A36. Comes in a vinyl pouch.

7426A48 ..... **Set** $12.66

6-Piece Telescoping Pull Set— Includes one 45° hook, 90° narrow hook, and offset hook; all are 4″ long and Type 302 stainless steel. Also has two 3⅞″ nickel-plated steel extensions and a chrome-plated brass handle. Handle telescopes from 4⅞″ to 17½″. Comes in a plastic tube.

3913A22 ..... **Set** $20.20

Picks with Comfort-Grip Handles

Comfort-grip handles provide a better grip than the other handles we offer. Use these tools on O-rings, small fuses, and other small parts. Blades are high-carbon steel.

4-Piece Set— Includes one of each style pick.

Screwdriver Grip

	O'all Lg.		Each
G	5⅛″	3842A21	$3.27
H	5⅛″	3842A23	3.27
J	5⅛″	3842A25	3.27
K	5⅛″	3842A26	3.27
4-Piece Set		**3842A35** **Set**	$11.39

Cushion Grip

	6⅞″ Length Each		***9¾″ Length*** Each
G	3842A41 $3.17	3842A51	$4.20
H	3842A42 3.17	3842A52	4.20
J	3842A43 3.17	3842A53	4.20
K	3842A44 3.17	3842A54	4.20
4-Piece Set (6⅞″)		**3842A37** **Set**	$10.96
4-Piece Set (9¾″)		**3842A39** **Set**	$15.09

Insulated Grip

Insulated Grip— Handles withstand up to 1,000 VAC/1,500 VDC. Meet IEC 900 and ASTM F1505-01.

	O'all Lg.		Each
G	7¼″	3975A11	$21.00
H	7″	3975A14	21.00
J	7″	3975A13	21.00
K	7¼″	3975A12	21.00
4-Piece Set		**3975A21** **Set**	$77.78

General Purpose Picks

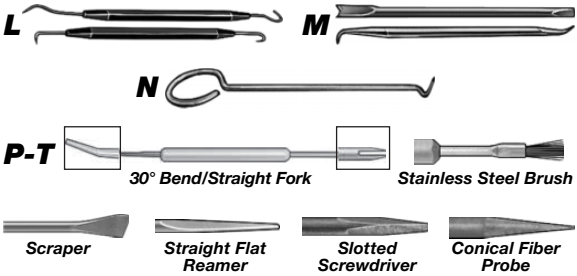

Fish out worn O-rings as well as position stubborn wires, springs, and other small parts. These tools are also good soldering aids.

Style L— Made of steel.

Style M— Made of brass.

Style N— Made of nickel-plated steel.

Styles P-T— Tips are steel with a satin chrome finish that repels solder. Handles have a hex shape and are made of wood, except *Style T*, which is made entirely of fiber. *Styles Q* and *R* have a Type 302 stainless steel brush on one end.

	O'all Lg.		Set
L	Hooks (2-piece set)	6⅞″, 7⅛″	**9570K71** $12.84
M	Pry Bars (2-piece set)	6″	**9451K65** 16.68
			Each
N	60° Double Bend	5⅞″	**9485K51** $4.71
P	30° Bend/Straight Fork	8″	**7705A1** 6.47
Q	Straight Fork/SS Brush	8″	**7705A2** 6.64
R	Scraper/SS Brush	8″	**7705A3** 6.82
S	Straight Flat Reamer/Straight Fork	8″	**7705A4** 7.00
T	Screwdriver/Conical Fiber Probe	5½″	**7705A6** 11.27

6-Piece Set— Includes Styles L and M plus one 6″ 17-4 PH stainless steel conical probe and one 6″ 400 series stainless steel tweezer (blunt ends with serrated inside tips). Comes in a canvas bag.

9490K41 ..... **Set** $44.67

4-Piece Set— Includes Styles R, S, and T plus one 8″ steel angled flat reamer/straight fork. Comes in a vinyl pouch.

7705A7 ..... **Set** $31.86

Magnetic 4-Piece Set— Includes one straight, 60° double bend, 90° bend, and hook. Tips are steel. Handles are 4⅝″ knurled aluminum and have a magnetic end (1.5-lb. pull). Comes in a vinyl pouch.

7705A21 ..... **Set** $18.67

Interchangeable-Tip Picks

Tips and handle are sold separately, so you can create a tool that fits your needs.

(1-4) Tips— Separate wire, remove small fuses and O-rings, and position small parts. Made of steel.

Handle— Hex shaped for a good grip and has a magnetic end (6-oz. pull). Made of aluminum.

Tip	Lg.		Each
1 ... Straight	3¼″	7388A31	$1.50
2 ... 90°	3⅜″	7388A32	1.50
2 ... 90°	6½″	7388A45	1.65
3 ... Hook	2⅞″	7388A33	1.50
4 ... 60° Double Bend	3⅛″	7388A34	1.50
Handle (3½″ long)		7388A35	$2.60

5-Piece Set— Includes the handle and one of each tip (except 7388A45). Comes in a vinyl pouch.

7388A43 ..... **Set** $7.00

Nonmarring Picks

Also known as orange sticks, these picks position sensitive components.

Style	Lg.	Pkg. Qty.		Pkg.
Wood				
Flat Tip/Point Tip	7″	10	53385A48	$3.31
Two Flat Tips	7″	10	53385A55	4.11
Plastic				
Flat Tip/Point Tip	5⅝″	5	53385A12	12.68
Two Flat Tips	7″	5	53385A14	11.22

Lifting Pick

Get the leverage you need to lift computer chips and other electronic components. Tip is forked and 2″ long. Handle is antistatic plastic. Overall length is 5¾″. Made of chrome-vanadium steel.

3808A45 ..... $8.08

Electronic Component Grippers

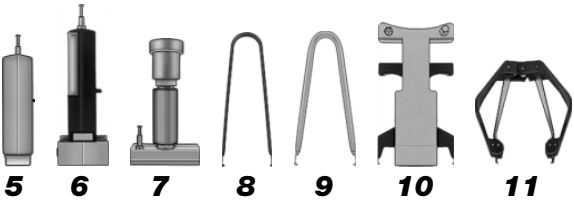

Insert and remove computer chips and other delicate components with ease. Made of plastic and steel.

Style 9— Has a plastic-coated grip.

Style 11— Only for PLCC (plastic leaded chip carrier) chips.

For Chip Size (No. of Pins)	Lg.		Each
Insertion			
5 ... 14- 16	4″	7375K1	$24.06
6 ... 24- 28	4¾″	7375K2	24.06
7 ... 36- 40	3¾″	7375K3	26.55
Extraction			
8 ... 8- 24	4″	7375K4	3.62
9 ... 8- 24	4″	7375K7	2.92
10 ... 24- 40	4¼″	7375K5	27.50
11 ... 20-128	4″	7375K8	23.62

5-Piece Set— Includes Styles 5, 6, 7, 8, and 10.

7375K15 ..... **Set** $84.82

Plastic Tweezers

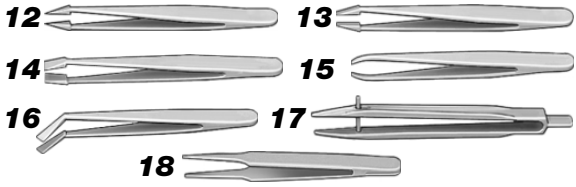

Confidently work with small items in corrosive environments. These plastic tweezers resist a variety of chemicals. Grip is smooth, except Style 17, which has a grooved grip. All have smooth inside tips.

Chemical Resistant— Made of acetal, these tweezers withstand solvents and acids. Max. temp. is 225° F. Color is light gray.

High Temperature— Made of composite plastic. Max. temp. is 428° F. Color is black.

Chemical Resistant and High Temperature— Made of ryton, this tweezer withstands solvents. Max. temp. is 425° F. Color is black.

Tip	Lg.		Each
Chemical Resistant			
12 ... Extra Fine	4½″	7003A21	$3.29
13 ... Blunt	4½″	7003A11	3.57
14 ... Square	4⅝″	7003A19	3.86
15 ... Curved Square	4⅝″	7003A12	3.57
16 ... Bent Spade	4⅞″	7003A16	5.81
17 ... Blunt	6⅜″	7003A13	10.00
18 ... Tapered Round Blunt	4½″	7003A18	4.35
High Temperature			
12 ... Extra Fine	4½″	5946A11	3.33
13 ... Blunt	4½″	5946A12	3.33
14 ... Square	4½″	5946A13	3.33
Chemical Resistant and High Temperature			
13 ... Blunt	4½″	7003A22	6.94

3-Piece High-Temperature Set— Includes Styles 12, 13, and 14. Made of composite plastic and comes in a plastic pouch.

5946A8 ..... **Set** $8.62

Nonmarring Tweezers

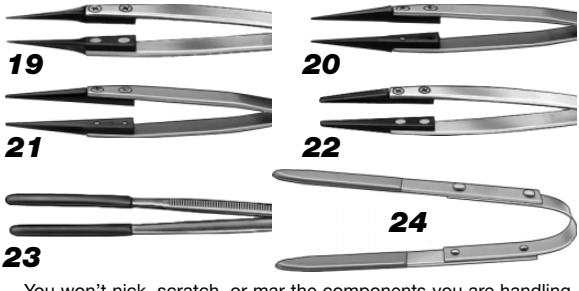

You won't nick, scratch, or mar the components you are handling. All have smooth inside tips. Max. temperature is 250° F for Styles 19-22 and 175° F for Style 23. Style 24 is not rated for temperature.

Styles 19-22 are 300 series stainless steel with a smooth grip.

Style 23 are 400 series stainless steel with a serrated grip.

Style 24 are aluminum with a smooth grip.

Replacement tips include two tips and four screws.

Tip	Lg.	Tweezers	Each	Replacement Tips	Pkg.
Antistatic Carbon-Fiber Tip					
19 ... Ultra Fine	5″	6182A21	$38.51	6182A31	$6.02
20 ... Extra Fine	5″	6182A22	38.51	6182A32	6.02
21 ... Fine	5″	6182A23	38.51	6182A33	6.02
22 ... Round Blunt	5″	6182A24	38.51	6182A34	6.02
Plastic-Coated Tip					
23 ... Round Blunt	8″	5244A11	8.00	—	—
23 ... Round Blunt	12″	5244A12	9.88	—	—
24 ... Round Blunt	6½″	4937A21	15.96	—	—
24 ... Round Blunt	9″	4937A22	17.04	—	—

4-Piece Set— Includes Styles 19, 20, 21, and 22. Comes in a wood box.

6182A25 ..... **Set** $136.84

Telescoping Gripper

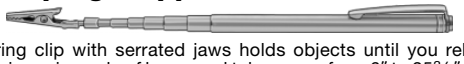

A spring clip with serrated jaws holds objects until you release them. Gripper is made of brass and telescopes from 6″ to 25¾″ long. Maximum jaw opening is ¼″.

7394A41 ..... $4.78

Precision-Tip Tweezers

Ultra Fine

Extra Fine

Fine

Tapered Extra Fine

Tapered Fine

Tapered Blunt

Offset

Bent

Tapered Bent

Curved

With Cushion Grip

Specially designed for microelectronics and micro-assembly, these tweezers have a smooth grip and smooth inside tips.

Premium Swiss grade are top quality Swiss-made tweezers, crafted for perfect tip symmetry.

High grade are high-quality precision tweezers at an economical price.

Steel— Low corrosion resistance but excellent tip wear resistance. Tweezers are magnetic and have a polished finish, except 5669A81-A87 have a dull finish.

400 Series Stainless Steel— Excellent corrosion resistance and good tip wear resistance. Tweezers are magnetic and have a polished finish.

Nonmagnetic 300 Series Stainless Steel— Excellent corrosion resistance and fair tip wear resistance. *Premium Swiss-grade* tweezers have a polished finish. *High-grade* tweezers have a dull finish.

Nonmagnetic Cushion-Grip 300 Series Stainless Steel— Excellent corrosion resistance and good tip wear resistance. They have an ergonomic antistatic foam grip and a polished finish.

Nonmagnetic Titanium— High corrosion resistance is combined with superior tip wear resistance and strength for extreme durability. These tweezers are also lightweight and have a dull finish.

			Steel		400 Series Stainless Steel		NONMAGNETIC 300 Series Stainless Steel		NONMAGNETIC Cushion-Grip 300 Series Stainless Steel		NONMAGNETIC Titanium	
Tip	Lg.	Industry No.		Each		Each		Each		Each		Each
Premium Swiss Grade												
Ultra Fine	4¼″	3C	5184A48	$33.08	5184A28	$33.77	5184A8	$30.84	5197A18	$41.46	5175A8	$78.74
Ultra Fine	4½″	1	5184A44	34.13	5184A24	33.87	5184A4	33.44	5197A31	34.19	5175A4	61.64
Ultra Fine	4¾″	3	5184A47	37.23	5184A27	37.86	5184A7	39.14	5197A15	38.39	5175A5	61.64
Extra Fine	5″	AA	5184A43	25.43	5184A23	27.72	5184A3	28.50	5197A13	40.86	5175A3	34.14
Fine	4½″	00	5184A41	48.60	5184A71	32.68	5184A1	32.45	5197A11	41.58	5175A1	61.64
Fine	4¾″	00D	5184A42 ◆	46.82	5184A72 ◆	41.54	5184A2 ◆	31.68	5197A12 ●	40.96	5175A2 ◆	58.11
Tapered Extra Fine	3¼″	5	—	—	5184A17	40.40	—	—	—	—	—	—
Tapered Extra Fine	4¼″	4	5184A61	40.36	5184A29	36.09	5184A9	36.23	5197A19	43.45	5175A9	57.43
Tapered Extra Fine	4¼″	5	5184A51	36.50	5184A31	41.34	5184A11	39.05	5197A21	46.83	5175A11	76.36
Tapered Fine	4¾″	2	5184A45	36.82	5184A25	41.03	5184A5	36.04	5197A17	38.30	5175A6	61.64
Tapered Blunt	4¾″	2A	5184A46	41.04	5184A26	35.44	5184A6	29.15	5197A16	38.70	5175A7	61.64
Offset	4½″	5A	5184A62	44.00	5184A32	56.60	5184A12	37.31	5197A22	43.48	5175A12	64.66
Bent	4½″	6	5184A64	49.73	5184A34	46.33	5184A14	48.44	5197A24	59.46	5175A14	81.03
Tapered Bent	4¼″	5B	5184A63	47.45	5184A73	44.37	5184A13	43.56	5197A23	46.00	—	—
Curved	4½″	7	5184A55	43.98	5184A35	47.95	5184A15	36.32	5197A25	47.24	5175A15	79.73
High Grade												
Ultra Fine	4¼″	3C	8384A41	5.38	5669A48	6.05	8384A45	5.76	5180A26	26.25	5669A66	25.43
Ultra Fine	4¾″	1	5669A82	5.25	5669A44	6.05	5669A14	5.30	5180A36	23.80	5669A64	25.43
Ultra Fine	4¾″	3	5669A83	5.25	5669A47	6.37	5669A3	6.02	5180A25	28.88	5669A65	25.43
Extra Fine	5″	AA	5669A31	5.38	5669A43	6.05	5669A13	5.76	5180A23	27.50	5669A63	25.43
Fine	4¾″	00	5669A81	5.25	5669A88	5.98	5669A12	6.16	5180A21	28.18	5669A61	25.43
Fine	4¾″	00D	5669A2 ◆	6.13	5669A89 ◆	5.98	5669A1 ◆	6.22	5180A22 ●	28.49	5669A62 ◆	25.43
Tapered Extra Fine	4¼″	5	5669A4	5.38	5669A51	6.05	5669A23	5.27	5180A31	40.62	5669A71	25.43
Tapered Extra Fine	4½″	4	5669A32	5.38	5669A49	6.31	5669A7	6.16	5180A38	24.79	5669A69	25.43
Tapered Fine	4¾″	2	5669A84	5.25	5669A45	6.05	5669A15	5.30	5180A37	24.79	5669A67	25.43
Tapered Blunt	4¾″	2A	5669A85	5.25	5669A46	6.05	8384A51	6.31	5180A28	28.06	5669A68	25.43
Offset	4½″	5A	5669A86	5.25	5669A52	6.05	8384A47	5.76	5180A32	36.55	5669A72	25.43
Bent	4½″	6	5669A33	5.38	5669A54	6.37	5669A21	6.22	5180A34	29.26	5669A74	25.43
Tapered Bent	4¼″	5B	5669A87	5.25	5669A91	5.98	8384A49	6.79	5180A33	30.80	5669A92	27.00
Curved	4½″	7	5669A8	5.38	5669A55	6.37	5669A9	6.16	5180A35	22.16	5669A75	25.43

◆ Serrated grip and inside tips. ● Serrated tips.

5-Piece Premium Swiss-Grade Nonmagnetic 300 Series Stainless Steel Set— Includes one each of 5184A8, 5184A4, 5184A11, 5184A5, and 5184A15. Comes in a wood box.

5184A75 ..... **Set** $221.66

6-Piece High-Grade Nonmagnetic 300 Series Stainless Steel Set— Includes one each of 8384A45, 5669A13, 5669A12, 5669A1, 5669A23, and 5669A9. Comes in a plastic pouch.

5669A26 ..... **Set** $31.27

4-Piece High-Grade Steel Set— Includes one each of 8384A41, 5669A31, 5669A2, and 5669A8. Comes in a plastic pouch.

5669A93 ..... **Set** $19.21

Squeeze-to-Open Tweezers

Fine

Square

Round Blunt

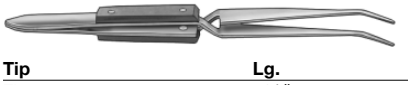
Bent Blunt

Once clamped on a part, these 400 series stainless steel tweezers won't let go. Squeeze to open jaws then put to work in fine assembly and soldering. All have a polished finish.

Fine and ***square*** tweezers have a smooth grip and serrated inside tips.

Round blunt and ***bent blunt*** tweezers have a smooth, heat-resistant fiber grip and smooth inside tips.

Tip	Lg.		Each
Fine	4½″	5799A12	$4.42
Square	6½″	5799A14	5.35
Round Blunt	6½″	7007A73	5.11
Bent Blunt	6½″	7007A74	5.11

4-Piece Set— Includes one each of tweezers sold above. Comes in a plastic pouch.

7007A81 ..... **Set** $18.20

General Purpose Tweezers

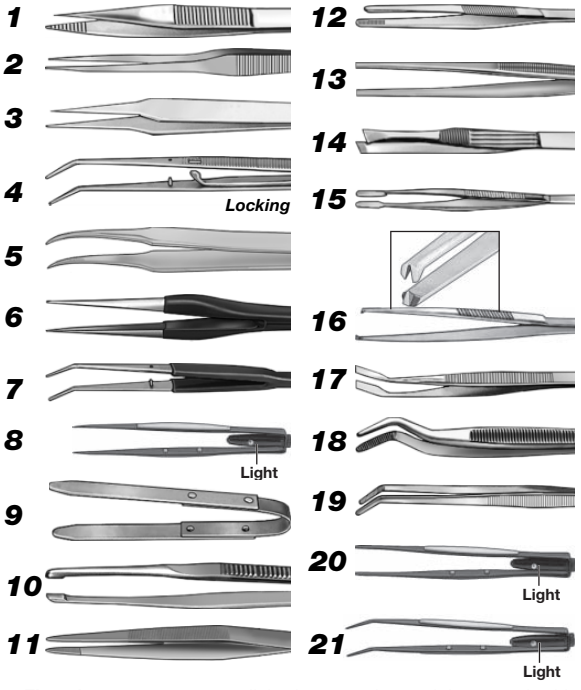

Fine-tip tweezers are polished 400 series stainless steel with a serrated grip, except for 5498A18 and 5498A19, which have a smooth grip.

Fine-tip tweezers with comfort grip are 300 series stainless steel.

Fine-tip tweezer with comfort grip and light is made of steel.

Blunt-tip and ***extra-long blunt-tip tweezers*** are 400 series stainless steel with a serrated grip, except 4937A11 and 4937A12, which are aluminum with a smooth grip, and 5498A15, which has a smooth grip.

Blunt-tip tweezers with comfort grip and light are steel.

	Tip	Inside Tips	Lg.		Each
Fine-Tip Tweezers					
1	Standard	Serrated	3″	**5498A13**	$3.00
1	Standard	Serrated	6″	**5498A22**	5.33
2	Tapered	Serrated	7″	**7005A11**	4.78
3	Tapered	Smooth	4⅜″	**5498A18**	3.10
4	Bent	Serrated	6″	**5498A23**	4.80
4	Bent	Serrated	7″	**7005A12**	4.78
4	Bent (Locking)	Serrated	6″	**5498A24**	5.33
5	Curved	Serrated	4⅜″	**5498A19**	3.44
Fine-Tip Tweezers with Comfort Grip					
6	Standard	Smooth	5″	**5796A12**	5.25
7	Bent	Serrated	6½″	**5796A14**	5.42
Fine-Tip Tweezer with Comfort Grip and Light					
8	Standard	Smooth	6¼″	**1877A11**	10.82
Blunt-Tip Tweezers					
9	Round	Smooth	6½″	**4937A11**	10.18
10	Round	Smooth	3″	**5498A11**	3.00
11	Round	Serrated	5¾″	**5516A14**	3.78
12	Round	Serrated	6″	**7379A21**	4.80
12	Round	Serrated	8″	**7379A22**	5.60
13	Square	Smooth	3½″	**5498A15**	3.00
13	Square	Smooth	4¾″	**5516A16**	3.31
14	Angled	Smooth	3½″	**5498A16**	3.00
15	Spade	Smooth	4½″	**5498A21**	3.40
16	Toothed	Smooth	5½″	**5516A17**	4.60
17	Bent Spade	Smooth	4⅛″	**5516A15**	3.78
18	Bent Square	Serrated	4½″	**5516A18**	3.22
Extra-Long Blunt-Tip Tweezers					
9	Round	Smooth	9″	**4937A12**	10.87
12	Round	Serrated	10″	**7379A23**	6.20
12	Round	Serrated	12″	**7379A24**	7.37
19	Bent Round	Serrated	10″	**7379A36**	6.70
Blunt-Tip Tweezers with Comfort Grip and Light					
20	Square	Serrated	6¼″	**1877A12**	10.82
21	Bent Round	Serrated	6½″	**1877A13**	10.82

6-Piece Set— Includes one each of 5498A13, 5498A18, 7005A12, 7379A21, 5516A16, and 5516A18. Comes in a vinyl pouch.

5498A25 ..... **Set** $23.75

Tongs

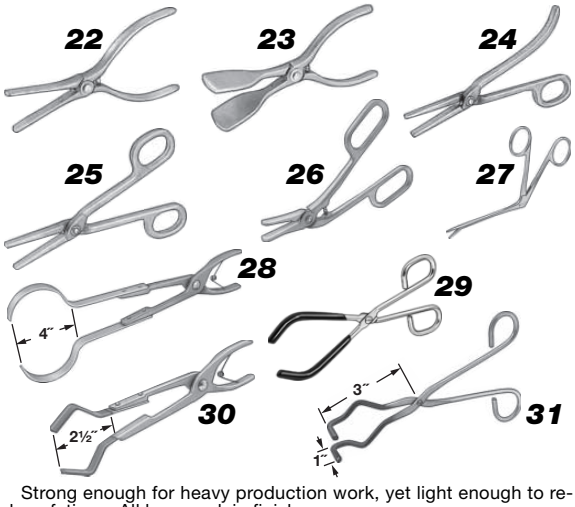

Strong enough for heavy production work, yet light enough to reduce fatigue. All have a plain finish.

Hinged-tip jaws open ½″ back from the point.

Nonmarring curved jaws are plastic coated.

Bent-tip jaws and ***nonstick bent-tip jaws*** are noncontaminating (after autoclaving) and inert to most chemicals. All tips have a 30° bend. A second gripping area behind the tips is 1″-1½″ long with an opening of 3¼″ for the 9″ long tongs; 4¼″ for the 18″ long tongs. *Nonstick bent-tip jaws* are PTFE coated.

	O'all Lg.	Jaw Lg.	Max. Jaw Opening	Material		
Straight Jaws						
22	7″	2½″	1⅛″	Aluminum	**5478A21**	$15.69
22	7½″	3″	1⅜″	Aluminum	**6991A22**	21.41
23	7⅛″	3″	1½″	Aluminum	**5788A11**	23.73
24	10½″	3″	3″	Aluminum	**5790A24**	30.08
25	10⅝″	3″	2½″	Aluminum	**5745A1**	36.52
25	12″	3″	3″	Aluminum	**5745A2**	43.27
26	12″	2½″	⅞″	Aluminum	**5745A4**	56.82
Hinged-Tip Jaws						
27	6″	½″	¼″	400 Series SS	**5279A25**	26.29
27	8″	½″	¼″	400 Series SS	**5279A29**	31.13
Curved Jaws						
28	16″	4″	6¼″	Aluminum	**5675A2**	74.25
Nonmarring Curved Jaws						
29	9⅜″	4½″	6⅜″	Steel	**8542A82**	12.14
30	13⅛″	2½″	3⅜″	Aluminum	**5675A1**	52.45
Bent-Tip Jaws						
31	9″	3″	7¼″	300 Series SS	**5499A12**	14.97
31	18″	3″	13½″	300 Series SS	**5499A24**	21.26
Nonstick Bent-Tip Jaws						
31	9″	3″	7¼″	300 Series SS	**5499A11**	21.14
31	18″	3″	13½″	300 Series SS	**5499A25**	31.43

Heavy Duty Tongs

Handle hot materials in furnaces and forging operations. Tongs are steel with a green finish.

O'all Lg.	Jaw Lg.	Max. Jaw Open.		
(32) Straight Jaws				
18″	2½″	3¼″	**5665A2**	$81.12
24″	3″	4¼″	**5665A4**	81.12
30″	3″	4¼″	**5665A5**	97.25
42″	3″	4¼″	**5665A6**	97.25
(33) Curved Jaws				
18″	3″	2¾″	**5664A2**	84.38
18″	4″	4¾″	**5663A11**	86.12
24″	3½″	2¾″	**5664A4**	84.38
24″	4″	4¾″	**5663A13**	86.12
30″	3½″	2¾″	**5664A5**	97.25
36″	4″	4¾″	**5663A15**	99.38
(33) Curved Jaws (Cont.)				
42″	3½″	2¾″	**5664A6**	$97.25
42″	4″	4¾″	**5663A16**	99.38
(34) Double-Curved Jaws				
18″	4½″	3½″	**5661A2**	84.38
24″	5″	3½″	**5661A4**	84.38
30″	5″	3½″	**5661A7**	97.25
42″	5″	3½″	**5661A6**	97.25
(35) Three-Finger Jaws				
36″	6″	9½″	**5115A11**	127.78
48″	6″	9½″	**5115A12**	144.11

Magnetic Retrievers

Quickly get a hold of screws, nuts, bolts, and other small items.

Pocket Style

Slip these retrievers into your pocket for go-anywhere convenience. 5838A24 has a polypropylene body. 5838A14 has an aluminum body.

Length	Approx. Pull, lbs.	Tip Dia.	Max. Temp.		
6″	3/8	0.189″	250° F	5838A24	$3.89
6″	1 1/2	0.315″	175° F	5838A14	7.09

Flexible

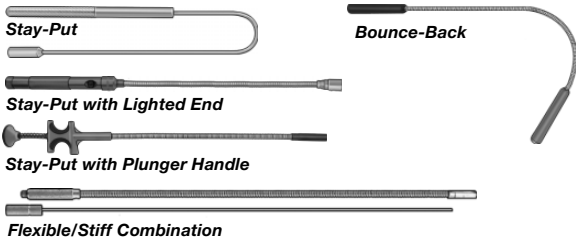

The shaft bends to reach items in awkward spots.

Stay-Put with Plunger Handle— Push the plunger to engage magnet.

Flexible/Stiff Combination— This rigid, 18″ long tool converts to a flexible, 32″ long tool—just remove the stiff wire section inside the tool and thread it onto the handle.

Length	Approx. Pull, lbs.	Tip Dia.	Max. Temp.		
Stay-Put—*Aluminum*					
21 1/2″	1 1/2	0.312″	175° F	3838A42	$9.56
Stay-Put with Lighted End—*Aluminum*					
23″	5	0.500″	175° F	5322A23	15.56
Stay-Put with Plunger Handle—*Spring Steel*					
19″	1 1/2	0.312″	175° F	5681A87	17.64
Bounce-Back—*Spring Steel*					
10 1/2″	1/2	0.187″	150° F	5802A4	6.67
17 1/2″	3	0.500″	175° F	5802A11	9.06
25″	3	0.500″	175° F	5802A22	10.91
Flexible/Stiff Combination—*Spring Steel*					
18″ or 32″	2	0.250″	175° F	6986A11	10.38

Thumb Release

Body is Type 304 stainless steel; handle is wood.

Length	Approx. Pull, lbs.	Tip Dia.	Max. Temp.		
12″	5	1″	800° F	5646A11	$40.54
14″	10	1″	800° F	5646A12	51.69

Telescoping

Standard and High-Visibility Orange

With Protective Cap

With Lighted End

Extend these retrievers for hard-to-reach items.

With Protective Cap— The cap covers the sides of the magnet, allowing you to pinpoint the object you want to retrieve. If you want the entire magnet to attract metal, slide the cap up the shaft. Approximate pull is measured with the cap in place. 3835A26 also has an inspection mirror.

Length	Approx. Pull, lbs.	Tip Dia.	Max. Temp.		
Standard—*Chrome-Plated Brass*					
5 5/8″-25 1/2″	1 1/2	0.295″	175° F	7385A28	$8.08
Standard—*Type 304 Stainless Steel*					
5 5/8″-18 1/8″	3/8	0.205″	842° F	7385A44	6.54
6″-23 1/2″	3	0.500″	175° F	7385A35	11.19
High-Visibility Orange—*Brass*					
5 7/8″-25 7/8″	1 1/2	0.295″	175° F	7385A52	9.07
With Protective Cap—*Type 304 Stainless Steel*					
6 5/8″-33 1/4″	2	0.442″	175° F	3835A22	12.08
7 1/4″-33 3/4″	5	0.634″	175° F	3835A27	14.44
8 1/4″-30 1/4″	10	0.758″	175° F	3835A29	18.68
8 1/4″-30 1/4″	16	0.865″	175° F	3835A24	20.49
10″ -34 1/4″	16	0.865″	175° F	3835A26	24.45
With Lighted End—*Brass*					
7 3/4″-26″	5	0.500″	175° F	5322A25	13.58

All-Angle

A ball joint holds the magnetic head firmly in place so you can pick up items from any angle.

Length	Approx. Pull, lbs.	Tip Dia.	Max. Temp.	Head Material		
Standard						
7 3/4″	2	0.312″	175° F	Aluminum	5801A12	$8.04
Telescoping						
6 1/2″-19″	2	0.312″	175° F	Aluminum	5801A11	9.49
10 5/8″-14 5/8″	3	0.500″	175° F	Nylon	5801A22	11.99
16 1/4″-26″	5	0.565″	175° F	Aluminum	5801A6	16.85
16 3/4″-26 3/4″	3	0.500″	175° F	Nylon	5801A33	13.01
Telescoping with Lighted End						
6 3/4″-27 3/4″	8	0.740″	175° F	Aluminum	5801A7	18.30
8″ -32 3/4″	8	0.735″	175° F	Steel	5801A8	17.16

Gripping Retrievers

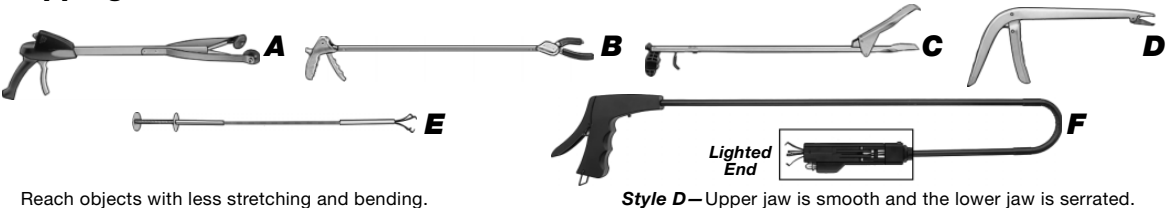

Reach objects with less stretching and bending.

Style A— Have rubber cups that grip and jaws that lock to hold objects.

Style B— Have an extra-sturdy construction and curved rubber-padded jaws.

Style C— 7294A3 and *A4* have vinyl-covered jaw tips.

Style D— Upper jaw is smooth and the lower jaw is serrated.

Style E— Shaft is flexible and bounces back after you bend it, except 5681A22, which has a rigid shaft. 5681A15 has a lighted end.

Style F— Shaft is flexible and stays put where you bend it. Also has a lighted end.

	Reach	Opening Wd.	Material		Each
A	20″	4″	Aluminum	7294A31	$14.30
A	32″	4″	Aluminum	7294A32	17.39
A	40″	4″	Aluminum	7294A33	17.89
A	48″	4″	Aluminum	7294A34	17.27
A	60″	4″	Aluminum	7294A35	22.70
A	72″	4″	Aluminum	7294A36	27.00
A	96″	4″	Aluminum	7294A38	32.95
A	120″	4″	Aluminum	7294A39	37.92
B	28″	3 1/2″	Aluminum	7294A1	98.33
B	38″	3 1/2″	Aluminum	7294A2	99.74
B	48″	3″	Aluminum	7294A23	175.00
B	60″	3″	Aluminum	7294A24	208.33
C	33″	5″	Aluminum	7294A3	$22.80
C	40″	5″	Aluminum	7294A4	22.80
C	52″	2 1/4″	Aluminum	7294A5	102.00
C	60″	2 1/4″	Aluminum	7294A6	107.92
C	72″	2 1/4″	Aluminum	7294A7	135.00
D	9 1/2″	1/2″	Steel	8548A11	6.98
E	4 1/2″	21/32″	Aluminum	5681A22	10.11
E	13 1/2″	1″	Steel	5681A12	7.11
E	23 1/2″	1″	Steel	5681A14	7.81
E	25 3/8″	1/2″	Steel	5681A15	16.67
F	42″	5/8″	Rubber-Coated Copper	57465A54	37.73
Replacement Cups for Style A (2/Set)				7294A18	**Set** $5.71

Pole-Style Retrievers

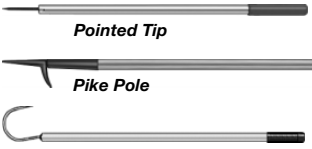

You don't have to get up close and personal with these retrievers—their long lengths allow you to reach objects that are farther away.

Pointed Tip—Tip is steel.

Pike Poles—Tip and hook are steel. *Fiberglass handles* are non-conductive and flame resistant.

Hook—Hook is Type 304 stainless steel. 5918A1 length adjusts anywhere within the range listed; 5918A11 and *A12* lengths adjust to three stop positions.

Hinged Hook—Also known as cant hooks. Head is iron with a hinged steel hook.

Noose—The plastic-coated cable opens to approximately 14″ and locks in place once tightened.

Length		
Pointed Tip—*Aluminum Handle*		
40″	**2400A11**	$10.84
Pike Pole—*Aluminum Handle*		
6 ft.	**2294T39**	73.10
8 ft.	**2294T41**	83.43
10 ft.	**2294T42**	92.85
12 ft.	**2294T43**	104.93
14 ft.	**2294T44**	112.17
16 ft.	**2294T45**	126.83
20 ft.	**2294T47**	161.44
Pike Pole—*Wood Handle*		
6 ft.	**2294T19**	88.56
8 ft.	**2294T21**	106.48
10 ft.	**2294T22**	128.98
12 ft.	**2294T23**	149.85

Length		
Pike Pole—*Wood Handle (Cont.)*		
14 ft.	**2294T24**	$184.47
16 ft.	**2294T25**	236.24
Pike Pole—*Fiberglass Handle*		
6 ft.	**2294T49**	70.29
8 ft.	**2294T51**	81.10
10 ft.	**2294T52**	91.92
12 ft.	**2294T53**	102.74
14 ft.	**2294T61**	113.56
16 ft.	**2294T55**	124.38
20 ft.	**2294T57**	146.04
Hook—*Aluminum Handle*		
24″	**5918A22**	35.38
36″	**5918A23**	38.11
48″	**5918A24**	40.54
72″	**5918A25**	45.27

Length		
Hook—*Aluminum Handle (Cont.)*		
17″-39″	**5918A1**	$58.33
55″, 75″, 95″	**5918A11**	59.96
79″, 108″, 143″	**5918A12**	67.52
Hook—*Fiberglass Handle*		
96″	**5918A31**	176.80
192″	**5918A32**	248.32
Hinged Hook—*Wood Handle*		
36″	**2296T11**	92.20
54″	**2296T21**	124.56
60″	**2296T41**	128.55
Noose—*Aluminum Handle*		
4 ft.	**1466A21**	113.45
5 ft.	**1466A22**	126.55
4 ft.- 6 ft.	**1466A23**	155.64
7 ft.-12 ft.	**1466A24**	210.91

Pliers Sets

All-Purpose Pliers Sets

Forged Steel

High Visibility

5-Piece Premium Forged Steel Set—Pliers are forged steel with cushion-grip handles. Packed in a roll-up vinyl pouch. Set includes:

- 7½″ long-nose pliers with cutter
- 6″ combination jaw slip-joint pliers with cutter
- 7″ wire-cutting pliers
- 9½″ tongue-and-groove pliers with flat jaws
- 12″ tongue-and-groove pliers with flat jaws

5671A21 ..... **Set** $89.16

5-Piece Economy Forged Steel Set—Pliers are made of forged steel and have cushion-grip handles. Packed in a vinyl pouch. Set includes:

- 6″ long-nose pliers with cutter
- 6″ combination jaw slip-joint pliers with cutter
- 6″ wire-cutting pliers
- 10″ tongue-and-groove pliers with flat jaws
- 12″ tongue-and-groove pliers with flat jaws

5797A32 ..... **Set** $38.40

5-Piece Type 420 Stainless Steel Set—Pliers are made of Type 420 stainless steel for good corrosion resistance. All have plain handles and are autoclavable for sterile environments. Packed in a roll-up vinyl pouch. Set includes:

- 6″ long-nose pliers with cutter
- 6″ combination jaw slip-joint pliers without cutter
- 8″ wire gripping and cutting pliers
- 6″ wire-cutting pliers
- 9½″ tongue-and-groove pliers with flat jaws

5671A22 ..... **Set** $147.33

4-Piece High Visibility Set—Pliers are made of forged steel and have cushion-grip handles. Grips are neon colored for easy identification. Packed in a roll-up cloth pouch. Each set includes:

- 6″ long-nose pliers
- 6″ combination jaw slip-joint pliers with cutter
- 6″ wire-cutting pliers
- 10″ tongue-and-groove pliers with flat jaws

Grip Color		Set
Orange	**5451A12**	$48.88
Green	**5451A15**	48.88
Red	**5451A19**	$48.88

5-Piece Pliers Set with Adjustable Wrench

Pliers are made of forged steel and have cushion-grip handles. Packed in a roll-up vinyl pouch. Set includes:

- 6″ long-nose pliers
- 6″ combination jaw slip-joint pliers with cutter
- 6″ wire-cutting pliers
- 9½″ tongue-and-groove pliers with flat jaws
- 8″ adjustable wrench

5755A88 ..... **Set** $68.97

3-Piece Insulated Pliers Set

Pliers comply with IEC 60900 and ASTM F1505-01 standards and are rated to 1,000 volts. All are forged steel and have ultra-grip handles, which have grips made of both hard and soft materials for a more comfortable grip than cushion grips. Packed in a polyester and vinyl pouch that has a belt loop and swivel hammer loop. Set includes:

- 8″ long-nose pliers with cutter
- 8″ wire gripping and cutting pliers with pipe grip
- 6″ wire-cutting pliers

5487A65 ..... **Set** $182.35

6-Piece Miniature Electronics Pliers Sets

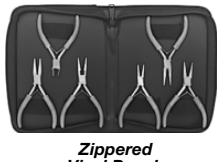
Zippered Vinyl Pouch

All pliers have a spring return.

Regular Sets—Pliers have cushion-grip handles. *Forged steel* set is packed in a zippered vinyl pouch. *Type 420 stainless steel* set has good corrosion resistance and is packed in a roll-up vinyl pouch.

Static-Dissipative (ESD-Safe) Set—Cushion grips dissipate electrostatic charges to protect sensitive electronic components. Comes in a zippered vinyl pouch.

Each set includes:

- 4½″ long-nose pliers
- 4¾″ long-nose pliers with cutter
- 5¾″ long-nose pliers
- 4¾″ flat-nose pliers (4½″ for Type 420 stainless steel pliers)
- 4¼″ wire-cutting pliers (4½″ for Type 420 stainless steel pliers)
- 4½″ end-cutting pliers

	Material		Set
Regular	Forged Steel	**7067A11**	$87.16
Regular	Type 420 Stainless Steel	**5323A49**	122.25
Static Dissipative	Forged Steel	**5460A55**	97.64

Tongue-and-Groove Pliers

Flat Jaw with Plain Handles

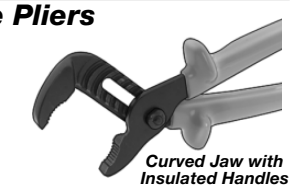
Curved Jaw with Insulated Handles

V-Jaw with Ultra-Grip Handles

Parrot Jaw with Cushion-Grip Handles

Lock the sliding top handle into one of the curved grooves for a strong, nonslip hold. All pliers have serrated jaws, unless noted.

Pliers ***with static-dissipative (ESD-safe) handles*** have cushion grips that dissipate electrostatic charges to protect sensitive electronic components. Pliers ***with high-visibility handles*** have neon-colored grips for easy identification. Pliers ***with insulated handles*** comply with IEC 60900 and ASTM F1505-01 standards and are tested to 1,000 volts. They also have finger guards to keep your fingers away from the jaws. Pliers ***with ultra-grip handles*** have special grips made of both hard and soft materials to provide a more comfortable grip than cushion grips.

Thin-Profile Flat Jaw— Nose is narrow and thin for tight spaces.

Flat Jaw— *Type 420 stainless steel* pliers have good corrosion resistance and are autoclavable for sterile environments.

Curved Jaw— Ideal for round stock and tubing. *Brass* pliers have softer jaws than steel pliers and will not mar your workpiece.

V-Jaw— Have more points of contact for a better grip on round and irregular workpieces.

Parrot Jaw— Bottom jaw is shorter than the top to get a good grip on the flats of bolt heads and nuts, even those with rounded edges.

O'all Lg.	Max. Jaw Opening	Jaw Lg.	No. of Positions	Grip Type		Each
Thin-Profile Flat Jaw— *Forged steel*						
12″	2 1/4″	1 1/2″	7	Cushion	5637A7	$19.14
Flat Jaw with Plain Handles— *Forged steel*						
4 1/2″	1/2″	5/16″	3	_____	5641A11	14.95
6 1/2″	7/8″	13/16″	5	_____	5637A3	11.75
9 1/2″	1 1/2″	1 1/8″	5	_____	5637A1	16.41
Flat Jaw with Plain Handles— *Type 420 stainless steel*						
9 1/2″	1 3/16″	1 3/16″	3	_____	5641A13	46.57
Flat Jaw— *Forged steel*						
4 1/2″	1/2″	5/16″	3	Cushion	5641A12	12.97
6 1/2″	7/8″	13/16″	5	Cushion	5637A4	12.92
8″	1 1/2″	1 1/8″	4	Cushion	5637A6■	15.46
9 1/2″	1 1/2″	1 1/8″	5	Cushion	5637A5	14.48
9 1/2″	1 1/2″	1 1/8″	5	Cushion	5637A23■	16.98
10″	2″	1 3/8″	7	Cushion	5765A3	15.07
10″	2″	1 3/8″	7	Cushion	5765A1▲	15.07
10″	2″	1 3/8″	7	Ultra	5637A71	19.14
12″	2 1/4″	1 1/2″	7	Cushion	5765A2	15.60
16 1/2″	4 1/4″	2 9/16″	8	Cushion	5769A1	30.58
20 1/4″	5 1/2″	3″	12	Cushion	5769A2	57.65
Flat Jaw w/Static-Dissipative (ESD-Safe) Handles— *Forged steel*						
7″	1 7/32″	1″	5	Cushion	5637A22	12.00
10″	2″	1 5/16″	6	Cushion	5637A32	13.50
Flat Jaw with High-Visibility Handles— *Forged steel*						
To Order: Please specify neon color: green, orange, or red.						
10″	2″	1 5/16″	6	Cushion	5825A12	13.40
Flat Jaw with Insulated Handles— *Forged steel*						
10″	2″	1 1/4″	7	Cushion	57775A32	37.32
12″	2 1/4″	1 1/2″	7	Cushion	57775A34	38.10
16″	4 1/4″	2 1/4″	11	Cushion	7453A42	214.74
Curved Jaw— *Forged steel*						
8 1/2″	1″	1 1/4″	5	Ultra	5638A12	25.27
Curved Jaw— *Brass*						
10″	1″	1 1/4″	5	Cushion	7453A43	49.05
Curved Jaw with Insulated Handles— *Forged steel*						
10″	1 13/16″	1 1/4″	7	Cushion	7453A41	62.01
V-Jaw— *Forged steel*						
9 1/2″	1 1/2″	1 1/8″	5	Cushion	5368A11	14.95
10″	1 1/8″	1 7/16″	5	Ultra	5638A13	26.03
10″	2″	1 3/8″	7	Cushion	5368A2	17.15
12″	2 1/4″	1 1/2″	7	Cushion	5368A14	16.80
16 1/2″	4 1/4″	2 3/8″	8	Cushion	5368A18●	34.08
20 1/4″	5 1/2″	3 3/16″	12	Cushion	5368A19●	62.54
Parrot Jaw— *Forged steel*						
7″	5/8″	1/2″	2	Cushion	54145A21	14.86
9 1/2″	1 1/8″	1 1/8″	4	Cushion	54145A22	16.18
13 1/2″	2″	1 5/8″	6	Cushion	54145A23■	25.58

■ Has a safety stop. ▲ Smooth jaws. ● V-shape on top jaw only.

2-Pc. Flat Jaw with Cushion-Grip Handles Pliers Set— Includes one each of 5637A4 and 5637A5 above. Packed in a roll-up cloth pouch.
5637A72 ..... **Per Set** $31.95

Adjustable Self-Gripping Pliers

Standard with Cushion-Grip Handles

Standard with Insulated Handles

Locking with Push Button, V-Jaw, Cushion-Grip Handles

Locking w/Push Button, Parrot Jaw

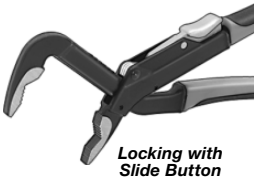
Locking with Slide Button

Locking with Push Button and Ratchet Action

Get the gripping power of a pipe wrench while keeping the feel of pliers. Also known as alligator and cobra pliers, these tools are self-gripping; you don't have to squeeze the handles together as you apply downward pressure. The greater the resistance, the tighter the hold. Made of forged steel, pliers have thin-profile serrated jaws (unless noted). A safety stop keeps your fingers from getting pinched between the handles. Pliers ***with ultra-grip handles*** have special grips made of both hard and soft materials to provide a more comfortable grip than cushion grips.

Standard— Slide the top handle and lock it into one of the holding positions. Pliers ***with insulated handles*** comply with IEC 60900 and ASTM F1505-01 standards and are tested to 1,000 volts.

Locking with Push Button— Push and hold the button, adjust the jaws, then release the button to lock the jaws in position.

Locking with Slide Button— Slide and hold the button, adjust the jaws, then release the button to lock the jaws in position.

Locking with Push Button and Ratchet Action— Same as push-button pliers, but have ratcheting action. Designed to provide 10 times the leverage of standard pliers. All have smooth nonmarring jaws (no serrations). The bottom jaw remains parallel to top jaw at all times.

V-Jaw— Have more points of contact for a better grip on round and irregular workpieces.

Parrot Jaw— Have smooth jaws (no serrations) that will not mar objects. Bottom jaw is shorter than the top to get a good grip on the flats of bolt heads and nuts, even those with rounded edges.

O'all Lg.	Max. Jaw Opening	Jaw Lg.	No. of Positions	Grip Type		Each
Standard— *V-Jaw*						
7″	1 3/16″	1″	7	Cushion	7145A19	$26.78
7 1/4″	1 1/4″	1″	7	Ultra	7145A15	24.60
9 7/8″	1 1/2″	1 5/16″	7	Cushion	7145A11	25.03
9 7/8″	1 1/2″	1 5/16″	7	Ultra	7145A14	27.53
10″	2″	1 1/4″	10	Cushion	7145A52	34.43
11 13/16″	2″	1 1/2″	7	Cushion	7145A12	36.46
11 13/16″	2″	1 1/2″	7	Ultra	7145A22	40.11
12″	2 1/2″	1 11/16″	11	Cushion	7145A53	52.86
16″	2 1/2″	2 5/16″	7	Cushion	7145A13	89.70
Standard with Insulated Handles— *V-Jaw*						
9 7/8″	1 1/2″	1 1/4″	7	Ultra	5578A13	53.97
11 7/8″	1 1/2″	1 5/8″	7	Cushion	5578A15	69.13
Locking with Push Button— *V-Jaw*						
5 7/8″	1 1/4″	1″	11	Cushion	5307A38	27.97
7 1/16″	1 1/4″	1″	11	Cushion	5307A41	28.22
7 1/16″	1 1/4″	1″	11	Ultra	5307A2	30.66
9 13/16″	2″	1 3/16″	25	Cushion	5307A42	32.11
9 13/16″	2″	1 3/8″	25	Ultra	5307A47	35.32
11 13/16″	2 3/4″	1 1/2″	14	Cushion	5307A44	44.39
11 13/16″	2 3/4″	1 1/2″	14	Ultra	5307A51	49.46
15 3/4″	3 1/2″	2 1/2″	27	Cushion	5307A43	74.66
22 1/16″	4 1/2″	3 11/16″	20	Cushion	5307A46	105.09
Locking with Push Button— *Parrot Jaw*						
10″	1 1/4″	9/16″	15	Cushion	5307A39	35.55
Locking with Slide Button— *V-Jaw*						
8″	1 1/2″	1 3/4″	13	Ultra	5704A52	31.07
10″	1 3/4″	1 9/16″	13	Ultra	5704A53	36.55
12″	2 3/16″	2 3/16″	14	Ultra	5704A54	49.74
Locking with Push Button and Ratchet Action— *Flat Jaw*						
7 1/8″	1 3/8″	5/16″	13	Cushion	51505A21	49.26
9 7/8″	1 3/4″	1 5/16″	13	Cushion	51505A23	55.19
11 13/16″	2 3/8″	1 7/16″	13	Cushion	51505A25	68.78

2-Pc. Locking with Push Button V-Jaw Pliers Set— Includes 5307A41 and 5307A42 above. Packed in a plastic pouch.
5307A21 ..... **Per Set** $58.12

Self-Adjusting Pliers

Tackle different-size workpieces with ease. Just squeeze the handle on these pliers and the serrated jaws automatically adjust to fit your object, providing a secure hold. These pliers are also self-gripping; you don't have to squeeze the handles together as you apply downward pressure. Made of laminated steel with cushion-grip handles.

Use *V-jaw* pliers to hold hex nuts and irregular shapes.

Jaw Style	O'all Lg.	Max. Jaw Opening	Jaw Lg.		Each
Curved	7″	1 3/16″	7/8″	51375A34	$15.73
V-Jaw	9″	1 13/16″	1 1/4″	51375A38	19.39
V-Jaw	10″	2″	1 7/8″	51375A41	21.34

2-Piece Set—Includes one 7″ curved jaw pliers and one 10″ V-jaw pliers.

51375A52 ..... **Per Set** $29.15

Combination Jaw Pliers

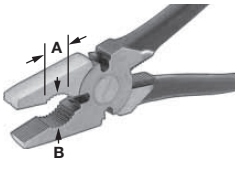

Perfect for general maintenance, pliers have serrated flat jaws, three 3/32″ wire-cutting notches, and a pipe grip. Made of forged alloy steel with plain handles.

The 5267A4 has a smaller-diameter opening (B), so it's great for gripping wire, cable, and tubing.

O'all Lg.	(A)	(B)	Jaw Lg.	Tip Wd.		Each
8″	31/64″	5/32″	1 9/32″	9/16″	5627A5	$26.16
10 1/4″	23/64″	3/32″	1 1/2″	5/8″	5627A4	29.10
10 1/4″	19/32″	17/64″	1 1/2″	5/8″	5627A2	29.10
12″	39/64″	1/4″	1 1/2″	45/64″	5627A3	29.34

Soft-Jaw Adjustable Pliers

With Nylon Insert Pads

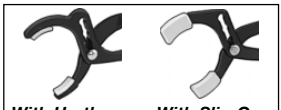

With Urethane Insert Pads — *With Slip-On Urethane Caps*

Pliers have replaceable pads or caps on their jaws to protect delicate materials from marring. Use for plastic pipe, glass, ceramics, electrical connectors, and tubing. Handles have cushion grips.

Pliers ***with nylon insert pads*** have a spring-loaded mechanism that automatically opens jaws. Good for use on irregular shapes.

O'all Lg.	Max. Jaw Opening	Pliers Each		Repl. Pads/Caps (Set of 2) Per Set
With Nylon Insert Pads—*Made of forged steel; 8 positions*				
10″	1 3/4″	5555A48	$37.42	5555A52 ..... $7.64
With Urethane Insert Pads—*Made of forged steel; 4 positions*				
10″	2 1/2″	5555A55	31.10	5555A56 ..... 4.55
With Slip-On Urethane Caps—*Made of stamped steel; 4 positions*				
10″	2 1/2″	5555A33	24.77	5555A34 ..... 5.21

Adjustable Pliers for Plastic Pipe

The jaws are circular to grip PVC, CPVC, and other plastic pipe without scratching. Jaws are serrated. Made of chrome-plated forged steel with cushion-grip handles.

O'all Lg.	Max. Jaw Opening	No. of Positions		Each
9″	2 1/2″	4	5465A19	$35.95

Double Pipe-Grip Pliers

Fit a range of pipe sizes with one tool—jaws have small and large pipe grips. The round nose gets into tight spaces, especially when you're working on burners and gas pipe fittings. Made of forged steel with plain handles.

O'all Lg.	Jaw Lg.	Pipe Size Min.	Pipe Size Max.		Each
10″	2 1/8″	5/16″	1 1/2″	5622A3	$30.88

Combination Jaw Slip-Joint Pliers

Standard Duty w/Plain Handles

Standard Duty w/ Static-Dissipative Handles

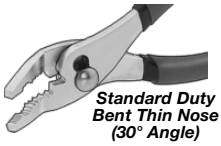

Standard Duty Bent Thin Nose (30° Angle)

Heavy Duty w/ Cushion-Grip Handles

Heavy Duty Side Cutting

A good all-purpose choice, pliers have a slip-joint design, serrated jaws, and a built-in wire cutter, unless stated otherwise.

Standard Duty—*Type 420 stainless steel* pliers have good corrosion resistance and can be autoclaved for sterile environments. *Brass* pliers have softer jaws than steel pliers and will not mar your workpiece. Pliers *with high-visibility cushion-grip handles* have neon-colored grips for easy identification. Pliers *with static-dissipative (ESD-safe) handles* have cushion grips that dissipate electrostatic charges to protect sensitive electronic components. *Straight thin-nose* pliers and *bent thin-nose (30° angle)* pliers reach into confined areas where other pliers won't fit.

Heavy Duty—More rugged than standard duty pliers. *Side-cutting* pliers have a sharp, 7/16″ long edge that acts as a wire cutter.

O'all Lg.	Max. Jaw Opening	Jaw Lg.	Max. Wire Size, AWG (Dia.)		Each
Standard Duty					
With Plain Handles—*Made of forged steel*					
6 1/2″	1″	1 5/16″	12 (0.080″)	5624A1	$5.95
8″	1″	1 17/64″	11 (0.090″)	5624A2	7.32
With Plain Handles—*Made of Type 420 stainless steel, no wire cutter*					
6 1/2″	1″	1″	—	5624A7	16.90
With Cushion-Grip Handles—*Made of forged steel*					
4″	1/2″	43/64″	20 (0.032″)	5624A6	5.44
6 1/2″	1 1/8″	31/32″	12 (0.080″)	5624A8	10.94
8″	1″	1 17/64″	11 (0.090″)	5624A9	8.00
10″	1 3/8″	1 25/32″	9 (0.114″)	5624A5	9.78
With Cushion-Grip Handles—*Made of brass, no wire cutter*					
6″	2 5/8″	15/16″	—	5624A81	23.80
With High-Visibility Cushion-Grip Handles—*Made of forged steel*					
To Order: Please specify neon color: green, orange, or red.					
6 3/4″	1″	1 5/8″	12 (0.080″)	5581A11	10.55

O'all Lg.	Max. Jaw Opening	Jaw Lg.	Max. Wire Size, AWG (Dia.)		Each
Standard Duty (Cont.)					
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles—*Made of forged steel*					
6 3/4″	1″	1 5/8″	12 (0.080″)	5624A12	$10.14
Straight Thin Nose w/Cushion-Grip Handles—*Made of forged steel*					
6 3/4″	1″	1 31/64″	12 (0.080″)	5623A2	8.72
Bent Thin Nose (30° Angle) with Cushion-Grip Handles—*Made of forged steel*					
6 3/4″	1″	1 25/32″	12 (0.080″)	5618A1	8.79
Heavy Duty					
With Cushion-Grip Handles—*Made of forged steel*					
6 5/8″	1 1/8″	1 3/16″	12 (0.080″)	5621A1	14.31
8″	1 1/8″	1 3/16″	11 (0.090″)	5621A2	16.35
10″	1 1/2″	1 9/16″	9 (0.114″)	5621A3	17.11
Side Cutting with Cushion-Grip Handles—*Made of forged steel*					
7 5/8″	1 3/8″	1 23/32″	12 (0.080″)	8528A11	24.89

Nonmarring Covers for Plier Jaws

Slip these rubber covers over the jaws of your pliers for a nonmarring hold. They are reusable, fit 80% of slip-joint pliers, and are unaffected by oil and most chemicals. Furnished five pairs per package.

For Pliers' Length	Inside Size, Wd. × Lg.		Per Pkg.
6″	3/8″ × 7/16″	53085A61	$7.43
8″	3/8″ × 9/16″	53085A62	8.27

Cushion Grips for Plier Handles

For a comfortable, slip-resistant grasp, slide these plastic grips over the handles of your pliers. One side is textured. Grips fit snugly; just heat with hot water and slide on. *Note:* Grips do not protect against electrical shock.

For Pliers' Length	Per Pair	For Pliers' Length	Per Pair
6″	5633A1 $7.70	8″-9″	5633A3 $8.50
7″	5633A2 7.94		

Wire Gripping and Cutting Pliers

A General Purpose w/Cushion-Grip Handles

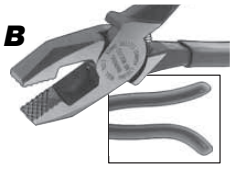

B

C General Purpose

D With Insulated Cushion-Grip Handles

Choose these strong, durable pliers for gripping and cutting electrical wiring. Also known as lineman's and side-cutting pliers, tools are made of forged steel (unless indicated otherwise) and have serrated jaws.

Pliers ***with ultra-grip handles*** have special grips made of both hard and soft materials to provide a more comfortable grip than cushion grips.

High Leverage— The joint rivets are closer to the cutting edges to provide more cutting power than general purpose pliers.

Ultra Cutters— Can cut through steel-reinforced wire (ACSR), hardened wire, and nails.

High Leverage with Ultra Cutters— Same as high leverage pliers above, plus cutters that can cut through steel-reinforced wire (ACSR), hardened wire, and nails.

Insulated Handles with Steel Cutting Inserts— Made entirely of composite material, pliers are lightweight and noncorrosive. They comply with IEC 60900 and ASTM F1505-01 standards and are tested to 1,000 volts.

Insulated Cushion-Grip Handles— Comply with IEC 60900 and ASTM F1505-01 standards and are tested to 1,000 volts. All have finger guards to prevent contact with the jaws.

(A) Square-Nose Pliers

O'all Lg.	Jaw Lg.		Each
General Purpose with Cushion-Grip Handles			
7 1/4″	1 9/32″	5616A2	$26.13
8 11/16″	1 7/16″	5616A3	36.98
Economy with Cushion-Grip Handles			
8 3/4″	1 15/32″	5827A56	8.71
Economy with Ultra-Grip Handles— *Pliers have a spring return*			
4 7/8″	13/16″	5827A1	7.89
High Leverage with Plain Handles			
9 1/4″	1 19/32″	5616A4	35.24
High Leverage with Cushion-Grip Handles			
9 3/8″	1 19/32″	5616A61	34.71
Insulated Handles with Steel Cutting Inserts			
7 7/8″	1 1/2″	5233A16	110.94

(B) Square-Nose Pliers with Spring Return

Also known as ironworker's pliers, this tool has a curved handle end that stops it from slipping through your hands.

O'all Lg.	Jaw Lg.		Each
High Leverage with Ultra Cutters and Cushion-Grip Handles			
9 3/8″	1 19/32″	8531A17	$48.29

(C) Curved-Nose "New England" Style Pliers

O'all Lg.	Jaw Lg.		Each
General Purpose with Cushion-Grip Handles			
6 5/16″	1 3/32″	5642A21	$21.26
7 7/16″	1 9/32″	5642A22	34.94
8 11/16″	1 7/16″	5642A23	35.21
9 3/8″	1 19/32″	5642A24	35.49
Ultra Cutters with Insulated Cushion-Grip Handles			
8 1/16″	1 5/8″	54625A42	47.42
High Leverage with Ultra Cutters and Cushion-Grip Handles			
9 3/8″	1 19/32″	56705A21	40.79
9 3/8″	1 19/32″	56705A22 ♦	49.24
High Leverage w/Ultra Cutters and Insulated Cushion-Grip Handles			
9 5/8″	1 19/32″	54525A91	82.14

♦ Has a crimping die.

(D) Universal Pliers with Pipe Grip

Type 420 stainless steel pliers have good corrosion resistance. Pliers ***with plain handles*** are also autoclavable for sterile environments.

O'all Lg.	Jaw Lg.	Pipe Size Min.	Pipe Size Max.		Each
General Purpose with Cushion-Grip Handles					
8 5/8″	1 25/32″	1/8″	3/4″	5634A3 ♦	$39.63
General Purpose with Insulated Cushion-Grip Handles					
8 7/8″	1 25/32″	1/8″	3/4″	5644A43 ♦	69.22
Type 420 Stainless Steel General Purpose with Plain Handles					
8″	1 3/8″	3/16″	1 3/8″	5710A13	40.53
Type 420 Stainless Steel General Purpose with Cushion-Grip Handles					
8″	1 3/8″	3/16″	1 3/8″	5710A14	41.97
High Leverage with Ultra Cutters and Insulated Ultra-Grip Handles					
9″	1 5/8″	1/8″	1/2″	54845A85	61.08

♦ Has a crimping die.

Long-Reach Wire Gripping and Cutting Pliers

Handles are long so jaws can grip, twist, and cut in areas normally out of reach. The joint rivet is located closer to the cutting edges to provide more cutting power than standard side-cutting pliers. Jaws have 1/4″ long serrated grippers and 3/8″ long cutting edges. Made of forged steel with cushion-grip handles.

O'all Lg.	Jaw Lg.		Each
11″	55/64″	57205A23	$31.76

End-Cutting Long-Nose Pliers

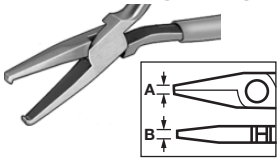

The cutting edges extend all the way across the tip of the nose for close, semiflush cutting. Also called end cutters, these pliers are well-suited for use on circuit boards and other delicate electronics. Made of forged steel with cushion-grip handles.

O'all Lg.	Jaw Lg.	Tip Thick. (A)	Tip Wd. (B)	Max. Wire Size, AWG (Dia.)		Each
8″	1 9/16″	9/32″	3/16″	14 (0.064″)	5761A15	$24.21

Interchangeable-Head Plier Set

You'll get plier handles and three plier heads you change to fit your application: a wire-cutting head, a wire gripping and cutting head, and a long nose with side cutter head. Pliers have a dual-hinge design that increases leverage and delivers twice the gripping power of standard pliers.

Heads are forged steel and cut steel-reinforced wire (ACSR), hardened wire, and nails. Handles are alloy steel with cushion grips and have a spring return. Set has a nylon carrying holster. *Wire gripping and cutting head* and *long nose head* have serrated jaws.

Head Type	O'all Lg. (w/Handles)	Jaw Lg.	Max. Wire Size, AWG (Dia.)
Wire Cutting (Standard Cut)	7 1/2″	1/2″	8 (0.128″)
Wire Gripping and Cutting	8 1/4″	1 1/4″	—
Long Nose with Side Cutter	9″	2″	11 (0.090″)

1105A1 ..... **Per Set** $36.22

Mini Thin-Head Wire-Cutting Pliers

20° Head

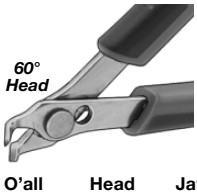

60° Head

When you don't plan on everyday, repetitive use, these pliers are an economical alternative to our other miniature wire-cutting pliers. All have a thin, angled head that allows cutting in confined areas. Pliers make a flush cut and have a spring return.

Steel pliers cut soft wire. ***Type 420 stainless steel*** pliers have good corrosion resistance and cut soft wire and medium hard wire.

Pliers ***with static-dissipative (ESD-safe) handles*** have cushion grips that dissipate electrostatic charges to protect sensitive electronic components. Pliers ***with fatigue-reducing handles*** have contoured handles that minimize wrist strain while offering maximum comfort. Pliers are for right-handed use. Pliers ***with ultra-grip handles*** have grips made of both hard and soft materials for a more comfortable grip than cushion grips.

O'all Lg.	Head Angle	Jaw Lg.	Max. Wire Size, AWG (Dia.)		Each
Steel with Cushion-Grip Handles					
5″	20°	11/32″	20 (0.032″)	3621A11	$6.85
5″	20°	11/32″	20 (0.032″)	3621A12●	8.40
5 5/8″	20°	13/32″	14 (0.064″)	3621A13	12.06
Steel with Static-Dissipative (ESD-Safe) Cushion-Grip Handles					
5″	20°	11/32″	20 (0.032″)	3621A21	6.94
5″	20°	11/32″	20 (0.032″)	3621A22●	8.52
5 5/8″	20°	13/32″	14 (0.064″)	3621A23	13.71
Steel with Static-Dissipative (ESD-Safe) Fatigue-Reducing Handles					
5 7/64″	20°	11/32″	20 (0.032″)	5324A3	17.45
Type 420 Stainless Steel with Ultra-Grip Handles					
4 59/64″	20°	23/64″	14 (0.064″)	5758A14	33.03
4 59/64″	60°	7/32″	18 (0.040″)	5758A16	37.49

● Has a catch to hold cut wire.

About Wire-Cutting Pliers

Wire-cutting pliers, also known as diagonal-cutting pliers, produce one of three cuts: standard, semiflush, or flush. These styles refer to the amount of "pinch" left on the tip of the wire after it has been cut.

Standard— These pliers produce a deep, pointed, pinched end. Use for electrical and general applications.

Semiflush— The most widely used cut for electronics assembly, these pliers produce a slightly pointed pinched end. They are generally more accurate than standard-cut pliers.

Flush— Pliers produce a cut with virtually no "pinch," creating clean connections for easy soldering. Flush-cut pliers are not as long lasting as standard and semiflush.

Wire-Cutting Pliers

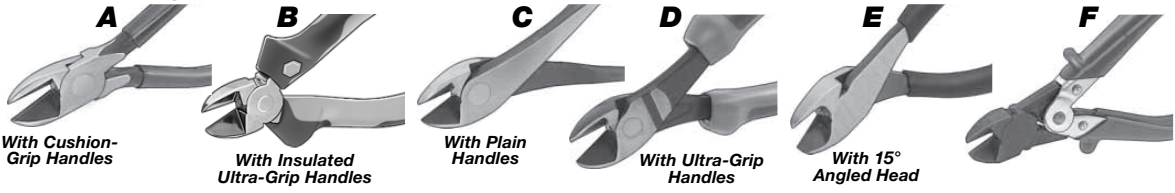

Also known as diagonal-cutting pliers and dike pliers, these tools have cutting edges that are beveled for close cutting and hardened for long-lasting sharpness and durability. Pliers have oval-shaped heads and are made of forged steel unless indicated otherwise.

General Purpose— For cutting soft steel wire and copper wire. The *Type 420 stainless steel* pliers offer good corrosion resistance. *Type 420 stainless steel pliers with plain handles* are also autoclavable for sterile environments.

High Leverage— The joint rivets are closer to the cutting edges to provide more cutting power than general purpose pliers. In addition to cutting soft steel wire and copper wire, pliers can cut most hardened wire.

Ultra High Leverage— Have super-tough cutting edges to cut through steel-reinforced wire (ACSR), hardened wire, and nails (in addition to cutting soft steel wire and copper wire).

Compound Leverage— The jaws and the handles have leverage points to permit easy cutting of soft steel wire and copper wire.

Pliers ***with spring return*** have jaws that automatically open after the cut is made to reduce operator fatigue.

Pliers ***with high-visibility handles*** have neon-colored grips for easy identification; grips are available in green, orange, and red.

Pliers ***with static-dissipative (ESD-safe) handles*** have cushion grips that dissipate electrostatic charges to protect sensitive electronic components.

Pliers ***with insulated handles*** comply with IEC 60900 and ASTM F1505-01 standards and are tested to 1000 volts; they have finger guards to keep your fingers away from the jaws.

Pliers ***with ultra-grip handles*** have grips that are made of hard and soft materials to offer a more comfortable grip than cushion grips.

Cut Style	O'all Lg.	Jaw Lg.	Max. Wire Size, AWG (Dia.)	Spring Return		Each
General Purpose						
With Cushion-Grip Handles						
A ... Standard	6⅜″	⅞″	10 (0.101″)	No	3711A3	$17.50
A ... Standard	6⅜″	⅞″	10 (0.101″)	Yes	3711A6	19.87
A ... Standard	7⅜″	1 1/16″	8 (0.128″)	No	3711A8	17.95
A ... Standard	7⅜″	1 1/16″	8 (0.128″)	Yes	3711A9	21.32
Type 420 Stainless Steel with Plain Handles						
A ... Semiflush	6″	⅞″	14 (0.064″)	No	5520A16	26.50
A ... Semiflush	7″	⅞″	14 (0.064″)	No	5520A17	38.50
Type 420 Stainless Steel with Cushion-Grip Handles						
A ... Standard	6¼″	⅞″	14 (0.064″)	No	5520A15	28.83
With High-Visibility Cushion-Grip Handles						
To Order: Please specify neon color: green, orange, or red.						
A ... Standard	6⅜″	⅞″	10 (0.101″)	No	5712A11	15.51
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles						
A ... Standard	4½″	⅝″	18 (0.040″)	No	3711A1	19.48
A ... Standard	4½″	⅝″	18 (0.040″)	Yes	3711A4	25.73
A ... Standard	5″	49/64″	18 (0.040″)	No	3711A2	21.80
A ... Standard	5″	49/64″	18 (0.040″)	Yes	3711A5	24.50
A ... Semiflush	5″	49/64″	20 (0.032″)	Yes	3620A12	27.61
With Insulated Ultra-Grip Handles						
B ... Standard	6 5/16″	⅝″	11 (0.090″)	No	3619A11	49.74
B ... Standard	7″	⅞″	12 (0.080″)	No	3619A12	57.48
High Leverage						
With Plain Handles						
C ... Standard	7″	13/16″	8 (0.128″)	No	3719A1	15.85
C ... Standard	7¾″	13/16″	8 (0.128″)	No	3719A2	16.91

★ The spring return can be engaged and disengaged.

Cut Style	O'all Lg.	Jaw Lg.	Max. Wire Size, AWG (Dia.)	Spring Return		Each
High Leverage (Cont.)						
With Cushion-Grip Handles						
D ... Standard	7¼″	51/64″	12 (0.080″)	No	8522A11	$13.68
D ... Standard	8″	51/64″	6 (0.162″)	No	8522A12	20.52
D ... Standard	9 27/32″	⅞″	5 (0.182″)	No	8522A15	40.75
With Ultra-Grip Handles						
D ... Standard	5½″	⅝″	14 (0.064″)	Yes	57115A14★	26.68
D ... Standard	6¼″	¾″	12 (0.080″)	Yes	57115A16★	27.60
D ... Standard	7⅞″	⅞″	6 (0.162″)	No	57115A17	40.11
D ... Standard	9 27/32″	⅞″	5 (0.182″)	No	57115A18	45.29
With Insulated Ultra-Grip Handles						
B ... Standard	9 27/32″	⅞″	5 (0.182″)	No	3619A15	67.82
With 12° Angled Head and Cushion-Grip Handles						
E ... Standard	9 27/32″	⅞″	5 (0.182″)	No	56815A33	39.76
With 15° Angled Head and Cushion-Grip Handles						
E ... Standard	7″	51/64″	12 (0.080″)	No	5372A4	16.06
E ... Flush	7¾″	13/16″	22 (0.025″)	No	3706A89	19.04
With 30° Angled Head and Long-Reach Cushion-Grip Handles						
E ... Semiflush	11″	1 3/64″	12 (0.080″)	No	57205A25	31.35
Ultra High Leverage						
With Cushion-Grip Handles						
D ... Standard	8 1/16″	13/16″	6 (0.162″)	No	56815A31	31.92
With 12° Angled Head and Cushion-Grip Handles						
E ... Standard	8 1/16″	13/16″	6 (0.162″)	No	56815A32	33.70
Compound Leverage						
With Cushion-Grip Handles						
F ... Standard	5½″	11/16″	16 (0.050″)	Yes	3722A22	54.66

Plastic-Cutting Pliers

Designed for cutting plastics, these extremely sharp pliers make a flush cut that leaves a smooth, finished edge. Not intended for cutting metal or wire.

Pliers are made of forged steel with a tapered and flat head that's ground flat on the back side for close trimming in confined areas. All have a spring return.

Pliers ***with adjustable stop*** have an adjustment screw to prevent the jaws from closing completely, which prolongs cutter life. Pliers ***with fatigue-reducing handles*** have contoured handles to minimize wrist strain and provide maximum comfort.

With Adjustable Stop and Cushion-Grip Handles

O'all Lg.	Jaw Lg.	Without Stop	Each	W/Adjustable Stop	Each
With Cushion-Grip Handles					
4¼″	½″	7059A8	$13.77	—	—
5¼″	¾″	7059A9	14.80	—	—
6⅜″	⅞″	7059A11	16.11	3695A21	$22.66
7⅜″	1 1/16″	7059A12	16.66	3695A22	25.36
With Fatigue-Reducing Handles					
7″	1 1/16″	—	—	5292A47	28.26

Tip-Cutting Pliers

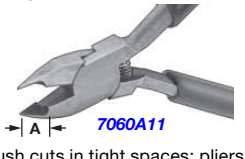

Make semiflush cuts in tight spaces; pliers have sharp cutting edges at the tip of each jaw for precise cutting. Made of polished forged steel with cushion-grip handles and a spring return.

7060A11 has a special cutting edge that is rugged enough to cut soft, medium hard, and hard wire. Edge also cuts nickel ribbon wire. 3714A11 cuts copper wire.

O'all Lg.	Jaw Lg.	(A)	Max. Wire Size, AWG (Dia.)		Each
4¼″	½″	3/16″	16 (0.050″)	7060A11	$37.53
5 1/16″	11/16″	—	14 (0.064″)	3714A11	32.68

Miniature Wire-Cutting Pliers

For information about wire-cutting pliers and cut styles, see page 2753.

Miniature Wire-Cutting Pliers

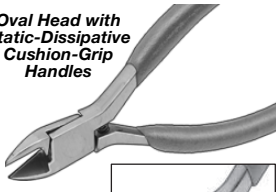

Oval Head with Static-Dissipative Cushion-Grip Handles

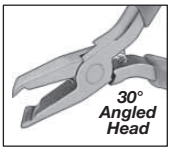

30° Angled Head

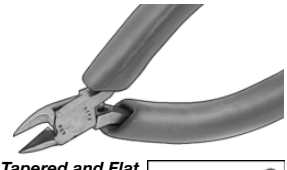

Tapered and Flat Head with Static-Dissipative Fatigue-Reducing Handles

A small head and hardened cutting edges yield good cutting results in most electronics applications. Also known as diagonal-cutting pliers, tools cut soft wire and copper wire. All have a spring return and cushion grips. ***Type 420 stainless steel*** pliers have good corrosion resistance.

Oval head pliers are the most durable. ***Angled head*** pliers allow cutting from above. ***Tapered head*** pliers provide easy access to confined spaces. ***Tapered and flat head*** pliers are ground flat on the back side for close trimming in confined areas. Pliers ***with static-dissipative (ESD-safe) handles*** have grips that dissipate electrostatic charges to protect sensitive electronic components. Pliers ***with fatigue-reducing handles*** have extra-long contoured handles that evenly disperse gripping pressure.

Head Shape	O'all Lg.	Jaw Lg.	Max. Wire Size, AWG (Dia.)	*Semiflush Cut*	Each	*Flush Cut*	Each
Forged Steel							
With Cushion-Grip Handles							
Oval	5½″	35/64″	16 (0.050″)	**5330A6**	$16.70	—	—
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles							
Oval	4″	13/32″	18 (0.040″)	**3817A12**	18.47	**3817A41**♣	$19.86
29° Angled	4″	7/16″	20 (0.032″)	—	—	**3817A15**♣	32.06
30° Angled	4½″	29/32″	20 (0.032″)	—	—	**3817A16**	36.08
Tapered	4″	13/32″	20 (0.032″)	**3817A13**	19.74	**3817A11**♣	19.93
Tapered and Flat	4″	15/32″	20 (0.032″)	—	—	**3817A14**♣	20.35
With Static-Dissipative (ESD-Safe) Fatigue-Reducing Handles							
Oval	5½″	13/32″	20 (0.032″)	**58195A22**	28.42	—	—
29° Angled	5½″	7/16″	20 (0.032″)	—	—	**58195A24**	39.33
Tapered	5½″	15/32″	20 (0.032″)	—	—	**58195A23**	30.18
Tapered and Flat	5½″	15/32″	20 (0.032″)	—	—	**58195A25**	30.79
Type 420 Stainless Steel							
With Cushion-Grip Handles							
Tapered	4½″	35/64″	22 (0.025″)	**5520A6**	15.37	—	—
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles							
Oval	4½″	35/64″	22 (0.025″)	**5520A14**	18.78	—	—
Tapered	4½″	35/64″	24 (0.020″)	—	—	**5520A7**	16.25

4-Piece Set with Static-Dissipative (ESD-Safe) Cushion-Grip Handles— You'll get one of each marked with a ♣ from above in a vinyl pouch.

3817A21 ..... **Per Set** $83.02

Miniature Precision Wire-Cutting Pliers

Erem Oval Head

45° Angled Head

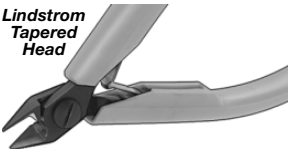

Lindstrom Tapered Head

You'll find these pliers a cut above the rest. Also known as diagonal-cutting pliers, tools cut soft steel and copper wire. All have a miniature head, precision cutting edges, and an adjustable screw joint that keeps the jaws aligned. Pliers are made of steel with static-dissipative (ESD-safe) handles that dissipate electrostatic charges to protect sensitive electronic components. ***Oval head*** pliers are the most durable. ***Angled head*** pliers allow cutting from above. ***Tapered head*** pliers provide easy access to confined spaces. ***Tapered and flat head*** pliers are ground flat on the back side for close trimming in confined areas.

Erem "Magic" Pliers— Formed by a process that imparts extra strength to the tool. All have an internal "magic" spring that provides constant, uniform tension for superior performance.

Lindstrom Pliers— Have a spring return that automatically opens the jaws to reduce operator fatigue.

Head Shape	Cut Style	O'all Lg.	Jaw Lg.	Max. Wire Size, AWG (Dia.)	Mfr. No.		Each
Erem "Magic" Pliers							
Oval	Standard	4¼″	23/64″	16 (0.050″)	612N	**5676A33**	$52.62
Oval	Standard	4½″	25/64″	15 (0.057″)	512N	**5676A4**	55.63
Oval	Semiflush	4¼″	23/64″	16 (0.050″)	622N	**5676A31**	55.64
Oval	Semiflush	4½″	25/64″	15 (0.057″)	522N	**5676A3**	58.13
Oval	Flush	4½″	31/64″	16 (0.050″)	532N	**5676A9**	59.39
30° Angled	Semiflush	4¼″	15/32″	17 (0.045″)	504E	**5676A23**	96.65
45° Angled	Flush	5″	49/64″	18 (0.040″)	2482E	**5676A27**	72.52
Tapered and Flat	Flush	4¼″	23/64″	18 (0.040″)	776E	**5676A22**	59.52
Lindstrom Pliers							
Oval	Semiflush	4 21/64″	25/64″	16 (0.050″)	8141	**5445A13**	52.38
Oval	Semiflush	4 7/16″	1/2″	14 (0.064″)	8150	**5445A17**	53.78
Oval	Semiflush	4 59/64″	5/8″	12 (0.080″)	8160	**5445A19**	53.78
Tapered	Semiflush	4 21/64″	25/64″	16 (0.050″)	8143	**5445A15**	50.98

Miniature Precision Anti-Glare Wire-Cutting Pliers

Tapered Head

The black chrome finish on these pliers won't cause glare that can interfere with precision work. Made of forged steel, they have hardened cutting edges and a spring return that automatically opens the jaws to reduce operator fatigue. Pliers have ultra-grip handles, which are made of both hard and soft materials to provide a comfortable grip.

Oval head pliers are the most durable. ***Angled head*** pliers allow cutting from above. ***Tapered head*** pliers provide easy access to confined spaces.

Head Shape	Cut Style	O'all Lg.	Jaw Lg.	Max. Wire Size, AWG (Dia.)		Each
For Cutting Soft, Medium, and Hard Wire						
Oval	Semiflush	5″	33/64″	18 (0.040″)	**5711A21**	$55.40
29° Angled	Flush	4¾″	25/64″	18 (0.040″)	**5711A31**	69.82
Tapered	Semiflush	5″	33/64″	18 (0.040″)	**5711A22**	58.55
For Cutting Soft Wire						
Oval	Flush	5″	33/64″	18 (0.040″)	**5711A33**	57.67
Tapered	Flush	5″	33/64″	18 (0.040″)	**5711A32**	60.23

Miniature Precision Tungsten Carbide Wire-Cutting Pliers

Oval Head with Ultra-Grip Handles

Tungsten carbide cutting edges are bonded to the jaws for long life and superior cutting of soft, medium, and hard wire. Pliers are made of steel and have a joint that keeps the cutting edges aligned. All have a spring return and static-dissipative (ESD-safe) handles that dissipate electrostatic charges to protect sensitive electronic components.

Pliers ***with ultra-grip handles*** have grips made of both hard and soft materials for a more comfortable grip than cushion grips. ***Oval head*** pliers are the most durable. ***Angled head*** pliers allow cutting from above. ***Tapered head*** pliers provide easy access to confined spaces.

Head Shape	Cut Style	O'all Lg.	Jaw Lg.	Max. Wire Size, AWG (Dia.)		Each
With Cushion-Grip Handles						
Oval	Semiflush	4½″	29/64″	15 (0.057″)	**5760A21**	$156.09
Tapered	Standard	4¼″	29/64″	15 (0.057″)	**5760A2**	168.14
With Ultra-Grip Handles						
Oval	Semiflush	5″	25/64″	18 (0.040″)	**5760A32**	172.27
29° Angled	Flush	4¾″	25/64″	18 (0.040″)	**5760A34**	197.38
Tapered	Flush	5″	25/64″	18 (0.040″)	**5760A36**	191.47

For information about wire-cutting pliers and cut styles, see page 2753.

Air-Powered Wire-Cutting Pliers

Use your shop's air supply to power these cutting pliers. They're great for high-volume cutting and trimming of plastic (Style 1 jaw) and soft wire (Styles 2-5 jaws). Jaws can be mounted in the handle for right- and left-hand use. Pliers require 60 to 100 psi air supply. For bolt and cable cutters, see pages 2342-2345.

Power Handles— Have an aluminum housing and a safety lever with a thumb latch that must be pushed forward to activate the lever. Come with a 5-ft. hose with 1/8″ NPT male connection for power handle and 1/4″ NPT male connection for air supply. *Light duty* handle has an external adjusting screw that controls jaw opening.

Cutting Jaws— Made of steel with a rust-resistant black-oxide finish. Jaws can be sharpened. *Scissor style* is useful for clean cutting of fine wire and nickel ribbon.

Also Available: Repl. parts. Please ask for 56145A21 and specify part name.

Power Handle with Style 2 Wire-Cutting Head (Sold Separately)

Light Duty and Medium Duty Power Handles

	Cutting Force @ 80 psi	Size, Lg. × Dia.	Wt., oz.		Each
Light Duty	575 lbs.	5 1/2″ × 1 1/2″	11	56145A29	$340.42
Medium Duty	850 lbs.	5 1/2″ × 1 3/4″	13	56145A31	397.87

Cutting Jaws for Light Duty and Medium Duty Power Handles

Cut Style	Cut Lg.	Max. Wire Size, AWG (Dia.) For Light Duty Unit	For Medium Duty Unit		Each
Plastic Cutting					
1 Flush	1″	1/8″▲	3/16″▲	56145A45	$108.34
Wire Cutting					
2 Semiflush	1/2″	15 (0.057″)	11 (0.090″)	56145A43	101.70
45° Angled Head Wire Cutting—56145A46 *cuts and crimps in one motion*					
3 Standard	3/8″	16 (0.050″)	16 (0.050″)	56145A46	101.70
3 Semiflush	7/16″	11 (0.090″)	9 (0.114″)	56145A41	105.32
Scissor Style					
4 Shear	3/4″	11 (0.090″)	9 (0.114″)	56145A42	119.52

▲ For cutting plastic only; dimensions given are for maximum plastic thickness.

Heavy Duty Power Handles

	Cutting Force @ 80 psi	Size, Lg. × Dia.	Wt., oz.		Each
Heavy Duty	1,120 lbs.	4″ × 1 3/4″	16	56145A32	$456.02

Cutting Jaws for Heavy Duty Power Handle

Cut Style	Cut Lg.	Max. Wire Size, AWG (Dia.)		Each
Wire Cutting				
5 Semiflush	3/4″	22 (0.025″)	56145A47	$536.76
5 Semiflush	1 1/32″	13 (0.072″)	56145A44	287.96

Long-Nose Pliers

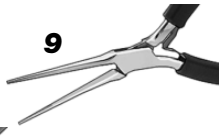

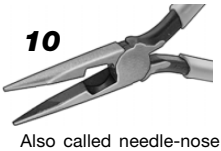

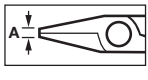

Also called needle-nose and chain-nose pliers, these are ideal for tight locations. Made of forged steel with serrated jaws, unless noted.

Pliers ***with wire cutter*** have hardened cutting edges that can cut soft wire. 5614A44 can also cut medium hard and hard wire. Pliers ***with spring return*** have a spring that automatically opens the jaws to reduce fatigue. Pliers ***with static-dissipative (ESD-safe) handles*** have cushion grips that dissipate electrostatic charges to protect sensitive electronic parts. Pliers ***with fatigue-reducing handles*** minimize wrist strain. Pliers ***with high-visibility handles*** have neon-colored grips for easy identification. Pliers ***with ultra-grip handles*** have grips made from hard and soft materials for a more comfortable grip than cushion grips. Pliers ***with insulated handles*** comply with IEC 60900 and ASTM F1505-01 standards and are tested to 1,000 volts. ***Miniature-head*** pliers are ideal for electronics applications.

	O'all Lg.	Jaw Lg.	Tip Thick. (A)	Spring Return		Each
Without Wire Cutter						
With Cushion-Grip Handles—5157A42 *and* ***5157A34*** *are Type 420 stainless steel;* ***5614A31*** *is brass*						
6	4 1/2″	15/16″	1/16″	Yes	5157A42●	$17.77
6	5 9/16″	1 11/16″	1/8″	Yes	5783A2	17.44
6	6″	1 17/32″	1/8″	Yes	5157A34	20.12
6	6 5/8″	1 7/8″	1/16″	Yes	5614A8	20.08
6	6 5/8″	1 7/8″	3/32″	No	5614A1	18.48
6	7 3/16″	2 7/16″	1/16″	Yes	5614A23	23.54
6	7 1/2″	2 21/32″	5/32″	No	5614A2	19.36
6	8″	2 19/32″	5/32″	No	5614A31	36.66
7	8 1/4″	1 9/16″	5/32″	No	5777A14	12.03
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles—5157A46 *and* ***5157A47*** *are Type 420 stainless steel*						
6	4″	13/16″	3/64″	Yes	5783A1	16.56
6	5″	1 3/64″	3/64″	Yes	5157A46	17.78
6	5″	1 3/16″	5/64″	Yes	5783A3	18.35
6	5″	1 27/64″	1/16″	Yes	5157A47●	17.78
6	5 1/2″	1 11/16″	5/64″	Yes	53895A19	17.36
6	5 1/2″	1 3/4″	5/64″	Yes	5781A14■	21.35
6	6″	2 5/16″	5/64″	Yes	53895A21	19.09
With Fatigue-Reducing Handles						
8	8″	1 15/16″	1/16″	Yes	5729A54	34.30
Thin-Profile Head w/Cushion-Grip Handles—5157A38 *is Type 420 stainless steel*						
9	5″	1 3/16″	5/64″	Yes	5630A4	19.88
9	5 3/4″	1 15/16″	1/16″	Yes	5157A38	19.05
9	6 3/4″	2 1/4″	1/8″	No	5630A1	16.05
9	7 15/32″	2 11/16″	5/32″	No	5630A2	17.96

● Smooth jaws. ■ Has an alignment pin to prevent jaw overlap.

	O'all Lg.	Jaw Lg.	Tip Thick. (A)	Spring Return	Max. Wire Size, AWG (Dia.)		Each
With Wire Cutter							
With Plain Handles— *Type 420 stainless steel*							
6	6″	1 7/8″	1/8″	No	14 (0.064″)	5157A43	$23.56
With Cushion-Grip Handles—5157A39 *is Type 420 stainless steel*							
10	6 7/8″	1 3/4″	1/8″	No	18 (0.040″)	5157A39	28.83
10	6 5/8″	1 7/8″	1/16″	Yes	12 (0.080″)	5614A24	22.95
10	6 5/8″	1 7/8″	3/32″	No	12 (0.080″)	5614A3	20.92
10	7 3/16″	2 7/16″	1/16″	Yes	10 (0.102″)	5614A25	26.91
10	7 3/16″	2 7/16″	3/32″	No	10 (0.102″)	5614A4	28.93
10	8″	2 1/8″	5/32″	No	10 (0.102″)	5299A29	17.98
10	8 3/8″	2 19/64″	5/32″	No	11 (0.090″)	5614A9	29.67
Miniature Head with Cushion-Grip Handles—5157A36 *is Type 420 stainless steel;* ***5326A11*** *has extra-long handles*							
10	4 3/4″	1 3/64″	3/64″	Yes	18 (0.040″)	5157A36	17.77
10	4 3/4″	1 3/32″	5/64″	Yes	25 (0.017″)	5783A4	17.30
10	6″	1 3/32″	3/32″	No	22 (0.025″)	5326A11●	16.70
With High-Visibility Cushion-Grip Handles— **To Order:** Please specify neon color: green, orange, or red.							
10	6″	2″	1/8″	No	22 (0.025″)	5962A25	14.58
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles							
10	5 1/2″	1 11/16″	5/64″	Yes	18 (0.040″)	53895A23	19.74
With Ultra-Grip Handles							
11	6 1/4″	1 31/32″	7/64″	No	11 (0.090″)	5614A44	25.34
With Insulated Ultra-Grip Handles							
12	6 5/16″	1 15/16″	1/8″	No	14 (0.064″)	5425A49	47.81
12	7 7/8″	3″	1/8″	No	14 (0.064″)	5425A61	53.12
With 19- and 22-AWG Wire Stripper							
13	6 5/8″	1 7/8″	3/32″	No	12 (0.080″)	5731A61	29.00
With 10-, 12-, and 14-AWG Wire Stripper and Crimper							
13	6 1/4″	7/8″	1/8″	No	10 (0.102″)	5407A81	39.49

For information about wire-cutting pliers and cut styles, see page 2753.

Extra-Reach Long-Nose Pliers

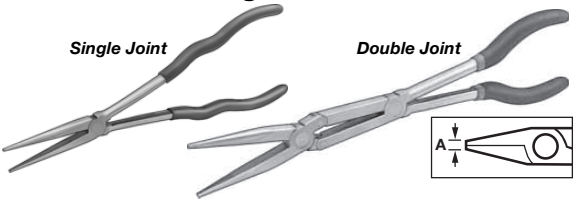

Perfect when you need to extend your reach, the handles on these pliers are longer than those on most long-nose and flat-nose pliers. Made of forged steel with cushion-grip handles. Jaws are serrated.

Double Joint— Pliers have two joints, allowing the jaws to fully open with minimal handle movement. Useful for reaching into narrow areas.

	O'all Lg.	Jaw Lg.	Tip Thick. (A)		Each
Single Joint	11″	2 51/64″	7/64″	5777A22	$24.26
Double Joint	13″	3″	9/64″	5777A16	29.02

Long-Nose Locking Pliers

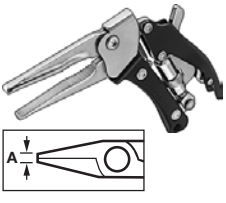

Get pistol-grip locking pliers and long-nose pliers in one tool. Just turn the pressure adjusting screw in the handle to lock the jaws around your workpiece. Pliers will stay clamped, leaving your hands free. A long nose on the jaws is ideal for use in confined spaces. Jaws are serrated and made of forged steel with a nickel-plated finish.

O'all Lg.	Jaw Lg.	Tip Thick. (A)		Each
8 5/8″	2 1/2″	5/16″	6261A11	$50.56

Flat-Nose Pliers

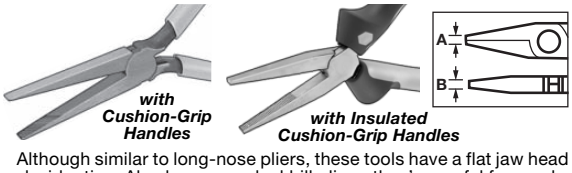

Although similar to long-nose pliers, these tools have a flat jaw head and wider tips. Also known as duckbill pliers, they're useful for reaching into confined spaces.

With Cushion-Grip Handles— Jaws are serrated. 5567A12 can cut soft and medium hard wire up to 10 AWG (0.102″ Dia.).

With Static-Dissipative (ESD-Safe) Cushion-Grip Handles— Have grips that dissipate electrostatic charges to protect sensitive electronic components. They have smooth jaws and a spring return. Type 420 stainless steel pliers have good corrosion resistance.

With Insulated Cushion-Grip Handles— Meet IEC 60900 and ASTM F1505-01 standards and are tested to 1,000 volts. Jaws are serrated.

Material	O'all Lg.	Jaw Lg.	Tip Thick. (A)	Tip Wd. (B)		Each
With Cushion-Grip Handles						
Forged Steel	5 1/2″	1 3/8″	1/8″	11/64″	5567A12	$30.21
Forged Steel	8″	1 3/8″	7/32″	5/16″	5631A1	13.08
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles						
Type 420 SS	4 1/2″	15/16″	3/64″	5/32″	5567A32	17.77
Type 420 SS	5″	15/16″	1/64″	5/32″	5567A1	17.78
Type 420 SS	6″	1 21/32″	1/64″	13/64″	5567A11	18.78
Forged Steel	5″	1 3/16″	5/64″	9/64″	5567A21	17.38
With Insulated Cushion-Grip Handles						
Forged Steel	6 5/16″	1 15/16″	9/64″	13/64″	54985A15	50.56

Round-Nose Pliers

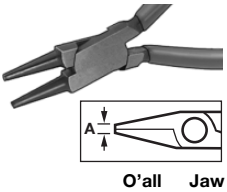

Commonly used to loop and form fine wire, pliers have a round nose and smooth jaws. ***Forged steel*** pliers have a cushion-grip handle. ***Type 420 stainless steel*** pliers resist corrosion and have static-dissipative (ESD-safe) cushion-grip handles that dissipate electrostatic charges to protect sensitive electronic components.

Material	O'all Lg.	Jaw Lg.	Tip Thick. (A)	Spring Return		Each
Forged Steel	4 1/2″	1 1/4″	9/64″	Yes	5779A6	$19.93
Forged Steel	6 5/16″	1 3/16″	1/8″	No	5779A8	22.93
Type 420 SS	5″	15/16″	7/64″	Yes	5779A2	29.63
Type 420 SS	6″	17/32″	7/64″	Yes	5779A21	31.30

Bent-Nose Pliers

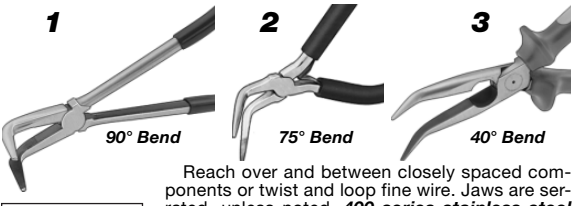

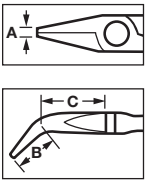

Reach over and between closely spaced components or twist and loop fine wire. Jaws are serrated, unless noted. ***400 series stainless steel*** pliers have good corrosion resistance.

Style 1— 5632A16 has a wire cutter for cutting medium and hard wire up to 16 AWG (0.051″ Dia.).

Style 2— Pliers have static-dissipative (ESD-safe) handles with grips that dissipate electrostatic charges to protect sensitive electronic components. A spring return automatically opens the jaws.

Style 3— Handles are insulated to comply with IEC 60900 and ASTM F1505-01 standards and are tested to 1,000 volts. Pliers are chrome plated with hardened cutting edges to cut soft and hard wire.

	O'all Lg.	Jaw Bend	Tip Thick. (A)	Jaw Lg. (B)	Jaw Lg. (C)		Each
Forged Steel							
With Cushion-Grip Handles							
1	6″	60°	5/32″	1 11/64″	1 3/64″	5632A14	$21.05
1	6 19/64″	40°	1/8″	15/16″	1 1/32″	5632A16	31.48
1	7 7/8″	70°	1/8″	2 27/64″	29/64″	5632A18	40.75
1	10 1/2″	90°	1/8″	1 1/4″	2 13/16″	5337A2	56.01
1	11″	45°	1/8″	1 35/64″	1 1/4″	5337A43	28.43
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles							
2	5″	60°	3/64″	23/64″	7/8″	5336A42	22.24
2	5″	60°	5/64″	19/32″	11/32″	5336A44●	20.71
With Insulated Cushion-Grip Handles and Wire Cutters							
3	7 7/8″	40°	1/8″	29/32″	1 31/32″	5454A81	57.59
400 Series Stainless Steel							
With Cushion-Grip Handles							
1	4 1/2″	60°	3/64″	1/4″	1/2″	5336A39●	18.76
With Static-Dissipative (ESD-Safe) Cushion-Grip Handles							
2	5″	42°	3/64″	13/32″	1″	5336A41●	18.60
2	6″	75°	3/64″	1 7/64″	9/16″	5337A41	19.49

●Smooth jaws.

Stainless Steel Hemostat Pliers

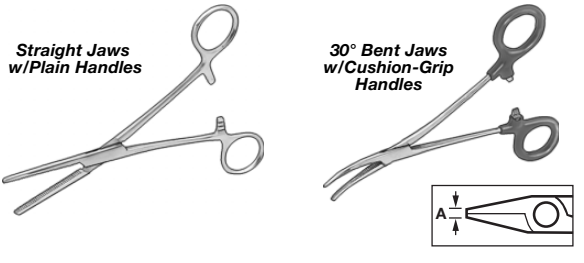

Use hemostat pliers for intricate work in tight spaces. All have a ratchet lock in the handle that allows you to vary the gripping pressure. Jaws are serrated and hold firmly without cutting. Made of 400 series stainless steel for good corrosion resistance.

Bent jaws have a 20° to 30° jaw bend, unless noted.

O'all Lg.	Jaw Lg.	No. of Locking Positions	Straight Jaws Tip Thick. (A)		Straight Jaws Each	Bent Jaws Tip Thick. (A)		Bent Jaws Each
With Plain Handles								
3 1/2″	25/32″	2	3/64″	5383A52	$4.27	3/64″	5383A62	$4.27
5 1/2″	1 1/8″	3	1/16″	5383A31	8.18	1/16″	5383A32♣	8.18
6 1/4″	1 3/4″	3	1/8″	5383A35	9.32	1/8″	5383A36♣	9.32
8″	2 23/64″	4	5/64″	5383A53	11.70	5/64″	5383A63	11.70
10 3/8″	3 1/4″	4	3/16″	5383A41	13.82	3/16″	5383A42	13.82
12″	4″	3	1/8″	5383A24	21.00	1/8″	5383A25	21.00
16″	5″	3	5/32″	5383A26	28.00	5/32″	5383A27	28.00
18″	5 15/32″	4	5/64″	5383A54	25.97	5/64″	5383A64	25.97
24″	6 7/64″	4	11/64″	5383A55	35.76	11/64″	5383A65	35.76
With Cushion-Grip Handles								
3 1/2″	1 3/16″	3	5/64″	5383A43	5.62	5/64″	5383A44	5.62
5 1/8″	1″	3	5/64″	5383A11	6.38	7/64″	5383A13	6.38
5 3/4″	1 1/4″	3	1/8″	5383A15	8.18	5/32″	5383A17	8.18
10 3/8″	3 1/4″	4	3/16″	5383A21	19.38	3/16″	5383A22	19.38
18″	1 3/16″	3	5/64″	5383A45	29.38	5/64″	5383A46	29.38

♣ Has a 45° jaw bend.

For information about wire-cutting pliers and cut styles, see page 2753.

Wire-Twisting Pliers

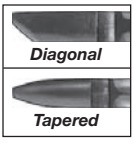

Manual Return

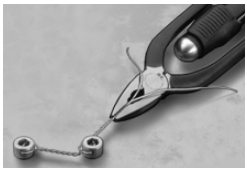

Also known as lock wire pliers, tools twist and cut Type 302/304 stainless steel safety wire (sold separately, see series 8860K on page 3731). Pliers are made of forged alloy steel with a black-oxide finish. Jaws are serrated.

Note: If the plier body cannot turn freely, the wire will not twist.

Manual Return— You push the knob back into the housing.

Automatic Return— Simply release the knob and a spring automatically retracts it. *Tapered nose* pliers get into narrower spaces. Pliers *with wire catch* hold cut wire.

Sets— Packed in a plastic case. Wire meets ASTM A580 and MS 20995C. For extra wire, see series 8860K on page 3731.

O'all Lg.	Jaw Lg.	Nose Style	Max. Wire Cap.		Each
Manual Return					
Clockwise Rotation					
8¾″	1⅛″	Diagonal	0.041″	5296A23	$83.33
10½″	1 19/32″	Diagonal	0.060″	5649A1	86.68
11⅞″	1 19/32″	Diagonal	0.060″	5649A2	86.98
Counterclockwise Rotation					
10½″	1 19/32″	Diagonal	0.060″	5649A7	86.68
11⅞″	1 19/32″	Diagonal	0.060″	5649A8	86.98
Automatic Return					
Clockwise Rotation					
8⅜″	1⅛″	Tapered	0.041″	5296A61	88.03
8⅜″	1⅛″	Diagonal	0.041″	5296A62	88.03
10½″	1 9/16″	Diagonal	0.060″	5296A25	94.25
11⅞″	1 9/16″	Diagonal	0.060″	5296A26	92.49
Reversible for Clockwise and Counterclockwise Rotation					
8¾″	1⅛″	Diagonal	0.041″	5296A54	95.75
11″	1 9/16″	Diagonal	0.060″	5296A52	102.48
12¼″	1 9/16″	Diagonal	0.060″	5296A53	104.20
Automatic Return with Wire Catch					
Reversible for Clockwise and Counterclockwise Rotation					
8¾″	1⅛″	Diagonal	0.041″	5296A63	104.25
11″	1 9/16″	Diagonal	0.060″	5296A64	108.47

5-Piece Set— Includes 5296A62 automatic-return pliers above, long-reach wire-twisting pliers (shown on this page), and three ¼-lb. spools of Type 304 stainless steel safety wire in sizes 0.020″, 0.032″, and 0.041″.

5296A55 ..... **Per Set** $163.56

6-Piece Set— Includes 5296A61 and 5296A25 automatic-return pliers above, long-reach wire-twisting pliers (shown on this page), and three ¼-lb. spools of Type 304 stainless steel safety wire in sizes 0.020″, 0.032″, and 0.041″.

5296A58 ..... **Per Set** $253.24

Hose Pinch-Off Pliers

Once you clamp these pliers onto a hose, their automatic locking ratchet holds the jaws in place, allowing you to squeeze shut nonwire-reinforced hose.

Jaws swivel for parallel clamping and positive shutoff. Pliers virtually eliminate the need for draining the hose when installing thermostats and pumps on pressurized cooling systems. Ideal for radiator and heater hoses and water, air, vacuum, and fuel lines. Pliers are steel and have cushion-grip handles.

O'all Lg.	Jaw Lg.	OD Capacity		Each
5½″	1⅜″	¾″	5774A21	$12.82
9¾″	2½″	1½″	5774A14	25.28
14″	4⅜″	2½″	5774A22	31.00

Fence Pliers

The plier head has a serrated hammer for driving staples on one side, a point for pulling staples on the other, and a ¾″ deep staple grip on top. Plus, there is a wire cutter on each side for double-stranded barbed wire and a wire stretcher between the handles. Made of forged steel with cushion-grip handles.

O'all Lg.	Head Lg.	Max. Wire Size, AWG (Dia.)		Each
10 5/16″	3 3/16″	11 (0.090″)	5636A4	$18.89

Long-Reach Wire-Twisting Pliers

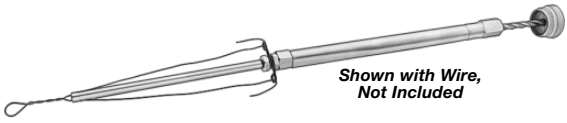
Shown with Wire, Not Included

Twist wire in narrow, hard-to-reach areas. Pliers have a slim design and come with an extension for extra length. Use with Type 302/304 stainless steel safety wire (sold separately, see 8860K series on page 3731). First, thread wire through the plier tip to the outside of the shaft. Then, thread the wire through the eyelets and bend the wire ends over to keep the wire in place. Finally, pull out the knob to twist the wire. Tool rotates clockwise. Shaft is made of chrome-plated steel.

O'all Lg.	Tip Dia.	Max. Wire Cap.		Each
13″ or 19″	¼″	0.057″	5726A9	$51.98

Stainless Steel Precision Micro-Pliers

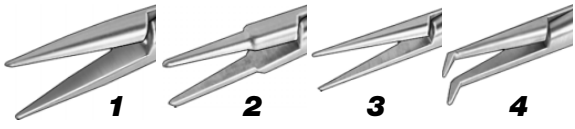

Easily work in the smallest of spaces, such as under a microscope. Pliers are made of 400 series stainless steel for good corrosion resistance. All can be autoclaved up to 600° F. Handles are designed to act as a spring return.

		O'all Lg.	Jaw Lg.		Each
1	Round Nose	3″	15/32″	5261A12	$30.53
2	Standard Long Nose	3″	15/32″	5261A11	30.53
3	Extra-Fine Long Nose	3″	½″	5261A13	30.53
4	45° Bent Nose	3″	⅜″	5261A14	30.53

Palm-Grip Miniature Pliers

Wire Cutting

Designed to fit comfortably in the palm of your hand, pliers have stainless steel jaws for good corrosion resistance. Handles are plastic and have a spring return.

Wire-cutting pliers make a flush cut. Max. wire size is 18 ga. (0.040″ dia.).

	O'all Lg.	Jaw Lg.		Each
Wire Cutting	4¼″	5/16″	5486A3	$33.35
Long Nose	4¾″	1″	5486A5	40.62
55° Bent Nose	4¾″	1″	5486A7	34.92

Breakaway Collar Removal Pliers

Remove breakable round collars on 5/32″ to 5/16″ Hi-Lok, Hi-Lite, Hi-Tigue, Veri-Lite, and C-Lok style fasteners—even those with rounded and stripped collars. Also called Hi-Lok pliers, these get under collars to break them without cutting or damaging the fastener and surrounding material. Pliers work on collars/fasteners that have press-fit installation (hole is slightly smaller than fastener body) and clearance-fit installation (hole is slightly larger than fastener body). For collars/fasteners with clearance-fit installation, use a T-handle hex key (sold separately, see pages 2841-2842) to keep the fastener from turning.

Head is offset 20° and jaws are notched for maximum gripping power. Made of forged steel with a black-oxide finish and cushion-grip handles.

O'all Lg.	Jaw Thick.	Jaw Tip Width		Each
7½″	9/32″	⅞″	1061A1	$33.76

Long-Reach Clamping Pliers

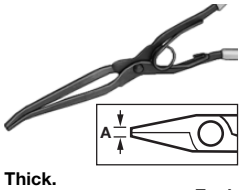

Similar to using a clamp, you squeeze the handles to open the jaws. When you release the handles, a spring snaps the jaws closed to hold your workpiece. Made of steel, pliers have long, serrated jaws and a 35° bend at the jaw tips for reaching into and around tight spaces. Handles have cushion grips.

O'all Lg.	Max. Jaw Opening	Jaw Lg.	Tip Thick. (A)		Each
9¼″	1¼″	3″	¼″	5295A41	$33.30

Heavy Duty Fixed-Tip Retaining-Ring Pliers

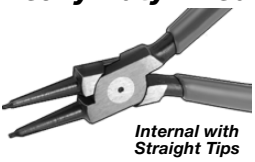

Internal with Straight Tips

External with 90° Tips

One-piece forged construction from the tips to the handles delivers super strength and long life. Made of hardened and tempered alloy steel. Handles have cushion grips. ***Internal pliers*** are for installing and removing rings inside a bore. ***External pliers*** are for installing and removing rings around a shaft. Pliers have a spring return.

For Bore Dia.		Tip Dia.	Straight Tip O'all Lg.		Straight Tip Each	90° Tip O'all Lg.		90° Tip Each
Internal Pliers (For Rings in a Bore)								
5/16"- 1/2"	(8- 13 mm)	0.035"	5 1/2"	5449A65	$20.66	5 1/8"	5449A75	$22.76
1/2" -1"	(12- 25 mm)	0.053"	5 1/2"	5449A91	21.15	5 1/8"	5449A95	23.00
3/4" -2 3/8"	(19- 60 mm)	0.070"	7 1/16"	5449A92	22.13	6 11/16"	5449A96	23.99
1 9/16"-3 15/16"	(40-100 mm)	0.090"	8 7/8"	5449A93	24.77	8 7/16"	5449A97	25.94
3 3/8" -5 1/2"	(85-140 mm)	0.126"	12 5/8"	5449A94	40.71	11 13/16"	5449A98	44.20
For Shaft Dia.								
External Pliers (For Rings on a Shaft)								
1/8" - 3/8"	(3- 10 mm)	0.035"	5 1/2"	5449A79	$22.72	4 15/16"	5449A76	$24.94
3/8" -1"	(10- 25 mm)	0.051"	5 1/2"	5449A81	23.00	4 15/16"	5449A85	25.06
3/4" -2 3/8"	(19- 60 mm)	0.070"	7 1/16"	5449A82	23.99	6 11/16"	5449A86	26.31
1 9/16"-3 15/16"	(40-100 mm)	0.090"	8 5/16"	5449A83	26.81	7 7/8"	5449A87	29.90
3 3/8" -5 1/2"	(85-140 mm)	0.126"	12 5/8"	5449A84	48.26	11 13/16"	5449A88	50.71

2-Pc. Straight-Tip Sets— Packed in a plastic pouch.

Includes Internal Pliers	External Pliers		Per Set
5449A91	5449A81	5449A31	$40.78
5449A92	5449A82	5449A32	42.54

4-Piece Straight-Tip Set— Includes one each of internal pliers 5449A91 and 5449A92 and external pliers 5449A81 and 5449A82. Packed in a nylon pouch.

5449A51 ..... **Per Set** $77.61

4-Piece Straight-Tip and 90° Tip Set— Includes one each of internal pliers 5449A91 and 5449A95 and external pliers 5449A81 and 5449A85. Packed in a nylon pouch.

5449A52 ..... **Per Set** $79.73

Standard Duty Fixed-Tip Retaining-Ring Pliers

Internal with Straight Tips

Tips are precision formed to optimize strength and ring handling capability. Made of stamped, heat-treated steel with a black-oxide finish. Handles have cushion grips with a spring return and an adjustable stop, unless noted. ***Internal pliers*** are for installing and removing rings inside a bore. ***External pliers*** are for installing and removing rings around a shaft.

To Order: Please specify straight, 45° angle, or 90° angle tips.

For Bore Dia.		Tip Dia.	O'all Lg.		Each
Internal Pliers (For Rings in a Bore)					
1/4" - 5/16"	(6- 8 mm)	0.025"	5 1/2"	57805A32	$16.12
3/8" -1 3/8"	(10-35 mm)	0.038"	5 1/2"	57805A33	16.12
5/8" -1 3/8"	(16-35 mm)	0.047"	5 1/2"	57805A34	16.12
5/8" -2"	(16-51 mm)	0.070"	6 1/2"	57805A35	17.41
1 13/16"-3"	(46-76 mm)	0.090"	9"	57805A36	25.16

For Bore Dia.		Tip Dia.	O'all Lg.		Each
External Pliers (For Rings on a Shaft)					
1/8" - 7/8"	(3-22 mm)	0.038"	6 1/4"	57805A42	$15.96
1/8" - 7/8"	(3-22 mm)	0.047"	5 3/4"	57805A43	16.13
3/4" -3 1/2"	(19-89 mm)	0.115"	9 1/4"	57805A45◆	20.28
15/16"-2"	(23-51 mm)	0.070"	7"	57805A44	17.41

◆ Handles do not have a stop.

Miniature External Fixed-Tip Retaining-Ring Pliers

45° Tips

Install and remove tiny retaining rings. Made of heat-treated steel. Handles are plain with a spring return.

For Shaft Dia. (For Rings on a Shaft)	Tip Dia.	O'all Lg.	*Straight Tip*	*45° Tip*	*90° Tip*	Each
1/8" (3 mm)	0.023"	5 1/4"	58225A21	58225A22	58225A23	$16.98
5/32" (4 mm)	0.023"	5 1/4"	58225A31	58225A32	58225A33	16.98
3/16"-15/64" (5-6 mm)	0.023"	5 1/4"	58225A41	58225A42	58225A43	16.98

Internal/External Fixed-Tip Retaining-Ring Pliers

Thumb Screw Style with Straight Tips

T-Knob Style with 90° Tips

12-Pc. Set

Convert pliers from internal to external and vice versa. Made of stamped, heat-treated steel. Handles have cushion grips. Sets are packed in a plastic case, except for 5415A71 and 5415A72. ***Thumb Screw Style—*** To convert, remove the thumb screw, move handle from one hole to the other, and retighten the screw. ***T-Knob Style—*** To convert, give the T-knob a quarter turn, move the handle from one slot to the other, and retighten the knob.

To Order: Please specify straight, 45° angle, or 90° angle tips.

For Bore Dia. (For Rings in a Bore)		For Shaft Dia. (For Rings on a Shaft)		Tip Dia.	O'all Lg.	*Thumb Screw Style*	Each	*T-Knob Style*	Each
3/8" -1"	(10-25 mm)	1/8" - 3/4"	(3-19 mm)	0.038"	5 3/4"	5415A61	$16.15	5719A1	$16.15
5/8" -1 3/8"	(16-35 mm)	5/16"- 7/8"	(8-22 mm)	0.047"	5 3/4"	5415A62	17.30	5719A2	17.30
1 1/16"-2"	(27-51 mm)	7/16"-1 7/16"	(11-37 mm)	0.070"	7 1/4"	5415A63	19.02	5719A3	19.01
1 3/16"-3 1/4"	(30-83 mm)	1 1/2" -3 1/2"	(38-89 mm)	0.090"	9 1/4"	5415A64	26.64	5719A4	26.63

3-Pc. Thumb Screw Style Set— Includes one each of 5415A61 with straight, 45° angle, and 90° angle tips.

5415A71 ..... **Per Set** $39.40

4-Pc. Thumb Screw Style Set— Includes one each of 5415A61, 5415A62, 5415A63, and 5415A64 with straight tips.

5415A72 ..... **Per Set** $65.39

6-Pc. Thumb Screw Style Set— Includes one each of 5415A61, 5415A62, and 5415A63 with straight and 90° angle tips.

5415A73 ..... **Per Set** $104.94

12-Pc. Thumb Screw Style Set— Includes one each of 5415A61, 5415A62, 5415A63, and 5415A64 with straight, 45° angle, and 90° angle tips.

7132A11 ..... **Per Set** $217.01

6-Pc. T-Knob Style Set— Includes one each of 5719A1, 5719A2, and 5719A3 with straight and 90° angle tips.

5719A5 ..... **Per Set** $110.65

12-Pc. T-Knob Style Set— Includes one each of 5719A1, 5719A2, 5719A3, and 5719A4 with straight, 45° angle, and 90° angle tips.

5719A51 ..... **Per Set** $217.01

Quick-Change Internal/External Fixed-Tip Retaining-Ring Pliers

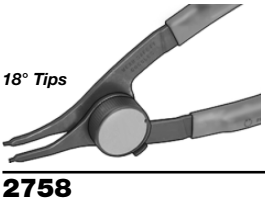

18° Tips

Simply turn the adjustment knob to quickly convert pliers from internal to external and back again. Made of stamped, heat-treated steel with a black-oxide finish. Handles have cushion grips.

For Bore Dia. (For Rings in a Bore)		For Shaft Dia. (For Rings on a Shaft)		Tip Dia.	O'all Lg.	*18° Tip*	Each	*90° Tip*	Each
3/8" -1"	(10-25 mm)	1/4" - 3/4"	(6-19 mm)	0.038"	6"	5182A11	$18.54	5182A12	$18.54
5/8" -1 3/8"	(16-35 mm)	5/16"-1"	(8-25 mm)	0.047"	6"	5182A21	20.12	5182A22	20.12
1 1/16"-2"	(27-51 mm)	7/16"-2"	(11-51 mm)	0.070"	7 1/4"	5182A31	21.11	5182A32	21.11

6-Pc. Set— Includes one each of pliers above. Packed in a plastic case..... **5182A41** **Per Set** $130.75

Heavy Duty Replaceable-Tip Retaining-Ring Pliers Set

Change tips instead of changing pliers. Pliers are forged, heat-treated steel with cushion-grip handles, a spring return, and an adjustable stop. Use the included 2.5 mm hex key to replace tips.

Pliers Set

Set includes one pair of internal pliers and one pair of external pliers. Internal pliers are for installing and removing rings inside a bore. External pliers are for installing and removing rings around a shaft. Includes one pair each of straight, 45° angle, and 90° angle tips in 0.035″, 0.051″, and 0.071″ dia. Packed in a plastic case.

5667A48 ..... **Per Set** $123.18

Replacement Tips—To Order: Please specify straight, 45° angle, or 90° angle.

Tip Dia.	For Bore Dia. (For Rings in a Bore)	For Shaft Dia. (For Rings on a Shaft)		Per Pair
0.035″	5/16″ - 15/32″ (8-12 mm)	1/8″ - 25/64″ (3-10 mm)	5667A1	$4.71
0.051″	15/32″- 63/64″ (12-25 mm)	25/64″- 63/64″ (10-25 mm)	5667A2	4.70
0.071″	3/4″ -2 31/64″ (19-63 mm)	3/4″ -2 31/64″ (19-63 mm)	5667A3	4.70

Standard Duty Replaceable-Tip Retaining-Ring Pliers Sets

You have many options for changing tools and tips. ***Sets A*** and ***B*** have both internal pliers and external pliers. ***Set C*** has internal pliers. ***Set D*** has external pliers. ***Internal pliers*** are for installing and removing rings inside a bore. ***External pliers*** are for installing and removing rings around a shaft.

Pliers Sets— Include pliers plus one pair of each tip size listed. Pliers are made of stamped, heat-treated steel and have cushion-grip handles with a spring return. Tips are made of steel and are color-coded for easy identification. Require a #1 Phillips screwdriver (not included) to change tips. *Sets A* and *B* are packed in a plastic case.

Replacement Tip Sets— 5625A17 and A32 include one pair of each tip size listed; 5625A15 includes two pairs of each size listed. All are packed in a plastic box.

For Bore Dia. (For Rings in a Bore)	For Shaft Dia. (For Rings on a Shaft)	Included Tips, Dia. Straight	45°	90°	O'all Lg.	Pliers Sets	Per Set	Repl. Tip Sets	Per Set
Internal and External Set									
A 3/8″-2″ (10-51 mm)	1/4″-2″ (6-51 mm)	0.038″, 0.047″, 0.070″	0.038″, 0.047″	0.038″, 0.047″	6 1/2″	5625A14★	$39.62	5625A17★	$9.03
B 3/8″-2″ (10-51 mm)	1/4″-2″ (6-51 mm)	0.038″, 0.047″, 0.070″, 0.090″	0.038″, 0.047″	0.038″, 0.047″	6 1/2″	5625A31	39.62	5625A32	9.27
Internal Set									
C 3/8″-2″ (10-51 mm)	1/4″-2″ (6-51 mm)	0.047″, 0.070″	0.047″	0.038″	6 1/2″	5625A16	21.05	5625A15	9.27
External Set									
D 3/8″-2″ (10-51 mm)	1/4″-2″ (6-51 mm)	0.047″, 0.070″	0.047″	0.038″	6 1/2″	5625A18	21.05	5625A15	9.27

★ Also includes a 15° angle, 0.070″ dia. tip.

Quick-Change Internal/External Replaceable-Tip Retaining-Ring Pliers Sets

Just flip a switch to convert between external and internal action. ***Sets E*** and ***G*** have a stop that can be adjusted by turning the set screw. ***Set F*** is the same as Style G except it does not have a stop. ***Set H*** has an automatic ratchet lock that holds rings open or closed for easier installation and removal.

Pliers Sets— Include pliers and one pair of each tip size listed. Pliers are made of steel and have cushion-grip handles with a spring return. Tips are made of color-coded alloy steel and come with a hex key for changing tips. Packed in a plastic pouch.

Replacement Tip Sets— Each set includes one pair of each tip size listed. Packed in a plastic pouch. *Note:* Tips E, F, and G are interchangeable, H is not.

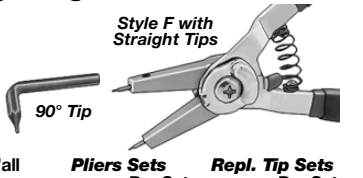

For Bore Dia. (For Rings in a Bore)	For Shaft Dia. (For Rings on a Shaft)	Included Tips, Dia. Straight	90°	O'all Lg.	Pliers Sets	Per Set	Repl. Tip Sets	Per Set
E 1/4″ -1″ (7- 26 mm)	1/8″-1″ (3- 26 mm)	0.023″, 0.036″, 0.047″	0.036″, 0.047″	6 3/16″	5391A33	$25.39	5391A41	$7.77
F 3/8″ -2″ (10- 51 mm)	1/4″-2″ (7- 51 mm)	0.036″, 0.047″, 0.070″	0.036″, 0.047″	7 5/8″	5391A34	26.19	5391A42	6.82
G 3/8″ -2″ (10- 51 mm)	1/4″-2″ (7- 51 mm)	0.036″, 0.047″, 0.070″	0.036″, 0.047″	7 5/8″	5391A35	29.81	5391A42	6.82
H 1 13/16″-4″ (46-102 mm)	1 1/2″-4″ (32-102 mm)	0.090″●, 0.108″●, 0.120″●	0.090″, 0.108″, 0.120″	10 1/8″	5391A37	58.21	5391A43	15.81

● Tips are 15°.

19-Piece Set— Includes Styles E, F, and H pliers; one pair of each tip size listed for each style; and hex keys for changing tips. Packed in a plastic case.

5391A91 ..... **Per Set** $110.60

Twist-Grip Replaceable-Tip Retaining-Ring Pliers Set

Give the handle a turn to open and close the jaws while you install and remove internal and external retaining rings. Use with rings that have bore diameters (for rings in a bore) from 2 7/16″ to 3 1/2″ (62 to 89 mm) and shaft diameters (for rings on a shaft) from 1 1/2″ to 4″ (38 to 102 mm). Made of stamped steel.

Set includes pliers, an extra pair of jaw plates and screws, and one pair each of 15° and 45° angle tips in 0.108″ dia. and 45° angle tips in 0.123″ dia. Pliers require a 3/32″ hex key (not included) to change tips. Overall length is 10″.

5538A11 ..... **Per Set** $48.12

Replacement Tip Set— Includes one pair each of 15° and 45° angle tips in 0.108″ dia. and 45° angle tips in 0.123″ dia., plus replacement jaw plates and screws. Packed in a plastic box.

5538A12 ..... **Per Set** $10.15

Replaceable-Tip Large-Diameter Retaining-Ring Pliers

A ratchet mechanism makes it easy to handle large rings. Compress and expand rings gradually, then lock in at the desired size without the need to keep pressure on the handles. Pliers are made of stamped, heat-treated steel and include a pair of straight steel tips. Require a #2 slotted screwdriver (not included) to change tips, except for 5300A27, which requires a 5/32″ hex key (not included). ***Internal pliers*** are for installing and removing rings inside a bore. ***External pliers*** are for installing and removing rings around a shaft.

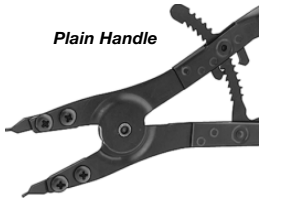

Also Available: Extra tips. Please ask for 7131A1 for pliers with cushion-grip handles, 5300A3 for plain-handle pliers, and specify tip diameter and angle (straight, 15°, 45°, or 90°).

Note: 15° angle tips not available for pliers with plain handles.

For Bore Dia.	Tip Dia.	O'all Lg.	Each
Internal Pliers (For Rings in a Bore) w/Cushion-Grip Handles			
2 7/16″- 4 1/4″ (62-108 mm)	0.108″	9 1/2″	7131A21 $38.90
2 7/16″- 4 1/4″ (62-108 mm)	0.120″	9 1/2″	7131A26 38.90
Internal Pliers (For Rings in a Bore) with Plain Handles			
3 1/16″- 6″ (78-152 mm)	0.120″	16″	5300A21 72.20
6 1/4″ -10″ (159-254 mm)	0.150″	29″	5300A27 196.83

For Shaft Dia.	Tip Dia.	O'all Lg.	Each
External Pliers (For Rings on a Shaft) w/Cushion-Grip Handles			
1 9/16″-3 15/16″ (40-100 mm)	0.108″	9 1/2″	7131A31 $38.90
1 9/16″-3 15/16″ (40-100 mm)	0.120″	9 1/2″	7131A27 38.90
External Pliers (For Rings on a Shaft) with Plain Handles			
3 1/2″ -6 1/2″ (89-165 mm)	0.120″	16″	5300A33 72.20
6 3/4″ -9 1/2″ (171-241 mm)	0.170″	19″	5300A35 161.99

10-Piece Cushion-Grip Set— Includes internal pliers 7131A21, external pliers 7131A31, and one pair each of straight, 15°, 45°, and 90° angle tips in 0.108″ and 0.120″ dia. Packed in a plastic case.

7131A13 ..... **Per Set** $122.13

7-Piece Plain-Handle Set— Includes internal pliers 5300A21 and external pliers 5300A33, both with 0.120″ dia. straight tips. Plus, one pair each of straight, 45°, and 90° angle tips in 0.120″ dia.

5300A61 ..... **Per Set** $198.62

Large-Diameter T-Handle Replaceable-Tip Retaining-Ring Tool Set

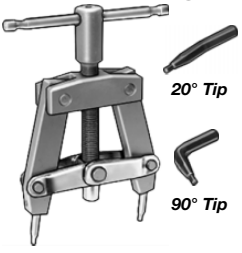

Install and remove large-diameter retaining rings easily and securely. The sliding T-handle and compound screw multiplies the force you exert and keeps internal rings contracted and external rings expanded to hold the rings in place. Tool is made of heat-treated steel and comes with one pair each of 20° angle and 90° angle tips in 0.120″, 0.150″, and 0.180″ dia. and a hex key for changing tips. Overall length is 7″. Packed in a plastic case.

Repl. Tip Sets— Include one pair each of 0.120″, 0.150″, and 0.180″ dia. tips.

	For Bore Dia. (For Rings in a Bore)	For Shaft Dia. (For Rings on a Shaft)		Per Set
Tool Set	3½″-7″ (90-175 mm)	3½″-7″ (90-175 mm)	5410A81	$103.85
20° Angle Replacement Tip Set			5410A82	14.40
90° Angle Replacement Tip Set			5410A83	14.40

External Retaining-Ring Tools

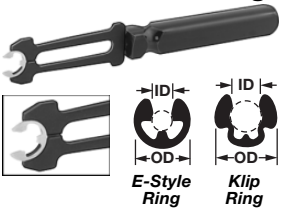

Choose tools for installing E-style or Klip ring retaining rings. Slide the retaining ring in between the jaws of the tool and push the ring onto a shaft. Remove rings by pulling or prying them off the shaft. Tools have steel jaws and a plastic handle. Overall length ranges from 4 15/16″ to 6 1/8″.

E-Style External Retaining-Ring Tools—Inch

For Ring OD	ID		Each	For Ring OD	ID		Each
5/32″	1/16″	93821A213	$23.51	7/16″	7/32″	93821A217	$24.54
3/16″	3/32″	93821A214	23.51	1/2″	5/16″	93821A219	24.54
13/64″	9/64″	93821A234	23.51	17/32″	1/4″	93821A238	24.54
15/64″	3/32″	93821A215	23.51	21/32″	3/8″	93821A221	24.54
9/32″	5/32″	93821A216	23.51	11/16″	7/16″	93821A222	24.54
5/16″	11/64″	93821A228	23.51	51/64″	1/2″	93821A223	28.75
21/64″	3/16″	93821A229	23.51	15/16″	5/8″	93821A224	28.75
3/8″	7/64″	93821A226	23.51	1″	3/4″	93821A235	44.05

E-Style External Retaining-Ring Tools—Metric (mm)

For Ring OD	ID		Each	For Ring OD	ID		Each
5.9	3	57905A41	$23.51	10.85	6	57905A44	$23.51
6.9	4	57905A42	24.54	11.8	7	57905A45	24.54
8.85	5	57905A43	24.54	13.8	8	57905A46	24.54

Klip Ring External Retaining-Ring Tools—Inch

For Ring OD	ID		Each	For Ring OD	ID		Each
21/64″	5/32″	5733A1	$34.70	19/32″	5/16″	5733A4	$34.70
13/32″	3/16″	5733A2	34.70	11/16″	3/8″	5733A5	36.41
31/64″	1/4″	5733A3	34.70	53/64″	1/2″	5733A7	36.41

Stainless Steel Locking Pliers

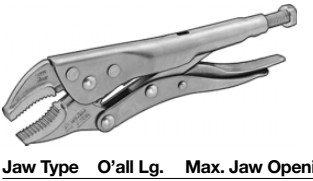

Made of Type 304 stainless steel to resist corrosion, pliers can be sterilized. All have a trigger-release lever handle and a pressure-adjusting screw to create a firm grip. Jaws are serrated.

Jaw Type	O'all Lg.	Max. Jaw Opening	Jaw Lg.		Each
Curved	7″	17/16″	1″	54645A24	$55.00
Straight	9″	1 3/4″	1 3/8″	54645A31	59.78

Storage Holder for Locking Pliers

Create convenient storage for up to three locking pliers (not included). Great for mounting to a table or bench top, holder has a thumb screw and a swivel pad that act like a C-clamp to firmly grip any surface up to 2″ thick. Made of steel with a corrosion-resistant enamel finish. Holder is 4 15/16″ Ht. × 2 1/2″ Wd.

Fits Pliers Lg.		Each
4″-5″, 6″-7″, 8″-12″	4978A22	$15.36

E- and C-Style External Retaining-Ring Tool

A spring on one end of the tool holds a ring in position for installation, and a hook on the other end is for removal. Use with external E- and C-style rings with an ID of 0.156″ to 3″ and a thickness of 0.025″ to 0.093″. Made of steel. Overall size is 6 3/4″ Lg. × 9/32″ Wd. × 1/16″ Thick.

5728A2 ..... Each $19.44

External Lock-Ring Pliers

Use pliers with 3/4″ to 1 3/4″ diameter external flat and pointed-tip lock rings (also known as Eaton-style snap rings). Pliers are made of heat-treated steel and have cushion-grip handles with spring return. Jaw tips are offset and finely scored on the outside to prevent slipping. O'all length is 8 1/2″.

5773A14 ..... Each $20.03

Parallel-Action Pliers

Standard with Wire Cutter

Jaws remain parallel.

Long Nose without Wire Cutter

Jaws remain parallel for a stronger grip—this keeps irregularly shaped objects from slipping forward when pressure is applied. All pliers have serrated steel jaws.

Standard— Pliers have plain handles made of nickel-plated steel. All have a V-shaped slot in the lower jaw that allows you to lead wire and pins down the throat of the pliers. Close the pliers to hold the wire or pin firmly in place during pulling operations.

Long Nose— Pliers have a compact profile, so they can get into tight spaces. Made of steel with cushion-grip handles.

O'all Lg.	Max. Jaw Opening	Jaw Lg.	Max. Wire Size, AWG (Dia.)		Each
Standard without Wire Cutter					
5″	3/8″	1 3/8″	———	5654A1	$32.02
8″	11/16″	1 5/8″	———	5654A4	47.52
Standard with Wire Cutter					
5″	3/8″	1 3/8″	10 (0.102″)	3728A1	44.36
8″	11/16″	1 5/8″	4 (0.204″)	3728A4	60.00
Long Nose without Wire Cutter					
9″	3/16″●	2 3/8″	———	5120A46	14.01

● Jaws open to 3″ when they are not parallel.

Self-Adjusting Locking Pliers

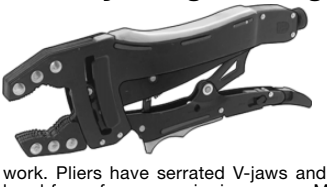

Switch between parallel-jaw self-adjusting pliers and locking pliers with a push of a lever. Use the pressure-adjusting screw to create a firm grip. When pliers are in self-adjusting mode, squeeze the handles and the jaws automatically adjust around your work. Pliers have serrated V-jaws and a mechanism that multiplies hand force for more gripping power. Made of steel with black-oxide finish. Handles have molded grips.

O'all Lg.	Max. Jaw Opening	Jaw Lg.		Each
6″	1 1/8″	2″	5113A1	$12.50
8″	1 1/8″	2″	5113A27	26.30

Swivel-Jaw Locking Pliers

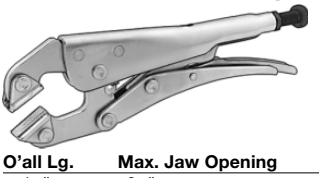

The swivel action of the jaw pads provides a secure hold on many shapes. Made of steel with knurled pads and a trigger-release lever handle. Use the pressure-adjusting screw to create a firm grip.

O'all Lg.	Max. Jaw Opening	Jaw Lg.		Each
9 1/4″	1 3/4″	1 1/2″	5114A51	$31.16
11 3/4″	3 15/16″	3 1/2″	5114A52	35.82

Vise-Grip Locking Pliers

Curved Jaws with Wire Cutter (Trigger-Release Handles)

Long Nose Jaws (Easy-Release Handles)

Hex Jaws

Straight Jaws

Pinch-Off Jaws (Nonserrated)

Turn the pressure-adjusting screw in the handle to lock the jaws in a vise-like grip around your workpiece. Pliers stay clamped on your work, leaving your hands free. Pliers are made of nickel-plated alloy steel. Jaws are serrated, unless noted.

Trigger-Release Handles— To open pliers, press the release trigger on the lower handle.

Easy-Release Handles— You can pull handles open with one hand; handles open twice as easily as trigger-release handles.

Pliers with wire cutter cut up to 3⁄64″. One bite will cut thinner wires; progressive bites will cut thicker wires.

Pliers with hex jaws lock on three sides of a hex fastener without damaging or slipping off the fastener.

Pliers with pinch-off jaws are for pinching off tubing as well as water and gas lines in general repair work.

Individual Pliers

Jaw Type	O'all Lg.	Max. Jaw Opening	Jaw Lg.	Trigger-Release Handles	Each	Easy-Release Handles	Each
With Wire Cutter							
Curved	4″	15⁄16″	5⁄8″	5369A8	$9.33	—	—
Curved	5″	1 1⁄8″	3⁄4″	5369A7	9.56	5172A32	$10.52
Curved	7″	1 1⁄2″	1″	5369A5	10.50	5172A33	11.55
Curved	10″	1 7⁄8″	1 1⁄8″	5369A6	11.21	5172A34	12.33
Long Nose	5 1⁄4″	1 1⁄2″	1 3⁄8″	7136A19	10.42	—	—
Long Nose	6 1⁄2″	2″	1 3⁄4″	7136A21	10.79	5172A35	11.87
Long Nose	8 3⁄4″	2 3⁄4″	2 3⁄8″	7136A23	13.21	—	—
Hex	4″	1⁄4″-9⁄16″ (7-14 mm)●	9⁄16″	5369A61	12.33	—	—
Hex	7″	7⁄16″-3⁄4″ (11-19 mm)●	3⁄4″	5369A62	14.02	—	—
Hex	10″	5⁄8″-1 1⁄8″ (16-28 mm)●	1 1⁄8″	5369A63	17.36	—	—
Without Wire Cutter							
Straight	7″	1 5⁄16″	1″	5369A1	10.40	5172A51	11.44
Straight	10″	1 3⁄4″	1 1⁄2″	5369A2	11.21	5172A5	12.33
Pinch Off	7″	1 5⁄16″	1″	7173A11▲	11.60	—	—
Curved	7″	1 1⁄2″	1 3⁄8″	5369A3	10.48	5172A53	11.53
Curved	10″	1 7⁄8″	1 1⁄2″	5369A4	11.66	5172A52	12.83
Curved	12″	3 1⁄8″	3 1⁄2″	7136A15	20.83	—	—

● Jaw capacity represents hex fastener size. ▲ Jaws are smooth (nonserrated).

Trigger-Release Sets

3-Pc. Set— Includes one each of 5″ curved jaw without wire cutter, 10″ curved jaw with wire cutter, and 6 1⁄2″ long nose with wire cutter. Packed in a pouch.

5369A46 ..... **Per Set** $28.74

3-Pc. Set— Includes one each of 10″ curved jaw with wire cutter, 6 1⁄2″ long nose with wire cutter, and 7″ straight jaw without wire cutter.

5172A42 ..... **Per Set** $24.92

4-Pc. Set— Includes one each of 10″ curved jaw with wire cutter, 6 1⁄2″ long nose with wire cutter, and 7″ and 10″ straight jaw without wire cutter. Packed in a pouch.

5369A47 ..... **Per Set** $40.67

Easy-Release Set

4-Pc. Set— Includes one each of 7″ and 10″ straight jaw and 7″ and 10″ curved jaw; all are without a wire cutter. Packed in a box.

5172A54 ..... **Per Set** $45.36

Adjustable Wrenches

Adjustability makes these wrenches a popular choice—they fit workpieces in many shapes and sizes.

Wrenches and Wrench Sets

Made of forged alloy steel. ***Auto Locking—*** Apply pressure on the wrench and the knurls lock automatically to prevent the jaws from loosening and slipping off your workpiece.

O'all Lg.	Jaw Cap.	Standard: Plain Handle Chrome	Each	Standard: Plain Handle Black	Each	Standard: Cushion-Grip Handle Chrome	Each	Standard: Cushion-Grip Handle Black	Each	Auto Locking Plain Handle Chrome	Each
4″	1⁄2″	5385A11	$13.27	5386A8	$12.23	7260A11	$15.58	—	—	5362A6	$16.44
6″	15⁄16″	5385A12	13.88	5386A2	13.58	7260A12	16.10	7260A222	$13.77	5362A1	16.87
8″	1 1⁄8″	5385A13	14.43	5386A3	15.32	7260A13	16.96	7260A223	14.48	5362A2	17.63
10″	1 5⁄16″	5385A14	18.39	5386A4	17.91	7260A14	20.94	7260A224	18.22	5362A3	22.78
12″	1 1⁄2″	5385A15	26.52	5386A5	25.87	7260A15	29.50	7260A225	26.81	5362A4	32.36
15″	1 11⁄16″	5385A16	44.32	5386A6	42.17	7260A16	51.79	—	—	5362A5	50.92
18″	2 1⁄16″	5385A17	73.77	5386A7	72.83	—	—	—	—	—	—
24″	2 7⁄16″	5385A18	134.08	5386A9	121.69	—	—	—	—	—	—
36″	4 3⁄4″	5385A34★	898.08	—	—	—	—	—	—	—	—

★ Has a painted silver finish.

3-Pc. Standard Sets— Include one each of standard 6″, 8″, and 10″ wrenches. Made of forged alloy steel. Packed in a vinyl pouch.

Handle	Finish		Per Set
Plain	Chrome	5385A32	$43.87
Plain	Black	5386A47	39.58
Cushion Grip	Chrome	7260A21	47.40

5-Pc. Standard Set— Includes one each of standard 4″, 6″, 8″, 10″, and 12″ wrenches. Made of forged alloy steel with plain handle and chrome finish. Packed in a vinyl pouch.

5385A33 ..... **Per Set** $83.79

Standard and Auto Locking with Plain Handle

Standard with Cushion-Grip Handle

Ultra-Grip Handle with Measuring Scale

Insulated Handle with Measuring Scale

Wrenches with Measuring Scale

A scale on the head of the wrench lets you accurately size flat plate metal, nuts, and tubing. All are made of forged alloy steel.

Ultra-Grip Handle— A hard plastic grip is covered with a soft rubber coating for maximum hold.

Insulated Handle— Wrenches have a cushion grip that is tested to 1,000 volts. Meet IEC 60900, ASTM F1505-01, and OSHA requirements.

O'all Lg.	Plain Handle Jaw Cap.	Chrome	Each	Ultra-Grip Handle Jaw Cap.	Black	Each	Insulated Handle Jaw Cap.	Orange	Each
4″	1⁄2″	7430A31	$19.78	—	—	—	1⁄2″	7435A31	$57.96
6″	3⁄4″	7430A32	20.85	1″	5211A52	$14.04	3⁄4″	7435A32	58.87
8″	15⁄16″	7430A33	23.49	1 1⁄8″	5211A53	15.73	15⁄16″	7435A33	59.98
10″	1 1⁄8″	7430A34	30.17	1 3⁄8″	5211A54	19.97	1 1⁄16″	7435A34	66.24
12″	1 3⁄8″	7430A35	45.26	1 1⁄2″	5211A55	26.88	1 5⁄16″	7435A37	83.16
15″	1 11⁄16″	7430A36	71.34	—	—	—	1 11⁄16″	7435A36	147.38
18″	2 1⁄8″	7430A37	123.46	—	—	—	—	—	—

Tight-Access Adjustable Wrench

A tapered, thin-profile nose and longer-than-average flat jaws reach into narrow spaces. Wrench has a short handle for easy positioning. Made of forged alloy steel with a corrosion resistant finish and a thermoplastic grip. A measuring scale is etched into the head.

O'all Lg.	Jaw Cap.		Each
8″	1½″	91821A200	$27.52

Lever-Locking Adjustable Wrench

Get an adjustable wrench and lockable pliers in one tool. Press a lever and the jaws lock onto your fastener, leaving your hands free. Made of forged steel with a chrome finish.

O'all Lg.	Jaw Cap.		Each
10″	1 9/64″	6556A8	$18.97

Adjustable Wrench with Hammer Head

Not your ordinary adjustable wrench, this tool has a raised striking surface that functions as a hammer head. The other end has a 12-pt. box end. Often used in the mining industry, wrench is made of forged alloy steel with a chrome finish.

O'all Lg.	Jaw Cap.	Box End Size		Each
12″	1¾″	⅞″	91822A100	$46.08

Ratchet-Action Adjustable Wrenches

You can reposition these wrenches without removing them from your workpiece—they are similar in function to a ratcheting wrench. Great for loosening and tightening fasteners quickly. Made of forged steel with a chrome finish.

O'all Lg.	Jaw Cap.		Each
8″	¼″ - 15/16″	53495A31	$15.61
10″	5/16″-1 3/16″	53495A33	18.35
12″	⅜″ -1⅜″	53495A34	23.86

Wide-Opening Pipe Wrenches

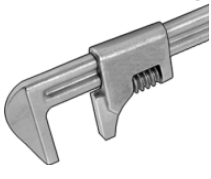

You might know these adjustable tools as monkey wrenches. The jaws open wide to fit around your workpiece. Made of forged alloy steel with a chrome finish. Jaws are smooth and nonmarring.

O'all Lg.	Jaw Cap.		Each
9″	2¾″	5382A1	$29.52
11″	3″	5382A2	34.90
15″	3⅝″	5382A3	55.49
18″	4⅜″	5382A4	77.49

Pipe and Valve Wheel Wrench

Also known as an engineers' pipe wrench, this tool combines a pipe wrench with a valve wheel wrench. The pipe wrench end is for gripping pipe, test plugs, packing glands, and flange nuts. Use the valve wheel end for loosening valve wheels. Made of ductile steel with forged alloy steel jaws. Jaws are serrated.

O'all Lg.	Pipe Wrench Jaw Capacity	Valve Wheel Wrench Opening		Each
10″	1″	⅝″	51425A25	$92.10

Stainless Steel Adjustable Wrenches

Made of Type 420 stainless steel, these wrenches are great for corrosive environments. ***Plain handle*** wrenches can be autoclaved up to 1832° F.

O'all Lg.	Jaw Cap.	Plain Handle	Each	Cushion Grip Handle	Each
6″	45/64″	7375A37	$33.73	7375A28	$37.39
8″	15/16″	7375A31	40.74	7375A24	65.66
10″	1 11/64″	7375A32	44.57	7375A25	83.44
12″	1 13/32″	7375A33	50.67	7375A26	101.29

Reversible-Jaw Adjustable Wrenches

Reverse the movable jaw to convert from a smooth-jaw adjustable wrench to a serrated-jaw pipe wrench. Made of hardened, forged alloy steel with a thermoplastic grip that resists oil and grease. A measuring scale is etched into the head.

O'all Lg.	Jaw Cap.	Chrome	Each	Black	Each
6″	13/16″	5195A22	$29.45	5195A42	$25.03
8″	1 1/16″	5195A24	31.04	5195A44	26.26
10″	1 5/16″	5195A26	37.86	5195A46	32.19
12″	1⅜″	5195A28	46.56	5195A48	40.75

Hinged Pipe-Wrenching Collars

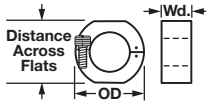

Loosen and tighten pipe without marring or gouging it—you don't even need access to the end of the pipe. Collars have a one-piece hinged design with wrench flats. Just fasten a collar onto your pipe, grip the flats with a wrench (not included), and rotate the pipe.

Collars have a captive screw to secure them, so there are no parts to drop or lose. Screw requires a hex key (not included) to tighten. Collars and screws are made of steel with a black finish.

Pipe Size	Collar OD	Collar Wd.	Distance Across Flats	Screw Size	Hex Size		Each
⅜″	1½″	7/16″	1 5/16″	10-32	5/32″	91823A100	$20.56
½″	1¾″	½″	1 9/16″	¼″-28	3/16″	91823A110	21.07
¾″	2″	½″	1 13/16″	¼″-28	3/16″	91823A120	22.24
1″	2¼″	½″	2 1/16″	¼″-28	3/16″	91823A130	22.75
1¼″	3″	⅝″	2 5/16″	5/16″-24	¼″	91823A140	23.89
1½″	3¼″	⅝″	2 13/16″	5/16″-24	¼″	91823A150	27.40

Internal Pipe and Nipple Wrenches

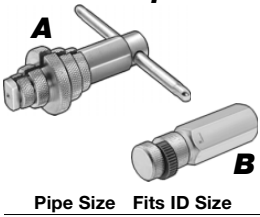

Insert wrenches into pipe or a fitting and turn—eccentric action engages the wrench against the walls of the pipe or fitting for easy installation and removal without thread damage. Made of steel.

Style A has a sliding T-handle to turn wrench. ***Style B*** turns with an adjustable wrench or pipe wrench (not included).

	Pipe Size	Fits ID Size	O'all Lg.	Hex Size		Each
A	1″-2″	1.049″-2.067″	4 9/16″	—	7172A11	$78.69
B	⅜″	0.493″	3¾″	½″	5371A13	5.78
B	½″	0.622″	3¾″	⅝″	5371A14	6.44
B	¾″	0.824″	3¾″	¾″	5371A15	7.98
B	1″	1.049″	3¾″	1″	5371A16	11.16

4-Piece Set—Includes one each of 5371A13, 5371A14, 5371A15, and 5371A16. Packed in a vinyl pouch.
5371A24 ..... **Per Set** $28.79

Nonmarring Round-Grip Wrenches

Jaws and Handle Sold Separately

Smooth (nonserrated) jaws grip most surfaces, even highly polished cylindrical objects, without marring. Just push down on the wrench and pull the handle toward you; the jaws encircle pipe, tubing, and other cylindrical objects. Use for pipe coils and pipe railings where work space is limited. Made of forged steel. Handles have a red painted finish. Jaws and handles are sold separately. *Note:* Jaws are not interchangeable with other handles.

To Order: For jaws, please specify size from those listed. A separate jaw is needed for each pipe diameter. ***Jaw and handle sets*** include a handle and one of each jaw size listed.

Jaw Sizes For Outside Diameter (OD)	Jaws Wd.		Each	Handles Lg.		Each	Jaw and Handle Sets	Per Set
1″, 1 1/16″, 1⅛″, 1¼″, 1 5/16″	2″	5351A15	$207.06	10″	5351A71	$141.07	5351A24	$1,085.52
1¼″, 1½″, 1¾″, 1⅞″, 2″, 2⅛″	3⅛″	5351A16	252.88	20″	5351A72	281.73	5351A25	1,751.63

Ridgid Heavy Duty Pipe Wrenches

Count on these premium wrenches for jam-free operation. All have I-beam shaped handles for strength. Hook jaws are forged steel with hardened alloy steel teeth. Heel jaws are hardened alloy steel. Meet Fed. Spec. GGG-W-651e, unless noted.

Cast Iron Wrenches— Have a cast iron handle.

Aluminum Wrenches— Have an aluminum handle. Tools are as durable as iron wrenches of the same size, but lighter in weight.

Standard jaws are serrated; they're well-suited for gripping pipe and conduit. Hook jaw is full floating with spring suspension. ***Hex jaws*** are smooth and provide a multisided grip on hex nuts, square nuts, valve packing nuts, and unions that join pipe and drain lines. Not for use on pipe.

Straight style wrenches are ideal for loosening and tightening pipe fittings and rigid conduit. ***End style*** wrenches work like straight style, but have an angled head for work in tight spaces. ***Offset style*** wrenches are similar to end style, but are especially effective for overhead work.

Note: Straight style and end style wrenches have the same replacement parts.

Standard Jaws, Straight Style

Standard Jaws, End Style

Standard Jaws, Offset Style

Hex Jaws, Straight Style

Hex Jaws, Offset Style

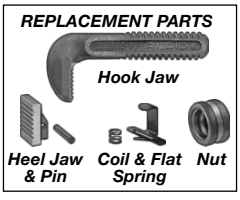

O'all Lg.	Jaw Cap.	WRENCHES: Straight Style	Each	End Style	Each	REPLACEMENT PARTS: Hook Jaws	Each	Heel Jaws & Pins	Each	Coils & Flat Springs	Each	Nuts	Each
Cast Iron Wrenches													
Standard Jaws													
6″	¾″	5357A121	$13.92	5357A141	$18.05	5357A181	$11.21	5357A201	$5.20	5357A241	$3.45	5357A261	$3.28
8″	1″	5357A122	16.93	5357A142	20.95	5357A182	11.26	5357A202	6.39	5357A242	3.56	5357A262	3.45
10″	1½″	5357A123	22.55	5357A143	27.89	5357A183	14.54	5357A203	8.43	5357A243	3.79	5357A263	3.56
12″	2″	5357A124	25.78	5357A144	32.48	5357A184	16.80	5357A205	10.80	5357A244	4.13	5357A264	4.13
14″	2″	5357A125	29.16	5357A145	35.56	5357A176	19.85	5357A205	10.80	5357A131	4.69	5357A265	4.69
18″	2½″	5357A126	42.12	5357A146	50.88	5357A177	27.88	5357A206	14.54	5357A132	8.43	5357A266	6.90
24″	3″	5357A127	66.04	5357A147	83.46	5357A178	43.49	5357A207	22.17	5357A133	9.45	5357A267	10.18
36″	5″	5357A128	142.30	5357A148	177.17	5357A188	91.35	5357A208	37.16	5357A248	12.16	5357A268	18.72
48″	6″	5357A129	212.40	—	—	5357A189	136.08	5357A209	58.60	5357A249	14.54	5357A269	28.96
60″	8″	5357A171	297.39	—	—	5357A172	217.08	5357A173	90.75	5357A174	24.49	5357A175	51.36
				Offset Style						Flat Springs			
14″	2″	—	—	5357A165	$55.35	5357A191	24.02	5357A205	10.80	5357A194	$4.17	5357A265	4.69
18″	2½″	—	—	5357A166	81.73	5357A192	34.22	5357A206	14.54	5357A195	7.17	5357A266	6.90
24″	3″	—	—	5357A167	129.35	5357A193	53.61	5357A207	22.17	5357A196	10.00	5357A267	10.18
Hex Jaws													
9½″	1⅛″-2⅝″	—	—	5373A21	33.39	5373A211	19.32	—	—	—	—	5357A263	3.56
14½″	⅝″-1¼″	5373A22■	56.96	—	—	5373A221	31.08	—	—	—	—	5357A266	6.90
20″	1″ -2″	5373A23■	87.48	—	—	5373A231	48.34	—	—	—	—	5357A267	10.18
Aluminum Wrenches													
Standard Jaws		Straight Style		End Style		Hook Jaws		Heel Jaws & Pins		Coils & Flat Springs		Nuts	
10″	1½″	5591A44	$35.56	5764A31■	$40.41	5357A183	$14.54	5357A203	$8.43	5357A243	$3.79	5357A263	$3.56
14″	2″	5591A46	48.78	5764A33■	57.18	5357A176	19.85	5357A205	10.80	5357A131	4.69	5357A265	4.69
18″	2½″	5591A47	60.22	5764A35■	71.52	5357A177	27.88	5357A206	14.54	5357A132	8.43	5357A266	6.90
24″	3″	5591A48	97.10	5764A37■	113.10	5357A178	43.49	5357A207	22.17	5357A133	9.45	5357A267	10.18
36″	5″	5591A49	167.05	—	—	5357A188	91.35	5357A208	37.16	5357A248	12.16	5357A268	18.72
48″	6″	5591A51	329.12	—	—	5357A189	136.08	5357A209	58.60	5357A249	14.54	5357A269	28.96
				Offset Style						Flat Springs			
14″	2″	—	—	52905A61	$65.41	5357A191	24.02	5357A205	10.80	5357A194	$4.17	5357A265	4.69
18″	2½″	—	—	52905A62	85.41	5357A192	34.22	5357A206	14.54	5357A195	7.17	5357A266	6.90
24″	3″	—	—	52905A63	136.74	5357A193	53.61	5357A207	22.17	5357A196	10.00	5357A267	10.18

■ Does not meet Fed. Spec. GGG-W-651e.

Self-Adjusting Pipe Wrenches

The top jaw is hinged, allowing these pipe wrenches to automatically clamp down on pipe and nuts—no adjustment screws necessary. Jaws are serrated and made of hardened alloy steel.

Standard— Jaws are spring loaded to clamp down for a snug fit. Great for working in limited-space areas.

Ratcheting— Tools ratchet without being removed from your workpiece. The head rotates 360° for full leverage in hard-to-reach places.

Standard

Ratcheting

O'all Lg.	Jaw Cap.	Handle Material		Each
Standard				
10″	⅛″-1½″	Cast Iron	5355A14	$27.92
14″	⅜″-2″	Cast Iron	5355A16	34.34
18″	¾″-3″	Aluminum	5355A19	69.50
Ratcheting				
11½″	1½″	Alloy Steel	4476A11	47.73
14½″	2½″	Alloy Steel	4476A21	71.13

Economy Pipe Wrenches

For general purpose use with pipe and fittings, these imported tools are an economical choice. All have I-beam shaped handles for strength. Jaws are made of alloy steel.

Cast Iron— Handles are cast iron.

Aluminum— Handles are aluminum, making these wrenches as durable as iron wrenches of the same size, but lighter in weight. All have a full-floating hook jaw with spring suspension. Meet Fed. Spec. GGG-W-651e.

O'all Lg.	Jaw Cap.	Cast Iron	Each	Aluminum	Each
8″	1″	7358A11	$10.15	—	—
10″	1½″	7358A12	12.38	5356A11	$27.88
12″	2″	7358A13	15.00	—	—
14″	2″	7358A14	18.21	5356A12	36.10
18″	2½″	7358A15	23.26	5356A13	46.05
24″	3″	7358A16	39.06	5356A14	70.37
36″	5″	—	—	5356A15	129.84
48″	6″	—	—	5356A16	251.19

Quick-Adjust Pipe Wrench

Simply press the lever to slide the movable jaw to the desired position—tension keeps it in place. The head is only ½″ thick, making this wrench ideal for work in confined spaces. Handle is aluminum. Body and jaws are steel.

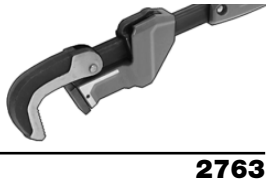

O'all Lg.	Jaw Cap.		Each
11″	2¼″	7023A41	$30.23

Strap Wrenches

When traditional wrenches aren't right for your job, use a strap wrench to grip almost any shape object without marring. For use on plastic pipe, tubing, hand wheels, and items with highly polished surfaces. Straps resist oils and solvents. Polyester is more durable and retains its shape better than synthetic rubber.

Styles A&B— Have a cast iron handle. Style A has a polyester strap. Style B has a latex-coated polyester strap. ***Style C—*** Has an aluminum handle and synthetic rubber strap. ***Style D—*** Have a polypropylene handle and synthetic rubber strap. ***Style E—*** Have a cast iron handle, latex-coated polyester strap, and forged shackle to hold strap closed for extra turning force. Shackle allows you to quickly adjust strap and reposition the wrench.

Handle Lg.	Fits Diameter	Strap Size, Wd. × Lg. × Thick.	Wrenches	Each	Repl. Straps♣ Lg.	Repl. Straps♣	Each	10-ft. Strap Rolls♣	Each
Regular Duty									
A 6″	1/4″ - 4″	1/2″ × 22″ × 1/32″	5378A31	$13.47	23″	5378A32	$3.40	5378A33	$27.32
B 12″	1/2″ - 2″	1 1/4″ × 17″ × 1/16″	5378A1★	31.33	18″	5378A4	12.55	5349A22	60.04
B 18″	1 1/4″ - 6 1/2″	1 3/4″ × 30″ × 3/32″	5378A2★	64.10	32″	5378A5	23.06	5349A23	76.71
B 24″	2 3/8″ - 12″	2 1/4″ × 54″ × 3/32″	5378A3	108.11	55″	5378A6	39.98	5349A24	96.22
C 8″	3/4″ - 12″	3/4″ × 38″ × 3/16″	54325A63	20.12	38″	54325A43	9.82	—	—
D 6″	1/2″ - 4″	1/2″ × 20″ × 1/8″	54325A61	7.68	20″	54325A41	4.71	—	—
D 8″	3/4″ - 6 5/16″	3/4″ × 24″ × 3/16″	54325A62	11.06	24″	54325A42	7.31	—	—
Heavy Duty									
E 12″	1/2″ - 2″	1 1/4″ × 17″ × 1/16″	5349A11★	99.74	17″	5349A15	23.24	—	—
E 18″	1 1/4″ - 6 1/2″	1 3/4″ × 30″ × 3/32″	5349A12★	145.91	30″	5349A17	30.76	—	—
E 24″	2 3/8″ - 12″	2 1/4″ × 54″ × 3/32″	5349A14	249.47	54″	5349A19	58.88	—	—

2-Pc. Regular Duty Style D Set— Includes one each of ***54325A61*** and A62..... **54325A57** **Per Set** $16.84

♣ Replacement straps do not fit Ridgid brand strap wrenches. ★ Meet Fed. Spec. GGG-W-651e.

Square-Drive Strap Wrenches

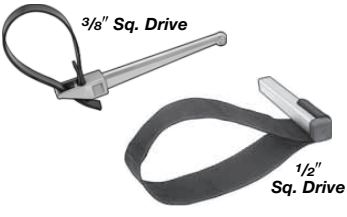

Pair these wrenches with your square-drive ratchet wrench to create more leverage and torque than you can achieve with standard strap wrenches of the same size.

3/8″ Square Drive— This miniature wrench is just the right size for small parts and fittings. It has a cast aluminum handle with a 3/8″ square-drive hole for use with a ratchet or torque wrench. Strap is made of neoprene-impregnated fabric to protect against marring.

1/2″ Square Drive— Great for larger parts and oil filters. Just apply pressure with your 1/2″ square-drive ratchet or 3/4″ open-end wrench. Handle is zinc-plated steel. Strap is nylon and is not replaceable.

Square Drive	Handle Lg.	Fits Diameter	Strap Size, Wd. × Lg. × Thick.	Wrenches	Each	Replacement Strap Lg.	Replacement Strap	Each
3/8″	6 1/2″	1/2″-2″	1/2″ × 12″ × 5/64″	5448A31	$43.31	12″	5448A33	$18.32
1/2″	6″	3/4″-6″	2″ × 23 1/2″ × 1/16″	6860A14	10.70	—	—	—

Chain Wrenches

Simply wrap chain around square, round, hexagonal, and even irregular shapes for easy turning. Chain is steel. ***Vise-Grip Style—*** Wrench has a more powerful grip than standard wrenches. Just turn the adjustment screw and squeeze the handle. Press release lever on handle to instantly unlock the wrench. Made of nickel-plated alloy steel. Add as many 18″ lengths of ***extension chain*** as you need to your wrench. ***Standard—*** Wrenches have ratchet-action that allows you to reposition the wrench without removing it from your workpiece. Made of steel with a forged head.

Handle Lg.	Fits Diameter	Chain Breaking Strength, lbs.	Wrenches	Each	Replacement Chain Lg.	Replacement Chain	Each	18″ Extension Chain	Each
Vise-Grip Style									
9″	11/16″-5 11/16″	6,000	5376A14	$29.91	18″	5376A18	$14.36	5376A16	$14.36
Standard—5377A11 *has a cushion-grip handle;* ***5377A12*** *has a knurled handle*									
12 11/16″	1/2″ - 4 3/4″	5,000	5377A11	45.41	16 3/4″	5377A14	20.39	—	—
19 1/4″	3″ - 6 3/4″	8,100	5377A12	126.73	24″	5377A16	53.11	—	—

Reversible-Jaw Chain Wrenches

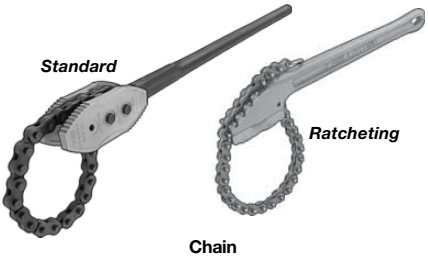

When the teeth on the chain become burred and dull, simply reverse the jaws end for end—and virtually double the service life of these wrenches. Wrap chain around square, round, hexagonal, and irregular shapes for easy turning. Jaws and chain are steel. Meet Fed. Spec. GGG-W-651e, unless noted.

Standard— Also known as chain tongs. Wrenches have a forged alloy steel handle.

Ratcheting— Wrenches ratchet in either direction without being removed from the workpiece. Handle is made of ductile iron.

Handle Lg.	Fits Diameter	Chain Breaking Strength, lbs.	Wrenches	Each	Replacement Chain Lg.	Replacement Chain	Each	Replacement Jaws	Per Pair
Standard									
27″	1/4″ - 2 1/2″	13,800	5366A13	$211.13	17 1/2″	5366A22	$7.00	5366A27	$113.34
37″	3/4″ - 4″	17,600	5366A14	294.11	22 1/2″	5366A23	128.48	5366A271	164.99
43″	1″ - 6″	20,100	5366A15	379.77	32″	5366A24	180.40	5366A272	195.75
50 1/2″	1 1/2″ - 8″	22,000	5366A16	464.12	40 1/2″	5366A25	231.48	5366A273	226.84
64 1/2″	2″ - 12″	31,000	5366A17	759.54	55 1/2″	5366A26	386.19	5366A274	309.34
Ratcheting									**Each**
14″	3/8″ - 4 9/16″	6,500	5367A14■	65.05	17 1/2″	5367A43	10.44	5367A61	$41.15
18″	9/16″ - 5″	12,100	5367A23■	97.24	18 13/16″	5367A54	26.61	5367A62	41.57
24″	9/16″ - 5 3/4″	12,100	5367A24■	112.86	21 13/16″	5367A55	31.80	5367A62	41.57
33″	13/16″ - 7 1/16″	17,750	5367A17	231.67	27 5/8″	5367A46	83.62	5367A63	97.03
44″	15/16″ - 8 1/2″	24,500	5367A18	416.00	31 7/8″	5367A47	145.27	5367A64	132.64
46″	1 7/8″ - 10 15/16″	27,000	5367A19	694.99	40 1/2″	5367A48	328.16	5367A65	170.86
46″	2 7/8″ - 12 15/16″	35,000	5367A21■	1,339.12	48 13/16″	5367A49	538.03	5367A66	173.13
46″	2 7/8″ - 17 15/16″	35,000	5367A22	1,531.90	72 1/8″	5367A51	669.60	5367A66	173.13

■ Does not meet Fed. Spec. GGG-W-651e.

Square-Drive Chain Wrenches

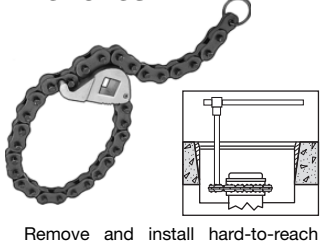

Remove and install hard-to-reach caps and plugs—even those located below grade. Loop the chain around object and attach your square-drive wrench to turn. Chain is made of steel.

1/2″ Square Drive— Head is alloy steel. O'all length is 17 3/4″. Chain is 16 1/4″ long.

3/4″ Square Drive— Head is cast iron. O'all length is 29″. Chain is 25 7/8″ long.

Fits Diameter	Chain Breaking Strength, lbs.		Each
1/2″ Square Drive			
3/4″-5″	6,400	5447A3	$28.28
3/4″ Square Drive			
1 1/2″-7 1/2″	13,000	5447A52	192.76

About Spanner Wrenches

There are two styles of spanner wrenches, pin style and hook style. Both styles are offered in fixed and adjustable versions. ***Fixed*** wrenches fit a single circle diameter. ***Adjustable*** wrenches fit a range of circle diameters—a good choice when you are unsure of the exact diameter you're working with.

Pin style spanner wrenches fit into round holes. Holes can be located on the ***side*** (circumference) of rings, locknuts, and collars or on the ***face*** of flanges and collars.

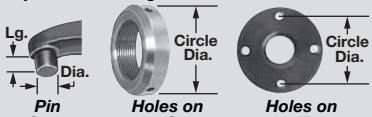

Pin Style — *Holes on the Side* — *Holes on the Face*

Hook style spanner wrenches fit into slots. Slots are located on the ***side*** (circumference) of rings, locknuts, and collars.

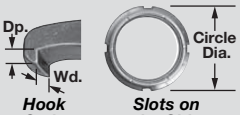

Hook Style — *Slots on the Side*

Spanner Wrenches

Adjust collars, locknuts, rings, packing glands, adjustable rollers, power transmission bearings, as well as material handling and machine tool equipment. All are forged steel with a black finish, except *Style F*, which also come in Type 304 stainless steel. ***Type 304 stainless steel*** wrenches are corrosion resistant and can be autoclaved up to 600° F.

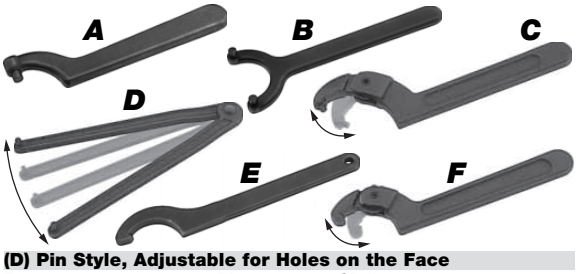

(A) Pin Style, Fixed for Holes on the Side

For Circle Dia.	Pin Dia.	Pin Lg.	O'all Lg.		Each
Inch					
1″	3/16″	5/32″	4″	5475A11	$8.30
1 1/4″	13/64″	5/32″	4 1/2″	5475A12	8.99
1 1/2″	7/32″	3/16″	5″	5475A13	9.03
1 3/4″	15/64″	3/16″	5 1/2″	5475A14	9.57
2″	1/4″	7/32″	6″	5475A15	10.45
2 1/4″	17/64″	1/4″	6 1/2″	5475A16	10.82
2 1/2″	9/32″	9/32″	7″	5475A17	11.37
2 3/4″	19/64″	9/32″	7 1/2″	5475A18	12.06
3″	5/16″	9/32″	8″	5475A19	13.06
3 1/4″	21/64″	9/32″	8 1/2″	5475A21	13.93
3 1/2″	11/32″	5/16″	9″	5475A22	14.66
3 3/4″	23/64″	11/32″	9 1/2″	5475A23	15.75
4″	3/8″	11/32″	10″	5475A24	16.55
5″	7/16″	13/32″	12″	5475A25	22.01
6″	1/2″	9/16″	14″	5475A26	29.73
Metric					
12 to 14 mm	2 mm	5/64″	4 5/16″	55165A31	33.52
16 to 18 mm	2.5 mm	3/32″	4 5/16″	55165A32	26.59
25 to 28 mm	3 mm	1/8″	5 5/16″	55165A33	25.85
30 to 32 mm	4 mm	1/8″	5 5/16″	55165A34	25.85
34 to 36 mm	4 mm	9/64″	6 11/16″	55165A35	29.76
40 to 42 mm	4 mm	9/64″	6 11/16″	55165A36	29.76
45 to 50 mm	5 mm	5/32″	8 1/16″	55165A37	30.67
52 to 55 mm	5 mm	5/32″	8 1/16″	55165A38	32.46
58 to 62 mm	5 mm	13/64″	9 7/16″	55165A39	37.21
68 to 75 mm	6 mm	13/64″	9 7/16″	55165A41	38.78
80 to 90 mm	6 mm	15/64″	11″	55165A42	45.35
95 to 100 mm	8 mm	15/64″	11″	55165A43	47.56
110 to 115 mm	8 mm	5/16″	13 3/16″	55165A44	68.22
120 to 130 mm	8 mm	5/16″	13 3/16″	55165A45	70.00
135 to 145 mm	8 mm	5/16″	15 1/8″	55165A46	85.11
155 to 165 mm	8 mm	5/16″	15 1/8″	55165A47	85.56

6-Piece Set—Includes one each of 5475A13, 5475A14, 5475A15, 5475A17, 5475A18, and 5475A19 above.
5475A33 ..... **Per Set** $62.77

(B) Pin Style, Fixed for Holes on the Face

For Circle Dia.	Pin Dia.	Pin Lg.	O'all Lg.		Each
1″	3/16″	3/16″	4 5/8″	5480A11	$9.32
1 1/4″	7/32″	7/32″	5 1/8″	5480A12	10.52
1 1/2″	7/32″	7/32″	5 11/16″	5480A13	11.70
1 3/4″	7/32″	7/32″	6 1/4″	5480A14	13.60
2″	1/4″	1/4″	6 3/4″	5480A15	15.09
2 1/4″	1/4″	1/4″	7 3/8″	5480A16	16.64
2 1/2″	9/32″	9/32″	7 5/8″	5480A17	20.24
2 3/4″	9/32″	9/32″	8 1/2″	5480A18	23.33
3″	5/16″	5/16″	9″	5480A19	26.59
3 1/4″	5/16″	5/16″	9 11/16″	5480A21	30.55
3 1/2″	5/16″	5/16″	10 1/4″	5480A22	34.92
3 3/4″	3/8″	3/8″	11 1/16″	5480A23	39.44
4″	3/8″	3/8″	11 1/2″	5480A24	45.68

(C) Pin Style, Adjustable for Holes on the Side

For Circle Dia. Inch	Metric, mm	Pin Dia.	Pin Lg.	O'all Lg.		Each
3/4″ to 2″	19 to 50.8	1/8″	5/32″	6 3/8″	5472A1	$22.45
3/4″ to 2″	19 to 50.8	3/16″	5/32″	6 3/8″	5472A2	21.76
1 1/4″ to 3″	31.7 to 76.2	3/16″	3/16″	7″	5472A3	26.02
1 1/4″ to 3″	31.7 to 76.2	1/4″	7/32″	7 7/8″	5472A4	26.40
2″ to 4 3/4″	50.8 to 120.6	1/4″	1/4″	11 3/8″	5472A5	38.79
4 1/2″ to 6 1/4″	114.3 to 158.8	3/8″	1/4″	12 1/8″	5472A6	38.98

6-Piece Set—Includes one of each wrench above. Packed in a vinyl roll-up pouch.
5462A11 ..... **Per Set** $144.01

(D) Pin Style, Adjustable for Holes on the Face

For Circle Dia.	Pin Dia.	Pin Lg.	O'all Lg.		Each
Inch					
5/8″ to 2″	3/16″	1/8″	6 3/8″	5481A1	$19.64
5/8″ to 3″	1/4″	3/16″	8 1/4″	5481A2	25.63
5/8″ to 4″	5/16″	1/4″	10 3/8″	5481A3	33.50
Metric					
10 to 100 mm	2.9 mm	5/32″	7″	5735A11	58.29
10 to 100 mm	3.8 mm	13/64″	7″	5735A12	58.29
10 to 100 mm	4.8 mm	15/64″	9 1/16″	5735A13	60.98
10 to 100 mm	5.8 mm	9/32″	9 1/16″	5735A14	66.34
10 to 100 mm	7.8 mm	5/16″	9 1/16″	5735A15	68.29

(E) Hook Style, Fixed for Slots on the Side

For Circle Dia. Inch	Metric, mm	Hook Wd.	Hook Dp.	O'all Lg.		Each
15/32″ to 35/64″	12 to 14	1/8″	3/64″	4 5/16″	6975A11	$15.23
5/8″ to 25/32″	16 to 20	1/8″	1/16″	4 5/16″	6975A12	15.58
63/64″ to 1 7/64″	25 to 28	5/32″	5/64″	5 3/8″	6975A13	16.50
1 3/16″ to 1 17/64″	30 to 32	5/32″	5/64″	5 3/8″	6975A14	16.41
1 11/32″ to 1 27/64″	34 to 36	13/64″	3/32″	6 11/16″	6975A15	18.95
1 37/64″ to 1 21/32″	40 to 42	13/64″	3/32″	6 11/16″	6975A16	19.07
1 49/64″ to 1 31/32″	45 to 50	15/64″	1/8″	8 1/8″	6975A17	18.75
2 3/64″ to 2 11/64″	52 to 55	15/64″	1/8″	8 1/8″	6975A18	21.40
2 9/32″ to 2 7/16″	58 to 62	9/32″	9/64″	9 1/2″	6975A19	23.02
2 43/64″ to 2 61/64″	68 to 75	9/32″	9/64″	9 1/2″	6975A21	23.77
3 5/32″ to 3 35/64″	80 to 90	5/16″	5/32″	11″	6975A22	43.72
3 47/64″ to 3 15/16″	95 to 100	5/16″	5/32″	11″	6975A23	46.05
4 21/64″ to 4 17/32″	110 to 115	25/64″	5/32″	13 3/16″	6975A24	69.77
4 23/32″ to 5 1/8″	120 to 130	25/64″	5/32″	13 3/16″	6975A25	69.77
5 5/16″ to 5 45/64″	135 to 145	25/64″	13/64″	15 1/8″	6975A26	96.05
6 7/64″ to 6 1/2″	155 to 165	25/64″	13/64″	15 1/8″	6975A27	96.05
7 3/32″ to 7 43/64″	180 to 195	25/64″	13/64″	18 1/2″	6975A28	170.90
8 5/64″ to 8 21/32″	205 to 220	25/64″	13/64″	18 1/2″	6975A29	174.71

5-Piece Set—Includes one each of 6975A12, 6975A13, 6975A15, 6975A17, and 6975A19 above. Packed in a vinyl roll-up pouch.
6975A3 ..... **Per Set** $102.05

(F) Hook Style, Adjustable for Slots on the Side

For Circle Dia. Inch	Metric, mm	Hook Wd.	Hook Dp.	O'all Lg.		Each
Steel						
3/4″ to 2″	19 to 50.8	11/32″	1/8″	6 3/8″	5471A11	$21.74
1 1/4″ to 3″	31.7 to 76.2	13/32″	5/32″	8 1/8″	5471A12	24.70
2″ to 4 3/4″	50.8 to 120.6	15/32″	3/16″	11 3/8″	5471A13	36.21
4 1/2″ to 6 1/4″	114.3 to 158.8	15/32″	1/4″	12 1/8″	5471A14	38.04
6 1/8″ to 8 3/4″	155.6 to 222.2	15/32″	5/16″	13 3/4″	5471A23	41.74
Type 304 Stainless Steel						
7/8″ to 1 3/8″	20 to 35	5/32″	5/64″	5 1/4″	6724A11	69.83
1 3/8″ to 2 3/8″	35 to 60	3/16″	3/32″	7″	6724A12	87.93
2 3/8″ to 3 1/2″	60 to 90	1/4″	1/8″	10″	6724A13	96.98
3 1/2″ to 6 1/8″	90 to 155	5/16″	5/32″	11 1/4″	6724A14	122.57
6 1/8″ to 9 1/8″	155 to 230	3/8″	3/16″	16 3/4″	6724A15	227.59

4-Piece Steel Set—Includes one each of 5471A11, 5471A12, 5471A13, and 5471A14 above.
5471A21 ..... **Per Set** $109.41

5-Piece Type 304 Stainless Steel Set—Includes one of each stainless steel wrench above.
6724A21 ..... **Per Set** $498.57

For information about spanner wrenches, see page 2765.

Long-Reach Adjustable Hook Spanner Wrench

With a 24″ long handle and two interchangeable heads, this spanner wrench has an extra-long reach and a wide capacity range. Each head has an overall size of 12″ Lg. × 4¾″ Ht. with 11 positioning holes to fit fasteners from 4¾″ to 12¾″ dia. One head has a ½″ Dp. × ⅜″ Thick. hook for thin adjusting nuts; the other has a ½″ Dp. × ¾″ Thick. hook for heavy turret nuts. Made of forged alloy steel with a chrome finish.

5479A11 ..... **Each** $264.00

Adjustable-Arm Multi-Pin Spanner Wrench Sets

Use the wrenches in these sets for internal and external retaining rings, bushings, and collets.

Set for 1/8″ to 4 5/8″ Circle Diameters

Use for ⅛″ to 4⅝″ circle diameters. Turn the thumb screw to adjust this wrench. A spring-loaded retainer holds the tips. Made of steel with five pairs of nickel-plated tips: straight, ⅛″ offset, ¼″ offset, ⅜″ offset, and 1/32″ dia. round point.

5754A5 ..... **Per Set** $84.95

Straight *⅛″ Offset* *¼″ Offset*

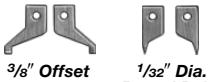

⅜″ Offset *1/32″ Dia. Round Point*

Replacement Tips		Per Pair
⅛″ Wd. × 0.025″ Thick.		
Straight	**5754A11**	$10.59
⅛″ Offset	**5754A12**	10.59
¼″ Offset	**5754A13**	10.59
⅜″ Offset	**5754A14**	10.59
1/32″ Dia. Round Pt.	**5754A15**	10.59

Set for 1/2″ to 7″ Circle Diameters

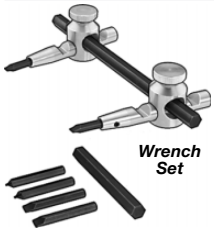

Wrench Set

Use for ½″ to 7″ circle diameters. Set includes 3½″ and 7″ hex steel bars, two 3¼″ aluminum arms, and three pairs of tips: 3/16″ Wd. × 1/32″ Thick., 3/16″ Wd. × 1/16″ Thick., and 1/16″ dia. round point. Each arm has a locking thumb screw for adjustments (arms with tips inserted adjust 2″, 2¾″, and 3½″ below the knob). All tips lock securely into arms with set screws.

Replacement tip set includes the three pairs of tips listed above.

		Per Set
Wrench Set	**5770A1**	$114.62
Replacement Tip Set	**5770A2**	33.26

Water Filter Spanner Wrenches

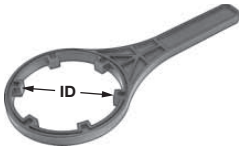

Easily loosen water filter housings when it's time to replace a cartridge. Wrenches are made of plastic and have contact points to turn the housing. Color is black. To estimate the diameter of your housing, measure its circumference with a flexible tape rule and then divide by 3.14.

Note: Wrenches are not for tightening.

ID	No. of Contact Points	O'all Lg.		Each
3¾″	6	11½″	**91824A100**	$3.00
4¼″	4	12″	**91824A200**	3.00
5¾″	6	13″	**91824A300**	3.14

Aluminum Hook Spanner Wrenches

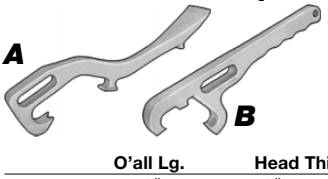

Loosen and tighten rocker-lug and pin-lug fire hose couplings and adapters from ¾″ to 6″ dia. Wrenches also have a 1 13/16″ Lg. × 7/16″ Ht. slot for gas valve shut-off.

Style A has a 1½″ wide pry tip on the end of the handle.

	O'all Lg.	Head Thick.		Each
A	10½″	¾″	**4898K21**	$26.67
B	10″	¾″	**4898K23**	34.88

Thin-Profile Adjustable Pin Spanner Wrench

You'll find this wrench slim enough to fit flanges and pad nuts on the backing pads of portable sanders and grinders. Made of ⅛″ thick steel with a black finish.

For Circle Dia.	Pin Dia.	Pin Lg.	O'all Lg.		Each
¾″ to 3⅝″	9/64″	¼″	7″	**5794A16**	$7.38

Adjustable Double-Sided Pin Spanner Wrench

One side of this wrench has ¼″ Dia. × 11/32″ Lg. pins; turn it over and it has 5/16″ Dia. × 11/32″ Lg. pins. Use to adjust collars, locknuts, and bearings on machine equipment. Made of corrosion-resistant bronze with Type 303 stainless steel pins.

For Circle Dia.	O'all Lg.		Each
½″ to 7″	7¾″	**5643A47**	$25.33

Square-Drive Adjustable Pin Spanner Wrenches

Just attach your square-drive tool—wrenches adjust to fit many sizes of collars, locknuts, rings, and packing glands. Made of alloy steel with a black finish.

	For Circle Dia.	Pin Sizes, Dia. × Lg.■		Each
½″ Sq. Drive	1″ to 3¾″	7/32″ × 3/16″, ¼″ × 3/16″	**69745A52**	$22.72
¾″ Sq. Drive	2″ to 6″	5/16″ × 3/16″, ¼″ × ¼″	**69745A51**	122.47

■ Pins are reversible to fit both diameters listed.

Adjustable Multi-Pin Spanner Wrench Sets

Each set includes a wrench and four pairs of interchangeable pins for various diameters. Wrenches are made of forged alloy steel with a chrome finish. Length is 9⅝″. All can be used for circle diameters of 25/32″ to 3 15/16″ (20 to 100 mm).

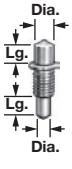

Metric Round Pin Set with Reversible Pins

Pin Dia.	Pin Lg.	Pin Dia.	Pin Lg.
2.5 mm, 4 mm	15/64″, 5/16″	6 mm, 8 mm	25/64″, 25/64″
3 mm, 5 mm	15/64″, 21/64″	7 mm, 9 mm	25/64″, 25/64″

5501A27 ..... **Per Set** $83.10

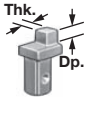

Square Pin Set—Pins are not reversible

Pin Thick.	Pin Dp.	Pin Thick.	Pin Dp.
5/32″	⅛″	¼″	13/64″
3/16″	5/32″	5/16″	15/64″

5490A31 ..... **Per Set** $117.06

Hydrant Wrenches

Single Spanner Head

Single Ratcheting Head

Put these adjustable wrenches to work on hydrants.

Spanner head wrenches fit rocker-lug and pin-lug fire hose couplings and adapters from ¾″ to 6″ dia. The head is ductile iron and the handle is steel with chrome finish and a knurled grip. *Single spanner head* wrench also fits square nuts up to 1¼″ and five-sided nuts up to 1¾″. *Double spanner head* wrench also fits square nuts up to 1½″ and five-sided nuts up to 1⅞″.

Single ratcheting head wrench fits five-sided nuts up to 1½″ dia. Head and handle are made of cast iron.

	O'all Lg.		Each
Single Spanner Head	18½″	**6537T35**	$47.66
Double Spanner Head	19½″	**6537T1**	63.59
Single Ratcheting Head	16⅛″	**6537T3**	254.31

Drum-Plug Wrenches and Square-Drive Socket

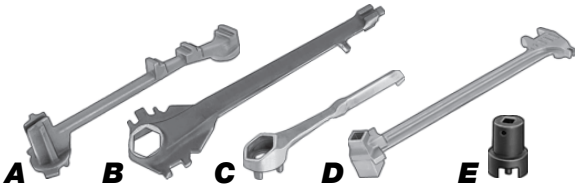

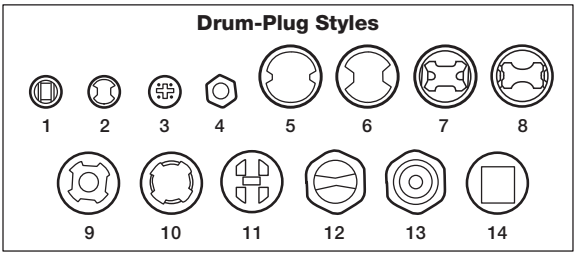

Also known as bung wrenches, these tools remove standard screw-in 3/4″ and 2″ drum plugs in the styles listed.

Wrenches are for use with steel and plastic drum plugs. *Style D* is nonmagnetic and FM approved. Meets OSHA requirements.

1/2″ square-drive socket requires a hand or impact wrench for operation. Use to remove plugs. Size is 1 15/16″ Dia. × 2 3/4″ Lg.

Fits Drum-Plug Style No.	Wrench/ Socket Material	O'all Lg.	Non-sparking		Each
Wrenches					
A.. 1-14	Ductile Iron	15 5/8″	No	**5302A1**	$33.96
A.. 1-14	Manganese Bronze	15 1/2″	Yes	**5600A31**	117.09
B.. 1-10, 12	Ductile Iron	18″	No	**5626A12**	49.74
B.. 1-10, 12	Manganese Bronze	18″	Yes	**5626A14**	98.74
C.. 1-12	Aluminum	10 1/2″	Yes	**6512A12**	32.65
D.. 1, 2, 4-9, 12, 14	Aluminum Bronze	15 3/16″	Yes	**6496A1**	73.98
1/2″ Square-Drive Socket					
E.. 2, 4-8, 12	Forged Steel	—	No	**5506A47**	173.75

Valve and Meter Nut Wrenches

For Water Assembly and Shut-off

Wrench has a V-shaped jaw that is flat on one side and serrated on the other. The head is alloy steel with a black finish; the handle is Type 304 stainless steel with a cushion grip. Head is 5/8″ thick. Overall length is 21″.

For Water Shut-Off Valve and Meter Nuts		Each
3/4″ to 2″	**5040A17**	$99.74

For Water and Gas Shut-Off

Wrench is made of high-strength, spark-resistant cast aluminum with a red powder-coated finish. Head is 1/2″ thick. Overall length is 11 3/8″.

For Water Shut-Off Valve and Meter Nuts (Open End)	For Gas Shut-Off Valve and Meter Nuts (Inside Slot)		Each
Up to 5/8″	Up to 1/2″ × 1 1/2″	**51435A21**	$12.25

Adjustable Slip-Nut Wrench

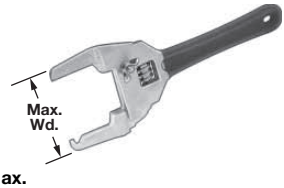

Slip this wrench into tight spaces to loosen slip nuts, jam nuts, hex nuts, and spuds. Jaws lock in place with a wing nut and have a cutout for easy locknut installation. Made of ductile iron with a rust-resistant zinc-plated finish.

O'all Lg.	Jaw Cap.	Max. Wd.		Each
10 1/4″	1″-3″	4 1/2″	**5423A12**	$14.32

Drum-Plug Torque Wrenches

When you feel the wrench "break," you'll know you've applied the correct pressure to your 3/4″ or 2″ drum plug. Wrenches have a low ft.-lbs. setting for 3/4″ plugs and a higher ft.-lbs. setting for 2″ plugs. Torque is nonadjustable within each setting.

Made of steel with a cushion grip. Overall length is 14″.

Torque, ft.-lbs. Low Setting	High Setting	For Drum Plug Material	Fits Style No.■		Each
For Drum Plugs with Rubber Gaskets					
7-15	17-26	Plastic	3, 4, 9, 10	**6102A13**	$361.16
11-15	18-22	Stainless Steel	1, 7	**6102A12**	411.33
13-21	27-36	Steel	4, 12	**6102A14**	361.16
For Drum Plugs with Plastic Gaskets					
18-26	38-46	Steel	4, 12	**6102A15**	361.16

■ See Drum-Plug Wrenches and Square-Drive Socket on this page for drum-plug style illustrations.

Valve Wheel Wrenches

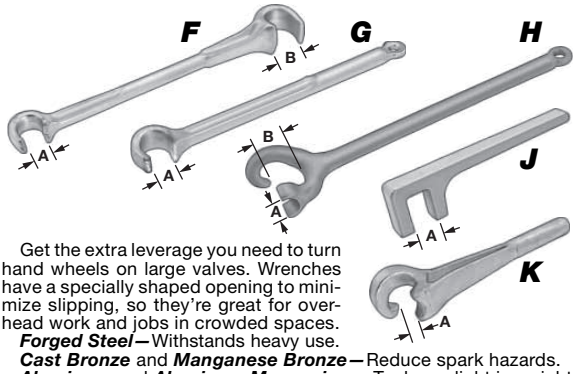

Get the extra leverage you need to turn hand wheels on large valves. Wrenches have a specially shaped opening to minimize slipping, so they're great for overhead work and jobs in crowded spaces.

Forged Steel—Withstands heavy use.

Cast Bronze and ***Manganese Bronze***—Reduce spark hazards.

Aluminum and ***Aluminum Magnesium***—Tools are light in weight and reduce spark hazards.

	Opening (A)	Opening (B)	O'all Lg.	Forged Steel	Each	Cast Bronze	Each
F	1/2″	21/32″	8″	**4862K31**	$28.09	**4862K41**	$64.42
F	11/16″	1″	10″	**4862K32**	36.94	**4862K42**	84.87
F	1″	15/16″	17 1/2″	**4862K33**	80.56	—	—
G	1″	—	15″	**4862K34**	48.32	**4862K44**	93.58
G	15/16″	—	22″	**4862K35**	81.94	**4862K45**	158.41
G	1 3/8″	—	15 1/2″	—	—	**4862K43**	105.54
G	2″	—	27″	**4862K36**	140.96	**4862K46**●	281.53
G	2 1/4″	—	48″	**4862K37**	202.02	—	—
				Manganese Bronze			
H	1 3/8″	1 1/2″	21 3/8″	**60555K71**	$171.29	—	—

● Overall length is 30″.

	Opening (A)	Opening (B)	O'all Lg.	Aluminum	Each
F	1/2″	21/32″	8″	**4862K51**	$34.07
F	11/16″	1″	10″	**4862K53**	52.56
J	1 3/8″	—	12″	**44515K81**	68.15
J	1 3/8″	—	14″	**44515K82**	68.15
J	1 3/8″	—	16″	**44515K83**	68.15
J	1 3/8″	—	17 3/8″	**44515K84**	68.15
J	1 5/8″	—	26 5/8″	**44515K85**	121.74
J	1 3/4″	—	35 1/8″	**44515K86**	147.37
				Aluminum Magnesium	
K	1 3/8″	—	13 5/8″	**49205K41**	$46.18
K	1 3/4″	—	17 5/8″	**49205K42**	70.59
K	2 1/2″	—	25 1/2″	**49205K43**	129.55

Self-Adjusting Open-End Wrenches

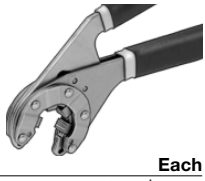

Get a grip on a variety of nut, bolt, pipe, and tube sizes. Just squeeze the handles and four serrated gripping surfaces adjust to fit your object. The gripping surfaces distribute force along the flats of fasteners, not just the pointed edges, to prevent slipping and stripping. Made of nickel-plated steel with textured, cushion-grip handles.

Size Range	O'all Lg.		Each
1/4″- 9/16″ (7 mm-14 mm)	6″	**5139A1**	$23.71
1/2″- 3/4″ (13 mm-20 mm)	8″	**5139A2**	25.43
7/8″-1 1/4″ (21 mm-30 mm)	10″	**5139A3**	31.86

Open-End Wrenches

Standard Head

Thin Head

Wrenches have an open end that is angled 15°. Made of forged steel with a black finish, unless noted.

Thin Head— A slimmer head is ideal for handling extra-thin fasteners.

Standard-Head Individual Wrenches

Size	Head Thick.	O'all Lg.		Each
Inch				
1/4"	3/16"	3 1/2"	5400A12	$12.13
5/16"	3/16"	3 1/2"	5400A13	13.92
3/8"	17/64"	4"	5400A14	15.36
7/16"	5/16"	4 5/8"	5400A16	8.22
1/2"	5/16"	4 5/8"	5400A17	8.22
9/16"	11/32"	5 1/2"	5400A18	8.99
5/8"	3/8"	6 3/8"	5400A21	11.94
11/16"	3/8"	6 3/8"	5400A22	10.90
3/4"	3/8"	7 1/4"	5400A23	12.69
13/16"	7/16"	8 1/8"	5400A25	15.33
7/8"	7/16"	8 1/8"	5400A26	15.92
15/16"	1/2"	9 1/4"	5400A27	19.10
1"	1/2"	9 1/4"	5400A28	18.05
1 1/16"	9/16"	10 1/2"	5400A29	22.30
1 1/8"	9/16"	10 1/2"	5400A31	22.91
1 1/4"	5/8"	12"	5400A32	29.67
1 5/16"	5/8"	12"	5400A55	30.17
1 3/8"	5/8"	12"	5400A34	31.32
1 7/16"	11/16"	13 1/2"	5400A35	43.52
1 1/2"	11/16"	13 1/2"	5400A36	43.52
1 5/8"	7/8"	15"	5400A37	61.20
1 11/16"	7/8"	15"	5400A38	58.94
1 13/16"	1"	16 1/2"	5400A65	77.84
1 7/8"	1"	16 1/2"	5400A41	79.41

★ Has a plain finish.

Size	Head Thick.	O'all Lg.		Each
Inch (Cont.)				
2"	1 1/32"	18 1/4"	5400A42	$112.06
2 1/16"	1 1/32"	18 1/4"	5400A43	107.96
2 3/16"	1 3/16"	20"	5400A44	150.52
2 1/4"	1 3/16"	20"	5400A45	143.38
2 3/8"	1 7/32"	22"	5400A46	180.78
2 7/16"	1 7/32"	22"	5400A47	180.78
2 9/16"	1 1/4"	24"	5400A48	227.46
2 5/8"	1 1/4"	24"	5400A49	227.46
2 3/4"	1 7/16"	27"	5400A51	233.80
2 13/16"	1 7/16"	27"	5400A52	292.09
2 15/16"	1 7/16"	27"	5400A53	212.58
3"	1 9/16"	30"	5400A61	410.50
3 1/8"	1 9/16"	30"	5400A62	410.50
3 3/8"	1 5/8"	34"	5400A63	606.86
3 1/2"	1 5/8"	34"	5400A64	606.86
3 3/4"	1 11/16"	37"	5400A66	863.57
Metric				
5.5 mm	1/8"	2 7/8"	5488A11	7.78
6 mm	1/8"	2 7/8"	5488A12	8.25
7 mm	1/8"	3"	5488A13	8.29
8 mm	9/64"	3 11/16"	5488A14	8.15
9 mm	5/32"	3 7/8"	5488A15	8.47
10 mm	11/64"	4 1/8"	5488A16	6.46
11 mm	3/16"	4 3/8"	5488A17	6.89

Size	Head Thick.	O'all Lg.		Each
Metric (Cont.)				
12 mm	3/16"	4 7/8"	5488A18	$7.66
13 mm	13/64"	4 7/8"	5488A19	7.66
14 mm	7/32"	5 1/2"	5488A21	8.11
15 mm	7/32"	5 1/2"	5488A22	8.69
17 mm	15/64"	6 1/16"	5488A23	8.11
18 mm	1/4"	6 1/16"	5488A24	9.20
19 mm	17/64"	6 11/16"	5488A25	9.66
22 mm	5/16"	7 5/8"	5488A26	11.37
24 mm	11/32"	8 7/16"	5488A27	14.89
27 mm	25/64"	9 3/8"	5488A28	17.29
30 mm	27/64"	10 1/4"	5488A29	20.14
32 mm	15/32"	10 3/4"	5488A31	22.00
36 mm	1/2"	11 13/16"	5488A32	30.86
41 mm	35/64"	13 3/16"	5488A34	36.14
46 mm	37/64"	14 1/2"	5488A35	41.25
50 mm	5/8"	15 3/4"	5488A36	53.25
55 mm	21/32"	17 1/2"	5488A37	61.25
60 mm	45/64"	18 7/8"	5488A38	77.50
65 mm	47/64"	20 3/8"	5488A39	91.00
70 mm	49/64"	21 7/8"	5488A41	111.78
75 mm	13/16"	23 3/8"	5488A42	128.60
85 mm	29/32"	27 1/8"	5488A44★	206.22
90 mm	29/32"	27 1/8"	5488A45★	217.35

Thin-Head Wrench Sets

7-Piece Inch Set— Includes the 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", and 7/8" wrenches listed below. Packed in a vinyl roll-up pouch.
5403A35 ..... **Per Set** $93.92

9-Piece Metric Set— Includes the 10, 11, 12, 13, 14, 15, 16, 17, and 19 mm wrenches listed below. Packed in a vinyl roll-up pouch.
5742A32 ..... **Per Set** $134.88

Thin-Head Individual Wrenches

Size	Head Thick.	O'all Lg.		Each
Inch				
7/16"	1/8"	4"	5403A11	$9.83
1/2"	1/8"	4"	5403A12	9.83
9/16"	5/32"	4 1/2"	5403A13	11.94
19/32"	5/32"	4 1/2"	5403A14	11.94
5/8"	3/16"	5 1/8"	5403A15	13.71
11/16"	3/16"	5 1/8"	5403A16	13.71
3/4"	7/32"	5 7/8"	5403A17	16.80
13/16"	1/4"	6 5/8"	5403A19	20.09
7/8"	1/4"	6 5/8"	5403A21	20.09
15/16"	9/32"	7 1/2"	5403A22	24.05
1"	9/32"	7 1/2"	5403A23	24.05
1 1/16"	5/16"	8 1/2"	5403A24	27.09
1 1/8"	5/16"	8 1/2"	5403A25	27.09

Size	Head Thick.	O'all Lg.		Each
Inch (Cont.)				
1 1/4"	3/8"	10"	5403A26	$34.29
1 5/16"	3/8"	10"	5403A27	34.29
1 1/2"	7/16"	11 3/8"	5403A29	43.06
1 5/8"	1/2"	13"	5403A31	65.71
1 11/16"	1/2"	13"	5403A32	65.71
Metric				
10 mm	3/16"	4"	5742A1	11.14
11 mm	3/16"	4"	5742A2	11.14
12 mm	3/16"	4"	5742A3	11.14
13 mm	3/16"	4"	5742A4	13.42
14 mm	5/32"	4 1/2"	5742A5	13.42
15 mm	5/32"	4 1/2"	5742A6	13.42
16 mm	3/16"	5 1/8"	5742A7	15.60

Size	Head Thick.	O'all Lg.		Each
Metric (Cont.)				
17 mm	3/16"	5 1/8"	5742A8	$15.60
18 mm	3/16"	5 1/8"	5742A9	19.08
19 mm	7/32"	6 1/8"	5742A11	22.79
21 mm	1/4"	6 5/8"	5742A12	22.79
22 mm	1/4"	6 5/8"	5742A13	22.79
24 mm	9/32"	7 1/2"	5742A14	27.28
27 mm	5/16"	8 1/2"	5742A15	30.66
30 mm	5/16"	8 1/2"	5742A16	38.90
32 mm	3/8"	10"	5742A17	38.90
36 mm	3/8"	10"	5742A18	48.83
37 mm	7/16"	11 3/8"	5742A19	74.52
38 mm	7/16"	11 3/8"	5742A21	74.52
41 mm	1/2"	13"	5742A22	74.52

Open-End Striking Wrenches

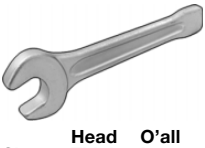

When stubborn nuts and bolts need a little "persuasion," these heavy duty brutes get the job done. Just place one of the wrenches, also known as a slugging wrench, on a fastener and strike the wrench handle with a hammer or mallet. Made of forged steel. Open end is angled 15°.

Size	Head Thick.	O'all Lg.		Each
Inch				
1"	5/8"	7 1/16"	55555A41	$44.00
1 1/16"	5/8"	7 1/16"	55555A42	44.00
1 1/4"	43/64"	7 1/16"	55555A43	60.80
1 5/16"	43/64"	7 1/16"	55555A44	62.24
1 7/16"	11/16"	8 7/16"	55555A45	69.80
1 1/2"	11/16"	8 7/16"	55555A46	73.80
1 5/8"	47/64"	9 1/4"	55555A47	94.00
1 11/16"	47/64"	9 1/4"	55555A37	88.65
1 3/4"	47/64"	9 1/4"	55555A38	115.38
1 13/16"	51/64"	10"	55555A48	115.38
1 7/8"	51/64"	10"	55555A49	115.38
2"	53/64"	10 13/16"	55555A51	132.69
2 1/8"	53/64"	10 13/16"	55555A39	135.83

Size	Head Thick.	O'all Lg.		Each
Inch (Cont.)				
2 1/4"	29/32"	11 13/16"	55555A52	$156.73
2 3/8"	31/32"	12 9/16"	55555A53	173.08
2 1/2"	31/32"	12 9/16"	55555A54	211.54
2 5/8"	1 1/16"	13 7/16"	55555A55	212.12
2 3/4"	1 3/16"	14 3/4"	55555A56	276.63
3"	1 3/16"	14 3/4"	55555A57	298.15
3 3/4"	1 1/2"	17 1/2"	55555A58	514.90
Metric				
27 mm	5/8"	7 1/16"	6973A13	41.40
30 mm	43/64"	7 1/2"	6973A14	45.34
32 mm	43/64"	7 1/2"	6973A16	48.54
36 mm	11/16"	8 7/16"	6973A18	65.30

Size	Head Thick.	O'all Lg.		Each
Metric (Cont.)				
41 mm	47/64"	9 1/4"	6973A21	$77.15
46 mm	25/32"	10 1/16"	6973A23	104.87
50 mm	53/64"	10 13/16"	6973A25	117.76
55 mm	29/32"	11 13/16"	6973A27	140.01
60 mm	31/32"	12 5/8"	6973A29	150.99
65 mm	1 1/16"	13 7/16"	6973A32	201.78
70 mm	1 3/16"	14 3/4"	6973A34	250.87
75 mm	1 3/16"	14 3/4"	6973A36	273.14
80 mm	1 11/32"	16 1/16"	6973A37	345.90
85 mm	1 11/32"	16 1/16"	6973A41	369.81
90 mm	1 1/2"	17 1/2"	6973A42	453.01
95 mm	1 1/2"	17 1/2"	6973A45	485.90

Tight-Access Open-End Wrenches

A thin head angled 30° and a short handle allow wrenches to fit into areas with limited clearance. Also known as pump wrenches and service wrenches, all are made of forged steel. Choose a satin (dull) chrome finish with polished (mirror-like) heads or a black finish.

11-Piece Wrench Sets—Packed in a vinyl roll-up pouch.

Sizes in Set	Finish		Per Set
Inch Sets			
3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 3/16″, 1 1/4″, 1 3/8″, and 1 1/2″	Chrome	5450A11	$217.71
3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 3/16″, 1 1/4″, 1 3/8″, and 1 1/2″	Black	5551A61	215.73
Metric Set			
19, 21, 22, 24, 27, 30, 32, 36, 37, 38, and 40 mm	Chrome	5746A21	272.51

Individual Wrenches

Size	Head Thick.	O'all Lg.	*Chrome Finish*	Each	*Black Finish*	Each
Inch						
3/4″	1/4″	6 5/16″	5414A11	$20.45	5551A31	$18.59
13/16″	1/4″	6 5/16″	5414A13	21.14	5551A32	19.22
7/8″	1/4″	6 5/16″	5414A14	21.14	5551A33	19.22
15/16″	1/4″	6 7/8″	5414A15	21.14	5551A34	19.22
1″	1/4″	6 7/8″	5414A16	21.14	5551A35	19.22
1 1/16″	1/4″	6 7/8″	5414A18	21.59	5551A36	19.63
1 1/8″	1/4″	7 3/16″	5414A19	22.43	5551A37	20.39
1 3/16″	1/4″	7 3/16″	5414A23	22.55	5551A38	20.51
1 1/4″	1/4″	7 3/16″	5414A24	22.55	5551A39	20.51
1 5/16″	1/4″	7 3/16″	5414A25	22.55	5551A41	20.51
1 5/16″	9/32″	7 11/16″	5414A26	23.09	5551A42	20.99
1 3/8″	9/32″	7 11/16″	5414A27	24.23	5551A43	22.03
1 7/16″	9/32″	7 11/16″	5414A28	24.77	5551A44	22.52
1 1/2″	9/32″	7 11/16″	5414A29	24.77	5551A45	22.52
1 9/16″	9/32″	7 15/16″	5414A31	27.58	5551A46	25.08
1 5/8″	9/32″	7 15/16″	5414A32	27.58	5551A47	25.07
1 11/16″	9/32″	7 15/16″	5414A51	29.42	5551A48	26.74
1 3/4″	5/16″	8 9/16″	5414A33	29.42	5551A49	26.74
1 13/16″	5/16″	8 9/16″	5414A52	31.29	5551A51	28.44
1 7/8″	5/16″	8 9/16″	5414A35	31.29	5551A52	28.44
1 15/16″	5/16″	8 9/16″	5414A53	31.29	5551A53	28.44
2″	5/16″	9 1/2″	5414A37	31.29	5551A54	28.44

Size	Head Thick.	O'all Lg.	*Chrome Finish*	Each	*Black Finish*	Each
Inch (Cont.)						
2 1/8″	5/16″	9 1/2″	5414A41	$31.57	5551A55	$28.70
2 1/4″	5/16″	9 1/2″	5414A42	31.95	5551A56	29.05
2 3/8″	5/16″	9 1/2″	5414A43	34.89	5551A57	31.72
2 1/2″	5/16″	9 1/2″	5414A44	34.89	5551A58	31.72
2 9/16″	5/16″	9 1/2″	5414A45	34.89	5551A59	31.72
Metric						
19 mm	1/4″	6 5/16″	5746A1	23.25	____	____
21 mm	1/4″	6 5/16″	5746A2	23.92	____	____
22 mm	1/4″	6 5/16″	5746A3	23.92	____	____
24 mm	1/4″	6 7/8″	5746A4	24.61	____	____
27 mm	1/4″	6 7/8″	5746A5	25.09	____	____
30 mm	1/4″	7 3/16″	5746A6	25.09	____	____
32 mm	1/4″	7 3/16″	5746A7	25.09	____	____
36 mm	9/32″	7 11/16″	5746A8	26.10	____	____
37 mm	9/32″	7 11/16″	5746A9	27.07	____	____
38 mm	9/32″	7 11/16″	5746A11	27.96	____	____
40 mm	9/32″	7 15/16″	5746A18	29.50	____	____
41 mm	9/32″	7 15/16″	5746A12	31.18	____	____
46 mm	5/16″	8 9/16″	5746A13	33.41	____	____
50 mm	5/16″	8 9/16″	5746A14	35.46	____	____
55 mm	5/16″	9 1/2″	5746A15	36.32	____	____
60 mm	5/16″	9 1/2″	5746A16	39.71	____	____
65 mm	5/16″	9 1/2″	5746A17	39.71	____	____

Miniature Open-End Wrenches

Just the right size for assembling and repairing precision equipment such as electronic devices. Each wrench has a hardened, tempered tool-steel blade with a black finish and a knurled steel handle with a chrome finish. Head is angled 30°. Head thickness is 1/16″. Overall length is 4 1/16″.

8-Piece Wrench Sets

Inch—Includes one of each inch size listed. Packed in a vinyl pouch.

8041A19 ..... **Per Set** $36.61

Metric—Includes one of each metric size listed. Packed in a vinyl pouch.

7793A41 ..... **Per Set** $49.25

Individual Wrenches

Size		Each	Size		Each
Inch			***Metric***		
5/64″	8041A11	$5.25	2.5 mm	7793A31	$7.22
3/32″	8041A12	5.25	3 mm	7793A32	7.22
7/64″	8041A13	5.25	3.2 mm	7793A33	7.22
1/8″	8041A14	5.25	4 mm	7793A34	7.22
5/32″	8041A15	5.25	5 mm	7793A35	7.22
3/16″	8041A16	5.25	5.5 mm	7793A36	7.22
1/4″	8041A17	5.25	6 mm	7793A37	7.22
5/16″	8041A21	5.25	7 mm	7793A38	7.22

Tapered-Handle Wrenches

Handles are tapered with a pointed end for aligning bolt holes during assembly. Also called spud, structural, and construction wrenches, all are forged steel with a black finish.

(A) Open End—Wrenches are flat with a head that's angled 15° from the handle.

(B) Offset Open End—Head is offset 45°.

(C) Offset Box End—Box end is 12 point and offset 60°.

(D) Adjustable—Wrenches adjust to fit a range of sizes.

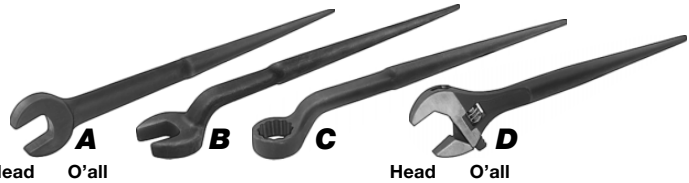

Size	Head Thick.	O'all Lg.		Each
(A) Open End				
5/8″	7/16″	12″	5405A15	$17.31
11/16″	7/16″	12″	5405A16	18.18
3/4″	7/16″	12″	5405A17	19.90
7/8″	17/32″	14 1/2″	5405A21	22.90
15/16″	17/32″	14 1/2″	5405A22	23.97
1″	17/32″	14 1/2″	5405A23	24.71
1 1/16″	5/8″	17″	5405A24	29.58
1 1/8″	5/8″	17″	5405A25	30.91
1 1/4″	11/16″	19″	5405A26	38.85
1 5/16″	11/16″	19″	5405A27	39.50
1 7/16″	3/4″	21″	5405A28	51.19
1 1/2″	3/4″	21″	5405A29	54.08
1 5/8″	27/32″	23″	5405A31	68.46
1 13/16″	15/16″	25″	5405A47	99.74
1 7/8″	15/16″	25″	5405A34	104.81
2″	15/16″	25″	5405A35	108.29

Size	Head Thick.	O'all Lg.		Each
(B) Offset Open End				
5/8″	7/16″	12 1/8″	5406A15	$18.75
11/16″	7/16″	12″	5406A16	23.75
3/4″	7/16″	12 1/8″	5406A17	19.80
13/16″	17/32″	14 1/2″	5406A19	29.77
7/8″	17/32″	14 1/2″	5406A21	26.67
15/16″	17/32″	14 1/2″	5406A22	27.91
1″	17/32″	14 1/2″	5406A23	28.99
1 1/16″	5/8″	17″	5406A24	32.79
1 1/8″	5/8″	17″	5406A25	34.67
1 1/4″	11/16″	19″	5406A26	41.51
1 5/16″	11/16″	19″	5406A27	44.18
1 7/16″	3/4″	21″	5406A28	52.94
1 1/2″	3/4″	21″	5406A29	55.58
1 5/8″	7/8″	23″	5406A31	72.29
1 13/16″	1″	25″	5406A33	104.67
1 7/8″	1″	25″	5406A34	108.17
2″	1″	25″	5406A35	115.31

Size	Head Thick.	O'all Lg.		Each
(C) Offset Box End				
7/8″	11/16″	12″	5457A12	$48.29
15/16″	25/32″	13″	5457A13	49.61
1″	25/32″	13″	5457A14	49.61
1 1/16″	7/8″	15″	5457A15	53.82
1 1/8″	7/8″	15″	5457A16	54.25
1 1/4″	15/16″	17″	5457A17	59.71
1 5/16″	15/16″	17″	5457A21	60.10
1 7/16″	1 1/16″	19″	5457A22	79.10
1 1/2″	1 1/16″	19″	5457A23	79.54
1 5/8″	1 1/8″	21″	5457A24	93.55
1 13/16″	1 3/16″	23″	5457A26	99.30
1 7/8″	1 3/16″	23″	5457A27	99.30
2″	1 5/16″	24 1/2″	5457A31	103.67
(D) Adjustable				
1 1/8″★	1/2″	10″	7237A12	31.52
1 1/2″★	23/32″	16″	7237A11	48.38

★ Jaw capacity.

Double Open-End Wrenches

Each end has a different size opening, but both heads are angled 15°. Wrenches are made of forged steel.

***Inch*—**Wrenches have either a satin (dull) chrome finish with polished (mirror-like) heads or a black finish, unless noted.

***Metric*—**Have a satin (dull) chrome finish, unless noted.

Wrench Sets—Packed in a roll-up pouch.

No. of Pcs.	Sizes in Set	Finish	Per Set
Inch, Short Length			
5	3/16″×7/32″, 1/4″×9/32″, 5/16″×11/32″, 3/8″×7/16″, 1/2″×9/16″	Satin	55065A71 $47.87
Inch, Standard Length			
6	1/4″×5/16″, 3/8″×7/16″, 1/2″×9/16″, 5/8″×11/16″, 3/4″×13/16″, 7/8″×15/16″	Polished	5428A18▲ $90.82
10	1/4″×5/16″, 3/8″×7/16″, 1/2″×9/16″, 5/8″×11/16″, 3/4″×13/16″, 7/8″×15/16″, 1″×1 1/8″, 1 1/16″×1 1/4″, 1 5/16″×1 1/2″, 1 3/8″×1 7/16″	Polished	5428A19▲ $121.13
10	1/4″×5/16″, 5/16″×3/8″, 7/16″×1/2″, 1/2″×9/16″, 9/16″×5/8″, 5/8″×3/4″, 11/16″×3/4″, 13/16″×7/8″, 15/16″×1″, 1 1/16″×1 1/8″	Satin	5436A8 $143.89
12	1/4″×5/16″, 3/8″×7/16″, 1/2″×9/16″, 5/8″×11/16″, 3/4″×13/16″, 7/8″×15/16″, 15/16″×1″, 1 1/16″×1 1/4″, 1 1/8″×1 3/16″, 1 1/4″×1 5/16″, 1 3/8″×1 7/16″, 1 1/2″×1 5/8″	Satin	5430A4 $296.05
Metric, Short Length			
6	3.2×5.5, 4×5, 6×7, 8×9, 10×11, 12×13 mm	Satin	5739A11 $70.95
Metric, Standard Length			
8	4×5, 6×7, 8×9, 10×11, 12×13, 14×15, 16×17, 18×19 mm	Satin	5437A1■ $82.41
12	6×7, 8×9, 10×11, 12×13, 14×15, 16×17, 18×19, 20×22, 21×23, 24×26, 25×28, 27×30 mm	Satin	5420A51 $251.29

▲ Polished (mirror-like) chrome finish. ■ Heads are polished (mirror-like).

Individual Wrenches—Inch

Size	Chrome Finish Head Thick.	Chrome Finish O'all Lg.	Chrome Finish Each	Black Finish Head Thick.	Black Finish O'all Lg.	Black Finish Each
Short Length						
3/16″ × 7/32″	1/8″	2 13/16″	55065A61 $9.30	—	—	—
1/4″ × 9/32″	1/8″	3 1/8″	55065A62 9.78	—	—	—
5/16″ × 11/32″	5/32″	3 7/16″	55065A63 10.00	—	—	—
3/8″ × 7/16″	5/32″	3 3/4″	55065A64 10.19	—	—	—
1/2″ × 9/16″	3/16″	4 3/8″	55065A65 10.49	—	—	—
Standard Length						
3/16″ × 1/4″	5/32″	3 7/8″	5408A19 8.44	—	—	—
1/4″ × 5/16″	5/32″	4 1/2″	5408A11 8.72	3/16″	4″	5401A17 $7.37
5/16″ × 11/32″	3/16″	4″	5408A12 8.94	3/16″	4″	5401A18 7.45
5/16″ × 3/8″	13/64″	5 1/8″	5408A13 8.54	3/16″	5 1/4″	5401A11 7.71
5/16″ × 13/32″	3/16″	4″	5408A61 8.94	3/16″	4″	5401A19 7.45
3/8″ × 7/16″	7/32″	5 3/4″	5408A14 8.54	7/32″	5 7/8″	5401A12 7.71
3/8″ × 1/2″	13/64″	4 7/8″	5408A15 9.95	13/64″	4 7/8″	5401A13 8.29
7/16″ × 1/2″	1/4″	6 3/8″	5408A16 8.43	1/4″	6 7/16″	5401A14 7.81
7/16″ × 9/16″	1/4″	5 3/4″	5408A17 9.24	1/4″	5 3/4″	5401A15 7.70
1/2″ × 9/16″	17/64″	7″	5408A18 8.95	1/4″	7 1/8″	5401A16 8.29
1/2″ × 5/8″	1/4″	6 1/8″	5408A33 13.98	1/4″	6 1/8″	5401A68 11.65
9/16″ × 5/8″	9/32″	7 5/8″	5408A21 12.00	17/64″	7 3/4″	5401A21 10.40
9/16″ × 11/16″	19/64″	7 1/2″	5408A22 14.54	19/64″	7 1/2″	5401A24 12.12
9/16″ × 3/4″	19/64″	7 1/2″	5408A38 15.01	19/64″	7 1/2″	5401A27 12.51
5/8″ × 11/16″	5/16″	8 3/16″	5408A24 12.49	9/32″	7 1/4″	5401A23 10.06
5/8″ × 3/4″	5/16″	8 9/16″	5408A25 14.31	19/64″	8 11/16″	5401A25 12.03
11/16″ × 3/4″	21/64″	8 7/8″	5408A26 12.65	5/16″	9″	5401A26 12.36
11/16″ × 25/32″	21/64″	8 7/8″	5408A27 15.67	5/16″	8 1/2″	5401A28 13.25
3/4″ × 13/16″	11/32″	9 5/8″	5408A29 20.53	11/32″	9 5/8″	5401A34 17.11
3/4″ × 7/8″	11/32″	9 1/2″	5408A31 17.44	21/64″	9 5/8″	5401A35 16.01
13/16″ × 7/8″	23/64″	10 1/8″	5408A34 20.51	23/64″	10 1/4″	5401A36 17.74
7/8″ × 15/16″	3/8″	10 5/8″	5408A35 27.74	3/8″	10 5/8″	5401A43 23.12
7/8″ × 1″	3/8″	10 5/8″	5408A36 28.36	3/8″	10 5/8″	5401A37 23.63
15/16″ × 1″	13/32″	11 3/8″	5408A37 27.73	31/64″	11 1/2″	5401A45 25.60
15/16″ × 1 1/16″	7/16″	11 1/2″	5408A39 31.60	7/16″	11 1/2″	5401A47 26.33
1″ × 1 1/8″	7/16″	12 1/2″	5408A41 33.03	7/16″	12 1/2″	5401A51 27.53
1 1/16″ × 1 1/8″	29/64″	12 5/8″	5408A68 29.68	7/16″	12 3/8″	5401A76 26.24
1 1/16″ × 1 1/4″	15/32″	13 9/16″	5408A42 41.37	29/64″	13 11/16″	5401A52 36.64
1 1/8″ × 1 1/4″	1/2″	13 3/4″	5408A43 40.05	1/2″	13 3/4″	5401A53 33.37
1 1/4″ × 1 7/16″	9/16″	15″	5408A46 59.11	9/16″	15″	5401A56 49.25
1 5/16″ × 1 1/2″	9/16″	15 1/2″	5408A47 59.10	9/16″	15 1/2″	5401A57 49.25
1 3/8″ × 1 7/16″	39/64″	15 3/4″	5408A48 54.63	17/32″	15 7/8″	5401A58 48.38
1 1/2″ × 1 5/8″	39/64″	17″	5408A52 74.13	39/64″	17 1/16″	5401A64 63.01
1 11/16″ × 1 13/16″	45/64″	18 1/2″	5408A53 82.38	—	—	—
1 7/8″ × 2″	45/64″	20″	5408A54 106.84	—	—	—

Individual Wrenches—Metric

Size	Head Thick.	O'all Lg.	Chrome Finish Each
Short Length			
3.2 × 5.5 mm	3/32″	2 3/4″	5739A1■ $11.23
4 × 5 mm	3/32″	2 3/4″	5739A2■ 11.29
6 × 7 mm	7/64″	3 1/8″	5739A3■ 11.62
8 × 9 mm	1/8″	3 9/16″	5739A4■ 14.77
10 × 11 mm	1/8″	3 15/16″	5739A5■ 16.37
12 × 13 mm	9/64″	4 5/16″	5739A6■ 16.63
Standard Length			
4 × 5 mm	9/64″	3 15/16″	5420A32 11.19
5.5 × 7 mm	9/64″	4 3/4″	5420A13 11.27
6 × 7 mm	5/32″	4 1/2″	5420A25▲ 7.42
7 × 8 mm	5/32″	4 1/2″	5420A24▲ 7.84
8 × 9 mm	13/64″	4 7/8″	5420A31▲ 7.63
8 × 10 mm	13/64″	4 7/8″	5420A12▲ 8.24
10 × 11 mm	13/64″	5 3/16″	5420A33▲ 8.07
10 × 13 mm	13/64″	6 11/16″	5420A34 13.67
12 × 13 mm	1/4″	6 1/8″	5420A15▲ 8.54
12 × 14 mm	1/4″	6 1/8″	5420A14▲ 8.94
13 × 15 mm	1/4″	7″	5420A26▲ 11.12
13 × 17 mm	17/64″	7″	5420A35▲ 12.12
14 × 15 mm	17/64″	7″	5420A18▲ 8.63
16 × 17 mm	9/32″	7 11/16″	5420A22▲ 12.12
17 × 19 mm	19/64″	8 11/16″	5420A17▲ 13.99
18 × 19 mm	5/16″	8 11/16″	5420A27▲ 15.02
19 × 24 mm	19/64″	9 13/16″	5420A36■ 26.14
20 × 22 mm	5/16″	9 1/2″	5420A19▲ 17.42
21 × 23 mm	23/64″	10 1/8″	5420A21■ 23.16
22 × 24 mm	5/16″	9 13/16″	5420A37 22.08
24 × 26 mm	13/32″	11 3/8″	5420A23■ 26.30
24 × 27 mm	21/64″	11″	5420A38 37.87
25 × 28 mm	21/64″	11 1/4″	5420A28 37.94
27 × 30 mm	3/8″	11 13/16″	5420A29 46.56
30 × 32 mm	3/8″	11 13/16″	5420A41 48.13
32 × 36 mm	25/64″	12 13/16″	5420A54 71.73
34 × 36 mm	25/64″	12 13/16″	5420A53 72.68
41 × 46 mm	15/32″	16 3/4″	5420A43 113.30
46 × 50 mm	27/64″	17 11/16″	5420A44■ 130.99

■ Heads are polished (mirror-like).
▲ Polished (mirror-like) chrome finish.

Extra-Long Thin-Head Double Open-End Wrenches

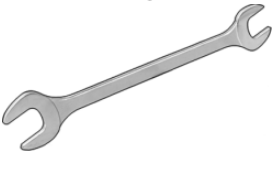

Also known as tappet wrenches, these tools make it easy to turn low-height nuts in confined areas. Made of forged steel. Wrenches have a satin (dull) chrome finish, unless noted. Heads are angled 15°.

Wrench Sets—Packed in a roll-up pouch.

No. of Pieces	Sizes in Set	Per Set
Inch Sets		
4	7/16″×1/2″, 9/16″×5/8″, 1/2″×9/16″ (2)	5411A31 $40.95
8	3/8″×7/16″ (2), 1/2″×9/16″ (2), 5/8″×11/16″ (2), 3/4″×7/8″ (2)	5411A32 98.74
Metric Set		
6	8×9, 10×11, 12×13, 14×15, 16×17, 18×19 mm	54755A61 130.33

(Continued on following page)

Extra-Long Thin-Head Double Open-End Wrenches *(Continued from previous page)*

Individual Wrenches

Size	Head Thick.	O'all Lg.		Each
Inch				
3/8″ × 7/16″	13/64″	10″	5411A11■	$12.03
7/16″ × 1/2″	13/64″	10″	5411A12■	10.76
1/2″ × 9/16″	13/64″	10″	5411A14■	11.28
9/16″ × 5/8″	13/64″	10″	5411A15■	11.58
5/8″ × 11/16″	7/32″	10″	5411A16■	14.46
11/16″ × 3/4″	13/64″	10″	5411A23■	14.19
3/4″ × 7/8″	7/32″	10″	5411A18■	15.53
13/16″ × 7/8″	13/64″	10″	5411A22■	16.61
15/16″ × 1″	7/32″	9″	5411A19■	15.53
Inch (Cont.)				
1 1/16″ × 1 1/8″	1/4″	12 1/4″	5411A34▲	$64.95
1 1/4″ × 1 5/16″	1/4″	12 1/4″	5411A35▲	71.45
1 3/8″ × 1 7/16″	1/4″	12 1/4″	5411A36▲	103.73
1 1/2″ × 1 5/8″	9/32″	14 1/4″	5411A37▲	111.58
1 11/16″ × 1 7/8″	9/32″	14 1/4″	5411A38▲	124.58
Metric				
6× 7 mm	3/32″	5 7/8″	54755A51	18.11
8× 9 mm	3/32″	6 7/8″	54755A52	18.48
10×11 mm	3/32″	6 7/8″	54755A53	18.73
Metric (Cont.)				
12×13 mm	9/64″	8 1/4″	54755A54	$19.73
14×15 mm	9/64″	8 1/4″	54755A55	20.56
16×17 mm	11/64″	9 7/8″	54755A56	24.86
18×19 mm	11/64″	9 7/8″	54755A57	25.90
19×22 mm	5/32″	9 1/2″	54755A78▲	43.04
21×24 mm	5/32″	9 1/2″	54755A63▲	47.62
27×30 mm	15/64″	12 1/4″	54755A64▲	60.62
32×36 mm	15/64″	12 1/4″	54755A65▲	66.03

■ Heads are polished (mirror-like). ▲ Polished (mirror-like) chrome finish.

Angled Double Open-End Wrenches

Get a better angle on hard-to-reach fasteners—one head is angled 15° and the other is angled either 60° or 75°. Made of forged steel.

15° and 60° Angle Wrenches— The open ends are hex shaped to grip four sides of the fastener (unless noted). Wrenches have a satin (dull) chrome finish with polished (mirror-like) heads or a black finish.

15° and 75° Angle Wrenches— The open ends are rounded. Openings are the same size on both ends. Inch sizes have a polished (mirror-like) chrome finish; metric sizes have a satin (dull) chrome finish.

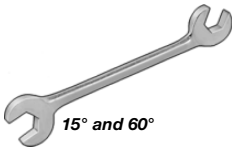
15° and 60°

15° and 75°

15° and 60° Angle Wrench Sets— Packed in a roll-up pouch.

9-Piece Inch Set— Includes sizes 13/64″ × 15/64″, 15/64″ × 13/64″, 7/32″ × 1/4″, 1/4″ × 7/32″, 9/32″ × 5/16″, 5/16″ × 9/32″, 11/32″ × 3/8″, and 3/8″ × 11/32″. First opening listed for each size is the 15° angle end. Also includes one 4 1/16″ bent-nose pliers.

5434A2♦ ..... **Per Set** $69.56

18-Piece Inch Sets— Include sizes 11/32″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″, 1 3/8″, 1 7/16″, and 1 1/2″. Openings are the same size on both ends.

Finish		Per Set
Chrome	5433A14	$463.42
Black	54895A86	437.12

15-Piece Metric Set— Includes chrome-finish wrenches in sizes 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 24, 27, and 30 mm. Openings are the same size on both ends.

6032A34 ..... **Per Set** $379.00

15° and 60° Angle Individual Wrenches

Size, 15°×60°	Head Thick.	O'all Lg.	Chrome Finish	Each	Black Finish	Each
Inch						
13/64″ × 15/64″	7/64″	3″	5413A41♦	$6.88	—	—
7/32″ × 1/4″	7/64″	3″	5413A43♦	7.00	—	—
15/64″ × 13/64″	7/64″	3″	5413A42♦	7.00	—	—
1/4″ × 7/32″	7/64″	3″	5413A44♦	7.00	—	—
9/32″ × 5/16″	5/32″	3 1/2″	5413A45♦	7.48	—	—
5/16″ × 9/32″	5/32″	3 1/2″	5413A46♦	7.82	—	—
11/32″ × 11/32″	7/32″	4 3/4″	5413A11	14.09	54895A62	$12.26
3/8″ × 3/8″	7/32″	4 3/4″	5413A12	14.52	54895A63	12.63
7/16″ × 7/16″	7/32″	5″	5413A13	15.84	54895A64	13.78
1/2″ × 1/2″	7/32″	5 1/2″	5413A14	17.59	54895A65	15.29
9/16″ × 9/16″	1/4″	6″	5413A15	18.13	54895A66	15.76
5/8″ × 5/8″	9/32″	6 1/4″	5413A16	19.82	54895A67	17.23
11/16″ × 11/16″	9/32″	7″	5413A17	21.68	54895A68	18.85
3/4″ × 3/4″	9/32″	7 1/4″	5413A18	23.75	54895A69	20.65
13/16″ × 13/16″	9/32″	7 1/2″	5413A19	24.54	54895A71	21.34
7/8″ × 7/8″	9/32″	8 1/4″	5413A21	27.07	54895A72	23.54
15/16″ × 15/16″	1/4″	9″	5413A22	28.29	54895A73	24.60
1″ × 1″	5/16″	9 3/4″	5413A23	29.80	54895A74	25.91
1 1/16″ × 1 1/16″	5/16″	10″	5413A31	33.37	54895A75	29.01
1 1/8″ × 1 1/8″	5/16″	11″	5413A32	38.31	54895A76	33.31
1 3/16″ × 1 3/16″	5/16″	11″	5413A48	39.82	54895A77	34.62
1 1/4″ × 1 1/4″	11/32″	11 1/2″	5413A33	41.62	54895A78	36.19
1 3/8″ × 1 3/8″	13/32″	12 1/2″	5413A34	45.20	54895A79	39.30
1 7/16″ × 1 7/16″	13/32″	12 1/2″	5413A35	50.80	54895A81	44.17
1 1/2″ × 1 1/2″	13/32″	12 1/2″	5413A36	55.38	54895A82	48.16
1 5/8″ × 1 5/8″	15/32″	15 3/4″	5413A51	87.82	54895A91	76.37
Inch (Cont.)						
1 1 1/16″ × 1 1 1/16″	1/2″	16 1/2″	5413A52	$96.00	54895A92	$83.47
1 3/4″ × 1 3/4″	17/32″	17″	5413A53	104.07	54895A93	90.50
1 13/16″ × 1 13/16″	17/32″	17 3/4″	5413A54	110.18	54895A94	95.81
1 7/8″ × 1 7/8″	9/16″	18 1/2″	5413A55	120.56	54895A95	104.83
2″ × 2″	19/32″	19 1/4″	5413A56	124.54	54895A96	108.30
Metric						
9× 9 mm	7/32″	4 3/4″	6032A11	14.96	—	—
10×10 mm	7/32″	4 3/4″	6032A12	14.96	—	—
11×11 mm	7/32″	4 3/4″	6032A13	16.25	—	—
12×12 mm	7/32″	4 3/4″	6032A14	17.04	—	—
13×13 mm	7/32″	5 1/2″	6032A15	17.96	—	—
14×14 mm	1/4″	6″	6032A16	18.47	—	—
15×15 mm	1/4″	6″	6032A17	20.22	—	—
16×16 mm	9/32″	6 1/4″	6032A18	20.22	—	—
17×17 mm	9/32″	6 1/4″	6032A19	22.30	—	—
18×18 mm	9/32″	7″	6032A21	24.44	—	—
19×19 mm	9/32″	7 1/4″	6032A22	24.44	—	—
20×20 mm	9/32″	7 1/4″	6032A23	25.23	—	—
21×21 mm	9/32″	7 1/2″	6032A24	25.23	—	—
22×22 mm	9/32″	7 1/2″	6032A25	27.88	—	—
23×23 mm	9/32″	8 1/4″	6032A26	27.88	—	—
24×24 mm	9/32″	9″	6032A27	29.12	—	—
27×27 mm	5/16″	10″	6032A28	34.32	—	—
30×30 mm	5/16″	11″	6032A29	40.95	—	—
32×32 mm	11/32″	11 1/2″	6032A31	42.91	—	—
34×34 mm	13/32″	12 1/2″	6032A32	46.51	—	—
36×36 mm	13/32″	12 1/2″	6032A33	52.28	—	—

♦ The open ends are rounded to grip two sides of the fastener.

15° and 75° Angle Wrench Sets— Packed in a canvas roll-up pouch.

14-Piece Inch Set— Includes one of each inch size listed below plus 5″ tongue-and-groove pliers.

5431A11 ..... **Per Set** $106.82

16-Piece Metric Set— Includes one of each metric size listed below.

8393A72 ..... **Per Set** $196.63

15° and 75° Angle Individual Wrenches

Size	Head Thick.	O'all Lg.		Each
Inch				
3/16″	1/8″	3 1/8″	5412A11	$6.63
13/64″	1/8″	3 1/8″	5412A12	6.79
7/32″	1/8″	3 1/8″	5412A13	6.87
15/64″	1/8″	3 1/8″	5412A14	6.91
1/4″	1/8″	3 1/8″	5412A15	7.01
9/32″	1/8″	3 5/8″	5412A16	7.16
5/16″	1/8″	3 5/8″	5412A17	7.33
11/32″	5/32″	4 1/8″	5412A18	7.50
3/8″	5/32″	4 1/8″	5412A19	7.53
7/16″	3/16″	4 5/8″	5412A21	7.96
Inch (Cont.)				
1/2″	3/16″	4 9/16″	5412A22	$8.13
9/16″	3/16″	5 3/32″	5412A23	8.43
5/8″	3/16″	5 1/16″	5412A24	8.53
Metric				
3.2 mm	3/32″	2 3/4″	8393A41	9.05
4 mm	3/32″	2 3/4″	8393A42	9.05
5 mm	3/32″	2 15/16″	8393A43	9.22
5.5 mm	3/32″	2 15/16″	8393A44	9.22
6 mm	7/64″	3 1/8″	8393A45	12.07
7 mm	7/64″	3 1/8″	8393A46	12.57
Metric (Cont.)				
8 mm	1/8″	3 9/16″	8393A47	$13.89
9 mm	1/8″	3 9/16″	8393A48	14.47
10 mm	1/8″	3 15/16″	8393A49	14.88
11 mm	1/8″	3 15/16″	8393A51	15.07
12 mm	9/64″	4 3/4″	8393A52	16.92
13 mm	9/64″	4 3/4″	8393A53	16.80
14 mm	9/64″	4 3/4″	8393A54	16.92
15 mm	11/64″	5 1/2″	8393A55	22.20
16 mm	11/64″	5 1/2″	8393A56	22.20
17 mm	11/64″	5 1/2″	8393A57	24.22

Flare-Nut Wrenches

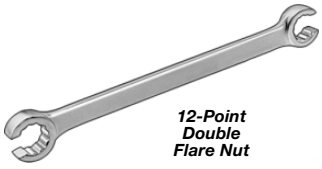

12-Point Double Flare Nut

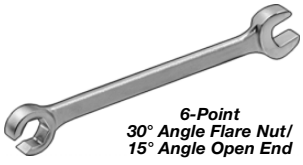

6-Point 30° Angle Flare Nut/ 15° Angle Open End

Compared to the rounded openings found on most open-end wrenches, flare-nut ends provide more surface contact to securely grip pipe and tube fittings without marring. Also known as line wrenches, these tools are often used in hydraulic line applications. Flare-nut ends are offset 15° and straight (not angled), except where noted. Made of forged steel in a satin (dull) chrome finish with polished (mirror-like) heads, unless noted. Use ***6-point*** wrenches for maximum surface contact on hex fasteners. The ***12-point*** wrenches provide less surface contact than 6-point wrenches, but are easier to position.

Wrench Sets—Packed in a roll-up pouch.

No. of Pieces	Sizes in Set	Finish		Per Set
6-Point Double Flare Nut				
5	7×8, 9×11, 10×12, 13×14, and 15×17 mm	Satin	7192A44	$88.73
6- and 12-Point 15° Angle Double Flare Nut				
5	6-Point: 3/8″×7/16″, 1/2″×9/16″, and 5/8″×11/16″; 12-Point: 3/4″×1″ and 7/8″×1 1/8″	Polished	8537A11	$102.81
12-Point Double Flare Nut				
3	3/8″×7/16″, 1/2″×9/16″, and 5/8″×11/16″	Satin	54745A69	$52.14
5	7×8, 9×11, 10×12, 13×14, and 15×17 mm	Satin	54855A41	$93.92
6-Point 30° Angle Flare Nut/15° Angle Open End				
7	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, and 3/4″	Satin	5442A24	$126.91
12-Point 30° Angle Flare Nut/15° Angle Open End				
7	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, and 3/4″	Satin	55185A51	$130.52

Individual Double Flare-Nut Wrenches

Size	6 Point O'all Lg.	6 Point Each	12 Point O'all Lg.	12 Point Each
Inch				
1/4″× 5/16″	4 13/16″	8537A49★ $15.18	—	—
3/8″× 7/16″	6 1/8″	8537A41★ 13.30	6 1/4″	54745A63 $14.74
1/2″× 9/16″	7 1/2″	8537A42★ 16.13	7 1/2″	54745A64 17.94
5/8″× 11/16″	8 7/16″	8537A43★ 19.21	8 3/4″	54745A65 21.33
3/4″× 13/16″	8 13/16″	8537A46★ 52.82	—	—
3/4″×1″	9 1/2″	8537A47★■ 52.95	9 1/8″	54745A66★ 25.60
7/8″×1 1/8″	10 1/2″	8537A48★■ 63.50	9 3/4″	54745A67★ 29.78
Metric				
7×8 mm	5 11/16″	7192A17 15.76	5 11/16″	54855A31 15.76
Metric (Cont.)				
9×11 mm	6 5/16″	7192A11 $15.77	6 5/16″	54855A32 $15.77
10×12 mm	6 15/16″	7192A12 18.27	6 15/16″	54855A33 18.27
13×14 mm	7 9/16″	7192A13 18.28	7 9/16″	54855A34 18.28
15×17 mm	8″	7192A14 21.88	8″	54855A35 21.88
16×18 mm	8 13/16″	7192A15 21.95	8 13/16″	54855A36 21.95
19×21 mm	9 7/16″	7192A16 22.90	8 1/2″	54855A37 22.90
22×24 mm	—	—	9 1/4″	54855A38★● 62.55
24×27 mm	—	—	10 1/16″	54855A39★● 65.45
30×32 mm	—	—	11″	54855A42★● 82.73

★ Ends are angled 15°. ■ Heads have a satin finish. ● Made of alloy steel.

Individual 30° Angle Flare-Nut/15° Angle Open-End Wrenches—Size is the same on both ends.

Size	Open-End Head Thick.	O'all Lg.	6 Point	Each
3/8″	23/64″	5 11/16″	5442A11	$14.39
7/16″	13/32″	6″	5442A12	15.29
1/2″	13/32″	6 7/16″	5442A13	16.65
9/16″	15/32″	6 15/16″	5442A14	$17.43
5/8″	15/32″	7 5/8″	5442A15	20.32
11/16″	17/32″	8 11/16″	5442A16	22.19
3/4″	17/32″	9 3/16″	5442A17	$23.33
7/8″	3/8″	12 1/8″	5442A18♠	29.34

♠ Angle on flare-nut end is 22 1/2°.

Ratchet-Action Open-End Wrenches

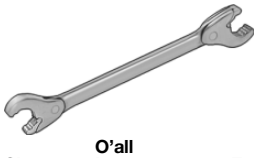

Both ends are open and have ratcheting action that requires a 30° handle swing to turn a fastener. You can reposition the wrenches without removing them from the fastener. Made of polished 17-4 stainless steel.

Size	O'all Lg.	Each	Size, mm	O'all Lg.	Each
***Inch—**Head thick.: 17/64″ to 11/32″*			***Metric—**Head thick.: 19/64″ to 11/32″*		
3/8″×7/16″	5″	6795A14 $14.95	10×12	5 3/16″	6795A24 $14.95
1/2″×9/16″	6 5/16″	6795A16 16.49	13×14	6 3/16″	6795A26 16.49
5/8″×11/16″	7 1/8″	6795A18 18.02	15×17	6 13/16″	6795A28 18.02

Aluminum AN Open-End Wrenches

Also known as AN (Army-Navy) wrenches, these tools are designed for soft metal AN fittings often found on hydraulic lines in aircraft, marine, and performance racing applications. Made of aluminum for corrosion resistance and lighter weight than steel. The open end is V-shaped for a deep fit and has corner recesses so it won't mar or round corners on fittings. Head is angled 15°. Sizes are color coded for easy identification.

8-Piece Set—Includes one of each size listed below. Packed in a roll-up vinyl pouch.

91825A100 ..... **Per Set** $249.93

AN Size	Metal Tube OD	Thread Size	Head Thick.	O'all Lg.		Each
3	3/16″	3/8″-24	23/64″	4″	91825A110	$25.18
4	1/4″	7/16″-20	23/64″	4 3/4″	91825A120	26.88
6	3/8″	9/16″-18	23/64″	5 3/4″	91825A130	29.93
8	1/2″	3/4″-16	23/64″	5 3/4″	91825A140	31.56
10	5/8″	7/8″-14	23/64″	7 1/8″	91825A150	33.18
12	3/4″	1 1/16″-12	23/64″	7 1/2″	91825A160	36.32
16	1″	1 5/16″-12	23/64″	8 3/4″	91825A170	41.06
20	1 1/4″	1 5/8″-12	23/64″	9 1/4″	91825A180	44.18

Square-Head Fastener Open-End Wrenches

Square openings provide a better fit on square-head bolts, cap screws, set screws, and nuts. Heads are angled 22 1/2°. Made of forged steel with a black finish.

Size	Head Thick.	O'all Lg.		Each
3/16″ × 1/4″	19/64″	4 1/4″	5402A31	$13.27
1/4″ × 5/16″	19/64″	4 1/4″	5402A33	13.27
5/16″ × 3/8″	11/32″	5″	5402A35	16.01
3/8″ × 7/16″	3/8″	5 3/4″	5402A37	18.95
3/8″ × 1/2″	13/32″	5 3/4″	5402A38	24.85
7/16″ × 1/2″	13/32″	5 3/4″	5402A39	24.85
1/2″ × 5/8″	9/16″	8 1/2″	5402A42	35.31

Stainless Steel Open-End Wrenches

Made of Type 420 stainless steel for corrosion resistance, wrenches are autoclavable up to 250° F. Ideal for use in clean rooms and other sterile applications. Heads are angled 15°.

Also Available: Metric sizes. Please ask for 55195A31 and specify size: 6×7, 8×9, 10×11, 12×13, 14×15, 16×17, or 19×22 mm.

8-Piece Inch Set—Includes one of each size listed below.

54565A19 ..... **Per Set** $519.37

Size	Head Thick.	O'all Lg.		Each
1/4″ × 5/16″	3/16″	4 3/4″	54565A11	$31.72
3/8″ × 7/16″	7/32″	6 1/4″	54565A12	38.94
1/2″ × 9/16″	15/64″	7″	54565A13	52.17
5/8″ × 11/16″	17/64″	8 1/4″	54565A14	63.92
3/4″ × 13/16″	19/64″	8 7/8″	54565A15	83.44
7/8″ × 15/16″	5/16″	10 1/4″	54565A16	96.89
1″ × 1 1/16″	19/64″	10 3/8″	54565A17	113.61
1 1/8″ × 1 1/4″	11/32″	11 1/16″	54565A18	118.07

Maximum Open-End Head Thickness of Combination Wrenches

Inch Size	Head Thick.
1/8"	1/8"
5/32"	1/8"
3/16"	9/64"
13/64"	1/8"
7/32"	5/32"
15/64"	9/64"
1/4"	1/4"
9/32"	17/64"
5/16"	13/64"
11/32"	13/64"
3/8"	19/64"
7/16"	17/64"
1/2"	11/32"
9/16"	23/64"

Inch Size	Head Thick.
19/32"	1/4"
5/8"	13/32"
11/16"	27/64"
3/4"	29/64"
25/32"	21/64"
13/16"	27/64"
7/8"	7/16"
15/16"	15/32"
1"	15/32"
1 1/16"	11/16"
1 1/8"	35/64"
1 3/16"	9/16"
1 1/4"	19/32"
1 5/16"	17/32"

Inch Size	Head Thick.
1 3/8"	35/64"
1 7/16"	3/4"
1 1/2"	5/8"
1 5/8"	21/32"
1 11/16"	11/16"
1 3/4"	49/64"
1 13/16"	25/32"
1 7/8"	49/64"
2"	49/64"
2 1/16"	27/32"
2 1/8"	55/64"
2 3/16"	55/64"
2 1/4"	55/64"
2 3/8"	31/32"

Inch Size	Head Thick.
2 1/2"	31/32"
2 9/16"	1"
2 5/8"	17/32"
2 3/4"	17/32"
2 7/8"	17/32"
2 15/16"	17/32"
3"	17/32"
3 1/8"	17/32"
3 1/4"	1 1/2"
3 3/8"	1 1/2"
3 1/2"	1 1/2"
3 3/4"	1 1/2"
3 7/8"	1 1/2"
4"	1 1/2"

Metric Size	Head Thick.
4 mm	1/8"
4.5 mm	7/64"
5 mm	5/32"
5.5 mm	5/32"
6 mm	17/64"
7 mm	13/64"
8 mm	17/64"
9 mm	9/32"
10 mm	19/64"
11 mm	5/16"
12 mm	21/64"
13 mm	11/32"
14 mm	23/64"

Metric Size	Head Thick.
15 mm	3/8"
16 mm	13/32"
17 mm	27/64"
18 mm	23/64"
19 mm	29/64"
20 mm	27/64"
21 mm	7/16"
22 mm	29/64"
23 mm	13/32"
24 mm	13/32"
25 mm	27/64"
26 mm	29/64"
27 mm	29/64"

Metric Size	Head Thick.
28 mm	15/32"
29 mm	15/32"
30 mm	1/2"
32 mm	33/64"
36 mm	5/8"
41 mm	21/32"
46 mm	49/64"
50 mm	49/64"
55 mm	63/64"
60 mm	63/64"
65 mm	1 5/32"
70 mm	1 5/32"

Ratcheting Combination Wrenches

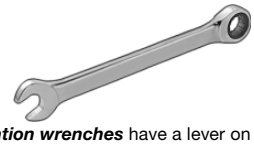

One end has a 12-point box end ratchet that requires only a 5° handle swing. The other end is open and angled 15°. Made of forged steel with a polished (mirror-like) chrome finish.

Ratcheting combination wrenches are flat. Flip them over to reverse ratchet action. ***Reversible ratcheting combination wrenches*** have a lever on the box end that reverses direction. Ratchet is offset 15° for work in hard-to-reach areas. The offset also provides a more comfortable grip.

Premium Sets—The highest quality available. Made in the U.S. Packed in a vinyl roll-up pouch.

Economy Sets—Imported tools. *Inch* set is packed in a nylon roll-up pouch. *Metric* set is packed in a plastic tray.

Ratcheting Wrench Sets

7-Pc. Premium Inch Set—Includes sizes 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4".
5163A41 ..... **Per Set** $140.18

10-Pc. Premium Inch Set—Includes sizes 1/4", 5/16", 11/32", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4".
5163A43 ..... **Per Set** $177.22

10-Pc. Premium Metric Set—Includes sizes 10 through 19 mm.
5163A42 ..... **Per Set** $210.08

Individual Ratcheting Wrenches

Size	O'all Lg.		Each
Inch			
1/4"	5 1/16"	5163A11	$15.73
5/16"	5 3/4"	5163A12	15.73
11/32"	6 1/8"	5163A13	15.73
3/8"	6 11/16"	5163A14	16.89
7/16"	7 1/4"	5163A15	17.77
1/2"	8 1/8"	5163A16	18.44
9/16"	8 5/8"	5163A17	20.95
5/8"	9 1/2"	5163A18	23.15
11/16"	10 1/8"	5163A19	25.27
3/4"	11"	5163A21	27.56
13/16"	11 7/16"	5163A81	23.23
7/8"	11 7/16"	5163A82	23.23
15/16"	13 1/8"	5163A83	25.75
1"	13 1/8"	5163A84	25.37
1 1/16"	14 1/8"	5163A85	30.40
1 1/8"	15 13/16"	5163A86	30.40
1 1/4"	16 3/4"	5163A87	36.74
Metric			
6 mm	5 1/16"	5163A22	15.54
7 mm	5 3/8"	5163A23	15.99
Metric (Cont.)			
8 mm	5 11/16"	5163A24	$16.44
9 mm	6 1/8"	5163A25	17.79
10 mm	6 3/4"	5163A26	18.09
11 mm	7 1/4"	5163A27	18.52
12 mm	7 3/4"	5163A28	19.32
13 mm	8 1/8"	5163A29	20.26
14 mm	8 5/8"	5163A31	21.34
15 mm	9 1/8"	5163A32	23.07
16 mm	9 1/2"	5163A33	24.30
17 mm	10 1/8"	5163A34	26.54
18 mm	10 1/2"	5163A35	27.68
19 mm	11 1/16"	5163A36	28.94
21 mm	11 7/16"	5163A88	23.23
22 mm	11 7/16"	5163A89	23.23
24 mm	13 1/8"	5163A91	25.32
25 mm	13 1/8"	5163A92	25.32
27 mm	14 1/8"	5163A93	30.40
30 mm	15 13/16"	5163A94	33.43
32 mm	16 3/4"	5163A95	36.74

Reversible Ratcheting Wrench Sets

7-Pc. Premium Inch Set—Includes sizes 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4".
5160A33 ..... **Per Set** $154.24

10-Pc. Premium Metric Set—Includes sizes 10 through 19 mm.
5160A34 ..... **Per Set** $231.14

7-Pc. Economy Inch Set—Includes sizes 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4".
6871A21 ..... **Per Set** $88.28

8-Pc. Economy Metric Set—Includes sizes 8, 10, 12, 13, 14, 15, 17, and 19 mm.
6871A31 ..... **Per Set** $88.59

Individual Reversible Ratcheting Wrenches

Size	O'all Lg.		Each
Inch			
5/16"	5 13/16"	5160A2	$17.28
3/8"	6 3/4"	5160A3	18.60
7/16"	7 1/4"	5160A4	19.50
1/2"	8 1/8"	5160A5	20.26
9/16"	8 9/16"	5160A6	22.99
5/8"	9 9/16"	5160A7	25.44
11/16"	10 3/16"	5160A8	27.82
3/4"	11"	5160A9	30.33
Metric			
8 mm	5 13/16"	5160A21	18.05
Metric (Cont.)			
10 mm	6 3/4"	5160A22	$19.91
11 mm	7 5/16"	5160A23	20.36
12 mm	7 3/4"	5160A24	21.29
13 mm	8 1/4"	5160A25	22.29
14 mm	8 11/16"	5160A26	23.46
15 mm	9 3/16"	5160A27	24.86
16 mm	9 9/16"	5160A28	26.17
17 mm	10 3/16"	5160A29	28.61
18 mm	10 5/8"	5160A31	29.86
19 mm	11 1/16"	5160A32	31.24

Stubby Ratcheting Combination Wrenches

Need to work in tight areas? The shorter length of a stubby wrench is the answer. Wrenches have a 12-point box end ratchet on one end that requires only a 5° handle swing to turn a fastener. The other end is open and angled 15°. Made of forged steel with a polished (mirror-like) chrome finish.

Ratcheting combination wrenches are flat. Flip them over to reverse ratchet action. ***Reversible ratcheting combination wrenches*** have a lever on the box end that reverses direction. Ratchet is offset 15° for work in hard-to-reach areas. The offset also provides a more comfortable grip.

Premium Sets—The highest quality available. Made in the U.S.

Economy Sets—Imported tools.

Ratcheting Wrench Sets

7-Pc. Premium Inch Set—Includes sizes 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4". Packed in a vinyl roll-up pouch.
5666A65 ..... **Per Set** $135.63

7-Pc. Economy Inch Set—Includes sizes 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4". Packed in a plastic tray.
4363A11 ..... **Per Set** $87.01

10-Pc. Premium Metric Set—Includes sizes 10 through 19 mm. Packed in a vinyl roll-up pouch.
5666A67 ..... **Per Set** $197.52

10-Pc. Economy Metric Set—Includes sizes 10 through 19 mm. Packed in a plastic tray.
4363A12 ..... **Per Set** $120.97

Individual Ratcheting Wrenches

Size	O'all Lg.		Each
Inch			
3/8"	3 13/16"	5666A12	$16.87
7/16"	4 1/16"	5666A13	17.49
1/2"	4 3/8"	5666A14	18.33
9/16"	4 5/8"	5666A15	20.69
5/8"	4 7/8"	5666A16	21.43
11/16"	5 1/16"	5666A17	24.39
3/4"	5 3/8"	5666A18	27.59
Metric			
10 mm	4"	5666A31	17.99
Metric (Cont.)			
11 mm	4 1/16"	5666A32	$17.99
12 mm	4 1/4"	5666A33	20.05
13 mm	4 5/16"	5666A34	20.05
14 mm	4 9/16"	5666A35	21.43
15 mm	4 3/4"	5666A36	21.43
16 mm	4 7/8"	5666A37	23.39
17 mm	5 1/8"	5666A38	24.63
18 mm	5 3/16"	5666A39	25.81
19 mm	5 7/16"	5666A41	26.63

Reversible Ratcheting Wrench Sets—Packed in a metal box.

9-Pc. Economy Inch Set—Includes sizes 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4".
5666A3 ..... **Per Set** $107.33

13-Pc. Economy Metric Set—Includes 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm.
5666A29 ..... **Per Set** $164.16

Individual Reversible Ratcheting Wrenches

Size	O'all Lg.		Each
Inch			
1/4"	3 1/8"	5666A19	$10.47
7/16"	4"	5666A2	12.06
1/2"	4 3/8"	5666A21	13.83
9/16"	4 1/2"	5666A22	14.67
3/4"	5 5/16"	5666A23	18.99
Metric			
8 mm	3 1/2"	5666A24	$10.25
10 mm	3 13/16"	5666A25	11.60
13 mm	4 3/8"	5666A26	13.83
17 mm	5"	5666A27	17.24
19 mm	5 1/2"	5666A28	19.99

Stainless Steel Combination Wrenches

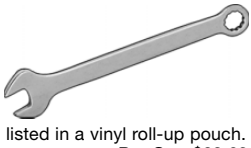

Take a stand against corrosion with Type 420 stainless steel wrenches. All can be autoclaved up to 250°F. The open end is angled 15°. The other end is a 12-point box end that is offset 15°.

6-Pc. Set—Includes one of each size listed in a vinyl roll-up pouch.
91827A700 ..... **Per Set** $83.62

Size	O'all Lg.		Each
5/16"	5 1/8"	91827A100	$11.14
3/8"	5 11/16"	91827A200	12.00
7/16"	6 1/16"	91827A300	13.14
1/2"	6 7/8"	91827A400	$15.79
9/16"	7 5/16"	91827A500	17.89
5/8"	8 1/16"	91827A600	20.92

For open-end head thickness, see page 2773.

Combination Wrenches

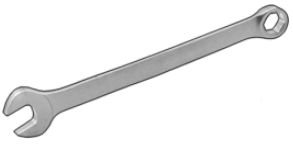

Wrenches have a 15° angle open end and a 15° offset box end with 6 or 12 points. Made of forged steel. Use ***6-point*** wrenches for maximum surface contact on hex fasteners. ***12-point*** wrenches provide less surface contact than 6-point wrenches, but are easier to position.

Premium wrenches have extra machining for a superior fit and finish. The highest quality tools available. Made in the U.S., unless noted. ***Value*** wrenches are economical tools made in the U.S. ***Economy*** tools are imported.

Wrench Sets— Packed in a pouch, unless noted. Choose from four finishes: high-visibility colored, polished (mirror-like) chrome, satin (dull) chrome with polished heads, and black. *High-visibility colored wrench sets* have a bright, powder-coated finish so they are easy to spot—and difficult to leave behind at the job site. **To Order:** For high-visibility wrench sets, please specify color: red or yellow.

Individual Wrenches— Choose from polished (mirror-like) chrome, satin (dull) chrome, and black finishes.

No. of Pieces	Sizes in Set	Range of Lengths	Finish		Per Set
High-Visibility Premium Sets, Inch—12-Point Box End					
7	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	Long (6 1/2″-11″)	High Vis.♣	5813A1	$102.31
11	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	Long (6 1/2″-14″)	High Vis.♣	5813A2	$191.50
14	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″	Long (6 1/2″-17″)	High Vis.♣	5813A3	$285.17
Premium Sets, Inch—6-Point Box End					
7	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	Long (6 1/2″-11″)	Polished	5772A51	$96.00
8	1/8″, 5/32″, 3/16″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″	Short (3″-5 1/2″)	Polished	5772A53★	$82.70
	5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	Long (5 3/4″-11″)	Satin	56945A35	$96.39
11	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	Long (6 1/2″-14″)	Polished	5772A52	$184.89
Premium Sets, Inch—12-Point Box End					
7	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	Extra Short (3 11/16″-5 7/16″)	Polished	5304A21	$81.74
		Short (5 1/2″-9 5/8″)	Polished	5304A91	$89.09
			Satin	5441A94	$79.13
		Long (6″-10 1/16″)	Satin	5444A3	$99.74
		Long (6 1/2″-11″)	Polished	5304A92	$98.17
			Black	7242A41	$82.45
		Extra Long (7 3/8″-13 1/8″)	Polished	5304A98	$99.74
11	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	Long (6″-13 5/16″)	Polished	5304A71	$217.88
			Satin	5444A4	$198.98
		Extra Long (7 3/8″-17″)	Polished	5304A97	$213.07
14	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″	Long (6″-16 13/16″)	Polished	5304A73	$388.34
			Satin	5444A2	$313.84
		Long (6 1/2″-17 1/16″)	Black	7242A45	$257.60
Value Sets, Inch—12-Point Box End					
11	1/4″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″	Long (4″-12 5/8″)	Satin	5807A6	$67.33
14	5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/8″, 1 1/4″	Long (4 3/8″-16 13/16″)	Satin	5807A8	$116.76
Economy Sets, Inch—12-Point Box End					
11	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	Long (5 1/8″-13 1/2″)	Satin	5201A7	$40.60
14	3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″	Long (5 1/8″-16 7/8″)	Satin	5201A8	$58.64
Premium Sets, Metric—6-Point Box End					
6	4, 5, 5.5, 6, 7, and 8 mm	Short (3″-4 5/16″)	Polished	5314A25	$70.74
11	7, 8, 9, 10, 11, 12, 13, 14, 15, 17, and 19 mm	Long (5″-11″)	Polished	5314A16	$151.20
Premium Sets, Metric—12-Point Box End					
10	8, 9, 10, 11, 12, 13, 14, 15, 17, and 19 mm	Short (4 5/16″-9 5/8″)	Polished	5314A93●	$119.06
11	7, 8, 9, 10, 11, 12, 13, 14, 15, 17, and 19 mm	Long (5 3/16″-10 1/16″)	Polished	5314A26	$175.06
			Satin	5140A15	$164.48
15	7, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 29, 30, and 32 mm	Long (5 5/16″-17″)	Polished	5314A99	$387.35
17	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 22 mm	Long (4 15/16″-11 3/4″)	Satin	5140A12	$298.74
18	7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24 mm	Long (5 5/16″-13 5/16″)	Polished	5314A62	$282.30
Value Sets, Metric—12-Point Box End					
11	7, 8, 9, 10, 11, 12, 13, 14, 15, 17, and 19 mm	Long (4 3/16″-9 5/8″)	Black	5811A25	$60.93
17	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 22 mm	Long (4″-11 5/8″)	Satin	5811A16	$124.27
Economy Sets, Metric—12-Point Box End					
11	7, 8, 9, 10, 11, 12, 13, 14, 15, 17, and 18 mm	Long (5 3/8″-10 1/2″)	Satin	5068A4	$26.47
16	7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, and 24 mm	Long (5 3/8″-13 1/4″)	Satin	5068A5	$56.80

♣ Choose red or yellow. ★ 9/32″, 5/16″, 11/32″, and 3/8″ sizes have a 12-point box end. ● 8 mm size has a 6-point box end.

Premium Individual Wrenches, Inch

Size	O'all Lg.		Each
6 Point, Polished			
1/8″	3″	5772A21	$9.73
5/32″	3″	5772A22	9.73
3/16″	3 3/16″	5772A23	9.73
7/32″	3 3/8″	5772A24	9.73
1/4″	3 15/16″	5772A25	9.73
6 Point, Polished (Cont.)			
1/4″	5″	5772A26	$9.98
5/16″	4 5/16″	5772A27	9.78
5/16″	5 3/4″	5772A28	9.98
11/32″	4 7/8″	5772A29	9.92
3/8″	5 1/2″	5772A31	9.93
6 Point, Polished (Cont.)			
3/8″	6 1/2″	5772A32	$10.85
7/16″	7 1/4″	5772A34	11.37
1/2″	6 1/2″	5772A35	11.23
1/2″	8″	5772A36	11.78
9/16″	7 1/16″	5772A37	12.62
6 Point, Polished (Cont.)			
9/16″	8 3/4″	5772A38	$13.38
5/8″	7 15/16″	5772A39	13.36
5/8″	9 1/2″	5772A41	14.79
11/16″	10 1/4″	5772A42	16.21
3/4″	11″	5772A43	17.61

(Continued on following page)

For open-end head thickness, see page 2773.

Combination Wrenches *(Continued from previous page)*

Premium Individual Wrenches, Inch (Cont.)

Size	O'all Lg.		Each
6 Point, Polished			
13/16"	11 3/4"	5772A44	$19.14
7/8"	12 1/2"	5772A45	22.46
15/16"	13 1/4"	5772A46	25.01
1"	14"	5772A47	30.29
6 Point, Satin			
1/8"	3"	56945A11●	8.80
5/32"	3"	56945A12●	8.80
3/16"	3 3/16"	56945A13●	8.80
7/32"	3 3/16"	56945A14●	8.85
1/4"	3 1/2"	56945A15●	9.06
9/32"	3 1/2"	56945A16●	9.06
5/16"	3 11/16"	56945A17●	9.13
5/16"	5 3/4"	56945A21	9.13
11/32"	3 13/16"	56945A18●	9.14
3/8"	6 1/2"	56945A22	9.78
7/16"	4 5/16"	56945A52	9.47
7/16"	7 1/4"	56945A23	10.26
1/2"	8"	56945A24	10.61
9/16"	8 3/4"	56945A25	12.09
5/8"	9 1/2"	56945A26	13.39
11/16"	10 1/4"	56945A27	14.62
3/4"	11"	56945A28	15.93
13/16"	11 7/8"	56945A29	17.62
7/8"	12 1/2"	56945A31	20.28
15/16"	13 1/4"	56945A32	22.65
1"	14"	56945A33	26.30
12 Point, Polished			
1/4"	3 15/16"	5304A41	9.28
1/4"	5"	5304A39	9.59
5/16"	4 5/16"	5304A42	9.28
5/16"	5 3/4"	5304A52	10.29
11/32"	4 7/8"	5304A43	9.99
11/32"	5 3/4"	5304A31	10.44
11/32"	6 1/4"	5441A13	9.78
3/8"	5 1/2"	5304A44	10.14
3/8"	6 1/2"	5304A53	10.51
7/16"	4"	5304A12	10.32
7/16"	5 13/16"	5304A45	10.73
7/16"	7 1/4"	5304A54	11.28
1/2"	4 3/16"	5304A13	11.06
1/2"	6 1/2"	5304A46	11.04
1/2"	8"	5304A55	12.03
9/16"	4 7/16"	5304A14	11.79
12 Point, Polished (Cont.)			
9/16"	7 1/16"	5304A47	$12.32
9/16"	8 3/4"	5304A56	13.26
5/8"	4 13/16"	5304A15	11.87
5/8"	7 15/16"	5304A48	13.05
5/8"	9 1/2"	5304A57	15.16
11/16"	5"	5304A16	14.81
11/16"	8 3/4"	5304A49	14.41
11/16"	10 1/4"	5304A58	15.99
3/4"	5 7/16"	5304A17	14.76
3/4"	9 5/8"	5304A51	14.96
3/4"	11"	5304A59	17.98
13/16"	10 15/16"	5304A82	17.72
13/16"	11 3/4"	5304A61	18.93
7/8"	11 7/16"	5304A83	19.96
7/8"	12 1/2"	5304A62	23.06
15/16"	12 1/2"	5304A37	21.91
15/16"	13 1/4"	5304A63	24.26
1"	13 9/16"	5304A38	25.58
1"	14"	5304A64	30.20
1 1/16"	14 3/4"	5304A65	35.20
1 1/8"	15 1/2"	5304A66	41.83
1 3/16"	16 5/16"	5304A68	42.93
1 1/4"	17 1/16"	5304A67	49.17
1 5/16"	17 3/4"	5304A93	102.95
1 3/8"	18 1/2"	5304A94	104.95
1 7/16"	19 1/4"	5304A95	119.95
1 1/2"	20 1/16"	5304A96	134.95
12 Point, Satin			
1/4"	3 15/16"	5441A82	8.36
1/4"	5"	5441A11	8.52
5/16"	4 5/16"	5441A71	8.36
5/16"	5 3/4"	5441A12	8.85
3/8"	5 1/2"	5441A72	8.53
3/8"	6 1/2"	5441A14	9.27
7/16"	5 13/16"	5441A73	9.00
7/16"	7 1/4"	5441A15	9.78
1/2"	6 1/2"	5441A74	9.66
1/2"	8"	5441A16	10.17
9/16"	7 1/16"	5441A75	10.88
9/16"	8 3/4"	5441A17	11.54
9/16"	10"	5441A39	12.62
5/8"	7 15/16"	5441A76	11.55
5/8"	9 1/2"	5441A22	12.78
12 Point, Satin (Cont.)			
5/8"	11 1/8"	5441A48	$14.01
11/16"	8 7/8"	5441A78	11.94
11/16"	10 1/4"	5441A23	13.94
11/16"	12"	5441A49	15.25
3/4"	9 5/8"	5441A79	13.18
3/4"	11"	5441A24	15.20
3/4"	13 1/8"	5441A57	16.52
13/16"	11 3/4"	5441A26	16.49
7/8"	11 7/16"	5441A84	12.86
7/8"	12 1/2"	5441A27	19.35
7/8"	15"	5441A59	21.18
15/16"	12 1/2"	5441A85	14.46
15/16"	13 1/4"	5441A28	21.58
15/16"	16"	5441A64	23.62
1"	14"	5441A31	26.07
1 1/16"	14 3/4"	5441A32	30.31
1 1/8"	15 1/2"	5441A33	37.05
1 3/16"	15 15/16"	5441A38	51.22
1 1/4"	17 1/16"	5441A34	41.60
1 5/16"	20 1/8"	5441A35	44.86
1 3/8"	20 1/8"	5441A36	47.81
1 7/16"	21 1/8"	5441A37	54.85
1 1/2"	21 1/8"	5441A41	64.44
1 5/8"	24 1/8"	5441A42	69.91
1 11/16"	24 1/8"	5441A43	71.69
1 3/4"	25 5/8"	5441A44	76.94
1 13/16"	25 5/8"	5441A45	81.24
1 7/8"	27 1/8"	5441A46	87.38
2"	27 1/8"	5441A47	91.87
2 1/16"	27 1/8"	5441A51	107.52
2 1/8"	28"	5441A52	121.20
2 3/16"	28"	5441A53	128.45
2 1/4"	28"	5441A54	134.77
2 3/8"	30"	5441A55	165.42
2 1/2"	30"	5441A56	173.33
2 9/16"	32"	5441A61	245.26
2 5/8"	32"	5441A62	242.78
2 3/4"	32"	5441A63	279.77
2 7/8"	32"	5441A65	393.42
2 15/16"	32"	5441A66	346.36
3"	32"	5441A67	355.16
3 1/8"	32"	5441A68	335.13
12 Point, Black			
1/4"	5"	7242A31	$8.97
5/16"	5 3/4"	7242A32	8.97
11/32"	5 3/4"	7242A33	8.97
3/8"	6 1/2"	7242A11	9.04
7/16"	7 1/4"	7242A12	9.53
1/2"	8"	7242A13	9.92
9/16"	8 3/4"	7242A14	11.24
5/8"	9 1/2"	7242A15	12.47
11/16"	10 1/4"	7242A16	13.57
3/4"	11"	7242A17	14.79
13/16"	11 3/4"	7242A18	16.06
7/8"	12 1/2"	7242A19	18.82
15/16"	13 1/4"	7242A21	21.00
1"	14"	7242A22	25.42
1 1/16"	14 3/4"	7242A23	29.53
1 1/8"	15 1/2"	7242A24	34.43
1 3/16"	16 5/16"	7242A28	39.96
1 1/4"	17 1/16"	7242A25	40.53
1 5/16"	20 1/8"	7242A34	43.68
1 3/8"	20 1/8"	7242A35	46.56
1 7/16"	21 1/8"	7242A36	51.82
1 1/2"	21 1/8"	7242A26	58.69
1 5/8"	24 1/8"	7242A37	64.67
1 11/16"	24 1/8"	7242A38	69.81
1 3/4"	25 5/8"	7242A39	74.94
1 13/16"	25 5/8"	7242A51	79.11
1 7/8"	27 1/8"	7242A42	94.53
2"	27 1/8"	7242A43	99.40
2 1/8"	28"	7242A55	136.90
2 1/4"	28"	7242A47	152.16
2 3/8"	30"	7242A48	186.87
2 1/2"	30"	7242A49	195.78
2 5/8"	32"	7242A57	261.39
2 3/4"	32"	7242A58	311.94
2 15/16"	32"	7242A61	337.80
3"	32"	7242A62	339.04
3 1/8"	35"	7242A63★	553.50
3 1/4"	36"	7242A65★	711.57
3 3/8"	36 1/2"	7242A66★	711.92
3 1/2"	37"	7242A67★	718.30
3 3/4"	38"	7242A68★	751.18
3 7/8"	38 1/2"	7242A69★	752.59
4"	39"	7242A71★	759.39

● Made in Italy. ★ Made in Canada.

Premium Individual Wrenches, Metric

Size, mm	O'all Lg.		Each
6 Point, Polished			
4	3"	5314A83	$10.53
5	3 1/8"	5314A84	10.53
5.5	3 3/8"	5314A85	10.53
6	3 15/16"	5314A86	10.53
6	5"	5314A1	10.52
7	4 3/16"	5314A87	10.53
7	5"	5314A2	10.74
8	4 5/16"	5314A88	10.53
8	5 3/4"	5314A3	10.52
9	6 1/8"	5314A4	11.04
10	6 3/4"	5314A5	11.23
11	7 1/4"	5314A6	11.50
12	7 11/16"	5314A7	12.01
13	8 1/8"	5314A8	12.57
14	8 5/8"	5314A9	13.25
15	9 1/8"	5314A11	14.30
16	9 1/2"	5314A12	15.16
17	10 1/16"	5314A13	16.46
18	10 1/2"	5314A14	17.17
19	11"	5314A15	17.99
6 Point, Satin			
7	5 3/16"	7191A62	9.68
8	5 7/16"	7191A63	9.93
9	5 11/16"	7191A64	11.10
10	5 15/16"	7191A65	11.13
11	6 15/16"	7191A66	11.37
12	7 11/16"	7191A67	11.87
13	7 15/16"	7191A68	12.45
14	8 13/16"	7191A69	13.11
15	9 1/8"	7191A71	14.15
16	9 9/16"	7191A72	14.92
17	10 5/16"	7191A73	16.30
6 Point, Satin (Cont.)			
18	10 11/16"	7191A74	$17.22
19	11 1/16"	7191A75	17.83
12 Point, Polished			
6	5"	5314A29	10.03
7	5 5/16"	5314A31	10.65
8	5"	5314A32	11.15
9	4 7/8"	5314A41	10.73
9	6 1/8"	5314A33	11.81
10	5 1/2"	5314A42	11.44
10	6 3/4"	5314A51	12.38
11	5 13/16"	5314A43	11.74
11	7 1/4"	5314A52	12.50
12	6 3/16"	5314A44	12.40
12	7 11/16"	5314A53	13.12
13	6 1/2"	5314A45	12.47
13	8 1/8"	5314A54	13.70
14	7 1/16"	5314A46	12.30
14	8 5/8"	5314A55	14.16
15	7 1/2"	5314A47	13.95
15	9 1/16"	5314A56	14.52
16	7 15/16"	5314A94	13.95
16	9 1/2"	5314A57	16.51
17	8 3/8"	5314A48	15.68
17	10 1/16"	5314A58	17.98
18	8 3/4"	5314A95	17.05
18	10 1/2"	5314A59	18.74
19	9 5/8"	5314A49	21.36
19	11"	5314A61	19.56
20	10 1/4"	5314A89	19.28
20	11 1/2"	5314A64	20.74
21	10 15/16"	5314A91	20.21
21	12"	5314A65	25.69
12 Point, Polished (Cont.)			
22	12 1/2"	5314A66	$26.44
23	12 7/8"	5314A67	26.45
24	13 5/16"	5314A68	29.93
25	14"	5314A69	31.78
26	14 3/4"	5314A71	33.26
27	14 3/4"	5314A72	38.88
28	15 1/2"	5314A96	43.11
29	15 1/2"	5314A97	45.58
30	16 5/16"	5314A73	44.05
32	17 1/16"	5314A74	50.69
12 Point, Satin			
6	5"	7191A46	12.58
7	5 5/16"	7191A51	9.38
8	5 3/4"	7191A11	9.61
9	6 1/8"	7191A12	10.38
10	6 3/4"	7191A13	10.54
11	7 1/4"	7191A14	10.86
12	7 11/16"	7191A15	11.30
13	8 1/8"	7191A16	11.84
14	7 1/16"	7191A42	8.75
14	8 5/8"	7191A17	12.44
15	7 1/2"	7191A43	10.62
15	9 1/16"	7191A18	13.46
16	9 1/2"	7191A19	14.20
17	10 1/16"	7191A21	15.48
18	10 1/2"	7191A22	16.16
19	11"	7191A23	16.93
20	11 1/2"	7191A24	18.31
21	12"	7191A25	21.50
22	12 1/2"	7191A26	22.80
23	12 15/16"	7191A27	24.04
24	13 5/16"	7191A28	26.46
12 Point, Satin (Cont.)			
25	14"	7191A29	$29.00
26	14 3/4"	7191A33	30.38
27	14 3/4"	7191A31	35.23
28	15 1/2"	7191A34	39.36
29	15 1/2"	7191A35	41.59
30	16 5/16"	7191A36	39.40
32	17 1/16"	7191A32	46.28
36	20 1/8"	7191A37	63.78
41	24 1/8"	7191A38	77.91
46	25 5/8"	7191A39	116.35
50	27 1/8"	7191A41	119.94
55	28 3/4"	7191A82★	235.11
60	29 1/4"	7191A83★	243.11
65	29 3/4"	7191A84★	328.79
70	29 3/4"	7191A85★	372.61
12 Point, Black			
7	5 5/16"	71405A32	7.87
8	5 3/4"	71405A33	8.17
9	6 1/8"	71405A34	8.80
10	6 3/4"	71405A35	8.80
12	7 11/16"	71405A37	9.58
13	8 1/8"	71405A38	10.09
14	8 5/8"	71405A39	10.58
15	9 1/16"	71405A41	11.45
16	9 1/2"	71405A42	12.08
17	10 1/16"	71405A43	13.20
18	10 1/2"	71405A44	13.76
19	11"	71405A45	14.40
20	11 1/2"	71405A46	15.56
21	12"	71405A47	18.27
22	12 1/2"	71405A48	19.36
23	12 15/16"	71405A49	20.47
24	13 5/16"	71405A51	22.47

★ Made in Canada.

Versa-Grip Ratcheting Combination Wrenches

A spline-shaped ratcheting box end gives you a good grip on 6-point, 6-point 50% rounded, and 12-point fastener heads as well as square, Torx, and spline-shaped fastener heads (as indicated). The ratcheting end requires only a 5° handle swing to turn the fastener. Flip wrenches over to reverse ratchet action. The open end has gripping recesses to reduce rounding. Open end is angled 15°. *Inch sizes* are made of forged steel with a polished (mirror-like) chrome finish. *Metric sizes* are made of alloy steel with a black chrome finish.

Wrench Sets—Come in a roll pouch.

9-Pc. Inch Set—Includes sizes 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, and 3/4″.
4950A22 ..... **Per Set** $163.60

10-Pc. Metric Set—Includes sizes 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm.
4950A91 ..... **Per Set** $151.39

Individual Wrenches, Inch

6 & 12 Point	Square	Torx	Spline	O'all Lg.		Each
5/16″	1/4″	E10	#10	5 15/16″	4950A2	$16.62
3/8″	5/16″	E12	#12	7 1/16″	4950A3	17.75
7/16″	3/8″	E14	#14	7 11/16″	4950A4	18.33
1/2″	—	E16	#16	8 11/16″	4950A5	19.75
9/16″	7/16″	E18	#18	9 1/4″	4950A6	20.31
5/8″	1/2″	E20	#20	10 1/4″	4950A7	22.33
11/16″	9/16″	E22	#22	10 13/16″	4950A8	23.75
3/4″	5/8″	E24	#24	12 1/16″	4950A9	26.31

Individual Wrenches, Metric

6 & 12 Point	Square	Torx	Spline	O'all Lg.		Each
8 mm	—	E10	#10	5 1/2″	4950A11	$12.63
10 mm	8 mm	E12	#12	6 1/4″	4950A12	12.63
11 mm	—	E14	#14	6 1/2″	4950A13	14.19
12 mm	10 mm	E16	—	6 3/4″	4950A14	14.62
13 mm	11 mm	E18	#16	7″	4950A15	17.79
16 mm	—	E20	#20	8 3/16″	4950A17	17.89
18 mm	15 mm	E22	#22	9 5/16″	4950A18	20.85
19 mm	16 mm	E24	#24	9 3/4″	4950A19	22.21

Deep Offset Combination Wrenches

Go deep to reach recessed fasteners. Wrenches have a 12-point box end that is offset 30° to offer more clearance than most offset wrenches. The other end is an open end and angled 15°. Made of forged steel with a polished (mirror-like) chrome finish.

9-Pc. Set—Includes one of each size listed in a roll-up pouch.
91826A100 ..... **Per Set** $81.68

Size	O'all Lg.		Each	Size	O'all Lg.		Each
3/8″	5″	91826A110	$7.20	11/16″	8 3/4″	91826A160	$10.25
7/16″	5 3/4″	91826A120	7.79	3/4″	9 5/8″	91826A170	11.57
1/2″	6 3/4″	91826A130	8.15	13/16″	10 1/2″	91826A180	13.51
9/16″	7 1/4″	91826A140	8.95	7/8″	10 1/2″	91826A190	15.77
5/8″	8 1/8″	91826A150	9.67				

Comfort Grip Combination Wrench Sets

Do your hands a favor—choose wrenches with comfortable cushioned grips. All have a 15° angle open end and a 12-point, 15° offset box end. Made of steel with polished (mirror-like) chrome heads. Overall length ranges from 3 15/16″ to 13″. Packed in a vinyl roll-up pouch.

Inch Sets—Yellow Grip

10-Pc. Inch Set—Includes one each of sizes 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, and 1″.
6114A22 ..... **Per Set** $196.04

15-Pc. Inch Set—Includes one each of sizes 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, and 1 1/8″.
6114A24 ..... **Per Set** $304.73

Metric Sets—Red Grip

10-Pc. Metric Set—Includes one each of sizes 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm.
6114A31 ..... **Per Set** $151.96

15-Pc. Metric Set—Includes one each of sizes 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, and 24 mm.
6114A32 ..... **Per Set** $239.00

Flex-Head Ratcheting Combination Wrenches

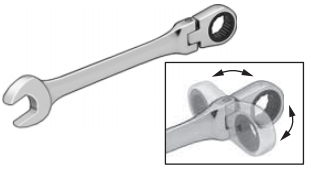

The 12-point box end ratchet is hinged—it pivots up to 180° and requires only a 5° handle swing to turn a fastener. The other end is an open end, angled 15°. Made of alloy steel with a polished (mirror-like) chrome finish.

Wrench Sets

7-Pc. Inch Set—Includes inch sizes listed below.
6445A21 ..... **Per Set** $142.99

7-Pc. Metric Set—Includes metric sizes listed below.
6445A22 ..... **Per Set** $139.35

Individual Wrenches

Size	O'all Lg.		Each	Size	O'all Lg.		Each
Inch				***Metric***			
5/16″	5 1/2″	6445A211	$20.65	8 mm	5 1/2″	6445A221	$19.53
3/8″	6 3/16″	6445A212	21.69	10 mm	6 3/16″	6445A222	20.65
7/16″	6 1/2″	6445A213	22.83	12 mm	6 3/4″	6445A223	22.27
1/2″	7″	6445A214	23.89	13 mm	7″	6445A224	22.83
9/16″	7 1/2″	6445A215	24.97	14 mm	7 1/2″	6445A225	23.89
5/8″	8 3/16″	6445A216	26.08	15 mm	7 13/16″	6445A226	24.97
3/4″	9 3/4″	6445A217	28.26	18 mm	9 5/16″	6445A227	28.26

High-Torque Grip-Plus Combination Wrenches

Gripping recesses on the open end reduce rounding and allow higher torque. The recesses also improve your grip on already worn and rounded fasteners. Open end is angled 15°. Box end is 12-point and offset 15°. Made of forged steel with a polished (mirror-like) chrome finish.

Wrench Sets—Packed in a canvas roll-up pouch.

7-Pc. Inch Set—Includes sizes 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, and 3/4″.
56255A61 ..... **Per Set** $102.33

11-Pc. Inch Set—Includes sizes 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, and 1″.
56255A62 ..... **Per Set** $189.94

14-Pc. Inch Set—Includes sizes 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, and 1 1/4″.
56255A64 ..... **Per Set** $307.71

Individual Wrenches

Size	O'all Lg.		Each	Size	O'all Lg.		Each
3/8″	6 1/2″	56255A31	$9.67	7/8″	12 1/2″	56255A39	$20.67
7/16″	7 1/4″	56255A32	10.37	15/16″	13 1/4″	56255A41	22.71
1/2″	8″	56255A33	10.92	1″	14″	56255A42	27.50
9/16″	8 3/4″	56255A34	12.15	1 1/16″	14 3/4″	56255A47	32.69
5/8″	9 1/2″	56255A35	13.25	1 1/8″	15 1/2″	56255A48	38.15
11/16″	10 1/4″	56255A36	14.77	1 3/16″	16 1/4″	56255A49	37.03
3/4″	11″	56255A37	16.23	1 1/4″	17″	56255A5	44.81
13/16″	11 3/4″	56255A38	17.51				

Miniature Combination Wrenches

Our tiny combination wrenches are great for precision applications. Wrenches have an open end that's angled 15° and a 6- or 12-point box end that's offset 15°. All are made of forged steel. *Wrench sets* have a polished (mirror-like) chrome finish. *Individual wrenches* have a satin finish.

Wrench Sets—Packed in a vinyl roll-up pouch.

10-Pc. Inch Set—Includes one each of 5/32″, 3/16″, 13/64″, 7/32″, 15/64″, 1/4″, 9/32″, 5/16″, 3/8″, and 7/16″ sizes.
5443A14 ..... **Per Set** $28.65

10-Pc. Metric Set—Includes one each of 4 mm, 4.5 mm, 5 mm, 5.5 mm, 6 mm, 7 mm, 8 mm, 9 mm, 10 mm, and 11 mm sizes.
55715A21 ..... **Per Set** $30.52

Individual Wrenches, Inch

Size	O'all Lg.		Each
6-Point Box End			
1/8″	2 49/64″	5443A18	$10.46
3/16″	2 25/32″	5443A22	10.46
12-Point Box End			
1/4″	3 1/4″	5443A26	10.53
5/16″	3 1/2″	5443A28	10.53
3/8″	4 1/4″	5443A29	10.81
7/16″	4 3/8″	5443A3	11.46

Individual Wrenches, Metric

Size	O'all Lg.		Each
6-Point Box End			
4 mm	3 1/32″	55715A22	$11.54
5 mm	3 7/32″	55715A24	11.54
5.5 mm	3 19/64″	55715A25	11.54
12-Point Box End			
6 mm	3 35/64″	55715A26	11.54
7 mm	3 35/64″	55715A27	11.54
8 mm	3 45/64″	55715A28	11.54
9 mm	3 55/64″	55715A29	11.54
10 mm	4 3/64″	55715A3	11.54
11 mm	4 19/64″	55715A31	11.54

Box Wrenches

Wrenches have a 12-point opening at each end. Made of forged steel with a polished (mirror-like) chrome finish, a satin (dull) chrome finish, or a black finish. Wrenches with a ***45° deep offset*** provide maximum handle clearance for reaching recessed fasteners. ***Half-moon*** wrenches are also known as obstruction wrenches. They have a curved handle that allows you to reach around obstacles and into machinery.

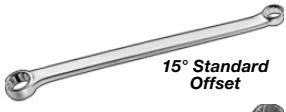
15° Standard Offset

45° Deep Offset

Half Moon

Wrench Sets—Packed in a roll-up pouch.				
No. of Pcs.	**Range of Lengths**	**Sizes in Set**		**Per Set**
Inch, 15° Standard Offset				
5	6 15/16"-13 1/8"	5/16"×3/8", 7/16"×1/2", 9/16"×5/8", 11/16"×3/4", 13/16"×7/8"	5458A71	$74.58
7	6 15/16"-17 1/2"	5/16"×3/8", 7/16"×1/2", 9/16"×5/8", 11/16"×3/4", 13/16"×7/8", 15/16"×1", 1 1/16"×1 1/8"	5458A72	$141.84
Inch, 45° Deep Offset				
5	7 5/16"-14 1/2"	3/8"×7/16", 1/2"×9/16", 5/8"×11/16", 3/4"×7/8", 15/16"×1"	5459A83	$91.49
9	7 5/16"-19"	5/16"×3/8", 3/8"×7/16", 1/2"×9/16", 5/8"×11/16", 3/4"×7/8", 15/16"×1", 1 1/16"×1 1/4", 1 1/8"×1 5/16", 1 1/4"×1 7/16"	5459A84	$255.04
Metric, 45° Deep Offset				
5	7 5/16"-10 13/16"	10×11, 12×13, 14×15, 16×18, and 17×19 mm	5469A62	$73.91

Individual Wrenches, Inch

Size	O'all Lg.		Each
15° Standard Offset—*Polished, unless noted*			
5/16" × 3/8"	6 15/16"	5458A12	$12.09
3/8" × 7/16"	7 3/4"	5458A11	11.25
7/16" × 1/2"	8 7/16"	5458A13	12.49
1/2" × 9/16"	9 1/8"	5458A15	13.45
9/16" × 5/8"	9 13/16"	5458A17	13.87
11/16" × 3/4"	11 3/16"	5458A24	17.61
3/4" × 7/8"	12 5/8"	5458A31	17.60
15/16" × 1"	15 3/8"	5458A37	33.33
15/16" × 1 1/16"	15 1/2"	5458A42	36.88
1" × 1 1/8"	16 5/8"	5458A43	37.28
1 1/16" × 1 1/8"	17"	5458A44	36.02
1 1/16" × 1 1/4"	17 1/4"	5458A45★	35.51
15° Standard Offset—*Black*			
7/16" × 1/2"	8 1/16"	7241A12	11.59

★ Satin (dull) finish. ♣ 70° deep offset.

Size	O'all Lg.		Each
15° Standard Offset—*Black (Cont.)*			
3/4" × 7/8"	13 1/8"	7241A17	$16.55
1 1/16" × 1 1/4"	18 1/4"	7241A22	33.63
45° Deep Offset—*Polished, unless noted*			
1/4" × 5/16"	6 11/16"	5459A52★♣	14.45
5/16" × 3/8"	7 1/2"	5459A53	10.39
3/8" × 7/16"	4 1/2"	5459A71	10.65
3/8" × 7/16"	7 5/16"	5459A12	13.50
7/16" × 1/2"	5 1/2"	5459A72	11.18
7/16" × 1/2"	7 15/16"	5459A54	15.07
1/2" × 9/16"	5 1/2"	5459A73	11.18
1/2" × 9/16"	8 11/16"	5459A16	15.19
9/16" × 5/8"	9 1/4"	5459A18	16.31
5/8" × 11/16"	9 13/16"	5459A21	16.31
5/8" × 3/4"	10 3/8"	5459A22	18.70

Size	O'all Lg.		Each
45° Deep Offset—*Polished, unless noted (Cont.)*			
11/16" × 3/4"	10 3/8"	5459A23	$19.24
3/4" × 7/8"	11 1/2"	5459A28	19.24
13/16" × 7/8"	13 5/16"	5459A32★	27.64
7/8" × 15/16"	14 1/16"	5459A46★	36.37
15/16" × 1"	14 1/2"	5459A35	27.55
1 1/16" × 1 1/8"	17"	5459A39	42.06
1 1/16" × 1 1/4"	18"	5459A41	47.11
1 1/8" × 1 5/16"	18"	5459A42	47.11
1 1/4" × 1 7/16"	19"	5459A44	65.66
1 5/16" × 1 1/2"	20 1/16"	5459A45★	85.35
Half Moon—*Satin*			
7/16" × 1/2"	5 7/16"	5466A21	17.97
9/16" × 5/8"	5 3/4"	5466A11	20.97
5/8" × 3/4"	6 1/2"	5466A24	23.77

Individual Wrenches, Metric

Size	O'all Lg.		Each
45° Deep Offset—*Polished, unless noted*			
6× 7 mm	6 1/2"	5469A21★♣	$12.74
8× 9 mm	7 1/2"	5469A22	11.20
10×11 mm	7 5/16"	5469A23	11.12
12×13 mm	7 15/16"	5469A14	11.60

★ Satin (dull) finish. ♣ 70° deep offset.

Size	O'all Lg.		Each
45° Deep Offset—*Polished (Cont.)*			
14×15 mm	8 15/16"	5469A16	$12.66
16×18 mm	9 13/16"	5469A42	15.50
17×19 mm	10 13/16"	5469A17	17.29

Size	O'all Lg.		Each
45° Deep Offset—*Polished (Cont.)*			
20×22 mm	13 3/8"	5469A29	$17.83
21×23 mm	13 1/4"	5469A31	34.12
30×32 mm	18"	5469A32	75.57

Heavy Duty Box Wrenches

Designed to handle demanding applications, wrenches have a 12-point opening and a straight head. Made of forged steel with a black finish.

Size	Head Thick.	O'all Lg.		Each
1/2"	3/8"	6 3/4"	5315A61	$12.01
9/16"	7/16"	6 3/4"	5315A62	14.52
5/8"	1/2"	7 1/8"	5315A63	15.79
11/16"	1/2"	7 3/16"	5315A64	17.16
3/4"	9/16"	7 7/16"	5315A65	$17.31
7/8"	5/8"	7 1/2"	5315A66	19.53
15/16"	5/8"	7 13/16"	5315A67	21.67
1"	11/16"	7 13/16"	5315A68	21.90
1 1/16"	3/4"	7 15/16"	5315A69	$22.45
1 1/8"	25/32"	7 15/16"	5315A71	24.16
1 1/4"	13/16"	7 15/16"	5315A72	32.13
1 1/2"	7/8"	10"	5315A73	55.70

Heavy Duty Box Wrenches and Tubular Handles

Use these 12-point box wrenches by themselves, or slide a tubular handle (sold separately) over the end of the wrench for extra reach and/or leverage. Wrenches attach securely into the handles. All wrenches and handles are made of forged steel with a black finish.

Choose offset or straight wrenches. ***Offset wrenches*** have a 45° offset head that clears obstructions.

Offset Wrench

Straight Wrench

Optional Tubular Handle

Offset Wrenches

Size	Head Thick.	Lg.	Lg. w/Optional 24" Tubular Handle		Each
1 1/16"	5/8"	10 1/2"	30 1/16"	54555A21	$31.95
1 1/8"	23/32"	10 11/16"	30 3/16"	54555A22	33.39
1 1/4" (32 mm)	23/32"	10 11/16"	30 3/16"	54555A23	40.01
1 5/16" (33 mm)	27/32"	10 3/4"	32 1/2"	54555A24	50.27
1 3/8" (35 mm)	7/8"	10 3/4"	32 9/16"	54555A25	51.62
1 7/16" (36 mm)	7/8"	10 3/4"	32 9/16"	54555A26	56.79
1 1/2" (38 mm)	15/16"	10 7/8"	32 9/16"	54555A27	58.08
			Lg. w/Optional 36" Tubular Handle		
1 3/4" (44 mm)	1 1/16"	13 5/16"	43 1/4"	54555A32	74.81
1 13/16" (46 mm)	1 1/8"	13 3/8"	43 3/8"	54555A33	81.82
1 7/8" (47 mm)	1 1/8"	13 3/8"	43 3/8"	54555A34	77.09
2" (51 mm)	1 1/4"	13 1/2"	43 1/2"	54555A35	94.60
2 1/4" (57 mm)	1 5/16"	13 5/8"	43 9/16"	54555A38	96.52
2 3/8" (60 mm)	1 13/32"	13 11/16"	43 11/16"	54555A39	98.53
2 9/16" (65 mm)	1 1/2"	13 7/8"	43 13/16"	54555A41	110.39
2 3/4" (70 mm)	1 19/32"	14"	44"	54555A43	122.97

Straight Wrenches

Size	Head Thick.	Lg.	Lg. w/Optional 24" Tubular Handle		Each
3/4"	17/32"	10 13/16"	29 1/2"	54555A13	$34.79
13/16"	17/32"	10 13/16"	29 1/2"	54555A14	37.90
7/8"	19/32"	10 15/16"	29 1/2"	54555A15	38.85
15/16"	19/32"	10 15/16"	29 1/2"	54555A16	39.59
1"	21/32"	11 1/16"	29 9/16"	54555A17	40.94
1 1/16"	21/32"	11 1/16"	29 9/16"	54555A18	41.65
1 1/8"	11/16"	11 1/8"	29 9/16"	54555A19	43.02
1 1/4" (32 mm)	27/32"	13 1/2"	31 7/8"	54555A51	45.44
1 7/16" (36 mm)	7/8"	13 5/8"	31 7/8"	54555A53	64.58
1 1/2" (38 mm)	7/8"	13 5/8"	31 7/8"	54555A54	68.22
1 5/8" (41 mm)	15/16"	13 3/4"	32 11/16"	54555A55	66.80

Optional Tubular Handles

	Lg.		Each
Fits wrench sizes 3/4"-1 5/8"	24"	54555A81	$40.99
Fits wrench sizes 1 3/4"-2 3/4"	36"	54555A82	84.97

Striking Box Wrenches

Hit the large striking surface with a hammer when extreme force is necessary to loosen and set large fasteners. Wrenches are made of forged steel with a black finish. Use ***6-point wrenches*** for maximum surface contact on hex fasteners. ***12-point wrenches*** provide less surface contact than 6-point wrenches, but are easier to position.

Offset wrenches have a 45° offset head to clear obstructions. ***Straight*** wrenches allow you to apply maximum force directly through the handle to the fastener head while keeping the wrench head on the fastener.

6-Point Wrenches

Size	Head Thick.	O'all Lg.		Each
Straight				
11/16"	5/8"	9 7/8"	8341A41	$46.61
11/4"	23/32"	10 1/4"	8341A42	48.14
17/16"	7/8"	10 9/16"	8341A43	57.36
15/8"	61/64"	11"	8341A44	68.77
13 13/16"	63/64"	11 5/16"	8341A45	68.77
Straight (Cont.)				
2"	17/32"	11 11/16"	8341A46	$81.19
2 3/16"	1 1/4"	12"	8341A47	103.64
2 3/8"	1 7/16"	12 3/8"	8341A48	110.38
2 9/16"	1 17/32"	12 11/16"	8341A49	119.30
2 3/4"	1 17/32"	13 1/16"	8341A51	161.46
Straight (Cont.)				
2 15/16"	1 17/32"	13 7/16"	8341A52	$180.71
3 1/8"	1 5/8"	13 13/16"	8341A53	212.40
3 1/2"	1 23/32"	14 1/8"	8341A54	273.53
3 7/8"	1 23/32"	14 1/2"	8341A55	307.96

12-Point Wrenches

Size	Head Thick.	O'all Lg.		Each
Offset				
11/16"	3/4"	10"	5455A11	$47.65
1 1/8"	3/4"	10"	5455A12	50.38
1 3/16"	27/32"	11"	5455A47	52.11
1 1/4"	27/32"	11"	5455A13	53.56
32 mm	27/32"	11"	5455A72	53.56
1 5/16"	27/32"	11"	5455A14	55.09
1 3/8"	15/16"	11 1/2"	5455A36	60.46
36 mm	15/16"	11 1/2"	5455A51	65.64
1 7/16"	15/16"	11 1/2"	5455A15	62.09
1 1/2"	15/16"	11 1/2"	5455A16	63.82
1 9/16"	1 1/8"	12"	5455A33	97.60
41 mm	1 1/16"	12"	5455A73	78.81
1 5/8"	1 1/16"	12"	5455A17	78.81
1 11/16"	1 1/16"	12"	5455A18	82.02
1 3/4"	1 1/16"	12"	5455A42	86.22
1 13/16"	1 3/16"	13"	5455A19	91.07
1 7/8"	1 3/16"	13"	5455A21	93.42
1 15/16"	1 3/16"	13"	5455A43	99.02
50 mm	1 3/16"	13"	5455A52	99.02
2"	1 3/16"	13"	5455A22	99.02
2 1/16"	1 5/16"	13 1/2"	5455A34	135.31
2 1/8"	1 5/16"	13 1/2"	5455A44	101.62
2 3/16"	1 5/16"	13 1/2"	5455A23	107.09
2 1/4"	1 5/16"	13 1/2"	5455A24	114.00
2 5/16"	1 7/16"	14"	5455A49	114.56
60 mm	1 7/16"	14"	5455A74	121.10
Offset (Cont.)				
2 3/8"	1 7/16"	14"	5455A25	$121.10
2 1/2"	1 7/16"	14"	5455A46	145.13
2 9/16"	1 5/8"	15"	5455A26	147.80
2 5/8"	1 5/8"	15"	5455A27	151.91
2 3/4"	1 5/8"	15"	5455A28	152.93
2 7/8"	1 7/8"	16"	5455A48	179.32
2 15/16"	1 7/8"	16"	5455A29	181.11
3"	1 7/8"	16"	5455A31	185.67
3 1/8"	1 7/8"	16"	5455A32	185.69
3 3/8"	2 3/8"	18"	5455A61	249.45
3 1/2"	2 3/8"	18"	5455A62	283.45
3 3/4"	2 3/8"	18"	5455A63	302.83
3 7/8"	2 3/8"	18"	5455A64	331.37
4 1/8"	2 3/8"	18"	5455A65	368.20
4 1/4"	2 3/8"	18"	5455A66	383.53
Straight				
11/16"	5/8"	9 7/8"	5456A47	50.66
1 3/16"	23/32"	10 1/4"	5456A43	51.56
1 1/4"	23/32"	10 1/4"	5456A11	53.56
1 5/16"	23/32"	10 1/4"	5456A12	53.56
1 3/8"	15/16"	8 1/4"	5456A51	41.80
36 mm	7/8"	10 9/16"	5456A53	62.09
1 7/16"	15/16"	8 1/4"	5456A13	41.72
1 1/2"	7/8"	10 9/16"	5456A14	59.67
1 5/8" (41 mm)	1 5/32"	7 7/8"	5456A15	53.62
Straight (Cont.)				
1 11/16" (43 mm)	1 5/32"	7 13/16"	5456A16	$57.09
1 3/4"	1 1/8"	9"	5456A18	51.41
1 13/16" (46 mm)	1 1/4"	7 7/8"	5456A17	58.57
1 7/8"	1 1/4"	10"	5456A21	54.76
50 mm	1 13/32"	11 5/8"	5456A54	97.93
2"	1 7/32"	11 11/16"	5456A22	104.75
2 1/16"	1 7/32"	11 11/16"	5456A52	111.51
2 1/8"	1 1/4"	12"	5456A29	117.94
2 3/16"	1 1/4"	12"	5456A23	117.79
2 1/4"	1 7/16"	12 3/8"	5456A24	123.14
2 3/8"	1 7/16"	12 3/8"	5456A25	156.99
2 9/16"	1 17/32"	12 11/16"	5456A26	182.29
2 5/8"	1 17/32"	12 11/16"	5456A27	185.38
2 3/4"	1 17/32"	13 1/16"	5456A31	214.69
2 15/16"	1 17/32"	13 7/16"	5456A44	248.19
3"	1 5/8"	13 13/16"	5456A32	264.22
3 1/8"	1 5/8"	13 13/16"	5456A33	264.26
3 3/8"	1 23/32"	14 1/8"	5456A34	275.61
3 1/2"	1 23/32"	14 1/8"	5456A35	303.99
3 3/4"	1 23/32"	14 1/2"	5456A36	378.12
3 7/8"	1 23/32"	14 1/2"	5456A37	378.12
4 1/8"	2 7/8"	16 3/16"	5456A38	552.07
4 1/4"	2 7/8"	16 3/16"	5456A39	581.77
4 1/2"	3"	18 3/16"	5456A41	730.12
4 5/8"	3"	18 3/16"	5456A42	736.29

Ratcheting Box Wrenches

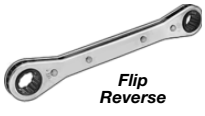

You'll have twice the ratcheting choices—each end has a different size 12-point opening (unless noted). Wrenches require a 26° handle swing to turn a fastener. Made of nickel-chrome plated steel. Meet Fed. Spec. GGG-W-001405.

6-point wrenches offer maximum surface contact on hex fasteners. ***12-point*** wrenches provide less surface contact than 6-point wrenches, but are easier to position.

Flip Reverse—Turn wrenches over to reverse ratchet action.

Lever Reverse—Wrenches have a lever to reverse direction. Retaining rings prevent the wrench from slipping past the nut while you loosen or tighten it.

Wrench Sets—Packed in a vinyl pouch, unless noted.		
No. of Pieces	**Sizes in Set**	**Per Set**
Inch—*Flip Reverse*		
3	3/8" × 7/16"●, 1/2" × 9/16"●, and 5/8" × 11/16"	5364A17 ... $31.05
3	3/8" × 7/16", 1/2" × 9/16", and 5/8" × 3/4"	5364A19 ... $33.79
5	1/4" × 5/16"●, 3/8" × 7/16"●, 1/2" × 9/16"●, 5/8" × 11/16", and 3/4" × 7/8"	5364A13 ... $56.17
6	1/4" × 5/16"●, 3/8" × 7/16"●, 1/2" × 9/16"●, 5/8" × 11/16", 3/4" × 7/8", and 13/16" × 15/16"	5364A15 ... $76.32
Inch—*Lever Reverse*		
5	1/4" × 5/16", 3/8" × 7/16", 1/2" × 9/16", 5/8" × 3/4", and 11/16" × 7/8"	5688A31★ $81.99
Metric—*Flip Reverse*		
3	9 × 10, 13 × 14, and 15 × 17 mm	7235A27 ... $33.68
5	7 × 8●, 9 × 10●, 11 × 13●, 12 × 14●, and 15 × 17 mm	7235A23 ... $59.12
Metric—*Lever Reverse*		
5	7 × 8, 9 × 10, 11 × 12, 13 × 14, and 15 × 17 mm	5688A32★ $81.99

● Has 6-point openings. ★ Packed in a plastic caddy.

Individual Wrenches

Size	O'all Lg.	*Flip Reverse*	Each	*Lever Reverse*	Each
Inch					
1/4" × 5/16"	4 3/8"	5461A1●	$9.49	—	—
1/4" × 5/16"	4 3/8"	5461A31	10.19	5688A11	$13.45
1/4" × 5/16"	8"	5461A34	22.47	—	—
3/8" × 7/16"	5 1/2"	5461A2●	10.12	—	—
3/8" × 7/16"	5 1/2"	5461A32	12.08	5688A12	14.02
3/8" × 7/16"	10"	5461A35	24.86	—	—
1/2" × 9/16"	6 7/8"	5461A3●	12.72	—	—
1/2" × 9/16"	6 7/8"	5461A33	14.99	5688A13	18.00
1/2" × 9/16"	10"	5461A36	24.07	—	—
5/8" × 11/16"	8 1/8"	5461A4	17.48	—	—
5/8" × 11/16"	12"	5461A41	27.49	—	—
5/8" × 3/4"	8 1/8"	5461A5	17.83	5688A14	22.42
11/16" × 7/8"	9 1/4"	5461A83	20.49	5688A15	23.04
3/4" × 7/8"	9 1/4"	5461A8	20.49	—	—
3/4" × 7/8"	14"	5461A82	26.92	—	—
13/16" × 7/8"	9 1/4"	5461A6	20.49	—	—
13/16" × 15/16"	9 1/4"	5461A9	20.49	—	—
1" × 1 1/16"	15"	5461A21	41.49	—	—
1 1/16" × 1 1/8"	15"	5461A24	41.49	—	—
1 1/16" × 1 1/4"	15"	5461A25	41.49	—	—
1 1/8" × 1 3/16"	15"	5461A22	41.49	—	—
Metric					
7 × 8 mm	4 3/8"	7235A11●	10.39	5688A21	11.86
9 × 10 mm	5 1/2"	7235A12●	12.08	5688A22	12.69
11 × 12 mm	6 7/8"	7235A13●	15.31	5688A23	18.00
11 × 13 mm	6 7/8"	7235A16●	15.31	—	—
12 × 14 mm	6 7/8"	7235A17●	15.31	—	—
13 × 14 mm	6 7/8"	7235A14●	15.31	5688A24	22.00
15 × 17 mm	8 1/8"	7235A15	18.14	5688A25	22.81
16 × 18 mm	8 1/8"	7235A24	18.37	5688A26	22.81
19 × 21 mm	9 1/4"	7235A25	20.49	5688A27	22.81

● Has 6-point openings.

Tight-Access Ratcheting Box Wrenches

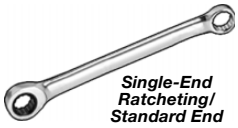

Single-End Ratcheting/ Standard End

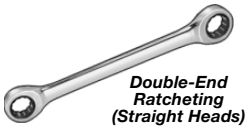

Double-End Ratcheting (Straight Heads)

You don't need a lot of space to turn fasteners; wrenches have ratcheting heads that require only a 5° handle swing. Choose wrenches with a ratcheting head on one or both ends. Openings are 12 point. Made of forged steel with a polished (mirror-like) chrome finish.

Single-End Ratcheting/Standard End— Wrenches have a ratcheting box end and a standard box end. Flip them over to reverse ratchet action. Ratcheting box end has a straight head. Standard box end has a 15° offset head.

Double-End Ratcheting— Both heads are ratcheting. Flip wrenches over to reverse ratchet action, except 6443A14 wrenches have a lever to reverse direction.

Single-End Ratcheting/Standard End Wrench Sets

7-Pc. Inch Set— Includes sizes 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4". Packed in a roll-up pouch.
5348A21 ..... **Per Set** $165.93

10-Pc. Metric Set— Includes sizes 10 mm through 19 mm. Packed in a roll-up pouch.
5348A51 ..... **Per Set** $250.29

Single-End Ratcheting/Standard End Wrenches

Size	O'all Lg.		Each	Size	O'all Lg.		Each
Inch				***Metric***			
3/8"	6 3/4"	**5348A12**	$17.14	10 mm	6 3/4"	**5348A33**	$17.64
7/16"	7 5/16"	**5348A13**	19.73	11 mm	7 5/16"	**5348A34**	21.26
1/2"	8 9/16"	**5348A14**	21.78	12 mm	7 15/16"	**5348A35**	21.70
9/16"	9 1/4"	**5348A15**	25.00	13 mm	8 9/16"	**5348A36**	26.54
5/8"	10 1/2"	**5348A16**	25.74	14 mm	9 1/4"	**5348A37**	27.14
11/16"	11 1/4"	**5348A17**	29.65	15 mm	9 15/16"	**5348A38**	27.69
3/4"	12 5/8"	**5348A18**	29.65	16 mm	10 9/16"	**5348A39**	28.48
13/16"	13 3/8"	**5348A19**	47.03	17 mm	11 1/4"	**5348A41**	29.15
7/8"	14 1/4"	**5348A22**	49.46	18 mm	11 15/16"	**5348A42**	29.85
15/16"	15 1/8"	**5348A23**	55.33	19 mm	12 5/8"	**5348A43**	30.52
1"	16 1/16"	**5348A24**	55.33	21 mm	13 3/8"	**5348A44**	48.19

Double-End Ratcheting Wrench Sets

4-Pc. Straight Inch Set— Includes sizes 5/16"×3/8", 7/16"×1/2", 9/16"×5/8", and 11/16"×3/4". Heads are straight. Packed in a plastic tray.
6443A11 ..... **Per Set** $63.03

4-Pc. Offset Inch Set— Includes sizes 5/16"×3/8", 7/16"×1/2", 9/16"×5/8", and 11/16"×3/4". Heads are 15° offset. Packed in a metal box.
6443A14 ..... **Per Set** $75.95

6-Pc. Metric Set— Includes sizes 8×9, 10×11, 12×13, 14×15, 16×18, and 17×19 mm. Heads are straight. Packed in a plastic tray.
6443A12 ..... **Per Set** $91.02

Insulated Ratcheting Box Wrenches

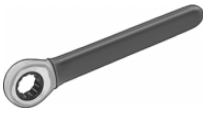

Wrenches have insulated handles that are tested to 1,000 volts. They comply with IEC 60900 and ASTM F1505-01. All have a straight head with a 12-point opening and require only a 6° handle swing to turn a fastener. Flip wrenches over to reverse the ratchet action. Made of forged steel.

Size	O'all Lg.		Each
3/8"	5 5/8"	**7449A61**	$39.81
7/16"	5 3/4"	**7449A62**	43.97
1/2"	6 1/8"	**7449A63**	44.97
9/16"	6 1/2"	**7449A64**	46.97
5/8"	6 15/16"	**7449A65**	48.97
3/4"	8 5/16"	**7449A67**	51.97

Square-Head Ratcheting Box Wrenches

The square heads are ideal for shut-off and service valves in air conditioning, refrigeration, and welding systems. Each wrench accommodates four sizes, two on each side. All have straight heads (unless noted) and require a 23° handle swing to turn a fastener. Push the lever to reverse the ratchet action. Made of nickel-chrome plated steel. Meet Fed. Spec. GGG-W-001405.

Size	O'all Lg.		Each
3/16" and 1/4" sq. × 1/2" and 9/16" hex	7"	**5473A11**	$21.50
3/16" and 1/4" sq. × 5/16" and 3/8" sq.	5 1/2"	**5473A12**	18.27
3/16" and 1/4" sq. × 5/16" and 3/8" sq.	5 3/16"	**5473A15** ♦	22.58

♦ Heads are offset 25°.

Offset Ratcheting Box Wrenches

Because the wrench heads are offset 25°, you'll have easier access to hard-to-reach fasteners. All require a 25° handle swing to turn a fastener. Just push the lever to reverse direction. Made of nickel-chrome plated steel. Meet Fed. Spec. GGG-W-001405. ***Single-end*** wrenches have a plastic handle.

Use ***6-point wrenches*** for maximum surface contact on hex fasteners. ***12-point wrenches*** provide less surface contact than 6-point wrenches, but are easier to position.

Wrench Sets— Openings are 6-point, unless noted.		
Pieces	**Sizes in Set**	**Per Set**
Inch, Double End— *Packed in a vinyl pouch.*		
3	1/4"×5/16", 3/8"×7/16", and 1/2"×9/16"	**5396A41** ... $32.31
5	1/4"×5/16", 3/8"×7/16", 1/2"×9/16", 5/8"×11/16"■, and 3/4"×7/8"■	**5396A22** ... $66.37
Metric, Double End— *Packed in a vinyl pouch.*		
5	7×8, 9×10, 11×13, 12×14, and 15×17■ mm	**5359A81** ... $66.09

■ Has 12-point openings.

6-Point Individual Wrenches

Size	O'all Lg.		Each	Size, mm	O'all Lg.		Each
Inch, Single End				***Metric, Single End***			
1/4"	5 1/2"	**54105A31**	$27.69	8	5 1/2"	**54235A52**	$27.17
5/16"	5 1/2"	**54105A32**	27.69	10	5 1/2"	**54235A53**	27.17
3/8"	5 1/2"	**54105A33**	27.17	11	6 3/4"	**54235A54**	29.52
7/16"	5 1/2"	**54105A34**	27.17	12	6 3/4"	**54235A55**	29.52
1/2"	6 3/4"	**54105A35**	30.97	13	6 3/4"	**54235A56**	29.52
9/16"	7"	**54105A36**	29.52	14	7"	**54235A57**	29.52
Inch, Double End				***Metric, Double End***			
1/4"×5/16"	4 1/4"	**5396A12**	10.99	7× 8	4 1/4"	**5359A71**	11.02
3/8"×7/16"	5 7/16"	**5396A14**	12.76	9×10	5 7/16"	**5359A72**	13.39
1/2"×9/16"	6 3/4"	**5396A16**	16.00	11×12	6 3/4"	**5359A73**	16.71
				11×13	6 3/4"	**5359A78**	15.28
				12×14	6 3/4"	**5359A79**	14.97
				13×14	6 3/4"	**5359A74**	16.71

12-Point Individual Wrenches

Size	O'all Lg.		Each	Size, mm	O'all Lg.		Each
Inch, Single End				***Metric, Single End***			
5/8"	7 3/4"	**54105A37**	$34.32	15	7 3/4"	**54235A58**	$35.38
3/4"	8 3/4"	**54105A39**	36.09	16	7 3/4"	**54235A59**	36.09
7/8"	9"	**54105A41**	36.09	17	8"	**54235A61**	35.38
Inch, Double End				***Metric, Double End***			
1/4" ×5/16"	4 1/4"	**5396A31**	11.16	15×17	8"	**5359A75**	19.43
5/16" ×11/32"	4 1/4"	**5396A34**	13.70	16×18	8"	**5359A76**	20.00
3/8" ×7/16"	5 7/16"	**5396A32**	13.39	19×21	9 1/8"	**5359A77**	22.98
1/2" ×9/16"	6 3/4"	**5396A33**	16.71				
5/8" ×11/16"	8"	**5396A18**	19.43				
5/8" ×3/4"	8"	**5396A23**	19.43				
3/4" ×7/8"	9 1/8"	**5396A21**	22.32				
13/16"×15/16"	9 1/8"	**5396A36**	22.75				

Large-Size Heavy Duty Ratcheting Box Wrenches

Meet the demands of heavy equipment and industrial applications with extra-large wrenches. All have a straight head with a 12-point opening and require a 20° handle swing to turn a fastener. Just flip wrenches over to reverse ratchet action. Made of nickel-chrome plated steel with a vinyl grip. Meet Fed. Spec. GGG-W-001405.

Size	O'all Lg.		Each	Size	O'all Lg.		Each
Inch— *Head Thickness is 5/8"*				***Metric—*** *Head Thickness is 9/16"*			
15/16"	15 1/2"	**5183A21**	$91.07	22 mm	12"	**5183A34**	$36.68
13/8"	15 1/2"	**5183A22**	91.07	23 mm	12"	**5183A35**	36.68
17/16"	15 1/2"	**5183A23**	91.07	24 mm	12"	**5183A36**	36.68
11/2"	15 1/2"	**5183A24**	91.07	25 mm	12"	**5183A37**	36.68
19/16"	15 1/2"	**5183A25**	91.07	26 mm	12"	**5183A38**	36.68
15/8"	15 1/2"	**5183A26**	91.07	27 mm	12"	**5183A39**	36.68
11 1/16"	19"	**5183A27**	109.72	29 mm	12"	**5183A41**	36.68
13/4"	19"	**5183A28**	109.72	30 mm	12"	**5183A42**	36.68
13 3/16"	19"	**5183A29**	109.72				
17/8"	19"	**5183A31**	109.72	***Metric—*** *Head Thickness is 5/8"*			
2"	19"	**5183A32**	109.72	32 mm	15 1/2"	**5183A43**	91.07
2 1/8"	19"	**5183A33**	109.72	36 mm	15 1/2"	**5183A44**	91.07

Bolt-Through Reversible Ratcheting Wrenches

Square, Reversing Control on Top of Head

6 Point, Reversing Control at End of Handle

Round Bore with Keyway, Reversing Control on Side of Head

Open socket head allows bolts to pass through.

A straight, open socket head allows long bolts to pass through. Wrenches require a 23° handle swing to turn a fastener. Choose square, 6-point, or round bore with keyway wrenches. ***Round bore with keyway*** wrenches have a channel that allows the female bore to lock onto a male shaft.

Wrenches with ***reversing control on side of head*** have a lever on the side of the head to reverse direction. Wrenches with ***reversing control on top of head*** have a lever on the top of the head to reverse direction. Wrenches with ***reversing control at end of handle*** have a knurled knob at the end of the handle to reverse direction, making them perfect for work in tight areas.

Standard Duty—An economical alternative to the heavy duty wrenches, these are made of stamped steel side plates that are riveted together. Handles are plain (unless noted). Sockets are not replaceable.

Heavy Duty—Made of cast iron, wrenches can be used as hand-held ratcheting tools or can be mounted to machinery to serve as handles for turning, motion control, and adjustments. Sockets are replaceable.

To Order: Please specify size where necessary.

Square

Available Sizes	O'all Lg.	Head OD	Head Thick.		Each
Standard Duty Reversing Control on Side of Head					
1/2", 5/8"	7 13/16"	19/16"	19/32"	7277A565	$36.65
1/2", 5/8", 3/4"	9"	2 1/16"	7/8"	7277A555▲	78.14
3/4", 1"	13 1/2"	2 1/2"	7/8"	7277A545	85.72
Heavy Duty Reversing Control on Top of Head					
3/8", 1/2", 5/8"	6 15/16"	1 13/16"	23/32"	5519A2	83.58
1/2", 5/8"	11"	1 15/16"	7/8"	5519A3	110.35
3/4", 7/8", 1", 1 1/8"	16 1/2"	3"	1 7/32"	5519A4	158.69
1", 1 1/8", 1 1/4"	25 7/8"	3 3/4"	1 3/8"	5519A5	328.48
Heavy Duty Reversing Control at End of Handle					
3/8", 7/16", 1/2"	8 3/16"	1 9/16"	13/16"	5508A9	163.54
1/2", 9/16", 5/8"	11 1/2"	2"	1"	5508A11	183.54
5/8", 3/4"	13 9/16"	2 3/8"	1 1/8"	5508A12	215.94
3/4", 7/8", 1"	17 1/8"	3 1/8"	1 7/32"	5508A13	262.28
3/4", 1"	20 1/16"	3 1/8"	1 7/32"	5508A14	298.74
1 1/8", 1 1/4", 1 1/2"	26 9/16"	3 3/4"	1 3/8"	5508A15	416.59
1 1/2", 2"	39 3/16"	4 7/8"	1 1/2"	5508A16	629.03

▲ Has a vinyl grip handle.

6 Point

Available Sizes	O'all Lg.	Head OD	Head Thick.		Each
Standard Duty Reversing Control on Side of Head					
5/8", 3/4"	7 13/16"	1 9/16"	19/32"	7277A435	$36.65
3/4", 7/8", 1"	9"	2 1/16"	7/8"	7277A425▲	78.14
3/4", 1"	13 1/2"	2 1/2"	7/8"	7277A415	85.72
Heavy Duty Reversing Control on Top of Head					
1/2", 9/16", 5/8", 3/4"	6 15/16"	1 13/16"	23/32"	5519A17	83.58
3/4"	11"	1 15/16"	7/8"	5519A342	110.35
1", 1 1/8", 1 1/4"	16 1/2"	3"	1 7/32"	5519A18	158.69
1 1/2", 1 5/8"	25 7/8"	3 3/4"	1 3/8"	5519A19	328.48
Heavy Duty Reversing Control at End of Handle					
3/4"	11 1/2"	2"	1"	5508A347	183.54
1 1/4"	20 1/16"	3 1/8"	1 7/32"	5508A493	298.74

▲ Has a vinyl grip handle.

Round Bore with Keyway

Available Sizes	Keyway Size	O'all Lg.	Head OD	Head Thick.		Each
Standard Duty Reversing Control on Side of Head						
3/4"	3/16"	7 13/16"	1 9/16"	19/32"	7277A31	$36.65
Heavy Duty Reversing Control on Top of Head						
1/2"	1/8"	9"	1 15/16"	7/8"	52795A111	102.20
5/8"	3/16"	6 15/16"	1 13/16"	23/32"	52795A112	85.49
3/4"	3/16"	11"	1 15/16"	7/8"	52795A114	112.89
1", 1 1/4"	1/4"	16 1/2"	3"	1 7/32"	52795A24	157.03

Ratcheting Torx Box Wrenches

Both ends ratchet and have a 6-point Torx opening. Wrenches require only a 5° handle swing to turn a fastener. Flip them over to reverse ratchet action. Heads are straight. Made of forged steel with a polished (mirror-like) chrome finish.

4-Pc. Set—Includes one of each size wrench listed below. Set is packed in a plastic tray.

6065A25 ..... **Per Set** $80.96

Size	O'all Lg.		Each	Size	O'all Lg.		Each
E6/E8	5 1/8"	6065A13	$21.05	E14/E18	7 1/2"	6065A17	$26.30
E10/E12	5 7/8"	6065A15	22.11	E20/E24	9 1/16"	6065A19	28.94

Quick-Grab Ratchet-Action Wrenches

You'll have the advantages of an open-end wrench, plus the convenience of ratchet action. The jaws snap open to slip onto fittings and fasteners; then, they close tightly for ratcheting. Wrenches require a 30° handle swing to turn a fastener. All are made of hardened steel with a black finish.

Also Available: Metric sizes. Please ask for 56215A5 and specify desired size: 7-19 mm or 21-24 mm.

Wrench Sets—Packed in a vinyl roll-up pouch.

4-Pc. Inch Set—Includes sizes 1/2", 9/16", 5/8", and 3/4".

5515A32 ..... **Per Set** $84.42

7-Pc. Inch Set—Includes sizes 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4".

5515A44 ..... **Per Set** $150.81

5-Pc. Metric Set—Includes sizes 10, 11, 12, 13, and 14 mm.

56215A55 ..... **Per Set** $116.16

Individual Wrenches

Size	O'all Lg.		Each	Size	O'all Lg.		Each
5/16"	5 1/2"	5515A35	$17.35	13/16"	9 3/8"	5515A19	$28.76
3/8"	5 7/16"	5515A11	18.87	7/8"	9 3/8"	5515A21	28.76
7/16"	5 7/16"	5515A12	18.87	15/16"	9 3/8"	5515A22	28.76
1/2"	5 7/16"	5515A13	18.87	1"	9 3/8"	5515A18	27.13
9/16"	7 1/4"	5515A14	23.26	1 1/16"	13 5/8"	5515A36	91.68
5/8"	7 1/4"	5515A15	23.25	1 1/8"	13 5/8"	5515A37	91.68
11/16"	7 1/4"	5515A16	23.26	1 1/4"	13 5/8"	5515A38	99.87
3/4"	7 1/4"	5515A17	23.25				

Wrench Holders

Screw Mount

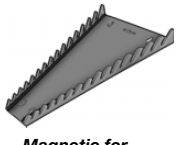

Magnetic for 15 Wrenches

Harsh Environment

Screw Mount—Require four #11 screws for surface or wall mounting (screws not included). Wrenches are held in place by spring tabs. Slots are marked with the wrench size. Made of ABS plastic.

Magnetic—Have a magnetic back for mounting. Wrenches are held in place by tabs. Made of polystyrene.

Harsh Environment—Designed for offset combination wrenches, holders are made of polyethylene foam that stands up to petroleum products and solvents. Slots are marked with the wrench size. Base is a contrasting color to clearly identify missing tools. Holders lay flat.

	For No. of Wrenches	Sizes Marked	Overall Size, Lg.×Wd.×Ht.		Each
Screw Mount					
Inch	13	1/4"-15/16"	12" × 6" × 1 1/2"	8371A21	$8.80
Metric	13	6-18 mm	12" × 6" × 1 1/2"	8371A22	8.80
Magnetic					
Inch/Metric	7	_____	6" × 2" × 1 1/4"	5417A22	9.50
Inch/Metric	15	_____	11 5/8" × 7" × 1"	5417A31	14.13
Harsh Environment					
Inch	14	1/4"-1"	12" × 16" × 1 1/4"	5159A12	51.69
Metric	14	6-19 mm	10 1/2" × 13" × 1 1/4"	5159A13	51.69

Socket Wrenches

90° Offset

T-Handle

Stubborn fasteners are no match for these heavy duty socket wrenches. All are made of forged carbon steel with a black finish.

T-handle wrenches allow faster turning.

Use ***4-point*** wrenches on square fasteners. Use ***6-point*** wrenches on hex fasteners.

90° Offset Wrenches

Size	O'all Lg.		Each
4 Point			
1/4"	3 3/8"	5532A31	$19.75
5/16"	3 7/8"	5532A32	20.07
3/8"	4 5/16"	5532A33	21.61
7/16"	5 7/8"	5532A34	25.62
1/2"	6 1/4"	5532A35	30.13
9/16"	6 3/4"	5532A36	34.01
5/8"	7 1/2"	5532A37	37.79
3/4"	8 3/8"	5532A38	49.86

Size	O'all Lg.		Each
6 Point			
7/16"	4 5/16"	5533A54	$20.25
1/2"	5 1/8"	5533A55	22.08
9/16"	5 7/8"	5533A56	26.07
5/8"	6 1/4"	5533A58	30.34
3/4"	6 3/4"	5533A63	31.70
7/8"	8 3/8"	5533A66	39.57
15/16"	9 1/8"	5533A67	48.07
1 1/16"	10"	5533A69	52.74

T-Handle Wrenches

Size	O'all Lg.		Each
4 Point			
3/16"	4 1/4"	5532A11	$23.59
1/4"	4 1/4"	5532A12	23.59
5/16"	4 1/2"	5532A13	27.45
3/8"	4 7/8"	5532A14	32.09
7/16"	5 3/4"	5532A15	33.39
1/2"	6 1/8"	5532A16	33.39
9/16"	6 1/2"	5532A17	41.87
5/8"	7"	5532A18	44.21
3/4"	7 3/8"	5532A21	49.75

Size	O'all Lg.		Each
6 Point			
5/16"	4 1/4"	5533A11	$23.55
3/8"	4 1/2"	5533A12	24.63
7/16"	4 7/8"	5533A14	32.02
1/2"	5 1/4"	5533A15	32.02
9/16"	5 3/4"	5533A16	33.45
5/8"	6 1/8"	5533A18	33.45
11/16"	6 1/2"	5533A19	41.79
3/4"	6 1/2"	5533A23	43.41

Self-Adjusting Ratcheting Socket Wrenches

No more searching around for the right socket—slide the lever, and the wrench jaw adjusts to fit square and hex fasteners. A second lever reverses ratchet action. Made of cast aluminum with steel jaws and a black finish. Handle is plastic.

Jaws Expanded

Size	O'all Lg.	Handle Swing		Each
5/16"-17/32" (8-14 mm)	8"	15°	53735A31	$23.81
9/16"-13/16" (14-21 mm)	10"	18°	53735A35	28.57

Bolt-Through Socket Wrenches

Each end has the same size socket for reaching recessed fasteners, but one end is open and offset 90° to fit over long bolts and studs. For extra leverage on the straight end, slip a bar through the offset end to create a T-handle. Wrenches are made of forged steel with a satin (dull) chrome finish.

Use ***6-point*** wrenches for maximum surface contact on hex fasteners. The ***12-point*** wrenches provide less surface contact than 6-point wrenches, but are easier to position.

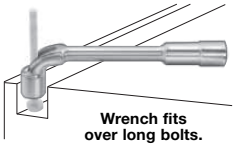
Wrench fits over long bolts.

Inch—6 point × 6 point

Size	O'all Lg.		Each
1/4"	4"	7250A11	$15.35
5/16"	4 1/2"	7250A12	15.24
3/8"	5 1/16"	7250A13	15.24
7/16"	5 5/16"	7250A14	16.00
1/2"	6"	7250A15	18.28

Size	O'all Lg.		Each
9/16"	6 5/8"	7250A16	$20.53
5/8"	7"	7250A17	23.34
3/4"	8"	7250A19	29.16
13/16"	8 11/16"	7250A21	35.14

Metric—12 point (offset end) × 6 point

Size	O'all Lg.		Each
8 mm	4 1/2"	7247A46	$15.36
10 mm	5 1/16"	7247A48	15.79
11 mm	5 5/16"	7247A49	16.46
12 mm	5 11/16"	7247A51	17.74
13 mm	6"	7247A52	18.35

Size	O'all Lg.		Each
14 mm	6 5/16"	7247A53	$20.33
15 mm	6 5/8"	7247A54	21.00
17 mm	7 3/8"	7247A56	23.26
19 mm	8"	7247A58	29.04

Lug Wrenches

Wrenches are made of alloy steel with a gray painted finish (unless noted). All have a strong, durable welded center.

Sizes	O'all Lg.		Each
Passenger Car—*Inch*			
3/4", 13/16", 7/8", and 15/16" hex	22"	6679A2	$35.60
Passenger Car—*Metric with Blue Painted Finish*			
17 mm, 19 mm (3/4"), 21 mm (13/16"), and 22 mm (7/8") hex	18"	6679A4	19.79
Light Truck			
7/8", 15/16", 1", and 1 1/16" hex	25"	6679A5	46.08
Heavy Truck			
1 1/16", 1 1/4", and 1 1/2" hex; 13/16" square	27 1/2"	6679A3	101.63

Flex-End Socket Wrenches

A 12-point socket end pivots 180° to give you easy access to hard-to-reach fasteners. Wrenches are made of forged steel.

Open/flex-end wrenches have a polished (mirror-like) chrome finish. Both ends are the same size. ***Double flex-end wrenches*** have a satin (dull) chrome finish with polished heads.

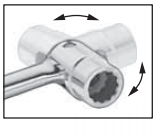

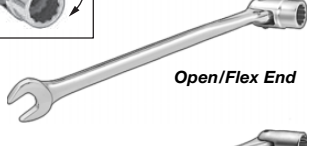
Open/Flex End

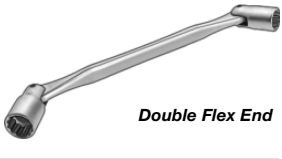
Double Flex End

Open/Flex-End Wrench Sets

No. of Pieces	Sizes in Set		Per Set
Inch Sets—*Packed in a vinyl roll-up pouch.*			
4	7/16", 1/2", 9/16", and 5/8"	5435A64	$93.11
7	3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4"	5435A63	189.39
Metric Set			
12	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm	54775A62	621.53

Open/Flex-End Individual Wrenches

Size	Open-End Head Thick.	O'all Lg.		Each
Inch				
1/4"	3/16"	4 11/16"	5435A49	$18.43
5/16"	13/64"	5 9/16"	5435A51	19.53
3/8"	7/32"	6 5/16"	5435A52	19.80
7/16"	1/4"	7 1/8"	5435A53	19.96
1/2"	17/64"	8 1/4"	5435A54	21.63
9/16"	9/32"	8 11/16"	5435A55	24.02
5/8"	19/64"	9 1/2"	5435A56	27.38
11/16"	5/16"	10 1/4"	5435A57	27.77
3/4"	11/32"	10 1/4"	5435A58	29.87
13/16"	3/8"	11 7/8"	5435A61	34.46
7/8"	25/64"	12 3/4"	5435A62	35.05

Size	Open-End Head Thick.	O'all Lg.		Each
Metric				
8 mm	13/64"	5 3/4"	54775A36	$52.12
9 mm	13/64"	6 1/8"	54775A37	53.74
10 mm	7/32"	6 9/16"	54775A38	51.95
11 mm	1/4"	7 1/8"	54775A39	53.03
12 mm	15/64"	7 13/16"	54775A41	54.12
13 mm	9/32"	8 1/16"	54775A42	55.20
14 mm	9/32"	8 3/8"	54775A43	61.70
15 mm	9/32"	8 13/16"	54775A44	67.12
16 mm	9/32"	9"	54775A45	73.02
17 mm	5/16"	9 11/16"	54775A46	74.02
18 mm	5/16"	10"	54775A47	76.02
19 mm	5/16"	10 1/4"	54775A48	81.05

Double Flex-End Individual Wrenches

Size	O'all Lg.		Each
Inch			
3/8" × 7/16"	6 1/2"	55675A62	$43.55
1/2" × 9/16"	9 1/4"	55675A63	54.43
5/8" × 3/4"	11 1/4"	55675A65	72.37
Metric			
16 × 17 mm	11"	55675A21	50.48
18 × 19 mm	11 1/4"	55675A22	51.83
20 × 22 mm	12 15/16"	55675A23	67.86

Master Inch and Metric Tool Sets

You'll get both inch and metric tools to handle a wide variety of jobs. Sockets and wrenches are forged alloy steel with a chrome finish.

75-Piece Set

Packed in a 16″ Ht.×11″ Wd.×3¼″ Dp. plastic case and includes the tools listed below:

- 43-pc. ¼″ sq. drive tools: sockets (inch and metric), ratchet, and extension
- 32-pc. ⅜″ sq. drive tools: sockets (inch and metric), ratchet, and extension

57615A61 ..... **Per Set** $77.41

170-Piece Set

Packed in a 15″ Ht.×15″ Wd.×4″ Dp. plastic case. Set includes the tools listed below:

- 30-pc. ¼″ sq. drive tools: sockets (inch and metric), ratchet, and extensions
- 27-pc. ⅜″ sq. drive tools: sockets (inch and metric), ratchet, and extensions
- 11-pc. ½″ sq. drive tools: sockets (inch and metric) and ratchet
- 56-pc. ¼″ sq. bits set: 55 bits and 1 holder
- 8 combination wrenches (inch and metric)
- 12 nutdrivers (inch and metric)
- 26 hex keys (inch and metric)

57615A62 ..... **Per Set** $141.45

Economy Inch and Metric Tool Sets

Tools are made of forged steel.

70-Piece Set

Set comes in a 9½″ Ht.×13″ Wd.×2½″ Dp. plastic case and includes tools listed below:

- 19-pc. ¼″ sq. drive tools: sockets (inch and metric), ratchet, extension, and adapter
- 18-pc. ⅜″ sq. drive tools: sockets (inch and metric), ratchet, and extension
- 12 combination wrenches (inch and metric)
- 13-pc. screwdriver set: 10″ magnetic driver with 12 bits (slotted, Phillips, hex, and Torx)
- 8 hex keys (inch)

4090A23 ..... **Per Set** $73.91

147-Piece Set

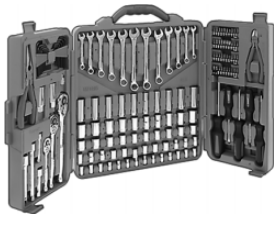

Set is packed in a 19½″ Ht.×16″ Wd.×3½″ Dp. plastic case. Includes the tools listed below:

- 22-pc. ¼″ sq. drive tools: sockets (inch and metric), ratchet, and extension
- 32-pc. ⅜″ sq. drive tools: sockets (inch and metric), ratchet, extensions, and adapter
- 12-pc. ½″ sq. drive tools: sockets (inch and metric), ratchet, and extension
- 12 combination wrenches (inch and metric)
- 2 pliers (long nose with cutter and wire cutting)
- 4 screwdrivers (slotted and Phillips)
- 45-pc. screwdriver set: 10″ magnetic driver with 38 bits (slotted, Phillips, hex, Torx, Posi-drive, and square recess), adapters, and holders
- 18-pc. hex key set: 16 hex keys (inch and metric) and 2 holders

6173A27 ..... **Per Set** $119.04

Maintenance Tool Sets

Take care of most maintenance jobs with these sets. Tools are steel.

9-Piece Set

Set comes in a vinyl roll-up pouch and includes the tools listed below:

- Screwdriver set:
  7½″ handle with bits
  Slotted: ¼″, 5/16″
  Phillips: #1, #2
  Nutdriver: ¼″, 5/16″
- 5 pliers (long nose with cutter, wire cutting, slip joint, tongue-and-groove, and vise grip)
- Fold-up hex key set (inch)
- Adjustable wrench
- Crimper/stripper

5818A66 ..... **Per Set** $131.15

33-Piece Set

Set comes in a nylon bag that has inside and outside tool pockets, strong web straps, and a zipper closure. Bag is 6″ Ht.×12″ Wd.×5½″ Dp. Set includes the tools listed below:

- 7 screwdrivers (slotted, slotted narrow blade, and Phillips)
- Screwdriver set:
  8″ driver with bits
  Slotted: 3/16″, 17/64″
  Phillips: #1, #2
  Torx: T15
- 14-pc. ¼″ sq. drive tools:
  6-pt. standard sockets (9), 3/16″ to ½″ in vinyl holder
  5½″ reversible ratchet
  6″ driver handle
  3″ and 6″ extensions
- 6 pliers (long nose with cutter (2), wire cutting (2), tongue-and-groove, and vise grip)
- Fold-up hex key set (inch)
- Adjustable wrench
- Ball peen hammer
- Electricians' knife
- Inch/metric tape rule

55915A65 ..... **Per Set** $298.74

9-Piece Insulated Electricians' Tool Set

Tools are alloy steel with insulated grips that are tested to 1,000 volts. All comply with IEC 60900 and ASTM F1505-07 standards. Set comes in a 13½″ Ht.×9½″ Wd.×2″ Dp. zippered vinyl case and includes the tools listed below:

- 5 screwdrivers (slotted and Phillips)
- 2 pliers (long nose w/cutter and wire cutting)
- 6 5/16″ wire stripper for 6-25 AWG
- 5½″ circuit tester with ⅛″ tip

5320A11 ..... **Per Set** $233.55

49-Piece Technicians' Tool Set

Get the tools you need for servicing electronic equipment, such as PCs and copy machines, in one easy-to-carry set.

The sockets and wrenches are made of forged alloy steel with a chrome finish. Set is furnished in a zippered nylon case with inside and outside tool pockets. Case is 12″ Ht.×14″ Wd.×3½″ Dp.

- 13-pc. ¼″ sq. drive tools:
  6-pt. standard sockets (9), 3/16″ to ½″ in vinyl holder
  5½″ reversible ratchet
  6″ spinner handle
  3″ and 6″ extensions
- 6-pc. screwdriver set:
  4″ handle with bits
  Slotted: 3/16″, ¼″, 5/16″
  Phillips: #1, #2
- 7-pc. mini screwdriver set:
  3″ handle with bits
  Slotted: 0.040″, 0.070″, 0.100″
  Phillips: #00, #0, #1
- 2 adjustable wrenches
- 2 pliers (long nose with cutter and wire cutting)
- Fold-up hex key set (inch)
- 6″ straight hemostat pliers
- 3-pc. soldering set
- DIP extractor
- Insertion/extraction tool
- Feeler gauge set (inch and metric)
- Alignment tool (double-end, slotted)
- Trimpot adjusting tool
- Key cap puller
- Spring combination tool
- 5″ to 19″ telescoping mirror and magnetic retriever tool
- #2 round needle file
- Standard duty precision knife
- 6″ stainless steel rule
- 5″ wire stripper/cutter
- Burnisher with 6 blades
- Penlight (AAA batteries included)

57935A45 ..... **Per Set** $384.85

Clip Rail Socket Holders

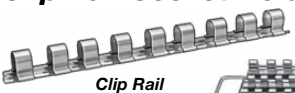

Clip Rail

Clip Rail Socket Tray

Each holder consists of a nickel-plated steel rail with nickel-plated spring steel clips. Simply press your sockets onto the clips for a secure hold. Clips can be arranged in any position along the rail.

For Sq. Drive	9″ Rails No. of Clips		Each	17″ Rails No. of Clips		Each
1/4″	9	5605A51	$2.66	16	5605A21	$3.54
3/8″	9	5605A52	2.71	16	5605A11	3.62
1/2″	9	5605A53	2.85	16	5605A12	3.80
3/4″	4	5605A54	2.89	10	5605A22	3.85

Clip Rail Socket Tray—Includes four 17″ long rails plus 60 socket clips (20 clips each for 1/4″, 3/8″, and 1/2″ sq. drive sockets). The tray is 19 1/2″ long including the handle and can hold up to 80 sockets.

5836A54 ..... **Each** $26.16

Extra Socket Clips—20 clips per package. **To Order:** Please specify 1/4″, 3/8″, 1/2″, or 3/4″ square drive.

5605A75 ..... **Per Pkg.** $3.10

Flexible Socket Holders

Bend these holders any way you like—they'll hold both standard and deep sockets tightly. Made of polyurethane, holders are nonmarring and resistant to chemicals and solvents. You can cut them to fit any space. Made to accommodate 14 sockets. **To Order:** Please specify blue or red.

For Sq. Drive	For Socket Sizes Inch	Metric	Overall Size, Lg.×Wd.×Ht.			Each
1/4″	1/8″ to 5/8″	4 to 15 mm	11 1/2″	× 7/8″	× 5/8″	5513A21 $3.22
3/8″	1/4″ to 1″	5.5 to 26 mm	14 1/2″	× 1 1/16″	× 11/16″	5513A32 5.53
1/2″	3/8″ to 1 1/2″	8 to 36 mm	17 1/2″	× 1 1/4″	× 7/8″	5513A43 6.40

Magnetic Inserts for Sockets

Slip magnetic inserts into your sockets to prevent fasteners from falling out. Inserts are plastic coated.

	No. of Inserts	For Socket Sizes		Per Set
Inch	9	3/8″ to 7/8″	8646A41	$12.84
Metric	10	10 to 19 mm	8646A51	12.84

Easy-Slide Clip Rail Socket Holders

Holders are nylon with smooth edges so sockets slide off easily. Clips are black nylon and have a steel ball detent to hold the sockets in place.

To Order: Please specify holder color: red (for inch sizes) or blue (for metric sizes), unless noted.

For Sq. Drive	No. of Clips	O'all Lg.	Holders	Each	Replacement Clips Pkg. Qty.		Per Pkg.
1/4″	10	14″	4940A27■	$8.67	5	4940A31	$4.70
1/4″	14	8 1/4″	4940A21	8.30	5	4940A31	4.70
1/4″	18	11 1/4″	4940A22	10.34	5	4940A31	4.70
3/8″	10	8 1/4″	4940A23	6.49	5	4940A32	4.70
3/8″	10	14″	4940A28■	8.67	5	4940A32	4.70
3/8″	12	11 1/4″	4940A24	7.70	5	4940A32	4.70
1/2″	8	8 1/4″	4940A25	5.60	5	4940A33	5.10
1/2″	10	11 1/4″	4940A26	6.79	5	4940A33	5.10
1/2″	10	14″	4940A29■	9.17	5	4940A33	5.10

■ Available in red only (for inch sizes).

Easy I.D. Socket Holders

Store standard and deep sockets on a post marked with their size. Holders are ABS plastic. Color is red for inch sizes and gray for metric sizes.

For Sq. Drive	For Socket Sizes	No. of Sockets (Std./Deep)	O'all Size, Lg.×Wd.×Ht.				Each
Inch							
1/4″	1/8″ to 5/8″	26 (13/13)	9″	× 2 1/4″	× 2 1/2″	7014A11	$13.53
3/8″	1/4″ to 1″	26 (13/13)	13 1/4″	× 3″	× 3″	7014A12	13.88
1/2″	3/8″ to 1 1/4″	28 (14/14)	18″	× 4″	× 3 5/8″	7014A13	14.88
Metric							
1/4″	4 to 15 mm	28 (14/14)	9″	× 2 1/4″	× 2 1/4″	7014A21	13.53
3/8″	6 to 20 mm	30 (15/15)	13 1/4″	× 3″	× 3″	7014A22	13.88
1/2″	10 to 27 mm	34 (17/17)	20 1/2″	× 3 1/2″	× 3 5/8″	7014A23	14.88

Magnetic Drawer Organizer Set for Sockets

Keep sockets neat and organized in the drawers of your tool chest. Set includes high-impact polypropylene mat with embedded magnets and 84 pegs (28 pegs each for 1/4″, 3/8″, and 1/2″ sq. drive sockets). Pegs can be used in any combination to customize your workspace. Mat is 18 3/8″ Lg.×10 1/4″ Wd.

8634A25 ..... **Per Set** $61.85

Magnetic Socket Holders

Running out of bench-top storage space? The magnetic base on these holders sticks to almost any metal surface for convenient storage. Holders accommodate both standard and deep sockets in inch and metric sizes.

Style A—Has a two-tier design. Base is rubber.

Style B—Sockets lay flat for a low profile. Made of ABS plastic. 55305A84 also holds impact sockets.

Style C—Magnetic pegs securely hold any size socket. Base is polypropylene.

To Order: For Styles A and B, please specify color from those listed.

A

B

C

	For Sq. Drive	For Socket Sizes Inch	Metric	Holds No. of Sockets	Overall Size, Lg.×Wd.×Ht.			Available Colors		Each
A	1/4″	1/4″ to 9/16″	4 to 14 mm	26 (13 Standard/13 Deep)	9 1/2″	× 2 1/4″	× 1 1/2″	Red, Neon Green, Orange	52765A41	$21.33
B	1/4″	1/8″ to 5/8″	4 to 15 mm	26 (13 Standard/13 Deep)	11 3/8″	× 4″	× 3/4″	Red, Neon Green	55305A81	19.00
B	3/8″	1/4″ to 1″	6 to 24 mm	28 (14 Standard/14 Deep)	16 5/8″	× 5″	× 7/8″	Red, Neon Green	55305A83	23.44
B	1/2″	3/8″ to 1″	9 to 20 mm	22 (11 Standard/11 Deep)	16 5/8″	× 6 3/8″	× 1 3/8″	Red, Neon Green	55305A84	27.92
C	1/4″	1/8″ to 5/8″	4 to 15 mm	10 Standard or Deep	9″	× 2 1/4″	× 7/8″	Red	5266A111	10.25
C	3/8″	1/4″ to 1″	5.5 to 26 mm	10 Standard or Deep	15 5/8″	× 2″	× 15/16″	Red	5266A121	16.12
C	1/2″	3/8″ to 1 1/2″	8 to 36 mm	10 Standard or Deep	16 5/8″	× 1 7/8″	× 1 1/16″	Red	5266A131	18.92

Harsh Environment Socket Holders

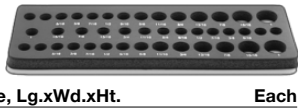

Made of polyethylene foam, these holders stand up to petroleum products and solvents used in harsh environments. Holes are marked with the socket size for easy identification.

For Sq. Drive	For Socket Sizes	Holds No. of Sockets	Overall Size, Lg.×Wd.×Ht.				Each
Inch							
1/4″	1/8″ to 9/16″	36 (12 Standard/12 Deep/12 Universal Joint Sockets)	10 1/4″	× 4″	× 7/8″	5243A12	$33.86
3/8″	5/16″ to 1″	42 (14 Standard/14 Deep/14 Universal Joint Sockets)	15 1/4″	× 5″	× 1 1/8″	5243A14	38.65
1/2″	3/8″ to 1 1/4″	30 (15 Standard/15 Deep)	15 1/4″	× 6″	× 1 3/8″	5243A16	32.17
Metric							
1/4″	4 to 15 mm	42 (14 Standard/14 Deep/14 Universal Joint Sockets)	11″	× 4″	× 7/8″	5243A13	36.91
3/8″	6 to 23 mm	54 (18 Standard/18 Deep/18 Universal Joint Sockets)	18 5/8″	× 4 5/8″	× 1 1/8″	5243A15	44.32
1/2″	10 to 24 mm	30 (15 Standard/15 Deep)	14 3/8″	× 5 5/16″	× 1 3/8″	5243A17	31.51

Square Drive Hex-Bit Sockets

Sockets on a Clip Rail

Sockets are made of heat-treated alloy steel with a chrome finish and have black or gray hex bits. Bits are replaceable, unless noted. Not for use with power or impact tools. Furnished with a clip rail, unless noted.

Pcs.	Length	Hex Sizes in Set		Per Set
1/4″ Square Drive Socket Sets				
Inch				
11	Short	1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, and 5/16″	54875A68★	$73.54
10	Long	5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, and 5/16″	54875A69	$89.28
Metric				
7	Short	2, 2.5, 3, 4, 5, 6, and 8 mm	5557A52	$44.43
3/8″ Square Drive Socket Sets				
Inch				
7	Extra Short	1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″	5570A31★	$64.24
5	Short	1/8″, 3/16″, 1/4″, 5/16″, and 3/8″	5570A36	$32.38
7	Short	1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″	5570A33	$50.33
7	Short	1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″	5570A32■	$52.38
7	Long	1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″	5570A91	$52.24
14	Short and Long	1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″ in short and long	5570A34★	$124.60
Metric				
7	Extra Short	4, 5, 6, 7, 8, 9, and 10 mm	8367A11★	$61.44
5	Short	4, 5, 6, 8, and 10 mm	8367A63	$32.44
7	Short	4, 5, 6, 7, 8, 9, and 10 mm	8367A12	$52.24
6	Long	4, 5, 6, 7, 8, and 10 mm	8367A81★	$62.72
1/2″ Square Drive Socket Sets				
Inch				
6	Short	1/4″, 5/16″, 3/8″, 1/2″, 9/16″, and 5/8″	5494A95	$78.01
7	Short	1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, and 5/8″	5494A96	$83.76
6	Long	1/4″, 5/16″, 3/8″, 1/2″, 9/16″, and 5/8″	5494A97	$70.31
Metric				
6	Short	6, 8, 10, 12, 14, and 17 mm	5571A82★	$81.25
10	Short	6, 8, 10, 12, 13, 14, 15, 17, 18, and 19 mm	5571A45★	$140.79
6	Long	6, 8, 10, 12, 14, and 17 mm	5571A83	$73.60
Combination 3/8″ and 1/2″ Square Drive Socket Sets				
Inch				
10	Short	**3/8″ sq. dr.:** 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″ **1/2″ sq. dr.:** 1/2″, 9/16″, and 5/8″	55595A51★	$104.22
10	Short	**3/8″ sq. dr.:** 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″ **1/2″ sq. dr.:** 1/2″, 9/16″, and 5/8″	55595A49★■	$104.12
Metric				
10	Short	**3/8″ sq. dr.:** 4, 5, 6, 7, 8, 9, and 10 mm **1/2″ sq. dr.:** 12, 14, and 17 mm	5554A42★■	$111.35
Combination 1/4″, 3/8″, and 1/2″ Square Drive Socket Set				
Inch				
13	Short	**1/4″ sq. dr.:** 3/32″, 1/8″, 5/32″, and 3/16″ **3/8″ sq. dr.:** 5/32″, 3/16″, 1/4″, 5/16″, and 3/8″ **1/2″ sq. dr.:** 3/8″, 1/2″, 5/8″, and 3/4″	55595A41★	$119.42

★ Hex bit is not replaceable.
■ Has a plastic case.

1/4″ Square Drive Individual Sockets

Also Available: Replacement hex bits (unless noted). For inch sizes, please ask for 54875A481 and specify hex size and length (short or long). For metric sizes, ask for 5557A291 and specify hex size.

Size	O'all Lg.		Each
Inch, Extra Short			
1/8″	1 1/16″	54875A31★	$7.50
9/64″	1 1/16″	54875A32★	7.50
5/32″	1 1/16″	54875A33★	7.50
3/16″	1 1/16″	54875A34★	7.50
Inch, Short			
0.05″	1 7/8″	54875A41	7.42
1/16″	1 7/8″	54875A43★	7.29
5/64″	1 7/8″	54875A45★	7.32
3/32″	1 7/8″	54875A47★	6.83
7/64″	1 7/8″	54875A49★	7.32
1/8″	1 7/8″	54875A52★	7.39
9/64″	1 7/8″	54875A54★	7.32
5/32″	1 7/8″	54875A56★	7.32
3/16″	1 7/8″	54875A58★	7.39
7/32″	1 7/8″	54875A61★	7.32
1/4″	1 7/8″	54875A63★	7.40
5/16″	1 7/8″	54875A65★	7.33
Inch, Long			
0.05″	3 5/16″	54875A42	8.98
1/16″	3 5/16″	54875A44	9.11
Inch, Long (Cont.)			
5/64″	3 5/16″	54875A46	$9.11
3/32″	3 5/16″	54875A48	10.49
7/64″	3 5/16″	54875A51	8.78
1/8″	4 7/16″	54875A53	8.78
9/64″	4 7/16″	54875A55	9.06
5/32″	4 7/16″	54875A57	9.06
3/16″	4 7/16″	54875A59	9.06
7/32″	4 7/16″	54875A62	9.56
1/4″	4 7/16″	54875A64	10.17
5/16″	4 7/16″	54875A66	10.17
Metric, Short			
2 mm	1 7/8″	5557A39	7.58
2.5 mm	1 7/8″	5557A41	7.58
3 mm	1 7/8″	5557A42	7.58
4 mm	1 7/8″	5557A43	7.58
5 mm	1 7/8″	5557A44	7.58
6 mm	1 7/8″	5557A45	8.16
8 mm	1 7/8″	5557A46	8.91
10 mm	1 1/2″	5557A47	12.96

★ Hex bit is not replaceable.

3/8″ Square Drive Individual Sockets

Also Available: Replacement hex bits (unless noted). Please ask for 5570A789 for inch sizes or 8367A187 for metric sizes, and specify hex size and length (short or long).

Size	O'all Lg.		Each
Inch, Extra Short			
1/16″	1 21/32″	5570A37★	$6.60
5/64″	1 21/32″	5570A38★	5.65
7/64″	1 21/32″	5570A39★	6.62
1/8″	1 13/16″	5570A11★	8.65
5/32″	1 13/16″	5570A12★	8.96
3/16″	1 13/16″	5570A17★	8.96
7/32″	1 13/16″	5570A18★	9.00
1/4″	1 13/16″	5570A19★	9.28
5/16″	1 13/16″	5570A21★	9.35
3/8″	1 13/16″	5570A22★	9.90
Inch, Short			
3/32″	1 27/32″	5570A48	8.11
1/8″	2 25/32″	5570A51	7.56
9/64″	2 25/32″	5570A64	7.67
5/32″	2 25/32″	5570A52	8.05
3/16″	2 25/32″	5570A13	8.18
7/32″	2 25/32″	5570A14	8.18
1/4″	2 25/32″	5570A15	8.85
5/16″	2 25/32″	5570A16	8.85
3/8″	2 25/32″	5570A49	9.38
Inch, Long			
3/32″	3 23/32″	5570A53★	9.06
1/8″	6 5/32″	5570A24	8.21
5/32″	6 5/32″	5570A27	8.60
3/16″	6 5/32″	5570A28	8.83
7/32″	6 5/32″	5570A29	9.20
1/4″	6 5/32″	5570A61	9.48
5/16″	6 5/32″	5570A62	9.48
3/8″	6 5/32″	5570A63	9.51
Metric, Extra Short			
5 mm	1 25/32″	8367A42★	$7.80
6 mm	1 25/32″	8367A43★	8.08
8 mm	1 25/32″	8367A45★	7.79
10 mm	1 25/32″	8367A47★	8.24
11 mm	2″	8367A48★	6.96
12 mm	2″	8367A49★	6.96
Metric, Short			
2 mm	1 55/64″	8367A18	9.09
2.5 mm	1 55/64″	8367A19	9.09
3 mm	2 25/32″	8367A21	8.12
4 mm	2 25/32″	8367A22	8.16
5 mm	2 25/32″	8367A23	8.54
6 mm	2 25/32″	8367A24	8.94
7 mm	2 25/32″	8367A25	9.09
8 mm	2 25/32″	8367A26	9.66
9 mm	2 25/32″	8367A27	9.71
10 mm	2 25/32″	8367A28	9.94
12 mm	3 5/8″	8367A29	12.85
Metric, Long			
4 mm	6 1/8″	8367A71	10.74
5 mm	6 1/8″	8367A72	10.74
6 mm	6 1/8″	8367A73	10.74
7 mm	6 1/8″	8367A74	11.45
8 mm	6 1/8″	8367A75	11.52
9 mm	6 1/8″	8367A77	12.51
10 mm	6 1/8″	8367A76	12.50

★ Hex bit is not replaceable.

1/2″ Square Drive Individual Sockets

Also Available: Replacement hex bits (unless noted). Please ask for 5494A897 for inch sizes or 5571A897 for metric sizes, and specify hex size and length (short or long).

Size	O'all Lg.		Each
Inch, Short			
1/4″	3 1/4″	5494A74	$10.25
5/16″	3 1/4″	5494A76	12.32
3/8″	3 1/4″	5494A78	12.82
7/16″	3 1/4″	5494A81	13.31
1/2″	3 23/32″	5494A82	13.92
9/16″	3 23/32″	5494A84	14.13
5/8″	3 31/32″	5494A86	14.23
3/4″	3 31/32″	5494A69	16.11
Inch, Long			
1/4″	5″	5494A75	12.29
5/16″	5″	5494A77	12.35
3/8″	6″	5494A79	13.27
1/2″	6″	5494A83	14.50
9/16″	6 31/32″	5494A85	15.56
5/8″	6 31/32″	5494A87	15.90
Metric, Short			
4 mm	2 3/64″	5571A61★	14.19
5 mm	2 3/64″	5571A62★	14.54
6 mm	3 3/16″	5571A63	11.02
Metric, Short (Cont.)			
7 mm	2 3/64″	5571A77★	$13.02
8 mm	3 3/16″	5571A64	11.37
10 mm	3 3/16″	5571A66	12.36
12 mm	3 21/32″	5571A68	13.47
13 mm	3 21/32″	5571A22★	12.87
14 mm	3 21/32″	5571A71	14.33
15 mm	3 21/32″	5571A24★	12.88
17 mm	3 15/16″	5571A73	15.63
19 mm	3 15/16″	5571A79	16.75
Metric, Long			
5 mm	7 5/64″	5571A59★	15.45
6 mm	4 31/32″	5571A76	12.91
7 mm	3 15/16″	5571A78★	14.60
8 mm	4 31/32″	5571A65	13.13
10 mm	6″	5571A67	13.72
12 mm	6″	5571A69	13.98
14 mm	7″	5571A72	15.70
17 mm	7″	5571A74	17.05

★ Hex bit is not replaceable.

1/2″ Square Drive Insulated Hex-Bit Sockets

Made of carbon steel, sockets have an insulated cover that is tested to 1,000 volts. All meet IEC 60900, ASTM F1505-01, and OSHA requirements. Bits are gray and are not replaceable. Not for use with power or impact tools.

Size	O'all Lg.		Each
1/4″	2 1/4″	7444A51	$99.30
5/16″	2 1/4″	7444A52	99.67
3/8″	2 1/4″	7444A53	99.67
7/16″	2 7/8″	7444A54	131.18
1/2″	2 7/8″	7444A55	134.60
9/16″	2 7/8″	7444A56	144.45
5/8″	2 7/8″	7444A57	144.45
3/4″	2 7/8″	7444A58	136.62

1/2″ Square Drive Insulated Ratchet Wrench—Tool is 10″ long and requires only a 5° handle swing to turn a fastener. Made of alloy steel.

5556A22 ..... **Each** $182.77

Square Drive Ball-Point Hex-Bit Sockets

A ball point on the bits allows up to a 20° angled entry—great for getting at hard-to-reach fasteners. Sockets are heat-treated alloy steel with chrome finish. Bits are black or gray. Not for use with power or impact tools.

Also Available: Replacement bits for inch sizes, except where noted. Please ask for 54905A32 and specify hex size and square drive size.

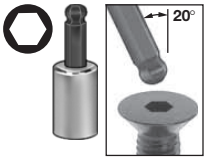

Inch Sets—Furnished with a clip rail.

No. of Pcs.	Sizes in Set		Per Set
1/4″ Square Drive, Short			
7	3/32″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″	54075A61	$49.80
3/8″ Square Drive, Short			
6	5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″	54905A59	49.88
3/8″ Square Drive, Long			
7	1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″	54905A71	66.67

Metric Sets—Furnished with a clip rail.

7-Pc. 3/8″ Square Drive Short Set—Includes 4, 5, 6, 7, 8, 9, and 10 mm sockets.
54185A41 ..... **Per Set** $62.95

8-Pc. 3/8″ Square Drive Short Set—Includes 3, 4, 5, 6, 7, 8, 9, and 10 mm sockets.
54185A39 ..... **Per Set** $129.82

Individual Sockets—Inch

Hex Size	O'all Lg.		Each
1/4″ Square Drive, Short			
3/32″	1 1/2″	54075A43	$7.27
1/8″	1 1/2″	54075A44	7.27
9/64″	1 1/2″	54075A45	7.27
5/32″	1 1/2″	54075A46	7.27
3/16″	1 1/2″	54075A47	7.27
7/32″	1 1/2″	54075A48	7.27
1/4″	1 1/2″	54075A49	7.31
3/8″ Square Drive, Short			
3/32″	1 27/32″	54905A48	9.41
1/8″	1 7/8″	54905A49	9.41
5/32″	1 7/8″	54905A51	7.97
3/16″	1 7/8″	54905A52	8.10
3/8″ Square Drive, Short (Cont.)			
7/32″	1 7/8″	54905A53	$8.62
1/4″	1 7/8″	54905A54	8.91
5/16″	1 7/8″	54905A55	8.91
3/8″	1 7/8″	54905A56	8.88
3/8″ Square Drive, Long			
1/8″	6 3/32″	54905A61 ♠	8.77
5/32″	6 3/32″	54905A62 ♠	8.96
3/16″	6 3/32″	54905A63 ♠	9.41
7/32″	6 3/32″	54905A64 ♠	9.19
1/4″	6 3/32″	54905A65 ♠	9.48
5/16″	6 3/32″	54905A66 ♠	9.50
3/8″	6 3/32″	54905A67 ♠	9.58

♠ Replacement bits are not available.

Individual Sockets—Metric

Hex Size	O'all Lg.		Each
3/8″ Square Drive, Short			
4 mm	1 11/16″	54185A32	$12.00
5 mm	1 11/16″	54185A33	12.00
6 mm	1 11/16″	54185A34	11.99
7 mm	1 11/16″	54185A37	12.90
8 mm	1 11/16″	54185A35	12.88
9 mm	1 7/8″	54185A38	14.75
10 mm	1 7/8″	54185A36	14.75
3/8″ Square Drive, Long			
3 mm	5 31/32″	54185A21	$15.93
4 mm	5 31/32″	54185A22	15.93
5 mm	5 31/32″	54185A23	15.93
6 mm	5 31/32″	54185A24	15.95
7 mm	5 31/32″	54185A25	17.10
8 mm	5 31/32″	54185A26	17.10
9 mm	5 31/32″	54185A27	17.12
10 mm	5 31/32″	54185A28	17.12

1/4″ and 3/8″ Square Drive Bit Socket Assortment

You'll get 32 sockets made of heat-treated alloy steel with a chrome finish. Bits are black. Not for use with impact tools. Furnished in a plastic case.

- **3/8″ sq. drive hex-bit sockets:** 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″
- **3/8″ sq. drive metric hex-bit sockets:** 4, 5, 6, 7, 8, 9, 10 mm
- **1/4″ sq. drive Torx-bit sockets:** T10, T15, T20, T25, T27, T30
- **3/8″ sq. drive Torx-bit sockets:** T40, T45, T47, T50
- **3/8″ sq. drive screwdriver-bit sockets:** Slotted: 3/16″, 1/4″, 5/16″, 3/8″, Phillips: #1, #2, #3

5534A22 ..... **Per Set** $59.79

Square Drive Torx-Bit Sockets

Sockets are made of heat-treated alloy steel with a chrome finish. Bits are black or gray. Not for use with power or impact tools.

Also Available: Replacement bits, except where noted. Please ask for 5474A1 for 1/4″ square drive, 6939A3 for 3/8″ square drive, or 5477A5 for 1/2″ square drive, and specify Torx size and length (short or long) where applicable.

Socket Sets

6-Pc. 1/4″ Square Drive Short Set—Includes T10, T15, T20, T25, T27, and T30 sockets and a clip rail. Packed in a vinyl pouch.
5474A51 ..... **Per Set** $45.21

8-Pc. 3/8″ Square Drive Short Set—Includes T15, T20, T25, T27, T30, T40, T45, and T50 sockets and a clip rail. Packed in a vinyl pouch.
6939A75 ..... **Per Set** $56.87

10-Pc. 1/4″ and 3/8″ Square Drive Short Set—Includes 1/4″ drive sizes T8, T10, T15, T20, and T25 sockets plus 3/8″ drive sizes T27, T30, T40, T45, and T50 sockets. Furnished with a clip rail. Packed in a vinyl pouch.
5527A11 ..... **Per Set** $72.25

6-Pc. 1/2″ Square Drive Short Set—Includes T30, T40, T45, T50, T55, and T60 sockets and a clip rail.
5477A75 ..... **Per Set** $62.70

Individual Sockets

Size	O'all Lg.		Each
1/4″ Square Drive, Short			
T6	1 1/2″	5474A37	$6.64
T7	1 1/2″	5474A38	7.38
T8	1 1/2″	5474A39	7.38
T9	1 1/2″	5474A41	7.38
T10	1 1/2″	5474A42	7.66
T15	1 1/2″	5474A43	7.66
T20	1 1/2″	5474A44	7.66
T25	1 1/2″	5474A45	7.66
T27	1 1/2″	5474A46	7.75
T30	1 1/2″	5474A47	7.75
T40	1 1/2″	5474A48	7.97
1/4″ Square Drive, Long			
T8	4 1/16″	5474A61	30.05
T10	4 1/16″	5474A62	30.05
T15	4 1/16″	5474A63	28.30
T20	4 1/16″	5474A64	28.30
T25	4 1/16″	5474A65	28.30
3/8″ Square Drive, Short			
T9	1 21/32″	6939A49	6.64
T10	1 21/32″	6939A51	7.01
T15	1 21/32″	6939A52	7.38
T20	1 21/32″	6939A53	7.38
3/8″ Square Drive, Short (Cont.)			
T25	1 21/32″	6939A54	$7.52
T27	1 21/32″	6939A55	7.52
T30	1 21/32″	6939A56	7.52
T40	1 31/32″	6939A57	9.05
T45	1 31/32″	6939A81	9.05
T47	2″	6939A86 ♠	10.99
T50	1 31/32″	6939A82	9.05
T55	1 31/32″	6939A83	10.52
3/8″ Square Drive, Long			
T30	4 1/4″	6939A84	31.42
T40	4 1/4″	6939A87	31.96
T45	4 1/4″	6939A88	32.50
T50	4 1/4″	6939A89	34.40
1/2″ Square Drive, Short			
T27	2″	5477A61	10.34
T30	2″	5477A62	10.34
T40	2 1/4″	5477A63	10.34
T45	2 1/4″	5477A64	10.41
T50	2 1/4″	5477A65	10.73
T55	2 9/16″	5477A66	13.07
T60	2 9/16″	5477A67	14.39

♠ Replacement bits are not available.

3/8″ Square Drive Tamper-Resistant Hex-Bit Socket Set

Set includes nine sockets for tamper-resistant (pin-in-head) hex screws. Sockets are heat-treated alloy steel with a chrome finish. Bits are gray. Set has a clip rail with a 1 1/2″ long socket in each of the following sizes: 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″. Not for use with power or impact tools.

Also Available: Repl. sockets and bits. For sockets, please ask for 5536A1 and specify size. For bits, please ask for 5536A2 and specify size.

5536A33 ..... **Per Set** $70.90

Square Drive Tamper-Resistant Torx-Bit Sockets

All of these sockets are for use with tamper-resistant (pin-in-head) Torx fasteners. Not for use with power or impact tools. ***24-piece set*** can also be used with standard Torx fasteners.

13-Piece Set

Sockets are heat-treated alloy steel with a chrome finish. Bits are gray. Includes 1/4″ square drive sizes T7, T8, T10, T15, T20, T25, T27, and T30, 3/8″ square drive sizes T40, T45, T50, and T55, and 1/2″ square drive size T60. Furnished with a clip rail.

54055A75 ..... **Per Set** $73.80

24-Piece Set

Set has 22 interchangeable Torx bits made of heat-treated alloy steel. All have a 3/8″ hex shank to fit 3/8″ and 1/2″ square drive bit holders (included). Holders are alloy steel with a chrome finish and have a ball detent to firmly hold bits in place. You'll get one of each size in 13/16″ and 3″ lengths: T10, T15, T20, T25, T27, T30, T40, T45, T50, T55, and T60. Furnished in a 7 1/2″ Ht. × 9″ Wd. × 1 3/4″ Dp. plastic case.

Also Available: Replacement 3″ long tamper-resistant Torx bits. Please ask for 55535A4 and specify size.

55535A42 ..... **Per Set** $75.66

Individual Sockets

Sockets are heat-treated alloy steel with a chrome finish. Bits are gray.

Size	O'all Lg.		Each
1/4″ Square Drive			
T7	1 9/16″	**54055A37**	$8.72
T8	1 9/16″	**54055A38**	8.72
T10	1 9/16″	**54055A41**	8.72
T15	1 9/16″	**54055A42**	8.72
T20	1 9/16″	**54055A43**	8.72
T25	1 9/16″	**54055A44**	8.73
1/4″ Square Drive (Cont.)			
T27	1 9/16″	**54055A45**	$8.73
T30	1 9/16″	**54055A46**	8.72
3/8″ Square Drive			
T40	1 7/8″	**54055A51**	11.12
T45	1 7/8″	**54055A52**	11.09
T50	1 7/8″	**54055A53**	11.12
T55	2″	**54055A54**	12.01

Square Drive External Torx Sockets

Sockets are made of heat-treated alloy steel and are for use with Torx fasteners. Not for use with power or impact tools. Sockets have a black finish, except those in the ***6-piece deep set***, which have a polished chrome finish.

Socket Sets— Furnished with a clip rail.

7-Pc. Standard Set— Includes 1/4″ square drive sizes E6, E7, and E8 and 3/8″ square drive sizes E10, E12, E14, and E16.

5588A44 ..... **Per Set** $35.97

6-Pc. Deep Set— Sockets are 2 1/4″ long. Includes 1/4″ square drive sizes E4, E5, E6, E7, E8, and E10.

5588A32 ..... **Per Set** $31.22

Individual Standard Sockets

Size	O'all Lg.		Each
1/4″ Square Drive			
E4	1″	**53025A38**	$4.29
E5	1″	**53025A39**	4.30
E6	1″	**53025A41**	4.43
E7	1″	**53025A42**	4.49
E8	1″	**53025A43**	4.30
3/8″ Square Drive			
E10	1 1/4″	**53215A61**	$5.89
E12	1 1/4″	**53215A62**	5.89
E14	1 1/4″	**53215A63**	5.89
E16	1 1/4″	**53215A64**	5.89
1/2″ Square Drive			
E18	1 1/2″	**55755A73**	10.03

Square Drive Torx-Plus Bit Sockets

Use Torx-Plus bit sockets for increased surface contact and 25% more torque on Torx-Plus fasteners. Sockets are heat-treated alloy steel with a chrome finish. Bits are gray. Not for use with power or impact tools.

Note: These are compatible only with Torx-Plus fasteners.

8-Piece Set

Includes 1/4″ square drive sockets in sizes IP9, IP10, IP15, and IP20; 3/8″ square drive sockets in sizes IP25, IP27, IP30, and IP40 on a clip rail; a hex key; and a vinyl pouch.

8637A41 ..... **Per Set** $55.55

Individual Sockets

1/4″ Square Drive Sockets— Overall length is 1 1/2″. Available in sizes IP6, IP7, IP8, IP9, IP10, IP15, IP20, IP25, IP27, IP30, and IP40.

To Order: Please specify size.

8637A52 ..... **Each** $6.81

3/8″ Square Drive Sockets— Overall length is 1 21/32″. Available in sizes IP9, IP10, IP15, IP20, IP25, IP27, IP30, and IP40.

To Order: Please specify size.

8637A62 ..... **Each** $8.18

About Selecting a Square Drive Size

Select the square drive size of your socket based on the size of your fastener and your space and torque needs. Some fasteners are compatible with multiple drive sizes. For work in confined areas, select the smaller drive size. If you are applying a lot of torque and space is not an issue, select the larger drive size.

Fastener Size	Fits Square Drive	Pages
1/8″ to 5/8″ and 4 to 15 mm	1/4″	2786–2788
1/4″ to 1″ and 5.5 to 26 mm	3/8″	2789-2793
3/8″ to 1 1/2″ and 10 to 36 mm	1/2″	2792-2796
3/4″ to 2 3/8″ and 19 to 55 mm	3/4″	2796-2797
1 1/16″ to 3 1/2″	1″	2797

1/4″ Square Drive Socket Sets

58455A14

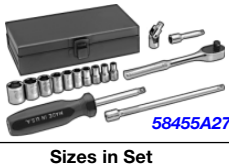

58455A27

Sockets are heat-treated alloy steel with a chrome finish. Not for use with power or impact tools. ***6-point*** and ***12-point sockets*** are for use with hex fasteners. The 6-point sockets prevent rounding and work well on fasteners made of soft metals. The 12-point sockets are easier to position. ***Premium sets*** are the finest tools available. They have gone through additional machining, grinding, and/or polishing for superior fit and finish. Made in the U.S. ***Value sets*** are high-quality tools offered at an economical price. Made in the U.S. ***Economy set*** is imported.

Pcs.	Sizes in Set	Accessories		Per Set
Premium Sets, Inch				
10	**6-pt. std.:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″	metal clip rail	**58455A14**	$38.07
13	**6-pt. std.:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″	5 1/4″ ratchet; 1 7/16″ flex joint; 1/4″ female × 3/8″ male adapter; plastic clip rail	**58455A31**	$78.09
15	**6-pt. std.:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″	5 1/4″ ratchet; 6″ driver; 2″ and 6″ extensions; 1 9/16″ flex joint; metal box	**58455A27**	$98.74
10	**6-pt. deep:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″	metal clip rail	**58455A23**	$49.32
25	**6-pt. std.:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″ **6-pt. deep:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″	5 1/4″ ratchet; 6″ driver; 2″ and 6″ extensions; 1 9/16″ flex joint; metal box	**5558A29**	$165.54
10	**12-pt. std.:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″	metal clip rail	**58455A24**	$44.53
10	**12-pt. deep:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″	metal clip rail	**58455A25**	$57.89
25	**12-pt. std.:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″ **12-pt. deep:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″	5 1/4″ ratchet; 6″ driver; 2″ and 6″ extensions; 1 9/16″ flex joint; metal box	**5558A41**	$165.81
Value Sets, Inch				
10	**6-pt. std.:** 5/32″, 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″	metal clip rail	**5837A14**	$19.26
13	**6-pt. std.:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″	5″ ratchet; 5 7/8″ driver; 1 1/2″ & 6″ extensions; metal box	**5837A29**	$38.59

(Continued on following page)

1/4" Square Drive Socket Sets *(Continued from previous page)*

Pcs.	Sizes in Set	Accessories	Per Set
Value Sets, Inch			
21	**6-pt. std.:** 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8", 7/16", 1/2" **6-pt. deep:** 1/4", 9/32", 5/16", 11/32", 3/8", 7/16", 1/2"	5 13/16" ratchet; 6" driver; 3" and 6" extensions; 1 1/4" flex joint; plastic box	**5837A49** $56.00
Economy Set, Inch			
21	**6-pt. std.:** 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8", 7/16", 1/2" **6-pt. deep:** 1/4", 9/32", 5/16", 11/32", 3/8", 7/16", 1/2"	5 1/2" ratchet; 5 7/8" driver; 3" and 6" extensions; 1 3/8" flex joint; plastic box	**5894A36** $28.67
Premium Sets, Metric			
12	**6-pt. std.:** 4, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 mm	metal clip rail	**5753A41** $42.56
16	**6-pt. std.:** 4, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 mm	5 1/4" ratchet; 6" driver; 2" extension; 1 7/16" flex joint; metal box	**7208A13** $105.55
12	**6-pt. deep:** 4, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 mm	metal clip rail	**5753A43** $48.55
30	**6-pt. std.:** 4, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 mm **6-pt. deep:** 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 mm	5 1/4" ratchet; 5 3/4" flex-head handle; 5" sliding T-handle; 6" driver; 2" and 6" extensions; 1 7/16" flex joint; metal box	**5840A33** $169.55
Value Sets, Metric			
10	**6-pt. std.:** 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13 mm	metal clip rail	**55275A14** ... $21.58
14	**6-pt. std.:** 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13 mm	5" ratchet; 5 7/8" driver; 1 1/2" and 6" extensions; metal box	**55275A25** ... $37.17
21	**6-pt. std.:** 5, 6, 7, 8, 9, 10, 11, 12, and 13 mm **6-pt. deep:** 7, 8, 9, 10, 11, 12, and 13 mm	5" ratchet; 6" driver; 3" and 6" extensions; 1 1/4" flex joint; plastic box	**55275A48** ... $58.76

1/4" Square Drive Sockets

All of these premium-quality sockets are made of heat-treated alloy steel with a chrome finish. Not for use with power or impact tools.

4-point and ***8-point sockets*** are for use with square fasteners. The 4-point sockets prevent rounding, but the 8-point sockets are easier to position. ***6-point*** and ***12-point sockets*** are for use with hex fasteners. The 6-point sockets prevent rounding and work well on fasteners made of soft metals. The 12-point sockets are easier to position.

Also Available: 12-point deep metric sockets. Please ask for 7195A2 and specify size (5-14 mm).

4 Point *6 Point*

8 Point *12 Point*

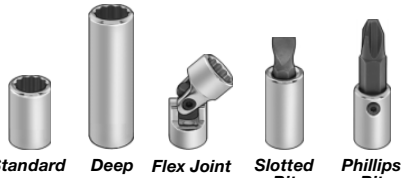

Standard *Deep* *Flex Joint* *Slotted Bit* *Phillips Bit*

Inch Sizes

Size	O'all Lg.		Each
4-Pt. Standard			
3/16"	7/8"	**5543A11**	$4.77
1/4"	7/8"	**5543A13**	4.26
6-Pt. Standard			
1/8"	7/8"	**5543A41**	4.13
5/32"	7/8"	**5543A42**	4.01
3/16"	7/8"	**5543A21**	3.98
7/32"	7/8"	**5543A22**	4.01
1/4"	7/8"	**5543A23**	4.20
9/32"	7/8"	**5543A24**	4.23
5/16"	7/8"	**5543A25**	4.27
11/32"	7/8"	**5543A26**	4.30
3/8"	7/8"	**5543A27**	4.27
7/16"	7/8"	**5543A28**	4.37
1/2"	7/8"	**5543A29**	4.35
9/16"	7/8"	**5543A43**	4.38
5/8"	31/32"	**5543A48**	4.36

Size	O'all Lg.		Each
6-Pt. Deep			
1/8"	1 61/64"	**5543A101**	$7.04
5/32"	2"	**5543A46**	4.67
3/16"	2"	**5543A72**	5.56
7/32"	2"	**5543A78**	5.79
1/4"	2"	**5543A71**	5.75
9/32"	2"	**5543A47**	5.91
5/16"	2"	**5543A73**	5.94
11/32"	2"	**5543A74**	5.83
3/8"	2"	**5543A75**	5.97
7/16"	2"	**5543A76**	6.11
1/2"	2"	**5543A77**	6.06
9/16"	2"	**5543A79**	6.18
8-Pt. Standard			
1/4"	7/8"	**5543A62**	4.46
5/16"	7/8"	**5543A63**	4.46
3/8"	7/8"	**5543A65**	4.46

Size	O'all Lg.		Each
12-Pt. Standard			
3/16"	7/8"	**5543A44**	$4.05
7/32"	7/8"	**5543A38**	4.09
1/4"	7/8"	**5543A31**	4.12
9/32"	7/8"	**5543A39**	4.22
5/16"	7/8"	**5543A32**	4.17
11/32"	7/8"	**5543A33**	4.31
3/8"	7/8"	**5543A34**	4.27
7/16"	7/8"	**5543A35**	4.30
1/2"	7/8"	**5543A36**	4.36
9/16"	7/8"	**5543A37**	4.39
12-Pt. Deep			
3/16"	2"	**5543A89**	5.82
7/32"	2"	**5543A91**	6.21
1/4"	2"	**5543A81**	6.11
9/32"	2"	**5543A82**	6.26
5/16"	2"	**5543A83**	6.10

Size	O'all Lg.		Each
12-Pt. Deep (Cont.)			
11/32"	2"	**5543A84**	$6.43
3/8"	2"	**5543A85**	6.27
7/16"	2"	**5543A86**	6.53
1/2"	2"	**5543A87**	6.48
9/16"	2"	**5543A88**	6.55
12-Pt. Flex Joint			
7/32"	1 1/4"	**5543A92**	18.39
1/4"	1 1/4"	**5543A49**	17.89
9/32"	1 1/4"	**5543A93**	18.39
5/16"	1 1/4"	**5543A52**	17.90
11/32"	1 1/4"	**5543A53**	18.39
3/8"	1 1/4"	**5543A54**	17.89
7/16"	1 1/4"	**5543A55**	17.89
1/2"	1 1/4"	**5543A56**	18.39
9/16"	1 21/64"	**5543A57**	18.38

Metric Sizes

Size, mm	O'all Lg.		Each
6-Pt. Standard			
4	7/8"	**7195A11**	$4.13
4.5	7/8"	**7195A53**	4.37
5	7/8"	**7195A12**	4.20
5.5	7/8"	**7195A13**	4.27
6	7/8"	**7195A14**	4.24
7	7/8"	**7195A15**	4.30
8	7/8"	**7195A16**	4.30
9	7/8"	**7195A17**	4.44
10	7/8"	**7195A18**	4.39
11	7/8"	**7195A19**	4.32
12	7/8"	**7195A21**	4.32
13	7/8"	**7195A22**	4.33

Size, mm	O'all Lg.		Each
6-Pt. Standard (Cont.)			
14	7/8"	**7195A23**	$4.32
15	7/8"	**7195A25**	4.39
16	7/8"	**7195A3**	5.95
6-Pt. Deep			
4	2"	**7195A35**	6.67
4.5	2"	**7195A55**	6.25
5	2"	**7195A37**	6.64
5.5	2"	**7195A38**	6.64
6	2"	**7195A41**	6.64
7	2"	**7195A42**	6.64
8	2"	**7195A43**	6.73
9	2"	**7195A44**	6.73
10	2"	**7195A45**	6.74

Size, mm	O'all Lg.		Each
6-Pt. Deep (Cont.)			
11	2"	**7195A46**	$6.64
12	2"	**7195A47**	6.64
13	2"	**7195A48**	6.64
14	2"	**7195A49**	6.70
15	2"	**7195A54**	8.33
6-Pt. Flex Joint			
5	1 1/4"	**7195A81**	18.39
5.5	1 1/4"	**7195A82**	18.90
6	1 1/4"	**7195A83**	18.90
7	1 1/4"	**7195A84**	18.90
8	1 1/4"	**7195A85**	18.90
10	1 1/4"	**7195A87**	18.90

Size, mm	O'all Lg.		Each
12-Pt. Standard			
5	7/8"	**7195A61**	$4.33
5.5	7/8"	**7195A62**	4.38
6	7/8"	**7195A63**	4.36
7	7/8"	**7195A64**	4.39
8	7/8"	**7195A65**	4.42
9	7/8"	**7195A66**	4.45
10	7/8"	**7195A67**	4.49
11	7/8"	**7195A68**	4.53
12	7/8"	**7195A69**	4.56
13	7/8"	**7195A71**	4.59
14	7/8"	**7195A72**	4.70

Screwdriver Bit Sockets

Tip Wd.	O'all Lg.		Each
Slotted			
3/16"	1 7/8"	**55045A21**	$9.64
1/4"	1 7/8"	**55045A22**	10.13

Tip Wd.	O'all Lg.		Each
Slotted (Cont.)			
9/32"	1 13/32"	**55045A24**	$6.81

Tip No.	O'all Lg.		Each
Phillips			
#0	1 13/32"	**55045A26**	$6.16
#1	1 1/16"	**55045A27**	9.63

Tip No.	O'all Lg.		Each
Phillips (Cont.)			
#2	1 1/16"	**55045A29**	$9.97
#3	1 29/32"	**55045A32**	10.70

1/4″ Square Drive Wrenches & Accessories

For information about drive size, see page 2786.

1/4″ Square Drive Ratchet Wrenches

Wrenches are premium quality and made of alloy steel. All have a reversible ratchet. ***High-torque wrenches*** have a pear-shaped head that tends to provide more torque, but requires a 6° to 15° handle swing. ***Tight-clearance wrenches*** have a round head that requires a 0° to 10° handle swing; they're great for use in confined spaces.

Push-Button Release— Push the button to release the socket.

Sealed Head— A gasket seals in permanent lubrication and keeps out contaminants such as dust, dirt, and moisture.

Twist-Action Speed Drive— Use as a reversing ratchet or rotate the handle to turn the square drive. Handle has a cushion grip.

Palm Control— Hold down the ring on the top of the head while turning to prevent accidental reversal.

Flex Head— The head pivots 90° up and down.

Fine Control Silent— Also known as tight-spot 0° ratchets. All have a series of rollers (instead of gear teeth) that engage with the slightest handle movement. A through hole allows use with hex keys.

High-Torque Wrenches

STANDARD

O'all Lg.	Chrome	Each	Black	Each
5″	53725A61	$21.59	53725A44	$20.51

PUSH-BUTTON RELEASE

O'all Lg.	Chrome	Each
5 1/2″	5514A48	$22.72

SEALED HEAD

O'all Lg.	Chrome	Each
5 7/16″	5574A31	$28.75

High-Torque Wrenches

TWIST-ACTION SPEED DRIVE

O'all Lg.	Chrome	Each
7 1/8″	7638A12	$32.15

Tight-Clearance Wrenches

PALM CONTROL

O'all Lg.	Chrome	Each	Black	Each
4 1/2″	51405A11	$30.81	51405A12	$27.38

PALM CONTROL W/FLEX HEAD

O'all Lg.	Chrome	Each
6 3/16″	5370A37	$40.74

Tight-Clearance Wrenches

FINE CONTROL SILENT

O'all Lg.	Chrome	Each
3 1/2″	7031A31	$41.31
5 1/2″	7031A32	44.07
7 3/16″	7031A33	87.16

SHORT

O'all Lg.	Chrome	Each
3 1/16″	5539A21	$64.31

PALM STYLE

Dia.	Chrome	Each
1 1/2″	53725A54	$41.95

1/4″ Square Drive Socket Accessories

Made of alloy steel with a chrome finish, unless noted.

Drivers

Standard

Ratcheting

Ratcheting T-Handle

Flexible Shaft

	O'all Lg.		Each
Short	3 1/2″	5521A21▲	$5.67
Standard	7″	5521A65	13.02
Standard—1/4″ female sq. drive in handle	6″	5521A24	9.63
Long	9 1/2″	5521A67■	13.96
Ratcheting (bit storage in handle)	8 15/16″	54675A45	75.45
Ratcheting T-Handle	10″	54675A47	81.20
Flexible Shaft	6 3/4″	5841A31▲	12.16

▲ Made of zinc-plated steel. ■ Plain finish.

1/4″ Hex Bit Socket Holders

Standard

Swivel Joint

	O'all Lg.		Each
Nonmagnetic			
Standard	1″	7229A42■	$4.20
Swivel Joint	1 1/2″	54215A51	12.74
Magnetic			
Standard	2″	7229A61★	13.86

■ Plain finish.
★ Made of Type 303 stainless steel.

Female×Male Adapters

Standard

Flex Joint

1/4″ sq.×3/8″ sq.	O'all Lg.		Each
Standard	1″	55585A35♠	$5.16
Standard	1″	5521A27	5.16
Flex Joint	1 3/8″	5521A29✓	13.86

♠ Black finish. ✓ 1/4″ sq.×1/4″ sq.

Spinners

Ratchet

Hex Head

	Head Dia.	O'all Lg.		Each
Ratchet	31/32″	27/32″	5521A14	$18.37
Hex Head	3/8″	1/2″	5521A16♠	8.20

♠ Black finish.

Handles

Flex Head

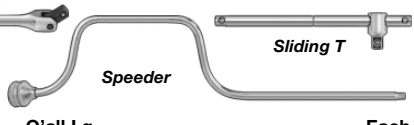

Speeder

Sliding T

	O'all Lg.		Each
Flex Head	5 3/4″	5521A13	$16.43
Sliding T	4 1/2″	5521A12	17.26
Speeder	15 1/2″	5521A11	17.35

Extensions

Standard

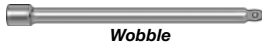

Wobble

Locking

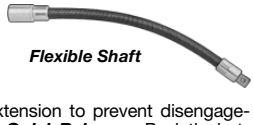

Flexible Shaft

Quick Release

Locking— Lock a socket onto the extension to prevent disengagement. Pull the collar to release the socket. ***Quick Release—*** Push the button to release a socket. ***Wobble—*** Allows an angled entry of up to 16°.

			Per Set
Set of 3 Standard (2″, 6″, 10″)		5521A73	$28.39
Set of 3 Quick Release (2″, 3″, 6″)		5521A51	19.44

O'all Lg.		Each
Standard		
2″	5521A17	$5.57
3″	5521A36	7.65
6″	5521A18	8.00
9 3/4″	5521A37	13.83
14″	5521A19	12.76
24″	5521A74	16.12
Locking		
2″	5521A76	13.47
6″	5521A77	19.16
15″	5521A46	30.50
Quick Release		
2″	5521A52	5.41

O'all Lg.		Each
Quick Release (Cont.)		
3″	5521A81	$7.62
6″	5521A82	9.50
Wobble		
2″	5521A59	5.61
3″	5521A61	7.57
6″	5521A62	7.81
11″	5521A44	30.02
Flexible Shaft		
4 1/16″	5521A22▲	13.47
6″	5521A23▲	16.01
10″	5521A25▲	16.38

▲ Made of zinc-plated steel.

For information about drive size, see page 2786.

3/8″ Square Drive Socket Sets

Sockets are made of heat-treated alloy steel with a chrome finish. Not for use with power or impact tools. 53305A21 has both 1/4″ and 3/8″ square drive sockets.

6-point and ***12-point sockets*** are for use with hex fasteners. The 6-point sockets prevent rounding and work well on fasteners made of soft metals. The 12-point sockets are easier to position. ***8-point sockets*** are for use with square fasteners.

Premium sets are the finest tools available. All have gone through additional machining, grinding, and/or polishing for a superior fit and finish. Made in the U.S. ***Value sets*** are high-quality tools offered at an economical price. Made in the U.S. ***Economy sets*** are imported.

5609A31

7223A81

Pieces	Sizes in Set	Accessories	Per Set
Premium Set, Inch, Combination 1/4″ and 3/8″ Square Drive			
22	**6-pt. standard—1/4″ square drive:** 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″ **6-pt. standard—3/8″ square drive:** 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	**1/4″ Drive:** 6″ driver **3/8″ Drive:** 7″ ratchet; 3″ and 6″ extensions; 3/8″ female × 1/4″ male adapter; plastic box	53305A21 ..... $152.13
Premium Sets, Inch			
9	**6-pt. standard:** 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	metal clip rail	5609A11 ..... $42.52
13	**6-pt. standard:** 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″	7 3/4″ ratchet; 3/8″ female × 1/4″ male adapter; cardboard box	5609A94 ..... $77.91
13	**6-pt. standard:** 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 7/8″	7 5/8″ ratchet; 3″ and 6″ extensions; metal box	5561A33 ..... $96.15
9	**6-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″	metal clip rail	5609A78 ..... $63.78
24	**6-pt. standard:** 1/4″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″ **6-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″	7 3/8″ ratchet; 8 1/2″ flex-head handle; 3″ and 6″ extensions; 1 7/8″ flex joint; metal box	7223A81 ..... $179.07
7	**8-pt. standard:** 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″	metal clip rail	5609A88 ..... $46.24
10	**12-pt. standard:** 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″	metal clip rail	5609A87 ..... $50.25
12	**12-pt. standard:** 1/4″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	7 3/8″ ratchet; 3″ extension; metal box	5617A74 ..... $91.98
15	**12-pt. standard:** 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 7/8″	7 3/8″ ratchet; 8 1/2″ flex-head handle; 3″ and 6″ extensions; 1 7/8″ flex joint; metal box	5561A5 ..... $146.23
9	**12-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″	metal clip rail	5609A14 ..... $63.78
28	**12-pt. standard:** 1/4″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″ **12-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″	7 3/8″ ratchet; 8 1/2″ flex-head handle; 3″ and 6″ extensions; 1 7/8″ flex joint; metal box	5582A11 ..... $207.84
7	**12-pt. flex joint:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	metal clip rail	5609A31 ..... $111.19
Value Sets, Inch			
20	**6-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″ **6-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″	7 1/2″ ratchet; 3″ and 6″ extensions; metal box	5615A64 ..... $68.23
9	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″	metal clip rail	5615A21 ..... $35.82
10	**12-pt. standard:** 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″	metal clip rail	5615A19 ..... $21.50
20	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″ **12-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″	7 1/2″ ratchet; 3″ and 6″ extensions; metal box	5615A66 ..... $67.45
Economy Set, Inch			
21	**6-pt. standard:** 7/16″ **6-pt. deep:** 1/4″, 3/8″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 7/8″ **12-pt. standard:** 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	8 5/16″ ratchet; 3″ and 6″ extensions; plastic box	6016A21 ..... $64.17
20	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″ **12-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″	7 3/4″ ratchet; 3″ and 6″ extensions; plastic box	6016A12 ..... $39.18
Premium Sets, Metric			
12	**6-pt. standard:** 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	metal clip rail	5757A33 ..... $57.67
16	**6-pt. standard:** 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	7 5/8″ ratchet; 3″ extension; metal box	7290A12 ..... $106.28
12	**6-pt. deep:** 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	metal clip rail	5757A35 ..... $72.57
27	**6-pt. standard:** 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm **6-pt. deep:** 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	7 5/8″ ratchet; 8 9/16″ flex-head handle; 6″ extension; metal box	7259A31 ..... $197.50
12	**12-pt. standard:** 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	metal clip rail	5757A34 ..... $51.32
16	**12-pt. standard:** 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	7 3/8″ ratchet; 6″ extension; metal box	7290A24 ..... $102.14
12	**12-pt. deep:** 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	metal clip rail	5757A31 ..... $61.98
29	**12-pt. standard:** 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm **12-pt. deep:** 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	7″ ratchet; 8 1/2″ flex-head handle; 3″ and 6″ extensions; 1 7/8″ flex joint; plastic box	7259A11 ..... $227.76
Value Sets, Metric			
13	**12-pt. standard:** 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm	metal clip rail	52825A72 ..... $27.29
22	**12-pt. standard:** 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19mm **12-pt. deep:** 10, 11, 12, 13, 14, 15, 17, and 19mm	7 5/8″ ratchet; 3″ and 6″ extensions; 5/8″ spark plug socket; metal box	52825A63 ..... $77.53
Economy Set, Inch/Metric			
34	**12-pt. standard:** 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″ **12-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″ **12-pt. standard:** 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, and 19mm	7 3/4″ ratchet; 3″ and 6″ extensions; 2″ flex joint; plastic box	6016A14 ..... $51.26

3/8" Square Drive Sockets

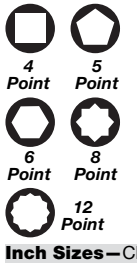

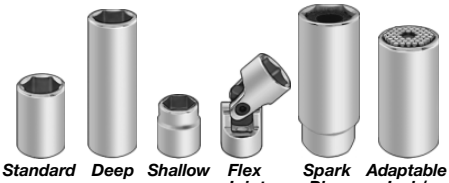

Sockets are premium quality and made of heat-treated alloy steel. Not for use with power or impact tools. ***4-point*** and ***8-point sockets*** are for use with square fasteners. The 4-point sockets prevent rounding, but the 8-point sockets are easier to position. ***5-point sockets*** are for use with water and gas valves. ***6-point*** and ***12-point sockets*** are for use with hex fasteners. The 6-point sockets prevent rounding and work well on fasteners made of soft metals. The 12-point sockets are easier to position. ***Spark plug sockets*** have a rubber insert that grips the plug's insulator to prevent damage.

Also Available: 12-pt. flex-joint inch sockets with black finish. Please ask for 5484A83 and specify size: 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", or 3/4".

Also Available: 12-pt. flex-joint metric sockets with chrome finish. Please ask for 5849A112 and specify size: 9-19 mm.

Inch Sizes—Chrome Finish

Size	O'all Lg.		Each
4-Pt. Standard			
9/32"	1 1/32"	5544A86	$6.65
5-Pt. Standard			
13/16"	1 1/16"	5544A8	19.44
6-Pt. Standard			
3/16"	1 3/32"	5544A99	4.37
1/4"	1 3/32"	5544A11	4.81
5/16"	1 3/32"	5544A12	4.76
11/32"	1 1/32"	5544A13	4.62
3/8"	1 3/32"	5544A14	4.76
7/16"	1 3/32"	5544A15	4.78
1/2"	1 1/8"	5544A16	4.81
9/16"	1 1/8"	5544A17	5.00
5/8"	1 1/8"	5544A18	5.05
11/16"	1 1/8"	5544A19	5.27
3/4"	1 3/16"	5544A21	5.27
13/16"	1 3/16"	5544A22	6.00
7/8"	1 5/16"	5544A23	6.27
15/16"	1 5/16"	5544A24	7.05
1"	1 3/8"	5544A25	7.46
6-Pt. Deep			
1/4"	2 1/8"	5544A39	6.38
5/16"	2 1/8"	5544A41	6.75
11/32"	2 1/2"	5544A131	5.99
3/8"	2 1/8"	5544A42	6.99
7/16"	2 1/8"	5544A43	7.05
1/2"	2 1/8"	5544A44	7.06
9/16"	2 1/8"	5544A45	7.17
5/8"	2 3/4"	5544A46	7.39
11/16"	2 3/4"	5544A47	8.20
6-Pt. Deep (Cont.)			
3/4"	2 3/4"	5544A48	$8.62
13/16"	2 3/4"	5544A49	9.51
7/8"	2 3/4"	5544A51	10.40
15/16"	2 3/4"	5544A111	12.25
1"	2 3/4"	5544A112	13.57
6-Pt. Shallow			
3/16"	3/4"	5544A101	4.72
1/4"	13/16"	5544A102	5.87
5/16"	3/4"	5544A103	5.53
3/8"	3/4"	5544A104	6.00
7/16"	7/8"	5544A105	5.70
1/2"	7/8"	5544A106	6.16
9/16"	7/8"	5544A107	6.28
5/8"	15/16"	5544A108	6.34
3/4"	15/16"	5544A109	6.59
6-Pt. Flex Joint			
7/16"	1 3/4"	5544A93	20.62
1/2"	1 13/16"	5544A94	20.62
9/16"	1 13/16"	5544A95	20.63
5/8"	1 13/16"	5544A96	20.63
3/4"	1 13/16"	5544A98	22.11
6-Pt. Spark Plug			
5/8"	2 1/2"	5544A117	8.50
3/4"	2 13/32"	5544A122	35.02
13/16"	2 1/2"	5544A118	9.92
6-Pt. Spark Plug-Flex Joint			
5/8"	3 3/8"	5544A119	31.68
13/16"	3 3/8"	5544A121	30.98
8-Pt. Standard			
1/4"	15/16"	5544A52	$5.59
9/32"	15/16"	5544A9	5.42
5/16"	15/16"	5544A53	5.59
3/8"	15/16"	5544A58	5.59
7/16"	31/32"	5544A54	5.59
1/2"	31/32"	5544A55	5.59
9/16"	1 3/8"	5544A56	7.33
5/8"	1 3/8"	5544A57	7.46
11/16"	1 5/64"	5544A113	8.84
3/4"	1 3/16"	5544A114	9.01
13/16"	1 7/32"	5544A115	9.37
7/8"	1 5/16"	5544A116	9.87
12-Pt. Standard			
1/4"	1 3/32"	5544A26	4.55
5/16"	1 3/32"	5544A27	4.51
11/32"	1 1/32"	5544A28	4.00
3/8"	1 3/32"	5544A29	4.51
7/16"	1 3/32"	5544A31	4.52
1/2"	1 1/8"	5544A32	4.58
9/16"	1 1/8"	5544A33	4.76
19/32"	1 3/32"	5544A85	4.95
5/8"	1 1/8"	5544A34	4.76
11/16"	1 1/8"	5544A35	4.98
3/4"	1 3/16"	5544A36	4.98
13/16"	1 3/16"	5544A37	5.67
7/8"	1 5/16"	5544A38	5.71
15/16"	1 5/16"	5544A82	6.86
1"	1 3/8"	5544A83	7.06
12-Pt. Deep			
1/4"	2 1/8"	5544A81	$5.86
5/16"	2 1/8"	5544A84	6.20
11/32"	2 3/8"	5544A187	5.87
3/8"	2 1/8"	5544A61	6.30
7/16"	2 1/8"	5544A62	6.41
1/2"	2 1/8"	5544A63	6.62
9/16"	2 1/8"	5544A64	6.83
5/8"	2 3/4"	5544A65	7.03
11/16"	2 3/4"	5544A66	7.75
3/4"	2 3/4"	5544A67	8.21
13/16"	2 3/4"	5544A68	9.00
7/8"	2 3/4"	5544A69	9.84
15/16"	2 3/4"	5544A59	11.58
1"	2 3/4"	5544A71	12.74
12-Pt. Flex Joint			
5/16"	1 13/16"	5544A3	21.40
3/8"	1 3/4"	5544A73	21.40
7/16"	1 3/4"	5544A74	21.39
1/2"	1 3/4"	5544A75	20.62
9/16"	1 27/32"	5544A76	20.63
5/8"	1 27/32"	5544A77	20.63
11/16"	2"	5544A78	20.62
3/4"	2"	5544A79	22.11
13/16"	2 3/32"	5544A4	22.54
7/8"	2 3/32"	5544A5	22.54
15/16"	2 3/32"	5544A6	22.52
1"	2 3/32"	5544A7	23.58

Inch Sizes—Black Finish

Size	O'all Lg.		Each
12-Pt. Standard			
1/4"	1 1/16"	5484A41	$4.32
5/16"	1 3/64"	5484A42	4.71
3/8"	1 3/64"	5484A43	4.71
7/16"	1 3/64"	5484A44	4.72
1/2"	1 1/8"	5484A45	4.79
9/16"	1 1/8"	5484A46	4.98
12-Pt. Standard (Cont.)			
5/8"	1 1/8"	5484A47	$4.98
11/16"	1 1/8"	5484A48	5.20
3/4"	1 1/8"	5484A49	5.20
7/8"	1 5/16"	5484A52	5.70
15/16"	1 5/16"	5484A53	6.24
1"	1 5/16"	5484A54	6.55
12-Pt. Deep			
1/4"	2 7/16"	5484A38	$5.04
5/16"	2 7/16"	5484A39	5.04
3/8"	2 1/8"	5484A61	6.19
7/16"	2 1/8"	5484A62	6.19
1/2"	2 1/8"	5484A63	6.19
9/16"	2 1/8"	5484A64	6.80
12-Pt. Deep (Cont.)			
5/8"	2 3/4"	5484A65	$6.88
11/16"	2 3/4"	5484A66	7.92
3/4"	2 3/4"	5484A67	8.44
7/8"	2 3/4"	5484A69	10.38
15/16"	2 3/4"	5484A71	11.66
1"	2 3/4"	5484A72	12.44

Metric Sizes—Chrome Finish

Size, mm	O'all Lg.		Each
6-Pt. Standard			
5.5	1 1/32"	5849A1	$3.97
6	1 3/32"	5849A81	4.64
7	1 3/32"	5849A11	4.64
8	1 3/32"	5849A12	4.64
9	1 3/32"	5849A13	4.64
10	1 3/32"	5849A14	4.61
11	1 3/32"	5849A15	4.66
12	1 7/64"	5849A16	4.69
13	1 1/8"	5849A17	4.69
14	1 1/8"	5849A18	4.91
15	1 1/8"	5849A19	4.91
16	1 1/8"	5849A21	4.91
17	1 1/8"	5849A22	5.07
18	1 3/16"	5849A23	5.07
19	1 3/16"	5849A24	5.07
20	1 3/16"	5849A26	5.40
21	1 13/64"	5849A27	4.93
22	1 5/16"	5849A28	5.66
23	1 5/16"	5849A29	5.53
24	1 5/16"	5849A111	6.49
26	1 1/2"	5849A113	6.79
6-Pt. Deep			
6	2 1/8"	5849A31	$6.44
7	2 1/8"	5849A32	6.44
8	2 1/8"	5849A33	6.44
9	2 1/8"	5849A34	6.56
10	2 1/8"	5849A35	6.56
11	2 1/8"	5849A36	6.56
12	2 1/8"	5849A37	6.56
13	2 1/8"	5849A38	6.56
14	2 1/8"	5849A39	6.89
15	2 3/4"	5849A41	6.89
16	2 3/4"	5849A42	6.45
17	2 3/4"	5849A43	6.89
18	2 3/4"	5849A44	7.40
19	2 3/4"	5849A45	7.89
20	2 3/4"	5849A74	8.51
21	2 3/4"	5849A75	8.79
22	2 3/4"	5849A76	9.33
23	2 3/4"	5849A77	10.99
24	2 7/8"	5849A2	10.05
25	2 7/8"	5849A3	10.05
26	2 7/8"	5849A68	10.51
6-Pt. Flex Joint			
10	1 3/4"	5849A91	$22.92
13	1 27/32"	5849A94	20.63
14	1 27/32"	5849A95	20.63
15	2"	5849A96	20.62
17	2"	5849A97	20.63
6-Pt. Spark Plug			
18	2 1/2"	5849A941	16.43
12-Pt. Standard			
6	1 3/32"	5849A78	4.77
7	1 3/32"	5849A79	4.77
8	1 3/32"	5849A25	4.67
9	1 3/32"	5849A46	4.77
10	1 3/32"	5849A47	4.63
11	1 3/32"	5849A48	4.67
12	1 1/8"	5849A49	4.74
13	1 1/8"	5849A51	4.77
14	1 1/8"	5849A52	4.93
15	1 1/8"	5849A53	4.93
16	1 1/8"	5849A54	4.93
17	1 1/8"	5849A55	5.02
18	1 3/16"	5849A56	5.02
19	1 3/16"	5849A57	5.03
20	1 3/16"	5849A58	5.55
12-Pt. Standard (Cont.)			
21	1 3/16"	5849A59	$5.78
22	1 5/16"	5849A61	5.92
23	1 3/8"	5849A72	5.80
24	1 5/16"	5849A73	6.11
12-Pt. Deep			
6	2 1/2"	5849A4	6.01
7	2 1/2"	5849A5	6.01
8	2 1/2"	5849A6	6.01
9	2 1/2"	5849A7	6.14
10	2 1/2"	5849A8	6.14
11	2 1/2"	5849A9	6.14
12	2 1/2"	5849A62	6.14
13	2 1/2"	5849A64	6.14
14	2 1/2"	5849A65	6.49
15	2 1/2"	5849A67	6.49
16	2 1/2"	5849A69	6.49
17	2 1/2"	5849A71	6.49
18	2 1/2"	5849A82	6.95
19	2 1/2"	5849A83	7.45
20	2 33/64"	5849A84	7.97
21	2 1/2"	5849A85	8.81
22	2 1/2"	5849A86	9.87

Adaptable Inch/Metric Socket—Chrome Finish

Socket has 54 pins that work with inch and metric hex fasteners. No adjustment needed—just place the socket over your fastener and turn.

For Fastener Sizes	Max. Dp.	O'all Lg.		Each
1/4"-3/4", 7mm-19mm	3/8"	2"	5398A66	$15.22

For information about drive size, see page 2786.

3/8″ Square Drive Tight-Access Offset Sockets

Also known as crowfoot wrenches, these sockets provide access to hard-to-reach fasteners and fittings. Made of heat-treated alloy steel with a chrome finish. ***6-point*** and ***12-point sockets*** are for use with hex fasteners. The 6-point sockets prevent rounding and work well on fasteners made of soft metals. The 12-point sockets are easier to position.

Open-end sockets have the thinnest head. ***Flare-nut sockets*** are for flared tube fittings as well as for fuel and hydraulic lines. 12-pt. flare-nut style has a side-locking hole for a more secure attachment. ***Ratcheting box-end sockets*** have a lever to push to reverse direction.

Also Available: 1/4″ square drive open-end inch sizes. Please ask for 1213A101 and specify size: 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, or 9/16″.

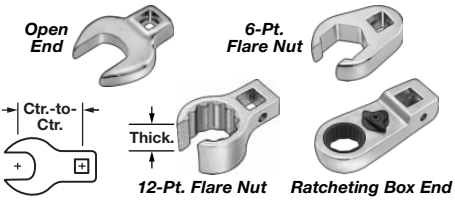

Sets

10-Pc. Inch Open-End Set—Includes 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 1″ sizes on a metal clip rail.

5844A25 ..... **Per Set** $96.10

7-Pc. Inch 6-Pt. Flare-Nut Set—Includes 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″ sizes and a plastic tray.

7306A53 ..... **Per Set** $160.98

8-Pc. Inch 12-Pt. Flare-Nut Set—Includes 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″ sizes on a metal clip rail.

5845A21 ..... **Per Set** $164.66

9-Pc. Inch 12-Pt. Ratcheting Box-End Set—Includes 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″ sizes; 10″ extension; and a plastic tray.

5844A36 ..... **Per Set** $187.43

10-Pc. Metric Open-End Set—Includes 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 mm sizes on a metal clip rail.

5311A45 ..... **Per Set** $92.83

Inch Sizes

Size	Thick.	Ctr.-to-Ctr.		Each
Open End				
3/8″	7/32″	3/4″	5844A11	$8.06
7/16″	7/32″	23/32″	5844A12	9.56
1/2″	17/64″	51/64″	5844A13	9.71
9/16″	17/64″	55/64″	5844A14	9.79
5/8″	11/32″	15/16″	5844A15	10.10
11/16″	11/32″	1 1/64″	5844A16	10.98
3/4″	11/32″	1 3/32″	5844A17	11.19
13/16″	11/32″	1 5/32″	5844A21	12.44
7/8″	3/8″	1 15/64″	5844A18	13.38
15/16″	23/64″	1 5/16″	5844A24	14.22
1″	3/8″	1 25/64″	5844A19	14.74
1 1/4″	3/8″	1 15/64″	5844A22	29.92
1 3/8″	3/8″	1 19/64″	5844A23	32.29
6-Pt. Flare Nut				
3/8″	3/8″	9/16″	7306A31	19.00
7/16″	3/8″	9/16″	7306A32	19.00
1/2″	3/8″	9/16″	7306A33	21.24
9/16″	7/16″	3/4″	7306A34	22.41
5/8″	7/16″	3/4″	7306A35	24.60
3/4″	1/2″	13/16″	7306A37	29.09

Size	Thick.	Ctr.-to-Ctr.		Each
6-Pt. Flare Nut (Cont.)				
13/16″	9/16″	7/8″	7306A38	$31.33
7/8″	9/16″	7/8″	7306A39	32.22
1″	5/8″	15/16″	7306A41	39.17
12-Pt. Flare Nut				
5/8″	11/16″	47/64″	5845A11	20.96
11/16″	11/16″	25/32″	5845A12	22.83
3/4″	23/32″	53/64″	5845A13	23.72
7/8″	3/4″	15/16″	5845A15	25.74
15/16″	3/4″	15/16″	5845A16	27.20
1″	25/32″	1 1/64″	5845A17	28.24
1 1/16″	25/32″	1 3/64″	5845A18	30.03
12-Pt. Ratcheting Box End				
5/16″	1/4″	1/4″	5844A27	21.18
3/8″	5/16″	5/16″	5844A28	21.18
7/16″	11/32″	7/8″	5844A29	21.18
1/2″	13/32″	31/32″	5844A31	24.06
9/16″	13/32″	1 1/16″	5844A32	25.43
5/8″	7/16″	1 3/16″	5844A33	26.93
11/16″	15/32″	1 1/4″	5844A34	26.68
3/4″	1/2″	1 7/16″	5844A35	29.75

Metric Sizes

Size	Thick.	Ctr.-to-Ctr.		Each
Open End				
10 mm	7/32″	21/32″	5311A31	$9.41
12 mm	1/4″	49/64″	5311A33	9.42
13 mm	17/64″	25/32″	5311A34	9.42
14 mm	17/64″	7/8″	5311A35	9.55

Size	Thick.	Ctr.-to-Ctr.		Each
Open End (Cont.)				
15 mm	5/16″	29/32″	5311A36	$9.55
16 mm	11/32″	15/16″	5311A37	9.85
17 mm	11/32″	1 1/64″	5311A38	10.75
18 mm	11/32″	1 1/16″	5311A39	10.75

Size	Thick.	Ctr.-to-Ctr.		Each
Open End (Cont.)				
19 mm	11/32″	1 3/32″	5311A41	$10.92
20 mm	1/4″	1 13/64″	5311A42	18.75
21 mm	23/64″	1 17/64″	5311A43	12.13
22 mm	3/8″	1 15/64″	5311A44	12.99

3/8″ Square Drive Box-End Wrench Sockets

Change your square-drive torque wrench or standard ratchet into a 12-pt. box end wrench. Also known as torque adapters, sockets are made of heat-treated alloy steel with a chrome finish.

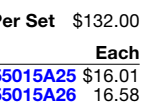

9-Pc. Set—Includes one each of sizes 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″. Furnished on a metal bar.

55015A35 ..... **Per Set** $132.00

Size	O'all Lg.		Each
3/8″	2 11/16″	55015A21	$14.84
7/16″	2 47/64″	55015A22	14.44
1/2″	2 25/32″	55015A23	14.84
9/16″	2 27/32″	55015A24	14.84
5/8″	2 55/64″	55015A25	$16.01
11/16″	2 29/32″	55015A26	16.58
3/4″	2 61/64″	55015A27	16.83
7/8″	3 1/32″	55015A29	21.04

3/8″ Square Drive Bolt-Through Sockets

Bolts and threaded rod can pass right through these 6-point sockets and their wrench (sold separately). Made of heat-treated alloy steel with a chrome finish. Not for use with power or impact tools.

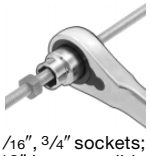

Also Available: Individual metric sockets. Please ask for 54485A39 and specify size: 10, 12, 13, 14, 15, 16, or 17 mm.

21-Pc. Set—Includes 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″ sockets; 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 mm sockets; 12″ Lg. reversible ratchet; 3″ Lg. extension; 1/4″ and 3/8″ sq. adapters; and a plastic box.

54485A8 ..... **Per Set** $82.14

Individual Sockets

Size	O'all Lg.		Each
3/8″	1 17/64″	54485A11	$2.10
7/16″	1 17/64″	54485A12	2.10
1/2″	1 17/64″	54485A13	2.10
9/16″	1 17/64″	54485A14	2.10
5/8″	1 17/64″	54485A15	$2.77
11/16″	1 17/64″	54485A16	2.83
3/4″	1 5/16″	54485A17	2.89

Ratchet Wrench

12″ Lg. Reversible Ratchet Wrench ..... 54485A33 **Each** $46.96

Insulated Sockets and Accessories

All of the tools are made of heat-treated alloy steel. The sockets and the wrench handle are coated with plastic insulation and tested to 1000 volts. Meet IEC 60900 and OSHA requirements.

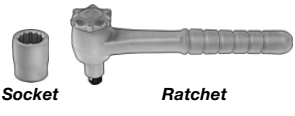

3/8″ Square Drive 12-Pt. Sockets

Size	O'all Lg.		Each
5/16″	1 1/16″	55445A31	$31.16
3/8″	1 1/16″	55445A32	31.16
7/16″	1 1/16″	55445A33	31.16
1/2″	1 1/4″	55445A34	31.58
9/16″	1 1/4″	55445A35	33.20
5/8″	1 1/4″	55445A36	$34.82
11/16″	1 1/4″	55445A37	36.84
3/4″	1 1/4″	55445A38	40.48
13/16″	1 1/4″	55445A39	45.74
7/8″	1 1/4″	55445A41	48.58

Ratchet and Accessories for 3/8″ Square Drive Sockets

		Each
Ratchet Wrench—7 1/2″ Lg.; 5° handle swing	55445A44	$133.38
5″ Extension	55445A42	36.22
10″ Extension	55445A43	46.56
3/8″ Female × 1/4″ Male Adapter	55445A58	56.78
3/8″ Female × 1/2″ Male Adapter	55445A56	56.95

Socket Adapter Sets

Adapters are made of heat-treated alloy steel. All have a chrome finish, except for impact adapters, which have a black finish. ***Hand set*** is not for use with power or impact tools. Furnished on a metal clip rail. ***Combination set*** has hand and impact adapters. Furnished on a clip rail.

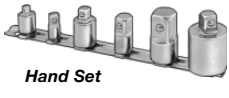

6-Pc. Hand Set—Includes female × male square-drive adapters in sizes 1/4″ × 3/8″, 3/8″ × 1/4″, 3/8″ × 1/2″, 1/2″ × 3/8″, 1/2″ × 3/4″, 3/4″ × 1/2″.

55805A43 ..... **Per Set** $49.03

10-Pc. Combination Set—Includes female × male square-drive hand adapters in sizes 1/4″ × 3/8″, 3/8″ × 1/4″, 3/8″ × 1/2″, 1/2″ × 3/8″, 1/2″ × 3/4″; flex-joint hand adapters in sizes 1/4″ and 3/8″; and flex-joint impact adapters in sizes 1/4″, 3/8″, and 1/2″.

55805A45 ..... **Per Set** $134.23

3/8″ and 1/2″ Square Drive Ratchet Wrenches

Wrenches are premium quality and have a reversible ratchet. Made of alloy steel, except palm style, which is rubber-coated polycarbonate. ***High-torque wrenches*** have a pear-shaped head that tends to provide more torque but requires a 5° to 15° handle swing. ***Tight-clearance wrenches*** have a round head that requires a 0° to 8° handle swing (unless noted); they're great for use in confined spaces.

Push-Button Release— Push the button to release the socket.

Sealed Head— A gasket seals in permanent lubrication and keeps out contaminants such as dust, dirt, and moisture.

Twist-Action Speed Drive— Use as a reversing ratchet or rotate the handle to turn the square drive. Handle has a cushion grip.

Flex Head— Head pivots 90° up and down.

Tapered Handle— Also known as a construction wrench or spud handle. Handle tapers to a pointed end for aligning bolt holes.

Fine Control Silent— Also known as a tight-spot 0° ratchet. Wrench has a series of rollers (instead of gear teeth) that engage with the slightest handle movement. A through hole allows use with hex keys.

Offset Handle with Flex Head— The handle is offset 23° to clear obstructions.

Raised Ratchet Reverse— Also known as a lineman's ratchet. The raised reverse allows easy turning when you're wearing gloves.

Push-Through Reversing Square Drive— To reverse, push the square drive through the ratchet head so you can use it on the other side. Wrenches have a comfortable cushion-grip handle.

Miniature— Head diameter is 27/32″ for use in confined areas.

High-Torque Wrenches

STANDARD

O'all Lg.	Chrome	Each	Black	Each
3/8″ Square Drive				
7″	53035A13	$34.51	53165A62	$30.08
11″	53035A16	39.70	53165A12	34.93
1/2″ Square Drive				
10″	53155A23	46.92	53125A81	41.91
16″	53155A24	52.50	53125A82	49.78

STANDARD W/PLASTIC HANDLE

O'all Lg.	Chrome	Each
3/8″ Square Drive		
8 3/8″	5393A11	$33.54
11 1/2″	5393A13	40.16

ADJUSTABLE LENGTH

O'all Lg.	Chrome	Each
3/8″ Square Drive		
8 1/2″–12 1/2″	53035A2	$29.40
1/2″ Square Drive		
12″–17 1/4″	53155A7	35.15

PUSH-BUTTON RELEASE

O'all Lg.	Chrome	Each
3/8″ Square Drive		
7 5/8″	5835A15	$23.78
1/2″ Square Drive		
10 5/16″	5823A2	34.54

SEALED HEAD

O'all Lg.	Chrome	Each
3/8″ Square Drive		
8″	5395A15	$34.97
10 3/4″	5395A17	38.23
1/2″ Square Drive		
10 3/16″	5426A21	54.01
15″	5426A23	61.50

TWIST-ACTION SPEED DRIVE

O'all Lg.	Chrome	Each
3/8″ Square Drive		
8 7/8″	7438A11	$37.12

FLEX HEAD

O'all Lg.	Chrome	Each
3/8″ Square Drive		
6 1/4″	5816A3	$77.03
9 1/2″	5095A16	48.33
1/2″ Square Drive		
14 1/4″	5169A27	55.48

TAPERED HANDLE

O'all Lg.	Black	Each
1/2″ Square Drive		
14″	5747A12	$50.34

FEMALE DRIVE

O'all Lg.	Chrome	Each
3/8″ Square Drive		
7″	54205A22	$37.95
1/2″ Square Drive		
16″	54715A16	61.84

Tight-Clearance Wrenches

STANDARD

O'all Lg.	Chrome	Each
3/8″ Square Drive		
7 1/16″	5846A74	$40.80
1/2″ Square Drive		
10 1/2″	7308A56	56.42

STANDARD W/PUSH-BUTTON RELEASE

O'all Lg.	Chrome	Each
1/2″ Square Drive		
10 1/2″	7199A11	$55.97

FLEX HEAD

O'all Lg.	Chrome	Each
3/8″ Square Drive		
10 3/4″	5749A61	$56.94

PUSH-BUTTON RELEASE W/FLEX HEAD

O'all Lg.	Chrome	Each
3/8″ Square Drive		
11 3/8″	5749A11★	$43.70
1/2″ Square Drive		
16 3/4″	53205A14★	61.83

★ Has a pear-shaped head that requires a 10° handle swing.

FINE CONTROL SILENT

O'all Lg.	Chrome	Each
3/8″ Square Drive		
7 7/8″	7031A34	$101.50

OFFSET HANDLE W/FLEX HEAD

O'all Lg.	Chrome	Each
3/8″ Square Drive		
9 15/16″	6729A54	$129.05

RAISED RATCHET REVERSE

O'all Lg.	Chrome	Each
3/8″ Square Drive		
7″	53635A12	$48.81
1/2″ Square Drive		
10 1/4″	53635A72	70.69

PUSH-THROUGH REVERSING SQUARE DRIVE

O'all Lg.	Chrome	Each
1/2″ Square Drive		
10 7/8″	7429A33	$68.73

MINIATURE

O'all Lg.	Chrome	Each
3/8″ Square Drive		
4 3/4″	53035A21	$32.31
5 1/2″	53035A32■	52.25

■ Flexes 90° up and down.

PALM STYLE

O'all Lg.	Black	Each
3/8″ Square Drive		
2 5/8″	53725A72	$58.01

3/8" and 1/2" Square Drive Handles and Drivers

Flex Head

Ratcheting w/Flex Head

Adjustable Length w/Flex Head

Sliding T

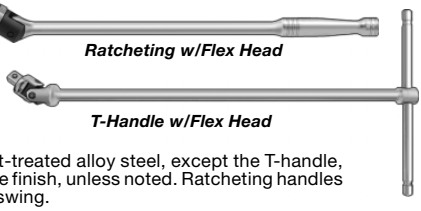
T-Handle w/Flex Head

Driver

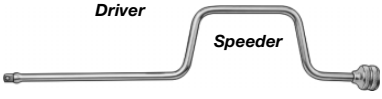
Speeder

These quality tools are made of heat-treated alloy steel, except the T-handle, which is carbon steel. All have a chrome finish, unless noted. Ratcheting handles are reversible and have a 14° handle swing.

	O'all Lg.		Each
3/8" Square Drive			
Flex Head	7 7/8"	5522A17	$20.04
Flex Head	12"	5522A42	25.78
Flex Head w/Black Finish	8 1/2"	55315A49	19.03
Flex Head w/Cushion Grip	9 11/16"	5522A53	28.56
Ratcheting w/Flex Head	17"	5522A22	31.19
Sliding T	8"	5522A15	17.50
Speeder	17"	5522A11	19.25
Driver	5 1/2"	5522A51	8.12
Driver	7 1/4"	5522A77	8.32
1/2" Square Drive			
Flex Head	10 13/16"	5523A14	36.35
Flex Head	15 3/4"	5523A44	39.04

	O'all Lg.		Each
1/2" Square Drive (Cont.)			
Flex Head	18 5/8"	5523A15	$41.72
Flex Head	24"	5523A48	44.12
Flex Head w/Black Finish	10 13/16"	55435A44	31.28
Flex Head w/Black Finish	18 3/8"	55435A41	38.65
Flex Head w/Cushion Grip	18"	5523A45	55.69
Ratcheting w/Flex Head	24"	5523A21	39.31
Adjustable Lg. w/Flex Head	15" or 25"	5523A22	59.98
Sliding T	12 15/16"	5523A13	23.39
T-Handle w/Flex Head	19 5/16"	5523A24	63.18
Speeder	13 5/8"	5523A11	30.79
Speeder	17"	5523A12	30.26

3/8" and 1/2" Square Drive Accessories

Made of heat-treated alloy steel with a chrome finish, unless noted.

Screwdriver Bit Sockets

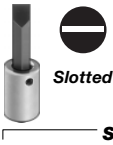
Slotted

Phillips

Pozidriv®

Slotted

Tip Width ×O'all Lg.		Each
3/8" Square Drive		
1/4" ×2 19/32"	51395A38	$10.83
5/16" ×2 19/32"	51395A39	10.83
3/8" ×2 19/32"	51395A41	11.97
1/2" Square Drive		
5/16" ×2 61/64"	55085A21	15.18
3/8" ×2 61/64"	55085A22	13.64
7/16" ×3 5/32"	55085A23■	14.29
1/2" ×3 5/32"	55085A24■	14.48

■ Black oxide finish.

Phillips

Tip No. ×O'all Lg.		Each
3/8" Square Drive		
#1 ×2 3/64"	51395A43	$10.32
#2 ×1 21/32"	51395A48★	8.02
#2 ×2 3/64"	51395A44	10.32
#3 ×2 3/64"	51395A45	10.32
#4 ×2 3/64"	51395A46	10.32
1/2" Square Drive		
#2 ×2 13/32"	55085A27	12.25
#3 ×2 13/32"	55085A28	12.40
#4 ×2 13/32"	55085A29	12.49

★ Pozidriv®.

Wide-Tip Adjustment Sockets

Also called drag links, sockets work like a screwdriver blade.

Tip Width×O'all Lg.	Tip Thick.		Each
3/8" Square Drive			
11/16" ×1 1/8"	1/8"	51395A42	$11.12
1/2" Square Drive			
3/4" ×1 5/8"	7/64"	55085A31	9.85
15/16" ×1 5/8"	7/64"	55085A32	10.01
1 1/4" ×1 1/2"	3/32"	55085A33	11.40

Hex Insert Bit Holders—Gray Finish

For Hex Bit Shank Size	O'all Lg.		Each
3/8" Square Drive			
1/4"	1 1/4"	7229A44	$3.86
1/4"	2 1/16"	7229A62♦	18.46
5/16"	1 1/4"	7229A46	3.92
1/2" Square Drive			
5/16"	1 1/2"	7229A56	6.56

♦ Magnetic.

3/8" Square Drive Quick-Release Extensions

Slide the button to release a socket.

O'all Lg.		Each	O'all Lg.		Each
3"	6339A21	$8.04	10"	6339A23	$12.55
6"	6339A22	11.89			

3-Pc. Set—Includes 3", 6", 10" quick-release extensions.
6339A24 ..... **Per Set** $29.10

3/8" Square Drive Flexible Extensions—Bright Zinc Finish

Made of carbon steel. Ends are not heat treated.

O'all Lg.		Each
8"	5522A43	$14.26
11"	5522A44	15.40

Adapters

Convertible adapter can be used as 3/8" F× 1/2" M or 1/2" F×3/8" M. To convert one end from male to female (and the other from female to male), push the square drive through to the other side. ***Ratchet adapters*** convert standard handles to ratchet handles.

Female × Male

Convertible

Ratchet

Flex Joint

	O'all Lg.		Each
3/8" Square Drive			
3/8" sq. F×1/4" sq. M	1 1/64"	5522A41	$6.92
3/8" sq. F×1/4" sq. M	1 1/8"	55315A21♠	6.21
3/8" sq. F×1/2" sq. M	1 3/8"	5522A33	5.44
3/8" sq. F×1/2" sq. M	1 5/16"	55315A22♠	8.22
Convertible	2 3/4"	5522A21	8.70
Ratchet	2 1/16"	5526A2	39.36
Flex Joint	2"	5522A28	15.93
1/2" Square Drive			
1/2" sq. F×3/8" sq. M	1 13/32"	5523A54	7.17
1/2" sq. F×3/8" sq. M	5"	55435A65♠	12.11
1/2" sq. F×3/4" sq. M	1 27/32"	5523A38	9.37
1/2" sq. F×3/4" sq. M	1 15/16"	55435A42♠	8.18
Ratchet	2 21/32"	5523A18	46.54
Flex Joint	2 21/32"	5523A19	20.58

♠ Black finish.

Extensions

Standard

Standard Adjustable Length

Wobble—Allows up to a 16° angled entry.

	STANDARD Chrome		STANDARD Black		WOBBLE Chrome	
O'all Lg.		Each		Each		Each
3/8" Square Drive						
1 3/4"	5522A18	$5.34	55315A54	$4.93	5848A21	$5.57
3"	5522A19	8.34	55315A55	7.60	5848A14	9.19
3 1/4"-4 1/4"▲	5522A14	51.47	—	—	—	—
6 1/8"-7 1/4"▲	5522A13	53.90	—	—	—	—
6"	5522A23	10.08	55315A56	9.71	5848A11	11.68
8"	5522A38	10.74	55315A57	10.76	5848A22	12.45
12"	5522A24	12.20	55315A58	11.91	5848A12	13.79
17 3/16"	5522A25	15.59	—	—	5848A23	16.75
24"	5522A26	28.93	—	—	—	—
34"	5522A39	48.79	—	—	—	—
1/2" Square Drive						
2 1/2"	5523A27	9.22	55435A51	8.73	5523A71	10.31
5"	5523A28	11.94	55435A52	11.96	5523A72	12.72
10"	5523A29	15.38	55435A53	15.01	5523A73	16.67
20"	5523A33	25.29	—	—	5523A74	26.06
36"	5523A41	41.95	—	—	—	—

▲ Adjustable length.

3/8" Sq. Dr. 3-Pc. Set—Includes 3", 6", 12" standard chrome extensions.
5522A54 ..... **Per Set** $30.72

1/2" Sq. Dr. 3-Pc. Set—Includes 2", 5", 10" standard chrome extensions.
5523A82 ..... **Per Set** $34.06

1/2″ Square Drive Socket Sets

For information about drive size, see page 2786.

3/8″ and 1/2″ Square Drive Spinners

Ratchet

Hex Head

Made of heat-treated alloy steel. ***Ratchet*** spinners have a chrome finish. ***Hex head*** spinners have a black finish.

Style	Head Dia.	O'all Lg.		Each
3/8″ Square Drive				
Ratchet	17/16″	11/2″	5522A27	$12.09
Hex Head	9/16″	11/16″	5522A12	8.86

Style	Head Dia.	O'all Lg.		Each
1/2″ Square Drive				
Ratchet	113/16″	19/16″	5523A26	$17.00
Hex Head	11/16″	57/64″	5523A17	9.44

1/2″ Square Drive Socket Sets

5573A13

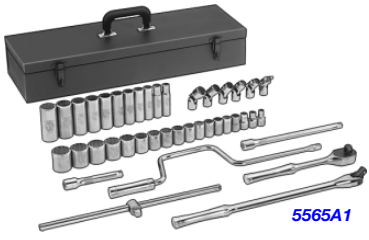

5565A1

5880A22

Furnished in convenient sets, sockets are made of heat-treated alloy steel with a chrome finish. Not for use with power or impact tools.

Premium sets are the finest tools available. All have gone through additional machining, grinding, and/or polishing for a superior fit and finish. ***Value sets*** are high-quality tools offered at an economical price. ***Economy sets*** are imported.

Pieces	Sizes in Set	Accessories		Per Set
Premium Sets, Inch				
12	**6-pt. standard:** 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	103/8″ ratchet; 51/2″ extension; metal box	5573A52	$147.69
15	**6-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 13/16″, 11/4″	metal clip rail	5573A13	$103.26
18	**6-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 13/16″, 11/4″	101/2″ ratchet; 17″ flex-head handle; 5″ extension; metal box	5573A17	$205.47
11	**6-pt. deep:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″	metal clip rail	5573A2	$97.90
29	**6-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″ **6-pt. deep:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″	101/2″ ratchet; 17″ flex-head handle; 5″ and 10″ extensions; metal box	5573A19	$411.20
10	**8-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 1″	metal clip rail	5573A26	$86.95
15	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 13/16″, 11/4″	metal clip rail	5573A29	$99.74
18	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″	101/2″ ratchet; 17″ flex-head handle; 5″ extension; 211/16″ flex joint; metal box	5572A6	$213.16
11	**12-pt. deep:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″	metal clip rail	5573A4	$118.08
30	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″ **12-pt. deep:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″	101/2″ ratchet; 17″ flex-head handle; 5″ and 10″ extensions; metal box	5573A15	$346.61
41	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 19/32″, 5/8″, 21/32″, 11/16″, 3/4″, 25/32″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 13/16″, 11/4″ **12-pt. deep:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″ **12-pt. flex joint:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″	101/2″ ratchet; 17″ flex-head handle; 11″ sliding T-handle; 19″ speeder handle; 5″ and 10″ extensions; 211/16″ flex joint; metal box	5565A1	$505.53
Value Sets, Inch				
14	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″	metal clip rail	55155A33	$57.55
17	**6-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″ **12-pt. standard:** 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″	97/8″ ratchet; 151/2″ flex-head handle; 6″ extension; metal clip rail	55155A48	$86.90
26	**6-pt. standard:** 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″ **12-pt. standard:** 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″ **12-pt. deep:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	97/8″ ratchet; 151/2″ flex-head handle; 5″ extension; 211/16″ flex joint; metal clip rail	55155A52	$139.94
Economy Sets, Inch				
17	**12-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″	10″ ratchet; 173/4″ flex-head handle; 5″ extension; plastic box	5880A22	$45.42
26	**6-pt. standard:** 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″ **12-pt. standard:** 13/16″, 7/8″, 15/16″, 1″, 11/16″, 11/8″, 11/4″ **12-pt. deep:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	10″ ratchet; 17″ flex-head handle; 5″ extension; 211/16″ flex joint; plastic box	5880A23	$77.25
Premium Sets, Metric				
15	**6-pt. standard:** 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24 mm	metal clip rail	7256A5	$96.02
13	**6-pt. deep:** 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24 mm	plastic molded tray	7256A8	$390.00
15	**12-pt. standard:** 10, 13, 14, 15, 17, 18, 19, 20, 22, 23, 24, 26, 27, 30, and 32 mm	two metal clip rails	7256A21	$89.69
20	**12-pt. standard:** 10, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 30, 32, and 36 mm	101/2″ ratchet; 17″ flex-head handle; 5″ extension; metal box	53195A74	$230.64
17	**12-pt. deep:** 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 30, and 32 mm	two metal clip rails	7256A11	$189.58
Value Sets, Metric				
15	**12-pt. standard:** 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 22, 24, 27, 30, and 32 mm	metal clip rail	56285A29	$51.91
23	**12-pt. standard:** 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27, 30, and 32 mm	105/16″ ratchet; 15″ flex-head handle; 6″ and 10″ extensions; metal box	56285A27	$160.52

For information about drive size, see page 2786.

1/2″ Square Drive Sockets

Sockets are premium quality and made of heat-treated alloy steel. Not for use with power or impact tools. ***Extra-deep sockets*** are for use on long-stem bolts used in repairing clamps, joint fittings, and saddles. The socket barrel is carbon steel. ***Spark plug sockets*** have a rubber insert that grips the plug's insulator to prevent damage.

5-point socket is for use with water and gas valves. ***6-point*** and ***12-point sockets*** are for use with hex fasteners. The 6-point sockets prevent rounding and work well on fasteners made of soft metals. The 12-point sockets are easier to position. ***8-point sockets*** are for use with square fasteners.

Also Available: 12-pt. flex-joint inch sockets. For chrome finish, please ask for 5545A34 and specify size: 1/2″, 9/16″, 5/8″, 11/16″, or 3/4″. For black finish, please ask for 5491A11 and specify size: 1/2″, 9/16″, 5/8″, 11/16″, or 3/4″.

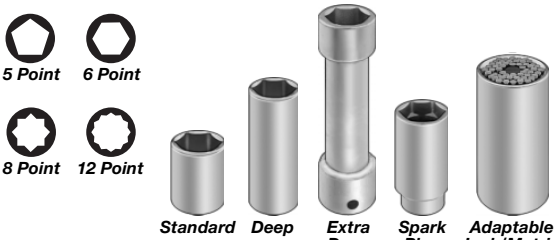

Inch Sizes—Chrome Finish

Size	O'all Lg.		Each
6-Pt. Standard			
3/8″	1 31/64″	5545A11	$5.70
7/16″	1 31/64″	5545A12	5.76
1/2″	1 31/64″	5545A13	5.87
9/16″	1 1/2″	5545A14	5.97
19/32″	1 1/2″	5545A15	5.91
5/8″	1 1/2″	5545A16	6.00
11/16″	1 1/2″	5545A18	6.56
3/4″	1 1/2″	5545A19	6.76
25/32″	1 1/2″	5545A21	6.38
13/16″	1 1/2″	5545A22	7.14
7/8″	1 9/16″	5545A23	7.33
15/16″	1 9/16″	5545A24	7.84
1″	1 9/16″	5545A25	8.41
1 1/16″	1 41/64″	5545A26	9.51
1 1/8″	1 3/4″	5545A27	10.71
1 3/16″	1 3/4″	5545A17	12.29
1 1/4″	1 55/64″	5545A28	13.21
1 5/16″	1 3/4″	5545A271	15.01
1 3/8″	2″	5545A272	20.53
1 7/16″	2 1/8″	5545A273	19.53
1 1/2″	2 1/4″	5545A274	21.07
1 9/16″	2 1/4″	5545A29	21.34
6-Pt. Deep			
3/8″	3 1/4″	5545A278	10.36
7/16″	3 3/64″	5545A294	12.39
1/2″	3 1/4″	5545A281	10.48

Size	O'all Lg.		Each
6-Pt. Deep (Cont.)			
9/16″	3 1/4″	5545A282	$10.67
5/8″	3 1/4″	5545A283	10.72
11/16″	3 1/4″	5545A284	10.87
3/4″	3 1/4″	5545A285	11.15
13/16″	3 1/4″	5545A286	11.29
7/8″	3 1/4″	5545A287	12.13
15/16″	3 1/4″	5545A288	12.96
1″	3 1/4″	5545A289	13.55
1 1/16″	3 1/4″	5545A291	13.50
1 1/8″	3 1/4″	5545A292	13.75
1 3/16″	3 1/4″	5545A331	18.65
1 1/4″	3 1/4″	5545A295	18.47
1 5/16″	3 1/2″	5545A296	22.23
1 3/8″	3 1/2″	5545A297	23.94
1 7/16″	3 1/2″	5545A298	26.53
1 1/2″	3 1/2″	5545A299	30.41
6-Pt. Spark Plug			
5/8″	2 1/2″	5545A851	9.57
13/16″	2 47/64″	5545A852	10.21
7/8″	2 5/8″	5545A853	20.80
8-Pt. Standard			
3/8″	1 1/2″	5545A293	7.69
7/16″	1 1/2″	5545A31	7.81
1/2″	1 1/2″	5545A32	7.81
9/16″	1 1/2″	5545A45	7.86
5/8″	1 1/2″	5545A46	7.90

Size	O'all Lg.		Each
8-Pt. Standard (Cont.)			
11/16″	1 1/2″	5545A68	$8.61
3/4″	1 1/2″	5545A69	9.21
13/16″	1 5/8″	5545A83	11.43
7/8″	1 3/4″	5545A84	11.95
15/16″	1 13/16″	5545A95	13.17
1″	1 15/16″	5545A96	14.37
1 1/16″	1 15/16″	5545A97	15.10
1 1/8″	2″	5545A98	15.85
1 1/4″	2″	5545A99	16.27
12-Pt. Standard			
3/8″	1 31/64″	5545A47	5.56
7/16″	1 31/64″	5545A48	5.87
1/2″	1 31/64″	5545A49	5.92
9/16″	1 1/2″	5545A51	6.00
19/32″	1 1/2″	5545A52	6.11
5/8″	1 1/2″	5545A53	6.24
11/16″	1 1/2″	5545A55	6.56
3/4″	1 1/2″	5545A56	6.65
25/32″	1 1/2″	5545A57	6.73
13/16″	1 1/2″	5545A58	7.31
7/8″	1 9/16″	5545A59	7.49
15/16″	1 9/16″	5545A61	7.90
1″	1 9/16″	5545A63	8.41
1 1/16″	1 5/8″	5545A64	9.51
1 1/8″	1 3/4″	5545A65	10.79
1 3/16″	1 3/4″	5545A66	12.29

Size	O'all Lg.		Each
12-Pt. Standard (Cont.)			
1 1/4″	1 55/64″	5545A67	$13.21
1 5/16″	1 55/64″	5545A91	15.25
1 3/8″	2″	5545A92	17.29
1 7/16″	2 1/8″	5545A93	19.53
1 1/2″	2 1/4″	5545A94	21.25
12-Pt. Deep			
3/8″	3 3/16″	5545A711	10.48
7/16″	3 3/16″	5545A712	10.48
1/2″	3 1/4″	5545A71	10.28
9/16″	3 1/4″	5545A72	10.37
5/8″	3 1/4″	5545A73	10.51
11/16″	3 1/4″	5545A74	10.48
3/4″	3 1/4″	5545A75	10.73
25/32″	3 1/4″	5545A827	9.83
13/16″	3 1/4″	5545A76	11.07
7/8″	3 1/4″	5545A77	11.81
15/16″	3 1/4″	5545A78	12.49
1″	3 1/4″	5545A79	13.16
1 1/16″	3 1/4″	5545A81	14.52
1 1/8″	3 1/4″	5545A82	15.68
1 3/16″	3 1/4″	5545A826	16.85
1 1/4″	3 1/4″	5545A821	18.11
1 5/16″	3 1/2″	5545A822	22.69
1 3/8″	3 1/2″	5545A823	24.90
1 7/16″	3 1/2″	5545A824	27.88
1 1/2″	3 1/2″	5545A825	30.41

Inch Sizes—Black Finish (unless noted)

Size	O'all Lg.		Each
5-Pt. Standard			
13/16″	2″	5491A35	$15.59
6-Pt. Extra Deep—Silver Finish			
15/16″	6 1/4″	55375A41	34.72
11/16″	6 1/4″	55375A42	39.35
1 1/8″	6 1/4″	55375A43	41.67
1 1/4″	6 1/2″	55375A44	44.44
12-Pt. Standard			
3/8″	1 1/2″	5491A51	5.42
1/2″	1 1/2″	5491A53	5.61

Size	O'all Lg.		Each
12-Pt. Standard (Cont.)			
9/16″	1 1/2″	5491A54	$5.61
5/8″	1 1/2″	5491A56	5.61
3/4″	1 1/2″	5491A59	6.40
13/16″	1 1/2″	5491A62	7.02
7/8″	1 9/16″	5491A63	7.20
15/16″	1 9/16″	5491A65	7.45
1″	1 9/16″	5491A67	8.10
1 1/16″	1 5/8″	5491A68	9.02
1 1/8″	1 3/4″	5491A69	10.31

Size	O'all Lg.		Each
12-Pt. Standard (Cont.)			
1 1/4″	1 21/32″	5491A72	$11.91
1 5/16″	1 3/4″	5491A73	14.67
1 3/8″	2″	5491A74	16.65
1 7/16″	2 1/8″	5491A75	18.58
1 1/2″	2 1/4″	5491A76	20.30
12-Pt. Deep			
9/16″	3 1/4″	5491A82	9.68
11/16″	3 1/4″	5491A84	9.94
3/4″	3 1/4″	5491A85	9.94

Size	O'all Lg.		Each
12-Pt. Deep (Cont.)			
13/16″	3 1/4″	5491A86	$10.65
7/8″	3 1/4″	5491A87	11.36
15/16″	3 1/4″	5491A88	11.98
1″	3 1/4″	5491A89	12.79
1 1/16″	3 1/4″	5491A91	13.78
1 1/8″	3 1/4″	5491A92	14.71
1 1/4″	3 1/4″	5491A93	16.95
1 5/16″	3 3/64″	5491A28	25.28
1 1/2″	3 3/64″	5491A32	31.89

Metric Sizes—Chrome Finish

Size, mm	O'all Lg.		Each
6-Pt. Standard			
10	1 31/64″	7149A52	$6.26
11	1 31/64″	7149A53	6.26
12	1 31/64″	7149A54	6.26
13	1 31/64″	7149A55	6.26
14	1 31/64″	7149A56	6.26
15	1 1/2″	7149A57	6.26
16	1 1/2″	7149A58	6.26
17	1 1/2″	7149A59	6.66
18	1 1/2″	7149A81	6.66
19	1 1/2″	7149A62	6.66
20	1 1/2″	7149A63	7.31
21	1 1/2″	7149A64	7.31
22	1 17/32″	7149A65	7.47
23	1 17/32″	7149A66	8.21
24	1 17/32″	7149A67	8.26
25	1 17/32″	7149A68	8.86
26	1 39/64″	7149A69	9.77
27	1 43/64″	7149A82	9.76
28	1 25/32″	7149A86	10.51
29	1 25/32″	7149A87	11.88
30	1 25/32″	7149A83	12.42

Size, mm	O'all Lg.		Each
6-Pt. Standard (Cont.)			
31	1 25/32″	7149A88	$13.85
32	1 55/64″	7149A84	14.46
34	2 1/4″	7149A94	14.33
6-Pt. Deep			
10	3 7/64″	7149A121	8.55
13	3 7/64″	7149A124	7.61
14	3 7/64″	7149A125	7.61
17	3 7/64″	7149A128	8.76
18	3 7/64″	7149A129	8.76
19	3 7/64″	7149A131	8.76
22	3 7/64″	7149A134	9.86
24	3 7/64″	7149A136	11.21
30	3 1/4″	7149A142	52.05
32	3 1/4″	7149A143	55.60
12-Pt. Standard			
9	1 1/2″	7149A61	7.90
10	1 31/64″	7149A11	6.26
11	1 31/64″	7149A12	6.26
12	1 31/64″	7149A13	6.26
13	1 31/64″	7149A14	6.26
14	1 1/2″	7149A15	6.26
15	1 1/2″	7149A16	6.26

Size, mm	O'all Lg.		Each
12-Pt. Standard (Cont.)			
16	1 1/2″	7149A17	$6.26
17	1 1/2″	7149A18	6.78
18	1 1/2″	7149A19	6.78
19	1 1/2″	7149A21	6.78
20	1 1/2″	7149A22	7.31
21	1 1/2″	7149A23	7.45
22	1 17/32″	7149A24	7.67
23	1 17/32″	7149A25	8.22
24	1 17/32″	7149A26	8.40
25	1 17/32″	7149A27	9.05
26	1 39/64″	7149A28	9.77
27	1 43/64″	7149A29	9.95
28	1 25/32″	7149A31	10.91
29	1 25/32″	7149A32	11.76
30	1 25/32″	7149A33	12.18
31	1 25/32″	7149A34	13.85
32	1 55/64″	7149A35	14.46
34	2 1/16″	7149A37	16.31
36	2 15/64″	7149A39	18.31
38	2 1/4″	7149A93	18.58
12-Pt. Deep			
10	3 1/4″	7149A71	10.52

Size, mm	O'all Lg.		Each
12-Pt. Deep (Cont.)			
11	3 1/4″	7149A72	$10.56
12	3 1/4″	7149A73	10.60
13	3 1/4″	7149A74	10.07
14	3 1/4″	7149A75	10.29
15	3 1/4″	7149A76	10.38
16	3 1/4″	7149A41	10.88
17	3 1/4″	7149A42	10.99
18	3 1/4″	7149A43	10.91
19	3 1/4″	7149A44	10.99
20	3 1/4″	7149A45	11.91
21	3 1/4″	7149A46	12.02
22	3 1/4″	7149A47	12.63
23	3 15/64″	7149A85	12.81
24	3 1/4″	7149A48	13.23
25	3 1/4″	7149A49	14.05
26	3 1/4″	7149A51	15.23
27	3 1/4″	7149A77	15.01
28	3 1/4″	7149A91	14.92
29	3 1/4″	7149A92	15.55
30	3 1/4″	7149A78	15.81
32	3 15/64″	7149A79	16.99

Adaptable Inch/Metric Sockets—Chrome Finish

Socket has 54 pins that work with inch and metric hex fasteners. No adjustment needed—just place the socket over your fastener and turn.

For Fastener Sizes	Max. Depth	O'all Lg.		Each
11 mm-32 mm, 7/16″-1 1/4″	5/8″	3 1/2″	6021A11	$35.60

1/2″ & 3/4″ Square Drive Sockets

For information about drive size, see page 2786.

1/2″ Square Drive Tight-Access Offset Sockets

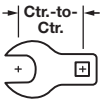

Open End

12-Pt. Flare Nut

Also known as crowfoot wrenches, these sockets provide access to hard-to-reach fasteners and fittings. Made of heat-treated alloy steel with a chrome finish. ***Open-end sockets*** have the thinnest head. Head thick. ranges from 11/32″ to 39/64″. ***Flare-nut sockets*** are for flared tube fittings as well as for fuel and hydraulic lines. Sockets have a side-locking hole for a more secure attachment. Head thick. ranges from 7/8″ to 1 1/16″.

Sets

7-Pc. Open-End Set — Includes 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″, 1 7/16″, 1 1/2″ sizes on a metal clip rail.
5831A41 ..... **Per Set** $104.80

8-Pc. 12-Pt. Flare-Nut Set — Includes 1 1/8″, 1 1/4″, 1 5/16″, 1 3/8″, 1 1/2″, 1 5/8″, 1 3/4″, 2″ sizes on a metal clip rail.
5832A31 ..... **Per Set** $219.00

Individual Sockets

Size	Ctr.-to-Ctr.		Each
Open End			
15/16″	1 25/32″	**5831A11**	$15.00
1″	1 25/32″	**5831A12**	15.17
1 1/16″	1 11/16″	**5831A13**	15.42
1 1/8″	1 11/16″	**5831A14**	15.65
1 3/16″	1 3/4″	**5831A31**	46.53
1 1/4″	1 11/16″	**5831A15**	15.87
1 5/16″	2″	**5831A16**	53.03
1 3/8″	2″	**5831A22**	54.12
1 7/16″	2″	**5831A17**	18.01
1 1/2″	2″	**5831A18**	19.29
1 9/16″	2″	**5831A42**	57.48
1 5/8″	1 31/32″	**5831A19**	74.70
1 11/16″	2 1/4″	**5831A43**	61.29
Open End (Cont.)			
1 3/4″	2 3/16″	**5831A21**	$74.70
1 13/16″	2 1/4″	**5831A44**	65.73
1 7/8″	2 3/16″	**5831A32**	81.20
2″	2 7/32″	**5831A33**	85.53
2 1/8″	2 1/4″	**5831A45**	73.46
2 1/4″	2 1/2″	**5831A46**	76.73
2 3/8″	2 1/2″	**5831A47**	81.35
2 7/16″	2 1/2″	**5831A48**	81.35
2 1/2″	2 1/2″	**5831A49**	83.01
12-Pt. Flare Nut			
1 1/8″	1 5/32″	**5832A11**	24.18
1 3/16″	1 3/16″	**5832A23**	24.69
1 1/4″	1 15/64″	**5832A12**	24.74
12-Pt. Flare Nut (Cont.)			
1 5/16″	1 17/64″	**5832A24**	$27.00
1 3/8″	1 5/16″	**5832A14**	28.78
1 7/16″	1 11/32″	**5832A25**	29.32
1 1/2″	1 3/8″	**5832A16**	30.43
1 9/16″	1 27/64″	**5832A26**	33.40
1 5/8″	1 29/64″	**5832A17**	33.40
1 11/16″	1 33/64″	**5832A27**	35.72
1 3/4″	1 35/64″	**5832A19**	34.87
1 13/16″	1 19/32″	**5832A28**	36.39
1 7/8″	1 41/64″	**5832A21**	36.67
1 15/16″	1 43/64″	**5832A29**	51.38
2″	1 23/32″	**5832A22**	51.38

3/4″ Square Drive Socket Sets

7220A21

7220A34

All of the sockets are made of heat-treated alloy steel with a chrome finish. Not for use with power or impact tools. Made in the U.S. ***Premium sets*** are the finest tools available. All have gone through additional machining, grinding, and/or polishing for a superior fit and finish. ***Value sets*** are high-quality tools offered at an economical price.

Pieces	Sizes in Set	Accessories	Per Set
Premium Sets, Inch			
11	**6-pt. deep:** 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″, 1 5/8″	two metal clip rails	**7220A21** $249.34
20	**12-pt. standard:** 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″, 1 5/8″, 1 11/16″, 1 3/4″, 1 13/16″, 1 7/8″, 2″	19″ ratchet; 22″ flex-head handle; 8″ and 16″ extensions; metal box	**7220A34** $579.70
29	**12-pt. standard:** 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 3/16″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″, 1 9/16″, 1 5/8″, 1 11/16″, 1 3/4″, 1 13/16″, 1 7/8″, 2″, 2 1/8″, 2 3/16″, 2 1/4″, 2 3/8″	20″ ratchet; 18″ sliding T-handle; 20″ flex-head handle; 4″, 8″ and 16″ extensions; 3 39/64″ flex joint; metal box	**7219A28** $1,066.72
Value Set, Inch			
15	**12-pt. standard:** 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 3/16″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″, 1 9/16″, 1 5/8″	20″ ratchet; 8″ extension; metal box	**5805A52** $281.11
Premium Sets, Metric			
13	**12-pt. standard:** 19, 20, 22, 24, 27, 30, 32, 36, 41, 46, 50, 55, and 60 mm	two metal clip rails	**8362A11** $320.99
19	**12-pt. standard:** 24, 25, 26, 27, 28, 29, 30, 31, 32, 35, 36, 38, 41, 42, and 46 mm	20″ ratchet; 20″ flex-head handle; 8″ and 16″ extensions; metal box	**8362A21** $609.32
12	**12-pt. deep:** 22, 23, 24, 27, 30, 32, 35, 36, 38, 41, 46, and 50 mm	two metal clip rails	**8362A16** $347.50

3/4″ Square Drive Sockets

6 Point

12 Point

Standard

Deep

Sockets are premium quality and made of heat-treated alloy steel with a chrome finish. Not for use with power or impact tools. ***6-point*** and ***12-point sockets*** are for use with hex fasteners. The 6-point sockets prevent rounding and work well on fasteners made of soft metals. The 12-point sockets are easier to position.

Inch Sizes

Size	O'all Lg.		Each
6-Pt. Deep			
3/4″	3 1/2″	**5547A53**	$24.62
13/16″	3 1/2″	**5547A54**	24.79
7/8″	3 1/2″	**5547A55**	23.15
15/16″	3 1/2″	**5547A56**	23.36
1″	3 1/2″	**5547A57**	23.75
1 1/16″	3 1/2″	**5547A58**	25.95
1 1/8″	3 1/2″	**5547A59**	29.38
1 3/16″	3 1/2″	**5547A61**	30.99
1 1/4″	3 1/2″	**5547A62**	27.76
1 5/16″	3 1/2″	**5547A63**	29.67
1 3/8″	3 1/2″	**5547A64**	34.78
1 7/16″	3 1/2″	**5547A65**	34.36
1 1/2″	3 1/2″	**5547A66**	37.38
1 5/8″	3 1/2″	**5547A67**	39.20
12-Pt. Standard			
3/4″	1 29/32″	**5547A51**	$13.84
13/16″	1 15/16″	**5547A52**	13.84
7/8″	1 31/32″	**5547A11**	14.06
15/16″	1 31/32″	**5547A12**	13.79
31/32″	2″	**5547A13**	15.11
1″	2″	**5547A14**	14.32
1 1/16″	2 3/32″	**5547A15**	14.37
1 1/8″	2 1/8″	**5547A16**	14.11
1 3/16″	2 3/16″	**5547A17**	14.67
1 1/4″	2 11/64″	**5547A18**	15.58
1 5/16″	2 15/64″	**5547A19**	17.21
1 3/8″	2 15/64″	**5547A21**	19.05
1 7/16″	2 19/64″	**5547A22**	20.10
1 1/2″	2 19/64″	**5547A23**	22.07
12-Pt. Standard (Cont.)			
1 9/16″	2 27/64″	**5547A41**	$24.54
1 5/8″	2 31/64″	**5547A24**	24.85
1 11/16″	2 31/64″	**5547A25**	26.48
1 3/4″	2 41/64″	**5547A26**	27.23
1 13/16″	2 51/64″	**5547A27**	30.41
1 7/8″	2 55/64″	**5547A28**	33.54
2″	2 63/64″	**5547A29**	38.11
2 1/16″	3 1/64″	**5547A31**	41.94
2 1/8″	3 3/64″	**5547A32**	46.13
2 3/16″	3 3/64″	**5547A33**	53.18
2 1/4″	3 11/64″	**5547A34**	53.08
2 5/16″	3 15/64″	**5547A42**	60.88
2 3/8″	3 15/64″	**5547A43**	66.26

Metric Sizes

Size, mm	O'all Lg.		Each
12-Pt. Standard			
19	1 15/16″	**7312A21**	$14.81
20	1 15/16″	**7312A51**	15.55
21	1 31/32″	**7312A22**	14.49
22	1 31/32″	**7312A23**	15.35
23	1 31/32″	**7312A24**	14.61
24	1 31/32″	**7312A25**	15.82
25	2″	**7312A26**	14.73
26	2 1/16″	**7312A27**	14.73
27	2 3/32″	**7312A28**	15.99
12-Pt. Standard (Cont.)			
28	2 1/8″	**7312A31**	$16.03
29	2 1/8″	**7312A32**	16.78
30	2 3/16″	**7312A33**	17.17
31	2 7/32″	**7312A52**	18.82
32	2 11/64″	**7312A34**	19.07
35	2 15/64″	**7312A35**	19.48
36	2 19/64″	**7312A36**	21.43
38	2 23/64″	**7312A37**	22.74
41	2 33/64″	**7312A38**	27.42
12-Pt. Standard (Cont.)			
42	2 35/64″	**7312A39**	$28.31
46	2 51/64″	**7312A41**	34.60
50	2 63/64″	**7312A42**	39.04
54	3 3/64″	**7312A43**	46.57
55	3 9/64″	**7312A44**	59.82
58	3 15/64″	**7312A45**	64.83
60	3 15/64″	**7312A46**	69.84
12-Pt. Deep			
24	3 3/8″	**7312A64**	24.44
12-Pt. Deep (Cont.)			
30	3 1/2″	**7312A66**	$25.13
32	3 1/2″	**7312A67**	25.27
35	3 1/2″	**7312A68**	30.58
36	3 1/2″	**7312A69**	30.33
38	3 1/2″	**7312A71**	36.32
41	3 1/2″	**7312A72**	38.53
46	3 1/2″	**7312A73**	46.21
50	4″	**7312A74**	55.49
55	4 1/4″	**7312A75**	66.56

3/4″ Square Drive Ratchet Wrenches and Handles

Wrenches and handles are made of heat-treated alloy steel with a chrome finish, unless noted.

Ratchet Wrenches

Standard

Adjustable Length

Female Drive

Ratchet Head Only

Handle for Ratchet Head

Wrenches have a reversible ratchet. Handle swing is 15°, which is the minimum angle the handle must swing for the ratchet to engage.

	O'all Lg.		Each
Standard	19″	5524A11	$98.74
Standard with Black Finish	19″	5524A15	91.27
Adjustable Length	24″–40″	5524A14	115.11
Female Drive	20″	5524A17	101.71
Ratchet Head Only	6″	5524A12	134.36
Handle for Ratchet Head	19 1/4″	5524A16	49.54

Handles

Flex Head

Sliding T

Locking Sliding T

L

Locking Sliding T-Handle—Use with the head at the end of the bar, or loosen the set screw and move the head to the middle of the bar for use as a fixed-head T-handle.

	O'all Lg.		Each
Flex Head	22″	5524A18	$61.24
Flex Head with Black Finish	22″	5524A23	52.35
Flex Head	40″	5524A28■	68.96
Sliding T	20″	5524A19	45.58
Sliding T with Black Finish	19 1/4″	5524A32	48.01
Locking Sliding T	24″	5524A31	109.42
L	16″	5524A21	49.63

■ Head has a black finish.

1″ Square Drive Sockets

Sockets are premium quality and made of heat-treated alloy steel with a chrome finish. All are 12 point. Not for use with power or impact sockets.

12 Point

Size	O'all Lg.		Each
1 1/16″	2 7/16″	5546A11	$24.97
1 1/8″	2 17/64″	5546A12	27.27
1 3/16″	2 7/16″	5546A27	25.46
1 1/4″	2 17/64″	5546A13	25.42
1 5/16″	2 21/64″	5546A46	25.75
1 3/8″	2 27/64″	5546A14	26.61
1 7/16″	2 31/64″	5546A15	29.04
1 1/2″	2 35/64″	5546A16	30.22
1 5/8″	2 43/64″	5546A17	32.63
1 11/16″	2 47/64″	5546A28	36.14
1 3/4″	2 51/64″	5546A29	39.96
1 13/16″	2 55/64″	5546A18	41.65
1 7/8″	2 59/64″	5546A19	45.73
2″	2 63/64″	5546A21	50.49
2 1/16″	3 1/2″	5546A31	$53.04
2 1/8″	3 3/64″	5546A22	59.77
2 3/16″	3 17/64″	5546A23	64.66
2 1/4″	3 17/64″	5546A24	68.69
2 3/8″	3 5/16″	5546A25	78.95
2 1/2″	3 7/16″	5546A26	88.54
2 9/16″	3 1/2″	5546A41	97.93
2 5/8″	3 9/16″	5546A42	108.81
2 3/4″	3 13/16″	5546A43	120.92
2 15/16″	3 7/8″	5546A44	137.47
3″	4 3/16″	5546A32	150.02
3 1/8″	4 3/16″	5546A45	160.08
3 1/2″	4 1/2″	5546A33	196.96

3/4″ Square Drive Socket Accessories

Made of heat-treated alloy steel with a chrome finish, unless noted.

Extensions

O'all Lg.		Each
5″	5524A24	$22.31
8″	5524A25	27.04
8″ with Black Finish	5524A38	29.05
16″	5524A26	39.02
16″ with Black Finish	5524A39	41.07

Wide-Tip Adjustment Sockets—Black Finish

Also called drag links, sockets work like a screwdriver blade.

Tip Width × O'all Lg.	Tip Thick.		Each
1 3/8″ × 2 3/16″	13/64″	5524A54	$57.68
1 11/16″ × 2 3/16″	1/4″	5524A57	69.88

Adapters

Female/Male

Ratchet

Flex Joint

Ratchet adapter converts a standard handle to a ratchet handle.

Female × Male	O'all Lg.		Each
1/2″ sq. × 3/4″ sq.	1 27/32″	5523A38	$9.37
1/2″ sq. × 3/4″ sq. with Black Finish	1 15/16″	55435A42	8.18
3/4″ sq. × 1/2″ sq.	2 3/32″	5524A29	14.94
3/4″ sq. × 1/2″ sq. with Black Finish	2 5/16″	5524A34	14.54
3/4″ sq. × 1″ sq.	2 35/64″	5524A13	20.48
3/4″ sq. × 1″ sq. with Black Finish	2 1/2″	5524A45	20.42
1″ sq. × 3/4″ sq.	2 5/8″	5525A22	30.94
3/4″ sq. Ratchet	3 3/4″	5524A22	135.53
3/4″ sq. Flex Joint	4 5/32″	5524A27	56.00
3/4″ sq. Flex Joint with Black Finish	4 1/16″	5524A36	60.94

1″ Square Drive Ratchet Wrenches and Handles

Made of heat-treated alloy steel with a chrome finish, unless noted.

Ratchet Wrenches

Standard

Male/Female Drive

Wrenches have a reversible ratchet. Handle swing is 15°, which is the minimum angle the handle must swing for the ratchet to engage.

Male/Female Drive—Wrench has a male plug that you can remove to convert to a female drive.

	O'all Lg.		Each
Standard	30″	5525A35	$174.53
Standard with Black Finish	30″	5525A31	166.55
Male/Female Drive	26″	5525A14	186.73

Handles

Flex Head

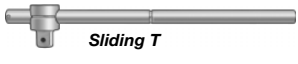
Sliding T

Locking Sliding T

Locking Sliding T-Handle—Use with the head at the end of the bar, or loosen the set screw and move the head to the middle of the bar for use as a fixed-head T-handle.

	O'all Lg.		Each
Flex Head	26 1/4″	5525A13	$149.57
Flex Head with Black Finish	34 3/16″	5525A24	155.08
Sliding T	20″	5525A32	79.82
Locking Sliding T	30″	5525A21	192.25

1″ Square Drive Socket Accessories

Made of heat-treated alloy steel with a chrome finish, unless noted.

Extensions

O'all Lg.		Each
9″	5525A15	$46.18
18″	5525A16	59.84

Adapters

Female × Male	O'all Lg.		Each
3/4″ sq. × 1″ sq.	2 35/64″	5524A13	$20.48
1″ sq. × 3/4″ sq.	2 5/8″	5525A22	30.94
1″ sq. × 3/4″ sq. w/Black Finish	3 1/16″	5525A27	33.38

About Impact Sockets and Power Sockets

4 Point | 6 Point | 8 Point | 12 Point | Hex Bit

4-point and ***8-point sockets*** are for use with square fasteners. The 4-point sockets prevent rounding, but the 8-point sockets are easier to position.

6-point and ***12-point sockets*** are for use with hex fasteners. The 6-point sockets prevent rounding and work well on fasteners made of soft metals. The 12-point sockets are easier to position.

Hex-bit sockets are for hex socket head fasteners.

Magnetic sockets hold fasteners in the socket. They are ideal for self-tapping screws.

Thin-wall sockets have thinner walls (smaller outside diameter) for tight-clearance applications.

Impact Sockets (pages 2798-2804)— Sockets are heat treated to a lesser hardness than power sockets, giving them the ability to withstand high torque and the force of impact tools. Impact sockets can be used in hand-driven and power applications, but they will wear sooner than power sockets.

Note: For ¾″ square drive and larger impact sockets, use a retaining ring to secure the socket (or accessory) to your power tool or impact wrench that has a hole- or a ring-and-hole style retainer. Or, use a tool with a pin-style retainer (no retaining ring needed).

Thin-Wall Power Sockets (pages 2804-2805)— For use with power-driven tools such as ratchets, wrenches, and multiple-spindle machines. Power sockets are heat treated to a greater hardness than impact sockets for increased durability. This hardness also allows the sockets to be thinner, making them useful in tight-clearance areas. Power sockets are not for use with impact tools.

Square Drive Impact Sockets & Drivers

¼″ Square Drive Impact Sockets and Accessories

6 Point

Standard Socket

Deep Socket

Made of heat-treated alloy steel, these premium-quality sockets and accessories have a black finish, unless noted.

Also Available: 6-point impact sockets in metric sizes. For deep sockets, please ask for 53115A42 and specify size: 6, 7, 8, 10, 11, 12, or 13mm. For flex-joint sockets, please ask for 53115A43 and specify size: 7, 8, 10, 12, or 13mm.

Socket Sets—Inch Sizes

Pieces	Sizes in Set	Container	Per Set
6	**6-pt. standard:** ¼″, 5/16″, ⅜″, 7/16″, ½″, 9/16″	metal clip rail	7236A114 ... $25.10
11	**6-pt. deep:** 3/16″, 7/32″, ¼″, 9/32″, 5/16″, 11/32″, ⅜″, 7/16″, ½″, 9/16″, ⅝″	metal clip rail	7236A116 ... $62.15

Inch Sizes

Size	O'all Lg.	OD		Each
6-Pt. Standard				
3/16″	⅞″	½″	7236A11	$4.29
7/32″	⅞″	½″	7236A12	4.29
¼″	⅞″	½″	7236A13	4.29
9/32″	⅞″	½″	7236A14	4.49
5/16″	⅞″	½″	7236A15	4.37
11/32″	⅞″	33/64″	7236A16	4.30
⅜″	⅞″	9/16″	7236A17	4.28
7/16″	⅞″	21/32″	7236A18	4.32
½″	⅞″	45/64″	7236A19	4.19
9/16″	⅞″	51/64″	7236A21	4.31
6-Pt. Standard—Magnetic				
3/16″	⅞″	½″	7236A85	9.71
¼″	⅞″	½″	7236A87	10.11
5/16″	59/64″	½″	7236A89	10.11

Size	O'all Lg.	OD		Each
6-Pt. Standard—Magnetic (Cont.)				
⅜″	15/16″	9/16″	7236A92	$10.43
7/16″	1″	21/32″	7236A93	10.43
½″	1″	11/16″	7236A94	11.48
6-Pt. Deep				
3/16″	2″	½″	7236A52	5.64
¼″	2″	½″	7236A35	5.64
9/32″	2″	½″	7236A53	5.56
5/16″	2″	½″	7236A36	5.63
11/32″	2″	33/64″	7236A54	5.63
⅜″	2″	9/16″	7236A37	5.63
7/16″	2″	21/32″	7236A38	5.64
½″	2″	11/16″	7236A55	5.64
9/16″	2″	51/64″	7236A57	5.82
⅝″	2″	⅞″	7236A58	5.64

Metric Sizes

Size	O'all Lg.	OD		Each
6-Pt. Standard				
4 mm	⅞″	½″	53115A56	$4.18
5 mm	⅞″	½″	53115A57	4.46
5.5 mm	⅞″	½″	53115A58	4.49
6 mm	⅞″	½″	53115A59	4.52
7 mm	⅞″	½″	53115A61	4.55
8 mm	⅞″	½″	53115A62	4.57
9 mm	⅞″	33/64″	53115A63	4.60
10 mm	⅞″	9/16″	53115A64	4.62
11 mm	⅞″	21/32″	53115A65	4.84
12 mm	⅞″	11/16″	53115A67	5.11
13 mm	⅞″	47/64″	53115A66	4.72

Accessories

Adapter

Swivel-Joint Adapter

Extension

	O'all Lg.		Each
Adapter: ¼″ sq. F × ⅜″ sq. M	1″	7236A97■	$10.43
Adapter: ⅜″ sq. F × ¼″ sq. M	1¼″	7236A98■	13.70
Swivel-Joint Adapter: ¼″ sq. F × ¼″ sq. M	1⅜″	7236A112	31.57
Extension	2″	7236A42	4.87
Extension	6″	7236A43	6.75

■ Finish is gray.

⅜″ and ½″ Square Drive Manual Impact Drivers

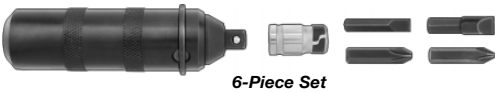

6-Piece Set

Use the drivers with impact sockets to free frozen bolts and screws. You can also use them with insert bits to turn frozen screws. Strike the shank end with a hammer to loosen or tighten fasteners. Drivers operate in forward and reverse. Made of heat-treated alloy steel. See pages 2818-2825 for a complete selection of ¼″ and 5/16″ hex-shank insert bits.

Manual Impact Driver Sets

6-Piece Sets— Include impact driver, 5/16″ and ⅜″ slotted bits, #2 and #3 Phillips bits, 5/16″ hex bit adapter, and a vinyl pouch.

With ⅜″ Sq. Drive Impact Driver ..... **5610A2** **Per Set** $32.65
With ½″ Sq. Drive Impact Driver ..... **5610A33** **Per Set** $38.96

9-Piece Set— Includes impact driver; 5/16″ slotted bit; #2 Phillips bit; 3, 4, 5, 6, 8 mm hex bits; 5/16″ hex bit adapter; and a vinyl pouch.

With ⅜″ Sq. Drive Impact Driver ..... **6967A12** **Per Set** $36.16

Manual Impact Drivers

Sq. Drive	O'all Lg.		Each
⅜″	4¾″	5610A1	$25.12
½″	5¼″	5610A23	29.15

Phillips Insert Bits

Hex Shank	Tip No.	O'all Lg.		Each
5/16″	2	1¼″	5750A94	$1.43
5/16″	3	1¼″	5750A95	1.43
5/16″	4	1¼″	5750A96	1.43

Impact Socket Adapter Sets

7-Pc. Set

Use these sets with impact tools and other power tools. Made of heat-treated alloy steel with a black finish.

6-Pc. Set— Includes female × male square drive adapters in sizes ⅜″ × ½″, ½″ × ⅜″, ½″ × ¾″, ¾″ × ½″, ¾″ × 1″, 1″ × ¾″, and a metal clip rail for ⅜″ to ¾″ (female) sizes.
55805A44 ..... **Per Set** $92.36

7-Pc. Set— Includes female × male square drive adapters in sizes ⅜″ × ½″, ½″ × ⅜″, ½″ × ¾″, ¾″ × ½″; flex-joint adapters in sizes ¼″, ⅜″, ½″; and a metal clip rail.
55805A12 ..... **Per Set** $137.07

For information about impact sockets, see page 2798.

3/8" Square Drive Impact Sockets and Accessories

All of these premium-quality impact sockets and accessories are made of heat-treated alloy steel and have a black finish.

Also Available: 6-pt. metric magnetic sockets. Please ask for 7193A82 and specify size: 7-19 mm.

Also Available: 6-pt. metric flex-joint sockets. Please ask for 7193A111 and specify size: 8-20 mm.

Socket Sets

Pieces		Container	Per Set
Inch Sets			
8	**6-pt. standard:** 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4"	metal clip rail	7227A11 ..... $34.32
8	**6-pt. deep:** 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4"	metal clip rail	7227A12 ..... $41.06
7	**6-pt. flex joint:** 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4"	metal clip rail	5553A98 ..... $136.45
7	**Hex bit:** 1/8", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"	metal clip rail	54615A39 .. $69.59
Metric Sets			
13	**6-pt. standard:** 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm	metal clip rail	6979A53 ..... $60.47
13	**6-pt. deep:** 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm	metal clip rail	6979A55 ..... $71.51
10	**6-pt. flex joint:** 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm	metal clip rail	7193A81 ..... $192.86
5	**Hex bit:** 4, 5, 6, 8, and 10 mm	metal clip rail	55005A62 .. $57.06
Inch/Metric Set			
40	**6-pt. standard:** 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4" and 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm **6-pt. deep:** 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4" and 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 mm	metal clip rail	7227A13 ..... $207.94

Inch Sizes

Size	O'all Lg.	OD		Each
6-Pt. Standard				
1/4"	1 3/32"	11/16"	5553A21	$4.35
5/16"	1 3/32"	11/16"	5553A11	4.42
11/32"	1 3/32"	11/16"	5553A12	4.46
3/8"	1 3/32"	11/16"	5553A13	4.51
7/16"	1 3/32"	11/16"	5553A14	4.54
1/2"	1 3/32"	3/4"	5553A15	4.46
9/16"	1 3/32"	13/16"	5553A16	4.57
5/8"	1 3/32"	29/32"	5553A18	4.43
11/16"	1 3/32"	1"	5553A23	4.47
3/4"	1 3/32"	1 1/16"	5553A24	4.47
13/16"	1 7/32"	1 13/64"	5553A85	5.41
7/8"	1 7/32"	1 9/32"	5553A86	5.63
15/16"	1 11/32"	1 23/64"	5553A87	6.13
1"	1 11/32"	1 1/2"	5553A88	6.59
6-Pt. Standard—Magnetic				
5/16"	1 3/32"	11/16"	5553A103	11.25
3/8"	1 3/32"	11/16"	5553A105	11.25
7/16"	1 3/32"	11/16"	5553A106	11.25
1/2"	1 3/32"	3/4"	5553A107	11.89
9/16"	1 3/32"	13/16"	5553A108	13.82
6-Pt. Deep				
1/4"	2 3/4"	11/16"	5553A95	5.17
9/32"	2 3/4"	11/16"	5553A96	5.18
5/16"	2 3/4"	11/16"	5553A42	5.77
11/32"	2 3/4"	11/16"	5553A97	5.70
3/8"	2 3/4"	11/16"	5553A43	5.77
7/16"	2 3/4"	11/16"	5553A44	5.83
1/2"	2 3/4"	3/4"	5553A45	5.76
1/2"	9 1/2"	7/8"	6023A11	64.00
9/16"	2 3/4"	13/16"	5553A46	5.88
9/16"	9 1/2"	7/8"	6023A12	64.33
5/8"	2 3/4"	29/32"	5553A47	6.09
5/8"	9 1/2"	31/32"	6023A13	64.83
11/16"	2 3/4"	1"	5553A48	6.31
11/16"	9 1/2"	1 1/8"	6023A14	65.38
3/4"	2 3/4"	1 1/16"	5553A49	6.55
3/4"	9 1/2"	1 3/16"	6023A15	59.95
13/16"	2 3/4"	1 13/64"	5553A91	7.45
7/8"	2 3/4"	1 9/32"	5553A92	7.73
15/16"	2 3/4"	1 23/64"	5553A93	8.47
1"	2 3/4"	1 1/2"	5553A94	8.93

Size	O'all Lg.	OD		Each
6-Pt. Deep—Thin Wall				
1/4"	2"	11/16"	5553A25	$8.41
5/16"	2"	11/16"	5553A26	8.41
3/8"	1 3/4"	11/16"	5553A27	8.41
7/16"	1 3/4"	11/16"	5553A28	8.41
1/2"	1 3/4"	11/16"	5553A29	8.41
9/16"	2"	25/32"	5553A3	9.22
5/8"	2"	7/8"	5553A31	9.92
11/16"	2"	15/16"	5553A32	11.44
3/4"	2"	1"	5553A33	11.61
7/8"	2 1/2"	1 13/64"	5553A34	15.37
15/16"	2 13/16"	1 1/4"	5553A35	16.79
6-Pt. Flex Joint				
3/8"	1 29/32"	31/32"	5553A59	23.49
7/16"	1 31/32"	31/32"	5553A61	23.49
1/2"	2 1/32"	31/32"	5553A62	22.81
9/16"	2 15/32"	31/32"	5553A63	22.81
5/8"	2 3/32"	31/32"	5553A64	23.49
11/16"	2 3/16"	1"	5553A114	26.50
3/4"	2 3/16"	1 1/16"	5553A115	26.50
6-Pt. Flex-Joint Deep				
3/8"	2 15/16"	7/8"	5553A116	41.22
7/16"	2 3/4"	7/8"	5553A117	41.22
1/2"	2 3/4"	7/8"	5553A118	42.07
9/16"	3 3/16"	7/8"	5553A119	42.07
5/8"	3 1/4"	7/8"	5553A122	42.07
8-Pt. Standard				
1/4"	1"	11/16"	5553A75	6.76
7/16"	1"	13/16"	5553A37	7.37
1/2"	1 1/16"	15/16"	5553A38	8.04
9/16"	1 1/8"	1 3/16"	5553A39	7.83
Hex Bit				
1/8"	2 23/32"	11/16"	54615A21	8.79
5/32"	2 23/32"	11/16"	54615A22	8.79
3/16"	2 23/32"	11/16"	54615A23	8.79
7/32"	2 23/32"	11/16"	54615A24	8.69
1/4"	2 23/32"	11/16"	54615A25	9.52
5/16"	2 23/32"	11/16"	54615A26	9.52
3/8"	2 23/32"	11/16"	54615A27	9.52
7/16"	1 63/64"	3/4"	54615A28▲	13.50
1/2"	1 63/64"	3/4"	54615A29▲	13.50

▲ One-piece construction (bit is not replaceable).

Metric Sizes

Size	O'all Lg.	OD		Each
6-Pt. Standard				
6 mm	59/64"	11/16"	7193A25	$4.76
7 mm	1 1/32"	11/16"	7193A11	4.43
8 mm	1 1/32"	11/16"	7193A12	4.43
9 mm	1 1/32"	11/16"	7193A33	4.35
10 mm	1 1/32"	11/16"	7193A14	4.43
11 mm	1 1/32"	11/16"	7193A35	4.42
12 mm	1 1/16"	23/32"	7193A16	4.42
13 mm	1 1/16"	25/32"	7193A17	4.86
14 mm	1 3/32"	13/16"	7193A18	4.94
15 mm	1 3/32"	27/32"	7193A22	4.94
16 mm	1 1/8"	29/32"	7193A23	4.94
17 mm	1 5/32"	31/32"	7193A19	5.14
18 mm	1 5/32"	1"	7193A24	5.14
19 mm	1 3/16"	1 1/16"	7193A21	5.14
20 mm	1 7/32"	1 1/8"	7193A26	4.88
21 mm	1 3/32"	1 5/32"	7193A27	5.25
22 mm	1 7/32"	1 1/4"	7193A36	5.20
24 mm	1 3/32"	1 19/64"	7193A37	5.99
6-Pt. Deep				
6 mm	2 3/4"	11/16"	7193A41	5.81
7 mm	2 1/8"	11/16"	7193A42	5.17
8 mm	2 1/8"	11/16"	7193A43	5.54
9 mm	2 1/8"	11/16"	7193A44	5.61
10 mm	2 1/8"	11/16"	7193A45	5.61
11 mm	2 1/8"	11/16"	7193A46	5.60
12 mm	2 1/8"	23/32"	7193A47	5.60
13 mm	2 1/8"	25/32"	7193A48	5.60
14 mm	2 3/8"	13/16"	7193A49	5.59
15 mm	2 3/8"	27/32"	7193A51	5.59
16 mm	2 3/8"	29/32"	7193A52	5.65
17 mm	2 5/8"	31/32"	7193A53	5.89
18 mm	2 5/8"	1"	7193A54	5.89
19 mm	2 5/8"	1 1/16"	7193A55	5.94
21 mm	2 5/8"	1 5/32"	7193A57	6.62
22 mm	2 3/4"	1 13/64"	7193A58	7.00
24 mm	2 7/8"	1 5/16"	7193A61	7.06
Hex Bit				
4 mm	2 23/32"	11/16"	55005A41	10.55
5 mm	2 23/32"	11/16"	55005A42	10.55
6 mm	2 23/32"	11/16"	55005A43	10.41
7 mm	2"	3/4"	55005A37	20.77
8 mm	2 23/32"	11/16"	55005A44	10.41
10 mm	2 23/32"	11/16"	55005A45	9.97
12 mm	1 63/64"	3/4"	55005A48▲	14.25

▲ One-piece construction (bit is not replaceable).

Accessories

	O'all Lg.		Each
Adapter: 3/8" sq. F × 1/2" sq. M	1 3/8"	5553A69	$7.03
Adapter: 1/2" sq. F × 3/8" sq. M	1 1/2"	5549A45	7.97
Swivel-Joint Adapter: 3/8" sq. F × 3/8" sq. M	2 1/64"	5553A73	23.46
Extension	3"	5553A71	$8.54
Extension	6"	5553A72	10.77
Extension	12"	5553A76	14.90

1/2″ Square Drive Impact Sockets

For information about impact sockets, see page 2798.

1/2″ Square Drive Impact Sockets and Accessories

6 Point

8 Point

12 Point

Hex Bit

Standard Socket

Deep Socket

Extra-Deep Socket

Flex-Joint Socket

Hex-Bit Socket

Adapter

Magnetic Adapter

Swivel-Joint Adapter

Standard Extension

Sockets and accessories are premium quality and made of heat-treated alloy steel. All have a black finish.
Also Available: 6-point flex-joint metric sockets. Please ask for 7205A111 and specify size: 10-20 mm.

Socket Sets

Pieces	Sizes in Set and Accessories	Container	Per Set
Inch Sets—*Made in the U.S.*			
7	**6-pt. standard:** 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″	metal clip rail	**7221A11**..... $38.13
11	**6-pt. standard:** 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″	metal clip rail	**7221A14**..... $72.31
13	**6-pt. standard:** 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″	metal clip rail	**7221A18**..... $87.97
16	**6-pt. standard:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″; 5″ extension; 2 19/32″ flex joint	metal box	**7404A86**..... $129.35
11	**6-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″	metal clip rail	**7221A16**..... $97.91
14	**6-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″	metal clip rail	**53105A75**.. $159.87
16	**6-pt. deep:** 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″; 5″ extension; 1/2″ flex joint	metal box	**7404A12**..... $221.67
7	**6-pt. flex joint:** 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″, 13/16″	metal clip rail	**7221A23**..... $177.57
7	**Hex bit:** 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″	metal clip rail	**7221A22**..... $78.68
Metric Sets—*Made in the U.S.*			
16	**6-pt. standard:** 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, and 27 mm	metal clip rail	**5321A16**..... $109.96
16	**6-pt. deep:** 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, and 27 mm	metal clip rail	**5321A21**..... $138.66
6	**Hex bit:** 6, 8, 10, 12, 14, and 17 mm	metal clip rail	**5321A24**..... $76.25
Economy Inch/Metric Set—*Imported*			
18	**Hex bit:** 1/4″, 9/32″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 11/16″, 3/4″ and 6, 7, 10, 12, 14, 15, 17, and 18 mm	plastic case	**6040A21**..... $141.52

Inch Sizes

Size	O'all Lg.	OD		Each
6-Pt. Standard				
5/16″	1 1/2″	7/8″	**5549A301**	$4.57
3/8″	1 1/2″	29/32″	**5549A11**	4.47
7/16″	1 1/2″	29/32″	**5549A12**	4.64
1/2″	1 1/2″	29/32″	**5549A13**	4.64
9/16″	1 1/2″	29/32″	**5549A15**	4.70
5/8″	1 1/2″	31/32″	**5549A18**	5.09
11/16″	1 1/2″	1 1/16″	**5549A19**	5.22
3/4″	1 1/2″	1 1/8″	**5549A22**	5.22
13/16″	1 1/2″	1 1/4″	**5549A25**	6.40
7/8″	1 1/2″	1 5/16″	**5549A26**	7.11
15/16″	1 3/4″	1 3/8″	**5549A28**	8.06
1″	1 3/4″	1 7/16″	**5549A29**	8.48
1 1/16″	2″	1 9/16″	**5549A32**	9.47
1 1/8″	2″	1 5/8″	**5549A33**	9.47
1 3/16″	2″	1 11/16″	**5549A34**	10.94
1 1/4″	2″	1 3/4″	**5549A36**	11.72
1 5/16″	2″	1 7/8″	**5549A37**	14.20
1 3/8″	2″	1 15/16″	**5549A38**	15.76
1 7/16″	2″	2″	**5549A39**	18.02
1 1/2″	2″	2 1/8″	**5549A43**	20.27
1 9/16″	2 23/64″	2 1/8″	**5549A306**	19.79
1 5/8″	2 23/64″	2 13/64″	**5549A302**	22.19
1 11/16″	2 23/64″	2 25/64″	**5549A307**	24.49
1 3/4″	2 23/64″	2 31/64″	**5549A303**	26.23
1 13/16″	2 49/64″	2 9/16″	**5549A308**	27.98
1 7/8″	2 49/64″	2 39/64″	**5549A304**	29.20
1 15/16″	2 49/64″	2 11/16″	**5549A309**	31.00
2″	2 49/64″	2 23/32″	**5549A305**	33.21
2 1/4″	2 49/64″	3 5/64″	**5549A31**	43.77
6-Pt. Standard—*Magnetic*				
3/8″	1 1/2″	63/64″	**5549A201**	9.23
7/16″	1 1/2″	63/64″	**5549A202**	9.34
1/2″	1 1/2″	63/64″	**5549A203**	9.36
9/16″	1 1/2″	63/64″	**5549A204**	9.34
6-Pt. Standard—*Magnetic (Cont.)*				
5/8″	1 1/2″	13/16″	**5549A205**	$10.44
13/16″	1 1/2″	17/32″	**5549A206**	10.44
15/16″	1 49/64″	1 3/8″	**5549A207**	12.98
1″	1 49/64″	1 29/64″	**5549A208**	14.53
6-Pt. Deep				
3/8″	3 1/4″	29/32″	**5549A133**	7.27
7/16″	3 1/4″	29/32″	**5549A134**	7.27
1/2″	3 1/4″	29/32″	**5549A135**	7.27
9/16″	3 1/4″	29/32″	**5549A136**	7.58
5/8″	3 1/4″	31/32″	**5549A137**	7.58
11/16″	3 1/4″	1 1/16″	**5549A138**	7.58
3/4″	3 1/4″	1 1/4″	**5549A139**	8.16
13/16″	3 1/4″	1 1/4″	**5549A141**	8.16
7/8″	3 1/2″	1 5/16″	**5549A142**	9.64
15/16″	3 1/2″	1 3/8″	**5549A143**	9.64
1″	3 1/2″	1 7/16″	**5549A144**	11.00
1 1/16″	3 1/2″	1 9/16″	**5549A151**	11.59
1 1/8″	3 1/2″	1 5/8″	**5549A152**	13.14
1 3/16″	3 1/2″	1 11/16″	**5549A153**	17.92
1 1/4″	3 1/2″	1 3/4″	**5549A145**	18.98
1 5/16″	3 1/2″	1 7/8″	**5549A146**	23.33
1 3/8″	3 1/2″	2″	**5549A147**	23.68
1 7/16″	3 1/2″	2″	**5549A148**	25.26
1 1/2″	3 1/2″	2 1/8″	**5549A149**	29.80
1 9/16″	3 21/32″	2 1/8″	**5549A103**	35.67
1 5/8″	3 21/32″	2 13/64″	**5549A109**	38.98
1 11/16″	3 21/32″	2 25/64″	**5549A104**	41.12
1 3/4″	3 21/32″	2 31/64″	**5549A112**	44.36
1 13/16″	3 21/32″	2 9/16″	**5549A105**	48.33
1 7/8″	3 21/32″	2 39/64″	**5549A113**	49.05
1 15/16″	3 21/32″	2 11/16″	**5549A106**	49.02
2″	3 21/32″	2 23/32″	**5549A114**	52.33
2 1/16″	3 21/32″	2 53/64″	**5549A107**	59.62
2 1/8″	3 21/32″	2 61/64″	**5549A115**	65.67
6-Pt. Deep (Cont.)				
2 1/4″	3 21/32″	3 5/64″	**5549A108**	$81.00
6-Pt. Extra Deep				
15/16″	9 1/2″	1 1/2″	**6023A21**	67.16
1 1/8″	9 1/2″	1 11/16″	**6023A22**	73.07
1 5/16″	9 1/2″	1 21/32″	**6023A23**	83.63
1 1/2″	9 1/2″	2 1/4″	**6023A24**	98.00
6-Pt. Flex-Joint				
7/16″	2 19/32″	1 1/16″	**5549A55**	26.22
1/2″	2 19/32″	1 1/16″	**5549A61**	26.78
9/16″	2 21/32″	1 9/64″	**5549A62**	28.71
5/8″	2 19/32″	1 1/16″	**5549A63**	28.26
3/4″	2 19/32″	1 1/4″	**5549A65**	29.09
13/16″	2 19/32″	1 1/4″	**5549A66**	28.92
7/8″	3 1/16″	1 3/16″	**5549A119**	55.60
15/16″	3 1/16″	1 9/32″	**5549A16**	57.80
1″	3 1/16″	1 11/32″	**5549A17**	60.30
1 1/16″	3 5/32″	1 7/16″	**5549A178**	60.80
1 1/8″	3 11/32″	1 1/2″	**5549A179**	63.60
1 3/16″	3 11/32″	1 9/16″	**5549A188**	69.60
1 1/4″	3 13/32″	1 5/8″	**5549A189**	69.60
8-Pt. Standard				
3/8″	1 1/2″	15/16″	**5549A121**	7.30
7/16″	1 1/2″	15/16″	**5549A122**	7.30
1/2″	1 1/2″	15/16″	**5549A123**	7.30
9/16″	1 1/2″	1 1/32″	**5549A124**	8.64
5/8″	1 1/2″	1 1/8″	**5549A125**	9.32
11/16″	1 1/2″	1 3/16″	**5549A126**	9.89
3/4″	1 1/2″	1 11/32″	**5549A127**	11.03
13/16″	1 1/2″	1 3/8″	**5549A128**	11.66
7/8″	1 5/8″	1 1/2″	**5549A129**	12.64
15/16″	1 3/4″	1 5/8″	**5549A131**	14.63
1″	1 3/4″	1 3/4″	**5549A132**	14.95
1 1/16″	1 3/4″	1 27/32″	**5549A21**	18.56

(Continued on following page)

For information about impact sockets, see page 2798.

1/2″ Square Drive Impact Sockets and Accessories *(Continued from previous page)*

Inch Sizes (Cont.)

Size	O'all Lg.	OD		Each
8-Pt. Deep				
3/8″	3 1/4″	7/8″	5549A154	$10.63
7/16″	3 1/4″	15/16″	5549A155	11.19
1/2″	3 1/4″	15/16″	5549A156	11.19
9/16″	3 1/4″	1 1/32″	5549A157	12.37
5/8″	3 1/4″	1 1/8″	5549A158	12.61
11/16″	3 1/4″	1 3/16″	5549A159	12.37
3/4″	3 1/4″	1 5/16″	5549A163	13.60
3/4″	5″	1 5/16″	5549A211	20.47
13/16″	3 1/4″	1 3/8″	5549A165	13.60
13/16″	5″	1 1/2″	5549A212	21.71
7/8″	3 1/2″	1 1/2″	5549A166	15.85
15/16″	3 1/2″	1 39/64″	5549A167	14.80
1″	3 1/2″	1 11/16″	5549A168	17.16
1″	5″	1 3/4″	5549A213	24.16
1 1/8″	5″	2″	5549A214	28.27
12-Pt. Standard				
3/8″	1 1/2″	15/16″	5549A14	5.50
7/16″	1 1/2″	15/16″	5549A71	5.61
1/2″	1 1/2″	15/16″	5549A72	5.73
9/16″	1 1/2″	15/16″	5549A73	5.77
5/8″	1 1/2″	1″	5549A74	6.02
11/16″	1 1/2″	1 1/32″	5549A75	6.50
12-Pt. Standard (Cont.)				
3/4″	1 1/2″	1 7/64″	5549A76	$6.28
13/16″	1 5/8″	1 13/64″	5549A77	7.40
7/8″	1 5/8″	1 9/32″	5549A78	7.49
15/16″	1 3/4″	1 23/64″	5549A79	8.30
1″	1 3/4″	1 1/2″	5549A81	8.62
1 1/16″	1 3/4″	1 33/64″	5549A82	11.23
1 1/8″	2″	1 19/32″	5549A83	11.23
1 3/16″	2″	1 3/4″	5549A951	11.70
1 1/4″	2″	1 3/4″	5549A952	13.24
1 5/16″	2″	1 3/4″	5549A953	14.93
1 3/8″	2 1/8″	1 51/64″	5549A954	16.76
1 7/16″	2 15/64″	1 59/64″	5549A955	19.21
1 1/2″	2 15/64″	2″	5549A956	20.09
12-Pt. Deep				
3/8″	3 1/4″	15/16″	5549A118	8.82
7/16″	3 1/4″	15/16″	5549A84	8.82
1/2″	3 1/4″	51/64″	5549A85	8.82
9/16″	3 1/4″	15/16″	5549A86	8.82
5/8″	3 1/4″	1″	5549A87	8.82
11/16″	3 1/4″	1 1/32″	5549A88	8.82
3/4″	3 1/4″	1 1/8″	5549A89	8.88
13/16″	3 1/4″	1 3/16″	5549A91	9.47
12-Pt. Deep (Cont.)				
7/8″	3 1/2″	1 19/64″	5549A92	$10.49
15/16″	3 1/2″	1 3/8″	5549A93	10.72
1″	3 1/2″	1 1/2″	5549A94	11.92
1 1/16″	3 1/2″	1 1/2″	5549A95	13.63
1 1/8″	3 1/2″	1 19/32″	5549A171	17.16
1 3/16″	3 1/2″	1 43/64″	5549A172	19.13
1 1/4″	3 1/2″	1 3/4″	5549A173	19.73
1 5/16″	3 1/2″	1 27/32″	5549A174	21.49
1 3/8″	3 1/2″	1 29/32″	5549A175	25.72
1 7/16″	3 1/2″	2″	5549A176	29.21
1 1/2″	3 1/2″	2 1/16″	5549A177	29.75
Hex Bit				
1/4″	3 1/4″	29/32″	54705A51	11.83
9/32″	3 15/16″	63/64″	54705A11	15.80
5/16″	3 1/4″	29/32″	54705A52	11.82
3/8″	3 1/4″	29/32″	54705A53	11.82
7/16″	3 1/4″	29/32″	54705A54	12.36
1/2″	3 5/8″	1 1/16″	54705A55	11.83
9/16″	3 5/8″	1 1/16″	54705A56	11.87
5/8″	4″	1 5/16″	54705A57	12.12
11/16″	2 61/64″	63/64″	54705A58	15.45
3/4″	2 61/64″	63/64″	54705A59	16.19

Metric Sizes

Size	O'all Lg.	OD		Each
6-Pt. Standard				
8 mm	1 1/2″	15/16″	7205A11	$5.52
9 mm	1 1/2″	15/16″	7205A12	5.52
10 mm	1 1/2″	29/32″	7205A13	5.41
11 mm	1 1/2″	29/32″	7205A14	5.49
12 mm	1 1/2″	29/32″	7205A15	5.55
13 mm	1 1/2″	29/32″	7205A16	5.55
14 mm	1 1/2″	29/32″	7205A17	5.69
15 mm	1 1/2″	15/16″	7205A18	5.82
16 mm	1 1/2″	31/32″	7205A19	5.94
17 mm	1 1/2″	1″	7205A21	5.94
18 mm	1 1/2″	1 1/16″	7205A22	5.67
19 mm	1 1/2″	1 1/8″	7205A23	6.29
20 mm	1 1/2″	1 3/16″	7205A65	7.14
21 mm	1 1/2″	1 1/4″	7205A24	7.66
22 mm	1 1/2″	1 5/16″	7205A25	7.90
23 mm	1 3/4″	1 5/32″	7205A26	8.17
24 mm	1 3/4″	1 3/8″	7205A27	9.68
25 mm	1 3/4″	1 3/8″	7205A28	11.59
26 mm	1 3/4″	1 1/2″	7205A29	11.81
27 mm	1 31/32″	1 9/16″	7205A31	10.55
28 mm	2″	1 5/8″	7205A32	12.44
29 mm	2″	1 5/8″	7205A73	12.67
30 mm	1 31/32″	1 11/16″	7205A33	11.78
32 mm	2″	1 33/64″	7205A34	14.42
36 mm	2″	2 1/64″	7205A49	16.81
38 mm	2 1/4″	2 5/32″	7205A98	16.59
41 mm	2 1/4″	2 19/64″	7205A99	20.70
46 mm	2 1/4″	2 3/8″	7205A101	30.26
6-Pt. Deep				
8 mm	3 1/4″	7/8″	7205A55	$9.25
9 mm	3 1/4″	7/8″	7205A56	8.80
10 mm	3 1/4″	29/32″	7205A51	9.10
11 mm	3 1/4″	29/32″	7205A57	9.10
12 mm	3 1/4″	29/32″	7205A37	9.10
13 mm	3 1/4″	29/32″	7205A53	8.56
14 mm	3 1/4″	29/32″	7205A38	9.43
15 mm	3 1/4″	15/16″	7205A54	9.38
16 mm	3 1/4″	31/32″	7205A39	9.38
17 mm	3 1/4″	1″	7205A41	9.61
18 mm	3 1/4″	1 1/16″	7205A42	9.64
19 mm	3 1/4″	1 1/4″	7205A43	9.68
20 mm	3 1/4″	1 3/16″	7205A66	10.57
21 mm	3 1/4″	1 1/4″	7205A44	11.49
22 mm	3 1/2″	1 5/16″	7205A45	11.49
23 mm	3 1/2″	1 11/32″	7205A67	12.27
24 mm	3 1/2″	1 3/8″	7205A46	13.08
25 mm	3 1/2″	1 7/16″	7205A58	14.86
26 mm	3 1/2″	1 31/64″	7205A59	14.93
27 mm	3 1/2″	1 9/16″	7205A68	15.15
28 mm	3 1/2″	1 5/8″	7205A74	15.65
29 mm	3 1/2″	1 5/8″	7205A71	15.83
30 mm	3 1/2″	1 11/16″	7205A61	14.19
32 mm	3 1/2″	1 13/16″	7205A72	15.59
34 mm	3 1/2″	1 15/16″	7205A78	16.25
35 mm	3 1/2″	2″	7205A79	16.56
36 mm	3 1/2″	2″	7205A62	16.63
12-Pt. Standard				
10 mm	1 1/2″	57/64″	7205A35	5.99
12-Pt. Standard (Cont.)				
11 mm	1 1/2″	15/16″	7205A36	$6.29
12 mm	1 1/2″	15/16″	7205A47	6.08
13 mm	1 1/2″	15/16″	7205A48	5.94
14 mm	1 1/2″	15/16″	7205A52	6.30
15 mm	1 1/2″	15/16″	7205A63	6.30
16 mm	1 1/2″	15/16″	7205A64	6.17
17 mm	1 1/2″	15/16″	7205A69	6.49
18 mm	1 1/2″	1″	7205A81	6.74
19 mm	1 1/2″	1 1/32″	7205A82	7.52
20 mm	1 1/2″	1 1/8″	7205A83	7.97
21 mm	1 1/2″	1 3/16″	7205A84	8.46
24 mm	1 1/2″	1 13/32″	7205A87	9.98
30 mm	1 5/8″	1 11/16″	7205A94	13.82
32 mm	1 3/4″	1 49/64″	7205A95	15.30
Hex Bit				
6 mm	3 1/4″	29/32″	55105A61	13.81
7 mm	2 61/64″	63/64″	55105A51▲	16.60
8 mm	3 1/4″	29/32″	55105A62	13.80
9 mm	3 15/16″	63/64″	55105A12▲	20.50
10 mm	3 1/4″	29/32″	55105A63	13.81
11 mm	2 61/64″	63/64″	55105A52▲	16.60
12 mm	3 1/4″	29/32″	55105A64	13.80
13 mm	2 61/64″	63/64″	55105A53▲	16.60
14 mm	3 5/8″	1 1/16″	55105A65	13.79
15 mm	2 61/64″	63/64″	55105A54▲	16.60
16 mm	2 61/64″	63/64″	55105A55▲	16.60
17 mm	4″	1 5/16″	55105A66	13.79
18 mm	2 61/64″	63/64″	55105A56▲	18.88
19 mm	2 61/64″	63/64″	55105A57▲	20.40

▲ One-piece construction (bit is not replaceable).

Individual Accessories, Extensions, and Sets

Locking extensions lock onto a socket to prevent disengagement. Pull the collar to release the socket.

	O'all Lg.		Each
Adapter: 1/2″ sq. F × 3/8″ sq. M	1 1/2″	5549A45	$7.97
Adapter: 1/2″ sq. F × 5/8″ sq. M	1 11/16″	5549A46	10.72
Adapter: 1/2″ sq. F × 3/4″ sq. M	1 29/32″	5549A161■	15.12
Adapter: 5/8″ sq. F × 1/2″ sq. M	1 7/8″	53055A41	13.31
Magnetic Adapter: 1/2″ sq. F × 3/4″ sq. M	1 3/16″	5549A116	12.66
Swivel-Joint Adapter: 1/2″ sq. F × 1/2″ sq. M	2 19/32″	5549A51	27.77
Standard Extension	2″	5549A44	10.24
Standard Extension	5″	5549A41	10.69
Standard Extension	10″	5549A42	13.85
Locking Extension	3″	5549A312	24.88
Locking Extension	5″	5549A313	29.79
Locking Extension	10″	5549A314	36.45

■ Male end requires a retaining ring. Please ask for 5549A169.

		Per Set
Set of 4 Standard Extensions (2″, 3″, 5″, 10″)	5549A209	$44.48
Set of 3 Locking Extensions (3″, 5″, 10″)	5549A311	90.33

1/2″ Square Drive Torque Limiting Extensions and Set

Don't damage your fasteners by applying too much force. You'll know you're at the proper torque when you feel the extension spring back slightly. Made of heat-treated alloy steel, each extension is painted a different color. Overall length is 7 5/8″; diameter is 1.07″. Use with a 1/2″ impact wrench rated at 250 ft./lbs. of working torque with 90-100 psi.

Torque, ft.-lbs.	Shaft Dia.	Color		Each
65	0.36″	Yellow	4491A21	$33.60
80	0.43″	Blue	4491A22	33.60
100	0.48″	Gray	4491A23	33.60
120	0.54″	White	4491A24	33.60
140	0.59″	Aqua	4491A25	33.60

5-Piece Set—Includes one of each extension above and a plastic case.

4491A31 ..... **Per Set** $152.13

3/4″ Square Drive Impact Sockets

For information about impact sockets, see page 2798.

3/4″ Square Drive Impact Sockets and Accessories

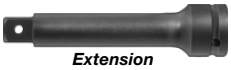

Made of heat-treated alloy steel, sockets are premium quality and have a black finish. ***Dual-size socket*** is also called a Budd wheel socket. It's designed to remove and install dual wheels on trucks, trailers, and other vehicles. Socket is 13/16″ sq. × 1 1/2″ hex. Use the 13/16″ square opening to thread a shaft onto a wheel; use the 1 1/2″ hex opening to tighten the nut.

♣ *Note:* An O-ring with retaining pin or a 1-pc. retaining ring should be used to secure sockets and accessories to impact tools that have a hole- or a ring-and-hole style retainer. Or, use a tool with a pin-style retainer (no retaining ring needed). The *Ring ID* is the inside diameter of the ring that will fit a particular socket (rings sold separately on page 2803).

Also Available: Replacement hex bits. Please ask for 53525A1 and specify size.

Socket Sets

Pieces	Sizes in Set and Accessories	Container	Per Set
Inch Sets			
8	**6-pt. standard:** 1″, 1 1/16″, 1 1/8″, 1 1/4″, 1 5/16″, 1 7/16″, 1 1/2″, 1 5/8″	metal clip rail	7405A81 ..... $139.15
13	**6-pt. standard:** 3/4″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″, 1 5/16″, 1 3/8″, 1 7/16″, 1 1/2″, 1 5/8″; 7″ extension	two metal clip rails	7405A83 ..... $202.42
8	**6-pt. deep:** 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, 1 1/4″, 1 5/16″, 1 1/2″	metal clip rail	7405A82 ..... $180.95
5	**Hex bit:** 9/16″, 5/8″, 3/4″, 7/8″, 1″	metal clip rail	53525A31 .. $153.18
Metric Set			
12	**6-pt. standard:** 19, 20, 21, 22, 23, 24, 27, 30, 32, 36, 41, and 46 mm	two metal clip rails	54175A21 .. $205.62

Inch Sizes

Size	O'all Lg.	OD	Ring ID♣		Each
4-Pt. Standard					
5/8″	1 7/8″	1 5/8″	1.4″	5552A1	$19.65
11/16″	1 7/8″	1 5/8″	1.4″	5552A2	22.87
13/16″	2″	1 5/8″	1.4″	5552A3	21.96
6-Pt. Standard					
1/2″	1 13/16″	1 5/8″	1.4″	5552A58	12.73
9/16″	2″	1 5/8″	1.4″	5552A59	12.13
5/8″	2″	1 5/8″	1.4″	5552A61	12.65
11/16″	2″	1 5/8″	1.4″	5552A62	12.83
3/4″	2″	1 5/8″	1.4″	5552A63	13.40
13/16″	2″	1 5/8″	1.4″	5552A65	13.67
7/8″	2″	1 5/8″	1.4″	5552A66	13.67
15/16″	2″	1 5/8″	1.4″	5552A67	13.67
1″	2″	1 5/8″	1.4″	5552A109	12.52
1 1/16″	2″	1 11/16″	1.4″	5552A69	15.23
1 1/8″	2 1/8″	1 3/4″	1.4″	5552A71	16.83
1 3/16″	2 1/8″	1 7/8″	1.4″	5552A72	17.22
1 1/4″	2 1/8″	2″	1.4″	5552A73	17.41
1 5/16″	2 1/8″	2 1/32″	1.4″	5552A74	17.76
1 3/8″	2 1/4″	2 1/8″	1.4″	5552A75	17.83
1 7/16″	2 1/4″	2 3/16″	1.4″	5552A76	18.90
1 1/2″	2 1/4″	2 1/4″	1.4″	5552A77	19.50
1 9/16″	2 3/8″	2 11/32″	1.4″	5552A107	21.18
1 5/8″	2 3/8″	2 13/32″	1.4″	5552A78	21.06
1 11/16″	2 9/16″	2 15/32″	1.4″	5552A79	21.38
1 3/4″	2 5/8″	2 39/64″	1.6″	5552A41	22.33
1 13/16″	2 5/8″	2 3/4″	1.6″	5552A43	22.33
1 7/8″	2 13/16″	2 3/4″	1.6″	5552A19	23.61
1 15/16″	2 13/16″	2 7/8″	1.6″	5552A21	24.88
2″	2 13/16″	3″	1.6″	5552A22	28.41
2 1/16″	3 3/32″	3″	1.6″	5552A241	35.41
2 1/8″	3 3/32″	3 1/8″	1.6″	5552A242	38.60
2 3/16″	3 1/8″	3 1/4″	1.6″	5552A243	43.21
2 1/4″	3 1/4″	3 5/16″	1.6″	5552A244	47.56
2 3/8″	3 3/8″	3 1/2″	1.6″	5552A245	51.79
2 7/16″	3 1/4″	3 29/64″	2″	5552A246	56.22
2 1/2″	3 1/4″	3 17/32″	2″	5552A247	62.06
6-Pt. Deep					
1/2″	3 23/64″	7/8″	1.2″	5552A114	16.69
9/16″	3 1/4″	1 5/8″	1.4″	5552A15	18.10
5/8″	3 1/4″	1 5/8″	1.4″	5552A81	18.10
11/16″	3 1/4″	1 5/8″	1.4″	5552A82	18.10
3/4″	3″	1 5/8″	1.4″	5552A83	17.60
13/16″	3″	1 5/8″	1.4″	5552A84	17.44
7/8″	3″	1 5/8″	1.4″	5552A85	18.53
15/16″	3″	1 5/8″	1.4″	5552A86	19.26
1″	3″	1 5/8″	1.4″	5552A87	20.08
6-Pt. Deep (Cont.)					
1 1/16″	3″	1 11/16″	1.4″	5552A88	$20.34
1 1/8″	3″	1 3/4″	1.4″	5552A89	20.37
1 3/16″	3 3/16″	1 15/16″	1.4″	5552A91	23.42
1 1/4″	3 1/4″	1 15/16″	1.4″	5552A92	26.33
1 5/16″	3 1/4″	2″	1.4″	5552A93	27.24
1 3/8″	3 1/4″	2 1/8″	1.4″	5552A94	26.96
1 7/16″	3 1/2″	2 1/8″	1.4″	5552A95	27.14
1 1/2″	3 1/2″	2 1/4″	1.4″	5552A96	28.70
1 9/16″	3 1/2″	2 5/16″	1.4″	5552A118	28.81
1 5/8″	3 1/2″	2 7/16″	1.4″	5552A97	29.01
1 11/16″	3 1/2″	2 1/2″	1.4″	5552A23	29.60
1 3/4″	3 7/8″	2 39/64″	1.6″	5552A24	31.39
1 13/16″	3 7/8″	2 3/4″	1.6″	5552A45	31.39
1 7/8″	4 1/16″	2 3/4″	1.6″	5552A27	34.10
2″	4 1/16″	3″	1.6″	5552A28	35.48
2 1/16″	3 3/4″	2 31/32″	1.7″	5552A12	32.14
2 1/8″	3 3/4″	3 5/32″	1.7″	5552A14	31.23
2 3/16″	4 1/4″	3 9/64″	1.7″	5552A25	30.06
2 1/4″	4 1/4″	3 9/64″	1.7″	5552A17	38.95
2 5/16″	4 1/4″	3 19/64″	1.7″	5552A49	38.73
2 3/8″	4 1/4″	3 3/8″	1.7″	5552A47	36.00
2 7/16″	4 1/4″	3 29/64″	2″	5552A44	44.08
2 1/2″	4 1/4″	3 17/64″	2″	5552A46	49.34
6-Pt. Deep—Thin Wall					
3/4″	4″	1 3/8″	1.4″	5552A161	18.21
13/16″	4″	1 3/8″	1.4″	5552A162	19.23
7/8″	4″	1 3/8″	1.4″	5552A163	21.94
15/16″	4″	1 3/8″	1.4″	5552A164	21.39
1″	4″	1 7/16″	1.4″	5552A165	22.65
1 1/16″	4″	1 1/2″	1.4″	5552A166	23.75
1 1/8″	4″	1 5/8″	1.4″	5552A167	24.11
1 3/16″	4″	1 11/16″	1.4″	5552A168	26.20
1 1/4″	4″	1 3/4″	1.6″	5552A169	27.21
1 5/16″	3 1/4″	1 7/8″	1.6″	5552A171	27.95
1 3/8″	3 1/4″	1 15/16″	1.6″	5552A172	27.96
1 7/16″	3 1/2″	2″	1.6″	5552A173	28.08
1 1/2″	3 1/2″	2 1/8″	1.6″	5552A174	30.53
6-Pt. Deep—Dual Size					
13/16″	4″	2 1/4″	1.6″	5552A33	33.06
8-Pt. Standard					
3/4″	1 15/16″	1 5/8″	1.4″	5552A121	16.92
13/16″	2″	1 5/8″	1.4″	5552A122	16.92
7/8″	2″	1 3/4″	1.6″	5552A123	17.85
15/16″	2 1/16″	1 13/16″	1.6″	5552A124	18.64
1″	2 1/8″	2″	1.6″	5552A125	18.25
1 1/16″	2 3/16″	2 1/8″	1.6″	5552A126	21.16
8-Pt. Standard (Cont.)					
1 1/8″	2 1/4″	2 1/4″	1.6″	5552A127	$20.70
1 3/16″	2 5/16″	2 3/8″	1.6″	5552A29	23.75
1 1/4″	2 3/8″	2 3/8″	1.6″	5552A128	23.85
1 5/16″	2 3/8″	2 1/2″	1.6″	5552A31	29.68
12-Pt. Standard					
9/16″	1 7/8″	1 5/8″	1.4″	5552A4	14.23
5/8″	1 7/8″	1 5/8″	1.4″	5552A132	14.31
11/16″	1 15/16″	1 5/8″	1.4″	5552A5	14.23
3/4″	1 15/16″	1 5/8″	1.4″	5552A134	14.51
13/16″	1 15/16″	1 5/8″	1.4″	5552A6	14.43
7/8″	2″	1 5/8″	1.4″	5552A136	14.15
15/16″	2″	1 5/8″	1.4″	5552A137	15.42
1″	2″	1 5/8″	1.4″	5552A138	15.42
1 1/16″	2 1/16″	1 5/8″	1.4″	5552A139	16.82
1 1/8″	2 3/16″	1 3/4″	1.6″	5552A141	17.93
1 3/16″	2 3/16″	1 7/8″	1.6″	5552A142	18.82
1 1/4″	2 3/16″	2″	1.6″	5552A143	19.05
1 5/16″	2 3/16″	2 1/8″	1.6″	5552A144	20.11
1 3/8″	2 1/4″	2 1/8″	1.6″	5552A145	21.05
1 7/16″	2 5/16″	2 1/4″	1.6″	5552A146	21.67
1 1/2″	2 3/8″	2 3/8″	1.6″	5552A147	22.03
1 5/8″	2 7/16″	2 3/8″	1.6″	5552A149	22.42
1 11/16″	2 5/8″	2 39/64″	1.6″	5552A151	23.12
1 3/4″	2 5/8″	2 39/64″	1.6″	5552A152	24.48
1 13/16″	2 5/8″	2 3/4″	1.6″	5552A153	23.12
1 7/8″	2 13/16″	2 3/4″	1.6″	5552A154	25.94
1 15/16″	2 13/16″	2 7/8″	1.6″	5552A155	25.99
2″	2 13/16″	3″	1.6″	5552A156	30.31
2 1/16″	3 3/32″	3″	1.6″	5552A7	37.66
2 1/8″	3 3/32″	3 1/8″	1.6″	5552A8	37.72
2 3/16″	3 1/8″	3 1/4″	1.6″	5552A9	41.49
2 1/4″	3 1/4″	3 1/4″	1.6″	5552A112	45.67
2 3/8″	3 3/8″	3 1/2″	1.6″	5552A113	49.74
Hex Bit					
1/2″	3 15/16″	1 47/64″	1.4″	53525A41▲	36.54
9/16″	3 3/4″	1 5/8″	1.4″	53525A11	25.50
5/8″	3 27/32″	1 5/8″	1.4″	53525A12	27.57
3/4″	4 3/8″	1 3/4″	1.6″	53525A13	31.20
13/16″	3 15/16″	1 47/64″	1.4″	53525A42▲	37.20
7/8″	4 3/4″	1 7/8″	1.6″	53525A14	38.71
1″	5 13/64″	2″	1.6″	53525A15	38.45
1 1/16″	3 15/16″	1 47/64″	1.4″	53525A43▲	39.36
1 1/8″	3 15/16″	1 47/64″	1.4″	53525A44▲	41.52
1 3/16″	3 15/16″	1 47/64″	1.4″	53525A45▲	45.82
1 1/4″	3 15/16″	1 47/64″	1.4″	53525A46▲	66.70

▲ One-piece construction (bit is not replaceable).

(Continued on following page)

¾″ Square Drive Impact Sockets and Accessories *(Continued from previous page)*

Metric Sizes

Size, mm	O'all Lg.	OD	Ring ID♣		Each
6-Pt. Standard					
17	1 59/64″	1 5/8″	1.4″	54175A75	$12.50
19	1 59/64″	1 5/8″	1.4″	54175A76	13.18
20	1 59/64″	1 5/8″	1.4″	54175A61	13.53
21	1 59/64″	1 5/8″	1.4″	54175A62	13.97
22	2″	1 5/8″	1.4″	54175A77	13.47
23	2″	1 5/8″	1.4″	54175A63	13.51
24	2″	1 5/8″	1.4″	54175A78	14.06
25	2″	1 5/8″	1.4″	54175A64	15.17
26	2 1/16″	1 5/8″	1.4″	54175A65	14.56
27	2 1/16″	1 5/8″	1.4″	54175A79	14.99
28	2 1/16″	1 5/8″	1.4″	54175A66	15.24
29	2 1/8″	1 13/16″	1.4″	54175A127	15.18
30	2 3/16″	1 7/8″	1.6″	54175A81	15.85
31	2 3/16″	1 7/8″	1.6″	54175A67	16.90
32	2 3/16″	2″	1.6″	54175A82	17.29
33	2 3/16″	2″	1.6″	54175A68	17.68
6-Pt. Standard (Cont.)					
34	2 1/4″	2 1/8″	1.6″	54175A69	$18.70
35	2 1/4″	2 1/8″	1.6″	54175A83	18.72
36	2 5/16″	2 1/4″	1.6″	54175A84	19.32
38	2 3/8″	2 3/8″	1.6″	54175A85	22.18
40	2 1/2″	2 1/2″	1.6″	54175A71	24.69
41	2 5/8″	2 1/2″	1.6″	54175A86	24.96
42	2 3/4″	2 1/2″	1.6″	54175A72	29.40
43	2 3/4″	2 9/16″	1.6″	54175A87	30.64
44	2 31/64″	2 9/16″	1.7″	54175A118	28.14
46	2 7/8″	2 3/4″	1.6″	54175A73	33.28
50	3 1/8″	2 15/16″	1.6″	54175A74	41.96
6-Pt. Deep					
19	3 1/4″	1 5/8″	1.4″	54175A1	17.79
21	3 1/4″	1 5/8″	1.4″	54175A2	19.22
22	3 1/4″	1 5/8″	1.4″	54175A3	19.23
23	3 1/4″	1 5/8″	1.4″	54175A4	19.22
24	3 1/4″	1 5/8″	1.4″	54175A5	20.18
6-Pt. Deep (Cont.)					
26	3 1/4″	1 5/8″	1.4″	54175A6	$20.88
27	3 1/4″	1 5/8″	1.4″	54175A7	20.89
30	3 1/4″	1 7/8″	1.6″	54175A8	24.20
32	3 1/4″	2″	1.6″	54175A9	24.17
33	3 1/4″	2″	1.6″	54175A11	24.90
35	3 1/4″	2 1/8″	1.6″	54175A12	26.24
36	3 1/4″	2 1/4″	1.6″	54175A13	28.22
38	3 1/2″	2 3/8″	1.6″	54175A14	29.86
41	3 1/2″	2 1/2″	1.6″	54175A15	33.30
43	3 1/2″	2 9/16″	1.6″	54175A16	36.86
Hex Bit					
14	3 15/16″	1 5/8″	1.4″	53245A81	28.74
17	4″	1 5/8″	1.4″	53245A82	30.39
19	4 3/8″	1 3/4″	1.6″	53245A83	35.13
22	4 1/2″	1 3/4″	1.6″	53245A84	41.64
24	4 5/8″	1 7/8″	1.7″	53245A85	43.29

Accessories

Pull the collar on the ***quick-change adapter*** to release a socket.

	O'all Lg.	Ring ID♣		Each
Adapter: ¾″ sq. F×½″ sq. M	2 3/32″	1.4″	5552A101■	$16.54
Adapter: ¾″ sq. F×5/8″ sq. M	2 1/8″	1.4″	5552A102	23.38
Adapter: ¾″ sq. F×1″ sq. M	2 1/2″	1.4″	5552A103■	15.85
Magnetic Sleeve Adapter: ¾″ sq. F×1″ sq. M	1 3/8″	1.7″	5552A116	20.90
Quick-Change Adapter: ¾″ sq. F×¾″ sq. M	3 3/16″	1.7″	5552A111	61.10
Swivel-Joint Adapter: ¾″ sq. F×¾″ sq. M	3 5/16″	1.4″	5552A26■	44.52
Extension	2 61/64″	1.7″	5552A115	21.52
Extension	7″	1.4″	5552A104■	30.00
Extension	10″	1.4″	5552A105■	41.05
Extension	13″	1.4″	5552A106■	43.56

	Each
O-Ring with Retaining Pin (1.4″ ID) 5552A108	$3.51
1-Pc. Retaining Ring (1.2″ ID) 5552A52	4.86
1-Pc. Retaining Ring (1.4″ ID) 5552A36	4.31
1-Pc. Retaining Ring (1.6″ ID) 5552A38	4.31
1-Pc. Retaining Ring (1.7″ ID) 5550A68	5.21
1-Pc. Retaining Ring (2″ ID) 5550A611	5.21

■ Requires two retaining rings—one for adapter, swivel-joint adapter, or extension (ring ID listed); one for socket (ring ID depends on socket).

1″ Square Drive Impact Sockets and Accessories

Sockets and accessories are premium quality and made of heat-treated alloy steel. Finish is black.

♣ *Note:* An O-ring with retaining pin or a 1-pc. retaining ring should be used to secure sockets and accessories to impact tools that have a hole- or a ring-and-hole style retainer. Or, use a tool with a pin-style retainer (no retaining ring needed). The *Ring ID* is the inside diameter of the ring that will fit a particular socket (rings sold separately on page 2804).

Also Available: 6-point deep metric sockets. Please ask for 54155A69 and specify size.

Inch Sizes

Size	O'all Lg.	OD	Ring ID♣		Each
6-Pt. Standard					
3/4″	2 1/16″	2 1/8″	2″	5550A85	$19.06
13/16″	2 1/8″	2 1/8″	2″	5550A86	19.06
7/8″	2 3/16″	2 1/8″	2″	5550A87	19.20
15/16″	2 3/16″	2 1/8″	2″	5550A88	19.50
1″	2 1/4″	2 1/8″	2″	5550A89	19.50
1 1/16″	2 1/4″	2 1/8″	2″	5550A91	19.72
1 1/8″	2 3/8″	2 1/8″	2″	5550A92	19.72
1 3/16″	2 7/16″	2 1/8″	2″	5550A93	19.97
1 1/4″	2 7/16″	2 1/8″	2″	5550A32	20.20
1 5/16″	2 9/16″	2 1/8″	2″	5550A33	21.20
1 3/8″	2 9/16″	2 1/4″	2.1″	5550A94	20.43
1 7/16″	2 9/16″	2 1/4″	2.1″	5550A35	22.43
1 1/2″	2 5/8″	2 5/16″	2.1″	5550A36	22.73
1 9/16″	2 5/8″	2 3/8″	2.1″	5550A37	25.88
1 5/8″	2 5/8″	2 7/16″	2.1″	5550A38	27.22
1 11/16″	2 11/16″	2 1/2″	2.1″	5550A39	27.12
1 3/4″	2 11/16″	2 5/8″	2.1″	5550A41	28.32
1 13/16″	2 3/4″	2 3/4″	2.1″	5550A42	31.06
1 7/8″	2 7/8″	2 3/4″	2.1″	5550A43	32.85
1 15/16″	2 7/8″	2 7/8″	2.1″	5550A77	34.82
2″	2 15/16″	3″	2.1″	5550A78	38.91
2 1/16″	3 1/16″	3″	2.1″	5550A46	41.31
2 1/8″	3 1/8″	3 1/8″	2.1″	5550A47	45.67
2 3/16″	3 1/8″	3 1/4″	2.1″	5550A48	47.62
2 1/4″	3 1/4″	3 1/4″	2.1″	5550A49	48.68
2 5/16″	3 5/16″	3 3/8″	2.1″	5550A51	51.09
2 3/8″	3 5/16″	3 1/2″	2.1″	5550A52	64.22
6-Pt. Standard (Cont.)					
2 7/16″	3 1/2″	3 1/2″	2.1″	5550A53	$64.76
2 1/2″	3 1/2″	3 3/4″	2.1″	5550A54	80.13
2 9/16″	3 1/2″	3 3/4″	2.1″	5550A55	84.22
2 5/8″	3 11/16″	3 3/4″	2.1″	5550A56	88.43
2 11/16″	3 11/16″	4″	2.1″	5550A79	85.20
2 3/4″	3 11/16″	4″	2.1″	5550A81	91.89
2 13/16″	3 7/8″	4″	2.1″	5550A82	97.02
2 7/8″	3 15/16″	4″	2.1″	5550A83	99.74
2 15/16″	3 15/16″	4 1/8″	2.1″	5550A84	112.15
3″	4 1/16″	4 1/4″	2.1″	5550A63	112.77
3 1/8″	4 1/8″	4 3/8″	2.1″	5550A64	133.43
3 1/4″	4 1/8″	4 1/2″	2.1″	5550A65	134.72
3 3/8″	4 1/2″	4 3/4″	2.1″	5550A66	132.16
3 1/2″	4 1/2″	4 3/4″	2.1″	5550A67	156.85
3 5/8″	4 3/4″	4 55/64″	3.1″	5550A141	223.95
3 3/4″	5″	5″	3.1″	5550A172	254.82
3 7/8″	5 1/4″	5 7/64″	3.1″	5550A142	298.74
4″	5 3/8″	5 1/4″	3.1″	5550A143	358.21
4 1/8″	5 3/8″	5 3/8″	3.1″	5550A144	360.96
4 1/4″	5 1/2″	5 17/32″	3.1″	5550A145	416.01
4 1/2″	5 5/8″	5 13/16″	3.1″	5550A146	546.30
6-Pt. Deep					
3/4″	4″	1 7/16″	1.7″	5550A147	32.38
7/8″	3 3/4″	2 1/8″	2″	5550A111	26.91
15/16″	3 3/4″	2 1/8″	2″	5550A112	27.11
1″	3 3/4″	2 1/8″	2″	5550A113	27.39
1 1/16″	3″	2 1/8″	1.9″	5550A114	29.10
1 1/8″	3″	2 1/8″	1.9″	5550A115	30.54
6-Pt. Deep (Cont.)					
1 3/16″	3 3/4″	2 1/8″	2″	5550A116	$29.12
1 1/4″	3 1/4″	2 1/8″	1.9″	5550A137	30.71
1 5/16″	3 1/4″	2 1/8″	1.9″	5550A118	32.11
1 3/8″	3 1/4″	2 1/8″	1.9″	5550A119	32.20
1 7/16″	3 1/4″	2 1/4″	1.9″	5550A121	36.16
1 1/2″	3 1/2″	2 3/8″	1.9″	5550A153	37.73
1 9/16″	4″	2 3/8″	2.1″	5550A122	40.91
1 5/8″	3 5/8″	2 3/8″	1.9″	5550A123	43.09
1 11/16″	3 5/8″	2 1/2″	2.1″	5550A124	45.39
1 3/4″	3 7/8″	2 3/4″	2.1″	5550A125	47.94
1 13/16″	3 7/8″	2 3/4″	2.1″	5550A126	49.68
1 7/8″	3 7/8″	2 3/4″	2.1″	5550A127	52.48
1 15/16″	4 1/8″	3″	2.1″	5550A128	57.35
2″	4 1/8″	3″	2.1″	5550A129	64.69
2 1/16″	3 7/8″	3″	2.1″	5550A131	65.32
2 1/8″	4 1/2″	3 1/8″	2.1″	5550A148	65.77
2 3/16″	4 3/8″	3 1/4″	2.1″	5550A132	75.15
2 1/4″	4 3/8″	3 1/4″	2.1″	5550A134	79.15
2 5/16″	4 1/2″	3 1/2″	2.1″	5550A135	89.07
2 3/8″	4 1/2″	3 1/2″	2.1″	5550A136	98.88
2 7/16″	4 21/64″	3 1/2″	2.1″	5550A154	82.82
2 1/2″	4 7/8″	3 19/32″	2.2″	5550A175	173.55
Hex Bit					
5/8″	4″	1 55/64″	1.7″	5550A161	40.88
3/4″	4 1/2″	1 55/64″	1.7″	5550A162	40.88
7/8″	4 7/8″	1 55/64″	1.7″	5550A163	44.99
1″	5 1/4″	1 55/64″	1.7″	5550A164	44.99
1 1/4″	5 3/4″	1 55/64″	1.7″	5550A165	47.03

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1″ Square Drive Impact Sockets and Accessories *(Continued from previous page)*

♣ *Note:* An O-ring with retaining pin or a 1-pc. retaining ring should be used to secure sockets and accessories to impact tools that have a hole- or a ring-and-hole style retainer. Or, use a tool with a pin-style retainer (no retaining ring needed). The *Ring ID* is the inside diameter of the ring that will fit a particular socket (rings sold separately below).

Metric Sizes

Size, mm	O'all Lg.	OD	Ring ID ♣		Each
6-Pt. Standard					
19	2 7/16″	2 1/8″	2″	54155A71	$20.30
22	2 7/16″	2 1/8″	2″	54155A72	20.49
24	2 7/16″	2 1/8″	2″	54155A73	20.39
27	2 19/32″	2 1/8″	2″	54155A74	21.36
28	2 19/32″	2 1/8″	2″	54155A75	22.44
6-Pt. Standard (Cont.)					
30	2 19/32″	2 1/8″	2″	54155A76	$24.98
32	2 19/32″	2 1/8″	2″	54155A77	25.60
33	2 3/4″	2 1/8″	2″	54155A78	26.00
36	2 7/16″	2 1/4″	2″	54155A79	24.90
41	2 13/16″	2 1/2″	2.1″	54155A81	28.96
6-Pt. Standard (Cont.)					
46	2 13/16″	2 25/32″	2.1″	54155A82	$33.23
50	3″	3″	2.1″	54155A83	35.83
55	3 1/8″	3 1/4″	2.1″	54155A84	49.74
60	3 3/8″	3 3/4″	2.1″	54155A85	59.61
65	3 1/2″	3 3/4″	2.1″	54155A86	85.99

Accessories

	O'all Lg.	Ring ID ♣		Each
Adapter: 1″ sq. F×3/4″ sq. M	2 5/8″	2.1″	5550A14■	$28.94
Adapter: 1″ sq. F×1 1/2″ sq. M	3 3/8″	1.9″	5550A19	59.34
Quick-Change Adapter: 1″ sq. F×1″ sq. M	3 61/64″	2.1″	5550A166	83.33
Swivel-Joint Adapter: 1″ sq. F×1″ sq. M	4 7/16″	2.1″	5550A18■	93.54
Extension	7″	2.1″	5550A16■	58.16
Extension	10″	2″	5550A159	64.41
Extension	13″	2.1″	5550A17■	81.32

		Each
O-Ring with Retaining Pin (1.7″ ID)	5550A9	$4.71
O-Ring with Retaining Pin (3″ ID)	7196A751	6.91
1-Pc. Retaining Ring (1.7″ ID)	5550A68	5.21
1-Pc. Retaining Ring (1.9″ ID)	5550A612	4.57
1-Pc. Retaining Ring (2″ ID)	5550A611	5.21
1-Pc. Retaining Ring (2.1″ ID)	5550A62	5.21
1-Pc. Retaining Ring (3.1″ ID)	5550A156	7.70

■ Requires two retaining rings—one for adapter, swivel-joint adapter, or extension (ring ID listed); one for socket (ring ID depends on socket).

1 1/2″ Square Drive Impact Sockets and Accessories

6 Point

Socket

Adapter

1-Pc. Retaining Ring

Made of heat-treated alloy steel, these sockets and accessories are premium quality. All have a black finish.

♣ *Note:* An O-ring with retaining pin or a 1-pc. retaining ring should be used to secure sockets and accessories to impact tools that have a hole- or a ring-and-hole style retainer. Or, use a tool with a pin-style retainer (no retaining ring needed). The *Ring ID* is the inside diameter of the ring that will fit a particular socket (rings sold separately below).

Also Available: Other 6-point standard and 6-point deep sizes. Please ask for 7196A999 and specify size and standard or deep.

Inch Sizes

Size	O'all Lg.	OD	Ring ID ♣		Each
6-Pt. Standard					
1 1/2″	3 1/8″	3 1/4″	2.9″	7196A13	$81.72
1 13/16″	3 5/16″	3 1/4″	2.9″	7196A18	83.45
1 7/8″	3 1/2″	3 1/4″	2.9″	7196A19	83.45
2″	3 5/8″	3 1/4″	2.9″	7196A23	83.45
2 3/16″	3 5/8″	3 1/2″	2.9″	7196A11	90.35
2 1/4″	3 61/64″	3 3/4″	2.9″	7196A27	101.42
2 3/8″	4 1/8″	3 3/4″	2.9″	7196A29	120.72
6-Pt. Standard (Cont.)					
2 9/16″	4 1/8″	4″	2.9″	7196A33	$126.82
2 3/4″	4 3/8″	4 7/32″	2.9″	7196A64	151.62
2 15/16″	4 1/2″	4 1/2″	2.9″	7196A39	184.62
3″	4 5/8″	4 1/2″	2.9″	7196A41	187.27
3 1/8″	4 21/32″	4 3/4″	2.9″	7196A43	199.74
3 1/2″	5″	5″	2.9″	7196A49	234.15
4 1/2″	6″	6 1/4″	2.9″	7196A67	531.68

Accessories

	O'all Lg.	Ring ID ♣		Each
Adapter: 1 1/2″ sq. F×1″ sq. M	3 7/16″	2.9″	7196A42■	$120.97

		Each
1-Pc. Retaining Ring (2.9″ ID)	7196A75	$6.36

■ Requires two retaining rings—one for adapter (ring ID listed); one for socket (ring ID depends on socket).

1/4″, 3/8″, and 1/2″ Square Drive Thin-Wall Power Sockets and Accessories

6 Point

Hex Bit

Standard Socket

Hex-Bit Socket

Harder and thinner than impact sockets, these premium-quality power sockets are more durable and fit into tighter spots. For use with power drivers. Sockets and accessories are made of heat-treated alloy steel. Finish is gray, unless noted. For bit adapters and insert-bit holders, see 52735A and 7229A on page 2826.

Note: Sockets are not for use with impact tools.

Also Available: 1/4″ drive 6-pt. standard inch sockets. Please ask for 54655A5 and specify size: 3/16″, 1/4″, 5/16″, 3/8″, 7/16″, or 1/2″.

Also Available: 3/8″ drive 6-pt. deep inch sockets. Please ask for 54885A1 and specify size: 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, or 3/4″.

Also Available: 1/2″ drive 6-pt. standard magnetic inch sockets. Please ask for 55725A9 and specify size: 3/8″, 7/16″, 1/2″, or 9/16″.

Inch Sizes

Size	O'all Lg.	OD		Each
1/4″ Drive				
6-Pt. Standard—Magnetic				
3/16″	7/8″	1/2″	54655A31★	$7.73
7/32″	7/8″	1/2″	54655A32	23.20
1/4″	7/8″	1/2″	54655A33★	7.73
5/16″	1″	1/2″	54655A35★	8.08
11/32″	1″	1/2″	54655A36★	8.17
3/8″	1″	5/8″	54655A37★	8.29
7/16″	1″	5/8″	54655A38★	8.35
1/2″	1″	11/16″	54655A39★	9.04
3/8″ Drive				
6-Pt. Standard—Magnetic				
5/16″	1 1/4″	3/4″	54885A35★	10.62
3/8″ Drive (Cont.)				
6-Pt. Standard—Magnetic (Cont.)				
3/8″	1 1/4″	3/4″	54885A37★	$11.27
7/16″	1 1/2″	3/4″	54885A38★	12.42
1/2″	1 1/2″	13/16″	54885A39★	12.42
9/16″	1 1/2″	7/8″	54885A41★	12.42
Hex Bit				
1/8″	2 1/4″	3/4″	5613A11	16.30
5/32″	2 1/4″	3/4″	5613A12	16.61
3/16″	2 1/4″	3/4″	5613A13	16.55
7/32″	2 1/4″	3/4″	5613A14	16.36
1/4″	2 1/4″	3/4″	5613A15	16.32
3/8″ Drive (Cont.)				
Hex Bit (Cont.)				
5/16″	2 1/4″	3/4″	5613A16	$16.09
3/8″	2 1/4″	3/4″	5613A17	16.71
1/2″ Drive				
Hex Bit				
1/4″	2 1/2″	15/16″	5652A21	17.57
5/16″	2 1/2″	15/16″	5652A22	17.29
3/8″	2 1/2″	15/16″	5652A23	17.05
1/2″	2 1/2″	15/16″	5652A24	19.61
9/16″	2 1/2″	15/16″	5652A26	19.50
5/8″	2 1/2″	15/16″	5652A28	19.54

★ Black finish.

(Continued on following page)

For information about power sockets, see page 2798.

1/4", 3/8", and 1/2" Square Drive Thin-Wall Power Sockets and Accessories

(Continued from previous page)

Metric Sizes

Size	O'all Lg.	OD		Each
1/4" Drive				
6-Pt. Standard—Magnetic				
5 mm	7/8"	1/2"	54095A41★	$9.36
5.5 mm	7/8"	1/2"	54095A42★	9.36
6 mm	7/8"	1/2"	54095A43★	9.36
7 mm	15/16"	1/2"	54095A44★	9.62
8 mm	15/16"	1/2"	54095A45★	9.89
10 mm	15/16"	9/16"	54095A47★	10.41
12 mm	1"	11/16"	54095A49★	10.93
13 mm	1"	47/64"	54095A51★	11.20
3/8" Drive				
Hex Bit				
4 mm	2 1/4"	3/4"	5620A42	17.05
5 mm	2 1/4"	3/4"	5620A43	17.23
6 mm	2 1/4"	3/4"	5620A44	17.46
8 mm	2 1/4"	3/4"	5620A45	17.57
10 mm	2 1/4"	3/4"	5620A46	17.70
1/2" Drive				
Hex Bit				
8 mm	2 1/2"	15/16"	5677A51	18.96
10 mm	2 1/2"	15/16"	5677A52	19.12
12 mm	2 1/2"	15/16"	5677A53	20.45
14 mm	2 1/2"	15/16"	5677A54	22.96
17 mm	2 1/2"	1 1/8"	5677A56	41.29

★ Black finish.

Accessories

Hex Shank Adapter

Flexible Extension

	O'all Lg.		Each
Hex Shank Adapters			
1/4" sq. M × 1/4" hex M	4"	7236A41	$3.85
1/4" sq. M × 1/4" hex M	6"	7236A45	4.44
3/8" sq. M × 1/4" hex M	2"	5553A41	4.26
3/8" sq. M × 1/4" hex M	4"	5553A65	5.76
3/8" sq. M × 1/4" hex M	6"	5553A17	6.68
3/8" sq. M × 7/16" hex M	2 3/4"	5553A66★	7.91
1/2" sq. M × 7/16" hex M	2 3/4"	5549A162★	7.83
1/2" sq. M × 7/16" hex M	5"	5549A56★	12.24
1/2" sq. M × 5/8" hex M	2 3/4"	5549A164★	14.29
Flexible Extensions			
3/8" sq. drive	3 3/8"	5496A61♦	44.01
1/2" sq. drive	3 3/4"	5496A62★	46.87

★ Black finish. ♦ Chrome finish.

About Powered Fastening Tools

The tool you need depends on the fastener you're using. Use the chart below as a general guide. It suggests tightening torque based on using Grade 2 low-strength carbon steel fasteners. Values are approximate. For fasteners smaller than 1/4", see powered screwdrivers on pages 2816-2817 and precision hand-driven screwdrivers on pages 2830-2831.

Air tools require lubrication to operate properly. For air tool oil, see page 2175. For air hose, see pages 240-245.

Grade 2 Carbon-Steel Fastener Size:		1/4"-20	5/16"-18	3/8"-16	1/2"-13	5/8"-11	3/4"-10	1"-8	1 1/4"-7	1 1/2"-6
Max. Tightening Torque:	in.-lbs.	61	126	224	546	1088	1929	2800	5596	9737
	ft.-lbs.	5	11	19	46	91	161	233	466	811
Ratchet Wrenches (5 to 100 ft.-lbs.)										
Impact Wrenches (20 to 3000 ft.-lbs.)										
Impact Drivers (7 to 70 ft.-lbs.)										
Powered Screwdrivers (1 to 30 ft.-lbs.)										
Precision Screwdrivers (0.17 to 11 ft.-lbs.)										

Retainer Styles for Ratchet and Impact Wrenches

Quick Change— For quick assembly and changing. *Ball* and *ring* retainers are for sockets. Ball style is spring loaded. *1/4" hex chuck* retainer is for bits.

Positive Locking— For more secure retention of sockets. *Pin* style is spring loaded. *Hole-* and *ring-and-hole* styles require a retaining ring.

Ring-and-Hole Style Retainer Shown with Socket and Retaining Ring

1/2" Square Drive Air Impact Wrenches

1/2" Square Drive Economy Air-Powered Impact Wrench and Wrench Set

Use this impact wrench for jobs requiring up to 260 ft.-lbs. of torque. It's designed for intermittent, light duty use. Wrench operates in forward and reverse and has a built-in power regulator to control torque. Recommended air pressure is 90 psi. For use with impact sockets only (see pages 2798-2804).

Wrench and Socket Set

Set includes an impact wrench, a 5" long extension bar, an inline oiler, and ten 6-pt. standard inch sockets in the following sizes: 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 1", 1 1/16". Packed in a plastic case.

6038A32 ..... Per Set $98.87

Wrench and Socket Set

Wrench

Wrench

Working Torque Range, ft.-lbs.	Max. Torque, ft.-lbs.	No-Load rpm	Standard Bolt Capacity	Socket Retainer Style	Avg. cfm @ 90 psi	Air Inlet, NPT	For Hose ID	Lubrication Feed	Lg.	Wt., lbs.		Each
50–260	260	7000	5/8"	Ring	4.5	1/4"	3/8"	Manual	7 7/8"	4.9	6038A21	$66.30

Note: Air-powered tools on this page require lubrication to operate properly.

Air-Powered Impact Wrenches

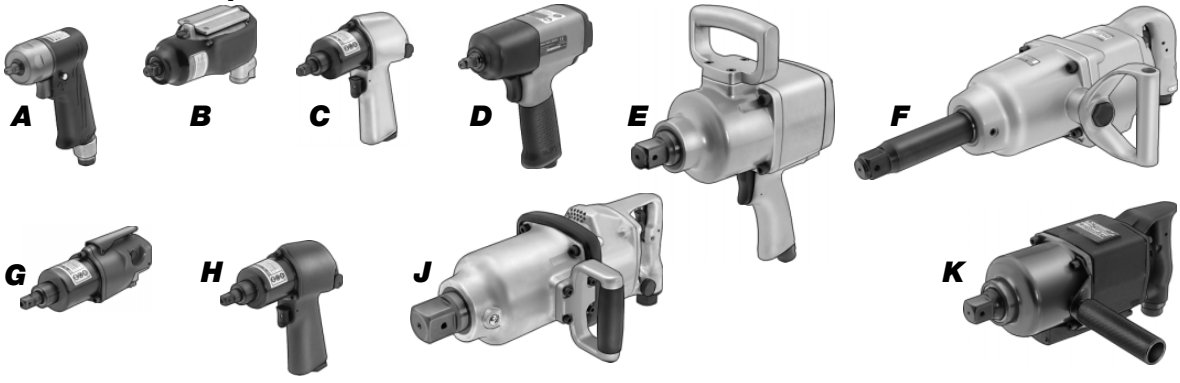

All of these wrenches operate in forward and reverse and have a metal housing to protect the hammer mechanism. They also have a built-in power regulator to control torque. Recommended air pressure is 90 psi. Use wrenches with impact sockets only (see pages 2798-2804).

Standard Duty— Best for general shop applications as well as maintenance and automotive work. Wrenches with a ring-and-hole style socket retainer do not come with an O-ring and pin (required, see page 2804).

Heavy Duty— Perfect for medium volume production, general maintenance, and construction applications. Wrenches with a hole-style socket retainer do not come with an O-ring and pin (required, see page 2804).

Super Heavy Duty— Built to provide ultimate performance, these top-of-the-line tools are durable enough for high volume production and heavy maintenance applications. Wrenches with a hole-style socket retainer include an O-ring and pin to secure the socket to the tool.

Style C— 71655A32 and 71655A36 have a lightweight, yet strong titanium housing.

Style D— 71205A33 has a rubber grip. 71655A34 has a 2″ extended shaft.

Style E— Wrench has a removable top handle.

Style F— Wrench has an 8″ extended shank and a fixed side handle.

Style H— 7177A22, 7174A54, 7174A55, and 7174A13 have a lightweight, yet strong titanium housing.

Styles J&K— Wrenches have a reversible side handle.

	Working Torque Range, ft.-lbs.	Max. Torque, ft.-lbs.	No-Load rpm	Standard Bolt Cap.	Socket Retainer Style	Avg. cfm @ 90 psi	Air Inlet, NPT	For Hose ID	Lubrication Feed	Lg.	Wt., lbs.		Each
Standard Duty													
1/4″ Square Drive													
A	5– 48	50	17,000	3/8″	Ball	3.8	1/4″	3/8″	Manual	4 3/4″	1.5	**7176A25**	$198.85
3/8″ Square Drive													
B	25– 50	75	11,000	3/8″	Ring	7.5	1/4″	3/8″	Automatic	6 1/4″	2.4	**7182A13**	123.41
C	20– 150	180	10,000	7/16″	Ring	2.5	1/4″	3/8″	Manual	6″	2.9	**7176A19**	179.42
D	184– 295	331	11,500	1/2″	Ring	32	1/4″	3/8″	Manual	7″	2.5	**7176A14**♠	221.63
1/2″ Square Drive													
C	25– 300	600	8,000	9/16″	Ring	4.2	1/4″	3/8″	Manual	7 5/16″	5.8	**5828A13**	164.26
C	40– 250	400	8,500	9/16″	Pin	5.4	1/4″	3/8″	Manual	6 3/4″	5.6	**7176A13**	223.36
C	50– 550	600	9,800	9/16″	Pin	5	1/4″	3/8″	Manual	7 5/16″	4.0	**71655A32**	360.95
C	50– 550	600	9,800	9/16″	Ring	5	1/4″	3/8″	Manual	7 5/16″	4.0	**71655A36**	355.92
D	25– 310	425	8,400	1/2″	Ring	15	1/4″	3/8″	Manual	7 1/2″	5.1	**71205A33**	167.02
D	50– 450	550	6,400	1/2″	Ring	5.5	1/4″	3/8″	Manual	9″	5.8	**71655A34**	265.52
3/4″ Square Drive													
C	200– 800	1,050	6,000	1″	Ring	8	3/8″	3/8″	Manual	8 9/16″	8.8	**71805A42**	347.67
C	207– 715	1,100	6,000	1 1/4″	Ring & Hole	10	3/8″	1/2″	Manual	8 1/8″	9.0	**7186A11**	341.61
1″ Square Drive													
E	100–1,000	1,450	5,000	1 1/4″	Ring & Hole	10	1/2″	1/2″	Manual	10 1/2″	22.0	**7176A54**	731.06
F	100–1,440	1,800	4,500	1 1/4″	Ring & Hole	12	1/2″	1/2″	Automatic	20 1/2″	25.5	**55055A73**	618.82
Heavy Duty													
3/8″ Square Drive													
G	13– 85	105	10,000	7/16″	Pin	2.5	1/4″	5/16″	Manual	5 7/8″	2.5	**7177A19**	505.89
H	20– 100	125	10,000	7/16″	Pin	4	1/4″	5/16″	Manual	5 1/2″	2.8	**7177A14**	356.34
H	25– 230	250	15,000	7/16″	Ring	4	1/4″	3/8″	Manual	5 15/16″	2.5	**7177A22**	289.23
1/2″ Square Drive													
H	40– 275	450	7,750	9/16″	Pin	5.4	1/4″	5/16″	Manual	6 1/2″	6.0	**7177A11**	379.35
H	40– 350	500	7,000	9/16″	Ring	5.4	1/4″	3/8″	Manual	7 5/16″	6.0	**5828A15**	261.93
3/4″ Square Drive													
H	200– 900	1,350	7,000	1″	Hole	8.5	3/8″	1/2″	Manual	8 1/2″	7.4	**7177A32**	645.09
H	250– 800	1,250	5,750	1″	Hole	10	3/8″	1/2″	Manual	8 1/2″	11.3	**7177A12**	973.40
1″ Square Drive													
J	740–1,840	2,160	4,000	1 1/4″	Hole	11	1/2″	1/2″	Automatic	13 3/4″	23.5	**57855A45**	1,543.08
1 1/2″ Square Drive													
J	740–2,580	3,000	3,000	1 1/2″	Hole	12.5	1/2″	1/2″	Automatic	16 7/8″	34.2	**57855A47**	2,361.54
Super Heavy Duty													
3/8″ Square Drive													
H	25– 230	250	15,000	7/16″	Pin	4	1/4″	3/8″	Manual	5 15/16″	2.5	**7174A54**	347.98
1/2″ Square Drive													
H	40– 350	500	5,000	9/16″	Pin	3.8	1/4″	3/8″	Automatic	6 7/8″	6.0	**7174A11**	822.00
3/4″ Square Drive													
H	400–1,400	1,600	5,200	1″	Hole	15	3/8″	1/2″	Manual	8 7/8″	11.9	**7174A55**	2,057.03
1″ Square Drive													
H	350–1,100	1,450	5,200	1 1/4″	Hole	6	3/8″	1/2″	Manual	8 7/8″	11.4	**7174A13**	1,980.33
K	1,000–1,600	2,000	5,000	1 1/4″	Hole	10	1/2″	3/4″	Automatic	12 1/4″	22.0	**7174A22**	3,908.06

♠ Housing is plastic and metal.

Note: These air-powered tools require lubrication to operate properly.

For information about powered fastening tools, see page 2805.

Cordless Impact Wrenches and Drivers

Fasten and remove bolts without the limitations of a cord. Tools have a forward/reverse switch and an electric brake, unless noted. All come with a UL listed charger, two battery packs, and a carrying case, unless noted. The maximum torque is the largest value in the working torque range listed below. Tools with lithium ion batteries weigh less than similar tools with other battery types.

Use impact wrenches with impact sockets (see pages 2798-2804) and impact drivers with power bits (see pages 2818-2825).

Wrenches with light and ***drivers with light*** have a built-in, shock-proof light to improve visibility as you're working.

Style J has a right-angle head that rotates a full 360° in 45° increments. *Optional straight-head attachment* converts the tool into a straight driver.

Wrenches and Drivers

Drive	Working Torque Range, ft.-lbs.	Volts	No-Load rpm	Socket Retainer Style	Lg.	Wt., lbs.	Battery Type	Mfr. and Model No.		Each
Impact Wrenches										
A 3/8″ Sq.	0– 83	12.0	2200	Ring	6 1/2″	2.3	Lithium Ion	Milwaukee 2451-22	**54275A23**	$174.38
B 1/2″ Sq.	0–135	14.4	2400	Pin	5 3/4″	3.9	Nickel Cadmium	DeWalt DC830KA	**6790A21**	259.16
C 1/2″ Sq.	0–325	28.0	1450	Pin	11 3/4″	8.9	Lithium Ion	Milwaukee 0779-22	**54275A21★**	511.25
D 1/2″ Sq.	0–450	18.0	1900	Pin	8 7/8″	6.7	Lithium Ion	Milwaukee 2662-22	**54275A25★**	416.87
Impact Wrenches with Light										
E 3/8″ Sq.	0–155	18.0	2100	Ring	6 1/8″	3.5	Lithium Ion	Makita BTW253	**51455A12**	398.91
F 1/2″ Sq.	0–145	18.0	2400	Pin	5 3/4″	3.7	Lithium Ion	DeWalt DC822KL	**6790A13**	381.36
G 1/2″ Sq.	0–170	18.0	2100	Pin	6 1/2″	3.7	Lithium Ion	Makita BTW251	**51455A21**	398.91
Impact Driver—*For use with power bits*										
H 1/4″ Hex	0– 96	12.0	2400	1/4″ Hex Chuck	5 3/4″	3.6	Nickel Cadmium	DeWalt DC845KA	**53145A71**	247.97
Impact Drivers with Light—*For use with power bits*										
J 1/4″ Hex	0– 44	18.0	2000	1/4″ Hex Chuck	15 1/4″	3.7	Lithium Ion	Makita BTL061	**37375A31**	398.91
K 1/4″ Hex	0–106	18.0	2300	1/4″ Hex Chuck	5 3/4″	2.8	Lithium Ion	Makita BTD142HW	**51455A91**	229.23
L 1/4″ Hex	0–116	18.0	2200	1/4″ Hex Chuck	5 3/4″	3.5	Lithium Ion	Milwaukee 2650-22	**54275A18**	307.50

Optional Straight-Head Attachment for Style J ..... **37375A21** Each $72.05

★ Does not include an electric brake.

Replacement Battery Packs and Chargers

	Battery Packs	Each	Chargers	Each
For Style A	**4443A33**	$49.23	**4443A22**	$56.92
For Style B	**29835A12**	83.66	**29835A631**	81.82
For Style C	**54275A31**	170.00	**54275A32**	66.00
For Style D	**29735A124**	151.95	**29735A128**	64.62
For Style E	**27875A15**	128.34	**27875A17**	122.97
For Style F	**29835A121**	161.11	**29835A631**	81.82
For Style G	**27875A15**	$128.34	**27875A17**	$122.97
For Style H	**29835A11**	72.89	**29835A631**	81.82
For Style J	**27875A15**	128.34	**27875A17**	122.97
For Style K	**27875A12**	94.02	**27875A17**	122.97
For Style L	**29735A124**	151.95	**29735A128**	64.62

Electric Impact Wrenches

No need to fire up your air compressor—just plug in and start working. Our electric wrenches operate on 120 VAC and deliver full torque in forward and reverse. All are double insulated and have an 8-ft. cord with two-prong plug. Wrenches are UL listed and meet OSHA requirements. Use with impact sockets only (see pages 2798-2804).

Style N wrenches are single speed. ***Style P*** wrench with ring-and-hole style socket retainer (7184A33) includes an O-ring and pin to secure the socket to the tool.

	Working Torque Range, ft.-lbs.	Max. Torque, ft.-lbs.	No-Load rpm	Socket Retainer Style	Amps	Hz	Lg.	Wt., lbs.	Mfr. and Model No.		Each
1/2″ Square Drive											
M	0–150	150	2200	Pin	3.3	60	9 7/8″	4.6	Makita TW0200	**57755A46**	$199.74
N	———	345	2100	Pin	7.5	50/60	11 1/4″	7	DeWalt DW292	**5736A72**	190.76
P	0–300	300	1800	Pin	7	60	11 5/8″	6	Milwaukee 9070-20	**7184A31**	181.25
P	0–300	300	1800	Ring	7	60	11 5/8″	6	Milwaukee 9071-20	**7184A32**	181.25
3/4″ Square Drive											
N	———	345	2100	Pin	7.5	50/60	11 1/4″	7	DeWalt DW294	**5736A83**	254.18
P	0–380	380	1750	Ring & Hole	7	60	11 5/8″	6.2	Milwaukee 9075-20	**7184A33**	285.00

Air-Powered & Cordless Ratchet Wrenches

For information about powered fastening tools, see page 2805.

Air-Powered Ratchet Wrenches

Finish jobs quickly and with less effort using these air-powered wrenches. Turn manually for initial loosening and tightening. Wrenches operate at full torque in forward and reverse. Each has a ball-style socket retainer and a lever throttle control, unless noted. Handles are metal, unless noted. Recommended air pressure is 90 psi. Use with impact sockets and power sockets, except 6949A48, which is for use with impact sockets only. See pages 2798-2805 for sockets.

Style A—7305A57 and 6949A63 have a sealed head that keeps lubrication in and debris out.

Style C—Provide the highest torque of all our air-powered ratchets.

Style D—Wrenches are combination impact/ratchet tools with a powerful pin-clutch hammer mechanism that eliminates the need for hand tightening. The mechanism also absorbs shock to protect your hands and wrists from the twisting force of kickback.

Style E—Has extra length for increased leverage.

	Working Torque Range, ft.-lbs.	Max. Torque, ft.-lbs.	No-Load rpm	Avg. cfm @ 90 psi	Air Inlet, NPT	For Hose ID	Exhaust	Lg.	Wt., lbs.		Each
1/4″ Square Drive											
A	5–20	25	250	3	1/4″	3/8″	Rear	7 5/16″	1.4	**7305A41**	$112.01
A	5–25	25	250	4.8	1/4″	3/8″	Rear	6 11/16″	1.3	**7305A56**♣	60.24
A	6–26	35	250	2.8	1/4″	3/8″	Rear	7 3/4″	1.4	**7305A57**●	156.55
3/8″ Square Drive											
A	5–25	25	250	4.8	1/4″	3/8″	Rear	6 11/16″	1.3	**6949A62**♣	62.73
A	6–26	35	250	2.8	1/4″	3/8″	Rear	7 3/4″	1.4	**6949A63**●	158.45
B	5–60	65	200	3.5	1/4″	3/8″	Center	10 13/16″	3.1	**6949A48**▲	151.74
B	10–45	54	160	4	1/4″	3/8″	Center	10 11/16″	2.8	**6949A41**	127.91
B	10–60	76	220	4	1/4″	3/8″	Center	12″	3.3	**6949A61**♦	166.86
C	10–90	110	180	2	1/4″	3/8″	Rear	10 1/4″	2.8	**6949A64**●	184.71
D	10–67	90	500	2.5	1/4″	3/8″	Front	10 1/2″	3.3	**5692A16**	245.60
1/2″ Square Drive											
B	10–45	54	160	4	1/4″	3/8″	Center	10 7/8″	2.8	**6949A46**	135.25
C	10–90	110	180	3.3	1/4″	3/8″	Rear	10 1/4″	2.8	**6949A67**●	190.66
D	10–70	90	500	2.5	1/4″	3/8″	Front	10 1/2″	3.3	**5692A17**	247.50
E	15–90	90	200	5.5	1/4″	3/8″	Center	12 1/2″	3.5	**5283A53**♦	252.50

♣ Designed for light duty, intermittent use. ● Handle is cushioned. ▲ Handle is made of a molded composite. ♦ Push-button control.

Air-Powered Precision Ratchet Wrenches

Step up to precision ratcheting. Also known as nutrunners, these wrenches have torque-limiting mechanical clutches that allow precise fastening—great for assembly applications. The head flexes 90° for easy access to tight spaces. Wrenches operate at full torque in forward and reverse. Each has a pin-style retainer and a lever throttle control. Recommended air pressure is 90 psi. Use with impact sockets only (see pages 2798-2804).

1132A11 shuts off automatically when the torque setting is reached. 1132A1 has an adjustable cushion clutch that "slips" to indicate when the torque setting is reached.

Sq. Drive	Working Torque Range, ft.-lbs.	Max. Torque, ft.-lbs.	No-Load rpm	Avg. cfm @ 90 psi	Air Inlet, NPT	For Hose ID	Exhaust	Lg.	Wt., lbs.		Each
1/4″	0.16–3.8	3.8	700	13	1/8″	1/4″	Rear	12 1/2″	1.8	**1132A11**	$820.75
3/8″	0.83–9.16	9.16	600	16	1/4″	1/4″	Rear	13 1/8″	3.4	**1132A1**	1,281.67

3/8″ Square Drive Cordless Ratchet Wrenches

No outlet necessary—take these cordless ratchet wrenches wherever you need to go. Wrenches operate at full torque in forward and reverse. Furnished with a charger.

5483A31 can be used with both impact sockets and socket bits. Includes two lithium ion batteries and a canvas carrying bag. 5483A12 can only be used with impact sockets. Motor stops automatically when fastener is tight. Includes one lithium ion battery and a plastic case.

Working Torque Range, ft.-lbs.	Max. Torque, ft.-lbs.	Volts	No-Load rpm	Socket Retainer Style	Lg.	Wt., lbs.	***Wrenches***	Each	***Repl. Batteries***	Each	***Repl. Chargers***	Each
0–44	44	18	2000	Ring	15 1/4″	3.7	**5483A31**	$447.41	**27875A15**	$128.34	**27875A17**	$122.97
10–60	70	14.4	225	Ball	12 3/8″	4.1	**5483A12**	368.37	**5483A13**	141.59	**5483A14**	97.29

Note: Air-powered tools on this page require lubrication to operate properly.

Torque Multipliers

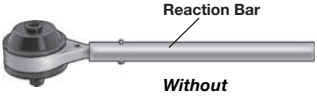

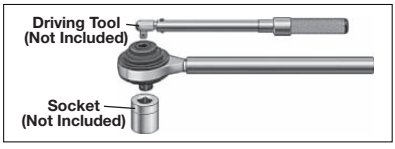

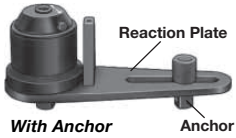

When you need more torque than your wrench can deliver, multipliers help you reach high torque values without a lot of effort. Gears in the housing multiply the amount of force (or torque) that can be applied to the fastener. For example, if the torque ratio is 1:3.3 and you apply 100 ft.-lbs., the torque output would be 330 ft.-lbs.

Multipliers torque in clockwise and counterclockwise directions. Accuracy is ±5% of torque output.

Without Anchor— Place the reaction bar against a stationary object to keep the tool in place. Multipliers *for hand tools* signal with an audible click when overtorque occurs. When those *for hand and nonimpact power tools* are overtorqued, the male output square drive shears off to protect the gear housing (an extra male square drive comes with each tool). 7295A16 and 7295A18 also have an antibacklash feature to prevent wrench from swinging back when torqued.

With Anchor— Choose a multiplier with an anchor when you need extra stability in order to apply greater force. The reaction plate is held down by placing a socket on the anchor and attaching it to a secured fastener. The anchor and the male output drive have the same square size. When overtorqued, the male output square drive shears off to protect the gear housing (an extra male square drive comes with each tool). An antibacklash feature prevents wrench from swinging back when torqued.

Square Drive Female	Square Drive Male	Torque Ratio	Max. Input ft.-lbs.	Max. Input Nm	Max. Output ft.-lbs.	Max. Output Nm	O'all Lg.	Multipliers		Replacement Male Output Drive	
Without Anchor— *For hand tools.*											
1/2″	3/4″	1:3.3	227	307	750	1,016	8 5/8″	7295A31	$498.47	—	—
1/2″	3/4″	1:4	295	398	1,000	1,356	22 1/2″	5603A1	442.58	—	—
3/4″	1″	1:4	588	798	2,000	2,711	24″	5603A2	694.51	—	—
1″	1 1/2″	1:4.33	1,176	1,466	4,000	5,423	28 7/8″	5603A3	1,519.67	—	—
Without Anchor— *For hand and nonimpact power tools.*											
1/2″	3/4″	1:6	200	271	1,200	1,627	19 5/8″	7295A12	977.87	7295A13	$50.60
1/2″	1″	1:13.6	162	220	2,200	2,982	19 5/8″	7295A16	1,543.42	7295A17	71.45
1/2″	1″	1:18.5	173	235	3,200	4,338	19 5/8″	7295A18	2,345.57	7295A19	109.89
With Anchor— *For hand and nonimpact power tools.*											
1/2″	1″	1:13.6	162	220	2,200	2,983	14″	51525A42	3,351.53	7295A17	71.45
1/2″	1″	1:18.5	173	235	3,200	4,339	14″	51525A43	3,856.30	7295A19	109.89
1/2″	1 1/2″	1:26.5	189	256	5,000	6,779	14 7/8″	51525A44	5,274.98	51525A21	182.27

Adjustable Torque-Limiting Adapters

To prevent overtorquing, adapters click and release when they've reached the torque setting. Pair them with any standard square-drive tool. To set torque, remove the snap ring and locking plate, then adjust the nut. *Note:* There's no Nm scale on the adapter, so you'll need a torque tester (see page 2815) or torque wrench to check the setting.

All have a female square drive on one end and a male square drive on the other; drives are the same size. Adapters torque in clockwise and counterclockwise directions. Accuracy is 5% of the torque setting. Maximum rpm is 300. Made of steel.

Adaptable to machine and nonimpact power tool applications if used intermittently. Not for use with impact tools. For best results, choose an adapter so that your desired torque setting falls in the middle of its torque range.

Also Available: Factory-set torque-limiting adapters with 3/8″ drive and 60-, 75-, 180-, or 240-in.-lb. torque setting, or 1/2″ drive with 360-in.-lb. setting. Please ask for 6968A9 and specify drive size and torque setting.

Square Drive	Torque Range in.-lbs.	Torque Range Nm	Dia.	O'all Lg.		
3/8″	24 to 180	2.7 to 20.3	1 1/2″	2 1/8″	6968A12	$86.44
3/8″	60 to 300	6.8 to 33.9	1 1/2″	2 1/8″	6968A14	86.44
1/2″	120 to 480	13.6 to 54.2	1 3/4″	2 5/8″	6968A16	104.22
1/2″	240 to 600	27.1 to 67.8	1 3/4″	2 5/8″	6968A18	104.22
1/2″	480 to 900	54.2 to 101.7	2 1/4″	2 5/8″	6968A21	208.22
1/2″	720 to 1,440	81.4 to 162.7	3″	2 3/4″	6968A22	236.80

Electronic Torque Analyzers and Sensors

Use an analyzer with a sensor (sold separately) to display, store, collect, and download torque readings for a variety of applications—just switch sensors as you switch jobs. Each sensor has a 4 ft. long cable, except 5833A27, which has an 8-ft. long cable. Not for use with power tools.

Torque Analyzer— Stores up to 3,500 readings, which can be downloaded to a PC with an RS-232 cable (sold separately). The LCD shows track display (values as they're measured) or peak display (high value). Torque can be measured in ft.-lbs., in.-lbs., in.-oz., Nm, dNm, m-kg, or cm-kg. Use the keypad to specify high and low torque limits. Also features an audio output jack for use with headphones (the unit beeps at 110% of torque setting). Measures 6″ Lg.×3″ Wd.×2 1/2″ Ht. Includes a rechargeable NiCad battery and charger. Comes in a plastic case.

Attachable Sensors— Sensors fit between your socket and driver and plug into the back of the torque analyzer. They have a female square drive on one end and a male square drive on the other; drives are the same size. Accuracy is ±1% of torque setting for 10-100% of torque range. Come with certificate of calibration traceable to NIST.

Hand-Held Sensors— No need for extra tools; grasp the knurled sensor and let your hand work as the driver for low-torque applications. Sensors have a male square drive. Accuracy is ±2% of torque reading for 10-100% of torque range. Come with certificate of calibration traceable to NIST.

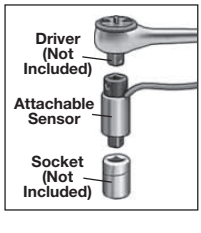

Torque Analyzer

5833A11	$1,212.42
Optional RS-232 to PC Cable (12-ft. Lg.) 5833A36	$66.31

Attachable Sensors

Square Drive	Torque Range		
1/4″	5 to 50 in.-lbs.	5833A21	$356.15
1/4″	20 to 200 in.-lbs.	5833A22	342.45
3/8″	10 to 100 ft.-lbs.	5833A23	332.65
1/2″	25 to 250 ft.-lbs.	5833A24	393.60
3/4″	60 to 600 ft.-lbs.	5833A27	441.33

Hand-Held Sensors

Square Drive	Torque Range		
1/4″	2 to 20 in.-oz.	5833A25	$480.51
1/4″	1 to 10 in.-lbs.	5833A26	466.53

About Torque Tools

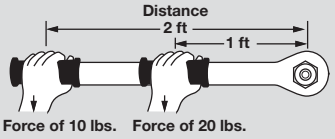

Torque is a measure of turning or twisting force. It is calculated by multiplying force by distance. For example, if you applied 10 lbs. of force with a 2-ft. wrench, you would get 20 ft.-lbs. of torque; if you applied 20 lbs. of force with a 1-ft. wrench, you would also get 20 ft.-lbs. of torque.

Selecting the Correct Torque Range— For the most accurate performance, the maximum torque you're applying should fall near the middle of the tool's torque range. For example, if you're applying 50 ft.-lbs. of torque, choose a wrench with a range of 5 to 100 ft.-lbs., rather than a range of 5 to 50 ft.-lbs.

Accuracy— Accuracy is usually given for 20-100% of a tool's torque range. For example, if the torque range is 20 to 120 in.-lbs., the accuracy statement is true for measurements between 40 and 120 in.-lbs. Below 20% of the torque range, the tool's accuracy often drops significantly.

Certificates of Calibration— Torque tools are calibrated by the manufacturer; the certificate provides proof of calibration and the date it was completed. Shelf life does not affect the calibration of a torque tool. Common practice is to consider the calibration life to begin at the date of purchase or first use.

Conversions— The chart below shows how to convert between some of the units used to measure torque:

Nm = Newton meters
dNm = deci Newton meters
cNm = centi Newton meters

To Convert From	To	Multiply By
in.-lbs.	in.-oz.	16
in.-lbs.	ft.-lbs.	0.08333
in.-lbs.	cm-kg	1.1519
in.-lbs.	m-kg	0.011519
in.-lbs.	Nm	0.113
in.-lbs.	dNm	1.13
in.-lbs.	cNm	11.3
ft.-lbs.	m-kg	0.1382
ft.-lbs.	Nm	1.356
Nm	dNm	10
Nm	cm-kg	10.2
Nm	m-kg	0.102

To Convert From	To	Multiply By
in.-oz.	in.-lbs.	0.0625
ft.-lbs.	in.-lbs.	12
cm-kg	in.-lbs.	0.8681
m-kg	in.-lbs.	86.81
Nm	in.-lbs.	8.85
dNm	in.-lbs.	0.885
cNm	in.-lbs.	0.0885
m-kg	ft.-lbs.	7.236
Nm	ft.-lbs.	0.7376
dNm	Nm	0.10
cm-kg	Nm	0.09807
m-kg	Nm	9.807

Torque Wrenches

Premium Electronic Torque Wrenches

Track applied torque and tighten fasteners with precision. The large LCD shows track display (values as they're measured) or peak display (highest value). When displaying a measurement, wrenches show their sequence number and the total number of stored values. They store up to 4,000 torque values and recall up to 999 measurements in order of operation. You can set the desired torque along with high and low tolerance limits. Lights and audible alarm signal when lower limit is met or upper limit is exceeded.

Accuracy is ±1% of torque setting for 20-100% of torque range (for both clockwise and counterclockwise use). Torque can be measured in in.-lbs., ft.-lbs., Nm, dNm, cm-kg, and m-kg. Download values using an RS-232 cable (sold separately). Wrenches use a 9-volt battery (included) and come in a plastic case with certificate of calibration traceable to NIST.

Square Drive	Torque Range in.-lbs.	Torque Range ft.-lbs.	Torque Range Nm	Graduations in.-lbs.	Graduations ft.-lbs.	Graduations Nm	O'all Lg.		
1/4"	5 to 50	0.4 to 4.2	0.56 to 5.6	0.01	0.001	0.01	13 1/2"	8545A21	$907.24
3/8"	25 to 250	2 to 20	2.8 to 28	0.1	0.01	0.01	15"	8545A22	907.24
3/8"	60 to 600	5 to 50	6.8 to 67.7	0.1	0.01	0.01	15"	8545A23	907.24
1/2"	300 to 3,000	25 to 250	34 to 338	1	0.1	0.1	21 1/2"	8545A11	953.08
3/4"	720 to 7,200	60 to 600	81 to 813	3	0.1	0.1	46 1/2"	8545A31	1,139.07
Optional RS-232 to PC Cable (6-ft. Lg.)								8545A12	142.63

Electronic Torque Wrenches with Rotating Dial

Rotate the large digital display so you can read it at any angle. Torque wrenches show a track display (values as they're measured) or a peak display (highest value). A touch of a button sets pass/fail mode for quick target tolerance settings from ±1% to ±10%. Colored lights and audible alarm signal to let you know whether you're above, below, or within your target torque range. Accuracy is ±1% of torque setting for entire torque range (for clockwise and counterclockwise use). Wrenches are chrome-plated steel with a plastic grip. They use a 9-volt battery (included), and come in a plastic case with certificate of calibration traceable to NIST.

Square Drive	Torque Range in.-lbs.	Torque Range ft.-lbs.	Torque Range Nm	Graduations in.-lbs.	Graduations ft.-lbs.	Graduations Nm	O'all Lg.		
1/4"	7.5 to 75	0.63 to 6.25	0.84 to 8.5	0.01	0.01	0.01	11"	7767A11	$562.50
1/4"	10 to 100	0.83 to 8.3	1.1 to 11.1	0.1	0.01	0.01	11"	7767A12	593.75
3/8"	25 to 250	2.1 to 20.8	2.8 to 28.2	0.1	0.01	0.01	11"	7767A13	670.90
3/8"	60 to 600	5 to 50	6.8 to 67.8	0.1	0.01	0.1	11"	7767A14	640.53
1/2"	300 to 3,000	25 to 250	33.8 to 338	1	0.1	0.1	22"	7767A15	727.84
3/4"	720 to 7,200	60 to 600	81 to 813	1	0.1	0.1	47"	7767A16	1,350.00

Electronic Torque Wrenches

Set your torque value with the touch of a button. Digital display, colored lights, and an audible alarm let you know whether you're above, below, or within your target torque. Wrenches show a track display (values as they're measured) or a peak display (highest value). They have a reversible ratchet head and come in a plastic case with certificate of calibration traceable to NIST.

8976A41 and 8976A12 have a steel body and a metal grip. Accuracy is ±2% (for clockwise use) and ±3% (for counterclockwise use) of torque setting for 20-100% of torque range. Require four AAA batteries (sold separately).

8976A31 has a steel body and a plastic grip. Accuracy is ±3.5% of torque setting for 20-100% of torque range (for clockwise and counterclockwise use). Requires three AA batteries (sold separately).

Square Drive	Torque Range in.-lbs.	Torque Range ft.-lbs.	Torque Range Nm	Graduations in.-lbs.	Graduations ft.-lbs.	Graduations Nm	O'all Lg.		
3/8"	120 to 1,200	10 to 100	13.6 to 135.6	1	1	1	17 3/4"	8976A41	$294.10
1/2"	180 to 1,800	15 to 150	20.3 to 203	6	0.5	0.6	22 1/2"	8976A31	163.33
1/2"	300 to 3,000	25 to 250	33.9 to 339	1	1	1	26 1/2"	8976A12	358.89
AA Alkaline Battery (Pkg. of 4)								71455K53	2.94
AAA Alkaline Battery (Pkg. of 4)								71455K62	2.82

Adjustable Click-Style Torque Wrenches

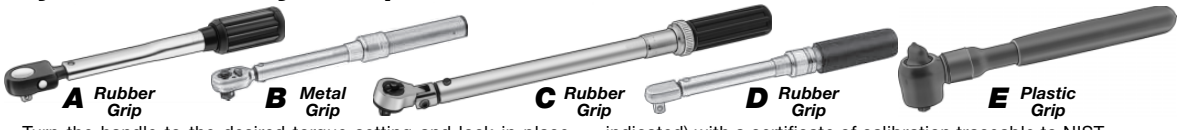

Turn the handle to the desired torque setting and lock in place. When torque setting is reached, wrenches signal with an audible click and an impulse in the grip. Accuracy is ±4% of torque setting for 20-100% of torque range (for clockwise use) and ±6% of torque setting for 20-100% of torque range (for counterclockwise use) except 85555A324, A325, and A328, which have ±3% accuracy in both directions. Body is steel. Wrenches come in a case (unless otherwise indicated) with a certificate of calibration traceable to NIST.

Style C has a head that pivots 15° up and down.

Style E are insulated, tested to 1,000 VAC, and meet IEC 900 specifications. Handle is nonconductive. Case not included.

Note: To relieve pressure on the spring and maintain calibration, return setting to lowest reading on scale when not in use.

Sq. Drive	Torque Range	Graduations	Grip	O'all Lg.		
(A) Reversible Ratchet Head						
in.-lbs., Nm						
1/4"	5 to 25 Nm	1 Nm	Metal	10"	85555A111●	$207.45
1/4"	10 to 50 in.-lbs.	1.0 in.-lbs.	Rubber	10 1/8"	85555A113★	170.69
1/4"	10 to 50 in.-lbs., 1.08 to 5.4 Nm	1.0 in.-lbs., 0.06 Nm	Metal	10"	85555A114	140.17
1/4"	30 to 150 in.-lbs., 3.06 to 15.3 Nm	1.0 in.-lbs., 0.12 Nm	Rubber	10"	85555A115	134.79
3/8"	30 to 150 in.-lbs.	2.0 in.-lbs.	Rubber	10 5/8"	85555A212★	176.72
3/8"	30 to 150 in.-lbs., 3.06 to 15.3 Nm	1.0 in.-lbs., 0.12 Nm	Rubber	10"	85555A213	134.79
3/8"	40 to 200 in.-lbs.	2.0 in.-lbs.	Rubber	10 5/8"	85555A215★	176.72
3/8"	50 to 250 in.-lbs., 5.54 to 27.7 Nm	1.0 in.-lbs., 0.12 Nm	Metal	11 1/4"	85555A214	140.17
3/8"	150 to 750 in.-lbs.	5.0 in.-lbs.	Rubber	16"	85555A216	147.87
3/8"	200 to 1,000 in.-lbs., 22.04 to 110.2 Nm	5.0 in.-lbs., 0.6 Nm	Metal	16"	85555A217	147.87
1/2"	150 to 750 in.-lbs., 16.38 to 81.9 Nm	5.0 in.-lbs., 0.6 Nm	Metal	16"	85555A218	170.51
1/2"	300 to 3,000 in.-lbs., 44.1 to 349.1 Nm	18.0 in.-lbs., 2 Nm	Metal	24"	85555A221●	199.74
1/2"	700 to 1,600 in.-lbs.	10.0 in.-lbs.	Rubber	19"	85555A219	164.43
ft.-lbs., Nm						
3/8"	5 to 75 ft.-lbs., 10.1 to 105.1 Nm	5.0 ft.-lbs., 6.8 Nm	Metal	17"	85555A311●	191.20
3/8"	20 to 100 ft.-lbs., 26.44 to 132.2 Nm	0.5 ft.-lbs., 0.7 Nm	Metal	16"	85555A312	146.45
1/2"	10 to 150 ft.-lbs., 20.3 to 210.1 Nm	1.0 ft.-lbs., 1.36 Nm	Rubber	20 1/2"	85555A315●	185.51
1/2"	25 to 250 ft.-lbs., 43.4 to 348.4 Nm	1.0 ft.-lbs., 1.4 Nm	Rubber	22 1/2"	85555A319●	162.51
1/2"	30 to 150 ft.-lbs., 39.4 to 197 Nm	1.0 ft.-lbs., 1.4 Nm	Rubber	19"	85555A316	161.19
1/2"	50 to 250 ft.-lbs., 66.4 to 332 Nm	1.0 ft.-lbs., 1.4 Nm	Metal	24 3/8"	85555A318	164.81
3/4"	50 to 400 ft.-lbs., 85 to 559 Nm	2.5 ft.-lbs., 3.4 Nm	Metal	32 3/4"	85555A321●	517.32
3/4"	100 to 600 ft.-lbs., 153 to 830 Nm	2.5 ft.-lbs., 3.4 Nm	Rubber	43"	85555A322●	435.25
3/4"	220 to 750 ft.-lbs., 300 to 1,000 Nm	5.0 ft.-lbs., 5 Nm	Metal	49 1/8"	85555A324	1,192.31
3/4"	370 to 1,100 ft.-lbs., 500 to 1,500 Nm	5.0 ft.-lbs., 5 Nm	Metal	61 3/4"	85555A325	1,269.23
1"	140 to 700 ft.-lbs., 217 to 976 Nm	2.0 ft.-lbs., 2.71 Nm	Metal	47 7/8"	85555A326	846.93
1"	200 to 1,000 ft.-lbs., 264.4 to 1,322 Nm	5.0 ft.-lbs., 6.8 Nm	Metal	70"	85555A327	860.15
1"	370 to 1,100 ft.-lbs., 500 to 1,500 Nm	5.0 ft.-lbs., 5 Nm	Metal	61 3/4"	85555A328	1,346.15
(B) Reversible Ratchet Head with Push-Button Socket Release						
in.-lbs., Nm						
1/4"	30 to 150 in.-lbs., 3.06 to 15.3 Nm	1.0 in.-lbs., 0.12 Nm	Plastic	10"	85555A411	134.79
3/8"	30 to 150 in.-lbs.	1.0 in.-lbs.	Metal	10"	85555A211	134.79
3/8"	50 to 250 in.-lbs., 5.54 to 27.7 Nm	1.0 in.-lbs., 0.12 Nm	Plastic	11 1/4"	85555A412	140.17
3/8"	50 to 250 in.-lbs., 5.54 to 27.7 Nm	1.0 in.-lbs., 0.12 Nm	Metal	11 1/4"	85555A413	140.17
3/8"	100 to 1,000 in.-lbs., 14.1 to 115.8 Nm	5.0 in.-lbs., 0.6 Nm	Metal	17 3/4"	85555A414●	201.40
ft.-lbs., Nm						
3/8"	5 to 75 ft.-lbs., 19.66 to 98.3 Nm	0.5 ft.-lbs., 0.7 Nm	Metal	16"	85555A415	145.04
3/8"	10 to 100 ft.-lbs., 16.9 to 138.9 Nm	0.5 ft.-lbs., 0.7 Nm	Metal	17 3/4"	85555A416●	191.20
1/2"	10 to 150 ft.-lbs., 20.3 to 210.1 Nm	1.0 ft.-lbs., 1.4 Nm	Metal	22"	85555A417●	178.35
1/2"	25 to 250 ft.-lbs., 43.4 to 348.4 Nm	1.0 ft.-lbs., 1.4 Nm	Metal	24"	85555A421●	184.14
1/2"	30 to 150 ft.-lbs., 39.4 to 197 Nm	1.0 ft.-lbs., 1.4 Nm	Plastic	19"	85555A418	159.66
1/2"	30 to 150 ft.-lbs.	1.0 ft.-lbs.	Metal	19"	85555A314	159.66
1/2"	40 to 200 ft.-lbs., 4.4 to 22 Nm	1.0 ft.-lbs., 0.1 Nm	Plastic	19"	85555A419	153.51
1/2"	50 to 250 ft.-lbs., 66.4 to 332 Nm	1.0 ft.-lbs., 1.4 Nm	Plastic	24 3/8"	85555A422	161.55
(C) Reversible Ratchet Flex Head						
ft.-lbs., Nm						
3/8"	5 to 75 ft.-lbs., 10.1 to 105.1 Nm	5.0 ft.-lbs., 6.7 Nm	Rubber	17 1/4"	85555A711●	182.88
(D) Nonratcheting Head						
in.-lbs., Nm						
1/4"	10 to 50 in.-lbs., 1.08 to 5.4 Nm	1.0 in.-lbs., 0.06 Nm	Metal	10"	85555A511	112.80
1/4"	30 to 150 in.-lbs., 3.06 to 15.3 Nm	1.0 in.-lbs., 0.12 Nm	Rubber	10"	85555A512	116.18
3/8"	30 to 150 in.-lbs., 3.06 to 15.3 Nm	1.0 in.-lbs., 0.12 Nm	Rubber	10"	85555A513	119.67
3/8"	50 to 250 in.-lbs., 5.54 to 27.7 Nm	1.0 in.-lbs., 0.12 Nm	Metal	11 1/4"	85555A514	119.93
3/8"	150 to 750 in.-lbs.	5.0 in.-lbs.	Rubber	16"	85555A515	128.73
3/8"	200 to 1,000 in.-lbs., 22.04 to 110.2 Nm	5.0 in.-lbs., 0.6 Nm	Metal	16"	85555A516	128.45
1/2"	150 to 750 in.-lbs., 16.38 to 81.9 Nm	5.0 in.-lbs., 0.6 Nm	Metal	16"	85555A517	151.55
ft.-lbs., Nm						
3/8"	5 to 75 ft.-lbs., 19.66 to 98.3 Nm	0.5 ft.-lbs., 0.7 Nm	Metal	16"	85555A611	127.49
3/8"	20 to 100 ft.-lbs., 26.44 to 132.2 Nm	0.5 ft.-lbs., 0.7 Nm	Metal	16"	85555A612	127.49
1/2"	30 to 150 ft.-lbs., 39.4 to 197 Nm	1.0 ft.-lbs., 1.4 Nm	Rubber	19"	85555A613	147.11
1/2"	50 to 250 ft.-lbs., 66.4 to 332 Nm	1.0 ft.-lbs., 1.4 Nm	Metal	24 3/8"	85555A614	154.44
3/4"	120 to 600 ft.-lbs., 154 to 770 Nm	5.0 ft.-lbs., 6.8 Nm	Metal	42"	85555A615	472.04
1"	200 to 1,000 ft.-lbs., 264.4 to 1,322 Nm	5.0 ft.-lbs., 6.8 Nm	Metal	70"	85555A616	732.83
(E) Insulated Reversible Ratchet Head						
in.-lbs.						
1/4"	30 to 150 in.-lbs.	1.0 in.-lbs.	Plastic	10 1/2"	7936A11	377.59
3/8"	30 to 150 in.-lbs.	1.0 in.-lbs.	Plastic	10 1/2"	7936A12	377.59
3/8"	50 to 250 in.-lbs.	1.0 in.-lbs.	Plastic	11 3/4"	7936A13	377.59
1/2"	150 to 750 in.-lbs.	5.0 in.-lbs.	Plastic	15 1/2"	7936A14	463.79

● Accuracy is not rated for counterclockwise use. ★ For clockwise use only.

For information about torque tools, see page 2810.

Easy-Read Adjustable Click-Style Torque Wrenches

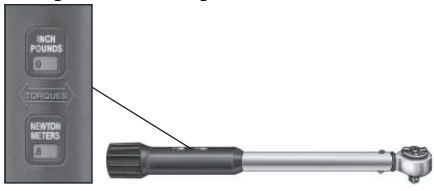

Forget squinting at scales and converting measurements—these wrenches display torque settings in two easy-to-read values. Set the torque using the knob at the end of the grip. When your torque setting is reached, the wrench signals with an audible click, an impulse in the grip, and a momentary release.

All wrenches have a reversible ratchet head, a chrome-plated steel body, and a rubber grip, except 5274A15, which has a metal grip. Accuracy is ±4% of torque setting for 20-100% of torque range (for clockwise use). Accuracy is not rated for counterclockwise use. Come in a plastic case with certificate of calibration traceable to NIST.

Note: To relieve pressure on the spring and maintain calibration, return setting to lowest reading on scale when not in use.

Square Drive	Torque Range	Graduations	O'all Lg.		
in.-lbs., Nm					
3/8″	25 to 250 in.-lbs., 3 to 27.8 Nm	2 in.-lbs., 0.2 Nm	14″	5274A11	$152.93
ft.-lbs., Nm					
3/8″	5 to 80 ft.-lbs., 5 to 110 Nm	0.5 ft.-lbs., 1 Nm	17″	5274A12	141.93
1/2″	10 to 150 ft.-lbs., 10 to 200 Nm	1 ft.-lbs., 2 Nm	20 3/4″	5274A13	147.47
1/2″	25 to 250 ft.-lbs., 35 to 340 Nm	2 ft.-lbs., 2 Nm	21 3/4″	5274A14	169.90
3/4″	100 to 600 ft.-lbs., 135 to 815 Nm	50 ft.-lbs., 65 Nm	43″	5274A15	488.85

No-Reset Adjustable Click-Style Torque Wrenches

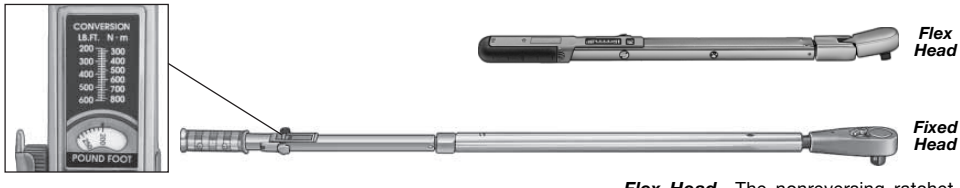

Unique split-beam design inside the wrench body minimizes friction and wear and eliminates the need to return to the lowest scale reading after each use. To set torque, turn knob to the desired setting. When your torque setting is reached, the wrench signals with an audible click and a momentary release. Use the chart above the display to convert ft.-lbs. to Nm. Wrenches have a chrome-plated steel body and a metal grip. They come in a plastic case with certificate of calibration traceable to NIST.

Flex Head—The nonreversing ratchet head flexes 15° to work around obstacles. Accuracy is ±4% of torque setting for 20-100% of torque range (for clockwise use).

Fixed Head—Has a reversible ratchet head. Three components detach for compact storage. Accuracy is ±4% of torque setting for 20-100% of torque range (for clockwise and counterclockwise use). *Note:* You must use all pieces to obtain correct readings.

Square Drive	Torque Range	Graduations	O'all Lg.		
Flex Head					
3/8″	20 to 100 ft.-lbs.	2 ft.-lbs.	17 5/8″	5387A22	$195.87
1/2″	40 to 250 ft.-lbs.	5 ft.-lbs.	22 1/8″	5387A25	213.67
Fixed Head					
3/4″	200 to 600 ft.-lbs.	10 ft.-lbs.	48 1/2″	5387A56	373.92

High-Accuracy Flat-Beam Torque Wrenches

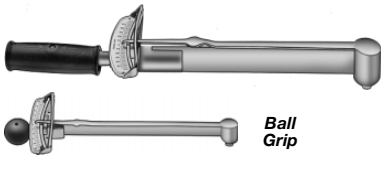

The most accurate nonelectronic torque tools we offer have almost no moving parts and are virtually maintenance-free. Memory pointers show the torque reached. Body is steel; grip is plastic. Accuracy is ±2% of torque setting for 20-100% of torque range (for clockwise and counterclockwise use). Wrenches come with certificate of calibration traceable to NIST.

Also Available: Wrenches with metric (Nm) scales. Please ask for 5358A95 and specify grip style (straight or ball), square drive (1/4″, 3/8″, or 1/2″), and maximum torque (2.5, 5, 12, 22, 34, 70, 140, or 210 Nm).

Square Drive	Torque Range	Graduations	O'all Lg.		
Straight Grip—in.-lbs.					
3/8″	0 to 300 in.-lbs.	10 in.-lbs.	15 1/2″	5358A14	$320.00
3/8″	0 to 600 in.-lbs.	25 in.-lbs.	15 1/2″	5358A15	355.40
Straight Grip—ft.-lbs.					
1/2″	0 to 100 ft.-lbs.	5 ft.-lbs.	17″	5358A16	369.81
1/2″	0 to 150 ft.-lbs.	5 ft.-lbs.	20″	5358A17	460.00
Ball Grip—in.-oz.					
1/4″	0 to 32 in.-oz.	2 in.-oz.	6 3/4″	5358A41	243.33
1/4″	0 to 80 in.-oz.	5 in.-oz.	6 7/8″	5358A42	243.33
1/4″	0 to 160 in.-oz.	10 in.-oz.	6 3/4″	5358A43	243.33
Ball Grip—in.-lbs.					
1/4″	0 to 10 in.-lbs.	0.5 in.-lbs.	6 3/4″	5358A44	243.33
3/8″	0 to 25 in.-lbs.	1 in.-lbs.	7″	5358A45	253.33
3/8″	0 to 50 in.-lbs.	2 in.-lbs.	6 3/4″	5358A46	256.67
3/8″	0 to 100 in.-lbs.	5 in.-lbs.	7 1/4″	5358A47	283.50
3/8″	0 to 200 in.-lbs.	10 in.-lbs.	9 3/4″	5358A48	283.33

Economy Round-Beam Torque Wrenches

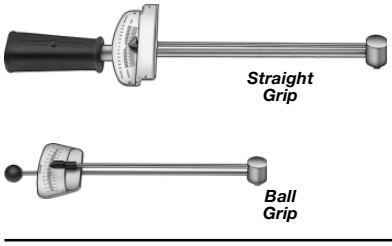

The grip pivots and transmits torque directly to the indicator needle. Body is steel; grip is plastic. Accuracy is ±7% of torque setting for 20-100% of torque range (for clockwise and counterclockwise use).

Square Drive	Torque Range	Graduations	O'all Lg.		
Straight Grip—in.-lbs., Nm					
3/8″	0 to 600 in.-lbs., 0 to 68 Nm	50 in.-lbs., 11 Nm	15″	7181A17	$72.98
Straight Grip—ft.-lbs., Nm					
1/2″	0 to 150 ft.-lbs., 0 to 200 Nm	5 ft.-lbs., 10 Nm	18 1/4″	7181A18	83.78
Ball Grip—in.-lbs., cm-kg					
1/4″	0 to 60 in.-lbs., 0 to 70 cm-kg	2.5 in.-lbs., 0.25 cm-kg	11″	7181A21	64.60

For information about torque tools, see page 2810.

Interchangeable-Head Click-Style Torque Wrenches

Interchangeable heads let you tackle several jobs with one torque wrench. Wrenches have a pin lock for a secure connection between handle and head (handles and heads sold separately). When torque setting is reached, wrenches signal with an audible click and a momentary release. They torque in both clockwise and counterclockwise directions. To reverse direction, remove head, turn handle over, and reattach head. *Note:* Do not exceed maximum torque of handle or head.

Handles— Accuracy is ±4% of torque setting for 20-100% of torque range. Come with certificate of calibration traceable to NIST.

Adjustable handles have a steel body and a rubber grip. Turn grip to set torque, then lock in setting. *Note:* To relieve pressure on the spring and maintain calibration, return setting to lowest reading on scale when not in use. *Factory-set handles* have a steel body and a vinyl grip.

Heads— All heads have one-piece construction and a consistent length to the center of the fastener, so you don't need to recalibrate handles when changing heads. Made of cast alloy steel.

Adjustable Handles

Torque Range	Graduations	O'all Lg.		
in.-lbs.				
10 to 50 in.-lbs.	1 in.-lbs.	9″	**5347A25**	$145.00
30 to 150 in.-lbs.	2 in.-lbs.	9″	**5347A22**	158.59
100 to 600 in.-lbs.	5 in.-lbs.	12¾″	**5347A29**	163.50
ft.-lbs.				
15 to 75 ft.-lbs.	0.5 ft.-lbs.	12¾″	**5347A23**	167.50
30 to 150 ft.-lbs.	1 ft.-lbs.	16″	**5347A24**	207.07
Nm				
4 to 20 Nm	0.2 Nm	9″	**5347A127**	158.59
20 to 100 Nm	0.5 Nm	12⅞″	**5347A128**	167.50
40 to 200 Nm	1.0 Nm	16¼″	**5347A129**	204.69

Factory-Set Handles

To Order: Please specify exact torque setting from the ranges listed below.

Available Torque Settings		O'all Lg.		
30 to 150 in.-lbs.,	3 to 17 Nm	6⅞″	**5347A64**	$158.00
60 to 300 in.-lbs.,	6 to 34 Nm	8¾″	**5347A65**	179.29
150 to 750 in.-lbs.,	17 to 85 Nm	12½″	**5347A66**	195.50
360 to 1,800 in.-lbs.,	30 to 150 ft.-lbs., 40 to 204 Nm	15⅞″	**5347A67**	207.50

Square-Drive Heads

Size	Max. Torque			
Nonratcheting				
¼″	250 in.-lbs.		**5347A55**	$37.88
⅜″	1,250 in.-lbs.		**5347A56**	39.00
½″	2,500 in.-lbs.		**5347A57**	46.00
Reversible Ratchet				
¼″	250 in.-lbs.		**5347A61**	68.69
⅜″	1,250 in.-lbs.		**5347A62**	78.79
½″	2,500 in.-lbs.		**5347A63**	96.50

Wrench Heads

Size	Max. Torque			
Open End— *15° Head Angle*				
¼″	100 in.-lbs.,	8.3 ft.-lbs.	**5347A111**	$51.00
5/16″	150 in.-lbs.,	12.5 ft.-lbs.	**5347A112**	51.00
⅜″	200 in.-lbs.,	16.6 ft.-lbs.	**5347A113**	51.00
7/16″	300 in.-lbs.,	25 ft.-lbs.	**5347A114**	51.00
½″	350 in.-lbs.,	29.1 ft.-lbs.	**5347A115**	54.00
9/16″	400 in.-lbs.,	33.3 ft.-lbs.	**5347A116**	54.00
⅝″	600 in.-lbs.,	50 ft.-lbs.	**5347A117**	54.00
11/16″	800 in.-lbs.,	66.6 ft.-lbs.	**5347A118**	54.00
¾″	1,000 in.-lbs.,	83.3 ft.-lbs.	**5347A119**	54.00
13/16″	1,250 in.-lbs.,	104.1 ft.-lbs.	**5347A121**	61.00
⅞″	1,500 in.-lbs.,	125 ft.-lbs.	**5347A122**	61.00
15/16″	1,750 in.-lbs.,	145.8 ft.-lbs.	**5347A123**	65.66
1″	2,000 in.-lbs.,	166.6 ft.-lbs.	**5347A124**	65.66
1 1/16″	2,250 in.-lbs.,	187.5 ft.-lbs.	**5347A148**	69.50
1⅛″	2,500 in.-lbs.,	208.3 ft.-lbs.	**5347A125**	69.50
1¼″	3,000 in.-lbs.,	250 ft.-lbs.	**5347A126**	74.00
8 mm	16 Nm		**5347A181**	52.00
10 mm	22 Nm		**5347A182**	51.76
11 mm	34 Nm		**5347A183**	51.76

Wrench Heads (Cont.)

Size	Max. Torque			
Open End— *15° Head Angle (Cont.)*				
12 mm	39 Nm		**5347A184**	$55.05
13 mm	39 Nm		**5347A185**	55.05
14 mm	45 Nm		**5347A186**	55.05
15 mm	67 Nm		**5347A187**	55.05
16 mm	67 Nm		**5347A188**	54.50
17 mm	90 Nm		**5347A189**	55.05
18 mm	90 Nm		**5347A191**	55.05
19 mm	113 Nm		**5347A192**	55.05
22 mm	169 Nm		**5347A194**	61.62
24 mm	197 Nm		**5347A195**	65.66
27 mm	254 Nm		**5347A196**	65.66
Box End				
¼″	250 in.-lbs.,	20.8 ft.-lbs.	**5347A131**	56.06
5/16″	350 in.-lbs.,	29.1 ft.-lbs.	**5347A132**	56.06
⅜″	450 in.-lbs.,	37.5 ft.-lbs.	**5347A133**	56.06
7/16″	650 in.-lbs.,	54.1 ft.-lbs.	**5347A134**	56.06
½″	850 in.-lbs.,	70.8 ft.-lbs.	**5347A135**	59.09
9/16″	1,050 in.-lbs.,	87.5 ft.-lbs.	**5347A136**	59.09
⅝″	1,250 in.-lbs.,	104.1 ft.-lbs.	**5347A137**	59.09
11/16″	1,450 in.-lbs.,	120.8 ft.-lbs.	**5347A138**	59.09
¾″	1,800 in.-lbs.,	150 ft.-lbs.	**5347A139**	59.09
13/16″	2,100 in.-lbs.,	175 ft.-lbs.	**5347A141**	63.50
⅞″	2,400 in.-lbs.,	200 ft.-lbs.	**5347A142**	63.50
15/16″	2,700 in.-lbs.,	225 ft.-lbs.	**5347A143**	68.50
1″	3,000 in.-lbs.,	250 ft.-lbs.	**5347A144**	68.50
1 1/16″	3,150 in.-lbs.,	262.5 ft.-lbs.	**5347A145**	71.50
1⅛″	3,300 in.-lbs.,	275 ft.-lbs.	**5347A146**	71.50
1¼″	3,600 in.-lbs.,	300 ft.-lbs.	**5347A147**	80.00
10 mm	50 Nm		**5347A201**	56.06
11 mm	73 Nm		**5347A202**	56.06
12 mm	96 Nm		**5347A209**	59.09
13 mm	96 Nm		**5347A203**	59.09
14 mm	119 Nm		**5347A204**	59.09
15 mm	141 Nm		**5347A205**	59.09
17 mm	163 Nm		**5347A206**	59.09
19 mm	203 Nm		**5347A207**	58.50
24 mm	305 Nm		**5347A208**	68.50
Flare-Nut End— *30° Head Angle*				
5/16″	150 in.-lbs.,	12.5 ft.-lbs.	**5347A161**	59.09
7/16″	250 in.-lbs.,	20.8 ft.-lbs.	**5347A163**	59.09
½″	300 in.-lbs.,	25 ft.-lbs.	**5347A164**	62.63
9/16″	350 in.-lbs.,	29.1 ft.-lbs.	**5347A165**	62.63
⅝″	400 in.-lbs.,	33.3 ft.-lbs.	**5347A166**	62.63
¾″	600 in.-lbs.,	50 ft.-lbs.	**5347A168**	62.63
⅞″	800 in.-lbs.,	66.6 ft.-lbs.	**5347A171**	65.50
15/16″	900 in.-lbs.,	75 ft.-lbs.	**5347A172**	70.50
Hex Key				
3/32″	30 in.-lbs.,	2.5 ft.-lbs.	**5347A151**	62.63
5/32″	135 in.-lbs.,	11.2 ft.-lbs.	**5347A153**	62.63
3/16″	235 in.-lbs.,	19.5 ft.-lbs.	**5347A154**	62.63
¼″	450 in.-lbs.,	37.5 ft.-lbs.	**5347A155**	62.63
5/16″	850 in.-lbs.,	70.8 ft.-lbs.	**5347A156**	62.63

¼″ Square-Drive Torque Wrench/Drivers

Check clockwise and counterclockwise torque on small fasteners. The dial faces the user for easy reading. Tools are nonratcheting and have a memory pointer to show maximum torque reached. Body is die cast zinc; grip is plastic. Overall length is 8⅝″. Accuracy is ±2% of torque setting for 20-100% of torque range. 54765A14 and 54765A15 have a ¼″ female square drive in handle for extra leverage when applying high torque levels.

Come in a plastic case with certificate of calibration traceable to NIST.

Torque Range in.-oz.	*Torque Range* in.-lbs.	*Graduations* in.-oz.	*Graduations* in.-lbs.		
0 to 192	0 to 12	4	0.25	**54765A11**	$237.44
0 to 384	0 to 24	8	0.5	**54765A12**	237.44
0 to 480	0 to 30	16	1	**54765A13**	237.44
_____	0 to 50	—	1	**54765A14**	245.69
_____	0 to 75	—	1	**54765A15**	245.69

For information about torque tools, see page 2810.

Adjustable Click-Style Pipe-Head Torque Wrenches

Head is ideal for tightening applications involving pipe, fittings, or plumbing. Just turn the end of the handle to desired torque setting. Wrench signals with an audible click when torque is reached. Accuracy is ±5% of torque setting for entire torque range (for clockwise use). Jaws are serrated. Wrenches have a steel body and a rubber grip, except 5778A14, which has a metal grip. They come with certificate of calibration.

For Dia.	Torque Range	Graduations	O'all Lg.		
1/2"-1 1/2"	100 to 400 in.-lbs.	5 in.-lbs.	13 1/8"	5778A11	$617.08
1/2"-1 1/2"	15 to 75 ft.-lbs.	1 ft.-lbs.	16 1/8"	5778A12	626.77
1/2"-1 1/2"	30 to 200 ft.-lbs.	2 ft.-lbs.	30 1/8"	5778A13	754.92
1" -2"	60 to 300 ft.-lbs.	3 ft.-lbs.	42 1/2"	5778A14	1,096.31

Factory-Set Click-Style Torque Wrenches

When torque setting is reached, wrenches signal with an audible click and a momentary release. Accuracy is ±4% of torque setting for 20-100% of torque range (for clockwise use). Wrenches have a reversing ratchet head, a steel body, and a vinyl grip. They come with certificate of calibration traceable to NIST.

To Order: Please specify exact torque from the ranges listed.

Sq. Drive	Available Torque Settings	O'all Lg.		
in.-lbs.				
1/4"	10 to 50 in.-lbs.	7 1/4"	7152A3	$159.55
1/4"	30 to 150 in.-lbs.	7 1/4"	7152A9	161.36
3/8"	30 to 150 in.-lbs.	7 7/8"	7152A4	170.45
3/8"	60 to 300 in.-lbs.	10 3/8"	7152A5	177.73
3/8"	150 to 750 in.-lbs.	14 3/4"	7152A6	194.09
in.-lbs., ft.-lbs.				
1/2"	360 to 1,800 in.-lbs., 30 to 150 ft.-lbs.	18 1/4"	7152A7	221.82
1/2"	600 to 3,000 in.-lbs., 50 to 250 ft.-lbs.	22 7/8"	7152A8	228.18
Nm				
1/4"	1.2 to 6 Nm	7 1/4"	7152A211	159.55
1/4"	3.4 to 17 Nm	7 1/4"	7152A221	161.36
3/8"	3.4 to 17 Nm	7 7/8"	7152A231	170.45
3/8"	6.8 to 34 Nm	10 3/8"	7152A241	177.73
3/8"	17 to 85 Nm	14 3/4"	7152A251	194.09
1/2"	40.8 to 204 Nm	18 1/4"	7152A261	221.82
1/2"	67.8 to 339 Nm	22 7/8"	7152A271	228.18

Factory-Set Slip-Release Torque Wrenches

Straight Handle

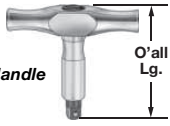

T-Handle

When torque setting is reached, wrenches slip to prevent overtorquing. All torque clockwise and also have a counterclockwise mode: torque, ratchet (nonreversing), or lock up. Lock-up mode allows you to loosen fasteners. Made of chrome-plated steel. Come with certificate of calibration traceable to NIST.

Straight Handle— Accuracy is ±4% of torque setting for entire torque range (in clockwise mode).

T-Handle— Accuracy is ±0.5 in.-lbs. for 2 to 10 in.-lb. torque settings, ±1 in.-lb. for 11 to 25 in.-lb. torque settings, ±2 in.-lbs. for 26 to 50 in.-lb. torque settings, and ±4 in.-lbs. for 51 in.-lb. and higher torque settings (in clockwise mode).

To Order: Please specify exact torque setting from the ranges listed.

Also Available: Metric factory-set wrenches. For straight handle wrenches, please ask for 7151A999 and specify square drive (1/4", 3/8", or 1/2") and exact torque setting. For T-handle wrenches, please ask for 5507A999 and specify square drive (1/4", 3/8", or 1/2") and exact torque setting.

Square Drive	Available Torque Settings	Counter-clockwise Mode	O'all Lg.		
Straight Handle					
in.-lbs.					
1/4"	2 to 20 in.-lbs.	Torque	4"	7151A25	$93.99
3/8"	5 to 60 in.-lbs.	Torque	6 1/8"	7151A27	131.42
3/8"	5 to 60 in.-lbs.	Lock Up	6 1/4"	7151A29	142.24
3/8"	30 to 100 in.-lbs.	Ratchet	5 5/8"	7151A31	133.57
ft.-lbs.					
1/2"	3 to 15 ft.-lbs.	Ratchet	9 3/4"	7151A11	172.62
1/2"	15 to 30 ft.-lbs.	Ratchet	9 3/4"	7151A12	191.36
1/2"	30 to 90 ft.-lbs.	Ratchet	17 1/4"	7151A13	286.03
T-Handle					
in.-lbs.					
1/4"	2 to 50 in.-lbs.	Ratchet	3 3/8"	5507A21	74.03
1/4"	2 to 80 in.-lbs.	Torque	3 1/2"	5507A24	107.90
1/4"	2 to 80 in.-lbs.	Lock Up	3 1/2"	5507A26	131.30
3/8"	2 to 80 in.-lbs.	Ratchet	3 1/2"	5507A22	107.90
3/8"	2 to 80 in.-lbs.	Torque	3 1/2"	5507A25	107.90
3/8"	2 to 80 in.-lbs.	Lock Up	3 1/2"	5507A27	131.30
3/8"	50 to 250 in.-lbs.	Ratchet	5 3/8"	5507A23	241.70
3/8"	50 to 250 in.-lbs.	Torque	5 3/8"	5507A28	241.70

Dial Torque Wrenches

Dual Scale

Single Scale

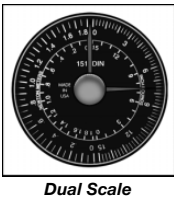

Dual Scale

Monitor torque as it's being applied. Tools have a memory pointer to show maximum torque reached. Accuracy is ±4% of torque setting for 20-100% of torque range (for clockwise and counterclockwise use). All have a steel body and a rubber grip. They come in a case with certificate of calibration traceable to NIST.

Single Scale— Shows units in in.-lbs.

Dual Scale— Show units in in.-lbs. and Nm or ft.-lbs. and Nm.

Square Drive	Torque Range	Graduations	O'all Lg.		
Single Scale					
in.-lbs.					
1/4"	0 to 75 in.-lbs.	1 in.-lbs.	11 1/2"	5718A31	$149.43
3/8"	0 to 250 in.-lbs.	5 in.-lbs.	11 1/2"	5718A32	153.76
Dual Scale					
in.-lbs., Nm					
1/4"	0 to 15 in.-lbs., 0 to 1.8 Nm	0.25 in.-lbs., 0.05 Nm	11 1/2"	5718A41	155.43
1/4"	0 to 30 in.-lbs., 0 to 3.5 Nm	0.5 in.-lbs., 0.1 Nm	11 1/2"	5718A42	150.86
1/4"	0 to 75 in.-lbs., 0 to 9 Nm	1 in.-lbs., 0.2 Nm	11 1/2"	5718A43	149.43
3/8"	0 to 150 in.-lbs., 0 to 18 Nm	2 in.-lbs., 0.5 Nm	11 1/2"	5718A44	150.86
3/8"	0 to 250 in.-lbs., 0 to 30 Nm	5 in.-lbs., 0.5 Nm	11 1/2"	5718A45	153.76
3/8"	0 to 300 in.-lbs., 0 to 35 Nm	5 in.-lbs., 1 Nm	11 1/2"	5718A46	150.86
3/8"	0 to 600 in.-lbs., 0 to 66 Nm	10 in.-lbs., 2 Nm	12 1/2"	5718A47	196.43
ft.-lbs., Nm					
3/8"	0 to 50 ft.-lbs., 0 to 66 Nm	1 ft.-lbs., 2 Nm	12 1/2"	5718A71	215.86
1/2"	0 to 175 ft.-lbs., 0 to 225 Nm	5 ft.-lbs., 5 Nm	21"	5718A73	248.73
1/2"	0 to 250 ft.-lbs., 0 to 330 Nm	5 ft.-lbs., 10 Nm	21"	5718A75	262.47
3/4"	0 to 350 ft.-lbs., 0 to 480 Nm	10 ft.-lbs., 10 Nm	28"	5718A76	401.80
3/4"	0 to 600 ft.-lbs., 0 to 800 Nm	10 ft.-lbs., 20 Nm	47"	5718A77	405.33
1"	0 to 1,000 ft.-lbs., 0 to 1,400 Nm	20 ft.-lbs., 25 Nm	74"	5718A78	688.23

For information about torque tools, see page 2810.

Dial Torque Tool Testers

Check the accuracy of your torque wrenches and screwdrivers. A memory needle remains on maximum torque reading until manually reset to zero. To use with click-style torque wrenches, take the reading from the main dial.

Units measure in both clockwise and counterclockwise directions. Accuracy is ±2% of torque reading for 20-100% of torque range. A female-to-female square drive adapter is included.

In.-lb. testers are 8″ Lg.× 4″ Wd.×2¼″ Ht.; ***ft.-lb.*** testers are 12⅞″ Lg.×4″ Wd.×2½″ Ht. Both testers have ¼″ dia. mounting holes and a steel housing.

Furnished with a certificate of calibration traceable to NIST.

Note: Not for use with power or impact tools.

Male Sq. Drive	Torque Range	Graduations		
in.-lbs.				
¼″	0 to 30 in.-lbs.	0.5 in.-lbs.	**7154A11**	$355.23
¼″	0 to 75 in.-lbs.	1 in.-lbs.	**7154A12**	355.23
¼″	0 to 100 in.-lbs.	2 in.-lbs.	**7154A19**	362.82
⅜″	0 to 150 in.-lbs.	2.5 in.-lbs.	**7154A15**	358.25
⅜″	0 to 300 in.-lbs.	5 in.-lbs.	**7154A17**	407.88
⅜″	0 to 600 in.-lbs.	10 in.-lbs.	**7154A18**	407.88
ft.-lbs.				
½″	0 to 50 ft.-lbs.	1 ft.-lbs.	**7154A32**	410.82
½″	0 to 100 ft.-lbs.	2 ft.-lbs.	**7154A33**	410.82
½″	0 to 150 ft.-lbs.	2.5 ft.-lbs.	**7154A34**	410.82
½″	0 to 200 ft.-lbs.	5 ft.-lbs.	**7154A35**	410.82

Low-Torque Precision Gauges

Gauges precisely measure low torque values. They have both a top dial and side scale with memory pointers that remain on the maximum torque reading, unless noted.

To use, finger-tighten the three-jaw chuck on the object to be measured, then twist either the gauge or object.

Gauges measure in both clockwise and counterclockwise directions. Accuracy is ±2% of torque reading for 10-100% of torque range. The housing is aluminum. All have an aluminum chuck except 83395A14, A29, and A13, which have a steel chuck. Plastic storage case included.

Also Available: Gauges with certificate of calibration traceable to NIST. Please ask for 83395A11 and specify torque range.

Torque Range	Graduations	Chuck Cap.	Head Dia.		
in.-oz.					
0.06 to 0.6 in.-oz.	0.01 in.-oz.	¼″	1¾″	**83395A24** ♣	$463.75
2 to 18 in.-oz.	0.5 in.-oz.	¼″	1¾″	**83395A26**	596.09
4 to 36 in.-oz.	0.5 in.-oz.	¼″	1¾″	**83395A12**	596.09
10 to 120 in.-oz.	2 in.-oz.	11/32″	2½″	**83395A14**	840.00
in.-lbs.					
0.6 to 6 in.-lbs.	0.1 in.-lbs.	11/32″	2½″	**83395A29**	814.55
2 to 15 in.-lbs.	0.2 in.-lbs.	11/32″	2½″	**83395A13**	840.00

♣ Has no memory pointer.

Electronic Torque Tool Testers

Get quick and accurate torque measurements on the easy-to-read digital display.

Testers feature three modes of operation: track (readings go up and down as torque tool moves), peak hold (holds the top torque value), and first peak (for micrometer click-style wrenches). It also displays range in Nm.

Testers measure in both clockwise and counterclockwise directions. Accuracy is ±1% of torque reading for 10-100% of torque range. A female-to-female square drive adapter is included.

Units are 4½″ Ht.×6″ Wd.×6″ Dp. and have a steel housing with ⅜″ dia. mounting holes. 9-volt battery included.

Furnished with a certificate of calibration traceable to NIST.

Note: Not for use with power or impact tools.

Male Sq. Drive	Torque Range in.-lbs.	Torque Range ft.-lbs.	Graduations in.-lbs.	Graduations ft.-lbs.		
¼″	5 to 50	0.4 to 4.17	0.01	0.01	**4457A41**	$1,012.50
⅜″	25 to 250	2 to 21	0.1	0.01	**4457A43**	1,012.50
⅜″	60 to 600	5 to 50	0.1	0.01	**4457A44**	1,068.75
½″	300 to 3,000	25 to 250	1	0.1	**4457A45**	1,116.56
¾″	720 to 7,200	60 to 600	1	0.1	**4457A46**	1,403.44

Torque Gauges/Screwdrivers

The 3″ dial makes it easy to measure torque as you apply it with these combination gauge and screwdrivers.

Accuracy is ±3% of torque reading for entire range. Drivers have a ¼″ female hex drive and include a ¼″ hex × ¼″ square-drive adapter, plus two ¼″ hex-shank insert bits: one ¼″ slotted and one #2 Phillips. See pages 2818-2825 for additional ¼″ hex-shank insert bits. Plastic storage tube included.

Furnished with a certificate of calibration traceable to NIST.

Torque Range	Graduations	O'all Lg.		
For Clockwise and Counterclockwise Use				
in.-oz.				
0 to 3 in.-oz.	0.25 in.-oz.	8″	**5699A25**	$113.54
0 to 6 in.-oz.	0.5 in.-oz.	8″	**5699A17**	113.54
0 to 12 in.-oz.	0.5 in.-oz.	8″	**5699A18**	113.54
0 to 24 in.-oz.	1 in.-oz.	8″	**5699A19**	113.54
0 to 48 in.-oz.	2 in.-oz.	8″	**5699A21**	113.54
0 to 96 in.-oz.	4 in.-oz.	8″	**5699A22**	113.54
in.-lbs.				
0 to 6 in.-lbs.	0.25 in.-lbs.	8″	**5699A11**	113.54
0 to 12 in.-lbs.	0.5 in.-lbs.	8″	**5699A12**	113.54
For Clockwise Use				
in.-lbs.				
0 to 25 in.-lbs.	1 in.-lbs.	10″	**5699A14**	123.33
0 to 50 in.-lbs.	2 in.-lbs.	10″	**5699A26**	123.33
0 to 100 in.-lbs.	5 in.-lbs.	12″	**5699A28**	137.56

Nonadjustable Torque Screwdrivers

Maintain precision in repetitive fastening applications with factory set, nonadjustable torque. Tools slip to prevent over-torquing once the torque setting is reached, except Style F, which clicks.

Accuracy is ±6% of torque setting for 20-100% of torque range. Drive is ¼″ hex female and accepts any ¼″ hex-shank bit (see pages 2818-2825 for bits). Drivers have an aluminum housing.

Furnished with a certificate of calibration traceable to NIST.

Styles A and ***D*** torque in both clockwise and counterclockwise directions and include five colored sleeves.

Styles B, C, E, and ***F*** are for clockwise use only. ***Styles B, C,*** and ***E*** are offered in four sleeve colors.

To Order: Please specify the exact torque setting required. For Styles B, C, and E, also specify sleeve color (blue, gold, green, or red).

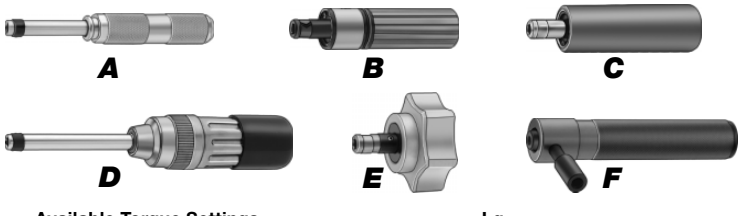

Available Torque Settings	Lg.		
in.-oz./in.-lbs.			
A 20 to 100 in.-oz., 14 to 70 cNm	5½″	**7022A61**	$150.00
B 3 to 192 in.-oz., 0.2 to 12 in.-lbs., 2 to 135 cNm	4⅜″	**5851A11**	351.85
B 8 to 576 in.-oz., 0.5 to 36 in.-lbs., 6 to 406 cNm	5″	**5851A12**	368.70
in.-lbs.			
A 3 to 15 in.-lbs., 0.3 to 1.47 Nm	6¼″	**7022A62**	155.09
C 2 to 36 in.-lbs., 22 to 406 cNm	4½″	**7022A22**	144.31
D 7 to 36 in.-lbs., 0.8 to 4 Nm	7¾″	**7022A63**	194.91
E 5 to 50 in.-lbs.	2¼″	**7022A32**	114.51
F 20 to 170 in.-lbs., 2.25 to 19.2 Nm	5¼″	**7022A43**	196.90
¼″ Hex × ¼″ Square-Drive Male Adapter—1″ long		**52735A21**	2.25

For information about torque tools, see page 2810.

Adjustable Slip-Release Torque Screwdrivers and Sets

A&C

B

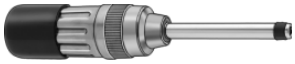

D

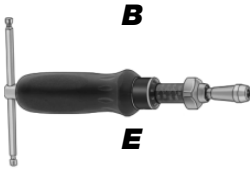

E

Adjust torque by turning the grip or collar. A slip-release mechanism prevents over-torquing once the setting is reached. Drivers torque in both clockwise and counterclockwise directions. Clockwise accuracy is ±6% of torque setting for 20-100% of torque range. Accuracy is not rated in counterclockwise direction. Drive is 1/4″ hex female and accepts any 1/4″ hex-shank bit (see pgs. 2818-2825 for bits).

Furnished with certificate of calibration traceable to NIST.

Styles A and ***C*** have an aluminum housing.

Styles B and ***E*** have a lock that prevents accidental adjustment and an aluminum housing with antistatic rubber grip. *Style E* also have a removable T-bar for extra leverage.

Style D is graduated in both inch and metric scales. It has an aluminum housing and vinyl grip cap.

Screwdrivers

	Torque Range	Graduations	O'all Lg.		
in.-oz.					
A	20 to 100 in.-oz.	2 in.-oz.	6 3/4″	**8554A25**	$242.86
B	20 to 160 in.-oz.	1 in.-oz.	7 1/4″	**5871A51**	422.42
in.-lbs.					
B	2 to 12 in.-lbs.	0.1 in.-lbs.	7 1/4″	**5871A52**	422.42
C	6 to 30 in.-lbs.	1 in.-lbs.	6 3/4″	**8554A26**	242.86
D	2 to 36 in.-lbs.	2 in.-lbs.	7 3/4″	**5716A21★**	228.49
E	10 to 50 in.-lbs.	1 in.-lbs.	7 3/4″	**5871A53**	429.22
E	30 to 80 in.-lbs.	1 in.-lbs.	7 3/4″	**5871A54**	436.87
cNm					
B	20 to 120 cNm	1 cNm	7 1/4″	**5871A55**	422.42
Nm					
E	1 to 6 Nm	0.1 Nm	7 3/4″	**5871A56**	429.22
E	4 to 9 Nm	0.1 Nm	7 3/4″	**5871A57**	436.87

★ On metric scale, torque range: 0.2 to 4 Nm; graduations: 0.2 Nm.

Adapter

1/4″ Hex × 1/4″ Square-Drive Male Adapter— 1″ long

52735A21 ..... $2.25

Sets

22-Piece Set— Includes Style C torque screwdriver, plus miniature and 1/4″ hex-shank insert bits. Miniature bits include slotted size 3/32″; hex size 0.035″; socket size 7/64″; and a miniature bit adapter. The 1/4″ hex-shank bits include slotted sizes 1/8″, 3/16″, 7/32″, and 1/4″; Phillips sizes #0 and #1; hex sizes 0.050″, 1/16″, 5/64″, 3/32″, 1/8″, and 5/32″; socket sizes 1/8″, 3/16″, 1/4″, and 5/16″; and a 1/4″ hex × 1/4″ square-drive adapter. Packed in a plastic case.

8554A61 ..... $349.69

29-Piece Set— Includes Style D torque screwdriver, plus the following 1/4″ hex-shank insert bits: slotted sizes 1/8″, 5/32″, 1/4″, and two 9/32″; Phillips sizes #0, #1, #2, and #3; Torx sizes T10, T15, T20, T25, T30, and T40; square-recess sizes #0, #1, #2, and #3; Pozidriv® sizes #1 and #2; and hex sizes 5/64″, 3/32″, 7/64″, 1/8″, and 9/64″. Set also comes with a 1/4″ hex × 1/4″ square-drive adapter and 1/4″ bit holder. Packed in a plastic case.

5716A52 ..... $266.81

Interchangeable-Blade Click-Style Torque Screwdrivers

Handle

Blade

Select a handle based on torque, then add a slotted-, Phillips-, or Torx-tip blade that fits your needs. Screwdrivers signal with an audible click when torque is reached. Accuracy is ±6% and calibrated to DIN standard.

Choose from nonadjustable and adjustable torque handles. ***Handles*** have a slip-resistant rubber grip and are furnished in a plastic case. ***Blades*** are chrome-plated steel and include a plastic sleeve marked with the blade size. Sleeves are gray on slotted blades, blue on Phillips blades, and green on Torx blades.

Handles

Torque Setting/Range	O'all Lg. with Blade		
Nonadjustable Torque			
5 in.-lbs., 0.56 Nm	7 3/8″	**5263A12**	$71.23
7.5 in.-lbs., 0.84 Nm	7 3/8″	**5263A13**	71.23
10 in.-lbs., 1.12 Nm	7 3/8″	**5263A14**	81.38
15 in.-lbs., 1.69 Nm	7 3/8″	**5263A16**	81.38
20 in.-lbs., 2.25 Nm	7 3/8″	**5263A17**	81.38
25 in.-lbs., 2.82 Nm	7 1/2″	**5263A18**	81.38
30 in.-lbs., 3.39 Nm	7 1/2″	**5263A19**	81.38
Adjustable Torque			
1 to 5 in.-lbs.	7 3/8″	**5263A42**	93.66
5 to 10 in.-lbs.	7 3/8″	**5263A43**	93.66
10 to 50 in.-lbs.	7 1/2″	**5263A24**	107.25
20 to 70 in.-lbs.	7 1/2″	**5263A44**	114.18

Blades—To Order: For single blades, please specify size.

	Available Sizes		
Slotted	5/64″, 3/32″, 1/8″, 9/64″, 5/32″	**5263A31**	$4.62
Phillips	No. 000, 00, 0, 1	**5263A32**	4.93
Torx	T5, T6, T7, T8, T9, T10, T15, T20, T25	**5263A33**	4.93

7-Pc. Slotted and Phillips Blade Set— You'll get one handle with a torque range of 7.5 to 20 in.-lbs. plus one each of slotted blade sizes 3/32″, 9/64″, 5/32″, and 1/8″ and Phillips sizes No. 0 and 1. Packed in a canvas pouch.

5263A52 ..... $119.45

Accessories

Universal Bit Holder for 1/4″ Hex Bits	**5263A34**	$8.98
Square-Drive Holder for 1/4″ Sockets	**5263A35**	8.56

Milwaukee Electric Screwdrivers

Torque Control

Control either torque or depth with these variable speed, reversing screwdrivers. They accept 1/4″ hex-shank screwdriver bits (see pages 2818-28252 for bits). Tools are double insulated and come with a 10-ft. cord with two-prong plug. They operate on 120 VAC, 60 Hz. UL listed, CSA certified, and meet OSHA requirements.

Torque Control— Twist the adjusting collar to set torque. The clutch slips when torque is reached to prevent over-torquing. Includes three bits and a bit holder.

Depth Control— Twist the nosepiece to set driving depth. The nosepiece can be removed to access tight spaces. Furnished with a 5/16″ hex socket driver.

	Torque Range, in.-lbs.	Max. Torque, in.-lbs.	No-Load rpm	Maximum Fastener Size	Amps	Lg.	Wt., lbs.	Milwaukee Model No.		
Torque Control	10-140	140	0-1,200	#14 Self-Drilling	6.5	12 3/4″	3.6	6580-20	**7415A21**	$202.50
Depth Control	———	175	0-2,500	#14 Self-Drilling	6.5	12 1/8″	3.7	6790-20	**7415A23**	137.50

Precision Torque Control Electric Screwdrivers

Lever Operated

The motor stops when a set torque is reached for precise torque control. To adjust torque, remove the flange and turn the torque ring. Tools are for intermittent use (0.5 seconds on for every 3.5 seconds off). They accept 1/4″ hex-shank bits (see pages 2818-2825 for bits). Screwdrivers have a forward/reverse switch and 8-ft. cord with three-prong plug. They operate on 115 VAC, 50/60 Hz. UL listed and meet OSHA requirements.

Lever Operated— Depress lever to activate motor.

Push-to-Start— Press tip against fastener to activate motor.

Torque Range, in.-lbs.	No-Load rpm	Maximum Fastener Size	Amps	Lg.	Wt., lbs.	*Lever Operated*		*Push-to-Start*	
5-15	2,000	#6	0.75	11 1/4″	1.6	**5809A11**	$1,125.82	**5809A13**	$1,125.82
11-26	1,200	#10	0.75	11 1/4″	1.6	**5809A12**	1,125.82	**5809A14**	1,018.07

For information about powered fastening tools, see page 2805.

Cordless Screwdrivers

Battery-powered screwdrivers are easy to maneuver and operate in forward and reverse directions. They accept 1/4″ hex-shank screwdriver bits (see pages 2818-2825 for bits), are UL listed, and meet OSHA requirements. Chargers operate on 120 VAC.

(A) Nonadjustable Torque Control— Economical and for intermittent use. Internal battery and 12-hour charger included.

(B-E) Adjustable Torque Control— Set torque with the adjustable clutch. Choose from flex and pistol-grip handle styles.

Style B have a two-position flex handle. 7183A71 has a six-position clutch to adjust torque. NiCad battery pack and one-hour charger included. 7183A44 has a 21-position clutch to adjust torque and auto shut-off to prevent over-torquing. Two lithium ion battery packs and a 30-minute charger included. *Style C* has a three-position flex handle. Internal battery and 12-hour charger included.

Styles D and *E* are compact and ideal for corners and tight spaces. They have a pistol grip, a 15-position clutch to adjust torque, and a built-in light to illuminate work surfaces. Two lithium ion battery packs, a 30-minute charger, and a storage bag included. *Style E* is not rated for torque.

(F) Nonadjustable Torque/Depth Sensitive— Adjust the nosepiece to set and maintain consistent screw depth. Includes two NiCad battery packs, a one-hour charger, and a storage case.

	Volts	Torque, in.-lbs.	No-Load rpm	Lg.	Wt., lbs.	Manufacturer and Model No.	Screwdrivers		Replacement Chargers		Replacement Battery Packs	
Nonadjustable Torque Control												
A	2.4	20	150	8 7/8″	1.5	Black & Decker 9072CTN	53625A44	$16.91	53625A62	$9.80	53625A72	$15.16
Adjustable Torque Control												
B	2.4	3.5 to 26	400/200	9 3/8″	0.9	Milwaukee 6546-6	7183A71	101.86	7183A73	47.50	7183A75	29.24
B	4	3 to 29	600/200	11 5/8″	1.2	Milwaukee 0490-22	7183A44	141.88	7183A52	49.23	7183A53	44.62
C	6	40/80	600/180	14 1/4″	2.5	Black & Decker PD600	53625A42	35.13	53625A53	5.67	53625A71	19.11
D	12	7 to 150	0-500	7″	2	Milwaukee 2401-22	4443A11	111.25	4443A22	56.92	4443A33	49.23
E	12	———	0-1,050	6 1/4″	2.2	DeWalt DCF610S2	6978A61●	151.88	6978A63	49.23	6978A62	61.54
Nonadjustable Torque/Depth Sensitive												
F	18	180	0-900; 0-2,900	12 1/2″	5.1	DeWalt DC520KA	5687A51	290.10	29835A631	81.82	29835A13	95.29

●Not rated for torque.

Air-Powered Screwdrivers

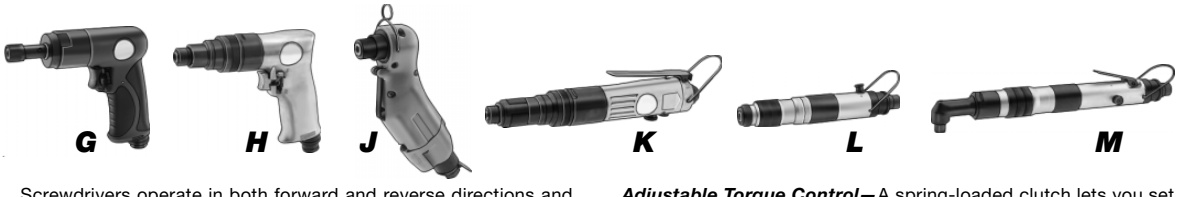

Screwdrivers operate in both forward and reverse directions and have bit holders that accept 1/4″ hex-shank power bits (see pages 2818-2825 for bits). Recommended operating pressure is 90 psi, unless noted.

Nonadjustable Torque Control— Use for general maintenance jobs.

Adjustable Torque Control— A spring-loaded clutch lets you set the correct torque for your application. Screwdrivers ratchet when set torque is reached, unless noted.

Style M has a head angled 90° for hard-to-reach areas.

Style	Torque, in.-lbs.	No-Load rpm	Avg. cfm @ 90 psi	Air Inlet, NPT	For Hose ID	Lg.	Wt., lbs.		
Nonadjustable Torque Control									
G Trigger Operated	125	1,800	4	1/4″	3/8″	7″	2.3	57555A21	$226.00
H Trigger Operated	115	1,800	4	1/4″	3/8″	7 3/4″	2.9	57485A11	254.91
J Trigger Operated	70	1,000	16	1/4″	3/8″	7 1/4″	2.3	58005A51	577.72
Adjustable Torque Control									
H Trigger Operated	13 to 70	900	17	1/4″	1/4″	9 1/2″	2.9	7029A15	572.65
H Trigger Operated	25 to 44	1,800	4	1/4″	3/8″	8 1/4″	2.5	5767A58	401.17
H Trigger Operated	25 to 75	800	4	1/4″	3/8″	8 7/8″	3	5767A59	426.33
K Lever Operated	1.5 to 30	1,000	13	1/4″	1/4″	8 3/4″	1.1	7029A34	617.46
K Lever Operated	3.5 to 17.4	1,100	7	1/4″	1/4″	8 1/4″	1.2	5925A14▲	941.42
K Lever Operated	13 to 40	2,100	16	1/4″	1/4″	10″	2.6	7029A14	645.00
K Lever Operated	45 to 90	1,800	4	1/4″	3/8″	9 1/2″	1.5	5767A51	312.54
L Push-to-Start	1.5 to 30	1,000	13	1/4″	1/4″	8 3/4″	1.1	7029A32	617.46
L Push-to-Start	3.1 to 9.7	1,000	5.6	1/8″	1/4″	7 1/8″	0.7	5925A11▲	917.80
L Push-to-Start	3.5 to 18.5	1,100	7	1/4″	1/4″	7 1/4″	0.9	5925A12▲	941.42
L Push-to-Start	14.1 to 35.2	800	10.5	1/4″	1/4″	8 1/8″	1.4	5925A13▲	988.91
M Lever Operated	9.7 to 18.5	1,100	7	1/4″	1/4″	10 3/4″	1.5	5925A18▲	1,332.07

▲Recommended operating pressure is 85 psi and avg. cfm rating is at 85 psi. Screwdriver stops when set torque is reached.

Angled Heads for Cordless Screwdrivers

Head has a 75° angle for access to confined spaces and a 360° adjustable thumb flange for torque control. Accepts 1/4″ hex-shank screwdriver bits (see pages 2818-2825 for bits). Max. torque is 100 in.-lbs.; max. rpm is 400. Made of steel.

5803A91 ..... $31.51

Automatic Screw Feeders

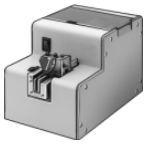

Pour screws into the machine's hopper and they automatically line up on the included rail to be picked up with a magnetic-tipped screwdriver. Pick-up rate is up to two screws per second. Max. screw length is 18 mm (11/16″). Operates on 120 VAC, 60 Hz; power is converted to 12 VDC.

Screw Rail Size (Screw Body Dia.)	Also Accommodates Screw Rail Sizes (Screw Body Dia.)		
#0 (0.060″)	#00 (0.047″)	5931A1	$950.00
#4 (0.112″)	#1 (0.073″), #2 (0.086″), #3 (0.099″)	5931A2	912.50
#10 (0.190″)	#6 (0.138″), #7 (0.151″)	5931A3	912.50

About Screwdriver Bits

Insert Bit

Power Bit

Threaded-Shank Bit

Screwdriver bits are the tips of a screwdriver blade that can be interchanged.

Insert bits are compact bits that allow quick and easy bit changes. Use them in hand drivers (see page 2828) and with a bit holder (see page 2826) in power tools.

Power bits fit directly into power tools to provide less wobble and offer more reach for recessed holes. They are easily recognized by the groove in the shank.

Threaded-shank bits are compact bits that thread directly into your driving tool.

How to Choose a Bit— For information on how to choose the correct size Phillips bit, see page 2832.

Phillips Bits

Insert

Extra-Clearance Insert (3/8″ and 7/16″ Tip Lg.)

Extra-Clearance Insert (1″ and 1 1/2″ Tip Lg.)

Power

Insert Bits

Tip No.	For Screw Size	1/4″ Hex Shank 1″ Long		1/4″ Hex Shank 1 1/2″ Long		5/16″ Hex Shank 1 1/4″ Long		4mm Hex Shank 1 1/8″ Long	
000	000	—	—	—	—	—	—	5750A44	$3.23
00	00	—	—	—	—	—	—	5750A45	3.23
0	0-1	5750A12	$0.63	—	—	—	—	5750A46	3.23
1	2-4	5750A13	.43	5750A41	$0.72	5750A72	$1.39	5750A47	3.23
2	5-10	5750A14	.43	5750A42	.72	5750A91	1.39	—	—
2	5-10	5750A11♠	1.53	—	—	—	—	—	—
3	12, 1/4″	5750A15	.43	5750A43	.72	5750A92	1.39	—	—
4	5/16″-1/2″	5750A23●	2.33	—	—	5750A93	1.39	—	—

♠ Has a wider tip for better contact on inexact recesses. ● 1 1/4″ long.

Extra-Clearance Bits

Tip No.	For Screw Size	Tip Lg.	O'all Lg.	1/4″ Hex Shank	
Insert Bits					
0	0- 1	7/16″	1″	5750A86	$1.47
1	2- 4	3/8″	1″	5750A82	.53
1	2- 4	7/16″	2″	5750A87	1.45
2	5-10	3/8″	1″	5750A83	.43
2	5-10	15/32″	2″	5750A84	.77
2	5-10	1″	1 1/2″	5750A88	1.30
2	5-10	1 1/2″	2″	5750A89	1.23
Power Bits					
2	5-10	1″	2″	5750A97	7.88
2	5-10	5″	6″	5750A98	14.11

Power Bits—1/4″ Hex Shank

Tip No.	For Screw Size	2″ Long		2 3/4″ Long		3″ Long		3 1/2″ Long		4″ Long		6″ Long		12″ Long	
00	00	5751A71	$3.22	5751A44	$4.06	—	—	—	—	—	—	—	—	—	—
0	0-1	5751A65	3.00	5751A66	4.04	—	—	5751A67	$4.39	—	—	5751A68	$8.93	5751A73	$8.12
1	2-4	5751A24	.74	5751A32	.90	5751A41	$1.01	5751A25	1.26	5751A54	$1.57	5751A58	2.95	5751A74	5.81
2	5-10	5751A26	.75	5751A33	.89	5751A42	1.01	5751A27	1.26	5751A55	1.57	5751A59	2.95	5751A75	5.81
3	12, 1/4″	5751A31	.89	5751A35	1.26	5751A43	1.33	5751A36	1.43	5751A56	1.72	5751A64	3.04	5751A76	5.81
4	5/16″-1/2″	5751A69	4.45	—	—	—	—	—	—	—	—	—	—	5751A77	7.62

Threaded-Shank Phillips Bits

Tip No.	For Screw Size	10-32 Thread Lg.		12-24 Thread Lg.	
1	2- 4	1 1/2″	5945A21	$5.02	1 1/4″	5945A24	$4.50
2	5-10	1 1/2″	5945A22	5.00	1 1/4″	5945A25	4.63
3	12, 1/4″	1 1/2″	5945A23	6.32	1 1/4″	5945A26	5.14

Square Phillips Bits

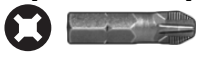
Insert

Power

Also known as Quadrex bits. Use with Phillips/square-drive combination screws (see 91550A on page 3015). Bits have a 1/4″ hex shank.

Tip No.	For Screw Size	Insert Bit Lg.			Power Bits Lg.		
2	5-10	1″	2335A2	$0.61	2″	2335A4	$1.00
2	5-10	—	—	—	3 1/2″	2335A6	1.89

Corrosion-Resistant Phillips Bits

Made of Type 440 stainless steel, these insert bits have a 1/4″ hex shank. 6134A27 has a smaller diameter for extra clearance.

Tip No.	For Screw Size	Lg.			Tip No.	For Screw Size	Lg.		
1	2- 4	1″	6134A21	$3.42	2	5-10	1″	6134A27	$3.42
2	5-10	1″	6134A23	3.42	3	12, 1/4″	1″	6134A25	3.42

Tamper-Resistant Phillips Bits

Also known as pin-in-head Phillips bits, these insert bits have a 1/4″ hex shank.

Tip No.	For Screw Size	Lg.		
2	6-10	1″	54265A31	$3.75
3	12, 1/4″	1″	54265A32	3.75

Torque-Absorbing Phillips Bits

Insert

Power

Well suited for high-torque applications, these bits absorb shock and twisting forces—they wear before they break. Bits have a 1/4″ hex shank.

Titanium-nitride coated bits are wear resistant.

Diamond coated bits have better grip on the fastener than titanium-nitride coated bits and are also wear resistant.

Tungsten-carbide coated bits grip the fastener and are the most wear resistant of the three coated bits.

Tip No.	For Screw Size	Insert Bits Lg.			Power Bits Lg.		
Uncoated							
0	0- 1	1″	5980A11	$0.45	2″	5980A19	$1.69
1	2- 4	1″	5980A12	.45	2″	5980A21	1.02
1	2- 4	—	—	—	6″	5980A24	3.63
2	5-10	1″	5980A13	.45	2″	5980A22	1.07
2	5-10	—	—	—	6″	5980A25	3.49
3	12, 1/4″	1″	5980A14	.45	2″	5980A23	1.17
4	5/16″-1/2″	1 1/4″	5980A15	1.84	—	—	—
Titanium-Nitride Coated							
1	2- 4	1″	36835A42	2.89	2″	36835A53	4.65
1	2- 4	2″	36835A31	5.32	—	—	—
2	5-10	1″	36835A44	2.89	2″	36835A55	4.65
2	5-10	2″	36835A32	5.32	—	—	—
3	12, 1/4″	1″	36835A46	2.89	2″	36835A57	4.66
3	12, 1/4″	2″	36835A33	5.32	—	—	—
Diamond Coated							
1	2- 4	1″	36285A51	3.43	2″	36285A52	5.05
2	5-10	1″	36285A53	3.43	2″	36285A54	5.05
3	12, 1/4″	1″	36285A55	3.43	2″	36285A56	5.05
Tungsten-Carbide Coated							
1	2- 4	1″	4519A52	5.24	2″	4519A72	7.28
2	5-10	1″	4519A54	5.24	2″	4519A74	7.28
3	12, 1/4″	1″	4519A56	5.24	2″	4519A76	7.28

6-Piece Titanium-Nitride-Coated Insert-Bit Set— Includes four each of the #2 as well as one each of the #1 and #3 bits. Bits are 1″ long. Packed in a plastic case.

36835A48 ..... $18.47

For information about screwdriver bits, see page 2818.

Slip-Resistant Phillips Bits

Also known as ACR® bits, ribs forged into the wings of each bit bite into the screw recess to reduce stripping of the screw and bit.

Insert Bits

Tip No.	For Screw Size	1/4" Hex Shank Lg.			5/16" Hex Shank Lg.		
1	2- 4	1"	7164A66	$0.69	—	—	—
2	5-10	1"	7164A67	.69	1 1/4"	7164A73	$1.87
2	5-10	2"	7164A69	1.86	—	—	—
3	12, 1/4"	1"	7164A68	.69	1 1/4"	7164A74	1.90
4	5/16"-1/2"	—	—	—	1 1/4"	7164A75	2.93

6-Piece Insert-Bit Set— Includes two each of #1, #2, and #3 bits with 1/4" hex shank. Bits are 1" long.

7164A72 ..... $4.23

Power Bits

Tip No.	For Screw Size	Lg.	1/4" Hex Shank	
1	2- 4	2"	83445A41	$1.71
1	2- 4	6"	83445A46	3.17
2	5-10	2"	83445A42	1.71
2	5-10	2 3/4"	83445A44	1.98
2	5-10	3 1/2"	83445A45	2.19
2	5-10	6"	83445A47	3.17
3	12, 1/4"	2"	83445A43	1.71
3	12, 1/4"	6"	83445A48	3.17
4	5/16"-1/2"	6"	83445A49	6.87

6-Piece Power-Bit Set— Includes two each of #1, #2, and #3 bits. Bits are 2" long. Packed in a vinyl pouch.

83445A61 ..... $12.12

Impact Phillips Bits

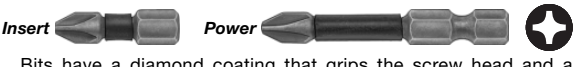

Bits have a diamond coating that grips the screw head and a 1/4" hex shank.

Tip No.	For Screw Size	Insert Bits Lg.			Power Bits Lg.		
2	5-10	1"	4622A11	$4.62	2"	4622A13	$7.13
3	12, 1/4"	1"	4622A12	4.62	2"	4622A14	7.13

Terminal-Screw Bits

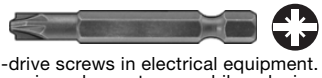

Designed to fit combination-drive screws in electrical equipment. These power bits provide better grip and more torque while reducing stripping. Bits have a 1/4" hex shank.

Tip No.	For Screw Size	Lg.		
1	2- 4	2"	6087A26	$9.82
2	5-10	2"	6087A27	9.82

Bits with Screw Guide

Remove screws in hard-to-reach places. A spring-loaded sleeve guides bits on to the screw head. These power bits are nonmagnetic and have a 1/4" hex shank.

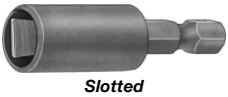
Slotted

Slotted Bits

Tip Wd.	For Screw Size	Sleeve Dia.	Lg.		
0.193"	4- 5	3/8"	3 3/4"	7039A18	$5.81
0.193"	4- 6	3/8"	3 3/4"	7039A19	4.89
0.241"	6- 8	7/16"	2 1/8"	7039A13	6.60
0.241"	6- 8	7/16"	3 3/4"	7039A21	5.16
0.290"	8-10	1/2"	2 1/8"	7039A14	7.02
0.290"	8-10	1/2"	3 3/4"	7039A22	5.55
0.290"	8-10	1/2"	6 3/4"	7039A28	7.88
0.350"	10-12	9/16"	3 3/4"	7039A23	5.07
0.395"	12-14	5/8"	3 7/8"	7039A24	5.84
0.457"	14-16	11/16"	4 1/8"	7039A25	7.06

Phillips Bits

Tip No.	For Screw Size	Sleeve Dia.	Lg.		
2	5-10	7/16"	3 1/2"	7039A31	$9.37
2	5-10	7/16"	6"	7039A32	18.17

Pozidriv® Bits

Bits have a 1/4" hex shank.

Tip No.	For Screw Size	Lg.		
Insert Bits				
0	0- 1	1"	7189A24	$0.70
1	2- 4	1"	7189A26	.57
2	5-10	1"	7189A28	.57
3	12, 1/4"	1"	7189A32	.57
Power Bits				
0	0- 1	2"	52865A11	1.51
0	0- 1	2 3/4"	52865A31	3.44
1	2- 4	2"	52865A12	1.20
1	2- 4	2 3/4"	52865A32	3.44
1	2- 4	3 1/2"	52865A34	3.93
1	2- 4	6"	52865A22	4.23
2	5-10	2"	52865A13	1.20
2	5-10	2 3/4"	52865A33	3.44
2	5-10	3 1/2"	52865A35	3.93
2	5-10	6"	52865A23	3.43
3	12, 1/4"	2"	52865A14	1.20
3	12, 1/4"	3 1/2"	52865A36	3.93
3	12, 1/4"	6"	52865A24	3.56

15-Piece Insert-Bit Set— Includes five each of #1, 8 each of #2, and two each of #3 bits.

7189A35 ..... $10.11

15-Piece Power-Bit Set— Includes five each of #1, 8 each of #2, and two each of #3 bits. Bits are 2" long.

52865A17 ..... $17.62

Impact Pozidriv® Bits

A diamond coating on these bits provides better grip on fasteners. Bits have a 1/4" hex shank.

Tip No.	For Screw Size	Insert Bits Lg.			Power Bits Lg.		
2	5-10	1"	4581A21	$4.62	2"	4581A23	$7.13
3	12, 1/4"	1"	4581A22	4.62	2"	4581A24	7.13

Frearson Bits

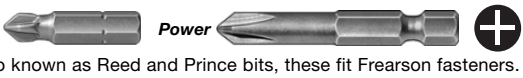

Also known as Reed and Prince bits, these fit Frearson fasteners.

Hex Shank	Insert Bits Lg.			Power Bit Lg.		
1/4"	1 1/8"	52785A25	$0.80	2"	52785A27	$1.11
5/16"	1 3/8"	52785A26	1.56	—	—	—

Shallow-Depth Bits

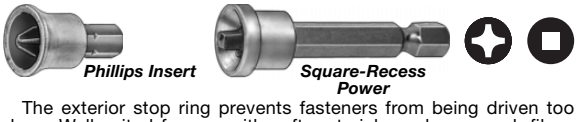
Phillips Insert
Square-Recess Power

The exterior stop ring prevents fasteners from being driven too deep. Well suited for use with soft materials such as wood, fiberboard, decking, paneling, drywall, and insulation board. Bits have a 1/4" hex shank.

Tip No.	For Screw Size	Insert Bits Lg.			Power Bits Lg.		
Phillips							
2	8-10	1"	4955A35	$2.38	2"	4955A36	$3.28
Square Recess							
2	8-10	1"	4955A45	2.40	2"	4955A46	3.28

Triple Square Bits

Also known as XZN bits. They have a 1/4" hex shank.

Size	Insert Bits Lg.			Power Bits Lg.		
M4	1"	5074A11	$3.93	2"	5074A21	$4.96
M5	1"	5074A12	3.93	2"	5074A22	4.96
M6	1"	5074A13	3.93	2"	5074A23	4.96
M8	1"	5074A14	4.78	2"	5074A24	6.04
M10	1"	5074A15	5.32	2"	5074A25	6.69
M12	—	—	—	2"	5074A26	7.33

Screwdriver Bits

For information about screwdriver bits, see page 2818.

Slotted Bits

Insert

Extra-Clearance Insert (3/8″ Tip Lg.)

Extra-Clearance Insert (1 1/8″ Tip Lg.)

Power

Insert Bits

Tip Wd.	For Screw Size			Tip Wd.	For Screw Size			Tip Wd.	For Screw Size			Tip Wd.	For Screw Size		
1/4″ Hex Shank—1″ Long				***1/4″ Hex Shank—1″ Long (Cont.)***				***5/16″ Hex Shank—1 1/2″ Long***				***4mm Hex Shank—1 1/8″ Long***			
7/64″	0- 1	5750A34	$1.93	9/32″	14-16	5750A56	$0.83	5/32″	3- 4	5750A64	$1.24	0.8mm	000	5750A371	$3.23
1/8″	1- 2	5750A35	1.92	***1/4″ Hex Shank—1 1/2″ Long***				3/16″	4- 5	5750A65	1.08	1.2mm	00	5750A372	3.23
9/64″	2- 3	5750A36	1.82	3/16″	4- 5	5750A16	.92	7/32″	6- 8	5750A61	1.24	1.5mm	0	5750A373	3.23
5/32″	3- 4	5750A37	1.83	15/64″	6- 8	5750A27	.92	1/4″	8-10	5750A66	1.24	1.8mm	1	5750A374	3.23
3/16″	4- 5	5750A51	.83	1/4″	8-10	5750A17	.92	9/32″	10-12	5750A67	1.24	2mm	2	5750A375	3.23
7/32″	6- 8	5750A52	.83	9/32″	8-10	5750A18	1.02	5/16″	12-14	5750A69	1.24	2.5mm	3	5750A376	3.23
1/4″	7- 8	5750A53	.83	9/32″	10-12	5750A19	.92	5/16″	14-16	5750A85	1.25	3mm	4	5750A377	3.23
1/4″	10-12	5750A54	.80	9/32″	12-14	5750A21	1.12	3/8″	3/8″	5610A4	1.21	3.5mm	5	5750A378	3.23
9/32″	10-12	5750A55	.83	23/64″	14-16	5750A22	2.73	15/32″	1/2″	5610A5	1.51	4mm	6	5750A379	3.23

Extra-Clearance Insert Bits

Tip Wd.	For Screw Size	Tip Lg.		
1/4″ Hex Shank—1″ Long				
1/8″	1-2	3/8″	5944A31	$1.90
9/64″	2-3	3/8″	5944A32	1.56
5/32″	3-4	3/8″	5944A33	1.65
3/16″	4-5	3/8″	5944A34	1.56
7/32″	5-6	3/8″	5944A35	1.56
1/4″	6-7	3/8″	5944A36	1.56
1/4″ Hex Shank—1 1/2″ Long				
9/64″	2-3	11/8″	5944A41	1.53
5/32″	3-4	11/8″	5944A42	1.53
3/16″	4-5	11/8″	5944A43	1.53
7/32″	5-6	11/8″	5944A44	1.53
1/4″	6-7	11/8″	5944A45	1.53

Power Bits

Tip Wd.	For Screw Size	*2″ Long*		*3″ Long*		*3 1/2″ Long*		*6″ Long*	
1/4″ Hex Shank									
1/8″	1- 2	5748A11	$1.55	5748A22	$2.78	5748A41	$2.89	5748A71	$4.49
9/64″	2- 3	5748A12	1.40	5748A23	2.51	5748A42	2.89	5748A72	4.06
5/32″	3- 4	5748A13	1.22	5748A24▲	1.53	5748A43	2.07	5748A69	3.18
3/16″	4- 5	5748A14	1.15	5748A25	1.29	5748A44	2.07	5748A61	3.15
7/32″	5- 6	5748A15	1.15	5748A26	1.39	5748A45	2.07	5748A62	3.17
1/4″	6- 7	5748A17	1.15	5748A28	1.36	5748A46	1.89	5748A63●	2.89
9/32″	8-10	5748A18	1.15	5748A29	1.36	5748A47	1.83	5748A64	2.94
5/16″	10-12	5748A19	1.12	5748A31	1.59	5748A48	2.07	5748A65	2.93
23/64″	12-14	5748A21	1.41	5748A32	1.90	5748A49	2.06	5748A66	2.93

▲2 3/4″ long. ●For screw size 6-8.

Corrosion-Resistant Slotted Bits

Made of Type 440 stainless steel, these insert bits have a 1/4″ hex shank.

Tip Wd.	For Screw Size	Lg.		
1/8″	1- 2	1″	4966A41	$3.70
5/32″	3- 4	1″	4966A42	3.70
1/4″	8-10	1″	4966A45	3.70
9/32″	10-12	1″	4966A47	3.70

Torque-Absorbing Slotted Bits

These insert bits are coated to grip the fastener and have a 1/4″ hex shank. ***Tungsten-carbide coated*** bits are wear resistant.

Tip Wd.	For Screw Size	Lg.	*Diamond Coated*		*Tungsten-Carbide Coated*	
11/64″	4- 5	1″	—	—	4593A63	$6.10
7/32″	6- 8	1″	36285A42	$4.19	4593A64	6.10
1/4″	8-10	1″	36285A45	4.19	4593A65	6.10
5/16″	12-14	1″	—	—	4593A66	6.10

Hex Bits

Insert

Power

Also known as socket-head bits and Allen bits.

Insert Bits

Hex Size	Lg.			Hex Size	Lg.			Hex Size	Lg.			Hex Size	Lg.		
1/4″ Hex Shank				***1/4″ Hex Shank (Cont.)***				***5/16″ Hex Shank (Cont.)***				***4mm Hex Shank (Cont.)***			
0.05″	1″	8526A46	$1.65	2mm	1″	7389A21	$1.61	1/4″	1 3/8″	8526A84	$1.85	1/8″	1 1/8″	8526A15	$2.13
1/16″	1″	8526A47	1.65	2.5mm	1″	7389A22	1.61	5/16″	1 3/8″	8526A85	1.85	9/64″	1 1/8″	8526A16	2.13
5/64″	1″	8526A61	1.47	3mm	1″	7389A23	1.61	3/8″	1 3/8″	8526A86	1.85	5/32″	1 1/8″	8526A17	2.13
3/32″	1″	8526A62	1.47	4mm	1″	7389A24	1.61	3mm	1 1/4″	7389A31	1.54	0.71mm	1 1/8″	7389A11	2.13
7/64″	1″	8526A63	1.47	5mm	1″	7389A25	1.61	4mm	1 1/4″	7389A32	1.54	0.89mm	1 1/8″	7389A12	2.13
1/8″	1″	8526A64	1.47	6mm	1″	7389A26	1.61	5mm	1 1/4″	7389A33	1.54	1.27mm	1 1/8″	7389A13	2.13
9/64″	1″	8526A65	1.47	7mm	1″	7389A44	1.54	6mm	1 1/4″	7389A34	1.54	1.5mm	1 1/8″	7389A14	2.13
5/32″	1″	8526A66	1.49	8mm	1″	7389A27	1.90	8mm	1 1/4″	7389A35	1.61	2mm	1 1/8″	7389A15	2.13
3/16″	1″	8526A67	1.49	9mm	1″	7389A45	1.80	10mm	1 1/4″	7389A36	3.02	2.5mm	1 1/8″	7389A16	2.13
7/32″	1″	8526A68	1.49	10mm	1″	7389A28	2.12	***4mm Hex Shank***				3mm	1 1/8″	7389A17	2.13
1/4″	1″	8526A69	1.49	***5/16″ Hex Shank***				1/16″	1 1/8″	8526A11	2.13	4mm	1 1/8″	7389A18	2.13
5/16″	1″	8526A71	1.73	5/32″	1 3/8″	8526A81	1.85	5/64″	1 1/8″	8526A12	2.13				
3/8″	1″	8526A72	1.71	3/16″	1 3/8″	8526A82	1.85	3/32″	1 1/8″	8526A13	2.13				
1.5mm	1″	7389A43	3.39	7/32″	1 3/8″	8526A83	1.85	7/64″	1 1/8″	8526A14	2.13				

12-Piece Inch Insert-Bit Set— Includes one each of the 1/4″ hex-shank inch bits, except the 0.05″ size. Packed in a vinyl pouch.

8526A88 ..... $17.33

7-Piece Metric Insert-Bit Set— Includes one each of the 1/4″ hex-shank bits with hex sizes 2, 2.5, 3, 4, 5, 6, and 8 mm. Packed in a vinyl holder.

7389A41 ..... $12.06

Power Bits—1/4″ Hex Shank

Hex Size	Lg.			Hex Size	Lg.			Hex Size	Lg.			Hex Size	Lg.		
1/16″	2″	7397A31	$3.12	9/64″	2″	7397A36	$3.12	1.5mm	2″	7397A56	$6.00	6mm	2″	7397A46	$3.61
5/64″	2″	7397A32	3.12	5/32″	2″	7397A37	3.12	2mm	2″	7397A47	3.61	7mm	2″	7397A57	4.76
3/32″	2″	7397A33	3.16	5/32″	6″	7397A54	8.80	2.5mm	2″	7397A42	3.97	8mm	2″	7397A48	5.48
3/32″	6″	7397A52	8.80	3/16″	2″	7397A38	3.12	3mm	2″	7397A43	3.61	10mm	2″	7397A58	7.28
7/64″	2″	7397A34	3.16	7/32″	2″	7397A39	3.12	4mm	2″	7397A44	3.61				
1/8″	2″	7397A35	3.12	1/4″	2″	7397A41	3.04	5mm	2″	7397A45	3.61				

10-Piece Combination Inch and Metric Power-Bit Set— Includes one each of bits with hex sizes 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, and 3, 4, 5, and 6 mm. Bits are 2″ long. Packed in a plastic bit holder. 7397A29 $34.04

For information about screwdriver bits, see page 2818.

Ball-Point Hex Bits

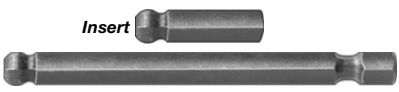

Bits can access sockets at any angle up to 25° and have a 1/4″ hex shank.

Hex Size	Insert Bits Lg.			Power Bits Lg.		
5/64″	1″	5464A31	$1.38	3″	5492A61	$1.97
3/32″	1″	5464A32	1.38	3″	5492A62	1.97
7/64″	1″	5464A33	1.38	3″	5492A63	1.97
1/8″	1″	5464A34	1.38	3″	5492A64	1.97
9/64″	1″	5464A35	1.38	3″	5492A65	1.97
5/32″	1″	5464A36	1.38	3″	5492A66	1.97
3/16″	1″	5464A37	1.38	3″	5492A67	1.97
7/32″	1″	5464A38	1.38	3″	5492A68	1.97
1/4″	1″	5464A39	1.38	3″	5492A69	1.97
5/16″	1 1/2″	5464A41	4.53	3″	5492A71	4.82
3/8″	1 1/2″	5464A42	4.70	3″	5492A72	5.14
1/2″	1 1/2″	5464A43	5.33	3″	5492A73	6.05
2 mm	1″	5464A51	1.38	3″	5492A81	1.97
2.5 mm	1″	5464A52	1.38	3″	5492A82	1.97
3 mm	1″	5464A53	1.38	3″	5492A83	1.97
4 mm	1″	5464A54	1.38	3″	5492A84	1.97
5 mm	1″	5464A55	1.38	3″	5492A85	1.97
6 mm	1″	5464A56	1.38	3″	5492A86	1.97
8 mm	1 1/2″	5464A57	4.53	3″	5492A87	4.82
10 mm	1 1/2″	5464A58	4.89	3″	5492A88	5.26
12 mm	1 1/2″	5464A59	5.26	3″	5492A89	5.89

12-Piece Inch Insert-Bit Set— Includes one each of the inch bits.
5464A75 ..... $27.84

9-Piece Metric Insert-Bit Set— Includes one each of the metric bits.
5464A83 ..... $22.61

12-Piece Inch Power-Bit Set— Includes one each of the inch bits.
5492A75 ..... $30.61

9-Piece Metric Power-Bit Set— Includes one each of the metric bits.
5492A92 ..... $26.32

Screw-Holding Ball-Point Hex Bits

The ball end of these power bits has a steel retaining ring that temporarily holds standard socket head screws during installation and removal. Plus, the ball end can access socket head screws at any angle up to 20°. Bits have a 1/4″ hex shank.

Hex Size	Lg.			Hex Size	Lg.		
1/8″	2″	4538A42	$4.16	1/4″	2″	4538A47	$4.16
9/64″	2″	4538A43	4.16	3 mm	2″	4538A33	4.16
5/32″	2″	4538A44	4.16	4 mm	2″	4538A34	4.16
3/16″	2″	4538A45	4.16	5 mm	2″	4538A35	4.16
7/32″	2″	4538A46	4.16	6 mm	2″	4538A36	4.16

10-Piece Power-Bit Set— Includes one of each bit listed. Packed in a plastic bit holder.
4538A59 ..... $45.05

Screw-Holding Hex Bits

The steel retaining ring temporarily holds standard socket head screws during installation and removal. Bits have a 1/4″ hex shank.

Hex Size	Insert Bits Lg.			Power Bits Lg.		
1/8″	1″	4309A21	$3.21	2″	4417A51	$3.77
9/64″	1″	4309A22	3.21	2″	4417A52	3.77
5/32″	1″	4309A23	3.21	2″	4417A53	3.77
3/16″	1″	4309A24	3.21	2″	4417A54	3.77
7/32″	1″	4309A25	3.21	2″	4417A55	3.77
1/4″	1″	4309A26	3.21	2″	4417A56	3.77
3 mm	1″	4309A13	3.21	2″	4417A43	3.77
4 mm	1″	4309A14	3.21	2″	4417A44	3.77
5 mm	1″	4309A15	3.21	2″	4417A45	3.77
6 mm	1″	4309A16	3.21	2″	4417A46	3.77

10-Piece Insert-Bit Set— Includes one each of the insert bits listed. Packed in a plastic bit holder.
4309A37 ..... $37.65

10-Piece Power-Bit Set— Includes one each of the power bits listed. Packed in a plastic bit holder.
4417A74 ..... $39.38

Tamper-Resistant Hex Bits

Also known as pin-in-socket hex bits.

Hex Size	Insert Bits Lg.			Power Bits Lg.		
1/4″ Hex Shank						
3/32″	1″	7257A63	$2.50	2″	7240A31	$2.98
7/64″	1″	7257A64	2.50	2″	7240A32	2.98
1/8″	1″	7257A22	2.53	2″	7240A33	2.98
1/8″	—	—	—	6″	7240A41	5.95
9/64″	1″	7257A27	2.30	2″	7240A34	2.98
9/64″	—	—	—	6″	7240A42	5.95
5/32″	1″	7257A23	2.30	2″	7240A35	2.98
5/32″	—	—	—	6″	7240A43	5.95
3/16″	1″	7257A24	2.30	2″	7240A36	2.98
3/16″	—	—	—	6″	7240A44	5.95
7/32″	1″	7257A25	2.30	2″	7240A37	2.98
7/32″	—	—	—	6″	7240A45	5.95
1/4″	1″	7257A28	2.30	2″	7240A38	2.98
1/4″	—	—	—	6″	7240A46	5.95
5/16″	1″	7257A29	2.83	2″	7240A39	5.35
5/16″	—	—	—	6″	7240A47	7.42
3/8″	1″	7257A31	2.87	2″	7240A52	6.11
3/8″	—	—	—	6″	7240A53	7.42

11-Piece Inch Insert-Bit Set— Includes one each of the inch bits with 1/4″ hex shank, plus one 5/64″ inch insert bit. Packed in a plastic pouch.
7257A41 ..... $36.80

6-Piece Metric Insert-Bit Set— Includes one each of the metric bits with 1/4″ hex shank. Packed in a vinyl holder.
7257A61 ..... $12.54

Hex Size	Insert Bits Lg.			Power Bits Lg.		
1/4″ Hex Shank (Cont.)						
2.5 mm	1″	7257A51	$2.23	2″	7240A65	$2.95
3 mm	1″	7257A52	2.23	2″	7240A66	2.95
4 mm	1″	7257A53	2.23	2″	7240A67	2.95
5 mm	1″	7257A54	2.23	2″	7240A68	2.95
6 mm	1″	7257A55	2.28	2″	7240A69	2.95
8 mm	1″	7257A56	2.34	2″	7240A71	2.95
4 mm Hex Shank						
5/64″	1 1/8″	7257A71	2.95	—	—	—
3/32″	1 1/8″	7257A72	2.95	—	—	—
7/64″	1 1/8″	7257A73	2.95	—	—	—
1/8″	1 1/8″	7257A74	2.95	—	—	—
9/64″	1 1/8″	7257A75	2.95	—	—	—
5/32″	1 1/8″	7257A76	2.95	—	—	—
2 mm	1 1/8″	7257A81	2.95	—	—	—
2.5 mm	1 1/8″	7257A82	2.95	—	—	—
3 mm	1 1/8″	7257A83	2.95	—	—	—
4 mm	1 1/8″	7257A84	2.95	—	—	—

8-Piece Inch Power-Bit Set— Includes one each of 1/4″ hex-shank bits with hex sizes 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″. Bits are 2″ long. Packed in a plastic pouch.
7240A55 ..... $24.20

6-Piece Metric Power-Bit Set— Includes one each of the metric bits with 1/4″ hex shank. Packed in a plastic pouch.
7240A74 ..... $19.21

Impact Hex Bits

Hex Size	Hex Shank	Insert Bits Lg.			Power Bits Lg.		
4 mm	1/4″	1″	4641A11	$5.33	2″	4641A14	$8.20
5 mm	1/4″	1″	4641A12	5.33	2″	4641A15	8.20
6 mm	1/4″	1″	4641A13	5.33	2″	4641A16	8.20

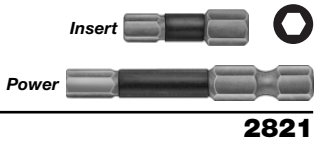

For information about screwdriver bits, see page 2818.

Nutdriver Bits

Also known as nut setters. Bits have a 1/4″ hex shank.

Insert Bits

Hex Size	Hex Dp.	Lg.		
Magnetic				
1/4″	3/32″	1 1/8″	54515A61	$2.32
5/16″	7/64″	1 1/4″	54515A62	2.50
3/8″	3/16″	1 1/8″	54515A63	3.44
7 mm	3/32″	1 1/8″	54515A64	3.73
8 mm	9/64″	1 1/4″	54515A65	3.81
Magnetic (Cont.)				
10 mm	5/32″	1 1/8″	54515A66	$4.11
Nonmagnetic				
3/16″	13/64″	1 3/8″	54515A52	1.66
1/4″	17/64″	1 3/8″	54515A53	1.77
9/32″	9/32″	1 1/2″	54515A54	1.90
Nonmagnetic (Cont.)				
5/16″	9/32″	1 1/2″	54515A55	$2.04
11/32″	9/32″	1 1/2″	54515A56	2.21
3/8″	19/64″	1 1/2″	54515A57	2.67
7/16″	11/32″	1 5/8″	54515A58	3.38

7-Piece Nonmagnetic Insert-Bit Set— Includes one each of the nonmagnetic bits. Packed in a plastic case..... 54515A51 $15.13

Power Bits

Hex Size	Hex Dp.	Lg.		
Magnetic				
3/16″	5/64″	1 5/8″	7291A81	$4.83
3/16″	5/64″	2 5/8″	7291A82	5.32
1/4″	3/32″	1 3/4″	7291A14	2.62
1/4″	3/32″	2 5/8″	7291A21	3.67
1/4″	7/64″	4″	7291A31	4.53
1/4″	7/64″	6″	7291A32	5.05
1/4″	7/64″	8″	7291A46	5.95
1/4″	7/64″	10″	7291A47	6.55
1/4″	7/32″	12″	7291A94	6.98
5/16″	7/64″	1 3/4″	7291A15	2.78
5/16″	7/64″	2 5/8″	7291A22	4.07
5/16″	1/8″	4″	7291A83	5.21
5/16″	1/8″	6″	7291A84	5.48
5/16″	7/32″	12″	7291A95	7.62
3/8″	5/32″	1 3/4″	7291A16	3.44
3/8″	5/32″	2 5/8″	7291A23	5.34
3/8″	5/32″	4″	7291A85	7.98
3/8″	5/32″	6″	7291A86	8.98
3/8″	7/32″	12″	7291A96	8.64
Magnetic (Cont.)				
7/16″	11/64″	6″	7291A48	$8.47
7/16″	13/64″	1 3/4″	7291A38	5.29
7/16″	13/64″	2 5/8″	7291A24	6.70
1/2″	13/64″	1 3/4″	7291A42	7.72
1/2″	13/64″	2 5/8″	7291A45	8.47
4 mm	5/64″	2 5/8″	8534A21	3.96
5 mm	5/64″	1 5/8″	8534A31	3.80
5 mm	5/64″	2 5/8″	8534A43	4.77
5.5 mm	5/64″	1 5/8″	8534A32	3.67
5.5 mm	5/64″	2 5/8″	8534A44	4.97
6 mm	3/32″	1 5/8″	8534A46	3.29
6 mm	3/32″	2 5/8″	8534A22	3.98
7 mm	7/64″	2 5/8″	8534A49	4.92
8 mm	7/64″	1 5/8″	8534A47	3.60
9 mm	5/32″	2 5/8″	8534A23	5.96
10 mm	5/32″	1 3/4″	8534A48	3.94
10 mm	5/32″	2 5/8″	8534A24	5.80
12 mm	13/64″	2 5/8″	8534A25	9.22
13 mm	13/64″	2 5/8″	8534A26	10.82
Nonmagnetic				
1/4″	11/64″	1 3/4″	7291A35	$2.72
1/4″	11/64″	2 5/8″	7291A11	2.96
1/4″	13/64″	1 5/8″	7291A91★	5.32
1/4″	5/8″	1 7/8″	7291A43◆	1.59
5/16″	13/64″	1 5/8″	7291A92★	4.43
5/16″	13/64″	1 3/4″	7291A36	3.05
5/16″	13/64″	2 5/8″	7291A12	3.28
3/8″	13/64″	1 5/8″	7291A93★	5.65
3/8″	15/64″	1 3/4″	7291A37	3.33
3/8″	15/64″	2 5/8″	7291A13	5.03
7/16″	9/32″	1 3/4″	7291A39	4.43
7/16″	9/32″	2 5/8″	7291A19	4.64
5 mm	3/16″	2 5/8″	8534A51	4.21
5.5 mm	3/16″	2 5/8″	8534A52	4.35
6 mm	3/16″	2 5/8″	8534A53	4.40
7 mm	3/16″	2 5/8″	8534A54	4.53
8 mm	3/16″	2 5/8″	8534A55	5.13
10 mm	13/64″	2 5/8″	8534A56	5.67

★ Includes a spring clip for a tighter hold. ◆ Nose is tapered for more clearance.

9-Piece Power-Bit Sets— Include one each of bits with 1/4″ and 5/16″ hex size in 1 5/8″ and 2 5/8″ lengths, one each of bits with 3/8″ and 7/16″ hex size in 1 3/4″ and 2 5/8″ lengths, and a 1/4″ hex size tapered-nose bit in 2″ length. Packed in a vinyl holder.

Magnetic ..... 7291A41 $33.05 Nonmagnetic 7291A51 $29.10

Extra-Long Hollow-Body Power Bits

An extra-deep hole in the shaft accommodates longer screws. Bits are nonmagnetic.

Hex Size	Hex Dp.	Lg.		
1/4″	1 7/8″	3″	5971A31	$4.34
9/32″	1 3/8″	3 1/4″	5971A32	22.63
5/16″	1 7/8″	3″	5971A33	4.68
11/32″	1 3/8″	3 1/4″	5971A34	$24.44
3/8″	1 7/8″	3″	5971A35	5.03
7/16″	1 7/8″	3″	5971A36	5.26
1/2″	1 7/8″	3″	5971A37	$5.63
9/16″	1 3/8″	3 1/4″	5971A38	27.38
5/8″	1 3/8″	3 1/4″	5971A39	30.78

Extra-Strong Lobular Power Bits

Four times stronger than ordinary power bits, these bits make contact on the flat side of fasteners rather than on the corners to dramatically reduce breaks and damage from stripping. Bits are magnetic.

Hex Size	Hex Dp.	Lg.		
1/4″	3/32″	1 3/4″	7291A71	$2.15
1/4″	3/32″	2 5/8″	7291A72	2.44
5/16″	7/64″	1 3/4″	7291A73	2.37
5/16″	7/64″	2 5/8″	7291A74	$2.80
3/8″	5/32″	1 3/4″	7291A75	2.53
3/8″	5/32″	2 5/8″	7291A76	3.21
7/16″	13/64″	1 3/4″	7291A77	$3.37
7/16″	13/64″	2 5/8″	7291A78	4.42

Torx-Plus Bits

Designed for use with Torx-Plus screws, these bits provide better torque transfer and torsional strength as well as longer tool life than standard Torx bits. They also reduce stripping.

Note: Bits are not compatible with standard Torx screws.

Size	Insert Bits Lg.		Power Bits Lg.	
1/4″ Hex Shank				
IP1	1″	54305A41	2″	3716A31
IP2	1″	54305A42	2″	3716A32
IP3	1″	54305A16	2″	3716A33
IP4	1″	54305A17	2″	3716A34
IP5	1″	54305A18	2″	3716A35
IP6	1″	54305A11	2″	3716A21
IP7	1″	54305A12	2″	3716A22
IP8	1″	54305A13	2″	3716A11
IP9	1″	54305A14	2″	3716A12
IP10	1″	54305A21	2″	3716A13
IP15	1″	54305A22	2″	3716A14
1/4″ Hex Shank (Cont.)				
IP20	1″	54305A23	2″	3716A15
IP25	1″	54305A24	2″	3716A16
IP27	1″	54305A15	2″	3716A17
IP30	1″	54305A25	2″	3716A18
IP40	1″	54305A26	2″	3716A19
5/16″ Hex Shank				
IP30	1 1/4″	54305A31	—	—
IP40	1 1/4″	54305A32	—	—
IP45	1 1/4″	54305A33	—	—
IP50	1 1/4″	54305A34	—	—

Size	Insert Bits Lg.		Power Bits Lg.	
1/4″ Hex Shank (Cont.)				
IP20	1″	$1.78	2″	$4.70
IP25	1″	1.78	2″	4.70
IP27	1″	1.78	2″	4.70
IP30	1″	2.22	2″	4.70
IP40	1″	2.22	2″	4.70
5/16″ Hex Shank				
IP30	1 1/4″	5.71	—	—
IP40	1 1/4″	5.71	—	—
IP45	1 1/4″	5.71	—	—
IP50	1 1/4″	5.96	—	—

For information about screwdriver bits, see page 2818.

Torx Bits

Insert Power

Insert Bits

Size	Lg.		
1/4″ Hex Shank			
T3	1″	7013A16	$2.00
T4	1″	7013A17	1.10
T5	1″	7013A18	1.19
T6	1″	7013A19	1.25
T7	1″	7013A21	1.25
T8	1″	7013A22	1.25
T9	1″	7013A23	1.25
T10	1″	7013A24	1.16
T15	1″	7013A25	1.16
T20	1″	7013A26	1.16
T25	1″	7013A27	1.16
T27	1″	7013A28	1.16
T30	1″	7013A29	1.16
T40	1″	7013A31	1.16
T45	1″	7013A35	3.33
T50	1″	7013A36	3.49
T55	1″	7013A37	3.72

Size	Lg.		
5/16″ Hex Shank			
T30	1 1/4″	7013A41	$1.72
T40	1 1/4″	7013A42	1.72
T45	1 1/4″	7013A43	1.72
T50	1 1/4″	7013A44	1.72
T55	1 1/4″	7013A45	1.72
4mm Hex Shank			
T3	1 1/8″	7013A61	2.13
T4	1 1/8″	7013A62	2.13
T5	1 1/8″	7013A63	2.13
T6	1 1/8″	7013A64	2.13
T7	1 1/8″	7013A65	2.13
T8	1 1/8″	7013A66	2.13
T9	1 1/8″	7013A67	2.13
T10	1 1/8″	7013A68	2.13
T15	1 1/8″	7013A69	2.13
T20	1 1/8″	7013A71	2.13

7-Piece Insert-Bit Set— Includes one each of T10, T15, T20, T25, T27, T30, and T40 bits with a 1/4″ hex shank. Packed in a plastic box.

7013A52 ..... $9.74

23-Piece Insert-Bit Set— Includes one each of T5, T6, T7, T8, T9, T45, T50, and T55 bits; two each of T10, T15, T20, T25, T27, T30, and T40 bits; and a magnetic quick-release bit holder. Bits have a 1/4″ hex shank. Packed in a vinyl holder.

7013A56 ..... $37.63

Power Bits

Size	Lg.		
1/4″ Hex Shank			
T3	2″	7396A13	$2.43
T4	2″	7396A14	2.42
T5	2″	7396A79	2.22
T6	2″	7396A74	2.22
T6	2 3/4″	7396A76	3.62
T6	3 1/2″	7396A78	5.08
T7	2″	7396A17	2.22
T7	2 3/4″	7396A77	3.62
T7	3 1/2″	7396A75	3.89
T8	2″	7396A18	2.22
T8	2 3/4″	7396A28	2.41
T8	3 1/2″	7396A38	3.53
T8	6″	7396A51	4.97
T9	2″	7396A19	2.22
T9	2 3/4″	7396A29	3.12
T9	3 1/2″	7396A39	3.53
T10	2″	7396A21	2.06
T10	2 3/4″	7396A31	2.62
T10	3 1/2″	7396A41	3.16
T10	6″	7396A52	4.47
T15	2″	7396A22	2.06
T15	2 3/4″	7396A32	2.38

Size	Lg.		
1/4″ Hex Shank (Cont.)			
T15	3 1/2″	7396A42	$3.16
T15	6″	7396A53	4.47
T20	2″	7396A23	2.06
T20	2 3/4″	7396A33	2.62
T20	3 1/2″	7396A43	3.16
T20	6″	7396A54	4.47
T25	2″	7396A24	2.06
T25	2 3/4″	7396A34	2.62
T25	3 1/2″	7396A44	3.19
T25	6″	7396A55	4.47
T27	2″	7396A25	2.06
T27	2 3/4″	7396A35	2.62
T27	3 1/2″	7396A45	3.16
T27	6″	7396A56	4.47
T30	2″	7396A26	2.06
T30	2 3/4″	7396A36	2.62
T30	3 1/2″	7396A46	3.16
T30	6″	7396A57	4.47
T40	2″	7396A27	2.06
T40	2 3/4″	7396A37	2.62
T40	3 1/2″	7396A47	3.16
T40	6″	7396A58	4.47

11-Piece Power-Bit Set— Includes one each of T6, T7, T8, T9, T10, T15, T20, T25, T27, T30, and T40 bits. Bits are 2″ long. Packed in a plastic box.

7396A81 ..... $28.29

Screw-Holding Torx Bits

Insert Power

Prevent the loss of fasteners with bits that hold on to the screw head during installation and removal. Bits have a 1/4″ hex shank.

Size	Insert Bits Lg.			Power Bits Lg.		
T8	1″	5066A21	$2.46	2″	5066A17	$4.95
T9	1″	5066A22	2.46	—	—	—
T10	1″	5066A23	2.46	2″	5066A11	4.95
T15	1″	5066A24	2.46	2″	5066A12	4.95
T20	1″	5066A25	2.46	2″	5066A13	4.95
T25	1″	5066A26	2.46	2″	5066A14	4.95
T27	1″	5066A27	2.46	2″	5066A16	4.95
T30	1″	5066A28	2.46	2″	5066A15	4.95
T40	1″	5066A29	2.46	2″	5066A18	4.95

Wear-Resistant Torx Bits

Coated with titanium nitride to prolong bit life. These insert bits have a 1/4″ hex shank.

Size	Lg.			Size	Lg.		
T10	1″	57625A41	$3.81	T25	1″	57625A44	$3.81
T15	1″	57625A42	3.81	T30	1″	57625A45	3.81
T20	1″	57625A43	3.81	T40	1″	57625A46	3.81

7-Piece Insert-Bit Set— Includes one each of the bits listed, plus a magnetic insert-bit holder. Packed in a plastic box.

57625A47 ..... $31.00

Torque-Absorbing Torx Bits

Insert Power

Bits are coated to grip the fastener and have a 1/4″ hex shank. ***Tungsten-carbide-coated*** bits are more wear resistant.

Size	Insert Bits Lg.			Power Bits Lg.		
Diamond Coated						
T10	1″	5983A61	$8.04	—	—	—
T15	1″	5983A62	8.04	—	—	—
T20	1″	5983A63	8.04	—	—	—
T25	1″	4584A11●	5.33	2″	4584A14●	$8.20
T25	1″	5983A64	8.04	—	—	—
T30	1″	4584A12●	5.33	2″	4584A15●	8.20
T30	1″	5983A65	8.04	—	—	—
T40	1″	4584A13●	5.33	2″	4584A16●	8.20
T40	1″	5983A66	8.04	—	—	—
Tungsten-Carbide Coated						
T10	1″	5937A51	8.53	—	—	—
T15	1″	5937A52	8.53	—	—	—
T20	1″	5937A53	8.53	—	—	—
T25	1″	5937A54	8.53	—	—	—
T30	1″	5937A55	8.53	—	—	—
T40	1″	5937A56	8.53	—	—	—

● Use with impact drivers.

6-Piece Tungsten-Carbide-Coated Insert-Bit Set— Includes one each of the bits listed. Packed in a plastic case.

5937A57 ..... $46.08

Torx-Align Bits

Insert Power

Bits are slightly tapered to wedge into Torx screws for fast alignment and a good fit.

Size	Insert Bits Lg.			Power Bits Lg.		
1/4″ Hex Shank						
T6	1″	6947A36	$1.93	2″	53275A197	$4.53
T7	1″	6947A37	1.93	2″	53275A198	4.53
T8	1″	6947A38	1.93	2″	53275A199	4.53
T9	1″	6947A39	1.93	2″	53275A201	4.53
T10	1″	6947A41	1.93	2″	53275A191	4.53
T15	1″	6947A42	1.93	2″	53275A192	4.53
T20	1″	6947A43	1.93	2″	53275A193	4.53
T25	1″	6947A44	1.93	2″	53275A194	4.53
T27	1″	6947A45	1.93	2″	53275A195	4.53
T30	1″	6947A46	1.93	2″	53275A196	4.53
T40	1″	6947A47	1.93	—	—	—
5/16″ Hex Shank						
T30	1 1/4″	6947A51	6.53	—	—	—
T40	1 1/4″	6947A52	6.53	—	—	—
T45	1 1/4″	6947A53	6.53	—	—	—

6-Piece Insert-Bit Set— Includes one each of T10, T15, T20, T25, T30, and T40 bits with a 1/4″ hex shank. Packed in a plastic box.

6947A48 ..... $8.10

10-Piece Power-Bit Set— Includes one each of the bits listed. Packed in a plastic bit holder.

53275A32 ..... $38.11

Ball-Point Torx Bits

Access sockets at any angle up to 25°. These power bits have a 1/4″ hex shank.

Size	Lg.			Size	Lg.		
T9	2″	5044A11	$4.86	T25	2″	5044A15	$4.86
T10	2″	5044A12	4.86	T27	2″	5044A16	4.86
T15	2″	5044A13	4.86	T30	2″	5044A17	4.86
T20	2″	5044A14	4.86	T40	2″	5044A19	4.86

For information about screwdriver bits, see page 2818.

Tamper-Resistant Torx Bits

Insert

Power

Insert Bits

Size	Lg.			Size	Lg.		
1/4″ Hex Shank				***5/16″ Hex Shank***			
T7	1″	7377A41	$2.07	T40	1 1/4″	36575A31	$4.89
T8	1″	7377A42	2.07	T45	1 1/4″	36575A32	4.89
T9	1″	7377A43	2.07	T50	1 1/4″	36575A33	4.89
T10	1″	7377A44	1.93	T55	1 1/4″	36575A34	4.89
T15	1″	7377A45	1.93	***4mm Hex Shank***			
T20	1″	7377A46	1.93	T7	1 1/8″	7377A31	2.95
T25	1″	7377A47	1.93	T8	1 1/8″	7377A32	2.95
T27	1″	7377A48	1.93	T9	1 1/8″	7377A33	2.95
T30	1″	7377A49	1.93	T10	1 1/8″	7377A34	2.95
T40	1″	7377A51	1.93	T15	1 1/8″	7377A35	2.95
				T20	1 1/8″	7377A36	2.95

***7-Piece Insert-Bit Set*—**Includes one each of T7, T8, T9, T10, T15, T20, and T25 bits with 1/4″ hex shank. Packed in a plastic box.

7377A55 ..... $20.48

Power Bits

Size	Lg.			Size	Lg.		
1/4″ Hex Shank				***1/4″ Hex Shank (Cont.)***			
T7	2″	7233A84	$5.95	T27	2″	7233A67	$5.95
T7	6″	7233A21	10.28	T27	6″	7233A79	10.37
T8	2″	7233A61	5.95	T30	2″	7233A68	5.95
T8	6″	7233A22	10.27	T30	6″	7233A81	10.37
T9	2″	7233A62	5.95	T35	2″	7233A69	5.92
T9	6″	7233A23	10.33	T35	6″	7233A82	10.37
T10	2″	7233A63	5.95	T40	2″	7233A71	5.95
T10	6″	7233A75	10.37	T40	6″	7233A83	10.37
T15	2″	7233A64	5.95	T45	2″	7233A72	6.88
T15	6″	7233A76	10.37	T45	6″	7233A24	11.26
T20	2″	7233A65	5.95	T50	2″	7233A73	6.88
T20	6″	7233A77	10.37	T50	6″	7233A25	11.26
T25	2″	7233A66	5.95	T55	2″	7233A74	6.88
T25	6″	7233A78	10.37	T55	6″	7233A26	12.42

***10-Piece Power-Bit Set*—**Includes one each of T7, T8, T9, T10, T15, T20, T25, T27, T30, and T40 bits. Bits are 2″ long. Packed in a plastic bit holder.

7233A85 ..... $34.22

Corrosion-Resistant Square-Recess Bits

Made of Type 440 stainless steel, these insert bits have a 1/4″ hex shank.

Tip No.	For Screw Size	Lg.		
1	5-7	1″	6034A31	$3.66
2	8, 10	1″	6034A33	3.66
3	12, 14, 1/4″	1″	6034A35	3.66
4	5/16″-1/2″	1″	6034A37	3.66

Impact Square-Recess Bits

Insert

Power

A diamond coating helps bits grip the screw head. Bits have a 1/4″ hex shank.

Tip No.	For Screw Size	Insert Bits Lg.			Power Bits Lg.		
2	8, 10	1″	4652A21	$4.98	2″	4652A23	$7.57
3	12, 14, 1/4″	1″	4652A22	4.98	2″	4652A24	7.57

Five-Point Tamper-Resistant Torx-Plus Bits

Use with Torx-Plus security screws. These insert bits have a 1/4″ hex shank.

Size	Lg.			Size	Lg.		
IPR8	1″	5043A21	$5.85	IPR25	1″	5043A25	$5.85
IPR10	1″	5043A22	5.85	IPR27	1″	5043A26	5.85
IPR15	1″	5043A23	5.85	IPR30	1″	5043A27	5.85
IPR20	1″	5043A24	5.85	IPR40	1″	5043A28	8.19

Double-End Bits

Use with the reversible-bit screwdrivers listed on page 2828. Bits have a ball detent, unless noted.

Slotted/Phillips

Slotted Tip Wd.	Phillips Tip No.	Lg.		
1/4″ Hex Shank				
1/8″	0	1 1/4″	5645A52	$1.09
3/16″	1	1 1/4″	5645A53	1.09
7/32″	1	1 1/2″	5645A31●	1.43
7/32″	1	2 3/8″	5645A38●	1.63
7/32″	2	2 3/8″	5645A39●	2.16
1/4″	2	1 1/2″	5645A32●	1.43
9/32″	3	1 1/2″	5645A33●	1.43
—	0, 3	2 1/2″	5645A62	1.96
—	1, 2	3″	5645A61	1.73
—	2, 2	1 3/4″	5645A41●	2.31
5/16″ Hex Shank				
1/8″	0	2 3/4″	5645A51	2.61
3/16″	1	2 3/4″	36565A89	2.39
3/16″, 9/32″	—	2 3/4″	36565A87	2.39
—	1, 2	2 5/8″	36565A91	2.39

●Does not have a ball detent.

Torx/Torx and Square Recess/Square Recess

Torx Size	Square Recess Tip No.	Lg.		
1/4″ Hex Shank				
T6, T7	—	1 1/4″	5645A54	$1.83
T6, T7	—	2 1/2″	5645A47	2.09
T8, T9	—	1 1/4″	5645A55	1.83
T8, T10	—	1 1/2″	5645A48	1.62
T8, T10	—	2 1/2″	5645A49	2.09
T10, T20	—	2″	5645A43●	3.00
T15, T20	—	2″	5645A42●	3.00
—	0, 3	1 1/2″	5645A45●	1.85
—	1, 2	1 1/2″	5645A44●	2.11
5/16″ Hex Shank				
T8, T10	—	2 7/8″	36565A81	3.69
T8, T10	—	2 7/8″	36565A82▲	7.54
T15, T20	—	2 3/4″	36565A92	3.71
T15, T20	—	2 7/8″	36565A83▲	7.54
T25, T30	—	2 5/8″	36565A93	3.71
—	0, 1	2 3/4″	36565A94	2.54
—	2, 3	2 3/4″	36565A95	2.54

●Does not have a ball detent.
▲Tamper-resistant security bits for pin-in-head fasteners.

Square-Recess Bits

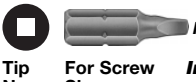
Insert

Power

Also known as Robertson bits, these bits can be used with Scrulox® screws. Bits have a 1/4″ hex shank.

Tip No.	For Screw Size	Insert Bits 1″ Long		Power Bits 2″ Long		2 3/4″ Long		2 7/8″ Long		4″ Long		6″ Long		12″ Long	
00	1, 2	7185A17	$1.71	—	—	—	—	—	—	—	—	—	—	—	—
0	3, 4	7185A18	.60	7021A27	$1.31	7021A28	$1.43	—	—	—	—	7021A29	$3.32	7021A31	$8.75
1	5-7	7185A21	.50	7021A11	.77	7021A14	1.00	—	—	7021A24	$1.87	7021A21	2.23	7021A32	8.75
2	8, 10	7185A22	.51	7021A12	.77	7021A15	1.03	—	—	7021A25	2.03	7021A22	2.57	7021A33	8.75
3	12, 14, 1/4″	7185A23	.49	7021A16	.77	7021A18	.99	—	—	7021A26	2.05	7021A23	2.29	7021A34	8.75
4	—	—	—	7021A42	2.56	—	—	7021A43	$3.58	7021A44★	3.96	7021A45	7.68	7021A46	11.12

★3 1/2″ long.

***8-Piece Insert-Bit Set*—**Includes two each of sizes #0, #1, #2, and #3. Bits are 1″ long. Packed in a vinyl holder.

7185A31 ..... $3.92

***6-Piece Power-Bit Set*—**Includes two each of sizes #1, #2, and #3. Bits are 2″ long. Packed in a vinyl pouch.

7021A39 ..... $10.49

For information about screwdriver bits, see page 2818.

Drilled Spanner Bits

For Screw Size	Insert Bits Lg.			Power Bits Lg.		
1/4″ Hex Shank						
4	1″	52775A26	$2.37	2″	7230A55	$4.33
6	1″	52775A21	1.94	2″	7230A56	4.33
8	1″	52775A22	1.94	2″	7230A57	4.33
10	1″	52775A23	1.94	2″	7230A58	4.33
12	1″	52775A24	1.96	2″	7230A59	4.33
14	1″	52775A33■	5.97	2″	7230A44	4.34
5/16″ Hex Shank						
6	1 1/4″	5560A71	3.43	—	—	—
8	1 1/4″	5560A72	3.43	—	—	—
10	1 1/4″	5560A73	3.43	—	—	—
12	1 1/4″	5560A74	3.43	—	—	—
14	1 1/4″	5560A76■	3.43	—	—	—

■ Also for 1/4″ screw size.

6-Piece Insert-Bit Set— Includes two each of the 1/4″ hex-shank bits for screw sizes 6, 8, and 10. Packed in a plastic bag.

52775A31 ..... $14.77

8-Piece Insert-Bit Set— Includes two each of the 5/16″ hex-shank bits for screw sizes 6, 8, and 10 as well as one each for sizes 12 and 14. Packed in a plastic bag.

5560A81 ..... $32.50

4-Piece Power-Bit Set— Includes one each of the bits for screw sizes 4, 6, 8, and 10. Packed in a plastic bag.

7230A54 ..... $13.33

Tri-Wing® Bits

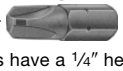

Bits have a 1/4″ hex shank.

Tip No.	For Screw Size	Insert Bits Lg.			Power Bits Lg.		
0	0	1″	7175A44	$3.05	1 1/4″	53265A311	$3.20
1	2	1″	7175A45	2.20	1 1/4″	53265A312	2.88
2	4	1″	7175A46	2.23	1 1/4″	53265A313	3.06
3	6	1″	7175A47	2.29	1 1/4″	53265A314	3.21
4	8	1″	7175A48	2.29	1 1/4″	53265A315	3.06
5	10	1″	7175A49	2.29	1 1/4″	53265A316	3.06

6-Piece Insert-Bit Set— Includes one each of the insert bits. Packed in a vinyl holder.

7175A51 ..... $13.02

Tri-Groove Tamper-Resistant Bits

Use with tri-groove tamper-resistant screws and nuts. These power bits have a 1/4″ hex shank and are 1 1/4″ long.

For Screw Size			For Screw Size		
1- 8	7309A21	$10.70	8-12, 1/4″	7309A23	$11.96
5-11	7309A22	11.52	12-13, 5/16″	7309A24	12.08

4-Piece Set— Includes one each of the bits listed. Packed in a plastic pouch.

7309A25 ..... $43.85

Triangle Bits

These power bits have a 1/4″ hex shank and are 2″ long.

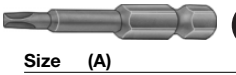

Size	(A)			Size	(A)		
TA18	0.070″	5941A11	$3.77	TA23	0.090″	5941A13	$3.78
TA20	0.083″	5941A12	3.77	TA27	0.100″	5941A14	3.77

Screw-In Hook Bits

A slotted groove in the head of this bit holds and helps turn curved screw-in hooks. Groove is 7/8″ Lg. x 5/32″ Wd. Bit has a 1/4″ hex shank and is 1″ long.

6093A3 ..... $4.80

Torq-Set® Bits

Bits have a 1/4″ hex shank.

For Screw Size	Insert Bits Lg.			Power Bits Lg.		
Standard Tip						
2	1″	36735A55	$2.52	1 1/4″	56075A515	$2.86
4	1″	36735A49	2.52	1 1/4″	56075A509	2.86
6	1″	36735A51	2.52	1 1/4″	56075A511	2.86
8	1″	36735A52	2.52	1 1/4″	56075A512	2.86
10	1″	36735A53	2.54	1 1/4″	56075A513	2.86
1/4″	1″	36735A54	2.71	1 1/4″	56075A514	5.43
5/16″	1″	36735A56	3.59	1 1/4″	56075A516	6.03
Slip-Resistant Tip						
6	1″	5225A11	4.16	2″	5225A21	15.76
8	1″	5225A12	4.24	2″	5225A22	15.76
10	1″	5225A13	4.24	2″	5225A23	16.13
1/4″	1″	5225A14	4.79	—	—	—

10-Piece Standard-Tip Insert-Bit Set— Includes two each of the bits for screw sizes 4, 6, 8, 10, and 1/4″. Packed in a plastic pouch.

36735A75 ..... $27.81

Clutch-Head Bits

Also called butterfly and Type G bits. Bits have a 1/4″ hex shank.

(A)	Insert Bits Lg.			(A)	Power Bits Lg.		
3/32″	1″	7188A31	$1.61	3/32″	2″	69815A51	$2.91
7/64″	1″	7188A21	1.28	1/8″	2″	69815A45	2.14
5/32″	1″	7188A23	1.28	5/32″	2″	69815A46	2.19
11/64″	1″	7188A24	1.28	3/16″	2″	69815A47	2.19
1/4″	1″	7188A32	1.93	1/4″	2″	69815A52	3.64

One-Way-Screw Remover Bits

Tip depth adjusts with a set screw. These power bits have a 1/4″ hex shank.

For Screw Size	For Screw Head Dia.	Lg.		
6	0.225″	2″	5713A11	$17.39
8	0.260″	2″	5713A12	17.88
10	0.339″	2″	5713A13	18.20
12	0.392″	2″	5713A14	18.76
14	0.443″	2″	5713A15	19.86
16	0.665″	2″	5713A16	32.28
18-20	0.684″	2″	5713A17	32.28

Security Bit Sets

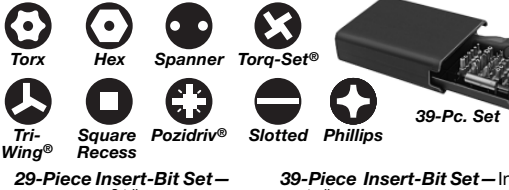

29-Piece Insert-Bit Set— Includes an 8 3/4″ long magnetic driver; 2 1/8″ long bit holder; 1″ long 1/4″ hex male x 1/4″ sq. male adapter; and the following 1/4″ hex shank x 1″ Lg. insert bits:

Tamper-Resistant Torx: T9, T10, T15, T20, T25, T27, T30, and T40

Tamper-Resistant Hex: 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″

Spanner: #6, #8, and #10

Torq-Set®: #5 and #8

Tri-Wing®: #4 and #5

Square Recess: #1 and #2

Pozidriv®: #2

5996A3 ..... $64.41

39-Piece Insert-Bit Set— Includes a 4 5/16″ long cushion-grip handle; 2 1/4″ long magnetic bit holder; 1/4″ female sq. drive x 1/4″ female hex drive adapter (for use with 1/4″ square drive ratchets); and the following 1/4″ hex shank x 1″ Lg. insert bits:

Tamper-Resistant Torx: T8, T10, T15, T20, T25, T27, T30, and T40

Tamper-Resistant Hex: 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, and 5/32″

Spanner: #4, #6, #8, and #10

Torq-Set®: #6, #8, and #10

Tri-Wing®: #1, #2, #3, and #4

Square Recess: #1, #2, and #3

Pozidriv®: #0, #1, #2, and #3

Slotted: 1/4″ and 5/16″

Phillips: #1 and #2

5996A12 ..... $72.02

Slotted Hanger Bits

Use with hanger screws such as the flattened-end fasteners on page 3163. These power bits have a 1/4″ hex shank.

For Screw Size	Slot Wd.	Lg.		
1/4″	1/8″	2 7/8″	5977A42	$4.58
5/16″	3/16″	2 7/8″	5977A43	5.46

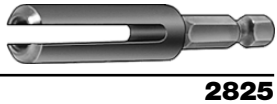

Bit Organizers

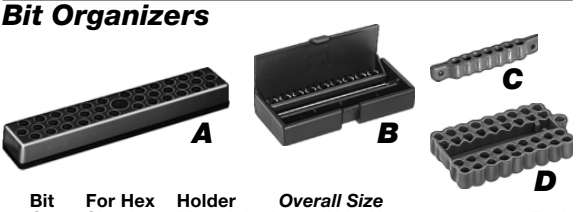

	Bit Cap.	For Hex Shank	Holder Material	Overall Size Lg.	Wd.	Ht.		Each
A	12	1/4"	Plastic	5 1/2"	5/8"	5/8"	52745A18★	$8.48
A	37	1/4"	Plastic	7"	1 1/2"	1"	52745A21★	17.28
B	9	1/4"	Plastic	4 1/2"	2 1/4"	3/4"	83765A32	6.50
B	60	1/4"	Plastic	4 1/2"	3 1/4"	1 1/2"	83765A33	8.98
C	21	1/4"	Vinyl	3 1/2"	5/8"	1/2"	56635A21	1.71
								Pkg. of 2
C	7	1/4"	Vinyl	2 1/4"	1/4"	1/2"	56635A23●	$8.34
C	9	1/4"	Vinyl	3"	1/4"	1/2"	56635A24	8.34
D	36	1/4"	Vinyl	3 1/2"	1 3/4"	1/2"	56635A22	13.56

★ Nonmarring magnetic base. ● Includes split ring key chain.

Insert-Bit Holders

(E) Plain End—Have a retaining ring, except 7225A24. Bodies are stainless steel.

(F) Knurled End—Tightens onto the bit for a more secure hold. Bodies are stainless steel, except 7225A42 and A49 have a bronze body.

(G) Wobble-Reducing Plain End—Machined from a single piece of metal to create a concentric holder with less wobble. Bodies are stainless steel, unless noted.

(H) Quick-Change Chuck—Pull back the chuck to lock or release bits. Body is aluminum.

(J) Quick-Change Click-Lock Chuck—Chuck clicks and locks in open position to remove bits; locks in closed position to hold them. Bodies are stainless steel.

(K) Impact Plain End—Designed for use with impact drivers. Body is steel.

(L) Screw Guiding—Keep fasteners in position and prevent wobbling. Outer sleeve slides over screw head. Maximum screw head diameter is 3/8". Bodies are stainless steel. Sleeve is aluminum, unless noted.

(M) Mini Bit Holder—Accepts 4 mm hex-shank bits. Made of steel.

	Hex Shank	Hex Opening	Lg.		
Magnetic Holders					
E	1/4"	1/4"	2 3/8"	7225A28	$5.15
E	1/4"	1/4"	2 5/8"	7225A29	5.80
E	1/4"	1/4"	2 7/8"	7225A24	8.00
E	1/4"	1/4"	3 7/8"	7225A31	7.66
E	1/4"	1/4"	5 7/8"	7225A32	10.30
E	1/4"	1/4"	7 7/8"	7225A33	13.70
E	1/4"	1/4"	10"	7225A34	17.36
F	1/4"	1/4"	2 7/8"	7225A49	7.99
F	1/4"	1/4"	3"	7225A41	8.02
F	1/4"	1/4"	6"	7225A42	10.24
G	1/4"	1/4"	2 1/8"	7225A21	5.31
G	1/4"	1/4"	3"	7225A22	6.41
G	1/4"	5/16"	3 1/4"	7225A25▲	12.85
G	5/16"	1/4"	3 1/8"	7225A71▲	21.88
G	5/16"	5/16"	3 1/8"	7225A72▲	22.72
J	1/4"	1/4"	2 3/8"	8345A38	12.56
J	1/4"	1/4"	2 7/8"	8345A36	17.00
K	1/4"	1/4"	3"	7225A76▲	27.44
L	1/4"	3/8"	3 1/8"	52885A33	5.77
L	1/4"	3/8"	4 5/8"	52885A34	6.32
L	1/4"	3/8"	4 5/8"	52885A36♥	6.74
Nonmagnetic Holders					
F	1/4"	1/4"	2 3/8"	7225A59	6.48
G	1/4"	1/4"	2 1/8"	7225A51	3.02
G	1/4"	1/4"	4"	7225A61	5.25
G	1/4"	1/4"	6"	7225A62	8.80
G	1/4"	1/4"	10"	7225A63	14.37
G	5/16"	1/4"	2 1/2"	7225A64▲	8.99
G	5/16"	5/16"	2 1/2"	7225A66▲	14.31
H	7/16"	7/16"	2 3/8"	7225A73	9.25
M	1/4"	4 mm	2 3/8"	7225A75	7.05

▲ Steel body. ♥ Sleeve is clear plastic.

Power-Bit Holders

Slide the quick-change chuck down to secure or release a power bit. Made of steel.

Hex Shank	Hex Opening	Lg.		
1/4"	1/4"	2 5/8"	7179A11	$10.59
1/4"	1/4"	6"	7179A12	11.88
1/4"	1/4"	12"	7179A13	13.53
3/8"	1/4" to 3/8"	2 3/4"	4534A11	13.50

Flexible Screwdriver-Bit Extensions

Access hard-to-reach spots with extensions that flex up to 90°. They have a 1/4" hex male end and a 1/4" hex female end. Made of chrome-plated steel.

Use the ***light duty*** extension with hand drivers and cordless screwdrivers. Use the ***heavy duty*** extension with air and electric drivers and drills.

	Max. Torque, in.-lbs.	Lg.		
Light Duty	42	7 1/2"	85255A11	$8.49
Heavy Duty	156	11"	85255A13	18.53

Square-Drive Insert-Bit Holders

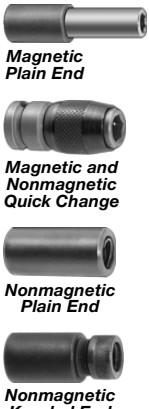

Use with male square-drive tools. Made of steel.

Quick-Change Chuck—Easily locks or releases bits—just pull back the collar.

Knurled End—Tightens onto the bit for a more secure hold.

Female Square Drive	Hex Opening	Lg.		
Magnetic Plain End				
1/4"	1/4"	2"	7229A61	$13.86
3/8"	1/4"	2 1/8"	7229A62	18.46
3/8"	5/16"	2 1/2"	7229A82	17.00
1/2"	1/4"	2 3/4"	7229A83	16.97
Magnetic Quick-Change Chuck				
1/4"	1/4"	3"	7229A74	26.59
3/8"	1/4"	3 1/4"	7229A75	30.81
Nonmagnetic Plain End				
1/4"	1/4"	7/8"	7229A42	4.20
3/8"	1/4"	1 1/4"	7229A44	3.86
3/8"	5/16"	1 1/4"	7229A46	3.92
1/2"	1/4"	1 3/4"	7229A81	6.06
1/2"	5/16"	1 1/2"	7229A56	6.56
Nonmagnetic Plain End with Set Screw				
1/4"	1/4"	7/8"	7229A77	4.06
3/8"	1/4"	1 1/8"	7229A78	4.26
3/8"	5/16"	1 1/8"	7229A79	6.36
Nonmagnetic Knurled End				
1/4"	1/4"	1 1/8"	7229A48	3.99
3/8"	1/4"	1 1/8"	7229A52	4.45
3/8"	5/16"	1 3/8"	7229A54	4.06
Nonmagnetic Quick-Change Chuck				
1/4"	1/4"	1 1/4"	53655A32	25.00
3/8"	1/4"	1 5/8"	53655A33	26.29
3/8"	5/16"	2"	53655A34	25.43
1/2"	1/4"	2"	53655A35	27.73
1/2"	5/16"	2"	53655A36	29.94

Adjustable-Depth Insert-Bit Holders

An extra-strong magnet and bit-locking system with depth stop securely hold your screws. They have a 1/4" hex shank and a 1/4" hex opening. Bit holders are 2 3/8" long. Made of stainless steel.

For Use With		
Flat-head screws #1 and #2 and Torx T20 and smaller	6005A1	$20.40
Flat-head screws #0 and #1and Torx T15 and smaller	6005A3	21.24

Insert- and Power-Bit Adapters

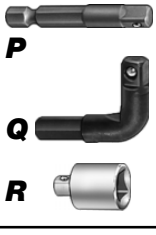

Adapters allow hex-shank screwdrivers to accept square-drive tools except Style R, which is a male to female square drive adapter. Made of steel.

	Style	Hex Size, male	Sq. Dr. Size	Lg.		
N	Insert	1/4"	1/4" M	1"	52735A21	$2.25
P	Power	1/4"	1/4" M	2"	52735A23	2.25
P	Power	1/4"	1/4" M	3"	52735A25	2.15
P	Power	1/4"	1/4" M	3 7/8"	52735A27	3.04
P	Power	1/4"	3/8" M	2"	52735A45	2.92
Q	Insert	1/4"	1/4" M	1 3/8"	52735A44	4.41
R	Socket	1/4"	3/8" F	1"	5522A41	6.92
R	Socket	1/2"	3/8" F	1 3/8"	5522A33	5.44

For information about screwdriver bits, see page 2818.

Combination Bit Sets

Phillips | Slotted | Torx | Square Recess | Pozidriv® | Hex | Nutdriver | Clutch | Frearson

5399A16

Insert bits vary from 1″ to 1⅜″ long. Power bits are approximately 2″ long, unless otherwise noted.

Pcs.	Bit Shank		Accessories		
Bits and Adapters					
7	1/4″ hex insert with diamond coating	***Slotted:*** 7/32″ and 1/4″; ***Phillips:*** one each #1 and #3; two each #2.	2 1/4″ magnetic bit holder in a plastic case	36285A65	$33.79
9	1/4″ hex insert for impact drivers	***Phillips:*** one each #2 and #3; ***Torx:*** one each T25, T30, and T40; ***Square Recess:*** one each #2 and #3; ***Pozidriv®:*** one each #2 and #3	3″ magnetic bit holder and plastic case	8346A31	$75.26
10	1/4″ hex power	***Slotted:*** 1/8″, 3/16″, 7/32″, and 1/4″; ***Phillips:*** #1, #2, and #3; ***Square Recess:*** #1, #2, and #3	Packed in a molded plastic bit holder, includes a belt clip	5965A12	$19.57
10	1/4″ hex insert	***Slotted:*** 3/16″, 7/32″, and 1/4″; ***Phillips:*** #1, #2, and #3; ***Hex:*** 1/8″, 5/32″, and 3/16″	2 3/8″ magnetic quick-change insert-bit holder in a plastic case	8348A17	$26.55
11	1/4″ hex insert	***Slotted:*** 7/32″, 1/4″, and 5/16″; ***Phillips:*** #0, #1, #2, and #3; ***Torx:*** T10, T15, and T20	2 3/8″ quick-change chuck packed in a plastic case	8348A11	$25.45
16	1/4″ hex power	***Phillips:*** 3 1/2″ long: #2 and #3; 6″ long: #1 and #2; ***Torx:*** 3 1/2″ long: T15 and T20; 6″ long: T20, T25, T27, and T30; ***Pozidriv®:*** 3 1/2″ long: #2; ***Nutdrivers:*** 5/16″	2 1/2″ quick-change chuck, 6″ quick-change chuck extension, and 1/4″ × 1/4″ hex male and 3/8″ × 1/4″ hex male adapters packed in a plastic case	5965A16	$44.66
17	1/4″ hex insert	***Slotted:*** two each 7/32″, 1/4″, and 9/32″; one each 3/16″; ***Phillips:*** four each #2; two each #1, #3; one each #0	2 1/8″ magnetic insert bit holder packed in a vinyl holder	8346A41	$15.76
30	1/4″ hex insert	***Slotted:*** 13/64″, 15/64″, and 9/32″; ***Phillips:*** two each #1 and #3; seven each #2; ***Square Recess:*** one each #1 and #3; five each #2; ***Double-End:*** one each slotted 15/64″/15/64″; two each Phillips #2/#2; one each square recess #2/#2; ***Nutdrivers:*** 1/4″, 5/16″, 3/8″, and 7/16″	2 1/4″ magnetic insert-bit holder in a plastic case	52725A34	$28.04
34	1/4″ hex power	***Phillips:*** one each #1, #2, #3 in 2″, 3 1/2″, and 6″ lengths; ***Torx:*** 2″ long: T8, T9, and T10; 3 1/2″ long: T15, T20, T25, and T30; 6″ long: T15, T20, T25, T27, and T30; ***Pozidriv®:*** 2″ long: #1, #2, and #3; 3 1/2″ long: #2; 6″ long: #2; ***Nutdrivers:*** 5/16″, 3/8″, and 1/2″	2 1/2″ quick-change chuck, 6″ quick-change chuck extension, and 1/4″, 3/8″, and 1/2″ × 1/4″ hex male adapters in a plastic case	5965A13	$72.88
39	1/4″ hex insert 1/4″ hex power	***Slotted:*** two each 1/4″; 1 each 3/16″, 7/32″, and 9/32″; ***Phillips:*** eight each #2; two each #1, #3; one each #0, #2 reduced dia.; ***Slotted:*** three each 1/4″; two each 7/32″; one each 3/16″; ***Phillips:*** eight each #2; two each #1 and #3	3″ magnetic insert-bit holder and 1/4″ sq. female × 1/4″ hex female bit holder packed in a vinyl bit stand	53975A43	$35.86
51	1/4″ hex insert	***Phillips:*** 10 each #1 and #2; five each #3; ***Hex:*** 10 each 1/8″ and 3/16″; five each 5/32″	2 3/8″ magnetic quick-change insert-bit holder in a plastic case	8346A73	$62.28
Bits with Drivers and Adapters					
12	1/4″ hex insert	***Slotted:*** 3/16″ and 9/32″; ***Phillips:*** #1 and #2; ***Nutdrivers:*** 3/16″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, and 7/16″	7 3/4″ magnetic ratcheting screwdriver handle packed in a plastic tube	7383A34	$38.86
27	1/4″ hex insert	***Slotted:*** 3/16″, 1/4″, and 9/32″; ***Phillips:*** #1 and #2; ***Hex:*** 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, and 5/16″; 1.5, 2, 2.5, 3, 4, and 5 mm	4 1/8″ single-end offset ratchet wrench, 4 1/4″ bit holder/extension, 3 5/8″ screwdriver handle, and 1/4″ hex male × 1/4″ sq. male adapter in a plastic case	52725A27	$40.60
27	1/4″ hex insert with knurled end	***Slotted:*** 3/16″, 1/4″, and 3/8″; ***Phillips:*** #1 and #2; ***Hex:*** 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″; 1.5, 2, 2.5, 3, 4, 5, and 6 mm	3 3/4″ midget stainless steel ratchet wrench, 3 1/2″ extension, 1/4″ hex male × 1/4″ sq. drive adapter, and screwdriver handle in a plastic case	5399A16	$40.07
27	1/4″ hex insert	***Slotted:*** 5/32″, 11/64″, 7/32″, 1/4″, and 9/32″; ***Phillips:*** #1, #2, and #3; ***Hex:*** 5/64″, 3/32″, 1/8″, 5/32″, and 3/16″; ***Torx:*** T10, T15, T20, T25, T30, and T40; ***Square Recess:*** #0, #1, #2, and #3; ***Clutch:*** 1/8″ and 5/32″	7 3/4″ magnetic driver and 2 1/4″ magnetic bit holder	53365A43	$42.22
29	1/4″ hex insert	***Slotted:*** 3/16″, 1/4″, and 9/32″; ***Phillips:*** #1, #2, #3, and #2 reduced diameter; ***Hex:*** 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″; 2, 2.5, 3, 4, 5, 6, and 8 mm	7 3/4″ magnetic driver, 2 1/8″ magnetic insert-bit holder, and 1/4″ hex male × 1/4″ sq. male adapter packed in a plastic case	53365A32	$57.83
35	1/4″ hex insert 5/16″ hex insert	***Slotted:*** 3/16″, 1/4″, and 9/32″; ***Phillips:*** #1 and #2; ***Hex:*** 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 7/32″, and 1/4″; ***Torx:*** T10, T15, T20, T25, T27, and T30; ***Square Recess:*** #1, #2, and #3; ***Pozidriv®:*** #1 and #2; ***Clutch:*** 3/32″, 1/8″, 5/32″, and 3/16″; ***Hex:*** 5/32″ and 3/16″; ***Torx:*** T40, T45, and T50	5 1/2″ double-end straight ratchet wrench, 5 3/8″ double-end offset ratchet wrench, and 4 1/2″ magnetic extension packed in a molded plastic case	52815A15	$104.15
40	1/4″ hex insert	***Slotted:*** one each 7/64″, 5/32″, and 7/32″; two each 9/32″; ***Phillips:*** #0, #1, #2, and #3; ***Hex:*** 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″; 2.5, 3, 4, 5, and 6 mm; ***Torx:*** T10, T15, T20, T25, T27, T30, and T40; ***Square Recess:*** #0, #1, #2, and #3; ***Pozidriv®:*** #1 and #2; ***Clutch:*** 5/32″	7″ magnetic driver, 1 3/4″ magnetic bit holder, and 1/4″ sq. male × 1/4″ hex male socket adapter packed in a plastic case	8533A83	$56.95
43	1/4″ round insert with 30 teeth	***Slotted:*** 3/32″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 9/32″, 5/16″, and 3/8″; ***Phillips:*** #0, #1, #2, #3, and #4; ***Frearson:*** 1/4″; ***Hex:*** 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, and 5/16″; 1.5, 2, 2.5, 3, 4, 5, 6, and 8 mm	4 1/2″ stainless steel ratchet wrench, 4 1/2″ extension, 3 3/4″ screwdriver handle, end cap, and 1/4″ sq. male × round male socket adapter in a plastic case and three bit caddies	7286A55	$102.69

Ratchet Wrenches— Knurled fingertip knobs help turn fasteners more quickly. Single-end wrench holds 1/4″ hex-shank bits. Double-end wrenches hold both 1/4″ and 5/16″ hex-shank bits.

Style	Lg.		
Single-End Offset	4 1/8″	52725A31	$11.79
Double-End Offset	5 3/8″	52815A11	14.86
Double-End Straight	5 1/2″	52815A21	14.68

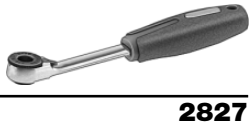

Magnetic-Bit Screwdriver Sets

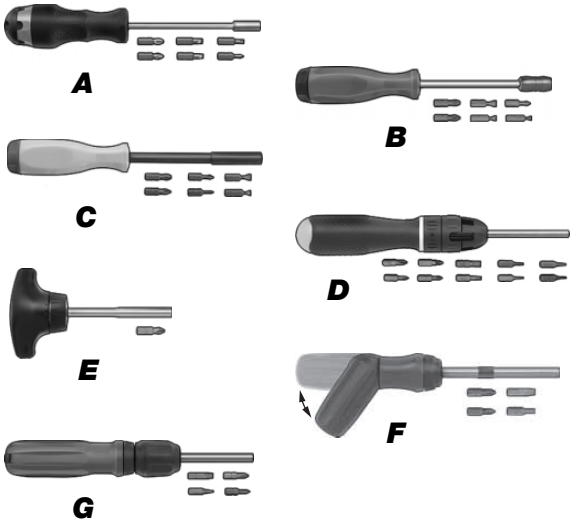

A strong magnet in the shank holds bits firmly in place. Instead of using multiple screwdrivers, simply change the bit to match your fastener. Tools have steel shanks and plastic handles, unless stated otherwise. Bits are steel. For additional insert bits, see pages 2818-2825.

***A* Ergonomic Style—**Handle design reduces fatigue and provides more torque than regular screwdrivers. Bits store in handle.

***B* Quick-Release Chuck Style—**A quick-release chuck locks bits firmly in place but makes them easy to change. Handle is designed to reduce fatigue and has a bit holder that's indexed for easy identification.

***C* Insulated Style—**Insulated for safety, handle meets 1,000-volt EN 60900 specifications and is contoured for a comfortable grip. Handle has a bit holder that's transparent for easy identification.

***D* Ultra-Grip Ratchet Style—**Handle has a hard interior with a soft textured grip that allows you to achieve maximum torque with minimal effort. Handle has a three-position ratchet (left, right, and lock) for easier driving and a rotating bit holder for easy access to bits.

***E* T-Handle Ratchet Style—**Screwdrivers have a T-handle to provide a firm grip for improved torque. Ratchets have three positions: left, right, and lock. Shank is stainless steel. No bit storage.

***F* Multiposition-Grip Ratchet Style—**Use handle straight or in a pistol grip. Has two ratchet positions (left and right). Shank is aluminum alloy. Bits store in handle.

***G* Two-Speed Ratchet Style—**Use standard 1:1 speed or change to 4:1 speed where one turn of the handle equals four turns of the bit. Use 1:1 for extra torque and power, 4:1 is for fast driving. Bits store in handle.

	Hex Opening	O'all Lg.	Slotted Bit Sizes	Phillips Bit Sizes		Per Set
A	1/4"	9"	3/16", 7/32", 1/4"	#1, #2, #3	5829A35	$16.07
B	1/4"	9"	3/16", 7/32", 1/4"	#1, #2, #3	8343A43	28.32
C	1/4"	9"	7/32", 1/4"	#0, #1, #2, #3	7315A71	19.48
D	1/4"	10"	3/16", 1/4"	#1, #2	4057A52★	17.68
E	1/4"	3 7/8"	—	#2	6541A11	32.07
E	1/4"	5 13/16"	—	#2	6541A12	33.31
E	1/4"	9 13/16"	—	#2	6541A13	33.87
F	1/4"	9"	3/16", 1/4"	#1, #2	4488A25	27.45
G	1/4"	9"	3/16", 1/4"	#1, #2	5647A65	30.03

★ Also has T10, T15 Torx; #1, #2 Pozidriv; #1, #2 square recess bits.

Fold-Up Screwdriver Sets

5 Piece

You'll have a variety of drive styles in tools that fold like a pocket knife. Handles are steel; blades are hardened steel. Handle length is 3 5/8".

***5-Piece Screwdriver—**Includes 1/8", 3/16", 1/4" slotted sizes; #1 Phillips size; and 3/16" dia. awl.

5820A14 ..... **Each** $6.81

***6-Piece Screwdriver—**Same as the 5-piece screwdriver plus a T15 Torx blade.

5820A17 ..... **Each** $7.30

Nonmagnetic-Bit Drivers

Screwdriver Handle

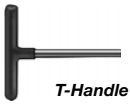

T-Handle

Add bits to these nonmagnetic drivers to fasten/unfasten screws. Bits are not included (see pgs. 2818-2825 for insert bits). Shanks are steel.

***Screwdriver Handle—**Has a Type 303 stainless steel collar. An O-ring firmly holds bits in place. Handle is plastic and stores up to four bits.

***T-Handle—**The T-handle offers an improved grip and increased torque. A set screw firmly holds bits in place. Handle is steel with a plastic-coated cushion grip.

Handle Style	Hex Opening	O'all Lg.		Each
Screwdriver Handle	1/4"	8"	56055A34	$7.48
T-Handle	1/4"	6"	83385A31	16.42
T-Handle	1/4"	12"	83385A35	18.37
T-Handle	1/4"	18"	83385A38	23.21

Reversible-Bit Screwdriver Sets

With Plastic Handle

With Ultra-Grip Handle

Double your options—these screwdrivers have double-end bits to give you twice as many sizes as single insert bits. All bits are steel and have ball detents for a secure hold in the shank. Store bits in the shank. Shanks are steel. Handles are plastic, unless stated otherwise. For additional double-end insert bits, see page 2824.

***1/4" and 5/16" Hex Opening with Ultra-Grip Handle—**Handle has areas of hard and soft (multicomponent) plastic with a soft textured surface. This comfortable surface provides the best possible grip for achieving maximum torque with minimal effort. Shank has a hex shoulder that can be turned with a wrench for extra torque.

Slotted Bit Sizes	Phillips Bit Sizes	Torx Bit Sizes	O'all Lg.		Per Set
5/16" Hex Opening					
3/16", 9/32"	#1, #2	—	7 1/4"	6981A92	$5.82
7/32"	#1	—	3"	6981A93	4.19
7/32", 9/32"	#1, #2	—	9 1/2"	6981A95	6.74
9/32"	#2	—	3"	6981A96	4.81
1/4" and 5/16" Hex Opening					
3/16", 1/4", 9/32"	#1, #2, #3	T15, T20	7 1/4"	5493A45	9.58
1/4" and 5/16" Hex Opening with Ultra-Grip Handle					
3/16", 1/4"	#1, #2	—	7 3/4"	6127A38	4.93

***Extension for Screwdrivers with 5/16" Hex Opening—**For use with 6981A. Use one or more extensions to lengthen your reach. 5 1/2" long.

6981A94 ..... **Each** $1.95

Reversible-Blade Screwdriver Set

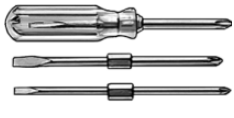

Snap the double-end blades into the handle and this screwdriver is ready to use. A spring lock holds blades in perfect alignment. Handle is plastic and 4 1/8" long. Overall length is 7 1/2". Includes double-end alloy steel blades in 3/16", 1/4", and 5/16" slotted sizes; #1, #2, and #3 Phillips sizes. Packed in a vinyl pouch.

5817A1 ..... **Per Set** $23.64

Lighted Magnetic-Bit Screwdriver Set

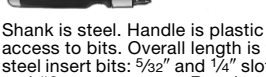

A battery-operated light illuminates fasteners in dark spaces while a magnet in the shank holds bits in place. Shank is steel. Handle is plastic and has a rotating bit holder for easy access to bits. Overall length is 9". Set includes seven 1/4" hex-shank steel insert bits: 5/32" and 1/4" slotted; #1, #2, and #3 Phillips; T15 Torx; and #2 square recess. Requires two AA batteries (included).

5509A35 ..... **Per Set** $13.49

Push/Pull Spiral-Action Screwdriver Set

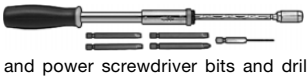

Push on the handle to drive or remove screws or drill holes rapidly. Accepts 1/4" hex insert and power screwdriver bits and drill bits. A sliding switch changes easily between forward, reverse, and lock positions. Includes five 3" long power bits: 7/32" and 1/4" slotted, #1 and #2 Phillips, and 1/4" drill bit. Bits are held by a quick-change chuck. Screwdriver length is 12" when closed and 17" when extended. Made of steel with a plastic handle. For additional bits, see pages 2818-2825.

5693A84 ..... **Per Set** $35.14

Wedge-Grip Slotted Screw Starters

Hold and start slotted screws with one hand. Grip the handle and move sleeve forward with your thumb, wedging the split blades into the screw slot for a firm hold. After the screw is started, release it from starter by pulling the sleeve back to the handle. Blades are steel; handles are plastic. For slotted screws only. Not intended for final tightening.

Vinyl-coated steel blades are nonconductive. Not rated for high-voltage applications.

Steel Blades

Tip Wd.	Blade Lg.	O'all Lg.		Each
For #0 Screws (M1.6)				
1/8″	3″	5″	5690A27	$7.23
For #2 to #4 Screws (M2 to M2.5)				
1/8″	3″	5″	5690A24	6.60
1/8″	8″	10″	5690A25	7.76
For #4 to #6 Screws (M2.5 to M3.5)				
3/16″	2″	4 1/2″	5690A11	7.08
3/16″	4″	6 1/2″	5690A12	7.73
3/16″	6″	8 1/2″	5690A13	7.98
3/16″	8″	10 1/2″	5690A14	8.36
3/16″	12″	14 1/2″	5690A15	10.96
For #6 to #12 Screws (M3.5 to M5)				
3/16″	4″	8″	5690A16	8.76
3/16″	6″	10″	5690A17	9.08
3/16″	8″	12″	5690A18	9.64
For #8 to 3/8″ Screws (M4 to M8)				
1/4″	4″	8″	5690A19	10.28
1/4″	6″	10″	5690A21	10.59
1/4″	8″	12″	5690A22	11.04
1/4″	14″	18″	5690A23	14.71

Vinyl-Coated Steel Blades

Tip Wd.	Blade Lg.	O'all Lg.		Each
For #0 Screws (M1.6)				
1/8″	3″	5″	5690A31	$7.86
For #2 to #4 Screws (M2 to M2.5)				
1/8″	3″	5″	5690A32	7.45
1/8″	8″	10″	5690A33	8.33
For #4 to #6 Screws (M2.5 to M3.5)				
3/16″	4″	6 1/2″	5690A34	8.26
3/16″	6″	8 1/2″	5690A35	8.50
3/16″	8″	10 1/2″	5690A36	8.73
3/16″	12″	14 1/2″	5690A37	11.80
For #6 to #12 Screws (M3.5 to M5)				
3/16″	4″	8 5/8″	5690A38	9.23
3/16″	6″	10″	5690A39	9.59
3/16″	8″	12″	5690A41	10.09
For #8 to 3/8″ Screws (M4 to M8)				
1/4″	4″	8″	5690A42	10.83
1/4″	6″	10″	5690A43	11.13
1/4″	8″	12″	5690A44	11.59
1/4″	14″	18″	5690A45	15.67

4-Piece Sets— Include a wall-mount, high-impact plastic rack and blade sizes:
For #2 to #4 Screws: 1/8″×3″
For #4 to #6 Screws: 3/16″×4″
For #6 to #12 Screws: 3/16″×4″
For #8 to 3/8″ Screws: 1/4″×6″

		Per Set
Steel Blades	5690A26	$29.21
Vinyl-Coated Steel Blades	5690A59	31.37

7-Piece Sets— Include blade sizes:
For #2 to #4 Screws: 1/8″×3″
For #4 to #6 Screws: 3/16″×4″, 3/16″×6″
For #6 to #12 Screws: 3/16″×4″, 3/16″×6″, 3/16″×8″
For #8 to 3/8″ Screws: 1/4″×6″

		Per Set
Steel Blades	5690A61	$54.53
Vinyl-Coated Steel Blades	5690A62	58.12

Screw Hole Starter

Tapered screw point accurately marks, starts, and threads holes in wood and other nonmetals. Starter has a steel blade and plastic handle. Shank is 1/4″ Dia.×3″ Lg. O'all length is 6 11/16″. The threaded tapered point is 9/16″ long.

5352A11 ..... **Each** $4.25

Universal Screw Starter

Start almost all screw types—this tool can handle #4-#12 Phillips, hex socket, T10-T30 Torx, clutch-head, square-recess, Pozidriv®, Frearson, and Torq-Set® screws. Just push sleeve forward to close tips and insert starter into the screw head. Pull sleeve back to open tips and grip screw. Once threads are started, the tool releases the screw automatically. Made of aluminum with steel tips. End opposite the tip has a permanent magnet to retrieve fasteners. Overall length is 5 5/8″. Not intended for final tightening.

74265A88 ..... **Each** $7.15

Spring-Grip Screw Starters and Drivers

Start and drive screws with one tool. Extend the gripper forward past the blade end and insert into the screw head. The gripper has spring action to firmly hold screws while starting, even in awkward places. Push gripper back to the handle and tool becomes a regular screwdriver. Blades are steel; handles are plastic.

Slotted

Tip Wd.	Blade Lg.	O'all Lg.		Each
For #3 to #5 Screws (M2.5 to M3)				
5/32″	3″	5 3/4″	5689A12	$2.91
5/32″	4″	7 1/4″	5689A13	3.87
5/32″	5″	8 3/4″	5689A36	4.10
5/32″	6″	9 5/8″	5689A14	4.13
5/32″	10″	13 5/8″	5689A16	4.64
For #6 to #10 Screws (M3.5 to M5)				
7/32″	2″	4 1/2″	5689A17	3.74
7/32″	4″	8″	5689A18	4.29
7/32″	5″	9 1/4″	5689A37	4.16
7/32″	6″	10″	5689A19	4.80
5/16″	4″	8″	5689A38	5.34
5/16″	5″	10″	5689A39	5.81
5/16″	6″	11 1/4″	5689A41	5.94
5/16″	7″	14 3/4″	5689A42	6.66
For #12 to 1/4″ Screws (M5 to M6)				
3/8″	8″	12 3/4″	5689A21	6.36
3/8″	9 3/4″	14 3/4″	5689A34	7.00

Phillips

Tip No.	Blade Lg.	O'all Lg.		Each
1	2″	4 5/8″	5689A22	$3.49
1	4″	7 1/4″	5689A23	3.74
1	5″	8 3/4″	5689A43	3.80
1	6″	9 1/2″	5689A24	4.33
2	2″	4 1/2″	5689A25	4.73
2	4″	8″	5689A26	4.75
2	5″	9 1/4″	5689A44	4.63
2	6″	11″	5689A27	4.74

4-Piece Slotted Set— Includes blade sizes 5/32″×4″, 5/32″×6″, 7/32″×4″, and 7/32″×6″.

5689A51 ..... **Per Set** $14.37

4-Piece Phillips Set— Includes blade sizes #1×4″, #1×6″, #2×4″, and #2×6″.

5689A52 ..... **Per Set** $14.43

8-Piece Slotted and Phillips Set— Includes both of the sets listed above.

5689A53 ..... **Per Set** $27.30

Nut Starter

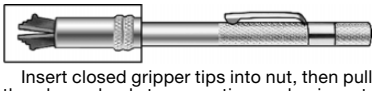

Insert closed gripper tips into nut, then pull the sleeve back to open tips and grip nut. Starter releases from nut as the threads are engaged. Fits 4-40 thread; use with nut sizes 3/32″ to 5/16″ and 2.5 mm to 8 mm. Handle is aluminum and gripper tips are carbon steel. Overall length is 5 1/8″. Not intended for final tightening.

5738A62 ..... **Each** $7.25

Twist-Tip Screw Starters

A one-handed twist is all it takes to start screws. Insert the tip into the fastener, push down, and turn to secure the tip into the fastener head. As the fastener is tightened, the starter tip releases automatically. Not intended for final tightening. Tips are steel.

Steel Insulated Body— End magnet (opposite the tip) allows you to retrieve fasteners. Insulated handles are tested to 1,000 volts. Starters meet IEC 900 specifications.

Nylon Body— Body is nonconductive. Starters do not have a magnetic end.

Aluminum Body— End magnet (opposite the tip) allows you to retrieve fasteners (except double end starter with aluminum body).

Double End— Starters have a slotted tip on one end and a Phillips tip on the other. They do not have a magnetic end.

Slotted

Tip Wd./Tip No.	O'all Lg.		Each
Steel Insulated Body—			
For #3 to #12 Screws (M2.5 to M5)			
1/4″	3″	7437A31	$54.73
1/4″	6″	7437A32	59.53
Nylon Body—			
For #6 to #12 Screws (M3.5 to M5)			
9/32″	2 11/16″	5517A11	6.88
9/32″	6 1/8″	5517A12	8.00
9/32″	9 1/8″	5517A13	8.63
9/32″	15 3/16″	5517A14	11.59
Aluminum Body—			
For #6 to #12 Screws (M3.5 to M5)			
9/32″	5 5/8″	5806A2●	7.05
9/32″	9 5/8″	5806A3	8.00
Double End with Nylon Body—			
For #5 to #12 Screws (M3 to M5)			
9/32″, #2	9″	58465A63	8.98
Double End with Aluminum Body—			
For #5 to #12 Screws (M3 to M5)			
9/32″, #2	6 1/4″	58465A65●	8.98

● Has pocket clip.

Phillips

Tip No.	O'all Lg.		Each
Steel Insulated Body—			
For #3 to #12 Screws (M2.5 to M5)			
1, 2	6″	7437A34	$61.22
1, 2	10″	7437A35	65.12
Nylon Body—			
For #5 to #12 Screws (M3 to M5)			
2	2 13/16″	5517A21	7.43
2	6 1/4″	5517A22	7.54
2	9 1/4″	5517A23	8.11
2	15 5/16″	5517A24	10.71
Aluminum Body—			
For #5 to #12 Screws (M3 to M5)			
2	5 3/4″	5806A6●	7.76
2	9 3/4″	5806A7	8.43
2	15 1/4″	5806A8	10.59

● Has pocket clip.

4-Piece Slotted and Phillips Set with Nylon Body— Includes starters:
Slotted: 9/32″×6 1/8″, 9/32″×9 1/8″
Phillips: #2×6 1/4″, #2×9 1/4″

5517A31 ..... **Per Set** $27.90

4-Piece Slotted and Phillips Set with Aluminum Body— Includes starters:
Slotted: 9/32″×5 5/8″, 9/32″×9 5/8″
Phillips: #2×5 3/4″, #2×9 3/4″

5806A22 ..... **Per Set** $27.50

Miniature Screw Starters

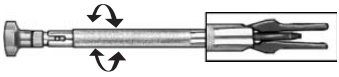

Hold and start small screws with ease. Simply push down on the top of the starter to open the tips and grasp the screw. Tips are spring-loaded so they snap back after the screw is started. Starters have a rotating aluminum cap on the end of the handle. Apply pressure to the cap with your index finger or palm and turn the body of the starter for precision control. Handles are zinc-plated brass; blades are hardened chrome-plated steel. Not intended for final tightening.

Tip Wd./Tip No.	O'all Lg.		Each
For #0 Slotted Screws (M1.6)			
5/64″	4 1/2″	55505A43	$35.00
For #0 Phillips Screws (M1.6)			
0	4 1/2″	55505A44	35.00

Miniature Precision Reversible-Blade Screwdriver Sets

Avoid the hassle of individual screwdrivers. Sets have one handle and reversible blades to offer a wide range of sizes. Blades are steel and 4 45/64″ long. Handles are plastic, conductive, and static-dissipative (ESD safe). They are 4 21/64″ long and have a locking collet chuck that allows you to adjust blade length. A rotating cap on the handle offers precision control. Just apply pressure to the cap with your index finger or palm and turn the body of the screwdriver. ***Warning:*** Since the handles are conductive, tools must not come in contact with sources of electrical power.

6-Piece Slotted and Phillips Set— Includes adjustable handle and five blades in the following sizes:
Slotted: 0.059″, 0.079″, 0.099″, 0.118″, 0.138″, 0.158″
Phillips: #000, #00, #0, #1

		Per Set
In Canvas Pouch	7271A37	$44.42
In Metal Box	7271A43	56.16

5-Piece Torx Set— Includes adjustable handle and four blades in the following sizes: T6, T7, T8, T9, T10, T20, and two each T15 Torx. Packed in a plastic box.

7271A45 ..... **Per Set** $27.40

9-Piece Slotted, Phillips, and Torx Set— Has a plastic box. Includes adjustable handle and eight blades in the following sizes:
Slotted: 0.059″, 0.079″, 0.099″, 0.118″, 0.138″, 0.158″
Phillips: #000, #00, #0, #1
Torx: T6, T7, T8, T9, T10, T15

7271A46 ..... **Per Set** $55.22

Replacement Handle

Handle has a locking collet chuck to allow you to vary blade length.

		Each
Locking Collet Chuck	7271A51	$7.16

Replacement Blades (4 45/64″ Lg.)

Tip Width/Tip No.		Each
Slotted Blades		
0.059″ and 0.118″	7271A11	$7.82
0.079″ and 0.138″	7271A12	7.38
0.099″ and 0.158″	7271A13	7.20
Phillips Blades		
000 and 00	7271A21	7.31
0 and 1	7271A22	6.47
Torx Blades		
T6 and T8	7271A31	5.79
T7 and T9	7271A32	5.79
T10 and T15	7271A33	5.79
T15 and T20	7271A34	5.79

Miniature Precision Plastic-Handle Screwdrivers

The right size for working with electronics, precision components, and small-parts assembly. Handles are made of plastic and are molded to the blade. They have a rotating cap for precision control. Just apply pressure to the cap with your index finger or palm and turn the body of the screwdriver. Blades are hardened chrome-plated steel, unless noted.

Screwdrivers and Sets— A slim ergonomic handle provides a comfortable grip. Tips have a chrome finish. The tips are nonslip, except the tips on Pozidriv® blades.

ESD Static-Dissipative Screwdrivers and Set— For areas where electrostatic discharge is a concern. Handles are impact resistant and conductive. ***Warning:*** Since the handles are conductive, tools must not come in contact with sources of electrical power.

Screwdrivers and Sets

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Blades				
0.031″	1 39/64″	4 23/32″	52985A32	$6.38
0.039″	1 39/64″	4 23/32″	52985A33	5.86
0.047″	1 39/64″	4 23/32″	52985A34	4.98
0.063″	1 39/64″	4 23/32″	52985A11	4.66
0.070″	1 39/64″	4 23/32″	52985A35	4.48
0.078″	1 39/64″	4 23/32″	52985A12	4.30
0.078″	4″	7 3/32″	52985A41	4.30
0.094″	2″	5 23/32″	52985A13	4.04
0.094″	3 29/32″	7 11/16″	52985A42	4.04
0.125″	2″	5 23/32″	52985A14	3.92
0.125″	4″	8 17/64″	52985A43	4.48
0.125″	6″	10 1/4″	52985A44	4.84
0.141″	2 13/32″	6 11/16″	52985A15	4.30
0.156″	2 13/32″	6 11/16″	52985A16	4.84
0.156″	3 29/32″	8 17/64″	52985A46	4.84

6-Piece Slotted Set— Includes six screwdrivers in the following sizes: 0.063″×4 23/32″, 0.078″×4 23/32″, 0.094″×5 23/32″, 0.125″×5 23/32″, 0.141″×6 11/16″, and 0.156″×6 11/16″.

52985A21 ..... **Per Set** $21.70

7-Piece Slotted and Phillips Set— Includes seven screwdrivers in the following sizes:
Slotted: 0.063″×4 23/32″, 0.078″×5 23/32″, 0.094″×5 23/32″, 0.125″×6 11/16″
Phillips: #00×4 45/64″, #0×5 45/64″, #1×6 45/64″

52985A22 ..... **Per Set** $23.54

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Blades (Cont.)				
0.156″	6″	10 1/4″	52985A47	$5.48
0.216″	5″	9 19/64″	52985A62	11.08
0.255″	6″	10 1/2″	52985A63	13.48
0.315″	7″	11 39/64″	52985A64	17.42
Phillips Blades				
000	1 39/64″	4 45/64″	52985A31	6.22
00	1 39/64″	4 45/64″	52985A17	4.78
0	2″	5 45/64″	52985A18	4.30
0	3″	6 45/64″	52985A48	4.18
1	2 13/32″	6 45/64″	52985A19	4.66
1	3 7/64″	7 1/2″	52985A49	4.84
1	5 29/32″	10 15/64″	52985A51	5.48
Pozidriv® Blades				
0	2″	5 45/64″	2222A12	4.86
1	2 13/32″	6 45/64″	2222A14	4.86

4-Piece Phillips Set— Includes four screwdrivers in the following sizes: #000×4 45/64″, #00×4 45/64″, #0×5 45/64″, and #1×6 45/64″.

52985A23 ..... **Per Set** $16.50

7-Piece Extra-Long Slotted and Phillips Set— Packed in a plastic pouch. Includes seven screwdrivers in the following sizes:
Slotted: 0.094″×5 23/32″, 0.094″×7 11/16″, 0.125″×8 17/64″, 0.125″×10 1/4″, 0.156″×8 17/64″, 0.156″×10 1/4″
Phillips: #0×6 45/64″

52985A52 ..... **Per Set** $26.25

ESD Static-Dissipative Screwdrivers and Sets

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Blades				
0.025″	1 13/64″	4 29/32″	7440A27■	$5.42
0.040″	1 13/64″	4 29/32″	7440A28■	5.02
0.055″	1 13/64″	4 29/32″	7440A29■	5.02
0.063″	1 19/32″	4 23/32″	7440A11	5.78
0.078″	1 19/32″	4 23/32″	7440A12	4.87
0.094″	2″	5 23/32″	7440A13	5.03
0.125″	2″	5 23/32″	7440A14	5.03

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Blades (Cont.)				
0.141″	2 13/32″	6 11/16″	7440A15	$5.44
0.156″	2 13/32″	6 11/16″	7440A16	5.82
Phillips Blades				
00	1 39/64″	4 45/64″	7440A21	5.53
0	2″	5 45/64″	7440A22	5.29
1	2 19/64″	6 45/64″	7440A23	5.30

■ Blades are hardened and tempered chrome vanadium steel with a black-oxide finish.

7-Piece Slotted and Phillips ESD Static-Dissipative Set— Includes screwdrivers in slotted sizes 0.063″, 0.078″, 0.094″, and 0.141″; Phillips sizes #00, #0, and #1.

7440A41 ..... **Per Set** $35.31

Miniature Precision Ceramic-Blade Screwdrivers

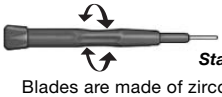

Standard

Reversible-Bit Set

Blades are made of zirconia ceramic, so they're nonconductive and nonmagnetic—perfect for aligning and adjusting electronics or miniature components. The blades resist most acids and the adherence of solder. Plus, they don't shed metal particles, making them suitable for clean room use. Handles are antistatic plastic. Furnished with a cap to protect blade when not in use. *Note:* Not recommended for high torque applications.

Standard Screwdrivers— A rotating cap on the handle offers precision control; just apply pressure to the cap with your index finger or palm and turn the body of the screwdriver.

Standard Screwdrivers—Slotted Blades

Tip Wd.	O'all Lg.		Each
0.035″	4 1/4″	5879A21	$11.57
0.051″	4 1/4″	5879A22	11.57
0.070″	4 1/4″	5879A23	11.57
0.102″	4 1/4″	5879A24	11.57

Reversible-Bit Screwdriver Set

Includes handle and two reversible bits in the following sizes: 0.035″ and 0.070″ slotted; #0 and 1.7 mm Phillips. A plastic sleeve holds bits in place. Overall length is 6″.

5879A45 ..... **Per Set** $20.60

Antislip Fluid

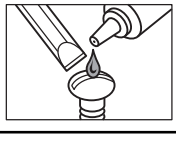

Put slipping screwdrivers, hex keys, and pliers in their place. A single drop of this nontoxic, nonstaining, noncorrosive fluid increases the grip between screw and tool by as much as 700%.

1/2-oz. Tube ..... 53795A21 **Each** $5.67

Miniature Precision Metal-Handle Screwdriver and Tool Sets

Use for assembling and repairing small parts. Also known as jewelers' screwdrivers, these tools have a hardened steel blade for durability. Handles have a rotating cap. Apply pressure to the cap with your index finger or palm and turn the body of the screwdriver for precision control. Screwdrivers have a 1 13/16″ blade length and 4″ overall length. Blades are replaceable. ***Nonmagnetic replacement blades*** are for both nonmagnetic and magnetic screwdrivers and sets.

Nonmagnetic Screwdrivers and Nonmagnetic Screwdriver Sets— Handles are knurled and made of steel. They are conductive and can be used in situations where electrostatic discharge is a concern. ***Warning:*** Since the handles are conductive, tools must not come in contact with sources of electrical power.

Magnetic Screwdriver Sets— Screwdrivers have a knurled aluminum handle that contains a magnet to transfer magnetism to the tip of the blade.

Nonmagnetic Screwdriver and Tool Sets— Include a variety of tools. Screwdrivers are the same as *nonmagnetic screwdrivers* above, unless stated otherwise. Include a partitioned vinyl case.

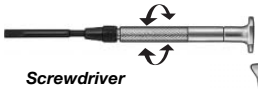

Screwdriver

25-Piece Screwdriver and Tool Set

Nonmagnetic Screwdrivers

Tip Width/ Tip No.	Screwdrivers	Each	Repl. Blades	Each
Slotted Blades				
0.025″	7026A11	$5.37	5341A31	$1.78
0.040″	7026A12	4.55	5341A32	1.56
0.055″	7026A13	4.57	5341A33	1.56
0.070″	7026A14	4.57	5341A34	1.56
0.080″	7026A15	4.57	5341A35	1.56
0.100″	7026A16	4.57	5341A36	1.56
0.125″	7026A25	4.51	5341A37	2.44
Phillips Blades				
000	7026A23	6.95	5341A41	4.32
00	7026A22	5.82	5341A42	3.07
0	7026A18	4.74	5341A43	2.02
1	7026A19	6.58	5341A44	3.73

Nonmagnetic Screwdriver Sets

6-Piece Slotted Set— Includes six screwdrivers in sizes 0.025″, 0.040″, 0.055″, 0.070″, 0.080″, and 0.100″. Packed in a vinyl pouch.

5714A4 ..... **Per Set** $21.70

4-Piece Phillips Set— Includes four screwdrivers in sizes #000, #00, #0, and #1. Packed in a vinyl pouch.

5714A23 ..... **Per Set** $21.70

6-Piece Slotted, JIS, and Phillips Set— Packed in a vinyl pouch. Includes six screwdrivers in the following sizes:
Slotted: 0.040″, 0.070″, 0.100″
JIS: #00
Phillips: #0, #1

5714A6 ..... **Per Set** $27.18

Magnetic Screwdriver Sets

7-Piece Slotted Set— Includes handle with six blades in sizes 0.025″, 0.040″, 0.055″, 0.070″, 0.080″, and 0.100″. Packed in a vinyl pouch.

8550A62 ..... **Per Set** $18.30

5-Piece Phillips Set— Includes handle with four blades in sizes #000, #00, #0, and #1. Packed in a vinyl pouch.

8550A63 ..... **Per Set** $21.50

6-Piece Slotted and Phillips Set— Packed in a vinyl pouch. Includes handle with the following blades:
Slotted: 0.055″, 0.070″, 0.100″
Phillips: #0, #1

8550A54 ..... **Per Set** $19.25

Nonmagnetic Screwdriver and Tool Sets

25-Piece Set— Includes 16 handles and blades, eight hex keys, and a tweezer:
Slotted Screwdrivers: 0.055″, 0.080″, 0.100″, 0.125″
Phillips Screwdrivers: #00, #0, #1
Nutdrivers: 5/64″, 3/32″, 7/64″, 1/8″, 5/32″
Hex-Key Drivers: 0.050″, 1/16″, 5/64″
Short-Arm Hex Keys: 1/16″, 5/64″, 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″
Awl: 5/64″ Dia.
Stainless Steel Tweezer: 3 9/16″ long with smooth tips

5821A46 ..... **Per Set** $77.86

28-Piece Set— Includes 27 handles and blades and an extension:
Slotted Screwdrivers: 0.025″, 0.040″, 0.055″, 0.070″, 0.080″, 0.100″
Phillips Screwdrivers: #0, #1
Nutdrivers: 5/64″, 3/32″, 7/64″, 1/8″, 5/32″
Hex-Key Drivers: 0.028″, 0.035″, 0.050″, 1/16″, 5/64″, 3/32″
Open-End Wrenches: 5/64″, 3/32″, 7/64″, 1/8″, 5/32″, 3/16″, 1/4″, 5/16″
Extension: 3″ long

5468A31 ..... **Per Set** $97.94

31-Piece Set— Includes three handles (one is smooth plastic and ESD static-dissipative), 27 blades, and an extension:
Slotted Screwdrivers: 0.055″, 0.070″, 0.080″, 0.100″
Phillips Screwdrivers: #00, #0, #1
Hex-Key Drivers: 0.028″, 0.035″, 0.050″, 1/16″, 5/64″, 3/32″
Star Drivers (fit Torx fasteners): T5, T6, T7, T9, TPT8, TPT10 (TPT = tamper resistant)
Nutdrivers: 7/64″, 1/8″, 5/32″
Open-End Wrenches: 7/64″, 1/8″, 5/32″, 3/16″
Awl: 5/64″ Dia.
Extension: 3″ long

5821A48 ..... **Per Set** $76.21

Japanese Industrial Standard (JIS) Screwdrivers

Miniature

Standard

Designed especially for the fasteners used in electronics assembly. The screwdriver tips have slightly sharper corners than Phillips tips, which have a more rounded shape. Blades are steel.

Miniature screwdrivers have knurled steel handles that are conductive; they can be used in situations where electrostatic discharge is a concern. All have a rotating cap. Apply pressure to the cap with your index finger or palm and turn the body of the tool for precision control. ***Warning:*** Since the handles are conductive, tools must not come in contact with sources of electrical power.

Standard screwdrivers have plastic handles.

Miniature Screwdrivers

Tip No.	Blade Lg.	O'all Lg.		Each
000	1 13/16″	4″	53325A11	$5.87
00	1 13/16″	4″	53325A12	4.91
0	1 13/16″	4″	53325A13	4.00
1	1 13/16″	4″	53325A14	5.56

4-Piece Miniature Screwdriver Set— Includes one each of the miniature screwdrivers at left. Packed in a vinyl pouch.

53325A21 ..... **Per Set** $19.10

Also Available: Repl. miniature blades. Please ask for 53325A51 and specify tip no.

Standard Screwdrivers

Tip No.	Blade Lg.	O'all Lg.		Each
1	3″	7 1/4″	53325A32	$8.12
2	4″	8 1/4″	53325A33	8.98
3	6″	10 13/16″	53325A34	13.00

3-Piece Standard Screwdriver Set— Includes one each of the standard screwdrivers listed at left.

53325A61 ..... **Per Set** $28.92

Compact Screwdriver Set

With an overall length of 3 1/2″, the screwdrivers in this set fit into tight spaces. Handles are plastic; each handle is a unique color. Set comes with a large secondary handle that slips over the screwdriver handle to provide greater torque and a more comfortable grip.

Set also includes eight screwdrivers in the following sizes: 3/32″, 1/8″, 5/32″, 3/16″, and 1/4″ slotted; #0, #1, and #2 Phillips. Blades are alloy steel. Secondary handle is 3 1/8″ long. Packed in a clear plastic case.

7032A11 ..... **Per Set** $31.55

Plastic Handle Extra-Long Screwdrivers

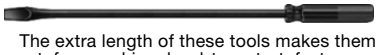

The extra length of these tools makes them great for reaching hard-to-get-at fasteners. Blades are alloy steel; handles are plastic.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Round Blades				
1/4″	20″	24 1/2″	6970A11	$35.67
Slotted Square Blades				
1/4″	24″	28″	6970A17	17.23
3/8″	18″	23 5/16″	6970A13	21.61
5/8″	19″	25″	6970A14	25.27
Phillips Round Blades				
2	18″	21 7/8″	6970A18	27.23
2	20″	24 1/2″	6970A19	27.74

Convertible Handle Insulated Screwdriver Set

Convert to a precision screwdriver in seconds—just remove the screwdriver handle and replace it with the rotating cap. Screwdriver handle has a quick-release button for easy blade changes. The rotating cap is for precision control. Apply pressure to the cap with your index finger or palm and turn the body of the screwdriver. Overall length ranges from 7″ to 8 1/4″. All meet IEC 900 and VDE standards. Rated to 1,000 volts.

Set includes screwdriver handle, rotating cap, and 12 blades in the following sizes: 3/32″, 1/8″, 9/64″, 5/32″, 7/32″, and 1/4″ slotted; #1 and #2 Phillips; T10, T15, and T20 Torx; and #2 Pozidriv®. Packed in a metal case.

6095A11 ..... **Per Set** $52.84

How to Choose the Correct Phillips Screwdriver

First, measure the length of the recess on the fastener you wish to drive (see (A) at left). Then, use the charts at right to find which tip no. will fit best.

Tip No.	(A) minimum	(A) maximum
0	0.048″ (3/64″)	0.077″ (5/64″)
1	0.082″ (5/64″)	0.136″ (9/64″)
2	0.127″ (1/8″)	0.220″ (7/32″)

Tip No.	(A) minimum	(A) maximum
3	0.220″ (7/32″)	0.322″ (5/16″)
4	0.304″ (19/64″)	0.473″ (15/32″)

About Ultra-Grip Screwdrivers

Ultra-grip screwdriver handles have areas of hard and soft (multicomponent) plastic with a soft surface. This provides the best possible grip for achieving maximum torque with minimal effort. Handles have an ergonomic shape that offers comfort and reduces fatigue.

Blades are made of alloy steel for high strength and durability. They are coated to resist corrosion.

Ultra-Grip High-Voltage Insulated Screwdrivers

The blades are completely insulated with plastic and are tested to 1,000 volts. Screwdrivers meet EN 60900 and VDE standards, except 7020A24, which meets IEC 900 and VDE standards. The tip style is marked on each handle for easy identification.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Round Blades				
3/32″	3 1/8″	6 5/16″	7020A22	$7.83
1/8″	4″	7 1/8″	7020A23	8.11
5/32″	4″	7 13/16″	7020A12	8.29
3/16″	5″	9 5/16″	7020A24	8.90
7/32″	5″	8 3/4″	7020A14	13.36
1/4″	6″	10 1/16″	7020A18	16.30
5/16″	7″	11 5/16″	7020A13	20.56
3/8″	8″	12 5/16″	7020A15	26.16
Phillips Round Blades				
0	3 1/8″	6 5/16″	7020A31	8.59
1	3 1/8″	7″	7020A32	10.61
2	4″	8 1/16″	7020A33	13.78
3	6″	10 5/16″	7020A34	20.60
4	8″	12 5/16″	7020A35	22.29

5-Piece Slotted Set—Includes sizes 3/32″×3 1/8″, 5/32″×4″, 7/32″×5″, 1/4″×6″, and 5/16″×7″.

7020A51 ..... **Per Set** $40.10

5-Piece Phillips Set—Includes sizes #0×3 1/8″, #1×3 1/8″, #2×4″, #3×6″, and #4×8″.

7020A42 ..... **Per Set** $49.17

5-Piece Slotted and Phillips Set—Includes the following sizes:
Slotted: 3/32″×3 1/8″, 7/32″×5″, 1/4″×6″
Phillips: #1×3 1/8″, #2×4″

7020A53 ..... **Per Set** $38.12

7-Piece Slotted, Phillips, and Square-Recess Set—Includes an insulated voltage tester (use to check max. 250 volts) and the following sizes:
Slotted: 5/32″×4″, 1/4″×6″
Phillips: #1×3 1/8″, #2×4″
Square-Recess: #2×4″
Slotted Screw-Holding Screwdriver: 3/16″×6″

53285A61 ..... **Per Set** $60.23

Ultra-Grip Screwdrivers

Get power and a soft textured grip in these premium screwdrivers. The tip style is marked on each handle for easy identification.

Screwdrivers that have a hex shoulder can be gripped with a wrench for additional torque.

Slotted Narrow Round Blades—Have thin blades for limited clearance. Also known as cabinet or electricians' screwdrivers.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Stubby Narrow Round Blades				
5/32″	1″	3 1/4″	7127A17	$4.20
Slotted Narrow Round Blades				
3/32″	3″	7″	7127A11	3.65
1/8″	3″	6″	7127A12	3.80
1/8″	5″	9″	7127A13	3.83
5/32″	7″	11 3/4″	7127A14	4.90
1/4″	5″	9 3/4″	7127A62	7.22
1/4″	6″	10 3/4″	7127A63	7.67
Slotted Stubby Round Blades				
1/4″	1″	3 1/4″	7127A19	4.58
Slotted Round Blades				
7/32″	4″	8 3/4″	7127A21	5.07
1/4″	1 3/4″	4″	7127A22	5.44
1/4″	4″	8 3/4″	7127A27	5.05
Phillips Stubby Round Blades				
1	1″	3″	7127A33	5.14
2	1″	3″	7127A36	5.47
Phillips Round Blades				
0	2 3/16″	6 1/2″	7127A32	4.00
1	3″	7 3/4″	7127A34	5.47
1	8″	12 3/4″	7127A35	8.79
2	4″	8 3/4″	7127A37	5.93
2	8″	12 3/4″	7127A38	10.19
Pozidriv® Round Blades				
1	3″	7 3/4″	7127A51	6.52
2	4″	8 3/4″	7127A52	6.80
Slotted Hex Blades—*Have hex shoulder.*				
5/16″	5″	9 3/4″	7127A23	8.22
5/16″	7″	13 1/2″	7127A24	8.88
3/8″	7″	13 1/2″	7127A25	11.24
9/16″	8″	14 1/2″	7127A26	13.56
Phillips Hex Blades—*Have hex shoulder.*				
3	6″	10 3/4″	7127A39	8.68
4	8″	14 1/4″	7127A41	11.46

6-Piece Slotted and Phillips Set—Includes screwdrivers in the following sizes:
Slotted Narrow Round: 1/8″×3″, 5/32″×7″
Slotted Round: 7/32″×4″
Slotted Hex: 5/16″×5″
Phillips Round: #1×3″, #2×4″

7127A61 ..... **Per Set** $31.12

12-Pc. Slotted, Phillips, and Pozidriv® Set—Includes screwdrivers in the following sizes:
Slotted Narrow Round: 3/32″×3″, 1/8″×3″, 1/8″×5″, 5/32″×7″
Slotted Round: 7/32″×4″
Slotted Hex: 5/16″×5″, 9/16″×8″
Phillips Round: #0×2 3/16″, #1×3″, #2×4″
Pozidriv®: #1×3″, #2×4″

7127A64 ..... **Per Set** $61.86

Ultra-Grip Screwdrivers with Antislip Tips

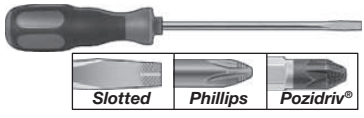

Reduce cam-out, or slipping and stripping of the screw recess. The blade tips have ribbed grooves that dig into the screw recess when force is applied. This means less damage to the fastener recess and less pressure required to achieve maximum torque.

Slotted Narrow Round Blades—Have thin blades for limited clearance. Also known as cabinet or electricians' screwdrivers.

Hex Blades—The tip style is marked on each handle for easy identification. Screwdrivers have a hex shoulder to grip with a wrench for additional torque.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Narrow Round Blades				
3/16″	3 1/8″	7 5/16″	55095A28	$3.39
3/16″	6″	10″	55095A29	4.22
Slotted Round Blades				
1/4″	4″	8 1/2″	55095A23	4.72
1/4″	6″	10 1/2″	55095A24	5.08
5/16″	6″	10 1/2″	55095A25	5.92
Phillips Round Blades				
1	3 1/8″	7 5/16″	55095A32	3.50
1	6″	10 1/8″	55095A33	4.22
2	4″	8 1/2″	55095A35	5.08
2	6″	10 5/8″	55095A36	5.92
Slotted Hex Blades				
9/64″	3″	6 1/8″	7359A38	5.19
5/32″	3 1/2″	6 3/4″	7359A39	6.99
7/32″	4″	7 13/16″	7359A41	9.81
1/4″	5″	9 1/16″	7359A37	12.75
9/32″	5″	9 1/16″	7359A42	13.22
11/32″	6″	10 5/16″	7359A43	16.51
3/8″	7″	11 5/16″	7359A44	22.42
Phillips Hex Blades				
1	3 1/8″	7″	7359A62	9.56
2	4″	8 1/16″	7359A63	12.04
3	6″	10 5/16″	7359A64	17.47
Pozidriv® Hex Blades				
1	3 1/8″	7″	7359A71	11.95
2	4″	8 1/16″	7359A72	15.06
3	6″	10 5/16″	7359A73	21.85

7-Piece Slotted Round and Phillips Round Set—Packed in a vinyl pouch. Includes the following sizes:
Slotted Round: 3/16″×3 1/8″, 3/16″×6″, 1/4″×4″, 1/4″×6″, 5/16″×6″
Phillips Round: #1×3 1/8″, #2×4″

55095A41 ..... **Per Set** $30.34

6-Piece Slotted Hex and Phillips Hex Set—Includes the following sizes:
Slotted Hex: 9/64″×3″, 5/32″×3 1/2″, 7/32″×4″, 1/4″×5″
Phillips Hex: #1×3 1/8″, #2×4″

7359A81 ..... **Per Set** $56.15

Ultra-Grip Static-Dissipative Screwdrivers

Conductive plastic handles prevent static buildup and protect sensitive electronic equipment from damage due to electrostatic discharge. For greater controlled release of static energy, use with a static control grounding strap; see 72555K on page 929. ***Warning:*** Since the handles are conductive, tools must not come in contact with sources of electrical power.

Tip Wd.	Blade Lg.	O'all Lg.		Each
Slotted Round Blades				
1/8″	3 1/8″	7″	54445A31●	$4.09
5/32″	3 1/8″	7″	54445A33●	5.30
7/32″	8″	11 3/4″	54445A34	9.70
15/64″	5″	8 3/4″	54445A35	7.59
1/4″	6″	9 3/4″	54445A36	9.11
5/16″	7″	11 5/16″	54445A38	11.76

● Has ultra-thin handle with rotating end cap.

Tip No.	Blade Lg.	O'all Lg.		Each
Phillips Round Blades				
0	2 3/8″	6 3/16″	54445A41●	$4.97
1	3 1/8″	7″	54445A42●	5.51
1	8″	11 3/4″	54445A43	8.24
2	4″	7 13/16″	54445A44	9.41
2	8″	11 3/4″	54445A45	12.17
3	6″	10 5/16″	54445A46	14.40

6-Piece Slotted and Phillips Set—Includes the following sizes:
Slotted: 1/8″×3 1/8″, 5/32″×3 1/8″, 1/4″×6″
Phillips: #0×2 3/8″, #1×3 1/8″, #2×4″

54445A51 ..... **Per Set** $36.25

For information about choosing a Phillips screwdriver, see page 2832.

Cushion-Grip Screwdrivers

A cushioned grip over a plastic core creates nonslip handles that are extra comfortable. Blades are alloy steel.

Slotted Narrow Round Blades—Have thin blades for limited clearance. Also known as cabinet or electricians' screwdrivers.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Narrow Round Blades				
3/32″	3″	5 3/4″	5720A18	$8.05
1/8″	4″	6 3/4″	5720A19	8.38
1/8″	10″	12 3/4″	5720A25	11.40
3/16″	3″	6 3/4″	5720A21	5.16
3/16″	6″	9 3/4″	5720A22	5.41
3/16″	8″	11 3/4″	5720A23	6.05
3/16″	10″	13 3/4″	5720A24	6.02
Slotted Round Blades				
1/16″	2″	4 3/4″	5720A17	7.71
3/16″	3″	6 3/4″	5720A11	5.83
1/4″	1 1/2″	3 5/8″	5720A74	4.79
1/4″	4″	8 5/8″	5720A12	6.25
1/4″	6″	10 3/8″	5720A26	11.20
5/16″	6″	11″	5720A13	6.85
3/8″	8″	13 5/8″	5720A14	8.52
3/8″	10″	15 1/2″	5720A15	8.80
3/8″	12″	17 7/16″	5720A16	21.68
Slotted Stubby Square Blade				
1/4″	1 1/4″	3 1/8″	5720A29	4.08
Slotted Square Blades				
1/4″	4″	8 3/8″	5720A31	6.82
5/16″	6″	11″	5720A32	8.65
3/8″	8″	13 3/8″	5720A33	10.30
3/8″	12″	17 1/2″	5720A34	10.07
1/2″	12″	17 7/16″	5720A27	21.44
Phillips Round Blades				
0	3″	5 3/4″	5720A45	8.05
1	3″	6 3/4″	5720A41	4.61
2	1 1/4″	3 1/8″	5720A39	4.17
2	4″	8 5/8″	5720A42	5.45
2	7″	11 5/16″	5720A46	11.87
2	10″	14 5/16″	5720A47	13.43
3	6″	11″	5720A43	8.47
4	8″	13 1/2″	5720A44	8.58

6-Piece Slotted and Phillips Set—Includes the following blade sizes:
Slotted Narrow Round: 3/16″×3″, 3/16″×6″
Slotted Round: 1/4″×4″
Slotted Square: 5/16″×6″
Phillips: #1×3″, #2×4″
5720A84 ..... **Per Set** $24.80

10-Piece Slotted and Phillips Set—Packed in a vinyl pouch. Includes the following blade sizes:
Slotted Narrow Round: 3/16″×3″
Slotted Round: 3/16″×3″, 1/4″×4″, 5/16″×6″, 3/8″×8″
Slotted Square: 1/4″×4″, 5/16″×6″
Phillips: #1×3″, #2×4″, #3×6″
5720A82 ..... **Per Set** $69.35

Premium Plastic-Handle Screwdrivers

Deep flutes in the handles offer a secure grip, making this design the industry standard. Handles are made of plastic and are oversized for extra torque, although screwdrivers with ***slotted round blades with pocket clip*** have slim handles to fit in your pocket.

Blades and tips are alloy steel for high strength and heavy duty use.

Screwdrivers that have a hex shoulder can be gripped with a wrench for additional torque.

Slotted Extra Narrow Round and ***Slotted Narrow Round Blades***—Have thin blades for limited clearance. Also known as cabinet or electricians' screwdrivers.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Extra Narrow Round Blades				
1/8″	3″	5 3/4″	5682A37	$3.02
1/8″	4″	6 3/4″	5682A64	3.43
1/8″	6″	8 3/4″	5682A65	3.79
1/8″	10″	13″	5682A57	12.61
Slotted Narrow Round Blades				
3/16″	3″	6 3/4″	5682A15	3.73
3/16″	6″	9 3/4″	5682A16	4.21
3/16″	8″	11 3/4″	5682A32	5.17
3/16″	10″	13 3/4″	5682A17	5.53
3/16″	12″	15 3/4″	5682A38	6.84
Slotted Stubby Round Blades				
3/16″	1 1/2″	3 1/2″	5682A11	5.23
1/4″	1 1/2″	3 1/2″	5682A14	4.22
Slotted Round Blades with Pocket Clip				
3/32″	3″	5 1/4″	5682A41	1.75
1/8″	2″	4 3/8″	5682A12	2.21
Slotted Round Blades—*Have hex shoulder.*				
3/16″	3″	6 3/4″	5682A33	5.23
1/4″	4″	8 1/4″	5682A18	5.13
1/4″	6″	10 1/4″	5682A59	5.58
5/16″	6″	11″	5682A19	6.08
5/16″	8″	13″	5682A62	6.60
3/8″	8″	13 1/4″	5682A21	7.80
3/8″	10″	15 1/4″	5682A34	10.50
3/8″	12″	17 1/4″	5682A22	12.33

5-Piece Slotted Set—Includes the following blade sizes:
Narrow Round: 1/8″×2″ with pocket clip, 3/16″×6″
Round: 1/4″×1 1/2″, 1/4″×4″, 5/16″×6″
8551A13 ..... **Per Set** $20.56

7-Piece Slotted Set—Includes the following blade sizes:
Narrow Round: 3/16″×3″
Round: 1/4″×1 1/2″, 5/16″×6″, 3/8″×8″
Square: 1/4″×4″, 5/16″×6″, 3/8″×8″
8551A18 ..... **Per Set** $44.37

5-Piece Phillips Set—Includes sizes #0×3″, #1×3″, #2×1 1/2″, #2×4″, and #3×6″.
8551A48 ..... **Per Set** $22.61

Slotted Extra Narrow Round Blade

Slotted Round Blade with Hex Shoulder

Phillips Stubby Round Blade

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Square Blades—*Have hex shoulder.*				
3/16″	4″	7 3/4″	5682A56	$4.39
1/4″	4″	8 1/4″	5682A23	5.88
5/16″	6″	11″	5682A24	7.85
3/8″	8″	13 1/4″	5682A25	9.89
1/2″	10″	15 1/4″	5682A35	12.46
1/2″	12″	17 1/4″	5682A26	14.01
Slotted Square Blade				
5/16″	10″	15 3/16″	5682A68	18.58
Phillips Stubby Round Blade				
2	1 1/2″	3 1/2″	5682A39	4.34
Phillips Round Blade with Pocket Clip				
0	2″	4 1/4″	5682A43	2.54
Phillips Round Blades				
0	3″	5 1/8″	5682A36	3.43
1	3″	6 3/4″	5682A27	3.86
1	10″	13 1/2″	5682A45	4.46
2	4″	8 1/4″	5682A28	4.71
2	6″	10 1/4″	5682A44	6.62
2	10″	14 1/4″	5682A46	5.80
2	12″	15 5/8″	5682A58	14.23
2	16″	20 3/16″	5682A69	11.36
3	6″	11″	5682A29	6.51
4	8″	13 1/4″	5682A31	8.44
Pozidriv Round Blades				
1	3″	6 7/16″	5682A51	3.83
2	4″	8 3/16″	5682A52	4.72
3	6″	10 11/16″	5682A53	5.80

6-Piece Slotted and Phillips Set—Includes the following blade sizes:
Slotted Narrow Round: 3/16″×3″, 3/16″×6″
Slotted Round: 1/4″×4″, 5/16″×6″
Phillips: #1×3″, #2×4″
8551A26 ..... **Per Set** $27.71

10-Piece Slotted and Phillips Set—Includes the following blade sizes:
Slotted Narrow Round: 1/8″×2″ with pocket clip, 3/16″×6″
Slotted Round: 1/4″×4″, 5/16″×6″, 3/8″×8″
Slotted Square: 1/4″×4″, 5/16″×6″
Phillips: #1×3″, #2×4″, #3×6″
8551A31 ..... **Per Set** $51.68

Plastic-Handle Screwdrivers

Get the job done with these "no frills" screwdrivers. Handles are plastic; they're shorter and slightly smaller than premium plastic handles. Blades are alloy steel. ***Slotted Narrow Round Blades***—Have thin blades for limited clearance. Also known as cabinet or electricians' screwdrivers.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Narrow Round Blades				
3/16″	3″	6 11/16″	5791A25	$2.13
3/16″	4″	7 11/16″	5791A26	2.55
3/16″	6″	9 11/16″	5791A27	3.47
3/16″	10″	13 11/16″	5791A29	6.26
Slotted Narrow Round Blade with Pocket Clip				
1/8″	2 1/4″	4 3/4″	5791A12	2.24
Slotted Stubby Round Blade				
1/4″	1 1/2″	3 1/2″	5791A14	2.45
Slotted Round Blades				
3/16″	1 1/2″	5 1/8″	5791A15	1.49
1/4″	4″	8 3/16″	5791A17	3.13
5/16″	6″	10 11/16″	5791A19	4.34
3/8″	8″	13 3/16″	5791A21	6.51
3/8″	10″	15 3/16″	5791A22	8.21
3/8″	12″	17 3/16″	5791A23	11.60
Slotted Square Blades				
1/4″	4″	8 3/16″	5791A31	$3.29
5/16″	8″	12 5/8″	5791A32	7.74
3/8″	8″	13 3/16″	5791A33	7.28
3/8″	10″	15 3/16″	5791A34	11.29
Phillips Stubby Round Blade				
1	1 1/2″	3 1/2″	5791A36	2.74
Phillips Round Blades				
1	3″	6 11/16″	5791A38	2.83
2	1 1/2″	3 1/2″	5791A37	3.06
2	4″	8 3/16″	5791A39	3.79
2	6″	10 3/16″	5791A41	4.70
2	12″	16 3/16″	5791A45	6.98
3	6″	10 11/16″	5791A42	4.50
4	8″	13 3/16″	5791A54	8.23
Phillips Round Blade with Pocket Clip				
0	2 1/2″	5″	5791A53	2.92

6-Piece Slotted and Phillips Set—Includes the following blade sizes:
Slotted Narrow Round: 3/16″×3″, 3/16″×6″
Round: 1/4″×4″, 5/16″×6″
Phillips: #1×3″, #2×4″
5791A51 ..... **Per Set** $13.93

10-Piece Slotted and Phillips Set—Includes the following blade sizes:
Slotted Narrow Round: 1/8″×2 1/4″ with pocket clip, 3/16″×3″, 3/16″×6″, 1/4″×4″, 5/16″×6″
Slotted Round: 3/8″×8″
Slotted Square: 5/16″×8″
Phillips: #1×3″, #2×4″, #3×6″
5791A52 ..... **Per Set** $28.72

For information about choosing a Phillips screwdriver, see page 2832.

Ultra-Grip Steel-Head Screwdrivers

Steel end caps can take a hit; they resist impact and absorb the hammer blows needed in tough jobs. Blades extend through handle for added strength. All have a hex shoulder to grip with a wrench for increased torque. Handles have areas of hard and soft plastic with a soft surface (unless noted). This is the best grip for achieving maximum torque with minimal effort.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Hex Blades				
3/16"	3 1/2"	7 3/8"	7249A32	$7.70
7/32"	4"	8 1/16"	7249A33	10.06
9/32"	5"	9 1/16"	7249A34	11.09
11/32"	6"	10 5/16"	7249A35	14.76
3/8"	7"	11 5/16"	7249A36	18.65
1/2"	8"	12 1/2"	7249A37	22.34
9/16"	10"	14 7/16"	7249A38	31.72
Phillips Hex Blades				
1	3 1/8"	7"	7249A41	7.55
2	4"	8 1/16"	7249A42	10.68
3	6"	10 5/16"	7249A43	15.68
4	8"	12 1/2"	7249A44 ♦	22.80

♦ One-piece hard plastic handle.

6-Piece Slotted and Phillips Set—Includes:
Slotted: 1/8"×3 1/8", 3/16"×3 1/2", 7/32"×4", 9/32"×5"
Phillips: #1×3 1/8", #2×4"
7249A51 ..... **Per Set** $51.63

Ultra-Grip Stainless Steel Screwdrivers

You won't find rust or chips on Type 420 stainless steel blades. Their strength and rust resistance make them ideal for food-service areas and laboratories, as well as other medical and marine applications. Handles are plastic. Screwdrivers can be autoclaved up to 266°F.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Narrow Round Blades				
1/8"	3 1/8"	6 1/8"	56405A41	$8.74
5/32"	4"	8"	56405A63	10.54
Slotted Round Blades				
7/32"	5"	8 3/4"	56405A62	13.94
1/4"	6"	10"	56405A44	16.94
5/16"	7"	11 1/2"	56405A45	20.25
Phillips Round Blades				
0	2 3/8"	5 1/2"	56405A51	8.78
1	3 1/8"	7"	56405A52	9.49
2	4"	8"	56405A53	13.01

6-Piece Slotted and Phillips Set—Comes in a box. Includes the following sizes:
Slotted: 1/8"×3 1/8", 5/32"×4", 7/32"×5", 1/4"×6"
Phillips: #1×3 1/8", #2×4"
56405A71 ..... **Per Set** $51.75

Titanium Screwdrivers

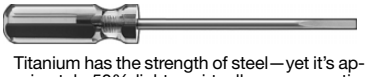

Titanium has the strength of steel—yet it's approximately 50% lighter, virtually nonmagnetic, and highly corrosion resistant. It's used in the aircraft and medical industries. Blades are made of grade 6AL-4V titanium. Handles are plastic.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Round Blades				
3/32"	6"	8 1/2"	54035A71	$33.12
1/8"	6"	8 1/2"	54035A72	33.12
3/16"	6"	9 1/4"	54035A73	41.14
1/4"	5"	8 1/4"	54035A74	55.70
Phillips Round Blades				
1	3"	6 1/4"	54035A82	49.51
2	6"	9 1/4"	54035A83	62.23

Sure-Grip High-Torque Screwdrivers

A permanent "sueded" finish on the plastic handles provides a nonslip grip, even with wet or oily hands. Blades are alloy steel and have a hex shoulder to grip with a wrench for additional torque (unless noted).

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Round Blades				
1/8"	3"	6 1/2"	52915A37▲	$5.24
5/32"	3"	7"	52915A31▲	9.31
5/16"	7"	11 3/4"	52915A32▲	19.84
Slotted Hex Blades				
3/16"	3 1/2"	7 7/8"	52915A41▲	9.30
7/32"	4"	8 3/8"	52915A42	10.98
1/4"	5"	9 3/8"	52915A43	12.26
5/16"	6"	10 11/16"	52915A44	16.99
3/8"	7"	11 11/16"	52915A45	17.30
Phillips Hex Blades				
0	2 3/8"	6 1/2"	52915A33▲★	8.38
1	3 1/8"	7 5/16"	52915A46	9.52
2	4"	8 3/8"	52915A47	11.54
3	6"	10 9/16"	52915A48	15.28

▲ No hex shoulder. ★ Blade is round.

5-Piece Slotted and Phillips Set—Includes:
Slotted: 7/32"×4", 1/4"×5", 5/16"×6"
Phillips: #1×3 1/8", #2×4"
52915A51 ..... **Per Set** $56.62

Screwdrivers with Wire-Bending Stud

Use the metal stud to bend and loop solid wire for making connections to outlets and switches. Use for 10, 12, and 14 AWG wire, unless noted. Blades are alloy steel. A cushioned grip over a plastic core creates comfortable, nonslip handles. Handle end is marked with the tip style for easy identification.

Slotted Narrow Round Blades—Have thin blades for limited clearance. Also known as cabinet or electricians' screwdrivers.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Narrow Round Blades				
1/4"	4"	8 11/32"	5354A13	$11.86
1/4"	6"	10 11/32"	5354A14	12.85
Phillips Round Blades				
1	3"	6 3/4"	5354A15♠	10.53
2	4"	8 5/16"	5354A16	11.86
Square Recess Round Blades				
1	4"	8 1/4"	5354A17	12.16
2	4"	8 1/4"	5354A18	12.16

♠ Not for use with 10 AWG wire.

High-Visibility Colored-Handle Screwdrivers

Neon-colored plastic handles stand out. Blades are alloy steel. **To Order:** Please specify orange or green, unless noted.

Slotted Narrow Round Blades—Have thin blades for limited clearance. Also known as cabinet or electricians' screwdrivers.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Narrow Round Blades				
3/16"	3"	6 1/2"	56805A21	$4.84
3/16"	6"	9 1/2"	56805A22	5.24
3/16"	8"	11 1/2"	56805A24	5.76
3/16"	10"	13 1/2"	56805A25	6.38
1/4"	6"	10 1/4"	56805A23	6.88
Slotted Round Blades				
1/4"	4"	8 1/4"	56805A33	7.03
1/4"	6"	10 1/4"	56805A28	7.79
5/16"	6"	10 5/8"	56805A34	8.16
3/8"	8"	13"	56805A35	11.97
3/8"	10"	15"	56805A291♣	13.68
Slotted Square Blades				
1/4"	4"	8 1/4"	56805A41	7.45
5/16"	6"	10 5/8"	56805A422●	8.05
3/8"	8"	13"	56805A43	11.93
3/8"	10"	15"	56805A271♣	14.89
Phillips Round Blades				
1	3"	6 1/2"	56805A55	4.36
2	4"	8 1/4"	56805A56	5.16
2	6"	10 1/4"	56805A31	6.00
3	6"	10 5/8"	56805A57	7.29

♣ Only available in orange.
● Only available in green.

8-Piece Slotted and Phillips Set—Includes:
Slotted Narrow Round: 3/16"×6"
Slotted Round: 1/4"24", 5/16"×6", 3/8"×8"
Slotted Square: 3/8"×8"
Phillips: #1×3", #2×4", #3×6"
56805A69 ..... **Per Set** $49.52

Magnetic Bit Offset Screwdriver

With a blade angle of 105°, this tool can be used as an offset screwdriver for tight spaces.

End is magnetic and accepts standard 1/4" hex-shank bits. Comes with 3/16" and 1/4" slotted bits, #1 and #2 Phillips bits, and a thumb flange for stability. Twist the handle and the bit rotates. Also works with 1/4" hex-shank power drills up to 1/4-hp, 125 in.-lbs. torque, 400-rpm capacity.

Head is die cast zinc; shank is cold-rolled steel. Handle is plastic and has bit storage. Overall length is 8 3/8".
5332A81 ..... **Each** $30.03

Offset Screwdrivers

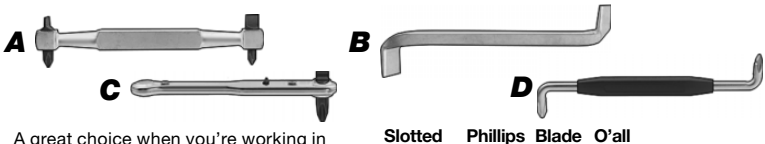

A great choice when you're working in confined areas. All are made of steel.

A Screwdriver is zinc plated.

B Blades are slotted and made of square stock for extra heavy duty use.

C Screwdrivers have a reversible ratchet.

D Screwdrivers have a sure-grip, black polyamide handle.

5-Piece Set—Includes one each of Style B slotted offset screwdrivers (5708A1, 5708A2, 5708A3, 5708A4, and 5708A7). Packed in a vinyl pouch.
5708A9 ..... **Per Set** $40.78

	Slotted Sizes	Phillips Sizes	Blade Angle	O'all Lg.		Each
A	5/16", 5/16"	#1, #2	90°	5"	5707A12	$9.43
B	1/4"	—	45°	3"	5708A1	7.20
B	5/16"	—	45°	4"	5708A2	7.49
B	3/8"	—	45°	4 1/4"	5708A3	7.96
B	1/2"	—	45°	5"	5708A4	9.09
B	5/8"	—	45°	6"	5708A7	10.84
C	1/4", 3/8"	—	90°	4"	5695A1	6.97
C	—	#1, #2	90°	4"	5695A3	9.61
C	1/4"	#2	90°	4"	5695A8	8.86
D	1/4"	—	90°	5"	36585A91	5.55
D	5/16"	—	90°	6"	36585A92	7.59
D	—	#1, #2	90°	4 7/8"	36585A94	4.96
D	—	#3, #4	90°	8"	36585A95	11.63

For tamper-resistant hex drivers, see page 2840. For tamper-resistant Torx drivers, see page 2849.

Drilled Spanner Screwdrivers

For use with screws that have two drilled holes (as shown at right). Blades are one-piece solid steel; handles are plastic.

For Screw Size	For Screw Head Dia.	Hole Ctr.-to-Ctr. (A)	Blade Lg.	O'all Lg.		Each
4	0.183"-0.235"	0.094"	3¾"	8"	94062A113	$8.47
6	0.226"-0.290"	0.125"	3¾"	8"	94062A114	8.47
8	0.270"-0.344"	0.156"	3¾"	8"	94062A116	5.12
10	0.313"-0.399"	0.187"	3¾"	8"	94062A117	5.12
12	0.357"-0.454"	0.218"	3¾"	8"	94062A118	8.84
14	0.414"-0.525"	0.250"	3¾"	8"	94062A119●	8.84

● Also for use with ¼" and 5/16" screw sizes.

3-Piece Drilled Spanner Screwdriver Set—Includes one each of #6, #8, and #10 screwdrivers. Packed in a vinyl pouch.
94062A121 ..... **Per Set** $25.67

Magnetic-Bit Drilled Spanner Screwdriver—The magnetic end holds ¼" hex-shank bits. Handle is plastic and stores bits. Shank is aluminum. Screwdriver is furnished with five bits: #6, #8, #10, #12, and #14. See page 2825 for replacement insert bits.
94062A216 ..... **Each** $36.78

Torq-Set® Screwdrivers

Blades are tool steel and handles are plastic.

For Screw Size	For Screw Head Dia.	Blade Lg.	O'all Lg.		Each
6	0.226"-0.290"	3¾"	8"	56035A81	$9.35
8	0.270"-0.344"	3¾"	8"	56035A82	9.35
10	0.313"-0.399"	3¾"	8"	56035A83	9.35
¼"	0.414"-0.525"	6¼"	10½"	56035A84	9.35

4-Piece Torq-Set® Screwdriver Set—Includes one of each size listed above. Packed in a vinyl pouch.
56035A85 ..... **Per Set** $35.83

Phillips Pin-in-Head Screwdrivers

For use with tamper-resistant pin-in-head Phillips screws. Shanks are aluminum; tips are steel. Handles are plastic.

Tip No.	For Screw Head Dia.	Blade Lg.	O'all Lg.		Each
2	0.256"-0.425"	4⅜"	8¼"	7267A42	$10.90
3	0.407"-0.516"	4⅜"	8¼"	7267A44	10.90

One-Way Screw Removal Tools

One-way screws can be installed with a slotted screwdriver but can only be removed with either these hand tools or one-way screw drill bits (see 5713A on page 2825). Apply downward pressure on tool until its prongs dig into the screw. Then, rotate tool to extract the screw. Blades are carbide steel; handles are plastic.

One-way screw removal tools are for removal only. Screws that are corroded or were installed with power tools must be drilled out.

For Screw Size	For Screw Head Dia.	Blade Dia.	Blade Lg.	O'all Lg.		Each
4, 6, 8	0.193"-0.384"	5/16"	3½"	7⅛"	7392A52	$17.88
10, 12	0.306"-0.487"	⅜"	3 9/16"	7⅜"	7392A63	18.63
14-24	0.389"-0.787"	7/16"	3⅝"	7⅝"	7392A64■	20.25

■ Also for ¼", 5/16", ⅜" screw sizes.

3-Piece One-Way Screw Removal Tool Set—Includes one of each tool listed above. Packed in a vinyl pouch.
7392A71 ..... **Per Set** $50.78

Square-Recess Screwdrivers

Standard

Ball Point

Also known as Robertson screwdrivers, these tools have steel blades and plastic handles. ***Standard*** screwdrivers have a cushioned grip. ***Ball-point*** screwdrivers don't require exact alignment—they allow an angled entry of up to 20°.

Tip No.	For Screw Size	Blade Lg.	O'all Lg.		Each
Standard					
00	1, 2	2⅜"	5½"	5830A21	$4.88
01	5, 6, 7	1"	3⅛"	5830A27	5.52
02	8, 9, 10	1"	3⅛"	5830A28	6.20
0	3, 4	2⅜"	5½"	5830A22	4.88
0	3, 4	3⅛"	7½"	5830A11	4.69
1	5, 6, 7	3⅞"	8 3/16"	5830A12	5.65
1	5, 6, 7	8"	11¾"	5830A23	6.90
2	8, 9, 10	5⅞"	10½"	5830A13	7.06
2	8, 9, 10	8"	12"	5830A24	10.30
2	8, 9, 10	12"	16"	5830A25	10.26
3	12, 14	5⅞"	10½"	5830A14	7.24
4	—	8"	12¼"	5830A26	16.08
Ball-Point					
0	3, 4	3½"	6 5/16"	53315A11	4.38
1	5, 6, 7	3 13/16"	7 3/16"	53315A12	5.01
2	8, 9, 10	4"	7¾"	53315A13	5.38
3	12, 14	4"	8"	53315A14	5.99

4-Piece Standard Set—Includes one each of standard size tip numbers 0, 1, 2, and 3 (5830A11, A12, A13, and A14) above. Packed in a vinyl pouch.
5830A15 ..... **Per Set** $22.37

4-Piece Ball-Point Set—Includes one of each ball-point size above. Packed in a vinyl pouch.
53315A21 ..... **Per Set** $18.88

Tri-Wing® Screwdrivers

Screwdrivers have aluminum shanks and alloy steel tips. Handles are plastic.

Tip No.	For Screw Size	For Screw Head Dia.	Blade Lg.	O'all Lg.		Each
2	4	0.205"-0.219"	4⅜"	8¼"	7266A29	$10.90
3	6	0.256"-0.270"	4⅜"	8¼"	7266A31	10.90
4	8	0.306"-0.322"	4⅜"	8¼"	7266A32	10.90
5	10	0.357"-0.373"	4⅜"	8¼"	7266A33	10.90

4-Piece Tri-Wing® Screwdriver Set—Includes one of each size listed above. Packed in a vinyl pouch.
7266A41 ..... **Per Set** $34.88

Threaded Rod and Stud Drivers

Tighten and hold right-hand threaded rod and studs. Blades are steel and handles are plastic.

Not for removal of threaded studs and rods.

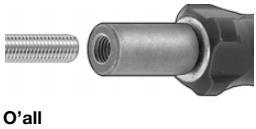

For Thread Size	Thread Dp.	O'all Lg.		Each
6-32	¼"	5¾"	6197A1	$20.53
8-32	¼"	5¾"	6197A2	20.53
10-24	¼"	5¾"	6197A3	20.53
¼"-20	5/16"	5¾"	6197A4	20.53
5/16"-18	7/16"	5¾"	6197A5	20.53
⅜"-16	7/16"	6"	6197A6	20.53

Tri-Groove Sockets and Drivers

Sockets are steel. Drivers have alloy steel blades and plastic handles. Sockets and handles sold separately.

SQUARE-DRIVE SOCKETS									SQUARE-DRIVE HANDLES			
	For Round Head		For Countersunk Head		For Nuts							
Socket No.	Screw Size	Screw Head Dia.	Screw Size	Screw Head Dia.	Nut Size	Nut Head Dia.		Each	Square Drive	O'all Lg.		Each
4	4	0.130"	6	0.268"	—	—	7393A34	$10.60	¼"	7"	5521A65	$13.02
6	6, 8	0.208"	8, 10	0.320"-0.372"	—	—	7393A35	10.60	¼"	7"	5521A65	13.02
10	10, 12, ¼"	0.334"	¼"	0.492"	6, 8	0.406"	7393A36	10.78	¼"	7"	5521A65	13.02
20	5/16"	0.580"-0.585"	—	—	10, ¼"	0.661"	7393A37	25.76	⅜"	7¼"	5522A77	8.32
30	—	—	—	—	5/16", ⅜"	0.864"	7393A38	29.13	⅜"	7¼"	5522A77	8.32

4-Piece Tri-Groove Set—Includes a handle and sockets in sizes 4, 6, and 10. 7393A41 **Per Set** $34.62

For information about choosing a Phillips screwdriver, see page 2832.

Flexible-Shaft Screwdrivers

Work around corners and in other spots that regular and offset screwdrivers can't reach. Tools have a flexible shaft, an alloy steel blade, and a plastic handle.

Blade Lg.	O'all Lg.		Each
3/16″ Slotted Blade			
4½″	7¼″	5705A1	$10.80
#1 Phillips Blade			
4½″	7⅛″	5705A2	10.80

Hollowed-Tip Screwdrivers

Often called hollow or parallel ground screwdrivers, these have tip faces designed to fill the screw slot better than the tapered tips found on most screwdrivers. More of the blade is in contact with the screw, so more torque is produced. Blades are slotted and made of alloy steel. Handles are plastic.

Tip Wd.	Tip Thick.	Blade Lg.	O'all Lg.		Each
⅛″	0.023″	4¼″	6⅝″	7297A11	$11.11
11/64″	0.031″	4¼″	6 13/16″	7297A23	11.11
3/16″	0.032″	4¼″	6 13/16″	7297A12	11.11
3/16″	0.037″	4¼″	6⅞″	7297A13	11.11
¼″	0.041″	4¼″	7¼″	7297A14	11.11
5/16″	0.034″	4¼″	7½″	7297A15	11.11
5/16″	0.037″	4¼″	7½″	7297A21	11.11
5/16″	0.040″	4¼″	7½″	7297A22	11.11

8-Piece Set—Includes one of each size above. Packed in a vinyl partitioned pouch.

7297A33 ..... **Per Set** $73.17

Screwdrivers with 1/4″ Square Drive Handles

Increase turning power by adding a drive tool, such as a ratchet, to these screwdrivers. A ¼″ square-drive recess in the handle accepts ¼″ male drive tools. Blades and square-drive recesses are alloy steel; handles are plastic.

Tip Width/ Tip No.	Blade Lg.	O'all Lg.		Each
Slotted Round Blades				
3/16″	3⅜″	7 13/16″	7200A11	$6.39
¼″	4¼″	8⅝″	7200A12	6.60
5/16″	8″	12½″	7200A13	7.14
Phillips Round Blades				
1	3 7/16″	7⅞″	7200A14	6.39
2	4¼″	8⅝″	7200A15	6.60

5-Piece Slotted and Phillips Set—Includes one of each size above. Packed in a vinyl pouch.

7200A16 ..... **Per Set** $32.88

Adjustable-Length Solid-Shaft Nutdrivers

When you need extra reach, just push the button on these nutdrivers and move the shaft. It adjusts from 3″ to 6″ in ¾″ intervals. Nutdrivers are magnetic. Shaft is alloy steel. Handles are black plastic with a color-coded ring.

Size	Hex Dp.	O'all Lg.■	Ring Color		Each
¼″	3/16″	10½″	Red	5491T1	$12.05
5/16″	3/16″	10½″	Yellow	5491T2	12.05
⅜″	3/16″	10½″	Blue	5491T3	12.33

■ Fully extended.

Insulated Screwdrivers for Terminal Screws

Also known as terminal screwdrivers, these tools are for use with combination drive screws in electrical equipment. Insulated to 1,000 volts and meet IEC 60900 and VDE standards. Blades are alloy steel. Handles have areas of hard and soft (multicomponent) plastic with a soft surface.

Tip Size	Blade Lg.	O'all Lg.		Each
#1	3⅛″	7½″	4245A11	$13.02
#2	4″	8¾″	4245A12	15.98

2-Piece Set—Includes one of each screwdriver above.

4245A16 ..... **Per Set** $27.95

Screwdriver and Solid-Shaft Nutdriver Sets

We've grouped 13 of the most common screwdriver and nutdriver sizes in these sets.

Standard Set—Blades are steel and 3⅝″ to 4″ long. Furnished with a 4″ long plastic drive handle. Includes #1 and #2 Phillips screwdriver blades; 3/16″ and ¼″ slotted screwdriver blades; and 3/16″, 7/32″, ¼″, 9/32″, 5/16″, 11/32″, ⅜″, 7/16″, and ½″ nutdriver sockets. Packed in a canvas roll-up pouch.

5404A1 ..... **Per Set** $82.81

ESD Static-Dissipative Set—Use on static-sensitive electronics and in areas where electrostatic discharge is a concern. Blades are hardened tool steel and 5 29/32″ long. Includes a 5 9/32″ long plastic drive handle; #0, #1, and #2 Phillips screwdriver blades; 3 mm, 4 mm, and 6 mm slotted screwdriver blades; and 3/16″, ¼″, 5/16″, 11/32″, ⅜″, 7/16″, and ½″ nutdriver sockets. Packed in a canvas roll-up pouch. ***Warning:*** The handles are conductive, so tools must not come in contact with sources of electrical power.

5587A16 ..... **Per Set** $81.05

Composite Solid-Shaft Nutdrivers

Lighten up with nutdrivers made entirely of composite materials. They're 50% lighter in weight than standard nutdrivers and are nonmagnetic, nonsparking, and corrosion resistant. They have one-piece solid-shaft construction and color-coded end caps on the handles for easy identification.

Size	Hex Dp.	O'all Lg.	End Cap Color		Each
3/16″	¼″	7½″	White	4860A22	$20.92
¼″	¼″	7½″	Red	4860A23	24.66
5/16″	¼″	7½″	Amber	4860A24	25.74
⅜″	¼″	7½″	Blue	4860A26	25.74
½″	3/16″	7½″	Orange	4860A28	24.70
9/16″	5/16″	7½″	Yellow	4860A29	24.66

Self-Adjusting Hollow-Shaft Nutdriver

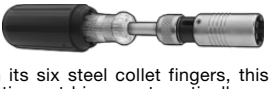

With its six steel collet fingers, this nonmagnetic nutdriver automatically adjusts to fit hex nuts from ¼″ to 7/16″, hex-head screws from #6 to ¼″, and socket-head cap screws from #8 to 5/16″. Push the sleeve down to open the jaws and engage your fastener. Shaft is steel. Shaft depth is 3″. Handle is black plastic. O'all length is 7″.

7384A44 ..... **Each** $36.21

Ratcheting Solid-Shaft Nutdriver Set

You'll get a handle with three ratchet positions (left, right, and lock) for easier driving and seven interchangeable nutdriver shafts in sizes 3/16″, ¼″, 5/16″, 11/32″, ⅜″, 7/16″, and ½″. Handle is plastic with a cushion grip and is 3¼″ long. Shafts are color coded and made of alloy steel. Hex depth is ¼″. Overall length (handle with shaft) is 6½″. Packed in a plastic case.

7965A1 ..... **Per Set** $52.60

Precision Solid-Shaft Nutdrivers

Precision driving at your fingertips. Apply pressure to the rotating end cap with your index finger or palm and turn the body of the nutdriver. Great for use with electronics, precision components, and small-parts assembly. Shafts are steel. Handles are tapered.

Standard—Handles are red and black plastic.

ESD Static-Dissipative—For use where electrostatic discharge is a concern. Handles are conductive and are made of green and black plastic. ***Warning:*** The handles are conductive, so tools must not come in contact with sources of electrical power.

Standard

Size	Hex Dp.	O'all Lg.		Each
Inch Sizes				
3/32″	5/32″	6 3/32″	7278A33	$4.49
7/64″	5/32″	6 3/32″	7278A34	4.66
⅛″	5/32″	6 3/32″	7278A35	4.89
9/64″	3/16″	6 3/32″	7278A36	4.89
5/32″	7/32″	6 3/32″	7278A37	4.89
3/16″	7/32″	6 3/32″	7278A38	5.10
7/32″	7/32″	6 45/64″	7278A39	5.10
¼″	7/32″	6 45/64″	7278A41	5.10
Metric Sizes				
1.5 mm	5/32″	5½″	52965A22	4.43
1.8 mm	5/32″	5½″	52965A23	4.43
2 mm	5/32″	5½″	52965A24	4.44
2.5 mm	5/32″	6 3/32″	52965A11	4.59
3 mm	3/16″	6 3/32″	52965A12	4.68
3.2 mm	3/16″	6 3/32″	52965A25	4.89
3.5 mm	3/16″	6 3/32″	52965A13	4.89
4 mm	3/16″	6 3/32″	52965A14	5.00
4.5 mm	3/16″	6 3/32″	52965A15	5.00
5 mm	3/16″	6 3/32″	52965A16	5.00
5.5 mm	7/32″	6 45/64″	52965A17	5.21
6 mm	7/32″	6 45/64″	52965A18	5.44
7 mm	7/32″	6 45/64″	52965A19	5.44

8-Piece Standard Inch Set—Includes one of each inch size above.

7278A57 ..... **Per Set** $38.97

8-Piece Standard Metric Set—Includes 2.5, 3, 3.5, 4, 4.5, 5, 5.5, and 6 mm sizes above.

52965A21 ..... **Per Set** $40.10

ESD Static Dissipative

Size	Hex Dp.	O'all Lg.		Each
5/64″	9/64″	6 13/64″	7278A31	$5.72

8-Piece ESD Static-Dissipative Inch Set—Includes the following sizes: 5/64″ × 9/64″, 3/32″ × 9/64″, 7/64″ × 9/64″, ⅛″ × 3/16″, 5/32″ × 3/16″, 3/16″ × 3/16″, 7/32″ × 3/16″, and ¼″ × 3/16″. Overall length is 6 3/16″. Packed in a vinyl pouch.

7278A58 ..... **Per Set** $50.25

8-Piece ESD Static-Dissipative Metric Set—Includes the following sizes: 2 mm × 9/64″, 2.2 mm × 9/64″, 2.5 mm × 9/64″, 3 mm × 3/16″, 3.5 mm × 3/16″, 4 mm × 3/16″, 4.5 mm × 3/16″, and 5 mm × 3/16″. Overall length is 6 3/16″. Packed in a vinyl pouch.

52965A28 ..... **Per Set** $50.60

About Hex Nutdrivers

All nutdrivers are for use with hex head bolts, screws, and nuts. Some handles are color coded for easier size identification. ***Magnetic*** nutdrivers firmly hold your hex head bolts, screws, or nuts during driving.

Solid-Shaft Nutdrivers—The shaft is solid, while the tip is drilled. A good choice when you don't need extra clearance for long bolts.

Hollow-Shaft Nutdrivers—The entire shaft is hollow to provide the clearance necessary to remove nuts from long bolts.

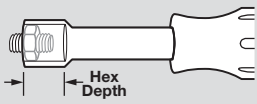

Solid Shaft

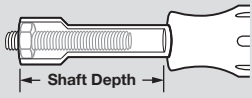

Hollow Shaft

Color-Coded Handles Chart

Size	Handle Color
3/16″	Black
7/32″	Brown
1/4″	Red

Size	Handle Color
9/32″	Orange
5/16″	Amber or Yellow
11/32″	Green

Size	Handle Color
3/8″	Blue
7/16″	Brown
1/2″	Red

Size	Handle Color
9/16″	Orange ♦
5/8″	Amber or Yellow ♦

♦ Except where noted.

Solid-Shaft Nutdrivers

All of these nutdrivers have a solid shaft and plastic handles. ***Comfort grip handles*** have nonslip rubber cushioned grips.

Inch Sizes—Color-Coded Handles

Size	Hex Dp.	O'all Lg.		Each
Nonmagnetic—*Chrome-Plated Steel Shafts*				
3/16″	3/16″	6 11/16″	**7292A12**	$6.42
7/32″	3/16″	6 11/16″	**7292A13**	6.35
1/4″	3/16″	6 11/16″	**7292A14**	6.67
9/32″	5/16″	6 11/16″	**7292A15**	6.67
5/16″	5/16″	6 11/16″	**7292A16**	7.70
11/32″	5/16″	6 11/16″	**7292A17**	7.67
3/8″	5/16″	6 11/16″	**7292A18**	7.56
7/16″	5/16″	7″	**7292A19**	9.33
1/2″	7/16″	7″	**7292A21**	9.33
9/16″	7/16″	7″	**7292A22**	10.85
5/8″	7/16″	7″	**7292A23**	10.69
Nonmagnetic with Comfort-Grip Handles— *Zinc-Plated Steel Shafts*				
3/16″	1/4″	7 7/8″	**53765A12**	2.81
1/4″	1/4″	7 7/8″	**53765A13**	2.88
5/16″	1/4″	7 7/8″	**53765A14**	2.96
3/8″	3/8″	7 7/8″	**53765A16**	3.12
7/16″	3/8″	7 7/8″	**53765A17**	3.23
1/2″	3/8″	7 7/8″	**53765A18**	3.33
Magnetic—*Zinc-Plated Steel Shafts*				
1/4″	1/4″	6 1/8″	**8530A32**	9.29
1/4″	1/4″	10 1/8″	**8530A34**	11.75
5/16″	1/4″	6 1/8″	**8530A33**	9.29
5/16″	1/4″	10 1/8″	**8530A35**	11.75

7-Piece Inch Set—Includes nonmagnetic inch sizes 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, and 3/8″ above. Packed in a vinyl pouch.
7292A51 ..... **Per Set** $53.63

11-Piece Compact Inch Set—Includes 3 1/2″ long nonmagnetic inch sizes 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, and 3/8″. Set also has a 3 1/8″ long torque-amplifier handle with a larger grip to slip over the screwdriver handle for increased driving power. Overall length (nutdriver with torque-amplifier handle) is 5 1/8″. Shafts are zinc-plated steel. Packed in a plastic case.
7382A31 ..... **Per Set** $37.66

5-Piece Inch Set w/ Comfort-Grip Handles—Includes nonmagnetic inch sizes 3/16″, 1/4″, 5/16″, 11/32″, and 3/8″. Shafts are zinc-plated steel.
53765A11 ..... **Per Set** $14.07

Metric Sizes—Blue Handles

Size	Hex Dp.	O'all Lg.		Each
Nonmagnetic—*Chrome-Plated Steel Shafts*				
4 mm	3/16″	6 3/4″	**6919A11**	$6.96
5 mm	3/16″	6 3/4″	**6919A12**	7.00
5.5 mm	3/16″	6 3/4″	**6919A13**	7.01
6 mm	3/16″	6 3/4″	**6919A14**	7.29
7 mm	3/16″	6 3/4″	**6919A15**	7.48
8 mm	1/4″	6 3/4″	**6919A16**	7.67
9 mm	1/4″	6 3/4″	**6919A17**	7.78
10 mm	1/4″	6 3/4″	**6919A18**	8.01
11 mm	1/4″	7″	**6919A19**	8.09
13 mm	1/4″	7″	**6919A21**	11.85
14 mm	1/4″	7″	**6919A22**	12.80

11-Piece Metric Set—Includes one of each metric size above. Packed in a plastic case.
6919A23 ..... **Per Set** $88.58

Hollow-Shaft Nutdrivers

Shafts are chrome-plated steel. ***Nonmagnetic*** handles are plastic. ***Magnetic*** handles are cushion grip.

Inch Sizes—Color-Coded Handles

Size	Shaft Dp.	O'all Lg.		Each
Nonmagnetic Stubby				
1/4″	1 1/2″	3 3/4″	**8358A33**	$7.10
5/16″	1 1/2″	3 3/4″	**8358A34**	7.18
3/8″	1 1/2″	3 3/4″	**8358A35**	7.39
Nonmagnetic Standard				
3/16″	3 1/4″	7″	**8358A21**	6.95
7/32″	3″	6 5/8″	**8358A22**	6.90
1/4″	3 1/4″	7″	**8358A23**	7.04
9/32″	3″	6 5/8″	**8358A24**	7.02
5/16″	3 1/4″	7 7/16″	**8358A25**	7.97
11/32″	3 1/4″	7 7/16″	**8358A26**	8.51
3/8″	3 1/4″	7 7/16″	**8358A27**	8.03
7/16″	4″	8 11/16″	**8358A28**	13.30
1/2″	4″	8 11/16″	**8358A29**	14.48
9/16″	4″	8 1/2″	**8358A31▲**	12.11
5/8″	4″	8 1/2″	**8358A32▲**	13.57

▲ Handle is red.

7-Piece Standard Inch Set—Includes nonmagnetic inch sizes 3/16″, 1/4″, 5/16″, 11/32″, 3/8″, 7/16″, and 1/2″ above.
5586A18 ..... **Per Set** $51.10

Size	Shaft Dp.	O'all Lg.		Each
Nonmagnetic Extra Long				
3/16″	6″	9 5/8″	**7142A11**	$8.70
1/4″	6″	10 1/8″	**7142A12**	8.75
1/4″	18″	21 5/8″	**7142A25**	22.32
5/16″	6″	10 1/8″	**7142A13**	8.75
5/16″	18″	21 5/8″	**7142A26**	23.66
11/32″	6″	10 1/8″	**7142A14**	9.17
3/8″	6″	10 1/8″	**7142A15**	9.17
7/16″	6″	10″	**7142A16**	10.51
1/2″	6″	10″	**7142A17**	11.21
Magnetic Standard				
1/4″	3″	6 3/4″	**7320A1**	13.15
1/4″	6″	9 3/4″	**7320A3**	14.81
5/16″	3″	6 3/4″	**7320A2**	14.12
5/16″	6″	9 3/4″	**7320A4**	16.11
Magnetic Extra Long				
1/4″	18″	21 3/4″	**7320A5**	26.10
5/16″	18″	21 3/4″	**7320A6**	28.36

10-Piece Standard Inch Set—Includes nonmagnetic inch sizes 3/16″, 7/32″, 1/4″, 9/32″, 5/16″, 11/32″, 3/8″, 7/16″, 1/2″, and 9/16″. Packed in a plastic case.
5586A29 ..... **Per Set** $67.00

7-Piece Extra-Long Inch Set—Includes nonmagnetic extra-long inch sizes 3/16″, 1/4″, 5/16″, 11/32″, 3/8″, 7/16″, and 1/2″. Shaft depth is 6″. Overall length is 9 5/8″ to 10″.
7142A51 ..... **Per Set** $57.38

Metric Sizes—Black Handles

Size	Shaft Dp.	O'all Lg.		Each
Nonmagnetic Standard				
4 mm	3″	6 5/8″	**7299A16**	$7.98
4.5 mm	3″	6 5/8″	**7299A17**	7.98
5 mm	3″	6 5/8″	**7299A18**	7.98
5.5 mm	3″	6 5/8″	**7299A19**	7.98
6 mm	3″	6 5/8″	**7299A21**	8.10
7 mm	3″	6 5/8″	**7299A22**	8.10
Nonmagnetic Standard (Cont.)				
8 mm	3″	6 5/8″	**7299A23**	$8.19
9 mm	3″	6 5/8″	**7299A24**	8.31
10 mm	3″	7″	**7299A25**	8.43
11 mm	3″	7″	**7299A29**	9.03
12 mm	3″	7″	**7299A31**	11.08
13 mm	3″	7 1/4″	**7299A32**	13.15

10-Piece Standard Metric Set—Includes nonmagnetic metric sizes 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, and 11 mm above. Packed in a metal stand.
7299A28 ..... **Per Set** $78.35

Stainless Steel Solid-Shaft Nutdrivers

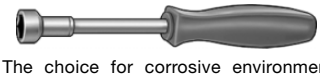

The choice for corrosive environments and clean rooms. All nutdrivers are nonmagnetic. Shafts are made of Type 17-4 stainless steel to resist corrosion; they can be sterilized and passivated. Handles are made of ivory-colored plastic and can be sterilized.

Size	Hex Dp.	O'all Lg.		Each
3/16″	3/8″	8″	**5964A1**	$86.25
1/4″	3/8″	8″	**5964A2**	86.25
5/16″	3/8″	8″	**5964A3**	86.25
3/8″	3/8″	8″	**5964A4**	87.50
7/16″	3/8″	8″	**5964A5**	88.75
1/2″	3/8″	8″	**5964A6**	90.00
9/16″	3/8″	8″	**5964A7**	90.00

7-Piece Set—Includes one of each size above.
5964A9 ..... **Per Set** $566.13

Insulated Hollow-Shaft Nutdrivers

Protect yourself and your equipment from electrical shock. Nutdrivers are nonconductive, and they're 1,000 VAC rated per ASTM F1505-94 and IEC 900 standards. All have an insulated steel shaft. Handle is plastic with a black cushion grip. End caps are color-coded.

Size	Shaft Dp.	O'all Lg.		Each
3/16″	3″	6 3/4″	**54425A31**	$19.59
1/4″	3″	6 3/4″	**54425A32**	19.81
5/16″	3″	6 3/4″	**54425A33**	20.03
11/32″	3″	6 3/4″	**54425A34**	20.23
3/8″	3″	6 3/4″	**54425A35**	20.42
7/16″	3″	7 5/16″	**54425A36**	22.09
1/2″	3″	7 5/16″	**54425A37**	22.94
9/16″	4″	9 3/8″	**54425A38**	25.66
5/8″	4″	9 3/8″	**54425A41**	28.72

Hex L-Key Sets

Vinyl Pouch

Plastic Indexed Caddy

Plastic Indexed Ring

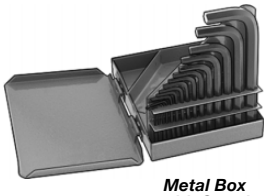
Metal Box with Stand

Vinyl Partitioned Roll-Up Pouch

Metal Partitioned Box

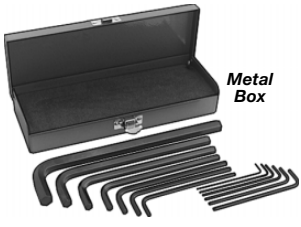
Metal Box

A variety of sets allows you to choose the hex L-key sizes you need in the container you prefer. Hex size is measured across parallel flats. All keys are made of alloy steel with either a black-oxide, ultra-coated silver, or high-visibility blue finish.

Ultra-coated silver sets have a highly corrosion-resistant silver coating that resists more than 600 hours of salt-spray exposure by ASTM B117 testing standards.

High-visibility blue sets have a blue coating to make the L-keys easy to identify.

For ball-point hex keys, see pages 2844-2847.

No. of Pieces	Hex Sizes	Container		Per Set
Black-Oxide Inch L-Key Sets				
9	5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	Vinyl Pouch	7158A3	$3.78
11	0.050″, 1/16″, 5/64″, 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Vinyl Pouch	7158A1	$6.10
12	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″	Plastic Indexed Caddy	5812A35	$6.96
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Caddy	7158A26	$7.60
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Ring	7279A14	$14.10
15	0.028″, 0.035″, 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Vinyl Pouch	7158A4	$8.88
15	0.028″, 0.035″, 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Metal Box with Stand	7125A11	$22.58
18	0.028″, 0.035″, 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, 1/2″, 9/16″, 5/8″	Metal Box with Stand	7125A14	$36.45
20	0.028″, 0.035″, 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 3/4″	Vinyl Partitioned Roll-Up Pouch	7156A11	$48.57
270	50 each of sizes 5/64″, 3/32″, 1/8″; 25 each of sizes 5/32″, 3/16″, 7/32″, and 1/4″; 10 each of sizes 5/16″ and 3/8″	Metal Partitioned Box	7155A11	$103.52
Black-Oxide Inch Long-Arm L-Key Sets				
7	5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″	Plastic Indexed Caddy	5812A44	$4.84
12	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″	Plastic Indexed Caddy	5812A48	$9.02
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Vinyl Pouch	7158A5	$12.97
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Caddy	5812A13	$10.13
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Ring	7279A28	$18.55
13	1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, 1/2″	Metal Box	7395A41	$19.31
15	5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, 1/2″, 9/16″, 5/8″, 3/4″	Vinyl Partitioned Roll-Up Pouch	7158A2	$57.81
Black-Oxide Metric L-Key Sets				
9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Plastic Indexed Caddy	5511A41	$7.18
11	1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 9, 10 mm	Plastic Indexed Ring	37355A19	$15.04
12	0.7, 0.9, 1.3, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Vinyl Pouch	6956A13	$8.15
12	0.7, 0.9, 1.3, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Metal Box with Stand	5388A31	$23.51
15	0.7, 0.9, 1.3, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 14, 17 mm	Metal Box with Stand	5388A34	$39.96
175	25 each of sizes 1.5, 2, 2.5, 3, 4, 5, 6 mm	Plastic Partitioned Box	6957A12	$92.06
Black-Oxide Metric Long-Arm L-Key Sets				
7	1.5, 2, 2.5, 3, 4, 5, 6 mm	Plastic Indexed Caddy	6956A42	$5.91
9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Plastic Indexed Caddy	69485A21	$11.02
10	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12 mm	Metal Box	8351A33	$19.07
11	1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 9, 10 mm	Plastic Indexed Ring	37355A21	$20.68
15	0.9, 1.3, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 14, 17, 19 mm	Vinyl Partitioned Roll-Up Pouch	6956A24	$63.26
Ultra-Coated Silver Inch L-Key Sets				
10	1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	Plastic Indexed Caddy	4891A28	$8.64
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Caddy	4891A25	$16.14
Ultra-Coated Silver Inch Long-Arm L-Key Sets				
10	1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	Plastic Indexed Caddy	4891A18	$13.20
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Caddy	4891A15	$21.58
High-Visibility Blue Metric L-Key Sets				
9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Plastic Indexed Caddy	5789A19	$14.56
12	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 14, 17 mm	Vinyl Pouch	5789A18	$41.43
High-Visibility Blue Metric Long-Arm L-Key Sets				
9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Plastic Indexed Caddy	5789A15	$18.70
12	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 14, 17 mm	Vinyl Pouch	5789A16	$53.99
15	0.9, 1.3, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 14, 17, 19 mm	Canvas Partitioned Roll-Up Pouch	5789A24	$131.18

Hex L-Keys

All keys are made of alloy steel and have a black-oxide finish, except the ***metric high-visibility blue*** keys, which have an easy-to-identify blue coating. Hex size is measured across parallel flats.

Inch Sizes

Hex Size	Lg.		Each
Standard L-Keys			
0.028″	1 5/16″	7122A11	$0.27
0.035″	1 5/16″	7122A12	.22
0.050″	1 3/4″	7122A13	.13
1/16″	1 13/16″	7122A14	.15
5/64″	2″	7122A15	.15
3/32″	2 1/8″	7122A16	.16
7/64″	2 3/16″	7122A17	.17
1/8″	2 5/16″	7122A18	.17
9/64″	2 1/2″	7122A19	.21
5/32″	2 5/8″	7122A21	.22
3/16″	2 13/16″	7122A22	.30
7/32″	3 1/8″	7122A23	.43
1/4″	3 5/16″	7122A24	.58
5/16″	3 13/16″	7122A25	.91
3/8″	4 5/16″	7122A26	1.34
7/16″	4 13/16″	7122A27	2.97
1/2″	5 5/16″	7122A28	3.61
9/16″	5 13/16″	7122A29	5.40
5/8″	6 5/16″	7122A31	6.93
3/4″	7 5/16″	7122A32	10.77
7/8″	8 5/16″	7122A33	17.94
1″	9 5/16″	7122A34	24.38
1 1/4″	11 1/2″	7122A35	72.58
1 1/2″	13 1/2″	7122A36	101.72
Long-Arm L-Keys			
0.028″	2 5/8″	7122A77	.47
0.035″	2 3/4″	7122A37	.38
0.050″	2 15/16″	7122A38	.20
1/16″	3 1/8″	7122A39	.19
5/64″	3 1/4″	7122A41	.19
3/32″	3 1/2″	7122A42	.22
7/64″	3 11/16″	7122A43	.26
1/8″	3 13/16″	7122A44	.26
9/64″	4 1/16″	7122A45	.30
Long-Arm L-Keys (Cont.)			
5/32″	4 3/16″	7122A46	$0.33
3/16″	4 5/8″	7122A47	.41
7/32″	5″	7122A48	.61
1/4″	5 5/16″	7122A49	.90
5/16″	6 1/8″	7122A51	1.37
3/8″	6 13/16″	7122A52	2.03
7/16″	7 5/8″	7122A53	4.48
1/2″	8 5/16″	7122A54	5.15
9/16″	9 1/8″	7122A55	7.40
5/8″	9 13/16″	7122A56	11.30
3/4″	11 5/16″	7122A57	16.08
7/8″	12 13/16″	7122A58	23.76
1″	14 5/16″	7122A59	32.36
1 1/4″	17 1/4″	7122A81	177.54
1 1/2″	20 1/4″	7122A82	304.23
1 3/4″	23 1/4″	7122A83	331.94
2″	26 3/8″	7122A84	501.11
6″ and 12″ Long-Arm L-Keys			
5/64″	6″	7122A61	.39
5/64″	12″	7122A87	2.70
3/32″	6″	7122A62	.46
3/32″	12″	7122A88	2.76
7/64″	6″	7122A63	.58
1/8″	6″	7122A64	.60
1/8″	12″	7122A89	3.00
9/64″	6″	7122A65	.59
5/32″	6″	7122A66	.65
5/32″	12″	7122A91	3.04
3/16″	6″	7122A67	.89
3/16″	12″	7122A92	3.48
7/32″	6″	7122A68	1.00
7/32″	12″	7122A93	3.57
1/4″	6″	7122A69	1.08
1/4″	12″	7122A94	3.62

Metric Sizes

Hex Size, mm	Lg.		Each
Standard L-Keys			
0.7	1 5/16″	7289A31	$0.16
0.9	1 5/16″	7289A32	.20
1.3	1 3/4″	7289A33	.13
Standard L-Keys (Cont.)			
1.5	1 3/4″	7289A11	$0.18
2	2″	7289A12	.19
2.5	2 3/16″	7289A13	.25

Metric Sizes (Cont.)

Hex Size, mm	Lg.		Each
Standard L-Keys (Cont.)			
3	2 1/2″	7289A14	$0.28
4	2 3/4″	7289A15	.41
5	3 1/8″	7289A16	.53
6	3 9/16″	7289A17	.82
7	3 5/8″	7289A34	1.42
8	3 15/16″	7289A18	1.49
9	4 1/16″	7289A35	2.01
10	4 7/16″	7289A19	2.15
12	4 15/16″	7289A21	3.86
14	5 1/2″	7289A22	6.30
17	6 5/16″	7289A23	7.58
19	7 1/16″	7289A24	12.53
22	8 1/4″	7289A25	15.80
24	9 1/4″	7289A26	22.17
27	9 5/8″	7289A27	45.21
32	12 1/8″	7289A28	58.51
36	13 5/8″	7289A29	73.14
Long-Arm L-Keys			
0.7	2 5/8″	6958A41	.47
0.9	2 13/16″	6958A22	.30
1.3	2 15/16″	6958A23	.31
Long-Arm L-Keys (Cont.)			
1.5	3 1/16″	6958A21	$0.30
2	3 1/4″	6958A11	.30
2.5	3 9/16″	6958A12	.37
3	3 15/16″	6958A13	.43
4	4 3/16″	6958A14	.59
5	4 5/8″	6958A15	.62
6	5 1/2″	6958A16	1.00
7	6 3/16″	6958A33	1.57
8	6 5/16″	6958A17	1.85
9	6 9/16″	6958A34	2.87
10	6 11/16″	6958A18	2.78
12	8 5/16″	6958A19	5.14
14	9 5/16″	6958A2	7.56
17	9 13/16″	6958A31	12.37
19	11 1/16″	6958A32	17.22
22	13″	6958A35	20.46
24	14 1/4″	6958A36	22.93
27	15 1/4″	6958A37	53.43
32	19 13/16″	6958A38	104.50
36	22 3/16″	6958A39	132.38

Metric High-Visibility Blue Sizes

Hex Size, mm	Lg.		Each
Standard L-Keys			
1.5	1 3/4″	5984A21	$0.52
2	1 15/16″	5984A22	.52
2.5	2 3/16″	5984A23	.59
3	2 1/2″	5984A24	.66
4	2 3/4″	5984A25	.77
5	3 1/8″	5984A26	.98
6	3 9/16″	5984A27	1.47
8	3 15/16″	5984A28	1.95
10	4 3/8″	5984A29	3.84
12	4 15/16″	5984A31	7.05
14	5 1/2″	5984A32	10.17
17	6 5/16″	5984A33	13.55
19	7 1/16″	5984A34	22.58
22	7 7/8″	5984A35	78.58
27	9 13/16″	5984A36	81.06
Long-Arm L-Keys			
1.5	3 1/8″	5984A41	$0.57
2	3 5/16″	5984A42	.64
2.5	3 5/8″	5984A43	.68
3	4″	5984A44	.82
4	4 9/16″	5984A45	.92
5	5″	5984A46	1.21
6	5 3/4″	5984A47	1.76
8	6 3/8″	5984A48	2.95
10	7 1/4″	5984A49	4.95
12	9 1/4″	5984A51	9.18
14	10 7/8″	5984A52	13.46
17	11 13/16″	5984A53	22.09
19	12 1/2″	5984A54	30.86
22	14″	5984A55	77.00

Stainless Steel Hex L-Keys

Stainless steel provides excellent resistance to corrosion resulting from humidity, food acids, and salts. Made of Type 416 heat-treated stainless steel, unless noted. Hex keys can be autoclaved up to 221°F.

Also Available: Individual keys in metric sizes 2, 2.5, 3, 4, 5, 6, 7, 8, and 10 mm. Please ask for 53855A888 and specify hex size.

Hex Size	Lg.		Each
1/8″	2 5/16″	53855A11	$4.80
5/32″	2 1/2″	53855A12●	5.66
3/16″	4″	53855A13	5.56
7/32″	4 1/2″	53855A14●	5.94
1/4″	4 3/4″	53855A15	6.32
5/16″	5″	53855A16	7.58
3/8″	6″	53855A17	$10.44
7/16″	7 1/2″	53855A21	11.62
1/2″	8 1/2″	53855A22	14.85
9/16″	9″	53855A23	17.19
5/8″	10″	53855A24	20.59

● Made of Type 303 stainless steel (not heat-treated).

7-Piece Inch Set—Includes sizes 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″. Packed in a vinyl pouch.

53855A18 ..... **Per Set** $47.31

8-Piece Metric Set—Includes sizes 2, 2.5, 3, 4, 5, 6, 8, and 10 mm. Packed in a vinyl pouch.

53855A51 ..... **Per Set** $80.13

Titanium Hex L-Keys

As strong as steel but approximately 50% lighter in weight, these one-piece keys are made of solid Grade 5 (6AL-4V) titanium. All are corrosion resistant and virtually nonmagnetic.

Inch Sizes

Hex Size	Lg.		Each
0.05″	1 7/8″	53945A21	$27.40
1/16″	2″	53945A22	27.40
5/64″	2 1/16″	53945A23	27.40
3/32″	2 1/4″	53945A24	27.40
7/64″	2 3/8″	53945A25	27.40
1/8″	2 9/16″	53945A26	27.40
9/64″	2 3/4″	53945A27	32.12
5/32″	3″	53945A28	32.12
3/16″	3 5/16″	53945A29	36.47
7/32″	3 5/8″	53945A31	40.51
1/4″	4″	53945A32	45.18
5/16″	4 1/2″	53945A33	49.51
3/8″	4 15/16″	53945A34	92.99

Metric Sizes

Hex Size, mm	Lg.		Each
1.5	1 15/16″	53945A41	$29.35
2	2 1/16″	53945A42	29.35
2.5	2 3/16″	53945A43	30.99
3	2 3/8″	53945A44	30.99
4	2 1/2″	53945A45	32.11
5	2 3/4″	53945A46	36.47
6	3 1/8″	53945A47	40.52
8	3 7/8″	53945A48	49.51
10	4 7/8″	53945A49	93.00

Flexible Hex Drivers

Easily start and remove hex socket head screws in hard-to-reach areas. A flexible spring connects the long arm of a hex L-key to a short, straight hex key. Use the L-key to loosen and tighten; use the short, straight end for fast spinning. Made of steel.

Hex Size	O'all Lg.		Each
3/32″	4 1/4″	7153A21	$7.70
7/64″	4 1/2″	7153A22	7.84
1/8″	4 5/8″	7153A23	7.91
9/64″	4 3/4″	7153A24	8.05
5/32″	5″	7153A25	$8.19
3/16″	5 3/4″	7153A26	8.47
7/32″	6″	7153A27	8.89

7-Piece Set—Includes one of each size driver listed at left. Packed in a plastic pouch.

7153A11 ..... **Per Set** $57.69

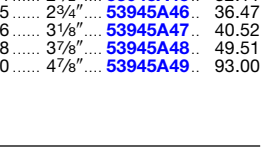

Ultra-Gold Hex L-Keys

Go for the gold. An extra-strong, flexible gold finish provides keys with good corrosion resistance. The finish won't flake or peel when keys are twisted or torqued—ideal for use in food applications and electronics assembly. Dirt and grime can't hide on these keys, and the gold color makes them easy to identify. Made of extra-strong steel for up to 20% more torque than ordinary steel.

Hex Size	Lg.		Each
Inch Sizes			
0.028″	2 5/8″	6493A61	$0.77
0.035″	2 11/16″	6493A62	.77
0.05″	2 7/8″	6493A63	.46
1/16″	3 1/16″	6493A64	.49
5/64″	3 1/4″	6493A65	.49
3/32″	3 1/2″	6493A66	.61
7/64″	3 11/16″	6493A67	.61
1/8″	3 7/8″	6493A68	.61
9/64″	4 1/8″	6493A69	.73
5/32″	4 3/8″	6493A71	.73
3/16″	4 11/16″	6493A72	1.06
7/32″	5 1/16″	6493A73	1.69
Inch Sizes (Cont.)			
1/4″	5 1/2″	6493A74	$1.69
5/16″	6 5/16″	6493A75	2.81
3/8″	7 1/4″	6493A76	4.38
Metric Sizes			
1.5 mm	3 1/16″	6493A77	.49
2 mm	3 5/16″	6493A78	.49
2.5 mm	3 9/16″	6493A79	.61
3 mm	4″	6493A81	.61
4 mm	4 5/16″	6493A82	.73
5 mm	4 11/16″	6493A83	1.06
6 mm	5 11/16″	6493A84	1.58
8 mm	6″	6493A85	2.64
10 mm	6 11/16″	6493A86	4.09

13-Piece Inch Set—Includes sizes 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″. Packed in a plastic indexed caddy.

6493A91 ..... **Per Set** $14.13

9-Piece Metric Set—Includes sizes 1.5, 2, 2.5, 3, 4, 5, 6, 8, and 10 mm. Packed in a plastic indexed caddy.

6493A92 ..... **Per Set** $13.35

High-Torque Hex L-Keys

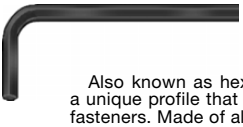

A larger contact surface along the edges allows you to achieve 20% more torque than with standard hex keys, which grip only with their pointed edges.

Also known as hex-plus L-keys, high-torque L-keys have a unique profile that distributes pressure on the flat sides of fasteners. Made of alloy steel with a black-oxide finish.

Hex Size	Lg.		Each
Inch Sizes			
0.05″	2 7/8″	71285A148	$0.23
1/16″	3″	71285A149	.26
5/64″	3 1/4″	71285A151	.26
3/32″	3 1/2″	71285A152	.26
7/64″	3 5/8″	71285A153	.30
1/8″	3 7/8″	71285A154	.32
9/64″	4 1/8″	71285A155	.32
5/32″	4 3/8″	71285A156	.35
3/16″	4 5/8″	71285A157	.38
7/32″	5 1/8″	71285A158	.57
1/4″	5 1/2″	71285A159	.78
5/16″	6 1/4″	71285A161	1.18
3/8″	7 1/8″	71285A162	1.70
7/16″	8″	71285A187	3.58
1/2″	8 3/4″	71285A188	4.05
Metric Sizes			
1.5 mm	3″	71285A169	$0.31
2 mm	3 3/16″	71285A171	.32
2.5 mm	3 1/2″	71285A172	.38
3 mm	3 15/16″	71285A173	.34
3.5 mm	3 15/16″	71285A191	.33
4 mm	4 5/16″	71285A175	.39
4.5 mm	4 1/2″	71285A192	.43
5 mm	4 11/16″	71285A177	.55
6 mm	5 1/2″	71285A178	.79
7 mm	5 1/2″	71285A193	1.19
8 mm	6″	71285A181	1.27
9 mm	6 5/16″	71285A194	1.89
10 mm	6 11/16″	71285A183	2.01
11 mm	7 15/16″	71285A195	4.26
12 mm	8 11/16″	71285A196	4.94

13-Piece Inch Set—Includes sizes 0.05″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″. Packed in a plastic indexed caddy.

71285A95 ..... **Per Set** $8.20

9-Piece Metric Set—Includes sizes 1.5, 2, 2.5, 3, 4, 5, 6, 8, and 10 mm. Packed in a plastic indexed caddy.

71285A96 ..... **Per Set** $8.12

Nickel-Plated Hex L-Keys

Nickel plating resists rust, making these keys a good choice for the food and medical industries. Keys are made of alloy steel.

Hex Size	Lg.		Each
Inch Sizes			
1/16″	1 13/16″	53425A29	$0.37
5/64″	2″	53425A31	.40
3/32″	2 1/8″	53425A32	.46
1/8″	2 5/16″	53425A33	.70
5/32″	2 11/16″	53425A34	.71
3/16″	2 13/16″	53425A35	.80
7/32″	3 1/8″	53425A36	.97
1/4″	3 1/2″	53425A37	1.01
5/16″	3 7/8″	53425A38	1.98
3/8″	4 3/16″	53425A39	2.76
1/2″	5 3/16″	53425A41	5.59
Metric Sizes			
1.5 mm	1 13/16″	53475A31	$0.38
2 mm	2″	53475A32	.38
2.5 mm	2 3/16″	53475A33	.44
3 mm	2 1/2″	53475A34	.50
4 mm	2 13/16″	53475A35	.58
5 mm	3 3/16″	53475A36	.78
6 mm	3 11/16″	53475A37	.97
7 mm	3 7/8″	53475A38	1.19
8 mm	4 1/8″	53475A39	1.77
9 mm	4 3/8″	53475A41	2.15
10 mm	4 11/16″	53475A42	2.46

8-Piece Inch Set—Includes sizes 5/64″, 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, and 5/16″. Packed in a plastic indexed caddy.

53425A43 ..... **Per Set** $7.17

9-Piece Metric Set—Includes sizes 1.5, 2, 2.5, 3, 4, 5, 6, 8, and 10 mm. Packed in a plastic indexed caddy.

53475A45 ..... **Per Set** $9.53

Hex L-Keys and Hex Drivers for Tamper-Resistant Screws

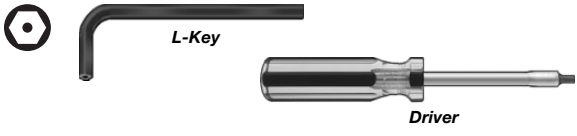

Specially designed ends remove tamper-resistant pin-in-socket screws, which can't be removed with conventional hex keys.

L-keys are alloy steel with a black-oxide finish. They have a tamper-resistant design on both ends, unless noted. ***Drivers*** have a plastic handle and an aluminum shaft with an alloy steel tip.

For tamper-resistant hex insert bits, see page 2821. For pin-in-socket screws, see page 3132.

	L-Keys			***Drivers***			
Hex Size	Lg.		Each	Blade Lg.	O'all Lg.		Each
3/32″	2 1/4″	7390A19	$3.26	3 5/8″	8 1/4″	7253A61	$9.24
1/8″	2 1/4″	7390A21	3.57	3 5/8″	8 1/4″	7253A62	9.44
5/32″	2 1/2″	7390A27	3.57	3 5/8″	8 1/4″	7253A63	9.66
3/16″	2 3/4″	7390A32	3.95	3 5/8″	8 1/4″	7253A64	10.12
7/32″	3″	7390A33	4.17	3 5/8″	8 1/4″	7253A65	10.37
1/4″	3 1/4″	7390A34 ♦	5.88	3 5/8″	8 1/4″	7253A66	10.62
5/16″	3 3/4″	7390A35 ♦	7.35	—	—	—	—
3/8″	4 3/8″	7390A36 ♦	9.09	—	—	—	—

♦ Tamper-resistant hex on one end, standard hex on the other end.

4-Piece L-Key Set—Includes sizes 1/8″, 5/32″, 3/16″, and 7/32″. Packed in a vinyl pouch.

7390A45 ..... **Per Set** $15.62

6-Piece Magnetic Driver and Bit Set—Has a 9″ long magnetic driver with a hardened tool steel shaft; a magnet in the shank holds pin-in-socket hex insert bits in place. Comes with 1/4″ hex-shank pin-in-socket hex insert bits in 3/32″, 1/8″, 5/32″, 3/16″, and 7/32″ sizes. Made of plastic, handle has an ergonomic design and stores bits.

7253A53 ..... **Per Set** $30.77

L-Key Holders

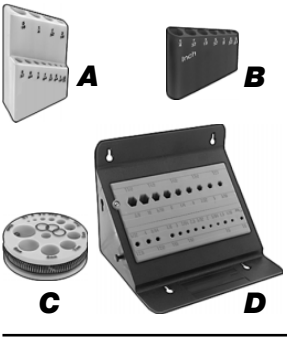

Keep your regular hex, ball-point, spline, and Torx L-keys organized. Sizes are marked on holders for easy identification. All holders are plastic.

Styles A&B—Insert keys and twist to lock them in place; keys won't fall out of these caddies. ***Style C***—The rings have springs to hold keys in place. ***Style D***—Holder is freestanding and can be wall mounted.

	For No. of Keys	For Key Sizes		Each
A	13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	53045A19	$1.47
A	12	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″	53045A42	1.20
A	9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	53045A31	1.20
B	7	5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″	53045A22	.96
B	7	5/64″, 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″	53045A25	1.52
B	7	T10, T15, T20, T25, T27, T30, T40	53045A71	1.52
B	6	1.5, 2, 2.5, 3, 4, 5 mm	53045A33	.96
C	13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	53045A61	3.90
C	11	1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 9, 10 mm	53045A62	3.75
D	22	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, T6, T8, T10, T15, T20, T25, T27, T30, T40, T45, T50, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	53045A36	11.24

Looped T-Handle Hex Keys

One-piece alloy steel construction gives keys extra strength. All have a black-oxide finish for corrosion resistance. Choose handles with a plain grip or a cushion grip for added comfort. Blades are nonreplaceable.

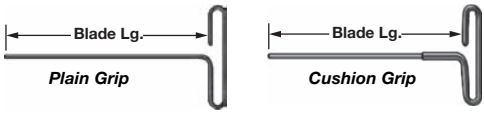

Hex Size	PLAIN GRIP 6″ Blade Lg.	Each	PLAIN GRIP 9″ Blade Lg.	Each	CUSHION GRIP 6″ Blade Lg.	Each	CUSHION GRIP 9″ Blade Lg.	Each
Inch Sizes								
5/64″	7391A49	$1.16	7391A69	$1.30	5419A29	$2.41	5419A59	$2.54
3/32″	7391A51	1.23	7391A71	1.37	5419A31	1.92	5419A61	2.03
7/64″	7391A52	1.30	7391A72	1.42	5419A32	1.95	5419A62	2.08
1/8″	7391A53	1.30	7391A73	1.42	5419A33	1.95	5419A63	2.08
9/64″	7391A54	1.42	7391A74	1.57	5419A34	2.13	5419A64	2.34
5/32″	7391A55	1.53	7391A75	1.73	5419A35	2.22	5419A65	2.43
3/16″	7391A56	1.88	7391A76	2.15	5419A36	2.60	5419A66	2.87
7/32″	7391A57	2.52	7391A77	2.89	5419A37	3.24	5419A67	3.66
1/4″	7391A58	2.85	7391A78	3.45	5419A38	3.70	5419A68	4.33
5/16″	7391A59	5.16	7391A79	5.85	5419A39	6.27	5419A69	7.01
3/8″	7391A61	6.36	7391A81	7.34	5419A41	7.89	5419A71	8.86
Metric Sizes (mm)								
2	5334A31	1.57	5334A41	1.73	5629A61	2.22	5629A71	2.43
2.5	5334A32	1.57	5334A42	1.73	5629A62	2.22	5629A72	2.43
3	5334A33	1.57	5334A43	1.73	5629A63	2.22	5629A73	2.43
4	5334A34	1.83	5334A44	2.04	5629A64	2.57	5629A74	2.82
5	5334A35	2.43	5334A45	2.68	5629A65	3.17	5629A75	3.45
6	5334A36	2.85	5334A46	3.20	5629A66	3.70	5629A76	4.09
8	5334A37	5.23	5334A47	5.92	5629A67	6.41	5629A77	7.08
10	5334A38	6.60	5334A48	7.59	5629A68	8.14	5629A78	9.10

Inch Sets—*8-piece sets* include hex sizes 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″. *10-piece sets* include all hex sizes in the 8-piece sets plus sizes 5/16″ and 3/8″.

Metric Sets—*6-piece sets* include hex sizes 2, 2.5, 3, 4, 5, and 6 mm. *8-piece sets* include all hex sizes in the 6-piece sets plus sizes 8 and 10 mm.

Blade Lg.	No. of Pcs.	Container	Plain Grip Per Set		Cushion Grip Per Set	
Inch Sets						
6″	8	Vinyl Pouch	8366A11	$14.56	5419A21	$20.04
6″	10	Vinyl Pouch	8366A15	26.46	5419A23	30.75
6″	10	Plastic Stand	7391A25	30.24	5419A25	34.15
9″	8	Vinyl Pouch	8366A12	16.78	5419A22	19.64
9″	10	Vinyl Pouch	8366A16	29.99	5419A24	33.88
9″	10	Plastic Stand	7391A27	33.74	5419A26	41.76
Metric Sets						
6″	6	Vinyl Pouch	5334A27	13.80	5629A51	16.89
6″	8	Vinyl Pouch	5334A23	23.22	5629A53	29.98
9″	6	Vinyl Pouch	5334A28	15.45	5629A52	18.47
9″	8	Vinyl Pouch	5334A24	26.29	5629A54	33.08
9″	8	Plastic Stand	5334A56	32.85	5629A58	39.88

Large-Grip T-Handle Hex Keys

Oversized molded plastic handles deliver extra torque while providing a sure grip. Blades are alloy steel with a black-oxide finish; they are nonreplaceable.

Smooth-grip T-handle hex keys have a comfortable grip and are easy to clean.

Textured-grip T-handle hex keys offer superior slip-resistance, even when tools are wet or oily.

Also Available: Individual keys with textured grip in metric sizes 2, 2.5, 3, 4, 5, 6, 8, and 10 mm. Please ask for 4973A888 and specify hex size and 6″ or 9″ blade length.

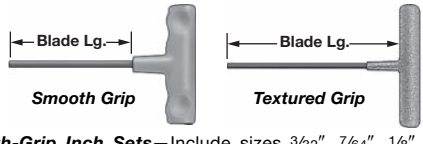

Hex Size	Standard Length Blade Lg.	Each	Long Length Blade Lg.	Each
Smooth-Grip Inch Sizes				
3/32″	4 1/8″	5374A11	7 1/8″	5374A51	$4.73
7/64″	4 7/16″	5374A12	7 7/16″	5374A52	4.98
1/8″	4 7/16″	5374A13	7 7/16″	5374A53	5.19
9/64″	4 7/16″	5374A14	7 7/16″	5374A54	5.49
5/32″	4 7/16″	5374A15	7 7/16″	5374A55	5.68
3/16″	4″	5374A16	7″	5374A56	6.17
7/32″	4″	5374A17	7″	5374A57	6.42
1/4″	4″	5374A18	7″	5374A58	8.43
5/16″	3 5/8″	5374A19	6 5/8″	5374A59	9.23
3/8″	3 5/8″	5374A21	6 5/8″	5374A61	9.66
Smooth-Grip Metric Sizes				
2 mm	4 5/16″	6954A19	7 5/16″	6954A31	5.88
2.5 mm	4 5/16″	6954A21	7 5/16″	6954A32	5.88
3 mm	4 5/16″	6954A22	7 5/16″	6954A33	6.88
4 mm	4 5/16″	6954A23	7 5/16″	6954A34	7.36
5 mm	3 15/16″	6954A24	6 15/16″	6954A35	10.53
6 mm	3 15/16″	6954A25	6 15/16″	6954A36	10.64
8 mm	3 9/16″	6954A26	6 9/16″	6954A37	10.47
10 mm	3 9/16″	6954A27	6 9/16″	6954A38	13.89
Textured-Grip Inch Sizes				
3/32″	6″	4973A11	9″	4973A31	2.78
7/64″	6″	4973A12	9″	4973A32	2.84
1/8″	6″	4973A13	9″	4973A33	3.13
9/64″	6″	4973A14	9″	4973A34	3.15
5/32″	6″	4973A15	9″	4973A35	3.37
3/16″	6″	4973A16	9″	4973A36	3.68
7/32″	6″	4973A17	9″	4973A37	4.12
1/4″	6″	4973A18	9″	4973A38	5.19
5/16″	6″	4973A19	9″	4973A39	7.01
3/8″	6″	4973A21	9″	4973A41	7.64

8-Piece Smooth-Grip Inch Sets— Include sizes 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″. Packed in a vinyl pouch.

Standard Length ..... 5422A43 **Per Set** $27.24
Long Length ..... 5422A45 **Per Set** $32.81

10-Piece Smooth-Grip Inch Sets— Include sizes 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″. Packed in a metal stand.

Standard Length ..... 5422A13 **Per Set** $65.49
Long Length ..... 5422A15 **Per Set** $71.75

5-Piece Smooth-Grip Metric Set— Includes sizes 2.5, 3, 4, 5, and 6 mm. Packed in a vinyl pouch.

Standard Length ..... 6954A14 **Per Set** $19.46

9-Piece Textured-Grip Inch Sets— Include sizes 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″. Packed in a vinyl pouch.

Standard Length ..... 4973A63 **Per Set** $27.36
Long Length ..... 4973A64 **Per Set** $31.15

11-Piece Textured-Grip Inch Sets— Include sizes 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″. Packed in a vinyl pouch.

Standard Length ..... 4973A61 **Per Set** $42.42
Long Length ..... 4973A62 **Per Set** $47.16

6-Piece Textured-Grip Metric Sets— Include sizes 2, 2.5, 3, 4, 5, and 6 mm. Packed in a vinyl pouch.

Standard Length ..... 4973A73 **Per Set** $19.78
Long Length ..... 4973A74 **Per Set** $24.50

8-Piece Textured-Grip Metric Sets— Include sizes 2, 2.5, 3, 4, 5, 6, 8, and 10 mm. Packed in a vinyl pouch.

Standard Length ..... 4973A71 **Per Set** $32.98
Long Length ..... 4973A72 **Per Set** $37.70

High-Torque T-Handle Hex Keys

Also known as hex-plus keys, high-torque keys have a larger contact surface along their edges to deliver up to 20% more torque than standard keys, which grip only with their pointed edges. The unique profile distributes pressure on the flat sides of fasteners. Blades are alloy steel and nonreplaceable. Handles are plastic.

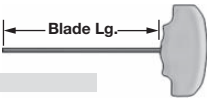

Inch—Black-oxide finish blades

Hex Size	Blade Lg.	Each	Hex Size	Blade Lg.	Each
3/32″	3 15/16″	6625A41	$3.71	3/16″	5 7/8″	6625A46	$5.34
7/64″	3 15/16″	6625A42	3.71	7/32″	5 7/8″	6625A47	5.34
1/8″	3 15/16″	6625A43	4.08	1/4″	7 7/8″	6625A48	6.57
9/64″	5 7/8″	6625A44	4.68	5/16″	7 7/8″	6625A49	9.57
5/32″	5 7/8″	6625A45	4.68	3/8″	7 7/8″	6625A51	10.95

Metric—Nickel-plated blades

Hex Size, mm	Blade Lg.	Each	Hex Size, mm	Blade Lg.	Each
2	3 15/16″	6625A61	$3.90	6	7 7/8″	6625A66	$6.89
2.5	3 15/16″	6625A62	3.90	7	7 7/8″	6625A67	8.28
3	3 15/16″	6625A63	4.28	8	7 7/8″	6625A68	10.04
4	5 7/8″	6625A64	4.91	10	7 7/8″	6625A69	11.50
5	5 7/8″	6625A65	6.08				

Extra-Long T-Handle Hex Keys with Replaceable Bits

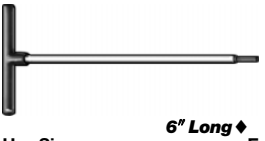

Install and remove socket-head hex screws that are beyond the reach of standard-length hex keys. A set screw locks the bit firmly in place. Bits are replaceable. Handles are plastic with a cushion grip for added comfort. Shanks and bits are made of alloy steel; shanks are zinc plated.

Note: A hex L-key (not included) is required to tighten and loosen the set screw when you replace the bit; refer to the set screw hex key size column below for the correct hex key size needed. Replacement bits listed are compatible with any length driver listed on the same line as the bit.

Hex Size	6″ Long ♦	Each	12″ Long ♦	Each	18″ Long ♦	Each	24″ Long ♦	Each	Replacement Bits: Set Screw Hex Key Size		Each
Inch Sizes											
5/64″	7300A8	$14.91	7300A28	$18.84	7300A88	$22.62	7300A6	$29.44	0.050″	7300A4	$1.52
3/32″	7300A9	16.18	7300A29	19.84	7300A89	23.63	7300A7	27.18	0.050″	7300A5	1.52
7/64″	7300A11	15.41	7300A31	17.20	7300A51	22.88	7300A21	28.30	0.050″	7300A41	1.58
1/8″	7300A12	16.19	7300A32	17.94	7300A52	24.14	7300A22	29.57	0.050″	7300A42	1.58
9/64″	7300A13	16.94	7300A33	18.84	7300A53	24.77	7300A23	30.71	0.050″	7300A43	1.58
5/32″	7300A14	17.94	7300A34	19.84	7300A54	25.65	7300A24	31.59	0.050″	7300A44	1.58
3/16″	7300A15	18.84	7300A35	20.72	7300A55	26.79	7300A61	36.12	0.050″	7300A45	1.58
7/32″	7300A16	19.84	7300A36	21.98	7300A56	27.66	7300A25	41.83	0.050″	7300A46	1.58
1/4″	7300A17	20.72	7300A37	22.88	7300A57	28.68	7300A62	40.30	0.050″	7300A47	1.58
5/16″	7300A18	21.87	7300A38	24.14	7300A58	29.82	7300A63	41.44	1/16″	7300A48	1.58
3/8″	7300A19	22.74	7300A39	25.16	7300A59	31.10	7300A64	42.70	1/16″	7300A49	1.58
Metric Sizes											
2 mm	7167A21	16.18	7167A41	17.94	7167A61	23.63	7167A11	32.23	0.050″	7167A51	1.57
2.5 mm	7167A22	16.94	7167A42	18.84	7167A62	24.77	7167A12	33.49	0.050″	7167A52	1.57
3 mm	7167A23	17.82	7167A43	19.71	7167A63	25.53	7167A13	34.75	0.050″	7167A53	1.57
4 mm	7167A24	18.84	7167A44	20.72	7167A64	26.53	7167A14	36.01	0.050″	7167A54	1.57
5 mm	7167A25	19.84	7167A45	21.98	7167A65	27.66	7167A15	37.40	0.050″	7167A55	1.57
6 mm	7167A26	20.85	7167A46	23.11	7167A66	28.94	7167A16	38.66	0.050″	7167A56	1.57
7 mm	7167A29	21.23	7167A35	23.75	7167A37	32.49	7167A84	40.87	0.050″	7167A39	2.11
8 mm	7167A27	22.11	7167A47	25.16	7167A67	31.08	7167A17	42.69	1/16″	7167A57	1.74
9 mm	7167A34	22.74	7167A36	25.91	7167A38	31.85	7167A85	45.54	1/16″	7167A59	1.90
10 mm	7167A28	25.01	7167A48	28.30	7167A68	33.98	7167A18	48.95	1/16″	7167A58	1.74

♦ Overall length without bit.

7-Piece Inch Sets— Include sizes 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, and 1/4″ plus a 0.050″ hex L-key for tightening and loosening the set screw. Packed in a metal stand.

6″ Key Length	7300A69	Per Set	$126.81
12″ Key Length	7300A71	Per Set	139.22

7-Piece Metric Sets— Include sizes 2, 2.5, 3, 4, 5, 6, and 8 mm plus two hex L-keys (sizes 0.050″ and 1/16″) for tightening and loosening the set screw. Packed in a metal stand.

6″ Key Length	7167A69	Per Set	$133.13
12″ Key Length	7167A71	Per Set	146.92

Stainless Steel T-Handle Hex Keys

Blades are made of Type 17-4 stainless steel for excellent corrosion resistance. A nonreplaceable hex tip is machined into the round blade. Handles are plastic with a cushion grip for added comfort. *Note:* Keys 1/4″ (and metric equivalent) and smaller are not meant for high-torque applications.

Hex Size	6″ Overall Length	Each	12″ Overall Length	Each
Inch Sizes				
7/64″	83375A21	$17.58	83375A41	$19.18
1/8″	83375A22	18.26	83375A42	19.98
9/64″	83375A23	19.06	83375A43	20.67
5/32″	83375A24	19.98	83375A44	21.71
3/16″	83375A25	22.39	83375A45	24.35
7/32″	83375A26	23.32	83375A46	25.28
1/4″	83375A27	25.85	83375A47	28.03
5/16″	83375A28	26.99	83375A48	29.16
3/8″	83375A29	27.79	83375A49	30.09
1/2″	83375A32	29.98	83375A51	34.00
9/16″	83375A31	36.07	83375A52	42.16
5/8″	83375A33	43.42	83375A53	49.16
3/4″	83375A34	56.98	83375A54	66.05
Metric Sizes				
2 mm	83375A61	17.51	83375A81	19.98
2.5 mm	83375A62	19.06	83375A82	20.67
3 mm	83375A63	19.87	83375A83	21.59
4 mm	83375A64	22.39	83375A84	24.35
5 mm	83375A65	23.32	83375A85	25.39
6 mm	83375A66	26.07	83375A86	28.14
8 mm	83375A67	27.34	83375A87	30.09
10 mm	83375A68	29.98	83375A88	32.98
12 mm	83375A69	32.97	83375A89	37.33
14 mm	83375A71	37.67	83375A91	43.65

Insulated T-Handle Hex Keys

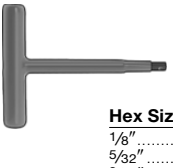

Keys have an insulated, PVC-coated handle tested to 1,000 volts and meet IEC 900 and OSHA requirements. Tips are alloy steel and 1/2″ long. Overall length is 7″.

Hex Size		Each	Hex Size		Each
1/8″	7434A31	$24.50	5/16″	7434A36	$31.11
5/32″	7434A32	26.54	3/8″	7434A37	33.64
3/16″	7434A33	26.54	7/16″	7434A38	37.72
7/32″	7434A34	28.58	1/2″	7434A39	40.83
1/4″	7434A35	28.58			

Short-Length T-Handle Hex Keys

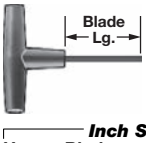

Blades are made of alloy steel and are nonreplaceable. Handles are plastic.

Inch Sizes: Hex Size	Blade Lg.		Each
3/32″	1 7/8″	7041A11	$2.51
7/64″	2 1/8″	7041A12	2.59
1/8″	2 5/16″	7041A13	2.71
9/64″	2 1/2″	7041A14	2.87
5/32″	2 11/16″	7041A15	2.95
3/16″	3 1/16″	7041A16	2.95
7/32″	4 1/2″	7041A24	4.24
1/4″	4 1/2″	7041A17	4.31
5/16″	4 1/2″	7041A19	8.20
3/8″	4 1/2″	7041A21	9.51

Metric Sizes: Hex Size, mm	Blade Lg.		Each
2	1 13/16″	7041A41	$2.78
2.5	2 1/16″	7041A42	2.78
3	2 3/8″	7041A43	2.92
4	2 1/2″	7041A44	3.20
5	3 1/4″	7041A45	3.61
6	4 3/16″	7041A46	3.89

10-Piece Inch Set— Includes one each of the inch hex key sizes above. Blades are 4 1/2″ long. Packed in a metal stand.

7041A31 ..... **Per Set** $40.46

6-Piece Metric Set— Includes one each of the metric hex keys above.

7041A39 ..... **Per Set** $22.06

Hex Drivers with Replaceable Blades

Get a grip on smaller-sized hex keys. Handles are plastic and 4″ long (unless noted). Blades are made of alloy steel and are replaceable. A set screw holds the blade in place. ***Drivers*** include handle, hex blade, and L-key for the set screw. ***Replacement blades*** are compatible only with a driver of the same hex size.

Hex Size	Blade Lg.	Drivers	Each	Replacement Blades	Each
0.028″	2″	7160A11★	$6.72	7160A23	$0.61
0.035″	2″	7160A12★	6.72	7160A24	.61
0.05″	3″	7160A13	6.72	7160A25	.65
1/16″	3″	7160A14	6.72	7160A26	.66
5/64″	3″	7160A15	6.72	7160A27	.69
3/32″	3″	7160A16	6.72	7160A28	.87
7/64″	3″	7160A17	6.72	7160A29	.90
1/8″	3″	7160A18	7.59	7160A31	.92
9/64″	3″	7160A19	7.59	7160A32	1.06

★ Handle length is 2 7/8″.

Hex Drivers

Use hex drivers to tighten or loosen hex socket screws—they're as easy to use as regular screwdrivers. Blades are steel; handles are plastic.

	Hex Size	Blade Lg.	O'all Lg.		Each
Inch Sizes					
A	0.050″	2⅜″	4 13/16″	7400A11	$4.78
A	1/16″	2½″	4⅞″	7400A12	5.03
A	5/64″	2⅝″	5″	7400A13	5.45
A	3/32″	2¾″	6¼″	7400A14	5.54
A	7/64″	2⅞″	6⅜″	7400A15	5.54
A	⅛″	3⅛″	6⅝″	7400A16	6.51
A	9/64″	3 5/16″	6¾″	7400A17	6.70
A	5/32″	3 9/16″	7 15/16″	7400A18	6.97
A	3/16″	3 11/16″	8 1/16″	7400A19	7.42
Metric Sizes					
B	1.5 mm	4″	6⅝″	57585A52	6.67
C	2 mm	2 15/16″	5 11/16″	57585A53	4.73
C	2.5 mm	2 15/16″	6⅛″	57585A54	4.90
C	3 mm	2 15/16″	6⅛″	57585A55	5.05
C	4 mm	2 15/16″	6 13/16″	57585A56	5.79
C	5 mm	3⅛″	7 5/16″	57585A57	6.78
C	6 mm	3⅛″	7 5/16″	57585A58	6.94
C	8 mm	3 15/16″	8⅜″	57585A71	7.45
C	10 mm	3 15/16″	8⅜″	57585A72	8.32

6-Piece Inch Set—Includes sizes 0.050″, 1/16″, 5/64″, 3/32″, ⅛″, and 5/32″. Set has Style A handle. Packed in a vinyl pouch.
7400A36 ..... **Per Set** $32.71

11-Piece Inch Set—Includes one of each inch hex driver listed above, plus 7/32″ and ¼″ hex sizes. Set has Style B handle. Packed in a canvas roll-up case.
7400A33 ..... **Per Set** $60.63

8-Piece Metric Set—Includes sizes 1.27, 1.5, 2, 2.5, 3, 4, 5, and 6 mm. Set has Style B handle. Packed in a canvas roll-up case.
57585A61 ..... **Per Set** $57.04

Miniature Hex Drivers

Drivers have a rotating cap for precision control. Just apply pressure to the cap with your index finger or palm and turn the body of the driver. Great for small-parts assembly and repair.

Plastic Handle

Made of plastic, handles are molded to hardened-steel blades and have a comfortable grip.

Hex Size Inches	Hex Size mm	O'all Lg.		Each
0.028″	0.7	4 45/64″	7270A37	$4.07
0.035″	0.9	4 45/64″	7270A38	3.97
0.050″	1.27	4 45/64″	7270A39	3.61
—	1.5	5 45/64″	52975A14	3.61
0.063″	—	5 45/64″	7270A41	3.44
0.078″	2	5 45/64″	7270A42	3.29
0.094″	—	6 45/64″	7270A43	3.29
—	2.5	6 45/64″	52975A16	3.29
0.109″	—	6 45/64″	7270A44	3.11
—	3	6 45/64″	52975A17	3.11
0.125″	—	6 45/64″	7270A45	3.11

8-Piece Inch Set—Includes one each of inch sizes above.
7270A59 ..... **Per Set** $26.02

7-Piece Metric Set—Includes one each of metric sizes above.
52975A21 ..... **Per Set** $23.57

Steel Handle

Drivers have a knurled steel handle. Blades are hardened, tempered chrome-vanadium steel; they are interchangeable—different sizes fit the same handle. Handles are conductive and can be used in situations where electrostatic discharge is a concern. ***Warning:*** The handles are conductive, so tools must not come into contact with sources of electrical power.

Also Available: Replacement blades. Please ask for 7043A55 and specify hex blade size.

Hex Size	O'all Lg.		Each	Hex Size	O'all Lg.		Each
0.028″	4″	7043A11	$5.02	0.062″	4″	7043A14	$5.02
0.035″	4″	7043A12	5.02	0.078″	4″	7043A15	5.02
0.050″	4″	7043A13	5.02	0.093″	4″	7043A18	5.02

6-Piece Inch Set—Includes one of each driver listed above. Packed in a vinyl pouch.
7043A17 ..... **Per Set** $28.62

6-Piece Metric Set—Includes sizes 0.7, 0.9, 1.3, 1.5, 2, and 2.5 mm. Packed in a vinyl pouch.
7043A19 ..... **Per Set** $28.62

Hex Driver Sets

Blades are carbon steel, and handles are plastic. Packed in a plastic case.

Compact Hex Driver Sets—With an overall length of 3½″, the drivers are short enough to fit into tight spaces. Sets include eight complete drivers and a large secondary handle (3⅛″ long) that slips over the driver handle to provide greater torque and a more comfortable grip.

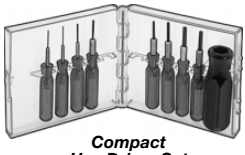

Compact Hex Driver Set

Interchangeable Blade Hex Driver Sets—Include one handle with interchangeable hex blades. Handle and blades are each 4″ long.

Compact Hex Driver Sets

9-Piece Inch Set—Includes secondary handle and hex drivers in sizes 0.028″, 0.035″, 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, and ⅛″.
5759A12 ..... **Per Set** $28.51

9-Piece Metric Set—Includes secondary handle and hex drivers in sizes 0.89, 1.27, 1.5, 2, 2.5, 3, 4, and 5 mm.
5759A13 ..... **Per Set** $32.21

Interchangeable Blade Hex Driver Sets

11-Piece Inch Set—Includes handle, 4″ extension, and hex blades in sizes 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, and 3/16″.
5548A11 ..... **Per Set** $48.96

9-Piece Metric Set—Includes handle, 4″ extension, and hex blades in sizes 1.27, 1.5, 2, 2.5, 3, 4, and 5 mm.
5537A11 ..... **Per Set** $48.29

Fold-Up Hex Key Sets

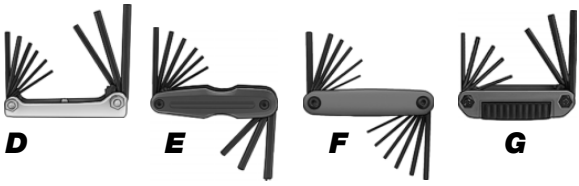

Keep the most popular hex key sizes close at hand. Keys fold out for easy access. All blades are alloy steel. ***High-visibility sets*** have brightly colored handles that are easy to identify.

(D) Standard Fold-Up Sets—Handles are alloy steel. Blades open up to 180°. **Also Available:** Inch replacement keys (except high-visibility handles). Please ask for 7162A75 and specify hex key size and set part number.

(E&F) "Z" Fold-Up Sets—The "Z" design lets you select any key without unfolding the others in the set. Blades open up to 270°. *Style E* sets have an alloy steel handle. *Style F* set has a glass-filled nylon handle.

(G) Ultra-Grip Fold-Up Sets—Handle is two-component plastic with a hard inner body for maximum strength. The handle has a soft cushion grip for comfort and slip resistance. Blades open up to 180°.

	No. of Pieces	Hex Key Sizes	Handle Lg.		Each
Inch Hex Key Sets					
D	5	3/16″, 7/32″, ¼″, 5/16″, ⅜″	5¼″	7162A18	$7.40
D	8	3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″, 7/32″, ¼″	5¼″	7162A31	8.06
D	9	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″	3⅝″	7162A13	8.13
D	9	5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″, 7/32″, ¼″	4¼″	7162A14	8.50
E	9	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″	3½″	5725A82	10.35
E	9	5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″, 7/32″, ¼″	4¼″	5725A83	11.52
G	6	5/32″, 3/16″, 7/32″, ¼″, 5/16″, ⅜″	5½″	5215A13	9.62
G	9	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″	3⅝″	5215A11	9.69
G	9	5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″, 7/32″, ¼″	4¼″	5215A12	9.84
High-Visibility Orange Inch Hex Key Sets					
D	9	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″	3⅝″	54405A55	5.23
D	9	5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″, 3/16″, 7/32″, ¼″	4¼″	54405A56	6.71
Inch/Metric Hex Key Set					
F	12	5/64″, 3/32″, 7/64″, ⅛″, 9/64″, 5/32″; 1.5, 2, 2.5, 3, 4, 5 mm	4⅜″	7324A18	10.17
Metric Hex Key Sets					
D	6	3, 4, 5, 6, 8, 10 mm	5¼″	5541A33	7.94
D	7	1.5, 2, 2.5, 3, 4, 5, 6 mm	3⅝″	5541A31	8.14
D	7	2, 2.5, 3, 4, 5, 6, 8 mm	4¼″	5541A32	8.20
E	7	1.5, 2, 2.5, 3, 4, 5, 6 mm	3½″	5724A75	12.12
G	6	3, 4, 5, 6, 8, 10 mm	5⅜″	5215A24	9.62
G	7	1.5, 2, 2.5, 3, 4, 5, 6 mm	3¾″	5215A21	9.69
G	8	2, 2.5, 3, 4, 5, 6, 7, 8 mm	5⅜″	5215A23	10.18
High-Visibility Blue Metric Hex Key Sets					
D	6	3, 4, 5, 6, 8, 10 mm	5¼″	56115A66	10.10
D	7	1.5, 2, 2.5, 3, 4, 5, 6 mm	3⅝″	56115A65	7.12

Ball-Point Hex L-Key Sets

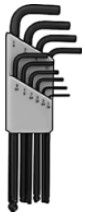

L-Key Set in Plastic Indexed Caddy

Stubby L-Key Set in Plastic Indexed Caddy

L-Key Set in Metal Indexed Box

You don't need exact alignment between the hex socket fastener and the tool—keys have a ball-point end that allows an angled entry of up to 25°. This allows you to quickly tighten and remove screws in hard-to-reach areas. The short arm has a standard hex end; the long arm has a ball-point end. *Stubby* sets have a short arm that is 70% shorter than standard hex keys to eliminate the need to cut off the arm to shorten the key.

Keys are made of alloy steel with either a black-oxide, ultra-coated silver, or high-visibility blue finish. ***Ultra-coated silver*** sets have a highly corrosion-resistant silver coating that resists more than 600 hours of salt-spray exposure by ASTM B117 testing standards. ***High-visibility blue*** sets have a blue coating to make keys easy to identify.

No. of Pieces	Hex Sizes	Container	Per Set
Black-Oxide Inch L-Key Sets			
7	5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″	Plastic Indexed Caddy	**5709A51**... $6.34
8	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″	Plastic Indexed Caddy	**5709A16**... $6.74
10	1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	Plastic Indexed Caddy	**5709A19**... $9.32
12	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″	Plastic Indexed Caddy	**5709A17**... $11.66
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Caddy	**5709A52**... $14.95
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Metal Indexed Box	**5709A14**... $41.55
15	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″	Vinyl Pouch	**5709A15**... $44.57
Black-Oxide Inch Stubby Short-Arm L-Key Sets			
10	1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	Plastic Indexed Caddy	**6112A11**... $11.37
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Caddy	**6112A12**... $18.23
Black-Oxide Metric L-Key Sets			
6	1.5, 2, 2.5, 3, 4, 5 mm	Plastic Indexed Caddy	**5709A44**... $5.51
9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Plastic Indexed Caddy	**5709A18**... $12.15
13	1.27, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 14, 17 mm	Metal Indexed Box	**5709A22**... $70.33
15	1.27, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10 mm	Plastic Indexed Caddy	**5709A45**... $21.26
Black-Oxide Metric Stubby Short-Arm L-Key Sets			
7	1.5, 2, 2.5, 3, 4, 5, 6 mm	Plastic Indexed Caddy	**6112A21**... $9.00
9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Plastic Indexed Caddy	**6112A22**... $14.80
Ultra-Coated Silver Inch L-Key Sets			
10	1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	Plastic Indexed Caddy	**5888A36**... $22.24
13	0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, 3/8″	Plastic Indexed Caddy	**5888A38**... $37.79
High-Visibility Blue Metric L-Key Sets			
9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	Plastic Indexed Caddy	**5786A2**..... $23.26
15	1.27, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10 mm	Plastic Indexed Caddy	**5786A1**..... $54.58

Ball-Point Hex L-Key Boxed Set

All of the L-keys in this 200-piece set allow an angled entry up to 25°. Because the ball-point end doesn't require exact alignment between the fastener and the tool, you can use the keys in limited space areas. Made of alloy steel with a black-oxide finish. Comes in four plastic snap boxes that fit into a four-shelf plastic storage unit.

No. of Pieces	Hex Sizes	Per Set
200	**10 each:** 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 1.5 mm, 2 mm, 2.5 mm, 3 mm, 4 mm, 5 mm, 6 mm **5 each:** 5/16″, 3/8″, 8 mm, 10 mm	**6083A7**.... $231.93

Ball-Point Hex L-Keys

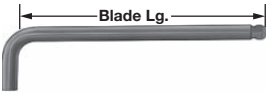

Save time tightening hex socket fasteners with these ball-point keys. The ball-point end can access fasteners at angles up to 25°, so exact alignment between the fastener and the tool is not required. Made of high strength tool steel with a black, corrosion-resistant finish.

Inch Sizes

Hex Size	Blade Lg.		Each
0.050″	2 13/16″	**5503A13**	$0.72
1/16″	3″	**5503A14**	.72
5/64″	3 3/16″	**5503A15**	.75
3/32″	3 3/8″	**5503A16**	.78
7/64″	3 9/16″	**5503A17**	.81
1/8″	3 3/4″	**5503A18**	.81
9/64″	4″	**5503A19**	.84
5/32″	4 3/16″	**5503A21**	.94
3/16″	4 1/2″	**5503A22**	1.16
7/32″	4 7/8″	**5503A23**	1.59
1/4″	5 1/4″	**5503A24**	$1.69
5/16″	6″	**5503A25**	2.62
3/8″	6 3/4″	**5503A26**	3.94
7/16″	7 1/2″	**5503A27**	8.14
1/2″	8 1/4″	**5503A28**	9.00
9/16″	9″	**5503A29**	13.82
5/8″	9 3/4″	**5503A31**	15.46
3/4″	11 1/4″	**5503A32**	25.60
7/8″	12 3/4″	**5503A33**	30.20
1″	14 1/4″	**5503A34**	40.29

Metric Sizes

Hex Size, mm	Blade Lg.		Each
1.27	2 13/16″	**5503A35**	$0.72
1.5	3″	**5503A36**	.75
2	3 3/16″	**5503A37**	.75
2.5	3 1/2″	**5503A38**	.78
3	3 7/8″	**5503A39**	.81
3.5	3 7/8″	**5503A41**	1.07
4	4 5/16″	**5503A42**	1.13
4.5	4 1/2″	**5503A43**	1.20
5	4 11/16″	**5503A44**	1.34
5.5	4 7/8″	**5503A45**	1.59
6	5 1/2″	**5503A46**	1.66
7	5 1/2″	**5503A47**	$2.43
8	6″	**5503A48**	2.88
9	6 5/8″	**5503A49**	3.75
10	6 11/16″	**5503A51**	3.93
11	7 7/8″	**5503A52**	7.93
12	8 11/16″	**5503A53**	8.05
14	10 3/16″	**5503A54**	10.13
17	11″	**5503A55**	16.52
19	11 9/16″	**5503A56**	19.64
22	13″	**5503A57**	31.81
24	14 1/2″	**5503A58**	40.29

High-Torque Ball-Point Hex L-Keys

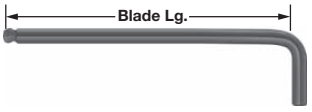

Also known as hex-plus keys, tools have a ball-point end and a hex end with a profile that provides greater contact with the flat sides of fasteners. This delivers up to 20% more torque than standard keys, which grip only with their pointed edges. Made of alloy steel with a black-oxide finish.

Hex Size	Blade Lg.		Each
Inch Sizes			
5/64"	4"	57185A43	$0.75
3/32"	4 7/16"	57185A11	.80
7/64"	4 3/4"	57185A44	.81
1/8"	5"	57185A12	.88
9/64"	5 3/16"	57185A45	.89
5/32"	5 1/2"	57185A13	1.27
3/16"	6 5/16"	57185A14	1.49
7/32"	7 1/16"	57185A15	1.52
1/4"	7 1/2"	57185A16	1.81
5/16"	8"	57185A17	2.46
3/8"	8 3/8"	57185A18	3.58

Hex Size	Blade Lg.		Each
Metric Sizes, mm			
1.5	3 1/2"	57185A34	$0.71
2	4"	57185A21	.75
2.5	4 7/16"	57185A22	.81
3	5"	57185A23	.86
4	5 1/2"	57185A24	1.06
5	6 5/16"	57185A25	1.28
6	7 1/16"	57185A26	1.49
8	8"	57185A28	2.45
10	8 11/16"	57185A31	4.21

13-Piece Inch Set— Includes one each of 0.050", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", and 3/8" L-keys. Packed in a plastic caddy.

57185A61 ..... **Per Set** $23.29

9-Piece Metric Set— Includes one each of metric L-keys listed above. Packed in a plastic caddy.

57185A33 ..... **Per Set** $16.29

Stainless Steel Ball-Point Hex L-Keys

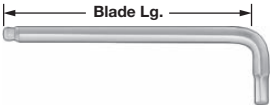

Ideal for sterile and clean room environments, keys can be autoclaved up to 600° F and don't have any coatings to peel or chip. Made of hardened and passivated Type 465 stainless steel for excellent corrosion resistance. Ball-point end does not require exact alignment into fastener; it allows for angled entry up to 25°.

Hex Size	Blade Lg.		Each
Inch Sizes			
1/16"	2 3/4"	5020A31	$24.19
5/64"	2 7/8"	5020A32	24.19
3/32"	3 1/8"	5020A33	25.40
7/64"	3 3/8"	5020A34	25.40
1/8"	3 1/2"	5020A35	26.61
9/64"	3 3/4"	5020A36	30.24
5/32"	4"	5020A37	30.24
3/16"	4 1/8"	5020A38	32.66
7/32"	4 1/2"	5020A39	36.29
1/4"	5"	5020A41	41.13
5/16"	5 3/4"	5020A42	50.81
3/8"	6"	5020A43	60.48

Hex Size	Blade Lg.		Each
Metric Sizes, mm			
1.5	2 3/4"	5020A21	$24.19
2	2 7/8"	5020A22	24.19
2.5	3 1/8"	5020A23	25.40
3	3 1/2"	5020A24	26.61
3.5	3 3/4"	5020A51	27.82
4	3 7/8"	5020A25	30.24
5	4 1/2"	5020A26	36.29
6	5"	5020A27	41.13
8	5 3/4"	5020A28	50.81
10	6"	5020A29	59.27

12-Piece Inch Set— Includes one of each inch size key above.

5020A13 ..... **Per Set** $368.08

10-Piece Metric Set— Includes one of each metric size key above.

5020A12 ..... **Per Set** $312.69

Ball-Point Hex Blades and Drivers

A ball-point end on these tools allows an angled entry of up to 25°. Exact alignment between the fastener and tool is not required, so you can quickly tighten and remove screws in hard-to-reach areas. Blades are alloy steel with black-oxide finish.

Blades— Can be cut down and/or welded onto another tool to make a customized driver. You can use larger-size blades with socket wrenches and power tools for additional reach. ***Snap-In Blade Sets—*** Include a plastic handle and interchangeable blades. Sets are not compatible with individual blades below. ***Drivers and Driver Sets—*** Drivers have a plastic handle with cushioned rubber grip. Inch-size handles are yellow; metric-size are red.

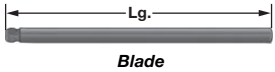

Blade

Standard Driver

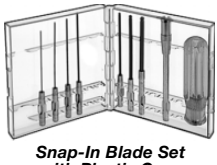

Snap-In Blade Set with Plastic Case

Blades

Hex Size	Lg.		Each
Inch Sizes			
0.050"	3 3/8"	6972A13	$0.88
1/16"	3 1/2"	6972A14	.89
5/64"	3 5/8"	6972A15	.89
3/32"	3 13/16"	6972A16	.92
7/64"	4 5/16"	6972A17	1.04
1/8"	4 1/2"	6972A18	1.07
9/64"	4 13/16"	6972A19	1.07
5/32"	5 1/8"	6972A21	1.12
3/16"	5 1/2"	6972A22	1.30
7/32"	5 7/8"	6972A23	1.58
1/4"	6 11/16"	6972A24	1.81
5/16"	7 5/16"	6972A25	2.85
3/8"	8 3/16"	6972A26	4.00
7/16"	9 1/8"	6972A27	8.28
1/2"	10 1/8"	6972A28	10.63
9/16"	10 7/8"	6972A29	12.97
5/8"	11 13/16"	6972A31	14.50
3/4"	13 1/2"	6972A32	24.01

Hex Size	Lg.		Each
Metric Sizes, mm			
1.27	3 3/8"	6972A43	$0.88
1.5	3 5/8"	6972A44	.88
2	3 13/16"	6972A45	.89
2.5	4 3/16"	6972A46	.95
3	4 5/8"	6972A47	1.06
3.5	4 13/16"	6972A48	1.10
4	5 3/16"	6972A49	1.12
4.5	5 1/2"	6972A51	1.30
5	5 13/16"	6972A52	1.43
5.5	6 1/8"	6972A53	1.66
6	6 11/16"	6972A54	1.90
7	7 5/16"	6972A55	2.58
8	7 13/16"	6972A56	3.06
9	8 3/8"	6972A57	3.64
10	9"	6972A58	4.44
11	9 5/8"	6972A59	8.20
12	10 1/2"	6972A61	9.86
14	12 1/2"	6972A62	12.32

12-Piece Inch Blade Set— Includes sizes 0.050", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", and 5/16". Packed in a vinyl pouch.

5709A61 ..... **Per Set** $14.96

11-Piece Inch Snap-In Blade Set— Includes sizes 0.050", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", plus 4" extension and handle. Set is not compatible with blades above. Packed in a plastic case.

8544A11 ..... **Per Set** $79.85

9-Piece Metric Snap-In Blade Set— Includes sizes 1.27, 1.5, 2, 2.5, 3, 4, and 5 mm, plus 4" extension and handle. Set is not compatible with blades above. Packed in a plastic case.

5505A23 ..... **Per Set** $64.98

Standard Drivers

Hex Size	Blade Lg.		Each
Inch Sizes			
0.050"	2 3/8"	5497A22	$1.83
1/16"	2 1/2"	5497A23	1.93
5/64"	2 5/8"	5497A24	2.11
3/32"	2 13/16"	5497A25	2.20
7/64"	2 7/8"	5497A26	2.24
1/8"	3 1/8"	5497A27	2.26
9/64"	3 5/16"	5497A28	2.48
5/32"	3 5/8"	5497A29	2.61
3/16"	3 11/16"	5497A31	3.49
7/32"	4 3/16"	5497A32	3.75
1/4"	5"	5497A33	4.73
5/16"	5 5/8"	5497A34	5.61
3/8"	6 1/2"	5497A35	6.84

Hex Size	Blade Lg.		Each
Metric Sizes, mm			
1.27	2 3/8"	5497A49	$1.79
1.5	2 1/2"	5497A51	2.01
2	2 13/16"	5497A52	2.24
2.5	2 11/16"	5497A53	2.23
3	3 5/16"	5497A54	2.29
3.5	3 1/2"	5497A55	3.13
4	3 11/16"	5497A56	3.04
5	4 5/16"	5497A58	3.60
6	5 3/8"	5497A61	4.16
8	6 3/8"	5497A63	6.27
10	7 5/16"	5497A65	7.33

Long Drivers

Hex Size	Blade Lg.		Each
Inch Sizes			
0.050"	3 5/8"	5497A19	$2.43
1/16"	3 13/16"	5497A21	2.43
5/64"	4 5/16"	5497A68	2.52
3/32"	4 13/16"	5497A69	2.58
7/64"	5 7/8"	5497A38	3.08
1/8"	6 3/8"	5497A39	3.08
9/64"	6 7/8"	5497A41	3.34
5/32"	7 3/8"	5497A42	4.00
3/16"	7 7/8"	5497A43	4.42
1/4"	8 7/8"	5497A45	5.75
5/16"	9 1/2"	5497A46	6.89

Hex Size	Blade Lg.		Each
Metric Sizes, mm			
1.27	3 5/8"	5497A47	$2.43
1.5	3 13/16"	5497A48	2.43
2	4"	5497A67	2.58
2.5	4 5/16"	5497A72	2.76
3	6 3/16"	5497A73	3.23
3.5	6 3/8"	5497A66	3.32
4	7"	5497A74	3.48
5	7 13/16"	5497A75	4.80
6	8 5/8"	5497A76	5.13
8	9 5/16"	5497A77	7.12
10	10 3/16"	5497A78	8.77

Driver Sets— Packed in a vinyl pouch

No. of Pieces	Hex Sizes		Per Set
Standard-Length Driver Inch Sets			
7	5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16"	5709A39	$18.69
8	0.050", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32"	5709A38	19.46
8	7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16"	5709A41	31.56
11	5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"	5709A23	44.81
13	0.050", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"	5709A31	46.83

No. of Pieces	Hex Sizes		Per Set
Standard-Length Driver Metric Sets			
7	1.5, 2, 2.5, 3, 4, 5, 6 mm	5709A58	$21.51
9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm	5709A32	36.90
Long-Length Driver Inch Set			
11	5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"	5709A35	51.41
Long-Length Driver Metric Set			
8	2, 2.5, 3, 4, 5, 6, 8, 10 mm	5709A33	42.04

Ultra-Gold Ball-Point Hex L-Keys and Drivers

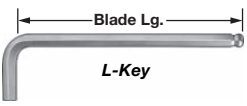

L-Key

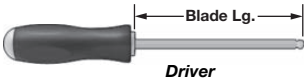

Driver

A strong, flexible gold finish gives these hex L-keys and drivers good corrosion resistance. The finish won't flake or peel when the tools are twisted or torqued—ideal for use in food applications and electronics assembly. Dirt and grime can't hide on the tools and the gold color makes them easy to identify. The ball-point end does not require exact alignment into the fastener; it allows for angled entry up to 25°. Made of extra-strong steel for up to 20% more torque than ordinary steel.

L-Keys and Drivers

Hex Size	L-Keys Blade Lg.		Each	Drivers Blade Lg.	O'all Lg.		Each
Inch Sizes							
0.050″	2 13/16″	7813A21	$0.94	2 3/8″	4 1/8″	7996A51	$2.99
1/16″	3″	7813A22	.94	2 1/2″	4 11/16″	7996A52	3.26
5/64″	3 3/16″	7813A23	.94	2 5/8″	4 13/16″	7996A53	3.69
3/32″	3 3/8″	7813A24	.97	2 13/16″	5 3/16″	7996A54	3.69
7/64″	3 5/8″	7813A25	1.11	2 15/16″	5 5/16″	7996A55	3.81
1/8″	3 13/16″	7813A26	1.16	3 1/8″	6 5/8″	7996A56	3.81
9/64″	4″	7813A27	1.16	3 5/16″	6 3/4″	7996A57	4.57
5/32″	4 3/16″	7813A28	1.20	3 9/16″	7 15/16″	7996A58	4.57
3/16″	4 1/2″	7813A29	1.38	3 11/16″	8 1/16″	7996A59	5.98
7/32″	4 7/8″	7813A31	1.75	4 3/16″	9 1/16″	7996A6	6.84
1/4″	5 5/16″	7813A32	2.02	5″	9 13/16″	7996A61	6.84
5/16″	6″	7813A33	3.20	5 5/8″	10 7/16″	7996A62	10.43
3/8″	6 13/16″	7813A34	4.51	6 1/2″	11 5/16″	7996A63	12.06
7/16″	7 1/2″	7813A35	8.50	7 5/8″	12 1/2″	7996A64	21.83
1/2″	8 5/16″	7813A36	10.62	8 9/16″	13 3/8″	7996A65	25.52
Metric Sizes							
1.27 mm	2 13/16″	7813A41	.94	2 3/8″	4 1/8″	7996A81	3.14
1.5 mm	3″	7813A42	.94	2 9/16″	4 3/4″	7996A82	3.43
2 mm	3 3/16″	7813A43	.94	2 7/8″	5″	7996A83	3.89
2.5 mm	3 1/2″	7813A44	.97	2 11/16″	5 1/8″	7996A84	3.89
3 mm	3 7/8″	7813A45	1.11	3 1/4″	6 3/4″	7996A85	4.01
4 mm	4 5/16″	7813A46	1.20	3 3/4″	8 1/16″	7996A86	4.81
5 mm	4 11/16″	7813A47	1.51	4 5/16″	8 5/8″	7996A87	6.29
6 mm	5 1/2″	7813A48	2.11	5 3/8″	10 1/4″	7996A88	7.20
8 mm	6″	7813A49	3.42	6 3/8″	11 1/4″	7996A89	10.98
10 mm	6 11/16″	7813A51	5.06	7 1/4″	12 1/8″	7996A9	12.69

L-Key Sets—Furnished in a plastic indexed caddy

12-Piece Inch Set—Includes one each of sizes 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, and 5/16″.
7813A11 ..... **Per Set** $15.09

13-Piece Inch Set—Includes one each of sizes 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″.
7813A12 ..... **Per Set** $19.30

9-Piece Metric Set—Includes one each of sizes 1.5, 2, 2.5, 3, 4, 5, 6, 8, and 10 mm.
7813A13 ..... **Per Set** $15.68

15-Piece Metric Set—Includes one each of sizes 1.27, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 7, 8, 9, and 10 mm.
7813A15 ..... **Per Set** $26.90

Driver Sets—Furnished in a clear vinyl pouch

8-Piece Inch Set—Includes one each of sizes 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, and 5/32″.
7996A66 ..... **Per Set** $28.26

13-Piece Inch Set—Includes one each of sizes 0.050″, 1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″.
7996A67 ..... **Per Set** $68.39

6-Piece Metric Set—Includes one each of sizes 1.5, 2, 2.5, 3, 4, and 5 mm.
7996A91 ..... **Per Set** $26.11

9-Piece Metric Set—Includes one each of sizes 1.5, 2, 2.5, 3, 4, 5, 6, 8, and 10 mm.
7996A92 ..... **Per Set** $56.47

Two-Tip T-Handle Ball-Point Hex Keys

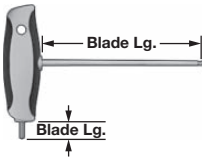

Use the straight hex end on the short blade for increased torque and power. Use the ball-point hex end on the long blade for angled entry up to 25°; the ball-point end doesn't require exact alignment between the fastener and the tool. Handle is two-component plastic and rubber to offer a firm, comfortable grip. Blades are chrome-plated steel.

Hex Size	Blade Lg. Short Blade	Blade Lg. Long Blade		Each
Inch Sizes				
3/32″	1/2″	5 15/16″	6286A13	$6.10
7/64″	1/2″	5 15/16″	6286A15	6.34
1/8″	1/2″	5 15/16″	6286A17	6.46
9/64″	1/2″	5 15/16″	6286A19	6.46
5/32″	1/2″	5 15/16″	6286A23	6.57
3/16″	5/8″	5 15/16″	6286A25	6.58
7/32″	5/8″	5 15/16″	6286A27	7.02
1/4″	5/8″	5 15/16″	6286A29	7.17
5/16″	5/8″	7 15/16″	6286A33	8.17
3/8″	3/4″	7 15/16″	6286A35	12.34

10-Piece Inch Set—Includes one of each inch size above.
6286A88 ..... **Per Set** $70.72

Hex Size, mm	Blade Lg. Short Blade	Blade Lg. Long Blade		Each
Metric Sizes				
2	1/2″	5 15/16″	6286A12	$6.38
2.5	1/2″	5 15/16″	6286A14	6.60
3	1/2″	5 15/16″	6286A16	6.67
4	1/2″	5 15/16″	6286A18	6.78
5	5/8″	5 15/16″	6286A22	7.32
6	5/8″	5 15/16″	6286A24	7.45
8	5/8″	7 15/16″	6286A26	8.48
10	7/8″	7 15/16″	6286A28	12.85

8-Piece Metric Set—Includes one of each metric size above.
6286A89 ..... **Per Set** $59.50

Ball-Point T-Handle Hex Keys

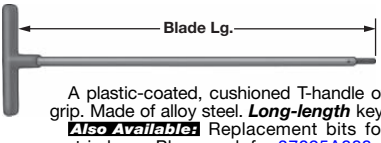

Long Length

A plastic-coated, cushioned T-handle offers a firm, comfortable grip. Made of alloy steel. ***Long-length*** keys have replaceable bits.
Also Available: Replacement bits for long-length inch and metric keys. Please ask for 37095A888 and specify size.

Hex Size	Standard Length Blade Lg.		Each	Long Length Blade Lg.		Each
Inch Sizes						
5/64″	9 5/16″	37095A31	$3.15	18 5/8″	37095A47	$23.70
5/32″	8 1/2″	37095A35	3.48	18 1/2″	37095A51	25.15
3/16″	9 1/4″	37095A36	3.56	18 1/2″	37095A52	26.76
7/32″	9 3/4″	37095A37	4.46	18 1/2″	37095A53	28.14
1/4″	10″	37095A38	4.56	18 1/2″	37095A54	29.63
5/16″	10 1/2″	37095A39	7.00	18 1/2″	37095A55	31.13
3/8″	11″	37095A41	8.05	18 1/2″	37095A56	34.12
Metric Sizes						
2 mm	9 5/16″	37165A59	3.21	18 5/8″	37165A76	22.05
2.5 mm	9 5/16″	37165A61	3.21	18 5/8″	37165A83	22.87
3 mm	9 5/16″	37165A62	3.21	18 5/8″	37165A84	25.96
4 mm	8″	37165A63	3.69	18 1/2″	37165A71	26.76
5 mm	9″	37165A64	4.28	18 1/2″	37165A72	28.14
6 mm	9 3/4″	37165A65	4.80	18 1/2″	37165A73	29.65
8 mm	10 1/2″	37165A66	7.40	18 1/2″	37165A74	32.63
10 mm	11 1/4″	37165A67	8.11	18 1/2″	37165A75	37.14

6-Piece Inch Set—Includes one each of the standard-length inch sizes 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″ above. Packed in a vinyl pouch.
37095A45 ..... **Per Set** $29.97

10-Piece Inch Set—Includes one each of standard-length inch sizes 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″ above. Also has one each of inch sizes 3/32″, 7/64″, 1/8″, and 9/64″ with straight hex ends. Packed in a plastic stand.
37095A46 ..... **Per Set** $44.37

5-Piece Metric Set—Includes one each of the standard-length metric sizes 4, 5, 6, 8, and 10 mm listed above. Packed in a vinyl pouch.
37165A68 ..... **Per Set** $26.78

Fold-Up Ball-Point Hex Key Sets

A

B

C

Keys have ball-point ends that can enter socket-head screws at angles up to 25°. Blades are alloy steel and open to 180°.

(A) Standard Fold-Up Sets—Have slim alloy-steel handles.

(B) Ultra-Grip Fold-Up Sets—The two-component glass-reinforced nylon handle has a hard inner body for maximum strength and stability. A soft cushioned grip provides comfort and slip resistance.

(C) Screw-Holding Tip "Z" Fold-Up Sets—A steel retaining ring around the ball-point end of the hex key firmly holds socket head screws during installation and removal. Handle is molded plastic for a sure grip. *Note:* Sizes indicated with a ♣ do not have a retaining ring.

	No. of Pieces	Hex Sizes	Handle Lg.		Each
Inch Sets					
A	5	3/16″, 7/32″, 1/4″, 5/16″, 3/8″	5 1/4″	5339A21	$9.41
A	7	1/16″, 5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″	3″	5339A11	9.41
A	9	5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	4 1/4″	5339A31	11.99
B	5	3/16″, 7/32″, 1/4″, 5/16″, 3/8″	5 1/4″	5206A12	13.08
B	9	5/64″, 3/32″, 7/64″, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	4 1/4″	5206A11	13.11
C	9	5/64″♣, 3/32″♣, 7/64″♣, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″	4 3/4″	4881A35	22.28
Metric Sets					
A	5	1.5, 2, 2.5, 3, 4 mm	3″	5339A42	6.42
A	5	4, 5, 6, 8, 10 mm	5 1/4″	5339A52	9.52
B	5	4, 5, 6, 8, 10 mm	5 1/4″	5206A22	13.08
B	6	2, 2.5, 3, 4, 5, 6 mm	3 5/8″	5206A21	10.25
C	7	2♣, 2.5♣, 3, 4, 5, 6, 8 mm	4 3/4″	4881A34	22.28

Ball-Point Hex L-Keys, Drivers, and T-Handles with Screw-Holding Tips

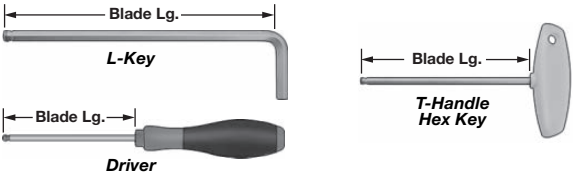

A steel retaining ring around the ball-point end of the tools holds hex socket head screws firmly in place during installation and removal. The ball-point end allows up to a 25° angled entry into the fastener, making tools ideal for hard-to-access areas. Blades are alloy steel.

L-Keys and Drivers

Drivers have two-component plastic and rubber handles with a comfortable cushion grip for achieving maximum torque. Inch-size handles are black and yellow; metric-size handles are black and red.

Hex Size	L-Keys Blade Lg.		Each	Drivers Blade Lg.		Each
Inch Sizes						
1/8″	4 5/8″	6450A51	$2.93	4″	5691A33	$4.64
9/64″	5 3/16″	6450A52	2.93	4″	5691A34	4.75
5/32″	5 5/8″	6450A53	2.93	5″	5691A35	4.74
3/16″	6 3/16″	6450A54	2.93	6″	5691A36	4.76
7/32″	6 1/2″	6450A55	3.15	6″	5691A37	5.30
1/4″	7 3/16″	6450A56	3.51	6″	5691A38	5.83
5/16″	7 7/8″	6450A57	5.37	8″	5691A39	6.93
3/8″	8 11/16″	6450A58	6.88	8″	5691A41	8.96
Metric Sizes						
3 mm	4 15/16″	6450A24	2.97	3 15/16″	5691A13	4.79
4 mm	5 3/8″	6450A25	2.97	4 15/16″	5691A14	4.80
5 mm	6 3/16″	6450A26	3.18	5 7/8″	5691A15	5.07
6 mm	7″	6450A27	3.75	5 7/8″	5691A16	5.81
8 mm	7 13/16″	6450A28	5.30	7 7/8″	5691A17	7.11
10 mm	8 11/16″	6450A29	6.85	7 7/8″	5691A18	9.21

L-Key and Driver Sets

Sizes with a ♦ have a ball-point end without a retaining ring.

13-Piece Inch L-Key Set— Includes hex sizes 0.050″♦, 1/16″♦, 5/64″♦, 3/32″♦, 7/64″♦, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″. Packed in a plastic indexed caddy.
6450A7 ..... **Per Set** $36.92

9-Piece Metric L-Key Set— Includes hex sizes 1.5♦, 2♦, 2.5♦, 3, 4, 5, 6, 8, and 10 mm. Packed in a plastic indexed caddy.
6450A6 ..... **Per Set** $29.51

8-Piece Inch Driver Set— Includes one each of the inch drivers above.
5691A3 ..... **Per Set** $45.04

13-Piece Inch Driver Set— Includes hex sizes 0.050″♦, 1/16″♦, 5/64″♦, 3/32″♦, 7/64″♦, 1/8″, 9/64″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″.
5691A2 ..... **Per Set** $61.48

9-Piece Metric Driver Set— Includes hex sizes 1.5♦, 2♦, 2.5♦, 3, 4, 5, 6, 8, and 10 mm.
5691A1 ..... **Per Set** $44.07

T-Handle Hex Keys and Sets

Keys have plastic handles molded to the blade for a sure grip. Inch-size handles are black and yellow; metric-size handles are black and red.

Hex Size	Blade Lg.		Each	Hex Size	Blade Lg.		Each
Inch Sizes				***Metric Sizes***			
5/32″	5 13/16″	5361A52	$3.80	4 mm	5 7/8″	5361A42	$3.79
3/16″	5 13/16″	5361A53	4.47	5 mm	5 7/8″	5361A43	4.42
7/32″	5 13/16″	5361A54	5.31	6 mm	5 7/8″	5361A44	5.34
1/4″	5 13/16″	5361A55	5.69	8 mm	7 7/8″	5361A45	7.05
5/16″	7 13/16″	5361A56	6.98	10 mm	7 7/8″	5361A46	9.08
3/8″	7 13/16″	5361A57	9.06				

6-Piece Inch Hex Key Set— Includes one each of the inch T-handle hex keys listed above.
5361A5 ..... **Per Set** $35.54

5-Piece Metric Hex Key Set— Includes one each of the metric T-handle hex keys listed above.
5361A4 ..... **Per Set** $28.82

Miniature Ball-Point Hex Drivers

A rotating cap on the handle offers precision control. Just apply pressure to the cap with your index finger or palm and turn the body of the driver. The precision-ground ball-point end allows up to a 25° angled entry into the fastener. Blades are hardened alloy steel. Handles are plastic; they're tapered and molded to the blade.

Also Available: Individual drivers in metric sizes 1.5, 2, 2.5, and 3 mm. Please ask for 55035A888 and specify hex size.

Hex Size	Blade Lg.	O'all Lg.		Each
0.050″ (1.3 mm)	1 9/16″	4 23/32″	7268A51	$4.24
0.063″	1 31/32″	5 45/64″	7268A52	4.24
0.078″	1 31/32″	5 45/64″	7268A53	4.24
0.094″	1 31/32″	5 45/64″	7268A54	4.24
0.109″	2 23/64″	6 11/16″	7268A55	4.24
0.125″	2 23/64″	6 11/16″	7268A56	4.24
0.141″	2 23/64″	6 11/16″	7268A57	4.24
0.156″	2 23/64″	6 11/16″	7268A58	4.24

8-Piece Inch Set— Includes one each of the hex sizes listed above.
7268A66 ..... **Per Set** $30.76

5-Piece Metric Set— Includes sizes 1.3, 1.5, 2, 2.5, and 3 mm.
55035A55 ..... **Per Set** $19.65

Spline L-Keys and Drivers

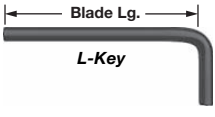

Driver

Four Flute

Six Flute

Also known as Bristol keys, these tools remove spline-socket screws. Blades are steel. ***Drivers*** have plastic handles and nonreplaceable blades.

L-Keys and L-Key Sets

Dia.	Standard Blade Lg.		Each	Long Arm Blade Lg.		Each
Four Flute						
0.033″	1 1/4″	7048A11	$1.43	—	—	—
0.048″	1 1/4″	7048A12	1.88	3 1/16″	7048A61	$2.18
0.069″	1 3/4″	7048A15	1.88	3 1/8″	7048A62	2.34
0.076″	1 3/4″	7048A16	1.88	3 1/8″	7048A63	2.24
Six Flute						
0.048″	1 1/4″	7048A13	1.54	3 1/16″	7048A64	2.06
0.060″	1 5/8″	7048A14	1.91	3 1/8″	7048A65	1.92
0.072″	1 3/4″	7048A17	1.91	3 1/8″	7048A66	2.59
0.096″	1 7/8″	7048A18	1.68	3 1/8″	7048A31	2.07
0.111″	2″	7048A19	1.57	3 5/16″	7048A32	2.16
0.133″	2 1/8″	7048A21	1.91	3 9/16″	7048A33	2.10
0.145″	2 1/4″	7048A22	1.81	3 3/4″	7048A34	1.56
0.168″	2 3/8″	7048A23	2.63	3 15/16″	7048A35	2.69
0.183″	2 1/2″	7048A24	2.67	4 1/8″	7048A36	2.70
0.216″	2 3/4″	7048A25	3.57	4 1/2″	7048A37	4.56

9-Piece Standard L-Key Set— Includes four-flute diameters 0.033″, 0.048″, 0.069″, and 0.076″, plus six-flute diameters 0.048″, 0.060″, 0.072″, 0.096″, and 0.111″. Packed in a vinyl pouch.
7048A54 ..... **Per Set** $10.43

10-Piece Standard L-Key Set— Includes four-flute diameters 0.069″ and 0.076″, plus six-flute diameters 0.060″, 0.072″, 0.096″, 0.111″, 0.133″, 0.145″, 0.168″, and 0.183″.
7048A55 ..... **Per Set** $26.33

7-Piece Long-Arm L-Key Set— Includes six-flute diameters 0.096″, 0.111″, 0.133″, 0.145″, 0.168″, 0.183″, and 0.216″.
7048A56 ..... **Per Set** $18.82

Drivers—Blade length is 7/8″

Dia.		Each	Dia.		Each
Four Flute			***Six Flute***		
0.033″	55705A22	$9.60	0.048″	55705A24	$9.60
0.048″	55705A23	9.60	0.060″	55705A25	9.60
0.069″	55705A26	9.60	0.072″	55705A27	9.60
0.076″	55705A28	9.60	0.096″	55705A29	9.60

Spline Bits and Ratchet Wrench

Also known as Bristol bits, these have a knurled end for easy finger-tightening. Made of alloy steel with a six-flute design. Bits must be used with the miniature ratchet wrench (sold separately below). Wrench is not compatible with standard 1/4″ hex-shank insert bits.

Spline Bit

Six Flute

Six-Flute Spline Bits— **To Order:** Please specify diameter: 0.060″, 0.072″, 0.096″, 0.111″, or 0.145″.
5697A888 ..... **Each** $2.28

Miniature Ratchet Wrench— Made of stainless steel. Overall length is 3 3/4″.
5697A12 ..... **Each** $5.58

Miniature Ratchet Wrench

6-Piece Spline Insert-Bit Set— Includes one miniature ratchet wrench and five spline bits in the sizes listed above. Packed in a plastic pouch.
5697A28 ..... **Per Set** $11.89

Torx L-Keys and Drivers

Blades are steel. Driver handles are plastic. *Note:* Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

L-Keys

Torx Size	Standard Lg.		Each	Long Arm Lg.		Each
T3	1 7/8″	6959A81	$2.88	—	—	—
T4	1 7/8″	6959A82	2.88	—	—	—
T5	1 35/64″	6959A89	3.41	2 23/32″	6959A87	$3.70
T6	1 21/32″	6959A11	3.81	2 49/64″	6959A72	4.19
T7	1 7/8″	6959A12	3.35	2 53/64″	6959A73	3.70
T8	1 7/8″	6959A14	3.35	2 63/64″	6959A74	3.70
T9	1 7/8″	6959A16	3.35	3 3/16″	6959A75	3.70
T10	2″	6959A18	1.06	3 3/8″	6959A41	1.23
T15	2 1/8″	6959A21	1.11	3 9/16″	6959A42	1.28
T20	2 1/4″	6959A23	1.26	3 3/4″	6959A43	1.43
T25	2 3/8″	6959A25	1.39	3 15/16″	6959A44	1.56
T27	2 1/2″	6959A27	1.47	4 1/8″	6959A45	1.64
T30	2 3/4″	6959A29	1.73	4 1/2″	6959A46	1.90
T40	3″	6959A32	2.17	4 7/8″	6959A76	2.38
T45	3 1/4″	6959A34	2.86	5 1/4″	6959A77	3.11
T50	3 3/4″	6959A36	3.23	6″	6959A78	3.57
T55	4 1/4″	6959A38	4.42	6 3/4″	6959A79	5.74
T60	5 1/4″	6959A86	5.63	8 1/4″	6959A88	6.81

7-Piece L-Key Sets—Include sizes T10, T15, T20, T25, T27, T30, and T40. Packed in a plastic caddy.

Standard Set ..... 6959A54 **Per Set** $11.91
Long-Arm Set ..... 6959A58 **Per Set** $15.22

14-Piece L-Key Sets—Include sizes T6, T7, T8, T9, T10, T15, T20, T25, T27, T30, T40, T45, T50, and T55.

Container	Standard	Per Set	Long Arm	Per Set
Vinyl Pouch	6959A62	$35.91	6959A63	$40.82
Metal Box	6959A84	44.24	6959A85	45.73

Drivers

Torx Size	Blade Lg.	O'all Lg.		Each
T6	3″	5 13/16″	5756A32	$5.76
T7	3″	5 13/16″	5756A11	5.76
T8	3″	5 13/16″	5756A12	5.76
T9	3 1/8″	5 13/16″	5756A13	5.76
T10	3 1/8″	5 13/16″	5756A14	5.76
T10	11″	15 1/4″	5756A55	6.26
T15	3 3/8″	6 3/4″	5756A15	6.75
T15	10 15/16″	15″	5756A56	6.34
T20	3 3/8″	6 3/4″	5756A16	7.16
T25	3 3/4″	7 3/4″	5756A17	7.77
T27	4 3/8″	8″	5756A18	6.84
T30	4 5/16″	8 1/2″	5756A19	6.58
T40	4″	8 5/8″	5756A2	9.26
T45	4 1/8″	9 1/16″	5756A21	10.42
T50	4 1/16″	8 1/8″	5756A22	10.42

6-Piece Driver Set—Includes sizes T6, T7, T8, T9, T10, and T15. Packed in a vinyl pouch.

5756A92 ..... **Per Set** $32.21

6-Piece Driver Set—Includes sizes T10, T15, T20, T25, T27, and T30. Packed in a vinyl pouch.

5756A45 ..... **Per Set** $33.62

10-Piece Driver Set—Includes sizes T6, T7, T8, T9, T10, T15, T20, T25, T27, and T30. Packed in a vinyl pouch.

5756A91 ..... **Per Set** $57.89

Magnetic Driver and Torx Bit Set

Here's an easier way to drive Torx screws. A magnet is built into the driver's steel shank to hold bits securely. Plus, you can store the bits right in the handle. Handle is plastic and has an ergonomic design for fatigue-free driving. This 7-piece set includes driver and 1/4″ hex-shank Torx bits in sizes T10, T15, T20, T25, T30, and T40. Driver has a 4 3/4″ long blade; overall length is 9 1/8″.

Note: Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

5379A82 ..... **Per Set** $26.44

Ultra-Gold Torx L-Key Sets

You won't have to search for these keys—their gold finish makes them easy to identify. Made of steel, these keys are an extra strong version of our standard Torx L-keys. The gold finish provides good corrosion resistance. Lengths range from 2 7/64″ to 3 13/16″ for 6370A1; 2 29/32″ to 4 29/32″ for 6370A2. These eight-piece sets are packed in a plastic caddy. *Note:* Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Torx Sizes		Per Set
T6, T7, T8, T9, T10, T15, T20, T25	6370A1	$18.71
T9, T10, T15, T20, T25, T27, T30, T40	6370A2	19.04

Fold-Up Torx-Key Sets

You'll get a variety of Torx key sizes in one tool. Blades are steel and can be used at any angle. They open up to 180°.

A ***Standard Fold-Up Sets***—Handles are steel.

B ***Ultra-Grip Fold-Up Set***—Set has a two-component plastic handle with a hard inner body for maximum strength and a soft cushion grip for comfort and slip resistance.

C ***Tamper-Resistant Ultra-Grip Fold-Up Set***—Same as Style B, except for use with tamper-resistant Torx screws.

	Torx Sizes	Handle Lg.		Each
A	T6, T7, T8, T9, T10, T15, T20	3″	8372A59	$11.51
A	T10, T15, T20, T25, T27, T30, T40	4 1/4″	8372A61	11.51
B	T8, T10, T15, T20, T25, T27, T30, T40	4 1/2″	5842A43	13.38
C	T10, T15, T20, T25, T27, T30, T40	4 1/4″	55515A22	15.39

Miniature Precision Torx Drivers

Use these drivers with electronics and precision components and for small parts assembly. All have a tapered plastic handle and an ergonomic design for a comfortable grip. A rotating top on the handle enhances fingertip control for precise turning. Blades are steel and molded to the handle. *Note:* Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Torx Size	Blade Lg.	O'all Lg.		Each
T1	1 13/64″	4 29/32″	52995A22	$6.67
T2	1 13/64″	4 29/32″	52995A24	6.67
T3	1 37/64″	4 45/64″	52995A26	5.48
T4	1 37/64″	4 45/64″	52995A27	5.48
T5	1 37/64″	4 45/64″	52995A23	5.48
T6	1 37/64″	4 45/64″	52995A11	5.48
T7	1 37/64″	4 45/64″	52995A12	5.48
T8	1 37/64″	4 45/64″	52995A13	5.48
T9	1 31/32″	5 45/64″	52995A14	5.48
T10	1 31/32″	5 45/64″	52995A15	5.72
T15	2 23/64″	6 45/64″	52995A16	5.72
T20	2 23/64″	6 45/64″	52995A17	5.72

4-Piece Set—Includes drivers in sizes T1, T2, T3, and T4. Furnished in a vinyl pouch.

	Per Set
52995A31	$21.22

7-Piece Set—Includes drivers in sizes T5, T6, T7, T8, T9, T10, and T15. Furnished in a blister pack.

	Per Set
52995A25	$41.13

Torx Driver Sets with Screw-Holding Tips

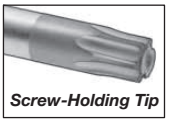

No more dropped screws—a rotary spring on the tip of these drivers holds the fastener in place while it turns. Great for use in tight spaces. Spring is made of stainless steel. Blades are hardened steel.

Miniature electronics driver set has a cushion grip handle for comfort. A rotating top on the handle enhances fingertip control for precise turning. Furnished in a canvas pouch.

Driver set has a two-component plastic and rubber handle for a firm, comfortable grip. Furnished in a vinyl pouch.

No. of Pieces	Torx Sizes	O'all Lg.		Per Set
Miniature Electronics Driver Set—*Blade Lg.: 1 37/64″*				
6	T6, T7, T8, T9, T10, T15	5 33/64″-6 19/64″	7904A26	$39.49
Driver Set—*Blade Lg.: 2 3/8″-4 17/32″*				
6	T8, T10, T15, T20, T25, T30	6 15/32″-9 3/16″	7904A22	40.48

Insulated Torx Drivers

Comply with IEC 900 and VDE specifications and are rated for use up to 1,000 volts. Insulation is molded onto the steel blade. *Note:* Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Torx Size	Blade Lg.	O'all Lg.		Each
T5	2 13/32″	6 1/2″	53415A21	$6.20
T6	2 13/32″	6 1/2″	53415A22	6.20
T7	2 13/32″	6 1/2″	53415A23	6.20
T8	2 13/32″	6 1/2″	53415A24	6.20
T9	2 13/32″	6 1/2″	53415A25	6.20
T10	2 13/32″	6 1/2″	53415A26	$6.20
T15	3″	7 1/2″	53415A27	7.66
T20	3″	7 1/2″	53415A28	7.66
T25	3″	7 51/64″	53415A29	7.66

6-Piece Set—Includes sizes T8, T9, T10, T15, T20, and T25. Packed in a vinyl pouch.
53415A35 ..... **Per Set** $41.02

T-Handle Torx Drivers

Designed for comfort, these drivers have a plastic T-handle molded onto the blade. Blades are steel. *Note:* Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Fingertip T-handle drivers are ideal for delicate assembly work.

T-handle drivers have handles designed for extra torque.

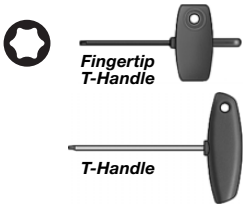

Torx Size	Fingertip T-Handle Blade Lg.	Fingertip T-Handle O'all Lg.		Each	T-Handle Blade Lg.	T-Handle O'all Lg.		Each
T6	1 13/32″	2 45/64″	7273A51	$3.29	—	—	—	—
T7	1 13/32″	2 45/64″	7273A52	3.29	—	—	—	—
T8	1 39/64″	2 29/32″	7273A53	3.29	—	—	—	—
T9	1 39/64″	2 29/32″	7273A54	3.35	3 29/32″	5″	6963A19	$5.00
T10	1 39/64″	2 29/32″	7273A55	3.35	3 29/32″	5″	6963A21	5.19
T15	1 45/64″	3 7/64″	7273A56	3.35	7 29/32″	9″	6963A22	5.97
T20	2″	3 7/64″	7273A57	3.35	7 29/32″	9 13/64″	6963A23	6.81
T25	—	—	—	—	7 29/32″	9 13/64″	6963A31	7.06
T27	—	—	—	—	7 29/32″	9 13/64″	6963A32	8.05
T30	—	—	—	—	7 29/32″	9 13/64″	6963A24	8.05
T40	—	—	—	—	7 29/32″	9 13/64″	6963A25	8.63
T45	—	—	—	—	5 29/32″	7 1/2″	6963A26	10.38

7-Piece Fingertip T-Handle Set—Includes sizes T6, T7, T8, T9, T10, T15, and T20. Packed in a metal bench stand.
7273A61 ..... **Per Set** $25.65

7-Pc. T-Handle Set—Includes sizes T9, T10, T15, T20, T25, T27, and T30. Packed in a cardboard box.
6963A58 ..... **Per Set** $46.62

7-Pc. T-Handle Set—Includes sizes T10, T15, T20, T25, T30, T40, and T50. Packed in a metal bench stand.
6963A71 ..... **Per Set** $68.18

Torx-Plus L-Keys and Drivers

Exclusively for use with Torx-Plus screws, these keys and drivers deliver up to 100% longer life and 25% better torsional strength than standard Torx tools. They also have less cam-out (slippage that can damage the screw). Blades are steel. ***Drivers*** have a cushion grip for comfort. *Note:* These tools won't work with standard Torx screws.

Torx-Plus Size	Standard L-Keys Lg.		Each	Long-Arm L-Keys Lg.		Each
IP6	1 1/2″	3726A11	$2.76	2 39/64″	3726A23	$3.08
IP7	1 39/64″	3726A12	2.76	2 51/64″	3726A24	3.08
IP8	1 45/64″	3726A13	2.76	3″	3726A25	3.08
IP9	1 29/32″	3726A14	2.76	3 13/64″	3726A26	3.08
IP10	2″	3726A15	2.76	3 13/32″	3726A27	3.08
IP15	2 7/64″	3726A16	2.76	3 39/64″	3726A28	3.08
IP20	2 13/64″	3726A17	2.76	3 51/64″	3726A29	3.08
IP25	2 13/32″	3726A18	2.76	4″	3726A31	3.08
IP27	2 39/64″	3726A19	2.76	4 19/64″	3726A32	3.08
IP30	2 45/64″	3726A21	3.80	4 39/64″	3726A33	4.08
IP40	2 29/32″	3726A22	5.38	4 29/32″	3726A34	5.86

Torx-Plus Size	Drivers Blade Lg.	Drivers O'all Lg.		Each
IP6	2 13/32″	6 1/2″	5259A11	$4.82
IP7	2 13/32″	6 1/2″	5259A12	4.82
IP8	2 13/32″	6 45/64″	5259A13	4.88
IP9	2 13/32″	6 45/64″	5259A14	5.54
IP10	3 7/64″	7 1/2″	5259A15	5.64
IP15	3 7/64″	7 1/2″	5259A16	5.90
IP20	3 29/32″	8 19/64″	5259A17	6.16
IP25	3 29/32″	8 19/64″	5259A18	7.08
IP27	4 1/2″	9 13/64″	5259A19	8.08
IP30	4 1/2″	9 13/64″	5259A21	9.60
IP40	5 7/64″	10″	5259A22	10.26

9-Pc. Torx-Plus Long-Arm L-Key Set—Includes L-keys in sizes IP8, IP9, IP10, IP15, IP20, IP25, IP27, IP30, and IP40. Packed in a plastic caddy.
3726A36 .. **Per Set** $32.76

7-Pc. Torx-Plus Driver Set—Includes drivers in sizes IP8, IP10, IP15, IP20, IP25, IP30, and IP40. Packed in a cardboard box.
5259A31 .. **Per Set** $49.54

Torx Ball-Point L-Keys and Drivers

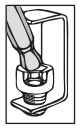

Because they allow angled entry of up to 20°, these keys and drivers don't require exact alignment between the fastener and the tool. Great for quickly installing and removing fasteners in hard-to-reach areas. Blades are steel. ***Drivers*** have a cushion grip for comfort. *Note:* Also compatible with Torx-Plus screws and will give Torx-Plus performance.

Torx Size	L-Keys Lg.		Each	Drivers Blade Lg.	Drivers O'all Lg.		Each
T6	2 7/64″	54575A45	$4.32	2 1/2″	4 39/64″	37455A34	$6.90
T7	2 25/64″	54575A46	4.49	2 1/2″	4 39/64″	37455A35	6.90
T8	2 19/32″	54575A47	4.69	2 1/2″	4 29/32″	37455A36	6.90
T9	2 29/32″	54575A31	4.69	2 1/2″	4 29/32″	37455A21	6.73
T10	3 13/64″	54575A32	5.05	2 45/64″	5 3/32″	37455A22	7.09
T15	3 19/64″	54575A33	5.24	2 29/32″	6 19/64″	37455A23	7.09
T20	3 39/64″	54575A34	5.40	3 13/64″	7 1/2″	37455A24	7.29
T25	3 51/64″	54575A35	5.80	3 1/2″	7 45/64″	37455A25	7.49
T27	4 13/64″	54575A36	5.98	3 51/64″	8 39/64″	37455A26	7.87
T30	4 39/64″	54575A37	6.17	4 13/64″	9″	37455A27	8.41
T40	4 29/32″	54575A38	6.91	4 39/64″	9 13/32″	37455A28	8.99
T45	5 13/32″	54575A39	8.23	5 3/32″	10″	37455A29	10.66
T50	6 13/64″	54575A41	9.17	5 51/64″	10 51/64″	37455A31	12.72
T55	6 45/64″	54575A42	12.37	6 13/32″	11 39/64″	37455A32	15.28

8-Pc. L-Key Set—Includes sizes T9, T10, T15, T20, T25, T27, T30, and T40. Packed in an indexed, two-tiered plastic caddy.
54575A44 ..... **Per Set** $39.60

8-Pc. Driver Set—Includes sizes T9, T10, T15, T20, T25, T27, T30, and T40. Packed in a clear vinyl pouch.
37455A33 ..... **Per Set** $56.16

Tamper-Resistant Torx L-Keys and Drivers

Use these keys and drivers to install and remove tamper-resistant pin-in-head Torx screws. All are steel. ***L-keys*** have tamper-resistant Torx on both ends. ***Drivers*** have a plastic handle with a cushion grip (unless noted) for maximum torque and comfort. *Note:* Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Torx Size	L-Keys Lg.		Each	Drivers Blade Lg.	Drivers O'all Lg.		Each
T7	1 39/64″	55525A22	$3.87	2 13/32″	6 1/2″	83335A68	$8.18
T8	1 45/64″	55525A23	3.87	2 13/32″	6 1/2″	83335A69	8.18
T9	1 29/32″	55525A24	3.87	2 13/32″	6 45/64″	83335A59	8.66
T10	2″	55525A25	2.91	3″	7 1/2″	83335A61	8.66
T15	2 7/64″	55525A26	2.91	3″	7 1/2″	83335A62	8.92
T20	2 13/64″	55525A27	2.96	4″	8 5/16″	83335A63	11.10
T25	2 13/32″	55525A28	3.02	4″	8 5/16″	83335A64	11.20
T27	2 45/64″	55525A29	3.12	4 1/2″	9 13/64″	83335A65	13.12
T30	2 45/64″	55525A31	3.57	4 1/2″	9 13/64″	83335A66	15.52
T40	3″	55525A32	4.34	5 7/64″	10″	83335A67	16.76
T45	3 13/64″	55525A33	6.33	—	—	—	—
T50	3 45/64″	55525A34	6.96	—	—	—	—
T55	4 13/64″	55525A35	8.16	—	—	—	—

6-Piece L-Key Set—Includes L-keys in sizes T10, T15, T20, T25, T27, and T30. Packed in a vinyl pouch.
55525A41 ..... **Per Set** $17.71

9-Piece Driver Set—Includes one 9 5/32″ long magnetic driver with bit storage in the plastic handle, a vinyl bit organizer, and 1/4″ hex-shank insert bits in these sizes: T8, T9, T10, T15, T20, T25, and T27. Handle does not have a cushion grip. Packed in a plastic box.
7262A44 ..... **Per Set** $48.10

11-Piece Driver Set—Includes one 9 5/32″ long magnetic driver with bit storage in the plastic handle, a vinyl bit organizer, and 1/4″ hex-shank insert bits in these sizes: T8, T9, T10, T15, T20, T25, T27, T30, and T40. Handle does not have a cushion grip. Packed in a plastic box.
7262A47 ..... **Per Set** $54.85

Offset Torx Drivers

Now you can have two different Torx sizes in a single driver. Both ends have blades that are offset from the center grip. The grip is molded-on plastic for comfort. Blades are steel with a black finish.

Note: Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Torx Sizes	O'all Lg.		Each
T6 ×T8	3 39/64″	6103A33	$6.38
T7 ×T9	3 39/64″	6103A34	6.88
T10×T15	3 39/64″	6103A35	7.58
T20×T25	4 29/32″	6103A36	$8.18
T27×T30	4 29/32″	6103A37	9.36

5-Piece Set—Includes one of each driver above in a vinyl pouch.

6103A41 ..... **Per Set** $36.40

Fingertip T-Handle Torx Drivers with Screw-Holding Tips

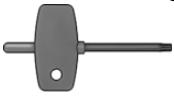

Screw-Holding Tip

A rotary spring on the tip of these drivers holds the screw in place while it turns. Drivers have a plastic T-handle molded onto the blade. A rotating top on the handle enhances fingertip control for precise turning. Spring is made of steel. Blades are steel with a black finish.

Note: Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Torx Size	Blade Lg.	O'all Lg.		Each
T6	1 13/32″	2 45/64″	4147A12	$4.66
T7	1 13/32″	2 45/64″	4147A14	4.78
T8	1 39/64″	2 29/32″	4147A16	4.78
T9	1 39/64″	2 29/32″	4147A18	4.78
T10	1 39/64″	2 29/32″	4147A22	4.89
T15	1 45/64″	3 7/64″	4147A24	4.89
T20	1 45/64″	3 7/64″	4147A26	5.32

7-Piece Set—Includes one of each size above in a metal stand.

7904A25 ... **Per Set** $36.80

Torx L-Keys with Screw-Holding Tips

Screw-Holding Tip

L-keys with a difference—the long arm of these keys has a rotary spring tip. The spring holds the screw in place while it turns. Spring is made of stainless steel. Blades are hardened steel.

Note: Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Torx Size	O'all Lg.		Each
T6	3 3/16″	7943A11	$3.71
T7	3 33/64″	7943A12	3.60
T8	4 1/64″	7943A13	3.60
T9	4 27/64″	7943A14	3.60
T10	4 53/64″	7943A15	3.60
T15	5 27/64″	7943A16	3.60
T20	5 29/32″	7943A17	$3.83
T25	6 1/2″	7943A18	4.03
T27	7 1/64″	7943A19	5.24
T30	7 39/64″	7943A21	5.44
T40	8 3/8″	7943A22	6.97

7-Piece Set—Includes sizes T6, T7, T8, T9, T10, T15, and T20. Furnished in a plastic caddy.

7904A23 ..... **Per Set** $22.86

10-Piece Set—Includes sizes T6, T7, T8, T9, T10, T15, T20, T25, T27, and T30. Furnished in a plastic caddy.

7904A24 ..... **Per Set** $35.47

Flexible-Leg Tripod

Stand this tripod on its own three feet, or wrap the legs around almost anything. Legs are made of 1 1/8″ dia. plastic sections that have ball-and-socket joints, allowing the legs to flex and move. The feet and the rings around each section are rubber to prevent slipping. Color is black and gray.

Tripod has a 1 3/4″ dia. head with a 1/4″-20 threaded mounting stud. Comes with a 3/8″-16 male adapter.

Max. Proj.	Load Cap., lbs.		Each
9 13/16″	6.6	1050A1	$49.74

Two-Tip T-Handle Torx Drivers

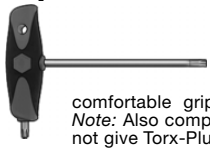

Use the short blade on these drivers for added torque; use the long blade for hard-to-reach screws. The T-handle is made of two-component plastic and rubber to provide a firm, comfortable grip. Blades are chrome-plated steel. *Note:* Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

Torx Size	Length: Short Blade	Long Blade		Each
T10	1/2″	4″	6186A61	$5.76
T15	1/2″	4″	6186A62	6.34
T20	19/32″	4″	6186A63	7.20
T25	19/32″	6″	6186A64	7.52
T27	19/32″	6″	6186A65	8.45
T30	43/64″	6″	6186A66	8.51
T40	43/64″	6″	6186A67	9.28

7-Piece Set—Includes one of each driver above.

6186A72 ..... **Per Set** $52.48

Magnetic Torx Driver Set

A magnet is built into the shaft of this driver to hold bits securely. Handle is made of polypropylene with an ergonomic cushion grip. Bits store in the handle; flip open the storage compartment for quick and easy access. The extended blade provides access to hard-to-reach Torx screws. Blade is steel.

Set includes a driver handle and 1/4″ hex-shank bits in sizes T8, T10, T15, T20, T25, T27, T30, and T40. Handle is 4 5/8″ long. Shaft is 5″ long. *Note:* Also compatible with Torx-Plus screws.

6194A27 ..... **Per Set** $31.88

Adjustable Blade Length Tamper-Resistant Torx Driver Set

Blade Detents

The blades for this driver have detents, so you can adjust their length from 4 5/64″ to 3 1/2″. Use to install and remove tamper-resistant pin-in-head Torx screws. To adjust the blade, press down on the handle's collar and manually adjust the blade's length. Release the collar and a spring-loaded ball bearing mechanism locks the blade in place. A shorter blade delivers greater torque; a longer blade reaches difficult-to-access screws. Handle has a cushioned rubber grip. Blades are steel.

Set includes a driver handle and five double-ended blades for a total of 10 blade sizes: T6, T7, T8, T9, T10, T15, T20, T25, T30, and T40. Furnished with a blade holder and a canvas pouch.

Note: Also compatible with Torx-Plus screws, but will not give Torx-Plus performance.

2257A5 ..... **Per Set** $56.50

Fingertip Flag-Handle Torx-Plus Drivers

Use these flag-handle drivers exclusively on Torx-Plus screws. Drivers offer fingertip control, so they're ideal for delicate assembly and electronics work. The flag-handle design makes work in tight spaces easier. Drivers deliver up to 100% longer life and 25% better torsional strength than standard Torx tools. They also have less cam-out (slippage that can damage the screw). Handles are rubber. Blades are steel.

Note: These drivers won't work with standard Torx screws.

Torx-Plus Size	Blade Lg.	O'all Lg.		Each
IP6	2″	3 3/8″	7974A21	$2.69
IP7	2″	3 3/8″	7974A22	2.69
IP8	2″	3 3/8″	7974A23	2.69
IP9	2″	3 3/8″	7974A24	3.02
IP10	2″	3 1/2″	7974A25	3.02
IP15	2″	3 1/2″	7974A26	3.19
IP20	2″	3 1/2″	7974A27	3.53

7-Piece Set—Includes one of each size above in a plastic stand.

7974A28 ..... **Per Set** $19.82

Screw Extractors

Extractors have a spiral flute; use them to remove broken screws, bolts, studs, pipe, and other threaded parts. Drill a hole in the broken part, place the extractor in the hole, and turn it with a standard wrench or a tap wrench. The broken part will back out without damaging the threads. Use on right-hand threads. Made of steel.

Extractors

Trade No.	For Screw, Bolt, and Stud Dia.	For Pipe Size	Use Drill Size	O'all Lg.		
1	#8-1/4" (2.5-6 mm)	—	5/64"	2"	2563A11	$3.21
2	#12-5/16" (6-8 mm)	—	7/64"	2 3/8"	2563A12	3.32
3	5/16"-7/16" (8-12 mm)	—	5/32"	2 3/4"	2563A13	3.23
4	7/16"-9/16" (12-14 mm)	1/8"	1/4"	3"	2563A14	4.10
5	9/16"-3/4" (14-20 mm)	1/8"	17/64"	3 3/8"	2563A15	4.32
5 1/4	11/16"-15/16" (17-24 mm)	1/4"	23/64"	3 3/8"	2563A16	8.07
6	3/4"-1" (20-25 mm)	3/8"	13/32"	3 3/4"	2563A17	9.38
6 3/8	15/16"-1 1/8" (24-29 mm)	3/8"	31/64"	3 3/4"	2563A18	11.69
7	1"-1 3/8" (25-35 mm)	—	17/32"	4 1/8"	2563A19	19.35
7 1/2	1 1/8"-1 1/2" (29-38 mm)	1/2"	39/64"	4 1/8"	2563A21	16.10
8	1 3/8"-1 3/4" (35-44 mm)	3/4"	13/16"	4 3/8"	2563A22	25.53
9	1 3/4"-2 1/8" (44-54 mm)	1"	1 1/16"	4 5/8"	2563A23	38.99
10	2 1/8"-2 1/2" (54-63 mm)	1 1/4"	1 5/16"	5"	2563A24	48.66
11	2 1/2"-3" (63-76 mm)	1 1/2"	1 9/16"	5 5/8"	2563A25	66.14
12	3"-3 1/2" (76-88 mm)	2"	1 15/16"	6 1/4"	2563A26	97.45

Extractor and Extractor/Drill Sets

Trade Nos. in Set	Container		
Extractor Sets			
5, 5 1/4, 6 3/8, 7 1/2	Vinyl Pouch	2563A32	$46.19
6, 7, 8, 9	Vinyl Pouch	2563A29	78.92
1, 2, 3, 4, 5	Vinyl Pouch	2563A27	11.35
1, 2, 3, 4, 5, 6	Vinyl Pouch	2563A28	27.80
5, 5 1/4, 6 3/8, 7 1/2, 8, 9	Vinyl Pouch	2563A33	77.68
1, 2, 3, 4, 5, 6, 7, 8, 9	Wood Block	2563A35	65.42
Extractor Set with Right-Hand High-Speed Steel Drills			
1, 2, 3, 4, 5, 6	Vinyl Pouch	2729A48	33.57
Extractor Set with Right-Hand Cobalt Steel Drills			
1, 2, 3, 4, 5	Plastic Pack	2729A44	27.28
Extractor Set with Left-Hand Cobalt Steel Drills			
1, 2, 3, 4, 5	Plastic Pack	2729A46	38.60

Case for Extractors and Drills— Case is steel and has compartments for screw-extractor Nos. 1-5 and corresponding drill bits.

27475A16 ..... $6.18

Heavy Duty Screw Extractors

Extra deep edges equal strong gripping with reduced expansion and jamming. All four sides of these heavy duty, spiral-flute extractors bite into the broken part of the pipe or fastener at the same time. Insert the extractor into the broken pipe or into a hole drilled in a screw, bolt, or stud. Turn the extractor with a wrench and the broken part will turn out on its own threads. Use on right-hand threads. Made of steel.

Also Available: Extractors for left-hand threads. Please ask for 2566A51 and specify trade number.

Extractors

Trade No.	For Screw, Bolt, and Stud Dia.	For Pipe Size	Use Drill Size	O'all Lg.		
1	3/8" (10 mm)	1/8"	13/64"	1 1/2"	2566A15	$7.29
2	1/2" (12 mm)	1/4"	9/32"	1 1/2"	2566A16	11.80
3	5/8"-3/4" (16-20 mm)	3/8"	13/32"	1 3/4"	2566A17	13.60
4	—	1/2"	—	2"	2566A18	16.56
5	1 1/8"-1 1/4" (28-31 mm)	3/4"	23/32"	2 1/2"	2566A21	22.95
6	1 1/2"-1 3/4" (38-45 mm)	1"	29/32"	2 3/4"	2566A22	30.73
7	2" (50 mm)	1 1/4"	1 3/16"	3 3/8"	2566A23	43.36
8	2 1/4"-2 1/2" (56-62 mm)	1 1/2"	1 15/32"	3 1/2"	2566A24	71.48
9	3"-3 1/2" (75-87 mm)	2"	2 1/16"	4 3/8"	2566A25	115.41
10	7/8"-1" (22-25 mm)	—	1/2"	2 1/2"	2566A19	20.25

Extractor Sets— Packed in a compartmented plastic case

Trade Nos. in Set		
1, 2, 3, 4, 5	2566A11	$77.70
1, 2, 3, 4, 5, 6	2566A12	109.43
1, 2, 3, 4, 5, 6, 10	2566A13	130.08
All 10 sizes	2566A14	353.50

Screw Extractors for Hard-to-Reach Areas

The spiral flute and short, stocky design provides an aggressive grip for high-torque applications. Drill a hole in the broken screw, bolt, or stud; insert the extractor; and turn it with a wrench. Also good for removing pipe, fittings, and other hollow tubular-shaped items. Use on right-hand threads. Made of steel.

For Screw, Bolt, and Stud Dia.	For Tube ID	Use Drill Size	O'all Lg.		
#12 (6 mm)	1/8"	1/8"	1 1/4"	57195A511	$3.07
1/4" (6 mm)	5/32"	5/32"	1 1/4"	57195A512	3.07
5/16" (8 mm)	3/16"	3/16"	1 1/4"	57195A513	3.07
3/8" (10 mm)	7/32"	7/32"	1 1/4"	57195A514	3.07
7/16" (11 mm)	1/4"	1/4"	1 1/4"	57195A515	3.07
1/2" (12 mm)	9/32"	9/32"	1 1/4"	57195A516	3.07
9/16" (14 mm)	5/16"	5/16"	1 1/4"	57195A517	3.07
5/8" (16 mm)	11/32"	11/32"	1 1/4"	57195A518	3.07
11/16" (17 mm)	3/8"	3/8"	1 1/4"	57195A519	3.07
3/4" (20 mm)	13/32"	13/32"	1 1/4"	57195A521	3.41
13/16" (21 mm)	7/16"	7/16"	1 1/4"	57195A522	3.40
7/8" (22 mm)	15/32"	15/32"	1 1/4"	57195A523	3.40
15/16" (24 mm)	1/2"	1/2"	1 1/4"	57195A524	3.40
1" (25 mm)	17/32"	17/32"	1 1/4"	57195A525	3.21
1 1/16" (27 mm)	9/16"	9/16"	1 1/4"	57195A526	3.21
1 1/8" (28 mm)	19/32"	19/32"	1 1/4"	57195A527	3.21
1 3/16" (30 mm)	5/8"	5/8"	1 1/4"	57195A528	3.21
1 1/4" (31 mm)	21/32"	21/32"	1 1/4"	57195A531	3.74
1 5/16" (33 mm)	11/16"	11/16"	1 1/4"	57195A532	3.74
1 3/8" (35 mm)	23/32"	23/32"	1 1/4"	57195A533	3.74
1 7/16" (36 mm)	3/4"	3/4"	1 1/4"	57195A534	3.74
1 1/2" (38 mm)	25/32"	25/32"	1 1/4"	57195A541	4.46
1 9/16" (39 mm)	13/16"	13/16"	1 1/4"	57195A542	4.46
1 5/8" (41 mm)	27/32"	27/32"	1 1/4"	57195A543	4.46
1 11/16" (42 mm)	7/8"	7/8"	1 1/4"	57195A544	4.46

10-Piece Set— Includes extractors in sizes #12 to 3/4". Packed in a plastic case.

57195A31 ..... $28.85

25-Piece Set— Includes one each of the extractors listed. Packed in a plastic case.

57195A32 ..... $68.05

Any-Direction Heavy Duty Extractors

Pipe Extractor

Screw Extractor

Straight flutes on these extractors strongly grip everywhere they're engaged. Use on right-hand and left-hand threads. Made of steel.

Drive ***pipe extractors*** directly into pipe and turn out the broken piece with a wrench. ***Screw extractors*** remove broken screws, bolts, and studs. Drill a hole into the part being removed and insert the extractor. Sizes for screw diameters up to 9/16" have a sliding nut.

Pipe Extractors

For Pipe Size	Use Drill Size	O'all Lg.		
1/8" (3 mm)	1/4"	2 1/4"	2562A15	$13.75
1/4" (6 mm)	3/8"	2 1/2"	2562A16	14.60
3/8" (10 mm)	1/2"	2 3/4"	2562A17	14.72
1/2" (12 mm)	5/8"	3"	2562A18	17.49
3/4" (20 mm)	13/16"	3 1/4"	2562A19	21.18
1" (25 mm)	1 1/16"	3 1/2"	2562A21	31.14
1 1/4" (32 mm)	1 3/8"	3 3/4"	2562A22	49.17
1 1/2" (40 mm)	1 9/16"	4"	2562A23	60.14
2" (50 mm)	2 1/16"	4 1/2"	2562A24	115.84

Extractor Sets

4-Piece Pipe Extractor Set— Includes extractors for pipe sizes 1/8", 1/4", 3/8", and 1/2". Packed in a box.

2562A11 ..... $53.09

6-Piece Pipe Extractor Set— Includes extractors for pipe sizes 1/8", 1/4", 3/8", 1/2", 3/4", and 1". Packed in a box.

2562A14 ..... $97.07

5-Piece Screw Extractor Set— Includes extractors for screw diameters 1/4", 5/16", 3/8", 7/16", and 1/2" to 9/16". Packed in a box.

2564A22 ..... $35.72

20-Piece Screw Extractor Set— Includes five extractors for screw diameters 1/4", 5/16", 3/8", 7/16", and 1/2" to 9/16"; five corresponding high-speed steel drills; and 10 solid-style drill guides. Packed in a compartmented plastic box.

2565A2 ..... $99.07

61-Piece Pipe- and Screw- Extractor Set— Includes six pipe extractors in sizes 1/8" to 1", eight screw extractors in sizes 1/4" to 1", nine drills in sizes 1/8" to 5/8", 10 solid-style drill guides, and 28 sleeve-style drill guides. Packed in a compartmented plastic box.

2565A1 ..... $506.01

For information about pipe size, see pages 2-3.

Any-Direction Light Duty Screw Extractors

Well suited for soft materials and thin-walled pieces, these straight flute extractors won't expand the piece being removed. Drill a hole in the broken screw, bolt, or stud; lightly tap the extractor with a hammer; and turn it with a wrench. Use on right-hand and left-hand threads. Made of steel.

Extractors

For Screw, Bolt, and Stud Dia.	For Pipe Size	Use Drill Size	O'all Lg.		
3/16"-5/16" (5-8 mm)	—	9/64"	2 1/2"	8289A31	$2.39
3/8" (10 mm)	—	3/16"	2 5/8"	8289A32	2.63
7/16" (11 mm)	—	15/64"	3"	8289A33	2.89
1/2"-9/16" (12-14 mm)	1/8"	5/16"	3 1/8"	8289A34	3.42
5/8" (16 mm)	1/4"	3/8"	3 3/8"	8289A35	4.55
3/4" (20 mm)	3/8"	15/32"	4"	8289A36	6.74
7/8" (22 mm)	1/2"	9/16"	4 3/4"	8289A37	8.87
1"-1 1/8" (26-28 mm)	1/2"	21/32"	4 7/8"	8289A38	14.76
1 1/4"-1 3/8" (31-34 mm)	3/4"	13/16"	5 3/8"	8289A39	17.17
1 1/2" (38 mm)	1"	1 1/16"	5 1/2"	8289A41	22.69

Extractor and Extractor/Drill Sets

No. of Pieces	For Screw, Bolt, and Stud Dia.		
Extractor Sets			
5	3/32"-5/8"	8289A11	$15.71
6	3/16"-3/4"	8289A45	20.17
Extractor Sets with Cobalt Steel Drills			
10	3/16"-5/8"	2729A45	39.64
12	3/16"-3/4"	2729A51	48.20

One-Step Screw Extractors

No drilling required. Tap the extractor onto the fastener and use a wrench to remove frozen screws, bolts, and studs as well as rounded or deformed bolt heads. Use on right-hand and left-hand threads. Made of steel.

For Screw, Bolt, and Stud Dia.			For Screw, Bolt, and Stud Dia.		
3/16" (5 mm)	2769A12	$40.43	7/16" (10 mm)	2769A16	$45.00
1/4" (6 mm)	2769A13	41.29	1/2" (12 mm)	2769A17	46.71
5/16" (8 mm)	2769A14	41.86	3/4" (18 mm)	2769A21	65.86
3/8" (9 mm)	2769A15	42.57			

6-Piece Set— Includes one each of the extractors listed, except the 3/4" (18 mm) size. Packed in a plastic case.

2769A31 ..... $225.62

One-Step Miniature Screw Extractors

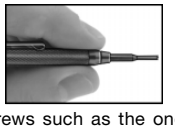

Remove small stripped and damaged screws such as the ones used in eyeglasses and electronics. Place the extractor over the fastener and twist it out. No drilling required. Extractors have double-ended, reversible tips. Use on right-hand and left-hand threads. Made of steel; handle is aluminum.

For Screw Dia.	O'all Lg.		
1.1 mm, 1.5 mm	4 1/2"	5054A11	$6.20
1.25 mm	4 1/2"	5054A12	6.20
1.5 mm	4 1/2"	5054A13	6.20
2 mm	4 1/2"	5054A14	6.20

All-in-One Screw Extractors

Double Ended

Single Ended

Drill and remove broken screws, bolts, and studs with a single tool. The seven-flute extracting edge bites into the broken fastener. Use on right-hand threads. Made of steel.

Double Ended— One end drills the hole and the other end extracts the bolt. Use with a 1/8" variable-speed reversible power drill, unless noted.

Single Ended— Both the drill and the extractor are on one end. After drilling, screw the extractor to the top of the drill bit, then extract the bolt. Use with a 3/8" variable-speed reversible power drill.

For Screw, Bolt, and Stud Dia.		
Double Ended		
#5-#6 (3 mm-3.5 mm)	53405A41	$9.80
#8 (4 mm)	53405A42	11.20
#10 (5 mm)	53405A44	11.20
1/4" (6 mm)	53405A43▲	14.00
Single Ended		
5/16" (8 mm)	53405A47	16.80
3/8" (10 mm)	53405A48	18.20
1/2" (12 mm)	53405A49	21.00

▲Use with a 3/8" variable-speed reversible power drill.

4-Piece Double-Ended Extractor Set— Includes four extractors (not listed) for removing screw/bolt sizes #4 to 3/8". Use with a 3/8" and larger variable-speed reversible power drill.

5997A6 ..... $32.36

7-Piece Double- and Single-Ended Extractor Set— Includes one each of the extractors listed.

53405A39 ..... $74.67

One-Step Socket-Drive Bolt Extractor Sets

Ratchet Drive

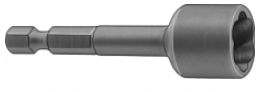

Power Drive

The spiral-fluted socket grips a bolt or stud and then tightens as it's turned. No drilling required. Use on right-hand and left-hand threads. Made of steel.

Ratchet Drive— Turn extractors with a square-drive ratchet or impact wrench, or use a flat wrench on the 3/8" and 1/2" drive sizes.

Power Drive— Turn extractors with power tools that accept a 1/4" hex shank.

Drive Size	No. of Pieces	Dia. Range		
Ratchet Drive				
1/4"	16	1/4"-3/8" and 6-10 mm	6792A14	$127.50
3/8"	13	1/4"-3/4"	6792A13	126.98
3/8"	9	8-19 mm	6792A12	88.54
1/2"	5	3/4"-1"	6792A11	87.80
Power Drive				
1/4" hex shank	7	3/16"-1/2" and 10 mm	6792A15	42.40

One-Step Knurl-Grip Stud Extractors

Use a standard 1/2" square-drive ratchet wrench to tighten the knurled wheel on this extractor; as you tighten the wheel, its grip on studs and bolt ends becomes stronger. No drilling required. Removes 1/4" to 3/4" size studs. Use on right-hand and left-hand threads. Made of steel.

2537A11 ..... $39.49

One-Step Socket-Screw Extractor Sets

Extract all types of socket-head screws that have rounded or damaged recesses. No drilling required: drive the extractor into the socket-screw recess with a hammer and use a wrench to twist it out. Use on right-hand and left-hand threads. Made of steel. Packed in a vinyl pouch.

Also Available: Individual extractors. Please ask for 2643A11 and specify screw type and size.

For Screw Dia.	For Socket-Head Cap Screws		For Flat-Head Socket Cap Screws		For Button-Head Socket Cap Screws		For Socket Set Screws	
Machine-Screw and Inch Sets								
#6, #8, #10, 1/4"	2643A41	$35.00	2643A58	$35.00	2643A65	$35.00	2643A49	$35.00
1/4", 5/16", 3/8", 7/16", 1/2"	2643A42	44.00	2643A59	44.00	—	—	2643A51	44.00
1/4", 5/16", 3/8", 1/2", 5/8"	—	—	—	—	2643A66	44.00	—	—
5/8", 3/4"	2643A43	32.00	2643A61	32.00	—	—	2643A52	32.00
7/8", 1"	2643A44	35.00	2643A62	35.00	—	—	2643A53	35.00
Metric Sets								
3, 4, 5, 6 mm	2643A54	35.00	2643A63	35.00	2643A67	35.00	2643A56	35.00
6, 8, 10, 12 mm	—	—	—	—	2643A68	44.00	—	—
6, 8, 10, 12, 14 mm	2643A55	44.00	—	—	—	—	—	—
16, 18, 20, 24 mm	2643A71	71.00	—	—	—	—	—	—

About Nonsparking Metal Tools

Made from aluminum bronze, beryllium copper, and other copper-based alloys (such as bronze and nickel copper) that are Factory Mutual approved, these nonmagnetic, corrosion-resistant tools inhibit sparking. They satisfy OSHA requirements that specify nonsparking tools for locations where flammable vapors and combustible residues are present. Iron or steel tools could produce sparks and be an ignition source. Nonsparking tools are not, however, classified as antistatic because they do conduct electricity.

Note: Do not use these tools in direct contact with acetylene due to the possible risk of explosion.

Aluminum Bronze—Has high strength for impact and torque applications. Most tools are beryllium free.

Beryllium Copper—With maximum strength for impact and torque applications, it's the most desirable material for tools with cutting edges or gripping teeth. This alloy contains approximately 2% beryllium.

Adjustable and Pipe Wrenches

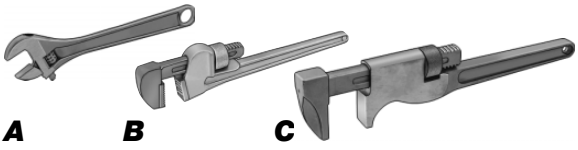

A **B** **C**

Style A are made of aluminum bronze.

Style B have a beryllium copper jaw insert and aluminum bronze hook.

Style C are made of aluminum bronze. Also known as engineers' and railroad wrenches.

O'all Lg.	Jaw Cap.		
(A) Adjustable Wrenches			
6″	15/16″	6502A1	$57.93
8″	1 1/8″	6502A2	66.00
10″	1 5/16″	6502A3	88.88
12″	1 1/2″	6502A4	113.24
15″	1 11/16″	6502A5	207.83
(B) Pipe Wrenches with Aluminum Handle			
10″	2 1/2″	6461A21	171.03
14″	2 13/16″	6461A22	198.38
18″	3 3/16″	6461A23	239.44
24″	4 1/4″	6461A24	295.21
36″	5 11/16″	6461A25	445.71

O'all Lg.	Jaw Cap.		
(B) Pipe Wrenches with Aluminum Bronze Handle			
8″	1 15/16″	6498A1	$155.87
10″	2 1/2″	6498A2	162.82
14″	2 13/16″	6498A3	201.96
18″	3 3/16″	6498A4	225.41
24″	4 1/4″	6498A5	313.65
36″	5 11/16″	6498A6	541.54
(C) Pipe Wrenches			
15″	2 13/16″	6482A12	226.44
18″	3″	6482A16	285.66

Adjustable-Hook Spanner Wrenches

Made of aluminum bronze. Heads have a movable hook.

For Circle Dia.	Hook Dp.	O'all Lg.		
1 1/4″-3″	9/32″	8″	6504A1	$64.81
2″ -4 3/4″	9/32″	11″	6504A2	75.00
4 1/2″-6 3/8″	1/4″	12″	6504A3	74.94

Combination Wrenches

Each wrench has a 15° angled open end and 12-point, 15° offset box end of the same size.

Size	O'all Lg.		
Beryllium Copper			
3/8″	5″	6506A12	$44.92
7/16″	5 1/2″	6506A13	47.32
1/2″	6″	6506A14	47.37
9/16″	6 3/4″	6506A15	48.29
5/8″	7 3/4″	6506A16	49.48
11/16″	8 3/4″	6506A17	49.74
3/4″	9 1/2″	6506A18	67.51
7/8″	11″	6506A19	91.04
15/16″	12 1/2″	6506A33	94.21
1″	12 1/2″	6506A21	99.01
1 1/16″	14″	6506A22	109.17
1 1/8″	14 1/2″	6506A23	112.53
1 1/4″	16 1/4″	6506A24	139.32
1 5/16″	17″	6506A25	150.53
1 3/8″	19″	6506A26	182.58
1 7/16″	19″	6506A27	191.00

Size	O'all Lg.		
Beryllium Copper (Cont.)			
1 1/2″	19″	6506A28	$206.61
1 5/8″	21″	6506A29	218.62
Aluminum Bronze			
8 mm	5 3/8″	6506A51	42.72
10 mm	6 3/8″	6506A52	41.49
11 mm	6 7/8″	6506A31	38.30
12 mm	7 1/2″	6506A32	39.30
13 mm	8 1/8″	6506A53	45.29
14 mm	8 1/8″	6506A34	41.81
15 mm	8 7/8″	6506A35	45.99
16 mm	8 7/8″	6506A36	45.99
17 mm	9 5/8″	6506A54	54.34
18 mm	9 5/8″	6506A37	49.74
19 mm	10 5/8″	6506A55	61.37
22 mm	11 5/8″	6506A56	69.75

6-Piece Inch Set—Includes sizes 7/16″, 1/2″, 9/16″, 5/8″, 3/4″, and 1 1/8″ in a plastic pouch.

6506A41 ..... $343.04

7-Piece Inch Set—Includes sizes 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 3/4″, and 7/8″ in a plastic pouch.

6506A42 ..... $357.73

Double Open-End Wrenches

Made of aluminum bronze. Heads are angled 15°.

Size	O'all Lg.		
1/4″ × 5/16″	5 1/4″	6499A31	$33.57
3/8″ × 7/16″	5 1/4″	6499A32	33.57
7/16″ × 1/2″	5 1/4″	6499A11	33.57
1/2″ × 5/8″	6″	6499A12	40.56
9/16″ × 5/8″	6″	6499A13	40.56
9/16″ × 3/4″	6 3/4″	6499A14	48.82
11/16″ × 7/8″	8 3/16″	6499A36	50.65
3/4″ × 13/16″	8 1/8″	6499A41	49.92
3/4″ × 7/8″	8 1/8″	6499A37	49.46
7/8″ × 15/16″	9 1/4″	6499A17	58.73
1″ × 1 1/8″	10 3/4″	6499A18	67.92
1 1/16″ × 1 1/4″	12 3/8″	6499A19	77.74
1 1/8″ × 1 5/16″	12 3/8″	6499A21	78.47

Striking Box Wrenches

To loosen a rusted nut, place one of these wrenches on the nut and strike wrench with a hammer. Made of aluminum bronze. Wrenches have a straight, 6-point head.

Size	O'all Lg.		
1 1/4″	6 1/2″	6507A12	$93.85
1 7/16″	7 1/2″	6507A16	104.12
1 1/2″	8 3/4″	6507A18	108.96
1 5/8″	8 3/4″	6507A22	112.38
1 13/16″	9 7/8″	6507A26	142.87
2″	10 5/8″	6507A32	151.49

12-Point Box Wrenches

Made of aluminum bronze, wrenches have 12-point, 15° offset heads.

Size	O'all Lg.		
7/16″ × 1/2″	7 3/4″	6505A31	$33.96
1/2″ × 9/16″	9 1/2″	6505A13	39.54
9/16″ × 5/8″	9 1/2″	6505A15	42.51
3/4″ × 7/8″	12 1/4″	6505A33	58.59
15/16″ × 1″	14 3/4″	6505A34	79.55
15/16″ × 1 1/16″	15 1/8″	6505A21	83.97

Screwdrivers

Have a beryllium copper blade and plastic handle.

Slotted

Tip Width/Tip No.	Blade Lg.	O'all Lg.		
Slotted				
1/8″	6″	9 1/2″	6525A6	$15.92
3/16″	9 3/8″	13″	6525A7	22.45
1/4″	2″	5″	6525A5	18.79
5/16″	3″	6 1/2″	6525A1	17.18
5/16″	6″	10 1/8″	6525A2	24.06
3/8″	8″	13″	6525A3	35.09
3/8″	12″	17″	6525A4	42.85
3/8″	18″	23″	6525A8	74.39
Phillips				
#1	3″	6 1/2″	6529A1	13.69
#2	4″	7 1/2″	6529A2	16.70
#3	6″	10 1/8″	6529A3	25.83
#4	8″	13″	6529A4	34.39

4-Piece Set—Includes slotted sizes 5/16″ × 3″, 5/16″ × 6″, and 3/8″ × 8″ as well as Phillips size #2 × 4″ in a roll-up pouch.

6525A21 ..... $86.93

6-Piece Set—Includes slotted sizes 5/16″ × 3″, 5/16″ × 6″, and 3/8″ × 8″ as well as Phillips sizes #1 × 3″, #2 × 4″, and #3 × 6″ in a roll-up pouch.

6525A22 ..... $121.53

For information about nonsparking metal tools, see page 2853.

1/2″ Square Drive Sockets and Drive Tools

Made of aluminum bronze. Sockets are 6-point.

Sockets

Size	O'all Lg.		
7/16″	1 1/4″	6503A22	$36.80
1/2″	1 1/4″	6503A23	37.69
9/16″	1 1/4″	6503A24	38.32
5/8″	1 1/2″	6503A26	39.76
3/4″	1 1/2″	6503A28	44.62
7/8″	1 1/2″	6503A32	61.53
15/16″	1 1/2″	6503A33	65.50
1″	1 1/2″	6503A34	68.27
1 1/16″	1 1/2″	6503A35	72.19
1 1/8″	1 5/8″	6503A36	$74.38
1 1/4″	1 5/8″	6503A37	86.17
10 mm	1 1/4″	6503A51	41.38
13 mm	1 1/4″	6503A53	42.46
17 mm	1 1/2″	6503A55	47.96
19 mm	1 1/2″	6503A57	50.45
24 mm	1 1/2″	6503A59	67.51
30 mm	1 5/8″	6503A62	97.68

Drive Tools

10″ Ratchet Wrench ..... 6503A3 .. $168.32
10″ Extension ..... 6503A14 .. 91.05

21-Piece Inch Set—You'll get a 10″ ratchet wrench, 10″ extension bar, 11″ sliding bar, 12″ hinged handle, plus one each of the following 6-point sockets: 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 19/32″, 5/8″, 11/16″, 3/4″, 25/32″, 13/16″, 7/8″, 15/16″, 1″, 1 1/16″, 1 1/8″, and 1 1/4″ in a plastic case.

6503A1 ..... $1,119.32

3/4″ Square Drive Sockets and Wrenches

Made of aluminum bronze. Sockets are 6-point.

Size	O'all Lg.		
15/16″	2″	6490A11	$121.06
1 7/16″	2″	6490A13	124.08
1 1/2″	2 1/16″	6490A14	125.26
1 5/8″	2 1/4″	6490A16	$140.20
1 3/4″	2 9/16″	6490A18	140.22
2″	2 9/16″	6490A22	141.59

18″ Ratchet Wrench ..... 6490A31 .. $333.51

1/2″ Square Drive Impact Sockets

All are 12-point and made of beryllium copper.

Size	O'all Lg.	OD		
3/4″	1 1/2″	1 3/8″	6527A11	$125.62
15/16″	1 1/2″	1 1/2″	6527A13	138.28
1 1/16″	1 3/4″	1 3/4″	6527A14	159.18
1 1/8″	1 3/4″	1 15/16″	6527A15	170.10
1 1/4″	2 1/4″	1 15/16″	6527A16	215.28

Crow, Pry, and Wrecking Bars

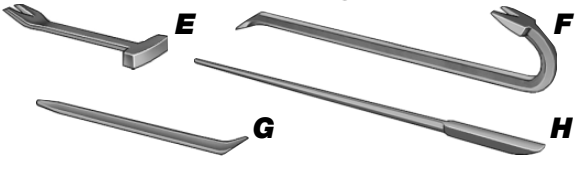

Made of aluminum bronze.

Lg.	Wt., lbs.	Bar Size		
(E) Claw and Hammer Bars				
9″	7/8	3/4″ Wd. x 5/16″ Thick.	6489A14	$44.30
(F) Chisel and Claw Bars				
18″	1 7/8	5/8″ Hex	6466A1	103.19
24″	3 3/4	3/4″ Hex	6466A2	123.66
30″	6	7/8″ Hex	6466A3	172.29
36″	7 1/4	7/8″ Hex	6466A4	182.09
(G) Crowbars—*With bent chisel tip.*				
18″	2 1/4	3/4″ Hex	6467A1	48.85
30″	5 1/8	7/8″ Hex	6467A2	131.77
36″	8 3/4	1″ Hex	6467A3	221.88
(H) Pinch Bars—*With straight chisel tip.*				
60″	18 3/4	1 1/4″ Sq.	6467A4	457.00

Pliers

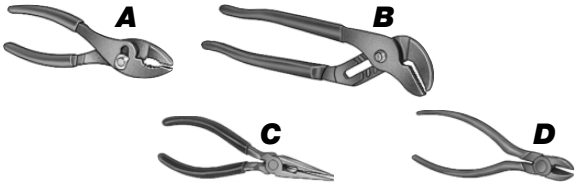

O'all Lg.	Jaw Lg.	Max. Jaw Opening	Material		
(A) Combination Slip-Joint Pliers					
6 1/2″	7/8″	—	Aluminum Bronze	6511A4	$56.10
8″	7/8″	—	Aluminum Bronze	6511A5	62.95
(B) Tongue-and-Groove Pliers with 6 Positions					
10″	—	1 1/2″	Aluminum Bronze	6513A5	105.78
12″	—	2 1/8″	Aluminum Bronze	6513A6	128.10
(C) Long-Nose Pliers with Side Cutter and 1/8″ Tip					
7″	1 1/4″		Aluminum Bronze	6544A18	93.32
(C) Long-Nose Pliers with Side Cutter and 5/32″ Tip					
6 3/4″	2 1/4″	—	Beryllium Copper	6515A16	119.97
(D) Diagonal-Cutting Pliers					
6″	25/32″	15/16″	Beryllium Copper	6521A12	195.73

Hex L-Keys

Made of beryllium copper.

Hex Size	Lg.		
1/16″	1 3/4″	6522A11	$8.51
5/64″	1 3/4″	6522A12	8.71
3/32″	1 7/8″	6522A13	8.98
1/8″	2 3/8″	6522A14	9.01
5/32″	2 1/2″	6522A15	9.46
3/16″	2 7/8″	6522A16	9.68
7/32″	3 1/8″	6522A17	10.24
1/4″	3 7/8″	6522A18	15.85
5/16″	4 1/8″	6522A31	18.54
3/8″	4 1/2″	6522A21	24.19
1/2″	5 1/4″	6522A23	$40.19
3/4″	7 1/4″	6522A27	111.19
1.5 mm	2 1/2″	6522A51	6.36
2 mm	2 1/2″	6522A52	7.76
2.5 mm	2 1/2″	6522A53	7.97
3 mm	2 1/2″	6522A54	8.51
4 mm	2 3/4″	6522A56	8.71
5 mm	3 1/8″	6522A57	10.82
6 mm	3 5/8″	6522A58	14.45
8 mm	4″	6522A59	21.74

10-Piece Inch Set—Sizes 1/16″, 5/64″, 3/32″, 1/8″, 5/32″, 3/16″, 7/32″, 1/4″, 5/16″, and 3/8″ in a canvas pouch.

6522A41 ..... $116.53

Hex Nutdrivers

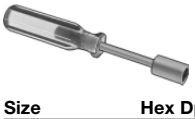

Made of aluminum bronze with a solid shaft and plastic handle.

Size	Hex Dp.	O'all Lg.		
3/16″	1″	6 7/8″	3940A51	$43.70
7/32″	1″	6 7/8″	3940A52	43.70
1/4″	1″	6 7/8″	3940A53	43.70
5/16″	1″	6 7/8″	3940A54	53.74
3/8″	1 1/8″	7 1/2″	3940A55	69.87
7/16″	1 1/8″	7 1/2″	3940A56	69.87
1/2″	1 1/8″	7 1/2″	3940A57	84.53
4 mm	1″	8 1/2″	3940A61	43.70
7 mm	1″	8 1/2″	3940A66	53.74
8 mm	1″	8 1/2″	3940A67	53.74
10 mm	1 1/8″	9 1/8″	3940A69	69.87

Wedges

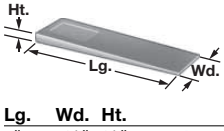

Made of aluminum bronze.

Lg.	Wd.	Ht.		
3″	1/2″	1/4″	6517A1	$9.73
3 1/2″	2″	3/8″	6517A11	17.42
4″	3/4″	1/2″	6517A12	9.57
6″	1″	1/2″	6517A13	13.15
6″	1 1/2″	3/4″	6517A14	21.95
7″	1 1/4″	1/2″	6517A15	18.37
7″	2″	3/8″	6517A22	$25.22
7″	2″	3/4″	6517A16	32.36
8″	1 1/2″	1″	6517A18	34.90
8″	1 1/2″	1 5/8″	6517A17	45.32
8″	2″	3/4″	6517A19	38.39
8 1/2″	2″	1 1/4″	6517A21	47.34

For information about nonsparking metal tools, see page 2853.

Hammers

All have a smooth aluminum bronze striking face and fiberglass handle to reduce vibration.

Head Wt., lbs.	Face Size	O'all Lg.		
(A) Nail Hammers				
3/4	7/8" Dia.	14"	6484A19	$56.27
1	1" Dia.	14"	6484A21	59.89
1 1/4	1 1/8" Dia.	14"	6484A22	90.14
(B) Ball Peen Hammers				
1/4	3/4" Dia.	9 3/4"	6481A43	37.70
3/4	1" Dia.	14"	6481A31	49.42
1	1 1/4" Dia.	14"	6481A33	54.82
1 1/2	1 5/16" Dia.	14"	6481A35	61.86
2	1 9/16" Dia.	14"	6481A37	72.23
2 1/4	1 5/8" Dia.	14"	6481A39	82.37
2 3/4	1 3/4" Dia.	14"	6481A41	83.78
(C) Blacksmiths' Hammers				
1 1/2	1 5/16" Sq.	14"	6462A22	85.34
2 1/2	1 1/2" Sq.	15"	6462A23	99.74
3 1/2	1 7/8" Sq.	15"	6462A24	115.11
(D) Square Heavyweight Hammers				
1 3/4	1 7/16" Sq.	14"	6486A11	67.55
2 1/4	1 7/16" Sq.	14"	6486A12	75.23
2 3/4	1 9/16" Sq.	15"	6486A13	94.24
3	1 5/8" Sq.	15"	6486A14	97.54
(E) Round Heavyweight Hammers				
2	1 1/2" Dia.	14"	6463A21	71.45
4	2" Dia.	15"	6463A22	105.75
6	2 3/16" Dia.	15"	6463A23	168.65
(F) Sledge Hammers				
3	1 3/4" Sq.	15"	6488A21	108.94
5	2" Sq.	33"	6488A22	144.85
7 1/2	2 1/4" Sq.	33"	6488A23	212.28
10	2 7/16" Sq.	33"	6488A24	249.93
15	2 3/4" Sq.	33"	6488A25	368.95

Chisels

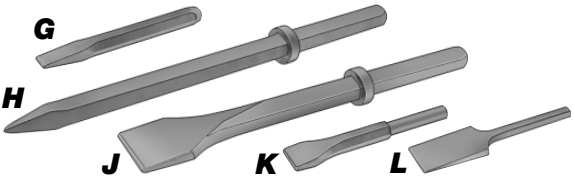

Made of aluminum bronze.

	Cutting Wd.	Shank Size	O'all Lg.		
Hand Chisels					
G	1/4"	1/4" Oct.	5 1/4"	6458A72	$16.62
G	7/16"	3/8" Hex	5 3/4"	6458A81	22.20
G	9/16"	1/2" Hex	6 1/2"	6458A89	18.81
G	9/16"	1/2" Oct.	12"	6458A82	28.86
G	11/16"	5/8" Oct.	9 1/8"	6458A91	30.50
G	3/4"	5/8" Oct.	6"	6458A74	21.97
G	3/4"	3/4" Oct.	9"	6458A92	33.40
G	13/16"	3/4" Hex	8"	6458A75	28.23
G	7/8"	3/4" Hex	12"	6458A96	40.05
G	7/8"	7/8" Oct.	9"	6458A93	37.37
G	1 1/16"	1" Hex	9 1/4"	6458A94	44.80
Air-Powered Chisels					
H	—	1 1/8" Hex	21"	6455A1▲	196.06
J	3"	1 1/8" Hex	18"	6456A1●	260.53
K	1 1/2"	11/16" Dia.	7 3/4"	6470A11	93.92
K	2 1/2"	11/16" Dia.	9"	6470A13	97.28
L	2"	1/2" Oct.	7 3/4"	6472A14	71.48

▲15" shank length under round collar.
●12" shank length under round collar.

Knives

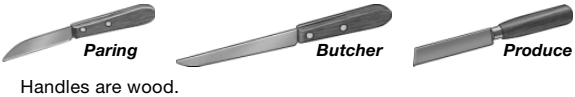

Handles are wood.

Style	Blade Lg.	Blade Wd.		
Nickel-Copper Alloy				
Paring	3 1/8"	5/8"	3925A1	$14.66
Butcher	5 3/4"	7/8"	3925A2	23.98
Beryllium Copper				
Produce	4"	7/8"	6548A11	24.53

Scrapers

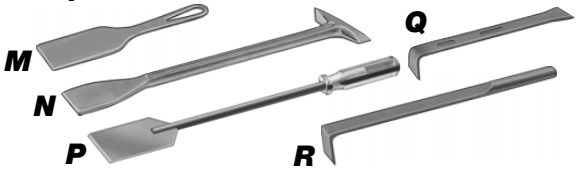

Made of aluminum bronze. Style P has a plastic handle.

	Blade Wd.	Blade Lg.	O'all Lg.		
M	3"	4"	9 1/4"	3628A11	$32.53
N	3"	3 1/2"	17 3/4"	6474A14	60.72
P	3 3/4"	3 3/4"	18 3/4"	6497A11	107.56
Q	7/8"	—	7 7/8"	6473A3	25.60
Q	2"	—	12"	6473A1	35.37
R	1 1/2"	—	15"	6473A2	74.99

Scraper Heads

Made of aluminum bronze. Use scrapers with the *optional handle* (sold separately below).

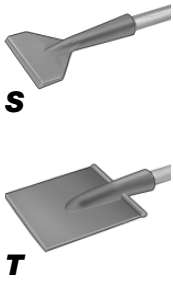

	Blade Wd.	Blade Lg.	Blade Thick.		
S	3"	1 1/2"	1/4"	6494A11	$50.99
S	3"	2 1/2"	1/4"	6471A1	46.88
S	4"	1 1/2"	1/4"	6494A12	66.38
S	4"	2 1/2"	1/4"	6471A2	64.50
S	5"	1 1/4"	1/4"	6494A13	73.31
S	5"	2 1/2"	1/4"	6471A3	70.95
S	6"	1 1/2"	1/4"	6494A14	69.92
S	6"	2 1/4"	1/4"	6471A4	71.55
T	6"	6 3/4"	1/8"	6476A1	67.92
Optional 54" Lg. Wood Handle				7349T14	$5.53

Sheet Metal Snips

Made of aluminum bronze. Cutting capacity is 30 ga.

O'all Lg.	Cut Lg.		
8"	2"	6514A21	$88.48
12"	3"	6514A25	105.72

Punches

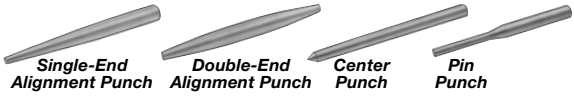

Single- and ***double-end alignment punches*** are made of aluminum bronze. ***Center*** and ***pin punches*** are made of beryllium copper, except 6477A35 is aluminum bronze.

Point Dia.	Handle Size	O'all Lg.		
Single-End Alignment Punches				
1/4"	1/2"	6"	6480A11	$13.75
9/32"	11/16"	6"	6480A14	18.74
5/16"	13/16"	8"	6480A12	27.56
7/16"	15/16"	10"	6480A13	34.86
1/2"	1 1/8"	10"	6480A15	45.05
Double-End Alignment Punches				
3/16"	11/16"	8"	6479A11	24.39
5/16"	13/16"	8"	6479A12	33.70
7/16"	15/16"	8"	6479A13	41.23
11/16"	1 3/16"	8"	6479A14	60.47
Center Punches				
1/8"	1/4"	4 1/2"	3495A21	38.67
1/4"	3/8"	5"	3495A22	38.80
3/8"	1/2"	6"	3495A23	39.43
15/32"	5/8"	8"	3495A24	41.50
Pin Punches				
1/8"	3/8"	5"	6477A31	21.38
1/4"	1/2"	6"	6477A32	29.27
3/8"	5/8"	7"	6477A33	35.95
1/2"	5/8"	7 3/4"	6477A34	39.79
5/8"	13/16"	9"	6477A35	52.52

Awls

Blade is tapered for marking and piercing. Made of beryllium copper with a plastic handle.

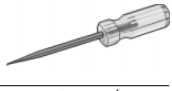

Blade Lg.	O'all Lg.		
4"	7 1/4"	6453A11	$38.45
10 1/8"	15 1/4"	6453A14	42.80

For information about nonsparking metal tools, see page 2853.

Hand Files

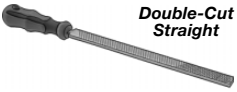

Double-Cut Straight

For use on soft metals, files have a Rockwell hardness of C38-C45. Made of beryllium copper with a plastic handle.

Lg.	Wd.	Thick.		
Double-Cut Straight Files— *Coarse Cut*				
10½″	13/16″	3/16″	3510A72	$130.99
Double-Cut Half-Round Files— *Fine Cut*				
10¼″	1″	3/8″	3510A75	132.58

Hand Brushes

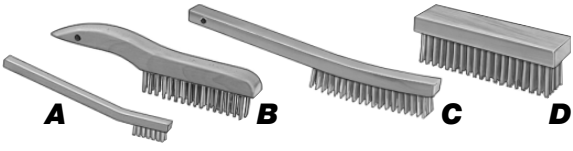

Made of phosphorus bronze with a wood handle.

	Brush Face Wd.	Brush Face Lg.	Bristle Lg.	O'all Lg.		
A	5/16″	1 3/8″	½″	7¾″	6531A5	$4.09
B	⅞″	5″	1⅛″	10″	6531A1	27.19
C	1″	6⅛″	1⅛″	13¾″	6531A2	24.61
D	1¾″	6½″	1¾″	7¼″	6531A3	48.93

Loop-Handle Brushes

Made of phosphorus bronze.

Brush Dia.	Brush Lg.	O'all Lg.		
13/16″	4″	12½″	3746A77	$35.25

Wire Brushes

Flexible-Bristle Cup

Rigid-Bristle Cup

Flexible-Bristle Wheel

Rigid-Bristle Wheel

Made of phosphorus bronze. Choose ***flexible-bristle brushes*** for soft brushing; ***rigid-bristle brushes*** for heavy duty work on pipe, structural steel, and welds.

Brush Dia.	Bristle Dia.	Arbor Hole	Bristle Lg.	Wheel Thick.	Max. rpm		
Flexible-Bristle Cup Brushes							
3″	0.014″	5/8″-11	1″	—	12,500	6530A3	$102.72
4″	0.014″	5/8″-11	1½″	—	8,000	6530A4	161.30
Rigid-Bristle Cup Brushes							
3″	0.020″	5/8″-11	1⅛″	—	12,500	6530A6	75.44
4″	0.020″	5/8″-11	1½″	—	7,000	6530A7	139.35
Flexible-Bristle Wheel Brushes							
6″	0.014″	½″	1″	1″	4,500	4851A17	167.65
6″	0.014″	5/8″	1″	1″	4,500	4851A2	167.65
6″	0.014″	¾″	1″	1″	4,500	4851A61	169.35
6″	0.014″	1″	1″	1″	4,500	4851A62	157.71
Rigid-Bristle Wheel Brushes							
4″	0.020″	5/8″-11	¾″	11/32″	20,000	4851A33	77.61
6″	0.020″	5/8″-11	1 3/8″	½″	9,000	4851A34	146.74

Aluminum Bronze Arbor— Use this arbor to mount ½″ arbor size wire brushes in portable tools and drill presses that have a ¼″ capacity chuck. Arbor has a ¼″ diameter shank, hex nut, and washer.

4851A45 ..... $8.38

Packing Seal Tools

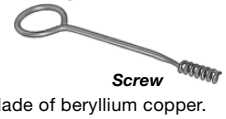

Screw

Hook

Made of beryllium copper.

Style	O'all Lg.		
Screw	10″	6491A12	$52.23
Hook	10″	6475A11	52.23

Dust Pans and Scoops

Dust Pan

Scoop

Made of aluminum bronze.

Wd.	Dp.	Ht.		
Dust Pans				
4″	8″	1½″	6535A1	$81.51
9″	7½″	1½″	6535A2	103.70
Scoops				
3″	5″	2″	6535A3	172.46
4⅞″	8″	3½″	6535A4	176.62
5½″	10″	4″	6535A5	199.96

Wet-Mop Handles

Made of aluminum bronze with a fiberglass handle. Head width is 6½″. Overall length is 68″.

6536A14 ..... $128.54

Pick Heads

Made of aluminum bronze with a 2⅝″ × 1½″ eye. Both sides of the blade are equal length. Use picks with the *optional handle* (sold separately below).

Blade Wd.	Blade Lg.		
1″	21″	6518A11	$168.80
1¼″	25″	6518A12	185.40
Optional 36″ Lg. Fiberglass Handle		62715A21	$29.32

Hoes

Standard

Made of aluminum bronze with a fiberglass handle.

Blade Wd.	Blade Ht.	O'all Lg.		
Standard				
6″	4½″	55″	6537A14	$182.44
8″	5″	55½″	6537A22	221.50
Angled				
7¾″	6¾″	55″	6537A12	151.97

Shovels

Rounded Digging

Squared Scooping

Made of aluminum bronze with a one-piece blade, hollow socket, and fiberglass handle. Shovel blades are 9″ Wd. × 11″ Ht.

Handle Style	Handle Lg.	O'all Lg.	Rounded Digging		Squared Scooping	
D	26″	37″	6204A2	$192.55	6204A3	$221.05
Straight	46″	57″	6204A5	198.94	6204A6	223.55

Tool Sets

16-Piece Set

Screwdrivers are made of beryllium copper; the other tools are made of aluminum bronze, unless noted.

6-Piece Set— Includes a slotted screwdriver (9/32″ × 3″ blade), Phillips screwdriver (#2 × 4″ blade), 6½″ combination pliers, 10″ tongue-and-groove pliers, 8″ adjustable wrench, and a 9″ hammer/claw crate opener. Comes in a roll-up nylon pouch.

6533A7 ..... $305.13

16-Piece Set— Includes a slotted screwdriver (5/16″ × 6″ blade); Phillips screwdriver (#2 × 4″ blade); 6½″ and 8″ combination pliers; 10″ tongue-and-groove pliers; 10″ adjustable wrench; 14″ pipe wrench; 12-point box wrenches in sizes 5/16″ × 3/8″, 7/16″ × ½″, 9/16″ × 5/8″, and ¾″ × 7/8″; 1¼″ putty knife; paring knife (3⅛″ wide blade); 14″ long, 1-lb. claw hammer; 10″ shoe handle brush; and 12″ long deck scraper. Brush is made of phosphorus bronze, and knives are made of nickel copper. Packed in a heavy duty plastic box.

6534A2 ..... $834.47

About Dead Blow Hammers and Sledges

You don't need a big swing to produce a powerful striking force—dead blow hammers and sledges have heads loaded with metal shot or sand to add weight for controlled impact with minimal rebound. The shot also ensures that the striking force is transmitted solidly, reducing worker fatigue and injuries. Dead blow hammers and sledges (except for ball peen) are nonmarring.

Dead Blow Hammers and Sledges

Standard

Slimline

Faces are soft to absorb impact, reduce noise, and prevent marring of the work surface. Handle has a textured grip and is nonreplaceable. ***High-visibility polyurethane*** hammers and sledges are bright safety orange, so they're easy to spot. All have a steel-reinforced handle and are fully encased in polyurethane. ***Black PVC*** hammers have a steel-reinforced handle and are fully encased in PVC.

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
High-Visibility Polyurethane—*Head is loaded with steel shot*				
Standard Hammers				
5/8	1 13/64"	10 1/8"	6051A29	$21.93
1 1/8	1 39/64"	11 1/4"	6051A31	25.81
1 5/16	1 51/64"	12 7/8"	6051A34	30.03
2 5/8	2 7/64"	14 1/4"	6051A37	42.35
3 1/4	2 33/64"	15 1/4"	6051A41	58.49
Slimline Hammers				
5/16	57/64"	9 3/8"	6073A19	19.14
7/8	1 19/64"	10 9/16"	6073A11	24.11
1 1/8	1 33/64"	12 1/8"	6073A13	26.03
1 5/16	1 17/32"	12 7/8"	6073A12	32.14
Sledges				
5	2 55/64"	19 5/8"	6072A11	88.09
8	2 61/64"	29 7/8"	6072A12	129.18
10 1/2	3 25/64"	29 7/8"	6072A14	176.06
11 1/2	3 25/64"	36 1/8"	6072A15	221.71
Black PVC—*Head is loaded with sand*				
Standard Hammers				
1 5/32	1 21/32"	10 5/8"	6085A11	18.09
1 9/16	1 23/32"	11 13/16"	6085A12	20.21
2	1 15/16"	12 13/16"	6085A13	23.94
2 5/32	2 3/32"	13 3/8"	6085A14	26.60
2 31/32	2 5/16"	13 25/32"	6085A15	29.79
3 9/32	2 5/8"	14 9/16"	6085A16	33.51

Urethane Replaceable-Face Dead Blow Hammers and Sledges

Hammer

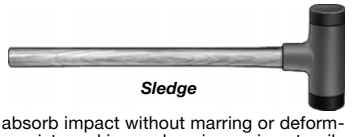
Sledge

Screw-on urethane faces absorb impact without marring or deforming your work surface. Faces resist cracking and are impervious to oils and solvents. Head is loaded with iron shot. Complete hammers and sledges include a lightweight aluminum or iron head, a replaceable hickory handle (see pg. 2866 for replacement handles), and two replaceable faces: medium (green) on one end; extra-hard (black) on the other.

To Order: For replacement faces, please specify soft (burnt orange), medium (green), hard (red), or extra hard (black). *Note:* For information about face hardness, see page 2858.

Hammers

O'all Wt., lbs.	Face Dia.	Thread Size	O'all Lg.	Complete Hammers	Each	Repl. Faces	Each♠
Aluminum Head							
5/8	1"	1/4"-20	11"	6047A81	$28.76	6047A1	$5.81
7/8	1 1/4"	5/16"-18	12"	6047A83	32.31	6047A2	6.49
1 3/8	1 1/2"	5/16"-18	13"	6047A15	39.06	6047A3	8.01
2 3/8	2"	3/8"-16	15"	6047A17	54.44	6047A4	10.90
4 1/8	2 1/2"	7/16"-14	17"	6047A19	94.50	6047A5	19.70
Iron Head							
7/8	1"	1/4"-20	11"	6047A82	28.84	6047A1	5.81
1 3/8	1 1/4"	5/16"-18	12"	6047A14	32.57	6047A2	6.49
1 7/8	1 1/2"	5/16"-18	13"	6047A16	38.59	6047A3	8.01
3 1/2	2"	3/8"-16	15"	6047A18	52.66	6047A4	10.90

♠ Extra-hard (black) faces are approximately 30% higher in price.

Sledges

O'all Wt., lbs.	Face Dia.	Thread Size	O'all Lg.	Complete Sledges	Each	Repl. Faces	Each♠
Aluminum Head							
7 1/2	3"	1/2"-13	35"	5947A2	$162.41	6047A6	$27.46
Iron Head							
6 1/4	2 1/2"	7/16"-14	17"	6047A21	86.44	6047A5	19.70
7 1/8	2 1/2"	7/16"-14	32"	5947A1	136.44	6047A5	19.70
11 1/4	3"	1/2"-13	35"	5947A3	187.89	6047A6	27.46

♠ Extra-hard (black) faces are approximately 30% higher in price.

Hard Nylon Dead Blow Hammers

Made of nylon, the head is encapsulated in PVC for durability; it will not chip or "mushroom" when striking. The PVC casing also minimizes bounce. Head is loaded with steel shot. Faces are hard. The handle is made of fiberglass to withstand impact. It has a safety grip (unless noted) and is nonreplaceable.

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
11/16	1"	10 3/4"	5969A15★	$21.32
1 7/16	1 9/16"	12 1/4"	5969A11	25.06
2	2"	14"	5969A12	29.42
2	2"	14"	5969A17■	30.39
2	2"	14"	5969A19▲	31.61
2 11/16	2 11/32"	14 1/4"	5969A13	38.18
3 3/8	2 11/16"	15 1/4"	5969A14	49.35

★ Smooth grip. ■ One face is steel. ▲ One face is brass.

High-Visibility Polyurethane Dead Blow Ball Peen Hammers

You won't overlook these ball peen hammers—they have a bright orange polyurethane body. The peen end and striking face are alloy steel. Head is loaded with steel shot. The ball peen design handles any job from light duty tapping to heavy duty forming. Use for striking chisels and punches, as well as for setting rivets. The peen end is especially good for forming unhardened metal. The striking face is slightly rounded with beveled edges. Handle is made of steel-reinforced polyurethane; it has a textured grip and is nonreplaceable.

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
1 1/2	1 11/32"	12 5/8"	5949A11	$37.91
2 1/8	1 19/32"	12 7/8"	5949A12	57.38
2 11/16	1 25/32"	13 5/8"	5949A13	66.22

High-Visibility Polyurethane Replaceable-Face Dead Blow Hammers

Head and handle are one-piece molded polyurethane with a bright orange color for high visibility. Head is loaded with steel shot. Faces screw on to the head and are made of polyurethane to absorb impact, resist oils and solvents, and protect your work surface from marring. Complete hammers include a medium hard (red) face on one end, an extra hard (black) face on the other end, and a steel-reinforced polyurethane handle. Handle has a textured grip and is nonreplaceable.

To Order: For replacement faces, please specify extra soft (clear), soft (blue), medium (green), medium hard (red), hard (amber), or extra hard (black). *Note:* For information about face hardness, see page 2858.

O'all Wt., lbs.	Face Dia.	Thread Size♣	O'all Lg.	Complete Hammers	Each	Replacement Faces	Each
3/4	1 3/8"	3/4"	10"	60515A1	$41.31	60515A61	$9.31
1 1/2	1 3/4"	1"	11"	60515A2	50.88	60515A62	15.81
2	1 7/8"	1"	11 3/4"	60515A3	62.11	60515A63	15.82
3	2 1/2"	1 1/4"	13 5/8"	60515A4	78.12	60515A64	22.74
4 1/2	2 7/8"	1 1/2"	14 3/4"	60515A5	122.91	60515A65	25.48
7	2 7/8"	1 1/2"	19 1/4"	60515A6●	183.61	60515A65	25.48

♣ Has NPT threads. ● Also known as a sledge.

Hard UHMW Polyethylene Replaceable-Face Dead Blow Hammers

Faces screw on to the hammer head and are made of ultra-high molecular weight (UHMW) polyethylene, which resists abrasion, cracking, and chipping. Handle and head are one-piece aluminum alloy to provide high strength, durability, and perfect balance. Head is loaded with steel shot. Handle has a ribbed grip and is nonreplaceable.

O'all Wt., lbs.	Face Dia.	Thread Size	O'all Lg.	Complete Hammers	Each	Repl. Faces	Each
1 5/16	1 1/2"	5/8"-11	10 3/4"	5875A1	$67.02	5875A4	$9.37
2 1/4	2"	5/8"-11	11 7/8"	5875A3	77.32	5875A6	12.42

About Replaceable Plastic Hammer Faces

Replaceable plastic faces range in hardness from extra soft to extra hard. Use the diagram below to determine which hardness is best for your application. *Note:* The color indicating a plastic's grade is not standardized and may vary among manufacturers.

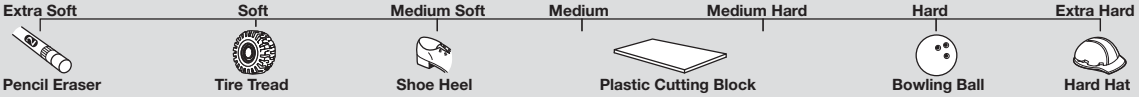

Create-Your-Own Replaceable-Face Hammers, Sledges, and Dead Blows

Hammer with Textured Handle Grip (Shown with Faces, Sold Separately)

Hammer with Safety Handle Grip (Shown with Faces, Sold Separately)

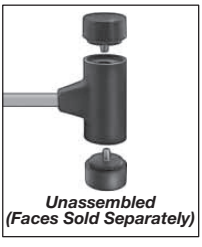

Unassembled (Faces Sold Separately)

Design the perfect striking tool. The bodies and faces are sold separately, so you can customize a hammer, sledge, or dead blow to fit your needs.

Hammer and Sledge Bodies (Without Faces)— Consist of a hammer head and a nonreplaceable solid fiberglass handle for optimal strength. Head is glass-filled nylon to eliminate metal contamination as well as scratching and marring caused by metal-to-metal contact. *Safety handle grip* is ribbed to prevent your hand from slipping.

Dead Blow Hammer and Dead Blow Sledge Bodies (Without Faces)— Consist of a hammer head loaded with steel shot and a nonreplaceable reinforced-fiberglass handle. *PVC head* eliminates metal contamination as well as scratching and marring caused by metal-to-metal contact.

Faces— Screw on to the head. *Plastic* faces are tough, nonmarring PVC. *Brass* faces are medium hard and nonsparking. *Steel* faces are hardened for extra durability.

Hammer and Sledge Bodies (Without Faces)

O'all Wt., lbs.	Face Dia.	O'all Lg.	Handle Grip		Each
Hammer Bodies with Glass-Filled Nylon Head					
3/8	1"	11"	Textured	5877A152	$15.28
1/2	1"	11"	Textured	5877A151	15.66
3/4	1 3/8"	11 3/4"	Textured	5877A115	17.12
13/16	1 1/2"	12 1/2"	Textured	5877A153	17.77
1 1/16	1 1/2"	12 1/2"	Textured	5877A155	18.38
1 1/16	2"	14"	Textured	5877A154	19.66
1 11/16	2"	14"	Textured	5877A157	21.73
1 3/4	1 5/8"	12 1/4"	Textured	5877A116	22.62
1 13/16	2 1/2"	15"	Textured	5877A156	33.62
1 13/16	2 1/2"	15"	Safety	5877A241	34.52

O'all Wt., lbs.	Face Dia.	O'all Lg.	Handle Grip		Each
Hammer Bodies with Glass-Filled Nylon Head (Cont.)					
2 7/8	3"	15"	Textured	5877A158	$43.32
2 7/8	3"	15"	Safety	5877A243	44.23
3 3/8	2 1/2"	15"	Textured	5877A159	42.02
3 3/8	2 1/2"	15"	Safety	5877A242	42.93
4 7/8	3"	15"	Textured	5877A161	52.61
4 7/8	3"	15"	Safety	5877A244	53.52
Sledge Bodies with Glass-Filled Nylon Head					
5 7/8	3"	32"	Textured	5877A245	68.04
6 5/16	3"	32"	Textured	5877A246	73.67
6 5/16	3"	32"	Safety	5877A247	74.58

Dead Blow Hammer and Dead Blow Sledge Bodies (Without Faces)

O'all Wt., lbs.	Face Dia.	O'all Lg.	Handle Grip		Each
Dead Blow Hammer Bodies with PVC Head					
11/16	1"	11 1/2"	Textured	59895A66	$17.10
1 3/16	1 1/2"	12 1/2"	Textured	59895A72	20.58
1 3/4	2"	13 1/2"	Textured	59895A73	32.56
2 11/16	2 1/2"	14 1/2"	Textured	59895A74	53.04

O'all Wt., lbs.	Face Dia.	O'all Lg.	Handle Grip		Each
Dead Blow Hammer Bodies with PVC Head (Cont.)					
4 1/4	3"	15 1/2"	Safety	5989A44	$64.91
Dead Blow Sledge Bodies with Aluminum Head					
10 9/16	4"	34"	Textured	5989A57	343.44
12 15/16	4"	34"	Textured	5989A59	369.53

Plastic Faces

Face Dia.	Thread Size	*Extra Soft (Gray)*	Each	*Soft (Brown)*	Each	*Medium Soft (Red)*	Each	*Medium (Green)*	Each	*Medium Hard (Cream)*	Each	*Hard (Black)*	Each	*Extra Hard (Yellow)*	Each
1"	1/4"-20	5877A31	$5.32	5877A41	$4.17	5877A51	$4.17	5877A61	$4.17	5877A71	$5.07	5877A81	$5.07	5877A91	$5.07
1 3/8"	1/4"-20	—	—	5877A131	3.76	5877A132	3.76	5877A133	3.76	5877A134	6.99	—	—	—	—
1 1/2"	5/16"-18	5877A32	9.86	5877A42	6.14	5877A52	6.14	5877A62	6.14	5877A72	9.80	5877A82	9.80	5877A92	9.80
1 5/8"	5/16"-18	—	—	5877A141	4.04	5877A142	4.04	5877A143	4.04	5877A144	9.78	—	—	—	—
2"	3/8"-16	5877A33	15.76	5877A43	9.37	5877A53	9.37	5877A63	9.37	5877A73	15.62	5877A83	15.70	5877A93	15.70
2 1/2"	7/16"-14	5877A34	26.57	5877A44	16.16	5877A54	16.16	5877A64	16.16	5877A74	26.07	5877A84	25.19	5877A94	25.19
3"	1/2"-13	5877A35	47.19	5877A45	24.53	5877A55	24.53	5877A65	24.53	5877A75	46.28	5877A85	46.28	5877A95	46.28
4"	1/2"-13	—	—	5877A57	63.91	5877A96	63.91	5877A87	63.91	5877A58	82.28	5877A88	82.28	5877A59	82.28

Metal Faces

Face Dia.	Thread Size	*Soft Brass*	Each	*Steel*	Each
1 1/2"	5/16"-18	5877A22	$14.25	5877A101	$12.42
2"	3/8"-16	5877A23	$22.70	5877A102	$16.84

Create-Your-Own Replaceable-Face Split-Head Hammers

Hammer Body (Shown with Faces, Sold Separately)

Unassembled (Faces Sold Separately)

It's faster and easier to change the faces on these split-head hammers than on press-fit style hammers. Just loosen the nut under the head, remove the face, insert the new face, and tighten the nut. The hammer bodies and faces are sold separately, so you can create a custom hammer for your application.

Bodies consist of a two-piece malleable iron hammer head, a nut to secure the assembly, and a replaceable hickory handle. ***Faces*** are available in your choice of materials. *Lead* consists of 94% lead and 6% antimony. *Rawhide* provides soft blows—great for assembly work. *Copper* allows high-impact blows but is soft enough not to damage precision parts. *Hard nitrile rubber* is green and is similar in hardness to a bowling ball. *Hard plastic* is made of yellow ultra-high molecular weight (UHMW) polyethylene and is similar in hardness to a hard hat.

Also Available: Replacement handles. Please ask for 5911A61 and specify the McMaster-Carr body part number.

Bodies (Without Faces)

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
1 1/2	1 1/4"	11"	5911A11	$29.71
1 3/4	1 1/2"	12 1/2"	5911A12	30.96
2 1/2	1 3/4"	13"	5911A13	35.29
3 1/2	2"	14"	5911A14	38.08
5 1/4	2 3/4"	15 3/4"	5911A15	54.04
7	2 3/4"	36"	5911A25	88.78

Faces

Face Dia.	*Lead*	Each	*Rawhide*	Each	*Copper*	Each	*Hard Rubber*	Each	*Hard Plastic*	Each
1 1/4"	5911A36	$29.37	5907A18	$7.50	5905A22	$6.73	5911A16	$10.75	5911A27	$6.25
1 1/2"	5911A37	37.48	5907A19	9.57	5905A23	9.02	5911A17	12.42	5911A28	7.06
1 3/4"	5911A38	50.59	5907A21	12.86	5905A24	12.52	5911A18	13.77	5911A29	7.94
2"	5911A39	67.64	5907A22	15.64	5905A25	18.42	5911A19	14.64	5911A31	9.38
2 3/4"	—	—	5907A23	29.86	—	—	5911A21	19.23	5911A51	15.64
2 3/4"	—	—	5907A23	29.86	—	—	5911A21	19.23	5911A51	15.64

Air-Powered Replaceable-Face Hammers

Palm-sized tools fit into tight spaces where swinging a hammer is not possible. They can deliver a single blow or up to 1,000 blows per minute. Both have a 1/4″ NPT female air inlet and require compressed air at 60-125 psi, depending on force of impact required. Faces are 1 1/2″ dia. and are replaceable. Hammers are 3 1/2″ high and weigh 2 lbs.

Leather tool cover provides a comfortable grip and muffles sound. ***Maintenance/repair kit*** has six O-rings and a 0.05-oz. tube of lubricant.

		Each
Complete Hammers		
With Hard Plastic Face	6081A11	$248.96
With Steel Face	6081A12	269.79
Replacement Faces		
Extra-Soft Plastic (Red)	6081A15	23.12
Soft Plastic (Blue)	6081A16	23.12
Medium Plastic (Black)	6081A17	23.12
Hard Plastic (Yellow)	6081A13	23.12
Aluminum	6081A23	31.30
Steel	6081A14	42.20
Accessories		
Leather Tool Cover	6081A21	40.83
Maintenance/Repair Kit	6081A22	21.75

Hard Nylon Replaceable-Face Hammers

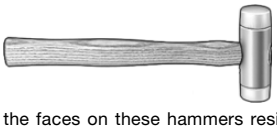

Made of nylon, the faces on these hammers resist chemicals and abrasion and won't mark your work. Faces screw on to the head. They're off-white and are similar in hardness to a bowling ball. Complete hammers include a chrome-plated zinc alloy head, two screw-on nylon faces, and a replaceable ash handle (unless noted).

For replacement handles, see page 2866.

O'all Wt., lbs.	Face Dia.	Thread Size	O'all Lg.	Complete Hammers	Each	Replacement Faces	Each
1/2	1″	7/16″-14	10″	5914A17	$15.20	5914A18	$2.55
3/4	1 1/4″	9/16″-12	11″	5914A1	16.90	5914A6	3.25
1 1/4	1 1/2″	5/8″-11	11 1/4″	5914A2	19.51	5914A7	4.22
1 1/2	1 3/4″	3/4″-12	12″	5914A3	23.11	5914A8	5.18
2 1/2	2″	13/16″-12	13″	5914A4★	37.47	5914A9	6.85
4 1/2	2 1/2″	1″-10	14″	5914A5★▲	50.49	5914A11	8.61

★ Replaceable hickory handle. ▲ Head is black-painted malleable iron.

Hard/Soft Plastic Replaceable-Face Hammers

Ideal for assembly applications where the components vary in hardness, hammers have a press-fit hard plastic face on one end and a press-fit soft plastic face on the other.

Hard face is yellow Surlyn, which is similar to the hardness of a bowling ball. Soft face is red Kraton, which is similar to the hardness of a shoe heel. Hammers have a forged steel head and a replaceable hickory handle. For replacement handles, see pg. 2866. **To Order:** For replacement faces, please specify hard or soft.

O'all Wt., lbs.	Face Dia.	O'all Lg.	Complete Hammers	Each	Repl. Faces	Each
9/16	1″	10 1/2″	3755A45	$15.04	3755A61	$2.04
1 1/8	1 3/8″	11 1/4″	3755A46	16.72	3755A62	2.12

Hard/Soft Rubber Replaceable-Face Hammer

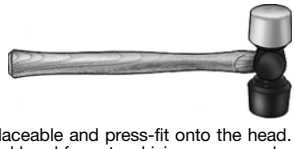

You have two hardness options with this hammer. The white rubber face won't mark your work; it's medium hard and is similar in hardness to a plastic cutting block. The black rubber face is for general use; it's medium soft and similar in hardness to a shoe heel. Faces are replaceable and press-fit onto the head. Complete hammer has a forged steel head for extra driving power and a replaceable hickory handle. For replacement handles, see page 2866.

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
2 3/16	2″	14″	5939A11	$19.81
Black Replacement Face (Medium Soft)			5939A12	2.90
White Replacement Face (Medium Hard)			5939A13	2.90

Rawhide Replaceable-Face Hammers

Rawhide faces provide nonmarring blows on steel, brass, aluminum, and other soft metals. Faces press-fit onto the head. Worn faces can be removed by drilling out the center of the face. Complete hammers have a cast steel head, two press-fit rawhide faces, and a replaceable hickory handle (unless noted). **Also Available:** Replacement hickory handles. Please ask for 5907A25 and specify face diameter.

O'all Wt., lbs.	Face Dia.	O'all Lg.	Complete Hammers	Each	Repl. Faces	Each
3/4	1″	9″	5907A11●	$19.58	5907A17	$8.71
1	1 1/4″	10 7/8″	5907A12	34.25	5907A18	7.50
1 1/2	1 1/2″	10 7/8″	5907A13	39.50	5907A19	9.57
2 1/2	1 3/4″	12 1/4″	5907A14	47.67	5907A21	12.86
4	2″	13 1/2″	5907A15	56.33	5907A22	15.64
6 1/4	2 3/4″	13 1/2″	5907A16	91.17	5907A23	29.86

● Has a malleable iron head and replaceable ash handle.

Copper Replaceable-Face Hammers

Copper faces allow high-impact blows, yet are soft enough to reduce the possibility of damage to precision parts. Use on bronze, brass, aluminum, and ferrous alloys. Faces press-fit onto the head. Worn faces can be removed by drilling out the center of the face. Complete hammers come with a malleable iron head, two press-fit copper faces, and a replaceable hickory handle (unless noted). For replacement handles, see page 2866.

O'all Wt., lbs.	Face Dia.	O'all Lg.	Complete Hammers	Each	Repl. Faces	Each
1	1″	9″	5905A11■	$19.10	5905A21	$4.35
1 3/4	1 1/4″	10 3/4″	5905A12■	27.35	5905A22	6.73
2 3/4	1 1/2″	12″	5905A13	38.13	5905A23	9.02
4	1 3/4″	12″	5905A14	47.27	5905A24	12.52
6 1/2	2″	14″	5905A15	75.58	5905A25	18.42

■ Replaceable ash handle.

Extra-Hard UHMW Polyethylene Replaceable-Face Hammers

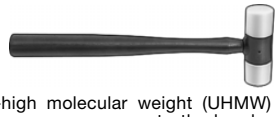

Made of ultra-high molecular weight (UHMW) polyethylene, the faces on these hammers screw on to the head and shrug off abrasion, impact, and corrosion. They're unaffected by water and coolants. Faces are yellow and similar in hardness to a hard hat. Complete hammers include a steel head, two screw-on UHMW polyethylene faces, and a nonreplaceable hickory handle (unless noted).

O'all Wt., lbs.	Face Dia.	Thread Size	O'all Lg.	Complete Hammers	Each	Replacement Faces	Each
1/8	5/8″	1/4″-20	8 1/8″	5912A21♠	$11.62	5912A18	$2.48
1/4	7/8″	5/16″-18	9 1/8″	5912A11♠	14.78	5912A16	3.16
7/16	1″	7/16″-14	10 1/4″	5912A22	17.80	5951A8	3.72
1/2	1 1/4″	7/16″-14	12″	5912A12	20.44	5912A17	4.02
1	1 1/4″	7/16″-14	12″	5912A13	21.89	5912A17	4.02
1 1/2	1 3/4″	1/2″-13	12 3/4″	5912A14	34.55	5912A19	6.29
2	1 3/4″	1/2″-13	12 3/4″	5912A15	36.20	5912A19	6.29

♠ Has an acetal handle with a cushion grip.

Acetal/Brass Replaceable-Face Hammer

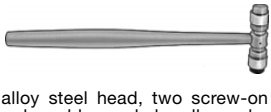

Lightweight and versatile, this hammer has a screw-on acetal face on one side and a screw-on brass face on the other. Acetal is similar in hardness to a hard hat. Complete hammer includes a chrome-plated alloy steel head, two screw-on faces (one acetal, one brass), a nonreplaceable maple handle, and a spanner wrench to remove and replace the faces. ***Replacement face set*** includes one acetal face, one brass face, and a spanner wrench.

O'all Wt., lbs.	Face Dia.	Thread Size	O'all Lg.	Complete Hammer	Each	Replacement Face Set	Per Set
1/4	1/2″	5/8″-32	9″	6086A13	$13.91	6086A15	$5.17

Rubber Hammers

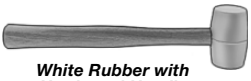

White Rubber with Hardwood Handle

Black Rubber with Fiberglass Handle and Cushion Grip

Also known as rubber mallets, these hammers deliver a heavy blow, yet they have soft faces that won't damage your work. Made of a blend of natural and synthetic rubber, the head is molded and cured for strength. Handle is nonreplaceable, unless noted.

Rubber hammers are offered with either a hardwood handle or a fiberglass handle. 5917A7 and *A8* include a cushion grip. *White* hammers are nonmarking. ***No-bounce rubber*** hammers have fibrous layers in the head to greatly reduce bounce and rebound.

O'all Wt., lbs.	Face Dia.	O'all Lg.	Black	Each	White	Each
Rubber with Hardwood Handle						
5/8	1 5/8"	12 1/2"	5917A1	$10.12	5878A3	$11.03
1	2 1/4"	12 1/2"	5917A2	11.57	5878A5	14.18
1 1/2	2 1/4"	14"	5917A3	12.70	5878A4	16.18
2	2 1/2"	15 1/2"	5917A6	16.37	5878A6	19.39
2 1/2	2 1/2"	16"	5917A4	19.76	5878A7	23.07
4	3 1/8"	16 1/2"	5917A5	34.41	5878A8	37.20
Rubber with Fiberglass Handle						
15/16	1 3/4"	12 1/2"	5917A7★	18.74	____	____
1	2 1/8"	12 1/2"	____	____	5878A11	14.81
1 7/8	2 1/2"	15 3/4"	5917A8★	25.03	____	____
2	2 1/2"	15 1/2"	____	____	5878A12	19.06
2 1/2	2 1/2"	16"	5917A11	20.47	____	____
4	3 1/8"	16 1/2"	5917A12	31.89	____	____
No-Bounce Rubber with Hickory Handle						
5/8	2"	12"	5916A1	35.45	____	____
1 1/4	2 1/2"	14"	5916A2	50.82	____	____
1 3/4	2 7/8"	14"	5916A3	59.91	____	____
2 1/2	3 1/2"	14"	5916A4	79.08	____	____

★ Handle is replaceable. For replacement handles, see page 2866.

Soft Alloy Replaceable-Head Hammers

An excellent alternative to lead hammers. The head is cast of a heavy zinc-aluminum material that's soft and ductile like lead, but more wear-resistant and longer lasting. To replace the head, simply remove the socket cap screw. Handle is steel and has a textured nonslip rubber grip that resists water, oil, and chemicals.

Also Available: Replacement steel handles. Please ask for 6042A61 and specify face diameter.

O'all Wt., lbs.	Face Dia.	O'all Lg.	Hammers	Each	Repl. Heads	Each
3/4	31/32"	7 3/4"	6042A32	$33.76	6042A52	$11.02
1	1 3/16"	11 3/4"	6042A41	39.28	6042A55	14.19
2	1 7/16"	11 3/4"	6042A42	43.33	6042A56	18.26
3	1 3/4"	12"	6042A43	48.40	6042A57	23.36
4	1 15/16"	12"	6042A44	52.77	6042A58	29.34
5	2 3/64"	12"	6042A45	60.46	6042A59	35.71
14 3/4	2 43/64"	31 1/2"	6042A46●	117.66	6042A53	54.09

● Also known as a sledge.

Hickory Hammers

Made entirely of hickory, these top-quality hammers are well-balanced and coated with a clear, waterproof sealer. They're also known as wooden mallets. Use them on wood and for light duty sheet metal work. Handle is nonreplaceable.

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
3/16	7/8"	9 1/2"	5899A23	$6.60
3/8	1 3/8"	11"	5899A24	7.28
5/8	2"	12 7/8"	5899A15	10.21
7/8	2 1/4"	13"	5899A16	10.49
1	2 1/2"	13"	5899A17	11.82
1 1/8	2 3/4"	13 1/4"	5899A18	14.45
1 3/8	3"	13 1/2"	5899A19	15.58
1 7/8	3 1/2"	14 7/8"	5899A21	17.41

Rawhide and Weighted Rawhide Hammers

Rawhide hammers cause minimal surface distortion. Also known as rawhide mallets, they're great for bending and fabricating sheet materials such as brass, copper, and steel. Handle is hickory and is replaceable. For replacement handles, see page 2866. ***Rawhide*** hammers have large-diameter faces that are great for use on broad surfaces. ***Weighted rawhide*** hammers are filled with lead to give a heavier, balanced blow.

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
Rawhide				
1/8	1"	8"	5908A11	$14.02
1/4	1 1/4"	9 1/4"	5908A12	14.22
3/8	1 1/2"	10"	5908A13	16.81
9/16	1 3/4"	11 1/2"	5908A14	21.03
11/16	2"	11 3/4"	5908A15	24.74
1 3/8	2 3/4"	13 1/2"	5908A16	44.31
1 1/2	2 3/4"	13 1/2"	5908A17	48.10
Weighted Rawhide				
1/2	1 1/4"	9 1/4"	5908A51	24.89
3/4	1 1/2"	9 1/2"	5908A19	25.47
1	1 3/4"	11 1/2"	5908A21	29.41
1 1/4	2"	11 3/4"	5908A22	36.11
2 1/2	2 3/4"	13 1/2"	5908A23	63.87

Plastic Hammers

Sometimes called plastic mallets, these hammers deliver a soft blow. The head is made of opaque-yellow ultra-high molecular weight (UHMW) polyethylene; it's similar in hardness to a plastic cutting board. Handle is hickory and is nonreplaceable.

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
5/16	1 1/4"	10 3/4"	5913A1	$7.58
7/16	1 1/2"	10 3/4"	5913A3	9.12
1/2	1 3/4"	10 3/4"	5913A6	9.75
3/4	1 3/4"	13 1/2"	5913A5	13.35

Lead Hammers and Hammer Molds

Complete Hammer with Steel Handle

Complete Hammer with Hickory Handle

Clamping Mold and Handle

Hammer heads are made of 95% lead and 5% antimony, giving them a longer life than heads made of 100% lead. Although lead is the softest metal offered within nonmarring hammers, it produces a heavy blow with minimal rebound and no surface blemishes. Use on plastics and soft, nonferrous metals such as copper and aluminum.

Hammers with Steel Handle—*Complete hammers* have a steel handle with a comfortable rubber grip. You can also make your own steel-handle hammers using molds, handles, and lead hammer metal, all sold separately. *Molds* have a built-in ladle that holds the exact amount of molten lead needed to form the hammer head. A C-clamp and thumb screw hold the mold together until the metal has set. *Handles* are reusable and made of solid steel with a rubber grip. *Lead hammer metal* is 95% lead and 5% antimony and comes in a 4 3/4-lb. bar. Pouring temp. range is 650° to 700° F. Melting point is slightly lower. ***Hammers with Hickory Handle—*** Have a nonreplaceable hickory handle.

Steel-Handle Hammers

O'all Wt., lbs.	Face Dia.	O'all Lg.	Complete Hammers	Each	Molds	Each	Handles	Each
1 1/4	3/4"	10"	5961A41	$22.00	5961A12	$64.00	5961A31	$14.50
2 1/4	1 3/16"	10 1/8"	5961A42	26.00	5961A13	70.00	5961A31	14.50
3	1 5/8"	10 1/8"	5961A43	29.00	5961A14	77.90	5961A33	16.50
4	1 9/16"	10 1/4"	5961A44	32.00	5961A15	83.90	5961A33	16.50
5	1 5/8"	10 1/2"	5961A45	33.90	5961A16	90.00	5961A33	16.50
6	1 3/4"	11"	5961A46	35.90	5961A17	96.00	5961A33	16.50
12 1/2	2"	27 1/8"	5961A52●	58.00	____	____	____	____

Lead Hammer Metal (For Steel Handle Only) ..... 9045K11 Each $28.77

● Also known as a sledge.

Hickory-Handle Hammers

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
3/4	7/8"	9 1/2"	5910A1	$17.68
1 1/2	1 1/4"	12"	5910A2	20.92
2 1/2	1 1/2"	12 1/2"	5910A3	25.75
4 1/2	2"	14"	5910A4	37.09
7 1/2	2"	18"	5910A5	54.78
10	2 1/2"	36"	5910A22●	77.29

● Also known as a sledge.

One-Piece Aluminum Hammers

Aluminum alloy hammers are soft like copper, but lighter in weight. Good for use on steel molds and brass and copper alloys. Handle is grooved for a sure grip and is nonreplaceable.

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
1	1 1/4"	10 3/4"	5930A1	$10.52
1 1/2	1 7/8"	11"	5930A2	14.71
2	2"	12 3/4"	5930A3	19.13
3	2 1/2"	14 3/4"	5930A4	26.00

Copper Hammers and Sledges

Slightly softer than brass, copper is the perfect choice when striking aluminum, brass, bronze, ferrous alloys, and other brittle surfaces.

Styles A&C— All have a replaceable hickory handle with a textured, nonslip coating.

Also Available: Replacement hickory handles. Please ask for 5915A5 and specify overall weight.

Style B— Hammers have a replaceable fiberglass handle with a cushion grip. All have a handle guard to prevent breakage if you miss your mark. For replacement handles, see page 2866.

A&C

B

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
Hammers				
A ... 1/2	13/16"	10"	5915A12	$17.22
A ... 1	1 1/16"	12"	5915A13	29.78
A ... 1 1/2	1 1/4"	13"	5915A14	35.78
A ... 2	1 1/2"	13"	5915A15	44.02
A ... 2 1/2	1 9/16"	13"	5915A18	51.78
A ... 3	1 11/16"	14"	5915A16	59.64
A ... 4	1 3/4"	16"	5915A17	76.40
A ... 5	1 7/8"	16"	5915A24	94.36
B ... 1 3/16	1 1/16"	13"	6181A15	29.51
Hammers (Cont.)				
B ... 1 3/8	1 3/16"	14"	6181A11	$40.40
B ... 1 7/8	1 1/4"	14 1/2"	6181A12	47.91
B ... 2 1/2	1 5/16"	14 1/2"	6181A13	64.33
B ... 3 11/16	1 3/4"	15"	6181A14	82.82
Sledges				
C ... 6	1 7/8"	24"	5915A19	112.04
C ... 8	2"	24"	5915A21	155.20
C ... 10	2 1/4"	24"	5915A22	199.89
C ... 12	2 3/8"	30"	5915A23	239.78
C ... 15	2 1/2"	36"	5915A25	373.98

Brass Hammers and Sledges

A medium-hard material, brass can be used to strike steel, iron, stone, and other hard surfaces. Also used to bend and form sheet metal.

Styles D&H— Have a replaceable hickory handle with a textured, nonslip coating.

Also Available: Replacement handles. Please ask for 5978A5 and specify overall weight.

Styles E&J— Have a nonreplaceable tubular steel handle with a textured, nonslip coating.

Style F— Have a nonreplaceable aluminum handle with a textured grip, except for 6024A4 and 6024A5, which have a smooth grip.

Style G— Have a replaceable fiberglass handle with safety grip to prevent your hand from slipping. A handle guard prevents breakage if you miss your mark. For replacement handles, see pg. 2866.

D&H

E&J

F

G

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
Hammers				
D ... 1/2	13/16"	10"	5978A11	$19.22
D ... 1	1 1/16"	12"	5978A12	25.74
D ... 1 1/2	1 1/4"	13"	5978A13	30.38
D ... 2	1 1/2"	13"	5978A14	35.82
D ... 2 1/2	1 9/16"	13"	5978A15	41.10
D ... 3	1 11/16"	14"	5978A16	45.33
D ... 4	1 3/4"	16"	5978A17	60.00
D ... 5	1 7/8"	16"	5978A18	72.78
E ... 1	15/16"	10"	59805A24	21.51
E ... 1 1/2	1 3/16"	13"	59805A25	24.21
E ... 2	1 1/4"	13"	59805A26	29.29
E ... 2 1/2	1 7/16"	13"	59805A27	29.82
E ... 3	1 5/16"	13"	59805A28	38.68
E ... 4	1 3/4"	15"	59805A29	54.93
E ... 5	1 15/16"	15"	59805A31	69.13
F ... 1/4	3/4"	5 1/2"	6024A4	10.66
F ... 5/8	15/16"	7 1/4"	6024A5	17.03
Hammers (Cont.)				
F ... 1	1 1/8"	9 1/16"	6024A6	$21.98
F ... 1 1/4	1 1/4"	9 7/8"	6024A7	26.00
F ... 2	1 1/2"	10 1/2"	6024A8	43.19
F ... 3	1 3/4"	12 1/4"	6024A9	58.67
G ... 2 1/16	1"	12"	6088A32	42.06
G ... 2 3/4	1 1/4"	12"	6088A34	65.07
G ... 4	1 5/8"	12"	6088A36	110.34
Sledges				
H ... 6	1 7/8"	24"	5978A19	91.07
H ... 8	2"	24"	5978A21	119.36
H ... 10	2 1/4"	24"	5978A22	151.56
H ... 12	2 3/8"	30"	5978A23	183.89
H ... 15	2 1/2"	36"	5978A24	298.08
J ... 6	1 13/16"	20"	59805A32	84.91
J ... 8	2"	20"	59805A33	113.11
J ... 10	2 1/8"	30"	59805A34	144.44
J ... 12	2 1/4"	30"	59805A35	173.96
J ... 15	2 1/2"	30"	59805A36	208.53

Bronze Hammers and Sledges

Bronze is the hardest nonmarring material. It's ideal for striking tool steel and other hard metals.

Style K— Hammers have two square faces and a replaceable hickory handle. The handle is grooved to prevent your hand from slipping.

Style L— Have two square faces and a fiberglass handle. The handle is encapsulated in urethane and has a textured grip. Handle is nonreplaceable.

Style M— Hammers have one round face and one extended tapered nose for access to hard-to-reach areas. Handle is made of hickory and is replaceable. The handle is grooved to prevent your hand from slipping.

Style N— Slimline design has a round face on one end and a needle nose on the other for reaching into tight spaces. Handle is made of hickory and is replaceable.

Style P— These sledges have two square faces and a replaceable hickory handle.

Also Available: Replacement hickory handles. Please ask for 5893A35 and specify overall weight.

K

L

M

N

P

O'all Wt., lbs.	Face Dia.	O'all Lg.		Each
Hammers				
K ... 1 3/8	7/8" sq.	12"	5893A11	$29.09
K ... 2 1/4	1 1/4" sq.	13"	5893A12	43.84
K ... 4 1/4	1 1/2" sq.	14"	5893A13	71.52
L ... 1 7/16	7/8" sq.	12"	5854A71	48.14
L ... 2 3/8	1 1/4" sq.	12"	5854A72	60.27
L ... 4 3/8	1 1/2" sq.	14"	5854A73	87.68
M ... 3/4	13/16"	11"	5897A21	22.54
Hammers (Cont.)				
M ... 1 1/4	1"	12"	5897A22	$26.50
M ... 1 1/2	1 1/8"	13"	5897A23	33.04
N ... 3/16	7/16"	10"	5897A11	16.78
N ... 3/8	1/2"	11"	5897A12	19.44
Sledges				
P ... 4 1/2	1 1/2" sq.	24"	5943A1	86.60
P ... 8 1/4	2" sq.	32"	5943A2	140.48

Ball Peen Hammers

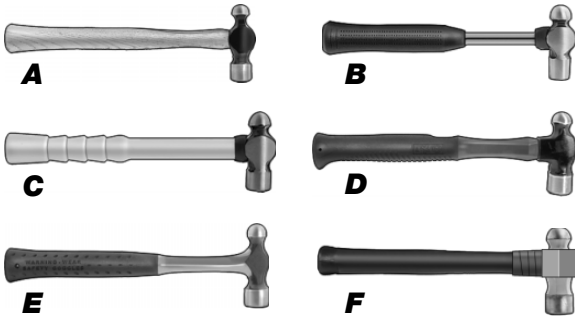

A slightly rounded striking face with a beveled edge gives these hammers the ability to handle any job from light duty tapping to heavy duty forming. Use them for striking chisels and punches, as well as for setting rivets. The peen end is especially good for forming unhardened metal.

Style A—These classic style hammers have a steel head and a replaceable hickory handle. For replacement handles, see page 2866.

Styles B&C—Have a steel head with a solid fiberglass handle. All have a handle guard to prevent breakage if you miss your mark. For replacement handles, see page 2866. *Style B* has a smooth grip. *Style C* has a safety grip that's ribbed to prevent your hand from slipping.

Style D—Have a steel head and a sturdy graphite handle that's encased in molded PVC to prevent breakage if you miss your mark. The handle has a textured grip and is nonreplaceable.

Style E—Made from one piece of solid steel, these hammers have a cushion grip. The handle is nonreplaceable.

Style F—Head is steel. Handle is made of heat-treated steel rods that are surrounded by abrasion-resistant rubber. The rubber absorbs shock and reduces fatigue. Handle is unbreakable and nonreplaceable.

	Head Wt., oz.	Face Dia.	O'all Lg.		Each
A	2	1/2″	10 1/4″	**5855A11**	$10.39
A	4	3/4″	10 1/4″	**5855A12**	10.39
A	8	1″	11 3/4″	**5855A13**	10.72
A	12	1 1/8″	12″	**5855A14**	11.74
A	16	1 1/4″	13 3/4″	**5855A15**	12.66
A	20	1 5/16″	15″	**5855A16**	13.82
A	24	1 3/8″	15 1/4″	**5855A17**	15.43
A	32	1 1/2″	15 3/4″	**5855A18**	17.32
A	40	1 21/32″	16″	**5855A19**	21.01
A	48	1 13/16″	16″	**5855A21**	24.74
B	4	3/4″	11″	**5968A21**	18.05
B	8	15/16″	11″	**5968A11**	19.30
B	12	1″	12″	**5968A12**	20.60
C	16	1 3/16″	13 3/4″	**5968A13**	21.85
C	20	1 7/32″	13 3/4″	**5968A22**	23.50
C	24	1 5/16″	14″	**5968A14**	25.96
C	32	1 13/32″	14″	**5968A15**	28.41
C	40	1 9/16″	16″	**5968A16**	34.80
C	48	1 13/16″	16″	**5968A17**	43.44
D	12	1 11/64″	11 3/4″	**58945A3**	18.97
D	16	1 9/32″	12 3/4″	**58945A31**	19.04
D	24	1 35/64″	15″	**58945A32**	20.44
D	32	1 11/16″	15″	**58945A33**	21.38
E	8	31/32″	11″	**5858A15**	21.14
E	12	1 5/64″	11″	**5858A16**	21.48
E	16	1 5/16″	13″	**5858A11**	23.01
E	24	1 15/32″	13 1/2″	**5858A12**	23.64
E	32	1 41/64″	14 1/2″	**5858A13**	25.72
F	24	1 7/32″	14″	**5518A12**	41.67
F	32	1 21/64″	14″	**5518A14**	46.67

Extra-Hard UHMW Polyethylene Replaceable-Face Tapping Hammers

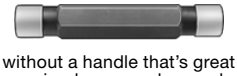

Here's a hammer without a handle that's great for tapping work into position. These nonmarring hammers have a hex-shaped steel body that won't roll when you set it down. Hammers include two screw-on faces that are made of ultra-high molecular weight (UHMW) polyethylene to resist abrasion, impact, and corrosion. Faces are yellow and similar in hardness to a hard hat.

O'all Wt., lbs.	Face Dia.	Thread Size	O'all Lg.	*Complete Hammers*	Each	*Replacement Faces*	Each
5/8	5/8″	1/4″-20	6 1/4″	**5951A1**	$15.38	**5912A18**	$2.48
1 1/4	1″	7/16″-14	6 3/4″	**5951A4**	22.52	**5951A8**	3.72

Riveting and Setting Hammers

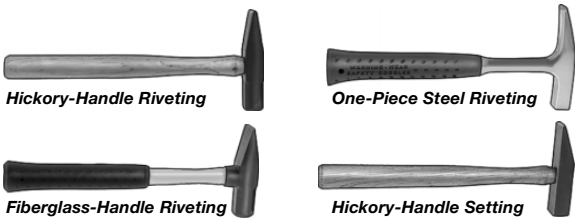

Riveting Hammers—Also known as tinners' hammers, these are great for driving and spreading rivets in sheet metal.

Setting Hammer—Also known as paneing or seaming hammers. Use to form sheet metal corners, close seams, and insert glazing points.

Hickory-handle models have a forged steel head and replaceable handle. For replacement handles, see page 2866. ***One-piece steel*** models are forged from a single piece of steel and have a nylon vinyl hand grip to reduce shock. Handle is nonreplaceable. ***Fiberglass-handle*** model has a forged steel head, slip-resistant PVC hand grip, and nonreplaceable handle.

Head Wt., oz.	Handle Material	O'all Lg.		Each
Riveting Hammers				
8	Hickory	11″	**5860A5**	$22.49
12	Hickory	13 1/2″	**5860A1**	23.26
12	One-Piece Steel	11″	**6069A5**	33.90
16	Hickory	14″	**5860A3**	31.61
16	Fiberglass	12 1/2″	**58605A1**	20.33
18	One-Piece Steel	12″	**6069A6**	34.71
Setting Hammer				
16	Hickory	13 1/2″	**5860A4**	33.14

Bricklayers', Masons', and Tilesetters' Hammers

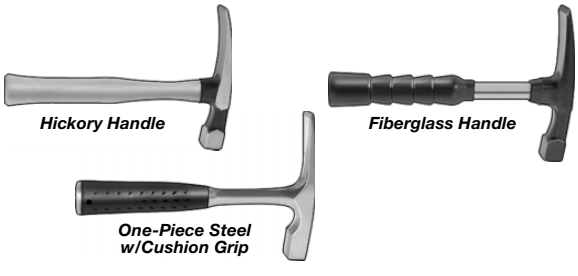

Hammers have a carbon steel head with a square flat face on one end and a curved chisel on the other for trimming, shaping, and cutting bricks, concrete blocks, and masonry tiles. They're also good for chipping mortar off bricks. The handles can be replaced on the steel-head hammers (see page 2866 for replacement handles); the handles are not replaceable on the one-piece hammers.

Head Wt., oz.	Face Size	O'all Lg.		Each
Steel Head with Hickory Handle				
16	15/16″ × 15/16″	10 3/4″	**5863A3**	$23.69
24	1 1/16″ × 15/16″	11 1/4″	**5863A1**	25.69
Steel Head with Carbide Chisel End and Hickory Handle				
16	15/16″ × 15/16″	10 3/4″	**5863A4**	29.58
24	1 1/16″ × 15/16″	11 1/4″	**5863A5**	34.08
Steel Head with Fiberglass Handle				
25	1″ × 1″	12″	**5847A16**	43.08
One-Piece Steel with Cushion Grip				
12	23/32″ × 13/16″	10″	**6063A1**	26.59
20	29/32″ × 7/8″	11″	**6063A2**	27.59
24	7/8″ × 59/64″	11″	**6063A3**	29.15

One-Piece Steel Pick Hammers

Also known as geologists' picks, these hammers have a pointed tip on one end for prying and removing rock; the other face is square and flat with beveled edges. Hammers are forged from a single piece of carbon steel. Handles are nonreplaceable and have a shock-reducing cushion grip (unless noted).

Head Wt., oz.	Face Size	O'all Lg.		Each
14	23/32″ × 3/4″	11″	**6064A1**	$26.86
22	13/16″ × 7/8″	13″	**6064A2**	27.05
22	13/16″ × 7/8″	16 1/2″	**6064A7**	30.83
22	13/16″ × 57/64″	12 1/2″	**6064A5**■	32.64

■ Has a double-lacquered leather grip.

Heavyweight Hammers

Strike a powerful blow, even when swing area is limited. Hammers have a shorter handle than sledges for use in confined work areas. All heads are made of painted carbon steel and have a polished striking face with beveled edges.

One-Piece Steel Hammers—Head and handle are forged from a single piece of steel. Handle is nonreplaceable; a cushion grip reduces shock.

Hickory Handle Hammers—Have a hickory handle that is replaceable. For replacement handles, see page 2866.

Fiberglass Handle Hammers—Handle is fiberglass and encapsulated in polypropylene, which prevents handle from breaking if you miss your mark. Handles are replaceable. For replacement handles, see page 2866.

A *One-Piece Steel*

A *w/Hickory Handle*

B *One-Piece Steel*

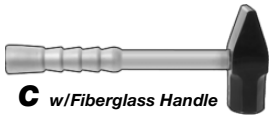
C *w/Fiberglass Handle*

Style A

This is the most popular style within the heavyweight hammer family. Also called engineers' hammers, they're for forming metal and for driving punches, cold chisels, and rock drills.

Head Wt., lbs.	Face Dia.	O'all Lg.		Each
One-Piece Steel				
2½	1 35/64″	13½″	6066A13	$27.17
Hickory Handle				
2	1 19/64″	16″	5882A1	17.96
3	1⅜″	15¼″	5882A2	17.29
4	1½″	15¼″	5882A3	17.84
6	1¾″	16″	5882A4	24.78
8	2″	16″	5882A5	29.40
Fiberglass Handle				
2	1½″	14″	60485A11	24.96
3	1⅝″	14″	60485A12	28.20
4	1¾″	14″	60485A13	31.08
6	2⅛″	16″	6048A21	38.12
8	2¼″	16″	6048A23	44.22
10	2½″	16″	6048A24	53.35

Style B

Also known as drilling, club, and crack hammers, these rugged striking tools are just what you need for demolishing masonry. Also for driving steel chisels, masonry drills, and hardened nails.

Head Wt., lbs.	Face Dia.	O'all Lg.		Each
One-Piece Steel				
2	1 3/32″	10½″	5922A1	$28.70
3	1 17/64″	11″	5922A2	27.77
4	1 17/64″	11½″	5922A3	31.30
4	1 19/64″	16″	5922A4	32.72
Hickory Handle				
2	1″	10¼″	5902A1	13.32
3	1⅛″	10¼″	5902A2	14.68
4	1 5/16″	10¼″	5902A3	16.06
Fiberglass Handle				
2	1¼″	10″	5850A55	26.81
3	1⅜″	10″	5850A56	28.20
4	1 9/16″	10″	5850A57	29.86

Style C

Often called blacksmiths' or cross peen hammers. One end has a beveled face for striking unhardened metal, concrete, and stone; the other end has a cross peen for shaping and bending unhardened metal.

Head Wt., lbs.	Face Dia.	O'all Lg.		Each
One-Piece Steel				
1½	1 7/64″	13″	5318A11	$25.86
2	1 11/64″	14″	5318A12	26.92
2½	1 7/32″	14¼″	5318A13	27.69
Hickory Handle				
2	1¼″	15¼″	5881A2	19.43
3	1½″	15¼″	5881A4	22.63
4	1⅝″	15¼″	5881A5	28.31
Fiberglass Handle				
3	1⅝″	14″	5923A61	33.94
4	1¾″	14″	5923A62	37.37

Sledges

Also known as blacksmith-style sledges, these tools provide maximum striking power for all of your extra-tough jobs. All sledges have a painted head and crowned and beveled striking faces. Use them for striking stone, concrete, and hardened nails, unless noted.

Hickory Handle

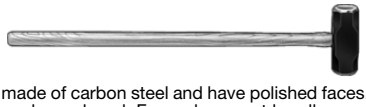

Heads are made of carbon steel and have polished faces. Handles are hickory and can be replaced. For replacement handles, see page 2866.

Head Wt., lbs.	Face Dia.	O'all Lg.		Each
6	2″	36″	5884A14	$23.17
6½	2″	36″	5884A22	28.89
8	2″	36″	5884A15	26.25
10	2 3/32″	36″	5884A16	29.34
12	2 19/64″	36″	5884A17	34.38
16	2½″	36″	5884A18	52.32
20	2½″	36″	5884A19	61.32

Fiberglass Handle

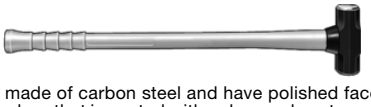

Heads are made of carbon steel and have polished faces. Handles are solid fiberglass that is coated with polypropylene to reduce impact and prevent breakage if you miss your mark. Handles are replaceable. For replacement handles, see page 2866.

Head Wt., lbs.	Face Dia.	O'all Lg.		Each
6	2⅛″	32″	6048A14	$41.37
8	2¼″	32″	6048A15	47.10
10	2½″	32″	6048A16	52.90
12	2⅝″	32″	6048A17	61.32
16	2⅞″	34½″	6048A18	79.36
20	3¼″	34¼″	6048A19	115.34

Steel-Reinforced Rubber Handle

Handles are unbreakable—they are reinforced with heat-treated steel rods and covered with heavy duty molded rubber to reduce shock and fatigue. Heads are tempered steel and coated with high-visibility green paint. Handles are nonreplaceable.

Head Wt., lbs.	Face Dia.	O'all Lg.		Each
8	2⅛″	24″	5895A44	$86.52
8	2⅛″	30″	5895A45	93.17
14	2 13/32″	30″	5895A48	136.43

Shock-Absorbing Safety Sledges

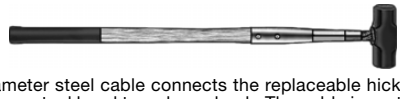

A 1″ diameter steel cable connects the replaceable hickory handle to the carbon steel head to reduce shock. The cable is protected by a stainless steel sheath. Faces are polished.

Head Wt., lbs.	Face Dia.	O'all Lg.		Each
6	2⅛″	37″	5988A22	$157.58
8	2¼″	37½″	5988A23	167.67
10	2½″	37¾″	5988A24	173.24
12	2½″	38″	5988A25	183.33
16	2⅞″	38″	5988A26	214.65

Replacement Hickory Handle ..... 5988A29 **Each** $22.22

Driving Maul

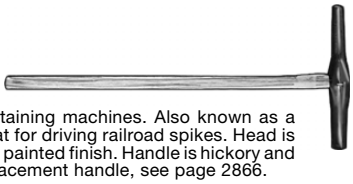

A maul is similar to a sledge hammer, but has a longer, slimmer head. It's often used to drive and punch out pins when aligning structural steel components or maintaining machines. Also known as a spike maul, this tool is great for driving railroad spikes. Head is made of carbon steel with a painted finish. Handle is hickory and can be replaced; for a replacement handle, see page 2866.

Head Wt., lbs.	Face Dia.	O'all Lg.		Each
10	1¼″, 1⅝″	36″	5932A8	$92.36

Sledge and Ax Handle Protectors

Add a durable rubber collar to your tool's handle to protect it from cracking and the wear that can occur if you miss your mark.

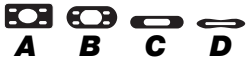
A **B** **C** **D**

	Inside Lg.	Inside Wd.		Each
For Most Sledges and Splitting Maul Handles				
A	1 3/16″	15/16″	5955A11	$9.38
B	1⅝″	1″	5955A12	9.38
For Sledges and Splitting Mauls w/Ax-Eye Handles				
C	1⅞″	11/16″	5955A13	9.00
For Single-Bit Ax Handles				
D	2″	½″	5955A14	9.00

For replacement handles, see page 2866.

Sheet Metal Forming Tools

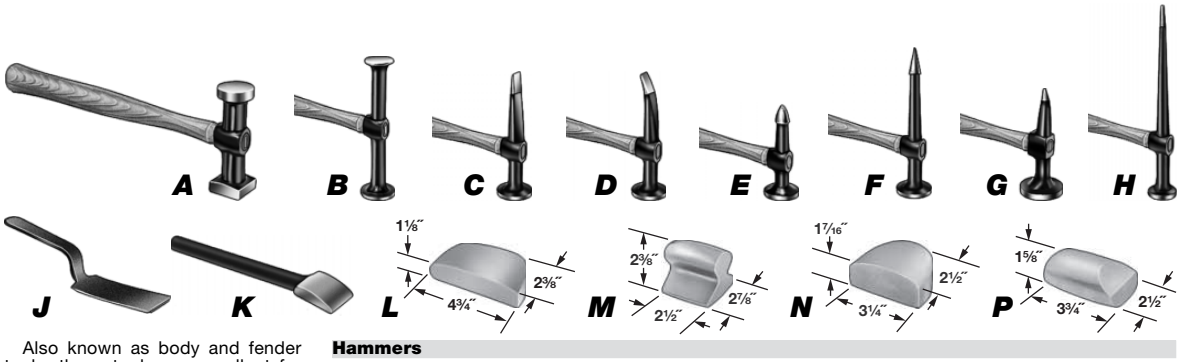

Also known as body and fender tools, these tools are excellent for forming and repairing dents in sheet metal components. All are made of forged steel.

(A-H) Hammers— All measure approximately 12″ long and have a smooth face (except where noted).

(J) Dinging Spoon— To protect the finish of your workpiece, place this tool against the workpiece you're forming or repairing and strike with a hammer. It's often used to smooth ridges.

(K) Dolly Block with Handle— A long handle allows this tool to get into hard-to-reach spots.

(L-P) Dolly Blocks— Place blocks on the back side of your workpiece to act as a support when you strike the workpiece.

Hammers

	Head Wt., lbs.	Head Lg.	Face Size	With Hickory Handle	Each	With Fiberglass Handle	Each
A	9⁄16	4″	1¼″ Round End●, 1⅛″ Square End	6689A1	$42.16	6689A44	$46.52
A	⅞	4″	1¼″ Round End, 1³⁄₁₆″ Square End	6689A21	32.29	6689A45	36.66
B	¾	6″	1¼″ Round End, 1⁹⁄₁₆″ Round End	6689A22	33.88	6689A54	38.22
C	½	5½″	⅝″ Chisel End, 1⁹⁄₁₆″ Round End	6689A31	31.87	6689A41	36.18
D	½	5½″	⅝″ Chisel End, 1⁹⁄₁₆″ Round End	6689A51	34.58	6689A42	38.92
E	½	4″	Rounded Cone End, 1⁹⁄₁₆″ Round End	6689A69	30.34	6689A46	34.70
F	9⁄16	6⅜″	Pointed Cone End, 1⁹⁄₁₆″ Round End	6689A68	32.19	6689A43	36.48
G	9⁄16	4½″	Pick End, 1⁷⁄₈″ Round End	6689A35	33.40	6689A56	37.74
H	9⁄16	8⅛″	Pick End, 1¼″ Round End	6689A32	33.22	6689A55	37.54

● Has a milled (serrated) face.

Dinging Spoon

	Spoon Base Size	O'all Lg.	Wt., lbs.		Each
J	4⁵⁄₁₆″ Lg. × 2″ Wd. × 5⁄32″ Thick.	10″	½	6689A28	$23.29

Dolly Block with Handle

	Head Size	O'all Lg.	Wt., lbs.		Each
K	3″ Lg. × 2½″ Wd. × 1″ Thick.	14″	4³⁄₁₆	6689A49	$43.76

Dolly Blocks

	Wt., lbs.		Each
L	3	6689A23	$45.49
M	3	6689A24	46.55
N	2¹¹⁄₁₆	6689A26	38.14
P	3⅛	6689A48	45.02

Replacement Handles

Designed for use with hammers A-H. All are approximately 12″ long.

Material		Each
Hickory	6689A3	$7.98
Fiberglass	6689A71	14.63

Welders' Chipping and Scaling Hammers

Chip away unwanted weld spatter and slag as well as rust and paint from metals. All hammers have a steel head and shank (unless stated otherwise). Handles are replaceable, except for the handle on Style R hammers. ***Styles T*** and ***U*** have a wire coil handle that provides a flexible grip and dissipates heat. ***Style U*** also has a replaceable wire brush and is made entirely of steel.

Head Wt., lbs.	Head Lg.	Head Style	O'all Lg.		Each
(Q) Hickory Handle					
1	7¾″	Pick/Chisel	12″	5866A2	$16.69
1	8¼″	Pick/Cross Chisel	12″	5866A1	17.13
(R) One-Piece Forged Steel with Cushion-Grip Handle					
⅞	7¼″	Pick/Chisel	11″	5938A14	31.50
(S) Hickory Hand-Grip Handle					
⅝	6½″	Pick/Chisel	10½″	7905A11	12.30
(S) Type 420 Stainless Steel Head with Hickory Hand-Grip Handle					
⅝	6½″	Pick/Chisel	10½″	7905A32	20.26
(T) Wire Coil Handle					
⅝	6½″	Pick/Chisel	10½″	7842A11	9.94
⅝	6½″	Pick/Cross Chisel	10½″	7842A13	9.94
(T) Wire Coil Handle (Cont.)					
⅝	6½″	Cross Chisel/Chisel	10½″	7842A12	$9.94
(T) Type 420 Stainless Steel Head with Wire Coil Handle					
⅝	6½″	Pick/Chisel	10½″	7842A14	20.20
(U) Combination Wire Brush and Chisel with Wire Coil Handle					
½	3⅞″	Chisel/Brush	11½″	7954A11	19.67
Replacement Handles and Brushes					
Replacement Handle for Style Q				5866A3	5.30
Replacement Handle for Style S				7905A65	3.98
Replacement Handle for Style T and Style U				7842A65	1.74
Replacement Steel Wire Brush for Style U				7954A14	3.59
Optional Type 302 Stainless Steel Brush for Style U				7954A16	7.72

Magnetic Tack Hammers

Also known as upholstery hammers, these hammers have a tapered head for driving tacks in confined areas. For added convenience, one end of the hammer head is permanently magnetized to hold tacks. The head is forged steel with a polished finish; handle is hickory and nonreplaceable.

Head Wt., lbs.	Head Lg.	O'all Lg.		Each
¼	3½″	11″	5861A2	$33.11
5⁄16	4⅛″	11″	5861A6	36.38
½	4⅜″	10½″	5861A7	37.51

Magnetic Brad Driver

The magnetic point holds the brad; push the handle to easily drive and countersink 16-ga. brads up to 1½″ long. Shaft is carbon steel; handle is hardwood. Overall length is 6″.

5702A11 ..... Each $6.84

McMASTER-CARR®

For replacement handles, see page 2866.

Nail Hammers

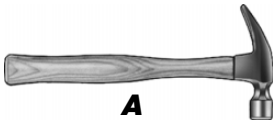

A

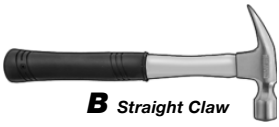

B Straight Claw

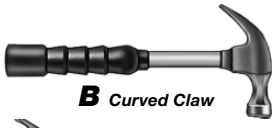

B Curved Claw

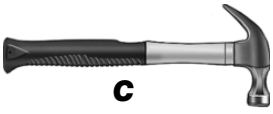

C

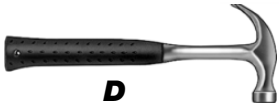

D

Hit the nail on the head with any one of these hammers. All have a polished head (except where noted). Choose hammers with a ***straight claw*** for ripping and prying; hammers with a ***curved claw*** are for removing nails. Hammers with a ***milled (serrated) face*** prevent the head from slipping when striking.

Style A have a hickory handle that's replaceable.

Style B have a fiberglass handle that resists breakage if you miss your mark. Handles are nonreplaceable. *Straight claw* hammers have a hollow core that reduces vibration and a smooth cushion grip that reduces fatigue. *Curved claw* hammers have a solid core that reduces impact and wear. A cushioned safety grip prevents your hand from slipping.

Style C have a graphite handle with a graphite core and a molded polycarbonate casing that reduces shock and prevents breakage if you miss your mark. Hammers also have a ribbed cushion grip for added shock reduction. Handles are nonreplaceable.

Style D have a cushion grip that reduces shock. The handles are nonreplaceable.

Head Wt., oz.	O'all Lg.	Face Style	Straight Claw	Each	Curved Claw	Each
(A) Forged Steel Head with Hickory Handle						
10	11″	Smooth	5874A3	$15.60	5852A6	$17.26
13	12½″	Smooth	____	____	5852A3	17.23
16	13″	Smooth	5874A7■	8.66	5852A5■	9.29
16	13″	Smooth	5874A1	19.02	5852A2	19.31
20	14″	Smooth	5874A4	20.44	5852A1	20.84
20	14″	Milled	5874A8	22.84	____	____
20	16″	Smooth	5874A6	20.83	____	____
20	16″	Milled	5874A9	23.23	____	____
24	17″	Milled	5874A17	26.45	____	____
32	18″	Milled	5874A19	30.53	____	____
(B) Forged Steel Head with Fiberglass Handle						
13	13″	Smooth	____	____	5924A62	31.83
16	13″	Smooth	6044A13	21.15	5924A63	31.89
20	14″	Smooth	6044A11	22.47	5924A64	33.93
20	16″	Milled	6044A14	26.54	____	____
24	17″	Milled	6044A15	30.55	____	____

■ Has a painted head.

Head Wt., oz.	O'all Lg.	Face Style	Straight Claw	Each	Curved Claw	Each
(C) Forged Steel Head with Graphite Handle						
16	13¼″	Smooth	____	____	1580A31	$21.01
20	13¼″	Smooth	1580A34	$22.99	____	____
(D) One-Piece Forged Steel with Cushion-Grip Handle						
12	11″	Smooth	6062A1	22.71	6061A1	24.04
16	13″	Smooth	6062A2	22.72	6061A2	24.06
20	13½″	Smooth	6062A3	26.00	6061A3	29.30
20	13½″	Milled	6062A6	30.81	____	____
22	16″	Smooth	6062A11	32.05	6061A6	35.78
22	16″	Milled	6062A12	34.01	6061A7	39.20
24	16″	Smooth	6062A14	34.76	____	____
24	16″	Milled	6062A16	36.23	____	____
25	18″	Smooth	6062A47	35.34	____	____
25	18″	Milled	6062A67	36.79	____	____
30	16″	Milled	6062A22	39.44	____	____

One-Piece Steel Carpenters' Hatchets

One side of the head has a hammer face for driving unhardened nails and wood or plastic stakes; the other side has a hatchet for cutting, splitting, and trimming. Tools are one-piece forged steel with a fully polished head and a cushion grip to reduce shock. 5966A3 has a milled (serrated) hammer face to prevent the head from slipping when striking.

Head Wt., lbs.	Hammer Face Style	Cutting Edge Lg.	O'all Lg.	Each
1 3/16	Smooth	3 5/8″	13″	5966A2 $41.40
1 3/8	Milled (Serrated)	3½″	16¾″	5966A3 44.34

Axes

Utility Ax

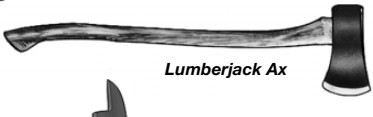

Lumberjack Ax

Firefighters' Ax

Axes have a forged steel head with a sharpened cutting edge. Handle is hickory and can be replaced.

Utility Ax— With its short handle, this ax is great for confined spaces. It has a black powder-coated finish to resist rust and scratches.

Lumberjack Ax— With its longer handle and larger cutting edge, this ax is the choice for big cutting jobs. It has a black powder-coated finish to resist rust and scratches.

Firefighters' Axes— Axes have the traditional bright red head for easy visibility. One end has a cutting edge for chopping; the other end has a pick end for ripping.

	Head Wt., lbs.	Cutting Edge Lg.	O'all Lg.	Each
Utility Ax	1¼	3″	14″	5784A2 $21.38
Lumberjack Ax	3½	4 9/16″	35½″	5960A2 31.91
Firefighters' Ax	2¾	4″	28″	6084A14 55.94
Firefighters' Ax	6	5″	36″	6084A12 72.91

Slide-Bar Hammers

Slide-Bar Hammer

Optional 7/8″ Dia. Face

No need for a separate hammer and chisel. These hammers have a slide bar that acts as a sledge, eliminating the danger of swinging a traditional sledge hammer. To use, extend the slide bar's handle and forcefully push it into the hammer's steel chamber. The bar strikes against the removable driver face, delivering accurate driving power. Perfect for one-person jobs on heavy equipment and for limited-space areas where it would be difficult to swing a regular sledge. A slide lock keeps the bar in place when not in use. Hammers are made of steel. Furnished with a 2″ dia. steel face. ***Optional 7/8″ dia. face*** fits both hammers below.

Shown with Optional 7/8″ Dia. Face

O'all Wt., lbs.	Face Dia.	O'all Lg.	Each
14	2″	30″	6861A34 $487.54
21	2″	46″	6861A37 554.34
Optional 7/8″ Dia. Face (11½″ Lg.)			6861A41 74.50

Hickory Replacement Handles

A

B

C

D

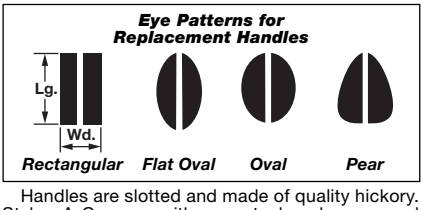

Handles are slotted and made of quality hickory. Styles A-C come with one steel and one wood wedge (unless noted) to use together for a secure fit. Style D handles come with one wood wedge (unless noted).

All-White Grade AA— The highest grade available. This straight-grain, smooth and dense hickory is free from defects. Handles have a wax finish that provides a longer service life than Grade A hickory. 5976A18 and 5976A33 are red and white.

Flame-Tempered Grade A— Fire-finished hickory is coated with a clear lacquer to resist aging, dirt, moisture, and weathering.

For Head Wt. Range	O'all Lg.	Eye Size, Lg. × Wd.	Eye Pattern	All-White Grade AA	Each	Flame-Tempered Grade A	Each
(A) Nail Hammer Handles							
7-10 oz.	12″	7/8″ × 1/2″	Rectangular	5976A18	$4.69	5976A55	$4.02
13 oz.	13″	1″ × 1/2″	Rectangular	5976A31	5.00	5976A42	4.02
16 oz.	14″	1 1/16″ × 9/16″	Rectangular	5976A19	5.00	5976A56	4.02
20-24 oz.	14″	1 1/16″ × 5/8″	Rectangular	5976A15	5.00	—	—
28-32 oz.	16″	1 3/16″ × 3/4″	Rectangular	5976A32	5.08	5976A43	4.16
28-32 oz.	18″	1 3/16″ × 3/4″	Rectangular	5976A33	4.91	5976A45	4.28
(B) Ball Peen, Riveting, Setting, Tack, Bricklayers', Tilesetters', Masons' Hammer Handles							
2 oz.	10″	7/16″ × 1/4″	Flat Oval	—	—	5976A27■	4.02
4-6 oz.	10″	9/16″ × 5/16″	Flat Oval	—	—	5976A57■	4.02
8-12 oz.	12″	3/4″ × 7/16″	Flat Oval	5976A22■	5.00	5976A58■	4.02
16-20 oz.	14″	29/32″ × 17/32″	Flat Oval	5976A23	5.00	5976A59	4.02
24-28 oz.	16″	1 1/16″ × 19/32″	Flat Oval	5976A24	5.08	5976A61	4.33
32-48 oz.	18″	1 3/16″ × 11/16″	Flat Oval	5976A25	5.25	5976A62	4.47
(B) Heavyweight, Blacksmiths', Engineers' Hammer Handles							
1 1/2-2 1/2 lbs.	12″	7/8″ × 5/8″	Oval	—	—	5976A51	4.02
1 1/2-2 1/2 lbs.	14″	7/8″ × 5/8″	Oval	5976A69	5.00	5976A71	4.02
3 1/2 lbs.-Up	16″	1 1/4″ × 1″	Oval	5976A13	5.08	5976A53	4.16
3 1/2 lbs.-Up	18″	1 1/4″ × 1″	Oval	5976A14	5.50	5976A54	4.28
(B) Heavyweight, Blacksmiths', Engineers', Drilling Hammer Handles							
2-3 lbs.	14″	1 3/16″ × 11/16″	Flat Oval	5976A12	5.00	5976A52	4.02
2-4 lbs.	10 1/2″	1″ × 3/4″	Oval	5976A67	5.29	5976A66	4.42
3-4 lbs.	16″	1″ × 3/4″	Oval	5976A68	5.08	5976A72	4.16
(C) Sledge Handles							
22-26 lbs.	36″	1 3/4″ × 1 1/4″	Oval	5973A14	11.61	5973A26	9.98
(C) Sledge, Driving Maul Handles							
6-8 lbs.	30″	1 1/4″ × 1″	Oval	5973A11	10.06	5973A21	8.53
6-16 lbs.	32″	1 1/4″ × 1″	Oval	5973A16	9.56	5973A31	8.89
6-16 lbs.	36″	1 1/4″ × 1″	Oval	5973A12	9.65	5973A23	8.68
18-24 lbs.	36″	1 1/2″ × 1 1/4″	Oval	5973A13	11.61	5973A25	9.96
(D) Ax Handles							
1 1/4 lbs.	14″	1 5/8″ × 19/32″	Pear	5976A82	6.12	5976A73	5.06
3-5 lbs.	32″	2 5/16″ × 3/4″	Pear	—	—	5976A75	9.68
3-5 lbs.	36″	2 5/16″ × 3/4″	Pear	5976A83	12.21	5976A84	10.68
3 1/2-6 lbs.	36″	2 1/2″ × 3/4″	Pear	—	—	5976A78▲	11.60

■ Not slotted; has one steel wedge. ▲ Has two steel wedges and one wood wedge.

Fiberglass Replacement Handles

With Smooth Grip

With Safety Grip

Ax Handle with Smooth Grip

Solid fiberglass handles are durable and impact resistant. They won't split like wood handles.

Wedge-Style Handles— Furnished with two synthetic wedges for quick and easy assembly (does not require epoxy). The wedges are ribbed to ensure a tight fit. Choose handles with a smooth cushion grip or a ribbed safety grip that prevents your hand from slipping. 36155A22 and *A24* are encapsulated in polypropylene to prevent breakage if you miss your mark.

Epoxy-Style Handles— Furnished with epoxy bonding compound, mixing stick, and tape seal. Just pour mixed epoxy into the tool head, place the handle in the tool head, and let the epoxy cure. Epoxy fills in around the handle, compensating for different eye patterns and ensuring a secure fit. Choose handles with a smooth cushion grip (except for ax-handle style, which is not cushioned) or a ribbed safety grip that prevents your hand from slipping.

For Head Wt. Range	O'all Lg.	For Hammer Type	Handle Grip		Each
Wedge-Style Handles					
Nail Hammer Handle					
16-20 oz.	13″	Nail	Smooth	36155A29	$11.12
Sledge, Blacksmiths', Maul Hammer Handles					
2-4 lbs.	14″	Sledge, Blacksmiths'	Safety	36155A31	12.23
2-4 lbs.	16″	Sledge, Blacksmiths'	Safety	36155A33	12.42
6-16 lbs.	32″	Sledge, Maul	Safety	36155A22●	20.78
6-16 lbs.	36″	Sledge, Maul	Safety	36155A24●	22.58
Epoxy-Style Handles					
Nail, Ball Peen, Sledge Hammer Handles					
4 oz.	11″	Ball Peen	Smooth	5982A12	10.51
7-12 oz.	13″	Nail, Ball Peen	Smooth	5982A13	11.59
8 oz.	12″	Ball Peen	Smooth	5982A1	10.86
13-20 oz.	13″	Nail, Ball Peen	Safety	5982A2	12.90
13-20 oz.	16″	Nail, Ball Peen	Smooth	58615A17	12.42
16-32 oz.	14″	Nail, Ball Peen, Sledge	Safety	5982A3	14.01
40 oz.	16″	Ball Peen	Safety	5982A8	13.85
48 oz.	16″	Ball Peen	Safety	5982A9	15.05
Blacksmiths', Engineers', Drilling, Sledge, Maul Hammer Handles					
1-2 lbs.	14″	Blacksmiths', Engineers', Sledge	Smooth	58615A21	12.42
2 lbs.	10″	Drilling	Smooth	58615A22	12.42
2-4 lbs.	10″	Drilling	Safety	5982A14	10.54
3-4 lbs.	10″	Drilling	Smooth	5982A4	12.16
3-4 lbs.	14″	Blacksmiths', Engineers', Sledge	Smooth	58615A23	16.21
3-4 lbs.	14″	Sledge	Safety	5982A5	14.17
6-20 lbs.	16″	Sledge, Maul	Smooth	5982A15♦	20.43
6-20 lbs.	32″	Sledge, Maul	Safety	5982A16♦	26.40
6-20 lbs.	36″	Sledge, Maul	Safety	5982A17♦	27.74
Ax Handle					
3-5 lbs.	34″	Single Bit Ax	Smooth	58615A36	22.98
Replacement 12-gram Epoxy Pack				5982A84	4.23
Replacement 24-gram Epoxy Pack				5982A79	4.87

● Head weight range is 6-16 lbs. for sledge heads; 6-8 lbs. for maul heads.
♦ Head weight range is 6-20 lbs. for sledge heads; 6-8 lbs. for maul heads.

Steel Wedges for Hammer Handles

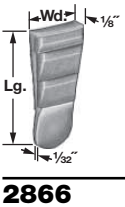

Drive one of these steel wedges in the handle of your hammer, sledge, or ax to ensure a snug-fitting head. Their ridged edges keep them from working loose.

For Use With	For Head Wt. Range	Size, Lg. × Wd.	Pkg. Qty.		Per Pkg.
Small Hammers	2-6 oz.	13/16″ × 5/16″	36	6676A1	$7.45
Nail Hammers	4-24 oz.	1 1/16″ × 1/2″	36	6676A3	8.32
Large Hammers	2-8 lbs.	1 1/16″ × 3/4″	36	6676A4	9.18
Sledges	3 1/2-16 lbs.	1 1/16″ × 1″	36	6676A5	9.53
Axes	3-5 lbs.	1 3/16″ × 1 1/4″	12	6676A6	7.97

252-Piece Steel Wedge Assortment— Contains 36 wedges for small hammers, 36 wedges for nail hammers, 36 wedges for large hammers, 36 wedges for sledges, 12 wedges for axes, 12 round wedges (9/16″ dia.), and 12 round wedges (3/4″ dia.). Also includes 72 steel rivets (3/16″ Dia. × 1 5/8″ Lg.). Wedges are smooth. Comes in a plastic box.

6676A9 ..... Each $49.94

Standard 0.401″ Shank Air-Powered Hammers

Also known as zip guns, these air-powered hammers easily handle metal cutting, chipping, scraping, and staking applications. They have a metering trigger that controls the number of blows per minute. Their piston stroke determines the hammering power; the longer the piston stroke, the greater the power. For example, a light duty hammer has a short piston stroke for fast-hitting, but has less power than a slower-hitting heavy duty hammer, which has a longer piston stroke. All hammers use standard 0.401″ shank chisels (sold separately, see 7117A on this page) and have a maximum operating pressure of 90 psi.

A-C ***Nonriveting Hammers—*** Have an aluminum housing, alloy steel barrel, and mechanical aid spring retainer (for replacement see 59005A24 on this page). Not suitable for driving rivets. ***Hammer sets*** include the hammer and one each of the following: 3/4″ Wd.×7 3/4″ Lg. edging tool, 3/4″ Wd.×7 3/4″ Lg. muffler/tail pipe cutter, 3/4″ Wd.×7 3/4″ Lg. flat chisel, 3/4″ Wd.×7 3/4″ Lg. cutting chisel, and 15/32″ Dia.×7 3/4″ Lg. tapered punch. Connections: NPT female.

D ***Medium Duty Riveting Hammer—*** Can accept up to 3/16″ size soft iron and aluminum rivets. It has an aluminum housing, heat-treated steel barrel, and beehive spring retainer (for replacement see 59005A23 on this page). ***Hammer set*** includes the hammer; air regulator; and one each of the following: 1/8″, 5/32″, and 3/16″ dia. round rivet setters. Furnished in a plastic box. Connections: NPT female.

E&F ***Heavy Duty Riveting Hammers—*** Can accept up to 3/8″ size soft iron and aluminum rivets. They have an aluminum housing, heat-treated steel barrel, and beehive spring retainer (for replacement see 59005A23 on this page). ***Hammer sets*** include the hammer and one each of the following: 3/16″ and 1/4″ dia. round rivet setters. Connections: NPT female.

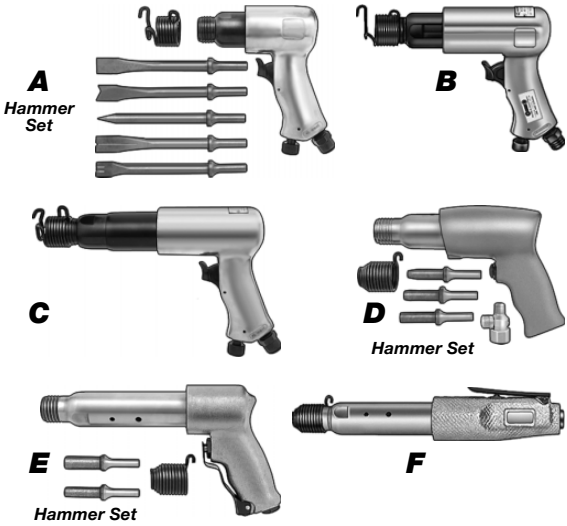

	Blows per Minute	Piston Stroke	cfm @ 90 psi	Air Inlet	Min. Hose ID	O'all Lg.	Wt., lbs.	Hammers	Each	Hammer Sets	Per Set
Nonriveting											
A Light Duty	0-5,000	1 5/8″	2	1/4″	3/8″	6 7/64″	2.6	59145A23	$45.47	59145A24	$62.18
B Medium Duty	0-3,500	2 5/8″	3	1/4″	3/8″	7 13/16″	3.4	58955A67	50.88	58955A68	65.41
C Heavy Duty	0-2,000	3 1/2″	3	1/4″	3/8″	9 29/32″	4.1	5981A11	63.10	5981A12	71.95
Riveting											
D Medium Duty	0-3,400	2 1/2″	4	1/4″	1/4″	8 1/2″	4	5872A92	210.76	5872A91	324.81
E Heavy Duty	0-2,200	4″	4	1/4″	3/8″	10 1/2″	4.75	6104A44	431.31	6104A45	490.10
F Heavy Duty	0-2,200	4″	4	1/4″	3/8″	13″	6.25	6104A46	431.31	6104A47	495.91

Standard 0.401″ Shank Chisels and Tools

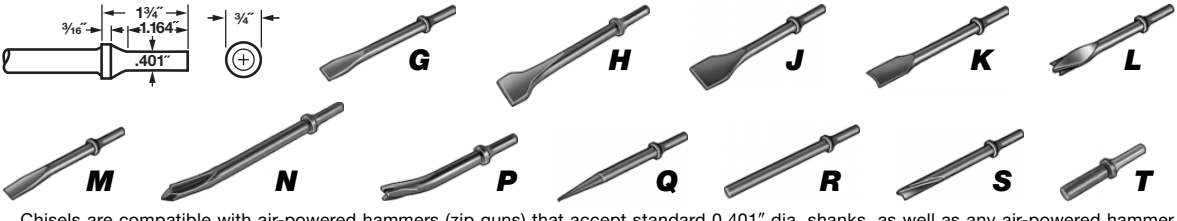

Chisels are compatible with air-powered hammers (zip guns) that accept standard 0.401″ dia. shanks, as well as any air-powered hammer that has a quick-change hammer retainer that accepts standard 0.401″ shank tools. ***Style T*** tools require a riveting hammer.

All chisels and tools are made of heat-treated alloy steel.

	Blade Size	O'all Lg.		Each
G Flat Chisel	1/2″ Wd.	6 1/2″	7117A32	$14.92
G Flat Chisel	3/4″ Wd.	6 1/2″	7117A25	11.65
G Flat Chisel	3/4″ Wd.	11″	7117A33	15.47
G Flat Chisel	3/4″ Wd.	18″	7117A26	26.35
H Wide Flat Chisel	1 1/2″ Wd.	6 1/2″	7117A31	15.88
H Wide Flat Chisel	2″ Wd.	7″	7117A34	23.85
J Wide Chisel/Scraper	1 5/16″ Wd.	6 1/4″	7117A22	15.04
K Cutter	1″ Wd.	6 7/8″	7117A21	14.39
K Cutter	1 1/4″ Wd.	8 1/2″	7117A37	13.43

4-Piece Set— Includes one each of 7117A32, 7117A25, 7117A24, and 7117A27.

7117A43 ..... **Per Set** $49.69

	Blade Size	O'all Lg.		Each
L Panel Cutter	3/4″ Wd.	6″	7117A24	$15.43
M Rivet Cutter	5/8″ Wd.	5 3/4″	7117A28	11.71
N Muffler/Tail Pipe Cutter	17/32″ Dia.	7 1/2″	7117A38	14.76
P Claw Ripper	5/8″ Wd.	5 3/8″	7117A23	15.94
Q Tapered Punch	3/16″ Dia.	6 1/2″	7117A27	11.65
R Straight Punch/Blank	1/2″ Dia.	6 1/2″	7117A29	10.49
S Bushing Splitter	1/2″ Dia.	6 1/4″	7117A39	15.84
T Rivet Setter	3/16″ Dia.	3 1/2″	6104A48	13.75
T Rivet Setter	1/4″ Dia.	3 1/2″	6104A49	14.57

9-Piece Set— Includes one each of 7117A25, 7117A22, 7117A37, 7117A24, 7117A28, 7117A38, 7117A23, 7117A27, and 7117A39.

7117A41 ..... **Per Set** $119.84

Air-Powered Hammer Retainers

All of these retainers accept standard 0.401″ shank chisels and tools. ***Quick-change retainers*** can replace retainers on air-powered hammers that have a threaded barrel. *Type 1 compatible quick-change retainer* has a pliable insert for a tight fit; *Type 2 compatible quick-change retainer* has a set screw adjustment. ***Spring retainers*** are replacements for air-powered hammers equipped with spring retainers.

Type 1 Compatible— Retainers are compatible with Chicago Pneumatic models 9311, 9315, 711, 714, 715, and 4444; Dayton; Cleco E3, E4, E15, and E16; Universal Tool; Florida Pneumatic; Snap-On models PH45 and PH50; and Ingersoll-Rand models 115, 116, and 117.

Type 2 Compatible— Retainers are compatible with Ingersoll-Rand models MC121 (700 series) and AV 10-12-13 as well as all Superior Pneumatic models.

Quick-Change Retainer

Beehive Spring Retainer

Mechanical Aid Spring Retainer

	Type 1 Compatible	Each	Type 2 Compatible	Each
Quick-Change Retainers	59005A21	$49.74	59005A22	$53.19
Beehive Spring Retainer	59005A23	4.47		
Mechanical Aid Spring Retainers	59005A24	5.17	59005A25	6.54

Quick-Change Air-Powered Hammers

Straight Handle

Pistol Handle

A good choice for applications that require fast hitting and light tapping. Hammers have a compact design and work well for scaling, trimming, cutting, chipping, piercing, and peening. Not suitable for driving rivets. A quick-change retainer lets you easily change chisels and lock them in place, even at various angles. The chuck is not removable. Hammers have an aluminum handle and a heat-treated steel barrel. The longer the piston stroke, the greater the force the hammer delivers. A metering trigger controls the blows per minute. Operating pressure is 90 psi. Connections: NPT female.

Note: The 0-13,000 bpm hammers only accept the 6027A octagon shank chisels and tools sold separately below; the 0-9,000 bpm hammers only accept the 6027A hex shank chisels and tools sold separately below.

Hammers

Blows per Minute	Piston Stroke	cfm @ 90 psi	Air Inlet	Min. Hose ID	Wt., lbs.	Straight Handle O'all Lg.		Straight Handle Each	Pistol Handle O'all Lg.		Pistol Handle Each
0-13,000	3/4"	3	1/4"	1/4"	1 1/4	7 1/4"	6022A11	$278.57	6"	6022A12	$278.57
0- 9,000	1 5/32"	6	1/4"	1/4"	2 1/4	9 1/8"	6022A13	359.21	6"	6022A14	359.21

Chisels and Tools—For use with the 6022A air-powered hammers on this page.

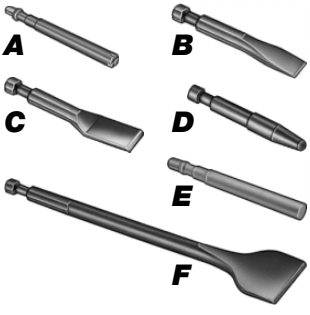

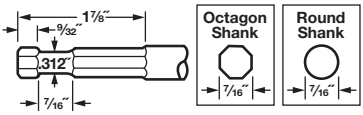

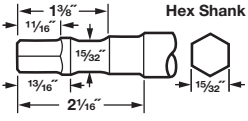

		For 0-13,000 bpm Hammers Shank Style	O'all Lg. × Blade Wd.		Each	For 0-9,000 bpm Hammers Shank Style	O'all Lg. × Blade Wd.		Each
A	Scaling Tool	Octagon	3 1/2" × 7/16"	6027A11	$21.55	Hex	5" × 5/8"	6027A45	$25.57
B	Flat Chisel	Octagon	4" × 9/16"	6027A14	18.60	Hex	6" × 5/8"	6027A32	28.42
B	Flat Chisel	Octagon	7" × 9/16"	6027A73	20.39	Hex	6" × 1"	6027A33	25.57
C	Offset Flat Chisel	Octagon	3 1/2" × 3/4"	6027A82	25.57	Hex	7" × 3/4"	6027A47	37.72
D	Peening Tool	Round	3 1/2" × 5/16"	6027A16	18.91	Hex	5" × 3/32"	6027A44	28.79
E	Blank	Octagon	3" × 7/16"	6027A74	16.69	Hex	5" × 5/8"	6027A76	25.25
F	Scraper	Octagon	12" × 1 3/4"	6027A21	35.13	Hex	12" × 2 1/2"	6027A48	47.12

Air-Powered Chipping Hammers

Gooseneck Handle

D Handle

Put these hammers to work on heavy construction jobs as well as in foundry and fabrication shops. The longer the piston stroke, the greater the force the hammer delivers. All of these chipping hammers use United States Navy (U.S.N.) style shank oval-collar flat chisels or oval-collar moil points (7083A sold separately on this page). Maximum operating pressure is 90 psi. Connections: NPT female.

The retainer on these hammers has a black-oxide coating. ***Gooseneck-handle*** hammers allow a firm grip and a quick release. They have a carbon steel handle with a hardened steel barrel and a plated piston for reduced wear. The ***D-handle*** hammers offer a firm grip with added safety. They have a forged steel handle with a heat-treated steel barrel and a plain piston. ***Swivel hose connectors*** eliminate cracked hoses due to kinking and broken inlet bushings. The connectors screw into the air inlet and allow hose to swivel with the hammer. ***Mufflers*** cover the tool's exhaust ports to reduce sound.

Blows per Minute	Piston Stroke	cfm @ 90 psi	Air Inlet	Min. Hose ID	O'all Lg.	Wt., lbs.	For 0.580" Hex Shank	Each	For 0.680" Round Shank	Each
Gooseneck-Handle Hammers										
2,500	1"	28	3/8"	1/2"	15 1/2"	14 3/4	5957A11	$477.37	5957A15	$477.37
2,300	2"	28	3/8"	1/2"	16"	15 1/8	5957A12	474.10	5957A16	478.31
1,725	3"	29	3/8"	1/2"	17 7/8"	16 5/8	5957A13	504.36	5957A17	501.56
1,480	4"	29	3/8"	1/2"	18 7/8"	17 1/2	5957A14	501.56	5957A18	501.56
Swivel Hose Connector for Gooseneck-Handle Hammers							5957A41	Each		$25.08
Muffler for Gooseneck-Handle Hammers							5957A31	Each		$212.42
D-Handle Hammers										
2,450	1"	28	3/8"	1/2"	12"	16	57225A32	413.64	57225A51	413.64
2,300	2"	28	3/8"	1/2"	14"	18	57225A33	436.81	57225A52	436.81
2,100	3"	28	3/8"	1/2"	15 1/4"	19	57225A34	470.36	57225A53	470.36
1,700	4"	28	3/8"	1/2"	16 1/2"	20	57225A35	503.98	57225A54	503.98
Swivel Hose Connector for D-Handle Hammers							57225A84	Each		$20.93
Muffler for D-Handle Hammers							57225A85	Each		$12.17

ⓘ For a listing of repair parts for these hammers, go to mcmaster.com and search for **5957AAC** for gooseneck handle or **57225AAC** for D handle.

Chipping Hammer Chisels

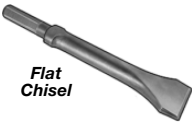

Flat Chisel

Moil Point

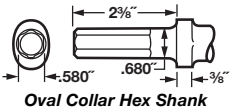

Oval Collar Hex Shank

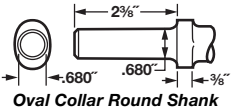

Oval Collar Round Shank

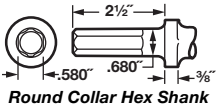

Round Collar Hex Shank

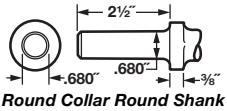

Round Collar Round Shank

Chisels have United States Navy (U.S.N.) style shanks that are specifically for use with air-powered chipping hammers. Made of heat-treated alloy steel. The ***oval collar*** tools work with 5957A and 57225A chipping hammers (sold separately on this page).

O'all Lg.	Blade Wd.	0.580" Hex Shank	Each	0.680" Round Shank	Each
Oval Collar—*For use with Air-Powered Chipping Hammers on this page*					
Flat Chisels					
9"	1"	7083A46	$15.13	7083A44	$15.13
9"	2"	7083A75	21.84	7083A74	21.84
9"	3"	7083A79	26.91	7083A78	26.91
12"	1"	7083A47	18.05	7083A45	18.05
12"	2"	7083A86	25.31	7083A85	25.31
18"	1"	7083A82	23.55	7083A81	23.55
24"	1"	7083A84	30.91	7083A83	30.91
Moil Points					
9"	—	7083A37	15.15	7083A35	15.15
12"	—	7083A38	18.05	7083A36	18.05
Round Collar					
Flat Chisels					
9"	3"	7083A77	26.91	7083A76	26.91
12"	1"	7083A43	18.05	7083A41	18.05
24"	1"	7083A93	30.92	7083A92	30.91

Electric Demolition Hammers

DeWalt

Milwaukee

Easily break through concrete walls and floors with these demolition hammers. The side handle rotates 360° for maximum control. Operate on 120 VAC, 50/60 Hz. Hammers use ¾″ hex shank chisels that are for electric demolition hammers; see 59305A sold separately on this page. Meet OSHA requirements.

DeWalt— Soft rubber-coated grips and an anti-vibration system provide fast cutting with less fatigue. Hammer has locking on/off switch. You can rotate the chisel to one of 12 positions to align the bit according to your needs. Hammer body is made of magnesium and aluminum, and the dust seals are spring loaded for longer life. Operates on 15 amps. Comes with a 13-ft. cord with a three-prong plug, and a nylon case. UL listed and CSA certified.

Milwaukee— Hammer has ball and roller bearing construction, a two-finger trigger switch, and a speed lock-on button. The body is made of aluminum; handles are glass-reinforced nylon with a cushion grip. The back handle has vibration isolation for less fatigue and a soft grip for extra comfort. Hammer operates on 14 amps. It comes with a 10-ft. cord with a two-prong, double-insulated plug and a steel carrying case. UL listed and C-UL listed.

Model No.	Blows per Minute	Piston Stroke	O'all Lg.	Wt., lbs.		Each
DeWalt						
D25941K	1,620	1 31/32″	29 11/16″	27.2	7882A23	$1,061.19
Milwaukee						
5337-21	975-1,950	1 9/16″	27 1/2″	24	59025A22	841.26

Bosch Brute Electric Pavement-Breaker Hammer

This heavy duty hammer delivers a powerful blast for heavy pavement-breaking and asphalt-cutting jobs. It's double insulated, has ball bearing construction, and has a brush system that turns off the hammer when brushes are worn. Hammer is made of cast aluminum. Handles absorb shock to reduce fatigue. Operates on 120 VAC/DC, 50/60 Hz, 15 amps, or a 2,500-watt portable generator. Comes with a 10-ft. cord with two-prong plug. Meets OSHA requirements and is UL listed.

Hammer uses 1 1/8″ hex shank chisels that are for electric pavement-breaker hammers; see 3615A, 3613A, 3617A, and 3616A sold separately on this page.

Bosch Model No.	Blows per Minute	Piston Stroke	O'all Lg.	Wt., lbs.		Each
11304	1,400	2 3/4″	29 3/4″	64	59045A51	$1,650.84

Air-Powered Pavement-Breaker Hammers

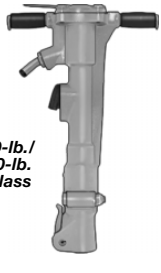
60-lb./ 90-lb. Class

One-piece housing eliminates side rods and springs, which reduces your cost for parts. These hammers have a built-in lubricator and a safety throttle that shuts off instantly when released. Cylinder is made of ductile iron. The latch-type front head is foot-operated for rapid tool changes. Max. operating pressure is 90 psi with a ¾″ min. hose ID. Air inlet is ¾″. Connections: NPT male.

The ***60-*** and ***90-lb. class models*** also have an exhaust deflector, a piston cycle that transfers blow energy to the tool, a four-bolt back-head plate for easy maintenance, and a special spring-loaded anvil bushing that can be serviced without a hydraulic press.

Use hex shank chisels that are for air-powered pavement-breaker hammers; see 3615A, 3613A, 3617A, and 3616A sold separately on this page.

Class	Blows per Minute	Piston Stroke	cfm @ 90 psi	Hex Shank Size	O'all Lg.	Wt., lbs.		Each
35 lb.	1,250	6 1/4″	48	1″	24 19/32″	44	58655A52	$1,070.13
60 lb.	1,250	5 3/4″	75	1 1/8″	27 1/2″	69	58655A54	1,137.43
90 lb.	1,250	5 3/4″	89	1 1/8″	27 1/2″	86	58655A57	1,233.48

Demolition Hammer and Pavement-Breaker Chisels

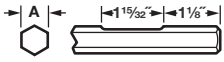

Chisel for Electric Demolition Hammers

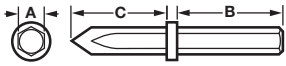

Chisel for Electric and Air-Powered Pavement-Breaker Hammers

For Electric Demolition Hammers

Made of alloy steel.

	Hex Shank (A)	O'all Lg.		Each
Moil Points— *1/8″ Blade Tip Dia.*				
1	3/4″	12″	59305A33	$11.94
1	3/4″	18″	59305A34	16.02
Cutting Chisel— *3″ Wd. Blade*				
2	3/4″	12″	59305A41	24.35
Narrow Chisels— *1″ Wd. Blade*				
3	3/4″	12″	59305A55	11.94
3	3/4″	18″	59305A57	16.02
Asphalt Cutter— *5″ Wd. × 6″ Lg. Blade*				
4	3/4″	15 1/2″	59305A61	80.64
Clay Spade— *4 1/2″ Wd. × 5 1/2″ Lg. Blade*				
5	3/4″	15 1/2″	59305A72	65.35
Ground Rod Driver— *1 1/2″ OD × 13/16″ ID*				
6	3/4″	10 1/2″	59305A37	77.18

For Electric and Air-Powered Pavement-Breaker Hammers

Made of heat-treated carbon steel.

	Shank Hex (A)	Shank Lg. (B)	Lg. Under Collar (C)	Blade Tip Dia.		Each
Moil Points						
1	1″	4 1/4″	14″	3/16″	3615A38	$26.04
1	1″	4 1/4″	18″	3/16″	3615A39	29.52
1	1 1/8″	6″	14″	1/4″	3615A41	29.52
1	1 1/8″	6″	18″	1/4″	3615A51	33.02
1	1 1/4″	6″	14″	5/16″	3615A42	34.04
1	1 1/4″	6″	18″	5/16″	3615A52	37.19
Cutting Chisels— *3″ Wd. Blade*						
2	1″	4 1/4″	14″	—	3613A6	35.30
2	1″	4 1/4″	18″	—	3613A7	40.83
2	1 1/8″	6″	14″	—	3613A1	39.40
2	1 1/8″	6″	18″	—	3613A2	42.77
2	1 1/4″	6″	14″	—	3613A3	43.34
Narrow Chisels— *1 1/4″ Wd. Blade*						
3	1″	4 1/4″	14″	—	3615A33	26.04
3	1 1/8″	6″	14″	—	3615A11	29.52
3	1 1/8″	6″	18″	—	3615A21	33.02
3	1 1/4″	6″	14″	—	3615A12★	33.93
Asphalt Cutters— *5″ Wd. × 6″ Lg. Blade*						
4	1″	4 1/4″	11″	—	3617A1	97.72
4	1 1/8″	6″	11″	—	3617A2	97.96
4	1 1/4″	6″	11″	—	3617A3	101.57
Clay Spades— *5 1/2″ Wd. × 6 1/2″ Lg. Blade*						
7	1″	4 1/4″	16″	—	3616A2	113.17
7	1 1/8″	6″	16″	—	3616A4	120.45
7	1 1/4″	6″	16″	—	3616A6	123.94

★ Blade width is 15/16″.

Combination Air-Powered Chipper/Scraper

Remove weld flux, spatter after welding, and perform a wide variety of light chipping applications with one tool. This combination chipper/scraper has an alloy steel body and a straight steel handle. It is equipped with a curved flat chisel that has a 1″ Wd. × 6 3/32″ Lg. blade. Maximum operating pressure is 85 psi.

Connections: NPT female.

Blows per Minute	Piston Stroke	cfm @ 85 psi	Air Inlet	Min. Hose ID	O'all Lg.	Wt., lbs.		Each
4,000	1 1/8″	7.1	3/8″	3/8″	12″	3 3/4	6018A48	$255.86

Air-Powered Demolition Hammer

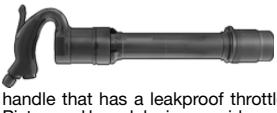

Demolish bricks and concrete walls and foundations. Barrel is hardened steel with a durable, forged-steel handle that has a leakproof throttle valve for positive shutoff. Piston and barrel design provides an air cushion between piston and accessory for maximum accessory life. A lock assembly keeps accessories firmly attached. Max. operating pressure is 90 psi with a 1/2″ min. hose ID. Use with 0.890″ demolition hammer chisels; see 36205A on this page. Weight is 24 3/4 lbs. Connections: NPT female.

Blows per Minute	Piston Stroke	cfm @ 90 psi	Air Inlet	O'all Lg.		Each
900	9″	40	1/2″	22 1/2″	6019A21	$1,280.00

0.890″ Demolition Hammer Chisels

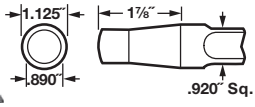

Use with air-powered demolition hammers that accept 0.890″ jumbo four-sided shanks. The chisels are compatible with Ingersoll-Rand models 8001A and 9001, as well as Chicago Pneumatic models 81X, 11X, and 4181.

O'all Lg.	Blade Wd.		Each
Flat Chisels—*Heat-Treated Alloy Steel*			
9 1/2″	15/16″	36205A41	$22.67
12″	15/16″	36205A42	27.42
18″	15/16″	36205A43	38.80

O'all Lg.	Blade Dia.		Each
Moil Points—*Carbon Steel*			
10″	1/8″	36205A48	$22.67
12″	1/8″	36205A49	27.42
18″	1/8″	36205A51	38.80

Air-Powered Needle Scalers

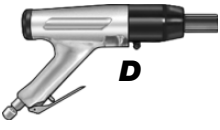

Mini needles tap surfaces to gently remove unwanted rust, scale, paint, and weld spatter. They generate very little dust and are excellent for use on irregular-shaped and hard-to-reach areas. Piston stroke determines the force of a scaler; the longer the piston stroke, the greater the force. Scalers are lever operated, except for Style C, which is button-operated. All come with flat blunt-tip needles. Connections: NPT female.

A ***Economy Needle Scaler***—Scaler is made of steel. Needle housing holds and is furnished with 12 (3 mm×7″) steel needles. Operating pressure is 80 to 100 psi. ***Scaler set*** includes scaler, three sets of 12 (3 mm×7″) steel needles, two 7″ Lg.×3/4″ Wd. narrow chisels, a 7″ Lg.×1 3/8″ Wd. wide chisel, a 7″ Lg.×1 3/8″ Wd. angle chisel, a return spring, and a chisel adapter. Comes in a metal carrying case.

B&C ***Adjustable-Blow Needle Scalers***—Change the number of blows per minute by adjusting the amount of pressure you place on the button. Scalers are steel with an aluminum handle and include two sets of nine (1/8″×5″) steel needles. Needle housing holds one set of needles. Operating pressure is 90 psi. ***Scaler sets*** include a scaler, two sets of nine (1/8″×5″) steel needles, and one each of: 7″ long gouge chisel, 4″ Lg.×9/16″ Wd. flat chisel, 7″ long grooving chisel, 3 1/2″ long peening chisel, and a chisel adapter. Comes in a plastic case.

D ***Spring-Less Needle Scaler***—Scaler has no internal springs to break, ensuring consistent performance. Made of aluminum. Comes with 28 (3 mm×7″) steel needles, a set of 14 (4 mm×7″) steel needles, a 4 mm needle holder, an installation tool for needle holders, and a 3/8″ hose nipple. Max. operating pressure is 85 psi.

E&F ***Low Vibration Needle Scalers***—Scalers produce 80-90% less vibration than conventional tools. All are made of steel. Maximum operating pressure is 90 psi. *Style E* holds 18 (1/8″×7″) steel needles and comes with two sets of needles. *Style F* holds 19 (1/8″×7″) steel needles and comes with one set of needles.

G ***Combination Needle Scalers/Scaling Hammers***—Tools are made of steel. They hold and are furnished with 19 (1/8″×5″) steel needles. Scalers have a built-in chisel retainer. Use scaling hammer chisels to convert tools into scaling hammers. For scaling hammer chisels, see 6097A sold separately on this page. Meet Mil. Spec. MIL-S-23492A. Maximum operating pressure is 90 psi. ***Scaler sets*** include a needle scaler, two sets of 19 (1/8″×5″) steel needles, one set of 19 (1/8″×7″) steel needles, and one each of the following: 6 1/8″ Lg.×1 3/8″ Wd. angle chisel, 6 1/8″ Lg.×1 3/8″ Wd. straight chisel, and 7″ Lg.×3/4″ Wd. narrow chisel. Come in a vinyl carrying case.

Needle Scalers

	Blows per Minute	Piston Stroke	cfm @ 90 psi	Air Inlet	Min. Hose ID	Needle Size	O'all Lg.	Wt., lbs.	*Scaling Tools*	Each	*Needle Scaler Sets*	Per Set
A	4,850	1″	3.5	1/4″	3/8″	3 mm×7″	13 1/2″	3 1/2	5898A11	$192.24	5898A31	$336.21
B	0-13,000	3/4″	3	1/4″	1/4″	1/8″×5″	12 1/2″	2 1/2	6106A31	418.78	6106A36	553.53
C	0-13,000	3/4″	3	1/4″	1/4″	1/8″×5″	11 1/2″	2 1/2	6106A33	418.78	6106A39	553.53
D	4,500	21/32″	12.4 ♦	3/8″	3/8″	3 mm×7″ & 4 mm×7″	13 1/16″	7 3/4	6011A32	493.82	—	—
E	9,000	1/4″	3	1/4″	3/8″	1/8″×7″	14 3/16″	4 1/4	36175A43	475.24	—	—
F	3,400	7/8″	4	1/4″	3/8″	1/8″×7″	14″	5 3/4	36175A45	588.23	—	—
G	5,500	5/16″	12	1/4″	5/16″	1/8″×5″	13 3/4″	5 1/4	6012A15	456.37	6012A19	630.51
G	4,000	1 1/16″	13	1/4″	5/16″	1/8″×5″	15″	5 3/4	6012A21	574.37	6012A32	738.85

♦ Operates @ 85 psi.

Replacement Needles

Size	Material	Pkg. Qty.		Per Pkg.
1/8″×5″	Stainless Steel	10	36125A44	$9.60
1/8″×5″	Beryllium Copper	2	36125A46	11.40
1/8″×7″	Stainless Steel	10	36125A45	11.76
1/8″×7″	Beryllium Copper	2	36125A47	12.71

Size	Material	Pkg. Qty.		Per Pkg.
2 mm×7″	Steel	10	36125A38	$10.56
3 mm×5″	Steel	10	36125A41	5.26
3 mm×5″	Stainless Steel	10	36125A34	10.40
3 mm×7″	Steel	10	36125A42	5.43
4 mm×7″	Steel	14	36125A43	12.40

Chisels for Needle Scalers

Made of heat-treated alloy steel. Use ***Style 1 shank*** chisels with the Economy Needle Scaler and Combination Needle Scalers/Scaling Hammers on this page as well as Chicago Pneumatic model CP 0456, Jet model F-25, and Chicago Monarch brands. Use ***Style 2 shank*** chisels with Cleco model BI-C, Chicago Pneumatic model 9356, Ingersoll-Rand model 125, Jet model JSG-9121, and Universal Tool model 8630.

For chisels compatible with the Adjustable-Blow Needle Scalers on this page and all Superior Pneumatic models, see chisels for 0-13,000 bpm hammers (6027A) on page 2868.

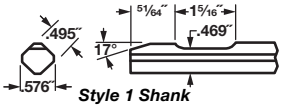

Style 1 Shank

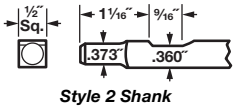

Style 2 Shank

Blade Style	O'all Lg.	Blade Wd.	*Style 1 Shank*	Each	*Style 2 Shank*	Each
H Narrow Flat	7″	3/4″	6097A32	$10.68	60975A61	$10.68
J Wide Flat	7″	1 3/8″	6097A33	11.40	60975A62	11.40
J Wide Flat	12″	1 3/8″	6097A34	14.60	60975A63	14.60
K Wide Angle	7″	1 3/8″	6097A35	11.40	60975A64	11.40
L Scraper	7″	2″	6097A36	25.98	60975A65	25.98
L Scraper	7 1/2″	3″	6097A37	32.02	60975A66	32.02

Long-Reach Air-Powered Combination Scaler/Scrapers

Remove paint and rust from hard-to-reach areas. Scaler/scrapers have a 1½″ dia. straight steel handle with a 9″ Lg.×4″ Wd. flat chisel. Operating pressure is 90 psi. Connections: NPT female. ***Accessory Set***—Includes a needle scaler nose assembly; one set of 28 (3 mm×7″ Lg.) blunt tip steel needles; and one each of 1⁹⁄₁₆″, 2″, and 4″ Wd.×9″ Lg. chisels. Furnished in a molded plastic carrying case.

Blows per Minute	Piston Stroke	cfm @ 90 psi	Air Inlet	Min. Hose ID	24″ Long Wt., lbs.	24″ Long Each	48″ Long Wt., lbs.	48″ Long Each	60″ Long Wt., lbs.	60″ Long Each
2,200	1½″	7	¼″	⅜″	8¾	5864A31 $298.74	14	5864A41 $354.67	15¼	5864A61 $378.42

Replacement 9″ Lg.×4″ Wd. Chisel	5864A63	Each $51.70
Accessory Set	5864A81	Each $352.73

Wrecking and Pry Bars

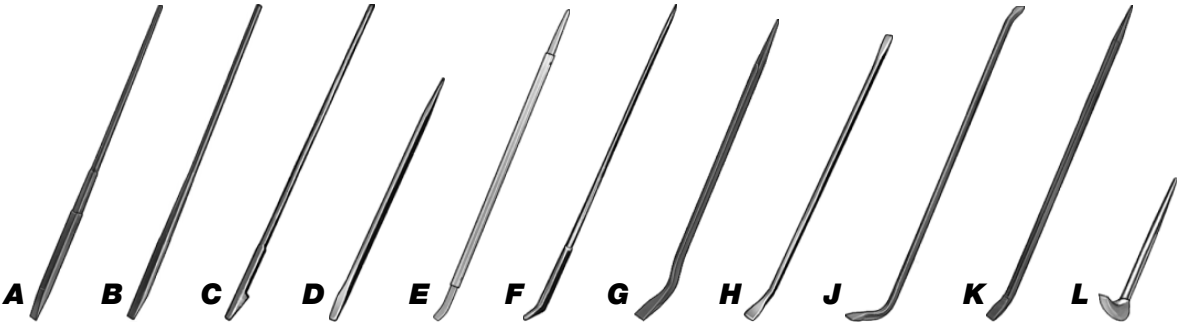

Some of these bars have pointed ends, which work well for aligning bolt holes in steel construction. *End width* is measured at the wedge, pinch, chisel, or rocking end of the bar. ***Offset (bent-tip) bars*** have at least one bent end to provide better leverage for lifting and moving.

Straight Bars

A Wedge- and Rounded-End Bars—Ideal for prying and moving heavy objects with wedge leverage. Forged from high-carbon steel square bar with a painted finish.

B Pinch- and Rounded-End Bars—Tools have a single taper that forms the pinch tip—they're great for getting into small crevices. Forged from high-carbon steel square bar with a painted finish.

	Lg.	Wt., lbs.	Bar Size	End Wd.		Each
A	36″	6	1″	1″	5891A22	$28.64
A	48″	10	1″	1″	5891A12	34.34
A	60″	18	1¼″	1¼″	5891A19	53.48
A	64″	22	1⅜″	1⅜″	5891A18	62.05
A	66″	26	1½″	1¾″	5891A21 ♦	80.05
B	36″	6	1″	1″	5995A24	28.52
B	48″	10	1″	1″	5995A25	33.86
B	54″	14	1⅛″	1⅛″	5995A27	44.53
B	60″	18	1¼″	1¼″	5995A29	48.94
B	64″	22	1⅜″	1⅜″	5995A31	60.67
B	66″	26	1½″	1½″	5995A33	67.33

♦ Has one wedge end and one pointed end.

C Heeled-Pinch and Rounded-End Bars—The heeled end provides extra leverage to tackle your heavy moving jobs. Forged from high-carbon steel square bar with a painted finish.

D Chisel- and Pointed-End Bars—Also known as pinch bars, these tools are specially designed with a chisel end for prying and a pointed end for aligning. Forged from alloy steel hex bar.

	Lg.	Wt., lbs.	Bar Size	End Wd.		Each
C	36″	6	1″	1″	5889A31	$37.06
C	48″	10	1″	1″	5889A32	41.01
C	66″	26	1½″	1½″	5889A34	168.52
D	14″	¾	½″	⅝″	5986A7	8.46
D	16″	1¼	⅝″	¾″	5986A1	11.71
D	20″	2¼	¾″	⅞″	5986A2	13.63
D	24″	2¾	¾″	1″	5986A3	27.78
D	30″	4¾	⅞″	1″	5986A5	39.24
D	36″	5¾	⅞″	1″	5986A6	42.07
D	36″	8	1″	1⅜″	5986A8	54.66

Offset (Bent-Tip) Bars

E Lightweight Pinch- and Pointed-End Bars—Lightweight aluminum with the strength of steel. Bars consist of a forged steel alloy pinch on one end and a pointed steel end riveted to high-strength aluminum hex bar.

F Offset-Wedge and Pointed-End Bars—Also known as warehouse/loading bars, these tools have a rounded handle that's tapered for prodding. Forged from high-carbon steel square bar with a painted finish.

G Gooseneck-Chisel and Pointed-End Bars—The gooseneck end provides extra leverage. Made of forged alloy steel hex bar.

H Double-Chisel-End Wrecking Bars—Have an offset chisel on one end and a straight chisel on the other. Forged from high-carbon steel hex bar with a painted finish.

J Double-Offset Chisel-End Bars—Also known as stripping bars. Each end has an offset chisel for easy prying. Forged from high-carbon steel hex bar with a painted finish.

K Offset-Chisel and Pointed-End Bars—Forged from high-carbon steel hex bar with a painted finish, unless noted.

L Rocking-Head Wedge and Pointed-End Bars—Have a rocking head that provides maximum leverage. Forged from heat-treated steel round bar with a nickel-chrome finish.

	Lg.	Wt., lbs.	Bar Size	End Wd.		Each
E	48″	7	1⁵⁄₁₆″	1⅛″	5594A12	$56.86
E	60″	8	1⁵⁄₁₆″	1⅛″	5594A13	61.61
E	72″	9	1⁵⁄₁₆″	1⅛″	5594A14	71.08
F	60″	18	1¼″	1¾″	6045A33	58.72
F	66″	26	1½″	1½″	6045A42	118.90
G	30″	5	⅞″	1⅛″	6043A36	34.49
G	48″	10¾	1″	1¼″	6043A38	59.85
H	36″	8¼	1″	1⅛″, 2″	5993A21	36.34
H	48″	11	1″	1⅛″, 2″	5993A11	45.44
H	60″	14¼	1″	1⅛″, 2″	5993A31	58.67
J	36″	5¼	¾″	1″, 1″	5999A4	41.46
J	42″	8½	⅞″	1¼″, 1¼″	5999A5	51.99
J	48″	12½	1″	1½″, 1½″	5999A6	62.25
J	72″	18	1″	1⅛″, 1⅛″	5999A7	69.84
J	96″	25	1″	1⅛″, 1⅛″	5999A8	$111.08
K	14″	¾	½″	⅝″	58875A54★	14.16
K	16″	1¼	⅝″	¾″	58875A55★	15.83
K	20″	2¼	¾″	⅞″	58875A58★	19.22
K	24″	2¾	¾″	¾″	58875A53	24.98
K	30″	5¼	⅞″	⅞″	58875A51	25.58
K	36″	8	1″	1″	58875A52	31.70
K	48″	11	1″	1″	58875A56	41.04
K	60″	14¼	1″	1″	58875A61	54.74
L	6″	³⁄₁₆	⁵⁄₁₆″	⁵⁄₁₆″	5987A3	20.78
L	12″	⅝	⁷⁄₁₆″	⁷⁄₁₆″	5987A4	24.76
L	16″	1½	⁹⁄₁₆″	¹¹⁄₁₆″	5987A1	34.00
L	18″	2½	¾″	⅞″	5987A2	38.71

★ Made of forged alloy steel hex bar.

Pry Bars and Nail Pullers

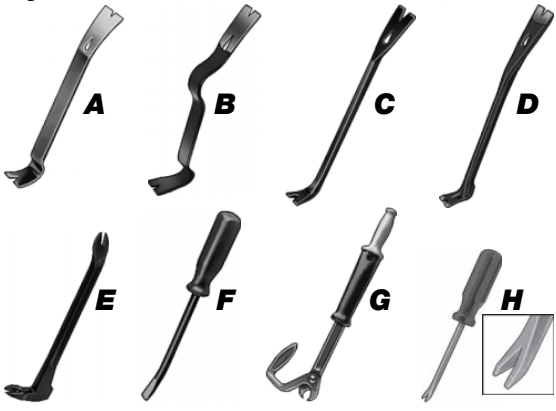

A&B ***Gooseneck-Claw and Offset-Claw Bars—*** Sharp, tapered thin blades handle prying, scraping, and nail pulling. Both ends have claws. Bars have three nail slots. Forged from high-carbon steel.

Style A has a gooseneck rocking head for extra leverage.

Style B has an arch for more swing during pulling and prying without the need for a block for leverage.

	Lg.	Wt., lbs.	Bar Size	Claw Wd.	Finish		Each
A	5¼″	1/16	½″	½″, ½″	Plain	6000A3	$3.72
A	7¼″	5/16	1″	1″, 1″	Plain	6000A2	3.79
A	15″	1½	1⅜″	1¾″, 1⅞″	Painted	6000A1	9.91
A	21″	2	1⅜″	1¾″, 1⅞″	Painted	6000A4	12.30
B	15½″	1¾	1⅜″	1¾″, 1¾″	Painted	6769A12	12.41

C-E ***Double-Offset Claw Bars—*** Both ends have claws. Forged from high-carbon steel with a painted finish.

Style C bar is hex shaped and has three nail slots.

Style D has an I-beam design to give you extra strength without adding weight to the tool. The rocking head provides maximum leverage. Bar has three nail slots.

Style E is also known as a bear claw. Flat claw is for easy wedging with minimal wood damage; extra-heavy rocking head provides maximum leverage.

	Lg.	Wt., lbs.	Bar Size	Claw Wd.		Each
C	18″	2½	¾″	1⅞″, 1⅜″	5990A2	$13.04
D	18″	1⅜	⅜″★	1¾″, 1⅜″	6004A11	20.87
E	7¾″	11/16	⅜″	⅝″, ⅝″	37205A68	10.89
E	10½″	⅞	½″	13/16″, 13/16″	37205A71	13.33
E	11¾″	1⅛	½″	⅞″, ⅞″	37205A72	16.02
E	14¼″	1⅝	⅝″	1″, 1″	37205A74	19.19

★ I-beam thickness.

F ***Screwdriver Pry Bars—*** The curved screwdriver blade gives you the extra leverage you need to handle tough prying jobs. Bars are made of hardened and tempered alloy steel. Bars 31″ and shorter have a hard plastic handle. Bars 36″ and longer have a cushion-grip handle for a comfortable and secure grip; they also have a capped end that allows you to strike the pry bar without damaging the handle.

O'all Lg.	Blade Lg.	Wt., lbs.	Bar Size	Tip Wd.		Each
12″	7″	⅜	⅜″	⅝″	60025A65	$12.03
17″	12″	½	⅜″	⅝″	60025A66	12.87
25″	18″	1½	½″	¾″	60025A67	20.19
31″	24″	2	½″	¾″	60025A68	23.70
36″	29″	4	⅝″	1″	60025A69	60.25
42″	35″	5½	⅝″	1″	60025A71	63.60
48″	38″	7½	¾″	1″	60025A72	87.97

3-Piece Set (12″, 17″, and 25″ bars) ..... 60025A7 **Per Set** $38.66

G ***Nail Puller—*** Excellent for removing deeply embedded nails. The lower handle controls the opening and closing of the jaw to get a good grip on the nail head and provides extra leverage for easy nail removal. Handle is cast iron with a vinyl grip; other parts are forged steel.

Lg.	Wt., lbs.	Claw Wd. Range		Each
17¾″	5 1/16	0″-½″	6094A31	$61.72

H ***Tack-Brad-Staple Puller—*** Great for opening paint-style cans without marring. Forged from high-carbon steel. Has an easy-grip plastic handle.

O'all Lg.	Blade Lg.	Wt., lbs.	Bar Size	Claw Wd.		Each
7¼″	3¾″	1/16	¼″	½″	5865A11	$4.14

Claw and Chisel Bars

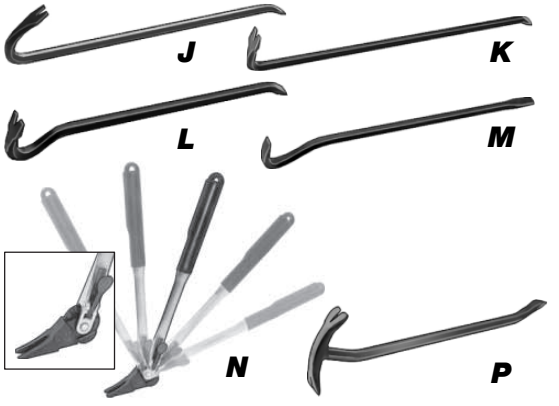

J ***U-Shaped Claw and Offset-Chisel Bars—*** Also known as crowbars. Bars are hex shaped. Forged from high-carbon steel with a painted finish.

Lg.	Wt., lbs.	Bar Size	Claw Wd.	Chisel Wd.		Each
12″	1	½″	1 1/16″	¾″	5992A12	$4.14
18″	2	⅝″	1⅛″	15/16″	5992A16	6.65
24″	3⅓	¾″	1¼″	1⅛″	5992A13	9.27
30″	4	¾″	1 3/16″	1⅛″	5992A14	11.29
36″	4¾	¾″	1 3/16″	1⅛″	5992A15	13.01
36″	8¼	1″	2¼″	1½″	5992A6	23.17
42″	8¾	⅞″	1⅝″	1⅛″	5992A5	22.57
48″	12½	1″	2⅛″	1⅝″	5992A17	29.00
60″	15½	1″	2¼″	1½″	5992A7	33.63

K ***Offset-Claw and Offset-Chisel Bars—*** Commonly used for stripping and removing wooden concrete forms after concrete has set. Bars are hex shaped. Forged from high-carbon steel with a painted finish.

Lg.	Wt., lbs.	Bar Size	Claw Wd.	Chisel Wd.		Each
36″	5¼	¾″	1 5/16″	1″	58835A1	$24.89
42″	8	⅞″	1⅞″	1⅜″	58835A2	25.11
48″	12	1″	2″	1¼″	58835A3	32.22
60″	14	1″	2″	1¼″	58835A4	37.44

L ***Gooseneck-Claw and Offset-Chisel Bars—*** Use bars for pulling nails in corners and other tight spots. Bars are hex shaped. Forged from high-carbon steel with a painted finish.

Lg.	Wt., lbs.	Bar Size	Claw Wd.	Chisel Wd.		Each
24″	4	¾″	1⅜″	1″	5956A11	$26.06
36″	5½	¾″	1⅜″	1″	5956A13	37.00

M ***Gooseneck-Chisel and Straight-Chisel Bars—*** Also known as die bars, these tools are useful for separating die sets. Bars are hex shaped. Forged from high-carbon steel. All have a painted finish, unless noted. The curved heel and tip of 5927A31 and 5927A34 are coated with aluminum bronze, which won't scratch die blocks.

Lg.	Wt., lbs.	Bar Size	U-Chisel Wd.	Straight Chisel Wd.		Each
Carbon Steel						
7″	½	5/16″	5/16″	5/16″	5927A41	$16.08
12″	1	7/16″	7/16″	7/16″	5927A42	20.12
18″	1¾	⅝″	⅝″	⅝″	5927A11	20.64
30″	4	¾″	¾″	¾″	5927A18	25.48
Carbon Steel with Aluminum Bronze-Coated Heel and Tip						
22″	2 3/16	⅝″	¾″	¾″	5927A31●	28.88
42″	7	⅞″	1″	1″	5927A34	59.82

● Has a waxed finish.

N ***Adjustable-Angle Claw Bars—*** The pry head can lock in at five different angles (straight, 80°, 105°, 130°, and 155°) for prying in tight and awkward spaces. Press the thumb lever to adjust the head; release the lever to lock in place. Head and bar are forged from high carbon steel with a powder-coated finish that resists rust and scratches.

Lg.	Wt., lbs.	Bar Size	Claw Wd.		Each
16″	1½	13/16″	¾″	6035A11	$36.11
20″	1¾	13/16″	¾″	6035A12	44.15

P ***Double-Claw and Offset-Chisel Bars—*** The double-claw end has a rocking head for leverage in hard-to-reach places. Bars are hex shaped. Forged from high-carbon steel with a painted finish and polished tips.

Lg.	Wt., lbs.	Bar Size	Claw Wd.	Chisel Wd.		Each
24″	4	¾″	1½″	1″	6006A12	$23.09
30″	4⅞	¾″	1½″	1″	6006A13	27.12
36″	8½	⅞″	1½″	1⅜″	6006A14	45.55
48″	11	⅞″	1½″	1⅜″	6006A16	61.15

Tire Irons

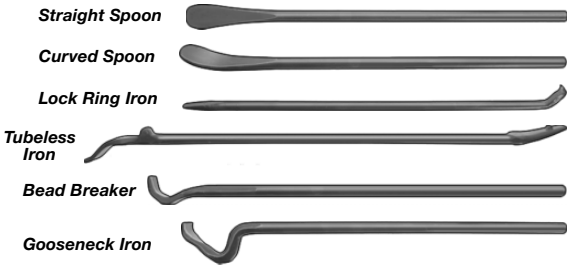

Use with large trucks, bus tires, and in other heavy duty prying situations. Tire irons are made of heat-treated alloy steel for extra strength.

See pages 2241-2242 for other tire and automobile service tools; see page 2781 for lug wrenches.

	Lg.	Bar Size	Wt., lbs.		Each
Straight Spoon	30″	7/8″	4 3/4	6002A2	$43.81
Curved Spoon	30″	7/8″	4 1/2	6002A3	43.81
Lock Ring Iron	30″	11/16″	3 1/8	6002A9	31.79
Tubeless Iron	37″	3/4″	5	6002A8	79.50
Bead Breaker	33″	7/8″	5 1/2	6002A1	56.08
Gooseneck Iron	30″	7/8″	5 1/4	6002A6	59.58

Plastic Wedges

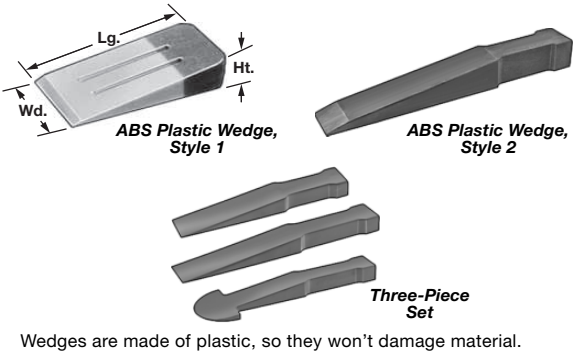

Wedges are made of plastic, so they won't damage material.

ABS Plastic Wedges— Lightweight, yet strong. *Style 1* wedges are for separating and holding material. They won't chip or shatter, even in subzero temperatures. For use with wood and other soft materials. *Style 2* wedge is for leveling, aligning, and prying apart materials. It's ideal for use in larger, heavier jobs such as framework and doors.

Lg.	Blade Wd.	Blade Ht.	Wt.		Each
Style 1					
5 1/2″	2 1/2″	1″	5 oz.	5868A91	$4.74
7 1/2″	3″	1 1/4″	9 oz.	5868A92	7.51
10″	3″	1″	10 oz.	5868A93	7.64
12″	3 1/2″	1 1/4″	1 lb.	5868A94	10.59
Style 2					
14″	1 7/8″	1 5/8″	1/2 lb.	6036A11	13.98

Three-Piece Sets— Wedges are for leveling, aligning, and prying apart materials. Include a 5″ Lg.×7/8″ Wd.×1/2″ Ht. short wedge, a 7″ Lg.×1″ Wd.×5/8″ Ht. long wedge, and a 7″ Lg.×2″ Wd.×5/8″ Ht. curved tip wedge. Each wedge weighs less than 2 oz. Use the *polyethylene wedge set* for soft and brittle materials and the *polycarbonate wedge set* for hard materials such as wood and fiberglass.

Three-Piece Polyethylene Set	6036A22	**Per Set**	$11.98
Three-Piece Polycarbonate Set	6036A21	**Per Set**	$12.98

Carbon Steel Wedges

Drive wedges into narrow openings to separate and hold wood. Ideal for use in the lumber industry, including splitting operations. Made of forged carbon steel.

Lg.	Blade Wd.	Blade Ht.	Wt.		Each
7 1/2″	2 1/8″	1 1/2″	3 lbs.	5948A1	$12.00
8 1/4″	2 3/8″	1 5/8″	4 lbs.	5948A2	13.87
9 1/4″	2 5/8″	1 3/4″	5 lbs.	5948A3	18.10
9 1/2″	2 3/4″	1 7/8″	6 lbs.	5948A4	21.14
11″	3″	2″	8 lbs.	5948A5	33.20

4-Piece Pry Bar Set

You'll get four pry bars in this convenient set. All are made from forged alloy steel hex stock.

End width is measured at the chisel or wedge end of the bar.

	Lg.	Bar Size	End Wd.	Wt., lbs.
Gooseneck-Chisel and Pointed-End Bar	16″	1/2″	5/8″	1
Offset-Wedge and Pointed-End Bar	14″	1/2″	5/8″	3/4
Offset-Wedge and Pointed-End Bar	20″	3/4″	7/8″	2 1/4
Chisel- and Rounded-End Bar	18″	3/4″	7/8″	2 1/4

5958A71 ..... **Per Set** $45.21

Pallet Buster

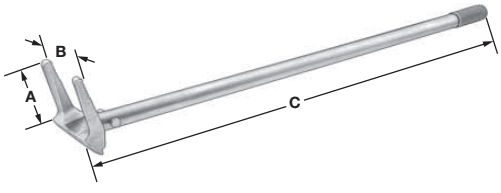

Easily disassemble pallets and skids to be recycled. This high-leverage tool is safer than chain saws, axes, and sledges. It has a zinc-plated steel breaker head and a 1 1/4″ tubular aluminum handle. Position forks in pallet slats, and push handle down. The breaker head provides prying leverage. There is a 3″ space between the forks.

(A)	(B)	(C)	Wt., lbs.		Each
8 7/8″	4″	44 1/16″	8	58585A65	$69.67

Pipe Flange Wedges

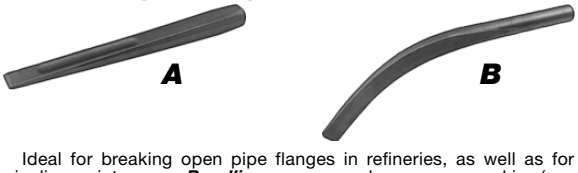

Ideal for breaking open pipe flanges in refineries, as well as for pipeline maintenance. ***Beryllium copper*** wedges are nonsparking (see page 2854 for additional nonsparking wedges).

Style A— Has slightly concave wedging surfaces for interlocking when used in pairs.

Style B— Has a curved shape.

Lg.	Blade Ht.	Blade Wd.	Tip Thick.	Wt., lbs.		Each
Carbon Steel						
A 11″	7/8″	7/8″	3/32″	1 1/4	5775A1	$12.20
B 12″	13/16″	13/16″	3/32″	1 1/2	5952A1	14.07
Beryllium Copper						
A 11″	7/8″	7/8″	3/32″	1 1/4	58725A67	84.94
B 12″	13/16″	13/16″	3/32″	1 1/2	58805A67	84.92

T-Handle Pipe Flange Spreaders

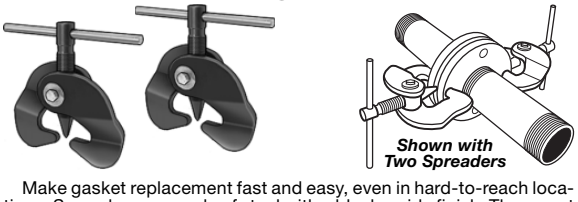

Make gasket replacement fast and easy, even in hard-to-reach locations. Spreaders are made of steel with a black-oxide finish. They exert extreme pressure smoothly and evenly with minimal operator effort. To use, place hooks in flange bolt holes and turn the T-handle. Units allow you to part flanges quickly and hold them in perfect alignment without damaging flange faces. *Note:* Use in pairs for even distribution of pressure. Capacities are for standard raised-face flanges.

PIPE SIZE RANGE: Cast-Iron Flange 125-lb.	Cast-Iron Flange 250-lb.	Steel Flange 150-lb.	Steel Flange 300-lb.		Per Pair
2″ to 20″	1″ to 12″	2″ to 20″	3/4″ to 12″	59125A1	$287.16
16″ to 48″	12″ to 30″	18″ to 24″	12″ to 24″	59125A2	562.32

Hex Bolt Pipe Flange Spreaders

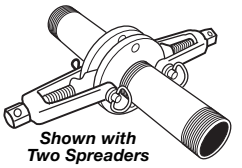

Shown with Two Spreaders

High-quality, alloy-steel spreaders are heat-treated to handle tough jobs without distortion or breakage. Compact in size, units are perfect for use on standard pipe and ring-type joint flanges. They're easy to use—remove bolt from flange to insert support rod, and turn the hex bolt to drive the spreader.

Note: A spreader is required on each side of the flange for even distribution of pressure.

Pipe Size Range 150-lb. Flange	300-lb. Flange	Hex Screw Size		Each
2″ to 6″	3/4″ to 2 1/2″	1 1/2″	59135A22	$248.50
5″ to 16″	2 1/2″ to 6″	1 1/2″	59135A24	257.10
14″ to 42″	10″ to 22″	1 5/8″	59135A26	325.63
22″ to 42″	16″ to 36″	1 5/8″	59135A28	431.87

Ratchet-Action Pipe Flange Spreaders

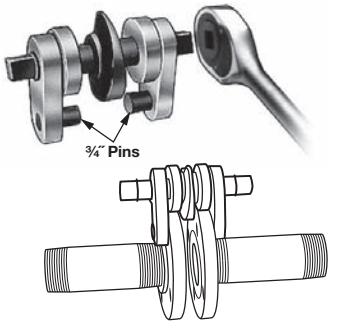

Slip these lightweight, easy-to-use spreaders over pipe flanges to separate stubborn connections. They're safe to use—no more hammer blows, chisels, or flying wedges. All are made of steel.

Spreaders have two 3/4″ pins that fit into the bolt holes on your flanges. Applying pressure to the ratchet handle forces a circular cam wedge between flanges to separate them. Use spreaders on standard raised-face flanges. Multi-range spreader is also suitable for large-diameter flanges with up to 750° F steam. All come with a female square-drive reversible ratchet. Furnished with a metal carrying case for the spreader; case for standard range spreader also holds the ratchet.

Standard Range— For 150-lb. flanges up to 20″ pipe size; 300-lb. flanges up to 6″ pipe size.

Multi-Range— *For standard raised-face flanges:* 150-lb. flanges 12″ to 24″ pipe size; 300-lb. flanges up to 24″ pipe size. *For large-diameter flanges with up to 750° F steam:* 150-lb. flanges 26″ to 72″ pipe size; 300-lb. flanges 26″ to 42″ pipe size.

Deluxe Range— For 400-lb. flanges up to 24″ pipe size; 600-lb. flanges up to 20″ pipe size; 900-lb. flanges up to 16″ pipe size; 1500-lb. flanges up to 8″ pipe size; 2500-lb. flanges up to 5″ pipe size.

	Ratchet Size		Each
Standard Range	3/4″	59115A1	$875.00
Multi-Range	1″	59115A2	1,055.00
Deluxe Range	1″	59115A3	1,067.50

Tapered Alignment Pins

Use alignment pins to align structural components such as I-beams and angle irons for bolting, riveting, and welding. Pins are made of carbon steel, unless noted.

Styles A-E— To align bolt holes, simply drive pins into the drilled holes of two structural components. When ordering, select a pin with a diameter that is 1/16″ larger than the diameter of the bolt or rivet being used. Diameter is measured at the widest part of the pin, unless noted.

Style F— To align bolt holes, fit the tapered end of the pin into the bolt holes and use a wrench on the hex head to rotate and align the holes. If your bolt hole is in between the sizes listed, choose the smaller size pin.

(A) Single-End Alignment Pins

Dia.	O'all Lg.	Taper Lg.	Point Size		Each
7/16″	6″	2 1/2″	3/16″	6054A1	$6.80
9/16″	6″	2 3/4″	1/4″	6054A2	7.05
11/16″	6″	2 3/4″	5/16″	6054A3	7.32
13/16″	8″	3 3/4″	5/16″	6054A4	8.68
15/16″	8″	3 3/4″	3/8″	6054A5	11.62
1 1/16″	8″	3 3/4″	1/2″	6054A6	13.16

(B) Extra-Long Taper Single-End Alignment Pins

Also known as pull or bull pins.

Dia.	O'all Lg.	Taper Lg.	Point Size		Each
15/16″	12″	10″	5/16″	6055A7	$12.74
15/16″	15″	10″	5/16″	6055A1	13.99
11/16″	12″	10″	3/8″	6055A4	14.07
11/16″	15″	10″	3/8″	6055A2	15.74
13/16″	12″	10 1/2″	7/16″	6055A6	16.47
13/16″	15″	10 1/2″	7/16″	6055A3	18.45
1 1/4″	12″	10 1/2″	7/16″	6055A5	19.08
1 1/4″	15″	10 1/2″	7/16″	6055A8	19.03

(C) Double-End Alignment Pins

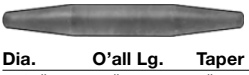

Also known as barrel drift pins, these pins are tapered on both ends.

Dia.	O'all Lg.	Taper Lg.	Point Size		Each
7/16″	6″	2″	3/16″	6053A1	$5.81
9/16″	6″	2″	1/4″	6053A2	5.81
11/16″	7 1/2″	2″	5/16″	6053A3	6.65
13/16″	8″	2 1/2″	3/8″	6053A4	6.97
15/16″	8″	2 1/2″	7/16″	6053A5	7.80
1 1/16″	8″	2 1/2″	9/16″	6053A6	9.03
1 3/16″	8″	2 1/2″	3/4″	6053A9	15.87
1 3/16″	10″	3″	1/4″	6053A7	21.96
1 5/16″	8″	2 1/2″	3/4″	6053A11	17.25
1 5/16″	11″	3″	5/16″	6053A8	23.70

(D) Long Taper Single-End Alignment Pins

Dia.	O'all Lg.	Taper Lg.	Point Size		Each
9/16″	7″	6″	1/8″	6059A2	$7.84
11/16″	7 1/2″	6 1/2″	3/16″	6059A3	8.11
13/16″	8″	7″	3/16″	6059A4	8.59
15/16″	8″	7″	1/4″	6059A5	9.49
1 1/16″	8″	7″	5/16″	6059A6	10.54

(E) Broad-Head Alignment Pins

Often called bull pins, these pins are designed to resist mushrooming caused by repeated pounding. The large striking surface allows you to drive the pins quickly and efficiently. Flat surfaces are forged below the head for use as a wrenching surface.

Dia. ♦	O'all Lg.	Taper Lg.	Point Size		Each
1 1/16″	10″	5 1/2″	1/4″	6057A11	$24.25
1 1/4″	13″	6″	5/16″	6057A12	33.80

♦ Diameter at the top of the pin, below the pin head.

(F) No Strike Hex-Head Alignment Pins

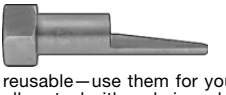

A specially designed shaft eliminates the need for hammering and prying when aligning bolt holes. Unlike most other pins, these are reusable—use them for your next aligning job. Pins are heat-treated alloy steel with cadmium plating for corrosion resistance. Great for use on flanges and steel framing.

For Bolt Hole Size	O'all Lg.	Taper Lg.	Point Size		Each
3/4″	4″	1 7/8″	5/8″	6851A22	$58.19
7/8″	4 1/4″	1 15/16″	5/8″	6851A23	66.86
1″	4 3/4″	2 1/4″	3/4″	6851A24	76.62
1 1/2″	7 3/4″	3 1/2″	1 1/2″	6851A28	183.62

6-Piece Set— Includes two each of 3/4″, 7/8″, and 1″ sizes. Furnished in a plastic carrying case.

6851A39 ..... Per Set $471.77

Window Hardware & Coverings	2876
Weatherstripping	2878
Steel Doors	2882
Swinging Doors	2885
Folding Gates	2886
Room Dividers	2887
Access Doors & Hatches	2888
Air Curtains	2890
Vinyl Strip Doors	2892
Door Track & Hangers	2895
Door Holders & Stops	2901
Door Plates	2904
Door Locks	2906
Electric Strikes	2912
Door Closers	2914
Door Openers	2918
Push Bars	2920
Magnetic Contacts	2923
Video Surveillance	2924
Key Control	2925
Lockouts	2928
Padlocks	2932
Hasps	2944
Cam Locks & Latches	2946
Bolting Locks	2952
Slide Bolts	2954
Latches	2956
Catches	2967
Pull Handles	2969
Hinges	2976
Lid Supports	2996
Drawer Slides	2998
Braces & Brackets	3002
Tool Holder Racks	3005
Hooks & Hangers	3007

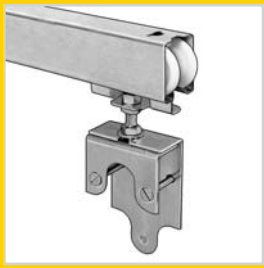

Window Hardware

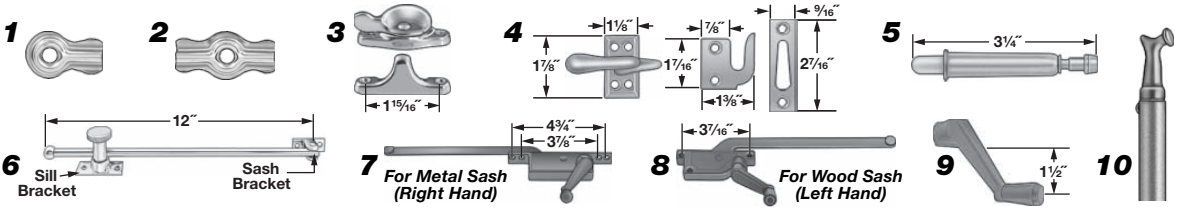

Material	Features	Pkg.
Turn Button Latches—*Furnished with #7 mounting screws; 10/Pkg.*		
1 Zinc-Plated Steel with Bright Finish	Single wing; 1 1/4″ o'all length	**1076A1** $3.76
2 Zinc-Plated Steel with Bright Finish	Double wing; 1 3/4″ o'all length	**1076A3** 4.16
Sash Window Latches—*Furnished with #6 mounting screws*		**Each**
3 Aluminum with Bright Brass Finish	For double-hung windows; Cam action	**1069A2** $1.91
3 Cast Brass with Bright Brass Finish	For double-hung windows; Cam action	**1069A4** 11.73
Casement Window Latch—*Furnished with #6 mounting screws*		
4 Zinc Alloy Handle and Catch; Steel Strikes; Bright Brass Finish	Includes a rim strike and a mortise strike	**1073A1** 8.76
Spring Bolt Window/Screen Latch—*Holds windows and screens in place*		
5 Zinc-Plated Steel with Bright Finish; Steel Spring	Requires a 3/8″ dia. hole for installation	**1075A2** 2.13
Manual Casement Window Bracket—*Furnished with #6 mounting screws*		
6 Solid Brass	Mounts on both sill and sash; Rod is 3/8″ dia.	**1058A11** 30.08
Hand-Crank Casement Window Brackets—*Fit most 18″ to 30″ wide casement windows.* **To Order:** Please specify left-hand or right-hand mount.		
7 Die Cast Zinc Case and Gear; Zinc-Plated Steel Arm; Bronze Powder-Coated Finish	For metal sash; Has four #10 mounting screws	**1060A3** 20.01
8 Die Cast Zinc Case and Gear; Zinc-Plated Steel Arm; Bronze Powder-Coated Finish	For wood sash; Has three #8 mounting screws	**1060A4** 11.83
Replacement Hand-Crank Handles—*Furnished with set screw to lock handle onto spline*		
9 Die Cast Zinc with Bronze Finish	Fits 3/8″ splines	**1064A11** 5.00
9 Die Cast Zinc with Aluminum Finish	Fits 3/8″ splines	**1064A12** 5.00
Window Hooks—*Use to open and close transom windows and upper sash windows*		
10 Galvanized Steel Pole with Nickel Bronze Hook	5-ft. pole; 1/2″ tip size	**1096A55** 26.70
10 Galvanized Steel Pole with Nickel Bronze Hook	12-ft. pole; 1/2″ tip size	**1096A57** 39.06

Steel Sash Clips

Wire Dia.	O'all Wd.	Pkg. Qty.		Pkg.
0.054″	1″	250	**1007A21**	$13.80

Glazing Points and Point Driver

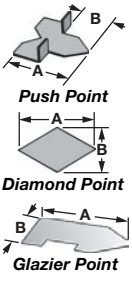

Diamond points have burr-free edges for easy, uniform penetration of hard wood. ***Glazier points*** insert flat to the surface for maximum holding power. ***Driver for 3/8″ glazier points*** quickly shoots glazing points into all types of wood. O'all size is 5 1/2″ Ht. × 7 1/4″ Lg.

(A)	(B)	Pkg. Qty.		Pkg.
Push Points—*Made of galvanized steel*				
3/8″	3/16″	100	**1010A36**	$2.48
Diamond Points—*Made of galvanized steel*				
3/8″	3/16″	500	**1045A11**	11.23
1/2″	1/4″	500	**1045A12**	11.62
Glazier Points—*Made of galvanized steel*				
3/8″	1/8″	1,000	**1052A24**	6.22

Driver for 3/8″ Glazier Points.. **1052A22** **Each** $89.13

Screening Splines and Installation Tool

Splines are made of black serrated vinyl. ***Installation tool*** has a wood handle. Overall length is 8 3/8″.

Dia.	Lg.		
1/8″	25 ft.	**1087A21**	$1.75
9/64″	25 ft.	**1087A22**	1.91
5/32″	25 ft.	**1087A23**	2.07
11/64″	25 ft.	**1087A24**	2.31
Installation Tool		**1028A12**	2.83

Sun-Guard Insect Screening

Made from vinyl-coated woven fiberglass, these screens block 70% of the sun's heat, yet let air through. Color is charcoal.

Wd.	Roll Lg.		
36″	7 ft.	**1566A19**	$17.02
48″	7 ft.	**1566A23**	22.67

Insect Screening

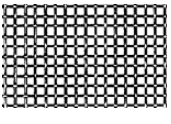

Keep bugs out. We have screening in a variety of materials to fit your application.

Width	7-ft. Roll		25-ft. Roll		100-ft. Roll	
Bright Aluminum, 0.011″ Wire						
24″	**1023A23**	$6.40	**1023A12**	$20.96	**1023A11**	$68.44
30″	**1023A24**	7.82	**1023A21**	26.22	**1023A16**	85.54
36″	**1023A25**	9.38	**1023A13**	31.47	**1023A17**	102.66
42″	**1023A61**	14.42	**1023A62**	45.72	**1023A18**	119.76
48″	**1023A26**	15.64	**1023A15**	52.44	**1023A19**	136.84
60″	**1023A63**	22.74	**1023A64**	72.02	**1023A22**	171.08
Charcoal Aluminum, 0.011″ Wire						
24″	**1023A52**	6.73	**1023A31**	22.97	**1023A41**	73.52
30″	**1023A53**	8.40	**1023A35**	28.69	**1023A45**	91.90
36″	**1023A54**	10.11	**1023A32**	34.43	**1023A42**	110.28
42″	**1023A65**	15.48	**1023A66**	49.10	**1023A43**	126.88
48″	**1023A55**	16.83	**1023A34**	57.36	**1023A44**	147.04
60″	**1023A67**	24.24	**1023A68**	77.14	**1023A46**	183.80
Medium-Gray Fiberglass, 0.011″ Wire						
24″	**1017A53**	4.38	**1017A51**	13.47	**1017A52**	43.76
30″	**1017A54**	5.44	**1017A15**	16.87	**1017A35**	54.68
36″	**1017A56**	6.57	**1017A31**	20.24	**1017A11**	65.62
42″	**1017A71**	8.70	**1017A72**	27.50	**1017A62**	76.56
Medium-Gray Fiberglass, 0.011″ Wire (Cont.)						
48″	**1017A57**	$8.71	**1017A33**	$26.96	**1017A13**	$87.50
60″	**1017A73**	12.40	**1017A74**	39.32	**1017A36**	109.38
Charcoal Fiberglass, 0.011″ Wire						
24″	**1017A63**	4.38	**1017A21**	13.47	**1017A41**	43.76
30″	**1017A64**	5.44	**1017A25**	16.87	**1017A45**	54.68
36″	**1017A66**	6.55	**1017A22**	20.24	**1017A42**	65.62
42″	**1017A75**	8.70	**1017A76**	27.52	**1017A43**	76.56
48″	**1017A67**	8.71	**1017A24**	33.69	**1017A44**	87.50
60″	**1017A77**	12.40	**1017A78**	39.32	**1017A46**	109.38
Electrogalvanized Steel, 0.009″ Wire						
24″	**1016A23**	11.92	**1016A24**	37.76	**1016A11**	94.48
30″	**1016A25**	14.84	**1016A26**	47.14	**1016A22**	115.62
36″	**1016A27**	17.82	**1016A28**	56.54	**1016A17**	140.46
48″	**1016A32**	23.78	**1016A33**	75.44	**1016A19**	187.28
Bright Bronze, 0.011″ Wire						
24″	**1022A71**	40.46	**1022A41**	133.60	**1022A11**	337.00
36″	**1022A77**	60.54	**1022A47**	199.74	**1022A17**	505.49
48″	**1022A79**	80.82	**1022A49**	267.18	**1022A19**	673.98
Type 304 Stainless Steel, 0.009″ Wire						
24″	**1021A31**	23.64	**1021A41**	84.44	**1021A51**	228.00
36″	**1021A32**	35.47	**1021A42**	126.67	**1021A52**	344.00
48″	**1021A33**	47.29	**1021A43**	168.89	**1021A53**	469.39
Type 316 Stainless Steel, 0.009″ Wire						
24″	**1667A22**	29.24	**1667A23**	102.22	**1667A25**	298.74
36″	**1667A33**	43.87	**1667A34**	151.11	**1667A37**	459.18
48″	**1667A45**	58.49	**1667A46**	182.00	**1667A49**	597.74

Sun-Guard Window Shades

Made of see-through metalized polyester, shades block light and up to 99% of UV rays. All have a spring roller except custom shades with mounting width 100″ and greater, which have a clutch roller. Furnished with universal mounting brackets (for inside, outside, and ceiling mounts) and mounting hardware. ***Embossed*** shades have a raised pattern for improved scratch resistance. *Note:* Shades with mounting width greater than 73¼″ and/or length over 72″ will have a seam.

Embossed

Standard Shades—6 ft. long; for use on 5-ft. high windows

Mounting Width	Smooth (Gray) % of Light Blocked			Embossed (Gray) % of Light Blocked		
37¼″	92	1035A23	$237.14	90	1230A11	$226.60
46¼″	92	1035A24	247.46	90	1230A12	236.74
55¼″	92	1035A25	257.78	90	1230A13	246.89
73¼″	92	1035A26	278.42	90	1230A14	267.19

Custom Shades—We can provide shades up to 144″×144″

To Order: Please ask for 1035A888 and specify mounting width (widths greater than 72″ will have a seam), length (we will add extra material to allow sufficient shade on the roller), and color (embossed gray, smooth gray, smooth gray interior and silver exterior, smooth bronze interior and gray exterior).

Color Sample Pack—Color samples for custom shades.
1035A12 ..... $5.08

Sun-Guard Window Film

In the summer, this film reflects the sun's heat energy; in the winter, it minimizes heat loss. Film also blocks up to 99% of UV rays. Made of see-through metalized polyester, so it won't spoil your view. 1 mil thick.

For indoor use on single- and dual-pane windows with ⅛″ or ¼″ thick glass. Apply with a soap and water solution. *Application kit* includes spray bottle of solution, edge trim guide, trimming blade, and squeegee.

Wd.	% of Light Blocked	% of Summer Heat Blocked	15-ft. Length		100-ft. Length	
Silver (Mirror Like)—*Similar to a one-way mirror*						
36″	85	84	1037A26	$39.56	1037A27	$179.05
Light Gray						
36″	51	55	1037A59	39.39	1037A63	195.15
48″	51	55	1037A69	52.63	1037A73	260.22
Application Kit					1037A75	$10.74

Privacy Window Film and Spray

Nonreusable Polyester Film—For indoor use on single- and dual-pane windows. Film blocks up to 99% of UV rays and 23% of light.

Reusable Vinyl Film—For indoor use on single-pane windows. It's easy to apply, remove, and reapply. Film remains pliable in temperatures from 32° to 150°F. *White* film blocks 26% of light. *Black* film blocks 95% of light. *Note:* Not recommended for indoor use on dual-pane, wire, and tinted glass. Heat buildup could crack the glass.

Application kit includes spray bottle of solution, blade, and squeegee.

Thick.	Roll Size	White		Black	
Nonreusable Polyester Film—*Apply with a soap and water solution*					
1.5 mils	48″× 6½ ft.	4936A21	$29.06	—	—
Reusable Vinyl Film—*Apply with water*					
10 mils	54″× 6 ft.	1015A13	29.44	1015A15	$29.44
10 mils	54″× 25 ft.	1015A67	74.26	1015A71	74.26
10 mils	54″×100 ft.	1015A54	212.73	1015A55	212.73
Application Kit				1037A75	$10.74

Privacy Window Spray—Create a frosted effect without blocking the light. Spray covers approximately 15-20 sq. ft. This product is compliant under all state VOC rules in effect on October 1, 2009.
12-oz. Spray Can 1008A12 $6.87

Glare-Guard Window Film

Reduce glare and filter sunlight with this reusable vinyl film. It's easy to apply, remove, and reapply. Film remains pliable in temperatures from 32° to 150°F. *Note:* Not recommended for indoor use on dual-pane, wire, and tinted glass. Heat buildup could crack the glass.

Wet Mount—For use on the inside of single-pane windows. *Application kit* includes spray bottle of solution, blade, and squeegee.

Static-Cling Mount—For use on the inside of single-pane windows and the outside of dual-pane windows.

Wet Mount—Film is 10 mils thick; apply to wet windows

% of Light Blocked	54″×6 ft.		54″×25 ft.		54″×100 ft.	
Golden Brown						
79	1015A18	$29.44	1015A62	$75.00	1015A43	$212.73
Smoke						
53	1015A19	29.44	1015A63	75.00	1015A47	212.73
Application Kit					1037A75	$10.74

Static-Cling Mount—Film is 4 mils thick; apply to dry windows

Color	% of Light Blocked	Roll Size			
Smoke	62	36″×6½ ft.	4803A1	$20.66
Bronze	66	36″×6½ ft.	4803A2	20.66

Privacy Window Shades

These room-darkening privacy shades won't let anyone see in. All shades are made of vinyl-coated fiberglass and have a spring roller. Furnished with universal mounting brackets (for inside, outside, and ceiling mounts) and mounting hardware. A minimum window depth of 2¾″ is required for inside mounting. Shades are flame retardant and meet Federal Specification CCC-C-521E.

Note: Shades with mounting width greater than 72″ and/or length over 72″ will have a seam.

Standard Shades—6 ft. long; for use on 5-ft. high windows

Mounting Width	Color		
37¼″	White	1031A65	$145.20
46¼″	White	1031A66	150.90
55¼″	White	1031A67	156.60
73¼″	White	1031A68	168.00

Custom Shades—We can provide shades up to 120″×120″

To Order: Please ask for 1031A888 and specify mounting width, (minimum available width is 24″), length (we will add extra material to allow sufficient shade on the roller), and color (white, ivory, or black).

Mini Blinds

Twist the plastic wand to adjust these slim 1″ slats for light control and privacy. Furnished with universal mounting brackets (can be used for inside, outside, and ceiling mounts) and mounting hardware. Inside mounting requires a min. window depth of 1½″ for light-filtering blinds (1 13/16″ for 1038A59) and ⅞″ for room-darkening blinds. Can be used on windows up to 4″ shorter than lengths listed. **To Order:** For room darkening blinds, please specify white or dark brown.

Also Available: Other sizes and colors. Please ask for 1038A888 and specify light-filtering blinds or room darkening blinds, mounting width, length, inside or outside mount, and color (room-darkening blinds only). Max. mounting width is 78″ for light-filtering blinds; 102″ for room-darkening blinds.

Color Sample Pack—Color samples for custom room-darkening blinds.
1038A95 ..... $7.14

Light Filtering—Made of white PVC

Wd.×Lg.			Wd.×Lg.		
23″×42″	1038A81	$10.51	35″×64″	1038A29	$14.62
23″×64″	1038A85	12.32	36″×64″	1038A53	15.04
24″×36″	1038A151	11.28	39″×64″	1038A41	16.29
26″×36″	1038A152	10.18	43″×64″	1038A54	19.96
27″×36″	1038A153	10.57	45″×48″	1038A64	20.14
27″×64″	1038A88	13.43	46″×42″	1038A65	21.02
28″×36″	1038A154	10.79	46″×64″	1038A52	21.35
29″×64″	1038A11	12.75	48″×36″	1038A67	16.11
30″×42″	1038A47	13.71	48″×48″	1038A69	18.80
31″×64″	1038A12	12.95	48″×64″	1038A55	22.28
32″×64″	1038A13	13.37	60″×48″	1038A156	26.86
33″×64″	1038A89	13.79	60″×64″	1038A57	27.85
34″×48″	1038A49	13.32	72″×64″	1038A59	30.08

Room Darkening—Made of aluminum with baked enamel finish

Wd.×Lg.			Wd.×Lg.		
23″×42″	1038A311	$59.32	46″×64″	1038A224	$83.44
24″×36″	1038A414	61.53	48″×48″	1038A315	83.85
26″×36″	1038A415	65.77	72″×64″	1038A227	112.57
39″×64″	1038A222	73.16			

Shrink-to-Fit Window Covering

This polyethylene film is clear, so it keeps drafts out without distorting the view. All include ½″×432″ double-sided tape. For indoor use.

Sheet, Wd.×Lg.		
62″× 7 ft.	1014A52	$13.39
62″×17 ft.	1014A54	27.33
84″× 9 ft.	1014A56	18.69
84″×19 ft.	1014A58	29.04
Double-Sided Tape (½″×500″ roll)	1014A6	7.03

Shatter-Guard Window Film

Made of scratch-resistant transparent polyester, this film bonds to the inside of glass windows to hold them together in the event of breakage or cracking; it minimizes broken and flying glass.

Note: Minimum film size is ⅛″ less than the length and width of your glass.

Thick.	% of Light Blocked	60″×10 ft.		60″×25 ft.	
2 mils	10	2293A76	$77.85	2293A16	$194.62
4.5 mils	11	2293A78	91.23	2293A18	228.08

Frame-Mount Door Weatherstripping

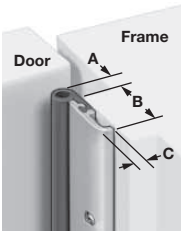

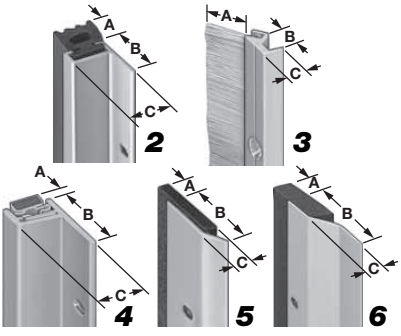

Mount weatherstripping to the sides and top of your door frame. All have a metal flange with mounting holes and a sealing insert. Mounting screws are included. UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. All styles meet UL 10B. All except Style 2 also meet UL 10C.

Style 1— Has a hollow bulb insert that compresses easily and remains flexible in low temperatures. *Silicone* inserts are not effected by ultraviolet light. *Neoprene* inserts resist abrasion. *Polyurethane* inserts are not effected by ultraviolet light, plus they resist oil, tears, and abrasion. *Vinyl* insert weatherstripping is the most economical choice.

Style 2— Has a thick, sponge-like ridged insert that provides a dense seal with some noise control.

Style 3— Because this dense, flexible nylon brush conforms to fill gaps, it's a great choice for sliding doors.

Style 4— Has a magnet covered in flexible vinyl. Use with metal doors.

Styles 5&6— Flange is Type 304 stainless steel to provide corrosion resistance and stand up to harsh weather.

To Order: Please specify length: 3, 4, 6, 7, or 8 ft.

	Insert Material	Flange Material and Finish	Insert Temp. Range	Insert Size (A)	Flange Wd. (B)	Flange Proj. (C)	Flange Thick.		Per Ft.
1	Silicone	Unfinished Aluminum	–100° to +525° F	1/4″	3/4″	1/4″	0.055″	**1114A3**	$2.00
1	Silicone	Anodized Aluminum	–100° to +525° F	5/16″	7/8″	3/16″	0.093″	**8415A3**	5.95
1	Neoprene	Anodized Aluminum	–30° to +210° F	5/16″	7/8″	3/16″	0.093″	**8415A1**	4.58
1	Polyurethane	Unfinished Aluminum	–58° to +162° F	5/16″	7/8″	15/64″	0.046″	**8415A5**	3.33
1	Polyurethane	Dark Brown Aluminum	–58° to +162° F	5/16″	7/8″	15/64″	0.046″	**8415A6**	4.82
1	Vinyl	Unfinished Aluminum	–40° to +200° F	1/4″	1/2″	1/4″	0.055″	**1114A1**	.96
2	Neoprene	Anodized Aluminum	–40° to +240° F	3/8″	1″	11/16″	0.062″	**1116A2**	3.54
3	Nylon Brush	Unfinished Aluminum	–70° to +160° F	5/8″	7/16″	9/32″	0.062″	**1283A2**	2.61
3	Nylon Brush	Dark Brown Aluminum	–70° to +160° F	5/8″	7/16″	9/32″	0.093″	**1283A1**	3.30
4	Vinyl-Covered Magnet	Unfinished Aluminum	0° to +140° F	3/16″	1 1/8″	5/8″	0.072″	**1478A8**	5.81
4	Vinyl-Covered Magnet	Dark Brown Aluminum	0° to +140° F	3/16″	1 1/8″	5/8″	0.072″	**1478A9**	6.75
5	Neoprene	Unfinished Type 304 SS	–30° to +210° F	1/4″	1 3/16″	3/16″	0.035″	**17775A1**	13.75
6	Neoprene	Unfinished Type 304 SS	–30° to +210° F	1/4″	1 1/8″	3/16″	0.035″	**17775A8**	13.29
6	Neoprene	Unfinished Type 304 SS	–30° to +210° F	1/2″	1 3/4″	3/8″	0.035″	**17775A7**	14.11

Double-Door Weatherstripping

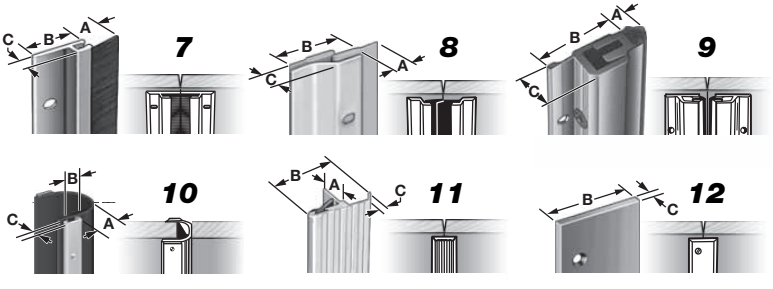

Seal the space between your wood or metal double doors. Flanges have mounting holes and come with screws. All styles are UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. Meet UL 10B. All except Styles 9 and 10 meet UL 10C. ***Styles 7-9*** are sets of two strips. ***Styles 10-12*** are single strips.

Style 7— Inserts mesh together to seal gap. ***Style 8—*** Inserts overlap to seal gap. ***Style 9—*** Once mounted, each insert adjusts 9/16″ for fit. ***Style 10—*** Has two flanges and a neoprene strip that wraps around one double door to create a hollow bulb. For doors up to 1 3/4″ thick. ***Styles 11&12—*** Mount strip to one door to overlap second door when closed.

	Max. Door Gap	Insert Material	Flange Material and Finish	Insert Temp. Range	Insert Size (A)	Flange Wd. (B)	Flange Proj. (C)	Flange Thick.	***7-ft. Lengths***	Set	***8-ft. Lengths***	Set
7	3/4″	Nylon Brush	Anodized Aluminum	–70° to +160° F	7/16″	5/8″	1/4″	3/64″	**1131A45**	$33.60	**1131A49**	$38.30
7	3/4″	Nylon Brush	Dark Brown Aluminum	–70° to +160° F	7/16″	5/8″	1/4″	3/64″	**1131A47**	42.56	**1131A48**	48.64
8	3/4″	Neoprene	Unfinished Type 304 SS	–30° to +120° F	3/8″	7/8″	11/64″	1/32″	**18955A61**	188.88	**18955A63**	215.86
9	9/16″	Polypropylene	Anodized Aluminum	Max. 320° F	1/4″	1″	9/16″	1/8″	**8111A21**	89.13	**8111A22**	101.84
										Each		**Each**
10	1 1/4″	Neoprene Strip	Unfinished Aluminum	–40° to +240° F	1 3/16″	9/16″	1/4″	3/16″	**1125A23**	$45.96	**1125A24**	$52.40
11	5/16″	Vinyl	Anodized Aluminum	–10° to +110° F	1/2″	1 3/8″	1/4″	1/16″	**10085A31**	30.56	**10085A33**	34.88
11	5/16″	Vinyl	Dark Brown Aluminum	–10° to +110° F	1/2″	1 3/8″	1/4″	1/16″	**10085A35**	41.18	**10085A37**	47.10
12	1/8″	—	Primed-Finish Steel	—	—	2″	1/8″	1/8″	**10305A63**	29.46	**10305A65**	33.65
12	1/8″	—	Unfinished Type 304 SS	—	—	2″	5/32″	5/32″	**1307A67**	127.33	**1307A69**	145.51

Adhesive-Backed Weatherstripping

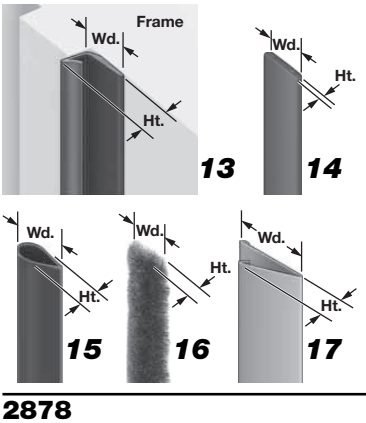

Apply this adhesive-backed weatherstripping to the inside of your door frame and around windows to seal gaps quickly and easily. ***Styles 13-16*** come in rolls and can be cut to desired length with metal shears. ***Style 17*** comes in strips.

Fire Seal— Made of graphite that expands at high temperatures to completely seal gaps and prevent the spread of fire. UL classified for use with wood fire doors rated for 1½ hours. Meet UL 10B and UL 10C. *Style 13* is wing shaped to fit snugly into the corners of your door frame.

Smoke Seal— Made of silicone rubber and seals gaps to prevent the spread of smoke. UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. Meets UL 10B, UL 10C, and UL 1784. UL listed as a smoke and draft control gasket. Temp. range is –40° to +250° F.

Pile— Made of polypropylene to reduce rattling. Temperature range is 23° to 176° F.

Metal— Has some flexibility and compresses to form a tight seal between doors and frames. UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. Meet UL 10B. Temp. range is 0° to 180° F. 1115A2 is bronze; 1115A61 is Type 301 stainless steel.

	Lg.	Max. Door Gap	Ht.	Wd.		
Fire Seal—Color is black						
13	9-ft.	7/16″	7/16″	5/8″	**1306A3**	$29.51
14	17-ft.	1/16″	1/16″	1/2″	**1306A1**	24.06
14	21-ft.	1/16″	1/16″	1/2″	**1306A4**	29.73
Smoke Seal—Color is charcoal						
15	25-ft.	1/4″	1/4″	1/2″	**1067A59**	28.55

	Lg.	Max. Door Gap	Ht.	Wd.		
Pile—Color is gray						
16	17-ft.	3/16″	3/16″	1/4″	**8435A15**	$7.88
Metal						
17	7-ft.	1/4″	5/16″	1″	**1115A2**	6.17
17	7-ft.	1/4″	5/16″	1″	**1115A61**	10.18

Door Bottom Sweeps

Cover the gap below your door to keep out drafts, dust, light, and weather. Sweeps have mounting holes to attach to the bottom face of the door using the included mounting screws. These sweeps are often used with thresholds (sold separately, see pg. 2880) to completely fill the gap underneath your door. UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. All styles meet UL 10B. Styles 1, 4, and 6, plus 17815A53 and 17815A55, meet UL 10C.

Style 3 has a triple-flap vinyl insert for better sealing. ***Style 4*** insert has dense, flexible nylon filaments that conform to fill gaps and keep insects out. ***Style 5*** has a rubber insert that compresses to hold the sweep tightly against the floor. ***Style 6*** has a drip cap.

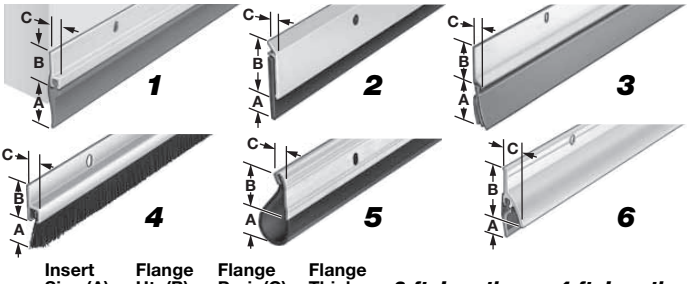

	Insert Material	Flange Material and Finish	Insert Temp. Range	Insert Size (A)	Flange Ht. (B)	Flange Proj. (C)	Flange Thick.	3-ft. Lengths		4-ft. Lengths	
1	Vinyl	Unfinished Aluminum	–40° to +200° F	⅞″	¾″	¼″	0.062″	1134A14	$6.08	1134A15	$8.11
2	Neoprene	Anodized Aluminum	+30° to +240° F	⅜″	1¼″	13⁄64″	0.062″	8126A11	8.25	8126A13	11.00
2	Neoprene	Dark Brown Aluminum	+30° to +240° F	⅜″	1¼″	13⁄64″	0.062″	8126A21	10.02	8126A23	13.36
2	Neoprene	Unfinished Type 304 SS	–30° to +210° F	⅜″	1¼″	3⁄16″	0.035″	17815A53	52.77	17815A55	70.36
3	Vinyl	Unfinished Aluminum	–10° to +155° F	13⁄16″	15⁄16″	17⁄64″	0.062″	8409A11	4.33	8409A13	5.77
4	Nylon Brush	Anodized Aluminum	–70° to +160° F	9⁄16″	¾″	19⁄64″	0.050″	1130A53	10.16	1130A73	13.55
4	Nylon Brush	Dark Brown Aluminum	–70° to +160° F	9⁄16″	¾″	19⁄64″	0.050″	1130A54	13.84	1130A74	18.45
5	Rubber	Unfinished Aluminum	–40° to +240° F	¾″	1″	¼″	0.032″	1144A1	9.40	1144A3	12.53
6	Vinyl	Unfinished Aluminum	–40° to +200° F	⅞″	1″	19⁄32″	0.062″	10465A72	8.06	10465A74	10.75
6	Nylon Brush	Unfinished Aluminum	–58° to +302° F	7⁄16″	1½″	9⁄16″	0.062″	10465A62	13.17	10465A64	17.56
								7-ft. Lengths		**8-ft. Lengths**	
4	Nylon Brush	Anodized Aluminum	–70° to +160° F	9⁄16″	¾″	19⁄64″	0.050″	1130A83	$20.32	1130A84	$27.09
5	Rubber	Unfinished Aluminum	–40° to +240° F	¾″	1″	¼″	0.032″	1144A4	22.00	1144A5	29.34

Wrap-Around Door Bottom Seals

Shut out drafts and protect your door from damage. Seals have an unfinished aluminum flange that wraps around the bottom of the door. They have an arched, flexible vinyl insert and are often used with thresholds (sold separately, see pg. 2880) to completely fill the gap underneath your door. For use on 1¾″ thick doors. All have slotted mounting holes and come with screws. UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. Meet UL 10B and UL 10C. Seals ***with drip cap*** have a slight overhang to keep dust, rain, and slush away from the door bottom. ***Style 7*** insert temp. range is –40° to +220° F. ***Style 8*** insert temp. range is –10° to +110° F.

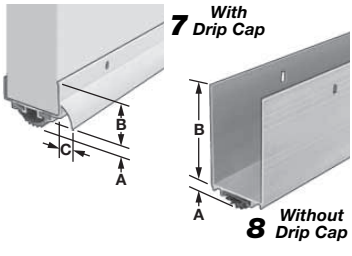

	Insert Size (A)	Flange Ht. (B)	Drip Cap Proj. (C)	Flange Thick.	3-ft. Lengths		4-ft. Lengths	
7 With Drip Cap	½″	1″	½″	0.062″	1113A9	$9.21	1113A11	$12.28
7 Without Drip Cap	½″	1″	—	0.062″	1113A5	8.80	1113A7	11.74
8 With Drip Cap	½″	3″	7⁄16″	0.070″	8441A33	31.50	8441A34	42.00
8 Without Drip Cap	½″	3″	—	0.070″	8441A31	30.61	8441A32	40.81

Automatic Door Bottom Seals

To allow greater clearance and save floors from scuffing, door seals automatically spring up when the door is opened. As door is closed, a drop bar on Styles 10-12 starts sealing on the hinge side to prevent the seal from dragging along the floor. The seal fully drops when the door is closed. Style 9 seal simply drops down when the door is closed. All are reversible for left- and right-hand doors.

Door seals work best with metal thresholds (sold separately, see page 2880); they cannot be used with solid vinyl thresholds or thresholds with vinyl seals. All conform to irregular surfaces and uneven floors. Seals have mounting holes and come with screws. When properly installed, ***Styles 10-12*** help you comply with the Americans with Disabilities Act (ADA) requirements for low-closing force.

For Surface Mounting— UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. Meet UL 10B and UL 10C. ***Style 9*** can be cut with a power saw down to 24″ in length. ***Style 10*** can be trimmed with a hacksaw up to 4″ off the side opposite the plunger.

For Surface and Half-Mortise Mounting— Seals can be mounted in a cutout on the bottom of the door face, but a portion of the flange will be exposed. All have a thick, heavy duty insert for increased durability. UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. Meet UL 10B and UL 10C. ***Seals with neoprene insert*** can be trimmed with a hacksaw up to 4″ off the side opposite the plunger. ***Seals with thermoplastic insert*** can be trimmed with a hacksaw up to 2″ off the side opposite the plunger.

For Full-Mortise Mounting— Install into an existing channel in a metal door bottom. Seals have a thick, heavy duty insert for increased durability. UL classified for metal fire doors rated for 3 hours. You can use a hacksaw to trim up to 4″ off the side opposite the plunger.

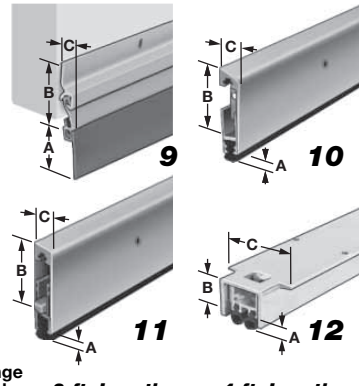

	Flange Material and Finish	Insert Temp. Range	Max. Seal Drop	Insert Size (A)	Flange Ht. (B)	Flange Proj. (C)	Flange Thick.	3-ft. Lengths		4-ft. Lengths	
For Surface Mounting											
Vinyl Insert—*Light Duty*											
9	Anodized Aluminum	–10° to +110° F	1¼″	1″	1½″	5⁄16″	0.045″	8120A11	$11.95	—	—
Neoprene Insert—*Standard Duty*											
10	Anodized Aluminum	–30° to +210° F	1″	¼″	2¼″	19⁄32″	0.062″	1500A11	39.28	1500A12	$47.60
10	Dark Brown Aluminum	–30° to +210° F	1″	¼″	2¼″	19⁄32″	0.062″	1500A14	45.40	1500A15	55.75
10	Unfinished Type 304 SS	–30° to +210° F	1″	¼″	1¾″	19⁄32″	0.035″	1500A24	61.37	1500A26	73.36
For Surface and Half-Mortise Mounting											
Neoprene Insert—*Heavy Duty*											
11	Anodized Aluminum	–30° to +210° F	⅞″	½″	2″	15⁄16″	0.097″	8403A56	65.51	8403A58	82.46
11	Dark Brown Aluminum	–30° to +210° F	⅞″	½″	2″	15⁄16″	0.097″	8403A57	72.49	8403A59	91.19
Thermoplastic Insert—*Heavy Duty*											
11	Anodized Aluminum	–70° to +250° F	¾″	7⁄16″	1½″	9⁄16″	0.062″	14775A21	38.79	14775A23	48.51
11	Anodized Aluminum	–70° to +250° F	¾″	11⁄16″	1⅛″	15⁄16″	0.125″	14775A51	63.74	14775A53	79.78
11	Dark Brown Aluminum	–70° to +250° F	¾″	7⁄16″	1½″	9⁄16″	0.062″	14775A22	47.65	14775A24	59.49
11	Dark Brown Aluminum	–70° to +250° F	¾″	11⁄16″	1⅛″	15⁄16″	0.125″	14775A52	74.94	14775A54	93.60
For Full-Mortise Mounting											
Neoprene Insert—*Heavy Duty*											
12	Unfinished Aluminum	–30° to +210° F	½″	⅛″	¾″	1½″	0.125″	8403A66	32.33	8403A68	40.88

Floor Thresholds

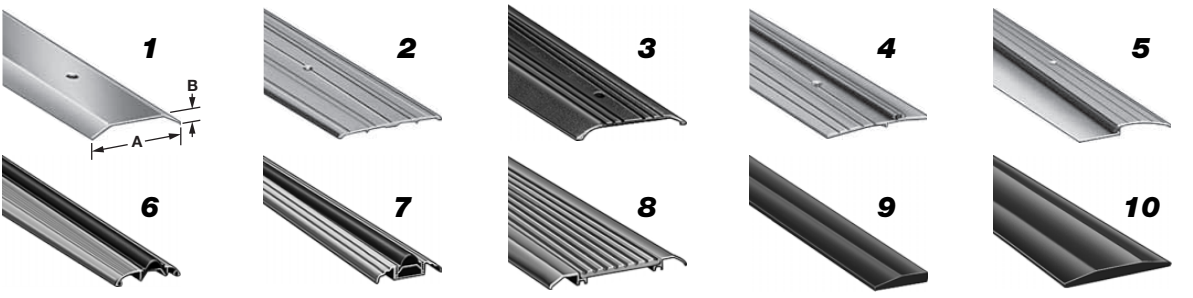

Make a smooth transition between flooring surfaces. The ***regular duty*** thresholds are good for light to moderate foot traffic. ***Heavy duty*** thresholds are made of thicker material to stand up to heavy foot traffic and traffic from motorized vehicles such as forklifts.

Thresholds are often used with door bottom sweeps or door bottom seals (sold separately, see page 2879) to completely fill the gap underneath your door. ***Styles 4-7*** have a vinyl insert to seal out weather; they can be used alone or with a door bottom sweep or seal. ***Styles 4-7, 9,*** and ***10*** are not compatible with the Automatic Door Bottom Seals on page 2879.

Thresholds do not have a finish. All have mounting holes and come with screws, unless noted. Thresholds with a ribbed top provide slip resistance.

When properly installed, ***Styles 1-4*** and ***Styles 8-10*** help you comply with the Americans with Disabilities Act (ADA).

Styles 1-5 and ***Style 8*** are UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. They meet UL 10B. ***Styles 1, 2, 3, 5,*** and ***8*** meet UL 10C, unless noted.

To Order: Please specify length: 3, 4, or 6 ft. where applicable.

3 Aluminum with Ribbed Top and Nonskid Surface— A nonskid coating embedded into the metal allows the thresholds to retain slip resistance even when exposed to oil and grease.

4-6 Regular Duty Aluminum with Ribbed Top and Vinyl Seal— Thresholds are aluminum with a vinyl insert that creates a seal when the door is closed. *Style 4* threshold is compatible with any door, including those with a vertical-rod (panic) exit device. *Style 5* is offset for uneven surfaces.

7 Regular Duty Adjustable-Height Aluminum Ribbed Top with Vinyl Seal— Made of aluminum with a vinyl insert that presses against the bottom of your door for a tight seal. Threshold offers six height levels.

8 Heavy Duty Aluminum with Ribbed Top— Assembles in three pieces: two 0.094″ thick end pieces and one 0.250″ thick ribbed top plate. Ideal for covering concrete seams and expansion joints. This style does not have mounting holes; drill your own where necessary.

9&10 Heavy Duty Solid Vinyl— Thresholds resist marring and wear. Their ½″ overall height tapers to ¼″ at the edges. Thresholds do not have mounting holes; install with contact cement (sold separately, see page 3420). *Style 9 half threshold* is for use between floors of different heights. *Style 10 full threshold* is for use between floors of equal height.

Regular Duty

	Wd. (A)	Ht. (B)	Thick.	3-, 4-, or 6-ft. Lengths	Per Ft.
Type 304 Stainless Steel with Smooth Top					
1	4″	½″	0.120″	**19045A7**	$54.64
1	5″	½″	0.120″	**19045A8**	59.14
Aluminum with Smooth Top					
1	2½″	¼″	0.125″	**1112A3**●	3.14
Aluminum with Ribbed Top					
2	4″	½″	0.150″	**1112A4**	5.00
2	5″	¼″	0.125″	**1112A2**	6.91
2	5″	½″	0.150″	**1112A7**	7.39
2	6″	½″	0.150″	**1112A5**	8.78
2	7″	½″	0.150″	**1112A8**	11.65
Aluminum with Ribbed Top and Nonskid Surface					
3	5″	½″	0.162″	**1094A7**	24.56
3	6″	½″	0.175″	**1094A8**	29.77
Aluminum with Ribbed Top and Vinyl Seal					
4	5″	½″	0.125″	**1003A2**	6.03
5	5″	½″	0.094″	**12615A3**	7.02
6	3¼″	1″	0.047″	**1127A15**	5.50
				3-ft. Lengths	**Each**
Adjustable-Height Aluminum Ribbed Top with Vinyl Seal					
7	3½″	⅞″-1⅜″	0.062″	**1056A61**	$14.49

●Does not meet UL 10C.

Heavy Duty

	Wd. (A)	Ht. (B)	Thick.	3-, 4-, or 6-ft. Lengths	Per Ft.
Aluminum with Ribbed Top					
8	6¾″	½″	0.250″	**1483A1**■	$14.82
Aluminum with Ribbed Top and Nonskid Surface					
3	5″	½″	0.250″	**1094A1**	37.75
3	6″	½″	0.250″	**1094A2**	49.75
				3-ft. Lengths	**Each**
Solid Vinyl Half Threshold					
9	2¾″	½″	0.500″	**8105A42**■	$12.02
Solid Vinyl Full Threshold					
10	5½″	½″	0.500″	**8105A46**■	21.14

■ No mounting holes.

ADA-Compliant Floor Ramps

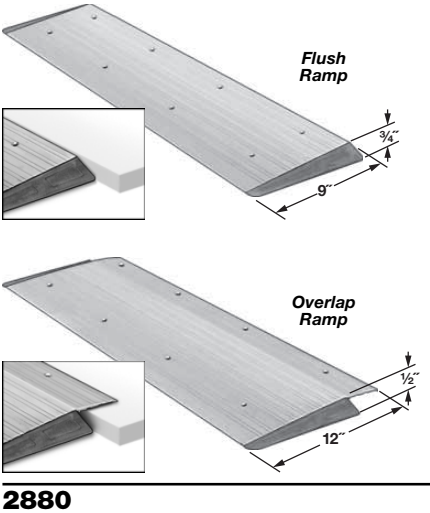

When properly installed, these ramps can help you comply with the Americans with Disabilities Act (ADA). Ramps are made of aluminum.

Ramps have a ribbed surface and are 0.110″ thick. All have 9″ wide closed-end sides and come with wood screws and instructions. UL classified for use with wood fire doors rated for 1½ hours and metal fire doors rated for 3 hours. Meet UL 10B and UL 10C.

Flush Ramps— For entries and doorways raised ¾″. Ramps fit snug against your threshold or raised entry.

Overlap Ramps— For entries and doorways raised ½″. Ramps have a 3″ overlap of threshold or raised entry.

For Door Wd.

Flush Ramps		
3 ft.	**10045A111**	$118.18
4 ft.	**10045A121**	133.03
6 ft.	**10045A131**	158.72
Overlap Ramps		
3 ft.	**10045A171**	139.05
4 ft.	**10045A181**	159.50
6 ft.	**10045A191**	199.74

Floor Edge Protectors

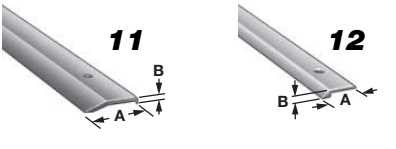

Protect the edges of flooring from damage caused by foot traffic. All are aluminum with mounting holes.

Style 11— Covers edges of two adjacent flooring materials. All have a clear anodized finish. Furnished with screws.

Style 12— For one edge of carpet or flooring material. Protector has a polished finish. Requires #4 screws (not included) for mounting.

Lg.	Wd. (A)	Ht. (B)	Thick.		
Style 11					
3 ft.	2½″	⅜″	3/16″	**8422A11**	$16.43
4 ft.	2½″	⅜″	3/16″	**8422A13**	21.86
6 ft.	2½″	⅜″	3/16″	**8422A14**	32.83
Style 12					
8 ft.	¾″	3/32″	1/16″	**1110A33**	11.35

Above-the-Door Drip Edges

Install above your door to protect opening from rain, snow, and dust. All are made of aluminum. Wall thickness is 3/32″. Edges have mounting holes and come with screws.

Lg.	Flange Ht. (A)	O'all Ht. (B)	Proj. (C)		
3′4″	19/32″	1 1/2″	2 1/2″	8112A11	$10.80
4′4″	19/32″	1 1/2″	2 1/2″	8112A12	14.08
6′4″	19/32″	1 1/2″	2 1/2″	8112A13	20.55

Overhead-Door Frame Weatherstripping

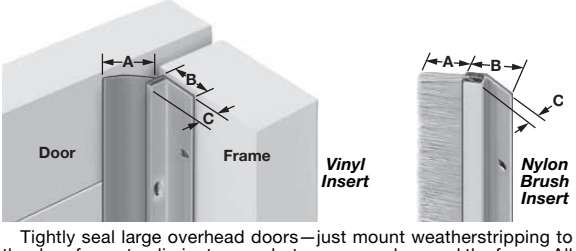

Tightly seal large overhead doors—just mount weatherstripping to the door frame to eliminate gaps between your door and the frame. All flanges have mounting holes and come with screws.

Vinyl Insert with Unfinished Aluminum Flange

Insert temperature range is –10° to +150° F. UL classified for use with wood fire doors rated for 1 1/2 hours and metal fire doors rated for 3 hours. Meet UL 10B.

Lg.	Insert Size (A)	Flange Ht. (B)	Flange Proj. (C)	Flange Thick.		
7 ft.	1″	7/8″	13/32″	0.040″	8410A11	$7.10
8 ft.	1″	7/8″	13/32″	0.040″	8410A12	8.10

Nylon Brush Insert with Anodized Aluminum Flange

Dense, flexible nylon filaments conform to fill gaps. Insert temp. range is –70° to +160° F. UL classified for use with wood fire doors rated for 1 hour and metal fire doors rated for 3 hours. Meet UL 10B and UL 10C.

Style 1 has two 4-ft. lengths and four 5-ft. lengths.
Style 2 has two 5-ft. lengths and four 6-ft. lengths.
Style 3 has six 6-ft. lengths.
Style 4 has two 4-ft. lengths and four 5-ft. lengths.
Style 5 has two 5-ft. lengths and four 6-ft. lengths.
Style 6 has six 6-ft. lengths.

	For Door Size, Wd.×Ht.	Insert Size (A)	Flange Ht. (B)	Flange Proj. (C)	Flange Thick.		Set
1	8 ft.×10 ft.	1″	1″	7/8″	0.062″	1081A19	$113.17
2	10 ft.×12 ft.	1″	1″	7/8″	0.062″	1081A21	137.42
3	12 ft.×12 ft.	1″	1″	7/8″	0.062″	1081A25	145.50
4	8 ft.×10 ft.	2 1/2″	1 11/16″	17/32″	0.078″	1081A32	239.87
4	8 ft.×10 ft.	4″	1 11/16″	17/32″	0.078″	1081A42	291.67
5	10 ft.×12 ft.	2 1/2″	1 11/16″	17/32″	0.078″	1081A33	281.87
5	10 ft.×12 ft.	4″	1 11/16″	17/32″	0.078″	1081A43	342.74
6	12 ft.×12 ft.	2 1/2″	1 11/16″	17/32″	0.078″	1081A34	289.12
6	12 ft.×12 ft.	4″	1 11/16″	17/32″	0.078″	1081A44	351.56

Dock Door Shelters

Protect your loading dock from the elements. Shelters fit dock doors with openings from 8-10 ft. Wd.×8-10 ft. Ht. You can use them to reduce oversized door openings to match trailer openings. Shelters consist of two side flaps and one top flap. All flaps are 40-oz. black nylon-reinforced vinyl. Mounting hardware not included.

Fixed

Fixed Shelter—Perimeter covering is 18-oz. white translucent vinyl with extruded aluminum trim. Shelter has two 21″ Wd.×10 1/2-ft. Ht. side flaps and one 11-ft. Wd.×3-ft. Ht. top flap. Side flaps have a 14″ vertical safety-yellow stripe. Shelter includes two steel guide protectors that are safety yellow.

Retractable Shelter—Perimeter covering is 18-oz. black vinyl-coated nylon with extruded aluminum trim. Has two 23″ Wd.×10-ft. Ht. side flaps and one 11-ft. Wd.×3-ft. Ht. top flap. Side flaps have a 22″ vertical safety-yellow stripe. Steel guide protectors are not needed—the frame pushes back to prevent damage if trailers back in off-center.

	Projection		
Fixed	24″	87645T75	$1,322.02
Retractable	24″	87645T76	1,656.13

Base-Mount Overhead-Door Seals

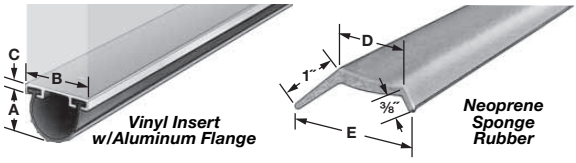

Seals mount to the bottom of your overhead door to close gaps between your door and a threshold or floor. All conform to irregular surfaces and uneven floors.

Vinyl Insert with Aluminum Flange

Insert is vinyl and stays flexible to –30° F. Use to seal 3/4″ gaps. If gap is larger than 3/4″, use with heavy duty thresholds on page 2880. Flanges have mounting holes and come with mounting screws.

The ***9-ft. long*** door bottom is furnished with two 4 1/2-ft. aluminum flanges and one 9-ft. rubber insert. The ***18-ft. long*** door bottom is furnished with four 4 1/2-ft. aluminum flanges and one 18-ft. rubber insert.

Lg.	Insert Size (A)	Flange Wd. (B)	Flange Ht. (C)	Flange Thick.		
9 ft.	3/4″	1 5/8″	3/8″	0.060″	10505A42	$28.32
18 ft.	3/4″	1 5/8″	3/8″	0.060″	10505A43	53.81

Neoprene Sponge Rubber

Neoprene is less flexible than vinyl and withstands temperatures from –22° to +302° F. Use to seal 5/8″ gaps. If gap is larger than 5/8″, use with a heavy duty floor threshold (sold separately, see page 2880). Weatherstripping does not have mounting holes; install with the included nails.

Lg.	Max. Door Gap	Top Wd. (D)	Bottom Wd. (E)	Flange Thick.		
9 ft.	5/8″	1 1/4″	2 3/8″	0.125″	8121A11	$9.82
16 ft.	5/8″	1 1/4″	2 3/8″	0.125″	8121A12	17.19
100 ft.	5/8″	1 1/4″	2 3/8″	0.125″	8121A13	88.38

Face-Mount Overhead-Door Seals

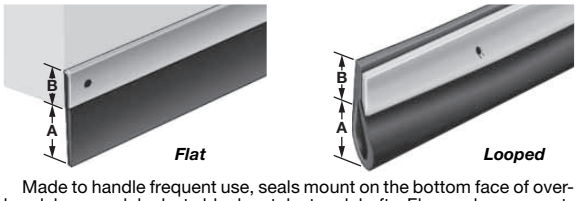

Made to handle frequent use, seals mount on the bottom face of overhead doors and docks to block out dust and drafts. Flanges have mounting holes and come with screws. Temp. range is –30° to +190° F.

Flat—Flange has a tan painted finish. *Note:* The flange on 8116A14 comes furnished in two 6-ft. lengths.

Looped—Meet MIL-R6855E Class II, Grade 40, Type A Material.

Lg.	Insert Size (A)	Flange Ht. (B)	Flange Proj.	Flange Thick.		
Flat Neoprene Insert with Steel Flange						
6 ft.	1 1/2″	1″	3/16″	0.083″	8116A11	$128.85
8 ft.	1 1/2″	1″	3/16″	0.083″	8116A12	150.00
10 ft.	1 1/2″	1″	3/16″	0.083″	8116A13	172.30
12 ft.	1 1/2″	1″	3/16″	0.083″	8116A14	207.69
Looped Neoprene Insert with Unfinished Aluminum Flange						
6 ft.	1 5/8″	1 1/8″	1/2″	0.250″	8413A11	146.94
8 ft.	1 5/8″	1 1/8″	1/2″	0.250″	8413A12	195.91
10 ft.	1 5/8″	1 1/8″	1/2″	0.250″	8413A13	244.89
15 ft.	1 5/8″	1 1/8″	1/2″	0.250″	8413A14	369.89

Dock Door Seals

When a trailer is backed into place at your open dock door, these seals create an energy-efficient, weather-tight seal between the trailer and your dock. Good for keeping out dust and fumes, seals are for openings with a maximum size of 8 ft. Wd.×8 ft. Ht. Seals consist of two 1-ft. Wd.×8-ft. Ht. side pads and one 10-ft. Wd.×1-ft. Ht. top header pad. Side pads have a 24″ vertical safety-yellow stripe. All pads are foam covered with 36-oz. black nylon-reinforced vinyl that's bonded to pressure-treated wood. Mount seals to your dock wall using the included brackets and wood lag screws.

Note: Choose a dock seal that projects a maximum of 5″ beyond your dock bumper. If your dock has an edge-of-dock leveler, order the dock seal with a 20″ projection.

	Projection		
10″		21735T11	$673.42
20″		21735T53	923.74

UL Fire-Rated Steel Doors

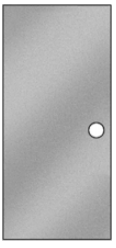

Plain

Window Options

Square Glass

Rectangular Glass

Half Glass

All of these steel doors are UL fire-rated and labeled with an hourly fire protection rating. Doors are 1¾″ thick with a solid polystyrene core and gray primer finish. All are reinforced at the top on the hinge side (to support a door closer; see pages 2914-2917). Install as either a left- or right-hand door.

Doors come prepared for three hinges (unless noted) and door hardware. All accept 0.134″ thick or 0.180″ thick, 4½″×4½″ standard hinges. They also come prepared for a cylindrical lockset with 2¾″ backset (the distance from the edge of the door to the center of the lockset's mounting hole). For hinges, hardware, and frames, see page 2883. Please see illustration at right for exact hinge and lockset cutout locations.

Square-glass, rectangular-glass, and ***half-glass*** doors have wire-reinforced clear glass.

Also Available: Additional sizes. Please ask for 14435A999 and specify door opening (Wd.×Ht.), plain or window option (square glass, rectangular glass, or half glass), gauge, hinge location, and lockset location.

Hinge and Lockset Locations

To identify your door style, see the hinge and lockset location table below. Doors are sized to fit UL Fire-Rated Steel Door Frames that have the same style number (frames sold separately, see page 2883); just match the style number and Door Ht.

Door Ht.	(A)	(B)	(C)	(D)
Style 1				
80″	7⅜″	37 5/16″	67¼″	38 7/16″
84″	9⅜″	39 5/16″	69¼″	42 7/16″
96″♣	4⅞″	30⅜″	55⅞″	54 7/16″
Style 2				
80″	4⅞″	35⅛″	65⅜″	38¾″
84″	4⅞″	37⅛″	69⅜″	42¾″
Style 3				
80″	6⅝″	37⅝″	68⅝″	36 15/16″
84″	6⅝″	39⅝″	72⅝″	40 15/16″
Style 4				
84″	7⅜″	39 5/16″	71¼″	42 7/16″

♣ 81⅜″ to top of fourth hinge cutout (not shown).

Hinge Locations

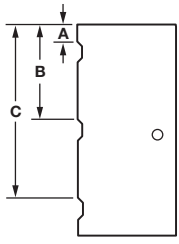

Lockset Location

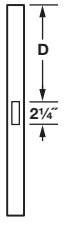

Style	Door Opening, Wd.×Ht.	Plain Doors 3-hr. Rating	Square-Glass Doors 1½-hr. Rating Glass Size▲		Rectangular-Glass Doors 1½-hr. Rating Glass Size▲		Half-Glass Doors ¾-hr. Rating Glass Size▲	
18-Gauge (0.042″) Doors								
1	30″×80″	14435A15 $387.21	11″×11″	14435A116 $503.37	5″×26″	14435A154 $542.09	16¾″×29¾″	14435A183 $638.90
1	30″×84″	14435A73 398.74	11″×11″	14435A117 518.36	5″×26″	14435A155 558.24	16¾″×33¾″	14435A184 657.92
1	32″×80″	14435A26 391.31	11″×11″	14435A118 508.70	5″×26″	14435A156 547.83	18¾″×29¾″	14435A185 645.66
1	32″×84″	14435A27 404.31	11″×11″	14435A119 525.60	5″×26″	14435A157 566.03	18¾″×33¾″	14435A186 667.11
1	36″×80″	14435A28 392.25	11″×11″	14435A126 509.93	5″×26″	14435A158 549.15	22¾″×29¾″	14435A187 647.21
1	36″×84″	14435A29 402.70	11″×11″	14435A127 523.51	5″×26″	14435A159 563.78	22¾″×33¾″	14435A188 664.45
1	36″×96″	14435A25★ 486.32	11″×11″	14435A115★ 632.22	5″×26″	14435A125★ 680.85	22¾″×45″	14435A135★ 802.43
1	42″×84″	14435A18 459.36	11″×11″	14435A113 597.17	5″×26″	14435A123 643.10	22¾″×33¾″	14435A133 757.94
1	44″×84″	14435A19 459.43	11″×11″	14435A114 597.26	5″×26″	14435A124 643.20	22¾″×33¾″	14435A134 758.06
2	36″×80″	1518A11 401.21	11″×11″	1518A37 521.57	5″×26″	1518A91 561.69	22¾″×29¾″	1518A6 662.00
2	36″×84″	1518A15 414.39	11″×11″	1518A39 538.71	5″×26″	1518A92 580.15	22¾″×33¾″	1518A7 683.74
2	48″×84″	1518A55 496.12	11″×11″	1518A56 644.96	5″×26″	1518A99 694.57	34¾″×33¾″	1518A8 818.60
3	36″×80″	1607A31 382.10	11″×11″	1607A53 496.73	5″×26″	1607A57 534.94	22¾″×29¾″	1607A64 630.47
3	36″×84″	1607A35 394.66	11″×11″	1607A54 513.06	5″×26″	1607A58 552.52	22¾″×33¾″	1607A65 651.19
4	36″×84″	1383A55 394.66	11″×11″	1383A15 513.06	5″×26″	1383A28 552.52	22¾″×33¾″	1383A34 651.19
16-Gauge (0.053″) Doors								
1	32″×80″	14435A43 445.62	11″×11″	14435A143 579.31	5″×26″	14435A169 623.87	18¾″×29¾″	14435A196 735.27
1	32″×84″	14435A44 458.97	11″×11″	14435A144 596.66	5″×26″	14435A173 642.56	18¾″×33¾″	14435A197 757.30
1	36″×80″	14435A45 460.83	11″×11″	14435A145 599.08	5″×26″	14435A174 645.16	22¾″×29¾″	14435A198 760.41
1	36″×84″	14435A46 474.15	11″×11″	14435A146 616.39	5″×26″	14435A175 663.81	22¾″×33¾″	14435A201 782.35
2	36″×80″	1518A21 445.37	11″×11″	1518A57 578.98	5″×26″	1518A3 623.52	22¾″×29¾″	1518A9 734.86
2	36″×84″	1518A25 455.43	11″×11″	1518A58 592.06	5″×26″	1518A4 637.60	22¾″×33¾″	1518A101 751.46
2	48″×84″	1518A42 547.04	11″×11″	1518A79 711.15	5″×26″	1518A5 765.86	34¾″×33¾″	1518A102 902.62
3	36″×80″	1607A41 445.37	11″×11″	1607A55 578.98	5″×26″	1607A59 623.52	22¾″×29¾″	1607A66 734.86
3	36″×84″	1607A45 455.43	11″×11″	1607A56 592.06	5″×26″	1607A63 637.60	22¾″×33¾″	1607A67 751.46
4	36″×84″	1383A65 455.43	11″×11″	1383A19 592.06	5″×26″	1383A29 637.60	22¾″×33¾″	1383A35 751.46

▲ The dimensions listed are the actual glass size. The exposed glass size is slightly smaller. ★ Prepared for four hinges.

Quick-Mount UL Fire-Rated Steel Doors

Half Glass Right-Hand Door (With Included Sub-Frame)

Easy-to-install replacement doors come hung in a sub-frame that anchors into your existing frame. Doors are UL fire-rated and made of zinc-coated galvanized steel with steel internal reinforcements and a gray primer finish. They are 1¾″ thick and have 4½″×4½″ stainless steel ball-bearing hinges with a removable pin and a dull brushed finish. All include a door closer, a door bottom sweep, weatherstripping, a threshold, and mounting hardware.

Doors are handed; you choose either a left-hand or a right-hand door. To determine the handing of your door, stand on the side of the door where the door swings away from you (the push side). If it opens to the left, it's a left-hand door; if it opens to the right, it's a right-hand door. ***Plain doors*** have a mortise lever lockset (cylinder lock is on the pull side of the door). Locks are keyed differently and come with two keys. ***Rectangular-glass*** and ***half-glass doors*** have a touch bar exit device (on the push side of the door) and a lever and a cylinder lock (both on the pull side of the door). Locks are keyed differently and come with two keys. Doors come with a clear ceramic glass window.

To Order: Please specify left or right hand for all doors.

Door Opening, Wd.×Ht.	Plain Doors 1½-hr. Rating	Rectangular-Glass Doors■ 1½-hr. Rating Glass Size		Half-Glass Doors ¾-hr. Rating Glass Size	
18-Gauge (0.042″) Doors					
36″×80″	1378A87 $1,424.62	4″×25″	1378A101 $1,663.13	22″×30″	1378A105 $1,809.94
36″×84″	1378A91 1,433.85	4″×25″	1378A102 1,670.84	22″×34″	1378A106 1,866.38
16-Gauge (0.053″) Doors					
36″×80″	1378A94 1,460.00	4″×25″	1378A103 1,643.39	22″×30″	1378A107 1,832.25
36″×84″	1378A97 1,467.69	4″×25″	1378A104 1,698.64	22″×34″	1378A108 1,888.69

■ Please see UL Fire-Rated Steel Doors on this page for window illustrations.

UL Fire-Rated Steel Door Frames

Made of 16-ga. cold-rolled steel, frames are sized to fit the UL Fire-Rated Steel Doors on page 2882 that have the same style number; just match the style number and Door Ht. Frames are prepared to accept three (unless noted) 0.134″ thick or 0.180″ thick, 4½″×4½″ hinges and a 4⅞″ strike. All have a 2″ face and are reinforced to support a door closer (sold separately, see pages 2914-2917). Shipped unassembled.

Frames are handed; you choose a frame for either a left-hand or a right-hand door. To determine the handing of your door, stand on the side of the door where the door swings away from you (the push side). If it opens to the left, it's a left-hand door; if it opens to the right, it's a right-hand door.

Flush frames are for use in new and existing masonry (brick or block) walls and in instances where the door frame is installed before drywall is in place. Not for use in existing drywall. They have a 5¾″ overall depth to fit a min. 4⅞″ thick wall. Rough opening will be about 4½″ wider and 2¼″ higher (±⅛″) than the door opening dimensions. Come with multipurpose and masonry wire anchors. Fire rated for three hours.

Wrap-around frames are for use where drywall or other material has been hung; they are only for existing walls. All have a 5⅞″ overall jamb depth to fit a maximum 4⅞″ thick wall. Rough opening is about 2¼″ wider and ⅞″ higher (±⅛″) than the door opening dimensions. Furnished with a compression bar anchor installed in the frame. Fire rated for 1½ hours.

Also Available: Additional sizes. Please ask for 1518A999 and specify door opening size (Wd.×Ht.), frame type (flush or wrap-around), handing (left or right), and hinge locations.

Hinge Locations

Door Ht.	(A)	(B)	(C)
Style 1			
80″	1½″	37 7/16″	67⅜″
84″	9½″	39 7/16″	69⅜″
96″♦	5″	30½″	56″
Style 2			
80″	5″	35¼″	65½″
84″	5″	37¼″	69½″
Style 3			
80″	6¾″	37¾″	68¾″
84″	6¾″	39¾″	72¾″
Style 4			
80″	7½″	37 7/16″	67⅝″
84″	7½″	39 7/16″	71⅜″

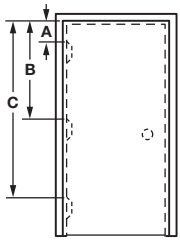

♦ 81½″ to top of fourth hinge cutout (not shown).

Style	Door Opening, Wd.×Ht.	FLUSH FRAMES Left Hand	FLUSH FRAMES Right Hand		WRAP-AROUND FRAMES Left Hand	WRAP-AROUND FRAMES Right Hand	
1	30″×80″	14435A75	14435A74	$140.11	14435A77	14435A76	$147.12
1	30″×84″	14435A79	14435A78	143.57	14435A82	14435A81	150.75
1	32″×80″	14435A55	14435A51	147.11	14435A65	14435A61	154.47
1	32″×84″	14435A56	14435A52	150.73	14435A66	14435A62	158.27
1	36″×80″	14435A57	14435A53	141.40	14435A67	14435A63	148.47
1	36″×84″	14435A58	14435A54	144.30	14435A68	14435A64	151.52
1	36″×96″	14435A69★	14435A99★	161.37	14435A98★	14435A93★	169.44
1	42″×84″	14435A47	14435A48	147.13	14435A85	14435A42	154.49
1	44″×84″	14435A49	14435A59	147.13	14435A83	14435A84	154.49
2	36″×80″	1518A71	1518A72	154.05	1518A73	1518A74	161.75
2	36″×84″	1518A75	1518A76	157.77	1518A77	1518A78	165.66
2	48″×84″	1518A59	1518A19	181.41	1518A69	1518A49	190.48
3	36″×80″	1607A81	1607A82	154.05	1607A83	1607A84	161.75
3	36″×84″	1607A85	1607A86	159.54	1607A87	1607A88	167.52
4	36″×80″	1383A24	1383A25	150.38	1383A26	1383A27	157.90
4	36″×84″	1383A95	1383A96	161.13	1383A97	1383A98	169.19

★ Prepared for four hinges.

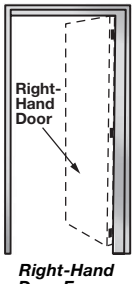

Right-Hand Door Frame

UL Fire-Rated Steel Double Doors and Frames

You'll find these have the same specifications as the steel doors and door frames on this page and the previous page, but in a double-door style. Doors are prepared to accept cylindrical locks and are reinforced to support closers and surface bolts. Install as either left- or right-hand doors. Door hardware and mounting hardware sold separately on this page. Furnished with flat bar weatherstripping to provide a continuous seal between doors. UL fire rated.

Flush frames are for use in new and existing masonry (brick or block) walls and in instances where the door frame is installed before drywall is in place. Not for use in existing drywall. They have a 5¾″ overall depth to fit a minimum 4⅞″ thick wall. Rough opening will be about 4½″ wider and 2¼″ higher (±⅛″) than the door opening dimensions. Furnished with multipurpose and masonry wire anchors. Fire rated for three hours.

Wrap-around frames are for use where drywall or other material has been hung; they are only for existing walls. All have a 5⅞″ overall jamb depth to fit a maximum 4⅞″ thick wall. Rough opening is about 2¼″ wider and ⅞″ higher (±⅛″) than the door opening dimensions. Furnished with a compression bar anchor installed in the frame. Fire rated for 1½ hours.

Hardware sold separately on this page.

Style♠	Door Opening, Wd.×Ht.	PLAIN DOORS, 18 GAUGE, 3-HR. RATING Pair		DOOR FRAMES, 16 GAUGE Flush Frames Each		Wrap-Around Frames Each	
1	60″×80″	15035A11	$793.52	15035A33	$206.67	15035A41	$217.00
1	60″×84″	15035A12	819.56	15035A34	212.89	15035A42	223.53
1	72″×80″	15035A13	814.07	15035A35	217.16	15035A43	228.02
1	72″×84″	15035A14	850.57	15035A36	220.32	15035A44	231.34

♠ See top of this page and previous page for dimensions.

Door Lockset, Strike, and Hinge Sets

Outfit the steel doors on this page and on pages 2882 and 2884. Each set includes a cylindrical Schlage lockset; a standard ANSI 4⅞″ high strike; and 0.134″ thick, 4½″×4½″ full mortise ball bearing template hinges with screws (see page 2986 for information about mortise-mount template hinges). All are reversible for left- and right-hand use. Backset is 2¾″ (the distance from the edge of the door to the center of the lockset's mounting hole).

On ***passage function*** locksets, both knobs/levers are always free turning. Locksets are nonlocking and have a spring latch. ***Entrance function*** knob/lever locksets have a deadlocking latch, a keyed cylindrical Schlage "C" keyway lock on the outside, and a turn button on the inside. Both knobs/levers are free turning until the turn button locks the outside knob/lever. Sets are keyed differently and come with two keys.

See pages 2906-2909 for locksets with other functions and page 2986 for additional hinge selections.

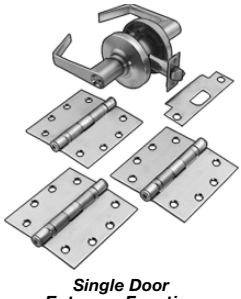

Single Door Entrance Function Lever Lockset with Strike and Hinges

Finish	No. of Hinges	PASSAGE FUNCTION Knob Lockset Set		PASSAGE FUNCTION Lever Lockset Set		ENTRANCE FUNCTION Knob Lockset Set		ENTRANCE FUNCTION Lever Lockset Set	
Single Door Sets—96″ high doors require four hinges									
Prime Coat✓	3	1899A71	$137.14	10275A61	$168.03	1899A53	$186.71	10275A41	$224.63
Dull Chrome	3	1899A73●	117.33	10275A63	152.35	1899A63●	175.77	10275A43	208.95
Dull Stainless Steel	3	1899A74	213.37	—	—	1899A61	263.29	—	—
Dull Chrome■	4	1899A82●	124.97	10275A34	155.75	1899A86●	179.16	10275A38	210.10
Double Door Sets									
Prime Coat✓	6	1899A76	163.05	10275A66	250.77	1899A55	206.72	10275A51	272.39
Dull Chrome	6	1899A78●	149.50	10275A68	261.28	1899A65●	205.42	10275A53	230.02
Dull Stainless Steel	6	1899A79	294.54	—	—	1899A67	332.16	—	—

✓ Lockset and strike are dull bronze. ●Strike is powder-coated steel. Color is silver. ■ For 96″ high doors.

Quick-Mount Stainless Steel Doors

Left-Hand Door

All of these doors come hung in a sub-frame that you anchor into your existing frame. Because both the doors and frames are made of stainless steel, units are well-suited for corrosive and high-moisture environments as well as clean rooms and laboratories.

Units are not fire rated (nonlabeled) but have full-perimeter weatherstripping and full thermal break (a channel filled with a high-density polyurethane foam that completely separates the inside and outside panels).

Frames are 16-ga. stainless steel and 3½″ wide; doors are lightweight 24-ga. stainless steel.

Choose from left- and right-hand doors. To determine the handing of your door, stand on the side of the door where the door swings away from you (the push side). If it opens to the left, it's a left-hand door; if it opens to the right, it's a right-hand door.

All doors are 1¾″ thick and come with 0.125″ thick, 4″×4″ stainless steel ball bearing hinges and an adjustable strike plate. Doors are prepared to accept either a knob or lever cylindrical lockset (not included; see page 2906) with a 2¾″ backset (the distance from the edge of the door to the center of the lockset's mounting hole).

Type 316 stainless steel doors provide greater corrosion resistance.

Door Opening, Wd.×Ht.	Actual Size, Wd.×Ht.	*Left Hand*	*Right Hand*	
Type 304 Stainless Steel				
30″×80″	32⅝″×81 7/16″	10365A12	10365A11	$1,337.85
32″×80″	34⅝″×81 7/16″	10365A22	10365A21	1,337.85
36″×80″	38⅝″×81 7/16″	10365A32	10365A31	1,337.85
36″×84″	38⅝″×85 7/16″	10365A42	10365A41	1,284.76
48″×84″	49⅜″×85 7/16″	10365A52	10365A51	1,803.82
Type 316 Stainless Steel				
36″×80″	38⅝″×81 7/16″	1677A48	1677A55	1,514.54
36″×84″	38⅝″×85 7/16″	1677A49	1677A57	1,578.34

One-Way Security Door Viewers

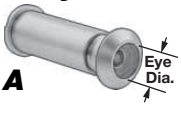

A

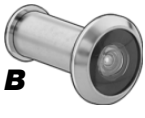

B

You can see out, yet no one can see in. Installation is easy; just drill a hole in your door and insert a viewer. All have optical glass lenses and are UL listed for use on fire doors rated up to 1½ hours. Made of solid brass. ***Style A*** viewers require a ½″ dia. mounting hole. ***Style B*** viewers require a 9/16″ dia. mounting hole.

	For Door Thickness	Eye Dia.	Angle of View	Finish		
A	1⅜″ to 2 1/16″	⅝″	120°	Dull Brass	8406A22	$7.65
A	1⅜″ to 2 1/16″	⅝″	120°	Dull Chrome	8406A26	7.65
A	2⅛″ to 2⅝″	⅝″	120°	Dull Brass	8406A24	11.25
B	1⅜″ to 2⅛″	1″	190°	Dull Chrome	8406A21	15.57
B	1⅜″ to 2⅛″	1″	190°	Bright Brass	8406A12	12.26

Weather-Tight Mail Slots

Mail Slot

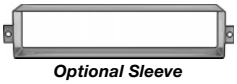

Optional Sleeve

Create a mail pass-through in your door. Slots have a spring-loaded front cover and an open back. Furnished with sheet metal screws for mounting.

Optional sleeve is for use with the magazine-size slots and 1¾″ thick doors. Made of Type 304 stainless steel. Furnished with sheet metal screws for mounting.

Mail Slots

Finish/Material

Magazine Size—11″ Wd.×2″ Ht. Slot Opening		
Dull Aluminum	8023A1	$29.44
Bright Brass	8023A6	47.15
Letter Size—8¾″ Wd.×2¾″ Ht. Slot Opening		
Chrome/Brass	8023A11	32.50
Bright Brass	8023A24	32.50

Optional Sleeve

	Wd.×Ht.×Dp.		
Magazine Size	11½″×2 11/16″×1¾″	8023A4	$11.45

Blank Steel Doors

Start with a blank canvas—doors are similar to the 14435A steel doors on page 2882, except they are not prepared for hinges and locksets and are not fire rated (nonlabeled). Use standard shop tools to customize doors to fit your existing frame and door hardware.

Doors are 1¾″ thick with a solid polystyrene core and gray primer finish. All are reinforced at the top to support a door closer (see pages 2914-2917). Instructions are included. For door hardware, see 1899A and 10275A on page 2883. Use an ***optional continuous hinge*** (sold separately below) to reduce door sag and deflection.

Doors

Door Opening, Wd.×Ht.

18-Gauge Doors		
36″×80″	14515A61	$414.46
36″×84″	14515A71	425.41
16-Gauge Doors		
36″×80″	14515A87	471.36
36″×84″	14515A91	485.25

Optional Continuous Hinge

Mount the blank doors above with this anodized aluminum geared continuous hinge. Designed for easy installation, it minimizes door sag and deflection. It's 83″ long and has a maximum capacity of 320 lbs.

Hinge has punched and countersunk holes and comes with snap-on security molding and mounting screws. Minimum clearance between jamb and door is 1/32″.

For more information about load-rated aluminum geared hinges, see page 2982.

1382A23 ..... $242.64

Door Window and Frames

See what's on the other side of the door before you open it. For use in 1¾″ thick doors.

Window with Glass

Window frame is 18-ga. cold-rolled steel with a gray primer finish and corrosion-resistant sealer. Viewing window is ½″ thick clear polycarbonate. Furnished with hardware and 2.8 oz. tube of silicone glazing.

Viewing Area, Wd.×Ht.	Rough Opening, Wd.×Ht.		
6″×6″	9″×9″	3903A24	$151.71

Frames without Glass

Made of 20-ga. cold-rolled steel with a gray primer finish, these frames are UL listed and accept ¼″ thick glass (not included).

Note: Actual glass size should be 1″ wider and higher than viewing area listed. (Glass not included.)

Viewing Area, Wd.×Ht.	Rough Opening, Wd.×Ht.		
3″×33″	5″×35″	1361A1	$59.62
4″×25″	6″×27″	1361A2	54.00
5″×20″	7″×22″	1361A3	48.86
10″×10″	12″×12″	1361A4	46.45
22″×28″	24″×30″	1361A5	69.43
24″×30″	26″×32″	1361A6	78.86

Heat-Resistant Observation Windows

Monitor the contents of tanks, silos, and other vessels, or simply see what's on the other side of a door. Windows are not rated for pressure. They are made of ¼″ thick borosilicate glass with a temperature range of –20° to +446°F. All have a bolt-on mounting flange that's made of ⅛″ thick carbon steel with a rust-resistant gray painted finish. Furnished with a mounting flange gasket. Mounting hardware not included.

Viewing Area Dia.	O'all Dia.	Rough Opening Dia.	Proj.	Mounting Hole Qty.	Mounting Hole Dia.		
3 9/16″	7⅛″	5 27/32″	1″	6	9/32″	1006A4	$728.57
5 9/16″	9⅝″	7 29/32″	1¼″	6	11/32″	1006A6	910.71
7 9/16″	11⅝″	9 29/32″	1¼″	8	11/32″	1006A8	1,095.00

Clear Flexible Vinyl Swinging Doors

You can see right through these 1/8″ thick clear PVC doors. Their clarity makes them a good alternative to strip doors. All are double-door style and have PVC strips at the top to ensure a proper seal. Suitable for USDA-inspected facilities. Furnished with two heavy duty cast aluminum hinges, mounting hardware, and instructions. Temperature range is 20° to 160° F.

For Door Opening, Wd. × Ht.		
3 ft. × 6′6″	12645A61	$494.44
3 ft. × 7 ft.	12645A69	437.70
4 ft. × 6′6″	12645A62	524.07
6 ft. × 7 ft.	12645A64	748.33
6 ft. × 8 ft.	12645A68	748.33
8 ft. × 8 ft.	12645A65	699.85

Aluminum Swinging Doors

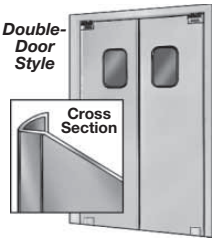

Double-Door Style

Made of tempered, 0.063″ thick aluminum alloy, doors are light in weight and open with a slight push. They gently close behind you via a gravity hinge. Doors are durable yet semiflexible to absorb initial impact. All have a dull anodized finish. Each door has a clear acrylic window that is secured with black rubber molding.

Doors mount flush to the jamb with 3/8″ clearance between the hinge and the jamb as well as 3/4″ clearance above, below, and between doors. The lower hinge bracket usually mounts to the floor, but it can be mounted on the jamb to allow extra space below the doors. Mounting hardware (included) includes a reinforcement bracket that extends 6″ from the jamb. Furnished with instructions.

Single-Door Style— Reversible for left- and right-hand doors.

Also Available: Additional sizes. Please ask for 8138A999 and specify single- or double-door style, door opening size, and window size.

For Door Opening, Wd. × Ht.	Window Size, Wd. × Ht.		
Single-Door Style			
2′6″ × 6′8″	9″ × 14″	8138A2	$439.29
3 ft. × 6′8″	9″ × 14″	8138A4	478.57
3 ft. × 7 ft.	9″ × 14″	8138A6	478.57
Double-Door Style			
4 ft. × 6′8″	9″ × 14″	8138A21	818.18
4 ft. × 7 ft.	9″ × 14″	8138A22	818.18
5 ft. × 6′8″	9″ × 14″	8138A24	878.57
5 ft. × 7 ft.	9″ × 14″	8138A25	878.57
5 ft. × 8 ft.	9″ × 14″	8138A32	892.86
6 ft. × 6′8″	9″ × 14″	8138A23	930.88
6 ft. × 7 ft.	9″ × 14″	8138A26	930.88
6 ft. × 8 ft.	9″ × 14″	8138A34	954.84

Swinging Divider Gates

Double Gate

Use gates to separate areas where you don't need a full-size door. Push gates open and a gravity hinge returns them to the closed position. For indoor use.

Overall thickness is 3/4″. Gates have a polypropylene core with an 1/8″ thick ABS thermoplastic outer layer for impact resistance. All have a gray textured finish. Surface or jamb mount. Furnished with mounting hardware and instructions.

Single Gates— Reversible for left- and right-hand mounting.

Double Gates— Have a padlock hasp so you can lock the gates together at the center. Hasp accepts up to a 1/2″ dia. shackle (padlock not included, see pages 2932-2944).

For Door Opening, Wd.	Gate Size, Wd. × Ht.		
Single Gates			
30″	29 3/8″ × 36″	96980A910	$601.85
36″	35 3/8″ × 36″	96980A930	601.85
Double Gates			
48″	23 3/8″ × 36″ per Gate	96980A950	982.76
60″	29 3/8″ × 36″ per Gate	96980A990	1,172.41
72″	35 3/8″ × 36″ per Gate	96980A970	1,172.41

Top-Hinge Flexible Swinging Doors

Double-Door Style

Doors flex and open when they're hit, then return to their closed position. Each door has a gravity hinge that attaches to an existing door frame at the top of the jamb—this allows you to swing the door up and out of the way.

Lightweight yet tough, doors are made of 1/4″ thick opaque PVC. Windows are clear 1/4″ thick PVC so you can see traffic on the other side. Suitable for USDA-inspected facilities.

Hinges are zinc plated and have 3/8″ dia. mounting holes (fasteners not included). You can trim doors with shears or a utility knife to accommodate uneven floors. Furnished with instructions. Temperature range is –10° to +150° F.

Note: Not recommended for door frames that are 5″ thick or more.

Single-Door Style— Reversible for left- and right-hand doors.

Double-Door Style— Panels overlap 2″ at the center of the doors so you can trim them to fit out-of-square openings.

Also Available: Additional sizes. Please ask for 1027A999 and specify single- or double-door style, door opening size, and gray or forest green color.

For Door Opening, Wd. × Ht.	Window Size, Wd. × Ht.	Gray		Forest Green	
Single-Door Style					
3 ft. × 7 ft.	15″ × 18″	1027A69	$906.08	1027A49	$906.08
4 ft. × 7 ft.	15″ × 18″	1027A71	1,131.71	1027A81	1,131.71
4 ft. × 8 ft.	15″ × 18″	1027A79	1,155.33	1027A89	1,155.33
Double-Door Style					
5 ft. × 7 ft.	15″ × 18″	1027A72	1,357.31	1027A82	1,357.31
5 ft. × 8 ft.	15″ × 18″	1027A73	1,461.02	1027A83	1,461.02
6 ft. × 7 ft.	15″ × 18″	1027A76	1,630.01	1027A86	1,630.01
6 ft. × 8 ft.	15″ × 18″	1027A74	1,697.74	1027A84	1,697.74
8 ft. × 8 ft.	15″ × 18″	1027A75	2,136.31	1027A85	2,136.31
8 ft. × 9 ft.	15″ × 18″	1027A77	2,259.94	1027A87	2,259.94

Extra Heavy Duty Swinging Doors

Double-Door Style

Built tough to handle daily forklift traffic, doors are 1 7/8″ thick and have one-piece molded construction with steel internal reinforcements. All have a light gray polyethylene outer skin and 42″ high polyethylene bumpers that project 4″ from the door surface both front and back. Doors have an insulated, urethane-filled core that can withstand refrigeration applications with temperatures down to –40° F. They're also ideal for washdown applications.

Each door has a recessed, abrasion-resistant, 1/8″ thick clear polycarbonate window with black frame. Gravity hinges control the door as it closes. Gasketing on door perimeter offers an effective seal. Furnished with mounting hardware and instructions.

Single-Door Style— Reversible for left- and right-hand doors.

For Door Opening, Wd. × Ht.	Window Size, Wd. × Ht.		
Single-Door Style			
3 ft. × 7 ft.	20 1/2″ × 22 1/2″	1346A43	$1,581.67
4 ft. × 7 ft.	20 1/2″ × 22 1/2″	1346A23	1,678.69
4 ft. × 8 ft.	20 1/2″ × 22 1/2″	1346A33	1,747.54
Double-Door Style			
5 ft. × 7 ft.	14 1/2″ × 22 1/2″	1346A14	2,668.18
5 ft. × 8 ft.	14 1/2″ × 22 1/2″	1346A15	2,797.74
6 ft. × 7 ft.	20 1/2″ × 22 1/2″	1346A16	2,872.73
6 ft. × 8 ft.	20 1/2″ × 22 1/2″	1346A17	2,961.19
8 ft. × 8 ft.	20 1/2″ × 22 1/2″	1346A18	3,575.36
8 ft. × 10 ft.	20 1/2″ × 22 1/2″	1346A19	4,023.20

Curved Polyethylene Door Bumpers

Protect doors from cracks and scratches resulting from contact with objects and vehicles. Made of polyethylene, bumpers (shown on the Extra Heavy Duty Swinging Doors on this page) have a small amount of "give"; the curve in the bumper projects from your door and absorbs the force of the impact. Bumpers have mounting holes and surface mount to door. Furnished with mounting hardware. Temp. range is –40° to +180° F.

Note: We recommend choosing a bumper with a width that is at least 2″ narrower than the overall width of your door. This will prevent the bumper from interfering with the opening and closing of your door.

For Door Panel Wd.	Size, Wd. × Ht.	Projection	Thick.		
30″	24 1/4″ × 24″	3″	1/4″	91371A700	$123.08
36″	30 1/2″ × 24″	3″	1/4″	91371A900	123.08
36″	31″ × 42″	4″	1/4″	91371A300	252.63
48″	41″ × 42″	4″	1/4″	91371A500	252.63
54″	41″ × 42″	4″	1/4″	91371A800	252.63

Folding Gates

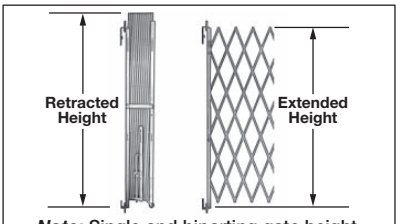

Note: Single and biparting gate height drops 6″ when fully extended.

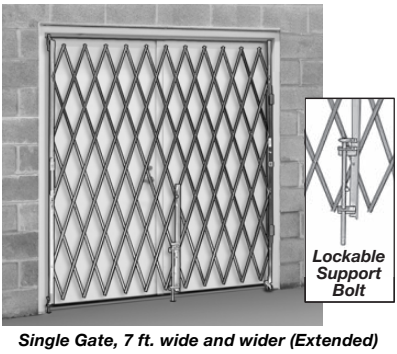

Single Gate, 7 ft. wide and wider (Extended)

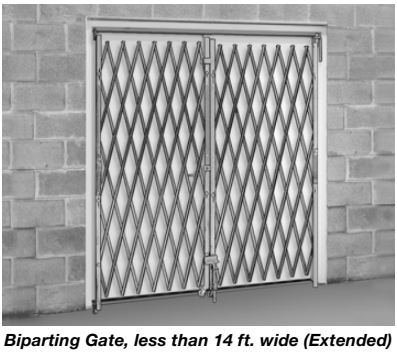

Biparting Gate, less than 14 ft. wide (Extended)

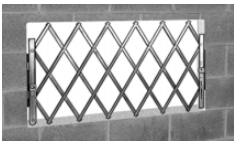

Window Gate (Extended)

Control access to selected areas without sacrificing visibility and air circulation. Folding gates are great for corridors, docks, windows, and doorways. All have a galvanized steel universal bracket that allows them to be surface or jamb mounted. When not in use and fully retracted, gates can swing out of the way, leaving you an unobstructed path. Gates come with mounting instructions and a padlock hasp that accepts up to a 5/8″ dia. shackle (padlock not included; see pages 2932-2944). For indoor and outdoor use.

Steel Gates— Have a galvanized finish for corrosion resistance. Frame is made of 12-ga. 1½″ × 1½″ angles. Mesh has a criss-cross design; it's made of 14-ga. ¾″ Wd. × ⅜″ Dp. U-channels that are riveted back-to-back with aluminum rivets.

Aluminum Gates— Lighter in weight than steel gates with greater corrosion resistance. Frame is made of 15-ga. 1½″ × 1½″ angles. Mesh has a criss-cross design; it's made of 14-ga. ¾″ Wd. × ⅜″ Dp. U-channels that are riveted back-to-back with aluminum rivets.

Single gates mount left and lock on the right (right side is determined by facing the gate from the outside). They have a 2″ dia. steel caster and a ⅛″ thick locking bar. Gates 7-ft. wide and wider have a lockable support bolt in the center of the gate for extra stability; support bolt has a padlock hasp that accepts up to a ½″ dia. shackle (padlock not included, see pages 2932-2944).

Biparting gates mount on each side of the doorway and lock together in the center. They come with two 2″ dia. steel casters. Gates 14-ft. wide and wider have a lockable support bolt on each half of the gate for extra stability; support bolts have a padlock hasp that accepts up to a ½″ dia. shackle (padlock not included, see pages 2932-2944). To mount biparting gates adjacent to existing overhead door rails, order a pair of extension brackets, sold separately below.

Window gates mount on the left or right side. *Note:* Gate height drops 1″ per linear foot when extended. For example, 31″ height drops to 28″ high when extended to cover a 3-ft. wide opening.

Single and Biparting Steel Gates

Max. Extended Width	Retracted Width Left	Retracted Width Right	6½ ft. Retracted Ht.	Each	7½ ft. Retracted Ht.	Each	8½ ft. Retracted Ht.	Each
Single Gates								
4 ft.	11″	—	**6710T41**	$180.30	**6710T42**	$207.34	**6710T43**	$225.38
5 ft.	11″	—	**6710T44**	177.84	**6710T45**	204.52	**6710T46**	222.30
6 ft.	11″	—	**6710T51**	182.80	**6710T52**	210.22	**6710T53**	228.50
7 ft.	11″	—	**6710T54**	213.40	**6710T55**	245.41	**6710T56**	266.75
8 ft.	15″	—	**6710T57**	220.71	**6710T58**	253.82	**6710T59**	275.89
9 ft.	15″	—	**6710T61**	269.77	**6710T62**	310.24	**6710T63**	337.21
10 ft.	15″	—	**6710T64**	277.95	**6710T65**	319.64	**6710T66**	347.44
Biparting Gates♣				**Pair**		**Pair**		**Pair**
6½ ft.	11″	11″	**6751T11**	$256.73	**6751T21**	$295.24	**6751T31**	$320.91
8 ft.	11″	11″	**6751T12**	261.34	**6751T22**	300.54	**6751T32**	326.67
10 ft.	11″	11″	**6751T13**	277.17	**6751T23**	318.75	**6751T33**	346.46
12 ft.	11″	11″	**6751T14**	298.36	**6751T24**	343.11	**6751T34**	372.95
14 ft.	11″	11″	**6751T15**	340.53	**6751T25**	391.61	**6751T35**	425.66
16 ft.	15″	15″	**6751T16**	388.05	**6751T26**	446.26	**6751T36**	485.06
18 ft.	15″	15″	**6751T17**	459.33	**6751T27**	528.23	**6751T37**	574.16
20 ft.	15″	15″	**6751T18**	522.69	**6751T28**	601.09	**6751T38**	653.36

♣ Maximum extended width includes both halves of gate.

Single and Biparting Aluminum Gates

Max. Extended Width	Retracted Width Left	Retracted Width Right	6½ ft. Retracted Ht.	Each	7½ ft. Retracted Ht.	Each	8½ ft. Retracted Ht.	Each
Single Gates								
4 ft.	11″	—	**4151A15**	$541.67	**4151A25**	$622.92	**4151A35**	$677.09
6 ft.	11″	—	**4151A11**	678.03	**4151A21**	779.73	**4151A31**	847.54
8 ft.	15″	—	**4151A14**	892.92	**4151A24**	1,026.86	**4151A34**	1,116.15
10 ft.	15″	—	**4151A17**	1,232.48	**4151A27**	1,417.35	**4151A37**	1,540.60
Biparting Gates ♣				**Pair**		**Pair**		**Pair**
8 ft.	11″	11″	**4151A12**	$1,105.22	**4151A22**	$1,271.00	**4151A32**	$1,381.53
10 ft.	11″	11″	**4151A13**	1,211.25	**4151A23**	1,392.94	**4151A33**	1,514.06

♣ Maximum extended width includes both halves of gate.

Steel Window Gates

Max. Extended Width	Retracted Ht.★	Retracted Width		Each	Max. Extended Width	Retracted Ht.★	Retracted Width		Each
4 ft.	31″	7″	**6747T12**	$84.48	4 ft.	49″	7″	**6747T18**	$115.42
4 ft.	33″	7″	**6747T13**	86.94	4 ft.	59″	7″	**6747T42**	122.09
4 ft.	37″	7″	**6747T14**	90.62	4 ft.	61″	7″	**6747T23**	131.27
4 ft.	40″	7″	**6747T15**	96.60	4 ft.	63″	7″	**6747T24**	133.68
4 ft.	43″	7″	**6747T16**	105.83	4 ft.	66″	7″	**6747T25**	141.17
4 ft.	46″	7″	**6747T17**	109.35	4 ft.	71″	7″	**6747T27**	144.19

★ Gate height drops 1″ per linear foot extended.

Extension L-Brackets

Allow biparting gates to clear overhead door rails and other obstacles. Brackets project 9″ from the wall and provide 7¼″ of clearance. Made of galvanized steel. Furnished with bearing washers.

6751T44 ..... **Pair** $68.72

Portable Folding Gate

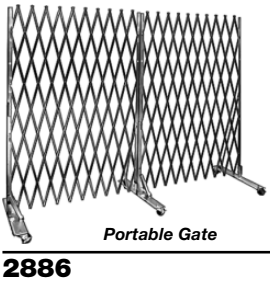

Portable Gate ***Add-On Unit***

Here's a portable way to control access. Gate has six 3″ dia. rubber casters on 28″ axles, so it's easy to roll anywhere. All casters have side wheel brakes. To store, simply retract gate and roll it into a closet or lock it to a wall. Gate has a padlock hasp that accepts up to a 5/8″ dia. shackle (padlock not included; see pages 2932-2944).

Frame is made of 12-ga. galvanized steel angles (1½″ × 1½″). Mesh has a criss-cross design; it's made of 14-ga. galvanized steel U-channels (¾″ Wd. × ⅜″ Dp.) that are riveted back-to-back with aluminum rivets. The galvanized finish on this gate gives it corrosion resistance for indoor and outdoor use. ***Add-on unit*** bolts to end of gate to add up to 6 feet of width. Includes two casters and hardware to bolt it to the gate.

	Extended Max. Wd.	Extended Ht.	Retracted Wd.	Retracted Ht.		
Portable Gate	12 ft.	6 ft.	27″	78″	**6692T51**	$549.85
Add-On Unit	6 ft.	6 ft.	11″	78″	**6692T52**	317.52

Rolling Curtain Overhead Steel Service Doors

Doors have few moving parts, so little maintenance is required. All are made of roll-formed 26-ga. galvanized steel sheeting that's primed white on both sides for extra corrosion protection. Doors have felt wear strips on the curtain to provide smooth, quiet operation. Bottom bar is extruded aluminum with a full-length steel angle that provides reinforcement; bar also has weatherstripping to seal the gap between the door and the ground. Tracks and guides are 14-ga. steel. Furnished with a slide bolt you can add to the interior side of the door for extra security. For indoor and outdoor use.

Mount doors on the inside of the wall on wood, steel, or masonry jambs. You can mount chain-operated or rope-operated controls on either the left or right side. Door curtains are assembled and include chain (rope for 1200A61), mounting hardware for steel jambs, a set of guides that you attach during installation, and instructions.

Chain Operated— Requires little force to open and close and can be opened to intermediate heights.

For electric roll-up openers, see page 2918.

Also Available: Additional sizes. Please ask for 1200A999 and specify width and maximum height of door opening, required ceiling clearance, and chain operated or rope operated.

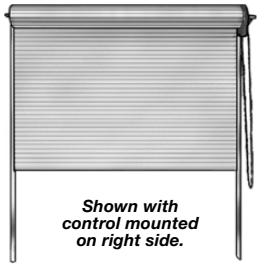

Shown with control mounted on right side.

Door Opening Width	Door Opening Max. Ht.▲	Required Ceiling Clearance		
Chain Operated				
8 ft.	10 ft.	19″	1200A78	$889.60
9 ft.	10 ft.	19″	1200A83	950.94
10 ft.	10 ft.	19″	1200A79	1,030.19
10 ft.	12 ft.	21″	1200A74	1,118.01
10 ft.	14 ft.	23″	1200A81	1,268.36
12 ft.	10 ft.	19″	1200A75	1,190.57
12 ft.	12 ft.	21″	1200A76	1,292.45
12 ft.	14 ft.	23″	1200A82	1,404.46

▲Guides and tracks may be cut to intermediate heights.

Door Opening Width	Door Opening Max. Ht.▲	Required Ceiling Clearance		
Rope Operated				
8 ft.	8 ft.	19″	1200A61	$711.32

Adapter Kit with #41 Chain Sprocket Gear— When using an automatic door operator (jackshaft) with the doors listed at left and above, you must also order this kit. Includes gear sprockets.

1200A91 ..... $86.54

Track-Mounted Accordion Doors and Room Dividers

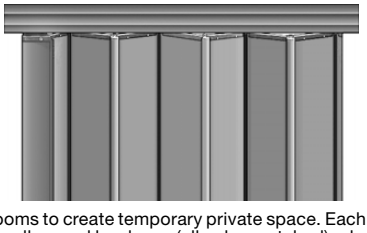

Partition rooms to create temporary private space. Each door comes with track, handles, and hardware (all color-matched), plus installation instructions. Doors are single-door style and have a handle on one end to open and close the door. For indoor use.

Vinyl— Made of rigid vinyl, doors have self-mating integral hinges, PVC posts, and interlocking jamb molding. All come with a magnetic latch. You can easily trim doors with a fine-tooth hacksaw to fit the height of your opening.

Premium Vinyl Laminated— These durable doors have a fiberwood core, steel hinges, aluminum posts, and aluminum interlocking jamb molding. They also have ball bearing wheels and a thumb-turn latch that operates from either side of the door.

Also Available: Custom vinyl doors. Please ask for 8449A999 and specify single- or double-door style. (Double door is split in the middle, mounts to both sides of the opening, and has a handle on each side to open and close that side.) Also specify width, height, and color (white, dark brown, or tan).

Also Available: Custom premium vinyl laminated doors. Please ask for 10265A999 and specify single- or double-door style. (Double door is split in the middle, mounts to both sides of the opening, and has a handle on each side to open and close that side.) Also specify width, height, and color (white, walnut, or light oak).

Vinyl

For Door Opening, Wd. × Ht.	White Color	Dark Brown Color	Tan Color	Each
2′8″ × 6′8″	8449A51	8449A61	8449A43	$186.39
3′0″ × 6′8″	8449A68	8449A62	8449A46	205.16
3′6″ × 6′8″	8449A69	8449A63	8449A52	239.44
4′0″ × 6′8″	8449A7	8449A64	8449A57	258.56
4′6″ × 8′0″	8449A75	8449A65	8449A58	332.76
5′0″ × 6′8″	8449A76	8449A66	8449A59	336.65
5′0″ × 8′0″	8449A77	8449A67	8449A6	372.41
6′0″ × 7′0″	8449A22	8449A24	8449A54	398.28

Premium Vinyl Laminated

For Door Opening, Wd. × Ht.	White Color	Walnut Color	Light Oak Color	Each
3′0″ × 6′8″	10265A42	10265A22	10265A32	$318.75
3′6″ × 6′8″	10265A43	10265A23	10265A33	425.00
4′0″ × 6′8″	10265A44	10265A24	10265A34	425.00
5′0″ × 6′8″	10265A46	10265A26	10265A36	531.25

Premium Vinyl Laminated Color Sample Pack— Includes three 3½″ × 5″ chips, one of each color (white, walnut, and light oak).

10265A55 ..... Pkg. $2.10

Overhead Screen Doors

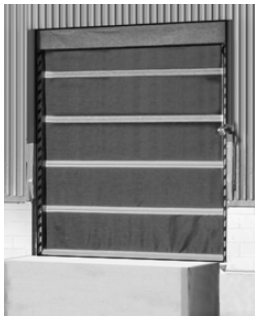

Leave your dock doors open to let light and fresh air into your facility while keeping insects out. Screens are made of an open weave, blue vinyl-coated polyester mesh that resists mildew, stains, and ultraviolet light. Mesh has 17 × 11 openings per sq. in. and is suitable for USDA-inspected facilities. All the screens have ¾″ dia. rods in yellow vinyl pockets spaced 2 ft. to 3 ft. apart for extra support.

Screens come with a 3″ dia. roller tube; roller tube mounting brackets; 1″ Wd. × 4″ Dp. × ⅛″ Thick. aluminum C-channel track; guide track mounting brackets; and top, bottom, and side seals. Mount inside the door jamb.

Manually Operated— Have a spring-loaded roller tube that allows you to lift and lower the screen.

Motor Powered— Has a single-phase, 115 VAC motor in the roller tube and a 6′9″ power cord with three-prong plug. Furnished with a wall switch.

For Door Opening, Wd. × Ht.		
Manually Operated		
8 ft. × 8 ft.	1188A11	$1,262.24
8 ft. × 10 ft.	1188A12	1,315.85
9 ft. × 10 ft.	1188A13	1,369.47
10 ft. × 10 ft.	1188A14	1,385.11
Motor Powered		
10 ft. × 12 ft.	1188A16	1,858.72

Insulated Extra-Large Access Door

Great for ducts and equipment housings, doors are filled with 1″ of fiberglass insulation and are rated for static pressures up to 4.5″ water gauge. Maximum temperature is 125° F. Door panel is made of 24-ga. galvanized steel. Door panel frame and mounting frame are made of 0.06″ thick extruded aluminum. Mounting frame has a 1⅜″ wide flange and neoprene gasketing.

Doors have a zinc-plated steel continuous hinge that is reversible for left- and right-hand mounting. Handles are shipped loose for attaching during installation. There are working handles on both sides of the door. Drill mounting holes in the mounting flange or door frame and surface mount the door (fasteners not included). Opening should be framed to provide support.

Fits Opening Size, Wd. × Ht. × Dp.	Door Size, Wd. × Ht.	No. of Handles		
18¼″ × 48¼″ × 1½″	18″ × 48″	2	10165A62	$245.28
18¼″ × 60¼″ × 1½″	18″ × 60″	3	10165A63	264.15
24¼″ × 48¼″ × 1½″	24″ × 48″	2	10165A64	264.15

Recess-Mount Metal Access Doors

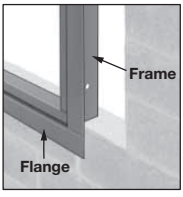

Standard

Standard with Key Lock

Tight Seal

Fire Rated

Drywall

Insulated

Gain easy access to pipes, pumps, electrical wiring, and other controls. Doors have frames that recess into walls and ceilings. The frames have mounting holes; fasteners are not included. All doors have a flange that hides the edge of a rough opening. ***Steel*** doors have a gray primer finish. ***Type 304 stainless steel*** doors and ***aluminum*** doors have a dull finish.

Standard— Can be installed in masonry, tile, plaster, drywall, metal, and wood. Doors have a concealed continuous hinge and flush-mounted, screwdriver-operated cam latches. **Also Available:** Additional door sizes. Please ask for 8143A2 for steel or 8450A999 for stainless steel and specify door size (height × width).

Standard with Key Lock— Doors have a five-pin cylinder lock and come with two keys. Locks are keyed alike (each lock opens with the same key). Can be installed in masonry, tile, plaster, drywall, metal, and wood. All have a concealed continuous hinge.

Tight Seal— Doors have a 1/2″ thick EPDM gasket to provide a tight seal—great for clean rooms and laboratories. Can be installed in masonry, tile, plaster, drywall, metal, and wood. All have a continuous hinge and a turn-to-latch knob.

Fire Rated— All of these doors contain 2″ of fire-rated insulation. When installed in fire-rated walls and ceilings, doors maintain fire barrier ratings—UL rated for 1 1/2 hours for wall installation; Warnock-Hersey 1-hour combustible and 3-hour noncombustible rating in floors/ceilings (unless noted). Can be installed in masonry, tile, plaster, drywall, and metal. Doors have a continuous hinge and universal latches that have both turn ring and flush key operation. Frames have an interior release latch and anchor straps.

Drywall— For use in walls and ceilings. Doors have a textured frame and a bead flange that allows you to apply enough joint compound to cover the flange. All have a concealed continuous hinge and flush-mounted, screwdriver-operated cam latches.

Insulated— Suitable for interior and exterior applications, doors have 3/4″ polystyrene insulation to protect against moisture and corrosion. Can be installed in masonry, tile, plaster, drywall, metal, and wood. Doors have two concealed pin hinges, except 1369A16 and A17, which have a continuous hinge. All have flush mounted, screwdriver-operated cam latches.

Fits Opening Size, Ht. × Wd. × Dp.	Door Size, Ht. × Wd.	Flange Width	No. of Latches	Gauge Door	Gauge Frame	Mounting Hole Dia.	Steel		Type 304 Stainless Steel	
Standard										
6 3/8″ × 6 3/8″ × 2″	6″ × 6″	3/4″	1	14	16	1/4″	8143A13	$27.16	8450A19	$45.71
8 3/8″ × 8 3/8″ × 2″	8″ × 8″	3/4″	1	14	16	1/4″	8143A11	27.16	8450A21	55.52
10 3/8″ × 10 3/8″ × 2″	10″ × 10″	3/4″	1	14	16	1/4″	8143A14	32.10	8450A27	63.78
12 3/8″ × 12 3/8″ × 2″	12″ × 12″	3/4″	1	14	16	1/4″	8143A12	32.10	8450A22	73.92
14 3/8″ × 14 3/8″ × 2″	14″ × 14″	3/4″	1	14	16	1/4″	8143A16	37.04	8450A28	91.36
16 3/8″ × 16 3/8″ × 2″	16″ × 16″	3/4″	1	14	16	1/4″	8143A15	40.35	8450A23	99.37
18 3/8″ × 18 3/8″ × 2″	18″ × 18″	3/4″	2	14	16	1/4″	8143A17	45.31	8450A24	114.09
24 3/8″ × 18 3/8″ × 2″	24″ × 18″	3/4″	2	14	16	1/4″	8143A18	58.44	8450A31	162.00
24 3/8″ × 24 3/8″ × 2″	24″ × 24″	3/4″	3	14	16	1/4″	8143A19	63.41	8450A25	170.84
30 3/8″ × 22 3/8″ × 2″	30″ × 22″	3/4″	5	14	16	1/4″	8143A22	81.18	8450A32	211.42
30 3/8″ × 30 3/8″ × 2″	30″ × 30″	3/4″	5	14	16	1/4″	8143A32	96.39	8450A43	224.34
36 3/8″ × 24 3/8″ × 2″	36″ × 24″	3/4″	5	14	16	1/4″	8143A21	95.56	8450A26	229.84
36 3/8″ × 36 3/8″ × 2″	36″ × 36″	3/4″	5	14	16	1/4″	8143A33	119.37	8450A44	268.31
48 3/8″ × 24 3/8″ × 2″	48″ × 24″	3/4″	6	14	16	1/4″	8143A31	133.36	8450A42	297.17
Standard with Key Lock										
12 3/8″ × 12 3/8″ × 1 3/4″	12″ × 12″	1″	1	16	16	7/32″	8143A43	148.07	8143A53★	224.77
16 3/8″ × 16 3/8″ × 1 3/4″	16″ × 16″	1″	1	16	16	7/32″	8143A45	159.00	8143A55★	247.73
18 3/8″ × 18 3/8″ × 1 3/4″	18″ × 18″	1″	1	16	16	7/32″	8143A47	163.41	8143A57★	257.49
24 3/8″ × 24 3/8″ × 1 3/4″	24″ × 24″	1″	4	16	16	7/32″	8143A49	187.61	8143A59★	415.91
Tight Seal										
12 3/8″ × 12 3/8″ × 2″	12″ × 12″	1 1/4″	1	16	16	1/4″	1370A21	133.08	1370A31	263.50
18 3/8″ × 18 3/8″ × 2″	18″ × 18″	1 1/4″	1	16	16	1/4″	1370A22	143.83	1370A32	311.83
24 3/8″ × 24 3/8″ × 2″	24″ × 24″	1 1/4″	2	16	16	1/4″	1370A23	201.67	1370A33	392.50
36 3/8″ × 24 3/8″ × 2″	36″ × 24″	1 1/4″	2	16	16	1/4″	1370A24	247.33	1370A34	483.92
Fire Rated										
8 3/8″ × 8 3/8″ × 2 1/2″▲	8″ × 8″	1″	1	20	16	1/4″	1124A31	86.05	1083A43	148.65
10 3/8″ × 10 3/8″ × 2 1/2″▲	10″ × 10″	1″	1	20	16	1/4″	1124A69	88.14	1083A41	164.68
12 3/8″ × 12 3/8″ × 2 1/2″▲	12″ × 12″	1″	1	20	16	1/4″	1124A32	93.60	1083A44	185.49
14 3/8″ × 14 3/8″ × 2 1/2″▲	14″ × 14″	1″	1	20	16	1/4″	1124A1	99.74	1083A31	217.45
16 3/8″ × 16 3/8″ × 2 1/2″▲	16″ × 16″	1″	1	20	16	1/4″	1124A33	110.81	1083A45	252.26
18 3/8″ × 18 3/8″ × 2 1/2″▲	18″ × 18″	1″	1	20	16	1/4″	1124A34	127.56	1083A46	294.01
24 3/8″ × 18 3/8″ × 2 1/2″▲	24″ × 18″	1″	1	20	16	1/4″	1124A2	171.98	1083A32	323.64
24 3/8″ × 24 3/8″ × 2 1/2″▲	24″ × 24″	1″	1	20	16	1/4″	1124A35	157.67	1083A47	356.00
30 3/8″ × 22 3/8″ × 2 1/2″▲	30″ × 22″	1″	1	20	16	1/4″	1124A37	166.98	1083A49	390.73
30 3/8″ × 30 3/8″ × 2 1/2″	30″ × 30″	1″	2	20	16	1/4″	1124A4✓	277.50	1083A34✓	496.18
36 3/8″ × 22 3/8″ × 2 1/2″▲	36″ × 22″	1″	2	20	16	1/4″	1124A67	214.77	1083A42	462.64
36 3/8″ × 24 3/8″ × 2 1/2″▲	36″ × 24″	1″	2	20	16	1/4″	1124A36	221.74	1083A48	513.36
36 3/8″ × 36 3/8″ × 2 1/2″	36″ × 36″	1″	2	20	16	1/4″	1124A5✓	393.37	1083A35✓	665.09
48 3/8″ × 24 3/8″ × 2 1/2″	48″ × 24″	1″	2	20	16	1/4″	1124A3✓	271.98	1083A33✓	631.82
Drywall										
8 3/8″ × 8 3/8″ × 2″	8″ × 8″	1″	1	14	16	1/4″	11995A61	29.62	—	—
12 3/8″ × 12 3/8″ × 2″	12″ × 12″	1″	1	14	16	1/4″	11995A62	34.35	—	—
16 3/8″ × 16 3/8″ × 2″	16″ × 16″	1″	2	14	16	1/4″	11995A65	43.92	—	—
18 3/8″ × 18 3/8″ × 2″	18″ × 18″	1″	2	14	16	1/4″	11995A63	48.39	—	—
24 3/8″ × 24 3/8″ × 2″	24″ × 24″	1″	5	14	16	1/4″	11995A64	69.42	—	—
Insulated							***Aluminum***			
12 3/4″ × 12 3/4″ × 1 1/2″	12″ × 12″	1 5/16″	1	14	12	9/32″	1369A11	$96.91	—	—
18 3/4″ × 18 3/4″ × 1 1/2″	18″ × 18″	1 5/16″	1	14	12	9/32″	1369A12	117.82	—	—
24 3/4″ × 24 3/4″ × 1 1/2″	24″ × 24″	1 5/16″	1	14	12	9/32″	1369A13	130.73	—	—
30 3/4″ × 30 3/4″ × 1 1/2″	30″ × 30″	1 5/16″	2	14	12	9/32″	1369A16	199.45	—	—
36 3/4″ × 24 3/4″ × 1 1/2″	36″ × 24″	1 5/16″	2	14	12	9/32″	1369A14	189.09	—	—
36 3/4″ × 36 3/4″ × 1 1/2″	36″ × 36″	1 5/16″	2	14	12	9/32″	1369A17	227.55	—	—
48 3/4″ × 24 3/4″ × 1 1/2″	48″ × 24″	1 5/16″	2	14	12	9/32″	1369A15	245.45	—	—

★ Frame is 18 gauge. ▲ For Warnock-Hersey 3-hour noncombustible fire rating in ceilings, increase "fits opening size" dimensions by 1 5/8″ to allow for additional sheetrock that must be added to maintain fire rating. ✓ Not fire rated for ceiling mounting.

Surface-Mount Metal Access Doors

Easy to install, these doors don't require framing, bracing, notching, or cutting of inner wall obstructions. Just cut an opening and surface mount doors to your masonry, plaster, drywall, metal, or wood walls and ceilings. Doors have a continuous hinge, flush-mounted screwdriver-operated cam latches, and a 3/16″ dia. mounting hole in each corner of the flange. Mounting hardware not included.

Steel doors have a gray enamel finish. Frames are the same gauge as the doors. The flanges are 1/2″ wide.

Type 304 stainless steel doors have a dull finish. The frames are 18 ga. The flanges are 1″ wide.

Fits Opening Size, Ht.×Wd.	Door Size, Ht.×Wd.	No. of Latches	Door ga.		
Steel					
8″ × 8″	7 1/2″ × 7 1/2″	1	16	**8131A29**	$32.76
12″ × 12″	11 1/2″ × 11 1/2″	1	16	**8131A31**	37.57
16″ × 16″	15 1/2″ × 15 1/2″	2	14	**8131A35**	47.43
24″ × 24″	23 1/2″ × 23 1/2″	4	14	**8131A37**	74.09
Type 304 Stainless Steel					
8 3/8″ × 8 3/8″	8″ × 8″	1	16	**10195A41**	93.00
12 3/8″ × 12 3/8″	12″ × 12″	1	16	**10195A42**	97.02
16 3/8″ × 16 3/8″	16″ × 16″	1	16	**10195A43**	206.40
24 3/8″ × 24 3/8″	24″ × 24″	4	16	**10195A44**	307.69

Heavy Duty Security Access Doors

Made of 10-ga. steel, doors have a five-pin cylinder lock and two keys so you can limit access to controls. Locks for each door size are keyed alike (all open with the same key). All doors have one latch and recess mount into masonry, tile, plaster, drywall, metal, and wood walls. For interior use. Butt hinges are welded to the door and frame for extra security. Frames are 6-ga. angle iron with welded-on heavy duty steel masonry anchors for secure mounting to brick walls. Doors have a gray powder-coated finish for corrosion resistance. Drill holes to mount. Mounting hardware not included.

Fits Opening Size, Ht.×Wd.×Dp.	Door Size, Ht.×Wd.	Flange Width		
12 3/4″ × 12 3/4″ × 2″	12″ × 12″	2″	**10175A72**	$237.11
16 3/4″ × 16 3/4″ × 2″	16″ × 16″	2″	**10175A73**	282.18
18 3/4″ × 18 3/4″ × 2″	18″ × 18″	2″	**10175A74**	291.27
24 3/4″ × 24 3/4″ × 2″	24″ × 24″	2″	**10175A75**	318.40

Self-Closing Fire-Rated Access Door

Commonly used as an intake door on a trash chute, this wall-mount door has a gas spring for automatic closing and a T-handle lock with two keys. Door is made of 20-gauge, Type 304 stainless steel and has a dull finish. Door liner is 18-ga. galvanized steel. Recess mount into a wall. Mounting frame has a 1 1/2″ flange on each side and a 1 1/4″ flange on the top and bottom. Install with eight #10 fasteners (not included). Door is UL rated for 1 1/2 hours when installed in a fire-rated wall.

Fits Opening Size, Ht.×Wd.×Dp.	Door Size, Ht.×Wd.		
17 3/4″ × 14 3/4″ × 2″	17 1/2″ × 14 1/2″	**1633A12**	$471.70

Plastic Access Doors and Hatches

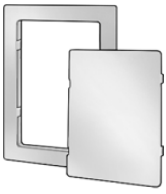

Surface/Flush-Mount Door

Doors and hatches are 1/8″ thick plastic.

Access Doors— The frame doesn't have holes. Attach doors with adhesive, or drill holes where needed. All have a snap friction catch that opens easily using the tip of a screwdriver. Doors have a textured surface that can be painted or wallpapered. Mount in walls and ceilings. Color is white.

Surface-mount access doors are made of styrene plastic and have a pivot hinge so they can be removed from the frame. Can be installed in masonry, tile, plaster, drywall, metal, and wood.

Surface/flush-mount access doors are made of ABS plastic and have snap-out doors (no hinges). Surface mount to wall, or reverse the frame and mount so the flange is inside the wall, making the door flush with the wall. Can be installed in tile, plaster, drywall, and wood. Doors 1243A61, 1243A62, and 1243A63 have knockouts to accommodate wiring or 1/4″ water lines.

Hatch

Access Hatch— Surface mount this polypropylene hatch to plaster or drywall. Simply slide the latch to open and close. Color is off-white. Requires five #5 screws (not included) for mounting.

Fits Opening Size, Ht.×Wd.×Dp.	Door Size, Ht.×Wd.	Flange Width		
Surface-Mount Access Doors				
8″ × 8″ × 11/16″	7 3/4″ × 7 3/4″	1″	**1243A71**	$16.21
14″ × 14″ × 11/16″	13 3/4″ × 13 3/4″	1 1/4″	**1243A82**	21.55
22″ × 22″ × 11/16″	21 5/8″ × 21 5/8″	1 1/2″	**1243A84**	38.98
Surface/Flush-Mount Access Doors				
6 3/16″ × 4 3/16″ × 5/8″	6″ × 4″	1/2″	**1243A61**	10.45
9 3/8″ × 6 3/8″ × 5/8″	9″ × 6″	1 1/8″	**1243A62**	15.14
8 1/4″ × 8 1/4″ × 5/8″	8″ × 8″	1 1/8″	**1243A63**	16.24
14″ × 14″ × 5/8″	13 1/2″ × 13 1/2″	1 5/8″	**1243A64**	19.93
29 1/8″ × 14″ × 5/8″	29″ × 13 3/4″	2″	**1243A65**	51.47
Surface-Mount Access Hatch				
3 3/4″ Dia.	4″ Dia. × 5/8″ Ht.	1 11/16″	**1123A42**	5.14

Tight-Seal Access Hatches

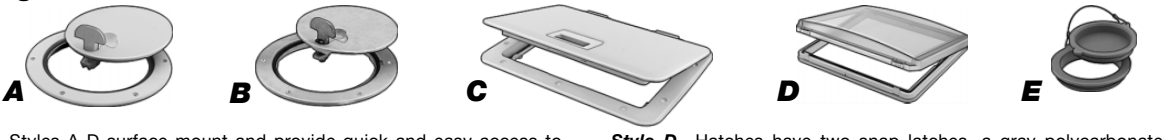

Styles A-D surface mount and provide quick and easy access to drains, hoses, wires, and valves. Styles A-C do not include mounting screws. Style D comes with mounting screws. Style E hatches recess into insulation surrounding pipes and other vessels.

Styles A&B— Hatches have a nonskid surface, a removable lid, a T-latch, and an EPDM rubber gasket. *Style A* is polypropylene and has a weathertight seal. Color is off-white. *Style B* is cast aluminum for corrosion resistance and has a watertight, airtight, and dustproof seal.

Style C— Made of polypropylene, hatches have a recessed slam latch (pull to open and slam to shut). All have a neoprene/EPDM gasket for a weathertight seal. Color is white.

Style D— Hatches have two snap latches, a gray polycarbonate frame, and a transparent polycarbonate window that's smoked for UV resistance. All have an EPDM rubber gasket to create a watertight, airtight, and dustproof seal. Temperature range is –40° to +175° F.

Style E— Made of silicone, hatches are used in refineries and chemical plants for inspecting insulated pipes and other vessels for corrosion. Recess mount in smooth, embossed, or corrugated insulation that is at least 1″ thick. Locking ridges keep the sealing flange secure in the opening—no screws or caulk required. Lid fits snugly for a watertight seal; just pull to open. Hatches conform to uneven surfaces and imperfect cutouts. Silicone is heat- and chemical-resistant. Max. temp. is 500° F. Color is gray.

	Fits Opening Size	Overall Size	Flange Width	No. of Screws Required (Size)		
A	6 3/8″ Dia.	8 3/8″ Dia. × 1″ Ht.	1 1/4″	6 (#8)	**1486A13**	$29.17
A	8 1/2″ Dia.	10 9/16″ Dia. × 1″ Ht.	1 1/4″	6 (#8)	**1486A17**	35.00
A	10 1/2″ Dia.	12 1/2″ Dia. × 1″ Ht.	1 1/4″	6 (#8)	**1486A23**	40.83
B	6 3/8″ Dia.	8 3/8″ Dia. × 1″ Ht.	1 1/4″	6 (#10)	**1486A4**	295.00
B	8 1/2″ Dia.	10 9/16″ Dia. × 1″ Ht.	1 1/4″	6 (#10)	**1486A5**	305.00
B	10 1/2″ Dia.	12 1/2″ Dia. × 1″ Ht.	1 1/4″	6 (#10)	**1486A6**	320.00
C	12 1/2″ Lg. × 8 5/8″ Wd.	15 1/8″ Lg. × 10 3/4″ Wd. × 1 3/8″ Ht.	1 1/2″♣	10 (#12)	**1358A311**	46.24
C	20 3/4″ Lg. × 10 3/4″ Wd.	23 1/4″ Lg. × 13″ Wd. × 1 3/8″ Ht.	1 1/2″♣	12 (#12)	**1358A321**	74.86
D	8 3/8″ Lg. × 7 3/16″ Wd.	9 3/4″ Lg. × 8 9/16″ Wd. × 1 1/8″ Ht.	11/16″	Included	**1363A15**	48.05
D	11 5/8″ Lg. × 9 1/2″ Wd.	13 1/16″ Lg. × 10 7/8″ Wd. × 1 1/8″ Ht.	11/16″	Included	**1363A16**	105.81
E	2 1/2″ Dia.	3 3/8″ Dia. × 1″ Ht.	3/4″	_____	**7522A25**	13.43
E	5″ Dia.	5 7/8″ Dia. × 1″ Ht.	3/4″	_____	**7522A55**	30.71

♣ Door covers flange.

Weld-On Inspection Hatches

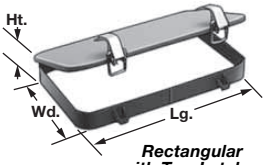

Rectangular with Two Latches

Round with One Latch

Weld hatches in place to create dustproof and rainproof points of access.

Rectangular Hatches—Commonly used for inspecting processing and handling equipment. Hatches have a polyethylene gasket and accept padlocks with up to a 5/16″ dia. shackle (padlocks not included, see pages 2932-2944). *Steel hatches* have a gray primer finish for corrosion resistance and chrome-plated steel latches. *Type 304 stainless steel hatches* have Type 304 stainless steel latches.

Round Hatches—Commonly installed on the deck or top of a tank. Hatches have a Buna-N gasket and accept padlocks with up to a 1/4″ dia. shackle (padlocks not included, see pages 2932-2944). *Steel hatches* are unfinished and have steel latches. *Type 304 stainless steel hatches* have Type 304 stainless steel latches.

Fits Opening Size, Lg. × Wd.	Overall Size, Lg. × Wd. × Ht.	No. of Latches	Frame ga.	Lid ga.	Steel		Type 304 SS	
Rectangular Hatches—*Temperature range is –95° to +175°F*								
8″ × 5″	9″ × 6 1/4″ × 2 1/2″	1	10	13	10605A41	$177.29	10605A51	$372.67
12″ × 8″	13″ × 9″ × 2 1/2″	1	10	13	10605A42	221.59	10605A52	463.14
19 3/4″ × 13 3/4″	20 3/4″ × 15″ × 2 1/2″	2	10	13	10605A43	370.25	10605A53	819.55
23 1/2″ × 19 3/4″	24 3/4″ × 20 3/4″ × 3 1/2″	2	10	13	10605A44	539.25	10605A54	1,101.30
Round Hatches—*Temperature range is –40° to +250°F*								
8″ Dia.	13 5/8″ Dia. × 4 3/8″ Ht.	1	10	10	10605A65	223.58	10605A66■	497.74
10″ Dia.	13 5/8″ Dia. × 4 3/8″ Ht.	1	10	10	10605A67	236.67	10605A68	533.33
20″ Dia.	23 13/16″ Dia. × 4 5/8″ Ht.	1	3/16″	7	10605A69	466.67	10605A71	1,080.65
24″ Dia.	27 13/16″ Dia. × 5 7/16″ Ht.	3	3/16″	7	10605A75	858.33	10605A76	2,275.00

■ Frame is 11 ga.

Floor and Sidewalk Access Hatches

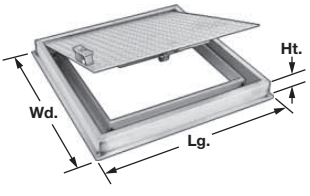

Designed for new installation in concrete, hatches have a 1/4″ concrete anchor flange; they are not for retrofit installation. Hatches are 1/4″ thick diamond tread textured aluminum and hold a load of 300 lbs./sq. ft. Frames are made from 1/4″ thick unfinished aluminum channel. All have a 1 1/2″ NPT female drainage coupling. Hatches lock when slammed closed. Unlock from above using the included key; unlock from below using the latching handle. An automatic locking arm holds the lid open at a 90° angle. There is a cast aluminum lifting handle on the outside that lays flat when hatch is closed. Butt hinges and hardware are Type 316 stainless steel.

Fits Opening Size, Lg. × Wd.	Overall Size, Lg. × Wd. × Ht.		
24″ × 24″	31 1/2″ × 31 1/2″ × 3″	84375A41	$491.25
30″ × 30″	37 1/2″ × 37 1/2″ × 3″	84375A43	577.50
36″ × 30″	43 1/2″ × 37 1/2″ × 3″	84375A44	621.25
36″ × 36″	43 1/2″ × 43 1/2″ × 3″	84375A45	651.25
48″ × 30″	55 1/2″ × 37 1/2″ × 3″	84375A46	753.75

Roof Hatches

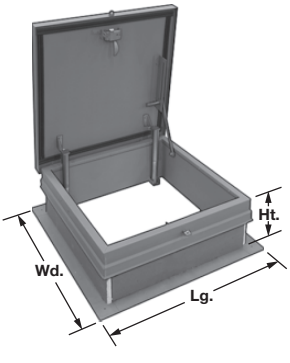

Access your roof easily and quickly. Simply unhook the latch and give the lid a gentle push—springs raise the lid smoothly. A hold-open arm automatically locks in the raised position; close the lid with one hand once you're on the roof.

Hatches have steel butt hinges, a latching handle inside, a push-button release outside, foam rubber weather seal, and a padlock hasp on the inside and the outside. Both hasps accept up to a 1/2″ dia. shackle (padlocks not included, see pages 2932-2944). Cover has a 22-ga. galvanized steel liner. Sides have 1″ of insulation. Flange is 4″ wide and has four 7/16″ dia. mounting holes (fasteners not included). Shipped assembled. For telescoping ladder support posts, see 8135T on page 2157.

Galvanized steel hatches are 14-ga. steel; the cover has a gray primer finish for corrosion resistance. ***Aluminum hatches*** are 1/8″ thick. ***Replacement spring and arm set*** includes a compression spring and a hold-open arm.

Also Available: Additional door sizes. Please ask for 8425A999 and specify material and inside opening size required.

Fits Opening Size, Lg. × Wd.	Overall Size, Lg. × Wd. × Ht.	Galvanized Steel	Each	Aluminum	Each
30″ × 30″	38″ × 38″ × 12″	8425A11	$629.20	8425A12	$838.33
30″ × 36″	38″ × 44″ × 12″	8425A27	469.50	8425A29	658.83
36″ × 36″	44″ × 44″ × 12″	8425A13	718.83	8425A14	1,027.67
Replacement Spring and Arm Set				8425A31	Set $74.17

Electrically Heated Air Curtains

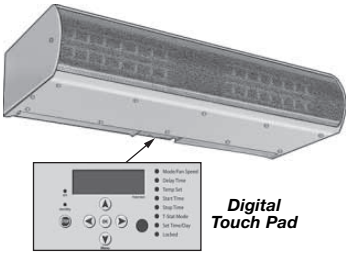

Digital Touch Pad

Heated air curtains create a wall of warm air, maintaining the temperature inside when your door is opened. In winter, heater setting adds warmth to heated areas; in summer, fan-only setting reduces cool-air loss. Plus, curtains keep out dust, dirt, insects, and fumes. All air curtains have a 1/5-hp, open dripproof motor that is wired to a controller for speed control. To install curtain, simply route your power source directly to the air curtain's wiring compartment. A wall mounting plate is included as well as four 1/4″ inserts in the top cover for suspending the curtains from a threaded rod. Curtains are for indoor mounting only.

Each air curtain includes a programmable touch pad on the underside of the unit. This digital touch pad allows you to change the fan speed and temperature setting, determine the length of time the unit will run when activated, and lock settings so only someone with the code can make changes. Curtains have a heavy-gauge steel and aluminum frame and a dull anodized aluminum shell. Heaters and motors are the same phase, except where noted. UL and C-UL listed.

Optional door switch (sold separately below) can be used with these air curtains to automatically turn them on when a door is opened and off when a door is closed.

To Order: Please specify voltage (see available voltages below).

Max. Door Wd.	Max. Door Ht.	Max. Nozzle scfm	Overall Size, Ht. × Wd. × Dp.	Single Phase Available Volts (Amps)			Three Phase Available Volts (Amps)		
10,000 Watts; 34,130 Btu/hr.									
3 ft.	8 ft.	1,036	7 5/8″ × 37 1/4″ × 13 11/16″	208 (49.8), 240 (43.4)	1059A41	$1,205.82	208 (29.5), 240 (25.8), 480 (13.7)★	1059A51	$1,205.82
3′6″	8 ft.	1,212	7 5/8″ × 43 1/4″ × 13 11/16″	208 (49.8), 240 (43.4)	1059A61	1,248.87	208 (29.5), 240 (25.8), 480 (13.7)★	1059A71	1,248.87
14,400 Watts; 49,147 Btu/hr.									
4 ft.	8 ft.	1,381	7 5/8″ × 49 1/4″ × 13 11/16″	208 (70.9), 240 (61.7)	1059A81●	1,288.80	208 (41.7), 240 (36.3), 480 (19)★	1059A91	1,236.65
5 ft.	8 ft.	1,682	7 5/8″ × 61″ × 13 11/16″	—	—	—	208 (41.7), 240 (36.3), 480 (19)★	1059A31	1,887.12
20,000 Watts; 68,260 Btu/hr.									
6 ft.	8 ft.	2,072	7 5/8″ × 74 1/4″ × 13 11/16″	—	—	—	208 (57.2)●, 240 (49.8), 480 (25.8)★	1059A33	2,109.70
Optional Door Switch								1059A21	$37.08

★ Heater coil is 480V, three phase; motor is 120V, single phase. ● Two circuits required.

Unheated Air Curtains

Create a curtain of air to keep out dust, dirt, insects, and fumes while allowing personnel to easily pass through. Air curtains pull in air from the room or surrounding area and produce a fast flow of air down a doorway or other opening. All have directional air vents. Mount to exterior or interior walls. For a wide door, mount two curtains side by side up to 4″ apart.

Air curtains do not include mounting hardware, except for Style A curtains, which are furnished with a steel mounting bracket. ETL listed for indoor and outdoor use. Temperature range is 0° to 120°F.

(A) Plug-In Low Profile— A great choice for entrances, coolers, and in-plant offices where overhead door clearance is limited. Housing is steel with black powder-coating. Curtains have a variable-speed motor switch, 5⁄8″ mounting holes, and a 3-ft. power cord with three-prong plug. Also have a junction box for hardwiring to a door switch.

(B) Standard— Use for plant entrances, receiving areas, and cold-storage rooms. Housing is 20-ga. steel. Curtains have an adjustable air-inlet damper, 7⁄16″ dia. mounting holes, and wire leads for hardwiring.

(C) Industrial— Use over dock doors and as barriers in hospitals, laboratories, and factories. Housing is 20-ga. steel. Curtains have an adjustable air-inlet damper, 7⁄16″ dia. mounting holes, and wire leads for hardwiring. *Three-phase air curtains* require motor control panel (sold separately below).

(D) Type 304 Stainless Steel— All the benefits of Style C curtains, plus a Type 304 stainless steel housing that can handle corrosive and high-moisture environments. Motor can withstand washdowns. If you want to use a door switch with these curtains, choose a washdown door switch (1345A95 sold separately below). All curtains have an adjustable air-inlet damper, 7⁄16″ dia. mounting holes, and wire leads for hardwiring. CSA certified.

A

B-D

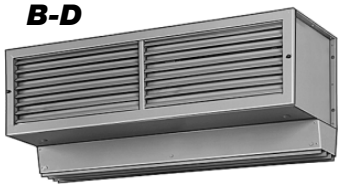

Single-Phase Air Curtains

Max. Door Wd.	Max. Door Ht.	Max. Flow scfm	Sound Level, dB	Overall Size, Ht. × Wd. × Dp.	Motor Qty.	Motor hp per motor	115 VAC Amps	115 VAC		230 VAC Amps	230 VAC	
(A) Plug-In Low Profile												
3 ft.	8 ft.	900	49	8″ × 36″ × 10¾″	1	1⁄6	2.4	10435A71	$602.81	1.2	10435A84	$602.81
4 ft.	8 ft.	1,200	52	8″ × 48″ × 10¾″	1	1⁄6	2.4	10435A73	655.21	1.2	10435A85	655.31
5 ft.	8 ft.	1,500	53	8″ × 60″ × 10¾″	1	1⁄6	2.6	10435A82	683.44	1.4	10435A86	683.44
6 ft.	8 ft.	1,800	53	8″ × 72″ × 10¾″	1	1⁄6	2.6	10435A83	865.31	1.4	10435A87	865.31
(B) Standard												
3 ft.	10 ft.	2,550	66	14″ × 36″ × 11¼″	1	1⁄2	5.1	1077A14	663.87	2.5	1077A42	663.87
3′6″	10 ft.	2,550	66	14″ × 42″ × 11¼″	1	1⁄2	5.1	1077A15	684.19	2.5	1077A43	684.19
4 ft.	10 ft.	2,550	66	14″ × 48″ × 11¼″	1	1⁄2	5.1	1077A31	704.52	2.5	1077A82	704.52
5′4″	10 ft.	5,100	68	14″ × 64″ × 11¼″	2	1⁄2	10.2	1077A11	1,051.65	5	1077A12	1,051.65
6 ft.	10 ft.	5,100	68	14″ × 72″ × 11¼″	2	1⁄2	10.2	1077A95	1,122.46	5	1077A96	1,122.46
6′6″	10 ft.	5,100	68	14″ × 78″ × 11¼″	2	1⁄2	10.2	1077A35	1,203.15	5	1077A85	1,203.15
(C) Industrial												
4 ft.	12 ft.	4,000	70	18″ × 48″ × 14″	1	1	9	1077A16	954.33	5	1077A44	954.33
5 ft.	12 ft.	4,000	70	18″ × 60″ × 14″	1	1	9	1077A17	973.23	5	1077A45	973.23
(D) Type 304 Stainless Steel												
4 ft.	12 ft.	4,000	70	18″ × 48″ × 14″	1	1	12	1345A68	2,561.54	6	1345A69	2,561.54
5 ft.	12 ft.	4,000	70	18″ × 60″ × 14″	1	1	12	1345A78	2,672.31	6	1345A79	2,672.31

Three-Phase Air Curtains

Max. Door Wd.	Max. Door Ht.	Max. Flow scfm	Sound Level, dB	Overall Size, Ht. × Wd. × Dp.	Motor Qty.	Motor hp per motor	230 VAC Amps	230 VAC		460 VAC Amps	460 VAC	
(C) Industrial												
6 ft.	12 ft.	8,000	73	18″ × 72″ × 14″	2	1	6.6	1077A97	$1,997.74	3.2	1077A98	$1,997.74
7 ft.	12 ft.	8,000	73	18″ × 84″ × 14″	2	1	6.6	1077A37	2,074.70	3.2	1077A86	2,074.70
7 ft.	16 ft.	9,600	79	18″ × 84″ × 14″	2	3	16.6	1077A39	2,253.82	7.6	1077A88	2,253.82
8 ft.	12 ft.	8,000	73	18″ × 96″ × 14″	2	1	6.6	1077A71	2,057.04	3.2	1077A91	2,057.04
8 ft.	16 ft.	9,600	79	18″ × 96″ × 14″	2	3	16.6	1077A53	2,220.47	7.6	1077A63	2,220.47
10 ft.	12 ft.	12,000	75	18″ × 120″ × 14″	3	1	9.9	1077A72	2,528.83	4.8	1077A92	2,528.83
10 ft.	16 ft.	14,400	81	18″ × 120″ × 14″	3	3	24.9	1077A54	2,870.51	11.4	1077A64	2,870.51
12 ft.	12 ft.	12,000	75	18″ × 144″ × 14″	3	1	9.9	1077A73	2,690.51	4.8	1077A93	2,690.51
12 ft.	16 ft.	14,400	81	18″ × 144″ × 14″	3	3	24.9	1077A55	2,951.75	11.4	1077A65	2,951.75

Motor Control Panels

Control panels allow you to select continuous operation, no operation (off), or automatic operation. Use one motor control panel for each air curtain. For automatic operation use a door switch (sold separately below) to signal motor to turn on and off. UL listed.

For Door Wd.	Max. Door Ht.	115 VAC		230 VAC		460 VAC	
For Three-Phase Air Curtains							
6 ft., 7 ft., or 8 ft.	12 ft.	—	—	1077A171	$888.39	1077A172	$888.39
7 ft. or 8 ft.	16 ft.	—	—	1077A174	958.06	1077A176	958.06
10 ft. or 12 ft.	12 ft.	—	—	1077A181	1,068.39	1077A182	1,068.39
10 ft. or 12 ft.	16 ft.	—	—	1077A184	1,267.74	1077A186	1,267.74
For 1345A68 and A78 Single-Phase Air Curtains							
4 ft. or 5 ft.	12 ft.	1345A91	$590.62	—	—	—	—

Door Switches

Automatically turn air curtain on when the door is opened and off when the door is closed. Door switches are made of steel.

For Styles A-C Air Curtains— Rated for 20 amps. For use with Styles A-C single-phase and Style C three-phase air curtains. Door switch requires a motor control panel (sold separately above) when used with a three-phase air curtain.

For Style D Air Curtains— Rated for 22 amps. For use with Style D single-phase air curtains. 1345A68 and 1345A78 can be used with a motor control panel (1345A91 sold separately above). Meets NEMA 1, 3, and 4 as well as IP66.

For Styles A-C Air Curtains

For Style D Air Curtains

For Styles A-C Air Curtains	1077A2	$51.43
For Style D Air Curtains	1345A95	137.33

Vinyl Strip Doors

Standard with Smooth Strips

With Bolt-On Mounting Hardware

With Press-On Mounting Hardware

Don't want to spend time hardwiring an air curtain? Vinyl strip doors are a simple way to maintain room temperature and seal out dust, dirt, and debris while still providing access for personnel and vehicles. The strips overlap each other to minimize gaps and maximize the effectiveness of the seal. Strips come in a variety of widths—narrow strips are easier for people to pass through while wider strips offer a better seal.

All strip doors include mounting hardware for hanging strips, vinyl strips with holes punched on 2″ centers, and instructions. Installation fasteners for attaching mounting hardware to your wall or door frame are not included. Bolt-on mounting hardware has ½″ dia. mounting holes. Press-on mounting hardware has ⅜″ dia. mounting holes.

Strip doors ***with bolt-on mounting hardware*** use push nuts (included). Place strips on the mounting studs and install push nuts to hold the strips tightly against the mounting plate.

Strip doors ***with press-on mounting hardware*** install fast and easy. Simply press the strips onto the bullet-shaped pegs, which hold the strips in place.

Standard— For indoor and outdoor use. Temp. range is 0° to 150° F. All have two safety orange vinyl strips for the sides of the opening to show wall location. Color is clear. ***Ribbed strips*** hide scratches and other general wear. **Also Available:** Custom-sized doors with standard vinyl strips. Please ask for 8447A22 and specify door size (width and height in 1-ft. increments), strip width, and smooth or ribbed surface.

Low Temp— For indoor use. Temperature range is –30° to +150° F. Doors can be used in USDA-inspected facilities. The strips are nylon reinforced. Color is clear. **Also Available:** Custom-sized doors with low-temp vinyl strips. Please ask for 8448A999 and specify door size (width and height in 1-ft. increments) and strip width.

Antistatic— For indoor use. Temperature range is 0° to 150° F. Material is non-conductive and virtually eliminates static electricity, dust accumulation, and cling. Charge potential is 5,000 volts per Federal Test Standard 101c, Method 4046. Color is transparent green.

Door Wd. × Ht.	Included Strips	STANDARD Smooth Strips		STANDARD Ribbed Strips		LOW TEMP Smooth Strips		ANTISTATIC Smooth Strips	
With Bolt-On Mounting Hardware									
6″ Wide × 0.060″ Thick Strips— *Allows for 2″ Overlap*									
3 ft. × 7 ft.	9	8447A57	$107.66	—	—	8448A57	$117.20	—	—
4 ft. × 7 ft.	12	8447A58	143.82	—	—	8448A58	156.81	—	—
5 ft. × 7 ft.	15	8447A59	184.30	—	—	8448A59	194.04	—	—
6 ft. × 7 ft.	18	8447A6	186.92	—	—	8448A6	237.50	—	—
8″ Wide × 0.080″ Thick Strips— *Allows for 2″ Overlap*									
3 ft. × 7 ft.	6	8447A11	105.75	1883A11	$114.36	8448A11	106.81	1814A21	$140.26
3′4″ × 7 ft.	7	—	—	—	—	8448A22	128.86	—	—
4 ft. × 7 ft.	8	8447A12	139.18	1883A12	150.50	8448A12	142.45	1814A22	187.03
4 ft. × 8 ft.	8	8447A24	151.65	1883A24	164.56	8448A21	155.34	1814A13	203.99
5 ft. × 7 ft.	10	8447A17	172.64	1883A19	186.63	8448A17	178.03	1814A11	233.79
5 ft. × 8 ft.	10	8447A13	188.02	1883A13	204.01	8448A13	194.18	1814A23	254.97
6 ft. × 7 ft.	12	8447A19	206.14	1883A23	222.77	8448A19	213.62	1814A12	280.59
6 ft. × 8 ft.	12	8447A55	224.40	1883A63	243.48	8448A55	233.00	1814A24	305.99
6 ft. × 9 ft.	12	8447A29	242.71	1883A27	264.16	8448A25	252.39	1814A16	274.79
7 ft. × 8 ft.	14	8447A36	273.79	1883A28	285.32	8448A27	284.84	1814A17	307.70
8 ft. × 8 ft.	16	8447A56	253.92	1883A64	309.38	8448A56	297.68	—	—
10 ft. × 8 ft.	20	8447A25	316.94	1883A25	401.26	8448A23	388.34	1814A14	422.83
12 ft. × 8 ft.	24	8447A27	442.64	1883A26	480.19	8448A24	466.01	1814A15	507.39
12″ Wide × 0.120″ Thick Strips— *Allows for 4″ Overlap*									
7 ft. × 10 ft.	11	8447A53	376.55	1883A41	459.16	—	—	—	—
8 ft. × 8 ft.	12	8447A14	373.75	1883A14	456.48	8448A14	439.89	1814A33	503.06
8 ft. × 10 ft.	12	8447A51	370.70	1883A15	528.82	8448A52	486.45	1814A34	597.74
8 ft. × 12 ft.	12	8447A38	501.33	1883A29	611.89	8448A29	564.40	1814A18	697.97
9 ft. × 9 ft.	14	8447A15	450.07	1883A16	559.73	8448A15	542.12	1814A35	621.84
10 ft. × 10 ft.	15	8447A16	475.57	1883A17	679.13	8448A16	608.04	1814A36	708.94
10 ft. × 12 ft.	15	8447A54	539.01	1883A42	773.19	—	—	—	—
12 ft. × 12 ft.	18	8447A18	646.24	1883A18	927.14	8448A18	846.63	1814A37	988.78
16″ Wide × 0.160″ Thick Strips— *Allows for 4″ Overlap*									
12 ft. × 12 ft.	12	8447A26	944.96	1883A21	1,161.60	8448A26	806.83	—	—
14 ft. × 14 ft.	14	8447A28	1,120.74	1883A22	1,412.06	8448A28	1,030.50	—	—
With Press-On Mounting Hardware									
8″ Wide × 0.080″ Thick Strips— *Allows for 2″ Overlap*									
3 ft. × 7 ft.	6	8460A11	97.43	8460A31	126.40	8460A51	133.17	8460A91	189.29
4 ft. × 7 ft.	8	8460A12	132.80	8460A32	178.86	8460A52	178.29	8460A92	248.06
4 ft. × 8 ft.	8	8460A128	156.88	8460A48	199.19	8460A68	182.83	8460A88	276.58
5 ft. × 7 ft.	10	8460A127	178.94	8460A47	217.85	8460A67	199.69	8460A87	302.50
5 ft. × 8 ft.	10	8460A13	182.88	8460A33	250.44	8460A53	245.57	8460A93	363.23
6 ft. × 7 ft.	12	8460A126	214.72	8460A46	242.75	8460A66	250.07	8460A86	393.23
6 ft. × 8 ft.	12	8460A14	238.21	8460A34	294.67	8460A54	290.70	8460A94	435.88
6 ft. × 9 ft.	12	8460A125	276.06	8460A45	312.14	8460A65	284.42	8460A85	466.69
7 ft. × 8 ft.	14	8460A124	286.28	8460A44	323.70	8460A64	294.94	8460A84	483.98
8 ft. × 8 ft.	16	8460A15	304.65	8460A35	398.74	8460A55	387.50	8460A95	495.90
10 ft. × 8 ft.	20	8460A123	409.00	8460A43	479.50	8460A63	421.35	8460A83	691.40
12 ft. × 8 ft.	24	8460A122	490.74	8460A42	575.41	8460A62	505.63	8460A82	829.65
12″ Wide × 0.120″ Thick Strips— *Allows for 4″ Overlap*									
7 ft. × 10 ft.	10	8460A121	425.97	8460A41	478.00	8460A61	565.23	8460A81	777.56
8 ft. × 8 ft.	12	8460A1	401.21	8460A2	453.72	8460A3	532.19	8460A4	710.69
8 ft. × 10 ft.	12	8460A16	520.63	8460A36	568.66	8460A56	620.94	8460A96	887.69
8 ft. × 12 ft.	12	8460A5	673.37	8460A6	752.50	8460A7	624.70	8460A8	892.58
9 ft. × 9 ft.	13	8460A111	583.80	8460A112	640.52	8460A113	649.31	8460A114	899.58
10 ft. × 10 ft.	15	8460A17	602.93	8460A37	708.93	8460A57	795.54	8460A97	1,202.17
10 ft. × 12 ft.	15	8460A18	730.20	8460A38	981.48	8460A58	1,030.78	8460A98	1,487.62
12 ft. × 12 ft.	18	8460A19	908.94	8460A39	1,138.65	8460A59	1,081.35	8460A99	1,598.40

NSF-Certified Vinyl Strip Doors

Make cleanliness a priority. Doors have a polypropylene mounting strip that's suitable for washdown environments. Mounting strip has a one-piece hinge design; strip folds over itself so dust and dirt won't collect on door parts—great for food prep areas. NSF certified. Can be used in USDA-inspected facilities.

Strips are smooth low temp vinyl with 3/8″ dia. holes punched on 2″ centers. All allow for 2″ overlap. Cut to length with shears or a utility knife. Include mounting hardware and instructions. For indoor and outdoor use. Temperature range is –40° to +160° F. Color is clear.

Door Wd. × Ht.	Included Strips		
6″ Wide × 0.060″ Thick Strips			
40″ × 80″	10	1174A11	$99.74
40″ × 86″	10	1174A12	105.89
8″ Wide × 0.080″ Thick Strips			
40″ × 80″	7	1174A13	111.59
40″ × 86″	7	1174A14	116.13

Visibility-Limiting Vinyl Strip Doors

Partially conceal areas as well as seal out dust, dirt, debris, and light. Doors have smooth vinyl strips with 3/8″ dia. holes punched on 2″ centers. Cut strips to length with shears or a utility knife. Furnished with bolt-on mounting hardware and instructions. For indoor and outdoor use. Temperature range is –10° to +150° F.

Opaque Black—Doors completely seal out light. They are not recommended for motorized traffic areas.

Dark Amber—Doors limit visibility and are ideal as welding curtains.

Door Wd. × Ht.	Included Strips	*Opaque Black*		*Dark Amber*	
8″ Wide × 0.080″ Thick Strips—*Allows for 2″ Overlap*					
3 ft. × 7 ft.	6	8462A44	$128.16	8462A21	$128.16
4 ft. × 7 ft.	8	8462A48	160.69	8462A22	170.91
5 ft. × 8 ft.	10	8462A53	244.20	8462A23	244.20
6 ft. × 8 ft.	12	8462A54	269.08	8462A24	269.08
8 ft. × 8 ft.	16	8462A55	358.78	8462A25	358.78
12″ Wide × 0.120″ Thick Strips—*Allows for 4″ Overlap*					
8 ft. × 8 ft.	12	8462A56	546.94	8462A31	546.94
8 ft. × 10 ft.	12	8462A57	683.71	8462A32	683.69
10 ft. × 10 ft.	15	8462A58	854.63	8462A34	854.63

Mesh Strip Doors

Allow air to circulate while keeping out insects, birds, and debris. Made of vinyl-coated polyester, mesh has 17 × 11 openings per sq. in. and is suitable for USDA-inspected facilities. Doors have 12″ of standard smooth vinyl at the bottom of each mesh strip. Furnished with a gray polymer press-on mounting strip and instructions.

Strips have 3/8″ dia. holes punched on 2″ centers. All allow for 2″ overlap. Cut to length with shears or a utility knife. For indoor and outdoor use. Temperature range is –10° to +150° F.

To Order: Please specify mesh color, black or yellow.

Door Wd. × Ht.	Included Strips		
8″ Wide × 0.030″ Thick Strips			
4 ft. × 7 ft.	8	1128A2	$186.92
4 ft. × 8 ft.	8	1128A3	237.51
6 ft. × 7 ft.	12	1128A6	280.36
6 ft. × 8 ft.	12	1128A7	355.61
8 ft. × 8 ft.	16	1128A8	474.44
10 ft. × 8 ft.	20	1128A9	593.25

Conveyor Vinyl Strip Doors

Keep conveyors rolling without losing heated or cooled air through unprotected openings. Made of smooth vinyl, these strip doors are sized to fit conveyor openings. Strips have 3/8″ dia. holes punched on 3″ centers. All allow for 1″ overlap. Cut strips to length with shears or a utility knife. Furnished with bolt-on mounting hardware and instructions. For indoor and outdoor use. Temperature range is –10° to +150° F. Color is clear.

Door Wd. × Ht.	Included Strips		
4″ Wide × 0.060″ Thick Strips			
3 ft. × 3 ft.	12	8454A21	$86.08
3 ft. × 4 ft.	12	8454A22	86.08
3 ft. × 5 ft.	12	8454A23	86.99
4 ft. × 3 ft.	16	8454A24	86.99
4 ft. × 4 ft.	16	8454A25	89.83
4 ft. × 5 ft.	16	8454A26	103.31
5 ft. × 3 ft.	20	8454A27	86.08
5 ft. × 4 ft.	20	8454A28	103.31
5 ft. × 5 ft.	20	8454A29	129.10

Ready-to-Hang Strips

Keep your strip doors working efficiently by replacing worn or damaged strips. You can also create a custom strip door; just combine the strips below (except Conveyor strips) with the universal mounting hardware on page 2894. Cut strips to length with shears or a utility knife. Strips have 3/8″ dia. holes on 2″ centers, except holes in Conveyor strips, which are on 3″ centers. Strips are for indoor and outdoor use, except Low Temp and Antistatic strips, which are for indoor use.

Standard—Made of vinyl. Temperature range is 0° to 150° F. *Ribbed* strips hide scratches and other general wear.

Low Temp—Made of vinyl. Can be used in USDA-inspected facilities. Temperature range is –30° to +150° F.

Antistatic—Made of vinyl. Nonconductive to virtually eliminate static electricity, dust accumulation, and cling. Charge potential is 5,000 V per Federal Test Standard 101c, Method 4046. Temperature range is 0° to 150° F.

Visibility Limiting—Made of vinyl. Temperature range is –10° to +150° F. *Opaque black* strips completely seal out light. They are not recommended for motorized traffic areas. *Dark amber* strips limit visibility and are ideal for use as welding curtains.

Ultra-High Temp—Ideal barrier for furnace conveyor entrances and exits, or any opening to a high temperature area. Material is flame-retardant silicone-coated fiberglass that resists water, oil, and chemicals. Temperature range is –65° to +500° F.

Mesh—Made of vinyl-coated polyester mesh. Temperature range is –10° to +150° F.

Conveyor—Made of vinyl. Strips are sized to fit conveyor openings. Temperature range is –10° to +150° F.

Strip Lg.	*STANDARD* *Clear and Smooth*		*Clear and Ribbed*		*Safety Orange and Smooth*		*LOW TEMP* *Clear and Smooth*		*ANTISTATIC* *Transparent Green and Smooth*		*VISIBILITY LIMITING* *Opaque Black and Smooth*		*Dark Amber and Smooth*	
8″ Wide × 0.080″ Thick Strips														
7 ft.	8447A31	$10.57	1883A31	$13.14	8447A511	$15.58	8448A31	$12.80	1814A51	$23.19	8462A64	$15.74	8462A28	$15.74
8 ft.	8447A32	13.79	1883A32	14.61	8447A512	17.80	8448A32	16.22	1814A52	26.53	8462A65	19.21	8462A29	19.21
9 ft.	8447A41	15.46	1883A38	16.44	8447A421	20.23	8448A38	18.31	1814A25	29.85	—	—	—	—
12″ Wide × 0.120″ Thick Strips														
8 ft.	8447A33	23.09	1883A33	26.32	8447A513	37.53	8448A33	22.94	1814A63	25.34	8462A66	43.24	8462A36	43.24
9 ft.	8447A34	25.39	1883A35	28.21	8447A514	33.70	8448A34	25.81	1814A64	28.50	—	—	—	—
10 ft.	8447A35	27.58	1883A34	32.48	8447A515	39.24	8448A35	28.68	1814A65	31.68	8462A67	54.06	8462A37	54.06
12 ft.	8447A37	32.37	1883A36	39.46	8447A516	47.07	8448A37	33.10	1814A66	38.00	—	—	—	—
16″ Wide × 0.160″ Thick Strips														
12 ft.	8447A45	67.41	1883A51	76.43	8447A517	92.39	8448A45	76.43	—	—	—	—	—	—
14 ft.	8447A47	78.64	1883A52	87.09	8447A518	105.21	8448A47	87.09	—	—	—	—	—	—

Strip Lg.	*ULTRA-HIGH TEMP* *Gray and Textured*	
8″ Wide × 0.015″ Thick Strips		
8 ft.	1140A31	$29.36

Strip Lg.	*MESH* *Black*		*Yellow*	
8″ Wide × 0.030″ Thick Strips				
7 ft.	1128A54	$33.11	1128A55	$33.11
8 ft.	1128A29	51.95	1128A49	51.95

Strip Lg.	*CONVEYOR* *Clear and Smooth*	
4″ Wide × 0.060″ Thick Strips		
3 ft.	8454A31	$3.04
4 ft.	8454A32	4.04
5 ft.	8454A33	5.08

Vinyl Strip Rolls

Replace worn-out strips or create your own custom strip door. Simply cut rolls to desired length and punch holes to hang, or choose Standard Ready-to-Hang rolls, which have strips in specific lengths with punched holes. Mounting hardware not included (sold separately on this page). Standard, Antimildew, Anti-Insect/Antiglare, and Standard Ready-to-Hang rolls are for indoor and outdoor use. Low Temp and Antistatic rolls are for indoor use.

***Low Temp*—**Material is suitable for USDA-inspected facilities.

***Antistatic*—**Nonconductive and virtually eliminates static electricity. Charge potential is 5,000 V per Federal Test Standard 101c, Method 4046.

***Antimildew*—**Has a UV inhibitor and a biocide that prevents the growth of microorganisms.

***Anti-Insect/Antiglare*—**Restricts the ability of insects to detect heat and light. Also reduces daytime glare while allowing limited visibility.

***Standard Ready to Hang*—**Rolls are scored into strips (cut 85% through the thickness) and have 3/8″ dia. holes punched on 2″ centers.

Wd. × Thick.	Regular Length Roll Lg.			Double Length Roll Lg.		
***Standard*—** *Temperature range is 0° to +150° F*						
Clear and Smooth						
4″ × 0.060″	75 ft.	1894A13	$49.94	150 ft.	1894A18	$90.80
6″ × 0.060″	75 ft.	1894A14	54.86	150 ft.	1894A19	99.74
8″ × 0.080″	75 ft.	1894A15	86.08	150 ft.	1894A27	156.50
12″ × 0.120″	75 ft.	1894A28	175.29	150 ft.	1894A22	319.90
16″ × 0.160″	50 ft.	1894A29	211.67	100 ft.	1894A11	384.86
24″ × 0.080″	30 ft.	1894A84	97.61	60 ft.	1894A9	177.48
24″ × 0.120″	30 ft.	1894A85	148.91	60 ft.	1894A91	270.75
24″ × 0.160″	30 ft.	1894A86	198.58	60 ft.	1894A92	361.05
36″ × 0.080″	30 ft.	1894A87	148.91	60 ft.	1894A93	270.75
36″ × 0.120″	30 ft.	1894A88	223.39	60 ft.	1894A94	406.16
36″ × 0.160″	30 ft.	1894A89	296.19	60 ft.	1894A95	538.53
48″ × 0.080″	30 ft.	1894A34	263.78	60 ft.	1894A12	479.60
48″ × 0.120″	30 ft.	1894A35	328.10	60 ft.	1894A25	596.55
48″ × 0.160″	30 ft.	1894A36	418.18	60 ft.	1894A26	760.32
Clear and Ribbed						
8″ × 0.080″	75 ft.	1894A37	130.21	150 ft.	1894A44	236.74
12″ × 0.120″	75 ft.	1894A38	246.71	150 ft.	1894A41	448.57
16″ × 0.160″	50 ft.	1894A39	286.86	100 ft.	1894A43	521.56
Opaque Black and Smooth						
4″ × 0.060″	75 ft.	1894A47	54.88	150 ft.	1894A48	99.79
6″ × 0.060″	75 ft.	1894A76	61.00	150 ft.	1894A77	110.91
8″ × 0.080″	75 ft.	8462A68	107.56	150 ft.	8462A81	195.57
12″ × 0.120″	75 ft.	8462A79	168.97	150 ft.	8462A73	307.21
Dark Amber and Smooth						
8″ × 0.080″	75 ft.	8462A69	131.77	150 ft.	8462A71	239.59
12″ × 0.120″	75 ft.	8462A72	254.60	150 ft.	8462A74	461.86
***Low Temp*—** *Temperature range is –30° to +140° F*						
Clear and Smooth						
4″ × 0.060″	75 ft.	1894A69	50.80	150 ft.	1894A54	92.36
6″ × 0.060″	75 ft.	1894A79	56.61	150 ft.	1894A55	102.92
8″ × 0.080″	____	____	____	150 ft.	1894A96	141.92
12″ × 0.120″	75 ft.	1894A97	170.04	150 ft.	1894A98	298.00
Clear and Ribbed						
8″ × 0.080″	75 ft.	1894A51	105.82	150 ft.	1894A81	192.40
12″ × 0.120″	75 ft.	1894A52	248.16	150 ft.	1894A82	451.20

Wd. × Thick.	Regular Length Roll Lg.			Double Length Roll Lg.		
***Low Temp*—** *Temperature range is –30° to +140° F (Cont.)*						
Clear and Ribbed (Cont.)						
16″ × 0.160″	50 ft.	1894A53	$266.98	100 ft.	1894A83	$485.41
Clear, Smooth, and Nylon Reinforced						
8″ × 0.080″	75 ft.	1894A45	95.40	150 ft.	1894A56	173.46
12″ × 0.120″	75 ft.	1894A57	200.32	150 ft.	1894A32	364.22
16″ × 0.160″	50 ft.	1894A58	256.28	100 ft.	1894A16	465.96
***Antistatic*—** *Temperature range is 0° to +150° F*						
Transparent Green and Smooth						
8″ × 0.080″	75 ft.	1894A46	206.54	150 ft.	1894A59	375.53
12″ × 0.120″	75 ft.	1894A61	422.65	150 ft.	1894A63	768.45
***Antimildew*—** *Temperature range is +10° to +150° F*						
Clear and Smooth						
6″ × 0.060″	75 ft.	1380A14	51.06	150 ft.	1380A24	92.83
8″ × 0.080″	75 ft.	1380A15	90.60	150 ft.	1380A25	164.72
12″ × 0.120″	75 ft.	1380A16	181.20	150 ft.	1380A26	329.45
***Anti-Insect/Antiglare*—** *Temperature range is 0° to +150° F*						
Amber and Smooth						
8″ × 0.080″	75 ft.	84035A58	131.77	150 ft.	84035A46	239.59

Strip Lg.	Roll Lg.	Strips per Roll	Clear and Smooth		Clear and Ribbed	
***Standard Ready to Hang*—** *Temperature range is 0° to +150° F*						
8″ Wide × 0.080″ Thick Strips						
7 ft.	70 ft.	10	1138A11	$90.01	1138A29	$126.07
7 ft.	140 ft.	20	1138A25	162.02	1138A33	226.93
8 ft.	72 ft.	9	1138A12	90.01	1138A3	126.07
8 ft.	144 ft.	18	1138A26	162.02	1138A34	226.93
8″ Wide × 0.120″ Thick Strips						
10 ft.	70 ft.	7	1138A13	221.05	____	____
12 ft.	72 ft.	6	1138A14	221.05	____	____
12″ Wide × 0.120″ Thick Strips						
10 ft.	70 ft.	7	1138A23	222.38	1138A31	259.45
10 ft.	140 ft.	14	1138A27	400.28	1138A35	467.01
12 ft.	72 ft.	6	1138A24	222.38	1138A32	259.45
12 ft.	144 ft.	12	1138A28	400.28	1138A36	467.01

Strip Door Mounting Hardware and Accessories

Combine mounting hardware below with rolls or strips (not included, see this page and pg. 2893) to create customized strip doors. ***Universal mounting hardware*** and ***continuous hinge mounting hardware*** have mounting studs that fit strips with 3/8″ dia. holes on 2″ centers. Hardware has 1/2″ dia. mounting holes (3/8″ dia. holes for 1012A and 8460A) for mounting to a wall or inside a door frame. Installation fasteners not included.

Universal Mounting Hardware

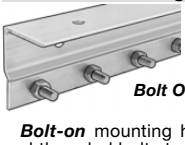

Bolt On

Press On

Bolt-on mounting hardware includes mounting plate, face plate, and threaded bolts to hold strips (not included) in place between the mounting plate and the face plate. ***Press-on*** mounting hardware includes a mounting plate with bullet-shaped pegs. Simply press strips (not included) onto the pegs, which hold the strips in place.

Lg.	Aluminum		Galvanized Steel		Type 304 SS	
Bolt On						
1 ft.	1012A51	$17.14	1321A11	$11.28	1317A21	$32.89
2 ft.	1012A52	27.29	1321A12	22.40	1317A22	61.94
3 ft.	1012A53	39.74	1321A13	33.79	1317A23	93.18
8 ft.	____	____	1321A14	84.72	1317A24	247.80
Press On						
1 ft.	8460A21	14.09	____	____	8460A25	60.43
2 ft.	8460A22	29.48	____	____	8460A26	111.02
4 ft.	8460A23	53.21	____	____	8460A27	215.42

Galvanized Steel Continuous Hinge Mounting Hardware

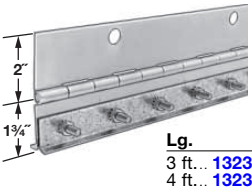

Just like bolt-on mounting hardware above, except with a continuous hinge. Mount top leaf to a wall or door frame. Attach strips (not included) to bottom leaf. The bottom leaf moves with traffic, reducing pulling stress on the strips.

Lg.			Lg.		
3 ft.	1323A11	$50.32	5 ft.	1323A13	$84.15
4 ft.	1323A12	67.13	6 ft.	1323A14	99.74

Galvanized Steel Roller Track

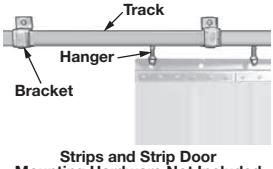

Strips and Strip Door Mounting Hardware Not Included

Turn your strip doors into sliding doors—track allows you to slide doors completely out of the door opening. Furnished with galvanized steel track with mounting brackets, hangers for holding a strip door, and end stops. Hardware is for wall mounting (above door opening). Hangers accept strip door mounting hardware with 1/2″ dia. mounting holes.

For Door Wd.	Track Lg. ■	No. of Hangers	No. of Brackets		
3 ft.	6 ft.	2	3	1040A11	$284.52
4 ft.	8 ft.	4	4	1040A12	481.58
5 ft.	10 ft.	4	4	1040A13	481.58
7 ft.	14 ft.	6	6	1040A14	678.67
8 ft.	16 ft.	6	6	1040A15	678.67
9 ft.	18 ft.	6	7	1040A16	678.67
10 ft.	20 ft.	8	8	1040A17	875.71
12 ft.	24 ft.	8	9	1040A18	875.71
14 ft.	28 ft.	10	10	1040A19	1,039.44

■ Track is furnished in multiple sections.

Strip Accessories

***Strip Door Template Kit*—**For cutting roll material into individual strips. Includes a stainless steel template for cutting squared strips and for marking 3/8″ dia. holes on 2″ centers. Template has directions etched into it. Comes with a drill bit for making 3/8″ dia. holes in strip material.

1139A11 ..... $76.74

***Vinyl Strip Cleaner*—**This cleaner removes dust, dirt, and markings. Furnished in a 1-gal. container.

1012A45 ..... $48.52

Cabinet-Door Track Sets

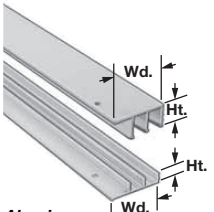

Aluminum Sliding Door Track Set

Plastic Sliding Door Track Set

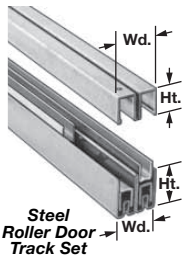

Steel Roller Door Track Set

For use with bypassing cabinet doors, sets include an upper and lower track. Fasteners not included.

Aluminum Sliding Door Track Sets—For use with lightweight wood cabinet doors. Upper track is 33/64″ Ht.×1 1/4″ Wd. Bottom track is 17/64″ Ht.×1 1/4″ Wd. Both tracks have a dull finish and 1/8″ dia. mounting holes for #12 screw nails.

Plastic Sliding Door Track Sets—Made of polystyrene, track works well with lightweight glass panels and lightweight wood cabinet doors. Upper track is 9/16″ Ht.×27/32″ Wd. Bottom track is 5/16″ Ht.×27/32″ Wd. Color is tan. To mount, glue track in place or use double-sided tape.

Steel Roller Door Track Sets—For use with 1/4″ thick glass panels. Sets include a 5/8″ Ht.×15/16″ Wd. upper track, a 1″ Ht.×1″ Wd. bottom track with two ball-bearing carriers, and two shoes that rest on the carrier and hold the glass. Track, carriers, and shoes are zinc-plated steel. To mount, glue track in place or use double-sided tape. *Note:* Height of cabinet door should not exceed twice its width.

Track Lg.	For Door Thick.	Aluminum Sliding Track	Set	Plastic Sliding Track	Set	Steel Roller Track	Set
3 ft.	1/4″	—	—	—	—	1718A5	$48.22
4 ft.	1/4″	1720A22	$15.01	1717A1	$6.73	1718A2	55.88
5 ft.	1/4″	—	—	—	—	1718A3	73.34
6 ft.	1/4″	1720A24	22.33	1717A3	9.60	1718A4	76.54

Cabinet Drawer and Door Rollers

Keep your wood frame cabinet drawers and doors rolling smoothly. To mount, just notch out a small half-circle pocket for the top of the roller from the underside of drawer or door. Screws not included. Rollers have a steel frame with a plain finish.

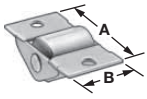

Roller Material	Roller Dia.	(A)	(B)	Screw Size		
Nylon	9/16″	17/8″	7/16″	#3	1714A5	$1.19
Nylon	5/8″	1 13/16″	5/8″	#5	1714A1	1.27
Steel	5/8″	1 13/16″	5/8″	#5	1714A2	1.43
Steel	3/4″	2″	1″	#6	1714A3	1.69

I-Beam Roller Track Sets for Doors

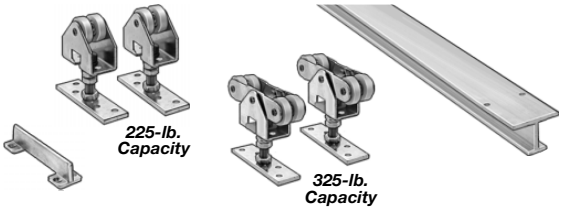

Choose an I-beam track set and add extra track and hangers in the same capacity to create a longer run. Track mounts directly to the ceiling. Use with single doors, panels, and space dividers that are at least 1″ thick. Sets include I-beam track made from 0.125″ thick aluminum, a door guide that fits into a notch on the underside of a door, two hangers with precision ball bearing nylon wheels, and mounting hardware. Hangers hold a door 3 1/4″ from the ceiling and allow up to 1/2″ vertical adjustment. Conforms to ANSI/BHMA standards, Grade 1.

Lg.	Track Wd.	Ht.		Set
225-lb. Capacity Track Sets				
6 ft.	1 7/8″	1 19/64″	1225A21	$74.32
12 ft.	1 7/8″	1 19/64″	1225A23	102.53
325-lb. Capacity Track Sets				
6 ft.	1 7/8″	1 19/64″	1225A11	111.82
8 ft.	1 7/8″	1 19/64″	1225A12	128.64
12 ft.	1 7/8″	1 19/64″	1225A14	140.26

Track Lg.		Each
Additional Track—*For 225-lb. and 325-lb. Capacity Track Sets*		
6 ft.	1225A41	$46.04
8 ft.	1225A42	55.86
12 ft.	1225A43	80.73

Capacity per Pair		Pair
Additional Hangers		
225 lbs.	1225A33	$46.35
325 lbs.	1225A38	60.31

Roller Track Sets for Bypassing Doors

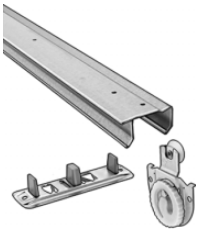

60-lb. Capacity Set

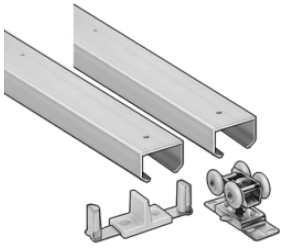

150-lb. and 250-lb. Capacity Sets

Doors pass each other smoothly as they roll along the track. Track can be cut with a saw. Sets include track, four hangers (two per door), adjustable door guides, and mounting hardware.

60-lb. Capacity Track Sets—Include one piece of track that requires 1 1/4″ to 1 9/16″ clearance from ceiling to top of door. Track is made from 0.024″ thick galvanized steel. Hangers are side-mount, one-wheel units with up to 5/16″ vertical adjustment. Both pairs of hangers have a 60-lb. capacity. Wheels are plastic.

150-lb. Capacity Track Sets—Include two pieces of track that require 1 3/4″ to 2 3/8″ clearance from ceiling to top of door. Track is made from 0.056″ thick aluminum. Hangers are top-mount, four-wheel units with up to 5/8″ vertical adjustment. Both pairs of hangers have a 150-lb. capacity. Wheels are plastic.

250-lb. Capacity Track Sets—Include two pieces of track that require 1 3/4″ to 2 3/8″ clearance from ceiling to top of door. Track is made from 0.056″ thick aluminum. Hangers are top-mount, four-wheel ball-bearing units with up to 5/8″ vertical adjustment. Both pairs of hangers have a 250-lb. capacity. Wheels are nylon.

Lg.	Track Wd.	Ht.	For Door Thick.		Set
60-lb. Capacity Track Sets					
3′9″	2 1/16″	1 1/16″	3/4″ to 1 3/8″	1223A1	$17.34
4′9″	2 1/16″	1 1/16″	3/4″ to 1 3/8″	1223A2	19.38
5′9″	2 1/16″	1 1/16″	3/4″ to 1 3/8″	1223A3	21.07
7′8″	2 1/16″	1 1/16″	3/4″ to 1 3/8″	1223A4	29.56
150-lb. Capacity Track Sets					
4 ft.	1 13/16″	1 3/16″	1 3/8″ to 1 3/4″	1223A6	43.50
5 ft.	1 13/16″	1 3/16″	1 3/8″ to 1 3/4″	1223A21	48.53
6 ft.	1 13/16″	1 3/16″	1 3/8″ to 1 3/4″	1223A8	53.06
8 ft.	1 13/16″	1 3/16″	1 3/8″ to 1 3/4″	1223A22	62.89
250-lb. Capacity Track Sets					
5 ft.	1 13/16″	1 3/16″	1 3/8″ to 1 3/4″	1223A32	113.41
6 ft.	1 13/16″	1 3/16″	1 3/8″ to 1 3/4″	1223A33	119.80
8 ft.	1 13/16″	1 3/16″	1 3/8″ to 1 3/4″	1223A34	134.17

Capacity per Pair		Pair
Additional Hangers		
150 lbs.	1223A54	$7.99
250 lbs.	1223A55	35.63

150-lb. Capacity Low-Profile Roller Track System for Doors

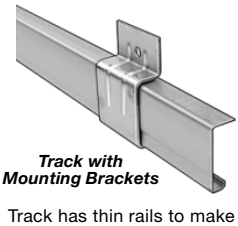

Track with Mounting Brackets

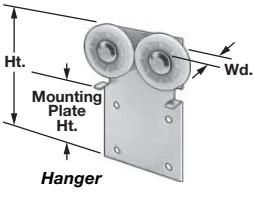

Hanger

Track has thin rails to make hanging doors in tight areas easier.

Track with Mounting Brackets—There are 4″ high wall-mount brackets welded to the track. Track projects 1 1/8″ from wall and is roll-formed from 0.060″ thick galvanized steel. Brackets have 3/8″ dia. mounting holes (fasteners not included).

Hanger—Has two 2 1/8″ dia. nylon wheels and a steel mounting plate. Use two hangers per door. Furnished with fasteners.

Track with Mounting Brackets

Track Lg.	Interior Wd.	Ht.	Bracket Spacing Ctr.-to-Ctr.		Each
6 ft.	1/2″	2 1/4″	24″	12635A61	$54.33
8 ft.	1/2″	2 1/4″	30 3/16″	12635A62	72.49
10 ft.	1/2″	2 1/4″	38 7/8″	12635A63	90.47

Hanger—150-lb. capacity per pair

Fits Door Thick.	Hanger Wd.	Ht.	Mounting Plate Ht.		Each
Up to 1 3/4″	21/64″	5 3/4″	3″	12635A65	$17.15

400-lb. and 600-lb. Capacity Steel Roller Track Systems for Doors

Track (Shown with Wall-Mount Support Bracket)

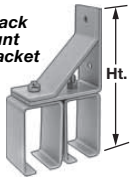

Double-Track Wall-Mount Support Bracket

Ceiling-Mount End Bracket

Suspended Ceiling-Mount Joint Bracket

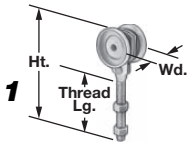

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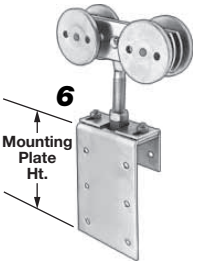

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Combine track, mounting brackets, and hangers of the same capacity to create a system for hanging doors, or choose a complete roller track set that has everything you need. ***Powder-coated*** track and track mounting brackets are tan.

Track Mounting Brackets— Mounting hardware not included. One *support bracket* is required for every 2 ft. of track. *End brackets* cap track ends to contain the hangers. *Joint brackets* hold adjoining sections of track together. *Double-track brackets* support two parallel tracks for hanging bypassing doors. *Ceiling-mount brackets* bolt to ceiling joists or hang from threaded rod.

Hangers— Made of zinc-plated steel, unless noted. Use two hangers per door. Mounting hardware included. *Steel ball bearings* last the longest. *Steel roller bearings* wear longer than acetal bearings. *Acetal sleeve bearings* are quiet and resist corrosion. ***Hangers with bolt*** are for doors with an angle iron or steel frame. Hangers bolt through the top of the framed door. Styles 1 and 2 have vertical adjustment. Style 3 swivels and has vertical adjustment. Style 4 and Style 5 have vertical and horizontal adjustment. Style 5 is also offset.

Hangers with mounting plate are for doors with an angle iron, steel, or wood frame and solid doors made of steel or wood. Hangers have a zinc-plated mounting plate that bolts onto the face of the door. Style 6 has vertical adjustment. Style 7 swivels and has vertical adjustment. Style 8 is offset and has vertical and horizontal adjustment.

Also Available: 400-lb. cap. galvanized steel track (0.047″ thick) with a welded-on "shield" that protects track interior from weather. Mounts directly to wall; no brackets required. Use with 400-lb. cap. hangers below. Interior is 1¾″ Wd.×2¼″ Ht. Has ⅜″ dia. mounting holes (hardware not included). Please ask for 1044A3 and specify length: 8 ft. or 10 ft.

400-lb. Capacity

Track—400-lb. capacity

Track Lg.	Interior Wd.	Interior Ht.	Thick.	Powder Coated	Each	Galvanized	Each
6 ft.	1¾″	2¼″	0.060″	1207A11	$25.91	1207A31	$23.53
8 ft.	1¾″	2¼″	0.060″	1207A17	34.41	1207A34	24.55
10 ft.	1¾″	2¼″	0.060″	1207A24	43.51	1207A37	38.16
12 ft.	1¾″	2¼″	0.060″	1207A101	51.41	1207A242	46.27

Track Mounting Brackets

Bracket Location	Ht.	Mounting Hole Dia.	Powder Coated	Each	Galvanized	Each
Wall Mount						
Support	4 11/16″	7/16″	1207A51	$8.50	1207A71	$7.31
End	4 11/16″	7/16″	1207A52	11.86	1207A72	10.67
Joint	4 11/16″	7/16″	1207A53	16.81	1207A73	12.85
Double-Track Wall Mount						
Support	7 29/32″	7/16″	1207A131	45.09	1207A134	40.73
End	7 29/32″	7/16″	1207A132	51.81	1207A135	47.45
Joint	8 1/32″	7/16″	1207A133	49.03	1207A136	44.09
Ceiling Mount						
Support	3 9/32″	13/32″ sq.	1207A16	10.29	1207A32	8.91
End	3 9/32″	13/32″ sq.	1207A18	13.65	1207A35	12.26
Joint	3 9/32″	7/16″	1207A21	14.44	1207A38	13.25
Suspended Ceiling Mount						
Support	4 5/32″	7/16″	1207A12	32.44	1207A27	35.79
End	4 5/32″	7/16″	1207A14	35.79	1207A28	39.15
Joint	4 9/32″	7/16″	1207A83	28.88	1207A29	30.66

Hangers with Bolt—400-lb. capacity per pair, unless noted

Hanger Wd.	Hanger Ht.	Bolt Size	Bolt Thread Lg.		Each
Steel Ball Bearings—2 1/16″ Wheel Dia.					
1	1¾″	6 1/16″	½″-13	3 1/16″ 1212A14●	$24.39
3	1¾″	5 1/16″	½″-13	3 1/16″ 1215A32	26.21
4	1¾″	11 5/16″	½″-13	7½″ 8440A12	32.17
Steel Roller Bearings—2 9/64″ Wheel Dia.					
3	1 39/64″	3 31/32″	½″-13	1⅜″ 1143A61	19.69
3	1 39/64″	5 31/32″	½″-13	2¾″ 1143A62	19.69
3	1 39/64″	6 11/32″	½″-13	3⅞″ 1143A63	19.69
5	1 39/64″	11¼″	½″-13	7″ 1143A71	25.33
Acetal Sleeve Bearings—2 9/64″ Wheel Dia.					
3	1 39/64″	3 31/32″	½″-13	1⅜″ 1143A51	15.73
3	1 39/64″	5 31/32″	½″-13	2¾″ 1143A52	15.73
3	1 39/64″	6 11/32″	½″-13	3⅞″ 1143A53	15.73

●300-lb. capacity per pair.

Hangers with Mounting Plate—400-lb. capacity per pair

Fits Door Thick.	Hanger Wd.	Hanger Ht.	Mounting Plate Ht.		Each
Steel Ball Bearings—2 1/16″ Wheel Dia.					
8 1½″ to 2¼″	1 9/16″	8 1/16″	6″	1206A41	$36.46
Steel Roller Bearings—2 1/8″ Wheel Dia.					
7 1½″ to 2¼″	1 17/32″	5 1/16″	6″	1206A18	66.27
Acetal Sleeve Bearings—2 1/8″ Wheel Dia.					
7 1½″ to 2¼″	1 19/32″	5 7/16″	6″	1206A11	34.06

600-lb. Capacity

Track—600-lb. capacity

Track Lg.	Interior Wd.	Interior Ht.	Thick.	Powder Coated	Each	Galvanized	Each
6 ft.	2 7/32″	3 1/4″	0.075″	1207A13	$54.97	1207A33	$64.66
8 ft.	2 7/32″	3 1/4″	0.075″	1207A19	78.11	1207A36	86.22
10 ft.	2 7/32″	3 1/4″	0.075″	1207A26	91.76	1207A39	107.58

Track Mounting Brackets

Bracket Location	Ht.	Mounting Hole Dia.	Powder Coated	Each	Galvanized	Each
Wall Mount						
Support	7 1/16″	9/16″	1207A57	$22.14	1207A87	$24.71
End	7 1/16″	9/16″	1207A58	28.47	1207A88	31.04
Joint	7 1/16″	9/16″	1207A59	31.26	1207A89	32.44
Ceiling Mount						
Support	4 9/16″	17/32″ sq.	1207A61	13.44	1207A43	14.24
End	4 9/16″	17/32″ sq.	1207A62	19.77	1207A48	20.56
Joint	4 9/16″	17/32″ sq.	1207A63	18.98	1207A69	20.86

Hangers with Bolt—600-lb. capacity per pair

Hanger Wd.	Hanger Ht.	Bolt Size	Bolt Thread Lg.		Each
Steel Ball Bearings—3″ Wheel Dia.					
2	2 1/8″	7 1/8″	5/8″-11	3 5/8″ 1215A33	$86.10
Steel Roller Bearings—3″ Wheel Dia.					
3	1 13/16″	6 5/8″	3/4″-10	3 1/8″ 1215A14	46.12

Hangers with Mounting Plate—600-lb. capacity per pair

Fits Door Thick.	Hanger Wd.	Hanger Ht.	Mounting Plate Ht.		Each
Steel Ball Bearings—3″ Wheel Dia.					
6 1¾″ to 2¾″	2 1/8″	7 1/8″	7¼″	1206A42	$140.27
7 1¾″ to 2¼″	1 49/64″	6 5/8″	7 11/16″	1206A14	119.04
7 2¼″ to 2¾″	1 49/64″	6 5/8″	7 11/16″	1206A15	119.92
Steel Roller Bearings—3″ Wheel Dia.					
7 1¾″ to 2¼″	1 13/16″	6 5/8″	7 11/16″	1206A25	94.58
7 2¼″ to 2¾″	1 13/16″	6 5/8″	7 11/16″	1206A26	95.19

Complete Roller Track Sets

Mount framed and solid sliding doors that are 1½″ to 2¼″ thick. Sets include tan powder-coated steel track; support, joint, and end brackets; a pair of hangers with mounting plate; a guide roller; floor end stops; bumper shoes; a bow handle and flush pull handle; and fasteners to mount hardware to door. The door and the bolts for mounting brackets to a wall are not included. Brackets for 400-lb. capacity set require ⅜″ bolts; brackets for 600-lb. capacity set require ½″ bolts.

Track Lg.	400-lb. Capacity	Set	600-lb. Capacity	Set
12 ft.	8443A22	$421.03	8443A32	$562.78
16 ft.	8443A23	432.79	8443A33	657.46
20 ft.	8443A24	480.88	8443A34	749.12

800-lb. and 1,000-lb. Capacity Steel Roller Track Systems for Doors

Create a custom track system—just combine track, mounting brackets, and hangers of the same capacity.

Track—Has a tan powder-coated finish.

Track Mounting Brackets—Have a tan powder-coated finish. Mounting hardware not included. One *support bracket* is required for every 2 ft. of track. *End brackets* cap track ends to contain the hangers. *Joint brackets* hold adjoining sections of track together. *Ceiling-mount brackets* bolt to ceiling joists or hang from threaded rod.

Hangers—Made of zinc-plated steel, unless noted. All hangers have vertical adjustment. Style 2 and Style 4 also swivel. Use two hangers per door. Furnished with mounting hardware. *Steel ball bearings* are the longest lasting. *Steel roller bearings* have a long wear time. ***Hangers with bolt*** are for doors with an angle iron, steel, or wood frame. Hangers bolt through the top of the framed door. ***Hangers with mounting plate*** are for doors with an angle iron, steel, or wood frame and solid doors made of steel or wood. Hangers have a tan powder-coated mounting plate (unless noted) that bolts onto the face of the door.

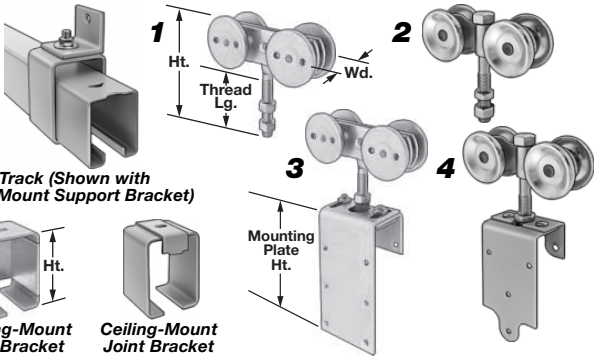

Track (Shown with Wall-Mount Support Bracket)

Ceiling-Mount End Bracket

Ceiling-Mount Joint Bracket

800-lb. Capacity

Track—800-lb. capacity

Track Lg.	Interior Wd.	Interior Ht.	Thick.		Each
6 ft.	2⅝″	3¼″	0.090″	1207A41	$81.47
8 ft.	2⅝″	3¼″	0.090″	1207A42	109.16
10 ft.	2⅝″	3¼″	0.090″	1207A44	136.05

Track Mounting Brackets

Bracket Location	Mounting Hole Dia.	Wall Mount Ht.		Wall Mount Each	Ceiling Mount Ht.		Ceiling Mount Each
Support	9/16″	7 3/16″	1207A54	$28.28	4 11/16″	1207A92▲	$18.78
End	9/16″	7 3/16″	1207A55	37.76	4 11/16″	1207A93▲	28.27
Joint	9/16″	7 3/16″	1207A56	36.98	4 11/16″	1207A97▲	24.91

▲ Mounting hole is 17/32″ square.

Hangers with Bolt—800-lb. capacity per pair

	Hanger Wd.	Hanger Ht.	Bolt Size	Bolt Thread Lg.		Each
Steel Ball Bearings—*2¾″ Wheel Dia.*						
2	2 13/32″	6⅝″	¾″-10	3⅛″	1215A23♦	$154.03
Steel Roller Bearings—*3″ Wheel Dia.*						
2	2 3/16″	6⅝″	¾″-10	3⅛″	1215A26	82.11

♦ Hanger frame is zinc-plated iron.

Hangers with Mounting Plate—800-lb. capacity per pair

	Fits Door Thick.	Hanger Wd.	Hanger Ht.	Mounting Plate Ht.		Each
Steel Ball Bearings—*3″ Wheel Dia.*						
4	1¾″ to 2¼″	2 3/16″	6⅝″	7 11/16″	1206A21	$125.33
4	2¼″ to 3″	2 3/16″	6⅝″	7 11/16″	1206A22	133.47
Steel Roller Bearings—*3″ Wheel Dia.*						
4	1¾″ to 2¼″	2 3/16″	6⅝″	7 11/16″	1206A56	112.43
4	2¼″ to 3″	2 3/16″	6⅝″	7 11/16″	1206A59	120.82

1,000-lb. Capacity

Track—1,000-lb. capacity

Track Lg.	Interior Wd.	Interior Ht.	Thick.		Each
6 ft.	2⅝″	3¼″	0.135″	1207A45	$128.93
8 ft.	2⅝″	3¼″	0.135″	1207A46	170.06
10 ft.	2⅝″	3¼″	0.135″	1207A47	213.57

Track Mounting Brackets

Bracket Location	Mounting Hole Dia.	Wall Mount Ht.		Wall Mount Each	Ceiling Mount Ht.		Ceiling Mount Each
Support	11/16″	7 5/16″	1207A64	$43.10	5″	1207A22	$24.32
End	11/16″	7 5/16″	1207A65	53.18	5″	1207A23	32.62
Joint	11/16″	7 5/16″	1207A66	52.98	5″	1207A25	31.23

Hangers with Bolt—1,000-lb. capacity per pair

	Hanger Wd.	Hanger Ht.	Bolt Size	Bolt Thread Lg.		Each
Steel Ball Bearings—*3″ Wheel Dia.*						
1	2½″	7⅛″	⅝″-11	3⅝″	1215A34	$106.70
Steel Roller Bearings—*3″ Wheel Dia.*						
2	2 3/16″	6⅝″	¾″-10	3⅛″	1215A26	82.11

Hangers with Mounting Plate—1,000-lb. capacity per pair

	Fits Door Thick.	Hanger Wd.	Hanger Ht.	Mounting Plate Ht.		Each
Steel Ball Bearings—*3″ Wheel Dia.*						
3	2⅜″ to 3⅝″	2½″	6⅞″	9¼″	1206A43♠	$155.60
4	1¾″ to 2¼″	2 3/16″	6⅝″	7 11/16″	1206A21	125.33
4	2¼″ to 3″	2 3/16″	6⅝″	7 11/16″	1206A22	133.47
Steel Roller Bearings—*3″ Wheel Dia.*						
4	1¾″ to 2¼″	2 3/16″	6⅝″	7 11/16″	1206A56	112.43
4	2¼″ to 3″	2 3/16″	6⅝″	7 11/16″	1206A59	120.82

♠ Mounting plates are zinc plated.

High-Capacity Steel Roller Track System for Doors

The highest-capacity track system we offer—either 2,500-lb. or 5,000-lbs.

Track—Has a tan powder-coated finish.

Track Mounting Brackets—Have a tan powder-coated finish. Mounting hardware not included. One *support bracket* is required for every 2 ft. of track. *End brackets* cap track ends to contain the hangers. *Joint brackets* hold adjoining sections of track together. *Ceiling-mount brackets* bolt to ceiling joists or hang from threaded rod.

Hangers—All have vertical adjustment. Hanger frame is iron. Wheels are zinc-plated steel with steel ball bearings for long life. Use two hangers per door. Furnished with mounting hardware. ***Hangers with bolt*** are for doors with an angle iron, steel, or wood frame. Hangers bolt through the top of the framed door. ***Hanger with mounting plate*** is for doors with an angle iron, steel, or wood frame and solid doors made of steel or wood. Hanger has a tan powder-coated mounting plate that bolts onto the face of the door.

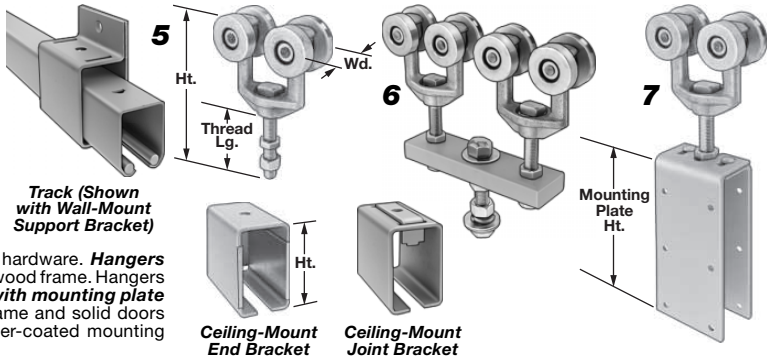

Track (Shown with Wall-Mount Support Bracket)

Ceiling-Mount End Bracket

Ceiling-Mount Joint Bracket

Track—5,000-lb. capacity

Track Lg.	Interior Wd.	Interior Ht.	Thick.		Each
6 ft.	2 13/16″	3 9/32″	0.150″	1207A98	$309.28
8 ft.	2 13/16″	3 9/32″	0.150″	1207A91	369.40
10 ft.	2 13/16″	3 9/32″	0.150″	1207A99	448.50

Track Mounting Brackets

Bracket Location	Mounting Hole Dia.	Wall Mount Ht.		Wall Mount Each	Ceiling Mount Ht.		Ceiling Mount Each
Support	13/16″	8 5/32″	1207A94	$59.31	5 31/32″	1207A121	$47.45
End	13/16″	8 5/32″	1207A95	70.00	5 31/32″	1207A122	58.15
Joint	13/16″	8 5/32″	1207A96	78.90	5 31/32″	1207A123	54.57

Hangers with Bolt—2,500-lb. capacity per pair, unless noted

	Hanger Wd.	Hanger Ht.	Bolt Size	Bolt Thread Lg.		Each
Steel Ball Bearings—*3″ Wheel Dia.; Style 5 bearings have neoprene seal*						
5	2½″	10 55/64″	7/8″-9	4½″	1215A24	$226.16
6	2½″	14 15/16″	1″-8	4¾″	1215A41★	661.96

★ Two hangers support up to 5,000 lbs.

Hanger with Mounting Plate—2,500-lb. capacity per pair

	Fits Door Thick.	Hanger Wd.	Hanger Ht.	Mounting Plate Ht.		Each
Steel Ball Bearings—*3″ Wheel Dia.; bearings have neoprene seal*						
7	2¼″ to 3¾″	2½″	10 55/64″	12¼″	1206A92	$337.97

Type 304 Stainless Steel Roller Track Systems for Doors

Track (Shown with Wall-Mount Support Bracket)

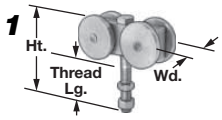

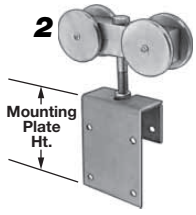

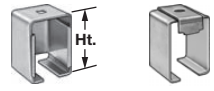

Ceiling-Mount End Bracket *Ceiling-Mount Joint Bracket*

Made of Type 304 stainless steel for improved corrosion resistance over plain steel. Combine track, mounting brackets, and hangers of the same capacity to create a complete system. All have a dull finish.

Track Mounting Brackets— Mounting hardware not included. One *support bracket* is required for every 2 ft. of track. *End brackets* cap track ends to contain hangers. *Joint brackets* hold adjoining sections of track together. *Ceiling-mount brackets* bolt to ceiling joists or hang from threaded rod.

Hangers— Have Type 304 stainless steel roller bearings. All swivel and have vertical adjustment. Use two hangers per door. Furnished with mounting hardware. ***Hangers with bolt*** are for doors with an angle iron, steel, or wood frame. Hangers bolt through the top of the framed door. ***Hangers with mounting plate*** are for doors with an angle iron, steel, or wood frame and solid doors made of steel or wood. Hangers have a mounting plate that bolts onto the face of the door.

400-lb. Capacity

Track—400-lb. capacity

Track Lg.	Interior Wd.	Interior Ht.	Thick.		Each
6 ft.	1 3/4"	2 1/4"	0.060"	1089A1	$111.04
8 ft.	1 3/4"	2 1/4"	0.060"	1089A2	122.67
10 ft.	1 3/4"	2 1/4"	0.060"	1089A51	176.57

Track Mounting Brackets

Bracket Location	Wall Mount 7/16" Dia. Mounting Hole Ht.		Each	Ceiling Mount 13/32" Sq. Mounting Hole Ht.		Each
Support	4 11/16"	1089A21	$15.36	3 5/32"	1089A42	$13.41
End	4 11/16"	1089A22	22.93	3 5/32"	1089A43	20.99
Joint	4 11/16"	1089A23	30.50	3 9/32"	1089A44	25.53

Hanger with Bolt—400-lb. capacity per pair

	Hanger Wd.	Hanger Ht.	Wheel Dia.	Bolt Size	Bolt Thread Lg.		Each
1	1 9/16"	4 13/16"	2 1/8"	1/2"-13	2 3/16"	1090A2	$281.77

Hanger with Mounting Plate—400-lb. capacity per pair

	Fits Door Thick.	Hanger Wd.	Hanger Ht.	Wheel Dia.	Mounting Plate Ht.		Each
2	1 1/2" to 2 1/4"	1 9/16"	4 13/16"	2 1/8"	6 1/16"	1090A5	$373.43

600-lb. Capacity

Track—600-lb. capacity

Track Lg.	Interior Wd.	Interior Ht.	Thick.		Each
6 ft.	2 7/32"	3 1/4"	0.075"	1089A3	$176.99
8 ft.	2 7/32"	3 1/4"	0.075"	1089A4	199.90
10 ft.	2 7/32"	3 1/4"	0.075"	1089A52	242.12

Track Mounting Brackets

Bracket Location	Wall Mount 9/16" Dia. Mounting Hole Ht.		Each	Ceiling Mount 17/32" Sq. Mounting Hole Ht.		Each
Support	7 1/16"	1089A24	$93.75	4 9/16"	1089A45	$37.66
End	7 1/16"	1089A25	118.37	4 9/16"	1089A46	54.02
Joint	7 1/16"	1089A26	106.86	4 9/16"	1089A47	49.50

Hanger with Bolt—600-lb. capacity per pair

	Hanger Wd.	Hanger Ht.	Wheel Dia.	Bolt Size	Bolt Thread Lg.		Each
1	1 13/16"	6 5/8"	3"	1/2"-13	3 1/4"	1090A3	$371.93

Hangers with Mounting Plate—600-lb. capacity per pair

	Fits Door Thick.	Hanger Wd.	Hanger Ht.	Wheel Dia.	Mounting Plate Ht.		Each
2	1 3/4" to 2 1/4"	1 13/16"	6 5/8"	3"	6 1/16"	1090A6	$414.08
2	2 1/4" to 2 3/4"	1 13/16"	6 5/8"	3"	6 1/16"	1090A8	421.52

Type 316 Stainless Steel Roller Track Systems for Doors

Track (Shown with Wall-Mount Support Bracket)

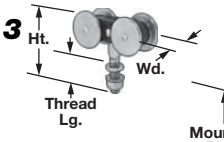

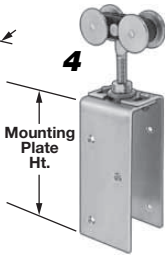

Track End Stop

Suspended Ceiling-Mount Joint Bracket

Track and mounting brackets are made of Type 316 stainless steel for greater corrosion resistance than plain steel and Type 304 stainless steel. Combine track, mounting brackets, hangers, and end stops of the same capacity to create a complete system for hanging doors. All components have a dull finish.

Track—Made of Type 316 stainless steel.

Track Mounting Brackets—Made of Type 316 stainless steel. Mounting hardware not included. One *support bracket* is required for every 2 ft. of track. *Joint brackets* hold adjoining sections of track together.

Hangers—Made of Type 304 stainless steel and have vertical adjustment. Use two hangers per door. *300-lb. capacity hangers* have noncorrosive nylon sealed needle bearings. *600-lb. capacity hangers* have Type 304 stainless steel sealed needle bearings. ***Hangers with bolt*** are for doors with an angle iron, steel, or wood frame. Hangers bolt through the top of the framed door. Furnished with mounting hardware. ***Hangers with mounting plate*** are for doors with an angle iron, steel, or wood frame and solid doors made of steel or wood. Hangers have a mounting plate that bolts onto the face of the door. Require three #10×1" Lg. fasteners (not included) to mount door.

Track End Stops—Have a rubber stop to cap track ends and contain the hangers. Made of Type 304 stainless steel. Furnished with mounting hardware.

300-lb. Capacity

Track—300-lb. capacity

Interior Wd.	Interior Ht.	Thick.	6-ft. Length	Each	8-ft. Length	Each
1 9/32"	1 19/32"	0.078"	10135A71	$240.96	10135A72	$321.85

Track Mounting Brackets

Ht.	Mtg. Hole Dia.	Support Brackets	Each	Joint Brackets	Each
Wall Mount					
4 1/8"	5/16"	10135A74	$54.64	10135A75	$88.94
Suspended Ceiling Mount					
2 7/8"	5/16"	10135A76	58.68	10135A77	102.24

Hanger with Bolt—300-lb. capacity per pair

	Hanger Wd.	Hanger Ht.	Wheel Dia.	Bolt Size	Bolt Thread Lg.		Each
3	1 1/8"	3 3/8"	1 1/2"	M10	1 3/8"	10135A81	$298.74

Hanger with Mounting Plate—300-lb. capacity per pair

	Fits Door Thick.	Hanger Wd.	Hanger Ht.	Wheel Dia.	Mounting Plate Ht.		Each
4	1 3/4" to 2 1/4"	1 1/8"	3 3/8"	1 1/2"	7 1/8"	10135A82	$431.37

Track End Stop—For 300-lb. capacity track

O'all Size, Lg.×Wd.×Ht.		Each
1 23/32"×1 3/8"×1 1/8"	10135A66	$46.82

600-lb. Capacity

Track—600-lb. capacity

Interior Wd.	Interior Ht.	Thick.	6-ft. Length	Each	8-ft. Length	Each
2"	2 15/32"	0.078"	10135A51	$379.09	10135A52	$496.28

Track Mounting Brackets

Ht.	Mtg. Hole Dia.	Support Brackets	Each	Joint Brackets	Each
Wall Mount					
5 1/2"	13/32"	10135A54	$87.76	10135A55	$120.10
Suspended Ceiling Mount					
3 7/8"	13/32"	10135A56	129.89	10135A57	121.09

Hanger with Bolt—600-lb. capacity per pair

	Hanger Wd.	Hanger Ht.	Wheel Dia.	Bolt Size	Bolt Thread Lg.		Each
3	1 3/4"	5 1/2"	2"	M16	3 3/16"	10135A61	$662.54

Hanger with Mounting Plate—600-lb. capacity per pair

	Fits Door Thick.	Hanger Wd.	Hanger Ht.	Wheel Dia.	Mounting Plate Ht.		Each
4	1 3/4" to 2 1/4"	1 3/4"	5 1/2"	1 7/8"	7 1/8"	10135A62	$861.10

Track End Stop—For 600-lb. capacity track

O'all Size, Lg.×Wd.×Ht.		Each
2 1/2"×1 3/4"×1 5/8"	10135A67	$56.18

Curved and Straight Steel Roller Track Systems

Move your sliding doors, curtains, partitions, and vinyl strip doors straight ahead or have them take a turn along curved track. The track mounting brackets bolt directly to ceiling joists or hang from threaded rod; mounting hardware not included. Combine track, mounting brackets, hangers, and accessories from the same system.

100-lb. Capacity System: For Curtains and Partitions

Straight Track (Shown with Support Bracket)

90° Curved Track

Joint Bracket

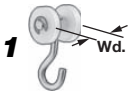

All components are galvanized steel.

Track Mounting Brackets— One *support bracket* is required for every 4 ft. of track. *Joint bracket* holds adjoining sections of track together.

Hangers— All swivel and have a steel hook with a 3/16″ OD that fits into grommets on curtains, partitions, and vinyl strip doors. For hanging one curtain or partition, two hangers are recommended. Please note load capacity is per hanger.

End stop caps the track end to contain hangers.

Pull trolley bolts onto the leading edge of a curtain, partition, or strip door. Trolley has a 4-ft. long pull cord for easy opening and closing.

Track—100-lb. capacity

	Track Radius	Track Lg.	Interior Wd.	Interior Ht.	Thick.		Each
Straight	—	8 ft.	1 21/64″	1 1/8″	0.062″	1040A21	$52.61
Straight	—	10 ft.	1 21/64″	1 1/8″	0.062″	1040A22	65.20
90° Curved	2 ft.	4 ft.	1 21/64″	1 1/8″	0.062″	1040A28	115.74

Track Mounting Brackets—Ceiling mount

Bracket Location	Ht.	Mounting Hole Dia.		Each
Support	4″	3/8″	1040A27	$13.55
Joint	4″	3/8″	1040A26	13.55

Hangers

	Wheel Material	Capacity per Hanger	Hanger Wd.	Hanger Ht.	Hook Lg.	Wheel Dia.		Each
1	Nylon	25 lbs.	1 1/16″	2 1/2″	1″	1 1/16″	5592T96	$2.73
1	Steel	40 lbs.	1 1/16″	2 1/2″	1 1/4″	1 1/16″	1040A23	11.77

Accessories

			Each
2	End Stop	1040A24	$4.21
3	Pull Trolley	1040A25	39.32

600-lb. Capacity System: For Doors, Curtains, and Partitions

Straight Track (Shown with Support Bracket)

90° Curved Track

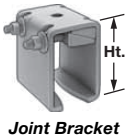

Joint Bracket

Wall-Mount Adapter Bracket

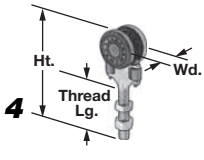

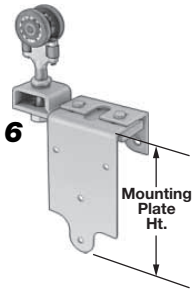

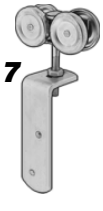

Track—Made from 3/16″ thick steel with a tan powder-coated finish.

Track Mounting Brackets—Made of steel with a tan powder-coated finish. One *support bracket* is required for every 5 ft. of track. *Joint bracket* holds adjoining sections of track together. *Wall-mount adapter* converts a support or joint bracket into a wall-mount bracket.

Hangers with bolt are for doors with an angle iron, steel, or wood frame. Hangers bolt through the top of the framed door. Made of steel; Style 5 is zinc-plated. Furnished with mounting hardware. *Steel ball bearings* are the longest lasting. *Steel roller bearings* have a long wear time.

Hangers have vertical adjustment. Style 5 also swivels.

Hangers with mounting plate are for doors with an angle iron, steel, or wood frame and solid doors made of steel or wood. Hangers have a mounting plate that bolts onto the face of the door. Made of steel; Style 7 is zinc-plated. Furnished with mounting hardware. *Steel ball bearings* are the longest lasting. *Acetal roller bearings* are quiet and corrosion resistant.

Style 6 has vertical adjustment. Style 7 swivels and has vertical and horizontal adjustment.

Hangers for curtains and partitions can be connected using "S" hooks (not included). For hanging one curtain or partition, two hangers are recommended. Please note load capacity is per hanger. Made of zinc-plated steel. *Steel ball bearings* last the longest. *Steel roller bearings* wear longer than acetal bearings. *Acetal sleeve bearings* are quiet and corrosion resistant. Style 8 hangers swivel and have zinc-plated steel wheels. Style 9 hanger has acetal wheels.

Track—600-lb. capacity

	Track Radius	Track Lg.	Interior Wd.	Interior Ht.		Each
Straight	—	10 ft.	1 3/4″	2 5/16″	1862A26	$107.42
90° Curved	2 ft.	3.14 ft.	1 3/4″	2 5/16″	1862A27	202.11
90° Curved	3 ft.	4.71 ft.	1 3/4″	2 5/16″	1862A28	231.42
90° Curved	4 ft.	6.28 ft.	1 3/4″	2 5/16″	1862A29	245.69

Track Mounting Brackets—Ceiling mount

Bracket Location	Ht.	Mounting Hole Dia.		Each
Support	3 15/16″	9/16″	1862A22	$15.13
Joint	3 15/16″	9/16″	1862A21	56.91
Wall-Mount Adapter	2 1/2″	9/16″	1862A24	19.84

Hangers with Bolt

	Hanger Capacity, lbs./Pair	Hanger Wd.	Hanger Ht.	Bolt Size	Bolt Thread Lg.		Each
Steel Ball Bearings—2 1/8″ Wheel Dia.							
4	600	1 1/2″	6 13/16″	5/8″-11	3 15/32″	1862A36	$112.70
Steel Roller Bearings—2 1/16″ Wheel Dia.							
5	300	1 39/64″	4 9/16″	1/2″-13	2 1/4″	1291A41	33.07

Hangers with Mounting Plate

	Hanger Capacity, lbs./Pair	Fits Door Thick.	Hanger Wd.	Hanger Ht.	Mounting Plate Ht.		Each
Steel Ball Bearings—2 1/8″ Wheel Dia.							
6	600	1 3/4″ to 2 1/4″	1 1/2″	6 13/16″	7 1/2″	1862A37	$250.82
Acetal Roller Bearings—2 1/8″ Wheel Dia.							
7	450	1 1/2″ to 2″	1 39/64″	4 1/2″	6 5/8″	1291A31	40.66

Hangers for Curtains and Partitions

	Capacity per Hanger	Hanger Wd.	Hanger Ht.	Eyebolt ID		Each
Steel Ball Bearings—2 1/16″ Wheel Dia.						
8	300 lbs.	1 17/32″	6″	1 1/4″	1212A21	$49.66
Steel Ball Bearings—2 9/64″ Wheel Dia.						
8	225 lbs.	1 9/16″	6″	1″	1212A8	26.64
Acetal Sleeve Bearings—2 1/8″ Wheel Dia.						
9	75 lbs.	1 5/8″	3″	1/4″	1222A1	$27.64

600-lb. Capacity Self-Cleaning Round Steel Roller Track System for Doors

Round track eliminates edges where dust and debris can accumulate, allowing particles and moisture to simply leave the track through the bottom slot.

Track with Mounting Brackets— Track comes with wall-mount brackets already attached beginning 1 ft. from each end on 2-ft. centers. Made of galvanized steel. Use screws or lag bolts (not included) to install track. *Joint collar* is used to align and lock together two sections of track. Furnished with a mounting nut. *End cap* contains hangers and keeps debris out.

Hangers— Have heavy duty, self-lubricating acetal wheels with steel ball bearings. All have vertical adjustment. Furnished with mounting hardware. ***Hangers with bolt*** are for doors with an angle iron, steel, or wood frame. They bolt through the top of the framed door. ***Hangers with mounting plate*** are for doors with an angle iron, steel, or wood frame and solid doors made of steel or wood. Hangers have a mounting plate that bolts onto the face of the door.

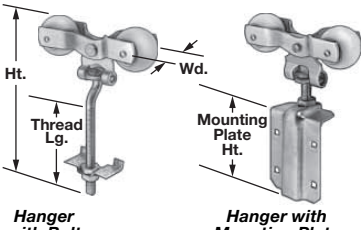

Hanger with Bolt — *Hanger with Mounting Plate*

Track with Mounting Brackets— 600-lb. capacity

Track Lg.	ID		Each
8 ft.	2 1/4″	1054A31	$28.96
10 ft.	2 1/4″	1054A33	36.20

Track Accessories

		Each
Joint Collar	1054A21	$2.88
End Cap	1054A23	.78

Hangers with Bolt— 600-lb. capacity per pair

Hanger Wd.	Hanger Ht.	Wheel Dia.	Bolt Size	Bolt Thread Lg.		Pair
1 7/8″	10″	2″	1/2″-13	4 3/4″	1054A37	$34.36
1 7/8″	13″	2″	1/2″-13	7 3/4″	1054A39	34.36

Hangers with Mounting Plate— 600-lb. capacity per pair

Fits Door Thick.	Hanger Wd.	Hanger Ht.	Wheel Dia.	Mounting Plate Ht.		Pair
1 1/2″ to 2 3/8″	1 7/8″	5 7/8″	2″	4 7/16″	1054A35	$35.26

Corrosion-Resistant I-Beam Trolley Systems for Doors

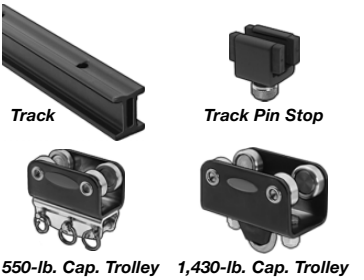

Use this trolley system in chemical plants and anywhere corrosion resistance is required. Track is marine-grade, black anodized aluminum, and trolleys are Type 316 stainless steel. Combine track, trolleys, track bolts, and pin stops of the same capacity to create a complete system for hanging doors.

Track mounts on ceilings and beams using track bolts (sold separately below). For extra stability in your system, an additional track can be mounted to the floor. To join track sections, just butt them together—no connectors needed. Mounting holes are on 3 15/16″ centers and have plastic inserts for a better grip. ***Track bolts*** are used to mount track. Track requires nine bolts for every 3 ft. of track. Made of 300 series stainless steel. ***Track pin stops*** are used at ends of track to prevent trolleys from sliding off. Stops have a Type 316 stainless steel spring.

To Order: Please specify track length: 3 ft., 6 ft., 9 ft., or 19 ft.

Cap., lbs.	Track Wd. × Ht.	Track Per Ft.		Trolleys Each		Track Bolts Each		Track Pin Stops Each
550	3/4″ × 15/16″	9484T41	$15.23	9484T21	$85.84	9484T71	$15.78	9484T11	$36.53
1,430	1 1/4″ × 1 1/4″	9484T43	25.95	9484T23	128.51	9484T72	14.76	9484T13	61.65

Door Stops and Guides

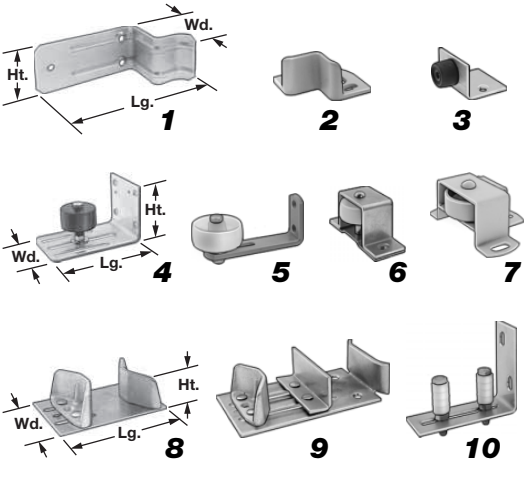

Control the motion of the door in your track system with door stops and guides. Mounting hardware not included, unless noted. ***Stops*** hold and stop doors. ***Roller*** and ***slide guides*** keep sliding and bypassing doors in their tracks and rolling smoothly. Slide guides also keep doors in perfect alignment.

	Fits Door Thick.	O'all Size, Lg. × Wd. × Ht.			Mounting Hole Size		Each
Steel Wall-Mount Stop							
1	Up to 2 1/4″	8″	× 3 3/8″	× 2 3/4″	♦	10245A31	$8.07
Malleable Iron Floor-Mount Stop							
2	Unlimited	2″	× 2″	× 2 1/4″	9/16″ × 1″	1216A1	23.20
Type 316 Stainless Steel Floor-Mount Stop							
3	Unlimited	3 1/2″	× 3″	× 2″	1/2″ Dia.	10135A68	51.72
Steel Frame Roller Guides							
4	Up to 3 3/4″	5 11/32″	× 3 1/2″	× 3 29/64″	21/64″ Dia.	1217A4	15.69
5	1 1/2″ to 2 3/4″	5 1/8″	× 2 1/2″	× 2 17/32″	#12	1217A1	19.73
6	Unlimited	6″	× 2 1/2″	× 2 23/32″	1/2″ Dia.	1217A2	36.28
7	Unlimited	7 1/8″	× 5 1/16″	× 2 15/16″	1/2″ Dia.	1217A3	91.80
Type 304 Stainless Steel Roller Guide							
5	1 1/2″ to 2 3/4″	5 1/16″	× 2 3/4″	× 2 17/32″	#12	1111A7	59.16
Zinc-Plated Steel Single Door Slide Guide							
8	1″ to 2 7/8″	6″	× 4″	× 1 55/64″	♦	1443A11	26.69
Zinc-Plated Steel Bypassing Door Slide Guide							
9	Up to 3″	7 9/16″	× 4 1/2″	× 2″	♦	1443A12	36.33
Type 316 Stainless Steel Door Slide Guide							
10	Up to 3″	5 3/8″	× 2″	× 4 1/2″	3/8″ × 1″	10135A65	122.76

♦ Mounting hardware included.

Wheels for Door Hangers

Give them a spin—wheels are perfect as replacements on an existing hanger or the starting point for a custom model. Wheels have a 1/2″ dia. bolt hole, so you can add a bolt for mounting doors with frames or a bolt and mounting plate for mounting solid doors (bolt and mounting plate not included). Wheels are zinc-plated steel. *Steel roller bearings* wear longer than acetal. *Acetal sleeve bearings* are quiet and corrosion resistant.

Capacity lbs./Pair	Wheel Wd.	Wheel Ht.	Wheel Dia.	Bolt Hole Size		Each
Steel Roller Bearings						
600 lbs.	1 39/64″	2 9/64″	2 9/64″	1/2″ Dia.	10075A42	$14.51
Acetal Sleeve Bearings						
450 lbs.	1 39/64″	2 9/64″	2 9/64″	1/2″ Dia.	10075A41	10.86

Replacement Overhead Door Rollers

Replace bent and broken rollers on any overhead door with a standard 2″ door track, such as garage doors. Rollers have a 7/16″ dia. steel stem and fit all track sizes. Wheels have steel ball bearings for long life.

Wheel Material	Wheel Dia.	Stem Length		1-9	10-Up
Steel	1 13/16″	3 11/16″	1903A31	$2.47	$1.98
Nylon	1 13/16″	3 11/16″	1903A29	2.75	2.20

Lever-Style Door Holders

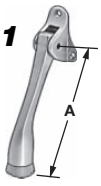

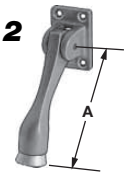

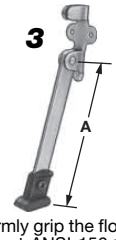

All have nonmarring, replaceable rubber pads that firmly grip the floor. Furnished with mounting screws. ***Styles 1 and 2—*** Meet ANSI 156.16. ***Style 3—*** A clip locks lever in the up position when holder is not in use.

Finish	(A)	Floor-to-Door Clearance★		Each
Cast Brass				
1 ... Dull Chrome	3¾″	¼″ to 2″	**1415A7**	$15.17
1 ... Dull Chrome	4¾″	¼″ to 3″	**1415A8**	16.04
1 ... Dull Brass	3¾″	¼″ to 2″	**1415A1**	15.17
1 ... Dull Brass	4¾″	¼″ to 3″	**1415A2**	16.04
Cast Iron				
2 ... Painted Brass	3¾″	¼″ to 2″	**1414A22**	7.03
2 ... Painted Brass	4¾″	¼″ to 3″	**1414A25**	7.56
2 ... Painted Bronze	3¾″	¼″ to 2″	**1414A21**	7.03
2 ... Painted Bronze	4¾″	¼″ to 3″	**1414A24**	7.56
2 ... Painted Aluminum	3¾″	¼″ to 2″	**1414A23**	7.03
2 ... Painted Aluminum	4¾″	¼″ to 3″	**1414A26**	7.56
Steel				
3 ... Zinc Plated	4″	½″ to 2″	**1410A11**	7.72
3 ... Zinc Plated	5″	½″ to 3″	**1410A12**	8.28
3 ... Zinc Plated	6″	½″ to 4″	**1410A13**	8.83
3 ... Zinc Plated	8″	½″ to 6″	**1410A14**	9.72
3 ... Zinc Plated	12″	½″ to 10″	**1410A16**	10.94

★ The distance from floor to bottom edge of door.

Replacement Rubber Pads	Pkg. Qty.		Pkg.
For Styles 1 and 2	6	**1413A34**	$4.41
For Style 3	2	**1410A31**	3.88

Plunger-Style Door Holders

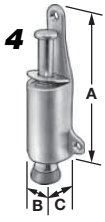

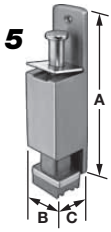

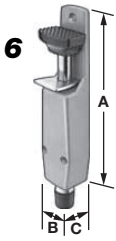

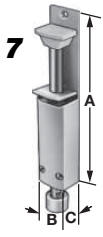

Step on the spring-operated plunger to hold your door in place; lightly tap on the lever to release the door. All have nonmarring, replaceable rubber pads that firmly grip the floor. Mounting screws are included.

Styles 4 and 5— Meet BHMA (Builders Hardware Manufacturers Assoc.) L11401 and ANSI 156.16. ***Style 6—*** The plunger's large head makes it easier to activate. ***Style 7—*** An aluminum housing and stainless steel components provide corrosion resistance.

Finish	Plunger Travel	(A)	(B)	(C)		Each
Cast Brass						
4 ... Dull Chrome	1¼″	5⅜″	1⅜″	1¼″	**1417A1**	$24.73
4 ... Polished Brass	1¼″	5⅜″	1⅜″	1¼″	**1417A4**	26.44
4 ... Dull Bronze	1¼″	5⅜″	1⅜″	1¼″	**1417A2**	25.42
Cast Aluminum						
5 ... Dull Aluminum	1⅝″	6¼″	1½″	1 7/16″	**1417A3**	25.17
Cast Zinc						
6 ... Painted Brass	1 3/16″	7⅛″	1⅝″	1⅛″	**14045A52**	12.27
6 ... Dull Aluminum	1 3/16″	7⅛″	1⅝″	1⅛″	**14045A51**	12.27
6 ... Dark Brown	1 3/16″	7⅛″	1⅝″	1⅛″	**14045A53**	12.27
Cast Aluminum/Stainless Steel						
7 ... Dull Aluminum	2⅜″	7 3/32″	1¼″	1 1/16″	**14045A9**	49.15

Replacement Rubber Pads	Pkg. Qty.		Pkg.
For Style 4	6	**1417A6**	$8.68
For Style 5	6	**1417A7**	8.58
For Style 6	6	**14045A55**	7.20
For Style 7		**14045A95** Each	$26.00

Hook-Style Door Holders

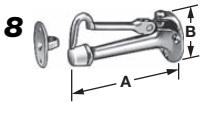

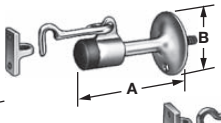

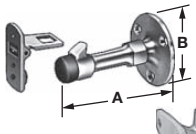

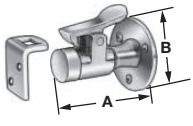

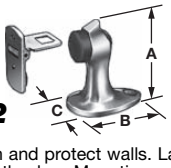

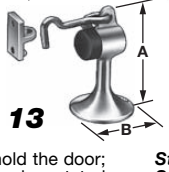

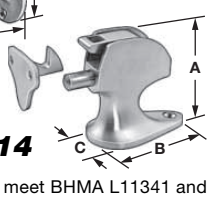

Hold doors open and protect walls. Latch the hook to hold the door; unlatch it to release the door. Mounting screws are included, unless stated otherwise. Styles 8-13 have replaceable, nonmarring rubber pads.

8-11 *Wall-Mount Door Holders*

Style 8— A 3″ long swivel hook holds the door open. Holder requires two #6 and three #7 screws for mounting (not included).

Style 9— A 3″ long swivel hook holds the door open. Holders meet Fed. Spec. 1321E, BHMA (Builders Hardware Manufacturers Assoc.) L11351, and ANSI A156.16.

Style 10— Holders meet BHMA L11341 and ANSI 156.16.

Style 11— Require five #7 flat head screws for mounting (not included).

12-14 *Floor-Mount Door Holders—*

Holders are designed for 1½″ or less clearance between the floor and bottom edge of the door.

Styles 12 and 13— Meet BHMA L11371 and ANSI 156.16. *Style 12* meets Fed. Spec. 1328/1328E; *Style 13* meets Fed. Spec. 1329E.

Style 14— Holders have a sturdy hook latch to secure heavy doors. They meet Fed. Spec. 1167, BHMA L11241, and ANSI A156.16.

Finish	(A)	(B)	(C)		Each
Cast Brass					
8 ... Dull Brass	3¾″	1¾″	—	**1407A1**	$28.11
9 ... Polished Brass	3⅝″	2¼″	—	**1407A6**	24.70
9 ... Dull Bronze	3⅝″	2¼″	—	**1407A4**	25.37
9 ... Dull Chrome	3⅝″	2¼″	—	**1407A5**	24.70
10 ... Dull Bronze	3⅝″	2⅜″	—	**1428A1**	23.20
10 ... Dull Chrome	3⅝″	2⅜″	—	**1428A3**	23.03
Cast Type 316 Stainless Steel					
11 ... Polished Stainless Steel	2½″	2″	—	**12975A35**	29.44
11 ... Polished Stainless Steel	4″	2″	—	**12975A36**	33.30
Cast Brass					
12 ... Polished Brass	2⅞″	2½″	1⅝″	**1429A2**	27.75
12 ... Dull Bronze	2⅞″	2½″	1⅝″	**1429A3**	27.75
Cast Brass (Cont.)					
12 ... Dull Chrome	2⅞″	2½″	1⅝″	**1429A4**	$27.84
13 ... Polished Brass	3⅝″	2¼″	—	**1429A31**	21.83
13 ... Dull Bronze	3⅝″	2¼″	—	**1429A32**	22.53
13 ... Dull Chrome	3⅝″	2¼″	—	**1429A33**	19.26
14 ... Dull Bronze	3 23/64″	3½″	2″	**1366A11**	89.02
14 ... Dull Chrome	3 23/64″	3½″	2″	**1366A24**	89.02

Replacement Rubber Pads	Pkg. Qty.		Pkg.
For Styles 9 and 13	6	**1429A61**	$13.71
For Style 10	6	**1430A9**	5.07
For Style 12	6	**1423A36**	5.40
For Style 8		**1407A8** Each	$1.30
For Style 11		**12975A45** Each	$2.64

Rubber Wedge Door Holders

Made of solid rubber, these holders have a ribbed bottom to grip the floor. Color is black.

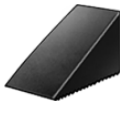

O'all Size, Lg.×Wd.×Ht.		
4 5/16″×1¾″×2⅛″	**8145A11**	$2.21
6¼″ ×3½″×2″	**8145A12**	3.52

Three-Way Door Holder

Hold your door open in three different ways. Mount holder over the top corner of the door, over the hinge pin, or use it as a wedge against the floor. It has polyurethane nonskid pads to prevent sliding. Made of a polycarbonate resin with ribbed construction. Size is 3½″ Lg.×2½″ Wd.×2⅛″ Ht. **To Order:** Please specify color: black, neon green, neon orange, or yellow.

1560A11 ... $10.11

Automatic Door Holders

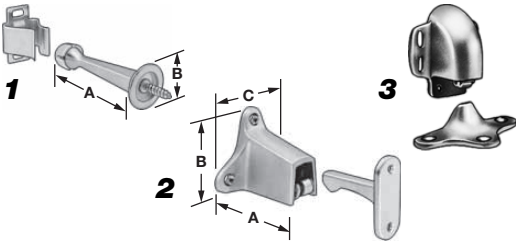

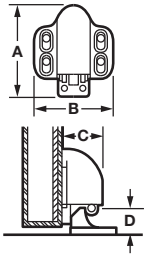

Just push the door until the holder automatically engages it. Gently pull on the door to release. All holders come with mounting screws.

1&2 Wall-Mount Door Holders

Style 1— A spring steel clip grasps a plastic tip to keep the door open.

Style 2— A spring-loaded roller mechanism secures the door. Holders meet Fed. Spec. 1169, BHMA (Builders Hardware Manufacturers Assoc.) L11291, and ANSI 156.16.

3 Floor-Mount Door Holders— Holders have elongated mounting holes for positioning adjustments up to 15/16″. They meet Fed. Spec. 1168, BHMA L11301, and ANSI A156.16.

Wall-Mount Door Holders

	Finish	(A)	(B)	(C)		
Cast Zinc						
1	Polished Brass	3 1/16″	1″	—	**13635A45**	$4.21
Cast Brass						
2	Polished Brass	2 1/4″	2 3/8″	2 5/8″	**1420A15**	27.67
2	Dull Bronze	2 1/4″	2 3/8″	2 5/8″	**1420A11**	26.31
2	Dull Chrome	2 1/4″	2 3/8″	2 5/8″	**1420A12**	30.68
Cast Aluminum						
2	Polished Aluminum	2 1/4″	2 3/8″	2 5/8″	**1420A13**	25.86

Floor-Mount Door Holders

	Finish	Floor-to-Door Clearance★	(A)	(B)	(C)	(D)		
Cast Brass								
3	Polished Bronze	Up to 1/2″	3 11/16″	3″	2″	1 3/16″	**1421A21**	$47.66
3	Dull Chrome	Up to 1/2″	3 11/16″	3″	2″	1 3/16″	**1421A15**	45.79
3	Dull Chrome	9/16″ to 1 1/16″	3 11/16″	3″	2″	1 3/16″	**1421A42**	54.97
3	Dull Chrome	1 1/8″ to 1 9/16″	3 11/16″	3″	2″	2 1/4″	**1421A44**	59.10

★ The distance from floor to bottom edge of door.

Hinge Pin Door Holders

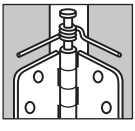

Each holder consists of a spring that fits onto a hinge pin to keep doors open at 90°. Holders are for use with hinges that have a removable pin. Use one holder per hinge. Fit right- and left-hand doors that are 36″ Wd.×96″ Ht. or smaller.

Springs are made of sturdy music wire. Spring legs are 1″ long. Furnished with an installation tool.

For Door Type	Spring Coil Dia.	Pkg. Qty.		Pkg.
Hollow Core	0.33″	4	**1621A21**	$9.30
Solid Core	0.40″	3	**1621A22**	9.30

Frame-Mount Adjustable Door Holders

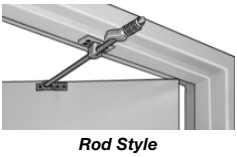

Rod Style

Channel Style

Hold doors open at a particular position within the 85° to 110° adjustment range. You can also set holders so they don't open past a certain angle. All holders are reversible for right- and left-hand doors and mount on the top of the door frame. Mounting screws included.

Rod-style holders have a 1/2″ dia. bar. Minimum required clearance at top of door is 7/8″. Made of brass, steel, and 300 series stainless steel.

Channel-style holders require a minimum clearance of 1 7/8″ at the top of the door. Made of brass, steel, and 300 series stainless steel. Holders are 1″ Wd.×1″ Ht.

For Door Opening Wd.	Finish		
Rod Style			
27 1/16″ to 33″	Dull Chrome	**1439A21**	$168.00
27 1/16″ to 33″	Dull Bronze	**1439A61**	158.25
33 1/16″ to 39″	Dull Chrome	**1439A22**	168.00
33 1/16″ to 39″	Dull Bronze	**1439A62**	158.25
Channel Style			
27 1/16″ to 33″	Dull Stainless Steel	**1439A41**	208.75
33 1/16″ to 39″	Dull Stainless Steel	**1439A42**	208.75
45 1/16″ to 54″	Dull Stainless Steel	**1439A45**	208.75

Hook-and-Catch Door Holders

Type 304 Stainless Steel

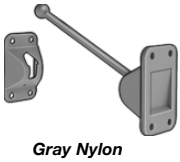

Gray Nylon

Commonly used on semi-trailer doors, these holders have a long hook that secures even heavy doors in the open position. Holders surface mount and have 3″ Lg.×1 3/4″ Wd.×1/8″ Thick. mounting plates. Require eight #10 screws (not included). ***Zinc-plated steel*** and ***Type 304 stainless steel*** hooks have 3/16″ dia. shafts and project 17/64″ from mounting plate. ***Nylon*** hooks have a 19/64″ dia. shaft and project 57/64″ from mounting plate. Temperature range is −20° to +150° F.

Hook Length	*Zinc-Plated Steel*		*Type 304 Stainless Steel*		*Gray Nylon*	
3 25/32″	**1941A21**	$2.48	**1941A23**	$7.06	**1941A25**	$3.12
5 29/32″	**1941A22**	2.79	**1941A24**	8.51	**1941A26**	3.09
10″	—	—	—	—	**1941A27**	3.03

Magnetic Door Holders

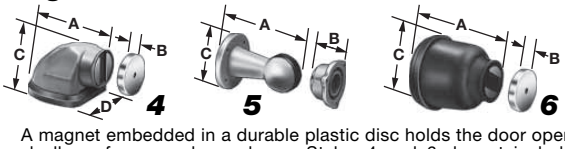

A magnet embedded in a durable plastic disc holds the door open and allows for easy door release. Styles 4 and 6 do not include screws.

Style 4— For floor mounting. Require two #6 screws and a #8 screw.

Style 5— For floor and wall mounting. Screws for mounting to wood are included; hardware for mounting to concrete is sold separately.

Style 6— For wall mounting. Require four #12 flat head screws.

	(A)	(B)	(C)	(D)	Holding Force, lbs.	Color		
4	2 23/64″	1/8″	1 1/2″	1 51/64″	44	Brown	**13775A48**	$29.83
4	2 23/64″	7/32″	1 1/2″	1 51/64″	44	Gray	**13775A43**	29.83
5	3″	7/8″	2 5/32″	—	26.4	Brown	**11305A22**	8.65
5	3″	7/8″	2 5/32″	—	26.4	Ivory	**11305A23**	8.65
6	2 3/4″	15/64″	2 13/16″	—	66	Gray	**13065A14**	43.42
6	2 3/4″	15/64″	2 13/16″	—	66	Brown	**13065A25**	43.42
Mounting Hardware for Concrete (for Style 5 only)							**11305A24**	6.72

Door and Hardware Protectors

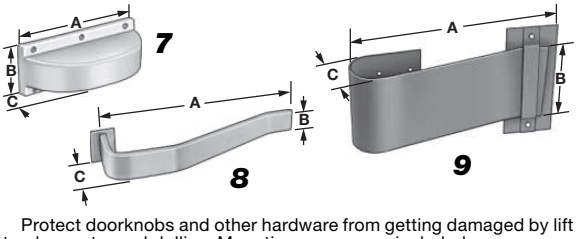

Protect doorknobs and other hardware from getting damaged by lift trucks, carts, and dollies. Mounting screws are included.

Style 8— Made of 0.375″ thick Type 304 stainless steel.

Style 9— Furnished with mounting screws for 1 3/4″ thick doors. *Spring steel* protectors are 0.125″ thick steel with a primed finish that can be painted. *Type 302 stainless steel* protectors are 0.109″ thick.

	Material	Finish	(A)	(B)	(C)		
7	Polycarbonate	Dark Brown	8 1/2″	3″	3 1/2″	**8026A52**	$28.40
7	Polycarbonate	Beige	8 1/2″	3″	3 1/2″	**8026A54**	28.40
8	Type 304 SS	Dull	13 3/16″	1 1/2″	3 1/4″	**80205A25**	66.12
9	Spring Steel	Primed	19″	8″	4″	**1533A22**	94.30
9	Spring Steel	Primed	32″	8″	4″	**1533A27**	116.64
9	Type 302 SS	Dull	19″	8″	4″	**1533A31**	247.10
9	Type 302 SS	Dull	32″	8″	4″	**1533A35**	307.01

Circular Wall-Mount Door Stops

Nonmarring inserts in these stops protect walls and doorknobs from damage. Inserts are vinyl, unless noted. ***Screw-mount*** stops come with a mounting screw, plus wall anchors for drywall installation.

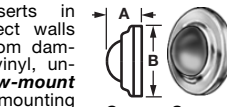

Convex Screw Mount — *Concave Self-Adhesive Mount*

Material	Finish	(A)	(B)		
Screw Mount					
Convex					
Stainless Steel	Dull SS	1″	2½″	**1422A55**	$3.10
Stamped Brass	Dull Brass	1″	2½″	**1422A53**	3.55
Stamped Brass	Polished Brass	1″	2½″	**1422A49**	3.55
Cast Brass	Polished Brass	9/16″	1″	**1273A31**	3.59
Cast Brass	Dull Chrome	9/16″	1″	**1273A33**	3.91
Cast Brass	Dull Chrome	1″	2½″	**1422A52**	6.00
Concave					
Stainless Steel	Dull SS	1″	2½″	**1399A75**	3.46
Stamped Brass	Dull Brass	1″	2½″	**1399A73**	4.38
Stamped Brass	Polished Brass	1″	2½″	**1399A69**	3.96
Cast Brass	Dull Chrome	1″	2½″	**1399A72**	5.71
Self-Adhesive Mount—*Have a peel-off backing*					
Concave					
Vinyl	Gray	5/8″	1⅞″	**8095A22**	1.84
Vinyl	White	5/8″	1⅞″	**8095A25**	1.84
Magnetic Mount—*Has a magnetic backing*					
Concave					
Rubber	Gray	¾″	2″	**8095A23**●	8.96

● Inserts are made of rubber.

Wall-Mount Door Stops

All have replaceable rubber pads.

Styles 1&2— Have a self-tapping screw for easy baseboard installation. No mounting screws required. 1431A15 meets Fed. Spec. 1322; 1431A11 meets Fed. Spec. 1322AL; and 8104A11 meets ANSI A156.16.

Style 3— Mounting screws are included. Meet Fed. Spec. 1320, BHMA (Builders Hardware Manufacturers Assoc.) L12011, and ANSI 156.16.

Material	Finish	(A)	(B)		Each
1 Cast Brass	Polished Brass	3″	1″	**1431A15**	$7.69
1 Cast Brass	Dull Chrome	3″	1″	**1431A21**	7.69
1 Cast Aluminum	Dull Aluminum	3″	1″	**1431A11**	1.40
1 Cast Aluminum	Dull Aluminum	4½″	1″	**1431A14**	3.32
2 Steel Spring	Polished Brass	3″	1″	**8104A11**	.92
3 Cast Brass	Polished Brass	3¾″	2″	**1430A24**	15.63
3 Cast Brass	Dull Brass	3¾″	2″	**1430A21**	15.84
3 Cast Brass	Dull Chrome	3¾″	2″	**1430A22**	15.63

Replacement Rubber Pads	Pkg. Qty.		Pkg.
For Style 1	5	**1431A56**	$1.54
For Style 2	5	**8104A24**	1.64
For Style 3	6	**1430A9**	5.07

Swing-Bar Security Door Guards

Open your door up to 5″ for viewing or ventilation while keeping it latched. Made of cast brass, guards are furnished with screws and a 1″ Lg. × 1⅛″ Wd. × ½″ Ht. edge protector to reduce marring on the door.

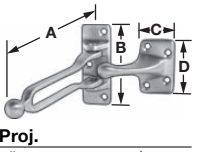

Finish	(A)	(B)	(C)	(D)	Proj.		
Polished Brass	4⅞″	2⅝″	1″	1⅝″	1″	**7036A1**	$18.86
Dull Chrome	4⅞″	2⅝″	1″	1⅝″	1″	**7036A2**	17.48

Door Frame Silencers

All of these nonmarring silencers require ⅛″ clearance between door and frame. Color is gray.

Push Mount— Meet ANSI 156.16. Pkg. qty. is 100. *Style 4* are vinyl and meet Fed. Spec. 1337A and BHMA (Builders Hardware Manufacturers Assoc.) L03011. *Style 5* are rubber and meet Fed. Spec. 1337B and BHMA L03021.

Self-Adhesive Mount— Made of rubber. Package quantity is 50.

For Frame Type	Face Size	Drill Hole Dia.		Pkg.
Push Mount—*Push into a drilled hole in the door frame*				
4 Metal	½″ Dia.	9/32″	**1432A11**	$12.06
5 Wood	¾″ Lg. × ⅜″ Wd.	¼″	**1432A15**	14.94
Self-Adhesive Mount—*Peel off backing and apply to door frame*				
6 Metal or Wood	½″ Dia.	—	**1432A16**	11.23

Adjustable Hinge-Pin Door Stops

Just slip the stop over the door hinge pin to halt the door—it's that easy. Bushings are removable and accommodate ¼″ to 5/16″ dia. hinge pins. All stops have a brass finish and nonmarring, replaceable rubber pads.

Cast aluminum stops come with an easy-to-adjust nut and threaded stud.

Steel stops have a sturdy, slip-resistant screw adjustment.

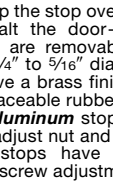

Material	Max. Door Opening	Each	Repl. Rubber Pads Pkg. Qty.		Pkg.
Cast Aluminum	85°-125°	**1398A16**	$1.27	5	**1431A56**	$1.54
Steel	70°-100°	**1398A14**	3.12	10	**1398A24**	2.67

Floor-Mount Door Stops

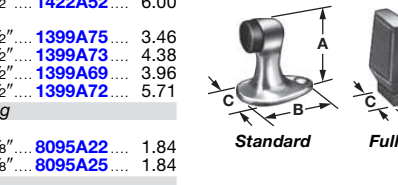

Super-strong stops take a beating so your walls don't have to. All stops meet ANSI 156.16. ***Standard*** and ***full-cushion*** stops meet Fed. Spec. 1328 and 1328E and BHMA (Builders Hardware Manufacturers Assoc.) L12121 and L12131. ***Half-dome*** stop 1426A3 meets Fed. Spec. 1330 and 1330E and BHMA L12141. 1426A4 meets Fed. Spec. 1330A and 1330AE and BHMA L12161. ***Round stops with stud*** meet Fed. Spec. 1328E and BHMA L12131.

Standard stops have replaceable, nonmarring rubber pads and are for doors having 1¾″ or less clearance from the floor to the bottom edge of the door. Mounting screws are included.

Full-cushion stop has a large, nonmarring rubber pad to absorb shock. Designed for doors having 1½″ or less clearance from the floor to the bottom edge of the door. Mounting screws are included.

Half-dome stops have a replaceable, nonmarring rubber pad. Mounting screws are included.

Round stops with stud resist chemicals and weather. Caps are nonmarring rubber. Mount into a 1″ Dia. × 2¾″ Dp. hole and set with grout.

Optional riser for half-dome stops raises your half-dome stops ⅜″. Riser has a dull chrome finish.

Material	Finish	(A)	(B)	(C)		Each
Standard—*For Wood and Concrete Floors*						
Cast Brass	Dull Brass	2 11/16″	2½″	1½″	**1423A13**	$20.65
Cast Brass	Polished Brass	2 11/16″	2½″	1½″	**1423A16**	17.63
Cast Brass	Dull Chrome	2 11/16″	2½″	1½″	**1423A22**	20.15
Full Cushion—*For Wood and Concrete Floors*						
Steel	Dull Zinc	2¾″	2½″	1″	**1154A56**	5.50
Half Dome—*For Wood and Concrete Floors*						
Cast Brass	♦	1″	1¾″	—	**1426A3**	4.74
Cast Brass	♦	1⅜″	1¾″	—	**1426A4**	4.94
Stainless Steel	Dull Stainless Steel	1″	1¾″	—	**1426A36**	7.18
Stainless Steel	Dull Stainless Steel	1⅜″	1¾″	—	**1426A46**	8.02
Round with Stud—*For Concrete Floors*						
Rubber	Black	1½″	2″	—	**12275A64**	28.32
Rubber	Black	3½″	2″	—	**12275A66**	38.27
Replacement Pads and Optional Riser						
Pads for Standard (Pkg. of 6)				**1423A36**	**Pkg.**	$5.40
Pads for Half Dome (Pkg. of 6)				**1426A51**	**Pkg.**	$3.86
Optional Riser for Half Dome (⅜″ high)				**1426A52**	**Each**	$2.50

♦ **To Order:** Please specify finish: dull brass, polished brass, or dull chrome.

Chain and Spring Door Stops

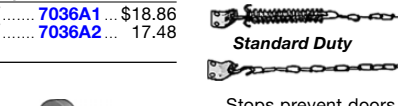

Stops prevent doors from opening too far, reducing stress on door hinges and closers. Mounting screws are included.

Standard Duty— For wood and aluminum screen and storm doors. Made of steel with zinc-plated finish. A drawbar spring is on one end.

Heavy Duty— For full-size exterior doors. Made of carbon steel with a polished chrome finish. Each end has drawbar springs. Furnished with a tear resistant, gray vinyl cover. Meet BHMA (Builders Hardware Manufacturers Assoc.) L02231 and ANSI A156.16 for LB2231.

Chain Length	For Door Width		
Standard Duty			
18″	Up to 36″	**1472A12**	$4.38
Heavy Duty			
20½″	30″	**1472A33**	25.24
25½″	36″	**1472A35**	26.92
30½″	42″	**1472A37**	29.77

Door Kick Plates

Also known as door plates, armor plates, or mop plates, these kick plates have mounting holes and include screws. ***Standard duty*** kick plates are 0.05″ thick. ***Heavy duty*** kick plates are 0.06″ thick.

Note: We recommend choosing a kick plate with a width that is 2″ narrower than the overall width of your door. This will prevent the kick plate from interfering with the opening and closing of your door.

Plate Size, Wd. × Ht.	STANDARD DUTY: Dull Type 304 Stainless Steel		Dull Type 316 Stainless Steel		Dull Aluminum		Dull Bronze		Polished Brass		HEAVY DUTY: Dull Type 304 Stainless Steel	
24″×34″	—	—	1397A63	$132.95	1397A64	$54.17	1397A62	$194.40	1397A61	$169.89	1918A27	$117.05
28″× 6″	1401A118	$16.09	1456A31	33.47	1401A115	12.45	1401A142	47.31	1401A126	39.40	1918A11	27.04
28″× 8″	1401A195	18.75	1456A34	44.62	1401A145	15.18	1401A147	59.71	1401A111	51.18	1918A12	34.28
28″×10″	1401A201	26.80	1456A38	55.76	1401A151	18.75	1401A162	75.15	1401A121	50.61	1918A13	41.54
28″×12″	1401A206	32.17	1456A43	66.91	1401A156	22.50	1401A166	90.20	1401A131	76.50	1918A14	48.76
28″×36″	1397A35	90.95	1456A48	181.68	1397A16	64.60	1397A53	244.75	1397A41	232.04	1918A15	128.84
28″×42″	1397A36	130.50	1456A49	215.60	1397A17	75.38	1397A55	272.56	1397A42	264.27	1918A16	160.67
30″× 6″	1401A119	17.23	1456A32	35.84	1401A116	13.05	1401A143	50.70	1401A127	37.14	1918A17	28.62
30″× 8″	1401A196	20.10	1456A35	45.77	1401A146	16.07	1401A153	64.42	1401A112	54.57	1918A18	36.36
30″×10″	1401A202	28.71	1456A39	59.73	1401A152	20.07	1401A163	81.37	1401A122	68.06	1918A19	44.10
30″×12″	1401A207	34.46	1456A44	71.69	1401A157	24.10	1401A167	96.61	1401A132	81.67	1918A21	51.86
34″× 6″	1401A125	19.51	1456A33	40.62	1401A117	14.70	1401A144	57.49	1401A128	39.40	1918A22	31.70
34″× 8″	1401A198	22.77	1456A36	51.85	1401A148	18.20	1401A158	73.03	1401A113	61.33	1918A23	40.50
34″×10″	1401A204	32.54	1456A41	67.71	1401A154	22.77	1401A164	91.26	1401A123	76.71	1918A24	49.28
34″×12″	1401A209	39.06	1456A45	81.24	1401A159	27.32	1401A168	109.45	1401A133	92.04	1918A25	58.06
34″×16″	1401A135	48.29	1456A47	108.33	1401A129	36.40	1401A171	146.00	1401A141	124.96	1918A26	75.62
34″×34″	—	—	1397A67	192.67	1397A68	72.48	1397A66	275.87	1397A65	259.78	1918A28	158.44
34″×36″	1397A37	107.98	1456A51	224.42	1397A18	78.44	1397A54	283.68	1397A43	275.95	1918A29	166.07
34″×42″	1397A38	124.56	1456A52	261.80	1397A19	91.51	1397A56	332.33	1397A44	320.91	1918A31	188.95
34″×46″	—	—	1397A72	262.00	1397A73	98.04	1397A71	370.13	1397A69	351.47	1918A32	204.18
36″× 8″	1401A199	23.62	1456A37	54.91	1401A149	19.30	1401A181	65.52	1401A114	64.71	1918A33	42.56
36″×10″	1401A205	34.46	1456A42	71.69	1401A155	24.10	1401A165	96.61	1401A124	81.02	1918A34	51.86
36″×12″	1401A211	41.34	1456A46	86.02	1401A161	28.93	1401A169	115.97	1401A134	97.21	1918A35	61.16

Polished Aluminum with Diamond Tread—*0.125″ Thick*

34″×36″	1940A11	$167.98

Pull and Push Plates

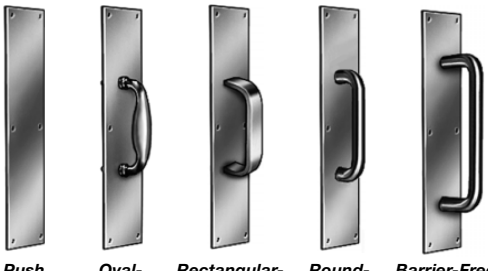

Push Plate — ***Oval-Grip Pull Plate*** — ***Rectangular-Grip Pull Plate*** — ***Round-Grip Pull Plate*** — ***Barrier-Free Round-Grip Pull Plate***

Protect your wood and metal doors with these pull and push plates. They have beveled edges and mounting holes. Screws are included. *Antimicrobial* plates have a coating that inhibits the growth of bacteria, mold, and mildew.

Barrier-free pull plates have extra clearance between the handle and the plate.

Pull Plates

Finish/ Material	Handle Lg.	Handle Clear-ance	Handle Grip Thick.	3½″×15″ Plate Size		4″×16″ Plate Size	
Oval Grip—*0.125″ Thick Plate*							
Dull Type 304 SS	5½″	1⅜″	½″	1404A14	$53.33	1404A54	$56.00
Dull Aluminum	5½″	1⅜″	½″	1404A11	31.73	1404A52	33.32
Polished Brass	5½″	1⅜″	½″	1404A12	65.81	1404A53	69.10
Oval Grip—*0.050″ Thick Plate*							
Dull Type 304 SS	5½″	1⅜″	½″	1404A18	31.74	1404A58	33.33
Dull Aluminum	5½″	1⅜″	½″	1404A15	20.16	1404A56	21.17
Polished Brass	5½″	1⅜″	½″	1404A16	34.73	1404A57	36.47
Rectangular Grip—*0.050″ Thick Plate*							
Dull Type 304 SS	6″	1⅝″	★	1404A63	35.02	1404A73	36.77
Dull Aluminum	6″	1⅝″	★	1404A61	23.15	1404A71	24.31
Polished Brass	6″	1⅝″	★	1404A62	46.72	1404A72	48.41
Round Grip—*0.050″ Thick Plate*							
Dull Type 304 SS	5½″	1⅜″	⅝″	1404A83	25.29	1404A93	26.55
Antimicrobial Type 304 SS	5½″	1⅜″	⅝″	1400A1	38.33	1400A2	40.25
Dull Type 316 SS	8″	1½″	¾″	1375A27	52.14	1375A28	54.75
Dull Aluminum	5½″	1½″	¾″	1404A81	20.76	1404A91	21.80
Polished Brass	5½″	1⅜″	⅝″	1404A82	46.10	1404A92	48.41
Barrier-Free Round Grip—*0.050″ Thick Plate*							
Dull Type 304 SS	8″	2½″	¾″	1404A67	35.80	1404A77	37.59
Antimicrobial Type 304 SS	8″	2½″	¾″	1400A3	49.60	1400A4	52.08
Dull Type 316 SS	8″	2½″	¾″	1375A31	58.26	1375A33	61.17
Dull Aluminum	8″	2½″	¾″	1404A65	26.95	1404A75	28.30
Polished Brass	8″	2½″	¾″	1404A66	52.29	1404A76	54.90

★ Grip is 1¼″ Wd. × ⅜″ Thick.

Push Plates

Thick.	3½″×15″ Plate Size		4″×16″ Plate Size		4″×20″ Plate Size	
Dull Type 304 Stainless Steel						
0.125″	1403A14	$26.33	1403A34	$30.28	1403A46	$34.76
0.050″	1403A19	9.38	1403A44	10.79	1403A49	12.38
Antimicrobial Type 304 Stainless Steel						
0.050″	1395A1	16.47	1395A2	18.94	1395A3	21.74
Dull Type 316 Stainless Steel						
0.125″	1551A17	32.54	1551A19	37.42	1551A41	42.95
0.050″	1551A25	14.63	1551A37	16.82	1551A42	19.31
Dull Aluminum						
0.125″	1403A11	18.79	1403A32	21.61	1403A47	24.80
0.050″	1403A16	6.69	1403A42	7.69	1403A51	8.83
Polished Brass						
0.125″	1403A12	42.78	1403A33	49.20	1403A48	56.47
0.050″	1403A17	17.85	1403A43	20.53	1403A52	23.56

Door Edge Repair Plates

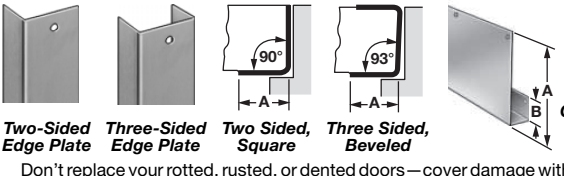

Two-Sided Edge Plate — ***Three-Sided Edge Plate*** — ***Two Sided, Square*** — ***Three Sided, Beveled*** — ***Combination Kick Plate/ Edge Plate***

Don't replace your rotted, rusted, or dented doors—cover damage with these repair plates. Mount to 1¾″ thick doors. All have mounting holes and include screws.

Edge plates mount to the edge of the door. Plates are made of dull Type 316 stainless steel, except the 83⅛″ long plate, which is made of dull Type 304 stainless steel. *Note:* 42″ and 83⅛″ long plates may require partial cutouts for door hinges or lock hardware. **To Order:** Please specify square or beveled door edge.

Combination kick plates/edge plates mount to the bottom of the door.

Edge Plates

Lg.	Thick.	(A)	Two Sided		Three Sided	
36″	0.050″	1¼″	1433A21	$36.44	1433A41	$58.04
42″	0.050″	1¼″	1433A31	39.29	1433A51	54.77
83⅛″	0.063″	¾″	1042A14	148.05	1042A13■	193.78

■ Angle is 89° for square edge, 91° for beveled edge.

Combination Kick Plates/Edge Plates—0.050″ Thick

Wd.	(A)	(B)	Dull Type 304 Stainless Steel		Dull Aluminum	
29½″	7″	1⅞″	1622A61	$57.22	1622A21	$38.29
31½″	7″	1⅞″	1622A62	58.06	1622A22	38.85
35½″	7″	1⅞″	1622A63	61.35	1622A23	40.45

Door Lock Cover and Repair Plates

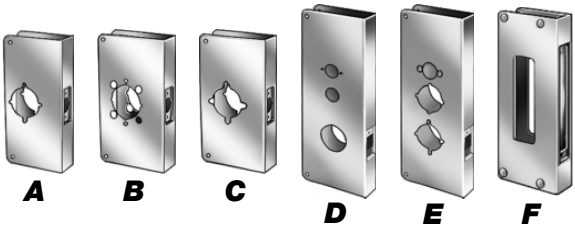

Convert from one lockset style to another without repairing or replacing your door. For wood and metal doors. Mounting screws are included.

Style A—For cylindrical locksets. Bore holes are 2⅛″ dia.

Styles B&C—For cylindrical locksets with lever handles. Bore holes are 2⅛″ dia. *Style B* is for Schlage D (see 11325A and 12905A on pgs. 2906-2907), Yale 5400 LN (see 11685A on pg. 2908), Sargent 10 (see 12115A on pg. 2908), Corbin Russwin 800, and Arrow H series locksets. *Style C* is for Best 93K and 7000 and Sargent 6500.

Style D—For Simplex 1000 series locks (see 8114A on page 2910).

Style E—For DL 2700 series alarm locks (see 12825A on page 2910).

Style F—For mortise-style locksets. Cover plates have an insert to use when lockset does not have a trim plate.

Material/ Finish	Ht.×Wd.	2⅜″ Backset		2¾″ Backset	
For 1⅜″ Door Thickness					
A... Polished Brass	9″×4″	1884A15	$21.28	1884A22▲	$21.28
A... Dull Type 304 SS	9″×4″	1884A17	18.17	1884A24▲	18.17
For 1¾″ Door Thickness					
A... Polished Brass	9″×4″	1884A16	21.28	1884A23▲	21.28
A... Dull Type 304 SS	9″×4″	1884A18	18.17	1884A25▲	18.17
B... Dull Type 304 SS	9″×4¾″	12785A74	24.60	12785A54	24.60
C... Dull Type 304 SS	9″×4¾″	12785A78	24.60	12785A68	24.60
D... Dull Type 304 SS	15″×5″	12785A76	27.00	12765A36	27.00
E... Dull Type 304 SS	15″×5″	12785A86	31.50	12765A46	31.50
F... Dull Type 304 SS	12″×5″	12785A88	33.75	12735A38	33.75

▲ Width is 4¼″.

Lockset and Deadbolt Cover Plates

Cover door damage or hide drilled holes. OD is 3½″.

Style G—Fits under doorknobs.

Style H—Fits under deadbolt locks.

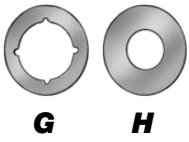

ID	Polished Brass		Type 304 SS	
G... 2⅛″	13185A21	$3.33	13185A25	$3.11
H... 1½″	13185A33	3.33	13185A37	3.11

Hole Cover Plates

Conceal up to 2⅛″ dia. holes when you remove knobs and locks. Made of steel. Screws are included.

Prime Coat Finish	12965A41	$3.28
Polished Brass Finish	12965A42	$5.60
Polished Chrome Finish	12965A43	$5.30

Doorknob and Lever Handle Lockouts

Prevent use of the keyhole on standard size knob and lever locksets. Made of aluminum alloy with a gray powder-coated finish. Come with two keys. Inside depth is 1 27/32″.

Keyed differently lockouts open with different keys. ***Keyed alike*** lockouts open with the same key.

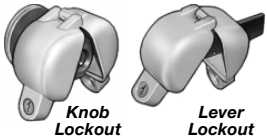

Knob lockouts are for 1¼″ to 2 7/16″ dia. doorknobs.

Lever lockouts are reversible for use on right- and left-hand levers.

	OD	ID	Knob Lockouts		Lever Lockouts	
Keyed Differently	2 53/64″	2 9/16″	12035A12	$39.20	12035A31	$49.54
Keyed Alike	2 53/64″	2 9/16″	12035A13	39.20	12035A32	49.54

Knob-to-Lever Handle Converters

Modify 1¾″ to 2¼″ dia. doorknobs to lever style. Made of high-density polyethylene. Reversible for right- and left-hand doors. Approved by the Arthritis Foundation.

To Order: Please specify color: dull brass, silver metallic, or off-white.

Lg.×Dp.		
6¾″×2½″	12015A21	$19.48

Lock Strike Plates

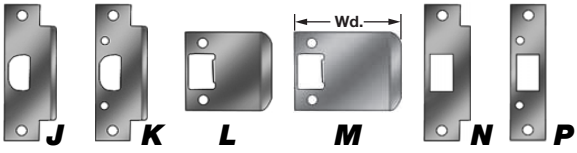

All strike plates are furnished with mounting screws. Plate thickness is 0.095″, unless noted. ***Styles J, K, N,*** and ***P*** fit frames that have a 4⅞″ Ht.×1¼″ Wd. ANSI preparation. ***Styles J&N***—Use on metal and wood door frames. ***Styles K&P***—Use on wood door frames; 3″ screws in offset holes secure strike plate to the 2×4 stud behind the frame. ***Styles L&M***—Use when door is set deep in a wood frame. An extended lip prevents latch from damaging the frame. Plate thickness is 0.05″.

Overall Size, Ht.×Wd.	Dull Silver Coated Steel		Polished Brass		Type 304 Stainless Steel	
For Cylindrical Door Locks						
J... 4⅞″×1 13/16″	80185A15	$7.12	80185A25	$6.79	80185A21	$8.42
K... 4⅞″×1 13/16″	80185A61	6.15	80185A58●	6.15	____	____
L... 2¼″×2½″	____	____	80185A63	6.45	80185A65	8.00
M... 2¼″×3″	____	____	80185A67	6.10	80185A69	7.56
For Deadbolt Locks						
N... 4⅞″×1⅝″	80185A35	6.27	80185A33●	6.27	____	____
P... 4⅞″×1¼″	80185A56	8.12	80185A53●	8.12	80185A52	10.28

● Brass coated steel.

Lock Cylinder Repinning Kits

Repin your own locks. These kits include pin charts, upper and lower pins, springs, and an indexed plastic case. Pins are 0.115″ dia., except A2 interchangeable core pins, which are 0.108″ dia. ***A2 interchangeable cores*** fit most Arrow and Falcon locks. ***Universal kit*** repins almost all locks. ***Tool kit*** includes tweezers, pin length gauge, and followers.

Manufacturer	No. of Sizes	Pins/ Size	Pin Lg. Increments		
Kwikset	14	25	0.023″	1287A56	$62.96
Sargent	23	25	0.020″	1287A47	62.96
Schlage	21	25	0.015″	1287A46	62.96
Yale	20	25	0.019″	1287A48	62.96
A2 Interchangeable Cores	25	25	0.0125″	1287A39	62.96
Universal Kit	124	72	0.003″	1287A52	250.00
Tool Kit				1287A11	62.50

Lockset Security Covers

Covers are made of steel. Mounting screws are included.

Style Q and Style R Latch Bolt Covers

Cover door gaps to prevent latch bolt tampering. ***Style Q*** is for doors that open toward you. ***Style R*** is for doors that open away from you. Covers have a two-piece interlocking design that mounts to door and frame. Their narrow profile allows use with most locksets.

Lg.×Wd.	Chrome Finish		Dark Brown Finish		Dull Stainless Steel Finish	
Q... 7″×2¾″	13055A51		13055A53	$9.49	13055A57	$16.10
Q... 11″×3″	13055A54♠		13055A56	10.29	13055A58	16.80
R... 6″× 5/8″	13055A64★		13055A66	10.67	____	____
R... 12″× 5/8″	13055A77★		13055A79	11.80	____	____

♠ Has a rectangular cutout. ★ Width is 9/16″.

Style S Doorknob Cover

Protect keyed doorknobs from tampering. Fits max. rose dia. of 2 11/16″. Projection is 3″. Base plate is 3½″×3½″. Has a gray powder-coated finish.

13055A81	$29.60

Temporary Door Lock

Maintain security while repairing or replacing an existing lockset. Fasten this reusable lock to a metal door frame (min. 2″ face) using the screw holes from your existing strike plate; it fits most hole patterns. Lock does not mount to your door, yet effectively denies access when secured with a padlock (not included, 5/16″ max. shackle dia.). When door is closed, all screws are hidden. Max. door thickness is 1¾″.

Made of zinc-plated steel, lock is 6⅜″ high and works with both in-swinging and out-swinging doors. Mounting screws are included.

1944A11	$49.54

About Door Locksets

Backset

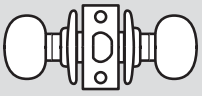

Passage

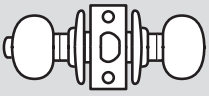

Privacy

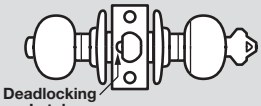

Entrance

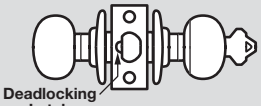

Storeroom and Classroom

Backset

Backset is the distance from the edge of the door to the center of the lockset's mounting hole. The most common backsets are 2⅜″ and 2¾″.

Functions

Passage— Both handles are always free-turning. No keys required.

Privacy— The push button on the inside handle locks the outside handle. Turn the inside handle to release push button. If push button is engaged while door is open, closing the door releases it, preventing accidental lockouts. Also opens from outside with a small screwdriver. No keys required.

Entrance— The push button on the inside handle locks the outside handle. Open the door with a key outside, or by turning the inside handle. Has a deadlocking latch for extra security.

Storeroom— Inside handle is always free-turning. Outside handle is always locked and unlocks by key only. Has a deadlocking latch for extra security.

Classroom— Inside handle is always free-turning. Outside handle is free-turning except when locked by key. Has a deadlocking latch for extra security.

Keying

Keyed Differently— Each lockset opens with a different key. Locks have random key numbers. You won't know your key number until you receive your lockset.

Keyed Alike— Locksets with the same McMaster-Carr part number open with the same key.

Master Keyed— Each lockset opens with a different key; master key opens all locks. Master keys must be ordered separately.

Keyway

Keyway is important when you are matching a lockset to an existing key system. The keyway style, "C" or "E," is stamped on the original key that comes with a lockset. If your key is a copy, order one of each sample key blank below and try them in your lock. The sample blank that fits your lock identifies your keyway style.

Style "C" Keyway Sample Blank **2164A11** $0.57
Style "E" Keyway Sample Blank ..... **2164A12** .53

Schlage Lever Locksets

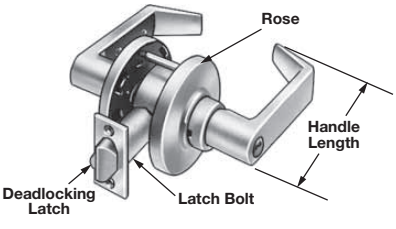

The lever handles on these locksets are easy to operate. When installed properly, they help you comply with the Americans with Disabilities Act (ADA). Use on wood and metal doors. Reversible for right- and left-hand doors. Latch bolt extends ½″ from edge of door. Furnished with strike plate, mounting hardware, and instructions. UL listed for three-hour fire doors.

Heavy Duty "D" Series— For doors with continuous use, such as cafeteria doors and main entrance doors. Fits 1⅝″ to 2⅛″ thick doors. Handle is 4⁹⁄₁₆″ long and projects 2¹⁵⁄₁₆″ from face of door. Rose is 3⁷⁄₁₆″ dia. Meets ANSI A156.2 Grade 1 standards for 800,000 cycles.

Standard Duty "AL" Series— Fits 1⅜″ to 1⅞″ thick doors. Handle is 4¼″ long and projects 2½″ from face of door. Rose is 3⁷⁄₁₆″ dia. Meets ANSI A156.2 Grade 2 standards for 400,000 cycles.

Entrance, Storeroom, and Classroom Functions— Come with two Schlage "C" style keys per lockset. *Keyed-alike* and *master-keyed* locksets are keyed to a McMaster-Carr key-numbering system. Master keys for master-keyed locks must be ordered separately; they're listed below. Use locksets *without lock cylinders* when you want to reuse your existing Schlage or other compatible cylinder in the new lock. **To Order:** For master keys, please specify the lockset's finish (dull chrome or dark bronze). For 13045A keys, also specify the lockset's backset (2⅜″ or 2¾″).

Also Available: Locksets to match your existing key system. Please tell us your key number when ordering a keyed lockset.

Also Available: Locksets with Schlage "E" style keyway ("E" is stamped on key). Please ask for 11325A91 for heavy duty or 13045A67 for standard duty and specify lockset function (entrance, storeroom, or classroom), keying style (keyed differently, keyed alike, or master keyed), backset (2⅜″ or 2¾″), and finish (dull chrome or dark bronze).

	2⅜″ BACKSET				2¾″ BACKSET				
	Dull Chrome		Dark Bronze		Dull Chrome		Dark Bronze		Master Key
Heavy Duty "D" Series									
Passage Function									
No Lock; No Key					11325A31	$215.47	11325A32	$230.62	
Privacy Function									
Push-Button Lock; No Key					11325A34	248.52	11325A35	267.58	
Entrance Function									
Keyed Differently					11325A37	289.38	11325A38	308.12	
Keyed Alike					11325A41	294.00	11325A42	312.75	
Master Keyed ♦					11325A44	288.57	11325A45	301.85	11325A911 $8.72
Without Lock Cylinder					11325A763	271.71	11325A764	295.12	
Storeroom Function									
Keyed Differently					11325A51	275.60	11325A52	288.87	
Keyed Alike					11325A54	284.52	11325A55	302.66	
Master Keyed ♦					11325A57	288.57	11325A58	301.85	11325A912 8.98
Without Lock Cylinder					11325A813	266.38	11325A814	285.73	
Classroom Function									
Keyed Differently					11325A823	280.04	11325A824	298.19	
Keyed Alike					11325A833	284.52	11325A834	302.66	
Master Keyed ♦					11325A843	288.93	11325A844	301.85	11325A913 8.62
Without Lock Cylinder					11325A853	266.38	11325A854	286.42	
Standard Duty "AL" Series									
Passage Function									
No Lock; No Key	13045A111	$109.38	13045A112	$128.12	13045A121	109.38	13045A122	128.12	
Privacy Function									
Push-Button Lock; No Key	13045A131	124.38	13045A132	143.12	13045A141	124.38	13045A142	143.12	
Entrance Function									
Keyed Differently	13045A151	159.38	13045A152	178.12	13045A161	159.38	13045A162	178.12	
Keyed Alike	13045A171	164.00	13045A172	182.75	13045A181	164.00	13045A182	182.75	
Master Keyed ♦	13045A191	168.19	13045A192	186.94	13045A211	164.00	13045A212	186.94	13045A911 8.33
Without Lock Cylinder	13045A221	128.12	13045A222	146.88	13045A231	128.12	13045A232	146.88	
Storeroom Function									
Keyed Differently	13045A241	159.38	13045A242	178.12	13045A251	159.38	13045A252	178.12	
Keyed Alike	13045A261	164.00	13045A262	182.75	13045A271	164.00	13045A272	182.75	
Master Keyed ♦	13045A281	186.94	13045A282	186.94	13045A291	186.94	13045A292	186.94	13045A912 8.33
Without Lock Cylinder	13045A411	128.12	13045A412	146.88	13045A421	128.12	13045A422	146.88	

♦ Master keys must be ordered separately.

(Continued on following page)

For information about door locksets, see page 2906.

Schlage Lever Locksets *(Continued from previous page)*

	2 3/8" BACKSET Dull Chrome		2 3/8" BACKSET Dark Bronze		2 3/4" BACKSET Dull Chrome		2 3/4" BACKSET Dark Bronze		Master Key	
Standard Duty "AL" Series (Cont.)										
Classroom Function										
Keyed Differently	13045A431	$173.86	13045A432	$194.85	13045A441	$173.86	13045A442	$194.85		
Keyed Alike	13045A451	178.91	13045A452	199.91	13045A461	178.91	13045A462	199.91		
Master Keyed ♦	13045A471	199.36	13045A472	199.91	13045A481	183.48	13045A482	199.91	13045A913	$8.33
Without Lock Cylinder	13045A491	139.77	13045A492	160.23	13045A581	139.77	13045A582	160.23		

♦ Master keys must be ordered separately.

Schlage Knob Locksets

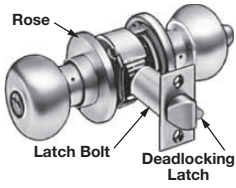

A traditional choice, these locksets have smooth, round knobs. Use on wood and metal doors. Reversible for right- and left-hand doors. Knobs are 2 1/8" dia. and project 2 9/16" from door. Rose is 2 9/16" dia. Latch bolt extends 1/2" from edge of door. Furnished with strike plate, mounting hardware, and instructions. UL listed for three-hour fire doors.

Heavy Duty "D" Series— For doors with continuous use, such as cafeteria doors and main entrance doors. Fits 1 3/8" to 2" thick doors. Meets ANSI A156.2 Grade 1 standards for 800,000 cycles.

Standard Duty "A" Series— Fits 1 3/8" to 1 7/8" thick doors. Meets ANSI A156.2 Grade 2 standards for 400,000 cycles.

Entrance, Storeroom, and Classroom Functions— Come with two Schlage "C" style keys per lockset. *Keyed-alike* and *master-keyed* locksets are keyed to a McMaster-Carr key-numbering system. Master keys for master-keyed locks must be ordered separately; they're listed below. Use locksets *without lock cylinders* when you want to reuse your existing Schlage or other compatible cylinder in the new lock. **To Order:** For master keys, please specify the lockset's finish (dull chrome or dull stainless steel). For 12895A keys, also specify the lockset's backset (2 3/8" or 2 3/4").

Also Available: Locksets to match your existing key system. Please tell us your key number when ordering a keyed lockset.

Also Available: Locksets with Schlage "E" style keyway ("E" is stamped on key). Please ask for 12905A15 for heavy duty or 12895A17 for standard duty and specify lockset function (entrance, storeroom, or classroom), keying style (keyed alike, keyed differently, or master keyed), and finish (dull chrome or dull stainless steel). For 12895A17, also specify backset (2 3/8" or 2 3/4"). 12905A15 has a 2 3/4" backset.

	2 3/8" BACKSET Dull Chrome		2 3/8" BACKSET Dull Stainless Steel		2 3/4" BACKSET Dull Chrome		2 3/4" BACKSET Dull Stainless Steel		Master Key	
Heavy Duty "D" Series										
Passage Function										
No Lock; No Key					12905A41	$224.38	12905A43	$243.13		
Privacy Function										
Push-Button Lock; No Key					12905A44	278.12	12905A46	296.88		
Entrance Function										
Keyed Differently					12905A47	323.12	12905A49	341.88		
Keyed Alike					12905A51	327.75	12905A53	346.50		
Master Keyed ♦					12905A54	331.94	12905A56	350.69	12905A911	$8.61
Without Lock Cylinder					12905A417	291.88	12905A419	310.62		
Storeroom Function										
Keyed Differently					12905A57	323.12	12905A59	341.88		
Keyed Alike					12905A61	327.75	12905A63	346.50		
Master Keyed ♦					12905A64	331.94	12905A66	350.69	12905A912	8.61
Without Lock Cylinder					12905A431	291.88	12905A433	310.62		
Classroom Function										
Keyed Differently					12905A17	323.12	12905A19	341.88		
Keyed Alike					12905A21	327.75	12905A23	327.75		
Master Keyed ♦					12905A24	331.94	12905A26	350.63	12905A913	8.61
Without Lock Cylinder					12905A444	291.88	12905A446	310.62		
Standard Duty "A" Series										
Passage Function										
No Lock; No Key	12895A21	$68.86	12895A23	$89.32	12895A24	68.86	12895A26	89.32		
Privacy Function										
Push-Button Lock; No Key	12895A27	73.64	12895A29	94.09	12895A31	73.64	12895A33	94.09		
Entrance Function										
Keyed Differently	12895A34	131.59	12895A36	152.05	12895A37	131.59	12895A39	152.05		
Keyed Alike	12895A41	136.64	12895A43	157.09	12895A44	136.64	12895A46	157.09		
Master Keyed ♦	12895A47	141.20	12895A49	161.66	12895A51	141.20	12895A53	161.66	12895A911	8.61
Without Lock Cylinder	12895A144	98.39	12895A146	117.95	12895A147	98.39	12895A149	117.95		
Storeroom Function										
Keyed Differently	12895A54	131.59	12895A56	152.05	12895A57	131.59	12895A59	152.05		
Keyed Alike	12895A61	136.64	12895A63	157.09	12895A64	136.64	12895A66	157.09		
Master Keyed ♦	12895A67	141.20	12895A69	161.66	12895A71	141.20	12895A73	161.66	12895A912	8.61
Without Lock Cylinder	12895A171	98.39	12895A173	117.95	12895A174	98.39	12895A176	117.95		
Classroom Function										
Keyed Differently	12895A281	137.86	12895A283	159.29	12895A284	137.86	12895A286	159.29		
Keyed Alike	12895A287	143.14	12895A289	164.57	12895A291	143.14	12895A293	164.57		
Master Keyed ♦	12895A294	147.93	12895A296	169.36	12895A297	147.93	12895A299	169.36	12895A913	8.61
Without Lock Cylinder	12895A197	105.15	12895A199	127.21	12895A201	105.15	12895A203	127.21		

♦ Master keys must be ordered separately.

Schlage Heavy Duty Mortise Lever Locksets

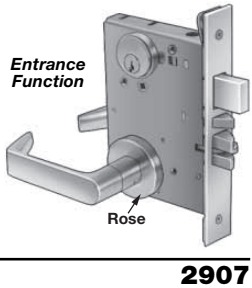

The body of the mortise lock fits within a 6 1/4" Ht. × 1" Wd. × 4 1/2" Dp. cutout in the door, so it's extra durable. When installed properly, these locksets help you comply with the Americans with Disabilities Act (ADA).

Use on 1 3/4" thick wood and metal doors. Reversible for right- and left-hand doors. Handles are 4 5/8" long and project 2 3/4" from door. Rose is 2 1/8" dia. Latch bolt extends 3/4" from edge of door. UL listed for three-hour fire doors. Meet ANSI A156.13 Grade 1 standards for 1,000,000 cycles.

Entrance and Storeroom Functions— Lock cylinder has a Schlage "C" style keyway and comes with two keys. *Entrance function* has a deadbolt that extends 1" into door frame and locks with a turnpiece.

Lock Function	Backset	Dull Chrome		Dark Bronze		Dull Stainless Steel	
Passage—No Lock; No Key	2 3/4"	12195A52	$352.23	12195A53	$372.32	12195A54	$372.32
Entrance—Keyed Differently	2 3/4"	12195A55	464.73	12195A56	484.82	12195A57	476.32
Storeroom—Keyed Differently	2 3/4"	12195A58	450.67	12195A59	458.71	12195A61	458.71

For information about door locksets, see page 2906.

Yale, Sargent, and Corbin Russwin Locksets

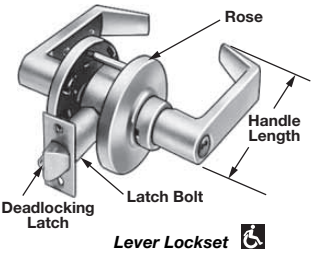

Lever Lockset

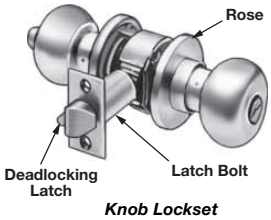

Knob Lockset

Use these locksets on wood and metal doors. They're reversible for right- and left-hand doors. Latch bolt extends ½″ from edge of door. Furnished with strike plate, mounting hardware, and instructions. UL listed for three-hour fire doors. ***Lever locksets*** offer easy gripping. When installed properly, the lever locksets help you comply with the Americans with Disabilities Act (ADA).

Heavy Duty— For doors with continuous traffic, such as cafeteria doors and main entrance doors. Backset is 2¾″. Meet ANSI A156.2 Grade 1 standards for 800,000 cycles. **To Order:** For Corbin Russwin keyed locksets, please specify keyway style: "L4," "D1," or "60" (keyway style is stamped on key).

Standard Duty— Meet ANSI A156.2 Grade 2 standards for 400,000 cycles. **To Order:** Please specify backset: 2⅜″ or 2¾″. For Corbin Russwin keyed locksets, also specify keyway style: "L4," "D1," or "60" (keyway style is stamped on key).

Entrance, Storeroom, and Classroom Functions— Come with two keys per lockset. ***Yale*** locksets have a Yale 8 (Para) style keyway ("Yale" is stamped on key). *Yale lever locksets* have tamper-resistant handles. When latch bolt is locked, the outside lever rotates freely so it can't be used for leverage during a forced entry. ***Sargent*** locksets have an "LA" style keyway ("Sargent" and "LA" are stamped on key). ***Corbin Russwin*** locksets have tamper-resistant handles. When latch bolt is locked, the outside lever rotates freely so it can't be used for leverage during a forced entry.

	LEVER LOCKSETS				KNOB LOCKSETS			
	For Door Thick.	Handle Lg.	Handle Proj.	Rose Dia.	For Door Thick.	Knob Dia.	Knob Proj.	Rose Dia.
Heavy Duty								
Yale	1¾″ to 2¼″	5 7/16″	3 3/64″	3½″	1⅜″ to 2″	2¼″	2 15/16″	2 9/16″
Sargent	1¾″ to 2″	5″	2½″	3½″	1⅜″ to 1¾″	2⅛″	2¾″	2¾″
Corbin Russwin	1¾″ to 2″	5″	2 13/16″	3½″	_____	____	____	____
Standard Duty								
Yale	1⅜″ to 1¾″	5″	3½″	3½″	1⅜″ to 1¾″	2 1/16″	2¾″	2¾″
Sargent	1⅜″ to 1¾″	4⅞″	2⅜″	3⅜″	1⅜″ to 1¾″	2⅛″	2 13/16″	2½″
Corbin Russwin	1⅜″ to 1¾″	4½″	2 13/16″	3½″	_____	____	____	____

Keying	LEVER LOCKSETS Yale Dull Chrome		Sargent Dull Chrome		Corbin Russwin Dull Chrome		KNOB LOCKSETS Yale Dull Chrome		Yale Dull Stainless Steel		Sargent Dull Chrome	
Heavy Duty												
Passage Function— *No Key*												
No Lock	**11685A21**	$224.29	**12115A81**	$230.58	**11725A41**	$336.99	**13025A54**	$204.04	**13025A56**	$226.19	**12945A81**	$270.08
Privacy Function— *No Key*												
Push-Button Lock	**11685A24**	256.84	**12115A84**	264.11	**11725A44**	384.52	**13025A57**	254.76	**13025A59**	260.71	**12945A84**	304.64
Entrance Function												
Keyed Differently	**11685A27**	304.19	**12115A87**	314.05	**11725A61**	440.92	**13025A61**	294.23	**13025A63**	309.52	**12945A87**	342.30
Storeroom Function												
Keyed Differently	**11685A31**	298.74	**12115A91**	314.05	**11725A63**	440.92	**13025A64**	303.57	**13025A66**	309.52	**12945A91**	342.30
Classroom Function												
Keyed Differently	**11685A33**	284.39	**12115A93**	314.05	**11725A65**	440.92	**13025A71**	298.74	**13025A73**	281.25	**12945A62**	331.43
Standard Duty												
Passage Function— *No Key*												
No Lock	**10225A42**	98.91	**10525A71**	90.37	**10375A51**	149.56	**12915A21**	74.40	**12915A23**	67.86	**13015A61**	78.75
Privacy Function— *No Key*												
Push-Button Lock	**10225A44**	113.62	**10525A73**	98.98	**10375A53**	165.12	**12915A24**	81.55	**12915A26**	76.21	**13015A64**	89.07
Entrance Function												
Keyed Differently	**10225A46**	144.81	**10525A75**	140.78	**10375A55**	202.13	**12915A27**	119.61	**12915A29**	126.72	**13015A67**	126.17
Storeroom Function												
Keyed Differently	**10225A48**	144.81	**10525A77**	140.78	**10375A57**	202.13	**12915A31**	119.61	**12915A33**	126.72	**13015A71**	126.17
Classroom Function												
Keyed Differently	**10225A51**	144.81	**10525A79**	140.78	**10375A59**	202.13	**12915A35**	119.61	**12915A37**	126.72	**13015A73**	126.17

Interchangeable Core Lever Locksets

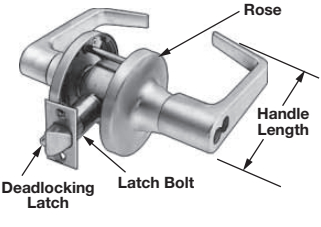

Use these lever locksets when you need to match the keying of an existing system or want the option of changing the lock's core without disassembling the lock. Locksets are compatible with Best, Arrow, Falcon, Alarm Lock, and Simplex small-format interchangeable cores (not included, see page 2910). Use a control key (not included, see page 2910) to remove and install cores. Use locksets on wood and metal doors that are 1¾″ to 2⅛″ thick. Reversible for right- and left-hand doors. Handle is 5½″ long and projects 3¼″ from door. Rose is 3½″ dia. Latch bolt extends ½″ from edge of door. All have a dull chrome finish.

When installed properly, these locksets help you comply with the Americans with Disabilities Act (ADA). Furnished with strike plate, mounting hardware, and instructions. UL listed for three-hour fire doors. Locksets meet ANSI A156.2 Grade 1 standards for 800,000 cycles.

	Backset	Entrance Function		Storeroom Function		Classroom Function	
Lockset (No Core)	2¾″	**2185A11**	$177.10	**2185A31**	$177.10	**2185A21**	$177.10

Corrosion-Resistant Knob Locksets

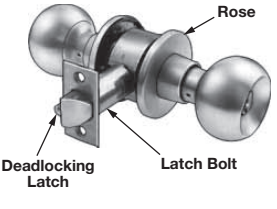

A good choice for marine and washdown environments, these locksets are made of stainless steel and other corrosion-resistant materials. For wood and metal doors that are 1⅜″ to 1⅞″ thick. Reversible for right- and left-hand doors. Knob is 2⅛″ dia. and projects 2 11/16″. Rose is 2⅝″ dia. Latch bolt extends 9/16″ from edge of door. Finish is dull stainless steel. Furnished with strike plate, mounting hardware, and instructions. UL listed for three-hour fire doors. Meet ANSI A156.2 Grade 1 standards for 800,000 cycles.

Passage and Privacy Functions— Do not require a key. Passage function does not have a lock. Privacy function has a push-button lock.

Entrance, Storeroom, and Classroom Functions— Have a Schlage "C" style keyway ("C" is stamped on key) and are keyed differently. Supplied with two keys.

Backset	Passage Function		Privacy Function		Entrance Function		Storeroom Function		Classroom Function	
2⅜″	**2146A18**	$250.80	**2146A17**	$284.63	**2146A15**	$307.20	**2146A16**	$307.20	**2146A21**	$307.20
2¾″	**2146A14**	250.80	**2146A13**	284.63	**2146A11**	307.20	**2146A12**	307.20	**2146A19**	307.20

For information about door locksets, see page 2906.

Antimicrobial Locksets

A clear antimicrobial powder coating on these locksets inhibits the growth of bacteria, mold, and mildew. Great for use in labs, clean rooms, and hospitals. Backset is 2¾″. All have a dull chrome finish. Reversible for right- and left-hand doors. The latch bolt extends ½″ from edge of door. Furnished with strike plate, mounting hardware, and instructions. UL listed for three-hour fire doors.

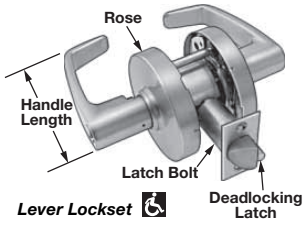

Lever Lockset

Lever Locksets— Work well for doors with continuous traffic. For wood and metal doors that are 1¾″ to 2″ thick. Handle is 5″ long and projects 2½″. Rose is 3½″ dia. When properly installed, these locksets help you comply with the Americans with Disabilities Act (ADA). Meet ANSI A156.2 Grade 1 standards for 800,000 cycles.

Knob Locksets— For wood and metal doors that are 1⅜″ to 1¾″ thick. Knob is 2⅛″ dia. and projects 2 13/16″. Rose is 2½″ dia. Meet ANSI A156.2 Grade 2 standards for 400,000 cycles.

Entrance, Storeroom, and Classroom Functions— Have an "LA" style keyway ("Sargent" and "LA" are stamped on key). Supplied with two keys.

Lock Function	Lever Locksets		Knob Locksets	
Passage—No Lock; No Key	1168A6	$270.93	1168A1	$114.63
Privacy—Push Button; No Key	1168A7	292.72	1168A2	127.96
Entrance—Keyed Differently	1168A8	352.80	1168A3	166.48
Storeroom—Keyed Differently	1168A9	352.80	1168A4	166.48
Classroom—Keyed Differently	1168A11	352.80	1168A5	166.48

Regular Duty Deadbolt Locks

Made of brass, these locks have a latch bolt that extends 1″ from the edge of the door for added security. Use on 1⅜″ to 1¾″ thick wood and metal doors. Locks are reversible for right- and left-hand doors. Keyway is Schlage "C" style. Fit cutouts from 1⅞″ to 2⅛″ dia. Rose is 2½″ dia. Furnished with strike plate, lock cylinder(s), two keys, mounting hardware, and instructions.

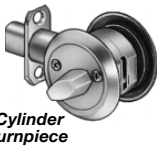

Lock Cylinder with Turnpiece

Lock cylinder with turnpiece has a lock cylinder with keyway on one side and opens with a turnpiece on the other side. ***Lock cylinder on both sides*** opens with a key on both sides of the door.

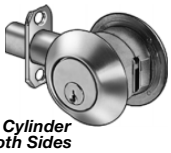

Lock Cylinder on Both Sides

Also Available: Locks keyed to your specific key number. Please ask for 1789A999 and tell us your key number.

Backset	Finish	Lock Cylinder with Turnpiece		Lock Cylinder on Both Sides	
Keyed Differently					
2⅜″	Dull Chrome	1789A27	$38.19	1789A53	$45.81
2⅜″	Polished Brass	1789A38	36.64	1789A57	45.81
2¾″	Dull Chrome	1789A36	38.19	1789A55	45.81
2¾″	Polished Brass	1789A46	38.19	1789A59	45.81
Keyed Alike					
2⅜″	Dull Chrome	1789A28	38.19	1789A54	45.81
2⅜″	Polished Brass	1789A39	38.19	1789A58	45.81
2¾″	Dull Chrome	1789A37	38.19	1789A56	45.81
2¾″	Polished Brass	1789A47	38.19	1789A61	45.81

Wire Partition Gate Locks

Secure gates in wire and chain link partitions and fences. Made of cast aluminum, locks have a ½″ Wd. × 3/16″ Dp. groove around the case (top, bottom, and back) so they can be securely fastened to the gate. Reversible for right- and left-hand gates. Locks open with a turnpiece on one side. Use locks with a ***mortise lock cylinder***, sold separately. Lock cylinder comes with two keys.

Swinging-Gate Lock— Latch projection is 1⅛″. Latch retracts ½″.

Sliding-Gate Lock— Hook projection is 53/64″. Requires a strike plate, sold separately.

Swinging Gate (Shown with Mortise Lock Cylinder)

Latch on Sliding Gate

Strike Plate for Sliding Gate

	Ht.	Wd.	Thick.		
Swinging-Gate Lock	6¼″	3⅝″	1″	1396A55	$80.21
Sliding-Gate Lock	6¼″	3⅝″	1″	1396A65	80.21
Mortise Lock Cylinder	—	—	—	1301A3	11.02
Strike Plate for Sliding Gate	4″	1 57/64″	1 11/16″	1396A12	20.11

Push and Pull Door Latches

A slight push or pull on the lever opens the door, allowing hands-free operation. When installed properly, these latches help you comply with the Americans with Disabilities Act (ADA). All have heavy duty construction for high-traffic areas. Choose latches that mount with the handles in a vertical or horizontal position.

For wood and metal doors up to 1¾″ thick. Reversible for right- and left-hand doors. Latch bolt extends ½″ from edge of door. Cover plates are 5½″ Ht. × 2 9/16″ Wd. Handles are 4½″ Ht. × 1½″ Wd. and project 2⅝″. Furnished with strike plate and mounting screws. UL listed for three-hour fire doors.

Latches with a ***dull chrome finish*** are aluminum. Latches with a ***dull stainless steel finish*** are Type 304 stainless steel.

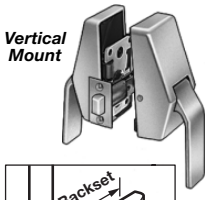

Vertical Mount

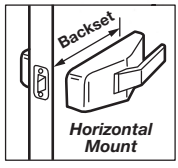

Horizontal Mount

Finish	Vertical Mount (2¾″ Backset)		Horizontal Mount (5″ Backset)	
Door Latches with Latch Bolts				
Dull Chrome	1247A33	$188.99	1247A45	$188.99
Dull Stainless Steel	1247A35	216.20	1247A47	216.20
Replacement Latch Bolts				
Dull Chrome	1247A61	30.68	1247A64	30.68

Heavy Duty Deadbolt Locks

A *Lock Cylinder on Both Sides*

Angle Strike Plate

Flat Strike Plate

B *Lock Cylinder with Turnpiece*

Great when you need extra security, these locks are reversible for right- and left-hand doors. Furnished with strike plate, lock cylinder(s), two keys, mounting hardware, and instructions. ***Lock cylinder with turnpiece*** has a lock cylinder with keyway on one side and opens with a turnpiece on the other side. ***Lock cylinder on both sides*** opens with a key on both sides of the door.

Style A— Great for heavy-traffic areas, these locks mount to 1¼″ to 2¼″ thick wood and metal in-swinging doors. Latch bolt extends 1⅛″ from edge of door. Made of zinc alloy, case is 3⅜″ Ht. × 3½″ Wd.

Style B— These jimmy-resistant locks have a guard that prevents them from being pried open with a screwdriver (even if the lock cylinder has been removed). For 1″ to 2½″ thick doors. All have vertical bolts. Made of brass, case is 2⅞″ Ht. × 4½″ Wd. ***Angle strike plate*** mounts on wood frames. ***Flat strike plate*** mounts on wood and metal frames.

Backset	Finish	Lock Cylinder with Turnpiece		Lock Cylinder on Both Sides	
Style A					
Keyed Differently					
2⅜″	Dull Brass	8047A47	$56.75	8047A49	$67.94
Style B with Angle Strike Plate					
Keyed Differently					
2⅜″	Polished Chrome	1336A21	71.25	—	—
2⅜″	Polished Bronze	1336A1	59.77	—	—
Keyed Alike					
2⅜″	Polished Chrome	1336A23	71.25	—	—
2⅜″	Polished Bronze	1336A5	59.77	—	—
Style B with Flat Strike Plate					
Keyed Differently					
2⅜″	Polished Chrome	1336A22	71.25	—	—
2⅜″	Polished Bronze	1336A2	59.77	—	—
Keyed Alike					
2⅜″	Polished Chrome	1336A24	71.25	—	—
2⅜″	Polished Bronze	1336A6	59.77	—	—

Occupied/Vacant Deadbolt Locks

Locks are for 1⅜″ to 1¾″ thick wood and metal doors. Reversible for right- and left-hand use. Latch bolt extends 1″ from edge of door. Open with a turnpiece inside and an emergency access tool outside. Backset is adjustable. Made of die cast zinc and come with a drill template, mounting hardware, and an emergency access tool.

	Backset	Ht. × Wd.		
Chrome Finish	2⅜″ to 2¾″	2 1/16″ × 3½″	14055A32	$77.59
Brass Finish	2⅜″ to 2¾″	2 1/16″ × 3½″	14055A39	77.59
Extra Emergency Access Tool			14055A35	6.90

Mechanical Push-Button Locksets

Standard, Knob Style

Standard, Left-Hand Lever Style

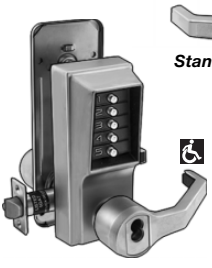

With Key Option, Right-Hand Lever Style (Core Sold Separately)

No need for electrical wiring or batteries—these locks are completely mechanical. Use them for security in high-traffic areas indoors and outdoors. Locks have a push-button combination for outside entry. The inside handle is always unlocked. Locksets accept one 1-5 digit code. All personnel share the same code; there are thousands of possible combinations. Furnished with a combination change key so you can quickly reset the combination without removing the lock from the door.

Each lockset fits 1⅜″ to 2¼″ thick wood and metal doors and has a heavy duty, deadlocking latch bolt that extends ½″ from the edge of the door. Backset is 2¾″ (see page 2906 for information about backset). Housing is 7⅜″ Ht.×3⅛″ Wd. and projects 3¹³⁄₁₆″. Not rated for temperature. Furnished with strike plate, mounting hardware, and instructions. Locksets meet ANSI 156.2 Grade 1 standards for 800,000 cycles. UL listed for three-hour "A" labeled fire doors. ***Lever-style*** locksets help you comply with the Americans with Disabilities Act (ADA) when properly installed.

Locksets with Passage Feature— For doors that need to be unlocked for long periods of time. Use the turnpiece on the inside to override the combination so door can be opened freely from the outside.

Locksets with Key Option— The handle accepts an interchangeable lock core (sold separately, see 12795A on this page) so you can open the lock with either the combination or a key.

Handing	Finish	Standard		With Passage Feature		With Key Option	
Knob-Style Locksets							
Reversible	Dull Chrome	8114A11	$358.42	8114A21	$401.60	—	—
Reversible	Dull Brass	8114A31	358.42	8114A22	419.58	—	—
Reversible	Polished Brass	8114A51	380.00	8114A23	394.49	—	—
Lever-Style Locksets							
Right Hand	Dull Chrome	8114A412	426.98	8114A911	471.45	8114A811	$493.47
Right Hand	Dull Brass	8114A422	426.98	8114A921	471.45	8114A821	493.47
Right Hand	Polished Brass	8114A522	419.46	8114A931	456.08	8114A831	507.04
Left Hand	Dull Chrome	8114A411	426.98	8114A912	471.45	8114A812	493.47
Left Hand	Dull Brass	8114A421	426.98	8114A922	471.45	8114A822	493.47
Left Hand	Polished Brass	8114A521	419.46	8114A932	456.08	8114A832	507.04

Anti-Spy Shield—Hides code being entered (for all locksets above) 8114A25 $31.67
Repl. Combination Change Keys (2) and Installation Spanner Wrench 8114A15 8.52

Electronic Keypad Locksets

Battery Operated with Schlage "C" Keyway

Battery Operated with Interchangeable Core (Core Sold Separately)

Self Powered

All of these keypad locksets accept multiple codes to provide a higher level of security than mechanical push-button locksets; a single code can be restricted without disruption to other personnel. Gain access from the outside with a 12-button metal keypad or key (where applicable). Inside handle is always unlocked. A visual display and an audible signal indicate when the correct code is entered and the door is unlocked. Reversible for right- and left-hand doors. Backset is 2¾″ (see page 2906 for information about backset). Housings are die cast zinc.

Furnished with strike plate, mounting hardware, and instructions. Locksets meet ANSI 156.2 Grade 1 standards for 800,000 cycles. UL listed for three-hour "A" labeled fire doors. Keyed locksets are keyed differently (each lock opens with a different key) and come with two keys. All locksets have a lever handle and help you comply with the Americans with Disabilities Act (ADA) when properly installed.

Battery-Operated Locksets— Have multiple levels of codes and can be programmed for up to 100 unique 3-5 digit codes. Units operate on five AA batteries (included) and have a low-battery warning. Locks that accept an interchangeable lock core do not include a core (sold separately, see 12795A on this page). Locksets fit 1⅝″ to 1⅞″ thick doors. Deadlocking latch bolt extends ½″ from door. Housing size is 8″ Ht.×3¼″ Wd. Locksets project 2⁹⁄₁₆″. Locksets ***for exterior weatherproof doors*** have a double-sealed keypad; temperature range is –31° to +151° F.

Self-Powered Locksets— No batteries or electrical wires needed—a few cranks of the lever and this tamper-resistant system generates its own power, making it maintenance free. Locksets support up to 20 unique 1-8 digit codes. Fit 1⅜″ to 2″ thick doors. Latch bolt extends ⁹⁄₁₆″ from edge of door. Housing is 9¼″ Ht.×3½″ Wd. with a 4″ projection. Include two keys for manual override. Outdoor use requires the gasket kit and weather shield (sold separately). Temperature range is –13° to +151° F.

Keyway	For Interior Doors		For Exterior Weatherproof Doors	
Battery-Operated Locksets—*Dull Chrome Finish*				
Schlage "C"; Keyed Differently	12825A41	$510.25	12825A62	$548.96
Accepts Interchangeable Lock Core	12825A52	512.41	12825A63	550.48
Self-Powered Lockset—*Black Powder-Coated Finish*				
Proprietary; Keyed Differently	1577A15	692.31	—	—
Self-Powered Lockset—*Dull Chrome Finish*				
Proprietary; Keyed Differently	1577A16	742.31	—	—

Optional Gasket Kit for Self-Powered Locksets 1577A22 $32.73
Optional Weather Shield for Self-Powered Locksets 1577A23 36.36

Interchangeable Lock Cores

These lock cores fit into the locksets on this page as well as Best, Arrow, Falcon, Alarm Lock, and Simplex small-format interchangeable core locksets. Use a control key to install a core in your interchangeable core lockset; you don't need to disassemble the lock.

Cores have a six-pin tumbler locking mechanism and include two keys. Choose Best E or Best A keyway. If you do not have a preference, we recommend using Best E keyways. A ***control key*** (sold separately) is required to remove and install a lock core. A ***master key*** (sold separately) is also required for a master-keyed lock core. One key can be used for multiple cores. For information about keying options, see page 2934.

To Order: For lock cores, please specify finish: dull chrome or dull brass.

	Best E Keyway		Best A Keyway	
Keyed Differently Lock Core	12795A85	$16.46	12795A95	$16.46
Keyed Alike Lock Core	12795A86	17.01	12795A96	17.01
Master-Keyed Lock Core	12795A87	19.44	12795A97	19.44
Control Key (for All Lock Cores)	12795A78	1.18	12795A81	1.18
Master Key (for Master-Keyed Cores)	12795A66	1.18	12795A72	1.18

Motorized Combination Lock

Use the push buttons to enter your own six-digit code and the battery-operated motor retracts the deadbolt latch to open your safe, vault, or door. Lock accepts one master code (for setting, changing, and deleting codes and time delays) and eight access codes. Optional time delay keeps the latch locked from one to nine minutes after you enter your code. Time delay is adjustable in one-minute increments. For indoor use.

Lock is zinc with a dull chrome finish. Operates on two 9-volt batteries (included) and has a low-battery warning signal. If battery power is interrupted, the lock retains your programmed codes. Housing is 3⁵⁄₁₆″ Lg.×2¹³⁄₃₂″ Wd. and projects 1¹³⁄₆₄″. Deadbolt latch is 1″ Ht.×⁵⁄₁₆″ Wd. and extends ¹⁵⁄₃₂″. Keypad is 4″ dia. UL listed. Mounting hardware and instructions are included.

10235A43 ..... $214.73

Push-Button Combination Locks

Outside View

With Deadlocking Latch
Inside View

With Deadbolt
Inside View

Use these mechanical locks in place of traditional deadbolts to limit access. Simply enter the 1-5 digit combination and turn the latch to open. All personnel share the same code; there are over 2,000 possible combinations. A turnpiece allows easy opening from the inside. For indoor and outdoor use. Not rated for temperature.

For wood door and frame installation (for metal doors, use adapter kit, sold separately). Reversible for right- and left-hand doors. Outside lock is 3¾″ Ht.×2⁹⁄₁₆″ Wd.×¹⁵⁄₁₆″ Dp.; inside lock is 5″ Lg.×3¹¹⁄₁₆″ Wd.×1⁹⁄₁₆″ Dp. Backset is 2½″ (see page 2906 for information about backset). Locks require a 1⅝″ dia. mounting hole. Made of die cast zinc with a brass faceplate. Inside has a matching finish. Furnished with strike plate, mounting hardware, and instructions.

With Deadlocking Latch— A latch bolt and a deadlocking latch secure door and prevent prying. When you close the door, the unit automatically locks. The latch can be held in the retracted position for unrestricted entry. Deadlocking latch extends ⅝″ from edge of door.

With Deadlocking Latch and Key Bypass— The same as the locks with deadlocking latch above, but can be opened from the outside with a key that overrides any combination and allows entry. Locks are keyed differently (each lock opens with a different key). Furnished with two keys.

With Deadbolt— Deadbolt extends 1″ from edge of door for added security. When you close the door, you have to manually relock the lock.

Metal Door Adapter Kit— Use to install locks on metal doors. Kit includes surface-mounted strike plate and adjustable riser plate.

For Door Thickness	Dull Chrome		Dull Brass	
With Deadlocking Latch				
1⅜″ to 1½″	8052A11	$134.14	8052A21	$134.14
1¾″ to 2⅛″	8052A15	135.14	8052A23	135.14
With Deadlocking Latch and Key Bypass				
1⅜″ to 1½″	8052A29	180.57	8052A32	180.57
1¾″ to 2⅛″	8052A44	180.57	8052A45	180.57
With Deadbolt				
1⅜″ to 1½″	8052A51	114.66	8052A52	114.66
1¾″ to 2⅛″	8052A53	114.66	8052A54	114.66
Metal Door Adapter Kit	8052A13	26.21	8052A31	26.21

Proximity and Keypad Lockset and Readers

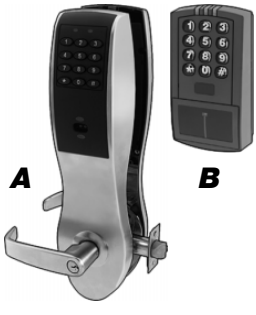

Up to 500 employees can use all methods of access—a code and/or an HID compatible proximity card or key fob (each sold separately). You can restrict the access methods of individuals. Memory is retained when power is interrupted. Keypads accept 1-6 digit codes. Use indoors or outdoors with the included weather shield gasket. All are HID compatible with a 26-bit format. UL listed. ***Optional tracking software*** (sold separately) lets you program the time of day the codes and proximity cards are in effect and tracks up to 2,000 events (code, entry time, unauthorized codes, etc.). Requires Windows 2000 or XP and a PDA or other portable data transfer device.

(A) Lockset with Proximity Reader and Keypad— A lever lockset is combined with access control. Lockset has a cylinder lock with two keys for emergency override. Inside lever is always unlocked. Reversible for right- and left-hand doors. Unit is 14¼″ Ht.×3¾″ Wd. and projects 3″. Keypad is black plastic with a blue reader surface. Housing is zinc and has a chrome finish. Latch bolt extends ½″ from edge of door. Backset is 2¾″ (see page 2906 for information about backset). Unit requires six AA batteries (included) and has a low battery indicator. Temp. range is –40° to +135° F. Furnished with strike plate and mounting hardware.

(B) Proximity Reader and Keypad— Use this reader and keypad with existing door hardware that is electrically actuated (electrified locks, electric strikes, etc.) to restrict access to areas such as computer rooms. Operates on 12 VDC or 24 VDC. Hardwire to an existing power source or use the 12 VDC power supply (sold separately below). Power supply operates on 115 VAC, 60 Hz; output current is 1 amp. Keypad housing is dark gray plastic with a black reader surface. Unit is 5¼″ Ht.×2¾″ Wd.×1⅝″ Dp. Temp. range is –22° to +122° F.

		Each
A ... Lockset with Proximity Reader and Keypad	1625A1	$1,132.22
B ... Proximity Reader and Keypad	1625A7	609.61
HID Proximity Card	1625A3	4.76
HID Proximity Key Fob	1625A4	7.53
Optional Tracking Software (CD-ROM)	1625A5	214.36
Repl. AA Batteries for Style A (4/Pkg.)	71455K53	Pkg. $2.94
Optional Power Supply for Style B	1625A8	Each $183.10

Electronic Touch-Screen Keypad Lockset

You don't need software or a programming device to give employees access privileges via their own keypad code. To use, touch the screen to activate the keypad, enter PIN, and turn the lever. Lockset is programmed with an easy mode which accepts up to 9 PIN codes, and an advanced mode that accepts up to 1,000 PIN codes. There are a variety of programming options including silent, unlock, and lockout modes. An LED indicates system status and low battery. For indoor and outdoor use; lockset comes with a weather-resistant gasket. Temperature range is –20° to +140° F.

Use this lever lockset to replace your current lever or knob cylindrical lockset. Lockset fits 1¾″ thick doors. Inside lever is free turning. Lockset has a cylinder lock and two keys for emergency override. Reversible for right- and left-hand doors.

Lockset is 7⅝″ Ht.×3¹¹⁄₁₆″ Wd. and projects 3⁵⁄₁₆″. Housing is steel with a dull chrome finish. Latch bolt extends ½″ from edge of door. Backset is 2¾″ (see page 2906 for information about backset). The lockset operates on four AA batteries (included). Furnished with strike plate, mounting hardware, and instructions.

Lockset ..... 9632T3 ... $350.00

Magnetic Stripe Card Reader Entry Control System

Access restricted areas with a control card; no keys required. System includes a card reader, 10 control cards, a transformer to convert 120 VAC to 12 VAC to power the reader, a hand-held programmer to activate/deactivate cards, instructions, and mounting hardware. An LED indicates system status. Designed for up to 10,000 cards.

Housing is black polycarbonate. Size is 5″ Ht.×7″ Wd.×1½″ Dp. Surface mount the card reader on a wall near any interior door that operates with an electric strike or electromagnetic lock that has its own power source (not included, see pages 2912-2913).

Additional control card (sold separately) allows you to add new members. **To Order:** Please specify the card code number on the last card number in your set.

Card Reader System ..... 1254A71 ... $433.09
Additional Control Card ..... 1254A73 ... 4.17

ADA-Compliant Automatic Door Openers

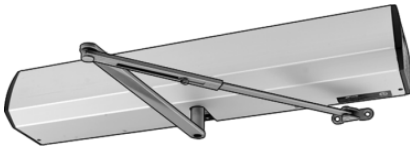

Wall-Mount Switch

Automatic swing-door openers offer easy access and hands-free opening for deliveries. When properly installed, openers help you comply with the Americans with Disabilities Act (ADA). In automatic mode, operate openers either by pushing on the door until the automatic opener takes over or by wiring the opener to a push-button switch (sold separately). Automatic opening force is less than 15 lbs. If an obstruction is sensed while opening, the unit automatically reverses direction. Adjustable "hold open" is 1-30 seconds. In manual mode, units operate as standard door closers.

Openers have an aluminum finish, are completely self-contained, and surface mount to an inside frame above interior or exterior doors. Reversible for right- and left-hand doors up to 200 lbs. and 48″ wide. Require 4½″ of clearance above the door. Openers are 27″ Lg.×4¾″ Wd. with a 4¾″ projection. Require hardwiring to a 115 VAC line. Furnished with mounting hardware. UL listed for fire-rated applications.

Regular arm mount pushes door open from inside. ***Parallel arm mount*** pulls door open from inside. See page 2914 for door mounting information.

Switches— Switch plates have "Push to Open" wording and ADA logo. Wire directly to the opener. Mounting screws are included.

Regular Arm Mount Opener ..... 10535A11 ... $1,897.74
Parallel Arm Mount Opener ..... 10535A12 ... 1,897.74
Door Frame Mount Switch (4¾″×1½″) ..... 10535A55 ... 84.87
Wall-Mount Switch (4¾″×4¾″) ..... 10535A56 ... 125.00

About Choosing an Electric Strike

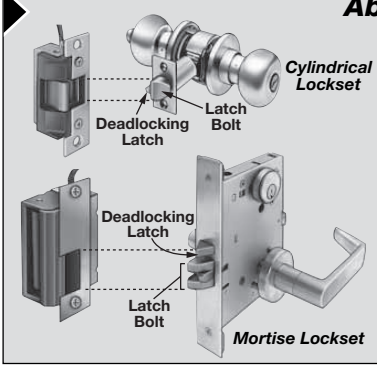

There are several factors to consider when choosing an electric strike:

1. Type of Lockset— Electric strikes have a latch-holding cavity that must line up with your lockset's latch bolt. The location of the latch bolt can differ between *cylindrical locksets* (pages 2906-2909) and *mortise locksets* (page 2907). See the diagrams at left to determine the type of lockset you have. Then, compare the face plates on the electric strikes on this page with your existing strike plate to find the correct electric strike. *Side-latch exit devices* (pages 2920-2921) surface mount on the door face and the latch extends into an electric strike surface-mounted on the door frame.

2. Door Frame Material and Case Size— To reduce door frame preparation work, choose an electric strike for your specific door frame material (aluminum, hollow metal, or wood) and match the case size of the strike to your existing frame cutout. If you don't find a case size that matches, choose a strike with a case size smaller than your cutout.

3. Maximum Latch Length— The latch fits inside the electric strike, so you need a strike that is deep enough to accommodate the portion of the latch that extends from the door.

4. Voltage & Current (Type)— Select an electric strike with the correct voltage. You may need to use a transformer and a rectifier in series to convert 120 VAC to lower DC power. Style A and B strikes on this page allow you to select 12 VDC or 24 VDC during installation.

Electric Strikes

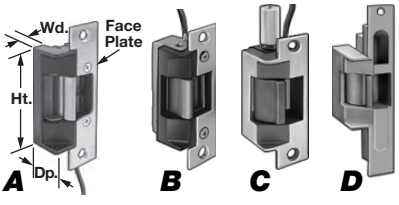

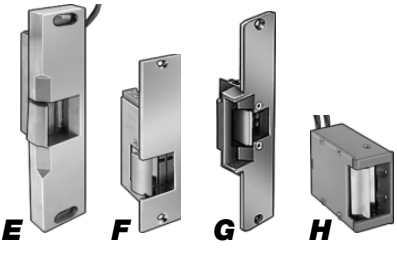

Electric strikes take the place of a standard strike plate in a door frame. They control access by either holding or releasing a latch bolt. Hardwire electric strikes to a power source and a controller (typically a push-button switch, keypad, or card reader).

Strikes are reversible for right- and left-hand doors. Furnished with mounting screws and instructions, unless stated. ***Styles A-E*** meet UL 1034 for burglary resistance.

Styles A and B allow you to select voltage and power-fail lock (to meet fire code requirements) or power-fail open operation. In power-fail lock operation, a power failure causes the latch-holding device to keep the latch engaged and the door locked. In power-fail open operation, a power failure causes the latch-holding device to release the latch and unlock the door. Styles C-H have power-fail lock operation.

A&B Regular Duty Electric Strikes— Max. holding force is 1,000 lbs. *Style A* includes two face plates to fit most frame cutouts. *Style B* includes three face plates to fit most frame cutouts.

C-E Heavy Duty Electric Strikes— For use in high traffic areas. Max. holding force is 1,500 lbs. *Style D* is for mortise locks with up to a 1″ deadbolt. Includes a face plate to accommodate a variety of latch positions. UL 10C listed for three-hour fire door assemblies.

F-H Low Voltage Electric Strikes— For replacing existing electric strikes in low voltage systems such as intercom systems and other specialty applications. Maximum holding force is 1,000 lbs. *Style F* requires #8 wood screws (not included). *Style G* requires #8 wood screws or 10-32 sheet metal screws (not included). *Style H* is for latches that surface mount on the face of the door and do not have a strike plate in the door frame.

Transformers— Convert 120 VAC to lower AC voltage. UL listed, except 81395A65, which is UL recognized. ***Rectifiers—*** Convert AC power to DC. ***Push-Button Controller—*** Has screw terminals with normally open contacts and wires to strike for latch release. For other push-button controllers, see pg. 2913. ***Remote Controller—*** Opens strike remotely. Includes digital receiver that's wall mountable and a mini transmitter. ***Buzzer—*** Allows strike to buzz when activated.

Regular Duty and Heavy Duty Electric Strikes

For Lock Type	Frame Material ♦	Finish	Max. Latch Lg.	Case Size, Ht.×Wd.×Dp.	Face Plate, Ht.×Wd.	12 VDC Amps		24 VDC Amps	
Regular Duty Electric Strikes									
A ... Cylindrical, Mortise	A, H, W	Stainless Steel	3/4″	3 11/32″×5/8″×1 1/16″	4 7/8″×1 1/4″	0.38	**8064A31**★ $123.42	0.19	**8064A31**★ $123.42
A ... Cylindrical, Mortise	A, H, W	Dark Bronze	3/4″	3 11/32″×5/8″×1 1/16″	4 7/8″×1 1/4″	0.38	**8064A32**★ 126.20	0.19	**8064A32**★ 126.20
B ... Cylindrical	A, H, W	Aluminum	1/2″	3 3/8″×1″×1 11/32″	4 7/8″×1 1/4″	0.38	**1497A2**● 149.29	0.19	**1497A2**● 149.29
B ... Cylindrical	A, H, W	Dark Brown	1/2″	3 3/8″×1″×1 11/32″	4 7/8″×1 1/4″	0.38	**1497A4**● 149.29	0.19	**1497A4**● 149.29
Heavy Duty Electric Strikes									
C ... Cylindrical	W	Stainless Steel	3/4″	3 1/4″×1 5/32″×1 3/4″	4 7/8″×1 1/4″	0.51	**1373A76** 350.00	0.25	**1373A78** 350.00
C ... Cylindrical	A, H	Stainless Steel	3/4″	5 5/32″×1 5/32″×1 3/4″	4 7/8″×1 1/4″	0.51	**1373A86** 349.34	0.25	**1373A26** 349.34
D ... Cylindrical, Mortise w/Deadbolt	A, H, W	Stainless Steel	3/4″	5 5/8″×1 1/8″×1 1/8″	9″ ×1 3/8″	0.51	**8081A31** 511.03	0.25	**8081A35** 511.03
E ... Side-Latch Exit Device	A, H	Brass	3/4″	5 5/8″×1 1/8″×6 1/64″	9″ ×1 3/4″	0.51	**1373A87** 424.38	0.25	**1373A27** 424.38
E ... Side-Latch Exit Device	A, H	Stainless Steel	3/4″	5 5/8″×1 1/8″×6 1/64″	9″ ×1 3/4″	0.51	**1373A88** 383.87	0.25	**1373A28** 383.87

♦ A=Aluminum, H=Hollow Metal, W=Wood. ★ Select 12-24 VAC or 12 VDC or 24 VDC during installation. Does not need a rectifier. Amps @ 12-24 VAC are 0.57-0.28. ● Select 12 VDC or 24 VDC during installation.

Low Voltage Electric Strikes

For Lock Type	Frame Material ♦	Finish	Max. Latch Lg.	Case Size, Ht.×Wd.×Dp.	Face Plate, Ht.×Wd.	Amps @ 12 VAC	8-16 VAC, 3-6 VDC
F ... Cylindrical, Mortise	W	Brass	5/8″	3 1/2″× 13/16″×1 3/32″	5 7/8″ ×1 1/4″	3.3	**1552A24** $57.38
F ... Cylindrical, Mortise	W	Chrome	5/8″	3 1/2″× 13/16″×1 3/32″	5 7/8″ ×1 1/4″	3.3	**1552A32** 57.38
G ... Mortise	A, H, W	Aluminum	5/8″	3 1/2″×1″ × 3/4″	7 15/16″×1 7/16″	3.3	**1552A28** 62.44
H ... Surface-Mounted Latches	A, H, W	Brass	5/8″	2 1/8″×1 3/16″ ×3 5/16″	———	1.5	**1552A27**■ 91.02

♦ A=Aluminum, H=Hollow Metal, W=Wood. ■ Operates on 8-16 VAC and 4-6 VDC. Does not include instructions.

Hardwired Transformers

Max. Volts		
8/16/24 VAC	**1373A96**	$23.40
24 VAC	**81395A65**	13.68

Plug-In Transformers

Max. Volts		
12 VAC	**81395A59**	$9.74
16 VAC	**81395A61**	11.96
24 VAC	**81395A63**	12.72

Rectifiers

For Strike		
Style B (12 VDC)	**1497A6**	$26.73
Style B (24 VDC)	**1497A5**	26.73
Styles C-E	**8081A55**	37.36
Styles F-H	**1552A31**	4.86

Accessories

Push-Button Controller	**81395A67**	$5.03
Remote Controller	**1373A95**	106.36
Buzzer (7-30 VDC)	**8064A43**	11.14

Keypad Alarm and Door Control

Hardwire this keypad to alarm systems, motion detectors, door strikes, and control equipment. Just enter your four-digit code to activate the control; all personnel share the same code. Authorized individuals can change the combination without disconnecting any input wiring. When the keypad is wired to an alarm system, three LED lights indicate system status. Designed for surface mounting; it can be mounted to a single gang electrical box. Unit draws 6 or 12 VDC power from your alarm panel. Housing is made of white plastic; size is 4 1/4″ Ht.×3 1/4″ Wd.×1″ Dp. Instructions are included.

8056A38 ..... $96.85

Weather-Resistant Keypad Control

Punch in your 3-8 digit code to control any electric strike, electromagnetic lock, or garage door opener. Keypad supports up to six codes at one time. Add or change codes from the keypad. Codes remain in memory if power is interrupted. Standby power requires a gel cell battery backup system (sold separately). Built to mount outdoors, keypad is weather resistant and made of stainless steel; size is 6⅝″ Ht.×2¼″ Wd.×½″ Dp. Control box is black plastic and mounts indoors; size is 5½″ Ht.×7½″ Wd.×2½″ Dp. Furnished with mounting hardware, instructions, and a 15-ft., 9/32″ dia. cable to connect keypad and control box. The control box requires a plug-in, ***step-down transformer*** for converting 120 VAC to 12 or 24 VAC (sold separately). Control box has two relays, which allow the additional output to be used for a second entranceway. An ***additional keypad*** requires a 15-ft. cable (sold separately) to connect to the system.

Door Control Keypad with Control Box	**8088A22**	$360.58
Accessories		
Step-Down Transformer, 120 VAC to 12 VAC	**8088A28**	19.97
Step-Down Transformer, 120 VAC to 24 VAC	**8088A29**	19.97
Additional/Replacement Keypad	**8088A19**	135.00
15-ft. Cable for Additional/Replacement Keypad	**8088A31**	70.00
Battery Backup System with 12-Volt Battery (w/Charger)	**8088A23**	110.00
Battery Backup System w/Two 12-Volt Batteries (w/Charger)	**8088A24**	160.00

Electromagnetic Gate Lock

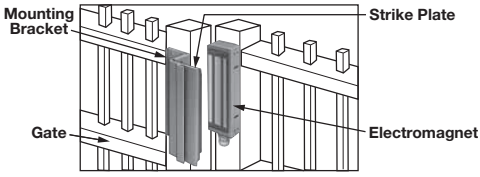

Designed for outdoor swinging and sliding gates, this lock has a hard-anodized aluminum housing and nickel-plated exposed locking surfaces for weather resistance. Requires a 12/24 VDC power supply (sold separately); power supply operates on 120/240 VAC, 50/60 Hz; output current is 2 amps. Electromagnetic lock is 11″ Lg.×3″ Wd.×1¾″ Dp. Strike plate is 8¾″ Lg.×2¼″ Wd.×⅞″ Dp. Includes mounting brackets for installation, nine 16″ long wire leads, and a ½″ connector for conduit.

Holding Strength, lbs.	Required Amps 12 VDC	Required Amps 24 VDC		
1,500	0.65	0.35	**13585A49**	$465.60
Power Supply			**1251A12**	259.20

Electromagnetic Door Locks

Use these powerful, low-maintenance locks to hold doors closed. Locks instantly release when power is interrupted. Operate on 12 VDC or 24 VDC. Use electromagnetic door locks alone or connect them to access-control and fire-protection systems. However, to meet fire codes, the door must have a latching device, such as a doorknob or lever lockset, to hold it closed when the power is cut during an emergency and the lock releases. Mounting hardware and instructions are included.

Control locks with a door switch, card reader, key-operated switch, or push-button switch. Lock with 300 lbs. of holding strength is ideal for small enclosures. All other locks are for high-security doors and meet ANSI/BHMA (Builders Hardware Manufacturers Association) A156.23 for electromagnetic locks.

Locks with time delay and status sensor have an adjustable time delay from 0.5 to 30 seconds and indicate whether the door is opened or closed. When door is closed the locks indicate a proper bond between magnet and strike, assuring door is locked. Locks can be monitored remotely. *Lock with delayed egress* postpones unlocking for up to 30 seconds to delay the exit of unauthorized individuals and includes an audible alarm. Designed to meet NFPA 101 Life Safety Code and BOCA (Buildings Officials and Code Administrators) standards.

Locks with mounting ***Style A*** mount on the door frame header. For locks with 500 lbs. and 1,500 lbs. of holding force, a ⅝″ thick filler plate (sold separately) is needed if the mounting surface on the frame is less than 2″. Double-door model comes with two strike plates and controls two doors at once as long as there is no vertical center support between doors. Locks with mounting ***Style B*** mount above door and include a mounting bracket that extends the strike plate above the door.

Power supply (sold separately) is field-selectable for 12 VDC or 24 VDC. Operates on 120/240 VAC, 50/60 Hz; output current is 2 amps. Includes a switching transformer with overload protection and six screw terminal connections. Housed in a NEMA 1 key locking enclosure for indoor use. UL listed. *Backup battery pack* (sold separately) supplies power when electricity goes out.

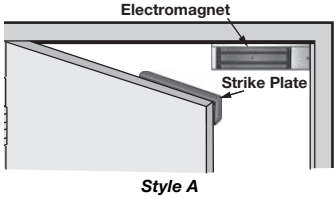

Style A

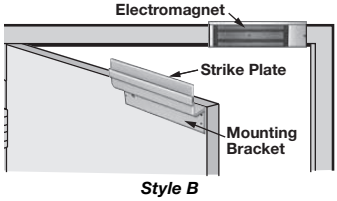

Style B

Opening Action	Holding Strength	Required Amps 12 VDC	Required Amps 24 VDC	Electromagnet, Ht.×Wd.×Dp.	Strike Plate, Ht.×Wd.×Dp.	Style A		Style B	
For Single Doors									
Instant Open	300 lbs.	0.48	0.28	1½″ × 6 17/32″ × 13/16″	1¼″ × 5⅛″ × ⅜″	**10455A64**	$145.12	**10455A73**	$205.88
Instant Open	500 lbs.	0.75	0.38	2½″ × 9″ × 1½″	1¾″ × 5 5/16″ × ⅝″	**10455A76**	327.97	**10455A85**	401.43
Time Delay and Status Sensor	1,500 lbs.	0.65	0.35	3″ × 12½″ × 1¾″	2¼″ × 8¾″ × ⅞″	**1251A54**	461.25	**1251A94**	556.79
Delayed Egress	1,500 lbs.	0.85	0.55	3″ × 12½″ × 3 1/16″	2¼″ × 8¾″ × ⅞″	**1251A25**	827.31	———	———
For Double Doors without Vertical Center Support									
Instant Open	1,500 lbs.	1.3	0.7	3″ × 25 1/16″ × 1¾″	2¼″ × 8¾″ × ⅞″	**1251A96**	831.00	———	———

Accessories

Filler Plate for Single Door Lock (Not required for 10455A64)	**1251A14**	$45.75
Filler Plate for Double Door Lock (Two required)	**1251A14**	45.75
Power Supply (Size is 14″ Ht.×12″ Wd.×4″ Dp.)	**1251A12**	259.20
Backup Battery Pack (Includes two 12-volt batteries and a battery card)	**1251A11**	150.00

Push-Button and Key-Activated Door Switches

You'll find these switches working in combination with electromagnetic locks, electric strikes, and automatic door openers. All switches are UL listed. Push-button switches are also CSA certified. Style 1 switches come with machine screws. Styles 2-5 include spanner head screws (to prevent tampering); Styles 3-5 also include an installation tool.

Instant open switches provide immediate access. ***Time delay*** switches allow time to reach the door before it opens. ***Turn-to-open/turn-to-close*** switch operates by turning the key to open the door and turning the key again to close the door.

(1&2) "Exit" Push-Buttons— Have a red, mushroom-shaped button and screw terminal connections. Style 1 has a Type 304 stainless steel plate. Style 2 has an aluminum plate.

(3&4) "Push to Open" Push-Buttons with ADA Symbol— Both styles are made of Type 304 stainless steel and have screw terminal connections.

(5) Key Activated— Often used to reset fire panels. All have crimp-on wire connectors. Plate has a dull aluminum finish. Lock and key not included. Use a 1¼″ long mortise lock with standard cam (see pg. 2922).

	Switch Action	Max. Amps	Button Size	O'all Wd.	O'all Ht.		
1	Instant Open	10 @ 24 VAC	1 9/16″ Dia.	2¾″	4½″	**13425A11**	$64.12
1	Time Delay	5 @ 24 VDC	1 9/16″ Dia.	2¾″	4½″	**13425A12**	110.45
2	Instant Open	10 @ 24 VAC	2⅜″ Dia.	3″	4¾″	**13425A42**	81.00
3	Instant Open	10 @ 24 VAC	6″ Dia.	6″ Dia.	———	**13425A52**	81.00
4	Instant Open	10 @ 24 VAC	2¾″ Wd.×4½″ Ht.	2¾″	4½″	**13425A51**	74.25
5	Turn-to-Open/Turn-to-Close	6 @ 125 VAC	———	3″	4¾″	**10475A31**	63.95
5	Instant Open	6 @ 125 VAC	———	3″	4¾″	**10475A32**	60.39
5	Time Delay	10 @ 125 VDC	———	3″	4¾″	**10475A33**	225.00

About Selecting a Door Closer

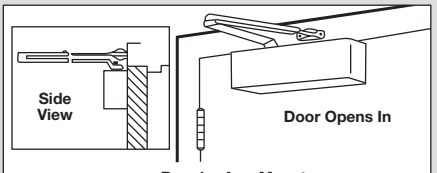

Regular Arm Mount

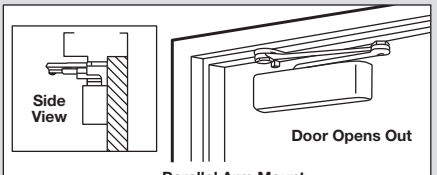

Parallel Arm Mount

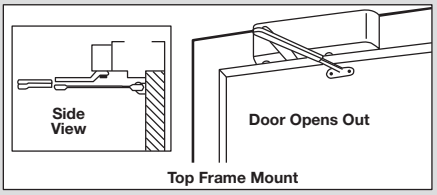

Top Frame Mount

TOP VIEW OF SWINGING DOOR

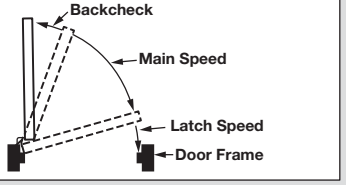

If you're replacing your current door closer, remove the cover and look for the model number and mounting hole pattern. We provide this information for all of our closers, so you can find a match and eliminate the need to drill new holes. If you don't find a match or don't have access to the model number and/or mounting hole information for your current closer, we offer a universal closer that is compatible with the mounting hole patterns of many popular models (see page 2917). If you're searching for a closer for a new installation, then consider the following factors:

1. *How much traffic and abuse does the closer need to withstand?* Closers that meet ANSI Grade 1 standards are rated to 2,000,000 cycles. ANSI Grade 2 closers are rated to 1,000,000 cycles. Although some medium duty and heavy duty closers share an ANSI Grade 1 rating, the heavy duty closers have a more rugged construction to withstand a higher level of abuse.

2. *Consider the size and location of your door.* Choose a closer that will accommodate the width of your door. Most closers have adjustable spring force that allows them to work with a range of door widths. Also, consider whether your door is an interior or an exterior door. Closers for exterior doors are built to withstand the extra strain of wind and drafts.

3. *Do you need to be in compliance with the Americans with Disabilities Act (ADA)? Do you need a hold-open feature?* The spring force of a closer determines the amount of force required to open the door. Most closers allow you to adjust the spring force from 1 to 6 to accommodate a variety of door widths. A spring force of 1 requires the least amount of force to open the door. A spring force of 6 requires the greatest amount of force. When properly installed, the closers that are adjustable to spring force 1 may help you comply with the ADA. These closers are barrier free; they open wide to allow full access through the doorway.

Some closers have a feature that holds the door open. A slight push or pull on the door releases the door and allows it to close. *Note:* Fire-rated doors require a non-hold-open closer.

4. *Which mounting style do you want/need your closer to have?* Most of our closers can be mounted in any of the three mounting styles shown at left (unless noted): Regular arm, parallel arm, and top frame. Closers are also reversible for right-hand and left-hand doors (unless noted).

5. *Consider the adjustability of the closer.* After installing your closer, you might want the ability to adjust how quickly the closer opens and closes the door. As you open a door, the closer provides very little resistance until the door nears its maximum open position. Some closers have an adjustable ***backcheck control*** to add resistance to the closer, slowing the door to a stopped position and protecting door hardware and the wall from damage. When the door is released, it moves at ***main speed*** until it nears the fully closed position. Some closers have adjustable ***latch speed*** to close the door slowly (to prevent slamming) or quickly (to firmly engage the latch mechanism).

Heavy Duty Reversible Door Closers

Shown in Regular Arm Position

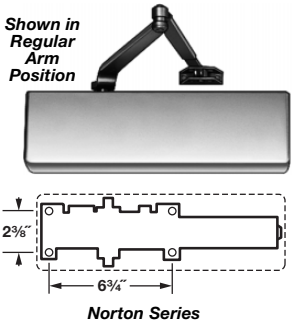

Norton Series

Shown in Regular Arm Position

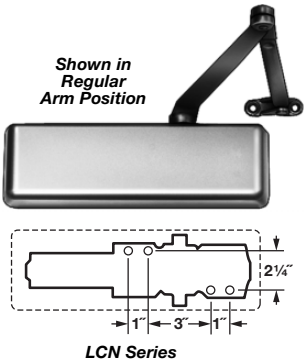

LCN Series

Built to meet ANSI A156.4 Grade 1 standards, these door closers stand up to abuse from frequent openings and closings—they're perfect for entrance doors. Closers are reversible for right- and left-hand doors. Mount in the regular arm, parallel arm, or top frame positions, except where noted. The spring force of the closers is adjustable from 1-6 to fit a range of door widths. Backcheck, main, and latch speeds are adjustable. Mounting hardware and instructions are included.

Non-hold-open closers are UL listed and comply with UL 10C positive pressure fire test.

Norton Door Closers— Can replace Yale 4000 and 4400 models. Closers have a cast aluminum body and a 13⅝″ Lg.×3⅞″ Ht. plastic cover with 2⅛″ projection. For parallel arm mounting, closers require a minimum of 7¼″ of space from top of door. For top frame mounting, the top of the door frame cannot project more than 3″ from the door face.

7500 Series— Can also replace the Norton 7700 series.

CLP-7500 Series— Have built-in door stops to prevent door from opening too far.

LCN Door Closers— Have a cast iron body and plastic cover. For parallel arm mounting, closers require a minimum of 5½″ of space from top of door. For top frame mounting (where applicable), the top of the door frame cannot project more than 2⁹⁄₁₆″ from the door face.

4041XP and ***4041 Super Smoothee Series—*** Can replace the 4010, 4020, and 4110 Smoothee series closers. Cover size is 12¾″ Lg.×3¾″ Ht. with 2¾″ projection. *Delayed closing* models hold door open for up to 60 seconds before closing.

4041XP Cush-n-Stop Series— Have built-in door stops to prevent door from opening too far. Cover is 12¼″ Lg.×3½″ Ht. with 2¼″ projection.

Door Width Interior	Door Width Exterior	Finish	Max. Door Opening	Non-Hold Open		Hold Open	
Norton							
7500 Series							
32″-54″	30″-48″	Aluminum	180°	15615A45	$218.31	15615A65	$237.79
32″-54″	30″-48″	Dark Brown	180°	15615A46	227.50	15615A66	246.86
CLP-7500 Series							
30″-48″	32″-48″	Aluminum	110°	15615A52■	252.02	15615A72■	275.39
30″-48″	32″-48″	Dark Brown	110°	15615A53■	252.02	15615A73■	275.39
LCN							
4041XP Super Smoothee Series— *Normal Closing*							
24″-60″	24″-48″	Aluminum	120°	8082A21	257.33	8082A24	287.24
24″-60″	24″-48″	Dark Brown	120°	8082A43	257.33	8082A44	287.24
4041 Super Smoothee Series— *Delayed Closing*							
24″-60″	24″-48″	Aluminum	120°	8082A55	276.02	8082A59	305.93
24″-60″	24″-48″	Dark Brown	120°	8082A46	276.02	8082A47	305.93
4041XP Cush-n-Stop Series							
24″-60″	24″-48″	Aluminum	110°	1164A41■	313.88	1164A42■	349.65
24″-60″	24″-48″	Dark Brown	110°	1164A43■	313.88	1164A44■	349.65

■ Parallel arm mount only.

For information about door closers, see page 2914.

Heavy Duty Nonreversible Door Closers

Use these closers on frequently opened doors; they meet ANSI A156.4 Grade 1 standards. Closers are similar to the units on page 2914, except they're not reversible. You choose a right- or left-handed closer. To find the handing of a door, stand on the side of the door where the door swings away from you—the push side. If it opens to the right, it's a right-hand door; if it opens to the left, it's a left-hand door (see illustration at right).

Spring force is adjustable from 1-5 to fit a range of door widths. Backcheck, main, and latch speeds are adjustable. Closers have a cast iron body and a 12¼″ Lg.×3½″ Ht. plastic cover with 2¼″ projection. Mounting hardware and instructions are included. ***Non-hold-open*** closers are UL listed and comply with UL 10C positive pressure fire test.

These LCN closers can replace LCN 4010N, 4020N, and 4110N series closers.

LCN 4011 Smoothee Series—For regular arm mounting. *Delayed closing* models hold the door open for up to 60 seconds before closing.

LCN 4021 Smoothee Series—For top frame mounting. The top of the frame cannot project more than 2⁹⁄₁₆″ from the door face (to achieve max. door opening).

LCN 4111 Smoothee Series—For parallel arm mounting. Requires a min. of 5⅛″ of space from top of door.

To Order: Please specify finish: aluminum or dark brown.

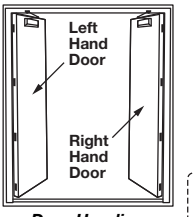

Door Handing

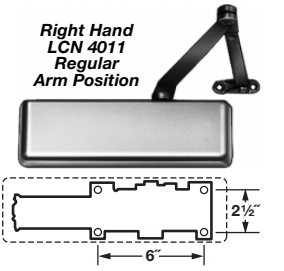

LCN 4011, 4021, and 4111

Door Width Interior	Door Width Exterior	NON-HOLD OPEN Max. Door Opening	Right Handed		Left Handed		HOLD OPEN Max. Door Opening	Right Handed		Left Handed	
LCN 4011 Smoothee Series—*Normal Closing*											
24″-54″	24″-42″	140°	1489A19	$247.40	1489A91	$247.40	140°	1489A67	$275.65	1489A95	$275.65
LCN 4011 Smoothee Series—*Delayed Closing*											
24″-54″	24″-42″	140°	1489A24	293.04	1489A92	293.04	140°	1489A68	294.49	1489A96	294.49
LCN 4021 Smoothee Series											
24″-54″	24″-42″	180°	1489A25	247.40	1489A93	247.40	140°	1489A79	275.65	1489A97	275.65
LCN 4111 Smoothee Series											
28″-54″	28″-42″	180°	1489A29	247.40	1489A94	247.40	180°	1489A89	275.65	1489A98	275.65

Medium Duty Slimline Reversible Door Closers

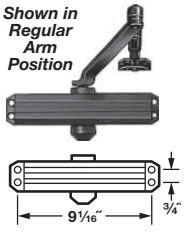

Norton 1600/1601 Series

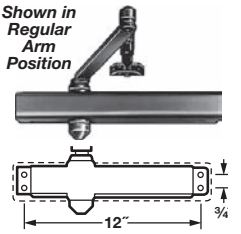

Norton 8301 Series

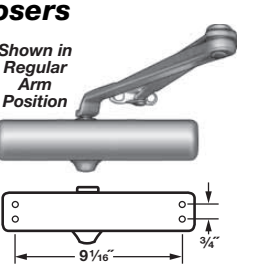

LCN 1261 Series

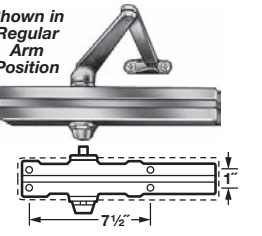

LCN 1460/1461 Series

Use on doors with moderate traffic, such as office doors. Closers meet ANSI A156.4 Grade 1 standards and have a slimline design, so they require less mounting space than most closers. Reversible for right- and left-hand doors. Mount in the regular arm, parallel arm, or top frame positions, except where noted. Backcheck, main, and latch speeds are adjustable. Mounting hardware and instructions are included. ***Non-hold-open*** closers are UL listed and comply with UL 10C positive pressure fire test.

Norton Door Closers—Have a cast aluminum body. For top frame mounting (where applicable), the top of the frame cannot project more than 3″ from the door face (4¼″ for 8301 series hold-open closers) to achieve max. door opening. ***1600/1601 series (all)*** have their moving parts enclosed in the body; size is 9¾″ Lg.×2⅝″ Ht. with 2⅞″ projection. For parallel arm mounting, closers require 5″ of space from top of door. ***8301 series (all)*** closers have a 12¾″ Lg.×2⅞″ Ht. plastic cover with 2⅛″ projection. For parallel arm mounting, closers require 6¼″ of space from top of door.

1600 Series—Can replace the Yale 50, Parker 500, Dorma 640, Taco Brute 50, and Jackson 70. Spring force is not adjustable.

CLP-1600 Series—Have a built-in door stop to prevent door from opening too far. Spring force is not adjustable.

UNI-1600 Series—Have a shock absorber and built-in door stop to prevent door from opening too far. Spring force is not adjustable.

1601 Series—Spring force is adjustable from 3-6.

1601 BF Series—Spring force is adjustable from 1-4. For interior doors only.

8301 Series—Can replace Yale 3000 series. Spring force is adjustable from 1-6.

CLP-8301 Series—Have a built-in door stop to prevent door from opening too far. Spring force is adjustable from 1-6.

LCN Door Closers—Have a cast iron body. For top frame mounting (where applicable), the top of the frame cannot project more than 2½″ from the door face (to achieve max. door opening).

1261 Series—A quick-mount template makes installation fast and easy. Closer body is 10″ Lg.×2⅝″ Ht. with 2⅞″ projection. For parallel arm mounting, closers require 5¼″ of space from top of door. Spring force is adjustable from 1-5.

1460/1461 Series—Have a 12¼″ Lg.×2″ Ht. plastic cover with 2⅜″ projection. For parallel arm mounting, closers require 4⅜″ of space from top of door. Spring force is adjustable from 1-6. *Delayed closing* units hold door open for up to 60 seconds before closing. *Cush-n-stop series* units have a built-in door stop to prevent door from opening too far.

To Order: Please specify finish: aluminum or dark brown.

Door Width Interior	Door Width Exterior	Max. Door Opening	Non-Hold Open		Hold Open	
Norton						
1600 Series						
22″-32″	22″-25″★	180°	1475A211	$103.17	1475A511	$118.65
33″-38″	26″-30″	180°	1475A212	103.17	1475A512	118.65
39″-42″	31″-36″	180°	1475A213	103.17	1475A513	118.65
43″-48″	37″-42″	180°	1475A214	103.17	1475A514	118.65
49″-54″	43″-48″	180°	1475A215	103.17	1475A515	118.65
CLP-1600 Series						
24″-32″	24″-27″	110°	1475A311■	124.84	1475A611■	145.48
33″-36″	28″-32″	110°	1475A312■	124.84	1475A612■	145.48
37″-42″	33″-36″	110°	1475A313■	124.84	1475A613■	145.48
43″-48″	37″-42″	110°	1475A314■	124.84	1475A614■	145.48
UNI-1600 Series						
27″-32″	27″	110°	1475A411■	189.84	1475A711■	213.57
33″-36″	28″-32″	110°	1475A412■	189.84	1475A712■	213.57
37″-41″	33″-36″	110°	1475A413■	189.84	1475A713■	213.57
42″-48″	37″-41″	110°	1475A414■	189.84	1475A714■	213.57
49″-54″	42″-48″	110°	1475A415■	189.84	1475A715■	213.57

Door Width Interior	Door Width Exterior	Max. Door Opening	Non-Hold Open		Hold Open	
Norton (Cont.)						
1601 Series						
33″-52″	26″-48″	180°	1475A811	$103.17	1475A813	$118.65
1601 BF Series						
22″-42″	———	180°	1475A812	103.17	1475A814	118.65
8301 Series						
30″-48″	30″-48″	180°	15565A22	153.64	15565A26	170.29
CLP-8301 Series						
28″-48″	28″-48″	110°	15565A23■	176.74	15565A27■	198.76
LCN						
1261 Series						
26″-54″	26″-42″	180°	1493A31	126.69	1493A32	142.63
1460/1461 Series—*Normal Closing*						
24″-60″	24″-48″	180°	1587A83	197.08	1587A87	212.39
1460/1461 Series—*Delayed Closing*						
24″-60″	24″-48″	180°	1587A84	216.21	1587A88	231.52
1460/1461 Cush-n-Stop Series						
24″-60″	24″-48″	100°	1587A82■	228.33	1587A86■	261.50

★ For regular arm and top frame mounting. ■ Parallel arm mount only.

For information about door closers, see page 2914.

Light Duty Reversible Door Closers

1700 Series Shown in Regular Arm Position

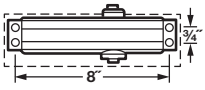

9300 Series Shown in Regular Arm Position

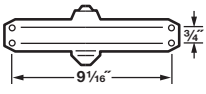

A light duty version of the closers on the previous pages, these are for doors with infrequent traffic, such as storage room doors. Reversible for right- and left-hand doors. Mount in regular arm, parallel arm, or top frame position. Spring force is not adjustable. Backcheck and latch speeds are adjustable. Bodies are aluminum alloy. Mounting hardware and instructions are included. ***Non-hold-open*** closers are UL listed and comply with UL 10C positive pressure fire test.

Norton 1700 Series— Meets ANSI A156.4 Grade 2 standards. Can replace Yale 5100 series. Closers have a plastic cover. For parallel arm mounting, non-hold-open closers require a minimum of 4¾″ of space from top of door; hold-open closers require 5″ of space. For top frame mounting, the top of the door frame cannot project more than 4⅞″ from the door face to achieve maximum door opening.

Norton 9300 Series— Meets ANSI A156.4 Grade 3 standards. Can replace Yale 2300, Yale 50, Parker 500, Dorma 640/650, Taco Brute 50, International 50, and Jackson 70 series. For parallel arm mounting, closers require a minimum of 5″ of space from top of door. For top frame mounting, the top of the door frame cannot project more than 2⅞″ from the door face to achieve maximum door opening.

Door Width Interior	Door Width Exterior	Max. Door Opening	Finish	Non-Hold Open		Hold Open	
Norton 1700 Series— *For interior doors only. Cover is 8⅝″ Lg. × 2½″ Ht. with 2 1/16″ Proj.*							
32″-36″	—	180°	Aluminum	1892A21	$112.00	1892A31	$128.55
32″-36″	—	180°	Dull Bronze	1892A22	112.00	1892A32	128.55
32″-36″	—	180°	Dark Brown	1892A23	112.00	1892A33	128.55
36″-42″	—	180°	Aluminum	1892A61	112.00	1892A71	128.55
36″-42″	—	180°	Dull Bronze	1892A62	112.00	1892A72	128.55
36″-42″	—	180°	Dark Brown	1892A63	112.00	1892A73	128.55
Norton 9300 Series— *Body is 9⅝″ Lg. × 2⅝″ Ht. with 2⅞″ Proj.*							
35″-40″	31″-34″	180°	Aluminum	11985A51	107.73	11985A61	128.86
35″-40″	31″-34″	180°	Dark Brown	11985A71	107.73	11985A81	128.86
41″-48″	35″-40″	180°	Aluminum	11985A52	107.73	11985A62	128.86
41″-48″	35″-40″	180°	Dark Brown	11985A72	107.73	11985A82	128.86
49″-52″	41″-48″	180°	Aluminum	11985A53	107.73	11985A63	128.86
49″-52″	41″-48″	180°	Dark Brown	11985A73	107.73	11985A83	128.86

Pot-Belly Reversible Door Closers

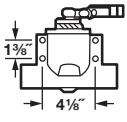

Norton 78 Series Shown in Regular Arm Position

Traditional and dependable, these pot-belly closers meet ANSI A156.4 Grade 3 standards. Reversible for right- and left-hand doors, unless noted. Backcheck, main, and latch speeds are adjustable. Housing is cast aluminum with a dull bronze finish; size is 7½″ Lg. × 5⅛″ Ht. with 3½″ projection. Mounting hardware is included. Closers for interior door widths 21″-48″ and 22″-42″ are adjustable for spring force from 2-4. Closers for interior door widths 49″-54″ and 43″-52″ are adjustable for spring forces 5 and 6.

Non-hold-open closers are UL listed and comply with UL 10C positive pressure fire test. Non-hold-open closers with parallel arm mounting require a minimum of 5¾″ of space from top of door.

Hold-open closers with parallel arm mounting 1454A65 and A75 require a minimum of 7¼″ of space from top of door. 8084A17 and A18 require a minimum of 5¾″ of space from top of door.

Top frame mounting bracket allows regular arm closers to mount to the underside of the top door frame when space is limited.

Mounting Arm Style	Door Width Interior	Door Width Exterior	Max. Door Opening	NORTON 78 SERIES Non-Hold Open		NORTON 78 SERIES Hold Open		YALE 1900 SERIES Non-Hold Open		YALE 1900 SERIES Hold Open		Replacement Spring	
Regular	21″-48″	21″-36″	180°	1452A31	$330.32	1452A41	$352.83	8084A11	$356.85	8084A13	$377.00	1461A283	$62.00
Regular	49″-54″	37″-48″	180°	1452A32	330.32	1452A42	352.83	8084A12	356.85	8084A14	377.00	1461A305	69.00
Parallel	22″-42″	22″-36″	180°	1454A34	333.98	1454A65■	352.83	8084A15	356.85	8084A17■	377.00	1461A283	62.00
Parallel	43″-52″	37″-44″	180°	1454A35	330.32	1454A75■	352.83	8084A16	356.85	8084A18■	377.00	1461A305	69.00

Top Frame Mounting Bracket for Norton and Yale Regular Arm Closers 1452A66 $77.27

■ **To Order:** Please specify right- or left-hand door (see illustration at the top of page 2915).

Rixson-Firemark Fire Alarm Activated Door Holders and Closers

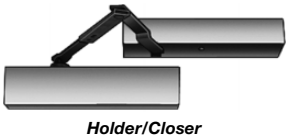

Holder/Closer

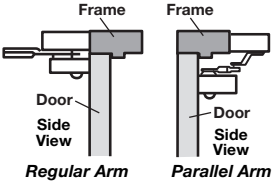

Regular Arm *Parallel Arm*

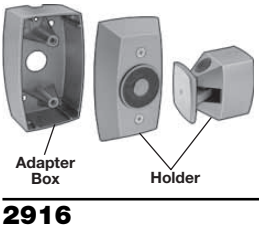

Holders keep doors open until your fire alarm system activates them. Units wire directly into your fire alarm system and have an aluminum finish. Mounting hardware and instructions are included. All conform to National Fire Protection Association (NFPA) Specifications 101 and 80. UL listed.

Door Holders/Closers— Reversible for right- and left-hand doors. Units hold doors open from 85° to 135°. When activated by a fire alarm, units close door. Mount to the top of the door frame and to the face of the door. Choose regular arm or parallel arm (see diagrams at left). Holder assembly requires 2″ of frame above door for mounting. Holder is steel; closer is aluminum. Meet ANSI 156.15 Grade 1 standards.

Regular Arm Holders/Closers— Frame cannot project more than ⅛″ from door face.

Parallel Arm Holders/Closers— Frame cannot project more than 3½″ from door face.

Door Holder— Useful when your door already has a closer. This unit works the same as the holders/closers above, but without the closing function. Holder keeps doors open by using an electromagnet. When activated by a fire alarm, the magnet shuts off and releases the door. Holder is furnished with a plastic wall plate with metal bracket and a plastic door plate with metal bracket. Mount the electromagnet in an electrical outlet box or use the ***wall-mount adapter box***, sold separately. Adapter box mounts directly to the wall using fasteners from the door holder.

Door Holders/Closers

Max. Door Width	Amps	Holder Assembly, Lg. × Wd. × Proj.	Closer Assembly, Lg. × Wd. × Proj.	Regular Arm		Parallel Arm	
24 VAC/VDC							
30″-48″	0.08	11¾″ × 1⅞″ × 4 1/16″	13″ × 2 3/16″ × 2⅛″	1202A29	$403.70	1202A31	$403.70
120 VAC							
30″-48″	0.017	11¾″ × 1⅞″ × 4 1/16″	13″ × 2 3/16″ × 2⅛″	1202A33	403.70	1202A34	403.70

Door Holder

Voltage	Amps	Wall Plate, Ht. × Wd. × Proj.	Door Plate, Ht. × Wd. × Proj.		
12 VDC, 24 VAC/VDC, 120 VAC	0.04/0.02/0.02	4⅝″ × 2¾″ × 1″★	1 13/16″ × 2 17/32″ × 2⅝″	1444A3	$157.41
Wall-Mount Adapter Box for Holder				1444A8	37.49

★ Wall plate projects 2½″ when used with the wall-mount adapter box.

For information about door closers, see page 2914.

Universal Reversible Door Closer

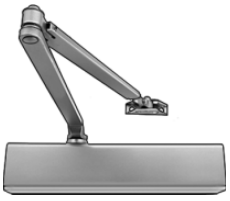

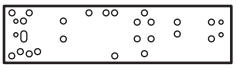

Universal Mounting Plate

With this closer, you won't have to drill new holes in your door. A universal mounting plate allows you to replace medium duty and heavy duty closers from most major manufacturers, including Corbin Russwin, Dorma, Dor-O-Matic, LCN, Norton, and Yale. Closer meets ANSI A156.4 Grade 1 standards.

Reversible for right- and left-hand doors. Mount in the regular arm, parallel arm, or top frame position. Spring force is adjustable from 1-6 to fit a range of door widths. Backcheck, main, and latch speeds are adjustable. Closer is aluminum and has a 13¼″ Lg.×3″ Ht. plastic cover with a 2⅛″ projection. Comes with mounting screws. UL listed.

Door Width Interior	Door Width Exterior	Max. Door Opening		Non-Hold Open
24″-60″	24″-48″	180°	2008A11	$126.00

Door and Gate Springs

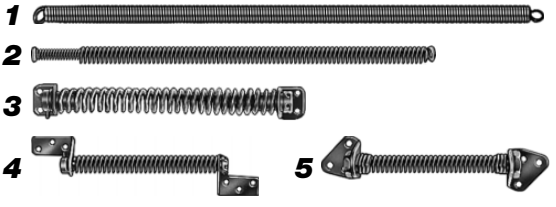

Extension Springs— Mount horizontally to top of door. Hook one end of spring to the door or gate and the other to the frame. Springs retract to pull the door or gate closed. Made of high-carbon steel wire. Style 1 has two looped ends and does not have adjustable closing force. Style 2 has two springs that thread into each other; turn the smaller spring to change the overall length and adjust the closing force.

Torsion Springs— Mount springs parallel to the side of door or gate; one end mounts to door, the other end mounts to frame. Adjust the tension of these high-grade steel wire springs by winding or unwinding them. Mounting hardware included.

Extension Springs

	Spring OD	Overall Lg.	Black-Oxide Finish		Polished Zinc-Plated Finish	
1	5/16″	16⅜″	9629K3	$2.12	9629K23	$2.12
1	23/64″	16⅜″	9629K4	2.41	9629K24	2.41
1	13/32″	16⅜″	9629K5	2.55	9629K25	2.55
1	15/32″	16⅜″	9629K6	2.69	9629K26	2.69
1	½″	16⅜″	9629K7	2.97	9629K27	2.97
1	13/32″	16⅜″	9629K8	7.98	9629K28	7.98
2	½″	13⅝″-17¼″	—	—	1474A11	4.47

Torsion Springs

	Spring OD	Spring Lg.	Overall Lg.	Finish		
3	¾″	6½″	8 5/16″	Black Zinc	1474A29	$9.48
3	29/32″	7½″	9 5/16″	Black Zinc	1474A31	10.21
3	1″	9 1/16″	11⅝″	Black Zinc	1474A32	13.75
3	1⅛″	10¼″	12¾″	Black Zinc	1474A43	15.94
4	¾″	6½″	10 7/16″	Black Zinc	1474A35	10.63
4	1″	9 1/16″	13 7/16″	Black Zinc	1474A36	14.79
4	1⅛″	10¼″	14⅝″	Black Zinc	1474A37	17.70
5	29/32″	5″	9″	Black Powder Coated	1474A12	15.30
5	15/16″	7″	11″	Black Powder Coated	1474A13	17.94
5	31/32″	9″	13″	Black Powder Coated	1474A14	19.00

Weather-Resistant Hydraulic Door Closer

Unaffected by weather, this unit gently closes interior and exterior doors and gates that weigh up to 150 lbs. Closer has a hold-open feature to keep doors open—great for delivery entrances. Max. door opening is 90°. Reversible for right- and left-hand doors. Main speed is adjustable. Mounts directly on door or gate to keep hinges free from any strain or pressure. Closer has a steel body with a painted black finish. Size is 13″ Lg.×7½″ Ht. with 2½″ projection. Furnished with mounting hardware and instructions. Bracket may be welded if desired.

1469A31 ..... $88.15

Spring Door Closers

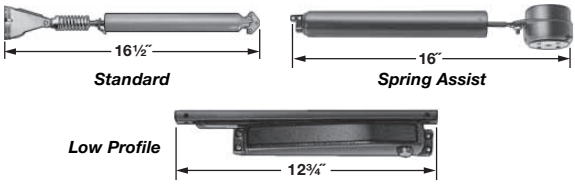

Close lightweight doors such as screen and storm doors. These closers are reversible for right- and left-hand doors. Main speed is adjustable. Mounting hardware and instructions are included.

Standard— Closers are pneumatic and have an external spring to prevent the rod from overextending. Closers are steel. Engage the hold open feature by moving washer up against the cylinder. Require a minimum of 3″ clearance between doors for mounting. Cylinder is 1¼″ dia.

Spring Assist— This pneumatic closer uses a tension spring to close heavier doors securely. Closer is steel. Engage the hold open feature by moving washer up against the cylinder. Requires a minimum of 2¾″ clearance between doors for mounting. Cylinder is 1½″ dia.

Low Profile— Ideal for use between doors, these closers require a minimum of 2⅛″ clearance between doors for mounting. Closers have a gas spring. Mount on push and pull sides. Housing is aluminum; size is 9½″ Lg.×1¾″ Ht. with a 2″ projection. UL listed.

	Max. Door Opening	Aluminum Finish		Black Powder-Coated Finish	
Standard	90°	1448A11	$13.14	1448A12	$13.14
Spring Assist	90°	—	—	1446A9	38.24
		Dull Brass Finish		**Dark Brown Finish**	
Low Profile	105°	10205A85	$32.09	10205A86	$32.09

Hydraulic Door Closers

Steel Body Shown in Regular Arm Position

Aluminum Body Shown in Parallel Arm Position

Use these hydraulic closers on lightweight doors, screen doors, and gates. Reversible for right- and left-hand doors. Mount in regular arm or parallel arm positions. Spring force is not adjustable. Furnished with mounting hardware and instructions.

Steel Body— Once installed, this sealed hydraulic closer doesn't require maintenance. Closer has a gray prime-coat finish. UL listed.

Cast Aluminum Body— Main speed is adjustable. Requires 2¾″ clearance between doors for mounting.

Max. Door Opening	Max. Door Weight		
Steel Body— *4¼″ Ht.×3½″ Wd.×2″ Proj.*			
140°	85 lbs.	1252A12	$75.33
Cast Aluminum Body— *1¾″ Dia.×3½″ Ht.*			
180°	35 lbs.	1255A14	45.91

Side-Frame Roller Door Closers

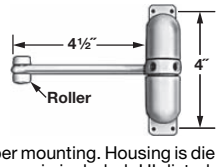

At just 4½″ Ht.×1″ Wd. with a 1⅜″ projection, closers are for use on lightweight doors, screen doors, and gates. Vertically mount closers to the door frame on the hinged side of the door. After the door is opened, the roller arm rolls along the door to automatically push it closed. Reversible for right- and left-hand doors. Main speed is adjustable. Door frame must be flat for proper mounting. Housing is die cast zinc with painted finish. Mounting hardware is included. UL listed.

Max. Door Opening	Max. Door Weight	Brown Finish		White Finish	
135°	150 lbs.	1234A82	$14.85	1234A83	$14.85

Heavy Duty Spring-Loaded Door Closer

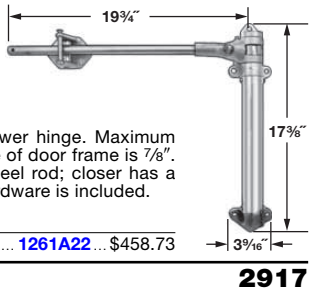

Built to handle cold storage doors and other doors between 200 and 1,000 lbs. This closer has variable spring tension to control main speed. Reversible for right- and left-hand doors.

Surface mount just above lower hinge. Maximum offset from door face to surface of door frame is ⅞″. Closer is malleable iron with steel rod; closer has a zinc-plated finish. Mounting hardware is included.

Max. Door Opening	Proj.		
150°	2 13/32″	1261A22	$458.73

Roll-to-Latch Door Holders

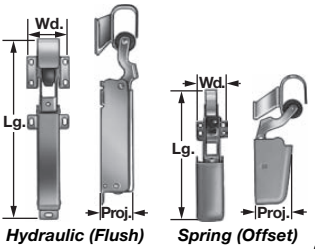

Hydraulic (Flush) *Spring (Offset)*

As the door closes, the holder arm rolls into the catch to secure the door. A firm tug releases the roller and opens the door. Suitable for walk-in cold storage rooms and freezers. Reversible for right- and left-hand doors. Mounting hardware is included. Use ***flush style*** when your closed door is even with its frame. Use ***1 1/8″ offset style*** for doors that have 7/8″ to 1 1/8″ of space between the frame and the door face when closed.

Hydraulic—*Steel* housing has a polished chrome finish and protects a gas-filled hydraulic cylinder. *Type 304 stainless steel* housing has a polished finish and protects a fluid-filled hydraulic cylinder.

Spring Loaded with Steel Housing— Holders have a spring mechanism protected by a plastic cover.

	O'all Size, Lg. × Wd. × Proj.	Flush		1 1/8″ Offset	
Hydraulic w/Steel Housing	10 1/8″ × 2 1/2″ × 2 5/16″	11935A72	$168.72	11935A73	$173.93
Hydraulic w/Type 304 SS Housing	7 1/2″ × 1 7/8″ × 1 3/8″	11935A84	180.00	—	—
Spring Loaded w/Steel Housing	6 3/8″ × 1 1/2″ × 2 5/16″	10555A82	108.94	10555A83★	117.15

★ Projection is 2 13/16″.

Hinge Pin Door Holder

This holder takes the place of one or more of your existing hinge pins. Adjustable tension controls the main speed. Holder fits all 3 1/2″ × 3 1/2″ and 4″ × 4″ hinges. Overall size is 15/64″ Dia. × 5 1/2″ Lg. Cap projection is 2 5/16″. Made of steel with a brass finish. Not rated for door size and weight.

1490A11 ..... $8.54

Roll-Up and Sectional Door Openers

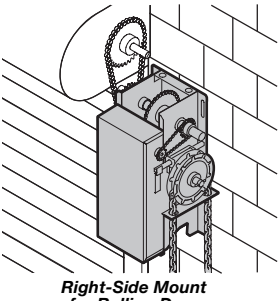

Right-Side Mount for Rolling Door

Also known as jackshafts, these door openers work with face-mounted 20-ga. or thinner doors. When the friction clutch is adjusted properly, it will "slip" if the door encounters an obstruction when closing. This stops the downward progress of the door and prevents damage to door and motor. Two safety photo eyes housed in a water-tight casing with heavy gauge metal mounting brackets are also included. Any object passing through the eye beam stops and reverses the motion of a descending door. Controllers have three buttons (open, close, and stop) and mount to a wall. They're wired to the opener and run on 24 VAC.

Openers have a heavy duty 1/2-hp motor that runs on 115 VAC, 60 Hz, 6.5 amps. Motor is capable of 12 cycles per hour, up to 50 cycles per day. During a power failure, use the manual chain hoist to move door. Chain hangs 12 feet below hoist. Openers have an 11-ga. steel frame with a black powder-coated finish. They are 18 1/2″ Ht. × 15 3/4″ Wd. × 9 1/4″ Dp. and work with doors that are a maximum 14 ft. Ht. × 14 ft. Wd. Each opener has a 1/4″ keyway, 1″ drive shaft, and #41 chain. Meet UL 325.

When facing the operating side of the door, ***right-side mount*** is on your right, ***left-side mount*** is on your left. For remote control operation, order the ***optional transmitter*** (sold separately below) for use with the included receiver. Transmitter has three buttons (open, close, and stop) and is powered by a 12-volt battery (included).

For Door Style	Right-Side Mount		Left-Side Mount	
Rolling Steel	12185A71	$652.90	12185A72	$652.90
Sectional Steel	12185A81	652.90	12185A82	652.90
Optional Remote Control Transmitter	1221A71	$37.90		

Chain Door Openers

We offer these openers with a solid hub that you can bore to the size you need. Chain (sold separately) is low carbon steel with zinc plating. *Note:* All openers are designed for use only with chain listed—do not substitute other chain.

Openers with Non-Load-Rated Hand Chain— Designed for opening, but not supporting, the weight of the door. Ideal for opening and closing independently supported overhead doors and furnace doors.

Openers with Load-Rated Chain— For operating heavy sliding doors, sliding windows, and power-operated garage doors.

To Order: For chain, please specify length.

OD	Pitch Dia.●	Max. Bore	Hub Thick.	Openers Material	Openers Each	Non-Load-Rated Hand Chain	Per Foot	Load-Rated Chain Capacity, lbs.		Per Foot
4 5/8″	3 5/8″	2″	1 1/2″	Aluminum	3172T111	$192.98	3172T41	$20.13	900	3171T51 ... $24.00
5 7/8″	4 7/8″	1 1/2″	1 3/8″	Cast Iron	3172T112	209.52	3172T41	20.13	900	3171T51 ... 24.00
7 3/4″	6 3/4″	3 1/2″	2 1/4″	Cast Iron	3171T114	473.33	—	—	1,140	3171T54 ... 32.14
8″	6″	1 1/4″	1 5/16″	Cast Iron	3172T128♠	323.89	3172T58	24.00	—	—
10″	7″	3″	3 1/2″	Cast Iron	3171T121	567.00	—	—	2,200	3171T82 ... 34.86
10 1/2″	9 1/2″	1 1/2″	1 5/8″	Cast Iron	3172T132	470.83	3172T58	24.00	—	—

● Pitch Diameter=diameter at midpoint of chain. ♠ Hub has a spoked design (not illustrated).

UL Listed Fusible Links

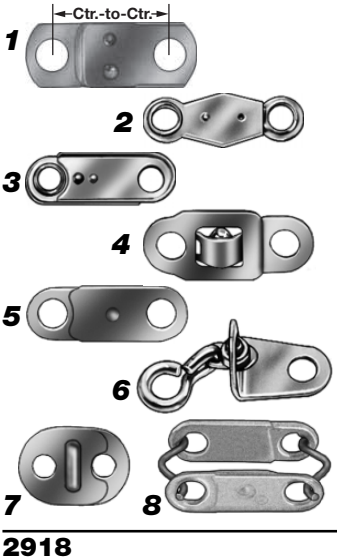

The high temperatures of a fire will melt the solder alloy bond between links. The link halves then separate, releasing overhead fire doors, windows, and lids. Install with S-hooks or chain (not included). Links should be replaced annually to ensure safety. To choose the proper links, refer to the fusing temperature and load rating listed below. UL listed. ***Double-link set*** is recommended for heavier loads.

Note: Links are designed for a straight-pull application only. Do not paint or coat.

	Fusing Temp. Rating	Load Rating, lbs. Min.	Max.	Mounting Holes Ctr.-to-Ctr.	Hole Dia.	O'all Size, Lg. × Ht.		Each
Single Links								
1	135° F	3	10	15/16″	1/4″	1 23/64″ × 1/2″	1204A22	$4.33
1	165° F	3	10	15/16″	1/4″	1 23/64″ × 1/2″	1204A23	2.29
2	135° F	3	20	1 5/8″	3/8″	2 1/4″ × 3/4″	1147A56	7.80
2	165° F	3	20	1 5/8″	3/8″	2 1/4″ × 3/4″	1147A18▲	4.13
2	212° F	3	20	1 5/8″	3/8″	2 1/4″ × 3/4″	1147A19▲	4.31
2	280° F	3	20	1 5/8″	3/8″	2 1/4″ × 3/4″	1147A21▲	4.31
2	360° F	3	20	1 5/8″	3/8″	2 1/4″ × 3/4″	1147A22▲	4.31
3	165° F	1	8	7/8″	13/64″	1 5/16″ × 7/16″	1147A25	1.89
4	165° F	5	50	1″	17/64″	1 1/2″ × 5/8″	6501T22▲	20.73
4	212° F	5	50	1″	17/64″	1 1/2″ × 5/8″	6501T23▲	21.74
4	286° F	5	50	1″	17/64″	1 1/2″ × 5/8″	6501T24▲	22.56
5	165° F	1	30	1 3/4″	7/16″	2 1/2″ × 3/4″	1147A26	11.25
5	212° F	1	30	1 3/4″	7/16″	2 1/2″ × 3/4″	1147A14	12.60
6	135° F	10	40	1 5/8″	21/64″	2 1/4″ × 51/64″	1449A21	7.98
6	165° F	10	40	1 5/8″	21/64″	2 1/4″ × 51/64″	1449A22	6.48
7	135° F	3	45	5/8″	1/4″	1 7/32″ × 27/32″	1449A41	8.06
7	165° F	3	45	5/8″	1/4″	1 7/32″ × 27/32″	1449A42	4.36
Double-Link Set								Set
8	165° F	2	60	1 3/4″	7/16″	2 1/2″ × 3/4″■	1148A17	$29.78

▲ Also FM approved. ■ Overall size represents the size of a single link.

Overhead-Door Openers

Open, close, and stop overhead doors with the touch of a button. Use this chain-drive system (push-button control, motor, and operator) on standard sectional doors made from fiberglass, aluminum, wood, and up to 16-ga. insulated steel. Openers move doors approximately 8-12 in./sec. If the door makes contact with an obstruction when closing, the friction clutch stops the door operator immediately. Two safety photo eyes housed in a water-tight casing with heavy gauge metal mounting brackets are also included. Any object passing through the eye beam stops and reverses the motion of a descending door. Replacement eyes are sold separately below. Operator has an emergency disconnect for manual operation. Units have a black powder-coated finish. Meet UL 325 for commercial use (not for residential use).

The push-button control has three push-and-hold buttons (open, close, and stop) and operates on 24 VAC. Size is 5¼″ Ht.×2⅜″ Wd.×1¾″ Dp. The built-in logic control board has a maintenance alert signal you can set for a designated maintenance cycle. Also allows programming of maximum run time and time delay before reversing direction, as well as setting a midway stop point.

Motor is rated continuous duty and has overload protection to prevent overheating.

Operator is 20½″ Lg.×13⁵⁄₆₄″ Wd.×11⅝″ Ht. and requires a minimum of 4″ clearance above the door. Furnished with an 11-ga. steel track that has nylon chain guides for quiet, smooth operation. Track is sized for the max. door height; trim the track for shorter doors. The quick-mount header bracket allows fast installation.

For remote control operation, order the ***optional transmitter*** (sold separately below) for use with the included receiver. Transmitter has three buttons (open, close, and stop) and is powered by a 12-volt battery (included).

Push-Button Control

Optional Remote Control Transmitter

Safety Photo Eyes

Max. Door Size, Ht.×Wd.	Motor	Amps		
8 ft.×22 ft.	½ hp, 115 VAC, 60 Hz, single phase	11.2	**1221A81**	$676.21
10 ft.×20 ft.	½ hp, 115 VAC, 60 Hz, single phase	11.2	**1221A82**	676.21
12 ft.×20 ft.	¾ hp, 115 VAC, 60 Hz, single phase	11.2	**1221A83**	823.82
14 ft.×18 ft.	¾ hp, 115 VAC, 60 Hz, single phase	11.2	**1221A84**	844.14
Optional Remote Control Transmitter			**1221A71**	37.90
Replacement Safety Photo Eyes (Set of Two)			**1221A31**	228.55

Remote Control Transmitter and Receiver for Overhead Doors

Open your doors by remote control using our matched transmitter and receiver. Also can be used for remote control in other open/close, up/down, and start/stop applications.

Transmitter has three buttons for open, close, and stop functions. Just set the DIP switch to match the code on your opener or receiver. Transmitter can be hand-held or mounted on your vehicle's dash or sun visor. Powered by a 12-volt battery (included).

Receiver wires directly to opener for its power supply. For 24 VAC/DC operations. Housing is aluminum.

Transmitter

Receiver

	Lg.×Wd.×Dp.		
Transmitter	3⁷⁄₁₆″×1⁹⁄₁₆″× 1¹⁄₁₆″	**1221A46**	$34.26
Receiver	4¾″ ×4½″ ×1¹¹⁄₃₂″	**1221A65**	79.63

Remote Control Transmitters and Receivers for Garage Doors

One-Button Transmitter

Two-Button Transmitter

Mini Transmitter with Rolling Code

Receiver 8129A57

Transmitter 8129A16

Keypad Transmitter

Team a matching transmitter and receiver to remotely operate your door opener. We offer transmitters and receivers that work with Chamberlain, Craftsman, and Liftmaster or with Delta, Multi-Code, and Stanley door openers. Choose from three different levels of built-in security—DIP switch, billion code, and rolling code. One-button and two-button transmitters come with a visor clip. Mini transmitter has a ring to attach to your keychain. To replace your current transmitter, identify the transmitter type by the color of the LED light (if applicable).

DIP-Switch Transmitters—The most commonly used transmitter type. Transmitters have a series of DIP switches that can be set to match the code on your opener or receiver. Transmitters ***for Chamberlain, Craftsman, and Liftmaster openers*** include a 12-volt battery. *One-button transmitter* operates one opener and has one set of nine DIP switches. *Two-button transmitter* can operate two devices and has two sets of nine DIP switches. Transmitter ***for Delta, Multi-Code, and Stanley openers*** includes a 9-volt battery. It operates one opener with one set of 10 DIP switches.

Billion-Code Transmitters—Come set to a unique code that is selected out of 3.5 billion possible options (the codes are not re-used). *Two-button transmitter* can operate two devices. One of the buttons uses billion code security and the other button operates with DIP switches. Includes a 3-volt battery. *Keypad transmitter* operates one device and remembers your 4-digit PIN after a power outage. The keypad is backlit for use in the dark. Includes a 9-volt battery.

Rolling-Code Transmitters—Send a different code to the receiver or opener every time the door is opened or closed—the code cannot be duplicated. All include a 3-volt lithium battery, unless noted. *One-button transmitter* operates one device. *Two-button transmitter* can operate two devices. One of the buttons uses rolling code security and the other button uses billion code security. *Mini transmitter* has three buttons to operate up to three devices. *Keypad transmitter* operates one device and remembers your 4-digit PIN after a power outage. Keypad is backlit for use in the dark. Includes a 9-volt battery.

Receivers—Work only with their matching transmitters. *Receiver for Chamberlain, Craftsman, and Liftmaster openers* plugs directly into a 120 VAC, 60 Hz outlet or can be wired directly to the opener for its power supply. Works with one DIP-switch code, 12 billion-code transmitters, eight rolling-code transmitters, or one keypad. *Receiver for Delta, Multi-Code, and Stanley openers* is wired directly to the opener for its power supply. It works with one DIP-switch code and is well-suited for outdoor applications.

For Chamberlain, Craftsman, and Liftmaster Openers

	Lg.×Wd.×Dp.	LED		
DIP Switch				
One-Button Transmitter	3⁷⁄₁₆″ ×1⁹⁄₁₆″ × ¾″	Red	**8129A51**	$34.03
Two-Button Transmitter	3⁷⁄₁₆″ ×1⁹⁄₁₆″ × ¾″	Red	**8129A55**	37.19
Billion Code				
Two-Button Transmitter	2¹⁵⁄₁₆″×1¹⁵⁄₁₆″× ½″	Yellow	**8129A24**	28.69
Keypad Transmitter	6″ ×2″ ×1″	—	**8129A54**	47.37
Rolling Code				
One-Button Transmitter	2¹⁵⁄₁₆″×1¹¹⁄₁₆″× ⅝″	—	**8129A81**	$29.41
Two-Button Transmitter	2¹⁵⁄₁₆″×1¹¹⁄₁₆″× ⅝″	—	**8129A82**	32.59
Mini Transmitter	2¹⁵⁄₁₆″×1⁵⁄₁₆″ × ½″	—	**8129A83**	36.08
Keypad Transmitter	6¼″ ×2⅜″ ×1″	—	**8129A84**	47.15
Receiver for Chamberlain, Craftsman, and Liftmaster				
Receiver	2¾″ ×3½″ ×1⅜″		**8129A57**	43.03

For Delta, Multi-Code, and Stanley Openers

	Lg.×Wd.×Dp.		
One-Button DIP-Switch Transmitter (Red LED)	4⁵⁄₁₆″×2⅜″×1″	**8129A16**	$25.07
Receiver	4⅛″ ×5¾″×1⁹⁄₁₆″	**8129A17**	52.36

About Exit Devices

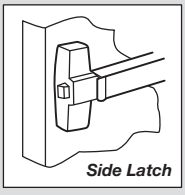
Side Latch

Mortise

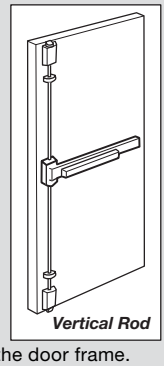
Vertical Rod

In an emergency, exit devices make it easy for occupants to exit quickly and safely. The most common exit devices are touch bars (panic bars) and crossbars. You can add an optional door handle for opening the door from the outside.

Side-latch exit devices mount to the surface of the door and have one latch bolt. The strike plate mounts on the surface of the door frame.

Mortise exit devices have a latching mechanism that is recessed into the door. The latch bolt projects into the strike plate, which is recessed into the door frame. In crossbar style only.

Vertical-rod exit devices mount to the surface of the door and have two latch bolts. One latch bolt extends above the top of the door and the other extends below the base of the door. Strike plates mount on the top of the door frame and on the floor.

Stainless Steel Touch Bar Exit Devices

Side Latch

Ball Knob

Lever

Pull Handle — Pull w/ Lock

Get the corrosion resistance of stainless steel and the convenience of touch bar styling. All external exit device parts are 18-8 stainless steel with a dull finish. For use on 1¾″ thick doors up to 8 feet high. Reversible for right- and left-hand doors. You can use the built-in hold-down feature to keep the door in the unlatched position, allowing traffic to enter and exit freely. Deadlocking latch bolts prevent latch tampering.

Devices surface mount and can be cut to fit door width. Housing requires a 3½″ wide mounting surface. Bars project 2¼″ from face of door. Latch bolts project ¾″. Mounting screws, strike plate, and instructions are included. UL listed. Use devices alone or pair them with handles surface mounted on the outside of the door.

	For Door Wd.	O'all Lg.		
Exit Devices				
Side Latch	30″ to 36″	32⅞″	13755A51	$187.84
Side Latch	40″ to 48″	43″	13755A61	206.68
Handles—*All (except pull) have a Schlage C keyway and two keys*				
Pull (Aluminum)			13755A58	9.28
Pull (Aluminum) with Lock			13755A71	16.98
Ball Knob (18-8 SS w/Dull Finish)			13755A56	33.18
Lever—Reversible (Cast Zinc w/Dull Chrome Finish)			13755A57	63.60

Touch Bar Exit Devices

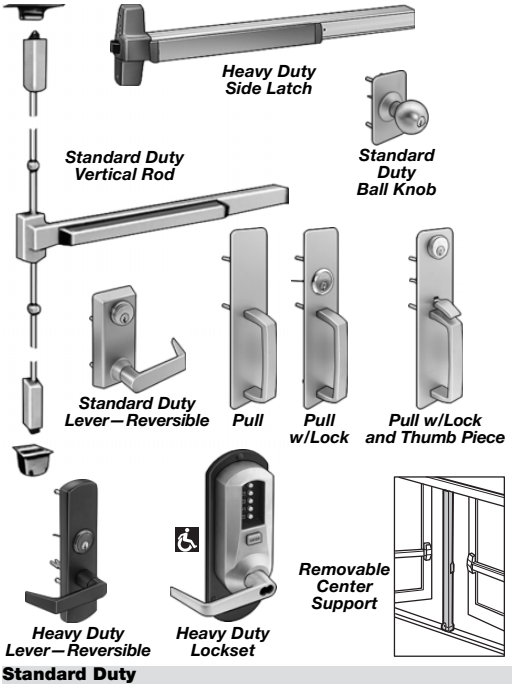

Slight pressure on the touch bar releases the latch bolt. Devices fit 1¾″ and 2¼″ thick doors up to 7 feet high. Reversible for right- and left-hand doors. Use the built-in hold-down feature to keep door unlatched, allowing traffic to enter and exit freely; fire-rated exit device does not have a hold-down feature. Deadlocking latch bolts prevent latch tampering.

Devices and handles surface mount. Touch bars project 3 13/16″ from face of door. Latch bolts project ¾″ for side-latch devices; ⅝″ for vertical-rod devices. Devices can be cut to fit door width. Mounting hardware, strike plate, and instructions are included. UL listed. Devices meet ANSI A156.3 Grade 1 standards. For double doors, order two of each exit device. A removable center support for double doors is sold separately.

Use exit devices alone or pair them with handles mounted on the outside of the door. Handles (except pull handles) include a Schlage C style keyway and two keys. Heavy duty lockset accepts a small-format interchangeable core.

Standard Duty Exit Devices—Housings and touch bars are steel. Housing on side-latch devices requires a 4¾″ wide mounting surface; housing on vertical-rod devices requires a 3⅝″ wide mounting surface.

Heavy Duty Exit Devices—Housings are aluminum. Devices with aluminum and dull chrome finishes have stainless steel touch bars; dull bronze and dark brown finishes have steel touch bars. All have a hydraulic noise-damping feature. Housing on side-latch devices requires a 4½″ wide mounting surface; housing on vertical-rod devices requires a 3 11/16″ wide mounting surface. ***Fire-rated exit device*** is UL listed for three-hour "A" labeled fire doors. ***Heavy duty lever handle*** is vandal resistant. When force is applied to the locked handle, the lever drops down into a vertical position so it can't be used for leverage during a forced entry. To reset, lift lever to regular position.

Heavy duty mechanical push-button lockset is exclusively for use with heavy duty side-latch exit devices. It doesn't require electricity or batteries. Enter a 1-5 digit code to unlock the door; there are thousands of combinations. All personnel share the same code. Lockset accepts a small-format interchangeable core (sold separately on page 2910), so you can use a key to override the combination. Reversible for right- and left-hand doors. Housing is 8⅞″ Ht.×4¼″ Wd. and projects 4 1/16″. Finish is dull chrome. Use indoors and outdoors. Temperature range is –30° to +130°F. Meets ANSI A156.2 Grade 1 standards for 800,000 cycles. UL listed for three-hour "A" labeled fire doors. When properly installed, lockset helps you comply with the Americans with Disabilities Act (ADA).

Standard Duty

To Order: Please specify finish: aluminum or dark brown.

	For Door Wd.	O'all Lg.		
Exit Devices				
Side Latch	30″ to 36″	33⅛″	8080A45	$281.47
Side Latch	37″ to 48″	45⅛″	8080A531	289.58
Vertical Rod	30″ to 36″	33⅛″	8080A521	493.07
Vertical Rod	37″ to 48″	45⅛″	8080A59	486.00
Handles—*Not interchangeable with heavy duty devices*				
Pull			8080A47	74.72
Pull with Lock			8080A48	126.22
Pull with Lock and Thumb Piece			8080A46	203.18
Ball Knob			8080A511	174.52
Lever—Reversible			8080A49	203.17

Removable Center Support—For Standard and Heavy Duty Devices

Also known as a mullion, this 7-ft. steel post provides stability and security for double doors. Remove it to let large equipment pass through. Mounting hardware is included. Drilled to accept strike plates included with standard and heavy duty exit devices.

Aluminum Finish	8080A81	$303.35
Dark Brown Finish	8080A82	303.35

Heavy Duty

To Order: For exit devices, please specify finish: aluminum, dull chrome, dark brown, or dull bronze (fire-rated exit device is dull chrome only). *Note:* Prices may be up to 15% higher for finishes other than aluminum. For handles, please specify finish: dull chrome or dull bronze.

	For Door Wd.	O'all Lg.		
Exit Devices				
Side Latch	28″ to 36″	33″	8042A18	$571.50
Side Latch	34″ to 48″	45″	8042A78	663.89
Vertical Rod	28″ to 36″	33″	8042A76	923.44
Vertical Rod	34″ to 48″	45″	8042A111	938.93
Fire-Rated Exit Device				
Side Latch	28″ to 36″	33″	8042A15	818.61
Handles—*Not interchangeable with standard duty devices*				
Pull			8042A21	148.03
Pull with Lock			8042A69	197.30
Pull with Lock and Thumb Piece			8042A19	197.92
Lever—Reversible			8042A32	357.92
Lockset—*Not interchangeable with standard duty devices*				
Mechanical Push-Button (for Side-Latch Devices)			8042A89	510.51

For information about exit devices, see page 2920.

Crossbar Exit Devices

Apply slight pressure on the crossbar of these devices to unlatch the door. Devices fit 1¾″ thick, 7-ft. high doors that are up to 4 feet wide. Housings are brass. Crossbars with *dark bronze finish* are made of brass. Crossbars with *dull chrome finish* are stainless steel. The crossbars, made of 1″ OD tubing, can be cut to fit narrower doors. Max. projection from the door face is 5″. Use the built-in hold-down feature to keep the door in the unlatched position, allowing traffic to enter and exit freely. Mounting hardware, strike plate, and instructions are included. UL listed. For double doors, order two of each exit device. A removable center support for double doors is sold separately below.

Use exit devices alone or pair them with door handles mounted on the outside of the door. All handles (except pull handles) come with a Schlage C keyway cylinder and two keys.

Side-latch and ***vertical-rod*** devices are reversible for right- and left-hand doors. Surface mount them on the door. ***Side-latch*** devices require a 4⅜″ wide mounting surface for each housing. ***Vertical-rod*** devices require a 2¹³⁄₁₆″ wide mounting surface for each housing. ***Mortise*** devices are recessed 4½″ into the door and have deadlocking latch bolts to prevent latch tampering. The crossbar latching mechanism is also recessed into the door.

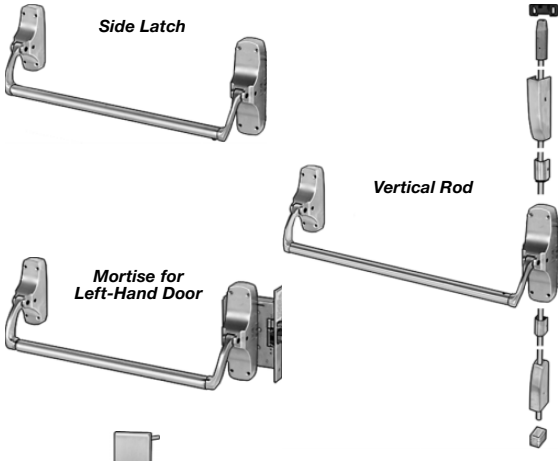

Exit Devices and Handles

To Order: For exit devices, please specify finish: dark bronze or dull chrome. For handles, please specify finish (dark bronze or dull chrome) and style of the exit device on the other side of the door.

	Latch Bolt Proj.		
Exit Devices			
Side Latch	¾″	8044A58	$693.37
Vertical Rod	⅝″	8044A66	966.76
Mortise for Left-Hand Door	¾″	8044A41★	947.89
Mortise for Right-Hand Door	¾″	8044A38★	947.89
Handles			
Pull		8044A31	138.91
Pull with Lock and Thumb Piece		8044A34	252.76
Ball Knob		8044A36	274.53
Lever for Left-Hand Door		8044A37★	427.67
Lever for Right-Hand Door		8044A61★	427.67

★ See diagram on page 2915 for door handing information.

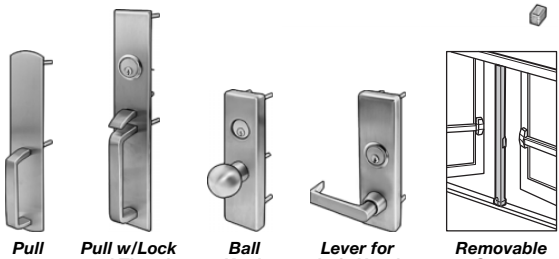

Removable Center Support—For Side-Latch and Vertical-Rod Exit Devices

Also known as a mullion, this 7-ft. steel post provides stability and security for double doors. Remove it to let large equipment pass through. Mounting hardware is included. For use with side-latch and vertical-rod exit devices. Support is drilled to accept strike plates included with the exit devices.

Finish		
Aluminum	8080A81	$303.35
Dark Brown	8080A82	303.35

Exit Bar Hold-Down Retainers

Use retainers on exit devices that don't have a built-in hold-down feature. Retainers keep the exit bar in the unlatched position, allowing traffic to enter and exit freely. A push-button release lets you return door to the latched position. Not for use on fire-rated doors. Retainers are made of aluminum. Furnished with an adjusting wrench and mounting hardware. One shim (sold separately) per retainer is required for installation on glass.

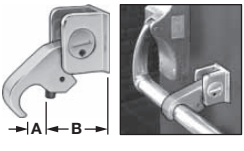

For Bar Style	(A)	Min. (B)	Max. (B)		
Round	1¹⁄₁₆″	3¹³⁄₃₂″	4″	8110A11	$55.55
Oval	²⁹⁄₃₂″	2¾″	3¹¹⁄₃₂″	8110A21	43.55
Shim for Installing on Glass Doors				8110A64	10.19

Alarmed Exit Devices

Applying pressure to the push bar retracts the latch from the strike plate and sounds a 95-dB alarm. Alarm sounds until you reset it with the control key. Push bars identify doors as alarmed emergency exits; Styles 1 and 2 are for exit doors that are not required by code to have a crossbar or touch bar. All are reversible for right- and left-hand doors. Housings are aluminum. Alarms operate on a 9-volt battery (included). Surface mount devices to door. Mounting hardware and instructions are included. UL listed. When properly installed, devices help you comply with the Americans with Disabilities Act (ADA).

Style 1—Deadbolt is saw-resistant and extends ¾″ into strike plate.

Styles 2&3—Have a low-battery indicator and a deadlocking latch for tamper resistance. Deadbolt extends 1″ into strike plate. Exit devices ***for exterior weatherproof doors*** are for indoor and outdoor use. Devices are waterproof and can be used in washdown areas. Temperature range is –20° to +140° F.

Note: Devices require a rim cylinder lock to reset the alarm (see 1385A on page 2922). Lock fits into the opening on the face of the device. You can mount an additional 1385A rim cylinder lock on the exterior of the door to use as a door lock.

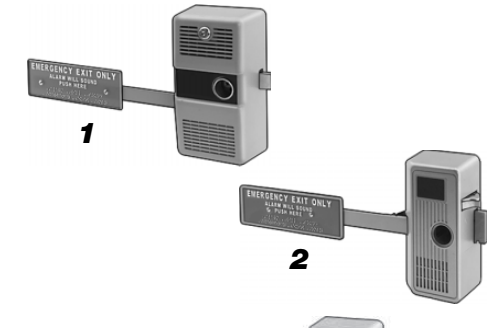

	Ht.×Wd.×Proj.	Bar Lg.	Deadbolt, Ht.×Thick.	*For Interior Doors*		*For Exterior Weatherproof Doors*	
1	10⅜″×5¾″×3¾″	12⅞″	1⅛″×⅜″	8049A23	$198.81	—	—
2	8½″×4⅜″×3¼″	13⅛″	2″ ×½″	8049A24	278.74	8049A241	$308.24
3	8½″×4⅜″×3¼″	27¾″	2″ ×½″	8049A25	350.12	8049A251	366.10
Replacement 9-Volt Battery				71455K56	2.75	8049A26	18.13

Magnetic Contact Door Alarms

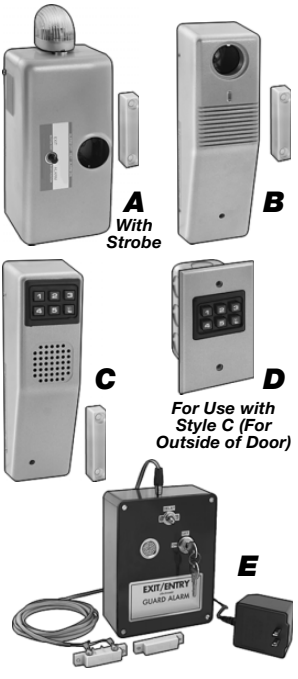

Deter unauthorized use of emergency exit doors—an alarm sounds when the door is opened. Alarm surface mounts on the interior side of the door and magnetic contact mounts on the door frame. The All-in-One alarm also can be mounted on windows. All the alarms are reversible for right- and left-hand doors. For indoor use. Mounting instructions are included.

Standard and ***slimline key-controlled*** alarms require a mortise cylinder lock (sold separately) to arm and disarm the alarm. Order a 1¼″ long mortise cylinder lock 1301A to fit into the face of the alarm. You can mount an optional rim cylinder lock 1385A on the opposite side of the door. Both locks sold separately on this page.

(A) Standard Alarms—Operate on a 6-volt battery (included) and have a low-battery warning. Mounting hardware is included. *Alarm with strobe* has an amber strobe light for visual indication.

(B&C) Slimline Alarms—The slimmer design takes up less space. The alarm sounds and an LED flashes when door is opened. Set alarm to sound continuously for two minutes or announce openings with a two-second tone. Alarms operate on a 9-volt battery (included) and have a low-battery warning and test button. Mounting hardware is included. *Keypad-controlled alarm (C)* has a programmable six-digit keypad to arm and disarm alarm from the inside. Alarm accepts one 3-5 digit code. An *optional keypad (D)* (sold separately) works with the keypad-controlled alarm and has all the features of the inside keypad. It mounts on the opposite side of the door, allowing another entry option.

(E) All-in-One Alarm—This easy-to-install alarm has the magnetic contacts already connected to the alarm system with 10-ft. wire leads. Once triggered, the alarm sounds until you close the door or window and insert the included key into the alarm to reset it. Alarm works on single and double doors and on windows that open inward or outward. Alarm operates on 9 VDC (via a built-in transformer with a 120 VAC power cord) and has battery backup in the event of power failure. Furnished with built-in horn, magnetic contacts, built-in transformer with 120 VAC 5-ft. power cord, two 9-volt batteries, and two keys. Contacts are 2½″ Lg.×½″ Wd.×½″ Proj. Gap distance is ¼″ (the maximum space allowed between the magnet and switch for proper functioning). Mounting hardware not included. Alarm box requires ¼″ machine screws; contacts have ⅛″ dia. mounting holes.

	Ht.×Wd.×Proj.	dB	Housing Material	Finish/Color		
Standard Alarms						
A...Key Controlled	8½″×4¼″×3³⁄₁₆″	95	Aluminum	Dull	**1292A22**	$158.08
A...Key Controlled w/Strobe	10⅝″×4¼″×3³⁄₁₆″	95	Aluminum	Dull	**1292A24**	167.21
Slimline Alarms						
B...Key Controlled	9″ ×2½″×2⅜″	110	Aluminum	Dull	**8108A21**	167.93
B...Key Controlled	9″ ×2½″×2⅜″	110	Aluminum	Dark Brown	**8108A23**	167.93
C...Keypad Controlled	9″ ×2½″×2⅜″	110	Aluminum	Dull	**8108A44**	199.03
C...Keypad Controlled	9″ ×2½″×2⅜″	110	Aluminum	Dark Brown	**8108A47**	199.03
D...Optional Keypad for Slimline Keypad-Controlled Alarms (Aluminum Finish)					**8108A63**	95.86
All-in-One Alarm						
E...Key Controlled	6⅝″×5⅝″×2½″	90	Plastic	Black	**80505A15**	309.38

Rim and Mortise Cylinder Locks

Rim Cylinder Lock

Mortise Cylinder Lock

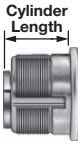

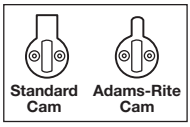

Insert these cylinder locks into exit alarms, exit devices, deadbolts, and mortise locks. Locks are made of solid brass and have a five-pin tumbler locking mechanism. Furnished with two keys. Select the keyway style that matches your keying system. Locks that are ***keyed differently*** each open with a different key. Locks that are ***keyed alike*** open with the same key.

Rim cylinder locks have an adjustable tailpiece to fit doors from 1⅜″ to 2¼″ thick. ***Mortise cylinder locks*** have either a standard cam or a cam specifically for Adams-Rite locks.

To Order: Please specify finish: dull chrome or polished brass.

Rim Cylinder Locks—Use with alarms above and on page 2921

Keyway Style	Keyed Differently		Keyed Alike	
Schlage "C"	**1385A11**	$10.90	**1385A12**	$12.88
Yale "Y8"	**1385A33**	10.90	**1385A34**	12.88

Mortise Cylinder Locks

Lg.	Keyway Style	Keyed Differently		Keyed Alike	
With Standard Cam					
¹⁵⁄₁₆″	Schlage "C"	**1301A1**	$11.02	**1301A2**	$13.12
1⅛″	Schlage "C"	**1301A23**	11.11	**1301A26**	13.21
1⅛″	Yale "Y8"	**1301A27**	11.11	**1301A42**	13.21
1¼″	Schlage "C"	**1301A41**●	11.22	**1301A54**●	13.31
With Adams-Rite Cam					
¹⁵⁄₁₆″	Schlage "C"	**1301A11**	11.02	**1301A12**	13.17
¹⁵⁄₁₆″	Yale "Y8"	**1301A15**	11.00	**1301A16**	13.17

● Recommended for use with alarms on this page.

Hand-Held Metal Detector

Portable, lightweight detector senses metal on individuals without physical contact. When it detects metal, detector gives an audible signal. Runs on a 9-volt battery (sold separately) and has a low-battery warning. Case is high-impact black ABS plastic. The metal detecting face of probe is 8″ long; overall length is 16″. Detects objects from 1″ to 12″ away, depending on the alloy, object size, and search speed.

Metal Detector ..... **6606T64** $142.86
9-Volt Battery ..... **71455K56** 2.75

Entrance and Exit Announcer and Counter

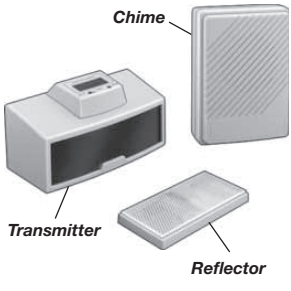

No more surprise guests; a chime announces each visitor walking through the door and a counter keeps track of each entrance and exit. Mount the infrared light beam transmitter and reflector between 3 and 20 feet apart. When a person interrupts the beam, the transmitter sends a signal to the receiver and the chime sounds. System includes a transmitter with four-digit counter, an electronic chime, 26 feet of 24 AWG wire, a plug-in transformer to supply 12 VAC, and a beam reflector. Adjust the chime's volume from 0 to 85 dB. Housing is ABS plastic. Mounting hardware and instructions are included.

Maximum output current is 1.0 amp to power additional chimes. Each chime draws 0.3 amps when activated. Not recommended for outdoor use.

Transmitter is 2²³⁄₃₂″ Ht.×5″ Wd.×2⁷⁄₁₆″ Dp. Chime is 4⁵⁹⁄₆₄″ Ht.×3³⁵⁄₆₄″ Wd.×1½″ Dp. Beam reflector is 1⅞″ Ht.×3¹³⁄₁₆″ Wd.

Announcer System ..... **80405A18** $133.77
Additional Chime ..... **80405A23** 54.60

Magnetic Entrance and Exit Announcer

No electricity, batteries, or wiring—installing this announcer couldn't be easier. Mount the metal contact disc on the door and the announcer with magnet on the door frame. The magnet actuates a pleasant chime when door is opened. A slide control allows you to deactivate the chime. Includes mounting hardware, drill bit, and instructions. Cover is heavy duty brown ABS plastic. Size is 2″ Ht.×5¾″ Wd.×2¾″ Dp. For indoor and outdoor use. Not temp. rated.

8096A61 ..... $35.44

Verbal Alert/Alarm Motion Sensor

Sound an alarm or play a recorded message up to 10 seconds long when someone passes within 10 feet of the motion sensor. Operating temperature range is 40° to 100° F. For indoor use only. Unit has an on/off switch and operates on four AA batteries (not included). Changing batteries does not erase the recorded message. Housing is black ABS plastic and has a keyhole slot for mounting.

	Ht. × Wd. × Dp.		Each
Motion Sensor	4⅜″ × 2½″ × 1¼″	1314A4	$46.80
Replacement AA Batteries (4/Pkg.)		71455K53 Pkg.	$2.94

Infrared Motion Sensor

When this sensor detects an object with a temperature that differs from the ambient temperature, it sends a signal to your existing alarm system. Wire sensor into your alarm; it operates on 10-16 VDC. Operating temperature range is 14° to 122° F. For indoor use only.

Sensor covers a 90° area that's 40 feet high and 40 feet wide. It can be set to ignore objects that weigh less than 30 lbs. Housing is white ABS plastic. Mount from 7 to 9 feet high. Mounting hardware is included. UL listed.

Range	Ht. × Wd. × Dp.		
40 ft. × 40 ft.	2 11/16″ × 3 3/64″ × 1 29/32″	8068A85	$21.04

Magnetic Contacts

Wire these magnetic contacts to your alarm or monitoring system to detect door and window openings. When the door magnet moves away from the frame magnet, a signal is sent to your system. Gap distance is the maximum space allowed between the magnet and switch for proper functioning. A wider gap distance compensates for loose and ill-fitting doors without triggering false alarms. Switches are hermetically sealed (unless noted) for corrosion resistance in moist and dusty areas. UL listed. *Note:* If current exceeds max. amps, the switch can burn out.

Surface-mounted plastic contacts are furnished with mounting screws, except 8039A21 is adhesive backed for mounting and has 12″ long wire leads. For indoor use.

Surface-mounted aluminum and ***floor-mounted*** contacts have 3 feet of flexible stainless steel conduit permanently attached to the switch housing. Mounting screws are included. For indoor use.

Mortise-mounted contacts mount in ⅜″ dia. drilled holes on the door frame and door. Contacts sit flush with surface and have 24″ long wire leads. Mounting screws not included. Use indoors and outdoors. Not rated for temperature.

Contacts ***for roll-up and overhead doors*** mount directly to track or channel and overhead door. Furnished with mounting hardware and stainless steel armored cable. Use indoors and outdoors. Not rated for temp. 80425A31 has a 2-ft. long cable; 80535A42 has a 1½-ft. long cable.

Closed-Loop Style— For wiring magnetic contacts to alarms. Switch is closed when magnet is in proximity.

Single-Pole Double-Throw (SPDT) Style— For wiring magnetic contacts to an alarm system and another item such as a motion detector.

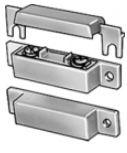

Plastic, Surface Mounted with Screw Leads

Aluminum, Surface Mounted

Floor Mounted

Mortise Mounted

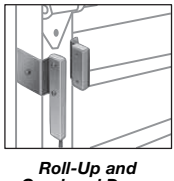

Roll-Up and Overhead Doors

Max. Gap Distance	Lead Size	Housing Size, Lg. × Wd. × Ht.	Closed Loop Voltage	Closed Loop Max. Amps/Watts			Single-Pole Double-Throw (SPDT) Voltage	Single-Pole Double-Throw (SPDT) Max. Amps/Watts		
Surface Mounted—Plastic										
5⅛″ (White)	22 AWG	1½″ × ¼″ × ⅜″	100V AC/DC	0.5/7.5	8039A21●	$3.68	—	—	—	—
¾″ (Gray)	#6 screw leads	2½″ × ½″ × 9/16″	100V AC/DC	0.5/7.5	8039A12●★	4.44	—	—	—	—
¾″ (White)	#6 screw leads	2½″ × ½″ × 9/16″	100V AC/DC	0.5/7.5	8039A14●★	4.44	30V AC/DC	0.25/3	8039A47●★	$9.65
1¼″ (Gray)	#6 screw leads	3 29/32″ × 45/64″ × 19/32″	100V AC/DC	0.5/7.5	8073A11	9.59	—	—	—	—
1¼″ (White)	#6 screw leads	3 29/32″ × 45/64″ × 19/32″	100V AC/DC	0.5/7.5	8073A13	9.59	30V AC/DC	0.25/3	8073A28	13.60
1¼″ (Brown)	#6 screw leads	3 29/32″ × 45/64″ × 19/32″	100V AC/DC	0.5/7.5	8073A16	9.59	—	—	—	—
Surface Mounted—Aluminum										
3″	3-ft. cable lead	3″ × ½″ × 1″	100V AC/DC	0.5/7.5	8039A51	36.16	30V AC/DC	0.25/3.0	8039A52	39.13
Floor Mounted—Aluminum										
3″	3-ft. cable lead	3½″ × 1½″ × 1½″▲	100V AC/DC	0.5/7.5	8135A11	36.16	30V AC/DC	0.25/3	8135A32	39.24
Mortise Mounted—Brass with Nickel Plating										
11/16″	22 AWG	3⅜″ Dia. × ⅝″	130 VDC	0.05/6.5	12495A41	6.25	—	—	—	—
⅞″	22 AWG	3⅜″ Dia. × 1½″	—	—	—	—	130 VDC	0.05/6.5	12495A53	13.33
1⅛″	22 AWG	3⅜″ Dia. × 1½″	130 VDC	0.05/6.5	12495A51	10.00	—	—	—	—
For Roll-Up and Overhead Doors—Aluminum										
3″	2-ft. cable lead	3⅝″ × 21/32″ × 3″	100V AC/DC	0.5/7.5	80425A31	40.08	—	—	—	—
6″	1½-ft. cable lead	6⅛″ × ½″ × 1″	100V AC/DC	0.5/7.5	80535A42	45.62	—	—	—	—

● Not hermetically sealed. ★ Furnished with a cover to protect screw terminals. ▲ Switch is 7/16″ wide.

Electronic Watchmen's Clocks

Are your security guards making their scheduled rounds? Here's how to be sure. Lay out a tour path of touch buttons. Guards carry an electronic clock to each touch button location. Each button has a unique identifier and touching the clock to the button records the location, date, and time. Clock stores up to 5,400 reads and operates on a 3-volt lithium battery (included). After collecting data, you can return the clock to the base station and use the included software to transfer data to your PC (requires Windows NT, 95 or later). Clock is 15/16″ Dia. × 5⅛″ Lg. Mounting brackets for touch buttons are 1 55/64″ Lg. × 1 7/32″ Wd. Complete kit includes an electronic clock, leather holster, 11 touch buttons with mounting brackets, a two-clock capacity base station, 9-pin cables to connect to a PC, and software. Mounting brackets for touch buttons require two #10 screws (not included).

Electronic Clock Kit

Electronic Clock Kit	1708T1	$797.74
Additional Clock	1708T5	373.10
Additional Touch Button w/Mounting Bracket	1708T6	7.07

Closed-Circuit Video Surveillance System

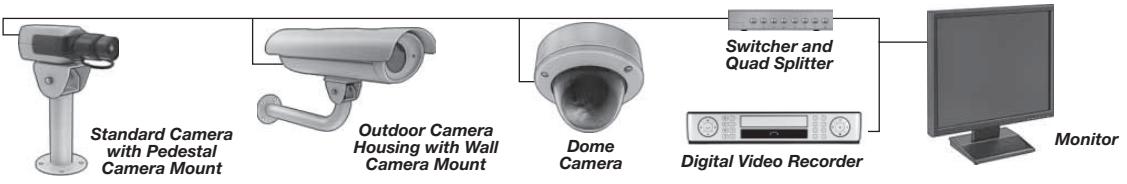

A closed-circuit video surveillance system can be as simple as a camera and a monitor. Add a digital video recorder or use a switcher and quad splitter to link up to four cameras to view multiple areas. Create your own system using the components below.

Cameras— Cameras have a 1/3″ image format and backlight compensation for use in brightly lit areas such as doorways and loading docks. All cameras record in color and have BNC video connections. Require a 120 VAC to 24 VAC transformer and conductor cords, sold separately. Operating temperature is –4° to +122°F.

Standard Camera— Lens has variable focal length from 2.8-10 mm. It automatically adjusts for areas with variable, direct, or indirect light. Housing is steel with a beige finish. There are 1/4″-20 threaded holes on top and bottom for attaching a camera mount. For indoor and outdoor use; outdoor use requires outdoor camera housing (sold separately).

Dome Camera— Inside the dome is a camera that pans 360° and tilts 90°. Lens has variable focal length from 2.6-6 mm and manual lens adjustment where light conditions are constant. Housing is cast aluminum with a white finish. Dome is polycarbonate. Mounting hardware is included. For indoor use.

Transformer (Required)— Convert 120 VAC to 24 VAC. Wire to screw terminals on camera using two conductor cords (sold separately).

Resolution	Shutter Cycle Speed		
Standard Camera—*O'all size is 7″ Lg.×2 1/2″ Wd.×2 1/4″ Ht.*			
330	1/60-1/110,000 sec.	**56735T92**	$247.44
Dome Camera—*Base is 6 7/32″ Dia.; O'all Proj. is 5 5/32″*			
540	1/60-1/100,000 sec.	**56735T96**	264.56
Transformer (Required)			
For Standard and Dome Cameras Above		**56735T98**	41.20

Outdoor Camera Housing— Fits standard camera above. Housing is aluminum with a gray finish and has liquid-tight cable fittings. Windows are glass. O'all size is 18 29/32″ Lg.×6 3/4″ Wd.×5″ Ht. Includes a heater and the required 120 VAC to 24 VAC transformer. Operating temperature is –4° to +131°F.

	Fits Max. Camera Size (Including Lens)		
Housing	10 5/16″ Lg.×3 3/16″ Wd.×3 1/2″ Ht.	**56735T16**	$262.18

Indoor/Outdoor Camera Mounts— Mounts are aluminum with a beige finish and have adjustable heads. They pan 360° and tilt 180°. When using mounts outside, combine them with the outdoor camera housing above. Base has four 5/16″ dia. mounting holes. Mounting hardware not included.

	O'all Ht.	Max. Cap., lbs.		
Pedestal Mount	8″	20	**56735T18**	$56.18
Wall Mount	12″	20	**56735T19**	46.81

Digital Video Recorder— Records continuously from up to four cameras in real time and keeps recording during playback of past recordings. Recorder can be wired to alarms and motion detectors. A built-in search function allows you to find specific dates, times, and alarm or motion events. Has 500 GB of storage to record approximately 30 days of high-quality video and audio. Also has a USB port, BNC video connections, and RCA audio connections. Housing is steel. Recorder has browser-based remote viewing capability (Windows 2000 and XP compatible), and is 3″ Ht.×14″ Wd.×14″ Dp. Operates on 120-230 VAC with 12-ft. cord and plug. UL listed.

56735T26 ..... $670.51

LCD Video Monitors— These color monitors have contrast and brightness adjustment and one VGA connection. Operate on 100-240 VAC with a 6-ft. cord and plug. Housing is steel with a black finish.

Note: A BNC to VGA converter (sold separately below) is required when using these monitors with other items on this page.

Diagonal	Max. Resolution	O'all Size, Ht.×Wd.×Dp.		
17″	1,280×1,024	14 19/32″×14 13/16″×6 5/16″	**56735T94**	$163.32
19″	1,440× 900	14 3/16″ ×17 13/32″ ×6 13/32″	**56735T32**	198.33
22″	1,680×1,050	15 3/4″ ×20 3/8″ ×7″	**56735T33**	264.65

BNC to VGA Converter— View images from your security camera on any monitor with a VGA connection. Multiple input ports allow a single monitor to be used with a camera and a PC. Use the BNC input to connect to a closed-circuit camera. The optional VGA pass-through connects a PC to the monitor. Simply press the input button to switch between sources. The converter includes a 5 VDC power adapter with plug.

56735T89 ..... $39.33

Switcher and Quad Splitter— Use with up to four cameras. Unit can automatically sequence from camera to camera or display real-time color images from two or four cameras at the same time. When the unit is switching from camera to camera, its display time can be adjusted from 1 to 50 seconds. It has an audible alarm for loss of video feed and also includes a feature for motion detection. Unit has BNC video connections and operates on 120 VAC with the included adapter. Housing is steel with a tan finish. Size is 1 3/4″ Ht.×8 1/2″ Wd.×5 1/2″ Dp.

56735T36 ..... $146.65

Wiring Accessories

Conductor Cord— Use to connect camera to transformer. Made of 18-ga., 2-wire, insulated solid copper cable. UL listed.

RG 6/U Cable— This coaxial cable is required for each video data connection between the camera, digital video recorder, switcher and quad splitter, and monitor.

BNC Connectors— Required on each end of the RG 6/U cable.

Conductor Cord	**72195K64**	**Per Ft.**	1-249	$0.23	250-Up	$0.18
RG 6/U Cable	**7032K5**	**Per Ft.**	1-99	$0.22	100-Up	$0.18
BNC Connectors (5/Pkg.)	**71115K34**	**Pkg.**	$14.30			

Wireless Transmitter and Receiver—For indoor use

Wireless Transmitter and Receiver— Use this 2.4 GHz transmitter and receiver instead of video cables. Range is 700 feet with unobstructed line of sight. There are four switchable transmitter and receiver channels. Housings are black plastic. Transmitter is 2 3/4″×2 1/4″×3/4″. Receiver is 6″×3 1/2″×1/2″. Transmitter and receiver come with a BNC video input, an RCA audio input, and two 12 VDC power supplies. FCC approved.

56735T93 ..... $154.96

Dummy Surveillance Cameras

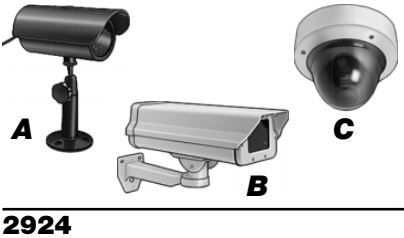

Sometimes the illusion is enough. These simulated surveillance cameras include mounting hardware. ***Style A*** is for indoor and outdoor use. ***Style B*** has a flashing "on" light and is for indoor and outdoor use. Operates on two C batteries (sold separately). ***Style C*** is for indoor use. No batteries required.

	Ht.×Wd.×Lg.	Material		
A	2 3/8″×2 1/2″× 5 1/4″	Plastic Housing; Plastic Base	**6685T42**	$21.74
B	5″ ×5″ ×15″	Aluminum Housing; Metal Mounting Bracket	**6685T37**	71.67
C	6 1/4″ Base Dia.×4 7/8″ Proj.	Polycarbonate	**6685T41**	85.83
C Battery			**65605T73**	1.50

Key Blanks

Here are the most popular key blanks used when rekeying and making duplicate keys for padlocks, cabinet locks, and door locksets. To determine which key blank you need, look at your key to identify the key number. Blanks are made of nickel-plated brass, except Sargent key blanks are made of nickel-silver and have a gold color.

Also Available: Additional key numbers. Please ask for 10655A271 and specify key number.

Not sure which key number you have? For actual-size drawings for all the key blanks we offer, go to mcmaster.com and search for **10655AAC**.

Equivalent Key Numbers		Pkg. of 10
American		
AM1, 1041C	10655A111	$5.81
AM3, 1045	10655A112	5.79
Arrow		
AR1, 1179	10655A115	5.79
AR4, 1179A	10655A116	8.47
Best		
A1114A, BE2	10655A118	5.80
Chicago		
AP1, CH12, K101, 101AM	10655A128	6.17
AP2, CH13, K102, 102AM	10655A129	6.17
AP3, CH14, K103, 103AM	10655A255	6.17
AP4, CH11, 104AM	10655A131	6.17
CG1, 1041G	10655A125	5.80
CG16, 1041T	10655A126	6.17
Corbin		
A1001AH, CO91	10655A815	6.76
A1001EH, CO88	10655A138	5.80
CO26, 1000V	10655A136	5.80
CO106, 1003M	10655A256	5.80
Dexter		
DE6, D1054K	10655A143	5.80
ESP		
1502	10655A221	10.28
Fort		
FR2, L1054G	10655A147	6.17
Haworth		
HAW1, 1597	10655A914	9.22

Equivalent Key Numbers		Pkg. of 10
Haworth (Cont.)		
HAW2, 1598	10655A915	$9.22
HAW3, 1599	10655A916	9.22
ILCO		
IN8, L1054B	10655A156	5.80
Illinois		
1043B	10655A223	6.17
Kwikset		
A1176ST, KW10	10655A161	6.17
KW1, 1176	10655A258	5.80
Master		
MS3R, M16, 1092NR	10655A166	6.17
M1RV, M15, 1092R	10655A168	6.90
M1, 1092	10655A163	5.80
M2, 1092B	10655A164	5.80
M4, 1092V	10655A167	5.80
M5, 1092VM	10655A813	5.80
M10, 1092N	10655A165	5.80
M12, 1092D	10655A814	6.17
M20, 1092-6000	10655A911	6.17
National		
NA12, 1069LB	10655A174	5.80
NCR6, RO3, 1069N	10655A175	5.80
RO7, 1069G	10655A811	5.80
Russwin		
A1011D1, RU46	10655A261	5.80
A1011D41, RU53	10655A812	9.22
RU45, 1011D1	10655A179	5.80

Equivalent Key Numbers		Pkg. of 10
Sargent		
S22, O1007LA	10655A183	$10.10
S22 1/2, 1007LA	10655A184	6.90
Schlage		
A1145E, SC9	10655A262	5.80
A1145EF, SH6	10655A192	6.90
A1145F, SC10, SH7	10655A194	5.80
A1145L, SC20	10655A913	9.22
SC1, 1145	10655A187	5.80
SC4, 1145A	10655A188	5.80
SC8, 1145E	10655A189	5.80
Segal		
SE1, 1022	10655A193	5.80
Timberline		
IL11, 1043J	10655A195	6.17
Weiser		
WR3, 1054WB	10655A197	5.80
Yale		
Y1, 999	10655A206	5.80
Y2, 999A	10655A207	5.80
Y4, 998	10655A817	5.80
Y11, O1122	10655A208	5.80
Y12, O1122A	10655A209	5.80
Y13, O1122R	10655A1	5.80
Y52, 997E	10655A818	5.80
Y103, 01122B	10655A816	5.80

Extend and Retract Key Holders

A Belt-Clip Holder **B** Belt-Loop Holder **C** **D** with Split Ring

A cable or chain extends for reach and then retracts automatically. No need to detach keys for use. Key end swivels 360°. Cable and chain are stainless steel, unless noted. *Steel holders* are chrome plated. *Plastic holders* are black.

Ball-socket style holders have a slit that allows cable to be pulled out on the side or directly up, relieving stress on the cable. When the cable is fully retracted, the ball locks in place to prevent extension.

Belt-Clip Holders— Hook onto your belt.

360° Belt-Clip Holders— The belt clip hooks onto your belt and rotates 360°. On *steel holders* the belt clip is detachable. *Plastic holder* has a detachable split ring and a locking latch to keep cable extended.

Belt-Loop Holders— Slide onto your belt. *Standard style* fits belts up to 1¾″ wide. *Ball-socket style* fits belts up to 2¼″ wide.

Bolt-Down Holders— Keep important keys and tools from leaving the area. Holders have two mounting tabs with 3⁄16″ dia. holes; two #8 screws are required (not included). Bracket has 3⁄16″ dia. holes.

	Mat'l	Case Size	Holders with 48″ Cable		Holders with 24″ Chain	
Belt-Clip Holders with Split Ring						
A Standard	Steel	2 1⁄16″ Dia.	1324A22	$14.19	1324A1	$11.00
B Ball Socket	Plastic	2¾″×2 5⁄16″	1324A14	14.19	—	—
360° Belt-Clip Holders with Split Ring						
A Standard	Steel	2 1⁄16″ Dia.	1324A12	14.74	1324A11	12.00
C Standard	Plastic	2⅝″×2 3⁄16″	1893A3■	25.07	—	—
Belt-Loop Holders with Split Ring						
A Standard	Steel	2 1⁄16″ Dia.	1324A33	14.19	1324A5	11.00
B Ball Socket	Plastic	2¾″×2 5⁄16″	1324A13	17.05	—	—
Bolt-Down Holder with Split Ring						
D Standard	Steel	2 1⁄16″ Dia.	1324A27	14.58	1324A7	11.56
Bolt-Down Holder with Clamp						
D Standard	Steel	2 1⁄16″ Dia.	1324A24	15.42	1324A2	12.40
Bolt-Down Holder with Bracket						
D Standard	Steel	2 1⁄16″ Dia.	1324A29	14.58	—	—

■ Has 42″ nylon cable.

Key Duplicating Machines

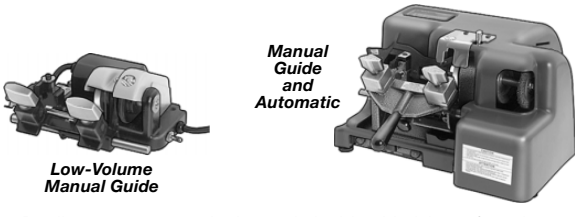

Duplicate your own single- and double-sided keys from brass, nickel-silver, and nickel-plated brass key blanks. Machines accept large-head keys up to 2½″ wide. All machines operate on 120 VAC and have a power cord with plug. Housing is plastic. Machines come with instructions and meet OSHA requirements.

Low-Volume Manual-Guide Machine— For intermittent use. Machine is 1⁄5 hp with 8,000 rpm. Comes with a deburring tool.

Manual-Guide Machine— Designed for constant use. Machine is 1⁄4 hp with 1,725 rpm. Includes a nylon deburring brush.

Automatic Machine— Insert the key blank into the jaws and flip the power switch; the machine does the rest. This unit stands up to constant, heavy duty use. Machine is 1⁄4 hp with 1,725 rpm. Includes a nylon deburring brush.

Also Available: Optional and replacement parts. Please order 1334A2 and specify machine style and part needed: optional side milling slotter, replacement cutting wheel, replacement drive belt, or replacement nylon brush. *Note:* Side milling slotter is not available for the automatic machine; nylon brush is not available for the low-volume manual-guide machine.

	Ht.	Wd.	Dp.		
Low-Volume Manual Guide	4″	8″	5¼″	1335A12	$460.44
Manual Guide	8¾″	14½″	17½″	1334A11	797.50
Automatic	8½″	15½″	16″	1334A13	1,045.76

Colored Keyhead-Cover Assortments

High-visibility, rubber-like vinyl caps make keys easy to identify. Covers fit most standard size keys; they will not fit large-head automotive or hotel keys. Each assortment contains 200 pieces. There are 25 each of the following colors: black, dark blue, light blue, green, pink, purple, red, and yellow.

		Asst.
Dome	10755A78	$16.25
Round	10755A76	16.25

Locking Key Holders

A tubular lock with circular keyway protects your keys from being removed and duplicated. The lock is made of aircraft aluminum. All come with two keys.

Flexible Key Holders— Also can be used to secure small tools to workbenches. They have a 1″ Dia.×2 1/8″ Lg. body with a black polyurethane sleeve. Key cable is flexible. It's made of aircraft aluminum that's wrapped in nylon-coated Type 304 stainless steel.

Rigid Choose-a-Color Key Holders— Have a 1″ Dia.×2″ Lg. body with a polyurethane sleeve that's offered in six colors for easy key identification. The ring is rigid and made of Type 304 stainless steel. It's interchangeable, so you can quickly transfer a set of keys from one lock to another. **To Order:** Please specify color: black, blue, green, orange, red, or yellow.

Opens with Key No.	Flexible Cable Lg.			Rigid Choose-a-Color Ring OD		
Key Holders						
—	12″	13255A21	$40.00	—	—	—
—	24″	13255A24	40.00	—	—	—
Key Holders Open with the Same Key						
R17134	12″	13255A32	40.00	1 1/2″	1835A41	$34.23
R21085	24″	13255A36	40.00	2 1/2″	1835A42	34.23

Key Ring Clips

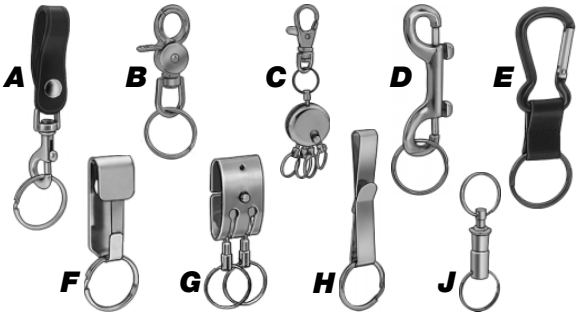

		O'all Lg.		
A	Snap-On Leather Strap	6 1/2″	11115A11	$4.71
B	Clip-On Single Hook	3 1/2″	11115A17	2.33
C	Clip-On Single Hook Multi-Ring	4″	1839A14	5.52
D	Clip-On Double Hook	4 1/2″	1839A12	3.12
E	Clip-On Carabiner Hook	4 11/16″	11115A19	3.27
F	Slip-On Lever Release	3 1/4″	11115A12	1.88
G	Slip-On Push-Button Release	3 1/4″	1839A13	3.24
H	Slide-On	3 7/8″	11115A18	1.64
J	Quick Release	3 1/8″	1839A11	1.14

Locking Key-Access Boxes

K

L

M

N

P

Q

R

Store and secure keys and other objects in these lockboxes. *Style K* boxes are for indoor use. *Styles L-R* are for indoor and outdoor use.

(K) Surface-Mount Emergency Key Boxes— For emergency access, break the glass with the attached tool. Boxes come with mounting screws and two keys.

(L) Surface-Mount Key Box with Dial Combination— Includes mounting screws.

(M) Surface-Mount Key Boxes with Push-Button Combination— 13275A44 includes mounting screws. 13275A45 requires 1/4″ mounting screws (not included).

(N) Magnet-Mount Key Box with Dial Combination— Box has a magnet for mounting; can also be mounted with the included adhesive. Temperature range is –4° to +131° F.

(P&Q) Padlock-Style Key Boxes with Combination— Attach like a padlock onto a doorknob. Box and shackle have a black rubber protector. The shackle is 1/4″ dia. and is made of hardened steel. Vertical shackle clearance is 1 3/4″; horizontal shackle clearance is 1 1/2″.

(R) Door-Mount Key Box with Dial Combination— Mounts over the top edge of any door up to 1 7/8″ thick; to secure the box, screw the Type 403 stainless steel bracket into the door (mounting screws are included). Box has plastic on the back to protect your door's surface.

Style	Key Capacity	Material	Box Size Ht.	Wd.	Dp.	Color		
Surface-Mount Key Boxes								
K Emergency—Keyed Lock	5	Steel	6 7/8″	6 3/4″	2″	Red	1536A36	$47.21
K Emergency—Opens with Key #JC01	5	Steel	6 7/8″	6 3/4″	2″	Red	1536A43	47.20
L Resettable Dial Combination	5	Zinc	4 1/8″	2 1/2″	1 7/8″	Gray	1689A21	33.56
M Resettable Push-Button Combination	2	Zinc	3 7/8″	2 1/4″	1 5/8″	Gray	13275A44	37.78
M Resettable Push-Button Combination	7	Zinc	4 7/8″	3 1/2″	2 3/4″	Gray	13275A45	66.44
Magnet-Mount Key Box								
N Resettable Dial Combination	1	ABS Plastic	3 1/4″	2 1/4″	3/4″	Gray	1869A11	11.25
Padlock-Style Key Boxes								
P Resettable Dial Combination	3	Zinc	3 7/8″	2 1/2″	1 3/4″	Black	1689A11	37.78
Q Resettable Push-Button Combination	3	Zinc	3 7/8″	2 1/2″	1 3/4″	Black	13275A46	44.22
Door-Mount Key Box								
R Resettable Dial Combination	5	Zinc	2 5/8″	4 1/2″	2 3/8″	Black	1689A24	37.78
Replacement Glass for Style K							1536A37	4.62

Drop-In Collection Boxes

Have a secure drop-off place for keys, access cards, and other objects. The top of the box has a 2 5/16″ Lg.× 1/2″ Wd. slot; only the person with the key can retrieve the contents. Boxes come with two keys. Made of steel with a gray powder-coated finish. Surface mount with the included screws. For indoor use.

Key Cap.	Ht.	Wd.	Dp.		
Locking Box					
30	7 1/4″	4 3/8″	3 1/4″	19055A21	$51.81
Locking Box Opens with Key No. BL01					
30	7 1/4″	4 3/8″	3 1/4″	19055A27	51.81

Key-Control Cases

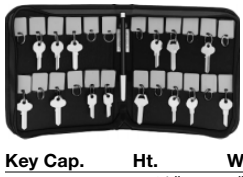

Organize, transport, and store keys. Cases are black vinyl and have a zipper closure. Furnished with reusable, blank key tags and a marker. For keys up to 4″ long. The key tags securely mount to strips inside the case with hook-and-loop fasteners.

Key Cap.	Ht.	Wd.	Dp.		
24	8 1/2″	7″	1 3/8″	11075A14	$41.14
48	11 3/4″	8 5/8″	1 3/8″	11075A18	67.88

Single-Use Key-Access Boxes

Once you snap the box closed, you have to break it open—it can't be reused. Use for emergency access to keys, access control cards, passwords, and codes. Sign your name in the space provided to ensure the key will not be used and replaced in another box without your knowledge. Made of plastic. Size is 4 3/4″ Ht.×3″ Wd.×3/4″ Dp. **To Order:** Please specify color: blue, clear, red, or yellow.

12665A5 ..... $9.17

For additional key tags, see page 1960.

Locking Key-Control Cabinets

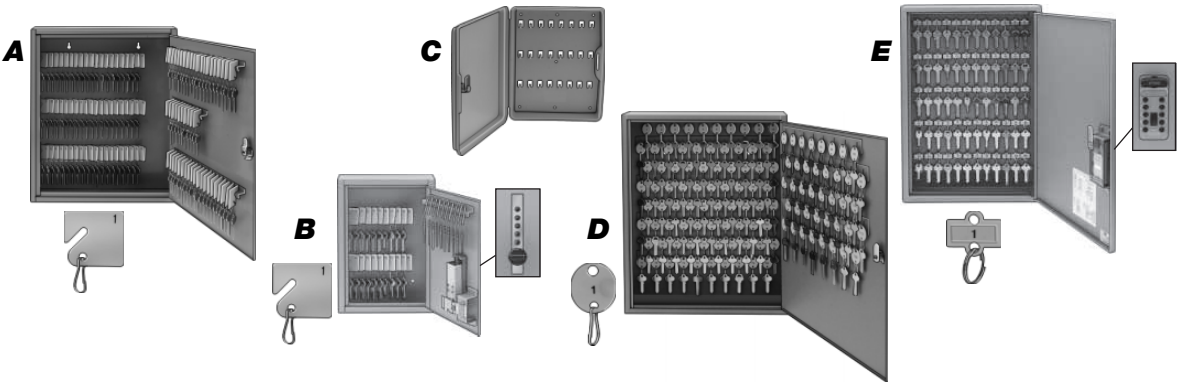

Use a wall-mount cabinet to keep track of loaned keys. Mounting screws are included.

(A) Cabinets with Cam Lock, Slotted Style— All come with consecutively numbered, reusable key tags. Cabinets store one tag per position and accommodate keys up to 3¼″ long. Locks come with two keys. Furnished with "out key" tags (one for every 10 key positions) to hang in place of a loaned key. Made of steel with a powder-coated finish. **To Order:** Please specify color (unless noted): tan or white.

(B) Cabinets with Push-Button Combination Lock, Slotted Style— Access cabinets with a one to five number resettable combination (with 1,081 possible combinations). All come with consecutively numbered, reusable key tags. Cabinets store one tag per position and accommodate keys up to 3″ long. Made of steel with a tan powder-coated finish. Furnished with "out key" tags (one for every 10 key positions) to hang in place of a loaned key.

(C) Cabinet with Cam Lock, Hook Style— Made of beige polypropylene for corrosion resistance. Hooks are consecutively numbered and hold up to four keys. Use with keys up to 2½″ long. Lock comes with two keys. Key tags are sold separately.

(D) Cabinets with Cam Lock, Hook Style— All come with consecutively numbered, reusable key tags. Each hook holds up to five keys and accommodates keys up to 3″ long. Locks come with two keys. Made of steel with a gray powder-coated finish.

(E) Cabinets with Push-Button Combination Lock, Hook Style— Access cabinets with a four to seven number resettable combination (with over 1,000 possible combinations). All come with consecutively numbered, reusable key tags. Cabinets hold keys up to 2⅜″ long and are deep enough to accommodate tags with multiple keys. All are made of steel with a tan powder-coated finish.

Slotted Style

Key Cap.	Material	Ht.	Wd.	Dp.		
With Cam Lock						
A 10	Steel	6¾″	6⅞″	2″	**1338A421**★	$27.18
A 30	Steel	12⅛″	8″	2⅝″	**1338A43**	48.59
A 60	Steel	12⅛″	10⅝″	3″	**1338A44**	73.20
A 110	Steel	17⅛″	14″	3⅛″	**1338A45**	125.51
A 160	Steel	20⅛″	16½″	4⅞″	**1338A46**	161.73
A 240	Steel	20⅛″	16½″	4⅞″	**1338A47**	221.27
With Cam Lock (Cont.)						
A 320	Steel	20⅛″	16½″	4⅞″	**1338A5**★	$250.32
With Push-Button Combination Lock						
B 30	Steel	12⅛″	8″	2⅝″	**1286A11**	129.47
B 60	Steel	12⅛″	10⅝″	3″	**1286A12**	157.32
B 120	Steel	20⅛″	16½″	4⅞″	**1286A13**	188.44

★ Not available in white.

Hook Style

Key Cap.	Material	Ht.	Wd.	Dp.		
With Cam Lock						
C 24	Polypropylene	10½″	8½″	1¾″	**1695A11**	$24.93
D 120	Steel	20⅛″	16½″	5″	**1347A61**	137.52
D 240	Steel	20⅛″	16½″	5″	**1347A62**	186.34
D 300	Steel	31⅛″	16½″	5″	**1347A63**	226.66
D 390	Steel	31⅛″	16½″	5″	**1347A64**	305.43
With Cam Lock (Cont.)						
D 700	Steel	31⅛″	16½″	7″	**1347A65**	$608.82
With Push-Button Combination Lock						
E 30	Steel	11¾″	7⅞″	2⅜″	**1185A1**	74.44
E 60	Steel	19¼″	13⅜″	4″	**1185A2**	109.44
E 120	Steel	19¼″	13⅜″	4″	**1185A3**	158.44

Blank Key Tags for Style C Cabinet (Pkg. of 20) **1333A21** $4.83

Loan-One and Keep-One Locking Key-Control Cabinets

Have the convenience of a wall-mount cabinet with a higher level of key-control than one-tag cabinets. Each hook holds two keys—a control key with a permanent tag (once the key is attached to the tag, you may only remove it by destroying the tag) and a duplicate loaner key with a reusable tag. The control key remains in the cabinet when its loaner key is removed. Key tags are hook style and consecutively numbered. Cabinets also include cardboard "out key" tags (a minimum of 250) to hang in place of a loaned key. Made of steel with a gray powder-coated finish. All have four ¼″ mounting holes (screws not included).

Cabinets for Standard-Size Keys— For keys up to 2½″ long. *Cabinets with cam lock* come with two keys. *Cabinets with push-button combination lock* have five push buttons with 2,200 possible combinations.

Cabinets for Large- and Standard-Size Keys— Keep large keys (up to 4″ long) from overlapping and tangling. Cabinets also have hooks for standard keys (up to 2″ long). All have a cam lock and two keys.

Reusable

Permanent

Cabinets for Standard-Size Keys

Key Cap.	Ht.	Wd.	Dp.	With Cam Lock		With Push-Button Combination Lock	
25	16¼″	12⅛″	5″	**1331A8**	$117.26	**1331A31**	$187.43
50	16¼″	12⅛″	5″	**1331A7**	161.57	**1331A32**	238.93
75	16¼″	12⅛″	5″	**1331A1**	192.63	**1331A33**	260.65
125	16¼″	12⅛″	5″	**1331A2**	$259.93	**1331A34**	$309.34
250	27″	13″	7⅞″	—	—	**1331A21**	487.65
350	27″	13″	7⅞″	**1331A23**	539.91	—	—

Cabinets for Large- and Standard-Size Keys

Key Capacity Total	Large	Std.	Ht.	Wd.	Dp.	With Cam Lock	
45	20	25	16¼″	12⅛″	5″	**1350A41**	$248.73
65	40	25	16¼″	12⅛″	5″	**1350A42**	270.33
85	35	50	27″	13″	7⅞″	**1350A43**	$276.33
120	70	50	27″	13″	7⅞″	**1350A44**	382.65

For choose-a-color padlocks, see page 2933. For lockout/tagout danger tags, see pages 1895-1896.

Lockout Hasps

Lock out a single energy source on machinery and electrical equipment. Lockouts have multiple holes or a slot to accept multiple employee padlocks. Hasp clearance defines how big of an object the hasp can get around. *Vinyl-coated* styles won't mar surfaces.

Scissor-Action Lockouts—*Lockouts with chain* attach to equipment so they won't get lost. *Lockouts with interlocking hasp* have an overlapping hasp that is difficult to pry open. *Lockouts with label* have a permanent label to record employee's name and department.

Hasp Clearance, Ht.×Wd.	Hasp Thick.	No. of Padlock Holes	Max. Padlock Shackle Dia.	Overall Size Lg.	Overall Size Wd.	Body Material and Finish		
(A) Scissor-Action Lockouts								
1″ Dia.	1/4″	6	7/16″	4 3/8″	1 1/2″	Vinyl-Coated Cast Aluminum	12005A61	$9.41
1″ Dia.	1/4″	6	7/16″	4 7/16″	1 1/2″	Vinyl-Coated Type 304 SS	12025A71	39.38
1 1/4″ Dia.	1/4″	6	5/16″	4 9/16″	1 1/2″	Vinyl-Coated Type 304 SS	12025A72	39.38
1 1/2″ Dia.	1/4″	6	7/16″	4 7/8″	1 1/2″	Vinyl-Coated Cast Aluminum	12005A63	11.17
(A) Scissor-Action Lockouts with 6″ Chain								
1″ Dia.	1/4″	6	7/16″	4 3/8″	1 1/2″	Vinyl-Coated Cast Aluminum	12005A62	12.36
1 1/2″ Dia.	1/4″	6	7/16″	4 7/8″	1 1/2″	Vinyl-Coated Cast Aluminum	12005A64	13.71
(A) Scissor-Action Lockouts with Interlocking Hasp								
1″ Dia.	1/8″	6	3/8″	4 1/2″	1 1/2″	Vinyl-Coated Zinc-Plated Steel	11525A71♣	5.67
1 1/2″ Dia.	1/8″	6	3/8″	5″	1 1/2″	Vinyl-Coated Zinc-Plated Steel	11525A73♣	7.47
(A) Scissor-Action Lockouts with Interlocking Hasp and 8″ Chain								
1″ Dia.	1/8″	6	3/8″	4 1/2″	1 1/2″	Vinyl-Coated Zinc-Plated Steel	11525A72♣	6.57
1 1/2″ Dia.	1/8″	6	3/8″	5″	1 1/2″	Vinyl-Coated Zinc-Plated Steel	11525A74♣	8.23
(B) Scissor-Action Lockout with Interlocking Hasp, 8″ Chain, and Adapter to Lock Out Valves								
1″ Dia.	1/8″	6	3/8″	4 1/2″	1 1/2″	Vinyl-Coated Zinc-Plated Steel	11525A75♣	10.93
(C) Low-Profile Scissor-Action Lockouts								
1″×1 1/4″	1/4″	7	3/8″	3″	3″	Nickel-Plated Steel	11545A71	8.89
1″×1 1/4″	1/4″	7	3/8″	3″	3″	Type 304 SS	11545A85	20.00
(C) Low-Profile Scissor-Action Lockout with Label								
1″×1 1/4″	1/4″	7	3/8″	3″	3″	Nickel-Plated Steel	11545A83	11.11
(D) Choose-a-Color Scissor-Action Lockout with Label—To Order: Please specify color: blue, green, or red.								
1 1/16″×1 3/8″	3/16″	6	5/16″	7 3/8″	3″	Anodized Aluminum	10915A51	15.62
(E) Fold-Over Lockouts								
1 1/4″×1″	1/4″	6	3/8″	5″	2 5/16″	Vinyl-Coated Zinc-Plated Steel	11465A78	23.69
3″×1″	1/4″	6	3/8″	6 3/4″	2 1/4″	Zinc-Plated Steel	11465A77	12.89
(F) Fold-Over Lockouts with Slot for Multiple Padlocks								
1″×1″	1/8″	5	5/16″	3 1/4″	2 1/4″	Zinc-Plated Steel	11465A71	10.29
1″×1″	1/4″	5	5/16″	3 1/4″	2 1/4″	Zinc-Plated Steel	11465A72	10.29
3″×1″	1/8″	9	5/16″	6 5/8″	2 1/4″	Zinc-Plated Steel	11465A74	10.73
3″×1″	1/4″	9	5/16″	6 3/4″	2 1/4″	Zinc-Plated Steel	11465A75	11.67
(G) Snap-In Lockout—*Nylon is nonconductive.*								
3″×1 9/16″	3/8″	6	1/4″	7 13/16″	1 9/16″	Red Nylon	11755A65	5.03
(H) Twin Scissor-Action Lockouts								
1/2″ Dia./1″ Dia.	9/32″	6	5/16″	7 3/4″	1 3/8″	Zinc-Plated Steel	11505A81	5.62
1″ Dia./1 1/2″ Dia.	1/4″	8	9/32″	5 7/8″	2″	Brushed Aluminum	11375A31	9.76

♣ Hasp thickness is measured where the hasp overlaps.

Lockout Cables

A convenient way to lock out panel boxes, freestanding equipment, and multiple gate valves. Use cables with one or more padlocks (not included).

Pinch-Point Lockouts— Thread the free end of the cable through the looped end and into the lockout clamping hole; pull tight and close handle to pinch cable. Cable is galvanized steel with a clear nylon jacket. Body is glass-filled nylon. Use padlocks with the shackle dia. listed for proper operation. Instructions are included.

Pull-Tight Lockout— After locking, you can pull the cable tight. Cable is steel with a clear vinyl coating. Body is plastic. Has reusable write-on labels in English, French, and Spanish.

Self-Retracting Lockout— Extend the cable and place its loop in the body opening. Rotate the body to lock. When cable is unlocked, push the button to retract it; cable stores in the body. Cable is red nylon. Body is nylon.

Body Color	No. of Padlock Holes	Padlock Shackle Dia.	5-ft. Cable		10-ft. Cable	
Pinch Point—*3/16″ dia. Cable; Body is 4 1/2″ Lg.×1″ Wd.×5/8″ Thick.*						
Orange	3	3/16″	10565A31	$20.57	10565A32	$24.90
Red	3	1/4″	10565A41	20.57	10565A42	24.90
Yellow	3	9/32″	10565A51	20.57	10565A52	24.90

Body Color	No. of Padlock Holes	Max. Padlock Shackle Dia.	6-ft. Cable		8-ft. Cable	
Pull Tight—*1/4″ dia. Cable; Body is 2 3/4″ Lg.×2 3/4″ Wd.×1 1/16″ Thick.*						
Red	4	9/32″	3294A11	$25.17	———	———
Self Retracting—*1/16″ dia. Cable; Body is 4″ Dia.×1 3/4″ Dp.*						
Red	6	9/32″	———	———	1811A11	$36.82

Universal Wall Switch Lockouts

Stop personnel from operating toggle- and rocker-style wall switches. To install, mount over your switch's cover plate (using the screws from the cover plate). Then, close the lockout cover and secure it with a padlock (not included; 9/32″ max. shackle dia.) to make the switch inaccessible. You can lock out the switch in either the on or off position. When not in use, the cover flips up to allow normal switch operation.

Cover is an ABS/polycarbonate blend; base is polycarbonate. Overall size is 4 3/4″ Ht.×1 3/4″ Wd.×1″ Dp. Color is red. Comes with English/Spanish and English/French labels.

12135A72 ..... $8.40

For choose-a-color padlocks, see page 2933. For lockout/tagout danger tags, see pages 1895-1896.

Group Lockout Boxes

Lock out a machine with fewer padlocks. Attach one padlock to each energy point; then, place the keys in the lockout box (or use the key return slot). Each employee in the group locks their padlock to the lockout box (instead of each employee locking a padlock to each energy point). You can't access the keys to the machine padlocks until each employee padlock is removed.

Portable Box— Made of steel with a powder-coated finish. Minimum padlock shackle vertical clearance is 5/8″.

Wall-Mount Box— Made of plastic, this box has six removable hooks inside and a plastic window for viewing contents. Box requires three #4 mounting screws (not included).

Portable/Wall-Mount Boxes— Made of steel with a powder-coated finish; handle is Type 302 stainless steel. There are 12 key holders inside. Require four #8 screws (not included) for wall mounting.

Portable

Wall Mount

Portable/ Wall Mount

(Padlocks Not Included)

Material	Color	Lg.	Wd.	Ht.	No. of Padlock Holes	Max. Padlock Shackle Dia.		
Portable								
Steel	Red	9″	3 1/2″	6″	12	9/32″	**12605A18**	$79.96
Wall Mount								
Plastic	Red	4″	5 1/2″	6 1/4″	8	9/32″	**12605A25**	52.59
Portable/Wall Mount								
Steel	Red	6 3/8″	3 1/2″	12 3/4″	14	9/32″	**12605A19**	65.84
Steel	Yellow	6 3/8″	3 1/2″	12 3/4″	14	9/32″	**12605A21**	65.84

Ball Valve Lockouts

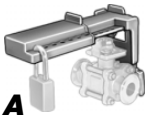
A

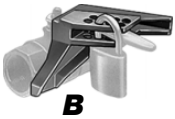
B

C

(Padlocks Not Included)

Lockouts fit onto ball valves to prevent operation. Color is red.

(A) Slide the lockout onto the valve handle; the valve body prevents the handle from turning. Made of polypropylene. Temperature range is –50° to +360° F.

(B) Slide the lockout onto the valve handle; the valve body prevents the handle from turning. Minimum padlock shackle vertical clearance is 1″. Lockouts are made of steel with a powder-coated finish, except 48635K81 is made of nylon (temperature range is –40° to +248° F).

(C) Close your valve and remove the handle—it stores in the lockout's zippered pouch. To prevent valve operation, the lockout fits around the pipe, covers the valve stem, and secures the pouch's zipper. Minimum padlock shackle vertical clearance is 3/4″. Lockout is plastic; storage pouch is PVC-coated polyester. Furnished with write-on erasable labels in English, French, and Spanish. Temperature range is –40° to +250° F.

	Fits Pipe Dia.	For Valve Handle Lg.	No. of Padlock Holes	Max. Padlock Shackle Dia.		
Slide-On, Locks in Open and Closed Position						
A	3/8″ to 1 1/4″	5 3/8″ to 7 1/2″	7	1/4″	**45075K27**	$22.82
Slide-On, Locks in Closed Position						
A	1 1/2″ to 2 1/2″	7 1/2″ to 10″	7	1/4″	**45075K37**	38.42
A	2″ to 8″	12″ to 17 1/2″	5	1/4″	**45075K47**	74.33
B	1/4″ to 1″	_____	6	3/8″	**48635K32**	31.33
B	1/4″ to 1″	_____	8	9/32″	**48635K81**	32.17
B	1 1/4″ to 3″	_____	6	9/32″	**48635K33**	46.06
B	1 1/4″ to 3″	_____	7	3/8″	**48635K38**	46.35
Wrap-Around, Locks in Closed Position						
C	3/8″ to 4″	Up to 11″	3	9/32″	**3299A11**	31.11

Valve Hand Wheel Lockouts

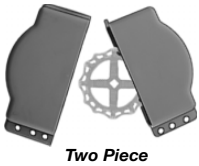
Two Piece

Hinged

Nestable

Cover your valve's hand wheel and secure with a padlock (not included) to prevent accidental opening. For use with gate and globe valves. Temperature range is –50° to +350° F.

Two-Piece Lockout— Fits a wide range of sizes. Made of polypropylene. **To Order:** Please specify color: red or yellow.

Hinged Lockouts— Made of polypropylene. **To Order:** Please specify color: blue, green, red, or yellow.

Nestable Lockouts— Each lockout rotates into itself, making installation in tight spaces easier. Made of red plastic. Furnished with write-on erasable labels in English, French, and Spanish. *Set* comes with one each of the nestable lockouts, which store inside each other.

Fits Hand Wheel Dia.	No. of Padlock Holes	Max. Padlock Shackle Dia.		
Two Piece				
1″ to 6 1/2″	3	3/8″	**48195K11**	$94.02
Hinged				
1″ to 2 1/2″	1	1/4″	**47235K51**	16.23
2 1/2″ to 5″	3	1/4″	**47235K52**	24.23
5″ to 6 1/2″	3	1/4″	**47235K53**	33.55
6 1/2″ to 10″	3	1/4″	**47235K54**	40.00
10″ to 14″	3	1/4″	**47235K55**	59.27
Nestable				
1″ to 3″	2	9/32″	**3286A11**	14.77
2″ to 5″	3	9/32″	**3286A12**	22.17
4″ to 6 1/2″	4	9/32″	**3286A13**	30.46
6″ to 10″	4	9/32″	**3286A14**	36.53
8″ to 13″	4	9/32″	**3286A15**	60.96
Set of 5 Nestable Lockouts (1 of each above)			**3286A16**	146.37

Air Hose Lockouts

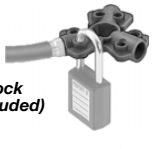
(Padlock Not Included)

Isolate air-powered equipment from a compressed air source. This lockout fits most 1/4″, 3/8″, and 1/2″ male quick-disconnect hose couplings—each arm accepts a different size. Use with one padlock that has either a 1/4″ or 9/32″ shackle dia. Lockout is 3″ across. Made of red plastic. Max. temperature is 482° F.

3423A11 ..... $21.40

Electrical Plug Lockouts

Prevent electrical devices from being energized—lock out the plug so it can't be used.

(D) Put the plug into the cylinder and lock the cover with a single padlock (not included; 5/16″ maximum shackle dia.). Includes two cover plates that fit cords up to 1 1/4″ dia. Fits plugs up to 5 1/2″ Lg.×3″ Wd. Lockout is 3 1/2″ Dia.×6 1/4″ Ht. Made of polypropylene. Color is yellow. Temperature range is 32° to 275° F.

10645A65 ..... $14.75

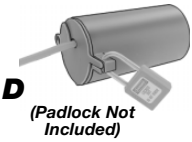
D
(Padlock Not Included)

(E) Secure a wide range of electrical plugs. Lockout fits a max. plug size of 4 3/4″ Lg.×2 3/4″ Wd., min. plug width of 1 1/2″, and max. cord diameter of 1 1/8″. Accepts up to four padlocks or tagouts (not included; 3/8″ max. shackle dia.). Lockout is 7 1/4″ Lg.×4 1/4″ Wd.×3 1/8″ Dp. Made of UV-stabilized polypropylene. Color is yellow. Temp. range is –20° to +140° F.

15515A41 ..... $23.42

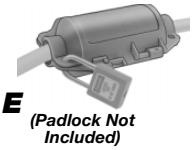
E
(Padlock Not Included)

(F) For security, these lockouts must be put on and removed with a key (two keys are included). They fit over most two- and three-prong standard plugs. Lockouts are 1 3/4″ Lg.×1 1/4″ Wd.×3/4″ Dp. Made of steel with a red ABS plastic housing. Temperature range is –40° to +194° F.

Keyed Lockout	**10715A15**	$16.03
Keyed Lockout—Multiple lockouts open with key no. 4001	**10715A19**	16.03

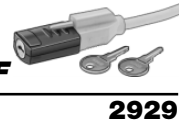
F

For choose-a-color padlocks, see page 2933. For lockout/tagout danger tags, see pages 1895-1896.

Lockout Sets

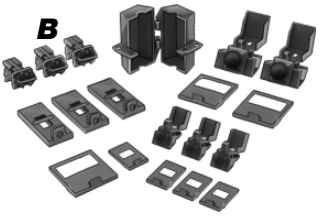

Take lockouts wherever you need them—sets come with a convenient pouch, bag, or box for portability. ***Styles A, C,*** and ***D*** include padlocks with a plastic body and a 1/4″ dia. steel shackle; the padlocks come with permanent write-on labels.

Padlocks, hasps, and lockouts are red.

(A) Personal Lockout Set with Padlocks— The padlocks in this set open with the same key. Includes three padlocks, a standard hasp, and 12 tags. Comes in a red nylon waist pouch (not shown).

4974A11 ..... $85.12

(B) Electrical Lockout Set without Padlocks— Includes three wall-switch lockouts, one electrical plug lockout, three universal multipole circuit-breaker lockouts, three 277 VAC no-hole lockouts and cleats, two 480/600 VAC no-hole lockouts and cleats, one 277 VAC cleat, and one 480/600 VAC cleat. Furnished in a black nylon zippered bag (not shown). Each piece accepts one padlock (not included) with a 9/32″ max. shackle diameter.

12865A32 ..... $114.44

(C&D) Electrical and Valve Lockout Sets with Padlocks— Sets include a standard hasp, a snap-on hasp, an adjustable cable lockout, three gate valve lockouts (for hand wheel diameters 1″ to 3″, 2″ to 5″, and 4″ to 6 1/2″), and two ball valve lockouts (fit pipe sizes 3/8″ to 4″; max. 11″ long valve handle). The universal circuit-breaker lockouts included in the sets come in two sizes; they take the place of tie-bar multipole lockouts and 277 VAC and 480/600 VAC no-hole lockouts.

Style C is a personal lockout set; it includes three padlocks that open with the same key. Also includes a circuit breaker padlock, five universal circuit-breaker lockouts, a wall-switch lockout, and 12 tags. Comes in a red polypropylene box (not shown).

4974A13 ..... $266.16

Style D is a group lockout set; it includes six padlocks that each open with a different key. Also includes two circuit breaker padlocks, nine universal circuit-breaker lockouts, two wall-switch lockouts, two plug covers (one for 120/220 VAC plugs and one for 220/550 VAC plugs), and 24 tags. Comes in a red polyester bag (not shown).

4974A15 ..... $386.19

Wall-Mount Lockout Stations

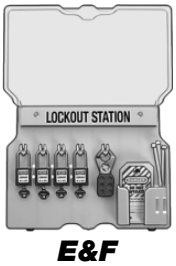

E&F

G

Store group lockout devices in a central location to keep them organized. Stations come with items intended for group lockouts. Each padlock in these sets opens with a different key. Padlocks have a plastic body and a 1/4″ dia. steel shackle. They come with erasable write-on labels. Padlocks, hasps, and lockouts are red.

(E&F) Padlock Lockout Sets— Stations are made of a yellow ABS/polycarbonate blend and have a transparent polycarbonate cover that stays in position when raised. The cover can be locked in the closed position with a padlock (9/32″ max. shackle dia.). Stations require four #6 mounting screws (not included).

(G) Electrical and Valve Lockout Set— Station is made of yellow polycarbonate. It requires eight #10 mounting screws (not included). In addition to the items listed, this set comes with two plug lockouts. *Universal circuit-breaker lockouts* come in two sizes to take the place of tie-bar multipole lockouts and 277 VAC and 480/600 VAC no-hole lockouts. *Gate valve lockouts* fit hand wheel diameters 1″ to 3″, 2″ to 5″, 4″ to 6 1/2″, and 6″ to 10″. *Ball valve lockouts* fit pipe sizes 1/4″ to 4″.

	Set Contents									
	Padlocks	Standard Hasps	Snap-On Hasps	Universal Circuit-Breaker Lockouts	Adjustable Cable Lockouts	Wall-Switch Lockouts	Gate Valve Lockouts	Ball Valve Lockouts	Tags	
Padlock Lockout Sets— *Style E station is 12 1/4″ Ht. × 16″ Wd. × 13/4″ Dp.; Style F station is 15 1/2″ Ht. × 22″ Wd. × 13/4″ Dp.*										
E	4	2	0	0	0	0	0	0	12	**4977A11** $155.71
F	10	2	0	0	0	0	0	0	24	**4977A12** 285.89
Electrical and Valve Lockout Set— *Station is 27″ Ht. × 23 1/2″ Wd. × 41/2″ Dp.*										
G	6	2	1	8	1	2	4	2	24	**4977A15** 623.10

Circuit Breaker Lockouts

Single Pole

Tie-Bar Multipole

No Hole

Prevent electrical circuits from being energized. Lockouts accept a single padlock with a max. shackle diameter of 9/32″ (padlock not included). All are compatible with Square D circuit breakers. Made of red nylon. Temperature range is 0° to 175° F.

Single-pole lockout works with most 120 VAC circuit breakers that have a hole through the breaker lever.

Tie-bar multipole lockout works with most major multipole breakers that have a tie bar, including GE, ITE, Sylvania, Challenger, Bryant, Westinghouse, and General Switch Co.

No-hole lockouts work on most single-pole circuit breakers that don't have a hole through the breaker lever. Lockout body is polypropylene.

	O'all Size				Each	
	Lg.	Wd.	Dp.		1-5	6-Up
Single Pole	2 1/8″	13/16″	5/16″	**12365A61**	$4.82	$4.17
Tie-Bar Multipole	2 1/4″	1 1/4″	1 1/16″	**12365A75**	10.40	9.02
No-Hole 120/277 VAC	2″	1 3/8″	7/8″	**12365A71**	10.76	9.32
No-Hole 480/600 VAC	2 3/4″	1 3/4″	1 13/16″	**12365A72**	12.09	10.49

DIN-Rail Circuit Breaker Lockouts

1&2

3

4

Style 1 Shown Mounted

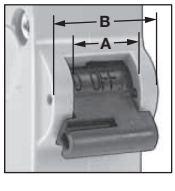

Lock out circuit breakers that are designed to mount on DIN rails. All of these lockouts accept one padlock with a 9/32″ max. shackle dia. (padlock not included). Made of red glass-filled nylon. Not rated for temperature.

Styles 1-3 work with single and multipole breakers. ***Style 4*** works with multipole breakers that have a tie bar. A thumb wheel simplifies use.

		Fits		O'all Size			
		(A)	(B)	Lg.	Wd.	Dp.	
1	Pin-Out Standard	3/8″	—	1 3/4″	15/16″	15/16″	**7243A11** $13.49
2	Pin-Out Wide	3/4″	—	1 3/4″	15/16″	15/16″	**7243A13** 13.49
3	Pin-In Standard	—	9/16″	1 3/4″	15/16″	15/16″	**7243A12** 13.49
4	Tie Bar	—	—	2 1/2″	1 1/4″	15/16″	**7243A14** 13.49

For choose-a-color padlocks, see page 2933. For lockout/tagout danger tags, see pages 1895-1896.

Lockout Labels and Sleeves for Padlocks

Comply with lockout/tagout procedures. All labels and sleeves have space for employee's name and department.

(A) Adhesive-Back Labels— Apply directly to locks. Supplied with a clear plastic strip to cover and protect the label. Color is red.

(B) Labels with Heat-Shrink Sleeve— Use a heat gun to apply the clear, shrink-to-fit sleeve over the label for protection from dirt and moisture. Color is blue. 5028T52 allows you to add the employee's picture for identification.

(C) Heat-Shrink Sleeves— Use a heat gun to apply these solid-colored sleeves to locks. **To Order:** Please specify color: blue, green, red, or yellow.

5028T44

A

5028T53

B

5028T52

C

(Padlocks Not Included)

	Message	Fits Lock Bodies Up to	Label Size Lg.	Label Size Ht.	Sleeve Size Dia.	Sleeve Size Ht.	Pkg. Qty.		Pkg.
A	Danger—Do not remove this lock	4⅝″ around	5″	¾″	—	—	10	5028T44	$7.78
A	Danger—Do not operate	3⅝″ around	4″	⅝″	—	—	5	5028T53	7.63
A	Peligro—Equipo bloqueado (Spanish)	4⅛″ around	4½″	¾″	—	—	6	5028T61	9.65
A	Danger—Verrouillée (French)	4⅛″ around	4½″	¾″	—	—	6	5028T62	9.65
B	Do not remove this lock my safety depends on it	6¼″ around	6½″	1″	2⅛″	1½″	5	5028T51	9.26
B	Locked out by (insert photo and name)	6¼″ around	6½″	1¼″	2⅛″	1½″	5	5028T52	9.26
C	Danger—Locked out	4 11/16″ around	—	—	1½″	2⅛″	10	5028T23	12.31

Gas Cylinder Lockouts

Prevent access to the main valve on a gas cylinder. This lockout has two different size wings that allow it to accommodate neck rings up to 3½″ dia. It accepts one padlock with a 9/32″ max. shackle dia. Lockout is 6 1/16″ high. Made of red plastic. Max. temperature is 172° F.

3409A11 ..... $16.09

(Padlock Not Included)

Lockout Cinch Bags

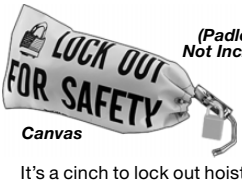

(Padlocks Not Included)

Canvas

Nylon

It's a cinch to lock out hoist controls, large electrical connectors, and other odd-sized controls.

Canvas bag is yellow. ***Nylon bag*** has the message "LOCKED OUT DO NOT REMOVE" in English, French, and Spanish. Color is red.

Material	Lg.	Wd.	No. of Padlock Holes	Max. Padlock Shackle Dia.		
Canvas	18″	9¾″	1	9/32″	12605A15	$46.73
Nylon	17″	7″	6	9/32″	1573A11	28.55

Lockout/Tagout Programs

Understand important lockout/tagout regulations. Programs explain OSHA's specifications and procedures. ***Compliance manual*** provides the information you need to start your own safety lockout/tagout program. ***Video programs*** include a 21-minute DVD or VHS tape, instructor's guide, schedule, attendance forms, and quizzes. **To Order:** Please specify DVD or VHS.

Compliance Manual	9401T55	$103.09
Video Program—English	9401T58	230.77
Video Program—Spanish	9401T59	230.77

Locking Bars for Tool Chests

Keep your tools safe from tampering. Bars have a spring hinge and fold over the edge of your tool chest drawers. Lock the drawers closed with a padlock (not included; see pages 2932-2944).

Bars are made of steel and are 1½″ wide. Bar and handle have a gray powder-coated finish. Hinges mount to the surface of your cabinet; they require at least ¼″ of surface area (mounting screws are included).

Note: When mounting the bar next to a drawer pull, you'll need a minimum of ½″ clearance from the drawer pull as well as ½″ of mounting surface on the cabinet edge.

(Padlock Not Included)

Bar Length	Max. Padlock Shackle Dia.		
12″	5/16″	12485A81	$38.93
22½″	5/16″	12485A82	41.70
34½″	5/16″	12485A83	46.08

Locking Bars for File Cabinets

Style D

(Padlock Not Included)

D E F G

Surface mount a locking bar on your file cabinet to secure information. Bars slide over a notched pin at the bottom, fit into a notched or clevis pin at the top, and lock at the top. Made of black, heavy channel steel. Bars are ⅛″ thick and can be cut to the length you need. Furnished with ⅜″ clevis pins, washers, notch pins, and nuts for mounting. Instructions are included.

Locking Bars

Padlocks are not included; see pages 2932-2944.

(D) Standard Padlockable Bars— Mount anywhere on the front of the cabinet. Bars are 1½″ wide and removable for easy access.

(E) Swing-Away Hinged Padlockable Bars— Bar has hinges for installation on the edge of the file cabinet at either corner (min. ½″ width required for mounting) and swings out of the way so you can open the drawers. Bar is 1½″ wide; hinges are 8″ Lg.×½″ Wd.

Bar Lg.	For No. of Drawers	Max. Padlock Shackle Dia.		
(D) Standard				
27″	2	7/16″	1687A16	$57.83
29″	2	7/16″	1687A11	44.06
51¼″	4	7/16″	1687A13	48.19
59″	5	7/16″	1687A14	50.94
64″	5	7/16″	1687A15	57.83
(E) Swing-Away Hinged				
27″	2	⅜″	1687A26	66.09
29″	2	⅜″	1687A21	55.07
51¼″	4	⅜″	1687A23	59.90
59″	5	⅜″	1687A24	62.65
64″	5	⅜″	1687A25	66.09

Locking Bars with Built-In Lock

Mount bars anywhere on the front of the cabinet.

(F) Bars with Built-In Keyed Lock— The lock has a built-in Schlage C keyway. Bar is 1½″ wide. Furnished with two keys.

(G) Bars with Built-In Push-Button Combination Lock— Choose your combination from over 2,000 possibilities. Bar is 1½″ wide.

Bar Lg.	For No. of Drawers	Opens with Key No.		
(F) With Keyed Lock				
29″	2	—	1687A31	$73.08
51¼″	4	—	1687A33	80.38
59″	5	—	1687A34	83.13
64″	5	—	1687A75	91.35
(F) With Keyed Lock— *Multiple bars open with the same key.*				
29″	2	41767	1687A55	73.08
51¼″	4	25767	1687A57	80.38
59″	5	47767	1687A58	83.13
64″	5	63767	1687A74	91.35
(G) With Push-Button Combination Lock				
29″	2	—	1687A81	115.74
51¼″	4	—	1687A84	121.67
59″	5	—	1687A87	124.18

About Padlocks

You'll find our basic padlocks on pages 2932 and 2933. These locks come with two keys (unless noted) and have random key numbers. If you want to add padlocks or keys to an existing system, purchase a padlock with more than two keys, or create systems of locks (keyed alike or master keyed), see pages 2934-2942. For combination padlocks, see page 2943.

Locks with a higher number of pins or discs are harder to pick. A higher number of pins or discs also makes duplicate key numbers less likely within a random group of locks.

Strength and corrosion resistance are important factors to consider in selecting a padlock. See the chart at right for the relative strength and corrosion resistance of padlock materials.

Strength		Corrosion Resistance
Solid Steel	Greatest	Brass
Laminated Steel, Plastic-Coated Laminated Steel	↑	Stainless Steel
		Plastic-Coated Laminated Steel
		Plastic
Stainless Steel		Aluminum
Aluminum		Zinc
Brass, Zinc		Solid Steel
Plastic		Laminated Steel

Padlocks

Abuse-Resistant Steel-Body Padlocks and Zinc-Body Padlocks

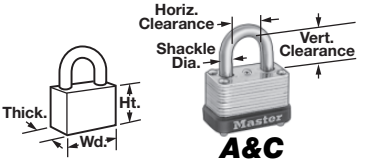

A&C

B

D&E

F

G

H

J

K

- All include two keys.

A steel body and shackle give Styles A-J the strength to resist abuse. Zinc-body locks are not as strong, but they have better corrosion resistance. All of these padlocks have random key numbers.

A&B** Master Lock Warded Laminated Steel*—Have a basic warded locking mechanism (a simple locking mechanism without pins or discs) and a gray bumper. Shackle is steel. ***(B) have an adjustable vertical shackle clearance.

C-E** Master Lock Laminated Steel*—Have gray bumpers, unless noted. ***(C) have a steel shackle and a four-pin tumbler. ***(D)*** have a hardened steel shackle and a four-pin tumbler. ***(E)*** have a hardened steel shackle and a five-pin tumbler.

***F** Master Lock Wide-Body Laminated Steel*—Has a hardened steel shackle and a five-pin tumbler.

G&H** Master Lock Solid Steel*—Each shackle leg has a ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. Locks have a hardened steel shackle and a five-pin tumbler. ***(G) has a standard shackle. ***(H)*** has a concealed shackle.

***J** American Lock Solid Steel*—Each shackle leg has a ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. Locks have a hardened steel shackle and a five-pin tumbler.

***K** Zinc*—Has a hardened steel shackle and a six-disc tumbler. Case is dark tan.

	SHACKLE Clearance Dia.	Vert.	Horiz.	Body Ht.	Wd.	Thick.	Series No.		Each 1-5	6-Up
A	1/8"	5/16"	1/4"	1"	3/4"	3/8"	9	1189A41	$2.61	$2.35
A	3/16"	1/2"	1/2"	1 1/8"	1 1/8"	5/8"	105	1189A21	3.32	3.00
A	1/4"	5/8"	9/16"	1 1/8"	1 1/2"	3/4"	22	1189A31	3.48	3.15
A	9/32"	13/16"	13/16"	1 3/16"	1 3/4"	7/8"	500	1189A1	4.18	3.77
B	9/32"	5/8"-2"	13/16"	1 3/16"	1 3/4"	7/8"	510	1182A5	6.59	5.95
B	9/32"	2 3/4"-5 3/8"	13/16"	1 3/16"	1 3/4"	7/8"	517	1182A1	6.98	6.31
C	3/16"	9/16"	1/2"	1 1/8"	1 1/8"	3/4"	7	1176A12■	7.16	6.47
C	3/16"	1 1/2"	1/2"	1 1/8"	1 1/8"	3/4"	7	1176A16■	8.61	7.77
C	3/16"	2 1/2"	1/2"	1 1/8"	1 1/8"	3/4"	7	1176A61■	8.96	8.10
D	9/32"	3/4"	5/8"	1 3/8"	1 9/16"	1 1/16"	3	1176A13	9.00	8.13
D	9/32"	1 1/2"	5/8"	1 3/8"	1 9/16"	1 1/16"	3	1176A17	10.45	9.44
D	9/32"	2"	5/8"	1 3/8"	1 9/16"	1 1/16"	3	1176A65	11.48	10.37
D	5/16"	15/16"	3/4"	1 3/8"	1 3/4"	1 1/8"	1	1176A14	10.34	9.34
D	5/16"	1 1/2"	3/4"	1 3/8"	1 3/4"	1 1/8"	1	1176A18	11.79	10.65
D	5/16"	2 1/2"	3/4"	1 3/8"	1 3/4"	1 1/8"	1	1176A62	12.16	10.98
D	5/16"	5 3/4"	3/4"	1 3/8"	1 3/4"	1 1/8"	1	1176A21	15.62	14.11
D	3/8"	1"	15/16"	1 9/16"	2"	1 1/4"	5	1176A15	13.14	11.87
D	3/8"	1 1/2"	15/16"	1 9/16"	2"	1 1/4"	5	1176A19	14.59	13.18
D	3/8"	2 1/2"	15/16"	1 9/16"	2"	1 1/4"	5	1176A39	14.95	13.50
E	5/16"	15/16"	3/4"	1 7/16"	1 3/4"	1 1/8"	81	1193A11	14.45	13.05
E	5/16"	1 1/2"	3/4"	1 7/16"	1 3/4"	1 1/8"	81	1193A18	15.89	14.35
E	5/16"	2 1/2"	3/4"	1 7/16"	1 3/4"	1 1/8"	81	1193A19	16.25	14.68
E	7/16"	2"	1 3/16"	2"	2 1/2"	1 1/2"	15	1179A15	25.93	23.42
F	5/16"	3"	2 1/4"	1 9/16"	3 1/4"	1 1/8"	101	1905A12	28.00	25.29
G	5/16"	1 3/16"	7/8"	1 15/16"	1 3/4"	7/8"	7040	1491A1	17.91	16.18
H	5/16"	1 3/16"	7/8"	3 3/8"	1 3/4"	7/8"	7045	1491A2	31.77	28.69
J	7/16"	1 1/16"	15/16"	2 1/8"	2 1/2"	1 1/8"	700	12705A21	31.41	28.50
J	7/16"	2"	15/16"	2 1/8"	2 1/2"	1 1/8"	701	12705A25	32.82	29.78
K	1/4"	3/4"	3/4"	1 3/8"	1 1/2"	3/4"	—	1199A1	8.29	7.46
K	1/4"	1 1/4"	3/4"	1 3/8"	1 1/2"	3/4"	—	1199A31	9.09	8.18
K	1/4"	2 3/4"	3/4"	1 3/8"	1 1/2"	3/4"	—	1155A6★	11.87	10.68
K	1/4"	5"	3/4"	1 3/8"	1 1/2"	3/4"	—	1155A7★	12.11	10.90

■ Has a blue bumper. ★ Has a removable brass identification tag.

Corrosion- and Abuse-Resistant Padlocks

L&M

- All include two keys.

Made to be strong and corrosion resistant, these padlocks have random key numbers. All have pins in the tumbler.

***L&M** Abus Lock Concealed Shackle*—Have a stainless steel body with laser-welded seams. 1831A31 and 1831A11 have a stainless steel shackle. 1831A24 has a hardened steel shackle.

N&P** Master Lock Pro Series*—Have a laminated-steel body with black thermoplastic cover. Shackle is hardened steel. Each shackle leg has a stainless steel ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. ***(N) have a standard shackle. ***(P)*** have a concealed shackle.

N

P

	SHACKLE Clearance Dia.	Vert.	Horiz.	Body Ht.	Wd.	Thick.	No. of Pins	Series No.		Each 1-5	6-Up
L	5/16"	1/2"	3/4"	2 3/8"	2 3/8"	1 1/16"	4	24/60	1831A31	$22.63	$20.25
M	3/8"	3/4"	3/4"	2 3/4"	2 3/4"	1 3/16"	5	24/70	1831A11	25.15	22.50
M	15/32"	5/8"	1"	3 3/4"	3 3/4"	1 3/16"	5	26/90	1831A24	58.68	52.50
N	5/16"	1 1/8"	7/8"	2 5/16"	2 1/8"	1 1/2"	5	6121	10885A21	20.89	18.87
N	3/8"	1 3/8"	7/8"	2 5/16"	2 3/8"	1 1/2"	5	6125	10885A22	24.25	21.90
N	7/16"	1 3/8"	7/8"	2 5/16"	2 5/8"	1 1/2"	5	6127	10885A23	28.21	25.48
P	5/16"	3/4"	7/8"	2 5/16"	2 1/8"	1 1/2"	5	6321	11345A23	28.73	25.95
P	3/8"	3/4"	7/8"	2 5/16"	2 3/8"	1 1/2"	5	6325	11345A24	34.00	30.71
P	7/16"	3/4"	7/8"	2 5/16"	2 5/8"	1 1/2"	5	6327	11345A25	39.20	35.40

For information about padlocks, see page 2932.

Corrosion-Resistant Brass-Body Padlocks

● All include two keys.

Tough enough to stand up to corrosion, high humidity, and atmospheric pollution, brass-body padlocks are an excellent choice for refineries and marine applications. Locks have random key numbers and pins in the tumbler.

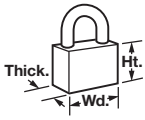

A ***Master Lock Laminated Brass—*** Have a blue bumper. Series 8 locks have a steel shackle. Series 2, 4, and 6 locks have a hardened steel shackle.

B-D ***Solid Brass—(B)*** have a brass shackle. ***(C)*** and ***(D)*** have a hardened steel shackle.

	SHACKLE Clearance Dia.	Vert.	Horiz.	Body Ht.	Wd.	Thick.	No. of Pins	Series No.		Each 1-5	6-Up
A	3/16"	9/16"	1/2"	13/16"	1 1/8"	3/4"	4	8	1315A32	$9.77	$8.82
A	3/16"	1 1/2"	1/2"	13/16"	1 1/8"	3/4"	4	8	1315A31	11.21	10.13
A	9/32"	3/4"	5/8"	1 7/16"	1 9/16"	3/4"	4	4	1315A33	12.11	10.94
A	9/32"	2"	5/8"	1 7/16"	1 9/16"	3/4"	4	4	1315A36	14.59	13.18
A	5/16"	15/16"	3/4"	1 7/16"	1 3/4"	1"	4	2	1315A34	14.16	12.79
A	5/16"	1 1/2"	3/4"	1 7/16"	1 3/4"	1"	4	2	1315A37	15.61	14.10
A	5/16"	2 1/2"	3/4"	1 7/16"	1 3/4"	1"	4	2	1315A38	15.96	14.42
A	5/16"	5 3/4"	3/4"	1 7/16"	1 3/4"	1"	4	2	1315A91	19.45	17.56
A	3/8"	1"	15/16"	1 9/16"	2"	1 1/4"	4	6	1315A35	17.59	15.89
A	3/8"	1 1/2"	15/16"	1 9/16"	2"	1 1/4"	4	6	1315A45	19.04	17.19
A	3/8"	2 1/2"	15/16"	1 9/16"	2"	1 1/4"	4	6	1315A21	19.39	17.52
B	3/16"	5/8"	5/8"	1 1/8"	1 1/8"	9/16"	4	—	1557A24	10.33	9.29
B	3/16"	2"	5/8"	1 1/8"	1 1/8"	9/16"	4	—	1557A51	11.79	10.61
B	1/4"	7/8"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1557A21	10.52	9.46
B	1/4"	2"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1557A54	12.47	11.22
B	1/4"	4"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1557A55	14.22	12.79
B	1/4"	6"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1557A56	15.00	13.49
B	1/4"	8"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1557A57	15.00	13.49
B	3/8"	1"	1"	1 1/2"	2"	1"	5	—	1557A23	14.57	13.11
B	3/8"	2"	1"	1 1/2"	2"	1"	5	—	1557A61	17.35	15.62
B	3/8"	4"	1"	1 1/2"	2"	1"	5	—	1557A62	19.50	17.55
C	1/4"	13/16"	13/16"	1 1/2"	1 1/2"	1/2"	4	—	1834A21	6.49	5.86
C	1/4"	1"	15/16"	1 1/2"	1 3/4"	1/2"	4	—	1834A25	7.71	6.96
D	1/4"	7/8"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1742A11★	10.28	9.25
D	1/4"	2"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1742A12★	12.44	11.20
D	1/4"	3"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1742A13★	13.49	12.14
D	1/4"	4"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1742A14★	13.06	11.75
D	1/4"	5"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1742A15★	14.31	12.88
D	1/4"	8"	13/16"	1 3/8"	1 1/2"	13/16"	5	—	1742A16★	14.31	12.88
D	9/32"	15/16"	1"	1 3/4"	2"	9/16"	5	—	1834A27	10.15	9.17

★ Has a removable brass identification tag.

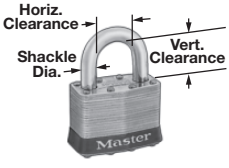

A

B-D

Choose-a-Color Padlocks

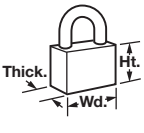

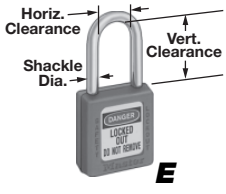

E

F

G

H

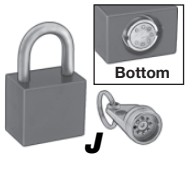

J

● All include two keys, unless noted.

Commonly used in lockout applications, these padlocks come in different colors for easy identification. All have random key numbers. Locks have pins in the tumbler.

E ***Master Lock Plastic Body—*** Entire body is colored. Shackle is hardened steel. Locks include a "Danger" label (as pictured) and a write-on label marked "Property of." **To Order:** Please specify body color: black, blue, green, orange, purple, red, teal, or yellow.

F ***Master Lock Plastic Body with Plastic Shackle—*** All external parts are plastic, making this lock nonsparking and nonmagnetic. Entire body is colored. Lock includes a "Danger" label (as pictured) and a write-on label marked "Property of." **To Order:** Please specify body color: black, blue, green, orange, purple, red, teal, or yellow.

G ***American Lock Aluminum Body—*** Entire body is colored. Shackle is hardened steel. **To Order:** Please specify body color: black, blue, brown, gold, green, orange, purple, or red.

H ***Master Lock Laminated-Steel Body—*** Locks have a colored bumper. Shackle is hardened steel. **To Order:** Please specify bumper color: black, blue, green, red, white, or yellow.

J ***Aluminum Body with High-Security Key—*** Locks have a specially shaped key that cannot be duplicated and cannot be removed when the lock is open. Entire body is colored. Shackle is stainless steel. **To Order:** Please specify body color: beige, black, blue, bronze, gold, or red.

	SHACKLE Clearance Dia.	Vert.	Horiz.	Body Ht.	Wd.	Thick.	No. of Pins	Series No.		Each 1-5	6-Up
E	1/4"	1 1/2"	13/16"	1 3/4"	1 1/2"	3/4"	6	410	13305A11 ♦	$14.10	$12.61
E	1/4"	1 1/2"	13/16"	3"	1 1/2"	3/4"	6	411	13305A15 ♦	15.55	13.91
F	1/4"	1 1/2"	25/32"	1 3/4"	1 1/2"	3/4"	6	406	1191A19 ♦	13.34	12.05
G	1/4"	1"	3/4"	1 13/16"	1 1/2"	3/4"	5	1105	12095A11	12.88	11.69
G	1/4"	3"	3/4"	1 13/16"	1 1/2"	3/4"	5	1107	12095A15	15.61	14.17
H	9/32"	3/4"	5/8"	1 3/8"	1 9/16"	1 1/8"	4	3	11775A11	9.34	8.44
H	9/32"	2"	5/8"	1 3/8"	1 9/16"	1 1/8"	4	3	11775A15	11.80	10.66
J	1/4"	1"	13/16"	1 5/16"	1 1/2"	1"	7	—	13355A11	35.14	31.72
J	1/4"	2"	13/16"	1 5/16"	1 1/2"	1"	7	—	13355A12	35.91	32.41
J	3/8"	1"	1"	1 5/8"	2"	1"	7	—	13355A13	37.35	33.79
J	3/8"	2"	1"	1 5/8"	2"	1"	7	—	13355A14	38.20	34.48

♦ Includes one key.

About Padlock Keying Options

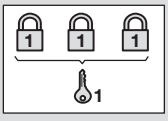

Multiple Padlocks that Open with the Same Key (pages 2934-2938)—Also called keyed alike. Choose these locks if you need several locks that open with the same key. You can also find locks and keys to match a specific key number.

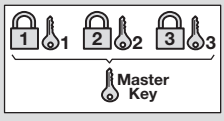

Master-Keyed Padlocks and Sets (pages 2940-2942)—Choose these locks if you want individual locks or groups of locks that open with their own key, but also open with a master key.

Abuse-Resistant Steel-Body Padlocks and Zinc-Body Padlocks (Multiple Locks that Open with the Same Key)

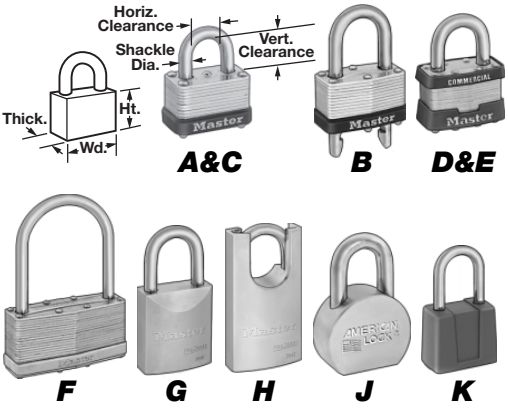

- All include two keys.

A steel body and shackle give Styles A-J the strength to resist abuse. Zinc-body locks are not as strong, but have better corrosion resistance. All of these padlocks have a specific key number. If the lock or key with the key number you want isn't listed, order in the "Other Key Nos." row and specify your desired key number.

A&B ***Master Lock Warded Laminated Steel***—Have a basic warded locking mechanism (a simple locking mechanism without pins or discs) and a gray bumper. Shackle is steel. ***(B)*** have an adjustable vertical shackle clearance. *Note:* Additional keys are not available because locks are warded.

C-E ***Master Lock Laminated Steel***—Have gray bumpers, unless noted. ***(C)*** have a steel shackle and a four-pin tumbler. ***(D)*** have a hardened steel shackle and a four-pin tumbler. ***(E)*** have a hardened steel shackle and a five-pin tumbler.

F ***Master Lock Wide-Body Laminated Steel***—Has a hardened steel shackle and a five-pin tumbler.

G&H ***Master Lock Solid Steel***—Each shackle leg has a ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. Shackle is hardened steel. Have a five-pin tumbler. ***(G)*** has a standard shackle. ***(H)*** has a concealed shackle.

J ***American Lock Solid Steel***—Each shackle leg has a ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. Locks have a hardened steel shackle and a five-pin tumbler.

K ***Zinc***—Have a hardened steel shackle and a six-disc tumbler. Case is dark tan.

	SHACKLE					Padlocks					Additional Keys
		Clearance		Body	Series	Opens with		Each			
Style	Dia.	Vert.	Horiz.	Ht. × Wd. × Thick.	No.	Key Number		1-5	6-Up		Each
A	3/16″	1/2″	1/2″	1 1/8″ × 1 1/8″ × 5/8″	105	048	1189A211	$4.20	$3.79		
						075	1189A22	$4.20	$3.79		
A	1/4″	5/8″	9/16″	1 1/8″ × 1 1/2″ × 3/4″	22	280	1189A32	$4.34	$3.92		
						338	1189A713	$4.34	$3.92		
						Other Key Nos.	1189A322	$4.34	$3.92		
A	9/32″	13/16″	13/16″	1 3/16″ × 1 3/4″ × 7/8″	500	227	1189A512	$5.05	$4.56		
						370	1189A2	$5.05	$4.56		
						Other Key Nos.	1189A201	$5.05	$4.56		
B	9/32″	5/8″-2″	13/16″	1 3/16" × 1 3/4" × 7/8"	510	F27	1182A6	$7.52	$6.79		
B	9/32″	2 3/4″-5 3/8″	13/16″	1 3/16″ × 1 3/4″ × 7/8″	517	F29	1182A3	$7.89	$7.13		
C	3/16″	9/16″	1/2″	1 1/8″ × 1 1/8″ × 3/4″	7	P139	1176A31■	$8.02	$7.24	1176A1	$3.66
						P225	1176A312■	$8.02	$7.24	1176A172	$3.66
						Other Key Nos.	1176A311■	$8.02	$7.24	1176A5	$3.66
C	3/16″	1 1/2″	1/2″	1 1/8″ × 1 1/8″ × 3/4″	7	P619	1176A353■	$9.46	$8.55	1176A174	$3.66
						P734	1176A35■	$9.46	$8.55	1176A2	$3.66
						Other Key Nos.	1176A351■	$9.46	$8.55	1176A5	$3.66
C	3/16″	2 1/2″	1/2″	1 1/8″ × 1 1/8″ × 3/4″	7	P349	1176A63■	$9.82	$8.87	1176A3	$3.66
						P518	1176A632■	$9.82	$8.87	1176A176	$3.66
						Other Key Nos.	1176A631■	$9.82	$8.87	1176A5	$3.66
D	9/32″	3/4″	5/8″	1 3/8″ × 1 9/16″ × 1 1/16″	3	0356	1176A323	$9.86	$8.90	1176A128	$3.66
						0400	1176A302	$9.86	$8.90	1176A144	$3.66
						0464	1176A325	$9.86	$8.90	1176A142	$3.66
						3210	1176A322	$9.86	$8.90	1176A136	$3.66
						3581	1176A32	$9.86	$8.90	1176A11	$3.66
						Other Key Nos.	1176A328	$9.86	$8.90	1176A5	$3.66
D	9/32″	1 1/2″	5/8″	1 3/8″ × 1 9/16″ × 1 1/16″	3	0536	1176A36	$11.30	$10.21	1176A111	$3.66
						3210	1176A362	$11.30	$10.21	1176A136	$3.66
						3753	1176A365	$11.30	$10.21	1176A129	$3.66
						Other Key Nos.	1176A361	$11.30	$10.21	1176A5	$3.66
D	9/32″	2″	5/8″	1 3/8″ × 1 9/16″ × 1 1/16″	3	0344	1176A662	$12.34	$11.15	1176A145	$3.66
						3975	1176A66	$12.34	$11.15	1176A154	$3.66
						Other Key Nos.	1176A661	$12.34	$11.15	1176A5	$3.66
D	5/16″	15/16″	3/4″	1 3/8″ × 1 3/4″ × 1 1/8″	1	2001	1176A337	$11.20	$10.11	1176A222	$3.66
						2004	1176A336	$11.20	$10.11	1176A147	$3.66
						2344	1176A33	$11.20	$10.11	1176A113	$3.66
						2402	1176A334	$11.20	$10.11	1176A114	$3.66
						Other Key Nos.	1176A181	$11.20	$10.11	1176A5	$3.66

■ Has a blue bumper.

(Continued on following page)

For information about padlocks, see page 2932.

Abuse-Resistant Steel-Body Padlocks and Zinc-Body Padlocks (Multiple Locks that Open with the Same Key) *(Continued from previous page)*

Style	SHACKLE Dia.	SHACKLE Clearance Vert.	SHACKLE Clearance Horiz.	Body Ht. × Wd. × Thick.	Series No.	Padlocks: Opens with Key Number	Padlocks: Each 1-5	Padlocks: Each 6-Up	Additional Keys Each
D	5/16″	1 1/2″	3/4″	1 3/8″ × 1 3/4″ × 1 1/8″	1	2016	1176A374 $12.64	$11.42	1176A137 $3.66
						2126	1176A372 $12.64	$11.42	1176A161 $3.66
						2402	1176A37 $12.64	$11.42	1176A114 $3.66
						Other Key Nos.	1176A376 $12.64	$11.42	1176A5 $3.66
D	5/16″	2 1/2″	3/4″	1 3/8″ × 1 3/4″ × 1 1/8″	1	2126	1176A641 $13.02	$11.76	1176A161 $3.66
						2863	1176A64 $13.02	$11.76	1176A115 $3.66
						Other Key Nos.	1176A643 $13.02	$11.76	1176A5 $3.66
D	5/16″	5 3/4″	3/4″	1 3/8″ × 1 3/4″ × 1 1/8″	1	X2282	1176A22 $16.48	$14.89	1176A116 $3.66
						Other Key Nos.	1176A227 $16.48	$14.89	1176A5 $3.66
D	3/8″	1″	15/16″	1 9/16″ × 2″ × 1 1/4″	5	A124	1176A345 $14.00	$12.65	1176A177 $3.66
						A506	1176A34 $14.00	$12.65	1176A117 $3.66
						Other Key Nos.	1176A341 $14.00	$12.65	1176A5 $3.66
D	3/8″	1 1/2″	15/16″	1 9/16″ × 2″ × 1 1/4″	5	A243	1176A383 $15.45	$13.95	1176A165 $3.66
						A389	1176A38 $15.45	$13.95	1176A118 $3.66
						Other Key Nos.	1176A381 $15.45	$13.95	1176A5 $3.66
D	3/8″	2 1/2″	15/16″	1 9/16″ × 2″ × 1 1/4″	5	A152	1176A412 $15.80	$14.27	1176A171 $3.66
						Other Key Nos.	1176A411 $15.80	$14.27	1176A5 $3.66
E	5/16″	15/16″	3/4″	1 7/16″ × 1 3/4″ × 1 1/8″	81	10R34	1193A123 $15.30	$12.56	1176A211 $3.66
						Other Key Nos.	1193A122 $15.30	$12.56	1176A5 $3.66
E	5/16″	1 1/2″	3/4″	1 7/16″ × 1 3/4″ × 1 1/8″	81	10R20	1193A312 $16.75	$13.76	1176A215 $3.66
						10R21	1193A313 $16.75	$13.76	1176A185 $3.66
						Other Key Nos.	1193A311 $16.75	$13.76	1176A5 $3.66
E	5/16″	2 1/2″	3/4″	1 7/16″ × 1 3/4″ × 1 1/8″	81	10R16	1193A325 $17.11	$14.05	1176A216 $3.66
						Other Key Nos.	1193A321 $17.11	$14.05	1176A5 $3.66
E	7/16″	1 1/4″	1 3/16″	2″ × 2 1/2″ × 1 1/2″	15	19N473	1179A16 $24.30	$21.95	1176A126 $3.66
						Other Key Nos.	1179A161 $24.30	$21.95	1176A5 $3.66
E	7/16″	2″	1 3/16″	2″ × 2 1/2″ × 1 1/2″	15	10N104	1179A17 $26.79	$24.19	1176A127 $3.66
						Other Key Nos.	1179A171 $26.79	$24.19	1176A5 $3.66
E	7/16″	1″	3/4″	1 3/4″ × 2″ × 1 3/8″	17	19T461	1179A42 $18.20	$16.44	1176A124 $3.66
						Other Key Nos.	1179A421 $18.20	$16.44	1176A5 $3.66
E	7/16″	2″	3/4″	1 3/4″ × 2″ × 1 3/8″	17	10T424	1179A46 $20.68	$18.68	1176A125 $3.66
						Other Key Nos.	1179A461 $20.68	$18.68	1176A5 $3.66
F	5/16″	3″	2 1/4″	1 9/16″ × 3 1/4″ × 1 1/8″	101	10L255	1905A14 $28.86	$26.06	1905A711 $3.87
						Other Key Nos.	1905A141 $28.86	$26.06	1905A7 $3.87
G	5/16″	1 3/16″	7/8″	1 15/16″ × 1 3/4″ × 7/8″	7040	10G050	1491A3 $18.77	$16.95	1176A218 $3.66
						Other Key Nos.	1491A111 $18.77	$16.95	1491A5 $3.66
H	5/16″	1 3/16″	7/8″	3 3/8″ × 1 3/4″ × 7/8″	7045	10G054	1491A4 $32.62	$29.47	1176A219 $3.66
						Other Key Nos.	1491A112 $32.62	$29.47	1491A5 $3.66
J	7/16″	1 1/16″	15/16″	2 1/8″ × 2 1/2″ × 1 1/8″	700	26868	12705A22 $32.29	$29.30	12705A112 $2.30
						Other Key Nos.	12705A221 $32.29	$29.30	12705A11 $2.30
J	7/16″	2″	15/16″	2 1/8″ × 2 1/2″ × 1 1/8″	701	27234	12705A26 $33.71	$30.59	12705A111 $2.30
						Other Key Nos.	12705A261 $33.71	$30.59	12705A11 $2.30
K	1/4″	3/4″	3/4″	1 3/8″ × 1 1/2″ × 3/4″	—	CAT15	1199A5 $8.29	$7.46	1199A21 $3.18
						Other Key Nos.	1199A41 $8.29	$7.46	1199A2 $3.18
K	1/4″	1 1/4″	3/4″	1 3/8″ × 1 1/2″ × 3/4″	—	CAT60	1199A32 $9.09	$8.18	1199A23 $3.18
						Other Key Nos.	1199A42 $9.09	$8.18	1199A2 $3.18
K	1/4″	2 3/4″	3/4″	1 3/8″ × 1 1/2″ × 3/4″	—	AUE1	1155A1★ $12.44	$11.20	1155A91 $3.18
						Other Key Nos.	1155A111★ $12.44	$11.20	1155A9 $3.18
K	1/4″	5″	3/4″	1 3/8″ × 1 1/2″ × 3/4″	—	AUE1	1155A2★ $12.91	$11.62	1155A91 $3.18
						Other Key Nos.	1155A211★ $12.91	$11.62	1155A9 $3.18

★ Has a removable brass identification tag.

Keyable Abuse-Resistant Steel-Body Padlocks

Customize these Master Lock padlocks to match your existing keys for Master Lock padlock Series Nos. 1, 3, or 5. Locks have a laminated-steel body and a five-pin tumbler. Shackle is hardened steel. To set the lock's key pattern, use the keying tool (sold separately), your key, and a hammer. *Note:* Locks cannot be master keyed.

SHACKLE Dia.	SHACKLE Clearance Vert.	SHACKLE Clearance Horiz.	Body Ht.	Body Wd.	Body Thick.	For Series No.		Each
9/32″	3/4″	5/8″	1 7/16″	1 9/16″	15/16″	3	8381A32	$8.26
9/32″	1 1/2″	5/8″	1 7/16″	1 9/16″	15/16″	3	8381A36	9.64
5/16″	15/16″	3/4″	1 7/16″	1 3/4″	1 1/16″	1	8381A21	9.47
5/16″	2 1/2″	3/4″	1 7/16″	1 3/4″	1 1/16″	1	8381A25	11.22
3/8″	1″	15/16″	1 5/8″	2″	1 1/4″	5	8381A41	12.01
3/8″	1 1/2″	15/16″	1 5/8″	2″	1 1/4″	5	8381A45	13.38

Keying Tool—4 3/8″ overall length ..... 8381A49 **Each** $44.55

Keying Tool

For information about padlocks, see page 2932. For information about keying options, see page 2934.

About Padlocks that Open with the Same Key (Keyed Alike)

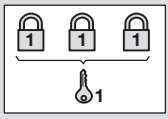

Choose these keyed-alike locks if you need several locks that open with the same key. You can also find locks and keys to match a specific key number. For example, use keyed-alike locks if you have multiple tool boxes and want them to open with the same key.

Corrosion- and Abuse-Resistant Padlocks (Multiple Locks that Open with the Same Key)

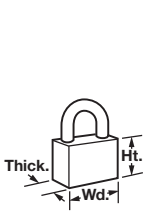

A

B&C

D

E

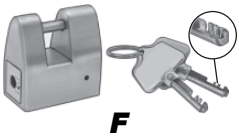

F

- All include two keys.

A step above ordinary padlocks, these are made for strength and corrosion resistance. All have a specific key number. The shackles are concealed, except Style D locks have a standard shackle.

If the lock or key with the key number you want isn't listed, order in the "Other Key Nos." row and specify your desired key number.

A ***Master Lock Titanium Series—*** Have a stainless steel body, a hardened steel shackle, a black bumper, and a four-pin tumbler. The locks also have a front access keyway with a sliding cover to protect it from the elements. Key cannot be removed when the lock is open.

B&C ***Abus Lock—*** Have a stainless steel body with laser-welded seams. The key cannot be removed when the lock is open. ***(B)*** have a stainless steel shackle and a four-pin tumbler. ***(C)*** has a hardened steel shackle and a five-pin tumbler.

D&E ***Master Lock Pro Series—*** Have a laminated-steel body with black thermoplastic cover. Shackle is hardened steel. Each shackle leg has a stainless steel ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. All locks have a five-pin tumbler.

F ***100% Stainless Steel with High-Security Key—*** Has a stainless steel body and shackle and a seven-disc tumbler. The specially shaped key is difficult to duplicate and cannot be removed when the lock is open.

	SHACKLE						Padlocks			
		Clearance					Each			Additional Keys
Style	Dia.	Vert.	Horiz.	Body Ht.×Wd.×Thick.	Series No.	Opens with Key Number		1-5	6-Up	Each
A	9/32″	5/8″	5/8″	3″×1 15/16″×1 1/8″	185	P681	1039A12	$14.31	$12.69	1039A22 $3.64
A	5/16″	15/16″	3/4″	3 9/16″×2 5/16″×1 5/16″	187	3475	1039A14	$17.00	$15.08	1039A24 $3.64
B	5/16″	1/2″	3/4″	2 3/8″×2 3/8″×1 1/16″	24/60	0261	1831A32	$23.43	$20.96	1831A44 $3.31
						Other Key Nos.	1831A321	$23.43	$20.96	——— ———
B	3/8″	3/4″	3/4″	2 3/4″×2 3/4″×1 3/16″	24/70	0123	1831A12	$25.94	$23.21	1831A42 $3.31
						Other Key Nos.	1831A121	$25.94	$23.21	——— ———
C	15/32″	5/8″	1″	3 3/4″×3 3/4″×1 3/16″	26/90	0377	1831A38	$59.47	$53.21	1831A43 $3.31
						Other Key Nos.	1831A251	$59.47	$53.21	——— ———
D	5/16″	1 1/8″	7/8″	2 5/16″×2 1/8″×1 1/2″	6121	10G012	10885A252	$21.75	$19.65	10885A312 $3.66
						12G100	10885A25	$21.75	$19.65	10885A318 $3.66
						Other Key Nos.	10885A251	$21.75	$19.65	10885A3 $3.66
D	3/8″	1 3/8″	7/8″	2 5/16″×2 3/8″×1 1/2″	6125	12G100	10885A262	$25.11	$22.68	10885A318 $3.66
						12G101	10885A26	$25.11	$22.68	10885A313 $3.66
						Other Key Nos.	10885A261	$25.11	$22.68	10885A3 $3.66
D	7/16″	1 3/8″	7/8″	2 5/16″×2 5/8″×1 1/2″	6127	12G100	10885A272	$29.07	$26.26	10885A318 $3.66
						12G102	10885A27	$29.07	$26.26	10885A314 $3.66
						Other Key Nos.	10885A271	$29.07	$26.26	10885A3 $3.66
E	5/16″	3/4″	7/8″	2 5/16″×2 1/8″×1 1/2″	6321	12G103	11345A33	$29.59	$26.73	11345A51 $3.66
						Other Key Nos.	11345A331	$29.59	$26.73	10885A3 $3.66
E	3/8″	3/4″	7/8″	2 5/16″×2 3/8″×1 1/2″	6325	12G104	11345A34	$34.86	$31.48	11345A52 $3.66
						Other Key Nos.	11345A341	$34.86	$31.48	10885A3 $3.66
E	7/16″	3/4″	7/8″	2 5/16″×2 5/8″×1 1/2″	6327	12G105	11345A35	$40.05	$36.18	11345A53 $3.66
						Other Key Nos.	11345A351	$40.05	$36.18	10885A3 $3.66
F	1/4″	9/16″	5/8″	2 3/16″×2 3/16″×1 3/16″	SK-9940	MAJY4S3K6L	1527A42	$62.45	$55.51	1527A63 $9.97

Breakable-Shackle Padlocks (Multiple Locks that Open with the Same Key)

G

H

- All include two keys.

In an emergency, use a hammer to quickly break the shackle on these locks. They are often used for sprinkler shutoff valves and fire hose housings. Locks have a specific key number, a zinc shackle, and a basic warded locking mechanism (a simple locking mechanism without pins or discs).

(G) has a stamped steel body. ***(H)*** are Master Lock laminated-steel body padlocks with a gray bumper.

	SHACKLE			Body				
		Clearance						
	Dia.	Vert.	Horiz.	Ht.	Wd.	Thick.	Opens with Key Number	Each
G	9/32″	15/16″	1 1/16″	1 3/4″	2″	1/2″	6500	1165A12 $13.62
H	9/32″	13/16″	13/16″	1 1/16″	1 3/4″	1 1/16″	197	1165A235 6.47
H	9/32″	13/16″	13/16″	1 1/16″	1 3/4″	1 1/16″	229	1165A233 6.47
H	9/32″	13/16″	13/16″	1 1/16″	1 3/4″	1 1/16″	267	1165A23 6.47

For information about padlocks, see page 2932. For information about keying options, see page 2934.

Corrosion-Resistant Brass-Body Padlocks (Multiple Locks that Open with the Same Key)

- All include two keys.

A brass body gives these padlocks the ability to withstand corrosion. All have a specific key number. If the lock or key with the key number you want isn't listed, order in the "Other Key Nos." row and specify your desired key number.

A ***Master Lock Laminated Brass—*** Have a blue bumper and a four-pin tumbler. Series 8 have a steel shackle. Series 2, 4, and 6 have a hardened steel shackle.

B-D ***Solid Brass—*** All have a five-pin tumbler, unless noted. ***(B)*** have a brass shackle. ***(C)*** have a stainless steel shackle. ***(D)*** have a hardened steel shackle.

E&F ***Solid Brass with High-Security Key—*** Have a half-moon shaped key that is difficult to duplicate and cannot be removed when the lock is open. Each shackle leg has a stainless steel ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. Locks have an 11-disc tumbler. ***(E)*** has a stainless steel shackle. ***(F)*** has a hardened steel shackle.

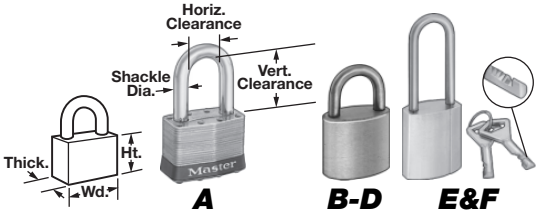

Style	SHACKLE Dia.	SHACKLE Clearance Vert.	SHACKLE Clearance Horiz.	Body Ht. × Wd. × Thick.	Series No.	Padlocks: Opens with Key Number	Padlocks Each 1-5	Padlocks Each 6-Up	Additional Keys Each
A	3/16″	9/16″	1/2″	1 3/16″ × 1 1/8″ × 3/4″	8	P150	1315A412 ..... $10.64	$9.61	1315A111 ..... $3.66
						Other Key Nos.	1315A411 ..... $10.64	$9.61	1315A7 ..... $3.66
A	3/16″	1 1/2″	1/2″	1 3/16″ × 1 1/8″ × 3/4″	8	P120	1315A46 ..... $12.09	$10.92	1315A2 ..... $3.66
						P761	1315A463 ..... $12.09	$10.92	1315A113 ..... $3.66
						Other Key Nos.	1315A461 ..... $12.09	$10.92	1315A7 ..... $3.66
A	9/32″	3/4″	5/8″	1 7/16″ × 1 9/16″ × 3/4″	4	0356	1315A473 ..... $12.96	$11.71	1176A128 ..... $3.66
						Other Key Nos.	1315A471 ..... $12.96	$11.71	1315A7 ..... $3.66
A	9/32″	2″	5/8″	1 7/16″ × 1 9/16″ × 3/4″	4	0455	1315A48 ..... $15.45	$13.95	1315A4 ..... $3.66
						Other Key Nos.	1315A481 ..... $15.45	$13.95	1315A7 ..... $3.66
A	5/16″	15/16″	3/4″	1 7/16″ × 1 3/4″ × 1″	2	2004	1315A423 ..... $15.02	$13.56	1176A147 ..... $3.66
						2007	1315A424 ..... $15.02	$13.56	1315A128 ..... $3.66
						Other Key Nos.	1315A421 ..... $15.02	$13.56	1315A7 ..... $3.66
A	5/16″	1 1/2″	3/4″	1 7/16″ × 1 3/4″ × 1″	2	2402	1315A495 ..... $16.46	$14.87	1176A114 ..... $3.66
						2508	1315A49 ..... $16.46	$14.87	1315A6 ..... $3.66
						Other Key Nos.	1315A491 ..... $16.46	$14.87	1315A7 ..... $3.66
A	5/16″	2 1/2″	3/4″	1 7/16″ × 1 3/4″ × 1″	2	2357	1315A512 ..... $16.82	$15.19	1315A137 ..... $3.66
						X2241	1315A51 ..... $16.82	$15.19	1315A8 ..... $3.66
A	5/16″	5 3/4″	3/4″	1 7/16″ × 1 3/4″ × 1″	2	2265	1315A922 ..... $20.30	$18.34	1315A138 ..... $3.66
						2413	1315A92 ..... $20.30	$18.34	1315A9 ..... $3.66
A	3/8″	1″	15/16″	1 9/16″ × 2″ × 1 1/4″	6	A112	1315A432 ..... $18.45	$16.66	1315A143 ..... $3.66
						Other Key Nos.	1315A431 ..... $18.45	$16.66	1315A7 ..... $3.66
A	3/8″	1 1/2″	15/16″	1 9/16″ × 2″ × 1 1/4″	6	A188	1315A57 ..... $19.89	$17.97	1315A12 ..... $3.66
						Other Key Nos.	1315A571 ..... $19.89	$17.97	1315A7 ..... $3.66
A	3/8″	2 1/2″	15/16″	1 9/16″ × 2″ × 1 1/4″	6	A112	1315A222 ..... $20.25	$18.29	1315A143 ..... $3.66
						A520	1315A22 ..... $20.25	$18.29	1315A13 ..... $3.66
B	3/16″	5/8″	5/8″	1 1/8″ × 1 1/8″ × 9/16″	—	MC40	1557A252▲ $11.62	$10.33	1557A112 ..... $2.73
						Other Key Nos.	1557A251▲ $11.62	$10.33	1557A11 ..... $2.73
B	3/16″	2″	5/8″	1 1/8″ × 1 1/8″ × 9/16″	—	MC45	1557A522▲ $13.26	$11.79	1557A126 ..... $2.73
						Other Key Nos.	1557A521▲ $13.26	$11.79	1557A11 ..... $2.73
B	9/32″	3″	3/4″	1 3/8″ × 1 1/2″ × 13/16″	—	MC11	1557A63 ..... $14.80	$13.16	1557A127 ..... $2.73
						Other Key Nos.	1557A631 ..... $14.80	$13.16	1557A11 ..... $2.73
B	1/4″	7/8″	13/16″	1 3/8″ × 1 1/2″ × 13/16″	—	MC56	1557A263 ..... $11.83	$10.51	1557A116 ..... $2.73
						Other Key Nos.	1557A261 ..... $11.83	$10.51	1557A11 ..... $2.73
B	1/4″	2″	13/16″	1 3/8″ × 1 1/2″ × 13/16″	—	MC3	1557A64 ..... $14.03	$12.47	1557A87 ..... $2.73
						Other Key Nos.	1557A641 ..... $14.03	$12.47	1557A11 ..... $2.73
C	9/32″	7/8″	13/16″	1 3/8″ × 1 1/2″ × 13/16″	—	MC34	1496A51 ..... $14.03	$12.47	1557A1 ..... $2.73
C	5/16″	2″	7/8″	1 1/2″ × 1 3/4″ × 7/8″	—	MC6	1496A53 ..... $17.50	$15.56	1557A3 ..... $2.73
C	3/8″	2″	1″	1 1/2″ × 2″ × 1″	—	MC12	1496A55 ..... $21.75	$19.33	1557A5 ..... $2.73
D	1/4″	13/16″	13/16″	1 1/2″ × 1 1/2″ × 1/2″	—	5402	1834A32▲ $7.21	$6.52	— ..... —
D	1/4″	1″	15/16″	1 1/2″ × 1 3/4″ × 1/2″	—	5453	1834A36▲ $8.44	$7.62	— ..... —
D	1/4″	2″	13/16″	1 3/8″ × 1 1/2″ × 13/16″	—	MC51	1742A283★ $14.00	$12.45	1742A115 ..... $2.14
						Other Key Nos.	1742A281★ $14.00	$12.45	1742A1 ..... $2.14
D	1/4″	3″	13/16″	1 3/8″ × 1 1/2″ × 13/16″	—	MC56	1742A292★ $15.17	$13.49	1557A116 ..... $2.73
						Other Key Nos.	1742A291★ $15.17	$13.49	1742A1 ..... $2.14
D	1/4″	4″	13/16″	1 3/8″ × 1 1/2″ × 13/16″	—	MC65	1742A314★ $14.69	$13.06	1557A131 ..... $2.73
						Other Key Nos.	1742A311★ $14.69	$13.06	1742A1 ..... $2.14
D	1/4″	5″	13/16″	1 3/8″ × 1 1/2″ × 13/16″	—	MC73	1742A667★ $16.10	$14.31	1742A146 ..... $2.14
						Other Key Nos.	1742A661★ $16.10	$14.31	— ..... —
D	1/4″	8″	13/16″	1 3/8″ × 1 1/2″ × 13/16″	—	MC31	1742A32★ $16.10	$14.31	1742A136 ..... $2.14
D	9/32″	15/16″	1″	1 3/4″ × 2″ × 9/16″	—	5502	1834A39 ..... $10.88	$9.83	— ..... —
E	13/64″	1 15/16″	1 1/16″	1 1/2″ × 1 5/16″ × 3/4″	—	6166214411	10835A54 ..... $33.08	$30.28	1698A553 ..... $4.65
F	25/64″	1 15/16″	1 1/16″	2 1/16″ × 2 1/4″ × 1″	—	4727924931	1698A54 ..... $69.01	$63.36	1698A552 ..... $4.65

▲ Has a four-pin tumbler. ★ Has a removable brass identification tag.

For information about padlocks, see page 2932. For information about keying options, see page 2934.

About Padlocks that Open with the Same Key (Keyed Alike)

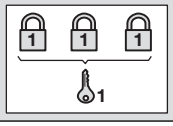

Choose these keyed-alike locks if you need several locks that open with the same key. You can also find locks and keys to match a specific key number. For example, use keyed-alike locks if you have multiple tool boxes and want them to open with the same key.

Choose-a-Color Padlocks (Multiple Locks that Open with the Same Key)

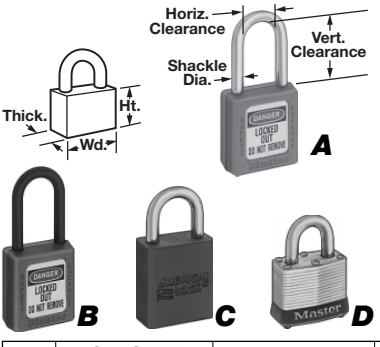

- All include two keys, unless noted.

Identify these keyed-alike padlocks by color. All have a specific key number. Styles A and B are perfect for lockout applications. If the lock keyed to the number you want isn't listed, order in the "Other Key Nos." row and specify your desired key number and lock color.

A Master Lock Plastic Body— Entire body is colored. Locks have a hardened steel shackle and a six-pin tumbler. Include a "Danger" label (as pictured) and a write-on label marked "Property of."

B Master Lock Plastic Body with Plastic Shackle— All external parts are plastic, making these locks nonsparking and nonmagnetic. Entire body is colored. Locks have a six-pin tumbler and include a "Danger" label (as pictured) and a write-on label marked "Property of."

C American Lock Aluminum Body— Entire body is colored. Locks have a hardened steel shackle and a five-pin tumbler. **Also Available:** Additional keys. Please ask for 12095A1 and specify key number.

D Master Lock Laminated-Steel Body— Have a colored bumper, a hardened steel shackle, and a four-pin tumbler. **Also Available:** Additional keys. Please ask for 11775A2 and specify key number.

Style	SHACKLE Clearance Dia.	Vert.	Horiz.	Body Ht.×Wd.×Thick.	Series No.	Color (Opens with Key Number)				Each 1-5	6-Up
A	1/4″	1 1/2″	13/16″	1 3/4″×1 1/2″×3/4″	410	Black (5XX2250)	13305A381 ♦	Purple (600F207)	13305A127 ♦	$15.04	$13.46
						Black (600F208)	13305A128 ♦	Red (3XX0011)	13305A311 ♦		
						Blue (600F205)	13305A125 ♦	Red (600F201)	13305A121 ♦		
						Green (600F204)	13305A124 ♦	Teal (600F206)	13305A126 ♦		
						Orange (600F201)	13305A212 ♦	Yellow (600F203)	13305A123 ♦		
						Orange (600F202)	13305A122 ♦	(Other Key Nos.)	13305A6 ♦		
A	1/4″	1 1/2″	13/16″	3″×1 1/2″×3/4″	411	Black (600F308)	13305A168 ♦	Red (600F301)	13305A161 ♦	$16.49	$14.75
						Blue (600F305)	13305A165 ♦	Red (600F302)	13305A625 ♦		
						Green (600F304)	13305A164 ♦	Teal (600F306)	13305A166 ♦		
						Orange (600F302)	13305A162 ♦	Yellow (600F303)	13305A163 ♦		
						Purple (600F307)	13305A167 ♦	(Other Key Nos.)	13305A7 ♦		
B	1/4″	1 1/2″	3/4″	1 3/4″×1 1/2″×3/4″	406	Black (605F125)	1191A101 ♦	Orange (605F128)	1191A128 ♦	$14.19	$12.82
						Blue (605F126)	1191A011 ♦	Red (605F130)	1191A146 ♦		
						Green (605F127)	1191A119 ♦	(Other Key Nos.)	1191A1 ♦		
C	1/4″	1″	3/4″	1 13/16″×1 1/2″×3/4″	1105	Black (22676)	12095A352	Green (22452)	12095A33	$13.76	$12.48
						Black (23754)	12095A35	Green (23534)	12095A332		
						Blue (22337)	12095A323	Orange (74256)	12095A122		
						Blue (22367)	12095A322	Orange (76383)	12095A192		
						Blue (22386)	12095A32	Purple (53684)	12095A191		
						Brown (26852)	1158A312	Red (22358)	12095A313		
						Brown (27635)	1158A31	Red (26248)	12095A314		
						Brown (42256)	1158A314	Red (27676)	12095A31		
						Gold (21323)	12095A34	Red (46327)	12095A312		
						Gold (22347)	12095A342	(Other Key Nos.)	12095A7		
C	1/4″	3″	3/4″	1 13/16″×1 1/2″×3/4″	1107	Black (25747)	12095A75	Orange (43568)	12095A762	$16.51	$14.98
						Black (42672)	12095A752	Orange (76383)	12095A162		
						Blue (25683)	12095A72	Purple (53684)	12095A161		
						Blue (42734)	12095A722	Red (22447)	12095A712		
						Brown (27635)	1158A322	Red (23227)	12095A713		
						Brown (34665)	1158A32	Red (36247)	12095A71		
						Gold (22473)	12095A74	Red (43568)	12095A714		
						Green (23534)	12095A73	(Other Key Nos.)	12095A8		
D	9/32″	3/4″	5/8″	1 3/8″×1 9/16″×1 1/8″	3	Black (0863)	11775A31	Red (0641)	11775A332	$11.33	$9.94
						Blue (0310)	11775A362	Red (0643)	11775A333		
						Blue (0312)	11775A363	Red (0645)	11775A335		
						Blue (3581)	11775A36	White (3230)	11775A322		
						Green (3044)	11775A342	Yellow (0911)	11775A352		
						Green (3918)	11775A34	(Other Key Nos.)	11775A807		
D	9/32″	2″	5/8″	1 3/8″×1 9/16″×1 1/8″	3	Black (3359)	11775A71	Red (3300)	11775A732	$12.86	$11.27
						Black (3650)	11775A712	Red (3462)	11775A73		
						Blue (0590)	11775A762	White (3431)	11775A72		
						Blue (3975)	11775A76	Yellow (3408)	11775A752		
						Green (3711)	11775A74	(Other Key Nos.)	11775A806		

♦ Includes one key.

For information about padlocks, see page 2932.

Padlocks to Match Your Door Key

Key these five-pin locks to match your Kwikset or Schlage entry door locks so you can use the same key for both. Use indoors and out.

Shackle is hardened steel. Each shackle leg has a stainless steel ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. Furnished with two keys already keyed to the padlock, two blank keys for rekeying the padlock, and instructions.

SHACKLE Dia.	Clearance Vert.	Clearance Horiz.	Kwikset Each	Schlage Each
Brass—*Body is 2″ Ht. × 1¾″ Wd. × ¾″ Thick.*				
5/16″	1″	15/16″	1522A11 $27.16	1522A12 $27.16
Chrome-Plated Brass—*Body is 2″ Ht. × 2″ Wd. × 13/16″ Thick.*				
3/8″	1″	15/16″	1522A13 30.63	1522A14 30.63

Adjustable-Length Cable Locks

- Locks include two keys.

A cinching mechanism in the lock allows you to tighten and loosen the cable around equipment of almost any shape.

Locks are made of weather-resistant aluminum alloy with a black and yellow ABS plastic bumper. They have a four-wafer cylinder. Size is 2¾″ Ht. × 4″ Wd. × 1 7/16″ Thick. Cables are 6-ft. long and are made of ⅜″ dia. black vinyl-coated braided steel.

	Each
Each Lock Opens with a Random Key No.	1033A31 $26.67
Each Lock Opens with Key No. 3221	1033A32 26.67

Cable Lock Security System

Prevent the theft of computers and secure equipment of almost any shape. System has locks at both ends of the cable to secure two pieces of equipment. Each lock fits into the standard built-in female security slot in PCs, laptops, and notebooks and has a random key number. Includes multistrand steel cable with a clear PVC coating and two high-security keys that are difficult to duplicate.

To attach to equipment without a built-in security slot, use an optional anchor (sold separately). ***Optional anchor*** is 1½″ Lg. × ⅞″ Wd. × ¾″ Proj. and comes with adhesive.

Cable Lg.	O'all Cable Dia.	Each
6 ft.	5/16″	1349A15 $70.00
Optional Anchor		1349A5 13.00

Vinyl-Coated Steel Cables

Coiled

Cables are steel with a clear vinyl coating. Aluminum sleeves secure the looped ends. Use with any style padlock. ***Coiled cables*** return to a compact, coiled position after use, making storage easy. ***Straight braided cables*** are more flexible than straight cables.

Cable Lg.	O'all Cable Dia.	Each
Coiled Cables		
6 ft.	1/4″	1585A56 $10.33
6 ft.	5/16″	1585A57 8.63
Straight Cables		
6 ft.	3/8″	1585A58 11.99
15 ft.	3/8″	1585A14 27.29
Straight Braided Cables		
7 ft.	3/8″	1585A61 11.81
15 ft.	3/8″	1585A13 19.92

Removable-Shackle Padlocks

- Include two keys.

The entire shackle separates from the body, making it easy to secure and remove these seven-pin locks. They're pry- and pick-resistant. Body and shackle are made of hardened steel with a vinyl cover to provide weather resistance. Lock with 11″ vertical shackle clearance is useful for securing gates and bulky equipment.

SHACKLE Clearance Vert.	Clearance Horiz.	Dia.	Body Dia.	Body Wd.	Each
1 7/8″	1 15/16″	9/16″	1″	3 11/16″	1026A11 $23.95
11″	5 1/8″	1/2″	1 1/8″	8 1/4″	1026A13 34.39

Master Lock Cable Locks

- Include two keys.

Great for anchoring tools and equipment, these locks have a four-wafer cylinder and open with a random key number. Locks are made of aluminum. Cables are made of strong, flexible steel and have a black vinyl coating to prevent scratching.

Cable Lg.	O'all Cable Dia.	Each
6 ft.	3/8″	8030A16 $13.91
6 ft.	5/8″	8030A18 33.50

Steel Security Chain with Nylon Sleeve

Made of hardened steel, chain is zinc plated for corrosion resistance and has a nylon sleeve to protect against abrasion. Chain is not load rated.

Fits Max. Padlock Shackle Dia.	Dia.	2-ft. Length	Each	10-ft. Length	Each
5/16″	0.24″	1585A73	$13.15	1585A81	$65.09
3/8″	0.31″	1585A75	20.57	1585A82	101.82
5/8″	0.39″	1585A77	29.18	1585A83	144.44

Padlock Chains, Collars, and Tags

Chains are made of zinc-plated cold-rolled stainless steel and fit the collars sold separately below. All have a 1 9/16″ Lg. × ¾″ Wd. mounting tab with two 3/16″ dia. holes (screws not included).

Sash chain has flat links that have been stamped into shape; *machine* chain is made of welded links, which are stronger.

	Chain Thick.	Chain Lg.	Pkg. Qty.	Per Pkg.
Sash	0.032″	9″	6	13205A11 $10.25
Machine	0.114″	9″	6	13205A12 15.20

Shackle collars allow you to attach a padlock to the 13205A series chain sold separately above. Made of zinc- and chrome-plated cold-rolled steel. Include rivets for attaching collar to shackle.

Fits Max. Shackle Dia.	Pkg. Qty.	Per Pkg.
1/4″	12	13205A14 $11.21
9/32″	12	13205A15 11.21
5/16″	12	13205A16 11.21
3/8″	12	13205A17 11.21
7/16″	12	13205A18 11.21

Chain assemblies include chain, an interlocking loop to fit your padlock shackle, and a mounting bracket to anchor the chain. Made of zinc-plated steel. Mounting hardware is included.

Fits Padlock Shackle Dia.	Chain Thick.	Chain Lg.	Each
Up to 9/32″	0.188″	8″	1084A51 $7.50
9/32″ to 5/16″	0.188″	8″	1084A57 8.56

Tags are brass and have an overlapping ring. They are 1¾″ Lg. × ½″ Wd. Package quantity is 12.

11695A44 ..... **Per Pkg.** $16.88

For information about padlocks, see page 2932. For information about keying options, see page 2934.

About Master Keyed Padlocks

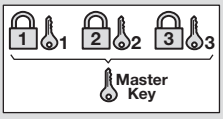

Choose these locks if you want individual locks or groups of locks that open with their own key, but also open with a master key. An example is locker assignments. Each person uses a padlock that has a random key number—each person can open only their own locker. In a master keyed system, one person has a master key that opens all of the lockers.

We also offer master keyed padlock sets. Master keyed sets have padlocks (or groups of padlocks) with different key numbers. Each person can open their own lock (or the locks in their group). One person has a master key that opens every lock in the set. For master keyed padlock sets, see pages 2940 and 2941.

Abuse-Resistant Steel-Body Padlocks and Zinc-Body Padlocks (Master Keyed)

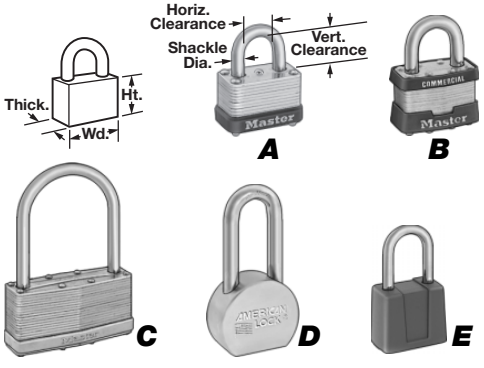

- All include two keys. Master keys for individual padlocks are sold separately.

A steel body and shackle give Styles A-D the strength to resist abuse. Zinc-body locks are not as strong, but they have better corrosion resistance. All of these locks have random key numbers; they also open with a master key (sold separately for individual padlocks).

A&B ***Master Lock Laminated Steel—*** Have a four-pin tumbler. ***(A)*** have a blue bumper and a steel shackle. ***(B)*** have gray bumpers and a hardened steel shackle.

C ***Master Lock Wide-Body Laminated Steel—*** Has a hardened steel shackle and a five-pin tumbler.

D ***American Lock Solid Steel—*** Each shackle leg has a ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. Lock has a hardened steel shackle and a five-pin tumbler.

E ***Zinc—*** Have a hardened steel shackle and a six-disc tumbler. Case is dark tan.

Individual Padlocks— Locks have random key numbers and also open with a master key (sold separately).

	Opens with Master Key No.	Shackle Clearance Dia.	Shackle Clearance Vert.	Shackle Clearance Horiz.	Body Ht.	Body Wd.	Body Thick.	Series No.	Padlocks	Padlocks Each	Master Keys	Master Keys Each
A	SM74	3/16″	9/16″	1/2″	1 1/8″	1 1/8″	3/4″	7	1176A45	$10.38	1176A81	$3.87
A	SM74	3/16″	1 1/2″	1/2″	1 1/8″	1 1/8″	3/4″	7	1176A51	11.68	1176A81	3.87
A	SM71	3/16″	2 1/2″	1/2″	1 1/8″	1 1/8″	3/4″	7	1176A67	12.02	1176A72	3.87
B	SB732	9/32″	3/4″	5/8″	1 3/8″	1 9/16″	1 1/16″	3	1176A464	12.04	1176A465	3.87
B	SM737	9/32″	3/4″	5/8″	1 3/8″	1 9/16″	1 1/16″	3	1176A46	12.04	1176A54	3.87
B	SK14	9/32″	1 1/2″	5/8″	1 3/8″	1 9/16″	1 1/16″	3	1176A53	13.36	1176A82	3.87
B	SB757	9/32″	2″	5/8″	1 3/8″	1 9/16″	1 1/16″	3	1176A68	14.30	1176A73	3.87
B	SM936	5/16″	15/16″	3/4″	1 3/8″	1 3/4″	1 1/8″	1	1176A85	13.27	1176A56	3.87
B	SM22	5/16″	1 1/2″	3/4″	1 3/8″	1 3/4″	1 1/8″	1	1176A55	14.59	1176A83	3.87
B	AM968	5/16″	2 1/2″	3/4″	1 3/8″	1 3/4″	1 1/8″	1	1176A69	14.91	1176A74	3.87
B	SM866	3/8″	1″	15/16″	1 9/16″	2″	1 1/4″	5	1176A48	15.80	1176A58	3.87
B	SM866	3/8″	1 1/2″	15/16″	1 9/16″	2″	1 1/4″	5	1176A57	17.12	1176A58	3.87
C	ST415	5/16″	3″	2 1/4″	1 9/16″	3 1/4″	1 1/8″	101	1905A16	32.25	1905A26	3.87
D	407M5	7/16″	2″	15/16″	2 1/8″	2 1/2″	1 1/8″	701	12705A27	37.22	12705A28	2.30
E	M8003	1/4″	3/4″	3/4″	1 7/16″	1 1/2″	3/4″	—	1199A6	8.88	1155A5	3.95
E	M8001	1/4″	1 1/4″	3/4″	1 7/16″	1 1/2″	3/4″	—	1199A33	13.25	1199A34	3.16
E	M8003	1/4″	2 3/4″	3/4″	1 7/16″	1 1/2″	3/4″	—	1155A3★	13.35	1155A5	3.95
E	M8003	1/4″	5″	3/4″	1 7/16″	1 1/2″	3/4″	—	1155A4★	13.62	1155A5	3.95

★ Has a removable brass identification tag.

Master Keyed Sets and Additional Padlocks, Keys, and Master Keys

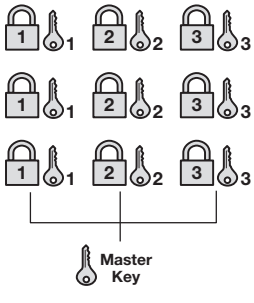

Master keyed sets come with nine padlocks that are divided into groups of three. Each group of three padlocks opens with a specific key number. Each padlock in the set comes with two keys. Each set comes with a master key that opens all the padlocks. If you want to expand your set, additional padlocks, keys, and master keys are sold separately.

	Included Master Key No.	Padlock Key No. (Qty.)	Shackle Clearance Dia.	Shackle Clearance Vert.	Shackle Clearance Horiz.	Body Ht. × Wd. × Thick.	Series No.	Per Set
A	SM124	X373 (3) X397 (3) X405 (3)	3/16″	1 1/2″	1/2″	1 1/8″ × 1 1/8″ × 3/4″	7	6310A11 $122.77
B	AE	AE1 (3) AE2 (3) AE3 (3)	9/32″	3/4″	5/8″	1 3/8″ × 1 9/16″ × 1 3/16″	3	6310A5 $125.66

Additional Padlocks Opens with Key No.	Additional Padlocks Each	Additional Keys Key No.	Additional Keys Each	Additional Master Keys Key No.	Additional Master Keys Each
For Adding to Set 6310A11					
X373	6310A31 $13.66	X373	6310A41 $3.65	SM124	6310A23 $3.69
X397	6310A32 13.66	X397	6310A42 3.65	SM124	6310A23 3.69
X405	6310A33 13.66	X405	6310A43 3.65	SM124	6310A23 3.69
For Adding to Set 6310A5					
AE1	6310A51 14.11	AE1	6310A55 3.65	AE	6310A54 3.65
AE2	6310A52 14.11	AE2	6310A56 3.65	AE	6310A54 3.65
AE3	6310A53 14.11	AE3	6310A57 3.65	AE	6310A54 3.65

For information about padlocks, see page 2932. For information about keying options, see page 2934.

Corrosion- and Abuse-Resistant Padlocks (Master Keyed)

- All include two keys. Master keys sold separately.

Made for strength and corrosion resistance, these locks have random key numbers. They also open with a master key (sold separately). Locks have pins in the tumbler. All except Style C have a concealed shackle.

A&B ***Abus Lock*****—**Have a stainless steel body with laser-welded seams. The key cannot be removed when the lock is open. ***(A)*** have a stainless steel shackle. ***(B)*** has a hardened steel shackle.

C&D ***Master Lock Pro Series*****—**Have a laminated-steel body with black thermoplastic cover. Shackle is hardened steel. Each shackle leg has a stainless steel ball-bearing locking mechanism, making the lock more difficult to shim and pull apart.

	Opens with Master Key No.	SHACKLE Clearance Dia.	Vert.	Horiz.	Body Ht.	Wd.	Thick.	No. of Pins	Series No.	Padlocks Each	Master Keys Each
A	0240	5/16″	1/2″	3/4″	2 3/8″	2 3/8″	1 1/16″	4	24/60	1831A33 $26.53	1831A34 $5.57
A	0244	3/8″	3/4″	3/4″	2 3/4″	2 3/4″	1 3/16″	4	24/70	1831A13 29.04	1831A16 5.57
B	0244	15/32″	5/8″	1″	3 3/4″	3 3/4″	1 3/16″	5	26/90	1831A35 62.57	1831A16 5.57
C	SG409	5/16″	1 1/8″	7/8″	2 5/16″	2 1/8″	1 1/2″	5	6121	10885A28 25.14	10885A41 3.32
C	SG410	3/8″	1 3/8″	7/8″	2 5/16″	2 3/8″	1 1/2″	5	6125	10885A29 28.50	10885A42 3.32
C	SG412	7/16″	1 3/8″	7/8″	2 5/16″	2 5/8″	1 1/2″	5	6127	10885A31 32.46	10885A43 3.32
D	SG414	5/16″	3/4″	7/8″	2 5/16″	2 1/8″	1 1/2″	5	6321	11345A43 32.96	11345A46 3.79
D	SG423	3/8″	3/4″	7/8″	2 5/16″	2 3/8″	1 1/2″	5	6325	11345A44 38.23	11345A47 3.79
D	SG424	7/16″	3/4″	7/8″	2 5/16″	2 5/8″	1 1/2″	5	6327	11345A45 43.45	11345A48 3.79

Corrosion-Resistant Brass-Body Padlocks (Master Keyed)

- All include two keys. Master keys sold separately.

All of these locks have a brass body that withstands corrosion, high humidity, and atmospheric pollution. Locks have random key numbers; they also open with a master key (sold separately). The tumblers have pins.

E ***Master Lock Laminated Brass*****—**Have a blue bumper and a chrome-plated hardened steel shackle.

F&G ***Solid Brass*****—*****(F)*** have a brass shackle. ***(G)*** have a chrome-plated hardened steel shackle.

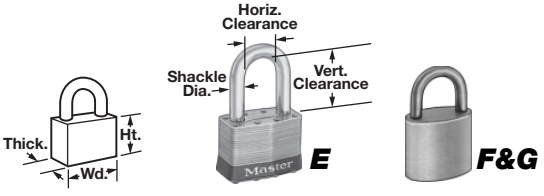

	Opens with Master Key No.	SHACKLE Clearance Dia.	Vert.	Horiz.	Body Ht.	Wd.	Thick.	No. of Pins	Series No.	Padlocks Each	Master Keys Each
E	SM77	3/16″	9/16″	1/2″	1 3/16″	1 1/8″	3/4″	4	8	1315A52 $12.99	1315A61 $3.24
E	SM167	3/16″	9/16″	1/2″	1 3/16″	1 1/8″	3/4″	4	8	1315A522 12.99	1315A528 3.24
E	SM71	3/16″	1 1/2″	1/2″	1 3/16″	1 1/8″	3/4″	4	8	1315A58 15.75	1315A64 3.24
E	SM175	3/16″	1 1/2″	1/2″	1 3/16″	1 1/8″	3/4″	4	8	1315A582 15.75	1315A588 3.24
E	SB53	9/32″	3/4″	5/8″	1 7/16″	1 9/16″	3/4″	4	4	1315A592 16.64	1315A598 3.24
E	SM737	9/32″	3/4″	5/8″	1 7/16″	1 9/16″	3/4″	4	4	1315A59 16.64	1315A65 3.24
E	SB701	9/32″	2″	5/8″	1 7/16″	1 9/16″	3/4″	4	4	1315A712 19.18	1315A718 3.24
E	AM935	5/16″	15/16″	3/4″	1 7/16″	1 3/4″	1″	4	2	1315A532 18.75	1315A538 3.24
E	SM201	5/16″	1 1/2″	3/4″	1 7/16″	1 3/4″	1″	4	2	1315A722 20.22	1315A728 3.24
E	AM6	5/16″	2 1/2″	3/4″	1 7/16″	1 3/4″	1″	4	2	1315A73 20.58	1315A68 3.24
F	2446	3/16″	5/8″	5/8″	1 1/8″	1 1/8″	9/16″	4	—	1557A912 16.63	1557A918 2.73
F	3573	3/16″	2″	5/8″	1 1/8″	1 1/8″	9/16″	4	—	1557A84 18.27	1557A39 2.73
F	40604	1/4″	7/8″	13/16″	1 3/8″	1 1/2″	13/16″	5	—	1557A92 16.87	1557A96 2.73
F	26884	1/4″	2″	13/16″	1 3/8″	1 1/2″	13/16″	5	—	1557A742 19.04	1557A748 2.73
G	66842	1/4″	2″	13/16″	1 3/8″	1 1/2″	13/16″	5	—	1742A38★ 18.99	1742A62 2.14
G	55773	1/4″	3″	13/16″	1 3/8″	1 1/2″	13/16″	5	—	1742A39★ 20.21	1742A55 2.14
G	24468	1/4″	4″	13/16″	1 3/8″	1 1/2″	13/16″	5	—	1742A46★ 19.73	1742A63 2.14
G	77513	1/4″	5″	13/16″	1 3/8″	1 1/2″	13/16″	5	—	1742A68★ 21.09	1742A65 2.14
G	17735	1/4″	8″	13/16″	1 3/8″	1 1/2″	13/16″	5	—	1742A47★ 21.09	1742A64 2.14

★ Has a removable brass identification tag.

Choose-a-Color Padlock Set (Master Keyed)

- Each padlock includes two keys. Master key included in set.

It's easy to identify an individual's padlock in this set—the body of each lock is a different color. Padlocks are American Lock series 1105 with an aluminum body and hardened steel shackle. All have a five-pin tumbler. Shackle diameter is 1/4″. Vertical shackle clearance is 1″. Horizontal shackle clearance is 3/4″. Body is 1 13/16″ Ht. × 1 1/2″ Wd. × 3/4″ Thick. Each padlock has a specific key number and comes with two keys. The master key opens all the locks.

If you want to expand your set, additional padlocks, keys, and a master key are sold separately.

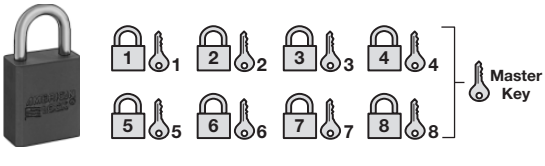

Master Keyed Padlock Set

You'll get eight padlocks in different colors (and key numbers): one each in black (0030), blue (0020), brown (0040), green (0015), orange (0025), purple (0045), red (0005), and yellow (0010). The included master key opens all the locks.

1455A19 ..... **Per Set** $124.81

Additional Master Key—Master key number is M58501.

The master key opens all the padlocks in the set.

1455A9 ..... **Each** $2.27

Additional Padlocks and Keys

Color (Key No.)	Additional Padlocks	Each	Additional Keys	Each
Black (0030)	1455A6	$15.92	1455A16	$2.27
Blue (0020)	1455A4	15.92	1455A14	2.27
Brown (0040)	1455A7	15.92	1455A17	2.27
Green (0015)	1455A3	15.92	1455A13	2.27
Orange (0025)	1455A5	15.92	1455A15	2.27
Purple (0045)	1455A8	15.92	1455A18	2.27
Red (0005)	1455A1	15.92	1455A11	2.27
Yellow (0010)	1455A2	15.92	1455A12	2.27

For information about padlocks, see page 2932. For information about keying options, see page 2934.

About Master Keyed Padlocks

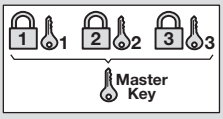

Choose these locks if you want individual locks or groups of locks that open with their own key, but also open with a master key. An example is locker assignments. Each person uses a padlock that has a random key number—each person can open only their own locker. In a master keyed system, one person has a master key that opens all of the lockers.

We also offer master keyed padlock sets. Master keyed sets have padlocks (or groups of padlocks) with different key numbers. Each person can open their own lock (or the locks in their group). One person has a master key that opens every lock in the set. For master keyed padlock sets, see pages 2940 and 2941.

Choose-a-Color Padlocks (Master Keyed)

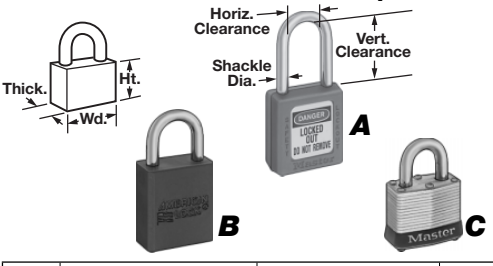

- All include two keys, unless noted. Master keys sold separately.

Identify these master keyed locks by color. All locks have random key numbers; they also open with a master key (sold separately). Shackle is hardened steel.

If the lock keyed to the master key number you want isn't listed, order in the "Other Padlocks" row and specify your desired master key number and lock color.

A ***Master Lock Thermoplastic Body***—Entire body is colored. Locks include a "Danger" label (as pictured) and a write-on label marked "Property of." All have a six-pin tumbler.

B ***American Lock Aluminum Body***—Entire body is colored. Locks have a five-pin tumbler.

C ***Master Lock Laminated-Steel Body***—Have a colored bumper and a four-pin tumbler.

Style	SHACKLE Dia.	SHACKLE Clearance Vert.	SHACKLE Clearance Horiz.	Body Ht.×Wd.×Thick.	Series No.	Padlocks Color	Padlocks Opens with Master Key No.	Padlocks Each	Master Keys Each
A	1/4″	1 1/2″	13/16″	1 3/4″×1 1/2″×3/4″	410	Black	BY8	13305A138♦ $18.75	13305A148 ... $3.87
						Blue	BY5	13305A135♦ $18.75	13305A145 ... $3.87
						Green	BY4	13305A134♦ $18.75	13305A144 ... $3.87
						Orange	BY2	13305A132♦ $18.75	13305A142 ... $3.87
						Purple	BY7	13305A137♦ $18.75	13305A147 ... $3.87
						Red	BY1	13305A131♦ $18.75	13305A141 ... $3.87
						Teal	BY6	13305A136♦ $18.75	13305A146 ... $3.87
						Yellow	BY3	13305A133♦ $18.75	13305A143 ... $3.87
						Other Padlocks		13305A4♦ $18.75	——— ... ———
A	1/4″	1 1/2″	13/16″	3″×1 1/2″×3/4″	411	Black	BY16	13305A178♦ $20.22	13305A188 ... $3.87
						Blue	BY13	13305A175♦ $20.22	13305A185 ... $3.87
						Green	BY12	13305A174♦ $20.22	13305A184 ... $3.87
						Orange	BY10	13305A172♦ $20.22	13305A182 ... $3.87
						Red	BY9	13305A171♦ $20.22	13305A181 ... $3.87
						Yellow	BY11	13305A173♦ $20.22	13305A183 ... $3.87
						Other Padlocks		13305A5♦ $20.22	——— ... ———
B	1/4″	1″	3/4″	1 13/16″×1 1/2″×3/4″	1105	Black	404M	12095A45 ..... $17.29	12095A55 ..... $2.45
						Blue	401M	12095A42 ..... $17.29	12095A52 ..... $2.45
						Brown	412M	1158A51..... $17.29	1158A81..... $2.45
						Gold	403M	12095A44 ..... $17.29	12095A54 ..... $2.45
						Green	402M	12095A43 ..... $17.29	12095A53 ..... $2.45
						Orange	425M	12095A132..... $17.29	12095A142 ... $2.45
						Purple	423M	12095A131 ..... $17.29	12095A141 ... $2.45
						Red	405M	12095A41 ..... $17.29	12095A51 ..... $2.45
						Other Padlocks		12095A101 ..... $17.29	——— ... ———
B	1/4″	3″	3/4″	1 13/16″×1 1/2″×3/4″	1107	Black	409M	12095A85 ..... $20.02	12095A95 ..... $2.45
						Blue	406M	12095A82 ..... $20.02	12095A92 ..... $2.45
						Gold	408M	12095A84 ..... $20.02	12095A94 ..... $2.45
						Green	407M	12095A83 ..... $20.02	12095A93 ..... $2.45
						Orange	427M	12095A172..... $20.02	12095A182 ... $2.45
						Purple	428M	12095A171 ..... $20.02	12095A181 ... $2.45
						Red	410M	12095A81 ..... $20.02	12095A91 ..... $2.45
						Other Padlocks		12095A102..... $20.02	——— ... ———
C	9/32″	3/4″	5/8″	1 3/8″×1 9/16″×1 1/8″	3	Black	SB742	11775A41 ..... $13.57	11775A51 ..... $3.87
						Blue	SM737	11775A46 ..... $13.57	1176A54..... $3.87
						Green	SB734	11775A44 ..... $13.57	11775A54 ..... $3.87
						Red	SB730	11775A43 ..... $13.57	11775A53 ..... $3.87
						Other Padlocks		11775A6..... $13.57	——— ... ———
C	9/32″	2″	5/8″	1 3/8″×1 9/16″×1 1/8″	3	Black	SB743	11775A81 ..... $16.05	11775A91 ..... $3.87
						Blue	SB757	11775A86 ..... $16.05	1176A73..... $3.87
						Green	SB734	11775A84 ..... $16.05	11775A94 ..... $3.87
						Red	SB729	11775A83 ..... $16.05	11775A93 ..... $3.87
						Yellow	SB730	11775A85 ..... $16.05	11775A95 ..... $3.87
						Other Padlocks		11775A7..... $16.05	——— ... ———

♦ Includes one key.

For information about padlocks, see page 2932.

Master Lock Combination Padlocks

Perfect for personal-storage lockers, these locks have a three-digit combination and a stainless steel outer wall that protects the inner case. Shackle is hardened steel. Dial is black with white numbers and has a large knurled knob.

Standard Security—Have a lever locking one shackle leg. Inner case is steel. Body is 1⅞″ Dia. × 1″ Thick.

High Security—Each shackle leg has a hardened stainless steel ball-bearing locking mechanism, making the lock more difficult to shim and pull apart. Dial rim is recessed and reinforced to prevent tampering. Inner case is zinc with a steel backplate. Body is 2³⁄₁₆″ Dia. × 1½″ Thick.

Key-controlled locks let you open the shackle with a control key (sold separately) instead of the combination. All have a four-pin tumbler. *Factory-registered* locks give you an exclusive keying system that is unique to your locks. **To Order:** If matching factory-registered locks to an existing group, please specify key number.

Standard Security — *Key Controlled High Security*

Combination Padlocks

SHACKLE Dia.	Clearance Vert.	Clearance Horiz.	Series No.		Each
Standard Security					
9/32″	3/4″	13/16″	1500	1180A11	$6.30
9/32″	1½″	13/16″	1500	1180A12	7.75
9/32″	2″	13/16″	1500	1180A13	8.79
High Security					
5/16″	1″	15/16″	2001	1876A21	15.64

Key-Controlled Combination Padlocks

SHACKLE Dia.	Clearance Vert.	Clearance Horiz.	Series No.	Padlocks	Each	Control Keys	Each
Standard Security—Not Factory Registered							
9/32″	3/4″	13/16″	1525	1186A22	$8.44	1186A23	$3.28
9/32″	1½″	13/16″	1525	1186A24	9.96	1186A23	3.28
Standard Security—Factory Registered							
9/32″	3/4″	13/16″	1525	1186A11	8.44	1186A12	3.28
9/32″	1½″	13/16″	1525	1186A13	9.96	1186A12	3.28
9/32″	2″	13/16″	1525	1186A14	11.06	1186A12	3.28
High Security—Factory Registered							
5/16″	1″	15/16″	2010	1876A51	18.19	1876A52	3.28

Push-Button Combination Padlock

Enter the five-digit code to unlock the shackle. Body is chrome-plated zinc. Shackle is hardened steel. Overall size is 3⅝″ Ht. (to top of shackle) × 1⅝″ Wd. × ⅝″ Thick.

SHACKLE Dia.	Clearance Vert.	Clearance Horiz.		Each
9/32″	1″	3/4″	5203A21	$7.13

Hook Resettable-Combination Padlock

Dial-in a resettable three-digit combination. Three 10-digit wheels provide 1,000 possible combinations. Body and shackle are zinc with a painted black finish; latch is chrome-plated steel. O'all size is 3⁵⁄₁₆″ Ht. × 1¹⁵⁄₁₆″ Wd. × ½″ Thick.

SHACKLE Dia.	Clearance Vert.	Clearance Horiz.		Each
3/16″	1 3/16″	1 3/16″	1367A11	$6.13

Resettable-Combination Padlocks

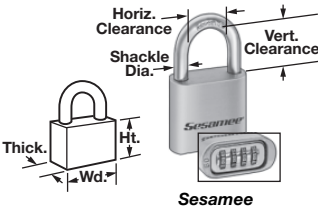

Sesamee

Laminated 3-Digit

Master Lock Key Controlled

Master Lock Concealed Shackle

Abus Lock 4-Digit

Letter Combination

Side 3-Digit

TSA Search Indicator

Set your own combination and change it at any time. Three-digit locks have 1,000 possible combinations; four-digit locks have 10,000 possible combinations; and five-letter lock has 50,000 possible combinations. ***Bottom-digit*** and ***front-digit*** locks have a hardened steel shackle. ***Side-digit*** locks have a steel shackle.

Super Sesamee—Locks have a hardened-steel jacket for extra toughness. Interior components are brass for corrosion resistance.

Laminated—Locks have a black bumper.

Key Controlled—Locks can open with a control key (sold separately).

Covered Digit—Cover snaps shut to protect dials from the weather. Locks have a black bumper.

Letter Combination—Use letters instead of numbers to unlock the shackle. Dials are plastic.

TSA Search Indicator—Lock secures your equipment cases during travel, but allows Transportation Security Administration (TSA) personnel to open your luggage. Indicator lets you know if the lock was opened.

No. of Digits	SHACKLE Dia.	Clearance Vert.	Clearance Horiz.	Body Ht.	Body Wd.	Body Thick.		Each
Bottom Digit								
Sesamee with Black Epoxy-Coated Zinc Body								
4	5/16″	1″	1″	1 11/16″	1 7/8″	7/8″	1160A6	$18.34
Sesamee with Brass Body								
4	5/16″	1″	1″	1 11/16″	1 7/8″	7/8″	1160A1	22.50
4	5/16″	2 1/4″	1″	1 11/16″	1 7/8″	7/8″	1160A2	23.57
4	5/16″	4″	1″	1 11/16″	1 7/8″	7/8″	1160A7	25.71
Super Sesamee with Black Epoxy-Coated Hardened Steel Body								
4	7/16″	1″	7/8″	2 1/4″	2 1/2″	1 3/8″	1160A71	37.64
4	7/16″	2″	7/8″	2 1/4″	2 1/2″	1 3/8″	1160A72	38.74
Super Sesamee Concealed Shackle with Black Epoxy-Coated Hardened Steel Body								
4	7/16″	1″	7/8″	3″	2 1/2″	1 3/8″	1160A73	49.83
Laminated with Nickel-Plated Steel Body								
3	1/4″	15/16″	13/16″	1 5/16″	1 1/2″	1 1/16″	11805A12	9.16
Laminated with Nickel/Chrome-Plated Steel Body								
4	5/16″	2 1/4″	15/16″	1 1/2″	2″	1 1/4″	11805A15	11.39
Covered Digit with Gray Thermoplastic-Covered Zinc Body								
4	5/16″	1 1/2″	1″	2 7/16″	2 5/16″	1 1/8″	1836A21	16.17
4	5/16″	2 1/2″	1″	2 7/16″	2 5/16″	1 1/8″	1836A22	16.98
Master Lock Key Controlled with Brass Body								
4	5/16″	1″	1″	1 7/8″	2″	15/16″	1836A17	26.09
4	5/16″	2 1/8″	1″	1 7/8″	2″	15/16″	1836A18	30.06

Control Key for Key-Controlled Padlocks ..... 1836A19 Each $3.18

No. of Digits	SHACKLE Dia.	Clearance Vert.	Clearance Horiz.	Body Ht.	Body Wd.	Body Thick.		Each
Bottom Digit (Cont.)								
Master Lock Concealed Shackle with Solid Brass Body								
4	5/16″	1″	1″	2 3/4″	2″	1″	1836A16	$23.25
Front Digit								
Abus Lock with Chrome-Plated Steel Body								
3	15/64″	7/8″	15/16″	1 3/4″	1 1/2″	5/16″	1836A11	19.66
4	5/16″	1″	1 1/8″	2 1/16″	2″	3/4″	1836A12	22.18
Chrome-Plated Zinc Body								
4	5/16″	1″	1 1/16″	2 1/8″	2 1/8″	3/4″	1836A13	17.14
4	5/16″	2 9/16″	1 1/16″	2 1/8″	2 1/8″	3/4″	1836A14	18.21
Letter Combination with Black Powder-Coated Zinc Body								
5	1/4″	1 1/8″	1 3/8″	1 1/4″	2 3/4″	1 1/4″	1214A1	9.80
Side Digit								
Nickel-Plated Zinc Body								
3	1/8″	13/16″	5/16″	1 7/16″	7/8″	1/2″	1559A54	5.69
3	1/4″	15/16″	1/2″	1 7/16″	1 1/4″	1/2″	1559A55	6.09
4	1/8″	13/16″	5/16″	1 11/16″	7/8″	1/2″	1559A56	5.61
Brass-Plated Aluminum Body								
4	1/4″	7/8″	1″	1 13/16″	1 9/16″	5/8″	1559A21	11.02
Choose-a-Color Powder-Coated Zinc Body								
To Order: Please specify body color: black, green, or red.								
3	1/8″	7/8″	5/16″	1 7/16″	7/8″	1/2″	1559A64	6.07
TSA Search Indicator with Black Powder-Coated Zinc Body								
3	1/4″	1 1/2″	1″	1 5/8″	1 1/8″	1/2″	1198A1	10.02

Shackleless Through-Bolt Padlocks and Security Hasp

Padlock with Optional Security Hasp

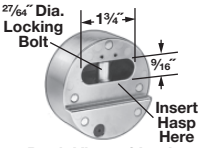

Back View of Lock

- Padlocks include two keys. Master keys sold separately for 1749A13.

Also called hockey puck locks, these eliminate the most vulnerable part of any padlock—the shackle. Use with optional security hasp (sold separately) or any hasp eye with a min. 7/16″ dia. hole. The locking bolt passes through the hasp eye to protect against bolt cutters, hacksaws, and pry bars. If the lock keyed to the number you want isn't listed, order under "Padlocks for Other Key Nos." and specify your desired key number. ***Locks*** are solid chrome-plated steel with a six-pin tumbler. ***Optional security hasp*** is 1/4″ thick chrome-plated steel. Requires six 3/8″ dia. carriage bolts (not included).

Body Dia.	Body Thick.	Series No.	Padlocks Opens with Key Number		Padlocks Each	Master Key	Master Key Each	Padlocks for Other Key Nos.
Each Lock Opens with a Random Key								
2 7/8″	1 1/2″	2000	—	1749A11	$27.41	—	—	1749A121
Each Lock Opens with the Same Key (Keyed Alike)								
2 7/8″	1 1/2″	2000	13041	1749A12	29.79	—	—	1749A121
2 7/8″	1 1/2″	2000	84500	1749A123	29.79	—	—	1749A121
Each Lock Opens with a Random Key and a Master Key (Master Keyed)								
2 7/8″	1 1/2″	2000	401M6■	1749A13	38.01	1749A21	$3.68	1749A121

Optional Security Hasp (4 1/2″ Ht. × 9″ Lg.) ..... 1749A25 Each $25.91

■ 401M6 is a master key number.

Padlock Hasps

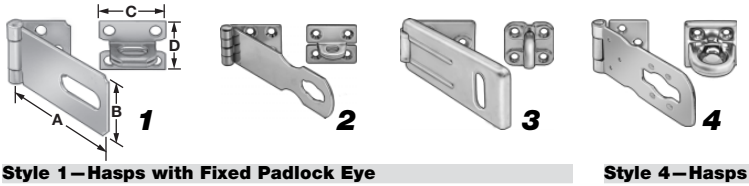

Styles 1&2— Padlock eye cannot be adjusted after installation.

Style 3— Padlock eye allows slight horizontal and vertical movement to compensate for misalignment with the hasp arm.

Style 4— Hasps can be fastened by turning the padlock eye; the hasp will stay closed without a padlock.

Style 1—Hasps with Fixed Padlock Eye

(A)	(B)	(C)	(D)	Proj.	Hasp Thick.	Eye ID★		Each
Zinc-Plated Steel—*Screws included*								
2 1/2″	1″	15/16″	1″	3/4″	1/8″	5/16″	1546A5	$2.65
3 1/4″	1 1/2″	1 5/8″	1 3/8″	15/16″	1/8″	3/8″	1546A6	2.93
4 7/16″	1 1/2″	1 5/8″	1 3/8″	15/16″	1/8″	3/8″	1546A7	3.99
6″	1 3/4″	1 5/8″	1 3/8″	15/16″	1/8″	3/8″	1546A8	5.64
7″	2 1/2″	2 1/4″	1 15/16″	1 7/16″	3/16″	3/4″	1546A11	14.66
Galvanized Hardened Steel—*Screws included*								
5 1/4″	1 13/16″	1 15/16″	1 1/2″	1 1/16″	1/8″	1/2″	1546A101	7.35
Plain-Finish Aluminum—*#8 screws required*								
3 1/2″	1 1/2″	1 1/2″	1 1/2″	7/8″	1/8″	1/2″	7030A1▲	18.67
Polished Brass—*#6 screws required*								
2″	1″	5/8″	7/8″	5/8″	1/8″	1/4″	1548A11	22.60
Polished Type 304 Stainless Steel—*#6 screws required*								
2 7/16″	1 3/16″	1 3/8″	1 3/16″	15/16″	1/16″	1/2″	1304A31	4.85
3 1/4″	1 3/16″	1 3/8″	1 3/16″	15/16″	1/16″	1/2″	1304A32	6.07
Dull Type 304 Stainless Steel—*#8 screws required*								
6″	2″	1 1/8″	2″	3/4″	1/8″	9/32″	1304A28	32.05

★ Max. padlock shackle diameter. ▲ Padlock eye is Type 304 SS.

Style 2—Hasps with Fixed Padlock Eye

(A)	(B)	(C)	(D)	Proj.	Hasp Thick.	Eye ID★		Each
Brass Colored Zinc-Plated Steel—*Screws included*								
2 7/16″	1″	11/16″	1″	3/4″	1/16″	9/32″	1547A1	$2.31
Polished Brass—*#6 screws required*								
3″	1″	1 1/2″	7/8″	1″	1/8″	1/2″	1548A12	26.91
Polished Type 304 Stainless Steel—*#5 screws required*								
2 7/16″	1″	1 1/4″	1 1/8″	11/16″	1/16″	5/16″	1304A24	5.22
3 7/16″	1″	1 1/4″	1 1/8″	11/16″	1/16″	5/16″	1304A26	5.28
4 1/4″	1″	1 1/4″	1 1/8″	11/16″	1/16″	5/16″	1304A33	6.01

★ Maximum padlock shackle diameter.

Style 3—Hasps with Adjustable Padlock Eye

(A)	(B)	(C)	(D)	Proj.	Hasp Thick.	Eye ID★		Each
Chrome-Plated Steel—*Screws included*								
3 1/2″	1 1/2″	1 1/2″	1 1/2″	7/8″	1/4″	11/32″	1545A1	$4.54
4 1/2″	1 13/16″	1 1/2″	1 1/2″	1 1/8″	5/16″	1/2″	1545A2	5.65
6″	2 3/8″	2 1/16″	2 1/16″	1 7/16″	7/16″	9/16″	1545A3	10.69

★ Maximum padlock shackle diameter.

Style 4—Hasps with Rotating Padlock Eye

(A)	(B)	(C)	(D)	Proj.	Hasp Thick.	Eye ID★		Each
Black-Finish Steel—*Screws included*								
3 5/16″	1 1/2″	1 9/16″	1 9/16″	1″	1/8″	3/8″	1544A7	$6.05
4 5/16″	1 1/2″	1 9/16″	1 9/16″	1″	1/8″	3/8″	1544A8	7.16
Zinc-Plated Steel—*Screws included*								
3 5/16″	1 1/2″	1 9/16″	1 9/16″	1″	1/8″	3/8″	1544A4	4.64
4 5/16″	1 1/2″	1 9/16″	1 9/16″	1″	1/8″	3/8″	1544A5	5.61
6″	1 3/4″	1 5/8″	1 5/8″	1 1/4″	1/8″	3/8″	1544A6	7.49
Polished Brass—*#6 screws required*								
2 5/8″	1″	1″	1 1/8″	1″	3/16″	5/16″	1205A1	7.03
Chrome-Plated Brass—*#6 screws required*								
2 5/8″	1″	1″	1 1/8″	1″	3/16″	5/16″	1205A2	6.37
Polished Type 304 Stainless Steel—*Screws included*								
1 1/2″	7/8″	7/8″	5/8″	7/8″	1/16″	13/64″	1912A15	11.00
1 7/8″	7/8″	7/8″	3/4″	15/16″	1/16″	7/32″	1912A16	11.50
2 7/16″	15/16″	15/16″	1″	1″	1/16″	17/64″	1912A17	13.00
2 7/8″	1 1/16″	1 1/16″	1 1/8″	1 1/16″	1/16″	11/32″	1912A18	18.00
3 3/4″	1 7/16″	1 7/16″	1 7/16″	1 1/16″	1/8″	27/64″	1912A19	31.90
4 9/16″	1 5/8″	1 5/8″	1 5/8″	1 1/4″	1/8″	27/64″	1912A21	46.00
Polished Type 304 Stainless Steel—*#8 screws required*								
2 5/8″	1 1/8″	1 1/16″	1 1/4″	15/16″	1/8″	21/64″	16295A32	12.15
Polished Type 316 Stainless Steel—*Screws included*								
3 1/2″	1 1/2″	1 1/2″	1 1/2″	1 3/8″	1/8″	25/64″	7033A1	15.08
4 1/2″	1 1/2″	1 1/2″	1 1/2″	1 3/8″	1/8″	25/64″	7033A2	17.46
6″	2″	1 1/2″	1 1/2″	1 3/8″	1/8″	25/64″	7033A3	22.19
Polished Type 316 Stainless Steel—*#8 screws required*								
2 11/16″	1″	1 1/16″	1 1/16″	1 3/16″	3/16″	11/32″	7033A4	26.46

★ Maximum padlock shackle diameter.

Zinc-Plated Steel Padlock Eyes

(C)	(D)	Thick.	Proj.	Eye ID★		Each
Fixed Padlock Eyes—*Screws included*						
1 1/4″	1 1/8″	1/8″	3/4″	5/16″	1724A4	$1.63
1 5/8″	1 3/8″	1/8″	15/16″	3/8″	1724A1	1.94
2 1/4″	1 7/8″	3/16″	1 7/16″	11/16″	1724A3	4.87
Adjustable Padlock Eye—*#10 screws required*						
2″	2 3/16″	1/8″	1 1/8″	5/8″	1724A32	3.01
Rotating Padlock Eye—*Screws included*						
1 5/8″	1 5/8″	1/8″	1 1/4″	3/8″	1724A8	3.18

★ Maximum padlock shackle diameter.

Padlock Hasps without Mounting Holes

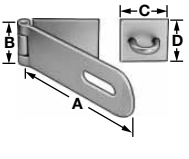

All of these hasps have a fixed padlock eye that cannot be adjusted after installation.

To mount ***steel*** and ***stainless steel*** hasps, drill mounting holes or weld in place. To mount ***acrylic*** hasp, use contact adhesive (see 7528A on page 3421).

(A)	(B)	(C)	(D)	Proj.	Hasp Thick.	Eye ID★		Each
Plain Steel								
1 5/8″	1″	3/4″	7/8″	3/4″	1/16″	25/64″	1750A12◆	$1.09
1 7/8″	1 1/8″	3/4″	7/8″	3/4″	1/16″	25/64″	1750A11◆	1.78
3 3/8″	1 1/2″	1 1/8″	1 1/2″	1 1/16″	1/8″	1/2″	1750A53	3.64
Polished Type 316 Stainless Steel								
3 1/2″	1 1/2″	1 1/2″	1 1/2″	13/16″	1/8″	25/64″	1047A41	9.62
4 1/2″	1 1/2″	1 1/2″	1 1/2″	13/16″	1/8″	25/64″	1047A43	12.33
6″	2″	1 1/2″	1 1/2″	13/16″	1/8″	25/64″	1047A45	17.56
Clear Acrylic								
2 3/16″	15/16″	15/16″	15/16″	5/8″	1/8″	3/16″	3538A42	.92

★ Maximum padlock shackle diameter. ◆ Padlock eye is "L" shaped.

Multi-Hinged Padlock Hasps

Hinged leaves on these hasps allow them to mount around curves, angles, and corners. All have a fixed padlock eye that cannot be adjusted after installation. Furnished with mounting screws.

Hasps with shackle protector prevent the shackle from being cut or pried open. They are designed for use with concealed-shackle and shackleless padlocks.

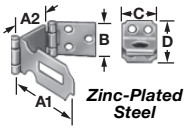

Zinc-Plated Steel

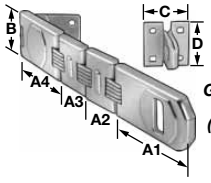

Galvanized Steel (4 Leaves)

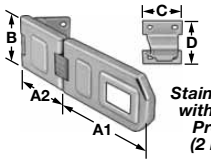

Stainless Steel with Shackle Protector (2 Leaves)

No. of Leaves	O'all Lg.	(A1)	(A2)	(A3)	(A4)	(B)	(C)	(D)	Eye ID★	Each
Zinc-Plated Steel—*1 3/16″ Proj.; 1/16″ Hasp Thick.*										
2	4 11/16″	3″	1 11/16″	—	—	1″	1 1/16″	1 7/16″	7/16″	**1359A6** $5.13
Hardened Chrome/Zinc/Nickel-Plated Galvanized Steel—*1 1/16″ Proj.; 3/8″ Hasp Thick.*										
2	6″	3 5/16″	2 3/4″	—	—	1 13/16″	1 1/2″	1 5/8″	31/64″	**1837A11** 10.26
3	7 3/4″	3 5/16″	1 7/16″	2 3/4″	—	1 13/16″	1 1/2″	1 5/8″	31/64″	**1837A12** 13.68
4	9″	3 5/16″	1 7/16″	1 7/16″	2 3/4″	1 13/16″	1 1/2″	1 5/8″	31/64″	**1837A13** 14.54
18-10 Stainless Steel with Shackle Protector—*1 1/16″ Proj.; 7/16″ Hasp Thick.*										
1	4 3/4″	4 3/4″	—	—	—	2 1/4″	1 5/8″	1 15/16″	21/32″	**1192A34** 13.45
2	7 1/2″	4 3/4″	2 3/4″	—	—	2 1/4″	1 5/8″	1 15/16″	21/32″	**1192A37** 17.49

★ Maximum padlock shackle diameter.

Heavy Duty Sliding Padlock Hasps

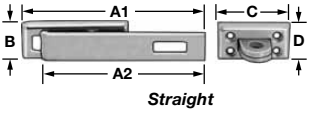

Straight

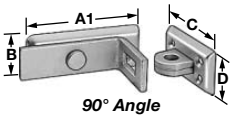

90° Angle

A 1/4″ thick sliding hasp arm stands up to heavy use. All have a fixed padlock eye that cannot be adjusted after installation. ***Zinc-plated steel*** hasps are furnished with mounting screws. Projection is 1″. ***Polished Type 304 stainless steel*** hasp requires 1/4″ screws (not included). Projection is 1 5/8″.

	(A1)	(A2)	(B)	(C)	(D)	Eye ID★	Each
Zinc-Plated Steel							
Straight	7 3/4″◤	6 3/4″	1 5/8″	3″	1 3/4″	9/16″	**1848A41** $11.02
90° Angle	5 3/16″	—	1 3/4″	3″	1 3/4″	17/32″	**1630A11** 11.76
Polished Type 304 Stainless Steel							
Straight	7 9/16″	6 5/8″	1 3/4″	3″	1 3/4″	9/16″	**1848A42** 35.07

★ Maximum padlock shackle diameter. ◤ Overall extended length.

Locking Hasps

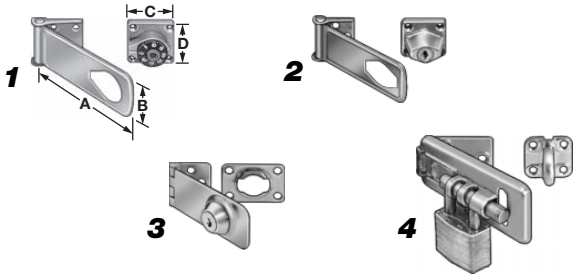

A lock is built into these hasps, eliminating the need for a separate padlock. All come with two keys except Style 1, which has a combination lock. Furnished with mounting screws.

Style 1—The lock is on the plate; just dial the three-digit combination. Hasp is zinc-plated steel.

Style 2—The plate has a five-wafer key lock. 16885A22 hasp is zinc-plated steel. 16885A25 hasp is chrome-plated steel.

Style 3—Has a four-wafer key lock on the hasp arm. Hasp is polished Type 304 stainless steel.

Style 4—A 1 3/4″ wide padlock with a four-pin tumbler is permanently attached to a 3/8″ dia. slide bolt. Hasp is chrome-plated steel. Master key is sold separately.

(A)	(B)	(C)	(D)	Proj.	Hasp Thick.	Key No.	Each
Dial Combination							
1 5 3/4″	2″	2″	2″	1 1/4″	1/8″	—	**16885A11** $12.58
Each Lock Opens with a Random Key							
2 4 5/16″	1 1/2″	1 5/8″	1 1/2″	1 1/4″	1/8″	—	**16885A22** 6.93
3 2 3/4″	1 1/4″	1 11/16″	1 3/16″	3/4″	1/16″	—	**16885A26** 8.40
4 4 1/2″	1 13/16″	1 1/2″	1 1/2″	1″	5/16″	—	**8031A14** 17.55
Each Lock Opens with the Same Key (Keyed Alike)							
2 4 1/2″	1 5/8″	1 5/8″	1 5/8″	1 1/4″	1/16″	620	**16885A25** 6.56
4 4 1/2″	1 13/16″	1 1/2″	1 1/2″	1″	5/16″	2523	**8031A16** 20.24
Each Lock Opens w/a Random Key and Master Key (Master Keyed)							
4 4 1/2″	1 13/16″	1 1/2″	1 1/2″	1″	5/16″	—	**8031A18** 21.06
Master Key #SK92 for 8031A18							**8031A19** Each $4.04

Corner Padlock Hasps

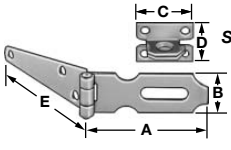

Standard Duty

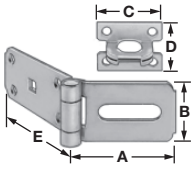

Heavy Duty

Mount these hasps around an inside or outside corner—an extra-long mounting arm provides the necessary support. All have a fixed padlock eye that cannot be adjusted after installation. Made of zinc-plated steel. Furnished with mounting screws. ***Standard duty*** hasps are 1/8″ thick. ***Heavy duty*** hasps are 3/16″ thick.

(A)	(B)	(C)	(D)	(E)	Proj.	Eye ID★	Each
Standard Duty							
2 7/16″	1 1/8″	1 1/8″	1 1/16″	2 7/8″	3/4″	5/16″	**1543A31** $3.01
2 7/16″	1 3/16″	1 1/8″	1 1/16″	3 7/8″	3/4″	5/16″	**1543A32** 4.00
3 15/16″	1 9/16″	1 5/8″	1 3/8″	5 7/8″	7/8″	7/16″	**1543A33** 5.37
Heavy Duty							
3 3/16″	1 7/8″	2 1/4″	1 7/8″	4 1/8″	1 7/16″	11/16″	**1543A44** 15.08

★ Maximum padlock shackle diameter.

Padlock Eyes

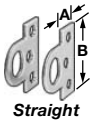

Straight

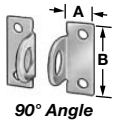

90° Angle

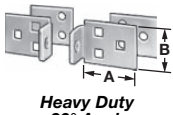

Heavy Duty 90° Angle

Each set includes two padlock eyes. Simply mount them on adjacent surfaces and insert a padlock through both eyes to secure any door (padlock not included). ***Straight eyes*** mount to inside edges. ***90° angle eyes*** mount to the front of your surface. ***Heavy duty 90° angle eyes*** mount to the front of your surface; set includes two backing plates.

Style	(A)	(B)	Proj.	Eye Thick.	Eye ID★	Per Set
Zinc-Plated Steel—*Mounting screws included*						
Straight	13/16″	2 1/8″	1 7/8″	1/8″	9/16″	**1183A11** $2.55
90° Angle	13/16″	2 1/8″	1 1/8″	1/8″	1/2″	**1183A12**♣ 3.60
Heavy Duty 90° Angle	2 1/2″	2″	1 11/16″	1/4″	1/2″	**8062A12** 9.26
Polished Type 304 Stainless Steel—*Mounting screws not included; require 1/4″ screws*						
Straight	7/8″	2 1/8″	1 15/16″	13/64″	5/8″	**1183A21** 14.00
90° Angle	7/8″	2 1/8″	1 1/4″	13/64″	5/8″	**1183A22** 11.38

★ Maximum padlock shackle diameter. ♣ Nickel-cadmium plated.

Padlock Hasp for Cam Locks

Install this hasp over a cam lock and secure it with a padlock (not included) to increase security on cabinets and chests. Designed for cam locks with up to a 1 1/16″ dia. head. Hasp has a fixed padlock eye that cannot be adjusted after installation. Made of Type 304 stainless steel with a polished finish. Furnished with mounting screws.

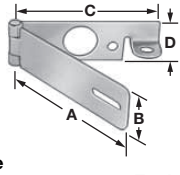

(A)	(B)	(C)	(D)	Proj.	Hasp Thick.	Eye ID★	Each
4 7/8″	1 3/8″	4 1/2″	1 3/8″	1 1/8″	1/8″	7/16″	**12475A57** $24.41

★ Maximum padlock shackle diameter.

About Cam Latches and Locks

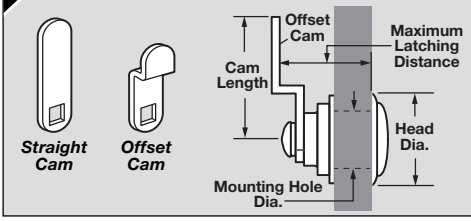

Cam latches and locks have an attached metal arm that rotates to lock cabinet doors and file drawers. The cam mechanism is either straight or offset. Offset cams are often reversible, which means they can be mounted to reach two different latching distances.

Latching distance is the distance between the outside mounting surface and the inside face of the cam. We provide the maximum latching distance possible after installation of the latch or lock. Some latches and locks have a latching distance range because their cams are adjustable. Latches and locks with fixed values for latching distance have cams that are not adjustable.

Cam Locks

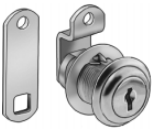

Locks have a zinc cylinder and reversible cams. All come with two keys. *Note:* Master keys for master-keyed locks are sold separately.

Locks for 1/2″ dia. mounting hole are recommended for mounting in metal and fiberglass. Head is 19/32″ dia. Locks come with a 1 1/8″ Lg. × 3/8″ Wd. straight cam, a 1 1/8″ Lg. × 3/8″ Wd. offset cam (11/32″ offset), a mounting nut, and a screw with washer for mounting in metal and fiberglass.

Locks for 3/4″ dia. mounting hole are recommended for mounting in metal and wood. Head is 7/8″ dia. Locks come with a 1 1/2″ Lg. × 5/8″ Wd. straight cam, a 1 1/8″ Lg. × 5/8″ Wd. offset cam (11/32″ offset), a trim washer, a mounting nut, and a lock washer for mounting in wood. Replacement washers for mounting in metal and wood are sold separately.

Locks

Max. Door/ Drawer Thick.	Max. Latching Distance	Polished Nickel Finish		Polished Brass Finish	
For 1/2″ Dia. Mounting Hole (Turn right 90° to unlock)					
13/32″	1″	11125A11	$6.05	—	—
For 3/4″ Dia. Mounting Hole (Turn right 90° to unlock)					
7/64″	3/4″	1770A51	5.90	15165A11	$7.40
15/64″	15/16″	1770A3	5.90	15165A21	7.40
5/8″	1 1/4″	1770A54	5.90	15165A14	7.40
7/8″	1 1/2″	1770A7	5.90	15165A27	7.34
For 3/4″ Dia. Mounting Hole (Turn right 90° to unlock) (Cont.)					
1 1/8″	1 3/4″	1770A41	$5.90	15165A31	$7.43
For 3/4″ Dia. Mounting Hole (Turn left 90° to unlock)					
15/64″	15/16″	1770A11	5.90	15165A41	8.22
7/8″	1 1/2″	1770A5	5.90	15165A24	8.22
For 3/4″ Dia. Mounting Hole (Turn right 90° or 180° to unlock)					
1 7/16″	2 1/16″	1770A71	7.29	15165A34	9.95

Locks Open with the Same Key

Max. Door/ Drawer Thick.	Max. Latching Distance	Opens with Key No.	Polished Nickel Finish		Polished Brass Finish	
For 1/2″ Dia. Mounting Hole (Turn right 90° to unlock)						
13/32″	1″	105	11125A12	$5.26	—	—
For 3/4″ Dia. Mounting Hole (Turn right 90° to unlock)						
7/64″	3/4″	C346A	1770A527	5.90	15165A12	$7.40
		C390A	1770A526	5.90	—	—
		C413A	1770A523	5.90	15165A203	7.40
		C415A	1770A524	5.90	15165A204	7.40
		C420A	1770A525	5.90	—	—
		C642A	1770A52	5.90	—	—
15/64″	15/16″	C346A	1770A412	5.90	15165A231	7.40
		C390A	1770A413	5.90	—	—
		C413A	1770A4	5.90	15165A233	7.40
		C415A	1770A415	5.90	15165A22	7.40
		C420A	1770A414	5.90	—	—
		C642A	1770A416	5.90	—	—
5/8″	1 1/4″	C346A	1770A557	5.90	15165A241	7.40
		C390A	1770A55	5.90	—	—
		C413A	1770A553	5.90	15165A15	7.40
		C415A	1770A555	5.90	15165A243	7.40
		C420A	1770A558	5.90	—	—
		C642A	1770A554	5.90	—	—
7/8″	1 1/2″	C346A	1770A813	5.90	15165A261	7.40
		C390A	1770A814	5.90	15165A262	7.40
		C413A	1770A815	5.90	15165A263	7.40
		C415A	1770A812	5.90	15165A264	7.40
		C420A	1770A816	5.90	15165A265	7.40
		C642A	1770A8	5.90	15165A28	7.40
For 3/4″ Dia. Mounting Hole (Turn right 90° to unlock) (Cont.)						
1 1/8″	1 3/4″	C346A	1770A42	$5.90	15165A32	$7.40
		C390A	1770A422	5.90	15165A271	7.40
		C413A	1770A425	5.90	15165A272	7.40
		C415A	1770A426	5.90	15165A273	7.40
		C420A	1770A424	5.90	15165A274	7.40
		C642A	1770A423	5.90	15165A275	7.40
For 3/4″ Dia. Mounting Hole (Turn left 90° to unlock)						
15/64″	15/16″	C346A	1770A123	6.47	15165A221	7.60
		C390A	1770A122	6.47	—	—
		C413A	1770A12	6.47	15165A223	7.60
		C415A	1770A124	6.47	15165A42	7.60
		C420A	1770A126	6.47	—	—
		C642A	1770A125	6.47	—	—
7/8″	1 1/2″	C346A	1770A316	6.47	15165A251	7.40
		C390A	1770A312	6.47	15165A252	7.40
		C413A	1770A315	6.47	15165A253	7.40
		C415A	1770A31	6.47	15165A254	7.40
		C420A	1770A314	6.47	15165A25	7.40
		C642A	1770A313	6.47	15165A255	7.40
For 3/4″ Dia. Mounting Hole (Turn right 90° or 180° to unlock)						
1 7/16″	2 1/16″	C346A	1770A72	7.29	15165A281	9.95
		C390A	1770A723	7.29	15165A35	9.95
		C413A	1770A726	7.29	15165A282	9.95
		C415A	1770A724	7.29	15165A283	9.95
		C420A	1770A725	7.29	15165A284	9.95
		C642A	1770A722	7.29	15165A285	9.95

Also Available: Additional keys for locks that open with the same key (except 11125A12). Please ask for 1770A2 and specify key number.

Locks Open with Their Own Key and a Master Key—Master key sold separately.

Max. Door/ Drawer Thick.	Max. Latching Distance	Polished Nickel Finish: Master Key No.	Locks		Master Key		Polished Brass Finish: Master Key No.	Locks		Master Key	
For 3/4″ Dia. Mounting Hole (Turn right 90° to unlock)											
7/64″	3/4″	E041A(E41A)	1770A53	$7.24	1770A25	$2.97	E041A(E41A)	15165A13	$11.82	1770A25	$2.97
15/64″	15/16″	E041A(E41A)	1770A1	7.24	1770A25	2.97	E041A(E41A)	15165A23	11.82	1770A25	2.97
5/8″	1 1/4″	E041A(E41A)	1770A56	7.24	1770A25	2.97	E041A(E41A)	15165A16	11.82	1770A25	2.97
7/8″	1 1/2″	E041A(E41A)	1770A9	7.24	1770A25	2.97	E041A(E41A)	15165A29	11.82	1770A25	2.97
1 1/8″	1 3/4″	E041A(E41A)	1770A43	7.24	1770A25	2.97	E041A(E41A)	15165A33	11.82	1770A25	2.97
For 3/4″ Dia. Mounting Hole (Turn left 90° to unlock)											
15/64″	15/16″	E01A(E1A)	1770A13	8.01	1770A26	2.97	E041A(E41A)	15165A43	11.58	1770A25	2.97
7/8″	1 1/2″	E02A(E2A)	1770A32	8.01	1770A28	2.97	E041A(E41A)	15165A26	11.58	1770A25	2.97
For 3/4″ Dia. Mounting Hole (Turn right 90° or 180° to unlock)											
1 7/16″	2 1/16″	E041A(E41A)	1770A73	8.13	1770A25	2.97	E041A(E41A)	15165A36	13.31	1770A25	2.97

Replacement Cams and Washers—For locks that fit in a 3/4″ dia. mounting hole.

Straight Cam (1 1/2″ Lg. × 5/8″ Wd.)	1770A111	$1.11	Washer for Mounting in Metal	1770A113	$0.95
Offset Cam (1 1/8″ Lg. × 5/8″ Wd. × 11/32″ Offset)	1770A112	1.84	Washer for Mounting in Wood	1770A114	.41

For information about cam latches and locks, see page 2946.

Circular-Keyway Cam Locks

Compared to conventional keys, circular keys provide more security because they are difficult to duplicate. Locks also have a tubular pin tumbler. Turn key 90° or 180° to the right or left to unlock. Cylinder is zinc with a polished nickel finish. Cams are steel. Head dia. is 7/8″.

Include two keys, a 1 9/16″ Lg.×5/8″ Wd. straight cam, a 1 7/16″ Lg.×5/8″ Wd. reversible offset cam (1/4″ offset), a cylinder nut with lock washer, two cam stops, and a mounting nut and washer. Recommended for mounting in metal, wood, plastic, and fiberglass. *Note:* Master key for master-keyed locks is sold separately.

Also Available: Replacement keys for locks that open with the same key. Please ask for 1682A41 and specify key number.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	Opens with Key No.		
Locks					
1/8″	15/16″	3/4″	—	**1682A51**	$20.26
11/16″	15/16″	3/4″	—	**1682A31**	20.24
15/16″	13/16″	3/4″	—	**1682A11**	21.15
1 1/8″	1 3/8″	3/4″	—	**1682A21**	20.87
1 1/8″	1 7/8″	3/4″	—	**1682A54**	20.87
Locks Open with the Same Key					
1/8″	15/16″	3/4″	27379	**1682A52**	20.26
11/16″	15/16″	3/4″	27379	**1682A32**	20.24
15/16″	13/16″	3/4″	PL505	**1682A12**	20.88
1 1/8″	1 3/8″	3/4″	PL505	**1682A22**	20.88
1 1/8″	1 7/8″	3/4″	PL505	**1682A55**	20.87
Locks Open with Their Own Key and a Master Key					
1/8″	15/16″	3/4″	Y18A	**1682A53**	22.00
11/16″	15/16″	3/4″	Y18A	**1682A33**	22.06
15/16″	13/16″	3/4″	Y18A	**1682A13**	22.06
1 1/8″	1 3/8″	3/4″	Y18A	**1682A23**	22.70
Master Key Y18A				**1682A15**	4.91

High-Security Cam Locks

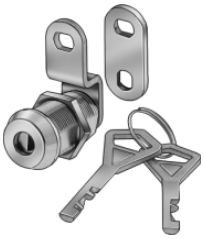

The half-moon shape of the keys is difficult to duplicate and makes these locks highly pick resistant. Turn key 180° to the right to unlock. Key is removable only in locked position. Cylinder is chrome-plated brass. Cams are nickel-plated steel. Head dia. is 7/8″.

Include two keys, a 1 1/8″ Lg.×5/8″ Wd. straight cam, a 1 1/2″ Lg.×5/8″ Wd. reversible offset cam (3/8″ offset), a nut lock washer, and a mounting nut. Recommended for mounting in metal, wood, and plastic. *Note:* Master keys for master-keyed locks are sold separately.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	Opens with Key No.		
Locks					
7/16″	1 1/8″	3/4″	—	**10765A31**	$23.01
7/8″	1 1/2″	3/4″	—	**10765A34**	28.91
Locks Open with the Same Key					
7/16″	1 1/8″	3/4″	6791738411	**10765A32**	23.01
7/8″	1 1/2″	3/4″	6946904531	**10765A35**	28.91
Locks Open with Their Own Key and a Master Key					
7/16″	1 1/8″	3/4″	93-0801-11S	**10765A33**	29.63
7/8″	1 1/2″	3/4″	93-0802-11S	**10765A36**	35.36
Master Key 93-0801-11S				**10765A38**	4.46
Master Key 93-0802-11S				**10765A39**	4.46

Plastic Cam Locks

Made of ABS plastic, the lock cylinder resists corrosion. Turn key 90° to the right to unlock. Cams are nickel-plated steel. Head diameter is 7/8″.

Furnished with two keys, a 1 1/4″ Lg.×5/8″ Wd. straight cam, a 1 1/4″ Lg.×5/8″ Wd. reversible offset cam (1/4″ offset), a mounting nut, and a cam screw. Recommended for mounting in metal, plastic, and fiberglass. Temperature range is 14° to 185° F.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	*Chrome*		*Black*	
Locks						
1/4″	7/8″	3/4″	**1561A11**	$3.89	**1561A12**	$3.89
9/16″	1 1/8″	3/4″	**1561A13**	4.05	**1561A14**	4.05
13/16″	1 3/8″	3/4″	**1561A15**	4.19	**1561A16**	4.19
Locks Open with Key No. 750						
1/4″	7/8″	3/4″	**1561A21**	3.89	**1561A22**	3.89
9/16″	1 1/8″	3/4″	**1561A23**	4.05	**1561A24**	4.05
13/16″	1 3/8″	3/4″	**1561A25**	4.19	**1561A26**	4.19

Miniature Circular-Keyway Cam Locks

With a head diameter of 19/32″, these locks are well-suited for small spaces. Their keys have a circular shape that is difficult to duplicate. Cams are reversible; their position determines the direction you turn the key. To engage lock, turn key 90°. Key is removable only in the locked position. Locks are brass with a polished chrome finish.

Include two keys, a 1 1/8″ Lg.×7/16″ Wd. reversible straight cam, a 1 1/8″ Lg.×7/16″ Wd. reversible offset cam (1/8″ offset), a cylinder nut, and a mounting nut. Recommended for mounting in metal and fiberglass.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	Opens with Key No.		
Lock					
9/16″	1″	1/2″	—	**13515A62**	$6.72
Lock Opens with the Same Key					
9/16″	1″	1/2″	601	**13515A64**	6.72

Weather-Resistant Cam Locks

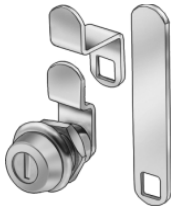

A Type 304 stainless steel spring-action shutter blocks liquid and dry contaminants from entering the cylinder where they can cause internal damage. Key will engage the lock with a 180° turn to either the right or left. Cylinder is zinc. Cams are nickel-plated steel. Head diameter is 7/8″.

Locks come with two keys, a 2 3/4″ Lg.×5/8″ Wd. straight cam (can be cut to size), two 1 5/16″ Lg.×5/8″ Wd. offset reversible cams (7/8″ offset and 1/4″ offset), a cylinder nut, mounting screw with washer, and trim washer. Recommended for mounting in metal and fiberglass.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	Opens with Key No.		
Locks					
5/16″	1 1/2″	3/4″	—	**13105A71**	$7.15
5/8″	1 3/4″	3/4″	—	**13105A72**	7.15
Locks Open with the Same Key					
5/16″	1 1/2″	3/4″	200R	**13105A75**	7.15
5/8″	1 3/4″	3/4″	200R	**13105A76**	7.15

Universal Mailbox Cam Locks

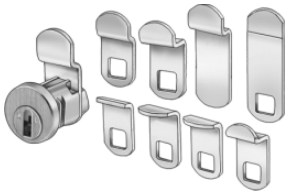

Meet U.S. postal guidelines for mailbox locks. Turn key 90° to the left to unlock. Key is removable only in the locked position. Cylinder is nickel-plated zinc. Cams are zinc-coated steel. Head diameter is 7/8″.

Includes two keys, nine reversible cams (lengths range from 3/4″ to 1 1/2″, offsets from 1/16″ to 7/16″), a quick-mount clip, cam nut, and lock washer. Recommended for metal, plastic, and fiberglass.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.		
3/16″	1 5/16″	3/4″	**1285A13**	$6.56

Recessed-Ring Cam Latches and Locks

Key Locking

Ring is recessed to stay out of the way when not in use; lift and twist 180° to the right to open. Latch and lock are chrome-plated brass. Ring and cams are 300 series stainless steel for corrosion resistance. O'all size is 2 1/8″ Lg.×1 7/8″ Wd.

Include a 2″ Lg.×5/8″ Wd. straight cam, a 2″ Lg.×5/8″ Wd. reversible offset cam (3/8″ offset), a mounting nut, and a lock washer. Recommended for mounting in metal, wood, plastic, and fiberglass.

Key-locking latch comes with two keys. Turn key 180° to the right or left to unlock.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	Handle Proj.		
Nonlocking Latch					
1 1/8″	1 11/16″	3/4″	3/16″	**1379A11**	$15.54
Key-Locking Latch Opens with Key No. S001					
1 1/8″	1 11/16″	3/4″	3/16″	**1379A13**	19.53

For information about cam latches and locks, see page 2946.

Resettable Combination Cam Locks

Dial in your three-number code and turn the knob 90° right or left to unlock. There are 1,000 different combinations possible—reset the lock with a paper clip. Made of zinc. Head diameter is 1½″. Knob projection is ⅝″.

Include a 1½″ Lg.×½″ Wd. straight cam, a ¾″ Lg.×½″ Wd. straight cam, and a 1½″ Lg.×½″ Wd. reversible offset cam (¼″ offset). Recommended for mounting in metal, wood, and fiberglass; secure from the back with the included cylinder nut.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	Chrome		Black	
⅜″	⅝″	¾″	7138A11	$11.42	7138A14	$11.42
⅝″	⅞″	¾″	7138A12	11.43	7138A16	11.43
⅞″	1⅛″	¾″	7138A13	11.43	7138A15	11.43

Wing-Handle Cam Latches

An easy-to-grasp wing handle simplifies use. Turn 90° right or left to unlatch; you select the turn direction when you mount the cam. Made of nickel-plated zinc. Wing handle is 1½″ long.

Furnished with a 1¼″ Lg.×⅝″ Wd. straight cam, a 1⅛″ Lg.×⅝″ Wd. reversible offset cam (¼″ offset), a hex nut, an assembly screw, and a lock washer. Recommended for mounting in metal, wood, and plastic.

Max. Door/ Drawer Thick.	Latching Distances	Mount. Hole Dia.	Handle Proj.		
¼″	⅜″, ⅝″, ⅞″	¾″	½″	1820A21	$4.45
9/16″	⅝″, ⅞″, 1⅛″	¾″	½″	1820A22	4.45
⅞″	⅞″, 1⅛″, 1⅜″	¾″	½″	1820A26	4.45

Adjustable Cam Latches

Turn the collar under the knob and set your latching distance exactly where you need it. To open and close, turn the knob 90° to the right or left. Control knob is black nylon and is not temperature rated. Latch and cam are zinc-plated steel.

Furnished with a reversible offset cam, a mounting nut, and two jam nuts. Recommended for mounting in metal, wood, plastic, and fiberglass.

Max. Door/ Drawer Thick.	Latching Distance Range	Mount. Hole Dia.	Knob Dia.	Knob Proj.		
3/16″	3/16″-1 11/16″	⅜″	½″	½″	1702A39	$15.14
¼″	⅛″-1 5/16″	½″	¾″	11/16″	1702A41	15.66
½″	3/16″-2 7/16″	11/16″	1⅛″	1″	1702A42	17.97

Dial Combination Cam Locks

To unlock, dial the three-number combination, push the knob in, and turn it 90° to the right. Made of zinc. Head diameter is 1″. Knob projection is ¾″.

Furnished with a 1½″ Lg.×⅝″ Wd. straight cam, a 1¼″ Lg.×⅝″ Wd. reversible offset cam (¼″ offset), a screw/lock washer, a stop washer, and a mounting nut. Recommended for mounting in metal and wood.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	Opens with Combination		
Locks					
⅜″	1¼″	¾″	—	1593A47	$10.62
⅝″	1¼″	¾″	—	1593A49	11.30
⅞″	1¼″	¾″	—	1593A53	11.42
Locks Open with the Same Combination					
⅜″	1¼″	¾″	10-5-10	1593A16	10.51
⅝″	1¼″	¾″	10-5-10	1593A18	11.22
⅞″	1¼″	¾″	10-5-10	1593A22	11.33

Slotted Cam Latches

Open the latch with a screwdriver instead of a key. The latch holds doors and drawers closed, but still allows easy access. You select both the direction and the degree of turn (90° or 180°). Latch is zinc; cams are steel.

Includes a 1½″ Lg.×⅝″ Wd. straight cam, a 1½″ Lg.×⅝″ Wd. reversible offset cam (3/16″ offset), a lock washer, two stop washers, and a mounting nut. Recommended for mounting in metal and wood.

Max. Door/ Drawer Thick.	Max. Latching Distance	Mount. Hole Dia.	Head Dia.		
¼″	13/16″	¾″	⅞″	10335A75	$5.48

Miniature Slotted Cam Latches

To unlatch, use a screwdriver to turn the slotted head 90° right or left. The head is small, so it's good for limited-space areas. Latch doesn't require any tools for installation—insert the shaft through a drilled hole and use the push-on retainer to tension-mount the latch against the inside surface. Made of steel.

Furnished with a 1 5/16″ Lg.×½″ Wd. straight cam. Recommended for mounting in metal, wood, plastic, and fiberglass.

Max. Door/ Drawer Thick.	Latching Distance Range	Mount. Hole Dia.	Head Dia.		
¾″	¼″-1″	¼″	9/16″	1340A31	$5.12

L- and T-Handle Cam Latches and Locks

Nonlocking L-Handle Latch with Exposed Screws

Key Locking T-Handle Latch with Concealed Screws

Use alone or with a three-point locking system commonly seen on filing cabinet doors. Mount cam to latch at a single point or, for additional strength, position it to drive a bar or rod into as many as two additional latch points. Handles are made of chrome-plated zinc alloy. They have a 2 5/16″ Lg.× 1 3/16″ Wd. base and fit into a ⅞″ dia. mounting hole.

Furnished with a 1¾″ Lg.×⅝″ Wd. three-point straight cam. Recommended for mounting in metal, wood, plastic, and fiberglass.

L-Handle Latches—All are 3 5/16″ Lg.×1″ Wd. and have a 1 11/16″ projection.

T-Handle Latches—All are 3 3/16″ Lg.×1″ Wd. and have a 1 13/16″ projection.

Concealed screw mount latches come with two M4 screws that screw in from the back of the handle. Require screw holes 1½″ apart (center-to-center). They have a 5/16″ Sq.×9/16″ Lg. spindle.

Exposed screw mount latches require two M4 screws (not included) that screw in from the front of the handle. Require screw holes 1¾″ apart (center-to-center). They have a 5/16″ Sq.×3 3/16″ Lg. spindle.

Key-locking latches come with two keys. *Note:* Master key for master-keyed locks is sold separately. **Also Available:** Replacement keys for locking latches. Please ask for 1210A77 and specify key number.

Screw Mounting	Max. Door Thick.	Max. Latching Distance	L-HANDLE LATCHES: Opens with Key Number	Turn Left 90° to Unlatch		Turn Right 90° to Unlatch		T-HANDLE LATCHES: Opens with Key Number	Turn Left 90° to Unlatch		Turn Right 90° to Unlatch	
Nonlocking Latches												
Concealed	⅛″	⅜″	—	1226A41	$14.16	1226A71	$11.93	—	1210A91	$11.76	1210A51	$14.07
Exposed	2 15/16″	3¼″	—	1226A42	13.78	1226A72	11.56	—	1210A92	11.67	1210A52	13.89
Key-Locking Latches												
Concealed	⅛″	⅜″	—	1226A43	16.09	1226A61	13.87	—	1210A81	13.93	1210A53	16.16
Exposed	2 15/16″	3¼″	—	1226A45	15.96	1226A63	13.73	—	1210A83	14.29	1210A55	16.51
Key-Locking Latches that Open with the Same Key												
Concealed	⅛″	⅜″	92303	1226A44	16.09	1226A62	13.87	92301	1210A82	13.93	1210A54	16.16
Exposed	2 15/16″	3¼″	92304	1226A46	15.96	1226A64	13.73	92302	1210A84	14.29	1210A56	16.51
Key-Locking Latches that Open with Their Own Key and a Master Key—*Master key sold separately*												
Concealed	⅛″	⅜″	92 Series	1226A47	16.09	1226A51	16.09	92 Series	1210A71	16.16	1210A57	16.16
Exposed	2 15/16″	3¼″	92 Series	1226A48	15.96	1226A52	15.96	92 Series	1210A72	16.51	1210A58	16.51

Replacement L-Handle—Concealed Screw Mount	1226A81	$8.00
Master Key—92 Series	1226A77	5.51

For information about cam latches and locks, see page 2946.

Padlockable L-Handles and Latches

Mount handles on heavy doors, such as those found on trucks and large cabinets; secure with a padlock (not included). An optional reversible latch is sold separately. Handles rotate 360° right and left. They mount to the front surface of a door and require #10 mounting screws (not included). Recommended for mounting in metal, wood, plastic, and fiberglass.

Zinc-Plated Steel L-Handle—Handle has a dull silver powder-coated finish; shaft is plain.

Type 304 Stainless Steel L-Handle—Handle and shaft have a dull finish.

Optional Reversible Latch—Depending on how you position this latch, it can unlatch when the handle (sold separately) is turned to the right or left. Made of zinc-plated steel. Latch is 3″ Lg.×1″ Wd. with an 11/32″ projection. Requires two #14 mounting screws (not included). Cam is 5/8″ Lg.×11/16″ Wd.

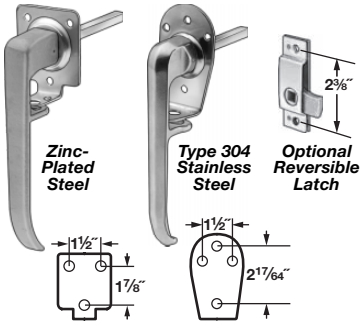

Material	Max. Door Thick.	Cutout Size, Sq.	Mount. Surface Ht.	Mount. Surface Wd.	Handle Lg.	Handle Proj.	Shaft Lg.	Max. Padlock Shackle Dia.		
Zinc-Plated Steel	3″	1/2″	2 3/4″	2 1/4″	6 7/8″	1 7/8″	3 3/4″	1/2″	1654A11	$16.71
Type 304 SS	3″	1/2″	3 1/2″	2″	6 1/16″	1 13/16″	3 1/4″	3/8″	1654A21	33.82
Optional Reversible Latch									13465A43	4.69

Water- and Dust-Resistant Cam Latches and Locks

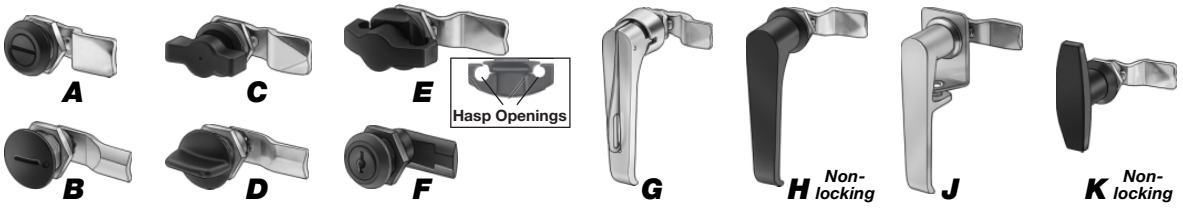

Designed for indoor and outdoor use, all latches and locks are IP65 rated for protection against dust and water projected from a nozzle. Unlatch with a 90° turn to the right or left. Mount into an approximately 7/8″ dia. punched hole.

Include three nonreversible cams with a variety of offsets, except Styles B and D come with one nonreversible cam (5/16″ offset). Cams are 1 3/4″ Lg.×3/4″ Wd., except cam for Style F is 1 3/8″ Lg.×3/4″ Wd.

Key-locking latches include two keys, except 80625A48 comes with one key.

Style E has two hasp openings that accommodate padlocks with a 5/32″ and 3/8″ diameter shackle.

Style F has a temperature range of –4° to +194° F.

Styles G&J have a Type 304 stainless steel hasp with an opening that accommodates a padlock with a max. shackle dia. of 5/16″.

Zinc Latches and Locks

	Max. Door Thick.	Latching Distances	Handle Projection	Handle/Head Size, Lg.×Wd.	Chrome Finish		Black Finish	
Nonlocking								
A Slotted	3/16″	3/8″, 11/16″, 1 1/4″	1/4″	1 1/8″ Dia.	12265A51	$11.71	12265A53	$11.20
B Slotted	1/2″	5/8″	3/16″	1 1/4″ Dia.	80625A32	8.45	80625A34	7.62
C Wing	3/16″	3/8″, 11/16″, 1 1/4″	7/8″	2″ × 1 1/8″	12265A55	14.77	12265A57■	14.08
D Wing	1/2″	5/8″	13/16″	1 1/4″ × 3/16″	80625A36	7.06	80625A38	7.62
H L-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 9/16″	4 3/16″ × 1″	80625A46	28.04	80625A52★	20.44
K T-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 9/16″	3 1/16″ × 13/16″	80625A45	21.24	80625A54★	18.26
Padlockable								
E Wing	5/16″	11/16″, 13/16″, 1 1/16″	13/16″	2″ × 1/2″	—	—	80625A41	22.84
G L-Handle	5/16″	3/8″, 3/4″, 1 3/16″	2 1/8″	4 9/16″ × 1″	80625A74	38.12	80625A56	38.12
Key Locking—*Locks open with key number EK333.*								
H L-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 9/16″	4 3/16″ × 1″	80625A49	40.22	80625A53★	29.44
K T-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 9/16″	3 1/16″ × 13/16″	80625A48	33.54	80625A55★	27.10

■ Latching distances are 3/8″, 11/16″, 1 1/16″; handle/head size is 1 5/8″ Lg.×13/16″ Wd. ★ Black nylon handle; temp. range is –4° to +248° F.

Stainless Steel Latches and Locks

	Max. Door Thick.	Latching Distances	Handle Projection	Handle/Head Size, Lg.×Wd.	TYPE 304 Dull Finish		TYPE 316 Dull Finish	
Nonlocking								
A Slotted	5/16″	11/16″, 13/16″, 1 1/16″	3/16″	1 1/8″ Dia.	80625A67	$38.44	80625A58	$87.44
C Wing	5/16″	11/16″, 13/16″, 1 1/16″	1 3/8″	2″ × 13/16″	80625A68★	40.80	—	—
H L-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 9/16″	4 3/16″ × 1″	80625A69	80.62	1416A12♠	169.65
K T-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 9/16″	3 3/16″ × 13/16″	80625A44	95.66	1416A11♠	168.78
Padlockable								
J L-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 5/16″	4 1/16″ × 13/16″	80625A75	168.12	1416A13♠	208.22
Key Locking—*Locks open with key number 1333.*							***Polished Finish***	
H L-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 1/2″	4 5/8″ × 5/8″	—	—	1416A22	$89.84
K T-Handle	5/16″	11/16″, 13/16″, 1 1/16″	1 1/2″	3 1/8″ × 7/16″	—	—	1416A21	81.35

★ Black nylon handle; temp. range is –4° to +248° F. ♠ Type 304 stainless steel cam.

Nylon Lock

	Max. Door Thick.	Latching Distances	Handle Projection	Head Dia.	Black Finish	
Key Locking						
F Key Slot	5/16″	11/16″, 13/16″, 1 1/16″	1/4″	1 1/8″	80625A61	$18.89

Two-Handle Bolt Latches

Operate these latches from either side of your door—there is a handle on both sides. Latches require a 3/4″ dia. hole through the door for installation. Made of zinc-plated steel. Accept a padlock with a max. shackle diameter of 3/8″. Reversible for right- and left-hand mounting. Furnished with mounting screws.

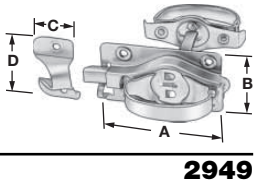

Max. Door Thick.	(A)	(B)	(C)	(D)	Proj.		
2″	5″	2 13/16″	1 3/4″	2 3/4″	2 1/2″	1355A11	$13.45
3″	5″	2 13/16″	1 3/4″	2 3/4″	2 1/2″	1355A12	13.80

For information about cam latches and locks, see page 2946; for cabinet locks, see page 2952.

Replaceable-Core Cabinet Locks

Combine a lock body with a replaceable core so you can match the keying of your current system, or have the option of changing the core without replacing the entire lock. It's a great way to save time and expense. Locks require a 180° turn to open.

Lock Bodies

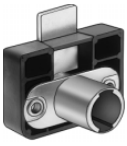

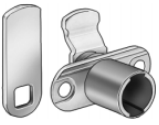

Lock bodies are made of zinc and have a 5/8″ dia. cylinder. Recommended for mounting in wood drawers, doors, and cabinets.

Deadbolt body is 1 1/4″ Ht.×1 3/4″ Wd.×1/2″ Dp. Cylinder is 3/4″ long. Bolt extension is 3/8″. Housing is nylon.

Cam body has a 5/8″ Ht.×1 11/16″ Wd.×1/8″ Thick. mounting plate. Cylinder is 3/4″ long. Furnished with a 1 1/4″ Lg.×5/8″ Wd. straight cam and a 13/16″ Lg.×5/8″ Wd. offset cam. Cams are zinc-plated steel.

	Max. Door/Drawer Thick.		
Deadbolt	3/4″	17825A21	$2.67
Cam	3/4″	17825A22	4.25

Lock Cores

Lock cores fit the deadbolt and cam lock bodies. To insert, snap the core into the lock body. Removal requires the *core removal tool* (sold separately). Cores are 5/8″ dia.

Furnished with two keys and a matching trim ring that adapts the lock for use with 3/4″ holes. *Note:* Master key for master-keyed lock is sold separately.

To Order: Please specify black, brass, or nickel finish.

Dia.	Opens with Key Number		
Lock Core			
5/8″	___	17825A42	$4.43
Lock Cores Open with the Same Key			
5/8″	598T	17825A47	4.43
5/8″	599T	17825A45	4.43
5/8″	600T	17825A46	4.43
Lock Core Opens with Its Own Key and a Master Key			
5/8″	7T	17825A44	4.43
Master Key 7T		17825A34	3.23
Core Removal Tool		17825A33	6.63

Spring-Cam Latches

Knob

Slotted

T-Handle

Give the latches a quarter turn and their spring-wire cams slip under a receiving catch on a cabinet body and hold the surfaces together. A 90° turn to the left releases the tension and opens your door or drawer. Latches can be screwed, riveted, or welded on to the back of your mounting surface.

Recommended for mounting in metal, wood, plastic, and fiberglass. Mounting screws not included.

Style	Max. Door/ Drawer Thick.	Latching Distance Range	Mount. Hole Dia.	Screw Size	Center-to-Center (A)	Handle Projec-tion	Mounting Plate Lg.	Mounting Plate Wd.	Knob/ Head Dia.	Cam Lg.		
Zinc-Plated Steel												
Knob	1/8″	1/16″-1/8″	5/16″	#3	7/8″	1/2″	1 1/16″	5/16″	5/16″	11/16″	1866A1	$3.48
Knob	1/4″	1/16″-1/4″	7/16″	#3	1 5/16″	1/2″	1 9/16″	7/16″	3/8″	1 1/16″	1866A3	3.04
Knob	3/8″	1/16″-3/8″	9/16″	#6	1 15/16″	11/16″	2 5/16″	5/8″	9/16″	1 9/16″	1866A12	3.79
Slotted	1/8″	1/16″-1/8″	5/16″	#3	7/8″	1/16″	1 1/16″	5/16″	1/4″	11/16″	1866A2	3.01
Slotted	1/4″	1/16″-1/4″	7/16″	#3	1 5/16″	1/8″	1 9/16″	7/16″	3/8″	1 1/16″	1866A4	2.45
Slotted	3/8″	1/16″-3/8″	1/2″	#6	1 15/16″	1/8″	2 5/16″	5/8″	1/2″	1 9/16″	1866A31	2.91
Slotted	9/16″	1/8″-9/16″	13/16″	#10	2 15/16″	3/16″	3 1/2″	15/16″	3/4″	2 5/16″	1866A5	8.47
T-Handle	1/4″	1/16″-3/8″	9/16″	#6	1 15/16″	3/4″	2 5/16″	5/8″	9/16″	1 9/16″	1866A33	5.43
T-Handle	5/16″	1/8″-9/16″	13/16″	#10	2 15/16″	1 1/16″	3 1/2″	15/16″	13/16″	2 5/16″	1866A6	12.33
Type 302 Stainless Steel												
Knob	3/8″	1/16″-3/8″	9/16″	#6	1 15/16″	11/16″	2 5/16″	5/8″	9/16″	1 9/16″	1866A14	9.06
Slotted	1/4″	1/16″-3/8″	1/2″	#6	1 15/16″	1/8″	2 5/16″	5/8″	1/2″	1 9/16″	1866A32	7.26

Lift-and-Turn Fixed-Compression Cam Latches and Locks

Lever Handle

Key-Locking Flush Handle

To latch, turn the handle 90° and push it down. Latches reach full compression as soon as the cam is engaged. To unlatch, lift the handle to release the compression, then turn 90°. The direction of turn depends on installation. All are through-hole mount. Latches are zinc; cams are zinc-plated steel.

Furnished with a reversible offset cam (except cam for 1619A13 and 1619A36 is not reversible) and mounting hardware. The offset cam provides variable latching ranges depending on cam position. Recommended for mounting in metal, wood, plastic, and fiberglass.

Key-locking latches come with two keys. They open with key number CH751.

Max. Door Thick.	Latching Distance Range Short	Latching Distance Range Long	Mounting Hole Size, Ht.×Wd.	Projection Front	Projection Back	Cam Lg.	Cam Wd.	Compression, lbs.	Chrome Finish		Black Finish	
Miniature with Lever Handle— *Handle is 1 3/8″ Lg.×1/2″ Wd.*												
3/16″	0″-1/8″	1 1/8″-1 5/16″	3/8″ Dia.	11/16″	1 1/16″	1 1/16″	1/2″	50	1619A51	$10.33	1619A54	$9.17
3/16″	3/16″-3/8″	7/8″-1 1/16″	3/8″ Dia.	11/16″	1 1/16″	1 1/16″	1/2″	50	1619A52	10.33	1619A55	9.17
3/16″	7/16″-5/8″	5/8″-7/8″	3/8″ Dia.	11/16″	1 1/16″	1 1/16″	1/2″	50	1619A53	10.33	1619A56	9.17
Small with Lever Handle— *Handle is 2 3/16″ Lg.×3/4″ Wd.*												
1/4″	1/8″-7/16″	1 1/4″-1 5/8″	11/16″ Dia.	1 1/4″	1 9/16″	1 11/16″	5/8″	125	1619A11	16.74	1619A34	11.64
1/4″	1/2″-7/8″	7/8″-1 1/4″	11/16″ Dia.	1 1/4″	1 9/16″	1 11/16″	5/8″	125	1619A12	16.74	1619A35	11.64
1/4″	___	1 11/16″-2″	11/16″ Dia.	1 1/4″	1 9/16″	1 11/16″	5/8″	125	1619A13	16.74	1619A36	11.64
Small with Flush Handle— *Handle is 1 13/16″ Lg.×7/8″ Wd.*												
1/8″	3/16″-3/8″	1 3/8″-1 9/16″	1 5/8″×11/16″	1/16″	1 3/8″	1 1/16″	1/2″	50	1619A15	27.24	1619A38	22.02
1/8″	7/16″-5/8″	1 1/8″-1 5/16″	1 5/8″×11/16″	1/16″	1 3/8″	1 1/16″	1/2″	50	1619A16	27.24	1619A39	22.02
Large with Flush Handle— *Handle is 3 3/8″ Lg.×1 5/8″ Wd.*												
1/4″	1/4″-5/8″	2 1/4″-2 9/16″	2 7/8″×1 3/16″	3/16″	2 1/4″	1 11/16″	5/8″	100	1619A17	32.60	1619A43	25.16
1/4″	5/8″-1″	1 13/16″-2 13/16″	2 7/8″×1 3/16″	3/16″	2 1/4″	1 11/16″	5/8″	100	1619A18	32.60	1619A44	25.16
1/4″	1 1/16″-1 3/8″	1 7/16″-1 13/16″	2 7/8″×1 3/16″	3/16″	2 1/4″	1 11/16″	5/8″	100	1619A19	32.60	1619A45	25.16
Key-Locking Large with Flush Handle— *Handle is 3 3/8″ Lg.×1 5/8″ Wd.*												
1/4″	1/4″-5/8″	2 1/4″-2 9/16″	2 7/8″×1 3/16″	3/16″	2 1/4″	1 11/16″	5/8″	100	1619A24	47.41	1619A47	36.20
1/4″	5/8″-1″	1 13/16″-2 13/16″	2 7/8″×1 3/16″	3/16″	2 1/4″	1 11/16″	5/8″	100	1619A25	47.41	1619A48	36.20
1/4″	1 1/16″-1 3/8″	1 7/16″-1 13/16″	2 7/8″×1 3/16″	3/16″	2 1/4″	1 11/16″	5/8″	100	1619A26	47.41	1619A49	36.20

For information about cam latches and locks, see page 2946.

Compression Cam Latches and Locks

Turn 90° to latch, then another 90° to draw the cam firmly against the door or drawer surface to hold it tightly closed.

Styles A, B, and ***D-F*** have a work load limit of 100 lbs. Handles and heads are zinc with a black finish. Latches come with a reversible offset cam; the offset cam provides variable latching ranges depending on the cam position. Recommended for mounting in metal, wood, plastic, and fiberglass.

Style C is not work load rated. Handle is zinc-aluminum alloy with a plain finish. Furnished with a straight cam. Recommended for mounting in metal.

(A) Hex Key Latch— Cam offset is 1/2″. To unlatch, use a 5/16″ hex key to turn cam left 90°. Hex key is not included; see page 2839. Comes with two mounting screws. Drill mounting holes 1 1/4″ apart (center-to-center).

(B) Slotted Latch— Cam offset is 1 1/16″. To unlatch, use a slotted screwdriver to turn cam left 90°. Furnished with a nut and lock washer.

(C) L-Handle Latch— Has a fan-shaped cam to spread compression force over a larger area than most. The 3″ Lg. × 1 1/4″ Wd. mounting plate accommodates the added force. To unlatch, turn handle left. Comes with mounting screws. Screw holes on mounting plate are 2 1/2″ and 3/4″ center-to-center.

(D) T-Handle Latch— Cam offset is 1/2″. To unlatch, turn handle left 180°. Comes with two mounting screws. Drill mounting holes 1 1/4″ apart (center-to-center).

(E) Circular-Keyway Lock— Cam offset is 1 1/16″. To unlatch, turn key left 90°. Comes with one key and two mounting screws. Drill mounting holes 1 1/4″ apart (center-to-center).

(F) T-Handle Lock— Cam offset is 1/2″. To unlatch, unlock and turn handle left. Comes with two keys and a nut and lock washer.

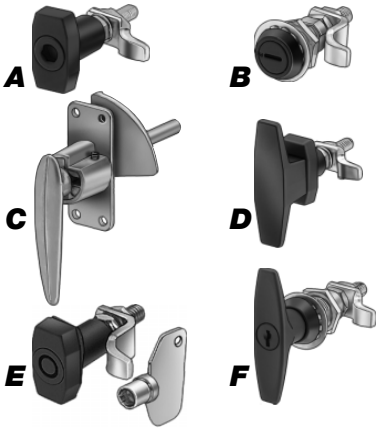

	Max. Door Thick.	Latching Distance Range Short	Latching Distance Range Long	Mount. Hole Dia.	Handle Projection	Handle/Head Size, Lg. × Wd.	Cam Lg.	Cam Wd.	Opens with Key No.		
Nonlocking											
A ... Hex Key	1/8″	13/16″-1 1/2″	1 13/16″-2 1/2″	13/16″	7/16″	1 9/16″ × 7/8″	1 11/16″	5/8″	———	1337A32	$17.61
B ... Slotted	3/4″	1/2″-1 1/8″	2 5/8″-3″	7/8″	1/4″	1 1/8″ Dia.	1 11/16″	3/4″	———	1337A35	18.82
C ... L-Handle	2″	5/16″-2 1/2″	———	1/2″	1 3/4″	3 3/4″ × 3/4″	2″	2 1/4″	———	1337A37	15.07
D ... T-Handle	3/16″	1/4″-15/16″	1 1/4″-1 15/16″	13/16″	1 1/4″	3″ × 15/16″	1 11/16″	5/8″	———	1337A31	24.93
Key Locking											
E ... Circular Keyway	3/16″	5/16″-15/16″	2 1/2″-3″	13/16″	7/16″	1 9/16″ × 7/8″	1 11/16″	3/4″	E3-5-15	1337A39	23.20
F ... T-Handle	3/4″	1″-1 5/8″	2 1/8″-2 11/16″	7/8″	1 5/16″	3 1/4″ × 7/8″	1 11/16″	3/4″	CH751	1337A33	35.59

Adjustable Compression Cam Latches

Latches can be adjusted to compensate for misalignment. Use them for gasketed doors, access panels, and equipment covers. To latch, turn 90° to the right; continue turning to draw the cam firmly against the door or drawer surface to hold it tightly closed.

Furnished with a nonreversible offset cam, unless noted. Recommended for mounting in metal, wood, plastic, and fiberglass.

(G-K) Latches through-hole mount and secure in back of the door with a nut (included).

(L&M) Latches through-hole mount and require two screw holes to secure in back of the door (require #10 screws or 3/16″ rivets, not included; screw holes are 1 1/4″ center-to-center).

Slotted Style— Use a screwdriver to latch and unlatch.

	Max. Door Thick.	Latching Distance Range	Mounting Hole Dia.	Projection Front	Projection Back	Knob/ Head Dia.	Cam Lg.	Cam Wd.	Maximum Compression, lbs.	Zinc-Plated Steel		300 Series Stainless Steel	
Miniature—Knob Style													
G	3/16″	1/16″-1/4″	5/16″	11/16″	9/16″	5/16″	1/2″	1/4″	35	1626A42	$9.68	1626A41	$12.62
H	3/16″	1/8″-3/8″	9/16″	3/4″	1″	1/2″	3/4″	1/4″	50	1887A52	14.21	———	———
H	3/16″	3/8″-5/8″	9/16″	3/4″	1″	1/2″	3/4″	1/4″	50	1887A53●	14.21	———	———
Miniature—Slotted Style													
J	3/16″	1/8″-3/8″	9/16″	1/4″	1″	1/2″	3/4″	1/4″	50	1887A54	15.42	———	———
J	3/16″	3/8″-5/8″	9/16″	1/4″	1″	1/2″	3/4″	1/4″	50	1887A55●	15.42	———	———
J	3/16″	5/8″-7/8″	9/16″	1/4″	1″	1/2″	3/4″	1/4″	50	1887A57	15.42	———	———
K	3/16″	1/16″-1/4″	5/16″	11/16″	9/16″	5/16″	1/2″	1/4″	35	———	———	1626A43	12.31
Large—Knob Style													
H	3/16″	1/16″-1/2″	3/4″	7/8″	15/16″	3/4″	15/16″	5/16″	—	1626A53	23.38	———	———
H	3/16″	3/8″-13/16″	3/4″	7/8″	15/16″	3/4″	15/16″	5/16″	75	1886A56●	24.69	———	———
L	3/4″	1/8″-3/8″▲	5/8″	15/16″	15/16″	5/8″	15/16″	5/16″	110	1626A34	8.70	1626A31	23.36
L	3/4″	3/8″-3/4″▲	5/8″	15/16″	15/16″	5/8″	15/16″	5/16″	110	1626A35●	8.70	1626A32●	23.36
L	3/4″	3/4″-1 1/8″▲	5/8″	15/16″	15/16″	5/8″	15/16″	5/16″	110	1626A36	8.70	1626A33	23.36
Large—Slotted Style													
M	3/4″	1/8″-3/8″▲	9/16″	3/16″	15/16″	1/2″	15/16″	5/16″	110	1626A27	9.09	1626A22	23.36
M	3/4″	3/8″-3/4″▲	9/16″	3/16″	15/16″	1/2″	15/16″	5/16″	110	1626A28●	9.09	1626A23●	23.36
M	3/4″	3/4″-1 1/8″▲	9/16″	3/16″	15/16″	1/2″	15/16″	5/16″	110	1626A29	9.09	1626A24	23.36
Latch Cover for Styles L and M												1626A45	$4.79

▲ Measured from back of door to front of cam. ● Includes a straight cam.

Push-Button Fixed-Compression Latches and Locks

Push the raised button and the lever snaps open; push the lever shut to close. To adjust the latching distance, turn the jam nut on the adjusting screw. Latches are through-hole mount. Made of zinc. Overall size is 3 21/32″ Ht. × 1 11/32″ Wd.

Furnished with a mounting bracket, an M5 mounting screw, and a lock washer. Recommended for mounting in metal, wood, plastic, and fiberglass. ***Key-locking latches*** come with two keys. They open with key number CH751.

To Order: Please specify chrome or black finish.

Max. Door Thick.	Latching Distance Range	Mount. Hole Ht.	Mount. Hole Wd.	Projection Front	Projection Back ♠	Compression, lbs.	Nonlocking		Key Locking	
1/4″	1/16″-15/16″	3 3/8″	1″	7/8″	3 5/16″	250	1653A21	$19.94	1653A42	$28.58
1/4″	15/16″-1 13/16″	3 3/8″	1″	7/8″	3 5/16″	250	1653A24	19.94	1653A45	28.58

♠ Minimum space required behind the panel for the latch to operate.

Key Locking

About Cabinet Door and Drawer Locks

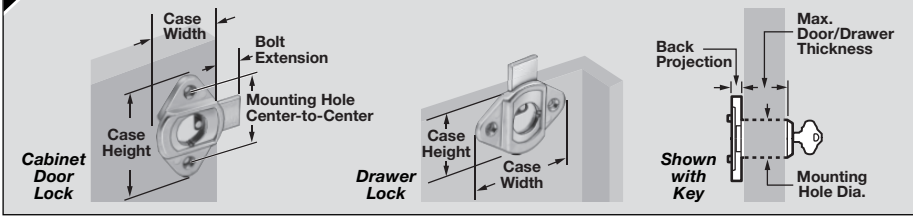

Cabinet door and drawer locks are usually used in wood doors and come with wood screws. Keys can be removed in both the locked and unlocked positions.

Cabinet Door and Drawer Locks

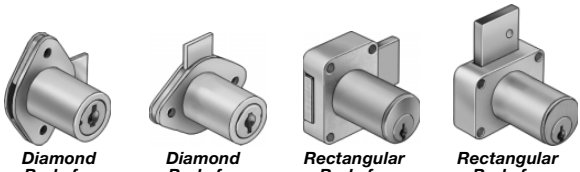

Diamond Body for Cabinet Door — *Diamond Body for Drawer* — *Rectangular Body for Cabinet Door* — *Rectangular Body for Drawer*

Locks come with two keys and mounting screws. *Note:* Master keys for master-keyed locks are sold separately.

Locks with Diamond Body— Body and cylinder are zinc. Bolt extension is 3/8″. Screw holes are 1 7/16″ center-to-center. Lock case is 2″ Ht.×1 3/8″ Wd. for door; 1 3/8″ Ht.×2″ Wd. for drawer.

Heavy Duty Locks with Rectangular Body— Compared to locks with a diamond body, these have more durable construction and provide greater security. Body is zinc and steel; cylinder is brass. Bolt extension is 3/4″. Screw holes are 15/16″ and 1 5/16″ center-to-center. Lock case is 1 5/8″ Ht.×1 1/4″ Wd. for door; 1 1/4″ Ht.×1 5/8″ Wd. for drawer.

Locks with Diamond Body

Max. Door/ Drawer Thick.	Mount. Hole Dia.	Back Proj.	Opens with Key Number	FOR CABINET DOORS Dull Brass Finish		FOR CABINET DOORS Polished Nickel Finish		FOR DRAWERS Dull Brass Finish		FOR DRAWERS Polished Nickel Finish	
Locks											
3/4″	7/8″	1/4″	—	1686A91	$7.62	1686A22	$7.62	1686A3	$7.62	1686A25	$7.62
7/8″	7/8″	1/4″	—	1686A94	7.62	1686A23	7.62	1686A1	7.62	1686A26	7.62
1 1/8″	7/8″	1/4″	—	1686A97	7.62	1686A24	7.62	1686A11	7.62	1686A27	7.62
Locks Open with the Same Key											
3/4″	7/8″	1/4″	EB018	1686A92	7.62	1686A292	7.62	1686A162	7.62	1686A322	7.62
3/4″	7/8″	1/4″	EB079	1686A169	7.62	1686A293	7.62	1686A4	7.62	1686A323	7.62
3/4″	7/8″	1/4″	EB121	1686A165	7.62	1686A294	7.62	1686A167	7.62	1686A324	7.62
3/4″	7/8″	1/4″	EB127	1686A239	7.62	1686A295	7.62	1686A237	7.62	1686A325	7.62
7/8″	7/8″	1/4″	EB019	1686A95	7.62	1686A302	7.62	1686A186	7.62	1686A342	7.62
7/8″	7/8″	1/4″	EB092	1686A193	7.62	1686A303	7.62	1686A2	7.62	1686A343	7.62
7/8″	7/8″	1/4″	EB123	1686A188	7.62	1686A304	7.62	1686A191	7.62	1686A344	7.62
7/8″	7/8″	1/4″	EB129	1686A197	7.62	1686A305	7.62	1686A195	7.62	1686A345	7.62
1 1/8″	7/8″	1/4″	EB020	1686A98	7.62	1686A314	7.62	1686A699	7.62	1686A352	7.62
1 1/8″	7/8″	1/4″	EB021	1686A218	7.62	1686A315	7.62	1686A71	7.62	1686A353	7.62
1 1/8″	7/8″	1/4″	EB125	1686A214	7.62	1686A316	7.62	1686A216	7.62	1686A354	7.62
1 1/8″	7/8″	1/4″	EB131	1686A223	7.62	1686A317	7.62	1686A221	7.62	1686A355	7.62
Locks Open with Their Own Key and a Master Key— *Master key sold separately*											
3/4″	7/8″	1/4″	Z001	1686A179	9.70	1686A124	9.70	1686A5	8.30	1686A102	9.70
3/4″	7/8″	1/4″	Z002	1686A93	9.70	1686A125	9.70	1686A173	8.30	1686A103	9.70
7/8″	7/8″	1/4″	Z011	1686A312	9.70	1686A146	9.70	1686A208	8.30	1686A362	9.70
1 1/8″	7/8″	1/4″	Z005	1686A232	9.70	1686A153	9.70	1686A72	8.30	1686A373	9.70

Master Key Z001 ..... 1686A7 ..... $1.28
Master Key Z002 ..... 1686A8 ..... 1.28
Master Key Z011 ..... 1686A76 ..... $1.28
Master Key Z005 ..... 1686A9 ..... 1.28

Heavy Duty Locks with Rectangular Body

Max. Door/ Drawer Thick.	Mount. Hole Dia.	Back Proj.	Opens with Key Number	FOR CABINET DOORS Dull Brass Finish		FOR CABINET DOORS Dull Chrome Finish		FOR DRAWERS Dull Brass Finish		FOR DRAWERS Dull Chrome Finish	
Locks											
7/8″	15/16″	1/2″	—	1505A11	$28.49	1505A112	$28.48	1259A21	$29.40	1259A31	$28.01
1 1/8″	15/16″	1/2″	—	1505A22	30.88	1505A231	30.90	1259A33	26.42	1259A451	26.42
Locks Open with the Same Key											
7/8″	15/16″	1/2″	107	1505A81	24.41	1505A113	23.69	1259A116	26.19	1259A117	25.65
7/8″	15/16″	1/2″	915	1505A114	24.41	1505A115	23.69	1259A71	26.19	1259A32	25.65
1 1/8″	15/16″	1/2″	101	1505A83	27.24	1505A241	25.68	1259A121	26.42	1259A122	25.69
1 1/8″	15/16″	1/2″	103	1505A118	27.24	1505A119	25.68	1259A73	26.42	1259A46	25.67
Locks Open with Their Own Key and a Master Key— *Master key sold separately*											
7/8″	15/16″	1/2″	D4299/GM1	1505A82	23.13	1505A14	24.14	1259A132	31.35	1259A133	31.34
1 1/8″	15/16″	1/2″	M1	1505A84	29.05	1505A25	32.39	1259A135	31.35	1259A134	31.35

Master Key D4299/GM1 ..... 1873A37 ..... $3.22
Master Key M1 ..... 1505A85 ..... $3.22

Bolting Drawer Locks

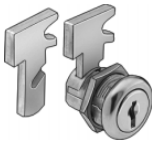

Two included deadbolts allow you to choose a 5/16″ or 7/16″ vertical bolt extension. Cylinder is die cast zinc and 11/16″ long. Face is 400 series stainless steel. Head dia. is 7/8″.

Furnished with two keys and a locking nut. *Note:* Master key for master-keyed lock is sold separately.

Max. Door/ Drawer Thick.	Mount. Hole Dia.	Opens with Key No.		
Lock				
5/8″	11/16″	—	1506A11	$11.63
Lock Opens with the Same Key				
5/8″	11/16″	215	1506A12	11.73
Lock Opens with Its Own Key and a Master Key				
5/8″	11/16″	F226	1506A13	12.79
Master Key F226			1506A14	4.61

Bolting Lock Universal Strike Plates

An extra long 3 3/8″ Lg.×1/4″ Wd. slot works with most cam and bolt-style locks. Mount strike plate on the right or left side of a wood cabinet door or on drawers. Plate is steel.

O'all size is 4″ Lg.×2 13/16″ Wd.×1/16″ Thick. Mounting flange is 1 7/8″ Lg.×5/8″ Wd. It has a 3/16″ dia. mounting hole and a 9/16″ Lg.×3/16″ Wd. mounting slot (screws not included).

8051A11 ..... $3.48

For information about cabinet door and drawer locks, see page 2952.

Replacement File Cabinet Locks

Replace locks on metal file cabinets that have existing mounting brackets. Locks are 13/16″ Ht.×9/16″ Wd. Furnished with two keys and a mounting screw, unless noted.

All locks are made of zinc. *Locks with round bolt* have a dull nickel finish. *Locks with rectangular bolt* have a dull chrome finish.

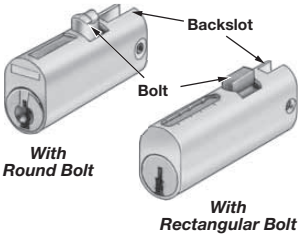

Bolt Style	Opens with Key No.	Lg.	Backslot Wd.	Backslot Dp.	Bolt Extension		
Locks							
Round	—	1 3/4″	1/8″	5/16″	1/8″	1657A33	$16.50
Round	—	1 3/4″	1/8″	5/16″	1/8″	1657A39■	16.50
Round	—	1 3/4″	1/8″	1/2″	1/8″	1657A36	16.50
Round	—	1 3/4″	1/8″	1/2″	1/8″	1657A38■	16.50
Rectangular	—	2″	1/8″	5/16″	1/8″	1657A21	16.50
Locks Open with the Same Key							
Round	L009	1 3/4″	1/8″	5/16″	1/8″	1657A34	16.50
Round	L008	1 3/4″	1/8″	5/16″	1/8″	1657A43■	16.50
Round	L006	1 3/4″	1/8″	1/2″	1/8″	1657A37	16.50
Round	L007	1 3/4″	1/8″	1/2″	1/8″	1657A44■	16.50
Rectangular	3X5	2″	1/8″	5/16″	1/8″	1657A22	16.50

■ Has a 0.095″ spring pin (also called a roll pin or tension pin) for mounting.

Spring-Loaded Bolts for Overhead Doors

Use on 2″ and 3″ track to keep sectional overhead doors closed. Made of galvanized steel. Locking bar is spring loaded and can be padlocked; maximum padlock shackle diameter is 5/16″.

Reversible for right- and left-hand mounting. Requires four 1/4″ mounting screws (not included).

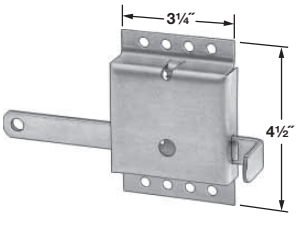

Proj.		
7/8″	15585A51	$7.03

Sliding Door Locks

Designed for overlapping glass, wood, and metal sliding doors, you'll see these locks on bookcases and display cases. Each lock comes with a 4 5/8″ Lg.× 5/8″ Wd. ratchet bar that has a thumbscrew adjustment.

To lock, slide ratchet bar through lock cylinder; to unlock, turn key 90° to the right and remove ratchet bar from lock cylinder. Locks and ratchet bar are zinc with a nickel finish. Include two keys.

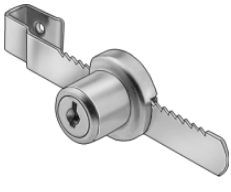

For Door Thick.	Opens with Key Number		
Lock			
3/16″-3/8″	—	1703A51	$11.00
Multiple Locks Open with the Same Key			
3/16″-3/8″	DF54	1703A52	11.00
Replacement Key Number DF54		1703A302	.85

Push-Bolt Sliding Door and Window Locks

Lock aluminum or wood sliding doors and windows in a closed position, or slightly open for ventilation. To install, drill a 1/2″ hole for the strike. To lock, push in the cylinder; to unlock, turn the key 45° to the right or left. Lock is zinc with a dull aluminum finish.

Lock body is 1 3/8″ Lg.×1 3/4″ Wd. with a 1″ projection. Screw holes are 0.19″ dia. and 15/16″ center-to-center (fasteners included). The bolt extends 1/2″. Strike has a 3/8″ inside dia.×5/8″ (overall) Lg. Includes two number 801 keys and two strikes.

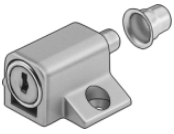

1048A14 ..... $12.36

Locker Locks

Surface mount these locks to the back of a locker door. They're reversible for right- and left-hand doors. The deadbolt moves horizontally; bolt extends 5/16″. Key is removable only in the locked position. Case is steel with a cadmium-plated finish.

Case is 2 11/16″ Ht.×2″ Wd. Back projection is 15/16″. Screw holes are 2 3/16″ center-to-center. Furnished with two keys and mounting screws and nuts. *Note:* Master key for master-keyed lock is sold separately.

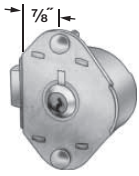

Max. Door Thick.	Mount. Hole Dia.	Opens with Key No.	Locks		Replacement Key	
Lock						
3/16″	5/8″	—	1782A14	$10.93	—	—
Locks Open with the Same Key						
3/16″	5/8″	40H001	1782A16	11.44	1782A221	$3.64
3/16″	5/8″	40H142	1782A42	11.44	1782A35	3.64
3/16″	5/8″	40H140	1782A43	11.44	1782A36	3.64
3/16″	5/8″	20H502	1782A44	11.44	1782A37	3.64
Lock Opens with Its Own Key and a Master Key						
3/16″	5/8″	SL30	1782A18	15.84	—	—
Master Key SL30			1782A21	$3.64		

Master Lock Resettable Combination Locker Locks

Change the combination in seconds. The back of each lock has a push-button combination changer that allows you to switch between five three-number combinations. Use a control key (sold separately) to override the combination if necessary.

Case is steel with a steel backing plate (front and back pieces disconnect to mount on either side of the door). Case is 2 7/8″ Ht.×1 7/8″ Wd. Locks fit doors 1/16″ to 1/8″ thick. The dial assembly mounts through an 11/16″ hole. Mounting bolts are concealed for added security; bolt holes are 2 3/16″ center-to-center. Back plate fastens with locking nuts (included).

Right Hand

Automatic-Lock Bolt—For lockers with vertical lift handles and automatic bar-and-rod releases. Bolt moves vertically and extends 5/16″.

Automatic-Lock Spring Bolt—For lockers without handles. Bolt moves horizontally and extends 1/4″.

Manual Deadbolt—For metal mesh lockers and lockers with automatic bar-and-rod releases. Bolt moves horizontally and extends 5/16″.

Control key overrides all combinations so you can open locks in an emergency.

To Order: For locks, please specify if order is for a new system or an existing system. If you are ordering for a new system, you must order a control key (sold separately). If you are matching an existing group of locks, please specify key number.

	Right Hand ♦		Left Hand ♦	
Automatic-Lock Bolt	1504A11	$15.45	1504A12	$15.45
Automatic-Lock Spring Bolt	1504A21	17.21	1504A22	17.21
Manual Deadbolt	1504A33	17.89	1504A35	17.89
Control Key			1504A31	$3.76

♦ To choose a lock, stand facing your locker. If the hinges are on your right, you need a right-hand lock; if they're on your left, you need a left-hand lock.

Push-Bolt Brass Sliding Door Locks

Secure display cases and wood cabinet sliding doors. To lock, push in the cylinder. To unlock, turn the key 45° to the right. Locks are brass with a dull finish.

Back projection is 7/16″. The mounting plate is 2″ Lg.×7/8″ Wd. with 1 11/32″ center-to-center screw holes. Strike is 7/16″ Dia.×3/8″ Lg. and has a 5/8″ dia. collar, unless noted. Mounting screws not included. Furnished with two keys.

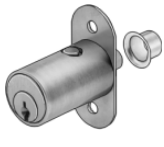

Max. Door Thick.	Cylinder Lg.	Mount. Hole Dia.	Opens with Key No.	Screw Size		
Locks						
7/8″	7/8″	7/8″	—	#5	1680A11▲	$40.76
1 1/8″	1 1/8″	15/16″	—	#8	1680A17	42.32
1 3/8″	1 3/8″	15/16″	—	#8	1680A19	42.32
Locks Open with the Same Key						
7/8″	7/8″	7/8″	4T362	#5	1680A23▲	40.76
1 1/8″	1 1/8″	15/16″	107	#8	1680A92	42.32
1 3/8″	1 3/8″	15/16″	915	#8	1680A91	42.32

▲ Strike is 7/16″ Dia.×1/2″ Lg. and has a 9/16″ dia. collar.

Slide Bolts

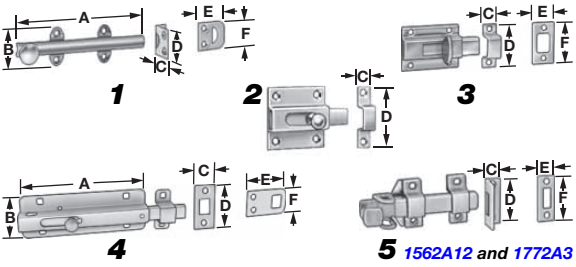

Bolts are reversible for right- and left-hand mounting. Furnished with mounting screws.

Style 1—(E) is 1 3/8″. (F) is 1 1/8″.

Style 3—(E) is 7/8″. (F) is 1 1/2″ for 1913A33; 1 7/8″ for 1913A35.

Style 4—A flat spring puts tension on the bolt to hold it in position. Maximum padlock shackle diameter is 3/8″. (E) is 2 3/8″ and (F) is 1 1/2″.

Style 5—Maximum padlock shackle diameter is 3/8″. For 1562A11 and 1562A12, (E) is 3/4″ and (F) is 2 7/8″. For 1772A3, (E) is 15/16″ and (F) is 2 1/2″.

(A)	(B)	(C)	(D)	Bolt Size Wd.	Bolt Size Thick.		
Nonlocking							
Brass—*Polished Finish; Projection is 1″*							
1	4″	19/16″	1 1/16″	1 1/8″	5/8″	5/16″	**1438A2** $12.60
1	6″	19/16″	1 1/16″	1 1/8″	5/8″	5/16″	**1438A3** 14.48
1	9″	19/16″	1 1/16″	1 1/8″	5/8″	5/16″	**1438A4** 15.71
1	12″	19/16″	1 1/16″	1 1/8″	5/8″	5/16″	**1438A5** 17.51
Brass—*Polished Finish; Projection is 15/16″*							
2	2″	2″	1/2″	2″	9/16″	3/16″	**12835A21** 32.24
Chrome-Plated Brass—*Dull Finish; Projection is 1″*							
1	4″	19/16″	1 1/16″	1 1/8″	5/8″	5/16″	**1438A6** 13.60
1	6″	19/16″	1 1/16″	1 1/8″	5/8″	5/16″	**1438A7** 14.00
Chrome-Plated Brass—*Polished Finish; Projection is 15/16″*							
2	2″	2″	1/2″	2″	9/16″	3/16″	**12835A22** 42.14
Type 304 Stainless Steel—*Dull Finish; Projection is 1 1/16″*							
3	2″	1 1/2″	1/2″	1 9/16″	5/8″	1/4″	**1913A33** 12.91
3	3″	1 15/16″	13/16″	1 7/8″	5/8″	5/16″	**1913A35** 31.56
Padlockable							
Steel—*Zinc-Plated Finish; Projection is 1 7/16″*							
4	6 1/2″	2 1/8″	1 1/8″	2 3/16″	5/8″	1/2″	**1244A3**★ 17.16
5	5″	2 1/16″	3/4″	2″	3/4″	1/4″	**1562A11**♦ 24.00
5	8″	2 1/16″	3/4″	2″	3/4″	1/4″	**1562A12** 25.00
Type 304 Stainless Steel—*Satin Finish; Projection is 15/16″*							
5	8″	2″	7/8″	2 1/2″	3/4″	1/4″	**1772A3** 50.40

★ Projection is 1 7/8″. ♦ Has one bracket.

Adjustable-Guide Extra-Long Slide Bolts

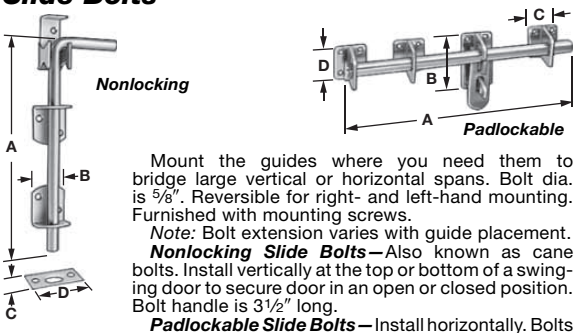

Mount the guides where you need them to bridge large vertical or horizontal spans. Bolt dia. is 5/8″. Reversible for right- and left-hand mounting. Furnished with mounting screws.

Note: Bolt extension varies with guide placement.

Nonlocking Slide Bolts—Also known as cane bolts. Install vertically at the top or bottom of a swinging door to secure door in an open or closed position. Bolt handle is 3 1/2″ long.

Padlockable Slide Bolts—Install horizontally. Bolts accept a padlock with a max. shackle dia. of 5/16″.

(A)	(B)	(C)	(D)		
Nonlocking—*Projection is 1 3/8″*					
Zinc-Plated Steel					
12″	2″	1 3/8″	2 3/4″	**1236A11**	$20.05
18″	2″	1 3/8″	2 3/4″	**1236A12**	23.25
24″	2″	1 3/8″	2 3/4″	**1236A13**	30.69
Polished Type 304 Stainless Steel					
12″	2″	1 3/8″	2 3/4″	**1236A51**	36.82
18″	2″	1 3/8″	2 3/4″	**1236A52**	40.73
24″	2″	1 3/8″	2 3/4″	**1236A53**	44.62
Padlockable—*Projection is 1 1/2″*					
Polished Type 304 Stainless Steel					
11 7/8″	3 1/4″	1 5/8″	1 7/8″	**1161A42**	133.70
17 3/4″	3 1/4″	1 5/8″	1 7/8″	**1161A44**	171.70
23 5/8″	3 1/4″	1 5/8″	1 7/8″	**1161A47**	203.70

Foot-Operated Slide Bolts

No hands needed—step on the top cap to lock the bolt; retract it with pressure on the side release button. Made of zinc-plated steel. Furnished with mounting screws. For foot-operated door holders, see page 2901.

Projection is 1 1/2″ for 1436A2 and 1 9/16″ for A4.

(A)	(B)	(C)	(D)	Bolt Dia.		
3 3/8″	1 1/2″	1 1/8″	1 7/8″	5/8″	**1436A2**	$16.42
4 15/16″	2 3/16″	1 3/8″	2 1/4″	3/4″	**1436A4**	17.92

Spring-Loaded Slide Bolts

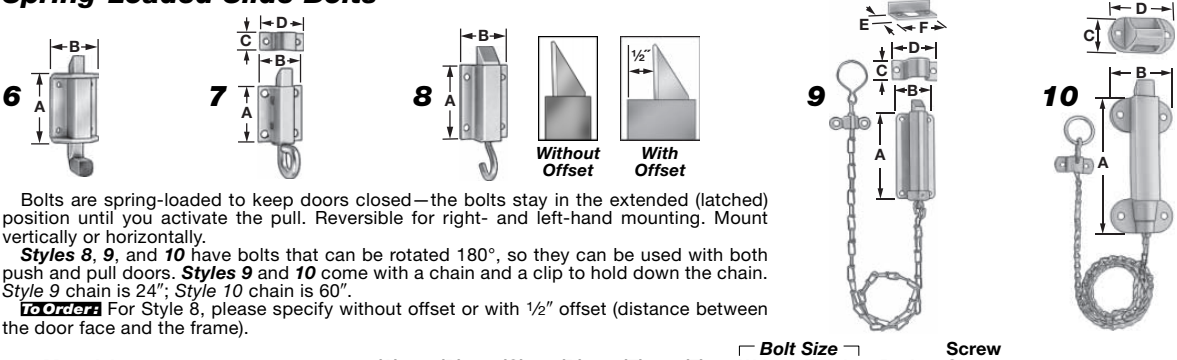

Bolts are spring-loaded to keep doors closed—the bolts stay in the extended (latched) position until you activate the pull. Reversible for right- and left-hand mounting. Mount vertically or horizontally.

Styles 8, ***9***, and ***10*** have bolts that can be rotated 180°, so they can be used with both push and pull doors. ***Styles 9*** and ***10*** come with a chain and a clip to hold down the chain. *Style 9* chain is 24″; *Style 10* chain is 60″.

To Order: For Style 8, please specify without offset or with 1/2″ offset (distance between the door face and the frame).

Material	(A)	(B)	(C)	(D)	(E)	(F)	Bolt Size Wd.	Bolt Size Thick.	Proj.	Screw Size		
Knob Pull with Black Vinyl Cap												
6 Steel w/ Zinc-Plated Finish	1 1/2″	1 1/4″	—	—	—	—	3/8″	3/8″	1″	#8	**2206A21**	$17.58
6 Steel w/ Zinc-Plated Finish	2″	1 5/8″	—	—	—	—	7/16″	7/16″	1 1/4″	#10	**2206A23**	19.22
6 Steel w/ Zinc-Plated Finish	2 7/8″	2″	—	—	—	—	1/2″	1/2″	1 3/8″	1/4″	**2206A25**	20.58
6 Type 304 Stainless Steel w/ Dull Finish	1 1/2″	1 1/4″	—	—	—	—	3/8″	3/8″	1″	#8	**2206A34**	20.16
Ring Pull (Transom Catch)—*Ring ID is 9/16″*												
7 Steel w/ Zinc-Plated Finish	2″	1 5/8″	5/8″	1 5/8″	—	—	7/16″	7/16″	1 5/16″	Included	**1066A11**	16.55
Hook Pull—*Bolts can be rotated 180°*												
8 Steel w/ Zinc-Plated Finish	3 1/8″	2 1/8″	—	—	—	—	3/4″	3/4″	3/4″	1/4″	**1178A3**	7.70
8 Steel w/ Zinc-Plated Finish	3 1/8″	2 1/8″	—	—	—	—	3/4″	3/4″	1 1/4″	1/4″	**1178A31**	10.10
Chain Pull—*Bolts can be rotated 180°*												
9 Steel w/ Zinc-Plated Finish	2 1/2″	1 1/2″	5/8″	1 5/8″	7/8″	1 1/2″	3/8″	3/8″	11/16″	Included	**1437A1**	14.81
9 Steel w/ Zinc-Plated Finish	3 3/8″	1 9/16″	3/4″	1 7/8″	7/8″	1 1/2″	7/16″	7/16″	7/8″	Included	**1437A2**	20.25
9 Steel w/ Zinc-Plated Finish	5″	2 3/16″	1 1/16″	2 13/16″	1 3/16″	2 3/16″	1/2″	1/2″	9/16″	Included	**1437A4**	16.30
Heavy Duty Chain Pull—*Bolts can be rotated 180°*												
10 Iron w/ Tan Painted Finish	9″	4 1/4″	2 1/4″	4 5/8″	—	—	1 3/16″	1″	2″	Included	**1235A11**	165.06

Barrel Slide Bolts

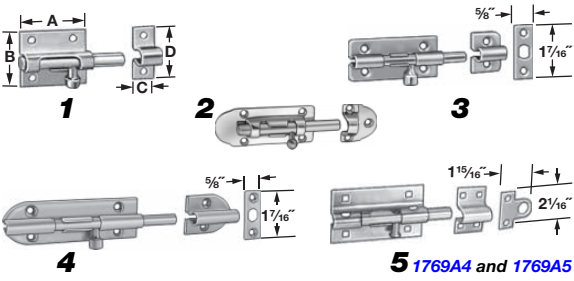

Slide the bolt and drop the knob into the notch to secure your door. Reversible for right- and left-hand mounting. Include mounting screws, except Style 2.

Style 2— Screws not included. Require #6 screws, except 1376A21 requires #3 screws and 1376A23 and A24 require #5 screws.

Style 5— 1441A21 and A42 have a 1/4″ maximum padlock shackle diameter; they do not have a second strike. 1769A4 and A5 have a 3/8″ maximum padlock shackle diameter.

(A)	(B)	(C)	(D)	Bolt Dia.	Proj.		
Nonlocking							
Steel—Black Finish							
1	1 3/4″	1 1/2″	9/16″	1 1/2″	5/16″	1/2″	**1441A12** $2.66
1	2 1/8″	1 9/16″	9/16″	1 9/16″	5/16″	1/2″	**1441A13** 3.00
1	3″	1 9/16″	9/16″	1 9/16″	5/16″	1/2″	**1441A14** 3.41
Steel—Zinc-Plated Finish							
1	1 3/4″	1 1/2″	9/16″	1 1/2″	5/16″	1/2″	**1441A32** 2.43
1	2 1/8″	1 9/16″	9/16″	1 9/16″	5/16″	1/2″	**1441A33** 2.54
1	3″	1 9/16″	9/16″	1 9/16″	5/16″	1/2″	**1441A53** 4.59
1	3″	1 5/8″	13/16″	1 5/8″	7/16″	11/16″	**1441A34** 4.51
1	4 5/8″	1 5/8″	13/16″	1 5/8″	7/16″	11/16″	**1441A45** 6.54
Steel—Brass-Plated Finish							
1	1 3/4″	1 1/2″	9/16″	1 1/2″	5/16″	1/2″	**1441A62** 2.82
1	2 1/8″	1 9/16″	9/16″	1 9/16″	5/16″	1/2″	**1441A63** 3.07
1	3″	1 9/16″	9/16″	1 9/16″	5/16″	1/2″	**1441A64** 3.39
1	3 7/8″	1 9/16″	9/16″	1 9/16″	5/16″	1/2″	**1441A65** 4.82
Brass—Polished Finish							
2	2″	1″	3/8″	1″	1/4″	1/2″	**1376A21** 15.76
2	3″	1 1/8″	1/2″	1 1/8″	5/16″	1/2″	**1376A23** 21.45
2	4″	1 1/4″	1/2″	1 1/4″	5/16″	5/8″	**1376A24** 22.14
2	4 9/16″	1 3/8″	1/2″	1 3/8″	3/8″	3/4″	**1376A25** 32.63
2	5 5/8″	1 3/8″	1/2″	1 3/8″	3/8″	3/4″	**1376A26** 38.13
Type 304 Stainless Steel w/ Nickel-Plated Brass Bolt—Dull Finish							
3	2 3/8″	1″	1″	13/16″	1/4″	9/16″	**1907A21** 13.35
4	3 9/16″	1 11/16″	1 7/16″	1 11/16″	5/16″	11/16″	**1907A23** 19.15
4	5 15/16″	1 11/16″	1 7/16″	1 11/16″	5/16″	11/16″	**1907A25** 22.54
4	9 1/2″	1 11/16″	1 7/16″	1 11/16″	5/16″	11/16″	**1907A27** 31.36
Type 316 Stainless Steel—Polished Finish							
2	2 1/4″	1 1/2″	1 7/16″	1 1/2″	3/8″	5/8″	**1093A23** 16.90
2	2 7/8″	1 1/2″	1 7/16″	1 1/2″	3/8″	5/8″	**1093A27** 22.36
Padlockable							
Steel—Black Finish							
5	4 5/8″	1 5/8″	1 1/4″	1 5/8″	7/16″	11/16″	**1441A21** 7.84
Steel—Zinc-Plated Finish							
5	4 1/2″	2 11/16″	1 1/2″	2 11/16″	5/8″	1″	**1769A4** 7.92
5	4 5/8″	1 5/8″	1 3/16″	1 5/8″	7/16″	11/16″	**1441A42** 7.81
5	6″	2 11/16″	1 1/2″	2 11/16″	5/8″	1″	**1769A5** 8.45

Easy-Grip Lift-and-Drop Slide Bolts

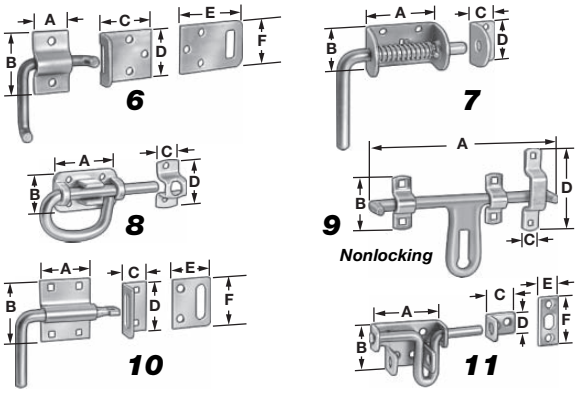

Handles are large to make gripping easy. Plus, the lift-and-drop design keeps them out of the way when not in use. Slide bolts are reversible for right- and left-hand mounting. Furnished with mounting screws, except Styles 6 and 7.

Style 6— (E) is 3 7/8″ and (F) is 2 1/2″. Requires 3/8″ dia. and 5/16″ dia. screws (not included).

Style 7— A spring keeps bolt extended for secure latching; bolt can be held in open (unlatched) position. Requires 1/4″ dia. screws (not included).

Style 8— Latches have a zinc mounting plate. 1754A24 has an additional flat strike; (E) is 1″ and (F) is 2 3/16″.

Style 9— 1241A3 and A4 have a max. padlock shackle dia. of 5/8″; the padlock eye requires four #10 screws (not included) for mounting.

Style 10— Max. padlock shackle dia. is 3/8″, (E) is 2″, and (F) is 2 1/4″.

Style 11— For 10635A45 the maximum padlock shackle diameter is 1/4″, (E) is 5/8″, and (F) is 1 1/4″. 10635A65 and A85 have a maximum padlock shackle diameter of 3/8″. For 10635A65 (E) is 3/4″; (F) is 1 5/8″. For 10635A85 (E) is 7/8″; (F) is 1 7/8″.

(A)	(B)	(C)	(D)	Bolt Dia.	Proj.		
Nonlocking							
Steel—Plain Finish							
6	1 3/4″	2 7/8″	3″	2 1/2″	1/2″	1 5/16″	**13395A55** $13.66
Steel—Zinc-Plated Finish, Spring-Loaded							
7	3″	1 3/4″	1 1/4″	1 3/4″	1/2″	1 3/4″	**3356A77** 9.20
Steel—Zinc-Plated Finish							
8	1 3/4″	1″	5/8″	1 5/16″	5/16″	5/8″	**1754A21** 7.07
8	2 3/8″	1 3/8″	11/16″	1 15/16″	3/8″	3/4″	**1754A24** 11.98
Malleable Iron w/ Zinc-Plated Steel Padlock Eye—Tan Finish							
9	8″	2 3/16″	3/4″	3 5/8″	1/2″	1 1/8″	**1241A1** 22.91
9	12″	3 1/16″	1 1/16″	4 1/8″	3/4″	1 5/16″	**1241A2** 48.27
Padlockable							
Steel—Zinc-Plated Finish							
10	2 1/4″	2 11/16″	1 1/4″	2 1/4″	1/2″	1 1/16″	**1386A11** 14.00
Malleable Iron w/ Zinc-Plated Steel Padlock Eye—Tan Finish							
9	8″	2 3/16″	3/4″	3 5/8″	1/2″	1 1/4″	**1241A3** 30.89
9	12″	3 1/16″	1 1/16″	4 1/8″	3/4″	1 5/16″	**1241A4** 56.26
Type 304 Stainless Steel—Dull Finish							
11	1 13/16″	1 1/8″	7/8″	9/16″	1/4″	7/8″	**10635A45** 8.60
11	2 9/16″	1 5/8″	1 3/16″	13/16″	3/8″	1 3/16″	**10635A65** 21.00
11	3 3/8″	1 13/16″	1 3/8″	1″	1/2″	1 3/8″	**10635A85** 34.40

Concealed Screw Slide Bolts

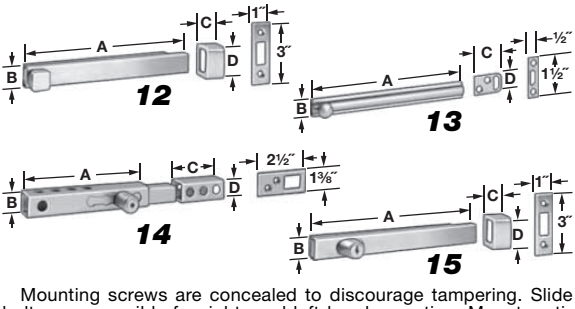

Mounting screws are concealed to discourage tampering. Slide bolts are reversible for right- and left-hand mounting. Mount vertically or horizontally. Furnished with mounting screws.

(14) Padlockable Slide Bolt— Lock the slide bolt in any of four holes. Padlock must have a vertical shackle clearance that exceeds 1″. Maximum padlock shackle diameter is 7/16″.

(15) Key-Locking Slide Bolts— Slide bolts can be locked in the open or closed position. Come with two keys.

(A)	(B)	(C)	(D)	Bolt Size Wd.	Bolt Size Thick.		
Nonlocking							
Steel—Dull Chrome Finish; Projection is 1 5/8″							
12	8″	7/8″	1″	1 1/2″	7/8″	7/16″	**1245A51** $18.03
Brass—Polished Finish; Projection is 1″							
13	3″	5/8″	1″	1 1/4″	1/2″	1/4″	**12215A21** 7.04
13	4″	5/8″	1″	1 1/4″	1/2″	1/4″	**12215A23** 7.77
13	6″	5/8″	1″	1 1/4″	1/2″	1/4″	**12215A25** 9.30
Brass—Dull Chrome Finish; Projection is 1″							
13	3″	5/8″	1″	1 1/4″	1/2″	1/4″	**12215A32** 7.50
13	4″	5/8″	1″	1 1/4″	1/2″	1/4″	**12215A36** 8.30
13	6″	5/8″	1″	1 1/4″	1/2″	1/4″	**12215A39** 9.90
Padlockable							
Steel—Polished Chrome Finish; Projection is 2 5/16″							
14	6″	7/8″	2 1/2″	7/8″	3/4″	3/4″	**1253A11** 23.22
Key Locking							
Steel—Dull Chrome Finish; Projection is 1 5/8″							
15	8″	7/8″	1″	1 1/2″	7/8″	7/16″	**1245A52** 52.12
Key Locking—Lock Opens with Key Number 820							
Steel—Dull Chrome Finish; Projection is 1 5/8″							
15	8″	7/8″	1″	1 1/2″	7/8″	7/16″	**1245A55** 52.12

Privacy Partition Slide Bolts and Swinging Bar Latches

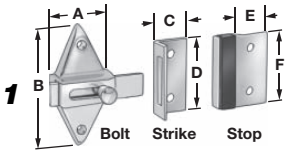

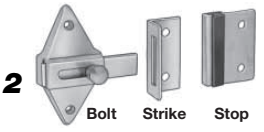

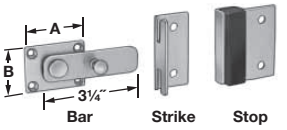

Mount on restroom partitions. All are reversible for right- and left-hand mounting. Mounting screws are included. ***Complete sets*** come with a slide bolt or swinging bar latch, a strike, and a door stop.

Style 1 bolt is ¾″ Wd. × 3⁄16″ Thick. ***Style 2*** bolt is 1″ Wd. × 3⁄16″ Thick. ***Style 3*** bar is ⅞″ Wd. × ⅛″ Thick. ***Door stops*** have a rubber bumper that is ½″ wide on Styles 1 and 2 and ⅞″ wide on Style 3.

	(A)	(B)	(C)	(D)	(E)	(F)	Proj.	Complete Sets		Bolt/Latch		Strike		Door Stop	
Slide Bolts															
Zinc—*Chrome Plated*															
1	2″	4″	1⅛″	2½″	1¼″	2½″	19⁄16″	12815A13	$28.37	12815A31	$16.02	12815A23	$7.00	12815A24	$10.04
2	1⅞″	4½″	1⅛″	2½″	1¼″	2½″	19⁄16″	12815A15	30.71	12815A32	18.74	12815A23	7.00	12815A24	10.04
Type 304 Stainless Steel—*Dull Finish*															
1	2″	4″	1⅛″	2½″	1¼″	2½″	19⁄16″	12815A14	58.02	12815A54	30.83	12815A27	13.65	12815A28	18.62
2	1⅞″	4½″	1⅛″	2½″	1¼″	2½″	19⁄16″	12815A16	62.86	12815A56	38.36	12815A27	13.65	12815A28	18.62
Swinging Bar Latch															
Type 304 Stainless Steel—*Dull Finish*															
3	2″	1½″	15⁄16″	2½″	1⅛″	2½″	¾″	11655A25	45.44	11655A31	25.36	11655A33	11.06	11655A35	11.06

Swinging Bar Latches

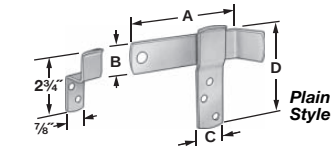

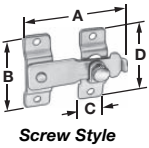

Screw Style

Snap Style

Latches are reversible for right- and left-hand mounting. Furnished with mounting screws.

Plain Style—The strike creates a sleeve to hold the bar. A back catch holds the bar when it's not latched. ***Screw Style—***1915A16 and A17 have a finger screw to hold the bar in the strike; A14 does not have a finger screw. ***Snap Style—***Latch snaps shut when the bar is placed in the strike; push the button on the bottom of the strike to release the bar.

(A)	(B)	(C)	(D)	Proj.		
Plain Style—*Zinc-Plated Steel*						
4⅞″	1⅛″	1⅛″	3 13⁄16″	1¼″	1614A11	$9.88
Screw Style—*Type 304 Stainless Steel with Polished Finish*						
19⁄16″	1⅜″	7⁄16″	1⅜″	½″	1915A14	7.89
2⅜″	1 13⁄16″	⅝″	1 13⁄16″	¾″	1915A16	14.74
3⅜″	29⁄16″	13⁄16″	29⁄16″	15⁄16″	1915A17	23.00
Snap Style—*Type 304 Stainless Steel with Polished Finish*						
1 15⁄16″	15⁄8″	9⁄16″	15⁄8″	11⁄16″	1915A31	15.30
2½″	1 13⁄16″	⅝″	1 13⁄16″	13⁄16″	1915A32	20.00
4⅛″	3 3⁄16″	1″	3 3⁄16″	1 1⁄16″	1915A34	41.80

Heavy Duty Swinging Bar Latches

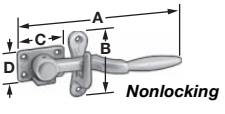

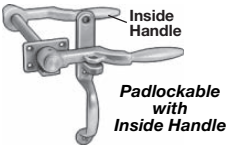

You'll see these latches on refrigerators and truck doors because they stand up to heavy use. Latches are reversible for right- and left-hand mounting. Mounting screws are not included.

Nonlocking Latch—Bar is zinc-plated steel.

Padlockable Latch with Inside Handle—Bar is zinc-plated iron. Handle is die cast zinc. Minimum door thickness is 2″. Maximum padlock shackle diameter is ⅜″. Latch has a through-door rod that's 9⁄16″ Dia. × 8¾″ Lg.; thread length is 7″.

(A)	(B)	(C)	(D)	Proj.	Screw Size		
Nonlocking							
7¼″	3⅜″	1½″	2¼″	2⅛″	#10	1250A21	$128.45
Padlockable with Inside Handle							
7¼″	7⅜″	1½″	2¼″	2⅛″	#10	1249A11	161.63

Flush-Mount Lever Extension Bolts

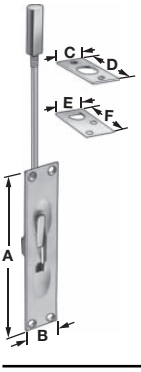

Use the lever to extend or retract the bolt. Also known as flush bolts, they're commonly used on metal double doors to hold one door closed. Reversible for right- and left-hand mounting. Bolts are approximately 6¾″ long and consist of a 10¾″ long rod with a ½″ Dia. × 1½″ Lg. brass tip. Come with mounting screws and a template for installation.

Bolts are UL listed for labeled metal fire doors up to 8 feet high with a maximum three-hour fire rating.

(A)	(B)	(C)	(D)	(E)	(F)		
Brass—*Bright Brass Finish*							
6¾″	1″	15⁄16″	2¼″	1″	2⅛″	1427A24	$18.44
6¾″	1¼″	15⁄16″	2¼″	1″	2⅛″	1427A12	22.36
Brass—*Dull Bronze Finish*							
6¾″	1″	15⁄16″	2¼″	1″	2⅛″	1427A25	18.44
6¾″	1¼″	15⁄16″	2¼″	1″	2⅛″	1427A13	22.36
Brass—*Dull Chrome Finish*							
6¾″	1″	15⁄16″	2¼″	1″	2⅛″	1427A22	18.44
6¾″	1¼″	15⁄16″	2¼″	1″	2⅛″	1427A14	22.36

Swinging Hook Latches

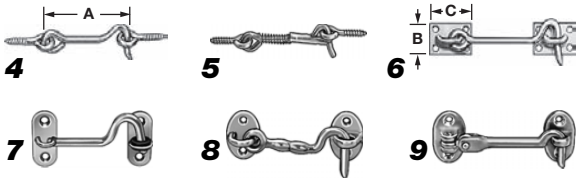

Style 5—A spring-action hook prevents accidental unlatching.

Style 6—Comes with mounting screws.

Style 7—A plastic bushing in the eye reduces vibration to prevent accidental unlatching. Mounting screws not included.

Style 8—Mounting screws not included.

Style 9—Two joints allow the hook to move up-and-down and side-to-side. Mounting screws not included.

	(A)	(B)	(C)	Proj.	Screw Size		Pkg. of 5
Steel—*Zinc-Plated Finish*							
4	2″	—	—	⅝″	—	1779A13	$2.78
4	2½″	—	—	⅝″	—	1779A15	3.15
4	4″	—	—	¾″	—	1779A18	5.91
4	6″	—	—	1″	—	1779A21	6.99
4	12″	—	—	1″	—	1779A22	15.30
							Each
5	2″	—	—	½″	—	1779A31	$2.16
5	2½″	—	—	½″	—	1779A32	2.21
6	5″	15⁄16″	15⁄8″	⅞″	#8	1727A4	4.88
Type 304 Stainless Steel—*Polished Finish*							
7	2 5⁄16″	15⁄8″	⅝″	¾″	#8	17345A22	6.26
7	3″	15⁄8″	⅝″	¾″	#8	17345A26	6.52
7	4″	15⁄8″	⅝″	¾″	#8	17345A29	6.78
Type 316 Stainless Steel—*Polished Finish*							
8	3″	1½″	1½″	13⁄16″	#8	18995A31	15.93
8	4″	1½″	1½″	13⁄16″	#8	18995A32	19.02
Brass—*Polished Finish*							
8	3″	1¼″	¾″	¾″	#6	19095A41	16.02
8	4″	1¼″	¾″	¾″	#6	19095A42	19.92
9	1⅜″	1½″	⅞″	¾″	#6	19095A19	22.59
9	2⅞″	1½″	⅞″	⅞″	#6	19095A21	30.16
9	4½″	1⅞″	1½″	1″	#8	19095A22	39.62
9	6⅜″	1⅞″	1½″	1″	#8	19095A24	47.35

Cam Latches and Latch Kits

Latches arrive ready for single-point latching. For more holding power, add a latch kit (sold separately) for two-point latching or add two latch kits for three-point latching (except 11595A41 is for single-point latching only). For multiple-point latching, use *Style A* on 7″ to 5′8″ high doors and *Styles B-E* on 20″ to 9′10″ high doors.

(A) Nonlocking Latch with Drop Handle— Cup is 3/8″ deep and mounts flush. Cup and handle are chrome-plated steel; shaft is zinc-plated steel. Reversible for 90° clockwise and counterclockwise unlatching. Includes a reversible offset cam, a mounting bracket, and screws. ***Latch kit*** has a rod and a rod guide. Guide requires #10 screws for mounting (not included).

(B&C) Nonlocking Latches with T-Handle— Latches through-hole mount; a jam nut is included. Made of zinc-plated steel and zinc. All latches are reversible for 90° clockwise and counterclockwise unlatching. Furnished with two mounting screws. 11595A41 has two handles (one inside and one outside). ***Latch kits*** have a rod and a rod guide. Guide requires M6 screws for mounting (not included).

(D&E) Latches with Folding T-Handle— Latches through-hole mount and require four 7/32″ dia. holes for the threaded male studs on the back. Handle is chrome-plated die cast zinc; cup and mounting bracket are Type 302 stainless steel. Furnished with a straight cam and two mounting screws. ***Latch kit*** has a rod and a rod guide. Guide requires M6 screws for mounting (not included).

To Order: For Style D and Style E latches, please specify unlatching direction: counterclockwise to unlatch or clockwise to unlatch.

Style D Shown with two Latch Kits

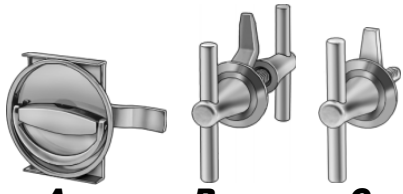

A **B** *11595A41* **C**

D *Counterclockwise to Unlatch*

E *Clockwise to Unlatch*

Max. Door Thick.	Latch Distance Short	Latch Distance Long	Cutout Size	Overall Size Lg.	Overall Size Wd.	Projection Front	Projection Back	Latch		Latch Kit	
(A) Nonlocking with Drop Handle											
1″	13/16″	1″	1 1/8″-1 3/8″	2 13/16″ Dia.	3″ Dia.	—	—	1 13/16″	1231A11	$38.02	1231A15	$8.27
(B) Nonlocking with T-Handle—Offset Cam											
1/2″	0″	1-1/2″	1″-1 1/2″	3/8″ Dia.	2 3/16″	1 1/16″	1 1/4″	1 3/8″	11595A11	18.07	11595A51	19.99
3/4″	1/16″	1 3/16″	1 1/16″-1 13/16″	3/8″ Dia.	3″	1 3/8″	1 3/4″	1 7/8″	11595A12	22.30	11595A52	23.47
1 1/2″	1/8″	1″-1″	1″-2″	3/8″ Dia.	3″	1 1/2″	1 3/4″	2 9/16″	11595A41	33.21	—	—
(C) Nonlocking with T-Handle—Straight Cam											
1/2″	1/2″	1″	—	3/8″ Dia.	2 3/16″	1 1/16″	1 1/4″	1 3/8″	11595A31	17.20	11595A51	19.99
3/4″	9/16″	1 5/16″	—	3/8″ Dia.	3″	1 3/8″	1 3/4″	1 7/8″	11595A32	22.30	11595A52	23.47
(D) Nonlocking with Folding T-Handle											
5/16″	1 1/8″	1 9/16″	—	4 3/16″ Ht. × 2 3/8″ Wd.	4 1/2″	3 1/2″	—	2 9/16″	11055A32	58.15	11595A52	23.47
(E) Key-Locking with Folding T-Handle—Comes with two keys; opens with key number CH751											
5/16″	1 1/8″	1 9/16″	—	4 3/16″ Ht. × 2 3/8″ Wd.	4 1/2″	3 1/2″	—	2 9/16″	11055A33	70.27	11595A52	23.47

Two-Point Latches

A paddle handle activates the top and bottom spring-loaded latching points. The handle itself does not latch. Mount vertically or horizontally. Handle is zinc with a black powder-coated finish; slide-bolt housing is zinc-plated steel; slide bolt is plastic; all other working parts are zinc-plated steel. Handle housing fits in a 4″ Lg. × 1 11/16″ Wd. opening.

Furnished with a mounting bracket, two 1/4″ Dia. × 48″ Lg. connecting rods (can be cut down), and two slide bolts. Bolt extension is 5/8″. Slide bolt housings are 4 1/4″ Lg. × 1 3/4″ Wd. with a 1 3/16″ projection. Mounting holes are 1 3/4″ and 1 1/4″ center-to-center. Require eight 10-24 mounting screws (not included).

Key-locking latch has a shuttered keyway for protection from the elements. Comes with two keys.

Key Locking

Max. Door Thick.	For Door Ht.	Handle Housing Ht.	Handle Housing Wd.	Projection Front	Projection Back		
Nonlocking							
2″	3 ft.-8 ft.	4 1/2″	2 1/4″	1 3/16″	1 13/16″	13835A85	$77.89
Key Locking							
2″	3 ft.-8 ft.	4 1/2″	2 1/4″	1 3/16″	1 13/16″	13835A87	90.24

Extra-Large Door Three-Point Latches

Side, top, and bottom latching points secure large doors that are subject to strenuous use such as those on trucks and large access doors. Made of zinc-plated steel with iron slide bolts. The outside handle is 7 1/2″ long and has a 5/8″ Sq. × 6″ Lg. spindle that mounts through the door. An inside safety-release handle opens the latch even if the outside handle is locked. Inside handle is 9 1/4″ long and surface mounts to the back of the door.

Latches are reversible for right- and left-hand doors. They have a 3 1/16″ long straight cam for side latching. For top and bottom latching, rods connect the top and bottom slide bolts, which have a 1 1/2″ bolt extension. One rod is 48″ long and the other is 36″ long (see image for max. reach). Use a hacksaw to cut rods and spindle to size. Require 1/4″ dia. mounting screws (not included). Screw holes on cam housing are 7 3/8″ and 1 1/4″ center-to-center; on slide bolt housings they are 3 1/8″ and 2 3/4″ center-to-center.

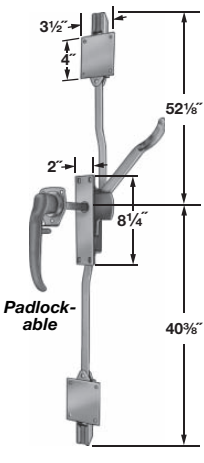

Padlock-able

Max. Door Thick.	For Door Ht.	Projection Front	Projection Back		
Padlockable— *7/16″ max. padlock shackle dia.*					
5″	2 1/4 ft.-7 1/2 ft.	2 1/4″	2 3/8″	1272A11	$91.06
Key Locking— *Comes with two keys; opens with key number 1250*					
5″	2 1/4 ft.-7 1/2 ft.	2 1/4″	2 3/8″	1272A12	101.71

Remote Release Cable Latches

Operate latches around corners and other obstructions—a flexible cable connects the latch and the T-handle. Pull on the handle to retract the spring-loaded bolt. Min. bend radius of the cable is 1 1/2″. The recommended max. amount of total bending is 720°. Through-hole mount the handle and bolt housing or surface mount them using the included mounting plates. The through-hole mounting size is 1/2″ for the handle and 9/16″ for the bolt housing.

Handles are plastic. Bolts are zinc-plated steel. Mounting plates are 12-ga. steel with a black-oxide finish and require four #10 screws (not included). Strike plates are Type 304 stainless steel and require three 1/4″ screws (not included).

To Order: Please specify cable length from those listed. *Note:* Cable length for double-point latch is for each length of cable.

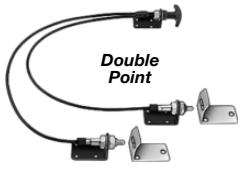

Double Point

Latch Type	Cable Dia.	Bolt Dia.	Bolt Ext.	Handle Wd.	Handle Proj.	Strike Size Lg.	Strike Size Wd.	Strike Size Proj.	Mounting Plate Size Lg.	Mounting Plate Size Wd.	Mounting Plate Size Proj.	Available Cable Lengths, ft.		
Single Point	1/4″	7/16″	1/2″	2 1/4″	1 5/8″	2 3/4″	1 3/4″	2″	2 3/8″	1 9/16″	1 1/2″	2, 3, 4, 5, 6, 7, 8, 9	3985A41	$75.28
Double Point	1/4″	7/16″	1/2″	2 1/4″	1 5/8″	2 3/4″	1 3/4″	2″	2 3/8″	1 9/16″	1 1/2″	2, 3, 4, 5, 6, 7, 8, 9	3985A42	88.84

About Draw Latches

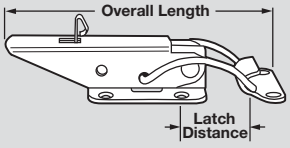

Draw latches operate by pulling surfaces together and holding them closed. They are also known as tension latches.

Latch distance is how far apart a mounted latch can be from the surface it's drawing to itself. Specifically, it's the distance between the center of the mounting hole closest to the latch arm and the farthest inside surface of the latching arm when the latch is closed.

The ***overall length*** listed includes the strike.

Draw Latches

A

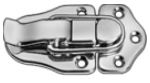

B *Nonlocking*

C

D

E

F

G *Nonlocking*

H

J

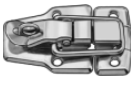

K

L

A great choice for light duty latching on tool boxes, chests, cabinets, and carrying cases. Latches have a fixed latch distance. Mounting screws not included.

Styles C and ***G*** are strikeless; they hook into a lip or notch in the item being latched.

Style C has a nonmarring vinyl-dipped blade.

Style F has a safety catch to prevent accidental opening.

Key-locking latch (Style L) opens with key number 931A and comes with one key. It has a simple locking mechanism without pins and discs.

Latch Distance	Overall Size Lg.	Wd.	Proj.	Screw Size	Max. Padlock Shackle Dia.	Finish	Pkg. Qty.		Pkg.
Nonlocking—Steel									
A ... 3/4"	2 3/4"	1 7/16"	3/8"	#6	—	Brass Plated	5	**1766A1**	$8.88
A ... 3/4"	2 3/4"	1 7/16"	3/8"	#6	—	Nickel Plated	5	**1766A2**	8.88
A ... 15/16"	3 5/16"	1 3/4"	7/16"	#6	—	Brass Plated	5	**1766A3**	9.02
A ... 15/16"	3 5/16"	1 3/4"	7/16"	#6	—	Nickel Plated	5	**1766A4**	9.02
B ... 1 1/16"	2 5/16"	15/16"	1/2"	♦	—	Plain	10	**1767A14**	10.00
B ... 1 1/16"	2 5/16"	15/16"	1/2"	#5, #6	—	Zinc Plated	10	**1590A13**	10.57
B ... 15/16"	3 9/16"	15/16"	9/16"	♦	—	Plain	5	**1590A23**	12.85
B ... 15/16"	3 9/16"	15/16"	9/16"	#12	—	Zinc Plated	3	**1590A21**	8.92
									Each
B ... 1"	5 1/2"	1 1/2"	7/16"	#6, #8	—	Galvanized	—	**1590A47**	$4.26
C ... 1 1/2"	3 3/4"	1 7/8"	15/16"	#12	—	Zinc Plated	—	**1863A21**	5.73
D ... 1 5/8"	4 1/2"	1 7/8"	1 1/16"	♦	—	Zinc Plated	—	**1863A18**	4.37
D ... 1 5/8"	4 1/2"	1 7/8"	1 1/16"	#5, #12	—	Zinc Plated	—	**1863A22**	4.00
Nonlocking—300 Series Stainless Steel									
B ... 1 1/16"	2 5/16"	15/16"	1/2"	#5, #6	—	Plain	—	**1590A43**	4.83
E ... 13/16"	1 7/8"	1 3/8"	1/2"	#6	—	Plain	—	**1889A34**	4.80
F ... 7/8"	3 7/16"	1 3/16"	7/8"	#6	—	Plain	—	**1889A43**	6.27
G ... 1 7/16"	2 1/8"	7/8"	9/16"	#6	—	Plain	—	**1889A22**	5.00
H ... 1 3/8"	3 3/4"	7/8"	1/2"	#6	—	Plain	—	**1889A37**	5.21
Padlockable—Steel									**Pkg.**
B ... 1 5/16"	3 7/8"	1 5/16"	15/16"	♦	5/16"	Plain	3	**1767A42**	$9.30
B ... 1 5/16"	3 7/8"	1 5/16"	15/16"	#10	5/16"	Zinc Plated	3	**1767A41**	10.95
G ... 1 1/2"	3 1/8"	7/8"	13/16"	#6	5/16"	Zinc Plated	5	**1767A43**	7.62
J ... 1 1/8"	2 5/8"	1 1/2"	5/8"	#8	1/4"	Nickel Plated	10	**1766A61**	18.18
K ... 1 1/16"	2 9/16"	1 5/8"	13/16"	♦	1/4"	Plain	10	**1767A15**	12.75
K ... 1 1/16"	2 9/16"	1 5/8"	13/16"	#6	1/4"	Zinc Plated	5	**1590A14**	8.99
Padlockable—300 Series Stainless Steel									**Each**
B ... 1"	5 1/2"	1 1/2"	15/16"	#6, #8	5/16"	Polished	—	**1889A45**	$13.53
K ... 1 1/16"	2 9/16"	1 5/8"	13/16"	#6	1/4"	Plain	—	**1590A45**	7.49
Key Locking—Steel									
L ... 1 7/16"	2 1/2"	1 1/4"	1/2"	#5	—	Nickel Plated	—	**1863A23**	6.76

♦ No screw holes; designed for welding.

Polypropylene and Rubber Draw Latches

M

N

P

Nonmetal bodies make these latches corrosion resistant. Use for light duty applications. Latch distance is fixed. Mounting screws not included.

Polypropylene latches have polypropylene strikes. Temperature range is 32° to 150° F.

Rubber latches absorb vibration and stretch to compensate for slight misalignment. Strikes are Type 304 stainless steel. Temperature range is –20° to +120° F.

Latch Distance	Overall Size Lg.	Wd.	Proj.	Screw Size	Max. Padlock Shackle Dia.	Color	Pkg. Qty.		Pkg.
Nonlocking—Polypropylene									
M ... 3/4"	1 3/4"	3/4"	1/4"	#4	—	Black	10	**1891A48**	$10.77
M ... 1"	2 3/16"	1 1/4"	5/16"	#4	—	Black	10	**1891A49**	13.83
Nonlocking—Rubber									**Each**
N ... 11/16"	3 1/8"	1 1/4"	13/16"	#8	—	Black	—	**1070A79**	$14.27
N ... 19/16"	4 3/16"	1 1/4"	13/16"	#8	—	Black	—	**1070A81**	13.31
N ... 19/16"	6 1/2"	1 13/16"	1 3/16"	#10	—	Black	—	**1070A82**	21.37
Padlockable—Rubber									
P ... 3 9/16"	4 3/16"	1 1/4"	15/16"	#8	5/16"	Black	—	**1070A91**	14.75

Type 304 Stainless Steel Snap Slide Latches

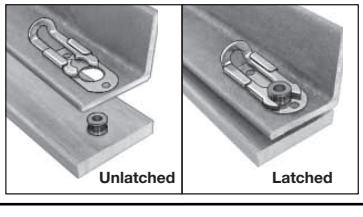

To secure overlapping components, engage the slide and the mating stud until they snap together. Latches resist shock and vibration. They are made of Type 304 stainless steel for corrosion resistance. Each set includes a slide and a stud. When assembled, latch is 1 13/16" Lg. × 11/16" Wd. × 1/2" Ht. Stud has a 3/8" dia. head. 1872A72 includes a steel spacer.

For Mounting Surface Thickness	Latch Distance (Length of Slide)		
0.046"-0.080"	5/8"	**1872A71**	$5.48
0.081"-0.128"	5/8"	**1872A72**	5.83

Rubber Pull Handle Draw Latches

Made of synthetic rubber, the handle and body stretch to fit the strike and to compensate for misalignment. They also absorb vibration. Rubber won't scratch painted surfaces and resists weather, oil, chemicals, and dirt. Color is black. Mounting screws not included.

With Metal Strike

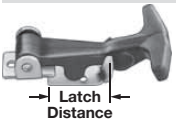

T-Handle

Tab Handle

Temperature range is 0° to 200° F, except 1685A13 and 1685A29 are not rated for temperature.

Latch Dist.	Overall Size Lg.	Wd.	Proj.	Screw Size	Zinc-Plated Steel Strike		300 Series SS Strike	
T-Handle								
15/16″	2 1/2″	1 1/2″	1 5/8″	#8	1685A13	$4.09	1685A29	$6.91
1 1/4″	3 7/16″	1 7/8″	3/4″	#5	1685A22	6.32	1685A32	6.93
1 9/16″	4 11/16″	2 7/16″	1 1/4″	#10	1685A24	8.24	1685A34	11.05
2 1/8″	5 7/8″	3 1/8″	1 1/4″	#10	1685A26	11.48	1685A36	15.99
6 3/16″	9 3/4″	3 1/8″	1 1/4″	#10	1685A38	19.71	1685A42	24.11
Tab Handle								
9/16″	2 7/16″	9/16″	3/4″	#4	—	—	1685A51	6.66
13/16″	3 1/8″	3/4″	1″	#4	1685A52	6.63	—	—

With Nylon Strike

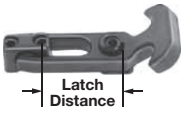

With Exposed Screws

With Concealed Screws

Temperature range is –20° to +140° F, except 12065A81 and 12065A82 are not rated for temperature.

Latch Distance	Overall Size Lg.	Wd.	Proj.	Screw Size		
T-Handle with Exposed Screws						
1 15/16″	4 7/16″	1 7/8″	1 1/4″	#10	12065A63	$8.63
3 3/16″	6 5/8″	1 7/8″	7/8″	#10	12065A82	14.05
4 9/16″	8 3/4″	1 7/8″	1 3/16″	#10	12065A64	11.82
T-Handle with Concealed Screws						
1 15/16″	4 7/16″	1 7/8″	1 1/4″	#10	12065A73	8.63
3 3/16″	6 5/8″	1 7/8″	7/8″	#10	12065A81	14.26
4 9/16″	8 3/4″	1 13/16″	1 1/8″	#10	12065A74	11.82

Spring-Loaded T-Handle Draw Latches

The spring compensates for misalignment and absorbs vibration. Latches are typically used to secure hinged and removable hoods and covers. Mounting screws not included.

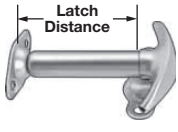

Straight Style

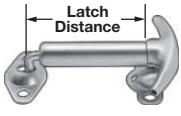

Elbow Style

	Latch Distance	Overall Size Lg.	Wd.	Proj.	Screw Size		
Straight Style							
Black Enamel Steel	3 1/4″	3 7/8″	2 11/16″	1 5/16″	1/4″	1344A21	$6.45
Chrome-Plated Steel	3 1/4″	3 7/8″	2 11/16″	1 5/16″	1/4″	1344A22	6.45
Polished Type 304 Stainless Steel	3 1/4″	3 7/8″	2 11/16″	1 5/16″	1/4″	1344A23	16.63
Elbow Style							
Black Enamel Steel	3 1/2″	4 1/2″	2 11/16″	1 11/16″	1/4″	1344A24	6.82
Chrome-Plated Steel	3 1/2″	4 1/2″	2 11/16″	1 11/16″	1/4″	1344A25	6.82
Polished Type 304 Stainless Steel	3 1/2″	4 1/2″	2 11/16″	1 11/16″	1/4″	1344A26	16.89

Adjustable Draw Latches

A threaded rod lets you adjust the latch distance to compensate for gasketing and misalignment. Choose latches with an ***enclosed*** or ***exposed*** threaded rod (on enclosed latches, the threaded rod is covered by the handle when the latch is closed). Mounting screws not included.

Nonlocking Latches—*Black nylon* has a temperature range of –20° to +176° F.

Nonlocking Latches with Safety Catch—Have a secondary release to prevent accidental opening.

Padlockable Latches—1864A19 and 1864A21 have a concealed-screw base.

A

B

Padlockable

C

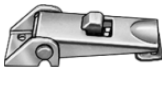

D

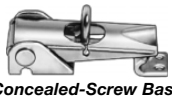

Concealed-Screw Base

E

F

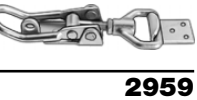

G

Material	Latch Distance	Overall Size■ Lg.	Wd.	Proj.	Screw Size	Max. Padlock Shackle Dia.		
Enclosed Latches—*Handle covers the threaded rod when latch is closed.*								
Nonlocking								
A ... Zinc-Plated Steel	1 3/4″-2 3/8″	3 1/8″	1 1/8″	11/16″	#6	—	1864A22	$7.22
A ... Zinc-Plated Steel	2 1/2″-3″	4 1/4″	1 5/16″	5/8″	#10	—	1864A25	14.16
A ... Yellow Zinc-Plated Steel	2″-2 1/2″	3 1/16″	1 1/8″	5/8″	#6	—	1864A11	7.51
A ... 300 Series Stainless Steel	2″-2 1/2″	3 1/16″	1 1/8″	5/8″	#6	—	1864A13	13.48
A ... 300 Series Stainless Steel	2 1/2″-3″	4 1/4″	1 5/16″	5/8″	#10	—	1864A27	15.57
B ... Black Nylon	1 1/16″-1 3/8″	3 3/4″	1 1/2″	11/16″	#10	—	1525A31	10.64
C ... Zinc-Plated Steel	2 3/4″-3 1/4″	5 3/16″	3″	1 1/16″	#10	—	1807A57▲	17.26
Nonlocking with Safety Catch								
D ... Zinc-Plated Steel	1 3/4″-2 3/8″	3 1/8″	1 1/8″	13/16″	#6	—	1864A23	8.61
D ... Yellow Zinc-Plated Steel	2″-2 1/2″	3 1/16″	1 1/8″	13/16″	#6	—	1864A15	7.73
D ... 300 Series Stainless Steel	2″-2 1/2″	3 1/16″	1 1/8″	13/16″	#6	—	1864A17	15.42
Padlockable								
C ... Zinc-Plated Steel	2 3/4″-3 1/4″	5 3/16″	3″	1 5/8″	#10	3/8″	1807A58▲	12.88
E ... Zinc-Plated Steel	2 1/2″-3″	4 1/4″	1 5/16″	1 1/8″	#10	1/4″	1864A26	18.45
E ... Yellow Zinc-Plated Steel	1″-1 9/16″	2 3/4″	1 1/8″	1 1/16″	#6	1/4″	1864A19	14.79
E ... 300 Series Stainless Steel	1″-1 9/16″	2 3/4″	1 1/8″	1 1/16″	#6	1/4″	1864A21	21.58
E ... 300 Series Stainless Steel	2 1/2″-3″	4 1/4″	1 5/16″	1 1/8″	#10	1/4″	1864A28	24.99
Exposed Latches—*Handle does not cover the threaded rod.*								
Nonlocking								
F ... Galvanized Steel	1 1/2″-2 1/2″	5 3/4″	1 5/16″	3/4″	#6	—	13435A63	6.22
F ... Type 304 Stainless Steel	1 1/2″-2 1/2″	5 3/4″	1 5/16″	3/4″	#6	—	13435A67	17.82
Padlockable								
G ... Galvanized Steel	1 5/8″-2 1/8″	6 7/8″	1 13/16″	7/8″	#6, #10	1/4″	13435A61	17.70

■ Overall length includes strike; measured with rod extended to maximum latch distance.
▲ Base and strike are aluminum.

Work-Load Rated Draw Latches

A Nonlocking with Button Strike

B Padlockable

C

D

E

F Padlockable

G

H

J

K

L

Here's a work-load rated solution for securing enclosures, containers, and cases. Mounting screws not included.

Nonlocking Latches with Safety Catch—Have a secondary release to prevent accidental opening.

Padlockable Latches—Maximum padlock shackle diameter is 5/16″ for Style A, 3/8″ for Style B, and 1/4″ for Style F.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

Material	Latch Distance	Overall Size Lg.	Overall Size Wd.	Overall Size Proj.	Work Load Limit, lbs.	Screw Size	With Square Strike		With Button Strike	
Nonlocking										
A Zinc-Plated Steel	15/16″	17/8″	1/2″	5/16″	85	#4	1844A51	$5.64	1844A41	$5.64
A Zinc-Plated Steel	1 11/16″	3 3/8″	15/16″	9/16″	285	#8	1844A52	7.82	1844A42	7.82
A Black Steel	2 5/16″	4 15/16″	1 3/16″	3/4″	160	#10	1844A63	18.25	1844A61	18.25
A Bright 300 Series SS	15/16″	17/8″	1/2″	5/16″	85	#4	1844A31●	11.13	1844A21●	10.47
A Bright 300 Series SS	1 11/16″	3 3/8″	15/16″	9/16″	200	#8	1844A32♦	15.11	1844A22♦	15.11
B Zinc-Plated Steel	1 9/16″	4″	1 7/8″	5/8″	400	#5, #12	1863A16	5.72	—	—
B Bright 300 Series SS	1 9/16″	4″	1 7/8″	5/8″	380	#5, #12	1863A17	9.86	—	—
C Zinc-Plated Steel	2 1/16″	4 5/16″	2 1/16″	1 3/16″	335	#8	1501A32	6.74	—	—
C Bright 300 Series SS	2 1/16″	4 5/16″	2 1/16″	1 3/16″	325	#8	1501A34	12.54	—	—
D Black Steel	1″	2 7/8″	1 1/2″	9/16″	231	#6	6082A15	6.96	—	—
D Bright 300 Series SS	1″	2 7/8″	1 1/2″	9/16″	254	#6	6082A16	6.76	—	—
E Black Steel	1 1/4″	4 3/16″	3/4″	1/2″	220	#6	6082A13	6.96	—	—
F Zinc-Plated Steel	1 3/8″	4 9/16″	1 3/16″	3/4″	661	#10	6082A17 ✓	7.21	—	—
F Bright 300 Series SS	1 3/8″	4 9/16″	1 3/16″	3/4″	428	#10	6082A18 ✓	15.75	—	—
G Zinc-Plated Steel	1 7/16″	3 5/8″	1 7/8″	11/16″	154	#10	6082A22 ✓	7.21	—	—
H Bright 300 Series SS	1/2″	1 3/4″	7/8″	3/8″	132	#5	6082A12	6.39	—	—
J Bright 300 Series SS	15/16″	1 5/8″	15/16″	3/8″	88	#5	6082A11	8.49	—	—
Nonlocking with Safety Catch										
K Zinc-Plated Steel	1 13/16″	3 1/2″	7/8″	7/8″	44	#6	6082A25 ✓	6.57	—	—
K Bright 300 Series SS	1 13/16″	3 1/2″	7/8″	7/8″	24	#6	6082A26 ✓	13.37	—	—
Padlockable										
A Zinc-Plated Steel	1 11/16″	3 3/8″	15/16″	15/16″	285	#8	1844A53	7.82	1844A43	7.82
A Bright 300 Series SS	1 11/16″	3 3/8″	15/16″	15/16″	200	#8	1844A33●	15.11	1844A23●	15.11
B Bright 300 Series SS	1 9/16″	4″	1 7/8″	7/8″	380	#12	1863A31	10.60	—	—
F Zinc-Plated Steel	1 3/8″	4 9/16″	1 3/16″	15/16″	661	#10	6082A19 ✓	7.49	—	—
F Bright 300 Series SS	1 3/8″	4 9/16″	1 3/16″	15/16″	428	#10	6082A21 ✓	16.62	—	—
Key Locking—*Come with two keys; locks open with key number S-010*										
L Black Die Cast Zinc	1 3/8″	2 7/8″	1 1/4″	3/4″	270	#4	6694A61	16.89	—	—
L Black Die Cast Zinc	1 5/8″	3 5/16″	1 3/8″	7/8″	270	#4	6694A62	15.13	—	—

●Latch arm is 17-7 PH stainless steel. ♦Latch arm is 400 series stainless steel.
✓ Latch is strikeless; it hooks into a lip or notch in the item being latched.

Work-Load Rated Rubber Draw Latches

M

N

The black EPDM rubber arm on these latches resists corrosion, absorbs vibration, and stretches to compensate for slight misalignment. Latches have a longer reach than standard draw latches. All are nonlocking. Mounting screws not included. ***Style M*** latches have a temperature range of –40° to +176° F. ***Style N*** latches have a temperature range of 0° to +200° F.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

	Latch Distance	Overall Size Lg.	Overall Size Wd.	Overall Size Proj.	Work Load Limit, lbs.	Screw Size	Strike, Mounting Plate, and Lever Handle Material	Finish		
M	2 7/8″	10″	1 15/16″	1 1/4″	175	#10	Glass-Filled Nylon	Black	4015A31	$26.78
M	4 1/4″	11 13/16″	1 7/8″	1 1/4″	427	1/4″	Type 316 Stainless Steel	Black	4015A43♣	99.74
M	6 13/16″	14 15/16″	1 15/16″	1 1/4″	270	#10	Glass-Filled Nylon	Black	4015A32	41.25
N	7 3/4″	14 5/8″	1 7/8″	1 3/16″	400	#10	Steel	Black	4015A21	36.42
N	7 3/4″	14 3/4″	1 7/8″	1 3/16″	400	#10	Type 302 Stainless Steel	Black	4015A22	52.31

♣Strike is glass-filled nylon.

Work-Load Rated Gasket-Sealing Draw Latches

P

Q

Bring surfaces together with the extra benefit of downward compression. Ideal for use on doors with a gasket, latches provide a tight hold and assist the sealing function of your gasket. Plus, all have a work load rating. A safety catch prevents accidental opening. Mounting screws not included.

Padlockable latches have a maximum padlock shackle diameter of 1/4″.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

Material	Latch Distance	Overall Size Lg.	Overall Size Wd.	Overall Size Proj.	Work Load Limit, lbs.	Screw Size		
Nonlocking								
P Zinc-Plated Steel	1″	4 3/16″	1 13/16″	5/8″	418	#10	4567A1	$12.86
P Zinc-Plated Steel	1 3/16″	3 1/8″	1 5/8″	3/4″	220	#8	4567A14	8.63
P Type 304 SS	1″	4 3/16″	1 13/16″	5/8″	407	#10	4567A11	25.99
P Type 304 SS	1 3/16″	3 1/8″	1 5/8″	3/4″	352	#8	4567A15	20.46
Padlockable								
Q Zinc-Plated Steel	1″	4 3/16″	1 13/16″	3/4″	418	#10	4567A12	12.86
Q Type 304 SS	1″	4 3/16″	1 13/16″	3/4″	407	#10	4567A13	25.99

For information about draw latches, see page 2958.

Work-Load Rated Versatile-Mount Draw Latches

Each latch comes with a variety of strikes, so you can choose the best mounting direction for your application. Mounting screws not included.

Nonlocking Latches with Safety Catch—Have a secondary release to prevent accidental opening.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

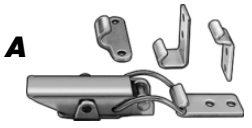

Nonlocking

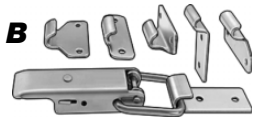

Nonlocking with Safety Catch

Latch Distance	Overall Size★ Lg.	Wd.	Proj.	Work Load Limit, lbs.	Screw Size	No. of Strikes	Zinc-Plated Steel		Polished 300 Series Stainless Steel	
Nonlocking										
A 1 3/8"	3 15/16"	1 5/8"	9/16"	61	#6	4	6139A27	$8.60	6139A29	$15.56
B 1 3/8"	6 7/16"	2 3/8"	11/16"	331	#10	6	6139A21	19.10	6139A24	39.07
Nonlocking with Safety Catch										
A 1 3/8"	3 15/16"	1 5/8"	11/16"	61	#6	4	6139A28	10.36	6139A31	18.77
B 1 3/8"	6 7/16"	2 3/8"	11/16"	331	#10	6	6139A22	28.32	6139A25	49.17

★ Overall length and width includes longest and widest strike.

Work-Load Rated Adjustable Draw Latches

Adjust the latch distance in applications that require work load ratings. All latches have a threaded rod that allows you to change the latch distance to compensate for gasketing and misalignment. Choose latches with an ***enclosed*** or ***exposed*** threaded rod (on enclosed latches, the threaded rod is covered by the handle when the latch is closed). Mounting screws not included. ***Style H*** latches have a yellow vinyl-coated handle.

Nonlocking Latches with Safety Catch—Have a secondary release to prevent accidental opening.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

Padlockable

Nonlocking

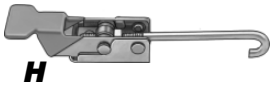

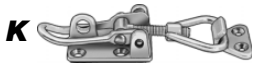

Material	Latch Distance	Overall Size■ Lg.	Wd.	Proj.	Work Load Limit, lbs.	Screw Size	Max. Padlock Shackle Dia.		
Enclosed Latches—*Handle covers the threaded rod when latch is closed.*									
Nonlocking									
C Type 304 SS	1 3/8"-2 1/2"	5 1/4"	1 3/4"	1 1/4"	800	#10	—	1807A61	$20.48
D Zinc-Plated Steel	1 11/16"-2"	7 1/4"	2"	7/8"	661	#10	—	6200A35	26.65
Nonlocking with Safety Catch									
D Zinc-Plated Steel	1 11/16"-2"	7 1/4"	2"	15/16"	661	#10	—	6200A36	30.68
E Polished Type 304 SS	15/16"-1 7/16"	3 1/8"	1 3/16"	13/16"	154	#6	—	6200A31	28.72
F Polished Type 304 SS	7/8"-1 1/4"	4 1/2"	1 5/8"	13/16"	661	#6	—	6200A34	53.76
Padlockable									
C Type 304 SS	1 3/8"-2 1/2"	5 1/4"	1 3/4"	1 1/4"	800	#10	5/16"	1807A62	26.82
Exposed Latches—*Handle does not cover the threaded rod.*									
Nonlocking									
G Zinc-Plated Steel	1 15/16"-2"	4 1/2"	1 1/16"	13/16"	40	#10	—	11605A12	12.53
G Zinc-Plated Steel	1 5/16"-2 5/8"	7 1/16"	1 9/16"	1 1/4"	200	1/4"	—	11605A13	21.80
G Type 304 SS	1 15/16"-2"	4 1/2"	1 1/16"	13/16"	40	#10	—	11605A16	22.32
G Type 304 SS	1 5/16"-2 5/8"	7 1/16"	1 9/16"	1 1/4"	200	1/4"	—	11605A14	35.95
H Zinc-Plated Steel	1 1/2"-2 1/4"	4 7/8"	1 1/16"	13/16"	270	#10	—	11605A17✓	18.69
H Zinc-Plated Steel	3 3/16"-4 7/16"	8 3/4"	1 9/16"	1 1/4"	400	1/4"	—	11605A19✓	30.21
H Type 304 SS	1 1/2"-2 1/4"	4 7/8"	1 1/16"	13/16"	270	#10	—	11605A18✓	27.96
H Type 304 SS	3 3/16"-4 7/16"	8 3/4"	1 9/16"	1 1/4"	400	1/4"	—	11605A21✓	48.58
Padlockable									
J Zinc-Plated Steel	1 3/16"-1 7/16"	4"	1 3/16"	11/16"	220	#8	3/16"	13435A31	12.47
J Zinc-Plated Steel	2"-2 1/2"	5 3/8"	1 5/16"	11/16"	660	#10	3/16"	13435A32	15.29
J Zinc-Plated Steel	2 5/16"-2 3/4"	7 1/8"	1 5/8"	1"	1,100	#10	3/8"	13435A33	24.11
J Polished Type 316 SS	1 3/16"-1 7/16"	4"	1 3/16"	11/16"	220	#8	3/16"	13435A41	32.36
J Polished Type 316 SS	2"-2 1/2"	5 3/8"	1 5/16"	11/16"	660	#10	3/16"	13435A42	44.83
J Polished Type 316 SS	2 5/16"-2 3/4"	7 1/8"	1 5/8"	1"	1,100	#10	3/8"	13435A43	50.28
K Zinc-Plated Steel	2 1/8"-2 7/8"	6 1/4"	2"	15/16"	1,100	#10	3/8"	13435A36	48.47
K Zinc-Plated Steel	2 5/16"-3"	7 11/16"	2"	15/16"	1,320	#10	3/8"	13435A35	57.01
L Zinc-Plated Steel	2 1/8"-2 11/16"	6 11/16"	1 5/8"	1"	1,100	#10	3/16"	13435A51	23.34
L Polished Type 316 SS	2 1/8"-2 11/16"	6 11/16"	1 5/8"	1"	1,100	#10	3/16"	13435A52	63.58

■ Overall length includes strike; measured with rod extended to maximum latch distance.
✓ Latch is strikeless; it hooks into a lip or notch in the item being latched.

Super Duty Work-Load Rated Adjustable Draw Latches

Demanding applications require latches with the highest work load ratings we offer. Use these latches for heavy duty jobs such as large-equipment latching. All have an exposed threaded rod that allows you to change the latch distance to compensate for gasketing and misalignment. Mounting screws not included.

Nonlocking Latches with Safety Catch—Have a secondary release to prevent accidental opening.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

Nonlocking with Safety Catch

Latch Distance	Overall Size Lg.	Wd.	Proj.	Screw Size	Max. Padlock Shackle Dia.	Zinc-Plated Steel Work Load Limit, lbs.			Polished Type 304 Stainless Steel Work Load Limit, lbs.		
Nonlocking with Safety Catch											
5/16"-1 7/8"	10 3/16"	1 1/2"	1 1/2"	5/16"	—	4,409	6304A52	$58.71	5,512	6304A54	$114.86
5/16"-3 5/8"	11 15/16"	1 1/2"	1 1/2"	5/16"	—	4,409	6304A56	61.25	5,512	6304A58	118.31
Padlockable											
5/16"-1 7/8"	10 3/16"	1 3/8"	1 1/2"	5/16"	5/16"	4,409	6304A51	53.32	5,512	6304A53	108.36
5/16"-3 5/8"	11 15/16"	1 3/8"	1 1/2"	5/16"	5/16"	4,409	6304A55	55.89	5,512	6304A57	111.86

For information about draw latches, see page 2958.

Work-Load Rated Multidirection Draw Latches

Surface Mount

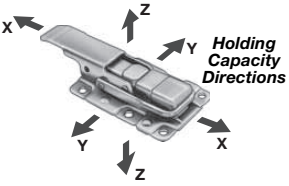

Inside-Corner Mount

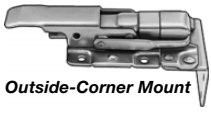

Outside-Corner Mount

Similar to latches used in the racing industry, these resist pull and vibration from side-to-side, front-to-back, and up-and-down forces. As you close the latches, an integrated slide bolt extends into the strike for secure latching. Mounting screws not included.

Nonlocking Latches with Safety Catch— Have a secondary release to prevent accidental opening.

Padlockable Latches— All accept padlocks with up to a 3/16″ shackle dia.

Note: Holding capacity is the maximum amount of force the latch can withstand without breaking.

Material	Latch Distance	Overall Size Lg.	Overall Size Wd.	Overall Size Proj.	Holding Capacity, lbs. (X)	Holding Capacity, lbs. (Y)	Holding Capacity, lbs. (Z)	Screw Size	Nonlocking with Safety Catch		Padlockable	
Surface Mount												
Zinc-Plated Steel	3/4″	3 15/16″	1 13/16″	1 1/16″	880	880	1,980	#6	6682A33	$30.06	6682A31	$26.20
Type 304 SS	3/4″	3 15/16″	1 13/16″	1 1/16″	1,320	1,320	1,980	#6	6682A34	50.74	6682A32	48.31
Inside-Corner Mount												
Zinc-Plated Steel	3/4″	4 3/16″	1 13/16″	1 13/16″	880	220	220	#6	6682A37	32.90	6682A35	33.69
Type 304 SS	3/4″	4 3/16″	1 13/16″	1 13/16″	1,320	220	220	#6	6682A38	57.23	6682A36	54.80
Outside-Corner Mount												
Zinc-Plated Steel	3/4″	4 3/16″	1 13/16″	1 1/8″	880	330	220	#6	6682A42	32.90	6682A39	33.66
Type 304 SS	3/4″	4 3/16″	1 13/16″	1 1/8″	1,320	330	220	#6	6682A43	57.23	6682A41	54.80

Spring Tension Draw Latches

A

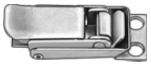

B

C

Padlockable

D

Padlockable

When the latches are fully closed, their compression springs provide constant holding tension for secure latching. The springs begin compressing when the latch engages the strike and continue compressing until the latch closes. Mounting screws not included. Choose latches with ***internal springs*** or latches with ***external springs*** (internal springs are covered by the latch housing).

Nonlocking Latch with Safety Catch— Has a secondary release to prevent accidental opening.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

	Latch Distance	Overall Size Lg.	Overall Size Wd.	Overall Size Proj.	Work Load Limit, lbs.	Screw Size	Max. Padlock Shackle Dia.	Zinc-Plated Steel		Bright 300 Series Stainless Steel	
Internal Springs											
Nonlocking											
A	3/8″	1 7/16″	1/2″	1/4″	200	#2	—	—	—	1794A51	$6.02
B	15/16″	2 3/4″	1 3/16″	7/16″	400	#6	—	1794A41	$3.81	1794A43	7.38
Nonlocking with Safety Catch											
C	15/16″	2 3/4″	1 3/16″	5/8″	400	#6	—	—	—	1794A55	11.18
Padlockable											
C	15/16″	2 3/4″	1 3/16″	15/16″	400	#6	3/8″	—	—	1794A54	9.36
External Springs											
Nonlocking											
D	1 1/4″	3 1/2″	1 3/8″	1/2″	—	#6	—	1734A12	4.90	—	—
D	1 1/4″	3 1/2″	1 3/8″	1/2″	—	▲	—	1734A14●	6.62	—	—
D	1 3/8″	2 11/16″	1 1/2″	9/16″	—	#5	—	—	—	1734A27	6.93
D	1 3/8″	3 5/8″	1 15/16″	5/8″	—	#10, #12	—	1734A26	9.87	—	—
D	1 3/8″	3 13/16″	1 15/16″	5/8″	—	#5, #12	—	—	—	1734A13	15.32
Padlockable											
D	1 1/16″	3″	1 3/8″	13/16″	—	#6	5/16″	1734A11	6.30	—	—
D	1 1/4″	3 5/8″	1 13/16″	15/16″	—	#10, #12	3/8″	1734A15	12.33	—	—

▲ No screw holes; designed for welding. ● Made of plain steel.

Corner-Mount Spring Tension Draw Latches

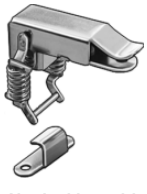

Nonlocking with 90° Angle Strike

Padlockable with Safety Catch and Straight Strike

Mount latches on a corner to draw perpendicular surfaces together. All have compression springs that provide constant holding tension for secure latching—especially useful for latches that are subject to vibration. Made of polished Type 304 stainless steel. Mounting screws not included.

Padlockable Latch with Safety Catch— Has a secondary release to prevent accidental opening. Latch accepts a padlock with up to a 3/16″ shackle dia.

Latch Distance	Overall Size Lg.	Overall Size Wd.	Overall Size Proj.	Screw Size	Strike		
Nonlocking							
1 1/8″	2 1/4″	1 9/16″	5/8″	M4	90° Angle	6148A15	$21.50
1 1/8″	2 1/4″	1 9/16″	5/8″	M4	Straight	6148A16	21.50
Padlockable with Safety Catch							
1 1/8″	2 9/16″	1 9/16″	5/8″	M4	Straight	6148A25	16.00

Panel/Partition Draw Latches

E

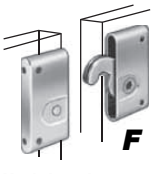

F

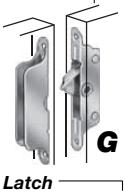

G

Pull panels together for a tight seal. Latches require a 5/16″ hex key (not included) to latch and unlatch. A hole must be drilled in the panel for hex key access. Made of zinc-plated steel. Mounting screws not included.

Styles E and ***F*** have both side and back mounting holes, so they attach to the side of the panel or mortise into the panel.

Style G has front tab mounting holes for mortise mounting.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

	Mount Style	Work Load Limit, lbs.	Latch Lg.	Latch Wd.	Latch Proj.	Strike Lg.	Strike Wd.	Strike Proj.	Cutout Size Lg.	Cutout Size Wd.	Cutout Size Dp.	Screw Size		
E	Side/Mortise	1,400	3 3/8″	1 3/4″	1 1/16″	3 3/8″	1 5/16″	5/8″	3 7/16″	1 1/16″	1 3/4″	1/4″	1393A34	$8.42
F	Side/Mortise	2,500	3 11/16″	1 3/4″	1 1/16″	3 11/16″	1 3/4″	1 1/16″	3 3/4″	1 1/16″	1 3/4″	1/4″	1393A37	24.45
G	Mortise	900	5 7/8″	1 13/16″	1 1/16″	5 7/8″	1 1/4″	5/8″	5 15/16″	1 1/16″	1 13/16″	#10	1393A39	15.92

For information about draw latches, see page 2958.

Snap-Down Arm Latches

Eliminate rattling and hold access doors, screens, windows, and panels in place. Lever arm is 7/16″ wide and snaps into place. Latches require #10 mounting screws (not included).

Zinc-plated steel latches have one mounting hole. ***Type 304 stainless steel latches*** have two mounting holes (9/16″ center-to-center).

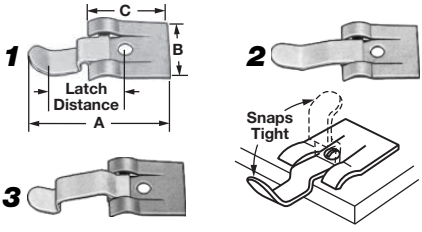

Latch Distance	(A)	(B)	(C)	Zinc-Plated Steel Pkg. Qty.	Zinc-Plated Steel Pkg.	Type 304 Stainless Steel Pkg. Qty.	Type 304 Stainless Steel Pkg.
1 ... 1 7/16″	2 1/8″	1″	1 1/4″	20	13295A52	10	13295A72 ... $14.29
2 ... 1 11/16″	2 3/8″	1″	1 1/4″	20	13295A53 ... 13.14	10	13295A73 ... 14.29
3 ... 1 13/16″	2 1/2″	1″	1 1/4″	20	13295A54 ... 13.71	10	13295A74 ... 14.57

Turn-to-Open Draw Latches

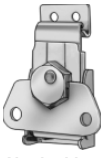

Nonlocking

Padlockable

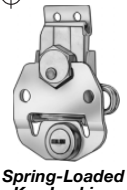

Spring-Loaded Key Locking

Lift the handle and turn 180° to open and close these latches. Mounting screws not included.

Spring-Loaded Latches— Springs compensate for misalignment.

Key-locking latch comes with two keys and opens with key number 801.

Note: Work load limit is the maximum amount of force the latch can withstand without affecting its operation or appearance.

Latch Distance	Overall Size Lg.	Wd.	Proj.	Work Load Limit, lbs.	Screw Size		
Latches							
Nonlocking—Zinc-Plated Steel							
3/4″	2 3/8″	1 1/2″	5/8″	300	#4	1406A42	$4.33
3/4″	2 3/4″	2 3/16″	13/16″	400	#8	1406A47	7.91
1 7/8″	4 15/16″	2 3/4″	11/16″	500	#10	1406A71	8.13
Nonlocking—300 Series SS							
3/4″	2 3/8″	1 1/2″	5/8″	300	#4	1406A46	9.91
1 7/8″	4 15/16″	2 3/4″	11/16″	500	#10	1406A72	16.95
Padlockable—Zinc-Plated Steel (3/8″ max. padlock shackle dia.)							
3/4″	2 9/16″	1 1/2″	15/16″	300	#4	1406A54	5.66
Padlockable—300 Series SS (3/8″ max. padlock shackle dia.)							
3/4″	2 9/16″	1 1/2″	15/16″	300	#4	1406A43	10.97
Spring-Loaded Latches							
Nonlocking—Zinc-Plated Steel							
3/4″	2 3/8″	1 15/16″	5/8″	300	#4	1406A48	5.53
3/4″	2 3/4″	2 1/2″	13/16″	400	#8	1406A45	7.80
1 7/8″	4 15/16″	3 1/4″	13/16″	500	#10	1406A73	10.66
Nonlocking—300 Series SS							
3/4″	2 3/8″	1 15/16″	5/8″	300	#4	1406A51	11.09
1″	2 7/8″	2 1/16″	3/4″	190	#8	1406A61	24.11
1 7/8″	4 15/16″	3 1/4″	13/16″	500	#10	1406A74	21.01
Key Locking—Zinc-Plated Steel							
3/4″	3 1/2″	2 1/2″	13/16″	400	#8	1406A57	18.90

Flush-Mount Turn-to-Open Draw Latches

After it's mounted, the latch creates a nearly flat surface that protects it from damage and allows the halves to mate securely. Latches are great for securing crates and cases. Lift the handle and turn 180° to open and close. All are spring-loaded to compensate for misalignment. Made of zinc-plated steel. Mounting screws not included.

Note: Dimensions given are for assembled top and bottom halves.

Nonlocking

Latch Distance	O'all Size Lg.	Wd.	Cutout Size Lg.	Wd.	Dp.	Screw Size		
Nonlocking								
1/2″	4 1/8″	4″	3 1/8″	3″	9/16″	#10	10425A82	$13.82
1 1/16″	6 1/4″	5″	5″	3 13/16″	9/16″	#10	10425A84	20.00
Padlockable—3/8″ max. padlock shackle dia.								
1 1/16″	6 1/4″	5″	5 1/8″	3 13/16″	9/16″	#10	10425A86	22.12

Push-to-Open Grab Latches

Forget about knobs, handles, and pulls. Push your door and these spring-loaded latches release the strike; push again to catch the door. Latches are for surface mounting. Furnished with mounting screws.

Style 4 latch has a brass-plated steel case and brown thermoplastic catch and strike. Not rated for temperature.

Style 5 latches have a thermoplastic case, catch, and strike. 10825A28 is black; A26 is brown. Temperature range is –22° to +194° F.

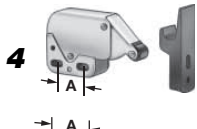

Latch Ht.	Latch Wd.	Latch Proj.	Strike Ht.	Strike Wd.	Screw Holes, Ctr.-to-Ctr. (A)	(B)		
Style 4								
1 1/16″	1 9/16″	7/16″	1 1/4″	7/16″	9/16″	—	18785A61	$2.05
Style 5								
1 7/16″	1 13/16″	9/16″	1 1/16″	9/16″	13/16″	7/8″	10825A28	5.51
1 5/8″	2 13/16″	5/8″	1 5/16″	5/8″	15/16″	1 1/4″	10825A26	6.62

Gate Latches

All latches surface mount and are reversible for right- and left-hand use. *Flush latches* are for gates that close flush with the post. *L-shaped latches* are for gates that overlap the post when closed.

Nonlocking Latches— A hidden push-button release on the bottom retracts the bolt; this discourages unwanted entries, but allows access to those who know it's there. Bolt extension is 7/16″.

Padlockable Latches— Use a padlock (not included) with these latches to secure gates and doors. Push to close; pull up on the latch arm to open. Arm has a 3/16″ dia. hole for a pull cord or chain, except 1774A44 has a 1/8″ dia. hole.

Key-Locking Latch— Latch is highly corrosion resistant and locks with a key for extra security.

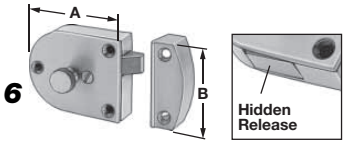

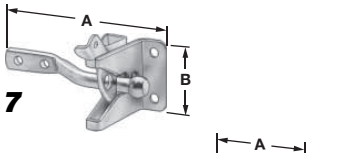

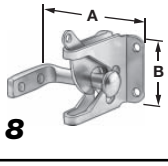

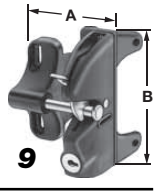

	(A)	(B)	Proj.	Material	Screw Size		
Nonlocking							
6 .. Flush	2 1/2″	2 1/8″	1 1/4″	Brass with Dull Finish	Included	1309A25	$27.33
6 .. Flush	2 1/2″	2 1/8″	1 1/4″	Brass with Dull Chrome Finish	Included	1309A28	27.88
Padlockable—5/16″ max. padlock shackle dia.							
7 .. Flush	4 7/16″	1 3/4″	2 3/8″	Zinc-Plated Steel	Included	1774A44	6.21
7 .. Flush	4 3/4″	1 3/4″	2 3/4″	Type 304 Stainless Steel	#8	1771A12	21.22
8 .. L-Shaped	3 7/8″	1 13/16″	2 1/4″	Zinc-Plated Steel	Included	1774A47	5.95
8 .. L-Shaped	4″	1 3/4″	2 3/4″	Type 304 Stainless Steel	#8	1771A13	21.22
Key Locking—Comes with two keys; opens with key number 62462							
9 .. Flush	3 3/4″	4 1/2″	1 3/4″	Black Plastic and 300 Series SS	Included	1262A11	29.39

About Push-to-Close Latches

When choosing between a face-mount latch and an edge-mount latch, consider the offset of your door. ***Offset*** is the space between the front of the door and the frame.

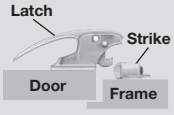

Face-Mount Latches— Mount horizontally to the front of the door with the strike mounted on the frame. Strike accommodates flush or offset doors.

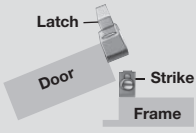

Edge-Mount Latches— Mount vertically to the side edge of the door with the strike mounted behind it on the face of the frame. Latches need a minimum ¾″ offset.

Door Face-Mount Latches

1

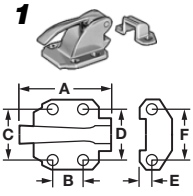

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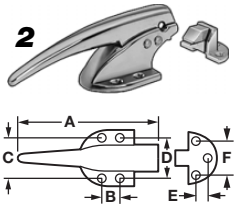

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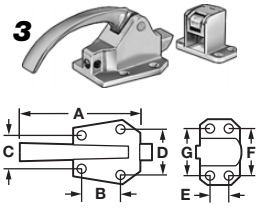

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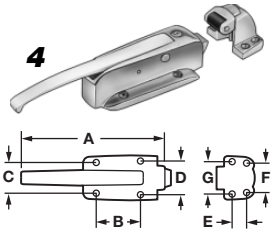

Mount latches to the front of doors on refrigerators and industrial enclosures. Styles 2-4 can mount to oven doors. Use for right- and left-hand doors. Mounting screws not included.

(1) Nonlocking Latches— Come with three fixed strikes. Not recommended for oven doors.

(2&3) Padlockable Latches— Have an adjustable strike to compensate for changes in offset caused by sagging doors and worn or flattened gaskets. Maximum padlock shackle diameter is ¼″.

(4) Key-Locking Latches with Antimicrobial Handle— An antimicrobial coating on the handle inhibits bacterial growth. Handle is malleable iron. Adjust the strikes to compensate for changes in offset caused by sagging doors and worn or flattened gaskets. Latches come with two keys and open with key number 105. NSF certified. *Latch for smaller offsets* accommodates a slight negative offset for recessed doors.

Proj.	(A)	Center-to-Center (B)	(C)	(D)	(E)	(F)	(G)	Screw Size	For Smaller Offsets Offset Range			For Larger Offsets Offset Range		
Nonlocking— *Chrome-Plated Zinc*														
1	1⅛″	2¼″	1 1/16″	1⅛″	1⅛″	5/16″	1⅛″	—	#6	0″, ⅛″, ⅜″	**15755A13**	$25.05	—	—
1	1 5/16″	2 13/16″	⅞″	1 7/16″	1 7/16″	⅜″	1 7/16″	—	#8	0″, ⅛″, ⅜″	**15755A11**	39.98	—	—
Padlockable— *Chrome-Plated Zinc*														
2	2 1/16″	5 15/16″	13/16″	1⅜″	1½″	½″	1½″	—	#8	0″ to ⅜″	**1266A5**	97.82	¾″ to 1¼″	**1266A1★** $102.71
Padlockable— *Stainless Steel*														
2	2″	5¼″	⅞″	1 5/16″	1½″	⅞″	1½″	—	#9	0″ to 5/16″	**1266A6**	73.22	⅝″ to 1¼″	**1266A7** 76.88
3	2 5/16″	5¼″	1¼″	1¾″	2 1/16″	¾″	2 1/16″	2 1/16″	#10	0″ to ⅜″	**1256A1**	90.09	½″ to 1¼″	**1256A2** 94.59
3	2½″	4¼″	1⅜″	1⅛″	1⅝″	⅝″	1⅝″	1⅝″	#8	0″ to ½″	**1256A3**	76.02	9/16″ to 1¼″	**1256A4** 79.82
Key Locking with Antimicrobial Handle— *Zinc*														
4	2 7/16″	11″	3⅜″	2⅛″	2½″	15/16″	2 5/16″	2 9/16″	¼″	−⅛″ to ¼″	**1576A51**	269.10	¾″ to 1½″	**1576A52** 261.73

★(E) dimension is ⅞″.

Door Face-Mount Latches with Emergency Release Handle

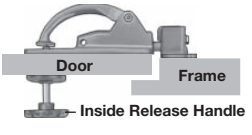

5&6

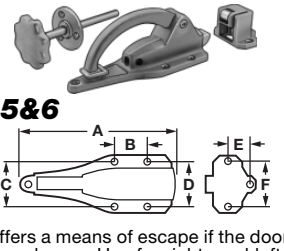

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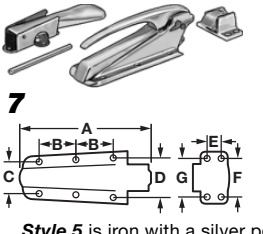

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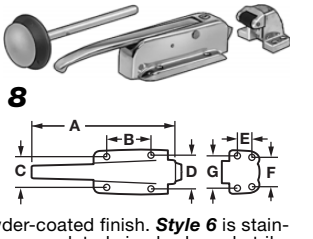

An emergency release handle offers a means of escape if the door closes with someone inside your enclosure. Use for right- and left-hand doors on walk-in freezers and coolers, ovens, paint booths, and industrial enclosures. All latches mount to the front of the door. Strikes are adjustable to compensate for sagging doors and worn or flattened gaskets.

Mounting screws are not included. Latches require ¼″ mounting screws, except 1840A12 and 1840A14 require #10 screws. *Style 8* latches also require #10 screws for mounting the release handle.

Style 5 is iron with a silver powder-coated finish. ***Style 6*** is stainless steel. ***Styles 7 & 8*** have a chrome-plated zinc body and strike with a chrome-plated malleable iron handle.

(8) Key Locking and Padlockable Latches— Have a locking cylinder and also accept a padlock. Latches come with two keys and open with key number 105. *Latches for smaller offsets* accommodate a slight negative offset for recessed doors. *Latches with fiberglass rods* are ideal for freezers because they work in temperatures down to −40° F.

Proj.	(A)	Center-to-Center (B)	(C)	(D)	(E)	(F)	(G)	Max. Padlock Shackle Dia.	For Smaller Offsets Offset Range			For Larger Offsets Offset Range		
Padlockable— *Cast Iron Release Handle with Steel Rod*														
5	3½″	8″	1¾″	2⅜″	2⅜″	1 3/16″	2 7/16″	—	5/16″	0″ to ½″	**1840A23**	$64.15	⅝″ to 1¼″	**1840A25** $64.15
5	4⅛″	10⅝″	1 15/16″	3″	3″	1½″	3⅛″	—	11/32″	0″ to 11/16″	**1840A12**	106.11	11/16″ to 1½″	**1840A14** 106.11
Padlockable— *Stainless Steel Release Handle with Stainless Steel Rod*														
6	3½″	8″	1¾″	2⅜″	2⅜″	1 3/16″	2 7/16″	—	5/16″	0″ to ½″	**1840A31**	196.60	⅝″ to 1¼″	**1840A32** 208.79
Padlockable— *Steel Release Handle with Steel Rod*														
7	4″	11¾″	3 5/16″	2⅞″	3⅜″	1¼″	3¼″	3¼″	5/16″	0″ to 3/16″	**1267A1**	608.35	1⅜″ to 1⅞″	**1267A3** 578.87
Key Locking and Padlockable— *Plastic Release Handle with Steel Rod*														
8	2¼″	11″	3⅜″	2⅛″	2½″	15/16″	2 5/16″	2 9/16″	5/16″	−⅛″ to ¼″	**1354A304**	299.05	¾″ to 1½″	**1354A444** 291.89
Key Locking and Padlockable— *Plastic Release Handle with Fiberglass Rod*														
8	2¼″	11″	3⅜″	2⅛″	2½″	15/16″	2 5/16″	2 9/16″	5/16″	−⅛″ to ¼″	**1354A424**	309.74	¾″ to 1½″	**1354A454** 302.58

For information about push-to-close latches, see page 2964.

Door Face-Mount Pressure-Venting Latches

Internal pressure in equipment such as spray booths and drying ovens automatically opens these latches. Manually open the latches by pulling on the handle. Mounting screws not included. All are FM approved.

Release force is the amount of pressure an enclosed area can sustain before the latch opens. Adjust the catch to make the latch more or less sensitive to pressure. To adjust the catch on Styles 1 and 2, use a slotted screwdriver. For Style 3, use a 3/16″ hex key.

Styles 1 & 2 are reversible for use on right- and left-hand doors. *Style 3* is not reversible. **To Order:** For Style 3, please specify right or left hand. To determine handing, look at the outside face of your door: if the hinges are on the right, order a right-hand latch; if the hinges are on the left, order a left-hand latch.

Body Material	Proj.	(A)	Ctr.-to-Ctr. (B)	(C)	Screw Size	For Smaller Offsets: Offset Range			For Larger Offsets: Offset Range		
(1) Release Force: 4 to 17 lbs./sq. ft.											
Type 316 SS	2 5/16″	2 3/8″	—	1 3/8″	1/4″	0″ to 3/16″	**1260A1**	$147.00	—	—	—
(2) Release Force: 10 to 45 lbs./sq. ft.											
Iron	3 1/4″	3 3/4″	—	2″	5/16″	0″ to 3/16″	**1260A13**	138.57	1/4″ to 9/16″, 5/8″ to 13/16″	**1260A14**	$146.70
(3) Release Force: 43 to 180 lbs./sq. ft.											
Steel	3 1/2″	7 3/4″	1 3/4″	2 7/8″	3/8″	0″ to 3/16″	**1260A31**	234.27	3/16″ to 5/16″, 5/16″ to 11/16″, 7/8″ to 1 1/16″	**1260A32**	247.02

Door Edge-Mount Latches

Mount latches on the side edge of doors on refrigerators, ovens, and industrial enclosures. Use for right- and left-hand doors. Latches require a minimum 3/4″ offset between the front of the door and the front of the frame. They are adjustable to compensate for changes in offset caused by sagging doors and worn or flattened gaskets. Latches are chrome-plated zinc, except Style 6 has a black composite handle. Mounting screws not included.

Padlockable Latch—Maximum padlock shackle diameter is 5/16″.

Key-Locking Latches—Come with two keys. *Style 5* opens with key number 01. *Style 6* opens with key number 1313 and has a magnetic strike for airtight closure.

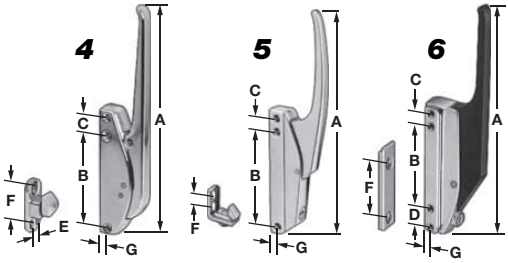

	Proj.	(A)	Center-to-Center (B)	(C)	(D)	(E)	(F)	(G)	Screw Size		
Padlockable											
4	1 15/16″	9 5/16″	3 3/4″	3/4″	—	7/16″	1 9/16″	3/8″	#10	**1268A1**	$89.29
Key Locking											
5	2 5/8″	10 1/2″	4 5/8″	5/8″	—	—	1/2″	3/8″	#10	**15775A28**	45.09
6	2 7/8″	11 1/2″	4 3/16″	5/8″	1″	—	3 1/2″	3/8″	#10	**15775A31**	85.41

Push-Knob Pull-to-Open Latches

To open the latches, push in the knob and pull the tab. Latches are black thermoplastic. Require #6 mounting screws (not included). Bolt extension is 5/16″. Temperature range is 0° to 150° F.

Note: Max. latch distance is the maximum allowable space between the bolt and the front surface of the door.

Key-Locking Latch—Comes with two keys. Turn key 180° to the left to unlock. Latch also operates without the key when unlocked.

Key Locking

	Max. Door Thick.	Max. Latch Distance	Cutout Dia.	Overall Dia.	Projection Front	Projection Back	Opens with Key No.		
Nonlocking	3/8″	15/16″	1″	1 1/8″	5/8″	1 1/2″	—	**1219A81**	$11.36
Key Locking	3/8″	15/16″	1″	1 1/8″	5/8″	1 1/2″	CH751	**1219A82**	16.09

Lever Pull-to-Open Metal Door Latches

Lift the lever to unlatch doors on circuit breakers and fuse boxes as well as other metal enclosures. Push the door closed to latch. Case is zinc-plated steel; lift lever is zinc with a dull chrome finish.

Horizontal Mount—Reversible for right- and left-hand doors. Furnished with a hardened-steel mounting clip to hold the latch in place.

Vertical Mount—Choose right or left hand. To determine handing, look at the outside face of your door: if the hinges are on the right, order a right-hand latch; if the hinges are on the left, order a left-hand latch. Require #8 mounting screws (not included).

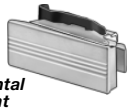

Horizontal Mount Nonlocking

Vertical Mount Key Locking Left Hand

Max. Door Thick.	HORIZONTAL MOUNT Case Lg.	Case Wd.	Projection Front	Projection Back		VERTICAL MOUNT Case Lg.	Case Wd.	Projection Front	Projection Back	Right Hand		Left Hand	
Nonlocking													
1/8″	2 3/4″	1″	7/8″	1/2″	**1517A55**	3″	1 3/8″	3/4″	1/2″	**1709A25**	$7.29	**1709A26**	$7.29
Key Locking—*Come with two keys; locks open with key number CAT60*													
1/8″	2 3/4″	1″	7/8″	1/2″	**1517A42**	3″	1 3/8″	3/4″	1/2″	**1709A12**	11.95	**1709A14**	11.95

Spring-Loaded Latches

Springs keep the latches engaged to hold doors closed. Activate the handle to unlatch; release the handle to engage. Furnished with mounting screws.

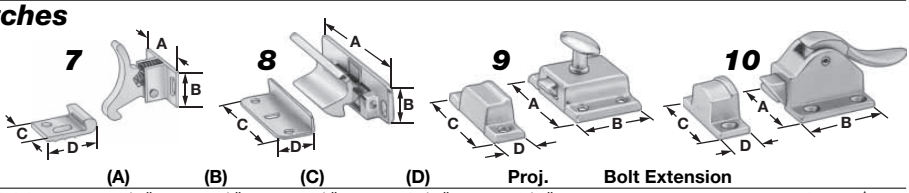

	Material	(A)	(B)	(C)	(D)	Proj.	Bolt Extension		
7	Brass with Bright Brass Finish	1 3/16″	5/8″	3/4″	15/16″	1 3/16″	—	**11265A61**	$4.13
7	Brass with Bright Nickel Finish	1 3/16″	5/8″	3/4″	15/16″	1 3/16″	—	**11265A71**	4.46
8	Type 316 SS with Polished Finish	2 5/8″	3/4″	1 13/16″	11/16″	1 1/8″	—	**11265A81**	44.80
9	Steel with Bright Brass Finish	1 7/8″	1 1/4″	1 7/8″	9/16″	1 1/8″	3/16″	**1663A21**	5.72
10	Brass with Dull Brass Finish	1 1/2″	1 3/8″	1 1/2″	9/16″	1 1/8″	1/4″	**1665A1**	31.59
10	Brass with Dull Chrome Finish	1 1/2″	1 3/8″	1 1/2″	9/16″	1 1/8″	1/4″	**1665A3**	37.92

Recessed-Handle Pull-to-Open Latches

1 Key Locking

2 Key Locking

3

Also known as paddle latches, these are often seen on electrical panels, cabinets, and lockers. Pull the recessed handle to open; the paddle is spring-loaded, so it returns to the closed position on its own. Reversible for right- and left-hand use. *Note:* Max. latch distance is the maximum possible space between the bolt and the front surface of the door.

(1) Mounting hardware is concealed for a finished look. All latches include a mounting bracket and mounting screw. *Key-locking latches* come with two keys and open with key number CH751.

(2) Mount with #6 screws (not included) or weld in place. *Key-locking latch* comes with one key and opens with key number CH501.

(3) Mounting hardware is concealed for a finished look. Requires #8 mounting screws (not included).

Material	Max. Door Thick.	Max. Latch Distance	Cutout Ht.	Cutout Wd.	Overall Ht.	Overall Wd.	Back Proj.	Screw Holes, Ctr.-to-Ctr.	Bolt Extension		
Nonlocking											
1 ... Steel (Black Finish)	1/4″	5/16″	2 3/16″	2 13/16″	2 11/16″	3 5/16″	1 7/16″	—	5/16″	**11585A71**	$23.43
1 ... Steel (Black Finish)	3/8″	1/2″	3 1/4″	4 1/4″	4″	5″	1 15/16″	—	7/16″	**11585A72**	30.56
1 ... Stainless Steel (Dull Finish)	1/16″	1/8″	1″	1 9/16″	1 1/8″	1 3/4″	5/16″	—	7/16″	**11585A11**	10.95
1 ... Stainless Steel (Dull Finish)	1/16″	3/16″	1 7/16″	1 7/8″	1 7/8″	2 1/4″	1″	—	1/2″	**11585A12**	18.70
1 ... Stainless Steel (Dull Finish)	1/4″	5/16″	2 3/16″	2 13/16″	2 11/16″	3 5/16″	1 7/16″	—	5/16″	**11585A13**	36.78
1 ... Stainless Steel (Dull Finish)	3/8″	1/2″	3 1/4″	4 1/4″	4″	5″	1 15/16″	—	7/16″	**11585A14**	52.74
2 ... Steel (Nickel-Plated Finish)	1/8″★	1/8″	1 1/2″	2″	2″	2 5/8″	11/16″	1 5/8″, 2 1/4″	5/16″	**1675A1**	9.40
3 ... Stainless Steel (Dull Finish)	3/16″★	3/16″	2″	3 1/8″	2 1/4″	3 5/16″	1/2″	2″	1/4″	**11585A77**	61.06
Key Locking											
1 ... Steel (Black Finish)	3/8″	1/2″	3 1/4″	4 1/4″	4″	5″	1 15/16″	—	7/16″	**11585A73**	41.20
1 ... Stainless Steel (Dull Finish)	3/8″	1/2″	3 1/4″	4 1/4″	4″	5″	1 15/16″	—	7/16″	**11585A21**	65.07
2 ... Steel (Nickel-Plated Finish)	1/8″★	1/8″	1 1/2″	3 3/16″	2″	3 1/2″	11/16″	1 5/8″, 2 7/8″	5/16″	**1675A3**	22.97

★ Maximum door thickness listed is for through-hole mounting. For other types of mounting, there is no maximum.

Recessed-Ring Pull-to-Open Latches

Plastic

When you release the spring-loaded ring, it returns to its recessed position to stay out of your way. Latches open from two sides. From the outside, pull the recessed ring to unlatch. From the inside, slide the release tab on the back of the latch. All latches are nonlocking with a stainless steel spring and strike for durability and corrosion resistance. Furnished with a mounting bracket and strike. The strike requires #10 screws (not included). *Note:* Max. latch distance is the maximum possible space between the bolt and the front surface of the door.

Plastic latches have a temperature range of 0° to 140° F.

Door Thick. Min.	Door Thick. Max.	Max. Latch Distance	O'all Dia.	Cutout Dia.	Projection Front	Projection Back	Bolt Extension	Black Plastic		Polished Type 316 SS	
1/8″	1/4″	1″	2 7/16″	2″	1/8″	1 7/16″	1/4″	**1065A41**	$15.47	**1731A11**	$38.80
5/16″	7/16″	1″	2 7/16″	2″	1/8″	1 7/16″	1/4″	**1065A42**	15.47	**1731A12**	38.80
1/2″	5/8″	1″	2 7/16″	2″	1/8″	1 7/16″	1/4″	**1065A43**	15.47	**1731A13**	38.80
11/16″	7/8″	1″	2 7/16″	2″	1/8″	1 7/16″	1/4″	**1065A44**	15.47	**1731A14**	38.80

Turn-to-Open Latches

4

Key Locking

5

Black Finish

6

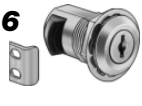

Optional Sealing Cover for Style 6

Latches operate with the turn of a knob or a key. All are for through-hole mounting on panels and doors. Bolt extension is 5/16″. *Note:* Max. latch distance is the maximum possible space between the bolt and the front surface of the door.

(4) Exposed Knob Latches— The knob is exposed for quick access. A 90° turn to the left or right opens the latch. Made of chrome-plated zinc with a plastic knob. Require #6 mounting screws (not included). Temperature range is 0° to 150° F. *Key-locking latches* come with two keys. They also operate without the key when they are unlocked.

(5) Pop-Out Knob Latches— When not in use, you can push the knob in so it's flush; it pops out with a touch. Turn the knob 45° to the left or right to open the latch. Latch secures with the knob in or out. Made of plastic and stainless steel for corrosion resistance. Require #10 mounting screws (not included). Temperature range is –20° to +140° F. 1248A11 has a black matte finish; 1248A12 has a chrome-plated finish.

(6) Flush-Face Latches— The low-profile design means less of the latch is exposed, reducing the potential for damage. Latches require the key for operation. A 90° turn to the left or right opens the latch. Made of chrome-plated zinc. Require #6 mounting screws (not included). Locks come with two keys.

Optional sealing covers protect flush-face latches. Made of black plastic. Temp. range is –40° to +175° F.

Max. Door Thick.	Max. Latch Distance	Cutout Dia.	Overall Dia.	Projection Front	Projection Back	Opens with Key No.		
Nonlocking								
4 ... 3/8″	13/16″	3/4″	7/8″	1 1/16″	1 3/16″	—	**11885A31**	$18.84
4 ... 1/2″	1″	1″	1 1/8″	7/8″	1 7/16″	—	**11885A32**	20.26
5 ... 3/4″	1 3/8″	1 1/4″	1 1/2″	1/4″	1 7/8″	—	**1248A11**	12.77
5 ... 3/4″	1 3/8″	1 1/4″	1 1/2″	1/4″	1 7/8″	—	**1248A12**	16.05
Key Locking								
4 ... 3/8″	13/16″	3/4″	7/8″	1 1/16″	1 3/16″	CH751	**11885A11**	25.77
4 ... 1/2″	1″	1″	1 1/8″	7/8″	1 7/16″	CH751	**11885A12**	27.21
6 ... 3/8″	13/16″	3/4″	7/8″	3/16″	1 3/16″	CH751	**11885A21**	21.24
6 ... 1/2″	1″	1″	1 1/8″	3/16″	1 7/16″	CH751	**11885A22**	23.99
Optional Sealing Cover for 11885A21 (Style 6)							**11885A43**	2.00
Optional Sealing Cover for 11885A22 (Style 6)							**11885A44**	2.18

Spring-Loaded Snap-Arm Catches

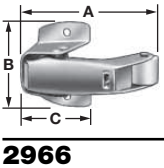

You don't need a mating strike for this catch—its spring-loaded arm snaps to engage when you close your screen or storm door. The arm applies pressure to the door to keep it closed. Open the door to release the catch. Made of zinc-plated steel with rubber rollers. For surface mounting. Furnished with mounting screws.

(A)	(B)	(C)	Projection	Screw Holes, Ctr.-to-Ctr.		
3″	1 7/8″	1 7/16″	1 3/4″	1 3/8″	**1302A11**	$6.14

Roller Catches

Doors stay closed thanks to the pressure of plastic rollers against the strike. Furnished with mounting screws, except Style 1.

Style 1 has elongated mounting holes that allow for adjustment. Max. temp. is 150° F.

Style 2 has elongated mounting holes that allow for adjustment. Not rated for temperature.

Styles 3-5 have an adjustment screw to adjust the roller projection from 0″ to 3/8″ to compensate for misalignment. Temp. range is –100° to +300° F.

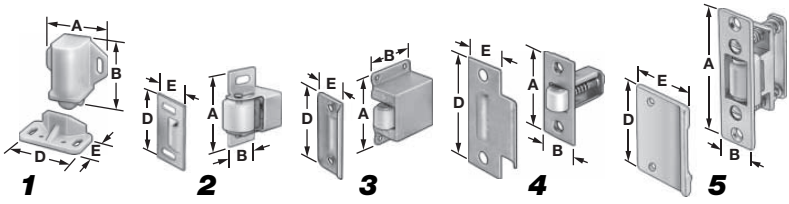

	Pull Power, lbs.	Catch (A)	Catch (B)	Strike (D)	Strike (E)	Screw Holes, Ctr.-to-Ctr. Catch	Screw Holes, Ctr.-to-Ctr. Strike	Screw Size	Catch and Strike Material		
Surface Mount											
1	—	15/16″	11/16″	1 1/16″	5/8″	5/8″	3/4″	#6	White Plastic	**8040A1**	$2.06
2	—	1 15/16″	1″	1 3/4″	1″	1 3/8″	1 1/4″	#6	Zinc-Plated Steel	**8040A12**	1.94
3	17	2″	1 7/16″	2 1/8″	1″	1″, 1 11/16″	1 1/2″	#6	Stainless Steel	**8040A14**	15.23
Mortise Mount											
4	17	2 1/4″	1″	2 3/4″	1 1/8″	1 5/8″	2 1/8″	#8	Stainless Steel	**8040A21**	12.55
5	17	3 3/8″	1″	2 1/4″	1 11/16″	2 7/8″	1 11/16″	#10	Chrome-Plated Brass	**8040A33**	12.73

Grab Catches

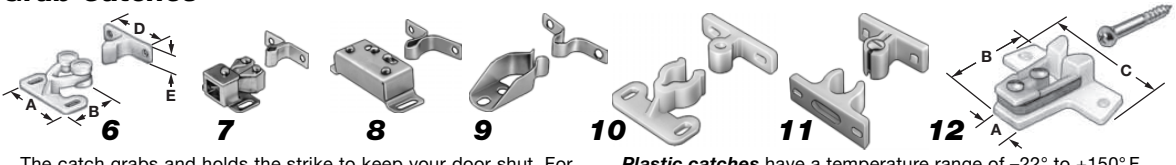

The catch grabs and holds the strike to keep your door shut. For surface mounting. Mounting screws not included, except Styles 7, 9, and 12 come with screws.

Plastic catches have a temperature range of –22° to +150° F.

Style 11 has a screw for adjusting the force needed to open and close the catch.

	Pull Power, lbs.	Catch (A)	Catch (B)	Catch (C)	Strike (D)	Strike (E)	Catch Proj.	Screw Holes, Ctr.-to-Ctr. Catch	Screw Holes, Ctr.-to-Ctr. Strike	Screw Size	Catch and Strike Material		
Double Roller— *Rollers are plastic*													
6	4	1 3/16″	1 3/16″	—	1 1/16″	5/16″	7/16″	7/8″	1 3/16″	#3	White Plastic	**1659A2**	$1.06
6	7	1 1/4″	1″	—	1 1/4″	5/16″	1/2″	15/16″	15/16″	#3	White Plastic	**1659A3**	1.15
7	4	1 5/16″	1 1/8″	—	1 1/4″	3/8″	9/16″	15/16″	15/16″	#5	Zinc-Plated Steel	**1659A1**	1.06
8	6	1 7/8″	5/8″	—	1 5/16″	1/4″	5/8″	1 9/16″	1″	#4	Stainless Steel	**1659A7**	6.66
Snap Action													
9	4	9/16″	1 7/16″	—	1 3/8″	3/8″	1/2″	7/16″	7/8″	#6	Zinc-Plated Steel	**1659A16**	1.25
10	16	1 3/8″	1 1/16″	—	1 7/16″	7/16″	1/2″	1 1/16″	7/8″	#3	White Plastic	**1659A5**	1.36
11	18-44	2 11/16″	1 1/4″	—	2 5/16″	1″	1 1/4″	2 1/16″	1 5/8″	#10	Black Plastic	**1739A22**	9.60
12	5	1/2″	1 1/4″	1 13/16″	—	—	11/16″	3/8″, 1 3/8″	—	#4	White Plastic w/ Steel Strike	**1659A15**	2.05

Multidirection Ball-Style Grab Catches

Each catch has top and bottom balls that can grab the strike from the direction that's best for your application. Furnished with mounting screws. ***Brass catches*** have screws in the top and bottom to adjust the force needed to open and close the catch.

Two Way— Strike can enter from either side. Made of brass with two stainless steel balls. For surface mounting. Meet ANSI 156.9.

Three Way— Strike can enter from front or either side. For surface mounting. *Brass catches* have two steel balls. *Type 316 stainless steel catches* have two Type 316 stainless steel balls.

Four Way— Strike can enter from front, back, or either side. Made of brass with two stainless steel balls. For surface or mortise mounting. Meet ANSI 156.9.

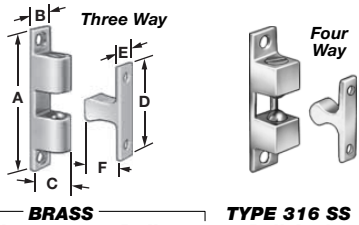

	Pull Power, lbs.	Catch (A)	Catch (B)	Catch (C)	Strike (D)	Strike (E)	Strike (F)	Screw Holes, Ctr.-to-Ctr. Catch	Screw Holes, Ctr.-to-Ctr. Strike	BRASS Dull Chrome Finish		BRASS Dull Brass Finish		TYPE 316 SS Polished Finish	
Two Way	4	2 3/16″	1/2″	1/2″	1 3/8″	3/8″	5/8″	1 3/4″	15/16″	**1669A4**	$6.03	**1669A16**	$6.04	—	—
Three Way	—	1 11/16″	5/16″	7/16″	1″	5/16″	3/8″	1 3/8″	9/16″	**1790A22**	2.43	**1790A21**	2.43	—	—
Three Way	—	1 15/16″	3/8″	7/16″	1 1/8″	5/16″	7/16″	1 9/16″	3/4″	**1790A15**	3.07	**1790A11**	3.07	—	—
Three Way	—	2 5/16″	7/16″	9/16″	1 7/16″	3/8″	9/16″	1 15/16″	1″	**1790A14**	5.13	**1790A12**	5.13	—	—
Three Way	—	2 3/4″	9/16″	5/8″	1 11/16″	7/16″	5/8″	2 1/4″	1 3/16″	**1790A17**	7.23	**1790A16**	7.23	—	—
Three Way	3	1 11/16″	5/16″	7/16″	1″	5/16″	7/16″	1 3/8″	5/8″	—	—	—	—	**1328A1**	$32.00
Three Way	4	2″	7/16″	1/2″	1 3/16″	3/8″	9/16″	1 9/16″	1 3/16″	—	—	—	—	**1328A2**	34.72
Three Way	9	2 3/4″	9/16″	11/16″	1 11/16″	7/16″	3/4″	2 3/8″	1 3/16″	—	—	—	—	**1328A3**	46.85
Four Way	4	3″	3/4″	3/4″	1 3/4″	7/16″	7/8″	2 1/2″	1 1/4″	**1316A5**	9.94	**1316A2**	9.94	—	—

Spring-Loaded Grab Catches

All of the catches have springs that assist them in applying pressure to the strike to keep your door closed. The case and strike are black plastic and the spring is stainless steel to resist corrosion. For surface mounting. Mounting screws not included.

Catches— Temperature range is –20° to +140° F. Meet UL 94HB for flammability.

Catches with Electrical Switch— An electrical switch enables these latches to power a light or other signal to indicate whether the door is open or closed. Not for use as a safety interlock. Temperature range is –40° to +140° F. Meet UL 94V0 for flammability.

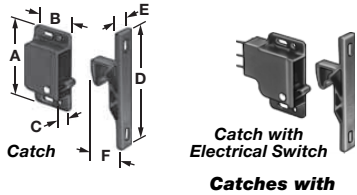

Pull Power, lbs.	Catch (A)	Catch (B)	Catch (C)	Strike (D)	Strike (E)	Strike (F)	Screw Holes, Ctr.-to-Ctr. Catch	Screw Holes, Ctr.-to-Ctr. Strike	Screw Size	Catches		Catches with Electrical Switch	
3	1 15/16″	1 1/8″	9/16″	2 7/8″	1/2″	15/16″	1 5/8″	2 3/16″	#4, #8	**12855A33**	$5.24	**12855A61**	$12.36
5	1 15/16″	1 1/8″	9/16″	2 7/8″	1/2″	15/16″	1 5/8″	2 3/16″	#4, #8	**12855A11**	5.24	**12855A62**	12.36
10	1 15/16″	1 1/8″	9/16″	2 7/8″	1/2″	15/16″	1 5/8″	2 3/16″	#4, #8	**12855A12**	5.24	**12855A63**	12.36

Magnetic Catches

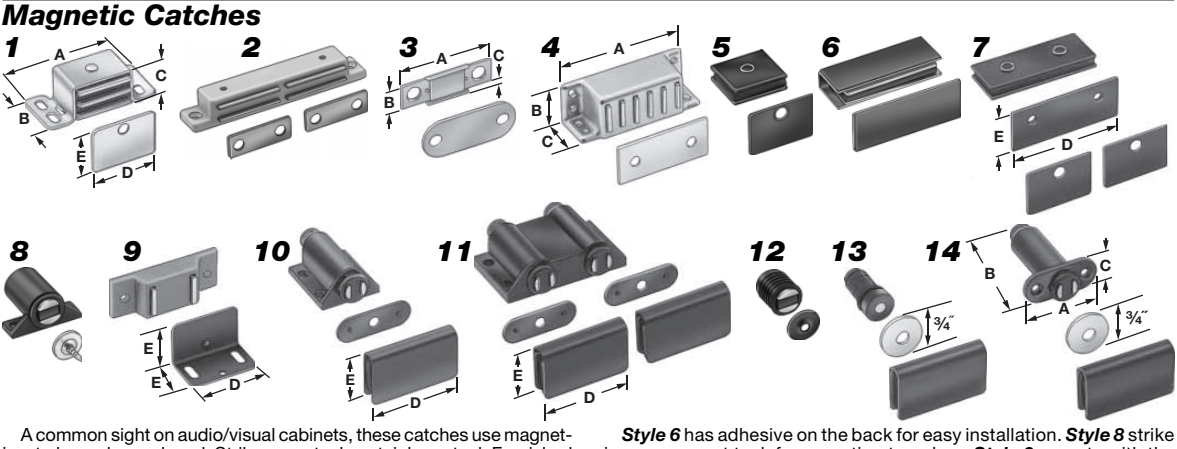

A common sight on audio/visual cabinets, these catches use magnetism to keep doors closed. Strikes are steel or stainless steel. Furnished with mounting screws, unless noted. Not rated for temperature.

Note: Pull power rating given is based on installation with the furnished strike plate; pull power may be different based on your application.

Style 6 has adhesive on the back for easy installation. ***Style 8*** strike is a permanent tack for mounting to a door. ***Style 9*** mounts with the strike on the inside of the cabinet rather than on the door. ***Styles 10, 11, 13 & 14*** are for glass and lightweight cabinet doors.

	Pull Power, lbs.	Catch (A)	Catch (B)	Catch (C)	Strike (D)	Strike (E)	Screw Holes, Ctr.-to-Ctr. Catch	Screw Holes, Ctr.-to-Ctr. Strike	Screw Size	Case Material		
***Surface Mount—**Pull-to-Open*												
1	6	2 1/8"	1 1/16"	1/2"	1 3/16"	7/8"	1 5/8"	—	Included	Tan Plastic	**1674A17**	$1.29
1	7	2 1/16"	1"	3/4"	1 1/8"	13/16"	1 11/16", 7/16"	—	Included	Aluminum	**1676A11**	2.46
1	13	2 1/16"	1"	3/4"	1 1/8"	13/16"	1 5/8", 7/16"	—	Included	Aluminum	**1676A12**	2.77
1	15	2 1/8"	7/8"	9/16"	1"	13/16"	1 5/8"	—	Included	Tan Plastic	**1672A15**	2.57
1	34	3 1/2"	2"	15/16"	2 11/16"	3/4"	2 13/16", 7/8"	2 5/16"	Included	Brass (Dull Brass Finish)	**1310A1**	63.59
1	34	3 1/2"	2"	15/16"	2 11/16"	3/4"	2 13/16", 7/8"	2 5/16"	Included	Brass (Dull Chrome Finish)	**1310A2**	65.57
2	10	3 1/4"	1 3/8"	7/16"	1 1/4"	7/8"	2 7/8"	—	Included	Aluminum	**1101A12**	8.47
2	11	3 7/16"	11/16"	9/16"	1 3/16"	7/16"	3 1/16"	13/16"	Included	White Plastic	**1101A13**	8.62
2	12	4 3/16"	13/16"	5/8"	1 1/2"	9/16"	3 11/16"	1"	Included	White Plastic	**1101A14**	9.54
3	4	1 7/16"	3/8"	3/16"	1 15/16"	—	1 3/16"	1 5/8"	M3●	Steel	**1745A18**	4.38
3	6	1 3/8"	1/2"	1/8"	1 3/8"	5/8"	1"	1"	Included	Steel (Nickel Finish)	**1745A12**	8.37
3	7	1 9/16"	7/16"	5/16"	1 15/16"	5/8"	1 3/16"	1 5/8"	M3●	Stainless Steel	**1745A16**	5.06
3	9	1 5/8"	11/16"	1/8"	1 3/16"	5/8"	1 1/8"	5/8"	Included	Steel (Nickel Finish)	**1745A15**	6.20
3	22	3 3/16"	11/16"	9/16"	2 3/16"	11/16"	2 13/16"	1 7/16"	M3●	Brass	**1745A17**	6.17
4	24	2 7/16"	13/16"	3/4"	1 3/4"	3/4"	2"	1 1/8"	#4●	Steel	**18325A61**	15.43
4	31	3 3/16"	13/16"	3/4"	2 3/8"	3/4"	2 13/16"	1 5/8"	#4●	Steel	**18325A62**	18.29
5	6	1"	15/16"	5/16"	1 1/8"	13/16"	—	—	Included	Zinc-Plated Steel (Black Finish)	**1674A61**	1.75
6	10	1 1/4"	3/4"	3/8"	1 1/4"	3/4"	—	—	—	Aluminum	**1733A1**	5.21
6	14	2"	3/4"	7/16"	2"	3/4"	—	—	—	Aluminum	**1733A2**	6.27
7	11	2"	13/16"	5/16"	2"	13/16"	1"	1 1/4"	Included	Zinc-Plated Steel (Black Finish)	**1674A62**	3.27
7	22	3"	13/16"	5/16"	3"	13/16"	2"	2 5/16"	Included	Zinc-Plated Steel (Black Finish)	**1674A63**	4.64
8	8	1 1/4"	7/8"	11/16"	9/16"	—	15/16"	—	#5●	Brown Plastic	**10935A33**	1.74
9	5	2"	3/4"	7/16"	1 1/8"	3/4"	1 1/2"	3/4"	Included	Tan Plastic	**18325A51**	2.48
***Surface Mount—**Push-to-Open*												
10	3	1 1/8"	1 13/16"	5/8"	1 5/8"	1"	7/8", 11/16"	—	Included	Black Plastic	**1860A21**	3.09
10	3	1 1/8"	1 13/16"	5/8"	1 5/8"	1"	7/8", 11/16"	—	Included	Black Plastic♠	**1860A22**	3.20
11	4	2 5/16"	1 13/16"	11/16"	1 5/8"	1"	2", 3/4"	—	Included	Black Plastic	**1860A23**	5.51
11	4	2 5/16"	1 13/16"	11/16"	1 5/8"	1"	2", 3/4"	—	Included	Black Plastic♠	**1860A24**	5.74
***Mortise Mount—**Pull-to-Open*												
12	4	5/8"	7/8"	3/4"	3/4"	—	—	—	Included	Aluminum	**15735A67**	2.63
12	6	5/16"	9/16"	3/8"	1/2"	—	—	—	#4●	Black Plastic	**15735A62**	3.03
12	13	9/16"	11/16"	9/16"	9/16"	—	—	—	#4●	Brown Plastic	**15735A64**	1.73
***Mortise Mount—**Push-to-Open*												
13	—	7/16"	1 1/16"	9/16"	1 5/8"	1"	—	—	—	Black Plastic	**15735A66**	2.54
14	—	1 3/8"	1 7/8"	5/8"	1 5/8"	1"	13/16"	—	#5●	Black Plastic	**15735A65**	3.14

●Mounting screws not included. ♠Strike plate has polished chrome finish.

Specialty Magnetic Catches

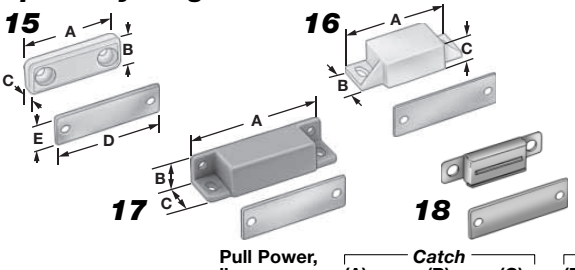

Keep doors closed in clean room, food service, and high-temperature environments. Catches are made of plastic or stainless steel for corrosion resistance. All catches have a stainless steel strike. Mounting screws not included.

(15&16) Clean Room Catches—For use in sanitary environments. The magnet is encapsulated in white plastic, so it won't give off particulates when it meets the strike. Temperature range is 14° to 176° F.

(17) Food-Safe Catch—The magnet is completely sealed in gray polyacetal plastic, eliminating crevices that can trap food particles. NSF certified. Temperature range is 14° to 176° F.

(18) High-Temperature Catch—This catch withstands temperatures up to 482° F. Min. temperature is 14° F. Made of stainless steel.

		Pull Power, lbs.	Catch (A)	Catch (B)	Catch (C)	Strike (D)	Strike (E)	Screw Holes, Ctr.-to-Ctr. Catch	Screw Holes, Ctr.-to-Ctr. Strike	Screw Size Catch	Screw Size Strike		
15	Clean Room	7	1 13/16"	11/16"	1/4"	1 15/16"	5/8"	1 3/16"	1 9/16"	#8	#6	**6680A12**	$9.74
16	Clean Room	7	2"	7/8"	9/16"	1 15/16"	5/8"	1 9/16"	1 9/16"	#8	#6	**6680A15**	12.94
17	Food Safe	11	2 1/2"	3/4"	9/16"	1 15/16"	5/8"	2 1/8"	1 5/8"	M3.5	#6	**6680A21**	20.23
18	High Temperature	11	1 9/16"	7/16"	5/16"	1 15/16"	5/8"	1 3/16"	1 5/8"	#8	#6	**6680A22**	17.75

For information about pull handles, see page 2970.

Ball-End Spring-Loaded Bullet Catches

The ball is spring-loaded to apply pressure against the strike to keep your door closed.
Style 1—Catch is nickel-plated steel. Requires #4 mounting screws (not included).
Style 2—Catches mortise mount. Case is brass. Ball and strike are steel. Furnished with a steel brad nail to surface mount the strike to the door frame.
Style 3—Catches and strikes mortise mount. Case, ball, and strike are brass. The catch is adjustable; push the ball in and rotate it to compensate for misalignment. Furnished with steel screws.

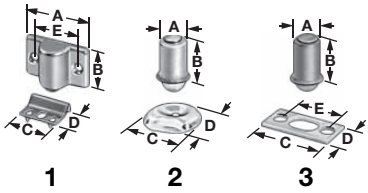

	Mount Type	(A)	(B)	(C)	(D)	(E)		
1	Surface Mount	13/16"	3/4"	3/4"	5/8"	13/16"	1662A13	$0.77
2	Nonadjustable Mortise Mount	1/4"	3/8"	9/16"	1/2"	___	1662A21	1.40
2	Nonadjustable Mortise Mount	3/8"	1/2"	5/8"	9/16"	___	1662A11	1.46
3	Adjustable Mortise Mount	3/8"	5/8"	11/16"	9/16"	11/16"	1662A31	1.71
3	Adjustable Mortise Mount	1/2"	11/16"	11/4"	11/16"	13/16"	1662A32	2.40

Recessed Pull Handles

Mount handles into a cutout so they are flush with your door. **Styles 4, 5, 6 & 10** come with mounting screws, except 1655A7 welds to your door. **Style 5** mounting holes are on the short sides of the handle. **Styles 7-9** do not include mounting screws. **Style 11** snap into a cutout.

	Cutout Ht.	Cutout Wd.	(A)	(B)	Back Proj.	Screw Size	Thread Depth		
With Unthreaded Through Holes									
Formed Steel—Tan Powder-Coated Finish									
4	3 5/8"	2"	6"	4"	7/8"	3/8", #12	___	1218A1	$23.03
Formed Steel—Brushed Zinc Finish									
5	2 7/16"	1 3/8"	3 1/4"	1 3/4"	9/16"	#4	___	1655A1	6.84
Formed Brass—Polished Finish									
5	2 7/16"	1 3/8"	3 1/4"	1 3/4"	9/16"	#4	___	1655A2	6.95
Stamped Type 304 Stainless Steel—Dull Finish									
6	3 3/4"	2 13/16"	5"	3 1/2"	7/8"	#8	___	1634A44	18.92
Stamped Type 316 Stainless Steel—Dull Finish									
6	3 3/4"	2 13/16"	5"	3 1/2"	7/8"	#8	___	1572A11	30.73
Cast Iron—Tan Powder-Coated Finish									
7	4 7/8"	4 1/8"	6 3/4"	5 1/8"	1 11/16"	5/16"	___	1218A3	56.85
Stamped Steel—Coated with Black Rubber (32° to 104° F)									
7	6 15/16"	4 15/16"	9 1/16"	6 11/16"	13/16"	#10	___	1218A5	34.00
Acetal—Black (–30° to 280° F)									
8	1 11/16" Dia.	___	2 3/16"	2 3/16"	5/8"	#6	___	13155A24	1.60
9	3 1/16"	1 11/16"	3 5/8"	2 3/8"	5/8"	#6	___	13155A61	2.00
With Threaded Studs									
Stamped Type 304 Stainless Steel—Dull Finish									
10	3 9/16"	1 5/8"	4 13/16"	2 7/16"	5/8"	10-32	3/16"	1655A8	5.11
With Threaded Holes									
Stamped Type 304 Stainless Steel—Dull Finish									
10	3 9/16"	1 5/8"	4 13/16"	2 7/16"	5/8"	M4	6 mm	1655A9	5.11
Weld-On									
Stamped Type 304 Stainless Steel—Dull Finish									
10	3 9/16"	1 5/8"	4 13/16"	2 7/16"	5/8"	___	___	1655A7	4.38

	Cutout Ht.	Cutout Wd.	(A)	(B)	Back Proj.	For Panel Thickness		
Snap-In								
ABS Plastic—Dull Black Finish (–60° to 140° F)								
11	1 1/4"	3 1/2"	1 7/16"	3 11/16"	11/16"	0.040"-0.055"	1098A91	$3.37
11	1 1/4"	3 1/2"	1 7/16"	3 11/16"	11/16"	0.055"-0.070"	1098A92	3.37
11	1 1/4"	3 1/2"	1 7/16"	3 11/16"	11/16"	0.070"-0.085"	1098A93	3.37
11	1 1/4"	3 1/2"	1 7/16"	3 11/16"	11/16"	0.085"-0.100"	1098A94	3.37
11	1 1/4"	5 1/4"	1 7/16"	5 7/16"	11/16"	0.040"-0.055"	1098A61	3.63
11	1 1/4"	5 1/4"	1 7/16"	5 7/16"	11/16"	0.055"-0.070"	1098A62	3.63
11	1 1/4"	5 1/4"	1 7/16"	5 7/16"	11/16"	0.070"-0.085"	1098A63	3.63
11	1 1/4"	5 1/4"	1 7/16"	5 7/16"	11/16"	0.085"-0.100"	1098A64	3.63

Open-Ended Pull Handles and Knobs

Access handles and knobs from multiple angles. Mounting screws are included, except Style 16 mounts with solvent adhesive (for adhesive, see 7528A13 on page 3421).
Style 13—Maximum temperature is 194° F.
Style 15—*Type 304 stainless steel knobs* are NSF certified. *ABS plastic knobs* are not rated for temperature.
Style 16—Not rated for temperature.

	(A)	(B)	(C)	Proj.	Screw Size		
Handles with Threaded Holes							
Extruded Aluminum—Black Anodized Finish							
12	2 1/4"	3/8"	1/2"	1 1/4"	8-32	11625A11	$5.89
12	2 1/4"	1/2"	1/2"	1 1/4"	10-24	11625A12	7.22
Handles with Unthreaded Through Holes							
Plastic—Black							
13	5 1/16"	1 3/16"	3/4"	1 7/8"	M5	1187A2	14.37
Knobs with Threaded Holes							
Cast Brass—Polished Finish							
14	1 1/4"	___	1/2"	15/16"	8-32	1652A23	6.80
Stamped Type 304 Stainless Steel—Polished Finish							
15	1"	___	3/4"	7/8"	M4	11705A12	9.09
15	1 3/16"	___	13/16"	15/16"	M4	11705A13	10.78

	(A)	(B)	(C)	Proj.	Screw Size		
Knobs with Threaded Holes (Cont.)							
Stamped Type 304 Stainless Steel—Polished Finish (Cont.)							
15	1 1/2"	___	1"	1 1/16"	M5	11705A14	$13.00
15	2"	___	1 7/16"	1 3/8"	M5	11705A15	13.00
Knobs with Unthreaded Hole							
ABS Plastic—Polished Chrome Finish							
15	1 5/16"	___	3/4"	1"	#8	11645A13	1.53
ABS Plastic—Polished Brass Finish							
15	1 5/16"	___	3/4"	1"	#8	11645A12	1.53
ABS Plastic—Black							
15	1 5/16"	___	3/4"	1"	#8	11645A11	1.05
Knobs with Adhesive Mount							
Clear Acrylic							
16	1"	___	1/2"	3/4"	___	1660A24	1.50

About Pull Handles

Round Grip—A circular gripping surface allows your hand to pivot in any direction.

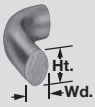

Oval Grip—A rounded edge on the gripping surface conforms to your hand and offers more control than round grip.

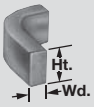

Rectangular Grip—The flat gripping surface prevents your hand from slipping or repositioning, but may be less comfortable than round and oval.

Handle strength varies by fabrication process and material.

Fabrication Process		Material
Forged	**Strongest**	Titanium, Stainless Steel
Cast	↑	Steel
Extruded		Zinc
Formed		Aluminum, Brass
Stamped		Plastic, Rubber

Pull Handles with Threaded Holes

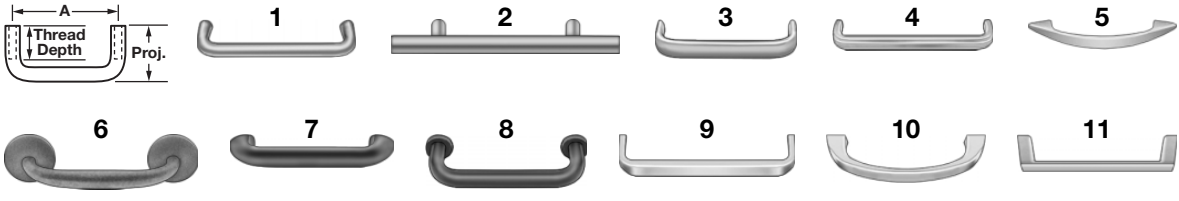

Mounting screws are completely hidden because these handles mount from behind your material. Furnished with mounting screws, unless noted. **Style 1**—*ABS plastic handles* are not rated for temperature. **Style 7**—Minimum temperature is not rated. Maximum temperature is 215°F. **Style 8**—Temperature range is –40° to 320°F.

Round Grip—Styles 1&2

	(A)	Proj.	Grip Size, Dia.	Thread Size	Thread Depth		
Extruded Aluminum—Dull Anodized Finish							
1	3/4″	1/2″	1/8″	2-56	3/16″	1568A65	$3.98
1	7/8″	1/2″	1/8″	2-56	3/16″	1568A66	4.18
1	1″	1″	3/16″	4-40	1/4″	1568A61	3.31
1	1 1/4″	1″	3/16″	4-40	1/4″	1568A62	3.40
1	2″	1″	3/16″	4-40	1/4″	1568A63	3.51
1	3″	1 5/16″	5/16″	8-32	1/2″	1568A11	3.86
1	3″	2″	1/2″	10-32	3/8″	1568A71	5.73
1	3 1/2″	1 5/16″	5/16″	8-32	1/2″	1568A21	4.13
1	4″	1 5/16″	5/16″	8-32	1/2″	1568A12	3.91
1	4″	1 7/8″	1/2″	10-32	3/4″	1568A14	7.66
1	4 9/16″	1 1/2″	5/16″	8-32	5/16″	1568A69	4.20
1	5″	1 7/16″	5/16″	8-32	1/2″	1568A15	4.67
1	5″	3″	1/2″	10-32	3/4″	1568A26	8.61
1	6″	2 5/8″	1″	1/4″-20	9/16″	1435A41	12.86
1	8″	3″	1″	1/4″-20	9/16″	1435A43	18.86
1	10″	3″	1″	1/4″-20	9/16″	1435A47	19.43
1	33 1/16″	2 1/4″	1″	3/8″-24	1″	1435A5	42.30
1	45 1/16″	2 1/4″	1″	3/8″-24	1″	1435A7	77.62
Extruded Aluminum—Black Anodized Finish							
1	3/4″	1/2″	1/8″	2-56	3/16″	1568A67	3.98
1	7/8″	1/2″	1/8″	2-56	3/16″	1568A68	4.18
1	1″	1″	3/16″	4-40	1/4″	1568A41	3.39
1	1 1/4″	1″	3/16″	4-40	1/4″	1568A42	3.35
1	2″	1″	3/16″	4-40	1/4″	1568A64	3.51
1	3″	1 5/16″	5/16″	8-32	1/2″	1568A43	4.12
1	3″	2″	1/2″	10-32	3/8″	1568A72	5.73
1	3 1/2″	1 5/16″	5/16″	8-32	1/2″	1568A44	4.39
1	4″	1 5/16″	5/16″	8-32	1/2″	1568A45	6.62
1	4 9/16″	1 1/2″	5/16″	8-32	5/16″	1568A7	4.20
1	5″	1 7/16″	5/16″	8-32	1/2″	1568A46	7.52
1	6″	1 7/16″	5/16″	8-32	1/2″	1568A47	8.59
Metric Extruded Aluminum—Dull Anodized Finish							
1	64 mm	33 mm	8 mm	M4	19 mm	1568A48	3.00
1	96 mm	33 mm	8 mm	M4	19 mm	1568A49	3.43
1	128 mm	33 mm	8 mm	M4	19 mm	1568A51	3.85
1	160 mm	33 mm	8 mm	M4	19 mm	1568A52	4.23
Extruded Brass—Dull Chrome Finish							
1	3″	1 5/16″	5/16″	8-32	1/2″	1568A31	2.28
1	4″	1 5/16″	5/16″	8-32	1/2″	1568A33	2.69
Extruded Type 303 Stainless Steel—Dull Finish							
1	2″	1″	3/16″	4-40	1/4″	1726A43	5.79
1	3″	1″	3/16″	4-40	1/4″	1726A44	6.28
1	4″	4″	1/4″	6-32	3/8″	1726A1	10.40
1	5″	4″	1/4″	6-32	3/8″	1726A2	10.71
1	6″	4″	1/4″	6-32	3/8″	1726A3	10.72
1	7″	4″	1/4″	6-32	3/8″	1726A4	11.60
Forged Type 303 Stainless Steel—Polished Finish							
1	3″	1 1/2″	5/16″	8-32	5/16″	1726A71	4.78
1	3 1/2″	1 1/2″	5/16″	8-32	5/16″	1726A72	4.91
Forged Type 303 Stainless Steel—Polished Finish (Cont.)							
1	4″	1 1/2″	5/16″	8-32	5/16″	1726A73	$5.00
1	5″	1 1/2″	5/16″	8-32	5/16″	1726A74	5.29
1	6″	1 1/2″	5/16″	8-32	5/16″	1726A75	5.44
Extruded Type 304 Stainless Steel—Dull Finish							
1	3″	1 5/16″	5/16″	8-32	1/2″	1726A31	8.14
1	3 1/2″	1 5/16″	5/16″	8-32	1/2″	1726A32	8.71
1	4″	1 5/16″	5/16″	8-32	1/2″	1726A33	9.37
1	5″	2 13/16″	5/16″	10-32	3/4″	1858A62	10.05
1	6″	2 5/8″	3/4″	1/4″-20	5/8″	1435A25	24.20
1	8″	3 1/2″	1″	1/4″-20	3/4″	1435A27	43.37
1	10″	3 1/2″	3/4″	1/4″-20	3/4″	1435A29	48.96
Extruded Type 304 Stainless Steel—Polished Finish							
1	1″	1/2″	1/8″	3-56	1/4″	1726A5	7.94
1	3″	1″	1/4″	6-32	1/4″	1726A6	7.98
1	4″	1 1/2″	5/16″	10-32	1/4″	1726A8	9.57
1	5″	1″	1/4″	6-32	1/4″	1726A7	8.46
1	5″	1 1/2″	5/16″	10-32	1/4″	1726A9	9.96
1	5 15/16″	1 1/8″	3/8″	M4	8 mm	1726A46	13.31
Extruded Type 316 Stainless Steel—Dull Finish							
1	3″	1 5/16″	5/16″	8-32	5/16″	18645A21	8.49
1	3 1/2″	1 5/16″	5/16″	8-32	5/16″	18645A22	8.63
1	4″	1 5/16″	5/16″	8-32	5/16″	18645A23	8.98
1	4″	1 3/8″	7/16″	8-32	5/16″	1726A91	8.11
1	5″	1 3/8″	7/16″	8-32	5/16″	1726A92	9.60
1	5″	1 9/16″	3/8″	M5	19 mm	1020A11	19.37
1	6″	1 3/8″	7/16″	8-32	5/16″	1726A93	10.40
1	8 13/16″	1 9/16″	3/8″	M5	19 mm	1020A12	24.90
1	9″	1 3/8″	7/16″	8-32	5/16″	1726A94	12.34
1	12″	1 3/8″	7/16″	8-32	5/16″	1726A95	14.29
1	12 9/16″	1 9/16″	3/8″	M5	19 mm	1020A13	31.70
Extruded Titanium—Polished Finish							
1	3 15/16″	1 3/16″	3/8″	M5	5/16″	1568A81	60.53
1	4 3/4″	1 5/8″	7/16″	M6	5/16″	1568A82	84.21
1	5 7/8″	2″	1/2″	M8	3/8″	1568A83	152.63
ABS Plastic—Polished Chrome Finish							
1	3″	1 1/4″	7/16″	#8	—	11945A13	1.67
1	4″	1 3/8″	7/16″	#8	—	11945A23	1.80
ABS Plastic—Black							
1	3″	1 1/4″	7/16″	#8	—	11945A11	.87
1	4″	1 3/8″	7/16″	#8	—	11945A21	.93
Extruded Steel—Nickel Finish							
2	3″	1 7/16″	1/2″	8-32	1/2″	1325A2	3.29
2	3 1/2″	1 7/16″	1/2″	8-32	1/2″	1325A21	3.42
2	3 3/4″	1 7/16″	1/2″	8-32	1/2″	1325A22	3.42
2	5 1/16″	1 7/16″	1/2″	8-32	1/2″	1325A23	3.64
2	7 9/16″	1 7/16″	1/2″	8-32	1/2″	1325A24	4.58
2	10 1/16″	1 7/16″	1/2″	8-32	1/2″	1325A25	5.78

(Continued on following page)

For information about pull handles, see page 2970.

Pull Handles with Threaded Holes *(Continued from previous page)*

Round Grip (Cont.)—Style 2

(A)	Proj.	Grip Size, Dia.	Thread Size	Thread Depth		
Extruded Type 304 Stainless Steel—Polished Finish						
2	3″	1 7/16″	1/2″	8-32	1/2″	1325A1	$5.82
2	3 1/2″	1 7/16″	1/2″	8-32	1/2″	1325A11	6.07
2	3 3/4″	1 7/16″	1/2″	8-32	1/2″	1325A12	6.07
Extruded Type 304 Stainless Steel—Polished Finish (Cont.)							
2	5 1/16″	1 7/16″	1/2″	8-32	1/2″	1325A13	$7.67
2	7 9/16″	1 7/16″	1/2″	8-32	1/2″	1325A14	8.69
2	10 1/16″	1 7/16″	1/2″	8-32	1/2″	1325A15	10.29

Oval Grip—Styles 3-8

(A)	Proj.	Grip Size Ht.	Grip Size Wd.	Thread Size	Thread Depth		
Extruded Aluminum—Dull Finish							
3	2″	1 1/2″	7/16″	5/16″	10-32	5/16″	1897A92	$4.55
3	3″	1 5/16″	5/8″	5/16″	10-32	9/16″	1897A49	3.93
3	3 1/2″	1 1/2″	7/16″	5/16″	10-32	5/16″	1897A95	4.65
3	4″	1 5/16″	5/8″	5/16″	10-32	9/16″	1897A52	4.16
3	4″	1 1/2″	5/8″	5/16″	10-32	9/16″	1897A56	4.29
3	4 9/16″	1 1/2″	5/8″	5/16″	10-32	9/16″	1897A59	4.36
3	6″	1 1/2″	5/8″	5/16″	10-32	9/16″	1897A62	4.78
3	6″	1 3/4″	5/8″	5/16″	10-32	9/16″	1897A73	4.91
3	8″	1 3/4″	5/8″	5/16″	10-32	5/16″	1897A88	6.43
3	9″	1 3/4″	5/8″	5/16″	10-32	5/16″	1897A9	6.65
Extruded Aluminum—Black Anodized Finish							
3	2″	1 1/2″	7/16″	5/16″	10-32	5/16″	1897A91	8.11
3	3″	1 5/16″	5/8″	5/16″	10-24	9/16″	1897A21	6.00
3	3 1/2″	1 1/2″	7/16″	5/16″	10-32	5/16″	1897A94	8.25
3	4″	1 1/2″	5/8″	5/16″	10-32	9/16″	1897A24	7.08
3	4 9/16″	1 1/2″	5/8″	5/16″	10-24	9/16″	1897A35	7.15
3	6″	1 1/2″	5/8″	5/16″	10-32	9/16″	1897A36	8.55
3	6″	1 3/4″	5/8″	5/16″	10-24	9/16″	1897A37	8.63
3	8″	1 3/4″	5/8″	5/16″	10-32	5/16″	1897A89	10.86
3	9″	1 3/4″	5/8″	5/16″	10-24	9/16″	1897A41	11.04
Extruded Type 303 Stainless Steel—Dull Finish							
3	2″	1 1/2″	7/16″	5/16″	10-32	5/16″	11245A93	8.78
3	3″	1 5/16″	5/8″	5/16″	10-32	5/16″	11245A8	15.30
3	3″	1 5/16″	5/8″	5/16″	10-32	9/16″	11245A61	22.22
3	3 1/2″	1 1/2″	7/16″	5/16″	10-32	5/16″	11245A96	9.93
3	4″	1 5/16″	5/8″	5/16″	10-32	5/16″	11245A81	17.10
3	4″	1 1/2″	5/8″	5/16″	10-32	5/16″	11245A82	17.65
3	4 9/16″	1 1/2″	5/8″	5/16″	10-32	5/16″	11245A83	18.83
3	4 9/16″	1 1/2″	5/8″	5/16″	10-32	9/16″	11245A63	24.89
3	6″	1 1/2″	5/8″	5/16″	10-32	5/16″	11245A84	21.40
3	6″	1 3/4″	5/8″	5/16″	10-32	5/16″	11245A85	22.30
3	8″	1 3/4″	5/8″	5/16″	10-32	5/16″	11245A86	25.95
3	9″	1 3/4″	5/8″	5/16″	10-32	5/16″	11245A87	27.75
3	9″	1 3/4″	5/8″	5/16″	10-32	9/16″	11245A67	30.27
Extruded Type 303 Stainless Steel—Polished Finish							
3	3 15/16″	1 5/8″	9/16″	5/16″	M5	11 mm	11245A42	$28.11
3	4 15/16″	1 5/8″	9/16″	5/16″	M5	11 mm	11245A43	29.84
3	5 15/16″	2″	9/16″	5/16″	M5	11 mm	11245A44	37.28
NSF Certified Extruded Type 303 Stainless Steel—Dull Finish							
4	4 7/16″	1 7/16″	11/16″	7/16″	M5	15 mm	1855A1	35.56
4	5 5/8″	1 1/2″	11/16″	7/16″	M5	15 mm	1855A2	38.06
4	6 13/16″	1 5/8″	11/16″	7/16″	M5	15 mm	1855A3	41.98
4	8 3/8″	1 11/16″	11/16″	7/16″	M5	15 mm	1855A4	43.23
4	11 1/2″	1 3/4″	11/16″	7/16″	M5	15 mm	1855A5	57.78
Extruded Type 316 Stainless Steel—Dull Finish							
4	3 1/2″	1 5/16″	9/16″	5/16″	8-32	3/8″	1855A71	12.34
4	4″	1 5/16″	9/16″	5/16″	8-32	3/8″	1855A73	12.80
4	5″	1 5/16″	9/16″	5/16″	8-32	3/8″	1855A75	13.71
4	6″	1 5/16″	9/16″	5/16″	8-32	3/8″	1855A77	14.74
Extruded Type 316 Stainless Steel—Polished Finish							
4	3 1/2″	1 5/16″	9/16″	5/16″	8-32	3/8″	1855A7	12.34
4	4″	1 5/16″	9/16″	5/16″	8-32	3/8″	1855A72	12.80
4	5″	1 5/16″	9/16″	5/16″	8-32	3/8″	1855A74	13.71
4	6″	1 5/16″	9/16″	5/16″	8-32	3/8″	1855A76	14.74
Cast Zinc—Chrome Finish							
5	3″	3/4″	7/16″	1/8″	8-32	5/16″	1786A11	3.63
Cast Zinc—Bright Brass Finish							
5	3″	3/4″	7/16″	1/8″	8-32	5/16″	1786A1	3.52
Cast Type 304 Stainless Steel—Dull Finish							
5	2 3/4″	13/16″	11/16″	7/16″	8-32	1/2″	1786A15■	23.47
Cast Aluminum—Dull Anodized Finish							
6	5 1/2″	2 1/4″	3/4″	3/4″	1/4″-20	5/8″	1402A19	14.09
6	7 1/2″	2 3/8″	3/4″	3/4″	1/4″-20	5/8″	1402A24	20.42
Nylon—Black							
7	4″	15/16″	5/8″	3/16″	10-24	3/8″	1815A52■	2.82
8	3 7/16″	1 9/16″	1/2″	3/8″	M5	7.5 mm	1967A1■	6.32
8	3 15/16″	1 9/16″	1/2″	3/8″	M5	7.5 mm	1967A2■	5.94
8	4 3/4″	1 9/16″	1/2″	3/8″	M5	7.5 mm	1967A3■	6.46

■ Mounting screws not included.

Rectangular Grip—Styles 9-11

(A)	Proj.	Grip Size Ht.	Grip Size Wd.	Thread Size	Thread Depth		
Extruded Aluminum—Dull Finish							
9	2″	1 1/2″	1/2″	1/4″	8-32	7/16″	15145A31	$7.57
9	4″	1 1/2″	1/2″	1/4″	8-32	7/16″	15145A41	7.95
9	4 9/16″	1 1/2″	1/2″	1/4″	8-32	7/16″	15145A51	8.09
9	6″	1 1/2″	1/2″	1/4″	8-32	7/16″	15145A61	8.35
Extruded Aluminum—Black Anodized Finish							
9	2″	1 1/2″	1/2″	1/4″	8-32	7/16″	15145A33	7.97
9	4″	1 1/2″	1/2″	1/4″	8-32	7/16″	15145A43	8.38
9	4 9/16″	1 1/2″	1/2″	1/4″	8-32	7/16″	15145A53	8.55
9	6″	1 1/2″	1/2″	1/4″	8-32	7/16″	15145A63	8.80
NSF Certified Extruded Type 303 Stainless Steel—Polished Finish							
9	2 9/16″	7/8″	7/16″	1/4″	M3	10 mm	1855A61	10.13
9	3 3/8″	15/16″	7/16″	1/4″	M3	10 mm	1855A62	11.18
Extruded Type 304 Stainless Steel—Polished Finish							
9	4″	15/16″	7/16″	1/4″	6-32	5/16″	1855A64	$8.42
Extruded Aluminum—Dull Finish							
10	3″	7/8″	1/2″	1/8″	8-32	5/16″	1651A22	3.88
10	3″	1 1/16″	7/16″	3/16″	10-24	3/8″	1651A2	3.86
10	4″	1 1/16″	5/8″	3/16″	10-24	3/8″	1651A1	4.26
Extruded Aluminum—Black Anodized Finish							
10	4″	1 1/16″	5/8″	3/16″	10-24	3/8″	1651A4	4.26
Extruded Brass—Dull Chrome Finish							
10	3 1/2″	7/8″	1/2″	1/8″	8-32	5/16″	1651A23	6.77
Cast Zinc—Dull Chrome Finish							
11	4″	7/8″	3/8″	3/16″	10-24	1/2″	1678A56	2.07

Pull Handles with Threaded Studs

Handles have a round grip.

(A)	Proj.	Grip Size, Dia.	Thread Size	Thread Length		
Extruded Aluminum—Black Anodized Finish						
12	4 1/4″	1 3/16″	5/16″	5/16″-18	15/16″	11665A11	$11.97
12	6″	1 3/16″	5/16″	5/16″-18	15/16″	11665A12	13.25
13	4″	2 1/4″	5/16″	1/4″-20	1/2″	11665A6	12.60
Extruded Brass—Polished Nickel Finish							
12	4 1/4″	1 3/16″	5/16″	5/16″-18	15/16″	11665A21	12.03
12	6″	1 3/16″	5/16″	5/16″-18	15/16″	11665A22	13.27
Extruded Type 303 Stainless Steel—Dull Finish							
12	4 1/4″	1 3/16″	5/16″	5/16″-18	15/16″	11665A31	15.70
12	6″	1 3/16″	5/16″	5/16″-18	15/16″	11665A32	16.60
Extruded Type 303 Stainless Steel—Polished Finish							
12	4″	1 3/16″	3/8″	3/8″-24	15/16″	11665A4	16.34
12	5″	1 3/16″	5/16″	5/16″-18	15/16″	11665A3	17.04
13	5″	2 1/4″	5/16″	1/4″-20	1/2″	11665A7	17.50

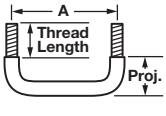

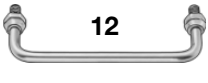

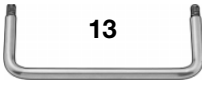

Pull Handles with Unthreaded Through Holes

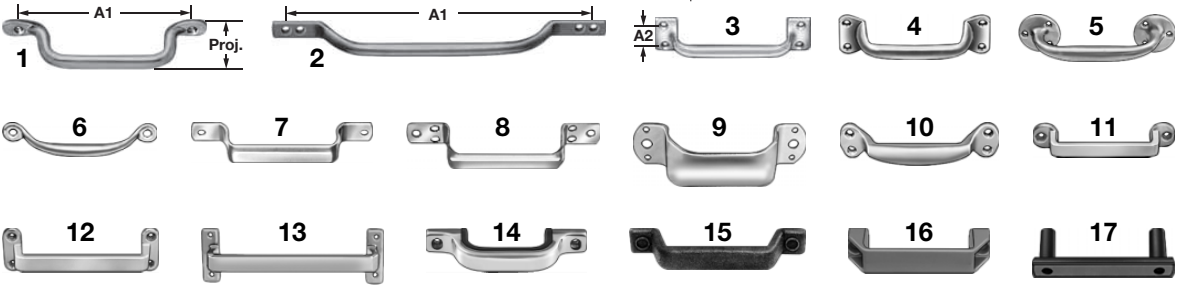

Handles surface mount from the front, so you don't have to drill a hole all the way through your material. Furnished with mounting screws, unless noted. **Style 15—**1973A1 and 1973A2 have caps to conceal screws.

Round Grip—Styles 1-3

(A1)	(A2)	Proj.	Grip Size, Dia.	Screw Size		
Formed Steel—Dull Finish						
1 8″	—	2 5/8″	5/8″	5/16″	17135A41 ★	$7.35
1 10″	—	2 5/8″	5/8″	5/16″	17135A42 ★	7.45
1 12″	—	2 5/8″	5/8″	5/16″	17135A43 ★	8.47
1 14″	—	2 5/8″	5/8″	5/16″	17135A44 ★	11.41
Formed Type 304 Stainless Steel—Dull Finish						
1 8″	—	2 5/8″	5/8″	5/16″	5186A5 ★	24.45
1 10″	—	2 5/8″	5/8″	5/16″	5186A6 ★	31.25
1 12″	—	2 5/8″	5/8″	5/16″	5186A7 ★	33.01
1 14″	—	2 5/8″	5/8″	5/16″	5186A8 ★	35.25
Formed Type 304 Stainless Steel—Polished Finish						
1 22 3/4″	—	2 5/8″	5/8″	5/16″	5186A1 ★ ■	23.99
1 28 3/4″	—	2 5/8″	5/8″	5/16″	5186A2 ★ ■	29.04
1 40 3/4″	—	2 5/8″	5/8″	5/16″	5186A3 ★ ■	39.94

★ Mounting screws not included. ■ Has four inline mounting holes.

(A1)	(A2)	Proj.	Grip Size, Dia.	Screw Size		
Formed Aluminum—Dull Finish						
2 12 1/8″	—	2 1/16″	1/2″	1/4″	1871A65 ★	$4.74
Formed Steel—Chrome Plated						
2 12 1/8″	—	2 1/16″	1/2″	1/4″	1871A64 ★	5.19
2 22 3/4″	—	2 5/8″	5/8″	5/16″	1871A82 ★	16.00
2 28 3/4″	—	2 5/8″	5/8″	5/16″	1871A83 ★	19.20
2 40 3/4″	—	2 5/8″	5/8″	5/16″	1871A84 ★	25.81
Formed Type 304 Stainless Steel—Polished Finish						
2 12 1/8″	—	2 1/16″	1/2″	1/4″	1871A67 ★	16.00
Cast Brass—Polished Finish						
3 3 15/16″	5/8″	1 1/8″	3/8″	#7	16545A2	11.10
Cast Zinc—Polished Chrome Finish						
3 3 3/8″	3/4″	1 1/16″	5/16″	#6	16545A1	3.69
3 4 1/2″	13/16″	1 1/4″	7/8″	#8	16545A23 ★	12.06

Oval Grip—Styles 4-6

(A1)	(A2)	Proj.	Grip Size Ht.	Grip Size Wd.	Screw Size		
Stamped Tubular Steel—Zinc Plated							
4 4 1/8″	1 1/16″	1 5/16″	9/16″	3/8″	#8	1646A13	$1.93
4 4 3/4″	7/8″	1 7/16″	3/4″	7/16″	#8	1646A18	2.00
4 5 1/2″	15/16″	1 9/16″	7/8″	7/16″	#10	1646A24	2.10
4 6 9/16″	1 5/16″	2 1/16″	1″	5/8″	#12	1646A36	4.00
Stamped Tubular Steel—Dull Brass Finish							
4 4 7/8″	7/8″	1 3/8″	1 1/16″	7/16″	#8	1646A14	3.64
Stamped Tubular Steel—Black Finish							
4 4 1/8″	1 1/16″	1 5/16″	9/16″	3/8″	#8	1646A11	2.07
4 4 3/4″	7/8″	1 7/16″	3/4″	7/16″	#8	1646A16	2.17
4 5 1/2″	15/16″	1 9/16″	7/8″	7/16″	#10	1646A22	2.27
4 6 9/16″	1 5/16″	2 1/16″	1″	5/8″	#12	1646A27	4.00
Stamped Type 304 Stainless Steel—Polished Finish							
4 4 3/16″	1 1/16″	1 5/16″	9/16″	3/8″	#8	5189A3 ★	6.60
4 4 3/4″	15/16″	1 7/16″	3/4″	7/16″	#8	5189A4 ★	10.29
4 5 1/2″	1 5/16″	1 9/16″	7/8″	7/16″	#10	5189A5 ★	13.62
4 6 9/16″	1 5/16″	2″	1″	5/8″	#12	5189A6 ★	17.82
Cast Aluminum—Dull Finish							
4 4 15/16″	1 1/8″	1 1/2″	1 1/16″	3/8″	#8	1646A34	5.20

★ Mounting screws not included.

(A1)	(A2)	Proj.	Grip Size Ht.	Grip Size Wd.	Screw Size		
Cast Brass—Polished Finish							
4 4 15/16″	1 1/8″	1 1/2″	1 1/16″	3/8″	#8	1646A35	$17.64
Cast Iron—Tan Powder-Coated Finish							
4 5 3/8″	7/8″	1 1/2″	1″	3/8″	#12	1232A1	20.02
4 6 13/16″	1 3/8″	2 1/16″	1″	9/16″	#14	1232A2	20.70
Cast Aluminum—Dull Anodized Finish							
5 6 7/8″	1″	2 1/4″	3/4″	3/4″	#8	1402A11	14.09
5 8 7/8″	1 3/16″	2 3/8″	3/4″	3/4″	#8	1402A4	20.42
Cast 300 Series Stainless Steel—Dull Finish							
5 6 7/8″	1″	2 1/4″	3/4″	3/4″	#8	1402A16	36.62
Stamped Tubular Steel—Zinc Plated							
6 4 1/16″	—	1 1/8″	5/8″	5/16″	#6	1645A2	1.52
Stamped Tubular Steel—Black							
6 4 1/16″	—	1 1/8″	5/8″	5/16″	#6	1645A1	1.77
Stamped Tubular Steel—Yellow Zinc-Plated							
6 4 1/16″	—	1 1/8″	5/8″	5/16″	#6	1645A3	1.70
Formed Steel—Dull Finish							
6 4 11/16″	—	1 1/2″	1/2″	1/4″	#12	14895A41 ★	2.00
Formed Steel—Zinc Plated							
6 4 11/16″	—	1 1/2″	1/2″	1/4″	#12	14895A42 ★	2.05

Rectangular Grip—Styles 7-17

(A1)	(A2)	Proj.	Grip Size Ht.	Grip Size Wd.	Screw Size		
Stamped Steel—Zinc Plated							
7 5 3/4″	—	1 1/4″	7/8″	1/4″	#10	1696A11	$2.61
7 11 1/8″	—	1 1/2″	1″	1/8″	3/8″	1696A15 ★	3.54
Stamped Type 304 Stainless Steel—Dull Finish							
7 5 3/4″	—	1 1/4″	7/8″	1/4″	#10	5185A1 ★	6.00
7 11 1/8″	—	1 1/2″	1″	1/8″	3/8″	5185A5 ★	13.50
Stamped Steel—Zinc Plated							
8 7 1/8″	5/8″	1 5/8″	1 1/8″	5/16″	#10	1696A12	4.72
Stamped Type 304 Stainless Steel—Polished Finish							
8 7 1/8″	5/8″	1 5/8″	1 1/8″	5/16″	#10	5185A4 ★	11.43
Stamped Steel—Zinc Plated							
9 6 1/2″	1 3/8″	2 1/2″	1 1/2″	5/8″	#12	1696A1	8.83
Cast Zinc—Bright Chrome Finish							
10 7″	1″	1 3/4″	1″	5/8″	1/4″	80275A33 ★	13.16
Cast Type 304 Stainless Steel—Polished Finish							
11 2 1/4″	—	5/8″	5/16″	3/16″	M3	11255A11	14.33
11 2 7/8″	—	13/16″	5/16″	3/16″	M3	11255A12	16.38
11 3 1/2″	—	1″	7/16″	1/4″	M3.5	11255A13	25.44
12 4 3/16″	15/16″	1 1/16″	1/2″	1/4″	M3.5	11255A14	30.78
12 5 3/16″	1 3/16″	1 5/16″	5/8″	1/4″	M5	11255A15	46.38

★ Mounting screws not included.

(A1)	(A2)	Proj.	Grip Size Ht.	Grip Size Wd.	Screw Size		
Cast Type 316 Stainless Steel—Polished Finish							
13 6 7/8″	1 3/4″	2″	7/8″	7/16″	M6	13725A23	$55.04
Stamped Type 304 Stainless Steel with Rubber Grip—Polished Finish (32° to 104° F)							
14 2 1/8″	—	1 1/8″	1 1/16″	5/16″	M3.1	1298A31	11.67
14 4″	—	1 1/4″	3/4″	7/16″	M3.5	1298A32	16.12
14 5 1/2″	—	1 1/2″	7/8″	9/16″	M4.1	1298A33	20.65
Stamped Steel Covered with Black Rubber (32° to 104° F)							
15 6 5/16″	—	2 1/16″	1″	13/16″	M7	1973A1 ★	15.64
15 9 7/8″	—	2 1/4″	1″	13/16″	M7	1973A2 ★	19.64
Rubber—Black (Temperature Not Rated)							
15 6 7/16″	—	1 7/8″	1″	11/16″	1/4″	13665A27 ★	6.21
15 9 7/8″	—	2 5/16″	1″	13/16″	1/4″	13665A29 ★	7.70
Plastic—(–20° to 300° F) **To Order** Please specify black or orange.							
16 3 11/16″	—	1 1/2″	7/8″	1/4″	M6.5	1078A1 ★	3.71
16 4 5/8″	—	1 5/8″	1 1/16″	5/16″	M8.5	1078A2 ★	4.09
16 5 3/16″	—	1 3/4″	1 1/16″	5/16″	M8.5	1078A3 ★	5.91
16 7 1/16″	—	1 15/16″	1 1/8″	5/16″	M8.5	1078A4 ★	7.16
16 9 1/4″	—	2 1/8″	1 3/16″	3/8″	M10.5	1078A5 ★	14.80
Phenolic—Black (–30° to 400° F)							
17 4 1/4″	—	1 3/4″	1″	3/8″	1/4″	10995A19 ★	3.57

Load-Rated Pull Handles

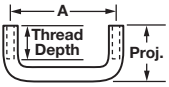

Meet the demands of your heavy duty applications. Note: Load cap. stated is for force pulling straight out from the handle.
Round Grip—Mounting screws not included.
Oval Grip—Mounting screws not included. *Nylon* and *plastic handles* have a temperature range of –20° to 230° F.
Rectangular Grip—Temperature range is –40° to 140° F. Styles 6 and 7 come with mounting screws. Styles 8-10 do not include mounting screws. Styles 9 and 10 have a snap-on cover to conceal screws.

Round Grip with Threaded Holes

	(A)	Proj.	Grip Size, Dia.	Load Cap., lbs.	Screw Size	Thread Depth		
Formed Type 303 Stainless Steel—Dull Finish								
1	3 7/16"	1 11/16"	1/2"	899	M5	7/16"	**7088A7**	$12.30
1	3 15/16"	1 11/16"	1/2"	854	M5	7/16"	**7088A71**	12.72
1	4 3/4"	1 11/16"	1/2"	674	M5	7/16"	**7088A72**	13.38
1	7 1/8"	1 11/16"	1/2"	505	M5	7/16"	**7088A73**	15.56
1	7 7/8"	1 11/16"	1/2"	337	M5	7/16"	**7088A74**	16.66
1	9 1/4"	1 11/16"	1/2"	314	M5	7/16"	**7088A75**	18.36

Oval Grip with Threaded Holes

	(A)	Proj.	Grip Size, Ht.	Load Cap., lbs.	Screw Size	Thread Depth		
Extruded Aluminum—Dull Anodized Finish								
2	4 7/16"	2 3/16"	1 1/16"	1,345	5/16"-18	7/16"	**5190A34**	$14.28
2	4 7/16"	2 3/16"	1 1/16"	1,345	M8	7/16"	**5190A37**	14.28
2	6 5/16"	2 1/4"	1 1/16"	1,124	5/16"-18	7/16"	**5190A35**	16.92
2	7 9/16"	2 1/4"	1 1/16"	904	5/16"-18	7/16"	**5190A36**	20.66
2	11 13/16"	2 1/4"	1 1/16"	341	M8	7/16"	**5190A38**	26.06
2	15 3/4"	2 1/4"	1 1/16"	176	M8	7/16"	**5190A39**	31.52
2	19 11/16"	2 1/4"	1 1/16"	337	M8	7/16"	**5190A4**	45.02
Extruded Aluminum—Black Powder-Coated Finish								
2	3 15/16"	1 7/8"	13/16"	472	M6	3/8"	**5190A8**	12.18
2	4 3/8"	1 15/16"	13/16"	494	1/4"-20	3/8"	**5190A16**	13.26
2	4 3/8"	2 3/16"	1 1/16"	1,573	M8	7/16"	**5190A9**	15.01
2	5 1/16"	2 3/16"	1 1/16"	1,011	5/16"-18	7/16"	**5190A17**	16.62
2	6 5/16"	2 1/4"	1 1/16"	786	5/16"-18	7/16"	**5190A18**	17.78
2	7 9/16"	2 1/4"	1 1/16"	674	5/16"-18	7/16"	**5190A19**	21.70
2	11 13/16"	2 1/4"	1 1/16"	505	M8	7/16"	**5190A14**	27.36
2	15 3/4"	2 1/4"	1 1/16"	393	M8	7/16"	**5190A15**	33.09
2	19 11/16"	2 1/4"	1 1/16"	337	M8	7/16"	**5190A41**	45.02
Formed Type 304 Stainless Steel—Dull Finish								
2	4 7/16"	1 15/16"	13/16"	1,798	M6	3/8"	**5191A1**	35.64
2	5 1/16"	2 1/16"	13/16"	1,573	M6	3/8"	**5191A2**	38.05
Nylon with Brass Inserts—Black								
3	4 1/8"	1 1/2"	15/16"	484	1/4"-20	5/16"	**1661A1**	4.92
3	4 5/16"	1 5/8"	15/16"	506	1/4"-20	5/16"	**1661A4**	5.34
3	4 5/8"	1 5/8"	15/16"	506	5/16"-18	5/16"	**1661A2**	5.58
Plastic with Type 303 SS Inserts—White								
4	4 5/8"	2 1/8"	13/16"	1,121	M8	1/2"	**4529A1**	17.76
4	7 1/16"	2 7/16"	13/16"	538	M8	1/2"	**4529A2**	24.18

Oval Grip with Unthreaded Through Holes

	(A)	Proj.	Grip Size, Ht.	Load Cap., lbs.	Screw Size		
Extruded Aluminum—Dull Anodized Finish							
5	4 9/16"	2 3/16"	1 1/16"	1,345	1/4"	**5190A3**	$16.02
5	5 3/16"	2 3/16"	1 1/16"	1,012	1/4"	**5190A31**	16.44
5	6 7/16"	2 1/4"	1 1/16"	783	1/4"	**5190A32**	17.82
5	7 3/4"	2 1/4"	1 1/16"	618	1/4"	**5190A33**	19.16
Extruded Aluminum—Black Powder-Coated Finish							
5	4 9/16"	2 3/16"	1 1/16"	1,124	1/4"	**5190A21**	16.82
5	5 3/16"	2 3/16"	1 1/16"	899	1/4"	**5190A22**	17.27
5	6 7/16"	2 1/4"	1 1/16"	809	1/4"	**5190A23**	18.70
5	7 3/4"	2 1/4"	1 1/16"	674	1/4"	**5190A24**	20.13

Rectangular Grip with Threaded Holes

	(A)	Proj.	Grip Size Ht.	Grip Size Wd.	Load Cap., lbs.	Screw Size	Thread Depth		
ABS Plastic—Black									
6	4 3/8"	1 5/8"	1 1/16"	3/8"	125	M6	16 mm	**1661A39**	$6.13

Rectangular Grip with Unthreaded Holes

	(A)	Proj.	Grip Size Ht.	Grip Size Wd.	Load Cap., lbs.	Screw Size		
ABS Plastic—Black								
7	6 3/4"	2"	1 3/16"	5/8"	175	M7.5	**12375A61**	$8.11

Rectangular Grip with Unthreaded Through Holes

	(A)	Proj.	Grip Size Ht.	Grip Size Wd.	Load Cap., lbs.	Screw Size		
Nylon—Black								
8	3 15/16"	1 5/16"	11/16"	3/8"	100	M5	**5193A1**	$11.22
8	4 3/4"	1 9/16"	13/16"	7/16"	100	M6	**5193A2**	13.71
8	5 1/2"	1 13/16"	1"	1/2"	100	M8	**5193A3**	17.69
8	6 5/16"	2 1/16"	1 1/8"	9/16"	100	M8	**5193A4**	24.91
8	7 1/16"	2 5/16"	1 1/4"	5/8"	100	M10	**5193A5**	35.73
ABS Plastic—Black								
9	4 3/8"	1 5/8"	1 1/16"	3/8"	125	#10	**12375A71**	5.79
10	6 3/4"	2"	1 3/16"	5/8"	175	#10	**12375A63**	7.42

Weld-On Pull Handles

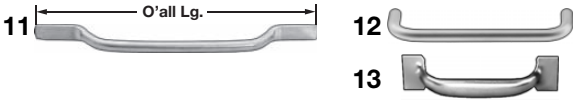

	O'all Lg.	Proj.	Grip Size, Dia.	Mounting Surface Ht.	Mounting Surface Wd.		
Round Grip							
Formed Steel—Dull Finish							
11	13"	2 1/16"	1/2"	11/16"	1 3/4"	**1871A69**	$3.37
Formed Type 304 Stainless Steel—Dull Finish							
11	13"	2 1/16"	1/2"	11/16"	1 3/4"	**1871A4**	14.17
Formed 300 Series Stainless Steel—Dull Finish							
12	5 7/16"	2 1/16"	1/2"	1/2" Dia.	____	**7088A1**	14.18
12	6 13/16"	2 1/16"	1/2"	1/2" Dia.	____	**7088A2**	15.48
12	8 3/8"	2 1/16"	1/2"	1/2" Dia.	____	**7088A3**	16.80
Oval Grip							
Stamped Steel—Dull Finish							
13	5 3/4"	1 1/4"	3/8"	x 7/16"	1 1/2"	7/8"	**1650A1**	1.42
13	6 5/16"	1 1/2"	13/16"	x 1/2"	1 5/8"	15/16"	**1650A2**	2.07
Stamped Type 304 Stainless Steel—Dull Finish							
13	5 3/4"	1 1/4"	5/8"	x 7/16"	1 9/16"	7/8"	**5187A1**	7.24
13	6 5/16"	1 1/2"	13/16"	x 1/2"	1 5/8"	15/16"	**5187A2**	8.22

Antimicrobial Pull Handles

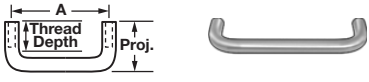

A step above ordinary, these handles have a coating to discourage the growth of bacteria, mold, and mildew. Handles have a round grip with threaded holes. For indoor use.
Cast aluminum handles do not include mounting screws.
Formed Type 303 stainless steel handles come with mounting screws.

(A)	Proj.	Grip Size, Dia.	Screw Size	Thread Depth		
Cast Aluminum—White Finish						
3 1/2"	1 1/2"	5/16"	10-32	3/8"	**6195A61**	$19.10
5"	1 1/2"	5/16"	10-32	3/8"	**6195A62**	19.10
Formed Type 303 Stainless Steel—Dull Finish						
4"	1 1/4"	5/16"	8-32	5/8"	**6195A51**	8.93
6"	2 1/4"	3/4"	1/4"-20	5/8"	**6195A52**	24.27
8"	3"	1"	1/4"-20	5/8"	**6195A53**	45.36
10"	3"	1"	1/4"-20	5/8"	**6195A54**	49.64

Folding Pull Handles

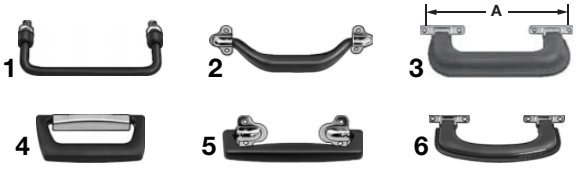

When you release the handle, it drops out of your way. Mounting screws not included.

Style 4 handle has a cap to conceal screws.

(A)	Proj.	Grip Size, Dia.	Screw Size	Thread Length		
90° Folding with Threaded Studs—Round Grip						
Formed Aluminum—Black Anodized Finish						
1 4″	1 7/8″	5/16″	5/16″-24	3/8″	1948A4	$14.90
1 5″	1 7/8″	5/16″	5/16″-24	3/8″	1948A5	15.16
1 6″	1 7/8″	5/16″	5/16″-24	3/8″	1948A6	15.44
180° Folding with Unthreaded Through Holes—Round Grip						
Formed Tubular Steel—Zinc Plated						
2 5 3/4″	2″	9/16″	#8	—	11905A12	2.00
Stamped Tubular Steel Coated w/ Black Plastic (Temp. Not Rated)						
2 5 3/4″	1 15/16″	9/16″	#8	—	11905A14	3.24
180° Folding with Unthreaded Through Holes—Rectangular Grip						
Stamped Steel Covered with Black Vinyl (40° to 80° F)						
3 5 3/4″	2 7/8″	13/16″ × 1 3/16″	#6	—	12535A25	8.26
Black Polyethylene—Textured Finish (40° to 80° F)						
4 2 7/16″	2 13/16″	5/8″ × 15/16″	#6	—	12535A29	5.14
5 4 1/8″	2 3/8″	5/8″ × 15/16″	#6	—	11905A21	3.09
6 5 3/4″	2 13/16″	9/16″ × 15/16″	#6	—	12535A17	3.10

Cut-to-Length Pull Handles

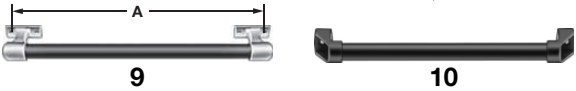

Remove the ends of the handles and cut the grip to the length you need before mounting. Handles have a round grip and unthreaded through holes. Mounting screws not included.

Style 9 is not rated for temperature.

Max. (A)	Proj.	Grip Size, Dia.	Screw Size		
Extruded Aluminum—Polished Finish with Black Rubber Grip					
9 24 5/8″	3 7/8″	1 1/4″	1/4″	18715A61	$61.23
Formed Steel—Coated with Black Plastic (–22° to 400° F)					
10 27 9/16″	3 3/16″	1 3/16″	M8	1550A5	32.34

Choose-a-Color Pull Handles

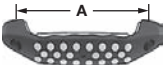

Use color to identify contents of drawers and cabinets. Handle is black nylon with colored dots that offer a secure gripping surface. Grip is rectangular with unthreaded through holes. Requires 1/4″ mounting screws (not included). Temperature range is –40° to 150° F.

To Order: Please specify dot color.

(A)	Proj.	Grip Size Ht.	Grip Size Wd.	Available Dot Colors		
4 3/4″	1 11/16″	1 3/16″	11/16″	Gray, Orange, Red, Yellow	1950A5	$9.00

Edge Pulls

Pulls have threaded holes and come with mounting screws.

Style 11—Made of 5/16″ thick extruded aluminum.

Style 12—Made of 1/4″ thick extruded aluminum.

O'all Lg.	(A)	(B)	Proj.	Screw Size	Thread Depth		
11 5″	4″	1 1/8″	1 3/16″	8-32	3/8″	1471A11	$10.88
12 4″	3″	7/16″	1″	8-32	3/8″	1471A14	5.88
12 5″	4″	7/16″	1″	8-32	3/8″	1471A15	6.25
12 6″	5″	7/16″	1″	8-32	3/8″	1471A16	6.68

Stay-Put Folding Pull Handles

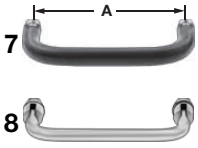

Detents keep the handles in the extended or folded position—they won't move until you reposition them. Ideal for use on instrumentation cases or anywhere rattling is undesirable. Grip is round. **Style 7** handles come with mounting screws.

90° folding handles have two positions. **180° folding handles** have three positions.

(A)	Proj.	Grip Size, Dia.	Screw Size	Thread Depth/Length		
90° Folding with Threaded Holes						
Extruded Aluminum—Black Powder-Coated Finish						
7 4″	2″	3/8″	8-32	1/4″	1327A1	$31.89
7 5″	2″	3/8″	8-32	1/4″	1327A2	32.44
7 6″	2″	3/8″	8-32	1/4″	1327A3	33.00
90° Folding with Threaded Studs						
Extruded Aluminum—Dull Anodized Finish						
8 3″	1 9/16″	5/16″	3/8″-24	5/8″	1327A12	13.98
8 4″	1 9/16″	5/16″	3/8″-24	5/8″	1327A13	14.18
8 5″	1 9/16″	5/16″	3/8″-24	5/8″	1327A14	14.33
8 6″	1 9/16″	5/16″	3/8″-24	5/8″	1327A15	14.56
Forged Type 303 Stainless Steel—Dull Finish						
8 3″	1 9/16″	5/16″	3/8″-24	5/8″	1327A16	22.44
8 4″	1 9/16″	5/16″	3/8″-24	5/8″	1327A17	22.84
8 5″	1 9/16″	5/16″	3/8″-24	5/8″	1327A18	23.33
8 6″	1 9/16″	5/16″	3/8″-24	5/8″	1327A19	23.89
180° Folding with Threaded Studs						
Extruded Aluminum—Dull Anodized Finish						
8 3″	1 9/16″	5/16″	3/8″-24	5/8″	1327A4	13.98
8 4″	1 9/16″	5/16″	3/8″-24	5/8″	1327A5	14.18
8 5″	1 9/16″	5/16″	3/8″-24	5/8″	1327A6	14.33
8 6″	1 9/16″	5/16″	3/8″-24	5/8″	1327A7	14.56
Forged Type 303 Stainless Steel—Dull Finish						
8 3″	1 9/16″	5/16″	3/8″-24	5/8″	1327A8	22.44
8 4″	1 9/16″	5/16″	3/8″-24	5/8″	1327A9	22.84
8 5″	1 9/16″	5/16″	3/8″-24	5/8″	1327A21	23.33
8 6″	1 9/16″	5/16″	3/8″-24	5/8″	1327A11	23.89

Offset Pull Handles

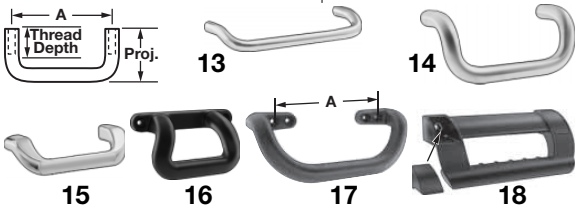

Because the grip is positioned away from the mounting surface, you have room to fully grasp the handle. **Styles 13 & 14** come with mounting screws. **Styles 15-18** do not include mounting screws.

Style 14—Help you comply with ADA when properly installed.

Style 15—Handle is NSF certified.

Styles 16-18—All have snap-on covers to conceal screws.

(A)	Proj.	Grip Size, Dia.	Screw Size	Thread Depth		
Round Grip with Threaded Holes						
30° Offset, Formed Aluminum—Dull Finish						
13 3″	1 1/2″	5/16″	8-32	5/16″	5245A5	$4.93
13 4″	1 1/2″	5/16″	8-32	5/16″	5245A6	5.02
13 6″	1 1/2″	5/16″	8-32	5/16″	5245A8	5.38
30° Offset, Extruded Type 303 Stainless Steel—Bright Finish						
13 3″	1″	1/4″	6-32	3/8″	5248A9	7.97
13 4″	1 1/2″	5/16″	10-32	9/16″	5248A11	9.17
13 6″	1 1/2″	5/16″	10-32	9/16″	5248A13	9.89
90° Offset, Formed Aluminum—Dull Finish						
14 8″	3 1/2″	1″	1/4″-20	5/8″	5245A9	26.36
14 10″	3 1/2″	1″	1/4″-20	5/8″	5245A12	27.22
90° Offset, Formed Type 303 Stainless Steel—Dull Finish						
14 8″	3 1/2″	1″	1/4″-20	5/8″	5248A1	46.36
14 10″	3 1/2″	1″	1/4″-20	5/8″	5248A3	50.48
Oval Grip with Threaded Holes						
45° Offset, Cast Zinc—Polished Chrome Finish						
15 5″	1 1/2″	5/8″ Ht. × 1/4″ Wd.	1/4″-20	7/8″	1656A1	12.76
Round Grip with Unthreaded Through Holes						
90° Offset, Stamped Steel Covered with Black Polyurethane (32° to 104° F)						
16 5 15/16″	2 5/8″	1 1/8″	#12	—	1979A3	38.84
17 8 3/8″	2 15/16″	1 1/16″	#12	—	1979A4	39.67
Oval Grip with Unthreaded Through Holes						
90° Offset, Black Glass-Reinforced Nylon (–20° to 230° F)						
18 7 7/8″	3 15/16″	1 5/16″	M8	—	1979A5	32.22

Surface-Mount Folding Pull Handles

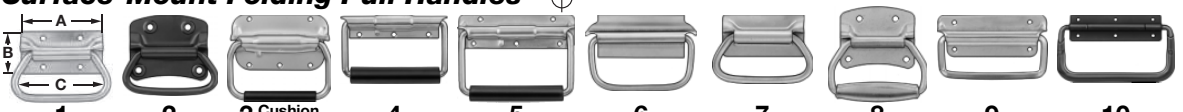

1 2 3 Cushion Grip 4 5 6 7 8 9 10

Also known as case handles, these pull handles fold to stay out of your way when not in use. Great for use on trash cans, chests, boxes, and cabinets. Mounting plates have unthreaded through holes (except mounting plates on weld-on handles). Plates are 1/16″ thick, except Style 7 plate is 1/8″ thick. Mounting screws not included.

Handles have a 90° stop, except Styles 6 and 10. Style 6 has a 120° stop. Style 10 does not have a stop; the handle automatically drops when you release it.

Spring-loaded handles snap flat to stay out of the way when not in use. **Cushion-grip handles** have a rubber grip (except Style 10 has a vinyl grip) for comfort. Temperature range is –40° to 150° F for rubber; vinyl grip is not rated.

	(A)	(B)	(C)	Grip Size, Dia.	Screw Size		
Round Grip							
Steel—Zinc Plated							
1	3 3/8″	1 3/4″	3 1/2″	5/16″	#10	**1647A42**	$2.31
Steel—Black Finish							
1	3 3/8″	1 3/4″	3 1/2″	5/16″	#8, #10	**1647A41**	2.49
2	3 3/8″	2 7/8″	3 1/2″	5/16″	#10	**1647A14**	3.37
Type 304 Stainless Steel—Dull Finish							
3	4 3/4″	2 3/4″	4 1/2″	5/16″	#10	**1856A63**	23.20
Round Cushion Grip							
300 Series Stainless Steel—Dull Finish							
3	4 3/4″	2 3/4″	4 1/2″	9/16″	#10	**1856A65**	26.71
Spring-Loaded Round Grip							
300 Series Stainless Steel—Dull Finish							
3	4 3/4″	2 3/4″	4 1/2″	5/16″	#10	**1856A71**	24.01
Spring-Loaded Round Cushion Grip							
Steel—Zinc Plated							
3	4 3/4″	2 3/4″	4 1/2″	9/16″	#10	**1764A25**	16.34
4	5 1/8″	1 3/16″	4 3/8″	3/4″	#10	**1764A31**	7.20
5	5 5/8″	1 5/8″	4 7/8″	3/4″	#8	**1764A33**	12.60
Steel—Black Finish							
4	4 3/16″	1 1/16″	4 1/2″	9/16″	#10	**1764A35**	8.48
Spring-Loaded Round Cushion Grip (Cont.)							
300 Series Stainless Steel—Dull Finish							
3	4 3/4″	2 3/4″	4 1/2″	9/16″	#10	**1856A73**	$30.00
300 Series Stainless Steel—Bright Finish							
4	4 3/16″	1 1/16″	4 1/2″	9/16″	#10	**1764A34**	12.17
Weld-On Round Grip							
Type 304 Stainless Steel—Dull Finish							
6	3 1/2″	1 3/8″	2 15/16″	1/4″	—	**1856A57**	5.77
7	3 3/8″	1 3/4″	3 1/2″	5/16″	—	**1856A61**	8.51
Oval Grip							
Steel—Nickel Plated							
8	3 3/8″	2 7/8″	3 7/8″	1″ × 5/8″	#10	**15265A81**	6.43
Weld-On Oval Grip							
Steel—Dull Finish							
8	3 3/8″	2 7/8″	3 7/8″	1″ × 5/8″	—	**15265A83**	3.71
Rectangular Grip							
Steel—Nickel Plated							
9	4 1/2″	1 3/4″	3 7/8″	1/4″ × 1/4″	#8	**15675A51**	4.26
Rectangular Cushion Grip							
Aluminum—Black Finish							
10	4 1/8″	1 1/4″	4 5/8″	11/16″ × 5/16″	#6	**11895A11**	14.45

Recessed Folding Pull Handles

Fold handles into the mounting plate—they're recessed to stay flush with the mounting surface. Handles have a 90° stop, except Styles 11 and 12 have a 110° stop. All require a cutout in your mounting surface.

Styles 11-16—Mounting plates have unthreaded through holes. *Style 11* comes with screws. *Styles 12-16* do not include screws.

Style 17—Mounting plate has 3/8″ deep threaded holes. Mounting screws are included.

Spring-loaded handles snap flat to stay out of the way when not in use. **Cushion-grip handles** have a rubber grip for comfort. *Style 15* handles have a temperature range of –40° to 240° F. *Style 17* handle has a temperature range of –10° to 200° F.

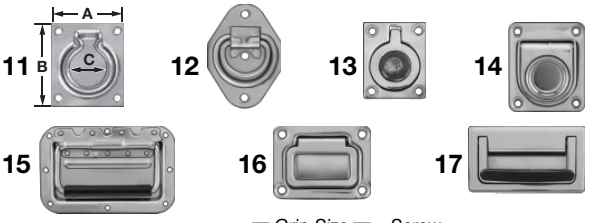

11 12 13 14 15 16 17

	(A)	(B)	(C)	Grip Size Ht.	Grip Size Wd.	Screw Size		
Ring Handle—Round Grip								
Steel—Zinc Plated								
11	3″	3 1/2″	1 1/2″	5/16″ Dia.	—	#7	**1313A21**	$5.71
12	3 1/2″	5″	1 7/8″	1/4″ Dia.	—	1/4″	**1759A28**	2.52
Ring Handle—Oval Grip								
Cast Type 316 Stainless Steel—Polished Finish								
13	1 9/16″	1 7/8″	3/4″	1/8″	1/8″	#8	**12315A31**	12.20
Cast Brass—Polished Brass Finish								
13	1 1/2″	1 7/8″	3/4″	3/16″	3/16″	#6	**1649A4**	21.63
Spring-Loaded Ring Handle—Oval Grip								
Stamped Type 304 Stainless Steel—Polished Finish								
14	1 1/2″	1 3/4″	11/16″	1/8″	3/16″	#6	**12315A41**	4.80
14	2 3/16″	2 9/16″	1 1/16″	1/4″	1/4″	#8	**12315A51**	6.21
Spring-Loaded Rectangular Handle—Round Cushion Grip								
Steel—Zinc Plated								
15	6 1/8″	4″	4 5/16″	9/16″ Dia.	—	#10	**13195A51**	$6.58
15	7″	5″	4 3/4″	3/4″ Dia.	—	#10	**13195A65**	11.02
Steel—Black Finish								
15	7″	5″	4 3/4″	3/4″ Dia.	—	#10	**13195A63**	13.12
Spring-Loaded Rectangular Handle—Rectangular Grip								
Stamped Type 304 Stainless Steel—Polished Finish								
16	3″	2 1/4″	1 11/16″	1/4″	1/4″	#8	**13165A31**	7.75
Spring-Loaded Rectangular Handle—Rectangular Cushion Grip								
Cast Zinc—Bright Chrome Finish								
17	5 9/16″	3 3/16″	3 3/4″	11/16″	9/16″	M5	**10815A42**	63.54

Load-Rated Folding Pull Handles

A load rating lets you know the capability of these handles. Fold them out of the way when not in use. Handles have a 90° stop and a round grip. Mounting plates are 1/16″ thick and have unthreaded through holes. Note: Load capacity is based on the use of one handle.

Style 18—Surface mount with the included mounting screws.

Styles 19&20—Handles are spring loaded, so they snap flat when not in use. All have a polypropylene grip; temp. range is 14° to 212° F. Mounting screws not included. *Style 19* handles surface mount. *Style 20* handles are recessed into the mounting plate.

18 19 20

	Load Cap., lbs.	(A)	(B)	(C)	Grip Size, Dia.	Screw Size		
Steel—Zinc Plated								
18	200	2 3/4″	2 1/16″	2 13/16″	1/4″	#6	**1647A31**	$3.56
18	200	3 1/2″	2 13/16″	3 9/16″	3/8″	#10	**1647A34**	4.80
18	180	4″	2 7/8″	4 1/8″	3/8″	#10	**1647A35**	6.32
18	175	4 13/16″	4 1/4″	4 1/2″	7/16″	#12	**1647A36**	10.18
19	496	4 9/16″	2 3/8″	4 3/4″	13/16″	#10	**1885A13**	19.89
19	220	7 1/2″	2 3/8″	7 5/8″	13/16″	#10	**1885A15**	29.72
Steel—Zinc Plated (Cont.)								
20	88	6″	4 1/2″	3 3/4″	5/8″	#10	**1881A11**	$16.00
20	330	7 1/8″	5″	4 3/4″	13/16″	#10	**1881A12**	29.11
Type 304 Stainless Steel—Dull Finish								
19	496	4 9/16″	2 3/8″	4 3/4″	13/16″	#10	**1885A14**	50.50
20	165	6″	4 1/2″	3 3/4″	5/8″	#10	**1881A13**	44.69

About Hinges

Leaves Lay Flat

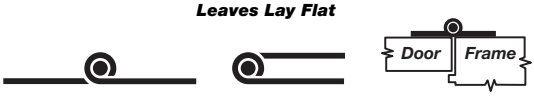

Flat Folded Flat

Hinges with Lay Flat Leaves— When the hinge is folded, the total thickness is equal to two times the thickness of a single leaf, plus the pin diameter. See pages 2976-2984 and 2987.

Tight Clearance

Flat Folded Tight Clearance

Hinges with Tight-Clearance Leaves— Also known as swaged. There is minimal clearance between the leaves when the hinge is folded. See pages 2980 and 2985-2987.

Half-Mortise/Half-Surface Mount

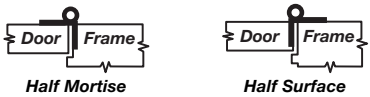

Half Mortise Half Surface

Hinges with Half-Mortise/Half-Surface Mount Leaves— One leaf is mortise mounted and the other leaf is surface mounted. For use where a traditional mortise mount hinge isn't suitable because either the door or the frame is damaged. See pages 2982 and 2985.

Offset

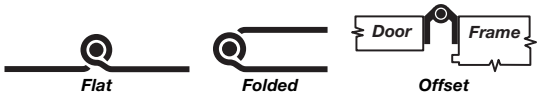

Flat Folded Offset

Hinges with Offset Leaves— When the hinge is folded, the distance between the leaves is larger than the pin diameter. Commonly used for gasketing applications. See pages 2980-2981.

Surface-Mount Piano Hinges

For technical drawings and 3-D models, go to mcmaster.com. CAD

About Piano Hinge Specifications

Range of Motion

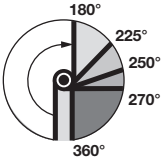

Pin Diameter

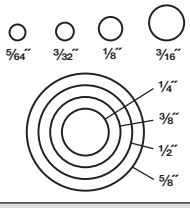

Leaf Thickness

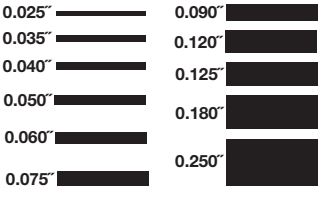

Knuckle Length

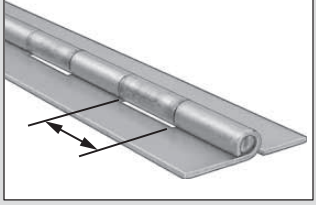

Don't see the piano hinge you need? Just tell us what you're looking for and we'll get it for you.

Unfinished Steel Piano Hinges without Holes CAD

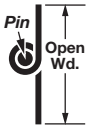

Leaves Lay Flat

You decide how to surface mount these hinges—they don't have mounting holes. Spot weld them in place or drill holes for rivets or screws. Hinges can be cut with a hacksaw. Pins are made of steel. From the folded position, the range of motion is 270°.

Open Wd.	Pin Dia.	Knuckle Lg.	3-ft. Length	Each★	6-ft. Length	Each★
0.025″ Thick Leaf						
3/4″	1/16″	1/4″	15665A209	$1.70	15665A212	$2.62
1″	1/16″	1/4″	15665A211	1.94	15665A213	2.99
0.035″ Thick Leaf						
3/4″	5/64″	1/4″	15665A162	2.76	15665A105	4.24
1 1/16″	5/64″	1/4″	15665A164	2.47	15665A115	3.80
1 1/4″	5/64″	1/4″	15665A165	2.60	15665A123	4.00
0.035″ Thick Leaf (Cont.)						
1 1/2″	5/64″	1/4″	15665A166	$2.97	15665A128	$4.57
0.040″ Thick Leaf						
1 1/16″	3/32″	1/2″	15665A145	2.50	15665A136	3.85
1 1/4″	3/32″	1/2″	15665A2	2.70	15665A143	4.16
1 1/2″	3/32″	1/2″	15665A3	3.54	15665A151	5.44
2″	3/32″	1/2″	15665A4	3.54	15665A156	5.44

★ Prices are 15% to 20% lower if you buy 10 or more hinges of the same size.

Open Wd.	Pin Dia.	Knuckle Lg.	3-ft. Length	Each★	4-ft. Length	Each★	5-ft. Length	Each★	6-ft. Length	Each★	8-ft. Length	Each★
0.050″ Thick Leaf												
1 1/16″	1/8″	1/2″	15665A167	$3.61	15665A172	$4.44	15665A186	$5.09	15665A163	$5.55	15665A187	$7.49
1 1/4″	1/8″	1/2″	15665A5	4.08	15665A8	5.02	15665A9	5.75	15665A168	6.27	15665A1	8.46
1 1/2″	1/8″	1/2″	15665A6	4.38	15665A174	5.39	15665A175	6.18	15665A176	6.74	15665A11	9.10
2″	1/8″	1/2″	15665A7	4.66	15665A181	5.74	15665A182	6.57	15665A183	7.17	15665A12	9.68
0.060″ Thick Leaf												
1 1/16″	1/8″	1/2″	15665A13	4.17	15665A802	5.14	15665A41	5.89	15665A215	6.42	15665A54	8.67
1 1/4″	1/8″	1/2″	15665A219	4.63	15665A29	5.70	15665A42	6.54	15665A223	7.13	15665A225	9.63
1 1/2″	1/8″	1/2″	15665A14	4.93	15665A146	6.07	15665A43	6.96	15665A231	7.59	15665A233	10.25
1 1/2″	3/16″	1/2″	15665A15	5.50	15665A236	6.77	15665A237	7.76	15665A238	8.46	15665A241	11.42
1 1/2″	3/16″	1″	15665A16	5.62	15665A31	6.92	15665A44	7.93	15665A112	8.65	15665A113	11.68
1 3/4″	1/8″	1/2″	15665A171	5.07	15665A178	6.24	15665A185	7.15	15665A246	7.80	15665A188	10.28
2″	1/8″	1/2″	15665A17	5.93	15665A32	7.30	15665A45	8.37	15665A253	9.13	15665A255	12.33
2″	3/16″	1/2″	15665A18	6.45	15665A258	7.94	15665A259	9.11	15665A261	9.93	15665A262	13.41
2″	3/16″	1″	15665A19	6.75	15665A33	8.30	15665A46	9.52	15665A114	10.38	15665A117	14.01
2 1/2″	1/8″	1/2″	15665A264	7.19	15665A34	8.85	15665A47	10.14	15665A267	11.06	15665A269	14.93
2 1/2″	3/16″	1/2″	15665A22	7.36	15665A35	9.06	15665A48	10.39	15665A275	11.33	15665A55	15.30
2 1/2″	3/16″	1″	15665A23	7.49	15665A36	9.22	15665A49	10.57	15665A118	11.53	15665A119	15.57
3″	1/8″	1/2″	15665A24	7.76	15665A37	9.55	15665A51	10.95	15665A283	11.94	15665A285	16.12
3″	3/16″	1/2″	15665A25	8.16	15665A288	10.04	15665A289	11.51	15665A291	12.55	15665A292	16.94
4″	1/8″	1/2″	15665A26	8.45	15665A38	10.40	15665A52	11.92	15665A296	13.00	15665A297	17.55
4″	3/16″	1/2″	15665A27	9.20	15665A39	11.32	15665A53	12.98	15665A298	14.15	15665A56	19.10

★ Prices are 15% to 20% lower if you buy 10 or more hinges of the same size.

(Continued on following page)

Don't see the piano hinge you need? Just tell us what you're looking for and we'll get it for you.

Unfinished Steel Piano Hinges without Holes *(Continued from previous page)*

Open Wd.	Pin Dia.	Knuckle Lg.	3-ft. Length	Each★	4-ft. Length	Each★	5-ft. Length	Each★	6-ft. Length	Each★	8-ft. Length	Each★
0.072″ Thick Leaf												
1 1/2″	1/4″	1″	15665A147	$7.52	15665A321	$9.26	15665A322	$10.61	15665A323	$11.57	15665A161	$15.62
2″	1/4″	1″	15665A152	9.96	15665A336	12.26	15665A337	14.05	15665A338	15.32	15665A341	20.68
2 1/2″	1/4″	1″	15665A153	10.67	15665A351	13.14	15665A352	15.06	15665A353	16.42	15665A355	22.17
3″	1/4″	1″	15665A154	12.15	15665A365	14.95	15665A366	17.14	15665A367	18.69	15665A369	25.23
3 1/2″	1/4″	1″	15665A155	13.08	15665A373	16.10	15665A158	18.45	15665A375	20.12	15665A377	27.16
4″	1/4″	1″	15665A157	13.74	15665A189	16.91	15665A159	19.39	15665A389	21.14	15665A392	28.54
0.075″ Thick Leaf												
1 1/2″	3/16″	1″	15665A57	6.86	15665A63	8.44	15665A68	9.67	15665A315	10.55	15665A75	14.24
2″	3/16″	1″	15665A58	8.05	15665A64	9.91	15665A69	11.36	15665A328	12.39	15665A332	16.73
2 1/2″	3/16″	1″	15665A59	9.28	15665A65	11.42	15665A71	13.09	15665A346	14.27	15665A76	19.26
3″	3/16″	1″	15665A61	11.50	15665A66	14.15	15665A72	16.22	15665A361	17.69	15665A362	23.88
4″	3/16″	1″	15665A62	13.23	15665A67	16.28	15665A73	18.66	15665A74	20.35	15665A384	27.47
0.090″ Thick Leaf												
2″	1/4″	1″	15665A422	15.65	15665A79	19.26	15665A84	22.07	15665A425	24.07	15665A427	32.49
3″	1/4″	1″	15665A429	19.45	15665A81	23.94	15665A85	27.45	15665A433	29.93	15665A434	40.41
4″	1/4″	1″	15665A77	22.48	15665A82	27.66	15665A86	31.71	15665A439	34.58	15665A442	46.68
5″	1/4″	1″	15665A78	29.33	15665A83	36.10	15665A87	41.38	15665A447	45.13	15665A88	60.93

★ Prices are 15% to 20% lower if you buy 10 or more hinges of the same size.

Open Wd.	Pin Dia.	Knuckle Lg.	1-ft. Length	Each♦	2-ft. Length	Each♦	4-ft. Length	Each♦	6-ft. Length	Each♦	8-ft. Length	Each♦
0.120″ Thick Leaf												
2″	1/4″	2″	15665A89	$6.64	15665A99	$12.82	15665A109	$22.78	15665A525	$28.48	15665A527	$41.77
2″	3/8″	2″	15665A91	7.04	15665A101	13.60	15665A111	24.18	15665A532	30.22	15665A534	40.80
2 1/2″	3/8″	2″	15665A92	7.31	15665A102	14.11	15665A116	25.09	15665A539	31.36	15665A541	42.34
3″	1/4″	2″	15665A93	8.49	15665A103	16.39	15665A803	29.14	15665A548	36.43	15665A551	49.18
3″	3/8″	2″	15665A94	9.37	15665A552	18.10	15665A554	32.18	15665A556	40.22	15665A558	54.30
3″	1/2″	2″	15665A169	12.58	15665A173	24.30	15665A177	43.19	15665A179	53.99	15665A564	72.89
3 1/2″	3/8″	2″	15665A95	10.22	15665A107	19.74	15665A122	35.09	15665A569	43.86	15665A572	59.21
4″	3/8″	2″	15665A96	7.71	15665A106	14.90	15665A124	26.48	15665A577	33.10	15665A579	44.69
5″	3/8″	2″	15665A97	12.23	15665A214	23.62	15665A583	42.00	15665A585	52.50	15665A587	70.88
6″	3/8″	2″	15665A98	13.33	15665A108	25.75	15665A125	45.78	15665A595	57.23	15665A597	77.26
0.180″ Thick Leaf												
3″	1/2″	2″	15665A126	20.71	15665A631	40.00	15665A633	71.10	15665A635	88.88	15665A637	119.99
4″	1/2″	2″	15665A127	21.86	15665A132	42.21	15665A641	75.04	15665A643	93.80	15665A645	126.63
5″	1/2″	2″	15665A129	23.21	15665A133	44.83	15665A648	79.70	15665A651	99.62	15665A653	134.49
6″	1/2″	2″	15665A131	24.29	15665A137	46.91	15665A138	83.40	15665A139	104.25	15665A661	140.74
0.250″ Thick Leaf												
3″	5/8″	1 1/2″	15665A184	48.10	15665A801	73.76	15665A191	136.30	15665A735	160.35	15665A737	216.47
4″	5/8″	1 1/2″	15665A192	50.71	15665A193	77.75	15665A194	143.67	15665A743	169.02	15665A745	228.18
5″	5/8″	1 1/2″	15665A195	53.18	15665A196	81.54	15665A197	150.67	15665A751	177.26	15665A753	239.30

♦ Prices are 15% to 20% lower if you buy five or more hinges of the same size.

Unfinished Steel Piano Hinges with Brass Pins and without Holes

Similar to our Unfinished Steel Piano Hinges without Holes, but with brass pins that resist corrosion and wear better over time than steel pins. You choose how to surface mount these hinges—they don't have mounting holes. Spot weld them in place or drill holes for rivets or screws. Hinges can be cut with a hacksaw. From the folded position, the range of motion is 270°.

Open Wd.	Pin Dia.	Knuckle Lg.	6-ft. Length	
0.025″ Thick Leaf				
3/4″	1/16″	1/4″	11815A12	$4.51
1″	1/16″	1/4″	11815A17	6.39
0.040″ Thick Leaf				
1 1/2″	3/32″	1/2″	11815A43	9.45
2″	3/32″	1/2″	11815A44	12.05
0.060″ Thick Leaf				
1 1/2″	1/8″	1/2″	11815A52	11.26
2″	1/8″	1/2″	11815A53	13.14
3″	1/8″	1/2″	11815A55	17.11

Open Wd.	Pin Dia.	Knuckle Lg.	3-ft. Length		6-ft. Length	
0.075″ Thick Leaf						
1 1/2″	1/4″	1″	_____	____	11815A63	$29.62
2″	1/4″	1″	_____	____	11815A64	29.92
3″	1/4″	1″	_____	____	11815A65	34.19
0.090″ Thick Leaf						
2″	1/4″	1″	11815A77	$28.78	11815A71	44.27
3″	1/4″	1″	11815A78	40.18	11815A73	61.82
4″	1/4″	1″	11815A79	45.14	11815A76	69.45

Leaves Lay Flat

Electrogalvanized Steel Piano Hinges without Holes

Electrogalvanizing gives these hinges the necessary corrosion resistance for use in heating, ventilating, air-conditioning, and other sheet-metal applications. Pin and leaves are both galvanized, so you can either paint hinges or use them without additional finishing. Designed for surface-mount applications, these hinges don't have mounting holes. Spot weld them in place or drill holes for rivets or screws. Hinges can be cut with a hacksaw. From the folded position, the range of motion is 270°.

Open Wd.	Pin Dia.	Knuckle Lg.	6-ft. Length	
0.042″ Thick Leaf				
1 1/2″	3/32″	1/2″	12145A71	$7.70
2″	3/32″	1/2″	12145A72	11.26
0.062″ Thick Leaf				
1 1/2″	1/8″	1/2″	12145A81	9.48
2″	1/8″	1/2″	12145A82	12.85
3″	1/8″	1/2″	12145A83	14.19

Leaves Lay Flat

Brass Piano Hinges without Holes

Made entirely of brass, these hinges perform extremely well in corrosive conditions. They don't have mounting holes, so you can choose how to surface mount them. Spot weld them in place or drill holes for rivets or screws. Hinges can be cut with a hacksaw. From the folded position, the range of motion is 270°.

Open Wd.	Pin Dia.	Knuckle Lg.	1-ft. Length		3-ft. Length		6-ft. Length	
0.040″ Thick Leaf								
1 1/16″	7/64″	1/2″	1578A2	$9.94	1578A8	$27.74	1578A17	$42.67
1 1/4″	7/64″	1/2″	1578A3	9.70	1578A9	27.06	1578A19	41.63
1 1/2″	7/64″	1/2″	1578A4	10.31	1578A11	28.78	1578A33	44.27
2″	7/64″	1/2″	1578A5	11.29	1578A13	31.50	1578A32	48.46
0.060″ Thick Leaf								
2″	1/8″	1/2″	1578A6	17.74	1578A14	49.50	1578A41	76.15

Leaves Lay Flat

About Piano Hinge Specifications

Range of Motion

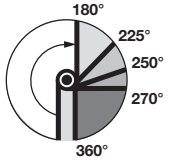

Pin Diameter

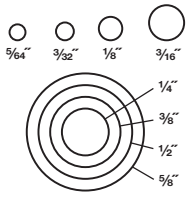

Leaf Thickness

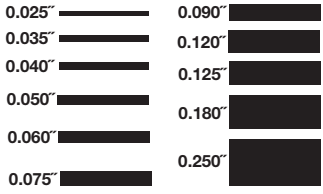

Knuckle Length

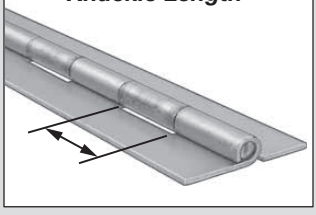

Don't see the piano hinge you need? Just tell us what you're looking for and we'll get it for you.

Type 304 Stainless Steel Piano Hinges without Holes

Leaves Lay Flat

Hinge pin and leaves are made entirely of unfinished Type 304 stainless steel for good corrosion resistance. Designed for surface-mount applications, these hinges don't have mounting holes. Spot weld them in place or drill holes for rivets or screws. Hinges can be cut with a hacksaw. From the folded position, the range of motion is 270°.

Open Wd.	Pin Dia.	Knuckle Lg.	4-ft. Length Each★		6-ft. Length Each★	
0.025″ Thick Leaf						
3/4″	1/16″	1/4″	1582A1	$8.24	1582A111	$10.30
1″	1/16″	1/4″	1582A2	10.58	1582A112	13.23
0.035″ Thick Leaf						
3/4″	3/32″	1/4″	1582A3	10.05	1582A113	12.56
1 1/16″	3/32″	1/4″	1582A4	11.43	1582A118	14.29
1 1/4″	3/32″	1/4″	1582A5	13.62	1582A123	17.03

Open Wd.	Pin Dia.	Knuckle Lg.	4-ft. Length Each★		6-ft. Length Each★	
0.035″ Thick Leaf (Cont.)						
1 1/2″	3/32″	1/4″	1582A6	$15.34	1582A128	$19.17
0.040″ Thick Leaf						
1 1/16″	3/32″	1/2″	1582A133	12.88	1582A135	16.10
1 1/4″	3/32″	1/2″	1582A139	14.48	1582A142	18.10
1 1/2″	3/32″	1/2″	1582A146	15.89	1582A148	19.86
2″	3/32″	1/2″	1582A153	21.14	1582A155	26.42

★ Prices are 15% to 20% lower if you buy 10 or more hinges of the same size.

Open Wd.	Pin Dia.	Knuckle Lg.	3-ft. Length Each★		4-ft. Length Each★		5-ft. Length Each★		6-ft. Length Each★		8-ft. Length Each★	
0.050″ Thick Leaf												
1 1/16″	1/8″	1/2″	1582A13	$11.94	1582A7	$14.70	1582A19	$16.85	1582A217	$18.37	1582A26	$24.80
1 1/4″	1/8″	1/2″	1582A14	13.31	1582A8	16.38	1582A21	18.78	1582A223	20.48	1582A27	27.65
1 1/2″	1/8″	1/2″	1582A15	15.09	1582A227	18.58	1582A22	21.29	1582A229	23.22	1582A231	31.35
2″	1/8″	1/2″	1582A16	18.04	1582A234	22.20	1582A23	25.45	1582A236	27.75	1582A237	37.46
2 1/2″	1/8″	1/2″	1582A17	21.42	1582A9	26.36	1582A24	30.22	1582A241	32.95	1582A242	44.48
3″	1/8″	1/2″	1582A18	25.19	1582A11	31.00	1582A25	35.53	1582A246	38.75	1582A247	52.31
0.060″ Thick Leaf												
1 1/16″	1/8″	1/2″	1582A28	11.47	1582A41	14.12	1582A44	16.19	1582A317	17.65	1582A54	23.83
1 1/4″	1/8″	1/2″	1582A29	15.60	1582A322	19.20	1582A45	22.01	1582A324	24.00	1582A325	32.40
1 1/2″	1/8″	1/2″	1582A31	17.77	1582A328	21.87	1582A46	25.07	1582A329	27.34	1582A332	36.91
1 1/2″	3/16″	5/8″	1582A32	20.96	1582A335	25.80	1582A47	29.57	1582A336	32.25	1582A337	43.54
2″	1/8″	1/2″	1582A33	21.24	1582A341	26.14	1582A48	29.96	1582A343	32.67	1582A344	44.10
2″	3/16″	5/8″	1582A34	24.92	1582A347	30.67	1582A348	35.16	1582A349	38.34	1582A351	51.76
2 1/2″	1/8″	1/2″	1582A35	25.58	1582A42	31.48	1582A49	36.08	1582A355	39.35	1582A356	53.12
2 1/2″	3/16″	5/8″	1582A36	29.25	1582A357	36.00	1582A51	41.27	1582A359	45.00	1582A361	60.75
3″	1/8″	1/2″	1582A37	29.53	1582A363	36.34	1582A52	41.66	1582A365	45.43	1582A366	61.33
3″	3/16″	5/8″	1582A38	33.69	1582A368	41.46	1582A369	47.53	1582A371	51.83	1582A372	69.97
4″	1/8″	1/2″	1582A39	38.31	1582A43	47.15	1582A53	54.05	1582A374	58.94	1582A55	79.57
0.075″ Thick Leaf				Each ♦		Each ♦		Each ♦		Each ♦		Each ♦
2″	3/16″	1″	1582A68	$24.97	1582A69	$30.74	1582A71	$35.23	1582A416	$38.42	1582A72	$51.87
2″	1/4″	1″	1582A56	26.10	1582A424	32.13	1582A63	36.83	1582A426	40.16	1582A427	54.22
2 1/2″	1/4″	1″	1582A57	29.65	1582A429	36.49	1582A431	41.82	1582A432	45.61	1582A433	61.57
3″	1/4″	1″	1582A58	33.22	1582A434	40.88	1582A64	46.86	1582A437	51.10	1582A438	68.98
3 1/2″	1/4″	1″	1582A59	36.76	1582A62	45.24	1582A65	51.86	1582A443	56.55	1582A67	76.34
4″	1/4″	1″	1582A61	40.32	1582A444	49.62	1582A66	56.88	1582A445	62.03	1582A446	83.74

★ Prices are 15% to 20% lower if you buy 10 or more hinges of the same size.
♦ Prices are 15% to 20% lower if you buy five or more hinges of the same size.

Open Wd.	Pin Dia.	Knuckle Lg.	1-ft. Length Each ♦		2-ft. Length Each ♦		4-ft. Length Each ♦		6-ft. Length Each ♦		8-ft. Length Each ♦	
0.090″ Thick Leaf												
2″	1/4″	1″	1582A73	$17.18	1582A519	$24.17	1582A522	$42.96	1582A525	$53.70	1582A526	$72.50
3″	1/4″	1″	1582A74	21.75	1582A86	30.59	1582A533	54.38	1582A535	67.97	1582A536	91.76
4″	1/4″	1″	1582A75	24.86	1582A87	34.97	1582A541	62.16	1582A543	77.70	1582A544	104.90
0.120″ Thick Leaf												
2″	1/4″	2″	1582A76	23.49	1582A88	33.03	1582A98	58.73	1582A615	73.41	1582A114	99.10
2″	3/8″	2″	1582A77	26.15	1582A89	36.77	1582A99	65.37	1582A616	81.71	1582A115	110.31
3″	1/4″	2″	1582A78	28.10	1582A91	39.51	1582A101	70.24	1582A626	87.80	1582A116	118.53
3″	3/8″	2″	1582A79	32.32	1582A92	45.45	1582A629	80.80	1582A632	101.00	1582A633	136.35
4″	1/4″	2″	1582A81	32.59	1582A93	45.83	1582A102	81.48	1582A637	101.85	1582A117	137.50
4″	3/8″	2″	1582A82	38.36	1582A94	53.95	1582A639	95.90	1582A641	119.88	1582A642	161.84
5″	3/8″	2″	1582A83	44.33	1582A95	62.34	1582A103	110.83	1582A644	138.54	1582A645	187.03
0.187″ Thick Leaf												
3″	1/2″	2″	1582A648	118.20	1582A649	166.22	1582A651	295.50	1582A652	369.37	1582A653	498.65
4″	1/2″	2″	1582A654	130.13	1582A655	183.00	1582A656	325.33	1582A657	406.66	1582A658	548.99

♦ Prices are 15% to 20% lower if you buy five or more hinges of the same size.

Don't see the piano hinge you need? Just tell us what you're looking for and we'll get it for you.

Type 316 Stainless Steel Piano Hinges without Holes

Compared to Type 304 stainless steel hinges, these deliver a higher level of corrosion resistance. The pin and leaves are made entirely of unfinished Type 316 stainless steel. You choose how to surface mount these hinges—they don't have mounting holes. Spot weld them in place or drill holes for rivets or screws. Hinges can be cut with a hacksaw, except for hinges with 0.187″ thick leaves, which can be cut with a band saw. From the folded position, the range of motion is 270°.

Leaves Lay Flat

Open Wd.	Pin Dia.	Knuckle Lg.	3-ft. Length		4-ft. Length		5-ft. Length		6-ft. Length		8-ft. Length	
0.040″ Thick Leaf												
1 1/16″	3/32″	1/2″	13795A1	$16.72	13795A111	$20.58	13795A121	$23.59	13795A18	$25.73	13795A131	$34.74
1 1/4″	3/32″	1/2″	13795A2	17.82	13795A112	21.94	13795A122	25.14	13795A19	27.42	13795A132	37.02
1 1/2″	3/32″	1/2″	13795A3	19.30	13795A113	23.76	13795A123	27.23	13795A22	29.70	13795A133	40.09
2″	3/32″	1/2″	13795A4	20.90	13795A114	25.73	13795A124	29.49	13795A24	32.16	13795A134	43.42
0.060″ Thick Leaf												
1 1/2″	1/8″	1/2″	13795A5	25.18	13795A13	30.99	13795A9	35.52	13795A31	38.74	13795A32	52.30
2″	1/8″	1/2″	13795A6	27.55	13795A16	33.91	13795A11	38.87	13795A33	42.39	13795A34	57.23
3″	1/8″	1/2″	13795A7	32.29	13795A8	39.74	13795A14	45.56	13795A35	49.68	13795A36	67.07
0.072″ Thick Leaf												
2″	1/4″	1″	13795A53	34.68	13795A55	42.69	13795A57	48.93	13795A45	53.36	13795A46	72.04
3″	1/4″	1″	13795A54	56.73	13795A56	69.82	13795A58	80.03	13795A47	87.27	13795A48	117.81

Open Wd.	Pin Dia.	Knuckle Lg.	1-ft. Length		2-ft. Length		4-ft. Length		6-ft. Length		8-ft. Length	
0.090″ Thick Leaf												
2″	1/4″	1″	13795A59	$24.17	13795A62	$33.99	13795A64	$60.42	13795A51	$75.53	13795A52	$101.97
0.120″ Thick Leaf												
3″	3/8″	2″	13795A61	58.19	13795A63	112.38	13795A25	199.78	13795A27	249.73	13795A28	337.14
0.187″ Thick Leaf												
3″	1/2″	2″	13795A101	142.60	13795A105	200.54	13795A78	356.51	13795A83	445.64	13795A87	601.61
4″	1/2″	2″	13795A102	157.98	13795A106	222.16	13795A79	394.95	13795A84	493.69	13795A88	666.48

Aluminum Piano Hinges without Holes

Aluminum construction makes these hinges corrosion resistant and lighter than steel or brass hinges. There are no mounting holes, so you decide how to surface mount the hinges. Spot weld them in place or drill holes for rivets or screws. Hinges are unfinished and can be cut with a hacksaw. From the folded position, the range of motion is at least 270°.

Leaves Lay Flat

Open Wd.	Pin Dia.	Knuckle Lg.	3-ft. Length Each★	6-ft. Length Each★
0.025″ Thick Leaf— *Alloy 3003*				
3/4″	1/16″	1/4″	1581A214 $3.54	1581A212 $5.44
1″	1/16″	1/4″	1581A215 3.76	1581A213 5.79
0.032″ Thick Leaf— *Alloy 3003*				
3/4″	3/32″	1/4″	1581A65 3.37	1581A11 5.19
1 1/16″	3/32″	1/4″	1581A1 3.79	1581A15 5.83
1 1/4″	3/32″	1/4″	1581A2 4.06	1581A16 6.25
0.032″ Thick Leaf— *Alloy 3003 (Cont.)*				
1 1/2″	3/32″	1/4″	1581A3 $4.80	1581A17 $7.39
0.040″ Thick Leaf— *Alloy 5052*				
1 1/16″	3/32″	1/2″	1581A66 3.54	1581A12 5.45
1 1/4″	3/32″	1/2″	1581A67 3.68	1581A13 5.66
1 1/2″	3/32″	1/2″	1581A68 3.96	1581A14 6.10
2″	3/32″	1/2″	1581A69 4.63	1581A18 7.12

★ Prices are 15% to 20% lower if you buy 10 or more hinges of the same size.

Open Wd.	Pin Dia.	Knuckle Lg.	3-ft. Length Each★	4-ft. Length Each★	5-ft. Length Each★	6-ft. Length Each★	8-ft. Length Each★
0.050″ Thick Leaf— *Alloy 5052*							
1″	1/8″	1/2″	1581A4 $3.41	1581A6 $4.19	1581A8 $4.81	1581A19 $5.24	1581A97 $7.69
1 1/4″	1/8″	1/2″	1581A5 4.68	1581A7 5.76	1581A9 6.60	1581A21 7.20	1581A98 10.56
1 1/2″	1/8″	1/2″	1581A71 5.25	1581A92 6.46	1581A94 7.41	1581A35 8.08	1581A36 11.85
2″	1/8″	1/2″	1581A72 6.08	1581A93 7.48	1581A95 8.57	1581A37 9.35	1581A38 13.72
0.060″ Thick Leaf— *Alloy 5052*							
1 1/16″	1/8″	1/2″	1581A101 5.84	1581A105 7.19	1581A115 8.24	1581A22 8.99	1581A126 13.19
1 1/4″	1/8″	1/2″	1581A102 5.95	1581A106 7.33	1581A116 8.40	1581A25 9.16	1581A127 13.44
1 1/2″	1/8″	1/2″	1581A73 6.39	1581A107 7.86	1581A117 9.01	1581A39 9.83	1581A41 14.42
1 3/4″	1/8″	1/2″	1581A103 6.90	1581A108 8.49	1581A118 9.73	1581A26 10.61	1581A128 15.56
2″	1/8″	1/2″	1581A74 7.34	1581A109 9.03	1581A119 10.35	1581A42 11.29	1581A43 16.56
2 1/2″	1/8″	1/2″	1581A104 8.42	1581A112 10.36	1581A122 11.88	1581A55 12.95	1581A131 19.00
3″	1/8″	1/2″	1581A75 9.35	1581A113 11.51	1581A123 13.20	1581A44 14.39	1581A45 21.11
4″	1/8″	1/2″	1581A76 11.28	1581A114 13.89	1581A124 15.92	1581A46 17.36	1581A47 25.47
0.075″ Thick Leaf— *Alloy 5052*							
2″	3/16″	1/2″	1581A132 8.90	1581A77 10.96	1581A136 12.56	1581A48 13.70	1581A49 20.10
2 1/2″	3/16″	1/2″	1581A133 10.26	1581A135 12.63	1581A137 14.48	1581A58 15.79	1581A139 23.16
3″	3/16″	1/2″	1581A134 11.64	1581A78 14.33	1581A138 16.42	1581A51 17.91	1581A52 26.27
0.090″ Thick Leaf— *Alloy 5052*							
2″	1/4″	1″	1581A141 15.72	1581A79 19.35	1581A145 22.18	1581A56 24.19	1581A57 35.49
2 1/2″	1/4″	1″	1581A142 18.41	1581A81 22.66	1581A146 25.98	1581A61 28.33	1581A59 41.56
3″	1/4″	1″	1581A143 21.18	1581A82 26.06	1581A147 29.88	1581A63 32.58	1581A64 47.79
4″	1/4″	1″	1581A144 24.75	1581A149 30.46	1581A148 34.92	1581A62 38.08	1581A151 55.86

★ Prices are 15% to 20% lower if you buy 10 or more hinges of the same size.

Open Wd.	Pin Dia.	Knuckle Lg.	1-ft. Length Each★	2-ft. Length Each★	4-ft. Length Each★	6-ft. Length Each★	8-ft. Length Each★
0.120″ Thick Leaf— *Alloy 5052*							
2″	1/4″	2″	1581A152 $7.35	1581A167 $14.20	1581A158 $25.24	1581A85 $31.55	1581A163 $46.28
3″	1/4″	2″	1581A153 7.81	1581A168 15.08	1581A159 26.82	1581A86 33.52	1581A87 49.17
3″	3/8″	2″	1581A154 8.86	1581A169 17.12	1581A83 30.43	1581A24 38.04	1581A164 55.80
4″	1/4″	2″	1581A155 9.42	1581A171 18.19	1581A161 32.34	1581A88 40.43	1581A89 59.31
4″	3/8″	2″	1581A156 10.50	1581A172 20.28	1581A84 36.05	1581A27 45.06	1581A165 66.10
5″	1/4″	2″	1581A157 11.04	1581A173 21.32	1581A162 37.90	1581A91 47.38	1581A166 69.51

★ Prices are 15% to 20% lower if you buy 10 or more hinges of the same size.

About Piano Hinge Specifications

Range of Motion

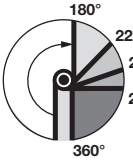

Pin Diameter

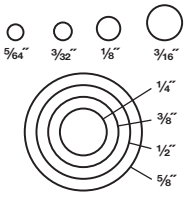

Leaf Thickness

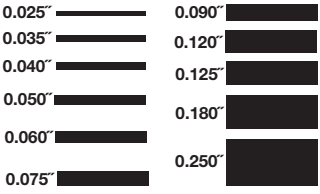

Knuckle Length

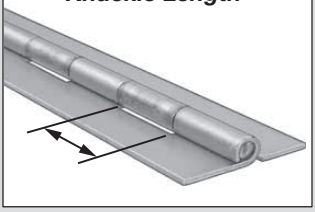

Don't see the piano hinge you need? Just tell us what you're looking for and we'll get it for you.

Military Specification Aluminum Piano Hinges without Holes

Leaves Lay Flat

Unlike other aluminum hinges that are stamped or formed from a flat piece of metal, these military specification hinges have leaves that are extruded, making them harder and more wear resistant. Leaves are made of unfinished Alloy 2024-T3511 aluminum. Pin is cadmium-plated Type 302 stainless steel. The pin hole is drilled and the knuckles are milled. Designed for surface-mount applications, these hinges don't have mounting holes. Spot weld them in place or drill holes for rivets or screws. They can be cut with a hacksaw. From the folded position, the range of motion is at least 270°.

Open Wd.	Pin Dia.	Knuckle Lg.	Military Spec. No.	6-ft. Length
0.044″ to 0.056″ Thick Leaf				
11/16″	3/32″	1/2″	MS20001-2	1792A12 ... $96.48
1 1/4″	3/32″	1/2″	MS20001-3	1792A13 ... 105.45
1 1/2″	3/32″	1/2″	MS20001-4	1792A14 ... 101.89
2″	3/32″	1/2″	MS20001-6	1792A16 ... 101.89
2 1/2″	3/32″	1/2″	MS20001-9	1792A17 ... 158.62
0.064″ to 0.076″ Thick Leaf				
2″	3/16″	1/2″	MS20001-8	1792A19 ... $340.00
0.196″ to 0.210″ Thick Leaf				
3 15/16″	3/16″	1/2″	MS20001-16	1792A23 ... 557.38

Piano Hinges for Tight Clearance without Holes

Tight Clearance

Since the leaves are close together when folded, these hinges are an excellent choice for doors with limited space, such as electrical cabinets. Designed for surface-mount applications, these hinges don't have mounting holes. Spot weld them in place or drill holes for rivets or screws. The fasteners are concealed when the door is closed. Hinges can be cut with a hacksaw. The pin and the leaves are made from the same material. From the folded position, the range of motion is 270°.

Open Wd.	Pin Dia.	Knuckle Lg.	UNFINISHED STEEL 3-ft. Length	UNFINISHED STEEL 6-ft. Length	TYPE 304 STAINLESS STEEL 1-ft. Length	TYPE 304 STAINLESS STEEL 3-ft. Length	TYPE 304 STAINLESS STEEL 6-ft. Length
0.040″ Thick Leaf							
1 1/2″	3/32″	1/2″	11785A1 ... $8.76	11785A15 ... $13.48	11555A1 ... $6.65	11555A12 ... $18.54	11555A23 ... $28.52
2″	3/32″	1/2″	11785A2 ... 10.24	11785A16 ... 15.75	11555A2 ... 6.41	11555A13 ... 17.89	11555A24 ... 27.53
0.060″ Thick Leaf							
1 1/16″	1/8″	1/2″	11785A3 ... 9.10	11785A37 ... 14.00	11555A3 ... 6.31	11555A14 ... 17.60	11555A34 ... 27.08
1 1/2″	3/16″	5/8″	11785A4 ... 15.36	11785A31 ... 23.63	11555A4 ... 10.03	11555A15 ... 27.98	11555A19 ... 43.04
2″	3/16″	5/8″	11785A5 ♦ ... 14.41	11785A13 ♦ ... 22.17	11555A5 ... 10.47	11555A16 ... 29.20	11555A22 ... 44.92
3″	3/16″	5/8″	11785A6 ... 18.67	11785A32 ... 28.73	11555A6 ... 11.02	11555A17 ... 30.74	11555A31 ... 47.29
0.075″ Thick Leaf							
1 1/2″	1/4″	1″	11785A7 ... 13.66	11785A22 ... 21.01	—	—	—
2″	1/4″	1″	11785A8 ... 14.80	11785A23 ... 22.77	11555A7 ■ ... 14.94	11555A18 ■ ... 41.66	11555A41 ■ ... 64.10
2 1/2″	1/4″	1″	11785A9 ... 16.09	11785A25 ... 24.75	—	—	—
3″	1/4″	1″	11785A12 ... 17.63	11785A27 ... 27.13	11555A8 ■ ... 18.71	11555A25 ■ ... 52.20	11555A42 ■ ... 80.31
0.090″ Thick Leaf							
2″	1/4″	1″	11785A17 ... 16.69	11785A33 ... 25.67	—	—	—
3″	1/4″	1″	11785A18 ... 19.97	11785A34 ... 30.72	—	—	—
4″	1/4″	1″	11785A19 ... 22.91	11785A35 ... 35.24	—	—	—
0.120″ Thick Leaf							
2″	1/4″	2″	11785A24 ... 28.60	11785A43 ... 44.00	11555A9 ... 28.46	11555A26 ... 79.39	11555A51 ... 122.14
3″	1/4″	2″	11785A26 ... 33.53	11785A44 ... 51.58	11555A11 ... 35.97	11555A27 ... 100.33	11555A52 ... 154.36

♦ Knuckle length is 1/2″. ■ 0.070″ thick leaf.

Offset Piano Hinges for Extra Clearance without Holes

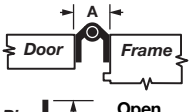

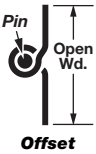

Offset

In the folded position, the distance between the leaves is larger than the pin diameter. This offset design provides a gap to accommodate gasketing or trim attached to the door. There are no mounting holes on these hinges, so you decide how to surface mount them. Spot weld them in place or drill holes for rivets or screws. Hinges can be cut with a hacksaw. The pin and the hinge leaves are made from the same material. From the folded position, the range of motion is at least 225°.

Open Wd.	(A)	Pin Dia.	Knuckle Lg.	UNFINISHED STEEL 3-ft. Length	UNFINISHED STEEL 6-ft. Length	TYPE 304 STAINLESS STEEL 1-ft. Length	TYPE 304 STAINLESS STEEL 3-ft. Length	TYPE 304 STAINLESS STEEL 6-ft. Length
0.040″ Thick Leaf								
1 1/2″	15/64″	3/32″	1/2″	1567A1 ... $9.28	1567A17 ... $14.28	14835A14 ... $6.70	14835A26 ... $18.70	14835A38 ... $28.77
2″	15/64″	3/32″	1/2″	1567A2 ... 10.00	1567A18 ... 15.38	14835A15 ... 7.81	14835A27 ... 21.80	14835A39 ... 33.54
0.060″ Thick Leaf								
1 1/16″	23/64″	1/8″	1/2″	1567A3 ... 8.01	1567A27 ... 12.33	14835A16 ... 5.63	14835A28 ... 15.71	14835A48 ... 24.17
1 1/2″	27/64″	3/16″	1/2″	1567A4 ... 9.28	1567A21 ... 13.32	14835A17 ★ ... 10.46	14835A29 ★ ... 29.18	14835A41 ★ ♠ ... 44.89
2″	27/64″	3/16″	1/2″	1567A6 ... 10.70	1567A13 ... 16.46	14835A18 ★ ... 12.18	14835A31 ★ ... 33.97	14835A44 ★ ♠ ... 52.26
0.075″ Thick Leaf								
2″	35/64″	1/4″	1″	1567A7 ... 12.01	1567A22 ... 18.47	14835A19 ▲ ... 15.81	14835A32 ▲ ... 44.10	14835A52 ▲ ... 67.85
3″	35/64″	1/4″	1″	1567A8 ... 13.72	1567A15 ... 21.11	14835A21 ▲ ... 19.79	14835A33 ▲ ... 55.21	14835A56 ▲ ... 84.94

★ (A) dimension is 23/64″; knuckle length is 5/8″. ♠ Length is 72 1/2″. ▲ 0.070″ thick leaf; (A) dimension is 29/64″.

(Continued on following page)

Don't see the piano hinge you need? Just tell us what you're looking for and we'll get it for you.

Offset Piano Hinges for Extra Clearance without Holes

(Continued from previous page)

Open Wd.	(A)	Pin Dia.	Knuckle Lg.	UNFINISHED STEEL 3-ft. Length		UNFINISHED STEEL 6-ft. Length		TYPE 304 STAINLESS STEEL 1-ft. Length		TYPE 304 STAINLESS STEEL 3-ft. Length		TYPE 304 STAINLESS STEEL 6-ft. Length	
0.090″ Thick Leaf													
2″	39/64″	1/4″	1″	1567A9	$15.09	1567A24	$23.22	14835A22	$13.37	14835A34	$37.30	14835A46	$57.39
3″	39/64″	1/4″	1″	1567A33	17.87	1567A25	27.49	14835A23	16.70	14835A35	46.60	14835A47	71.69
0.120″ Thick Leaf													
2″	3/4″	1/4″	2″	1567A34	28.91	1567A31	44.47	14835A24	29.41	14835A36	82.05	14835A61	126.23
3″	3/4″	1/4″	2″	1567A35	34.41	1567A32	52.94	14835A25	37.37	14835A37	104.26	14835A62	160.40

Piano Hinges with Holes

All of these surface-mount hinges have countersunk mounting holes. Hinges can be cut with a hacksaw. The pin and the hinge leaves are made of the same material. From the folded position, the range of motion is 270°, except for brass hinges, which have a 180° range of motion. Mounting screws not included.

Steel— The plated and finished steel hinges are countersunk before they are plated or painted for complete coverage and better corrosion resistance.

Leaves Lay Flat

Steel

Open Wd.	Knuckle Lg.	UNFINISHED 4-ft. Length		UNFINISHED 6-ft. Length		BRIGHT NICKEL PLATED 4-ft. Length		BRIGHT NICKEL PLATED 6-ft. Length		BRIGHT BRASS PLATED 4-ft. Length		BRIGHT BRASS PLATED 6-ft. Length	
0.040″ Thick Leaf—3/32″ Pin Dia., #4 Screw Size													
1 1/16″	1/2″	1569A115	$4.50	1569A117	$5.63	1569A415	$11.91	1569A417	$14.89	1569A615	$14.58	1569A617	$18.22
1 1/4″	1/2″	1569A125	4.49	1569A127	5.61	1569A425	7.83	1569A427	9.79	1569A625	12.09	1569A627	15.11
1 1/2″	1/2″	1569A1	6.40	1569A137	8.00	1569A435	16.62	1569A437	20.78	1569A635	15.82	1569A637	19.77
2″	1/2″	1569A2	6.60	1569A147	8.25	1569A445	13.05	1569A447	16.31	1569A645	13.84	1569A647	17.30
0.060″ Thick Leaf—1/8″ Pin Dia., #6 Screw Size													
1 1/4″	1/2″	1569A225	7.13	1569A227	8.91	1569A5	15.34	1569A527	19.18	1569A725	17.37	1569A7	21.71
1 1/2″	1/2″	1569A235	6.76	1569A237	8.45	1569A535	15.78	1569A537	19.72	1569A735	15.62	1569A737	19.53
2″	1/2″	1569A245	8.06	1569A247	10.07	1569A545	17.60	1569A547	22.00	1569A745	18.50	1569A747	23.13
2 1/2″	1/2″	1569A255	8.71	1569A257	10.89	1569A6	19.61	1569A557	24.51	—	—	—	—
3″	1/2″	1569A265	10.58	1569A267	13.22	1569A565	23.83	1569A567	29.79	1569A8	23.54	1569A767	29.43

Open Wd.	Knuckle Lg.	BRIGHT CHROME PLATED 4-ft. Length		BRIGHT CHROME PLATED 6-ft. Length		ANTIQUE BRONZE FINISH 4-ft. Length		ANTIQUE BRONZE FINISH 6-ft. Length		BLACK FINISH 4-ft. Length		BLACK FINISH 6-ft. Length	
0.040″ Thick Leaf—3/32″ Pin Dia., #4 Screw Size													
1 1/16″	1/2″	1569A3	$19.90	1569A317	$24.87	1569A9●	$12.12	1569A144●	$15.15	1569A16●	$11.49	1569A849●	$14.36
1 1/2″	1/2″	1569A335	18.38	1569A337	22.97	1569A11●	16.00	1569A145●	20.00	1569A18●	14.22	1569A852●	17.77
2″	1/2″	—	—	—	—	1569A12●	18.44	1569A146●	23.05	1569A19●	16.86	1569A853●	21.07
0.060″ Thick Leaf—1/8″ Pin Dia., #6 Screw Size													
1 1/2″	1/2″	1569A341	24.44	1569A342	30.55	1569A13	17.88	1569A154	22.35	1569A157	15.11	1569A172	18.89
2″	1/2″	1569A345	27.46	1569A347	34.32	1569A14	21.38	1569A155	26.73	1569A158	19.16	1569A173	23.95
3″	1/2″	1569A4	43.33	1569A367	54.16	1569A15	28.45	1569A156	35.56	1569A159	23.47	1569A174	29.34

● Requires #5 screws.

Type 304 Stainless Steel

Open Wd.	Knuckle Lg.	Screw Size	UNFINISHED 1-ft. Length		UNFINISHED 3-ft. Length		UNFINISHED 6-ft. Length		POLISHED ON EXPOSED SIDE 1-ft. Length		POLISHED ON EXPOSED SIDE 3-ft. Length		POLISHED ON EXPOSED SIDE 6-ft. Length	
0.042″ Thick Leaf—3/32″ Pin Dia.														
1 1/16″	1/2″	#4	1658A411	$2.62	1658A1	$7.32	1658A417	$11.26	12075A1●	$5.70	12075A6●	$15.91	12075A51●	$24.48
1 1/4″	1/2″	#4	1658A2	4.01	1658A424	11.17	1658A427	17.19	12075A2●	7.61	12075A7●	21.22	12075A52●	32.65
1 1/2″	1/2″	#4	1658A3	4.26	1658A4	11.89	1658A537	18.29	12075A3♣	7.94	12075A8♣	22.14	12075A53♣	34.06
2″	1/2″	#4	1658A5	7.51	1658A544	20.95	1658A547	32.23	12075A4♣	9.30	12075A9♣	25.93	12075A54♣	39.90
0.060″ Thick Leaf—1/8″ Pin Dia.														
1 1/4″	1/2″	#6	1658A6	6.83	1658A624	12.69	1658A627	19.52	—	—	—	—	—	—
1 1/2″	1/2″	#6	1658A731	6.88	1658A734	12.77	1658A737	19.65	12075A11	7.21	12075A13	20.12	12075A61	30.95
2″	1/2″	#6	1658A741	8.25	1658A7	15.33	1658A847	23.58	12075A12	9.56	12075A14	26.66	12075A62	41.01
3″	1/2″	#6	1658A861	11.02	1658A864	20.46	1658A867	31.48	—	—	—	—	—	—

● Requires #5 screws. ♣ Requires #6 screws.

Brass

Open Wd.	Knuckle Lg.	Screw Size	POLISHED FINISH 6-ft. Length	
0.040″ Thick Leaf—7/64″ Pin Dia.				
1 1/16″	1/2″	#4	1584A47	$45.22
1 1/2″	1/2″	#4	1584A72	49.23

Open Wd.	Knuckle Lg.	Screw Size	POLISHED FINISH 6-ft. Length	
0.060″ Thick Leaf—1/8″ Pin Dia.				
2″	1/2″	#6	1584A75	$81.04

Alloy T3003 Aluminum

Open Wd.	Knuckle Lg.	Screw Size	UNFINISHED 1-ft. Length		UNFINISHED 3-ft. Length		UNFINISHED 6-ft. Length		CLEAR ANODIZED FINISH 1-ft. Length		CLEAR ANODIZED FINISH 3-ft. Length		CLEAR ANODIZED FINISH 6-ft. Length	
0.040″ Thick Leaf—3/32″ Pin Dia.														
1 1/16″	1/2″	#4	1575A1	$1.40	1575A4	$3.89	1575A417	$5.99	1575A13	$3.15	1575A16	$8.79	1575A41	$13.53
1 1/4″	1/2″	#4	1575A2	3.72	1575A5	5.62	1575A427	8.64	—	—	—	—	—	—
1 1/2″	1/2″	#4	1575A3	2.77	1575A6	7.72	1575A437	11.88	1575A14	3.46	1575A17	9.65	1575A43	14.84
2″	1/2″	#4	—	—	—	—	—	—	1575A15	6.50	1575A18	18.14	1575A45	27.91
0.060″ Thick Leaf—1/8″ Pin Dia.														
1 1/2″	1/2″	#6	1575A7	2.74	1575A534	7.66	1575A537	11.78	1575A19	6.04	1575A23	16.85	1575A47	25.92
2″	1/2″	#6	1575A8	2.83	1575A11	7.89	1575A547	12.14	1575A21	6.79	1575A24	18.95	1575A49	29.15
3″	1/2″	#6	1575A9	2.81	1575A12	7.83	1575A667	12.04	1575A22	7.44	1575A25	20.77	1575A51	31.95

Don't see the piano hinge you need? Just tell us what you're looking for and we'll get it for you.

Load-Rated Piano Hinges with Bearings and Holes

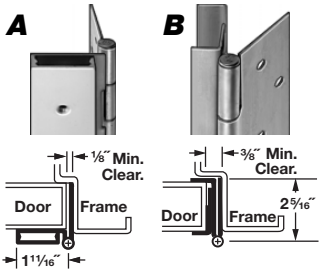

Not your ordinary piano hinges, these are load rated for heavy doors. They have nylon bearings spaced along the length of the hinge—the weight of the door is evenly distributed on the bearings for smooth door opening. One leaf mounts to the edge of the frame; the other mounts to the door surface or edge (see below). Minimum clearance is between the frame and the door. Ideal for replacing butt hinges on new and existing doors. Reversible for right- and left-hand doors. Pin is stainless steel. Can be cut with a band saw or hacksaw. From the folded position, the range of motion is 180°. Fire rated for 90 minutes for hollow metal and composite core wood doors. All have punched and countersunk mounting holes. Furnished with #10 screws; Style A also comes with #8×3/4″ fasteners.

	Max. Cap., lbs.	Lg.	Leaf Thick.	Pin Dia.	Knuckle Lg.	Mounting Frame	Mounting Door	Max. Door Thick.		
Steel—*Prime Coat Finish*										
A	600	7 ft.	1/16″	1/4″	1 7/8″	Edge	Surface	1 3/4″	**14225A22**	$283.07
Type 304 Stainless Steel—*Dull Finish*										
A	600	7 ft.	1/16″	1/4″	1 7/8″	Edge	Surface	1 3/4″	**14225A24**	444.27
B	600	7 ft.	1/16″	1/4″	1 7/8″	Edge	Edge	1 3/4″	**14225A26**	478.67

Load-Rated Aluminum Geared Hinges

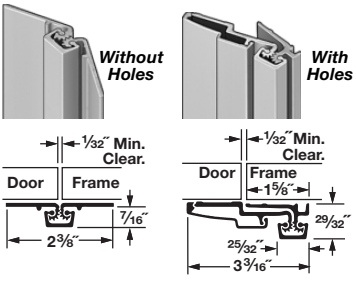

Instead of having pins and knuckles that could bend or shear, these aluminum hinges are geared with nylon bearings to minimize door sag and deflection. Plus, they're load rated to handle heavy doors. The weight of the door is evenly distributed on the bearings, which are spaced along the length of the hinge—the result is smooth, easy door opening. Hinges surface mount. Minimum clearance is between the frame and the door. From the folded position, the range of motion is 180°.

Without Holes— Weld in place or drill holes for screws.

With Holes— Excellent for replacing butt hinges, they're also used anywhere a door has been ripped out of the frame. Hinges have punched and countersunk holes. Furnished with snap-on security molding and #12 and 1/4″ screws.

Cap., lbs.	Daily Openings	Lg.	Leaf Thick.	Anodized Finish		Dark Bronze Finish	
Without Holes—*Capacity based on use with doors up to 2′ Wd.×4′ Ht.*							
12	11	4′	1/16″	**1381A33**	$73.95	———	———
With Holes—*Capacity based on use with doors up to 3′ Wd.×7′ Ht.*							
160	80	6′11″	1/16″	**1382A18**	198.55	**1382A19**	$268.80
320	80	6′11″	1/16″	**1382A23**	242.64	**1382A24**	289.67

Plastic Piano Hinges without Holes

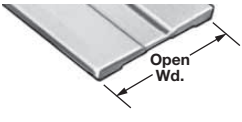

1 1/2″ Open Width

2″ and 3 1/2″ Open Widths

A lighter weight, more corrosion-resistant alternative to metal piano hinges, these plastic hinges have rigid leaves and a flexible elastomer middle instead of a pin. The pinless construction results in smooth, silent operation. There are no mounting holes—surface mount hinges with adhesive, screws, nails, or other fasteners. Can be cut with a hacksaw. The 1 1/2″ open width hinges are for indoor use; the 2″ and 3 1/2″ open width hinges are for indoor and outdoor use. All have a white middle, except for 11195A11, which has a clear middle. From the folded position, the range of motion is 360°, unless noted. Temp. range is 45° to 150°F, unless noted.

PVC— Leaves are PVC; this material is the most widely used vinyl, but has poor impact strength.

Acrylic— Leaves are clear acrylic; this material has good clarity, but poor impact strength.

PETG— Leaves are clear PETG, which has excellent clarity and good impact strength.

Open Wd.	Leaf Lg.	Leaf Thick.	Middle Material	Clear PVC		White PVC		Clear Acrylic		Clear PETG	
1 1/2″	6 ft.	3/32″	Polyester	**11195A41**▲	$12.00	**11195A42**▲	$12.00	**11195A21**	$10.38	**11195A11**■	$36.00
2″	6 ft.	5/64″	Polyurethane	**11195A43**	17.37	**11195A45**	18.42	**11195A22**	17.34	**11195A12**	17.68
3 1/2″	6 ft.	3/32″	Polyurethane	**11195A44**	30.18	**11195A46**	31.93	**11195A23**	27.73	**11195A13**	29.54

▲ From the folded position, the range of motion is almost 180°. ■ Leaf thickness is 1/8″. Max. temp. is 100°F.

Harsh-Environment Plastic Piano Hinges without Holes

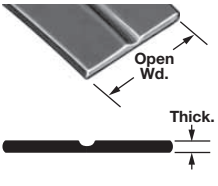

Made of tough polyolefin plastic, these hinges resist saltwater, oil, most chemicals (including solvents), temperature extremes, and damaging UV rays. All hinges have rigid leaves and a flexible webbed middle instead of a pin for smooth, silent operation. Hinges surface mount using adhesive, screws, nails, or other fasteners. Can be cut with a box cutter or razor. For indoor and outdoor use. From the folded position, the range of motion is 360°. Temp. range is –40° to +180°F.

To Order: Please specify color (black, gray, or white) and length from those listed below. The last length listed is the maximum continuous length.

Available Lengths	Leaf Thick.	1 1/8″ Open Width Per Ft.		1 1/2″ Open Width Per Ft.		2″ Open Width Per Ft.		3″ Open Width Per Ft.	
4′, 8′, 25′	1/8″	**1588A71**	$3.29	**1588A72**	$3.86	**1588A73**	$5.65	**1588A74**	$8.18

Slip-Over Panel Plastic Piano Hinges

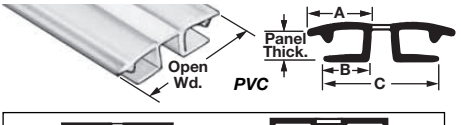

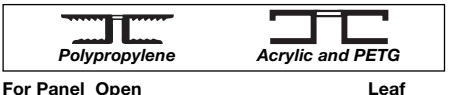

No need for screws to mount these hinges; the leaves are ribbed channels that press onto panel edges for a snug fit. All have rigid leaves with a flexible elastomer middle instead of a pin. For indoor use. From the folded position, the range of motion is 180°, unless noted.

PVC— Leaves are PVC; this material is the most widely used vinyl, but has poor impact strength. **To Order:** Please specify hinge color: clear or white.

Polypropylene— Leaves are polypropylene, which has good impact strength. Middle is the same color as the hinge. **To Order:** Please specify hinge color: black or white.

Acrylic— Leaves are clear acrylic; material has good clarity, but poor impact strength.

PETG— Leaves are clear PETG, which has excellent clarity and good impact strength.

For Panel Thick.	Open Wd.	Lg.	(A)	(B)	(C)	Leaf Thick.		
PVC w/White Polyester Middle—*Temp. Range: +30° to +150°F*								
1/4″	1 1/2″	6 ft.	19/32″	15/32″	1 1/4″	1/16″	**11565A35**	$13.66
Polypropylene w/Polypropylene Middle—*Not Rated for Temp.*								
1/8″	1 5/32″	6 ft.	17/32″	3/8″	27/32″	3/64″	**1793A61**●	8.40
3/16″	1 1/16″	6 ft.	31/64″	3/8″	27/32″	3/64″	**1793A62**●	8.55

● From a flat position, the range of motion is 90°.

For Panel Thick.	Open Wd.	Lg.	(A)	(B)	(C)	Leaf Thick.		
Polypropylene w/Polypropylene Middle—*Not Rated for Temp. (Cont.)*								
1/4″	15/32″	6 ft.	17/32″	3/8″	27/32″	3/64″	**1793A63**●	$9.00
Clear Acrylic w/White Polyester Middle—*Temp. Range: –40° to +150°F*								
1/4″	15/16″	6 ft.	1/2″	1/2″	15/16″	1/16″	**11565A11**	14.63
Clear PETG w/Clear Polyester Middle—*Temp. Range: +45° to +100°F*								
1/4″	17/64″	6 ft.	7/16″	7/16″	17/64″	3/64″	**11565A12**	39.97

About Hinge Specifications

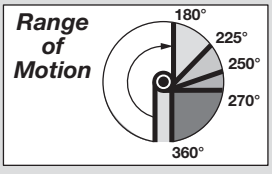

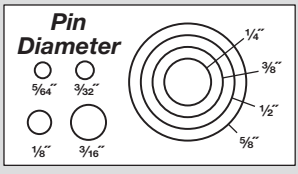

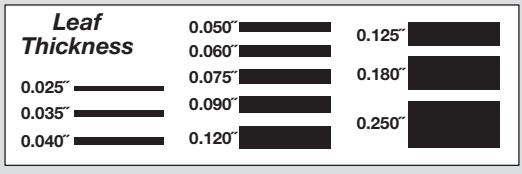

Surface-Mount Hinges without Holes

You have mounting options because these hinges don't have holes. To mount metal hinges, spot weld in place or drill holes for rivets or screws. Mount acrylic and polycarbonate hinges with solvent-based adhesive. To mount HDPE and PVDF hinges, heat weld in place or drill holes for rivets or screws. All are reversible for right- and left-hand mounting. The pin and the leaves are made of the same material, unless indicated otherwise. From the folded position, hinges have at least a 265° range of motion, except for polycarbonate, HDPE, and PVDF hinges, which have a 180° range of motion. ***Hinges with a nonremovable pin*** deter tampering. For information about hinges, see page 2976.

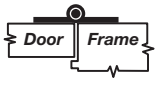

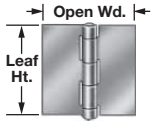

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.		Each★
Unfinished Steel					
Nonremovable Pin					
1"	31/32"	0.047"	7/64"	16175A12	$1.40
1½"	1⅜"	0.047"	7/64"	16175A131	1.71
1½"	1½"	0.050"	1/8"	16175A11	1.50
2"	1½"	0.060"	1/8"	16175A181	1.87
2"	1 17/32"	0.063"	9/64"	16175A182	1.74
2"	1 31/32"	0.107"	3/16"	16175A16	3.71
2"	2"	0.060"	1/8"	16175A14	2.01
2"	2"	0.083"	3/16"	16175A15	3.29
2½"	1 21/32"	0.063"	9/64"	16175A25	2.78
2½"	2"	0.075"	3/16"	16175A17	3.65
2½"	2½"	0.089"	13/64"	16175A21	4.21
2½"	2½"	0.120"	1/4"	16175A22	4.92
3"	1 15/16"	0.072"	11/64"	16175A27	3.60
3"	2"	0.090"	3/16"	16175A19	4.90
3"	2½"	0.120"	1/4"	16175A23	5.01
3"	2 31/32"	0.093"	15/64"	16175A24	5.68
3"	3"	0.120"	1/4"	16175A26	5.38
3½"	3 11/32"	0.123"	17/64"	16175A32	6.47
4"	3"	0.120"	1/4"	16175A28	5.78
4"	3½"	0.165"	5/16"	16175A33	10.25
4"	4"	0.120"	1/4"	16175A35	5.95
4"	4"	0.180"	3/8"	16175A37	9.34
4"	4"	0.250"	5/8"	16175A38	22.47
4½"	4½"	0.120"	1/4"	16175A42	6.32
4½"	4½"	0.185"	11/32"	16175A43	30.81
5"	4"	0.180"	3/8"	16175A41	10.69
5"	5"	0.120"	1/4"	16175A44	6.88
5"	5"	0.150"	5/16"	16175A45	13.66
5"	5"	0.180"	3/8"	16175A46	11.09
5"	5"	0.250"	5/8"	16175A47	22.89
6"	3"	0.180"	3/8"	16175A29	11.10
6"	5"	0.180"	3/8"	16175A48	12.73
6"	5"	0.250"	5/8"	16175A49	25.98
6"	6"	0.165"	3/8"	16175A51	16.50
6"	6"	0.180"	3/8"	16175A52	14.27
6"	6"	0.250"	5/8"	16175A53	27.48
8"	6"	0.180"	3/8"	16175A55	19.14
Removable Pin					
1"	31/32"	0.047"	7/64"	16175A561	1.43
1½"	1⅜"	0.047"	7/64"	16175A562	1.76
2"	1 17/32"	0.063"	9/64"	16175A563	2.17
2"	1 31/32"	0.107"	3/16"	16175A58	3.91
2"	2"	0.083"	3/16"	16175A57	3.69
2½"	1 21/32"	0.063"	9/64"	16175A564	2.59
2½"	2½"	0.089"	7/32"	16175A62	4.19
2½"	2½"	0.120"	1/4"	16175A63	5.21
3"	2"	0.075"	3/16"	16175A61	4.45
3"	2½"	0.120"	1/4"	16175A64	5.37
3"	2 31/32"	0.093"	15/64"	16175A65	5.34
3"	3"	0.120"	1/4"	16175A66	6.03
3½"	3 11/32"	0.123"	17/64"	16175A73	8.85
3½"	3½"	0.150"	5/16"	16175A74	8.03
4"	3"	0.120"	1/4"	16175A68	6.03
4"	3½"	0.165"	5/16"	16175A75	10.16

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.		Each★
Unfinished Steel (Cont.)					
Removable Pin (Cont.)					
4"	3 29/32"	0.130"	17/64"	16175A76	$9.71
4"	4"	0.120"	1/4"	16175A77	6.28
4"	4"	0.180"	3/8"	16175A78	9.73
4"	4"	0.250"	5/8"	16175A79	20.00
4½"	4½"	0.120"	1/4"	16175A83	6.98
4½"	4½"	0.185"	11/32"	16175A84	25.81
5"	4"	0.180"	3/8"	16175A82	10.91
5"	5"	0.150"	5/16"	16175A85	13.66
5"	5"	0.180"	3/8"	16175A86	10.55
5"	5"	0.250"	5/8"	16175A87	23.51
6"	3"	0.180"	3/8"	16175A72	10.50
6"	5"	0.180"	3/8"	16175A88	12.10
6"	6"	0.180"	3/8"	16175A91	13.85
6"	6"	0.250"	5/8"	16175A92	27.48
Galvanized Steel					
Nonremovable Brass Pin					
2"	2"	0.105"	3/16"	1623A11	6.31
2½"	2⅜"	0.120"	3/16"	1623A12	9.55
3"	3"	0.135"	1/4"	1623A13	10.08
3½"	3½"	0.165"	5/16"	1623A14	16.83
Zinc-Plated Steel					
Nonremovable Brass Pin					
2"	2"	0.090"	1/8"	1623A1 ♦	13.00
3"	3"	0.120"	3/16"	1623A2 ♦	14.94
4"	4"	0.180"	5/16"	1623A15	22.06
4"	4"	0.250"	1/2"	1623A3	32.45
4½"	4½"	0.180"	5/16"	1623A16	29.17
5"	5"	0.180"	5/16"	1623A17	25.16
5"	5"	0.250"	1/2"	1623A4	35.43
6"	6"	0.180"	1/2"	1623A18	33.29
Unfinished Type 304 Stainless Steel					
Nonremovable Pin					
1½"	1½"	0.050"	1/8"	1624A61	2.12
2"	1½"	0.060"	1/8"	1624A62	2.92
2"	2"	0.060"	1/8"	1624A64	2.51
2"	2"	0.075"	3/16"	1624A65	4.94
2½"	2½"	0.060"	1/8"	1624A69	5.35
2½"	2½"	0.075"	3/16"	1624A71	7.25
3"	2"	0.090"	3/16"	1624A67	6.52
3"	2"	0.120"	1/4"	1624A68	8.06
3"	3"	0.090"	3/16"	1624A73	8.21
3"	3"	0.120"	1/4"	1624A74	9.27
3½"	3"	0.090"	3/16"	1624A75	8.32
3½"	3½"	0.090"	3/16"	1624A77	9.98
4"	3"	0.120"	1/4"	1624A76	10.96
4"	4"	0.060"	1/8"	1624A79	8.76
4"	4"	0.120"	1/4"	1624A81	11.78
4"	4"	0.180"	3/8"	1624A82	22.95
4"	4"	0.250"	5/8"	1624A83	49.54
5"	5"	0.120"	1/4"	1624A85	15.13
5"	5"	0.180"	3/8"	1624A86	33.73
5"	5"	0.250"	5/8"	1624A87	72.36
6"	6"	0.120"	1/4"	1624A89	18.52
6"	6"	0.180"	3/8"	1624A91	40.36
6"	6"	0.250"	5/8"	1624A92	79.10

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.		Each★
Unfinished Type 304 Stain. Steel (Cont.)					
Removable Pin					
2"	2"	0.060"	1/8"	1624A51	$4.23
2½"	2½"	0.075"	3/16"	1624A53	6.31
3"	2"	0.120"	1/4"	1624A52	8.77
3"	3"	0.090"	3/16"	1624A54	9.65
3"	3"	0.120"	1/4"	1624A55	9.73
4"	3"	0.120"	1/4"	1624A56	11.42
4"	4"	0.120"	1/4"	1624A57	12.81
5"	5"	0.120"	1/4"	1624A58	15.76
6"	6"	0.120"	1/4"	1624A59	19.72
Unfinished Type 316 Stainless Steel					
Nonremovable Pin					
1½"	1½"	0.060"	1/8"	15095A32	5.75
2"	1½"	0.060"	1/8"	15095A33	6.08
2"	2"	0.060"	1/8"	15095A34	6.48
2"	2"	0.075"	3/16"	15095A41	6.95
2½"	2½"	0.060"	1/8"	15095A35	7.48
3"	2"	0.090"	3/16"	15095A54	11.78
3"	2"	0.120"	1/4"	15095A55	13.81
3"	3"	0.090"	3/16"	15095A42	12.75
3"	3"	0.120"	1/4"	15095A43	15.35
4"	3"	0.120"	1/4"	15095A56	18.18
4"	4"	0.120"	1/4"	15095A44	20.07
4"	4"	0.180"	3/8"	15095A57	86.40
Unfinished Alloy 5052 Aluminum					
Nonremovable Pin					
1½"	1½"	0.064"	1/8"	1609A12	4.37
2"	2"	0.075"	3/16"	1609A14	5.72
2½"	2½"	0.080"	3/16"	1609A16	5.91
2½"	2½"	0.120"	1/4"	1609A21	6.43
3"	2"	0.120"	1/4"	1609A25	7.18
3"	3"	0.075"	3/16"	1609A24	5.79
3"	3"	0.090"	3/16"	1609A17	6.21
3"	3"	0.120"	1/4"	1609A22	6.84
3½"	3½"	0.090"	3/16"	1609A27	7.45
4"	3"	0.120"	1/4"	1609A26	8.20
4"	4"	0.120"	1/4"	1609A23	8.91
Removable Pin					
2"	2"	0.064"	1/8"	1609A41	4.81
2½"	2½"	0.120"	1/4"	1609A42	6.74
3"	3"	0.120"	1/4"	1609A43	7.50
4"	4"	0.120"	1/4"	1609A44	9.58
4"	4"	0.250"	3/8"	1609A1	24.42
5"	5"	0.250"	3/8"	1609A2	29.63
Clear Acrylic—*Not rated for temp.*					
Removable Nylon Pin					
1½"	1⅜"	0.125"	1/8"	11185A141	1.02
1¾"	1½"	0.187"	1/8"	11185A11	1.07
Clear Polycarbonate—*Max. temp. is 250°F*					
Removable Pin					
2½"	2⅛"	0.200"	1/8"	11185A18	2.10
White HDPE—*Max. temp. is 160°F*					
Removable Pin					
2½"	2⅛"	0.200"	1/8"	11185A19	1.90
White PVDF—*Max. temp. is 200°F*					
Removable Pin					
2½"	2⅛"	0.200"	1/8"	11185A17	6.00

★ Prices are 15% to 25% lower when you buy 10 or more hinges of the same size. ♦ Pin is made of steel.

Brass Miniature Surface-Mount Hinges without Holes

Small enough to fit on your fingertip. These tiny, lightweight hinges don't have mounting holes; surface mount with solder or adhesive. All have unfinished brass leaves with a riveted middle instead of a pin. Reversible for right- and left-hand mounting. From the folded position, the range of motion is 180°.

Leaf Ht.	Open Wd.	Leaf Thick.		Each★
1/8"	29/64"	0.036"	1600A11	$7.04
3/16"	35/64"	0.036"	1600A12	7.10

★ Prices are 15% to 20% lower when you buy 10 or more hinges of the same size.

Surface-Mount Hinges with Holes

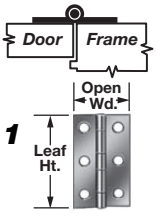

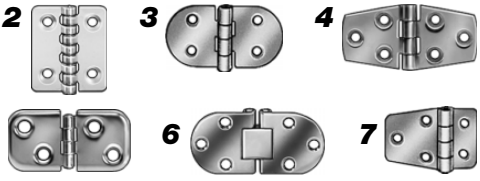

You don't have to prepare these hinges for mounting; they already have countersunk screw holes (unless noted). The holes on 1798A hinges are countersunk prior to coating to provide complete coverage for better corrosion resistance. Hinges are reversible for right- and left-hand mounting. The pin and the leaves are made of the same material, unless indicated otherwise. From the folded position, the range of motion is at least 180°, except for 1635A12 and 1635A22, which have a 90° range of motion. Mounting screws not included, unless noted. ***Style 6*** hinges have two pins and are typically used in double-door installations to reduce the number of hinges required.

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes		Each
Bright Brass with Nonremovable Pin							
1 .. 3/4″	5/8″	0.020″	5/64″	#2	4	**1603A2**	$0.82
1 .. 1″	3/4″	0.020″	5/64″	#2	4	**1603A3**	.86
1 .. 1″	1″	0.020″	5/64″	#2	4	**1603A23**	.99
1 .. 1 1/2″	1 1/2″	0.082″	1/8″	#6	4	**1797A12**	9.87
1 .. 2″	1″	0.040″	7/64″	#5	6	**1603A7**	2.26
1 .. 2″	1 3/16″	0.040″	7/64″	#5	6	**1603A24**	2.34
1 .. 2″	1 3/8″	0.040″	7/64″	#5	6	**1603A27**	2.52
1 .. 3″	2″	0.082″	1/8″	#6	6	**1797A16**	16.62
Unfinished Type 430 Stainless Steel with Removable Pin							
1 .. 3″	2 5/8″	0.072″	13/64″	#10	6	**1488A11**●	5.60
Unfinished Type 304 Stainless Steel with Removable Pin							
1 .. 6″	1 1/2″	0.050″	1/8″	#6	6	**1586A12**●♠	6.65
1 .. 6″	1 3/4″	0.050″	1/8″	#6	6	**1586A13**●♠	7.04
1 .. 6″	2″	0.050″	1/8″	#6	6	**1586A16**●♠	7.46
1 .. 6″	3″	0.050″	1/8″	#6	6	**1586A21**●♠	9.05
Polished Type 316 Stainless Steel with Nonremovable Pin							
1 .. 1 1/2″	1 5/8″	0.170″	7/32″	#10	4	**1488A12**♣	5.26
1 .. 2″	2″	0.170″	7/32″	#10	4	**1488A13**♣	6.44
1 .. 2 3/8″	2 3/8″	0.315″	5/16″	11/32″	4	**1488A1**	23.68
White Polypropylene with Nylon Nonremovable Pin—Not temp. rated							
2 .. 2″	2″	0.187″	1/4″	#10	4	**1635A12**	1.57
Black Polypropylene with Nylon Nonremovable Pin—Not temp. rated							
2 .. 2″	2″	0.187″	1/4″	#10	4	**1635A22**	1.57
Clear Polycarbonate with Removable Pin—Max. temp. is 250°F							
2 .. 2 1/2″	2 1/8″	0.200″	5/32″	1/4″	4	**1635A24**	$2.80
White HDPE with Removable Pin—Max. temp. is 160°F							
2 .. 2 1/2″	2 1/8″	0.200″	5/32″	1/4″	4	**1635A25**	2.60
White PVDF with Removable Pin—Max. temp. is 200°F							
2 .. 2 1/2″	2 1/8″	0.200″	5/32″	1/4″	4	**1635A23**	6.70
Polished Type 304 Stainless Steel with Nonremovable Pin							
3 .. 1 1/2″	2 3/4″	0.062″	13/64″	#8	4	**1549A57**	3.95
4 .. 1 1/2″	3″	0.080″	1/8″	#8	6	**1549A59**	6.43
Polished Type 316 Stainless Steel with Nonremovable Pin							
4 .. 1 1/2″	3″	0.187″	13/64″	#10	6	**11175A13**♣	8.18
4 .. 1 1/2″	4 3/16″	0.187″	13/64″	#10	6	**11175A14**♣	9.82
5 .. 1 1/4″	2 27/64″	0.145″	1/8″	#10	4	**1549A44**	14.52
Polished Type 304 Stainless Steel with Nonremovable Pin(s)							
6 .. 1 1/2″	2″	0.062″	11/64″	#8	4	**1549A49**	5.21
6 .. 1 1/2″	3″	0.062″	11/64″	#8	6	**1549A51**	5.39
7 .. 1 1/2″	2 1/4″	0.080″	13/64″	#8	5	**1549A64**	6.41
Polished Type 316 Stainless Steel with Nonremovable Pin							
7 .. 1 1/2″	2 7/8″	0.187″	13/64″	#10	5	**11175A12**	8.74
Zinc-Plated Steel with Removable Pin							**Pair**
1 .. 3″	2 1/2″	0.080″	1/4″	#8	6	**1798A25**●★	$5.68
Dull Black Finish Steel with Removable Pin							
1 .. 3″	2 1/2″	0.080″	1/4″	#8	6	**1798A21**●★	6.82
Galvanized Steel with Brass Removable Pin							
1 .. 3″	2 1/2″	0.080″	1/4″	#8	6	**1798A22**●★	13.55

● Holes are staggered. ♠ Holes are not countersunk. ♣ Pin is Type 304 stainless steel. ★ Mounting screws are included.

Clean Room Surface-Mount Hinges with Holes

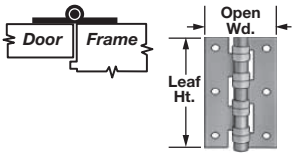

Opening and closing these hinges won't generate material residue that can contaminate your environment. A great choice for clean rooms and labs, hinges have aluminum leaves, polyacetal bushings, and a Type 304 stainless steel pin.

Reversible for right- and left-hand mounting. From the folded position, the range of motion is 270°. Mounting screws not included.

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes		
2 9/16″	2 23/64″	9/64″	13/64″	#12	4	**1795A1**	$19.56
3 15/16″	2 23/64″	9/64″	13/64″	#12	6	**1795A2**	25.78

Load-Rated Surface-Mount Hinges

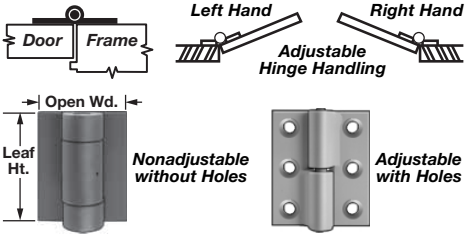

Commonly used on heavy doors, prison doors, vaults, and other doors in security applications, these hinges have thicker leaves than other surface-mount hinges and have a large diameter, nonremovable pin to deter tampering. Reversible for right- and left-hand mounting, except adjustable hinges, which are handed (you choose either right- or left-hand mount). All have a steel pin. The pin in 10855A32, 10855A46, 1828A21, 1828A22, 1828A27, 1828A28, and the stainless steel hinges has a corrosion-resistant coating. From the folded position, the range of motion is at least 180°.

Hinges without holes install by spot welding or by drilling holes for rivets or screws.

Hinges with holes have countersunk holes, unless noted. All are furnished with tamper-resistant screws, unless noted.

Adjustable hinges can be adjusted 1/8″ up and down after door is hung—just turn the hex set screw on the top of the hinge. *1,000-lb. cap. hinges* have a 3/16″ screw; *3,000-lb. cap. hinges* have a 1/4″ screw. **To Order:** Please specify right-hand or left-hand mount.

Forged steel hinges have an oil hole for lubricating the bearings.

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Load Cap., lbs.■	Daily Openings		
Without Holes—Nonadjustable with Bearings							
Prime-Coat Forged Steel							
5″ .. 4″	0.500″	3/4″	1/2″	1,000 ✓	210-350	**1805A15**	$163.73
5″ .. 5 1/4″	0.500″	3/4″	1/2″	1,000 ✓	210-350	**1805A16**	163.73
5″ .. 6 1/2″	0.500″	3/4″	1/2″	1,000 ✓	210-350	**1805A14**	163.73
Prime-Coat Stamped Steel							
5″ .. 6″	0.500″	5/8″		800	340	**10855A44**	123.53
5″ .. 6″	0.500″	5/8″		2,000	273	**10855A46**	210.42
Unfinished Type 304 Stainless Steel							
5″ .. 6″	0.500″	5/8″		2,000	273	**10855A54**	476.67
Without Holes—Adjustable with Bearings							
Prime-Coat Stamped Steel							
5″ .. 4 1/4″	0.375″	1/2″		1,000	273	**1828A27**	283.64
5″ .. 6 17/32″	0.500″	7/8″		3,000	273	**1828A28**	445.45
Unfinished Type 304 Stainless Steel							
5″ .. 4 1/4″	0.375″	1/2″		1,000	273	**1828A64**	455.00
5″ .. 6 17/32″	0.750″	7/8″		3,000	273	**1828A65**	784.00
With 4 Holes—Nonadjustable without Bearings							
Prime-Coat Cast Iron							
3″ .. 4″	0.375″	3/8″	3/8″	150	20-210	**1852A59**	$62.60
Prime-Coat Stamped Steel							
3″ .. 4″	0.203″	7/16″	3/8″	150	137	**1852A61**♠	29.95
With 6 Holes—Nonadjustable with Bearings							
Prime-Coat Forged Steel							
5″ .. 4″	0.500″	3/4″	1/2″	500	210-350	**1484A31**	169.85
5″ .. 5 1/4″	0.500″	3/4″	1/2″	500	210-350	**1484A32**	169.85
Prime-Coat Stamped Steel							
5″ .. 6″	0.500″	5/8″	1/2″	2,000	273	**10855A32**▲	235.42
With 6 Holes—Adjustable with Bearings							
Prime-Coat Stamped Steel							
5″ .. 4 1/4″	0.375″	1/2″	3/8″	1,000	273	**1828A21**▲	312.00
5″ .. 6 17/32″	0.500″	7/8″	1/2″	3,000	273	**1828A22**▲	445.45

■ Max. door weight based on two hinges per door. ✓ When hinge is weld mounted. ♠ Holes are not countersunk.
▲ Holes are not countersunk; mounting screws not included.

Pinless Plastic Surface-Mount Hinges with Holes

The pinless design of these one-piece hinges provides smooth, silent operation. Made of polyolefin plastic, hinges resist corrosion and harsh weather, plus they stay flexible in temperatures from –40° to +180°F. Holes are countersunk, unless noted. Reversible for right- and left-hand mounting. From the folded position, the range of motion is 270°. Mounting screws not included.

To Order: Please specify color: black or white.

Leaf Ht.	Open Wd.	Leaf Thick.	Screw Size	No. of Holes		
1″	3″	0.125″	#5	4	1637A74♠	$1.05
1½″	1″	0.0938″	#6	4	1637A71	.78
2″	1½″	0.125″	#5	4	1637A72	1.02
3″	2½″	0.188″	#8	6	1637A73	2.16
3½″	3½″	0.250″	#8	6	1637A75	3.30
4″	4″	0.250″	#12	8	1637A76	3.66

♠ Holes are not countersunk.

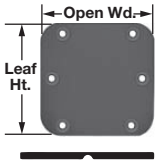

Load-Rated Half-Mortise/Half-Surface Mount Steel Template Hinges

You only need one cutout (mortise) for these hinges—the offset design allows you to mortise mount one leaf and surface mount the other leaf. Perfect when damage to your door or frame makes using a traditional mortise hinge impossible. Just select a hinge that matches your mortise placement. The template design has uniform screw holes placed in a standardized, half-moon pattern that's identical from manufacturer to manufacturer. They're reversible for right- and left-hand mounting. Made of steel with a removable steel pin. Holes are countersunk prior to plating to provide complete coverage for better corrosion resistance. From the folded position, the range of motion is at least 180°. Furnished with mounting screws.

Hinges with bearings provide smooth operation on doors with or without a door closer.

Hinges without bearings are for doors without a door closer.

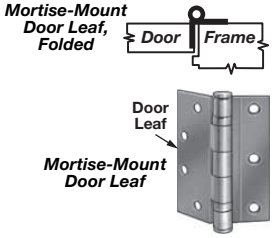

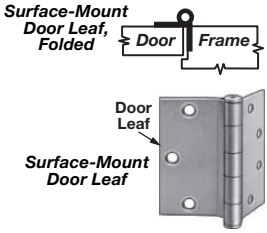

Leaf Ht.	Door Leaf Wd.	Door Leaf No. of Holes	Frame Leaf Wd.	Frame Leaf No. of Holes	Leaf Offset	Leaf Thick.	Pin Dia.	Screw Size	Load Cap., lbs.♣	Prime Coat		Dull Chrome	
Mortise-Mount Door Leaf/Surface-Mount Frame Leaf													
Hinges with Bearings—Daily openings: 100													
4½″	2″	4	1½″	3	⅜″	0.134″	5/16″	#12	150	1356A1	$27.53	1356A4	$33.21
Hinges with Bearings—Daily openings: 135													
4½″	2 1/16″	4	1½″	3	7/16″	0.180″	5/16″	#12	140	1509A11	59.30	1509A13	80.52
5″	2 1/16″	4	1½″	4	7/16″	0.190″	5/16″	#12	140	1509A12	75.93	1509A14	74.11
Surface-Mount Door Leaf/Mortise-Mount Frame Leaf													
Hinges without Bearings—Daily openings: 20-30													
3½″	1 39/64″	3	1 7/32″	3	29/64″	0.119″	5/16″	#10	45	1498A12	7.19	1498A31	11.14
4½″	2 9/16″	3	2″	4	½″	0.134″	5/16″	#12, ¼″	75	1498A15	13.66	1498A32	17.99
Hinges with Bearings—Daily openings: 50-100													
4½″	2 9/16″	3	2″	4	½″	0.134″	5/16″	#12, ¼″	150	1498A41	23.85	1498A43	30.45

♣ Max. door weight based on three hinges per door with a max. door size of 7 ft. Ht. × 3 ft. Wd. × 1¾″ Thick.

Mortise-Mount Nontemplate Hinges

Mount these hinges into recessed cutouts (mortises) on your door's edge and frame for a neat, flush-mounted appearance. The nontemplate design means that the hole pattern differs among manufacturers; you can change your existing hole pattern from a template pattern. When the hinge is folded, the leaves are close together to fit into tight spaces. Use these hinges on solid and hollow-core wood doors.

Reversible for right- and left-hand mounting. The pin and the leaves are made of the same material. Holes are countersunk prior to coating (where applicable) to provide complete coverage for better corrosion resistance. From the folded position, the range of motion is at least 270°. Hinges are not recommended for use on doors with a door closer. Mounting screws are not included, unless noted.

Hinges with a nonremovable pin deter tampering.

Mortise

Square Corners 3 Knuckle with 4 Holes

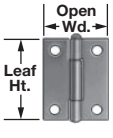

Square Corners 5 Knuckle with 10 Holes

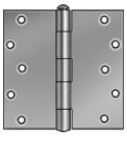

Round Corners 5 Knuckle with 6 Holes

Round Corners 5 Knuckle with 8 Holes

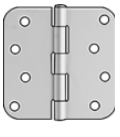

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes	NONREMOVABLE PIN Unfinished Steel		NONREMOVABLE PIN Zinc-Plated Steel		REMOVABLE PIN Unfinished Steel		REMOVABLE PIN Zinc-Plated Steel		Dull Type 304 SS	
Square Corners—3 Knuckle															
1″	1″	0.047″	3/32″	#4	4	1598A12	$0.68	1598A52	$0.78	1597A12	$0.79	1597A41	$0.82	—	—
1½″	1 3/8″	0.050″	⅛″	#5	4	1598A14	.83	1598A53	.95	1597A13	.87	1597A42	.95	—	—
1 7/16″	3½″	0.072″	⅛″	#8	6	—	—	1826A13★	4.56	—	—	—	—	—	—
Square Corners—5 Knuckle															
2″	1 9/16″	0.050″	⅛″	#6	4	1598A15	1.01	1598A54	1.10	1597A14	1.10	1597A43	1.15	—	—
2″	2″	0.080″	3/16″	#7	4	1514A11	2.94	—	—	1513A11	2.45	—	—	—	—
2½″	1 11/16″	0.055″	⅛″	#6	6	1598A17	1.10	1598A55	1.12	1597A15●	.79	1597A44●	1.16	—	—
2½″	2½″	0.090″	7/32″	#8	6	1514A12	3.03	—	—	1513A13	3.07	—	—	—	—
3″	2″	0.062″	5/32″	#7	6	1598A18	1.33	1598A56	1.40	1597A16	1.43	1597A45	1.59	—	—
3″	3″	0.090″	17/64″	#9	6	1514A13	3.30	—	—	1513A14	3.13	1513A27★◆	3.03	1513A37★◆	$12.69
3½″	3½″	0.110″	17/64″	#9	6	1514A28	3.55	—	—	1513A15	3.85	1513A61★◆	3.00	1513A38★◆	12.69
4″	4″	0.110″	17/64″	#10	8	1514A15	4.10	—	—	1513A16	4.31	1513A31★◆♥	4.49	1513A39★◆♥	14.72
6″	6″	0.160″	⅜″	¼″	10	1514A18★	27.58	—	—	1513A19★	26.70	—	—	—	—
Round Corners—5 Knuckle (5/8″ Radius)															
3½″	3½″	0.085″	¼″	#9	6	—	—	—	—	1513A51★■	1.23	1513A28★	1.44	1513A58	13.78
4″	4″	0.085″	¼″	#9	8	—	—	—	—	1513A52★■	1.88	1513A29★	2.24	1513A59	15.72

★ Mounting screws are included. ● Open width is 1 5/8″. ◆ Leaf thickness is 0.085″. Pin dia. is 15/64″. ♥ Screw size is #9.
■ Has prime-coat finish.

Mortise Hinge Profile Cutters

Here's an easy way to make an exact cutout for mounting a mortise hinge. Just position the cutter on your wood door or frame and hit it with a hammer. Cutters have a depth scriber and cutting edges that leave a clean outline for a mortise. Use a chisel to remove the wood and make the mortise. Cutters are made of heat-treated alloy steel with a black finish.

Leaf Ht.	(A)		
3″	1″	12565A61	$8.24
3½″	1 9/64″	12565A62	8.26
4″	1⅛″	12565A63	8.66
4½″	1½″	12565A64	11.65

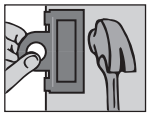

For information about hinges, see page 2976.

Mortise-Mount Template Hinges

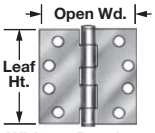

Without Bearings

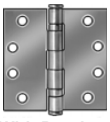

With Bearings

Mortise

With Concealed Bearings

Security Hinge

Always predictable, these hinges are ready for mounting into recessed cutouts (mortises) on your door's edge and frame. The template design has uniform screw holes placed in a standardized, half-moon pattern that's identical from manufacturer to manufacturer. The mortise mounting style gives the hinges a neat, flush-mounted appearance. When the hinge is folded, the leaves are close together to fit into tight spaces. For use on wood and hollow metal doors. The fasteners are concealed when the door is closed.

Hinges are reversible for right- and left-hand mounting. Holes are countersunk prior to plating (where applicable) to provide complete coverage for better corrosion resistance. From the folded position, the range of motion is at least 180°. All hinges have eight holes and include #12 screws for mounting, except hinges with 3″ and 3½″ leaf heights, which have six holes and include #9 screws.

Hinges without bearings are not designed for use on doors with a door closer.

Hinges with bearings are for use on doors with or without a door closer. *Hinges with concealed bearings* have a slim-profile design that encompasses the pin head.

Security hinge has concealed bearings, security studs, and includes tamper-resistant screws. ***Hinges with a nonremovable pin*** deter tampering.

Steel Hinge and Pin

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Load Cap., lbs.★	Daily Openings	Prime Coat		Dull Chrome		Dull Bronze		Dull Brass		Bright Brass	
Hinges without Bearings—Removable Pin															
3″	3″	0.092″	15/64″	45	11	1494A42	$6.61	1494A51	$9.75	1494A18	$8.83	1494A59	$7.89	1494A71	$17.88
3½″	3½″	0.119″	17/64″	45	11	1494A11	4.92	1494A52	10.74	1494A21	6.68	1494A61	5.37	1494A72	8.75
4″	4″	0.129″	17/64″	75	11	1494A12	6.53	1494A53	11.01	1494A22	7.91	1494A62	7.13	1494A73	9.46
4½″	4″	0.134″	5/16″	75	82	1494A43	6.12	1494A54	9.25	1494A19	7.12	1494A63	6.70	1494A74	7.56
4½″	4½″	0.134″	5/16″	75	82	1494A13	6.00	1494A55	9.26	1494A23	7.12	1494A64	6.70	1494A75	8.10
5″	4½″	0.145″	21/64″	75	82	1494A15	16.34	1494A56	18.13	1494A24	15.28	1494A65	13.05	1494A76	19.35
5″	5″	0.145″	21/64″	75	82	1494A14	16.34	1494A57	15.94	1494A25	15.28	1494A66	12.26	1494A77	17.22
Hinges with Bearings—Nonremovable Pin															
4½″	4½″	0.134″	5/16″	110	82	1502A89	15.21	1502A91	18.08	1502A92	13.25	1502A93	12.53	1502A94	17.08
Hinges with Bearings—Removable Pin															
3½″	3½″	0.119″	17/64″	45	13	1502A11	15.14	1502A51	19.85	1502A21	16.96	1502A81	14.58	1502A31	26.68
4″	4″	0.129″	17/64″	75	25	1502A12	16.20	1502A52	19.92	1502A22	17.26	1502A83	16.50	1502A32	23.36
4½″	4″	0.134″	5/16″	110	82	1502A14	12.13	1502A54	15.11	1502A24	13.04	1502A84	11.92	1502A33	14.17
4½″	4½″	0.134″	5/16″	110	82	1502A13	12.13	1502A53	13.72	1502A23	13.04	1502A85	11.92	1502A34	17.69
5″	4″	0.145″	21/64″	110	82	1502A16	19.80	1502A55	23.34	1502A25	18.39	1502A86	17.42	1502A35	24.16
5″	4½″	0.145″	21/64″	110	82	1502A15	19.80	1502A56	23.36	1502A26	19.28	1502A87	19.21	1502A36	25.34
5″	5″	0.145″	21/64″	110	82	1502A17	20.64	1502A57	23.36	1502A27	20.73	1502A88	19.39	1502A37	22.60
Hinges with Concealed Bearings—Removable Pin															
3½″	3½″	0.119″	17/64″	45	11	16745A22	14.87	16745A29	16.58	16745A37	16.65	16745A61♠	14.60	16745A44	24.38
4″	4″	0.129″	17/64″	75	11	16745A23	16.25	16745A31	19.88	16745A38	17.28	16745A62♠	15.96	16745A45	26.47
4½″	4″	0.134″	5/16″	75	82	16745A24	13.75	16745A32	16.39	16745A39	14.92	16745A63	11.52	16745A46	16.46
4½″	4½″	0.134″	5/16″	75	82	16745A25	13.75	16745A33	17.12	16745A41	14.75	16745A64	13.75	16745A47	20.04
5″	4″	0.145″	5/16″	75	82	16745A26	22.36	16745A34	26.43	16745A42	22.42	16745A65	19.03	16745A48	31.14
5″	4½″	0.145″	5/16″	75	82	16745A27	22.72	16745A35	26.82	16745A57	21.74	16745A66	19.03	16745A49	27.20
5″	5″	0.145″	5/16″	75	82	16745A28	24.01	16745A36	27.19	16745A43	23.48	16745A67	19.56	16745A58	27.20
Heavyweight Hinges with Bearings—Nonremovable Pin															
4½″	4½″	0.180″	21/64″	140	137	1511A18	36.41	1511A19	39.27	1511A21	24.30	1511A22	24.31	1511A23	33.67
Heavyweight Hinges with Bearings—Removable Pin															
4½″	4″	0.180″	21/64″	140	137	1511A71	32.82	1511A29	35.63	1511A61	34.11	1511A52	34.11	1511A66	31.95
4½″	4½″	0.180″	21/64″	140	137	1511A11	32.82	1511A31	35.63	1511A62	34.11	1511A54	34.11	1511A67	41.66
5″	4″	0.190″	21/64″	140	137	1511A72	38.48	1511A33	40.87	1511A63	29.23	1511A53	30.37	1511A68	41.33
5″	4½″	0.190″	21/64″	140	137	1511A12	38.48	1511A32	40.87	1511A64	39.68	1511A55	39.68	1511A69	53.99
5″	5″	0.190″	21/64″	140	137	1511A13	38.48	1511A34	40.87	1511A65	47.94	1511A56	39.68	1511A73	40.97

★ Maximum door weight based on three hinges per door with a maximum door size of 7 ft. Ht. × 3 ft. Wd. × 1¾″ Thick. ♠ Pin dia. is 5/16″.

Type 304 Stainless Steel Hinge and Pin

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Load Cap., lbs.★	Daily Openings	Dull Finish	
Hinges without Bearings—Removable Pin							
3″	3″	0.097″	15/64″	45	11	1781A41	$30.37
3½″	3½″	0.119″	17/64″	45	11	1781A42	40.71
4″	4″	0.129″	17/64″	75	11	1781A43	41.80
4½″	4″	0.134″	5/16″	75	82	1781A44	31.34
4½″	4½″	0.134″	5/16″	75	82	1781A45	31.65
Hinges with Bearings—Nonremovable Pin							
4½″	4½″	0.134″	21/64″	110	82	1499A32	45.44
Hinges with Bearings—Removable Pin							
4″	4″	0.129″	17/64″	75	25	1499A12	39.75
4½″	4″	0.134″	5/16″	110	82	1499A19	41.79
4½″	4½″	0.134″	5/16″	110	82	1499A14	41.79
5″	5″	0.145″	21/64″	110	82	1499A17	59.72
Hinges with Concealed Bearings—Removable Pin							
3½″	3½″	0.119″	17/64″	45	11	16745A51	$50.88
4″	4″	0.129″	5/16″	75	11	16745A52	51.10
4½″	4″	0.134″	5/16″	75	82	16745A53	43.48
4½″	4½″	0.134″	5/16″	75	82	16745A54	44.10
5″	5″	0.145″	5/16″	75	82	16745A56	62.88
Security Hinge—Nonremovable Pin							
4½″	4½″	0.187″	3/8″	250	55	1819A46	61.53
Heavyweight Hinges with Bearings—Nonremovable Pin							
4½″	4½″	0.180″	21/64″	140	137	1281A55	73.39
Heavyweight Hinges with Bearings—Removable Pin							
4½″	4″	0.180″	21/64″	140	137	1281A48	70.08
4½″	4½″	0.180″	21/64″	140	137	1281A49	69.77
5″	4½″	0.190″	21/64″	140	137	1281A51	79.77
5″	5″	0.190″	21/64″	140	137	1281A53	79.77

★ Maximum door weight based on three hinges per door with a maximum door size of 7 ft. Ht. × 3 ft. Wd. × 1¾″ Thick.

Wired Mortise-Mount Template Hinges

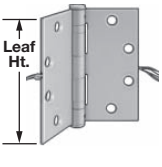

Transfer low-voltage current from the frame to your door to power electric locksets or exit devices—without any wires showing. The wires run through these hinges, which mount into recessed cutouts (mortises) on your door's edge and frame to give a neat, flush-mounted appearance. Wires are 28-ga. and approx. 11″ long. Max. current through the wires is 48 VDC/AC, 3.5 amps. The template design has uniform screw holes placed in a standardized, half-moon pattern that's identical from manufacturer to manufacturer. Reversible for right- and left-hand mounting. The pin and the leaves are steel. Pin is nonremovable. From the folded position, the range of motion is at least 180°. Furnished with mounting screws. UL listed.

No. of Wires per Leaf	Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes	Prime Coat		Dull Chrome		Dull Bronze	
4	4½″	4½″	0.134″	5/16″	#12	8	7166A13	$150.58	7166A12	$150.58	7166A11	$150.58

For information about hinges, see page 2976.

Surface-Mount Lift-Off Hinges

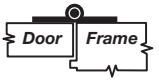

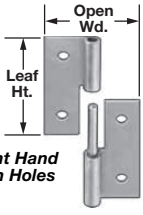

A *Right Hand with Holes*

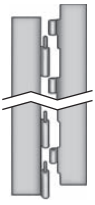

B *Left Hand without Holes*

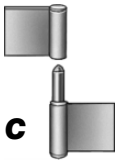

C *Right Hand without Holes*

D *Left Hand with Holes*

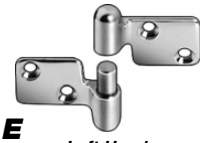

E *Left Hand with Holes*

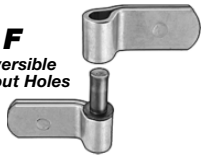

F *Reversible without Holes*

Because the pin is permanently attached to the frame leaf and mates into the door leaf, you can quickly lift your door off these hinges—without removing the pin. Range of motion is measured from the folded position. Hinges are for surface mounting. Leaves and pins are made of the same material, unless noted.

Without Screw Holes—Weld in place or drill holes for rivets or screws.

With Screw Holes—All have four screw holes. The screw holes in Styles A, B, E, and F are punched prior to plating to provide complete coverage for better corrosion resistance. Mounting screws not included.

					WITHOUT SCREW HOLES					WITH SCREW HOLES					
Leaf Ht.	Open Wd.	Pin Dia.	Range of Motion	Load Cap., lbs.♣	Leaf Thick.	Right Hand★		Left Hand★		Leaf Thick.	Screw Size	Right Hand★		Left Hand★	
Unfinished Steel															
A 2″	1 11/16″	1/8″	270°	—	0.072″	15195A12	$2.76	15195A11	$2.76	0.072″	#8	1151A62	$2.91	1151A61	$2.91
A 2″	2″	3/16″	270°	—	0.080″	15195A16	3.57	15195A15	3.57	0.080″	#8	1151A66	3.76	1151A65	3.76
A 2 1/2″	1 7/8″	3/16″	270°	—	0.075″	15195A14	2.94	15195A13	2.94	0.080″	#8	1151A64	3.10	1151A63	3.10
A 2 1/2″	2 1/2″	3/16″	270°	—	0.093″	15195A18	4.69	15195A17	4.69	0.093″	#8	1151A68	4.94	1151A67	4.94
A 3″	3″	1/4″	270°	—	0.093″	15195A21	5.35	15195A19	5.35	0.093″	#10	1151A71	5.63	1151A69	5.63
A 4″	3″	1/4″	270°	—	0.120″	15195A23	6.71	15195A22	6.71	0.120″	5/16″	1151A72	7.06	1151A73	7.06
A 4″	4″	1/4″	270°	—	0.120″	15195A25	6.84	15195A24	6.84	0.120″	5/16″	1151A74	7.20	1151A75	7.20
B 18″	2″	1/8″	270°	—	0.063″	—	—	1606A41	31.90	—	—	—	—	—	—
B 24″	2″	1/8″	270°	—	0.063″	—	—	1606A42	38.75	—	—	—	—	—	—
Unfinished Type 304 Stainless Steel															
A 2″	1 11/16″	3/16″	270°	—	0.080″	15195A32	4.77	15195A31	4.77	0.080″	#8	1151A82	5.02	1151A81	5.02
A 2 1/2″	2 1/2″	3/16″	270°	—	0.075″	15195A36	9.01	15195A35	9.01	0.080″	#8	1151A86	9.48	1151A85	9.48
A 3″	2″	3/16″	270°	—	0.093″	15195A34	7.22	15195A33	7.22	0.090″	#10	1151A84	7.60	1151A83	7.60
A 3″	3″	1/4″	270°	—	0.093″	15195A38	12.02	15195A37	12.02	0.093″	#10	1151A88	12.65	1151A87	12.65
A 4″	3″	1/4″	270°	—	0.120″	15195A46	10.12	15195A45	10.12	0.120″	5/16″	1151A89	10.65	1151A91	10.65
A 4″	4″	1/4″	270°	—	0.120″	15195A44	11.24	15195A43	11.24	0.120″	5/16″	1151A92	11.83	1151A93	11.83
Unfinished Aluminum—*Pin is Type 302 stainless steel*															
A 2″	1 11/16″	3/16″	270°	—	0.080″	15195A48	3.44	15195A47	3.44	—	—	—	—	—	—
Type 304 Stainless Steel with Dull Finish—*Pin is Type 304 stainless steel*															
C 1 61/64″	4 5/16″	15/32″	360°	88	0.118″	12575A631	24.74	12575A621	24.74	—	—	—	—	—	—
C 2 15/16″	4 5/16″	15/32″	360°	198	0.157″	12575A651	32.00	12575A641	32.00	—	—	—	—	—	—
Black Nylon—*Pin is Type 303 stainless steel; hinges are not rated for temperature*															
D 2 29/32″	2 23/64″	3/8″	180°	66	—	—	—	—	—	0.250″	#9	18585A26	12.46	18585A23	12.46
Brass with Polished Chrome Finish															
E 1 1/4″	4″	7/16″	180°	—	—	—	—	—	—	0.187″	#10	1799A42	10.26	1799A41	10.26
Type 316 Stainless Steel with Polished Finish															
E 1 15/32″	3 37/64″	3/8″	180°	—	—	—	—	—	—	0.187″	#10	1799A45	10.69	1799A43	10.69
Steel with Dull Zinc Finish—*Hinge is reversible*															
F 1 1/4″	5 3/8″	1/2″	270°	—	0.344″	15195A49	5.20	15195A49	5.20	—	—	—	—	—	—

♣ Load capacity is based on two hinges per door. ★ Handing is determined from the pull side of the door. If the door pulls open to the right, use a right-hand hinge and vice versa.

Mortise-Mount Lift-Off Hinges

Mount these hinges into recessed cutouts (mortises) in your door's edge and frame for a neat, flush-mounted appearance. Ideal when there is minimal clearance between the door and the frame. The pin is permanently attached to the frame leaf and mates into the door leaf, allowing you to quickly lift your door off the hinge without removing the pin. The leaves and the pin are made of the same material. Holes are countersunk prior to plating to provide complete coverage for better corrosion resistance. Furnished with mounting screws.

Nontemplate—The hole pattern differs among manufacturers. From the folded position, the range of motion is 270°. Hinges are reversible for right- and left-hand doors.

Template—Hinges have uniform screw holes placed in a standardized, half-moon pattern that's identical from manufacturer to manufacturer. From the folded position, the range of motion is at least 180°. Hinges are handed; you choose a right-hand hinge or a left-hand hinge. Handing is determined from the push side of the door. If the door swings right, use a right-hand hinge; if the door swings left, use a left-hand hinge.

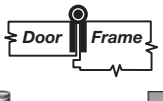

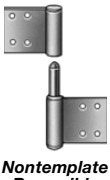

Nontemplate Reversible

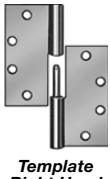

Template Right Hand

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes	Load Cap., lbs.♥	Handing	Steel with Prime-Coat Finish		Steel with Dull Chrome Finish		Type 304 SS with Dull Finish	
Nontemplate Hinges—*Reversible*													
1 63/64″	3 15/16″	0.118″	25/64″	#8	8	88♣	Reversible	—	—	—	—	12575A72	$22.22
2 31/64″	3 9/16″	0.118″	15/32″	#6	8	110♣	Reversible	—	—	—	—	12575A74	22.66
Template Hinges—*Handing is determined from the push side of the door; if the door swings right, use a right-hand hinge and vice versa*													
4 1/2″	4″	0.134″	5/16″	#12	8	150	Right Hand	1849A61	$15.30	1849A63	$19.27	1849A31	63.57
4 1/2″	4″	0.134″	5/16″	#12	8	150	Left Hand	1849A62	15.30	1849A64	19.27	1849A32	63.57
4 1/2″	4 1/2″	0.134″	5/16″	#12	8	150	Right Hand	1849A18	15.30	1849A12	19.27	1849A33	63.57
4 1/2″	4 1/2″	0.134″	5/16″	#12	8	150	Left Hand	1849A19	15.30	1849A14	19.27	1849A34	63.57

♥ Maximum door weight based on three hinges per door, 50-100 daily openings, with a maximum door size of 7 ft. Ht. × 3 ft. Wd. × 1 3/4″ Thick., unless noted. ♣ Load capacity is based on two hinges per door.

Narrow-Profile Screw-Mount Lift-Off Hinges

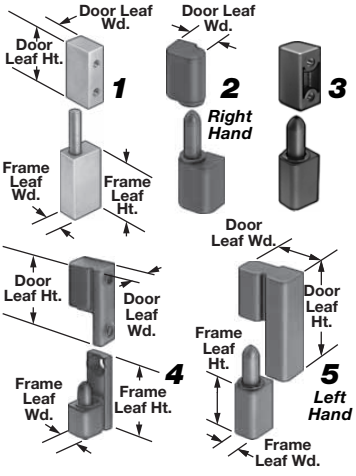

When space is at a premium, these narrow, block-style hinges are a smart choice. The pin is permanently attached to the frame leaf and mates into the door leaf, allowing you to quickly lift your door off the hinge without removing the pin. Hinges have four mounting holes; mounting screws not included. Screws are concealed when the hinge is closed. Leaves and pins are made of the same material. From the closed position, hinges have a max. 180° range of motion. Load ratings are listed per hinge, unless noted. ***Overlay***—Hinges are reversible to work with both right- and left-hand doors that overlay their frames. ***Flush***—Hinges are for use on flush-mounted doors.

Door Leaf Ht.	Door Leaf Wd.	Frame Leaf Ht.	Frame Leaf Wd.	Screw Size	Load Cap., lbs.	OVERLAY Reversible		FLUSH Right Hand★		FLUSH Left Hand★	
Type 303 Stainless Steel with Dull Finish											
1 1¼	33/64	1¼	33/64	M5	185●	19035A71	$41.76				
1 1½	33/64	1½	33/64	M6	300●	19035A73	44.36				
1 1 31/32	45/64	1 31/32	45/64	M8	440●	19035A75	67.32				
Black Nylon *(–4° to +140° F)*											
2 1 7/32	27/32	1 7/32	27/32	10-24	150			11835A16	$4.07	11835A17	$4.07
3 1 7/32	9/16	1 7/32	9/16	10-24	150	11835A13	4.07				
Die Cast Zinc with Black Finish											
3 1 15/64	19/32	1 15/64	19/32	10-32	300	11955A73	7.32				
4 1 7/64	11/32	1 7/64	11/32	6-32	250	11955A63	6.24				
5 1	51/64	39/64	3/8	6-32	250			11955A66	6.24	11955A67	6.24
5 2½	19/32	1 15/64	19/32	10-32	300			11955A76	9.05	11955A77	9.05

★ Handing is determined from the pull side of door. If a door pulls open to the right, use a right-hand hinge and vice versa. ● Load capacity based on two hinges per door.

Narrow-Profile Weld-On Lift-Off Hinges

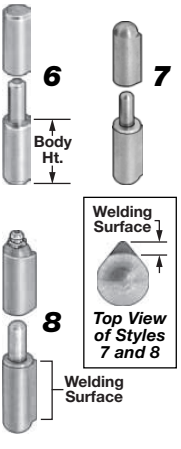

Weld these narrow hinges in place horizontally or vertically—they can mount flush to the door, offset, or straight. They're the right size for tight spaces, narrow frames, and areas close to corners. The pin is permanently attached to the frame leaf and mates into the door leaf, allowing you to quickly lift your door off the hinge without removing the pin.

Hinges are reversible for right- and left-hand doors. Leaves and pins are made of the same material, unless noted. From the closed position, the range of motion is 270° for Style 6 and 360° for Styles 7 and 8.

Style 6 hinges hold a maximum door weight of 600 lbs., based on two hinges per door. Weld the round body directly to your door frame. ***Style 7*** and ***Style 8*** are not load rated. They have a small triangular welding surface that you weld to your door frame. *Style 8* hinges have a built-in grease fitting, which makes them easy to lubricate.

Body Ht.	O'all Wd.		
(6) Type 316 Stainless Steel			
25/32	5/16	13615A57	$37.12
1	25/64	13615A56	39.44
1 3/8	33/64	13615A54	43.96
1 37/64	5/8	13615A55	48.35
(7) Steel			
25/32	3/8	1071A29	2.15
1 11/64	29/64	1071A31	2.47
1 3/8	33/64	1071A22	2.96
1 37/64	39/64	1071A33	3.64
1 31/32	49/64	1071A34	4.84
2 3/8	49/64	1071A23	6.31
2 21/32	29/32	1071A24	7.62
2 61/64	1	1071A36	9.57
3 35/64	1	1071A25	10.88
(7) Steel (Cont.)			
3 15/16	1 1/8	1071A38	$15.17
(7) Type 304 Stainless Steel			
1 11/64	29/64	1071A51	6.39
1 3/8	33/64	1071A52	8.11
1 37/64	39/64	1071A53	9.89
1 31/32	49/64	1071A54	16.25
2 21/32	29/32	1071A57	29.61
2 61/64	1	1071A59	44.25
(7) Aluminum—*Stainless steel pin*			
51/64	25/64	3991A1	2.64
63/64	3/8	3991A2	2.81
1 3/16	29/64	3991A3	3.35
1 3/8	33/64	3991A4	3.81
(7) Aluminum—*Stainless steel pin (Cont.)*			
1 9/16	5/8	3991A5	$4.54
1 31/32	49/64	3991A6	7.46
2 21/32	55/64	3991A7	14.98
2 61/64	1	3991A8	17.32
3 35/64	1	3991A9	26.71
3 15/16	1 1/8	3991A11	32.89
(8) Steel w/Grease Fitting—*Brass pin*			
1 17/32	1/2	3636A1	5.34
1 15/16	5/8	3636A2	6.94
2 11/32	5/8	3636A3	8.63
2 59/64	25/32	3636A4	14.52
3 33/64	25/32	3636A5	18.79
3 29/32	29/32	3636A6	24.49

Surface-Mount Self-Closing Gravity Hinges

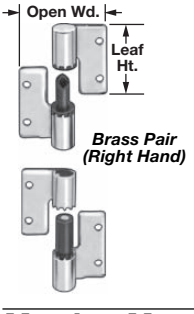

The weight of your door returns these hinges to a closed position without the help of springs. Hinges mount to the surface of flush-mounted doors, such as restroom doors. Pins are nonremovable. From the closed position, the range of motion is 180°. The screw holes are punched prior to plating to provide complete coverage for better corrosion resistance.

A pair includes two complete hinges (one for the top of the door and one for the bottom of the door) and one-way, tamper-resistant, #10 shoulder screws with barrel nuts.

For Door Thick.	For Frame Thick.	Leaf Ht.	Open Wd.	Leaf Thick.	Right Hand★	Pair	Left Hand★	Pair
Brass with Polished Chrome Finish—*Pin is black nylon*								
3/4	3/4	2 29/32	3 1/4	0.094	12125A273	$52.20	12125A243	$52.20
3/4	1	2 29/32	3 1/4	0.094	12125A275	52.19	12125A245	52.19
7/8	1 1/4	2 29/32	3 1/4	0.094	12125A271	58.92	12125A241	58.92
1	1	2 29/32	3 1/4	0.094	12125A274	48.00	12125A244	48.00
1	1 1/4	2 29/32	3 1/4	0.094	12125A272	62.29	12125A242	62.29
Type 304 Stainless Steel with Dull Finish—*Pin is Type 304 stainless steel*								
3/4	3/4	2 7/8	3 9/32	0.125	12125A333	48.18	12125A313	48.18
3/4	1	2 7/8	3 9/32	0.125	12125A335	44.29	12125A315	44.29
1	1	2 7/8	3 9/32	0.125	12125A334	48.05	12125A314	48.05
1	1 1/4	2 7/8	3 9/32	0.125	12125A332	48.29	12125A312	48.29

★ Handing is determined from the push side of the door. If the door swings open to the right, use a right-hand hinge and vice versa.

Mortise-Mount Self-Closing Gravity Hinges

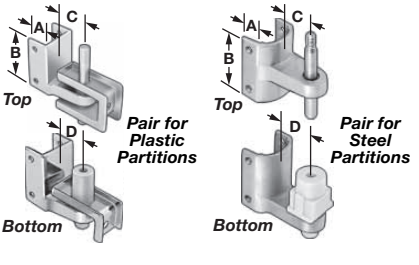

You won't have to deal with springs or spring adjustments. These hinges use the weight of your door to return to a closed position. Commonly found on restroom doors, hinges mount to 1¼″ thick partitions and fit their pins into recessed cutouts (mortises) in doors. Pins are removable. Hinges are reversible for right- and left-hand doors. From the closed position, the range of motion is 110°. Screw holes are countersunk prior to plating for better corrosion resistance. A pair is for one door and includes one top and one bottom hinge and mounting hardware.

Chrome-plated zinc hinges have a steel pin. ***Type 304 stainless steel*** hinges have a dull finish. 15345A31 and A32 have a steel pin. 15345A33 has a Type 304 stainless steel pin.

For Partition Material	For Door Thick.	(A)	(B)	(C)	(D)	Chrome-Plated Zinc	Pair	Type 304 Stainless Steel	Pair
Plastic	7/8	7/8	2 1/4	1 9/64	1 9/64	15345A12	$23.49	15345A31	$69.63
Plastic	1	7/8	2 1/4	1 9/64	1 9/64	15345A13	31.82	15345A32	70.67
Steel	1	11/16	2 3/16	31/32	1 1/32	15345A25	28.44	15345A33	59.60

Quick-Disconnect Latch Hinges

Retract the pins in these hinges to disconnect your door without having to lift it. You can also use these hinges as a latch. Great for use on cabinet lids, electrical enclosure doors, and computer equipment housings. All hinges surface mount.

Styles 1 and 2— Hinges are spring loaded; pull the handle back to retract the pin; release the handle and the pin snaps back. Hinges and pins are the same material. Springs are stainless steel. A set includes one left-hand and one right-hand hinge. *Style 2* hinges have a groove to hold the handle in the retracted position, simplifying door removal and replacement. From the closed position, Style 2 has a 270° range of motion.

Styles 3 and 5— Just squeeze the handles together to retract the pin; release the handles and the pin snaps back. Reversible for right- and left-hand mounting. From the closed position, the range of motion is 270°. For Style 3, the hinges and pins are the same material. For Style 5, the pin is nylon.

Style 4— Remove the split ring to pull out the pin. Pins are Type 304 stainless steel. Reversible for right- and left-hand mounting. From the closed position, the range of motion is 180°.

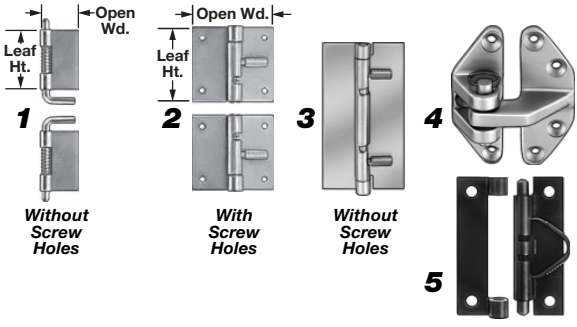

Without Screw Holes— Weld in place or drill holes for screws

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Bolt Throw	Zinc-Plated Steel	Set	300 Series Stainless Steel	Set
1 .. 7/8″	5/8″	0.040″	1/8″	3/16″	1305A29	$6.07	1305A51	$6.81
1 .. 1 3/8″	15/16″	0.040″	5/32″	1/4″	1305A31	6.40	1305A52	7.31
1 .. 2″	1 1/16″	0.050″	3/16″	3/8″	1305A38	8.24	1305A53	8.14
1 .. 2 3/4″	1 3/16″	0.062″	1/4″	1/2″	1305A42	8.76	1305A54	9.59
2 .. 1 3/4″	2″	0.050″	1/4″	3/8″	13525A72	13.42	13525A73	18.18
								Each
3 .. 3″	2″	0.050″	1/4″	3/8″	—	—	15185A29	$17.52
3 .. 4″	2″	0.050″	1/4″	3/8″	—	—	15185A31	16.75

With Screw Holes— Screws not included

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Bolt Throw	Screw Size	No. of Holes		Set
Zinc-Plated Steel								
1 .. 2″	1 9/16″	0.125″	3/8″	1 1/4″	1/4″	4	1305A81	$13.36
1 .. 3″	1 7/8″	0.187″	1/2″	1 1/2″	5/16″	4	1305A82	18.64

With Screw Holes— Screws not included (Cont.)

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Bolt Throw	Screw Size	No. of Holes		Set
Zinc-Plated Steel (Cont.)								
2 .. 1 3/4″	2″	0.050″	1/4″	3/8″	#5	4	13525A74	$16.40
300 Series Stainless Steel								
1 .. 2″	1 9/16″	0.125″	3/8″	1 1/4″	1/4″	4	1305A83	16.76
1 .. 3″	1 7/8″	0.187″	1/2″	1 1/2″	5/16″	4	1305A84	40.19
2 .. 1 3/4″	2″	0.050″	1/4″	3/8″	#5	4	13525A75	22.22
								Each
3 .. 3″	2″	0.050″	1/4″	3/8″	#4	4	15185A41	$16.04
3 .. 4″	2″	0.050″	1/4″	3/8″	#5	4	15185A42	18.85
Type 316 Stainless Steel with Polished Finish								
4 .. 2 7/8″	2 11/16″	0.240″	5/16″	—	#10	8	1803A33	17.55
4 .. 2 7/8″	3 9/16″	0.240″	5/16″	—	#10	8	1803A35	17.91
Brass with Polished Chrome Finish								
4 .. 3 3/32″	2 5/8″	0.270″	5/16″	—	#10	7	1803A31	15.80
Black ABS Plastic								
5 .. 3″	1 3/4″	0.080″	1/4″	3/8″	1/4″	4	1149A81	6.88

Reinforcing Pivot Hinges

If you have loose or damaged hinges, surface mount these pivots to the top edge of your door for reinforcement. They can be used on doors that swing in one direction and are flush with the frame or have up to a 1/8″ offset.

From the closed position, the range of motion is 270°. Screw holes are countersunk prior to plating to provide complete coverage for better corrosion resistance. Furnished with 1/4″ and #14 screws. Meet ANSI 156.1/156.7.

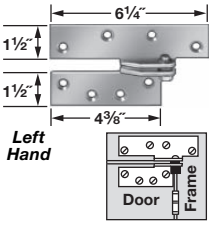

Hinge Open Wd.♠	Max. Door Thick.	Leaf Thick.	Right Hand★		Left Hand★	
Zinc-Plated Steel with Bronze Bushings— *Pin is steel*						
3 1/2″	1 3/8″	0.187″	1725A11	$75.52	1725A15	$75.52
4″	1 3/4″	0.187″	1725A12	75.52	1725A16	75.52
4 1/2″	1 3/4″	0.187″	1725A13	75.52	1725A17	75.52
5″	1 3/4″	0.187″	1725A14	75.52	1725A18	75.52
Type 304 Stainless Steel with Nylon Bearings— *Pin is Type 303 SS*						
4 1/2″	1 3/4″	0.187″	1725A21	119.70	1725A19	119.70
5″	1 3/4″	0.187″	1725A23	133.00	1725A22	133.00

♠ Open Wd. of existing door hinge. ★ Handing is determined from push side of door. If door swings right, it's right-hand and vice versa.

Two-Way-Swinging Self-Closing Pivot Hinges

Surface mount these hinges at the top and bottom of your door or gate for smooth swinging in two directions. Hinges have ball bearings and are spring loaded, so they return to the closed position on their own. You can adjust the spring tension with the included tool.

Reversible for right- and left-hand doors. From the closed position, the range of motion is 270°. The screw holes are countersunk prior to plating to provide complete coverage for better corrosion resistance. Each hinge has a top and bottom pivot that fits into a cutout in the door. Furnished with mounting screws.

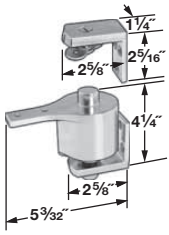

Finish	Screw Size	No. of Holes	Load Cap., lbs.✓		
Steel					
Prime Coat	#10, #12	6	75	1482A13	$93.09
Painted Black	#10, #12	6	75	1482A11	93.09
Dull Zinc	#10, #12	6	75	1482A15	124.41
Brass					
Polished Chrome	#10, #12	6	75	1482A17	229.00

✓ Load capacity is based on one hinge per door with a max. door size of 36″ Wd. × 2 1/2″ Thick.

Glass Door Pivot Hinges

Support, hold, and pivot glass doors with these hinges. The hinge channels mount to the top and bottom of flush glass doors that are 3/16″ to 1/4″ thick. Hinges are made of steel and are reversible for right- and left-hand doors. From the closed position, the range of motion is at least 110°. A set is for one door and includes one top hinge, one bottom hinge, and pressure plates (unless noted) to protect the glass when tightening the mounting set screws.

Top/Bottom Mount— Require a 3/8″ Dia. × 3/8″ Dp. hole (unless noted) in case or frame to accommodate the pin and included bushing. Set screws are included.

Side Mount— Surface mount the pivot arm to the case or frame. Hinges require four #6 screws for mounting (not included). The screw holes are punched prior to plating for better corrosion resistance.

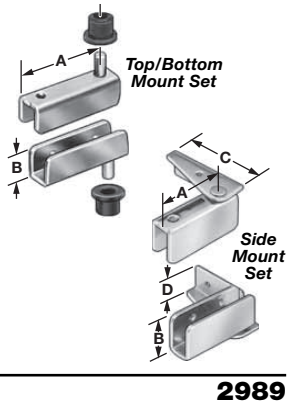

Finish	(A)	(B)	(C)	(D)		Set
Top/Bottom Mount						
Chrome	1 11/32″	1/2″	—	—	18455A61	$3.19
Chrome	1 1/2″	7/8″	—	—	18455A63 ♦	4.12
Brass	1 11/32″	1/2″	—	—	18455A62	3.19
Brass	1 1/2″	7/8″	—	—	18455A64 ♦	4.12
Black	1 3/16″	25/32″	—	—	18455A71▲	2.17
Side Mount						
Chrome	1 1/4″	25/32″	1 37/64″	19/32″	18455A65	3.84
Brass	1 1/4″	25/32″	1 37/64″	19/32″	18455A66	3.84

♦ Pressure plates not included. Nylon-tipped screws protect glass. ▲ Requires a 11/32″ Dia. × 5/16″ Dp. hole.

Overlay Door Pivot Hinge

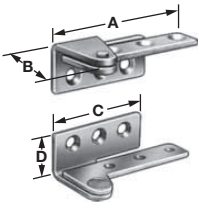

Use this pivot hinge on doors up to 13/16″ thick that overlay their frames; it's a great solution because traditional surface-mount hinges won't work properly on overlay doors. Hinge surface mounts at the top and bottom of the door and the frame. The hinge and pin are Type 430 stainless steel with a dull finish. Reversible for right- and left-hand doors. From the closed position, the range of motion is 270°. The screw holes are countersunk. Mounting screws not included. A set is for one door and includes one top and one bottom hinge.

(A)	(B)	(C)	(D)	Leaf Thick.	Screw Size	No. of Holes	Load Cap., lbs.✓		Set
2 9/16″	1 3/8″	1 31/32″	29/32″	0.118″	#6	12	5.7	12255A64	$19.86

✓ Load capacity based on two hinges per door.

Lightweight Surface-Mount Spring Hinges

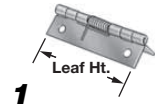

1 *For Self-Closing Door, with Screw Holes*

2 *For Self-Closing Door, with Screw Holes*

3 *For Self-Closing Door, with Screw Holes*

Spring Direction for Self-Closing Door

Spring Direction for Self-Opening Door

Depending on the hinge style you choose, your doors will return to the open or closed position thanks to the springs in these hinges. All hinges surface mount and have fixed spring tension. Reversible for right- and left-hand doors and lids. Hinges are unfinished, unless noted. From the closed position, the range of motion is 270°, unless noted. Mounting screws not included.

For Self-Closing Door— Hinges automatically return your lightweight door or lid to a closed position.

For Self-Opening Door— Hinges automatically return to an open position; great for cabinets and other light duty enclosures.

	Leaf Ht.	Open Wd.	Leaf Thick.	Screw Size	No. of Holes	FOR SELF-CLOSING DOOR Steel		FOR SELF-CLOSING DOOR 300 Series Stainless Steel		FOR SELF-OPENING DOOR Steel		FOR SELF-OPENING DOOR 300 Series Stainless Steel	
Without Screw Holes— *Weld or drill holes for rivets or screws*													
1	1 1/4″	3/4″	0.025″	—	—	15205A32	$1.36	15205A33	$2.73	15205A39	$3.01	15205A42	$3.60
1	1 3/4″	1 1/2″	0.035″	—	—	15205A35	2.55	15205A36	3.96	—	—	—	—
1	3 1/4″	1 1/2″	0.06″	—	—	15205A48●	6.49	15205A71●	15.05	—	—	—	—
1	3 1/2″	1 1/2″	0.040″	—	—	15205A11	2.26	15205A55	3.85	15205A77	1.58	15205A79	2.70
2	5″	2″	0.050″	—	—	15205A12	4.29	15205A56	6.63	15205A78	3.00	15205A81	3.98
2	5 3/8″	1 1/2″	0.06″	—	—	15205A53●	8.35	15205A72●	18.85	—	—	—	—
3	8 3/4″	1 1/2″	0.05″	—	—	15205A54	8.58	15205A73	20.49	15205A88▲	10.66	15205A92▲	22.54
With Screw Holes													
1	2″	1″	0.040″	#6	4	15205A21♣	1.69	15205A24★	2.04	15205A82♣	.98	15205A83★	1.30
1	3 1/2″	1 1/2″	0.040″	#6	4	15205A13♣	2.57	15205A61	3.86	15205A84♣	1.80	15205A85	2.70
1	3 1/4″	1 1/2″	0.06″	#6	6	15205A26●	10.58	15205A74●	19.69	—	—	—	—
2	5″	2″	0.050″	#8	6	15205A14♣	4.13	15205A62	6.63	15205A86♣	3.30	15205A87	3.98
2	5 3/8″	1 1/2″	0.06″	#6	10	15205A27●	11.30	15205A75●	23.75	—	—	—	—
3	8 3/4″	1 1/2″	0.05″	#10, 1/4″	4	15205A28	11.14	15205A76	23.82	15205A95▲	10.66	15205A98▲	26.20

● From the closed position, the range of motion is 110°. ▲ Leaf is 0.048″ thick. ♣ Bright zinc finish. ★ Leaf is 0.035″ thick.

Lightweight Self-Closing Spring Hinges

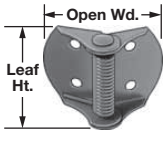

4

5

6

7

8

Your lightweight doors and gates will automatically close behind you when you use these spring-loaded hinges. Reversible for right- and left-hand use. From the closed position, the range of motion is at least 170°. All except Style 6 include mounting screws.

Style 4— Made of steel. Spring tension is fixed.

Style 5— Made of steel. To adjust spring tension, use the included tool. Screw holes are countersunk prior to plating to provide complete coverage for better corrosion resistance.

Styles 6 and 7— Made of black glass-filled nylon with Type 302 stainless steel springs for corrosion resistance. Adjust spring tension with a screwdriver (not included). Not rated for temperature.

Style 8— Made of steel. The door leaf mounts to the surface of your door, and the frame leaf mounts into a recessed cutout (mortise) in your door's frame, providing a neat, flush-mounted appearance. To adjust spring tension, use the included tool. Screw holes are countersunk prior to plating to offer complete coverage for better corrosion resistance.

	Leaf Ht.	Open Wd.	Leaf Thick.	Screw Size	No. of Holes	Prime-Coat Finish		Painted Black Finish		Dull Brass Finish		Bright Nickel Finish	
Surface Mount													
4	1 1/16″	1 11/16″	0.031″	#5	4	1613A13	$2.54	1613A14	$2.54	1613A11	$1.96	1613A12	$1.96
4	2″	1 3/4″	0.045″	#6	6	1613A15	4.40	1613A16	4.40	1613A2	4.04	1613A4	4.04
5	2 3/4″	2 27/32″	0.060″	#7	6	1481A12	7.60	1481A11	7.60	1481A13	8.50	1481A14	13.30
5	3″	3″	0.075″	#7	6	1481A32	10.10	1481A31	10.10	1481A21	11.00	1481A22	17.90
								Black Nylon					
6	3 13/16″	2 1/2″	0.188″	#12	4	—	—	2133A31	$13.82	—	—	—	—
6	4 1/2″	4 3/4″	0.218″	#12	6	—	—	2133A42	23.66	—	—	—	—
7	3 3/4″	4″	0.5″	#10	8	—	—	2133A43	35.52	—	—	—	—
								Painted Black Finish					
Surface-Mount Door Leaf/Mortise-Mount Frame Leaf													
8	2 3/4″	2 31/32″	0.060″	#7	6	1481A16	8.00	1481A15	$8.00	—	—	—	—
8	3″	3″	0.075″	#7	6	1481A33	10.50	1481A25	10.50	1481A26	11.60	—	—

Mortise-Mount Self-Closing Spring Hinges

You won't leave doors open with these hinges—they're spring-loaded to automatically return your door to a closed position. To adjust the spring tension, simply use the included tool. Hinges mount into recessed cutouts (mortises) in your door's edge and frame, giving them a neat, flush-mounted appearance.

Reversible for right- and left-hand doors. From a closed position, the range of motion is 180°. Screw holes are countersunk prior to plating to provide complete coverage for better corrosion resistance. Furnished with mounting screws. UL listed for labeled fire doors, unless noted.

Template hinges have uniform screw holes placed in a standardized, half-moon pattern that's identical from manufacturer to manufacturer. *Type 304 stainless steel* hinges have steel springs with a corrosion resistant coating.

Nontemplate hinges have a screw hole pattern that differs among manufacturers.

Template Hinge Flush Pin with Round Corners

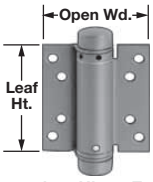

Nontemplate Hinge Extended Pin with Square Corners

Leaf Ht.	Open Wd.	Leaf Thick.	Screw Size	No. of Holes	Max. Door Thick.	Load Cap., lbs.★	Steel with Prime-Coat Finish		Steel with Dull Chrome Finish		Steel with Dull Brass Finish		Type 304 SS with Dull Finish	
Template Hinges														
Flush Pin with Square Corners														
3½″	3½″	0.130″	#10	6	1⅜″	90	8401A17♣	$9.62	8401A23♣	$14.38	8401A51♣	$11.00	8401A73♣	$37.50
4″	4″	0.130″	#12	8	1¾″	110	8401A19	11.75	8401A21	17.25	8401A52	12.25	8401A74	44.75
4½″	4″	0.134″	#12	8	1¾″	150	8401A16	20.38	8401A24	27.75	8401A53	22.50	8401A71	59.22
4½″	4½″	0.134″	#12	8	1¾″	150	8401A18	20.38	8401A22	27.75	8401A54	22.50	8401A72	59.22
Flush Pin with ¼″ Radius Round Corners														
3½″	3½″	0.130″	#10	6	1⅜″	90	8401A32♣	9.62	8401A36♣	14.38	8401A61♣	11.00	8401A65♣	39.88
4″	4″	0.130″	#12	8	1¾″	110	8401A33	11.75	8401A37	17.25	8401A62	12.25	8401A66	47.62
4½″	4″	0.134″	#12	8	1¾″	150	8401A35	20.38	8401A39	27.75	8401A63	22.50	8401A67	68.75
4½″	4½″	0.134″	#12	8	1¾″	150	8401A34	20.38	8401A38	27.75	8401A64	22.50	8401A68	68.75
											Steel with Zinc-Plated Finish		***Steel w/Painted Black Finish***	
Extended Pin with Square Corners														
4½″	5″	0.134″	#12	8	1¾″	155♥	1554A24	22.40	1554A26	40.11	1554A25	$31.33	1479A51	$24.89
Extended Pin with ¼″ Radius Round Corners														
3½″	3½″	0.096″	#10	6	1″-1½″	90★	1479A33	8.45	1479A82	11.40	1479A34	9.67	1479A47	8.44
Nontemplate Hinges														
Extended Pin with Square Corners														
3″	2¾″	0.075″	#7	8	¾″-1″	65●	1479A48▲	13.22	1479A81▲	18.80	1479A62▲	16.44	1479A42▲	13.22
6″	4⅛″	0.105″	#10	10	1¾″	155♥	1479A52	22.89	1479A83	36.44	1479A35	28.44	1479A45	22.89
7″	4½″	0.114″	#12	10	2″	175♦	1479A36	28.44	1479A84	43.44	1479A67	34.11	1479A46	28.44

★ Load capacity is based on three hinges per door with a maximum door size of 7 ft. Ht.×3 ft. Wd., unless noted. ♣ Pin is slightly extended.
♥ Based on a 7 ft. Ht.×4 ft. Wd. door. ● Based on a 7 ft. Ht.×2′8″ Wd. door. ▲ Not UL Listed. ♦ Based on a 7 ft. Ht.×4′6″ Wd. door.

Self-Closing Spring Hinges for Two-Way Swinging Doors

Whether you're coming or going, these spring-loaded hinges will automatically close your door. You can adjust the spring tension; simply use the included tool.

All hinges are reversible for right- and left-hand doors. They are made of steel, except for Style B, which are cast malleable iron to handle heavy wood or metal trucking doors. From a closed position, the range of motion is 180°. Hinges have a nontemplate design, which means the screw hole pattern differs among manufacturers. Screw holes are machined and countersunk (unless stated otherwise) prior to plating to provide complete coverage for better corrosion resistance. Furnished with mounting screws.

Style A— Door leaves mount into recessed cutouts (mortises) in your door's edge, giving them a neat, flush-mounted appearance.

Style B— Door leaves wrap around the door and partially mortise into the door's edge; a 15¾″ Lg.×1⅞″ Dp. cutout is required. Screw holes are not countersunk.

Style C— Door leaves wrap around your door's edge. Screw holes on the door leaf are not countersunk.

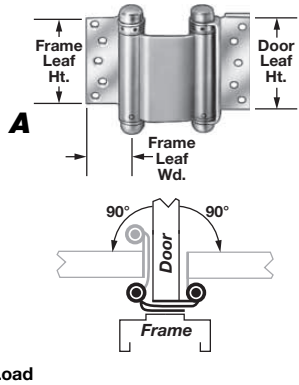

Door Leaf Ht.	Door Leaf Wd.	Frame Leaf Ht.	Frame Leaf Wd.	Leaf Thick.	Door Size Min. Ht.	Door Size Max. Wd.	Door Size Max. Thick.	Load Cap., lbs.■	Prime-Coat Finish		Painted Black Finish		Dull Zinc Finish		Bright Brass Finish	
(A) Hinges with Mortise-Mount Door Leaves and Surface-Mount Frame Leaves																
2¹⁵⁄₆₄″	1½″	2″	1²³⁄₃₂″	0.075″	3′6″	1′6″	⅞″-1″	18	14905A41	$16.91	—	—	14905A42	$21.27	14905A43	$23.73
2¹⁵⁄₆₄″	1²⁷⁄₃₂″	2″	1²³⁄₃₂″	0.075″	3′6″	1′6″	1⅛″-1½″	18	14905A51	17.91	—	—	14905A52	22.37	14905A53	24.91
													Dull Chrome Finish		***Dull Brass Finish***	
3″	1½″	2²³⁄₃₂″	1½″	0.075″	5′0″	2′0″	¾″-1″	35	1479A18	30.44	1479A11	$30.44	1479A71	$43.80	1479A26	$34.20
4″	1¾″	3⅝″	1¾″	0.091″	6′8″	2′4″	⅞″-1¼″	60	1479A19	32.11	1479A12	32.11	1479A72	46.30	1479A27	36.20
4½″	2⅜″	5½″	2²³⁄₆₄″	0.105″	7′0″	2′8″	1¾″	75	1479A25	49.10	1479A37	49.10	1479A39	78.50	1479A38	61.40
5″	2″	4⁹⁄₁₆″	2″	0.091″	6′8″	2′8″	1⅛″-1½″	65	1479A21	40.10	1479A13	40.10	1479A73	64.10	1479A28	49.74
6″	2¹¹⁄₆₄″	5½″	2²³⁄₆₄″	0.105″	7′0″	2′8″	1¼″-1¾″	75	1479A22	44.20	1479A14	44.20	1479A74	70.60	1479A29	55.20
7″	2⁹⁄₁₆″	6½″	2⁹⁄₁₆″	0.114″	7′0″	3′0″	1⅜″-2″	82	1479A23	54.70	1479A15	54.70	1479A75	87.40	1479A31	68.40
8″	2⁵¹⁄₆₄″	7⁷⁄₁₆″	2²⁷⁄₃₂″	0.128″	7′0″	3′6″	1½″-2″	103	1479A24	80.40	1479A16	80.40	1479A76	128.70	1479A32	99.74
(B) Wrap-Around Hinges with Mortise-Mount Door Leaves and Surface-Mount Frame Leaves																
15¾″	3³¹⁄₃₂″	15¾″	1²⁷⁄₃₂″	0.223″	8′0″♠	3′0″	1¾″	265	1480A21	286.76	1480A11	286.76	—	—	—	—
(C) Wrap-Around Hinges with Surface-Mount Door Leaves and Surface-Mount Frame Leaves																
4″	1¹¹⁄₁₆″	3⅝″	1¾″	0.091″	6′8″	2′4″	⅞″	60	1540A11	63.70	1540A41	63.70	1540A31	101.60	—	—
4″	1¹¹⁄₁₆″	3⅝″	1¾″	0.091″	6′8″	2′4″	1″	60	1540A12	63.70	1540A42	63.70	1540A32	101.60	—	—
4″	1¹¹⁄₁₆″	3⅝″	1¾″	0.091″	6′8″	2′4″	1⅛″	60	1540A13	63.70	1540A43	63.70	1540A33	101.60	—	—
6″	1³⁹⁄₆₄″	5½″	2²³⁄₆₄″	0.105″	7′0″	2′8″	1¼″	75	1540A17	82.40	1540A47	82.40	1540A37	131.80	—	—
6″	1³⁹⁄₆₄″	5½″	2²³⁄₆₄″	0.105″	7′0″	2′8″	1⅜″	75	1540A18	82.40	1540A48	82.40	1540A38	131.80	—	—
6″	1³⁹⁄₆₄″	5½″	2²³⁄₆₄″	0.105″	7′0″	2′8″	1½″	75	1540A19	82.40	1540A49	82.40	1540A39	131.80	—	—
8″	2³³⁄₆₄″	7⁷⁄₁₆″	2²⁷⁄₃₂″	0.134″	7′0″	3′6″	1¾″	103	1540A92	130.30	1540A91	130.30	1540A94	208.60	—	—

■ Load capacity based on two hinges per door with a maximum door width as listed. ♠ 9′0″ is the maximum door height.

About Position, Lever-Lock, and Friction Hinges

Position, lever-lock, and friction hinges hold small doors, lids, and hatches in position, eliminating the need for latches, door holders, and other secondary support mechanisms. An example of a friction hinge is on the display of a laptop computer. You can position the display at any angle without secondary support.

All of these hinges withstand an amount of rotational force, or torque, to hold doors in position. The greater the torque rating of the hinge, the greater the force required to change the angle of the hinge. Doors mounted vertically, such as cabinet doors, have hinges that require very little torque to hold them in place because gravity does not affect their operation. However, doors mounted horizontally, such as hatches or lids, are pulled downward by gravity; their hinges must have a minimum torque rating to be effective.

Selecting a Hinge with the Proper Torque Rating

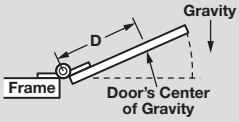

To select the correct hinge(s) for your door, you need to find the "torque force" of your door (the force needed to move the door). Once you know the torque force of your door, you can calculate the torque rating you should look for in a hinge.

1. Find the approximate "torque force" of your horizontally mounted door. Multiply the weight of your door (in pounds) by the distance (D) between the hinges and the door's center of gravity (in inches).

Example: Suppose your door weighs 2 lbs. and D=18″ (the door has an 18″ distance to its center of gravity). Multiply: 2×18=36. The door has a torque force of approximately 36 in.-lbs.

2. Divide the torque force of your door by the number of hinges you wish to use. The result is the torque rating you should exceed per hinge.

Example: Suppose you want to use two hinges on a door with a torque force of 36 in.-lbs. (see example above). Divide: 36/2=18. The torque rating for each hinge you choose should be greater than 18 in.-lbs.

Incremental-Angle Position Hinges

Inline (Steel)

Push the plastic button to adjust these hinges in set increments and release it to lock hinges in position—without the need for secondary mechanical support. All have rotary joint construction with an internal locking pin and hole locking mechanism. Hinges are incredibly strong and are great for use on machine guards and racks. Reversible for right- and left-hand doors. Mounting screws not included.

Inline—*Plastic* hinge has 1¼″ square arms without tapped holes and is not temperature rated. Color is black. *Steel* hinge has a black PTFE coating and ¾″ dia. round arms that each have two ¼″-20 tapped mounting holes. Holes are tapped prior to coating to provide complete coverage for better corrosion resistance.

Offset

Offset—Hinge is steel with a black PTFE coating. It has ¾″ dia. round arms that each have two ¼″-20 tapped mounting holes. Holes are tapped prior to coating to provide complete coverage for better corrosion resistance.

	O'all Ht.	Adjustable Increments	Torque, in.-lbs.		
Inline—*220° Range of Motion*					
Plastic	6⅛″	10°	828	**1258A1**	$27.00
Steel	5¼″	10°	2,040	**1258A12**	103.90
Offset—*360° Range of Motion*					
Steel	5¼″	10°	2,040	**1258A22**	112.00

Set-Angle Position Hinges

A detent on these hinges holds doors open at a set angle without secondary mechanical support. You can further open the hinges to a maximum of 180°. Surface mount them on flush-mounted doors such as access doors, machine covers, panels, and lids. Reversible for right- and left-hand doors.

Made of black acetal plastic with Type 302 stainless steel internal springs and a nonremovable steel pin. Temperature range is –40° to +180°F. Hinges require four #10 mounting screws (not included). Furnished with a snap-on, black acetal plastic cover for concealing the mounting screws.

Set Angle	Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Load Cap., lbs.★	Torque, in.-lbs.		
80°	1 31/32″	2¼″	0.36″	13/32″	100	10	**14965A41**	$12.07
115°	1 31/32″	2¼″	0.36″	13/32″	100	10	**14965A43**	12.07
150°	1 31/32″	2¼″	0.36″	13/32″	100	10	**14965A45**	12.07

★ Load capacity based on one hinge per door.

Lever-Lock Hinge

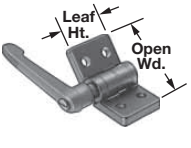

Simply tighten the lever on this hinge to lock it in any position from 0° to 180°. It keeps lids, panels, and doors in a fixed position without the need for secondary mechanical support. For surface mounting.

Hinge is die cast zinc with a black powder-coated finish. It has a black nylon handle and a nonremovable Type 316 stainless steel pin. Mounting screws not included.

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes		
1 37/64″	2 29/32″	5/16″	5/16″	M8	4	**1604A41**	$17.31

Friction Hinges

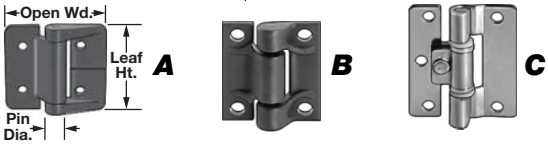

Use these hinges to hold lids, panels, and doors in a position you choose without secondary mechanical support. Just apply force to change the angle of the hinge. All provide constant resistance throughout their range of motion. For surface mounting. Reversible for right- and left-hand doors. All have four mounting holes; screws not included.

Aluminum with Black Painted Finish—Have a nonremovable steel pin.

Black Glass-Filled Nylon—Hinges have a nonremovable steel pin. Temperature range is 32° to 140°F.

Type 304 Stainless Steel—All have a nonremovable Type 303 stainless steel pin.

	Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Screw Size	Torque, in.-lbs.		
Aluminum with Black Painted Finish—*0° to 270° Range of Motion*								
A	1½″	1 19/32″	⅛″	13/32″	#8	8	**2190A21**	$17.75
A	1½″	1 19/32″	⅛″	13/32″	#8	16	**2190A22**	17.75
A	2″	2¼″	5/32″	½″	#10	16	**2190A12**	18.29
A	2″	2¼″	5/32″	½″	#10	20	**2190A13**	18.31
A	2″	2¼″	5/32″	½″	#10	30	**2190A14**	19.36
Black Glass-Filled Nylon—*0° to 270° Range of Motion*								
B	2½″	2¼″	15/64″	¼″	M6	30	**1467A1**	24.32
B	2½″	2¼″	15/64″	¼″	M6	40	**1467A2**	26.38
B	2½″	2¼″	15/64″	¼″	M6	50	**1467A3**	27.03
Type 304 Stainless Steel—*0° to 180° Range of Motion*								
C	1 37/64″	1 25/64″	1/16″	5/32″	#8	4	**1460A1**	16.28
C	1 31/32″	1 43/64″	5/64″	15/64″	#8	8	**1460A2**	21.20
C	1 31/32″	1 43/64″	5/64″	15/64″	#8	16	**1460A3**	23.56
C	3 35/64″	3¼″	3/32″	5/16″	#8	30	**1460A4**	54.40
C	3 35/64″	3¼″	3/32″	5/16″	#8	50	**1460A5**	60.62

Adjustable-Friction Hinges

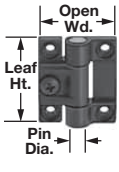

Hold your doors closed, open to 180°, or open to any angle in-between without secondary mechanical support—just tighten or loosen the adjustment screw to change the hinge resistance. Hinges move easily when you apply force and are load rated to handle heavy doors. Surface mount hinges on flush-mounted doors. Reversible for right- and left-hand doors.

Made of acetal plastic with a nonremovable polycarbonate pin and Type 303 stainless steel adjustment screw and nut. Temp. range is 20° to 150°F. All have four mounting holes; screws not included.

Leaf Ht.	Open Wd.	Leaf Thick.	Pin Dia.	Screw Size	Load Cap., lbs.★	Max. Torque, in.-lbs.		
Black Acetal Plastic								
1 11/16″	1 7/16″	0.23″	23/64″	#8	200	7	**1791A44**	$5.40
2½″	2¼″	0.20″	37/64″	¼″	450	35	**1791A48**	8.51
White Acetal Plastic								
1 11/16″	1 7/16″	0.23″	23/64″	#8	200	7	**1791A51**	5.38
2½″	2¼″	0.20″	37/64″	¼″	450	35	**1791A52**	8.51

★ Load capacity based on one hinge per door.

360° Friction Hinges

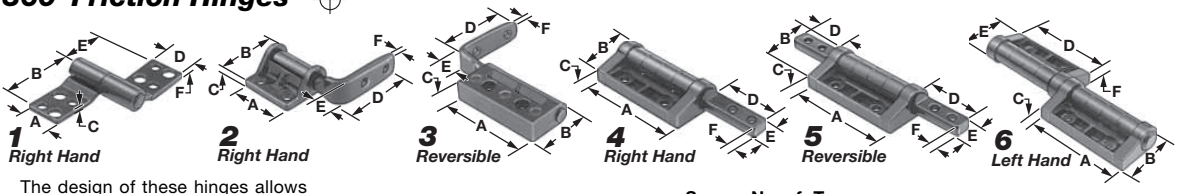

The design of these hinges allows an unlimited 360° range of motion while providing constant resistance. Hinges hold lids, panels, and doors at any angle without secondary mechanical support, yet they move when you apply force. For surface mounting. Made of die cast zinc and steel (unless noted) with a black epoxy finish. Pin is steel and nonremovable. Mounting screws not included.

	(A)	(B)	(C)	(D)	(E)	(F)	Screw Size	No. of Holes	Torque, in.-lbs.	Right Hand		Left Hand	
1	1/2"	7/8"	3/64"	1/2"	7/8"	3/64"	#4, #8	8	4.5	1541A1♣	$10.20	1541A2♣	$10.20
2	23/32"	21/32"	5/64"	7/8"	5/16"	5/64"	#4	4	4	1541A4	14.29	1541A3	14.29
2	2"	1"	9/32"	19/16"	3/8"	1/8"	#8	4	20	1541A8	40.80	1541A7	40.80
3	121/32"	13/16"	3/8"	13/8"	27/64"	1/8"	#4, #8	4	10	1541A5▲	30.61	1541A5▲	30.61
4	2"	1"	9/32"	17/32"	3/8"	13/64"	#8	4	20	1541A11	38.40	1541A9	38.40
5	2"	1"	9/32"	1"	3/8"	13/64"	#8	6	20	1541A12▲	38.40	1541A12▲	38.40
6	2"	23/32"	9/32"	2"	23/32"	9/32"	#8	4	30	1541A14	48.98	1541A13	48.98

♣ Hinge is steel. ▲ Hinge is reversible.

Surface-Mount Cabinet Hinges

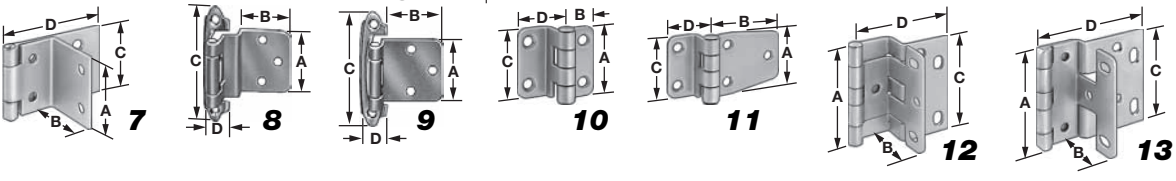

Surface mount these hinges to your cabinet's door and frame. Hinges are reversible for right- and left-hand doors. From the closed position, the range of motion is 180°, except for Styles 7, 12, and 13, which have a 270° range of motion. Leaf thick. is 1/16", unless stated otherwise. Pins are 11/64" dia. and nonremovable, unless noted. Hinges, pins, and springs (where applicable) are made of the same material. Furnished with mounting screws, unless noted.

Flush Style—For flush-mounted doors that are at least 3/4" thick.

Inset Style—For use on inset doors. Hinges have a built-in spring that pulls the door closed when it's open less than 35° and keeps the door closed without the need for a catch or latch.

Overlay Style—For use on doors that overlay their frames. *Style 9* have a built-in spring that pulls the door closed when it's open less than 35° and keeps the door closed without the need for a catch or latch. *Style 13* has a tapered pin for tamper resistance; it's for use on large doors.

For Door Thick.	Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Screw Size	No. of Holes	Pair
Flush Style							
Steel with Zinc-Plated Finish—5/64" leaf thick. and 1/8" dia. pin							
7	3/4"	1 1/2"	1 9/64"	1 1/2"	2 11/32"	#7	8	1627A42	$7.94
Steel with Brass Finish—5/64" leaf thick. and 1/8" dia. pin							
7	3/4"	1 1/2"	1 9/64"	1 1/2"	2 11/32"	#7	8	1631A21	8.72
Inset Style							
Steel with Polished Chrome Finish							
8	3/4"	1 1/2"	1 1/8"	2 3/4"	29/64"	#5	5	1787A38	5.48
Steel with Polished Brass Finish							
8	3/4"	1 29/64"	1 13/32"	2 3/4"	29/64"	#5	5	1787A61	2.34
Steel with Antique Brass Finish							
8	3/4"	1 29/64"	1 13/32"	2 3/4"	29/64"	#5	5	1787A62	2.28

■ Mounting screws not included. ● Pin is 1/8" dia. and removable.

For Door Thick.	Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Screw Size	No. of Holes	Pair
Overlay Style							
Steel with Polished Chrome Finish							
9	3/4"	1 1/2"	1 27/64"	2 3/4"	29/64"	#5	5	1787A39	$5.48
Steel with Polished Brass Finish							
9	3/4"	1 5/8"	1 15/64"	2 3/4"	7/16"	#6	5	1787A63	2.34
Steel with Antique Brass Finish							
9	3/4"	1 5/8"	1 15/64"	2 3/4"	7/16"	#6	5	1787A64	2.28
Type 304 Stainless Steel with Polished Finish—7/32" dia. pin							Each
10	3/8"	1 1/2"	11/16"	1 1/2"	13/16"	#8	4	1549A61■	$2.90
11	3/4"	1 1/2"	1 59/64"	1 1/2"	37/64"	#8	5	1549A63■	3.29
11	3/8"	1 29/64"	2"	1 29/64"	3/4"	#8	5	1549A65■	3.40
Steel with Dull Chrome Finish—3/32" leaf thick. and 3/16" dia. pin							
12	3/4"	2 3/4"	1 37/64"	2 3/4"	2 1/2"	#8	8	1804A11■●	6.51
13	3/4"	2 3/4"	1 19/32"	2 3/4"	3 3/32"	#8	9	1804A25■	6.08

Invisible Mortise-Mount Cabinet Hinges

You'll think these hinges disappeared—when your door is closed they're completely hidden from both sides to prevent tampering and to provide a neat appearance. Both leaves of these hinges mount into recessed cutouts (mortises) on your door's edge and frame, so they don't take up space in the cabinet itself. All hinges are reversible for right- and left-hand doors. From the closed position, the range of motion is 180°.

Steel Hinges with Zinc Leaves—Have nonremovable steel pins. Furnished with mounting screws.

Brass Hinges—Require two wood screws (not included, see pages 3014-3021) for mounting and adjusting tension.

Router Guides—Made of wood, these router guide templates make it easy to install the steel hinges (1612A) below.

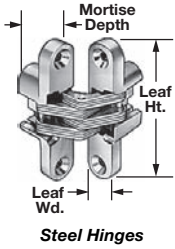

Steel Hinges

Steel Hinges with Zinc Leaves—1612A23 and A5 have steel leaves

Min. Door Thick.	Mortise Depth	Leaf Ht.	Leaf Wd.	Screw Size	No. of Holes	Dull Chrome Finish		Dull Brass Finish		Router Guide	
1/2"	15/32"	1"	3/8"	#5	4	1612A21	$8.52	1612A2	$8.52	—	—
1/2"	29/64"	11 1/16"	3/8"	#5	4	1612A22	10.78	1612A1	10.78	1612A811	$36.63
11/16"	21/32"	1 1/2"	1/2"	#5	4	1612A23	7.33	1612A5	7.33	—	—
3/4"	19/32"	1 1/2"	1/2"	#6	4	1612A24	9.47	1612A3	9.47	1612A812	36.63
3/4"	23/32"	1 3/4"	1/2"	#6	4	1612A25	10.18	1612A4	10.18	1612A813	36.63
3/4"	23/32"	2 3/8"	1/2"	#7	4	1612A26	14.51	1612A6	14.51	1612A814	36.63
1"	29/32"	2 3/4"	5/8"	#8	4	1612A27	20.12	1612A7	20.12	1612A815	36.63
1 1/8"	1 5/64"	3 3/4"	3/4"	#10	4	1612A28	32.38	1612A8	32.38	1612A816	36.63
1 3/8"	1 7/16"	4 5/8"	1"	#14	4	1612A41	43.82	1612A53	43.82	1612A817	36.63
1 3/4"	1 21/32"	4 5/8"	1 1/8"	#10	8	1612A42	48.56	1612A55	48.56	1612A818	36.63

Brass Hinges

Min. Door Thick.	Barrel Dia.	Mortise Depth	Screw Size	Dull Brass Finish		Min. Door Thick.	Barrel Dia.	Mortise Depth	Screw Size	Dull Brass Finish	
9/16"	25/64"	7/16"	#6	17725A41	$3.94	25/32"	35/64"	39/64"	#6	17725A44	$9.20
43/64"	15/32"	17/32"	#6	17725A43	5.90	7/8"	5/8"	21/32"	#6	17725A45	6.75

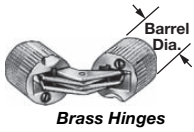

Brass Hinges

Concealed Surface-Mount Cabinet Hinges CAD

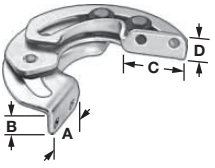

When external appearance is important, surface mount these hinges to the inside of cabinets with flush-mounted doors. When your door is closed, you can't see these hinges from the outside. Reversible for right- and left-hand doors. From the closed position, the range of motion is 180°. Mounting screws not included.

For Door Thick.	Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Leaf Thick.	Screw Size	No. of Holes		
Steel with Zinc-Plated Finish									
5/32"	13/16"	33/64"	13/16"	33/64"	5/64"	#10	4	1995A1	$15.93
Unfinished 300 Series Stainless Steel									
5/32"	13/16"	33/64"	13/16"	33/64"	5/64"	#10	4	1995A2	22.34

Concealed Half-Mortise Mount Cabinet Hinges CAD

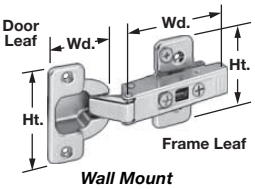

Wall Mount

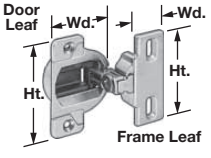

Edge Mount

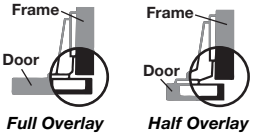

Full Overlay ***Half Overlay***

Completely hidden from the outside when the door is closed, these hinges (also known as European hinges) have a door leaf that mounts into a recessed cutout (mortise) on the inside of your cabinet doors. The door leaf requires a 1 3/8" (35 mm) dia. mortise—we recommend you use a wood boring bit (see 3216A29 on page 2463).

Reversible for right- and left-hand doors. Hinges, pins, and springs (where applicable) are made of the same material, except for zinc hinges, which have a steel pin and spring. Pins are nonremovable. Screw holes are countersunk, unless stated otherwise. Steel and zinc hinges have screw holes that are countersunk prior to plating for better corrosion resistance. All are furnished with mounting screws.

Wall Mount—*Steel* hinges have a quick-release clip for easy door removal. *Type 304 stainless steel* hinges screw into a Type 304 stainless steel mounting plate, which does not have countersunk holes.

Hold-closed models have a built-in spring that pulls the door closed when it's open less than 10° and keeps the door closed without the need for a catch or latch.

Range of Motion■	Mortise Depth	Door Leaf Ht.	Door Leaf Wd.	Frame Leaf Ht.	Frame Leaf Wd.	For Full Overlay Doors		For Half Overlay Doors	
Wall Mount—*Attach frame leaf to interior cabinet wall*									
Steel with Nickel-Plated Finish									
100°	7/16"	2 1/4"	1 1/2"	2 1/4"	2 7/8"	1100A1	$3.54	1100A2	$3.82
120°	1/2"	2 1/4"	1 1/2"	2 1/4"	2 7/8"	1100A3	4.30	1100A4	4.68
170°	7/16"	2 1/4"	1 1/2"	2 1/4"	3 5/8"	1100A5	6.81	1100A6▲	8.31
Steel with Nickel-Plated Finish—*Hold closed*									
100°	7/16"	2 1/4"	1 1/2"	2 1/4"	2 7/8"	1100A7	3.42	1100A11	3.70
120°	1/2"	2 1/4"	1 1/2"	2 1/4"	2 7/8"	1100A8	4.18	1100A12	4.68
170°	7/16"	2 1/4"	1 7/8"	2 1/4"	3 5/8"	1100A9	6.72	1100A13▲	8.31
Type 304 Stainless Steel with Polished Finish									
100°	7/16"	2 1/8"	1 1/2"	1 57/64"	2 1/8"	15215A15	14.44	15215A11★	15.06
Type 304 Stainless Steel with Polished Finish—*Hold closed*									
100°	7/16"	2 1/8"	1 1/2"	1 57/64"	2 1/8"	15215A16	15.66	15215A12★	15.79
Edge Mount—*Attach frame leaf to inside edge of cabinet frame*									
Zinc with Nickel-Plated Finish—*Hold closed*									
110°	1/2"	2 1/4"	1 1/2"	2 1/8"	3/4"	1100A68	4.30	1100A69	4.22

■ From the closed position. ▲ Frame leaf width is 3 1/32". ★ Frame leaf width is 2 3/16".

Adjustable Surface-Mount Cabinet Hinge CAD

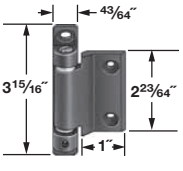

Need a hinge to accommodate warped doors and frames? Not a problem. This hinge has a pin adjustment screw that allows approximately 1/16" vertical adjustment and screw holes that allow 1/32" horizontal adjustment. This design makes installation and alignment easy. Hinge is for surface mounting and is reversible for right- and left-hand doors.

Made of die cast zinc with a black finish. The screw holes are countersunk prior to finishing to provide complete coverage for better corrosion resistance. Hinge has a 15/64" leaf thickness and a nonremovable, 15/64" dia. nickel-plated brass pin. From the closed position, the range of motion is 180°. The four mounting holes accept #10 screws (not included).

13675A51 ..... $17.24

Sectional-Door Hinges CAD

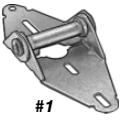

#1

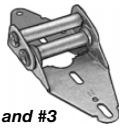

#2 and #3

#4, #5, and #6

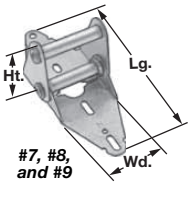

#7, #8, and #9

Your wood, aluminum, and metal sectional doors will move smoothly on these hinges. Made of steel with a hot-dipped galvanized finish, they're commonly used for garage doors.

All hinges are for surface mounting and are reversible for right- and left-hand doors. The hinges and pins (which are nonremovable) are made of the same material. Leaves are 0.113" thick. Range of motion is from the closed position. Mounting screws not included.

Trade No.	Range of Motion	Overall Size, Wd. x Lg. x Ht.	Screw Size	No. of Holes		
#1	180°	2 25/32" x 7 5/16" x 1 17/64"	1/4"	4	13925A41	$4.30
#2	90°	2 25/32" x 7 5/16" x 1 1/2"	1/4"	4	13925A42	4.79
#3	90°	2 25/32" x 7 5/16" x 1 3/4"	1/4"	4	13925A43	5.00
#4	90°	2 25/32" x 7 5/16" x 2 1/16"	1/4"	4	13925A44	5.18
#5	90°	2 25/32" x 7 5/16" x 2 17/64"	1/4"	4	13925A45	5.39
#6	90°	2 25/32" x 7 5/16" x 2 35/64"	1/4"	4	13925A46	5.61
#7	90°	2 25/32" x 7 5/16" x 2 27/32"	1/4"	4	13925A47	7.64
#8	90°	2 25/32" x 7 13/32" x 3 1/16"	1/4"	4	13925A48	7.86
#9	90°	2 25/32" x 7 13/32" x 3 23/64"	1/4"	4	13925A49	8.13

Heavy Duty Strap Hinges for Narrow Frames CAD

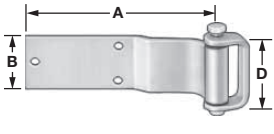

A narrow frame leaf makes these hinges great for trailers, containers, and other large doors that have frames with a limited mounting area. All are for surface mounting on flush-mounted doors and are reversible for right- and left-hand doors. Hinges have a removable steel pin and a nylon bearing. From the closed position, the range of motion is 270°.

Hinges have a 1 3/8" offset so the strap can clear a door seal. Weld the frame leaf on the frame and bolt the door leaf on the door. Frame leaf is steel with a galvanized finish. Screw holes are punched prior to finishing (where applicable) to provide complete coverage for better corrosion resistance. Mounting screws not included.

Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes		
Unfinished Extruded Aluminum									
9"	2 11/16"	7/8"	3 9/16"	1/4"	1/2"	3/8"	3	12395A31	$21.23
9"	4"	7/8"	4 7/8"	1/4"	1/2"	3/8"	4	12395A34	23.57
Steel with Galvanized Finish									
9"	4"	7/8"	4 7/8"	1/4"	1/2"	3/8"	4	12395A42	20.73

Strap Hinges

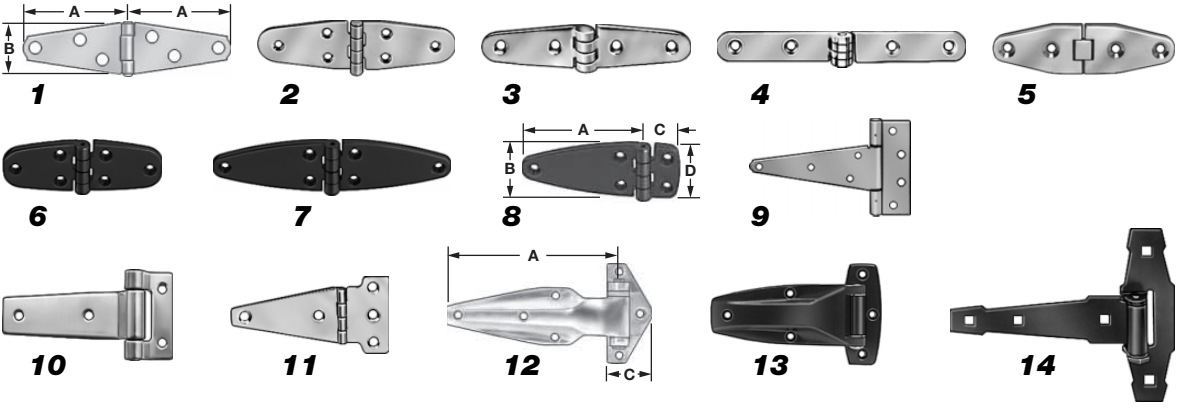

Surface mount these hinges on flush-mounted gates and doors. They're reversible for right- and left-hand doors. From the closed position, hinges have a 270° range of motion, unless noted. Pins are nonremovable, unless noted. The screw holes are made prior to finishing to provide complete coverage for better corrosion resistance. Screw holes are countersunk, except for hinges 1364A11, 1364A12, and 13125A51, which have punched holes. Mounting screws not included, unless noted.

Styles 12 and ***13*** are recommended for service doors, refrigerators, freezers, and industrial enclosures. *Style 12* hinges have nylon bearings for smooth operation. *Style 13* hinge has a nylon bushing for smooth operation.

Style 14 hinge is spring-loaded; it has adjustable tension for use on self-closing gates.

Leaf (A)	Leaf (B)	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes		Each
Steel with Zinc-Plated Finish— *Steel Pin (unless noted)*							
1	1 7/8"	1 11/16"	0.050"	1/8"	#5	1526A43	$1.08
1	3"	1 3/16"	0.056"	1/8"	#6	1526A44	1.11
1	3 3/4"	1 1/4"	0.056"	3/16"	#7	1526A51	4.10
1	4 53/64"	1 1/2"	0.067"	13/64"	#9	1526A52♥	3.14
1	5 3/4"	1 5/8"	0.072"	3/16"	#9	1526A53	3.36
1	7 3/4"	3 1/8"	0.112"	11/32"	#12	1526A54	5.97
1	9 3/4"	3 5/8"	0.125"	27/64"	#14	1526A55	11.11
1	12"	4 19/32"	0.160"	31/64"	#16	1526A56	20.74
Type 304 Stainless Steel with Dull Finish— *Type 304 SS Pin*							
1	4"	2"	0.090"	1/4"	#12	1704A11	17.22
1	6"	2 1/2"	0.125"	3/8"	#12	1704A12	26.36
1	8"	3"	0.125"	3/8"	#14	1704A13	34.18
1	10"	3 1/2"	0.125"	3/8"	#14	1704A14	43.67
Type 304 Stainless Steel w/Polished Finish— *Type 304 SS Pin*							
1	3"	1 1/2"	0.060"	1/8"	#8	1528A31	7.33
2	2"	1"	0.080"	3/16"	#10	1528A18	8.96
2	2 3/4"	1 1/2"	0.080"	3/16"	#8	1528A19	12.19
2	3 1/2"	1 5/8"	0.080"	3/16"	#8	1528A25	16.66
Type 302 Stainless Steel w/Polished Finish— *Type 302 SS Pin*							
3	1 31/32"	1 1/16"	0.060"	1/8"	#8	1528A32	6.10
3	2"	1 1/2"	0.060"	1/8"	#8	1528A33	5.85
Type 316 Stainless Steel w/Polished Finish— *Type 304 SS Pin*							
3	2 1/16"	1 1/16"	0.200"	3/16"	#10	1528A21●	7.86
3	2 15/16"	1 1/8"	0.175"	1/4"	#10	1528A23●	9.88
4	3 11/32"	3/4"	0.198"	1/4"	#10	1528A24●	9.76
Type 316 Stainless Steel w/Polished Finish— *Type 316 SS Pin*							
5	2"	1 7/64"	0.190"	3/32"	#10	1528A27♠	15.75
5	3"	1 5/8"	0.230"	1/8"	#10	1528A28♠	24.07
Black Plastic— *Monel Pin (Temp. Range is 0° to 190°F)*							
6	2"	1 1/2"	0.188"	1/8"	#8	1711A11	2.55
7	3"	1 1/2"	0.188"	1/8"	#8	1711A12	2.64

Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes		Each
Black Plastic— *Monel Pin (Temp. Range is 0° to 190°F)*									
8	3"	1 1/2"	7/8"	1 1/2"	0.188"	1/8"	#8	1711A13	$2.19
Steel with Galvanized Finish— *Brass Pin*									
9	3 13/16"	1 35/64"	1 1/8"	3 19/64"	0.076"	7/32"	#9	1530A71	9.59
9	5 47/64"	2 5/32"	1 9/16"	4 1/4"	0.095"	21/64"	#12	1530A72	15.29
9	7 11/16"	2 3/4"	2"	5 1/2"	0.105"	25/64"	#12	1530A73	24.21
Steel with Zinc-Plated Finish— *Steel Pin*									
9	1 7/8"	1 1/16"	17/32"	1 13/16"	0.05"	1/8"	#6	1530A31♣	1.22
9	2 27/32"	1 3/16"	11/16"	2 1/4"	0.06"	11/64"	#6	1530A32♣	1.42
9	3 13/16"	1 9/16"	1 1/8"	3 1/8"	0.077"	3/16"	#9	1530A51	3.54
9	3 53/64"	1 1/4"	3/4"	2 7/16"	0.06"	13/64"	#7	1530A33♣	1.76
9	4 3/4"	1 3/4"	1 5/16"	3 9/16"	0.077"	5/16"	#9	1530A52	4.28
9	4 13/16"	1 1/2"	29/32"	2 7/8"	0.07"	13/64"	#9	1530A24♣	2.23
9	5 11/16"	2"	1 9/16"	4 1/4"	0.104"	5/16"	#10	1530A53	4.75
9	5 13/16"	1 5/8"	29/32"	3 5/32"	0.07"	13/64"	#9	1530A25♣	2.67
9	7 11/16"	2 11/16"	2"	5 1/2"	0.112"	5/16"	#12	1530A54	7.88
9	9 5/8"	3 1/2"	2 5/16"	6 5/8"	0.125"	3/8"	#14	1530A55	13.45
9	11 5/8"	3 7/8"	2 11/16"	7 11/16"	0.139"	3/8"	#14	1530A56	32.49
Type 304 Stainless Steel with Dull Finish— *Type 304 Stainless Steel Pin*									
9	4"	2"	1 1/2"	3 1/2"	0.090"	1/4"	#14	1632A21	14.85
9	6"	2"	1 3/4"	4 1/2"	0.125"	3/8"	#14	1632A22	23.24
9	8"	3"	2 1/4"	5 1/2"	0.125"	3/8"	#14	1632A23	26.64
9	10"	3 1/2"	2 1/4"	7"	0.125"	3/8"	#14	1632A24	33.49
Type 304 Stainless Steel with Polished Finish— *Type 304 Stainless Steel Pin*									
10	3 9/64"	1 7/64"	15/16"	2 3/64"	0.099"	15/64"	#10	1364A11	8.98
10	4 23/32"	1 1/2"	1 13/32"	2 43/64"	0.158"	5/16"	#12	1364A12	18.04
11	3"	1 1/2"	1 9/32"	2 1/8"	0.060"	1/8"	#8	1528A61	7.42
12	5 1/8"	1 3/4"	1 3/8"	3"	0.172"	5/16"	#8	1264A12●★	26.28
12	6 3/32"	2 1/8"	1 1/2"	3 11/16"	0.203"	5/16"	#10	1264A13●★	37.10
Zinc with Black Powder-Coated Finish— *Steel Pin*									
13	4 41/64"	1 15/16"	1 1/4"	3 1/4"	0.188"	5/16"	#10	1276A49●	27.52
Spring-Loaded Steel with Black Powder-Coated Finish— *Steel Pin*									**Pair**
14	7 11/32"	1 7/8"	2"	7 1/8"	0.104"	13/64"	5/16"	13125A51●♦	$20.31

♥ Pin is aluminum. ● From the closed position, the range of motion is 180°. ♠ From the closed position, the range of motion is 360°.
♣ From the closed position, the range of motion is 260°. ★ Pin is removable. ♦ Mounting screws are included.

Layered Strap Hinges

Layers of metal provide extra strength and support. All hinges are for surface mounting on flush-mounted doors. They're reversible for right- and left-hand doors. From the closed position, hinges have a 180° range of motion, unless noted. Screw holes are made prior to finishing to provide complete coverage for better corrosion resistance. Mounting screws not included.

Steel hinges have a nonremovable steel pin. ***Type 304 stainless steel hinge*** has a nonremovable Type 304 stainless steel pin.

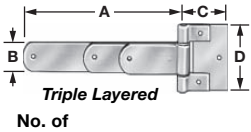

Triple Layered

Material	Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Thickness at Each Layer	Pin Dia.	Screw Size	No. of Holes		
Double-Layered Hinges										
Steel with Zinc-Plated Finish	3 3/4"	2"	2"	5"	0.171", 0.342"	1/2"	11/32"	4	1796A25	$9.72
Steel with Zinc-Plated Finish	7 1/2"	2 1/4"	3 5/16"	5"	0.165", 0.330"	1/2"	5/16"	5	1796A14	12.47
Triple-Layered Hinges										
Steel with Zinc-Plated Finish	12"	2 1/4"	3 5/16"	5"	0.165", 0.330", 0.495"	1/2"	5/16"	6	1796A12	17.22
Steel with Zinc-Plated Finish	16"	2 1/4"	3 5/16"	5"	0.165", 0.330", 0.495"	1/2"	5/16"	6	1796A13	19.36
Steel with Zinc-Plated Finish	19"	2 1/4"	3 5/16"	5"	0.165", 0.330", 0.495"	1/2"	5/16"	6	1796A15	21.58
Brushed Type 304 Stainless Steel	12"	2 1/4"	4 15/16"	5"	0.135", 0.270", 0.405"	1/2"	5/16"	6	1796A23◤	47.88

◤ From the closed position, the range of motion is 270°.

Load-Rated Strap Hinges

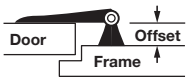

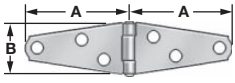

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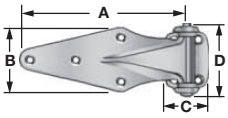

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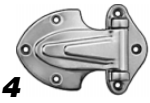

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Strap hinges with a difference—these have a load rating. Hinges are for surface mounting and are reversible for right- and left-hand doors. Screw holes are countersunk prior to finishing to provide complete coverage for better corrosion resistance. Mounting screws not included.

Style 1—Excellent for gates and doors. Hinges have a nonremovable brass pin. For flush-mounted doors.

Styles 2-4—Recommended for service doors, refrigerators, freezers, and industrial enclosures. *Style 2* have nylon washers for smooth operation and a removable steel pin. *Styles 3* and *4* have a removable Type 305 stainless steel pin.

Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes	Load Capacity ♦ lbs.	Load Capacity ♦ Door Wd.	Range of Motion♠		
Steel with Galvanized Finish—*Hinges are flush.*												
1	4″	1⅝″	—	—	0.078″	9/32″	#9	6	20	24″	260°	**1526A71**● $4.63
1	5 11/16″	2¼″	—	—	0.094″	3/8″	#12	8	40	24″	260°	**1526A72**● 8.98
1	7⅝″	2 15/16″	—	—	0.125″	3/8″	#12	8	60	24″	260°	**1526A73**● 13.99
Steel with Zinc-Plated Finish—**To Order:** *Please specify hinge offset: flush, 3/8″, 3/4″, or 1 1/8″.*												
2	6⅛″	2⅜″	1⅝″	2 7/16″	0.375″	5/16″	#10	8	100	36″	180°	**1276A71** 56.95
Zinc with Chrome-Plated Finish—**To Order:** *Please specify hinge offset: flush, 1/4″, 3/8″, 5/8″, 3/4″, 7/8″, 1″, or 1 1/8″.*												
3	5 1/16″	2″	1 13/32″	3 1/16″	0.375″	5/16″	#8	7	60	21″	180°	**1276A81** 46.68
Zinc with Chrome-Plated Finish—*Hinge offset is 1 1/8″.*												
3	6 3/16″	2⅜″	1 17/32″	3 23/32″	0.375″	5/16″	#10	7	100	24″	180°	**1276A37** 86.37
Zinc with Chrome-Plated Finish—**To Order:** *Please specify hinge offset: flush or 1 1/8″.*												
4	3⅜″	2¾″	1 13/32″	3 1/16″	0.375″	5/16″	#8	6	60	21″	180°	**1276A91** 60.28

♦ Load capacity is based on two hinges per door, unless noted. ♠ From the closed position. ● Load capacity is based on one hinge per door.

Load-Rated Lift-Off Strap Hinges

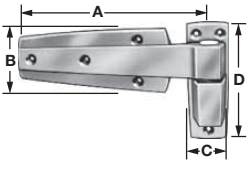

A self-lubricating nylon cam in these load-rated hinges provides smooth opening and closing as well as constant pressure for a positive seal—ideal for refrigerators, freezers, and doors on large enclosures. The lift-off design means that you can quickly lift your door off these hinges without disassembling the hinges.

Hinges are made of zinc with a polished-chrome finish. They're for surface mounting and are reversible for right- and left-hand doors. From the closed position, hinges have a 180° range of motion. A hold-open function holds your door open at 140° and automatically closes the door if it's opened less than 90°. Screw holes are countersunk prior to finishing to provide complete coverage for better corrosion resistance. Mounting screws not included.

Hinge Offset	Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes	Load Cap., lbs.♣		
Flush	9″	2⅞″	2⅛″	5½″	0.75″	7/16″	¼″	7	180	**14845A31**	$62.44
1⅛″	9″	2⅞″	2⅛″	5½″	0.75″	3/8″	¼″	7	180	**14845A32**	64.04
1¼″	9″	2⅞″	2⅛″	5½″	0.75″	3/8″	¼″	7	180	**14845A33**	65.73
1⅜″	9″	2⅞″	2⅛″	5½″	0.75″	3/8″	¼″	7	180	**14845A34**	67.50
1½″	9″	2⅞″	2⅛″	5½″	0.75″	3/8″	¼″	7	180	**14845A35**	69.30
1¾″	9″	2⅞″	2⅛″	5½″	0.75″	3/8″	¼″	7	180	**14845A36**	71.03

♣ Load capacity is based on two hinges per door with a maximum door width of 42″.

Load-Rated Heavy Duty Strap Hinges with Bearings

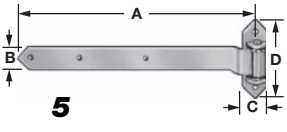

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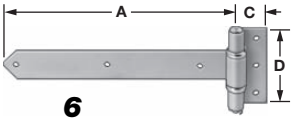

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With a ball-bearing design, large diameter pins, and door leaves that are thicker and longer than most, these hinges are built for heavy manual doors. Style 6 also works with power-operated doors. All hinges are for surface mounting on flush-mounted doors (Style 5 can also mount on the face of the wall to allow open doors to clear the doorway).

Hinges are made of steel with a tan enamel finish. All have a removable steel pin and are reversible for right- and left-hand doors. From the closed position, hinges have a 180° range of motion. Screw holes are punched prior to finishing to provide complete coverage for better corrosion resistance. Mounting screws not included.

	Door Leaf (A)	Door Leaf (B)	Frame Leaf (C)	Frame Leaf (D)	Leaf Thick.	Pin Dia.	Screw Size	No. of Holes	Load Capacity■ lbs.	Load Capacity■ Hinges per Door	Load Capacity■ Max. Door Size		
5	19″	2½″	1¾″	8″	0.250″	½″	3/8″, ½″	5	745	3	7 ft. Ht. × 3 ft. Wd.	**1233A41**	$154.04
5	24″	2½″	1¾″	8″	0.250″	½″	3/8″, ½″	5	745	3	7 ft. Ht. × 3 ft. Wd.	**1233A44**	158.37
5	36″	2½″	1¾″	8″	0.313″	½″	3/8″, ½″	6	695	3	7 ft. Ht. × 5 ft. Wd.	**1233A48**	181.73
6	24″	3″	3¼″	8″	0.375″	¾″	½″	6	3,625	4	10 ft. Ht. × 5 ft. Wd.	**1233A42**	428.37

■ Load capacity is based on the number of hinges listed per door with the maximum door size listed.

Self-Opening Lid Supports

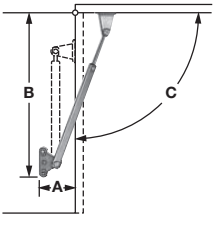

A spring assists these supports in opening and holding open lids and doors on cabinets and tool chests. Just flip up the lid or door and the support does the rest. When lids and doors are closed, the spring keeps them in position. Reversible for right- and left-hand doors. Supports are made of Type 304 stainless steel with a dull finish. Spring is steel. Require five #6 mounting screws (not included).

Note: These supports are designed to be used in pairs. Load capacity shown is for two lid supports.

Min. Opening Depth (A)	Min. Opening Wd. (B)	Max. Angle (C)	Load Cap., lbs.	Each	
2.204″	10.75″	90°	6.6	**11615A13**	$38.50
2.204″	15″	90°	5.5	**11615A14**	53.00
2.204″	14.75″	110°	5.5	**11615A15**	51.00

Self-Opening Combination Hinges and Lid Supports

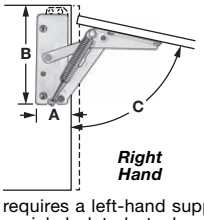

No separate hinges, catches, or latches required—these supports act as a hinge and a lid support. A spring assists the supports in opening lids and doors and then holds them open at either 75° or 90°. When lids and doors are closed, the spring keeps them in position.

Choose either right- or left-hand mounting. Handing is determined as you look into your cabinet or tool box; the right side requires a right-hand support, the left side requires a left-hand support. Made of white epoxy-coated steel with a nickel-plated steel spring. Require five #8 mounting screws (not included). Load capacity is 5½ lbs. for each lid support.

Min. Opening Depth (A)	Min. Swing Width (B)	Opening Positions (C)	Right Hand	Left Hand	
1.744″	5.313″	75°, 90°	**14785A53**	**14785A51**	$14.37

Lid Supports

All of these supports are free-moving; they open and close at the speed you raise and lower them. Use supports to hold lids and doors open for easy access to cabinets and tool chests. You'll need a latch (not included) to secure them in the closed position. Supports are made of Type 304 stainless steel with a dull finish. Mounting screws not included. *Note:* The load capacity shown is for one lid support.

Style 1— Designed exclusively for flip-down doors, these supports are ideal when a hold-open feature is not required. Reversible for right- and left-hand use.

Style 2— Supports have a hold-open mechanism—pull out the support arm to engage the mechanism and hold the arm in the fully open position; slightly raise the support arm to release the mechanism and retract the support arm. Reversible for right- and left-hand use.

Style 3— Supports have at least four hold-open positions up to 90°. Choose either right- or left-hand mounting. Handing is determined as you look into your cabinet or tool box; the right side requires a right-hand support, the left side requires a left-hand support.

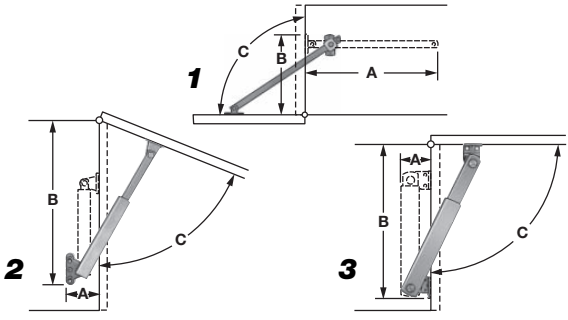

	Min. Opening Depth (A)	Min. Opening Width (B)	Max. Angle (C)	Screw Size	No. of Holes	Load Cap., lbs.	Handing		
1	8.266″	12.25″	90°	#4 flat head	4	7	Reversible	**15175A51**	$13.50
1	9.453″	14.25″	90°	#4 flat head	4	7	Reversible	**15175A52**	13.80
1	10.625″	16.25″	90°	#4 flat head	4	7	Reversible	**15175A53**	14.20
2	1.811″	9.75″	90°	#6, #8	5	33	Reversible	**11615A11**	33.43
2	1.811″	11.75″	120°	#6, #8	5	33	Reversible	**11615A12**	35.39
3	2.05″	14.65″	90°	#10	6	154	Right	**1351A61**	135.00
3	2.05″	14.65″	90°	#10	6	154	Left	**1351A62**	135.00
3	2.05″	18.19″	90°	#10	6	154	Right	**1351A63**	145.00
3	2.05″	18.19″	90°	#10	6	154	Left	**1351A64**	145.00

Speed Control Lid Supports

Prevent lids and doors from slamming down. Supports also have a hold-open and/or a hold-closed feature to keep your door in place, eliminating the need for latches. Furnished with mounting screws.

Handed lid supports are made of nickel-plated zinc alloy and steel. An adjustment screw on these supports controls the opening/closing speed to accommodate a variety of door sizes and weights. Choose either right- or left-hand mounting. Handing is determined as you look into your cabinet or tool box; the right side requires a right-hand support, the left side requires a left-hand support.

Reversible lid supports are made of nickel-plated steel with white plastic pivot covers. Reversible for right- and left-hand use.

Top Lid Supports and ***Flip-Up Lid Supports—*** For use with overlay doors that have butt hinges, piano hinges, or concealed hinges. 1227A73 also works with inset doors. Max. opening angles are adjustable within the ranges shown.

Flip-Down Lid Supports— For doors with butt hinges, piano hinges, or drop-leaf hinges.

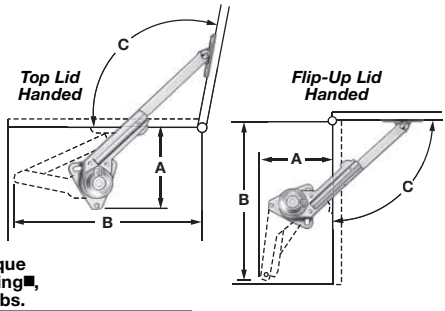

Lid Type	Holds Door Closed	Holds Door Open	Min. Opening Depth (A)	Min. Opening Width (B)	Max. Angle (C)	Handing	Torque Rating■, in.-lbs.		
Handed									
Top	No	Yes	4.844″	6.141″	70°-105°	Right	19-60	**1227A44**	$17.62
Top	No	Yes	4.844″	6.141″	70°-105°	Left	19-60	**1227A45**	17.62
Flip-Up	No	Yes	3.031″	7.875″	80°-100°	Right	19-60	**1227A46**	17.62
Flip-Up	No	Yes	3.031″	7.875″	80°-100°	Left	19-60	**1227A47**	17.62
Flip-Down	Yes	Yes	2.844″	8.313″	90°	Right	19-60	**1227A42**	17.62
Flip-Down	Yes	Yes	2.844″	8.313″	90°	Left	19-60	**1227A43**	17.62
Reversible									
Top	Yes	Yes	5.307″	7.776″	80°-100°	Reversible	35-60	**1227A73▲**	18.39
Flip-Up	Yes	Yes	3.323″	9.173″	80°-100°	Reversible	35-60	**1227A73▲**	18.39
Flip-Down	Yes	No	3.323″	8.858″	90°	Reversible	30-43	**1227A71**	19.05

■ Torque = Door Height × ½ × Door Weight. ▲ Can be used as either a top lid support or a flip-up lid support.

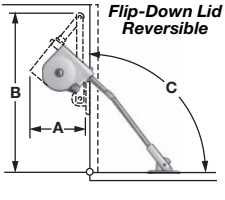

Adjustable-Friction Lid Supports

Hold open your windows, lids, and doors at any position up to the maximum angle of these supports. Simply open to the desired position and release. You can turn the adjustment screw to control the holding force to accommodate a variety of door sizes and weights. Choose either right- or left-hand mounting. Handing is determined as you look into your cabinet or tool box; the right side requires a right-hand support, the left side requires a left-hand support. Made of brass-plated steel. Furnished with mounting screws.

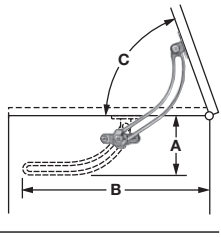

Min. Opening Depth (A)	Min. Opening Width (B)	Max. Angle (C)	Handing		
2.750″	9.125″	70°	Right	**1800A33**	$5.91
2.750″	9.125″	70°	Left	**1800A34**	5.91

Drop-Leaf Braces

Simply open these spring-tension braces to support drop-leaf shelves and tables; fold them closed when they're not needed. All are reversible for right- and left-hand mounting. To ensure proper operation, do not exceed the max. drop-leaf overhang (A) listed. ***Style 4*** comes with mounting screws. ***Style 5*** requires four #8 mounting screws (not included). ***Style 6*** requires six #10 mounting screws (not included).

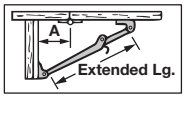

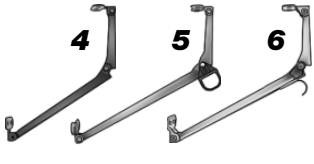

	Material	Finish	Release Style	Extended Lg.	Max. (A)	Load Cap., lbs.♣		Each
4	Steel	Black Epoxy	Push	10″	2½″	100	**1756A3**	$9.12
5	Steel	Dull	Pull Ring	12″	3″	Not Rated	**1756A4**	9.02
6	Type 304 SS	Polished	Finger Pull	11 37/64″	3 15/16″	13.2	**1756A41**	32.50

♣ These braces are designed to be used in pairs. Load capacity is for two braces.

Folding-Table Leg Braces

One side mounts to your table and the other mounts to a leg. Pull out the leg to lock the brace; press the release to fold the leg closed.

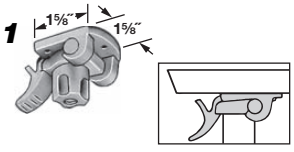

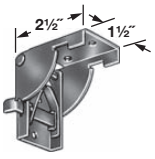

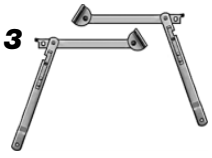

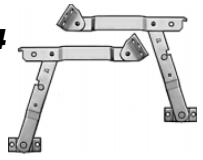

1 Made of black acetal plastic, this brace press-fits onto 0.78″ ID tube legs up to 18″ long. Requires three #5 mounting screws (not included). Not load rated.

1173A21 ..... **Each** $5.05

2 This bronze-plated steel brace mounts to 1½″ square legs. It requires six #8 mounting screws (not included). Load capacity is 75 lbs. per brace.

18095A51 ..... **Each** $5.72

3&4 The braces in these sets are made of zinc-plated steel. A set includes one right-hand and one left-hand brace plus mounting screws. Load capacity is per set.

	Extended Lg.	Load Cap., lbs.	Wd.		Set
3	13½″	75	⅝″	**1571A11**	$26.31
4	16⅝″	200	1¼″	**1570A11**	57.96

Steel Side-Mount Precision Drawer Slides CAD

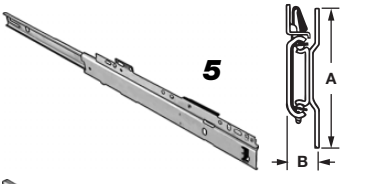

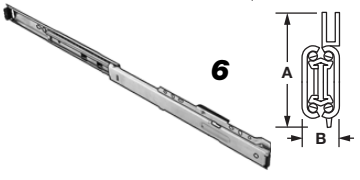

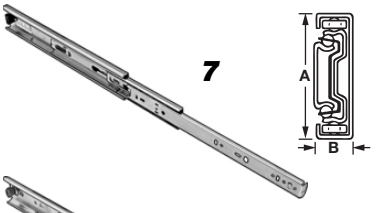

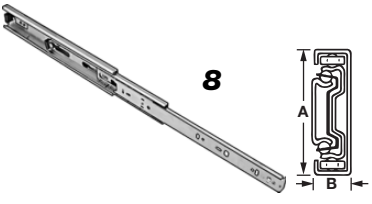

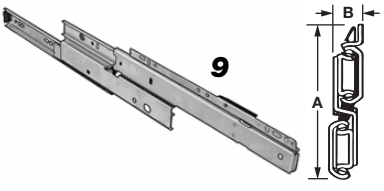

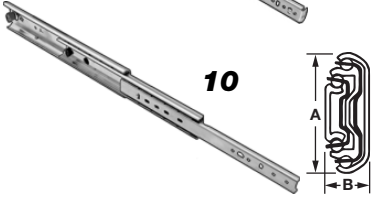

The ball bearings and raceways (where ball bearings travel) are manufactured to tight tolerances, ensuring smooth drawer movement. Slides are made from zinc-plated, cold-rolled steel. They have positive stop, so the drawer won't accidentally disengage from the slide. They also have a hold-in detent that firmly holds the drawer in the closed position. Mount these slides in desks, cabinets, and tool chests. All slides include mounting screws.

5&6 ***Extension Slides with Lift-Out Release—*** The lift-out release feature allows you to simply push in the clip and lift the drawer up and out of the slide.

Style 5 slides are ¾ extension, so the drawer will pull out ¾ the closed length of the slide. Load rating is based on 50,000 cycles of a 12″ wide drawer.

Style 6 slides are full extension, so the drawer will pull out the full closed length of the slide. Load rating is based on 50,000 cycles of a 16″ wide drawer.

7&8 ***Full-Extension Slides with Lever Release—*** Drawer will pull out the full closed length of the slide, except with the 10″ long slide, which has a slightly shorter travel length. Slides have a lever release; just push the lever to release the drawer from the slide. An adjustment lever allows you to vertically adjust the position of the drawer front up to 3/16″. Not for use on drawers that are wider than their length. Load rating is based on 50,000 cycles of a 16″ wide drawer.

Style 8 slides have a hold-open detent to hold the drawer in place when opened—just push firmly on the drawer to close.

9 ***Full-Extension Slides with Lift-Out Release—*** Slides have overtravel (except 22″ long slide), so the drawer will pull out farther than the closed length for easier access to the back of the drawer. The lift-out release feature allows you to simply push in the clip and lift the drawer up and out of the slide. An adjustment lever allows you to vertically adjust the position of the drawer front up to 3/16″. Load rating is based on 50,000 cycles of a 27″ wide drawer.

10 ***Full-Extension Slides without Release—*** Drawer will pull out the full closed length of the slide. Once installed, the drawer cannot be removed without disassembling the slides. Mount on storage drawers in utility and industrial trucks. Load rating is based on 50,000 cycles of a 16″ wide drawer.

	Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
¾-Extension Slides with Lift-Out Release							
5	12″	8″	67	2½″	½″	**11965A131**	$19.60
5	14″	10″	71	2½″	½″	**11965A134**	19.93
5	16″	12″	75	2½″	½″	**11965A133**	20.57
5	18″	14″	75	2½″	½″	**11965A124**	21.20
5	20″	16″	75	2½″	½″	**11965A125**	21.77
5	22″	18″	71	2½″	½″	**11965A126**	22.67
5	24″	20″	67	2½″	½″	**11965A127**	23.50
5	26″	22″	63	2½″	½″	**11965A132**	24.40
5	28″	24″	59	2½″	½″	**11965A128**	25.27
Full-Extension Slides with Lift-Out Release							
6	8″	8″	50	1⅝″	½″	**11965A171**	26.20
6	10″	10″	57	1⅝″	½″	**11965A19**	26.22
Full-Extension Slides with Lever Release							
7	10″	9 37/64″	50	1 51/64″	½″	**11435A11**	15.79
7	12″	12″	71	1 51/64″	½″	**11435A12**	15.79
7	14″	14″	75	1 51/64″	½″	**11435A13**	16.11
7	16″	16″	100	1 51/64″	½″	**11435A14**	16.57
7	18″	18″	100	1 51/64″	½″	**11435A25**	17.00
7	20″	20″	100	1 51/64″	½″	**11435A26**	17.68
7	22″	22″	100	1 51/64″	½″	**11435A27**	18.82
7	24″	24″	96	1 51/64″	½″	**11435A28**	20.57
7	26″	26″	92	1 51/64″	½″	**11435A29**	21.39
7	28″	28″	88	1 51/64″	½″	**11435A31**	23.04
Full-Extension Hold-Open Slides with Lever Release							
8	12″	12″	71	1 51/64″	½″	**1057A42**	18.21
8	14″	14″	75	1 51/64″	½″	**1057A43**	18.57
Full-Extension Hold-Open Slides with Lever Release (Cont.)							
8	16″	16″	100	1 51/64″	½″	**1057A44**	$19.00
8	18″	18″	100	1 51/64″	½″	**1057A45**	19.46
8	20″	20″	100	1 51/64″	½″	**1057A46**	20.14
8	22″	22″	100	1 51/64″	½″	**1057A47**	21.32
8	24″	24″	96	1 51/64″	½″	**1057A48**	23.07
8	26″	26″	92	1 51/64″	½″	**1057A49**	23.93
8	28″	28″	88	1 51/64″	½″	**1057A51**	25.61
Full-Extension Slides with Lift-Out Release							
9	12″	12 17/64″	142	3 51/64″	½″	**17165A29**	30.36
9	14″	14 7/32″	146	3 51/64″	½″	**17165A31**	31.64
9	16″	16 5/32″	150	3 51/64″	½″	**17165A32**	29.43
9	18″	18 7/64″	150	3 51/64″	½″	**17165A33**	31.93
9	20″	20 1/32″	146	3 51/64″	½″	**17165A34**	33.86
9	22″	21 61/64″	142	3 51/64″	½″	**17165A35**	35.75
9	24″	24 25/64″	138	3 51/64″	½″	**17165A36**	41.14
9	26″	26 21/64″	134	3 51/64″	½″	**17165A37**	43.04
9	28″	28 17/64″	130	3 51/64″	½″	**17165A38**	45.61
Full-Extension Slides without Release							
10	12″	12″	273	2 3/32″	¾″	**1277A78**	54.46
10	14″	14″	267	2 3/32″	¾″	**1277A79**	57.32
10	16″	16″	261	2 3/32″	¾″	**1277A81**	53.46
10	18″	18″	253	2 3/32″	¾″	**1277A82**	58.54
10	20″	20″	244	2 3/32″	¾″	**1277A83**	62.36
10	22″	22″	233	2 3/32″	¾″	**1277A84**	66.18
10	24″	24″	220	2 3/32″	¾″	**1277A85**	69.96
10	26″	26″	203	2 3/32″	¾″	**1277A86**	73.82
10	28″	28″	182	2 3/32″	¾″	**1277A89**	78.86

Type 304 Stainless Steel Side-Mount Precision Drawer Slides

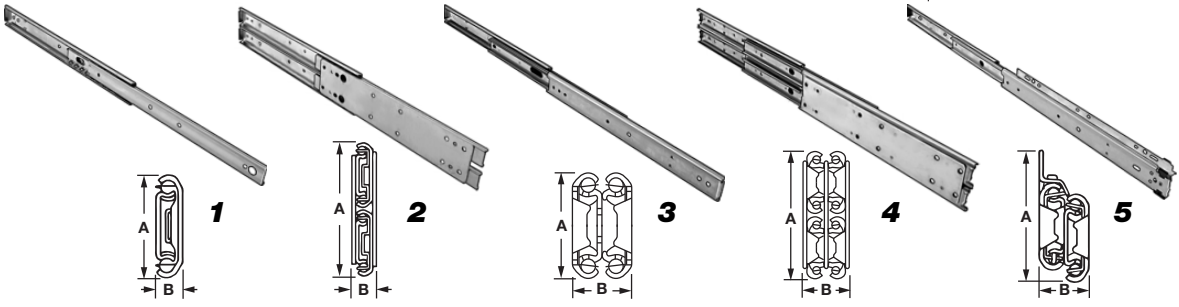

Made entirely from Type 304 stainless steel, these corrosion-resistant slides are often used on file cabinets and medical carts as well as in laboratories and damp environments. All have a dull finish. The ball bearings and raceways (where the ball bearings travel) are manufactured to tight tolerances to ensure smooth, quiet operation. Retainers keep ball bearings in place. Slides have a positive stop, so the drawer won't accidentally disengage from the slide (except *Style 1* slides, which have a friction stop that gradually stops the slide in the open position).

Slides come with installation instructions. Mounting screws not included. Load rating is based on 50,000 cycles of a 24″ wide drawer.

1&2 ***3/4-Extension Slides—*** Drawer will pull out approximately 3/4 the closed length of the slide.

Style 1 slides have friction release; firmly pull the drawer straight out of the slides. Each pair of slides requires 26 #8 pan head screws for installation, except for the 12″-16″ long slides, which require 22 screws.

Style 2 slides do not have a release. Once installed, the drawer cannot be removed without disassembling the slides. Each pair of slides requires 32 #8 pan head screws for installation, except for the 12″ long slides, which require 28 screws.

3&4 ***Full-Extension Slides without Release—*** Slides have overtravel, so you can pull the drawer out farther than the closed length for easier access to the back of the drawer. Once installed, the drawer cannot be removed without disassembling the slides.

Style 3 slides require 22 #8 pan head screws per pair for installation, except for the 12″-16″ long slides, which require 20 screws.

Style 4 slides are recommended for heavily loaded drawers. Each pair of slides requires 40 #8 pan head screws for installation, except for the 12″-16″ long slides, which require 32 screws.

5 ***Full-Extension Slides with Button Release—*** These slides have overtravel, so you can pull the drawer out farther than the closed length for easier access to the back of the drawer. To remove the drawer from the slides, simply push the release button. Each pair of slides requires 22 #8 pan head screws for installation, except for the 12″-16″ long slides, which require 20 screws.

	Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
3/4-Extension Slides with Friction Release							
1	12″	9″	107	1 3/8″	3/8″	12155A22	$29.14
1	14″	11″	103	1 3/8″	3/8″	12155A24	32.34
1	16″	12″	94	1 3/8″	3/8″	12155A26	35.65
1	18″	13″	90	1 3/8″	3/8″	12155A28	38.33
1	20″	15″	81	1 3/8″	3/8″	12155A31	38.86
1	22″	16″	74	1 3/8″	3/8″	12155A32	45.41
1	24″	17″	66	1 3/8″	3/8″	12155A34	48.67
1	26″	19″	59	1 3/8″	3/8″	12155A36	59.23
1	28″	20″	55	1 3/8″	3/8″	12155A38	62.94
3/4-Extension Slides without Release							
2	12″	8 23/32″	251	2 51/64″	1/2″	12805A22	108.51
2	18″	13 23/32″	224	2 51/64″	1/2″	12805A28	150.83
2	20″	14 7/32″	218	2 51/64″	1/2″	12805A31	164.34
2	22″	16 23/32″	207	2 51/64″	1/2″	12805A32	177.20
2	24″	17 23/32″	196	2 51/64″	1/2″	12805A34	197.81
2	28″	19 23/32″	176	2 51/64″	1/2″	12805A38	221.09
Full-Extension Slides without Release							
3	12″	12 9/16″	176	1 3/8″	3/4″	13875A51	40.99
3	14″	14 9/16″	169	1 3/8″	3/4″	13875A52	45.93
3	16″	16 9/16″	160	1 3/8″	3/4″	13875A53	50.81
3	18″	18 9/16″	149	1 3/8″	3/4″	13875A54	55.82
3	20″	20 9/16″	143	1 3/8″	3/4″	13875A55	60.77
3	22″	22 9/16″	129	1 3/8″	3/4″	13875A56	65.71

	Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
Full-Extension Slides without Release (Cont.)							
3	24″	24 9/16″	114	1 3/8″	3/4″	13875A57	$70.66
3	26″	26 9/16″	105	1 3/8″	3/4″	13875A58	74.24
3	28″	28 9/16″	90	1 3/8″	3/4″	13875A59	80.61
4	12″	12 9/16″	599	2 51/64″	15/16″	12555A22	184.58
4	14″	14 9/16″	590	2 51/64″	15/16″	12555A24	211.70
4	16″	16 9/16″	570	2 51/64″	15/16″	12555A26	233.73
4	18″	18 9/16″	550	2 51/64″	15/16″	12555A28	256.68
4	20″	20 9/16″	530	2 51/64″	15/16″	12555A31	290.14
4	22″	22 9/16″	504	2 51/64″	15/16″	12555A32	304.75
4	24″	24 9/16″	475	2 51/64″	15/16″	12555A34	324.34
4	26″	26 9/16″	440	2 51/64″	15/16″	12555A36	354.23
4	28″	28 9/16″	400	2 51/64″	15/16″	12555A38	376.69
Full-Extension Slides with Button Release							
5	12″	13 3/32″	143	2 5/32″	49/64″	12345A22	66.30
5	14″	15 3/32″	134	2 5/32″	49/64″	12345A24	73.55
5	16″	17 3/32″	134	2 5/32″	49/64″	12345A26	80.80
5	18″	19 3/32″	123	2 5/32″	49/64″	12345A28	88.22
5	20″	21 3/32″	114	2 5/32″	49/64″	12345A31	95.53
5	22″	23 3/32″	114	2 5/32″	49/64″	12345A32	102.84
5	24″	25 3/32″	105	2 5/32″	49/64″	12345A34	115.52
5	26″	27 3/32″	94	2 5/32″	49/64″	12345A36	117.57
5	28″	29 3/32″	94	2 5/32″	49/64″	12345A38	125.99

Steel Side-Mount Self-Closing Drawer Slides

When the drawer approaches the closed position, these slides automatically pull the drawer closed and hold it firmly in place. Ideal for use on desks and cabinets. Mounting screws are included.

6 ***3/4-Extension Side/Rear-Mount Drawer Slides with Lift-Out Release—*** Drawer will pull out 3/4 the closed length of the slide. The lift-out release feature allows you to lift the drawer up and out of the slides. You can also mount the slides to the rear wall of a cabinet instead of the side wall (requires two brackets, sold individually below). Slides are steel with a white epoxy finish. Rollers are plastic for quiet operation. Load rating is based on 50,000 drawer cycles.

7 ***Full-Extension Side-Mount Drawer Slides with Lever Release—*** Drawer will pull out the full closed length of the slide. To remove the drawer from the slides, simply push the lever. Slides are made of zinc-plated steel. They have ball bearings for smooth operation and retainers to keep ball bearings in place. Load rating is based on 50,000 cycles of a 16″ wide drawer.

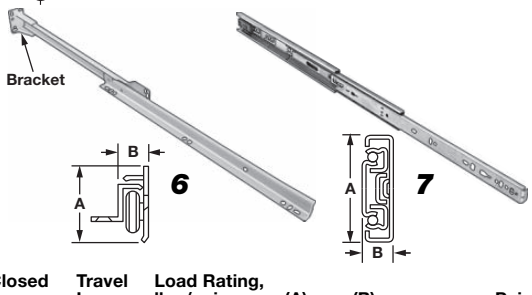

	Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
3/4-Extension Side/Rear-Mount Slides with Lift-Out Release							
6	16″	12″	55	1 1/8″	1/2″	14325A74	$7.36
6	18″	13 1/2″	55	1 1/8″	1/2″	14325A66	8.26
6	20″	15″	55	1 1/8″	1/2″	14325A68	8.53
6	22″	16 1/2″	55	1 1/8″	1/2″	14325A71	8.68
Optional Rear-Wall Mounting Bracket for Style 6						14325A81	Each $1.43
Full-Extension Side-Mount Slides with Lever Release							Pair
7	12″	11 1/4″	85	1 51/64″	1/2″	2712A2	$17.32
7	14″	14″	90	1 51/64″	1/2″	2712A3	17.68

	Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
Full-Extension Side-Mount Slides with Lever Release (Cont.)							
7	16″	16″	95	1 51/64″	1/2″	2712A4	$18.11
7	18″	18″	100	1 51/64″	1/2″	2712A5	18.57
7	20″	20″	95	1 51/64″	1/2″	2712A6	19.25
7	22″	22″	90	1 51/64″	1/2″	2712A7	20.43
7	24″	24″	85	1 51/64″	1/2″	2712A8	22.18
7	26″	26″	80	1 51/64″	1/2″	2712A9	23.00

Side-Mount Lock-Open Precision Drawer Slides

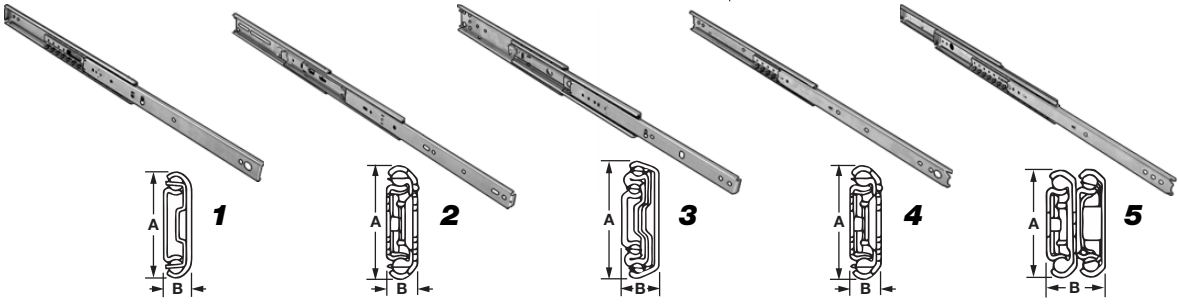

Use the levers or buttons on these slides to lock them in the open position, firmly holding your drawer in place for easy access to contents. To release the lock, simply push the levers or buttons on both sides. Continue applying pressure to the levers or buttons to release the drawer from the slides. The ball bearings and raceways (where ball bearings travel) are manufactured to tight tolerances to ensure smooth, quiet operation. Slides have retainers to keep ball bearings in place.

Full-extension slides have overtravel, so you can pull the drawer out farther than the closed length for easier access to the back of the drawer.

Steel

You can mount these slides to vertical rails in electronics racks and enclosures with the rail-mounting brackets (sold separately, unless noted). Slides have a zinc-plated finish. Ball bearings are steel. Mounting screws are included. Load rating is based on 10,000 cycles of a 16″ wide drawer (unless noted).

	Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
3/4-Extension Slides							
1	12″	8″	140	1 3/8″	3/8″	63835A31	$47.36
1	14″	10″	130	1 3/8″	3/8″	63835A32	48.30
1	16″	12″	120	1 3/8″	3/8″	63835A33	49.77
1	18″	13″	110	1 3/8″	3/8″	63835A34	51.29
1	20″	15″	92	1 3/8″	3/8″	63835A35	52.77
1	22″	16″	85	1 3/8″	3/8″	63835A36	54.87
1	24″	17″	78	1 3/8″	3/8″	63835A37	57.02
1	26″	19″	70	1 3/8″	3/8″	63835A38	59.13
1	28″	20″	60	1 3/8″	3/8″	63835A39	61.23
Narrow-Width, Full-Extension Slides with Overtravel ♦							
2	12″	14″	60	1 5/8″	3/8″	2005A1	68.13
2	16″	18″	100	1 5/8″	3/8″	2005A3	72.23
2	18″	20″	115	1 5/8″	3/8″	2005A4	74.03
2	22″	24″	112	1 5/8″	3/8″	2005A6	77.57
2	24″	26″	110	1 5/8″	3/8″	2005A7	79.37
2	28″	30″	110	1 5/8″	3/8″	2005A9	82.87
Full-Extension Slides with Overtravel							
3	12″	13″	150	2″	1/2″	63835A41	59.97
3	14″	15″	148	2″	1/2″	63835A42	62.84
3	16″	17″	147	2″	1/2″	63835A43	64.97
3	18″	19″	146	2″	1/2″	63835A44	67.06
3	20″	21″	145	2″	1/2″	63835A45	69.23
3	22″	23″	140	2″	1/2″	63835A46	71.35
3	24″	25″	135	2″	1/2″	63835A47	73.48
3	26″	27″	127	2″	1/2″	63835A48	75.65
3	28″	29″	120	2″	1/2″	63835A49	77.77

♦ Load ratings are based on 2,000 drawer cycles. Rail-mounting brackets included.

Type 304 Stainless Steel

Made entirely of Type 304 stainless steel, these slides are great anywhere corrosion is a concern. All have a dull finish and require up to 15 #8 mounting screws (not included). Load rating is based on 50,000 drawer cycles.

	Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
3/4-Extension Slides							
4	12″	9″	107	1 3/8″	3/8″	67995A71	$46.88
4	14″	11″	103	1 3/8″	3/8″	67995A72	51.58
4	16″	12″	94	1 3/8″	3/8″	67995A73	56.44
4	18″	13″	90	1 3/8″	3/8″	67995A74	61.10
Full-Extension Slides with Overtravel							
5	20″	21 7/32″	106	1 3/8″	3/4″	67995A65	142.91
5	22″	23 7/32″	99	1 3/8″	3/4″	67995A66	152.80
5	24″	25 7/32″	92	1 3/8″	3/4″	67995A67	161.39
5	28″	29 7/32″	79	1 3/8″	3/4″	67995A69	184.38

Optional Rail-Mounting Brackets for Steel Slides

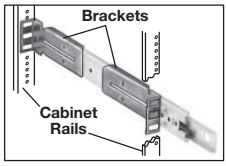

Use these brackets to mount slides on vertical rails (such as those found in electronics racks). The brackets fit over the slide and attach to the rail. One set of brackets includes two front brackets, two back brackets, bar nuts, and mounting screws—everything you need to mount one pair of slides.

		Set
For Style 1 Slides	63835A62	$22.34
For Style 3 Slides	63835A64	22.34

Aluminum Side-Mount Precision Drawer Slides

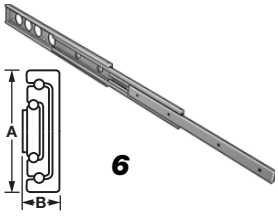

Made of aluminum, these slides are ideal for applications requiring light weight and high strength. They have ball bearings and raceways (where ball bearings travel) that are manufactured to tight tolerances to ensure smooth, quiet operation. Slides have full extension, so you can pull the drawer out the full closed length of the slide. Mounting screws not included. Load rating is based on 10,000 drawer cycles.

Style 6— Made of aircraft-grade anodized aluminum, these slides have Type 440 stainless steel ball bearings and anodized aluminum raceways. They have a lever release; just push the lever to release the drawer from the slide. Require up to 19 #8 flat head screws.

Style 7— Built for extreme loads, these slides have anodized aluminum rails and steel wheels with a double row of steel ball bearings that travel in steel raceways. To release the drawer from the slides, remove the end stop and slide drawer out of the track. Slides require up to 40 1/4″ flat head cap screws.

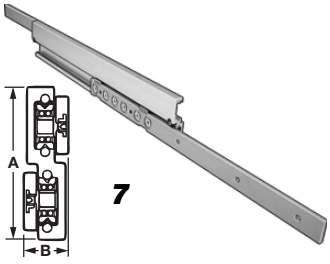

	Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
6	6″	6″	105	1 37/64″	3/8″	1694A11	$108.65
6	8″	8″	105	1 37/64″	3/8″	1694A12	120.10
6	10″	10″	110	1 37/64″	3/8″	1694A13	131.55
6	12″	12″	120	1 37/64″	3/8″	1694A14	139.84
6	14″	14″	115	1 37/64″	3/8″	1694A15	150.97
6	16″	16″	115	1 37/64″	3/8″	1694A16	158.94
6	20″	20″	100	1 37/64″	3/8″	1694A18	197.19
7	24″	24″	826	4 7/16″	1 1/8″	14335A82	854.72
7	36″	36″	881	4 7/16″	1 1/8″	14335A83	1,204.17
7	48″	48″	913	4 7/16″	1 1/8″	14335A64	1,355.28

Base-Mount Precision Drawer Slides

Because these slides mount to the base of your drawer or shelf, they're ideal when you don't have enough clearance for side-mount slides. Slides have ball bearings and raceways (where ball bearings travel) that are manufactured to tight tolerances to ensure smooth movement. Retainers keep ball bearings in place. Load rating is based on a drawer with a service life of 50,000 cycles.

3/4-Extension Slides— Mount one slide to the underside of the drawer, along the drawer's centerline. Drawer will pull out 3/4 the closed length of the slide. Slides have a friction stop that gradually stops the slides in the open position. To release the drawer, firmly pull the drawer straight out of the slides. Made entirely of Type 304 stainless steel with a dull finish. Each slide requires up to seven #8 pan head mounting screws (not included).

Full-Extension Slides— Slides have overtravel, so you can pull the drawer out farther than the closed length for easier access to the back of the drawer. Slides can also be mounted directly to the floor. Once installed, the drawer cannot be removed without disassembling the slides. *Steel* slides have a zinc-plated finish, steel ball bearings, steel raceways, and a hold-in detent that holds drawer in the closed position. Mounting screws are included. *Type 304 stainless steel* slides have a dull finish, steel ball bearings, and Type 304 stainless steel raceways. A cap at the end stops travel. Each slide requires up to 40 #8 mounting screws (not included).

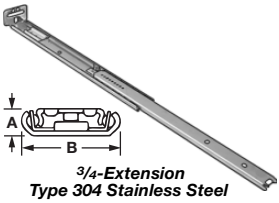

3/4-Extension
Type 304 Stainless Steel

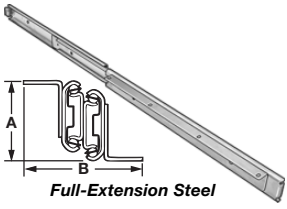

Full-Extension Steel

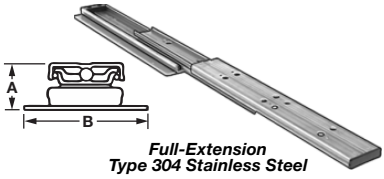

Full-Extension
Type 304 Stainless Steel

Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Each
3/4-Extension Slides— *Type 304 Stainless Steel*						
12 3/4″	8 1/2″	18●	3/8″	1 3/8″	1265A22	$23.94
14 3/4″	10 1/2″	17●	3/8″	1 3/8″	1265A24	26.23
16 3/4″	12″	15●	3/8″	1 3/8″	1265A26	28.55
18 3/4″	12 1/2″	15●	3/8″	1 3/8″	1265A28	35.64
20 3/4″	14 1/2″	14●	3/8″	1 3/8″	1265A31	33.46
22 3/4″	16 1/2″	13●	3/8″	1 3/8″	1265A32	40.86
24 3/4″	17 1/2″	12●	3/8″	1 3/8″	1265A34	38.64
26 3/4″	19 1/2″	11●	3/8″	1 3/8″	1265A36	44.60
Full-Extension Slides— *Steel*						**Pair**
14″	14 53/64″	148	1 35/64″	2 1/4″	15765A11	$64.28
16″	16 53/64″	140	1 35/64″	2 1/4″	15765A12	57.29
18″	18 53/64″	130	1 35/64″	2 1/4″	15765A13	58.65

●Load rating is for one slide.

Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
Full-Extension Slides— *Steel (Cont.)*						
20″	20 53/64″	122	1 35/64″	2 1/4″	15765A14	$60.07
22″	22 53/64″	113	1 35/64″	2 1/4″	15765A25	62.41
24″	24 53/64″	104	1 35/64″	2 1/4″	15765A26	73.62
26″	26 53/64″	95	1 35/64″	2 1/4″	15765A27	85.97
28″	28 53/64″	85	1 35/64″	2 1/4″	15765A28	89.10
Full-Extension Slides— *Type 304 Stainless Steel*						
11 13/16″	13 7/32″	104	1 1/16″	2 29/32″	10845A41	272.00
15 3/4″	17 5/32″	99	1 1/16″	2 29/32″	10845A42	308.47
19 11/16″	21 3/32″	93	1 1/16″	2 29/32″	10845A43	398.22
23 5/8″	25 1/32″	88	1 1/16″	2 29/32″	10845A44	492.44
31 1/2″	32 29/32″	71	1 1/16″	2 29/32″	10845A45	617.39
39 3/8″	40 25/32″	55	1 1/16″	2 29/32″	10845A46	723.40

Steel High-Capacity Precision Drawer Slides

Mount these high-capacity slides onto storage drawers for heavy tools and equipment as well as onto access drawers for batteries and generators. Made of steel, slides have steel ball bearings and steel raceways (where ball bearings travel) that are manufactured to tight tolerances to ensure smooth movement. Retainers keep ball bearings in place. All slides are full extension, so the drawer will pull out the full closed length of the slide. Once installed, the drawer cannot be removed without disassembling the slides. Require up to 34 mounting screws (not included); use 1/4″ hex head cap screws with max. head size of 1/2″ Wd.×0.19″ Ht. for clearance. Load rating is based on a drawer with a service life of 10,000 cycles.

Dual-Mount Slides— Side mount or base mount these slides.

Side-Mount Slides with Lock-Open/Closed— For side mounting. Fully open or close these slides and they lock in position. To release the lock, push the lever on the right-hand slide.

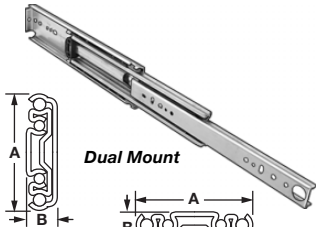

Dual Mount

Side Mount

Base Mount

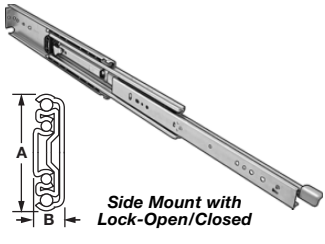

Side Mount with Lock-Open/Closed

Closed Lg.	Travel Lg.	Load Rating, lbs./pair: Vehicle Mounted	Load Rating, lbs./pair: Not Vehicle Mounted	(A)	(B)	Dual Mount	Pair	Side Mount with Lock-Open/Closed	Pair
14″	14″	280	400	3″	3/4″	1102A63	$75.34	6603A43	$92.91
16″	16″	300	450	3″	3/4″	1102A64	81.93	6603A44	99.74
18″	18″	300	500	3″	3/4″	1102A65	88.90	6603A45	108.18
20″	20″	300	500	3″	3/4″	1102A66	94.17	6603A46	114.11
22″	22″	300	500	3″	3/4″	1102A67	102.10	6603A47	123.02
24″	24″	300	500	3″	3/4″	1102A68	112.34	6603A48	134.53
26″	26″	300	500	3″	3/4″	1102A69	119.97	6603A49	143.09
28″	28″	300	500	3″	3/4″	1102A71	127.21	6603A51	151.26
30″	30″	300	480	3″	3/4″	1102A72	137.14	6603A52	162.42
32″	32″	300	500	3″	3/4″	1102A73	147.69	6603A53	174.32
36″	36″	300	460	3″	3/4″	1102A75	163.24	6603A55	191.79
40″	40″	290	440	3″	3/4″	1102A76	195.62	6603A56	228.25
48″	48″	280	400	3″	3/4″	1102A78	270.60	6603A58	314.46
60″	60″	280	350	3″	3/4″	1102A79	368.42	6603A59	424.49

■ When dual-mount slides are base mounted in nonvehicular applications, the load capacity is 1/3 of the listed capacity. Dual-mount slides are not for base mounting in vehicular applications.

Steel Under-the-Counter Mount Precision Drawer Slides

Install these slides directly to the underside of countertops, desktops, shelves, and tables. Made from zinc-plated steel, slides are 3/4 extension, so the drawer pulls out 3/4 the closed length of the slide. Slides have steel ball bearings and steel raceways (where ball bearings travel) that are manufactured to tight tolerances to ensure smooth movement. Retainers keep ball bearings in place. All have a lever release (push the lever to release the drawer from the slide) and hold-in and hold-open detents that firmly hold the drawer in the closed and open positions. Slides include mounting screws and adjustable-height mounting brackets that are reversible for inward and outward mounting. Load rating is based on a 16″ wide drawer with a service life of 50,000 cycles.

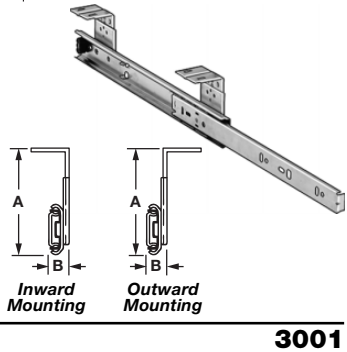

Inward Mounting

Outward Mounting

Closed Lg.	Travel Lg.	Load Rating, lbs./pair	(A)	(B)		Pair
12″	8 5/64″	60	2 7/16″-3 3/4″	21/32″	11675A41	$20.55
14″	10 1/4″	65	2 7/16″-3 3/4″	21/32″	11675A42	20.84
16″	11 3/64″	70	2 7/16″-3 3/4″	21/32″	11675A43	21.05
18″	13 1/64″	75	2 7/16″-3 3/4″	21/32″	11675A44	21.32
20″	14 51/64″	70	2 7/16″-3 3/4″	21/32″	11675A45	21.81
22″	16 11/32″	65	2 7/16″-3 3/4″	21/32″	11675A46	22.50
24″	17 47/64″	60	2 7/16″-3 3/4″	21/32″	11675A47	25.39
26″	19 13/64″	55	2 7/16″-3 3/4″	21/32″	11675A48	27.27

Brackets

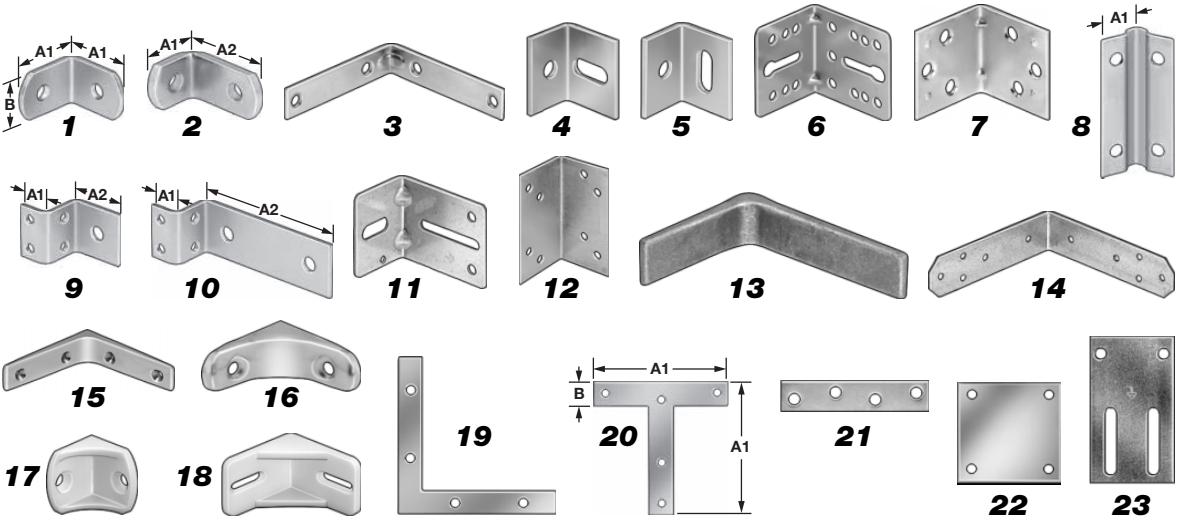

Also known as angle brackets and mending plates, these brackets strengthen and support corners and joints. The angle brackets (Styles 1-18) have 90° corners. Mounting screws are not included, unless noted. ***Style 9*** and ***Style 10*** have a 1⅛″ offset, except 1030A11, which has a ⅞″ offset.

	Length (A1), (A2)	Wd. (B)	Thick.	Screw Size	No. of Holes		Each♣
Zinc-Plated Steel							
1	⅞″	⅝″	0.078″	#8	2	**1556A24**	$0.35
2	11/16″, 1″	½″	0.118″	#8	2	**1556A26**	.51
3	1″	½″	0.070″	#7	2	**1556A61**	.33
3	1½″	⅝″	0.080″	#7	4	**1556A63**	.41
3	2″	⅝″	0.080″	#8	4	**1556A54**	.47
3	2½″	⅝″	0.100″	#8	4	**1556A55**	.62
3	3″	¾″	0.110″	#9	4	**1556A36**	.71
3	3½″	¾″	0.120″	#9	4	**1556A37**	.80
3	4″	⅞″	0.120″	#10	4	**1556A17**	1.18
3	5″	1″	0.160″	#10	6	**1556A39**	1.83
3	6″	1⅛″	0.190″	#12	6	**1556A49**	2.37
3	8″	1¼″	0.220″	#12	6	**1556A21**	7.60
3	10″	1¼″	0.250″	#12	8	**1556A22**	7.10
Galvanized Steel							
3	1″	½″	0.072″	#6	2	**1556A41**	.74
3	1½″	½″	0.072″	#6	4	**1556A42**	.95
3	2″	⅝″	0.072″	#6	4	**1556A43**	1.03
3	2½″	19/32″	0.090″	#6	4	**1556A44**	1.24
3	3″	23/32″	0.104″	#8	4	**1556A45**	2.45
3	4″	⅞″	0.125″	#10	4	**1556A46**	4.20
3	5″	31/32″	0.160″	#10	6	**1556A47**	4.00
3	6″	1⅛″	0.176″	#12	6	**1556A48**	6.13
Polished Type 304 Stainless Steel—*NSF Certified*							
3	1 7/32″	15/32″	0.098″	#4	4	**19155A34**★	4.82
3	1 13/16″	33/64″	0.118″	#4	4	**19155A36**★	5.70
3	2 13/32″	19/32″	0.118″	#6	4	**19155A38**★	7.22
Nickel-Plated Steel							
4	43/64″, 53/64″	63/64″	0.059″	#6	2●	**15275A51**	.57
5	43/64″, 53/64″	63/64″	0.059″	#6	2●	**15275A53**	.84
6	1 25/32″, 2 11/64″	1 31/32″	0.079″	#8	17▲	**15275A57**	1.97
Zinc-Plated Steel							
7	1½″	1½″	0.070″	#8	6	**17715A43**	.64
7	2″	1½″	0.070″	#8	6	**17715A44**	.97
7	2½″	1½″	0.070″	#8	6	**17715A45**	1.18
8	1″	2″	0.040″	#8	4	**1556A51**	.63
8	1″	3″	0.040″	#8	4	**1556A52**	1.97
9	¾″, 1 29/64″	1½″	0.125″	¼″, ⅜″	5	**1030A11**	1.17
9	¾″, 1½″	1½″	0.125″	¼″, ⅜″	5	**1030A12**	1.24
10	1″, 4″	1½″	0.125″	¼″, ⅜″	6	**1030A13**	2.50
Galvanized Steel							
11	1 59/64″, 2 25/64″	2⅜″	0.097″	¼″, 5/16″	5▲	**15275A63**	1.61
11	1 59/64″, 3″	2⅜″	0.097″	¼″, 5/16″	5▲	**15275A64**	1.84
11	1 59/64″, 3½″	2⅜″	0.097″	¼″, 5/16″	5▲	**15275A66**	2.02
Galvanized Steel—*For use with nails*							
12	1 7/16″	2¾″	0.052″	10d ♦	8	**17715A73**	2.27
12	2⅝″	2″	0.108″	16d ♦	6	**17715A11**	4.59
12	3⅝″	2″	0.108″	16d ♦	8	**17715A66**	3.96
Plain Steel—*Weld-On*							
13	6″, 8″	1½″	0.312″	—	—	**11765A11**	26.22
13	6″, 8″	2″	0.312″	—	—	**11765A12**	14.64
13	12″	1¼″	0.453″	—	—	**11765A13**	29.06
13	12″	1½″	0.344″	—	—	**11765A14**	40.81
Galvanized Steel—*For use with nails*							
14	3 1/16″	1¼″	0.108″	16d ♦	8	**17715A67**	$3.98
14	4 13/16″	1¼″	0.108″	16d ♦	10	**17715A68**	4.11
14	6 9/16″	1¼″	0.108″	16d ♦	12	**17715A12**	7.88
14	8 5/16″	1¼″	0.108″	16d ♦	14	**17715A13**	9.14
Polished Brass							
15	1⅜″	35/64″	0.118″	#4	4	**11765A61**★	25.87
15	1 25/32″	19/32″	0.118″	#4	4	**11765A62**★	29.59
15	2 23/64″	43/64″	0.157″	#6	4	**11765A63**★	35.70
15	3 5/32″	¾″	0.157″	#6	4	**11765A64**★	42.79
Polished Copper-Finish Steel							
16	1⅜″	¾″	0.030″	#8	2	**1564A1**	.94
16	2 1/16″	¾″	0.045″	#9	2	**1564A2**	1.50
White Polyethylene—*Not rated for temperature*							
17	29/32″	15/16″	0.137″	#8	2	**13135A59**	.28
18	1½″	1″	0.140″	#8	2▲	**13135A61**	.33
Galvanized Steel							
19	12″	2″	0.078″	½″	4	**1558A25**	15.10
Zinc-Plated Steel							
19	1½″	⅜″	0.065″	#5	4	**1558A11**	.51
19	2″	⅜″	0.065″	#5	4	**1558A12**	.54
19	2½″	½″	0.065″	#6	4	**1558A14**	.71
19	3″	½″	0.065″	#6	4	**1558A15**	.83
19	3½″	⅝″	0.072″	#8	4	**1558A16**	.91
19	4″	⅝″	0.072″	#8	4	**1558A19**	1.14
19	5″	⅞″	0.072″	#8	4	**1558A21**	1.57
19	6″	1″	0.077″	#9	6	**1558A23**	1.98
20	2½″	½″	0.072″	#7	5	**1555A1**	1.07
20	3″	⅝″	0.072″	#8	5	**1555A2**	1.47
20	4″	¾″	0.072″	#8	5	**1555A3**	2.20
20	5″	1″	0.072″	#9	5	**1555A4**	3.96
21	1½″	½″	0.062″	#5	2	**1394A23**	.70
21	2″	½″	0.070″	#7	2	**1394A31**	.27
21	3″	⅝″	0.080″	#7	4	**1394A45**	.58
21	3″	1″	0.180″	¼″	2	**1030A4**	1.46
21	4″	⅝″	0.080″	#8	4	**1394A34**	.49
21	5″	⅝″	0.100″	#8	4	**1394A35**	.69
21	6″	¾″	0.110″	#9	4	**1394A36**	.83
21	8″	⅞″	0.136″	#10	4	**1394A37**	1.55
21	10″	1″	0.160″	#12	6	**1394A18**	2.27
21	12″	1⅛″	0.190″	#12	6	**1394A41**	2.27
22	1 31/32″	1 31/32″	0.059″	#10	4	**1030A15**	1.14
22	4″	4″	0.180″	⅜″	4	**1030A5**	7.12
22	5½″	5½″	0.180″	⅜″	4	**1030A6**	9.21
Galvanized Steel							
23	2⅜″	3 23/32″	0.097″	¼″	4▲	**15275A71**	1.44
23	2⅜″	4 7/32″	0.097″	¼″	4▲	**15275A72**	1.67
23	2⅜″	4 23/32″	0.097″	¼″	4▲	**15275A73**	1.90

★ Furnished with mounting screws. ● Includes one mounting slot. ▲ Includes two mounting slots. ♦ Refers to common nail size.
♣ Prices are approximately 25% lower when you buy in quantities of 50 or more.

Heavy Duty Steel Brackets

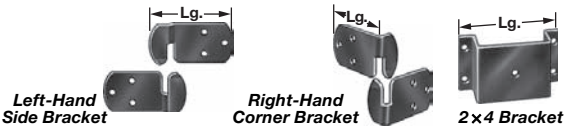

Left-Hand Side Bracket — *Right-Hand Corner Bracket* — *2×4 Bracket*

You'll find these steel brackets on truck racks, removable gates, knockdown crates, and fence sections. Mount with 5/16″ dia. screws (not included).

Side and ***Corner Brackets***—Each set has a top and bottom piece. Each piece has three mounting holes. All have a black zinc finish. Side brackets are 0.156″ thick. Corner brackets are 0.172″ thick.

2×4 Brackets—Mount on standard wood 2×4s. Brackets are 0.125″ thick and have five mounting holes. *Plain finish* bracket can also be welded.

	Lg. × Ht.	Left Hand Set		Right Hand Set	
Side Brackets	5 1/8″ × 2 1/2″	18445A42	$7.79	18445A41	$7.79
Corner Brackets	4″ × 2 1/2″	18445A52	7.79	18445A51	7.79

	Lg. × Ht. × Proj.	Plain Each		Black Each	
2×4 Brackets	5 1/2″ × 3″ × 1 5/8″	18725A61	$5.50	18725A62	$5.50

Heavy Duty Stainless Steel Brackets

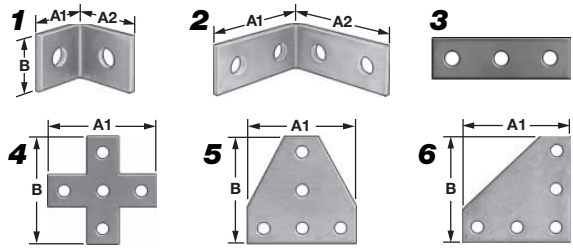

Made of Type 304 stainless steel, these thick brackets stand up to demanding applications and wet and corrosive environments. All are also compatible with 1 5/8″ wide strut channel. Use strut channel nuts (not included, see page 1551) to connect strut channels to each other.

Style 1 and ***Style 2*** have a 90° corner.

	Length (A1)	Length (A2)	Wd. (B)	Thick.	Mounting Hole Dia.	No. of Holes		
1	2″	1 7/8″	1 5/8″	0.250″	9/16″	2	33125T11	$5.63
2	3 7/8″	3 3/4″	1 5/8″	0.250″	9/16″	4	33125T12	9.88
3	5 3/8″	—	1 5/8″	0.250″	9/16″	3	33125T74	7.13
4	5 3/8″	—	5 3/8″	0.250″	9/16″	5	33125T76	35.22
5	5 3/8″	—	5 3/8″	0.250″	9/16″	5	33125T78	30.33
6	5 3/8″	—	5 3/8″	0.250″	9/16″	5	33125T83	34.94

Heavy Duty Galvanized Steel Brackets

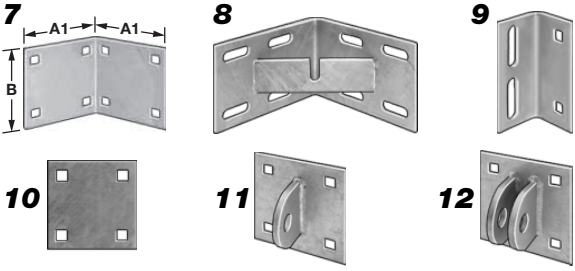

Galvanized steel construction makes these thick brackets a good choice for wet and corrosive environments. They're often used to construct marine docks. Mounting screws not included.

Styles 7, 8, and ***9*** have a 90° corner.

Use a ***Style 11*** bracket with a ***Style 12*** bracket to join marine dock sections or corners; secure with a bolt or pin.

	Lg. (A1)	Wd. (B)	Thick.	Screw Size	No. of Holes		
7	2 1/2″	5 1/4″	0.125″	3/8″	4	1845A31	$8.85
7	5 7/8″	5 1/4″	0.125″	3/8″	8	1845A33	11.93
7	5 7/8″	5 1/4″	0.187″	1/2″	8	1845A34	19.05
7	10″	5 1/4″	0.187″	1/2″	8	1845A35	30.45
8	8 1/4″	5 1/4″	0.187″	1/2″	8	1845A38	36.23
9	2 1/2″	5 1/4″	0.187″	1/2″	4	1845A41	10.35
10	5 1/4″	5 1/4″	0.125″	1/2″	4	1845A45	7.53
11	5 1/4″	5 1/4″	0.187″	1/2″	4	1845A46	16.30
12	5 1/4″	5 1/4″	0.187″	1/2″	4	1845A47	21.18

Set-Your-Own Angle Brackets

Bend these brackets to any angle from 0° to 135°. After the angle is set, it should not be changed. Made of galvanized steel. Mounting fasteners not included.

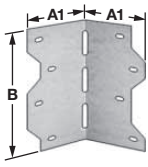

Lg. (A1)	Wd. (B)	Thick.	Nail Size	No. of Holes		
2 1/4″	3 3/8″	0.050″	10d	6	3269A1	$1.76
2 1/4″	4 7/8″	0.049″	10d	8	3269A2	2.55
2 1/4″	6 3/8″	0.048″	10d	10	3269A3	3.27
2 1/4″	7 7/8″	0.049″	10d	12	3269A4	4.21

Load-Rated Angle Brackets

All have a 90° corner. ***Style 13*** and ***Style 14*** come with mounting screws. ***Style 15*** require 10d nails (not included).

Bracket Cap., lbs.	Length (A1)	Length (A2)	Wd. (B)	Thick.	No. of Holes		
Style 13—*Type 304 Stainless Steel with Polished Finish*							
22	5 29/32″	—	25/32″	0.236″	6	15655A76	$36.99
28	4 23/32″	—	25/32″	0.236″	6	15655A74	31.67
37	3 35/64″	—	25/32″	0.236″	6	15655A72	27.22
52	2 3/4″	—	25/32″	0.236″	4	15655A71	23.67
Style 14—*Type 304 Stainless Steel with Dull Finish*							
33	2 23/32″	3 25/64″	19/32″	0.040″	4	15655A21	15.12
44	3 15/16″	4 23/32″	19/32″	0.040″	4	15655A22	18.30
55	5 27/32″	7 7/64″	19/32″	0.049″	6	15655A23	27.61
61	7 27/32″	9 29/64″	23/32″	0.059″	6	15655A24	42.14
77	9 25/64″	11 27/32″	25/32″	0.059″	6	15655A25	49.09
Style 15—*Galvanized Steel*							
65	1 1/2″	—	1 1/4″	0.063″	4	17715A75	1.16
135	1 7/16″	—	2 3/4″	0.052″	8	17715A73♣	2.27

♣ Prices are approximately 25% lower when you buy in quantities of 50 or more.

Panel Hanging Brackets

Perfect for mounting panels and partitions, these brackets are commonly found in washrooms.

Die cast zinc brackets are chrome-plated with a polished finish. ***Stainless steel*** brackets have a dull finish. ***Aluminum*** brackets have a white powder-coated finish.

Styles 16-19 come with mounting screws and one-way security screws. *Style 19* brackets consist of two pieces.

Style 20 require five 5/16″ dia. mounting screws (not included), unless noted.

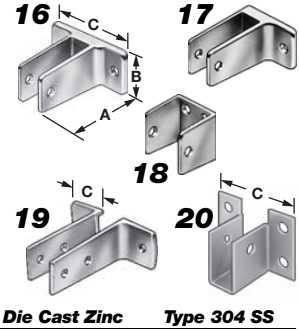

	Max. Panel Thick.■	Bracket Size (A)	(B)	(C)	Die Cast Zinc		Type 304 SS	
16	1/2″	2 1/2″	1 1/2″	2 27/32″	1755A1	$10.48	1755A11	$22.93
16	3/4″	2 1/2″	1 1/2″	3″	1755A31	12.41	1755A71	22.43
16	7/8″	2 1/2″	1 1/2″	3 1/2″	1755A2	11.39	1755A12	24.90
16	1″	2 1/2″	1 1/2″	4″	1755A32	8.77	1755A72	27.48
16	1″	3 1/2″	1 1/2″	4″	1755A33	15.73	—	—
16	1 1/4″	2 1/2″	1 1/2″	4″	1755A34	15.78	1755A73	25.79
16	1 1/4″	3 1/2″	1 1/2″	4″	1755A35	13.97	—	—
17	1/2″	2 1/2″	1 1/2″	1 3/4″	1755A3	9.51	1755A13	25.09
17	3/4″	2 1/2″	1 1/2″	2″	1755A41	11.42	1755A74	23.89
17	7/8″	2 1/2″	1 1/2″	2 1/8″	1755A4	9.70	1755A14	25.47
17	1″	2 1/2″	1 1/2″	2 21/32″	1755A42	11.61	1755A75	21.71
17	1″	3 1/2″	1 1/2″	2 21/32″	1755A5	15.00	—	—
17	1 1/4″	2 1/2″	1 1/2″	2 3/4″	1755A44	10.31	1755A76	22.32
17	1 1/4″	3 1/2″	1 1/2″	2 3/4″	1755A45	17.65	—	—
18	1/2″	1 3/8″	1 3/8″	3/4″	1755A6	7.25	1755A15	15.89
18	3/4″	1 3/8″	1 1/2″	1″	1755A51	8.54	1755A77	16.12
18	7/8″	1 3/8″	1 3/8″	1 5/32″	1755A7	6.43	1755A16	18.74
18	1″	1 3/8″	1 1/2″	1 1/4″	1755A52	4.03	1755A78	14.16
18	1″	2 1/2″	1 1/2″	1 1/4″	1755A8	8.76	—	—
18	1 1/4″	1 3/8″	1 1/2″	1 1/2″	1755A54	7.97	—	—
18	1 1/4″	2 1/2″	1 1/2″	1 1/2″	1755A9	8.80	—	—
19	Any	2 1/2″	1 1/2″	1 1/2″	1755A61	10.43	1755A79	29.47
19	Any	3 1/2″	1 1/2″	1 1/2″	1755A62	13.11	1755A81	27.82
					Aluminum		**Type 436 SS**	
20	1/4″	1 1/2″	2″	2 1/4″	1755A94	$7.48	1755A84♥✓	$4.77
20	1/2″	1 1/2″	2″	2 1/2″	1755A95	7.48	1755A85♥	4.96
20	3/4″	1 1/2″	2″	2 3/4″	1755A96	7.48	1755A86♥✓	5.13

■ Max. thickness of wall or partition between bracket arms.
♥ Requires five 1/4″ dia. mounting screws (not included).
✓ (C) dimension is 2 1/2″.

Steel Corner Protectors and Brackets

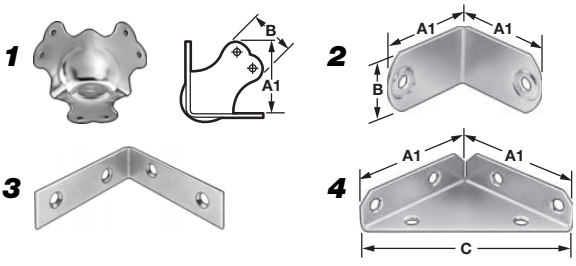

All of these corner protectors and brackets are made of zinc-plated steel. Mounting screws not included. ***Style 1*** ball corner protects the outside corners of wood cases and crates and has dimples to keep crates together when stacked. ***Style 2*** and ***Style 3*** support inside or outside walls. ***Style 4*** thick material provides additional strength to corners.

	(A1)	(B)	(C)	Thick.	Screw Size	No. of Holes		
1	2½″	1 39/64″	—	0.075″	#10	6	15705A34	$2.22
2	1½″	15/16″	—	0.050″	#10	2	15705A45	1.35
3	2⅜″	23/32″	—	0.078″	#8	4	15705A11	.82
4	2″	21/32″	2¾″	0.063″	#8	6	1088A31	1.56
4	3″	49/64″	4¼″	0.070″	#8	6	1088A32	2.27
4	4″	⅞″	5⅝″	0.100″	#8	6	1088A33	3.55

Magnet-Mount Tool Holders

No need for a drill and mounting screws. All of these holders have a nonmarring magnet that you can easily mount and reposition on steel walls, cabinets, and desks. Holders are for gripping round objects.

Style 5 has an adjustable hook-and-loop band to hold cylindrical containers. Base is made of polypropylene. Color is red. Temperature range is 0° to 120° F.

Styles 6-8 have a spring-action steel clip mounted to a corrosion-resistant steel base.

For Tool Dia. Range	Overall Size Wd.	Ht.	Proj.		
Hook and Loop Band					
5 1⅛″ -4″	1⅝″	4⅝″	2″	12205A25	$9.20
Zinc-Plated Steel Clip					
6 ⅜″ - ⅝″	1⅜″	1 13/64″	1⅛″	1777A21	8.58
6 ¾″ -1⅛″	1⅝″	1 13/32″	1 17/32″	1777A22	9.40
6 1″ -1½″	1¾″	1 13/32″	1 17/32″	1777A23	9.48
Black Vinyl-Coated Steel Clip					
6 ⅜″ - ⅝″	1⅜″	1 13/64″	1⅛″	1777A11	9.99
6 ¾″ -1⅛″	1⅝″	1 13/32″	1 17/32″	1777A12	10.80
6 2″ -2½″	2 9/16″	2 1/32″	2 5/16″	1777A13	14.32
7 1½″ -1⅞″	2 1/32″ Dia.	—	2 3/16″	1777A14	12.38
Nickel-Plated Steel Clip					
8 3/16″- ⅜″	1 13/64″ Dia.	—	⅞″	1777A31	9.40
8 5/16″- ¾″	1 13/32″ Dia.	—	1 17/32″	1777A32	10.16
8 ⅝″ -1¼″	2 1/32″ Dia.	—	2 5/16″	1777A33	11.77
8 1″ -1⅞″	2⅝″ Dia.	—	2½″	1777A34	15.30
Type 302 Stainless Steel Clip					
8 ⅜″ - ½″	1 13/64″ Dia.	—	1 3/32″	1777A35	10.98
8 ⅝″ - ⅞″	1 13/32″ Dia.	—	1 29/32″	1777A36	11.70
8 ⅞″ -1⅛″	1 13/32″ Dia.	—	2 1/32″	1777A37	11.90
White Nylon-Coated Steel Clip					
8 5/16″- ¾″	1 13/32″ Dia.	—	1 21/32″	1777A43	15.05
8 ⅝″ -1¼″	2 1/32″ Dia.	—	2 5/16″	1777A44	16.60
8 1″ -1⅞″	2⅝″ Dia.	—	2⅞″	1777A45	20.31

Multiposition Tool Holder

Just loosen and tighten the wing nuts to adjust the angle of this tool holder. The mounting plate swivels and also locks in position with a wing nut. Holder is made of Type 304 stainless steel with a polished finish; wing nuts are plastic. Holder has a protective vinyl tip. You can remove the holder from the mounting plate, which has three holes for surface mounting. Furnished with mounting screws.

For Tool Dia.	O'all Lg.	OD		
1⅝″	11″	1 29/32″	4505T31	$38.07

Tool Holders

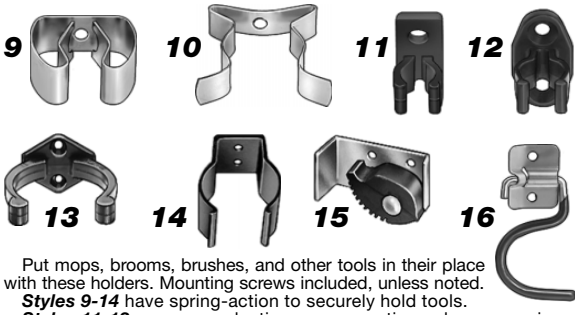

Put mops, brooms, brushes, and other tools in their place with these holders. Mounting screws included, unless noted.

Styles 9-14 have spring-action to securely hold tools.

Styles 11-13 are nonconductive, nonmagnetic, and noncorrosive.

Style 15 and ***Style 16*** use the weight of your stored tool to produce a secure grip. Push your tool up and out to remove. Style 16 consists of a hook and a mounting plate.

For Tool Dia. Range	Overall Size Wd.	Ht.	Proj.	Screw Size	Pkg. Qty.		Pkg.
Zinc-Plated Steel							
9 ⅜″ - ⅝″	1⅜″	½″	15/16″	#6	10	1723A21	$8.18
9 ¾″ -1⅛″	1⅝″	⅝″	1¼″	#6	10	1723A22	11.62
9 1″ -1½″	1¾″	⅝″	1¼″	#6	10	1723A24	11.75
Black Vinyl-Coated Steel							**Each**
9 ⅜″ - ⅝″	1⅜″	½″	15/16″	#6	—	1723A63	$1.75
9 ¾″ -1⅛″	1⅝″	⅝″	1¼″	#6	—	1723A64	1.92
9 2″ -2½″	2 9/16″	⅝″	2″	#6	—	1723A65	3.42
Nickel-Plated Steel							**Pkg.**
10 3/16″- ⅜″	⅞″	5/16″	11/16″	#4	10	1722A41	$5.40
10 5/16″- ¾″	1¼″	⅜″	1⅜″	#6	10	1722A42	7.60
10 ⅝″ -1¼″	1⅝″	7/16″	1⅞″	#8	10	1722A43	11.88
10 1″ -1⅞″	2⅛″	½″	2½″	#8	10	1722A44	13.53
10 2″ -2¾″	2 1/16″	½″	2⅝″	#8	5	1722A19	10.26
Type 302 Stainless Steel							
10 ⅜″ - ½″	9/16″	⅜″	15/16″	#6	5	13985A24	9.11
10 ⅝″ - ⅞″	1 11/16″	½″	1 9/16″	#8	5	13985A26	9.46
10 ⅞″ -1⅛″	1 5/16″	½″	1⅝″	#6	5	13985A27	10.14
White Nylon-Coated Steel ●							**Each**
10 3/16″- ⅜″	7/16″	5/16″	11/16″	#4	—	1722A16	$3.05
10 9/16″- ⅞″	1 3/16″	½″	1″	#6	—	1722A32	4.29
10 ⅝″ -1¼″	1⅝″	7/16″	1⅞″	#8	—	1722A35	4.72
10 ⅞″ -1¼″	1 11/16″	½″	1 5/16″	#8	—	1722A33	4.29
10 1″ -1⅞″	2⅛″	½″	2½″	#8	—	1722A36	5.15
10 2″ -2¾″	2 1/16″	½″	2⅝″	#8	—	1722A18	5.09
Black Thermoplastic ●							
11 ¼″ - 5/16″	23/64″	35/64″	27/64″	#4	—	1171A68	.79
12 ½″ - ⅝″	9/16″	59/64″	49/64″	#6	—	1171A69	1.60
12 ⅝″ - ⅞″	47/64″	27/32″	47/64″	#8	—	1171A71	1.63
13 ⅞″ -1⅛″	1 1/32″	1 7/64″	63/64″	#8	—	1171A72	1.66
13 1⅛″ -1⅜″	1 21/64″	1 25/64″	1¼″	#8	—	1171A73	1.73
13 1⅜″ -1⅝″	1⅝″	1 11/16″	1 33/64″	#8	—	1171A74	1.84
13 1⅝″ -1⅞″	1 29/32″	2 1/64″	1 13/16″	#8	—	1171A75	2.07
13 1⅞″ -2⅛″	2 3/16″	2 13/64″	2 1/16″	#8	—	1171A76	2.26
Black Nylon-Coated Steel ●							
14 1½″ -1⅞″	1½″	1¼″	1⅞″	#6	—	17185A51	2.42
Black Rubber with Galvanized Steel Base							
15 ⅞″ -1¼″	2½″	1 5/16″	1⅛″	#10	—	18505A71	2.45
Red Vinyl-Coated Steel							**Pkg.**
16 0 -1⅜″	1¾″	3/16″	2⅞″	#8	2	1723A66	$1.54

● Mounting screws not included.

Load-Rated Steel Tool Holders

A spring-loaded "push" lever supplies secure gripping power. Press the lever to insert and release a tool. Made of zinc-plated steel. Load capacity is 5 lbs. Mounting screws are included.

For Tool Dia. Range	Overall Size Wd.■	Ht.	Proj.	Pkg. Qty.		Pkg.
⅝″ - ⅞″	1″	2″	2½″	2	17765A15	$2.87
						Each
9/16″-1½″	1″	2″	3½″	—	17765A19	$1.91

■ When closed.

Wristband Magnetic Holder

Need a quick solution for storing small parts when on the go? Wear this magnetic tool holder on your wrist to hold nails, nuts, screws, and other easily lost items. Wristband has a hook-and-loop closure and snugly fits up to a 10″ circumference. Magnet is 2 1/32″ Dia. x 5/16″ Proj.

1846A21 ..... $13.66

Tool Holder Racks

Organize your mops, brooms, brushes, and hand tools.

Style 1— Spring-loaded rubber holders use the weight of your stored tool to produce a secure grip. Base is Type 304 stainless steel. Mounting screws are not included.

Style 2— Perfect for use in harsh environments, the holders and the base are made of a corrosion-resistant polymer that resists chemicals. You can position the holders anywhere along the base. Holders are black; base is white. Temperature range is 0° to 300° F. Furnished with mounting screws.

1 *6582A73*

2

	For Tool Dia.	No. of Holders	Overall Size Wd.	Overall Size Ht.	Overall Size Proj.	Screw Size	Screw Holes		
1	7/8″-1 1/4″	3	26″	3″	1 3/4″	#10	2	**6582A73**	$37.71
1	7/8″-1 1/4″	4	36″	3″	1 3/4″	#10	3	**6582A74**	49.71
2	9/16″-1 1/2″	3	18″	3″	1 1/2″	#6	4	**1051A21**	36.40

Load-Rated Tool Holder Racks

You won't have to guess how much weight these racks can support—they have a load rating. Just slide these spring-action holders into position anywhere along the rack. Rack and holders are made of zinc-plated steel. Furnished with mounting screws.

Rack with 3 Holders

Rack with 5 Holders

Load Capacity■	For Tool Dia.	No. of Holders	Overall Size Wd.	Overall Size Ht.	Overall Size Proj.	Screw Size	Screw Holes		
15 lbs.	7/8″-1 1/2″	3	8″	1″	3″	#8	2	**13535A81**	$4.45
20 lbs.	7/8″-1 1/2″	4	11″	1″	3″	#8	4	**13535A82**	5.78
25 lbs.	7/8″-1 1/2″	5	17″	1″	3″	#8	5	**13535A83**	7.28

■ 5 lbs. per holder.

Load-Rated Vinyl Slatwall

Want an alternative to pegboard? The grooves in these vinyl slatwall panels accept the pegboard hooks on page 3007 (except screw-mount style). Load rating is 130 lbs. when the panel is screwed into a stud and the load is 3″ from the panel. Center-to-center distance between grooves is 1″. You can cut panels and optional trim (sold separately) to size with a circular saw. Panels require mounting screws that are at least 2″ long with a maximum head diameter of 0.290″ (screws not included).

Slide ***optional trim*** over the panel ends for a finished look. Trim comes in three 4-ft. lengths per package.

Pegboard hook is not included.

Panel Size, Lg. × Ht. × Proj.	Pkg. Qty	Gray	Pkg.	White	Pkg.
96″ × 12″ × 1/2″	3 Panels	**1181A2**	$141.42	**1181A1**	$141.42
Optional Trim		**1181A12**	16.40	**1181A11**	16.40

Slide-Away Tool Holder Rack

Because it is mounted to a drawer slide, this tool rack is ideal for storing tools in narrow spaces. Just slide the rack out to access tools. Rack surface mounts to a wall or the side of a cabinet and has five spring-action, nickel-plated steel clips to hold tools in place. Two of the clips hold 5/16″-3/4″ diameter tools; the other three clips hold 5/8″-1 1/4″ diameter tools. Base and slide are made of steel with a black powder-coated aluminum clip plate. Screws are not included.

Spring-Action Clip

For Tool Dia.	Closed Lg.	Travel Lg.	O'all Ht.	O'all Proj.	Screw Size	Screw Holes		
5/16″-1 1/4″	23″	22 1/2″	2″	2 1/2″	#8, 1/4″	17	**1847A2**	$47.94

Magnetic Tool Holder Racks

It's easy to position and organize your metal tools—these racks hold them in place magnetically.

Screw-Mount Racks— Surface mount with screws.

Magnet-Mount Racks— These racks have a magnetic back for mounting to a ferrous surface without the need for fasteners.

3

4

5

6

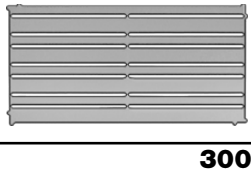

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	Overall Size Wd.	Overall Size Ht.	Overall Size Proj.	Screw Size	Screw Holes		
Screw-Mount Racks							
Black Painted Steel— *Furnished with screws*							
3	6″	3/4″	1″	#10	2	**6613A21**	$10.75
3	13″	3/4″	1″	#10	2	**6613A23**	15.70
3	18″	3/4″	1″	#10	2	**6613A4**	19.48
3	24″	3/4″	1″	#10	2	**6613A5**	21.20
Chrome-Plated Steel— *Furnished with screws*							
3	6″	3/4″	1″	#10	2	**6613A61**	13.88
3	13″	3/4″	1″	#10	2	**6613A63**	20.30
3	18″	3/4″	1″	#10	2	**6613A65**	24.12
3	24″	3/4″	1″	#10	2	**6613A67**	27.95
Type 409 Stainless Steel— *Screws not included*							
4	2 1/2″	1″	9/16″	1/4″	2	**12415A21**	16.93
4	4 1/2″	1″	9/16″	1/4″	2	**12415A22**	25.20
4	6 1/2″	1″	9/16″	1/4″	2	**12415A23**	29.36
4	12 1/2″	1″	9/16″	1/4″	2	**12415A24**	52.36
5	12″	1 1/2″	11/32″	1/4″	2	**12325A36**	40.61
5	12″	2 1/2″	5/8″	1/4″	2	**12325A34**	64.42
Magnet-Mount Racks							
Steel							
6	10 7/8″	2 3/16″	3/8″	—	—	**1916A11**	18.78
7	6″	12″	3/16″	—	—	**1916A14**	41.50
7	12″	6″	3/16″	—	—	**1916A12**	41.50
7	12″	12″	3/16″	—	—	**1916A13**	71.33

Revolving Pocket Tool Holder

Give this holder a spin to easily locate your frequently used tools. Holder has 18 pockets (six pockets are 1″ Dia.×3″ Dp., six pockets are 1″ Dia.×3½″ Dp., and six pockets are 1½″ Dia.×4″ Dp.) and 12 S-hooks that mount on the pockets for extra tool storage. Includes a tube clamp for installation on tubes up to 2⅜″ dia. Pockets are blue PVC; mounting pole is steel with a polished chrome finish.

For Tool Dia. Range	Overall Size Dia.	Overall Size Ht.		
1″-1½″	8¾″	9⅞″	1921A23	$38.51

Combination Dry-Erase Pegboards

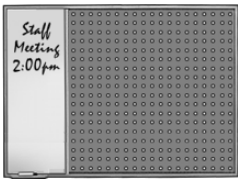

You'll have a framed brown hardboard pegboard and a white dry-erase board. Pegboards are ¼″ thick. Holes are 9/32″ dia. on 1″ centers. Mount with the included hardware for either a left- or right-handed writing surface. Dry-erase board portion is 12″ wide by the height of board and has an 11⅞″ long marker tray. ***Aluminum frames*** are unfinished. ***Oak frames*** have a lacquered finish.

Overall Size, Wd.×Ht.	w/Aluminum Frame		w/Oak Frame	
36″×24″	2271A21	$46.97	2271A33	$43.55
48″×36″	2271A22	70.90	2271A34	66.45
48″×48″	2271A23	91.57	2271A35	84.66
72″×48″	2271A24	145.95	2271A36	139.03
96″×48″	2271A26	168.38	2271A39	162.66

Load-Rated Metal Pegboards and Pegboard Bars

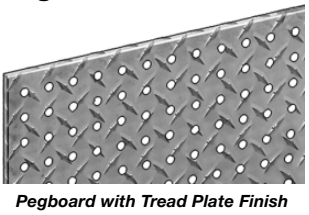

Pegboard with Tread Plate Finish

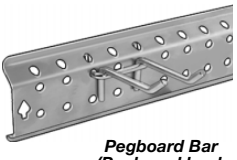

Pegboard Bar (Pegboard hook is not included.)

A step above hardboard and plastic pegboards, these unframed metal boards and bars handle heavy loads. Plus, they won't chip or crack. Holes are 9/32″ dia. on 1″ centers. Boards and bars project ¾″ from the wall, except ***aluminum bars***, which project ½″. All require ¼″ dia. mounting screws (not included, unless noted). ***Stainless steel*** resists corrosion. ***Aluminum*** is lighter in weight than steel and stainless steel.

Note: Load rating is based on a load that is evenly distributed across the entire board or bar.

Pegboards

Finish	Load Rating, lbs.	Overall Size, Wd.×Ht.	Thick.		
Steel					
Galvanized	1,000	45½″×21½″	0.03″	1928A31	$63.58
Type 430 Stainless Steel					
Brushed	1,000	45½″×21½″	0.03″	1928A41	131.67
Aluminum					
Brushed	1,000	45½″×21½″	0.04″	1928A21	73.55
Tread Plate	1,000	45½″×21½″	0.045″	1928A11	97.32
Tread Plate	1,500	45½″×45½″	0.045″	1928A12	195.13
Tread Plate	2,000	93½″×45½″	0.045″	1928A13	310.59

Pegboard Bars

Finish	Load Rating, lbs.	Overall Size, Wd.×Ht.	Thick.		
Steel					
White Epoxy	250	12″×3⅜″	0.06″	3079A3	$14.68
White Epoxy	250	23″×3⅜″	0.06″	3079A1	17.12
White Epoxy	250	34″×3⅜″	0.06″	3079A2	18.16
Type 430 Stainless Steel					
Polished	250	12″×3⅜″	0.06″	3079A6	20.33
Polished	250	23″×3⅜″	0.06″	3079A4	28.25
Polished	250	34″×3⅜″	0.06″	3079A5	38.21
Aluminum					
Brushed	150	12″×4 3/16″	0.04″	3079A21	13.67
Brushed	300	24″×4 3/16″	0.04″	3079A22	23.39
Brushed	600	48″×4 3/16″	0.04″	3079A23	34.92
Brushed	1,000	96″×4 3/16″	0.04″	3079A9	66.45
Tread Plate	150	12″×4 3/16″	0.045″	3079A11	15.06
Tread Plate	300	24″×4 3/16″	0.045″	3079A12	26.19
Tread Plate	600	48″×4 3/16″	0.045″	3079A13	40.52
Tread Plate	1,000	96″×4 3/16″	0.045″	3079A8	74.59

Pegboards

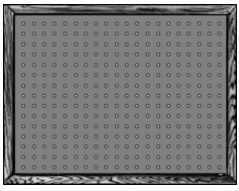

Framed Pegboard

Pegboard holes are on 1″ centers. Mounting hardware is not included. Pegboards with ***3/16″ dia. holes*** are ⅛″ thick; pegboards with ***9/32″ dia. holes*** are ¼″ thick.

Unframed Pegboards— The *polypropylene* boards offer excellent abrasion and chemical resistance. Temperature range is 30° to 180° F.

Framed Pegboards— Sturdy frame prevents warping and has built-in hangers for mounting. *Aluminum frame* is unfinished. *Oak frame* has a lacquered finish.

Mounting Hardware Package— Includes six #8×1¼″ long screws and six plastic spacers. Spacers are ⅜″ Dia.×½″ Thick. and should be placed behind pegboard to provide clearance between wall and pegboard.

18575A51 ..... $1.72

Unframed Pegboards

Overall Size, Wd.×Ht.	3/16″ Dia. Holes		9/32″ Dia. Holes	
Hardboard— *Color is brown*				
36″×24″	18575A11	$5.45	18575A21	$7.90
48″×24″	18575A13	7.00	18575A23	9.88
48″×36″	18575A15	12.33	18575A25	15.22
48″×48″	18575A17	17.38	18575A27	19.80
96″×48″	18575A19	28.34	18575A29	39.60
Polypropylene— *Color is translucent white*				
36″×24″	18615A21	25.18	18615A22	40.72
48″×36″	18615A27	48.18	18615A28	72.83
48″×48″	18615A29	53.00	18615A32	80.11
72″×48″	18615A31	81.17	18615A34	141.83
96″×48″	18615A33	89.28	18615A36	156.00

Framed Pegboards— With 9/32″ Dia. Holes

Overall Size, Wd.×Ht.	with Aluminum Frame		with Oak Frame	
Hardboard— *Color is brown*				
36″×24″	18575A31	$41.31	18575A41	$38.31
48″×36″	18575A33	60.24	18575A43	56.47
48″×48″	18575A34	80.60	18575A44	74.51
60″×48″	18575A35	103.22	18575A45	99.49
72″×48″	18575A37	124.05	18575A47	118.80
96″×48″	18575A39	148.16	18575A49	143.13

Pegboard Containers

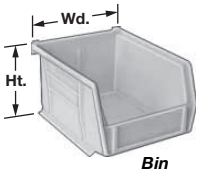

Bin

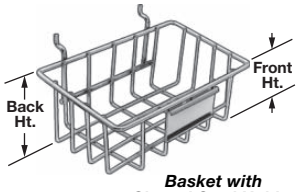

Basket with Slotted Card Holder

Jar

Great for storing large items or numerous smaller items. Containers fit 3/16″ and 9/32″ dia. pegboard holes that are on 1″ centers.

Bins are made of polypropylene and come with a zinc-plated steel clip that screws into the pegboard for secure mounting. Screws are included. **To Order:** Please specify color: blue, red, or yellow.

Baskets are made of epoxy-coated or chrome-plated steel wire. Load rated up to 29 lbs. **To Order:** For epoxy-coated baskets, please specify color: black, blue, green, red, or yellow.

Jar is clear PVC with a dark blue polypropylene lid.

Inside Height Front	Inside Height Back	O'all Wd.	Proj.		
Bins					
3⅞″	3⅞″	4⅛″	10⅞″	18555A7	$8.39
4⅞″	4⅞″	5½″	10⅞″	18555A9	11.06
6⅞″	6⅞″	8¼″	10⅝″	18555A8	12.41
Epoxy-Coated Baskets					
2 11/16″	3⅜″	8⅜″	4⅞″	18525A15★	47.94
4″	4″	14″	8″	18525A12	52.00
Chrome-Plated Baskets					
2 11/16″	3⅜″	8⅜″	4⅞″	18525A3★	51.93
4″	4″	14″	8″	18525A4	52.00
Jar					
3⅜″	—	2¼″ Dia.	2¼″	11735A7	1.57

★ The front of the basket has a slotted card holder.

Pegboard Hooks

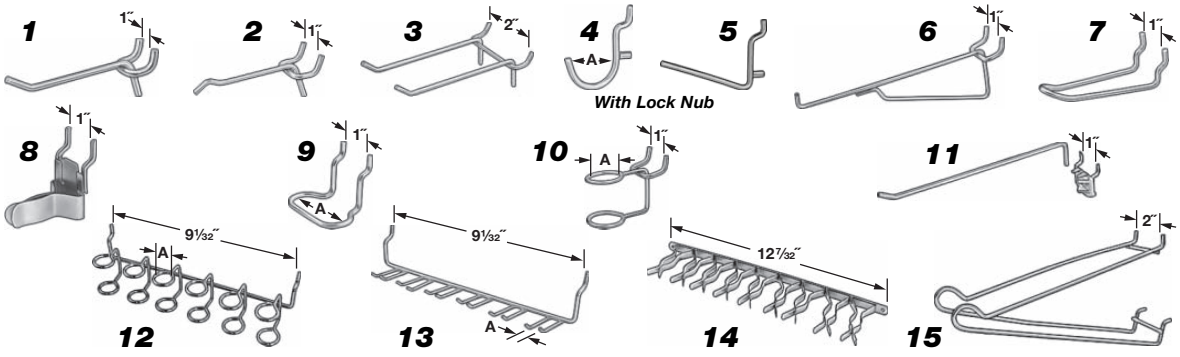

Light Wire—Hooks work with 3/16″ and 9/32″ dia. pegboard holes, giving you more flexibility but a looser fit for lighter loads.

Heavy Wire—Hooks fit tightly into 9/32″ dia. pegboard holes, securely holding heavier loads.

Styles 4 and *5* have a lock nub (except where noted). *Style 11* are two-piece hooks; pull up on the arm to "unlock" it from the mounting base and swivel it to fold flat against the pegboard when not in use. *Style 14* mounts into the board with screws. 18535A59 is furnished with screws; 8670A63 requires two #10 screws (not included). *Style 15* are ideal for shovels and rakes.

Light Wire—For 3/16″ and 9/32″ Dia. Pegboard Holes

			Zinc-Plated Steel Pkg. Qty.		Pkg.	Type 304 Stainless Steel	Each
1	3 3/32″	—	20	18535A11	$5.81	8670A1	$1.19
1	5 3/16″	—	20	18535A12	5.88	8670A2	2.92
1	7″	—	20	18535A13	7.56	8670A3	2.30
1	8 3/4″	—	20	18535A14	8.59	8670A41	2.71
1	11 1/16″	—	20	18535A15	9.52	8670A42	3.01
2	3 5/32″	—	20	18535A16	6.52	8670A21	1.82
2	7 1/8″	—	20	18535A17	8.12	8670A22	1.37
2	11″	—	20	18535A18	9.96	8670A23	2.34
3	2 3/4″	—	20	18535A21	9.04	8670A43	3.84
3	4 3/4″	—	20	18535A22	10.28	8670A44	2.05
3	8 27/32″	—	20	18535A24	13.12	8670A45	4.81
4	11/16″	3/8″	100	18535A25♠	9.07	8670A46♠	.70
4	1 1/16″	3/4″	100	18535A32	11.12	8670A47	1.32
4	1 1/2″	1 1/8″	100	18535A33	12.40	8670A48	1.66
5	1 3/16″	—	100	18535A36	10.64	8670A49	1.63
5	1 3/4″	—	100	18535A37	11.56	8670A51	1.65
5	2 3/4″	—	100	18535A38	$12.40	8670A52	$1.41
6	6″●	—	10	18535A46	7.04	8670A53	4.84
6	8″●	—	10	18535A47	8.48	8670A54	5.35
6	10″●	—	10	18535A29	8.80	8670A55	5.86
7	3 7/16″	—	10	18535A41	7.11	8670A31	2.48
7	5 1/4″	—	10	18535A42	8.63	8670A32	3.27
7	8 7/8″	—	10	18535A43	11.26	8670A33	4.02
8	1 23/32″	1/2″-1″■	20	18535A56	12.34	8670A56♦	12.77
9	1 1/4″	1 3/4″	20	18535A55	5.89	8670A57	2.05
10	1 1/4″	7/16″	20	18535A34	8.00	8670A58	5.11
10	2″	13/16″	20	18535A35	8.69	8670A59	4.66
					Each		Each
12	1 23/32″	3/4″	—	18535A57	$1.62	8670A61	$28.83
13	1 9/16″	3/8″	—	18535A58	1.54	8670A62	7.79
14	2 25/32″	1/2″-1″■	—	18535A59	3.93	8670A63♦	57.00

♠ Does not have a lock nub. ● Depth of the shelf that the hanger can accommodate. ■ Grip range. ♦ Grip range is 5/16″-1/2″.

38-Piece Zinc-Plated Steel Assortment—Includes two of Style 3, 14 of Style 4, 11 of Style 5, two of Style 6, two of Style 8, two of Style 9, four of Style 10, and one of Style 13.

18545A11 ..... **Each** $6.73

37-Piece Type 304 Stainless Steel Assortment—Includes two of Style 3, 13 of Style 4, 11 of Style 5, two of Style 6, two of Style 8, two of Style 9, four of Style 10, and one of Style 13.

8670A64 ..... **Each** $92.71

Heavy Wire—For 9/32″ Dia. Pegboard Holes

			Zinc-Plated Steel Pkg. Qty.		Pkg.	Type 304 Stainless Steel	Each
1	4 1/8″	—	10	18535A62	$6.32	8670A65	$3.11
1	6 1/4″	—	10	18535A63	7.97	8670A66	3.56
1	9″	—	10	18535A64	8.38	8670A67	3.59
1	10 1/2″	—	10	18535A65	9.58	8670A68	4.08
1	12 1/4″	—	10	18535A66	10.44	8670A69	4.64
1	15 1/4″	—	10	18535A67	13.72	8670A71	5.02
1	18 1/2″	—	10	18535A69	13.30	8670A72	4.87
3	4″	—	10	18535A76	11.97	8670A73	4.40
3	6 1/8″	—	10	18535A72	12.74	8670A74	4.67
3	8 3/4″	—	5	18535A77	9.20	8670A75	9.20
3	12 5/8″	—	5	18535A78	13.29	8670A76	9.25
3	15 5/8″	—	5	18535A79	14.71	8670A77	10.81
4	11/16″	5/8″	50	18535A83	11.56	8670A79	1.67
4	1 7/8″	1 1/2″	50	18535A84	13.64	8670A81	1.62
5	1 3/4″	—	50	18535A89	$12.44	8670A82	$2.78
6	8″●	—	10	18535A91	11.81	8670A83	6.46
6	10″●	—	5	18535A92	7.55	8670A84	7.11
6	12″●	—	5	18535A93	8.60	8670A85	7.83
6	16″●	—	5	18535A94	14.00	8670A86	9.69
11	3 1/4″	—	10	18565A21	6.00	8670A87	5.79
11	5 1/4″	—	10	18565A22	8.30	8670A88	5.73
11	8 1/4″	—	10	18565A23	11.28	8670A89	5.93
11	10 1/4″	—	5	18565A24	6.48	8670A91	5.78
11	12 1/4″	—	5	18565A25	7.10	8670A92	5.54
11	15 3/4″	—	5	18565A26	8.48	8670A93	7.22
11	18 1/4″	—	5	18565A27	11.63	8670A94	8.38
					Each		Each
15	11 7/8″	—	—	18535A87	$7.04	8670A95	$34.52
15	17 3/4″	—	—	18535A88	7.69	8670A96	38.30

● Depth of the shelf that the hanger can accommodate.

21-Piece Assortments—Include two of Style 1, two of Style 3, nine of Style 4, six of Style 5, and two of Style 6.

Zinc-Plated Steel ..... **18545A12** **Each** $6.30

Type 304 Stainless Steel ..... **8670A97** **Each** $70.21

Pegboard Hook Holder and End Caps

Hook holder snaps into pegboard to keep hooks (not included) from falling out. Use with pegboards that have 3/16″ and 9/32″ dia. holes on 1″ centers. Made of black flexible plastic.

End caps slide onto the end of hooks (not included) to create a nonmarring tip. Made of red vinyl.

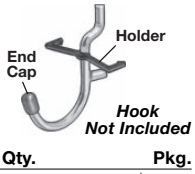

	Pkg. Qty.		Pkg.
Hook holder for 3/16″ and 9/32″ dia. holes	50	1169A85	$11.89
End cap for 3/16″ dia. hooks	100	18535A44	7.41
End cap for 9/32″ dia. hooks	100	18535A86	9.04

Pegboard Magnetic Holders

An alternative to traditional pegboard hooks, these holders have a magnet in their center to hold your tools. Just screw into 1/8″ or 1/4″ dia. pegboard holes with the included threaded machine screws. Holders install from the front, so there's no need to remove the board to install or rearrange them. Once installed, the holders are almost impossible to shake loose or pull out of hardboard pegboard. Magnet is surrounded by a black rubber housing.

O'all Dia.	Proj.	Pkg. Qty.		Pkg.
1 5/8″	1/2″	3	2130A11	$10.88

Stay-Put Pegboard Hooks

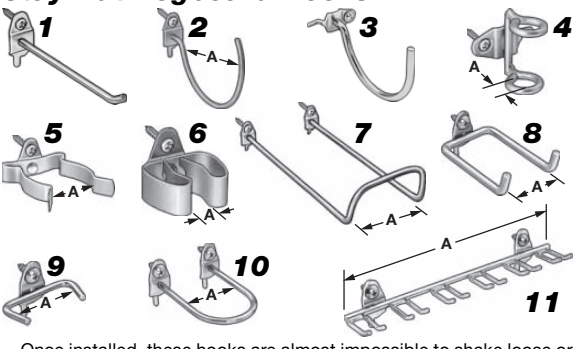

Once installed, these hooks are almost impossible to shake loose or pull out of hardboard pegboard. Hooks install from the front, so there's no need to remove the board to install or rearrange them. Secure in 3/16″ or 9/32″ dia. pegboard holes on 1″ centers with the included threaded machine screws. You can insert and remove the screws without damaging the pegboard. Made of zinc-plated steel, unless noted.

	Proj.	(A)	Pkg. Qty.		Pkg.
1	1 7/8″	—	10	18515A151	$8.90
1	3″	—	10	18515A111	9.06
1	4 5/8″	—	10	18515A112	9.50
1	6 3/32″	—	10	18515A113	10.20
1	8 5/8″	—	5	18515A114	8.84
2	2 1/2″	2 1/4″	10	18515A118	10.50
3	3 7/8″	3 3/32″	10	18515A119	12.96
4	1 3/4″	3/4″	10	18515A116	10.96
5	7/8″	1/4″-1/2″	10	18515A154▲	7.80
5	2 1/8″	3/4″-1 1/4″	10	18515A136▲	10.46
5	2 7/8″	1 7/8″-2 3/4″	5	18515A139▲	9.60
6	1 1/8″	1/4″-1/2″	10	18515A137▲	9.46
6	1 1/2″	1/2″-1″	10	18515A138▲	10.90
7	5 3/32″	2 3/4″	5	18515A141	14.56
7	8 3/32″	2 3/4″	1	18515A142	3.58
8	2 29/32″	1 5/8″	10	18515A144	11.40
8	5 27/32″	1 5/8″	5	18515A143	9.40
8	8 3/4″	1 5/8″	5	18515A153	11.60
9	1″	1 7/8″	10	18515A152	10.90
10	3″	1 3/4″	5	18515A155	9.96
11	1 1/2″	8 1/8″	5	18515A156	12.96

▲ Made of chrome-plated steel.

26-Piece Assortment—Includes six of Style 1, two of Style 3, one of Style 4, three of Style 5, one of Style 6, one of Style 7, three of Style 8, two of Style 9, two of Style 10, and one of Style 11. Also comes with two yellow polypropylene hanging bins and two bin clips.

18515A157 ..... **Each** $22.63

Vinyl-Coated Steel Hooks

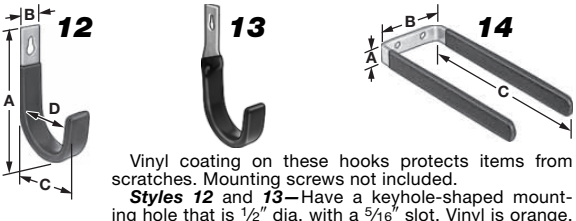

Vinyl coating on these hooks protects items from scratches. Mounting screws not included.

Styles 12 and ***13***—Have a keyhole-shaped mounting hole that is 1/2″ dia. with a 5/16″ slot. Vinyl is orange. *Style 13* also has a 90° offset bend in its shaft. ***Style 14***—Has two 1/4″ dia. mounting holes. Vinyl is red.

	(A)	(B)	(C)	(D)	Load Cap., lbs.		
12	5 1/2″	1″	2 5/8″	1 1/2″	100	1730A91	$2.90
12	5 1/2″	1″	3 3/4″	3″	80	1730A92	3.90
12	9″	1″	6 1/4″	5″	40	1730A93	6.45
13	6 7/8″	1″	4 1/8″	3″	80	1730A94	4.05
14	1/2″	2 1/8″	5 7/8″	—	10	1728A88	1.09

Snap-Close Hooks

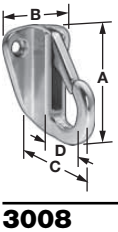

When snapped closed, the spring-loaded safety latch on these hooks holds items securely. ***Type 304 stainless steel*** hook includes mounting screws. ***Cast brass*** hooks require two #8 screws (not included).

(A)	(B)	(C)	(D)		
Type 304 Stainless Steel with Dull Finish					
1 29/64″	1 11/32″	63/64″	13/64″	11855A22	$30.67
Cast Brass with Polished Chrome Finish					
1 3/8″	1 1/4″	1″	5/16″	11855A33	4.00
1 3/4″	1 1/4″	1 5/16″	7/16″	11855A34	5.31

Steel Hooks

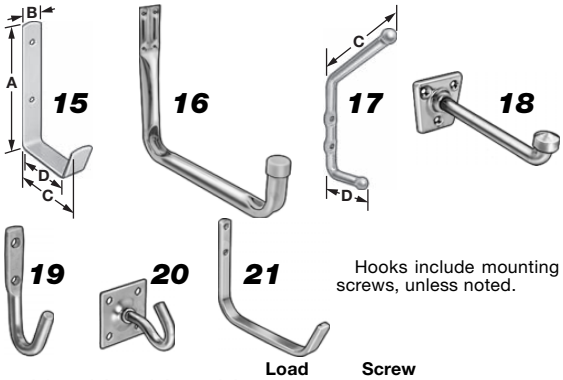

Hooks include mounting screws, unless noted.

	(A)	(B)	(C)	(D)	Load Cap., lbs.	Screw Size		Each
Steel with White Powder-Coated Finish								
15	6 1/2″	1 1/16″	4 1/4″	3 1/8″	50	1/4″	6558A62★	$4.03
15	6 1/2″	1 1/16″	6 1/2″	5 1/2″	50	1/4″	6558A63★	4.47
15	7 7/8″	1 1/16″	10 45/64″	9 3/8″	50	1/4″	6558A64★	5.46
Steel with Polished Chrome Finish								
16	9 1/4″	1 1/2″	11″	9″	25	#8	15295A4	4.55
Steel with Dull Chrome Finish								
17	6 7/8″	29/64″	3 5/8″	2 1/2″	50	#10	11045A11	10.00
Zinc-Plated Steel								
18	2 13/32″	2″	5 1/2″	4 1/8″	—	#10	1419A11	9.69
18	2 13/32″	2″	10″	9 1/8″	—	#10	1419A12	9.84
19	2 5/8″	15/32″	1 3/8″	3/4″	—	#8	15295A1	2.05
19	3 3/4″	9/16″	1 3/4″	1″	—	#12	15295A2	2.36
19	4 7/8″	9/16″	1 7/8″	1 1/8″	—	#12	15295A3	2.69
20	1 3/4″	1 3/4″	2 3/16″	7/8″	150	#10	1362A13	2.94
Zinc-Plated Steel								**Pair**
21	3 3/4″	1/2″	5″	4 5/8″	50	#10	1362A21	$4.58

★ Requires two mounting screws (not included).

Aluminum and Brass Hooks

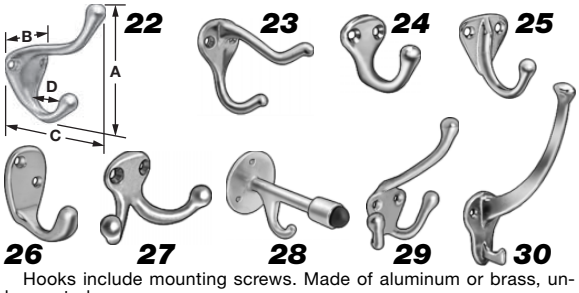

Hooks include mounting screws. Made of aluminum or brass, unless noted.

	(A)	(B)	(C)	(D)	Load Cap., lbs.	Screw Size		
Aluminum with Dull Finish								
22	3 5/16″	1 15/64″	3 1/16″	1 13/64″	—	#7	1465A12●	$2.09
23	2 7/32″	1 7/32″	3″	27/32″	—	#6	1719A1	1.25
24	1 1/2″	1 1/8″	1 11/16″	1″	—	#7	1760A1	1.12
27	1 1/2″	2 7/8″	1 1/8″	7/8″	—	#7	1760A3	1.27
30	6 1/8″	1 3/8″	3 11/16″	1 1/16″	—	#7	1761A11	2.33
Aluminum with Polished Brass Finish								
22	3 5/16″	1 15/64″	3 1/16″	1 13/64″	—	#7	1465A11●	2.32
23	2 7/32″	1 7/32″	3″	27/32″	—	#6	1719A3	1.40
24	1 1/2″	1 1/8″	1 11/16″	1″	—	#7	1760A5	1.27
27	1 1/2″	2 7/8″	1 1/8″	59/64″	—	#7	1760A4	1.45
30	6 1/8″	1 3/8″	3 11/16″	1 1/16″	—	#7	1761A12	2.58
Brass with Polished Finish								
22	3 5/16″	1 15/64″	3 1/16″	1 13/64″	—	#7	1465A24	5.08
23	2 7/32″	1 7/32″	3″	27/32″	—	#6	1719A4	4.13
24	1 1/2″	1 1/8″	1 11/16″	1″	—	#7	1760A6	2.33
26	2″	1″	1 3/4″	1 7/32″	15	#7	13785A27	2.88
27	2″	2 3/4″	1″	1″	—	#8	1760A9	2.80
29	4 1/2″	3 1/8″	3 1/16″	33/64″	—	#10	19105A42	10.45
Brass with Polished Chrome Finish								
25	1 1/4″	1 1/2″	2 1/4″	1 3/8″	15	#8	1760A7	4.30
27	2″	2 3/4″	1″	1″	—	#8	1760A8	2.98
28	2 1/2″	2″	3 3/4″	5/8″	—	#8	1776A4	42.77
29	4 1/2″	3 1/8″	3 1/16″	33/64″	—	#10	19105A45	11.48
Brass with Dull Chrome Finish								
22	3 5/16″	1 15/64″	3 1/16″	1 13/64″	—	#7	1465A26	5.66
23	2 7/32″	1 7/32″	3″	27/32″	—	#6	1719A5	4.24
24	1 1/2″	1 1/8″	1 11/16″	1″	—	#7	1760A2	2.56
28	2 1/2″	2″	3 3/4″	5/8″	—	#8	1776A1	37.01

● Made of die cast zinc.

Stainless Steel Hooks

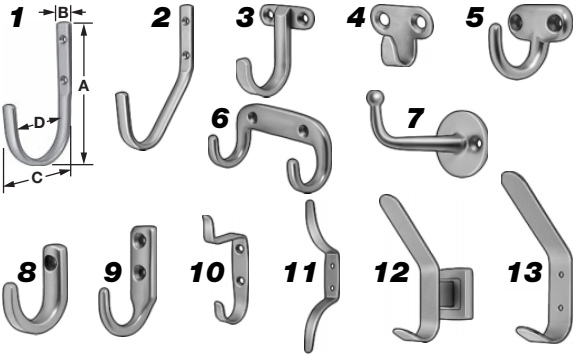

Mounting screws are included, unless noted. ***Style 12*** has a double hook welded to a 2″ square Type 304 stainless steel mounting bracket.

	(A)	(B)	(C)	(D)	Load Cap., lbs.	Screw Size		
Type 303 Stainless Steel with Polished Finish								
1	2 27/32″	15/32″	1 25/32″	1 3/8″	22	#6	**19075A11**■	$16.36
1	4 23/32″	5/8″	2 43/64″	2 1/4″	22	#8	**19075A12**■	28.31
1	7 7/8″	45/64″	4 21/64″	3 45/64″	26	#11	**19075A13**■	49.73
2	2 29/32″	15/32″	1 31/32″	1 5/8″	26	#6	**19075A14**■	16.78
2	4 17/32″	5/8″	3 5/32″	2 11/16″	44	#8	**19075A15**■	29.72
2	7 7/8″	45/64″	4 23/32″	4 3/32″	48	#11	**19075A16**■	57.78
3	1 25/32″	1 37/64″	1 3/8″	63/64″	35	#8	**11855A43**	50.26
3	1 31/32″	1 37/64″	1 37/64″	1 3/16″	35	#8	**11855A44**	51.14
Type 304 Stainless Steel with Polished Finish								
4	15/16″	1 1/4″	1/2″	3/8″	—	#6	**11855A21**★	.88
5	63/64″	1 7/64″	63/64″	5/8″	44	#4	**11855A15**■	9.69
5	1 19/64″	1 13/32″	1 17/64″	13/16″	44	#6	**11855A16**■	12.43
6	1 19/64″	2 9/16″	63/64″	5/8″	44	#5	**11855A18**	24.28
6	1 21/32″	3 5/32″	1 1/4″	53/64″	44	#6	**11855A19**	25.09
7	1 29/64″	1 7/64″ Dia.	1 27/32″	1 15/32″	22	#5	**11845A11**■	10.54
7	1 47/64″	1 3/8″ Dia.	2 9/16″	2 3/32″	26	#7	**11845A12**■	12.57
8	1 9/64″	23/64″	7/8″	35/64″	35	#5	**11855A11**	8.93
8	1 11/32″	25/64″	1 3/16″	3/4″	35	#5	**11855A12**	9.02
9	1 37/64″	15/32″	1 1/32″	5/8″	44	#4	**11855A13**■	9.87
9	2 9/64″	5/8″	1 17/64″	1 3/16″	44	#6	**11855A14**■	13.13
Type 304 Stainless Steel with Dull Finish								
10	2 3/4″	33/64″	1 5/32″	11/16″	11	#4	**11855A41**	4.89
11	3 15/16″	33/64″	55/64″	45/64″	—	#4	**11855A42**	3.82
12	5 1/2″	2″	4″	1 5/8″	—	#10	**12845A24**	15.65
13	5 3/8″	1″	3 1/2″	1 5/8″	—	#10	**12845A21**	8.62

■ NSF certified. ★ Requires two mounting screws (not included).

Type 304 Stainless Steel Swinging Hooks

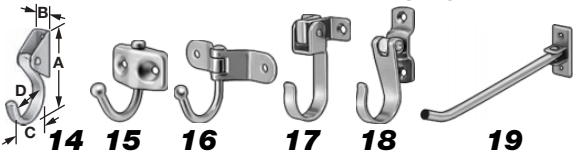

Hooks swing 180° except Style 16, which can be mounted on an inside corner for 90° movement or an outside corner for 270° movement. Mounting screws included. ***Style 14*** hook is Type 303 stainless steel; mounting plate is Type 304 stainless steel. ***Style 18*** swivels 360° when mounted horizontally under a table or shelf.

	(A)	(B)	(C)	(D)	Load Cap., lbs.	Screw Size		
Polished Finish								
14	2 61/64″	9/16″	1 15/32″	1″	110	#8	**7168A1**	$41.78
15	1 1/2″	1 3/8″	1 27/64″	13/16″	26	#6	**7168A6**	2.05
16	1 27/64″	2 33/64″	1 1/4″	13/16″	6	#8	**7168A7**	5.78
17	2 11/64″	1 37/64″	63/64″	13/16″	12	#8	**7168A2**	5.60
17	2 7/16″	1 37/64″	1 7/32″	1 1/64″	14	#8	**7168A3**	6.05
18	2 1/2″	5/8″	63/64″	13/16″	14	#8	**7168A4**	7.46
18	2 57/64″	45/64″	1 7/32″	1 1/64″	19	#8	**7168A5**	8.01
Dull Finish								
19	2 7/16″	1 1/16″	9 23/32″	7″	6.6	#6	**7168A8**	19.38

Load-Rated Foam-Padded Steel Hooks

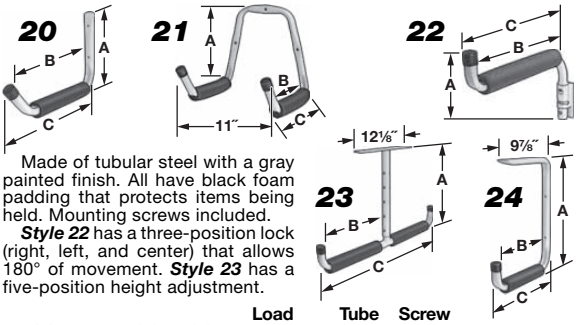

Made of tubular steel with a gray painted finish. All have black foam padding that protects items being held. Mounting screws included.

Style 22 has a three-position lock (right, left, and center) that allows 180° of movement. ***Style 23*** has a five-position height adjustment.

	(A)	(B)	(C)	Load Cap., lbs.	Tube OD	Screw Size		
20	9 7/8″	13 1/2″	15 1/2″	50	1 1/8″	1/4″	**1716A12**	$5.75
21	9 3/4″	6 1/2″	8 3/4″	75	7/8″	1/4″	**1716A14**	5.75
22	10″	11″	12 1/4″	50	57/64″	#10	**1716A15**	3.95
23	14 1/2″–22 1/4″	12″	27 1/4″	50	1″	1/4″	**1716A11**	11.75
24	16 1/2″	10″	12 3/16″	50	1 3/32″	1/4″	**1716A13**	5.75

Coat Racks

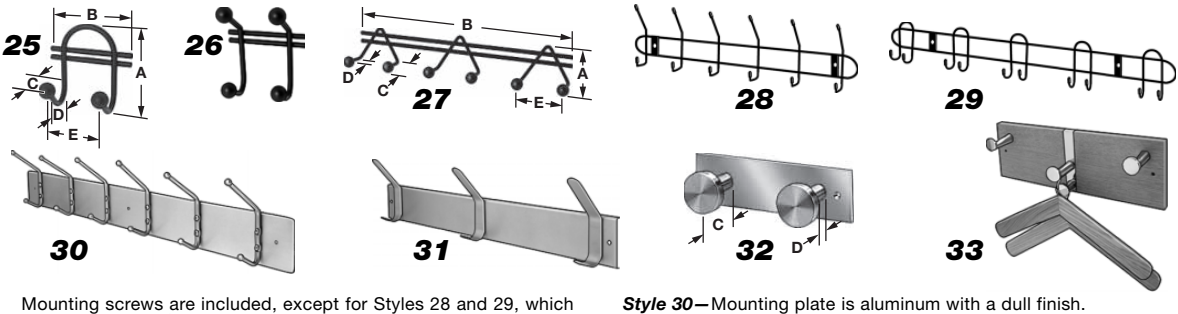

Mounting screws are included, except for Styles 28 and 29, which require two screws (not included).

Styles 25-27— Have welded steel balls at the end of each hook.

Styles 28&29— Have protective vinyl end caps (same color as rack).

Style 30— Mounting plate is aluminum with a dull finish.

Style 31— Mounting plate is aluminum with a polished finish.

Style 33— Furnished with two hangers.

	No. of Hooks	(A)	(B)	(C)	(D)	(E)	Screw Size		
Steel with Black Powder-Coated Finish									
25	2	4″	4″	2 7/16″	1/4″	2 1/8″	#8	**13685A1**	$6.18
26	2	5″	4″	2 43/64″	1/4″	1 45/64″	#8	**13685A2**	7.13
27	6	2″	10 3/8″	1 1/2″	57/64″	2 3/64″	#8	**13685A21**	7.60
28	6	5 3/8″	20″	1 3/4″	1 5/32″	3 5/16″	#8	**13685A22**	8.36
Steel with White Powder-Coated Finish									
29	10	3 3/4″	30 1/2″	2″	1 1/2″	1 19/64″	#8	**13685A37**	9.51
Steel with Dull Chrome Finish									
30	3	6 7/8″	18″	3 5/8″	2 1/2″	6″	#10	**11045A14**	46.33
30	6	6 7/8″	36″	3 5/8″	2 1/2″	6″	#10	**11045A16**	83.56
Type 304 Stainless Steel with Dull Finish									
31	3	5 3/8″	24″	2 7/8″	1 5/8″	9 1/2″	#10	**12845A32**	39.87
31	4	5 3/8″	36″	2 7/8″	1 5/8″	10 1/8″	#10	**12845A33**	49.54
Type 304 Stainless Steel with Dull Finish (Cont.)									
31	5	5 3/8″	48″	2 7/8″	1 5/8″	10 1/4″	#10	**12845A35**	$63.58
31	6	5 3/8″	60″	2 7/8″	1 5/8″	10 1/4″	#10	**12845A36**	101.74
Aluminum Panel with Dull Finish and Dull Aluminum Knobs									
32	2	2 1/2″	8 1/2″	2 1/4″	2″	6″	#8	**17645A65**	56.23
32	3	2 1/2″	16″	2 1/4″	2″	7 1/8″	#8	**17645A72**	84.35
Mahogany Wood Panel with Polished Chrome Knobs									
33	4	6″	18″	3 9/16″	2 3/4″	7 1/2″	#10	**11085A41**	121.19
Oak Wood Panel with Polished Chrome Knobs									
33	4	6″	18″	3 9/16″	2 3/4″	7 1/2″	#10	**11085A43**	121.19
Walnut Wood Panel with Polished Chrome Knobs									
33	4	6″	18″	3 9/16″	2 3/4″	7 1/2″	#10	**11085A42**	121.19

Nylon Hooks

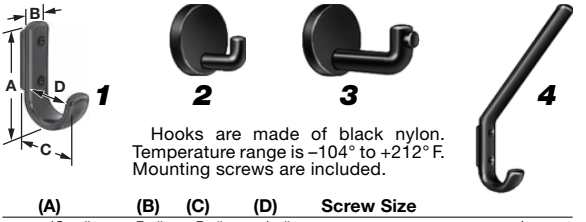

Hooks are made of black nylon. Temperature range is –104° to +212° F. Mounting screws are included.

	(A)	(B)	(C)	(D)	Screw Size		
1	2 15/16"	7/8"	1 7/8"	1/2"	#8	13765A51	$14.69
2	2" Dia.	—	1 3/4"	29/32"	#8	13765A55	10.60
2	2 3/8" Dia.	—	2 9/16"	1 1/2"	#8	13765A56	16.80
2	2 3/4" Dia.	—	3 15/16"	2 5/8"	#8	13765A57	23.05
3	2 3/4" Dia.	—	4 1/8"	2 5/8"	#8	13765A62	24.89
4	7 1/8"	7/8"	3 15/16"	1/2"	#8	13765A53	17.18

Under-Shelf and Ceiling Hooks

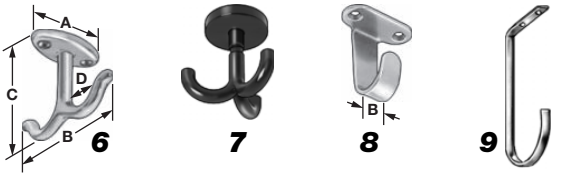

Mounting screws are included.

Style 6—Made of die cast zinc. 1721A1 has a polished brass finish; 1721A22 has a dull aluminum finish.

Style 7—Made of black nylon. Temp. range is –104° to +212° F.

Style 8—Made of Type 304 stainless steel with a dull finish.

Style 9—Made of Type 303 stainless steel with a polished finish.

	(A)	(B)	(C)	(D)	Load Cap., lbs.	Screw Size		
6	1 7/8"	3 1/4"	2 1/4"	3/4"	—	#7	1721A1	$2.28
6	1 7/8"	3 1/4"	2 1/4"	3/4"	—	#7	1721A22	2.09
7	2"	2 7/8"	2 3/4"	63/64"	—	#8	13765A66	14.87
8	1 45/64"	1/2"	1 7/8"	43/64"	22	#6	11515A42	5.34
9	3 17/64"	1/2"	7 3/32"	2 51/64"	22	#9	19075A17	36.35
9	4 21/64"	9/16"	10 15/64"	3 45/64"	33	#11	19075A18	55.75

Load-Rated Type 304 Stainless Steel Screw-In Hooks

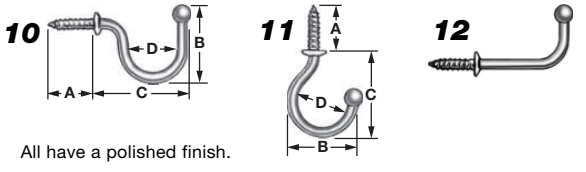

All have a polished finish.

	Wire Dia.	(A)	(B)	(C)	(D)	Load Cap., lbs.	Pkg. Qty.		Pkg.
10	0.106"	7/16"	25/32"	13/16"	15/32"	6	10	29905T36	$6.62
10	0.137"	19/32"	11/32"	15/32"	5/8"	15	10	29905T37	12.62
10	0.177"	25/32"	13/8"	119/32"	53/64"	26	5	29905T28	8.12
11	0.106"	7/16"	19/32"	21/32"	5/16"	11	10	29905T39	6.03
11	0.106"	7/16"	25/32"	29/32"	1/2"	11	10	29905T4	6.42
11	0.137"	19/32"	63/64"	15/32"	39/64"	11	10	29905T47	9.32
11	0.177"	25/32"	111/32"	119/32"	7/8"	26	5	29905T45	7.61
12	0.106"	7/16"	35/64"	55/64"	3/4"	6	10	29905T31	5.31
12	0.118"	33/64"	43/64"	1 1/16"	15/16"	6	10	29905T32	6.62
12	0.137"	19/32"	25/32"	17/32"	1 1/16"	15	10	29905T33	7.62
12	0.157"	19/32"	29/32"	17/16"	15/16"	15	10	29905T46	10.49
12	0.177"	19/32"	11/16"	123/32"	19/16"	17	5	29905T26	7.04

Screw-In Hooks

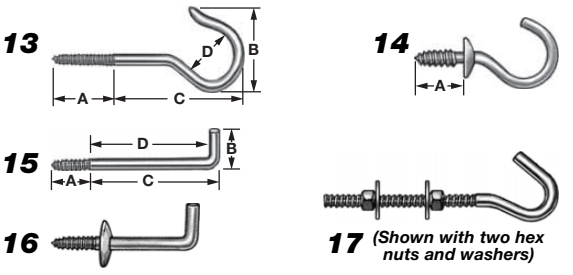

(Shown with two hex nuts and washers)

	Wire Dia.	(A)	(B)	(C)	(D)	Pkg. Qty.		Pkg.
Zinc-Plated Steel								
13	0.080"	11/32"	41/64"	31/32"	9/32"	100	9587T18	$12.15
13	0.105"	7/16"	11/16"	1 1/4"	11/32"	100	9587T17	14.88
13	0.135"	9/16"	7/8"	1 1/2"	13/32"	100	9587T16	15.65
13	0.162"	11/16"	1"	1 7/8"	9/16"	50	9587T21	9.54
13	0.192"	1 1/8"	1 1/2"	2 1/4"	13/16"	50	9587T22	13.16
13	0.225"	1 3/8"	1 1/2"	2 1/2"	29/32"	25	9587T23	9.04
13	0.243"	1 1/2"	137/64"	2 3/4"	7/8"	25	9587T31	9.52
13	0.262"	1 1/2"	213/64"	3"	1 1/32"	25	9587T24	12.61
13	0.306"	1 5/8"	2 5/32"	3 5/16"	1 1/8"	20	9587T25	13.64
13	0.362"	2"	2 1/32"	2 7/8"	1 11/16"	10	9587T33	8.40
Type 304 Stainless Steel Unfinished								**Each**
13	0.243"	1 1/2"	1 5/8"	2 3/4"	7/8"	—	9580T11	$4.72
13	0.306"	1 5/8"	151/64"	2 7/8"	15/16"	—	9580T12	7.59
13	0.362"	2"	2 3/32"	2 7/8"	1 11/16"	—	9580T13	8.59
Brass with Polished Finish								**Pkg.**
14	0.072"	1/4"	3/8"	1/2"	7/32"	100	9585T1	$13.66
14	0.080"	5/16"	29/64"	5/8"	1/4"	100	9585T2	14.79
14	0.091"	11/32"	33/64"	3/4"	21/64"	100	9585T3	16.18
14	0.105"	7/16"	21/32"	7/8"	7/16"	25	9585T24	6.19
14	0.120"	15/32"	49/64"	1"	1/2"	50	9585T25	15.13
14	0.148"	9/16"	1"	1 1/4"	21/32"	25	9585T26	13.41
14	0.148"	9/16"	15/64"	1 1/2"	3/4"	25	9585T27	16.14
14	0.177"	11/16"	119/32"	2"	1 3/32"	10	9585T28	11.71
Zinc-Plated Steel								
15	0.080"	11/32"	3/8"	21/32"	9/16"	100	9594T16	11.25
15	0.105"	7/16"	1/2"	15/16"	53/64"	100	9594T15	10.13
15	0.135"	9/16"	5/8"	1 1/4"	1 1/16"	100	9594T14	12.43
15	0.162"	11/16"	3/4"	1 9/16"	1 5/16"	100	9594T13	15.72
15	0.192"	3/4"	7/8"	1 7/8"	137/64"	50	9594T24	12.28
15	0.225"	15/16"	1"	2 1/16"	1 7/8"	25	9594T11	8.06
Steel with Polished Brass Finish								
15	0.091"	3/8"	1/2"	7/8"	13/16"	100	9595T15	12.29
15	0.135"	9/16"	3/4"	27/16"	2 5/16"	50	9595T13	8.95
15	0.148"	5/8"	3/4"	3 3/8"	3 1/4"	50	9595T12	11.82
Brass with Polished Finish								
16	0.072"	3/16"	9/32"	1/2"	27/64"	100	9586T1	12.91
16	0.080"	3/16"	9/32"	5/8"	35/64"	100	9586T2	13.88
16	0.091"	7/32"	3/8"	3/4"	21/32"	100	9586T3	15.92
16	0.105"	9/32"	3/8"	7/8"	49/64"	100	9586T4	13.72
16	0.120"	5/16"	1/2"	1"	7/8"	50	9586T21	15.00
16	0.148"	7/16"	15/32"	1 1/4"	17/64"	25	9586T22	13.45
16	0.148"	7/16"	15/32"	1 1/2"	123/64"	25	9586T23	14.78
16	0.177"	1/2"	9/16"	2"	153/64"	10	9586T24	12.09

	Thread Size	(A)	(B)	(C)	(D)	Pkg. Qty.		Pkg.
Zinc-Plated Steel Bolts with One Hex Nut								
17	8-32	1"	5/8"	5/8"	15/64"	10	9491T11	$3.93
17	10-24	1 3/16"	3/4"	13/16"	9/32"	10	9491T12	4.17
17	12-24	1 5/16"	13/16"	15/16"	11/32"	10	9491T13	5.35
17	1/4"-20	1 5/8"	1"	1"	3/8"	10	9491T14	5.97
17	5/16"-18	1 7/8"	1 1/8"	1 1/4"	1/2"	10	9491T15	7.66
17	3/8"-16	2 1/4"	1 13/32"	1 1/2"	5/8"	10	9491T16	12.43
17	3/8"-16	3 3/4"	1 1/2"	1 3/8"	5/8"	10	9491T17	15.01
Zinc-Plated Steel Bolts with Two Hex Nuts and Washers								
17	1/4"-20	2 7/8"	1 27/64"	1 3/8"	3/4"	10	9492T13	9.33
17	5/16"-18	4"	1 37/64"	2"	7/8"	10	9492T14	13.01
17	3/8"-16	4 1/2"	1 57/64"	2 1/2"	1 1/16"	10	9492T12	15.72
17	3/8"-16	5 1/2"	1 61/64"	2 1/2"	1 1/16"	5	9492T15	8.73

Steel Nail-In Hooks

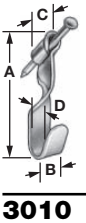

All of these steel hooks have a polished finish. Nails are included.

Picture hanging kit includes three 10-lb. capacity nail-in picture hooks, three 20-lb. capacity nail-in picture hooks, 15 feet of #2 picture wire, and 12 screw eyes.

(A)	(B)	(C)	(D)	Load Cap., lbs.	Pkg. Qty.		Pkg.
49/64"	1/8"	3/16"	9/64"	10	72	6109T1	$10.58
1 5/64"	11/64"	7/32"	3/16"	20	60	6109T2	10.58
1 21/64"	7/32"	9/32"	15/64"	30	48	6109T3	10.58
1 43/64"	17/64"	13/32"	9/32"	50	36	6109T4	10.58

(A)	(B)	(C)	(D)	Load Cap., lbs.	Pkg. Qty.		Pkg.
1 59/64"	23/64"	33/64"	3/8"	100	24	6109T5	$10.58

Picture Hanging Kit ..... 1311T11 **Each** $2.58

Additional Screw Eyes (16/Pkg.) ..... 1311T18 **Pkg.** $1.28

Vinyl-Coated Screw-In and Nail-In Hooks

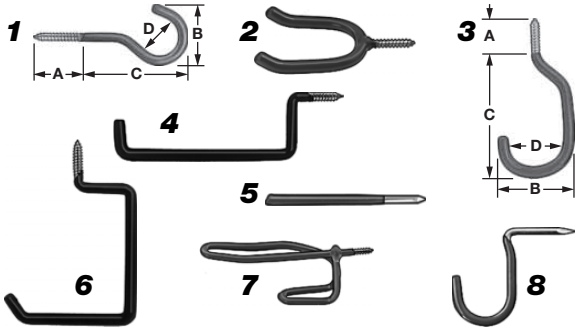

A vinyl coating over zinc-plated steel protects items from scratches.

	Wire Dia.	(A)	(B)	(C)	(D)	Load Cap., lbs.	Pkg. Qty.		Pkg.
Not Load Rated— *Red Vinyl Coating*									
Screw-In									
1	0.192″	7/8″	1 1/2″	2 1/2″	3/4″	—	10	1728A73	$9.88
1	0.235″	1 3/8″	1 49/64″	3 15/64″	1 3/16″	—	10	1728A75	6.58
2	0.264″	1″	—	3″	1 5/8″	—	10	1728A84	8.84
3	0.264″	1 1/2″	3″	4 1/2″	2 1/16″	—	10	1728A82	8.74
4	0.264″	1 1/4″	1 9/16″	6 19/32″	5 1/2″	—	10	1728A83	13.65
6	0.235″	1 3/8″	4 7/32″	5 43/64″	3 21/32″	—	10	1728A85	9.32
7	0.120″	19/32″	1 21/32″	3 5/16″	1 3/8″	—	10	1728A86	8.47
Nail-In									
5	0.148″	63/64″	—	2 23/64″	—	—	10	1728A89	6.03
8	0.235″	1 3/8″	1 7/16″	2″	1″	—	10	1728A87	6.03
Load Rated— *Black Vinyl Coating*									
Screw-In									**Each**
2	0.380″	1 3/8″	—	3 5/8″	2″	50	—	5238A2	$1.63
3	0.430″	1 5/8″	3 29/32″	7″	2 59/64″	40	—	5238A6	1.97
4	0.444″	1 13/16″	2 3/4″	8 3/4″	7 5/8″	50	—	5238A1	2.14
6	0.422″	1 3/4″	6 3/8″	7 1/4″	5 1/2″	50	—	5238A3	2.54

Load-Rated Nylon Anchor Hooks

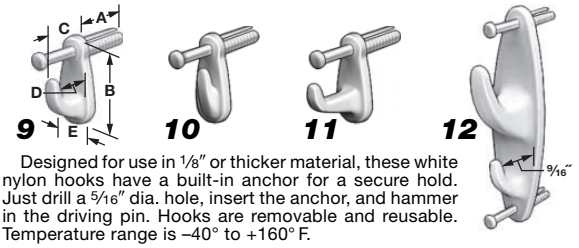

Designed for use in 1/8″ or thicker material, these white nylon hooks have a built-in anchor for a secure hold. Just drill a 5/16″ dia. hole, insert the anchor, and hammer in the driving pin. Hooks are removable and reusable. Temperature range is –40° to +160° F.

	(A)	(B)	(C)	(D)	(E)	Load Cap., lbs.♦	Pkg. Qty.		Pkg.
9	1″	1 5/8″	13/16″	7/16″	13/16″	40	6	14175A71	$5.24
10	1″	1 5/8″	3/8″	1/8″	13/16″	50	6	14175A72	5.24
11	1″	1 5/8″	1″	3/4″	13/16″	40	6	14175A73	5.24
									Each
12	7/8″	5 1/2″	1 7/16″	1 3/64″	1 1/2″	100	—	14175A74	$4.38

♦ Based on installation in sheetrock (drywall) except for Style 10, which is based on installation in a hollow core wood door.

Load-Rated Strap Hooks

Hang up odd-shaped items that most hooks can't handle. Simply adjust the length of the strap and wrap it around your item. Then, hook the steel end fitting onto the mounting plate for a secure hold. Strap is black nylon. Hook is plain steel. Mounting plate is 3 3/16″ Ht. × 1 1/2″ Wd. Mounting screws not included.

Strap Lg.	Load Cap., lbs.	Screw Size	No. of Holes		
32″	50	#8	2	1802A11	$6.80
48″	50	#8	2	1802A12	7.40

Over-the-Door Hooks

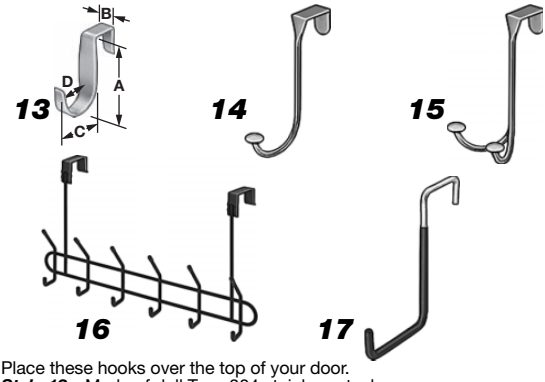

Place these hooks over the top of your door.

Style 13— Made of dull Type 304 stainless steel.

Styles 14 and ***15—*** Made of chrome-plated zinc with a polished finish.

Style 16— Hooks are steel with a black powder-coated finish. Distance between hooks is 3 1/4″. Distance between mounting hooks is 15″. Overall width is 20″.

Style 17— Hook is zinc-plated steel with a red vinyl coating for scratch protection. Temp. range is –20° to +120° F. Package quantity is 10.

	Max. Door Thick.	(A)	(B)	(C)	(D)		Each
13	19/32″	1 57/64″	33/64″	1 1/16″	29/32″	12175A81	$4.71
14	1 3/8″	6 3/4″	7/8″	3″	2 9/64″	12175A1	5.67
15	1 13/32″	6 3/4″	55/64″	3 9/64″	2 7/32″	12175A3	6.11
16	2 1/4″	11 1/4″	1″	2″	1 3/8″	12175A4	8.89
							Pkg.
17	1 3/4″	6″	1/4″	2 3/8″	1 13/16″	1728A91	$9.32

Suction Cup Hooks

Designed for temporary mounting, suction cup hooks are easy to remove and reposition. They adhere to glass, metal, and plastic surfaces that are clean and smooth. Suction cups are clear UV-resistant vinyl. Hooks are zinc-plated steel. Not rated for temperature.

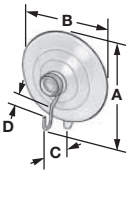

(A)	(B)	(C)	(D)	Pkg. Qty.		Pkg.
1 3/16″	3/4″	3/8″	5/32″	25	65825A2	$7.50
1 1/4″	1 1/8″	5/8″	17/64″	25	65825A3	9.68
1 55/64″	1 3/4″	5/8″	1/4″	25	65825A4	11.06
2 23/32″	2 1/2″	3/4″	1/4″	10	65825A5	7.98

Adhesive-Backed Hooks and Hangers

Adhesive on these hooks and hangers makes hanging items easy. Not temperature rated.

White Cloth Hanger with Zinc-Plated Steel Hook— Use water to moisten the adhesive on the cloth back of these hangers. You can use a single hook as a wall hook, or use two hooks as an interlocking pair: one hook mounts on the wall and one hook mounts on the item you're hanging.

Clear Plastic Hanger— Designed to attach to the top of an item. Just peel off the backing and affix the hanger to a flat-surfaced item. Once adhesive has dried, hang item from a hook, nail, or screw.

Aluminum Hanger— Has a 1/32″ offset for space between the item and hanging surface that hides the hanger from view. Peel off the backing and affix the hanger to a flat-surfaced item. For best holding power, allow adhesive to dry for two hours. Once adhesive has dried, hang item from a hook, nail, or screw.

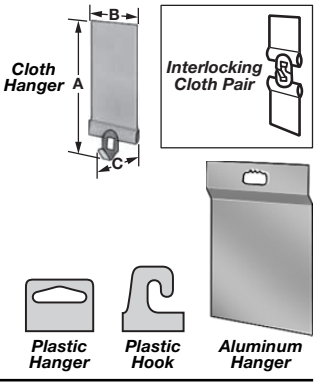

(A)	(B)	(C)	Adhesive Ht. × Wd.	Hole Ht. × Wd.	Load Cap.	Pkg. Qty.		Pkg.
White Cloth Hanger with Zinc-Plated Steel Hook								
2″	1 3/16″	15/64″	1 9/16″ × 1 3/16″	3/16″ × 3/16″	10 lbs.	6	6112T13	$1.34
Clear Plastic Hanger								
1 1/4″	1 5/8″	—	9/16″ × 1 5/8″	3/8″ × 1 1/4″	14 oz.	20	1701A6	1.74
Clear Plastic Hook								
1 9/16″	1 1/2″	—	3/8″ × 1 1/2″	5/16″ Dia.	12 oz.	20	1701A7	1.85
Aluminum Hanger								**Each**
8 1/4″	6″	—	6 1/2″ × 5 3/4″	1/2″ × 1 1/4″	40 lbs.	—	1701A3	$10.86

Reusable Adhesive-Backed Plastic Hooks

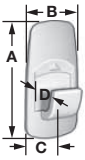

Special adhesive strips let you remove and reuse these hooks without damaging the wall. Hooks are white polystyrene and have a temperature range of 50° to 105°F. Just pull the tab on the adhesive strip to remove the hook from the wall. *Note:* Each time you reuse the hook, a new adhesive strip is required. Hooks come with four adhesive strips, except 1024A23, which comes with two.

Repl. adhesive strip assortment fits all hooks below.

(A)	(B)	(C)	(D)	Load Cap., lbs.	Pkg. Qty.		Pkg.
2 3/8″	5/8″	45/64″	35/64″	1	2	1024A21	$3.63
3″	15/16″	17/64″	29/32″	3	2	1024A22	3.88
							Each
3 29/32″	1 15/64″	1 19/64″	1 3/64″	5	—	1024A23	$3.88
Repl. Adhesive Strip Assortment (16 strips)						1024A24	4.20

Magnetic Holder

Just mount your item to the adapter plate and then screw the adapter plate into the magnet. Adapter plate has four 1/8″ dia. mounting holes on 1 3/64″ centers. Magnetic base is 0.48″ thick. To mount items to the magnet without using the adapter plate, use a 5/16″-24 screw (not included).

Dia.	Proj.	Hold Power, lbs.		
2 5/16″	11/16″	10	1046A5	$8.18

Interlocking Hangers

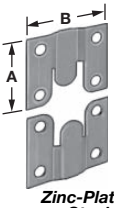

Zinc-Plated Steel

Aluminum, 1201A24

All of these hangers consist of identical parts that slide together and interlock for a secure hold. To remove your item, simply lift it off—no tools required. Use screws (not included) to mount hangers to wall and item.

Zinc-Plated Steel Hangers— Often used to hang mirrors, cabinets, and wall panels, these hangers are made of zinc-plated steel. Lift-off clearance of 1″ required for installation and removal. O'all height when mounted is 1 1/2″. Four screw holes per hanger.

Aluminum Hangers— A special Z-shape allows two of these hangers to wedge together, securely locking panels in place. Ideal for hanging wall panels, partitions, and signs. Made of unfinished aluminum. Lift-off clearance of 5/8″ required for installation and removal. Overall height when mounted is 3 1/8″. 1201A24 has two screw holes. 1201A38 has nine screw holes and can be cut to any length using a hacksaw.

Material	(A)	(B)	Proj.	Screw Size	Pkg. Qty.		Pkg.
Zinc-Plated	1 1/2″	1 7/8″	1/8″	#6	10 Pairs	17565A31	$7.21
Aluminum	1 7/8″	1 1/2″	3/16″	#8	10 Pairs	1201A24	11.01
							Each
Aluminum	1 7/8″	72″	3/16″	#8	—	1201A38	$13.44

Load-Rated Easy-Level Hangers

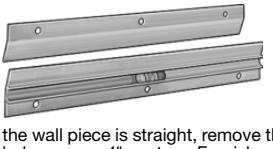

Hang mirrors, panels, and pictures straight the first time—these hangers have a removable tubular level. Each hanger consists of two aluminum pieces; one piece attaches to your item, and the other piece holds the level and mounts to the wall. When the wall piece is straight, remove the level and hang your item. Mounting holes are on 4″ centers. Furnished with screws.

Wd.	Ht.	Proj.	Load Cap., lbs.		
6″	2 1/4″	9/32″	75	2152A11	$7.37
10″	2 1/4″	9/32″	100	2152A12	9.47
18″	2 1/4″	9/32″	200	2152A13	13.37
30″	2 1/4″	9/32″	300	2152A14	15.17

Load-Rated Sliding Extension Hangers

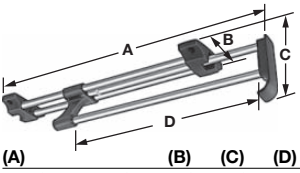

Slide the bottom rod out for easy access to items; slide it back to save space. Rods are 5/16″ dia. and made of steel with a nickel finish. Retainer guides are black nylon. Furnished with mounting screws.

(A)	(B)	(C)	(D)	Load Cap., lbs.		
11 13/16″ to 19 39/64″	2 3/8″	2 7/8″	9 15/16″	13	6692A61	$19.41
13 25/32″ to 21 57/64″	2 3/8″	2 7/8″	11 57/64″	11	6692A62	22.49
15 3/4″ to 24 23/32″	2 3/8″	2 7/8″	13 55/64″	11	6692A63	26.67
17 23/32″ to 27 31/64″	2 3/8″	2 7/8″	15 53/64″	8	6692A64	27.87

Magnetic-Mount Hooks

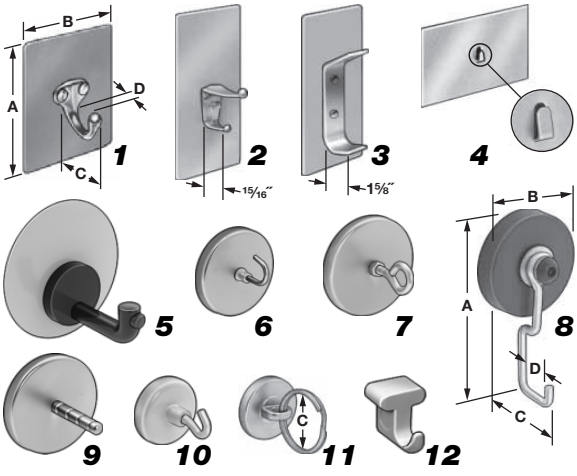

No drilling or fastening required; hooks are magnetic, so they're easy to attach and reposition on steel walls, cabinets, and desks. The magnets on Styles 1-3, 5, 6, and 12 are nonmarring.

Note: "Hold Power" (where listed) is the amount of weight the hook can hold under ideal conditions. Variations in material, surface finish, condition, and thickness will reduce these ratings. Please allow for your individual conditions (such as oiled parts and rusty, painted, and plated surfaces).

Styles 1-3— Have a 0.02″ thick steel base with a beige painted finish and aluminum hook with a polished finish.

Style 4— Have a 0.04″ thick zinc-plated steel base and hook.

Style 5— Has a 0.05″ thick steel base with a beige painted finish, a black nylon hook, and a 9/16″ door bumper.

Style 6— Has a 0.30″ thick chrome-plated steel base and zinc-plated steel hook.

Style 7— Has a 0.43″ thick chrome-plated steel base and an 11/16″ ID zinc-plated steel ring hook.

Style 8— Base is 0.48″ thick. You can reverse the hook to face forward or backward. Base is blue thermoplastic. Hook is zinc-plated steel with a dull finish. A 5/16″-24 screw (included) secures hook to magnet.

Style 9— 14025A44 has a 0.44″ thick chrome-plated steel base and hook. 14025A52 has a 0.50″ thick nickel-plated steel base and hook.

Style 10— Have a steel base and hook with a white painted finish. 14025A46 has a 0.35″ thick base; 14025A47 has a 0.31″ thick base.

Style 11— Has a 0.19″ thick chrome-plated steel base.

Style 12— Has a durable ivory-colored plastic base and hook.

	(A)	(B)	(C)	(D)	Hold Power, lbs.		
1	4 1/8″	3 1/8″	1 3/4″	1″	5	1092A41	$7.30
1	7 5/8″	3 1/8″	1 3/4″	1″	10	1092A42	8.18
2	7 5/8″	3 1/8″	2 1/2″	2 9/64″	10	1092A43	8.68
3	8″	3 1/8″	2 7/32″	2 3/32″	15	1092A46	13.20
4	2″	3″	1 9/64″	3/16″	2	13375A41	7.90
4	2″	4″	1 9/64″	3/16″	5	13375A42	9.20
4	4″	4″	1 9/64″	3/16″	12	13375A43	13.94
4	4″	8″	1 9/64″	3/16″	20	13375A44	19.94
5	6 1/8″ Dia.	—	4 1/4″	2 1/2″	15	1092A49	61.69
6	2″ Dia.	—	1 1/32″	3/8″	20	14025A18	5.50
7	3 13/64″ Dia.	—	2″	35/64″	57	14025A43	7.97
8	4 3/16″	2 5/16″ Dia.	1 3/16″	7/8″	10	1046A3	12.72
9	3 13/64″ Dia.	—	2 1/16″	—	57	14025A44	14.06
9	4 29/32″ Dia.	—	3 37/64″	—	120	14025A52	16.41
10	1″ Dia.	—	1″	13/64″	9	14025A46	1.77
10	1 1/4″ Dia.	—	1 1/16″	13/64″	14	14025A47	2.53
11	1 1/8″ Dia.	—	1″	—	35	14025A51	12.07
12	1 23/32″	1 27/64″	1 23/32″	11/16″	4	13735A22	3.56

T-Slotted Mounting Track

The T-slotted design allows you to slide in 1/4″-20 hex head bolts (not included; see 93306A series on page 3151 and 92865A549 on page 3140) to mount, position, and hang clamps and fixtures. To reposition clamps and fixtures, loosen the bolt and slide it into a new position. Ideal for positioning jigs, stops, and hold-downs on table saws. Track is made of clear anodized extruded aluminum and has mounting holes that accept #8 pan head screws (not included). Mounting holes are on 3″ centers.

(A)	(B)	Length		
47/64″	1/2″	18″	1850A11	$4.65
47/64″	1/2″	24″	1850A14	5.93
47/64″	1/2″	36″	1850A17	8.77
47/64″	1/2″	48″	1850A19	11.55

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About Wood Screws for Power Drivers

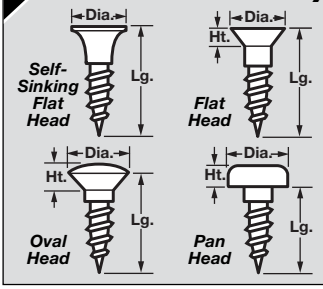

With a sharp cutting point, widely spaced threads, and a variety of drive styles, wood screws for power drivers are good for use in composites and other dense materials.

Power screwdriver bits for Phillips screws are sold on pages 2818-2819. Torx drive power bits are sold on page 2823; square drive power bits are sold on page 2824.

To prevent splitting, we recommend that you drill a starter hole slightly smaller than the screw you're installing (see page 2432 for drill bits).

Note: You can use Phillips and square drive sheet metal screws in place of wood screws for power drivers (see pages 3022-3030).

Screw Size		No. 6	No. 7	No. 8	No. 9	No. 10	No. 12
Decimal Equivalent		0.138″	0.151″	0.164″	0.177″	0.190″	0.216″
Drill Size	Hard Wood	5/64″	3/32″	3/32″	7/64″	7/64″	1/8″
	Soft Wood	1/16″	1/16″	5/64″	5/64″	3/32″	7/64″

Self-Sinking Flat Head

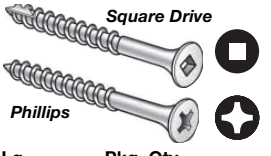

Thanks to a curved neck, these screws sink into soft materials and sit flush when installed. Also called bugle-head deck screws, they are threaded at least 1/2 of their length (unless noted).

Square Drive— Have a Type 17 auger point that easily penetrates hard woods. Choose from Type 316 stainless steel and 18-8 stainless steel; both are a good choice for ACQ-treated (arsenic-free) lumber and may be mildly magnetic. Type 316 stainless steel is more corrosion resistant than 18-8 stainless steel. Minimum Rockwell hardness is B84.

Phillips— Made of hardened C1018 steel with a gray coating that's resistant to at least 1,000 hours of salt spray, compared to zinc plating which provides 200 hours or less. Minimum Rockwell hardness is C44.

Lg.	Pkg. Qty.		Per Pkg.
Square Drive— *Type 316 Stainless Steel*			
No. 8— *#2 Drive; Head Dia.: 0.344″*			
15/8″	50	90000A290	$8.57
2″	50	90000A291	9.77
No. 10— *#2 Drive; Head Dia.: 0.344″*			
2 1/2″	25	90000A293	8.51
3″	25	90000A294	10.91
3 1/2″	25	90000A295	10.51
No. 12— *#3 Drive; Head Dia.: 0.430″*			
2 1/2″	25	90000A297	9.26
3″	25	90000A298	11.11
3 1/2″	10	90000A299	5.80
4″	10	90000A300	6.54
5″	10	90000A305	10.34
6″	10	90000A310	12.86

Lg.	Pkg. Qty.		Per Pkg.
Square Drive— *18-8 Stainless Steel*			
No. 6— *#2 Drive; Head Dia.: 0.344″*			
1 1/4″	100	90000A155	$10.94
1 5/8″	100	90000A159	11.03
No. 8— *#2 Drive; Head Dia.: 0.344″*			
1 1/4″	100	90000A196	12.23
1 5/8″	50	90000A200	7.26
2″	50	90000A205	7.91
2 1/4″	50	90000A210	8.09
2 1/2″	50	90000A215	9.03
No. 10— *#2 Drive; Head Dia.: 0.344″*			
1″	100	90000A220	11.83
1 1/4″	100	90000A222	13.09
1 1/2″	50	90000A224	7.74
1 3/4″	50	90000A226	8.46
2″	50	90000A228	9.33
2 1/2″	25	90000A255	6.91

Lg.	Pkg. Qty.		Per Pkg.
Square Drive— *18-8 Stainless Steel (Cont.)*			
No. 10 (Cont.)			
3″	25	90000A257	$8.06
3 1/2″	25	90000A260	8.71
3 3/4″	25	90000A265	12.34
Phillips— *Coated Steel*			
No. 6— *#2 Drive; Head Dia.: 0.330″*			
1 1/4″	100	90095A414●	2.34
1 5/8″	100	90095A416●	2.41
2″	100	90095A418	3.21
No. 8— *#2 Drive; Head Dia.: 0.349″*			
2 1/2″	100	90095A432	5.21
3″	100	90095A433	6.49
No. 10— *#2 Drive*			
3 1/2″	100	90095A438■	9.93
4″	100	90095A442▲	10.62

● Fully threaded. ■ Head diameter is 0.376″. ▲ Head diameter is 0.395″.

Self-Sinking Small Flat Head Square Drive

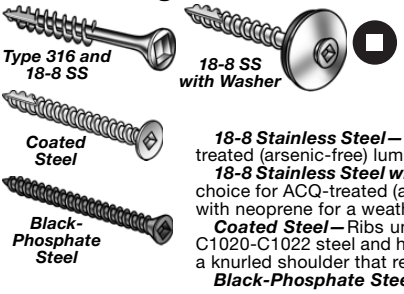

Ideal for trim and finish work, these screws have a small flat countersinking head and a slender shank. Also known as trim head and deck screws, they're threaded at least 1/2 of their length (unless noted). All except black-phosphate steel screws have a Type 17 auger point that easily penetrates hard woods.

Type 316 Stainless Steel— More corrosion resistant than 18-8 stainless steel and a good choice for ACQ-treated (arsenic-free) lumber. May be mildly magnetic. Min. Rockwell hardness is B89.

18-8 Stainless Steel— More corrosion resistant than coated steel and black-phosphate steel; a good choice for ACQ-treated (arsenic-free) lumber. May be mildly magnetic. Rockwell hardness is B85.

18-8 Stainless Steel with Washer— More corrosion resistant than coated steel and black-phosphate steel and a good choice for ACQ-treated (arsenic-free) lumber. May be mildly magnetic. Each has an 18-8 stainless steel washer backed with neoprene for a weather-resistant seal. Washer OD is 0.625″; height is 0.199″.

Coated Steel— Ribs under the head create a recess for complete countersinking. Screws are made from hardened C1020-C1022 steel and have a gray corrosion-resistant coating. Rockwell hardness is C47. All except 91520A301 have a knurled shoulder that reams a hole to reduce drag on the screw and driver.

Black-Phosphate Steel— Made from hardened C1018-C1022 steel. Mildly rust resistant. Not rated for hardness.

Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
No. 7— *#1 Drive; Head: Dia. 0.23″; Ht. 0.120″*			
1 5/8″	50	90076A710	$11.80
2 1/4″	25	90076A720	9.59
3″	25	90076A730	10.64
18-8 Stainless Steel			
No. 7— *#1 Drive; Head: Dia. 0.23″; Ht. 0.125″*			
1″	100	91530A771	13.68
1 5/8″	50	91530A774	10.20
2″	50	91530A776	10.96
2 1/4″	50	91530A778	12.13
2 1/2″	50	91530A782	12.04
3″	50	91530A400	14.25

● Fully threaded.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel (Cont.)			
No. 9— *#1 Drive; Head: Dia. 0.25″; Ht. 0.125″*			
3 1/2″	10	91530A420	$6.90
No. 9— *#2 Drive; Head: Dia. 0.25″; Ht. 0.125″*			
4″	10	91530A425	7.43
18-8 Stainless Steel with Washer			
No. 7— *#1 Drive; Head: Dia. 0.23″; Ht. 0.125″*			
1″	25	91540A100	11.76
1 5/8″	25	91540A200	12.22
2 1/4″	10	91540A300	12.17
3″	10	91540A400	14.95

Lg.	Pkg. Qty.		Per Pkg.
Coated Steel			
No. 6— *#1 Drive; Head: Dia. 0.25″; Ht. 0.125″*			
1 5/8″	50	91520A301●	$6.99
2″	50	91520A303	8.22
No. 8— *#2 Drive; Head: Dia. 0.3″; Ht. 0.130″*			
2 1/2″	50	91520A305	10.35
3″	25	91520A306	8.90
3 1/2″	25	91520A307	10.71
Black-Phosphate Steel			
No. 6— *#1 Drive; Head: Dia. 0.221″; Ht. 0.132″*			
1 5/8″	100	91520A150●	7.06
2 1/4″	100	91520A160●	11.21
No. 8— *#2 Drive; Head: Dia. 0.243″; Ht. 0.156″*			
3″	50	91520A171	10.03

Self-Sinking Flat Head Uni-Drive

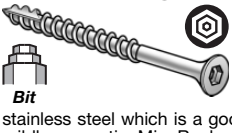

Have a curved neck and a drive that requires only one power bit (sold separately) for all screw sizes. They're threaded 2/3 of their length and have a Type 17 auger point that easily penetrates hard woods. Screws are corrosion-resistant 18-8 stainless steel which is a good choice for ACQ-treated lumber. May be mildly magnetic. Min. Rockwell hardness is B100.

Lg.	Pkg. Qty.		Per Pkg.
No. 8— *Head Dia.: 0.344″*			
1 5/8″	50	99351A250	$11.22
2″	50	99351A270	12.98
2 1/2″	25	99351A290	7.65

Lg.	Pkg. Qty.		Per Pkg.
No. 10— *Head Dia.: 0.344″*			
2 1/2″	25	99351A410	$9.07
3″	25	99351A430	10.48

2″ Long Steel Uni-Drive Power Bit ..... 93686A920 **Each** $1.97

For information about wood screws for power drivers, see page 3014.

Low-Profile Pan Head for Plastic Composites

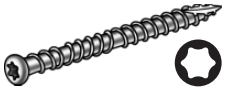

Designed with a smaller than usual pan head and threads that change directions to cut into composites without distorting the surface around the hole. The drive is star-shaped (compatible with Torx drivers and bits).

Each is fully threaded and has a Type 17 auger point for easier penetration. All are made from corrosion-resistant 18-8 stainless steel which may be mildly magnetic. Minimum Rockwell hardness is B84.

To Order: For screws with a painted head, please specify color: tan, brown, or gray.

Lg.	Unpainted Pkg. Qty.	Unpainted Per Pkg.	With Painted Head Pkg. Qty.	With Painted Head Per Pkg.
No. 10—*T20 Drive Size; Head: Dia. 0.267"; Ht. 0.083"*				
2½"	25	98419A330	10	98419A110
3"	25	98419A440	10	98419A120

Lg.	Unpainted Per Pkg.	With Painted Head Per Pkg.
No. 10—*T20 Drive Size; Head: Dia. 0.267"; Ht. 0.083"*		
2½"	$9.43	$6.25
3"	11.18	7.00

Heavy Duty Flat Head Square Drive

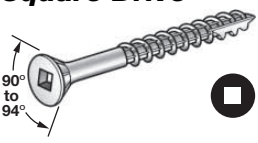

Ideal for hard wood, these screws have a ribbed shank for extra strength and ribs under the head to prevent the screws from backing out. Each is threaded ⅔ of its length and has a Type 17 auger point that easily penetrates hard woods. Screws are made from corrosion-resistant 18-8 stainless steel which is a good choice for ACQ-treated (arsenic-free) lumber and may be mildly magnetic. Minimum Rockwell hardness is B85.

Lg.	Pkg. Qty.	Per Pkg.
No. 8—*#2 Drive; Head: Dia. 0.307"; Ht. 0.088"*		
1⅝"	25	98643A350 $6.51
2"	25	98643A370 7.95
2½"	10	98643A390 4.02
No. 10—*#2 Drive; Head: Dia. 0.385"; Ht. 0.110"*		
2½"	10	98643A610 $5.31
3"	10	98643A640 6.19

Flat and Pan Head Phillips for Plywood and Particleboard

Sharp, asymmetrically angled threads provide excellent holding power and cut particleboard and other man-made materials without splitting. Screws are threaded at least ⅔ of their length (unless noted). All are made from C1018-C1022 steel with a black-oxide finish and are mildly rust resistant. Minimum Rockwell hardness is C44.

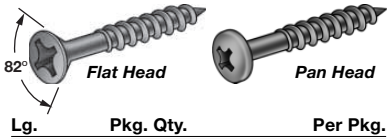

Lg.	Pkg. Qty.	Per Pkg.
Flat Head		
No. 6—*#2 Drive; Head: Dia. 0.267"; Ht. 0.120"*		
¾"	100	90252A104● $6.66
1"	100	90252A106● 6.88
1¼"	100	90252A108 7.54
1½"	100	90252A110 9.03
No. 8—*#2 Drive; Head: Dia. 0.322"; Ht. 0.139"*		
¾"	100	90252A111● 7.06
1"	100	90252A112● 6.29
1¼"	100	90252A114 7.71
1½"	100	90252A115 9.22
1⅝"	100	90252A116 10.01
2"	100	90252A118 11.96
2¼"	100	90252A119 13.94

● Fully threaded.

Lg.	Pkg. Qty.	Per Pkg.
Flat Head		
No. 9—*#2 Drive; Head: Dia. 0.345"; Ht. 0.153"*		
2½"	50	90252A232 $9.21
3"	50	90252A234 10.88
No. 10—*#3 Drive; Head: Dia. 0.377"; Ht. 0.163"*		
1"	100	90252A235● 10.48
1¼"	100	90252A237 12.36
1½"	100	90252A239 14.36
2"	50	90252A242 9.68
2½"	50	90252A244 12.79

Lg.	Pkg. Qty.	Per Pkg.
Pan Head		
No. 6—*#2 Drive; Head: Dia. 0.269"; Ht. 0.097"*		
½"	100	91555A101● $6.21
No. 8—*#2 Drive; Head: Dia. 0.321"; Ht. 0.096"*		
½"	100	91555A102 6.46
¾"	100	91555A104● 7.21
1"	100	91555A108● 8.30
1¼"	100	91555A109 7.69
1¾"	100	91555A110 7.85
2"	100	91555A111 8.31
No. 10—*#2 Drive; Head: Dia. 0.372"; Ht. 0.132"*		
1"	100	91555A112● 10.30

Serrated-Thread Screws for Wood, Plywood, and Fiberglass

Serrated threads penetrate dense materials and provide extra holding power. Screws are fully threaded (unless noted). The stainless steel screws are suitable for use in fiberglass and are a good choice for ACQ-treated (arsenic-free) lumber.

Type 316 Stainless Steel—More corrosion resistant than 18-8 stainless steel; may be mildly magnetic. Minimum Rockwell hardness is B89.

18-8 Stainless Steel—Passivated (coated with a protective film) to guard against oxidation. More corrosion resistant than zinc-plated steel. May be mildly magnetic. Minimum Rockwell hardness is B80.

Zinc-Plated Steel—Made from C1012 steel and zinc-plated for good rust resistance. Excellent for plastics, sheet metal, and masonry. Minimum Rockwell hardness is C40.

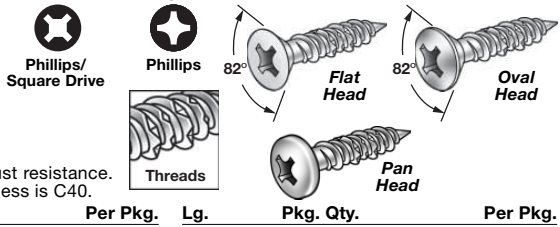

Lg.	Pkg. Qty.	Per Pkg.
Flat Head—*Type 316 Stainless Steel*		
No. 6—*#2 Phillips; Head: Dia. 0.279"; Ht. 0.083"*		
½"	100	93360A105 $11.23
¾"	100	93360A110 12.67
1"	100	93360A115 13.57
No. 8—*#2 Phillips; Head: Dia. 0.332"; Ht. 0.100"*		
¾"	100	93360A125 11.80
1"	100	93360A130 14.63
No. 10—*#2 Phillips; Head: Dia. 0.385"; Ht. 0.116"*		
1½"	50	93360A415▲ 11.63
Flat Head—*18-8 Stainless Steel*		
No. 9—*#2 Phillips, #2 Square Drive; Head: Dia. 0.350"; Ht. 0.159"*		
1½"	50	90027A211▲ 8.59
2"	50	90027A216▲ 11.57
2½"	25	90027A225▲ 10.43
No. 10—*#2 Phillips, #2 Square Drive; Head: Dia. 0.400"; Ht. 0.130"*		
2½"	50	90027A250▲ 14.66
3"	25	90027A255▲ 10.33
Flat Head—*Zinc-Plated Steel*		
No. 6—*#2 Phillips, #1 Square Drive; Head: Dia. 0.300"; Ht. 0.100"*		
⅝"	100	91550A150 3.37
¾"	100	91550A151 3.74
1"	100	91550A153 4.43
1¼"	100	91550A155 5.15
1½"	100	91550A157 5.71

▲ Threaded at least ½ of screw length.

Lg.	Pkg. Qty.	Per Pkg.
Flat Head—*Zinc-Plated Steel (Cont.)*		
No. 8—*#2 Phillips, #2 Square Drive; Head: Dia. 0.300"; Ht. 0.110"*		
¾"	100	91550A199 $4.46
1"	100	91550A201 5.16
1½"	100	91550A203 6.82
2"	100	91550A205 9.04
No. 10—*#2 Phillips, #2 Square Drive; Head: Dia. 0.400"; Ht. 0.130"*		
¾"	100	91550A245 6.82
1"	100	91550A247 7.44
1¼"	100	91550A249 8.78
1½"	100	91550A251 10.16
2"	100	91550A253 12.16
Oval Head—*Type 316 Stainless Steel*		
No. 8—*#2 Phillips; Head: Dia. 0.332"; Ht. 0.139"*		
¾"	100	93360A350 14.23
1"	100	93360A355 14.99
No. 10—*#2 Phillips; Head: Dia. 0.385"; Ht. 0.162"*		
1½"	50	93360A515▲ 11.03
Pan Head—*Type 316 Stainless Steel*		
No. 6—*#2 Phillips; Head: Dia. 0.270"; Ht. 0.094"*		
½"	100	93360A220 10.73
¾"	100	93360A225 11.07
1"	100	93360A230 14.37

Lg.	Pkg. Qty.	Per Pkg.
Pan Head—*Type 316 Stainless Steel (Cont.)*		
No. 8—*#2 Phillips; Head: Dia. 0.322"; Ht. 0.112"*		
¾"	100	93360A240 $13.20
1"	100	93360A245 14.63
1¼"	50	93360A250▲ 8.20
1½"	50	93360A255▲ 12.57
No. 10—*#2 Phillips; Head: Dia. 0.373"; Ht. 0.127"*		
¾"	50	93360A603 9.80
1"	50	93360A607 10.53
1¼"	50	93360A609▲ 11.26
1½"	50	93360A615▲ 11.93
Pan Head—*Zinc-Plated Steel*		
No. 6—*#1 Phillips, #2 Square Drive; Head: Dia. 0.260"; Ht. 0.100"*		
⅝"	100	91070A150 4.18
¾"	100	91070A151 4.57
No. 8—*#2 Phillips, #2 Square Drive; Head: Dia. 0.330"; Ht. 0.110"*		
¾"	100	91070A199 5.66
1"	100	91070A201 6.35
1½"	100	91070A203 8.53
2"	100	91070A205 10.31
No. 10—*#2 Phillips, #2 Square Drive; Head: Dia. 0.370"; Ht. 0.130"*		
⅝"	100	91070A244 8.42
¾"	100	91070A245 9.04
1"	100	91070A247 10.09

About Wood Screws

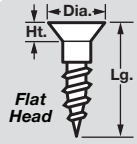

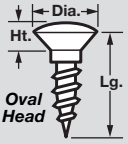

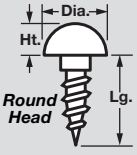

Use a wood screw when you need more holding power than a nail can provide. Wood screws are threaded at least two-thirds of their length and have a sharp point to facilitate entry.

Phillips and square drive screws can either be power driven or hand driven; screws with slotted drives should only be driven by hand. Screwdriver bits for Phillips screws are sold on pages 2818-2819; bits for square drive screws are sold on page 2824.

To prevent splitting, we recommend that you drill a starter hole slightly smaller than the screw you're installing (see page 2432 for drill bits). Use a countersink to create a recess for flat and oval head screws (see page 2468 for countersinks). The body diameter of your countersink should be equal to or larger than your screw's head diameter, and the included angle of your countersink should match your screw's head angle.

Note: You can use sheet metal screws in place of wood screws (see pages 3022-3030 for sheet metal screws).

Wood Screw Materials

18-8 Stainless Steel— Has excellent corrosion resistance and may be mildly magnetic. Minimum Rockwell hardness is B85.

Brass— Nonmagnetic with good corrosion resistance. Softer than stainless steel. Minimum Rockwell hardness is B55.

Zinc-Plated Steel— Made from low-strength steel such as C1006-C1022. Offers good rust resistance in most environments. Not rated for Rockwell hardness.

Screw Size		No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 12	No. 14	No. 16	No. 18	No. 20	No. 24
Decimal Equivalent		0.086″	0.099″	0.112″	0.125″	0.138″	0.151″	0.164″	0.177″	0.190″	0.216″	0.242″	0.268″	0.294″	0.320″	0.372″
Drill Size	Hard Wood	3/64″	1/16″	1/16″	5/64″	5/64″	3/32″	3/32″	7/64″	7/64″	1/8″	9/64″	5/32″	3/16″	13/64″	7/32″
	Soft Wood	1/32″	3/64″	3/64″	1/16″	1/16″	1/16″	5/64″	5/64″	3/32″	7/64″	7/64″	9/64″	9/64″	11/64″	3/16″
Head Dia.	Flat & Oval	0.172″	0.199″	0.225″	0.252″	0.279″	0.305″	0.332″	0.358″	0.385″	0.438″	0.507″	0.544″	0.635″	0.650″	0.762″
	Round	0.162″	0.187″	0.211″	0.236″	0.260″	—	0.309″	—	0.359″	0.408″	—	—	—	—	—
Head Ht.	Flat	0.051″	0.059″	0.067″	0.075″	0.083″	0.091″	0.100″	0.108″	0.116″	0.132″	0.153″	0.164″	0.191″	0.196″	0.230″
	Oval	—	—	0.104″	0.116″	0.128″	—	0.152″	—	0.176″	—	—	—	—	—	—
	Round	0.069″	0.078″	0.086″	0.095″	0.103″	—	0.120″	—	0.137″	0.153″	—	—	—	—	—

Flat Head Phillips, Square Drive, and Slotted

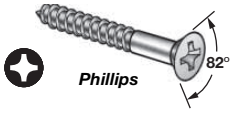

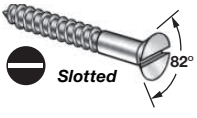

Flat head screws are beveled under the head so they provide a flush surface within countersunk holes. Choose from 18-8 stainless steel, brass, and zinc-plated steel.

Phillips—18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 4—#1 Drive			
3/8″	100	90294A108	$5.38
1/2″	100	90294A110	5.79
5/8″	100	90294A112	6.00
3/4″	100	90294A113	7.79
1″	100	90294A115	9.88
No. 5—#2 Drive			
1/2″	50	90294A122	8.97
5/8″	50	90294A124	9.43
3/4″	50	90294A127	9.86
No. 6—#2 Drive			
3/8″	100	90294A146	5.86
1/2″	100	90294A148	6.72
5/8″	100	90294A150	7.60
3/4″	100	90294A151	9.42
1″	50	90294A153	5.87
1 1/4″	50	90294A155	7.12
1 1/2″	50	90294A157	9.09
2″	50	90294A159	11.09
No. 7—#2 Drive			
5/8″	50	90294A170	9.93
No. 8—#2 Drive			
1/2″	100	90294A194	8.66
5/8″	100	90294A196	11.90
3/4″	100	90294A197	10.48
7/8″	50	90294A198	6.66
1″	100	90294A199	11.48
1 1/4″	50	90294A201	8.44
1 1/2″	50	90294A203	9.82
1 3/4″	25	90294A204	6.95
No. 8 (Cont.)			
2″	25	90294A205	$7.06
2 1/2″	25	90294A207	9.18
3″	25	90294A209	11.24
No. 10—#3 Drive			
5/8″	50	90294A244	7.77
3/4″	50	90294A245	8.35
1″	50	90294A247	10.36
1 1/4″	50	90294A249	11.06
1 1/2″	25	90294A251	5.85
1 3/4″	25	90294A252	8.17
2″	25	90294A253	8.29
2 1/2″	25	90294A255	11.23
3″	10	90294A257	5.85
No. 12—#3 Drive			
3/4″	50	90294A294	10.39
1″	50	90294A296	11.23
1 1/4″	25	90294A298	7.08
1 1/2″	25	90294A299	8.43
1 3/4″	25	90294A300	8.97
2″	25	90294A301	10.76
2 1/2″	10	90294A303	5.68
3″	10	90294A304	6.94
No. 14—#3 Drive			
1″	25	90294A315	10.40
1 1/4″	25	90294A316	11.59
1 1/2″	10	90294A317	6.66
2″	10	90294A319	7.08
2 1/2″	10	90294A321	7.86
3″	10	90294A323	9.43

Phillips—Brass

Lg.	Pkg. Qty.		Per Pkg.
No. 2—#1 Drive			
1/4″	100	92114A077	3.86
3/8″	100	92114A079	3.98
1/2″	100	92114A081	4.08
No. 3—#1 Drive			
3/8″	100	92114A094	4.11
1/2″	100	92114A096	4.70
5/8″	100	92114A098	5.37
3/4″	100	92114A099	5.99
No. 4—#1 Drive			
1/4″	100	92114A106	4.89
3/8″	100	92114A108	4.51
1/2″	100	92114A110	5.60
No. 4 (Cont.)			
5/8″	100	92114A112	6.58
3/4″	100	92114A113	7.11
7/8″	100	92114A114	9.17
1″	100	92114A115	10.02
1 1/4″	100	92114A117	10.65
No. 5—#2 Drive			
1/2″	100	92114A128	6.42
5/8″	100	92114A130	7.39
3/4″	100	92114A131	8.72
7/8″	100	92114A132	9.68
1″	100	92114A133	11.19

Phillips—Brass (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
No. 5 (Cont.)			
1 1/4″	100	92114A135	$11.18
1 1/2″	50	92114A138	8.21
No. 6—#2 Drive			
3/8″	100	92114A146	5.69
1/2″	100	92114A148	7.43
5/8″	100	92114A150	8.96
3/4″	100	92114A151	9.64
7/8″	100	92114A152	12.53
1″	100	92114A153	12.62
1 1/4″	100	92114A155	14.95
1 1/2″	100	92114A157	14.82
2″	50	92114A159	10.66
2 1/2″	50	92114A161	13.36
No. 7—#2 Drive			
1/2″	100	92114A170	9.90
5/8″	100	92114A172	11.29
3/4″	100	92114A173	12.76
1″	100	92114A175	14.14
1 1/2″	50	92114A179	10.77
No. 8—#2 Drive			
1/2″	100	92114A194	10.02
5/8″	100	92114A196	11.66
3/4″	100	92114A197	13.39
7/8″	100	92114A198	14.90
1″	100	92114A199	14.95
1 1/4″	50	92114A201	10.67
1 1/2″	50	92114A203	13.66
1 3/4″	50	92114A204	13.87
2″	50	92114A205	12.50
2 1/2″	25	92114A207	10.05
3″	25	92114A209	12.50
No. 9—#2 Drive			
5/8″	50	92114A213	$4.10
3/4″	50	92114A215	4.59
1″	50	92114A223	10.88
1 1/2″	50	92114A327	12.21
No. 10—#3 Drive			
5/8″	50	92114A244	9.18
3/4″	50	92114A245	10.61
1″	50	92114A247	12.06
1 1/4″	50	92114A249	14.48
1 1/2″	25	92114A251	8.74
1 3/4″	25	92114A252	9.97
2″	25	92114A253	9.72
2 1/2″	10	92114A255	5.76
3″	10	92114A257	6.21
3 1/2″	10	92114A259	6.87
No. 12—#3 Drive			
3/4″	50	92114A294	13.49
1″	25	92114A296	8.35
1 1/4″	50	92114A298	14.90
1 1/2″	25	92114A299	9.79
1 3/4″	25	92114A300	11.35
2″	25	92114A301	14.43
2 1/2″	25	92114A303	14.21
3″	10	92114A305	7.64
3 1/2″	10	92114A306	9.18
No. 14—#3 Drive			
1 1/2″	10	92114A317	6.23
2″	10	92114A319	7.25
2 1/2″	10	92114A321	9.51
3″	10	92114A323	9.11
4″	10	92114A325	11.42

Phillips—Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 4—#1 Drive			
3/8″	100	90031A108	1.85
1/2″	100	90031A110	2.39
5/8″	100	90031A112	2.24
3/4″	100	90031A113	2.29
1″	100	90031A115	2.81
1 1/4″	100	90031A117	4.11
No. 5—#2 Drive			
1/2″	100	90031A128	2.43
5/8″	100	90031A130	2.62
No. 5 (Cont.)			
3/4″	100	90031A131	3.22
1″	100	90031A133	3.36
1 1/4″	100	90031A135	4.91
No. 6—#2 Drive			
3/8″	100	90031A146	4.00
1/2″	100	90031A148	2.25
5/8″	100	90031A150	2.95
3/4″	100	90031A151	3.22
1″	100	90031A153	3.67

(Continued on following page)

For information about wood screw materials and dimensions, see page 3016.

Flat Head Phillips, Square Drive, and Slotted *(Continued from previous page)*

Phillips— *Zinc-Plated Steel (Cont.)*

Lg.	Pkg. Qty.		Per Pkg.
No. 6 (Cont.)			
1¼″	100	90031A155	$4.44
1½″	100	90031A157	5.19
2″	100	90031A159	7.04
No. 7— *#2 Drive*			
½″	100	90031A170	3.20
⅝″	100	90031A172	4.83
¾″	100	90031A173	4.31
1″	100	90031A175	5.72
1¼″	100	90031A177	3.20
1½″	100	90031A179	4.08
No. 8— *#2 Drive*			
½″	100	90031A194	4.50
⅝″	100	90031A196	3.76
¾″	100	90031A197	4.36
⅞″	100	90031A198	4.81
1″	100	90031A199	5.41
1¼″	100	90031A201	2.66
1½″	100	90031A203	3.01
1¾″	100	90031A204	8.49
2″	100	90031A205	8.44
2½″	100	90031A207	5.03
3″	100	90031A209	13.14
No. 9— *#2 Drive*			
⅝″	100	90031A219	8.04
¾″	100	90031A221	3.17
1″	100	90031A223	3.67
1¼″	100	90031A225	4.24
1½″	100	90031A327	4.86
2″	100	90031A229	6.15
3″	50	90031A233	7.01
No. 10— *#3 Drive*			
⅝″	100	90031A244	6.28
¾″	100	90031A245	6.19
1″	100	90031A247	2.93
1¼″	100	90031A249	3.33
1½″	100	90031A251	3.86
1¾″	100	90031A252	5.38
2″	100	90031A253	4.29
2¼″	100	90031A254	5.19
2½″	100	90031A255	11.17
3″	100	90031A257	9.47
3½″	50	90031A259	8.33
No. 12— *#3 Drive*			
¾″	100	90031A294	7.51
1″	100	90031A296	9.28
1¼″	100	90031A298	4.88
1½″	100	90031A299	5.44
1¾″	100	90031A300	6.21
2″	100	90031A301	11.37
2½″	100	90031A303	8.71
3″	100	90031A305	10.71
3½″	100	90031A306	13.00
No. 14— *#3 Drive*			
1″	100	90031A315	6.52
1¼″	100	90031A316	6.75
1½″	100	90031A317	7.13
2″	100	90031A319	8.49
2½″	100	90031A321	12.56
3″	100	90031A323	12.91
3½″	25	90031A334	8.58
4″	25	90031A335	9.31

Square Drive— *Brass*

Lg.	Pkg. Qty.		Per Pkg.
No. 6— *#1 Drive*			
¾″	100	95188A310	9.68
1″	100	95188A320	13.42
1¼″	100	95188A330	13.62
No. 8— *#2 Drive*			
¾″	100	95188A440	13.03
1″	50	95188A450	8.45
1¼″	50	95188A460	10.07

Square Drive— *Zinc-Plated Steel*

Lg.	Pkg. Qty.		Per Pkg.
No. 4— *#0 Drive*			
½″	100	90610A110	8.66
¾″	100	90610A113	10.14
1″	100	90610A115	9.19
No. 6— *#1 Drive*			
½″	100	90610A148	6.00
¾″	100	90610A151	5.61
1″	100	90610A153	7.65
1¼″	100	90610A155	11.47
1½″	100	90610A157	12.75
No. 8— *#2 Drive*			
½″	100	90610A194	8.45
¾″	100	90610A197	7.53
1″	100	90610A199	12.07
1¼″	100	90610A201	12.47
1½″	50	90610A203	7.78
2″	50	90610A205	12.25
No. 8 (Cont.)			
2½″	50	90610A607	11.44
3″	25	90610A609	8.19
No. 10— *#2 Drive*			
¾″	50	90610A245	8.36
1″	100	90610A247	9.33
1¼″	100	90610A249	12.85
1½″	50	90610A251	8.36
1¾″	50	90610A652	13.32
2″	50	90610A253	10.08
2½″	25	90610A655	8.17
3″	25	90610A657	8.84
No. 12— *#3 Drive*			
1″	100	90610A296	14.32
1½″	50	90610A299	10.71
2″	50	90610A681	9.44
2½″	25	90610A683	8.65
3″	25	90610A685	9.34

Slotted— *18-8 Stainless Steel*

Lg.	Pkg. Qty.		Per Pkg.
No. 4			
½″	100	91606A110	10.91
¾″	100	91606A113	11.46
No. 6			
½″	100	91606A148	9.36
¾″	50	91606A151	6.23
No. 8			
¾″	50	91606A197	6.10
1″	50	91606A199	7.90
1¼″	50	91606A201	9.07
1½″	50	91606A203	10.42
No. 10			
¾″	50	91606A245	$8.03
1″	50	91606A247	9.25
1¼″	50	91606A249	10.81
1½″	25	91606A251	6.50
No. 10 (Cont.)			
2″	25	91606A253	$8.36
3″	10	91606A257	6.34
No. 12			
2″	25	91606A301	11.52

Slotted— *Brass*

Lg.	Pkg. Qty.		Per Pkg.
No. 2			
¼″	100	92406A077	3.74
⅜″	100	92406A079	3.27
½″	100	92406A081	3.67
No. 3			
⅜″	100	92406A094	3.60
½″	100	92406A096	3.82
No. 4			
⅜″	100	92406A108	3.96
½″	100	92406A110	4.58
⅝″	100	92406A112	5.31
¾″	100	92406A113	6.24
1″	100	92406A115	7.18
No. 5			
½″	100	92406A128	5.99
⅝″	100	92406A130	6.57
¾″	100	92406A131	7.50
No. 6			
⅜″	100	92406A146	6.42
½″	100	92406A148	7.40
⅝″	100	92406A150	8.38
¾″	100	92406A151	8.41
1″	100	92406A153	9.83
1¼″	100	92406A155	13.69
1½″	100	92406A157	14.95
No. 7			
¾″	100	92406A173	11.06
1″	100	92406A175	12.85
No. 8			
½″	100	92406A194	8.77
¾″	100	92406A197	12.93
1″	100	92406A199	13.93
1¼″	100	92406A201	14.90
1½″	50	92406A203	10.20
2″	50	92406A205	13.82
No. 10			
¾″	100	92406A245	14.95
1″	50	92406A247	10.40
1¼″	50	92406A249	13.03
1½″	50	92406A251	14.95
2″	25	92406A253	10.50
2½″	25	92406A255	11.91
No. 12			
1″	50	92406A296	12.72
1¼″	25	92406A297	8.73
1½″	25	92406A299	9.29
2″	25	92406A301	12.91

Slotted— *Zinc-Plated Steel*

Lg.	Pkg. Qty.		Per Pkg.
No. 2			
¼″	100	90006A077	2.33
⅜″	100	90006A079	3.85
½″	100	90006A081	4.19
No. 3			
½″	100	90006A096	3.82
⅝″	100	90006A098	4.35
No. 4			
⅜″	100	90006A108	2.23
½″	100	90006A110	2.10
⅝″	100	90006A112	1.81
¾″	100	90006A113	2.43
1″	100	90006A115	2.68
1¼″	100	90006A117	2.60
1½″	100	90006A119	5.15
No. 5			
⅜″	100	90006A126	3.00
½″	100	90006A128	2.09
⅝″	100	90006A130	1.82
¾″	100	90006A131	2.27
1″	100	90006A133	2.40
1¼″	100	90006A136	2.98
1½″	100	90006A138	3.56
No. 6			
⅜″	100	90006A146	1.72
½″	100	90006A148	2.29
⅝″	100	90006A150	2.68
¾″	100	90006A151	2.50
1″	100	90006A153	2.67
1¼″	100	90006A155	3.12
1½″	100	90006A157	3.37
No. 8			
½″	100	90006A194	3.03
¾″	100	90006A197	2.16
No. 8 (Cont.)			
1″	100	90006A199	3.12
1¼″	100	90006A201	3.70
1½″	100	90006A203	4.36
2″	100	90006A205	4.61
No. 10			
¾″	100	90006A245	5.49
⅞″	100	90006A246	6.54
1″	100	90006A247	4.71
1¼″	100	90006A249	4.40
1½″	100	90006A251	4.04
1¾″	100	90006A252	6.03
2″	100	90006A253	4.74
2½″	100	90006A255	6.85
3″	100	90006A257	10.36
No. 12			
¾″	100	90006A294	5.30
1″	100	90006A296	5.62
1¼″	100	90006A298	6.57
1½″	100	90006A299	8.93
2″	100	90006A301	8.68
2½″	100	90006A303	11.10
3″	50	90006A304	6.06
No. 14			
¾″	100	90006A313	13.25
1″	100	90006A315	7.56
1¼″	100	90006A316	7.60
1½″	100	90006A317	8.51
1¾″	100	90006A318	10.24
2″	100	90006A319	10.84
2½″	50	90006A321	8.15
3″	50	90006A323	8.82
4″	50	90006A325	13.05
No. 18			
2″	25	90006A352	9.61

Wood Screw Assortments

220-Piece Assortments

Includes 110 flat head Phillips screws and 110 round head slotted screws furnished in an 8″ Lg.×4¼″ Wd.×1½″ Dp. compartmented plastic box with lid chart.

Size	No. of Pcs.	Lengths	Size	No. of Pcs.	Lengths
No. 4	20	½″	No. 8	80	½″, ¾″, 1″, 1¼″
No. 6	60	½″, ¾″, 1″	No. 10	60	¾″, 1″, 1½″, 2″

18-8 Stainless Steel	90105A200	Each	$41.26
Zinc-Plated Steel	90105A300	Each	25.26

2,000-Piece Assortment

Includes flat head Phillips screws furnished in an 18⅜″ Lg.×12¼″ Wd.×3″ Dp. compartmented steel box with lid chart.

Size	No. of Pcs.	Lengths
No. 4	200	½″, ¾″
No. 6	500	½″, ¾″, 1″, 1¼″, 1½″
No. 8	550	½″, ¾″, 1″, 1¼″, 1½″, 2″
No. 10	600	¾″, 1″, 1¼″, 1½″, 1¾″, 2″, 2½″, 3″
No. 12	150	1½″, 2″, 3″

Zinc-Plated Steel	90105A124	Each	$118.80

For information about wood screw materials and dimensions, see page 3016.

Oval Head

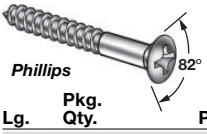

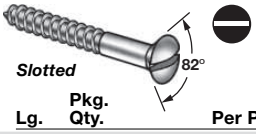

Beveled under the head like a flat head screw, but these screws have a domed head that rests above the surface for a more decorative look.

Lg.	Pkg. Qty.		Per Pkg.
Phillips—Brass			
No. 6—#2 Drive			
1/2"	100	99917A515	$8.43
5/8"	100	99917A517	11.92
3/4"	100	99917A520	12.45
1"	100	99917A525	13.53
1 1/4"	50	99917A530	9.00
1 1/2"	50	99917A535	8.94
No. 8—#2 Drive			
3/4"	100	99917A540	$12.63
1"	50	99917A545	9.44
1 1/4"	50	99917A550	11.80
1 1/2"	50	99917A555	12.19
No. 10—#3 Drive			
1"	50	99917A560	13.68
1 1/4"	25	99917A565	7.39
1 1/2"	25	99917A570	8.97
Slotted—18-8 Stainless Steel			
No. 4			
1/2"	100	91608A110	10.57
3/4"	100	91608A113	10.59
No. 5			
3/4"	50	91608A130	7.43
No. 6			
1/2"	100	91608A148	10.20
3/4"	50	91608A151	6.93
1"	50	91608A153	7.90
1 1/2"	50	91608A157	11.24
Slotted—18-8 Stainless Steel (Cont.)			
No. 8			
3/4"	50	91608A197	$6.84
1"	50	91608A199	8.78
1 1/2"	50	91608A203	11.69
Slotted—Brass			
No. 4			
1/2"	100	92408A110	6.01
3/4"	100	92408A113	7.41
No. 5			
3/4"	100	92408A131	8.91
No. 6			
1/2"	100	92408A148	8.12
5/8"	100	92408A150	9.71
3/4"	100	92408A151	10.15
1"	100	92408A153	13.37
No. 10			
1"	50	91608A247	$12.20
1 1/4"	50	91608A249	14.04
1 1/2"	25	91608A251	7.91
No. 6 (Cont.)			
1 1/4"	50	92408A155	9.21
1 1/2"	50	92408A157	9.72
No. 8			
3/4"	100	92408A197	14.95
1"	50	92408A199	9.84
1 1/4"	50	92408A201	12.59
1 1/2"	50	92408A204	12.47
No. 10			
1"	50	92408A247	12.21
1 1/2"	25	92408A251	9.42

Round Head

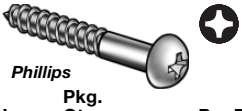

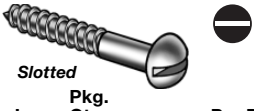

Domed like oval head screws, but these screws have a flat bearing surface under the head.

Lg.	Pkg. Qty.		Per Pkg.
Phillips—Brass			
No. 2—#1 Drive			
1/4"	100	98685A220	$4.21
3/8"	100	98685A225	5.04
No. 4—#1 Drive			
1/2"	100	98685A330	6.08
3/4"	100	98685A350	8.10
No. 6—#2 Drive			
1/2"	100	98685A430	$8.42
5/8"	50	98685A440	5.51
Slotted—18-8 Stainless Steel			
No. 4			
1/2"	100	91607A110	12.76
No. 6			
1/2"	100	91607A148	10.97
3/4"	100	91607A151	12.92
1"	50	91607A153	7.20
No. 8			
1/2"	100	91607A194	10.48
3/4"	50	91607A197	7.88
No. 8 (Cont.)			
1"	50	91607A199	9.64
1 1/4"	50	91607A201	10.29
1 1/2"	50	91607A203	9.87
No. 10			
3/4"	50	91607A245	8.92
1"	50	91607A247	11.75
1 1/2"	25	91607A251	7.64
2"	25	91607A253	9.42
Slotted—Brass			
No. 2			
1/4"	100	92407A077	3.58
3/8"	100	92407A079	3.59
1/2"	100	92407A081	3.67
No. 3			
3/8"	100	92407A094	3.92
1/2"	100	92407A096	4.36
No. 4			
3/8"	100	92407A108	4.83
1/2"	100	92407A110	5.16
5/8"	100	92407A112	6.05
3/4"	100	92407A113	6.34
No. 5			
1/2"	100	92407A128	6.68
3/4"	100	92407A131	7.60
No. 6			
3/8"	100	92407A146	6.56
1/2"	100	92407A148	6.98
5/8"	100	92407A150	7.88
3/4"	100	92407A151	8.62
1"	100	92407A153	11.92
1 1/4"	100	92407A155	14.75
1 1/2"	50	92407A157	7.96
Slotted—Brass (Cont.)			
No. 8			
1/2"	100	92407A194	$11.22
5/8"	100	92407A196	11.13
3/4"	100	92407A197	14.50
1"	100	92407A199	14.90
1 1/4"	50	92407A201	10.84
1 1/2"	50	92407A203	10.74
2"	50	92407A205	14.34
No. 10			
3/4"	100	92407A245	14.95
No. 10 (Cont.)			
1"	50	92407A247	$10.51
1 1/4"	50	92407A249	14.95
1 1/2"	25	92407A251	8.07
2"	25	92407A253	10.94
2 1/2"	25	92407A255	12.19
No. 12			
1"	50	92407A296	12.84
1 1/2"	25	92407A299	8.29
2"	25	92407A301	10.83
Slotted—Zinc-Plated Steel			
No. 2			
1/4"	100	90011A077	1.45
3/8"	100	90011A079	1.68
1/2"	100	90011A081	2.40
No. 4			
3/8"	100	90011A108	1.20
1/2"	100	90011A110	2.33
3/4"	100	90011A113	2.44
1"	100	90011A115	2.60
1 1/4"	100	90011A117	3.32
No. 6			
1/2"	100	90011A148	2.28
3/4"	100	90011A151	4.16
1"	100	90011A153	3.54
1 1/4"	100	90011A155	4.80
1 1/2"	100	90011A157	4.88
No. 8			
1/2"	100	90011A194	2.88
No. 8 (Cont.)			
5/8"	100	90011A196	3.08
3/4"	100	90011A197	2.98
1"	100	90011A199	4.11
1 1/4"	100	90011A201	4.39
1 1/2"	100	90011A203	5.10
No. 10			
3/4"	100	90011A245	5.07
1"	100	90011A247	5.12
1 1/4"	100	90011A249	7.21
1 1/2"	100	90011A251	8.64
2"	100	90011A253	9.21
2 1/2"	100	90011A255	13.55
3"	100	90011A257	14.03
No. 12			
3/4"	100	90011A294	6.77
1"	100	90011A296	7.53
1 1/4"	100	90011A298	8.35
1 1/2"	100	90011A299	11.39

Hex Flange Head Lag Screws

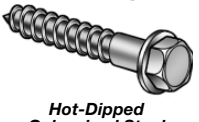

Hot-Dipped Galvanized Steel

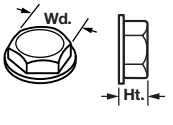

Also known as lag bolts, these thick screws have a flange under the head for extra holding power. They are also a good choice for ACQ-treated (arsenic-free) lumber.

Hot-Dipped Galvanized Steel—Made from C1006-C1022 steel, these screws offer excellent rust resistance. Screws are threaded at least half of their length. All have a minimum Rockwell hardness of B70 and meet ASTM A153.

Type 316 Stainless Steel—Our most corrosion resistant and longest length hex flange head lag screws. All are made with molybdenum for increased corrosion resistance. May be mildly magnetic. Screws with a 1/4" diameter have a 2 3/8" thread length; those with a 3/8" diameter have a 3" thread length. All have a minimum Rockwell hardness of B89.

Lg.	Flange Dia.	Pkg. Qty.		Per Pkg.
Hot-Dipped Galvanized Steel				
1/4" Dia.—Head: Wd. 3/8"; Ht. 0.28"				
1"	0.56"	100	95526A100	$9.63
1 1/2"	0.56"	100	95526A125	12.86
2"	0.56"	50	95526A150	8.35
2 1/2"	0.56"	50	95526A175	9.05
3"	0.56"	50	95526A200	10.73
5/16" Dia.—Head: Wd. 1/2"; Ht. 0.32"				
1"	0.68"	50	95526A325	8.20
1 1/2"	0.68"	50	95526A350	9.59
Hot-Dipped Galvanized Steel (Cont.)				
5/16" Dia. (Cont.)				
2"	0.68"	50	95526A375	$10.28
2 1/2"	0.68"	25	95526A400	6.55
3/8" Dia.—Head: Wd. 9/16"; Ht. 0.39"				
1 1/2"	0.81"	50	95526A500	14.80
2"	0.81"	25	95526A525	7.88
2 1/2"	0.81"	25	95526A550	9.25
3"	0.81"	25	95526A575	10.99
4"	0.81"	10	95526A600	5.56
Type 316 Stainless Steel				
1/4" Dia.—Head: Wd. 5/16"; Ht. 0.233"				
4"	0.50"	10	91428A500	$8.91
6"	0.50"	5	91428A600	7.84
8"	0.50"	1	91428A700	2.40
3/8" Dia.—Head: Wd. 1/2"; Ht. 0.268"				
10"	0.75"	1	91428A800	3.94

Hex Head (Lag Screws)

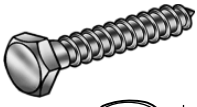

Also known as lag bolts, these screws come in longer lengths than wood screws and are easy to tighten with a wrench.

Screws are threaded at least 2/3 of their length (unless noted). Length is measured from under head. All have a minimum Rockwell hardness of B70 and meet ASME B18.2.1. Type 316 stainless steel, 18-8 stainless steel, and hot-dipped galvanized steel are a good choice for ACQ-treated (arsenic-free) lumber.

Type 316 Stainless Steel— More corrosion resistant than 18-8 stainless steel. May be mildly magnetic.

18-8 Stainless Steel— More corrosion resistant than zinc-plated steel. May be mildly magnetic.

Hot-Dipped Galvanized Steel— Made from C1006-C1022 steel; offers superior rust resistance compared to zinc-plated steel. Steel conforms to ASTM A307 or SAE J429; zinc coating conforms to ASTM 153.

Zinc-Plated Steel— Made from C1006-C1022 steel; offers good rust resistance.

Black Zinc-Plated Steel— Made from C1006-C1022 steel; offers good rust resistance and a decorative, black finish.

	Type 316 Stainless Steel		18-8 Stainless Steel		Hot-Dipped Galvanized Steel		Zinc-Plated Steel		Black Zinc-Plated Steel	
Lg.	Pkg. Qty.	Per Pkg.	Pkg. Qty.	Per Pkg.	Pkg. Qty.	Per Pkg.	Pkg. Qty.	Per Pkg.	Pkg. Qty.	Per Pkg.
1/4″ Dia.—Head: Wd. 7/16″; Ht. 11/64″										
1″	25	90123A113	50	92351A542	100	94048A212	100	91478A542	100	92371A412
		$11.29		$8.66		$12.49		$6.01		$13.01
1 1/4″	10	90123A116	25	92351A544	100	94048A215	100	91478A544	—	—
		5.67		6.23		12.86		5.99		
1 1/2″	10	90123A119	25	92351A546	100	94048A218	100	91478A546	50	92371A416
		6.30		7.52		13.63		7.53		8.12
1 3/4″	—	—	25	92351A548	—	—	100	91478A548	—	—
				9.05				7.63		
2″	10	90123A124	25	92351A550	100	94048A221	100	91478A550	100	92371A420
		7.44		8.94		13.95		9.90		12.99
2 1/2″	10	90123A127	25	92351A552	50	94048A224	100	91478A552	100	92371A424
		8.74		9.21		8.28		11.36		13.23
3″	10	90123A131	10	92351A554	50	94048A227	100	91478A554	50	92371A428
		9.46		5.36		9.73		12.49		10.82
3 1/2″	5	90123A139	10	92351A556	50	94048A230	100	91478A556	—	—
		6.12		6.11		10.13		14.42		
4″	5	90123A146	10	92351A558	50	94048A233	50	91478A558	—	—
		7.00		6.79		11.87		8.54		
4 1/2″	5	90123A154	10	92351A559	25	94048A236	—	—	—	—
		8.22		7.38		6.67				
5″	5	90123A161	10	92351A562	25	94048A239	50	91478A562	—	—
		8.64		8.29		8.32		12.70		
6″	1	90123A172	10	92351A566	25	94048A245	50	91478A566	—	—
		2.03		9.74		12.70		13.13		
5/16″ Dia.—Head: Wd. 1/2″; Ht. 7/32″										
1″	10	90123A206	25	92351A583	50	94048A248	100	91478A583	—	—
		8.03		7.80		11.10		8.87		
1 1/4″	10	90123A211	25	92351A585	50	94048A251	100	91478A585	—	—
		8.64		10.43		11.23		8.93		
1 1/2″	10	90123A227	25	92351A587	50	94048A254	100	91478A587	50	92371A521
		9.58		10.57		11.66		13.42		10.25
1 3/4″	—	—	10	92351A588	—	—	50	91478A588	—	—
				5.60				8.04		
2″	10	90123A234	10	92351A591	50	94048A257	100	91478A591	50	92371A525
		10.57		6.00		11.74		14.90		11.74
2 1/2″	5	90123A238	10	92351A593	50	94048A260	50	91478A593	50	92371A529
		6.34		6.19		13.61		9.84		14.19
3″	5	90123A242	10	92351A595	50	94048A263	50	91478A595	25	92371A533
		7.45		7.16		13.85		10.18		7.69
3 1/2″	5	90123A247	10	92351A597	25	94048A266	50	91478A597	—	—
		8.11		8.27		9.24		12.75		
4″	5	90123A256	10	92351A599	25	94048A269	50	91478A599	—	—
		9.48		9.47		9.73		14.90		
4 1/2″	1	90123A261	10	92351A601	25	94048A274	—	—	—	—
		2.43		11.91		9.02				
5″	1	90123A269	5	92351A603	25	94048A275	50	91478A603	—	—
		2.64		7.15		11.29		14.95		
6″	1	90123A278	5	92351A607	25	94048A278	25	91478A607	—	—
		3.24		8.40		14.32		10.96		
3/8″ Dia.—Head: Wd. 9/16″; Ht. 1/4″										
1″	5	90123A340	10	92351A624	—	—	100	91478A624	—	—
		5.41		5.67				13.65		
1 1/4″	5	90123A345	10	92351A626	50	94048A281	100	91478A626	—	—
		6.39		6.00		9.39		14.20		
1 1/2″	10	90123A374	10	92351A628	50	94048A284	100	91478A628	25	92371A571
		13.44		6.40		11.00		14.90		7.95
1 3/4″	—	—	10	92351A630	50	94048A287	50	91478A630	—	—
				8.10		11.56		9.94		
2″	5	90123A377	10	92351A632	50	94048A290	50	91478A632	25	92371A574
		7.75		8.30		14.81		11.22		6.86
2 1/2″	5	90123A379	10	92351A634	25	94048A293	50	91478A634	10	92371A578
		8.62		9.00		9.28		14.26		5.54
3″	5	90123A383	10	92351A636	25	94048A296	50	91478A636	25	92371A581
		11.31		9.85		10.19		14.95		12.90
3 1/2″	1	90123A386	5	92351A638	25	94048A299	25	91478A638	—	—
		2.31		5.90		11.83		8.77		
4″	1	90123A389	5	92351A640	25	94048A302	25	91478A640	10	92371A585
		2.62		7.94		13.29		9.83		7.20
4 1/2″	1	90123A393	5	92351A642	10	94048A305	25	91478A642	—	—
		3.39		8.45		6.34		11.71		
5″	1	90123A401	5	92351A644	10	94048A308	25	91478A644	—	—
		3.77		8.66		7.20		12.24		
6″	1	90123A407	5	92351A648	10	94048A314	10	91478A648	—	—
		4.60		9.79		8.03		7.31		
7″	1	90123A413	1	92351A656	10	94048A317	10	91478A650▲	—	—
		13.02		9.48		9.45		10.10		
8″	1	90123A417▲	1	92351A662	10	94048A320	5	91478A652▲	—	—
		13.63		9.86		10.80		6.30		
10″	1	90123A419▲	1	92351A671▲	5	94048A324▲	—	—	—	—
		15.77		6.97		6.63				
1/2″ Dia.—Head: Wd. 3/4″; Ht. 11/32″										
1 1/2″	1	90123A421	5	92351A712	—	—	50	91478A712	—	—
		2.84		4.79				14.95		
2″	1	90123A425	5	92351A720	10	94048A329	25	91478A720	—	—
		2.52		7.12		6.39		12.08		
2 1/2″	1	90123A429	5	92351A722	10	94048A332	25	91478A722	—	—
		2.97		7.69		7.46		13.92		
3″	1	90123A436	5	92351A724	10	94048A335	10	91478A724	—	—
		3.69		8.33		7.92		8.29		
3 1/2″	1	90123A439	1	92351A726	10	94048A338	10	91478A726	—	—
		4.06		1.79		8.30		6.75		
4″	1	90123A443	1	92351A728	10	94048A341	5	91478A728	—	—
		4.35		1.93		10.20		2.69		
4 1/2″	1	90123A449	1	92351A730	10	94048A344	10	91478A730	—	—
		6.73		2.14		12.50		8.94		
5″	1	90123A457	1	92351A732	10	94048A347	10	91478A732	—	—
		7.11		2.45		13.05		10.32		
6″	1	90123A465	1	92351A736	5	94048A353	10	91478A736	—	—
		8.33		2.94		7.89		7.47		
7″	1	90123A473	1	92351A740	5	94048A356	10	91478A738▲	—	—
		16.70		11.76		9.67		10.49		
8″	1	90123A481▲	1	92351A746	5	94048A359	5	91478A740▲	—	—
		17.62		12.24		9.59		11.12		
10″	1	90123A486▲	1	92351A754▲	1	94048A363▲	—	—	—	—
		17.82		9.03		2.55				
12″	1	90123A489▲	1	92351A757▲	1	94048A366▲	—	—	—	—
		34.80		10.47		2.69				
5/8″ Dia.—Head: Wd. 15/16″; Ht. 27/64″										
2 1/2″	1	90123A506	1	92351A801	—	—	—	—	—	—
		17.62		9.04						
3″	1	90123A514	1	92351A807	5	94048A374	5	91478A806	—	—
		17.77		9.32		7.09		6.96		
4″	1	90123A522	1	92351A819	5	94048A380	5	91478A810	—	—
		18.85		10.00		9.13		10.19		
5″	1	90123A530	1	92351A825	5	94048A386	5	91478A814	—	—
		20.07		10.60		11.39		11.26		
6″	1	90123A537	1	92351A831	1	94048A389	—	—	—	—
		21.45		11.26		2.77				
7″	1	90123A545	1	92351A837	1	94048A392	5	91478A820★	—	—
		22.83		11.93		3.33		13.93		
8″	1	90123A553▲	1	92351A843	1	94048A396	—	—	—	—
		24.37		12.58		3.81				
10″	1	90123A561▲	1	92351A849▲	1	94048A399	—	—	—	—
		28.35		13.87		4.62				
12″	—	—	1	92351A857▲	1	94048A402▲	—	—	—	—
				18.43		5.37				
3/4″ Dia.—Head: Wd. 1 1/8″; Ht. 1/2″										
3″	—	—	1	92351A896	—	—	5	91478A840	—	—
				11.57				13.55		
4″	1	90123A634	1	92351A903	1	94048A404	5	91478A842	—	—
		25.28		13.33		3.33		12.44		
5″	1	90123A642	1	92351A911	1	94048A407	5	91478A843	—	—
		28.65		13.54		3.98		12.97		
6″	1	90123A650	1	92351A919	1	94048A410	1	91478A844	—	—
		31.26		14.53		4.51		3.17		
7″	1	90123A657	1	92351A927	1	94048A420	—	—	—	—
		32.94		15.43		3.87				
8″	1	90123A665	1	92351A935	1	94048A430	—	—	—	—
		35.09		17.11		4.72				
10″	1	90123A673▲	1	92351A943▲	1	94048A440▲	—	—	—	—
		39.69		21.11		6.72				
12″	1	90123A681▲	1	92351A951▲	1	94048A450▲	—	—	—	—
		44.13		23.33		7.60				

▲ Threaded at least 5″. ★ Threaded at least 4″.

Round Head Square Neck (Carriage Screws)

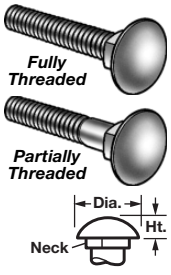

Screw Size	10-24	10-32	1/4″-20	5/16″-18	3/8″-16	7/16″-14	1/2″-13	5/8″-11	3/4″-10
Head Diameter	0.469″	0.469″	0.594″	0.719″	0.844″	0.969″	1.094″	1.344″	1.594″
Head Height	0.114″	0.114″	0.145″	0.176″	0.208″	0.239″	0.270″	0.344″	0.406″
Neck Width	0.199″	0.199″	0.260″	0.324″	0.388″	0.452″	0.515″	0.642″	0.768″
Neck Height	0.125″	0.125″	0.156″	0.187″	0.219″	0.250″	0.281″	0.344″	0.406″

Also known as carriage bolts, these screws have a square neck that keeps them from turning once tightened. Use in square holes for wood-to-wood and wood-to-metal fastening. Length is measured from under head. All meet ANSI B18.5, are fully threaded (unless noted), and have a Class 2A thread fit. Type 316 stainless steel, 18-8 stainless steel, and hot-dipped galvanized steel are a good choice for ACQ-treated (arsenic-free) lumber. For washers, see 97449A on page 3239.

Type 316 Stainless Steel— Our most corrosion resistant round head square neck carriage screws. May be mildly magnetic. Min. Rockwell hardness is B70. Partially threaded screws have at least 3/4″ of thread.

18-8 Stainless Steel— Excellent corrosion resistance that's superior to hot-dipped and zinc-plated steel. May be mildly magnetic. Min. Rockwell hardness is B70. Partially threaded screws have at least 3/4″ of thread.

Grade 2 Hot-Dipped Galvanized Steel— Made from C1006-C1050 steel. Offers superior rust resistance compared to zinc-plated steel. Steel conforms to ASTM A307; zinc coating conforms to ASTM 153. Minimum Rockwell hardness is B80. Partially threaded screws have at least 6″ of thread. Use with 90371A galvanized nuts on page 3187.

Grade 2 Zinc-Plated Steel— Low strength steel with good rust resistance. Conforms to ASTM A307 or SAE J429. Min. Rockwell hardness is B66. Partially threaded screws have 6″ or more of thread.

Grade 5 Zinc-Plated Steel— Medium strength steel with good rust resistance. Grade marked on top of head. Conforms to SAE J429. Minimum Rockwell hardness is C25.

Silicon Bronze— Consists of 95-98% copper with silicon added for strength. Nonmagnetic. Not rated for Rockwell hardness.

	Type 316 Stainless Steel			18-8 Stainless Steel			Grade 2 Hot-Dipped Galvanized Steel			Grade 2 Zinc-Plated Steel			Grade 5 Zinc-Plated Steel		
Lg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
10-24															
1/2″	10	93180A110	$8.70	50	92356A242	$11.10	—	—	—	100	93548A105	$3.42	—	—	—
5/8″	—	—	—	50	92356A243	11.22	—	—	—	—	—	—	—	—	—
3/4″	10	93180A115	9.40	50	92356A245	10.81	—	—	—	100	93548A109	4.05	—	—	—
1″	10	93180A120	9.61	50	92356A247	13.14	—	—	—	100	93548A113	4.58	—	—	—
1 1/4″	—	—	—	25	92356A249	7.80	—	—	—	100	93548A117	5.06	—	—	—
1 1/2″	—	—	—	25	92356A251	8.72	—	—	—	100	93548A121	6.86	—	—	—
1 3/4″	—	—	—	25	92356A252	9.69	—	—	—	—	—	—	—	—	—
2″	—	—	—	25	92356A253	10.92	—	—	—	100	93548A125	7.48	—	—	—
10-32															
1/2″	—	—	—	50	92356A255	11.12	—	—	—	—	—	—	—	—	—
5/8″	—	—	—	50	92356A257	11.22	—	—	—	—	—	—	—	—	—
3/4″	—	—	—	50	92356A259	11.48	—	—	—	—	—	—	—	—	—
1″	—	—	—	50	92356A261	13.14	—	—	—	—	—	—	—	—	—
1 1/4″	—	—	—	25	92356A263	7.80	—	—	—	—	—	—	—	—	—
1 1/2″	—	—	—	25	92356A265	8.18	—	—	—	—	—	—	—	—	—
1/4″-20															
1/2″	10	93180A208	5.70	50	92356A537	9.29	—	—	—	100	93548A530	4.93	—	—	—
5/8″	—	—	—	50	92356A538	9.13	—	—	—	—	—	—	—	—	—
3/4″	10	93180A210	6.81	50	92356A540	9.68	100	93604A611	$6.85	100	93548A540	2.96	50	90185A540	$7.02
1″	10	93180A220	7.50	25	92356A542	6.17	100	93604A613	7.45	100	93548A542	3.62	50	90185A542	6.87
1 1/4″	10	93180A225	8.70	25	92356A544	6.86	100	93604A615	7.86	100	93548A544	4.01	50	90185A544	9.57
1 1/2″	10	93180A230	9.19	25	92356A546	7.32	100	93604A617	8.78	100	93548A546	4.64	50	90185A546	9.89
1 3/4″	—	—	—	25	92356A548	7.67	100	93604A619	9.53	100	93548A548	5.67	—	—	—
2″	10	93180A240	10.01	25	92356A550	8.60	100	93604A621	11.31	100	93548A550	5.88	50	90185A550	12.17
2 1/4″	—	—	—	25	92356A551	9.97	—	—	—	100	93548A551	6.23	—	—	—
2 1/2″	5	93180A250	5.88	10	92356A552	4.61	100	93604A623	13.32	100	93548A552	6.55	25	90185A552	7.92
2 3/4″	—	—	—	10	92356A553	5.28	—	—	—	100	93548A553	7.48	—	—	—
3″	5	93180A260	6.66	10	92356A554	5.11	50	93604A625	8.19	100	93548A554	7.82	50	90185A555	8.42
3 1/4″	—	—	—	—	—	—	—	—	—	100	93548A555	12.95	—	—	—
3 1/2″	5	93180A262	8.40	10	92356A556	6.60	50	93604A627	9.18	100	93548A556	8.94	—	—	—
4″	1	93180A266	2.18	10	92356A558	6.63	50	93604A629	9.61	100	93548A558	10.33	—	—	—
4 1/2″	1	93180A270	2.38	10	92356A560★	8.12	50	93604A631	10.14	100	93548A560	10.72	—	—	—
5″	1	93180A275	2.60	5	92356A562★	4.13	50	93604A633	12.40	100	93548A562	11.59	—	—	—
5 1/2″	—	—	—	5	92356A564★	4.93	50	93604A635	12.87	100	93548A564	13.90	—	—	—
6″	1	93180A280	2.49	5	92356A566★	5.56	50	93604A637	14.40	100	93548A566	14.35	—	—	—
7″	—	—	—	1	92356A569★	3.16	25	93604A638★	13.78	25	93548A568★	7.28	—	—	—
8″	—	—	—	1	92356A572★	3.51	25	93604A901★	14.90	25	93548A570★	9.26	—	—	—
5/16″-18															
3/4″	10	93180A310	10.51	25	92356A581	9.31	100	93604A639	12.50	100	93548A581	5.53	50	90185A581	8.37
1″	10	93180A320	11.23	10	92356A583	4.85	100	93604A641	12.93	100	93548A583	6.05	50	90185A583	9.05
1 1/4″	5	93180A325	6.15	10	92356A589	5.23	50	93604A643	8.00	100	93548A585	6.83	50	90185A589	12.26
1 1/2″	5	93180A330	6.85	10	92356A587	5.50	50	93604A645	8.62	100	93548A587	7.61	50	90185A587	14.03
1 3/4″	—	—	—	10	92356A582	5.78	50	93604A647	9.54	100	93548A589	8.23	—	—	—
2″	5	93180A340	7.42	10	92356A591	6.16	50	93604A649	9.76	100	93548A591	9.06	25	90185A591	7.11
2 1/4″	—	—	—	10	92356A592	6.86	—	—	—	100	93548A592	10.93	—	—	—
2 1/2″	5	93180A350	9.19	10	92356A593	8.47	50	93604A651	11.64	100	93548A593	10.88	25	90185A593	11.15
2 3/4″	—	—	—	10	92356A594	8.88	—	—	—	100	93548A594	11.66	—	—	—
3″	5	93180A360	10.46	10	92356A595	9.02	50	93604A653	13.63	100	93548A595	11.31	25	90185A595	11.47
3 1/2″	1	93180A364	2.33	10	92356A597	9.38	50	93604A655	14.31	50	93548A597	6.95	—	—	—
4″	1	93180A368	2.56	10	92356A599	12.93	25	93604A657	8.38	50	93548A599	7.94	25	90185A598	14.09
4 1/2″	1	93180A372	3.04	5	92356A601★	6.53	25	93604A659	9.43	50	93548A601	9.10	—	—	—
5″	1	93180A376	3.28	5	92356A603★	7.41	25	93604A661	10.02	50	93548A603	9.30	—	—	—
5 1/2″	—	—	—	—	—	—	25	93604A663	12.35	50	93548A605	9.74	—	—	—
6″	1	93180A382	3.36	5	92356A607★	9.55	25	93604A665	12.37	50	93548A607	11.05	—	—	—
3/8″-16															
3/4″	5	93180A418	5.81	10	92356A622	6.24	—	—	—	100	93548A622	14.90	50	90185A621	11.82
1″	5	93180A420	6.15	10	92356A624	6.45	50	93604A667	9.43	100	93548A624	9.41	50	90185A624	11.47
1 1/4″	5	93180A425	7.98	10	92356A626	7.40	50	93604A669	10.88	100	93548A626	9.88	50	90185A626	12.07
1 1/2″	5	93180A430	6.99	10	92356A628	7.76	50	93604A671	12.87	100	93548A628	11.21	25	90185A628	6.08
1 3/4″	5	93180A435	8.07	10	92356A630	8.77	50	93604A673	13.27	100	93548A630	13.45	25	90185A630	7.56
2″	5	93180A440	9.00	10	92356A632	9.11	50	93604A675	14.10	100	93548A632	12.95	25	90185A632	7.85
2 1/4″	—	—	—	10	92356A633	9.81	25	93604A677	8.03	50	93548A633	7.75	25	90185A633	10.71

★ May be partially threaded.

(Continued on following page)

Round Head Square Neck (Carriage Screws) *(Continued from previous page)*

Lg.	Type 316 Stainless Steel Pkg. Qty.		Per Pkg.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Grade 2 Hot-Dipped Galvanized Steel Pkg. Qty.		Per Pkg.	Grade 2 Zinc-Plated Steel Pkg. Qty.		Per Pkg.	Grade 5 Zinc-Plated Steel Pkg. Qty.		Per Pkg.
3/8"-16 (Cont.)															
2½"	5	93180A450	$12.31	5	92356A634	$5.87	25	93604A679	$8.66	50	93548A634	$7.88	25	90185A634	$10.28
2¾"	—		—	5	92356A635	6.31	—		—	50	93548A635	9.51	—		—
3"	1	93180A460	2.59	5	92356A636	6.66	25	93604A681	9.51	50	93548A636	9.25	25	90185A636	12.58
3¼"	—		—	—		—	—		—	50	93548A637	11.29	—		—
3½"	1	93180A464	3.16	5	92356A638	7.07	25	93604A683	9.87	50	93548A638	10.05	10	90185A638	6.44
3¾"	—		—	—		—	—		—	25	93548A639	7.29	—		—
4"	1	93180A468	3.43	5	92356A640	7.47	25	93604A685	11.15	50	93548A640	11.65	10	90185A640	6.67
4½"	1	93180A473	4.12	5	92356A642★	8.34	25	93604A687	13.15	50	93548A642	12.14	—		—
5"	1	93180A477	4.52	5	92356A644★	9.80	25	93604A689	14.44	50	93548A644	14.52	—		—
5½"	—		—	5	92356A646★	9.79	10	93604A691	6.31	25	93548A646	8.78	—		—
6"	1	93180A485	5.25	5	92356A648★	10.81	10	93604A693	7.01	50	93548A648	14.77	—		—
6½"	—		—	1	92356A649★	4.01	10	93604A695★	7.33	25	93548A649★	8.22	—		—
7"	1	93180A494★	6.74	1	92356A650★	3.33	10	93604A697★	8.31	25	93548A650★	11.80	—		—
8"	1	93180A503★	17.53	1	92356A652★	3.78	10	93604A699★	8.45	25	93548A652★	13.31	—		—
8½"	—		—	1	92356A654★	4.95	—		—	10	93548A653★	8.87	—		—
9"	—		—	1	92356A657★	5.40	10	93604A701★	11.02	10	93548A654★	8.67	—		—
10"	—		—	1	92356A662★	6.04	10	93604A703★	12.43	10	93548A656★	9.15	—		—
7/16"-14															
1"	—		—	—		—	—		—	50	93548A669	9.51	—		—
2"	—		—	1	92356A688	4.88	—		—	50	93548A677	9.50	—		—
3"	—		—	1	92356A694	9.06	—		—	50	93548A681	13.57	—		—
4½"	—		—	—		—	—		—	25	93548A687	8.74	—		—
1/2"-13															
1"	—		—	5	92356A712	5.87	—		—	25	93548A708	8.37	10	90185A708	5.89
1¼"	—		—	5	92356A714	6.72	—		—	25	93548A712	9.68	10	90185A712	5.17
1½"	1	93180A617	3.13	5	92356A716	7.16	25	93604A711	10.68	50	93548A716	10.98	10	90185A716	4.16
1¾"	—		—	5	92356A718	7.97	—		—	—		—	10	90185A718	7.68
2"	1	93180A625	4.08	5	92356A720	8.01	25	93604A713	13.54	50	93548A720	12.97	10	90185A720	5.71
2½"	1	93180A629	4.71	5	92356A722	9.23	10	93604A715	6.37	25	93548A722	8.91	10	90185A722	7.44
3"	1	93180A633	5.40	5	92356A724	10.47	10	93604A717	7.59	25	93548A724	8.10	10	90185A724	10.58
3½"	1	93180A637	6.05	1	92356A726	2.12	10	93604A719	8.46	25	93548A726	9.50	10	90185A726	10.21
4"	1	93180A641	6.70	1	92356A728	1.89	10	93604A721	9.04	25	93548A728	10.38	10	90185A728	12.39
4½"	1	93180A645	7.35	1	92356A730★	2.00	10	93604A723	9.92	10	93548A730	8.21	10	90185A732	13.02
5"	1	93180A649	8.38	1	92356A732★	2.14	10	93604A725	10.62	25	93548A732	13.51	5	90185A736	7.48
6"	1	93180A658	9.32	1	92356A736★	2.42	10	93604A729	12.12	10	93548A736	7.42	5	90185A740	6.92
6½"	—		—	1	92356A737★	5.13	10	93604A731★	13.16	10	93548A737★	13.23	—		—
7"	1	93180A667★	12.16	1	92356A738★	5.24	10	93604A733★	13.78	5	93548A738★	7.06	—		—
7½"	—		—	1	92356A739★	5.40	—		—	5	93548A739★	9.77	—		—
8"	1	93180A678★	13.66	1	92356A740★	5.90	5	93604A735★	8.41	5	93548A740★	7.67	—		—
8½"	—		—	1	92356A741★	6.00	—		—	5	93548A741★	7.98	—		—
9"	1	93180A682★	22.68	1	92356A743★	6.34	5	93604A737★	9.11	5	93548A742★	8.53	—		—
10"	1	93180A686★	23.44	—		—	—		—	—		—	—		—
12"	1	93180A698★	25.44	1	92356A752★	7.67	5	93604A743★	12.43	5	93548A748★	10.86	—		—
5/8"-11															
2"	—		—	1	92356A802	3.18	10	93604A753	10.40	10	93548A802	6.62	10	90185A810	12.99
2½"	—		—	1	92356A804	3.44	10	93604A755	10.21	10	93548A804	9.79	10	90185A814	12.01
3"	—		—	1	92356A806	4.21	10	93604A757	12.95	10	93548A806	10.26	5	90185A818	6.50
3½"	—		—	1	92356A808	4.84	—		—	10	93548A808	12.51	5	90185A822	7.06
4"	1	93180A733	19.72	1	92356A810	5.16	5	93604A761	8.50	5	93548A810	6.26	5	90185A826	8.79
4½"	—		—	1	92356A812★	6.35	5	93604A763	10.00	5	93548A812	6.68	5	90185A830	8.33
5"	1	93180A742	21.02	1	92356A814★	6.96	5	93604A765	9.15	5	93548A814	8.10	5	90185A834	9.55
6"	1	93180A753	22.30	1	92356A818★	7.33	5	93604A767	9.55	5	93548A822	8.26	5	90185A838	10.73
7"	1	93180A761★	24.90	1	92356A820★	7.68	—		—	—		—	—		—
3/4"-10															
3"	—		—	1	92356A913	9.46	—		—	5	93548A881	9.99	5	90185A875	12.02
4"	1	93180A813	25.48	1	92356A917	10.49	5	93604A791	10.09	5	93548A887	10.64	5	90185A879	12.50
5"	—		—	1	92356A921★	10.29	5	93604A795	12.09	5	93548A903	11.78	1	90185A883	2.60
6"	1	93180A837	30.95	1	92356A925★	11.01	1	93604A797	1.78	1	93548A911	3.00	1	90185A887	2.89
8"	1	93180A851★	34.26	1	92356A933★	12.90	1	93604A802★	4.42	1	93548A916★	3.79	—		—

★ May be partially threaded.

Silicon Bronze

Lg.	Pkg. Qty.		Per Pkg.	Lg.	Pkg. Qty.		Per Pkg.	Lg.	Pkg. Qty.		Per Pkg.	Lg.	Pkg. Qty.		Per Pkg.
1/4"-20				***5/16"-18***				***3/8"-16***				***1/2"-13***			
1½"	10	94050A210	$10.63	1½"	5	94050A315	$9.43	1"	5	94050A410	$14.85	1½"	1	94050A460	$5.57
2"	10	94050A220	12.89	2"	5	94050A325	11.58	1½"	5	94050A420	14.90	2"	1	94050A465	6.96
2½"	10	94050A230	14.74	2½"	5	94050A330	12.97	1¾"	1	94050A425	3.61	2½"	1	94050A470	8.28
3"	5	94050A240	10.03	3"	1	94050A335	2.83	2"	5	94050A430	14.95	3"	1	94050A475	9.64
								2½"	1	94050A440	3.51				
								3"	1	94050A450	5.00				

Grade 2 Round Head Ribbed-Neck (Carriage Screws)

Also known as ribbed-neck carriage bolts, these screws have ribs that lock them in place when installed in holes that are slightly smaller than the ribbed neck diameter. Screws resist turning while you're tightening or loosening the nut. Can be used for metal-to-metal fastening. Length is measured from under the head. Screws are fully threaded and made of Grade 2 zinc-plated steel, unless noted. All have a min. Rockwell hardness of B69 and meet ASTM A307.

Lg.	Ribbed Neck Dia.	Rib Ht.	Pkg. Qty.		Per Pkg.	Lg.	Ribbed Neck Dia.	Rib Ht.	Pkg. Qty.		Per Pkg.	Lg.	Ribbed Neck Dia.	Rib Ht.	Pkg. Qty.		Per Pkg.
1/4"-20—Head: Dia. 0.594"; Ht. 0.145"						***5/16"-18—Head: Dia. 0.719"; Ht. 0.176"***						***3/8"-16—Head: Dia. 0.844"; Ht. 0.208"***					
¾"	0.274"	0.250"	50	98060A110	$9.23	1"	0.340"	0.407"	50	98060A320	$14.94	1¼"	0.405"	0.594"	25	98060A660	$12.84
1"	0.274"	0.407"	50	98060A130	9.68	1¼"	0.340"	0.594"	25	98060A340	8.30	1½"	0.405"	0.594"	25	98060A690	13.89
1¼"	0.274"	0.594"	50	98060A150	10.77	1½"	0.340"	0.594"	25	98060A360	9.24	2"	0.405"	0.594"	10	98060A720	7.27
1½"	0.274"	0.594"	50	98060A170	12.76	2"	0.340"	0.594"	25	98060A380	11.48	2½"	0.405"	0.594"	10	98060A740	8.54
2"	0.274"	0.594"	50	98060A190	14.94	2½"	0.340"	0.594"	25	98060A420	13.24						
2½"	0.274"	0.594"	25	98060A210♦	8.61												

♦ May be partially threaded (at least ¾").

About Tapping Screws

Screw Types

Sheet metal screws have a pointed end and widely spaced threads. They're self-starting in thin sheet metal. In thicker materials, a drilled hole is recommended.

Thread-forming screws have a blunt point and fine threads. They form threads in metal, plastic, and plywood. A drilled hole is required.

Thread-cutting screws have a blunt, tapered, tap-fluted end that cuts machine screw threads and ejects material as it turns. Use in metal, plastic, and plywood. A drilled hole is required.

Self-drilling screws drill their own hole, tap a thread, and fasten material in a single operation. Excellent for use in sheet metal.

Materials

Type 316 Stainless Steel— Superior corrosion resistance. May be mildly magnetic. Minimum Rockwell hardness is B85.

18-8 Stainless Steel— Excellent corrosion resistance. May be mildly magnetic. Minimum Rockwell hardness is B85.

Type 410 Stainless Steel— Stronger than Type 316 and 18-8 stainless steel but less corrosion resistant. Magnetic. Minimum Rockwell hardness is C34.

Aluminum— Made from aluminum 2024-T4 alloy, it offers mild resistance to weather-related corrosion. Nonmagnetic. Not rated for Rockwell hardness.

Steel— Made from steel such as C1016-C1024. Thread forming and thread-cutting screws have a minimum Rockwell hardness of C33; sheet metal screws are not rated.

Finishes

Black Oxide and ***Black Phosphate—*** Offer mild rust resistance and some lubricity.

Chrome Plated— Provides a bright, attractive appearance and good rust resistance.

Nickel Plated— A decorative finish that's more rust resistant than zinc plating and less expensive than chrome plating.

PTFE Coated— A thin, slick coating that prevents sticking and binding. Unaffected by caustic cleaners. Complies with FDA 21 CFR 175.300 for contact with food.

Weather-Resistant Coated— A heat-cured plastic or epoxy coating that resists rust and corrosion better than zinc plating, minimizes reactions between dissimilar metals, and adds lubricity.

Zinc Plated— Offers good rust resistance.

Countersinking

Use a countersink (see pg. 2468) to create a recess for flat and oval head screws. The body diameter of your countersink should be equal to or larger than your screw's head diameter and its included angle should match your screw's head angle.

An Important Note About Hole Size

The hole size required to install a self-tapping screw varies according to the material and thickness you're fastening. Our reference drill sizes are based on industry data and typically allow adequate thread engagement. We suggest, however, that you test to determine the ideal hole size for your application.

Screw Size	No. 0	No. 1	No. 2	No. 4	No. 5	No. 6	No. 7	No. 8	No. 10	No. 12	No. 14	1/4"	5/16"	3/8"
Decimal Equivalent	.060"	.073"	.086"	.112"	.125"	.138"	.151"	.164"	.190"	.216"	.242"	.250"	.312"	.375"
Screw sizes up to 2" long are fully threaded; sizes longer than 2" have at least 2" of thread.														
Head Diameter														
Button	—	—	—	—	—	.262"	—	.312"	.361"	—	.437"	—	—	—
Flat	.112"	.137"	.162"	.212"	.237"	.262"	.287"	.312"	.362"	.412"	.462"	.462"	.597"	—
Oval	—	—	—	.212"	—	.262"	—	.312"	.362"	.412"	.462"	—	—	—
Pan	.116"	.142"	.167"	.219"	.245"	.270"	.296"	.322"	.373"	.425"	.473"	.473"	.615"	.740"
Round	—	—	—	—	—	.260"	—	.309"	.359"	.408"	.472"	.472"	—	—
Truss	—	—	—	.257"	—	.321"	—	.384"	.448"	.511"	.573"	—	—	—
Head Height														
Button	—	—	—	—	—	.073"	—	.087"	.101"	—	.132"	—	—	—
Flat	.035"	.043"	.051"	.067"	.075"	.083"	.091"	.100"	.116"	.132"	.148"	.153"	.191"	—
Oval	—	—	—	.104"	—	.128"	—	.152"	.176"	.200"	.224"	—	—	—
Pan (Combo, Phillips, Torx, Uni-Drive)	.039"	.046"	.062"	.080"	.089"	.097"	.106"	.115"	.133"	.151"	.162"	.162"	.218"	.261"
Pan (Slotted, Tamper Resistant)	—	—	.053"	.068"	—	.082"	.089"	.096"	.110"	.125"	.130"	.130"	.178"	.212"
Pan (Square Drive) and Round	—	—	—	.086"	—	.103"	—	.120"	.137"	.153"	.175"	.175"	—	—
Truss	—	—	—	.069"	—	.086"	—	.102"	.118"	.134"	.150"	—	—	—
Hex Washer Head														
Hex Sz. (Head Wd.)	—	—	—	3/16"	—	1/4"	1/4"	1/4"	5/16"	5/16"	3/8"	3/8"	1/2"	5/8"
Dia. (Washer OD)	—	—	—	.243"	—	.328"	.328"	.348"	.414"	.432"	.520"	.520"	.676"	.780"
O'all Head Ht.	—	—	—	.079"	—	.118"	.122"	.141"	.151"	.194"	.240"	.240"	.285"	.358"
Approximate Threads per Inch														
Sheet Metal Screws	—	—	32	24	—	18 or 20	16 or 19	15 or 18	12 or 16	11 or 14	10 or 14	—	9 or 12	9 or 12
Reference Drill Sizes for Sheet Metal and Thread Forming Screws														
Drill Size	#56	#53	#48	#44-#41	#36	#32	#30	#29	#21	3/16"	5.5 mm	#4	I	21/64"
Reference Drill Sizes for Thread Cutting Screws														
Drill Size	—	—	#49	#41	—	#31	—	#26	#17-#16	#8	—	1	L	T

Sheet Metal Screws

For technical drawings and 3-D models, go to mcmaster.com.

Pan Head Phillips

Pan head screws have a lower profile and a slightly larger diameter head than round head screws. The underside of the head has a flat bearing surface. Length is measured from under head.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 4—#1 Drive			
3/8"	100	90184A105	$5.63
1/2"	100	90184A108	6.01
3/4"	100	90184A111	8.02
No. 6—#2 Drive			
3/8"	100	90184A127	7.62
1/2"	100	90184A138	8.48
5/8"	100	90184A146	9.55
3/4"	100	90184A152	10.18
1"	50	90184A155	6.08
1 1/4"	50	90184A158	8.56
1 1/2"	50	90184A161	9.11
No. 8—#2 Drive			
3/8"	100	90184A216	$9.56
1/2"	100	90184A224	9.83
5/8"	100	90184A236	11.24
3/4"	50	90184A247	6.95
1"	50	90184A273	8.64
1 1/4"	50	90184A276	10.10
1 1/2"	50	90184A278	10.51
2"	25	90184A281	7.88
No. 10—#2 Drive			
3/8"	100	90184A340	11.68
1/2"	50	90184A342	7.87

Type 316 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
No. 10 (Cont.)			
5/8"	50	90184A361	$8.51
3/4"	50	90184A374	9.69
1"	50	90184A378	10.10
1 1/4"	25	90184A385	7.01
1 1/2"	25	90184A397	7.08
2"	25	90184A400	9.04
No. 12—#3 Drive			
1/2"	50	90184A448	12.65
3/4"	25	90184A452	7.46
1"	25	90184A457	9.73
No. 12 (Cont.)			
1 1/4"	25	90184A463	$12.50
1 1/2"	25	90184A471	13.71
2"	10	90184A489	7.56
No. 14—#3 Drive			
3/4"	25	90184A513	9.07
1"	25	90184A517	12.18
1 1/4"	10	90184A536	6.64
1 1/2"	10	90184A542	6.65
2"	10	90184A556	9.20

(Continued on following page)

For information about sheet metal screws, see page 3022.

Pan Head Phillips *(Continued from previous page)*

PTFE Coated 18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 6—#2 Drive			
1/2"	50	97293A210	$9.37
3/4"	50	97293A215	9.60
No. 8—#2 Drive			
1/2"	50	97293A315	9.81
3/4"	50	97293A320	10.15
1"	50	97293A325	11.98
1 1/2"	25	97293A330	7.62
No. 10—#2 Drive			
3/4"	50	97293A355	$12.38
1"	25	97293A360	8.12
1 1/2"	25	97293A365	9.89
No. 12—#3 Drive			
3/4"	25	97293A420	8.13
1"	25	97293A425	8.51
1 1/2"	25	97293A430	10.74

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 0—#0 Drive			
1/4"	10	92470A022	6.40
3/8"	10	92470A026	6.55
1/2"	10	92470A031	6.68
No. 1—#0 Drive			
1/4"	50	92470A050	5.95
3/8"	10	92470A054	6.12
1/2"	10	92470A057	6.29
No. 2—#1 Drive			
1/4"	100	92470A095	3.62
3/8"	100	92470A097	3.89
1/2"	100	92470A098	4.07
5/8"	100	92470A101	4.10
3/4"	100	92470A103	4.28
No. 4—#1 Drive			
1/4"	100	92470A107	3.85
3/8"	100	92470A108	4.07
1/2"	100	92470A110	4.39
5/8"	100	92470A112	4.96
3/4"	100	92470A113	5.58
1"	100	92470A115	6.65
No. 5—#1 Drive			
1/2"	50	92470A121	6.40
3/4"	50	92470A123	7.20
No. 6—#2 Drive			
1/4"	100	92470A144	3.85
3/8"	100	92470A146	4.32
1/2"	100	92470A148	3.64
5/8"	100	92470A150	4.04
3/4"	100	92470A151	4.58
7/8"	100	92470A152	5.13
1"	100	92470A153	5.51
1 1/4"	100	92470A155	6.97
1 1/2"	100	92470A157	7.47
1 3/4"	100	92470A158	10.53
2"	50	92470A159	6.07
No. 7—#2 Drive			
3/8"	100	92470A168	6.31
1/2"	100	92470A170	6.94
3/4"	100	92470A173	8.06
1"	100	92470A175	10.60
No. 8—#2 Drive			
1/4"	100	92470A190	5.96
3/8"	100	92470A192	6.46
1/2"	100	92470A194	5.60
5/8"	100	92470A196	6.09
3/4"	100	92470A197	6.60
7/8"	100	92470A198	7.06
1"	100	92470A199	8.13
1 1/4"	100	92470A201	9.14
1 1/2"	100	92470A203	10.84
1 3/4"	50	92470A204	6.83
No. 8 (Cont.)			
2"	100	92470A205	12.91
2 1/2"	50	92470A207	8.70
3"	50	92470A209	9.44
No. 10—#2 Drive			
1/4"	100	92470A239	8.46
3/8"	100	92470A240	7.62
1/2"	100	92470A242	7.17
5/8"	100	92470A244	8.53
3/4"	100	92470A245	8.67
7/8"	50	92470A246	9.07
1"	50	92470A247	8.51
1 1/4"	50	92470A249	7.24
1 1/2"	50	92470A251	7.24
1 3/4"	50	92470A252	6.34
2"	50	92470A253	8.39
2 1/4"	50	92470A254	8.69
2 1/2"	50	92470A255	10.81
3"	50	92470A257	13.01
3 1/2"	25	92470A259	7.32
4"	25	92470A262	11.72
No. 12—#3 Drive			
3/8"	100	92470A289	8.86
1/2"	100	92470A291	10.22
5/8"	50	92470A293	5.76
3/4"	100	92470A294	12.68
1"	50	92470A296	7.37
1 1/4"	50	92470A298	7.91
1 1/2"	50	92470A299	10.23
1 3/4"	50	92470A300	10.12
2"	50	92470A301	12.68
2 1/2"	25	92470A303	7.38
3"	25	92470A304	6.47
3 1/2"	10	92470A306	5.40
4"	10	92470A308	6.27
No. 14—#3 Drive			
1/2"	50	92470A310	7.85
5/8"	50	92470A312	6.60
3/4"	50	92470A313	9.05
1"	50	92470A315	10.35
1 1/4"	50	92470A316	13.51
1 1/2"	50	92470A317	13.58
1 3/4"	25	92470A318	6.33
2"	25	92470A319	6.76
2 1/2"	25	92470A321	10.01
3"	10	92470A323	4.87
3 1/2"	10	92470A325	6.77
4"	10	92470A330	8.01
5"	10	92470A335	12.56
6"	5	92470A340	8.25

Black-Oxide 18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 6—#2 Drive			
3/8"	100	90356A211	9.32
1/2"	100	90356A215	10.09
5/8"	100	90356A218	12.26
3/4"	100	90356A222	12.47
1"	50	90356A225	8.07
No. 8—#2 Drive			
3/8"	100	90356A256	12.17
1/2"	100	90356A259	13.23
5/8"	50	90356A264	7.79
3/4"	50	90356A267	8.27
1"	50	90356A271	10.93
No. 10—#2 Drive			
1/2"	50	90356A285	8.76
5/8"	50	90356A287	10.22
No. 10 (Cont.)			
3/4"	50	90356A291	10.49
1"	25	90356A294	7.54
1 1/4"	25	90356A297	7.50
1 1/2"	25	90356A306	7.64
No. 12—#3 Drive			
3/4"	25	90356A327	7.11
1"	25	90356A331	8.71
1 1/4"	25	90356A335	11.56
1 1/2"	25	90356A339	11.69
No. 14—#3 Drive			
3/4"	25	90356A352	11.25
1"	25	90356A355	12.31
1 1/4"	10	90356A357	5.72
1 1/2"	10	90356A359	6.52

Type 410 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 6—#2 Drive			
1/4"	100	96832A155	3.83
3/8"	100	96832A160	3.90
1/2"	100	96832A165	4.24
5/8"	100	96832A170	4.31
3/4"	100	96832A175	4.84
1"	100	96832A180	5.79
No. 6 (Cont.)			
1 1/4"	50	96832A185	3.89
1 1/2"	50	96832A190	4.34
No. 8—#2 Drive			
3/8"	100	96832A210	5.06
1/2"	100	96832A215	5.37
5/8"	100	96832A220	5.61

Type 410 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
No. 8 (Cont.)			
3/4"	100	96832A225	$6.47
1"	100	96832A230	7.55
1 1/4"	100	96832A235	9.64
1 1/2"	50	96832A240	5.38
No. 10—#2 Drive			
1/2"	50	96832A310	$3.99
3/4"	50	96832A315	4.46
1"	50	96832A320	5.33
1 1/4"	50	96832A325	6.62
1 1/2"	50	96832A330	7.41

Aluminum

Lg.	Pkg. Qty.		Per Pkg.
No. 6—#2 Drive			
3/8"	50	93080A310	9.72
1/2"	50	93080A330	13.80
1"	25	93080A390	7.48
No. 8—#2 Drive			
3/8"	25	93080A420	10.97
1"	25	93080A480	7.50
1 1/2"	25	93080A520	12.53

Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 0—#0 Drive			
1/4"	10	90190A020	6.56
3/8"	10	90190A024	6.61
1/2"	10	90190A028	6.65
No. 1—#0 Drive			
1/4"	10	90190A051	6.36
3/8"	10	90190A054	6.41
1/2"	10	90190A057	6.45
No. 2—#1 Drive			
1/4"	50	90190A075	7.58
3/8"	50	90190A079	7.90
1/2"	50	90190A083	8.14
No. 4—#1 Drive			
1/4"	100	90190A106	1.93
3/8"	100	90190A108	2.12
1/2"	100	90190A110	2.12
5/8"	100	90190A112	2.40
3/4"	100	90190A113	2.59
7/8"	100	90190A120	3.07
1"	100	90190A125	3.57
No. 6—#2 Drive			
1/4"	100	90190A144	4.23
3/8"	100	90190A146	2.40
1/2"	100	90190A148	2.64
5/8"	100	90190A150	2.72
3/4"	100	90190A151	4.58
7/8"	100	90190A152	5.99
1"	100	90190A153	5.60
1 1/4"	100	90190A155	6.69
1 1/2"	100	90190A157	6.84
1 3/4"	100	90190A158	6.90
2"	100	90190A159	7.15
No. 7—#2 Drive			
3/8"	100	90190A168	5.23
1/2"	100	90190A170	4.05
5/8"	100	90190A172	5.73
3/4"	100	90190A173	4.55
7/8"	100	90190A174	5.19
1"	100	90190A175	5.76
1 1/4"	100	90190A178	8.61
1 1/2"	100	90190A181	8.86
No. 8—#2 Drive			
1/4"	100	90190A191	5.16
3/8"	100	90190A192	4.72
1/2"	100	90190A194	5.20
5/8"	100	90190A196	5.40
3/4"	100	90190A197	5.81
7/8"	100	90190A198	7.01
No. 8 (Cont.)			
1"	100	90190A199	6.19
1 1/4"	100	90190A201	8.86
1 1/2"	100	90190A203	8.95
1 3/4"	100	90190A204	9.90
2"	100	90190A205	8.74
2 1/2"	50	90190A207	10.49
3"	50	90190A209	10.17
No. 10—#2 Drive			
1/4"	100	90190A239	5.17
3/8"	100	90190A240	6.00
1/2"	100	90190A242	5.14
5/8"	100	90190A244	6.04
3/4"	100	90190A245	6.20
7/8"	100	90190A246	6.36
1"	100	90190A247	8.13
1 1/4"	100	90190A249	9.57
1 1/2"	100	90190A251	9.62
1 3/4"	50	90190A252	5.80
2"	100	90190A253	11.96
2 1/2"	50	90190A255	10.12
3"	50	90190A257	10.05
No. 12—#3 Drive			
1/2"	100	90190A291	8.37
5/8"	100	90190A293	9.72
3/4"	100	90190A294	7.31
7/8"	100	90190A295	8.46
1"	100	90190A296	8.01
1 1/4"	100	90190A298	9.31
1 1/2"	100	90190A299	9.74
1 3/4"	50	90190A300	7.71
2"	100	90190A301	13.29
2 1/2"	50	90190A303	9.71
3"	50	90190A304	14.95
No. 14—#3 Drive			
1/2"	100	90190A310	8.99
5/8"	100	90190A312	13.38
3/4"	100	90190A313	9.75
7/8"	50	90190A314	8.81
1"	100	90190A315	10.02
1 1/4"	50	90190A316	6.45
1 1/2"	100	90190A317	12.66
1 3/4"	50	90190A318	9.86
2"	50	90190A319	7.97
2 1/2"	50	90190A321	8.31
3"	25	90190A323	7.75

Black-Oxide Steel

Lg.	Pkg. Qty.		Per Pkg.
No. 4—#1 Drive			
1/4"	100	90935A131	3.16
3/8"	100	90935A133	3.44
1/2"	100	90935A135	3.52
3/4"	100	90935A137	4.08
No. 6—#2 Drive			
1/4"	100	90935A143	2.95
3/8"	100	90935A146	3.23
1/2"	100	90935A148	3.24
5/8"	100	90935A149	3.30
3/4"	100	90935A151	4.28
1"	100	90935A153	5.23
1 1/4"	100	90935A155	7.18
1 1/2"	100	90935A140	14.29
No. 8—#2 Drive			
1/4"	100	90935A187	8.00
3/8"	100	90935A190	4.51
1/2"	100	90935A194	4.75
5/8"	100	90935A196	5.17
3/4"	100	90935A197	5.81
7/8"	100	90935A198	7.54
1"	100	90935A199	6.67
1 1/4"	100	90935A201	8.03
1 1/2"	50	90935A203	4.67
1 3/4"	50	90935A206	8.47
No. 8 (Cont.)			
2"	50	90935A209	8.64
2 1/2"	50	90935A211	12.42
No. 10—#2 Drive			
3/8"	100	90935A240	8.03
1/2"	100	90935A243	6.32
5/8"	100	90935A244	7.62
3/4"	100	90935A245	7.80
1"	50	90935A247	4.67
1 1/4"	50	90935A249	5.01
1 1/2"	50	90935A251	6.40
1 3/4"	50	90935A255	11.06
2"	50	90935A260	8.46
2 1/2"	25	90935A265	8.70
No. 12—#3 Drive			
1/2"	50	90935A302	9.26
3/4"	100	90935A305	11.93
1"	100	90935A310	13.12
1 1/4"	100	90935A315	13.14
1 1/2"	50	90935A320	8.84
1 3/4"	25	90935A325	10.15
No. 14—#3 Drive			
3/4"	50	90935A355	8.45
1"	50	90935A360	10.10
1 1/2"	25	90935A365	12.66
2"	10	90935A370	7.05

Pan Head Square Drive

Also called a Robertson drive, the square drive offers excellent driving power and resists driver slippage. Pan head screws have a lower profile and a slightly larger head diameter than round head screws. The underside of the head has a flat bearing surface. Length is measured from under head.

For drivers, see 5830A on page 2835; for bits, see 7185A on page 2824.

Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
No. 6—#1 Drive			
1/2"	100	97188A210	$9.05
5/8"	100	97188A215	9.76
3/4"	100	97188A220	10.47
1"	100	97188A225	10.95
No. 8—#2 Drive			
1/2"	100	97188A305	10.62
5/8"	100	97188A310	14.90
3/4"	50	97188A315	7.22
1"	50	97188A320	9.29
1 1/4"	50	97188A325	8.34
1 1/2"	50	97188A330	10.49
No. 10—#2 Drive			
1/2"	50	97188A405	$9.05
5/8"	50	97188A410	9.68
3/4"	50	97188A415	10.20
1"	50	97188A420	13.56
1 1/4"	50	97188A425	14.76
1 1/2"	25	97188A430	7.65
2"	25	97188A435	9.76
No. 12—#3 Drive			
3/4"	50	97188A510	12.14
1"	25	97188A515	9.40
1 1/2"	25	97188A525	9.48
18-8 Stainless Steel			
No. 4—#0 Drive			
3/8"	100	94155A090	5.36
1/2"	100	94155A092	6.35
5/8"	100	94155A094	7.84
3/4"	100	94155A096	7.50
No. 6—#1 Drive			
3/8"	100	94155A099	5.94
1/2"	100	94155A101	5.63
5/8"	100	94155A103	6.72
3/4"	100	94155A105	7.33
1"	100	94155A107	8.65
1 1/4"	100	94155A109	11.84
1 1/2"	50	94155A111	6.44
2"	50	94155A116	9.49
No. 8—#2 Drive			
3/8"	100	94155A113	7.51
1/2"	100	94155A115	7.44
No. 8 (Cont.)			
5/8"	100	94155A117	8.29
3/4"	100	94155A119	9.52
1"	50	94155A121	5.69
1 1/4"	50	94155A123	6.15
1 1/2"	50	94155A125	7.74
1 3/4"	50	94155A126	9.02
2"	50	94155A127	9.94
2 1/2"	25	94155A130	7.99
No. 10—#2 Drive			
1/2"	50	94155A131	6.14
5/8"	50	94155A133	6.39
3/4"	50	94155A135	6.72
1"	50	94155A137	8.04
1 1/4"	50	94155A139	10.49
1 1/2"	50	94155A141	10.65
1 3/4"	25	94155A143	5.57
18-8 Stainless Steel (Cont.)			
No. 10 (Cont.)			
2"	25	94155A145	$6.89
2 1/2"	25	94155A147	8.27
3"	25	94155A149	9.54
No. 12—#3 Drive			
1/2"	50	94155A164	7.72
5/8"	50	94155A166	8.68
3/4"	50	94155A167	8.81
1"	50	94155A169	9.37
1 1/4"	25	94155A171	7.21
1 1/2"	25	94155A173	7.36
2"	25	94155A177	7.82
No. 12 (Cont.)			
2 1/2"	25	94155A179	$11.03
3"	10	94155A182	5.26
No. 14—#3 Drive			
1/2"	50	94155A150	11.91
3/4"	25	94155A151	7.14
1"	25	94155A153	8.12
1 1/4"	25	94155A155	9.88
1 1/2"	25	94155A157	11.08
1 3/4"	10	94155A159	4.94
2"	10	94155A161	5.61
2 1/2"	10	94155A163	5.67
3"	10	94155A165	5.38
Zinc-Plated Steel			
No. 6—#1 Drive			
3/8"	100	90395A146	5.09
1/2"	100	90395A148	3.52
3/4"	100	90395A151	3.81
1"	100	90395A153	4.09
1 1/4"	100	90395A158	6.29
1 1/2"	100	90395A165	8.47
No. 8—#2 Drive			
3/8"	100	90395A192	4.48
1/2"	100	90395A194	4.80
3/4"	100	90395A197	5.72
1"	100	90395A199	6.81
1 1/4"	100	90395A201	8.08
1 1/2"	100	90395A203	10.06
2"	50	90395A205	6.43
No. 10—#2 Drive			
1/2"	100	90395A242	7.95
3/4"	100	90395A245	11.01
1"	100	90395A247	9.14
1 1/4"	100	90395A249	11.01
1 1/2"	50	90395A251	7.67
2"	50	90395A253	8.10
No. 12—#3 Drive			
3/4"	100	90395A294	10.23
1"	100	90395A296	10.66
1 1/2"	50	90395A299	9.53
No. 14—#3 Drive			
3/4"	50	90395A326	8.93
1"	50	90395A331	9.95
1 1/2"	25	90395A335	8.28
2"	25	90395A339	8.86

Pan Washer Head Square Drive

The washer and pan head are formed as one piece, providing a large flat bearing surface that reduces the likelihood of crushing mating surfaces and holds thin materials. Also called Robertson and Scrulox screws, the square drive design resists driver slippage. Made of zinc-plated steel. Length is measured from under the washer.

For drivers, see 5830A on page 2835; for bits, see 7185A on page 2824.

Lg.	Pkg. Qty.		Per Pkg.
No. 8—#2 Drive			
Washer OD: .370"; Head Ht.: .115"			
1/2"	100	91655A194	$6.63
5/8"	100	91655A196	8.41
3/4"	100	91655A197	7.65
1"	100	91655A199	8.91
1 1/4"	100	91655A201	10.53
1 1/2"	100	91655A202	10.87
2"	100	91655A206	13.30
2 1/2"	50	91655A207	10.17
3"	50	91655A209	9.78
No. 10—#2 Drive			
Washer OD: .432"; Head Ht.: .123"			
1/2"	100	91655A244	$11.75
3/4"	100	91655A245	8.06
1"	100	91655A247	9.86
1 1/4"	100	91655A249	12.61
1 1/2"	50	91655A252	8.42
2"	50	91655A254	9.05
No. 12—#3 Drive			
Washer OD: .513"; Head Ht.: .155"			
3/4"	50	91655A294	8.10
1"	50	91655A296	7.72

Pan Head Uni-Drive

Bit

The universal drive design on these screws requires only one power bit (sold separately) for all screw sizes. Pan head screws have a lower profile and a slightly larger head diameter than round head screws. The underside of the head has a flat bearing surface. Made from 18-8 stainless steel. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
No. 6			
3/8"	100	93686A310	$6.56
1/2"	100	93686A330	7.23
No. 8			
1/2"	100	93686A420	8.58
3/4"	100	93686A440	10.41
1"	100	93686A460	12.96
No. 10			
1/2"	100	93686A500	12.35
3/4"	50	93686A520	8.27
1"	50	93686A540	9.50
No. 12			
1"	50	93686A610	$12.42
1 1/4"	25	93686A630	7.76
1 1/2"	25	93686A650	8.35
No. 14			
1"	25	93686A720	9.04
1 1/4"	25	93686A740	10.09
1 1/2"	25	93686A760	11.06

2" Long Steel Uni-Drive Power Bit
93686A920 ..... **Each** $1.97

Pan Head Slotted

Pan head screws have a lower profile and a slightly larger head diameter than round head screws. Underside of head has a flat bearing surface. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
No. 2			
1/4"	100	91632A077	$3.71
3/8"	100	91632A079	4.03
No. 4			
3/8"	100	91632A108	5.12
1/2"	100	91632A110	5.41
No. 6			
3/8"	100	91632A146	5.31
1/2"	100	91632A148	5.62
5/8"	100	91632A150	6.05
3/4"	100	91632A151	7.28
1"	100	91632A153	7.99
No. 8			
3/8"	100	91632A192	$6.09
1/2"	100	91632A194	7.81
5/8"	100	91632A196	8.41
3/4"	100	91632A197	9.13
1"	100	91632A199	11.06
No. 10			
3/8"	100	91632A240	9.84
1/2"	100	91632A242	11.57
5/8"	100	91632A244	11.92
3/4"	100	91632A245	12.65
1"	50	91632A247	7.47
Zinc-Plated Steel			
No. 2			
1/4"	100	90053A077	6.12
3/8"	100	90053A079	6.19
1/2"	100	90053A081	7.22
5/8"	100	90053A083	10.01
3/4"	100	90053A084	11.15
No. 4			
1/4"	100	90053A106	3.19
3/8"	100	90053A108	2.91
1/2"	100	90053A110	2.56
3/4"	100	90053A113	2.23
No. 6			
1/4"	100	90053A144	3.06
3/8"	100	90053A146	3.24
1/2"	100	90053A148	3.66
5/8"	100	90053A150	4.34
3/4"	100	90053A151	3.67
1"	100	90053A153	4.38
1 1/4"	100	90053A155	5.72
No. 8			
3/8"	100	90053A192	5.15
1/2"	100	90053A194	5.90
5/8"	100	90053A196	6.11
3/4"	100	90053A197	4.78
1"	100	90053A199	5.96
1 1/4"	100	90053A201	7.03
1 1/2"	100	90053A203	8.60
2"	100	90053A205	9.59
No. 10			
3/8"	100	90053A240	3.48
1/2"	100	90053A242	3.53
5/8"	100	90053A244	6.16
3/4"	100	90053A245	5.91
1"	100	90053A247	6.92
1 1/4"	100	90053A249	5.87
1 1/2"	100	90053A251	8.43
1 3/4"	100	90053A252	9.40
2"	100	90053A253	9.33
No. 12			
1/2"	100	90053A291	6.70
5/8"	100	90053A293	5.76
3/4"	100	90053A294	6.42
7/8"	100	90053A295	7.67
1"	100	90053A296	6.95
1 1/4"	100	90053A298	11.07
1 1/2"	100	90053A299	14.30
2"	100	90053A301	13.68
No. 14			
1/2"	100	90053A310	8.78
3/4"	100	90053A313	11.62
1"	100	90053A315	9.03
1 1/2"	100	90053A317	14.90
2"	50	90053A319	8.71

For information about sheet metal screws, see page 3022.

Pan Head Combination Drive

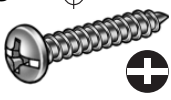

Screws accept both Phillips and slotted blade drivers. They have a low profile and a slightly larger head diameter than round head screws. The underside of the head has a flat bearing surface. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
***No. 4—**#1 Phillips Drive*			
1/4"	100	92465A135	$4.75
3/8"	100	92465A140	5.01
1/2"	100	92465A142	5.18
5/8"	100	92465A141	6.14
3/4"	100	92465A143	6.81
***No. 6—**#2 Phillips Drive*			
3/8"	100	92465A146	5.82
1/2"	100	92465A148	6.19
5/8"	100	92465A150	6.95
3/4"	100	92465A151	7.95
1"	100	92465A154	9.47
1 1/4"	50	92465A155	7.63
1 1/2"	50	92465A157	8.51
***No. 8—**#2 Phillips Drive*			
3/8"	100	92465A192	7.55
1/2"	100	92465A194	8.24
5/8"	100	92465A195	9.43
3/4"	100	92465A197	10.37
1"	100	92465A199	11.77
1 1/4"	50	92465A210	7.49
1 1/2"	50	92465A212	8.78
2"	50	92465A218	12.06
***No. 10—**#2 Phillips Drive*			
1/2"	100	92465A242	10.81
5/8"	50	92465A243	6.76
No. 10 (Cont.)			
3/4"	50	92465A245	$7.27
1"	50	92465A247	9.07
1 1/4"	50	92465A249	10.73
1 1/2"	50	92465A252	11.51
2"	25	92465A254	7.41
2 1/2"	25	92465A256	9.77
3"	25	92465A257	11.83
***No. 12—**#3 Phillips Drive*			
1/2"	50	92465A258	8.94
5/8"	50	92465A259	9.52
3/4"	50	92465A260	9.75
1"	50	92465A264	11.18
1 1/4"	50	92465A265	13.01
1 1/2"	25	92465A266	8.50
2"	25	92465A267	10.05
2 1/2"	25	92465A290	12.04
3"	10	92465A292	6.00
***No. 14—**#3 Phillips Drive*			
3/4"	50	92465A270	11.98
1"	25	92465A274	6.76
1 1/4"	25	92465A275	8.16
1 1/2"	25	92465A276	9.08
2"	25	92465A280	11.56
2 1/2"	10	92465A282	5.27
3"	10	92465A284	6.13
Zinc-Plated Steel			
***No. 4—**#1 Phillips Drive*			
1/4"	100	90077A106	1.35
3/8"	100	90077A108	1.45
1/2"	100	90077A110	1.66
5/8"	100	90077A112	2.28
3/4"	100	90077A113	2.30
1"	100	90077A115	2.58
***No. 6—**#2 Phillips Drive*			
1/4"	100	90077A144	2.58
3/8"	100	90077A146	2.56
1/2"	100	90077A148	2.17
5/8"	100	90077A150	2.38
3/4"	100	90077A151	2.62
1"	100	90077A153	2.94
1 1/4"	100	90077A155	4.00
1 1/2"	100	90077A157	4.86
2"	100	90077A159	5.34
***No. 8—**#2 Phillips Drive*			
3/8"	100	90077A192	3.06
1/2"	100	90077A194	2.97
5/8"	100	90077A196	3.21
3/4"	100	90077A197	3.58
1"	100	90077A199	4.27
1 1/4"	100	90077A201	5.28
1 1/2"	100	90077A203	5.56
1 3/4"	100	90077A204	7.76
2"	100	90077A205	7.86
2 1/2"	100	90077A207	9.82
3"	100	90077A209	10.07
***No. 10—**#2 Phillips Drive*			
3/8"	100	90077A240	3.94
1/2"	100	90077A242	3.79
No. 10 (Cont.)			
5/8"	100	90077A244	5.28
3/4"	100	90077A245	4.26
1"	100	90077A247	5.03
1 1/4"	100	90077A249	4.65
1 1/2"	100	90077A251	6.02
1 3/4"	100	90077A252	7.85
2"	100	90077A253	10.10
2 1/2"	100	90077A255	13.76
3"	100	90077A257	14.84
***No. 12—**#3 Phillips Drive*			
1/2"	100	90077A291	6.01
5/8"	100	90077A293	6.99
3/4"	100	90077A294	6.52
1"	100	90077A296	6.96
1 1/4"	100	90077A298	10.41
1 1/2"	100	90077A299	12.27
2"	100	90077A301	14.63
2 1/2"	100	90077A303	10.00
3"	50	90077A304	9.98
***No. 14—**#3 Phillips Drive*			
1/2"	100	90077A310	6.16
5/8"	100	90077A312	5.40
3/4"	100	90077A313	7.90
1"	100	90077A315	9.66
1 1/4"	100	90077A316	11.26
1 1/2"	100	90077A317	10.97
1 3/4"	50	90077A318	10.91
2"	50	90077A319	10.97
2 1/2"	50	90077A321	10.62
3"	50	90077A323	12.81
Brass			
***No. 10—**#2 Phillips Drive*			
3/4"	25	90077A910	13.52

Round Head Phillips

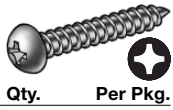

All have a domed head with a flat bearing surface underneath. Made from 18-8 stainless steel. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
***No. 6—**#2 Drive*			
3/8"	100	94005A335	$4.90
1/2"	100	94005A337	5.40
3/4"	100	94005A339	6.91
1"	100	94005A341	8.13
***No. 8—**#2 Drive*			
1/2"	100	94005A411	7.00
3/4"	100	94005A413	8.62
1"	100	94005A415	9.91
***No. 10—**#2 Drive*			
1/2"	100	94005A521	$9.65
3/4"	50	94005A523	6.60
1"	50	94005A525	6.99
1 1/4"	50	94005A527	8.62
1 1/2"	50	94005A529	8.70
***No. 12—**#3 Drive*			
3/4"	50	94005A641	8.40
1"	50	94005A643	9.02
1 1/2"	25	94005A645	5.93

Pan Head Torx

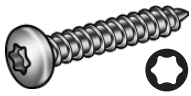

The Torx drive handles high torque and prevents your driver from slipping. Screws have a low profile and a slightly larger head diameter than round head screws. The underside of the head has a flat bearing surface. Screws are made from zinc-plated steel. Length is measured from under the head.

For drivers see pages 2848-2850; for bits see pages 2823-2824.

Lg.	Pkg. Qty.		Per Pkg.
***No. 4—**T10 Torx Size*			
1/4"	100	90925A106	$10.86
3/8"	100	90925A108	11.39
1/2"	100	90925A110	11.67
5/8"	100	90925A115	12.78
***No. 6—**T15 Torx Size*			
3/8"	100	90925A146	12.17
1/2"	100	90925A148	12.63
5/8"	100	90925A150	14.57
3/4"	100	90925A151	14.82
7/8"	100	90925A153	14.57
1"	50	90925A155	8.17
1 1/4"	50	90925A157	7.78
***No. 8—**T20 Torx Size*			
1/2"	100	90925A194	11.73
3/4"	50	90925A196	8.50
7/8"	100	90925A198	14.80
1"	50	90925A199	7.89
No. 8 (Cont.)			
1 1/4"	50	90925A201	$8.47
1 1/2"	50	90925A203	8.47
***No. 10—**T25 Torx Size*			
1/2"	50	90925A242	7.84
5/8"	50	90925A243	8.29
3/4"	50	90925A245	8.41
7/8"	50	90925A246	11.27
1"	50	90925A247	9.76
1 1/4"	50	90925A249	11.04
1 1/2"	50	90925A251	11.83
1 3/4"	25	90925A255	8.54
2"	25	90925A257	8.83
***No. 12—**T27 Torx Size*			
3/4"	50	90925A259	12.43
1"	50	90925A260	11.95
1 1/4"	25	90925A265	9.70

Metric Pan Head Phillips

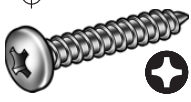

Screws have a lower profile and a slightly larger head diameter than round head screws. The head has a flat bearing surface underneath. Made of 18-8 stainless steel. Meet DIN 7981. Length measured from under head.

Lg., mm	Pkg. Qty.		Per Pkg.
***M2.2—**#1 Drive; Head: Dia. 4.2 mm; Ht. 1.8 mm*			
6.5	100	94997A125	$11.34
9.5	100	94997A130	11.69
***M2.9—**#1 Drive; Head: Dia. 5.6 mm; Ht. 2.2 mm*			
6.5	100	94997A225	11.80
9.5	100	94997A250	12.28
13	100	94997A275	12.24
***M3.5—**#2 Drive; Head: Dia. 6.9 mm; Ht. 2.6 mm*			
13	50	94997A300	$10.31
19	50	94997A325	12.44
25	50	94997A350	12.66
***M3.9—**#2 Drive; Head: Dia. 7.5 mm; Ht. 2.8 mm*			
13	50	94997A400	10.86
19	25	94997A425	7.90
25	25	94997A450	12.35

Large Diameter (Truss) Head Phillips

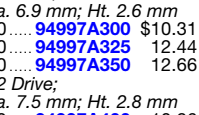

Truss head screws have a low profile and a larger head diameter than both pan head and round head screws. The extra diameter provides a bearing surface that's excellent for holding thin materials. Made of 18-8 stainless steel. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
***No. 4—**#1 Drive*			
1/4"	100	93406A106	$4.56
3/8"	100	93406A108	4.95
1/2"	100	93406A110	5.29
5/8"	100	93406A100	6.22
3/4"	100	93406A102	7.15
1"	100	93406A104	8.38
***No. 6—**#2 Drive*			
1/4"	100	93406A144	5.43
3/8"	100	93406A146	5.49
1/2"	100	93406A148	5.75
5/8"	100	93406A150	6.52
3/4"	100	93406A151	7.52
1"	100	93406A153	8.78
1 1/4"	100	93406A155	10.25
1 1/2"	100	93406A158	11.30
***No. 8—**#2 Drive*			
3/8"	100	93406A192	7.05
1/2"	100	93406A194	7.58
5/8"	100	93406A196	8.40
3/4"	100	93406A197	9.48
1"	100	93406A199	11.17
1 1/4"	50	93406A201	6.53
1 1/2"	50	93406A203	7.28
1 3/4"	50	93406A204	8.52
2"	50	93406A205	8.75
***No. 10—**#2 Drive*			
3/8"	100	93406A240	9.54
1/2"	100	93406A242	10.54
No. 10 (Cont.)			
5/8"	100	93406A244	$11.59
3/4"	50	93406A245	6.55
1"	50	93406A247	7.42
1 1/4"	50	93406A249	8.73
1 1/2"	50	93406A251	9.98
1 3/4"	50	93406A252	11.27
2"	50	93406A253	11.58
2 1/2"	25	93406A254	8.04
3"	25	93406A258	10.13
***No. 12—**#3 Drive*			
1/2"	50	93406A290	7.53
3/4"	50	93406A294	9.62
1"	50	93406A296	10.14
1 1/4"	25	93406A298	5.47
1 1/2"	25	93406A302	6.77
2"	25	93406A304	6.85
2 1/2"	25	93406A307	12.08
3"	10	93406A310	5.86
***No. 14—**#3 Drive*			
1/2"	50	93406A311	9.71
5/8"	50	93406A312	10.25
3/4"	50	93406A313	10.64
1"	25	93406A315	5.70
1 1/4"	25	93406A317	6.44
1 1/2"	25	93406A318	7.37
2"	25	93406A320	9.56
2 1/2"	10	93406A322	5.09
3"	10	93406A324	6.22

Tamper-Resistant Button, Round, and Pan Head

Tamper-resistant screws require unique drivers for installation (unless noted) and removal. All have a flat bearing surface under the head (unless noted) and are made from 18-8 stainless steel. Length is measured from under the head.

Pin-in-Hex—All have the same button head as our Pin-in-Torx screws, but with a different drive style. For drivers, see 7253A on page 2840; for bits, see 7257A on page 2821.

Pin-in-Torx—These low-profile screws have a button head that is flatter than both pan and round head screws. For drivers, see 83335A on page 2849; for bits, see 7377A on page 2824.

One Way—All have a round head (unless noted). They install with a standard slotted screwdriver, but require a special removal tool. For removal tool, see 7392A on page 2835.

Drilled Spanner—All have a pan head with a low profile and a slightly larger head diameter than round head screws. For drivers, see 94062A on page 2835; for bits, see 52775A on page 2825.

Tri-Wing®—All have a Y-shaped drive and a pan head with a low profile and a slightly larger head diameter than round head screws. For drivers, see 7266A on page 2835; for bits, see 7175A on page 2825.

Lg.	Pkg. Qty.	Pin-in-Hex Button Head	Per Pkg.	Pkg. Qty.	Pin-in-Torx Button Head	Per Pkg.	Pkg. Qty.	One-Way Round Head	Per Pkg.	Pkg. Qty.	Drilled Spanner Pan Head	Per Pkg.	Pkg. Qty.	Tri-Wing® Pan Head	Per Pkg.
No. 6—*Pin-in-Hex: 1/8″ Hex Drive; Pin-in-Torx: T10 Drive; One Way: Slotted Drive; Drilled Spanner: #6 Drive; Tri-Wing®: #3 Drive*															
3/8″							100	90090A145♦	$14.60						
1/2″	25	96612A140	$9.85	25	95638A148	$9.01	100	90090A148	10.41	25	94065A148	$8.26	50	95641A148	$10.34
3/4″	25	96612A145	10.06	25	95638A151	10.50	100	90090A151	12.03	25	94065A151	8.64	50	95641A151	11.03
1″	25	96612A150	10.17	25	95638A153	11.28	50	90090A153	8.61	25	94065A153	8.87	25	95641A153	6.21
1 1/2″				25	95638A155	11.24				25	94065A157	10.08			
No. 8—*Pin-in-Hex: 5/32″ Hex Drive; Pin-in-Torx: T15 Drive; One Way: Slotted Drive; Drilled Spanner: #8 Drive; Tri-Wing®: #4 Drive*															
3/8″							50	90090A191♦	9.66	25	94065A192	8.36			
1/2″	25	96612A205	9.97	25	95638A194	7.33	50	90090A194	8.52	25	94065A194	8.89	50	95641A194	11.72
5/8″	25	96612A210	10.17												
3/4″	25	96612A215	10.29	25	95638A197	7.55	50	90090A197	8.61	25	94065A197	9.29	50	95641A197	12.41
1″	25	96612A220	10.69	25	95638A199	7.68	50	90090A199	8.79	25	94065A199	9.44	50	95641A199	13.79
1 1/4″	25	96612A225	11.57	25	95638A201	8.62	50	90090A201	11.62				25	95641A201	8.62
1 1/2″	25	96612A230	11.65	25	95638A205	8.33	50	90090A203	8.86	25	94065A203	11.00	25	95641A205	10.35
2″										25	94065A205	12.51			
No. 10—*Pin-in-Hex: 5/32″ Hex Drive; Pin-in-Torx: T25 Drive; One Way: Slotted Drive; Drilled Spanner: #10 Drive; Tri-Wing®: #5 Drive*															
1/2″	25	96612A250	10.15	25	95638A242	8.45	50	90090A242	9.00	25	94065A242	9.32	50	95641A242	13.10
3/4″	25	96612A260	10.49	25	95638A245	8.53	50	90090A245	9.26	25	94065A245	9.54	25	95641A245	8.62
1″	25	96612A265	11.16	25	95638A247	8.79	50	90090A247	10.93	25	94065A247	9.86	25	95641A247	8.28
1 1/4″	25	96612A270	12.03	25	95638A249	9.48				25	94065A249	11.25			
1 1/2″	25	96612A275	12.57	10	95638A251	6.47	50	90090A251	11.54	25	94065A251	11.48			
2″	25	96612A280	14.06				25	90090A253	8.61	10	94065A253	6.08			
No. 12—*One Way: Slotted Drive; Drilled Spanner: #12 Drive*															
1/2″							50	90090A291★	14.68						
3/4″							25	90090A293★	7.67						
1″							25	90090A296★	8.17	25	94065A296	11.04			
1 1/2″							25	90090A299★	8.78	25	94065A299	12.64			
2″							25	90090A300★▲	11.28	25	94065A301	14.99			
No. 14—*Pin-in-Hex: 5/32″ Hex Drive; Pin-in-Torx: T27 Drive; One Way: Slotted Drive; Drilled Spanner: #14 Drive*															
1/2″				10	95638A313	7.61	50	90090A310	12.42						
3/4″	25	96612A320	13.63	10	95638A314	7.29	25	90090A313	6.79	25	94065A313	14.28			
1″	25	96612A325	14.25	10	95638A315	7.37	25	90090A315	7.92	25	94065A315	14.58			
1 1/2″	10	96612A335	6.38	10	95638A317	8.95	25	90090A317	10.08						
2″							25	90090A319	11.06	10	94065A319	6.47			
3″							10	90090A323	6.62						

♦ Has an oval head which is undercut to 70% of normal height to allow more threading. ★ Has a pan head. ▲ Partially threaded.

Tamper-Resistant Flat Head

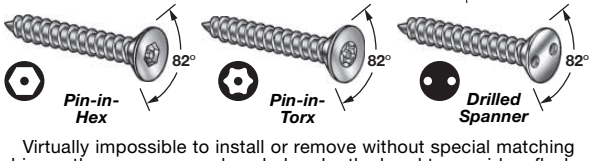

Virtually impossible to install or remove without special matching drivers, these screws are beveled under the head to provide a flush surface within countersunk holes. Made from 18-8 stainless steel. Length is measured from the top of the head.

Pin-in-Hex—For drivers, see 7253A on page 2840; for bits, see 7257A on page 2821.

Pin-in-Torx—For drivers, see 83335A on page 2849; for bits, see 7377A on page 2824.

Drilled Spanner—For drivers, see 94062A on page 2835; for bits, see 52775A on page 2825.

Lg.	Pkg. Qty.		Per Pkg.
Pin-in-Hex			
No. 6—*1/8″ Hex Drive; Head: Dia. 0.307″; Ht. 0.097″*			
1/2″	25	95829A150	$9.85
3/4″	25	95829A155	10.06
1″	25	95829A160	10.17
No. 8—*5/32″ Hex Drive; Head: Dia. 0.359″; Ht. 0.112″*			
1/2″	25	95829A205	9.97
3/4″	25	95829A215	10.29
1″	25	95829A220	10.69
No. 10—*5/32″ Hex Drive; Head: Dia. 0.411″; Ht. 0.127″*			
1/2″	25	95829A250	$10.15
3/4″	25	95829A260	10.49
1″	25	95829A265	11.16
1 1/4″	25	95829A270	12.03
1 1/2″	25	95829A275	12.57
No. 14—*5/32″ Hex Drive; Head: Dia. 0.531″; Ht. 0.161″*			
3/4″	25	95829A350	13.63
1″	25	95829A355	14.25
Pin-in-Hex (Cont.)			
No. 14 (Cont.)			
1 1/4″	25	95829A360	$14.75
No. 14 (Cont.)			
1 1/2″	10	95829A365	$6.38
Pin-in-Torx			
No. 6—*T15 Drive; Head: Dia. 0.307″; Ht. 0.097″*			
1/2″	25	95015A292	9.36
3/4″	25	95015A294	10.50
1″	25	95015A296	10.65
No. 8—*T20 Drive; Head: Dia. 0.359″; Ht. 0.112″*			
1/2″	25	95015A298	9.81
3/4″	25	95015A301	9.77
1″	25	95015A303	9.77
1 1/4″	25	95015A305	12.25
No. 10—*T25 Drive; Head: Dia. 0.411″; Ht. 0.127″*			
1/2″	25	95015A450	9.76
3/4″	25	95015A307	9.75
1″	25	95015A309	10.86
1 1/2″	10	95015A313	6.47
1/4″—*T30 Drive; Head: Dia. 0.531″; Ht. 0.161″*			
3/4″	10	95015A314	7.61
1″	10	95015A620	8.87
1 1/4″	10	95015A315	7.86
Drilled Spanner			
No. 6—*#6 Drive; Head: Dia. 0.262″; Ht. 0.083″*			
1/2″	25	95115A115	7.19
3/4″	25	95115A117	7.26
1″	25	95115A119	7.47
No. 8—*#8 Drive; Head: Dia. 0.312″; Ht. 0.100″*			
1/2″	25	95115A120	8.17
3/4″	25	95115A122	8.54
1″	25	95115A124	8.67
1 1/4″	25	95115A125	8.89
1 1/2″	25	95115A205	9.67
No. 10—*#10 Drive; Head: Dia. 0.362″; Ht. 0.116″*			
1/2″	25	95115A225	8.19
3/4″	25	95115A126	8.40
1″	25	95115A128	8.67
1 1/2″	25	95115A130	10.96
2″	25	95115A135	12.64
No. 12—*#12 Drive; Head: Dia. 0.412″; Ht. 0.132″*			
1″	25	95115A150	9.69
1 1/4″	25	95115A155	9.94
1 1/2″	25	95115A160	11.10
2″	10	95115A165	5.73

For information about sheet metal screws, see page 3022.

Flat Head and Undercut Flat Head Phillips

Also known as hinge screws, these flat head screws are beveled under the head to provide a flush surface within countersunk holes. Length is measured from the top of the head.

Screws with an undercut head are indicated with a ♦. The head is undercut to 70% of the normal height to allow more threading.

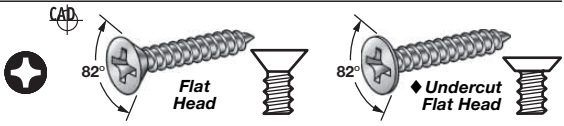

Type 316 Stainless Steel

Lg.	Pkg. Qty.	Per Pkg.		
No. 4—#1 Drive				
1/2"	100	90198A105	$7.38	
3/4"	100	90198A108	10.48	
No. 6—#2 Drive				
1/2"	100	90198A147	6.82	
5/8"	100	90198A154	7.39	
3/4"	100	90198A158	9.02	
1"	100	90198A173	10.82	
1 1/4"	50	90198A182	7.75	
1 1/2"	50	90198A198	9.71	
No. 8—#2 Drive				
1/2"	100	90198A216	8.18	
5/8"	100	90198A221	10.81	
3/4"	100	90198A236	11.76	
1"	50	90198A249	7.24	
1 1/4"	50	90198A253	9.37	
1 1/2"	50	90198A279	12.28	
1 3/4"	25	90198A280	7.78	
2"	25	90198A284	8.02	
2 1/2"	25	90198A286	8.69	
3"	25	90198A288	12.54	
No. 10—#2 Drive				
3/4"	50	90198A309	$7.70	
1"	50	90198A316	8.08	
1 1/4"	25	90198A325	6.14	
1 1/2"	25	90198A339	6.88	
1 3/4"	25	90198A340	9.25	
2"	25	90198A444	11.00	
2 1/2"	25	90198A446	11.96	
3"	10	90198A448	5.97	
No. 12—#3 Drive				
3/4"	25	90198A567	7.18	
1"	25	90198A573	8.81	
1 1/4"	25	90198A579	10.39	
1 1/2"	10	90198A583	5.84	
2"	10	90198A589	6.10	
2 1/2"	10	90198A772	7.56	
3"	10	90198A774	9.16	
No. 14—#3 Drive				
3/4"	25	90198A713	10.32	
1"	10	90198A721	5.53	
1 1/4"	10	90198A729	6.69	
1 1/2"	10	90198A742	7.24	
2"	10	90198A769	7.88	

PTFE Coated 18-8 Stainless Steel

Lg.	Pkg. Qty.	Per Pkg.		
No. 6—#2 Drive				
1/2"	50	99430A210	9.23	
3/4"	50	99430A215	9.47	
1"	50	99430A220	9.20	
No. 8—#2 Drive				
3/4"	50	99430A250	9.88	
1"	50	99430A255	11.68	
1 1/2"	50	99430A260	14.90	
No. 10—#2 Drive				
3/4"	50	99430A315	11.81	
1"	50	99430A320	14.09	
1 1/2"	25	99430A325	9.49	
No. 12—#3 Drive				
1"	25	99430A420	8.14	
1 1/2"	25	99430A425	10.31	
2"	25	99430A430	11.24	

18-8 Stainless Steel

Lg.	Pkg. Qty.	Per Pkg.		
No. 0—#0 Drive				
1/4"	10	90065A020	5.38	
3/8"	10	90065A024	5.70	
1/2"	10	90065A028	5.63	
No. 1—#0 Drive				
1/4"	10	90065A051	5.13	
3/8"	10	90065A054	5.28	
1/2"	10	90065A057	5.43	
No. 2—#1 Drive				
1/4"	100	90065A077	3.13	
3/8"	100	90065A079	3.36	
No. 4—#1 Drive				
1/4"	100	90065A106	3.85	♦
3/8"	100	90065A108	4.07	
1/2"	100	90065A110	4.34	
5/8"	100	90065A112	4.91	
3/4"	100	90065A113	6.02	
1"	100	90065A115	6.39	
No. 5—#2 Drive				
1/2"	10	90065A121	1.13	
5/8"	10	90065A124	1.21	
3/4"	10	90065A127	1.25	
No. 6—#2 Drive				
1/4"	100	90065A144	4.17	♦
3/8"	100	90065A146	3.32	
3/8"	100	98903A200	5.15	♦
1/2"	100	90065A148	3.40	
1/2"	100	98903A203	5.24	♦
5/8"	100	90065A149	3.89	
5/8"	100	98903A206	6.16	♦
3/4"	100	90065A151	4.28	
3/4"	100	98903A209	6.86	♦
7/8"	100	90065A152	5.32	
1"	100	90065A153	5.39	
1 1/4"	100	90065A154	6.18	
1 1/2"	100	90065A155	7.12	
2"	100	90065A157	10.54	
No. 7—#2 Drive				
5/8"	50	90065A172	4.97	
No. 8—#2 Drive				
3/8"	100	90065A192	8.08	♦
1/2"	100	90065A194	4.92	
1/2"	100	98903A250	7.47	♦
5/8"	100	90065A195	5.50	
5/8"	100	98903A253	8.58	♦
3/4"	100	90065A197	5.79	
No. 8 (Cont.)				
3/4"	100	98903A256	9.34	♦
7/8"	100	90065A198	6.49	
1"	100	90065A199	6.30	
1"	100	98903A259	10.50	♦
1 1/4"	100	90065A201	8.41	
1 1/2"	100	90065A203	8.86	
1 3/4"	50	90065A204	6.65	
2"	100	90065A205	12.59	
2 1/2"	100	90065A207	13.91	
3"	50	90065A209	7.12	
3 1/2"	50	90065A212	11.64	
No. 10—#2 Drive				
3/8"	100	90065A240	6.88	♦
1/2"	100	90065A242	6.03	♦
5/8"	100	90065A243	6.08	
5/8"	100	98903A308	9.69	♦
3/4"	100	90065A245	7.61	
3/4"	100	98903A311	10.80	♦
7/8"	100	90065A246	10.37	
1"	100	90065A247	9.55	
1"	50	98903A314	6.88	♦
1 1/4"	100	90065A249	10.26	
1 1/2"	100	90065A251	12.56	
1 3/4"	50	90065A252	7.33	
2"	50	90065A253	6.83	
2 1/2"	50	90065A255	7.15	
3"	50	90065A257	8.09	
3 1/2"	25	90065A259	8.22	
4"	25	90065A263	10.62	
No. 12—#3 Drive				
1/2"	100	90065A290	9.15	♦
5/8"	100	90065A292	11.65	♦
3/4"	100	90065A294	11.36	
3/4"	50	98903A361	9.01	♦
1"	100	90065A296	13.62	
1 1/4"	50	90065A298	7.18	
1 1/2"	50	90065A299	7.35	
1 3/4"	50	90065A300	7.32	
2"	50	90065A301	7.60	
2 1/2"	50	90065A303	11.85	
3"	50	90065A305	13.89	
3 1/2"	25	90065A307	9.85	
4"	25	90065A308	11.87	

♦ Has an undercut head.

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.	Per Pkg.		
No. 14—#3 Drive				
1/2"	50	90065A310	$6.32	♦
5/8"	50	90065A312	6.48	♦
3/4"	50	90065A313	7.25	
3/4"	50	98903A364	13.22	♦
1"	50	90065A315	7.28	
1 1/4"	50	90065A316	9.66	
1 1/2"	25	90065A317	6.55	
1 3/4"	25	90065A318	6.81	
No. 14 (Cont.)				
2"	25	90065A319	$7.52	
2 1/2"	25	90065A321	10.03	
3"	25	90065A323	11.32	
3 1/2"	10	90065A325	6.11	
4"	10	90065A329	7.70	
5"	10	90065A335	12.13	
6"	5	90065A340	8.02	

Type 410 Stainless Steel

Lg.	Pkg. Qty.	Per Pkg.		
No. 6—#2 Drive				
1/2"	100	97740A205	3.72	
3/4"	100	97740A210	4.05	
No. 8—#2 Drive				
1/2"	100	97740A250	4.46	
5/8"	100	97740A255	5.20	
No. 8 (Cont.)				
3/4"	100	97740A260	5.60	
1"	100	97740A265	6.40	
No. 10—#2 Drive				
3/4"	100	97740A310	6.91	
1"	100	97740A315	8.06	

Zinc-Plated Steel

Lg.	Pkg. Qty.	Per Pkg.		
No. 0—#0 Drive				
1/4"	10	90048A020	6.52	
3/8"	10	90048A024	6.56	
1/2"	10	90048A028	6.76	
No. 1—#0 Drive				
1/4"	10	90048A051	6.31	
3/8"	10	90048A054	6.35	
1/2"	10	90048A057	6.39	
No. 2—#1 Drive				
1/4"	50	90048A075	6.20	
3/8"	50	90048A079	6.30	
1/2"	50	90048A083	7.10	
No. 4—#1 Drive				
1/4"	100	90048A106	1.76	♦
3/8"	100	90048A108	1.75	
1/2"	100	90048A110	1.84	
5/8"	100	90048A111	2.20	
3/4"	100	90048A113	2.44	
1"	100	90048A117	2.52	
1 1/4"	50	90048A119	5.08	
1 1/2"	50	90048A123	6.50	
No. 6—#2 Drive				
1/4"	100	90048A144	4.20	♦
3/8"	100	90048A146	2.20	
1/2"	100	90048A148	2.20	
5/8"	100	90048A150	2.20	
3/4"	100	90048A151	2.64	
7/8"	100	90048A152	3.08	
1"	100	90048A153	3.76	
1 1/4"	100	90048A154	4.36	
1 1/2"	100	90048A155	4.80	
1 3/4"	100	90048A156	6.20	
2"	100	90048A157	5.80	
2 1/2"	25	90048A160	9.77	
3"	25	90048A164	9.63	
No. 8—#2 Drive				
3/8"	100	90048A192	1.41	♦
1/2"	100	90048A194	3.00	
5/8"	100	90048A196	2.92	
3/4"	100	90048A197	3.84	
7/8"	100	90048A198	4.20	
1"	100	90048A199	4.56	
1 1/4"	100	90048A201	6.52	
1 1/2"	100	90048A203	6.00	
No. 8 (Cont.)				
1 3/4"	100	90048A204	7.48	
2"	100	90048A205	8.16	
2 1/2"	100	90048A207	10.64	
3"	100	90048A209	11.12	
No. 10—#2 Drive				
3/8"	100	90048A240	3.96	♦
1/2"	100	90048A242	2.48	♦
5/8"	100	90048A244	4.20	
3/4"	100	90048A245	4.52	
7/8"	100	90048A246	5.28	
1"	100	90048A247	5.80	
1 1/4"	100	90048A249	6.52	
1 1/2"	100	90048A251	7.72	
1 3/4"	100	90048A252	10.00	
2"	100	90048A253	11.24	
2 1/4"	100	90048A254	10.52	
2 1/2"	100	90048A255	12.26	
3"	50	90048A257	7.53	
No. 12—#3 Drive				
1/2"	100	90048A290	4.81	♦
5/8"	100	90048A292	6.20	
3/4"	100	90048A294	7.36	
7/8"	100	90048A295	13.07	
1"	100	90048A296	8.72	
1 1/4"	100	90048A297	9.64	
1 1/2"	100	90048A299	11.92	
1 3/4"	100	90048A300	14.24	
2"	100	90048A301	14.84	
2 1/2"	50	90048A303	9.92	
3"	50	90048A305	8.07	
No. 14—#3 Drive				
1/2"	100	90048A308	12.50	♦
5/8"	100	90048A310	10.52	♦
3/4"	100	90048A313	10.64	
7/8"	100	90048A314	12.40	
1"	100	90048A315	11.36	
1 1/4"	100	90048A316	12.92	
1 1/2"	100	90048A317	11.69	
1 3/4"	50	90048A318	8.00	
2"	50	90048A319	9.20	
2 1/2"	50	90048A321	11.16	
3"	50	90048A323	14.90	

Black-Oxide Steel

Lg.	Pkg. Qty.	Per Pkg.		
No. 4—#1 Drive				
3/8"	100	90033A105	4.15	
1/2"	100	90033A110	4.39	
5/8"	100	90033A115	4.93	
3/4"	100	90033A118	6.41	
No. 6—#2 Drive				
1/2"	100	90033A150	4.06	
5/8"	100	90033A153	5.37	
3/4"	100	90033A155	5.03	
1"	100	90033A160	5.16	
1 1/4"	100	90033A164	9.24	
1 1/2"	100	90033A168	12.83	
No. 8—#2 Drive				
3/8"	100	90033A201	8.32	♦
1/2"	100	90033A205	5.79	
5/8"	100	90033A208	9.94	
3/4"	100	90033A210	5.43	
1"	100	90033A215	7.56	
No. 8 (Cont.)				
1 1/4"	100	90033A220	9.55	
1 1/2"	100	90033A225	12.56	
2"	50	90033A230	8.17	
2 1/2"	25	90033A235	4.31	
No. 8 (w/ No. 6 Head)—#2 Drive				
1/2"	100	90033A260	8.23	
1"	100	90033A270	9.25	
1 1/2"	100	90033A280	10.69	
No. 10—#2 Drive				
1/2"	100	90033A310	8.20	♦
3/4"	100	90033A315	9.40	
1"	100	90033A320	10.50	
1 1/4"	50	90033A325	10.22	
1 1/2"	50	90033A328	11.44	
2"	25	90033A331	9.07	
2 1/2"	25	90033A334	13.15	
3"	25	90033A338	14.23	

Special-Finish Flat Head Phillips

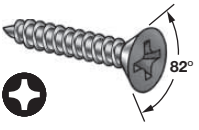

Brass Coated

Match these decorative steel hinge screws to your existing hardware. They provide a flush surface within countersunk holes. Length is measured from the top of the head. All meet ANSI B18.6.4.

Nickel-plated screws are entirely plated in nickel while ***brass-coated*** and ***black-coated*** screws are entirely plated in clear-zinc and have a colored polymer coating on the top of the head.

Lg.	Pkg. Qty.	Nickel-Plated	Per Pkg.	Brass-Coated	Per Pkg.	Black-Coated	Per Pkg.
No. 4—#1 Drive							
1/2"	25	96231A100	$9.55	96231A400	$9.97	96231A700	$9.21
5/8"	25	96231A120	9.62	96231A420	10.03	96231A720	9.24
3/4"	25	96231A150	10.17	96231A450	10.58	96231A750	9.79
No. 5—#1 Drive							
1/2"	25	96231A200	9.34	96231A500	9.72	96231A800	8.96
3/4"	10	96231A250	5.62	96231A550	5.76	96231A850	5.45
No. 6—#2 Drive							
1/2"	25	96231A300	9.35	96231A600	9.83	96231A900	9.04
5/8"	25	96231A320	9.38	96231A620	9.86	96231A920	9.07
3/4"	25	96231A350	9.86	96231A650	10.31	96231A950	9.55
No. 8—#2 Drive							
5/8"	25	96231A360	10.18	96231A660	10.66	96231A960	9.86
3/4"	10	96231A380	5.83	96231A680	5.49	96231A980	5.17

Flat Head Uni-Drive

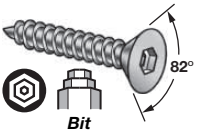

Bit

The universal drive requires only one power bit (sold separately) for all screw sizes. All screws are beveled under the head to provide a flush surface within countersunk holes. Made from 18-8 stainless steel. Length is measured from the top of the head.

Lg.	Pkg. Qty.		Per Pkg.
No. 6			
1/2"	100	97978A310	$6.45
3/4"	100	97978A330	7.82
No. 8			
3/4"	100	97978A420	8.95
1"	100	97978A440	10.66
1 1/4"	100	97978A445	12.33
1 1/2"	50	97978A460	8.37
No. 10			
1"	50	97978A500	8.37
1 1/2"	50	97978A520	10.70
2"	25	97978A540	7.25
No. 12			
1"	50	97978A610	$10.96
1 1/2"	25	97978A630	7.63
2"	25	97978A650	9.05
No. 14			
1"	25	97978A720	7.85
1 1/2"	25	97978A740	9.82
2"	25	97978A760	11.91

2" Long Steel Uni-Drive Power Bit ..... 93686A920 Each $1.97

Flat Head Square Drive

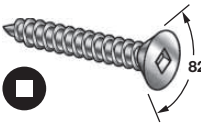

Also called a Robertson drive, the square drive offers excellent driving power and resists driver slippage. Screws are beveled under the head to provide a flush surface within countersunk holes. Made from 18-8 stainless steel. Length is measured from the top of the head.

For drivers, see 5830A on page 2835; for bits, see 7185A on page 2824.

Lg.	Pkg. Qty.		Per Pkg.
No. 6—#2 Drive			
1/2"	100	93945A001	$5.42
3/4"	100	93945A003	6.98
1"	100	93945A005	7.35
1 1/4"	100	93945A007	8.92
1 1/2"	100	93945A008	11.26
No. 8—#2 Drive			
1/2"	100	93945A011	6.41
5/8"	100	93945A013	6.70
3/4"	100	93945A015	7.76
1"	100	93945A017	8.56
1 1/4"	100	93945A019	9.33
1 1/2"	50	93945A022	6.90
1 3/4"	50	93945A024	8.11
2"	50	93945A026	8.01
2 1/2"	50	93945A028	11.32
3"	25	93945A030	8.96
No. 10—#2 Drive			
3/4"	100	93945A033	10.61
1"	50	93945A035	6.68
1 1/4"	50	93945A037	7.66
1 1/2"	50	93945A039	8.38
No. 10 (Cont.)			
1 3/4"	50	93945A042	$10.16
2"	25	93945A044	6.15
2 1/2"	25	93945A046	6.91
3"	25	93945A048	8.50
No. 12—#3 Drive			
1"	50	93945A051	9.27
1 1/4"	50	93945A053	11.87
1 1/2"	25	93945A055	6.55
1 3/4"	25	93945A057	7.54
2"	25	93945A059	8.50
2 1/2"	25	93945A062	10.24
3"	25	93945A064	11.23
No. 14—#3 Drive			
1"	50	93945A066	12.84
1 1/4"	25	93945A068	8.40
1 1/2"	25	93945A071	9.17
1 3/4"	25	93945A073	9.90
2"	25	93945A075	12.18
2 1/2"	10	93945A077	5.79
3"	10	93945A079	6.48

Metric Flat Head Phillips

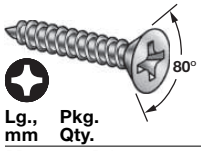

Flat head screws are beveled under the head to provide a flush surface within countersunk holes. They're made from 18-8 stainless steel and meet DIN 7982 Type C. Length is measured from the top of the head.

Lg., mm	Pkg. Qty.		Per Pkg.
M2.9—#1 Drive; Head: Dia. 5.5 mm; Ht. 1.7 mm			
9.5	50	95844A225	$10.75
13	50	95844A250	10.51
19	50	95844A275	11.34
M3.5—#1 Drive; Head: Dia. 6.8 mm; Ht. 2.1 mm			
13	50	95844A300	9.83
19	50	95844A325	13.10
25	50	95844A350	13.25
M3.9—#2 Drive; Head: Dia. 7.5 mm; Ht. 2.3 mm			
13	50	95844A400	$10.69
19	50	95844A425	10.86
25	25	95844A450	11.34
M4.2—#1 Drive; Head: Dia. 8.1 mm; Ht. 2.5 mm			
13	50	95844A500	12.52
19	50	95844A525	12.75
25	10	95844A550	6.87

Oval Head Phillips

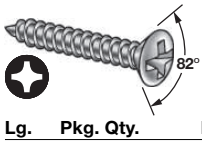

Beveled under the head like flat head screws, but these screws have a domed head that rests above the surface for a more decorative look. Use in countersunk holes. Length is measured from the edge of the head.

Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
No. 4—#1 Drive			
3/8"	100	95639A301	$5.24
1/2"	100	95639A304	5.42
5/8"	100	95639A307	6.11
3/4"	100	95639A309	6.38
1"	100	95639A312	6.55
No. 6—#2 Drive			
3/8"	100	95639A322	5.41
1/2"	100	95639A325	5.72
5/8"	100	95639A328	6.38
3/4"	100	95639A331	7.20
1"	100	95639A341	8.21
1 1/4"	100	95639A344	10.27
1 1/2"	100	95639A347	12.73
No. 8—#2 Drive			
3/8"	100	95639A362 ♦	7.93
1/2"	100	95639A364	8.03
5/8"	100	95639A367	8.34
3/4"	100	95639A369	11.13
1"	50	95639A371	7.95
1 1/4"	50	95639A374	9.26
1 1/2"	50	95639A377	10.40
1 3/4"	50	95639A379	10.17
2"	50	95639A381	11.72
2 1/2"	50	95639A384	13.28
3"	25	95639A387	7.30
No. 10—#2 Drive			
1/2"	100	95639A401 ♦	$9.83
5/8"	100	95639A404	11.62
3/4"	50	95639A406	7.78
1"	50	95639A409	8.03
1 1/4"	50	95639A412	8.76
1 1/2"	50	95639A415	11.55
1 3/4"	50	95639A418	11.98
2"	25	95639A421	6.38
2 1/2"	25	95639A423	8.36
3"	25	95639A426	8.45
No. 12—#3 Drive			
3/4"	50	95639A442	9.65
1"	50	95639A445	9.91
1 1/4"	50	95639A447	13.27
1 1/2"	25	95639A449	7.12
2"	25	95639A452	9.31
2 1/2"	25	95639A454	10.00
3"	25	95639A457	12.84
No. 14—#3 Drive			
3/4"	25	95639A471	9.71
1"	25	95639A474	10.60
1 1/4"	25	95639A476	10.24
1 1/2"	25	95639A479	11.81
1 3/4"	25	95639A482	12.37
2"	25	95639A485	13.71
2 1/2"	10	95639A488	7.70
3"	10	95639A493	8.36
18-8 Stainless Steel			
No. 4—#1 Drive			
3/8"	100	90315A401	4.06
1/2"	100	90315A403	4.37
5/8"	100	90315A406	4.94
3/4"	100	90315A409	5.90
1"	100	90315A412	5.97
No. 6—#2 Drive			
3/8"	100	90315A421	3.49
1/2"	100	90315A423	4.28
5/8"	100	90315A426	3.98
3/4"	100	90315A429	4.87
7/8"	100	90315A432	6.49
1"	100	90315A435	6.76
1 1/4"	100	90315A437	7.01
1 1/2"	100	90315A439	8.32
1 3/4"	100	90315A440	10.72
2"	50	90315A442	6.10
No. 8—#2 Drive			
3/8"	100	90315A461 ♦	6.44
1/2"	100	90315A464	6.49
5/8"	100	90315A467	6.97
3/4"	100	90315A471	7.26
7/8"	100	90315A474	9.21
1"	100	90315A476	9.12
1 1/4"	100	90315A479	9.56
1 1/2"	50	90315A481	5.34
1 3/4"	50	90315A484	7.06
No. 8 (Cont.)			
2"	50	90315A487	7.47
2 1/2"	50	90315A489	8.08
3"	50	90315A492	10.95
No. 10—#2 Drive			
3/8"	100	90315A495 ♦	7.91
1/2"	100	90315A498 ♦	7.88
5/8"	100	90315A501 ♦	8.21
3/4"	100	90315A504	9.58
7/8"	100	90315A507	11.50
1"	100	90315A511	11.74
1 1/4"	50	90315A513	6.96
1 1/2"	50	90315A516	6.64
1 3/4"	50	90315A519	8.51
2"	50	90315A522	8.62
2 1/2"	25	90315A525	6.06
3"	25	90315A527	7.30
3 1/2"	25	90315A530	9.52
4"	25	90315A531	11.24
No. 12—#3 Drive			
1/2"	100	90315A542 ♦	10.55
3/4"	50	90315A545	6.63
1"	50	90315A548	6.67
1 1/4"	50	90315A551	8.10
1 1/2"	50	90315A555	9.88
1 3/4"	25	90315A558	6.50

♦ Head is undercut to 70% of normal height to allow more threading.

(Continued on following page)

For information about sheet metal screws, see page 3022.

Oval Head Phillips (Cont. from previous pg.)

Lg.	Pkg. Qty.	Per Pkg.	
18-8 Stainless Steel (Cont.)			
No. 12—*#3 Drive (Cont.)*			
2″	25	90315A561	$7.05
2½″	25	90315A564	7.64
3″	25	90315A567	9.18
4″	10	90315A572	5.75
No. 14—*#3 Drive*			
½″	50	90315A579	7.29
¾″	50	90315A581	8.06
No. 14 (Cont.)			
1″	50	90315A584	$9.22
1¼″	25	90315A586	5.01
1½″	25	90315A589	6.76
1¾″	25	90315A591	8.83
2″	25	90315A593	8.74
2½″	10	90315A595	4.36
3″	10	90315A597	5.00
4″	10	90315A599	8.11
Black-Oxide Steel			
No. 4—*#1 Drive*			
⅜″	100	91775A513	3.59
½″	100	91775A515	3.24
⅝″	100	91775A517	3.84
¾″	100	91775A519	5.05
1″	100	91775A521	8.86
No. 6—*#2 Drive*			
⅜″	100	91775A640	5.76
½″	100	91775A648	4.25
⅝″	100	91775A650	3.89
¾″	100	91775A651	4.27
⅞″	100	91775A652	5.43
1″	100	91775A653	5.27
1¼″	100	91775A655	5.77
1½″	100	91775A663	10.37
No. 8—*#2 Drive*			
⅜″	100	91775A690 ♦	5.25
½″	100	91775A694	4.92
⅝″	100	91775A696	5.12
¾″	100	91775A697	5.12
⅞″	100	91775A698	6.91
1″	100	91775A699	6.35
1¼″	100	91775A701	8.53
1½″	100	91775A703	8.10
1¾″	50	91775A710	7.57
2″	50	91775A715	7.65
No. 8 (w/No. 6 Head)—*#2 Drive*			
½″	100	91775A718	8.37
¾″	100	91775A720	9.38
No. 10—*#2 Drive*			
½″	100	91775A743 ♦	6.76
⅝″	100	91775A744	7.11
¾″	100	91775A745	8.28
⅞″	100	91775A746	11.83
1″	100	91775A747	9.08
1¼″	100	91775A749	10.64
1½″	100	91775A751	12.91
1¾″	50	91775A752	8.66
2″	50	91775A754	8.60
No. 10 (w/No. 8 Head)—*#2 Drive*			
¾″	100	91775A760	10.55
1″	50	91775A765	7.84
1½″	50	91775A775	7.44
No. 12—*#3 Drive*			
¾″	100	91775A820	12.31
1″	50	91775A825	7.14
1¼″	50	91775A830	7.84
1½″	50	91775A835	9.24

♦ Head is undercut to 70% of normal height to allow more threading.

Self-Piercing Hex Washer Head

Unslotted

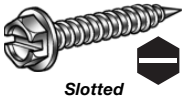

Slotted

Vibration Resistant Slotted

The needle point on these screws easily penetrates up to 0.050″ thick sheet metal. The washer and hex head are formed as one piece, providing a large flat bearing surface that reduces the likelihood of crushing mating surfaces. Length is measured from under the washer.

Vibration-Resistant Zinc-Plated Steel—Also known as Tapits, these screws have an integral washer with a serrated surface that keeps the screw from loosening. The serrations slow the screw at the point of engagement to minimize stripping as well. Ideal for electrical grounding.

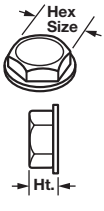

Lg.	Pkg. Qty.	Per Pkg.	
Type 410 Stainless Steel—*Unslotted*			
No. 6—*Hex Size: ¼″*			
⅜″	50	92650A120	$6.41
½″	50	92650A150	6.95
No. 8—*Hex Size: ¼″*			
½″	50	92650A155	7.80
¾″	50	92650A160	9.10
No. 10—*Hex Size: ¼″ Head Ht.: 0.161″; Washer OD: 0.339″*			
1″	25	92650A207	$7.66
1½″	25	92650A210	8.27
2″	25	92650A213	12.13
Zinc-Plated Steel—*Slotted*			
No. 6—*Hex Size: ¼″*			
⅜″	100	90197A146	4.15
No. 7—*Hex Size: ¼″*			
½″	100	90197A170	5.67
No. 8—*Hex Size: ¼″*			
½″	100	90197A194	4.72
¾″	100	90197A198	5.46
1″	100	90197A199	5.54
1½″	100	90197A203	8.44
2″	50	90197A205	6.85
No. 10—*Hex Size: 5/16″*			
½″	100	90197A641	5.24
¾″	100	90197A645	6.40
1″	100	90197A648	7.80
1½″	100	90197A651	10.36
No. 10 (with No. 8 Head)—*Hex Size: ¼″*			
½″	100	90197A242	5.62
¾″	100	90197A245	6.78
1″	100	90197A247	8.36
Vibration Resistant Zinc-Plated Steel—*Slotted*			
No. 6—*Hex Size: ¼″*			
⅜″	100	90063A146	6.18
No. 7—*Hex Size: ¼″*			
½″	100	90063A170	6.44
No. 8—*Hex Size: ¼″*			
½″	100	90063A194	6.82
No. 10—*Hex Size: ¼″*			
½″	100	90063A242	9.41
¾″	100	90063A245	9.59

Oval Head Phillips with Washer

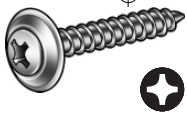

Also known as Sems trim screws, these screws have a freely rotating washer that's permanently attached and provides firm hold against thin materials. Washer OD is ½″. Together, the head and washer are 0.102″ to 0.123″ thick. Screws accept a #2 Phillips drive. Length is measured from edge of head.

Lg.	Pkg. Qty.	Per Pkg.	
Chrome-Plated Steel			
No. 6			
⅝″	50	90398A150	$10.48
¾″	50	90398A151	8.97
1″	50	90398A153	11.67
No. 8 with No. 6 Head			
⅝″	100	90398A196	10.00
¾″	100	90398A197	10.00
1″	100	90398A199	10.61
No. 8 with No. 6 Head (Cont.)			
1¼″	100	90398A201	$13.64
1½″	50	90398A203	10.46
No. 10			
⅝″	50	90398A244	8.94
¾″	50	90398A245	9.55
1″	50	90398A247	10.45
1¼″	50	90398A249	11.79
Black-Phosphate Steel			
No. 6			
⅝″	50	90399A150	8.21
¾″	100	90399A151	13.97
1″	100	90399A153	14.62
No. 8 with No. 6 Head			
½″	50	90399A194★	8.62
⅝″	100	90399A196	10.21
¾″	100	90399A197	9.30
No. 8 with No. 6 Head (Cont.)			
1″	100	90399A199	11.80
1¼″	100	90399A201	14.28
No. 10			
½″	50	90399A242	7.43
⅝″	50	90399A244	7.14
¾″	50	90399A245	7.43
1″	50	90399A247	10.00
1¼″	50	90399A249	10.17

★ Black-oxide finish.

Wide Washer Head Phillips

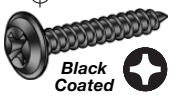

With a flat top and an extra-wide washer head these screws provide an ideal bearing surface for fastening plastic and thin metal. All accept a #2 Phillips drive. Length is measured from under the washer.

Lg.	Pkg. Qty.	Per Pkg.	
Black Weather-Resistant Coated Steel			
No. 6—*Head: Dia. .375″; Ht. .106″*			
½″	100	90930A148	$6.03
¾″	100	90930A151★	6.20
1″	100	90930A153★	6.32
No. 8—*Head: Dia. .418″; Ht. .106″*			
½″	100	90930A194	7.26
⅝″	100	90930A196	8.06
¾″	100	90930A197	9.13
No. 8 (Cont.)			
1″	100	90930A199	$9.13
1¼″	50	90930A201	5.35
1½″	50	90930A203	6.65
No. 10—*Head: Dia. .463″; Ht. .122″*			
¾″	50	90930A245	5.76
1″	50	90930A247	5.97
1¼″	50	90930A249	6.39
Zinc-Plated Steel			
No. 8—*Head: Dia. .418″; Ht. .106″*			
½″	100	90930A500	5.53
⅝″	100	90930A505	6.63
No. 8 (Cont.)			
¾″	100	90930A510	7.65
1″	100	90930A515	7.34
1¼″	50	90930A520	4.05

★ Black-oxide finish.

Sealing Hex Head

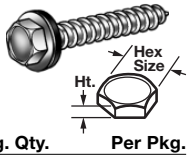

Also known as Staps screws, these screws have a 0.101″ thick EPDM rubber washer bonded to steel. The washer provides cushioning and vibration damping. Screw length is measured from under the head and does not include the thickness of the washer. Use a ¼″ drill to create the hole for No. 17 screws.

Lg.	Pkg. Qty.	Per Pkg.	
18-8 Stainless Steel			
No. 14—*Hex Size: ⅜″ Head Ht.: 0.181″; Washer OD: ⅝″*			
¾″	25	91644A313	$11.65
1″	25	91644A315	14.80
1½″	10	91644A317	7.54
2″	10	91644A319	9.79
2½″	10	91644A321	14.80
3″	5	91644A323	10.09
4″	5	91644A326	14.00
No. 14 (Cont.)			
5″	5	91644A329	$14.28
6″	5	91644A331	14.90
8″	1	91644A336	5.35
No. 17—*Hex Size: ⅜″ Head Ht.: 0.181″; Washer OD: ⅝″*			
¾″	10	91644A821	11.30
1″	10	91644A825	10.28
Weather-Resistant Coated Steel—*Silver Color*			
No. 10—*Hex Size: ¼″ Head Ht.: 0.142″; Washer OD: ½″*			
1″	100	94395A100	13.51
1½″	50	94395A200	8.18
No. 10 (Cont.)			
2″	50	94395A300	11.60
2½″	50	94395A400	14.83
3″	25	94395A500	8.71
Zinc-Plated Steel			
No. 14—*Hex Size: ⅜″ Head Ht.: 0.181″; Washer OD: ⅝″*			
⅝″	50	90066A312	14.23
¾″	50	90066A313	8.50
1″	50	90066A315	9.10
1¼″	50	90066A316	12.29
1½″	50	90066A317	12.89
2″	50	90066A319	14.90
2½″	25	90066A321	9.34
No. 14 (Cont.)			
3″	25	90066A323	12.37
4″	10	90066A324	9.95
5″	10	90066A327	14.95
No. 17—*Hex Size: ⅜″ Head Ht.: 0.181″; Washer OD: ⅝″*			
¾″	50	90066A821	13.19
1″	25	90066A823	8.88

Hex Washer Head

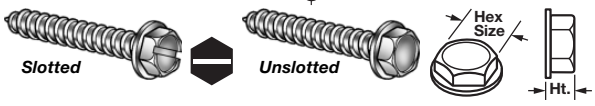

The hex washer head is formed as one piece, providing a large flat bearing surface that reduces the likelihood of crushing mating surfaces. Length is measured from under the washer.

Type 316 Stainless Steel—Slotted

Lg.	Pkg. Qty.		Per Pkg.
No. 6—Hex Size: 1/4″			
3/8″	50	99663A150	$6.10
1/2″	50	99663A153	7.78
3/4″	50	99663A156	8.08
No. 8—Hex Size: 1/4″			
3/8″	50	99663A210	7.67
1/2″	50	99663A213	9.45
5/8″	50	99663A216	9.70
3/4″	50	99663A219	9.82
1″	25	99663A222	6.57
1 1/4″	25	99663A225	7.00
1 1/2″	25	99663A228	8.00
No. 10—Hex Size: 5/16″			
1/2″	50	99663A315	12.16
5/8″	50	99663A318	12.83
No. 10 (Cont.)			
3/4″	25	99663A321	$6.45
1″	25	99663A324	7.29
1 1/4″	25	99663A327	9.40
1 1/2″	25	99663A330	9.57
No. 12—Hex Size: 5/16″			
3/4″	25	99663A410	10.58
1″	25	99663A413	11.60
1 1/4″	10	99663A416	6.53
1 1/2″	10	99663A419	7.70
No. 14—Hex Size: 3/8″			
3/4″	10	99663A450	5.37
1″	10	99663A453	6.43
1 1/4″	10	99663A456	7.62
1 1/2″	10	99663A459	7.66

18-8 Stainless Steel—Slotted

Lg.	Pkg. Qty.		Per Pkg.
No. 6—Hex Size: 1/4″			
1/4″	100	90286A144	5.58
3/8″	100	90286A146	5.59
1/2″	100	90286A148	5.67
5/8″	100	90286A150	6.86
3/4″	100	90286A151	7.07
1″	100	90286A153	9.51
No. 8—Hex Size: 1/4″			
3/8″	100	90286A192	6.46
1/2″	100	90286A194	6.86
5/8″	100	90286A196	8.23
3/4″	100	90286A197	8.65
7/8″	100	90286A198	8.67
1″	100	90286A199	8.90
1 1/4″	100	90286A201	10.96
1 1/2″	50	90286A203	7.48
2″	50	90286A205	8.54
No. 10—Hex Size: 5/16″			
3/8″	100	90286A240	8.22
1/2″	100	90286A242	8.46
5/8″	100	90286A244	9.68
3/4″	100	90286A245	10.66
7/8″	100	90286A246	11.60
1″	50	90286A247	7.30
1 1/4″	50	90286A249	7.78
1 1/2″	50	90286A251	8.24
No. 10 (Cont.)			
2″	25	90286A253	5.90
2 1/2″	25	90286A255	7.52
3″	25	90286A257	8.70
No. 12—Hex Size: 5/16″			
1/2″	50	90286A291	7.43
5/8″	50	90286A293	7.95
3/4″	50	90286A294	8.27
7/8″	50	90286A295	8.58
1″	50	90286A296	9.75
1 1/4″	50	90286A298	9.89
1 1/2″	25	90286A299	7.56
2″	25	90286A301	8.20
2 1/2″	25	90286A303	11.22
3″	25	90286A305	11.23
No. 14—Hex Size: 3/8″			
1/2″	50	90286A310	10.11
5/8″	50	90286A312	12.99
3/4″	50	90286A313	11.83
1″	25	90286A315	7.04
1 1/4″	25	90286A316	7.16
1 1/2″	25	90286A317	8.75
2″	25	90286A319	10.40
2 1/2″	10	90286A321	6.22
3″	10	90286A323	6.72

Type 410 Stainless Steel—Unslotted

Lg.	Pkg. Qty.		Per Pkg.
No. 6—Hex Size: 1/4″			
3/8″	100	91675A311	$7.46
1/2″	100	91675A313	7.87
5/8″	100	91675A315	8.32
3/4″	100	91675A317	9.13
No. 8—Hex Size: 1/4″			
3/8″	100	91675A321	10.52
1/2″	100	91675A323	10.99
5/8″	100	91675A325	10.01
3/4″	100	91675A327	10.99
1″	100	91675A331	13.19
No. 8 (Cont.)			
1 1/4″	50	91675A333	$7.99
1 1/2″	50	91675A335	8.47
2″	50	91675A339	10.99
No. 10—Hex Size: 5/16″			
3/8″	100	91675A351	11.69
1/2″	100	91675A353	12.74
3/4″	100	91675A357	14.67
1″	50	91675A359	8.11
1 1/2″	25	91675A361	5.05

Zinc-Plated Steel—Slotted

Lg.	Pkg. Qty.		Per Pkg.
No. 6—Hex Size: 1/4″			
3/8″	100	90054A146	4.05
1/2″	100	90054A148	3.84
5/8″	100	90054A150	4.20
3/4″	100	90054A151	4.06
1″	100	90054A153	3.87
1 1/4″	100	90054A155	4.16
1 1/2″	100	90054A158	4.96
2″	100	90054A160	9.21
No. 7—Hex Size: 1/4″			
1/2″	100	90054A170	4.64
No. 8—Hex Size: 1/4″			
3/8″	100	90054A192	4.79
1/2″	100	90054A194	3.59
5/8″	100	90054A196	6.00
3/4″	100	90054A197	4.49
1″	100	90054A199	5.36
1 1/4″	100	90054A201	6.19
1 1/2″	100	90054A203	7.63
2″	100	90054A205	9.95
2 1/2″	100	90054A208	11.92
3″	100	90054A212	13.32
No. 10—Hex Size: 5/16″			
3/8″	100	90054A240	5.00
1/2″	100	90054A242	4.56
5/8″	100	90054A244	6.77
3/4″	100	90054A245	6.03
1″	100	90054A247	5.56
1 1/4″	100	90054A249	7.35
1 1/2″	100	90054A251	8.06
1 3/4″	100	90054A252	12.08
2″	100	90054A253	12.64
2 1/2″	100	90054A255	14.90
3″	50	90054A260	8.96
No. 12—Hex Size: 5/16″			
1/2″	100	90054A291	10.81
5/8″	100	90054A293	8.68
3/4″	100	90054A294	10.05
1″	100	90054A296	9.49
1 1/4″	100	90054A298	14.05
1 1/2″	100	90054A299	14.29
1 3/4″	50	90054A300	6.28
2″	50	90054A301	8.36
2 1/2″	50	90054A305	9.90
3″	50	90054A307	10.98
No. 14—Hex Size: 3/8″			
1/2″	100	90054A310	12.68
5/8″	100	90054A312	10.96
3/4″	100	90054A313	10.99
1″	50	90054A315	8.07
1 1/4″	50	90054A316	9.17
1 1/2″	50	90054A317	11.36
1 3/4″	50	90054A318	14.04
2″	50	90054A319	11.27
2 1/2″	25	90054A322	6.73
3″	25	90054A325	8.32
5/16″—Hex Size: 1/2″			
1/2″	25	90054A405	7.03
3/4″	25	90054A410	7.75
1″	25	90054A415	9.89
1 1/2″	25	90054A420	11.98
2″	25	90054A425	11.93
3/8″—Hex Size: 9/16″			
3/4″	25	90054A505	9.92
1″	10	90054A510	5.25
1 1/2″	10	90054A515	5.02
2″	10	90054A520	5.42

Sheet Metal Screw Assortments

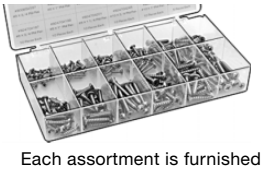

230-Piece Assortment

Each assortment is furnished in a compartmented box with lid chart.

230-Piece Assortments

Include pan and flat head Phillips screws in an 8″ Lg. × 4 1/4″ Wd. × 1 1/4″ Dp. plastic box.

Size	No. of Pcs.	Lengths		Each
No. 4	40	3/8″, 1/2″	18-8 Stainless Steel	$31.88
No. 6	60	1/2″, 3/4″, 1″	Zinc-Plated Steel	24.43
No. 8	80	1/2″, 3/4″, 1″, 1 1/4″		
No. 10	50	3/4″, 1″, 1 1/2″		

790-Piece Assortment—Zinc-Plated Steel

Includes pan head Phillips screws in a 10 3/4″ Lg. × 6 1/2″ Wd. × 1 11/16″ Dp. plastic box.

Size	No. of Pcs.	Lengths
No. 6	285	1/2″, 5/8″, 3/4″, 1″
No. 8	335	1/2″, 5/8″, 3/4″, 1″, 1 1/4″, 1 1/2″, 2″
No. 10	170	3/4″, 1″, 1 1/4″, 1 1/2″, 2″

99005A590 ..... **Each** $40.12

1,250-Piece Assortment—18-8 Stainless Steel

Includes pan head Phillips screws in a 13 5/16″ Lg. × 9 5/16″ Wd. × 12″ Dp. metal box.

Size	No. of Pcs.	Lengths	Size	No. of Pcs.	Lengths
No. 6	400	3/8″, 1/2″, 3/4″, 1″	No. 10	350	1/2″, 3/4″, 1″, 1 1/4″, 1 1/2″
No. 8	350	1/2″, 3/4″, 1″, 1 1/2″	No. 12	150	3/4″, 1″, 1 1/2″

90345A216 ..... **Each** $123.24

2,000-Piece Assortment—Zinc-Plated Steel

Includes pan head Phillips screws in an 18″ Lg. × 12″ Wd. × 3″ Dp. steel box.

Size	No. of Pcs.	Lengths	Size	No. of Pcs.	Lengths
No. 4	200	1/4″, 1/2″	No. 10	400	1/2″, 3/4″, 1″, 1 1/4″, 1 1/2″
No. 6	400	3/8″, 1/2″, 3/4″, 1″	No. 12	300	1/2″, 3/4″, 1″, 1 1/2″
No. 8	500	3/8″, 1/2″, 3/4″, 1″, 1 1/4″, 1 1/2″	No. 14	200	3/4″, 1″, 1 1/2″

90365A124 ..... **Each** $120.83

3,225-Piece Assortment—Zinc-Plated Steel

Includes pan and flat head Phillips sheet metal screws, round head combination drive machine screws, flat and lock washers, and machine screw and finished hex nuts in an 18″ Lg. × 12″ Wd. × 3″ Dp. steel box.

Size	No. of Pcs.	Lengths	Size	No. of Pcs.	Size	No. of Pcs.
Sheet Metal Screws			***Washers***		***Nuts***	
No. 6	400	1/2″, 3/4″	No. 6	200	No. 6-32	100
No. 8	400	1/2″, 3/4″, 1″	No. 8	200	No. 8-32	100
No. 10	400	3/4″, 1″	No. 10	200	10-24	100
Machine Screws			1/4″	200	10-32	100
10-24	200	3/4″, 1″	5/16″	200	1/4″-20	50
1/4″-20	200	3/4″, 1″	3/8″	100	5/16″-18	50
					3/8″-16	25

92630A111 ..... **Each** $143.14

For more information about thread-forming screws, see page 3022.

About Thread-Forming Screws

Thread-forming screws form mating threads in metals and plastics by displacing material rather than cutting it. They form a defined number of threads per inch and require a drilled or punched hole.

Screws for Metals

- ***Round-shank Type-B screws*** (the most common thread-forming screws) grip thin metals such as stainless steel, aluminum, and cast iron. They have coarse threads.
- ***Round-shank quick-drive screws*** grip heavy gauge sheet steel and cast metal. They have fine threads and sharp nibs for fast starts.
- ***Triangular-shank screws for metal*** grip soft metals such as aluminum, brass, and copper. They have fine threads.
- ***Triangular-shank screws for wood-to-metal*** are ideal for tasks such as fastening wood floors to metal crossmembers. They have coarse machine screw threads.

Round Shank Type B

Round Shank Quick Drive

Triangular Shank for Metal

Triangular Shank for Wood-to-Metal

Screws for Plastics

- ***Triangular-shank screws for plastics*** grip a wide variety of plastics including polypropylene and ABS. They have coarse threads.
- ***Round-shank high-performance screws*** fasten thin plastics without causing damage. They have deep, sharply angled threads.
- ***Round-shank screws for brittle plastics*** fasten brittle materials such as phenolic plastic without causing damage. They have alternating high and low threads.
- ***Round shank screws with sharp point*** fasten a variety of plastics, particleboard, and other composite materials. They have a tapered point and sharply angled threads.

Triangular Shank for Plastics

Round Shank High Performance

Round Shank for Brittle Plastics

Round Shank with Sharp Point

Round-Shank Screws for Metals (Type B)

Ideal for use in thin metals and nonferrous castings. All have coarse threads, a round shank, and a blunt tip. Each screw has an incomplete thread near the tip for easy entry.

Pan head screws have a low profile head with a flat bearing surface. Length is measured from under head.

Flat head screws are beveled under the head to provide a flush surface within countersunk holes. Length is measured from the top of the head.

Hex washer head screws have a head and washer that are formed as one piece, which provides a large flat bearing surface that reduces the likelihood of crushing surfaces. Length is measured from under the washer.

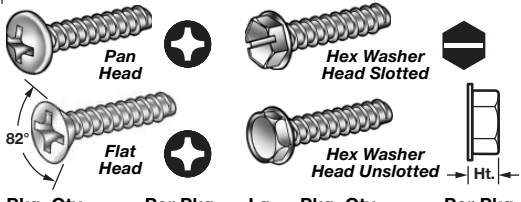

Pan Head Phillips—18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
4-24—#1 Drive			
1/4"	100	92525A201	$3.51
5/16"	100	92525A203	3.76
3/8"	100	92525A205	4.22
1/2"	100	92525A207	4.25
5/8"	100	92525A209	4.14
3/4"	100	92525A213	4.78
6-20—#2 Drive			
1/4"	100	92525A311	4.33
5/16"	100	92525A313	4.35
3/8"	100	92525A315	4.49
1/2"	100	92525A317	5.52
5/8"	100	92525A319	6.29
3/4"	100	92525A323	6.10
8-18—#2 Drive			
1/4"	100	92525A420	6.04
8-18 (Cont.)			
5/16"	100	92525A422	$6.07
3/8"	100	92525A424	6.99
1/2"	100	92525A426	7.31
5/8"	100	92525A428	8.39
3/4"	100	92525A430	9.39
1"	100	92525A440	10.32
1 1/4"	50	92525A451	7.34
10-16—#2 Drive			
1/4"	100	92525A549	8.06
5/16"	100	92525A550	8.56
3/8"	100	92525A551	8.80
1/2"	100	92525A553	9.65
5/8"	100	92525A555	10.35
3/4"	50	92525A557	6.53
1"	50	92525A560	6.75

Pan Head Phillips—Type 410 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
6-20—#2 Drive			
1/2"	100	95901A210	4.64
5/8"	100	95901A215	4.90
3/4"	100	95901A220	5.35
8-18—#2 Drive			
3/8"	100	95901A225	5.38
1/2"	100	95901A230	5.86
8-18 (Cont.)			
5/8"	100	95901A235	6.39
3/4"	100	95901A240	6.72
10-16—#2 Drive			
1/2"	100	95901A245	7.78
3/4"	100	95901A250	8.84

Pan Head Phillips—Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
2-32—#1 Drive			
1/8"	100	90056A074	6.42
3/16"	100	90056A075	6.49
1/4"	100	90056A077	6.58
5/16"	100	90056A078	6.52
3/8"	100	90056A079	6.61
4-24—#1 Drive			
3/16"	100	90056A105	5.64
1/4"	100	90056A106	5.64
5/16"	100	90056A107	5.82
3/8"	100	90056A108	5.82
1/2"	100	90056A110	6.21
6-20—#2 Drive			
3/16"	100	90056A143	6.15
1/4"	100	90056A144	6.15
5/16"	100	90056A145	6.64
3/8"	100	90056A146	6.64
1/2"	100	90056A148	7.00
6-20 (Cont.)			
5/8"	100	90056A150	7.18
3/4"	100	90056A151	7.52
8-18—#2 Drive			
1/4"	100	90056A190	7.61
3/8"	100	90056A192	7.61
1/2"	100	90056A194	8.18
5/8"	100	90056A196	8.61
3/4"	100	90056A197	9.12
1"	100	90056A199	10.12
10-16—#2 Drive			
3/8"	100	90056A240	9.00
1/2"	100	90056A242	9.64
5/8"	100	90056A244	10.00
3/4"	100	90056A245	10.61
1"	100	90056A247	12.97
1/4"-14—#3 Drive			
1/2"	50	90056A310	9.09

Pan Head Phillips—Black-Finish Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
4-24—#1 Drive			
1/4"	50	92115A211	8.60
3/8"	50	92115A213	8.74
1/2"	50	92115A215	8.69
6-20—#2 Drive			
1/4"	50	92115A217	8.93
3/8"	50	92115A219	8.91
1/2"	50	92115A222	9.45
3/4"	50	92115A224	9.81

Pan Head Phillips—Black-Finish Zinc-Plated Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
8-18—#2 Drive			
3/8"	50	92115A226	$9.86
1/2"	50	92115A228	10.21
3/4"	50	92115A231	10.81
1"	50	92115A233	11.43
10-16—#2 Drive			
3/8"	50	92115A235	$10.74
1/2"	50	92115A236	11.15
3/4"	25	92115A239	6.34
1"	25	92115A242	7.09

Flat Head Phillips—18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
4-24—#1 Drive			
1/4"	100	93195A110 ♦	3.61
3/8"	100	93195A113	3.57
1/2"	100	93195A116	4.09
6-20—#2 Drive			
3/8"	100	93195A221	4.25
1/2"	100	93195A223	5.01
3/4"	100	93195A266	6.08
8-18—#2 Drive			
3/8"	100	93195A322 ♦	5.30
1/2"	100	93195A325	6.17
3/4"	100	93195A327	7.60
10-16—#2 Drive			
3/8"	100	93195A426 ♦	7.33
1/2"	100	93195A429 ♦	10.52
3/4"	100	93195A431	10.00

Flat Head Phillips—Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
4-24—#1 Drive			
1/4"	100	90055A106 ♦	5.64
3/8"	100	90055A108	5.82
1/2"	100	90055A111	6.21
6-20—#2 Drive			
3/8"	100	90055A146	6.64
1/2"	100	90055A148	7.00
5/8"	100	90055A152	7.18
3/4"	100	90055A156	7.52
1"	100	90055A158	9.12
8-18—#2 Drive			
3/8"	100	90055A192 ♦	7.61
8-18 (Cont.)			
1/2"	100	90055A294	8.18
5/8"	100	90055A296	8.61
3/4"	100	90055A197	9.12
1"	100	90055A299	10.12
10-16—#2 Drive			
3/8"	100	90055A309 ♦	9.00
1/2"	100	90055A312 ♦	9.64
5/8"	100	90055A317	10.00
3/4"	100	90055A322	10.61
1"	100	90055A326	12.97

Hex Washer Head Slotted—Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
4-24—Hex Size: 3/16"			
1/4"	100	93880A106	6.72
3/8"	100	93880A108	6.66
6-20—Hex Size: 1/4"			
1/4"	100	93880A144	6.83
3/8"	100	93880A146	7.38
1/2"	100	93880A148	7.76
8-18—Hex Size: 1/4"			
1/4"	100	93880A190	8.65
3/8"	100	93880A192	8.65
1/2"	100	93880A194	9.31
3/4"	100	93880A197	10.52
1"	100	93880A199	11.73
10-16—Hex Size: 5/16"			
3/8"	100	93880A240	10.17
1/2"	100	93880A242	11.07
3/4"	100	93880A245	12.31
1"	50	93880A247	7.33
1/4"-14—Hex Size: 3/8"			
3/8"	50	93880A535	11.87
1/2"	50	93880A310	12.44
5/8"	50	93880A539	13.31
3/4"	25	93880A313	7.05
1"	25	93880A542	8.20
1 1/4"	25	93880A544	9.12
1 1/2"	25	93880A546	9.93

Hex Washer Head Unslotted—Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
5/16"-12—Hex Size: 1/2"			
1/2"	25	93880A578	9.41
5/8"	25	93880A580	9.79
3/4"	25	93880A581	10.57
1"	25	93880A583	11.88
3/8"-12—Hex Size: 9/16"			
3/4"	10	93880A622	8.56
1"	10	93880A624	9.71

♦ Head is undercut to 70% of normal height to allow more threading.

Round-Shank Quick Drive Screws for Metals

Pan Head

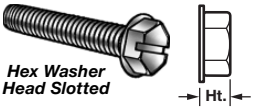

Hex Washer Head Slotted

Hex Washer Head Unslotted

With protruding nibs on the leading threads, these screws start fast and are easy to drive. Also called Swageform screws, they have machine screw threads, a round shank, and a blunt tip. Use them in electronic applications, as well as heavy gauge sheet steel and cast metal. All are made from zinc-plated steel.

Pan head screws have a low profile and a flat bearing surface. Length is measured from under the head.

Hex washer head screws have a washer and hex head that are formed as one piece to provide a large flat bearing surface that reduces the likelihood of crushing surfaces. Length is measured from under the washer.

Lg.	Pkg. Qty.		Per Pkg.
Pan Head—*Phillips*			
4-40—*#1 Drive*			
1/4"	100	93878A106	$8.28
5/16"	100	93878A107	8.30
3/8"	100	93878A108	8.38
1/2"	100	93878A110	8.82
6-32—*#2 Drive*			
1/4"	100	93878A144	8.68
5/16"	100	93878A145	8.82
3/8"	100	93878A146	9.04
1/2"	100	93878A148	9.73
5/8"	100	93878A150	10.97
3/4"	100	93878A149	11.71
8-32—*#2 Drive*			
1/4"	100	93878A191	9.79
5/16"	100	93878A192	10.44
3/8"	100	93878A193	11.14
1/2"	100	93878A194	11.14
5/8"	100	93878A196	12.93
8-32 (Cont.)			
3/4"	100	93878A195	$14.13
1"	50	93878A199	8.28
10-24—*#2 Drive*			
3/8"	100	93878A211	14.80
1/2"	100	93878A213	14.90
5/8"	100	93878A215	14.95
3/4"	50	93878A217	8.29
10-32—*#2 Drive*			
3/8"	100	93878A827	13.65
1/2"	100	93878A829	13.97
5/8"	50	93878A830	9.11
3/4"	50	93878A831	9.35
1/4"-20—*#3 Drive*			
1/2"	25	93878A536	8.33
3/4"	25	93878A540	9.17
1"	25	93878A542	10.44
1 1/4"	25	93878A543	11.50
Hex Washer Head—*Slotted*			
4-40—*Hex Size: 3/16"*			
1/4"	100	93882A106	14.90
3/8"	100	93882A108	14.95
6-32—*Hex Size: 1/4"*			
1/4"	100	93882A144	11.27
5/16"	100	93882A145	11.28
3/8"	100	93882A146	11.48
1/2"	100	93882A148	12.30
3/4"	100	93882A149	13.84
8-32—*Hex Size: 1/4"*			
1/4"	100	93882A191	11.07
5/16"	100	93882A192	11.34
3/8"	100	93882A193	11.66
1/2"	100	93882A194	12.42
5/8"	100	93882A196	13.72
3/4"	100	93882A195	14.90
1"	50	93882A199	9.19
10-24—*Hex Size: 5/16"*			
3/8"	50	93882A211	8.87
1/2"	50	93882A213	8.97
5/8"	50	93882A215	10.08
3/4"	50	93882A217	11.13
1"	50	93882A219	12.21
10-32—*Hex Size: 5/16"*			
3/8"	50	93882A827	8.84
1/2"	50	93882A829	8.97
5/8"	50	93882A830	10.07
3/4"	50	93882A831	11.13
1"	50	93882A832	12.21
1/4"-20—*Hex Size: 3/8"*			
1/2"	25	93882A536	10.27
5/8"	25	93882A538	10.65
3/4"	25	93882A540	11.63
1"	25	93882A542	11.86
1 1/4"	25	93882A543	13.61
Hex Washer Head—*Unslotted*			
5/16"-18—*Hex Size: 1/2"*			
1/4"	25	93882A578	11.82
3/4"	25	93882A581	13.65
1"	25	93882A583	14.90
1 1/4"	10	93882A585	7.43
3/8"-16—*Hex Size: 9/16"*			
3/4"	10	93882A654	8.71
1"	10	93882A657	9.59
1 1/4"	10	93882A659	10.15

Triangular-Shank Phillips Screws for Plastics

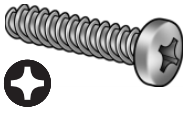

Coarse, sharply angled threads can be used with plastics including polypropylene, polycarbonate, acetal, polystyrene, and ABS to provide maximum holding strength with minimal stress.

Also known as Plastite screws, they have a triangular shank (also called tri-lobular), a blunt tip, and a pan head with a low profile and a flat bearing surface. Length is measured from under head.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
4-20—*#1 Drive*			
1/4"	50	99461A110	$10.72
3/8"	50	99461A120	11.46
1/2"	50	99461A130	11.95
5/8"	50	99461A140	13.09
3/4"	50	99461A150	13.80
6-19—*#2 Drive*			
1/4"	50	99461A220	12.59
3/8"	50	99461A230	14.01
1/2"	25	99461A240	7.43
5/8"	25	99461A250	8.09
3/4"	25	99461A260	8.58
8-16—*#2 Drive*			
1/4"	50	99461A330	$14.29
3/8"	25	99461A340	7.83
1/2"	25	99461A350	8.62
5/8"	25	99461A360	9.37
3/4"	25	99461A370	10.02
10-14—*#2 Drive*			
3/8"	25	99461A440	9.47
1/2"	25	99461A450	10.78
Zinc-Plated Steel			
2-28—*#1 Drive*			
1/4"	50	90380A005	9.36
5/16"	50	90380A008	9.41
3/8"	50	90380A011	9.42
1/2"	50	90380A014	8.96
4-20—*#1 Drive*			
1/4"	100	90380A106	9.53
5/16"	50	90380A107	5.20
3/8"	100	90380A108	10.02
1/2"	100	90380A110	10.42
5/8"	100	90380A115	12.18
3/4"	100	90380A120	13.11
6-19—*#2 Drive*			
1/4"	100	90380A144	10.10
5/16"	50	90380A145	5.52
3/8"	100	90380A146	10.40
7/16"	50	90380A147	6.11
1/2"	100	90380A148	10.93
6-19 (Cont.)			
5/8"	50	90380A152	6.00
3/4"	50	90380A155	6.19
1"	50	90380A158	6.83
8-16—*#2 Drive*			
1/4"	100	90380A190	11.02
5/16"	50	90380A191	6.19
3/8"	100	90380A192	11.26
1/2"	50	90380A194	6.63
5/8"	50	90380A196	7.34
3/4"	50	90380A198	7.56
1"	50	90380A202	11.17
10-14—*#2 Drive*			
3/8"	50	90380A240	7.86
1/2"	50	90380A242	8.33
5/8"	50	90380A245	9.06
3/4"	50	90380A248	9.36
1"	50	90380A251	9.64
Black-Finish Zinc-Plated Steel			
4-20—*#1 Drive*			
1/4"	25	92295A100	5.67
3/8"	25	92295A101	5.81
1/2"	25	92295A103	5.94
5/8"	25	92295A106	6.32
3/4"	25	92295A109	6.68
6-19—*#2 Drive*			
1/4"	25	92295A203	5.86
3/8"	25	92295A205	6.00
1/2"	25	92295A207	6.23
5/8"	25	92295A209	6.41
3/4"	25	92295A212	6.52
8-16—*#2 Drive*			
1/4"	25	92295A308	6.24
3/8"	25	92295A311	6.49
1/2"	25	92295A313	6.65
5/8"	25	92295A315	6.86
3/4"	25	92295A317	7.00
1"	25	92295A319	9.20
10-14—*#2 Drive*			
3/8"	25	92295A415	7.43
1/2"	25	92295A417	7.80

Miniature Triangular-Shank Screws for Metals

Ideal for small-scale applications. Also known as Taptite screws, these low-profile screws form fine threads in soft metals such as aluminum, brass, and copper. Each has a pan head with a flat bearing surface, a star-shaped drive (compatible with Torx drivers and bits), a triangular shank (also called tri-lobular), and a blunt tip. All are made from case-hardened zinc-plated steel. Length is measured from under the head.

For drivers see pages 2823-2824; for bits see pages 2848-2850.

Lg., mm	Pkg. Qty.		Per Pkg.
M1.4—*T3 Drive Size; Pitch: 0.3 mm; Head: Dia. 2.6 mm; Ht. 0.9 mm*			
3	10	94209A111	$7.19
4	10	94209A112	7.19
5	10	94209A113	7.19
6	10	94209A114	7.19
M1.6—*T4 Drive Size; Pitch: 0.35 mm; Head: Dia. 3.4 mm; Ht. 1.0 mm*			
3	10	94209A211	7.19
4	10	94209A212	7.19
5	10	94209A213	7.19
6	10	94209A214	7.19
M2—*T5 Drive Size; Pitch: 0.4 mm; Head: Dia. 3.5 mm; Ht. 1.3 mm*			
3	10	94209A311	$7.19
4	10	94209A312	7.19
5	10	94209A313	7.19
6	10	94209A314	7.19
8	10	94209A315	7.19
10	10	94209A316	7.19
12	10	94209A317	7.19
M2.5—*T8 Drive Size; Pitch: 0.45 mm; Head: Dia. 4.5 mm; Ht. 1.7 mm*			
3	10	94209A411	$7.19
4	10	94209A412	7.19
5	10	94209A413	7.19
6	10	94209A414	7.19
8	10	94209A415	7.19
10	10	94209A416	7.19
12	10	94209A417	7.19

For more information about thread-forming screws, see pages 3022 and 3031.

Miniature Triangular-Shank Screws for Plastics

Perfect for small-scale applications, these screws form coarse threads in plastics such as polycarbonate, ABS, and acetal. Also known as Plastite screws, they have a pan head with a flat bearing surface, star-shaped drive (compatible with Torx drivers and bits), and blunt tip. All are case-hardened zinc-plated steel. Length is measured from under head. For drivers see pgs. 2823-2824; for bits see pgs. 2848-2850.

Lg.	Pkg. Qty.	Per Pkg.
***M1.4—**T3 Drive; Pitch: 0.45 mm*		
Head: Dia. 2.6 mm; Ht. 1 mm		
3 mm	10	99397A111 ... $7.19
4 mm	10	99397A112 ... 7.19
5 mm	10	99397A113 ... 7.19
6 mm	10	99397A114 ... 7.19
***M1.6—**T4 Drive; Pitch: 0.79 mm*		
Head: Dia. 3.4 mm; Ht. 1.1 mm		
3 mm	10	99397A211 ... 7.19
4 mm	10	99397A212 ... 7.19
5 mm	10	99397A213 ... 7.19
6 mm	10	99397A214 ... 7.19
***M2—**T5 Drive; Pitch: 0.91 mm*		
Head: Dia. 3.5 mm; Ht. 1.4 mm		
3 mm	10	99397A311 ... 7.19
4 mm	10	99397A312 ... 7.19
M2 (Cont.)		
5 mm	10	99397A313 ... $7.19
6 mm	10	99397A314 ... 7.19
8 mm	10	99397A315 ... 7.19
10 mm	10	99397A316 ... 7.19
12 mm	10	99397A317 ... 7.19
***M2.5—**T8 Drive; Pitch: 1.06 mm*		
Head: Dia. 4.5 mm; Ht. 1.8 mm		
3 mm	10	99397A411 ... 7.19
4 mm	10	99397A412 ... 7.19
5 mm	10	99397A413 ... 7.19
6 mm	10	99397A414 ... 7.19
8 mm	10	99397A415 ... 7.19
10 mm	10	99397A416 ... 7.19
12 mm	10	99397A417 ... 7.19

Round-Shank High-Performance Screws for Plastics

With a round shank, blunt tip, and deeper, more sharply angled threads than other thread-forming screws, these screws require less driving torque and they won't crack thin materials. Similar to PT and PT Delta screws, they have a star-shaped drive (compatible with Torx drivers and bits) and a low-profile pan head with a flat bearing surface. Use them to fasten into a variety of plastics including polypropylene, polycarbonate, acetal, polystyrene, and ABS. All are made from zinc-plated steel. Length is measured from under the head.

For drivers see pgs. 2823-2824; for bits see pgs. 2848-2850.

Lg.	Pkg. Qty.	Per Pkg.
***M2.2—**T6 Drive; Pitch: 0.98 mm*		
Head: Dia. 4 mm; Ht. 1.6 mm		
6 mm	10	96817A220 ... $7.76
8 mm	10	96817A240 ... 7.76
10 mm	10	96817A260 ... 7.76
***M3—**T10 Drive; Pitch: 1.34 mm*		
Head: Dia. 5 mm; Ht. 2.1 mm		
6 mm	10	96817A310 ... 8.21
8 mm	10	96817A330 ... 8.21
10 mm	10	96817A350 ... 8.21
12 mm	10	96817A370 ... 8.21
***M3.5—**T10 Drive; Pitch: 1.57 mm*		
Head: Dia. 5.9 mm; Ht. 2.5 mm		
6 mm	10	96817A420 ... $8.06
10 mm	10	96817A440 ... 8.06
12 mm	10	96817A460 ... 8.06
***M4—**T15 Drive; Pitch: 1.79 mm*		
Head: Dia. 6.8 mm; Ht. 2.4 mm		
10 mm	10	96817A510 ... 7.91
12 mm	10	96817A520 ... 7.91
***M5—**T20 Drive; Pitch: 2.24 mm*		
Head: Dia. 7.5 mm; Ht. 3.1 mm		
10 mm	5	96817A620 ... 8.51
12 mm	5	96817A640 ... 8.51

Triangular-Shank Torx Screws for Plastics

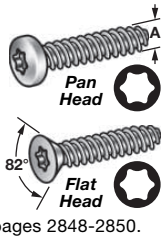

The Torx drive handles high torque and prevents your driver from slipping. Use these screws in a variety of plastics such as polycarbonate, ABS, and acetal. Also known as Plastite screws, they have a blunt tip and sharply angled, coarse threads that inflict minimal stress when installed. All except 96001A164 are fully threaded.

Pan head screws have a low profile and a flat bearing surface. Length is measured from under the head. ***Flat head*** screws are beveled under the head to sit flush within countersunk holes. Length is measured from the top of the head.

For drivers see pages 2823-2824; for bits see pages 2848-2850.

Lg.	Pkg. Qty.	Per Pkg.
***Pan Head—**18-8 Stainless Steel*		
***0-42—**T5 Drive; A: 0.0635"*		
1/4"	50	96001A103 ... $9.18
3/8"	50	96001A107 ... 9.18
***2-28—**T7 Drive; A: 0.086"*		
1/4"	50	96001A152 ... 10.31
3/8"	50	96001A156 ... 10.31
1/2"	50	96001A160 ... 10.31
3/4"	50	96001A164 ... 10.31
***4-20—**T10 Drive; A: 0.121"*		
1/4"	50	96001A202 ... 9.05
3/8"	50	96001A206 ... 9.05
***Pan Head—**Zinc-Plated Steel*		
***0-42—**T5 Drive; A: 0.0635"*		
3/16"	50	99512A108 ... 9.88
1/4"	50	99512A111 ... 9.89
3/8"	50	99512A117 ... 9.88
***2-28—**T7 Drive; A: 0.086"*		
1/4"	100	99512A153 ... 9.94
3/8"	100	99512A159 ... 9.94
1/2"	100	99512A162 ... 9.94
***4-20—**T10 Drive; A: 0.121"*		
1/4"	100	99512A210 ... 8.91
3/8"	100	99512A216 ... 8.91
1/2"	100	99512A219 ... 8.91
3/4"	100	99512A225 ... 8.91
***6-19—**T15 Drive; A: 0.141"*		
1/4"	100	99512A250 ... 10.49
1/2"	100	99512A259 ... 10.49
3/4"	100	99512A265 ... 10.52
***Flat Head—**Zinc-Plated Steel*		
***0-42—**T3 Drive; A: 0.0635"*		
3/16"	50	95893A113 ... 12.22
1/4"	50	95893A116 ... 12.22
3/8"	50	95893A119 ... 12.22
***2-28—**T6 Drive; A: 0.086"*		
1/4"	50	95893A153 ... 6.69
1/2"	50	95893A156 ... 6.69
***4-20—**T8 Drive; A: 0.121"*		
1/4"	50	95893A212 ... 6.03
3/8"	50	95893A215 ... 6.03
1/2"	50	95893A218 ... 6.03
4-20 (Cont.)		
1/2"	50	96001A210 ... $9.05
3/4"	50	96001A214 ... 9.05
***6-19—**T15 Drive; A: 0.141"*		
1/4"	50	96001A256 ... 10.72
3/8"	50	96001A260 ... 10.72
1/2"	50	96001A264 ... 10.72
3/4"	50	96001A268 ... 10.72
***8-16—**T20 Drive; A: 0.179"*		
3/8"	50	96001A318 ... 10.81
1/2"	50	96001A322 ... 10.81
***8-16—**T20 Drive; A: 0.179"*		
1/4"	100	99512A310 ... 10.79
1/2"	100	99512A316 ... 10.79
3/4"	100	99512A322 ... 10.79
1"	100	99512A325 ... 10.79
***10-14—**T25 Drive; A: 0.206"*		
1/2"	50	99512A450 ... 7.47
3/4"	50	99512A456 ... 7.47
1"	50	99512A459 ... 7.47
1 1/4"	50	99512A462 ... 7.47
1 1/2"	50	99512A465 ... 7.47
***1/4"-10—**T30 Drive; A: 0.27"*		
1/2"	50	99512A510 ... 12.19
3/4"	50	99512A516 ... 12.19
1"	50	99512A519 ... 12.19
1 1/4"	50	99512A522 ... 12.19
1 1/2"	50	99512A525 ... 12.19
***6-19—**T10 Drive; A: 0.141"*		
1/4"	50	95893A252 ... 6.09
1/2"	50	95893A255 ... 6.09
3/4"	50	95893A258 ... 6.09
***8-16—**T15 Drive; A: 0.179"*		
1/4"	50	95893A321 ... 7.34
1/2"	50	95893A325 ... 7.34
3/4"	50	95893A329 ... 7.34
***10-14—**T20 Drive; A: 0.206"*		
1/2"	50	95893A356 ... 8.51
3/4"	50	95893A360 ... 8.51
1 1/4"	50	95893A364 ... 8.51
1 1/2"	50	95893A368 ... 8.51

Round-Shank Screws for Brittle Plastics

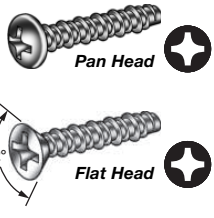

Minimize cracking and splitting in brittle materials such as phenolic and glass-filled plastics and wood. All have a Phillips drive, round shank, and blunt tip.

Pan head screws have a higher profile and slightly smaller head diameter than standard pan head screws. Bearing surface is flat. Length is measured from under head. ***Flat head*** screws are beveled under the head to sit flush within countersunk holes. Length is measured from top of the head.

Lg.	Pkg. Qty.	Per Pkg.
***Pan Head—**18-8 Stainless Steel*		
***4-24—**#1 Drive*		
Head: Dia. 0.193"; Ht. 0.071"		
3/8"	100	97349A100 ... $5.31
***6-19—**#2 Drive*		
Head: Dia. 0.254"; Ht. 0.097"		
3/8"	100	97349A200 ... 6.00
1/2"	100	97349A210 ... 6.68
***8-18—**#2 Drive*		
Head: Dia. 0.270"; Ht. 0.097"		
1/2"	100	97349A300 ... $7.78
3/4"	100	97349A310 ... 9.41
***Pan Head—**Type 410 Stainless Steel*		
***4-24—**#1 Drive*		
Head: Dia. 0.193"; Ht. 0.071"		
3/8"	100	97975A110 ... 5.39
1/2"	100	97975A115 ... 5.55
***6-19—**#2 Drive*		
Head: Dia. 0.254"; Ht. 0.097"		
3/8"	100	97975A205 ... 5.89
1/2"	100	97975A210 ... 6.23
5/8"	100	97975A215 ... 7.20
3/4"	100	97975A220 ... 8.12
***8-18—**#2 Drive*		
Head: Dia. 0.270"; Ht. 0.097"		
3/8"	100	97975A315 ... 7.07
1/2"	100	97975A320 ... 7.45
5/8"	100	97975A325 ... 8.21
3/4"	100	97975A330 ... 8.88
***10-16—**#2 Drive*		
Head: Dia. 0.322"; Ht. 0.115"		
3/8"	100	97975A410 ... 9.00
1/2"	100	97975A415 ... 9.50
5/8"	100	97975A420 ... 10.37
3/4"	100	97975A425 ... 11.78
***Pan Head—**Zinc-Plated Steel*		
***4-24—**#1 Drive*		
Head: Dia. 0.193"; Ht. 0.071"		
1/4"	100	90385A106 ... 13.05
5/16"	100	90385A107 ... 13.35
3/8"	100	90385A108 ... 13.80
1/2"	50	90385A110 ... 7.29
***6-19—**#2 Drive*		
Head: Dia. 0.254"; Ht. 0.097"		
1/4"	100	90385A144 ... 14.02
5/16"	50	90385A145 ... 7.23
3/8"	50	90385A146 ... 7.40
1/2"	50	90385A148 ... 8.01
3/4"	50	90385A151 ... 11.19
1"	50	90385A155 ... 11.84
***8-18—**#2 Drive*		
Head: Dia. 0.270"; Ht. 0.097"		
1/4"	50	90385A191 ... 7.55
3/8"	50	90385A192 ... 8.01
1/2"	50	90385A194 ... 8.34
5/8"	50	90385A196 ... 8.97
3/4"	50	90385A197 ... 9.38
1"	50	90385A199 ... 10.47
***10-16—**#2 Drive*		
Head: Dia. 0.322"; Ht. 0.115"		
3/8"	50	90385A240 ... 9.53
1/2"	50	90385A242 ... 9.97
5/8"	25	90385A244 ... 5.82
3/4"	25	90385A245 ... 6.14
1"	50	90385A247 ... 13.45
***Flat Head—**Type 410 Stainless Steel*		
***4-24—**#1 Drive*		
1/2"	100	96068A105 ... 6.31
***6-19—**#2 Drive*		
1/2"	100	96068A153 ... 6.78
5/8"	100	96068A156 ... 8.21
3/4"	100	96068A159 ... 8.63
***8-18—**#2 Drive*		
1/2"	100	96068A213 ... 7.66
5/8"	100	96068A216 ... 8.73
3/4"	100	96068A219 ... 9.31

For more information about thread-forming screws, see pages 3022 and 3031.
For more information about thread-cutting screws, see page 3022.

Triangular-Shank Wood-to-Metal Thread-Forming Screws

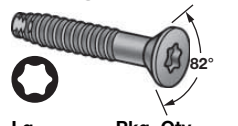

Also known as Flortorx screws, these screws form coarse machine screw threads that provide strong connections that resist stripping and pullout. Compared to thread-cutting screws, they have 50% more thread engagement and require 40% less torque to install. All have a triangular shank (also called tri-lobular) and a blunt tip.

They have a Torx drive that prevents driver slippage and a flat head that's beveled underneath to provide a flush surface within countersunk holes. All are steel with a rust-resistant black phosphate-and-oil finish. Length is measured from the top of the head. For drivers see pages 2823-2824; for bits see pages 2848-2850.

Lg.	Pkg. Qty.		Per Pkg.
1/4"-20—T30 Torx Size			
1"	50	91087A120	$7.43
1 1/4"	50	91087A122	7.33
1 1/2"	50	91087A124	8.97
1 3/4"	50	91087A129	13.56
2"	50	91087A128	11.81
1/4"-20 (Cont.)			
2 1/4"	50	91087A130	$13.80
2 1/2"	25	91087A132	7.78
3"	25	91087A134	9.38
3 1/2"	10	91087A135	6.65
4"	10	91087A136	9.26
5/16"-18—T40 Torx Size			
1 3/4"	25	91087A238	$9.18
2"	25	91087A241	7.49
2 1/4"	25	91087A243	7.75
2 1/2"	25	91087A245	11.88
3"	10	91087A247	6.65

Round-Shank Sharp-Point Screws for Plastics

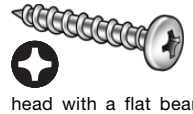

The tapered point reduces the chance that you'll crack the material you're fastening. Screws have a Phillips drive, a round shank, and deep, coarse threads that cut cleanly and reduce stripping. Each has a low-profile pan head with a flat bearing surface. They're ideal for use in a wide variety of plastics, PVC vinyl, particleboard, and other composite materials. Made from Type 410 stainless steel. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
6-13—#2 Drive			
5/8"	100	92325A301	$8.79
3/4"	100	92325A303	9.19
1"	100	92325A305	9.97
2"	50	92325A309	8.34
8-11—#2 Drive			
1/2"	100	92325A311	$9.90
5/8"	100	92325A313	11.12
3/4"	100	92325A315	11.78
1"	100	92325A317	13.41
1 1/4"	100	92325A319	14.50
1 1/2"	50	92325A321	7.65

About Thread-Cutting Screws

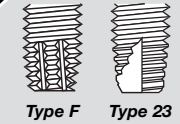

Thread-cutting screws cut machine screw threads and eject the chips as they're turned. They have a round shank, tapered entering threads, and a notched end with a blunt tip. Use them in metal, plastic, and plywood. They require a drilled or punched hole.

We offer Type F (the most common thread-cutting screw), Type 23, and Type 25 thread-cutting screws. Compared to Type F screws, Type 23 and Type 25 screws offer maximum thread cutting and excellent chip clearing so they're better for softer materials.

Thread-Cutting Screws for Metals and Plastics (Type F)

Use these Type F screws to cut machine screw threads in a wide variety of materials including metals such as aluminum, cast iron, and brass, and plastics such as polypropylene, ABS, and phenolic plastic.

Pan head screws rest above the material surface when installed. The head has a low profile and a flat bearing surface. Length is measured from under head.

Flat head screws are beveled under the head so they provide a flush surface within countersunk holes. Screws with an undercut head are indicated with a ♦. The undercut head is 70% of the normal height to allow for more threading. Length is measured from the top of the head.

Hex washer head screws have a head and washer that are formed as one piece, which provides a large flat bearing surface that reduces the likelihood of crushing surfaces. Length is measured from under the washer.

Pan Head Phillips—Type 410 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40—#1 Drive			
1/4"	100	90410A106	$3.20
3/8"	100	90410A107	3.64
1/2"	100	90410A108	3.97
6-32—#2 Drive			
1/4"	100	90410A144	3.71
3/8"	100	90410A146	3.94
1/2"	100	90410A148	4.09
5/8"	100	90410A149	4.67
3/4"	100	90410A151	4.96
8-32—#2 Drive			
1/4"	100	90410A190	4.89
3/8"	100	90410A192	5.21
1/2"	100	90410A194	5.62
5/8"	100	90410A195	6.34
3/4"	100	90410A197	6.72
1"	100	90410A199	7.82
10-24—#2 Drive			
3/8"	100	90410A240	$6.69
1/2"	100	90410A242	7.16
5/8"	100	90410A243	7.92
3/4"	100	90410A245	8.67
1"	100	90410A247	9.96
10-32—#2 Drive			
3/8"	100	90410A827	6.69
1/2"	100	90410A829	7.16
5/8"	100	90410A830	7.92
3/4"	100	90410A831	8.67
1"	100	90410A833	9.96
1/4"-20—#3 Drive			
1/2"	50	90410A320	7.40
3/4"	50	90410A323	8.32
1"	50	90410A326	9.39

Pan Head Phillips—Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56—#1 Drive			
3/16"	100	90087A101	6.20
1/4"	100	90087A102	6.65
3/8"	100	90087A103	6.86
4-40—#1 Drive			
3/16"	100	90087A105	8.87
1/4"	100	90087A106	7.17
3/8"	100	90087A107	7.38
1/2"	100	90087A108	7.90
6-32—#2 Drive			
3/16"	100	90087A143	8.93
1/4"	100	90087A144	7.48
5/16"	100	90087A145	7.90
3/8"	100	90087A146	8.11
1/2"	100	90087A148	8.51
6-32 (Cont.)			
5/8"	100	90087A150	8.72
3/4"	100	90087A151	9.17
1"	100	90087A153	11.14
8-32—#2 Drive			
1/4"	100	90087A190	9.31
5/16"	100	90087A191	9.31
3/8"	100	90087A192	9.31
1/2"	100	90087A194	10.03
5/8"	100	90087A196	10.56
3/4"	100	90087A197	11.10
1"	100	90087A199	12.34
10-24—#2 Drive			
3/8"	100	90087A240	11.00
1/2"	100	90087A242	11.73

Pan Head Phillips—Zinc-Plated Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
10-24 (Cont.)			
5/8"	100	90087A243	$12.10
3/4"	100	90087A245	12.90
1"	50	90087A247	8.43
1 1/4"	50	90087A249	9.64
1 1/2"	50	90087A250	10.55
10-32—#2 Drive			
3/8"	100	90087A827	11.00
1/2"	100	90087A829	11.73
5/8"	100	90087A830	12.10
3/4"	100	90087A831	12.90
1"	50	90087A833	8.43
1 1/4"	50	90087A835	9.64
1 1/2"	50	90087A836	10.55
12-24—#3 Drive			
1/2"	50	90087A703	$11.91
3/4"	50	90087A707	13.21
1/4"-20—#3 Drive			
1/2"	25	90087A537	6.64
5/8"	25	90087A538	6.75
3/4"	25	90087A540	7.09
1"	25	90087A542	7.95
1 1/4"	25	90087A544	8.54
1 1/2"	25	90087A546	9.38
2"	25	90087A548	12.10

Pan Head Phillips—Black Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40—#1 Drive			
1/4"	50	91715A101	9.04
3/8"	50	91715A103	9.16
6-32—#2 Drive			
3/8"	50	91715A114	9.21
1/2"	50	91715A116	9.77
3/4"	50	91715A118	9.76
8-32—#2 Drive			
3/8"	50	91715A122	10.21
1/2"	50	91715A124	10.60
3/4"	50	91715A126	10.74
1"	50	91715A128	11.89
10-24—#2 Drive			
3/8"	50	91715A132	11.17
1/2"	50	91715A134	11.57
10-24 (Cont.)			
3/4"	50	91715A136	12.21
10-32—#2 Drive			
3/8"	50	91715A142	11.17
1/2"	50	91715A144	11.57
3/4"	50	91715A146	12.21
1"	25	91715A148	7.41
12-24—#3 Drive			
1/2"	25	91715A152	9.37
3/4"	25	91715A154	10.07
1/4"-20—#3 Drive			
1/2"	25	91715A162	9.37
3/4"	25	91715A164	10.07
1"	25	91715A166	11.04
1 1/2"	25	91715A168	12.65
2"	10	91715A172	6.73

(Continued on following page)

For information about thread-cutting screws, see pages 3022 and 3031.

Screws for Metals and Plastics (Type F) *(Continued from previous page)*

Lg.	Pkg. Qty.		Per Pkg.
Flat Head Phillips— *Type 410 Stainless Steel*			
6-32— *#2 Drive*			
3/8"	100	92485A613	$4.50
1/2"	100	92485A615	6.27
5/8"	100	92485A617	7.75
3/4"	100	92485A619	7.85
1"	100	92485A621	8.06
8-32— *#2 Drive*			
3/8"	100	92485A622 ♦	6.04
1/2"	100	92485A624	6.82
5/8"	100	92485A626	7.89
3/4"	100	92485A628	8.34
1"	50	92485A630	4.86
10-24— *#2 Drive*			
1/2"	100	92485A405 ♦	$8.31
3/4"	100	92485A415	12.94
1"	50	92485A420	7.86
1 1/4"	50	92485A425	10.47
1 1/2"	50	92485A430	12.91
10-32— *#2 Drive*			
1/2"	100	92485A633 ♦	11.59
5/8"	50	92485A634	6.88
3/4"	100	92485A635	11.68
1"	50	92485A640	7.86
1/4"-20— *#3 Drive*			
3/4"	25	92485A705	6.49
1"	25	92485A710	6.81
Flat Head Phillips— *Zinc-Plated Steel*			
6-32— *#2 Drive*			
1/4"	100	90086A144 ♦	6.58
3/8"	100	90086A146	7.12
1/2"	100	90086A148	7.49
3/4"	100	90086A151	8.06
8-32— *#2 Drive*			
3/8"	100	90086A192 ♦	8.18
1/2"	100	90086A194	8.82
3/4"	100	90086A197	9.76
10-24— *#2 Drive*			
1/2"	100	90086A242 ♦	10.30
3/4"	100	90086A245	11.33
1"	50	90086A247	7.41
10-32— *#2 Drive*			
1/2"	100	90086A829 ♦	10.30
3/4"	100	90086A831	11.33
1"	50	90086A833	7.41
1/4"-20— *#3 Drive*			
3/4"	25	90086A540	6.22
1"	25	90086A542	6.98
1 1/4"	25	90086A544	7.50
1 1/2"	25	90086A545	8.24
2"	25	90086A550	10.63
2 1/2"	25	90086A552	13.31
3"	10	90086A554	7.62
Hex Washer Head Slotted— *Zinc-Plated Steel*			
4-40— *Hex Size: 3/16"*			
1/4"	100	90096A106	5.63
3/8"	100	90096A108	5.73
6-32— *Hex Size: 1/4"*			
1/4"	100	90096A144	6.98
3/8"	100	90096A146	6.15
1/2"	100	90096A148	6.42
8-32— *Hex Size: 1/4"*			
1/4"	100	90096A191	7.10
3/8"	100	90096A192	7.10
1/2"	100	90096A194	7.66
3/4"	100	90096A197	8.73
10-24— *Hex Size: 5/16"*			
3/8"	100	90096A240	8.58
1/2"	100	90096A242	9.12
5/8"	100	90096A243	9.62
3/4"	100	90096A245	10.13
1"	100	90096A247	12.62
10-32— *Hex Size: 5/16"*			
3/8"	100	90096A827	8.58
1/2"	100	90096A829	9.12
5/8"	100	90096A830	9.62
3/4"	100	90096A831	10.13
1"	100	90096A832	12.62
1/4"-20— *Hex Size: 3/8"*			
3/8"	50	90096A535	9.24
1/2"	50	90096A537	9.24
5/8"	50	90096A539	9.80
3/4"	50	90096A540	10.35
1"	25	90096A542	6.34
1 1/4"	25	90096A544	7.02
1 1/2"	25	90096A546	7.39
2"	25	90096A550	9.48
Hex Washer Head Unslotted— *Zinc-Plated Steel*			
5/16"-18— *Hex Size: 1/2"*			
1/2"	25	90096A578	9.10
5/8"	25	90096A580	8.71
3/4"	25	90096A581	9.07
1"	25	90096A583	10.15
1 1/4"	25	90096A585	11.92
1 1/2"	10	90096A587	5.58
3/8"-16— *Hex Size: 9/16"*			
5/8"	10	90096A620	6.86
3/4"	10	90096A622	7.23
1"	10	90096A624	8.29
1 1/4"	10	90096A626	8.82
1 1/2"	10	90096A628	9.53
2"	10	90096A630	13.46
Hex Washer Head Unslotted— *Type 410 Stainless Steel*			
8-32— *Hex Size: 1/4"*			
3/8"	100	96024A110	5.16
1/2"	100	96024A120	5.44
10-24— *Hex Size: 5/16"*			
1/2"	100	96024A220	7.60
3/4"	100	96024A230	8.80
10-32— *Hex Size: 5/16"*			
1/2"	100	96024A310	7.55
3/4"	100	96024A320	8.70
1/4"-20— *Hex Size: 3/8"*			
1/2"	50	96024A410	7.95
3/4"	50	96024A420	9.09
1"	50	96024A430	10.75
1 1/4"	50	96024A440	11.96
1 1/2"	25	96024A450	6.64

♦ Has an undercut head.

Green Electrical Grounding Screws

A green chromate finish identifies these screws as grounding screws. They have Type F threads and a slotted hex-washer head that's formed as one piece to provide a large flat bearing surface. All are made from zinc-plated steel. Length is measured from under the washer.

Lg.	Pkg. Qty.		Per Pkg.
6-32— *Hex Size: 1/4"*			
3/8"	25	92597A100	$6.18
8-32— *Hex Size: 1/4"*			
3/8"	25	92597A200	6.42
1/2"	25	92597A300	6.56
10-32— *Hex Size: 5/16"*			
3/8"	25	92597A400	$6.80
1/2"	25	92597A500	6.95

Torx Screws for Metals and Plastics (Type F)

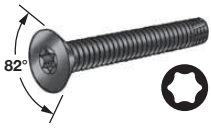

These versatile screws have a Torx drive that handles high torque and prevents your driver from slipping. Each has Type F threads, a Torx drive, and a flat head that's beveled underneath to provide a flush surface within countersunk holes. Use them to cut machine screw threads in a wide variety of materials including aluminum, cast iron, brass, brittle phenolic plastic, polypropylene, and ABS.

All are made from steel and have a rust-resistant black-phosphate finish. Length is measured from the top of the head.

For drivers see pages 2823-2824; for bits see pages 2848-2850.

Lg.	Pkg. Qty.		Per Pkg.
1/4"-20— *T30 Torx Size*			
1"	100	90390A535	$12.77
1 1/4"	100	90390A540	13.27
1 1/2"	50	90390A545	7.73
2"	50	90390A550	9.25
2 1/4"	50	90390A551	11.82
2 1/2"	50	90390A552	12.33
3"	25	90390A554	7.23
1/4"-20 (Cont.)			
3 1/2"	25	90390A555	$9.74
4"	25	90390A556	12.75
5/16"-18— *T40 Torx Size*			
2"	50	90390A591	13.24
2 1/4"	25	90390A592	8.10
2 1/2"	25	90390A593	9.07
3"	25	90390A595	12.03

Hinge Screws for Metals and Plastics (Type F)

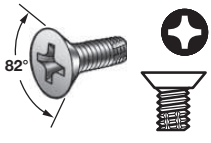

Commonly used with door hinge hardware, these screws are made of steel and come in four finishes. All have Type F threads, a Phillips drive, and a flat head that's beveled underneath to provide a flush surface within countersunk holes. The head is also undercut to allow for more threading. Length is measured from the top of the head.

Finish	Pkg. Qty.		Per Pkg.
12-24— *#3 Drive; Length: 1/2"; Head Ht.: 0.092"*			
Brass	10	93380A100	$5.83
Chrome	25	93380A300	13.39
Bronze	25	93380A200	11.93
Zinc Plated	25	93380A400	6.44

Screws for Soft Metals and Plastics (Type 23 and Type 25)

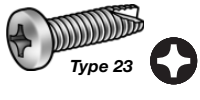

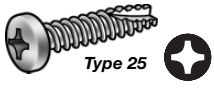

Ideal for soft materials thanks to a single, wide cutting slot that clears chips better than the smaller cutting grooves in Type F screws.

All have a Phillips drive and a low-profile pan head with a flat bearing surface. Made from Type 410 stainless steel. Length is measured from under the head.

Type 23 screws have fine threads. Use them in cast iron, zinc die castings, and plastic.

Type 25 screws have coarse threads that grip better in plastics and other soft materials.

Lg.	Pkg. Qty.		Per Pkg.
Type 23			
4-40— *#1 Drive*			
1/4"	100	98273A110	$4.86
3/8"	100	98273A115	5.12
1/2"	100	98273A120	5.54
6-32— *#2 Drive*			
1/4"	100	98273A155	5.69
3/8"	100	98273A160	6.03
1/2"	100	98273A165	6.56
8-32— *#2 Drive*			
1/4"	100	98273A215	7.43
3/8"	100	98273A220	7.55
1/2"	100	98273A225	8.32
10-24— *#2 Drive*			
3/8"	100	98273A250	$8.86
1/2"	50	98273A255	5.71
3/4"	50	98273A260	7.08
10-32— *#2 Drive*			
3/8"	100	98273A310	9.10
1/2"	50	98273A315	5.71
3/4"	50	98273A320	6.87
1/4"-20— *#3 Drive*			
1/2"	50	98273A355	10.34
3/4"	25	98273A360	6.87
1"	25	98273A365	8.21
Type 25			
4-24— *#1 Drive*			
3/8"	100	94629A550	3.76
1/2"	100	94629A560	4.01
6-20— *#2 Drive*			
3/8"	100	94629A670	4.28
1/2"	100	94629A680	4.72
3/4"	100	94629A690	5.21
8-18— *#2 Drive*			
3/8"	100	94629A710	5.49
1/2"	100	94629A720	5.58
3/4"	100	94629A730	6.88

About Self-Drilling Screws

Self-drilling screws drill a hole and tap a thread in a single operation. Install them with a power driver.

Materials

Expand-Flex Alloy Steel— Alloy 4037 steel provides the strength, ductility, and resistance to embrittlement needed for structural and other critical applications. Use these screws to join aluminum to aluminum, aluminum to steel, and steel to steel. Minimum Rockwell hardness is C28.

Aluminum— Made from 7075-T6 high strength heat-treated aluminum alloy and similar in strength to low-strength steel. Ideal for fastening aluminum to aluminum and for use outdoors. Minimum Rockwell hardness is B82.

Ultra Stainless Steel— A unique blend of elements including molybdenum for excellent corrosion resistance and Type 410 stainless steel for superior strength. Magnetic. Minimum Rockwell hardness is C50.

18-8 Stainless Steel— With excellent corrosion resistance, 18-8 stainless steel is a good choice for marine and chemical applications. May be mildly magnetic. Minimum Rockwell hardness is B84. *18-8 stainless steel screws with hardened drill point* have a case-hardened steel drill point welded to the end. The point enables them to drill through materials harder than 18-8 stainless steel and is not rated for Rockwell hardness.

Type 410 Stainless Steel— Harder than 18-8 stainless steel but less corrosion resistant. Magnetic. Minimum Rockwell hardness is C34.

Steel— Made from case-hardened C1016-C1024 steel, these screws have a minimum surface hardness of Rockwell C50 (unless noted). Use to join steel to steel.

Finishes

Protective Gray Finish— Protects against corrosion due to galvanic interaction with aluminum.

Weather-Resistant Coating— A heat-cured coating that provides 720 hours of salt spray resistance (up to 1,000 hours on 18-8 stainless steel) compared to zinc plating, which provides 200 hours or less. It prevents reactions between dissimilar metals (unless noted) and offers good lubricity. Color is metallic gray.

Zinc Plated and Black Finish— Provide good rust resistance.

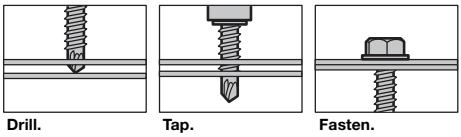

Note: For effective fastening, the screw's drill point must penetrate the total material thickness before the first thread engages.

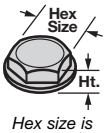

Hex size is measured from flat to flat. Height includes washer.

Max. Material Thickness and Drill Point Lg.

Screw Size	Drill Point	Maximum Recommended Material Thickness★	Approx. Drill Point Length★
No. 6	#1	0.035″	7/64″
No. 6	#2	0.090″	9/64″
No. 8	#1	0.035″	1/8″
No. 8	#2	0.098″	3/16″
No. 10	#2	0.106″	13/64″
No. 10	#3	0.150″	1/4″
No. 11	#4	0.312″	5/16″
No. 12	#2	0.140″	1/2″
No. 12	#3	0.187″	9/32″
No. 12	#4	0.210″	9/32″
No. 12	#4.5	0.375″	1/2″
No. 12	#5	0.500″	45/64″
1/4″	#1	0.048″	5/16″
1/4″	#3	0.210″	5/16″
1/4″	#4	0.236″	5/16″
1/4″	#5	0.500″	45/64″
5/16″	#3	0.250″	5/16″
5/16″	#4	0.187″	15/32″

★Unless otherwise noted.

Head and Washer Dimensions

Screw Size	No. 6	No. 8	No. 10	No. 12	1/4″	5/16″
Decimal Equivalent	0.138″	0.164″	0.190″	0.216″	0.250"	0.312″
Hex Size	1/4″	1/4″	5/16″	5/16″	3/8″	3/8″
Head Diameter						
Pan (Phillips, Square Drive, Torx)	0.270″	0.322″	0.373″	0.425″	0.473″	—
Flat (Phillips, Torx)	0.262″	0.312″	0.362″	0.412″	0.477″	—
Oval (Phillips)	0.279″	0.332″	0.385″	—	—	—
Head Height						
Hex Washer Head	0.118″	0.141″	0.151″	0.194″	0.240″	0.285″
Pan (Phillips, Torx)	0.097″	0.115″	0.133″	0.151″	0.169″	—
Pan (Square Drive)	0.097″	0.115″	0.137″	—	0.175″	—
Flat (Phillips, Torx)	0.083″	0.100″	0.116″	0.132″	0.153″	—
Oval (Phillips)	0.128″	0.152″	0.176″	—	—	—
Washer OD★						
Hex Washer Head	0.328″	0.348″	0.414″	0.432″	0.520″	0.676″

★Unless otherwise noted.

Hex Washer Head for Aluminum

Ideal for fastening aluminum to aluminum and for use outdoors. Each screw has a hex washer head that's formed as one piece, providing a large flat bearing surface that reduces the likelihood of crushing mating surfaces. Unless noted, *expand-flex alloy steel* screws can also be used to join aluminum to steel and steel to steel. All screws are fully threaded. Length is measured from under the washer.

Lg.	Pkg. Qty.		Per Pkg.
Expand-Flex Alloy Steel with Weather-Resistant Coating			
10-16—Drill Point #3			
3/4″	25	90122A313	$10.22
12-14—Drill Point #3			
7/8″	25	90122A316♠	11.12
1″	25	90122A319	11.54
1 1/2″	25	90122A321	13.26
2″	25	90122A324	14.46
12-24—Drill Point #5			
1 13/16″	10	90122A327	9.52
1/4″-14—Drill Point #3			
1″	10	90122A329	$8.14
1 1/2″	10	90122A333	8.51
2″	10	90122A334	9.33
1/4″-20—Drill Point #4			
1 1/8″	10	90122A335	8.79
1 1/2″	10	90122A338	9.34
2″	10	90122A341	9.64
2 1/2″	10	90122A345	11.94
Aluminum			
6-20—Drill Point #2			
1/2″	10	98248A110	6.28
8-18—Drill Point #2			
1/2″	10	98248A220	6.80
3/4″	10	98248A250	7.50
1″	10	98248A270	7.55
10-16—Drill Point #2			
1/2″	10	98248A430	7.74
5/8″	10	98248A450	8.06
3/4″	10	98248A470	8.77
1″	10	98248A490	10.22

♠ For use in aluminum only.

Lg.	Pkg. Qty.		Per Pkg.
18-8 SS with Protective Gray Finish			
8-18—Drill Point #2			
1/2″	50	90821A330	$13.13
3/4″	25	90821A350	7.47
10-16—Drill Point #3			
1/2″	25	90821A355	7.27
3/4″	25	90821A357	7.83
1″	25	90821A359	8.13
12-14—Drill Point #3			
3/4″	25	90821A374	8.64
1″	25	90821A377	8.77
1 1/4″	25	90821A380	9.99
1 1/2″	25	90821A390	10.72
2″	25	90821A420	11.62
12-14 (Cont.)			
2 1/2″	25	90821A460	$11.38
3″	10	90821A510	6.30
1/4″-14—Drill Point #3			
3/4″	25	90821A550	11.48
1″	25	90821A553	12.44
1 1/2″	25	90821A559	13.56
1/4″-20—Drill Point #4			
1″	25	90821A610	14.23
1 1/2″	25	90821A613	14.88

Hex Washer Head

The washer and hex head are formed as one piece. The underside of the head provides a large flat bearing surface that reduces the likelihood of crushing mating surfaces. All screws are fully threaded (unless noted). Length is measured from under the washer. *Note:* Weather-resistant coated screws are not for use with aluminum.

Unslotted

Slotted

Ultra Stainless Steel—*Unslotted*

Lg.	Pkg. Qty.		Per Pkg.
8-18—Drill Point #2			
1/2"	50	90106A103	$14.82
3/4"	25	90106A105	9.84
1"	25	90106A108	11.93
1 1/4"	25	90106A109	14.06
1 1/2"	10	90106A114	7.08
10-16—Drill Point #2			
1/2"	25	90106A211	12.69
10-16—Drill Point #3			
3/4"	25	90106A216	14.05
1"	10	90106A219	6.74
1 1/4"	10	90106A226	7.71
1 1/2"	10	90106A229	8.60
2"	10	90106A233	10.33
12-14—Drill Point #3			
3/4"	10	90106A317	7.46
12-14 (Cont.)			
1"	10	90106A321	$8.25
1 1/4"	10	90106A325	9.12
1 1/2"	10	90106A329	10.27
2"	10	90106A346	12.63
2 1/2"	10	90106A351	12.02
3"	10	90106A356	13.61
1/4"-14—Drill Point #3			
3/4"	10	90106A543	10.22
1"	10	90106A546	11.79
1 1/4"	10	90106A549	13.17
1 1/2"	10	90106A556	14.69
2"	5	90106A557	8.90
2 1/2"	5	90106A562	10.25
3"	5	90106A565	13.79

18-8 SS w/Weather-Resist. Coating & Hard. Drill Pt.—*Unslotted*

Lg.	Pkg. Qty.		Per Pkg.
8-18—Drill Point #2			
1/2"	25	90420A330	6.92
3/4"	25	90420A350	8.57
1"	25	90420A360	9.26
1 1/4"	25	90420A370	11.35
10-16—Drill Point #3 Head Ht.: 0.193"			
3/4"	25	90420A450	11.79
1"	25	90420A460	12.22
1 1/4"	10	90420A470	6.27
12-14—Drill Point #2			
1 1/4"	10	90420A515	8.05
12-14—Drill Point #3			
3/4"	10	90420A580	7.07
1"	10	90420A585	7.96
1 1/2"	10	90420A587	9.66
12-24—Drill Point #4 Head Ht.: 0.198"			
1 1/4"	10	90420A595	8.05
12-24—Drill Point #5 Head Ht.: 0.198"			
1 1/2"	10	90420A610	9.66
2"	10	90420A612	11.85
1/4"-14—Drill Point #3 Head Ht.: 0.238"			
1"	10	90420A620	10.33

Type 410 Stainless Steel—*Unslotted*

Lg.	Pkg. Qty.		Per Pkg.
6-20—Drill Point #1			
3/8"	100	90822A146	6.17
6-20—Drill Point #2			
1/2"	100	90822A148	6.36
5/8"	100	90822A149	6.83
3/4"	100	90822A152	7.22
1"	100	90822A153	8.17
1 1/4"	100	90822A155	9.47
1 1/2"	50	90822A158	7.19
8-18—Drill Point #1			
3/8"	100	90822A327	6.46
8-18—Drill Point #2			
1/2"	100	90822A330	7.60
5/8"	100	90822A345	8.14
3/4"	100	90822A350	8.71
1"	100	90822A360	10.06
1 1/4"	100	90822A370	12.01
1 1/2"	50	90822A380	11.26
1 3/4"	50	90822A382	12.06
2"	50	90822A386	12.27
10-16—Drill Point #2			
1/2"	100	90822A430	13.99
10-16—Drill Point #3			
5/8"	50	90822A440	7.60
3/4"	50	90822A450	8.70
1"	50	90822A460	9.52
1 1/4"	50	90822A470	10.87
10-16 (Cont.)			
1 1/2"	50	90822A480	12.53
1 3/4"	50	90822A484	14.78
2"	25	90822A520	7.71
2 1/2"	25	90822A524	10.86
3"	25	90822A528	12.04
12-14—Drill Point #3			
3/4"	50	90822A580	11.23
1"	50	90822A581	13.58
1 1/4"	50	90822A587	14.80
1 1/2"	25	90822A582	8.62
1 3/4"	25	90822A585	10.09
2"	25	90822A583	10.79
2 1/2"	25	90822A591	12.61
3"	10	90822A594	6.68
4"	10	90822A598	10.61
1/4"-14—Drill Point #3			
3/4"	25	90822A610	8.57
1"	25	90822A620	9.38
1 1/4"	25	90822A625	11.08
1 1/2"	25	90822A630	12.02
1 3/4"	25	90822A635	14.20
2"	25	90822A640	14.62
2 1/2"	10	90822A670	7.66
3"	10	90822A690	9.48
4"	10	90822A710	12.80
5"	1	90822A750▲	3.48

Type 410 Stainless Steel with White Painted Head—*Unslotted*

Lg.	Pkg. Qty.		Per Pkg.
8-18—Drill Point #2			
1/2"	50	97899A400	8.30
3/4"	50	97899A420	9.67
1"	50	97899A440	10.89
10-16—Drill Point #2			
1/2"	50	97899A510	11.20
10-16—Drill Point #3			
1"	50	97899A530	13.08
1 1/2"	25	97899A550	8.29
1/4"-14—Drill Point #3			
1"	10	97899A930	7.16
1 1/2"	10	97899A950	7.73
2"	10	97899A970	9.24

Steel with Weather-Resistant Coating—*Unslotted*

Lg.	Pkg. Qty.		Per Pkg.
8-18—Drill Point #2			
1/2"	100	91324A330	$7.78
5/8"	100	91324A340	8.58
3/4"	100	91324A350	9.23
1"	100	91324A360	10.13
10-16—Drill Point #2			
1/2"	100	91324A430	10.20
5/8"	100	91324A440	10.22
3/4"	100	91324A450	10.30
1"	100	91324A460	11.67
1 1/4"	100	91324A461	12.72
1 1/2"	100	91324A462	13.79
12-14—Drill Point #3			
3/4"	50	91324A580	9.76
1"	50	91324A581	9.66
1 1/4"	50	91324A578	10.48
1 1/2"	50	91324A582	11.63
2"	50	91324A583	13.31
2 1/2"	25	91324A805	7.60
3"	25	91324A810	9.09
4"	25	91324A815	11.02
12-24—Drill Point #4			
7/8"	50	91324A585	8.64
12-24—Drill Point #4.5			
1 1/4"	50	91324A587	9.31
12-24—Drill Point #5			
1 1/4"	25	91324A590	$6.33
1 1/2"	25	91324A591	6.98
2"	25	91324A592	7.78
3"	10	91324A595	7.78
1/4"-14—Drill Point #3			
3/4"	50	91324A610	10.15
1"	50	91324A620	11.54
1 1/4"	50	91324A625	13.12
1 1/2"	50	91324A630	14.27
2"	25	91324A632	7.78
2 1/2"	25	91324A635	8.93
3"	10	91324A638	4.95
4"	10	91324A641	6.74
1/4"-20—Drill Point #5			
5"	10	91324A645●	10.30
6"	10	91324A651●▲	12.19
1/4"-28—Drill Point #5			
3"	10	91324A710■	6.51
4"	10	91324A715■	10.27
6"	5	91324A720▲	8.83
8"	5	91324A725▲	10.84

Zinc-Plated Steel—*Unslotted*

Lg.	Pkg. Qty.		Per Pkg.
6-20—Drill Point #2			
3/8"	100	90064A146	4.83
1/2"	100	90064A148	4.93
5/8"	100	90064A150	5.38
3/4"	100	90064A151	5.41
1"	100	90064A153	6.05
8-18—Drill Point #2			
1/2"	100	90064A330	4.65
5/8"	100	90064A340	5.45
3/4"	100	90064A350	5.76
1"	100	90064A360	6.53
1 1/4"	100	90064A370	7.30
1 1/2"	100	90064A380	8.03
10-16—Drill Point #3			
1/2"	100	90064A430	5.87
5/8"	100	90064A440	6.92
3/4"	100	90064A450	7.11
1"	100	90064A460	8.61
1 1/4"	100	90064A461	9.85
1 1/2"	100	90064A462	10.78
1 3/4"	100	90064A470	12.20
2"	100	90064A463	12.15
3"	25	90064A464	8.18
10-24—Drill Point #2			
1/2"	100	90064A480	8.30
12-14—Drill Point #3			
3/4"	100	90064A580	9.78
12-14 (Cont.)			
1"	100	90064A581	11.01
1 1/4"	100	90064A590	12.88
1 1/2"	100	90064A582	14.26
1 3/4"	100	90064A591	14.11
2"	50	90064A583	7.99
2 1/2"	50	90064A584	9.64
3"	50	90064A585	14.80
4"	25	90064A587	12.58
1/4"-14—Drill Point #3			
3/4"	100	90064A610	12.47
1"	100	90064A620	13.36
1 1/4"	50	90064A622	8.09
1 1/2"	50	90064A630	8.34
1 3/4"	50	90064A631	10.85
2"	50	90064A632	10.76
2 1/2"	50	90064A633	14.58
3"	50	90064A634	14.90
4"	10	90064A636	11.33
1/4"-14—Drill Point #4			
5"	5	90064A638▲	10.29
1/4"-14—Drill Point #5			
6"	5	90064A640▲	12.41
5/16"-18—Drill Point #3			
1"	10	90064A705●	3.95
1 1/4"	10	90064A709●	4.45
1 1/2"	10	90064A713●	5.18

Zinc-Plated Steel—*Slotted*

Lg.	Pkg. Qty.		Per Pkg.
8-18—Drill Point #2			
1/2"	100	94056A330	6.57
5/8"	100	94056A196	7.51
3/4"	100	94056A350	8.39
8-18 (Cont.)			
1"	100	94056A360	9.85
10-16—Drill Point #3			
3/4"	100	94056A380	11.27

▲ Has at least 2 1/2" of thread. ● Washer OD is 0.610".
■ Hex size is 5/16".

Hex Washer Head Screw Assortments

Each set includes 525 unslotted hex washer head screws furnished in a 13 5/8" Lg. × 9 5/8" Wd. × 2" Dp. compartmented metal box with lid chart.

Size	No. of Pieces	Lengths
No. 8	150	1/2", 3/4", 1"
No. 10	200	1/2", 5/8", 3/4", 1"
No. 12	100	3/4", 1"
1/4"	75	3/4", 1", 1 1/2"

		Each
Type 410 Stainless Steel	91690A600	$143.60
Weather-Resistant Coated Steel	90960A412	105.56
Zinc-Plated Steel	90430A112	77.02

Strip-Resistant Hex Washer Head

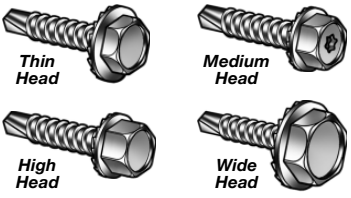

Serrations under the head add resistance and minimize stripping by acting as a break. The washer and head are formed as one piece, providing a large flat bearing surface. All screws are fully threaded. Length is measured from under the washer. Thin head, medium head, and high head screws are ideal for electrical grounding.

Thin Head—Use to fasten materials up to 0.100″ thick. Made from zinc-plated steel.

Medium Head—Our most versatile strip-resistant screw; great for general applications. Made from zinc-plated steel. Install with a wrench or a Torx driver (see pages 2848-2850).

High Head—The high head provides extra surface for your socket driver to grasp. Also known as Penetrator Plus screws, they're made from zinc-plated steel.

Wide Head—Also known as garage door Teks screws. Made from weather-resistant coated steel.

Lg.	Head Ht.	Pkg. Qty.		Per Pkg.
Thin Head				
8-18—*Drill Point #2; Washer OD: 0.385″*				
9/16″	0.150″	100	92685A200	$6.60
Medium Head—*Torx Drive*				
8-18—*T20 Torx Size; Drill Point #2; Washer OD: 0.370″*				
1/2″	0.197″	100	94425A510	11.18
3/4″	0.197″	100	94425A530	11.67
10-16—*T25 Torx Size; Drill Point #3; Washer OD: 0.445″*				
3/4″	0.216″	100	94425A640	11.96
1″	0.216″	100	94425A660	12.64
Medium Head (Cont.)				
12-14—*T27 Torx Size; Drill Point #3; Washer OD: 0.445″*				
3/4″	0.261″	50	94425A770	$9.83
1″	0.261″	50	94425A790	10.00
1/4″-14—*T30 Torx Size; Drill Point #3; Washer OD: 0.550″*				
3/4″	0.303″	50	94425A810	9.96
1″	0.303″	50	94425A830	10.31
High Head				
8-18—*Drill Point #2; Washer OD: 0.375″*				
1/2″	0.195″	100	92685A210	7.40
3/4″	0.195″	100	92685A220	8.40
1″	0.195″	100	92685A230	10.05
High Head (Cont.)				
10-16—*Drill Point #3; Washer OD: 0.465″*				
3/4″	0.229″	100	92685A330	$11.57
1″	0.229″	100	92685A340	14.29
12-14—*Drill Point #3; Washer OD: 0.520″*				
3/4″	0.260″	50	92685A420	9.45
1″	0.260″	50	92685A430	10.50
1/4″-14—*Drill Point #3; Washer OD: 0.595″*				
3/4″	0.300″	50	92685A520	11.84
1″	0.300″	50	92685A530	13.23
1 1/4″	0.300″	50	92685A535	14.39
Wide Head				
1/4″-14—*Drill Point #3; Washer OD: 0.615″*				
3/4″	0.250″	50	92685A600	8.72
1″	0.250″	50	92685A610	9.85

Sealing Hex Washer Head

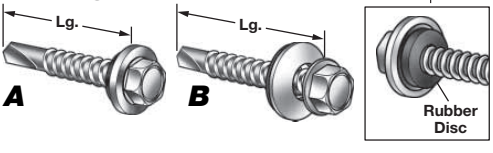

When you drive these screws, a flexible black EPDM rubber disc compresses to form a tight seal. The hex washer head is formed as one piece. Head height includes the thickness of washer(s) and rubber disc. All screws are fully threaded. Length is measured from under the hex washer head.

Steel with 18-8 stainless steel encapsulated head screws have an 18-8 stainless steel cap covering their head to prevent rust.

Style A—Have a freely rotating rubber disc.

Style B—Have a rubber disc that's bonded to a freely rotating metal washer.

Lg.	Head Ht.	Pkg. Qty.		Per Pkg.
Steel with 18-8 SS-Encapsulated Head				
12-14—*Drill Point #2; Washer OD: 0.562″*				
A 1″	0.250″	25	95135A210	$8.24
A 1 1/4″	0.250″	25	95135A215	8.65
A 1 1/2″	0.250″	25	95135A220	10.24
12-24—*Drill Point #5; Washer OD: 0.562″*				
A 2″	0.250″	10	95135A530	7.35
1/4″-14—*Drill Point #1; Washer OD: 0.562″*				
A 7/8″	0.250″	25	95135A615	8.32
A 1 1/8″	0.250″	25	95135A625 ♦	8.98
Zinc-Plated Type 410 Stainless Steel				
8-18—*Drill Point #2; Washer OD: 0.375″*				
B 1″	0.270″	50	94058A111	12.64
B 1 1/4″	0.270″	50	94058A112	14.20
8-18—*Drill Point #2; Washer OD: 0.500″*				
B 1/2″	0.242″	25	94058A105	8.43
B 3/4″	0.242″	25	94058A110	9.09
10-16—*Drill Point #3; Washer OD: 0.500″*				
B 5/8″	0.252″	25	94058A117	9.11
B 3/4″	0.252″	25	94058A120	10.08
B 1″	0.252″	25	94058A125	11.33
B 1 1/4″	0.290″	25	94058A127	8.40
B 1 1/2″	0.290″	25	94058A129	8.99
B 2″	0.290″	25	94058A131	10.31
12-14—*Drill Point #3; Washer OD: 0.551″*				
B 2″	0.335″	25	94058A311	13.47
B 2 1/2″	0.335″	10	94058A315	6.27
B 3″	0.335″	10	94058A319	7.55
12-14—*Drill Point #3; Washer OD: 0.625″*				
B 3/4″	0.295″	25	94058A294	13.49
B 1″	0.295″	25	94058A296	14.94
B 1 1/4″	0.295″	10	94058A297	6.64
B 1 1/2″	0.295″	10	94058A298	7.46
12-24—*Drill Point #4; Washer OD: 0.551″*				
B 1 1/4″	0.335″	10	94058A299	6.68
12-24—*Drill Point #5; Washer OD: 0.551″*				
B 2″	0.335″	5	94058A321	4.42
12-24—*Drill Point #5; Washer OD: 0.625″*				
B 1 1/4″	0.295″	10	94058A301	8.90
1/4″-14—*Drill Point #1; Washer OD: 0.625″*				
B 7/8″	0.341″	10	94058A541	7.67
Zinc-Plated Type 410 SS (Cont.)				
1/4″-14—*Drill Point #3; Washer OD: 0.591″*				
B 4″	0.380″	10	94058A559	$12.96
1/4″-14—*Drill Point #3; Washer OD: 0.625″*				
B 3/4″	0.341″	10	94058A540	6.64
B 1″	0.341″	10	94058A542	7.99
B 1 1/4″	0.341″	10	94058A543	8.47
B 1 1/2″	0.341″	10	94058A544	9.17
B 2″	0.341″	10	94058A548	10.86
B 2 1/2″	0.341″	10	94058A550	11.68
B 3″	0.341″	10	94058A555	12.50
Steel with Weather-Resistant Coating				
10-16—*Drill Point #2; Washer OD: 0.560″*				
B 1″	0.288″	50	90628A286	10.76
10-16—*Drill Point #3; Washer OD: 0.500″*				
B 2″	0.261″	50	90628A290	11.80
10-16—*Drill Point #3; Washer OD: 0.560″*				
A 3/4″	0.288″	50	90628A284	9.96
A 1 1/2″	0.288″	50	90628A288	10.46
12-14—*Drill Point #2; Washer OD: 0.574″*				
A 3/4″	0.326″	50	90628A294	10.90
A 1″	0.326″	50	90628A296	11.83
A 1 1/4″	0.326″	50	90628A298	12.93
A 1 1/2″	0.326″	25	90628A301	7.23
A 2″	0.326″	25	90628A303	7.82
12-14—*Drill Point #3; Washer OD: 0.574″*				
B 2 1/2″	0.326″	25	90628A305	11.94
B 3″	0.326″	25	90628A307	14.27
B 4″	0.326″	10	90628A311	8.23
12-24—*Drill Point #4; Washer OD: 0.562″*				
B 7/8″	0.298″	50	90628A321	12.43
12-24—*Drill Point #4.5; Washer OD: 0.562″*				
B 1 1/4″	0.298″	25	90628A323	7.89
B 1 1/2″	0.294″	25	90628A326	8.14
12-24—*Drill Point #5; Washer OD: 0.560″*				
B 1 1/4″	0.298″	25	90628A331	10.16
B 1 1/2″	0.298″	25	90628A333	11.46
B 2″	0.298″	25	90628A335	12.83
B 3″	0.298″	10	90628A340	8.33
1/4″-14—*Drill Point #1; Washer OD: 0.555″*				
A 7/8″	0.332″	25	90628A541	6.44
Steel w/ Weather-Resistant Coat. (Cont.)				
1/4″-14—*Drill Point #3; Washer OD: 0.555″*				
A 3/4″	0.332″	25	90628A641	$6.57
A 1″	0.332″	25	90628A542	6.91
A 1 1/4″	0.332″	25	90628A643	7.39
A 1 1/2″	0.332″	25	90628A546	7.76
B 2″	0.332″	25	90628A645	10.37
1/4″-14—*Drill Point #3; Washer OD: 0.562″*				
B 2 1/2″	0.347″	25	90628A646	14.20
B 3″	0.323″	10	90628A647	6.25
B 4″	0.347″	10	90628A652	9.41
Zinc-Plated Steel				
8-18—*Drill Point #2; Washer OD: 0.500″*				
B 3/4″	0.242″	50	94059A201	4.96
B 1″	0.242″	50	94059A203	5.27
B 1 1/2″	0.242″	50	94059A205	5.71
10-16—*Drill Point #3; Washer OD: 0.500″*				
B 3/4″	0.252″	100	94059A245	10.89
B 1″	0.252″	100	94059A247	11.43
B 1 1/4″	0.252″	50	94059A249	6.30
B 1 1/2″	0.252″	50	94059A251	6.82
12-14—*Drill Point #3; Washer OD: 0.562″*				
B 3/4″	0.295″	100	94059A294	11.59
B 1″	0.295″	100	94059A296	12.68
B 1 1/4″	0.295″	50	94059A298	7.23
B 1 1/2″	0.295″	50	94059A299	8.28
B 2″	0.295″	50	94059A301	8.79
B 2 1/2″	0.295″	25	94059A303	5.53
B 3″	0.295″	25	94059A305	5.47
12-24—*Drill Point #4; Washer OD: 0.562″*				
B 7/8″	0.295″	50	94059A261	8.59
B 1 1/4″	0.295″	25	94059A265	10.41
12-24—*Drill Point #5; Washer OD: 0.562″*				
B 1 1/4″	0.295″	50	94059A311	12.13
B 1 1/2″	0.295″	25	94059A313	9.64
B 2″	0.295″	25	94059A315	10.06
1/4″-14—*Drill Point #1; Washer OD: 0.625″*				
B 7/8″	0.341″	50	94059A615	7.95
1/4″-14—*Drill Point #3; Washer OD: 0.625″*				
B 3/4″	0.341″	50	94059A541	7.54
B 1″	0.341″	50	94059A542	7.96
B 1 1/4″	0.341″	50	94059A544	9.15
B 1 1/2″	0.341″	50	94059A546	10.41
B 2″	0.341″	50	94059A550	11.35
B 2 1/2″	0.341″	25	94059A552	7.07
B 3″	0.341″	25	94059A551	7.27

♦ Has a 1/2″ long drill point to fasten material up to 0.095″ thick.

Metal-to-Wood Sealing Hex Washer Head

Use these screws to fasten thin metal to wood framing. They have a freely rotating EPDM rubber washer for a water-tight seal. All are fully threaded and have a cutting point that easily penetrates overlapping panels.

Made from weather-resistant coated steel. The coating provides 1,000 hours of salt spray resistance (compared to zinc plating, which provides 200 hours or less). Screw length is measured from under the washer.

Maximum recommended metal thickness is 0.035″. Minimum recommended wood thickness is equal to the screw length.

Lg.	Head Ht.	Pkg. Qty.		Per Pkg.
9-15—*Hex Size: ¼″; Cutting Point; Washer OD: 0.327″*				
1″	0.169″	100	**98392A480**	$10.86
1½″	0.169″	100	**98392A520**	12.57
2″	0.169″	50	**98392A560**	8.69
2½″	0.169″	50	**98392A610**	10.70
3″	0.169″	50	**98392A650**	12.80

Pan Head Phillips

All have a rounded top and a flat bearing surface. Great for general applications. Screws are fully threaded. Length is measured from under the head.

18-8 stainless steel screws with hardened drill point provide superior drilling performance compared to Type 410 stainless steel and zinc-plated steel screws in comparable sizes.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel with Hardened Drill Point			
8-18—*#2 Drive; Drill Point #2*			
½″	25	**90415A330**	$7.52
¾″	25	**90415A350**	8.48
10-16—*#2 Drive; Drill Point #3*			
¾″	25	**90415A450**	$11.35
1″	25	**90415A460**	12.43
Type 410 Stainless Steel			
6-20—*#2 Drive; Drill Point #1*			
⅜″	100	**92364A146**	$6.30
6-20—*#2 Drive; Drill Point #2*			
½″	100	**92364A148**	6.51
⅝″	100	**92364A150**	6.48
¾″	100	**92364A151**	7.58
1″	100	**92364A153**	8.74
1¼″	100	**92364A157**	9.70
1½″	50	**92364A160**	7.39
8-18—*#2 Drive; Drill Point #1*			
⅜″	100	**92364A192**	6.33
8-18—*#2 Drive; Drill Point #2*			
½″	100	**92364A194**	8.02
⅝″	100	**92364A196**	8.04
¾″	100	**92364A197**	8.74
1″	100	**92364A199**	9.47
1¼″	100	**92364A200**	12.34
1½″	50	**92364A203**	11.44
2″	50	**92364A206**	13.64
10-16—*#1 Drive; Drill Point #2*			
½″	100	**92364A242**	13.05
10-16—*#2 Drive; Drill Point #3*			
⅝″	50	**92364A244**	8.26
¾″	50	**92364A245**	9.14
10-16 (Cont.)			
1″	50	**92364A247**	10.13
1¼″	50	**92364A249**	11.63
1½″	50	**92364A253**	13.03
2″	25	**92364A256**	8.45
2½″	25	**92364A258**	11.41
3″	25	**92364A260**	12.74
12-14—*#3 Drive; Drill Point #3*			
¾″	50	**92364A263**	12.08
1″	50	**92364A265**	13.71
1¼″	50	**92364A267**	14.54
1½″	25	**92364A269**	9.28
2″	25	**92364A271**	11.45
2½″	25	**92364A272**	14.33
3″	10	**92364A273**	7.93
¼″-14—*#3 Drive; Drill Point #3*			
¾″	25	**92364A275**	9.15
1″	25	**92364A278**	9.64
1¼″	25	**92364A281**	10.06
1½″	25	**92364A284**	11.18
2″	25	**92364A287**	13.81
2½″	10	**92364A290**	7.06
3″	10	**92364A294**	8.06
Zinc-Plated Steel			
6-20—*#2 Drive; Drill Point #2*			
⅜″	100	**94060A146**	4.58
½″	100	**94060A148**	4.68
⅝″	100	**94060A150**	5.41
¾″	100	**94060A151**	5.53
1″	100	**94060A153**	5.83
8-18—*#2 Drive; Drill Point #2*			
½″	100	**94060A194**	4.90
⅝″	100	**94060A196**	5.98
¾″	100	**94060A197**	6.08
1″	100	**94060A199**	6.44
1¼″	100	**94060A201**	8.33
1½″	100	**94060A203**	9.23
10-16—*#2 Drive; Drill Point #2*			
½″	100	**94060A242**	6.86
⅝″	100	**94060A244**	7.67
¾″	100	**94060A245**	7.66
1″	100	**94060A247**	9.40
1¼″	100	**94060A249**	11.38
1½″	100	**94060A251**	12.62
12-14—*#3 Drive; Drill Point #3*			
¾″	50	**94060A400**	6.99
1″	50	**94060A405**	7.69
¼″-14—*#3 Drive; Drill Point #3*			
¾″	50	**94060A455**	9.55
1″	50	**94060A460**	10.03

Wood-to-Metal Flat Head

Phillips with Cutting Wings

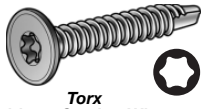

Torx without Cutting Wings

Designed to fasten wood and composite materials to steel. Unless noted, screws have cutting wings near the tip that ream a clearance hole through the top material, then break off when they hit steel so the screw can tap the remainder of the hole.

Screws are beveled under the head to provide a flush surface within countersunk holes. Length is measured from the top of the head.

Weather-resistant coated steel screws are fully threaded, unless noted. They're a good choice for ACQ-treated (arsenic-free) lumber.

Zinc-plated steel screws are fully threaded.

Lg.	Recommended Matl. Thick. For Metal	For Wood	Pkg. Qty.		Per Pkg.
Weather-Resistant Coated Steel—*Phillips Drive*					
10-16—*#2 Drive; Drill Point #3; Head: Dia. 0.480″; Ht. 0.144″*					
1½″	0.036″-0.150″	¼″-¾″	100	**94054A251**●	$10.94
10-24—*#2 Drive; Drill Point #3; Head: Dia. 0.480″; Ht. 0.144″*					
¾″	0.036″-0.175″	¼″-⅜″	100	**94054A245**●	8.16
1″	0.036″-0.175″	¼″-½″	100	**94054A247**●	8.61
1¼″	0.036″-0.175″	¼″-⅝″	100	**94054A249**●	9.74
1 7/16″	0.060″-0.175″	¼″-¾″	100	**94054A301**	14.11
11-16—*#3 Drive; Drill Point #4; Head: Dia. 0.565″; Ht. 0.145″*					
2 15/16″	0.060″-0.312″	1″-2″	10	**94054A320**★	7.14
3 7/16″	0.060″-0.312″	1½″-2½″	10	**94054A325**★	9.34
12-24—*#3 Drive; Drill Point #4; Head: Dia. 0.550″; Ht. 0.140″*					
1⅝″	0.060″-0.210″	¼″-¾″	50	**94054A401**♣	10.77
12-24—*#3 Drive; Drill Point #4; Head: Dia. 0.438″; Ht. 0.160″*					
2¼″	0.060″-0.210″	¾″-1⅛″	50	**94053A110**♦	10.04
2¾″	0.060″-0.250″	¾″-1⅜″	50	**94053A120**♦	11.60
¼″-20—*#3 Drive; Drill Point #4; Head: Dia. 0.507″; Ht. 0.175″*					
3″	0.060″-0.250″	¾″-1¾″	25	**94053A130**♦	8.01
Zinc-Plated Steel—*Torx Drive*					
10-16—*T25 Torx Size; Drill Point #3; Head: Dia. 0.480″; Ht. 0.136″*					
1″	0.110″-0.210″	¼″-⅜″	100	**90425A460**●	10.08
1¼″	0.110″-0.210″	⅜″-½″	100	**90425A461**●	11.82

● Does not have cutting wings. ★ Has at least 1⅞″ of thread.
♣ Has at least 1″ of thread. ♦ Approximate drill point length is ½″.

Round Washer Head Phillips

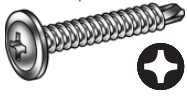

Also known as metal lath screws, you can use these screws to secure metal wire lath to steel framing. The washer and round head are formed as one piece, providing a large flat bearing surface.

All screws are fully threaded and accept a #2 Phillips drive. Made from zinc-plated steel. Length is measured from under the head.

Lg.	Head Ht.	Pkg. Qty.		Per Pkg.
8-18—*Drill Point #2; Washer OD: 0.440″*				
½″	0.097″	100	**91515A100**	$3.85
¾″	0.097″	100	**91515A200**	4.50
1″	0.097″	100	**91515A300**	6.91
1¼″	0.097″	100	**91515A400**	8.20

Pan Head Square Drive

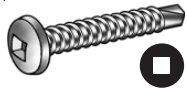

Use these screws to fasten fiberglass, composites, and light steel. Also known as a Robertson drive, the square drive offers excellent driving power and resists driver slippage. All screws have a rounded top and a flat bearing surface. Fully threaded. Length is measured from under the head.

For drivers, see page 2835; for bits, see page 2824.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
10-16—*#2 Drive; Drill Point #3*			
1″	25	**90203A112**	$6.76
1¼″	25	**90203A115**	8.69
10-16 (Cont.)			
1½″	25	**90203A118**	$7.90
2″	25	**90203A121**	9.90
Type 410 Stainless Steel			
6-20—*#1 Drive; Drill Point #1*			
⅜″	100	**90203A205**	6.47
6-20—*#1 Drive; Drill Point #2*			
½″	100	**90203A250**	7.05
¾″	100	**90203A253**	8.27
8-18—*#2 Drive; Drill Point #2*			
½″	100	**90203A310**	8.43
¾″	50	**90203A313**	5.42
8-18 (Cont.)			
1″	50	**90203A316**	7.06
10-16—*#2 Drive; Drill Point #2*			
½″	50	**90203A412**	7.30
10-16—*#2 Drive; Drill Point #3*			
¾″	50	**90203A415**	8.50
1″	50	**90203A418**	9.48

Low-Profile Head Combination Drive

Also known as pancake head screws and panel clip fasteners, these low-profile wide-head screws are good to attach framing to light-gauge metals with a maximum thickness of 3/16″. The combination drive accepts both #2 Phillips and #2 square drivers. Screws are fully threaded and made from zinc-plated steel. Minimum Rockwell hardness is C52. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
***10-16—**Drill Point #3*			
Head: Dia. 0.440″; Ht. 0.095″			
1″	100	94090A100	$14.58
***12-14—**Drill Point #3*			
Head: Dia. 0.460″; Ht. 0.095″			
1″	50	94090A200	$9.05

Tamper-Resistant Pan and Flat Head

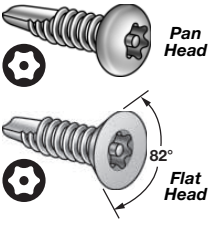

The pin-in-torx drive makes these screws difficult to remove without the proper tools. All are fully threaded.

Pan head screws have a rounded top and a flat bearing surface. Maximum recommended material thickness is 0.076″. Length is measured from under the head.

Flat head screws are beveled under the head, so they provide a flush surface within countersunk holes. Maximum recommended material thickness is 0.100″ for 8-18 screws, 0.110″ for 10-16 screws with a #2 drill point, and 0.175″ for 10-16 screws with a #3 drill point. Length is measured from the top of the head.

For L-keys and drivers, see page 2849; for bits, see page 2824.

Lg.	Pkg. Qty.		Per Pkg.
***Pan Head—**Type 410 Stainless Steel*			
***8-18—**T20 Torx Size; Drill Pt. #2*			
1/2″	25	92970A201	$11.90
3/4″	25	92970A203	11.90
1″	10	92970A205	6.09
1 1/4″	10	92970A208	7.40
***10-16—**T25 Torx Size; Drill Pt. #2*			
1/2″	10	92970A209	$6.47
3/4″	10	92970A211	6.47
1″	10	92970A213	6.76
1 1/4″	10	92970A216	7.43
1 1/2″	10	92970A218	11.31
***Flat Head—**Zinc-Plated Steel*			
***8-18—**T15 Torx Size; Drill Pt. #2*			
1 1/4″	50	94625A315	9.69
***10-16—**T20 Torx Size; Drill Pt. #2*			
3/4″	50	94625A423	8.91
***10-16—**T20 Torx Size; Drill Pt. #3*			
1 1/2″	50	94625A425	14.50
2″	25	94625A427	7.74

Oval Head Phillips

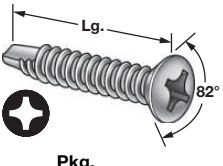

Beveled under the head like flat head screws, oval head screws have a rounded top that rests above the surface for a more decorative look. Use in countersunk holes. Screws are fully threaded. Made from zinc-plated steel. Length is measured from the edge of the head.

Lg.	Pkg. Qty.		Per Pkg.
***6-20—**#2 Drive; Drill Point #2*			
1″	100	94061A153	$5.60
1 1/4″	100	94061A155	6.28
***8-18—**#2 Drive; Drill Point #2*			
3/4″	100	94061A197	6.01
1″	100	94061A199	6.70
8-18 (Cont.)			
1 1/4″	100	94061A201	$7.35
***10-16—**#2 Drive; Drill Point #2*			
3/4″	100	94061A245	7.92
1″	100	94061A247	8.71
1 1/4″	100	94061A249	9.73

Oval Head Phillips with Washer

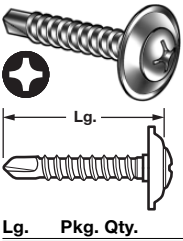

Attach fabric and other nonmetallic material to metal with these screws. The freely rotating washer provides a large bearing surface that won't crush thin materials. The head is rounded on top for a finished appearance.

Washer OD is 0.493″. Head diameter is 0.332″; head height is 0.152″. Screws are fully threaded. Length is measured from the edge of the head.

Lg.	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel			
***8-18—**#2 Drive; Drill Point #2*			
3/4″	50	92715A320	$10.68
1″	50	92715A330	11.36
1 1/4″	50	92715A340	11.66
Black Zinc-Plated Steel			
***8-18—**#2 Drive; Drill Point #2*			
3/4″	25	92715A620	$9.06
1″	25	92715A630	9.57
1 1/4″	25	92715A640	10.26

Flat Head Phillips

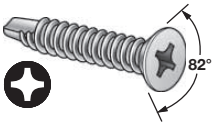

Flat head screws are beveled under the head, so they provide a flush surface within countersunk holes. Screws are fully threaded. Length is measured from the top of the head.

Lg.	Pkg. Qty.		Per Pkg.
Type 410 Stainless Steel			
***6-20—**#2 Drive; Drill Point #2*			
1/2″	100	94195A110	$8.01
5/8″	100	94195A115	11.66
3/4″	100	94195A120	10.51
1″	100	94195A125	11.26
1 1/4″	100	94195A130	12.26
1 1/2″	50	94195A133	7.60
***8-18—**#2 Drive; Drill Point #2*			
1/2″	100	94195A135	9.76
5/8″	100	94195A137	10.28
3/4″	100	94195A140	11.06
1″	100	94195A145	11.94
1 1/4″	50	94195A150	7.77
1 1/2″	50	94195A160	12.92
***10-16—**#2 Drive; Drill Point #3*			
3/4″	50	94195A170	9.92
1″	50	94195A175	11.19
1 1/4″	50	94195A177	13.54
1 1/2″	50	94195A180	14.54
1 3/4″	25	94195A183	10.98
2″	25	94195A187	11.86
2 1/2″	10	94195A190	6.68
3″	10	94195A193	7.64
***12-14—**#3 Drive; Drill Point #3*			
3/4″	50	94195A210	$14.30
1″	25	90122A617 ♦	12.16
1″	25	94195A220	8.57
1 1/4″	25	94195A230	9.86
1 1/2″	25	94195A240	10.32
1 3/4″	25	94195A243	13.34
2″	25	94195A246	14.39
2 1/2″	10	94195A249	7.99
3″	10	94195A255	9.37
***1/4″-14—**#3 Drive; Drill Point #3*			
3/4″	25	94195A310	8.85
1″	25	94195A320	10.66
1 1/4″	25	94195A330	11.81
1 1/2″	25	94195A340	14.90
2″	10	94195A343	8.52
2 1/2″	10	94195A346	9.92
3″	5	94195A349	6.55
3 1/2″	5	94195A355	8.69
4″	5	94195A360	10.60
Zinc-Plated Steel			
***8-18—**#2 Drive; Drill Point #2*			
3/4″	100	92365A340	5.60
8-18 (Cont.)			
1″	100	92365A350	6.33

♦ Head is undercut to 65% of normal height to allow more threading. Made from expand-flex alloy steel; for use in aluminum only.

Extra-Long Pan Head Phillips

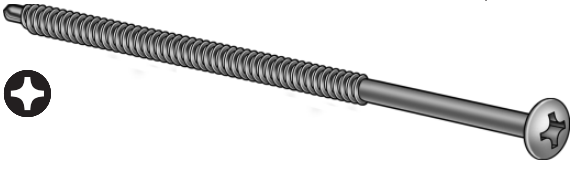

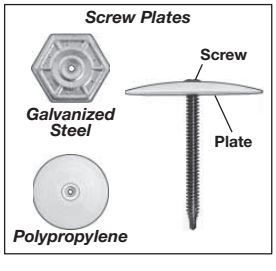

Use these hardened roofing screws to fasten rigid insulation board and insulating membrane to steel decking and framing. The max. recommended steel thickness is 0.047″ for gray-coated screws and 0.048″ for black epoxy-coated screws.

All screws are partially threaded (unless noted) and FM approved. Length is measured from under the head.

Screw plates (sold separately) provide a larger bearing surface, reducing the likelihood of crushing mating surfaces. The polypropylene screw plate is FM approved.

Lg.	Pkg. Qty.		Per Pkg.
Gray-Coated Steel			
***12-13 (0.210″)—**#3 Drive;*			
Head: Dia. 0.438″; Ht. 0.116″			
2 7/8″	20	90694A800 ●	$7.90
3 3/4″	20	90694A802	10.24
4 1/2″	20	90694A803	12.22
5″	20	90694A804	14.16
6″	10	90694A805	8.25
7″	10	90694A806	11.96
8″	10	90694A807	13.07
Black Epoxy-Coated Steel			
***15-12 (0.265″)—**#3 Drive;*			
Head: Dia. 0.435″; Ht. 0.115″			
2″	50	90694A814 ●	$12.61
3″	25	90694A817 ●	8.09
4″	25	90694A820	10.65
5″	20	90694A823	11.11
6″	20	90694A826	14.80
7″	10	90694A829	10.23
8″	10	90694A831	11.75
10″	5	90694A834	8.09

● Fully threaded.

Screw Plates

	Shape	Hole Dia.	Size	Pkg. Qty.		Per Pkg.
Galv. Steel	Hex	0.265″	2 7/8″ Wd.	50	90320A350	$11.48
Polypropylene	Round	0.260″	3″ Dia.	25	90320A380	7.44

Self-Sinking Flat Head Phillips

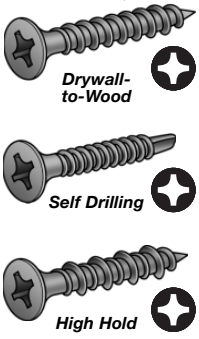

These bugle head screws have a curved neck that sinks into drywall and resists tearing the paper surface. Screws up to 2¼″ long are fully threaded; longer lengths are partially threaded. All have a sharp, piercing point (unless noted) and are made from C1018 (or better) steel with a black-phosphate finish (unless noted). Mildly rust resistant. Minimum Rockwell hardness is C44. Length is measured from the top of the head.

Drywall-to-Metal—Ideal for attaching drywall to metal studs up to 0.036″ thick.

Drywall-to-Wood—Use to attach drywall to wood framing. Have a zinc yellow-chromate plating for good rust resistance.

Laminating—Use these screws to hold two sheets of drywall together until the glue sets. Screws will pierce metal studs up to 0.036″ thick.

Corrosion-Resistant—Treated with a dacrotized finish to provide 500 hours of salt spray resistance. Color is silver. Will pierce metal studs up to 0.036″ thick.

Self Drilling—With a #2 drill point, you can easily drive these screws through drywall and into metal studs up to 0.105″ thick.

High Hold—Alternating high and low threads exceed the holding power of standard drywall screws and reduce the torque required for installation. Use them to attach drywall to wood framing and metal studs up to 0.036″ thick.

Lg.	Pkg. Qty.		Per Pkg.
Drywall-to-Metal			
6-18—*#2 Drive; Head: Dia. 0.347″*			
1″	500	90092A112	$5.96
1⅛″	500	90092A113	6.24
1¼″	500	90092A114	7.22
1⅝″	250	90092A116	4.68
2″	250	90092A118	7.10
2¼″	100	90092A120	2.75
8-18—*#2 Drive; Head: Dia. 0.332″*			
2½″	100	90092A132	4.10
3″	100	90092A133	4.53
10-12—*#2 Drive; Head: Dia. 0.385″*			
3½″	100	90092A140	12.94
3¾″	50	90092A141	7.82
4″	50	90092A150	9.31
4½″	50	90092A142	9.38
5″	50	90092A143	10.09
6″	25	90092A145	8.59
Drywall-to-Wood			
6-9—*#2 Drive; Head: Dia. 0.347″*			
1″	100	99136A100	3.05
1¼″	100	99136A200	3.25
1⅝″	100	99136A300	3.95
8-8—*#2 Drive; Head: Dia. 0.332″*			
2½″	100	99136A600	9.32
3″	50	99136A700	6.72
Laminating			
10-9—*#2 Drive; Head: Dia. 0.385″*			
1½″	100	90093A400	7.51
Corrosion Resistant			
6-17—*#2 Drive; Head: Dia. 0.347″*			
1″	100	95616A153	3.01
1¼″	100	95616A155	4.15

Lg.	Pkg. Qty.		Per Pkg.
Corrosion Resistant (Cont.)			
6-17 (Cont.)			
1⅝″	100	95616A158	$6.17
2″	100	95616A162	5.30
8-15—*#2 Drive; Head: Dia. 0.363″*			
2½″	100	95616A207	7.51
3″	100	95616A209	9.19
10-12—*#2 Drive; Head: Dia. 0.379″*			
3¾″	50	95616A262	10.94
4½″	25	95616A265	7.81
5″	25	95616A270	9.08
6″	25	95616A280	12.41
Self Drilling			
6-20—*#2 Drive; Head: Dia. 0.279″*			
1″	100	90093A114	4.26
1⅛″	100	90093A115	4.55
1¼″	100	90093A116	4.68
1⅝″	100	90093A118	5.30
1⅞″	100	90093A121	5.81
8-18—*#2 Drive; Head: Dia. 0.332″*			
2⅜″	100	90093A152	9.96
2⅝″	100	90093A153	11.07
3″	50	90093A154	7.21
High Hold			
6-18—*#2 Drive; Head: Dia. 0.279″*			
1″	100	90305A112	2.31
1¼″	100	90305A114	2.93
1⅝″	100	90305A116	3.82
2″	100	90305A118	4.80
2¼″	100	90305A120	6.47
8-18—*#2 Drive; Head: Dia. 0.332″*			
2½″	100	90305A132	8.32
3″	100	90305A126	12.25

Strip-Resistant Flat Head Phillips

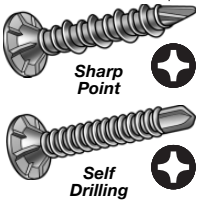

Also known as wafer head screws, these screws have ribs beneath the head to prevent stripping. With a curved neck, they sink into the surface material and sit flush when installed. You can use them to join cement board and other dense sheathing, wire lath, and plywood to metal and wood studs. Screws are fully threaded, except 2¼″ lengths which are partially threaded. They're made from C1022 steel and have a weather-resistant metallic-gray coating that resists up to 500 hours of salt spray. They're also a good choice for ACQ-treated (arsenic-free) lumber. Minimum Rockwell hardness is C45. Length is measured from the top of the head.

Sharp Point—Fasten metal studs up to 0.036″ thick.

Self Drilling—Fasten metal studs up to 0.105″ thick.

Lg.	Pkg. Qty.		Per Pkg.
Sharp Point			
9-15—*#2 Drive; Head: Dia. 0.395″*			
1¼″	100	92050A100	$6.97
1⅝″	100	92050A200	7.39
2¼″	100	92050A300	10.09

Lg.	Pkg. Qty.		Per Pkg.
Self Drilling—*Teks 2 Drill Point*			
8-18—*#2 Drive; Head: Dia. 0.395″*			
1¼″	100	92050A400	$9.87
1⅝″	100	92050A500	9.34
2¼″	100	92050A600	10.61

Self-Sinking Small Flat Head

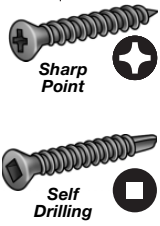

These trim head screws have head diameters that are one-third smaller than other countersinking drywall screws. Screws have at least 1″ of thread. Made from C1018 (or better) steel with a black-phosphate finish. Mildly rust resistant. Minimum Rockwell hardness is C50. Length is measured from the top of the head.

For square drivers, see page 2835; for square bits, see page 2824.

Sharp Point—Fasten wood or metal trim to wood or metal framing up to 0.036″ thick.

Self Drilling—Fasten drywall to metal studs up to 0.105″ thick. Approximate drill point length is 9⁄64″.

Lg.	Pkg. Qty.	Phillips Drive	Per Pkg.	Square Drive	Per Pkg.
Sharp Point					
6-18—*#1 Drive; Head: Dia. 0.216″*					
1⅝″	100	90091A112	$2.85	90330A116	$3.10
2¼″	100	90091A114	4.79	90330A120	4.42
8-18—*#2 Drive; Head: Dia. 0.259″*					
3″	100	—	—	90330A154	6.78
Self Drilling—*#2 Drill Point*					
6-20—*#1 Drive; Head: Dia. 0.216″*					
1⅝″	100	90091A400	7.12	90330A500	5.90
2¼″	100	90091A500	9.52	90330A600	8.00

Pan Head Phillips

Also known as framing screws, these screws are just the right size for fastening metal studs. Screws have a flat bearing surface and are fully threaded. They're made from C1018 (or better) steel with a black-phosphate finish. Mildly rust resistant. Minimum Rockwell hardness is C50. Length is measured from under the head.

Sharp Point—Fasten metal studs up to 0.036″ thick.

Self Drilling—Fasten metal studs up to 0.105″ thick. Approximate drill point length is 9⁄64″.

Lg.	Pkg. Qty.		Per Pkg.
Sharp Point			
7-16—*#2 Drive; Head: Dia. 0.309″; Ht. 0.114″*			
7⁄16″	250	94074A169	$6.69
Self Drilling—*Drill Point #2*			
6-20—*#2 Drive; Head: Dia. 0.319″; Ht. 0.114″*			
7⁄16″	250	94074A147	9.72

Auto-Feed Screw Driving Attachment

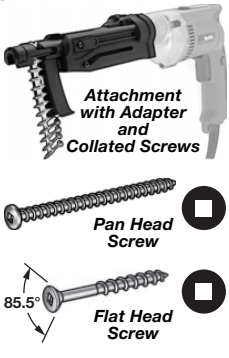

Drive wood screws fast. Just use an adapter (required) to attach the auto-feed attachment to your powered screwdriver. (Attachment, adapter, and screws sold separately.) The attachment comes in a 14″ Lg.×10½″ Wd.×3½″ Ht. plastic box and includes one #2 square drive bit.

Adapter for DeWalt screw guns fits models 252, 255, 257, 260, 266, 272, 274, 275, 276, and 284. Adapter for Makita screw guns fits models 6801DVB, 6802VB, 6820V, 6823N, 6823TP, 6824, and 6825. Adapter for Milwaukee screw guns fits models 6701-20, 6702-20, 6707-20, 6708-20, 6740-20, 6741-1, 6742-20, 6743-20, 6743-50, 6743-55, 6745-1, 6746-1, 6755-4, 6758-1, 6760-1, 6790-1, and 6791-20.

Pan head screws are fully threaded; flat head screws are partially threaded. All screws are made from corrosion-resistant zinc yellow-chromate plated C1018 steel and have a minimum Rockwell hardness of C52.

Auto-Feed Attachment, Adapters, and Replacement Bits			
Auto-Feed Attachment	97756A110	Each	$140.80
Adapter for DeWalt Screw Guns	97756A200	Each	$17.50
Adapter for Makita Screw Guns	97756A300	Each	$17.50
Adapter for Milwaukee Screw Guns	97756A400	Each	$17.50
Repl. #2 Square Drive Bits (Pkg. of 3)	97756A150	Per Pkg.	$7.18

Collated Wood Screws—#2 Square Drive

Lg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
No. 8—*Pan Head: Dia. 0.313″; Ht. 0.110″*						
2″	300	97756A710	$20.34	2,000	97756A610	$94.90
No. 8—*Flat Head: Dia. 0.333″; Ht. 0.150″*						
1¼″	300	97756A820 ♦	18.50	2,500	97756A520 ♦	118.38
1½″	300	97756A850	20.28	2,000	97756A550	97.90

♦ Has a Type 17 auger point.

About Machine Screw Materials and Dimensions

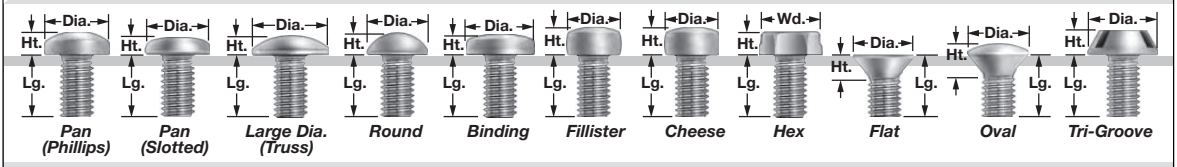

Materials

Type 316 Stainless Steel— Our most corrosion resistant stainless steel. Withstands chemicals, solvents, and pitting caused by chlorides. May be mildly magnetic.

18-8 Stainless Steel— Has excellent corrosion resistance. May be mildly magnetic.

Titanium— Resists corrosion from salt water and stands up to chemicals and acids better than stainless steel. It's strong, yet 40% lighter than steel.

Brass— Nonmagnetic with very good corrosion resistance. Usually softer than steel and stainless steel.

Aluminum— Offers mild resistance to corrosion. It's nonmagnetic, a good electrical conductor, and one-third the weight of steel.

Steel— This low-strength general purpose steel is often plated with zinc for good rust resistance in most environments.

Plastic— Plastic screws come in economical *nylon*, impact resistant *polycarbonate*, non-stick *PTFE*, and water and steam resistant *PEEK*.

Ceramic— Won't melt, rust, seize, or become brittle at high temperatures. Highly resistant to corrosive gasses. Nonconductive.

Finishes

Black Oxide— Provides a decorative finish, adds mild rust resistance, and makes screws easier to thread.

Zinc Plated— Enhances rust resistance.

Chrome Plated— Bright and attractive. Offers good rust resistance.

Cadmium Plated— Adds top-of-the-line corrosion protection and makes screws easier to thread.

Black Coated— Delivers corrosion resistance, and deep, consistent color that won't rub off with repeated use.

PTFE Coated— This slick coating prevents fasteners from sticking and binding.

Thread Fit

Thread fit is a measure of how tightly threads fit together. Most of our screws have a standard thread fit: inch sizes are Class 2A (unless noted); metric sizes are Class 6g, except zinc plated, which are Class 6h.

Countersinking

Use a countersink (see pages 2452-2454) to create a recess for flat and oval head screws. The body diameter of your countersink should be equal to or larger than your screw's head diameter and its included angle should match your screw's head angle.

Inch Sizes	**000**	**00**	**0**	**No. 1**	**No. 2**	**No. 3**	**No. 4**	**No. 5**	**No. 6**	**No. 8**	**No. 10**	**No. 12**	**1/4″**	**5/16″**	**3/8″**	**1/2″**
Decimal Sizes	**.034″**	**.047″**	**.060″**	**.073″**	**.086″**	**.099″**	**.112″**	**.125″**	**.138″**	**.164″**	**.190″**	**.216″**	**.250″**	**.312″**	**.375″**	**.500″**
Head Diameter— *Phillips, Slotted, Combination, Pozidriv®, Torx, Drilled Spanner, and One Way*																
Pan	.066″	.090″	.116″	.142″	.167″	.193″	.219″	.245″	.270″	.322″	.373″	.425″	.492″	.615″	.740″	—
82° Flat, Undercut Flat & Oval	—	—	.112″	.137″	.162″	.187″	.212″	.237″	.262″	.312″	.362″	.412″	.477″	.597″	.717″	.815″
82° Undercut Oval	—	—	—	—	.162″	—	.212″	—	.262″	.312″	.362″	—	.477″	—	—	—
100° Flat	—	—	—	—	.162″	—	.212″	—	.262″	312″	.362″	—	.477″	—	—	—
Round	.062″	.089″	.113″	.137″	.162″	.187″	.211″	.236″	.260″	.309″	.359″	.408″	.472″	.590″	.708″	.813″
Binding	—	—	.126″	.153″	.181″	.208″	.235″	.263″	.290″	.344″	.399″	.454″	.525″	—	—	—
Fillister	—	—	.096″	.118″	.140″	.161″	.183″	.205″	.226″	.270″	.313″	.357″	.414″	.518″	—	—
Large Diameter (Truss)	—	—	—	—	—	—	.257″	.289″	.321″	.384″	.448″	.511″	.573″	.698″	.823″	—
Head Height— *Phillips, Slotted, Combination, Pozidriv®, Torx, Drilled Spanner, and One Way*																
Pan (Phillips, Combination, Pozidriv®, Torx)	.026″	.036″	.044″	.053″	.063″	.071″	.080″	.089″	.097″	.115″	.133″	.151″	.175″	.218″	.261″	—
Pan (Slotted, Drilled Spanner)	—	—	.039″	.046″	.053″	.060″	.068″	.075″	.082″	.096″	.110″	.125″	.144″	.178″	.212″	—
82° Flat	—	—	.035″	.043″	.051″	.059″	.067″	.075″	.083″	.100″	.116″	.132″	.153″	.191″	.230″	.223″
82° Undercut Flat	—	—	.025″	031″	.036″	.042″	.047″	.053″	.059″	.070″	.081″	.092″	.107″	.134″	.161″	.156″
82° Undercut Oval	—	—	—	—	.065″	—	.084″	—	.104″	.123″	.142″	—	.186″	—	—	—
100° Flat	—	—	—	—	.037″	—	.049″	—	.060″	.072″	.083″	—	.110″	—	—	—
Oval	—	—	.056″	.068″	.080″	.092″	.104″	.116″	.128″	.152″	.176″	.200″	.232″	.290″	.347″	—
Round	.032″	.045″	.053″	.061″	.069″	.078″	.086″	.095″	.103″	.120″	.137″	.153″	.175″	.216″	.256″	.355″
Binding	—	—	.032″	.041″	.050″	.059″	.068″	.078″	.087″	.105″	.123″	.141″	.165″	—	—	—
Fillister	—	—	.055″	.066″	.083″	.095″	.107″	.120″	.132″	.156″	.180″	.205″	.237″	.295″	—	—
Large Diameter (Truss)	—	—	—	—	—	—	.069″	.078″	.086″	.102″	.118″	.134″	.150″	.183″	.215″	—
Hex Head																
Hex Size (Head Width)	—	—	—	—	1/8″	—	3/16″	—	1/4″	1/4″	5/16″	5/16″	3/8″	—	—	—
Head Height	—	—	—	—	.050″	—	.060″	—	.093″	.110″	.120″	.155″	.190″	—	—	—

Metric Sizes, mm	**M1**	**M1.2**	**M1.4**	**M1.6**	**M2**	**M2.5**	**M2.6**	**M3**	**M3.5**	**M4**	**M5**	**M6**	**M8**	**M10**
Pitch	0.25	0.25	0.30	0.35	0.4	0.45	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5
Head Diameter— *Phillips and Slotted*														
Pan	—	—	—	3.2	4	5	5	6	7	8	10	12	16	20
Flat	—	—	—	3	3.8	4.7	—	5.6	6.5	7.5	9.2	11	14.5	18
Oval	—	—	—	—	—	4.7	—	5.6	—	7.5	9.2	11	14.5	—
Cheese	2	2.3	2.6	3	3.8	4.5	—	5.5	6	7	8.5	10	13	—
Head Height— *Phillips and Slotted*														
Pan (Phillips)	—	—	—	1.3	1.6	2	—	2.4	2.7	3.1	3.8	4.6	6	7.5
Pan (Slotted)	—	—	—	—	1.2	1.5	1.5	1.8	2.1	2.4	3	3.6	4.8	—
Flat	—	—	—	.96	1.2	1.5	—	1.65	1.93	2.2	2.5	3	4	5
Oval	—	—	—	—	—	2.1	—	2.4	—	3.2	3.75	4.5	6	—
Cheese	0.7	0.8	0.9	1	1.3	1.6	—	2	2.4	2.6	3.3	3.9	5	—

Pan Head Phillips

Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Length is measured from under the head.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Pkg.
2-56—#1 Drive			
1/8″	100	91735A003	$9.99
3/16″	100	91735A007	10.00
1/4″	100	91735A010	10.58
5/16″	100	91735A013	11.02
3/8″	50	91735A017	5.70
7/16″	50	91735A019	5.75
1/2″	50	91735A021	6.18
5/8″	50	91735A025	6.60
3/4″	50	91735A029	7.10
1″	50	91735A033	8.50
4-40—#1 Drive			
3/16″	50	91735A101	5.65
1/4″	50	91735A102	4.33
5/16″	50	91735A103	4.62
3/8″	50	91735A104	5.15
7/16″	50	91735A105	5.50
1/2″	50	91735A106	5.52
5/8″	50	91735A109	6.97
3/4″	50	91735A113	8.15
7/8″	50	91735A115	8.93
1″	50	91735A117	9.90
6-32—#2 Drive			
3/16″	50	91735A142	5.85
1/4″	50	91735A144	4.16
5/16″	50	91735A145	5.10
3/8″	50	91735A146	5.37
7/16″	50	91735A147	10.26
1/2″	50	91735A148	5.49
5/8″	50	91735A150	6.05
3/4″	50	91735A151	6.44
7/8″	50	91735A152	7.71
1″	50	91735A154	7.39
1 1/4″	50	91735A161	8.94
1 1/2″	25	91735A165	6.61
2″	25	91735A170	9.44
8-32—#2 Drive			
1/4″	50	91735A190	5.17
5/16″	50	91735A191	5.47
3/8″	50	91735A192	5.53
7/16″	50	91735A193	7.86
8-32 (Cont.)			
1/2″	50	91735A194	$6.83
5/8″	50	91735A196	8.11
3/4″	50	91735A197	8.28
7/8″	25	91735A198	6.42
1″	25	91735A199	5.40
1 1/4″	25	91735A205	7.99
1 1/2″	25	91735A208	8.64
2″	10	91735A210	5.31
2 1/2″	10	91735A215	6.53
10-24—#2 Drive			
3/8″	50	91735A240	7.68
1/2″	25	91735A242	5.05
5/8″	25	91735A243	6.39
3/4″	25	91735A245	5.61
1″	25	91735A247	6.39
1 1/4″	25	91735A251	9.95
1 1/2″	10	91735A255	5.00
10-32—#2 Drive			
1/4″	50	91735A821	8.92
5/16″	50	91735A824	9.95
3/8″	50	91735A827	8.74
1/2″	25	91735A829	4.98
5/8″	25	91735A830	5.59
3/4″	25	91735A831	5.61
7/8″	25	91735A832	7.98
1″	25	91735A833	6.39
1 1/4″	25	91735A837	9.95
1 1/2″	10	91735A841	4.35
2″	10	91735A845	7.24
1/4″-20—#3 Drive			
1/4″	25	91735A530	9.91
3/8″	25	91735A535	9.81
1/2″	25	91735A537	7.53
5/8″	25	91735A539	9.88
3/4″	25	91735A540	8.00
1″	25	91735A542	9.83
1 1/4″	25	91735A544	11.64
1 1/2″	10	91735A546	5.89
2″	10	91735A548	7.24

18-8 Stainless Steel

Lg.	Pkg. Qty.		Pkg.
0-80—#0 Drive			
3/32″	100	91772A049	5.86
1/8″	100	91772A052	7.07
5/32″	100	91772A051	6.05
3/16″	100	91772A054	7.29
7/32″	100	91772A058	6.21
1/4″	100	91772A055	7.51
9/32″	100	91772A061	6.30
5/16″	100	91772A056	7.69
11/32″	100	91772A062	6.51
3/8″	100	91772A057	7.87
7/16″	100	91772A064	6.67
1/2″	100	91772A059	8.05
5/8″	100	91772A060	9.34
3/4″	100	91772A071	9.95
7/8″	100	91772A069	7.09
1″	50	91772A102	8.22
1-64—#0 Drive			
1/4″	100	91772A166	11.83
3/8″	100	91772A168	12.67
1/2″	100	91772A170	13.81
1-72—#0 Drive			
1/8″	100	91772A063	10.15
3/16″	100	91772A065	10.99
1/4″	100	91772A066	11.83
5/16″	100	91772A067	12.25
3/8″	100	91772A068	12.67
1/2″	100	91772A070	13.81
5/8″	100	91772A072	9.70
3/4″	100	91772A075	10.92
1″	50	91772A187	11.09
2-56—#1 Drive			
1/8″	100	91772A074	6.91
5/32″	100	91772A073	3.00
3/16″	100	91772A076	5.74
1/4″	100	91772A077	4.49
5/16″	100	91772A078	4.49
2-56 (Cont.)			
3/8″	100	91772A079	4.71
7/16″	100	91772A080	5.54
1/2″	100	91772A081	5.29
9/16″	100	91772A265	3.10
5/8″	100	91772A082	4.15
3/4″	100	91772A084	4.27
7/8″	100	91772A085	4.66
1″	100	91772A086	4.82
1 1/4″	100	91772A266	9.83
1 1/2″	50	91772A267	11.63
3-48—#1 Drive			
1/8″	100	91772A089	7.87
3/16″	100	91772A091	8.00
1/4″	100	91772A092	8.13
5/16″	100	91772A093	8.26
3/8″	100	91772A094	8.60
1/2″	100	91772A096	9.77
5/8″	100	91772A097	11.18
3/4″	100	91772A099	13.19
1″	50	91772A101	8.23
3-56—#1 Drive			
1/4″	100	91772A030	7.70
5/16″	100	91772A032	8.43
3/8″	100	91772A050	9.17
1/2″	100	91772A053	9.77
4-40—#1 Drive			
1/8″	100	91772A103	4.27
3/16″	100	91772A105	3.92
1/4″	100	91772A106	3.98
5/16″	100	91772A107	4.20
3/8″	100	91772A108	4.30
7/16″	100	91772A109	4.36
1/2″	100	91772A110	4.45
9/16″	100	91772A111	4.41
5/8″	100	91772A112	4.32
11/16″	100	91772A117	4.57

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
4-40 (Cont.)			
3/4″	100	91772A113	$4.95
7/8″	100	91772A114	5.03
1″	100	91772A115	5.29
1 1/8″	100	91772A118	6.49
1 1/4″	100	91772A116	6.57
1 3/8″	100	91772A122	8.78
1 1/2″	100	91772A119	6.85
1 3/4″	100	91772A120	8.86
2″	100	91772A121	9.40
2 1/2″	50	91772A137	9.86
2 3/4″	50	91772A127	13.01
3″	25	91772A138	6.81
4-48—#1 Drive			
1/4″	100	91772A741	9.98
3/8″	100	91772A742	9.79
1/2″	50	91772A743	8.27
5-40—#2 Drive			
3/16″	100	91772A123	6.22
1/4″	100	91772A124	5.28
5/16″	100	91772A125	5.80
3/8″	100	91772A126	6.36
1/2″	100	91772A128	7.01
5/8″	100	91772A130	8.92
3/4″	100	91772A131	9.95
1″	50	91772A133	7.97
6-32—#2 Drive			
1/8″	100	91772A142	5.27
3/16″	100	91772A143	6.19
1/4″	100	91772A144	4.55
5/16″	100	91772A145	4.60
3/8″	100	91772A146	4.49
7/16″	100	91772A149	4.73
1/2″	100	91772A148	5.14
9/16″	100	91772A162	4.63
5/8″	100	91772A150	5.60
3/4″	100	91772A151	6.28
7/8″	100	91772A152	6.66
1″	100	91772A153	7.43
1 1/8″	100	91772A154	6.58
1 1/4″	100	91772A155	8.39
1 3/8″	100	91772A156	7.68
1 1/2″	100	91772A157	10.14
1 5/8″	100	91772A159	9.96
1 3/4″	100	91772A158	9.29
1 7/8″	100	91772A164	8.82
2″	100	91772A160	9.88
2 1/4″	50	91772A167	6.93
2 1/2″	50	91772A161	6.23
2 3/4″	50	91772A165	6.66
3″	50	91772A163	7.84
8-32—#2 Drive			
1/8″	100	91772A188	10.31
3/16″	100	91772A189	9.06
1/4″	100	91772A190	6.42
5/16″	100	91772A191	6.56
3/8″	100	91772A192	6.88
7/16″	100	91772A193	6.64
1/2″	100	91772A194	7.54
9/16″	100	91772A200	7.03
5/8″	100	91772A196	8.33
3/4″	100	91772A197	9.16
7/8″	100	91772A198	9.36
1″	100	91772A199	10.45
1 1/8″	100	91772A211	9.09
1 1/4″	100	91772A201	10.47
1 3/8″	50	91772A202	6.83
1 1/2″	50	91772A203	7.36
1 3/4″	50	91772A204	7.68
2″	50	91772A205	9.91
2 1/4″	50	91772A206	9.04
2 1/2″	50	91772A207	10.07
2 3/4″	50	91772A208	11.36
3″	25	91772A209	6.56
3 1/2″	10	91772A213	4.90
4″	10	91772A217	5.59
10-24—#2 Drive			
1/4″	100	91772A238	9.10
5/16″	100	91772A239	9.16
10-24 (Cont.)			
3/8″	100	91772A240	$9.79
7/16″	100	91772A241	9.98
1/2″	100	91772A242	10.48
5/8″	100	91772A244	11.27
3/4″	100	91772A245	12.03
7/8″	100	91772A246	13.80
1″	50	91772A247	7.28
1 1/8″	50	91772A248	7.99
1 1/4″	50	91772A249	8.31
1 1/2″	50	91772A251	9.20
1 3/4″	50	91772A252	9.20
2″	50	91772A253	13.21
2 1/4″	50	91772A254	12.54
2 1/2″	25	91772A255	7.50
2 3/4″	25	91772A256	7.06
3″	25	91772A257	8.16
3 1/2″	10	91772A264	5.02
4″	10	91772A269	5.45
10-32—#2 Drive			
3/16″	100	91772A824	8.43
1/4″	100	91772A825	8.90
5/16″	100	91772A826	9.43
3/8″	100	91772A827	9.64
7/16″	100	91772A818	10.23
1/2″	100	91772A829	10.75
9/16″	100	91772A819	10.78
5/8″	100	91772A830	11.15
3/4″	100	91772A831	12.43
7/8″	100	91772A832	14.16
1″	50	91772A833	7.84
1 1/8″	50	91772A834	8.00
1 1/4″	50	91772A835	8.38
1 3/8″	50	91772A820	10.07
1 1/2″	50	91772A836	9.51
1 3/4″	50	91772A837	12.47
2″	25	91772A838	7.65
2 1/4″	25	91772A839	6.27
2 1/2″	25	91772A840	8.02
2 3/4″	25	91772A841	7.06
3″	25	91772A842	8.99
3 1/2″	25	91772A846	10.40
4″	25	91772A850	11.78
4 1/2″	10	91772A854	5.36
12-24—#3 Drive			
3/8″	100	91772A289	7.72
1/2″	100	91772A291	10.86
5/8″	50	91772A292	6.14
3/4″	50	91772A294	6.32
1″	50	91772A296	8.58
1 1/4″	50	91772A297	10.22
1 1/2″	50	91772A299	11.74
2″	25	91772A302	7.56
1/4″-20—#3 Drive			
1/4″	50	91772A533	7.18
5/16″	50	91772A534	7.41
3/8″	50	91772A535	7.53
1/2″	50	91772A537	10.28
5/8″	50	91772A539	8.18
3/4″	50	91772A540	13.09
7/8″	50	91772A541	10.13
1″	25	91772A542	8.76
1 1/8″	25	91772A543	6.88
1 1/4″	25	91772A544	7.97
1 3/8″	25	91772A545	7.76
1 1/2″	25	91772A546	9.39
1 3/4″	25	91772A548	8.15
2″	25	91772A550	12.13
2 1/4″	25	91772A551	10.25
2 1/2″	25	91772A552	13.21
2 3/4″	10	91772A553	5.24
3″	10	91772A554	6.06
3 1/2″	10	91772A701	6.58
4″	10	91772A703	8.77
4 1/2″	10	91772A556	8.19
5″	5	91772A706	6.55
6″	5	91772A709	8.13

(Continued on following page)

Pan Head Phillips *(Continued from previous page)*

Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Length is measured from under the head.

18-8 Stainless Steel (Cont.)

¼″-28—#3 Drive

Lg.	Pkg. Qty.		Pkg.
3/8″	50	91772A555	$8.83
1/2″	50	91772A557	9.49
5/8″	50	91772A560	10.24
3/4″	25	91772A559	6.86
1″	25	91772A561	7.09
1 1/4″	25	91772A563	9.30
1 1/2″	25	91772A564	9.95
2″	25	91772A568	10.56
2 1/2″	25	91772A572	12.38
3″	10	91772A575	5.70

5/16″-18—#4 Drive

Lg.	Pkg. Qty.		Pkg.
1/2″	25	91772A620	9.70
5/8″	25	91772A621	8.32
3/4″	25	91772A622	10.36
1″	10	91772A624	5.05
1 1/4″	10	91772A625	5.52
1 1/2″	10	91772A628	7.04
1 3/4″	10	91772A630	7.39
2″	10	91772A632	7.75
2 1/2″	10	91772A634	9.62

5/16″-18 (Cont.)

Lg.	Pkg. Qty.		Pkg.
2 3/4″	10	91772A635	$8.18
3″	10	91772A636	11.88
3 1/2″	5	91772A638	8.02
4″	5	91772A640	9.02
5″	1	91772A648	3.43
6″	1	91772A656	5.35

3/8″-16—#4 Drive

Lg.	Pkg. Qty.		Pkg.
1/2″	10	91772A673	7.55
3/4″	10	91772A675	6.98
1″	10	91772A677	8.20
1 1/4″	10	91772A679	10.81
1 1/2″	10	91772A681	11.13
1 3/4″	10	91772A682	10.87
2″	5	91772A683	7.76
2 1/2″	5	91772A685	8.91
3″	5	91772A687	9.97
4″	1	91772A691	2.75
5″	1	91772A695	4.46
6″	1	91772A711	6.17

Black-Oxide 18-8 Stainless Steel

0-80—#0 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	50	91249A010	8.67
3/16″	50	91249A013	5.68
1/4″	50	91249A016	7.03
5/16″	50	91249A019	7.45
3/8″	50	91249A021	8.45
1/2″	50	91249A024	10.25

2-56—#1 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	100	91249A042	7.75
3/16″	100	91249A046	4.04
1/4″	100	91249A050	3.60
5/16″	100	91249A052	3.15
3/8″	100	91249A054	4.16
7/16″	100	91249A047	5.12
1/2″	100	91249A058	4.42
5/8″	100	91249A060	6.33
3/4″	100	91249A063	7.16
1″	100	91249A066	8.02

4-40—#1 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	100	91249A101	4.76
3/16″	100	91249A102	5.53
1/4″	100	91249A105	4.16
5/16″	100	91249A107	5.81
3/8″	100	91249A108	4.58
7/16″	100	91249A109	6.14
1/2″	100	91249A111	5.08
9/16″	100	91249A112	6.77
5/8″	100	91249A115	7.37
3/4″	100	91249A119	7.60
7/8″	100	91249A120	8.61
1″	100	91249A123	9.48
1 1/2″	50	91249A126	8.25
2″	50	91249A129	10.44

6-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	100	91249A139	11.50
3/16″	100	91249A141	6.70
1/4″	100	91249A144	4.79
5/16″	100	91249A145	6.85
3/8″	100	91249A146	5.40
7/16″	100	91249A147	8.29
1/2″	100	91249A148	6.48
5/8″	50	91249A151	9.29

6-32 (Cont.)

Lg.	Pkg. Qty.		Pkg.
3/4″	50	91249A155	6.60
7/8″	50	91249A156	7.56
1″	50	91249A159	9.82
1 1/4″	50	91249A161	10.45
1 1/2″	50	91249A164	8.64

8-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	100	91249A189	9.86
5/16″	100	91249A190	10.15
3/8″	100	91249A192	7.62
1/2″	100	91249A194	9.02
5/8″	100	91249A196	9.34
3/4″	100	91249A197	9.61
1″	50	91249A201	9.61
1 1/4″	25	91249A204	10.24
1 1/2″	25	91249A207	10.34

10-24—#2 Drive

Lg.	Pkg. Qty.		Pkg.
3/8″	100	91249A240	9.97
1/2″	100	91249A242	11.37
5/8″	100	91249A244	12.30
3/4″	100	91249A245	14.70
1″	25	91249A248	11.14
1 1/2″	25	91249A251	14.36

10-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	100	91249A258	13.16
5/16″	50	91249A259	13.31
3/8″	100	91249A260	9.97
1/2″	100	91249A263	11.37
5/8″	100	91249A266	12.30
3/4″	100	91249A269	14.70
7/8″	25	91249A270	10.78
1″	50	91249A272	12.36
1 1/4″	25	91249A275	13.92
1 1/2″	25	91249A278	14.44

¼″-20—#3 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	25	91249A528	12.41
3/8″	25	91249A531	13.99
1/2″	50	91249A537	12.08
5/8″	50	91249A539	13.78
3/4″	25	91249A541	8.56
1″	25	91249A547	11.67
1 1/2″	10	91249A550	12.66
2″	10	91249A553	14.52

Chrome-Plated 18-8 Stainless Steel

4-40—#1 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	10	94836A210	6.20
3/8″	10	94836A213	6.23
1/2″	10	94836A216	6.26

6-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	10	94836A250	6.26
3/8″	10	94836A253	6.29
1/2″	10	94836A256	3.10
3/4″	10	94836A259	3.43

8-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/2″	10	94836A310	6.51
3/4″	10	94836A313	6.69

8-32 (Cont.)

Lg.	Pkg. Qty.		Pkg.
1″	10	94836A316	3.40
1 1/2″	10	94836A319	6.43

10-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/2″	10	94836A360	5.93
3/4″	10	94836A363	3.16
1″	10	94836A366	7.03
1 1/2″	10	94836A369	7.43

¼″-20—#3 Drive

Lg.	Pkg. Qty.		Pkg.
3/4″	10	94836A420	4.32
1″	10	94836A423	5.20
1 1/2″	10	94836A426	6.40
2″	10	94836A429	6.57

Brass

0-80—#0 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	100	94070A031	$9.69
3/8″	100	94070A035	10.50
1/2″	100	94070A039	11.17

1-64—#0 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	50	94070A043	7.87
3/8″	50	94070A047	8.68
1/2″	50	94070A051	9.59

2-56—#1 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	100	94070A074	4.66
3/16″	100	94070A076	4.25
1/4″	100	94070A077	4.44
3/8″	100	94070A079	5.45
1/2″	100	94070A081	5.75
3/4″	100	94070A084	7.72

4-40—#1 Drive

Lg.	Pkg. Qty.		Pkg.
3/16″	100	94070A105	6.07
1/4″	100	94070A106	6.55
5/16″	100	94070A107	5.98
3/8″	100	94070A108	6.45
1/2″	100	94070A110	8.80
5/8″	100	94070A112	7.80
3/4″	100	94070A113	9.46
1″	100	94070A115	11.71

5-40—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	100	94070A124	7.38
1/2″	100	94070A128	9.29
3/4″	100	94070A131	13.31

6-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
3/16″	100	94070A142	8.88
1/4″	100	94070A144	7.59
5/16″	100	94070A145	8.03
3/8″	100	94070A146	8.64
1/2″	100	94070A148	9.39
5/8″	100	94070A150	10.52
3/4″	100	94070A151	11.56
1″	100	94070A153	14.95
1 1/4″	50	94070A155	9.59
1 1/2″	50	94070A157	10.74
2″	50	94070A159	14.95

8-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	100	94070A190	10.15
5/16″	100	94070A191	11.11

8-32 (Cont.)

Lg.	Pkg. Qty.		Pkg.
3/8″	100	94070A192	$12.27
1/2″	100	94070A194	14.95
5/8″	50	94070A196	8.80
3/4″	50	94070A197	9.26
1″	50	94070A199	10.91
1 1/4″	25	94070A201	7.50
1 1/2″	25	94070A203	8.84
2″	25	94070A205	10.99

10-24—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	100	94070A236	14.25
5/16″	100	94070A238	14.50
3/8″	100	94070A240	14.98
1/2″	50	94070A242	10.70
5/8″	50	94070A244	11.07
3/4″	50	94070A245	14.90
1″	50	94070A247	14.95
1 1/4″	25	94070A249	9.29
1 1/2″	25	94070A251	10.91
2″	25	94070A255	13.60

10-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
3/16″	100	94070A824	14.80
1/4″	100	94070A825	14.90
5/16″	100	94070A826	14.95
3/8″	50	94070A827	8.83
1/2″	50	94070A829	10.70
5/8″	50	94070A830	11.07
3/4″	50	94070A831	14.90
1″	50	94070A833	14.95
1 1/4″	25	94070A835	9.29
1 1/2″	25	94070A836	10.91
2″	25	94070A838	13.59

¼″-20—#3 Drive

Lg.	Pkg. Qty.		Pkg.
3/8″	25	94070A535	9.37
1/2″	25	94070A537	10.75
5/8″	25	94070A539	11.22
3/4″	25	94070A540	12.19
1″	10	94070A542	6.36
1 1/4″	10	94070A544	7.61
1 1/2″	10	94070A546	8.37
2″	10	94070A550	10.17

Zinc-Plated Steel

0-80—#0 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	50	90272A020	8.08
3/16″	50	90272A025	6.68
1/4″	50	90272A030	6.70

1-72—#0 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	50	90272A040	7.58
3/16″	50	90272A045	6.78
1/4″	50	90272A050	6.84

2-56—#1 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	100	90272A075	4.33
3/16″	100	90272A076	4.67
1/4″	100	90272A077	2.64
5/16″	100	90272A078	3.28
3/8″	100	90272A079	3.28
7/16″	100	90272A080	6.78
1/2″	100	90272A081	4.30
9/16″	100	90272A082	8.75
5/8″	100	90272A083	8.71
3/4″	100	90272A084	7.39
7/8″	100	90272A085	6.73
1″	100	90272A086	6.20
1 1/4″	50	90272A087	5.98
1 1/2″	25	90272A088	6.53

3-48—#1 Drive

Lg.	Pkg. Qty.		Pkg.
3/16″	100	90272A091	5.66
1/4″	100	90272A092	5.71
5/16″	100	90272A093	6.86
3/8″	100	90272A094	8.00
1/2″	100	90272A096	7.45
5/8″	100	90272A097	7.26
3/4″	100	90272A098	8.22

4-40—#1 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	100	90272A103	8.18
3/16″	100	90272A105	1.51
1/4″	100	90272A106	1.36

4-40 (Cont.)

Lg.	Pkg. Qty.		Pkg.
5/16″	100	90272A107	1.41
3/8″	100	90272A108	1.49
7/16″	100	90272A109	2.36
1/2″	100	90272A110	1.63
9/16″	50	90272A111	3.50
5/8″	100	90272A112	1.95
3/4″	100	90272A113	2.16
7/8″	100	90272A114	2.21
1″	100	90272A115	2.70
1 1/4″	100	90272A117	8.47
1 1/2″	50	90272A119	5.22
2″	50	90272A121	6.30

5-40—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/4″	100	90272A124	8.14
5/16″	100	90272A125	7.63
3/8″	100	90272A126	7.33
1/2″	100	90272A128	8.80
5/8″	100	90272A129	7.98
3/4″	100	90272A130	9.35

6-32—#2 Drive

Lg.	Pkg. Qty.		Pkg.
1/8″	100	90272A142	7.69
3/16″	100	90272A143	1.76
1/4″	100	90272A144	1.70
5/16″	100	90272A145	1.85
3/8″	100	90272A146	1.98
7/16″	100	90272A147	2.01
1/2″	100	90272A148	2.17
5/8″	100	90272A150	2.50
3/4″	100	90272A151	2.79
7/8″	100	90272A152	3.06
1″	100	90272A153	3.29
1 1/4″	100	90272A155	3.67
1 1/2″	100	90272A157	4.12

(Continued on following page)

Pan Head Phillips *(Continued from previous page)*

Lg.	Pkg. Qty.		Pkg.
Zinc-Plated Steel (Cont.)			
6-32 (Cont.)			
2″	100	90272A159	$6.16
2½″	25	90272A161	8.49
3″	25	90272A163	9.95
4″	5	99117A110★	5.22
6″	5	99117A130★	9.05
8″	5	99117A150★	9.55
8-32—#2 Drive			
3/16″	100	90272A189	5.66
1/4″	100	90272A190	2.44
5/16″	100	90272A191	2.53
3/8″	100	90272A192	2.72
7/16″	100	90272A193	3.59
1/2″	100	90272A194	2.93
5/8″	100	90272A196	3.44
3/4″	100	90272A197	3.82
7/8″	100	90272A198	4.64
1″	100	90272A199	4.52
1 1/4″	100	90272A201	5.31
1 1/2″	100	90272A203	6.01
1 3/4″	100	90272A204	7.14
2″	100	90272A205	7.85
2 1/2″	25	90272A750	3.60
3″	25	90272A209	3.57
4″	5	99117A300★	4.84
6″	5	99117A320★	5.67
8″	5	99117A340★	6.90
10″	5	99117A360★	10.04
12″	5	99117A380★	10.75
10-24—#2 Drive			
1/4″	100	90272A238	$3.34
5/16″	100	90272A239	5.20
3/8″	100	90272A240	3.66
7/16″	100	90272A241	3.74
1/2″	100	90272A242	4.02
5/8″	100	90272A244	4.62
3/4″	100	90272A245	5.00
7/8″	100	90272A248	5.52
1″	100	90272A247	5.92
1 1/4″	100	90272A249	6.91
1 1/2″	100	90272A251	7.90
1 3/4″	100	90272A252	9.24
2″	100	90272A253	10.14
2 1/2″	100	90272A255	12.41
3″	50	90272A257	8.01
3 1/2″	10	90272A259	6.68
4″	10	90272A261	9.59
6″	5	99117A530★	6.46
8″	5	99117A550★	8.04
10″	5	99117A570★	9.53
12″	5	99117A590★	10.30
14″	5	99117A610★	11.05
10-32—#2 Drive			
1/4″	100	90272A825	3.66
5/16″	100	90272A826	3.65
3/8″	100	90272A827	3.68
7/16″	100	90272A828	3.84
1/2″	100	90272A829	4.22

★ Has a combination drive that accepts both Phillips and slotted drivers.

Lg.	Pkg. Qty.		Pkg.
Zinc-Plated Steel (Cont.)			
10-32 (Cont.)			
5/8″	100	90272A830	$4.67
3/4″	100	90272A831	5.47
7/8″	100	90272A832	5.79
1″	100	90272A833	6.22
1 1/4″	100	90272A835	6.79
1 1/2″	100	90272A836	8.44
1 3/4″	100	90272A837	10.84
2″	100	90272A838	9.95
2 1/2″	50	90272A840	7.04
3″	50	90272A842	7.71
4″	5	99117A700★	5.26
6″	5	99117A720★	6.37
8″	5	99117A740★	9.06
10″	5	99117A760★	10.39
12″	5	99117A780★	11.28
12-24—#3 Drive			
3/8″	50	90272A289	5.85
1/2″	100	90272A291	5.52
3/4″	100	90272A294	6.64
1″	100	90272A296	7.95
1 1/2″	25	90272A299	6.74
2″	25	90272A301	8.61
1/4″-20—#3 Drive			
1/4″	100	90272A531	9.38
3/8″	100	90272A535	6.92
1/2″	100	90272A537	7.86
5/8″	100	90272A539	8.06
3/4″	100	90272A540	9.92
1/4″-20 (Cont.)			
7/8″	100	90272A541	$10.40
1″	100	90272A542	10.88
1 1/4″	100	90272A544	12.28
1 1/2″	100	90272A546	14.92
1 3/4″	100	90272A547	14.14
2″	50	90272A550	9.92
2 1/2″	50	90272A552	9.95
3″	25	90272A554	7.14
3 1/2″	10	90272A556	7.26
4″	10	90272A558	7.81
6″	5	99117A870★	3.81
8″	5	99117A890★	8.77
10″	5	99117A910★	11.34
12″	5	99117A930★	11.95
14″	5	99117A950★	12.55
16″	5	99117A970★	13.59
1/4″-28—#3 Drive			
3/8″	50	90272A610	4.62
1/2″	50	90272A620	9.58
3/4″	50	90272A630	9.84
5/16″-18—#4 Drive			
1/2″	25	90272A575	6.62
5/8″	25	90272A580	6.02
3/4″	25	90272A581	4.57
1″	25	90272A583	5.73
2″	25	90272A591	10.57
3″	25	90272A592	11.58

Pan Head Slotted

Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Length is measured from under the head.

Lg.	Pkg. Qty.		Pkg.
Type 316 Stainless Steel			
6-32			
1/4″	100	93923A372	$9.83
3/8″	50	93923A375	5.57
1/2″	50	93923A378	6.31
8-32			
1/4″	50	93923A421	6.97
3/8″	50	93923A424	8.11
1/2″	50	93923A427	8.93
18-8 Stainless Steel			
0-80			
1/8″	100	91792A052	7.55
3/16″	100	91792A054	9.46
1/4″	100	91792A055	11.50
3/8″	100	91792A057	12.08
1/2″	100	91792A059	14.90
3/4″	50	91792A071	8.64
1″	50	91792A102	10.49
1-64			
1/4″	100	91792A166	14.86
3/8″	100	91792A168	14.95
1/2″	50	91792A170	9.42
1-72			
1/8″	100	91792A063	11.05
3/16″	100	91792A065	12.24
1/4″	100	91792A066	14.43
5/16″	100	91792A067	13.57
3/8″	100	91792A068	14.62
1/2″	50	91792A070	8.21
1″	50	91792A187	13.44
2-56			
1/8″	100	91792A074	9.32
3/16″	100	91792A076	4.10
1/4″	100	91792A077	4.16
5/16″	100	91792A078	4.31
3/8″	100	91792A079	4.33
7/16″	100	91792A080	5.04
1/2″	100	91792A081	5.32
5/8″	100	91792A083	5.51
3/4″	100	91792A084	6.15
7/8″	100	91792A085	6.73
1″	100	91792A086	7.28
1 1/4″	50	91792A266	10.48
3-48			
1/8″	50	91792A089	6.91
3/16″	100	91792A091	9.52
10-32			
3/8″	50	93923A533	$9.53
1/2″	50	93923A536	9.89
1/4″-20			
1/2″	25	93923A701	7.75
3/4″	25	93923A704	9.18
1″	25	93923A707	9.98
3-48 (Cont.)			
1/4″	100	91792A092	7.61
5/16″	100	91792A093	8.32
3/8″	100	91792A094	8.73
1/2″	100	91792A096	9.95
3/4″	50	91792A099	7.29
1″	50	91792A101	10.56
4-40			
1/8″	100	91792A103	10.26
3/16″	100	91792A105	4.70
1/4″	100	91792A106	4.42
5/16″	100	91792A107	4.82
3/8″	100	91792A108	5.08
7/16″	100	91792A109	5.46
1/2″	100	91792A110	5.56
5/8″	100	91792A112	5.88
3/4″	100	91792A113	6.33
7/8″	100	91792A114	7.08
1″	100	91792A115	7.88
1 1/4″	100	91792A117	9.92
1 1/2″	100	91792A119	10.95
4-48			
1/4″	50	91792A741	8.02
1/2″	50	91792A743	10.26
5-40			
3/16″	100	91792A123	9.85
1/4″	100	91792A124	5.63
5/16″	100	91792A125	6.11
3/8″	100	91792A126	6.46
1/2″	100	91792A128	6.78
5/8″	100	91792A130	7.48
3/4″	100	91792A131	8.07
1″	100	91792A133	11.37
1 1/2″	50	91792A135	9.06

Lg.	Pkg. Qty.		Pkg.
18-8 Stainless Steel (Cont.)			
6-32			
1/8″	100	91792A142	$10.87
3/16″	100	91792A143	5.54
1/4″	100	91792A144	4.84
5/16″	100	91792A145	5.02
3/8″	100	91792A146	5.09
7/16″	100	91792A147	5.26
1/2″	100	91792A148	5.59
5/8″	100	91792A150	6.47
3/4″	100	91792A151	6.66
7/8″	100	91792A152	7.38
1″	100	91792A153	8.15
1 1/4″	100	91792A155	9.93
1 1/2″	100	91792A157	12.27
1 3/4″	50	91792A158	7.16
2″	50	91792A159	9.08
2 1/2″	50	91792A161	10.12
3″	25	91792A163	6.30
8-32			
3/16″	100	91792A189	4.68
1/4″	100	91792A190	4.83
5/16″	100	91792A191	5.14
3/8″	100	91792A192	5.53
7/16″	100	91792A193	6.06
1/2″	100	91792A194	6.16
5/8″	100	91792A196	6.98
3/4″	100	91792A197	7.92
7/8″	100	91792A198	9.26
1″	100	91792A199	9.62
1 1/4″	50	91792A201	6.05
1 1/2″	50	91792A203	6.27
1 3/4″	50	91792A204	7.89
2″	50	91792A205	8.56
2 1/4″	50	91792A206	11.44
2 1/2″	50	91792A207	12.01
2 3/4″	25	91792A208	6.65
3″	25	91792A209	7.01
10-24			
1/4″	100	91792A238	7.17
5/16″	100	91792A241	7.39
3/8″	100	91792A240	8.19
1/2″	100	91792A242	8.76
10-24 (Cont.)			
5/8″	100	91792A244	$10.31
3/4″	100	91792A245	11.09
7/8″	50	91792A246	5.99
1″	50	91792A247	6.49
1 1/4″	50	91792A249	8.81
1 1/2″	50	91792A251	10.67
1 3/4″	50	91792A252	11.13
2″	25	91792A253	6.91
2 1/4″	25	91792A254	7.36
2 1/2″	25	91792A255	7.87
3″	25	91792A257	8.51
10-32			
1/4″	100	91792A825	7.17
5/16″	100	91792A826	7.39
3/8″	100	91792A827	8.19
1/2″	100	91792A829	8.76
5/8″	100	91792A830	10.31
3/4″	100	91792A831	11.09
7/8″	50	91792A832	5.99
1″	50	91792A833	6.49
1 1/4″	50	91792A835	8.81
1 1/2″	50	91792A836	10.67
1 3/4″	50	91792A837	11.13
2″	25	91792A838	6.91
2 1/4″	25	91792A839	7.36
2 1/2″	25	91792A840	7.87
3″	25	91792A842	8.51
12-24			
3/8″	50	91792A289	6.36
1/2″	50	91792A291	7.81
3/4″	50	91792A294	8.06
1″	50	91792A296	9.76
1 1/4″	25	91792A295	6.46
1 1/2″	25	91792A299	6.86
1/4″-20			
1/4″	50	91792A533	9.87
3/8″	50	91792A535	6.93
1/2″	50	91792A537	8.63
5/8″	50	91792A539	10.99
3/4″	50	91792A540	11.07
7/8″	25	91792A541	6.21

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Pan Head Slotted *(Continued from previous page)*

Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Length is measured from under the head.

Lg.	Pkg. Qty.		Pkg.
18-8 Stainless Steel (Cont.)			
¼″-20 (Cont.)			
1″	25	91792A542	$6.42
1¼″	25	91792A544	6.74
1½″	25	91792A546	9.11
1¾″	25	91792A548	9.27
2″	25	91792A550	10.33
2½″	25	91792A552	12.13
3″	10	91792A554	5.28
¼″-28			
3/8″	50	91792A555	9.89
1/2″	50	91792A557	9.88
3/4″	25	91792A559	7.33
1″	25	91792A561	9.17
1¼″	25	91792A563	10.56
Brass			
2-56			
1/8″	100	92446A074	4.79
3/16″	100	92446A076	4.79
1/4″	100	92446A077	4.83
3/8″	100	92446A079	4.22
1/2″	100	92446A081	4.74
3/4″	100	92446A084	5.47
3-48			
1/4″	100	92446A092	5.14
3/8″	100	92446A094	5.10
1/2″	100	92446A096	5.39
3/4″	100	92446A099	7.39
4-40			
1/8″	100	92446A103	4.65
3/16″	100	92446A105	5.19
1/4″	100	92446A106	5.16
3/8″	100	92446A108	5.58
1/2″	100	92446A110	6.11
5/8″	100	92446A112	6.79
3/4″	100	92446A113	7.28
1″	100	92446A115	8.41
1½″	100	92446A119	11.41
5-40			
1/4″	100	92446A124	6.00
3/4″	100	92446A131	9.89
1½″	100	92446A137	14.90
6-32			
1/4″	100	92446A144	6.34
5/16″	100	92446A145	7.82
3/8″	100	92446A146	7.16
1/2″	100	92446A148	8.02
5/8″	100	92446A150	9.06
3/4″	100	92446A151	10.10
1″	100	92446A153	11.82
1¼″	100	92446A155	14.39
5/16″-18			
1/2″	25	91792A578	$9.12
3/4″	25	91792A581	10.68
1″	25	91792A583	13.54
1½″	10	91792A587	6.47
2″	10	91792A591	8.05
3/8″-16			
1/2″	10	91792A619	6.79
3/4″	10	91792A622	7.43
1″	10	91792A624	8.99
1¼″	10	91792A626	9.46
1½″	10	91792A628	11.60
2″	10	91792A632	12.60
6-32 (Cont.)			
1½″	100	92446A157	14.23
2″	50	92446A159	11.21
8-32			
3/16″	100	92446A189	7.72
1/4″	100	92446A190	8.60
5/16″	100	92446A191	9.42
3/8″	100	92446A192	10.67
1/2″	100	92446A194	12.05
5/8″	100	92446A196	14.90
3/4″	100	92446A197	14.95
1″	50	92446A199	10.83
1¼″	50	92446A201	10.92
1½″	50	92446A203	13.32
2″	50	92446A206	14.95
3″	25	92446A209	12.37
10-24			
3/8″	100	92446A240	14.31
1/2″	50	92446A242	8.57
3/4″	50	92446A245	10.53
1″	50	92446A247	13.89
10-32			
3/16″	100	92446A824	13.24
1/4″	100	92446A825	13.50
5/16″	100	92446A826	13.71
3/8″	100	92446A827	14.95
1/2″	50	92446A829	8.97
5/8″	50	92446A830	10.26
3/4″	50	92446A831	10.53
1″	50	92446A833	13.89
1½″	25	92446A836	8.77
2″	25	92446A838	11.44
3″	10	92446A842	7.16
¼″-20			
3/8″	50	92446A535	14.18
1/2″	25	92446A537	8.56
Brass (Cont.)			
¼″-20 (Cont.)			
3/4″	25	92446A540	$10.23
1″	25	92446A542	10.86
1½″	25	92446A546	$14.95
2″	10	92446A550	8.59
Zinc-Plated Steel			
2-56			
1/4″	100	90283A077	3.36
3/8″	100	90283A079	3.65
1/2″	100	90283A081	3.55
5/8″	100	90283A083	3.75
3/4″	100	90283A084	3.88
4-40			
1/8″	100	90283A103	3.13
3/16″	100	90283A105	3.60
1/4″	100	90283A106	1.75
5/16″	100	90283A107	4.75
3/8″	100	90283A108	1.72
1/2″	100	90283A110	2.05
5/8″	100	90283A112	2.05
3/4″	100	90283A113	2.60
7/8″	100	90283A114	3.13
1″	100	90283A115	2.02
1¼″	100	90283A117	4.75
5-40			
1/4″	100	90283A124	3.85
3/8″	100	90283A126	4.44
1/2″	100	90283A128	4.07
6-32			
3/16″	100	90283A143	2.19
1/4″	100	90283A144	1.97
5/16″	100	90283A145	2.41
3/8″	100	90283A146	2.52
7/16″	100	90283A147	4.07
1/2″	100	90283A148	2.15
5/8″	100	90283A150	2.36
3/4″	100	90283A151	3.12
7/8″	100	90283A152	4.67
1″	100	90283A153	3.47
1¼″	100	90283A155	3.87
1½″	100	90283A157	3.25
2″	100	90283A159	6.01
8-32			
3/16″	100	90283A189	3.56
1/4″	100	90283A190	2.47
5/16″	100	90283A191	3.68
3/8″	100	90283A192	2.63
7/16″	100	90283A193	2.76
1/2″	100	90283A194	2.80
5/8″	100	90283A196	2.92
3/4″	100	90283A197	3.98
7/8″	100	90283A198	3.68
8-32 (Cont.)			
1″	100	90283A199	5.36
1¼″	100	90283A201	5.46
1½″	100	90283A203	6.72
1¾″	100	90283A204	8.08
2″	100	90283A205	7.52
10-24			
1/4″	100	90283A238	3.20
3/8″	100	90283A240	2.78
1/2″	100	90283A242	5.44
5/8″	100	90283A244	5.24
3/4″	100	90283A245	5.40
1″	100	90283A247	5.24
1¼″	100	90283A249	6.16
1½″	100	90283A251	7.76
2″	100	90283A253	9.56
3″	100	90283A257	13.50
10-32			
1/4″	100	90283A825	3.84
5/16″	100	90283A826	4.56
3/8″	100	90283A827	4.65
1/2″	100	90283A829	4.97
5/8″	100	90283A830	4.66
3/4″	100	90283A831	5.20
7/8″	100	90283A832	5.97
1″	100	90283A833	5.31
1¼″	100	90283A835	7.01
1½″	100	90283A836	7.24
2″	100	90283A838	10.91
2½″	50	90283A840	6.49
3″	50	90283A842	9.09
¼″-20			
3/8″	100	90283A535	6.70
1/2″	100	90283A537	8.14
5/8″	100	90283A539	8.97
3/4″	100	90283A540	8.76
1″	100	90283A542	8.73
1¼″	100	90283A544	9.10
1½″	100	90283A546	13.73
1¾″	50	90283A548	10.55
2″	50	90283A550	7.29
2½″	50	90283A552	9.90
3″	50	90283A554	12.33
5/16″-18			
3/4″	50	90283A581	9.66
1″	50	90283A583	11.44

Pan Head Combination Drive

The combination drive accepts both Phillips and slotted drivers. Screws are 18-8 stainless steel and fully threaded. Length is measured from under the head.

Lg.	Pkg. Qty.		Pkg.
6-32—#2 Phillips Drive			
1/4″	100	90604A144	$5.61
3/8″	100	90604A146	5.67
1/2″	100	90604A148	6.16
3/4″	100	90604A150	6.73
1″	100	90604A152	8.15
8-32—#2 Phillips Drive			
3/8″	100	90604A192	7.08
8-32 (Cont.)			
1/2″	100	90604A194	$7.82
5/8″	100	90604A196	8.51
3/4″	100	90604A197	9.08
1″	100	90604A199	12.07
10-24—#2 Phillips Drive			
3/8″	50	90604A240	5.29
1/2″	50	90604A242	5.65
10-24 (Cont.)			
3/4″	50	90604A245	$6.87
1″	50	90604A248	7.09
10-32—#2 Phillips Drive			
3/8″	50	90604A260	5.26
1/2″	50	90604A263	5.65
5/8″	50	90604A266	5.97
3/4″	50	90604A269	6.87
10-32 (Cont.)			
1″	50	90604A272	$7.09
¼″-20—#3 Phillips Drive			
1/2″	50	90604A537	10.23
5/8″	50	90604A539	11.19
3/4″	25	90604A541	5.96
1″	25	90604A545	6.77
1½″	25	90604A549	8.22

Pan Head Torx

With more drive surface than Phillips and slotted screws, you can apply extra force without slipping. For drivers, see pages 2848-2850; for bits, see pages 2823-2824.

Screws are fully threaded. Length is measured from under the head. **Black-coated steel** screws have a Class 3A thread fit.

Lg.	Pkg. Qty.		Pkg.
18-8 Stainless Steel			
000-120—T1 Torx Size			
1/8″	25	96710A001	$10.96
3/16″	25	96710A005	11.11
1/4″	25	96710A009	11.26
00-90—T2 Torx Size			
1/8″	25	96710A050	$10.37
3/16″	25	96710A054	10.44
1/4″	25	96710A058	10.52
18-8 Stainless Steel (Cont.)			
0-80—T5 Torx Size			
1/8″	50	96710A110	$6.52
3/16″	50	96710A113	6.69
1/4″	50	96710A116	6.73
2-56—T7 Torx Size			
3/16″	50	96710A150	$5.58
1/4″	50	96710A153	5.76
5/16″	25	96710A155	7.19

(Continued on following page)

Pan Head Torx *(Continued from previous page)*

Lg.	Pkg. Qty.		Pkg.
18-8 Stainless Steel (Cont.)			
2-56 (Cont.)			
3/8"	25	96710A158	$7.26
4-40—T10 Torx Size			
3/16"	50	96710A213	10.00
1/4"	50	96710A215	5.85
5/16"	50	96710A216	10.25
3/8"	50	96710A218	5.79
1/2"	50	96710A221	6.14
6-32—T15 Torx Size			
1/4"	50	96710A255	7.26
5/16"	50	96710A257	10.26
3/8"	50	96710A258	7.75
1/2"	50	96710A261	8.17
5/8"	50	96710A264	8.59
3/4"	50	96710A267	9.01
1"	50	96710A270	9.42
8-32—T20 Torx Size			
1/4"	50	96710A312	8.46
3/8"	50	96710A315	9.12
1/2"	50	96710A318	9.77
5/8"	50	96710A321	10.43
8-32 (Cont.)			
3/4"	50	96710A324	$11.08
1"	50	96710A327	11.74
10-24—T25 Torx Size			
3/8"	50	96710A461	11.12
1/2"	50	96710A465	11.73
3/4"	25	96710A471	6.56
1"	25	96710A475	6.89
10-32—T25 Torx Size			
1/4"	50	96710A572	10.41
3/8"	50	96710A576	11.12
1/2"	25	96710A578	7.41
5/8"	25	96710A580	6.29
3/4"	25	96710A584	6.56
1"	25	96710A586	6.84
1/4"-20—T30 Torx Size			
1/2"	25	96710A733	6.80
3/4"	25	96710A737	7.07
1"	25	96710A742	7.35
1 1/2"	25	96710A745	7.89
2"	25	96710A748	8.43
Zinc-Plated Steel			
2-56—T8 Torx Size			
3/16"	100	90022A088	12.14
1/4"	100	90022A090	12.31
5/16"	100	90022A094	12.45
3/8"	100	90022A096	12.61
4-40—T10 Torx Size			
1/4"	100	90022A110	5.47
5/16"	100	90022A112	5.72
3/8"	100	90022A114	5.75
1/2"	100	90022A116	5.77
Zinc-Plated Steel (Cont.)			
6-32—T15 Torx Size			
1/4"	100	90022A142	$6.22
3/8"	100	90022A145	6.17
1/2"	100	90022A148	6.67
3/4"	100	90022A151	7.32
8-32—T20 Torx Size			
1/4"	100	90022A180	7.52
3/8"	100	90022A185	7.67
1/2"	100	90022A188	8.03
3/4"	100	90022A191	9.29
10-24—T25 Torx Size			
3/8"	100	90022A240	$9.49
1/2"	100	90022A242	10.18
3/4"	100	90022A245	11.54
1"	50	90022A247	7.07
10-32—T25 Torx Size			
3/8"	100	90022A264	9.49
1/2"	100	90022A267	10.18
3/4"	100	90022A269	11.54
1"	50	90022A271	7.07
Black-Coated Steel			
00-90—T2 Torx Size			
1/8"	50	93701A001	11.67
3/16"	50	93701A003	11.80
1/4"	50	93701A005	11.93
0-80—T5 Torx Size			
1/8"	50	93701A100	9.92
3/16"	50	93701A103	10.07
1/4"	50	93701A106	10.22
2-56—T7 Torx Size			
3/16"	50	93701A200	9.48
1/4"	50	93701A203	9.78
5/16"	50	93701A206	10.07
3/8"	50	93701A209	10.37
4-40—T10 Torx Size			
3/16"	50	93701A250	8.60
1/4"	50	93701A253	8.74
5/16"	50	93701A256	9.03
4-40 (Cont.)			
3/8"	50	93701A259	9.33
1/2"	50	93701A262	9.63
6-32—T15 Torx Size			
1/4"	50	93701A300	9.33
3/8"	50	93701A304	9.63
1/2"	50	93701A308	10.07
5/8"	50	93701A312	10.37
3/4"	50	93701A315	10.67
1"	50	93701A318	11.11
8-32—T20 Torx Size			
1/4"	50	93701A400	9.92
3/8"	50	93701A404	10.22
1/2"	50	93701A408	10.52
5/8"	50	93701A412	10.81
3/4"	50	93701A416	11.11
1"	50	93701A420	11.55

Military Specification Pan Head Phillips

Strict military standards ensure performance and reliability. Materials and dimensions meet Fed. Spec. FF-S-92. Screws are fully threaded. Length is measured from under the head.

300 series stainless steel screws are passivated to meet QQ-P-35. **Cadmium-plated steel** screws meet QQ-P-416 and have a Class 3A thread fit.

Lg.	Dash No.	Pkg. Qty.		Pkg.
300 Series Stainless Steel				
0-80—#0 Drive; Meet MS-51958				
1/8"	120	100	91400A030	$12.50
3/16"	121	100	91400A035	14.25
1/4"	122	100	91400A041	10.78
5/16"	123	100	91400A043	14.29
3/8"	124	100	91400A046	14.77
7/16"	125	25	91400A047	10.00
1/2"	126	25	91400A049	10.00
2-56—#1 Drive; Meet MS-51957				
1/8"	1	100	91400A050	5.00
3/16"	2	100	91400A052	5.00
1/4"	3	100	91400A054	5.25
5/16"	4	100	91400A056	5.36
3/8"	5	100	91400A058	5.67
7/16"	6	100	91400A060	6.25
1/2"	7	100	91400A062	6.49
9/16"	141	100	91400A063	12.50
5/8"	8	100	91400A064	8.34
3/4"	9	100	91400A066	8.75
7/8"	10	25	91400A068	10.00
4-40—#1 Drive; Meet MS-51957				
1/8"	11	100	91400A101	8.75
3/16"	12	100	91400A104	5.88
1/4"	13	100	91400A106	5.89
5/16"	14	100	91400A107	6.04
3/8"	15	100	91400A108	6.13
7/16"	16	100	91400A112	6.92
1/2"	17	100	91400A110	7.92
9/16"	120	100	91400A111	9.59
5/8"	18	100	91400A114	6.75
3/4"	19	100	91400A116	11.75
7/8"	20	50	91400A118	4.38
1"	21	50	91400A119	8.75
1 1/8"	121	50	91400A121	11.25
1 1/4"	22	50	91400A124	10.63
1 3/8"	122	50	91400A127	14.63
1 1/2"	23	10	91400A130	6.00
6-32—#2 Drive; Meet MS-51957				
1/8"	24	50	91400A142	$9.00
3/16"	25	100	91400A143	10.50
1/4"	26	100	91400A144	7.00
5/16"	27	100	91400A145	7.75
3/8"	28	100	91400A146	7.75
7/16"	29	100	91400A149	8.82
1/2"	30	100	91400A148	9.00
9/16"	123	50	91400A147	10.00
5/8"	31	50	91400A150	5.65
3/4"	32	50	91400A151	7.00
7/8"	33	50	91400A152	7.30
1"	34	50	91400A154	7.39
1 1/8"	124	25	91400A155	7.50
1 1/4"	35	25	91400A156	6.56
1 3/8"	125	25	91400A157	11.25
1 1/2"	36	25	91400A158	6.88
1 3/4"	37	25	91400A160	10.00
2"	38	25	91400A162	12.50
6-40—#2 Drive; Meet MS-51958				
1/4"	26	25	91400A170	12.50
5/16"	27	25	91400A173	12.50
3/8"	28	25	91400A176	13.13
8-32—#2 Drive; Meet MS-51957				
3/16"	40	50	91400A189	8.75
1/4"	41	50	91400A190	7.63
5/16"	42	50	91400A191	4.75
3/8"	43	50	91400A192	5.25
7/16"	44	50	91400A193	6.38
1/2"	45	50	91400A194	5.50
9/16"	126	25	91400A195	11.25
5/8"	46	25	91400A196	3.29
3/4"	47	25	91400A197	4.21
7/8"	48	25	91400A198	5.69
1"	49	25	91400A199	6.88
1 1/4"	50	25	91400A201	10.38
1 1/2"	51	25	91400A203	11.25
2"	53	25	91400A206	14.38
10-24—#2 Drive; Meet MS-51957				
3/8"	61	50	91400A240	$8.63
1/2"	63	50	91400A242	13.13
5/8"	64	50	91400A244	10.25
3/4"	65	25	91400A245	9.19
1"	67	25	91400A247	10.00
1 1/4"	68	25	91400A251	13.75
1 1/2"	69	25	91400A255	10.62
2"	71	10	91400A257	8.00
10-32—#2 Drive; Meet MS-51958				
1/4"	59	50	91400A821	14.81
5/16"	60	50	91400A825	14.85
3/8"	61	50	91400A827	7.25
7/16"	62	50	91400A828	11.25
1/2"	63	50	91400A829	7.63
5/8"	64	50	91400A830	10.25
3/4"	65	25	91400A831	5.31
7/8"	66	25	91400A832	6.25
1"	67	25	91400A833	6.88
1 1/4"	68	25	91400A836	10.94
1 1/2"	69	25	91400A838	14.77
2"	71	10	91400A841	8.00
1/4"-20—#3 Drive; Meet MS-51957				
1/2"	79	25	91400A537	8.13
5/8"	80	25	91400A539	14.69
3/4"	81	25	91400A540	10.66
7/8"	82	10	91400A541	7.00
1"	83	10	91400A542	7.75
1 1/4"	84	10	91400A544	8.75
1 1/2"	85	10	91400A546	7.25
1/4"-28—#3 Drive; Meet MS-51958				
1/2"	79	25	91400A850	14.20
5/8"	80	25	91400A851	14.89
3/4"	81	10	91400A853	7.75
7/8"	82	10	91400A854	12.00
1"	83	10	91400A856	8.75
1 1/4"	84	10	91400A859	11.50
1 1/2"	85	10	91400A862	14.76
Cadmium-Plated Steel				
2-56—#1 Drive; Meet MS-35206				
1/8"	201	25	96880A108	6.12
3/16"	202	25	96880A112	6.20
1/4"	203	25	96880A115	6.33
2-56 (Cont.)				
5/16"	204	25	96880A119	6.42
3/8"	205	25	96880A123	6.51
1/2"	207	25	96880A127	6.65
4-40—#1 Drive; Meet MS-35206				
1/4"	213	25	96880A216	6.78
5/16"	214	25	96880A220	6.81
3/8"	215	25	96880A224	6.90

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Military Specification Pan Head Phillips *(Continued from previous page)*

Strict military standards ensure performance and reliability. Materials and dimensions meet Fed. Spec. FF-S-92. Screws are fully threaded. Length is measured from under the head.

Cadmium-plated steel screws meet QQ-P-416 and have a Class 3A thread fit.

Lg.	Dash No.	Pkg. Qty.		Pkg.
Cadmium-Plated Steel (Cont.)				
4-40—#1 Drive; Meet MS-35206 (Cont.)				
7/16″	216	25	96880A228	$7.05
1/2″	217	25	96880A233	7.13
9/16″	323	25	96880A237	7.24
5/8″	218	25	96880A242	7.33
3/4″	219	25	96880A246	7.45
1″	221	25	96880A250	7.51
6-32—#2 Drive; Meet MS-35206				
1/4″	226	25	96880A311	8.04
5/16″	227	25	96880A315	8.15
6-32 (Cont.)				
3/8″	228	25	96880A320	$8.22
7/16″	229	25	96880A326	8.30
1/2″	230	25	96880A329	8.41
5/8″	231	25	96880A332	8.54
3/4″	232	25	96880A336	8.62
1″	234	25	96880A339	8.68
8-32—#2 Drive; Meet MS-35206				
5/16″	242	25	96880A410	8.75
3/8″	243	25	96880A413	8.92
8-32 (Cont.)				
1/2″	245	25	96880A417	$8.97
5/8″	246	25	96880A421	9.20
1″	249	25	96880A426	9.35
10-32—#2 Drive; Meet MS-35207				
3/8″	261	25	96880A513	10.05
1/2″	263	25	96880A518	10.12
5/8″	264	25	96880A522	10.20
3/4″	265	25	96880A526	10.27
1″	267	25	96880A530	10.35

Titanium Pan Head Phillips

Not only are these screws durable and corrosion resistant, they're about 40% lighter than steel screws and have a high strength-to-weight ratio. Fully threaded. Length is measured from under the head.

Lg.		
4-40—#1 Drive		
1/4″	90234A170	$4.47
3/8″	90234A175	4.60
1/2″	90234A180	5.13
6-32—#2 Drive		
1/4″	90234A200	4.73
3/8″	90234A205	5.00
1/2″	90234A210	5.20
3/4″	90234A215	5.93
8-32—#2 Drive		
1/2″	90234A294	6.60
1″	90234A299	8.67
1 1/2″	90234A300	9.93
10-24—#2 Drive		
1″	90234A425	$8.19
1 1/2″	90234A426	8.58
1/4″-20—#3 Drive		
1/2″	90234A910	7.77
3/4″	90234A915	8.11
1″	90234A920	8.47
1 1/2″	90234A930	9.15
2″	90234A935	9.87

PTFE-Coated Pan Head Phillips

FDA compliant for food contact, these screws won't stick or bind. They meet FDA 21 CFR 175.300 and are made from 18-8 stainless steel. Fully threaded. Length is measured from under the head.

Lg.	Pkg. Qty.		Pkg.
6-32—#2 Drive			
1/4″	100	95233A110	$14.44
3/8″	100	95233A113	14.90
1/2″	100	95233A117	14.95
3/4″	100	95233A120	14.95
8-32—#2 Drive			
1/4″	100	95233A150	14.20
3/8″	50	95233A153	8.60
1/2″	50	95233A156	8.60
3/4″	50	95233A159	10.40
10-32—#2 Drive			
3/8″	50	95233A180	$10.43
1/2″	50	95233A183	9.91
3/4″	50	95233A186	11.24
1″	50	95233A189	13.44
1/4″-20—#3 Drive			
1/2″	25	95233A250	11.25
3/4″	25	95233A253	13.88
1″	25	95233A256	14.95
1 1/2″	10	95233A259	8.60

Pan Head Phillips with Split Lock Washer

When compressed, the split washer bites into surfaces, holding tension constant and keeping screws tight. Also known as Sems screws, the washer rotates freely, but won't fall off.

Screws are fully threaded. Length is measured from under the head.

Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Zinc-Plated Steel Pkg. Qty.		Pkg.
4-40—#1 Drive; Washer OD: 0.222″						
1/4″	10	96909A406	$8.92	100	93405A106	$7.32
5/16″	10	96909A407	9.10	100	93405A107	8.64
3/8″	10	96909A408	9.21	100	93405A108	9.36
1/2″	10	96909A410	9.48	100	93405A110	8.64
6-32—#2 Drive; Washer OD: 0.261″						
1/4″	10	96909A444	9.57	100	93405A144	8.64
5/16″	10	96909A445	9.76	100	93405A145	5.76
3/8″	10	96909A446	9.88	100	93405A146	6.00
1/2″	10	96909A448	10.23	100	93405A148	6.00
5/8″	10	96909A450	10.61	100	93405A150	6.40
8-32—#2 Drive; Washer OD: 0.319″						
3/8″	10	96909A492	11.68	100	93405A192	7.80
1/2″	10	96909A494	12.17	100	93405A194	7.20
5/8″	10	96909A496	12.73	100	93405A196	12.52
3/4″	10	96909A497	13.20	100	93405A197	12.84
10-32—#2 Drive; Washer OD: 0.373″						
3/8″	10	96909A527	14.27	100	93405A827	8.18
1/2″	5	96909A529	7.51	100	93405A829	7.60

Pan Head Phillips with Spring-Tension Lock Washer

Ensure a tight fit without scratching surfaces. Also known as Square Cone Sems screws, each has a curved washer that flexes to keep tension constant. The washer rotates freely, but won't fall off. Screws are fully threaded. Length is measured from under the head.

18-8 stainless steel screws have a magnetic Type 410 stainless steel washer.

Lg.	Pkg. Qty.		Pkg.
18-8 Stainless Steel			
4-40—#1 Drive; Washer OD: 0.250″			
1/4″	25	91241A412	$5.96
5/16″	25	91241A414	8.44
3/8″	25	91241A416	7.36
7/16″	25	91241A418	8.84
1/2″	25	91241A420	7.52
5/8″	25	91241A422	8.24
6-32—#2 Drive; Washer OD: 0.320″			
1/4″	25	91241A526	5.72
5/16″	25	91241A529	6.60
3/8″	25	91241A532	6.80
7/16″	25	91241A536	7.36
1/2″	25	91241A539	6.72
5/8″	25	91241A543	6.52
8-32—#2 Drive; Washer OD: 0.383″			
3/8″	25	91241A652	8.36
1/2″	25	91241A657	8.40
5/8″	25	91241A658	9.40
18-8 Stainless Steel (Cont.)			
10-32—#2 Drive; Washer OD: 0.446″			
1/2″	25	91241A773	$11.04
5/8″	25	91241A775	10.56
Zinc-Plated Steel			
6-32—#2 Drive; Washer OD: 0.320″			
1/4″	100	90400A144	9.44
3/8″	100	90400A146	9.88
1/2″	100	90400A148	10.28
3/4″	100	90400A151	12.04
1″	50	90400A153	11.80
8-32—#2 Drive; Washer OD: 0.383″			
3/8″	100	90400A192	12.36
1/2″	100	90400A194	12.60
3/4″	50	90400A197	7.20
1″	50	90400A199	8.36

Pan Head Phillips with Flat and Split Lock Washer

Protect delicate surfaces from damage while ensuring a tight, vibration-resistant hold. The washers rotate freely, but won't fall off. Made from 300 series stainless steel. Screws are fully threaded. Length is measured from under the head.

Lg.	Pkg. Qty.		Pkg.
4-40—#1 Drive; Washer OD: 0.375″			
1/4″	10	95092A316	$10.71
5/16″	10	95092A320	10.77
3/8″	10	95092A324	10.80
1/2″	10	95092A328	10.86
6-32—#2 Drive; Washer OD: 0.437″			
1/4″	10	95092A410	$12.89
5/16″	10	95092A414	12.91
3/8″	10	95092A418	12.97
1/2″	10	95092A422	13.06
8-32—#2 Drive; Washer OD: 0.500″			
1/4″	10	95092A512	$11.00
5/16″	10	95092A516	11.06
3/8″	10	95092A520	11.11
1/2″	10	95092A524	11.23
10-32—#2 Drive; Washer OD: 0.563″			
5/16″	10	95092A615	$12.23
3/8″	10	95092A619	12.31
1/2″	10	95092A623	12.46
3/4″	10	95092A627	12.77

Pan Head Phillips with Lock Washer

Sharp teeth dig into surfaces to resist vibration and keep screws tight. Also called Sems screws, each has a washer that rotates freely, but won't fall off. Screws are fully threaded. Length is measured from under the head.

18-8 stainless steel screws have magnetic Type 410 stainless steel washers. **Screws with internal-tooth lock washer** won't snag along the outer edge and have a smoother appearance than screws with external-tooth washers. **Screws with external-tooth lock washer** offer maximum holding power.

With Internal-Tooth Lock Washer

With External-Tooth Lock Washer

Screws with Internal-Tooth Lock Washer

Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Zinc-Plated Steel Pkg. Qty.		Pkg.
2-56—#1 Drive; Washer OD: 0.185″						
3/16″	50	95345A012	$10.80	50	90403A077	$8.88
1/4″	50	95345A014	10.96	50	90403A079	8.76
3/8″	50	95345A016	11.12	50	90403A081	8.52
1/2″	50	95345A018	14.92	50	90403A083	10.32
5/8″	10	95345A019	5.84	50	90403A085	10.36
3/4″	10	95345A020	6.09	50	90403A087	10.40
4-40—#1 Drive; Washer OD: 0.268″						
3/16″	50	95345A021	10.67	100	90403A104	8.60
1/4″	50	95345A023	7.52	100	90403A106	5.16
5/16″	50	95345A025	7.60	100	90403A107	6.48
3/8″	50	95345A027	7.80	100	90403A108	5.76
7/16″	50	95345A029	11.73	100	90403A109	6.60
1/2″	50	95345A031	7.96	100	90403A110	6.16
5/8″	50	95345A033	10.57	25	90403A112	6.56
3/4″	25	95345A034	9.55	25	90403A115	6.60
7/8″	25	95345A035	7.80	25	90403A118	6.64
1″	25	95345A037	10.73	25	90403A121	7.24
6-32—#2 Drive; Washer OD: 0.288″						
3/16″	50	95345A041	14.36	100	90403A142	7.00
1/4″	50	95345A043	7.60	100	90403A144	4.96
5/16″	50	95345A045	7.80	100	90403A145	8.88
3/8″	50	95345A047	8.04	100	90403A146	6.00
7/16″	50	95345A049	11.53	100	90403A147	8.40
1/2″	50	95345A051	8.24	100	90403A148	5.60
5/8″	50	95345A053	13.00	100	90403A150	7.28
3/4″	50	95345A055	14.11	100	90403A151	7.16
7/8″	25	95345A059	12.20	100	90403A152	9.32
1″	25	95345A061	12.36	100	90403A153	9.08
1 1/4″	5	95345A056	10.04	50	90403A155	7.00
1 1/2″	5	95345A057	10.44	25	90403A157	7.56
1 3/4″	5	95345A058	10.50	25	90403A159	5.16
8-32—#2 Drive; Washer OD: 0.338″						
1/4″	50	95345A063	13.00	100	90403A190	6.00
5/16″	50	95345A067	14.80	100	90403A191	8.18
3/8″	50	95345A071	13.72	100	90403A192	6.48
7/16″	25	95345A075	11.52	100	90403A193	10.45
1/2″	25	95345A077	7.87	100	90403A194	6.56
5/8″	25	95345A081	11.44	50	90403A196	7.29
3/4″	25	95345A085	14.22	50	90403A197	4.92
1″	25	95345A089	12.04	50	90403A199	6.92
1 1/4″	10	95345A087	14.71	50	90403A201	8.40
10-24—#2 Drive; Washer OD: 0.383″						
3/8″	25	95345A200	8.80	50	90403A238	5.52
1/2″	25	95345A205	9.28	50	90403A242	5.04
5/8″	25	95345A208	9.72	50	90403A246	6.24
10-32—#2 Drive; Washer OD: 0.383″						
1/4″	25	95345A090	13.00	50	90403A823	8.51
3/8″	25	95345A091	8.84	50	90403A827	4.56
1/2″	25	95345A095	9.04	50	90403A829	6.68
5/8″	25	95345A097	14.40	50	90403A830	8.55
3/4″	25	95345A099	14.70	50	90403A831	5.80
1/4″-20—#3 Drive; Washer OD: 0.478″						
3/8″	1	95345A108	3.60	25	90403A535	7.14
1/2″	1	95345A110	3.96	25	90403A537	6.40
5/8″	1	95345A113	3.96	25	90403A538	8.12
3/4″	1	95345A116	3.96	25	90403A540	6.08
1″	1	95345A119	4.40	25	90403A551	7.08

Screws with External-Tooth Lock Washer

Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Zinc-Plated Steel Pkg. Qty.		Pkg.
4-40—#1 Drive; Washer OD: 0.230″						
3/16″	50	95345A422	$10.44	100	90402A104	$7.86
1/4″	50	95345A426	8.36	100	90402A106	6.55
5/16″	50	95345A428	8.40	100	90402A107	8.37
3/8″	50	95345A432	8.48	100	90402A108	6.62
7/16″	50	95345A436	12.04	100	90402A109	9.62
1/2″	50	95345A438	11.04	100	90402A110	7.11
5/8″	50	95345A442	12.84	100	90402A112	11.91
3/4″	25	95345A444	9.50	100	90402A114	11.95
7/8″	25	95345A446	9.88	50	90402A117	7.38
1″	25	95345A450	12.92	50	90402A120	7.38
6-32—#2 Drive; Washer OD: 0.285″						
3/16″	25	95345A454	10.84	100	90402A142	7.92
1/4″	25	95345A458	6.04	100	90402A144	6.29
5/16″	25	95345A464	6.24	100	90402A145	6.81
3/8″	25	95345A468	6.36	100	90402A146	6.95
7/16″	25	95345A474	7.44	100	90402A149	7.76
1/2″	25	95345A476	6.48	100	90402A148	7.24
5/8″	25	95345A478	6.36	100	90402A150	8.52
3/4″	25	95345A482	7.40	100	90402A151	9.24
7/8″	25	95345A486	11.52	100	90402A152	10.67
1″	25	95345A488	11.96	100	90402A153	11.86
1 1/4″	10	95345A489	13.28	100	90402A155	13.60
1 1/2″	10	95345A490	13.56	50	90402A158	9.76
8-32—#2 Drive; Washer OD: 0.320″						
1/4″	50	95345A522	13.12	100	90402A190	7.09
5/16″	50	95345A526	13.73	100	90402A191	8.96
3/8″	50	95345A530	14.32	100	90402A192	6.43
7/16″	25	95345A536	10.32	100	90402A195	9.36
1/2″	25	95345A538	8.26	100	90402A194	7.67
5/8″	25	95345A544	11.12	100	90402A196	9.85
3/4″	25	95345A548	9.20	100	90402A197	9.71
1″	25	95345A554	13.32	50	90402A200	7.51
1 1/4″	25	95345A555	11.16	50	90402A201	8.57
10-24—#2 Drive; Washer OD: 0.383″						
3/8″	25	95345A557	8.80	100	90402A527	8.48
1/2″	25	95345A558	9.28	100	90402A242	9.19
5/8″	10	95345A559	7.68	50	90402A246	6.43
10-32—#2 Drive; Washer OD: 0.383″						
1/4″	25	95345A561	10.47	50	90402A821	8.13
3/8″	25	95345A562	8.84	50	90402A827	4.28
1/2″	25	95345A566	9.08	50	90402A829	4.04
5/8″	25	95345A568	9.72	50	90402A830	7.14
3/4″	25	95345A572	10.68	50	90402A831	4.96
1″	10	95345A574	8.96	50	90402A835	10.00
1 1/4″	10	95345A576	9.36	50	90402A839	10.62
1 1/2″	5	95345A578	7.52	25	90402A842	4.05
12-24—#3 Drive; Washer OD: 0.410″						
1/2″	10	95345A585	10.24	50	90402A605	10.81
1/4″-20—#3 Drive; Washer OD: 0.510″						
3/8″	1	95345A599	5.93	25	90402A610	12.67
1/2″	1	95345A601	4.05	25	90402A537	5.48
5/8″	1	95345A603	3.96	25	90402A538	9.67
3/4″	1	95345A606	4.04	25	90402A540	6.95
7/8″	1	95345A607	6.07	25	90402A546	7.62
1″	1	95345A609	4.40	25	90402A551	7.81

Self-Locking Pan Head Phillips

A nylon anti-vibration patch is bonded to the threads so screws resist loosening. The patch has a temperature range of –70° to 250°F. Screws are made from 18-8 stainless steel and are fully threaded. Length is measured from under the head.

Lg.	Pkg. Qty.		Pkg.
2-56—#1 Drive			
1/4″	50	96562A020	$7.85
3/8″	50	96562A024	8.01
1/2″	50	96562A028	8.18
4-40—#1 Drive			
1/4″	50	96562A106	8.31
3/8″	50	96562A108	8.56
1/2″	50	96562A110	8.83
5/8″	25	96562A112	5.28
3/4″	25	96562A113	5.68
6-32—#2 Drive			
1/4″	50	96562A144	8.61
3/8″	50	96562A146	8.64
6-32—#2 Drive (Cont.)			
1/2″	50	96562A148	$9.35
5/8″	50	96562A150	10.13
3/4″	25	96562A151	5.35
1″	25	96562A153	5.68
1 1/2″	25	96562A157	7.44
8-32—#2 Drive			
3/8″	25	96562A192	4.98
1/2″	25	96562A194	5.09
5/8″	25	96562A196	5.14
3/4″	25	96562A197	5.54
1″	25	96562A199	6.29
1 1/4″	25	96562A201	7.72
10-24—#2 Drive			
3/8″	25	96562A240	$5.60
1/2″	25	96562A242	5.93
5/8″	25	96562A244	6.10
3/4″	25	96562A245	6.60
1″	25	96562A247	7.15
1 1/2″	10	96562A251	3.88
10-32—#2 Drive			
3/8″	25	96562A827	5.60
1/2″	25	96562A829	5.93
5/8″	25	96562A830	6.10
3/4″	25	96562A831	6.60
10-32—#2 Drive (Cont.)			
1″	25	96562A833	$7.15
1 1/4″	25	96562A835	9.08
1 1/2″	10	96562A836	3.88
1/4″-20—#3 Drive			
1/2″	25	96562A537	8.24
5/8″	25	96562A539	9.17
3/4″	25	96562A540	10.16
1″	10	96562A542	4.27
1 1/4″	10	96562A544	4.79
1 1/2″	10	96562A546	5.21

For information about machine screws, see page 3042.

Sealing Pan Head Phillips

Prevent leaks and protect equipment. O-rings stop liquid and gas pressure up to 6,000 psi when used in the hole size range listed. Screws are made from 18-8 stainless steel and are fully threaded. Screw length is measured from under the head.

Buna-N rubber O-rings withstand abrasive environments and exposure to water. Temperature range is –40° to 225°F.

Silicone rubber O-rings are good for the widest range of temperatures: –80° to 400°F.

Fluoroelastomer rubber O-rings are resistant to acids and oils. Temperature range is –20° to 400°F.

Lg.	Pkg. Qty.	Buna-N O-Ring	Pkg.	Silicone O-Ring	Pkg.	Fluoroelastomer O-Ring	Pkg.
0-80—#0 Drive; Max. Hole Size: 0.068″							
1/8″	10	90825A102	$12.00	90825A515	$12.00	90825A302	$12.00
3/16″	10	90825A107	12.29	90825A520	12.29	90825A307	12.29
1/4″	10	90825A109	12.57	90825A525	12.57	90825A309	12.57
2-56—#1 Drive; Max. Hole Size: 0.095″							
1/8″	10	90825A120	8.00	90825A560	8.00	90825A320	8.00
3/16″	10	90825A122	8.00	90825A565	8.00	90825A322	8.00
1/4″	10	90825A125	8.57	90825A570	8.57	90825A325	8.57
3/8″	10	90825A127	8.57	90825A575	8.57	90825A327	8.57
1/2″	10	90825A129	8.86	90825A580	8.86	90825A329	8.86
4-40—#1 Drive; Max. Hole Size: 0.127″							
1/4″	10	90825A140	6.86	90825A613	5.71	90825A340	6.86
5/16″	10	90825A142	6.86	90825A614	6.86	90825A342	6.86
3/8″	10	90825A144	6.28	90825A615	6.28	90825A344	6.28
1/2″	10	90825A146	6.28	90825A618	6.28	90825A346	6.28
5/8″	10	90825A148	6.57	90825A619	6.57	90825A348	6.57
3/4″	10	90825A150	6.90	90825A622	6.90	90825A350	6.90
7/8″	10	90825A152	7.08	90825A628	7.08	90825A352	7.08
6-32—#2 Drive; Max. Hole Size: 0.150″							
1/4″	10	90825A160	6.86	90825A713	6.00	90825A360	6.86
5/16″	10	90825A162	6.86	90825A714	6.86	90825A362	6.86
3/8″	10	90825A164	6.29	90825A715	6.29	90825A364	6.29
1/2″	10	90825A166	6.29	90825A717	6.29	90825A366	6.29
6-32 (Cont.)							
5/8″	10	90825A168	$7.15	90825A719	$7.15	90825A368	$7.15
3/4″	10	90825A170	7.35	90825A721	7.35	90825A370	7.35
1″	10	90825A172	7.72	90825A725	7.72	90825A372	7.72
1 1/4″	10	90825A174	10.57	90825A731	10.57	90825A374	10.57
1 1/2″	10	90825A176	11.71	90825A738	11.71	90825A376	11.71
8-32—#2 Drive; Max. Hole Size: 0.177″							
1/4″	10	90825A180	7.72	90825A800	7.72	90825A380	7.72
3/8″	10	90825A182	6.86	90825A814	6.86	90825A382	6.86
1/2″	10	90825A185	7.14	90825A816	7.14	90825A385	7.14
3/4″	10	90825A187	8.00	90825A819	8.00	90825A387	8.00
1″	10	90825A189	8.86	90825A825	8.86	90825A389	8.86
10-32—#2 Drive; Max. Hole Size: 0.200″							
3/8″	10	90825A192	8.86	90825A900	8.86	90825A392	8.86
1/2″	10	90825A194	8.90	90825A916	8.90	90825A394	8.90
5/8″	10	90825A196	8.95	90825A918	8.95	90825A396	8.95
3/4″	10	90825A199	9.43	90825A919	9.43	90825A399	9.43
1″	10	90825A201	10.86	90825A921	10.86	90825A401	10.86
1/4″-20—#3 Drive; Max. Hole Size: 0.265″							
1/2″	5	90825A210	6.57	90825A950	6.57	90825A410	6.57
3/4″	5	90825A213	7.00	90825A953	7.00	90825A413	7.00
1″	5	90825A216	7.86	90825A955	7.86	90825A416	7.86

Sealing and Self-Locking Pan Head Phillips

A vibration-resistant patch locks threads in place so screws won't come loose and cause seals to leak. Screws are made from 18-8 stainless steel. They have a silicone O-ring that stops liquid and gas pressure up to 6,000 psi when used in the hole size range listed. They also have a nylon locking patch with a temperature range of –40° to 225°F. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Pkg.
0-80—#0 Drive; Max. Hole Size: 0.068″			
1/8″	5	93802A215	$8.43
3/16″	5	93802A218	8.57
1/4″	5	93802A221	8.71
2-56—#1 Drive; Max. Hole Size: 0.095″			
1/8″	5	93802A315	6.43
3/16″	5	93802A318	6.43
1/4″	5	93802A321	6.71
3/8″	5	93802A325	6.71
1/2″	5	93802A329	6.86
4-40—#1 Drive; Max. Hole Size: 0.127″			
1/4″	5	93802A421	5.71
5/16″	5	93802A423	6.14
4-40 (Cont.)			
3/8″	5	93802A425	$6.21
1/2″	5	93802A429	6.31
5/8″	5	93802A433	6.40
3/4″	5	93802A438	6.50
7/8″	5	93802A442	6.75
6-32—#2 Drive; Max. Hole Size: 0.150″			
1/4″	5	93802A521	5.86
5/16″	5	93802A523	6.14
3/8″	5	93802A525	6.21
1/2″	5	93802A529	6.31
5/8″	5	93802A533	6.38
3/4″	5	93802A538	6.47
1″	5	93802A545	6.71
6-32 (Cont.)			
1 1/4″	5	93802A548	$8.71
1 1/2″	5	93802A553	9.00
8-32—#2 Drive; Max. Hole Size: 0.177″			
1/4″	5	93802A621	6.71
3/8″	5	93802A625	6.78
1/2″	5	93802A629	6.88
3/4″	5	93802A638	6.96
1″	5	93802A645	7.29
10-32—#2 Drive; Max. Hole Size: 0.200″			
3/8″	5	93802A725	7.29
1/2″	5	93802A729	7.38
10-32 (Cont.)			
5/8″	5	93802A733	$7.50
3/4″	5	93802A738	7.71
1″	5	93802A745	8.14
1/4″-20—#3 Drive; Max. Hole Size: 0.265″			
1/2″	5	93802A829	9.86
3/4″	5	93802A838	10.29
1″	5	93802A845	11.29

Metric Pan Head Phillips

All are fully threaded. Length is measured from under the head.

Lg., mm	Pkg. Qty.		Pkg.
Type 316 Stainless Steel—DIN 7985			
M2—#1 Drive; Pitch: 0.4 mm			
3	100	90116A007	$8.67
4	100	90116A008	6.78
5	100	90116A009	6.90
6	100	90116A010	4.41
8	100	90116A015	7.41
10	100	90116A020	9.98
12	100	90116A022	10.48
16	100	90116A025	10.95
20	100	90116A027	12.00
M2.5—#1 Drive; Pitch: 0.45 mm			
4	100	90116A105	6.55
5	100	90116A107	5.76
6	100	90116A110	5.57
8	100	90116A112	6.24
10	100	90116A113	7.36
12	100	90116A114	8.72
16	100	90116A118	10.28
20	100	90116A124	11.52
25	50	90116A127	8.80
M3—#1 Drive; Pitch: 0.5 mm			
4	100	90116A147	$5.80
5	100	90116A150	8.64
6	100	90116A151	6.53
8	100	90116A153	6.72
10	100	90116A155	7.27
12	100	90116A157	7.64
14	100	90116A160	9.72
16	100	90116A161	8.64
18	100	90116A163	9.75
20	100	90116A165	9.28
25	100	90116A169	9.72
30	100	90116A174	10.80
35	100	90116A179	11.88
40	100	90116A184	13.36
45	50	90116A186	12.76
50	25	90116A188	7.59
Type 316 Stainless Steel—DIN 7985 (Cont.)			
M4—#2 Drive; Pitch: 0.7 mm			
5	100	90116A201	$10.80
6	100	90116A202	11.00
8	100	90116A205	11.92
10	50	90116A207	6.92
12	50	90116A209	7.24
14	50	90116A211	9.14
16	50	90116A213	7.70
18	50	90116A215	9.71
20	50	90116A217	9.68
25	50	90116A221	10.44
30	50	90116A225	11.22
35	50	90116A227	13.26
40	50	90116A233	12.40
45	25	90116A237	11.12
50	25	90116A240	11.90
60	10	90116A243	6.20
M5—#2 Drive; Pitch: 0.8 mm			
6	25	90116A246	$8.40
8	25	90116A248	9.10
10	50	90116A250	10.36
12	50	90116A252	11.36
14	25	90116A254	7.85
16	50	90116A256	11.42
18	25	90116A258	8.42
20	25	90116A260	5.98
25	10	90116A262	6.36
30	10	90116A264	7.00
35	10	90116A267	7.60
40	10	90116A270	8.16
50	10	90116A276	9.32
60	10	90116A279	10.56
70	10	90116A281	11.88
80	5	90116A283	9.08

(Continued on following page)

Metric Pan Head Phillips *(Continued from previous page)*

Type 316 Stainless Steel—DIN 7985 (Cont.)

M6—#3 Drive; Pitch: 1 mm

Lg., mm	Pkg. Qty.		Pkg.
8	10	90116A303	$7.52
10	25	90116A305	5.97
12	25	90116A307	7.91
16	25	90116A311	8.59
20	25	90116A315	9.79
25	10	90116A317	9.68
30	10	90116A319	10.52
35	10	90116A321	11.24
40	5	90116A323	6.74
45	5	90116A325	7.14
50	5	90116A327	7.56
60	5	90116A329	8.42
70	5	90116A331	9.30

M6 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
80	5	90116A333	$10.16

M8—#4 Drive; Pitch: 1.25 mm

Lg., mm	Pkg. Qty.		Pkg.
12	5	90116A405	8.42
16	5	90116A408	8.52
20	5	90116A411	9.08
25	5	90116A413	9.92
30	5	90116A415	10.70
35	5	90116A417	11.94
40	1	90116A419	2.21
45	1	90116A450	2.46
50	1	90116A423	2.53
60	1	90116A425	2.86

18-8 Stainless Steel—DIN 7985

M1.6—#0 Drive; Pitch: 0.35 mm

Lg., mm	Pkg. Qty.		Pkg.
3	100	92000A001	10.69
4	100	92000A002	10.87
5	100	92000A003	11.38
6	100	92000A004	11.58
8	100	92000A005	12.06
10	50	92000A006	8.45
12	50	92000A007	10.86

M2—#1 Drive; Pitch: 0.4 mm

Lg., mm	Pkg. Qty.		Pkg.
3	50	92000A010	9.55
4	100	92000A011	3.14
5	100	92000A012	4.10
6	100	92000A013	4.41
8	100	92000A015	4.52
10	100	92000A017	4.59
12	100	92000A019	4.76
14	100	92000A020	4.83
16	100	92000A022	5.31
18	100	92000A024	5.72
20	100	92000A026	6.10

M2.5—#1 Drive; Pitch: 0.45 mm

Lg., mm	Pkg. Qty.		Pkg.
3	100	92000A100	4.48
4	100	92000A102	3.79
5	100	92000A103	4.83
6	100	92000A104	4.97
8	100	92000A105	5.03
10	100	92000A106	5.21
12	100	92000A107	5.45
14	100	92000A108	5.76
16	100	92000A109	6.10
20	100	92000A111	6.55
25	100	92000A112	7.00

M3—#1 Drive; Pitch: 0.5 mm

Lg., mm	Pkg. Qty.		Pkg.
4	100	92000A113	5.52
5	100	92000A114	6.72
6	100	92000A116	5.16
8	100	92000A118	4.66
10	100	92000A120	4.34
12	100	92000A122	7.07
14	100	92000A124	7.93
16	100	92000A126	5.57
18	100	92000A127	8.27
20	100	92000A128	8.56
25	100	92000A130	7.62
30	100	92000A132	7.79
35	100	92000A134	8.52
40	100	92000A136	10.28
45	100	92000A138	11.59
50	50	92000A139	6.81

M3.5—#2 Drive; Pitch: 0.6 mm

Lg., mm	Pkg. Qty.		Pkg.
5	100	92000A150	7.24
6	100	92000A151	9.00
8	100	92000A153	9.12
10	100	92000A155	9.28
12	100	92000A157	9.66
16	100	92000A160	11.03
20	50	92000A163	7.24
25	50	92000A167	8.45

M4—#2 Drive; Pitch: 0.7 mm

Lg., mm	Pkg. Qty.		Pkg.
5	100	92000A215	7.24
6	100	92000A216	8.06

M4 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
8	100	92000A218	6.21
10	100	92000A220	7.52
12	100	92000A222	7.38
14	100	92000A224	8.50
16	100	92000A226	8.08
18	100	92000A227	9.50
20	100	92000A228	9.93
25	100	92000A230	11.24
30	100	92000A234	14.34
35	50	92000A238	8.00
40	50	92000A242	9.84
45	25	92000A243	5.23
50	25	92000A244	5.46
60	25	92000A248	5.76

M5—#2 Drive; Pitch: 0.8 mm

Lg., mm	Pkg. Qty.		Pkg.
6	50	92000A317	5.17
8	50	92000A318	5.83
10	50	92000A320	6.80
12	50	92000A322	6.73
14	50	92000A324	8.01
16	50	92000A326	7.27
18	50	92000A327	8.50
20	50	92000A328	7.97
25	50	92000A330	9.36
30	25	92000A332	6.05
35	25	92000A335	7.41
40	25	92000A338	8.10
45	25	92000A342	7.41
50	25	92000A340	8.30
60	10	92000A343	4.11
70	10	92000A345	5.08
80	10	92000A348	5.42

M6—#3 Drive; Pitch: 1 mm

Lg., mm	Pkg. Qty.		Pkg.
8	25	92000A417	4.44
10	25	92000A420	5.18
12	25	92000A424	5.34
16	25	92000A426	5.60
20	25	92000A428	5.85
25	25	92000A430	6.96
30	25	92000A438	8.18
35	25	92000A439	9.40
40	25	92000A440	8.93
45	25	92000A442	9.56
50	25	92000A441	10.19
60	10	92000A444	4.69
70	10	92000A447	8.96
80	10	92000A450	14.69
90	5	92000A470	8.40

M8—#4 Drive; Pitch: 1.25 mm

Lg., mm	Pkg. Qty.		Pkg.
12	10	92000A518	7.12
16	10	92000A526	6.96
20	10	92000A528	7.16
25	10	92000A530	11.08
30	10	92000A532	12.63
35	10	92000A534	12.67
40	10	92000A536	12.97
45	10	92000A538	11.44
50	10	92000A540	13.59
60	5	92000A562	8.16

Black-Oxide 18-8 Stainless Steel

M2—#1 Drive; Pitch: 0.4 mm

Lg., mm	Pkg. Qty.		Pkg.
3	100	95836A103	$9.74
4	100	95836A105	10.29
5	100	95836A107	10.75
6	100	95836A109	11.26
8	100	95836A111	12.81
10	100	95836A113	13.19
12	100	95836A115	13.52

M2.5—#1 Drive; Pitch: 0.45 mm

Lg., mm	Pkg. Qty.		Pkg.
4	100	95836A251	10.42
6	100	95836A253	11.59
8	100	95836A255	13.17
10	100	95836A257	13.55
12	50	95836A259	8.36

M3—#1 Drive; Pitch: 0.5 mm

Lg., mm	Pkg. Qty.		Pkg.
4	50	95836A201	7.27
5	50	95836A203	7.59
6	50	95836A205	7.36
8	50	95836A207	6.68
10	50	95836A209	6.98

M3 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
12	50	95836A211	$6.03
16	50	95836A215	10.31

M4—#2 Drive; Pitch: 0.7 mm

Lg., mm	Pkg. Qty.		Pkg.
5	50	95836A332	11.19
6	50	95836A333	11.80
8	50	95836A335	11.04
10	50	95836A337	11.04
12	50	95836A339	14.59
16	25	95836A343	9.75
20	25	95836A347	10.92

M5—#2 Drive; Pitch: 0.8 mm

Lg., mm	Pkg. Qty.		Pkg.
8	25	95836A447	10.28
10	25	95836A449	10.34
12	25	95836A451	10.81
16	10	95836A455	7.48

M6—#3 Drive; Pitch: 1 mm

Lg., mm	Pkg. Qty.		Pkg.
10	25	95836A678	11.66
12	10	95836A680	7.03
16	10	95836A684	6.84
20	10	95836A688	12.52

Brass

M2—#1 Drive; Pitch: 0.4 mm

Lg., mm	Pkg. Qty.		Pkg.
4	100	96741A011	8.76
5	100	96741A012	9.27
6	100	96741A013	9.87
8	100	96741A015	10.57
10	100	96741A017	10.97

M3—#1 Drive; Pitch: 0.5 mm

Lg., mm	Pkg. Qty.		Pkg.
4	100	96741A113	9.75
5	100	96741A114	10.50
6	100	96741A116	11.20
8	100	96741A118	11.87
10	50	96741A120	6.27
12	50	96741A122	6.87

M4—#2 Drive; Pitch: 0.7 mm

Lg., mm	Pkg. Qty.		Pkg.
6	50	96741A216	9.92
8	50	96741A218	10.97

M4 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
10	25	96741A220	6.07
12	25	96741A222	6.70
16	25	96741A226	8.53

M5—#2 Drive; Pitch: 0.8 mm

Lg., mm	Pkg. Qty.		Pkg.
8	10	96741A318	4.84
10	10	96741A320	5.09
12	10	96741A322	5.53
16	10	96741A326	6.49

M6—#3 Drive; Pitch: 1 mm

Lg., mm	Pkg. Qty.		Pkg.
10	10	96741A420	6.64
12	10	96741A424	8.14
16	5	96741A426	4.60
20	5	96741A428	5.23

Zinc-Plated Steel—DIN 7985

M1.6—#0 Drive; Pitch: 0.35 mm

Lg., mm	Pkg. Qty.		Pkg.
2	50	92005A001	8.83
3	50	92005A002	9.34
4	25	92005A003	6.65
5	25	92005A004	6.65
6	25	92005A005	7.11
8	25	92005A006	7.45

M2—#1 Drive; Pitch: 0.4 mm

Lg., mm	Pkg. Qty.		Pkg.
2	100	92005A010	9.17
3	100	92005A011	5.04
4	100	92005A016	3.67
5	100	92005A019	3.21
6	100	92005A023	3.67
8	100	92005A029	3.67
10	100	92005A033	3.67
12	100	92005A035	4.13
14	100	92005A036	3.65
16	100	92005A037	4.13
20	100	92005A039	5.96

M2.5—#1 Drive; Pitch: 0.45 mm

Lg., mm	Pkg. Qty.		Pkg.
3	100	92005A052	5.04
4	100	92005A056	5.04
5	100	92005A061	3.67
6	100	92005A066	4.13
8	100	92005A069	4.13
10	100	92005A071	4.13
12	100	92005A075	4.13
14	100	92005A074	6.25
16	100	92005A076	4.13
20	100	92005A077	5.04
25	100	92005A078	5.50
30	100	92005A079	9.17

M3—#1 Drive; Pitch: 0.5 mm

Lg., mm	Pkg. Qty.		Pkg.
3	100	92005A111	4.13
4	100	92005A112	2.44
5	100	92005A114	2.52
6	100	92005A116	2.56
8	100	92005A118	2.60
10	100	92005A120	2.56
12	100	92005A122	2.60
14	100	92005A124	4.24
16	100	92005A126	2.80

M3 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
18	100	92005A127	9.17
20	100	92005A128	3.00
22	100	92005A129	8.71
25	100	92005A130	3.20
30	100	92005A132	3.72
35	100	92005A133	7.79
40	100	92005A135	8.25
45	100	92005A136	14.67
50	25	92005A137	4.93
60	10	92005A140	6.06

M3.5—#2 Drive; Pitch: 0.6 mm

Lg., mm	Pkg. Qty.		Pkg.
5	100	92005A710	11.00
6	100	92005A712	4.13
8	100	92005A714	4.58
10	100	92005A716	4.58
12	100	92005A719	5.04
16	100	92005A721	7.79
20	100	92005A723	8.71
25	25	92005A725	2.41
30	25	92005A727	4.70

M4—#2 Drive; Pitch: 0.7 mm

Lg., mm	Pkg. Qty.		Pkg.
4	100	92005A211	5.50
5	100	92005A212	4.58
6	100	92005A215	3.20
8	100	92005A218	3.44
10	100	92005A220	3.28
12	100	92005A222	3.60
14	100	92005A223	5.04
16	100	92005A226	4.24
18	100	92005A227	9.63
20	100	92005A228	4.56
25	100	92005A230	5.04
30	100	92005A232	5.60
35	100	92005A234	10.09
40	100	92005A236	7.64
45	100	92005A238	9.48
50	100	92005A240	10.25
55	25	92005A242	4.70
60	25	92005A245	6.19
70	10	92005A248	3.44
80	10	92005A251	4.91

(Continued on following page)

Metric Pan Head Phillips *(Continued from previous page)*

All are fully threaded. Length is measured from under the head.

Zinc-Plated Steel—DIN 7985 (Cont.)

M5—#2 Drive; Pitch: 0.8 mm

Lg., mm	Pkg. Qty.		Pkg.
5	50	92005A315	$6.88
6	100	92005A316	4.24
8	100	92005A318	4.32
10	100	92005A320	4.60
12	100	92005A322	4.84
14	100	92005A324	10.18
16	100	92005A326	5.56
18	100	92005A327	10.39
20	100	92005A328	5.96
25	100	92005A330	7.24
30	100	92005A332	8.08
35	100	92005A334	8.84
40	50	92005A336	9.86
45	25	92005A338	8.60
50	25	92005A342	6.80
60	25	92005A345	8.05
70	10	92005A348	6.42
80	5	92005A351	3.69

M6—#3 Drive; Pitch: 1 mm

Lg., mm	Pkg. Qty.		Pkg.
6	50	92005A416	$7.56
8	100	92005A418	10.19
10	100	92005A420	7.24
12	100	92005A422	7.92
14	100	92005A423	10.42
16	100	92005A426	8.72
18	25	92005A427	8.60
20	100	92005A428	9.92
22	25	92005A429	9.86
25	50	92005A430	5.62
30	50	92005A435	6.16
35	50	92005A440	6.68
40	50	92005A442	7.40
45	50	92005A444	9.01
50	50	92005A446	10.23
60	25	92005A450	8.35
65	10	92005A449	8.75
70	10	92005A451	5.91

Zinc-Plated Steel—DIN 7985 (Cont.)

M6 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
75	10	92005A452	$5.60
80	5	92005A454	4.91
90	5	92005A457	6.06
100	5	92005A460	6.25

M8—#4 Drive; Pitch: 1.25 mm

Lg., mm	Pkg. Qty.		Pkg.
10	10	92005A519	6.42
12	10	92005A521	5.91
16	25	92005A526	6.30
20	25	92005A528	7.25
25	25	92005A530	8.30
30	10	92005A532	6.42
35	10	92005A533	7.38
40	10	92005A535	9.08
45	5	92005A537	5.94
50	5	92005A539	7.04
60	5	92005A541	8.92

M8 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
70	1	92005A543	$2.04
80	1	92005A545	2.73
90	1	92005A548	2.90
100	1	92005A552	3.10

M10—#4 Drive; Pitch: 1.5 mm

Lg., mm	Pkg. Qty.		Pkg.
16	1	92005A623	3.11
20	1	92005A626	3.00
25	1	92005A629	3.53
30	1	92005A633	3.04
35	1	92005A635	2.95
40	1	92005A637	3.84
45	1	92005A640	2.20
50	1	92005A643	2.24
60	1	92005A646	2.29
70	1	92005A649	2.32
80	1	92005A652	2.40

Metric Pan Head Slotted

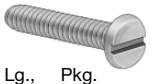

All are fully threaded. Meet DIN 85, except thread size M2.6. Length is measured from under the head.

18-8 Stainless Steel

M2—Pitch: 0.4 mm

Lg., mm	Pkg. Qty.		Pkg.
5	100	91200A100	$4.57
6	100	91200A102	4.80
8	100	91200A104	4.69
10	100	91200A106	5.04
12	100	91200A108	5.38
16	100	91200A110	5.71

M3—Pitch: 0.5 mm

Lg., mm	Pkg. Qty.		Pkg.
6	100	91200A112	6.21
8	100	91200A114	6.58
10	100	91200A116	7.13
12	100	91200A118	7.96
16	100	91200A120	9.75
20	100	91200A122	8.84
25	100	91200A124	9.98

M4—Pitch: 0.7 mm

Lg., mm	Pkg. Qty.		Pkg.
6	100	91200A128	5.72
8	100	91200A130	7.50

M4 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
10	100	91200A132	$7.62
12	100	91200A134	9.61
16	100	91200A136	11.40
25	50	91200A140	8.20

M5—Pitch: 0.8 mm

Lg., mm	Pkg. Qty.		Pkg.
8	50	91200A150	9.58
10	50	91200A152	6.24
12	50	91200A154	7.53
16	50	91200A156	8.60

M6—Pitch: 1 mm

Lg., mm	Pkg. Qty.		Pkg.
10	50	91200A172	10.70
12	50	91200A174	12.45
16	50	91200A176	10.62
20	25	91200A178	5.10
25	25	91200A180	7.88

Brass

M2.5—Pitch: 0.45 mm

Lg., mm	Pkg. Qty.		Pkg.
5	50	90928A205	8.61
6	25	90928A207	5.24
8	25	90928A209	4.27
10	25	90928A211	4.16

M3—Pitch: 0.5 mm

Lg., mm	Pkg. Qty.		Pkg.
5	50	90928A300	11.92
6	50	90928A301	9.29
8	50	90928A305	11.31
10	50	90928A309	14.05
12	50	90928A313	11.31
16	50	90928A317	13.03
20	25	90928A319	8.46
25	25	90928A321	9.15

M4—Pitch: 0.7 mm

Lg., mm	Pkg. Qty.		Pkg.
6	25	90928A327	8.10
8	25	90928A331	9.52

M4 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
10	25	90928A337	9.52
12	25	90928A342	10.87
16	25	90928A344	10.95
20	25	90928A346	12.06
25	10	90928A348	6.27

M5—Pitch: 0.8 mm

Lg., mm	Pkg. Qty.		Pkg.
8	10	90928A355	6.05
10	10	90928A356	6.16
12	10	90928A357	6.38
16	10	90928A358	7.21
20	10	90928A359	7.15

M6—Pitch: 1 mm

Lg., mm	Pkg. Qty.		Pkg.
10	10	90928A378	7.62
12	10	90928A382	11.43
16	10	90928A385	11.43
20	10	90928A388	11.20

Zinc-Plated Steel

M2.5—Pitch: 0.45 mm

Lg., mm	Pkg. Qty.		Pkg.
4	100	90353A001	$8.52
5	100	90353A002	5.56
6	100	90353A003	5.93
8	100	90353A004	7.78
10	100	90353A005	7.78
12	100	90353A006	7.78
20	100	90353A007	7.41

M2.6—Pitch: 0.45 mm

Lg., mm	Pkg. Qty.		Pkg.
4	100	90353A110	6.30
5	100	90353A111	5.42
6	100	90353A112	5.26
8	100	90353A113	5.26
10	100	90353A114	5.12
12	100	90353A115	5.12
25	100	90353A120	11.04

M3—Pitch: 0.5 mm

Lg., mm	Pkg. Qty.		Pkg.
4	100	90353A140	3.09
5	100	90353A141	3.09
6	100	90353A142	3.09
8	100	90353A143	3.09
10	100	90353A144	3.20
12	100	90353A145	3.52
16	100	90353A146	3.52
20	100	90353A148	3.52
25	100	90353A150	3.97
30	100	90353A151	5.29
35	100	90353A152	5.74
40	100	90353A154	6.74

M3.5—Pitch: 0.6 mm

Lg., mm	Pkg. Qty.		Pkg.
5	100	90353A170	4.41
6	100	90353A171	4.41
8	100	90353A172	4.41
10	100	90353A173	4.41
12	100	90353A174	4.41

M3.5 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
16	100	90353A175	$4.85
20	100	90353A177	4.85
25	100	90353A178	4.01
30	100	90353A180	6.17
35	100	90353A182	7.49

M4—Pitch: 0.7 mm

Lg., mm	Pkg. Qty.		Pkg.
6	100	90353A211	3.97
8	100	90353A212	3.97
10	100	90353A213	4.41
12	100	90353A214	4.41
14	100	90353A228	4.85
16	100	90353A215	4.85
20	100	90353A217	5.29
25	100	90353A219	5.29
30	100	90353A221	6.17
35	100	90353A222	8.30
40	100	90353A223	7.49

M5—Pitch: 0.8 mm

Lg., mm	Pkg. Qty.		Pkg.
6	100	90353A250	5.29
8	100	90353A251	5.29
10	100	90353A252	5.74
12	100	90353A253	5.74
16	100	90353A254	7.64
20	100	90353A256	7.93
25	100	90353A258	7.93
30	100	90353A260	9.69
40	100	90353A262	11.91

M6—Pitch: 1 mm

Lg., mm	Pkg. Qty.		Pkg.
10	100	90353A311	7.49
12	100	90353A312	7.49
14	100	90353A329	10.58
16	100	90353A314	9.69
20	100	90353A315	11.46
25	100	90353A317	11.91

Metric Japanese Industrial Standard Pan Head Phillips

Screws meet JIS B1111 for a smaller head diameter and shorter head height than most other metric pan head screws. They're made from zinc-plated steel and are fully threaded. Length is measured from under the head. For JIS drivers, see 53325A on page 2817. **Also Available:** 18-8 stainless steel screws in sizes marked with a ★. Please ask for 94102A650 and specify thread size and screw length.

M3—#2 Drive; Pitch: 0.5 mm

Lg., mm	Pkg. Qty.		Pkg.
4	25	94387A203 ★	$2.04
6	25	94387A206 ★	2.14
8	25	94387A209 ★	3.06
10	25	94387A212 ★	3.42

M3 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
12	25	94387A215 ★	$3.25
16	25	94387A218 ★	3.48
20	25	94387A221 ★	3.93
25	25	94387A224 ★	5.96

M3 (Cont.)

Lg., mm	Pkg. Qty.		Pkg.
30	25	94387A227 ★	$6.07
35	25	94387A229 ★	7.44
40	25	94387A231 ★	8.74
45	25	94387A233	9.23

M4—#2 Drive; Pitch: 0.7 mm

Lg., mm	Pkg. Qty.		Pkg.
8	25	94387A240	$3.47
10	25	94387A245	3.57
12	25	94387A250 ★	3.71
16	25	94387A253 ★	4.53

(Continued on following page)

Metric Japanese Industrial Standard Pan Head Phillips *(Continued from previous page)*

Also Available: 18-8 stainless steel screws in sizes marked with a ★. Please ask for 94102A650 and specify thread size and screw length.

Lg., mm	Pkg. Qty.		Pkg.
M4 (Cont.)			
20	25	94387A256★	$5.29
25	25	94387A259★	6.69
30	25	94387A262	8.05
35	25	94387A265	9.92
40	25	94387A268★	11.73
45	25	94387A271	13.11
50	25	94387A274★	14.34
60	10	94387A280	8.16
M5—#2 Drive; Pitch: 0.8 mm			
8	25	94387A320★	$6.27
10	25	94387A323★	6.82
12	25	94387A326★	8.41
16	25	94387A329★	9.46
20	25	94387A332★	10.52
25	25	94387A335★	11.25
30	25	94387A338★	12.54
35	25	94387A341★	13.24
40	10	94387A344	5.70
M5 (Cont.)			
45	10	94387A347	$6.27
50	10	94387A350★	7.68
60	10	94387A356	11.21
M6—#3 Drive; Pitch: 1 mm			
10	25	94387A420★	8.51
12	25	94387A423★	9.14
16	25	94387A426★	10.03
20	25	94387A429★	11.67
M6 (Cont.)			
25	25	94387A432★	$13.66
30	25	94387A435★	14.95
35	25	94387A438★	14.98
40	10	94387A441★	7.65
50	10	94387A447	9.49
60	10	94387A453	11.67
70	10	94387A459	13.26
80	10	94387A465	14.78

Metric Pan Head Phillips with Lock Washer

Sharp teeth dig into surfaces to resist vibration and keep screws tight. Also called Sems screws, each has a washer that rotates freely, but won't fall off. All are 18-8 stainless steel and have magnetic Type 410 stainless steel washers. Screws are fully threaded. Length is measured from under the head.

With Internal-Tooth Lock Washer

With External-Tooth Lock Washer

Screws with internal-tooth lock washer won't snag along the outer edge and have a smoother appearance than screws with external-tooth washers. **Screws with external-tooth lock washer** offer maximum holding power.

Screws with Internal-Tooth Lock Washer

Lg., mm	Pkg. Qty.		Pkg.
M2.5—#1 Drive; Pitch: 0.45 mm; Washer OD: 5.8 mm			
4	25	90317A100	$10.97
5	25	90317A103	11.03
6	25	90317A106	11.06
8	25	90317A105■	8.22
10	25	90317A108■	7.09
12	10	90317A109	7.63
M3—#1 Drive; Pitch: 0.5 mm; Washer OD: 7.4 mm			
4	25	90317A110	11.18
5	25	90317A111■▲	8.95
6	25	90317A112	10.40
8	25	90317A115	10.80
10	10	90317A118	5.44
12	10	90317A121	5.68
16	10	90317A125■▲	4.87
M4—#2 Drive; Pitch: 0.7 mm; Washer OD: 8.8 mm			
6	10	90317A162	$6.80
8	10	90317A165	6.80
10	10	90317A168	10.24
12	10	90317A171	11.40
16	10	90317A175	4.66
20	5	90317A176	9.24
25	5	90317A179	9.30
M5—#2 Drive; Pitch: 0.8 mm; Washer OD: 10 mm			
8	10	90317A198	8.40
10	10	90317A201■	5.93
12	10	90317A205■	6.32
14	5	90317A208	9.64
16	5	90317A211	9.67
M6—#3 Drive; Pitch: 1 mm; Washer OD: 12 mm			
12	5	90317A230	12.63

Screws with External-Tooth Lock Washer

Lg., mm	Pkg. Qty.		Pkg.
M2.5—#1 Drive; Pitch: 0.45 mm; Washer OD: 5.5 mm			
4	25	90317A400	10.03
5	25	90317A402	10.07
6	25	90317A404	10.10
8	25	90317A406	10.20
10	25	90317A408	10.27
12	10	90317A410	6.07
M3—#1 Drive; Pitch: 0.5 mm; Washer OD: 5.9 mm			
4	25	90317A550	10.27
5	25	90317A553■▲	8.15
6	25	90317A523	10.40
8	25	90317A526	10.80
10	10	90317A529	5.44
12	10	90317A532	5.68
16	10	90317A555■▲	3.79
M4—#2 Drive; Pitch: 0.7 mm; Washer OD: 8.3 mm			
6	10	90317A571	6.80
8	10	90317A573	6.80
10	10	90317A575	6.80
12	10	90317A579	7.44
16	10	90317A582	5.61
20	5	90317A585	5.80
25	5	90317A590	5.90
M5—#2 Drive; Pitch: 0.8 mm; Washer OD: 10 mm			
8	10	90317A598	7.10
10	10	90317A600■	7.36
12	10	90317A602	7.30
14	10	90317A605	7.43
16	10	90317A607	7.53
M6—#3 Drive; Pitch: 1 mm; Washer OD: 12 mm			
12	10	90317A630■	9.10

■ Washer is 18-8 stainless steel.
▲ Has a #2 drive and washer OD of 6.5 mm.

Metric Self-Locking Pan Head Phillips

A nylon anti-vibration patch fused to the threads prevents loosening. The patch has a temperature range of –70° to 250° F.

Screws are 18-8 stainless steel and fully threaded. Length is measured from under the head.

Lg., mm	Pkg. Qty.		Pkg.
M2—#0 Drive; Pitch: 0.4 mm			
3	25	95911A104	$8.33
4	25	95911A107	8.47
5	25	95911A111	9.17
6	25	95911A114	9.32
8	25	95911A118	9.48
M2.5—#1 Drive; Pitch: 0.45 mm			
3	25	95911A154	10.00
4	25	95911A159	10.83
5	25	95911A161	11.02
6	25	95911A164	11.21
8	25	95911A168	11.40
10	25	95911A171	11.61
M3—#1 Drive; Pitch: 0.5 mm			
4	25	95911A204	$10.83
5	25	95911A207	11.02
6	25	95911A211	11.21
8	25	95911A214	11.40
10	25	95911A218	11.61
12	25	95911A221	11.82
M4—#2 Drive; Pitch: 0.7 mm			
6	25	95911A254	11.67
8	25	95911A257	11.86
10	25	95911A261	12.50
M5—#2 Drive; Pitch: 0.8 mm			
10	10	95911A304	5.33
12	10	95911A307	5.42
16	10	95911A311	5.67

Metric Sealing Pan Head Phillips

Seal out contaminants and prevent leaks. Made from 18-8 stainless steel, screws have a silicone rubber O-ring that stops liquid and gas pressure up to 6,000 psi when used in the hole size range listed. Temperature range is –80° to 400° F. Screws are fully threaded. Length is measured from under the head.

Lg., mm	Pkg. Qty.		Pkg.
M2—#1 Drive; Pitch: 0.4 mm; Max. Hole Size: 2.44 mm			
3	10	93627A206	$8.00
4	10	93627A210	8.00
5	10	93627A214	6.86
6	10	93627A218	6.86
8	10	93627A222	6.86
M2.5—#1 Drive; Pitch: 0.45 mm; Max. Hole Size: 2.95 mm			
3	10	93627A313	8.57
4	10	93627A317	8.57
5	10	93627A321	6.00
6	10	93627A325	6.57
8	10	93627A329	6.57
M3—#1 Drive; Pitch: 0.5 mm; Max. Hole Size: 3.45 mm			
4	10	93627A404	8.86
5	10	93627A408	7.43
6	10	93627A412	6.86
M3 (Cont.)			
8	10	93627A413	$7.43
10	10	93627A420	6.86
12	10	93627A424	6.86
M4—#2 Drive; Pitch: 0.7 mm; Max. Hole Size: 4.55 mm			
5	10	93627A507	9.43
6	10	93627A511	8.57
8	10	93627A515	7.43
10	10	93627A519	7.71
12	10	93627A524	8.00
16	10	93627A529	8.86
M5—#2 Drive; Pitch: 0.8 mm; Max. Hole Size: 5.56 mm			
6	10	93627A610	10.57
8	10	93627A615	8.86
10	10	93627A620	9.71
12	10	93627A625	8.86
16	10	93627A630	9.43

Pan Head Phillips Machine Screw Assortments

Keep the screws you need convenient and organized. Assortments come in a steel box.

Inch assortment includes 1,200 size 4-40, 6-32, 8-32, and 10-32 18-8 stainless steel screws in lengths from ¼″ to 1″.

Metric assortment includes 1,500 size M3, M4, M5, and M6 zinc-plated steel screws in lengths from 6 to 20 mm.

Inch Assortment	93175A212	$106.10
Metric Assortment	92020A116	95.50

Large Diameter (Truss) Head

Phillips

Slotted

Truss head screws have a rounded, low-profile head that's wider than both round and pan head screws. The extra diameter provides a bearing surface that's excellent for holding thin materials. Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. All have a Class 2A thread fit. Length is measured from under the head.

18-8 Stainless Steel—Phillips

Lg.	Pkg. Qty.		Per Pkg.
4-40—#1 Drive			
3/16″	100	91770A090	$5.20
1/4″	100	91770A092	4.10
5/16″	100	91770A095	4.23
3/8″	100	91770A108	4.35
1/2″	100	91770A096	4.70
3/4″	100	91770A113	5.48
1″	100	91770A115	6.77
1 1/4″	100	91770A117	9.50
5-40—#1 Drive			
1/4″	100	91770A124	6.12
3/8″	100	91770A126	10.97
1/2″	100	91770A128	12.60
6-32—#2 Drive			
3/16″	100	91770A143	4.46
1/4″	100	91770A144	4.48
5/16″	100	91770A145	4.58
3/8″	100	91770A146	4.79
7/16″	100	91770A147	5.02
1/2″	100	91770A148	5.15
5/8″	100	91770A150	5.96
3/4″	100	91770A151	6.37
7/8″	100	91770A114	6.82
1″	100	91770A153	7.04
1 1/4″	100	91770A155	7.64
1 1/2″	100	91770A158	9.43
8-32—#2 Drive			
3/16″	100	91770A188	6.65
1/4″	100	91770A190	5.22
5/16″	100	91770A191	5.71
3/8″	100	91770A192	5.72
7/16″	100	91770A193	6.13
1/2″	100	91770A194	6.40
5/8″	100	91770A196	6.80
3/4″	100	91770A197	7.84
7/8″	100	91770A198	8.37
1″	100	91770A199	9.21
1 1/4″	100	91770A201	9.98
1 1/2″	50	91770A203	7.68
1 3/4″	50	91770A204	8.49
2″	50	91770A205	9.68
10-24—#2 Drive			
1/4″	100	91770A238	7.80
3/8″	100	91770A240	7.90
1/2″	100	91770A242	9.14
5/8″	100	91770A244	10.40
3/4″	100	91770A245	11.38
7/8″	50	91770A246	5.87
1″	50	91770A247	7.11
1 1/4″	50	91770A248	9.07
1 1/2″	50	91770A251	9.69
1 3/4″	50	91770A252	11.39
10-24 (Cont.)			
2″	25	91770A253	$6.80
2 1/2″	25	91770A259	9.50
3″	25	91770A304	10.79
10-32—#2 Drive			
1/4″	100	91770A825	7.80
5/16″	100	91770A826	7.90
3/8″	100	91770A827	8.00
1/2″	100	91770A829	9.14
5/8″	100	91770A830	10.40
3/4″	100	91770A831	11.38
1″	50	91770A833	7.11
1 1/4″	50	91770A835	9.07
1 1/2″	50	91770A836	9.69
1 3/4″	50	91770A837	11.40
2″	25	91770A838	6.80
2 1/2″	25	91770A843	9.50
3″	25	91770A847	10.80
12-24—#3 Drive			
1/2″	25	91770A291	3.52
3/4″	25	91770A296	4.34
1/4″-20—#3 Drive			
3/8″	50	91770A535	8.26
1/2″	50	91770A537	9.03
5/8″	50	91770A539	9.78
3/4″	50	91770A540	11.48
7/8″	25	91770A541	7.01
1″	25	91770A542	7.34
1 1/4″	25	91770A544	7.99
1 1/2″	25	91770A546	8.94
1 3/4″	25	91770A548	11.29
2″	25	91770A550	12.02
2 1/4″	10	91770A551	5.53
2 1/2″	10	91770A552	6.06
2 3/4″	10	91770A559	6.91
3″	10	91770A554	6.98
4″	10	91770A562	9.98
5/16″-18—#4 Drive			
1/2″	10	91770A578	5.21
5/8″	10	91770A580	5.21
3/4″	10	91770A581	5.72
1″	10	91770A583	6.78
1 1/4″	10	91770A585	7.12
1 1/2″	10	91770A587	8.70
2″	10	91770A590	9.91
2 1/2″	10	91770A594	10.88
3/8″-16—#4 Drive			
1/2″	10	91770A649	9.50
3/4″	10	91770A651	9.99
1″	10	91770A653	9.95
1 1/2″	5	91770A655	7.36
2″	5	91770A657	9.68

Black-Oxide 18-8 Stainless Steel—Phillips

Lg.	Pkg. Qty.		Per Pkg.
6-32—#2 Drive			
1/4″	50	94779A410	7.49
3/8″	50	94779A430	8.11
1/2″	50	94779A450	8.73
8-32—#2 Drive			
1/4″	25	94779A520	6.55
3/8″	50	94779A550	12.16
1/2″	50	94779A580	12.36
10-24—#2 Drive			
3/8″	25	94779A610	6.95
1/2″	25	94779A620	7.93
3/4″	10	94779A630	5.00
10-32—#2 Drive			
3/8″	25	94779A720	6.95
1/2″	25	94779A750	7.93
3/4″	10	94779A780	5.00
1/4″-20—#3 Drive			
1/2″	10	94779A820	6.55
3/4″	10	94779A840	8.36
1″	10	94779A860	9.23
1 1/4″	10	94779A880	10.99
1 1/2″	5	94779A900	6.37

18-8 Stainless Steel—Slotted

Lg.	Pkg. Qty.		Per Pkg.
4-40			
3/16″	100	91785A089	$5.00
1/4″	100	91785A092	4.42
3/8″	100	91785A108	5.08
1/2″	100	91785A096	5.56
1″	100	91785A115	7.88
6-32			
3/16″	100	91785A142	5.59
1/4″	100	91785A144	4.89
5/16″	100	91785A145	5.00
3/8″	100	91785A146	5.10
1/2″	100	91785A148	5.54
3/4″	100	91785A151	6.85
1″	100	91785A153	8.19
8-32			
1/4″	100	91785A190	6.35
5/16″	100	91785A191	6.55
3/8″	100	91785A192	6.57
7/16″	100	91785A193	8.02
1/2″	100	91785A194	8.08
5/8″	100	91785A196	8.32
3/4″	100	91785A197	9.77
1″	100	91785A199	10.34
1 1/4″	100	91785A201	13.16
1 1/2″	50	91785A203	7.61
10-24			
1/4″	100	91785A238	7.99
3/8″	100	91785A240	8.50
1/2″	100	91785A242	8.51
5/8″	100	91785A244	11.07
3/4″	100	91785A245	12.86
1″	50	91785A247	7.62
1 1/4″	50	91785A248	8.50
1 1/2″	50	91785A251	9.61
2″	25	91785A253	7.41
10-32			
1/4″	100	91785A825	7.99
5/16″	100	91785A826	8.50
3/8″	100	91785A827	8.58
10-32 (Cont.)			
1/2″	100	91785A829	$9.20
5/8″	100	91785A830	10.70
3/4″	100	91785A831	12.86
1″	50	91785A833	7.62
1 1/4″	50	91785A835	8.50
1 1/2″	50	91785A836	9.61
2″	25	91785A838	7.41
12-24			
1/2″	50	91785A291	8.92
1″	50	91785A296	9.90
1/4″-20			
3/8″	50	91785A535	8.81
1/2″	50	91785A537	9.73
5/8″	50	91785A539	9.75
3/4″	25	91785A540	6.11
7/8″	50	91785A541	14.07
1″	25	91785A542	7.45
1 1/4″	25	91785A544	9.35
1 1/2″	25	91785A546	9.90
1 3/4″	25	91785A548	9.98
2″	10	91785A550	4.69
2 1/2″	25	91785A552	13.85
3″	10	91785A554	6.31
1/4″-28			
5/8″	25	91785A558	8.33
1″	25	91785A561	9.57
5/16″-18			
1/2″	25	91785A578	9.76
3/4″	25	91785A581	11.87
1″	10	91785A583	5.82
1 1/2″	10	91785A587	7.76
2″	10	91785A591	9.67
3/8″-16			
3/4″	10	91785A622	7.87
1″	10	91785A624	9.87
1 1/2″	10	91785A628	12.92
2″	10	91785A632	14.55

Zinc-Plated Steel—Slotted

Lg.	Pkg. Qty.		Per Pkg.
6-32			
1/4″	100	90271A144	2.73
3/8″	100	90271A146	3.17
1/2″	100	90271A148	2.54
3/4″	100	90271A151	3.59
1″	100	90271A153	5.84
8-32			
1/4″	100	90271A190	2.79
3/8″	100	90271A192	3.26
1/2″	100	90271A194	3.54
3/4″	100	90271A197	3.89
1″	100	90271A199	4.43
1 1/2″	100	90271A203	5.34
10-24			
3/8″	100	90271A240	3.85
1/2″	100	90271A242	4.25
3/4″	100	90271A245	4.70
1″	100	90271A247	5.43
1 1/4″	100	90271A249	6.29
1 1/2″	100	90271A251	7.00
10-32			
3/8″	100	90271A827	3.16
1/2″	100	90271A829	3.81
3/4″	100	90271A831	6.59
1″	100	90271A833	9.48
1 1/4″	100	90271A835	8.74
10-32 (Cont.)			
1 1/2″	50	90271A836	5.82
1/4″-20			
3/8″	100	90271A535	6.04
1/2″	100	90271A537	7.11
5/8″	100	90271A539	7.39
3/4″	100	90271A540	8.04
1″	100	90271A542	8.42
1 1/4″	100	90271A544	11.17
1 1/2″	100	90271A546	11.40
2″	50	90271A550	9.43
2 1/2″	50	90271A552	9.47
3″	50	90271A554	11.23
5/16″-18			
1/2″	50	90271A578	9.60
3/4″	50	90271A581	7.59
1″	25	90271A583	5.31
1 1/2″	25	90271A587	5.93
2″	25	90271A591	8.06
2 1/2″	10	90271A593	4.49
3″	25	90271A595	9.90
3/8″-16			
3/4″	25	90271A622	6.00
1″	10	90271A624	5.10
2″	10	90271A632	8.03
3″	10	90271A636	10.10

Tamper-Resistant Large Diameter (Truss) Head Drilled Spanner

Virtually impossible to remove without a special matching driver (for drivers, see page 2835; for bits, see page 2825). Screws have a rounded, low-profile head that's an excellent bearing surface for holding thin materials.

Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. All are made from 18-8 stainless steel and have a Class 2A thread fit. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
8-32—#8 Drive			
1/2″	10	94135A121	$4.14
3/4″	10	94135A123	4.20
1″	10	94135A125	4.20
1 1/4″	10	94135A127	4.73
1 1/2″	10	94135A130	4.83
2 1/2″	10	94135A135	6.97
10-24—#10 Drive			
1/2″	10	94135A231	$4.60
3/4″	10	94135A233	4.60
10-32—#10 Drive			
3/4″	10	94135A341	4.60
1/4″-20—#14 (1/4″) Drive			
1/2″	10	94135A451	6.57
1″	10	94135A453	6.57
5/16″-18—#14 (1/4″) Drive			
3/4″	10	94135A581	$10.67
1″	10	94135A583	8.15
1 1/4″	10	94135A585	9.46
1 1/2″	10	94135A587	10.78
2″	10	94135A591	10.78
2 1/2″	10	94135A593	12.54
3/8″-16—#14 (1/4″) Drive			
3/4″	10	94135A622	$12.04
1″	10	94135A624	12.54
1 1/4″	10	94135A626	12.54
1 1/2″	10	94135A628	14.17
2″	5	94135A632	10.03
2 1/2″	5	94135A634	10.19
3″	5	94135A636	11.38

Round Head Phillips

Each screw has a thick, round head and a flat bearing surface. Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. All have a Class 2A thread fit. Length is measured from under the head.

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
0-80—#0 Drive			
1/8″	100	91773A052	$8.20
3/16″	100	91773A054	8.45
1/4″	100	91773A055	8.71
3/8″	100	91773A057	9.12
1/2″	100	91773A059	9.34
3/4″	100	91773A071	10.72
1″	100	91773A102	14.43
1-64—#0 Drive			
3/16″	100	91773A165	10.66
1/4″	100	91773A166	11.48
3/8″	100	91773A168	12.29
1/2″	100	91773A170	13.41
1″	50	91773A175	11.66
1-72—#0 Drive			
3/16″	100	91773A065	11.08
1/4″	100	91773A066	11.93
3/8″	100	91773A068	12.78
1/2″	100	91773A070	13.93
3/4″	50	91773A140	8.58
1″	50	91773A186	11.66
2-56—#1 Drive			
1/8″	100	91773A074	5.19
3/16″	100	91773A076	3.76
1/4″	100	91773A077	4.01
5/16″	100	91773A078	4.17
3/8″	100	91773A079	4.33
1/2″	100	91773A081	4.62
5/8″	100	91773A083	4.82
3/4″	100	91773A084	4.72
7/8″	100	91773A085	4.50
1″	100	91773A187	4.92
1 1/4″	100	91773A266	12.55
1 1/2″	50	91773A267	13.06
3-48—#1 Drive			
1/4″	100	91773A092	8.21
3/8″	100	91773A094	8.89
1/2″	100	91773A096	9.47
5/8″	100	91773A098	10.84
3/4″	100	91773A099	12.79
1″	50	91773A101	7.98
4-40—#1 Drive			
1/8″	100	91773A103	6.36
3/16″	100	91773A105	4.54
1/4″	100	91773A106	3.54
5/16″	100	91773A107	3.64
3/8″	100	91773A108	3.75
7/16″	100	91773A109	3.83
1/2″	100	91773A110	4.05
5/8″	100	91773A112	4.36
3/4″	100	91773A113	4.73
1″	100	91773A115	5.83
1 1/4″	100	91773A117	9.50
1 1/2″	100	91773A119	8.90
4-48—#1 Drive			
1/4″	100	91773A741	12.15
1/2″	50	91773A743	8.02
1″	50	91773A746	12.30
5-40—#2 Drive			
3/16″	100	91773A123	8.05
1/4″	100	91773A124	6.12
3/8″	100	91773A126	7.38
1/2″	100	91773A128	8.12
3/4″	100	91773A131	9.82
1″	50	91773A133	7.97
6-32—#2 Drive			
1/8″	100	91773A142	9.75
3/16″	100	91773A143	3.69
1/4″	100	91773A144	3.71
5/16″	100	91773A145	3.79
3/8″	100	91773A146	3.96
1/2″	100	91773A148	4.19
5/8″	100	91773A150	4.85
6-32 (Cont.)			
3/4″	100	91773A151	$5.42
7/8″	100	91773A152	5.86
1″	100	91773A153	5.96
1 1/4″	100	91773A155	6.58
1 1/2″	100	91773A157	8.00
1 3/4″	100	91773A158	10.43
2″	100	91773A159	11.85
2 1/2″	50	91773A161	8.62
3″	50	91773A163	11.35
8-32—#2 Drive			
3/16″	100	91773A189	5.74
1/4″	100	91773A190	4.51
5/16″	100	91773A191	4.92
3/8″	100	91773A192	4.94
1/2″	100	91773A194	5.42
5/8″	100	91773A196	5.79
3/4″	100	91773A197	6.76
7/8″	100	91773A198	7.40
1″	100	91773A199	7.93
1 1/4″	100	91773A201	9.97
1 1/2″	100	91773A203	13.23
1 3/4″	50	91773A204	7.31
2″	50	91773A205	8.34
2 1/2″	50	91773A207	11.04
3″	25	91773A209	7.27
4″	10	91773A213	4.40
10-24—#2 Drive			
1/4″	100	91773A238	6.71
3/8″	100	91773A240	6.90
7/16″	100	91773A241	7.30
1/2″	100	91773A242	7.89
5/8″	100	91773A246	8.96
3/4″	100	91773A245	9.81
1″	50	91773A247	6.50
1 1/4″	50	91773A249	7.82
1 1/2″	50	91773A251	8.35
1 3/4″	50	91773A252	10.70
2″	50	91773A253	11.72
2 1/2″	25	91773A256	8.94
3″	25	91773A257	9.31
4″	10	91773A261	5.99
10-32—#2 Drive			
1/4″	100	91773A825	6.71
5/16″	100	91773A826	6.82
3/8″	100	91773A827	6.90
1/2″	100	91773A829	7.89
5/8″	100	91773A830	8.96
3/4″	100	91773A831	9.81
7/8″	100	91773A832	9.79
1″	50	91773A833	6.50
1 1/8″	50	91773A834	8.46
1 1/4″	50	91773A835	7.82
1 1/2″	50	91773A836	8.35
1 3/4″	50	91773A837	10.70
2″	50	91773A838	11.72
2 1/2″	25	91773A840	8.19
3″	25	91773A841	9.31
12-24—#3 Drive			
1/2″	50	91773A291	7.03
3/4″	50	91773A294	8.68
1″	50	91773A296	9.73
1 1/2″	25	91773A299	7.53
2″	25	91773A301	9.02
1/4″-20—#3 Drive			
1/4″	25	91773A533	6.79
3/8″	50	91773A535	8.26
1/2″	50	91773A537	9.03
5/8″	50	91773A539	9.80
3/4″	50	91773A540	9.66
7/8″	25	91773A541	7.01
1″	25	91773A542	7.33

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
1/4″-20 (Cont.)			
1 1/4″	25	91773A544	$7.13
1 1/2″	25	91773A546	7.71
1 3/4″	25	91773A548	9.73
2″	25	91773A550	9.37
2 1/4″	25	91773A551	11.92
2 1/2″	10	91773A552	5.22
3″	10	91773A554	6.01
3 1/2″	10	91773A571	7.92
4″	10	91773A572	9.86
1/4″-28—#3 Drive			
1/2″	50	91773A557	11.34
5/8″	50	91773A558	12.79
3/4″	25	91773A559	7.33
1″	25	91773A561	9.02
1 1/4″	25	91773A563	10.25
1 1/2″	25	91773A564	10.91
5/16″-18—#3 Drive			
1/2″	25	91773A578	$10.49
5/8″	25	91773A580	10.54
3/4″	25	91773A581	11.80
1″	10	91773A583	5.55
1 1/4″	10	91773A584	7.17
1 1/2″	10	91773A586	7.66
2″	10	91773A591	8.71
2 1/2″	10	91773A593	10.88
3″	5	91773A595	7.19
3 1/2″	5	91773A597	7.69
3/8″-16—#4 Drive			
3/4″	10	91773A622	8.03
1″	10	91773A624	9.17
1 1/2″	10	91773A626	12.79
2″	5	91773A632	8.35
3″	5	91773A636	11.71
4″	5	91773A641	12.28

Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56—#1 Drive			
1/4″	100	90279A077	9.85
5/16″	100	90279A078	9.71
3/8″	100	90279A079	7.68
1/2″	100	90279A081	8.36
3/4″	100	90279A084	8.44
3-48—#1 Drive			
1/4″	100	90279A092	7.85
1/2″	100	90279A096	6.64
5/8″	100	90279A097	9.02
3/4″	100	90279A099	6.74
4-40—#1 Drive			
3/16″	100	90279A105	6.54
1/4″	100	90279A106	2.75
5/16″	100	90279A107	4.51
3/8″	100	90279A108	4.21
1/2″	100	90279A110	3.96
5/8″	100	90279A112	5.84
3/4″	100	90279A103	4.66
7/8″	100	90279A114	4.96
1″	100	90279A115	5.37
1 1/4″	100	90279A117	12.13
5-40—#2 Drive			
3/8″	100	90279A126	6.99
1/2″	100	90279A128	7.47
1″	100	90279A133	7.81
6-32—#2 Drive			
1/4″	100	90279A144	2.71
5/16″	100	90279A145	4.94
3/8″	100	90279A146	2.52
1/2″	100	90279A148	2.85
5/8″	100	90279A150	3.49
3/4″	100	90279A151	3.45
7/8″	100	90279A152	9.96
1″	100	90279A153	3.79
1 1/4″	100	90279A155	4.42
1 1/2″	100	90279A157	5.26
1 3/4″	50	90279A158	10.09
8-32—#2 Drive			
1/4″	100	90279A190	3.16
5/16″	100	90279A191	6.83
3/8″	100	90279A192	3.20
1/2″	100	90279A194	3.63
5/8″	100	90279A196	3.11
3/4″	100	90279A197	3.85
1″	100	90279A199	4.23
1 1/4″	100	90279A201	4.88
1 1/2″	100	90279A203	6.57
1 3/4″	100	90279A204	6.74
2″	100	90279A205	7.79
10-24—#2 Drive			
1/4″	100	90279A238	3.58
5/16″	100	90279A239	5.85
3/8″	100	90279A240	4.30
1/2″	100	90279A242	3.92
5/8″	100	90279A104	4.59
3/4″	100	90279A245	4.42
7/8″	100	90279A246	9.83
1″	100	90279A247	4.88
1 1/4″	100	90279A249	6.92
1 1/2″	100	90279A251	7.45
1 3/4″	100	90279A252	8.48
2″	100	90279A254	9.31
10-32—#2 Drive			
1/4″	100	90279A825	4.46
5/16″	100	90279A826	8.30
3/8″	100	90279A827	4.21
1/2″	100	90279A829	4.57
5/8″	100	90279A830	4.95
3/4″	100	90279A831	4.88
7/8″	100	90279A832	8.93
1″	100	90279A833	5.22
1 1/4″	100	90279A835	6.67
1 1/2″	100	90279A836	7.75
1 3/4″	100	90279A837	8.42
2″	100	90279A838	9.31
12-24—#3 Drive			
3/8″	100	90279A289	7.82
1/2″	100	90279A291	5.73
5/8″	100	90279A293	9.34
3/4″	100	90279A294	7.20
1″	100	90279A296	9.47
1 1/4″	100	90279A298	8.79
1 1/2″	100	90279A299	9.65
1/4″-20—#3 Drive			
1/4″	100	90279A533	13.01
3/8″	100	90279A535	7.70
1/2″	100	90279A537	5.89
5/8″	100	90279A539	5.43
3/4″	100	90279A540	5.14
7/8″	100	90279A541	10.44
1″	100	90279A542	9.22
1 1/4″	100	90279A544	7.73
1 1/2″	100	90279A546	9.43
1 3/4″	100	90279A548	10.86
2″	100	90279A550	11.11
2 1/4″	50	90279A551	9.08
2 1/2″	50	90279A552	8.24
5/16″-18—#3 Drive			
3/4″	50	90279A581	6.63
1″	25	90279A583	5.96
1 1/2″	25	90279A587	5.94

Extra-Wide Low-Profile Slotted

Also called hurricane shutter screws, these 18-8 stainless steel screws have a wide head so there's no need for a washer. Head dia. is 0.755″; head ht. is 0.110″. Fully threaded; Class 2A thread fit. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
1/4″-20			
1″	10	90015A414	$7.86
1 1/2″	10	90015A419	9.73
2″	10	90015A423	10.98

Lg.	Pkg. Qty.		Per Pkg.
5/16″-18			
1″	5	90015A471	$9.52

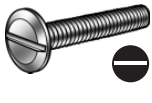

Round Head Slotted

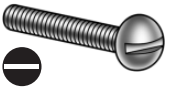

Each screw has a thick, round head and a flat bearing surface. Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. All have a Class 2A thread fit. Length is measured from under the head.

Also Available: Sizes marked with a ♣ are also available as a screw with nut. Please ask for 90232A600 and specify thread size and screw length.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
6-32			
1/4″	100	91857A144	$9.43
3/8″	100	91857A146	12.02
1/2″	100	91857A148	13.14
3/4″	50	91857A151	9.15
1″	50	91857A153	9.43
1 1/4″	50	91857A155	11.58
8-32			
1/4″	50	91857A190	7.05
3/8″	50	91857A192	7.73
1/2″	50	91857A194	9.14
3/4″	50	91857A197	9.95
1″	25	91857A199	6.98
1 1/2″	25	91857A203	9.22
10-24			
3/8″	50	91857A240	7.67
1/2″	50	91857A242	8.16
3/4″	25	91857A245	6.17
1″	25	91857A247	8.37
10-24 (Cont.)			
1 1/4″	25	91857A249	$10.86
1 1/2″	25	91857A251	12.76
10-32			
1/4″	50	91857A825	7.23
3/8″	50	91857A827	7.67
1/2″	50	91857A829	8.16
3/4″	25	91857A831	6.42
1″	25	91857A833	8.37
1 1/4″	25	91857A835	10.50
1 1/2″	25	91857A836	12.76
1/4″-20			
3/8″	25	91857A535	8.81
1/2″	25	91857A537	9.95
3/4″	10	91857A540	5.02
1″	10	91857A542	5.62
1 1/4″	10	91857A544	6.45
1 1/2″	10	91857A546	7.00
2″	10	91857A550	11.96

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
0-80			
1/8″	100	91783A052	7.55
3/16″	100	91783A054	9.46
1/4″	100	91783A055	11.50
3/8″	100	91783A057	12.09
7/16″	100	91783A058	12.55
1/2″	100	91783A059	14.95
1″	50	91783A102	10.49
1-64			
1/8″	100	91783A063	14.44
3/16″	100	91783A165	14.95
1/4″	100	91783A166	14.86
1″	50	91783A175	13.19
1-72			
1/8″	100	91783A164	11.05
3/16″	100	91783A065	12.25
1/4″	100	91783A066	14.44
3/8″	100	91783A068	14.62
3/4″	50	91783A140	11.90
2-56			
1/8″	100	91783A074	6.81
3/16″	100	91783A076	3.96
1/4″	100	91783A077	4.02
5/16″	100	91783A078	4.16
3/8″	100	91783A079	4.33
1/2″	100	91783A081	5.32
5/8″	100	91783A083	5.51
3/4″	100	91783A084	6.21
1″	100	91783A187	7.28
1 1/4″	50	91783A266	10.48
1 1/2″	25	91783A267	8.15
3-48			
1/4″	100	91783A092	7.61
1/2″	100	91783A096	9.96
4-40			
1/8″	100	91783A103	8.50
3/16″	100	91783A105	4.71
1/4″	100	91783A106	4.42
5/16″	100	91783A107	4.82
3/8″	100	91783A108	5.08
7/16″	100	91783A109	5.45
1/2″	100	91783A110	5.56
5/8″	100	91783A112	5.87
3/4″	100	91783A113	6.34
7/8″	100	91783A114	7.07
1″	100	91783A115	7.88
1 1/4″	100	91783A117	9.92
1 1/2″	100	91783A119	9.95
2″	50	91783A121	8.26
4-48			
1/2″	50	91783A743	10.25
5-40			
3/16″	100	91783A123	9.48
1/4″	100	91783A124	5.63
3/8″	100	91783A126	6.49
1/2″	100	91783A128	6.78
1″	100	91783A133	11.37
6-32			
1/8″	100	91783A142	8.40
3/16″	100	91783A143	5.52
1/4″	100	91783A144	4.76
5/16″	100	91783A145	4.92
3/8″	100	91783A146	4.94
7/16″	100	91783A147	5.28
1/2″	100	91783A148	5.45
5/8″	100	91783A150	6.26
3/4″	100	91783A151	6.81
7/8″	100	91783A152	7.35
1″	100	91783A153	8.07
1 1/4″	100	91783A155	9.90
1 1/2″	100	91783A157	12.26
1 3/4″	50	91783A158	7.09
2″	50	91783A159	8.96
2 1/2″	50	91783A161	11.06
3″	50	91783A163	12.56
8-32			
3/16″	100	91783A189	9.95
1/4″	100	91783A190	5.34
5/16″	100	91783A191	4.95
3/8″	100	91783A192	5.05
7/16″	100	91783A193	5.42
1/2″	100	91783A194	5.57
5/8″	100	91783A196	6.20
3/4″	100	91783A197	7.14
7/8″	100	91783A198	8.33
1″	100	91783A199	8.75
1 1/4″	100	91783A201	11.14
1 1/2″	100	91783A203	12.17
2″	50	91783A205	8.03
3″	25	91783A209	6.62
3 1/2″	10	91783A211	6.17
4″	10	91783A213	9.10
10-24			
1/4″	100	91783A238	6.75
5/16″	100	91783A239	6.44
3/8″	100	91783A240	6.91
1/2″	100	91783A242	8.72
5/8″	100	91783A244	9.26
3/4″	100	91783A245	9.96
1″	50	91783A247	6.20
1 1/4″	50	91783A249	7.56
1 1/2″	50	91783A251	9.00
2″	25	91783A253	5.89
2 1/4″	25	91783A254	6.65
2 1/2″	25	91783A255	7.46
2 3/4″	25	91783A256	8.33
3″	25	91783A257	8.83
3 1/2″	25	91783A259	12.28
4″	10	91783A261	6.66
5″	5	91783A265	8.98
6″	5	91783A269	9.56

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
10-32			
1/4″	100	91783A825	$6.75
5/16″	100	91783A826	6.44
3/8″	100	91783A827	7.82
1/2″	100	91783A829	9.70
5/8″	100	91783A830	10.41
3/4″	100	91783A831	11.11
7/8″	50	91783A832	6.23
1″	50	91783A833	6.54
1 1/4″	50	91783A835	7.56
1 1/2″	50	91783A836	9.58
1 3/4″	25	91783A837	5.68
2″	50	91783A838	11.79
2 1/4″	25	91783A839	6.65
2 1/2″	25	91783A840	7.46
3″	25	91783A842	8.34
3 1/2″	10	91783A844	5.48
4″	10	91783A846	6.66
12-24			
3/8″	100	91783A289	11.58
1/2″	100	91783A291	12.03
3/4″	50	91783A294	7.39
1″	50	91783A296	8.23
2″	25	91783A301	7.97
3″	10	91783A305	5.90
1/4″-20			
1/4″	50	91783A533	8.65
3/8″	50	91783A535	7.81
1/2″	50	91783A537	7.96
5/8″	50	91783A539	8.22
3/4″	50	91783A540	10.84
7/8″	25	91783A541	6.08
1″	25	91783A542	6.43
1 1/4″	25	91783A544	6.59
1 1/2″	25	91783A546	8.84
1 3/4″	25	91783A548	9.36
2″	25	91783A550	10.24
2 1/4″	10	91783A551	5.22
2 1/2″	10	91783A552	5.43
2 3/4″	10	91783A553	5.50
3″	10	91783A554	5.83
3 1/2″	10	91783A571	8.63
4″	10	91783A572	9.49
4 1/2″	10	91783A574	9.55
1/4″-20 (Cont.)			
5″	10	91783A576	$12.63
6″	5	91783A577	9.11
1/4″-28			
1/2″	50	91783A557	12.33
3/4″	25	91783A559	7.15
1″	25	91783A561	9.03
5/16″-18			
1/2″	25	91783A578	9.67
3/4″	25	91783A581	11.90
1″	10	91783A583	5.53
1 1/4″	10	91783A585	6.05
1 1/2″	10	91783A587	6.70
1 3/4″	10	91783A589	7.55
2″	10	91783A592	7.60
2 1/2″	10	91783A594	10.65
3″	10	91783A596	10.77
4″	5	91783A599	8.43
5″	1	91783A604	3.41
6″	1	91783A608	6.58
3/8″-16			
1/2″	10	91783A621	6.90
3/4″	10	91783A623	6.62
1″	10	91783A624	8.54
1 1/4″	10	91783A626	9.05
1 1/2″	10	91783A628	10.62
1 3/4″	10	91783A630	10.73
2″	5	91783A632	6.77
2 1/2″	5	91783A635	8.21
3″	5	91783A638	8.96
3 1/2″	5	91783A639	11.70
4″	5	91783A641	12.67
5″	1	91783A644	4.00
6″	1	91783A648	4.92
1/2″-13			
3/4″	10	91783A710	13.45
1″	5	91783A712	8.02
1 1/4″	5	91783A714	9.94
1 1/2″	5	91783A716	10.52
2″	5	91783A720	13.20
2 1/2″	1	91783A722	2.78
3″	1	91783A724	3.44
3 1/2″	1	91783A726	3.96
4″	1	91783A728	4.95

Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
3-48			
1/2″	100	90276A096	6.30
3/4″	100	90276A099	6.57
1″	100	90276A101	5.89
4-40			
1/8″	100	90276A103	5.95
3/16″	100	90276A105	5.62
1/4″	100	90276A106	2.33
5/16″	100	90276A107	4.78
3/8″	100	90276A108	1.65
1/2″	100	90276A110	1.85
5/8″	100	90276A112	2.03
3/4″	100	90276A113	2.29
7/8″	100	90276A114	3.60
1″	100	90276A115	2.48
1 1/4″	100	90276A117	7.59
1 1/2″	100	90276A119	5.12
5-40			
3/16″	100	90276A123	5.24
1/4″	100	90276A124	3.28
3/8″	100	90276A126	5.07
1/2″	100	90276A128 ♣	6.22
5/8″	100	90276A130	7.48
3/4″	100	90276A131 ♣	7.91
1″	100	90276A133 ♣	7.87
1 1/4″	100	90276A135	11.41
1 1/2″	100	90276A137 ♣	12.41
2″	100	90276A139	13.60
6-32			
1/8″	100	90276A142	5.18
3/16″	100	90276A143	2.41
1/4″	100	90276A144	2.10
5/16″	100	90276A145	2.33
3/8″	100	90276A146	2.83
7/16″	100	90276A147	2.59
1/2″	100	90276A148 ♣	1.94
5/8″	100	90276A150	2.28
3/4″	100	90276A151 ♣	2.41
7/8″	100	90276A152	2.38
1″	100	90276A153 ♣	2.71
1 1/4″	100	90276A155	3.04
1 1/2″	100	90276A157 ♣	3.40
1 3/4″	100	90276A158	4.02
2″	100	90276A159	4.93
2 1/2″	100	90276A161	5.06
3″	100	90276A163	6.72
4″	100	90276A167	8.83
8-32			
3/16″	100	90276A189	1.82
1/4″	100	90276A190	2.54
5/16″	100	90276A191	2.13
3/8″	100	90276A192	2.47
7/16″	100	90276A193	4.04
1/2″	100	90276A194 ♣	2.54
5/8″	100	90276A196	2.71
3/4″	100	90276A197 ♣	2.79

(Continued on following page)

Round Head Slotted *(Continued from previous page)*

Also Available: Sizes marked with a ♣ are available as a screw with nut. Please ask for 90232A600 and specify thread size and screw length.

Zinc-Plated Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
8-32 (Cont.)			
7/8"	100	90276A198	$3.85
1"	100	90276A199♣	3.44
1 1/4"	100	90276A201	4.56
1 1/2"	100	90276A203♣	5.55
1 3/4"	100	90276A204	7.24
2"	100	90276A205♣	7.14
2 1/4"	100	90276A206	7.57
2 1/2"	100	90276A207	8.48
2 3/4"	100	90276A208	9.82
3"	100	90276A209	9.33
3 1/2"	100	90276A211	12.75
4"	100	90276A213	14.90
5"	10	90276A217	8.43
6"	10	90276A221	12.63
10-24			
1/4"	100	90276A238	2.82
5/16"	100	90276A239	2.82
3/8"	100	90276A240♣	3.09
1/2"	100	90276A242♣	2.75
5/8"	100	90276A244♣	3.74
3/4"	100	90276A245♣	4.03
7/8"	100	90276A246	5.76
1"	100	90276A247♣	4.07
1 1/4"	100	90276A249♣	5.21
1 1/2"	100	90276A251♣	5.62
1 3/4"	100	90276A252♣	7.79
2"	100	90276A253♣	8.21
2 1/4"	100	90276A254	9.17
2 1/2"	100	90276A255♣	7.34
2 3/4"	100	90276A256	9.82
3"	100	90276A257♣	12.86
3 1/2"	100	90276A259	14.93
4"	100	90276A261	14.95
5"	50	90276A265	9.62
6"	50	90276A269	13.10
10-32			
1/4"	100	90276A825	3.62
5/16"	100	90276A826	3.14
3/8"	100	90276A827	3.36
7/16"	100	90276A828	3.33
1/2"	100	90276A829	3.79
5/8"	100	90276A830	3.13
3/4"	100	90276A831	4.25
7/8"	100	90276A832	5.74
1"	100	90276A833	4.91
1 1/8"	100	90276A834	4.39
1 1/4"	100	90276A835	4.82
1 1/2"	100	90276A836	5.36
1 3/4"	100	90276A837	7.33
2"	100	90276A838	8.02
2 1/4"	100	90276A839	9.09
2 1/2"	100	90276A840	9.69
2 3/4"	100	90276A841	14.03
3"	100	90276A842	12.31
3 1/2"	100	90276A844	14.95
4"	50	90276A846	7.91
5"	50	90276A850	11.02
6"	25	90276A854	7.70
12-24			
1/4"	100	90276A287	8.73
3/8"	100	90276A289	4.70
1/2"	100	90276A291	4.75
5/8"	100	90276A293	6.37
3/4"	100	90276A294	6.49
12-24 (Cont.)			
1"	100	90276A296	$7.12
1 1/4"	100	90276A298	7.96
1 1/2"	100	90276A299	9.51
2"	100	90276A301	9.40
2 1/2"	50	90276A303	7.10
3"	50	90276A305	7.53
1/4"-20			
1/4"	100	90276A533	9.92
5/16"	100	90276A534	9.98
3/8"	100	90276A535♣	5.72
1/2"	100	90276A537♣	7.00
5/8"	100	90276A539♣	6.52
3/4"	100	90276A540♣	7.29
7/8"	100	90276A541	6.03
1"	100	90276A542♣	8.24
1 1/8"	100	90276A543	9.18
1 1/4"	100	90276A544♣	8.13
1 1/2"	100	90276A546♣	9.90
1 3/4"	100	90276A548♣	10.34
2"	100	90276A550♣	11.07
2 1/4"	100	90276A551	13.25
2 1/2"	100	90276A552	12.74
2 3/4"	50	90276A553	7.48
3"	100	90276A554♣	12.80
3 1/2"	50	90276A571	10.09
4"	50	90276A572♣	10.38
4 1/2"	25	90276A573	6.63
5"	25	90276A270♣	6.40
6"	25	90276A274	7.88
1/4"-28			
1/2"	100	90276A557	10.98
3/4"	100	90276A559	12.69
1"	50	90276A561	9.28
1 1/2"	50	90276A563	10.52
2"	50	90276A564	10.82
5/16"-18			
3/8"	50	90276A576	6.75
1/2"	100	90276A578	11.29
5/8"	100	90276A580	12.28
3/4"	100	90276A581	12.97
1"	50	90276A583	8.24
1 1/4"	50	90276A585	6.88
1 1/2"	50	90276A587	9.40
2"	25	90276A591	5.63
2 1/4"	50	90276A592	11.09
2 1/2"	25	90276A593	6.92
3"	25	90276A595	7.50
4"	10	90276A599	4.41
5"	10	90276A603	5.79
3/8"-16			
1/2"	25	90276A619	7.03
3/4"	25	90276A622	6.39
1"	25	90276A624	6.45
1 1/2"	25	90276A628	7.65
2"	25	90276A632	9.32
3"	10	90276A636	5.44
4"	10	90276A640	5.89
5"	10	90276A644	6.23
1/2"-13			
1"	10	90276A712	5.93
1 1/2"	25	90276A716	14.25
2"	10	90276A720	6.07
3"	10	90276A724	10.12
4"	10	90276A728	13.70

Brass

Lg.	Pkg. Qty.		Per Pkg.
000-120			
1/4"	10	92482A147	6.38
00-90			
1/4"	25	92482A227	9.87
1/2"	10	92482A235	7.12
0-80			
5/32"	25	92482A264	8.57
1/4"	25	92482A267	9.87
3/8"	25	92482A271	13.81
1/2"	10	92482A275	6.26
1-72			
1/4"	25	92482A307	9.87
1/2"	25	92482A315	14.33
2-56			
1/8"	100	92453A074	4.79
3/16"	100	92453A076	3.84
1/4"	100	92453A077	4.02
5/16"	100	92453A078	4.28
3/8"	100	92453A079	4.22
1/2"	100	92453A081	5.20
5/8"	100	92453A083	5.81

Brass (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
2-56 (Cont.)			
3/4"	100	92453A084	$5.47
1"	100	92453A086	6.29
3-48			
1/8"	100	92453A089	5.26
3/16"	100	92453A091	4.81
1/4"	100	92453A092	4.80
3/8"	100	92453A094	4.85
1/2"	100	92453A096	5.53
3/4"	100	92453A099	7.39
7/8"	100	92453A100	7.78
4-40			
1/8"	100	92453A103	4.65
3/16"	100	92453A105	5.19
1/4"	100	92453A106	4.85
5/16"	100	92453A107	5.86
3/8"	100	92453A108	5.19
1/2"	100	92453A110	5.98
5/8"	100	92453A112	6.73
3/4"	100	92453A113	6.92
1"	100	92453A115	8.13
1 1/8"	100	92453A116	8.81
1 1/4"	100	92453A117	9.51
1 1/2"	100	92453A119	11.41
2"	100	92453A121	14.18
5-40			
1/4"	100	92453A124	5.62
3/8"	100	92453A126	6.16
1/2"	100	92453A128	7.90
5/8"	100	92453A130	7.66
3/4"	100	92453A131	8.34
1"	100	92453A133	10.83
1 1/4"	100	92453A135	10.98
1 1/2"	100	92453A137	13.74
6-32			
1/8"	100	92453A142	5.30
3/16"	100	92453A143	5.95
1/4"	100	92453A144	5.91
5/16"	100	92453A145	6.39
3/8"	100	92453A146	7.16
1/2"	100	92453A148	7.33
5/8"	100	92453A150	8.33
3/4"	100	92453A151	9.75
7/8"	100	92453A152	10.02
1"	100	92453A153	11.83
1 1/4"	100	92453A155	13.95
1 1/2"	50	92453A157	8.35
1 3/4"	50	92453A158	9.51
2"	50	92453A159	10.93
8-32			
3/16"	100	92453A189	6.90
1/4"	100	92453A190	7.31
5/16"	100	92453A191	7.96
3/8"	100	92453A192	8.85
1/2"	100	92453A194	11.30
5/8"	100	92453A196	11.40
3/4"	100	92453A197	13.26
7/8"	50	92453A198	8.51
1"	50	92453A199	8.75
1 1/4"	50	92453A201	9.82
1 1/2"	50	92453A203	11.89
8-32 (Cont.)			
2"	25	92453A205	$8.22
2 1/2"	25	92453A207	9.71
3"	25	92453A209	12.37
10-24			
1/4"	100	92453A238	9.92
3/8"	100	92453A240	12.81
1/2"	100	92453A242	14.14
5/8"	50	92453A244	9.02
3/4"	50	92453A245	11.12
1"	50	92453A247	12.24
1 1/4"	50	92453A249	14.50
1 1/2"	25	92453A251	8.59
2"	25	92453A253	11.14
2 1/2"	25	92453A255	13.78
3"	25	92453A257	14.95
10-32			
1/4"	100	92453A825	9.92
5/16"	100	92453A826	11.52
3/8"	100	92453A827	12.81
1/2"	100	92453A829	14.14
5/8"	50	92453A830	9.02
3/4"	50	92453A831	9.97
7/8"	50	92453A832	11.89
1"	50	92453A833	12.22
1 1/4"	50	92453A835	13.98
1 1/2"	25	92453A836	8.59
1 3/4"	25	92453A837	9.66
2"	25	92453A838	11.14
2 1/2"	25	92453A840	13.78
3"	10	92453A842	6.62
12-24			
3/8"	50	92453A289	9.52
1/2"	50	92453A291	10.68
3/4"	50	92453A294	13.74
1"	25	92453A296	8.73
1 1/2"	25	92453A299	10.21
2"	25	92453A301	13.82
1/4"-20			
1/4"	50	92453A533	11.78
3/8"	50	92453A535	13.31
1/2"	50	92453A537	14.95
5/8"	25	92453A539	9.14
3/4"	25	92453A540	9.61
1"	25	92453A542	10.64
1 1/4"	25	92453A544	12.87
1 1/2"	25	92453A546	14.89
1 3/4"	10	92453A548	7.57
2"	10	92453A550	8.07
2 1/2"	10	92453A552	9.92
3"	10	92453A554	11.55
5/16"-18			
1/2"	25	92453A578	14.34
3/4"	10	92453A581	7.21
1"	10	92453A583	9.12
1 1/2"	10	92453A587	11.38
2"	10	92453A591	13.70
3/8"-16			
3/4"	10	92453A622	14.14
1"	10	92453A624	14.90
2"	5	92453A632	11.23

Aluminum

Lg.	Pkg. Qty.		Per Pkg.
6-32			
1/4"	100	93143A144	13.00
1/2"	100	93143A148	13.30
3/4"	50	93143A151	7.06
1"	50	93143A153	11.68
8-32			
1/4"	50	93143A190	7.03
3/8"	50	93143A192	7.43
1/2"	50	93143A194	8.16
5/8"	25	93143A195	9.51
3/4"	25	93143A197	9.85
1"	50	93143A199	11.96
10-24			
1/2"	50	93143A242	7.53
3/4"	50	93143A245	9.29
1"	50	93143A247	12.93
1 1/2"	10	93143A249	7.18
10-32			
1/2"	50	93143A829	10.04
3/4"	50	93143A831	12.04
1"	25	93143A833	5.69
1 1/4"	25	93143A835	5.06
1 1/2"	25	93143A837	5.83
1/4"-20			
1/2"	50	93143A537	8.45
3/4"	25	93143A540	7.38
1"	25	93143A542	7.50
1 1/4"	25	93143A545	10.78
1 1/2"	25	93143A546	10.50
2"	25	93143A550	9.18
2 1/2"	10	93143A552	11.80

♣ **Also Available:** Screw with nut. Please ask for 90232A600 and specify thread size and screw length.

Round Head Combination Drive

You can drive these zinc-plated steel screws with a Phillips or slotted screwdriver. Each has a thick, round head and a flat bearing surface. All screws are fully threaded and have a Class 2A thread fit. Length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
6-32—#2 Drive			
3/8″	100	91440A144	$4.85
1/2″	100	91440A148	2.28
3/4″	100	91440A151	3.10
1″	100	91440A153	3.12
1 1/4″	100	91440A155	4.36
1 1/2″	100	91440A157	4.72
2″	100	91440A159	5.85
3″	100	91440A161	8.14
4″	50	91440A163	7.43
8-32—#2 Drive			
1/4″	100	91440A189	5.65
3/8″	100	91440A192	3.54
1/2″	100	91440A195	3.20
8-32 (Cont.)			
3/4″	100	91440A197	$3.34
1″	100	91440A199	3.56
1 1/4″	100	91440A201	4.21
1 1/2″	100	91440A203	4.97
2″	100	91440A205	6.72
2 1/2″	100	91440A209	8.64
3″	100	91440A213	9.95
10-24—#2 Drive			
1/2″	100	91440A242	3.26
3/4″	100	91440A245	5.05
1″	100	91440A247	5.09
1 1/4″	100	91440A249	5.81
1 1/2″	100	91440A251	6.42
10-24 (Cont.)			
2″	100	91440A253	$8.02
4″	50	91440A257	10.26
5″	25	91440A259	8.37
10-32—#2 Drive			
3/8″	100	91440A503	3.66
1/2″	100	91440A506	4.63
3/4″	100	91440A509	4.88
1″	100	91440A512	5.01
1 1/4″	100	91440A516	5.52
1 1/2″	100	91440A519	6.42
2″	100	91440A522	8.02
1/4″-20—#3 Drive			
3/8″	100	91440A535	5.14
1/2″	100	91440A537	5.14
1/4″-20 (Cont.)			
3/4″	100	91440A540	$5.33
1″	100	91440A542	7.26
1 1/4″	100	91440A544	8.13
1 1/2″	100	91440A546	9.13
2″	100	91440A550	9.90
2 1/2″	50	91440A552	7.60
3″	50	91440A554	8.89
4″	25	91440A556	9.92
5″	25	91440A558	9.63
6″	25	91440A560	12.23
3/8″-16—#4 Drive			
4″	5	91440A620	7.73

Binding Head Slotted

Binding head screws have a large, flat bearing surface so they're ideal for creating solid electrical connections. They have a thick, rounded head with slightly tapered sides. All are fully threaded (unless noted) and have a Class 2A thread fit. Length is measured from under the head.

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
0-80			
1/8″	100	91793A052	$8.76
3/16″	100	91793A054	10.97
1/4″	100	91793A055	13.34
5/16″	100	91793A056	13.60
3/8″	100	91793A057	14.02
1/2″	50	91793A059	9.04
3/4″	50	91793A071	10.02
1-72			
5/16″	50	91793A067	7.77
1/2″	50	91793A070	10.21
2-56			
1/8″	100	91793A074	7.72
3/16″	100	91793A076	4.99
1/4″	100	91793A077	4.86
5/16″	100	91793A078	5.03
3/8″	100	91793A079	5.23
7/16″	100	91793A080	5.85
1/2″	100	91793A081	6.13
5/8″	100	91793A083	6.39
3/4″	100	91793A084	7.14
7/8″	100	91793A086	7.81
1″	100	91793A187	8.45
1 1/4″	50	91793A266	12.16
1 1/2″	50	91793A267	12.30
3-48			
3/16″	100	91793A091	9.86
1/4″	100	91793A092	9.20
3/8″	100	91793A094	10.06
1/2″	100	91793A096	11.10
3/4″	50	91793A099	8.14
7/8″	50	91793A100	10.20
1″	50	91793A101	10.37
4-40			
1/8″	100	91793A103	8.50
3/16″	100	91793A105	5.05
1/4″	100	91793A106	5.13
5/16″	100	91793A107	5.60
3/8″	100	91793A108	5.81
7/16″	100	91793A109	6.33
1/2″	100	91793A110	6.44
9/16″	100	91793A111	7.01
5/8″	100	91793A112	6.73
3/4″	100	91793A113	7.35
7/8″	100	91793A114	8.29
1″	100	91793A115	9.15
1 1/4″	100	91793A117	11.51
1 1/2″	100	91793A119	12.62
5-40			
3/16″	100	91793A123	9.87
1/4″	100	91793A124	6.69
5-40 (Cont.)			
5/16″	100	91793A125	$7.20
3/8″	100	91793A126	7.72
1/2″	100	91793A128	7.86
1″	100	91793A133	13.19
6-32			
1/8″	100	91793A142	9.79
3/16″	100	91793A143	6.43
1/4″	100	91793A144	5.61
5/16″	100	91793A145	5.82
3/8″	100	91793A146	5.92
7/16″	100	91793A147	6.10
1/2″	100	91793A148	6.40
5/8″	100	91793A150	7.50
3/4″	100	91793A151	7.70
7/8″	100	91793A152	8.57
1″	100	91793A153	9.44
1 1/4″	100	91793A155	11.52
1 1/2″	50	91793A157	7.12
1 3/4″	50	91793A158	8.23
2″	50	91793A159	10.53
8-32			
3/16″	100	91793A189	5.43
1/4″	100	91793A190	5.61
5/16″	100	91793A191	5.96
3/8″	100	91793A192	6.43
7/16″	100	91793A193	7.03
1/2″	100	91793A194	7.14
5/8″	100	91793A196	8.10
3/4″	100	91793A197	9.20
7/8″	100	91793A198	10.73
1″	100	91793A199	11.16
1 1/4″	50	91793A201	7.02
1 1/2″	50	91793A203	7.27
1 3/4″	50	91793A204	9.16
2″	50	91793A205	9.93
2 1/2″	25	91793A207▲	6.93
10-24			
1/4″	100	91793A238	8.31
3/8″	100	91793A240	8.58
1/2″	100	91793A242	10.58
5/8″	50	91793A244	5.98
3/4″	50	91793A245	6.43
1″	50	91793A247	7.53
1 1/4″	50	91793A249	9.49
1 1/2″	25	91793A251	6.18
2″	25	91793A253	8.01
10-32			
1/4″	100	91793A825	8.31
5/16″	100	91793A826	8.58

▲ Has at least 1 1/2″ of thread.

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
10-32 (Cont.)			
3/8″	100	91793A827	$9.50
1/2″	100	91793A829	10.16
5/8″	50	91793A830	5.98
3/4″	50	91793A831	6.43
1″	50	91793A833	7.53
1 1/4″	25	91793A835	5.11
1 1/2″	25	91793A836	6.04
2″	25	91793A838	7.95
12-24			
1/2″	50	91793A291	9.06
5/8″	50	91793A293	9.25
12-24 (Cont.)			
3/4″	50	91793A294	$9.34
1″	50	91793A296	11.32
1/4″-20			
3/8″	25	91793A535	4.57
1/2″	25	91793A537	5.69
5/8″	25	91793A539	7.25
3/4″	25	91793A540	7.30
1″	25	91793A542	8.43
1 1/4″	25	91793A544	8.90
1 1/2″	25	91793A546	12.03
2″	10	91793A550	5.46

Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
3/16″	100	90277A105	5.32
1/4″	100	90277A106	3.07
5/16″	100	90277A107	4.87
3/8″	100	90277A108	3.07
1/2″	100	90277A110	3.63
5/8″	100	90277A112	5.97
6-32			
1/8″	100	90277A142	5.83
3/16″	100	90277A143	3.35
1/4″	100	90277A144	3.82
5/16″	100	90277A145	3.28
3/8″	100	90277A146	4.44
7/16″	100	90277A147	6.43
1/2″	100	90277A148	3.28
5/8″	100	90277A150	3.28
3/4″	100	90277A151	5.66
1″	100	90277A153	9.53
1 1/4″	100	90277A155	11.57
8-32			
1/4″	100	90277A190	3.77
5/16″	100	90277A191	4.36
3/8″	100	90277A192	4.49
1/2″	100	90277A194	4.05
5/8″	100	90277A196	4.43
3/4″	100	90277A197	4.52
1″	100	90277A199	5.27
10-24			
1/2″	100	90277A242	6.37
3/4″	100	90277A245	9.00
10-32			
1/4″	100	90277A825	7.52
3/8″	100	90277A827	6.20
1/2″	100	90277A829	5.31
5/8″	100	90277A830	5.91
3/4″	100	90277A831	7.12
1″	100	90277A833	6.84

Brass

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/8″	100	92443A074	4.79
3/16″	100	92443A076	4.79
1/4″	100	92443A077	4.83
4-40			
3/16″	100	92443A105	5.19
1/4″	100	92443A106	5.16
5/16″	100	92443A107	5.81
3/8″	100	92443A108	5.83
1/2″	100	92443A110	6.21
6-32			
3/16″	100	92443A143	5.95
1/4″	100	92443A144	6.34
5/16″	100	92443A145	7.82
3/8″	100	92443A146	7.42
1/2″	100	92443A148	8.41
3/4″	100	92443A151	10.42
8-32			
1/4″	100	92443A190	8.60
5/16″	100	92443A191	9.42
3/8″	100	92443A192	10.90
1/2″	100	92443A194	12.05
3/4″	100	92443A197	14.78
1″	50	92443A199	9.59
10-24			
3/8″	100	92443A240	14.31
1/2″	50	92443A242	10.15
3/4″	50	92443A245	10.50
1″	25	92443A247	6.98
10-32			
1/4″	100	92443A825	12.03
5/16″	100	92443A826	13.56
3/8″	100	92443A827	14.90
1/2″	50	92443A829	9.18
3/4″	50	92443A831	11.22
1″	25	92443A833	6.98

Fillister Head

Fillister head screws maximize driving power by combining the greatest head height with the smallest head diameter you can get in a machine screw. They have a slightly rounded top, a flat bearing surface, and a Class 2A thread fit. Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Length is measured from under the head.

Also Available: Military specification stainless steel drilled-fillister-head screws in sizes marked with a ●. They have a minimum tensile strength of 80,000 psi and are not rated for hardness. Please ask for 90350A100 and specify screw size and length.

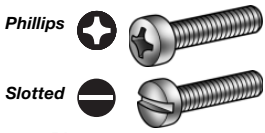

18-8 Stainless Steel—Phillips

Lg.	Pkg. Qty.		Per Pkg.
2-56—#1 Drive			
3/16″	100	91737A047	$4.86
1/4″	100	91737A051	4.29
5/16″	100	91737A053	5.07
3/8″	100	91737A054	4.38
4-40—#1 Drive			
3/16″	100	91737A069	4.43
1/4″	100	91737A072	4.48
5/16″	100	91737A076	4.64
3/8″	100	91737A079	4.77
1/2″	100	91737A084	5.97
6-32—#2 Drive			
1/4″	100	91737A105	5.33
5/16″	100	91737A106	5.75
3/8″	100	91737A107	5.80
1/2″	100	91737A109	6.18
3/4″	100	91737A114	7.66
8-32—#2 Drive			
1/4″	100	91737A123	7.30
5/16″	100	91737A126	7.46
8-32 (Cont.)			
3/8″	100	91737A125	$7.70
1/2″	100	91737A127	8.15
5/8″	50	91737A128	5.97
3/4″	100	91737A129	10.74
1″	50	91737A133	8.16
10-24—#2 Drive			
3/8″	50	91737A150	7.14
1/2″	50	91737A152	7.65
3/4″	50	91737A156	9.06
10-32—#2 Drive			
1/4″	100	91737A203	11.44
3/8″	50	91737A205	7.14
1/2″	50	91737A207	7.65
3/4″	50	91737A210	9.06
1/4″-20—#3 Drive			
1/2″	25	91737A252	7.06
3/4″	25	91737A256	8.81
1″	25	91737A259	9.97

18-8 Stainless Steel—Slotted

Lg.	Pkg. Qty.		Per Pkg.
0-80			
1/8″	100	91794A052	7.55
3/16″	100	91794A054	9.46
1/4″	100	91794A055	11.50
5/16″	100	91794A056	11.66
3/8″	100	91794A057	12.09
1/2″	100	91794A059	14.90
5/8″	100	91794A060	14.95
3/4″	50	91794A071	8.64
1″	50	91794A102	10.49
1-72			
1/8″	100	91794A063	11.31
3/16″	100	91794A065	12.25
1/4″	100	91794A066	14.44
3/8″	100	91794A068	14.62
1/2″	50	91794A070	8.21
5/8″	50	91794A120	9.97
3/4″	50	91794A130	11.50
1″	25	91794A186	6.73
2-56			
1/8″	100	91794A074	8.44
3/16″	100	91794A076	4.41
1/4″	100	91794A077●	4.03
5/16″	100	91794A078●	4.16
3/8″	100	91794A079●	4.33
7/16″	100	91794A080	5.04
1/2″	100	91794A081●	5.31
5/8″	100	91794A083	5.51
3/4″	100	91794A084	6.15
7/8″	100	91794A085	6.73
1″	100	91794A086	7.28
2-64			
1/2″	50	91794A218	10.55
3-48			
1/8″	100	91794A089	9.98
3/16″	100	91794A091	9.52
1/4″	100	91794A092	7.61
5/16″	100	91794A093	8.31
3/8″	100	91794A094	8.66
1/2″	100	91794A096	9.96
5/8″	100	91794A098	12.43
3/4″	50	91794A099	7.29
1″	50	91794A101	10.37
4-40			
1/8″	100	91794A103	8.50
3/16″	100	91794A105●	5.46
1/4″	100	91794A106●	5.12
5/16″	100	91794A107●	4.83
3/8″	100	91794A108●	5.08
7/16″	100	91794A109	5.46
1/2″	100	91794A110●	5.57
5/8″	100	91794A112	5.87
3/4″	100	91794A113	6.34
1″	100	91794A115	7.88
4-40 (Cont.)			
1 1/4″	100	91794A117	9.92
1 1/2″	100	91794A119	9.95
4-48			
1/4″	50	91794A741	8.02
3/8″	50	91794A742	8.99
1/2″	50	91794A743	10.41
3/4″	50	91794A745	12.46
1″	25	91794A746	8.87
5-40			
3/16″	100	91794A123	8.94
1/4″	100	91794A124	6.04
5/16″	100	91794A125	6.11
3/8″	100	91794A126	6.45
1/2″	100	91794A128	6.78
3/4″	100	91794A131	8.07
1″	100	91794A133	11.37
6-32			
3/16″	100	91794A143●	5.59
1/4″	100	91794A144●	4.90
5/16″	100	91794A145●	5.00
3/8″	100	91794A146●	5.09
1/2″	100	91794A148●	5.54
5/8″	100	91794A150	6.52
3/4″	100	91794A151●	6.84
7/8″	100	91794A152	7.51
1″	100	91794A153	8.19
1 1/4″	100	91794A155	9.98
1 1/2″	100	91794A157	12.32
2″	50	91794A159	9.02
8-32			
3/16″	100	91794A189	9.99
1/4″	100	91794A190	6.35
5/16″	100	91794A191	6.54
3/8″	100	91794A192●	6.57
1/2″	100	91794A194●	8.07
5/8″	100	91794A196	8.31
3/4″	100	91794A197●	9.77
7/8″	100	91794A198	10.05
1″	100	91794A199	10.34
1 1/4″	50	91794A201	6.80
1 1/2″	50	91794A203	7.60
1 3/4″	50	91794A204	7.98
2″	50	91794A205	10.14
2 1/2″	25	91794A207	6.40
10-24			
5/16″	100	91794A239	8.50
3/8″	100	91794A240	8.57
1/2″	100	91794A242	9.20
5/8″	100	91794A244	11.07
3/4″	50	91794A245	6.65
1″	50	91794A247	7.62
1 1/4″	50	91794A249	8.49
1 1/2″	50	91794A251	10.95

18-8 Stainless Steel—Slotted (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
10-24 (Cont.)			
2″	25	91794A253	$7.40
3″	25	91794A257	11.45
10-32			
1/4″	100	91794A825	7.99
5/16″	100	91794A826	8.50
3/8″	100	91794A827●	8.57
7/16″	100	91794A828	8.98
1/2″	100	91794A829●	9.20
5/8″	100	91794A830	11.07
3/4″	50	91794A831●	6.65
7/8″	50	91794A832	6.84
1″	50	91794A833	7.62
1 1/4″	50	91794A835	8.49
1 1/2″	50	91794A836	10.95
1 3/4″	50	91794A837	11.83
2″	25	91794A838	7.41
2 1/4″	25	91794A839	7.89
2 1/2″	25	91794A840	8.15
3″	25	91794A842	11.45
12-24			
1/2″	50	91794A291	$8.64
5/8″	50	91794A293	8.80
3/4″	50	91794A295	9.01
1/4″-20			
1/2″	50	91794A537	9.74
5/8″	50	91794A539	9.94
3/4″	25	91794A540	6.11
1″	25	91794A542	7.45
1 1/4″	25	91794A544	9.35
1 1/2″	25	91794A546	10.47
2″	25	91794A550	11.73
1/4″-28			
1/2″	25	91794A557	7.55
5/8″	25	91794A558	8.33
3/4″	25	91794A559	8.29
5/16″-18			
1/2″	25	91794A578	9.96
3/4″	10	91794A581	5.45
1″	10	91794A583	5.79
1 3/4″	10	91794A589	9.89

Zinc-Plated Steel—Slotted

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/4″	100	90280A106	4.32
3/8″	100	90280A108	4.75
1/2″	100	90280A110	5.03
6-32			
1/4″	100	90280A144	4.48
5/16″	100	90280A145	3.95
3/8″	100	90280A146	3.17
1/2″	100	90280A148	3.80
5/8″	100	90280A150	4.07
3/4″	100	90280A151	4.74
1″	100	90280A153	6.61
8-32			
1/4″	100	90280A190	4.32
5/16″	100	90280A191	4.62
3/8″	100	90280A192	4.64
1/2″	100	90280A194	4.41
5/8″	100	90280A196	8.63
3/4″	100	90280A197	4.70
1″	100	90280A199	6.17
1 1/4″	100	90280A201	7.33
1 1/2″	100	90280A203	8.45
10-24			
3/8″	100	90280A240	5.81
1/2″	100	90280A242	5.42
3/4″	100	90280A245	6.30
1″	100	90280A247	6.57
1 1/4″	100	90280A249	8.43
1 1/2″	100	90280A251	10.98
2″	50	90280A253	6.80
10-32			
1/4″	100	90280A825	5.60
3/8″	100	90280A827	5.43
1/2″	100	90280A829	5.25
5/8″	100	90280A830	6.78
3/4″	100	90280A831	7.09
1″	100	90280A833	7.75
1 1/4″	100	90280A835	8.89
1 1/2″	100	90280A836	9.95
1 3/4″	50	90280A837	5.91
2″	50	90280A838	6.04
12-24			
1/2″	100	90280A291	6.55
3/4″	100	90280A294	7.73
1″	100	90280A296	9.76
1 1/4″	50	90280A298	5.78
1 1/2″	25	90280A299	10.29
2″	25	90280A301	11.88
1/4″-20			
1/2″	100	90280A537	9.63
5/8″	100	90280A539	10.35
3/4″	100	90280A540	11.17
1″	100	90280A542	12.64
1 1/4″	50	90280A544	9.48
1 1/2″	50	90280A546	10.86
2″	25	90280A550	10.74
3″	10	90280A555	7.52
5/16″-18			
3/4″	50	90280A581	10.64
1″	50	90280A583	13.05

Brass—Slotted

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/4″	100	90114A124	4.42
3/8″	100	90114A127	4.74
1/2″	100	90114A131	4.78
4-40			
1/4″	100	90114A511	5.28
3/8″	100	90114A514	5.83
1/2″	100	90114A516	6.88
3/4″	100	90114A518	8.02
6-32			
1/4″	100	90114A523	7.53
3/8″	100	90114A527	7.53
1/2″	100	90114A529	8.90
5/8″	100	90114A531	9.14
3/4″	100	90114A534	11.54
1″	100	90114A537	12.90
8-32			
1/4″	100	90114A543	8.90
3/8″	100	90114A546	11.45
1/2″	100	90114A548	12.35
5/8″	100	90114A552	14.90
8-32 (Cont.)			
3/4″	100	90114A556	14.95
1″	50	90114A559	9.97
10-24			
3/8″	100	90114A561	14.90
1/2″	50	90114A565	9.23
5/8″	50	90114A567	10.20
3/4″	50	90114A571	11.60
1″	50	90114A574	14.25
10-32			
1/4″	100	90114A578	13.10
3/8″	100	90114A583	14.90
1/2″	50	90114A586	9.23
5/8″	50	90114A589	10.36
3/4″	50	90114A594	11.86
1″	50	90114A597	14.54
1/4″-20			
3/8″	50	90114A608	14.75
1/2″	25	90114A612	8.91
5/8″	25	90114A615	11.21
3/4″	25	90114A619	10.52
1″	25	90114A623	12.24

Metric Cheese Head Slotted

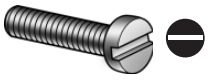

Cheese head screws maximize driving power by combining the greatest head height with the smallest head diameter you can get in a metric machine screw. Think of them as the metric version of fillister head screws, but with slightly tapered sides and a flat head.

All have a flat bearing surface and are fully threaded. Screws meet DIN 84. ***Stainless steel*** screws have a Class 6g thread fit; ***zinc-plated steel*** screws have a Class 6h thread fit. Length is measured from under the head.

Type 316 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—*Pitch: 0.4 mm*			
4	100	91613A032	$5.66
5	100	91613A034	6.35
6	100	91613A036	6.13
8	100	91613A038	5.75
10	100	91613A040	7.79
M3—*Pitch: 0.5 mm*			
5	100	91613A143	9.16
6	100	91613A145	11.81
8	100	91613A147	12.83
10	100	91613A149	12.93
12	50	91613A151	7.80
20	50	91613A159	10.00
M4—*Pitch: 0.7 mm*			
6	50	91613A224	3.89
M4 (Cont.)			
8	50	91613A226	$5.98
10	50	91613A228	8.19
12	50	91613A230	12.34
16	25	91613A240	7.82
M5—*Pitch: 0.8 mm*			
8	25	91613A337	8.05
10	25	91613A339	7.08
12	25	91613A341	9.99
16	25	91613A348	12.33
30	25	91613A364	13.46
M6—*Pitch: 1 mm*			
10	25	91613A418	8.80
12	10	91613A420	6.42
16	25	91613A422	9.80

18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M1—*Pitch: 0.25 mm*			
2	5	91800A050	8.00
3	5	91800A052	7.52
4	5	91800A056	7.85
6	5	91800A058	8.00
8	5	91800A060	8.76
10	5	91800A062	8.00
M1.2—*Pitch: 0.25 mm*			
2	10	91800A075	8.50
3	10	91800A077	7.26
4	10	91800A079	11.72
5	10	91800A081	14.00
6	10	91800A083	13.77
8	10	91800A085	13.97
10	5	91800A087	6.95
M1.4—*Pitch: 0.3 mm*			
3	10	91800A030	9.95
4	10	91800A032	9.96
5	10	91800A034	9.98
6	10	91800A036	9.99
8	10	91800A038	10.00
10	10	91800A040	10.50
M1.6—*Pitch: 0.35 mm*			
3	10	91800A003	1.15
4	10	91800A004	1.22
5	25	91800A005	3.18
6	25	91800A006	2.95
8	10	91800A008	1.64
10	50	91800A009	9.56
12	25	91800A010	4.17
16	25	91800A011	4.93
M2—*Pitch: 0.4 mm*			
3	100	91800A108	6.43
4	100	91800A110	6.82
5	100	91800A012	3.91
6	100	91800A013	3.93
8	100	91800A015	4.40
10	100	91800A017	5.00
12	100	91800A019	4.17
14	100	91800A018	6.20
16	100	91800A021	6.23
20	100	91800A022	8.33
25	50	91800A023	7.45
M2.5—*Pitch: 0.45 mm*			
3	50	91800A602	9.96
4	100	91800A606	7.30
5	100	91800A608	6.90
6	100	91800A610	7.14
8	100	91800A612	7.82
10	100	91800A614	7.59
12	100	91800A616	8.76
14	100	91800A617	10.68
16	100	91800A618	12.07
20	100	91800A619	14.18
25	50	91800A624	8.10
30	50	91800A626	7.54
M3—*Pitch: 0.5 mm*			
4	100	91800A113	9.71
5	50	91800A114	4.41
6	100	91800A116	6.42
8	100	91800A118	7.12
10	100	91800A120	7.11
12	100	91800A122	7.58
14	100	91800A124	8.33
16	100	91800A126	8.42
20	100	91800A128	9.21
25	100	91800A130	9.26
30	100	91800A132	11.11
35	100	91800A134	7.73
40	100	91800A136	10.64
45	50	91800A138	12.65
50	25	91800A140	6.50
M3.5—*Pitch: 0.6 mm*			
6	100	91800A175	6.60
8	100	91800A178	7.36
10	100	91800A181	9.50
12	100	91800A184	9.17
16	50	91800A190	6.00
20	50	91800A193	9.15
25	50	91800A196	9.60
40	50	91800A199	11.57
M4—*Pitch: 0.7 mm*			
5	100	91800A214	9.86
6	100	91800A216	6.16
8	100	91800A218	10.21

18-8 Stainless Steel (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
M4 (Cont.)			
10	100	91800A220	$10.04
12	100	91800A222	10.75
14	100	91800A224	10.79
16	100	91800A226	12.63
18	100	91800A227	12.64
20	50	91800A228	7.61
25	50	91800A230	7.94
30	50	91800A232	8.63
35	50	91800A234	8.80
40	50	91800A236	10.30
45	50	91800A238	13.80
50	25	91800A240	7.76
60	25	91800A242	10.16
70	25	91800A246	11.68
80	10	91800A250	6.83
M5—*Pitch: 0.8 mm*			
6	50	91800A316	5.99
8	50	91800A318	6.34
10	100	91800A320	14.84
12	50	91800A322	7.72
14	50	91800A324	13.46
16	50	91800A326	8.37
18	25	91800A327	10.08
20	50	91800A328	9.84
25	25	91800A330	5.72
30	25	91800A332	8.89
35	25	91800A334	9.56
M5 (Cont.)			
40	25	91800A336	$10.41
45	25	91800A338	13.15
50	10	91800A340	6.96
60	10	91800A344	6.96
70	10	91800A348	8.00
80	10	91800A352	11.60
M6—*Pitch: 1 mm*			
8	50	91800A418	13.15
10	50	91800A420	12.91
12	50	91800A424	11.07
16	50	91800A426	11.84
20	50	91800A428	12.80
25	50	91800A430	14.17
30	25	91800A438	8.79
35	25	91800A440	7.31
40	25	91800A442	13.80
45	25	91800A444	13.61
50	10	91800A446	5.86
60	10	91800A448	6.64
70	10	91800A450	7.52
M8—*Pitch: 1.25 mm*			
12	10	91800A550	8.03
16	10	91800A558	7.58
20	10	91800A562	6.97
25	10	91800A566	8.79
30	10	91800A568	10.38
40	10	91800A570	10.68

Zinc-Plated Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—*Pitch: 0.4 mm*			
3	100	91460A021	8.19
4	100	91460A023	6.00
5	100	91460A025	6.00
6	100	91460A027	6.00
8	100	91460A015	6.00
10	100	91460A018	6.00
12	100	91460A019	6.55
M2.5—*Pitch: 0.45 mm*			
6	100	91460A071	3.82
8	100	91460A073	3.82
10	100	91460A075	4.36
12	100	91460A077	4.91
M3—*Pitch: 0.5 mm*			
5	100	91460A110	5.10
6	100	91460A111	5.15
8	100	91460A113	6.00
10	100	91460A115	6.00
12	100	91460A117	6.00
16	100	91460A120	6.00
20	100	91460A123	6.00
25	100	91460A125	6.00
M4—*Pitch: 0.7 mm*			
5	100	91460A138	6.00
6	100	91460A139	6.00
8	100	91460A140	6.55
10	100	91460A144	6.55
12	100	91460A148	6.55
M4 (Cont.)			
16	100	91460A154	6.55
20	100	91460A168	6.55
25	100	91460A176	6.55
30	100	91460A180	6.55
35	100	91460A184	9.27
40	50	91460A187	9.55
M5—*Pitch: 0.8 mm*			
6	100	91460A220	9.27
8	100	91460A222	10.92
10	100	91460A224	10.92
12	100	91460A228	11.47
16	100	91460A232	9.82
20	100	91460A242	9.82
25	100	91460A252	10.92
30	100	91460A254	12.55
35	100	91460A256	13.64
40	25	91460A258	6.95
M6—*Pitch: 1 mm*			
8	100	91460A312	10.37
10	100	91460A316	12.00
12	100	91460A318	13.10
16	100	91460A321	14.19
20	50	91460A326	8.33
25	50	91460A330	8.35
30	25	91460A332	8.19
35	25	91460A334	8.59
40	25	91460A336	8.87

Hex Washer Head Slotted

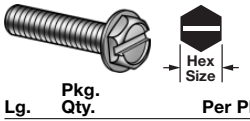

These 18-8 stainless steel screws have an indented hex head. The head and washer are formed as one piece; the washer provides a large, flat bearing surface that covers oversized holes. Screws are fully threaded and have a Class 2A thread fit. Head height includes washer. Screw length is measured from under the washer.

Lg.	Pkg. Qty.		Per Pkg.
6-32—*Hex Size: 1/4"; Head Ht.: 0.118"; Washer OD: 0.328"*			
1/4"	100	90316A160	$4.61
3/8"	100	90316A165	6.37
1/2"	100	90316A168	6.99
8-32—*Hex Size: 1/4"; Head Ht.: 0.141"; Washer OD: 0.348"*			
1/4"	100	90316A190	6.49
3/8"	100	90316A192	7.74
1/2"	100	90316A194	8.77
5/8"	100	90316A196	9.17
3/4"	100	90316A197	10.28
8-32 (Cont.)			
1"	100	90316A199	$12.32
1 1/4"	50	90316A203	7.23
1 1/2"	50	90316A207	8.35
10-24—*Hex Size: 5/16"; Head Ht.: 0.151"; Washer OD: 0.414"*			
3/8"	100	90316A240	10.27
1/2"	100	90316A242	11.21
5/8"	100	90316A244	12.84
3/4"	50	90316A245	6.79
1"	50	90316A247	8.64
1 1/4"	25	90316A251	5.43
10-24 (Cont.)			
1 1/2"	25	90316A255	$6.00
2"	25	90316A259	7.36
10-32—*Hex Size: 5/16"; Head Ht.: 0.151"; Washer OD: 0.414"*			
1/4"	100	90316A837	9.34
3/8"	100	90316A827	10.27
1/2"	100	90316A829	11.21
5/8"	100	90316A830	12.84
3/4"	50	90316A831	6.79
1"	50	90316A833	8.64
1 1/4"	25	90316A841	5.43
10-32 (Cont.)			
1 1/2"	25	90316A845	$6.00
2"	25	90316A849	7.36
1/4"-20—*Hex Size: 3/8"; Head Ht.: 0.240"; Washer OD: 0.520"*			
1/2"	50	90316A537	8.63
5/8"	25	90316A538	5.92
3/4"	25	90316A540	6.43
1"	25	90316A542	6.85
1 1/4"	10	90316A544	3.70
1 1/2"	10	90316A549	4.56
2"	10	90316A553	6.51

Hex Head

All have a flat bearing surface and a Class 2A thread fit. Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Length is measured from under head. For more hex head screws, see pages 3134-3159.

Stainless steel screws have a smooth, flush head.

Zinc-plated steel screws have an indented head.

Zinc-plated steel screws with external-tooth lock washer are also known as Sems screws. They have an indented head and come with a freely rotating, but permanently attached washer for extra holding power.

Stainless Steel

Zinc-Plated Steel with External-Tooth Lock Washer

Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
6-32—Hex Size: 1/4″			
3/8″	25	91720A142	$8.46
1/2″	25	91720A149	9.36
3/4″	25	91720A154	9.95
8-32—Hex Size: 1/4″			
3/8″	25	91720A192	7.42
1/2″	10	91720A194	4.86
3/4″	10	91720A197	5.06
10-24—Hex Size: 5/16″			
3/8″	25	91720A240	10.65
1/2″	25	91720A242	11.58
3/4″	10	91720A245	6.63
10-24 (Cont.)			
1″	10	91720A247	$7.78
1¼″	10	91720A249	6.84
1½″	10	91720A255	7.52
10-32—Hex Size: 5/16″			
3/8″	25	91720A827	10.65
1/2″	25	91720A829	11.58
3/4″	10	91720A831	5.67
1″	10	91720A833	6.50
1¼″	10	91720A849	6.84
1½″	10	91720A855	7.52
18-8 Stainless Steel			
4-40—Hex Size: 3/16″			
1/4″	100	92314A106	8.01
5/16″	100	92314A107	8.65
3/8″	100	92314A108	9.20
1/2″	100	92314A110	11.29
5/8″	100	92314A112	10.59
3/4″	100	92314A113	11.44
1″	50	92314A115	8.89
6-32—Hex Size: 1/4″			
1/4″	100	92314A144	7.80
5/16″	100	92314A145	9.10
3/8″	100	92314A146	9.20
1/2″	100	92314A148	10.85
5/8″	50	92314A150	6.80
3/4″	50	92314A151	7.39
1″	50	92314A153	10.35
1¼″	25	92314A155	7.07
1½″	25	92314A157	9.93
8-32—Hex Size: 1/4″			
1/4″	100	92314A190	11.46
5/16″	100	92314A191	11.50
3/8″	100	92314A192	11.42
1/2″	100	92314A194	12.26
5/8″	50	92314A196	8.67
3/4″	50	92314A197	8.48
7/8″	50	92314A198	10.55
1″	50	92314A199	11.04
8-32 (Cont.)			
1¼″	25	92314A201	6.47
1½″	25	92314A203	8.25
2″	25	92314A205	10.54
10-24—Hex Size: 5/16″			
1/4″	50	92314A239	7.35
3/8″	50	92314A240	9.37
1/2″	50	92314A242	9.22
5/8″	50	92314A244	9.55
3/4″	50	92314A245	12.36
7/8″	25	92314A248	7.23
1″	25	92314A247	7.42
1¼″	25	92314A249	8.82
1½″	25	92314A251	10.04
2″	25	92314A253	11.73
2½″	25	92314A255	13.92
3″	10	92314A257	8.37
10-32—Hex Size: 5/16″			
1/4″	100	92314A825	12.71
5/16″	50	92314A826	8.62
3/8″	50	92314A827	7.75
1/2″	50	92314A829	9.07
5/8″	50	92314A830	8.11
3/4″	50	92314A831	9.64
7/8″	50	92314A832	12.20
1″	50	92314A833	12.10
1¼″	25	92314A835	7.88
18-8 Stainless Steel (Cont.)			
10-32 (Cont.)			
1½″	25	92314A836	$9.75
2″	25	92314A838	10.43
2½″	25	92314A840	13.10
3″	10	92314A842	8.58
12-24—Hex Size: 5/16″			
1/2″	25	92314A291	$9.05
5/8″	25	92314A293	9.93
3/4″	25	92314A294	11.67
1″	25	92314A296	12.91
Zinc-Plated Steel			
6-32—Hex Size: 1/4″			
3/8″	100	93075A146	7.24
1/2″	100	93075A148	4.43
5/8″	100	93075A150	6.44
3/4″	100	93075A151	6.45
1″	100	93075A153	6.70
1¼″	100	93075A544	7.52
1½″	100	93075A546	5.95
8-32—Hex Size: 1/4″			
3/8″	100	93075A192	5.90
1/2″	100	93075A194	8.52
5/8″	100	93075A196	7.76
3/4″	100	93075A197	8.28
1″	100	93075A199	8.28
1¼″	100	93075A201	9.12
1½″	100	93075A203	11.37
10-24—Hex Size: 5/16″			
3/8″	100	93075A240	4.85
1/2″	100	93075A242	5.10
5/8″	100	93075A244	5.52
10-24 (Cont.)			
3/4″	100	93075A245	6.57
1″	100	93075A247	7.28
1¼″	100	93075A249	7.16
1½″	50	93075A251	7.40
10-32—Hex Size: 5/16″			
3/8″	100	93075A827	6.12
1/2″	100	93075A829	8.60
5/8″	100	93075A830	7.66
3/4″	100	93075A831	9.45
1″	100	93075A833	9.50
1¼″	100	93075A835	12.12
1½″	50	93075A836	6.22
12-24—Hex Size: 5/16″			
3/8″	50	93075A289	8.90
1/2″	50	93075A291	5.06
5/8″	25	93075A293	6.04
3/4″	50	93075A294	11.44
1″	50	93075A296	8.37
1½″	25	93075A299	8.04
Zinc-Plated Steel with External-Tooth Lock Washer			
6-32—Hex Size: 1/4″ *Washer: OD 0.285″; Thick. 0.022″*			
1/4″	100	90401A144	10.87
3/8″	100	90401A146	11.52
1/2″	100	90401A148	12.32
8-32—Hex Size: 5/16″ *Washer: OD 0.317″; Thick. 0.020″*			
1/4″	100	90401A190	14.35
3/8″	100	90401A192	14.17
1/2″	100	90401A194	14.80
10-24—Hex Size: 5/16″ *Washer: OD 0.381″; Thick. 0.024″*			
3/8″	100	90401A240	13.55
10-24 (Cont.)			
1/2″	100	90401A242	13.09
10-32—Hex Size: 5/16″ *Washer: OD 0.381″; Thick. 0.024″*			
3/8″	100	90401A827	12.75
1/2″	100	90401A829	12.10
1/4″-20—Hex Size: 7/16″ *Washer: OD 0.475″; Thick. 0.028″*			
3/8″	100	90401A535	11.65
1/2″	50	90401A537	11.75
3/4″	50	90401A540	12.06
1″	25	90401A542	9.13

100° Flat Head Phillips

With a larger bearing surface to distribute holding force, these screws are preferred over standard 82° flat heads for use in soft materials. They provide a flush surface within countersunk holes, are fully threaded, and have a Class 2A thread fit. All screws are made from zinc-plated steel. Length is measured from the top of the head.

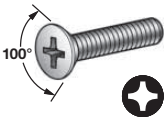

Lg.	Pkg. Qty.		Per Pkg.
2-56—#1 Drive			
3/16″	100	90471A110	$9.95
1/4″	100	90471A115	5.67
4-40—#1 Drive			
1/4″	100	90471A155	4.84
3/8″	100	90471A160	5.07
1/2″	100	90471A163	9.95
6-32—#2 Drive			
1/4″	100	90471A205	7.23
3/8″	100	90471A215	5.42
1/2″	100	90471A220	6.84
3/4″	100	90471A223	13.56
1″	100	90471A226	12.76
8-32—#2 Drive			
1/4″	100	90471A250	8.08
3/8″	100	90471A260	8.29
1/2″	100	90471A270	8.38
8-32 (Cont.)			
3/4″	100	90471A273	$13.08
1″	100	90471A276	13.92
10-24—#2 Drive			
1/2″	100	90471A310	9.75
3/4″	100	90471A315	10.84
1″	50	90471A318	10.80
10-32—#2 Drive			
1/2″	100	90471A355	8.86
3/4″	100	90471A360	10.80
1″	50	90471A363	10.30
1/4″-20—#3 Drive			
1/2″	50	90471A410	8.20
3/4″	50	90471A413	14.32
1″	25	90471A416	8.20
1¼″	25	90471A419	12.54
1½″	25	90471A422	13.65

Metric Japanese Industrial Standard Flat Head Phillips

JIS B1111 (Japanese Industrial Standard) flat head screws have a head with a larger diameter and a deeper bevel than screws that meet DIN specifications. They provide a flush surface within countersunk holes and are made from zinc-plated steel. All are fully threaded with a Class 6h thread fit. Length is measured from under the head. For JIS drivers, see 53325A on page 2831.

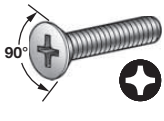

Also Available: 18-8 stainless steel screws (unless noted). Please ask for 97613A550 and specify thread size and screw length.

Lg., mm	Pkg. Qty.		Per Pkg.
M4—#2 Drive; Pitch: 0.7 mm; Head: Dia. 8 mm; Ht. 2.3 mm			
8	25	96477A120	$3.97
10	25	96477A123	4.02
14	25	96477A126♣	4.79
16	25	96477A129	5.03
20	25	96477A132	5.97
M5—#2 Drive; Pitch: 0.8 mm; Head: Dia. 10 mm; Ht. 2.8 mm			
8	25	96477A162	6.90
10	25	96477A165	6.98
16	25	96477A168	8.70
M5 (Cont.)			
30	25	96477A171	$11.09
35	25	96477A174♣	13.09
M6—#3 Drive; Pitch: 1 mm; Head: Dia. 12 mm; Ht. 3.4 mm			
8	25	96477A218	8.12
10	25	96477A221	9.18
12	25	96477A224	9.24
14	25	96477A227	10.06
16	25	96477A230	10.82
20	25	96477A233	13.64

♣ Not available in 18-8 stainless steel.

Flat Head Phillips

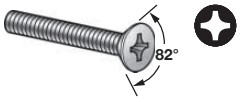

Flat Head — Undercut Flat Head

Considered standard flat head screws, these screws are beveled 82° under the head to provide a flush surface within countersunk holes. Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Screws marked with a ● have an undercut head to allow more threading. All have a Class 2A thread fit. Length is measured from the top of the head.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
6-32—#2 Drive			
1/4″	100	91500A144	$9.03
3/8″	100	91500A146	9.51
1/2″	100	91500A148	9.90
3/4″	50	91500A151	6.12
1″	25	91500A153	3.36
1 1/4″	25	91500A155	7.45
1 1/2″	25	91500A157	8.84
8-32—#2 Drive			
3/8″	50	91500A192	5.11
1/2″	50	91500A194	6.69
3/4″	50	91500A197	8.83
1″	25	91500A199	5.59
1 1/4″	25	91500A201	8.38
1 1/2″	25	91500A203	9.95
10-24—#2 Drive			
3/8″	25	91500A240	4.24
1/2″	25	91500A242	5.16
3/4″	25	91500A245	5.63
1″	25	91500A247	6.43
1 1/4″	25	91500A249	9.51
1 1/2″	10	91500A251	4.52
10-32—#2 Drive			
3/8″	50	91500A827	8.77
1/2″	25	91500A829	5.01
10-32 (Cont.)			
3/4″	25	91500A831	$5.54
1″	25	91500A833	6.21
1 1/4″	25	91500A835	9.51
1 1/2″	10	91500A836	4.21
1/4″-20—#3 Drive			
1/2″	25	91500A537	6.35
3/4″	25	91500A540	7.16
1″	10	91500A542	4.19
1 1/4″	10	91500A544	5.01
1 1/2″	10	91500A546	5.85
2″	10	91500A550	6.72
2 1/2″	10	91500A552	8.73
3″	10	91500A554	9.16
5/16″-18—#4 Drive			
3/4″	10	91500A581	6.90
1″	10	91500A583	7.37
1 1/4″	10	91500A585	10.07
1 1/2″	10	91500A587	11.48
2″	5	91500A591	6.78
3/8″-16—#4 Drive			
3/4″	10	91500A622	11.56
1″	10	91500A624	11.73
1 1/4″	5	91500A626	6.91
2″	5	91500A632	9.24

PTFE-Coated 18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
6-32—#2 Drive			
1/4″	100	96653A109	14.28
3/8″	100	96653A112	14.28
1/2″	100	96653A115	14.90
3/4″	100	96653A118	13.54
8-32—#2 Drive			
1/4″	100	96653A149●	13.54
3/8″	100	96653A152	14.89
1/2″	100	96653A155	14.95
3/4″	50	96653A158	8.60
10-32—#2 Drive			
3/8″	50	96653A179	9.89
1/2″	50	96653A182	10.40
3/4″	50	96653A185	11.70
1″	50	96653A188	11.24
1/4″-20—#3 Drive			
3/8″	25	96653A249●	10.40
1/2″	25	96653A252	11.45
3/4″	25	96653A255	11.90
1″	25	96653A258	14.55
1 1/2″	25	96653A261	14.90

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
0-80—#0 Drive			
1/8″	100	91771A052●	8.41
3/16″	100	91771A054	8.66
1/4″	100	91771A055	9.01
5/16″	100	91771A056	9.24
3/8″	100	91771A057	9.44
1/2″	100	91771A059	9.67
5/8″	100	91771A060	10.93
3/4″	100	91771A071	10.63
1″	100	91771A102	14.43
1-64—#0 Drive			
1/8″	100	91771A063●	9.84
3/16″	100	91771A065	10.66
1/4″	100	91771A066	11.48
3/8″	100	91771A068	12.29
1/2″	100	91771A070	14.12
3/4″	50	91771A176	8.66
1-72—#0 Drive			
1/8″	100	91771A164●	10.24
3/16″	100	91771A165	11.08
1/4″	100	91771A166	11.93
5/16″	100	91771A167	12.36
3/8″	100	91771A168	12.78
1/2″	100	91771A170	13.93
1″	50	91771A175	9.64
2-56—#1 Drive			
1/8″	100	91771A074●	4.71
3/16″	100	91771A076	7.96
1/4″	100	91771A104	5.94
5/16″	100	91771A078	6.20
3/8″	100	91771A105	6.25
7/16″	100	91771A080	6.98
1/2″	100	91771A081	6.94
9/16″	100	91771A082	4.74
5/8″	100	91771A083	4.64
3/4″	100	91771A084	4.76
7/8″	100	91771A085	5.19
1″	100	91771A140	4.92
1 1/4″	100	91771A141	5.29
1 1/2″	50	91771A267	10.22
3-48—#1 Drive			
1/8″	100	91771A089●	7.61
3/16″	100	91771A091	7.74
1/4″	100	91771A092	7.86
5/16″	100	91771A093	7.99
3/8″	100	91771A094	8.32
1/2″	100	91771A096	9.44
5/8″	100	91771A098	10.81
3/4″	100	91771A099	12.74
1″	50	91771A101	8.29
4-40—#1 Drive			
1/8″	100	91771A103●	7.95
3/16″	100	91771A111●	5.16
1/4″	100	91771A106	4.38
5/16″	100	91771A107	4.53
3/8″	100	91771A108	4.56
7/16″	100	91771A109	4.53
1/2″	100	91771A110	4.61
9/16″	100	91771A121	5.12
5/8″	100	91771A112	5.17
3/4″	100	91771A113	5.42
7/8″	100	91771A114	5.27
1″	100	91771A115	6.33
1 1/8″	50	91771A116	5.34
1 1/4″	100	91771A117	7.39
1 1/2″	100	91771A119	8.38
1 3/4″	100	91771A122	10.14
2″	100	91771A120	10.83
4-48—#1 Drive			
1/4″	100	91771A741	11.69
3/8″	100	91771A742	13.96
1/2″	50	91771A743	8.02
1″	50	91771A746	12.20
5-40—#2 Drive			
1/4″	100	91771A124	5.28
5/16″	100	91771A125	5.79
3/8″	100	91771A126	6.36
1/2″	100	91771A128	7.01
3/4″	100	91771A129	9.95
1″	50	91771A133	7.89

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
6-32—#2 Drive			
3/16″	100	91771A143●	$3.26
1/4″	100	91771A144	6.26
5/16″	100	91771A145	5.13
3/8″	100	91771A146	5.13
7/16″	100	91771A142	5.36
1/2″	100	91771A148	5.24
9/16″	100	91771A169	5.37
5/8″	100	91771A150	5.75
3/4″	100	91771A151	6.36
7/8″	100	91771A152	7.09
1″	100	91771A153	7.37
1 1/8″	100	91771A154	6.60
1 1/4″	100	91771A155	9.46
1 1/2″	100	91771A157	9.84
1 3/4″	100	91771A156	9.26
2″	100	91771A159	9.26
2 1/2″	50	91771A161	6.36
3″	50	91771A163	8.05
8-32—#2 Drive			
3/16″	100	91771A189●	4.69
1/4″	100	91771A190●	7.17
5/16″	100	91771A191	6.96
3/8″	100	91771A192	6.03
7/16″	100	91771A195	6.33
1/2″	100	91771A194	7.26
5/8″	100	91771A196	7.42
3/4″	100	91771A197	8.86
7/8″	100	91771A198	10.08
1″	100	91771A199	10.82
1 1/8″	100	91771A200	9.02
1 1/4″	100	91771A201	13.39
1 1/2″	50	91771A203	7.26
1 3/4″	50	91771A204	6.89
2″	50	91771A205	10.02
2 1/4″	50	91771A206	10.76
2 1/2″	50	91771A207	10.06
2 3/4″	50	91771A208	10.42
3″	50	91771A209	12.74
3 1/2″	10	91771A211	3.92
4″	10	91771A213	5.10
10-24—#2 Drive			
1/4″	100	91771A238●	9.34
5/16″	100	91771A239●	9.19
3/8″	100	91771A240	8.84
7/16″	100	91771A241	9.63
1/2″	100	91771A242	9.53
5/8″	100	91771A244	12.47
3/4″	100	91771A245	12.21
7/8″	100	91771A246	13.33
1″	100	91771A247	13.74
1 1/8″	50	91771A248	6.22
1 1/4″	50	91771A249	8.01
1 1/2″	50	91771A251	9.38
1 3/4″	50	91771A254	7.96
2″	50	91771A253	12.00
2 1/2″	25	91771A256	9.07
3″	25	91771A257	8.71
3 1/2″	10	91771A259	5.07
4″	10	91771A261	5.75
5″	10	91771A263	11.03
6″	5	91771A265	7.13
10-32—#2 Drive			
1/4″	100	91771A825●	9.96
5/16″	100	91771A826●	9.22
3/8″	100	91771A827	9.09
7/16″	100	91771A847	9.47
1/2″	100	91771A829	9.47
5/8″	100	91771A830	11.72
3/4″	100	91771A831	12.60
7/8″	100	91771A832	13.98
1″	50	91771A833	7.49
1 1/8″	50	91771A834	6.72
1 1/4″	50	91771A835	9.12
1 1/2″	50	91771A836	9.97
1 3/4″	50	91771A837	11.40
2″	50	91771A838	12.80
2 1/4″	50	91771A839	12.99
10-32 (Cont.)			
2 1/2″	25	91771A840	$8.03
3″	25	91771A842	9.64
3 1/2″	10	91771A844	5.07
4″	10	91771A846	4.95
12-24—#3 Drive			
3/8″	100	91771A289●	7.78
1/2″	100	91771A291	8.44
5/8″	100	91771A293	10.06
3/4″	100	91771A294	12.04
1″	50	91771A296	8.54
1 1/4″	50	91771A298	7.69
1 1/2″	50	91771A299	11.82
2″	25	91771A301	8.11
3″	25	91771A305	11.83
4″	10	91771A309	8.38
1/4″-20—#3 Drive			
3/8″	100	91771A535●	8.82
1/2″	50	91771A537	8.64
5/8″	50	91771A539	6.42
3/4″	50	91771A540	11.09
7/8″	50	91771A541	11.53
1″	50	91771A542	12.22
1 1/8″	50	91771A543	10.31
1 1/4″	25	91771A544	8.00
1 1/2″	25	91771A546	8.80
1 3/4″	25	91771A548	8.40
2″	25	91771A550	11.27
2 1/4″	25	91771A551	11.75
2 1/2″	25	91771A552	13.21
2 3/4″	10	91771A553	5.46
3″	10	91771A554	6.48
3 1/2″	10	91771A571	6.40
4″	10	91771A573	7.99
4 1/2″	10	91771A574	12.39
5″	5	91771A576	6.87
6″	5	91771A577	8.73
1/4″-28—#3 Drive			
3/8″	50	91771A555●	8.43
1/2″	50	91771A557	9.60
3/4″	25	91771A559	6.67
1″	25	91771A561	6.70
1 1/8″	25	91771A562	9.52
1 1/4″	25	91771A563	9.19
1 1/2″	25	91771A564	9.07
2″	25	91771A566	12.64
5/16″-18—#4 Drive			
1/2″	25	91771A578●	7.88
5/8″	25	91771A580	9.59
3/4″	25	91771A581	9.80
7/8″	25	91771A582	11.03
1″	10	91771A583	4.32
1 1/4″	25	91771A585	10.81
1 1/2″	10	91771A587	5.58
1 3/4″	10	91771A589	5.52
2″	10	91771A591	7.18
2 1/4″	10	91771A592	9.80
2 1/2″	10	91771A593	10.38
3″	10	91771A595	11.08
3 1/2″	5	91771A597	7.06
4″	5	91771A599	7.80
5″	5	91771A602	13.72
3/8″-16—#4 Drive			
1/2″	10	91771A619●	5.52
5/8″	10	91771A620	5.92
3/4″	10	91771A622	6.06
1″	10	91771A624	7.06
1 1/4″	10	91771A626	8.82
1 1/2″	10	91771A628	9.34
1 3/4″	10	91771A630	10.00
2″	10	91771A632	11.86
2 1/2″	5	91771A634	7.17
2 3/4″	5	91771A635	9.06
3″	5	91771A636	8.83
3 1/2″	5	91771A638	9.60
4″	5	91771A640	10.57
4 1/2″	5	91771A642	11.89
5″	5	91771A644	14.90
6″	1	91771A648	5.58

● Head is undercut.

(Continued on following page)

Flat Head Phillips *(Continued from previous page)*

18-8 Stainless Steel with Undercut Head

Lg.	Pkg. Qty.	Per Pkg.
4-40—#1 Drive		
1/4"	100	91099A155● $3.48
5/16"	100	91099A160● 4.09
3/8"	100	91099A165● 4.41
1/2"	100	91099A167● 4.73
5/8"	100	91099A169● 4.77
6-32—#2 Drive		
1/4"	100	91099A205● 4.35
5/16"	100	91099A210● 4.50
3/8"	100	91099A215● 4.75
1/2"	100	91099A220● 5.09
5/8"	100	91099A222● 5.19
3/4"	100	91099A224● 5.44
1"	100	91099A228● 7.26
8-32—#2 Drive		
5/16"	100	91099A255● 4.64
3/8"	100	91099A260● 4.87
1/2"	100	91099A265● 5.01
5/8"	100	91099A266● 6.49
3/4"	100	91099A268● 7.71
1"	100	91099A270● 9.10
10-24—#2 Drive		
3/8"	100	91099A315● $6.93
1/2"	100	91099A320● 7.95
3/4"	100	91099A325● 11.14
1"	50	91099A329● 8.20
10-32—#2 Drive		
3/8"	100	91099A355● 6.93
1/2"	100	91099A360● 7.95
5/8"	100	91099A362● 9.97
3/4"	100	91099A365● 11.14
1"	50	91099A367● 8.81
12-24—#3 Drive		
1/2"	100	91099A415● 10.94
3/4"	50	91099A420● 8.77
1"	50	91099A425● 11.52
1/4"-20—#3 Drive		
1/2"	50	91099A450● 9.92
3/4"	50	91099A453● 11.25
1"	25	91099A456● 7.54

Black-Oxide 18-8 Stainless Steel

Lg.	Pkg. Qty.	Per Pkg.
2-56—#1 Drive		
3/16"	100	96640A021 5.86
1/4"	100	96640A023 3.84
3/8"	100	96640A025 4.35
1/2"	100	96640A027 4.78
4-40—#1 Drive		
1/4"	100	96640A054 4.11
3/8"	100	96640A056 5.17
1/2"	100	96640A058 7.03
6-32—#2 Drive		
1/4"	100	96640A110 6.19
5/16"	100	96640A113 6.23
3/8"	100	96640A115 6.41
1/2"	100	96640A117 6.99
5/8"	100	96640A118 10.86
3/4"	100	96640A120 10.71
8-32—#2 Drive		
3/8"	100	96640A123 8.60
1/2"	100	96640A126 9.59
8-32 (Cont.)		
5/8"	100	96640A127 13.51
3/4"	100	96640A129 11.11
10-24—#2 Drive		
3/8"	50	96640A132 6.89
1/2"	50	96640A135 7.74
3/4"	50	96640A137 9.68
1"	50	96640A139 12.11
10-32—#2 Drive		
3/8"	50	96640A141 6.89
1/2"	50	96640A144 7.74
5/8"	50	96640A145 8.47
3/4"	50	96640A146 9.68
1"	50	96640A148 12.11
1/4"-20—#3 Drive		
1/2"	50	96640A150 13.29
3/4"	25	96640A153 8.40
1"	25	96640A155 10.71
1 1/4"	25	96640A157 13.16
1 1/2"	10	96640A158 5.73

Brass

Lg.	Pkg. Qty.	Per Pkg.
4-40—#1 Drive		
1/4"	100	92480A106 4.46
3/8"	100	92480A108 4.81
1/2"	100	92480A110 5.40
6-32—#2 Drive		
1/4"	100	92480A144 5.55
3/8"	100	92480A146 6.14
1/2"	100	92480A148 7.01
5/8"	100	92480A149 7.68
3/4"	100	92480A151 8.29
1"	100	92480A153 11.56
1 1/4"	100	92480A155 13.90
1 1/2"	50	92480A157 8.54
2"	50	92480A160 12.40
8-32—#2 Drive		
3/8"	100	92480A192 8.38
1/2"	100	92480A194 9.47
5/8"	100	92480A195 10.69
3/4"	50	92480A197 6.60
1"	50	92480A199 9.16
1 1/4"	50	92480A202 9.75
1 1/2"	50	92480A204 11.10
2"	25	92480A207 8.23
10-24—#2 Drive		
3/8"	100	92480A240 9.82
1/2"	50	92480A242 7.20
3/4"	50	92480A245 9.57
1"	25	92480A247 5.98
1 1/4"	25	92480A249 7.30
1 1/2"	25	92480A251 8.23
2"	25	92480A254 10.55
10-32—#2 Drive		
3/8"	100	92480A827 11.41
1/2"	50	92480A829 7.20
3/4"	50	92480A831 9.57
1"	25	92480A833 5.98
1 1/4"	25	92480A835 7.30
1 1/2"	25	92480A837 8.23
2"	25	92480A839 10.55
1/4"-20—#3 Drive		
1/2"	25	92480A537 6.43
3/4"	25	92480A541 8.23
1"	25	92480A545 9.56
1 1/4"	25	92480A549 11.63
1 1/2"	10	92480A553 6.02
2"	10	92480A556 7.61
3"	5	92480A602 6.14

● Head is undercut.

Zinc-Plated Steel

Lg.	Pkg. Qty.	Per Pkg.
4-40—#1 Drive		
3/16"	100	90273A105● $9.22
1/4"	100	90273A106 3.47
5/16"	100	90273A107 3.46
3/8"	100	90273A108 3.14
1/2"	100	90273A110 3.81
5/8"	100	90273A112 2.48
3/4"	100	90273A113 3.58
7/8"	100	90273A114 3.92
1"	100	90273A115 4.80
1 1/2"	100	90273A119 7.63
6-32—#2 Drive		
3/16"	100	90273A143● 9.16
1/4"	100	90273A144 3.32
5/16"	100	90273A145 3.34
3/8"	100	90273A146 3.42
7/16"	100	90273A147 3.02
1/2"	100	90273A148 3.71
5/8"	100	90273A150 3.71
3/4"	100	90273A151 3.73
7/8"	100	90273A152 5.20
1"	100	90273A153 4.44
1 1/4"	100	90273A155 4.66
1 1/2"	100	90273A157 5.35
2"	100	90273A159 7.75
2 1/2"	100	90273A161 9.14
3"	100	90273A163 10.65
8-32—#2 Drive		
1/4"	100	90273A190● 4.26
5/16"	100	90273A191 5.36
3/8"	100	90273A192 3.92
7/16"	100	90273A193 3.67
1/2"	100	90273A194 3.58
5/8"	100	90273A196 3.74
3/4"	100	90273A197 3.90
7/8"	100	90273A198 4.93
1"	100	90273A199 4.84
1 1/4"	100	90273A201 5.04
1 1/2"	100	90273A203 6.06
2"	100	90273A205 8.52
2 1/2"	50	90273A207 6.12
3"	50	90273A209 7.56
10-24—#2 Drive		
5/16"	100	90273A239● 7.25
3/8"	100	90273A240 4.91
7/16"	100	90273A241 7.56
1/2"	100	90273A242 5.70
5/8"	100	90273A244 4.68
3/4"	100	90273A245 5.16
1"	100	90273A247 5.20
1 1/4"	100	90273A249 6.77
1 1/2"	100	90273A251 6.89
2"	100	90273A254 10.40
2 1/2"	50	90273A255 7.95
3"	50	90273A257 8.34
4"	50	90273A261 9.42
10-32—#2 Drive		
1/4"	100	90273A825● $6.44
5/16"	100	90273A826● 7.79
3/8"	100	90273A827 5.87
7/16"	100	90273A828 9.35
1/2"	100	90273A829 4.61
5/8"	100	90273A830 4.69
3/4"	100	90273A831 5.16
7/8"	100	90273A832 7.54
1"	100	90273A833 5.22
1 1/4"	100	90273A835 5.26
1 1/2"	100	90273A836 7.24
2"	100	90273A838 10.31
2 1/2"	50	90273A840 6.92
3"	50	90273A842 7.30
12-24—#3 Drive		
3/8"	100	90273A289● 5.85
1/2"	100	90273A291 5.89
5/8"	100	90273A293 9.19
3/4"	100	90273A294 9.14
7/8"	50	90273A297 6.82
1"	100	90273A296 9.25
1 1/4"	50	90273A298 6.21
1 1/2"	50	90273A299 6.50
1/4"-20—#3 Drive		
3/8"	100	90273A535● 9.19
1/2"	100	90273A537 7.71
5/8"	100	90273A539 7.71
3/4"	100	90273A540 8.52
7/8"	100	90273A541 8.55
1"	100	90273A542 9.43
1 1/4"	100	90273A544 11.49
1 1/2"	50	90273A546 7.34
1 3/4"	50	90273A548 7.44
2"	50	90273A550 8.36
2 1/4"	50	90273A551 7.91
2 1/2"	50	90273A552 8.00
3"	50	90273A554 8.56
3 1/2"	50	90273A571 11.88
4"	50	90273A572 12.33
1/4"-28—#3 Drive		
1/2"	50	90273A557 9.02
3/4"	50	90273A559 11.07
5/16"-18—#4 Drive		
1/2"	50	90273A578● 7.11
3/4"	50	90273A581 8.00
1"	50	90273A583 8.11
1 1/4"	50	90273A585 8.69
1 1/2"	50	90273A587 10.55
2"	10	90273A501 4.09
2 1/2"	10	90273A593 3.02
3"	10	90273A505 5.58
3/8"-16—#4 Drive		
1"	25	90273A624 6.61
1 1/2"	10	90273A628 3.03
3"	10	90273A636 5.42

Titanium

Lg.	Each
6-32—#2 Drive	
3/8"	90233A546 $4.40
3/4"	90233A551 5.33
8-32—#2 Drive	
3/8"	90233A592 5.98
1/2"	90233A594 6.30
1"	90233A599 6.90
10-24—#2 Drive	
1/2"	90233A815 5.53
3/4"	90233A820 6.92
10-24 (Cont.)	
1"	90233A825 $7.22
1 1/2"	90233A835 7.88
1/4"-20—#3 Drive	
1/2"	90233A910 7.28
3/4"	90233A915 7.34
1"	90233A920 7.70
1 1/2"	90233A930 8.40
2"	90233A935 10.74

Self-Locking Flat Head Phillips

With a nylon locking patch bonded to the threads, these screws won't vibrate loose. The nylon patch has a temperature range of −70° to +250° F. All screws are beveled under the head to provide a flush surface within countersunk holes. They're made from 18-8 stainless steel, are fully threaded, and have a Class 2A thread fit. Length is measured from the top of the head.

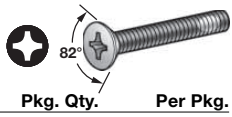

Lg.	Pkg. Qty.	Per Pkg.
4-40—#1 Drive		
1/4"	50	93082A110 $7.58
3/8"	50	93082A120 8.00
1/2"	50	93082A130 8.19
6-32—#2 Drive		
3/8"	50	93082A220 8.36
1/2"	50	93082A230 8.58
3/4"	50	93082A240 9.90
8-32—#2 Drive		
3/8"	50	93082A310 $9.01
1/2"	50	93082A320 9.20
3/4"	25	93082A330 5.32
1"	25	93082A350 5.65
10-24—#2 Drive		
1/2"	25	93082A410 5.53
3/4"	25	93082A420 6.08
10-24 (Cont.)		
1"	25	93082A430 $6.68
10-32—#2 Drive		
1/2"	25	93082A520 5.53
3/4"	25	93082A530 6.08
1"	25	93082A540 6.68
1/4"-20—#3 Drive		
1/2"	25	93082A610 $7.85
3/4"	25	93082A620 8.56
1"	25	93082A630 9.59
1 1/4"	25	93082A640 9.80
1 1/2"	25	93082A650 9.95

Military Specification Stainless Steel Flat Head Phillips

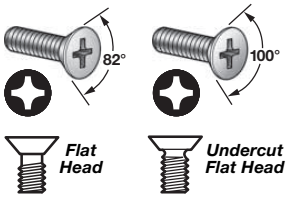

Designed to meet stringent military specifications, these screws provide a flush surface within countersunk holes. They're fully threaded with a Class 2A thread fit and made from 300 series stainless steel. Minimum tensile strength is 80,000 psi. Not rated for Rockwell hardness. Materials and dimensions meet Fed. Spec. FF-S-92. Length is measured from the top of the head.

82° screws meet MS 51959 (except for sizes marked with a ♠, which meet MS 51960). Screws marked with a ● have an undercut head to allow more threading. All are passivated (treated with nitric acid to create a film that protects against oxidation and corrosion) to meet QQ-P-35.

100° screws have a larger bearing surface to distribute holding force, so they're preferred over 82° flat heads for use in soft materials. They meet MS 24693 (except for sizes marked with a ★, which meet National Aerospace Standard 662C). All are passivated (treated with nitric acid to create a film that protects against oxidation and corrosion) to meet ASTM A380.

82° Screws—MS 51959

Lg.	Dash No.	Pkg. Qty.		Per Pkg.
0-80—#0 Drive				
1/8"	1	10	96877A070♠●	$6.43
3/16"	2	50	96877A076♠	9.04
2-56—#1 Drive				
1/8"	1	50	96877A110●	7.91
3/16"	2	100	96877A115	7.45
1/4"	3	100	96877A118	7.94
5/16"	4	100	96877A121	7.72
3/8"	5	100	96877A123	7.91
1/2"	7	100	96877A134	10.45
5/8"	8	50	96877A138	6.21
7/8"	10	25	96877A147	5.07
4-40—#1 Drive				
3/16"	12	50	96877A198●	7.31
1/4"	13	100	96877A200	8.58
5/16"	14	100	96877A205	9.31
4-40 (Cont.)				
3/8"	15	100	96877A209	$10.34
1/2"	17	50	96877A216	6.38
5/8"	18	50	96877A222	8.10
6-32—#2 Drive				
3/16"	25	25	96877A301●	5.24
1/4"	26	50	96877A305	6.23
5/16"	27	50	96877A310	7.64
3/8"	28	50	96877A315	8.21
1/2"	30	50	96877A320	7.65
3/4"	32	50	96877A330	10.08
8-32—#2 Drive				
5/16"	42	50	96877A401	8.99
3/8"	43	50	96877A405	10.21
1/2"	45	50	96877A411	11.19
3/4"	47	25	96877A418	7.78
10-24—#2 Drive				
3/8"	61	25	96877A500	$7.96
1/2"	63	25	96877A510	8.52
5/8"	64	25	96877A515	9.31
3/4"	65	25	96877A520	9.81
10-32—#2 Drive				
3/8"	63	25	96877A091♠	8.65
1/2"	65	25	96877A093♠	9.18
5/8"	66	25	96877A096♠	9.50
3/4"	67	25	96877A098♠	10.38
1/4"-20—#3 Drive				
1/2"	79	10	96877A615	7.03
5/8"	80	10	96877A617	6.25
3/4"	81	10	96877A619	7.69
7/8"	82	10	96877A102	6.82
1"	83	10	96877A624	8.74

100° Screws—MS 24693

Lg.	Dash No.	Pkg. Qty.		Per Pkg.
2-56—#1 Drive				
1/8"	C16	50	93085A010	7.62
5/32"	C17	50	93085A013	7.99
3/16"	2R3	100	93085A015★	7.94
1/4"	2R4	100	93085A017★	7.86
5/16"	2R5	100	93085A019★	8.20
3/8"	2R6	100	93085A021★	8.32
1/2"	2R8	100	93085A023★	9.36
4-40—#1 Drive				
3/16"	C1	100	93085A105	7.60
1/4"	C2	100	93085A106	8.16
5/16"	C3	100	93085A107	7.89
3/8"	C4	100	93085A108	8.40
7/16"	C5	100	93085A109	10.05
1/2"	C6	100	93085A110	10.00
5/8"	C7	100	93085A112	11.00
3/4"	C8	100	93085A113	13.20
7/8"	C9	50	93085A116	12.38
1"	C10	25	93085A119	6.64
1 1/8"	C11	25	93085A122	6.98
6-32—#2 Drive				
3/16"	C23	100	93085A143	10.03
1/4"	C24	100	93085A144	10.80
5/16"	C25	100	93085A145	11.35
3/8"	C26	100	93085A146	12.79
7/16"	C27	100	93085A147	13.40
1/2"	C28	100	93085A148	13.79
6-32 (Cont.)				
5/8"	C29	100	93085A150	14.60
3/4"	C30	50	93085A151	8.25
7/8"	C31	50	93085A152	12.65
1"	C32	25	93085A154	6.79
1 1/8"	C33	25	93085A155	9.20
1 1/4"	C34	25	93085A157	8.73
1 1/2"	C36	10	93085A159	5.02
2"	C40	10	93085A163	7.42
8-32—#2 Drive				
1/4"	C46	50	93085A190	8.92
5/16"	C47	100	93085A191	14.90
3/8"	C48	100	93085A192	14.32
7/16"	C49	50	93085A193	10.78
1/2"	C50	50	93085A194	8.16
5/8"	C51	50	93085A196	9.98
3/4"	C52	50	93085A197	11.20
7/8"	C53	25	93085A198	8.76
1"	C54	25	93085A199	8.23
1 1/8"	C55	25	93085A201	12.34
1 1/4"	C56	25	93085A203	12.59
1 1/2"	C58	10	93085A205	5.33
10-24—#2 Drive				
3/8"	C70	25	93085A239	8.45
1/2"	C72	50	93085A242	14.20
5/8"	C73	25	93085A244	9.23
3/4"	C74	10	93085A245	6.90
10-32—#2 Drive				
1/4"	C268	50	93085A825	13.09
5/16"	C269	25	93085A823	8.38
3/8"	C270	50	93085A827	12.40
7/16"	C271	50	93085A828	12.80
1/2"	C272	50	93085A829	11.05
5/8"	C273	50	93085A830	12.04
3/4"	C274	50	93085A831	14.90
7/8"	C275	25	93085A832	11.02
1"	C276	25	93085A833	10.80
1 1/4"	C278	10	93085A835	7.80
1 1/2"	C280	10	93085A837	8.88
1/4"-20—#3 Drive				
1/2"	C94	10	93085A537	7.36
5/8"	C95	10	93085A539	7.20
3/4"	C96	25	93085A540	12.26
1"	C98	10	93085A542	7.05
1 1/4"	C100	10	93085A544	9.93
1/4"-28—#3 Drive				
1/2"	C294	25	93085A557	14.20
5/8"	C295	10	93085A558	7.73
3/4"	C296	10	93085A559	8.16
7/8"	C297	10	93085A560	9.04
1"	C298	10	93085A561	8.90
1 1/4"	C300	10	93085A563	11.39

♠ Meets MS 51960. ● Head is undercut.
★ Meets National Aerospace Standard 662C; head height is 0.036".

Sealing Flat Head Phillips

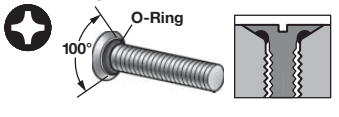

Seal out air, water, lubricants, and other contaminants with these reusable, vibration-resistant screws. Each screw has a silicone rubber O-ring attached to a groove under the head. The O-ring stops pressure up to 6000 psi (when used in the hole size range listed) and withstands temperatures from –150° to +500° F.

Screws are beveled under the head to provide a flush surface within countersunk holes. Angle of bevel is 100°, unless noted. All screws are made from 18-8 stainless steel. They're fully threaded and have a Class 2A thread fit. UL recognized. Length is measured from the top of the head.

Lg.	Hole Size Range	Pkg. Qty.		Per Pkg.
2-56—#0 Drive; Head: Dia. 0.172"; Ht. 0.035"				
3/16"	0.091"-0.095"	10	98070A073■	$10.28
1/4"	0.091"-0.095"	10	98070A079■	10.28
3/8"	0.091"-0.095"	10	98070A084■	10.28
4-40—#1 Drive; Head: Dia. 0.225"; Ht. 0.025"				
3/16"	0.125"-0.129"	10	98070A106	7.42
1/4"	0.125"-0.129"	25	98070A110	14.37
5/16"	0.125"-0.129"	10	98070A120	7.14
3/8"	0.125"-0.129"	25	98070A130	14.90
1/2"	0.125"-0.129"	25	98070A150	14.95
6-32—#1 Drive; Head: Dia. 0.279"; Ht. 0.038"				
1/4"	0.147"-0.152"	10	98070A210	$6.00
5/16"	0.147"-0.152"	10	98070A220	7.42
3/8"	0.147"-0.152"	10	98070A230	6.29
1/2"	0.147"-0.152"	10	98070A250	6.57
5/8"	0.147"-0.152"	10	98070A260	9.15
3/4"	0.147"-0.152"	10	98070A270	6.65
8-32—#2 Drive; Head: Dia. 0.332"; Ht. 0.048"				
1/4"	0.173"-0.179"	10	98070A310	7.74
3/8"	0.173"-0.179"	10	98070A320	8.00
8-32 (Cont.)				
1/2"	0.173"-0.179"	10	98070A330	$6.57
5/8"	0.173"-0.179"	10	98070A340	9.15
3/4"	0.173"-0.179"	10	98070A360	7.13
10-24—#2 Drive; Head: Dia. 0.385"; Ht. 0.053"				
1/2"	0.199"-0.204"	10	98070A410	9.75
3/4"	0.199"-0.204"	10	98070A440	11.14
10-32—#2 Drive; Head: Dia. 0.385"; Ht. 0.053"				
1/2"	0.199"-0.204"	10	98070A450	7.65
1"	0.199"-0.204"	10	98070A470	10.48

■ Angle of bevel is 82°.

Metric Flat Head Phillips

Our metric-sized flat head screws have a 90° bevel under the head to provide a flush surface within countersunk holes. All are fully threaded and have a Class 6g thread fit, except *black-oxide 18-8 stainless steel* and *zinc-plated steel* screws, which have a Class 6h thread fit. Screws meet DIN 965. Length is measured from the top of the head.

Black-oxide 18-8 stainless steel is not rated for Rockwell hardness.

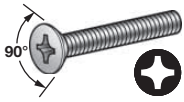

Type 316 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—#1 Drive; Pitch: 0.4 mm			
4	50	91801A105	$8.03
5	25	91801A106	5.02
6	25	91801A107	5.10
8	25	91801A109	5.18
10	25	91801A111	5.24
M2.5—#1 Drive; Pitch: 0.45 mm			
4	50	91801A133	6.67
5	25	91801A134	3.98
6	25	91801A135	4.26
8	25	91801A137	4.45
M3—#1 Drive; Pitch: 0.5 mm			
4	25	91801A149	7.40
5	100	91801A150	7.50
6	100	91801A151	7.40
8	100	91801A154	9.42
10	100	91801A156	7.62
12	100	91801A158	8.33
16	50	91801A162	11.82
20	50	91801A164	12.37
M4—#2 Drive; Pitch: 0.7 mm			
6	100	91801A210	10.10
8	100	91801A212	10.38
10	50	91801A214	7.60
12	50	91801A216	7.90
16	50	91801A220	8.76
M4 (Cont.)			
20	50	91801A224	$9.66
25	25	91801A227	11.94
M5—#2 Drive; Pitch: 0.8 mm			
10	50	91801A254	10.67
12	50	91801A256	9.22
16	50	91801A260	12.09
20	25	91801A264	9.79
25	25	91801A268	14.29
30	10	91801A270	7.15
40	10	91801A273	7.15
M6—#3 Drive; Pitch: 1 mm			
10	25	91801A305	9.79
12	25	91801A307	9.94
16	25	91801A311	9.75
20	10	91801A315	6.12
25	10	91801A320	6.40
30	10	91801A325	9.51
35	10	91801A329	10.48
40	10	91801A333	11.91
M8—#4 Drive; Pitch: 1.25 mm			
12	5	91801A402	5.12
16	5	91801A406	7.21
20	5	91801A410	5.75
25	5	91801A415	6.49

18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—#1 Drive; Pitch: 0.4 mm			
4	100	92010A001	5.17
5	100	92010A002	3.76
6	100	92010A003	3.68
8	100	92010A004	3.80
10	100	92010A005	5.28
12	100	92010A006	7.58
16	100	92010A008	7.62
20	100	92010A010	7.71
M2.5—#1 Drive; Pitch: 0.45 mm			
4	100	92010A012	4.56
5	100	92010A014	4.60
6	100	92010A016	5.53
8	100	92010A018	4.70
10	100	92010A020	5.43
12	100	92010A022	5.90
16	100	92010A024	5.91
20	100	92010A026	6.57
M3—#1 Drive; Pitch: 0.5 mm			
4	100	92010A112	4.37
5	100	92010A114	4.24
6	100	92010A116	4.60
8	100	92010A118	4.62
10	100	92010A120	5.29
12	100	92010A122	6.08
16	100	92010A126	8.13
20	100	92010A128	8.13
25	100	92010A130	8.69
30	100	92010A138	9.43
35	50	92010A143	10.38
40	50	92010A146	10.17
M4—#2 Drive; Pitch: 0.7 mm			
5	100	92010A212	7.18
6	100	92010A216	5.98
8	100	92010A218	6.65
10	100	92010A220	6.81
12	100	92010A222	7.75
16	100	92010A226	7.48
20	100	92010A228	9.16
25	100	92010A230	9.85
30	100	92010A238	9.92
35	50	92010A240	7.09
40	50	92010A242	7.88
45	50	92010A244	9.36
50	50	92010A246	9.46
60	10	92010A250	5.72
M5—#2 Drive; Pitch: 0.8 mm			
6	100	92010A314	8.27
8	100	92010A318	9.88
10	100	92010A320	9.87
12	100	92010A322	12.52
M5 (Cont.)			
16	50	92010A326	7.80
20	50	92010A328	7.91
25	50	92010A330	7.52
30	50	92010A332	6.03
35	50	92010A340	11.42
40	25	92010A342	7.73
45	25	92010A344	8.81
50	25	92010A346	8.78
60	10	92010A350	5.54
70	10	92010A355	6.55
80	10	92010A360	8.83
100	5	92010A370	6.55
M6—#3 Drive; Pitch: 1 mm			
8	50	92010A416	7.65
10	50	92010A420	6.45
12	50	92010A424	7.59
16	50	92010A426	7.66
20	50	92010A428	8.27
25	50	92010A430	9.57
30	25	92010A438	7.80
35	25	92010A440	9.60
40	25	92010A442	8.02
45	25	92010A444	9.95
50	25	92010A446	9.73
60	10	92010A450	5.65
70	10	92010A458	5.83
80	5	92010A466	4.78
100	5	92010A482	7.65
M8—#4 Drive; Pitch: 1.25 mm			
10	25	92010A520	9.85
12	25	92010A524	9.95
16	25	92010A526	7.70
20	25	92010A528	7.83
25	25	92010A530	9.77
30	25	92010A538	11.17
35	10	92010A540	6.56
40	10	92010A542	7.97
45	10	92010A544	9.98
50	10	92010A546	10.69
60	5	92010A550	7.98
M10—#4 Drive; Pitch: 1.5 mm			
20	5	92010A630	7.37
25	5	92010A635	7.90
30	1	92010A640	1.98
35	1	92010A646	2.33
40	1	92010A651	2.74
45	1	92010A657	3.63
50	1	92010A663	4.09
60	1	92010A669	4.33

Black-Oxide 18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M3—#1 Drive; Pitch: 0.5 mm			
5	50	91698A301	$6.68
6	100	91698A302	9.46
8	50	91698A304	6.10
10	50	91698A306	6.49
12	50	91698A308	8.57
M4—#2 Drive; Pitch: 0.7 mm			
5	50	91698A423	7.92
6	50	91698A424	8.57
8	50	91698A426	6.29
M4 (Cont.)			
10	50	91698A428	$6.29
12	50	91698A430	7.53
M5—#2 Drive; Pitch: 0.8 mm			
8	50	91698A534	10.65
10	50	91698A536	10.89
12	50	91698A538	10.89
M6—#3 Drive; Pitch: 1 mm			
10	25	91698A645	8.06
12	25	91698A647	9.21
16	25	91698A651	10.46

Brass

Lg., mm	Pkg. Qty.		Per Pkg.
M3—#1 Drive; Pitch: 0.5 mm			
6	100	99658A524	9.35
8	100	99658A526	10.98
10	100	99658A528	11.10
M4—#2 Drive; Pitch: 0.7 mm			
8	50	99658A641	10.35
10	50	99658A643	11.06
12	25	99658A645	6.19
M5—#2 Drive; Pitch: 0.8 mm			
10	25	99658A764	10.27
12	25	99658A766	10.99
16	10	99658A770	6.08
M6—#3 Drive; Pitch: 1 mm			
12	10	99658A810	6.32
16	10	99658A814	7.00
20	10	99658A818	8.61

Zinc-Plated Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—#1 Drive; Pitch: 0.4 mm			
3	100	91420A011	4.06
4	100	91420A001	5.52
5	100	91420A002	3.52
6	100	91420A003	4.34
8	100	91420A004	3.17
10	100	91420A005	3.20
12	100	91420A006	3.20
16	100	91420A007	2.86
20	100	91420A008	6.56
M2.5—#1 Drive; Pitch: 0.45 mm			
4	100	91420A012	3.67
5	100	91420A014	3.67
6	100	91420A016	3.67
8	100	91420A018	3.21
10	100	91420A020	4.13
12	100	91420A022	4.13
16	100	91420A024	4.13
20	100	91420A026	4.13
25	100	91420A028	4.93
M3—#1 Drive; Pitch: 0.5 mm			
4	100	91420A112	5.60
5	100	91420A114	3.83
6	100	91420A116	2.40
8	100	91420A118	2.40
10	100	91420A120	2.41
12	100	91420A122	2.80
14	100	91420A124	3.52
16	100	91420A126	2.80
20	100	91420A128	3.08
25	100	91420A130	3.40
30	100	91420A134	5.20
40	100	91420A136	8.80
45	50	91420A138	8.40
50	50	91420A140	9.00
M3.5—#2 Drive; Pitch: 0.6 mm			
6	100	91420A173	2.30
8	100	91420A175	3.21
10	100	91420A177	4.13
12	100	91420A179	3.33
16	100	91420A183	5.18
20	100	91420A187	6.68
25	100	91420A192	10.08
30	50	91420A194	5.20
M4—#2 Drive; Pitch: 0.7 mm			
5	100	91420A214	5.50
6	100	91420A216	3.00
8	100	91420A218	3.45
10	100	91420A220	3.00
12	100	91420A222	3.00
14	100	91420A224	4.40
16	100	91420A226	3.20
20	100	91420A228	3.60
M4 (Cont.)			
25	100	91420A230	5.20
30	100	91420A235	5.20
35	100	91420A240	6.42
40	50	91420A250	8.69
45	100	91420A260	11.79
50	50	91420A265	5.39
60	50	91420A270	8.00
70	25	91420A280	11.00
80	25	91420A290	6.50
M5—#2 Drive; Pitch: 0.8 mm			
6	100	91420A316	4.02
8	100	91420A318	4.02
10	100	91420A320	4.05
12	100	91420A322	4.08
14	100	91420A324	5.20
16	100	91420A326	5.45
20	100	91420A328	5.76
25	100	91420A330	7.20
30	100	91420A332	8.00
35	100	91420A340	9.13
40	100	91420A342	10.92
50	100	91420A346	11.59
60	25	91420A350	5.00
70	25	91420A370	12.15
80	10	91420A380	5.44
M6—#3 Drive; Pitch: 1 mm			
8	50	91420A410	7.79
10	100	91420A420	6.40
12	100	91420A424	8.71
16	100	91420A426	9.17
20	100	91420A428	10.09
25	100	91420A430	11.46
30	100	91420A438	12.00
35	100	91420A440	12.38
40	100	91420A442	13.75
45	50	91420A444	9.20
50	50	91420A446	9.24
60	25	91420A460	5.75
70	10	91420A470	5.16
80	25	91420A480	11.54
M8—#4 Drive; Pitch: 1.25 mm			
12	10	91420A515	6.78
16	50	91420A526	9.27
20	50	91420A528	11.04
25	50	91420A530	12.65
30	25	91420A538	9.39
35	50	91420A540	14.41
40	50	91420A542	14.90
50	50	91420A546	14.95
60	10	91420A552	8.60
80	5	91420A568	7.00

Flat Head Slotted

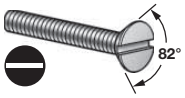

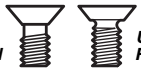

Flat head screws are beveled under the head to provide a flush surface within countersunk holes. Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Screws marked with a ● have an undercut head to allow more threading. All have a Class 2A thread fit. Length is measured from the top of the head.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
6-32			
1/4″	100	91858A144	$9.22
3/8″	100	91858A146	9.66
1/2″	100	91858A148	11.64
3/4″	100	91858A151	12.91
1″	50	91858A153	7.81
1 1/2″	25	91858A157	6.44
8-32			
3/8″	100	91858A192	12.07
1/2″	50	91858A194	8.00
3/4″	50	91858A197	8.11
1″	50	91858A199	9.88
1 1/2″	25	91858A203	8.63
10-24			
3/8″	50	91858A240	7.36
1/2″	50	91858A242	8.28
3/4″	50	91858A245	9.95
1″	25	91858A247	6.12
1 1/4″	25	91858A249	9.39
1 1/2″	25	91858A251	11.97
10-32			
3/8″	50	91858A827	7.36
1/2″	50	91858A829	8.28
3/4″	50	91858A831	12.78
1″	25	91858A833	6.97
1 1/2″	25	91858A836	12.58
1/4″-20			
1/2″	25	91858A537	11.10
3/4″	25	91858A540	12.21
1/4″-20 (Cont.)			
1″	10	91858A542	$5.43
1 1/4″	10	91858A544	6.22
1 1/2″	10	91858A546	6.69
2″	10	91858A550	8.70
2 1/2″	10	91858A552	10.09
3″	10	91858A554	11.32
5/16″-18			
1/2″	10	91858A578●	9.70
3/4″	10	91858A581	9.96
1″	10	91858A583	10.16
1 1/4″	10	91858A585	13.32
1 1/2″	5	91858A587	7.15
2″	5	91858A591	8.54
2 1/2″	5	91858A593	10.00
3/8″-16			
3/4″	5	91858A622	7.58
1″	5	91858A624	8.13
1 1/4″	5	91858A626	9.51
1 1/2″	5	91858A628	12.00
2″	1	91858A632	2.88
2 1/2″	1	91858A634	2.94
3″	1	91858A636	3.24
1/2″-13			
1″	5	91858A712	12.66
1 1/2″	1	91858A716	3.68
2″	1	91858A720	4.33

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
0-80			
1/8″	100	91781A052●	7.55
3/16″	100	91781A054	9.46
1/4″	100	91781A055	11.50
3/8″	100	91781A057	12.09
7/16″	100	91781A058	12.55
1/2″	100	91781A059	14.95
1″	50	91781A102	10.49
1-64			
1/8″	100	91781A063●	14.44
3/16″	100	91781A065	14.85
1/4″	100	91781A066	14.86
1″	50	91781A177	13.19
1-72			
1/8″	100	91781A164●	11.05
3/16″	100	91781A165	12.25
1/4″	100	91781A166	14.44
3/8″	100	91781A168	14.62
3/4″	50	91781A172	11.90
2-56			
1/8″	100	91781A074●	6.81
3/16″	100	91781A076	3.96
5/16″	100	91781A078	4.16
3/8″	100	91781A079	4.33
1/2″	100	91781A081	5.32
5/8″	100	91781A083	5.51
3/4″	100	91781A084	6.21
1″	100	91781A140	7.28
1 1/4″	50	91781A266	10.48
1 1/2″	25	91781A267	8.15
3-48			
1/4″	100	91781A092	7.61
1/2″	100	91781A096	9.96
4-40			
1/8″	100	91781A103●	8.50
3/16″	100	91781A105●	4.71
1/4″	100	91781A106	4.42
5/16″	100	91781A107	4.82
3/8″	100	91781A108	5.08
7/16″	100	91781A109	5.45
1/2″	100	91781A110	5.56
5/8″	100	91781A112	5.87
3/4″	100	91781A113	6.34
7/8″	100	91781A114	7.07
1″	100	91781A115	7.88
1 1/4″	100	91781A117	9.92
1 1/2″	100	91781A119	9.95
2″	50	91781A121	8.26
4-48			
1/2″	50	91781A743	10.25
5-40			
3/16″	100	91781A122●	8.94
1/4″	100	91781A124	5.63
3/8″	100	91781A126	6.49
1/2″	100	91781A128	6.78
1″	100	91781A133	11.37
6-32			
3/16″	100	91781A143●	5.52
1/4″	100	91781A144	4.76
5/16″	100	91781A145	4.92
3/8″	100	91781A146	4.94
7/16″	100	91781A147	5.28
1/2″	100	91781A148	5.45
5/8″	100	91781A150	6.26
3/4″	100	91781A151	6.81
7/8″	100	91781A152	7.35
1″	100	91781A153	8.07
1 1/4″	100	91781A155	9.90
1 1/2″	100	91781A157	12.26
1 3/4″	50	91781A158	7.09
2″	50	91781A159	8.96
2 1/2″	50	91781A161	11.06
3″	50	91781A163	12.56
8-32			
3/16″	100	91781A189●	9.95
1/4″	100	91781A190●	5.34
5/16″	100	91781A191	4.95
3/8″	100	91781A192	5.05
7/16″	100	91781A193	5.42
1/2″	100	91781A194	5.57
5/8″	100	91781A196	6.20
3/4″	100	91781A197	7.14
7/8″	100	91781A198	8.33
1″	100	91781A199	8.75
1 1/4″	100	91781A201	11.14
1 1/2″	100	91781A203	12.17
2″	50	91781A205	8.03
3″	25	91781A209	6.62
3 1/2″	10	91781A211	6.17
4″	10	91781A215	9.10
10-24			
1/4″	100	91781A238●	6.75
5/16″	100	91781A239●	6.44
3/8″	100	91781A240	6.91
1/2″	100	91781A242	8.72
5/8″	100	91781A244	9.26

● Head is undercut.

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
10-24 (Cont.)			
3/4″	100	91781A245	$9.96
1″	50	91781A247	6.20
1 1/4″	50	91781A249	7.56
1 1/2″	50	91781A251	9.00
2″	25	91781A253	5.89
2 1/4″	25	91781A256	6.65
2 1/2″	25	91781A255	7.46
2 3/4″	25	91781A258	8.33
3″	25	91781A257	8.83
3 1/2″	25	91781A259	12.28
4″	10	91781A261	6.66
5″	5	91781A265	8.98
6″	5	91781A269	9.56
10-32			
1/4″	100	91781A825●	6.75
5/16″	100	91781A826●	6.44
3/8″	100	91781A827	7.82
1/2″	100	91781A829	9.70
5/8″	100	91781A830	10.41
3/4″	100	91781A831	11.11
7/8″	50	91781A832	6.23
1″	50	91781A833	6.54
1 1/4″	50	91781A835	7.56
1 1/2″	50	91781A836	9.58
1 3/4″	25	91781A837	5.68
2″	50	91781A838	11.79
2 1/4″	25	91781A841	6.65
2 1/2″	25	91781A840	7.46
3″	25	91781A842	8.34
3 1/2″	10	91781A844	5.48
4″	10	91781A846	6.66
12-24			
3/8″	100	91781A289●	11.58
1/2″	100	91781A291	12.03
3/4″	50	91781A294	7.39
1″	50	91781A296	8.23
2″	25	91781A301	7.97
3″	10	91781A305	5.90
1/4″-20			
3/8″	50	91781A535●	7.81
1/2″	50	91781A537	7.96
5/8″	50	91781A539	8.22
3/4″	50	91781A540	10.84
7/8″	25	91781A541	6.08
1″	25	91781A542	6.43
1 1/4″	25	91781A544	6.59
1 1/2″	25	91781A546	8.84
1 3/4″	25	91781A548	9.36
2″	25	91781A550	10.24
1/4″-20 (Cont.)			
2 1/4″	10	91781A551	$5.22
2 1/2″	10	91781A552	5.43
2 3/4″	10	91781A553	5.50
3″	10	91781A554	5.83
3 1/2″	10	91781A571	8.63
4″	10	91781A572	9.49
4 1/2″	10	91781A574	9.55
5″	10	91781A576	12.63
6″	5	91781A577	9.11
1/4″-28			
1/2″	50	91781A557	12.33
3/4″	25	91781A559	7.15
1″	25	91781A561	9.03
5/16″-18			
1/2″	25	91781A578●	9.67
3/4″	25	91781A581	11.90
1″	10	91781A583	5.53
1 1/4″	10	91781A585	6.05
1 1/2″	10	91781A587	6.70
1 3/4″	10	91781A589	7.55
2″	10	91781A591	7.60
2 1/2″	10	91781A593	10.65
3″	10	91781A595	10.77
4″	5	91781A599	8.43
5″	1	91781A604	3.41
6″	1	91781A608	6.58
3/8″-16			
1/2″	10	91781A619●	6.90
3/4″	10	91781A622	6.62
1″	10	91781A624	8.54
1 1/4″	10	91781A626	9.05
1 1/2″	10	91781A628	10.62
1 3/4″	10	91781A630	10.73
2″	5	91781A632	6.77
2 1/2″	5	91781A634	8.21
3″	5	91781A636	8.96
3 1/2″	5	91781A638	11.70
4″	5	91781A640	12.67
5″	1	91781A644	4.00
6″	1	91781A648	4.92
1/2″-13			
3/4″	10	91781A710●	13.45
1″	5	91781A712	8.02
1 1/4″	5	91781A714	9.94
1 1/2″	5	91781A716	10.52
2″	5	91781A720	13.20
2 1/2″	1	91781A722	2.78
3″	1	91781A724	3.44
3 1/2″	1	91781A726	3.96
4″	1	91781A728	4.95

Zinc-Plated Steel

Lg.	Pkg. Qty.		Per Pkg.
3-48			
3/16″	100	90275A091	7.72
1/4″	100	90275A092	8.25
5/16″	100	90275A093	8.49
3/8″	100	90275A094	7.03
1/2″	100	90275A096	5.20
3/4″	100	90275A099	6.41
1″	100	90275A101	7.03
4-40			
1/8″	100	90275A103●	7.06
3/16″	100	90275A105●	6.12
1/4″	100	90275A106	3.59
5/16″	100	90275A107	3.82
3/8″	100	90275A108	3.07
1/2″	100	90275A110	3.11
5/8″	100	90275A112	2.94
3/4″	100	90275A113	3.49
1″	100	90275A115	3.25
1 1/2″	100	90275A119	5.16
5-40			
1/4″	100	90275A124	5.95
5/16″	100	90275A125	3.76
1/2″	100	90275A128	4.52
5/8″	100	90275A130	8.36
3/4″	100	90275A131	11.38
5-40 (Cont.)			
1″	100	90275A133	6.14
1 1/4″	100	90275A135	9.30
1 1/2″	100	90275A137	12.87
2″	100	90275A139	12.90
6-32			
3/16″	100	90275A143●	2.50
1/4″	100	90275A144	2.64
5/16″	100	90275A145	1.99
3/8″	100	90275A146	2.12
7/16″	100	90275A147	3.88
1/2″	100	90275A148	2.16
5/8″	100	90275A150	2.69
3/4″	100	90275A151	3.36
7/8″	100	90275A152	3.03
1″	100	90275A153	2.86
1 1/4″	100	90275A155	3.77
1 1/2″	100	90275A157	4.17
1 3/4″	100	90275A158	5.48
2″	100	90275A159	4.76
2 1/4″	100	90275A160	7.32
2 1/2″	100	90275A161	7.65
3″	100	90275A164	9.00
4″	50	90275A168	8.64

(Continued on following page)

Flat Head Slotted *(Continued from previous page)*

Lg.	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel (Cont.)			
8-32			
3/16"	100	90275A189●	$9.42
1/4"	100	90275A190●	2.27
5/16"	100	90275A191	6.94
3/8"	100	90275A192	3.11
1/2"	100	90275A194	3.59
5/8"	100	90275A196	3.79
3/4"	100	90275A197	3.36
7/8"	100	90275A198	6.22
1"	100	90275A199	4.59
1 1/4"	100	90275A201	3.93
1 1/2"	100	90275A203	5.48
1 3/4"	100	90275A204	5.62
2"	100	90275A205	5.84
2 1/4"	100	90275A206	9.42
2 1/2"	100	90275A207	8.86
3"	100	90275A209	9.95
4"	50	90275A213	8.57
10-24			
1/4"	100	90275A238●	3.88
3/8"	100	90275A240	3.44
1/2"	100	90275A242	3.99
5/8"	100	90275A244	3.85
3/4"	100	90275A245	4.14
7/8"	100	90275A246	6.21
1"	100	90275A247	5.04
1 1/4"	100	90275A249	5.81
1 1/2"	100	90275A251	6.64
1 3/4"	100	90275A252	7.15
2"	100	90275A253	8.39
2 1/2"	100	90275A255	9.85
3"	100	90275A257	9.90
3 1/2"	50	90275A259	8.33
4"	50	90275A261	8.66
5"	25	90275A264	6.51
6"	25	90275A267	7.56
10-32			
1/4"	100	90275A825●	3.37
5/16"	100	90275A826●	4.92
3/8"	100	90275A827	3.33
1/2"	100	90275A829	3.35
5/8"	100	90275A830	3.20
3/4"	100	90275A831	4.43
7/8"	100	90275A832	4.43
1"	100	90275A833	4.53
1 1/4"	100	90275A835	5.05
1 1/2"	100	90275A836	6.64
1 3/4"	100	90275A837	8.20
2"	100	90275A838	8.35
2 1/2"	100	90275A840	10.60
3"	100	90275A842	12.30
3 1/2"	50	90275A844	12.24
4"	50	90275A846	13.07
12-24			
3/8"	100	90275A289●	4.75
1/2"	100	90275A291	5.15
5/8"	100	90275A293	5.70
3/4"	100	90275A294	6.49
1"	100	90275A296	8.14
1 1/2"	100	90275A299	8.80
2"	100	90275A301	9.85
2 1/2"	50	90275A303	6.90
1/4"-20			
3/8"	100	90275A535●	5.17
1/2"	100	90275A537	5.50
5/8"	100	90275A539	6.13
3/4"	100	90275A540	6.15
1/4"-20 (Cont.)			
7/8"	100	90275A541	$8.78
1"	100	90275A542	6.84
1 1/8"	100	90275A543	7.69
1 1/4"	100	90275A544	6.16
1 1/2"	100	90275A546	7.24
1 3/4"	100	90275A548	8.92
2"	100	90275A550	8.34
2 1/4"	100	90275A551	9.14
2 1/2"	100	90275A552	12.16
2 3/4"	25	90275A553	10.43
3"	50	90275A554	8.14
3 1/2"	25	90275A571	5.83
4"	25	90275A573	6.21
4 1/2"	25	90275A575	7.22
5"	25	90275A577	7.14
5 1/2"	10	90275A579	7.86
6"	25	90275A576	11.38
1/4"-28			
1/2"	25	90275A557	8.45
5/8"	25	90275A558	9.97
3/4"	10	90275A559	4.59
1"	10	90275A561	4.67
5/16"-18			
1/2"	50	90275A578●	7.55
5/8"	50	90275A580	7.73
3/4"	50	90275A581	7.22
7/8"	50	90275A582	7.48
1"	50	90275A583	7.20
1 1/4"	50	90275A585	8.38
1 1/2"	50	90275A587	8.93
1 3/4"	25	90275A589	6.21
2"	25	90275A591	6.90
2 1/4"	25	90275A592	7.79
2 1/2"	25	90275A593	7.40
3"	25	90275A595	8.54
3 1/2"	25	90275A597	9.44
4"	10	90275A599	4.93
4 1/2"	10	90275A602	5.67
5"	10	90275A604	5.96
6"	10	90275A608	6.55
3/8"-16			
1/2"	50	90275A619●	8.30
3/4"	25	90275A622	6.02
1"	25	90275A624	4.45
1 1/4"	25	90275A626	5.31
1 1/2"	25	90275A628	7.01
2"	25	90275A632	8.42
2 1/2"	25	90275A634	9.75
3"	10	90275A636	4.84
3 1/2"	10	90275A638	5.16
4"	25	90275A640	9.90
4 1/2"	10	90275A642	5.98
5"	10	90275A645	6.67
5 1/2"	10	90275A646	6.87
6"	10	90275A648	6.28
1/2"-13			
1"	25	90275A712	7.89
1 1/4"	10	90275A714	7.25
1 1/2"	10	90275A716	7.35
2"	10	90275A720	7.39
2 1/2"	10	90275A722	7.89
3"	10	90275A724	9.10
3 1/2"	10	90275A726	13.84
4"	10	90275A729	14.90
5"	10	90275A733	14.95
6"	5	90275A737	8.92

● Head is undercut.

Lg.	Pkg. Qty.		Per Pkg.
Aluminum			
6-32			
3/4"	50	99468A136	$10.63
8-32			
1/4"	25	99468A139●	11.51
1/2"	25	99468A143	5.41
3/4"	25	99468A147	9.59
1"	25	99468A152	11.13
10-24			
1"	25	99468A156	11.54
1 1/4"	25	99468A163	11.91
10-32			
3/8"	25	99468A169	$10.66
1/2"	25	99468A179	11.13
1/4"-20			
3/8"	25	99468A184●	11.69
1/2"	25	99468A188	12.01
1"	25	99468A195	12.79
1 1/2"	25	99468A205	13.96
1 3/4"	10	99468A210	8.41
5/16"-18			
3/4"	10	99468A215	8.93
Brass			
1-72			
1/4"	100	92451A010	10.53
1/2"	50	92451A015	6.63
2-56			
1/8"	100	92451A074●	5.51
3/16"	100	92451A076	4.23
1/4"	100	92451A077	4.23
3/8"	100	92451A079	3.81
1/2"	100	92451A081	4.57
3/4"	100	92451A084	5.27
7/8"	100	92451A085	5.85
3-48			
1/4"	100	92451A092	4.08
1/2"	100	92451A096	4.97
3/4"	100	92451A099	6.47
4-40			
1/8"	100	92451A103●	4.25
3/16"	100	92451A105●	4.77
1/4"	100	92451A106	4.09
5/16"	100	92451A107	4.55
3/8"	100	92451A108	4.80
1/2"	100	92451A110	5.32
3/4"	100	92451A113	6.59
1"	100	92451A115	7.50
1 1/2"	100	92451A119	10.12
5-40			
1/4"	100	92451A124	4.73
3/8"	100	92451A126	5.92
1/2"	100	92451A128	6.38
6-32			
1/4"	100	92451A144	5.11
3/8"	100	92451A146	6.35
1/2"	100	92451A148	6.92
5/8"	100	92451A150	7.77
3/4"	100	92451A151	8.52
1"	100	92451A153	10.02
1 1/4"	100	92451A155	12.56
1 1/2"	100	92451A157	14.65
2"	50	92451A159	8.43
3"	10	92451A163	9.38
8-32			
1/4"	100	92451A190●	7.37
3/8"	100	92451A192	8.51
1/2"	100	92451A194	9.77
5/8"	100	92451A196	10.99
3/4"	100	92451A197	12.51
1"	100	92451A199	14.77
1 1/4"	50	92451A201	10.73
1 1/2"	50	92451A203	12.46
2"	50	92451A205	14.90
2 1/2"	25	92451A207	9.46
3"	25	92451A209	11.44
10-24			
3/8"	100	92451A240	10.18
1/2"	100	92451A242	12.22
5/8"	100	92451A244	14.90
3/4"	50	92451A245	8.29
1"	50	92451A247	11.12
1 1/4"	50	92451A249	14.76
10-24 (Cont.)			
1 1/2"	50	92451A251	14.96
2"	25	92451A253	10.22
2 1/2"	25	92451A255	12.21
10-32			
1/4"	100	92451A825●	7.44
3/8"	100	92451A827	10.18
1/2"	100	92451A829	12.22
5/8"	100	92451A830	14.95
3/4"	50	92451A831	8.29
1"	50	92451A833	11.12
1 1/4"	50	92451A835	12.83
1 1/2"	50	92451A836	14.90
2"	25	92451A838	10.22
2 1/2"	25	92451A840	12.21
3"	25	92451A842	14.95
4"	5	92451A846	8.90
12-24			
1/2"	50	92451A291	9.07
3/4"	50	92451A294	11.38
1"	50	92451A296	13.48
1 1/2"	25	92451A299	9.49
2"	25	92451A301	12.13
1/4"-20			
3/8"	50	92451A535●	11.90
1/2"	50	92451A537	11.70
5/8"	50	92451A539	13.03
3/4"	25	92451A540	8.63
7/8"	25	92451A541	9.30
1"	25	92451A542	9.52
1 1/4"	25	92451A544	11.36
1 1/2"	25	92451A546	12.78
2"	10	92451A550	7.44
2 1/2"	10	92451A552	8.98
3"	10	92451A554	10.83
5/16"-18			
1/2"	25	92451A578●	11.14
3/4"	25	92451A581	14.51
1"	10	92451A583	8.03
1 1/4"	10	92451A585	8.41
1 1/2"	10	92451A587	9.36
2"	10	92451A591	11.80
2 1/2"	10	92451A593	14.90
3"	5	92451A595	9.23
3/8"-16			
3/4"	10	92451A622	8.58
1"	10	92451A624	11.02
1 1/4"	10	92451A626	12.35
1 1/2"	10	92451A628	14.11
2"	5	92451A632	9.61
2 1/2"	5	92451A634	11.39
3"	1	92451A636	2.56
1/2"-13			
1"	5	92451A712	11.02
1 1/4"	5	92451A714	14.98
1 1/2"	1	92451A716	3.15
2"	1	92451A720	3.42
2 1/2"	1	92451A722	4.27

Machine Screw Assortments with Nuts

Assortments include 6-32, 8-32, 10-32, and 1/4"-20 size screws, plus matching nuts. Each comes in a compartmented plastic box with lid chart.

300 Piece— Include 240 pan and flat head Phillips screws in lengths from 1/4" to 1", and 60 nuts. Box is 8" Lg. × 4 1/4" Wd. × 1 1/2" Dp.

1280 Piece— Includes 880 pan and flat head Phillips screws in lengths from 1/2" to 2", and 400 nuts. Box is 13" Lg. × 9" Wd. × 2 1/4" Dp.

1520 Piece— Include 1120 round and flat head slotted screws in lengths from 1/2" to 2", and 400 nuts. Box is 13" Lg. × 9" Wd. × 2 1/4" Dp.

Material		Each
300-Piece Assortments		
18-8 Stainless Steel	96256A500	$45.00
Zinc-Plated Steel	96256A100	35.09
1280-Piece Assortment		
18-8 Stainless Steel	91885A228	118.35
1520-Piece Assortments		
18-8 Stainless Steel	98519A188	137.76
Zinc-Plated Steel	98519A114	97.18

1280-Piece Assortment

Metric Flat Head Slotted

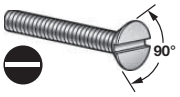

Offered in metric sizes, these flat head screws have a 90° bevel under the head to provide a flush surface within countersunk holes. All are fully threaded and have a Class 6g thread fit, except *zinc-plated steel* screws, which have a Class 6h thread fit. Screws meet DIN 963. Length is measured from the top of the head.

Lg., mm	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
M1.6—Pitch: 0.35 mm			
4	25	91430A003	$8.70
5	25	91430A005	10.45
8	25	91430A007	2.95
10	25	91430A009	3.84
M2—Pitch: 0.4 mm			
4	100	91430A050	4.80
5	100	91430A052	5.49
6	100	91430A054	7.01
8	100	91430A056	5.08
10	100	91430A058	6.87
12	100	91430A060	4.20
M2.5—Pitch: 0.45 mm			
4	100	91430A075	7.64
5	100	91430A077	5.81
6	100	91430A079	6.52
8	100	91430A081	7.20
10	100	91430A083	5.80
M3—Pitch: 0.5 mm			
5	100	91430A114	6.62
6	100	91430A116	6.03
8	100	91430A118	5.41
10	100	91430A120	6.03
12	100	91430A122	5.88
16	100	91430A126	6.01
20	100	91430A128	6.35
M4—Pitch: 0.7 mm			
6	100	91430A216	$6.57
8	100	91430A218	7.91
10	100	91430A220	8.09
12	100	91430A222	8.61
16	100	91430A226	10.74
20	100	91430A228	11.27
M5—Pitch: 0.8 mm			
10	100	91430A320	11.48
12	100	91430A322	12.09
16	100	91430A326	12.61
20	100	91430A328	12.26
25	50	91430A330	8.89
M6—Pitch: 1 mm			
10	50	91430A420	8.93
12	50	91430A419	11.13
16	50	91430A426	9.85
20	50	91430A428	10.97
25	50	91430A430	11.65
30	25	91430A432	7.61
M8—Pitch: 1.25 mm			
16	25	91430A526	11.56
20	25	91430A528	11.30
25	25	91430A530	14.81
Brass			
M2—Pitch: 0.4 mm			
6	50	96686A150	10.58
10	50	96686A153	10.91
12	50	96686A156	12.00
M3—Pitch: 0.5 mm			
6	100	96686A210	13.30
8	100	96686A213	13.50
10	100	96686A216	13.54
M4—Pitch: 0.7 mm			
8	50	96686A255	$12.60
10	50	96686A258	13.20
12	50	96686A261	13.20
16	50	96686A264	14.26
20	25	96686A267	8.92
25	25	96686A270	8.92
M5—Pitch: 0.8 mm			
10	25	96686A305	9.00
12	25	96686A308	9.90
M5 (Cont.)			
16	25	96686A311	$9.74
20	25	96686A314	13.00
25	25	96686A317	11.90
M6—Pitch: 1 mm			
12	25	96686A350	11.90
16	10	96686A353	7.20
20	10	96686A356	7.93
25	10	96686A359	8.68
30	10	96686A362	9.91
Zinc-Plated Steel			
M3—Pitch: 0.5 mm			
5	100	90274A114	4.58
6	100	90274A116	3.67
8	100	90274A118	3.67
10	100	90274A120	3.67
16	100	90274A126	4.13
M4—Pitch: 0.7 mm			
6	100	90274A216	3.60
8	100	90274A218	4.58
10	100	90274A220	4.58
12	100	90274A222	4.58
16	100	90274A226	5.04
20	100	90274A228	5.04
25	100	90274A230	6.48
35	100	90274A234	7.88
M5—Pitch: 0.8 mm			
8	100	90274A318	5.04
10	100	90274A320	6.42
12	100	90274A322	6.88
16	100	90274A326	8.25
M5 (Cont.)			
20	100	90274A328	8.00
25	100	90274A330	8.80
M6—Pitch: 1 mm			
8	100	90274A418	6.80
10	100	90274A420	8.40
12	100	90274A419	7.60
16	100	90274A426	8.40
20	100	90274A428	8.87
25	100	90274A430	8.80
40	100	90274A436	14.90
50	50	90274A440	8.80
M8—Pitch: 1.25 mm			
16	50	90274A526	9.23
25	50	90274A530	11.00
M10—Pitch: 1.5 mm			
20	25	90274A638	8.80
25	25	90274A640	11.00
35	10	90274A643	6.29
40	10	90274A644	7.20

Flat Head Torx

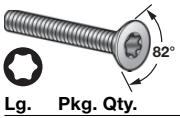

Made from zinc-plated steel, these flat head screws have a Torx drive that reduces slipping and improves driving power. They're beveled under the head to provide a flush surface within countersunk holes and have a Class 2A thread fit. Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Length is measured from the top of the head.

Lg.	Pkg. Qty.		Per Pkg.
4-40—T8 Torx Size			
½″	100	90920A110	$7.89
⅝″	100	90920A120	11.97
¾″	100	90920A113	10.40
1″	100	90920A115	10.84
6-32—T10 Torx Size			
⅜″	100	90920A146	11.63
½″	100	90920A148	7.85
¾″	100	90920A151	11.32
1″	100	90920A153	11.96
6-32 (Cont.)			
1¼″	50	90920A156	$12.60
1½″	50	90920A159	14.96
2″	50	90920A162	14.95
8-32—T15 Torx Size			
½″	100	90920A194	8.41
¾″	100	90920A197	10.60
1″	100	90920A199	14.44
1¼″	50	90920A202	13.68
1½″	50	90920A205	14.95
10-24—T20 Torx Size			
½″	100	90920A242	$12.56
¾″	100	90920A245	14.48
1″	100	90920A247	14.95
1¼″	50	90920A250	14.95
1½″	50	90920A253	14.95
2″	50	90920A256	14.95
2½″	25	90920A255	12.35
¼″-20—T27 Torx Size			
¾″	100	90920A540	$12.97
1″	50	90920A542	11.24
1¼″	50	90920A544	8.90
1½″	25	90920A547	14.95
2″	25	90920A550	14.95
2½″	10	90920A553	10.36
3″	10	90920A556	11.82

Machine Screw Assortments with Nuts and Washers

Machine Screws, Sheet Metal Screws, Nuts, and Washers

18-8 SS

Our 1500 piece 18-8 stainless steel and zinc-plated steel assortments contain flat and pan head Phillips sheet metal and machine screws, plus a variety of nuts and washers. Each includes 600 No. 6, 8, and 10 size sheet metal screws in lengths from ⅜″-1½″; 150 size 10-24 and ¼″-20 machine screws in lengths from ¾″-1″; 250 size 6-32, 8-32, 10-24, ¼″-20, 5⁄16″-18, and ⅜″-16 nuts; and 500 No. 6, 8, 10, ¼″, 5⁄16″, and ⅜″ size lock washers and flat washers.

The ***18-8 stainless steel assortment*** also includes 50 size 10-32 machine screw nuts for a total of 1550 pieces. Comes in an 18⅜″ Lg. × 12¼″ Wd. × 3⅛″ Dp. metal box with lid chart.

90970A350 ..... **Each** $142.60

The ***zinc-plated steel assortment*** comes in a 13″ Lg. × 9″ Wd. × 2¼″ Dp. clear plastic box with lid chart.

90970A670 ..... **Each** $112.00

Assorted Screws, Nuts, Washers, and Electrical Terminals

This 3342 piece assortment includes 480 round head slotted machine screws in sizes 6-32, 8-32, 10-24, and ¼″-20 in lengths from ½″-1½″, plus 490 nuts, 490 lock washers, and 490 flat washers in the same sizes; 700 No. 4, 6, 8, 10, and 14 size pan head combination drive tapping screws in lengths from ½″-1½″; 500 No. 4, 6, and 8 size flat head slotted wood screws in lengths from ½″-1″; 55 size 6-32, 8-32, 10-24, 10-32, ¼″-20, ¼″-28, 5⁄16″-18, 5⁄16″-24, ⅜″-16, ½″-13, and ⅝″-11 socket head screws in lengths from ⅛″-⅝″; 37 size 8-32, 10-24, 10-32, ¼″-20, 5⁄16″-18, and ⅜″-16 socket head cap screws in lengths from ½″-2″; and 100 electrical terminals including ring, spade, and butt connectors.

All are made from zinc-plated steel (except socket screws which have a black-oxide finish) and come furnished with a 14¾″ Lg. × 6¼″ Wd. × 18½″ Ht. plastic storage cabinet.

92250A680 ..... **Each** $190.92

Machine Screws, Nuts, and Washers

We've pulled together two great assortments of 18-8 stainless steel screws, nuts, and washers in your choice of inch and metric sizes.

The ***inch assortment*** contains 1440 pieces and includes 360 size 4-40, 6-32, 8-32, 10-24, 10-32, and ¼″-20 pan head Phillips, and pan, flat, and round head slotted screws in lengths from ¼″-1½″, plus 360 nuts and 360 split-lock washers and flat washers in the same sizes. All come in an 18½″ Lg. × 15″ Wd. × 6½″ Dp. plastic cabinet with 39 drawers.

94852A430 ..... **Each** $233.00

The ***metric assortment*** contains 2200 pieces and includes 600 M3 and M4 pan and flat head Phillips screws in lengths from 6-16 mm, plus 600 nuts, and 1000 split-lock washers and flat washers in sizes M3, M4, M5, M6, M8, and M10. All come furnished in an 18½″ Lg. × 12″ Wd. × 3″ Dp. compartmented metal box with a lid chart.

91470A150 ..... **Each** $190.76

Oval Head

Oval head screws are beveled under the head like flat head screws, but have a decorative, rounded top. Designed to be used in countersunk holes; length is measured from the edge of the head.

Inch sizes have an 82° beveled head and a Class 2A thread fit. ***Metric*** sizes have a 90° beveled head and a Class 6g thread fit.

Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Sizes marked with a ● have an undercut head to allow for more threading.

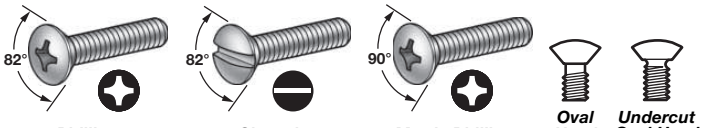

Phillips *Slotted* *Metric Phillips* *Oval Head* *Undercut Oval Head*

18-8 Stainless Steel—Phillips

Lg.	Pkg. Qty.		Per Pkg.
2-56—#1 Drive			
1/8″	100	91802A074●	$5.36
3/16″	100	91802A076	5.40
1/4″	100	91802A077	5.41
5/16″	100	91802A078	5.47
3/8″	100	91802A079	5.52
1/2″	100	91802A081	5.59
5/8″	100	91802A083	5.86
3/4″	100	91802A084	6.13
4-40—#1 Drive			
1/8″	100	91802A103●	9.90
3/16″	100	91802A105●	5.21
1/4″	100	91802A106	3.41
5/16″	100	91802A107	3.64
3/8″	100	91802A108	3.75
7/16″	100	91802A109	3.83
1/2″	100	91802A110	4.05
5/8″	100	91802A112	4.36
3/4″	100	91802A113	4.73
1″	100	91802A115	5.83
6-32—#2 Drive			
3/16″	100	91802A143●	9.90
1/4″	100	91802A144	3.78
5/16″	100	91802A145	3.12
3/8″	100	91802A146	3.72
7/16″	100	91802A147	3.32
1/2″	100	91802A148	4.21
5/8″	100	91802A150	4.63
3/4″	100	91802A151	5.14
7/8″	100	91802A152	5.52
1″	100	91802A153	5.20
1 1/4″	100	91802A155	5.23
1 1/2″	100	91802A157	5.81
1 3/4″	100	91802A159	7.33
2″	100	91802A162	7.35
8-32—#2 Drive			
1/4″	100	91802A190●	4.92
5/16″	100	91802A191	5.08
3/8″	100	91802A192	5.35
7/16″	100	91802A193	5.36
1/2″	100	91802A194	5.73
5/8″	100	91802A196	6.55
3/4″	100	91802A197	6.90
7/8″	100	91802A198	8.46
1″	100	91802A199	8.44
1 1/4″	100	91802A201	9.06
1 1/2″	50	91802A203	7.08
1 3/4″	50	91802A204	7.60
2″	50	91802A205	6.44
2 1/2″	50	91802A207	9.73
3″	50	91802A209	9.95
10-24—#2 Drive			
5/16″	100	91802A239●	6.85
3/8″	100	91802A240	7.07
7/16″	100	91802A241	8.03
1/2″	100	91802A242	7.39
5/8″	100	91802A244	8.98
3/4″	100	91802A245	9.24
7/8″	100	91802A246	9.57
10-24 (Cont.)			
1″	50	91802A247	$6.61
1 1/4″	50	91802A259	7.70
1 1/2″	50	91802A251	8.20
1 3/4″	50	91802A252	10.54
2″	50	91802A253	10.91
2 1/4″	25	91802A254	6.82
2 1/2″	25	91802A255	6.68
3″	25	91802A257	8.12
3 1/2″	10	91802A258	5.81
4″	10	91802A261	6.09
10-32—#2 Drive			
5/16″	100	91802A826●	9.95
3/8″	100	91802A827	7.07
7/16″	100	91802A828	8.12
1/2″	100	91802A829	7.48
5/8″	100	91802A830	8.98
3/4″	100	91802A831	9.24
7/8″	100	91802A832	9.57
1″	50	91802A833	6.61
1 1/4″	50	91802A835	7.70
1 1/2″	50	91802A836	8.20
1 3/4″	50	91802A837	10.68
2″	25	91802A838	5.75
2 1/2″	25	91802A840	6.50
3″	25	91802A845	8.12
12-24—#3 Drive			
1/2″	50	91802A371	7.73
3/4″	50	91802A374	6.98
1″	50	91802A376	9.39
1 1/4″	50	91802A378	10.58
1 1/2″	25	91802A381	6.81
1/4″-20—#3 Drive			
3/8″	50	91802A535●	8.08
1/2″	50	91802A537	7.85
5/8″	50	91802A539	8.99
3/4″	50	91802A540	9.92
1″	25	91802A542	6.99
1 1/4″	25	91802A544	6.37
1 1/2″	25	91802A546	7.22
1 3/4″	25	91802A547	9.46
2″	25	91802A550	9.74
2 1/4″	10	91802A551	4.88
2 1/2″	10	91802A552	5.34
2 3/4″	10	91802A553	5.60
3″	10	91802A554	6.65
3 1/2″	10	91802A556	8.10
4″	10	91802A572	9.84
4 1/2″	5	91802A573	7.45
5″	5	91802A575	9.01
6″	5	91802A577	9.95
5/16″-18—#4 Drive			
3/4″	10	91802A581	5.31
1″	10	91802A583	6.02
1 1/4″	10	91802A585	7.04
1 1/2″	10	91802A587	7.03
2″	10	91802A591	8.34
2 1/2″	10	91802A593	9.93
3″	5	91802A595	5.97

18-8 Stainless Steel—Slotted

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/4″	100	91790A105	4.42
3/8″	100	91790A108	5.08
1/2″	100	91790A110	5.56
3/4″	100	91790A115	6.33
1″	100	91790A120	7.88
6-32			
1/4″	100	91790A144	4.84
5/16″	100	91790A145	5.02
6-32 (Cont.)			
3/8″	100	91790A146	5.08
7/16″	100	91790A147	5.26
1/2″	100	91790A148	5.49
5/8″	100	91790A150	6.48
3/4″	100	91790A151	6.65
1″	100	91790A153	8.15
1 1/4″	100	91790A155	9.93
1 1/2″	100	91790A157	9.98
2″	50	91790A159	9.90

● Head is undercut.

18-8 Stainless Steel—Slotted (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
8-32			
1/4″	100	91790A190●	$4.83
3/8″	100	91790A192	5.53
1/2″	100	91790A194	6.16
3/4″	100	91790A197	7.92
1″	100	91790A199	9.62
1 1/4″	50	91790A201	6.05
1 1/2″	50	91790A203	6.27
10-24			
3/8″	100	91790A240	8.20
1/2″	100	91790A242	9.15
5/8″	50	91790A244	5.34
3/4″	50	91790A245	5.54
1″	50	91790A247	6.49
1 1/4″	50	91790A249	8.81
1 1/2″	50	91790A251	9.90
10-32			
3/8″	100	91790A827	8.20
1/2″	100	91790A829	9.15
5/8″	50	91790A830	5.54
10-32 (Cont.)			
3/4″	50	91790A831	$5.91
1″	50	91790A833	7.06
1 1/4″	50	91790A835	9.74
1 1/2″	50	91790A836	9.90
12-24			
3/8″	50	91790A310●	6.36
1/2″	50	91790A315	7.81
1″	25	91790A320	5.66
1 1/4″	25	91790A323	7.50
1/4″-20			
1/2″	50	91790A537	9.82
5/8″	50	91790A539	9.95
3/4″	25	91790A540	6.63
1″	25	91790A542	7.47
1 1/4″	25	91790A544	7.67
1 1/2″	25	91790A546	9.11
2″	25	91790A550	9.95
2 1/2″	10	91790A552	5.53

Brass—Slotted

Lg.	Pkg. Qty.		Per Pkg.
6-32			
1/4″	100	91700A142	6.41
3/8″	100	91700A146	7.42
1/2″	100	91700A148	8.42
3/4″	100	91700A151	10.42
1″	100	91700A153	14.41
1 1/4″	100	91700A158	14.39
1 1/2″	100	91700A161	14.95
8-32			
1/4″	100	91700A190●	8.63
3/8″	100	91700A192	12.12
1/2″	100	91700A194	12.05
5/8″	100	91700A195	14.95
3/4″	100	91700A197	14.98
1″	50	91700A199	11.33
10-24			
1/2″	100	91700A242	14.98
3/4″	50	91700A245	10.55
1″	25	91700A247	7.06
1 1/2″	25	91700A249	9.02
10-32			
1/2″	100	91700A829	14.95
3/4″	50	91700A831	12.27
1″	25	91700A833	7.06
1 1/2″	25	91700A835	9.02
1/4″-20			
1/2″	25	91700A537	8.73
3/4″	25	91700A540	11.59
1″	25	91700A542	10.99
1 1/2″	25	91700A546	14.95

Color	Size × Lg.	Pkg. Qty.		Per Pkg.
Painted Steel (Wall Plate Screws)—Slotted				
Brown	6-32 × 1/2″	10	99050A215	$2.87
White	6-32 × 1/2″	10	99050A315	2.87
Ivory	6-32 × 1/2″	10	99050A415	2.87

Metric 18-8 Stainless Steel—Phillips—DIN 966

Lg., mm	Pkg. Qty.		Per Pkg.
M2.5—#1 Drive; Pitch: 0.45 mm			
6	100	90258A103	$9.08
8	50	90258A109	5.62
10	100	90258A115	7.00
12	50	90258A121	5.12
M3—#1 Drive; Pitch: 0.5 mm			
5	50	90258A173	9.51
6	100	90258A176	4.90
8	100	90258A178	5.18
10	100	90258A181	5.19
12	100	90258A183	5.43
16	100	90258A187	7.00
20	100	90258A189	9.00
M4—#2 Drive; Pitch: 0.7 mm			
6	100	90258A210	5.14
8	100	90258A212	5.67
10	100	90258A214	6.69
12	100	90258A218	9.05
16	100	90258A221	8.00
20	100	90258A224	12.90
25	50	90258A229	6.86
30	25	90258A232	3.68
M5—#2 Drive; Pitch: 0.8 mm			
10	100	90258A246	$9.30
12	50	90258A249	6.17
16	50	90258A251	6.34
20	50	90258A253	8.12
25	50	90258A255	11.62
30	25	90258A258	6.38
35	50	90258A261	13.02
M6—#3 Drive; Pitch: 1 mm			
10	50	90258A279	5.55
12	50	90258A281	6.17
16	50	90258A285	11.22
20	25	90258A288	5.98
25	50	90258A291	12.27
30	50	90258A294	12.39
35	25	90258A297	7.20
M8—#4 Drive; Pitch: 1.25 mm			
20	25	90258A308	7.36
25	25	90258A312	8.76
30	10	90258A316	8.55

Tamper-Resistant

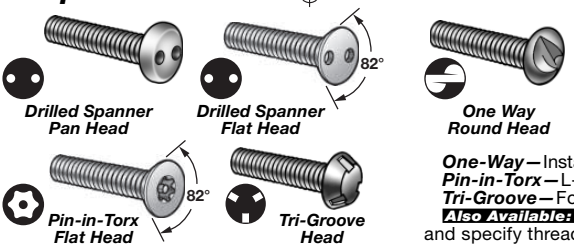

To discourage tampering, these screws require unique drivers. All are made from 18-8 stainless steel except tri-groove screws, which are made from zinc-plated, case-hardened steel. Each has a class 2A thread fit (unless noted). Screws up to 2″ long are fully threaded; those longer than 2″ have at least 1½″ of thread. Flat head screws provide a flush surface within countersunk holes.

Drilled Spanner— For drivers, see 94062A on page 2835; for bits, see 52775A on page 2825. Not rated for Rockwell hardness.

One-Way— Install with a slotted screwdriver. For removal tools, see 7392A on page 2835.

Pin-in-Torx— L-keys and drivers are sold on page 2849; bits are sold on page 2824.

Tri-Groove— For sockets and drivers, see 7393A on page 2835.

Also Available: One-way screws made from zinc-plated steel. Please ask for 90287A660 and specify thread size and screw length.

Lg.	Pkg. Qty.		Per Pkg.
Drilled Spanner—*Pan Head*			
4-40—*#4 Drive*			
3/8″	50	94066A108	$14.31
1/2″	50	94066A110	14.52
6-32—*#6 Drive*			
1/4″	50	94066A144	14.60
3/8″	50	94066A146	14.90
1/2″	50	94066A148	14.92
3/4″	50	94066A151	14.95
1″	50	94066A153	14.98
8-32—*#8 Drive*			
3/8″	50	94066A192	14.95
1/2″	25	94066A195	8.57
3/4″	25	94066A197	8.68
1″	25	94066A199	8.74
1¼″	25	94066A201	9.94
1½″	25	94066A203	10.79
10-24—*#10 Drive*			
3/8″	25	94066A240	8.59
1/2″	25	94066A242	8.61
3/4″	25	94066A245	8.85
10-24 (Cont.)			
1″	25	94066A247	$9.14
1½″	25	94066A251	12.24
2″	25	94066A253	14.11
10-32—*#10 Drive*			
3/8″	25	94066A827	8.97
1/2″	25	94066A829	9.00
3/4″	25	94066A831	8.85
1″	25	94066A833	9.14
1½″	25	94066A836	12.24
2″	25	94066A838	14.11
¼″-20—*#14 Drive*			
3/8″	25	94066A535	13.18
1/2″	25	94066A537	13.28
3/4″	25	94066A540	13.48
1″	25	94066A542	13.56
1½″	25	94066A546	14.92
2″	25	94066A550	14.95
3″	10	94066A554	11.27
Drilled Spanner—*Flat Head*			
4-40—*#4 Drive*			
1/4″	50	94063A063●	14.91
3/8″	50	94063A066	14.90
1/2″	50	94063A069	14.95
6-32—*#6 Drive*			
3/8″	50	94063A146	14.28
1/2″	50	94063A148	14.62
3/4″	50	94063A151	14.77
1″	50	94063A153	14.95
1½″	25	94063A157	8.59
2″	25	94063A159	11.67
8-32—*#8 Drive*			
3/8″	50	94063A192	14.95
1/2″	25	94063A194	8.59
3/4″	25	94063A197	8.97
1″	25	94063A199	8.73
1¼″	25	94063A201	9.35
1½″	25	94063A203	10.18
2″	25	94063A206	12.51
10-24—*#10 Drive*			
1/2″	25	94063A242	8.62
3/4″	25	94063A245	8.84
1″	25	94063A247	9.11
10-24 (Cont.)			
1¼″	25	94063A249	10.97
1½″	25	94063A251	12.20
2″	25	94063A254	14.39
10-32—*#10 Drive*			
1/2″	25	94063A829	8.62
3/4″	25	94063A831	8.94
1″	25	94063A833	10.41
1¼″	25	94063A835	10.87
1½″	25	94063A836	11.53
2″	25	94063A838	14.39
2½″	25	94063A842	14.98
12-24—*#12 Drive*			
1/2″	25	94063A291●	13.79
3/4″	25	94063A294	13.79
¼″-20—*#14 Drive*			
1/2″	25	94063A537●	12.99
3/4″	25	94063A540	13.21
1″	25	94063A542	13.27
1¼″	25	94063A544	14.33
1½″	25	94063A546	14.55
2″	25	94063A550	14.95
2½″	10	94063A552	7.96
One Way—*Round Head*			
4-40			
3/8″	100	90288A108	9.41
1/2″	100	90288A110	9.72
6-32			
3/16″	100	90288A143	9.72
1/4″	100	90288A144	10.00
3/8″	100	90288A146	10.28
1/2″	100	90288A148	10.45
3/4″	100	90288A151	12.03
6-32 (Cont.)			
1″	50	90288A153	8.03
1½″	50	90288A157	8.46
8-32			
1/4″	50	90288A190	7.29
3/8″	50	90288A192	7.59
1/2″	50	90288A194	8.23
3/4″	50	90288A197	8.47
1″	50	90288A199	8.22
One Way (Cont.)			
8-32 (Cont.)			
1½″	50	90288A203	$9.21
10-24			
1/2″	50	90288A242	8.43
3/4″	50	90288A245	8.72
1″	50	90288A247	10.91
1¼″	50	90288A249	12.71
1½″	25	90288A251	7.55
10-32			
1/2″	50	90288A829	8.75
5/8″	50	90288A830	9.48
10-32 (Cont.)			
3/4″	50	90288A831	$9.59
1″	50	90288A833	11.30
1¼″	25	90288A835	6.88
1½″	25	90288A836	7.55
¼″-20			
1/2″	25	90288A537	5.16
3/4″	25	90288A540	6.31
1″	25	90288A542	7.24
1½″	25	90288A546	10.64
2″	10	90288A550	6.16
Pin-in-Torx—*Flat Head*			
6-32—*T10 Drive; Head: Dia. 0.285″; Ht. 0.097″*			
1/2″	25	91870A148	8.97
3/4″	25	91870A151	8.97
1″	25	91870A153	8.97
6-32—*T15 Drive; Head: Dia. 0.285″; Ht. 0.097″*			
3/8″	25	91870A145★	10.51
8-32—*T15 Drive; Head: Dia. 0.335″; Ht. 0.112″*			
3/8″	25	91870A192	9.66
8-32—*T20 Drive; Head: Dia. 0.335″; Ht. 0.112″*			
1/2″	25	91870A194★	10.78
3/4″	25	91870A197★	11.14
1″	25	91870A199★	11.58
1¼″	25	91870A203★	12.54
1½″	10	91870A206★	5.53
10-24—*T25 Drive; Head: Dia. 0.385″; Ht. 0.127″*			
3/8″	25	91870A238★	10.84
1/2″	25	91870A242★	10.99
10-24 (Cont.)			
5/8″	25	91870A243★	11.10
3/4″	25	91870A245★	11.35
1″	25	91870A247★	12.07
1¼″	10	91870A259★	5.49
1½″	10	91870A261★	5.57
10-32—*T25 Drive; Head: Dia. 0.385″; Ht. 0.127″*			
3/8″	25	91870A826★	10.84
1/2″	25	91870A829★	10.99
3/4″	25	91870A831★	11.35
1″	25	91870A833★	12.07
1¼″	10	91870A835★	5.49
1½″	10	91870A838★	5.57
¼″-20—*T30 Drive; Head: Dia. 0.505″; Ht. 0.161″*			
3/4″	10	91870A618★	6.19
1″	10	91870A622★	6.28
1¼″	10	91870A627★	6.68
1½″	10	91870A631★	6.99
2″	10	91870A638★	7.85
Tri-Groove			
6-32—*#6 Drive; Head: Dia. 0.260″; Ht. 0.126″*			
3/8″	100	90058A146	12.73
1/2″	100	90058A148	13.33
3/4″	100	90058A151	13.63
8-32—*#6 Drive; Head: Dia. 0.268″; Ht. 0.126″*			
3/8″	100	90058A192	14.71
1/2″	100	90058A194	14.48
3/4″	100	90058A197	14.83
1″	50	90058A199	8.62
1¼″	50	90058A201	9.90
1½″	50	90058A203	10.52
10-24—*#10 Drive; Head: Dia. 0.370″; Ht. 0.148″*			
1/2″	50	90058A242	8.28
3/4″	50	90058A245	9.48
1″	25	90058A247	4.91
1½″	25	90058A251	6.52
10-32—*#10 Drive; Head: Dia. 0.370″; Ht. 0.148″*			
1/2″	50	90058A829	11.62
3/4″	50	90058A831	13.24
1″	50	90058A833	14.55
1½″	25	90058A836	9.66
¼″-20—*#10 Drive; Head: Dia. 0.370″; Ht. 0.148″*			
1/2″	50	90058A538	14.95
3/4″	50	90058A540	14.47
1″	25	90058A542	7.33
1½″	25	90058A546	7.16
2″	25	90058A550	8.03
2½″	10	90058A552	7.24
5/16″-18—*#20 Drive; Head: Dia. 0.580″; Ht. 0.263″*			
5/8″	25	90058A580	12.07
3/4″	25	90058A581	11.21
1″	25	90058A583	12.07

● Head is undercut to allow more threading. ★ Class 3A thread fit.

Very High Temperature Hex Head

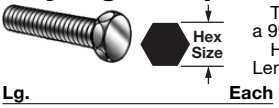

These ceramic screws won't melt, rust, seize, or become brittle—even at temperatures up to 3000° F. They have a 99.8% alumina content, are highly resistant to corrosive gases, and are nonconductive. Color is off-white. Hardness is 1365 on the Vickers scale. Screws are fully threaded and have a nominal Class 2A thread fit. Length is measured from under the head. Matching nuts sold separately below.

Lg.	Each
2-56—*Head: Wd. 1/8″; Ht. 0.050″*	
1/4″	94555A077 $20.50
3/8″	94555A079 21.76
1/2″	94555A081 24.12
Nut	94635A110 12.37
4-40—*Head: Wd. 3/16″; Ht. 0.060″*	
3/8″	94555A108 23.38
1/2″	94555A110 25.88
4-40 (Cont.)	
Nut	94635A115 $13.63
6-32—*Head: Wd. 1/4″; Ht. 0.093″*	
1/4″	94555A144 23.88
3/8″	94555A146 25.87
3/4″	94555A161 31.26
1″	94555A153 32.76
Nut	94635A120 15.00
8-32—*Head: Wd. 1/4″; Ht. 0.110″*	
3/8″	94555A192 $27.38
1/2″	94555A194 30.63
1″	94555A199 34.88
1¼″	94555A201 36.25
Nut	94635A124 15.62
¼″-20—*Head: Wd. 7/16″; Ht. 0.188″*	
1/2″	94555A317 $33.38
3/4″	94555A319 36.26
1″	94555A321 38.01
1¼″	94555A323 39.38
Nut	94635A135 16.88

Nylon Machine Screws

Pan Slotted | Round Slotted | Binding Slotted | Fillister Slotted | Hex | Flat Slotted

Our economical, off-white nylon 6/6 screws are fully threaded, nonconductive, and resistant to chemicals and solvents (except mineral acids). Temp. range is –40° to +185° F. (*Note:* Nylon absorbs moisture which can affect dimensions and other properties.) Not rated for hardness or tensile strength. All but hex heads have a slotted drive. Pan, round, binding, fillister, and hex head screw length is measured from under the head. Flat head screw length is measured from the top of the head.

100° and 82° flat head screws provide a flush surface within countersunk holes. 100° flat head screws have a larger bearing surface so they're preferred over 82° flat heads for use in soft materials.

To Order: Please specify pan, round, binding, fillister, hex, 100° flat, or 82° flat head style.

Also Available: Black nylon screws. Please ask for 94735A666 for Pan Head; 97263A110 for Round Head; 95000A555 for Binding Head; 93939A880 for Fillister Head; 99091A330 for Hex Head; 98286A220 for 100° Flat Head; and 95133A777 for 82° Flat Head; then specify thread size and length.

Lg.	Pkg. Qty.		Per Pkg.
2-56			
3/32″	100	95000A073	$5.28
1/8″	100	95000A074	4.85
3/16″	100	95000A076	4.89
1/4″	100	95000A077	4.92
5/16″	100	95000A078	4.96
3/8″	100	95000A079	4.99
7/16″	100	95000A080	5.01
1/2″	100	95000A081	5.01
3/4″	100	95000A084	5.09
1″	100	95000A086	5.12
4-40			
3/16″	100	95000A105	4.89
1/4″	100	95000A106	4.98
9/32″	100	95000A107	5.00
5/16″	100	95000A109	5.02
3/8″	100	95000A108	5.06
1/2″	100	95000A110	5.10
5/8″	100	95000A112	5.13
3/4″	100	95000A113	5.16
1″	100	95000A115	5.20
6-32			
3/16″	100	95000A143	5.13
1/4″	100	95000A144	5.16
5/16″	100	95000A145	5.20
3/8″	100	95000A146	5.23
1/2″	100	95000A148	5.27
5/8″	100	95000A150	5.30
3/4″	100	95000A151	5.33
1″	100	95000A153	5.38
8-32			
1/4″	100	95000A190	5.36

Lg.	Pkg. Qty.		Per Pkg.
8-32 (Cont.)			
3/8″	100	95000A192	$5.39
1/2″	100	95000A194	5.42
5/8″	100	95000A196	5.43
3/4″	100	95000A197	5.47
1″	100	95000A199	5.49
1 1/4″	100	95000A204	5.61
1 1/2″	100	95000A203	5.68
10-24			
1/4″	100	95000A238	5.72
1/2″	100	95000A242	5.83
3/4″	100	95000A245	5.90
1″	100	95000A247	5.94
1 1/2″	100	95000A251	6.07
10-32			
1/8″	100	95000A848	5.69
1/4″	100	95000A825	5.72
3/8″	100	95000A827	5.80
1/2″	100	95000A829	5.83
5/8″	100	95000A830	5.86
3/4″	100	95000A831	5.90
1″	100	95000A833	5.94
1 1/2″	100	95000A836	6.07
2″	100	95000A838	6.71
1/4″-20			
1/4″	100	95000A533	6.52
1/2″	100	95000A537	6.60
5/8″	100	95000A539	6.63
3/4″	100	95000A540	6.66
1″	100	95000A542	6.71
1 1/2″	100	95000A546	6.88
2″	100	95000A550	7.54

Metric Nylon Machine Screws

Pan Phillips | Pan Slotted | Cheese Slotted | Flat Slotted

Fully threaded, nonconductive, and made from off-white nylon 6/6, these screws are resistant to chemicals and solvents (except mineral acids) and have a temperature range of –40° to +185° F. (*Note:* Nylon absorbs moisture which can affect dimensions and properties.) Not rated for hardness or tensile strength. Pan head screws come with your choice of Phillips and slotted drive. Cheese and flat head screws have a slotted drive. Pan and cheese head screw length is measured from under the head. Flat head screw length is measured from the top of the head.

Pan head Phillips screws in sizes M2-M5 have a #1 drive; size M6 have a #2 drive; and size M8 have a #3 drive.

Cheese head screws combine the greatest head height with the smallest head diameter for maximum driving power.

Flat head screws are beveled 90° (unless noted) under the head to provide a flush surface within countersunk holes.

To Order: Please specify pan, cheese, or flat head style. For pan head screws, also specify Phillips or slotted drive.

Also Available: Black nylon screws. Please ask for 92492A560 for Pan Head Phillips; 90451A450 for Pan Head Slotted; 96295A890 for Cheese Head Slotted; and 95258A670 for Flat Head Slotted; then specify thread size and length.

Lg., mm	Pkg. Qty.		Per Pkg.
M2—Pitch: 0.4 mm			
8	100	94310A104	$6.87
10	100	94310A106	6.91
12	100	94310A108	6.99
16	100	94310A110	7.02
M3—Pitch: 0.5 mm			
5	100	94310A114	6.79
6	100	94310A116	6.81
8	100	94310A118	6.86
10	100	94310A120	6.91
12	100	94310A122	6.99
16	100	94310A126	7.02
20	100	94310A128	7.06
25	100	94310A130	7.12
30	100	94310A132	7.18
M4—Pitch: 0.7 mm▲			
6	100	94310A216	7.36
8	100	94310A218	7.38
10	100	94310A220	7.40
12	100	94310A222	7.76
16	100	94310A226	7.48
20	100	94310A228	7.53
25	100	94310A230	7.54
30	100	94310A232	7.75
35	100	94310A234	7.84

Lg., mm	Pkg. Qty.		Per Pkg.
M5—Pitch: 0.8 mm			
8	100	94310A318	$7.96
10	100	94310A320	8.01
12	100	94310A322	8.07
16	100	94310A326	8.11
20	100	94310A328	8.17
25	100	94310A330	8.21
30	100	94310A332	8.33
40	100	94310A336	8.42
M6—Pitch: 1 mm			
8	100	94310A418	9.14
10	100	94310A420	9.17
12	100	94310A419	9.20
16	100	94310A426	9.24
20	100	94310A428	9.32
25	100	94310A430	9.38
30	100	94310A432	9.50
35	100	94310A433	9.61
40	100	94310A436	9.68
45	100	94310A438	9.74
50	100	94310A440	9.77
M8—Pitch: 1.25 mm★			
16	25	94310A527	7.10
20	25	94310A529	7.11
25	25	94310A531	7.15
30	25	94310A533	7.16
50	25	94310A541	7.52

▲ Flat head dia. is 8.7 mm; head height is 2.7 mm; bevel is 82°.
★ Flat head dia. is 16.4 mm; head height is 4.6 mm; bevel is 82°.

Polycarbonate, PTFE, and PEEK Machine Screws

Pan Phillips | Pan Slotted | Round Slotted | Hex | Flat Slotted

Choose these screws to handle extreme conditions. They're fully threaded and nonconductive. Not rated for hardness or tensile strength. Pan and hex head screw length is measured from under the head. Flat head screw length is measured from the top of the head. Flat head screws are beveled 82° under the head to provide a flush surface within countersunk holes.

Polycarbonate— A tough material with extreme impact resistance. Does not absorb moisture. Temperature range is –40° to +212° F. Color is clear.

PTFE— Unaffected by grease, oil, detergents, and most mineral acids. Has excellent nonstick properties. Temperature range is –450° to +500° F. Color is white.

PEEK— Extremely stable in hostile environments; withstands water and steam without loss of physical properties. Maximum temperature is 500° F. Color is tan.

To Order: Polycarbonate and PEEK screws, please specify pan head Phillips or flat head slotted style.

To Order: PTFE screws, please specify pan head slotted, hex head, or flat head slotted style.

Also Available: PTFE round head slotted screws. Please ask for 94700A910 and specify thread size and screw length.

Lg.	Polycarbonate Pkg. Qty.		Per Pkg.	PTFE	Each	PEEK	Each
4-40—#1 Phillips Drive							
1/4″	50	93140A406	$12.77				
3/8″	50	93140A408	13.00				
1/2″	50	93140A409	13.11				
6-32—#2 Phillips Drive; Hex Size: 1/4″							
1/4″	50	93140A444	13.33	94701A205	$3.45		
3/8″	50	93140A446	13.33	94701A221	3.45	96367A251	$3.88
1/2″	50	93140A448	13.66	94701A229	4.11	96367A264	4.01
3/4″				94701A237	4.46	96367A277	4.17
1″				94701A245	5.17		
8-32—#2 Phillips Drive; Hex Size: 1/4″							
1/4″	50	93140A466	13.52	94701A301	4.11		
3/8″	50	93140A469	13.63	94701A312	4.27	96367A354	3.98
1/2″				94701A323	4.63	96367A367	4.07
3/4″				94701A334	5.08	96367A380	4.27
10-32—#2 Phillips Drive; Hex Size: 5/16″							
1/4″	50	93140A473	14.16	94701A402	4.76		
3/8″	50	93140A475	14.37	94701A414	4.76	96367A457	4.04
1/2″	50	93140A478	14.47	94701A426	5.29	96367A471	4.21
5/8″	50	93140A481	14.56				
3/4″	50	93140A484	14.67	94701A438	5.29	96367A485	4.53
1″	50	93140A487	14.78	94701A450	5.29		
1/4″-20—#3 Phillips Drive; Hex Size: 7/16″							
3/4″	10	93140A539	5.27	94701A521	6.57		
1″	10	93140A546	5.40	94701A533	6.57		

About Set Screws, Materials, and Hex Sizes

Unlike typical screws that hold materials together by way of threads, set screws are designed to exert pressure at the tip to hold objects in place.

Point Selection

Cup Point—The most popular set screw style, the cup has a thin edge that digs into the contact surface for high holding power.

Extended Point—Have a protruding tip that locks within mating holes or slots in your workpiece. Often used in place of a dowel pin.

Knurled Cup Point—A variation of the cup point, this style has knurls that improve grip and prevent the screw from backing out or loosening from vibration.

Cone Point—With the highest holding power of any style set screw, cone points feature a sharp tip that wedges into the contact surface.

Flat Point—Best for making frequent adjustments, the blunt tip won't mar the contact surface.

Oval Point—Like flat points, these are ideal for making frequent adjustments. Their rounded tip has a small contact area and causes little damage.

Materials

Stainless Steel—*Type 316 stainless steel* and *18-8 stainless steel* may be mildly magnetic and have a minimum Rockwell hardness of B80 (unless noted). Type 316 stainless steel provides better corrosion resistance than 18-8 stainless steel and also contains molybdenum, which increases corrosion resistance to chlorides and sulfates.

Alloy Steel—Heat-treated for hardness with a minimum Rockwell hardness of C45 (unless noted).

Brass—Corrosion resistant and usually softer than stainless steel and steel. Generally nonmagnetic. Minimum Rockwell hardness is B55.

Nylon 6/6—Is nonconductive and resistant to chemicals and solvents (except mineral acids). It does absorb moisture, which can affect dimensions and other properties. Color is off-white. Withstands temperatures from –40° to +185°F (unless noted). Not rated for hardness.

Nickel Alloy C276—This high-strength alloy withstands most corrosive environments and resists stress-corrosion cracking and oxidation. Nonmagnetic. Not rated for hardness.

Nickel Alloy 400—Has excellent corrosion resistance—even in marine and chemical processing environments. It's strong, heat resistant, and slightly magnetic. Not rated for hardness.

Finish

Cadmium Plated—Adds rust resistance and lubricity.

Inch Hex Sizes

Screw Size	No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 8	No. 10	1/4″	5/16″	3/8″	7/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1″	1 1/4″
Dec. Equiv.	.060″	.073″	.086″	.099″	.112″	.125″	.138″	.164″	.190″	.250″	.312″	.375″	.437″	.500″	.562″	.625″	.750″	.875″	1.000″	1.250″
Hex Size	.028″	.028″	.035″	.050″	.050″	1/16″	1/16″	5/64″	3/32″	1/8″	5/32″	3/16″	7/32″	1/4″	1/4″	5/16″	3/8″	1/2″	9/16″	5/8″

Metric Hex Sizes

Screw Size	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20
Hex Size	0.7 mm	0.9 mm	1.3 mm	1.5 mm	2 mm	2.5 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm

For hex bits, see pages 2820-2821. For hex keys and drivers, see pages 2838-2847.

Cup Point Set Screws

The most common point style, cup points have a thin edge that digs into the contact surface for high holding power. All have a hex socket and a Class 3A thread fit. Dimensions meet ASME B18.3. Length listed is the overall length.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/16″	10	92313A010	$9.80
3/32″	10	92313A013	9.78
1/8″	10	92313A016	10.36
3/16″	5	92313A019	5.03
1/4″	5	92313A022	5.38
4-40			
1/16″	10	92313A099	9.88
3/32″	50	92313A102	9.10
1/8″	25	92313A103	3.31
3/16″	25	92313A105	3.63
1/4″	25	92313A106	3.65
3/8″	50	92313A017	7.66
1/2″	50	92313A109	10.00
6-32			
1/8″	50	92313A142	5.22
3/16″	50	92313A143	5.38
1/4″	25	92313A144	2.78
3/8″	25	92313A146	3.40
1/2″	50	92313A148	9.54
3/4″	25	92313A154	8.87
8-32			
1/8″	25	92313A188	2.95
3/16″	25	92313A189	2.97
1/4″	25	92313A190	3.05
5/16″	25	92313A191	3.00
3/8″	25	92313A192	3.08
1/2″	50	92313A194	6.11
5/8″	25	92313A198	8.14
3/4″	10	92313A204	3.88
10-24			
3/16″	25	92313A237	3.14
1/4″	25	92313A238	3.19
5/16″	25	92313A239	3.20
3/8″	25	92313A240	3.62
1/2″	25	92313A242	3.76
10-24 (Cont.)			
3/4″	25	92313A248	$4.91
1″	25	92313A254	7.39
10-32			
1/8″	50	92313A820	6.11
3/16″	25	92313A824	3.14
1/4″	25	92313A825	3.19
5/16″	25	92313A826	3.20
3/8″	25	92313A827	3.62
1/2″	25	92313A829	3.76
5/8″	25	92313A831	3.83
3/4″	25	92313A832	4.91
1″	25	92313A834	7.39
1 1/4″	10	92313A842	4.74
1/4″-20			
3/16″	25	92313A532	3.36
1/4″	25	92313A533	3.60
5/16″	25	92313A534	3.80
3/8″	25	92313A535	4.29
1/2″	25	92313A537	4.63
5/8″	25	92313A539	6.37
3/4″	25	92313A540	7.07
1″	10	92313A542	3.87
1 1/4″	10	92313A546	5.36
1 1/2″	10	92313A549	6.43
1/4″-28			
1/4″	10	92313A100	5.29
3/8″	10	92313A150	7.39
5/16″-18			
1/4″	25	92313A574	4.87
5/16″	25	92313A575	5.46
3/8″	25	92313A576	6.28
1/2″	25	92313A578	8.54
5/8″	10	92313A580	4.21
5/16″-18 (Cont.)			
3/4″	10	92313A581	$4.65
1″	10	92313A583	5.98
5/16″-24			
1/4″	10	92313A200	8.59
3/8″	10	92313A250	9.56
3/8″-16			
3/8″	10	92313A617	3.95
1/2″	10	92313A619	4.66
5/8″	10	92313A621	5.05
3/4″	10	92313A622	6.27
1″	10	92313A624	7.94
3/8″-24			
3/8″	10	92313A300	$10.35
1/2″	5	92313A350	6.55
1/2″-13			
1/2″	10	92313A707	7.80
5/8″	5	92313A709	5.15
3/4″	5	92313A710	5.52
1″	5	92313A712	7.32
1 1/2″	1	92313A718	2.87
1/2″-20			
1/2″	1	92313A400	2.07

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
0-80			
1/16″	50	92311A050	8.59
3/32″	50	92311A051	9.08
1/8″	25	92311A052	5.17
5/32″	25	92311A053	7.51
3/16″	10	92311A054	2.95
1/4″	25	92311A055	5.78
1-72			
1/16″	25	92311A909★	4.30
3/32″	25	92311A910★	4.38
1/8″	25	92311A912	4.65
3/16″	25	92311A916	5.35
2-56			
1/16″	100	92311A072	9.22
3/32″	100	92311A073	9.32
1/8″	100	92311A074	9.39
3/16″	100	92311A076	9.20
1/4″	50	92311A077	5.17
5/16″	50	92311A078	5.90
3/8″	50	92311A079	6.19
1/2″	50	92311A083	6.89
3-48			
3/32″	100	92311A088	9.33
1/8″	100	92311A089	9.40
3/16″	50	92311A091	5.43
1/4″	50	92311A092	6.00
4-40			
1/16″	100	92311A101	9.48
3/32″	100	92311A102	3.56
1/8″	100	92311A103	3.51
3/16″	100	92311A105	3.58
1/4″	100	92311A106	3.64
5/16″	100	92311A107	4.25
3/8″	100	92311A108	4.36
7/16″	100	92311A109	6.00
1/2″	100	92311A110	5.82
5/8″	100	92311A112	7.25
3/4″	100	92311A113	7.16
1″	50	92311A115	4.71

★ Hex size is 0.035″.

(Continued on following page)

Cup Point Set Screws *(Continued from previous page)*

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
5-40			
1/8"	100	92311A121	$4.75
3/16"	100	92311A123	5.19
1/4"	100	92311A124	5.22
3/8"	100	92311A126	6.20
1/2"	100	92311A128	6.94
6-32			
3/32"	100	92311A141	6.12
1/8"	100	92311A142	4.30
3/16"	100	92311A143	4.28
1/4"	100	92311A144	4.40
5/16"	100	92311A145	5.05
3/8"	100	92311A146	5.39
7/16"	100	92311A147	5.57
1/2"	100	92311A148	5.55
5/8"	100	92311A150	7.14
3/4"	100	92311A151	8.52
1"	50	92311A153	5.77
6-40			
3/16"	100	92311A170	12.15
1/4"	50	92311A172	7.44
8-32			
1/8"	100	92311A188	4.15
3/16"	100	92311A189	4.72
1/4"	100	92311A190	4.77
5/16"	100	92311A191	4.94
3/8"	100	92311A192	5.24
7/16"	100	92311A193	5.90
1/2"	100	92311A194	6.27
5/8"	100	92311A196	6.29
3/4"	100	92311A197	8.59
7/8"	50	92311A198	6.52
1"	50	92311A199	7.54
1 1/4"	50	92311A201	9.24
1 1/2"	25	92311A203	8.01
10-24			
1/8"	100	92311A235	3.75
3/16"	100	92311A237	3.92
1/4"	100	92311A238	4.11
5/16"	100	92311A239	4.08
3/8"	100	92311A240	4.30
1/2"	100	92311A242	5.38
5/8"	100	92311A243	5.28
3/4"	50	92311A245	5.04
7/8"	50	92311A246	5.92
1"	50	92311A248	7.11
1 1/4"	25	92311A251	6.45
1 1/2"	25	92311A253	8.86
10-32			
1/8"	100	92311A422	3.89
3/16"	100	92311A424	3.92
1/4"	100	92311A425	4.33
5/16"	100	92311A426	4.08
3/8"	100	92311A427	4.30
7/16"	100	92311A428	5.25
1/2"	100	92311A429	5.38
5/8"	100	92311A430	5.28
3/4"	50	92311A431	5.02
7/8"	50	92311A832	5.90
1"	25	92311A433	3.55
1 1/4"	25	92311A435	6.21
1 1/2"	25	92311A437	8.86
1/4"-20			
3/16"	100	92311A532	4.29
1/4"	100	92311A533	4.34
5/16"	100	92311A534	5.16
3/8"	100	92311A535	6.59
7/16"	100	92311A536	8.62
1/2"	100	92311A537	9.28
5/8"	100	92311A539	12.81
3/4"	50	92311A540	8.76
7/8"	25	92311A541	4.78
1"	25	92311A542	5.26
1 1/4"	25	92311A544	6.73
1 1/2"	25	92311A546	8.79
1 3/4"	25	92311A548	9.40
2"	25	92311A550	11.44
2 1/2"	10	92311A552	7.60
3"	5	92311A554	5.32
1/4"-28			
3/16"	100	92311A555	4.81
1/4"	100	92311A556	4.88
1/4"-28 (Cont.)			
5/16"	100	92311A557	$5.90
3/8"	100	92311A558	8.02
1/2"	100	92311A560	9.13
5/8"	50	92311A561	7.05
3/4"	50	92311A562	7.44
7/8"	50	92311A563	11.28
1"	50	92311A564	11.65
1 1/4"	25	92311A566	9.38
1 1/2"	25	92311A568	10.63
2"	10	92311A571	5.17
5/16"-18			
1/4"	100	92311A574	6.98
5/16"	100	92311A575	8.63
3/8"	100	92311A576	10.51
1/2"	50	92311A578	7.06
5/8"	50	92311A580	10.11
3/4"	50	92311A581	12.45
7/8"	25	92311A582	7.32
1"	25	92311A583	7.82
1 1/4"	25	92311A584	8.70
1 1/2"	10	92311A587	6.06
1 3/4"	10	92311A588	6.72
2"	10	92311A589	7.11
5/16"-24			
1/4"	100	92311A594	8.70
5/16"	100	92311A596	9.89
3/8"	50	92311A597	7.69
1/2"	25	92311A598	5.15
5/8"	50	92311A599	10.06
3/4"	25	92311A600	6.15
1"	25	92311A603	8.98
1 1/4"	10	92311A605	6.37
1 1/2"	10	92311A607	6.65
3/8"-16			
1/4"	25	92311A615	3.99
5/16"	25	92311A616	3.99
3/8"	25	92311A617	3.96
1/2"	25	92311A619	5.91
5/8"	25	92311A621	6.95
3/4"	25	92311A622	7.03
7/8"	25	92311A623	10.11
1"	25	92311A624	10.75
1 1/4"	10	92311A626	5.94
1 1/2"	10	92311A628	7.04
1 3/4"	5	92311A627	4.60
2"	5	92311A631	5.74
2 1/2"	10	92311A632	12.15
3"	1	92311A633	2.69
3/8"-24			
1/4"	25	92311A634	4.90
5/16"	50	92311A934	9.83
3/8"	25	92311A635	5.18
1/2"	25	92311A636	5.12
5/8"	25	92311A650	6.25
3/4"	10	92311A637	3.55
1"	10	92311A639	5.91
1 1/4"	10	92311A640	6.95
1 1/2"	5	92311A642	3.66
7/16"-14			
3/8"	25	92311A937	12.77
1/2"	10	92311A641	5.01
3/4"	10	92311A643	5.57
1"	10	92311A939	7.30
7/16"-20			
1/2"	10	92311A663	5.67
1/2"-13			
3/8"	25	92311A705	9.18
1/2"	25	92311A707	8.92
5/8"	10	92311A706	5.99
3/4"	10	92311A710	6.16
1"	10	92311A712	9.04
1 1/4"	5	92311A714	5.28
1 1/2"	5	92311A716	5.33
1 3/4"	5	92311A718	7.19
2"	5	92311A720	7.93
2 1/2"	1	92311A721	2.68
3"	1	92311A723	3.65
1/2"-20			
3/8"	10	92311A725	6.09
1/2"	10	92311A727	4.98
5/8"	10	92311A728	6.05
3/4"	10	92311A729	6.11
1/2"-20 (Cont.)			
1"	10	92311A731	$10.21
1 1/4"	5	92311A735	7.11
1 1/2"	5	92311A741	8.65
1 3/4"	5	92311A747	10.71
5/8"-11			
1/2"	5	92311A789	3.92
5/8"	5	92311A791	3.93
3/4"	5	92311A792	3.77
1"	5	92311A794	4.73
1 1/4"	1	92311A795	1.03
1 1/2"	1	92311A797	1.19
3/4"-10			
3/4"	1	92311A833	$0.98
1"	1	92311A835	1.23
1 1/4"	1	92311A837	2.20
1 1/2"	1	92311A839	2.30
2"	1	92311A841	3.05
7/8"-9			
1"	1	92311A942	9.13
1 1/2"	1	92311A944	11.92
2"	1	92311A947	16.61
1"-8			
1"	1	92311A951	6.39
1 1/2"	1	92311A954	8.78
2"	1	92311A957	11.47

Black Alloy Steel—*Meets ASTM F912 (unless noted)*

Lg.	Pkg. Qty.		Per Pkg.
0-80			
1/16"	25	91375A050	12.16
3/32"	25	91375A051	12.26
1/8"	25	91375A052	12.51
5/32"	10	91375A053	7.90
3/16"	10	91375A054	5.28
1/4"	10	91375A055	5.52
5/16"	10	91375A056	10.75
3/8"	10	91375A057	11.25
1-64			
1/8"	10	91375A018★	6.21
3/16"	10	91375A019★	6.54
1/4"	10	91375A020★	6.94
1-72			
1/16"	25	91375A061★	12.35
3/32"	25	91375A062★	12.69
1/8"	10	91375A063	5.21
5/32"	10	91375A942★	5.42
3/16"	10	91375A064	5.40
1/4"	10	91375A065	5.70
5/16"	10	91375A067★	8.99
3/8"	5	91375A069★	5.29
2-56			
1/16"	25	91375A072	12.57
3/32"	25	91375A073	12.01
1/8"	25	91375A074	11.84
5/32"	25	91375A075	6.29
3/16"	25	91375A076	8.66
1/4"	25	91375A077	8.86
5/16"	25	91375A078	7.68
3/8"	25	91375A079	7.24
1/2"	25	91375A081	11.52
5/8"	10	91375A082	6.51
3/4"	10	91375A083	5.24
2-64			
1/8"	10	91375A921	4.06
3/16"	10	91375A923	4.22
1/4"	10	91375A925	3.88
3-48			
1/16"	50	91375A085	11.31
3/32"	50	91375A088	14.83
1/8"	25	91375A089	8.15
3/16"	25	91375A091	9.14
1/4"	25	91375A092	8.58
5/16"	50	91375A095	12.60
1/2"	25	91375A097	10.70
5/8"	10	91375A098	5.63
4-40			
1/16"	10	91375A101	5.90
3/32"	10	91375A102	5.18
1/8"	100	91375A103	8.63
3/16"	100	91375A105	8.75
1/4"	100	91375A106	8.98
5/16"	100	91375A107	9.34
3/8"	100	91375A108	9.41
7/16"	25	91375A109	9.19
1/2"	100	91375A110	10.79
5/8"	100	91375A112	12.84
3/4"	25	91375A113	9.28
7/8"	25	91375A170	9.91
1"	25	91375A171	10.56
4-48			
1/8"	100	91375A114	8.75
3/16"	100	91375A115	8.78
1/4"	100	91375A116	9.05
5/16"	25	91375A117	8.17
1/2"	25	91375A118	8.64
5/8"	25	91375A119	9.18
5-40			
1/8"	100	91375A121	9.21
3/16"	100	91375A123	8.86
1/4"	100	91375A124	9.05
5/16"	100	91375A125	9.27
3/8"	100	91375A126	9.43
7/16"	25	91375A127	8.17
1/2"	100	91375A128	11.03
5/8"	100	91375A130	13.33
3/4"	100	91375A131	14.90
7/8"	25	91375A133	9.47
1"	25	91375A134	11.11
5-44			
1/8"	100	91375A221	9.32
3/16"	100	91375A223	9.70
1/4"	100	91375A224	10.91
5/16"	25	91375A225	8.99
3/8"	25	91375A227	9.37
6-32			
1/8"	100	91375A142	8.93
3/16"	100	91375A143	9.01
1/4"	100	91375A144	9.19
5/16"	100	91375A145	9.24
3/8"	100	91375A146	10.08
1/2"	100	91375A148	10.93
5/8"	100	91375A150	14.16
3/4"	100	91375A151	14.42
7/8"	50	91375A152	11.52
1"	50	91375A153	10.73
1 1/4"	25	91375A154	12.65
1 1/2"	10	91375A155	7.38
1 3/4"	10	91375A156	7.70
2"	5	91375A157	4.11
6-40			
1/8"	100	91375A160	8.94
3/16"	100	91375A161	8.99
1/4"	100	91375A162	9.25
5/16"	100	91375A164	9.02
3/8"	100	91375A163	10.04
8-32			
1/8"	100	91375A188	8.95
3/16"	100	91375A189	9.07
1/4"	100	91375A190	9.23
5/16"	100	91375A191	9.47
3/8"	100	91375A192	9.44
7/16"	100	91375A193	10.83
1/2"	100	91375A194	11.02
5/8"	100	91375A196	14.18
3/4"	50	91375A197	8.74
7/8"	50	91375A198	8.82
1"	50	91375A199	11.54
1 1/4"	10	91375A176	7.25
1 1/2"	10	91375A177	6.75
1 3/4"	10	91375A178	8.18
2"	5	91375A179	4.52
8-36			
1/8"	100	91375A203	9.38
3/16"	100	91375A204	9.00
1/4"	100	91375A205	9.30
5/16"	100	91375A206	8.80
3/8"	100	91375A207	12.87
1/2"	100	91375A208	9.32
10-24			
1/8"	25	91375A235	4.64
3/16"	100	91375A237	9.31
1/4"	100	91375A238	9.41
5/16"	100	91375A239	9.61
3/8"	100	91375A240	10.39

★ Hex size is 0.035".

(Continued on following page)

Cup Point Set Screws *(Continued from previous page)*

The most common point style, cup points have a thin edge that digs into the contact surface for high holding power. All have a hex socket and a Class 3A thread fit. Dimensions meet ASME B18.3. Length listed is the overall length.

Black Alloy Steel— *Meets ASTM F912 (unless noted) (Cont.)*

Lg.	Pkg. Qty.	Per Pkg.
10-24 (Cont.)		
1/2"	100	91375A242 $14.99
5/8"	100	91375A244 14.19
3/4"	50	91375A245 11.11
1"	50	91375A247 14.85
1 1/4"	25	91375A249 7.48
1 1/2"	10	91375A250 7.09
1 3/4"	10	91375A251 4.75
2"	10	91375A252 5.28
2 1/2"	10	91375A253 9.29
10-32		
1/8"	50	91375A436 12.66
3/16"	100	91375A437 9.39
1/4"	100	91375A438 9.31
5/16"	100	91375A439 9.58
3/8"	100	91375A440 10.43
1/2"	100	91375A442 10.95
5/8"	100	91375A444 14.14
3/4"	50	91375A445 8.55
7/8"	25	91375A446 8.43
1"	50	91375A447 11.92
1 1/4"	25	91375A449 8.13
1 1/2"	10	91375A450 8.40
1 3/4"	10	91375A451 7.42
2"	10	91375A452 7.88
2 1/2"	5	91375A453 4.61
1/4"-20		
3/16"	100	91375A532 13.40
1/4"	100	91375A533 13.45
5/16"	100	91375A534 13.60
3/8"	100	91375A535 13.77
1/2"	100	91375A537 14.94
5/8"	50	91375A539 10.67
3/4"	50	91375A540 10.97
7/8"	50	91375A541 9.08
1"	50	91375A542 14.64
1 1/8"	50	91375A543 11.26
1 1/4"	25	91375A544 9.72
1 1/2"	25	91375A546 9.58
1 3/4"	25	91375A548 10.70
2"	25	91375A550 11.97
2 1/4"	25	91375A551 10.39
2 3/4"	25	91375A552 12.99
3"	5	91375A554 8.32
1/4"-28		
3/16"	100	91375A555 13.23
1/4"	100	91375A556 13.28
5/16"	100	91375A557 10.02
3/8"	100	91375A558 10.11
1/2"	100	91375A559 10.97
5/8"	50	91375A560 6.51
3/4"	100	91375A561 14.90
1"	50	91375A563 10.90
1 1/4"	25	91375A565 7.71
1 1/2"	10	91375A566 7.76
1 3/4"	25	91375A567 6.79
2 1/2"	10	91375A570 5.71
3"	10	91375A572 9.39
5/16"-18		
1/4"	50	91375A574 8.14
5/16"	100	91375A575 10.14
3/8"	100	91375A576 10.20
7/16"	100	91375A577 13.54
1/2"	100	91375A578 11.50
5/8"	100	91375A580 14.73
3/4"	50	91375A581 8.86
7/8"	50	91375A582 11.44
1"	50	91375A583 11.77
1 1/4"	25	91375A585 7.90
1 1/2"	25	91375A587 10.65
1 3/4"	25	91375A589 14.04
2"	10	91375A591 6.87
2 1/4"	25	91375A592 11.75
2 1/2"	5	91375A593 8.87
2 3/4"	10	91375A594 7.60
5/16"-24		
1/4"	50	91375A595 8.22
5/16"	100	91375A596 10.10
3/8"	100	91375A597 10.45
5/16"-24 (Cont.)		
1/2"	100	91375A599 $11.43
5/8"	100	91375A601 14.77
3/4"	50	91375A602 8.88
1"	50	91375A604 11.85
1 1/4"	25	91375A605 10.04
1 1/2"	25	91375A606 11.85
1 3/4"	25	91375A607 10.80
2"	25	91375A608 11.34
2 1/4"	25	91375A609 12.52
3/8"-16		
1/4"	50	91375A615 10.61
5/16"	50	91375A616 10.60
3/8"	50	91375A617 8.29
7/16"	100	91375A618 12.13
1/2"	50	91375A619 8.82
5/8"	50	91375A621 10.43
3/4"	50	91375A622 8.49
7/8"	50	91375A623 9.82
1"	25	91375A624 6.55
1 1/4"	25	91375A626 8.30
1 1/2"	25	91375A628 10.88
1 3/4"	10	91375A630 5.74
2"	10	91375A632 6.37
2 1/4"	10	91375A633 6.68
2 1/2"	10	91375A634 8.15
2 3/4"	10	91375A635 7.26
3"	10	91375A636 12.23
3 1/2"	10	91375A637 9.88
4"	1	91375A638 4.07
3/8"-24		
1/4"	100	91375A640 14.50
5/16"	50	91375A641 9.60
3/8"	50	91375A642 8.27
1/2"	50	91375A644 8.86
5/8"	50	91375A645 10.34
3/4"	50	91375A646 10.59
1"	25	91375A648 6.52
1 1/4"	25	91375A649 9.53
1 1/2"	25	91375A650 10.61
1 3/4"	25	91375A651 12.35
2"	5	91375A652 10.72
2 1/4"	10	91375A653 7.26
3"	5	91375A656 6.68
7/16"-14		
3/8"	25	91375A662 8.34
7/16"	25	91375A663 9.04
1/2"	25	91375A664 9.18
5/8"	25	91375A666 10.05
3/4"	25	91375A667 10.79
7/8"	25	91375A668 11.42
1"	10	91375A669 5.89
1 1/4"	10	91375A670 6.92
1 1/2"	10	91375A673 8.00
1 3/4"	25	91375A674 11.03
2"	10	91375A675 9.14
2 1/4"	10	91375A676 8.72
2 1/2"	10	91375A677 11.03
2 3/4"	5	91375A678 6.94
7/16"-20		
3/8"	25	91375A680 8.38
7/16"	25	91375A681 11.19
1/2"	25	91375A682 8.90
5/8"	25	91375A683 7.88
3/4"	10	91375A684 9.61
7/8"	25	91375A685 9.46
1"	10	91375A686 11.09
1 1/4"	10	91375A687 6.32
1 1/2"	5	91375A688 9.12
1 3/4"	10	91375A689 7.56
2"	5	91375A690 12.02
2 1/2"	10	91375A692 12.61
3"	5	91375A694 9.02
1/2"-13		
3/8"	25	91375A705 12.58
1/2"	25	91375A707 9.15
5/8"	25	91375A709 10.02
3/4"	25	91375A710 10.83

■ Does not meet ASTM F912.

Black Alloy Steel— *Meets ASTM F912 (unless noted) (Cont.)*

Lg.	Pkg. Qty.	Per Pkg.
1/2"-13 (Cont.)		
7/8"	10	91375A711 $6.80
1"	10	91375A712 5.89
1 1/4"	10	91375A714 7.07
1 1/2"	10	91375A716 8.09
1 3/4"	10	91375A718 8.83
2"	10	91375A720 9.83
2 1/4"	5	91375A721 7.28
2 1/2"	5	91375A722 8.72
2 3/4"	5	91375A723 8.15
3"	5	91375A724 10.41
3 1/2"	5	91375A725 9.16
4"	1	91375A726 3.87
4 1/2"	1	91375A728 2.50
5"	1	91375A727 2.76
1/2"-20		
3/8"	25	91375A729 7.95
1/2"	25	91375A730 12.53
5/8"	25	91375A731 10.68
3/4"	25	91375A732 14.77
1"	10	91375A734 7.27
1 1/4"	5	91375A736 5.68
1 1/2"	5	91375A738 6.12
1 3/4"	5	91375A739 10.17
2"	5	91375A740 11.09
2 1/2"	1	91375A742 2.77
3"	5	91375A744 8.46
3 1/2"	5	91375A746 9.74
4"	5	91375A748 12.93
9/16"-12		
1/2"	1	91375A275■ 2.00
5/8"	1	91375A279■ 2.07
3/4"	1	91375A283■ 2.26
1"	1	91375A287■ 2.82
1 1/4"	1	91375A291■ 2.93
1 1/2"	1	91375A295■ 3.05
5/8"-11		
1/2"	10	91375A789 8.08
5/8"	10	91375A791 8.88
3/4"	10	91375A792 9.43
1"	10	91375A794 11.63
1 1/4"	10	91375A796 13.19
1 1/2"	5	91375A798 7.28
1 3/4"	5	91375A799 8.39
2"	5	91375A802 9.60
2 1/4"	5	91375A803 7.13
2 1/2"	5	91375A804 11.49
2 3/4"	5	91375A805 9.16
3"	5	91375A806 11.30
3 1/4"	5	91375A807 11.33
5/8"-11 (Cont.)		
3 1/2"	5	91375A808 $12.64
4"	1	91375A809 3.66
5/8"-18		
1/2"	10	91375A811 9.59
5/8"	10	91375A810 7.69
3/4"	10	91375A812 10.17
7/8"	10	91375A813 11.33
1"	10	91375A814 11.63
1 1/2"	1	91375A820 2.94
1 3/4"	5	91375A821 8.15
2"	5	91375A822 8.87
2 1/2"	5	91375A824 9.88
3/4"-10		
5/8"	10	91375A832 9.93
3/4"	5	91375A833 5.58
7/8"	10	91375A834 12.82
1"	5	91375A835 6.47
1 1/4"	5	91375A837 7.20
1 1/2"	5	91375A839 7.90
1 3/4"	5	91375A840 14.57
2"	5	91375A843 9.07
2 1/4"	1	91375A844 2.99
2 1/2"	1	91375A845 4.92
3"	5	91375A847 13.80
3 1/2"	1	91375A849 4.01
4"	1	91375A851 4.42
3/4"-16		
3/4"	5	91375A856 7.44
1"	1	91375A857 3.43
1 1/2"	5	91375A859 10.99
1 3/4"	5	91375A860 12.06
2"	5	91375A861 13.90
3"	1	91375A865 4.49
7/8"-9		
7/8"	5	91375A871 14.66
1"	1	91375A872 3.34
1 1/2"	1	91375A876 3.87
2"	1	91375A878 4.87
2 1/2"	1	91375A880 7.63
3"	1	91375A882 8.57
7/8"-14		
1"	5	91375A893 10.94
1"-8		
1"	1	91375A904 2.66
1 1/2"	1	91375A908 3.49
2"	1	91375A912 4.65
2 1/2"	1	91375A914 7.43
3"	1	91375A916 6.10
1 1/4"-7		
1"	1	91375A935 12.83

Brass

Lg.	Pkg. Qty.	Per Pkg.
4-40		
1/8"	50	92991A103 5.59
3/16"	50	92991A105 6.41
1/4"	50	92991A106 6.80
6-32		
1/8"	50	92991A142 4.72
3/16"	50	92991A143 4.42
1/4"	50	92991A144 4.73
8-32		
1/8"	50	92991A188 5.78
3/16"	50	92991A189 5.36
1/4"	50	92991A190 5.82
3/8"	50	92991A192 5.87
1/2"	25	92991A194 4.48
10-24		
3/16"	25	92991A237 3.15
1/4"	25	92991A238 2.66
3/8"	25	92991A240 3.34
1/2"	25	92991A243 3.44
10-32		
3/16"	50	92991A824 6.29
1/4"	25	92991A825 2.66
3/8"	25	92991A827 3.34
10-32 (Cont.)		
1/2"	25	92991A829 3.44
3/4"	25	92991A833 7.99
1/4"-20		
1/4"	25	92991A533 3.03
3/8"	25	92991A535 4.43
1/2"	25	92991A537 5.07
3/4"	10	92991A540 3.51
1"	10	92991A542 5.99
5/16"-18		
1/4"	25	92991A574 5.21
3/8"	25	92991A576 5.64
1/2"	10	92991A578 3.81
3/4"	10	92991A581 5.36
1"	10	92991A583 7.03
3/8"-16		
3/8"	25	92991A617 10.52
1/2"	10	92991A619 5.74
3/4"	10	92991A922 7.12
1"	10	92991A624 9.04
1/2"-13		
1/2"	10	92991A650 9.34
3/4"	5	92991A655 8.21
1"	5	92991A660 9.12

Self-Locking Cup Point Set Screws

Upgraded with a nylon locking element, our self-locking hex-socket set screws are perfect for tough jobs. The locking element increases holding power and remains effective up to 250°F. All screws have a locking patch, except those marked with a ●, which have a locking pellet. Screws are reusable and have a Class 3A thread fit. Dimensions meet ASME B18.3. Length listed is the overall length.

18-8 stainless steel screws have a minimum Rockwell hardness of B80. ***Alloy steel*** screws have a minimum Rockwell hardness of C45, except for those with a locking pellet, which have a minimum Rockwell hardness of C28.

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/8″	25	90251A108	$8.19
3/16″	25	90251A110	9.99
1/4″	25	90251A112	10.56
6-32			
1/8″	25	90251A141	8.37
3/16″	25	90251A143	9.83
1/4″	25	90251A144	10.41
3/8″	25	90251A146	11.72
1/2″	25	90251A148	13.71
8-32			
1/8″	25	90251A187	8.93
3/16″	25	90251A189	9.83
1/4″	25	90251A190	10.77
5/16″	25	90251A191	12.14
3/8″	25	90251A193	12.85
1/2″	25	90251A194	12.84
10-24			
1/8″	25	90251A233	9.42
3/16″	25	90251A235	12.12
1/4″	25	90251A237	12.14
3/8″	25	90251A240	13.06
1/2″	25	90251A242	14.58
10-32			
1/8″	25	90251A248	9.42
3/16″	25	90251A250	11.02
1/4″	25	90251A252	11.88
5/16″	25	90251A254	12.77
10-32 (Cont.)			
3/8″	25	90251A256	$13.25
1/2″	25	90251A258	14.99
5/8″	25	90251A260	14.16
3/4″	25	90251A264	9.25
1/4″-20			
3/16″	25	90251A531	9.61
1/4″	25	90251A533	12.42
5/16″	25	90251A534	14.06
3/8″	25	90251A535	14.25
1/2″	25	90251A537	14.30
5/8″	10	90251A539	6.65
3/4″	10	90251A540	7.19
1″	10	90251A541	5.91
1 1/4″	10	90251A542	6.90
1 1/2″	10	90251A543	8.62
1/4″-28			
1/4″	25	90251A550	14.61
5/16″-18			
5/16″	25	90251A574	14.76
3/8″	10	90251A576	6.87
1/2″	10	90251A578	8.47
3/8″-16			
3/8″	10	90251A617	8.93
1/2″	10	90251A619	10.31
5/8″	10	90251A620	9.86
3/4″	10	90251A622	12.07

Black Alloy Steel—*Meets ASTM F912*

Lg.	Pkg. Qty.		Per Pkg.
4-40			
3/16″	25	91385A105	14.62
1/4″	25	91385A106	14.64
3/8″	25	91385A108	14.90
5-40			
3/16″	25	91385A123	13.78
1/4″	25	91385A124	14.65
3/8″	25	91385A126	12.47
6-32			
3/16″	25	91385A143	8.64
1/4″	25	91385A144	6.51
6-32 (Cont.)			
3/8″	25	91385A146	10.63
1/2″	25	91385A148	12.87
3/4″	10	91385A911●	9.80
8-32			
3/16″	25	91385A189	9.19
1/4″	25	91385A190	9.89
5/16″	25	91385A191	11.33
3/8″	25	91385A192	11.44
1/2″	25	91385A194	10.37
3/4″	25	91385A197	12.40

Black Alloy Steel—*Meets ASTM F912 (Cont.)*

Lg.	Pkg. Qty.		Per Pkg.
10-24			
3/16″	25	91385A237	$10.45
1/4″	25	91385A238	10.05
3/8″	25	91385A240	10.33
1/2″	25	91385A242	10.20
3/4″	25	91385A244	13.84
10-32			
3/16″	25	91385A337	10.57
1/4″	25	91385A338	10.62
3/8″	25	91385A340	10.47
1/2″	25	91385A342	10.75
5/8″	25	91385A344	11.99
3/4″	25	91385A345	12.52
1″	10	91385A915●	9.03
1/4″-20			
1/4″	25	91385A533	10.33
5/16″	25	91385A534	10.39
3/8″	25	91385A535	10.45
1/2″	25	91385A537	10.85
5/8″	25	91385A539	12.20
3/4″	25	91385A540	12.47
1″	25	91385A542	14.73
1 1/4″	10	91385A544	6.83
1 1/2″	10	91385A546	8.46
2″	10	91385A548	9.89
1/4″-28			
1/4″	25	91385A351	10.70
5/16″	25	91385A352	10.76
3/8″	25	91385A353	10.87
1/2″	25	91385A355	11.31
5/8″	25	91385A357	12.38
3/4″	25	91385A358	12.95
1″	25	91385A363	14.90
1 1/4″	10	91385A362	6.82
5/16″-18			
5/16″	25	91385A575	10.84
3/8″	25	91385A576	10.91
1/2″	25	91385A578	11.15
5/8″	25	91385A580	12.33
5/16″-18 (Cont.)			
3/4″	25	91385A581	$12.97
1″	25	91385A583	14.90
1 1/2″	10	91385A585	8.68
2″	10	91385A586	10.37
5/16″-24			
5/16″	25	91385A356	11.93
3/8″	25	91385A360	11.31
1/2″	25	91385A361	11.54
5/8″	10	91385A584	5.67
3/8″-16			
5/16″	25	91385A616	11.92
3/8″	25	91385A617	11.70
1/2″	25	91385A619	12.67
5/8″	25	91385A621	12.87
3/4″	25	91385A622	13.42
1″	10	91385A624	6.74
1 1/4″	10	91385A625	8.89
1 1/2″	10	91385A626	9.49
2″	10	91385A628	11.89
3/8″-24			
3/8″	25	91385A365	12.11
1/2″	25	91385A366	13.15
1/2″-13			
1/2″	10	91385A707	9.22
3/4″	10	91385A710	10.89
1″	10	91385A712	12.54
1 1/2″	10	91385A714	14.33
2″	5	91385A918●	8.90
1/2″-20			
3/4″	10	91385A750	9.25
1″	5	91385A753	5.70
5/8″-11			
5/8″	5	91385A921●	9.29
3/4″	5	91385A924●	9.79
1″	5	91385A927●	10.94
3/4″-10			
1″	5	91385A934●	13.95
1 1/4″	1	91385A935●	3.50

● Has a locking pellet.

Cup Point Set Screw Assortments

The set screws in the following assortments have a hex socket and come in a compartmented box with lid chart.

200-Pc. Assortments—Come in an 8 1/4″ Lg.×4 1/4″ Wd.×1 3/8″ Dp. plastic box.

Size	No. of Pcs.	Lengths	Size	No. of Pcs.	Lengths
6-32	10	3/16″	5/16″-18	50	3/8″, 1/2″
8-32	10	3/16″	5/16″-24	20	3/8″
10-24	10	1/4″	3/8″-16	20	3/8″, 1/2″
1/4″-20	50	1/4″, 3/8″	3/8″-24	10	3/8″
1/4″-28	20	1/4″			

18-8 Stainless Steel ..... 92045A338 Each $63.80

Black Alloy Steel ..... 98606A010 Each $35.37

900-Pc. 18-8 Stainless Steel Assortment—Comes in a 10 7/8″ Lg.×6 1/2″ Wd.×1 3/4″ Dp. plastic box.

Size	No. of Pcs.	Lengths
4-40	150	1/8″, 3/16″, 1/4″
6-32	250	1/8″, 3/16″, 1/4″, 5/16″, 3/8″
8-32	250	1/8″, 3/16″, 1/4″, 5/16″, 3/8″
10-32	250	3/16″, 1/4″, 5/16″, 3/8″, 1/2″

92055A218 ..... Each $102.43

2,100-Pc. Assortments—Come in a 13 5/8″ Lg.×9 1/2″ Wd.×2″ Dp. metal box.

Size	No. of Pcs.	Lengths
4-40	300	1/8″, 3/16″, 1/4″
6-32	300	1/8″, 3/16″, 1/4″
8-32	500	1/8″, 3/16″, 1/4″, 3/8″, 1/2″
10-32	400	3/16″, 1/4″, 3/8″, 1/2″
1/4″-20	350	1/4″, 3/8″, 1/2″, 3/4″
5/16″-18	150	1/4″, 3/8″, 1/2″
3/8″-16	100	3/8″, 1/2″

18-8 Stainless Steel ... 92045A224 Each $182.09

Black Alloy Steel ..... 92065A524 Each $240.66

300-Pc. Black Alloy Steel Assortment—Set screws have a knurled cup point that improves grip and prevents them from backing out or loosening from vibration. Screws come in a 11″ Lg.×6 3/4″ Wd.×1 3/4″ Dp. plastic box.

Size	No. of Pcs.	Lengths	Size	No. of Pcs.	Lengths
8-32	25	1/4″	5/16″-18	50	3/8″, 1/2″
10-32	50	3/16″, 1/4″	3/8″-16	50	3/8″, 1/2″
1/4″-20	75	1/4″, 3/8″, 1/2″	1/2″-13	25	1/2″
1/4″-28	25	1/4″			

92170A111 ..... Each $99.02

Metric 120-Pc. 18-8 Stainless Steel Assort.—Comes in a 13″ Lg.×8 5/8″ Wd.×2 1/2″ Dp. plastic box.

Size	No. of Pcs.	Lengths, mm
M4	30	5, 6, 10
M5	20	5, 6
M6	40	6, 8, 10, 12
M8	30	8, 10, 12

92550A111 ..... Each $36.13

336-Pc. Black Alloy Steel Screw/Hex Key Assortment—Comes in an 8 1/4″ Lg.×5 1/2″ Wd.×1″ Dp. metal box.

Set Screws			Hex Keys	
Size	No. of Pcs.	Lengths	Hex Size	No. of Pcs.
4-40	60	1/8″, 3/16″, 1/4″, 5/16″, 3/8″	0.050″	12
5-40	60	1/8″, 3/16″, 1/4″, 5/16″, 3/8″	1/16″	12
6-32	60	1/8″, 3/16″, 1/4″, 5/16″, 3/8″	5/64″	12
8-32	60	1/8″, 3/16″, 1/4″, 5/16″, 3/8″	3/32″	12
10-24	48	3/16″, 1/4″, 5/16″, 3/8″		

98581A130 ..... Each $157.04

Metric 1,100-Pc. Black Alloy Steel Assort.—Comes in a 10 3/4″ Lg.×6 1/2″ Wd.×1 3/4″ Dp. plastic box.

Size	No. of Pcs.	Lengths, mm
M3	200	3, 6
M4	200	4, 6
M5	200	5, 6
M6	400	6, 8, 10, 12
M8	100	8, 10

92560A222 ..... Each $93.25

For information about point selection, materials, and hex key sizes, see page 3072.

Metric Cup Point Set Screws

These metric-sized set screws have a thin edge that digs into the contact surface to provide high holding power. Screws have a hex socket and meet DIN 916/ISO 4029. Stainless steel screws have a Class 6g thread fit; black alloy steel screws have a Class 5g6g thread fit. Length listed is the overall length.

Fine thread black alloy steel screws have a finer thread pitch than other cup point set screws.

Type 316 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—*Pitch: 0.4 mm*			
3	10	92029A085	$8.71
4	10	92029A087	7.31
M3—*Pitch: 0.5 mm*			
3	50	92029A100	10.26
4	50	92029A101	11.09
5	25	92029A102	5.69
6	25	92029A103	5.65
8	25	92029A105	6.40
10	25	92029A107	13.10
12	25	92029A109	8.61
16	10	92029A110	7.14
M4—*Pitch: 0.7 mm*			
4	50	92029A140	11.46
5	50	92029A141	11.88
6	50	92029A142	11.41
8	25	92029A144	6.30
10	25	92029A146	6.40
12	25	92029A149	13.09
16	10	92029A152	6.19
20	10	92029A155	7.73
M5—*Pitch: 0.8 mm*			
5	50	92029A205	12.73
6	25	92029A206	6.51
8	25	92029A208	6.71
10	25	92029A210	7.28
12	25	92029A213	11.90
16	25	92029A215	7.90
M5 (Cont.)			
20	10	92029A218	$6.67
25	10	92029A221	8.33
M6—*Pitch: 1 mm*			
6	25	92029A250	6.90
8	25	92029A252	7.23
10	25	92029A254	7.65
12	25	92029A256	7.78
16	10	92029A258	7.62
20	10	92029A260	4.47
25	10	92029A263	8.58
30	10	92029A266	12.39
M8—*Pitch: 1.25 mm*			
8	25	92029A301	8.05
10	25	92029A303	8.90
12	25	92029A305	9.68
16	10	92029A307	5.28
20	10	92029A309	6.54
25	10	92029A310	7.59
30	10	92029A315	8.43
40	5	92029A325	10.48
M10—*Pitch: 1.5 mm*			
10	10	92029A410	10.48
12	10	92029A415	11.90
20	5	92029A420	9.06
25	1	92029A425	1.90
30	5	92029A430	14.29
40	1	92029A435	3.76

18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M1.6—*Pitch: 0.35 mm*			
3	10	92015A087	6.73
4	10	92015A088	6.53
5	10	92015A089	8.74
M2—*Pitch: 0.4 mm*			
3	25	92015A090	4.36
4	25	92015A091	5.06
5	25	92015A092	6.22
6	25	92015A093	6.81
8	25	92015A194	8.06
10	10	92015A195	2.77
M2.5—*Pitch: 0.45 mm*			
3	50	92015A094	7.28
4	50	92015A095	7.02
5	50	92015A096	8.59
6	25	92015A097	7.14
8	25	92015A098	5.73
10	10	92015A099	2.58
12	10	92015A100	2.79
M3—*Pitch: 0.5 mm*			
3	100	92015A101	9.34
4	100	92015A102	9.58
5	50	92015A103	5.93
6	50	92015A104	6.06
8	50	92015A105	6.56
10	50	92015A106	6.94
12	50	92015A107	7.69
16	50	92015A108	6.34
20	25	92015A109	5.46
30	10	92015A199	8.19
M4—*Pitch: 0.7 mm*			
4	100	92015A110	10.03
5	100	92015A111	12.22
6	100	92015A112	12.69
8	50	92015A113	6.56
10	50	92015A114	6.94
12	50	92015A115	8.94
16	50	92015A116	10.46
20	25	92015A201	7.77
25	25	92015A203	5.78
30	10	92015A204	4.54
M5—*Pitch: 0.8 mm*			
5	50	92015A117	6.04
6	50	92015A118	6.43
8	50	92015A119	6.43
10	50	92015A121	6.47
12	25	92015A122	4.36
16	25	92015A123	4.29
M5 (Cont.)			
20	25	92015A124	6.46
25	25	92015A125	7.76
30	10	92015A535	3.75
35	10	92015A538	4.75
40	10	92015A539	6.28
M6—*Pitch: 1 mm*			
6	50	92015A126	6.81
8	50	92015A127	6.93
10	50	92015A128	7.19
12	50	92015A129	10.03
16	25	92015A131	5.13
20	25	92015A133	7.05
25	10	92015A135	5.22
30	10	92015A136	6.47
35	10	92015A555	5.26
40	10	92015A558	5.33
50	5	92015A560	4.10
M8—*Pitch: 1.25 mm*			
8	50	92015A139	7.42
10	50	92015A141	8.58
12	50	92015A142	9.11
16	25	92015A143	9.45
20	10	92015A145	4.98
25	10	92015A147	4.32
30	10	92015A148	6.06
35	10	92015A149	7.81
40	10	92015A150	8.21
50	5	92015A151	7.12
M10—*Pitch: 1.5 mm*			
10	10	92015A155	4.14
12	10	92015A156	5.17
16	10	92015A157	6.97
20	10	92015A159	6.06
25	10	92015A162	8.56
30	10	92015A163	10.38
35	5	92015A164	4.93
40	5	92015A165	6.82
50	5	92015A166	8.64
M12—*Pitch: 1.75 mm*			
12	5	92015A169	4.34
16	10	92015A170	6.65
20	5	92015A173	6.35
25	5	92015A175	7.46
30	5	92015A176	8.17
35	5	92015A177	7.66
40	5	92015A178	10.00
50	5	92015A180	13.06

Black Alloy Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M1.6—*Pitch: 0.35 mm*			
3	1	91390A087	$3.01
4	1	91390A088	3.11
5	1	91390A089	3.41
M2—*Pitch: 0.4 mm*			
3	50	91390A090	13.73
4	50	91390A091	13.20
5	50	91390A092	9.22
6	50	91390A093	9.33
8	50	91390A002	10.93
10	25	91390A005	8.29
M2.5—*Pitch: 0.45 mm*			
3	100	91390A094	14.27
4	100	91390A095	14.26
5	50	91390A096	8.33
6	50	91390A256	7.04
8	50	91390A258	10.18
10	50	91390A260	9.47
M3—*Pitch: 0.5 mm*			
3	100	91390A097	4.10
4	100	91390A098	4.60
5	100	91390A099	4.77
6	100	91390A100	5.30
8	100	91390A101	4.79
10	100	91390A103	8.86
12	100	91390A105	12.15
16	100	91390A107	13.73
20	25	91390A108	7.18
25	25	91390A109	12.81
M4—*Pitch: 0.7 mm*			
3	50	91390A403	7.30
4	100	91390A110	3.91
5	100	91390A111	4.02
6	100	91390A112	3.90
8	100	91390A113	4.31
10	100	91390A114	4.90
12	100	91390A115	11.60
16	50	91390A116	10.30
20	50	91390A218	7.58
25	25	91390A220	7.02
30	25	91390A430	11.01
40	10	91390A440	6.12
M5—*Pitch: 0.8 mm*			
5	100	91390A117	4.20
6	100	91390A118	3.89
8	100	91390A119	4.55
10	100	91390A121	5.27
12	100	91390A122	6.50
16	100	91390A124	8.06
20	50	91390A226	9.75
25	50	91390A228	9.92
30	25	91390A230	5.10
35	25	91390A232	7.15
40	10	91390A540	6.29
M6—*Pitch: 1 mm*			
6	100	91390A126	5.20
8	100	91390A127	5.95
10	100	91390A128	7.22
12	100	91390A129	7.93
16	100	91390A132	10.04
20	100	91390A133	14.15
25	50	91390A135	9.29
M6 (Cont.)			
30	25	91390A136	$9.06
35	25	91390A138	10.24
40	25	91390A140	6.28
M8—*Pitch: 1.25 mm*			
8	100	91390A139	11.47
10	100	91390A141	11.47
12	50	91390A142	8.05
16	50	91390A143	9.78
20	25	91390A145	6.82
25	25	91390A147	9.77
30	25	91390A148	10.64
35	25	91390A149	12.14
40	25	91390A150	10.43
45	10	91390A151	12.62
50	10	91390A152	8.74
60	5	91390A153	9.06
M10—*Pitch: 1.5 mm*			
10	50	91390A155	8.05
12	50	91390A156	8.61
16	25	91390A157	7.29
20	25	91390A159	9.51
25	25	91390A162	12.14
30	25	91390A163	14.47
35	10	91390A164	8.62
40	10	91390A265	9.49
45	10	91390A267	14.09
50	5	91390A167	6.96
60	5	91390A168	11.30
M12—*Pitch: 1.75 mm*			
12	25	91390A169	6.72
16	25	91390A171	11.30
20	10	91390A173	6.47
25	10	91390A175	7.96
30	10	91390A176	9.82
35	10	91390A177	9.65
40	10	91390A178	10.02
45	5	91390A179	8.41
50	5	91390A180	5.13
60	5	91390A181	10.65
M16—*Pitch: 2 mm*			
16	10	91390A183	10.22
20	10	91390A185	10.25
25	10	91390A186	6.68
30	5	91390A187	10.93
35	1	91390A188	3.84
40	5	91390A189	14.60
45	1	91390A192	3.30
50	1	91390A191	4.35
55	1	91390A194	4.70
60	1	91390A193	4.47
70	1	91390A195	4.10
80	1	91390A197	4.26
M20—*Pitch: 2.5 mm*			
20	1	91390A210	3.33
25	1	91390A213	3.71
30	1	91390A216	3.98
35	1	91390A217	9.09
40	1	91390A219	4.44
50	1	91390A222	4.45
60	1	91390A225	4.70

Fine Thread Black Alloy Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M6—*Pitch: 0.75 mm*			
6	10	99642A111	10.00
8	10	99642A114	10.90
10	10	99642A117	13.75
12	5	99642A121	6.90
16	5	99642A124	7.96
20	5	99642A127	11.25
M8—*Pitch: 1 mm*			
8	10	99642A130	8.00
10	10	99642A133	8.46
12	10	99642A136	9.26
16	10	99642A139	10.00
20	10	99642A142	10.90
25	5	99642A145	7.45
30	5	99642A148	8.45
40	5	99642A151	12.38
M10—*Pitch: 1 mm*			
10	5	99642A154	7.45
12	5	99642A157	10.26
16	5	99642A160	10.26
M10—*Pitch: 1 mm (Cont.)*			
20	5	99642A163	10.45
25	5	99642A166	10.45
30	5	99642A169	11.45
M10—*Pitch: 1.25 mm*			
10	5	99642A181	8.13
12	5	99642A184	8.95
16	5	99642A187	11.00
20	5	99642A190	14.38
25	5	99642A193	14.26
M12—*Pitch: 1.25 mm*			
12	5	99642A205	12.38
16	5	99642A208	13.51
20	1	99642A211	3.12
25	1	99642A214	3.29
M12—*Pitch: 1.5 mm*			
12	5	99642A229	12.18
16	5	99642A232	12.50
20	5	99642A235	13.50
25	5	99642A238	13.75

Cup Point Slotted Set Screws

Also known as headless set screws and grub screws, these slotted set screws install with a standard slotted screwdriver. The edge of the cup point digs into the contact surface for maximum holding power. Screws have a Class 2A thread fit. Dimensions meet ASME B18.6.2. Length listed is the overall length.

Lg.	Pkg. Qty.		Per Pkg.	Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel							
6-32				***10-32***			
1/8"	25	98057A267	$10.32	3/16"	10	98057A526	$4.75
3/16"	25	98057A271	10.90	1/4"	10	98057A531	4.82
1/4"	25	98057A276	11.30	3/8"	10	98057A537	4.91
3/8"	25	98057A280	11.63				
1/2"	25	98057A284	11.88	***1/4"-20***			
8-32				1/4"	10	98057A652	5.50
1/8"	25	98057A403	10.65	3/8"	10	98057A658	5.70
3/16"	10	98057A408	4.46	1/2"	10	98057A663	5.96
1/4"	10	98057A411	4.59				
5/16"	10	98057A414	4.65	***5/16"-18***			
3/8"	10	98057A417	4.72	3/8"	10	98057A712	7.34
1/2"	10	98057A421	4.72	1/2"	10	98057A718	8.26
10-24							
3/16"	10	98057A476	4.75	***3/8"-16***			
1/4"	10	98057A481	4.82	3/8"	5	98057A832	5.41
3/8"	10	98057A487	4.91	1/2"	5	98057A838	6.06

Lg.	Pkg. Qty.		Per Pkg.	Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel							
6-32				***10-32***			
1/8"	50	94025A125	$6.84	3/16"	25	94025A160	$3.70
3/16"	50	94025A127	6.85	1/4"	25	94025A162	3.74
1/4"	50	94025A129	6.88	3/8"	25	94025A164	4.41
3/8"	50	94025A130	7.87				
1/2"	50	94025A400	12.87	***1/4"-20***			
8-32				1/4"	25	94025A145	4.11
1/8"	50	94025A131	6.70	3/8"	25	94025A146	5.29
3/16"	50	94025A133	6.80	1/2"	25	94025A147	6.26
1/4"	50	94025A135	6.85				
5/16"	50	94025A502	7.05	***5/16"-18***			
3/8"	50	94025A136	7.16	3/8"	25	94025A149	7.38
1/2"	50	94025A137	8.44	1/2"	10	94025A150	4.10
10-24							
3/16"	50	94025A139	7.40	***3/8"-16***			
1/4"	50	94025A141	7.47	3/8"	10	94025A151	3.58
3/8"	25	94025A143	4.41	1/2"	10	94025A154	7.21

Military Specification Cup Point Set Screws

Designed to meet stringent military specifications, these set screws have a hex socket and a Class 3A thread fit. Length listed is the overall length.

18-8 stainless steel screws are passivated (treated with nitric acid to create a film that protects against oxidation and corrosion) to meet QQ-P-35. Not rated for hardness.

Cadmium-plated alloy steel screws have a minimum Rockwell hardness of C45. The plating adds rust resistance and lubricity.

Lg.	18-8 Stainless Steel Dash No.		Each	Cadmium-Plated Alloy Steel Dash No.		Each
2-56— *18-8 SS meet MS 51021; Cadmium-Plated Alloy Steel meet MS 51963*						
1/8"	1	97705A139	$2.21	1	98637A016	$2.75
3/16"	2	97705A142	2.22	2	98637A019	2.77
1/4"	3	97705A145	2.24	3	98637A022	2.78
4-40— *18-8 SS meet MS 51021; Cadmium-Plated Alloy Steel meet MS 51963*						
1/8"	9	97705A226	2.21	9	98637A103	2.80
3/16"	10	97705A228	2.22	10	98637A105	2.82
1/4"	11	97705A234	2.24	11	98637A111	2.83
5/16"	—	—	—	12	98637A119	3.36
3/8"	13	97705A242	2.37	—	—	—
1/2"	15	97705A246	2.38	15	98637A123	3.38
6-32— *18-8 SS meet MS 51021; Cadmium-Plated Alloy Steel meet MS 51963*						
1/8"	21	97705A265	2.91	20	98637A142	2.14
3/16"	22	97705A269	2.92	21	98637A146	2.15
1/4"	23	97705A274	2.94	22	98637A151	2.16
5/16"	24	97705A278	2.96	—	—	—
3/8"	25	97705A282	2.97	24	98637A155	2.45
1/2"	—	—	—	26	98637A159	2.46
8-32— *18-8 SS meet MS 51021; Cadmium-Plated Alloy Steel meet MS 51963*						
1/8"	—	—	—	33	98637A278	3.36
3/16"	31	97705A401	3.19	34	98637A283	3.40
1/4"	32	97705A406	3.21	35	98637A286	2.14
5/16"	33	97705A409	3.23	—	—	—
3/8"	34	97705A412	3.25	37	98637A289	2.15
1/2"	36	97705A415	3.27	39	98637A292	2.75
10-32— *18-8 SS meet MS 51023; Cadmium-Plated Alloy Steel meet MS 51964*						
3/16"	48	97705A474	3.19	48	98637A351	2.45
1/4"	49	97705A479	3.21	49	98637A356	2.46
5/16"	—	—	—	50	98637A362	2.47
3/8"	51	97705A485	3.23	51	98637A365	2.80
1/2"	52	97705A488	3.25	53	98637A368	2.82
1/4"-20— *Cadmium-Plated Alloy Steel meet MS 51963*						
1/4"	—	—	—	63	98637A401	3.06
5/16"	—	—	—	64	98637A405	3.07
3/8"	—	—	—	65	98637A410	3.36
1/2"	—	—	—	67	98637A416	3.38
1/4"-28— *18-8 SS meet MS 51023; Cadmium-Plated Alloy Steel meet MS 51964*						
3/16"	60	97705A647	3.49	—	—	—
1/4"	61	97705A650	3.80	64	98637A527	3.06
5/16"	62	97705A656	3.82	65	98637A533	3.38
3/8"	63	97705A661	3.84	66	98637A538	3.40
1/2"	—	—	—	68	98637A542	3.42

High Performance Nickel Alloy Cup Point Set Screws

Our nickel alloy hex socket set screws maintain their high strength under the most extreme conditions. To maximize holding power, the edge of the cup point digs into the contact material. All screws have a Class 3A thread fit and are not rated for hardness. Dimensions meet ASME B18.3. Length listed is the overall length.

Alloy 400 is highly resistant to corrosion and heat.

Alloy C276 offers outstanding resistance to chemical corrosion and stress-corrosion cracking.

Lg.	Alloy 400	Each	Alloy C276	Each
10-24				
3/16"	93386A261	$3.67	94766A529	$5.52
1/4"	93386A265	3.40	94766A533	5.75
5/16"	93386A273	3.67	94766A537	5.87
3/8"	—	—	94766A541	6.80
1/2"	93386A277	3.91	94766A546	7.71
10-32				
3/16"	93386A310	3.67	—	—
1/4"	93386A315	3.40	94766A588	5.75
3/8"	93386A321	3.67	94766A594	6.80
1/2"	93386A326	3.91	—	—
1/4"-20				
3/16"	93386A436	5.62	—	—
1/4"	93386A442	5.62	94766A724	5.87
5/16"	93386A448	6.25	94766A730	6.25
3/8"	93386A454	6.49	94766A736	7.05
1/2"	93386A460	7.34	—	—
5/16"-18				
5/16"	93386A496	4.77	94766A805	7.82
3/8"	93386A502	5.13	94766A811	11.44
1/2"	93386A508	5.96	94766A817	14.20
3/8"-16				
3/8"	93386A616	5.56	94766A969	12.44
1/2"	93386A622	6.36	94766A975	16.06
3/4"	93386A628	7.09	94766A981	19.58
1"	93386A634	7.95	—	—

Vented Cup Point Set Screws

Use these drilled hex socket set screws to vent fluids and gases while holding parts securely in place. Typically found in vacuum systems, they're made from 18-8 stainless steel and have a Class 3A thread fit. Not rated for hardness. Length listed is the overall length.

Lg.	Pkg. Qty.		Per Pkg.	Lg.	Pkg. Qty.		Per Pkg.
8-32— *Vent Hole Dia.: 0.042"*				***1/4"-20 (Cont.)***			
3/16"	10	91979A403	$6.41	3/8"	5	91979A658	$4.28
1/4"	10	91979A408	6.89	1/2"	5	91979A663	4.75
3/8"	5	91979A411	4.51	***5/16"-18—*** *Vent Hole Dia.: 0.078"*			
10-32— *Vent Hole Dia.: 0.046"*				3/8"	5	91979A712	4.28
3/16"	10	91979A576	6.65	1/2"	5	91979A718	4.51
1/4"	10	91979A581	7.12	3/4"	5	91979A724	5.35
3/8"	5	91979A587	4.28	***3/8"-16—*** *Vent Hole Dia.: 0.093"*			
1/2"	5	91979A593	4.99	3/8"	5	91979A832	4.51
1/4"-20— *Vent Hole Dia.: 0.062"*				1/2"	5	91979A838	4.99
1/4"	5	91979A652	3.80	3/4"	5	91979A846	5.70

For information about point selection, materials, and hex key sizes, see page 3072.

Extended Point Set Screws

Extended Point

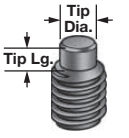

Self-Locking Extended Point

Extra-Long Extended Point

Also known as dog point and pilot point set screws, these hex socket screws have an extended tip that guides them into mating holes or slots in your workpiece. They permanently lock one object to another and are frequently used to secure parts to rotating shafts so the entire assembly turns in unison. Length listed is the overall length.

Inch size *extended point* and *self-locking extended point* set screws made of black alloy steel meet ASME B18.3. *Extra-long extended point* screws have a point that's twice as long as that of extended point set screws. *Self-locking extended point* screws have a nylon patch on the threads that locks them in place and prevents loosening from vibration. The patch retains its strength at temperatures up to 250°F. All inch screws have a Class 3A thread fit.

Metric sizes meet DIN 915/ISO 4028. 18-8 stainless steel metric screws have a Class 6g thread fit; black alloy steel metric screws have a Class 5g6g thread fit.

For extended point thumb screws, see page 3092.

Extended Point—18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40—Tip: Dia. .075"; Lg. .030"			
1/8"	50	92845A105	$9.30
3/16"	50	92845A110	9.58
6-32—Tip: Dia. .092"; Lg. .038"			
3/16"	50	92845A140	8.69
1/4"	50	92845A144	5.16
5/16"	50	92845A145	10.45
3/8"	25	92845A146	2.93
1/2"	25	92845A148	9.64
8-32—Tip: Dia. .109"; Lg. .043"			
3/16"	50	92845A185	11.00
1/4"	25	92845A190	2.61
3/8"	25	92845A192	3.44
1/2"	25	92845A195	10.12
10-24—Tip: Dia. .127"; Lg. .049"			
1/4"	25	92845A238	3.62
3/8"	25	92845A240	3.75
1/2"	25	92845A245	8.55
10-32—Tip: Dia. .127"; Lg. .049"			
3/16"	50	92845A328	5.98
1/4"	25	92845A330	3.67
10-32 (Cont.)			
3/8"	25	92845A335	$3.75
1/2"	25	92845A340	7.26
1/4"-20—Tip: Dia. .156"; Lg. .067"			
1/4"	25	92845A528	8.69
5/16"	25	92845A530	9.92
3/8"	10	92845A535	2.74
1/2"	10	92845A537	2.84
5/8"	10	92845A540	5.55
3/4"	10	92845A542	6.01
1"	10	92845A545	6.63
5/16"-18—Tip: Dia. .203"; Lg. .082"			
5/16"	10	92845A605	2.51
3/8"	10	92845A610	2.80
1/2"	10	92845A615	3.14
3/4"	10	92845A618	4.63
1"	10	92845A620	5.84
3/8"-16—Tip: Dia. .250"; Lg. .099"			
1/2"	10	92845A650	4.41
3/4"	5	92845A655	3.69
1"	5	92845A658	4.46

Extended Point—Black Alloy Steel (Meets ASTM F912)

Lg.	Pkg. Qty.		Per Pkg.
4-40—Tip: Dia. .075"; Lg. .030"			
1/8"	25	92505A065	13.97
3/16"	25	92505A070	5.94
1/4"	50	92505A075	5.38
5-40—Tip: Dia. .083"; Lg. .033"			
1/8"	25	92505A080	8.92
3/16"	25	92505A083	6.48
1/4"	25	92505A085	5.76
3/8"	25	92505A090	6.58
6-32—Tip: Dia. .092"; Lg. .038"			
1/8"	25	92505A101	10.22
3/16"	50	92505A105	11.69
1/4"	100	92505A110	9.00
3/8"	100	92505A115	9.38
8-32—Tip: Dia. .109"; Lg. .043"			
1/8"	25	92505A181	11.17
3/16"	100	92505A189	11.04
1/4"	100	92505A190	11.32
5/16"	100	92505A191	13.84
3/8"	100	92505A192	11.50
1/2"	100	92505A194	11.96
10-24—Tip: Dia. .127"; Lg. .049"			
3/16"	100	92505A235	9.20
1/4"	100	92505A238	11.33
5/16"	100	92505A239	12.95
3/8"	100	92505A240	12.61
1/2"	100	92505A242	13.68
10-32—Tip: Dia. .127"; Lg. .049"			
3/16"	100	92505A637	13.77
1/4"	100	92505A638	13.77
3/8"	100	92505A640	8.50
1/2"	100	92505A642	10.50
5/8"	25	92505A644	6.88
3/4"	25	92505A646	7.75
1"	10	92505A648	4.25
1/4"-20—Tip: Dia. .156"; Lg. .067"			
1/4"	100	92505A533	14.53
5/16"	100	92505A534	13.68
3/8"	100	92505A535	13.76
1/2"	50	92505A537	8.06
5/8"	25	92505A538	5.11
3/4"	25	92505A540	5.67
1"	25	92505A542	7.43
1 1/4"	10	92505A545	5.00
1 1/2"	10	92505A548	5.50
1/4"-28—Tip: Dia. .156"; Lg. .067"			
1/4"	50	92505A633	10.62
5/16"	100	92505A634	9.12
3/8"	100	92505A635	9.50
1/2"	25	92505A639	5.38
3/4"	25	92505A645	6.58
5/16"-18—Tip: Dia. .203"; Lg. .082"			
1/4"	100	92505A574	11.88
5/16"	50	92505A575	7.10
3/8"	100	92505A576	14.06
1/2"	50	92505A578	7.62
5/8"	50	92505A579	10.98
3/4"	25	92505A581	6.06
1"	25	92505A583	7.26
1 1/2"	10	92505A585	6.50
2"	5	92505A588	5.88
5/16"-24—Tip: Dia. .203"; Lg. .082"			
3/8"	25	92505A594	2.80
1/2"	25	92505A596	4.38
3/4"	25	92505A598	8.44
1"	10	92505A599	6.10
1 1/4"	10	92505A601	6.75
3/8"-16—Tip: Dia. .250"; Lg. .099"			
3/8"	25	92505A617	4.03
1/2"	25	92505A619	4.77
5/8"	25	92505A621	5.98
3/4"	25	92505A622	6.15
1"	25	92505A624	7.80
1 1/4"	25	92505A626	9.43
1 1/2"	5	92505A628	4.38
3/8"-24—Tip: Dia. .250"; Lg. .099"			
1/2"	50	92505A650	13.84
5/8"	10	92505A654	4.33
3/4"	10	92505A657	5.25
1"	10	92505A660	6.50
1/2"-13—Tip: Dia. .344"; Lg. .130"			
1/2"	10	92505A707	5.54
5/8"	10	92505A709	6.23
3/4"	10	92505A710	6.69
1"	10	92505A712	6.82
1 1/4"	10	92505A714	8.23
1 1/2"	5	92505A723	6.25
2"	5	92505A731	7.88
2 1/2"	5	92505A738	10.32
1/2"-20—Tip: Dia. .344"; Lg. .130"			
1/2"	10	92505A750	6.62
3/4"	5	92505A755	4.88
1"	5	92505A761	6.33
2"	5	92505A768	11.25
2 1/2"	1	92505A775	2.68
5/8"-11—Tip: Dia. .469"; Lg. .164"			
1"	10	92505A794	9.47
1 1/2"	1	92505A803	3.37
2"	1	92505A811	3.38
5/8"-18—Tip: Dia. .469"; Lg. .164"			
1"	1	92505A855	2.80
1 1/2"	1	92505A861	3.75

Extra-Long Extended Point—Black Alloy Steel (Meets ASTM F912)

Lg.	Pkg. Qty.		Per Pkg.
10-32—Tip: Dia. .127"; Lg. .095"			
1/4"	25	95289A205	$6.68
3/8"	25	95289A216	7.24
1/4"-20—Tip: Dia. .156"; Lg. .130"			
1/4"	25	95289A314	6.85
3/8"	25	95289A325	7.33
1/2"	25	95289A336	8.72
3/4"	25	95289A347	11.24
1"	10	95289A358	6.27
5/16"-18—Tip: Dia. .203"; Lg. .161"			
3/8"	25	95289A403	8.38
1/2"	25	95289A414	11.39
3/4"	10	95289A425	5.96
3/8"-16—Tip: Dia. .250"; Lg. .193"			
3/8"	25	95289A521	$10.47
1/2"	25	95289A532	12.51
3/4"	10	95289A543	6.62
1"	10	95289A554	8.26
1/2"-13—Tip: Dia. .344"; Lg. .255"			
3/4"	5	95289A602	9.01
1"	5	95289A613	10.00
1 1/4"	5	95289A624	10.65
1 1/2"	5	95289A635	12.29
2"	1	95289A646	3.45
5/8"-11—Tip: Dia. .469"; Lg. .312"			
1"	1	95289A657	3.45
1 1/2"	1	95289A668	4.03
2"	1	95289A679	5.84

Self-Locking Extended Point—Black Alloy Steel (Meets ASTM F912)

Lg.	Pkg. Qty.		Per Pkg.
8-32—Tip: Dia. .109"; Lg. .043"			
1/4"	25	95235A501	10.53
5/16"	25	95235A503	6.74
3/8"	25	95235A505	6.80
1/2"	25	95235A507	6.85
10-24—Tip: Dia. .127"; Lg. .049"			
1/4"	25	95235A515	13.15
3/8"	10	95235A517	3.07
10-32—Tip: Dia. .127"; Lg. .049"			
1/4"	25	95235A525	10.73
3/8"	10	95235A527	11.15
1/4"-20—Tip: Dia. .156"; Lg. .067"			
5/16"	25	95235A530	13.50
3/8"	25	95235A532	13.58
1/2"	25	95235A534	14.27
5/8"	25	95235A536	14.90
3/4"	5	95235A537	10.00
1"	1	95235A538	3.38
5/16"-18—Tip: Dia. .203"; Lg. .082"			
5/16"	10	95235A540	3.45
3/8"	25	95235A541	13.88
1/2"	10	95235A542	14.82
5/8"	25	95235A543	14.95
3/4"	10	95235A545	6.62
1"	10	95235A548	5.09
3/8"-16—Tip: Dia. .250"; Lg. .099"			
1/2"	10	95235A551	7.20
5/8"	10	95235A553	8.32
3/4"	10	95235A555	8.65
1"	10	95235A558	9.78
1 1/4"	10	95235A560	14.93
1/2"-13—Tip: Dia. .344"; Lg. .130"			
1/2"	5	95235A621	4.04
3/4"	5	95235A626	4.88
1"	5	95235A632	5.08

Metric Extended Point—18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
Tip: Dia. 2 mm; Lg. 1 mm			
3	25	92775A010	$3.27
4	10	92775A104	3.22
Tip: Dia. 2 mm; Lg. 1.75 mm			
5	10	92775A105	3.22
6	25	92775A106	7.60
8	25	92775A108	8.89
M5—Pitch: 0.8 mm			
Tip: Dia. 3.5 mm; Lg. 1.5 mm			
5	10	92775A154	3.64
6	10	92775A155	3.76
Tip: Dia. 3.5 mm; Lg. 2.75 mm			
8	25	92775A157	5.21
10	10	92775A159	4.22
12	10	92775A161	3.85
16	25	92775A165	5.66
20	25	92775A169	7.72
25	10	92775A174	4.85
M6—Pitch: 1 mm			
Tip: Dia. 4 mm; Lg. 1.75 mm			
6	10	92775A210	5.50
8	50	92775A212	6.57
M6 (Cont.)			
Tip: Dia. 4 mm; Lg. 3.25 mm			
10	50	92775A214	$12.13
12	25	92775A216	6.67
16	25	92775A218	8.19
20	10	92775A223	6.67
M8—Pitch: 1.25 mm			
Tip: Dia. 5.5 mm; Lg. 2.25 mm			
8	25	92775A308	6.96
10	25	92775A310	8.38
Tip: Dia. 5.5 mm; Lg. 4.3 mm			
12	25	92775A312	8.48
16	25	92775A314	13.17
20	10	92775A316	6.01
25	10	92775A319	10.47
30	5	92775A324	8.76
M10—Pitch: 1.5 mm			
Tip: Dia. 7 mm; Lg. 2.75 mm			
12	10	92775A412	7.21
Tip: Dia. 7 mm; Lg. 5.3 mm			
16	10	92775A414	10.92
20	10	92775A416	9.41
25	10	92775A418	14.34

Metric Extended Point—Black Alloy Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
Tip: Dia. 2 mm; Lg. 1 mm			
4	100	92905A051	4.67
5	100	92905A053	4.97
Tip: Dia. 2 mm; Lg. 1.75 mm			
8	100	92905A056	5.40
M4—Pitch: 0.7 mm			
Tip: Dia. 2.5 mm; Lg. 1.25 mm			
5	100	92905A084	4.64
6	100	92905A085	4.43
Tip: Dia. 2.5 mm; Lg. 2.25 mm			
8	100	92905A087	5.70
10	100	92905A089	6.78
12	100	92905A091	6.94

(Continued on following page)

Extended Point Set Screws *(Continued from previous page)*

Lg., mm	Pkg. Qty.		Per Pkg.
Metric Extended Point—Black Alloy Steel			
M5—Pitch: 0.8 mm			
Tip: Dia. 3.5 mm; Lg. 1.5 mm			
6	100	92905A112	$5.30
Tip: Dia. 3.5 mm; Lg. 2.75 mm			
8	100	92905A114	4.79
12	100	92905A118	5.69
M6—Pitch: 1 mm			
Tip: Dia. 4 mm; Lg. 1.75 mm			
6	25	92905A210	5.00
8	50	92905A212	7.80
Tip: Dia. 4 mm; Lg. 3.25 mm			
10	50	92905A214	8.00
12	50	92905A216	7.60
16	50	92905A218	7.66
18	25	92905A219	7.48
M6 (Cont.)			
Tip: Dia. 4 mm; Lg. 3.25 mm (Cont.)			
20	25	92905A220	$5.50
25	25	92905A222	6.50
30	25	92905A225	8.22
35	25	92905A228	11.00
50	10	92905A241	6.30
M8—Pitch: 1.25 mm			
Tip: Dia. 5.5 mm; Lg. 2.25 mm			
10	25	92905A310	4.95
Tip: Dia. 5.5 mm; Lg. 4.3 mm			
12	50	92905A312	8.51
16	25	92905A314	6.20
20	25	92905A316	7.40
25	25	92905A319	9.71
Metric Extended Point—Black Alloy Steel			
M8 (Cont.)			
Tip: Dia. 5.5 mm; Lg. 4.3 mm (Cont.)			
30	25	92905A322	$10.99
40	10	92905A325	7.20
50	10	92905A327	8.40
M10—Pitch: 1.5 mm			
Tip: Dia. 7 mm; Lg. 2.75 mm			
12	25	92905A412	8.00
Tip: Dia. 7 mm; Lg. 5.3 mm			
16	25	92905A414	8.40
20	25	92905A416	10.00
25	25	92905A418	12.50
30	10	92905A420	6.16
35	10	92905A423	7.88
40	10	92905A426	8.18
45	10	92905A429	12.33
M10 (Cont.)			
Tip: Dia. 7 mm; Lg. 5.3 mm (Cont.)			
50	10	92905A432	$12.79
60	5	92905A435	8.34
M12—Pitch: 1.75 mm			
Tip: Dia. 8.5 mm; Lg. 3.25 mm			
12	10	92905A512	4.00
16	25	92905A514	10.49
Tip: Dia. 8.5 mm; Lg. 6.3 mm			
20	10	92905A516	6.40
25	10	92905A518	6.33
30	10	92905A520	7.93
35	10	92905A524	9.60
40	10	92905A528	12.00
45	10	92905A531	14.40
50	5	92905A535	8.72
60	5	92905A538	10.52

Knurled Cup Point Set Screws

Similar to cup point set screws, but these screws have knurls that improve grip and prevent them from backing out or loosening from vibration. All have a hex socket. Length listed is the overall length.

Inch sizes have a Class 3A thread fit; screw dimensions meet ASME B18.3. Metric sizes have a Class 6g thread fit.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
4-40			
1/8″	50	93445A170	$10.92
3/16″	50	93445A175	12.63
1/4″	50	93445A180	11.69
6-32			
1/8″	50	93445A210	10.52
3/16″	50	93445A215	10.98
1/4″	50	93445A220	8.41
3/8″	50	93445A225	9.13
8-32			
1/8″	50	93445A310	13.02
3/16″	50	93445A315	11.20
1/4″	50	93445A320	6.99
3/8″	50	93445A330	10.05
1/2″	25	93445A332	6.66
10-24			
3/16″	25	93445A348	7.46
1/4″	50	93445A350	8.86
3/8″	50	93445A355	9.48
10-32			
1/4″	50	93445A380	$8.35
3/8″	25	93445A385	4.40
1/2″	25	93445A376	8.99
1/4″-20			
1/4″	50	93445A420	9.76
3/8″	25	93445A425	5.42
1/2″	25	93445A427	11.47
3/4″	10	93445A440	5.57
1″	10	93445A453	3.91
5/16″-18			
1/4″	10	93445A520	5.94
5/16″	10	93445A523	6.20
3/8″	10	93445A525	6.21
1/2″	10	93445A528	6.42
3/8″-16			
3/8″	10	93445A610	6.50
1/2″	10	93445A613	11.27
5/8″	10	93445A615	13.64
3/4″	10	93445A618	13.54
Black Alloy Steel—Meets ASTM F912			
4-40			
1/8″	100	90289A103	8.69
1/4″	100	90289A106	7.69
3/8″	100	90289A109	8.72
1/2″	50	90289A112	8.65
4-48			
1/8″	50	90289A130	9.12
5-40			
1/8″	100	90289A121	7.76
3/16″	100	90289A123	7.83
1/4″	100	90289A124	8.38
5/16″	100	90289A125	8.62
6-32			
1/8″	100	90289A142	11.20
3/16″	100	90289A143	9.71
1/4″	100	90289A144	10.31
6-40			
1/8″	50	90289A160	7.91
3/16″	50	90289A161	8.52
1/4″	50	90289A162	8.72
8-32			
1/8″	100	90289A188	10.96
3/16″	100	90289A189	10.12
1/4″	100	90289A190	10.35
5/16″	100	90289A191	9.23
3/8″	100	90289A192	10.94
7/16″	50	90289A193	7.12
1/2″	50	90289A194	6.03
3/4″	50	90289A197	9.14
1″	50	90289A199	11.99
10-24			
1/8″	25	90289A235	10.90
3/16″	50	90289A237	7.97
1/4″	100	90289A238	10.94
5/16″	100	90289A239	9.03
3/8″	50	90289A240	8.78
1/2″	50	90289A242	9.35
10-32			
1/8″	25	90289A335	7.05
3/16″	100	90289A337	10.49
1/4″	100	90289A338	10.93
3/8″	100	90289A340	11.67
7/16″	50	90289A341	8.78
1/2″	100	90289A342	13.43
5/8″	50	90289A344	7.34
1/4″-20			
3/16″	100	90289A532	12.61
1/4″	100	90289A533	12.68
5/16″	100	90289A534	11.71
3/8″	100	90289A535	12.85
7/16″	50	90289A536	7.76
1/2″	50	90289A537	7.57
5/8″	50	90289A539	9.16
3/4″	50	90289A540	9.39
7/8″	25	90289A541	7.76
1″	25	90289A542	8.00
1 1/2″	10	90289A546	7.10
2″	10	90289A550	8.62
1/4″-28			
3/16″	100	90289A350	12.60
1/4″	100	90289A351	12.62
5/16″	100	90289A352	12.68
3/8″	100	90289A353	13.05
1/2″	50	90289A559	7.76
3/4″	50	90289A561	8.21
5/16″-18			
1/4″	100	90289A574	12.28
5/16″	100	90289A575	14.52
3/8″	100	90289A576	14.57
7/16″	50	90289A577	10.34
1/2″	100	90289A578	14.68
5/8″	50	90289A580	10.16
3/4″	25	90289A582	5.12
Black Alloy Steel—Meets ASTM F912 (Cont.)			
5/16″-18 (Cont.)			
1″	25	90289A584	$5.36
1 1/2″	10	90289A587	6.06
2″	5	90289A591	8.33
5/16″-24			
1/4″	100	90289A358	14.32
5/16″	100	90289A359	14.24
3/8″	100	90289A360	14.59
1/2″	100	90289A361	14.75
3/8″-16			
1/4″	25	90289A615	7.05
5/16″	25	90289A616	7.47
3/8″	50	90289A617	9.29
7/16″	50	90289A618	13.03
1/2″	50	90289A619	11.59
5/8″	25	90289A621	5.40
3/4″	25	90289A622	5.48
1″	25	90289A624	7.44
1 1/4″	25	90289A626	7.85
1 1/2″	10	90289A628	8.33
2″	10	90289A632	13.64
3/8″-24			
5/16″	25	90289A363	6.90
3/8″	50	90289A365	7.91
1/2″	50	90289A366	8.23
1/2″-13			
3/8″	10	90289A705	$7.93
1/2″	10	90289A707	6.89
5/8″	10	90289A709	5.41
3/4″	10	90289A711	5.67
1″	10	90289A713	7.18
1 3/4″	5	90289A718	8.62
2″	5	90289A720	9.48
1/2″-20			
3/4″	10	90289A750	14.31
7/8″	5	90289A753	9.07
1″	5	90289A756	8.45
1 1/4″	5	90289A759	10.34
1 1/2″	5	90289A764	11.72
5/8″-11			
1/2″	1	90289A789	2.93
5/8″	10	90289A791	8.24
3/4″	1	90289A792	3.45
1″	1	90289A794	3.88
3/4″-10			
3/4″	5	90289A833	6.89

Lg., mm	Pkg. Qty.		Per Pkg.
Metric 18-8 Stainless Steel			
M3—Pitch: 0.5 mm			
3	25	91313A116	$5.53
4	25	91313A119	5.71
5	25	91313A122	7.54
M4—Pitch: 0.7 mm			
4	25	91313A134	6.79
5	25	91313A137	7.68
6	25	91313A139	7.88
M5—Pitch: 0.8 mm			
5	25	91313A142	7.93
6	25	91313A145	7.99
10	25	91313A149	8.09
M6—Pitch: 1 mm			
6	25	91313A151	$8.12
10	25	91313A156	8.46
12	25	91313A159	8.72
M8—Pitch: 1.25 mm			
8	10	91313A167	4.13
10	10	91313A172	4.62
12	10	91313A175	5.42
Metric Black Alloy Steel			
M3—Pitch: 0.5 mm			
3	50	94285A310	9.84
4	50	94285A315	10.04
5	50	94285A320	10.13
6	50	94285A325	10.13
8	25	94285A327	7.91
M4—Pitch: 0.7 mm			
4	50	94285A350	10.20
5	50	94285A355	10.29
6	50	94285A360	10.52
8	50	94285A365	10.96
10	25	94285A367	8.66
M5—Pitch: 0.8 mm			
5	50	94285A450	10.60
6	50	94285A455	10.96
M5 (Cont.)			
8	50	94285A460	11.05
10	50	94285A465	11.38
M6—Pitch: 1 mm			
6	50	94285A510	11.05
8	50	94285A515	11.38
10	50	94285A520	11.50
12	50	94285A525	12.28
20	25	94285A530	10.27
M8—Pitch: 1.25 mm			
8	50	94285A610	11.50
10	50	94285A615	12.05
12	50	94285A620	12.39
20	10	94285A630	4.89
25	10	94285A633	5.73
30	10	94285A636	6.72

Cone Point Set Screws

Designed to provide the highest holding power of any style set screw, these hex socket screws have a sharp conical point that wedges into the contact surface. They work especially well against hardened surfaces.

The point is angled 90°, unless noted. Inch sizes meet ASME B18.3 and have a Class 3A thread fit. Metric sizes meet DIN 914/ISO 4027. *Metric 18-8 stainless steel* screws have a Class 6g thread fit; *metric black alloy steel* screws have a Class 5g6g thread fit. Length listed is the overall length.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/8"	10	90778A016	$7.98
3/16"	10	90778A019	8.40
1/4"	10	90778A022	8.78
4-40			
1/8"	10	90778A103★	4.94
3/16"	10	90778A105	5.13
1/4"	10	90778A111	5.51
3/8"	10	90778A119	5.89
6-32			
1/8"	10	90778A142★	5.17
3/16"	10	90778A146	5.40
1/4"	10	90778A151	5.70
3/8"	10	90778A155	5.82
1/2"	10	90778A159	6.08
8-32			
3/16"	10	90778A178★	5.62
1/4"	10	90778A183	5.78
3/8"	10	90778A186	5.93
1/2"	10	90778A189	6.08
10-24			
3/16"	10	90778A227★	$5.93
1/4"	10	90778A232	6.08
3/8"	10	90778A236	6.31
1/2"	10	90778A243	6.61
10-32			
3/16"	10	90778A351★	5.93
1/4"	10	90778A356	6.08
3/8"	10	90778A362	6.31
1/2"	10	90778A365	6.61
1/4"-20			
1/4"	10	90778A401★	6.92
5/16"	10	90778A405	6.99
3/8"	10	90778A410	7.07
1/2"	10	90778A416	7.37
3/4"	10	90778A422	8.36
1/4"-28			
1/4"	10	90778A450★	7.41
5/16"-18			
3/8"	10	90778A533	9.12
1/2"	10	90778A538	10.26
3/4"	5	90778A542	5.70

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/8"	50	92785A050	12.28
3/16"	25	92785A053	8.83
1/4"	25	92785A055	9.29
4-40			
1/8"	50	92785A110★	6.58
3/16"	50	92785A114	6.00
1/4"	50	92785A116	7.59
3/8"	25	92785A118	5.61
5-40			
1/4"	25	92785A123	6.44
6-32			
1/8"	50	92785A128★	5.76
3/16"	50	92785A142	6.24
1/4"	25	92785A144	3.85
3/8"	25	92785A146	4.37
1/2"	25	92785A148	7.35
8-32			
1/8"	50	92785A186★	6.02
3/16"	50	92785A189★	6.45
1/4"	25	92785A190	3.36
5/16"	25	92785A191	3.53
3/8"	25	92785A192	3.75
1/2"	25	92785A195	5.90
10-24			
3/16"	50	92785A237★	7.09
1/4"	25	92785A238	4.18
3/8"	25	92785A240	4.19
1/2"	25	92785A243	4.20
10-32			
3/16"	25	92785A330★	3.80
1/4"	25	92785A332	4.02
5/16"	25	92785A333	3.62
3/8"	25	92785A334	4.27
1/2"	25	92785A337	4.20
1/4"-20			
1/4"	25	92785A433★	3.46
5/16"	10	92785A434	1.54
3/8"	25	92785A435	4.22
1/2"	10	92785A437	2.54
3/4"	10	92785A439	2.55
1"	10	92785A443	3.13
1/4"-28			
3/16"	25	92785A449★	8.33
1/4"	25	92785A451★	8.17
5/16"-18			
3/8"	10	92785A467	2.30
1/2"	10	92785A472	2.60
3/4"	10	92785A476	3.68

Black Alloy Steel—*Meets ASTM F912*

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/16"	10	92695A005★	7.21
1/8"	10	92695A007	7.21
4-40			
1/8"	50	92695A105★	7.50
3/16"	50	92695A110	7.31
1/4"	25	92695A112	8.10
4-48			
1/8"	25	92695A115★	10.72
3/16"	25	92695A120	11.38
5-40			
3/16"	50	92695A126	7.09
1/4"	50	92695A125	9.24
3/8"	10	92695A127	5.62
6-32			
1/8"	50	92695A130★	9.01
3/16"	50	92695A131	8.77
1/4"	50	92695A132	8.83
5/16"	50	92695A134	7.63
3/8"	50	92695A136	7.82
1/2"	25	92695A140	8.03
3/4"	25	92695A144	12.50
8-32			
3/16"	50	92695A150★	7.31
1/4"	50	92695A152	9.42
3/8"	50	92695A153	9.78
1/2"	50	92695A155	8.76
3/4"	25	92695A157	12.77
1"	10	92695A160	6.67
10-24			
1/4"	50	92695A202	10.87
5/16"	100	92695A203	13.78
3/8"	50	92695A204	11.63
1/2"	50	92695A206	10.04
3/4"	25	92695A207	13.14
1"	10	92695A208	7.54
10-32			
3/16"	50	92695A210★	9.87
1/4"	50	92695A211	9.01
3/8"	50	92695A213	8.78
1/2"	50	92695A215	10.57
3/4"	25	92695A217	13.14
1"	10	92695A219	7.54
1/4"-20			
1/4"	50	92695A302★	11.33
5/16"	50	92695A303	7.85
3/8"	50	92695A304	11.99
1/2"	25	92695A305	7.81
5/8"	25	92695A306	6.63
3/4"	25	92695A307	9.61
1"	25	92695A308	11.08
1 1/2"	10	92695A310	13.10
1/4"-28			
1/4"	50	92695A311★	8.47
3/8"	50	92695A312	9.88
1/2"	25	92695A314	11.65
3/4"	10	92695A316	5.62

★ Point is angled 118°. ▲ Point is angled 120°.

Black Alloy Steel—*Meets ASTM F912 (Cont.)*

Lg.	Pkg. Qty.		Per Pkg.
5/16"-18			
5/16"	50	92695A402★	$10.72
3/8"	50	92695A403	10.37
1/2"	50	92695A404	10.90
5/8"	25	92695A405	8.10
3/4"	25	92695A406	9.78
1"	25	92695A409	10.60
5/16"-24			
5/16"	50	92695A420★	10.72
3/8"	50	92695A424	11.00
3/8"-16			
3/8"	25	92695A502★	9.31
1/2"	50	92695A503	13.30
3/8"-16 (Cont.)			
3/4"	25	92695A505	$10.64
1"	10	92695A507	8.02
3/8"-24			
3/8"	25	92695A520★	9.53
1/2"	25	92695A523	11.29
1/2"-13			
1/2"	10	92695A605★	7.30
3/4"	10	92695A610	8.82
1"	10	92695A615	10.05
1 1/2"	5	92695A618	12.58

Metric 18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—Pitch: 0.4 mm			
3	25	91217A011	$11.57
4	25	91217A012	12.18
5	25	91217A013	12.99
10	25	91217A018	11.81
M3—Pitch: 0.5 mm			
3	25	91217A050▲	4.52
4	25	91217A055	2.81
5	25	91217A060	2.87
6	25	91217A065	3.57
8	25	91217A070	4.54
10	10	91217A076	2.27
12	5	91217A078	3.42
16	5	91217A082	4.21
20	25	91217A086	11.94
M4—Pitch: 0.7 mm			
4	25	91217A105▲	1.50
5	25	91217A110	4.42
6	25	91217A115	2.76
8	25	91217A120	2.92
10	25	91217A125	3.12
12	25	91217A130	3.12
16	25	91217A134	7.40
20	10	91217A138	7.08
M5—Pitch: 0.8 mm			
5	25	91217A155▲	2.10
6	25	91217A160	4.37
M5 (Cont.)			
8	25	91217A165	$2.22
10	25	91217A170	4.93
12	25	91217A175	2.96
30	5	91217A193	4.98
M6—Pitch: 1 mm			
6	25	91217A210▲	3.81
8	25	91217A215	2.57
10	25	91217A220	3.06
12	25	91217A225	4.41
16	25	91217A230	8.70
20	25	91217A240	10.99
30	10	91217A250	6.62
M8—Pitch: 1.25 mm			
8	25	91217A303▲	5.97
10	25	91217A305▲	4.44
12	10	91217A310	4.06
16	10	91217A315	5.43
20	10	91217A320	3.84
30	10	91217A325	9.32
M10—Pitch: 1.5 mm			
10	10	91217A458▲	5.58
12	10	91217A460	5.96
16	10	91217A464	7.94
20	5	91217A468	5.68
25	1	91217A473	1.47
30	5	91217A478	7.18

Metric Black Alloy Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2.5—Pitch: 0.45 mm			
3	10	91210A038▲	3.70
6	10	91210A042	3.62
M3—Pitch: 0.5 mm			
3	50	91210A097▲	7.22
4	50	91210A098	6.77
5	50	91210A099	6.92
6	50	91210A100	8.25
8	50	91210A101	6.32
M4—Pitch: 0.7 mm			
4	50	91210A110▲	6.36
5	50	91210A111	5.58
6	50	91210A112	6.25
8	50	91210A113	5.90
10	50	91210A114	6.53
12	50	91210A115	6.60
16	25	91210A117	6.65
20	25	91210A120	6.72
M5—Pitch: 0.8 mm			
5	50	91210A200▲	6.86
6	50	91210A210	6.63
8	50	91210A215	6.37
10	50	91210A220	6.45
12	50	91210A225	6.50
16	50	91210A230	6.62
20	25	91210A235	5.52
M6—Pitch: 1 mm			
6	50	91210A300▲	7.71
8	50	91210A310	6.49
10	50	91210A315	6.57
12	50	91210A320	7.89
16	50	91210A325	8.77
20	25	91210A330	9.27
M6 (Cont.)			
25	25	91210A335	10.07
30	25	91210A340	11.31
M8—Pitch: 1.25 mm			
8	50	91210A410▲	12.14
10	50	91210A415	11.64
12	50	91210A420	9.12
16	25	91210A425	7.91
20	25	91210A430	8.86
22	10	91210A435	8.87
25	10	91210A437	4.74
30	10	91210A440	7.15
40	10	91210A445	7.79
50	10	91210A450	12.23
M10—Pitch: 1.5 mm			
10	25	91210A515▲	7.79
12	25	91210A520	9.11
16	25	91210A525	10.65
20	25	91210A530	8.30
25	10	91210A535	6.49
30	10	91210A540	7.96
40	10	91210A545	11.88
50	10	91210A550	14.16
M12—Pitch: 1.75 mm			
12	10	91210A620▲	6.88
16	10	91210A625	6.25
20	10	91210A630	8.25
25	10	91210A635	8.73
30	10	91210A640	9.27
40	10	91210A645	14.12
50	5	91210A650	8.86
M16—Pitch: 2 mm			
25	5	91210A835	10.26
50	1	91210A850	1.69

Flat Point Set Screws

Great for making frequent adjustments, these hex socket set screws cause little or no damage to the surface they touch. You'll get the greatest contact using them on flat surfaces. Length listed is the overall length.

Inch Sizes— All have a Class 3A thread fit. Screw dimensions meet ASME B18.3. *Self-locking black alloy steel* screws are reusable and have a nylon patch on the threads that keeps them from vibrating loose. The patch retains its holding power at temperatures from –65° to +250° F.

Metric Sizes— *18-8 stainless steel* screws have a Class 6g thread fit; *metric black alloy steel* screws have a Class 5g6g thread fit. All metric sizes meet DIN 913/ISO 4026.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/8"	10	92158A119	$3.93
3/16"	10	92158A121	4.12
1/4"	10	92158A127	4.46
3/8"	10	92158A135	4.59
6-32			
1/8"	10	92158A158	4.12
3/16"	10	92158A162	4.36
1/4"	10	92158A167	4.52
3/8"	10	92158A171	4.65
8-32			
1/4"	10	92158A199	4.59
3/8"	10	92158A202	4.72
1/2"	10	92158A205	4.88
10-24			
1/4"	10	92158A248	$4.82
3/8"	10	92158A252	4.91
10-32			
3/16"	10	92158A367	4.75
1/4"	10	92158A372	4.82
3/8"	10	92158A378	4.91
1/2"	10	92158A381	5.18
1/4"-20			
1/4"	10	92158A417	5.50
3/8"	10	92158A426	5.70
1/2"	10	92158A432	5.97

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/8"	50	94355A080	8.33
3/16"	50	94355A085	9.66
4-40			
1/8"	50	94355A130	6.30
3/16"	50	94355A135	4.66
1/4"	50	94355A140	4.89
3/8"	50	94355A141	9.92
6-32			
1/8"	50	94355A142	4.90
3/16"	50	94355A143	5.13
1/4"	25	94355A144	2.33
3/8"	25	94355A146	2.48
1/2"	25	94355A148	4.65
8-32			
1/8"	50	94355A180	4.13
3/16"	50	94355A182	4.39
1/4"	25	94355A190	2.48
5/16"	25	94355A191	2.52
3/8"	25	94355A192	3.07
1/2"	25	94355A194	6.41
5/8"	25	94355A198	6.55
10-24			
1/4"	25	94355A238	2.79
3/8"	25	94355A240	3.25
10-32			
3/16"	50	94355A328	5.29
1/4"	25	94355A330	2.83
5/16"	25	94355A239	2.69
3/8"	25	94355A335	3.25
1/2"	25	94355A337	3.58
3/4"	25	94355A341	7.77
1"	10	94355A343	4.19
1/4"-20			
1/4"	25	94355A533	2.53
3/8"	25	94355A535	3.22
1/2"	25	94355A540	4.47
3/4"	10	94355A544	2.48
1"	10	94355A548	2.98
1/4"-28			
1/4"	10	94355A602	3.72
3/8"	10	94355A608	4.15
1/2"	10	94355A614	4.53

Black Alloy Steel—*Meets ASTM F912*

Lg.	Pkg. Qty.		Per Pkg.
3-48			
1/8"	10	94105A020	8.21
3/16"	10	94105A022	9.08
4-40			
1/8"	100	94105A104	12.02
3/16"	50	94105A105	8.04
1/4"	50	94105A106	6.37
5-40			
1/8"	50	94105A120	8.93
6-32			
1/8"	50	94105A142	10.22
3/16"	50	94105A143	6.95
1/4"	50	94105A144	7.04
3/8"	50	94105A146	7.34
8-32			
1/8"	50	94105A187	7.31
3/16"	50	94105A189	7.13
1/4"	50	94105A190	7.32
3/8"	50	94105A192	7.66
1/2"	25	94105A193	4.96
10-24			
3/16"	50	94105A237	7.34
1/4"	50	94105A238	7.90
5/16"	50	94105A239	7.44
3/8"	50	94105A240	9.30
10-32			
1/8"	25	94105A188	10.40
3/16"	50	94105A824	7.50
1/4"	50	94105A825	7.79
3/8"	50	94105A826	6.77
1/2"	50	94105A828	8.14
3/4"	50	94105A830	9.77
1"	25	94105A835	8.01
1/4"-20			
3/16"	50	94105A532	10.03
1/4"	50	94105A533	7.96
5/16"	50	94105A534	6.67
3/8"	50	94105A535	9.89
1/2"	50	94105A537	10.16
5/8"	25	94105A538	4.85
3/4"	25	94105A539	6.94
1/4"-20 (Cont.)			
1"	25	94105A541	8.57
1 1/2"	10	94105A544	9.41
2"	10	94105A547	12.38
1/4"-28			
3/16"	50	94105A625	8.06
1/4"	50	94105A630	7.69
3/8"	50	94105A635	8.13
1/2"	25	94105A638	8.81
5/8"	25	94105A641	10.32
5/16"-18			
1/4"	50	94105A574	10.60
5/16"	50	94105A575	9.22
3/8"	50	94105A576	9.85
1/2"	50	94105A578	8.40
5/8"	50	94105A579	12.97
3/4"	25	94105A580	6.96
1"	25	94105A583	7.31
5/16"-24			
3/8"	10	94105A588	2.25
1/2"	25	94105A590	7.60
5/8"	25	94105A593	8.18
3/4"	25	94105A596	9.38
3/8"-16			
1/4"	10	94105A603	2.83
3/8"	50	94105A605	9.48
1/2"	50	94105A610	9.90
5/8"	25	94105A613	7.21
3/4"	10	94105A614	3.60
1"	10	94105A615	3.35
3/8"-24			
1/4"	25	94105A616	9.95
3/8"	50	94105A617	9.96
1/2"	50	94105A619	10.77
3/4"	10	94105A621	8.25
1/2"-13			
3/8"	25	94105A706	12.89
1/2"	10	94105A707	5.44
5/8"	10	94105A708	5.91
3/4"	10	94105A710	6.11
1/2"-13 (Cont.)			
1"	10	94105A712	$7.56
1 1/4"	5	94105A715	9.40
1/2"-20			
1/2"	25	94105A730	13.37
5/8"-11			
5/8"	5	94105A740	$9.89
3/4"	5	94105A742	12.30
1"	5	94105A744	12.29

Self-Locking Black Alloy Steel—*Meets ASTM F912*

Lg.	Pkg. Qty.		Per Pkg.
4-40			
3/16"	25	94495A201	9.46
6-32			
3/8"	25	94495A210	9.12
8-32			
1/4"	25	94495A221	8.66
3/8"	25	94495A223	8.78
1/2"	25	94495A225	9.01
10-32			
3/16"	25	94495A231	8.89
1/4"	25	94495A235	9.12
1/4"-20			
1/4"	25	94495A241	8.89
3/8"	25	94495A243	9.23
1/4"-20 (Cont.)			
1/2"	25	94495A245	9.98
3/4"	25	94495A247	10.95
1/4"-28			
1/4"	25	94495A251	8.89
3/8"	25	94495A253	9.23
5/16"-18			
5/16"	25	94495A261	9.46
3/8"	10	94495A263	7.15
5/8"	10	94495A265	6.58
5/16"-24			
5/16"	25	94495A271	9.63
3/8"-24			
3/8"	25	94495A281	11.12
1/2"	25	94495A283	11.82

Metric 18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—Pitch: 0.4 mm			
3	50	92605A042	$11.71
4	10	92605A043	4.24
5	50	92605A044	12.90
M3—Pitch: 0.5 mm			
3	25	92605A097	2.73
4	50	92605A098	5.19
6	25	92605A100	2.57
8	25	92605A102	2.77
10	50	92605A104	5.14
12	50	92605A106	6.41
16	50	92605A108	6.73
20	25	92605A109	5.34
M4—Pitch: 0.7 mm			
4	25	92605A110	2.91
6	25	92605A112	3.08
8	25	92605A113	3.22
10	50	92605A115	13.10
12	50	92605A117	6.48
16	50	92605A121	7.90
20	50	92605A123	8.64
M5—Pitch: 0.8 mm			
5	50	92605A228	3.88
6	50	92605A229	3.77
8	50	92605A231	3.44
10	50	92605A233	6.38
12	50	92605A235	6.55
16	50	92605A239	6.74
20	25	92605A243	4.83
25	25	92605A248	5.56
30	25	92605A253	6.00
M6—Pitch: 1 mm			
6	50	92605A125	$12.33
8	25	92605A127	3.37
10	25	92605A128	3.88
12	25	92605A129	3.94
16	10	92605A132	3.43
20	25	92605A134	6.71
25	25	92605A136	8.79
30	10	92605A137	4.84
35	10	92605A138	5.20
M8—Pitch: 1.25 mm			
8	25	92605A139	5.37
10	10	92605A141	2.77
12	10	92605A142	2.79
16	10	92605A144	3.80
20	10	92605A148	8.10
25	10	92605A150	5.94
30	10	92605A152	7.10
35	10	92605A153	7.66
40	5	92605A154	6.44
M10—Pitch: 1.5 mm			
10	25	92605A155	13.64
12	10	92605A156	7.27
16	10	92605A157	9.55
20	10	92605A161	8.57
25	5	92605A166	4.70
30	5	92605A171	9.04
35	5	92605A176	7.23
40	1	92605A180	2.36
50	1	92605A190	3.05
60	1	92605A200	3.26

Metric Black Alloy Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
3	100	93245A097	7.64
4	100	93245A098	8.19
5	100	93245A099	9.28
6	100	93245A100	9.28
8	100	93245A102	9.82
10	100	93245A104	9.82
12	100	93245A106	12.01
16	50	93245A107	8.06
M4—Pitch: 0.7 mm			
4	100	93245A110	7.64
5	100	93245A111	8.19
6	100	93245A112	9.28
8	100	93245A113	9.28
10	100	93245A114	11.46
12	100	93245A115	13.10
16	100	93245A117	13.64
20	50	93245A119	9.82
M5—Pitch: 0.8 mm			
4	100	93245A210	12.42
5	100	93245A213	7.16
6	100	93245A215	6.35
8	100	93245A219	6.19
10	100	93245A222	9.64
12	100	93245A225	9.31
16	100	93245A228	11.93
20	50	93245A231	7.92
25	50	93245A234	8.17
M6—Pitch: 1 mm			
5	50	93245A125	8.61
6	100	93245A126	7.64
8	100	93245A127	8.19
10	100	93245A128	9.28
12	100	93245A129	12.83
16	100	93245A131	13.10
20	25	93245A133	3.06

(Continued on following page)

Flat Point Set Screws *(Continued from previous page)*

Great for making frequent adjustments, these hex socket set screws cause little or no damage to the surface they touch. You'll get the greatest contact using them on flat surfaces. Length listed is the overall length.

Inch Sizes— All have a Class 3A thread fit. Screw dimensions meet ASME B18.3. *Self-locking black alloy steel* screws are reusable and have a nylon patch on the threads that keeps them from vibrating loose. The patch retains its holding power at temperatures from –65° to +250° F.

Metric Sizes— *18-8 stainless steel* screws have a Class 6g thread fit; *metric black alloy steel* screws have a Class 5g6g thread fit. All metric sizes meet DIN 913/ISO 4026.

Lg., mm	Pkg. Qty.		Per Pkg.
Metric Black Alloy Steel (Cont.)			
M8—*Pitch: 1.25 mm*			
8	100	93245A139	$11.52
10	100	93245A141	12.01
12	50	93245A142	7.91
16	50	93245A143	10.04
20	25	93245A145	6.82
25	25	93245A147	5.84
30	25	93245A149	5.95
M10—*Pitch: 1.5 mm*			
10	50	93245A155	$9.28
12	25	93245A156	6.00
16	25	93245A157	6.69
20	25	93245A159	9.55
25	25	93245A161	12.49
30	25	93245A163	11.59
35	10	93245A164	9.52
Metric Black Alloy Steel (Cont.)			
M10 (Cont.)			
40	10	93245A165	$7.59
50	10	93245A167	10.00
60	5	93245A168	7.85
M12—*Pitch: 1.75 mm*			
12	25	93245A169	10.11
16	10	93245A171	5.45
20	10	93245A173	5.91
M12 (Cont.)			
25	10	93245A175	$7.28
30	10	93245A177	7.17
35	10	93245A179	10.00
40	10	93245A181	11.42
50	10	93245A183	14.29

Nylon Flat Point Set Screws

Nonconductive and chemical resistant, these hex socket set screws are an economical alternative to metal flat point set screws. A good choice if you'll be making frequent adjustments, they're tough, lightweight, and cause little damage to the surface they touch. Color is off-white. Temperature range is –40° to +185° F. Class 2A thread fit. Length listed is the overall length.

Lg.	Pkg. Qty.		Per Pkg.
6-32			
1/8"	100	94564A021	$5.10
3/16"	100	94564A022	5.13
1/4"	100	94564A023	5.16
3/8"	100	94564A025	5.24
1/2"	100	94564A027	5.27
8-32			
1/8"	100	94564A032	5.31
3/16"	100	94564A034	5.33
1/4"	100	94564A036	5.35
3/8"	100	94564A037	5.38
1/2"	100	94564A039	5.42
10-32			
1/4"	100	94564A045	5.73
3/8"	100	94564A046	5.80
1/2"	100	94564A047	5.84
1/4"-20			
1/4"	100	94564A065	6.52
5/16"	100	94564A075	6.53
3/8"	100	94564A070	6.56
1/2"	100	94564A080	6.60
5/8"	100	94564A085	6.63
3/4"	100	94564A090	6.67
1"	100	94564A095	6.71
1 1/2"	100	94564A100	6.88
1 3/4"	100	94564A105	7.49
2"	100	94564A110	7.54
2 1/2"	100	94564A115	11.78
1/4"-28			
3/16"	100	94564A205	$7.03
1/4"	100	94564A210	7.05
3/8"	100	94564A215	7.10
5/8"	100	94564A220	7.17
3/4"	100	94564A225	7.21
1"	100	94564A230	7.26
5/16"-18			
1/2"	50	94564A305	10.43
3/4"	50	94564A310	10.58
1"	50	94564A315	10.72
3/8"-16			
1/2"	50	94564A405	11.06
3/4"	50	94564A410	11.51
1"	50	94564A415	11.94
1/2"-13			
1/2"	25	94564A505	10.38
3/4"	25	94564A510	10.81
1"	25	94564A515	11.03
1 1/4"	25	94564A520	11.35
5/8"-11			
1/2"	25	94564A605	11.15
3/4"	25	94564A610	11.50
1"	25	94564A615	11.87
1 1/2"	25	94564A620	12.74
3/4"-10			
1/4"	25	94564A705	10.87

Slotted Nylon Flat Point Set Screws

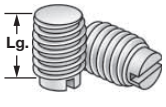

Install these set screws with a standard slotted screwdriver. They're tough, lightweight, and won't damage the surface they touch, so they're a good choice if you'll be making frequent adjustments. Screws are off-white, nonconductive, and chemical resistant. Temperature range is –40° to +185° F. Class 2A thread fit. Length does not include the drive portion.

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/8"	100	95862A103	$5.13
1/4"	100	95862A106	5.19
3/8"	100	95862A108	5.27
1"	100	95862A115	5.42
6-32			
1/8"	100	95862A142	5.31
1/4"	100	95862A144	5.37
3/8"	100	95862A146	5.45
1/2"	100	95862A148	5.48
8-32			
1/8"	100	95862A188	5.52
1/4"	100	95862A190	5.57
8-32 (Cont.)			
3/8"	100	95862A192	$5.61
1/2"	100	95862A194	5.64
10-32			
1/4"	100	95862A253	5.95
3/8"	100	95862A254	6.03
1/2"	100	95862A255	6.06
1"	100	95862A258	6.17
1/4"-20			
1/4"	100	95862A533	6.76
1/2"	100	95862A537	6.84
3/4"	100	95862A540	6.91
1"	100	95862A542	6.96

Oval Point Set Screws

The rounded point is ideal for angled surfaces, and since the area of contact is so small, these hex socket set screws cause little damage—even when frequently adjusted. Recommended for seating into varying types of shaft grooves. Screws have a Class 3A thread fit. Dimensions meet ASME B18.3. Length listed is the overall length.

Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
4-40			
1/8"	25	99553A140	$8.91
3/16"	10	99553A142	3.86
1/4"	10	99553A148	4.04
3/8"	10	99553A156	4.28
6-32			
1/4"	10	99553A179	4.09
3/8"	10	99553A183	4.22
1/2"	10	99553A188	4.30
8-32			
1/4"	10	99553A220	4.16
8-32 (Cont.)			
3/8"	10	99553A223	$4.28
1/2"	10	99553A226	4.43
10-32			
3/16"	10	99553A388	4.30
1/4"	10	99553A393	4.36
3/8"	10	99553A399	4.46
1/2"	10	99553A402	4.69
1/4"-20			
3/8"	10	99553A447	5.17
1/2"	10	99553A453	5.40
18-8 Stainless Steel			
4-40			
1/8"	50	92778A040	5.10
3/16"	50	92778A044	5.20
1/4"	50	92778A047	5.30
3/8"	50	92778A052	5.89
6-32			
1/8"	25	92778A067	3.10
3/16"	25	92778A069	3.11
1/4"	25	92778A071	2.64
3/8"	25	92778A074	2.58
1/2"	25	92778A079	5.83
8-32			
1/4"	25	92778A113	4.64
3/8"	25	92778A114	3.15
8-32 (Cont.)			
1/2"	25	92778A115	5.85
10-32			
3/16"	25	92778A117	4.64
1/4"	25	92778A119	2.71
3/8"	25	92778A120	2.88
1/2"	25	92778A121	3.27
3/4"	25	92778A122	8.37
1/4"-20			
3/8"	25	92778A123	10.07
1/2"	25	92778A127	11.88
3/8"-16			
5/8"	10	92778A135	8.36
Black Alloy Steel—*Meets ASTM F912*			
4-40			
1/8"	50	92765A002	8.20
3/16"	50	92765A005	8.38
6-32			
3/16"	50	92765A020	8.25
1/4"	50	92765A023	8.24
8-32			
1/4"	50	92765A152	7.76
5/16"	50	92765A155	8.81
3/8"	50	92765A157	9.03
10-32			
3/16"	50	92765A210	7.60
1/4"	50	92765A212	8.84
5/16"	50	92765A214	9.19
3/8"	50	92765A216	9.01
1/2"	50	92765A219	11.53
3/4"	25	92765A223	14.21
1"	10	92765A226	8.49
1/4"-20			
3/8"	50	92765A304	10.98
1/2"	25	92765A305	6.62
3/4"	25	92765A308	7.14
1"	25	92765A311	7.41
1 1/4"	10	92765A314	6.88
1 1/2"	10	92765A317	8.52
1/4"-28			
1/4"	50	92765A350	10.11
3/8"	50	92765A353	10.63
1/2"	10	92765A356	5.50
1/4"-28 (Cont.)			
3/4"	10	92765A359	6.42
1"	10	92765A361	8.11
5/16"-18			
5/16"	50	92765A405	9.95
3/8"	50	92765A408	11.40
1/2"	50	92765A411	14.19
5/8"	25	92765A414	8.14
3/4"	25	92765A417	10.46
1"	25	92765A420	13.38
3/8"-16			
1/2"	25	92765A502	7.16
5/8"	25	92765A504	6.92
3/4"	25	92765A507	10.50
1"	10	92765A510	5.78
1 1/2"	10	92765A512	14.08
3/8"-24			
1/2"	25	92765A548	9.75
5/8"	10	92765A550	5.43
3/4"	10	92765A553	8.87
1"	10	92765A559	10.65
1 1/2"	5	92765A562	8.16
1/2"-13			
1"	10	92765A614	8.59
1/2"-20			
3/4"	5	92765A647	8.42
1"	5	92765A650	9.98
3/4"-10			
3/4"	1	92765A705	4.34
1"	1	92765A708	5.13

Conformable Soft-Tip Set Screws

With rigid yet soft flat tips, these hex socket set screws conform to the texture and curves of a surface without marring. Ideal for use on gears and collars. Dimensions meet ASME B18.3. Screws have a Class 3A thread fit. Length listed does not include tip. Alloy steel screws have a minimum Rockwell hardness of C28.

***Silver Tip*—**Softer than brass; a small drop is enough to provide greater holding power. Conductive.

***Nylon Tip*—**Noise reducing, vibration damping, and nonconductive. Temperature range is –50° to +250° F.

***Brass Tip*—**The hardest tip material. Conductive.

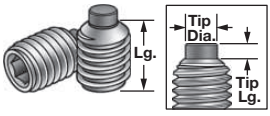

Silver Tip 18-8 Stainless Steel—*Tip dimensions not available.*

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/8"	5	99934A140	$5.08
4-40			
1/8"	5	99934A210	5.53
1/4"	5	99934A220	5.65
6-32			
1/8"	5	99934A330	5.65
1/4"	5	99934A340	5.65
8-32			
3/16"	5	99934A440	6.21
3/8"	5	99934A450	5.59
10-24			
3/8"	5	99934A510	5.59
10-32			
3/16"	5	99934A620	$6.21
3/8"	5	99934A640	5.59
1/4"-20			
1/4"	5	99934A750	6.21
3/8"	5	99934A760	5.90
5/16"-18			
1/2"	5	99934A830	6.10
3/4"	5	99934A840	6.20
3/8"-16			
1/2"	5	99934A960	6.30

Nylon Tip 18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56—Tip: Dia. 1/32"; Lg. 1/32"			
1/8"	10	90291A074	8.03
1/4"	10	90291A077	8.00
4-40—Tip: Dia. 1/16"; Lg. 1/32"			
1/8"	25	90291A103	13.18
3/16"	25	90291A105	14.64
1/4"	25	90291A106	14.90
3/8"	10	90291A108	6.89
6-32—Tip: Dia. 1/16"; Lg. 1/32"			
1/8"	25	90291A142	14.90
3/16"	10	90291A143	6.60
1/4"	10	90291A144	6.60
3/8"	10	90291A146	9.55
1/2"	10	90291A148	8.60
8-32—Tip: Dia. 3/32"; Lg. 3/64"			
1/8"	10	90291A183	9.14
3/16"	25	90291A189	13.21
1/4"	25	90291A190	13.24
3/8"	25	90291A192	14.90
5/8"	10	90291A194	8.20
10-24—Tip: Dia. 3/32"; Lg. 3/64"			
3/16"	10	90291A234	6.34
1/4"	25	90291A238	14.90
3/8"	10	90291A240	7.03
3/4"	10	90291A242	7.97
10-32—Tip: Dia. 3/32"; Lg. 3/64"			
3/16"	25	90291A826	13.63
1/4"	25	90291A825	12.94
3/8"	25	90291A827	12.69
1/2"	25	90291A829	13.35
3/4"	10	90291A831	8.37
1/4"-20—Tip: Dia. 1/8"; Lg. 1/16"			
3/16"	10	90291A529	9.02
1/4"	25	90291A533	14.61
5/16"	25	90291A534	14.83
3/8"	25	90291A535	14.90
1/2"	10	90291A537	6.74
3/4"	10	90291A540	8.20
1"	10	90291A542	8.69
1/4"-28—Tip: Dia. 1/8"; Lg. 1/16"			
1/4"	25	90291A303	14.90
3/8"	10	90291A305	6.55
5/16"-18—Tip: Dia. 3/16"; Lg. 3/32"			
3/8"	10	90291A576	8.37
1/2"	10	90291A578	8.14
3/4"	10	90291A581	10.88
1"	10	90291A583	13.72
5/16"-24—Tip: Dia. 3/16"; Lg. 3/32"			
3/8"	10	90291A405	8.37
1/2"	10	90291A407	8.52
3/8"-16—Tip: Dia. 3/16"; Lg. 3/32"			
3/8"	10	90291A617	9.80
1/2"	10	90291A619	12.94
3/4"	10	90291A622	13.54
1"	10	90291A624	14.97
3/8"-24—Tip: Dia. 3/16"; Lg. 3/32"			
3/8"	10	90291A444	11.74
3/4"	10	90291A449	13.54
1/2"-13—Tip: Dia. 1/4"; Lg. 1/8"			
5/8"	5	90291A709	11.20
3/4"	5	90291A710	11.93
1"	5	90291A712	14.90

Nylon Tip Black Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56—Tip: Dia. 1/32"; Lg. 1/32"			
1/8"	10	94115A051	9.80
1/4"	10	94115A056	10.03
4-40—Tip: Dia. 1/16"; Lg. 1/32"			
1/8"	10	94115A103	8.31
3/16"	25	94115A105	13.54
1/4"	25	94115A106	11.96
3/8"	25	94115A107	13.54
6-32—Tip: Dia. 1/16"; Lg. 1/32"			
1/8"	10	94115A142	9.29
3/16"	25	94115A143	13.66
1/4"	25	94115A144	11.68
3/8"	25	94115A164	12.72
1/2"	25	94115A184	13.80
8-32—Tip: Dia. 3/32"; Lg. 3/64"			
1/8"	25	94115A188	14.29
3/16"	25	94115A189	14.26
1/4"	25	94115A190	12.34
3/8"	25	94115A192	13.15
1/2"	25	94115A198	14.83
5/8"	10	94115A196	6.51
10-24—Tip: Dia. 3/32"; Lg. 3/64"			
3/16"	10	94115A237	8.60
1/4"	25	94115A238	12.26
5/16"	25	94115A239	12.75
3/8"	25	94115A240	13.06
1/2"	25	94115A242	13.41
3/4"	25	94115A246	14.54
10-32—Tip: Dia. 3/32"; Lg. 3/64"			
3/16"	10	94115A824	8.60
1/4"	25	94115A825	12.26
5/16"	25	94115A826	12.75
3/8"	25	94115A827	13.06
10-32 (Cont.)			
1/2"	25	94115A829	13.41
3/4"	25	94115A831	14.29
1/4"-20—Tip: Dia. 1/8"; Lg. 1/16"			
1/4"	25	94115A533	11.68
5/16"	25	94115A534	11.86
3/8"	25	94115A535	12.00
1/2"	25	94115A537	12.55
5/8"	25	94115A539	13.66
3/4"	25	94115A541	14.83
1"	10	94115A547	7.09
1 1/4"	5	94115A551	11.14
1 1/2"	5	94115A558	11.45
1/4"-28—Tip: Dia. 1/8"; Lg. 1/16"			
1/4"	25	94115A303	11.68
3/8"	25	94115A305	12.00
1/2"	25	94115A307	12.94
5/16"-18—Tip: Dia. 3/16"; Lg. 3/32"			
1/4"	10	94115A574	9.20
5/16"	25	94115A575	14.58
3/8"	25	94115A576	14.77
1/2"	10	94115A578	6.91
3/4"	10	94115A581	8.57
1"	10	94115A583	10.18
5/16"-24—Tip: Dia. 3/8"; Lg. 3/32"			
3/8"	25	94115A406	14.77
3/8"-16—Tip: Dia. 3/16"; Lg. 3/32"			
1/4"	10	94115A614	7.34
3/8"	10	94115A617	6.51
1/2"	10	94115A619	7.06
3/4"	10	94115A622	8.77
1"	10	94115A624	10.19
3/8"-24—Tip: Dia. 3/16"; Lg. 3/32"			
3/8"	10	94115A417	$6.74
1/2"	10	94115A408	7.06
1/2"-13—Tip: Dia. 1/4"; Lg. 1/8"			
1/2"	10	94115A707	$13.06
3/4"	10	94115A710	14.17
1"	5	94115A712	8.38

Brass Tip 18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56—Tip: Dia. 1/32"; Lg. 1/32"			
1/8"	10	90669A074	11.03
1/4"	10	90669A077	11.03
4-40—Tip: Dia. 1/16"; Lg. 1/32"			
1/8"	10	90669A103	8.47
1/4"	10	90669A106	7.03
6-32—Tip: Dia. 1/16"; Lg. 1/32"			
1/8"	10	90669A142	8.69
1/4"	10	90669A143	7.11
8-32—Tip: Dia. 3/32"; Lg. 3/64"			
3/16"	10	90669A189	6.91
1/4"	10	90669A190	6.92
3/8"	10	90669A192	8.51
10-24—Tip: Dia. 3/32"; Lg. 3/64"			
1/4"	10	90669A238	6.71
3/8"	10	90669A240	8.16
10-32—Tip: Dia. 3/32"; Lg. 3/64"			
3/16"	10	90669A337	7.20
1/4"	10	90669A338	6.72
10-32 (Cont.)			
3/8"	10	90669A340	8.45
1/2"	10	90669A342	10.12
3/4"	10	90669A346	10.90
1/4"-20—Tip: Dia. 1/8"; Lg. 1/16"			
1/4"	25	90669A533	14.90
3/8"	25	90669A535	14.95
1/2"	10	90669A537	6.73
3/4"	10	90669A540	8.45
1/4"-28—Tip: Dia. 1/8"; Lg. 1/16"			
1/4"	10	90669A351	7.30
3/8"	10	90669A353	8.20
5/16"-18—Tip: Dia. 3/16"; Lg. 3/32"			
3/8"	10	90669A576	9.08
1/2"	10	90669A578	9.32
3/8"-16—Tip: Dia. 3/16"; Lg. 3/32"			
1/2"	10	90669A619	13.66
3/4"	10	90669A622	14.95

Brass Tip Black Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56—Tip: Dia. 1/8"; Lg. 1/32"			
1/8"	10	91381A074	14.68
1/4"	10	91381A077	14.85
4-40—Tip: Dia. 1/16"; Lg. 1/32"			
1/8"	10	91381A670	9.49
3/16"	10	91381A681	8.92
1/4"	10	91381A671	8.29
3/8"	10	91381A675	9.46
1/2"	10	91381A686	9.83
6-32—Tip: Dia. 1/16"; Lg. 1/32"			
1/8"	10	91381A672	8.92
3/16"	10	91381A691	8.38
1/4"	10	91381A673	7.06
3/8"	10	91381A674	7.17
1/2"	10	91381A677	8.14
8-32—Tip: Dia. 3/32"; Lg. 3/64"			
1/8"	10	91381A191	8.51
3/16"	10	91381A189	7.31
1/4"	10	91381A190	6.60
5/16"	10	91381A195	6.74
3/8"	10	91381A192	6.83
1/2"	10	91381A194	6.89
5/8"	10	91381A196	8.31
10-24—Tip: Dia. 3/32"; Lg. 3/64"			
3/16"	25	91381A236	14.23
1/4"	25	91381A238	11.06
3/8"	25	91381A240	11.64
1/2"	25	91381A242	11.89
3/4"	25	91381A244	14.35
10-32—Tip: Dia. 3/32"; Lg. 3/64"			
3/16"	25	91381A337	11.96
1/4"	25	91381A338	11.06
3/8"	25	91381A340	11.64
1/2"	25	91381A342	11.89
3/4"	25	91381A344	14.90
1/4"-20—Tip: Dia. 1/8"; Lg. 1/16"			
3/16"	25	91381A532	12.60
1/4"	25	91381A533	11.36
5/16"	25	91381A534	11.51
3/8"	25	91381A535	11.74
1/2"	25	91381A537	12.37
5/8"	25	91381A539	13.20
3/4"	25	91381A540	13.80
1"	25	91381A542	14.71
1 1/4"	5	91381A547	11.96
1 1/2"	5	91381A555	12.37
1/4"-28—Tip: Dia. 1/8"; Lg. 1/16"			
1/4"	25	91381A351	11.36
3/8"	25	91381A353	11.74
1/2"	25	91381A357	13.20
3/4"	25	91381A391	14.20
1"	10	91381A359	7.03
5/16"-18—Tip: Dia. 3/16"; Lg. 3/32"			
1/4"	25	91381A574	12.62
5/16"	25	91381A575	12.75
3/8"	25	91381A576	12.97
1/2"	25	91381A578	14.02
5/8"	25	91381A580	14.86
3/4"	25	91381A581	14.54
1"	10	91381A583	8.40
1 1/4"	5	91381A588	13.35
1 1/2"	5	91381A593	13.80
5/16"-24—Tip: Dia. 3/16"; Lg. 3/32"			
1/4"	25	91381A358	14.43
3/8"	25	91381A360	13.22
1/2"	25	91381A361	14.02
5/8"	25	91381A363	14.90
3/4"	10	91381A367	6.97
1"	10	91381A364	8.17
3/8"-16—Tip: Dia. 3/16"; Lg. 3/32"			
1/4"	25	91381A615	14.80
5/16"	25	91381A616	14.85
3/8"	25	91381A617	14.90
1/2"	25	91381A619	14.95
5/8"	25	91381A621	14.98
3/4"	10	91381A622	6.89
1"	10	91381A624	8.51
1 1/4"	5	91381A633	14.37
1 1/2"	5	91381A639	14.86
3/8"-24—Tip: Dia. 3/16"; Lg. 3/32"			
3/8"	25	91381A365	14.40
1/2"	25	91381A366	14.95
5/8"	10	91381A368	6.57
3/4"	10	91381A369	6.89
1"	10	91381A374	8.51
1/2"-13—Tip: Dia. 1/4"; Lg. 1/8"			
1/2"	10	91381A664	11.20
5/8"	10	91381A666	11.17
3/4"	10	91381A667	11.92
1"	10	91381A669	13.57
1 1/4"	1	91381A678	3.37
1 1/2"	1	91381A682	3.49
1/2"-20—Tip: Dia. 1/4"; Lg. 1/8"			
1/2"	10	91381A381	11.29
3/4"	10	91381A379	12.43
1"	5	91381A385	7.43
5/8"-11—Tip: Dia. 3/8"; Lg. 9/64"			
1/2"	1	91381A709	4.56
3/4"	1	91381A717	4.20
1"	1	91381A723	4.37
1 1/4"	1	91381A729	4.52
1 1/2"	1	91381A735	4.56

Metric Conformable Soft-Tip Set Screws

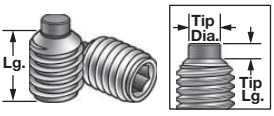

Sized for metric applications, these hex socket set screws have a flat tip that's rigid, yet soft enough to conform to the textures and curves of a surface without marring. They also dampen vibration and are ideal for use on gears and collars. Screws meet ANSI/ASME B18.3.6M and have a Class 6g thread fit. Length listed does not include the tip. Alloy steel screws have a minimum Rockwell hardness of C28.

Nylon Tip—Noise reducing and nonconductive. Temperature range is –50° to +250° F.

Brass Tip—Harder than a nylon tip. Conductive.

Nylon Tip 18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—*Pitch: 0.4 mm; Tip: Dia. 0.8 mm; Lg. 0.8 mm*			
3	1	93285A009	$4.76
4	1	93285A014	4.88
5	1	93285A018	4.96
6	1	93285A023	5.00
M3—*Pitch: 0.5 mm; Tip: Dia. 1.6 mm; Lg. 0.8 mm*			
3	5	93285A110	12.24
4	5	93285A112	12.28
5	5	93285A114	12.28
6	5	93285A115	12.32
8	5	93285A119	13.68
10	5	93285A125	13.88
M4—*Pitch: 0.7 mm; Tip: Dia. 2.4 mm; Lg. 1.2 mm*			
4	5	93285A210	12.28
5	5	93285A211	12.32
6	5	93285A212	12.44
10	5	93285A216	12.76
M5—*Pitch: 0.8 mm; Tip: Dia. 2.4 mm; Lg. 1.2 mm*			
6	5	93285A312	$12.36
8	5	93285A314	12.48
10	5	93285A316	12.60
14	5	93285A321	14.28
20	5	93285A327	14.96
M6—*Pitch: 1 mm; Tip: Dia. 3.2 mm; Lg. 1.6 mm*			
6	5	93285A412	12.48
10	5	93285A416	12.76
16	5	93285A420	14.92
25	1	93285A425	3.36
M8—*Pitch: 1.25 mm; Tip: Dia. 4.8 mm; Lg. 2.4 mm*			
6	1	93285A501	5.40
8	1	93285A513	3.64
10	1	93285A526	3.68
12	1	93285A538	3.72

Nylon Tip Black Alloy Steel—*Meets ASTM F912*

Lg., mm	Pkg. Qty.		Per Pkg.
M3—*Pitch: 0.5 mm; Tip: Dia. 1.6 mm; Lg. 0.8 mm*			
3	10	94095A020	14.88
4	10	94095A021	14.88
5	10	94095A024	14.92
6	10	94095A025	14.96
M4—*Pitch: 0.7 mm; Tip: Dia. 2.4 mm; Lg. 1.2 mm*			
4	10	94095A110	13.68
6	10	94095A112	13.68
8	10	94095A113	13.72
10	10	94095A114	13.68
M5—*Pitch: 0.8 mm; Tip: Dia. 2.4 mm; Lg. 1.2 mm*			
5	10	94095A120	13.76
6	10	94095A121	13.76
8	10	94095A124	13.84
M6—*Pitch: 1 mm; Tip: Dia. 3.2 mm; Lg. 1.6 mm*			
6	10	94095A126	13.88
8	10	94095A127	13.92
M6 (Cont.)			
10	10	94095A128	13.92
12	10	94095A129	13.96
16	5	94095A133	8.44
M8—*Pitch: 1.25 mm; Tip: Dia. 4.8 mm; Lg. 2.4 mm*			
6	1	94095A136	4.88
8	10	94095A139	14.36
10	10	94095A140	14.40
12	10	94095A142	14.56
16	10	94095A143	14.60
20	10	94095A145	14.84
M10—*Pitch: 1.5 mm; Tip: Dia. 4.8 mm; Lg. 2.4 mm*			
10	10	94095A155	14.36
16	5	94095A157	8.72
25	5	94095A162	9.24

Brass Tip 18-8 Stainless Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M3—*Pitch: 0.5 mm; Tip: Dia. 1.6 mm; Lg. 0.8 mm*			
3	5	90418A101	$9.94
4	5	90418A103	9.97
5	5	90418A105	10.00
6	5	90418A107	10.11
10	5	90418A111	11.20
M4—*Pitch: 0.7 mm; Tip: Dia. 2.4 mm; Lg. 1.2 mm*			
4	5	90418A223	9.97
6	5	90418A226	10.14
8	5	90418A229	10.29
10	5	90418A234	10.40
M5—*Pitch: 0.8 mm; Tip: Dia. 2.4 mm; Lg. 1.2 mm*			
5	5	90418A341	10.11
6	5	90418A343	10.14
M5 (Cont.)			
8	5	90418A345	$10.20
10	5	90418A347	10.29
M6—*Pitch: 1 mm; Tip: Dia. 3.2 mm; Lg. 1.6 mm*			
6	5	90418A441	10.23
8	5	90418A443	10.29
10	5	90418A447	10.37
12	5	90418A451	11.20
M8—*Pitch: 1.25 mm; Tip: Dia. 4.8 mm; Lg. 2.4 mm*			
6	1	90418A662	4.23
8	1	90418A664	2.86
10	1	90418A668	2.97
12	1	90418A671	3.00
16	1	90418A676	3.06

Brass Tip Black Alloy Steel—*Meets ASTM F912*

Lg., mm	Pkg. Qty.		Per Pkg.
M3—*Pitch: 0.5 mm; Tip: Dia. 1.6 mm; Lg. 0.8 mm*			
3	5	94085A090	8.88
4	5	94085A091	9.24
5	5	94085A092	9.24
6	5	94085A093	8.93
M4—*Pitch: 0.7 mm; Tip: Dia. 2.4 mm; Lg. 1.2 mm*			
4	5	94085A100	8.52
6	5	94085A112	8.56
8	5	94085A113	8.56
10	5	94085A114	8.56
M5—*Pitch: 0.8 mm; Tip: Dia. 2.4 mm; Lg. 1.2 mm*			
5	5	94085A119	8.40
6	5	94085A120	8.40
8	5	94085A122	8.44
10	5	94085A123	8.44
M6—*Pitch: 1 mm; Tip: Dia. 3.2 mm; Lg. 1.6 mm*			
6	5	94085A126	8.72
8	5	94085A127	8.72
10	5	94085A128	8.72
M6 (Cont.)			
12	5	94085A129	8.76
16	5	94085A131	8.76
20	5	94085A133	8.88
25	5	94085A136	9.76
M8—*Pitch: 1.25 mm; Tip: Dia. 4.8 mm; Lg. 2.4 mm*			
6	1	94085A137	4.96
8	5	94085A139	8.92
10	5	94085A141	8.92
12	5	94085A142	8.92
16	5	94085A143	9.00
25	5	94085A145	10.12
30	5	94085A148	11.04
M10—*Pitch: 1.5 mm; Tip: Dia. 4.8 mm; Lg. 2.4 mm*			
10	5	94085A155	9.44
12	5	94085A156	9.72
16	5	94085A157	10.20
20	5	94085A161	9.08
25	5	94085A162	10.64

Swivel Pad Set Screws for Angled Surfaces

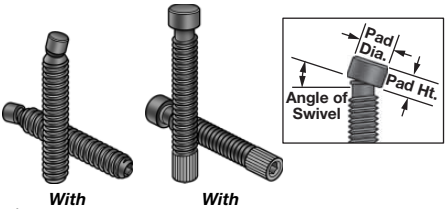

With 7½° Swivel Pad ***With 10° Swivel Pad***

As you tighten these screws, a self-aligning pad swivels to make maximum contact against angled and uneven surfaces. Pads swivel in all directions and stop rotating upon contact to reduce damage if the screw is overtightened. Screws have a hex socket and a Class 2A thread fit. Length listed includes the pad.

Screws with 7½° Swivel Pad—The pad is narrower than the screw, so you can thread these screws straight through holes where clearance is limited. Pads are not removable. Pad and screw are made from black alloy steel. The pad has a minimum Rockwell hardness of C32; the screw has a minimum Rockwell hardness of C45.

Screws with 10° Swivel Pad—These screws have wider pads than the screws above, so they provide more gripping power. To use, remove the pad, thread the screw through the hole, and reattach the pad on the other side. Pad and screw are made from black 12L14 steel and have a minimum Rockwell hardness of C30. For replacement pads, see 90165A on page 3093.

Lg.	Pad Swivel	Pad Dia.	Pad Ht.		Each
10-32—*Hex Size: 3/32"*					
1/2"	7½°	9/64"	1/8"	92432A452	$5.20
1/4"-20—*Hex Size: 1/8"*					
1/2"	7½°	3/16"	5/32"	92432A454	5.45
3/4"	7½°	3/16"	5/32"	92432A456	5.32
1"	7½°	3/16"	5/32"	92432A458	5.03
1½"	7½°	3/16"	5/32"	92432A460	5.11
1⅞"	10°	5/16"	3/16"	91925A111	4.94
2⅝"	10°	5/16"	3/16"	91925A115	5.05
3⅜"	10°	5/16"	3/16"	91925A119	5.26
5/16"-18—*Hex Size: 5/32"*					
3/4"	7½°	1/4"	3/16"	92432A462	5.78
1"	7½°	1/4"	3/16"	92432A464	6.27
1½"	7½°	1/4"	3/16"	92432A466	5.58
2"	7½°	1/4"	3/16"	92432A468	6.48
2 3/16"	10°	3/8"	7/32"	91925A127	5.26
5/16"-18 (Cont.)					
2 15/16"	10°	3/8"	7/32"	91925A131	$5.42
4 7/16"	10°	3/8"	7/32"	91925A133	6.14
3/8"-16—*Hex Size: 3/16"*					
3/4"	7½°	19/64"	1/4"	92432A470	5.50
1"	7½°	19/64"	1/4"	92432A472	5.35
1½"	7½°	19/64"	1/4"	92432A474	5.63
2"	7½°	19/64"	1/4"	92432A476	6.48
2 5/16"	10°	7/16"	1/4"	91925A143	5.76
3 1/16"	10°	7/16"	1/4"	91925A147	6.03
3 13/16"	10°	7/16"	1/4"	91925A151	6.60
5 5/16"	10°	7/16"	1/4"	91925A159	7.80
1/2"-13—*Hex Size: 1/4"*					
3/4"	7½°	13/32"	9/32"	92432A478	9.46
1"	7½°	13/32"	9/32"	92432A480	6.75
1½"	7½°	13/32"	9/32"	92432A482	7.84
1/2"-13 (Cont.)					
2"	7½°	13/32"	9/32"	92432A484	$8.48
3"	7½°	13/32"	9/32"	92432A486	8.53
3 1/4"	10°	9/16"	5/16"	91925A163	6.76
3 15/16"	10°	9/16"	5/16"	91925A167	7.40
4 11/16"	10°	9/16"	5/16"	91925A171	8.17
6 3/16"	10°	9/16"	5/16"	91925A179	9.66
5/8"-11—*Hex Size: 5/16"*					
2"	7½°	1/2"	11/32"	92432A490	9.68
3"	7½°	1/2"	11/32"	92432A491	10.79
3⅝"	10°	11/16"	13/32"	91925A183	8.33
5⅛"	10°	11/16"	13/32"	91925A187	10.02
6⅝"	10°	11/16"	13/32"	91925A192	11.78
3/4"-10—*Hex Size: 3/8"*					
1½"	7½°	5/8"	7/16"	92432A494	14.36
2½"	7½°	5/8"	7/16"	92432A496	12.91

Swivel Ball-Bearing Point Set Screws for Angled Surfaces

Ball bearings swivel in all directions to securely hold screws against angled surfaces with little chance of marring. Also known as ball-ended thrust screws, each has a hex socket drive and is made from alloy steel. Length listed includes the ball.

Inch sizes have a black finish and a Class 3A thread fit. Minimum Rockwell hardness is C45 for the screw and C60 for the ball.

Metric sizes have a black finish and a Class 6g thread fit. Minimum Rockwell hardness is C38 for the screw and C60 for the ball.

Flat-point screws have a flat-faced ball that swivels 9°.

Round-point screws have a completely round ball that swivels 360°.

For Ball-Nose Spring Plungers, see page 2602.

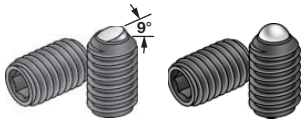

Flat Point *Round Point*

Also Available: Inch-size 18-8 stainless steel swivel ball-bearing point set screws with a Type 410 stainless steel ball. Please ask for 91688A205 for flat-point screws and 91658A141 for round-point screws; then specify thread size and screw length.

Lg.		Each
Flat Point		
1/4"-20—Hex Size: 1/8"; Tip Dia.: 0.120"		
1/2"	91943A510	$5.11
3/4"	91943A514	5.25
5/16"-18—Hex Size: 5/32"; Tip Dia.: 0.147"		
3/4"	91943A561	6.05
1"	91943A564	6.23
3/8"-16—Hex Size: 3/16"; Tip Dia.: 0.192"		
3/4"	91943A601	7.06
1"	91943A612	7.26
1/2"-13—Hex Size: 1/4"; Tip Dia.: 0.290"		
1"	91943A648	8.78
1 1/2"	91943A657	9.02
5/8"-11—Hex Size: 5/16"; Tip Dia.: 0.372"		
1"	91943A714	13.04
1 1/2"	91943A723	13.44
Round Point		
1/4"-20—Hex Size: 1/8"; Tip Dia.: 0.157"		
1/2"	91677A106	3.31
3/4"	91677A110	3.38
5/16"-18—Hex Size: 5/32"; Tip Dia.: 0.216"		
3/4"	91677A114	3.55
1"	91677A118	3.62
3/8"-16—Hex Size: 3/16"; Tip Dia.: 0.275"		
3/4"	91677A122	4.14
1"	91677A126	4.29
1/2"-13—Hex Size: 1/4"; Tip Dia.: 0.334"		
1"	91677A130	5.16
1 1/2"	91677A134	5.31
5/8"-11—Hex Size: 5/16"; Tip Dia.: 0.472"		
1"	91677A138	7.45
1 1/2"	91677A142	7.82

Lg., mm		Each
Metric Flat Point		
M5—Hex Size: 2.5 mm; Pitch: 0.8 mm; Tip Dia.: 2.2 mm		
9.5	92123A101	$8.40
15.5	92123A103	8.56
24.5	92123A105	8.69
M6—Hex Size: 3 mm; Pitch: 1 mm; Tip Dia.: 3.2 mm		
16	92123A112	7.76
20	92123A114	7.76
25	92123A116	7.84
M8—Hex Size: 4 mm; Pitch: 1.25 mm; Tip Dia.: 4.5 mm		
20	92123A121	9.09
25	92123A123	9.18
30	92123A125	9.18
M10—Hex Size: 5 mm; Pitch: 1.5 mm; Tip Dia.: 6 mm		
16	92123A133	9.18
25	92123A136	9.35
35	92123A138	9.77
M12—Hex Size: 6 mm; Pitch: 1.75 mm; Tip Dia.: 7.2 mm		
16	92123A141	12.60
30	92123A145	12.90
40	92123A147	13.25
Metric Round Point		
M4—Hex Size: 2 mm; Pitch: 0.7 mm; Tip Dia.: 2.5 mm		
6	93339A062	4.83
8	93339A064	4.76
12	93339A066	4.76

Lg., mm		Each
Metric Round Point (Cont.)		
M5—Hex Size: 2.5 mm; Pitch: 0.8 mm; Tip Dia.: 3 mm		
8	93339A121	$4.42
12	93339A124	4.42
20	93339A128	4.64
M6—Hex Size: 3 mm; Pitch: 1 mm; Tip Dia.: 4 mm		
10.8	93339A205	4.42
12.8	93339A208	4.42
16.8	93339A211	4.42
20.8	93339A214	4.64
25.8	93339A217	4.64
M8—Hex Size: 4 mm; Pitch: 1.25 mm; Tip Dia.: 5.5 mm		
11.2	93339A221	4.42
13.2	93339A223	4.42
17.2	93339A226	4.38
21.2	93339A227	4.42
31.2	93339A229	4.64
M10—Hex Size: 5 mm; Pitch: 1.5 mm; Tip Dia.: 7 mm		
17.7	93339A230	5.20
21.7	93339A231	5.38
26.7	93339A232	5.33
36.7	93339A235	5.60
M12—Hex Size: 6 mm; Pitch: 1.75 mm; Tip Dia.: 8.5 mm		
22	93339A238	5.85
27	93339A239	6.38
32	93339A241	6.38
42	93339A244	7.07

Set Screws for Indexable Tooling

Typically used to fasten indexable carbide inserts to tool holders, these screws should be replaced when they become worn. (Tool holders are marked with reference numbers to help you select the size you need.) Set screws have a hex socket drive in both ends (unless noted) and are made from heat-treated black alloy steel. Minimum Rockwell hardness is C42. Length listed is the overall length.

Clamp style screws hold tool-holding clamps at the proper height relative to tooling. They have right-hand threads on one end, left-hand threads on the other, and a Class 3A thread fit.

Lock-pin style screws fit into a hole in an insert to keep it in place. They have right-hand threads on one end.

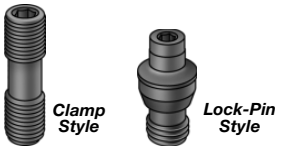

Clamp Style *Lock-Pin Style*

O'all Lg.	Thread Lg. Right Hand	Thread Lg. Left Hand	Hex Size	Reference No.		Each
Clamp Style						
10-32						
0.590"	0.190"	0.190"	3/32"	CS-205	91442A210	$1.55
0.750"	0.250"	0.250"	3/32"	CS-220	91442A250	3.17
0.840"	0.310"	0.310"	3/32"	CS-228	91442A260	1.66
0.875"	0.500"	0.250"	3/32"	CS-230	91442A270	2.56
1/4"-28						
0.564"	0.221"	0.221"	1/8"	CS-304	91442A310♣	3.37
0.690"	0.280"	0.280"	1/8"	CS-306	91442A320	4.00
0.810"	0.280"	0.280"	3/32"	CS-321	91442A370	2.89
0.810"	0.280"	0.280"	1/8"	CS-320	91442A360	1.63
1.000"	0.370"	0.370"	1/8"	CS-330	91442A390	2.88
1.160"	0.450"	0.450"	1/8"	CS-335	91442A400	1.63
5/16"-24						
1.000"	0.250"	0.500"	5/32"	CS-410	91442A410	1.63
1.120"	0.410"	0.470"	5/32"	CS-420	91442A440	1.81
1.125"	0.375"	0.375"	5/32"	CS-416	91442A430♠	3.52
1.156"	0.406"	0.500"	5/32"	CS-425	91442A450	1.63
1.250"	0.500"	0.500"	5/32"	CS-430	91442A460	2.55

♣ Left-hand thread size is 1/4"-32. Has hex drive in one end only.
♠ Left-hand thread size is 5/16"-32. Has hex drive in one end only.

O'all Lg.	Hex Size	Reference No.		Each
Lock-Pin Style				
8-32				
0.322"	1/16"	NL-23	91442A520★	$6.81
10-32				
0.347"	5/64"	NL-33	91442A530	6.80
0.410"	5/64"	NL-33L	91442A540	6.80
0.425"	5/64"	NL-43	91442A570	7.20
0.452"	5/64"	NL-34	91442A550	6.91
0.513"	5/64"	NL-34L	91442A560	6.91
1/4"-28				
0.519"	3/32"	NL-44	91442A580	7.20
0.676"	3/32"	NL-46	91442A590	7.48
0.733"	3/32"	NL-46L	91442A600	7.48
5/16"-24				
0.646"	1/8"	NL-55	91442A610	8.98
0.701"	1/8"	NL-56	91442A620	8.98
0.802"	1/8"	NL-57	91442A630	8.98
0.857"	1/8"	NL-58	91442A640	8.98
0.885"	1/8"	NL-58L	91442A650	8.98
3/8"-24				
0.701"	9/64"	NL-66	91442A660	8.52
0.821"	9/64"	NL-66L	91442A670	8.52
0.857"	9/64"	NL-68	91442A680	9.32
0.948"	9/64"	NL-68L	91442A690	9.32
7/16"-20				
1.167"	5/32"	NL-810	91442A700	10.66

★ Has hex drive in one end only.

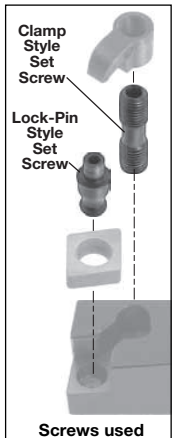

Screws used in a tool holder.

Hollow-Lock Set Screws

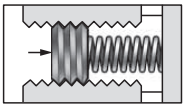

Screws can be used behind a spring to adjust compression.

Also known as jam set screws, hollow-lock set screws are often used to lock other set screws in place, to hold pins, and to adjust spring tension. All screws have a hex socket that can be accessed from either end with a hex key. Class 3A thread fit. Length listed is the overall length.

18-8 stainless steel provides excellent corrosion resistance. It may be mildly magnetic and has a minimum Rockwell hardness of B80.

Black alloy steel offers mild rust resistance and some lubricity. It has a minimum Rockwell hardness of C48.

Thread Size	Lg.	Hex Size	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel					
4-40	5/64"	0.050"	10	91318A010	$7.44
6-32	3/32"	1/16"	10	91318A110	8.56
8-32	7/64"	5/64"	10	91318A210	8.64
10-24	1/8"	3/32"	10	91318A310	6.22
10-32	1/8"	3/32"	10	91318A350	6.22
1/4"-20	1/8"	1/8"	10	91318A410	9.24
1/4"-28	1/8"	1/8"	10	91318A450	10.03
5/16"-18	5/32"	5/32"	10	91318A510	14.44
5/16"-24	5/32"	5/32"	5	91318A550	8.29
3/8"-16	3/16"	3/16"	5	91318A610	10.12
3/8"-24	3/16"	3/16"	5	91318A650	11.06
Black Alloy Steel					
4-40	5/64"	0.050"	25	91301A005	$9.83
6-32	3/32"	1/16"	25	91301A007	10.82
8-32	7/64"	5/64"	25	91301A009	8.80
10-24	1/8"	3/32"	25	91301A011	7.38
10-32	1/8"	3/32"	25	91301A130	7.28
1/4"-20	1/8"	1/8"	25	91301A029	7.39
1/4"-28	1/8"	1/8"	25	91301A140	7.47
5/16"-18	5/32"	5/32"	25	91301A030	8.71
5/16"-24	5/32"	5/32"	25	91301A150	8.51
3/8"-16	3/16"	3/16"	25	91301A031	9.66
3/8"-24	3/16"	3/16"	25	91301A160	9.76
Black Alloy Steel (Cont.)					
7/16"-14	7/32"	7/32"	10	91301A032	$6.88
7/16"-20	7/32"	7/32"	10	91301A170	5.97
1/2"-13	1/4"	1/4"	10	91301A033	7.03
1/2"-20	1/4"	1/4"	10	91301A180	7.00
5/8"-11	5/16"	5/16"	5	91301A035	6.14
5/8"-18	5/16"	5/16"	5	91301A190	6.11
3/4"-10	3/8"	3/8"	5	91301A036	7.56
3/4"-16	3/8"	3/8"	5	91301A200	7.57
7/8"-9	7/16"	1/2"	5	91301A037	14.20
7/8"-14	7/16"	1/2"	5	91301A210	11.16
1"-8	1/2"	9/16"	1	91301A038	2.93
1"-14	1/2"	9/16"	1	91301A220	3.38

Cup Point Square Head Set Screws

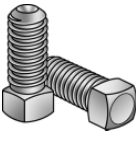

With a prominent square head, these screws are easy to access by hand or with a wrench when you need more torque. All have a cup point that digs into the contact surface to provide high holding power. They're fully threaded and have a Class 2A thread fit. Dimensions meet ASME B18.6.2. Length is measured from under the head.

Type 316 stainless steel offers better corrosion resistance than 18-8 stainless steel and contains molybdenum, which increases corrosion resistance to chlorides and sulfates. It may be mildly magnetic and has a minimum Rockwell hardness of B100.

18-8 stainless steel provides excellent corrosion resistance. It may be mildly magnetic and has a minimum Rockwell hardness of B80.

Black alloy steel offers mild rust resistance and some lubricity. It has a minimum Rockwell hardness of C45.

Plain steel is case hardened C1006-C1022 steel. It has a minimum Rockwell hardness of C45.

Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
1/4"-20—Head: Wd. 1/4"; Ht. 3/16"			
1/2"	10	94087A114	$5.82
3/4"	10	94087A116	7.90
1"	10	94087A118	9.46
5/16"-18—Head: Wd. 5/16"; Ht. 15/64"			
3/4"	10	94087A123	12.90
1"	5	94087A127	6.61
3/8"-16—Head: Wd. 3/8"; Ht. 9/32"			
1"	5	94087A131	9.56
1 1/4"	5	94087A135	13.29
3/8"-16 (Cont.)			
1 1/2"	1	94087A139	$2.88
2"	1	94087A144	3.62
1/2"-13—Head: Wd. 1/2"; Ht. 3/8"			
1"	1	94087A162	3.95
1 1/4"	1	94087A165	4.56
1 1/2"	1	94087A168	4.83
2"	1	94087A171	7.11
2 1/2"	1	94087A175	8.44
18-8 Stainless Steel			
1/4"-20—Head: Wd. 1/4"; Ht. 3/16"			
3/8"	10	92308A535	3.53
1/2"	10	92308A537	3.57
5/8"	10	92308A538	3.88
3/4"	10	92308A540	4.24
1"	10	92308A542	4.79
1 1/4"	10	92308A544	4.68
1 1/2"	10	92308A546	7.18
5/16"-18—Head: Wd. 5/16"; Ht. 15/64"			
1/2"	10	92308A575	5.00
5/8"	10	92308A591	5.05
3/4"	10	92308A581	5.66
1"	10	92308A583	6.07
1 1/4"	10	92308A595	5.09
1 1/2"	10	92308A597	8.46
3/8"-16—Head: Wd. 3/8"; Ht. 9/32"			
3/4"	10	92308A622	6.78
1"	10	92308A624	7.63
1 1/4"	5	92308A626	4.58
1 1/2"	5	92308A628	5.71
2"	5	92308A632	6.63
2 1/2"	1	92308A636	1.40
3"	1	92308A639	1.57
1/2"-13—Head: Wd. 1/2"; Ht. 3/8"			
3/4"	5	92308A710	6.47
1"	5	92308A712	8.53
1 1/4"	1	92308A714	1.73
1 1/2"	1	92308A716	1.75
2"	1	92308A720	1.77
2 1/2"	1	92308A724	2.25
3"	1	92308A726	3.03
3 1/2"	1	92308A732	3.96
4"	1	92308A736	4.43
5/8"-11—Head: Wd. 5/8"; Ht. 31/64"			
1 1/2"	1	92308A806	4.61
2"	1	92308A811	4.68
3"	1	92308A818	7.01
4"	1	92308A825	8.41
3/4"-10—Head: Wd. 3/4"; Ht. 37/64"			
2"	1	92308A933	8.63
3"	1	92308A938	11.50
4"	1	92308A946	12.32
5"	1	92308A949	14.95
Black Alloy Steel			
1/4"-20—Head: Wd. 1/4"; Ht. 3/16"			
1/2"	10	91416A110	6.91
5/8"	10	91416A115	7.31
3/4"	10	91416A120	7.58
1"	10	91416A125	8.51
1 1/4"	10	91416A130	9.45
1 1/2"	10	91416A135	10.37
2"	1	91416A550	2.24
5/16"-18—Head: Wd. 5/16"; Ht. 15/64"			
1/2"	10	91416A210	7.58
3/4"	10	91416A215	8.64
5/16"-18 (Cont.)			
1 1/2"	5	91416A220	5.79
2 1/2"	1	91416A593	3.82
3/8"-16—Head: Wd. 3/8"; Ht. 9/32"			
3/4"	10	91416A310	10.25
1"	5	91416A315	5.65
1 1/4"	5	91416A320	6.50
1 1/2"	5	91416A325	6.98
2"	5	91416A330	9.11
Black Alloy Steel (Cont.)			
1/2"-13—Head: Wd. 1/2"; Ht. 3/8"			
3/4"	5	91416A410	$7.98
1 1/2"	5	91416A415	10.18
2"	5	91416A420	11.83
3"	1	91416A425	3.84
4"	1	91416A728	5.77
5/8"-11—Head: Wd. 5/8"; Ht. 31/64"			
2"	1	91416A510	5.06
3"	1	91416A515	6.66
5/8"-11 (Cont.)			
4"	1	91416A520	$8.42
5"	1	91416A814	10.10
3/4"-10—Head: Wd. 3/4"; Ht. 37/64"			
3 1/2"	1	91416A610	8.77
4"	1	91416A615	9.95
5"	1	91416A855	12.82
Plain Steel			
1/4"-20—Head: Wd. 1/4"; Ht. 3/16"			
3/8"	100	91410A535	8.81
1/2"	100	91410A537	10.07
5/8"	100	91410A538	9.16
3/4"	100	91410A540	11.02
1"	100	91410A542	12.97
1 1/2"	50	91410A546	8.66
2"	25	91410A550	5.53
5/16"-18—Head: Wd. 5/16"; Ht. 15/64"			
1/2"	50	91410A578	7.78
3/4"	50	91410A581	8.50
1"	50	91410A583	9.73
1 1/4"	50	91410A585	11.79
1 1/2"	25	91410A587	7.18
2"	25	91410A942	9.24
3"	10	91410A943	6.63
3/8"-16—Head: Wd. 3/8"; Ht. 9/32"			
1/2"	50	91410A619	11.07
3/4"	50	91410A622	11.78
1"	25	91410A624	7.34
1 1/4"	25	91410A626	8.47
1 1/2"	25	91410A628	9.30
2"	25	91410A632	10.60
2 1/2"	10	91410A634	6.07
3"	10	91410A636	8.12
3 1/2"	10	91410A639	11.31
4"	10	91410A642	12.78
4 1/2"	5	91410A645	7.98
5"	5	91410A648	9.16
7/16"-14—Head: Wd. 7/16"; Ht. 21/64"			
1"	25	91410A669	11.48
2"	10	91410A677	7.65
1/2"-13—Head: Wd. 1/2"; Ht. 3/8"			
3/4"	25	91410A710	13.66
1"	25	91410A712	14.33
1 1/4"	10	91410A714	6.09
1/2"-13 (Cont.)			
1 1/2"	10	91410A716	6.80
2"	10	91410A720	9.23
2 1/2"	10	91410A722	10.39
3"	10	91410A724	11.64
3 1/2"	5	91410A726	8.13
4"	5	91410A728	8.84
5"	5	91410A730	13.96
6"	1	91410A735	2.88
5/8"-11—Head: Wd. 5/8"; Ht. 31/64"			
1 1/2"	10	91410A798	13.33
2"	10	91410A802	13.77
2 1/2"	5	91410A804	9.13
3"	5	91410A806	10.45
3 1/2"	5	91410A808	12.14
4"	5	91410A810	13.69
5"	1	91410A814	3.75
6"	1	91410A818	3.79
3/4"-10—Head: Wd. 3/4"; Ht. 37/64"			
2"	5	91410A843	13.03
2 1/2"	1	91410A845	2.59
3"	1	91410A847	3.07
3 1/2"	1	91410A849	3.62
4"	1	91410A851	3.61
5"	1	91410A855	3.56
6"	1	91410A859	4.60
7/8"-9—Head: Wd. 7/8"; Ht. 43/64"			
4"	1	91410A888	4.63
6"	1	91410A896	7.38
1"-8—Head: Wd. 1"; Ht. 49/64"			
4"	1	91410A920	6.40
5"	1	91410A926	7.72
6"	1	91410A928	9.73

For information about point selection, materials, and hex key sizes, see page 3072.

Precision-Adjustment Set Screws

These finely-threaded screws are your best choice for making ultra-precise adjustments to sensitive equipment. To install in unthreaded holes, use the optional threaded bushings (sold separately).

Screws have a hex socket drive and a round point. They're made entirely of 18-8 stainless steel and have a Class 3A thread fit. Not rated for hardness. Length listed is the overall length.

Optional threaded bushings are made from brass. They have a Class 3B thread fit and are not rated for hardness.

Set Screws

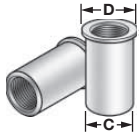

Optional Threaded Bushings

Screws

Lg.		Each
3/16"-100—*Hex Size: 3/32"*		
Tip Dia.: 5/32"		
3/8"	98625A110	$7.76
1/2"	98625A130	8.18
3/4"	98625A160	9.41
1"	98625A190	10.71
1 1/4"	98625A220	12.42
1 1/2"	98625A230	13.50
1 3/4"	98625A250	14.11
2"	98625A280	15.44

Lg.		Each
1/4"-80—*Hex Size: 3/32"*		
Tip Dia.: 5/32"		
3/8"	98625A620	$7.87
1/2"	98625A650	8.18
3/4"	98625A680	8.75
1"	98625A710	9.41
1 1/4"	98625A740	10.35
1 1/2"	98625A750	10.71
1 3/4"	98625A770	11.55
2"	98625A800	12.94

Optional Threaded Bushings

Lg.	(C)	(D)	(E)		Each
For 3/16"-100 Screws					
5/16"	0.2505"	0.290"	0.015"	98625A320	$7.23
7/16"	0.2505"	0.290"	0.015"	98625A330	7.23
5/8"	0.2505"	0.290"	0.015"	98625A340	7.23
3/4"	0.2505"	0.290"	0.015"	98625A350	7.23
For 1/4"-80 Screws					
5/16"	0.3125"	0.352"	0.015"	98625A950	7.23
7/16"	0.3125"	0.352"	0.015"	98625A960	7.23
5/8"	0.3125"	0.352"	0.015"	98625A970	7.23
3/4"	0.3125"	0.352"	0.015"	98625A980	7.23

Extended-Point Square-Head Set Screws

Like dowel pins, you can use these screws to permanently lock one part to another. They have an extended point to guide them into mating holes or slots in your workpiece and a prominent head that's easy to access for tightening by hand or with a wrench. Also known as dog point and pilot point set screws, they're fully threaded (from under the head to where the extended point begins) and made from alloy steel. Length is measured from under the head to the end of the point.

Inch sizes have a black finish and a Class 2A thread fit. Minimum Rockwell hardness is C48. Metric sizes have a black finish and a Class 6g thread fit. Minimum Rockwell hardness is C20 for sizes up to M16 and C23 for size M20.

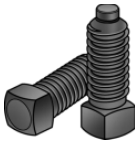

Black Alloy Steel—*Meets ASTM F912*

Lg.		Each
1/4"-20—*Head: Wd. 1/4"; Ht. 3/16"*		
Tip: Dia. 5/32"; Lg. 1/16"		
1/2"	91418A540	$3.89
1"	91418A542	2.11
2"	91418A550	4.14
5/16"-18		
Head: Wd. 5/16"; Ht. 15/64"		
Tip: Dia. 13/64"; Lg. 5/64"		
1"	91418A583	3.38
1 1/4"	91418A585	3.74
1 1/2"	91418A587	3.49
3/8"-16—*Head: Wd. 3/8"; Ht. 9/32"*		
Tip: Dia. 1/4"; Lg. 3/32"		
3/4"	91418A622	3.50
1"	91418A625	3.91
1 1/4"	91418A626	2.54
1 1/2"	91418A628	3.09
2"	91418A632	3.89
2 1/2"	91418A634	4.46
3"	91418A636	5.14

Lg.		Each
1/2"-13—*Head: Wd. 1/2"; Ht. 3/8"*		
Tip: Dia. 11/32"; Lg. 1/8"		
1"	91418A712	$6.19
1 1/4"	91418A714	6.23
1 1/2"	91418A716	4.57
2"	91418A720	5.57
2 1/2"	91418A722	5.89
3"	91418A724	7.00
4"	91418A730	8.77
5/8"-11—*Head: Wd. 5/8"; Ht. 15/32"*		
Tip: Dia. 15/32"; Lg. 5/32"		
2"	91418A802	7.86
3"	91418A806	9.71
4"	91418A810	12.51
5"	91418A814	16.40
3/4"-10—*Head: Wd. 3/4"; Ht. 9/16"*		
Tip: Dia. 9/16"; Lg. 3/16"		
2"	91418A843	12.46
2 1/2"	91418A845	11.80
3"	91418A847	12.80
4"	91418A851	16.40
5"	91418A855	21.20

Metric Black Alloy Steel—DIN 479

Lg., mm	Pkg. Qty.		Per Pkg.
M6—*Pitch: 1 mm*			
Head: Wd. 6 mm; Ht. 6 mm			
Tip: Dia. 4 mm; Lg. 1.75 mm			
12	10	92635A254	$8.75
16	10	92635A256	9.34
20	10	92635A258	9.66
25	10	92635A260	9.66
35	10	92635A264	12.72
M8—*Pitch: 1.25 mm*			
Head: Wd. 8 mm; Ht. 8 mm			
Tip: Dia. 5.5 mm; Lg. 2.25 mm			
25	5	92635A314	5.17
30	5	92635A316	5.17
35	5	92635A318	7.59
40	5	92635A320	7.24
50	5	92635A324	7.04
M10—*Pitch: 1.5 mm*			
Head: Wd. 10 mm; Ht. 10 mm			
Tip: Dia. 7 mm; Lg. 2.75 mm			
25	5	92635A352	8.11
30	5	92635A354	8.06
35	5	92635A355	7.24
40	5	92635A358	10.34
50	5	92635A363	11.20
60	5	92635A370	13.44

Lg., mm	Pkg. Qty.		Per Pkg.
M12—*Pitch: 1.75 mm*			
Head: Wd. 13 mm; Ht. 12 mm			
Tip: Dia. 8.5 mm; Lg. 3.25 mm			
35	1	92635A419	$3.03
40	1	92635A421	3.10
50	1	92635A426	3.10
60	1	92635A430	3.49
70	1	92635A433	5.00
80	1	92635A436	5.17
100	1	92635A439	7.24
M16—*Pitch: 2 mm*			
Head: Wd. 17 mm; Ht. 16 mm			
Tip: Dia. 12 mm; Lg. 4.3 mm			
50	1	92635A540	5.51
60	1	92635A543	6.55
80	1	92635A546	7.42
100	1	92635A549	10.34
M20—*Pitch: 2.5 mm*			
Head: Wd. 22 mm; Ht. 20 mm			
Tip: Dia. 15 mm; Lg. 5.3 mm			
60	1	92635A633	9.66
70	1	92635A636	20.01
80	1	92635A639	18.24
100	1	92635A641	22.64

Quick-Latch Thumb Screws

Also known as quarter-turn thumb screws, these screws have a head designed to hold items such as access panels and covers in place. With the head properly positioned in a slot, a quick quarter turn latches or unlatches the screw.

Screws have a Class 2A thread fit and are made from black-oxide steel such as C1018 and 12L14. They have a minimum tensile strength of 64,000 psi and are not rated for hardness.

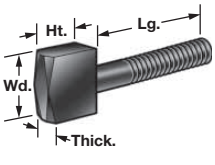

Lg.	Thread Lg.		Each
10-24			
Head: Wd. 1/2"; Ht. 1/2"; Thick. 3/16"			
1"	7/8"	90017A251	$4.34
10-32			
Head: Wd. 1/2"; Ht. 1/2"; Thick. 3/16"			
1"	7/8"	90017A252	4.40
1 1/2"	1 1/4"	90017A254	5.20
1/4"-20			
Head: Wd. 3/4"; Ht. 5/8"; Thick. 1/4"			
1 1/4"	1"	90017A547	4.60
1 3/4"	1 1/2"	90017A553	5.50

Lg.	Thread Lg.		Each
5/16"-18			
Head: Wd. 1"; Ht. 3/4"; Thick. 5/16"			
1 1/2"	1 1/4"	90017A592	$5.27
2"	1 3/4"	90017A597	6.13
3/8"-16			
Head: Wd. 1"; Ht. 1"; Thick. 3/8"			
1 1/2"	1 1/4"	90017A633	6.95

Hex Head Thumb Screws

You won't have a problem gripping these hex heads—they're tall enough to get your fingers around. If finger tightening isn't enough, you can use a wrench for more torque.

Made from 18-8 stainless steel, they're corrosion resistant and may be mildly magnetic. All are fully threaded and have a Class 2A thread fit. Minimum Rockwell hardness is B75. Minimum tensile strength is 80,000 psi.

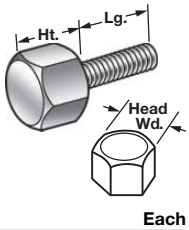

Lg.		Each
4-40—*Head: Wd. 3/8"; Ht. 1/4"*		
1/2"	90113A110	$3.68
6-32—*Head: Wd. 5/16"; Ht. 1/4"*		
1/2"	90113A120	3.55
8-32—*Head: Wd. 3/8"; Ht. 1/4"*		
1/2"	90113A130	3.68
3/4"	90113A136	3.85
10-32—*Head: Wd. 3/8"; Ht. 1/4"*		
1/2"	90113A150	3.68
5/8"	90113A153	3.80

Lg.		Each
10-32—*Head: Wd. 1/2"; Ht. 3/8"*		
3/4"	90113A156	$4.38
1/4"-20—*Head: Wd. 1/2"; Ht. 3/8"*		
5/8"	90113A160	4.38
3/4"	90113A163	4.51
1/4"-20—*Head: Wd. 5/8"; Ht. 7/16"*		
1"	90113A166	5.47
1 1/4"	90113A169	6.00

Spade-Head Thumb Screws

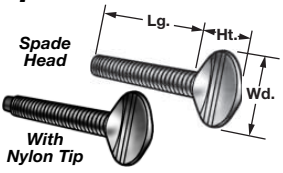

Ideal for frequent adjustments. The wide head is easy to turn by hand—no tools required. All are fully threaded with a Class 2A thread fit, except metric zinc-plated malleable iron screws have a Class 8g thread fit. Head dimensions are approximate. ***18-8 stainless steel*** is corrosion resistant and can be mildly magnetic. Min. Rockwell hardness is B85. Tensile strength is 80,000 psi. ***Zinc-plated steel*** and ***plain steel*** are C1006-C1010 steel. Min. Rockwell hardness is B50. Tensile strength is 48,000 psi. Zinc-plated steel is also rust resistant. ***Zinc-plated steel screws with nylon tip*** have a soft, flat nylon tip that prevents marring. Not rated for hardness. Tensile strength is 48,000 psi. Length does not include nylon tip. Nylon temperature range is -50° to +250° F. ***Brass*** is softer than stainless steel. Min. Rockwell hardness is B55. Tensile strength is 55,000 psi. ***Metric zinc-plated malleable iron*** has a min. Rockwell hardness of B66. Tensile strength is 58,000 psi.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
8-32—*Head: Wd. 15/32"; Ht. 1/4"*			
3/8"	10	91745A192	$8.87
1/2"	10	91745A194	9.20
5/8"	5	91745A196	5.68
3/4"	10	91745A197	12.69
1"	5	91745A199	5.93
10-24—*Head: Wd. 9/16"; Ht. 3/8"*			
3/8"	10	91745A240	9.13
1/2"	10	91745A242	9.53
3/4"	5	91745A245	5.29
1"	5	91745A247	6.73
1 1/2"	5	91745A250	7.98
10-32—*Head: Wd. 9/16"; Ht. 3/8"*			
3/8"	10	91745A827	9.13
1/2"	10	91745A829	9.53
3/4"	5	91745A831	5.29
1"	5	91745A833	5.56
1 1/2"	5	91745A836	7.98
1/4"-20—*Head: Wd. 23/32"; Ht. 1/2"*			
3/8"	5	91745A534	5.02
1/2"	10	91745A537	9.87
1/4"-20 (Cont.)			
5/8"	5	91745A539	$5.86
3/4"	5	91745A540	6.04
1"	5	91745A542	6.84
1 1/4"	5	91745A544	7.52
1 1/2"	5	91745A546	8.23
2"	5	91745A550	8.35
5/16"-18—*Head: Wd. 7/8"; Ht. 11/16"*			
1/2"	5	91745A578	10.79
3/4"	5	91745A581	9.79
1"	5	91745A583	10.28
1 1/4"	5	91745A585	11.33
1 1/2"	5	91745A587	12.28
2"	1	91745A591	2.99
3/8"-16—*Head: Wd. 1 3/32"; Ht. 13/16"*			
3/4"	1	91745A622	3.16
1"	1	91745A624	3.18
1 1/4"	1	91745A625	3.51
1 1/2"	1	91745A628	3.84
2"	1	91745A632	4.18
Zinc-Plated Steel			
6-32—*Head: Wd. 3/8"; Ht. 1/4"*			
3/8"	25	96966A110	8.74
1/2"	25	96966A113	8.91
3/4"	25	96966A116	8.98
1"	25	96966A119	9.09
8-32—*Head: Wd. 15/32"; Ht. 1/4"*			
3/8"	25	96966A130	9.01
1/2"	25	96966A133	9.09
3/4"	25	96966A136	9.00
1"	25	96966A139	9.54
10-24—*Head: Wd. 9/16"; Ht. 3/8"*			
3/8"	25	96966A220	9.48
1/2"	25	96966A223	9.59
3/4"	25	96966A226	9.77
1"	25	96966A229	9.93
10-32—*Head: Wd. 9/16"; Ht. 3/8"*			
3/8"	25	96966A260	9.48
1/2"	25	96966A263	9.59
3/4"	25	96966A266	9.77
1"	25	96966A269	9.93
1 1/2"	25	96966A272	10.32
2"	25	96966A275	11.34
1/4"-20—*Head: Wd. 23/32"; Ht. 1/2"*			
1/2"	25	96966A622	10.31
3/4"	25	96966A624	10.71
1"	25	96966A626	11.11
1 1/4"	25	96966A628	11.43
1 1/2"	25	96966A630	11.81
2"	25	96966A632	13.20
5/16"-18—*Head: Wd. 7/8"; Ht. 11/16"*			
1/2"	10	96966A740	6.57
3/4"	10	96966A742	6.79
1"	10	96966A744	7.53
1 1/4"	10	96966A746	7.73
1 1/2"	10	96966A748	7.98
2"	10	96966A750	8.63
3/8"-16—*Head: Wd. 1 3/32"; Ht. 13/16"*			
3/4"	10	96966A850	8.47
1"	10	96966A852	8.77
1 1/4"	10	96966A854	9.07
1 1/2"	10	96966A856	9.37
2"	10	96966A857	10.10
Plain Steel			
6-32—*Head: Wd. 3/8"; Ht. 1/4"*			
1/4"	50	90181A144	13.28
3/8"	50	90181A146	11.62
1/2"	50	90181A148	11.81
3/4"	50	90181A151	11.97
1"	50	90181A153	12.18
8-32—*Head: Wd. 15/32"; Ht. 1/4"*			
3/8"	50	90181A192	12.01
1/2"	50	90181A194	12.19
3/4"	50	90181A197	12.40
1"	50	90181A199	13.07
10-24—*Head: Wd. 9/16"; Ht. 3/8"*			
3/8"	50	90181A240	12.91
1/2"	50	90181A242	13.18
3/4"	50	90181A245	13.54
1"	50	90181A247	13.87
1 1/2"	50	90181A251	14.64
10-32—*Head: Wd. 9/16"; Ht. 3/8"*			
3/8"	50	90181A827	12.81
1/2"	50	90181A829	13.18
3/4"	50	90181A831	13.54
1"	50	90181A833	13.78
Plain Steel (Cont.)			
10-32 (Cont.)			
1 1/2"	50	90181A836	$14.64
2"	25	90181A838	8.58
1/4"-20—*Head: Wd. 23/32"; Ht. 1/2"*			
1/2"	25	90181A537	7.61
3/4"	25	90181A540	7.99
1"	25	90181A542	8.36
1 1/4"	25	90181A544	8.43
1 1/2"	25	90181A546	8.75
2"	25	90181A550	10.21
2 1/2"	25	90181A552	10.83
3"	10	90181A556	5.72
1/4"-28—*Head: Wd. 23/32"; Ht. 1/2"*			
1/2"	10	90181A560	7.52
3/4"	10	90181A565	7.85
1"	10	90181A568	7.55
5/16"-18—*Head: Wd. 7/8"; Ht. 11/16"*			
1/2"	25	90181A578	10.32
3/4"	25	90181A581	10.82
5/16"-18 (Cont.)			
1"	25	90181A583	$11.32
1 1/4"	25	90181A585	11.81
1 1/2"	25	90181A587	12.45
2"	10	90181A591	6.06
3"	10	90181A595	6.98
5/16"-24—*Head: Wd. 7/8"; Ht. 11/16"*			
3/4"	10	90181A600	8.49
1"	10	90181A605	8.99
1 1/2"	10	90181A610	9.30
3/8"-16—*Head: Wd. 1 3/32"; Ht. 13/16"*			
3/4"	25	90181A622	13.68
1"	25	90181A624	14.43
1 1/4"	10	90181A626	6.08
1 1/2"	10	90181A628	6.37
2"	10	90181A632	7.43
3"	10	90181A636	8.78
Zinc-Plated Steel with Nylon Tip			
6-32—*Head: Wd. 13/32"; Ht. 19/64"*			
Tip: Dia. 1/16"; Lg. 1/32"			
1/2"	1	90772A281	4.61
8-32—*Head: Wd. 7/16"; Ht. 19/64"*			
Tip: Dia. 3/32"; Lg. 3/64"			
1/2"	1	90772A383	4.42
3/4"	1	90772A384	4.42
10-32—*Head: Wd. 35/64"; Ht. 7/16"*			
Tip: Dia. 3/32"; Lg. 3/64"			
1/2"	1	90772A829	4.26
3/4"	1	90772A831	4.16
1"	1	90772A833	4.19
1/4"-20—*Head: Wd. 13/16"; Ht. 35/64"*			
Tip: Dia. 1/8"; Lg. 1/16"			
1/2"	1	90772A537	4.23
3/4"	1	90772A540	4.16
1"	1	90772A542	4.26
5/16"-18—*Head: Wd. 7/8"; Ht. 43/64"*			
Tip: Dia. 3/16"; Lg. 3/32"			
1/2"	1	90772A579	4.48
3/4"	1	90772A581	4.45
1"	1	90772A583	4.52
3/8"-16—*Head: Wd. 1 1/64"; Ht. 3/4"*			
Tip: Dia. 3/16"; Lg. 3/32"			
1"	1	90772A481	6.81
1 1/2"	1	90772A482	7.94
Brass			
10-24—*Head: Wd. 9/16"; Ht. 3/8"*			
1/2"	5	92427A282	7.00
3/4"	5	92427A284	7.02
1"	5	92427A286	7.15
10-32—*Head: Wd. 9/16"; Ht. 3/8"*			
1/2"	5	92427A383	7.00
3/4"	5	92427A385	7.02
1"	5	92427A387	7.15
1/4"-20—*Head: Wd. 23/32"; Ht. 1/2"*			
1/2"	5	92427A537	7.05
3/4"	5	92427A540	7.16
1"	5	92427A542	8.02
1/4"-20 (Cont.)			
1 1/2"	5	92427A546	10.57
2"	1	92427A550	2.77
5/16"-18—*Head: Wd. 7/8"; Ht. 11/16"*			
3/4"	1	92427A581	2.43
1"	1	92427A583	3.07
1 1/2"	1	92427A587	3.88
2"	1	92427A588	4.89
3/8"-16—*Head: Wd. 1 3/32"; Ht. 13/16"*			
1"	1	92427A624	4.47
1 1/2"	1	92427A628	4.71
2"	1	92427A629	6.21
Metric Zinc-Plated Malleable Iron			
M5—*Pitch: 0.8 mm*			
Head: Wd. 20.5 mm; Ht. 15.5 mm			
10 mm	5	90359A100	7.79
16 mm	5	90359A110	8.32
20 mm	5	90359A120	9.63
M6—*Pitch: 1 mm*			
Head: Wd. 23.5 mm; Ht. 16 mm			
10 mm	5	90359A130	7.78
M6 (Cont.)			
16 mm	5	90359A150	9.29
20 mm	5	90359A160	9.74
30 mm	1	90359A170	2.17
M8—*Pitch: 1.25 mm*			
Head: Wd. 27.5 mm; Ht. 19 mm			
16 mm	1	90359A180	2.59
20 mm	1	90359A200	3.39

Spade-Head Thumb Screws with Shoulder

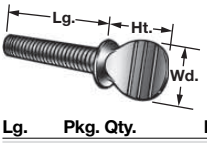

The shoulder serves as a large bearing surface, and like our other spade-head thumb screws, they have a wide head that's easy to grasp and turn by hand—no tools required. All screws are fully threaded and have Class 2A thread fit. Head and shoulder dimensions are approximate.

18-8 stainless steel is corrosion resistant and can be mildly magnetic. It has a min. Rockwell hardness of B85 and a tensile strength of 80,000 psi. ***Zinc-plated steel*** and ***plain steel*** are made from C1006-C1010 steel. They have a min. Rockwell hardness of B50 and a tensile strength of 55,000 psi. Zinc-plated steel is also rust resistant.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
8-32—*Head: Wd. 23/64", Ht. 25/64"*			
Shoulder Dia.: 9/32"			
3/8"	10	91744A192	$10.69
1/2"	10	91744A194	10.51
3/4"	5	91744A197	6.21
1"	5	91744A199	6.32
10-24—*Head: Wd. 7/16", Ht. 15/32"*			
Shoulder Dia.: 11/32"			
3/8"	10	91744A240	10.91
1/2"	5	91744A242	5.94
10-24 (Cont.)			
3/4"	5	91744A245	$6.45
1"	5	91744A247	7.06
10-32—*Head: Wd. 7/16", Ht. 15/32"*			
Shoulder Dia.: 11/32"			
3/8"	10	91744A827	9.96
1/2"	5	91744A829	5.94
3/4"	5	91744A831	6.28
1"	5	91744A833	6.84
18-8 Stainless Steel (Cont.)			
1/4"-20—*Head: Wd. 33/64", Ht. 19/32"*			
Shoulder Dia.: 7/16"			
1/2"	5	91744A537	$5.77
5/8"	5	91744A538	6.48
3/4"	5	91744A540	6.67
1"	5	91744A542	6.65
1 1/4"	5	91744A545	7.40
1 1/2"	5	91744A548	9.30
5/16"-18—*Head: Wd. 11/16", Ht. 3/4"*			
Shoulder Dia.: 9/16"			
3/4"	1	91744A581	$3.11
1"	1	91744A583	3.39
1 1/2"	1	91744A587	3.33
3/8"-16—*Head: Wd. 13/16", Ht. 15/16"*			
Shoulder Dia.: 11/16"			
1"	1	91744A624	3.64
1 1/2"	1	91744A628	3.98

(Continued on following page)

Spade-Head Thumb Screws with Shoulder *(Continued from previous page)*

Lg.	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel			
6-32—*Head: Wd. 5/16", Ht. 11/32"*			
Shoulder Dia.: 1/4"			
1/4"	10	97008A110	$6.15
3/8"	25	97008A113	10.67
8-32—*Head: Wd. 23/64", Ht. 25/64"*			
Shoulder Dia.: 9/32"			
3/8"	25	97008A140	10.96
1/2"	25	97008A143	11.08
3/4"	25	97008A146	11.39
1"	25	97008A149	11.40
10-24—*Head: Wd. 7/16", Ht. 15/32"*			
Shoulder Dia.: 11/32"			
1/2"	25	97008A210	11.42
3/4"	25	97008A213	11.58
1"	25	97008A216	11.90
10-32—*Head: Wd. 7/16", Ht. 15/32"*			
Shoulder Dia.: 11/32"			
3/8"	25	97008A250	11.33
1/2"	25	97008A253	11.42
3/4"	25	97008A256	11.58
1"	25	97008A259	11.90
1 1/2"	25	97008A262	12.80
1/4"-20—*Head: Wd. 33/64", Ht. 19/32"; Shoulder Dia.: 7/16"*			
1/2"	25	97008A612	$12.65
3/4"	25	97008A614	13.30
1"	25	97008A616	13.64
1 1/4"	25	97008A618	14.12
1 1/2"	25	97008A620	14.46
2"	10	97008A622	6.41
2 1/2"	10	97008A625	6.37
5/16"-18—*Head: Wd. 11/16", Ht. 3/4"*			
Shoulder Dia.: 9/16"			
1/2"	10	97008A722	7.22
3/4"	10	97008A724	7.26
1"	10	97008A726	9.12
1 1/2"	10	97008A728	9.62
2"	10	97008A730	10.47
3/8"-16—*Head: Wd. 13/16", Ht. 15/16"; Shoulder Dia.: 11/16"*			
3/4"	10	97008A812	9.89
1"	10	97008A816	11.03
1 1/2"	10	97008A820	11.73
2"	10	97008A825	11.46
Plain Steel			
6-32—*Head: Wd. 5/16", Ht. 11/32"*			
Shoulder Dia.: 1/4"			
1/4"	25	90179A144	11.74
3/8"	25	90179A146	8.21
6-32 (Cont.)			
1/2"	25	90179A148	8.36
3/4"	25	90179A151	8.47
1"	25	90179A153	8.80
Plain Steel (Cont.)			
8-32—*Head: Wd. 23/64", Ht. 25/64"*			
Shoulder Dia.: 9/32"			
3/8"	25	90179A192	$8.52
1/2"	25	90179A194	8.64
3/4"	25	90179A197	8.96
1"	25	90179A199	8.96
10-24—*Head: Wd. 7/16", Ht. 15/32"*			
Shoulder Dia.: 11/32"			
3/8"	25	90179A240	8.88
1/2"	25	90179A242	8.98
3/4"	25	90179A245	9.14
1"	25	90179A247	9.48
1 1/2"	25	90179A251	10.47
2"	25	90179A253	11.92
10-32—*Head: Wd. 7/16", Ht. 15/32"*			
Shoulder Dia.: 11/32"			
3/8"	25	90179A827	8.88
1/2"	25	90179A829	8.46
3/4"	25	90179A831	9.14
1"	25	90179A833	9.31
1 1/2"	25	90179A836	10.47
2"	25	90179A838	11.92
1/4"-20—*Head: Wd. 33/64", Ht. 19/32"; Shoulder Dia.: 7/16"*			
1/2"	25	90179A537	9.66
1/4"-20 (Cont.)			
3/4"	25	90179A540	$10.92
1"	25	90179A542	11.24
1 1/4"	25	90179A544	11.40
1 1/2"	25	90179A546	12.09
2"	25	90179A550	13.70
2 1/2"	10	90179A552	6.03
5/16"-18—*Head: Wd. 11/16", Ht. 3/4"*			
Shoulder Dia.: 9/16"			
1/2"	25	90179A578	13.21
3/4"	25	90179A581	13.85
1"	25	90179A583	14.47
1 1/2"	10	90179A587	6.29
2"	10	90179A591	7.61
2 1/2"	10	90179A593	8.81
3"	10	90179A595	9.56
3/8"-16—*Head: Wd. 13/16", Ht. 15/16"; Shoulder Dia.: 11/16"*			
3/4"	10	90179A622	7.52
1"	10	90179A624	7.69
1 1/4"	10	90179A626	8.05
1 1/2"	10	90179A628	8.35
2"	10	90179A632	9.06
2 1/2"	10	90179A634	10.56
3"	10	90179A636	12.97

Wing-Head Thumb Screws

Wider than spade head screws, wing heads give you more gripping surface, so they're ideal for making frequent adjustments. Fully threaded; head width and head height are approximate. Inch sizes have a Class 2A thread fit. Thread fit for metric sizes made from steel is Class 6h; for those made from stainless steel it's 6g.

Zinc-plated malleable iron screws in inch sizes have a min. Rockwell hardness of B70 and a min. tensile strength of 45,000 psi. ***Zinc-plated iron*** screws in metric sizes meet DIN 316 (unless noted) and are not rated for hardness or tensile strength. ***Zinc-plated stamped steel*** screws are made from C1008-C1010 steel and are not rated for hardness or tensile strength.

18-8 stainless steel screws are corrosion resistant and can be mildly magnetic. They have a minimum Rockwell hardness of B80 and a minimum tensile strength of 72,500 psi.

Also Available: Plain malleable iron thumb screws in inch sizes. For ***Style 1*** please ask for 90195A700 and specify thread size and length. For ***Style 2*** please ask for 90196A300 and specify thread size and length.

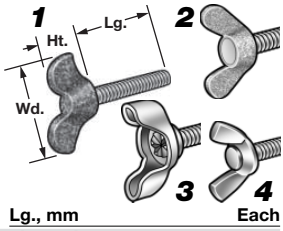

Lg.		Each
Zinc-Plated Malleable Iron—Style 1		
10-24—*Head: Wd. 1 1/16", Ht. 1/2"*		
1/2"	91404A505	$3.46
3/4"	91404A508	3.55
1"	91404A510	3.67
1 1/2"	91404A514	4.00
1/4"-20—*Head: Wd. 1 3/8", Ht. 5/8"*		
1/2"	91404A537	3.38
3/4"	91404A540	3.51
1/4"-20 (Cont.)		
1"	91404A542	$3.63
1 1/2"	91404A546	3.88
2"	91404A550	4.14
2 1/2"	91404A552	4.50
3"	91404A554	4.71
Zinc-Plated Malleable Iron—Style 2		
5/16"-18—*Head: Wd. 1 3/4", Ht. 3/4"*		
3/4"	97568A581	4.37
1"	97568A583	4.43
1 1/2"	97568A587	4.69
2"	97568A591	4.78
2 1/2"	97568A595	4.89
3"	97568A599	4.99
3/8"-16—*Head: Wd. 1 13/16", Ht. 7/8"*		
3/4"	97568A622	4.94
1"	97568A624	5.01
3/8"-16 (Cont.)		
1 1/2"	97568A628	5.10
2"	97568A632	5.23
3"	97568A636	6.06
1/2"-13—*Head: Wd. 2 1/4", Ht. 1"*		
1"	97568A712	6.12
2"	97568A720	6.42
2 1/2"	97568A722	6.81
3"	97568A724	6.84

Lg.	Pkg. Qty.		Per Pkg.
Zinc-Plated Stamped Steel—Style 3			
8-32—*Head: Wd. 49/64", Ht. 25/64"*			
1/4"	10	91510A104	10.89
5/16"	10	91510A108	10.89
3/8"	10	91510A112	10.96
1/2"	10	91510A116	11.03
10-32—*Head: Wd. 57/64", Ht. 29/64"*			
1/2"	10	91510A109	12.26
3/4"	10	91510A117	12.92
1"	10	91510A118	13.09
1/4"-20—*Head: Wd. 15/64", Ht. 29/64"*			
3/8"	10	91510A141	12.84
1/2"	10	91510A145	12.94
5/8"	10	91510A149	13.10
3/4"	10	91510A153	13.20
1"	5	91510A157	6.76
1 1/2"	5	91510A161	7.22
5/16"-18—*Head: Wd. 1 19/64", Ht. 39/64"*			
1/2"	5	91510A165	7.52
3/4"	5	91510A169	7.76
1"	5	91510A173	8.03

Lg., mm		Each
Metric Zinc-Plated Iron—Style 2		
M3—*Pitch: 0.5 mm*		
Head: Wd. 16 mm, Ht. 8 mm		
6	92595A098■	2.08
10	92595A101■	2.71
16	92595A103■	2.85
M4—*Pitch: 0.7 mm*		
Head: Wd. 20 mm, Ht. 10.5 mm		
8	92595A195	2.01
10	92595A200	2.06
16	92595A205	2.11
20	92595A206	2.21
25	92595A207	2.26
30	92595A208	2.31

■ Does not meet DIN 316.

Lg., mm		Each
Metric Zinc-Plated Iron—Style 2 (Cont.)		
M4 (Cont.)		
40	92595A209	$2.36
M5—*Pitch: 0.8 mm*		
Head: Wd. 26 mm, Ht. 13 mm		
8	92595A300	2.21
10	92595A304	2.26
12	92595A307	2.31
16	92595A309	2.36
20	92595A310	2.38
25	92595A311	2.41
40	92595A314	2.81
50	92595A316	2.87
M6—*Pitch: 1 mm*		
Head: Wd. 33 mm, Ht. 17 mm		
10	92595A405	2.41
12	92595A406	2.50
16	92595A407	2.58
20	92595A408	2.65
25	92595A409	2.70
30	92595A410	2.75
35	92595A411	2.77
M6 (Cont.)		
40	92595A412	$2.85
50	92595A414	2.94
60	92595A416	3.04
M8—*Pitch: 1.25 mm*		
Head: Wd. 39 mm, Ht. 20 mm		
12	92595A503	3.53
16	92595A504	3.63
20	92595A505	3.68
25	92595A506	3.83
30	92595A507	3.92
40	92595A509	4.08
50	92595A512	4.17
60	92595A514	4.61
80	92595A518	6.82
M10—*Pitch: 1.5 mm*		
Head: Wd. 51 mm, Ht. 25 mm		
16	92595A603	5.40
25	92595A607	5.59
40	92595A610	5.92
60	92595A614	7.29
Metric 18-8 Stainless Steel—Style 4		
M3—*Pitch: 0.5 mm*		
Head: Wd. 17.6 mm, Ht. 8.6 mm		
12	92625A106	2.11
20	92625A108	1.73
30	92625A110	2.19
M4—*Pitch: 0.7 mm*		
Head: Wd. 23 mm, Ht. 11.5 mm		
10	92625A205	2.95
12	92625A203	3.27
16	92625A207	2.87
20	92625A209	3.14
25	92625A210	3.25
30	92625A213	3.42
35	92625A216	3.62
M5—*Pitch: 0.8 mm*		
Head: Wd. 23 mm, Ht. 11.5 mm		
10	92625A309	3.30
12	92625A307	3.29
16	92625A311	3.33
20	92625A313	2.31
25	92625A315	3.41
30	92625A317	3.46
35	92625A319	5.05
M6—*Pitch: 1 mm*		
Head: Wd. 28 mm, Ht. 14 mm		
10	92625A412	2.80
12	92625A413	3.25
16	92625A414	3.56
20	92625A416	3.66
25	92625A418	2.89
30	92625A420	3.86
35	92625A422	4.25
40	92625A424	4.83
M8—*Pitch: 1.25 mm*		
Head: Wd. 31 mm, Ht. 16 mm		
16	92625A516	5.59
20	92625A518	4.25
25	92625A520	4.52
30	92625A525	4.54
40	92625A529	6.09
50	92625A533	8.24
M10—*Pitch: 1.5 mm*		
Head: Wd. 37 mm, Ht. 18 mm		
20	92625A611	9.15
30	92625A613	9.66
50	92625A621	10.17

Knurled-Head Thumb Screws

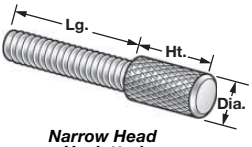

Narrow Head Unslotted

Narrow Head | Low Head | High Head

Not only are these thumb screws great looking, they're finely knurled for a comfortable, nonslip grip. 18-8 stainless steel screws come with your choice of slotted and unslotted heads, all other screws are unslotted. All screws are fully threaded (unless noted) and have a Class 2A thread fit.

18-8 stainless steel offers excellent corrosion resistance and may be mildly magnetic. Min. Rockwell hardness is B65. Min. tensile strength is 70,000 psi.

Black-oxide steel is made from 12L14 steel. It's rust resistant and has a min. Rockwell hardness of B84 and a min. tensile strength of 70,000 psi.

Brass is made from Alloy 360. It's softer than steel, corrosion resistant, and nonmagnetic. Min. Rockwell hardness is B78. Min. tensile strength is 58,000 psi.

Lg.	Head Dia.	Head Ht.	Unslotted	Each	Slotted	Each
Narrow Head—*18-8 Stainless Steel*						
4-40						
3/8"	1/4"	1/8"	91746A019	$5.56	91746A919	$6.94
1/2"	1/4"	1/2"	91746A112●	2.17	91746A832●	2.41
3/4"	1/4"	1/2"	91746A532▲	2.41	91746A836▲	2.65
1"	3/16"	3/8"	91746A118	2.89	91746A840	3.18
1"	1/4"	1/2"	91746A529	3.37	91746A844	3.66
4-48						
1/2"	1/4"	1/2"	91746A020	7.17	91746A920	9.25
3/4"	1/4"	1/2"	91746A023	7.36	91746A923	9.44
1"	1/4"	1/2"	91746A026	8.28	91746A926	10.36
6-32						
1/2"	1/4"	1/2"	91746A536●	2.32	91746A848●	2.60
3/4"	1/4"	1/2"	91746A539▲	3.93	91746A852▲	2.89
1"	3/16"	3/8"	91746A122	2.89	91746A856	3.28
6-48						
1/2"	1/4"	1/2"	91746A551	8.33	91746A951	10.42
3/4"	1/4"	1/2"	91746A554	8.69	91746A954	10.78
1"	1/4"	1/2"	91746A557	9.03	91746A957	11.11
8-32						
1/2"	3/16"	3/8"	91746A219	2.60	91746A864	2.89
1/2"	1/4"	1/2"	91746A541●	2.41	91746A860●	2.65
1"	3/16"	3/8"	91746A228	3.13	91746A872	3.37
1"	1/4"	1/2"	91746A545▲	3.13	91746A868▲	3.37
8-40						
1/2"	1/4"	1/2"	91746A241	8.83	91746A963	10.92
3/4"	1/4"	1/2"	91746A244	9.17	91746A966	11.25
1"	1/4"	1/2"	91746A247	10.08	91746A969	12.17
10-24						
1/2"	1/4"	1/2"	91746A310	3.13	91746A876	3.47
1"	1/4"	1/2"	91746A326	3.62	91746A880	3.95
10-32						
1/2"	1/4"	1/2"	91746A359	2.89	91746A884	3.18
1"	1/4"	1/2"	91746A374	3.37	91746A888	3.66
1/4"-20						
1/2"	5/16"	1/2"	91746A410	3.13	91746A892	3.47
1"	5/16"	1/2"	91746A413	3.62	91746A896	3.95
1 1/2"	5/16"	1/2"	91746A415	4.57	91746A900	4.96
1/4"-28						
1/2"	5/16"	1/2"	91746A472	10.64	91746A974	11.75
1"	5/16"	1/2"	91746A475	10.83	91746A977	11.94
1 1/2"	5/16"	1/2"	91746A478	15.83	91746A979	13.19
5/16"-18						
1/2"	3/8"	5/8"	91746A603	5.36	91746A904	6.07
1"	3/8"	5/8"	91746A609	5.61	91746A908	6.04
1 1/2"	3/8"	5/8"	91746A612	5.89	91746A912	6.32
Low Head—*18-8 Stainless Steel*						
4-40						
5/16"	5/16"	3/16"	91746A113	1.45	91746A624	1.69
3/8"	5/16"	3/16"	91746A114	1.83	91746A628	2.03
3/8"	3/8"	1/8"	91746A116●	2.32	91746A632●	2.65
1/2"	5/16"	3/16"	91746A119	2.32	91746A636	2.56
6-32						
3/8"	5/16"	3/16"	91746A124	2.41	91746A640	2.65
1/2"	5/16"	3/16"	91746A127	2.65	91746A644	2.89
8-32						
3/8"	3/8"	3/16"	91746A218	2.65	91746A648	2.89
1/2"	3/8"	1/8"	91746A220●	2.89	91746A652●	3.13
1/2"	3/8"	3/16"	91746A222	2.80	91746A656	3.13
5/8"	3/8"	3/16"	91746A224	2.89	91746A660	3.13
3/4"	3/8"	3/16"	91746A226	3.13	91746A664	3.37
10-24						
3/4"	3/8"	3/16"	91746A312	2.89	91746A668	3.14
3/4"	1/2"	3/16"	91746A318	3.18	91746A672	3.46
3/4"	3/4"	3/16"	91746A324	3.68	91746A676	4.07
1"	3/8"	3/16"	91746A512▲	4.68	91746A680▲	5.07
1 1/2"	5/8"	3/16"	91746A330	6.14	91746A688	6.50
1 1/2"	3/4"	3/16"	91746A514▲	5.04	91746A684▲	5.43
2"	5/8"	3/16"	91746A332	6.93	91746A692	7.32
10-32						
3/8"	7/16"	3/16"	91746A358	2.41	91746A696	2.65
1/2"	3/8"	3/16"	91746A360●	2.65	91746A700●	2.89
1/2"	7/16"	3/16"	91746A361	2.89	91746A704	3.13
5/8"	7/16"	3/16"	91746A362	2.89	91746A708	3.13
3/4"	7/16"	3/16"	91746A363	2.85	91746A712	3.37
3/4"	1/2"	3/16"	91746A364	4.89	91746A716	5.25
3/4"	3/4"	3/16"	91746A372	5.18	91746A720	5.54
1"	1/2"	3/16"	91746A109▲	5.21	91746A724▲	5.39

● Minimum thread length is 5/16". ▲Minimum thread length is 9/16".

Lg.	Head Dia.	Head Ht.	Unslotted	Each	Slotted	Each
Low Head—*18-8 Stainless Steel (Cont.)*						
10-32 (Cont.)						
1 1/4"	1/2"	3/16"	91746A368	$4.75	91746A728	$5.07
1 1/4"	3/4"	3/16"	91746A376	6.68	91746A732	7.21
1 1/2"	5/8"	3/16"	91746A378	6.29	91746A736	6.64
2"	5/8"	3/16"	91746A380	6.71	91746A740	7.07
1/4"-20						
3/4"	3/4"	3/16"	91746A412	5.68	91746A744	6.07
1"	3/4"	3/16"	91746A414	5.93	91746A752	6.43
1"	1"	3/16"	91746A525▲	8.92	91746A748▲	9.64
1 1/4"	3/4"	3/16"	91746A416	6.43	91746A756	6.86
1 1/2"	3/4"	3/16"	91746A418	6.75	91746A760	7.25
1 5/8"	3/4"	3/16"	91746A521▲	7.39	91746A764▲	7.68
2"	3/4"	3/16"	91746A420	9.14	91746A768	9.79
2"	1"	3/16"	91746A428	13.36	91746A772	14.11
2 1/2"	11/16"	7/32"	91746A431	9.68	91746A776	10.54
5/16"-18						
1"	3/4"	1/4"	91746A437	7.11	91746A780	7.46
1 1/2"	3/4"	1/4"	91746A439	7.75	91746A784	8.21
1 3/4"	3/4"	1/4"	91746A442	7.68	91746A788	8.11
2 1/4"	3/4"	1/4"	91746A445	9.75	91746A792	10.21
3"	3/4"	1/4"	91746A448	11.82	91746A796	12.46
3/8"-16						
1"	7/8"	5/16"	91746A451	9.71	91746A800	10.29
1 1/2"	7/8"	5/16"	91746A452	10.89	91746A804	11.50
2"	7/8"	5/16"	91746A453	11.43	91746A808	12.07
2 1/2"	7/8"	5/16"	91746A456	12.79	91746A812	13.57
3"	7/8"	5/16"	91746A459	13.89	91746A816	14.68
1/2"-13						
1 1/2"	1"	3/8"	91746A460	12.32	91746A820	13.11
2"	1"	3/8"	91746A461	13.57	91746A824	14.39
2 1/2"	1"	3/8"	91746A462	14.93	91746A828	15.71
3"	1"	3/8"	91746A463	15.82	91746A830	16.57
Low Head—*Brass*						
4-40						
5/16"	5/16"	3/16"	95488A123	2.69	___	___
3/8"	5/16"	3/16"	95488A127	2.76	___	___
6-32						
3/8"	5/16"	3/16"	95488A152	2.83	___	___
1/2"	5/16"	3/16"	95488A156	2.90	___	___
8-32						
3/8"	3/8"	3/16"	95488A194	3.07	___	___
1/2"	3/8"	3/16"	95488A199	3.31	___	___
10-24						
1/2"	3/8"	3/16"	95488A250	3.52	___	___
5/8"	3/8"	3/16"	95488A255	3.52	___	___
10-32						
1/2"	3/8"	3/16"	95488A266	3.52	___	___
5/8"	3/8"	3/16"	95488A272	3.62	___	___
1/4"-20						
3/4"	1/2"	3/16"	95488A307	3.79	___	___
1"	1/2"	3/16"	95488A312	4.00	___	___
Low Head—*Black-Oxide Steel*						
10-24						
1 1/2"	5/8"	3/16"	90200A251	3.36	___	___
2"	5/8"	3/16"	90200A253	2.47	___	___
10-32						
1 1/2"	5/8"	3/16"	90200A257	2.25	___	___
2"	5/8"	3/16"	90200A264	2.44	___	___
1/4"-20						
1 1/2"	11/16"	7/32"	90200A549	2.61	___	___
2 1/2"	11/16"	7/32"	90200A552	3.78	___	___
5/16"-18						
1 3/4"	3/4"	1/4"	90200A586	2.94	___	___
2 1/4"	3/4"	1/4"	90200A591	3.47	___	___
3"	3/4"	1/4"	90200A595	4.86	___	___
3/8"-16						
2"	7/8"	5/16"	90200A629	4.05	___	___
2 1/2"	7/8"	5/16"	90200A632	4.72	___	___
3"	7/8"	5/16"	90200A636	5.41	___	___
1/2"-13						
3"	1"	3/8"	90200A724	5.97	___	___
High Head—*18-8 Stainless Steel*						
1/4"-20						
1/2"	5/8"	1/2"	93585A180	7.00	___	___
3/4"	5/8"	1/2"	93585A190	7.20	___	___

(Continued on following page)

Knurled-Head Thumb Screws *(Continued from previous page)*

Lg.	Head Dia.	Head Ht.	Unslotted	Each
High Head—18-8 Stainless Steel (Cont.)				
1/4"-20 (Cont.)				
1"	5/8"	1/2"	93585A193	$7.40
5/16"-18				
3/4"	3/4"	9/16"	93585A290	8.29
1"	3/4"	9/16"	93585A295	9.34
1 1/4"	3/4"	9/16"	93585A297	9.51
3/8"-16				
3/4"	7/8"	11/16"	93585A390	10.66
1"	7/8"	11/16"	93585A395	11.72
1 1/2"	7/8"	11/16"	93585A398	12.14
1/2"-13				
3/4"	1"	13/16"	93585A450	$12.23
1"	1"	13/16"	93585A460	13.40
1 1/2"	1"	13/16"	93585A464	13.54
High Head—Black-Oxide Steel				
1/4"-20				
1/2"	5/8"	1/2"	90200A110	4.37
3/4"	5/8"	1/2"	90200A120	4.62
High Head—Black-Oxide Steel (Cont.)				
5/16"-18				
3/4"	3/4"	9/16"	90200A220	$4.51
1"	3/4"	9/16"	90200A230	4.76
3/8"-16				
3/4"	7/8"	11/16"	90200A320	5.28
1"	7/8"	11/16"	90200A330	5.54
1/2"-13				
3/4"	1"	13/16"	90200A420	5.70
1"	1"	13/16"	90200A430	5.95

Knurled-Head Thumb Screws with Shoulder

A high shoulder lifts the head off your work surface making these screws easier to grasp. Knurls prevent your fingers from slipping. All screws are fully threaded and have a Class 2A thread fit.

18-8 stainless steel offers excellent corrosion resistance and may be mildly magnetic. It has a min. Rockwell hardness of B80 and a min. tensile strength of 75,000 psi.

Black-oxide steel is made from 12L14 steel. It's rust resistant and has a min. Rockwell hardness of B68 and a min. tensile strength of 57,000 psi.

Brass is made from Alloy 360. It's nonmagnetic, softer than stainless steel, and corrosion resistant. Min. Rockwell hardness is B78. Min. tensile strength is 58,000 psi.

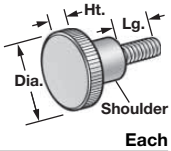

Lg.		Each
18-8 Stainless Steel		
4-40—Shoulder: Dia. 1/4", Lg. 3/32"; Head: Dia. 3/8", Ht. 3/32"		
1/4"	91830A101	$2.85
3/8"	91830A102	2.93
7/16"	91830A104	2.93
4-48—Shoulder: Dia. 1/4", Lg. 3/32"; Head: Dia. 3/8", Ht. 3/32"		
1/4"	91830A151	6.74
3/8"	91830A154	7.35
7/16"	91830A157	8.11
6-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 7/16", Ht. 7/32"		
3/8"	91830A200	3.33
7/16"	91830A202	3.78
1/2"	91830A203	3.37
9/16"	91830A204	3.78
8-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 7/16", Ht. 7/32"		
5/16"	91830A205	3.78
5/16"	91830A301♣	4.73
3/8"	91830A206	3.78
3/8"	91830A302♣	4.73
7/16"	91830A207	3.78
7/16"	91830A303♣	4.88
1/2"	91830A208	4.03
1/2"	91830A304♣	5.00
9/16"	91830A209	4.03
5/8"	91830A305♣	5.00
10-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 1/2", Ht. 7/32"		
5/16"	91830A401	$4.76
3/8"	91830A402	4.76
7/16"	91830A403	4.88
1/2"	91830A404	5.00
9/16"	91830A405	5.00
5/8"	91830A406	5.00
1/4"-20—Shoulder: Dia. 1/2", Lg. 3/8"; Head: Dia. 1", Ht. 1/4"		
5/16"	91830A562	9.75
3/8"	91830A566	10.05
1/2"	91830A569	10.41
5/8"	91830A573	11.21
3/4"	91830A577	11.88
1"	91830A581	12.72
5/16"-18—Shoulder: Dia. 5/8", Lg. 1/2"; Head: Dia. 1 1/4", Ht. 1/4"		
1/2"	91830A631	14.30
5/8"	91830A634	14.93
3/4"	91830A636	15.95
1"	91830A639	17.38
1 1/4"	91830A642	18.88
1 1/2"	91830A645	19.88
3/8"-16—Shoulder: Dia. 3/4", Lg. 11/16"; Head: Dia. 1 3/8", Ht. 5/16"		
5/8"	91830A713	23.31
3/4"	91830A716	24.20
1"	91830A719	25.13
1 1/4"	91830A721	25.88
1 1/2"	91830A723	26.38
Black-Oxide Steel		
4-40—Shoulder: Dia. 1/4", Lg. 3/32"; Head: Dia. 3/8", Ht. 3/32"		
1/4"	91882A216	2.45
3/8"	91882A219	2.40
7/16"	91882A221	2.40
4-48—Shoulder: Dia. 1/4", Lg. 3/32"; Head: Dia. 3/8", Ht. 3/32"		
1/4"	91882A106	5.78
3/8"	91882A108	6.40
7/16"	91882A111	7.18

♣ Head diameter is 1/2".

Lg.		Each
Black-Oxide Steel (Cont.)		
6-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 7/16", Ht. 7/32"		
3/8"	91882A224	$2.75
7/16"	91882A226	2.78
1/2"	91882A227	2.78
9/16"	91882A229	2.78
8-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 7/16", Ht. 7/32"		
5/16"	91882A335	2.78
5/16"	91882A352♣	3.11
3/8"	91882A338	2.78
3/8"	91882A355♣	3.18
7/16"	91882A342	2.75
7/16"	91882A358♣	3.36
1/2"	91882A346	3.05
9/16"	91882A349	3.05
5/8"	91882A366♣	3.55
10-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 1/2", Ht. 7/32"		
5/16"	91882A371	3.23
3/8"	91882A374	3.23
7/16"	91882A378	3.36
1/2"	91882A382	3.55
9/16"	91882A386	3.55
5/8"	91882A389	3.55
1/4"-20—Shoulder: Dia. 1/2", Lg. 3/8"; Head: Dia. 1", Ht. 1/4"		
5/16"	91882A412	$4.96
3/8"	91882A415	5.05
1/2"	91882A419	5.48
5/8"	91882A423	5.60
3/4"	91882A425	5.90
1"	91882A429	6.57
5/16"-18—Shoulder: Dia. 5/8", Lg. 1/2"; Head: Dia. 1 1/4", Ht. 1/4"		
1/2"	91882A431	7.31
5/8"	91882A434	7.47
3/4"	91882A437	7.86
1"	91882A439	8.82
1 1/4"	91882A442	9.20
1 1/2"	91882A445	10.31
3/8"-16—Shoulder: Dia. 3/4", Lg. 11/16"; Head: Dia. 1 3/8", Ht. 5/16"		
5/8"	91882A451	10.45
3/4"	91882A453	11.45
1"	91882A455	12.76
1 1/4"	91882A458	14.00
1 1/2"	91882A463	15.18
Brass		
4-40—Shoulder: Dia. 1/4", Lg. 3/32"; Head: Dia. 3/8", Ht. 3/32"		
1/4"	98816A216	2.76
3/8"	98816A223	2.83
6-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 7/16", Ht. 7/32"		
7/16"	98816A227	2.86
9/16"	98816A231	3.07
8-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 1/2", Ht. 7/32"		
3/8"	98816A235	3.24
1/2"	98816A238	3.31
8-32 (Cont.)		
5/8"	98816A243	3.38
10-32—Shoulder: Dia. 3/8", Lg. 3/32"; Head: Dia. 1/2", Ht. 7/32"		
3/8"	98816A245	3.24
1/2"	98816A249	3.31
5/8"	98816A252	3.38
1/4"-20—Shoulder: Dia. 1/2", Lg. 1/8"; Head: Dia. 5/8", Ht. 5/16"		
1/2"	98816A256	3.65
5/8"	98816A263	3.79
3/4"	98816A266	4.00

Small Diameter Knurled-Head Thumb Screws with Shoulder

They may be small, but the shoulder makes them easy to grasp and the knurls prevent your fingers from slipping. Also known as washer-face thumb screws, they're fully threaded and have a Class 2A thread fit.

Aluminum is made from lightweight Alloy 2011T3. It's nonmagnetic, has a lustrous finish, and is not rated for hardness or tensile strength.

18-8 Stainless Steel— Offers excellent corrosion resistance and may be mildly magnetic. Min. Rockwell hardness is B65. Min. tensile strength is 70,000 psi.

Brass— Is corrosion resistant, nonmagnetic, and softer than 18-8 stainless steel. Min. Rockwell hardness is B50. Min. tensile strength is 50,000 psi.

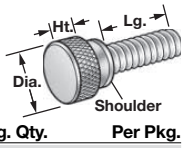

Lg.	Pkg. Qty.	Per Pkg.
Aluminum		
4-40—Shoulder: Dia. 3/8", Lg. 1/8"; Head: Dia. 3/8", Ht. 3/16"		
5/16"	1	94567A120	$1.56
3/8"	1	94567A150	1.59
7/16"	1	94567A180	1.62
6-32—Shoulder: Dia. 3/8", Lg. 1/8"; Head: Dia. 3/8", Ht. 3/16"		
3/8"	1	94567A210	1.61
7/16"	1	94567A240	1.54
1/2"	1	94567A270	1.68
8-32—Shoulder: Dia. 3/8", Lg. 1/8"; Head: Dia. 7/16", Ht. 3/16"		
3/8"	1	94567A300	1.91
1/2"	1	94567A330	1.96
8-32 (Cont.)		
5/8"	1	94567A360	$2.01
10-32—Shoulder: Dia. 3/8", Lg. 1/8"; Head: Dia. 7/16", Ht. 3/16"		
3/8"	1	94567A390	1.91
1/2"	1	94567A420	1.96
5/8"	1	94567A450	2.01
1/4"-20—Shoulder: Dia. 3/8", Lg. 1/8"; Head: Dia. 1/2", Ht. 1/4"		
3/8"	1	94567A480	2.04
1/2"	1	94567A510	2.10
5/8"	1	94567A540	2.15
3/4"	1	94567A570	2.21
18-8 Stainless Steel		
4-40—Shoulder: Dia. 15/64", Lg. 1/8"; Head: Dia. 19/64", Ht. 1/8"		
5/16"	5	99607A103	$8.78
3/8"	5	99607A106	9.12
7/16"	5	99607A109	9.79
6-32—Shoulder: Dia. 21/64", Lg. 5/32"; Head: Dia. 25/64", Ht. 1/8"		
1/4"	5	99607A112	8.44
3/8"	5	99607A116	9.12
1/2"	5	99607A120	9.45
3/4"	5	99607A124	10.13
1"	5	99607A128	10.97
8-32—Shoulder: Dia. 11/32", Lg. 11/64"; Head: Dia. 27/64", Ht. 5/32"		
3/8"	5	99607A132	$9.79
1/2"	5	99607A135	10.13
3/4"	5	99607A137	10.97
1"	5	99607A139	12.66
10-24—Shoulder: Dia. 3/8", Lg. 11/64"; Head: Dia. 29/64", Ht. 5/32"		
3/8"	5	99607A142	10.13
1/2"	5	99607A145	10.97
3/4"	5	99607A148	11.82
1"	5	99607A152	12.66

(Continued on following page)

For similar items, see pages 2206-2210.

Small Diameter Knurled-Head Thumb Screws with Shoulder (Cont. from previous page)

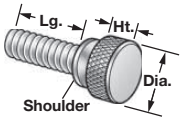

They may be small, but the shoulder makes them easy to grasp and the knurls prevent your fingers from slipping. Also known as washer-face thumb screws, they're fully threaded and have a Class 2A thread fit.

18-8 Stainless Steel— Offers excellent corrosion resistance and may be mildly magnetic. Min. Rockwell hardness is B65. Min. tensile strength is 70,000 psi.

Brass— Is corrosion resistant, nonmagnetic, and softer than 18-8 stainless steel. Min. Rockwell hardness is B50. Min. tensile strength is 50,000 psi.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel (Cont.)			
10-32—*Shoulder: Dia. 3/8″, Lg. 11/64″; Head: Dia. 29/64″, Ht. 5/32″*			
3/8″	5	99607A163	$10.13
1/2″	5	99607A167	10.97
3/4″	5	99607A169	11.82
1″	5	99607A172	12.66
1/4″-20—*Shoulder: Dia. 31/64″, Lg. 1/8″; Head: Dia. 37/64″, Ht. 1/4″*			
3/8″	1	99607A184	$3.04
1/2″	1	99607A186	3.20
3/4″	1	99607A189	3.38
1″	1	99607A193	4.05

Lg.	Pkg. Qty.		Per Pkg.
Brass			
6-32—*Shoulder: Dia. 21/64″, Lg. 11/64″; Head: Dia. 3/8″, Ht. 1/8″*			
1/4″	25	92421A144	$9.75
3/8″	25	92421A146	10.35
1/2″	25	92421A148	10.99
3/4″	25	92421A151	11.09
1″	25	92421A153	12.06
8-32—*Shoulder: Dia. 11/32″, Lg. 3/16″; Head: Dia. 13/32″, Ht. 9/64″*			
3/8″	25	92421A192	10.57
1/2″	25	92421A194	10.64
3/4″	10	92421A197	5.09
1″	10	92421A199	5.12
10-24—*Shoulder: Dia. 3/8″, Lg. 13/64″; Head: Dia. 7/16″, Ht. 9/64″*			
3/8″	25	92421A240	11.68
10-24 (Cont.)			
1/2″	10	92421A242	$6.18
3/4″	10	92421A245	6.24
1″	10	92421A247	6.88
10-32—*Shoulder: Dia. 3/8″, Lg. 13/64″; Head: Dia. 7/16″, Ht. 9/64″*			
3/8″	25	92421A640	11.68
1/2″	10	92421A642	6.18
3/4″	10	92421A645	6.24
1″	10	92421A647	6.88
1/4″-20—*Shoulder: Dia. 31/64″, Lg. 7/32″; Head: Dia. 9/16″, Ht. 5/32″*			
3/8″	10	92421A535	8.71
1/2″	10	92421A537	9.28
3/4″	10	92421A540	9.71
1″	10	92421A542	10.04

Metric Knurled-Head Thumb Screws

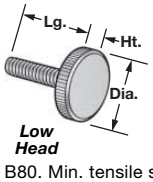

Choose a ***low head*** for tight spaces and a screw ***with shoulder*** when you need a raised head that's easy to get your fingers around.

18-8 stainless steel offers excellent corrosion resistance and may be mildly magnetic. Min. Rockwell hardness is B80. Min. tensile strength is 75,000 psi. Class 6g thread fit.

Black-oxide steel is made from 12L14 steel. Rust resistant. Min. Rockwell hardness is B80. Min. tensile strength is 70,000 psi. Class 6h thread fit.

Lg., mm		Each
Low Head—*18-8 Stainless Steel*		
M3—*Pitch: 0.5 mm, Head: Dia. 8 mm; Ht. 5 mm*		
8	92545A111	$2.37
9	92545A115	2.42
11	92545A119	2.52
13	92545A123	2.63
M3.5—*Pitch: 0.6 mm, Head: Dia. 8 mm; Ht. 5 mm*		
8	92545A127	2.40
9	92545A131	2.45
11	92545A135	2.56
13	92545A139	2.67
M4—*Pitch: 0.7 mm, Head: Dia. 10 mm; Ht. 5 mm*		
9	92545A143	3.07
11	92545A147	3.24
13	92545A151	3.41
M4 (Cont.)		
14	92545A155	$3.56
16	92545A159	3.78
M5—*Pitch: 0.8 mm, Head: Dia. 11 mm; Ht. 5 mm*		
9	92545A163	3.88
11	92545A167	4.02
13	92545A171	4.13
14	92545A175	4.19
16	92545A179	4.35
M6—*Pitch: 1 mm, Head: Dia. 13 mm; Ht. 6 mm*		
13	92545A183	5.36
14	92545A187	5.45
16	92545A191	5.65
18	92545A195	5.83
19	92545A199	5.90
Low Head—*Black Oxide Steel*		
M3—*Pitch: 0.5 mm, Head: Dia. 12 mm; Ht. 2.5 mm*		
6	92552A411	2.14
10	92552A414	2.14
16	92552A418	2.20
M4—*Pitch: 0.7 mm, Head: Dia. 16 mm; Ht. 3.5 mm*		
8	92552A423	2.43
10	92552A426	2.49
12	92552A429	2.54
16	92552A431	2.91
20	92552A434	3.34
M5—*Pitch: 0.8 mm, Head: Dia. 20 mm; Ht. 4 mm*		
10	92552A438	3.09
12	92552A442	3.20
16	92552A445	3.34
20	92552A447	3.86
M6—*Pitch: 1 mm, Head: Dia. 24 mm; Ht. 5 mm*		
12	92552A453	4.09
16	92552A456	4.17
20	92552A459	4.34
30	92552A462	5.66
40	92552A465	7.00

Lg., mm		Each
Low Head—*Black Oxide Steel (Cont.)*		
M8—*Pitch: 1.25 mm, Head: Dia. 30 mm; Ht. 6 mm*		
16	92552A471	$5.80
20	92552A474	6.43
M8 (Cont.)		
25	92552A478	$6.60
30	92552A482	7.66
40	92552A484	10.23
With Shoulder—*18-8 Stainless Steel*		
M4—*Pitch: 0.7 mm, Head: Dia. 16 mm; Ht. 3.5 mm, Shoulder: Dia. 8 mm; Lg. 6 mm*		
8	92558A100	6.35
10	92558A110	6.63
12	92558A120	6.62
16	92558A130	6.76
M5—*Pitch: 0.8 mm, Head: Dia. 20 mm; Ht. 4 mm, Shoulder: Dia. 10 mm; Lg. 7.5 mm*		
10	92558A150	7.75
12	92558A160	8.00
16	92558A170	8.41
20	92558A180	8.76
M6—*Pitch: 1 mm, Head: Dia. 24 mm; Ht. 5 mm, Shoulder: Dia. 12 mm; Lg. 11 mm*		
12	92558A200	10.38
16	92558A210	11.33
20	92558A220	11.88
30	92558A230	13.37
M8—*Pitch: 1.25 mm, Head: Dia. 30 mm; Ht. 6 mm, Shoulder: Dia. 16 mm; Lg. 12 mm*		
16	92558A250	16.00
20	92558A260	17.05
30	92558A270	20.25
With Shoulder—*Black Oxide Steel*		
M3—*Pitch: 0.5 mm, Head: Dia. 12 mm; Ht. 2.5 mm, Shoulder: Dia. 6 mm; Lg. 5 mm*		
6	92581A120	2.66
10	92581A130	2.66
12	92581A140	2.66
16	92581A150	2.66
M4—*Pitch: 0.7 mm, Head: Dia. 16 mm; Ht. 3.5 mm, Shoulder: Dia. 8 mm; Lg. 6 mm*		
5	92581A223	2.66
8	92581A230	2.77
10	92581A240	3.20
12	92581A250	3.37
16	92581A260	3.62
20	92581A270	4.08
25	92581A280	4.25
M5—*Pitch: 0.8 mm, Head: Dia. 20 mm; Ht. 4 mm, Shoulder: Dia. 10 mm; Lg. 7.5 mm*		
8	92581A320	3.78
10	92581A330	3.83
M5 (Cont.)		
12	92581A340	4.25
16	92581A350	4.38
20	92581A360	4.66
M6—*Pitch: 1 mm, Head: Dia. 24 mm; Ht. 5 mm, Shoulder: Dia. 12 mm; Lg. 11 mm*		
8	92581A410	4.93
10	92581A420	5.08
12	92581A430	5.51
16	92581A440	5.62
20	92581A450	5.92
25	92581A460	6.38
M8—*Pitch: 1.25 mm, Head: Dia. 30 mm; Ht. 6 mm, Shoulder: Dia. 16 mm; Lg. 12 mm*		
20	92581A530	7.92
25	92581A540	9.05
30	92581A550	9.48
40	92581A560	10.58

Extended Point Thumb Screws

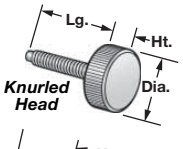

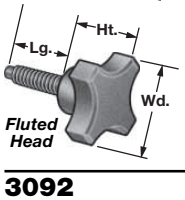

Insert the point into a drilled hole or slot to lock items in place. Also called dog points and pilot points, inch sizes have a Class 2A thread fit; metric sizes have a Class 6g thread fit.

18-8 stainless steel is corrosion resistant and can be mildly magnetic. Min. Rockwell hardness is B80. Min. tensile strength is 75,000 psi.

Black-oxide steel is rust resistant. Made from C1018 or 12L14 steel. Min. Rockwell hardness is B84. Min. tensile strength is 70,000 psi.

Screws ***with fluted head*** are made from black-oxide steel and are fully threaded. Inch sizes have a head made from black-oxide steel; metric sizes have a head made from zinc-plated cast iron.

Lg.	Thread Lg.		Each
With Knurled Head—*18-8 Stainless Steel*			
10-24—*Head: Dia. 3/4″; Ht. 5/16″, Tip: Dia. 1/8″; Lg. 1/8″*			
1 1/4″	1 1/16″	93015A211	$6.83
1 5/8″	1 7/16″	93015A212	6.83
2″	1 13/16″	93015A213	7.21
10-32—*Head: Dia. 3/4″; Ht. 5/16″, Tip: Dia. 1/8″; Lg. 1/8″*			
1″	3/4″	93015A208	6.83
1 1/2″	1 1/4″	93015A209	6.83
2″	1 3/4″	93015A210	7.21
1/4″-20—*Head: Dia. 1″; Ht. 5/16″, Tip: Dia. 0.175″; Lg. 1/8″*			
1″	11/64″	93015A214	$7.60
1 1/2″	1 1/4″	93015A215	8.22
2″	1 3/4″	93015A216	8.36
2 1/2″	2 1/4″	93015A217	8.25
5/16″-18—*Head: Dia. 1 1/8″; Ht. 3/8″, Tip: Dia. 15/64″; Lg. 3/16″*			
1″	7/8″	93015A218	8.63
1 1/2″	1 3/16″	93015A219	9.01

(Continued on following page)

For similar items, see pages 2206-2210.

Extended Point Thumb Screws *(Continued from previous page)*

Lg.	Thread Lg.		Each
With Knurled Head— *18-8 Stainless Steel (Cont.)*			
5/16"-18 (Cont.)			
1 3/4"	1 7/16"	93015A220	$9.12
2 1/4"	1 15/16"	93015A221	9.50
2 3/4"	2 7/16"	93015A222	9.72
3"	2 11/16"	93015A223	9.72
3/8"-16— *Head: Dia. 1 1/4"; Ht. 7/16"*			
Tip: Dia. 0.285"; Lg. 3/16"			
1 1/2"	1 1/8"	93015A224	11.38
2"	1 5/8"	93015A225	11.38
2 1/2"	2 1/8"	93015A226	11.86
3/8"-16 (Cont.)			
3"	2 5/8"	93015A227	$11.96
3 1/2"	3 1/8"	93015A228	12.46
4"	3 5/8"	93015A229	13.25
1/2"-13— *Head: Dia. 1 1/4"; Ht. 1/2"*			
Tip: Dia. 25/64"; Lg. 1/4"			
2 1/2"	2"	93015A230	15.21
3"	2 1/2"	93015A232	15.70
3 1/2"	3"	93015A233	15.98

Lg.	Thread Lg.		Each
With Knurled Head— *Black-Oxide Steel*			
10-24— *Head: Dia. 3/4"; Ht. 1/4"*			
Tip: Dia. 1/8"; Lg. 3/32"			
1"	3/4"	90079A247	3.13
1 1/2"	1 1/4"	90079A251	2.81
2"	1 3/4"	90079A253	3.36
10-32— *Head: Dia. 3/4"; Ht. 1/4"*			
Tip: Dia. 1/8"; Lg. 1/8"			
1"	3/4"	90079A225	4.01
1 1/2"	1 3/8"	90079A227	3.41
2"	1 3/4"	90079A229	4.56
1/4"-20— *Head: Dia. 1"; Ht. 5/16"*			
Tip: Dia. 5/32"; Lg. 1/8"			
1"	3/4"	90079A245	4.63
1 1/2"	1 1/4"	90079A546	3.50
2"	1 3/4"	90079A548	3.52
2 1/2"	2 1/4"	90079A255	3.51
5/16"-18— *Head: Dia. 1 1/8"; Ht. 3/8"*			
Tip: Dia. 13/64"; Lg. 5/32"			
1"	7/8"	90079A585	5.35
5/16"-18 (Cont.)			
1 1/2"	1 1/4"	90079A587	4.08
2"	1 3/4"	90079A588	4.17
2 1/2"	2 1/4"	90079A589	4.38
3"	2 11/16"	90079A590	5.56
3/8"-16— *Head: Dia. 1 1/4"; Ht. 7/16"*			
Tip: Dia. 1/4"; Lg. 3/16"			
1 1/2"	1 1/8"	90079A630	5.83
2"	1 3/4"	90079A632	4.42
2 1/2"	2 1/4"	90079A633	4.88
3"	2 3/4"	90079A634	4.97
3 1/2"	3 1/8"	90079A635	7.08
4"	3 5/8"	90079A636	7.61
1/2"-13— *Head: Dia. 1 1/4"; Ht. 1/2"*			
Tip: Dia. 11/32"; Lg. 1/4"			
2 1/2"	2"	90079A668	6.22
3"	2 3/4"	90079A672	5.95
3 1/2"	3"	90079A670	7.08

Lg.	Thread Lg.		Each
With Fluted Head— *Black-Oxide Steel*			
1/4"-20— *Head: Wd. 1 1/8"; Ht. 5/8"*			
Tip: Dia. 5/32"; Lg. 1/8"			
1"		93005A551	$4.80
1 1/2"		93005A552	5.15
2"		93005A581	8.39
5/16"-18— *Head: Wd. 1 1/2"; Ht. 7/8"*			
Tip: Dia. 13/64"; Lg. 5/32"			
1 3/4"		93005A553	$5.37
2 1/2"		93005A554	5.73
3"		93005A585	9.49
3/8"-16— *Head: Wd. 2"; Ht. 1 1/8"*			
Tip: Dia. 1/4"; Lg. 3/16"			
1 1/2"		93005A555	$6.22
2"		93005A556	7.02
2 1/2"		93005A557	7.61
3"		93005A589	11.20
1/2"-13— *Head: Wd. 2 1/2"; Ht. 1 1/2"*			
Tip: Dia. 11/32"; Lg. 1/4"			
1 1/2"		93005A558	$8.39
2 1/2"		93005A561	9.66
3"		93005A563	10.54
5/8"-11— *Head: Wd. 2 1/2"; Ht. 1 1/2"*			
Tip: Dia. 15/32"; Lg. 5/16"			
3"		93005A570	12.95

Lg., mm	Thread Lg., mm		Each
Metric with Knurled Head— *18-8 Stainless Steel*			
M4— *Pitch: 0.7 mm*			
Head: Dia. 19 mm; Ht. 8 mm			
Tip: Dia. 2 mm; Lg. 3 mm			
32	26	98014A601	$6.75
41	35	98014A603	6.96
M6— *Pitch: 1 mm*			
Head: Dia. 25 mm; Ht. 8 mm			
Tip: Dia. 4.3 mm; Lg. 3 mm			
25	19	98014A625	7.38
38	32	98014A629	7.62
51	45	98014A633	7.86
M8— *Pitch: 1.25 mm*			
Head: Dia. 29 mm; Ht. 9.5 mm			
Tip: Dia. 6 mm; Lg. 4.3 mm			
25	18	98014A641	8.41
M8 (Cont.)			
38	31	98014A644	$8.55
57	50	98014A652	9.26
M10— *Pitch: 1.5 mm*			
Head: Dia. 32 mm; Ht. 11 mm			
Tip: Dia. 7 mm; Lg. 4.3 mm			
38	31	98014A662	10.13
51	44	98014A665	10.95
76	69	98014A673	11.33
M12— *Pitch: 1.75 mm*			
Head: Dia. 32 mm; Ht. 13 mm			
Tip: Dia. 10 mm; Lg. 6.35 mm			
64	57	98014A681	14.01
76	67	98014A686	14.81

Lg., mm		Each
Metric with Fluted Head— *Black-Oxide Steel Shaft*		
M6— *Pitch: 1 mm*		
Head: Wd. 38 mm; Ht. 22 mm		
Tip: Dia. 4.5 mm; Lg. 3 mm		
26	98052A416	$6.98
38	98052A419	7.38
M8— *Pitch: 1.25 mm*		
Head: Wd. 38 mm; Ht. 22 mm		
Tip: Dia. 6 mm; Lg. 4.5 mm		
44.5	98052A426	7.51
M10— *Pitch: 1.5 mm*		
Head: Wd. 51 mm; Ht. 22 mm		
Tip: Dia. 7 mm; Lg. 4.5 mm		
38	98052A431	$8.78
51	98052A435	9.63
M12— *Pitch: 1.75 mm*		
Head: Wd. 63.5 mm; Ht. 38 mm		
Tip: Dia. 10 mm; Lg. 6.5 mm		
38	98052A441	10.93
63.5	98052A445	12.38

Swivel-Pad Thumb Screws for Angled Surfaces

The pad swivels in all directions to make maximum contact with angled surfaces. It stops rotating when it touches the workpiece to reduce marring if the screw is overtightened. Screws are fully threaded.

Style A have a reduced diameter pad that can pass through tapped holes. Head and shaft are made from steel with a min. Rockwell hardness of C58. The pad swivels 7 1/2°. It's made from 41L40 steel with a min. Rockwell hardness of C32. All parts have a black-oxide finish and a min. tensile strength of 80,000 psi.

Style B have a removable pad that swivels 10°. To use, thread the screw through a hole. Screw parts are 12L14 steel with a black-oxide finish. Not rated for hardness. Tensile strength is 78,000 psi.

Style C have the largest pad, so they provide the most gripping power. To use, thread the screw through the hole, then snap the pad on from the other side. Pads swivel 10° and are made from steel such as C1018 or 12L14 with a black-oxide finish. Min. Rockwell hardness is C39. For more gripping strength, use an *optional extra large steel pad*; for a soft, nonmarring point, use an *optional nylon pad*.

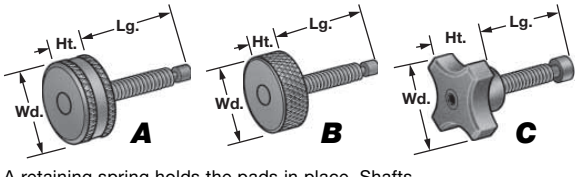

A retaining spring holds the pads in place. Shafts are made from 12L14 steel with a black-oxide finish and a min. Rockwell hardness of C39. Heads are made from powdered metal and have a min. Rockwell hardness of B70. Shanks have a min. tensile strength of 70,000 psi. **Also Available:** Replacement retaining springs for Style C. Please ask for 90165A700 and specify thread size.

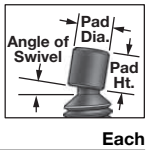

Lg.		Each
Style A		
1/4"-20— *Head: Dia. 1"; Ht. 3/8"*		
Pad: Dia. 3/16"; Ht. 5/32"		
1 1/2"	90282A201	$9.45
2"	90282A205	9.74
5/16"-18— *Head: Dia. 1 1/8"; Ht. 7/16"*		
Pad: Dia. 1/4"; Ht. 3/16"		
1 1/2"	90282A209	10.87
2"	90282A213	13.40
2 1/2"	90282A217	11.25
3/8"-16— *Head: Dia. 1 1/4"; Ht. 1/2"*		
Pad: Dia. 19/64"; Ht. 15/64"		
1 1/2"	90282A221	10.37
3/8"-16 (Cont.)		
2"	90282A225	$9.55
2 1/2"	90282A229	10.35
3"	90282A233	11.90
1/2"-13— *Head: Dia. 1 1/4"; Ht. 9/16"*		
Pad: Dia. 13/32"; Ht. 9/32"		
1 1/2"	90282A237	21.22
2"	90282A241	11.14
2 1/2"	90282A245	12.42
3"	90282A249	22.26

Lg.		Each
Style B		
1/4"-20— *Head: Dia. 1"; Ht. 5/16"*		
Pad: Dia. 3/16"; Ht. 3/16"		
1 1/2"	90210A111	6.13
2 1/32"	90210A112	6.13
5/16"-18— *Head: Dia. 1 1/8"; Ht. 3/8"*		
Pad: Dia. 1/4"; Ht. 19/64"		
1 33/64"	90210A211	6.70
2 1/64"	90210A212	6.70
5/16"-18 (Cont.)		
2 33/64"	90210A214	6.25
3/8"-16— *Head: Dia. 1 1/4"; Ht. 7/16"*		
Pad: Dia. 19/64"; Ht. 21/64"		
1 1/2"	90210A311	7.13
2"	90210A312	7.15
2 1/2"	90210A316	7.15
3"	90210A318	7.58

Lg.		Each
Style C		
1/4"-20— *Head: Wd. 1 1/8"; Ht. 5/8"*		
Pad: Dia. 5/16"; Ht. 3/16"		
1 1/4"	90165A412	7.34
1/4"-20 (Cont.)		
2"	90165A414	7.46
2 3/4"	90165A416	7.50

Lg.		Each
Style C (Cont.)		
1/4"-20 (Cont.)		
3 1/2"	90165A418	$8.14
5/16"-18— *Head: Wd. 1 1/2"; Ht. 7/8"*		
Pad: Dia. 3/8"; Ht. 7/32"		
1 5/16"	90165A420	8.25
2 1/16"	90165A422	8.49
2 13/16"	90165A424	8.80
3 9/16"	90165A426	9.38
3/8"-16— *Head: Wd. 2"; Ht. 1"*		
Pad: Dia. 7/16"; Ht. 1/4"		
1 5/16"	90165A512	9.91
2 1/16"	90165A514	10.42
2 13/16"	90165A516	11.00
3 9/16"	90165A518	11.53
4 5/16"	90165A520	11.80
1/2"-13— *Head: Wd. 2 1/2"; Ht. 1 1/8"*		
Pad: Dia. 9/16"; Ht. 5/16"		
2 1/16"	90165A522	$11.90
2 13/16"	90165A524	12.58
3 9/16"	90165A526	13.40
4 5/16"	90165A527	14.13
5 1/16"	90165A528	14.46
5/8"-11— *Head: Wd. 3"; Ht. 1 1/4"*		
Pad: Dia. 11/16"; Ht. 13/32"		
2 5/16"	90165A532	15.72
3 1/16"	90165A533	16.67
3 13/16"	90165A535	17.64
4 9/16"	90165A537	18.43
5 5/16"	90165A540	18.87

Optional Pads for Style C

For Screw Size	Extra-Large Steel Pads Dia.	Ht.		Each	Nylon Pads Dia.	Ht.		Each
1/4"-20	5/8"	7/32"	90165A301	$1.50	5/16"	3/16"	90165A602	$1.20
5/16"-18	11/16"	1/4"	90165A311	1.63	3/8"	7/32"	90165A612	1.26
3/8"-16	3/4"	9/32"	90165A321	1.70	7/16"	1/4"	90165A622	1.32
1/2"-13	7/8"	3/8"	90165A331	1.78	9/16"	5/16"	90165A632	1.43
5/8"-11	1"	7/16"	90165A341	1.96	11/16"	13/32"	90165A642	1.61

For similar items, see pages 2206-2210.

Plastic-Head Thumb Screws

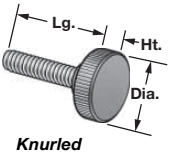

Knurled

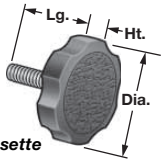

Rosette

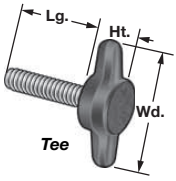

Tee

With large, easy-to-grip heads, these screws are perfect when "finger-tight" is sufficient or if you need to make frequent adjustments. Made from acetal plastic, the heads withstand temperatures from 32° to 180° F.

All screws are made from 18-8 stainless steel and are fully threaded, except 4-40×1″ long, 10-32 ×1½″ long and ¼″-20×1½″, 1¾″, and 2″ long screws, which have at least ¾″ of thread. Inch sizes have a Class 3A thread fit; metric sizes have a Class 4g6g thread fit.

Knurled Head—To Order: Please specify color: black or red.

Lg.	Pkg. Qty.		Per Pkg.
4-40—Head: Dia. 5/16″; Ht. 11/64″			
¼″	25	91185A233	$8.43
⅜″	25	91185A237	8.65
½″	25	91185A241	9.11
⅝″	25	91185A245	9.85
¾″	25	91185A249	9.84
1″	25	91185A253	11.99
6-32—Head: Dia. 3/8″; Ht. 3/16″			
¼″	25	91185A257	8.92
⅜″	25	91185A261	8.96
½″	25	91185A265	9.88
⅝″	25	91185A269	9.99
¾″	25	91185A273	10.37
⅞″	25	91185A277	11.97
1″	25	91185A281	12.49
8-32—Head: Dia. 1/2″; Ht. 7/32″			
¼″	25	91185A285	9.13
⅜″	25	91185A289	10.81
½″	25	91185A293	11.28
⅝″	25	91185A297	11.69
¾″	25	91185A301	12.34
⅞″	25	91185A305	14.09
1″	25	91185A309	14.60
10-24—Head: Dia. 5/8″; Ht. 1/4″			
⅜″	25	91185A342	13.08
½″	25	91185A346	13.11
⅝″	25	91185A350	13.37
¾″	25	91185A354	14.29
⅞″	10	91185A358	7.28
1″	10	91185A362	7.62
10-32—Head: Dia. 5/8″; Ht. 1/4″			
⅜″	25	91185A366	13.08
½″	25	91185A370	13.11
⅝″	25	91185A374	13.37
¾″	25	91185A378	14.29
⅞″	10	91185A382	7.28
1″	10	91185A386	7.49

Lg.	Pkg. Qty.		Per Pkg.
10-32 (Cont.)			
1½″	10	91185A390	$9.13
¼″-20—Head: Dia. 3/4″; Ht. 5/16″			
⅜″	10	91185A394	8.00
½″	10	91185A398	8.38
⅝″	10	91185A402	8.62
¾″	10	91185A406	9.12
⅞″	10	91185A410	9.76
1″	10	91185A414	10.00
1¼″	10	91185A418	11.00
1½″	10	91185A422	11.76
1¾″	10	91185A426	13.12
2″	5	91185A430	8.13
¼″-28—Head: Dia. 3/4″; Ht. 5/16″			
⅜″	10	91185A455	9.12
½″	10	91185A459	9.26
⅝″	10	91185A463	9.38
¾″	10	91185A467	9.88
⅞″	10	91185A471	11.08
1″	10	91185A475	11.12
1¼″	10	91185A479	11.88
5/16″-18—Head: Dia. 1″; Ht. 13/32″			
½″	10	91185A483	13.12
⅝″	10	91185A487	13.25
¾″	5	91185A491	7.50
⅞″	5	91185A495	7.88
1″	5	91185A499	8.38
1¼″	5	91185A503	8.88
1½″	5	91185A507	9.57
5/16″-24—Head: Dia. 1″; Ht. 13/32″			
½″	5	91185A511	9.00
⅝″	5	91185A515	9.76
¾″	5	91185A519	8.07
⅞″	5	91185A523	8.60
1″	5	91185A527	8.63
1¼″	5	91185A531	9.20
1½″	5	91185A535	10.13

Rosette Head—Color is black.

Lg.	Pkg. Qty.		Per Pkg.
¼″-20—Head: Dia. 1½″; Ht. 15/32″			
⅜″	10	91185A801	10.38
½″	10	91185A803	10.75
⅝″	10	91185A805	11.01
¾″	10	91185A807	11.63
⅞″	10	91185A809	12.00
1″	10	91185A811	12.38
1¼″	10	91185A813	13.38
1½″	10	91185A815	14.12
1¾″	5	91185A817	8.38
2″	5	91185A819	8.75
¼″-28—Head: Dia. 1½″; Ht. 15/32″			
⅜″	10	91185A821	11.63
½″	10	91185A823	11.62

Lg.	Pkg. Qty.		Per Pkg.
¼″-28 (Cont.)			
⅝″	10	91185A825	11.88
¾″	10	91185A827	12.26
⅞″	10	91185A829	14.62
1″	10	91185A831	13.50
1¼″	10	91185A833	14.25
5/16″-18—Head: Dia. 1½″; Ht. 13/32″			
½″	10	91185A835	14.76
⅝″	5	91185A837	8.12
¾″	5	91185A839	8.38
⅞″	5	91185A841	8.75
1″	5	91185A843	9.12
1¼″	5	91185A845	9.75
1½″	5	91185A847	10.51

Rosette Head (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
5/16″-24—Head: Dia. 1½″; Ht. 13/32″			
½″	5	91185A849	$9.88
⅝″	5	91185A851	9.80
¾″	5	91185A853	9.85
⅞″	5	91185A855	9.90
1″	5	91185A857	9.95
1¼″	5	91185A859	10.00
1½″	5	91185A861	11.45
3/8″-16—Head: Dia. 1½″; Ht. 15/32″			
¾″	5	91185A863	$10.38
⅞″	5	91185A865	11.08
1″	5	91185A867	11.25
1¼″	5	91185A869	12.23
1½″	5	91185A871	13.12

Tee Head—Color is black.

Lg.	Pkg. Qty.		Per Pkg.
10-24—Head: Wd. 1″; Ht. 1/4″			
½″	25	91185A891	13.26
⅝″	25	91185A893	13.63
¾″	25	91185A895	14.12
1″	10	91185A899	7.38
10-32—Head: Wd. 1″; Ht. 1/4″			
⅜″	25	91185A901	12.88
½″	25	91185A903	13.26
⅝″	25	91185A905	13.63
¾″	25	91185A907	14.12
⅞″	10	91185A909	7.25
1″	10	91185A911	7.38
1½″	10	91185A913	9.13
¼″-20—Head: Wd. 1¼″; Ht. 5/16″			
⅜″	10	91185A915	8.00
½″	10	91185A917	8.51
¼″-20 (Cont.)			
⅝″	10	91185A919	8.63
¾″	10	91185A921	9.25
⅞″	10	91185A923	9.63
1″	10	91185A925	10.12
1¼″	10	91185A927	11.12
1½″	10	91185A929	11.88
2″	5	91185A933	8.08
5/16″-18—Head: Wd. 1½″; Ht. 13/32″			
½″	10	91185A955	12.75
⅝″	10	91185A957	12.88
¾″	5	91185A959	7.37
⅞″	5	91185A961	7.76
1″	5	91185A963	8.12
1¼″	5	91185A965	8.76
1½″	5	91185A967	9.50

Metric Knurled Head—Color is black.

Lg., mm	Pkg. Qty.		Per Pkg.
M4—Pitch: 0.7 mm			
Head: Dia. 13 mm; Ht. 5.5 mm			
10	10	96016A117	$5.38
12	10	96016A121	5.51
16	10	96016A125	5.76
20	10	96016A129	6.00
M5—Pitch: 0.8 mm			
Head: Dia. 16 mm; Ht. 6.5 mm			
10	10	96016A233	6.25
12	10	96016A237	6.63
16	10	96016A241	7.12
20	10	96016A245	7.38
25	10	96016A249	8.25
M6—Pitch: 1 mm			
Head: Dia. 19 mm; Ht. 7.6 mm			
10	10	96016A353	$8.01
12	10	96016A357	8.12
16	10	96016A361	8.63
20	10	96016A365	9.00
25	10	96016A369	9.75
M8—Pitch: 1.25 mm			
Head: Dia. 26 mm; Ht. 9.8 mm			
12	5	96016A473	7.62
16	10	96016A477	14.50
20	5	96016A481	8.25
25	5	96016A485	8.75

Metric Rosette Head—Color is black.

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
Head: Dia. 9.6 mm; Ht. 4.4 mm			
6	10	96016A051	5.25
12	10	96016A054	5.25
16	10	96016A058	5.38
20	10	96016A062	5.50
M6—Pitch: 1 mm			
Head: Dia. 38 mm; Ht. 12.2 mm			
10	10	96016A501	10.38
12	10	96016A505	10.50
M6 (Cont.)			
16	10	96016A509	11.00
20	10	96016A513	11.38
25	10	96016A517	12.26
M8—Pitch: 1.25 mm			
Head: Dia. 38 mm; Ht. 10 mm			
12	5	96016A602	8.87
16	5	96016A606	8.75
20	5	96016A610	9.12
25	5	96016A614	9.50

Informational Plastic Thumb Screw Heads

Etched with your choice of four important messages, these screw heads clearly communicate their purpose. They're made from black acetal and have knurled edges for better grip. Temp. range is 32° to 180° F. Press heads onto matching socket head cap screws (see pgs. 3105-3106) using a bench vise or arbor press.

To Order: Please specify message: Caution, Lock/Unlock, Do Not Remove, or Service Access.

Fits Screw Size	Head Dia.	Head Ht.	Pkg. Qty.		Per Pkg.
No. 8	½″	7/32″	5	92144A100	$4.38
No. 10	⅝″	¼″	5	92144A200	4.63
¼″	¾″	5/16″	5	92144A300	5.25
5/16″	1″	13/32″	5	92144A400	6.50

Plastic-Head Thumb Screws with Graduations

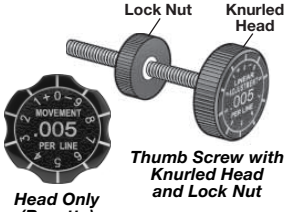

Thumb Screw with Knurled Head and Lock Nut

Head Only (Rosette)

For accurate adjustments, each head is precisely etched with graduations in increments of 0.005″. Made from black acetal, all have a temperature range of 32° to 180° F.

Thumb screws feature a fully threaded, ¼″-20 black alloy steel shaft with a Class 3A thread fit. Use *thumb screws with lock nut* to hold your adjustments extra tight.

Heads only can be used to create custom length thumb screws. Press them onto ¼″-20 socket head cap screws (sold on page 3106) using a bench vise or arbor press.

Head Dia.	Head Ht.	Thread Lg.	Thumb Screws Without Lock Nut Each	Thumb Screws With Lock Nut Each	Heads Only Each
Knurled Head					
1″	5/16″	2″	93228A100 $2.50	93228A150 $3.75	93228A400 $1.88
Rosette Head					
1½″	15/32″	3″	93228A200 3.13	93228A250 4.38	93228A500 2.50

Plastic-Head Thumb Screws with Socket Drive

Each screw head is press-fit onto a hex head cap screw so you can turn these screws by hand or with a hex key for more torque. Heads have knurled edges and are made from black acetal with a temperature range of 32° to 180° F. Screws are made from 18-8 stainless steel and are fully threaded (unless noted) with a Class 3A thread fit.

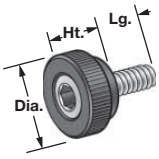

Lg.	Pkg. Qty.		Per Pkg.
4-40—*Head: Dia. 5/16"; Ht. 11/64"*			
Hex Size: 3/32"			
9/32"	25	98704A105	$9.86
13/32"	25	98704A110	10.29
17/32"	25	98704A115	10.43
21/32"	10	98704A120	5.72
25/32"	10	98704A125	6.00
29/32"	10	98704A130★	7.14
6-32—*Head: Dia. 3/8"; Ht. 3/16"*			
Hex Size: 7/64"			
9/32"	10	98704A200	5.57
13/32"	10	98704A205	5.86
17/32"	10	98704A210	6.00
21/32"	10	98704A215	6.14
25/32"	10	98704A220	6.43
29/32"	10	98704A225	6.71
8-32—*Head: Dia. 1/2"; Ht. 7/32"*			
Hex Size: 9/64"			
9/32"	10	98704A310	6.14
13/32"	10	98704A315	6.43
17/32"	10	98704A320	6.57
21/32"	10	98704A325	6.85
25/32"	10	98704A330	7.28
29/32"	10	98704A335	7.71
10-24—*Head: Dia. 5/8"; Ht. 1/4"*			
Hex Size: 5/32"			
3/8"	10	98704A415	7.57
1/2"	10	98704A420	7.71
5/8"	10	98704A425	8.00
3/4"	10	98704A430	8.29
7/8"	10	98704A435	8.43
1 1/8"	10	98704A440▲	9.57
10-32—*Head: Dia. 5/8"; Ht. 1/4"*			
Hex Size: 5/32"			
3/8"	10	98704A520	7.57
1/2"	10	98704A525	8.00
5/8"	10	98704A530	8.29
10-32 (Cont.)			
3/4"	10	98704A535	$8.43
7/8"	10	98704A540	9.57
1 1/8"	10	98704A545▲	9.57
1/4"-20—*Head: Dia. 3/4"; Ht. 5/16"*			
Hex Size: 3/16"			
3/8"	10	98704A605	9.57
1/2"	10	98704A610	9.86
5/8"	10	98704A615	10.43
3/4"	10	98704A620	10.86
7/8"	10	98704A625	11.43
1 1/8"	10	98704A630	12.57
1 3/8"	10	98704A635♣	13.43
1/4"-28—*Head: Dia. 3/4"; Ht. 5/16"*			
Hex Size: 3/16"			
3/8"	10	98704A705	10.57
1/2"	10	98704A710	10.72
5/8"	10	98704A715	11.29
3/4"	10	98704A720	12.66
7/8"	10	98704A725	12.71
1 1/8"	10	98704A730	13.57
1 3/8"	10	98704A735♣	14.37
5/16"-18—*Head: Dia. 1"; Ht. 13/32"*			
Hex Size: 1/4"			
1/2"	5	98704A800	8.29
5/8"	5	98704A805	8.56
3/4"	5	98704A810	9.01
7/8"	5	98704A815	9.57
1 1/8"	5	98704A820	10.15
1 3/8"	5	98704A825	10.95
5/16"-24—*Head: Dia. 1"; Ht. 13/32"*			
Hex Size: 1/4"			
1/2"	5	98704A900	11.14
5/8"	5	98704A905	9.22
3/4"	5	98704A910	12.66
7/8"	5	98704A915	9.85
1 1/8"	5	98704A920	10.51
1 3/8"	5	98704A925	11.58

★ Minimum thread length is 3/4". ▲ Minimum thread length is 7/8".
♣ Minimum thread length is 1".

Precision-Adjustment Thumb Screws

Extremely fine threads give you exacting control. Screws have a Type 440 stainless steel ball-bearing point that's great for angled surfaces and has a small contact surface, so there's less chance of marring.

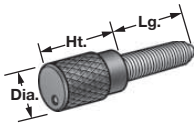

The head sits on a shoulder so it's easy to grab, and it's knurled so your fingers won't slip. Made from black acetal, it withstands temperatures up to 160° F.

The screw is made from 18-8 stainless steel. It's fully threaded and has a Class 3A thread fit. Screw components are not rated for hardness.

Also Available: Brass threaded bushings. Use to install thumb screws in existing holes. Please ask for 98625A300 for bushings for 3/16"-100 screws and 98625A900 for bushings for 1/4"-80 screws, then specify length: 5/16", 7/16", 5/8", or 3/4".

Lg.		Each	Lg.		Each
3/16"-100—*Head: Dia. 0.37"; Ht. 0.45"; Tip Dia.: 1/8"*			***1/4"-80***—*Head: Dia. 0.49"; Ht. 0.75"; Tip Dia.: 3/16"*		
3/4"	97424A110	$14.88	3/4"	97424A560	$8.77
1"	97424A140	17.31	1"	97424A590	9.00
1 1/4"	97424A170	19.62	1 1/4"	97424A620	9.23
1 1/2"	97424A200	21.82	1 1/2"	97424A650	9.58
1 3/4"	97424A230	24.20	2"	97424A680	10.15
			2 1/2"	97424A710	11.42
			3"	97424A740	12.90
			3 1/2"	97424A770	14.40

Big-Grip Clamp-On Thumb Screw Heads

Convert hex nuts and hex- and socket-head cap screws into thumb screws so large you can grip them with heavy work gloves. Head diameter is 2 3/4"; gripping surface is knurled. Made from aluminum Alloy 2011, they have a Rockwell hardness of B67.

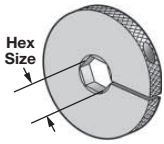

For Hex Head Cap Screws

See pages 3134-3152 for hex head cap screws, pages 3105-3117 for socket head cap screws, and pages 3186-3189 for hex nuts.

Fits Screw Size	*For Hex Head Cap Screws* Hex Size		Each	*For Socket Head Cap Screws* Bore Size (ID)		Each
1/4"	7/16"	91363A100	$14.82	3/8"	91363A400	$15.38
3/8"	9/16"	91363A150	14.91	9/16"	91363A450	15.48
1/2"	3/4"	91363A200	15.00	3/4"	91363A500	15.58
5/8"	15/16"	91363A250	15.09	15/16"	91363A550	15.68
3/4"	1 1/8"	91363A300	15.19	1 1/8"	91363A600	15.78
1"	1 1/2"	91363A350	15.28	1 1/2"	91363A650	15.89

Press-Fit Plastic Thumb Screw Heads

Create thumb screws that are the perfect length for your application. Just choose the head style you prefer and pair it with a socket head cap screw (sold on pages 3105-3117 and 3119-3122) of the same screw size. Press the head and screw together using a bench vise or arbor press. Temperature range is 32° to 180° F.

To Order: Please specify color: black, gray, red, or yellow.

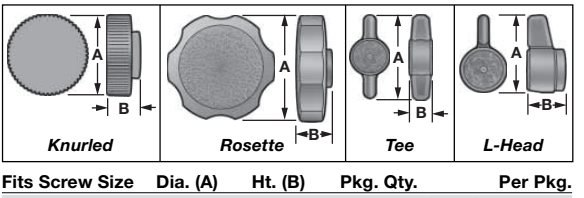

Fits Screw Size	Dia. (A)	Ht. (B)	Pkg. Qty.		Per Pkg.
Inch Screw Heads					
Knurled					
No. 4	5/16"	11/64"	100	94052A021	$12.12
No. 6	3/8"	3/16"	100	94052A023	12.50
No. 8	1/2"	7/32"	100	94052A025	12.75
No. 10	5/8"	1/4"	50	94052A031	8.55
1/4"	3/4"	5/16"	50	94052A033	8.93
1/4"	1"	5/16"	50	94052A034	12.38
5/16"	1"	13/32"	25	94052A036	6.92
Rosette					
1/4"	1 1/2"	15/32"	10	94052A041	4.85
5/16"	1 1/2"	13/32"	10	94052A043	4.85
3/8"	1 1/2"	15/32"	10	94052A046	4.97
Tee					
No. 10	1"	1/4"	50	94052A051	8.55
1/4"	1 1/4"	5/16"	50	94052A053	9.54
5/16"	1 1/2"	13/32"	25	94052A055	6.12
3/8"	1 3/4"	15/32"	25	94052A057	6.50
L-Head					
No. 10	9/16"	11/32"	50	94052A014	8.55
1/4"	11/16"	7/16"	50	94052A016	9.36
5/16"	27/32"	17/32"	50	94052A018	10.78
Metric Screw Heads—*Dimensions in millimeters.*					
Knurled					
M3	9.6	4.4	100	91175A061	14.66
M4	13.0	5.5	50	91175A062	8.77
M5	16.0	6.5	50	91175A063	9.69
M6	19.0	7.6	25	91175A064	5.83
M6	26.0	7.8	25	91175A065	7.39
Metric Screw Heads—*Dimensions in millimeters. (Cont.)*					
Knurled (Cont.)					
M8	26.0	9.8	25	91175A066	$7.54
Rosette					
M6	38.0	12.2	10	91175A071	4.85
M8	38.0	10.0	10	91175A072	4.85
M10	38.0	12.5	10	91175A073	4.98
Tee					
M5	26.0	6.6	100	91175A081	14.77
M6	30.0	7.8	50	91175A082	9.54
M8	38.0	10.0	50	91175A083	11.01
M10	45.0	12.5	25	91175A084	6.50

Assortments

Choose from inch and metric sizes. Heads are black. Each assortment comes in a 13" Lg. × 8 1/2" Wd. × 2 1/4" Dp. plastic box.

Head Style	*295-Pc. Inch Assort.* No. of Pcs.	Fits Screw Sizes	*260-Pc. Metric Assort.* No. of Pcs.	Fits Screw Sizes
Knurled	140	Nos. 4, 6, 8, 10, 1/4", 5/16"	120	M3, M4, M5, M6, M8
Rosette	60	1/4", 5/16", 3/8"	60	M6, M8, M10
Tee	80	No.10, 1/4", 5/16", 3/8"	80	M5, M6, M8, M10
L-Head	15	No.10, 1/4", 5/16"		

295-Piece Inch Assortment	91165A880	Each	$91.88
260-Piece Metric Assortment	91165A440	Each	$91.88

Nylon Knurled-Head Thumb Screws

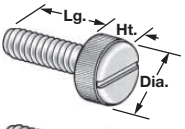

Nylon 6/6 with Slotted Head

Nylon 6/6 with Shoulder

Our nylon thumb screws are nonconductive, chemical resistant, and knurled to keep your fingers from slipping. All are fully threaded, have a Class 2A thread fit, and are not rated for hardness or tensile strength. *Note:* Nylon absorbs environmental moisture, which can affect dimensions and other properties.

Nylon 6/6 screws come with a *slotted head* (so you can also turn them with a screwdriver) or with a *shoulder* (which raises them so they're easier to grip). They withstand temperatures from –40° to +185° F.

To Order: Please specify black or off-white.

Glass-filled nylon screws are reinforced with glass fibers so they're extremely strong, and have a *shoulder*, which raises them so they're easier to grip. They withstand temperatures from –40° to +230° F. Color is off-white.

Nylatron screws have a low-profile head and are made with molybdenum disulfide so they're more wear resistant than those made from nylon 6/6. They withstand temperatures up to 260° F.

Lg.	Pkg. Qty.		Per Pkg.
Nylon 6/6 with Slotted Head			
4-40—*Head: Dia. 21/64"; Ht. 7/32"*			
1/4"	100	94320A331	$6.60
6-32—*Head: Dia. 11/32"; Ht. 1/4"*			
1/4"	100	94320A346	6.86
1/2"	100	94320A348	7.01
3/4"	100	94320A351	6.83
1"	100	94320A353	7.16
8-32—*Head: Dia. 25/64"; Ht. 9/32"*			
3/16"	100	94320A390	6.56
3/8"	100	94320A393	6.63
1/2"	100	94320A395	6.68
3/4"	100	94320A397	6.72
1"	100	94320A399	6.76
1 1/4"	100	94320A403	6.92
10-32—*Head: Dia. 13/32"; Ht. 5/16"*			
1/4"	100	94320A430	$7.07
3/8"	100	94320A440	7.17
1/2"	100	94320A445	7.21
3/4"	100	94320A448	7.30
1"	100	94320A973	7.35
1 1/2"	100	94320A976	7.52
1/4"-20—*Head: Dia. 31/64"; Ht. 5/16"*			
1/2"	100	94320A737	8.20
3/4"	100	94320A740	8.28
1"	100	94320A742	8.36
1 1/4"	100	94320A744	8.46
1 1/2"	100	94320A746	8.56
1 3/4"	100	94320A748	9.37
Nylon 6/6 with Shoulder			
6-32—			
Shoulder: Dia. 19/64"; Lg. 5/32"			
Head: Dia. 23/64"; Ht. 1/8"			
1/4"	100	94323A581	11.90
3/8"	100	94323A583	11.94
1/2"	100	94323A585	11.97
3/4"	100	94323A587	13.17
1"	100	94323A589	13.26
8-32—			
Shoulder: Dia. 11/32"; Lg. 11/64"			
Head: Dia. 27/64"; Ht. 9/64"			
3/16"	100	94323A591	13.23
3/8"	100	94323A592	12.32
1/2"	100	94323A594	13.52
3/4"	100	94323A596	13.60
1"	100	94323A598	13.69
10-24—			
Shoulder: Dia. 21/64"; Lg. 3/16"			
Head: Dia. 27/64"; Ht. 9/64"			
1/2"	100	94323A611	13.95
3/4"	100	94323A613	14.03
1"	100	94323A615	14.12
10-32—			
Shoulder: Dia. 21/64"; Lg. 3/16"			
Head: Dia. 27/64"; Ht. 9/64"			
3/8"	100	94323A727	12.75
1/2"	100	94323A729	12.75
3/4"	100	94323A731	14.03
1"	100	94323A733	14.12
2"	50	94323A735	7.61
1/4"-20—			
Shoulder: Dia. 27/64"; Lg. 7/32"			
Head: Dia. 35/64"; Ht. 5/32"			
1/2"	100	94323A837	13.15
3/4"	100	94323A840	13.38
1"	100	94323A841	13.46
1 1/4"	100	94323A843	13.62
1 1/2"	100	94323A845	13.92
5/16"-18—			
Shoulder: Dia. 1/2"; Lg. 7/32"			
Head: Dia. 39/64"; Ht. 11/64"			
1/2"	50	94323A921	13.60
1"	50	94323A922	14.00
1 1/2"	50	94323A923	14.40
2"	50	94323A924	14.81
Nylon 6/6 with Shoulder (Cont.)			
3/8"-16—			
Shoulder: Dia. 35/64"; Lg. 1/4"			
Head: Dia. 11/16"; Ht. 3/16"			
1/2"	50	94323A952	$14.49
3/8"-16 (Cont.)			
1"	25	94323A958	$7.83
1 1/2"	25	94323A963	8.88
2"	25	94323A967	9.48
Glass-Filled Nylon with Shoulder			
6-32—			
Shoulder: Dia. 19/64"; Lg. 5/32"			
Head: Dia. 3/8"; Ht. 9/32"			
1/4"	25	90462A200	7.94
3/8"	25	90462A210	8.00
1/2"	25	90462A220	8.00
8-32—			
Shoulder: Dia. 3/8"; Lg. 11/64"			
Head: Dia. 27/64"; Ht. 5/16"			
3/8"	25	90462A330	8.19
1/2"	25	90462A340	8.25
3/4"	25	90462A350	8.38
10-32—			
Shoulder: Dia. 21/64"; Lg. 3/16"			
Head: Dia. 27/64"; Ht. 9/64"			
3/8"	25	90462A500	8.44
1/2"	25	90462A510	8.44
3/4"	25	90462A520	8.50
1"	25	90462A530	8.56
1 1/2"	25	90462A540	8.63
1/4"-20—			
Shoulder: Dia. 31/64"; Lg. 13/64"			
Head: Dia. 35/64"; Ht. 23/64"			
1/2"	25	90462A650	8.69
3/4"	25	90462A660	8.81
1"	25	90462A670	8.88
1 1/2"	25	90462A680	9.19

Nylatron

Lg.	Head Dia.		Each
6-32—*Head Ht.: 1/8"*			
3/8"	3/8"	94955A010	$3.02
1/2"	3/8"	94955A015	3.06
8-32—*Head Ht.: 3/16"*			
3/8"	3/8"	94955A020	3.06
1/2"	3/8"	94955A025	3.13
3/4"	3/8"	94955A030	3.35
10-24—*Head Ht.: 3/16"*			
1/2"	3/8"	94955A035	3.15
3/4"	1/2"	94955A040	3.55
3/4"	3/4"	94955A045	3.75
10-32—*Head Ht.: 3/16"*			
1/2"	3/8"	94955A050	$3.75
3/4"	1/2"	94955A055	3.55
1"	3/4"	94955A065	4.13
1/4"-20—*Head Ht.: 3/16"*			
3/4"	1/2"	94955A070	3.55
3/4"	3/4"	94955A075	3.75
1"	3/4"	94955A080	4.15
1 1/4"	3/4"	94955A085	4.38
5/16"-18—*Head Ht.: 1/4"*			
1"	3/4"	94955A090	4.30
1 1/4"	3/4"	94955A095	4.38

Slotted Head Captive Panel Screws

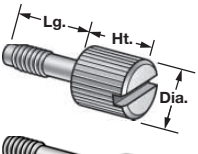

Knurled Head

Fillister Head

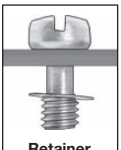

Retainer not included.

Use these nonmagnetic screws for panel assemblies, cabinets, and enclosures. They also work well as instrument hardware and needle valves in air-powered tools. To hold them captive in a panel, use with a retainer (sold separately; see page 3097 for inch size retainers). Install with a standard slotted screwdriver.

Screws are made from 18-8 stainless steel and have a Class 2A thread fit. They meet ASTM-A581-A582 and are not rated for hardness or tensile strength.

Also Available: Metric size screws, retainers, and springs. For screws, please ask for 95536A110 and specify thread size: M3, M3.5, or M4, and screw length. For retainers, please ask for 91065A800 and specify screw size: M3, M3.5, or M4. For springs that fit M3, M3.5, and M4 screws, please ask for 94125K472.

See pages 3279-3281 for more captive fasteners.

Lg.	Each★	Lg.	Each★	Lg.	Each★	Lg.	Each★	Lg.	Each★
Knurled Head									
4-40—*Thread Lg.: 1/8"*		***6-32 (Cont.)***		***10-24 (Cont.)***		***10-32 (Cont.)***		***1/4"-20 (Cont.)***	
Head: Dia. 1/4"; Ht. 1/4"		7/8" 91035A360	$4.66	5/8" 91035A460	$5.33	3/4" 91035A530	$5.70	1" 91035A625	$10.39
3/8" 91035A190	$3.46	1" 91035A370	5.23	3/4" 91035A470	5.70	7/8" 91035A540	6.37	1 1/4" 91035A640	11.73
1/2" 91035A210	4.13	***8-32***—*Thread Lg.: 7/32"*		7/8" 91035A480	6.33	1" 91035A550	6.84	1 1/2" 91035A650	10.32
5/8" 91035A220	4.53	*Head: Dia. 5/16"; Ht. 5/16"*		1" 91035A490	6.85	1 1/8" 91035A570	7.33	***1/4"-28***—*Thread Lg.: 5/16"*	
3/4" 91035A230	4.83	1/2" 91035A390	3.89	1 1/8" 91035A495	7.33	1 1/4" 91035A590	8.05	*Head: Dia. 1/2"; Ht. 9/16"*	
7/8" 91035A240	5.00	5/8" 91035A400	4.53	1 1/4" 91035A497	8.00	1 3/8" 91035A593	8.66	5/8" 91035A710	8.66
1" 91035A250	5.36	3/4" 91035A410	4.96	1 3/8" 91035A499	8.66	1 1/2" 91035A595	8.93	3/4" 91035A730	9.32
6-32—*Thread Lg.: 7/32"*		7/8" 91035A420	5.33	1 1/2" 91035A501	9.38	***1/4"-20***—*Thread Lg.: 5/16"*		7/8" 91035A750	12.07
Head: Dia. 5/16"; Ht. 5/16"		1" 91035A430	6.19	***10-32***—*Thread Lg.: 1/4"*		*Head: Dia. 1/2"; Ht. 9/16"*		1" 91035A770	12.73
1/2" 91035A330	3.69	***10-24***—*Thread Lg.: 1/4"*		*Head: Dia. 3/8"; Ht. 7/16"*		5/8" 91035A610	8.05	1 1/4" 91035A790	14.08
5/8" 91035A340	4.02	*Head: Dia. 3/8"; Ht. 7/16"*		1/2" 91035A510	5.05	3/4" 91035A615	9.05	1 1/2" 91035A810	15.41
3/4" 91035A350	4.29	1/2" 91035A450	5.03	5/8" 91035A508	5.36	7/8" 91035A620	9.72		
Fillister Head									
4-40—*Thread Lg.: 3/16"*		***6-32***—*Thread Lg.: 7/32"*		***8-32***—*Thread Lg.: 7/32"*		***10-24***—*Thread Lg.: 9/32"*		***10-32***—*Thread Lg.: 9/32"*	
Head: Dia. 11/64"; Ht. 0.107"		*Head: Dia. 7/32"; Ht. 0.132"*		*Head: Dia. 1/4"; Ht. 0.156"*		*Head: Dia. 5/16"; Ht. 0.180"*		*Head: Dia. 5/16"; Ht. 0.180"*	
1/2" 94375A320	3.08	1/2" 94375A405	2.77	1/2" 94375A520	2.93	1/2" 94375A615	3.44	1/2" 94375A715	3.44
3/4" 94375A340	3.85	3/4" 94375A425	3.39	3/4" 94375A540	3.85	3/4" 94375A635	4.62	3/4" 94375A735	4.55
		1" 94375A445	4.16	1" 94375A560	4.21	1" 94375A655	5.01	1" 94375A755	4.70

Prices are 15% lower when you buy in multiples of five.

Hex Socket Captive Panel Screws

With both a hex socket and a knurled head you can tighten these screws with a hex key or by hand. They're made from 18-8 stainless steel, have a Class 3A thread fit, and are not rated for hardness or tensile strength. To hold them captive in a panel, use the retainers sold separately on this page.

See pages 3279-3281 for more captive fasteners.

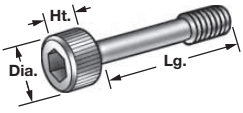

Lg.		Each★
4-40—*Thread Lg.: 5/32″*		
Head: Dia. 11/64″; Ht. 0.112″		
Hex Size: 3/32″		
1/4″	95966A121	$3.90
5/16″	95966A125	4.05
3/8″	95966A130	4.20
7/16″	95966A135	4.28
1/2″	95966A140	4.36
5/8″	95966A145	4.36
6-32—*Thread Lg.: 3/16″*		
Head: Dia. 7/32″; Ht. 0.138″		
Hex Size: 7/64″		
3/8″	95966A211	3.88
7/16″	95966A216	4.06
1/2″	95966A221	4.20
9/16″	95966A226	4.28
5/8″	95966A231	4.36
3/4″	95966A237	4.43
1″	95966A239	4.52
8-32—*Thread Lg.: 3/16″*		
Head: Dia. 17/64″; Ht. 0.164″		
Hex Size: 9/64″		
1/2″	95966A316	4.20
9/16″	95966A323	4.20
5/8″	95966A329	4.06
3/4″	95966A332	4.12
7/8″	95966A339	4.20
1″	95966A341	4.36
10-32—*Thread Lg.: 1/4″*		
Head: Dia. 5/16″; Ht. 0.190″		
Hex Size: 5/32″		
1/2″	95966A410	4.69
9/16″	95966A414	4.76

Lg.		Each★
10-32 (Cont.)		
5/8″	95966A419	$4.82
3/4″	95966A423	4.90
7/8″	95966A428	4.98
1″	95966A432	5.06
1 1/4″	95966A437	5.14
1 3/8″	95966A441	5.22
1 1/2″	95966A445	5.29
1 3/4″	95966A449	5.38
1/4″-20—*Thread Lg.: 1/4″*		
Head: Dia. 3/8″; Ht. 0.250″		
Hex Size: 3/16″		
5/8″	95966A512	5.44
3/4″	95966A516	5.60
7/8″	95966A523	5.76
1″	95966A529	5.91
1 1/4″	95966A531	6.07
1 1/2″	95966A537	6.23
1 3/4″	95966A543	6.61
2″	95966A549	7.37
5/16″-18—*Thread Lg.: 3/8″*		
Head: Dia. 15/32″; Ht. 0.312″		
Hex Size: 1/4″		
3/4″	95966A613	6.23
1″	95966A618	7.55
1 1/2″	95966A624	8.18
3/8″-16—*Thread Lg.: 3/8″*		
Head: Dia. 9/16″; Ht. 0.375″		
Hex Size: 5/16″		
1″	95966A634	9.32
1 1/2″	95966A638	10.14

Binding Screws for Wood

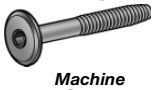
Machine Screw

Machine Screw with Plates

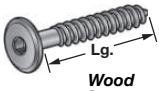

Wood Screw

Use to join wood and wood composites.

Machine screws require a cap nut or a dowel nut (sold separately). Use a *cap nut* for a finished look on the back of a through hole and a *dowel nut* for an extra strong joint in a blind hole. ***Machine screw with plates*** is great for joining mitered corners. It comes with one threaded and one unthreaded plate. ***Wood screws*** have a low-profile head and require a 3/16″ diameter hole.

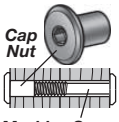

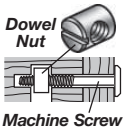

Lg.	Thread Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Per Pkg.
Machine Screws—*Bronze-Plated Steel; Hex Socket Drive*						
1/4″-20—*Hex Size: 4 mm*						
50 mm	30 mm	17 mm	2 mm	50	90835A108	$10.82
70 mm	40 mm	17 mm	2 mm	50	90835A110	11.54
Cap Nuts—*Bronze-Plated Steel*						
1/4″-20—*Hex Size: 5 mm*						
12 mm	—	17 mm	2.5 mm	25	90835A300	9.23
17 mm	—	17 mm	2.5 mm	25	90835A310	11.57
Dowel Nuts—*Plain Steel*						
1/4″-20—*Slotted Drive; Body Dia.: 10 mm*						
12 mm	—	—	—	50	90835A200	11.14
16 mm	—	—	—	25	90835A210	6.66
Machine Screw with Plates—*C1010-C1018 Zinc-Plated Steel*						
1/4″-20—***Plates:*** *7/16″ Wd.×1 1/4″ Lg.×3/16″ Thick.*						
3 1/2″	3″	0.425″	0.15″	10	91560A120	8.33
Wood Screws—*Bronze-Plated Steel; Hex Socket Drive*						
M7—*Hex Size: 4 mm*						
50 mm	40 mm	17 mm	2 mm	50	90835A400	10.86
70 mm	60 mm	17 mm	2 mm	50	90835A410	11.79
50 mm	40 mm	13 mm	2 mm	50	90835A420	8.53

Retainers for Captive Panel Screws

Retainers and springs are made from 18-8 stainless steel.

Retainers hold screws "captive", so when you loosen them, they won't fall out and get lost. Package quantity is 25.

Springs provide even compression against panels. Package quantity is 5.

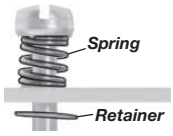

Fits Screw Size	RETAINERS ID	OD	Thick.	Per Pkg.★		SPRINGS Per Pkg.
4-40	0.093″	0.171″	0.010″	91065A620	$9.33	9435K24 $5.29
6-32	0.112″	0.171″	0.010″	91065A640	9.33	9435K24 5.29
8-32	0.146″	0.312″	0.012″	91065A660	9.33	9435K36 5.56
10-24	0.166″	0.312″	0.012″	91065A680	9.33	9435K36 5.56
10-32	0.166″	0.312″	0.012″	91065A720	9.33	9435K36 5.56
1/4″-20	0.204″	0.312″	0.012″	91065A740	9.33	9435K5 6.65
1/4″-28	0.214″	0.312″	0.012″	91065A770	8.97	9435K5 6.65

Light Duty Plastic Binding Posts

Also known as Chicago binding posts, these two-part fasteners consist of a screw and barrel—each with a slotted head. Snap pieces together with your fingers; the barrel closes around the screw, locking them together. Unscrew either end to disassemble.

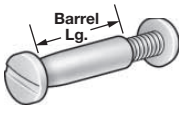

Screws are made from nylon 6/6. Barrels are made from polyethylene. Both have a temperature range of −40° to +185°F. Head diameter is 3/8″; head height is 0.1″. Barrel diameter is 0.240″. Screw and barrel are not rated for hardness or tensile strength.

To Order: Please specify color: off-white or black.

Barrel Lg.	Pkg. Qty.		Per Pkg.
10-24—*Thread Lg.: 1/4″*			
1/4″	100	90249A610	$8.82
10-24—*Thread Lg.: 3/8″*			
3/8″	100	90249A620	9.87
1/2″	100	90249A630	9.99
3/4″	100	90249A640	10.24
10-24—*Thread Lg.: 11/16″*			
7/8″	100	90249A710	$14.85
1″	100	90249A720	14.93
1 1/4″	100	90249A730	14.95
1 1/2″	100	90249A740	14.98
2″	50	90249A750	8.67

Quick-Install Light Duty Binding Barrels and Caps

A snap to install, just tap the cap into the barrel with a hammer. Not reusable.

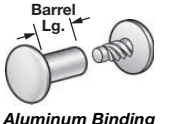

Aluminum Binding Barrel with Cap

Aluminum Binding Barrels with Cap—These two-part fasteners come complete with a binding barrel and a cap. Barrels are made from 6061-T6 aluminum and have a Rockwell hardness of B40. Use in 7/32″ holes. Caps are made from nickel-plated C1022 steel; they have a Rockwell hardness of C45. Once installed, caps cannot be removed.

Barrels and caps are not rated for tensile strength. Both have a 3/8″ dia. unslotted truss head that is less than 0.070″ high.

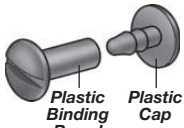

Plastic Binding Barrels and Plastic Caps—Sold separately; not rated for hardness or tensile strength. Barrels are made from polypropylene; caps are made from polycarbonate. Both materials are black and withstand temperatures from 20° to 120°F.

Plastic binding barrels have a slotted flat head that's 5/64″ Ht.×3/8″ Dia. Use in 1/4″ dia. holes.

Plastic caps come in permanent and removable styles. *Permanent caps* have an unslotted flat head that's 1/16″ Ht.×7/16″ Dia. Self-locking fins hold them in place. *Removable caps* have a slotted binding head that's 3/32″ Ht.×0.42″ Dia. Special threads allow you to unscrew and remove the caps.

Aluminum Barrels with Cap

Barrel Lg.	Pkg. Qty.		Per Pkg.
3/8″	50	99172A128	$13.30
1/2″	50	99172A133	13.70
5/8″	50	99172A139	14.24
3/4″	50	99172A142	14.36
7/8″	25	99172A147	8.52
1″	25	99172A152	8.64

Plastic Barrels and Caps

Barrel Lg.	Pkg. Qty.		Per Pkg.
Barrels			
1/2″	100	93120A100	$8.82
5/8″	100	93120A105	8.87
3/4″	100	93120A110	8.38
1″	50	93120A115	9.04
1 1/4″	50	93120A120	9.14
1 1/2″	50	93120A125	9.19
Permanent Caps			
—	100	93120A190	5.22
Removable Caps			
—	100	93120A195	5.22

★Prices are 15% lower when you buy in multiples of five.

Light Duty Binding Posts

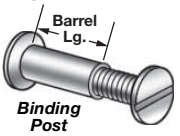

Binding Post

Barrel Extension

Also known as Chicago binding posts, these two-part fasteners come complete with a barrel and screw. The screw has a slotted large-diameter (truss) head; the barrel has an unslotted large-diameter (truss) head. Screw size is 8-32. Thread length is 3/8″ (unless noted) for all materials except brass, which has a thread length of 5/16″ (unless noted). Barrel diameter is 13/64″. Barrels 3/8″ and shorter are tapped through; those 1/2″ and longer have a minimum thread depth of 3/8″ (unless noted).

To increase barrel length, add a ***barrel extension*** (sold separately below). Extensions are made from 6061-T6 aluminum. They have a minimum Rockwell hardness of B40 and a minimum tensile strength of 42,000 psi. Maximum usable thread depth is 3/8″ (unless noted).

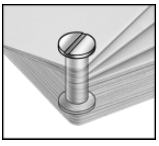

18-8 Stainless Steel— More corrosion resistant than zinc-plated steel; may be mildly magnetic. Minimum Rockwell hardness is B80. Min. tensile strength is 80,000 psi.

Zinc-Plated Steel— Made from C1006 steel; offers good rust resistance. Minimum Rockwell hardness is B70. Min. tensile strength is 60,000 psi.

Plain Aluminum— Lightweight, corrosion resistant, and nonmagnetic. Screws are 6063 aluminum; barrels are 6061 aluminum. Minimum Rockwell hardness is B40. Min. tensile strength is 34,800 psi.

Black Anodized Aluminum— Made from 1100-H18 or 6061 aluminum. Lightweight, more corrosion resistant than plain aluminum, and nonmagnetic. Minimum Rockwell hardness is B38. Min. tensile strength is 23,000 psi.

Brass— Corrosion resistant and nonmagnetic. Minimum Rockwell hardness is B55. Min. tensile strength is 50,000 psi.

Binding Posts

Barrel Lg.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Zinc-Plated Steel Pkg. Qty.		Per Pkg.	Plain Aluminum Pkg. Qty.		Per Pkg.	Black Anodized Aluminum Pkg. Qty.		Per Pkg.	Brass Pkg. Qty.		Per Pkg.
1/8″	25	94887A112♣	$13.13	25	95519A601♣	$10.12	50	93121A315♣	$10.44	25	99024A305♣	$10.76	25	93813A303♣	$10.62
3/16″	25	94887A123♣	13.38	25	95519A608♣	10.88	50	93121A320●	10.44	25	99024A312●	11.06	25	93813A311●	9.80
1/4″	25	94887A129●★	13.62	25	95519A617♣	11.00	50	93121A325●	8.55	25	99024A327	10.49	25	93813A317●	10.74
3/8″	10	94887A136♡	6.21	25	95519A625♣♡	9.12	50	93121A330	8.67	25	99024A334	10.73	25	93813A325	10.88
1/2″	10	94887A142■	6.01	25	95519A633	9.62	50	93121A335	8.97	25	99024A339♡	12.32	25	93813A332■	11.46
5/8″	10	94887A148	6.38	25	95519A641	10.00	50	93121A337	9.38	25	99024A353	12.10	25	93813A336■	14.38
3/4″	10	94887A153	6.88	25	95519A649	10.62	50	93121A340	10.01	25	99024A366	12.81	25	93813A339	12.00
7/8″	—	—	—	—	—	—	50	93121A342	10.61	—	—	—	10	93813A342	10.38
1″	10	94887A162	7.96	10	95519A657	6.62	25	93121A345	5.86	10	99024A379	8.00	10	93813A344	5.55
1 1/4″	10	94887A168	9.12	10	95519A665	7.12	25	93121A350	6.80	10	99024A392	8.39	10	93813A357■	9.05
1 1/2″	10	94887A171	10.62	10	95519A673	7.38	25	93121A355	7.29	10	99024A405	8.84	10	93813A370■	9.75
1 3/4″	10	94887A179	10.75	10	95519A681	7.75	25	93121A360	8.06	10	99024A418	9.23	10	93813A383■	10.45
2″	5	94887A187	8.62	10	95519A689	8.12	25	93121A365	8.47	10	99024A431	9.97	10	93813A389■	10.90
2 1/4″	5	94887A195	9.13	—	—	—	25	93121A367	9.07	—	—	—	5	93813A394	8.40
2 1/2″	5	94887A203	9.00	—	—	—	25	93121A370	9.56	1	99024A526	4.23	5	93813A411	9.30
2 3/4″	5	94887A211	9.25	—	—	—	10	93121A372	5.81	—	—	—	5	93813A424	9.72
3″	5	94887A219	9.62	—	—	—	10	93121A375	6.12	1	99024A539	3.93	5	93813A431	10.62
3 1/2″	5	94887A227	10.00	—	—	—	10	93121A380	7.05	—	—	—	5	93813A438	11.95
4″	5	94887A235	11.00	—	—	—	10	93121A382	9.26	1	99024A552	4.07	1	93813A445	3.64
4 1/2″	5	94887A243	11.88	—	—	—	5	93121A383	6.25	—	—	—	1	93813A453	3.83
5″	5	94887A251	12.71	—	—	—	5	93121A384	7.08	1	99024A565	4.15	1	93813A461	4.22
6″	—	—	—	—	—	—	5	93121A390	10.60	1	99024A578	5.77	—	—	—

Barrel Extensions— Plain Aluminum

Barrel Lg.	Pkg. Qty.		Per Pkg.	Barrel Lg.	Pkg. Qty.		Per Pkg.
1/4″	50	93122A325♦	$11.41	3/4″	25	93122A335	$7.08
1/2″	50	93122A330	11.64	1″	25	93122A340	7.28

♣ Thread length is 3/16″. ● Thread length is 1/4″. ★ Thread depth is 5/32″. ♡ Thread depth is 1/4″. ■ Thread depth is 5/16″. ♦ Thread depth is 3/16″.

Heavy Duty Binding Posts

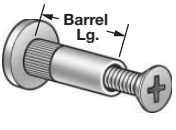

Also known as sex bolts and architectural bolts, these two-part fasteners come complete with a binding barrel and screw for anchoring all types of hardware. Barrels have a large-diameter (truss) head and knurls that prevent them from rotating in the hole. Screws have an 82° flat head with a Phillips drive.

Calculate your barrel length by deducting 3/16″ from the total thickness of the material you're fastening. For example, for a 1 3/8″ thick door, you'll need a 1 3/16″ long binding barrel. Install in a hole with a diameter equal to the barrel diameter.

Type 316 Stainless Steel and ***18-8 Stainless Steel—*** Corrosion resistant with a minimum Rockwell hardness of B85 and a minimum tensile strength of 80,000 psi. ***Brass—*** Has a minimum Rockwell hardness of B60 and a minimum tensile strength of 55,000 psi. ***Steel—*** Has a Rockwell hardness of B60 and a tensile strength of 50,000 psi.

Barrel Lg.	Barrel Dia.	Barrel Thread Dp.	Screw Size × Overall Lg.	TYPE 316 SS	Each	18-8 SS	Each	BRASS Chrome Finish	Each	BRASS Dull Brass Finish	Each	BRASS Dark Bronze Finish	Each
Barrel Head: Dia. 1/2″; Ht. 1/8″													
1 3/16″	1/4″	5/8″	8-32 ×1″	93544A472✓	$9.78	98975A122	$5.08	92437A122	$5.20	92436A122	$4.10	91135A122	$5.45
1 9/16″	1/4″	5/8″	8-32 ×1″	93544A475✓	10.93	98975A125	5.58	92437A125	5.46	92436A125	4.44	91135A125	5.94
2″	1/4″	5/8″	8-32 ×1″	93544A478✓	12.22	98975A128	8.38	92437A128	8.76	92436A129	7.84	—	—
3″	1/4″	5/8″	8-32 ×1″	93544A481✓	14.11	98975A131	10.00	92437A131	9.50	92436A132	9.05	—	—
1 3/16″	5/16″	3/4″	10-32 ×1″	93544A603	10.58	98975A253	3.40	92437A253	4.43	92436A253	2.89	91135A253	4.07
1 9/16″	5/16″	3/4″	10-32 ×1″	93544A612	11.96	98975A252	3.75	92437A252	4.25	92436A252	3.30	91135A252	4.25
2″	5/16″	3/4″	10-32 ×1″	93544A624	14.44	98975A274	8.75	92437A274	9.26	92436A275	9.51	—	—
3″	5/16″	3/4″	10-32 ×1″	93544A676	16.56	98975A276	9.28	92437A276	10.00	92436A277	10.14	—	—
1 3/16″	5/16″	3/4″	12-24 ×1″	—	—	98975A361	3.63	92437A361	3.38	92436A361	3.03	91135A361	3.97
1 9/16″	5/16″	3/4″	12-24 ×1″	—	—	98975A365	3.83	92437A365	3.50	92436A365	3.37	91135A365	4.28
2 1/16″	5/16″	3/4″	12-24 ×1″	—	—	98975A369	5.41	92437A369	5.30	92436A369	4.31	91135A369	4.62
Barrel Head: Dia. 9/16″; Ht. 5/32″													
1″	3/8″	5/8″	1/4″-20 × 1/2″	93544A755	10.82	98975A388♥	3.70	92437A381	4.06	92436A391	3.74	—	—
1 9/16″	3/8″	1 1/4″	1/4″-20 ×1 1/2″	93544A898♠	14.22	98975A548♠▲	4.03	92437A548	4.55	92436A548	3.79	91135A548	4.85
2 1/16″	3/8″	1 1/4″	1/4″-20 ×1 1/2″	93544A901♠	16.67	98975A551♠▲	4.63	92437A551	5.24	92436A551	4.40	91135A551	5.82
3″	3/8″	3/4″	1/4″-20 ×1 1/2″	93544A904	19.22	98975A554	9.88	92437A554	12.58	92436A556	10.00	—	—
Barrel Head: Dia. 3/4″; Ht. 3/16″													
2 1/16″	1/2″	1 1/4″	5/16″-18 ×1 1/2″	93544A942♠▲	18.44	98975A592♠▲	5.78	92437A592	6.14	92436A592	4.74	91135A592	6.67
3″	1/2″	3/4″	5/16″-18 ×1 1/2″	93544A944▲	25.83	98975A594	11.75	92437A594	11.51	92436A596	12.85	—	—

	STEEL Chrome Finish		STEEL Dull Brass Finish		STEEL Zinc-Plated Finish	
Barrel Head: Dia. 9/16″; Ht. 5/32″						
1 9/16″ 3/8″ 1″	98975A708	$2.20	98975A711	$2.63	98975A704▲	$2.00

✓ Overall length is 3/4″. ♥ Overall length is 7/8″. ♠ Thread depth is 3/4″. ▲ Overall length is 1″.

Medium Duty Binding Barrels and Screws

Create a custom fastener—just pair a barrel with a machine screw. If you need extra barrel length, use a shoulder screw instead. Barrels and screws are sold separately. *Note*: The pin-in-star drive is compatible with tamper-resistant Torx drivers and bits.

Type 316 Stainless Steel—More corrosion resistant than 18-8 stainless steel. Rockwell hardness is B80. Min. tensile strength is 75,000 psi.

18-8 Stainless Steel—More corrosion resistant than zinc-plated steel; may be mildly magnetic. Min. Rockwell hardness is B85. Min. tensile strength is 80,000 psi.

Zinc-Plated Steel—Offers good rust resistance. Has a min. Rockwell hardness of B65 and a min. tensile strength of 55,000 psi.

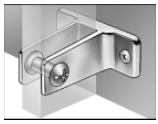

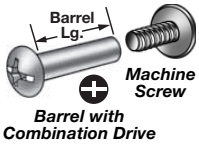

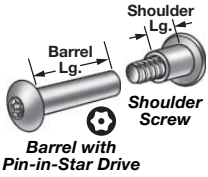

Barrels

Barrel Lg.	Thread Dp.	COMBINATION DRIVE Type 316 SS Pkg. Qty.	Per Pkg.	18-8 SS Pkg. Qty.	Per Pkg.	Zinc-Plated Steel Pkg. Qty.	Per Pkg.	PIN-IN-STAR DRIVE 18-8 SS Drive Size	Each
10-24—*Barrel Dia.: 1/4"; Head: Dia. 7/16"; Ht. 1/8"*									
1/4"	Full	5 92463A303♠	$8.38	5 99637A179♠	$5.17	50 98002A910♠	$10.00	—	—
3/8"	5/16"	5 92463A309	8.83	5 99637A183	5.34	50 98002A920	9.93	T20 96754A213●■	$3.94
1/2"	3/8"	5 92463A315	9.51	5 99637A188	5.86	50 98002A930	11.43	T20 96754A219●■	4.33
5/8"	3/8"	—	—	5 99637A194	5.78	50 98002A940	12.14	T20 96754A223●■	4.51
3/4"	3/8"	5 92463A327	10.64	5 99637A199	6.38	50 98002A950	12.14	T20 96754A228●	4.66
1"	3/8"	5 92463A323	12.00	5 99637A206	6.55	50 98002A960	13.58	T20 96754A331●	4.57
1 1/4"	3/8"	—	—	5 99637A212	7.07	50 98002A970	13.72	T20 96754A336●	4.88
1 1/2"	3/8"	—	—	5 99637A216	7.76	25 98002A980	7.94	T20 96754A342●	5.45
2"	3/8"	—	—	5 99637A221	8.45	25 98002A983	8.93	—	—
1/4"-20—*Barrel Dia.: 5/16"; Head: Dia. 9/16"; Ht. 5/32"*									
3/8"	3/16"	5 92463A562	11.09	5 99637A227	8.62	—	—	—	—
1/2"	3/8"	5 92463A568	12.22	5 99637A234	11.21	25 98002A985	11.43	T27 96754A347♦	5.75
5/8"	3/8"	—	—	5 99637A239	10.00	—	—	—	—
3/4"	3/8"	5 92463A580	13.81	5 99637A244	11.90	25 98002A987	12.14	T27 96754A356♦	6.66
7/8"	3/8"	—	—	5 99637A251	10.52	—	—	—	—
1"	3/8"	1 92463A592	2.80	5 99637A258	12.59	25 98002A990	12.14	T27 96754A361♦	7.57
1 1/4"	1/2"	—	—	—	—	10 98002A993	6.35	—	—
1 1/2"	1/2"	—	—	—	—	10 98002A995	6.35	—	—

Machine Screws—Large-Diameter (Truss) Head

Screw Size	Thread Lg.	COMBINATION DRIVE Type 316 SS Pkg. Qty.	Per Pkg.	18-8 SS Pkg. Qty.	Per Pkg.	Zinc-Plated Steel Pkg. Qty.	Per Pkg.	PIN-IN-STAR DRIVE 18-8 SS Drive Size	Each
10-24	5/16"	5 92463A658	$3.41	5 99637A294	$2.04	25 98002A709	$4.75	T20 96754A410♣	$0.72
1/4"-20	5/16"	5 92463A664	3.60	5 99637A299	2.32	25 98002A721	5.00	T27 96754A440♣	1.08

Shoulder Screws—Large-Diameter (Truss) Head

Screw Size	Shoulder Dia.	Shoulder Lg.	Thread Lg.	COMBINATION DRIVE Zinc-Plated Steel Pkg. Qty.	Per Pkg.	PIN-IN-STAR DRIVE 18-8 SS Drive Size	Each
10-24	1/4"	1/4"	5/16"	25 98002A104	$7.25	T20 96754A128▲	$0.84
1/4"-20	5/16"	1/4"	5/16"	25 98002A108	8.00	T27 96754A140♣	1.24

♠ Slotted drive only. ● Head height is 7/64". ■ Thread depth is 1/4". ♦ Head height is 9/64". ♣ Thread length is 1/4". ▲ Thread length is 3/8".

Self-Locking Binding Barrels and Shoulder Screws

Also called Camtainer fasteners. Typically used in the trucking industry to fasten wood and composite paneling to metal frames. Barrels and screws (sold separately) are zinc-plated steel. Min. Rockwell hardness is C28; min. tensile strength is 120,000 psi.

Barrels have a low-profile head with a T55 Torx drive. ***Shoulder screws*** have a tamper-resistant, low-profile head with a PVC seal and a knurled shoulder that resists rotation. The seal is effective from –40° to +320° F. Adhesive on the threads adds vibration resistance.

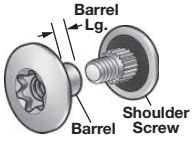

Use the chart below to find the material thickness range that each barrel and shoulder screw pair can be used with.

Shoulder Screw Lg.	Material Thickness Range — Barrel Length 3/8"	1/2"	5/8"	1"
5/8"	0.593"-0.665"	0.723"-0.785"	0.813"-0.875"	1.188"-1.250"
3/4"	0.690"-0.775"	0.785"-0.900"	0.875"-1.000"	1.275"-1.395"
7/8"	—	0.785"-1.015"	0.885"-1.125"	1.270"-1.500"
1"	0.735"-1.125"	0.778"-1.250"	0.880"-1.355"	1.265"-1.735"
1 1/4"	1.225"-1.315"	1.310"-1.450"	1.415"-1.575"	1.430"-1.945"
1 7/16"	1.422"-1.495"	1.395"-1.610"	1.395"-1.725"	1.422"-2.115"

Barrels

Lg.	Pkg. Qty.	Per Pkg.
5/16"-18—*Barrel Dia.: 25/64"; Head: Dia. 1"; Ht. 5/32"*		
3/8"	10	90216A310 $9.52
1/2"	10	90216A320 9.75
5/8"	10	90216A330 10.35
1"	10	90216A350 12.86

Shoulder Screws

Lg.	Pkg. Qty.	Per Pkg.
5/16"-18—*Head: Dia. 7/8"; Ht. 3/16"*		
5/8"	5	90216A120 $6.76
3/4"	10	90216A140 12.29
7/8"	10	90216A160 12.37
1"	10	90216A230 12.55
1 1/4"	5	90216A250 6.88
1 7/16"	5	90216A180 7.05

Nylon Shoulder Screws

Our molded nylon fasteners are a lightweight, nonconductive alternative to metal shoulder screws. With a hex socket drive and a Class 2A thread fit, they withstand temperatures from –40° to +180° F. Shoulder diameter tolerance is –0.004" to –0.017"; shoulder length tolerance is ±0.015". They're not rated for hardness, tensile, or shear strength. *Note:* Nylon absorbs environmental moisture, which can affect dimensions and other properties.

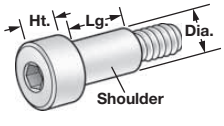

To Order: Please specify color: black or off-white.

Shoulder Lg.	Pkg. Qty.	Per Pkg.
1/4" Shoulder Dia.—*Hex Size: 1/8"; Head: Dia. 3/8"; Ht. 3/16"; Thread: 10-24; 3/8" Lg.*		
1/4"	25	93897A236 $5.98
3/8"	25	93897A254 6.03
1/2"	25	93897A263 6.10
5/8"	25	93897A271 6.17
3/4"	25	93897A279 6.27
1"	25	93897A288 6.35
1 1/4"	25	93897A296 6.49
1 1/2"	25	93897A305 6.61
1 3/4"	25	93897A313 6.74
2"	25	93897A320 6.87
5/16" Shoulder Dia.—*Hex Size: 5/32"; Head: Dia. 7/16"; Ht. 7/32"; Thread: 1/4"-20; 7/16" Lg.*		
1/4"	25	93897A401 6.33
5/16"	25	93897A410 6.40
3/8"	25	93897A417 6.43
1/2"	25	93897A425 6.53
5/8"	25	93897A433 6.63
3/4"	25	93897A440 6.73
1"	25	93897A448 6.93
1 1/2"	25	93897A464 7.35
2"	25	93897A480 7.73

Shoulder Lg.	Pkg. Qty.	Per Pkg.
3/8" Shoulder Dia.—*Hex Size: 3/16"; Head: Dia. 9/16"; Ht. 1/4"; Thread: 5/16"-18; 1/2" Lg.*		
1/4"	25	93897A517 $6.95
3/8"	25	93897A525 7.09
1/2"	25	93897A534 7.23
5/8"	25	93897A542 7.38
3/4"	25	93897A551 7.52
1"	25	93897A559 7.81
1 1/4"	25	93897A567 8.09
1 1/2"	25	93897A575 8.38
1 3/4"	25	93897A580 8.67
2"	25	93897A588 8.95
1/2" Shoulder Dia.—*Hex Size: 1/4"; Head: Dia. 3/4"; Ht. 5/16"; Thread: 3/8"-16; 5/8" Lg.*		
3/8"	10	93897A658 5.32
1/2"	10	93897A664 5.43
5/8"	10	93897A671 5.53
3/4"	10	93897A677 5.63
1"	10	93897A686 5.83
1 1/4"	10	93897A694 6.04
1 1/2"	10	93897A701 6.23
1 3/4"	10	93897A708 6.44
2"	10	93897A716 6.64

Stainless Steel Shoulder Screws

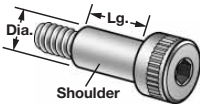

Also called stripper and shoulder bolts, these screws have a shoulder that serves as a bearing or spacer. They're used for locating parts, and as retaining components, guide screws, axle bolts, fulcrums, and pivots. Screws have a minimum Rockwell hardness of B55, a minimum tensile strength of 70,000 psi, and are not rated for shear strength. They have a hex socket drive and a Class 3A thread fit. Those with a shoulder diameter of 1/4" and larger meet ANSI/ASME B18.3. Shoulder dia. tolerance is –0.002" to –0.004"; shoulder length tolerance is ±0.005".

Type 316 and ***18-8 stainless steel*** provide excellent corrosion resistance and may be mildly magnetic. More corrosion resistant than 18-8 stainless steel, Type 316 stainless steel contains molybdenum, which increases resistance to chlorides and sulfates.

Self-locking screws have a nylon patch that keeps them from vibrating loose. Patches remain effective at temperatures from –70° to +250° F.

Type 316 Stainless Steel

Shoulder Lg.		Each ★
1/8" Shoulder Dia.		
Head: Dia. 1/4"; Ht. 1/8"		
Thread: 4-40; 5/32" Lg.		
Hex Size: 5/64"		
1/8"	97345A410	$2.39
3/16"	97345A413	2.49
1/4"	97345A416	2.57
5/16"	97345A419	2.65
3/8"	97345A422	2.75
7/16"	97345A425	2.93
1/2"	97345A428	3.32
5/32" Shoulder Dia.		
Head: Dia. 9/32"; Ht. 1/8"		
Thread: 6-32; 3/16" Lg.		
Hex Size: 3/32"		
1/8"	97345A441	2.65
3/16"	97345A443	2.75
1/4"	97345A446	2.84
5/16"	97345A449	3.02
3/8"	97345A452	3.20
7/16"	97345A455	3.54
1/2"	97345A458	3.99
3/16" Shoulder Dia.		
Head: Dia. 5/16"; Ht. 5/32"		
Thread: 8-32; 3/16" Lg.		
Hex Size: 3/32"		
1/8"	97345A472	$2.65
3/16"	97345A476	2.84
1/4"	97345A480	3.02
5/16"	97345A483	3.32
3/8"	97345A486	3.64
1/2"	97345A489	4.07
5/8"	97345A492	4.66
3/4"	97345A495	5.99
1"	97345A499	7.10
1 1/4"	97345A502	8.20
1 1/2"	97345A506	9.31
1/4" Shoulder Dia.		
Head: Dia. 3/8"; Ht. 3/16"		
Thread: 10-24; 3/8" Lg.		
Hex Size: 1/8"		
1/4"	97345A529	3.07
3/8"	97345A531	2.99
1/4" Shoulder Dia. (Cont.)		
1/2"	97345A537	$3.00
5/8"	97345A539	3.00
3/4"	97345A540	3.24
1"	97345A542	3.41
1 1/4"	97345A556	3.88
1 1/2"	97345A561	4.44
1 3/4"	97345A563	5.91
2"	97345A565	6.45
5/16" Shoulder Dia.		
Head: Dia. 7/16"; Ht. 7/32"		
Thread: 1/4"-20; 7/16" Lg.		
Hex Size: 5/32"		
1/4"	97345A567	3.91
3/8"	97345A571	3.47
1/2"	97345A578	3.54
5/8"	97345A579	3.70
3/4"	97345A581	3.97
1"	97345A583	4.08
1 1/4"	97345A588	4.55
1 1/2"	97345A593	4.62
2"	97345A569	7.38
3/8" Shoulder Dia.		
Head: Dia. 9/16"; Ht. 1/4"		
Thread: 5/16"-18; 1/2" Lg.		
Hex Size: 3/16"		
1/4"	97345A599	$5.04
3/8"	97345A601	4.49
1/2"	97345A619	4.71
5/8"	97345A621	4.60
3/4"	97345A622	4.82
1"	97345A624	5.65
1 1/4"	97345A632	5.74
1 1/2"	97345A644	5.82
1 3/4"	97345A651	7.69
2"	97345A656	6.95
1/2" Shoulder Dia.		
Head: Dia. 3/4"; Ht. 5/16"		
Thread: 3/8"-16; 5/8" Lg.		
Hex Size: 1/4"		
3/8"	97345A698	5.86
1/2"	97345A700	6.27
5/8"	97345A703	6.60
1/2" Shoulder Dia. (Cont.)		
3/4"	97345A707	$6.66
1"	97345A712	7.29
1 1/4"	97345A714	7.92
1 1/2"	97345A716	8.41
1 3/4"	97345A718	9.55
2"	97345A720	10.20
2 1/4"	97345A723	13.87
2 1/2"	97345A727	14.73
3"	97345A732	19.65
5/8" Shoulder Dia.		
Head: Dia. 7/8"; Ht. 3/8"		
Thread: 1/2"-13; 3/4" Lg.		
Hex Size: 5/16"		
1/2"	97345A743	16.71
3/4"	97345A747	17.69
1"	97345A754	18.37
1 1/4"	97345A758	20.25
1 1/2"	97345A762	20.29

18-8 Stainless Steel

Shoulder Lg.		Each ★
1/4" Shoulder Dia.		
Head: Dia. 3/8"; Ht. 3/16"		
Thread: 10-24; 3/8" Lg.		
Hex Size: 1/8"		
1/8"	90298A525	2.32
3/16"	90298A530	2.21
1/4"	90298A534	2.24
5/16"	90298A520	2.24
3/8"	90298A535	2.27
1/2"	90298A537	2.25
5/8"	90298A539	2.33
3/4"	90298A540	2.37
1"	90298A542	2.49
1 1/4"	90298A544	2.64
1 1/2"	90298A546	2.77
1 3/4"	90298A547	2.94
2"	90298A548	3.42
2 1/4"	90298A549	4.14
2 1/2"	90298A550	5.09
2 3/4"	90298A551	6.30
3"	90298A552	6.43
3 1/2"	90298A555	9.11
4"	90298A559	11.45
5/16" Shoulder Dia.		
Head: Dia. 7/16"; Ht. 7/32"		
Thread: 1/4"-20; 7/16" Lg.		
Hex Size: 5/32"		
1/4"	90298A574	2.40
5/16"	90298A575	2.44
3/8"	90298A576	2.48
1/2"	90298A578	2.57
5/8"	90298A580	2.66
3/4"	90298A581	2.75
1"	90298A583	2.93
1 1/4"	90298A585	3.14
5/16" Shoulder Dia. (Cont.)		
1 1/2"	90298A587	3.32
1 3/4"	90298A589	3.50
2"	90298A591	3.68
2 1/4"	90298A592	4.98
2 1/2"	90298A593	5.56
2 3/4"	90298A594	7.00
3"	90298A595	7.51
3 1/2"	90298A597	8.21
4"	90298A599	9.31
4 1/2"	90298A603	13.46
5"	90298A607	15.89
3/8" Shoulder Dia.		
Head: Dia. 9/16"; Ht. 1/4"		
Thread: 5/16"-18; 1/2" Lg.		
Hex Size: 3/16"		
1/4"	90298A615	3.37
3/8"	90298A617	3.49
1/2"	90298A619	3.60
5/8"	90298A621	3.72
3/4"	90298A622	3.84
1"	90298A624	4.11
1 1/4"	90298A626	4.35
1 1/2"	90298A628	4.58
1 3/4"	90298A630	4.82
2"	90298A632	5.10
2 1/4"	90298A633	6.46
2 1/2"	90298A634	6.70
2 3/4"	90298A635	7.01
3"	90298A636	7.26
3 1/4"	90298A637	8.07
3 1/2"	90298A638	8.40
3 3/4"	90298A639	9.73
4"	90298A640	10.98
4 1/2"	90298A641	15.27
3/8" Shoulder Dia. (Cont.)		
5"	90298A643	17.79
5 1/2"	90298A644	20.74
6"	90298A645	22.65
6 1/2"	90298A649	24.20
7"	90298A653	25.96
1/2" Shoulder Dia.		
Head: Dia. 3/4"; Ht. 5/16"		
Thread: 3/8"-16; 5/8" Lg.		
Hex Size: 1/4"		
3/8"	90298A705	4.76
1/2"	90298A707	4.98
5/8"	90298A709	5.20
3/4"	90298A710	5.44
1"	90298A712	5.88
1 1/4"	90298A714	6.31
1 1/2"	90298A716	6.77
1 3/4"	90298A718	8.33
2"	90298A720	8.71
2 1/4"	90298A721	9.48
2 1/2"	90298A722	10.87
2 3/4"	90298A723	11.49
3"	90298A724	11.99
3 1/4"	90298A725	12.89
3 1/2"	90298A726	13.23
3 3/4"	90298A727	13.39
4"	90298A728	13.66
4 1/4"	90298A729	17.67
4 1/2"	90298A730	18.27
4 3/4"	90298A731	19.10
5"	90298A732	19.65
5 1/2"	90298A733	23.11
6"	90298A735	34.92
6 1/2"	90298A739	27.37
7"	90298A743	30.83
5/8" Shoulder Dia.		
Head: Dia. 7/8"; Ht. 3/8"		
Thread: 1/2"-13; 3/4" Lg.		
Hex Size: 5/16"		
1/2"	90298A790	12.99
5/8"	90298A791	13.63
3/4"	90298A792	14.39
1"	90298A794	15.87
1 1/4"	90298A796	16.52
1 1/2"	90298A798	17.19
1 3/4"	90298A800	17.63
2"	90298A802	18.07
2 1/4"	90298A803	18.70
2 1/2"	90298A804	19.41
2 3/4"	90298A805	19.95
3"	90298A806	21.17
3 1/4"	90298A807	22.10
3 1/2"	90298A808	22.02
3 3/4"	90298A809	23.20
4"	90298A810	23.50
4 1/2"	90298A812	25.03
4 3/4"	90298A813	26.69
5"	90298A814	27.94
5 1/2"	90298A815	30.63
6"	90298A817	35.34
6 1/2"	90298A821	40.99
7"	90298A825	44.44
3/4" Shoulder Dia.		
Head: Dia. 1"; Ht. 1/2"		
Thread: 5/8"-11; 7/8" Lg.		
Hex Size: 3/8"		
1/2"	90298A832	20.02
5/8"	90298A834	20.72
3/4"	90298A835	21.44
1"	90298A836	21.50
1 1/4"	90298A837	22.44
3/4" Shoulder Dia. (Cont.)		
1 1/2"	90298A839	23.39
1 3/4"	90298A841	23.89
2"	90298A843	24.36
2 1/4"	90298A844	27.62
2 1/2"	90298A845	27.46
2 3/4"	90298A846	29.21
3"	90298A847	28.93
3 1/4"	90298A848	30.82
3 1/2"	90298A849	30.91
3 3/4"	90298A850	34.56
4"	90298A851	34.12
4 1/4"	90298A852	36.53
4 1/2"	90298A853	37.94
4 3/4"	90298A854	39.20
5"	90298A855	40.76
5 1/2"	90298A856	43.58
6"	90298A859	46.40
6 1/2"	90298A863	51.81
7"	90298A867	62.58
7 1/2"	90298A871	74.20
8"	90298A876	85.44
1" Shoulder Dia.		
Head: Dia. 1 5/16"; Ht. 5/8"		
Thread: 3/4"-10; 1" Lg.		
Hex Size: 1/2"		
1"	90298A870	38.98
1 1/2"	90298A872	41.40
1 3/4"	90298A874	43.82
2"	90298A875	47.18
2 1/2"	90298A877	52.01
3"	90298A879	56.84
3 1/2"	90298A881	62.85
4"	90298A883	65.27
5"	90298A885	67.68
6"	90298A887	69.44

Self-Locking 18-8 Stainless Steel Screws

Shoulder Lg.		Each ★
1/4" Shoulder Dia.		
Head: Dia. 3/8"; Ht. 3/16"		
Thread: 10-24; 3/8" Lg.		
Hex Size: 1/8"		
1/4"	91327A104	2.40
3/8"	91327A107	2.53
1/2"	91327A112	2.66
5/8"	91327A114	2.72
3/4"	91327A116	2.88
1"	91327A119	3.19
1 1/4"	91327A123	3.80
1 1/2"	91327A126	4.05
2"	91327A128	5.62
5/16" Shoulder Dia.		
Head: Dia. 7/16"; Ht. 7/32"		
Thread: 1/4"-20; 7/16" Lg.		
Hex Size: 5/32"		
1/4"	91327A132	3.18
3/8"	91327A134	3.29
1/2"	91327A136	3.49
5/8"	91327A137	3.55
3/4"	91327A139	3.64
1"	91327A143	4.11
1 1/4"	91327A146	4.28
1 1/2"	91327A148	4.50
2"	91327A133	9.52
3/8" Shoulder Dia.		
Head: Dia. 9/16"; Ht. 1/4"		
Thread: 5/16"-18; 1/2" Lg.		
Hex Size: 3/16"		
1/4"	91327A150	4.04
3/8"	91327A151	4.10
1/2"	91327A152	4.29
5/8"	91327A155	4.39
3/4"	91327A156	4.60
1"	91327A161	5.44
1 1/4"	91327A163	5.61
1 1/2"	91327A165	6.62
2"	91327A167	10.69
1/2" Shoulder Dia.		
Head: Dia. 3/4"; Ht. 5/16"		
Thread: 3/8"-16; 5/8" Lg.		
Hex Size: 1/4"		
3/8"	91327A168	7.26
1/2"	91327A170	7.67
5/8"	91327A172	7.79
3/4"	91327A173	8.46
1"	91327A177	8.85
1 1/4"	91327A183	9.12
1 1/2"	91327A188	9.77
1 3/4"	91327A193	16.35
2"	91327A197	19.65
5/8" Shoulder Dia.		
Head: Dia. 7/8"; Ht. 3/8"		
Thread: 1/2"-13; 3/4" Lg.		
Hex Size: 5/16"		
3/4"	91327A223	32.40
1"	91327A228	35.65
1 1/4"	91327A235	42.94
1 1/2"	91327A252	43.25
2"	91327A259	46.90
3/4" Shoulder Dia.		
Head: Dia. 1"; Ht. 1/2"		
Thread: 5/8"-11; 7/8" Lg.		
Hex Size: 3/8"		
1"	91327A266	49.50
1 1/2"	91327A273	51.43
2"	91327A280	51.72

★ Prices are 15% lower when you buy in multiples of five.

Alloy Steel Shoulder Screws

Also called stripper bolts and shoulder bolts, these screws have a cylindrical shoulder under the head that serves as a bearing or spacer. They're used for locating parts, and as retaining components, guide screws, axle bolts, fulcrums, and pivots. Screw heads and threads have a black finish and a hex socket drive.

All screws are made from alloy steel, have a Class 3A thread fit, and meet ANSI/ASME B18.3. Minimum Rockwell hardness is C32, minimum tensile strength is 140,000 psi, and shear strength is 84,000 psi (unless noted). Shoulder diameter tolerance is –0.004″; shoulder length tolerance is ±0.005″. Screws with a 1″ and smaller shoulder diameter meet ASTM A574. Those with a 1¼″ and a 1½″ shoulder diameter are not rated for shear strength.

Self-locking screws have a nylon pellet that keeps them from vibrating loose. Pellets remain effective at temperatures from –70° to +250°F.

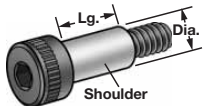

Alloy Steel

Shoulder Lg.		Each★
¼″ Shoulder Dia.		
Head: Dia. ⅜″; Ht. 3/16″		
Thread: 10-24; ⅜″ Lg.		
Hex Size: ⅛″		
¼″	91259A533	$1.02
5/16″	91259A534	1.00
⅜″	91259A535	1.01
½″	91259A537	1.02
⅝″	91259A539	1.05
¾″	91259A540	1.07
⅞″	91259A541	2.85
1″	91259A542	1.13
1¼″	91259A544	1.22
1½″	91259A546	1.26
1¾″	91259A102	1.49
2″	91259A103	1.59
2¼″	91259A104	1.78
2½″	91259A105	1.88
3″	91259A106	1.92
3¼″	91259A101	4.14
3½″	91259A110	4.39
3¾″	91259A107	7.93
4″	91259A115	6.09
5/16″ Shoulder Dia.		
Head: Dia. 7/16″; Ht. 7/32″		
Thread: ¼″-20; 7/16″ Lg.		
Hex Size: 5/32″		
¼″	91259A574	1.17
⅜″	91259A576	1.22
½″	91259A578	1.20
⅝″	91259A580	1.22
¾″	91259A581	1.27
⅞″	91259A582	2.95
1″	91259A583	1.30
1¼″	91259A585	1.41
1½″	91259A587	1.53
1¾″	91259A589	1.57
2″	91259A591	1.60
2¼″	91259A108	5.09
2½″	91259A109	5.32
3″	91259A111	5.89
5/16″ Shoulder Dia.		
3½″	91259A225	$3.13
4″	91259A121	4.44
4½″	91259A910	12.65
5″	91259A914	16.18
⅜″ Shoulder Dia.		
Head: Dia. 9/16″; Ht. ¼″		
Thread: 5/16″-18; ½″ Lg.		
Hex Size: 3/16″		
¼″	91259A615	1.40
⅜″	91259A617	1.41
½″	91259A619	1.43
⅝″	91259A621	1.44
¾″	91259A622	1.47
⅞″	91259A623	4.42
1″	91259A624	1.48
1¼″	91259A626	1.56
1½″	91259A628	1.60
1¾″	91259A630	1.64
2″	91259A632	1.76
2¼″	91259A633	1.84
2½″	91259A634	1.87
2¾″	91259A635	1.97
3″	91259A636	2.13
3¼″	91259A637	2.41
3½″	91259A638	2.60
3¾″	91259A639	3.07
4″	91259A640	2.99
4½″	91259A112	13.64
5″	91259A113	13.80
5½″	91259A651	11.72
6″	91259A114	14.26
6½″	91259A660	18.64
7″	91259A664	18.99
½″ Shoulder Dia.		
Head: Dia. ¾″; Ht. 5/16″		
Thread: ⅜″-16; ⅝″ Lg.		
Hex Size: ¼″		
⅜″	91259A705	2.07
½″	91259A707	2.14
⅝″	91259A709	2.23
¾″	91259A710	2.20
½″ Shoulder Dia.		
⅞″	91259A711	$2.89
1″	91259A712	2.26
1¼″	91259A714	2.31
1½″	91259A716	2.36
1¾″	91259A718	2.48
2″	91259A720	2.49
2¼″	91259A721	2.72
2½″	91259A722	2.80
2¾″	91259A723	2.96
3″	91259A724	3.13
3¼″	91259A725	3.47
3½″	91259A726	3.69
3¾″	91259A727	4.29
4″	91259A728	4.05
4¼″	91259A729	4.91
4½″	91259A730	4.87
4¾″	91259A731	5.42
5″	91259A732	5.57
5½″	91259A116	16.32
6″	91259A117	17.88
6½″	91259A740	20.57
7″	91259A744	28.08
8″	91259A901	26.04
⅝″ Shoulder Dia.		
Head: Dia. ⅞″; Ht. ⅜″		
Thread: ½″-13; ¾″ Lg.		
Hex Size: 5/16″		
⅜″	91259A903	8.57
½″	91259A118	6.94
⅝″	91259A119	6.09
¾″	91259A792	3.36
1″	91259A794	3.45
1¼″	91259A796	3.35
1½″	91259A798	3.53
1¾″	91259A800	3.62
2″	91259A802	3.75
2¼″	91259A803	4.13
2½″	91259A804	4.41
2¾″	91259A805	4.76
3″	91259A806	5.05
⅝″ Shoulder Dia.		
3¼″	91259A807	$5.87
3½″	91259A808	6.55
3¾″	91259A809	7.63
4″	91259A810	7.98
4¼″	91259A811	8.95
4½″	91259A812	9.06
4¾″	91259A813	9.85
5″	91259A814	9.97
5½″	91259A816	14.48
6″	91259A818	18.58
6½″	91259A822	25.14
7″	91259A826	31.83
¾″ Shoulder Dia.		
Head: Dia. 1″; Ht. ½″		
Thread: ⅝″-11; ⅞″ Lg.		
Hex Size: ⅜″		
½″	91259A122	9.66
¾″	91259A123	8.09
⅞″	91259A904	6.16
1″	91259A124	8.59
1¼″	91259A125	9.32
1½″	91259A839	6.98
1¾″	91259A841	7.10
2″	91259A843	7.29
2¼″	91259A844	7.47
2½″	91259A845	8.12
2¾″	91259A846	9.06
3″	91259A847	9.19
3¼″	91259A848	9.36
3½″	91259A849	9.90
3¾″	91259A850	10.69
4″	91259A851	10.89
4¼″	91259A852	12.06
4½″	91259A853	12.21
4¾″	91259A854	13.46
5″	91259A855	13.43
5½″	91259A857	16.47
6″	91259A860	20.09
6½″	91259A864	26.91
7″	91259A230	33.17
7½″	91259A232	34.20
8″	91259A235	51.16
1″ Shoulder Dia.		
Head: Dia. 15/16″; Ht. ⅝″		
Thread: ¾″-10; 1″ Lg.		
Hex Size: ½″		
1″	91259A130	$18.17
1½″	91259A132	19.80
1¾″	91259A133	20.43
2″	91259A134	21.37
2½″	91259A136	23.24
3″	91259A138	25.13
3½″	91259A140	26.90
4″	91259A141	30.89
4½″	91259A906	28.59
5″	91259A142	33.19
5½″	91259A143	32.16
6″	91259A145	34.88
6½″	91259A149	35.56
7″	91259A152	51.08
1¼″ Shoulder Dia.		
Head: Dia. 1¾″; Ht. ¾″		
Thread: ⅞″-9; 1⅛″ Lg.		
Hex Size: ⅝″		
1½″	91259A301	48.54
1¾″	91259A304	48.86
2″	91259A307	49.20
2½″	91259A310	49.84
3″	91259A313	50.60
3½″	91259A316	51.14
4″	91259A319	51.80
5″	91259A322	53.10
6″	91259A323	54.40
1½″ Shoulder Dia.		
Head: Dia. 2⅛″; Ht. 1″		
Thread: 1⅛″-7; 1½″ Lg.		
Hex Size: ⅞″		
1½″	91259A351	51.82
1¾″	91259A354	52.20
2″	91259A357	52.60
2½″	91259A360	53.36
3″	91259A363	54.12
3½″	91259A366	54.88
4″	91259A370	55.64
5″	91259A373	57.18
6″	91259A376	58.70

Self-Locking Alloy Steel

Shoulder Lg.		Each★
¼″ Shoulder Dia.		
Head: Dia. ⅜″; Ht. 3/16″		
Thread: 10-24; ⅜″ Lg.		
Hex Size: ⅛″		
⅜″	91264A240	1.59
½″	91264A242	1.68
⅝″	91264A244	1.63
¾″	91264A245	1.70
1″	91264A247	1.73
1¼″	91264A249	1.95
1½″	91264A251	1.94
5/16″ Shoulder Dia.		
Head: Dia. 7/16″; Ht. 7/32″		
Thread: ¼″-20; 7/16″ Lg.		
Hex Size: 5/32″		
⅜″	91264A535	1.76
½″	91264A537	1.82
⅝″	91264A539	1.85
¾″	91264A540	1.88
1″	91264A542	1.89
1¼″	91264A544	2.03
1½″	91264A547	2.15
1¾″	91264A550	2.21
2″	91264A553	2.27
⅜″ Shoulder Dia.		
Head: Dia. 9/16″; Ht. ¼″		
Thread: 5/16″-18; ½″ Lg.		
Hex Size: 3/16″		
⅜″	91264A576	2.01
½″	91264A578	2.01
⅝″	91264A580	2.07
¾″	91264A581	2.09
1″	91264A583	2.13
1¼″	91264A585	2.13
1½″	91264A587	2.23
1¾″	91264A589	2.33
2″	91264A591	2.41
2¼″	91264A592	2.54
2½″	91264A593	2.76
2¾″	91264A594	2.90
3″	91264A595	3.05
½″ Shoulder Dia.		
Head: Dia. ¾″; Ht. 5/16″		
Thread: ⅜″-16; ⅝″ Lg.		
Hex Size: ¼″		
½″	91264A619	3.03
⅝″	91264A621	3.08
¾″	91264A622	3.01
1″	91264A624	3.18
1¼″	91264A626	3.23
1½″	91264A628	3.31
1¾″	91264A630	3.41
2″	91264A632	3.44
2¼″	91264A635	3.81
2½″	91264A640	3.92
2¾″	91264A645	4.17
3″	91264A650	4.28
⅝″ Shoulder Dia.		
Head: Dia. ⅞″; Ht. ⅜″		
Thread: ½″-13; ¾″ Lg.		
Hex Size: 5/16″		
1¼″	91264A714	5.06
1½″	91264A716	5.17
1¾″	91264A718	5.76
2″	91264A720	5.92
¾″ Shoulder Dia.		
Head: Dia. 1″; Ht. ½″		
Thread: ⅝″-11; ⅞″ Lg.		
Hex Size: ⅜″		
1½″	91264A798	7.44
1¾″	91264A800	7.66
2″	91264A802	7.87
2½″	91264A804	8.60

Tamper-Resistant Medium Duty Binding Posts

You can install these two-part fasteners with a standard slotted screwdriver, but the one-way large-diameter (truss) head requires a special tool for removal (see 7392A on page 2835). Also known as partition sex bolts, they're made from 18-8 stainless steel.

Screw size is 10-24. The head is 27/64″ Dia.×7/64″ Ht. Barrels have a min. ⅜″ thread depth, a ¼″ diameter, and fit in ¼″ diameter holes. Min. Rockwell hardness is B85. Min. tensile strength is 85,000 psi.

Usable Lg.	Barrel Lg.	Screw Thread Lg.	Screw Shoulder Lg.	Pkg. Qty.		Per Pkg.
½″	⅜″	7/32″	⅛″	5	90650A401	$6.86
¾″	½″	11/32″	¼″	5	90650A402	7.00
1″	¾″	17/32″	¼″	5	90650A403	7.29
1¼″	1″	17/32″	¼″	5	90650A404	7.92

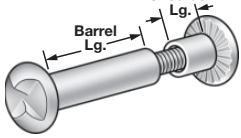

★Prices are 15% lower when you buy in multiples of five.

Metric Shoulder Screws

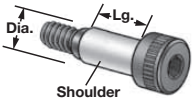

Class 12.9 Alloy Steel

Self-Locking Class 12.9 Alloy Steel

We're offering metric versions of our most popular shoulder screws in wear-resistant Class 12.9 alloy steel with dimensions that are comparable to ISO 7379 (unless noted). They have a hex socket drive and a Class 5g6g thread fit.

All screws have a minimum Rockwell hardness of C39, a minimum tensile strength of 159,500 psi, and a shear strength of 95,700 psi. Shoulders have a diameter tolerance of –0.01 mm to –0.072 mm and a length tolerance of +0.25 mm to –0.00 mm. Heads and threads have a black finish.

Self-locking shoulder screws have a nylon patch bonded to the threads so the screws resist loosening due to vibration. The patch withstands temperatures from –70° to +250° F.

Class 12.9 Alloy Steel

Shoulder Lg., mm		Each★
5 mm Shoulder Dia.		
Head Dia.: 9 mm		
Head Ht.: 4 mm		
Thread: M4; 8.3 mm Lg.		
Pitch: 0.7 mm		
Hex Size: 2.5 mm		
10	92981A030	$6.25
12	92981A034	6.25
16	92981A038	7.50
20	92981A042	7.14
25	92981A050	7.86
30	92981A055	7.50
6 mm Shoulder Dia.♣		
Head Dia.: 10 mm		
Head Ht.: 4.5 mm		
Thread: M5; 9.5 mm Lg.		
Pitch: 0.8 mm		
Hex Size: 3 mm		
8	92981A108	1.34
10	92981A100	1.23
12	92981A101	1.29
16	92981A102	1.31
20	92981A103	1.35
25	92981A104	1.37
30	92981A105	1.43
35	92981A120	1.51
40	92981A106	1.53
45	92981A130	1.98
50	92981A107	1.89
60	92981A109	3.51

Shoulder Lg., mm		Each★
8 mm Shoulder Dia.		
Head Dia.: 13 mm		
Head Ht.: 5.5 mm		
Thread: M6; 11 mm Lg.		
Pitch: 1 mm		
Hex Size: 4 mm		
6	92981A196	$1.98
8	92981A198	1.39
10	92981A200	1.36
12	92981A201	1.39
16	92981A202	1.45
20	92981A203	1.51
25	92981A204	1.47
30	92981A205	1.68
35	92981A220	2.72
40	92981A206	2.03
45	92981A250	3.17
50	92981A207	2.84
55	92981A210	6.30
60	92981A215	3.97
70	92981A217	4.14
80	92981A230	3.21
10 mm Shoulder Dia.		
Head Dia.: 16 mm		
Head Ht.: 7 mm		
Thread: M8; 13 mm Lg.		
Pitch: 1.25 mm		
Hex Size: 5 mm		
10	92981A299	1.71
12	92981A300	2.23

Shoulder Lg., mm		Each★
10 mm Shoulder Dia. (Cont.)		
16	92981A302	$1.85
20	92981A303	2.05
25	92981A304	2.73
30	92981A305	2.41
35	92981A325	2.85
40	92981A306	2.57
45	92981A335	2.89
50	92981A307	2.58
55	92981A340	2.98
60	92981A308	2.88
70	92981A309	2.92
80	92981A310	3.12
90	92981A312	4.72
100	92981A314	5.20
12 mm Shoulder Dia.♣		
Head Dia.: 18 mm		
Head Ht.: 9 mm		
Thread: M10; 16 mm Lg.		
Pitch: 1.5 mm		
Hex Size: 6 mm		
12	92981A400	4.43
16	92981A402	3.82
20	92981A403	3.87
25	92981A404	3.96
30	92981A405	4.06
35	92981A415	4.16
40	92981A406	4.21
45	92981A420	4.96

Shoulder Lg., mm		Each★
12 mm Shoulder Dia.♣ (Cont.)		
50	92981A407	$4.90
55	92981A430	5.75
60	92981A408	5.04
70	92981A409	5.53
80	92981A410	5.78
90	92981A411	6.66
100	92981A412	7.15
120	92981A418	7.88
16 mm Shoulder Dia.		
Head Dia.: 24 mm		
Head Ht.: 11 mm		
Thread: M12; 18 mm Lg.		
Pitch: 1.75 mm		
Hex Size: 8 mm		
20	92981A495	4.75
25	92981A500	6.63
30	92981A505	6.62
35	92981A520	8.97
40	92981A506	7.00
45	92981A535	7.82
50	92981A507	7.68
55	92981A545	11.36
60	92981A508	10.27
70	92981A509	11.96
80	92981A510	10.70
90	92981A511	12.48
100	92981A512	13.67
120	92981A513	7.00

Shoulder Lg., mm		Each★
20 mm Shoulder Dia.		
Head Dia.: 30 mm		
Head Ht.: 14 mm		
Thread: M16; 22 mm Lg.		
Pitch: 2 mm		
Hex Size: 10 mm		
30	92981A595	$17.78
35	92981A600	18.88
40	92981A606	15.15
45	92981A625	15.25
50	92981A607	10.46
55	92981A635	13.80
60	92981A608	12.31
70	92981A609	13.89
80	92981A610	14.61
90	92981A611	19.93
100	92981A612	31.12
120	92981A613	27.69
24 mm Shoulder Dia.♣		
Head Dia.: 36 mm		
Head Ht.: 16 mm		
Thread: M20; 27 mm Lg.		
Pitch: 2.5 mm		
Hex Size: 12 mm		
50	92981A705	74.32
60	92981A711	75.71
80	92981A720	78.04
90	92981A725	81.75
100	92981A730	81.75
120	92981A735	85.47

Self-Locking Class 12.9 Alloy Steel

Shoulder Lg., mm		Each★
6 mm Shoulder Dia.		
Head Dia.: 10 mm		
Head Ht.: 4.5 mm		
Thread: M5; 9.5 mm Lg.		
Pitch: 0.8 mm		
Hex Size: 3 mm		
10	91319A202	$4.27
12	91319A203	4.29
16	91319A204	4.33
20	91319A205	4.47

Shoulder Lg., mm		Each★
6 mm Shoulder Dia. (Cont.)		
25	91319A206	$4.54
8 mm Shoulder Dia.		
Head Dia.: 13 mm		
Head Ht.: 5.5 mm		
Thread: M6; 11 mm Lg.		
Pitch: 1 mm		
Hex Size: 4 mm		
10	91319A207	5.04

Shoulder Lg., mm		Each★
8 mm Shoulder Dia. (Cont.)		
12	91319A208	$5.14
16	91319A209	5.20
20	91319A211	5.31
25	91319A212	5.38
30	91319A213	5.51
35	91319A214	5.90
40	91319A215	6.32

Shoulder Lg., mm		Each★
10 mm Shoulder Dia.		
Head Dia.: 16 mm		
Head Ht.: 7 mm		
Thread: M8; 13 mm Lg.		
Pitch: 1.25 mm		
Hex Size: 5 mm		
12	91319A216	$5.76
16	91319A217	5.84

Shoulder Lg., mm		Each★
10 mm Shoulder Dia. (Cont.)		
20	91319A218	$5.95
25	91319A219	6.07
30	91319A221	6.26
35	91319A222	6.98

♣ Dimensions are not comparable to ISO 7379.

Self-Locking Precision Shoulder Screws

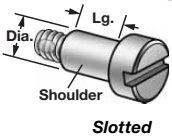

Slotted

Hex Socket

Get the dimensional accuracy you need, plus corrosion resistance and a firm grip. With a nylon patch bonded to the threads, these screws resist loosening due to vibration. The patch withstands temperatures from –70° to +250° F. Screws are made from 18-8 stainless steel and may be mildly magnetic. They have a shoulder diameter tolerance of +0.000″ to –0.001″ and a shoulder length tolerance of +0.002″ to –0.000″. Class 2A thread fit. Minimum Rockwell hardness is C20. Minimum tensile strength is 105,000 psi. Not rated for shear strength.

Shoulder Lg.	Head Dia.	Head Ht.	Slotted	Each★	Hex Socket	Each★
1/8″ Shoulder Dia. — *Thread: 4-40; 5/32″ Lg.; Hex Size: 5/64″*						
1/8″	1/4″	1/8″	93996A111	$2.95	93996A516	$3.32
3/16″	1/4″	1/8″	93996A114	3.03	93996A518	3.39
1/4″	1/4″	1/8″	93996A116	3.10	93996A521	3.54
5/16″	1/4″	1/8″	93996A118	3.17	93996A523	3.61
3/8″	1/4″	1/8″	93996A121	3.17	93996A526	3.61
7/16″	1/4″	1/8″	93996A123	3.39	93996A528	3.84
1/2″	1/4″	1/8″	93996A125	3.54	93996A531	3.98
5/32″ Shoulder Dia. — *Thread: 6-32; 3/16″ Lg.; Hex Size: 3/32″*						
1/8″	9/32″	1/8″	93996A202	3.32	93996A600	3.69
3/16″	9/32″	1/8″	93996A204	3.39	93996A603	3.77
1/4″	9/32″	1/8″	93996A207	3.47	93996A605	3.84
5/16″	9/32″	1/8″	93996A210	3.54	93996A607	3.98
3/8″	9/32″	1/8″	93996A213	3.69	93996A609	4.13
7/16″	9/32″	1/8″	93996A215	4.06	93996A611	4.42
1/2″	9/32″	1/8″	93996A218	4.42	93996A613	4.80
3/16″ Shoulder Dia. — *Thread: 8-32; 3/16″ Lg.; Hex Size: 3/32″*						
1/8″	5/16″	5/32″	93996A321	$3.17	93996A710	$3.61
3/16″	5/16″	5/32″	93996A324	3.17	93996A712	3.77
1/4″	5/16″	5/32″	93996A327	3.54	93996A714	3.98
5/16″	5/16″	5/32″	93996A329	3.61	93996A716	4.20
3/8″	5/16″	5/32″	93996A332	3.77	93996A718	4.35
7/16″	5/16″	5/32″	93996A336	3.77	93996A721	4.42
1/2″	5/16″	5/32″	93996A339	4.06	93996A723	4.72
5/8″	5/16″	5/32″	93996A341	4.94	93996A726	5.76
3/4″	5/16″	5/32″	93996A343	5.31	93996A729	6.20
1″	5/16″	5/32″	93996A346	5.61	93996A733	6.64
1 1/4″	5/16″	5/32″	93996A348	5.76	93996A735	6.86
1 1/2″	5/16″	5/32″	93996A351	5.90	93996A738	7.01
1/4″ Shoulder Dia. — *Thread: 10-32; 1/4″ Lg.; Hex Size: 1/8″*						
1/8″	3/8″	3/16″	93996A404	3.91	93996A831	5.31
3/16″	3/8″	3/16″	93996A406	3.98	93996A834	5.46
1/4″	3/8″	3/16″	93996A408	4.13	93996A836	5.61
5/16″	3/8″	3/16″	93996A411	4.13	93996A838	5.76
3/8″	3/8″	3/16″	93996A413	4.35	93996A842	5.90
7/16″	3/8″	3/16″	93996A416	4.42	93996A845	6.05
1/2″	3/8″	3/16″	93996A419	4.72	93996A847	6.20
5/8″	3/8″	3/16″	93996A422	5.46	93996A849	6.49
3/4″	3/8″	3/16″	93996A424	5.53	93996A853	6.94
1″	3/8″	3/16″	93996A427	5.68	93996A856	7.38
1 1/4″	3/8″	3/16″	93996A430	5.90	93996A858	7.75
1 1/2″	3/8″	3/16″	93996A435	6.20	93996A861	8.48

★Prices are 15% lower when you buy in multiples of five.

Precision Shoulder Screws

Exacting shoulder tolerances make these screws ideal for precision applications. Shoulder dia. tolerance is +0″ to –0.001″; shoulder length tolerance is +0.002″ to –0″. Screws have a Class 2A thread fit. Not rated for shear strength.

18-8 stainless steel provides excellent corrosion resistance; may be mildly magnetic. Min. Rockwell hardness is B65. Min. tensile strength is 90,000 psi (unless noted). Slotted screws with a Dash No. meet MS51575; those with a hex socket and a Dash No. meet MS51576. Screws with a star-shaped drive can be driven with Torx drivers and bits. Not rated for hardness or tensile strength. ***Type 416 stainless steel*** is stronger and harder than 18-8 stainless steel, but not as corrosion resistant. Magnetic. Min. Rockwell hardness is C26. Min. tensile strength is 123,000 psi. ***Alloy steel*** is high-strength Alloy 4140. Head and threads are black. Rockwell hardness is C32-C43. Min. tensile strength is 144,000 psi.

Also Available: Brass hex-socket screws in sizes marked with a ◆. Please ask for 95446A630 and specify shoulder dia. and length.

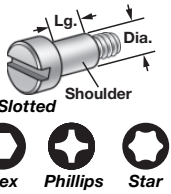

Shoulder Lg.	18-8 SS Slotted Dash No.	Slotted Each★	18-8 SS Hex Socket Dash No.	Hex Socket Each★	18-8 SS Phillips	Phillips Each★	18-8 SS Star	Star Each★	TYPE 416 SS Hex Socket	Hex Socket Each★	ALLOY STEEL Hex Socket	Hex Socket Each★
1/8″ Shoulder Dia.—Head Dia.: 1/4″; Head Ht.: 1/8″; Thread: 4-40; Thread Lg.: 5/32″; Hex Drive Size: 5/64″; Phillips Drive: #1; Star Drive: T10												
1/8″	1	91829A511	$1.31	1	94035A511	$1.60	94045A511	$2.66	96167A380	$3.19	93985A511	$2.23	92012A511◆	$3.28
3/16″	2	91829A513	1.37	2	94035A513	1.74	94045A513	2.80	96167A383	3.19	93985A513	2.23	92012A513◆	3.36
1/4″	3	91829A515	1.43	3	94035A515	1.87	94045A515	3.08	96167A386	3.37	93985A515	2.34	92012A515◆	3.57
5/16″	4	91829A517	1.50	4	94035A517	1.93	94045A517	4.31	—	—	93985A517	2.44	92012A517	3.79
3/8″	5	91829A519	1.50	5	94035A519	1.94	94045A519	4.31	96167A389	3.37	93985A519	2.49	92012A519◆	3.85
7/16″	—	91829A521	1.70	—	94035A521	2.14	94045A521	3.14	—	—	93985A521	3.11	92012A521	4.71
1/2″	—	91829A522	1.83	—	94035A522	2.27	94045A522	3.62	—	—	93985A522	3.37	92012A522	4.98
5/32″ Shoulder Dia.—Head Dia.: 9/32″; Head Ht.: 1/8″; Thread: 6-32; Thread Lg.: 3/16″; Hex Drive Size: 3/32″; Phillips Drive: #1												
1/8″	—	91829A523	1.65	—	94035A523	1.93	94045A523	2.41	—	—	93985A523	2.49	92012A523	3.64
3/16″	—	91829A524	1.71	—	94035A524	2.00	94045A524	2.51	—	—	93985A524	1.61	92012A524	3.64
1/4″	—	91829A525	1.78	—	94035A525	2.05	94045A525	2.61	—	—	93985A525	1.66	92012A525	3.93
5/16″	—	91829A526	1.83	—	94035A526	2.19	94045A526	2.71	—	—	93985A526	2.70	92012A526	4.08
3/8″	—	91829A527	1.97	—	94035A527	2.31	94045A527	2.89	—	—	93985A527	2.86	92012A527	4.36
7/16″	—	91829A528	2.31	—	94035A528	2.57	94045A528	3.38	—	—	93985A528	3.21	92012A528	4.50
1/2″	—	91829A529	2.61	—	94035A529	2.90	94045A529	3.86	—	—	93985A529	3.53	92012A529	4.84
3/16″ Shoulder Dia.—Head Dia.: 5/16″; Head Ht.: 5/32″; Thread: 8-32; Thread Lg.: 3/16″; Hex Drive Size: 3/32″; Phillips Drive: #2; Star Drive: T25												
1/8″	6	91829A201	1.50	6	94035A201	1.85	94045A201	4.44	96167A410	4.01	93985A201	2.54	92012A201◆	3.93
3/16″	7	91829A202	1.57	7	94035A202	1.98	94045A202	4.44	96167A440	4.01	93985A202	2.54	92012A202◆	3.93
1/4″	8	91829A203	1.83	8	94035A203	2.17	94045A203	4.44	96167A470	4.01	93985A203	2.65	92012A203◆	4.00
5/16″	9	91829A200	1.89	9	94035A200	2.36	94045A200	4.44	—	—	93985A200	2.86	92012A200	4.36
3/8″	10	91829A204	2.03	10	94035A204	2.48	94045A204	4.44	96167A500	4.01	93985A204	2.86	92012A204◆	4.36
1/2″	11	91829A205	2.03	11	94035A205	2.54	94045A205	4.64	96167A530	4.22	93985A205	2.96	92012A205◆	4.51
5/8″	12	91829A206	2.29	12	94035A206	2.81	94045A206	4.58	96167A560	5.67	93985A206	3.17	92012A206◆	4.73
3/4″	13	91829A207	3.07	13	94035A207	3.70	94045A207	5.21	96167A580	6.24	93985A207	3.79	92012A207◆	5.32
1″	14	91829A208	3.39	14	94035A208	4.12	94045A208	5.74	96167A590	6.24	93985A208	4.26	92012A208◆	6.19
1 1/4″	15	91829A209	3.68	15	94035A209	4.50	94045A209	6.35	—	—	93985A209	4.57	92012A209	6.70
1 1/2″	—	91829A211	3.82	—	94035A211	4.69	—	—	—	—	93985A211	4.73	92012A211	7.07
1/4″ Shoulder Dia.—Head Dia.: 3/8″; Head Ht.: 3/16″; Thread: 10-24; Thread Lg.: 3/8″; Hex Drive Size: 1/8″												
1/8″	—	91829A554	2.61	—	94035A554	3.34	—	—	—	—	—	—	—	—
3/16″	—	91829A557	2.77	—	94035A557	3.34	—	—	—	—	—	—	—	—
1/4″	—	91829A560	2.90	—	94035A560	3.60	—	—	—	—	—	—	—	—
5/16″	—	91829A563	3.03	—	94035A563	3.73	—	—	—	—	—	—	—	—
3/8″	—	91829A566	3.17	—	94035A566	3.86	—	—	—	—	—	—	—	—
1/2″	—	91829A569	3.43	—	94035A569	4.12	—	—	—	—	—	—	—	—
5/8″	—	91829A572	3.95	—	94035A572	4.37	—	—	—	—	—	—	—	—
3/4″	—	91829A575	4.22	—	94035A575	4.76	—	—	—	—	—	—	—	—
1″	—	91829A578	4.61	—	94035A578	5.14	—	—	—	—	—	—	—	—
1 1/4″	—	91829A581	5.00	—	94035A581	5.40	—	—	—	—	—	—	—	—
1 1/2″	—	91829A584	5.41	—	94035A584	5.79	—	—	—	—	—	—	—	—
1/4″ Shoulder Dia.—Head Dia.: 3/8″; Head Ht.: 3/16″; Thread: 10-32; Thread Lg.: 1/4″; Hex Drive Size: 1/8″; Phillips Drive: #2; Star Drive: T30												
1/8″	16	91829A531	2.15	—	94035A531	2.67	94045A531	4.64	96167A600	4.57	93985A531	3.01	92012A531◆	4.51
3/16″	17	91829A533	2.22	16	94035A533	2.74	94045A533	4.64	96167A620	4.57	93985A533	3.06	92012A533◆	4.59
1/4″	18	91829A534	2.35	17	94035A534	2.93	94045A534	4.64	96167A650	4.81	93985A534	3.17	92012A534◆	4.81
5/16″	19	91829A532	2.35	18	94035A532	2.99	94045A532	4.64	—	—	93985A532	3.27	92012A532	4.96
3/8″	20	91829A535	2.55	19	94035A535	3.12	94045A535	4.63	96167A680	4.81	93985A535	3.43	92012A535◆	5.09
1/2″	21	91829A537	2.87	20	94035A537	3.44	94045A537	4.84	96167A710	4.81	93985A537	3.69	92012A537◆	5.47
5/8″	22	91829A539	3.56	21	94035A539	4.40	94045A539	5.10	96167A740	5.15	93985A539	4.57	92012A539◆	6.70
3/4″	23	91829A540	3.63	22	94035A540	4.46	94045A540	5.27	96167A770	5.15	93985A540	4.62	92012A540◆	6.77
1″	24	91829A542	3.76	23	94035A542	4.59	94045A542	5.59	96167A790	5.15	93985A542	4.73	92012A542◆	6.98
1 1/4″	25	91829A544	3.95	24	94035A544	5.02	94045A544	6.28	—	—	93985A544	4.98	92012A544	7.28
1 1/2″	26	91829A546	4.20	25	94035A546	5.41	94045A546	7.53	—	—	93985A546	5.30	92012A546	7.64
5/16″ Shoulder Dia.—Head Dia.: 1/2″; Head Ht.: 7/32″; Thread: 1/4″-20; Thread Lg.: 7/16″; Hex Drive Size: 5/32″; Phillips Drive: #3												
1/4″	27	91829A301	4.48	—	94035A301	5.66	94045A301	7.31	—	—	93985A301	5.71	92012A301	8.74
5/16″	28	91829A302	3.95	—	94035A302	5.72	94045A302	7.30	—	—	93985A302	5.87	92012A302	8.74
3/8″	—	91829A303	4.01	—	94035A303	5.79	—	—	—	—	93985A303	5.97	92012A303	8.89
1/2″	—	91829A304	4.07	26	94035A304	5.91	94045A304	7.82	—	—	93985A304	6.13	92012A304	9.10
5/8″	—	91829A305	4.24	27	94035A305	6.17	—	—	—	—	93985A305	6.23	92012A305	9.47
3/4″	—	91829A306	4.47	28	94035A306	6.43	—	—	—	—	93985A306	6.39	92012A306	9.47
3/8″ Shoulder Dia.—Head Dia.: 1/2″; Head Ht.: 7/32″; Thread: 1/4″-20; Thread Lg.: 7/16″; Hex Drive Size: 5/32″												
5/16″	—	91829A307	3.95	—	94035A307	5.89	—	—	—	—	93985A307	6.02	92012A307	9.32
3/8″	—	91829A308	4.01	—	94035A308	5.96	—	—	—	—	93985A308	6.13	92012A308	9.47
1/2″	—	91829A309	4.12	—	94035A309	6.16	—	—	—	—	93985A309	6.39	92012A309	9.83
5/8″	—	91829A311	4.30	—	94035A311	6.35	—	—	—	—	93985A311	6.54	92012A311	9.90
3/8″ Shoulder Dia.—Head Dia.: 9/16″; Head Ht.: 1/4″; Thread: 5/16″-18; Thread Lg.: 1/2″; Hex Drive Size: 3/16″												
5/16″	—	91829A401	5.14	—	94035A401	7.59	—	—	—	—	93985A401	7.06	92012A401	10.64
3/8″	—	91829A402	5.20	—	94035A402	7.66	—	—	—	—	93985A402	7.33	92012A402	11.72
1/2″	—	91829A403	5.38	—	94035A403	7.92	—	—	—	—	93985A403	8.04	92012A403	12.02
5/8″	—	91829A404	5.78	32	94035A404	8.52	—	—	—	—	93985A404	8.36	92012A404	12.38
1/2″ Shoulder Dia.—Head Dia.: 3/4″; Head Ht.: 5/16″; Thread: 3/8″-16; Thread Lg.: 5/8″; Hex Drive Size: 1/4″												
1/2″	29	91829A501	7.81	—	94035A501	11.46	—	—	—	—	93985A501	11.21	92012A501	16.39
5/8″	—	91829A502	8.09	37	94035A502	11.91	—	—	—	—	93985A502	11.47	92012A502	15.92
3/4″	—	91829A503	8.38	38	94035A503	12.31	—	—	—	—	93985A503	11.94	92012A503	18.20
1″	—	91829A504	8.98	39	94035A504	13.21	—	—	—	—	93985A504	12.83	92012A504	19.44

★ Prices are 15% lower when you buy in multiples of five.

Metric Precision Shoulder Screws

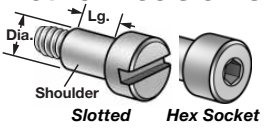

Precision shoulder screws have tighter shoulder tolerances than standard versions, so they're ideal for critical applications. They're made of 18-8 stainless steel, which provides excellent corrosion resistance and may be mildly magnetic. Shoulder dia. tolerance is +0.000 mm to –0.025 mm; shoulder length tolerance is +0.05 mm to –0.00 mm. Screws have a Class 6g thread fit. Min. Rockwell hardness is B65; min. tensile strength is 90,000 psi. Not rated for shear strength.

Shoulder Lg.	Head Dia.	Head Ht.	Slotted	Slotted Each★	Hex Socket	Hex Socket Each★
4 mm Shoulder Dia. — *Thread: M3; 4 mm Lg.; Hex Size: 2 mm*						
4 mm	6 mm	3 mm	90270A651	$2.40	90278A311	$4.00
5 mm	6 mm	3 mm	90270A652	2.40	90278A312	2.40
6 mm	6 mm	3 mm	90270A653	2.47	90278A313	4.00
8 mm	6 mm	3 mm	90270A654	2.61	90278A316	4.00
10 mm	6 mm	3 mm	90270A655	2.80	90278A317	2.80
5 mm Shoulder Dia. — *Thread: M4; 5 mm Lg.; Hex Size: 2.5 mm*						
4 mm	8 mm	4 mm	90270A656	2.66	90278A319	4.00
5 mm	8 mm	4 mm	90270A657	2.73	90278A321	4.00
6 mm	8 mm	4 mm	90270A658	2.73	90278A323	4.00
8 mm	8 mm	4 mm	90270A659	2.80	90278A326	4.00
10 mm	8 mm	4 mm	90270A660	2.94	90278A328	4.00
12 mm	8 mm	4 mm	90270A661	3.20	90278A371	3.20
14 mm	8 mm	4 mm	90270A662	3.47	90278A372	3.47
16 mm	8 mm	4 mm	90270A663	3.74	90278A373	3.74
20 mm	8 mm	4 mm	90270A664	4.00	90278A374	4.00
25 mm	8 mm	4 mm	90270A665	4.27	90278A375	4.27
30 mm	8 mm	4 mm	90270A666	4.67	90278A376	4.67
6 mm Shoulder Dia. — *Thread: M5; 6 mm Lg.; Hex Size: 3 mm*						
4 mm	10 mm	5 mm	90270A672	3.20	90278A301	3.20
5 mm	10 mm	5 mm	90270A673	3.20	90278A329	4.00
6 mm	10 mm	5 mm	90270A675	3.47	90278A331	4.00
8 mm	10 mm	5 mm	90270A676	3.53	90278A333	4.00
10 mm	10 mm	5 mm	90270A677	3.67	90278A334	3.67
12 mm	10 mm	5 mm	90270A678	3.87	90278A335	3.87
14 mm	10 mm	5 mm	90270A679	4.00	90278A403	4.00
16 mm	10 mm	5 mm	90270A680	4.27	90278A404	4.27
20 mm	10 mm	5 mm	90270A681	4.41	90278A406	4.41
25 mm	10 mm	5 mm	90270A682	4.81	90278A408	4.81
30 mm	10 mm	5 mm	90270A683	5.20	90278A410	5.20
8 mm Shoulder Dia. — *Thread: M6; 11 mm Lg.; Hex Size: 4 mm*						
6 mm	12 mm	6 mm	90270A684	6.67	90278A337	6.54
8 mm	12 mm	6 mm	90270A685	6.81	90278A341	6.54
10 mm	12 mm	6 mm	90270A541	5.88	90278A342	5.88
12 mm	12 mm	6 mm	90270A686	7.54	90278A344	6.54
16 mm	12 mm	6 mm	90270A687	6.67	90278A423	6.67
20 mm	12 mm	6 mm	90270A688	7.35	90278A427	7.35
10 mm Shoulder Dia. — *Thread: M6; 11 mm Lg.; Hex Size: 4 mm*						
8 mm	12 mm	6 mm	90270A689	6.67	90278A336	6.67
10 mm	12 mm	6 mm	90270A690	8.82	90278A345	7.00
12 mm	12 mm	6 mm	90270A691	7.00	90278A346	7.00
16 mm	12 mm	6 mm	90270A692	8.34	90278A362	8.34
10 mm Shoulder Dia. — *Thread: M8; 12 mm Lg.; Hex Size: 5 mm*						
8 mm	14 mm	7 mm	90270A693	10.01	90278A411	10.01
10 mm	14 mm	7 mm	90270A694	10.01	90278A414	10.01
12 mm	14 mm	7 mm	90270A695	10.69	90278A417	10.69
16 mm	14 mm	7 mm	90270A696	12.01	90278A419	12.01
12 mm Shoulder Dia. — *Thread: M10; 16 mm Lg.; Hex Size: 6 mm*						
12 mm	20 mm	8 mm	90270A697	13.00	90278A347	13.01
16 mm	20 mm	8 mm	90270A699	16.02	90278A348	16.02
20 mm	20 mm	8 mm	90270A698	16.68	90278A349	16.68
25 mm	20 mm	8 mm	90270A700	18.02	90278A350	18.02

Low-Profile Precision Shoulder Screws

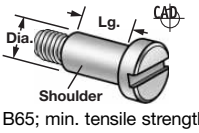

With a narrow shoulder and a shallow, slotted head, these 18-8 stainless steel screws are perfect where space is limited. Shoulder dia. tolerance is +0.000″ to –0.001″; shoulder length tolerance is +0.002″ to –0.000″. Screws have Class 2A thread fit. Min. Rockwell hardness is B65; min. tensile strength is 90,000 psi. Not rated for shear strength.

Shoulder Lg.	Each★
3/32″ Shoulder Dia. *Head: Dia. 3/16″; Ht. 1/16″ Thread: 2-56; 1/8″ Lg.*	
1/8″	99154A301 $5.05
1/4″	99154A306 5.42
3/8″	99154A313 5.80
1/8″ Shoulder Dia. *Head: Dia. 1/4″; Ht. 3/32″ Thread: 4-40; 5/32″ Lg.*	
1/8″	99154A330 3.00
1/4″	99154A335 3.36
3/8″	99154A340 3.74
3/16″ Shoulder Dia. *Head: Dia. 5/16″; Ht. 7/64″ Thread: 8-32; 3/16″ Lg.*	
1/4″	99154A360 $3.93
3/8″	99154A365 4.30
1/2″	99154A370 4.67
1/4″ Shoulder Dia. *Head: Dia. 3/8″; Ht. 1/8″ Thread: 10-32; 1/4″ Lg.*	
1/4″	99154A380 5.05
3/8″	99154A385 5.42
1/2″	99154A390 5.98

Friction-Resistant Precision Shoulder Screws

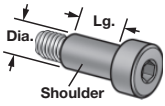

With a thin, purple layer of titanium carbonitride (TiCN) on the head and shoulders, these precision shoulder screws resist wear caused by friction. The coating also provides increased lubricity for rotating components. Screws are made from 18-8 stainless steel, which is corrosion resistant and may be mildly magnetic. They have a shoulder diameter tolerance of +0.000″ to –0.002″ and a shoulder length tolerance of +0.003″ to –0.000″. All have a hex socket drive and a Class 2A thread fit. Not rated for hardness, shear, or tensile strength.

Shoulder Lg.	Each★
1/4″ Shoulder Dia. *Head: Dia. 3/8″; Ht. 3/16″ Thread: 10-32; 1/4″ Lg. Hex Size: 1/8″*	
1/4″	91054A100 $8.04
1/2″	91054A120 8.39
3/4″	91054A140 8.99
1″	91054A160 9.27
5/16″ Shoulder Dia. *Head: Dia. 7/16″; Ht. 7/32″ Thread: 1/4″-20; 3/8″ Lg. Hex Size: 5/32″*	
1/4″	91054A210 11.13
1/2″	91054A230 11.73
3/4″	91054A250 12.17
1″	91054A270 12.63
3/8″ Shoulder Dia. *Head: Dia. 9/16″; Ht. 15/64″ Thread: 5/16″-18; 1/2″ Lg. Hex Size: 3/16″*	
1/2″	91054A340 $17.63
3/4″	91054A360 17.99
1″	91054A380 19.80
1 1/2″	91054A390 23.30
1/2″ Shoulder Dia. *Head: Dia. 3/4″; Ht. 21/64″ Thread: 3/8″-16; 5/8″ Lg. Hex Size: 1/4″*	
1/2″	91054A410 19.76
3/4″	91054A430 20.71
1″	91054A450 22.07
1 1/2″	91054A460 25.89

Hex Head Shoulder Screws

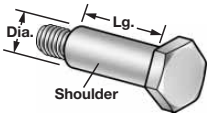

Often called wheel or axle bolts. All have a shoulder diameter tolerance of +0.000″ to –0.004″, a shoulder length tolerance of ±0.010″, and a Class 2A thread fit.

18-8 stainless steel screws are corrosion resistant and may be mildly magnetic. Min. Rockwell hardness is B70; min. tensile strength is 58,000 psi. Not rated for shear strength.

Zinc-plated steel screws are made from C1018 steel and offer good rust resistance. Minimum Rockwell hardness is B67; minimum tensile strength is 55,000 psi. Not rated for shear strength.

Shoulder Lg.	18-8 Stainless Steel	18-8 Stainless Steel Each★	Zinc-Plated Steel	Zinc-Plated Steel Each★
3/8″ Shoulder Dia. — *Head: Wd. 5/8″; Ht. 3/16″; Thread: 1/4″-20; 3/4″ Lg.*				
15/16″	94731A610	$10.64	94496A460	$5.01
1 3/8″	94731A630	10.38	94496A480	4.83
1 7/16″	94731A650	11.64	94496A500	5.28
1 1/2″	94731A680	13.18	94496A520	5.43
1 9/16″	94731A700	14.69	94496A540	5.94
1 5/8″	94731A710	15.89	94496A560	6.46
1 3/4″	94731A730	18.67	94496A580	7.51
1 7/8″	94731A750	20.00	94496A600	8.08
2″	94731A770	20.11	94496A620	8.14
2 1/8″	94731A790	21.11	94496A640	8.57
2 1/4″	94731A820	22.56	94496A670	9.11
2 1/2″	94731A840	25.00	94496A690	10.20
1/2″ Shoulder Dia. — *Head: Wd. 3/4″; Ht. 1/4″; Thread: 3/8″-16; 3/4″ Lg.*				
15/16″	94731A360	11.18	94496A210	4.81
1 3/8″	94731A380	10.91	94496A230	4.81
1 7/16″	94731A400	12.27	94496A250	4.81
1 1/2″	94731A430	13.64	94496A270	4.81
1 9/16″	94731A450	14.98	94496A290	4.81
1 5/8″	94731A460	16.33	94496A310	4.81
1 3/4″	94731A480	19.07	94496A330	6.17
1 7/8″	94731A500	20.44	94496A350	6.17
2″	94731A520	20.44	94496A370	6.17
2 1/8″	94731A540	21.80	94496A390	6.43
2 1/4″	94731A570	23.18	94496A420	6.43
2 1/2″	94731A590	25.87	94496A440	6.43

Shoulder Screw Assortments

Include 60 hex-socket screws furnished in a compartmented plastic box with lid chart. 18-8 stainless steel screws come in a 10 1/2″ Lg. × 6″ Wd. × 1 3/4″ Dp. box; alloy steel screws come in a 11″ Lg. × 7″ Wd. × 2″ Dp. box.

Shoulder, Dia. × Lg.	No. of Pcs.	Shoulder, Dia. × Lg.	No. of Pcs.	Shoulder, Dia. × Lg.	No. of Pcs.
1/4″ × 1/2″	5	5/16″ × 3/4″	5	3/8″ × 1″	5
1/4″ × 3/4″	5	5/16″ × 1″	5	1/2″ × 1/2″	5
1/4″ × 1″	5	3/8″ × 1/2″	5	1/2″ × 3/4″	5
5/16″ × 1/2″	5	3/8″ × 3/4″	5	1/2″ × 1″	5

18-8 Stainless Steel Assortment	93305A101	Each	$190.03
Alloy Steel Assortment	97315A201	Each	$130.33

★Prices are 15% lower when you buy in multiples of five.

Socket Head Cap Screw Hex Sizes and Head Dimensions

Screw Size	No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 8	No. 10	No. 12	1/4″
Decimal Approx.	0.060″	0.073″	0.086″	0.099″	0.112″	0.125″	0.138″	0.164″	0.190″	0.216″	0.250″
Hex Size	0.050″	1/16″	5/64″	5/64″	3/32″	3/32″	7/64″	9/64″	5/32″	5/32″	3/16″
Head Dia.	0.096″	0.118″	0.140″	0.161″	0.183″	0.205″	0.226″	0.270″	0.312″	0.324″	3/8″
Head Height	0.060″	0.073″	0.086″	0.099″	0.112″	0.125″	0.138″	0.164″	0.190″	0.216″	1/4″

Screw Size	5/16″	3/8″	7/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1″	1 1/8″	1 1/4″	1 3/8″	1 1/2″	1 3/4″	2″	2 1/4″	2 1/2″	3″
Hex Size	1/4″	5/16″	3/8″	3/8″	7/16″	1/2″	5/8″	3/4″	3/4″	7/8″	7/8″	1″	1″	1 1/4″	1 1/2″	1 3/4″	1 3/4″	2 1/4″
Head Dia.	15/32″	9/16″	21/32″	3/4″	27/32″	15/16″	1 1/8″	1 5/16″	1 1/2″	1 11/16″	1 7/8″	2 1/16″	2 1/4″	2 5/8″	3″	3 3/8″	3 3/4″	4 1/2″
Head Height	5/16″	3/8″	7/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1″	1 1/8″	1 1/4″	1 3/8″	1 1/2″	1 3/4″	2″	2 1/4″	2 1/2″	3″

Alloy Steel Socket Head Cap Screw Thread Lengths

Sizes marked with a ♣ are always fully threaded.
For all other sizes, manufacturing standards allow threads to fall between the minimum and maximum lengths shown below.

Screw Size	No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 8	No. 10	No. 12	1/4″	5/16″	3/8″	7/16″
Min. Thread Lg.	1/2″	5/8″	5/8″	5/8″	3/4″	3/4″	3/4″	7/8″	7/8″	7/8″	1″	1 1/8″	1 1/4″	1 3/8″
Max. Thread Lg.	5/8″	7/8″	7/8″	7/8″	1 3/16″	1 3/16″	1 3/16″	1 5/16″	1 3/8″	1 3/8″	1 1/2″	1 23/32″	1 15/16″	2 11/64″

Screw Size	1/2″	9/16″	5/8″	3/4″	7/8″	1″	1 1/8″	1 1/4″	1 3/8″	1 1/2″	1 3/4″	2″	2 1/4″	2 1/2″	3″
Min. Thread Lg.	1 1/2″	1 5/8″	1 3/4″	2″	2 1/4″	2 1/2″	2 13/16″	3 1/8″	3 7/16″	3 3/4″	4 3/8″	5″	5 5/8″	6 1/4″	7 1/2″
Max. Thread Lg.	2 7/16″	3″	2 15/16″	3 1/4″	3 11/16″	4 1/8″	4 11/16″	5 1/8″	5 21/32″	6 1/8″	7 1/8″	8 1/8″	9″	10″	11 3/4″

Black-Oxide Alloy Steel

The standard among high-strength fasteners, these screws are made from an alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574. They have a black-oxide finish that provides lubricity and mild rust resistance.

Screw sizes through 1″ have a Class 3A thread fit; screw sizes larger than 1″ have a Class 2A thread fit.

Screw sizes through 1/2″ have a minimum Rockwell hardness of C39 and minimum tensile strength of 180,000 psi; screw sizes larger than 1/2″ have a minimum Rockwell hardness of C37 and minimum tensile strength of 170,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
0-80			
1/16″	50	91251A051♣	$9.11
1/8″	50	91251A052♣	7.00
3/16″	50	91251A054♣	6.93
1/4″	50	91251A055♣	7.02
5/16″	50	91251A056♣	7.26
3/8″	50	91251A057♣	4.85
1/2″	25	91251A059♣	5.21
5/8″	10	91251A825♣	3.38
3/4″	10	91251A776♣	4.83
1″	10	91251A777♣	5.71
1-72			
1/8″	50	91251A064♣	7.48
3/16″	50	91251A065♣	7.48
1/4″	50	91251A066♣	7.87
5/16″	50	91251A067♣	8.72
3/8″	50	91251A068♣	8.25
1/2″	50	91251A069♣	9.71
5/8″	50	91251A070♣	10.00
3/4″	25	91251A071♣	5.07
2-56			
1/16″	25	91251A213♣	7.50
1/8″	25	91251A072♣	6.74
5/32″	25	91251A073♣	6.50
3/16″	100	91251A076♣	12.81
1/4″	100	91251A077♣	10.86
5/16″	50	91251A062♣	11.32
3/8″	100	91251A079♣	10.86
7/16″	50	91251A060♣	11.32
1/2″	100	91251A081♣	10.86
5/8″	50	91251A102♣	7.24
3/4″	50	91251A103♣	7.24
7/8″	25	91251A826	6.18
1″	25	91251A109	3.94
1 1/4″	5	91251A195	5.57
1 1/2″	5	91251A200	5.86
2-64			
1/8″	25	91251A745♣	8.04
3/16″	25	91251A746♣	8.21
1/4″	25	91251A747♣	8.43
3/8″	25	91251A748♣	8.57
1/2″	25	91251A749♣	9.29
3-48			
3/16″	100	91251A091♣	10.90
1/4″	100	91251A092♣	10.90
5/16″	50	91251A951♣	6.57
3/8″	100	91251A094♣	10.86
3-48 (Cont.)			
1/2″	100	91251A096♣	$10.87
5/8″	25	91251A952♣	5.36
3/4″	25	91251A828♣	6.18
1″	25	91251A953	7.50
4-40			
1/8″	50	91251A135♣	6.63
3/16″	100	91251A105♣	9.61
1/4″	100	91251A106♣	9.61
5/16″	100	91251A107♣	9.20
3/8″	100	91251A108♣	10.86
7/16″	100	91251A831♣	10.32
1/2″	100	91251A110♣	8.14
9/16″	25	91251A208♣	6.44
5/8″	100	91251A112♣	9.90
3/4″	100	91251A113♣	9.90
7/8″	100	91251A114♣	9.90
1″	50	91251A115	6.26
1 1/8″	25	91251A209	7.50
1 1/4″	50	91251A078	6.41
1 3/8″	25	91251A210	9.06
1 1/2″	50	91251A149	9.30
1 3/4″	10	91251A160	5.84
2″	10	91251A162	5.36
2 1/4″	10	91251A211	5.38
2 1/2″	5	91251A834	8.59
3″	5	91251A212♣	6.25
4-48			
1/4″	50	91251A164♣	11.24
3/8″	50	91251A836♣	9.10
1/2″	50	91251A166♣	7.85
5/8″	25	91251A840♣	7.58
3/4″	25	91251A842♣	7.95
1″	25	91251A168	8.66
1 1/2″	10	91251A838	8.42
5-40			
1/8″	25	91251A170♣	7.47
3/16″	50	91251A171♣	12.66
1/4″	100	91251A124♣	9.61
5/16″	50	91251A125♣	8.44
3/8″	100	91251A126♣	8.55
7/16″	25	91251A215♣	5.31
1/2″	100	91251A128♣	8.57
5/8″	100	91251A130♣	8.63
3/4″	100	91251A131♣	9.90
7/8″	25	91251A172♣	8.30
1″	50	91251A080	3.96
5-40 (Cont.)			
1 1/8″	25	91251A217	$8.03
1 1/4″	25	91251A173	8.57
1 1/2″	25	91251A175	14.29
1 3/4″	10	91251A218	6.43
2″	10	91251A219	6.57
3″	5	91251A220♣	7.86
6-32			
1/8″	50	91251A864♣	8.00
3/16″	50	91251A866♣	5.36
1/4″	100	91251A144♣	9.90
5/16″	100	91251A145♣	9.55
3/8″	100	91251A146♣	9.59
7/16″	50	91251A178♣	8.28
1/2″	100	91251A148♣	9.98
9/16″	50	91251A867♣	8.93
5/8″	100	91251A150♣	9.59
3/4″	100	91251A151♣	10.19
7/8″	100	91251A152♣	10.19
1″	100	91251A153♣	10.20
1 1/8″	25	91251A870♣	7.66
1 1/4″	50	91251A155	6.99
1 3/8″	25	91251A874	9.69
1 1/2″	50	91251A157	7.23
1 5/8″	10	91251A875	6.75
1 3/4″	50	91251A158	9.99
2″	50	91251A159	10.08
2 1/4″	10	91251A876	6.63
2 1/2″	25	91251A871	14.16
2 3/4″	10	91251A872	7.32
3″	5	91251A873	5.42
6-40			
3/16″	100	91251A405♣	11.22
1/4″	100	91251A406♣	11.22
5/16″	100	91251A407♣	8.00
3/8″	100	91251A408♣	9.59
1/2″	100	91251A410♣	9.84
5/8″	100	91251A411♣	9.96
3/4″	100	91251A413♣	10.19
7/8″	50	91251A425♣	9.52
1″	25	91251A414♣	7.37
1 1/8″	25	91251A412♣	11.15
1 1/4″	25	91251A415	9.53
8-32			
1/8″	25	91251A179♣	5.48
3/16″	50	91251A180♣	7.47
8-32 (Cont.)			
1/4″	100	91251A190♣	$11.00
5/16″	100	91251A191♣	10.99
3/8″	100	91251A192♣	11.16
7/16″	50	91251A182♣	8.43
1/2″	100	91251A194♣	11.85
5/8″	100	91251A196♣	12.18
3/4″	100	91251A197♣	11.24
7/8″	100	91251A198♣	12.88
1″	100	91251A199♣	13.95
1 1/8″	25	91251A183♣	8.51
1 1/4″	50	91251A201	8.55
1 3/8″	25	91251A185	8.75
1 1/2″	50	91251A203	8.65
1 5/8″	10	91251A187	5.10
1 3/4″	25	91251A082	7.75
1 7/8″	10	91251A188	6.00
2″	25	91251A205	5.75
2 1/4″	10	91251A184	6.24
2 1/2″	25	91251A207	9.62
2 3/4″	25	91251A827	14.90
3″	5	91251A086	3.48
3 1/4″	10	91251A189	9.68
3 1/2″	10	91251A186	7.28
4″	5	91251A193	5.92
8-36			
1/4″	100	91251A491♣	10.88
5/16″	50	91251A492♣	7.71
3/8″	100	91251A493♣	9.88
1/2″	100	91251A494♣	11.19
5/8″	50	91251A499♣	6.56
3/4″	100	91251A497♣	11.62
1″	25	91251A829♣	10.70
1 1/4″	25	91251A500	8.57
1 1/2″	10	91251A830	6.83
10-24			
1/4″	50	91251A083♣	10.02
5/16″	50	91251A238♣	7.66
3/8″	100	91251A240♣	10.82
7/16″	100	91251A974♣	9.87
1/2″	100	91251A242♣	10.84
9/16″	50	91251A975♣	5.63
5/8″	100	91251A244♣	11.17
3/4″	100	91251A245♣	12.13
7/8″	100	91251A246♣	12.79
1″	100	91251A247♣	14.05

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See top of page for more thread length information.

(Continued on following page)

Black-Oxide Alloy Steel *(Continued from previous page)*

Fully Threaded♣

Partially Threaded

The standard among high-strength fasteners, these screws are made from an alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574. They have a black-oxide finish that provides lubricity and mild rust resistance.

Screw sizes through 1″ have a Class 3A thread fit; screw sizes larger than 1″ have a Class 2A thread fit.

Screw sizes through ½″ have a minimum Rockwell hardness of C39 and minimum tensile strength of 180,000 psi; screw sizes larger than ½″ have a minimum Rockwell hardness of C37 and minimum tensile strength of 170,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
10-24 (Cont.)			
1⅛″	25	91251A248	$6.81
1¼″	50	91251A249	10.85
1⅜″	25	91251A250	7.66
1½″	50	91251A251	9.61
1⅝″	25	91251A977	9.06
1¾″	50	91251A252	8.99
1⅞″	25	91251A978	10.00
2″	50	91251A253	10.32
2¼″	25	91251A254	6.05
2½″	25	91251A255	6.87
2¾″	10	91251A256	7.02
3″	25	91251A084	9.24
3¼″	10	91251A980	6.00
3½″	5	91251A085	5.94
3¾″	5	91251A257	8.33
4″	5	91251A088	5.57
4¼″	5	91251A258	6.25
4⅜″	1	91251A259	2.12
4½″	1	91251A891	1.89
4¾″	1	91251A260	2.00
5″	1	91251A897	1.84
5¼″	1	91251A994	1.91
5½″	1	91251A995	2.15
6″	1	91251A899	2.45
6½″	1	91251A904	5.95
6¾″	1	91251A921	6.63
7″	1	91251A934	9.53
10-32			
3/16″	10	91251A901♣	3.64
¼″	50	91251A338♣	10.52
5/16″	50	91251A337♣	12.96
⅜″	100	91251A340♣	10.99
7/16″	50	91251A350♣	5.00
½″	100	91251A342♣	11.34
9/16″	50	91251A356♣	6.13
⅝″	100	91251A344♣	12.07
¾″	100	91251A345♣	12.78
⅞″	100	91251A346♣	13.52
1″	100	91251A347♣	14.90
1⅛″	5	91251A348	6.28
1¼″	50	91251A349	10.94
1½″	50	91251A351	9.61
1¾″	25	91251A352	4.16
2″	25	91251A353	5.41
2¼″	25	91251A354	6.92
2½″	25	91251A355	7.93
2¾″	10	91251A359	9.35
3″	25	91251A360	8.06
3½″	5	91251A361	5.81
4″	5	91251A364	6.45
4½″	5	91251A357	8.69
5″	5	91251A358	10.44
5½″	1	91251A906	6.25
6″	1	91251A907	6.88
12-24			
⅜″	10	91251A452♣	4.01
½″	25	91251A453♣	10.39
⅝″	25	91251A459♣	10.56
¾″	25	91251A460♣	11.63
⅞″	10	91251A461♣	5.71
1″	25	91251A454♣	12.31
1¼″	10	91251A455♣	5.47
1½″	10	91251A456	5.86
1¾″	10	91251A480♣	7.14
2″	10	91251A889	7.63
2¼″	10	91251A481♣	9.57
2½″	10	91251A482♣	10.43
¼″-20			
¼″	100	91251A533♣	10.46
5/16″	50	91251A534♣	7.18
⅜″	100	91251A535♣	11.94
7/16″	50	91251A536♣	11.13
½″	100	91251A537♣	12.88
¼″-20 (Cont.)			
9/16″	25	91251A538♣	$5.94
⅝″	100	91251A539♣	13.70
¾″	100	91251A540♣	13.96
⅞″	100	91251A541♣	14.89
1″	100	91251A542♣	14.43
1⅛″	25	91251A560♣	7.44
1¼″	50	91251A544♣	11.03
1⅜″	10	91251A543♣	6.44
1½″	50	91251A546	8.48
1¾″	25	91251A548	5.03
2″	25	91251A550	5.51
2¼″	25	91251A551	7.52
2½″	25	91251A552	7.03
2¾″	25	91251A553	7.90
3″	25	91251A554	9.69
3¼″	10	91251A555	6.53
3½″	10	91251A556	7.62
3¾″	10	91251A087	6.44
4″	10	91251A558	8.35
4¼″	5	91251A559	9.79
4½″	5	91251A089	8.26
5″	5	91251A090	8.69
5½″	5	91251A093	9.26
6″	1	91251A095	2.92
6¼″	1	91251A562	2.38
6½″	1	91251A563	2.95
7″	1	91251A908	3.12
7½″	1	91251A923	7.50
8″	1	91251A566	8.77
¼″-28			
¼″	50	91251A462♣	10.76
5/16″	50	91251A396♣	10.25
⅜″	100	91251A435♣	12.09
7/16″	50	91251A397♣	10.50
½″	100	91251A437♣	13.76
9/16″	25	91251A438♣	5.59
⅝″	100	91251A439♣	13.89
¾″	100	91251A440♣	14.16
⅞″	100	91251A441♣	14.15
1″	50	91251A442♣	10.82
1⅛″	25	91251A443♣	8.13
1¼″	50	91251A444♣	10.96
1½″	25	91251A446	5.06
1¾″	25	91251A448	5.48
2″	25	91251A450	5.97
2¼″	25	91251A451	8.15
2½″	25	91251A463	11.95
2¾″	5	91251A464	3.64
3″	10	91251A467	6.75
3¼″	10	91251A458	6.25
3½″	5	91251A468	11.02
4″	5	91251A469	5.02
5/16″-18			
¼″	10	91251A575♣	6.75
5/16″	10	91251A577♣	7.00
⅜″	50	91251A576♣	9.64
½″	50	91251A578♣	8.74
⅝″	50	91251A580♣	8.03
¾″	50	91251A581♣	8.06
⅞″	50	91251A582♣	9.61
1″	50	91251A583♣	10.15
1⅛″	25	91251A613♣	9.69
1¼″	50	91251A585♣	10.88
1⅜″	25	91251A620♣	10.94
1½″	50	91251A587♣	11.80
1¾″	25	91251A589	6.89
2″	25	91251A591	7.21
2¼″	25	91251A592	8.87
2½″	25	91251A593	9.63
2¾″	10	91251A594	5.50
3″	10	91251A595	6.88
3¼″	10	91251A596	7.65
5/16″-18 (Cont.)			
3½″	10	91251A597	$8.50
3¾″	5	91251A598	7.08
4″	10	91251A600	7.26
4¼″	5	91251A657	8.21
4½″	5	91251A098	9.46
4¾″	1	91251A658	2.39
5″	5	91251A099	10.65
5½″	5	91251A100	12.78
6″	1	91251A101	3.53
6¼″	1	91251A659	3.75
6½″	1	91251A660	4.05
7″	1	91251A661	4.13
7½″	1	91251A008	12.75
8″	1	91251A662	5.60
5/16″-24			
½″	50	91251A378♣	9.06
⅝″	50	91251A380♣	9.27
¾″	25	91251A381♣	5.26
⅞″	25	91251A382♣	5.47
1″	25	91251A383♣	5.89
1⅛″	10	91251A384♣	5.21
1¼″	25	91251A385♣	6.20
1½″	25	91251A387♣	6.88
1¾″	25	91251A389	7.60
2″	25	91251A391	8.25
2¼″	25	91251A392	9.70
2½″	25	91251A393	11.33
2¾″	5	91251A394	9.52
3″	5	91251A370	7.02
3½″	5	91251A395	8.47
4″	5	91251A371	8.69
⅜″-16			
⅜″	10	91251A663♣	7.57
½″	50	91251A619♣	13.03
⅝″	50	91251A621♣	9.67
¾″	50	91251A622♣	10.49
⅞″	25	91251A623♣	5.94
1″	25	91251A624♣	6.46
1⅛″	5	91251A588♣	5.89
1¼″	25	91251A626♣	7.12
1⅜″	5	91251A590♣	6.64
1½″	25	91251A628♣	7.74
1¾″	25	91251A630	8.22
2″	25	91251A632	8.77
2¼″	25	91251A633	8.99
2½″	10	91251A634	5.10
2¾″	10	91251A635	6.76
3″	10	91251A636	7.37
3¼″	10	91251A637	8.62
3½″	5	91251A638	3.04
3¾″	5	91251A639	8.98
4″	5	91251A640	5.91
4¼″	5	91251A649	6.69
4½″	5	91251A642	7.44
4¾″	5	91251A650	7.56
5″	5	91251A644	8.25
5¼″	5	91251A651	10.19
5½″	5	91251A104	9.98
5¾″	1	91251A645	3.72
6″	5	91251A648	10.56
6¼″	1	91251A652	2.65
6½″	1	91251A111	3.15
7″	1	91251A116	3.62
7¼″	1	91251A653	3.75
7½″	1	91251A655	3.89
8″	1	91251A117	4.43
9″	1	91251A013	9.69
9½″	1	91251A656	8.13
10″	1	91251A925	10.00
12″	1	91251A919	12.50
⅜″-24			
⅜″	10	91251A420♣	7.50
½″	25	91251A618♣	6.92
⅜″-24 (Cont.)			
⅝″	25	91251A421♣	$6.85
¾″	25	91251A422♣	7.60
⅞″	25	91251A423♣	7.66
1″	25	91251A424♣	8.20
1¼″	25	91251A426♣	8.87
1½″	25	91251A428♣	9.62
1¾″	25	91251A430	10.71
2″	25	91251A432	12.39
2¼″	10	91251A433	5.86
2½″	10	91251A434	6.25
2¾″	10	91251A472	7.89
3″	10	91251A436	7.92
3¼″	10	91251A478	10.00
3½″	5	91251A473	7.09
4″	5	91251A474	7.06
4½″	5	91251A039	9.62
4¾″	5	91251A479	8.93
5″	5	91251A475	9.78
5½″	5	91251A476	10.57
6″	5	91251A477	12.25
7/16″-14			
½″	25	91251A664♣	12.07
⅝″	25	91251A665♣	12.16
¾″	25	91251A667♣	11.67
⅞″	25	91251A668♣	12.58
1″	25	91251A669♣	13.03
1⅛″	10	91251A670♣	10.63
1¼″	10	91251A671♣	6.23
1½″	10	91251A673♣	6.99
1¾″	10	91251A675♣	6.95
2″	10	91251A677	7.50
2¼″	10	91251A678	8.14
2½″	10	91251A679	8.69
2¾″	10	91251A680	9.49
3″	5	91251A681	5.44
3¼″	5	91251A682	5.06
3½″	5	91251A683	6.68
3¾″	5	91251A684	8.39
4″	5	91251A685	7.21
4½″	5	91251A118	6.64
5″	5	91251A119	7.02
5½″	1	91251A688	2.38
5¾″	1	91251A689	3.38
6″	1	91251A690	3.75
6½″	1	91251A691	4.56
7″	1	91251A692	5.00
7½″	1	91251A693	5.63
8″	1	91251A694	5.88
7/16″-20			
½″	5	91251A957♣	5.00
¾″	10	91251A781♣	7.38
⅞″	10	91251A782♣	7.75
1″	10	91251A001♣	5.82
1¼″	10	91251A002♣	6.25
1½″	10	91251A003♣	6.71
1¾″	10	91251A783♣	9.00
2″	10	91251A004	7.96
2¼″	1	91251A959	1.35
2½″	5	91251A005	7.19
2¾″	5	91251A987	6.94
3″	5	91251A006	7.95
3½″	5	91251A007	8.83
4″	1	91251A988	2.13
5½″	1	91251A986	5.63
½″-13			
½″	10	91251A707♣	4.72
⅝″	10	91251A708♣	4.98
¾″	10	91251A710♣	5.23
⅞″	10	91251A711♣	5.27
1″	10	91251A712♣	5.43
1¼″	10	91251A714♣	5.67
1⅜″	1	91251A715♣	4.42
1½″	10	91251A716♣	5.99

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

(Continued on following page)

Black-Oxide Alloy Steel *(Continued from previous page)*

Lg.	Pkg. Qty.		Per Pkg.
1/2"-13 (Cont.)			
1 3/4"	10	91251A718♣	$6.31
2"	10	91251A720♣	8.77
2 1/4"	10	91251A721	9.48
2 1/2"	10	91251A722	10.52
2 3/4"	5	91251A723	5.72
3"	5	91251A724	5.79
3 1/4"	5	91251A725	5.96
3 1/2"	5	91251A726	6.36
3 3/4"	5	91251A120	8.61
4"	5	91251A728	8.00
4 1/4"	1	91251A015	2.48
4 1/2"	5	91251A730	9.57
4 3/4"	1	91251A731	6.60
5"	5	91251A732	10.71
5 1/4"	1	91251A733	7.28
5 1/2"	5	91251A734	11.47
5 3/4"	1	91251A735	6.12
6"	5	91251A736	12.76
6 1/4"	1	91251A739	8.46
6 1/2"	1	91251A737	3.81
7"	1	91251A738	4.05
7 1/2"	1	91251A121	6.17
8"	1	91251A740	5.07
8 1/2"	1	91251A122	7.06
9"	1	91251A123	7.23
9 1/2"	1	91251A127	8.40
10"	1	91251A129	8.59
11"	1	91251A132	9.77
12"	1	91251A741	11.14
1/2"-20			
1/2"	5	91251A965♣	6.05
5/8"	5	91251A063♣	5.06
3/4"	5	91251A011♣	6.10
1"	10	91251A012♣	8.15
1 1/4"	10	91251A014♣	8.89
1 3/8"	10	91251A074♣	10.00
1 1/2"	10	91251A016♣	9.62
1 3/4"	10	91251A018♣	10.34
2"	10	91251A020♣	11.25
2 1/4"	10	91251A019	11.78
2 1/2"	5	91251A022	6.70
2 3/4"	5	91251A027	6.78
3"	5	91251A024	6.79
3 1/4"	5	91251A226	7.07
3 1/2"	5	91251A028	9.31
3 3/4"	5	91251A227	8.48
4"	5	91251A029	11.08
4 1/2"	5	91251A030	11.99
5"	5	91251A031	13.14
5 1/2"	5	91251A032	14.29
6"	5	91251A033	15.49
7"	1	91251A037	6.12
8"	1	91251A038	6.94
9/16"-12			
1"	1	91251A753♣	3.72
1 1/4"	1	91251A755♣	3.76
1 1/2"	1	91251A757♣	3.87
1 3/4"	1	91251A758♣	3.96
2"	1	91251A759♣	4.57
2 1/4"	1	91251A761♣	4.52
2 1/2"	1	91251A762♣	4.36
2 3/4"	1	91251A763	4.51
3"	1	91251A971♣	4.85
3 1/2"	1	91251A972♣	6.37
4"	1	91251A764	6.39
9/16"-18			
3/4"	1	91251A696♣	3.93
1"	1	91251A697♣	3.17
1 1/2"	1	91251A698♣	3.37
1 3/4"	1	91251A699♣	3.50
2"	1	91251A700♣	3.90
2 1/2"	1	91251A701♣	4.58
3"	1	91251A702	4.98
5/8"-11			
1/2"	1	91251A791♣	2.11
5/8"	5	91251A792♣	7.43
3/4"	5	91251A793♣	6.88
1"	5	91251A794♣	6.54
1 1/4"	5	91251A796♣	6.95
1 1/2"	5	91251A798♣	7.53
1 3/4"	5	91251A800♣	7.95
2"	5	91251A802♣	8.35
5/8"-11 (Cont.)			
2 1/4"	5	91251A803♣	$8.78
2 1/2"	5	91251A804	9.56
2 3/4"	5	91251A805	10.11
3"	5	91251A806	11.15
3 1/4"	5	91251A807	11.63
3 1/2"	5	91251A808	12.17
3 3/4"	1	91251A817	2.45
4"	5	91251A810	13.38
4 1/4"	1	91251A811	2.82
4 1/2"	1	91251A812	3.21
4 3/4"	1	91251A813	2.87
5"	1	91251A814	3.24
5 1/4"	1	91251A815	3.08
5 1/2"	1	91251A816	3.53
6"	1	91251A818	3.59
6 1/2"	1	91251A819	5.09
7"	1	91251A820	6.14
7 1/2"	1	91251A821	7.84
8"	1	91251A822	7.00
8 1/2"	1	91251A823	8.69
9"	1	91251A133	8.69
9 1/2"	1	91251A824	7.69
10"	1	91251A134	10.15
11"	1	91251A136	11.87
12"	1	91251A137	13.63
13"	1	91251A966	11.69
5/8"-18			
3/4"	5	91251A483♣	7.39
1"	5	91251A495♣	7.98
1 1/4"	5	91251A496♣	6.35
1 1/2"	5	91251A498♣	9.14
1 3/4"	5	91251A400♣	9.77
2"	5	91251A402♣	10.18
2 1/4"	5	91251A484♣	10.78
2 1/2"	5	91251A404	11.35
2 3/4"	5	91251A485	12.53
3"	5	91251A486	12.93
3 1/4"	1	91251A503	2.94
3 1/2"	1	91251A487	3.25
3 3/4"	1	91251A506	3.43
4"	1	91251A488	3.26
4 1/2"	1	91251A489	3.71
5"	1	91251A490	3.92
5 1/2"	1	91251A508	4.43
6"	1	91251A617	5.89
6 1/2"	1	91251A510	5.31
7"	1	91251A511	6.94
3/4"-10			
3/4"	1	91251A833♣	4.62
1"	1	91251A835♣	3.02
1 1/4"	5	91251A837♣	13.11
1 1/2"	5	91251A839♣	12.87
1 3/4"	5	91251A841♣	11.99
2"	5	91251A843♣	12.65
2 1/4"	5	91251A844♣	13.16
2 1/2"	5	91251A845♣	14.09
2 3/4"	1	91251A846♣	3.03
3"	1	91251A847	3.24
3 1/4"	1	91251A848	3.40
3 1/2"	1	91251A849	3.61
3 3/4"	1	91251A138	3.64
4"	1	91251A851	3.85
4 1/2"	1	91251A853	4.21
5"	1	91251A855	4.58
5 1/2"	1	91251A857	4.98
6"	1	91251A859	5.30
6 1/2"	1	91251A860	6.96
7"	1	91251A861	7.86
7 1/2"	1	91251A139	10.19
8"	1	91251A863	9.78
8 1/2"	1	91251A140	12.28
9"	1	91251A141	12.28
9 1/2"	1	91251A865	29.78
10"	1	91251A142	14.00
11"	1	91251A143	16.27
12"	1	91251A147	18.66
13"	1	91251A868	19.82
14"	1	91251A869	23.27
20"	1	91251A998	83.74
3/4"-16			
1 1/4"	5	91251A041♣	12.78
1 1/2"	5	91251A042♣	13.41
3/4"-16 (Cont.)			
1 3/4"	5	91251A043♣	$14.27
2"	5	91251A044♣	14.90
2 1/4"	1	91251A045♣	3.01
2 1/2"	1	91251A046♣	3.16
2 3/4"	1	91251A047♣	3.75
3"	1	91251A048	3.90
3 1/4"	1	91251A050	11.92
3 1/2"	1	91251A049	4.24
3 3/4"	1	91251A300	4.69
4"	1	91251A301	4.67
4 1/2"	1	91251A302	5.15
5"	1	91251A303	5.56
5 1/2"	1	91251A304	5.91
6"	1	91251A305	6.26
7"	1	91251A306	9.02
8"	1	91251A040	11.01
7/8"-9			
1 1/4"	1	91251A877♣	6.50
1 1/2"	1	91251A878♣	6.19
1 3/4"	1	91251A879♣	6.19
2"	1	91251A880♣	4.33
2 1/4"	1	91251A881♣	4.47
2 1/2"	1	91251A882♣	4.66
2 3/4"	1	91251A883♣	4.98
3"	1	91251A884♣	5.24
3 1/4"	1	91251A991	5.46
3 1/2"	1	91251A886	5.90
3 3/4"	1	91251A887	13.24
4"	1	91251A888	6.62
4 1/2"	1	91251A890	7.28
5"	1	91251A892	7.98
5 1/2"	1	91251A894	8.67
6"	1	91251A896	9.33
6 1/2"	1	91251A895	10.46
7"	1	91251A898	13.14
8"	1	91251A900	15.31
8 1/2"	1	91251A968	35.57
9"	1	91251A902	17.44
10"	1	91251A903	20.71
12"	1	91251A905	27.23
7/8"-14			
2 1/4"	1	91251A307♣	4.88
2 1/2"	1	91251A308♣	7.24
3"	1	91251A309♣	6.18
3 1/2"	1	91251A312	6.82
4"	1	91251A313	8.14
4 1/2"	1	91251A319	8.87
5"	1	91251A314	9.21
6"	1	91251A317	24.04
7"	1	91251A316	15.46
1"-8			
1 1/2"	1	91251A909♣	7.97
1 3/4"	1	91251A911♣	7.16
2"	1	91251A912♣	6.17
2 1/4"	1	91251A913♣	5.28
2 1/2"	1	91251A914♣	5.39
2 3/4"	1	91251A915♣	5.58
3"	1	91251A916♣	5.85
3 1/4"	1	91251A917♣	6.06
3 1/2"	1	91251A918	6.45
3 3/4"	1	91251A154	8.34
4"	1	91251A920	7.71
4 1/2"	1	91251A922	9.01
5"	1	91251A924	9.69
5 1/2"	1	91251A926	10.61
6"	1	91251A928	11.52
6 1/2"	1	91251A929	14.47
7"	1	91251A930	16.33
7 1/2"	1	91251A931	17.95
8"	1	91251A932	20.03
9"	1	91251A156	21.29
10"	1	91251A161	23.20
10 1/2"	1	91251A990	40.22
12"	1	91251A935	30.55
14"	1	91251A936	37.85
16"	1	91251A947	45.30
18"	1	91251A933	89.68
20"	1	91251A946	102.22
1"-14			
2"	1	91251A416♣	5.60
2 1/4"	1	91251A417♣	6.04
2 1/2"	1	91251A009♣	6.52
1"-14 (Cont.)			
2 3/4"	1	91251A418♣	$6.77
3"	1	91251A419♣	7.21
3 1/2"	1	91251A320	7.93
4"	1	91251A321	9.27
4 1/2"	1	91251A322	10.67
5"	1	91251A323	11.76
5 1/2"	1	91251A324	19.83
6"	1	91251A325	13.71
7"	1	91251A326	18.95
8"	1	91251A331	23.04
1 1/8"-7			
3"	1	91251A163♣	14.69
4"	1	91251A165	15.63
5"	1	91251A169	17.48
6"	1	91251A167	19.52
7"	1	91251A174	22.48
8"	1	91251A176	46.49
9"	1	91251A177	48.74
10"	1	91251A181	53.68
1 1/4"-7			
2 1/2"	1	91251A937♣	19.58
3"	1	91251A938♣	21.19
3 1/2"	1	91251A939♣	21.90
4"	1	91251A940	23.36
4 1/2"	1	91251A941	23.79
5"	1	91251A942	24.49
5 1/2"	1	91251A943	27.50
6"	1	91251A944	28.42
6 1/2"	1	91251A945	33.12
7"	1	91251A021	37.04
7 1/2"	1	91251A967	54.27
8"	1	91251A948	37.45
9"	1	91251A023	43.79
10"	1	91251A949	77.92
11"	1	91251A025	48.61
12"	1	91251A950	82.10
16"	1	91251A996	85.98
20"	1	91251A954	92.07
1 1/4"-12			
2 1/2"	1	91251A616♣	15.41
3"	1	91251A601♣	15.94
3 1/2"	1	91251A017♣	17.53
4"	1	91251A602	16.79
4 1/2"	1	91251A026	18.47
5"	1	91251A603	19.33
5 1/2"	1	91251A625	21.24
6"	1	91251A604	21.40
8"	1	91251A605	27.93
9"	1	91251A606	31.71
10"	1	91251A615	30.90
1 3/8"-6			
5"	1	91251A771	57.00
6"	1	91251A773	61.50
8"	1	91251A775	88.28
10"	1	91251A778	91.44
12"	1	91251A780	96.20
1 1/2"-6			
3"	1	91251A034♣	22.04
3 1/2"	1	91251A955♣	22.58
4"	1	91251A956♣	37.79
4 1/2"	1	91251A961♣	36.81
5"	1	91251A958	40.17
5 1/2"	1	91251A962	39.77
6"	1	91251A960	42.66
6 1/2"	1	91251A036	43.40
7"	1	91251A053	45.02
8"	1	91251A963	87.02
9"	1	91251A058	62.14
10"	1	91251A964	90.78
12"	1	91251A976	96.28
14"	1	91251A979	99.74
18"	1	91251A981	106.66
1 1/2"-12			
3"	1	91251A607♣	26.26
3 1/2"	1	91251A035♣	31.34
4"	1	91251A608♣	27.59
4 1/2"	1	91251A641♣	38.37
5"	1	91251A609	29.55
5 1/2"	1	91251A643	44.83
6"	1	91251A610	34.49
7"	1	91251A611	36.95
8"	1	91251A612	42.69

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

Alloy Steel Assortments

170-Piece Black-Oxide Assortment

170-Piece Assortments

Offered in *black-oxide alloy steel* and *zinc-plated alloy steel*. Furnished in an 11″ Lg. × 6¾″ Wd. × 1¾″ Dp. compartmented plastic case with lid chart.

Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.
6-32	½″	20	¼″-20	¾″	10
8-32	½″	20	¼″-20	1″	10
10-32	½″	20	5/16″-18	1″	10
10-32	¾″	20	5/16″-18	1½″	10
10-32	1″	20	3/8″-16	1″	10
¼″-20	½″	10	3/8″-16	1½″	10

Black Oxide ..... **91965A512** **Each** $75.00

Zinc Plated ..... **91965A473** **Each** $155.23

400-Pc. Assort.—Black-Oxide Alloy Steel

Furnished in a 10¾″ Lg. × 6½″ Wd. × 1¾″ Dp. compartmented plastic case with lid chart.

Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.
6-32	¼″	20	¼″-28	5/8″	10
6-32	3/8″	20	¼″-28	¾″	10
6-32	½″	20	¼″-28	⅞″	10
8-32	3/8″	20	¼″-28	1″	10
8-32	½″	20	¼″-28	1¼″	5
8-32	5/8″	20	¼″-28	1½″	5
10-24	½″	20	5/16″-18	¾″	5
10-24	5/8″	20	5/16″-18	⅞″	5
10-24	¾″	20	5/16″-18	1″	5
10-32	½″	20	5/16″-18	1¼″	5
10-32	5/8″	20	5/16″-18	1½″	5
10-32	¾″	20	5/16″-18	1¾″	5
¼″-20	5/8″	10	5/16″-24	¾″	5
¼″-20	¾″	10	5/16″-24	⅞″	5
¼″-20	⅞″	10	5/16″-24	1″	5
¼″-20	1″	10	5/16″-24	1¼″	5
¼″-20	1¼″	5	5/16″-24	1½″	5
¼″-20	1½″	5	5/16″-24	1¾″	5

92135A536 ..... **Each** $124.10

400-Pc. Assort.—Zinc-Plated Alloy Steel

Furnished in a 13″ Lg. × 9″ Wd. × 2⅜″ Dp. compartmented plastic case with lid chart.

Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.
6-32	¼″	20	10-24	1″	20
6-32	3/8″	20	10-24	1½″	10
6-32	½″	20	10-32	½″	20
6-32	¾″	10	10-32	¾″	20
6-32	1″	10	10-32	1″	20
8-32	¼″	20	10-32	1½″	10
8-32	3/8″	20	¼″-20	½″	20
8-32	½″	20	¼″-20	¾″	20
8-32	¾″	10	¼″-20	⅞″	10
8-32	1″	10	¼″-20	1″	20
10-24	½″	20	5/16″-18	¾″	10
10-24	¾″	20	5/16″-18	1″	20

92135A346 ..... **Each** $174.75

Self-Locking Black-Oxide Alloy Steel

Fully Threaded♣

Partially Threaded

A nylon locking patch bonded to the threads holds these screws firmly in place and prevents loosening from vibration. Patch withstands temperatures from −65° to +250° F.

Screws are made from an alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574. It has mild rust resistance and some lubricity. Screws are reusable and have a Class 3A thread fit. Sizes through ½″ have a min. Rockwell hardness of C39 and min. tensile strength of 180,000 psi. The ⅝″ screws have a min. Rockwell hardness of C37 and min. tensile strength of 170,000 psi. Screws meet ANSI/ASME B18.3. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
2-56			
¼″	5	**91205A060♣**	$6.50
3/8″	5	**91205A063♣**	6.55
½″	5	**91205A066♣**	6.60
4-40			
¼″	25	**91205A105♣**	11.63
3/8″	25	**91205A108♣**	11.69
½″	25	**91205A110♣**	11.83
5-40			
3/8″	25	**91205A120♣**	11.06
½″	25	**91205A124♣**	11.35
6-32			
¼″	25	**91205A144♣**	8.22
3/8″	25	**91205A146♣**	8.34
½″	25	**91205A148♣**	8.51
5/8″	25	**91205A150♣**	8.64
¾″	25	**91205A151♣**	8.77
⅞″	25	**91205A152♣**	8.80
1″	25	**91205A153♣**	9.39
8-32			
3/8″	25	**91205A192♣**	8.67
½″	25	**91205A194♣**	8.80
5/8″	25	**91205A195♣**	8.95
¾″	25	**91205A197♣**	9.08
⅞″	25	**91205A198♣**	9.40
1″	25	**91205A193♣**	10.01
1¼″	25	**91205A201**	10.18
1½″	25	**91205A203**	10.88
10-24			
3/8″	25	**91205A240♣**	$9.02
½″	25	**91205A242♣**	9.08
5/8″	25	**91205A244♣**	9.32
¾″	25	**91205A245♣**	9.48
1″	25	**91205A247♣**	10.22
10-32			
3/8″	25	**91205A340♣**	9.02
½″	25	**91205A342♣**	9.08
5/8″	25	**91205A344♣**	9.33
¾″	25	**91205A345♣**	9.48
⅞″	25	**91205A346♣**	9.81
1″	25	**91205A347♣**	10.22
1¼″	25	**91205A349**	10.54
1½″	25	**91205A351**	11.32
1¾″	25	**91205A353**	11.76
2″	25	**91205A355**	12.28
¼″-20			
3/8″	25	**91205A535♣**	9.49
½″	25	**91205A537♣**	9.72
5/8″	25	**91205A539♣**	9.80
¾″	25	**91205A540♣**	9.95
⅞″	25	**91205A541♣**	10.31
1″	25	**91205A542♣**	10.70
1¼″	25	**91205A544♣**	11.00
1½″	25	**91205A546**	11.75
1¾″	25	**91205A548**	12.21
2″	25	**91205A550**	12.77
2¼″	5	**91205A675**	11.14
¼″-20 (Cont.)			
2½″	10	**91205A552**	$6.41
3″	10	**91205A554**	7.83
¼″-28			
½″	25	**91205A560♣**	9.74
¾″	25	**91205A563♣**	9.95
1″	25	**91205A565♣**	10.70
1¼″	25	**91205A667♣**	11.03
1½″	25	**91205A669**	11.75
1¾″	25	**91205A671**	12.24
2″	25	**91205A673**	12.77
5/16″-18			
½″	25	**91205A578♣**	10.80
¾″	25	**91205A581♣**	11.14
1″	25	**91205A583♣**	11.84
1¼″	10	**91205A585♣**	5.10
1½″	10	**91205A587♣**	5.38
1¾″	10	**91205A584**	5.68
2″	10	**91205A591**	5.78
2½″	10	**91205A593**	6.76
3″	10	**91205A595**	9.77
5/16″-24			
¾″	25	**91205A597♣**	11.32
1″	25	**91205A599♣**	12.00
1¼″	25	**91205A601♣**	12.29
1½″	25	**91205A603♣**	13.06
3/8″-16			
¾″	10	**91205A622♣**	5.31
⅞″	10	**91205A623♣**	6.35
3/8″-16 (Cont.)			
1″	10	**91205A624♣**	$5.67
1¼″	10	**91205A626♣**	5.77
1½″	10	**91205A628♣**	6.11
1¾″	10	**91205A630**	6.42
2″	10	**91205A632**	6.29
2¼″	10	**91205A633**	6.59
2½″	10	**91205A634**	9.28
3″	5	**91205A636**	6.01
3½″	1	**91205A648**	3.22
4″	1	**91205A668**	3.82
3/8″-24			
1″	10	**91205A621♣**	5.65
1¼″	10	**91205A627♣**	5.93
1½″	10	**91205A629♣**	7.00
½″-13			
1″	10	**91205A712♣**	10.72
1¼″	5	**91205A714♣**	5.83
1½″	5	**91205A716♣**	6.07
1¾″	5	**91205A718♣**	6.41
2″	5	**91205A720♣**	6.73
2¼″	1	**91205A721**	3.82
2½″	5	**91205A722**	7.79
3″	5	**91205A724**	8.83
4″	1	**91205A726**	4.45
5/8″-11			
1½″	5	**91205A728♣**	10.93
1¾″	5	**91205A730♣**	10.41
2″	5	**91205A732♣**	11.56

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary; see page 3105 for more thread length information.

Zinc-Plated Alloy Steel

Fully Threaded♣

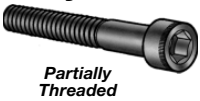

Partially Threaded

You'll get better rust resistance from our zinc-plated screws than you will from screws with a standard black-oxide coating. Screws are made from an alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574.

All have a Class 3A thread fit. Sizes through ½″ have a minimum Rockwell hardness of C39 and minimum tensile strength of 180,000 psi. Sizes larger than ½″ have a minimum Rockwell hardness of C37 and minimum tensile strength of 170,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
2-56			
3/16″	50	**90128A040♣**	$8.65
¼″	25	**90128A042♣**	5.69
5/16″	25	**90128A044♣**	5.70
3/8″	25	**90128A046♣**	5.72
2-56 (Cont.)			
½″	25	**90128A050♣**	$5.73
5/8″	25	**90128A054♣**	5.77
¾″	25	**90128A058♣**	7.56
4-40			
3/16″	10	**90128A105♣**	$4.15
¼″	25	**90128A106♣**	6.55
5/16″	10	**90128A107♣**	4.18
3/8″	25	**90128A108♣**	7.00
4-40 (Cont.)			
½″	25	**90128A110♣**	$8.48
5/8″	10	**90128A112♣**	5.04
¾″	10	**90128A113♣**	4.39
⅞″	10	**90128A114♣**	5.13

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

(Continued on following page)

Zinc-Plated Alloy Steel *(Continued from previous page)*

Lg.	Pkg. Qty.		Per Pkg.
4-40 (Cont.)			
1″	10	90128A115	$5.29
1¼″	10	90128A119	5.47
1½″	10	90128A123	5.76
6-32			
¼″	50	90128A144♣	6.94
5/16″	50	90128A145♣	7.48
3/8″	50	90128A146♣	7.04
½″	50	90128A148♣	7.09
5/8″	50	90128A150♣	8.42
¾″	50	90128A151♣	9.44
7/8″	50	90128A152♣	10.02
1″	50	90128A153♣	10.20
1¼″	25	90128A160	7.20
1½″	25	90128A164	8.65
1¾″	25	90128A168	10.08
2″	10	90128A172	6.05
8-32			
¼″	100	90128A191♣	13.38
3/8″	100	90128A192♣	13.72
½″	50	90128A194♣	7.63
5/8″	50	90128A196♣	8.15
¾″	50	90128A197♣	9.60
7/8″	50	90128A198♣	9.77
1″	50	90128A199♣	9.90
1¼″	50	90128A201	10.73
1½″	25	90128A203	8.90
1¾″	10	90128A206	4.89
2″	10	90128A209	6.05
10-24			
3/8″	10	90128A218♣	1.61
½″	50	90128A220♣	8.25
5/8″	50	90128A221♣	8.15
¾″	50	90128A222♣	10.14
7/8″	50	90128A223♣	10.64
1″	50	90128A224♣	10.65
1¼″	25	90128A225	5.25
1½″	25	90128A226	6.23
1¾″	25	90128A227	8.36
2″	25	90128A229	10.08
2¼″	10	90128A231	6.05
2½″	10	90128A233	6.19
3″	5	90128A237	5.76
10-32			
¼″	50	90128A932♣	8.76
3/8″	50	90128A940♣	7.51
½″	50	90128A942♣	7.16
5/8″	50	90128A944♣	8.15
¾″	50	90128A945♣	10.14
7/8″	25	90128A946♣	4.68
1″	25	90128A947♣	5.82
1¼″	25	90128A948	5.66
1½″	25	90128A951	6.43
1¾″	25	90128A953	8.36
10-32 (Cont.)			
2″	25	90128A955	$7.36
2¼″	10	90128A957	6.05
2½″	10	90128A961	6.19
3″	5	90128A969	5.76
3½″	5	90128A973	8.35
¼″-20			
¼″	50	90128A239♣	13.07
3/8″	25	90128A241♣	6.32
½″	50	90128A242♣	9.44
5/8″	25	90128A243♣	4.90
¾″	50	90128A245♣	11.12
7/8″	50	90128A246♣	11.34
1″	25	90128A247♣	6.13
1¼″	25	90128A250♣	6.19
1⅜″	10	90128A301♣	5.40
1½″	25	90128A251	6.73
1¾″	10	90128A252	4.00
2″	25	90128A253	7.29
2¼″	10	90128A254	4.24
2½″	25	90128A255	11.71
2¾″	10	90128A259	6.05
3″	10	90128A554	5.68
3½″	10	90128A560	8.64
4″	5	90128A566	6.62
4½″	5	90128A569	6.91
5″	5	90128A572	7.20
5½″	5	90128A575	7.77
6″	5	90128A577	8.35
¼″-28			
½″	25	90128A361♣	6.41
5/8″	25	90128A363♣	7.56
¾″	25	90128A365♣	7.86
7/8″	25	90128A369♣	7.92
1″	25	90128A372♣	8.28
1¼″	25	90128A376♣	9.01
1½″	25	90128A380	9.37
1¾″	25	90128A384	10.08
2″	10	90128A388	6.05
5/16″-18			
½″	25	90128A578♣	5.12
5/8″	25	90128A580♣	5.85
¾″	25	90128A581♣	5.80
7/8″	25	90128A582♣	6.59
1″	25	90128A583♣	6.14
1¼″	25	90128A586♣	6.72
1½″	25	90128A587♣	6.71
1¾″	25	90128A589	8.67
2″	25	90128A591	8.39
2¼″	10	90128A592	4.84
2½″	10	90128A593	4.83
2¾″	10	90128A594	8.48
3″	10	90128A595	7.09
3¼″	10	90128A596	8.73
5/16″-18 (Cont.)			
3½″	5	90128A597	$3.98
4″	5	90128A599	5.26
4½″	5	90128A603	5.91
5″	5	90128A607	6.16
5/16″-24			
¾″	10	90128A745♣	3.98
1″	10	90128A749♣	4.75
1¼″	10	90128A753♣	4.37
1½″	10	90128A757♣	4.50
1¾″	10	90128A761	5.39
2″	10	90128A765	5.91
3/8″-16			
½″	25	90128A619♣	5.53
5/8″	25	90128A621♣	6.94
¾″	25	90128A622♣	5.73
7/8″	25	90128A623♣	7.71
1″	25	90128A624♣	6.30
1¼″	25	90128A627♣	9.29
1½″	25	90128A628♣	8.66
1¾″	25	90128A630	11.56
2″	10	90128A632	4.31
2¼″	10	90128A633	6.01
2½″	10	90128A634	5.80
2¾″	10	90128A635	8.73
3″	5	90128A636	3.84
3¼″	10	90128A303	9.25
3½″	5	90128A637	5.39
3¾″	5	90128A305	5.91
4″	5	90128A638	4.72
4½″	5	90128A642	6.16
5″	5	90128A647	6.42
5½″	5	90128A652	6.68
6″	1	90128A657	1.95
7″	1	90128A662	4.17
3/8″-24			
¾″	25	90128A362♣	8.35
1″	10	90128A364♣	5.39
1¼″	10	90128A367♣	5.52
1½″	10	90128A370♣	5.65
1¾″	10	90128A373	5.91
2″	10	90128A377	6.04
7/16″-14			
1″	10	90128A402♣	7.45
1¼″	10	90128A406♣	7.58
1½″	10	90128A410♣	7.71
1¾″	10	90128A414	8.48
2″	10	90128A418	8.73
½″-13			
¾″	10	90128A710♣	7.71
1″	10	90128A712♣	5.30
1¼″	10	90128A714♣	7.96
1½″	5	90128A716♣	3.66
1¾″	5	90128A718♣	5.26
2″	5	90128A720♣	4.35
½″-13 (Cont.)			
2¼″	5	90128A721	$6.55
2½″	5	90128A722	5.12
2¾″	5	90128A723	9.76
3″	5	90128A724	6.23
3¼″	5	90128A725	8.22
3½″	5	90128A726	8.35
3¾″	5	90128A727	8.47
4″	1	90128A728	1.78
4½″	5	90128A732	8.60
5″	5	90128A735	8.73
5½″	5	90128A738	9.76
6″	1	90128A741	3.59
6½″	1	90128A744	3.85
7″	1	90128A747	4.62
8″	1	90128A750	4.88
½″-20			
1″	5	90128A840♣	5.91
1¼″	5	90128A842♣	6.04
1½″	5	90128A844♣	6.16
1¾″	5	90128A846♣	6.29
2″	5	90128A848♣	6.42
2½″	5	90128A852	6.55
3″	5	90128A856	6.93
5/8″-11			
1″	5	90128A510♣	6.16
1¼″	5	90128A513♣	6.29
1½″	5	90128A798♣	5.73
1¾″	5	90128A516♣	7.19
2″	5	90128A802♣	7.04
2¼″	5	90128A519♣	8.22
2½″	5	90128A804	8.96
2¾″	5	90128A522	8.47
3″	5	90128A806	10.11
3½″	5	90128A525	9.50
4″	5	90128A810	11.46
4½″	5	90128A528	11.04
5″	1	90128A531	2.21
5½″	1	90128A534	2.49
6″	1	90128A537	3.36
¾″-10			
1½″	5	90128A901♣	10.40
1¾″	5	90128A905♣	10.53
2″	5	90128A909♣	10.79
2½″	1	90128A915♣	2.41
3″	1	90128A919	2.44
3½″	1	90128A921	2.54
4″	1	90128A923	2.82
4½″	1	90128A925	3.03
5″	1	90128A927	3.08
6″	1	90128A935	4.11
1″-8			
3″	1	90128A980♣	6.16
4″	1	90128A985	6.42

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

Ultra Corrosion-Resistant Coated Alloy Steel

Also known as armor coat, the coating on these screws provides better corrosion resistance than zinc, cadmium, and hot-dipped galvanized plating. It also provides salt spray resistance of 1,000 hours per ASTM B117 and does not interfere with the screw's Class 3A thread fit. Color is silver.

Screws are made from an alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574. They meet ANSI/ASME B18.3 and have a minimum Rockwell hardness of C39 and a minimum tensile strength of 180,000 psi. Screw length is measured from under the head.

Fully Threaded♣

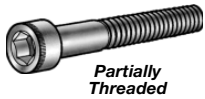

Partially Threaded

Lg.	Pkg. Qty.		Per Pkg.
6-32			
¼″	25	91274A004♣	$7.42
3/8″	25	91274A008♣	7.45
½″	25	91274A012♣	8.07
5/8″	25	91274A016♣	8.40
¾″	25	91274A020♣	8.38
7/8″	50	91274A024♣	13.65
1″	50	91274A028♣	10.55
1¼″	25	91274A032	8.40
1½″	25	91274A036	7.93
1¾″	25	91274A040	8.40
2″	25	91274A044	11.25
8-32			
¼″	50	91274A048♣	9.98
3/8″	50	91274A052♣	9.88
8-32 (Cont.)			
½″	50	91274A056♣	$9.95
5/8″	50	91274A060♣	8.27
¾″	50	91274A064♣	9.87
7/8″	50	91274A068♣	10.18
1″	50	91274A072♣	11.28
1¼″	50	91274A076	12.37
1½″	50	91274A080	13.83
1¾″	25	91274A084	10.45
2″	25	91274A088	10.48
2½″	25	91274A092	12.55
10-24			
¼″	25	91274A096♣	7.50
3/8″	50	91274A100♣	7.46
½″	50	91274A104♣	7.64
10-24 (Cont.)			
5/8″	50	91274A108♣	$8.18
¾″	50	91274A112♣	8.74
7/8″	50	91274A116♣	10.57
1″	50	91274A120♣	10.12
1¼″	50	91274A124	13.09
1½″	50	91274A128	12.55
1¾″	25	91274A132	7.62
2″	25	91274A136	9.37
2¼″	25	91274A140	13.19
2½″	25	91274A144	14.09
¼″-20			
¼″	50	91274A148♣	11.70
3/8″	50	91274A152♣	8.03
½″	50	91274A156♣	7.68
¼″-20 (Cont.)			
5/8″	50	91274A160♣	$8.51
¾″	50	91274A164♣	8.70
7/8″	50	91274A168♣	10.53
1″	50	91274A172♣	10.71
1¼″	50	91274A176♣	11.98
1½″	25	91274A180	7.23
1¾″	25	91274A184	7.67
2″	25	91274A188	8.24
2¼″	25	91274A192	11.59
2½″	25	91274A196	12.40
2¾″	10	91274A200	6.10
3″	10	91274A208	6.67
3¼″	10	91274A212	9.69

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

(Continued on following page)

Ultra Corrosion-Resistant Coated Alloy Steel *(Continued from previous page)*

Fully Threaded♣

Partially Threaded

Coated with armor coat for better corrosion resistance than zinc, cadmium, and hot-dipped galvanized plating, plus resistance to 1,000 hours of salt spray per ASTM B117. The thickness of the coating does not interfere with the screw's Class 3A thread fit. Color is silver.

Screws are made from an alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574. They meet ANSI/ASME B18.3 and have a minimum Rockwell hardness of C39 and minimum tensile strength of 180,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
1/4"-20 (Cont.)			
3 1/2"	10	91274A216	$8.38
3 3/4"	10	91274A220	8.92
4"	10	91274A204	9.94
5/16"-18			
3/8"	25	91274A224♣	6.08
1/2"	25	91274A228♣	7.62
5/8"	25	91274A232♣	6.69
3/4"	25	91274A236♣	6.87
7/8"	25	91274A240♣	7.14
1"	25	91274A244♣	7.23
1 1/4"	25	91274A248♣	8.36
1 1/2"	25	91274A252♣	8.12
1 3/4"	25	91274A256	9.81
2"	25	91274A260	10.71
2 1/4"	25	91274A264	13.70
2 1/2"	10	91274A268	6.28
2 3/4"	10	91274A272	7.75
3"	10	91274A276	9.88
3 1/4"	10	91274A280	10.77
3 1/2"	10	91274A284	11.90
5/16"-18 (Cont.)			
4"	5	91274A288	$8.22
3/8"-16			
1/2"	25	91274A292♣	9.90
5/8"	25	91274A296♣	10.25
3/4"	25	91274A300♣	8.38
7/8"	25	91274A304♣	9.09
1"	25	91274A308♣	9.43
1 1/4"	25	91274A312♣	10.79
1 1/2"	25	91274A316♣	11.85
1 3/4"	25	91274A320	13.64
2"	10	91274A324	5.99
2 1/4"	10	91274A328	8.03
2 1/2"	10	91274A332	6.67
2 3/4"	10	91274A336	10.48
3"	10	91274A340	11.25
3 1/4"	10	91274A344	13.16
3 1/2"	5	91274A348	7.44
4"	5	91274A352	8.36
4 1/2"	5	91274A356	10.29
5"	5	91274A360	12.03
3/8"-16 (Cont.)			
5 1/2"	1	91274A364	$5.95
6"	1	91274A368	3.25
7/16"-14			
5/8"	10	91274A376♣	6.67
1"	5	91274A384♣	3.87
1 1/4"	10	91274A388♣	8.42
1 1/2"	10	91274A392♣	9.59
1 3/4"	10	91274A396♣	10.28
2"	10	91274A400	11.04
2 1/4"	5	91274A404	7.95
2 1/2"	10	91274A408	13.20
3"	5	91274A416	7.81
3 1/2"	5	91274A420	10.03
4"	5	91274A424	10.14
1/2"-13			
1/2"	10	91274A428♣	10.11
5/8"	5	91274A432♣	8.03
3/4"	10	91274A436♣	8.60
7/8"	10	91274A440♣	7.89
1"	10	91274A444♣	8.88
1/2"-13 (Cont.)			
1 1/4"	10	91274A448♣	$8.96
1 1/2"	10	91274A452♣	9.89
1 3/4"	10	91274A456♣	10.56
2"	10	91274A460♣	11.24
2 1/4"	10	91274A464	13.23
2 1/2"	5	91274A468	7.14
2 3/4"	5	91274A472	9.89
3"	5	91274A476	9.16
3 1/4"	5	91274A480	9.91
3 1/2"	5	91274A484	10.19
3 3/4"	1	91274A488	3.70
4"	5	91274A492	12.77
4 1/2"	1	91274A496	2.99
5"	1	91274A500	3.31
5 1/2"	1	91274A504	3.69
6"	1	91274A508	3.92
6 1/2"	1	91274A512	5.38
7"	1	91274A516	5.97
8"	1	91274A520	7.36

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

Military Specification Cadmium-Plated Alloy Steel

Fully Threaded♣

Partially Threaded

Made to meet stringent military and aerospace specifications, these high-strength screws feature a cadmium-plated finish that provides better rust resistance than zinc plating.

Screws meet Military Specifications (MS) and National Aerospace Standards (NAS). They have a Class 3A thread fit, a minimum Rockwell hardness of C39, and a minimum tensile strength of 180,000 psi. Screw length is measured from under the head.

Lg.	MS Dash No.	NAS Dash No.		Each
6-32—Meet MS 16997 and NAS 1352				
1/4"	18	06-4P	92562A207♣	$2.15
1/2"	20	06-8P	92562A212♣	2.30
3/4"	22	06-12P	92562A214♣	2.94
1"	24	06-16P	92562A216♣	3.29
8-32—Meet MS 16997 and NAS 1352				
1/2"	32	08-8P	92562A219♣	1.85
3/4"	34	08-12P	92562A221♣	2.47
1"	36	08-16P	92562A225♣	2.50
1 1/4"	37	08-20P	92562A227	3.24
1 1/2"	38	08-24P	92562A229	3.53
10-24—Meet MS 16997 and NAS 1352				
1/2"	44	3-8P	92562A234♣	2.71
3/4"	46	3-12P	92562A237♣	3.53
1"	48	3-16P	92562A239♣	4.41
1 1/4"	49	3-20P	92562A242	4.71
1 1/2"	50	3-24P	92562A245	7.60
1 3/4"	51	3-28P	92562A247	8.24
2"	52	3-32P	92562A253	8.57
10-32—Meet MS 16998 and NAS 1351				
1/2"	27	3-8P	92562A416♣	$2.32
3/4"	29	3-12P	92562A428♣	2.70
1"	31	3-16P	92562A434♣	2.73
1/4"-20—Meet MS 16997 and NAS 1352				
1/2"	58	4-8P	92562A257♣	2.76
3/4"	60	4-12P	92562A263♣	3.09
1"	62	4-16P	92562A271♣	3.67
1 1/4"	63	4-20P	92562A273♣	3.82
1 1/2"	64	4-24P	92562A276	5.29
1 3/4"	65	4-28P	92562A279	5.36
2"	66	4-32P	92562A281	5.88
1/4"-28—Meet MS 16998 and NAS 1351				
3/4"	43	4-12P	92562A588♣	3.18
1"	45	4-16P	92562A596♣	3.97
1 1/2"	47	4-24P	92562A605	4.85
1 3/4"	48	4-28P	92562A612	5.09
5/16"-18—Meet MS 16997 and NAS 1352				
3/4"	78	5-12P	92562A299♣	$3.82
1"	80	5-16P	92562A304♣	4.12
1 1/4"	81	5-20P	92562A306♣	5.29
1 1/2"	82	5-24P	92562A309♣	5.59
1 3/4"	83	5-28P	92562A312	6.47
2"	84	5-32P	92562A315	7.20
3/8"-16—Meet MS 16997 and NAS 1352				
3/4"	97	6-12P	92562A341♣	8.00
1"	99	6-16P	92562A346♣	5.88
1 1/4"	100	6-20P	92562A349♣	6.33
1 1/2"	101	6-24P	92562A352♣	9.60
1 3/4"	102	6-28P	92562A355	22.80
2"	103	6-32P	92562A358	21.00
2 1/4"	104	6-36P	92562A361	21.79
2 1/2"	105	6-40P	92562A364	22.21
2 3/4"	106	6-44P	92562A367	34.62

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

Torx Drive Black-Oxide Alloy Steel

Fully Threaded♣

Partially Threaded

The Torx drive handles high torque and prevents your driver from slipping. Screws are made from an alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574. They have a black-oxide finish that provides lubricity and mild rust resistance. All have a Class 3A thread fit, a minimum Rockwell hardness of C39, and a minimum tensile strength of 180,000 psi. Screw length is measured from under the head. For Torx tools, see pages 2823-2824 and 2848-2850.

Lg.	Pkg. Qty.		Per Pkg.
4-40—Torx Size: T10			
1/4"	100	92610A108♣	$6.75
3/8"	100	92610A106♣	7.50
1/2"	100	92610A110♣	7.62
5/8"	50	92610A112♣	7.97
3/4"	50	92610A114♣	7.56
5-40—Torx Size: T10			
3/8"	50	92610A126♣	6.41
1/2"	50	92610A128♣	6.91
6-32—Torx Size: T15			
1/4"	100	92610A144♣	7.48
3/8"	100	92610A146♣	7.67
1/2"	100	92610A148♣	7.93
5/8"	50	92610A150♣	7.97
3/4"	50	92610A152♣	7.55
8-32—Torx Size: T25			
1/4"	100	92610A190♣	$7.67
3/8"	100	92610A192♣	7.95
1/2"	100	92610A194♣	8.28
3/4"	50	92610A198♣	7.62
1"	50	92610A202♣	9.21
10-24—Torx Size: T27			
1/2"	100	92610A242♣	9.25
5/8"	50	92610A243♣	7.20
3/4"	50	92610A245♣	8.07
1"	50	92610A247♣	9.66
10-32—Torx Size: T27			
1/2"	100	92610A842♣	9.18
5/8"	100	92610A517♣	9.91
3/4"	50	92610A845♣	8.06
10-32 (Cont.)			
1"	50	92610A523♣	$9.90
1 1/4"	50	92610A527	11.01
1 1/2"	25	92610A528	6.56
1 3/4"	25	92610A531	6.99
2"	25	92610A533	7.73
1/4"-20—Torx Size: T30			
3/8"	50	92610A335♣	6.87
1/2"	50	92610A537♣	6.74
5/8"	50	92610A339♣	8.55
3/4"	50	92610A540♣	7.86
1"	50	92610A542♣	8.50
1 1/4"	50	92610A344♣	11.16
1 1/2"	25	92610A346	6.19
2 1/2"	25	92610A352	10.30
3"	10	92610A353	5.96
1/4"-28—Torx Size: T30			
3/4"	25	92610A611♣	$5.20
1"	25	92610A619♣	5.94
5/16"-18—Torx Size: T45			
3/4"	50	92610A581♣	10.68
1"	25	92610A583♣	5.83
1 1/4"	25	92610A385♣	6.44
1 1/2"	25	92610A387♣	7.05
5/16"-24—Torx Size: T45			
1 1/4"	25	92610A711♣	7.23
3/8"-16—Torx Size: T50			
1"	25	92610A624♣	7.08
1 1/2"	25	92610A628♣	8.37
2 1/4"	10	92610A428	5.76

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

For information about hex sizes, head dimensions, and thread lengths, see page 3105.

Nonmarring Soft-Point Black-Oxide Alloy Steel

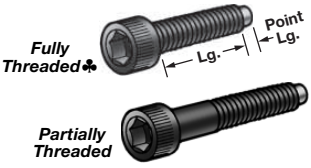

To protect delicate surfaces, these screws have a soft point. Screws are made from a high-strength alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574. Their black-oxide finish provides lubricity and mild rust resistance. They have a Class 3A thread fit, a minimum Rockwell hardness of C36, and a minimum tensile strength of 180,000 psi. They meet ANSI/ASME B18.3 and are reusable. Screw length is measured from under the head.

Nylon Point—Softer than brass, nylon points reduce vibration and eliminate damage from metal touching metal. Made from nylon 6/6, they withstand temperatures from –50° to +250° F and have a minimum Rockwell hardness of R105.

Brass Point—Harder than nylon, but not rated for hardness. Made from 60-65% copper, brass points are conductive.

Lg.	With Nylon Point Pkg. Qty.		Per Pkg.	With Brass Point Pkg. Qty.		Per Pkg.
6-32—*Point Dia.: 1/16"; Point Lg.: 1/32"*						
3/8"	5	90303A030♣	$13.97	1	90299A140♣	$3.66
1/2"	5	90303A035♣	14.04	1	90299A145♣	3.73
8-32—*Point Dia.: 3/32"; Point Lg.: 3/64"*						
3/8"	5	90303A060♣	13.63	1	90299A170♣	3.63
1/2"	5	90303A065♣	13.75	1	90299A175♣	3.66
3/4"	5	90303A070♣	13.83	1	90299A180♣	3.66
10-32—*Point Dia.: 3/32"; Point Lg.: 3/64"*						
3/8"	5	90303A108♣	13.21	1	90299A241♣	3.72
1/2"	5	90303A110♣	13.29	1	90299A242♣	3.71
5/8"	5	90303A112♣	13.63	1	90299A243♣	3.66
3/4"	5	90303A115♣	12.79	1	90299A245♣	3.61
1"	5	90303A120♣	13.14	1	90299A247♣	3.62
1/4"-20—*Point Dia.: 1/8"; Point Lg.: 1/16"*						
1/2"	5	90303A125♣	13.41	1	90299A537♣	3.72
5/8"	5	90303A128♣	13.63	1	90299A538♣	3.61
3/4"	5	90303A130♣	12.84	1	90299A540♣	3.55
1"	5	90303A135♣	13.15	1	90299A542♣	3.65
1 1/4"	5	90303A137♣	13.46	1	90299A544♣	3.64
1 1/2"	5	90303A138	13.81	1	90299A545	3.66
5/16"-18—*Point Dia.: 3/16"; Point Lg.: 3/32"*						
3/4"	5	90303A140♣	12.42	1	90299A581♣	3.55
1"	5	90303A145♣	13.15	1	90299A583♣	3.72
1 1/2"	5	90303A148♣	13.63	1	90299A586♣	3.70
3/8"-16—*Point Dia.: 3/16"; Point Lg.: 3/32"*						
3/4"	5	90303A425♣	14.04	1	90299A710♣	3.88
1"	5	90303A430♣	14.39	1	90299A715♣	3.92
1 1/4"	5	90303A435♣	14.75	1	90299A720♣	3.99
1 1/2"	5	90303A440♣	14.15	1	90299A725♣	4.05

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more information.

Socket Screw Selectors

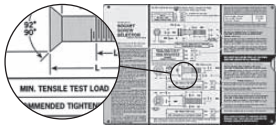

These handy slide charts list specifications and torque guidelines for socket and set screws.

Printed on heavy duty card stock. Size is 6 1/2" Ht. × 9" Wd.

Metric Selector	92243A610	Each	$4.22
Inch Selector	92243A510	Each	$4.22

Wire-Lockable Steel

Wire these drilled-head screws together so they can't vibrate loose. All have a Class 3A thread fit and meet ANSI/ASME B18.3. Screw length is measured from under the head.

Black-Oxide Alloy Steel—Comparable to Grade 8 steel. The black-oxide finish provides lubricity and mild rust resistance. Thread sizes through 1/2" have a min. Rockwell hardness of C39 and min. tensile strength of 180,000 psi. Thread sizes larger than 1/2" have a min. Rockwell hardness of C37 and min. tensile strength of 170,000 psi.

18-8 Stainless Steel—Meets ASTM F837, provides excellent corrosion resistance, and may be mildly magnetic. Screws have a min. Rockwell hardness of B70 and min. tensile strength of 70,000 psi.

For safety lock wire, see 8860K14 on pg. 3731. For wire twisting pliers, see pg. 2757.

Use safety lock wire (not included) to wire screws together.

Lg.	Pkg. Qty.		Per Pkg.
Black-Oxide Alloy Steel			
10-24—*Hole Dia.: 0.0465"*			
3/8"	10	90117A183♣	$7.70
1/2"	10	90117A187♣	7.76
10-32—*Hole Dia.: 0.0465"*			
1/2"	10	90117A193♣	7.73
1/4"-20—*Hole Dia.: 0.0625"*			
3/8"	10	90117A535♣	6.63
1/2"	10	90117A537♣	6.76
5/8"	10	90117A539♣	6.85
3/4"	10	90117A540♣	7.08
1"	10	90117A542♣	7.23
1 1/4"	10	90117A544♣	7.40
1 1/2"	10	90117A546	7.60
1 3/4"	10	90117A562	7.99
2"	10	90117A550	8.00
2 1/4"	10	90117A551	8.94
2 1/2"	10	90117A565	9.25
2 3/4"	10	90117A569	9.86
3"	10	90117A572	10.35
3 1/2"	10	90117A575	11.04
1/4"-28—*Hole Dia.: 0.0625"*			
3/4"	10	90117A200♣	7.23
1"	10	90117A205♣	7.56
5/16"-18—*Hole Dia.: 0.0625"*			
3/4"	10	90117A581♣	8.00
1"	10	90117A583♣	8.16
1 1/4"	10	90117A585♣	8.38
1 1/2"	10	90117A587♣	8.68
5/16"-24—*Hole Dia.: 0.0625"*			
3/4"	10	90117A230♣	$8.25
1"	10	90117A235♣	8.38
3/8"-16—*Hole Dia.: 0.0625"*			
3/4"	10	90117A622♣	8.50
1"	10	90117A624♣	8.69
1 1/4"	10	90117A626♣	9.50
1 1/2"	10	90117A628♣	9.68
1 3/4"	10	90117A630	10.02
2 1/4"	10	90117A633	10.94
2 1/2"	10	90117A634	11.33
3 1/2"	10	90117A638	14.02
3/8"-24—*Hole Dia.: 0.0625"*			
1"	10	90117A250♣	9.39
1 1/4"	10	90117A255♣	10.04
1/2"-13—*Hole Dia.: 0.1094"*			
1 1/2"	5	90117A716♣	9.96
1 3/4"	5	90117A718♣	10.23
2"	5	90117A720♣	10.65
2 1/2"	5	90117A722	11.41
1/2"-20—*Hole Dia.: 0.1094"*			
1 1/4"	5	90117A270♣	10.20
1 3/4"	5	90117A275♣	10.89
2"	5	90117A280♣	11.04
5/8"-11—*Hole Dia.: 0.1562"*			
2"	5	90117A802♣	14.41
2 1/2"	1	90117A804	3.03
18-8 Stainless Steel			
4-40—*Hole Dia.: 0.038"*			
1/4"	5	90152A110♣	6.35
3/8"	5	90152A113♣	6.19
1/2"	5	90152A116♣	6.30
6-32—*Hole Dia.: 0.038"*			
3/8"	5	90152A150♣	6.12
1/2"	5	90152A153♣	6.24
3/4"	5	90152A156♣	6.29
8-32—*Hole Dia.: 0.0465"*			
3/8"	5	90152A215♣	6.12
1/2"	5	90152A218♣	6.16
3/4"	5	90152A221♣	6.29
10-32—*Hole Dia.: 0.0465"*			
1/2"	5	90152A255♣	5.64
3/4"	5	90152A258♣	5.80
1"	5	90152A261♣	5.96
1/4"-20—*Hole Dia.: 0.0625"*			
1/2"	5	90152A320♣	5.80
3/4"	5	90152A323♣	5.84
1"	5	90152A326♣	6.36
1 1/4"	5	90152A329♣	6.56
1 1/2"	5	90152A332	7.00

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more information.

Left-Hand Thread Black-Oxide Alloy Steel

Forget the "righty-tighty" rule—tighten these screws by turning counterclockwise. Screws are made from an alloy steel that's comparable to Grade 8 steel and conforms to ASTM A574. They have a black-oxide finish for lubricity and mild rust resistance. All are fully threaded and have a Class 3A thread fit. Meet ANSI/ASME B18.3. Min. Rockwell hardness is C39 and min. tensile strength is 180,000 psi. Screw length is measured from under the head.

Also Available: 18-8 stainless steel screws with a minimum tensile strength of 85,000 psi. in sizes marked with a ▲. Please ask for 92202A550 and specify thread size and screw length.

Lg.		Each
6-32		
3/8"	91670A146	$11.69
1/2"	91670A148	13.10
8-32		
3/8"	91670A192▲	6.55
1/2"	91670A194▲	7.41
3/4"	91670A197▲	8.45
1"	91670A199	9.03
10-24		
1/2"	91670A242	6.72
3/4"	91670A245	7.76
10-24 (Cont.)		
1"	91670A249	$9.48
1 1/2"	91670A252	10.93
10-32		
1/2"	91670A310▲	7.24
3/4"	91670A313▲	8.10
1"	91670A316▲	10.21
1 1/2"	91670A319	12.07
1/4"-20		
1/2"	91670A537▲	7.20
5/8"	91670A539▲	8.00
3/4"	91670A540▲	8.45
1/4"-20 (Cont.)		
1"	91670A542▲	$9.86
1 1/4"	91670A544▲	10.00
1 1/2"	91670A546▲	11.21
1 3/4"	91670A548	12.07
2"	91670A550▲	13.79
5/16"-18		
3/4"	91670A581	10.00
1"	91670A583	10.34
1 1/4"	91670A585	10.69
1 1/2"	91670A587	12.07
2"	91670A589	13.79
3/8"-16		
3/4"	91670A622	$12.41
1"	91670A624	14.14
1 1/4"	91670A626	14.48
1 1/2"	91670A628	14.83
2"	91670A632	15.52
2 1/4"	91670A635	16.38
1/2"-13		
1"	91670A713	13.14
1 1/2"	91670A716	16.21
2"	91670A720	16.90

Stainless Steel Socket Head Cap Screw Thread Lengths

Sizes marked with a ♣ are always fully threaded.
For all other sizes, manufacturing standards allow thread length to vary between the minimum and maximum lengths shown below.

Screw Size No.	0	1	2	3	4	5	6	8	10	12	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	7/8"	1"	1 1/4"
Min. Thread Lg.	1/2"	Full	5/8"	5/8"	3/4"	3/4"	3/4"	3/4"	7/8"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 3/4"	2"	2 1/4"	2 1/2"	2 1/2"
Max. Thread Lg.	1"	Full	1"	1"	1 1/2"	1 1/2"	1 1/2"	2"	2"	1 1/2"	3"	3"	3"	3"	4 1/2"	4"	3 1/2"	4"	4 1/2"	6"

Stainless Steel

Fully Threaded♣

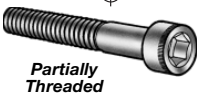

Partially Threaded

Our stainless steel socket head cap screws have a Class 3A thread fit, a min. Rockwell hardness of B70, and min. tensile strength of 70,000 psi. Screw length is measured from under the head. ***Type 316 stainless steel*** provides better corrosion resistance than 18-8 stainless steel and contains molybdenum, which increases corrosion resistance to chlorides and sulfates. May be mildly magnetic. ***18-8 stainless steel*** offers excellent corrosion resistance and may be mildly magnetic.

Type 316 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56			
3/16"	25	92185A073♣	$4.50
1/4"	25	92185A077♣	6.46
5/16"	25	92185A078♣	3.84
3/8"	25	92185A079♣	6.86
7/16"	25	92185A081♣	4.16
1/2"	25	92185A083♣	4.31
9/16"	25	92185A086♣	4.39
5/8"	50	92185A089♣	9.17
3/4"	50	92185A092	9.86
7/8"	25	92185A095	5.23
4-40			
3/16"	25	92185A105♣	8.60
1/4"	50	92185A106♣	4.93
5/16"	50	92185A107♣	7.16
3/8"	50	92185A108♣	6.21
7/16"	50	92185A109♣	7.20
1/2"	50	92185A110♣	7.27
9/16"	50	92185A124♣	8.12
5/8"	50	92185A111♣	12.02
3/4"	25	92185A112♣	5.60
7/8"	25	92185A113♣	5.71
1"	25	92185A115	9.66
1 1/4"	25	92185A118	7.13
1 1/2"	25	92185A126	9.68
2"	25	92185A131	11.14
5-40			
1/4"	50	92185A132♣	6.73
3/8"	50	92185A134♣	7.45
1/2"	50	92185A136♣	8.33
5/8"	50	92185A138♣	9.19
3/4"	25	92185A140♣	4.89
1"	25	92185A142	5.60
6-32			
1/4"	25	92185A144♣	2.68
5/16"	25	92185A145♣	3.93
3/8"	25	92185A147♣	2.88
7/16"	25	92185A163♣	5.65
1/2"	25	92185A148♣	2.93
9/16"	25	92185A164♣	6.37
5/8"	25	92185A149♣	3.21
3/4"	25	92185A151♣	3.34
7/8"	25	92185A152♣	8.42
1"	25	92185A153	3.95
1 1/8"	10	92185A154	4.42
1 1/4"	10	92185A155	5.59
1 1/2"	10	92185A158	6.69
1 3/4"	10	92185A161	5.54
2"	10	92185A165	5.91
8-32			
1/4"	25	92185A190♣	3.32
5/16"	25	92185A191♣	6.36
3/8"	25	92185A192♣	3.24
7/16"	25	92185A193♣	6.96
8-32 (Cont.)			
1/2"	25	92185A194♣	$3.43
9/16"	25	92185A195♣	6.57
5/8"	25	92185A196♣	3.93
3/4"	25	92185A197♣	4.09
7/8"	25	92185A198♣	9.09
1"	25	92185A199♣	5.01
1 1/8"	10	92185A200♣	4.71
1 1/4"	10	92185A201	4.84
1 1/2"	10	92185A203	5.91
1 3/4"	10	92185A206	6.73
2"	10	92185A209	7.45
2 1/2"	10	92185A213	9.18
3"	5	92185A217	5.34
10-24			
1/4"	25	92185A238♣	6.19
5/16"	25	92185A239♣	6.68
3/8"	25	92185A240♣	3.94
1/2"	25	92185A242♣	4.43
5/8"	25	92185A243♣	4.97
3/4"	25	92185A245♣	5.22
7/8"	25	92185A246♣	9.69
1"	25	92185A247♣	6.07
1 1/4"	10	92185A249	5.28
1 1/2"	10	92185A251	5.90
1 3/4"	10	92185A252	8.83
2"	10	92185A253	8.48
2 1/2"	5	92185A257	6.73
3"	5	92185A260	7.97
10-32			
1/4"	25	92185A986♣	9.30
5/16"	25	92185A987♣	8.17
3/8"	25	92185A988♣	3.94
7/16"	25	92185A969♣	7.28
1/2"	25	92185A989♣	4.43
9/16"	25	92185A971♣	7.58
5/8"	25	92185A990♣	4.97
3/4"	25	92185A991♣	5.22
7/8"	25	92185A960♣	9.54
1"	25	92185A992♣	6.07
1 1/8"	10	92185A972♣	5.37
1 1/4"	10	92185A993	5.28
1 1/2"	10	92185A994	5.90
1 3/4"	10	92185A995	7.85
2"	10	92185A996	7.86
2 1/2"	5	92185A997	5.75
3"	5	92185A998	8.03
1/4"-20			
3/8"	10	92185A535♣	3.71
1/2"	10	92185A537♣	3.22
5/8"	10	92185A539♣	3.43
3/4"	10	92185A540♣	4.07
7/8"	10	92185A541♣	5.32
1/4"-20 (Cont.)			
1"	10	92185A542♣	$4.16
1 1/4"	10	92185A544♣	4.88
1 1/2"	10	92185A546	5.87
1 3/4"	10	92185A548	6.67
2"	5	92185A550	4.23
2 1/4"	5	92185A553	6.85
2 1/2"	5	92185A555	6.54
3"	5	92185A557	7.30
1/4"-28			
1/2"	10	92185A558♣	6.70
5/8"	10	92185A559♣	7.96
3/4"	10	92185A561♣	7.49
1"	10	92185A564♣	7.79
1 1/4"	5	92185A566♣	6.16
5/16"-18			
1/2"	10	92185A578♣	5.11
5/8"	10	92185A579♣	5.40
3/4"	10	92185A581♣	6.26
7/8"	5	92185A582♣	4.80
1"	10	92185A583♣	7.60
1 1/4"	10	92185A585♣	7.91
1 1/2"	5	92185A587	5.05
1 3/4"	5	92185A589	5.75
2"	5	92185A591	7.11
2 1/4"	5	92185A592	7.60
2 1/2"	5	92185A593	7.35
3"	1	92185A597	1.91
3 1/2"	1	92185A599	2.70
4"	1	92185A605	4.21
5/16"-24			
1/2"	5	92185A608♣	7.13
5/8"	5	92185A611♣	7.81
3/4"	5	92185A615♣	10.11
1"	5	92185A617♣	10.36
3/8"-16			
1/2"	1	92185A620♣	1.72
5/8"	1	92185A621♣	1.80
3/4"	5	92185A622♣	4.81
7/8"	5	92185A616♣	6.90
1"	5	92185A624♣	5.40
1 1/4"	5	92185A626♣	5.95
1 1/2"	5	92185A628	6.60
1 3/4"	5	92185A630	7.58
2"	1	92185A632	1.53
2 1/4"	1	92185A633	1.69
2 1/2"	1	92185A634	1.73
2 3/4"	1	92185A635	2.52
3"	1	92185A636	2.91
3 1/2"	1	92185A641	3.04
4"	1	92185A645	4.19
3/8"-24			
3/4"	1	92185A670♣	2.99
1"	1	92185A673♣	3.66
3/8"-24 (Cont.)			
1 1/4"	1	92185A675♣	$3.36
1 1/2"	1	92185A677♣	4.02
7/16"-14			
1 1/4"	1	92185A679♣	5.22
1 1/2"	1	92185A681♣	7.19
2"	1	92185A683	8.48
1/2"-13			
3/4"	1	92185A711♣	2.29
1"	1	92185A712♣	1.91
1 1/4"	1	92185A714♣	2.26
1 1/2"	1	92185A716♣	2.33
1 3/4"	1	92185A718	2.65
2"	1	92185A720	2.95
2 1/4"	1	92185A721	4.54
2 1/2"	1	92185A722	3.54
2 3/4"	1	92185A723	3.92
3"	1	92185A724	4.04
3 1/2"	1	92185A726	5.60
4"	1	92185A728	7.47
5"	1	92185A734	14.78
6"	1	92185A737	20.42
5/8"-11			
1"	1	92185A794♣	3.92
1 1/4"	1	92185A796♣	4.03
1 1/2"	1	92185A798♣	4.48
1 3/4"	1	92185A801♣	6.30
2"	1	92185A803	6.32
2 1/4"	1	92185A802	8.90
2 1/2"	1	92185A804	7.03
2 3/4"	1	92185A822	8.15
3"	1	92185A805	7.44
3 1/2"	1	92185A806	12.11
4"	1	92185A807	11.42
3/4"-10			
1 1/4"	1	92185A859♣	8.71
1 1/2"	1	92185A861♣	9.03
1 3/4"	1	92185A863♣	9.52
2"	1	92185A865♣	9.52
2 1/2"	1	92185A867	9.63
3"	1	92185A869	10.53
4"	1	92185A871	12.66
4 1/2"	1	92185A824	22.92
5"	1	92185A828	24.26
7/8"-9			
2"	1	92185A880♣	18.28
2 1/4"	1	92185A881♣	21.66
2 1/2"	1	92185A883	22.04
3"	1	92185A886	23.23
4"	1	92185A889	28.16
1"-8			
2"	1	92185A909♣	27.65
2 1/2"	1	92185A911♣	31.73
3"	1	92185A913	33.42
4"	1	92185A916	37.09

18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
0-80			
3/32"	100	92196A051♣	5.64
1/8"	100	92196A052♣	3.87
5/32"	100	92196A053♣	5.68
3/16"	100	92196A054♣	3.66
1/4"	100	92196A055♣	4.63
5/16"	100	92196A056♣	4.92
3/8"	100	92196A057♣	5.14
1/2"	50	92196A070♣	7.59
5/8"	50	92196A058	3.87
0-80 (Cont.)			
3/4"	25	92196A059	2.52
1"	25	92196A060	7.01
1-64			
1/8"	50	92196A451♣	5.27
1/4"	50	92196A459♣	5.89
1-72			
1/8"	100	92196A063♣	4.71
3/16"	100	92196A065♣	4.93
1/4"	100	92196A066♣	5.86
5/16"	50	92196A067♣	4.06
1-72 (Cont.)			
3/8"	100	92196A068♣	6.84
1/2"	50	92196A069♣	4.49
5/8"	50	92196A071♣	5.13
3/4"	25	92196A072♣	3.57
2-56			
1/8"	100	92196A074♣	5.08
5/32"	100	92196A075♣	6.59
3/16"	100	92196A076♣	3.96
1/4"	100	92196A077♣	3.39
5/16"	100	92196A078♣	3.68
2-56 (Cont.)			
3/8"	100	92196A079♣	3.72
7/16"	100	92196A082♣	4.70
1/2"	100	92196A081♣	3.86
9/16"	100	92196A085♣	6.61
5/8"	100	92196A083♣	4.51
3/4"	100	92196A084	4.64
7/8"	100	92196A086	5.19
1"	50	92196A140	5.57
1 1/4"	10	92196A141	5.41
1 1/2"	10	92196A087	9.87

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See top of page for more thread length information.

(Continued on following page)

Stainless Steel *(Continued from previous page)*

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel (Cont.)			
3-48			
3/16"	50	92196A091♣	$7.73
1/4"	50	92196A092♣	7.82
5/16"	50	92196A094♣	5.15
3/8"	50	92196A101♣	4.80
1/2"	50	92196A102♣	5.39
5/8"	50	92196A095♣	6.09
3/4"	25	92196A096♣	7.12
1"	25	92196A097	7.12
3-56			
1/4"	25	92196A501♣	5.35
3/8"	25	92196A505♣	5.47
4-40			
1/8"	100	92196A103♣	5.53
3/16"	100	92196A105♣	5.99
1/4"	100	92196A106♣	2.74
5/16"	100	92196A107♣	2.80
3/8"	100	92196A108♣	2.87
7/16"	100	92196A109♣	3.09
1/2"	100	92196A110♣	3.13
9/16"	100	92196A111♣	5.39
5/8"	100	92196A112♣	3.65
3/4"	100	92196A113♣	3.64
7/8"	100	92196A114♣	3.93
1"	100	92196A115	3.79
1 1/8"	50	92196A117	3.93
1 1/4"	100	92196A302	5.50
1 3/8"	10	92196A118	4.90
1 1/2"	100	92196A119	5.92
1 3/4"	10	92196A120	6.25
2"	10	92196A121	6.66
2 1/2"	10	92196A122	7.39
3"	5	92196A123	5.78
4-48			
1/4"	25	92196A171♣	3.36
3/8"	25	92196A173♣	3.40
1/2"	25	92196A175♣	6.26
5-40			
3/16"	50	92196A124♣	4.44
1/4"	50	92196A125♣	1.97
5/16"	50	92196A751♣	2.08
3/8"	50	92196A126♣	2.15
7/16"	50	92196A127♣	4.86
1/2"	50	92196A128♣	2.57
9/16"	50	92196A752♣	5.38
5/8"	50	92196A130♣	8.43
3/4"	50	92196A131♣	11.77
7/8"	50	92196A753	3.45
1"	50	92196A129	3.81
1 1/8"	50	92196A755	7.33
1 1/4"	10	92196A132	5.01
1 1/2"	5	92196A133	7.43
6-32			
1/8"	50	92196A139♣	10.82
3/16"	100	92196A143♣	11.73
1/4"	100	92196A144♣	3.76
5/16"	100	92196A145♣	3.85
3/8"	100	92196A146♣	3.92
7/16"	100	92196A147♣	3.95
1/2"	100	92196A148♣	3.98
9/16"	50	92196A149♣	7.98
5/8"	100	92196A150♣	3.92
3/4"	100	92196A151♣	4.03
7/8"	100	92196A152♣	4.33
1"	100	92196A153	5.21
1 1/8"	50	92196A154	4.83
1 1/4"	100	92196A155	8.54
1 1/2"	100	92196A157	9.81
1 3/4"	25	92196A158	2.97
2"	25	92196A159	4.78
2 1/4"	25	92196A160	5.71
2 1/2"	25	92196A161	7.83
3"	10	92196A164	3.31
6-40			
1/4"	50	92196A134♣	4.45
3/8"	50	92196A136♣	7.59
1/2"	50	92196A137♣	9.14
5/8"	10	92196A138♣	1.80
3/4"	10	92196A761♣	3.12
1"	10	92196A765	5.26
8-32			
1/8"	25	92196A187♣	$9.42
3/16"	50	92196A189♣	5.81
1/4"	100	92196A190♣	3.47
5/16"	100	92196A191♣	3.89
3/8"	100	92196A192♣	3.97
7/16"	100	92196A193♣	5.31
1/2"	100	92196A194♣	4.51
9/16"	50	92196A195♣	9.43
5/8"	100	92196A196♣	5.26
3/4"	100	92196A197♣	5.93
7/8"	100	92196A198♣	6.49
1"	100	92196A199♣	6.93
1 1/8"	50	92196A200♣	6.66
1 1/4"	50	92196A201	5.68
1 3/8"	50	92196A202	11.01
1 1/2"	50	92196A203	7.33
1 3/4"	25	92196A204	4.46
2"	25	92196A205	5.68
2 1/4"	25	92196A206	5.62
2 1/2"	10	92196A207	6.85
3"	5	92196A209	7.26
3 1/2"	1	92196A210	1.28
4"	1	92196A213	3.28
8-36			
3/8"	25	92196A216♣	10.20
1/2"	25	92196A217♣	7.52
3/4"	25	92196A219♣	5.93
10-24			
1/4"	50	92196A309♣	3.10
5/16"	100	92196A239♣	5.63
3/8"	100	92196A240♣	6.32
7/16"	100	92196A241♣	6.83
1/2"	100	92196A242♣	6.35
9/16"	50	92196A243♣	4.76
5/8"	100	92196A244♣	6.60
3/4"	100	92196A245♣	7.47
7/8"	100	92196A246♣	8.28
1"	100	92196A247♣	8.87
1 1/8"	50	92196A248	6.76
1 1/4"	50	92196A249	6.14
1 3/8"	25	92196A250	4.67
1 1/2"	50	92196A251	6.74
1 3/4"	50	92196A252	9.63
2"	25	92196A253	6.36
2 1/4"	25	92196A254	8.58
2 1/2"	25	92196A255	8.93
2 3/4"	10	92196A256	9.79
3"	5	92196A257	8.39
3 1/4"	5	92196A771	5.65
3 1/2"	1	92196A258	3.35
4"	1	92196A259	3.69
5"	1	92196A260	3.48
6"	1	92196A262	4.38
10-32			
3/16"	25	92196A264♣	3.85
1/4"	50	92196A265♣	4.10
5/16"	100	92196A266♣	5.78
3/8"	100	92196A267♣	6.69
7/16"	100	92196A268♣	7.68
1/2"	100	92196A269♣	6.63
9/16"	25	92196A270♣	10.58
5/8"	100	92196A271♣	6.89
3/4"	100	92196A272♣	7.47
7/8"	100	92196A273♣	8.28
1"	100	92196A274♣	8.87
1 1/8"	25	92196A275♣	8.89
1 1/4"	50	92196A276	6.30
1 3/8"	25	92196A291	5.00
1 1/2"	50	92196A277	7.20
1 5/8"	25	92196A292	9.84
1 3/4"	50	92196A278	9.95
2"	25	92196A279	6.36
2 1/4"	25	92196A280	11.64
2 1/2"	25	92196A281	8.92
2 3/4"	10	92196A282	9.79
3"	1	92196A283	3.09
3 1/4"	5	92196A285	3.89
3 1/2"	1	92196A284	3.25
10-32 (Cont.)			
4"	5	92196A286	$7.83
4 1/2"	1	92196A287	3.38
5"	1	92196A288	3.48
6"	1	92196A290	4.38
12-24			
3/8"	10	92196A293♣●	7.10
1/2"	10	92196A294♣●	4.11
3/4"	10	92196A295♣●	5.63
1"	10	92196A296●	8.17
1 1/4"	5	92196A261●	4.39
1 1/2"	5	92196A297●	7.48
1/4"-20			
1/4"	25	92196A533♣	3.34
5/16"	50	92196A534♣	6.91
3/8"	50	92196A535♣	5.16
7/16"	50	92196A536♣	9.18
1/2"	50	92196A537♣	6.76
5/8"	50	92196A539♣	7.23
3/4"	50	92196A540♣	6.76
7/8"	50	92196A541♣	7.30
1"	50	92196A542♣	8.99
1 1/8"	25	92196A543♣	6.08
1 1/4"	25	92196A544♣	5.04
1 3/8"	25	92196A545	7.63
1 1/2"	25	92196A546	6.51
1 3/4"	25	92196A548	6.75
2"	25	92196A550	7.92
2 1/4"	25	92196A551	9.73
2 1/2"	25	92196A552	9.55
2 3/4"	10	92196A553	4.17
3"	10	92196A554	4.24
3 1/4"	5	92196A555	7.21
3 1/2"	5	92196A556	3.44
3 3/4"	1	92196A557	3.15
4"	10	92196A558	7.72
4 1/2"	1	92196A559	5.23
5"	1	92196A561	5.73
5 1/2"	1	92196A563	7.25
6"	1	92196A565	8.21
6 1/2"	1	92196A567	3.32
7"	1	92196A569	4.25
8"	1	92196A571	5.56
1/4"-28			
1/4"	10	92196A313♣	5.13
3/8"	50	92196A315♣	6.67
1/2"	50	92196A317♣	6.91
5/8"	50	92196A319♣	8.22
3/4"	50	92196A321♣	8.98
7/8"	25	92196A323♣	5.27
1"	50	92196A325♣	9.96
1 1/4"	25	92196A327♣	5.95
1 1/2"	25	92196A329	7.27
1 3/4"	25	92196A330	9.22
2"	25	92196A331	8.52
2 1/4"	25	92196A340	11.06
2 1/2"	10	92196A332	4.89
3"	10	92196A333	6.55
3 1/2"	1	92196A342	2.84
4"	1	92196A334	6.57
5/16"-18			
3/8"	10	92196A576♣	4.96
1/2"	25	92196A578♣	6.72
5/8"	25	92196A580♣	6.27
3/4"	25	92196A581♣	6.40
7/8"	25	92196A582♣	8.34
1"	25	92196A583♣	7.43
1 1/8"	10	92196A584♣	5.31
1 1/4"	10	92196A585♣	4.47
1 1/2"	10	92196A587	4.53
1 3/4"	10	92196A589	4.61
2"	10	92196A591	5.03
2 1/4"	10	92196A592	7.41
2 1/2"	10	92196A593	6.22
2 3/4"	10	92196A594	8.27
3"	10	92196A595	7.32
3 1/4"	5	92196A596	4.74
3 1/2"	5	92196A597	5.42
3 3/4"	5	92196A598	7.05
4"	5	92196A142	6.27
5/16"-18 (Cont.)			
4 1/2"	1	92196A602	$2.52
5"	1	92196A604	2.54
6"	1	92196A606	2.89
7"	1	92196A607	4.39
8"	1	92196A608	5.47
5/16"-24			
1/2"	25	92196A335♣	7.84
5/8"	25	92196A337♣	8.07
3/4"	25	92196A339♣	8.49
7/8"	10	92196A338♣	4.35
1"	25	92196A341♣	9.28
1 1/8"	10	92196A769♣	7.39
1 1/4"	10	92196A343♣	5.16
1 1/2"	10	92196A344	5.61
1 3/4"	10	92196A345	6.71
2"	10	92196A346	6.15
2 1/4"	10	92196A354	8.95
2 1/2"	10	92196A347	9.58
2 3/4"	10	92196A348	11.28
3"	5	92196A349	5.30
3 1/2"	5	92196A351	11.58
4"	1	92196A353	3.08
3/8"-16			
3/8"	5	92196A618♣	5.64
1/2"	10	92196A619♣	9.84
5/8"	10	92196A621♣	6.80
3/4"	25	92196A622♣	9.61
7/8"	10	92196A623♣	4.41
1"	10	92196A624♣	4.97
1 1/8"	10	92196A625♣	7.17
1 1/4"	10	92196A626♣	5.54
1 3/8"	10	92196A627	8.14
1 1/2"	10	92196A628	5.91
1 3/4"	10	92196A630	6.24
2"	10	92196A632	7.17
2 1/4"	10	92196A633	8.79
2 1/2"	10	92196A634	9.02
2 3/4"	5	92196A635	5.02
3"	5	92196A636	5.61
3 1/4"	5	92196A637	9.99
3 1/2"	5	92196A638	8.96
3 3/4"	5	92196A639	11.23
4"	5	92196A640	10.27
4 1/2"	1	92196A642	2.19
5"	1	92196A644	2.20
5 1/2"	1	92196A646	9.97
6"	1	92196A648	2.62
6 1/2"	1	92196A649	4.28
7"	1	92196A651	4.57
8"	1	92196A654	8.02
3/8"-24			
1/2"	10	92196A355♣	11.85
5/8"	10	92196A356♣	14.95
3/4"	10	92196A357♣	6.57
1"	10	92196A359♣	6.64
1 1/4"	10	92196A361♣	7.15
1 1/2"	10	92196A363	7.47
1 3/4"	10	92196A364	10.37
2"	5	92196A365	6.39
2 1/4"	5	92196A366	6.39
2 1/2"	5	92196A367	6.51
2 3/4"	5	92196A368	6.51
3"	5	92196A369	6.62
3 1/2"	1	92196A371	2.88
4"	1	92196A373	3.60
4 1/2"	1	92196A374	4.58
5"	1	92196A376	4.79
6"	1	92196A378	6.24
7/16"-14			
1/2"	5	92196A665♣	8.88
3/4"	5	92196A667♣	6.52
1"	5	92196A669♣	5.32
1 1/4"	5	92196A671♣	6.02
1 1/2"	5	92196A673♣	5.61
1 3/4"	5	92196A675	6.59
2"	1	92196A677	1.33
2 1/4"	1	92196A678	1.40
2 1/2"	1	92196A679	5.36
3"	1	92196A681	6.97

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3112 for more thread length information.

● Head diameter is 0.343".

(Continued on following page)

Stainless Steel *(Continued from previous page)*

Fully Threaded♣

Partially Threaded

Our stainless steel socket head cap screws have a Class 3A thread fit, a minimum Rockwell hardness of B70, and minimum tensile strength of 70,000 psi. Screw length is measured from under the head.

18-8 stainless steel offers excellent corrosion resistance and may be mildly magnetic.

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
7/16"-14 (Cont.)			
3 1/2"	1	92196A682	$4.05
4"	1	92196A683	4.96
7/16"-20			
1"	1	92196A375♣	.94
1 1/4"	1	92196A380♣	1.09
1 1/2"	1	92196A377♣	1.26
2"	1	92196A379	1.55
1/2"-13			
1/2"	1	92196A708♣	3.13
5/8"	5	92196A709♣	11.45
3/4"	5	92196A710♣	5.57
7/8"	5	92196A711♣	5.77
1"	5	92196A712♣	5.96
1 1/4"	5	92196A714♣	6.41
1 1/2"	5	92196A716♣	6.47
1 3/4"	5	92196A718	6.58
2"	5	92196A720	8.81
2 1/4"	5	92196A721	8.62
2 1/2"	5	92196A722	9.73
2 3/4"	1	92196A723	1.92
3"	1	92196A724	2.18
3 1/4"	1	92196A725	6.75
3 1/2"	1	92196A726	3.49
3 3/4"	1	92196A727	3.24
4"	1	92196A728	5.44
4 1/2"	1	92196A730	3.56
5"	1	92196A732	3.99
5 1/2"	1	92196A734	5.85
6"	1	92196A736	6.01
6 1/2"	1	92196A737	16.71
1/2"-13 (Cont.)			
7"	1	92196A738	$11.94
7 1/2"	1	92196A739	14.35
8"	1	92196A740	15.61
9"	1	92196A742	18.75
10"	1	92196A744	23.88
12"	1	92196A746	26.02
1/2"-20			
3/4"	5	92196A384♣	5.71
1"	5	92196A385♣	8.01
1 1/4"	5	92196A386♣	8.54
1 1/2"	5	92196A387♣	8.59
1 3/4"	5	92196A388	9.31
2"	1	92196A389	1.87
2 1/4"	1	92196A772	2.30
2 1/2"	1	92196A390	2.42
3"	1	92196A392	3.00
3 1/2"	1	92196A610	4.79
4"	1	92196A396	5.95
4 1/2"	1	92196A398	7.81
5"	1	92196A400	10.20
6"	1	92196A402	14.96
5/8"-11			
1"	1	92196A794♣	2.00
1 1/4"	1	92196A796♣	2.52
1 1/2"	1	92196A798♣	2.52
1 3/4"	1	92196A800♣	2.63
2"	1	92196A802	2.78
2 1/4"	1	92196A803	3.33
2 1/2"	1	92196A804	3.11
2 3/4"	1	92196A805	4.35
3"	1	92196A806	4.34
5/8"-11 (Cont.)			
3 1/4"	1	92196A807	$5.62
3 1/2"	1	92196A808	5.63
4"	1	92196A810	5.71
4 1/2"	1	92196A812	7.27
5"	1	92196A814	5.73
5 1/2"	1	92196A816	8.32
6"	1	92196A818	8.70
7"	1	92196A820	14.02
8"	1	92196A822	20.35
5/8"-18			
1 1/4"	1	92196A391♣	6.14
1 1/2"	1	92196A393♣	15.66
1 3/4"	1	92196A394♣	18.79
2"	1	92196A395	7.85
2 1/2"	1	92196A405	8.21
3"	1	92196A409	8.51
3 1/2"	1	92196A413	10.19
4"	1	92196A417	11.01
3/4"-10			
1"	1	92196A835♣	6.17
1 1/4"	1	92196A837♣	4.51
1 1/2"	1	92196A839♣	4.28
1 3/4"	1	92196A840♣	4.29
2"	1	92196A843♣	4.64
2 1/4"	1	92196A844	5.97
2 1/2"	1	92196A845	5.87
2 3/4"	1	92196A846	6.56
3"	1	92196A847	8.85
3 1/2"	1	92196A849	9.07
4"	1	92196A851	9.25
4 1/2"	1	92196A853	10.30
3/4"-10 (Cont.)			
5"	1	92196A856	$12.13
5 1/2"	1	92196A857	14.45
6"	1	92196A858	15.29
7"	1	92196A860	16.16
8"	1	92196A862	16.99
3/4"-16			
1 1/2"	1	92196A887♣	8.79
2"	1	92196A891♣	10.96
2 1/2"	1	92196A895	12.66
3"	1	92196A899	13.43
3 1/2"	1	92196A903	14.02
4"	1	92196A907	18.84
7/8"-9			
2"	1	92196A880♣	11.78
2 1/2"	1	92196A882	12.33
3"	1	92196A884	12.29
3 1/2"	1	92196A888	14.08
1"-8			
2"	1	92196A912♣	14.52
2 1/2"	1	92196A914♣	15.67
3"	1	92196A916	19.55
3 1/2"	1	92196A918	20.24
4"	1	92196A920	20.08
4 1/2"	1	92196A922	24.14
5"	1	92196A924	24.91
6"	1	92196A926	25.60
8"	1	92196A928	51.67
1 1/4"-7			
4"	1	92196A930	39.96
5"	1	92196A934	44.64
6"	1	92196A938	55.01

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3112 for more thread length information.

Military Specification Stainless Steel

Fully Threaded♣

Partially Threaded

Made from 300 series stainless steel, these screws are not only corrosion resistant, they also meet stringent Military Specifications (MS) and National Aerospace Standards (NAS). They're passivated (a nitric acid treatment that creates a film to protect against oxidation and corrosion) to QQ-P-35 and meet FF-S-86. All have a Class 3A thread fit, minimum tensile strength of 80,000 psi, and are not rated for hardness. Screw length is measured from under the head.

Lg.	MS Dash No.	NAS Dash No.	Pkg. Qty.		Per Pkg.
0-80—Meet MS 16996 and NAS 1351C					
1/8"	1	00-2	10	92200A052♣	$6.48
3/16"	2	00-3	10	92200A054♣	6.70
1/4"	3	00-4	10	92200A055♣	6.91
3/8"	4	00-6	10	92200A057♣	7.24
2-56—Meet MS 16995 and NAS 1352C					
3/16"	1	02-3	10	92200A076♣	3.24
1/4"	2	02-4	10	92200A077♣	3.31
3/8"	3	02-6	10	92200A079♣	3.43
1/2"	4	02-8	10	92200A081♣	3.42
4-40—Meet MS 16995 and NAS 1352C					
1/4"	9	04-4	10	92200A106♣	3.38
3/8"	10	04-6	10	92200A108♣	3.59
1/2"	11	04-8	10	92200A110♣	3.44
6-32—Meet MS 16995 and NAS 1352C					
1/4"	16	06-4	10	92200A144♣	3.51
3/8"	17	06-6	10	92200A146♣	3.57
1/2"	18	06-8	10	92200A148♣	3.69
5/8"	19	06-10	10	92200A150♣	3.80
3/4"	20	06-12	10	92200A151♣	3.96
8-32—Meet MS 16995 and NAS 1352C					
3/8"	25	08-6	10	92200A192♣	3.91
1/2"	26	08-8	10	92200A194♣	3.82
5/8"	27	08-10	10	92200A196♣	4.22
3/4"	28	08-12	10	92200A197♣	4.25
7/8"	29	08-14	10	92200A198♣	5.16
1"	30	08-16	10	92200A199♣	5.35
10-24—Meet MS 16995 and NAS 1352C					
3/8"	35	3-6	10	92200A240♣	3.95
1/2"	36	3-8	10	92200A242♣	4.38
5/8"	37	3-10	10	92200A244♣	4.21
3/4"	38	3-12	10	92200A245♣	4.33
7/8"	39	3-14	10	92200A246♣	4.39
1"	40	3-16	10	92200A247♣	4.53
1 1/4"	41	3-20	10	92200A249	6.73
1 1/2"	42	3-24	10	92200A251	6.84
10-32—Meet MS 16996 and NAS 1351C					
3/8"	9	3-6	10	92200A340♣	$4.20
1/2"	10	3-8	10	92200A342♣	4.26
5/8"	11	3-10	10	92200A344♣	4.33
3/4"	12	3-12	10	92200A345♣	4.39
7/8"	13	3-14	10	92200A346♣	4.44
1"	14	3-16	10	92200A347♣	4.34
1 1/4"	15	3-20	10	92200A349	7.25
1 1/2"	16	3-24	10	92200A351	7.66
1/4"-20—Meet MS 16995 and NAS 1352C					
3/8"	47	4-6	5	92200A535♣	7.60
1/2"	48	4-8	5	92200A537♣	7.80
5/8"	49	4-10	5	92200A539♣	8.01
3/4"	50	4-12	5	92200A540♣	8.21
7/8"	51	4-14	5	92200A541♣	8.40
1"	52	4-16	5	92200A542♣	8.50
1 1/4"	53	4-20	5	92200A544♣	8.74
1 1/2"	54	4-24	5	92200A546	8.93
1 3/4"	55	4-28	5	92200A548	12.21
2"	56	4-32	5	92200A550	13.27
1/4"-28—Meet MS 16996 and NAS 1351C					
1/2"	21	4-8	5	92200A580♣	8.89
5/8"	22	4-10	5	92200A582♣	9.09
3/4"	23	4-12	5	92200A584♣	9.31
1"	24	4-16	5	92200A586♣	9.51
1 1/4"	25	4-20	5	92200A588♣	9.71
1 1/2"	26	4-24	5	92200A590	9.96
5/16"-18—Meet MS 16995 and NAS 1352C					
3/8"	61	5-6	1	92200A620♣	6.91
1/2"	62	5-8	1	92200A622♣	6.97
5/8"	63	5-10	1	92200A624♣	7.01
3/4"	64	5-12	1	92200A626♣	7.08
7/8"	65	5-14	1	92200A628♣	7.14
1"	66	5-16	1	92200A630♣	7.20
1 1/4"	67	5-20	1	92200A632♣	7.30
1 1/2"	68	5-24	1	92200A634♣	7.36
5/16"-18 (Cont.)					
1 3/4"	69	5-28	1	92200A636	$7.41
2"	70	5-32	1	92200A638	12.90
2 1/4"	71	5-36	1	92200A640	14.56
2 1/2"	72	5-40	1	92200A642	14.89
5/16"-24—Meet MS 16996 and NAS 1351C					
3/4"	31	5-12	1	92200A651♣	6.95
1"	32	5-16	1	92200A653♣	7.35
1 1/4"	33	5-20	1	92200A655♣	7.41
1 1/2"	34	5-24	1	92200A657♣	7.64
3/8"-16—Meet MS 16995 and NAS 1352C					
1/2"	77	6-8	1	92200A672♣	7.30
5/8"	78	6-10	1	92200A674♣	7.36
3/4"	79	6-12	1	92200A676♣	7.41
7/8"	80	6-14	1	92200A678♣	7.47
1"	81	6-16	1	92200A680♣	7.68
1 1/4"	82	6-20	1	92200A682♣	9.54
1 1/2"	83	6-24	1	92200A684♣	10.06
1 3/4"	84	6-28	1	92200A686	11.22
2"	85	6-32	1	92200A690	12.90
2 1/4"	86	6-36	1	92200A692	14.55
2 1/2"	87	6-40	1	92200A694	14.89
3/8"-24—Meet MS 16996 and NAS 1351C					
3/4"	39	6-12	1	92200A704♣	7.54
1"	40	6-16	1	92200A706♣	7.88
1 1/4"	41	6-20	1	92200A708♣	9.56
1 1/2"	42	6-24	1	92200A709♣	10.04
1/2"-13—Meet MS 16995 and NAS 1352C					
3/4"	92	8-12	1	92200A710♣	24.58
1"	94	8-16	1	92200A712♣	25.58
1 1/4"	95	8-20	1	92200A714♣	26.55
1 1/2"	96	8-24	1	92200A716♣	27.33
2"	98	8-32	1	92200A718♣	27.92
2 1/2"	100	8-40	1	92200A720	28.42
3"	102	8-48	1	92200A722	28.92

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3112 for more thread length information.

For information about hex sizes and head dimensions, see page 3105.

Highly Polished Chrome-Plated Stainless Steel

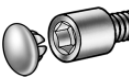
Fully Threaded Screw ♣

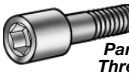
Partially Threaded Screw

Optional Plug

The heads on these screws have no knurls—just a polished, mirror-like finish. Screws are made from nickel-chrome plated 18-8 stainless steel, which provides excellent corrosion resistance and may be mildly magnetic. They have a Class 3A thread fit, a minimum Rockwell hardness of B80, and minimum tensile strength of 95,000 psi. Screw length is measured from under the head.

Optional plugs are made from nickel-chrome plated steel. Press them into the hex opening of a screw to block debris and provide a sleek, finished look.

Screws

Lg.		Each
6-32		
3/8″	93595A020♣	$1.79
1/2″	93595A025♣	1.80
3/4″	93595A030♣	1.84
8-32		
3/8″	93595A050♣	1.84
1/2″	93595A055♣	1.87
3/4″	93595A060♣	1.89
10-32		
5/8″	93595A075♣	1.89
3/4″	93595A080♣	1.92
1″	93595A085♣	1.96
1/4″-20		
5/8″	93595A110♣	2.32
3/4″	93595A115♣	2.32
7/8″	93595A120♣	2.43
1″	93595A125♣	2.49
1 1/4″	93595A130♣	2.81
1 1/2″	93595A135	2.90
1/4″-28		
5/8″	93595A210♣	$2.52
3/4″	93595A215♣	2.52
7/8″	93595A220♣	2.55
1″	93595A225♣	3.01
5/16″-18		
1″	93595A526♣	3.39
1 1/4″	93595A536♣	3.88
1 1/2″	93595A546♣	4.07
5/16″-24		
3/4″	93595A410♣	3.59
1″	93595A415♣	3.98
1 1/4″	93595A420♣	4.17
1 1/2″	93595A425♣	4.36
3/8″-24		
1 1/2″	93595A450♣	6.11
2″	93595A455	7.27

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3112 for more information.

Optional Plugs

Fits Screw Diameter	(A)	(B)	(C)		Each
1/4″-20 and 1/4″-28	11/32″	5/64″	1/8″	93595A303	$1.22
5/16″-18 and 5/16″-24	13/32″	1/16″	11/64″	93595A308	1.22
3/8″-24	7/16″	1/16″	3/16″	93595A312	1.14

Stainless Steel Assortments

120-Piece Assortment—Type 316 Stainless Steel

Comes in a 10 3/4″ Lg. × 6 1/2″ Wd. × 1 5/8″ Dp. compartmented plastic case with lid chart.

Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.
6-32	1/2″	10	10-32	1″	10
8-32	1/2″	10	1/4″-20	1/2″	10
10-32	3/8″	10	1/4″-20	3/4″	10
10-32	1/2″	10	1/4″-20	1″	10
10-32	5/8″	10	1/4″-20	1 1/2″	10
10-32	3/4″	10	3/8″-16	1″	10

92085A111 ..... Each $112.68

300-Piece Assortment—18-8 Stainless Steel

Comes in a 10 3/4″ Lg. × 6 1/2″ Wd. × 1 5/8″ Dp. compartmented plastic case with lid chart.

Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.
4-40	1/4″	25	8-32	1/2″	25	10-32	1″	25
4-40	1/2″	25	8-32	3/4″	25	1/4″-20	1/2″	25
6-32	3/8″	25	10-32	1/2″	25	1/4″-20	3/4″	25
6-32	1/2″	25	10-32	3/4″	25	1/4″-20	1″	25

92085A212 ..... Each $63.56

1,300-Piece Assortment—18-8 Stainless Steel

Comes in a 13 5/8″ Lg. × 9 1/2″ Wd. × 2 1/2″ Dp. compartmented metal case with lid chart.

Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.
4-40	1/4″	100	8-32	3/4″	50	1/4″-20	3/4″	10
4-40	3/8″	100	8-32	1″	50	1/4″-20	1″	10
4-40	1/2″	100	10-24	1/2″	100	1/4″-20	1 1/4″	5
6-32	1/4″	100	10-24	3/4″	50	1/4″-20	1 1/2″	5
6-32	3/8″	100	10-32	1/2″	100	5/16″-18	1″	5
6-32	1/2″	100	10-32	3/4″	50	5/16″-18	1 1/2″	5
8-32	3/8″	100	10-32	1″	25	3/8″-16	1″	5
8-32	1/2″	100	1/4″-20	1/2″	25	3/8″-16	1 1/2″	5

92085A224 ..... Each $146.07

Black-Oxide 18-8 Stainless Steel

Black-oxide provides lubricity and an attractive, matte-black finish. Screws have a Class 3A thread fit, a minimum Rockwell hardness of B70, and minimum tensile strength of 70,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/4″	100	96006A210♣	$7.50
5/16″	100	96006A211♣	8.16
3/8″	100	96006A213♣	7.88
1/2″	100	96006A216♣	8.26
6-32			
3/8″	50	96006A253♣	5.16
1/2″	50	96006A256♣	5.54
5/8″	50	96006A258♣	6.46
3/4″	50	96006A259♣	6.61
8-32			
3/8″	50	96006A613♣	6.62
1/2″	50	96006A616♣	7.14
5/8″	50	96006A617♣	8.03
3/4″	50	96006A619♣	8.17
10-24			
1/2″	50	96006A646♣	10.36
5/8″	25	96006A648♣	6.11
3/4″	25	96006A649♣	6.47
1″	25	96006A652♣	7.44
10-32			
1/2″	50	96006A690♣	$10.34
5/8″	25	96006A692♣	6.11
3/4″	25	96006A693♣	6.22
1″	25	96006A696♣	7.44
1/4″-20			
1/2″	25	96006A703♣	8.42
5/8″	25	96006A705♣	9.31
3/4″	25	96006A706♣	9.45
1″	25	96006A709♣	11.52
1 1/4″	10	96006A718	5.70
1 1/2″	10	96006A727	5.96
5/16″-18			
3/4″	10	96006A821♣	7.62
1″	10	96006A826♣	8.49
1 1/4″	10	96006A831	9.35
1 1/2″	5	96006A836	5.55
3/8″-16			
1″	5	96006A906♣	6.62
1 1/4″	5	96006A914♣	8.01
1 1/2″	5	96006A922	8.76

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3112 for more information.

18-8 Stainless Steel with Captive Lock Washer

Never lose another washer. Each screw has a permanently attached but freely rotating split washer that holds tension constant to provide vibration resistance. Screw and washer are made from 18-8 stainless steel, which meets ASTM F837, offers excellent corrosion resistance, and may be mildly magnetic. All screws are fully threaded and have a Class 3A thread fit. Minimum Rockwell hardness is B81; minimum tensile strength is 80,000 psi. Dimensions meet ASME B18.3. Screw length is measured from under the head.

Lg.		Each
6-32—Washer: OD 0.217″; Thick. 0.040″		
1/4″	94912A100	$1.45
3/8″	94912A105	1.45
1/2″	94912A110	1.47
3/4″	94912A115	1.49
8-32—Washer: OD 0.257″; Thick. 0.047″		
3/8″	94912A220	1.48
1/2″	94912A225	1.49
5/8″	94912A230	1.50
3/4″	94912A235	1.52
1″	94912A240	1.54
10-32—Washer: OD 0.311″; Thick. 0.047″		
1/2″	94912A330	$1.54
5/8″	94912A335	1.55
3/4″	94912A340	1.56
1″	94912A345	1.59
1/4″-20—Washer: OD 0.370″; Thick. 0.062″		
1/2″	94912A450	1.62
5/8″	94912A455	1.65
3/4″	94912A460	1.67
1″	94912A465	1.72
1 1/4″	94912A470	1.83

Lightweight Aluminum

Fully Threaded ♣

Our aluminum cap screws are extremely lightweight, nonmagnetic, and come in three colors. They have a Class 3A thread fit and are not rated for hardness or tensile strength. Screw length is measured from under the head.

To Order: Please specify anodized blue, anodized red, or plain silver.

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/8″	25	98511A100♣	$8.34
3/16″	25	98511A110♣	8.47
1/4″	25	98511A120♣	8.47
1/2″	25	98511A130♣	9.29
4-40			
3/16″	25	98511A200♣	9.58
1/4″	25	98511A210♣	8.99
5/16″	25	98511A220♣	9.48
3/8″	25	98511A230♣	8.99
1/2″	25	98511A240♣	8.99
5/8″	25	98511A250♣	9.97
6-32			
1/4″	25	98511A300♣	7.03
3/8″	25	98511A310♣	7.30
1/2″	25	98511A320♣	7.45
5/8″	25	98511A330♣	7.73
3/4″	25	98511A340♣	7.98
1″	25	98511A350♣	8.49
8-32			
1/4″	10	98511A400♣	$6.62
3/8″	10	98511A410♣	6.39
1/2″	10	98511A420♣	7.58
5/8″	10	98511A430♣	7.99
3/4″	25	98511A440♣	7.73
1″	5	98511A450♣	6.70
10-32			
1/4″	10	98511A500♣	5.32
3/8″	10	98511A510♣	5.53
1/2″	10	98511A520♣	5.67
3/4″	10	98511A540♣	5.86
1/4″-20			
3/8″	10	98511A600♣	5.86
1/2″	10	98511A610♣	6.27
5/8″	10	98511A620♣	6.62
3/4″	10	98511A630♣	6.66
1″	5	98511A640♣	7.14
1 1/4″	5	98511A650♣	7.38
1 1/2″	5	98511A660	7.75

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3105 for more information.

Self-Locking 18-8 Stainless Steel

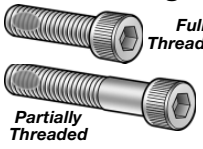

A nylon locking patch bonded to the threads prevents loosening from vibration. The patch withstands temperatures from –70° to +250° F.

Screws are made from 18-8 stainless steel which provides excellent corrosion resistance and may be mildly magnetic. They're reusable and have a Class 3A thread fit. All have a min. Rockwell hardness of B100 and min. tensile strength of 100,000 psi. Dimensions meet ANSI/ASME B18.3. Screw length is measured from under the head.

Also Available: Self-sealing 18-8 stainless steel cap screws with attached silicone O-ring in sizes marked with a ★. O-ring temp. range is –85° to +450° F. Screws meet ANSI B18.3. Min. tensile strength is 55,000 psi. Please ask for 95198A330 and specify thread size and screw length.

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/4"	50	93705A118♣	$5.19
3/8"	50	93705A120♣	5.24
1/2"	50	93705A124♣	6.14
6-32			
1/4"	50	93705A144★♣	5.80
3/8"	50	93705A146★♣	5.82
1/2"	50	93705A148★♣	6.86
5/8"	50	93705A195♣	8.35
3/4"	50	93705A197★♣	8.46
1"	25	93705A154	6.25
8-32			
1/4"	50	93705A190♣	7.42
3/8"	50	93705A192★♣	7.09
1/2"	50	93705A194★♣	7.59
5/8"	25	93705A201★♣	4.54
3/4"	50	93705A196★♣	9.52
1"	25	93705A198★♣	5.75
10-24			
3/8"	50	93705A240♣	11.24
1/2"	50	93705A242♣	11.40
5/8"	25	93705A243♣	6.17
3/4"	25	93705A245♣	6.19
1"	25	93705A247♣	6.56
1 1/4"	25	93705A249	10.03
1 1/2"	25	93705A251	10.51
10-32			
3/8"	25	93705A260♣	5.62
1/2"	25	93705A264★♣	5.70
5/8"	25	93705A265★♣	6.17
3/4"	25	93705A266★♣	6.19
1"	25	93705A268★♣	6.56
10-32 (Cont.)			
1 1/4"	25	93705A271	$10.03
1 1/2"	25	93705A274	10.51
1/4"-20			
3/8"	25	93705A535♣	7.38
1/2"	25	93705A537★♣	6.76
5/8"	25	93705A538★♣	7.58
3/4"	25	93705A540★♣	7.71
1"	25	93705A542★♣	9.98
1 1/4"	25	93705A544★	11.66
1 1/2"	10	93705A546	6.16
2"	10	93705A548	7.49
1/4"-28			
3/8"	10	93705A711♣	4.56
1/2"	10	93705A714♣	4.41
3/4"	10	93705A717♣	5.13
1"	10	93705A722♣	6.22
5/16"-18			
3/4"	10	93705A581♣	5.69
1"	10	93705A583♣	6.47
1 1/4"	10	93705A585♣	8.02
1 1/2"	10	93705A587	9.71
2"	10	93705A589	9.95
3/8"-16			
3/4"	10	93705A622♣	9.06
1"	10	93705A624♣	10.00
1 1/4"	10	93705A626♣	10.81
1 1/2"	10	93705A628	11.48
1/2"-13			
1"	1	93705A637♣	2.54
1 1/4"	1	93705A639♣	2.76
1 1/2"	1	93705A641♣	2.94
2"	1	93705A643	3.64

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3112 for more information.

Vented 18-8 Stainless Steel

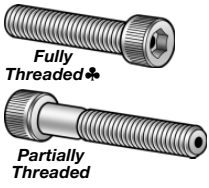

Used in vacuum systems, these chemically cleaned and precision manufactured screws are drilled through the shaft to vent fluid and gas. They're made from 18-8 stainless steel, which provides excellent corrosion resistance and may be mildly magnetic. All have a Class 3A thread fit, a min. Rockwell hardness of B70, and min. tensile strength of 85,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
2-56—Vent Dia.: 0.028"			
1/8"	5	93235A074♣	$5.10
3/16"	5	93235A076♣	5.19
1/4"	5	93235A077♣	5.59
5/16"	5	93235A078♣	7.24
3/8"	5	93235A079♣	7.87
1/2"	5	93235A081♣	13.65
4-40—Vent Dia.: 0.035"			
3/16"	5	93235A104♣	5.19
1/4"	5	93235A106♣	5.65
5/16"	5	93235A107♣	6.76
3/8"	5	93235A108♣	6.93
1/2"	5	93235A110♣	9.73
5/8"	1	93235A112♣	4.15
3/4"	1	93235A114♣	4.47
1"	1	93235A116	7.99
6-32—Vent Dia.: 0.038"			
3/16"	5	93235A142♣	4.71
1/4"	5	93235A144♣	4.39
5/16"	5	93235A145♣	4.55
3/8"	5	93235A146♣	5.19
7/16"	5	93235A147♣	6.13
1/2"	5	93235A148♣	6.29
5/8"	5	93235A150♣	6.93
3/4"	5	93235A152♣	10.18
7/8"	1	93235A153♣	3.28
1"	1	93235A154♣	3.42
1 1/4"	1	93235A156	6.96
8-32—Vent Dia.: 0.042"			
1/4"	5	93235A186♣	4.99
5/16"	5	93235A190♣	6.23
3/8"	5	93235A192♣	5.81
1/2"	5	93235A194♣	6.93
5/8"	5	93235A196♣	8.19
3/4"	5	93235A197♣	10.09
7/8"	1	93235A198♣	2.84
1"	1	93235A199♣	2.73
1 1/4"	1	93235A202	7.51
8-32 (Cont.)			
1 1/2"	1	93235A204	$9.25
10-24—Vent Dia.: 0.046"			
3/8"	5	93235A214♣	3.95
1/2"	5	93235A216♣	5.24
5/8"	5	93235A218♣	6.13
3/4"	5	93235A220♣	7.24
1"	5	93235A224♣	11.99
10-32—Vent Dia.: 0.046"			
1/4"	5	93235A238♣	4.95
5/16"	5	93235A239♣	4.95
3/8"	5	93235A240♣	3.95
1/2"	5	93235A242♣	5.24
9/16"	5	93235A243♣	6.13
5/8"	5	93235A244♣	6.13
3/4"	5	93235A245♣	7.24
7/8"	5	93235A246♣	10.09
1"	5	93235A247♣	11.99
1 1/8"	1	93235A248	3.24
1 1/4"	1	93235A249	3.26
1 1/2"	1	93235A250	5.97
1/4"-20—Vent Dia.: 0.062"			
3/8"	5	93235A534♣	5.54
1/2"	5	93235A537♣	5.65
5/8"	5	93235A539♣	6.76
3/4"	5	93235A540♣	7.24
7/8"	5	93235A541♣	9.10
1"	5	93235A542♣	9.14
1 1/4"	1	93235A544♣	3.26
1 1/2"	1	93235A545	5.14
1 3/4"	1	93235A546	5.72
5/16"-18—Vent Dia.: 0.078"			
3/4"	5	93235A781♣	8.01
1"	5	93235A783♣	9.04
3/8"-16—Vent Dia.: 0.093"			
1"	5	93235A924♣	9.39
1 1/2"	1	93235A926♣	3.70

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3112 for more information.

High-Strength Corrosion Resistant

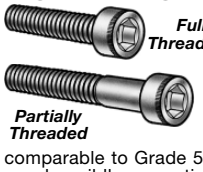

Count on these screws to hold up under the toughest conditions. Length is measured from under the head.

Bumax 88 Stainless Steel— Made from Type 316L stainless steel, Bumax 88 has a high molybdenum content for corrosion resistance similar to Type 316 stainless steel. Strength is comparable to Grade 5 steel. Screws meet ANSI/ASME B18.3 and may be mildly magnetic. Thread fit is Class 2A, min. Rockwell hardness is C25, and min. tensile strength is 116,000 psi.

A286 Super Alloy— With nearly 26% nickel and 15% chrome, this iron-based alloy provides corrosion resistance similar to 18-8 stainless steel and strength comparable to alloy steel. It conforms to Aerospace Material Specification (AMS) 5737 and National Aerospace Standard (NAS) 1352N, except 10-32 screws meet NAS 1351N. Screws are passivated (a nitric acid treatment that creates a film to protect against oxidation and corrosion) to QQ-P-35. Thread fit is Class 3A, min. Rockwell hardness is C33, and min. tensile strength is 160,000 psi.

Also Available: Titanium screws with a minimum tensile strength of 50,000 psi and a Class 2A thread fit. Please ask for 95435A110 and specify thread size and screw length.

Bumax 88 Stainless Steel

Lg.		Each
1/4"-20		
1/2"	92488A216♣	$1.14
5/8"	92488A219♣	1.19
3/4"	92488A222♣	1.23
1"	92488A225♣	1.30
1 1/4"	92488A228♣	1.43
1 1/2"	92488A231	1.96
5/16"-18		
1/2"	92488A251♣	3.56
5/8"	92488A254♣	1.54
3/4"	92488A257♣	1.59
7/8"	92488A261♣	1.66
1"	92488A264♣	1.73
1 1/4"	92488A267♣	1.89
1 1/2"	92488A272♣	2.04
5/16"-18 (Cont.)		
2"	92488A275	$2.33
3/8"-16		
3/4"	92488A283♣	2.91
7/8"	92488A287♣	2.98
1"	92488A291♣	3.05
1 1/4"	92488A295♣	3.23
1 1/2"	92488A298♣	3.37
2"	92488A302	4.10
1/2"-13		
1"	92488A321♣	4.85
1 1/4"	92488A324♣	5.16
1 1/2"	92488A328♣	6.27
2"	92488A331♣	6.02
3"	92488A334	8.50

A286 Super Alloy

Lg.	NAS Dash No.		Each
2-56			
3/16"	02-3	92423A411♣	$2.48
1/4"	02-4	92423A413♣	2.48
5/16"	___	92423A416♣	2.64
3/8"	02-6	92423A419♣	2.32
4-40			
1/4"	04-4	92423A430♣	2.48
5/16"	___	92423A433♣	2.48
3/8"	04-6	92423A436♣	2.20
1/2"	04-8	92423A439♣	2.32
3/4"	04-12	92423A442♣	2.32
6-32			
1/4"	06-4	92423A452♣	2.61
5/16"	___	92423A455♣	2.61
3/8"	06-6	92423A458♣	2.74
1/2"	06-8	92423A461♣	2.74
3/4"	06-12	92423A467♣	2.81
1"	06-16	92423A471♣	2.86
8-32			
3/8"	08-6	92423A480♣	2.68
1/2"	08-8	92423A483♣	2.68
8-32 (Cont.)			
5/8"	08-10	92423A486♣	$2.74
3/4"	08-12	92423A489♣	2.74
1"	08-16	92423A491♣	2.92
10-32			
3/8"	3-6	92423A502♣	2.74
1/2"	3-8	92423A505♣	2.74
5/8"	3-10	92423A508♣	2.86
3/4"	3-12	92423A511♣	2.86
7/8"	3-14	92423A513♣	2.92
1"	3-16	92423A516♣	3.05
1 1/4"	3-20	92423A519	6.66
1/4"-20			
1/2"	4-8	92423A531♣	5.70
5/8"	4-10	92423A533♣	5.70
3/4"	4-12	92423A536♣	5.85
1"	4-16	92423A539♣	8.13
1 1/4"	4-20	92423A543♣	10.15
3/8"-16			
1"	6-16	92423A573♣	20.68
1 1/2"	6-24	92423A577♣	21.15

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3112 for more information.

Brass and Silicon Bronze

Corrosion resistant and nonmagnetic, these screws are fully threaded and have a Class 3A thread fit. Screw length is measured from under the head. ***Brass*** screws have a min. Rockwell hardness of B55 and min. tensile strength of 55,000 psi. ***Silicon bronze*** screws are made from 94-96% copper with a small amount of silicon for strength. A good conductor of heat, silicon bronze has a min. Rockwell hardness of B70 and min. tensile strength of 70,000 psi.

Lg.	Pkg. Qty.		Per Pkg.
Brass			
2-56			
3/16″	10	93465A076	$8.87
1/4″	10	93465A077	6.06
5/16″	10	93465A078	10.73
3/8″	10	93465A079	10.83
4-40			
3/16″	10	93465A103	7.10
1/4″	10	93465A106	7.58
5/16″	10	93465A107	7.79
3/8″	10	93465A108	7.88
1/2″	10	93465A110	8.18
5/8″	10	93465A111	9.33
3/4″	10	93465A113	8.79
6-32			
1/4″	10	93465A144	8.00
5/16″	10	93465A145	5.96
3/8″	10	93465A147	8.12
1/2″	10	93465A148	8.25
5/8″	10	93465A150	8.25
3/4″	10	93465A151	10.67
1″	10	93465A153	10.25
Brass (Cont.)			
8-32			
1/4″	10	93465A190	$8.62
5/16″	10	93465A191	9.01
3/8″	10	93465A192	8.79
1/2″	10	93465A194	9.09
5/8″	10	93465A196	10.91
3/4″	10	93465A197	12.73
1″	5	93465A199	6.36
10-24			
3/8″	10	93465A240	12.73
1/2″	10	93465A242	10.15
5/8″	10	93465A244	10.43
3/4″	10	93465A245	10.91
1″	5	93465A247	5.61
10-32			
3/8″	10	93465A320	9.39
1/2″	10	93465A323	10.00
5/8″	10	93465A324	10.61
3/4″	10	93465A326	10.61
1″	5	93465A329	5.45
Brass (Cont.)			
10-32 (Cont.)			
1 1/4″	5	93465A331	$10.45
1 1/2″	5	93465A333	11.57
1/4″-20			
3/8″	5	93465A535	7.68
1/2″	5	93465A537	7.42
5/8″	5	93465A538	7.58
3/4″	5	93465A540	7.88
7/8″	5	93465A541	10.64
1″	5	93465A542	8.28
1 1/4″	5	93465A544	7.86
1 1/2″	5	93465A546	12.00
1 3/4″	5	93465A548	9.58
2″	1	93465A550	4.09
2 1/2″	1	93465A552	3.84
5/16″-18			
1/2″	1	93465A778	2.59
5/8″	1	93465A780	3.32
3/4″	1	93465A781	3.70
1″	1	93465A784	3.25
1 1/4″	1	93465A786	3.11
Brass (Cont.)			
5/16″-18 (Cont.)			
1 1/2″	1	93465A789	$3.57
2″	1	93465A792	3.90
2 1/2″	1	93465A795	4.40
3/8″-16			
3/4″	1	93465A920	3.38
1″	1	93465A924	3.12
1 1/4″	1	93465A926	4.14
1 1/2″	1	93465A927	5.17
2″	1	93465A930	5.21
2 1/2″	1	93465A935	6.15
Silicon Bronze			
1/4″-20			
3/4″	1	97928A105	2.88
1″	1	97928A110	3.46
5/16″-18			
3/4″	1	97928A130	3.63
1″	1	97928A135	4.57
3/8″-16			
3/4″	1	97928A210	5.15
1″	1	97928A215	5.06

Nylon

Our nylon screws have an approximate Class 2A thread fit and are not rated for tensile strength. *Note:* Nylon absorbs environmental moisture, which can affect dimensions and other properties. Screw length is measured from under the head.

Nylon 6/6— Nonconductive and resistant to most chemicals and solvents (except mineral acids). Not rated for hardness. Temperature range is –40° to +185° F. **To Order:** Please specify black or off-white.

Glass-Filled Nylon— With the addition of 30% fiberglass, these screws are much stronger than those made from plain nylon. They have a temperature range of –40° to +230° F and are not rated for hardness. Color is off-white.

Also Available: Polypropylene screws. They're resistant to most chemicals and have a temperature range of –20° to +212° F. Not rated for tensile strength. Please ask for 99477A880 and specify thread size and screw length.

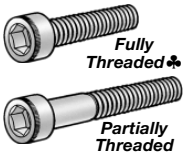

Lg.	Pkg. Qty.		Per Pkg.
Nylon 6/6			
4-40			
3/32″	100	95868A252♣	$5.79
1/8″	100	95868A254♣	5.40
9/64″	100	95868A253♣	5.83
3/16″	100	95868A255♣	5.29
1/4″	100	95868A256♣	5.42
9/32″	100	95868A251♣	5.48
5/16″	100	95868A257♣	5.38
3/8″	100	95868A258♣	5.42
7/16″	100	95868A259♣	5.56
1/2″	100	95868A260♣	5.46
9/16″	100	95868A261♣	6.06
5/8″	100	95868A262♣	5.62
11/16″	100	95868A270♣	6.08
3/4″	100	95868A263♣	5.53
7/8″	100	95868A264♣	5.69
1″	100	95868A265♣	5.56
1 1/8″	100	95868A266♣	6.32
1 1/4″	100	95868A267♣	5.96
1 3/8″	100	95868A268♣	6.16
1 1/2″	100	95868A269♣	6.18
6-32			
3/32″	100	95868A290♣	6.01
1/8″	100	95868A291♣	5.59
5/32″	100	95868A292♣	6.06
3/16″	100	95868A293♣	5.50
1/4″	100	95868A294♣	5.53
5/16″	100	95868A295♣	5.56
3/8″	100	95868A296♣	5.61
7/16″	100	95868A297♣	5.64
1/2″	100	95868A298♣	5.64
5/8″	100	95868A299♣	5.69
11/16″	100	95868A300♣	6.31
3/4″	100	95868A301♣	5.72
7/8″	100	95868A302♣	5.88
1″	100	95868A304♣	5.75
1 1/8″	100	95868A303♣	5.92
1 1/4″	100	95868A305♣	5.79
1 1/2″	100	95868A307♣	5.95
1 3/4″	100	95868A310♣	6.73
1 7/8″	50	95868A311♣	4.23
2 1/4″	100	95868A312♣	9.99
6-40			
1/4″	100	95868A904♣	6.10
3/8″	100	95868A906♣	6.20
Nylon 6/6 (Cont.)			
6-40 (Cont.)			
3/4″	100	95868A908♣	$6.32
1″	100	95868A910♣	6.37
8-32			
1/8″	100	95868A337♣	5.83
3/16″	100	95868A338♣	5.71
1/4″	100	95868A340♣	5.73
9/32″	100	95868A339♣	6.36
5/16″	100	95868A341♣	5.75
3/8″	100	95868A342♣	5.77
7/16″	100	95868A343♣	5.93
1/2″	100	95868A344♣	5.82
5/8″	100	95868A346♣	5.82
3/4″	100	95868A347♣	5.85
7/8″	100	95868A348♣	6.01
1″	100	95868A349♣	5.88
1 1/8″	100	95868A350♣	6.62
1 1/4″	100	95868A351♣	6.03
1 3/8″	100	95868A352♣	6.70
1 1/2″	100	95868A353♣	6.09
1 3/4″	100	95868A354♣	6.79
2″	100	95868A355♣	6.90
10-24			
1/8″	100	95868A387♣	6.26
3/16″	100	95868A388♣	6.79
1/4″	100	95868A389♣	6.14
5/16″	100	95868A390♣	6.34
3/8″	100	95868A391♣	6.38
1/2″	100	95868A392♣	6.26
5/8″	100	95868A393♣	6.46
3/4″	100	95868A395♣	6.33
1″	100	95868A397♣	6.38
1 1/4″	100	95868A398♣	6.46
1 1/2″	100	95868A399♣	6.53
10-32			
1/8″	100	95868A080♣	6.26
3/16″	100	95868A082♣	6.28
1/4″	100	95868A084♣	6.29
5/16″	100	95868A085♣	6.34
3/8″	100	95868A087♣	6.25
1/2″	100	95868A089♣	6.29
5/8″	100	95868A090♣	6.32
3/4″	100	95868A091♣	6.36
7/8″	100	95868A095♣	6.51
1″	100	95868A092♣	6.41
1 1/4″	100	95868A093♣	6.49
Nylon 6/6 (Cont.)			
10-32 (Cont.)			
1 1/2″	100	95868A096♣	$6.03
2″	100	95868A098♣	6.69
1/4″-20			
3/16″	100	95868A733♣	7.05
1/4″	100	95868A734♣	7.18
5/16″	100	95868A736♣	7.21
3/8″	100	95868A735♣	7.07
1/2″	100	95868A740♣	7.11
5/8″	100	95868A741♣	7.16
3/4″	100	95868A742♣	7.18
7/8″	100	95868A743♣	7.39
1″	100	95868A744♣	7.25
1 1/8″	100	95868A739♣	8.09
1 1/4″	100	95868A745♣	7.33
1 1/2″	100	95868A746♣	7.42
1 3/4″	100	95868A747♣	8.29
2″	100	95868A750	8.15
2 1/4″	50	95868A751	7.03
2 1/2″	100	95868A752	12.81
3″	25	95868A753♣	6.53
1/4″-28			
3/16″	100	95868A077♣	7.77
1/4″	100	95868A078♣	7.78
3/8″	100	95868A079♣	7.85
3/4″	100	95868A081♣	7.97
1″	100	95868A094♣	7.33
5/16″-18			
1/2″	25	95868A810♣	6.17
3/4″	25	95868A812♣	6.25
Nylon 6/6 (Cont.)			
5/16″-18 (Cont.)			
1″	25	95868A814♣	$6.33
1 1/4″	25	95868A815	6.71
1 1/2″	25	95868A816	6.49
2″	25	95868A817	6.96
2 1/2″	25	95868A818	7.13
3″	25	95868A819	7.29
3/8″-16			
1/2″	25	95868A821♣	6.52
3/4″	25	95868A824♣	6.52
1″	25	95868A826♣	6.57
1 1/4″	25	95868A828	6.54
1 1/2″	25	95868A830	6.57
2″	25	95868A834	6.56
2 1/2″	25	95868A836	4.52
3″	25	95868A837	9.31
1/2″-13			
1/2″	25	95868A631♣	10.22
3/4″	10	95868A633♣	5.53
1″	10	95868A636♣	5.69
1 1/4″	25	95868A650	11.20
1 1/2″	25	95868A654	11.52
2″	10	95868A657	6.27
2 1/2″	25	95868A663	12.82
3″	10	95868A664	6.87
5/8″-11			
1/2″	10	95868A963♣	5.73
3/4″	10	95868A964♣	5.90
1″	10	95868A965♣	6.07
1 1/2″	10	95868A966♣	6.46
2″	10	95868A967	6.87
Glass-Filled Nylon			
6-32			
1/4″	10	91221A210♣	6.24
3/8″	10	91221A215♣	6.32
1/2″	10	91221A220♣	6.37
3/4″	10	91221A225♣	6.45
1″	10	91221A230♣	6.49
8-32			
3/8″	10	91221A440♣	6.55
1/2″	10	91221A445♣	6.56
5/8″	10	91221A450♣	6.58
3/4″	10	91221A455♣	6.60
1″	10	91221A460♣	6.62
10-32			
1/2″	10	91221A680♣	6.83
Glass-Filled Nylon			
10-32 (Cont.)			
3/4″	10	91221A685♣	6.91
1″	10	91221A690♣	6.95
1 1/4″	10	91221A695♣	7.06
1 1/2″	10	91221A705♣	7.17
2″	10	91221A710♣	7.28
1/4″-20			
5/8″	10	91221A960♣	7.47
3/4″	10	91221A965♣	7.53
7/8″	10	91221A970♣	7.57
1″	10	91221A975♣	7.60
1 1/4″	10	91221A980♣	7.72
1 1/2″	10	91221A985♣	7.85
2″	10	91221A990♣	7.97

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary between a minimum of 1″ and maximum of 2 1/2″.

Low Head

Perfect for tight areas, low heads are about half the height of standard socket heads. All have a Class 3A thread fit. Screw length is measured from under the head. *Note:* Low head screws are not recommended for high strength applications.

18-8 Stainless Steel— Offers excellent corrosion resistance and may be mildly magnetic. Minimum Rockwell hardness is B70. Minimum tensile strength is 70,000 psi. ***Black-Oxide Alloy Steel—*** Conforms to ASTM F835. Black-oxide finish provides lubricity and mild rust resistance. Minimum Rockwell hardness is C39; minimum tensile strength is 145,000 psi.

Screw Size	No. 6	No. 8	No. 10	1/4″	5/16″	3/8″	1/2″
Decimal Equiv.	.138″	.164″	.190″	.250″	.3125″	.375″	.5″
Hex Size	1/16″	5/64″	3/32″	1/8″	5/32″	3/16″	1/4″
Head Ht.	.072″	.085″	.098″	.127″	.158″	.192″	.254″
Head Dia.	.226″	.270″	.312″	.375″	.437″	.562″	.750″

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
6-32			
1/4″	25	93615A210♣	$8.61
3/8″	25	93615A215♣	9.20
1/2″	25	93615A216♣	10.74
3/4″	25	93615A217♣	12.40
8-32			
1/4″	25	93615A317♣	10.82
3/8″	25	93615A315♣	10.86
1/2″	25	93615A320♣	11.47
3/4″	25	93615A323♣	13.79
10-24			
1/2″	25	93615A350♣	13.28
3/4″	10	93615A355♣	5.90
1″	10	93615A360♣	7.30
10-32			
3/8″	25	93615A370♣	12.24
1/2″	25	93615A380♣	13.28
3/4″	10	93615A385♣	5.90
1″	10	93615A390♣	7.30
1/4″-20			
3/8″	10	93615A405♣	6.09
1/4″-20 (Cont.)			
1/2″	10	93615A410♣	$6.40
5/8″	10	93615A412♣	6.80
3/4″	10	93615A415♣	7.25
1″	10	93615A420♣	8.41
1 1/4″	5	93615A422♣	5.42
1 1/2″	5	93615A425♣	6.30
5/16″-18			
1/2″	5	93615A450♣	6.37
5/8″	5	93615A451♣	6.67
3/4″	5	93615A453♣	6.76
1″	5	93615A456♣	7.62
1 1/4″	5	93615A458♣	8.26
1 1/2″	5	93615A460♣	9.97
3/8″-16			
1/2″	5	93615A510♣	8.27
5/8″	5	93615A512♣	8.68
3/4″	5	93615A515♣	8.83
1″	5	93615A520♣	9.87
1 1/4″	5	93615A524♣	10.69
1 1/2″	5	93615A526♣	11.47
Black-Oxide Alloy Steel			
6-32			
1/4″	25	92220A141♣	7.84
3/8″	25	92220A142♣	8.34
6-32 (Cont.)			
1/2″	25	92220A143♣	8.81
5/8″	25	92220A144♣	9.25
Black-Oxide Alloy Steel (Cont.)			
8-32			
1/4″	50	92220A151♣	$13.29
3/8″	100	92220A152♣	12.24
1/2″	100	92220A153♣	12.72
5/8″	100	92220A154♣	13.40
3/4″	50	92220A155♣	6.94
1″	50	92220A156♣	8.74
1 1/4″	10	92220A157	5.40
1 1/2″	10	92220A158	5.69
10-24			
1/4″	25	92220A161♣	7.13
3/8″	50	92220A162♣	8.13
1/2″	50	92220A163♣	7.82
5/8″	50	92220A164♣	8.78
3/4″	50	92220A165♣	8.77
1″	50	92220A166♣	10.00
10-32			
1/4″	25	92220A171♣	7.13
3/8″	50	92220A172♣	8.20
1/2″	50	92220A173♣	9.21
5/8″	50	92220A174♣	8.80
3/4″	50	92220A175♣	8.78
1″	50	92220A176♣	7.89
1 1/4″	10	92220A177	5.41
1 1/2″	10	92220A178	5.84
1/4″-20			
1/4″	10	92220A181♣	5.72
3/8″	50	92220A182♣	8.61
1/2″	50	92220A183♣	8.79
5/8″	50	92220A184♣	8.78
3/4″	50	92220A185♣	8.78
1″	50	92220A186♣	11.37
1 1/2″	25	92220A187	13.10
1/4″-20 (Cont.)			
1 3/4″	10	92220A188	$5.93
2″	10	92220A189	6.79
1/4″-28			
1/2″	10	92220A211♣	5.25
3/4″	10	92220A212♣	5.37
1″	10	92220A213♣	6.46
5/16″-18			
1/2″	50	92220A221♣	7.37
3/4″	25	92220A222♣	5.83
1″	25	92220A223♣	6.57
1 1/4″	25	92220A224♣	7.80
1 1/2″	25	92220A225♣	9.40
1 3/4″	5	92220A226	6.42
2″	5	92220A227	6.70
5/16″-24			
1/2″	5	92220A231♣	3.45
3/4″	5	92220A232♣	5.37
1″	5	92220A233♣	4.21
3/8″-16			
1/2″	25	92220A251♣	7.31
3/4″	25	92220A252♣	8.04
1″	25	92220A253♣	8.95
1 1/4″	25	92220A254♣	9.78
1 1/2″	25	92220A255♣	10.31
2″	5	92220A256	4.53
1/2″-13			
1″	10	92220A261♣	7.13
1 1/4″	10	92220A262♣	7.43
1 1/2″	10	92220A263♣	10.56
1 3/4″	5	92220A264♣	11.25
2″	1	92220A265♣	2.79

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3105 for more thread length information.

Metric Low Head

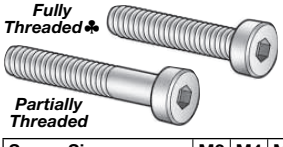

With a head height that's half the height of a standard socket head, these screws are ideal for tight spaces. All screws have a Class 6g thread fit. Screw length is measured from under the head. *Note:* Low head screws are not recommended for high strength applications.

18-8 Stainless Steel— Offers excellent corrosion resistance and may be mildly magnetic. Minimum tensile strength is 101,000 psi. Not rated for hardness. ***Class 8.8 Steel—*** Made from steel with strength comparable to Grade 5 steel. Minimum Rockwell hardness is C22; minimum tensile strength is 116,000 psi. Screws have a dark surface color as a result of heat treatment.

Screw Size	M3	M4	M5	M6	M8	M10	M12	M16	M20
Hex Size, mm	2	2.5	3	4	5	7	8	12	14
Head Ht., mm	2	2.8	3.5	4	5	6	7	9	11
Head Dia., mm	5.5	7	8.5	10	13	16	18	24	30
Min. Thread Lg., mm	12	14	16	18	22	26	30	38	46

Lg., mm	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel—DIN 7984-A2			
M3—Pitch: 0.5 mm			
6	25	92855A307♣	$6.22
8	25	92855A309♣	6.44
10	25	92855A310♣	3.21
12	25	92855A313♣	3.26
16	25	92855A316♣	3.69
20	25	92855A319	5.56
M4—Pitch: 0.7 mm			
8	25	92855A408♣	7.03
10	50	92855A410♣	7.34
12	25	92855A413♣	4.55
16	25	92855A416♣	4.64
20	25	92855A419♣	5.87
25	25	92855A422	6.03
30	25	92855A425	7.74
35	25	92855A428	9.02
M5—Pitch: 0.8 mm			
10	50	92855A510♣	12.72
12	25	92855A513♣	6.89
16	25	92855A516♣	7.23
20	25	92855A519♣	9.74
25	25	92855A522♣	8.89
30	25	92855A525	10.83
35	25	92855A528	14.33
50	10	92855A537	9.87
60	10	92855A543	10.89
M6—Pitch: 1 mm			
10	25	92855A610♣	8.21
M6 (Cont.)			
12	25	92855A613♣	$8.39
16	25	92855A616♣	8.47
20	25	92855A619♣	9.53
25	25	92855A622♣	13.00
30	10	92855A625	6.25
35	10	92855A628	6.55
40	10	92855A631	8.18
50	10	92855A637	10.45
60	5	92855A643	7.68
M8—Pitch: 1.25 mm			
10	10	92855A710♣	7.59
12	10	92855A713♣	7.08
16	10	92855A716♣	7.13
20	10	92855A719♣	7.74
25	10	92855A722♣	7.86
30	10	92855A725♣	8.92
35	10	92855A728	9.25
40	10	92855A731	13.93
45	10	92855A734	12.79
50	10	92855A737	14.61
60	5	92855A743	9.67
M10—Pitch: 1.5 mm			
16	10	92855A750♣	13.71
20	10	92855A753♣	12.14
25	10	92855A756♣	14.30
30	5	92855A759♣	7.95
60	5	92855A777	14.68
Class 8.8 Steel—DIN 7984			
M3—Pitch: 0.5 mm			
6	50	93070A061♣	$9.90
8	50	93070A064♣	10.41
10	25	93070A067♣	6.26
12	25	93070A070♣	6.51
14	25	93070A071♣	5.96
16	50	93070A073♣	9.91
20	50	93070A076	12.38
M4—Pitch: 0.7 mm			
8	50	93070A098♣	9.86
10	50	93070A101♣	10.09
12	50	93070A103♣	7.91
16	100	93070A105♣	13.29
20	100	93070A107♣	13.75
25	25	93070A109	6.88
M5—Pitch: 0.8 mm			
6	50	93070A119♣	9.20
8	25	93070A120♣	5.39
10	50	93070A121♣	9.40
12	50	93070A123♣	9.63
14	50	93070A124♣	9.86
16	50	93070A125♣	10.54
20	50	93070A127♣	10.21
25	50	93070A129♣	10.77
30	25	93070A131	6.56
M6—Pitch: 1 mm			
10	50	93070A141♣	9.91
12	50	93070A143♣	9.06
14	50	93070A144♣	9.12
16	50	93070A145♣	9.63
20	50	93070A147♣	9.86
25	50	93070A149♣	9.56
30	25	93070A151	6.07
35	25	93070A153	8.59
40	25	93070A155	10.94
M6 (Cont.)			
50	25	93070A157	$12.64
M8—Pitch: 1.25 mm			
10	25	93070A169♣	9.97
12	25	93070A170♣	9.90
16	25	93070A171♣	7.33
20	25	93070A173♣	8.14
25	25	93070A175♣	9.28
30	25	93070A177♣	9.40
35	25	93070A179	10.43
40	25	93070A181	12.89
50	25	93070A183	14.33
M10—Pitch: 1.5 mm			
16	25	93070A211♣	13.52
20	25	93070A213♣	12.89
25	25	93070A215♣	13.29
30	10	93070A217♣	6.50
35	10	93070A219♣	6.19
40	10	93070A221	10.27
50	10	93070A223	9.64
60	10	93070A226	12.47
M12—Pitch: 1.75 mm			
20	10	93070A241♣	8.48
25	10	93070A243♣	8.76
30	10	93070A245♣	7.38
35	10	93070A247♣	8.16
40	10	93070A249♣	8.85
50	10	93070A251	9.90
M16—Pitch: 2 mm			
35	5	93070A272♣	12.59
40	1	93070A271♣	4.34
50	1	93070A273♣	5.09
M20—Pitch: 2.5 mm			
40	1	93070A291♣	6.58
50	1	93070A293♣	9.70

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary from the minimum length (above) to full thread.

Metric Socket Head Cap Screw Hex Sizes and Head Dimensions

Screw Size	M1.6	M2	M2.5	M2.6	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M30	M36
Hex Size, mm	1.5	1.5	2	2	2.5	3	4	5	6	8	10	12	14	14	17	17	19	22	27
Pitch, mm	0.35	0.4	0.45	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3	3.5	4
Head Height, mm	1.6	2	2.5	2.6	3	4	5	6	8	10	12	14	16	18	20	22	24	30	36
Head Dia., mm	3	3.8	4.5	5	5.5	7	8.5	10	13	16	18	21	24	27	30	33	36	45	54

Metric Socket Head Cap Screw Thread Lengths

Sizes marked with a ♣ are always fully threaded.
For all other sizes, manufacturing standards allow threads to fall between the minimum and maximum lengths shown below.

Screw Size	M1.6	M2	M2.5	M2.6	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M30	M36
Min. Thread Lg., mm	Fully	Fully	Fully	Fully	18	20	22	24	28	32	36	40	44	48	52	56	60	72	84
Max. Thread Lg., mm	Fully	Fully	Fully	Fully	20.5	23.5	26	29	34.3	39.5	44.8	50	54	60.5	64.5	68.5	75	89.5	104

Metric Class 12.9 Alloy Steel

Made from a high-strength steel alloy, these are the metric versions of our popular inch size alloy steel screws. Screw length is measured from under the head.

Standard thread and ***fine thread*** screws have a dark surface color as a result of heat treatment. They have a Class 5g6g thread fit, a minimum Rockwell hardness of C39, and minimum tensile strength of 174,000 psi. Dimensions meet DIN 912/ISO 4762. *Fine thread* screws allow precision adjustment.

High-visibility metric blue screws have a distinctive blue coating that makes them easy to distinguish from inch sizes. They meet ASTM A574M (similar to DIN 912 and ISO 4762) and ANSI/ASME B18.3.1M. All have a Class 4g6g thread fit, a minimum Rockwell hardness of C38, and minimum tensile strength of 176,900 psi.

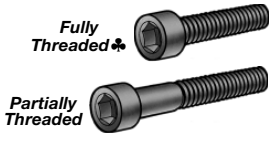

Standard Thread—Black

Lg., mm	Pkg. Qty.		Per Pkg.
M1.6—*Pitch: 0.35 mm*			
3	25	91290A020♣	$3.82
4	25	91290A021♣	4.37
5	25	91290A022♣	4.13
6	25	91290A023♣	5.24
M2—*Pitch: 0.4 mm*			
3	50	91290A010♣	7.66
4	100	91290A011♣	8.05
5	100	91290A012♣	8.40
6	100	91290A013♣	8.45
8	100	91290A015♣	8.76
10	100	91290A017♣	8.81
12	100	91290A019♣	9.13
M2.5—*Pitch: 0.45 mm*			
4	100	91290A099♣	9.65
5	100	91290A100♣	13.58
6	100	91290A101♣	10.54
8	100	91290A102♣	10.73
10	100	91290A103♣	11.12
12	100	91290A104♣	11.65
16	100	91290A106♣	13.10
20	25	91290A108♣	5.98
M2.6—*Pitch: 0.45 mm*			
8	50	91290A031♣	9.88
10	50	91290A033♣	11.18
12	50	91290A035♣	13.15
M3—*Pitch: 0.5 mm*			
4	100	91290A109♣	6.55
5	100	91290A110♣	5.43
6	100	91290A111♣	5.25
8	100	91290A113♣	4.48
10	100	91290A115♣	4.65
12	100	91290A117♣	5.26
14	100	91290A119♣	7.15
16	100	91290A120♣	5.60
18	100	91290A121♣	6.94
20	100	91290A123♣	6.47
22	100	91290A124♣	4.77
25	100	91290A125	8.17
30	100	91290A130	9.09
35	100	91290A135	11.50
40	25	91290A136	3.63
50	25	91290A137	4.91
M4—*Pitch: 0.7 mm*			
5	100	91290A138♣	7.48
6	100	91290A139♣	5.30
8	100	91290A140♣	6.05
10	100	91290A144♣	5.41
12	100	91290A148♣	5.58
14	100	91290A150♣	6.16
16	100	91290A154♣	6.22
18	100	91290A164♣	7.44
20	100	91290A168♣	6.63
22	100	91290A170♣	14.06
25	100	91290A176♣	8.14
M4 (Cont.)			
30	100	91290A180	$9.00
35	100	91290A182	10.09
40	100	91290A184	10.88
45	100	91290A145	12.74
50	100	91290A186	13.18
55	50	91290A187	6.87
60	25	91290A188	4.82
70	25	91290A190	7.38
80	5	91290A192	1.03
M5—*Pitch: 0.8 mm*			
6	100	91290A221♣	6.42
8	100	91290A222♣	5.94
10	100	91290A224♣	6.47
12	100	91290A228♣	7.42
14	100	91290A230♣	7.32
15	100	91290A231♣	9.52
16	100	91290A232♣	7.86
18	100	91290A238♣	8.49
20	100	91290A242♣	7.95
22	100	91290A248♣	9.45
25	100	91290A252♣	8.55
30	100	91290A254	9.47
35	100	91290A256	12.30
40	100	91290A258	12.72
45	50	91290A260	7.30
50	50	91290A262	7.83
55	25	91290A264	5.58
60	25	91290A268	4.86
65	25	91290A270	4.96
70	25	91290A272	3.18
75	25	91290A274	5.89
80	25	91290A276	4.25
90	25	91290A278	7.59
100	25	91290A280	8.14
120	10	91290A290	3.25
M6—*Pitch: 1 mm*			
6	50	91290A310♣	3.37
8	100	91290A312♣	7.70
10	100	91290A316♣	7.66
12	100	91290A318♣	7.58
14	100	91290A319♣	9.88
15	100	91290A320♣	7.87
16	100	91290A321♣	7.66
18	100	91290A323♣	9.85
20	100	91290A326♣	8.54
22	100	91290A328♣	12.74
25	100	91290A330♣	8.72
30	100	91290A332♣	9.70
35	100	91290A334	10.54
40	100	91290A336	11.78
45	50	91290A338	7.10
50	50	91290A340	8.26
55	50	91290A342	10.70

Standard Thread—Black (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
M6 (Cont.)			
60	25	91290A344	$6.81
65	25	91290A346	8.85
70	25	91290A348	7.75
75	25	91290A349	9.13
80	25	91290A351	10.63
90	25	91290A352	12.06
100	25	91290A360	12.97
110	10	91290A355	9.21
120	10	91290A357	13.62
M8—*Pitch: 1.25 mm*			
10	50	91290A414♣	8.54
12	50	91290A416♣	6.63
14	50	91290A417♣	5.82
16	50	91290A418♣	7.20
18	25	91290A422♣	5.39
20	50	91290A426♣	9.36
22	50	91290A428♣	11.60
25	50	91290A432♣	9.78
30	50	91290A434♣	9.90
35	50	91290A438♣	9.79
40	50	91290A442	10.01
45	50	91290A446	10.35
50	25	91290A448	8.15
55	25	91290A452	9.17
60	25	91290A456	9.97
65	25	91290A458	11.11
70	25	91290A460	11.67
75	25	91290A461	12.84
80	25	91290A462	12.79
90	10	91290A466	7.06
100	10	91290A468	7.79
110	5	91290A470	4.52
120	5	91290A472	4.88
130	5	91290A474	5.75
140	5	91290A476	6.20
150	5	91290A478	6.65
160	5	91290A480	11.92
180	5	91290A482	12.81
200	1	91290A484	2.74
M10—*Pitch: 1.5 mm*			
12	25	91290A510♣	8.87
15	25	91290A511♣	10.15
16	25	91290A512♣	8.19
18	25	91290A514♣	10.16
20	25	91290A516♣	8.60
22	25	91290A518♣	9.80
25	25	91290A520♣	8.78
30	25	91290A522♣	9.72
35	25	91290A526♣	10.53
40	25	91290A528♣	11.44
45	25	91290A530	12.52
50	25	91290A532	13.05
M10 (Cont.)			
55	10	91290A534	$5.70
60	10	91290A536	6.55
65	10	91290A540	6.89
70	10	91290A542	7.25
75	10	91290A541	7.29
80	10	91290A544	9.54
90	10	91290A546	7.62
100	10	91290A548	9.95
110	5	91290A550	7.49
130	5	91290A554	8.35
140	5	91290A556	9.19
150	5	91290A558	9.67
160	5	91290A560	12.17
180	1	91290A562	3.26
200	1	91290A564	3.73
M12—*Pitch: 1.75 mm*			
16	10	91290A610♣	6.60
20	10	91290A612♣	4.85
25	25	91290A616♣	10.56
30	25	91290A618♣	11.70
35	25	91290A620♣	12.52
40	10	91290A622♣	5.97
45	10	91290A624♣	6.98
50	10	91290A626♣	7.11
55	10	91290A628	7.16
60	10	91290A630	9.12
65	10	91290A632	9.57
70	10	91290A634	9.75
75	10	91290A635	10.61
80	10	91290A636	12.18
90	10	91290A638	12.65
100	5	91290A640	7.20
110	5	91290A642	7.16
120	5	91290A643	10.22
130	5	91290A649	11.37
140	5	91290A644	11.86
150	5	91290A646	13.81
160	1	91290A648	3.70
200	1	91290A652	4.06
220	1	91290A654	4.25
M14—*Pitch: 2 mm*			
20	10	91290A710♣	8.52
25	10	91290A712♣	6.74
30	10	91290A714♣	10.05
35	10	91290A720♣	9.13
40	5	91290A725♣	6.76
45	5	91290A727♣	5.47
50	5	91290A735♣	7.84
55	5	91290A737♣	8.86
60	5	91290A745	8.42
65	5	91290A747	8.65
70	5	91290A749	7.45

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See top of page for more thread length information.

(Continued on following page)

Metric Class 12.9 Alloy Steel *(Continued from previous page)*

Fully Threaded♣

Partially Threaded

Made from a high-strength steel alloy, these are the metric versions of our popular inch size alloy steel screws. Screw length is measured from under the head.

Standard thread and ***fine thread*** screws have a dark surface color as a result of heat treatment. They have a Class 5g6g thread fit, a minimum Rockwell hardness of C39, and minimum tensile strength of 174,000 psi. Dimensions meet DIN 912/ISO 4762. *Fine thread* screws allow precision adjustment.

High-visibility metric blue screws have a distinctive blue coating that makes them easy to distinguish from inch sizes. They meet ASTM A574M (similar to DIN 912 and ISO 4762) and ANSI/ASME B18.3.1M. All have a Class 4g6g thread fit, a minimum Rockwell hardness of C38, and minimum tensile strength of 176,900 psi.

Standard Thread—Black (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
M14 (Cont.)			
75	5	91290A751	$5.71
80	5	91290A765	11.82
90	5	91290A767	12.22
100	5	91290A769	13.06
110	5	91290A770	14.68
120	1	91290A772	2.83
130	1	91290A774	4.47
140	5	91290A776	13.84
150	1	91290A778	2.92
160	1	91290A780	3.20
200	1	91290A784	4.37
***M16—**Pitch: 2 mm*			
20	5	91290A786♣	6.66
25	5	91290A788♣	11.60
30	5	91290A800♣	6.41
35	5	91290A805♣	4.82
40	5	91290A810♣	6.94
45	5	91290A815♣	7.27
50	5	91290A820♣	6.91
55	5	91290A825♣	8.81
60	5	91290A830♣	8.38
65	5	91290A835	8.21
70	5	91290A837	8.75
75	5	91290A838	9.31
80	5	91290A840	10.52
90	5	91290A841	11.22
100	5	91290A842	12.92
110	5	91290A844	14.61
120	1	91290A846	3.07
130	1	91290A848	4.06
140	1	91290A025	3.81
150	1	91290A027	4.71
160	1	91290A024	5.14
180	1	91290A026	4.60
200	1	91290A028	6.97
220	1	91290A900	6.18
260	1	91290A905	7.16
300	1	91290A910	9.69
***M18—**Pitch: 2.5 mm*			
30	5	91290A030♣	10.25
35	1	91290A029♣	2.50
40	5	91290A032♣	9.82
45	5	91290A034♣	11.80
50	5	91290A036♣	10.62
55	5	91290A038♣	12.49
60	5	91290A040♣	12.80
65	5	91290A042♣	13.22
70	1	91290A044	1.96
75	1	91290A046	3.09
80	1	91290A048	3.05
90	1	91290A050	3.08
100	1	91290A052	3.68
110	1	91290A054	3.96
120	1	91290A056	3.93
130	1	91290A058	4.11
140	1	91290A060	4.25
150	1	91290A062	6.71
160	1	91290A064	11.92
180	1	91290A066	13.02
200	1	91290A068	12.96
***M20—**Pitch: 2.5 mm*			
30	5	91290A061♣	12.77
40	5	91290A063♣	13.27
45	5	91290A065♣	13.90
50	5	91290A850♣	13.91
55	5	91290A851♣	14.09
60	5	91290A852♣	14.65
65	1	91290A853♣	3.03
70	1	91290A854♣	3.19
75	1	91290A855	3.55
80	1	91290A856	3.94
90	1	91290A067	4.47
M20 (Cont.)			
100	1	91290A069	$4.13
110	1	91290A070	4.08
120	1	91290A072	4.22
130	1	91290A074	5.26
140	1	91290A076	5.76
150	1	91290A078	5.93
160	1	91290A080	6.42
180	1	91290A082	6.80
200	1	91290A084	6.94
220	1	91290A086	8.57
240	1	91290A089	12.47
260	1	91290A088	11.20
300	1	91290A090	15.13
***M22—**Pitch: 2.5 mm*			
40	1	91290A963♣	4.50
50	1	91290A966♣	3.37
60	1	91290A970♣	3.53
70	1	91290A978♣	3.84
80	1	91290A984	4.23
100	1	91290A988	4.60
110	1	91290A992	5.33
120	1	91290A994	5.48
***M24—**Pitch: 3 mm*			
40	1	91290A091♣	3.76
45	1	91290A092♣	3.96
50	1	91290A093♣	5.05
60	1	91290A869♣	5.41
65	1	91290A870♣	5.61
70	1	91290A871♣	5.82
75	1	91290A872♣	6.06
80	1	91290A873♣	6.18
90	1	91290A874	6.52
100	1	91290A875	6.89
110	1	91290A876	7.03
120	1	91290A877	7.08
130	1	91290A878	7.34
140	1	91290A879	8.19
150	1	91290A880	8.01
160	1	91290A094	10.02
200	1	91290A096	10.64
220	1	91290A097	12.37
260	1	91290A925	16.91
300	1	91290A098	16.98
***M30—**Pitch: 3.5 mm*			
60	1	91290A915♣	15.58
70	1	91290A881♣	9.76
80	1	91290A882♣	10.13
90	1	91290A883♣	10.77
100	1	91290A884♣	11.07
110	1	91290A885	11.59
120	1	91290A886	12.56
130	1	91290A887	13.41
140	1	91290A888	15.20
150	1	91290A889	14.47
160	1	91290A890	16.63
180	1	91290A891	17.55
200	1	91290A971	38.24
240	1	91290A976	38.71
300	1	91290A892	47.01
***M36—**Pitch: 4 mm*			
80	1	91290A893♣	16.50
90	1	91290A933♣	17.16
100	1	91290A894♣	18.59
110	1	91290A935♣	19.55
120	1	91290A895	20.04
130	1	91290A938	20.87
140	1	91290A896	21.67
150	1	91290A897	22.53
160	1	91290A898	24.45
180	1	91290A944	24.64
200	1	91290A901	28.51
240	1	91290A956	30.53

Standard Thread—High-Visibility Metric Blue

Lg., mm	Pkg. Qty.		Per Pkg.
***M3—**Pitch: 0.5 mm*			
5	50	91303A003♣	$12.58
6	50	91303A006♣	12.72
8	50	91303A009♣	12.05
10	50	91303A012♣	12.37
12	50	91303A015♣	9.89
14	50	91303A016♣	10.89
16	50	91303A018♣	11.13
18	50	91303A019♣	12.10
20	50	91303A021♣	12.56
25	50	91303A024	13.71
30	50	91303A027	11.34
35	25	91303A030	8.23
40	25	91303A031	9.68
50	10	91303A032	10.53
***M4—**Pitch: 0.7 mm*			
6	50	91303A036♣	10.89
8	50	91303A039♣	8.14
10	50	91303A042♣	8.18
12	50	91303A045♣	9.56
14	25	91303A046♣	9.68
16	50	91303A048♣	9.75
18	25	91303A049♣	12.70
20	50	91303A051♣	10.40
25	25	91303A054♣	8.04
30	50	91303A057	12.25
35	50	91303A060	13.26
40	25	91303A063	8.07
45	25	91303A066	10.22
50	25	91303A069	13.74
60	10	91303A071	9.68
***M5—**Pitch: 0.8 mm*			
10	50	91303A078♣	9.63
12	100	91303A081♣	14.46
14	25	91303A082♣	8.47
16	50	91303A084♣	9.56
18	25	91303A085♣	10.88
20	50	91303A087♣	9.68
25	50	91303A090♣	11.29
30	50	91303A093	12.06
35	50	91303A096	13.98
40	50	91303A099	14.05
45	25	91303A102	9.92
50	25	91303A105	10.89
90	5	91303A118	6.90
***M6—**Pitch: 1 mm*			
8	50	91303A119♣	9.67
10	50	91303A120♣	9.98
12	50	91303A123♣	9.80
14	25	91303A124♣	9.07
16	50	91303A126♣	9.77
18	25	91303A127♣	11.49
20	50	91303A129♣	10.09
22	25	91303A130♣	13.31
25	50	91303A132♣	11.78
30	50	91303A135♣	11.02
35	50	91303A138	13.59
40	50	91303A141	14.02
45	50	91303A144	14.30
50	50	91303A147	14.73
55	25	91303A150	12.66
60	25	91303A153	13.76
65	25	91303A156	12.27
70	25	91303A159	13.45
75	10	91303A162	6.18
80	10	91303A165	6.46
90	10	91303A168	8.67
100	10	91303A171	10.84
***M8—**Pitch: 1.25 mm*			
12	50	91303A177♣	12.01
16	50	91303A180♣	12.16
M8 (Cont.)			
18	10	91303A181♣	$7.26
20	50	91303A183♣	12.43
22	10	91303A184♣	8.22
25	50	91303A186♣	13.95
30	50	91303A189♣	14.26
35	25	91303A192♣	8.00
40	25	91303A195	8.25
45	25	91303A198	9.43
50	25	91303A201	10.11
55	25	91303A204	12.53
60	25	91303A207	11.94
65	25	91303A210	13.97
70	10	91303A213	6.65
75	10	91303A216	6.40
80	10	91303A219	6.63
90	10	91303A222	10.85
100	10	91303A225	11.52
110	10	91303A228	13.59
***M10—**Pitch: 1.5 mm*			
20	25	91303A249♣	10.02
25	25	91303A252♣	10.41
30	25	91303A255♣	11.54
35	25	91303A258♣	11.32
40	25	91303A261♣	11.59
45	25	91303A264	12.83
50	25	91303A267	13.25
55	25	91303A270	14.35
60	10	91303A273	6.50
65	10	91303A276	8.33
70	10	91303A279	8.88
80	10	91303A285	10.04
90	10	91303A288	12.02
100	10	91303A291	14.37
110	5	91303A294	8.04
120	5	91303A297	11.28
150	5	91303A306	13.47
***M12—**Pitch: 1.75 mm*			
25	10	91303A321♣	6.67
30	10	91303A324♣	8.98
35	10	91303A327♣	9.40
40	10	91303A330♣	9.53
45	10	91303A333♣	9.65
50	10	91303A336♣	9.65
55	10	91303A339	10.17
60	10	91303A342	11.73
65	10	91303A345	12.26
70	10	91303A348	12.67
80	10	91303A354	13.43
90	10	91303A357	14.48
100	5	91303A360	8.13
110	5	91303A363	10.98
120	5	91303A366	14.21
***M16—**Pitch: 2 mm*			
35	5	91303A387♣	8.10
40	5	91303A390♣	8.23
45	5	91303A393♣	8.21
50	5	91303A396♣	9.68
60	5	91303A402♣	12.38
70	5	91303A408	11.93
80	5	91303A414	13.25
***M20—**Pitch: 2.5 mm*			
50	5	91303A465♣	14.86
60	1	91303A471♣	3.27
70	1	91303A477♣	5.27
80	1	91303A483	4.23
***M24—**Pitch: 3 mm*			
80	1	91303A540♣	10.14
90	1	91303A543	10.62
100	1	91303A546	10.44

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3119 for more thread length information.

(Continued on following page)

Metric Class 12.9 Alloy Steel *(Continued from previous page)*

Lg., mm	Pkg. Qty.		Per Pkg.
Fine Thread—Black			
M8—Pitch: 1 mm			
20	50	96144A211♣	$9.55
25	50	96144A215♣	12.21
30	25	96144A219♣	6.73
35	25	96144A223♣	7.36
40	25	96144A227	8.28
50	25	96144A231	10.41
M8 (Cont.)			
60	25	96144A235	$11.92
80	10	96144A239	6.74
M10—Pitch: 1.25 mm			
20	25	96144A252♣	11.07
25	25	96144A256♣	10.50
30	25	96144A261♣	12.13
40	10	96144A265♣	5.86
50	10	96144A269	7.00
Fine Thread—Black (Cont.)			
M10 (Cont.)			
60	10	96144A273	$7.62
80	10	96144A277	11.56
M12—Pitch: 1.25 mm			
30	10	96144A293♣	7.54
40	10	96144A297♣	7.87
50	10	96144A303♣	9.25
60	10	96144A307	11.75
M12 (Cont.)			
70	10	96144A313	$13.67
80	5	96144A317	8.22
M16—Pitch: 1.5 mm			
40	5	96144A330♣	9.32
50	5	96144A334♣	9.28
60	5	96144A338♣	11.54
80	1	96144A342	4.10

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3119 for more thread length information.

Metric Self-Locking Class 12.9 Alloy Steel

A nylon patch bonded to the threads keeps these reusable, high-strength screws from loosening due to vibration. The patch withstands temperatures from –70° to +250° F. Screws have a dark surface color as a result of heat treatment. They have a Class 5g6g thread fit, a minimum Rockwell hardness of C39, and minimum tensile strength of 176,900 psi. Dimensions meet DIN 912/ISO 4762. Screw length is measured from under the head.

Fully Threaded♣

Partially Threaded

Lg., mm	Pkg. Qty.		Per Pkg.
M4—Pitch: 0.7 mm			
10	25	91760A144♣	$12.05
12	25	91760A148♣	12.05
16	25	91760A154♣	12.05
20	25	91760A158♣	13.24
25	25	91760A162♣	13.12
M5—Pitch: 0.8 mm			
10	25	91760A224♣	12.05
12	25	91760A232♣	12.05
16	25	91760A242♣	12.05
20	25	91760A245♣	12.50
25	25	91760A248♣	12.50
M6—Pitch: 1 mm			
12	25	91760A318♣	12.05
16	25	91760A321♣	12.05
20	25	91760A326♣	12.50
25	25	91760A330♣	12.50
30	25	91760A332♣	12.50
M6 (Cont.)			
35	25	91760A335	$13.72
40	25	91760A338	14.06
M8—Pitch: 1.25 mm			
16	25	91760A423♣	14.84
20	25	91760A426♣	14.84
25	25	91760A432♣	14.84
30	25	91760A434♣	14.57
40	10	91760A438	6.56
M10—Pitch: 1.5 mm			
25	10	91760A510♣	7.19
30	10	91760A515♣	7.61
35	10	91760A520♣	8.20
40	10	91760A525♣	8.11
M12—Pitch: 1.75 mm			
30	10	91760A553♣	11.57
35	10	91760A556♣	12.20
40	10	91760A559♣	13.12
50	10	91760A562♣	13.12

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3119 for more thread length information.

Metric Zinc-Coated Class 12.9 Alloy Steel

Class 12.9 screws are high strength and coated with a layer of zinc for rust resistance. Size M3 screws are zinc plated; all other sizes have a coating of zinc flake, which provides 600 hours of salt spray resistance. All screws are fully threaded and have a Class 5g6g thread fit. They have a minimum Rockwell hardness of C37 and tensile strength of 174,000 psi. Dimensions meet DIN 912/ISO 4762. Screw length is measured from under the head.

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
6	50	95263A110	$5.66
8	50	95263A122	5.93
10	50	95263A134	6.27
12	50	95263A146	6.55
16	25	95263A158	3.90
M4—Pitch: 0.7 mm			
6	50	95263A221	5.03
8	50	95263A234	6.72
10	50	95263A247	5.86
12	50	95263A260	6.67
16	50	95263A273	6.37
20	50	95263A286	7.57
M5—Pitch: 0.8 mm			
10	50	95263A332	8.13
12	50	95263A346	8.14
14	25	95263A360	5.07
16	25	95263A374	4.34
20	25	95263A388	4.65
25	25	95263A402	4.86
M6—Pitch: 1 mm			
12	25	95263A516	5.38
16	25	95263A531	5.48
M6 (Cont.)			
20	25	95263A546	$5.69
25	25	95263A561	6.62
30	25	95263A576	8.05
M8—Pitch: 1.25 mm			
16	25	95263A605	9.34
20	10	95263A619	4.73
25	10	95263A633	4.31
30	10	95263A647	4.50
35	10	95263A661	4.87
40	10	95263A675	9.47
M10—Pitch: 1.5 mm			
20	10	95263A735	6.02
25	10	95263A743	6.13
30	10	95263A751	7.46
35	10	95263A759	10.10
40	10	95263A767	11.14
M12—Pitch: 1.75 mm			
25	5	95263A846	7.00
30	5	95263A859	7.16
40	5	95263A872	7.42
50	5	95263A885	8.84

Metric Stainless Steel

Screws have a Class 6g thread fit and minimum tensile strength of 101,000 psi, but are not rated for hardness. Screw length is measured from under the head.

Type 316 stainless steel provides better corrosion resistance than 18-8 stainless steel and contains molybdenum, which increases corrosion resistance to chlorides and sulfates. May be mildly magnetic.

18-8 stainless steel provides good corrosion resistance and may be mildly magnetic.

Also Available: Plastic screws that withstand temperatures from –22° to +176° F in sizes marked with a ▲. Please ask for 93640A440 and specify thread size and screw length.

Fully Threaded♣

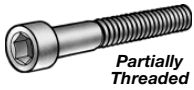

Partially Threaded

Lg., mm	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel—DIN 912-A4			
M2—Pitch: 0.4 mm			
5	25	92290A012♣	$10.71
6	25	92290A013♣	11.17
8	25	92290A015♣	12.08
10	50	92290A017♣	7.83
12	50	92290A019♣	8.61
M2.5—Pitch: 0.45 mm			
5	50	92290A055♣	6.38
6	25	92290A056♣	4.89
8	25	92290A058♣	4.94
10	50	92290A060♣	11.98
12	25	92290A062♣	6.19
16	10	92290A065♣	6.21
M3—Pitch: 0.5 mm			
4	25	92290A108♣	12.80
5	50	92290A110♣	11.62
6	50	92290A111♣	9.44
M3 (Cont.)			
8	50	92290A113♣	$9.63
10	50	92290A115♣	9.99
12	50	92290A117♣	9.99
14	50	92290A118♣	6.57
16	50	92290A120♣	10.90
20	50	92290A122♣	11.44
25	50	92290A124	13.44
30	25	92290A126	10.17
40	25	92290A128	11.17
50	25	92290A130	11.66
M4—Pitch: 0.7 mm			
6	25	92290A139♣	7.26
8	25	92290A140♣	6.72
10	50	92290A144♣	11.99
12	50	92290A148♣	12.53
14	25	92290A150♣	8.90
16	50	92290A154♣	13.44
Type 316 Stainless Steel—DIN 912-A4 (Cont.)			
M4 (Cont.)			
18	25	92290A161♣	$4.31
20	25	92290A168♣	7.72
25	25	92290A176♣	8.54
30	25	92290A180	10.71
35	25	92290A182	12.98
40	25	92290A184	12.99
45	25	92290A186	6.11
50	10	92290A188	8.02
M5—Pitch: 0.8 mm			
8	50	92290A222♣	13.75
10	25	92290A224♣	7.45
12	25	92290A228♣	7.72
14	25	92290A230♣	9.63
16	25	92290A232♣	8.35
18	25	92290A237♣	8.13
20	25	92290A242♣	9.63
25	25	92290A252♣	10.17
M5 (Cont.)			
30	25	92290A254	$11.80
35	10	92290A256	6.32
40	10	92290A258	5.99
45	10	92290A260	7.55
50	10	92290A265	9.37
55	10	92290A268	4.65
60	10	92290A270	11.88
M6—Pitch: 1 mm			
8	25	92290A312♣	5.76
10	25	92290A316♣	10.17
12	25	92290A318♣	10.53
14	25	92290A320♣	11.80
16	25	92290A321♣	9.90
18	10	92290A323♣	6.45
20	25	92290A326♣	10.62
25	25	92290A330♣	11.80
30	25	92290A332♣	12.98

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3119 for more thread length information.

(Continued on following page)

Metric Stainless Steel *(Continued from previous page)*

Fully Threaded♣

Partially Threaded

Screws have a Class 6g thread fit and minimum tensile strength of 101,000 psi, but are not rated for hardness. Screw length is measured from under the head.

Type 316 stainless steel provides better corrosion resistance than 18-8 stainless steel and contains molybdenum, which increases corrosion resistance to chlorides and sulfates. May be mildly magnetic.

18-8 stainless steel provides good corrosion resistance and may be mildly magnetic.

Also Available: Plastic screws that withstand temperatures from –22° to +176° F in sizes marked with a ▲. Not rated for tensile strength. Please ask for 93640A440 and specify thread size and screw length.

Type 316 Stainless Steel—DIN 912-A4 (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
M6 (Cont.)			
35	25	92290A334	$8.90
40	10	92290A336	7.48
45	10	92290A338	9.26
50	10	92290A339	9.69
55	10	92290A340	12.97
60	5	92290A342	7.50
65	5	92290A341	8.73
70	5	92290A344	8.34
80	5	92290A346	10.64
90	5	92290A350	11.02
100	5	92290A354	12.08
110	5	92290A358	13.03
M8—Pitch: 1.25 mm			
10	10	92290A414♣	8.82
12	10	92290A416♣	8.61
16	10	92290A418♣▲	10.06
20	10	92290A426♣▲	9.44
25	10	92290A432♣▲	10.71
30	10	92290A434♣▲	11.01
35	10	92290A438♣▲	11.99
40	5	92290A442	7.37
45	5	92290A446	8.86
50	5	92290A449	10.26
55	5	92290A452	11.68
60	5	92290A455	11.80
70	5	92290A458	10.86
80	5	92290A461	12.02
90	1	92290A464	3.35
M10—Pitch: 1.5 mm			
16	10	92290A512♣	9.63
20	5	92290A516♣▲	7.70
M10 (Cont.)			
25	5	92290A520♣▲	$8.03
30	5	92290A522♣▲	9.30
35	1	92290A526♣▲	1.80
40	1	92290A528♣▲	1.85
45	1	92290A530	2.67
50	1	92290A535	2.08
55	1	92290A540	3.24
60	1	92290A544	3.78
70	1	92290A548	3.80
80	1	92290A552	4.34
140	1	92290A595	9.77
M12—Pitch: 1.75 mm			
16	5	92290A608♣	12.20
20	1	92290A612♣▲	2.09
25	1	92290A616♣▲	2.64
30	1	92290A618♣▲	2.31
35	1	92290A620♣	3.16
40	1	92290A622♣▲	3.61
45	1	92290A624♣	2.53
50	1	92290A628♣	4.16
55	1	92290A630	4.45
60	1	92290A632	4.58
70	1	92290A636	4.97
80	1	92290A640	5.41
100	1	92290A662	6.96
M16—Pitch: 2 mm			
35	1	92290A711♣	6.23
40	1	92290A715♣	7.55
50	1	92290A719♣	7.62
60	1	92290A728♣	9.35
80	1	92290A743	11.58

18-8 Stainless Steel—DIN 912-A2

Lg., mm	Pkg. Qty.		Per Pkg.
M2—Pitch: 0.4 mm			
3	100	91292A003♣	8.92
4	100	91292A004♣	7.23
5	100	91292A005♣	6.54
6	100	91292A006♣	7.07
8	100	91292A008♣	6.17
10	100	91292A011♣	3.81
12	100	91292A007♣	9.72
14	50	91292A001♣	5.05
16	50	91292A002♣	12.84
20	25	91292A013♣	7.43
M2.5—Pitch: 0.45 mm			
4	25	91292A015♣	5.45
5	100	91292A009♣	3.57
6	100	91292A010♣	4.30
8	100	91292A012♣	4.33
10	100	91292A014♣	3.87
12	100	91292A016♣	4.85
14	50	91292A017♣	3.02
16	50	91292A018♣	3.76
20	50	91292A019♣	11.43
M3—Pitch: 0.5 mm			
4	50	91292A109♣	2.86
5	100	91292A110♣	6.99
6	100	91292A111♣	5.48
8	100	91292A112♣	5.08
10	100	91292A113♣	5.85
12	100	91292A114♣	3.15
14	100	91292A027♣	3.26
16	100	91292A115♣	3.24
18	100	91292A029♣	6.89
20	100	91292A123♣	5.74
22	50	91292A801	4.48
25	100	91292A020	13.85
30	50	91292A022	3.63
35	25	91292A033	5.55
40	25	91292A024	5.76
M3 (Cont.)			
45	50	91292A025	10.81
50	25	91292A026	10.72
M4—Pitch: 0.7 mm			
5	100	91292A105♣	8.48
6	100	91292A107♣	4.68
8	100	91292A108♣	5.37
10	100	91292A116♣	5.00
12	100	91292A117♣	5.37
14	100	91292A038♣	5.91
16	100	91292A118♣	4.93
18	100	91292A043♣	4.72
20	100	91292A121♣	4.51
22	50	91292A806♣	8.64
25	100	91292A122♣	8.26
30	100	91292A130	7.56
35	100	91292A131	12.67
40	50	91292A132	7.36
45	50	91292A133	7.17
50	25	91292A140	6.15
60	25	91292A048	6.32
M5—Pitch: 0.8 mm			
6	50	91292A189♣	9.90
8	100	91292A191♣	6.83
10	100	91292A124♣	7.68
12	100	91292A125♣	7.29
14	100	91292A058♣	8.93
16	100	91292A126♣	7.44
18	100	91292A127♣	12.07
20	100	91292A128♣	7.76
22	25	91292A060♣	5.62
25	100	91292A129♣	11.87
30	50	91292A192	6.35
35	25	91292A193	4.37
40	25	91292A194	6.27
45	25	91292A195	6.59
50	25	91292A196	8.22

18-8 Stainless Steel—DIN 912-A2 (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
M5 (Cont.)			
55	25	91292A690	$13.54
60	10	91292A197	4.42
65	25	91292A811	10.76
70	10	91292A198	5.52
80	10	91292A199	7.37
90	10	91292A200	10.95
M6—Pitch: 1 mm			
8	50	91292A201♣	10.87
10	50	91292A441♣	8.29
12	50	91292A134♣	9.65
14	50	91292A070♣	5.17
16	50	91292A135♣	7.07
18	50	91292A136♣	8.57
20	25	91292A137♣	4.28
22	25	91292A073♣	3.64
25	50	91292A138♣	12.15
30	50	91292A139♣	13.24
35	25	91292A141	6.24
40	25	91292A142	7.19
45	25	91292A143	7.83
50	25	91292A144	10.38
55	25	91292A410	13.16
60	25	91292A413	13.38
65	25	91292A416	14.57
70	10	91292A202	3.29
75	10	91292A816	5.47
80	10	91292A203	4.92
90	10	91292A204	8.67
100	5	91292A205	7.26
110	5	91292A420	6.87
120	5	91292A423	8.39
130	1	91292A424	2.54
140	1	91292A425	2.80
150	5	91292A426	10.16
M8—Pitch: 1.25 mm			
10	25	91292A206♣	8.49
12	25	91292A207♣	9.82
14	25	91292A150♣	9.75
16	25	91292A145♣	6.57
18	10	91292A080♣	4.65
20	25	91292A147♣	8.29
22	10	91292A082♣	5.65
25	25	91292A148♣	8.04
30	25	91292A149♣	7.59
35	25	91292A151♣	10.13
40	10	91292A152	8.40
45	10	91292A208	6.31
50	10	91292A154	4.67
55	10	91292A156	6.77
60	10	91292A209	9.96
65	10	91292A210	6.75
70	10	91292A211	13.25
75	5	91292A085	6.64
80	10	91292A212	11.50
90	5	91292A213	6.73
100	5	91292A214	7.97
110	5	91292A520	9.82
120	5	91292A523	10.99
130	5	91292A525	14.86
140	1	91292A527	3.71
150	1	91292A529	4.08
M10—Pitch: 1.5 mm			
12	5	91292A822♣	5.43
16	10	91292A215♣	12.62
20	10	91292A157♣	9.82
25	10	91292A158♣	5.84
30	10	91292A159♣	8.06
35	10	91292A161♣	7.45
40	10	91292A216♣	7.20
M10 (Cont.)			
45	10	91292A217	$9.50
50	10	91292A164	13.14
55	10	91292A218	13.00
60	5	91292A219	7.57
65	10	91292A251	11.31
70	5	91292A220	8.47
75	5	91292A090	9.20
80	5	91292A221	9.89
85	1	91292A826	3.01
90	5	91292A222	10.45
100	5	91292A223	14.13
110	1	91292A620	2.92
120	1	91292A623	3.62
130	1	91292A625	3.94
140	1	91292A628	4.90
150	1	91292A631	5.25
M12—Pitch: 1.75 mm			
16	10	91292A224♣	6.19
20	10	91292A225♣	8.77
25	10	91292A226♣	8.59
30	10	91292A174♣	8.20
35	10	91292A227♣	10.37
40	5	91292A228♣	4.50
45	5	91292A229♣	4.82
50	5	91292A178♣	4.76
55	5	91292A230	8.29
60	5	91292A231	10.05
65	5	91292A650	8.37
70	5	91292A232	12.24
75	5	91292A095	12.98
80	5	91292A233	12.84
90	1	91292A234	3.65
100	1	91292A235	3.53
110	1	91292A670	1.99
120	1	91292A675	3.82
130	1	91292A676	5.74
140	1	91292A678	4.00
150	1	91292A679	7.21
160	1	91292A683	6.94
M14—Pitch: 2 mm			
30	1	91292A720♣	2.56
35	1	91292A725♣	3.16
40	1	91292A730♣	3.21
50	1	91292A735♣	3.27
60	1	91292A739	3.28
M16—Pitch: 2 mm			
25	5	91292A237♣	9.63
30	5	91292A238♣	12.46
35	5	91292A239♣	14.35
40	1	91292A240♣	3.23
45	1	91292A241♣	4.02
50	1	91292A242♣	2.64
55	1	91292A243♣	3.46
60	1	91292A244♣	2.97
65	1	91292A245	3.37
70	1	91292A246	4.59
80	1	91292A247	3.89
90	1	91292A248	4.88
100	1	91292A249	4.24
110	1	91292A253	8.12
120	1	91292A256	14.50
M20—Pitch: 2.5 mm			
40	1	91292A750♣	4.83
50	1	91292A760♣	4.90
60	1	91292A765♣	7.42
70	1	91292A770♣	7.50
80	1	91292A775	9.29
90	1	91292A785	10.91

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3119 for more thread length information.

For information about hex sizes, head dimensions, and thread lengths, see page 3119.

Metric Assortments

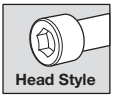

210-Piece Class 8.8 Black Alloy Steel Assortment

210-Piece Assortment—Class 8.8 Black Alloy Steel—DIN 912

Furnished in a 10¾″ Lg. × 6½″ Wd. × 1¾″ Dp. compartmented plastic case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M3 × 10	20	M5 × 10	10	M8 × 16	5
M3 × 16	20	M5 × 16	10	M8 × 20	5
M3 × 20	20	M5 × 25	10	M8 × 35	5
M4 × 10	20	M6 × 10	10	M10 × 20	5
M4 × 16	20	M6 × 16	10	M10 × 25	5
M4 × 20	20	M6 × 25	10	M10 × 30	5

95874A113 ..... **Each** $64.84

240-Piece Assortment—18-8 Stainless Steel—DIN 912-A2

Furnished in a 13″ Lg. × 8⅞″ Wd. × 2¼″ Dp. compartmented plastic case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M2 × 8	25	M5 × 12	25	M8 × 16	10
M2.5 × 8	25	M5 × 20	25	M8 × 25	10
M3 × 12	25	M6 × 12	25	M10 × 25	10
M4 × 10	25	M6 × 16	25	M10 × 30	10

92540A111 ..... **Each** $74.63

240-Piece Assortment—Class 12.9 Black Alloy Steel—DIN 912

Furnished in an 11″ Lg. × 6¾″ Wd. × 1¾″ Dp. compartmented plastic case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M4 × 10	25	M5 × 25	25	M8 × 25	10
M4 × 12	25	M6 × 12	25	M8 × 40	10
M5 × 12	25	M6 × 20	25	M10 × 30	10
M5 × 20	25	M6 × 25	25	M10 × 40	10

92275A512 ..... **Each** $73.43

288-Piece Assortment—18-8 Stainless Steel—DIN 912-A2

Includes the screws listed below, plus two each of the following size hex keys: 5 mm, 6 mm, 8 mm, and 10 mm. Furnished in a 13⅝″ Lg. × 9⅝″ Wd. × 2⅛″ Dp. compartmented metal case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M6 × 16	25	M8 × 30	10	M10 × 50	5
M6 × 20	25	M8 × 35	10	M12 × 25	10
M6 × 25	25	M8 × 40	10	M12 × 30	10
M6 × 30	25	M10 × 25	10	M12 × 35	10
M6 × 35	25	M10 × 30	10	M12 × 40	5
M8 × 20	25	M10 × 35	10	M12 × 50	5
M8 × 25	10	M10 × 40	10	M12 × 60	5

90110A032 ..... **Each** $243.45

880-Piece Assortment—Class 12.9 Black Alloy Steel—DIN 912

Furnished in a 13⅜″ Lg. × 9¼″ Wd. × 2″ Dp. compartmented metal case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M4 × 10	100	M5 × 20	50	M8 × 20	10
M4 × 12	100	M5 × 25	25	M8 × 25	10
M4 × 16	100	M6 × 12	25	M8 × 30	10
M4 × 20	100	M6 × 16	25	M8 × 40	10
M5 × 10	100	M6 × 20	25	M10 × 30	10
M5 × 12	100	M6 × 25	10	M10 × 40	10
M5 × 16	50	M6 × 30	10		

92275A520 ..... **Each** $130.87

1,058-Piece Assortment—Class 12.9 Black Alloy Steel—DIN 912

Includes the screws listed below, plus two each of the following size hex keys: 3 mm, 4 mm, 5 mm, and 6 mm. Furnished in an 18″ Lg. × 12″ Wd. × 3″ Dp. compartmented metal case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M4 × 10	50	M5 × 25	50	M6 × 35	50
M4 × 16	50	M5 × 30	50	M6 × 40	50
M4 × 20	50	M5 × 35	50	M8 × 16	25
M4 × 25	50	M5 × 40	50	M8 × 20	25
M4 × 30	50	M6 × 16	50	M8 × 25	25
M4 × 35	50	M6 × 20	50	M8 × 30	25
M5 × 16	50	M6 × 25	50	M8 × 35	25
M5 × 20	50	M6 × 30	50	M8 × 40	25

98573A010 ..... **Each** $178.00

Metric Flange-Head Class 12.9 Alloy Steel

The flange distributes holding pressure, so screws are less likely to come loose. All screws are made from alloy steel and have a black finish. They're fully threaded (unless noted) and have a Class 5g6g thread fit.

Minimum Rockwell hardness is C39; minimum tensile strength is 176,900 psi. Head height is measured from the bottom of the flange to the top of the head. Screw length is measured from under the flange.

Fully Threaded

Partially Threaded

Lg., mm	Pkg. Qty.		Per Pkg.
***M4—**Flange Dia.: 9 mm*			
Head Ht.: 4 mm; Pitch: 0.7 mm			
8	50	**92235A105**	$11.70
10	50	**92235A108**	7.30
12	50	**92235A111**	7.40
16	50	**92235A114**	7.50
20	50	**92235A117**	9.21
***M5—**Flange Dia.: 11 mm*			
Head Ht.: 5 mm; Pitch: 0.8 mm			
10	25	**92235A208**	7.88
12	25	**92235A210**	7.82
16	25	**92235A212**	7.90
20	25	**92235A214**	8.78
***M6—**Flange Dia.: 12.5 mm*			
Head Ht.: 6 mm; Pitch: 1 mm			
16	10	**92235A238**	3.70
20	10	**92235A240**	4.21
25	10	**92235A242**	4.94

Lg., mm	Pkg. Qty.		Per Pkg.
***M8—**Flange Dia.: 17 mm*			
Head Ht.: 8 mm; Pitch: 1.25 mm			
20	5	**92235A284**	$3.90
25	5	**92235A286**	3.94
30	5	**92235A288**	4.64
***M10—**Flange Dia.: 21 mm*			
Head Ht.: 10 mm; Pitch: 1.5 mm			
20	5	**92235A328**	6.10
25	5	**92235A330**	5.80
30	5	**92235A332**	7.14
40	5	**92235A334** ♦	7.55
50	5	**92235A336** ♦	7.94
***M12—**Flange Dia.: 24 mm*			
Head Ht.: 12 mm; Pitch: 1.75 mm			
30	5	**92235A410**	8.75
35	5	**92235A415**	6.69
40	5	**92235A420**	9.73
50	5	**92235A425** ★	10.77

♦ Minimum thread length is 26 mm; maximum thread length is 29 mm.
★ Minimum thread length is 30 mm; maximum thread length is 33 mm.

Inch and Metric Flat Head Assortments

300-Piece 18-8 Stainless Steel Assortment

300-Piece Assortments—ASME B18.3

Choose from 18-8 stainless steel and black-oxide alloy steel assortments. Each comes furnished in a 11″ Lg. × 6¾″ Wd. × 1¾″ Dp. compartmented plastic case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
6-32 × ⅜″	25	10-32 × ⅜″	25	¼″-20 × ¾″	25
6-32 × ½″	25	10-32 × ½″	25	¼″-20 × 1″	25
8-32 × ⅜″	25	10-32 × ¾″	25	5⁄16″-18 × ¾″	25
8-32 × ½″	25	¼″-20 × ½″	25	5⁄16″-18 × 1″	25

18-8 Stainless Steel ..... **91945A212** **Each** $67.75

Black-Oxide Alloy Steel ..... **91995A512** **Each** $77.81

Metric 258-Piece Assortment—Class 10.9 Alloy Steel—DIN 7991

Includes the screws listed below, plus two each of the following size hex keys: 2.5 mm, 3 mm, 4 mm, and 5 mm. Furnished in an 11″ Lg. × 6¾″ Wd. × 1¾″ Dp. compartmented plastic case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M4 × 10	25	M5 × 25	10	M6 × 30	10
M4 × 16	25	M5 × 30	10	M8 × 20	10
M4 × 20	25	M6 × 16	10	M8 × 25	10
M4 × 25	25	M6 × 20	10	M8 × 30	10
M5 × 16	25	M6 × 25	10	M8 × 40	10
M5 × 20	25				

90115A031 ..... **Each** $58.48

Metric 300-Piece Assortment—18-8 Stain. Steel—DIN 7991-A2

Furnished in a 13″ Lg. × 8⅞″ Wd. × 2¼″ Dp. compartmented plastic case with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M3 × 6	50	M4 × 10	25	M6 × 20	10
M3 × 8	50	M4 × 12	25	M8 × 16	10
M3 × 12	50	M5 × 12	25	M8 × 20	10
M4 × 8	25	M6 × 16	10	M8 × 25	10

92740A111 ..... **Each** $49.64

About Flat-Head Socket Head Cap Screws

Sizes marked with a ♣ are always fully threaded. For all other sizes, manufacturing standards allow threads to fall between the minimum and maximum lengths shown below.

Use a countersink (see pages 2465-2470) to create a recess for flat head screws. The body diameter of your countersink should be equal to or larger than your screw's head diameter and its included angle should match your screw's head angle.

Screw Size No.	0	1	2	3	4	5	6	8	10	12	1/4″	5/16″	3/8″	7/16″	1/2″	5/8″	3/4″	7/8″	1″
Decimal Equiv.	.060″	.073″	.086″	.099″	.112″	.125″	.138″	.164″	.190″	.216″	.250″	.3125″	.375″	.4375″	.500″	.625″	.750″	.875″	1.00″
Hex Sizes and Head Dimensions																			
Hex Size	.035″	.050″	.050″	1/16″	1/16″	5/64″	5/64″	3/32″	1/8″	1/8″	5/32″	3/16″	7/32″	1/4″	5/16″	3/8″	1/2″	9/16″	5/8″
Head Ht.	.044″	.054″	.064″	.073″	.083″	.090″	.097″	.112″	.127″	.134″	.161″	.198″	.234″	.234″	.251″	.324″	.396″	.468″	.540″
Head Dia.	.138″	.168″	.197″	.226″	.255″	.281″	.307″	.359″	.411″	.4375″	.531″	.656″	.781″	.844″	.938″	1.188″	1.438″	1.688″	1.938″
Thread Lengths for Alloy Steel																			
Minimum	Fully	Fully	Fully	Fully	Fully	Fully	11/16″	7/8″	7/8″	Fully	1″	1 1/8″	1 1/4″	1 5/16″	1 1/2″	1 3/4″	2″	Fully	2 5/16″
Maximum	Fully	Fully	Fully	Fully	Fully	Fully	13/16″	15/16″	1 3/8″	Fully	1 1/2″	1 11/16″	1 13/16″	1 3/4″	2 3/8″	2 3/4″	3″	Fully	3 5/8″
Thread Lengths for Type 316 Stainless Steel and 18-8 Stainless Steel																			
Minimum	Fully	—	3/4″	—	3/4″	Fully	3/4″	7/8″	7/8″	—	1″	1 1/8″	1 1/4″	Fully	1 1/2″	1 3/4″	1 3/4″	—	—
Maximum	Fully	—	1″	—	1 1/2″	Fully	2″	2″	3″	—	4 1/2″	4″	6″	Fully	4″	6″	5″	—	—

Alloy Steel Flat Head

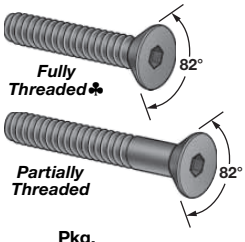

Designed with a beveled neck and a flat head, these screws sit flush within countersunk holes. They meet ASTM F835 and have a Class 3A thread fit. Unless noted, screw sizes through 1/2″ have a minimum Rockwell hardness of C39 and minimum tensile strength of 144,000 psi; sizes larger than 1/2″ have a minimum Rockwell hardness of C37 and minimum tensile strength of 135,000 psi. Screw length is measured from the top of the head. *Note:* Flat head screws are not recommended for high strength applications.

Black-oxide alloy steel offers mild rust resistance and has some lubrication qualities.

Zinc-plated screws offer good rust resistance.

Self-locking black-oxide alloy steel screws have a nylon patch bonded to the threads that prevents loosening. They have a minimum tensile strength of 145,000 psi and are reusable. The patch withstands temperatures from –65° to +250° F.

Also Available: Military spec. MS24667 cadmium-plated alloy steel flat head cap screws in sizes marked with a ●. Minimum tensile strength is 130,000 psi. Please ask for 93401A555 and specify thread size and screw length.

Black-Oxide Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
0-80			
1/8″	25	91253A029♣	$7.03
3/16″	25	91253A030♣	6.62
1/4″	25	91253A031♣	7.08
3/8″	25	91253A035♣	9.49
1-72			
1/8″	25	91253A050♣	7.67
3/16″	25	91253A052♣	7.84
1/4″	25	91253A056♣	8.02
3/8″	25	91253A060♣	8.23
2-56			
1/8″	25	91253A073♣	6.75
3/16″	25	91253A075♣	5.97
1/4″	25	91253A077♣	5.99
5/16″	50	91253A078♣	7.19
3/8″	25	91253A079♣	5.39
7/16″	25	91253A080♣	4.92
1/2″	25	91253A081♣	5.53
5/8″	25	91253A083♣	4.79
3/4″	25	91253A085♣	7.15
1″	25	91253A087♣	9.29
3-48			
1/4″	25	91253A092♣	5.60
3/8″	25	91253A094♣	5.64
1/2″	25	91253A096♣	6.12
4-40			
1/8″	25	91253A102♣★	9.19
3/16″	50	91253A104♣	6.07
1/4″	100	91253A106♣●	10.03
5/16″	100	91253A107♣	8.73
3/8″	100	91253A108♣●	10.29
7/16″	50	91253A109♣	4.70
1/2″	100	91253A110♣	10.83
5/8″	100	91253A112♣	11.13
3/4″	100	91253A113♣●	11.33
7/8″	25	91253A114♣	6.49
1″	50	91253A115♣	10.07
1 1/4″	25	91253A117♣	7.77
5-40			
1/8″	10	91253A122♣★	9.88
3/16″	25	91253A123♣	9.64
1/4″	100	91253A124♣	8.92
5/16″	50	91253A125♣	7.28
3/8″	100	91253A126♣	10.78
1/2″	100	91253A128♣	10.91
5/8″	100	91253A130♣	11.54
5-40 (Cont.)			
3/4″	100	91253A131♣	$11.80
1″	25	91253A135♣	7.97
1 1/2″	10	91253A139♣	4.06
6-32			
1/4″	100	91253A144♣	10.28
5/16″	50	91253A145♣	5.55
3/8″	100	91253A146♣●	10.85
7/16″	50	91253A147♣	5.00
1/2″	100	91253A148♣●	11.24
5/8″	100	91253A150♣●	11.27
3/4″	100	91253A151♣●	11.72
7/8″	25	91253A152♣	6.25
1″	25	91253A153♣	10.81
1 1/4″	25	91253A155	6.79
1 1/2″	25	91253A157	8.14
1 3/4″	25	91253A158	9.00
2″	25	91253A159	10.54
6-40			
1/4″	25	91253A160♣	6.76
3/8″	25	91253A161♣	7.60
1/2″	25	91253A162♣	6.32
8-32			
1/4″	50	91253A189♣	11.38
5/16″	25	91253A190♣	10.52
3/8″	100	91253A192♣●	11.08
7/16″	100	91253A193♣	10.14
1/2″	100	91253A194♣●	11.67
5/8″	100	91253A196♣●	12.29
3/4″	100	91253A197♣	12.84
7/8″	25	91253A198♣	5.66
1″	100	91253A199♣	14.08
1 1/4″	25	91253A201	9.72
1 1/2″	25	91253A204	10.60
1 3/4″	10	91253A206	5.05
2″	10	91253A209	6.86
2 1/4″	10	91253A211	7.01
2 1/2″	10	91253A213	8.24
3″	10	91253A217	8.67
8-36			
1/2″	25	91253A220♣	9.86
1 1/4″	5	91253A226♣	7.66
10-24			
1/4″	25	91253A238♣	4.85
5/16″	25	91253A239♣	4.76

Black-Oxide Alloy Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
10-24 (Cont.)			
3/8″	100	91253A240♣	$11.74
7/16″	25	91253A241♣	5.02
1/2″	100	91253A242♣	12.53
5/8″	100	91253A244♣	13.31
3/4″	100	91253A245♣	14.02
7/8″	50	91253A246♣	12.43
1″	50	91253A247♣●	10.48
1 1/4″	50	91253A249♣	10.00
1 1/2″	25	91253A251	7.76
1 3/4″	25	91253A253	6.25
2″	10	91253A255	6.18
2 1/4″	25	91253A256	7.09
2 1/2″	5	91253A257	4.17
3″	5	91253A260	5.30
10-32			
1/4″	50	91253A002♣	7.73
5/16″	25	91253A025♣	4.66
3/8″	100	91253A001♣	12.20
1/2″	100	91253A003♣	13.46
5/8″	100	91253A006♣	13.38
3/4″	100	91253A008♣	14.59
7/8″	50	91253A009♣	8.74
1″	50	91253A010♣	8.92
1 1/4″	25	91253A012♣	5.47
1 1/2″	25	91253A014	6.20
1 3/4″	25	91253A016	9.44
2″	25	91253A018	9.91
2 1/4″	10	91253A020	5.36
2 1/2″	5	91253A022♣	4.41
3″	5	91253A024♣	8.59
12-24			
1/2″	10	91253A405♣	6.90
1″	10	91253A415♣	9.48
1/4″-20			
1/4″	10	91253A533♣★	8.75
3/8″	50	91253A535♣	8.78
1/2″	50	91253A537♣	8.86
5/8″	50	91253A539♣●	9.11
3/4″	50	91253A540♣	9.31
7/8″	50	91253A536♣	11.72
1″	50	91253A542♣	9.46
1 1/4″	50	91253A544♣	8.00
1 3/8″	10	91253A545♣	9.38
1/4″-20 (Cont.)			
1 1/2″	25	91253A546♣	$5.91
1 3/4″	25	91253A548	8.08
2″	25	91253A550	8.68
2 1/4″	10	91253A554	11.56
2 1/2″	10	91253A556	13.22
2 3/4″	10	91253A558	11.40
3″	5	91253A560	8.14
3 1/4″	5	91253A562	6.36
3 1/2″	5	91253A564	5.53
4″	1	91253A566	1.19
1/4″-28			
3/8″	50	91253A301♣	7.78
1/2″	50	91253A303♣	7.74
5/8″	50	91253A305♣	7.98
3/4″	50	91253A307♣	8.31
7/8″	25	91253A302♣	3.98
1″	25	91253A309♣	4.53
1 1/4″	25	91253A311♣	7.41
1 1/2″	25	91253A313♣	6.75
1 3/4″	10	91253A317	5.22
2″	10	91253A319	5.76
2 1/4″	10	91253A321	8.23
2 1/2″	5	91253A322	5.09
2 3/4″	5	91253A323	6.00
3″	1	91253A324	1.05
5/16″-18			
3/8″	25	91253A576♣	5.89
1/2″	25	91253A578♣	5.29
5/8″	25	91253A580♣	5.31
3/4″	25	91253A581♣	5.38
7/8″	25	91253A582♣	7.86
1″	25	91253A583♣●	6.04
1 1/4″	25	91253A585♣	6.58
1 1/2″	25	91253A587♣	6.95
1 3/4″	10	91253A589♣	4.04
2″	10	91253A591	4.54
2 1/4″	10	91253A592	4.62
2 1/2″	10	91253A593	4.31
2 3/4″	10	91253A594	7.47
3″	5	91253A595	9.37
3 1/4″	5	91253A597	3.88
3 1/2″	5	91253A599	4.80
4″	5	91253A601	5.58

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See top of page for more thread length information.
★ Head is undercut to 70% of standard height to allow more threading.

(Continued on following page)

Alloy Steel Flat Head *(Continued from previous page)*

Black-Oxide Alloy Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
5/16"-24			
1/2"	25	91253A331♣	$5.83
5/8"	50	91253A332♣	10.04
3/4"	25	91253A333♣	6.18
7/8"	10	91253A334♣	3.31
1"	25	91253A335♣	6.88
1 1/4"	25	91253A337♣	7.52
1 1/2"	25	91253A339♣	7.30
1 3/4"	10	91253A345♣	4.68
2"	5	91253A356	5.43
2 1/4"	5	91253A358	5.77
2 1/2"	5	91253A362	6.07
3"	5	91253A363	6.34
3/8"-16			
1/2"	25	91253A619♣	8.94
5/8"	25	91253A621♣	6.56
3/4"	25	91253A622♣	7.53
7/8"	25	91253A623♣	9.95
1"	25	91253A624♣●	7.65
1 1/4"	25	91253A626♣	7.88
1 1/2"	25	91253A628♣	8.35
1 3/4"	25	91253A630♣	8.65
2"	10	91253A632♣	4.91
2 1/4"	10	91253A633	6.31
2 1/2"	10	91253A634	7.44
2 3/4"	5	91253A635	6.97
3"	10	91253A636	8.78
3 1/4"	5	91253A638	7.50
3 1/2"	5	91253A640	7.44
3 3/4"	5	91253A642	6.94
4"	5	91253A644	8.41
4 1/2"	1	91253A646	7.50
5"	1	91253A648	8.13
5 1/2"	1	91253A650	8.83
6"	1	91253A652	8.59
3/8"-24			
5/8"	25	91253A351♣	7.38
3/4"	25	91253A353♣	7.47
1"	25	91253A355♣	8.92
1 1/4"	25	91253A357♣	9.20
1 1/2"	25	91253A359♣	10.04
1 3/4"	10	91253A361♣	9.90
2"	10	91253A365♣	10.14
2 1/4"	5	91253A366	5.27
2 1/2"	1	91253A367	2.97
3"	5	91253A372	6.48
3 1/2"	5	91253A376	7.50
7/16"-14			
3/4"	10	91253A667♣	5.72
1"	10	91253A669♣	5.94
1 1/4"	10	91253A671♣	6.50
1 1/2"	10	91253A673♣	6.86
1 3/4"	10	91253A675♣	6.55
2"	10	91253A677♣	7.67
2 1/4"	5	91253A672♣	6.03
2 1/2"	5	91253A676	6.72
3"	5	91253A679	9.50
7/16"-20			
1"	5	91253A451♣	6.52
1 1/4"	5	91253A454♣	7.19
1/2"-13			
1/2"	1	91253A706♣	3.13
3/4"	10	91253A710♣	6.82
7/8"	5	91253A708♣	5.25
1"	10	91253A712♣	7.48
1 1/4"	10	91253A714♣	7.63
1 1/2"	10	91253A716♣	8.43
1 3/4"	10	91253A718♣	9.26
2"	5	91253A720♣	4.90
2 1/4"	5	91253A721♣	4.91
2 1/2"	5	91253A722	5.61
2 3/4"	5	91253A723	6.25
3"	5	91253A724	6.32
3 1/4"	5	91253A725	8.40
3 1/2"	5	91253A726	10.66
3 3/4"	5	91253A727	10.14
4"	5	91253A728	12.78
4 1/2"	5	91253A730	14.79
5"	1	91253A732	3.36
6"	1	91253A740	4.42
6 1/2"	1	91253A746	4.50
1/2"-13 (Cont.)			
7"	1	91253A750	$5.00
8"	1	91253A755	5.44
9"	1	91253A759	9.64
10"	1	91253A763	9.94
11"	1	91253A767	13.96
12"	1	91253A771	15.71
1/2"-20			
3/4"	10	91253A371♣	7.06
1"	10	91253A373♣	6.34
1 1/4"	10	91253A375♣	7.49
1 1/2"	10	91253A377♣	7.83
1 3/4"	5	91253A379♣	4.21
2"	5	91253A381♣	4.52
2 1/4"	5	91253A383	6.21
2 1/2"	5	91253A385	7.14
3"	5	91253A389	7.59
3 1/2"	1	91253A393	2.30
5/8"-11			
1"	5	91253A794♣	9.38
1 1/4"	5	91253A796♣	7.37
1 1/2"	5	91253A798♣	7.14
1 3/4"	5	91253A800♣	7.52
2"	5	91253A802♣	7.83
2 1/4"	5	91253A803♣	8.93
2 1/2"	5	91253A804♣	9.82
2 3/4"	5	91253A805♣	9.81
3"	5	91253A806♣	11.24
3 1/4"	1	91253A807	2.71
3 1/2"	1	91253A808	3.63
4"	1	91253A810	4.02
4 1/2"	1	91253A812	4.14
5"	1	91253A814	4.87
5 1/2"	1	91253A815	5.70
6"	1	91253A816	5.88
7"	1	91253A818	6.25
8"	1	91253A820	9.06
5/8"-18			
1"	1	91253A866♣	4.63
1 1/4"	1	91253A868♣	4.63
1 1/2"	1	91253A870♣	4.38
1 3/4"	1	91253A871♣	5.12
2"	1	91253A873♣	6.56
2 1/4"	1	91253A874♣	6.00
2 1/2"	1	91253A876♣	7.66
3"	1	91253A879♣	7.78
3 1/2"	1	91253A881	9.23
3/4"-10			
1"	1	91253A837♣	2.65
1 1/4"	5	91253A838♣	11.19
1 1/2"	5	91253A839♣	12.10
1 3/4"	5	91253A841♣	12.84
2"	5	91253A843♣	13.34
2 1/4"	1	91253A844♣	2.66
2 1/2"	1	91253A845♣	3.09
2 3/4"	1	91253A846♣	3.36
3"	1	91253A847♣	3.31
3 1/4"	1	91253A848♣	3.87
3 1/2"	1	91253A849	5.37
4"	1	91253A851	4.75
4 1/2"	1	91253A853	7.64
5"	1	91253A855	6.25
5 1/2"	1	91253A859	8.13
6"	1	91253A596	10.94
7"	1	91253A863	15.88
8"	1	91253A867	19.62
3/4"-16			
1 1/2"	1	91253A830♣	5.94
1 3/4"	1	91253A831♣	6.65
2"	1	91253A832♣	8.34
2 1/2"	1	91253A834♣	9.53
3"	1	91253A836♣	9.69
3 1/2"	1	91253A840	10.14
4"	1	91253A842	14.44
7/8"-9			
2"	1	91253A890♣	13.37
2 1/2"	1	91253A894♣	16.47
3"	1	91253A898♣	19.00
3 1/2"	1	91253A901♣	21.22
1"-8			
2"	1	91253A912♣	11.77
2 1/2"	1	91253A914♣	14.62
3"	1	91253A916♣	$16.25
3 1/2"	1	91253A918♣	15.22
4"	1	91253A920	16.78
4 1/2"	1	91253A922	18.00
1"-8 (Cont.)			
5"	1	91253A924	$20.22
5 1/2"	1	91253A926	22.93
6"	1	91253A928	24.86
8"	1	91253A932	38.78

Self-Locking Black-Oxide Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
3/8"	25	91266A108♣	8.70
1/2"	25	91266A110♣	9.09
6-32			
3/8"	25	91266A146♣	6.78
1/2"	25	91266A148♣	6.88
5/8"	25	91266A150♣	7.06
3/4"	25	91266A152♣	7.54
8-32			
3/8"	25	91266A192♣	7.05
1/2"	25	91266A194♣	7.17
5/8"	25	91266A196♣	7.34
3/4"	25	91266A198♣	7.51
1"	25	91266A200♣	8.16
10-24			
3/8"	25	91266A240♣	7.18
1/2"	25	91266A242♣	7.23
5/8"	25	91266A244♣	7.35
3/4"	25	91266A246♣	7.60
1"	25	91266A247♣	7.89
10-32			
3/8"	25	91266A250♣	7.18
1/2"	25	91266A252♣	7.23
5/8"	25	91266A253♣	7.35
3/4"	25	91266A254♣	7.60
1"	25	91266A256♣	8.45
1 1/4"	25	91266A258♣	8.44
1 1/2"	25	91266A260	9.67
1/4"-20			
1/2"	25	91266A537♣	7.94
5/8"	25	91266A539♣	8.11
3/4"	25	91266A540♣	9.15
1"	25	91266A542♣	9.73
1 1/4"	25	91266A544♣	10.88
1 1/2"	25	91266A546♣	11.53
1 3/4"	10	91266A548	5.32
2"	10	91266A549	5.64
1/4"-28			
1/2"	25	91266A560♣	7.94
5/8"	25	91266A561♣	8.11
3/4"	25	91266A562♣	9.15
1"	25	91266A567♣	9.73
1 1/4"	10	91266A569♣	4.35
1 1/2"	10	91266A571♣	4.62
5/16"-18			
5/8"	25	91266A580♣	9.76
3/4"	25	91266A581♣	10.13
1"	25	91266A583♣	10.56
1 1/4"	25	91266A585♣	11.49
1 1/2"	25	91266A587♣	11.62
2"	10	91266A589	5.15
5/16"-24			
3/4"	25	91266A592♣	10.13
1 1/2"	10	91266A597♣	5.30
3/8"-16			
5/8"	25	91266A621♣	12.95
3/4"	25	91266A622♣	13.09
1"	10	91266A624♣	5.31
1 1/4"	10	91266A626♣	5.40
1 1/2"	10	91266A628♣	5.68
1 3/4"	10	91266A629♣	6.21
2"	10	91266A632♣	6.71
3/8"-24			
3/4"	10	91266A650♣	5.24
1"	10	91266A652♣	5.31
1 1/4"	10	91266A654♣	5.12
1/2"-13			
1"	5	91266A712♣	4.76
1 1/4"	5	91266A714♣	5.34
1 1/2"	5	91266A716♣	5.87
1 3/4"	5	91266A718♣	6.05
2"	5	91266A720♣	6.13

Zinc-Plated Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
3/8"	50	91263A501♣	11.22
1/2"	50	91263A503♣	11.67
6-32			
1/4"	25	91263A512♣	6.00
3/8"	25	91263A514♣	6.29
1/2"	25	91263A516♣	6.35
3/4"	25	91263A518♣	7.23
1"	25	91263A520♣	9.30
8-32			
3/8"	50	91263A522♣	11.47
1/2"	25	91263A524♣	6.25
3/4"	25	91263A526♣	7.29
1"	25	91263A528♣	8.26
10-24			
3/8"	25	91263A531♣	6.39
1/2"	25	91263A533♣	6.44
3/4"	25	91263A535♣	7.30
1"	25	91263A537♣	8.40
1 1/2"	10	91263A539	4.84
10-32			
3/8"	50	91263A542♣	12.17
1/2"	25	91263A544♣	6.44
3/4"	25	91263A546♣	7.30
1"	25	91263A548♣	8.40
1/4"-20			
3/8"	25	91263A551♣	8.16
1/2"	25	91263A553♣	6.88
5/8"	25	91263A556♣	7.13
3/4"	25	91263A559♣	7.32
1"	25	91263A562♣	8.05
1 1/2"	10	91263A564♣	4.91
2"	10	91263A566	6.71
2 1/2"	10	91263A568	7.65
1/4"-28			
1/2"	25	91263A250♣	8.39
3/4"	25	91263A255♣	8.92
1"	25	91263A260♣	9.83
5/16"-18			
1/2"	25	91263A571♣	8.10
3/4"	25	91263A573♣	8.60
7/8"	25	91263A574♣	9.02
1"	25	91263A575♣	9.19
1 1/2"	10	91263A577♣	5.37
2"	10	91263A578	9.34
2 1/2"	10	91263A579	9.81
5/16"-24			
3/4"	25	91263A350♣	8.24
1"	10	91263A353♣	6.76
3/8"-16			
1/2"	25	91263A580♣	13.49
5/8"	25	91263A581♣	13.80
3/4"	10	91263A582♣	4.75
1"	10	91263A584♣	4.84
1 1/4"	10	91263A585♣	5.51
1 1/2"	10	91263A587♣	6.08
1 3/4"	10	91263A591♣	8.51
2"	10	91263A593♣	9.29
2 1/2"	5	91263A595	6.31
3"	5	91263A597	6.59
1/2"-13			
1"	5	91263A601♣	5.61
1 1/4"	5	91263A603♣	6.48
1 1/2"	5	91263A605♣	6.85
1 3/4"	5	91263A608♣	7.65
2"	5	91263A610♣	7.95
2 1/2"	1	91263A612	2.15
3"	1	91263A614	2.39
5/8"-11			
1 1/2"	1	91263A805♣	2.59
2"	1	91263A807♣	3.51
2 1/2"	1	91263A809♣	3.69
3"	1	91263A811♣	4.39

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3124 for more thread length information.

Torx Drive Black-Oxide Alloy Steel Flat Head

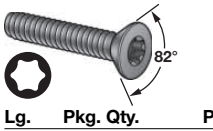

The Torx drive handles high torque and prevents your driver from slipping. Screws are made from black-oxide alloy steel, which conforms to ASTM F835 and provides lubricity and mild rust resistance. All have a Class 3A thread fit. They have a minimum Rockwell hardness of C39 and minimum tensile strength of 145,000 psi. Screw length is measured from the top of the head. *Note:* Flat head screws are not recommended for high strength applications.

For Torx tools, see pages 2823-2824 and 2848-2850.

Lg.	Pkg. Qty.		Per Pkg.
4-40—Torx Size: T10			
1/4"	50	94414A106♣	$11.84
3/8"	50	94414A108♣	12.27
1/2"	50	94414A110♣	12.77
3/4"	50	94414A112♣	9.21
5-40—Torx Size: T10			
3/8"	50	94414A121♣	7.43
1/2"	50	94414A124♣	7.94
6-32—Torx Size: T15			
1/4"	50	94414A144♣	7.72
3/8"	50	94414A146♣	8.06
1/2"	50	94414A148♣	8.20
6-32 (Cont.)			
5/8"	50	94414A150♣	$9.07
3/4"	50	94414A151♣	9.82
8-32—Torx Size: T20			
3/8"	50	94414A192♣	12.47
1/2"	50	94414A194♣	12.89
3/4"	25	94414A198♣	5.34
10-24—Torx Size: T25			
1/2"	50	94414A242♣	9.21
5/8"	50	94414A243♣	9.64
3/4"	50	94414A245♣	10.18
1"	25	94414A247♣	6.35
10-32—Torx Size: T25			
3/8"	50	94414A261♣	$9.01
1/2"	50	94414A263♣	9.21
5/8"	50	94414A265♣	9.64
3/4"	50	94414A267♣	10.20
1"	25	94414A269♣	9.14
1/4"-20—Torx Size: T30			
3/4"	50	94414A540♣	10.96
1"	50	94414A542♣	12.16
2"	25	94414A550	12.62
1/4"-28—Torx Size: T30			
1/2"	50	94414A571♣	$10.35
5/8"	50	94414A573♣	10.89
5/16"-18—Torx Size: T40			
1/2"	50	94414A583♣	12.07
1 1/4"	25	94414A588♣	9.20
5/16"-24—Torx Size: T40			
1"	25	94414A591♣	7.35
3/8"-16—Torx Size: T45			
3/4"	25	94414A622♣	8.49
1"	25	94414A624♣	9.11
1 1/2"	25	94414A628♣	10.97

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3124 for more thread length information.

Stainless Steel Flat Head

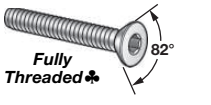

Fully Threaded♣

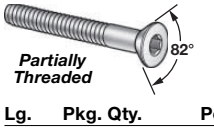

Partially Threaded

Designed for light fastening jobs where you need a flush surface and corrosion resistance. All screws have a Class 3A thread fit, a Rockwell hardness of B70, and minimum tensile strength of 70,000 psi. Screw length is measured from the top of the head. *Note:* Flat head screws are not recommended for high strength applications.

Self-locking 18-8 stainless steel screws have a nylon locking patch bonded to the threads that increases holding power, adds vibration resistance, and withstands temperatures from –65° to +250°F. Self-locking screws are reusable.

Type 316 stainless steel provides excellent corrosion resistance—even better than 18-8 stainless steel. It contains molybdenum, which increases corrosion resistance to chlorides and sulfates. May be mildly magnetic.

18-8 stainless steel provides excellent corrosion resistance and may be mildly magnetic. The addition of an attractive ***black-oxide*** finish adds a bit of lubricity.

Also Available: Military spec. MS24671 300-series stainless steel flat head cap screws in sizes marked with a ●. Minimum tensile strength is 80,000 psi. Please ask for 94518A555 and specify thread size and screw length.

Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
2-56			
5/16"	50	90585A116♣	$6.56
3/8"	50	90585A120♣	6.88
1/2"	50	90585A124♣	7.78
4-40			
3/16"	10	90585A201♣	3.84
1/4"	10	90585A200♣	3.17
5/16"	10	90585A203♣	4.07
3/8"	10	90585A202♣	3.36
1/2"	10	90585A204♣	3.85
5/8"	10	90585A205♣	4.40
3/4"	10	90585A206♣	4.54
1"	25	90585A208♣	5.83
1 1/4"	25	90585A209♣	7.07
5-40			
1/4"	25	90585A014♣	5.53
3/8"	25	90585A018♣	4.37
1/2"	25	90585A022♣	4.41
6-32			
1/4"	10	90585A210♣	3.34
5/16"	25	90585A211♣	5.05
3/8"	10	90585A212♣	3.36
7/16"	25	90585A213♣	4.72
1/2"	10	90585A214♣	3.65
5/8"	25	90585A215♣	5.66
3/4"	25	90585A216♣	6.25
7/8"	25	90585A217♣	6.92
1"	25	90585A218♣	7.64
1 1/4"	25	90585A219♣	9.32
1 1/2"	25	90585A220♣	10.67
8-32			
1/4"	10	90585A224♣	3.48
5/16"	10	90585A225♣	4.49
3/8"	10	90585A226♣	3.66
7/16"	25	90585A227♣	6.39
1/2"	10	90585A228♣	3.71
5/8"	10	90585A229♣	5.41
3/4"	10	90585A230♣	4.31
7/8"	25	90585A232♣	10.06
1"	10	90585A233♣	4.13
1 1/4"	10	90585A235♣	5.36
1 1/2"	10	90585A237♣	6.24
10-24			
3/8"	10	90585A240♣	3.84
1/2"	10	90585A242♣	3.90
5/8"	10	90585A243♣	4.15
10-24 (Cont.)			
3/4"	10	90585A245♣	$4.81
7/8"	10	90585A246♣	5.33
1"	10	90585A247♣	5.52
1 1/4"	10	90585A252♣	6.83
1 1/2"	10	90585A254♣	7.88
10-32			
1/4"	25	90585A281♣	9.10
5/16"	25	90585A283♣	9.38
3/8"	10	90585A287♣	3.84
7/16"	25	90585A292♣	9.58
1/2"	10	90585A989♣	3.90
5/8"	10	90585A990♣	3.79
3/4"	10	90585A991♣	4.27
7/8"	10	90585A296♣	5.57
1"	10	90585A992♣	4.41
1 1/4"	10	90585A994♣	4.19
1 1/2"	10	90585A996♣	4.55
2"	10	90585A299♣	6.03
1/4"-20			
3/8"	10	90585A535♣	4.12
1/2"	10	90585A537♣	4.23
5/8"	10	90585A358♣	4.24
3/4"	10	90585A540♣	4.57
7/8"	10	90585A541♣	6.16
1"	10	90585A542♣	5.23
1 1/4"	10	90585A544♣	5.87
1 1/2"	10	90585A546♣	7.00
1 3/4"	5	90585A548♣	4.98
2"	5	90585A550	4.56
2 1/2"	5	90585A552	6.09
3"	5	90585A554	6.35
1/4"-28			
1/2"	5	90585A560♣	4.01
5/8"	5	90585A563♣	4.15
3/4"	5	90585A566♣	5.12
1"	5	90585A569♣	5.26
5/16"-18			
1/2"	10	90585A579♣	7.55
5/8"	5	90585A580♣	4.97
3/4"	5	90585A581♣	3.97
1"	5	90585A583♣	4.61
1 1/4"	5	90585A585♣	6.07
1 1/2"	5	90585A587♣	7.96
2"	5	90585A590♣	9.09
Type 316 Stainless Steel (Cont.)			
5/16"-18 (Cont.)			
2 1/2"	1	90585A593	$1.99
3"	1	90585A596	2.26
3 1/2"	1	90585A599	3.30
4"	1	90585A602	3.57
3/8"-16			
3/4"	5	90585A622♣	5.31
1"	5	90585A624♣	6.11
1 1/4"	1	90585A626♣	1.50
1 1/2"	1	90585A628♣	1.85
1 3/4"	1	90585A630♣	2.14
2"	1	90585A632♣	2.41
2 1/2"	1	90585A635	2.53
3"	1	90585A637	2.84
3 1/2"	1	90585A639	2.99
4"	1	90585A641	3.44
1/2"-13			
3/4"	1	90585A710♣	3.88
1"	1	90585A712♣	4.04
1 1/4"	1	90585A714♣	4.09
1 1/2"	1	90585A716♣	4.02
1 3/4"	1	90585A718♣	4.74
1/2"-13 (Cont.)			
2"	1	90585A720♣	$5.40
2 1/2"	1	90585A722♣	6.01
3"	1	90585A724♣	6.70
3 1/2"	1	90585A726	7.49
4"	1	90585A728	8.21
5/8"-11			
1"	1	90585A822♣	5.95
1 1/4"	1	90585A825♣	6.61
1 1/2"	1	90585A831♣	7.09
1 3/4"	1	90585A833♣	7.58
2"	1	90585A834♣	8.83
2 1/2"	1	90585A837♣	9.45
3"	1	90585A841♣	9.94
3 1/2"	1	90585A854	13.50
4"	1	90585A857	16.92
3/4"-10			
1 1/2"	1	90585A961♣	11.72
2"	1	90585A964♣	11.25
2 1/2"	1	90585A967♣	12.46
3"	1	90585A971♣	13.83
3 1/2"	1	90585A974	14.84
4"	1	90585A977	15.50
18-8 Stainless Steel			
0-80			
1/8"	50	92210A010♣	4.90
1/4"	50	92210A012♣	6.47
2-56			
1/8"	50	92210A075♣	7.82
3/16"	100	92210A076♣	7.15
1/4"	100	92210A077♣	7.31
5/16"	100	92210A078♣	7.42
3/8"	100	92210A079♣	7.76
1/2"	100	92210A081♣	11.47
5/8"	50	92210A083♣	6.38
3/4"	50	92210A085♣	8.69
7/8"	25	92210A086	5.49
1"	25	92210A087	7.72
4-40			
3/16"	100	92210A103♣	5.67
1/4"	100	92210A105♣●	4.05
5/16"	100	92210A107♣	4.19
3/8"	100	92210A108♣●	4.31
7/16"	100	92210A109♣	4.42
1/2"	100	92210A110♣●	4.48
5/8"	100	92210A112♣	4.68
4-40 (Cont.)			
3/4"	100	92210A113♣●	5.15
1"	100	92210A115♣	6.41
1 1/4"	25	92210A118	5.65
1 1/2"	25	92210A120	7.74
5-40			
1/4"	100	92210A126♣	5.19
3/8"	50	92210A127♣	2.93
1/2"	50	92210A128♣	3.26
5/8"	50	92210A130♣	3.60
3/4"	25	92210A131♣	2.98
6-32			
3/16"	25	92210A142♣★	6.67
1/4"	100	92210A144♣	4.63
5/16"	100	92210A145♣	4.67
3/8"	100	92210A146♣●	4.83
7/16"	100	92210A114♣	5.17
1/2"	100	92210A148♣●	5.19
5/8"	100	92210A150♣●	5.68
3/4"	100	92210A151♣●	5.82
7/8"	100	92210A152♣	7.25
1"	100	92210A153♣	7.46

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3124 for more thread length information.

★ Head is undercut to 70% of standard height to allow more threading.

(Continued on following page)

Stainless Steel Flat Head *(Continued from previous page)*

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel (Cont.)			
6-32 (Cont.)			
1¼″	100	92210A155	$8.70
1½″	100	92210A157	9.45
2″	25	92210A160	7.88
8-32			
¼″	100	92210A190♣	7.28
5/16″	100	92210A191♣	5.88
⅜″	100	92210A192♣●	5.65
7/16″	100	92210A193♣	5.90
½″	100	92210A194♣●	5.89
⅝″	100	92210A196♣	6.44
¾″	100	92210A197♣●	7.20
⅞″	100	92210A198♣	8.28
1″	100	92210A199♣●	8.81
1¼″	50	92210A201	6.60
1½″	50	92210A203	8.23
1¾″	25	92210A205	5.53
2″	25	92210A208	8.28
10-24			
¼″	25	92210A236♣★	5.38
5/16″	25	92210A238♣	2.33
⅜″	100	92210A240♣	8.21
½″	100	92210A242♣●	8.27
⅝″	100	92210A244♣	8.70
¾″	100	92210A245♣●	9.78
⅞″	50	92210A246♣	7.94
1″	50	92210A247♣●	6.41
1¼″	50	92210A249♣	8.70
1½″	50	92210A251	9.77
1¾″	25	92210A252	8.19
2″	25	92210A253	8.41
2½″	10	92210A256	4.85
3″	10	92210A258	6.34
10-32			
¼″	50	92210A297♣★	9.63
5/16″	50	92210A299♣	6.62
⅜″	100	92210A301♣	8.21
7/16″	100	92210A295♣	8.68
½″	100	92210A302♣	8.27
⅝″	100	92210A303♣	8.70
¾″	100	92210A304♣	9.78
⅞″	50	92210A305♣	5.78
1″	50	92210A306♣	6.41
1¼″	50	92210A307♣	8.58
1½″	50	92210A308	9.77
1¾″	25	92210A312	6.81
2″	25	92210A315	9.22
2½″	10	92210A318	4.85
3″	10	92210A321	6.34
¼″-20			
⅜″	50	92210A535♣	6.57
½″	50	92210A537♣●	6.58
⅝″	50	92210A539♣	7.49
¾″	50	92210A540♣●	8.50
⅞″	25	92210A541♣	4.71
1″	50	92210A542♣●	9.68
1⅛″	25	92210A543♣	7.80
1¼″	25	92210A544♣	6.26
1½″	25	92210A546♣●	7.04
1¾″	25	92210A548	8.73
2″	25	92210A550	9.86
2¼″	10	92210A551	5.40
¼″-20 (Cont.)			
2½″	10	92210A552♣	$6.32
3″	10	92210A555	6.91
3½″	10	92210A557	10.39
4″	5	92210A559	6.99
4½″	1	92210A563	3.18
¼″-28			
½″	50	92210A331♣	5.86
⅝″	50	92210A332♣	6.43
¾″	25	92210A334♣	5.73
1″	25	92210A336♣	6.72
1¼″	25	92210A337♣	7.88
1½″	25	92210A338♣	10.34
5/16″-18			
½″	25	92210A578♣	6.73
⅝″	25	92210A580♣	6.83
¾″	25	92210A581♣●	7.12
⅞″	10	92210A584♣	4.09
1″	10	92210A583♣●	4.68
1⅛″	25	92210A582♣	7.95
1¼″	10	92210A585♣	5.51
1½″	10	92210A587♣●	5.72
1¾″	10	92210A589♣	6.23
2″	10	92210A591♣	6.53
2¼″	10	92210A592	8.41
2½″	10	92210A593♣	8.57
2¾″	5	92210A594	5.23
3″	10	92210A595♣	10.09
3½″	5	92210A597	7.84
4″	5	92210A599	8.77
5/16″-24			
½″	10	92210A600♣	7.08
¾″	10	92210A602♣	7.24
1″	10	92210A603♣	7.81
1¼″	10	92210A604♣	10.01
1½″	5	92210A605♣	5.54
2″	5	92210A610	6.61
⅜″-16			
½″	5	92210A619♣	4.81
⅝″	5	92210A621♣	3.84
¾″	10	92210A622♣	5.69
⅞″	10	92210A623♣	6.46
1″	10	92210A624♣●	6.49
1¼″	10	92210A626♣	6.86
1½″	10	92210A628♣	8.13
1¾″	10	92210A630♣	9.46
2″	5	92210A632♣	5.20
2¼″	5	92210A633	6.46
2½″	5	92210A634	6.76
2¾″	5	92210A635	7.99
3″	5	92210A636	7.97
3½″	5	92210A637	11.02
4″	1	92210A638	2.49
4½″	1	92210A648	3.29
5″	1	92210A639	8.99
6″	1	92210A660	10.81
⅜″-24			
¾″	10	92210A640♣	10.53
1″	10	92210A642♣	10.23
1¼″	10	92210A643♣	11.10
1½″	1	92210A644♣	1.55
2″	5	92210A647♣	9.64
18-8 Stainless Steel (Cont.)			
7/16″-14			
1″	1	92210A669♣	$3.35
1¼″	1	92210A671♣	3.94
1½″	1	92210A673♣	3.53
2″	1	92210A676♣	5.19
½″-13			
¾″	10	92210A710♣	9.83
1″	5	92210A712♣	6.79
1¼″	5	92210A714♣	6.92
1½″	5	92210A716♣	7.33
1¾″	5	92210A718♣	8.29
2″	5	92210A720♣	8.86
2¼″	1	92210A721♣	1.78
2½″	1	92210A722♣	1.85
3″	1	92210A724♣	1.98
3½″	1	92210A726♣	2.31
4″	1	92210A728	2.59
4½″	1	92210A730	7.23
5″	1	92210A732	10.22
6″	1	92210A734	11.71
½″-20			
¾″	1	92210A740♣	1.47
1″	1	92210A742♣	1.84
1½″	1	92210A744♣	2.58
2″	1	92210A746♣	2.92
5/8″-11			
1″	1	92210A794♣	$3.28
1¼″	1	92210A796♣	3.12
1½″	1	92210A798♣	3.66
1¾″	1	92210A800♣	4.96
2″	1	92210A802♣	3.94
2½″	1	92210A804♣	4.56
3″	1	92210A806♣	5.02
3½″	1	92210A808	8.22
4″	1	92210A810	9.51
4½″	1	92210A811	11.99
5″	1	92210A812	16.63
6″	1	92210A814	23.11
¾″-10			
1¼″	1	92210A837♣	6.69
1½″	1	92210A839♣	5.57
1¾″	1	92210A841♣	7.69
2″	1	92210A843♣	6.97
2½″	1	92210A845♣	7.68
3″	1	92210A847	8.18
3½″	1	92210A849	12.11
4″	1	92210A851	13.22
5″	1	92210A853	23.08
Self-Locking 18-8 Stainless Steel			
4-40			
¼″	50	92805A106♣	10.50
⅜″	50	92805A108♣	11.44
½″	10	92805A112♣	7.10
6-32			
¼″	50	92805A144♣	11.37
⅜″	50	92805A146♣	12.34
½″	25	92805A148♣	6.63
⅝″	10	92805A150♣	7.34
¾″	10	92805A152♣	7.82
8-32			
⅜″	25	92805A192♣	7.56
½″	25	92805A194♣	7.75
⅝″	10	92805A195♣	7.50
¾″	25	92805A197♣	7.77
10-24			
⅜″	25	92805A240♣	8.27
½″	25	92805A242♣	8.81
¾″	25	92805A245♣	8.64
1″	25	92805A247♣	8.85
10-32			
⅜″	25	92805A260♣	8.27
½″	25	92805A264♣	8.81
⅝″	10	92805A265♣	8.06
¾″	25	92805A266♣	8.27
1″	25	92805A268♣	12.02
¼″-20			
⅜″	25	92805A535♣	11.38
½″	25	92805A537♣	11.86
⅝″	10	92805A378♣	9.25
¾″	25	92805A540♣	12.38
1″	25	92805A542♣	12.92
1¼″	10	92805A544♣	10.74
5/16″-18			
¾″	5	92805A624♣	7.25
1″	5	92805A626♣	7.74
⅜″-16			
¾″	5	92805A723♣	8.86
1″	5	92805A725♣	9.90
1¼″	5	92805A727♣	10.07
Black-Oxide 18-8 Stainless Steel			
6-32			
⅜″	100	93791A453♣	8.28
½″	100	93791A457♣	8.96
¾″	100	93791A460♣	11.32
8-32			
⅜″	100	93791A472♣	9.67
½″	100	93791A475♣	10.45
¾″	50	93791A479♣	7.41
10-24			
½″	50	93791A491♣	6.98
¾″	50	93791A494♣	9.31
1″	50	93791A499♣	11.60
10-32			
⅜″	100	93791A508♣	12.29
½″	50	93791A512♣	6.98
⅝″	50	93791A516♣	8.48
¾″	50	93791A518♣	9.31
1″	50	93791A523♣	11.60
¼″-20			
½″	50	93791A546♣	11.94
⅝″	25	93791A552♣	6.82
¾″	25	93791A557♣	8.01
1″	25	93791A563♣	9.31
1¼″	25	93791A569♣	10.71
1½″	25	93791A573♣	11.20

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3124 for more thread length information.
★ Head is undercut to 70% of standard height to allow more threading.

Brass Flat Head

Our brass flat heads are excellent conductors of electricity. They're nonmagnetic, soft, and corrosion resistant—plus, they sit flush when installed so they won't disrupt smooth surfaces. *Note:* Flat head screws are not recommended for high strength applications.

All screws are fully threaded and have a Class 3A thread fit. Minimum Rockwell hardness is B55; minimum tensile strength is 55,000 psi. Screw length is measured from the top of the head.

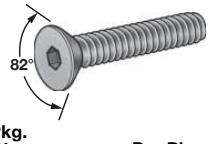

Lg.	Pkg. Qty.		Per Pkg.
10-24			
½″	25	97595A211	$7.97
¾″	25	97595A215	8.50
1″	25	97595A219	9.25
10-32			
½″	25	97595A232	7.97
¾″	25	97595A236	8.50
1″	25	97595A240	9.25
¼″-20			
½″	10	97595A251	$4.77
⅝″	10	97595A255	5.14
¾″	10	97595A259	5.90
1″	10	97595A263	6.78
1¼″	10	97595A268	7.79
1½″	10	97595A271	9.12
5/16″-18			
¾″	10	97595A302	$8.28
1″	10	97595A307	10.18
1¼″	10	97595A312	11.21
1½″	10	97595A316	12.56
⅜″-16			
¾″	10	97595A334	11.73
1″	10	97595A337	14.13
⅜″-16 (Cont.)			
1¼″	5	97595A342	$8.37
1½″	5	97595A346	9.95
½″-13			
1″	1	97595A365	2.43
1¼″	1	97595A369	2.89
1½″	1	97595A374	3.28
2″	1	97595A378	3.98

About Metric Flat-Head Socket Head Cap Screws

Use a countersink (see pages 2465-2470) to create a recess for flat head screws. The body diameter of your countersink should be equal to or larger than your screw's head diameter and its included angle should match your screw's head angle.

Screw Size	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20
Hex Size, mm	1.3	1.5	2	2.5	3	4	5	6	8	10	10	12
Pitch, mm	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5
Head Height, mm	1.2	1.5	1.7	2.3	2.8	3.3	4.4	5.5	6.5	7	7.5	8.5
Head Dia., mm	4	5	6	8	10	12	16	20	24	27	30	36
Min. Thread Lg., mm	Fully	Fully	12	14	16	18	22	26	30	Fully	38	46
Max. Thread Lg., mm	Fully	Fully	20.5	23.5	26	29	34.25	39.5	44.75	Fully	54	64.5

Metric Class 10.9 Steel Flat Head

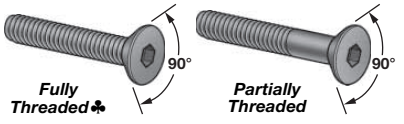

Made from an alloy steel that's comparable to Grade 8 steel, these screws have been heat treated and are great for light fastening jobs where a flush surface is desired. All have a Class 6g thread fit and meet ISO 10642 (unless noted as meeting DIN 7991). They have a minimum Rockwell hardness of C32 and minimum tensile strength of 142,000 psi. Screw length is measured from the top of the head. *Note:* Flat head screws are not recommended for high strength applications.

High-visibility metric blue screws have a distinctive blue coating that makes them easy to distinguish from inch sizes.

Black Alloy Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M2—Pitch: 0.4 mm			
4	25	91294A002♣♦	$6.42
5	25	91294A003♣♦	6.24
6	25	91294A004♣♦	6.42
8	25	91294A005♣♦	6.45
10	25	91294A006♣♦	6.65
12	25	91294A009♣♦	6.55
M2.5—Pitch: 0.45 mm			
5	25	91294A012♣♦	7.68
6	25	91294A014♣♦	5.40
8	25	91294A016♣♦	5.40
10	25	91294A018♣♦	6.00
12	25	91294A020♣♦	7.00
16	25	91294A022♣♦	9.48
20	25	91294A024♣♦	9.30
M3—Pitch: 0.5 mm			
5	100	91294A125♣	9.54
6	100	91294A126♣	7.76
8	100	91294A128♣	7.67
10	100	91294A130♣	7.72
12	100	91294A132♣	11.24
14	100	91294A133♣♦	6.06
16	100	91294A134♣	12.04
18	100	91294A135♣♦	12.60
20	100	91294A136♣	13.13
22	50	91294A137♣♦	6.19
25	100	91294A138♣	13.78
30	50	91294A141	9.20
M4—Pitch: 0.7 mm			
6	100	91294A186♣	10.85
8	100	91294A188♣	7.80
10	100	91294A190♣	7.84
12	100	91294A192♣	8.48
14	100	91294A193♣♦	10.00
16	100	91294A194♣	8.95
18	100	91294A195♣♦	9.46
20	100	91294A196♣	9.54
22	50	91294A197♣♦	9.92
25	100	91294A198♣	12.51
30	100	91294A200	13.14
M4 (Cont.)			
35	50	91294A202	$8.50
40	50	91294A204	9.43
M5—Pitch: 0.8 mm			
8	100	91294A207♣	12.25
10	100	91294A208♣	8.55
12	100	91294A210♣	8.65
14	100	91294A211♣♦	7.60
16	100	91294A212♣	11.28
18	100	91294A213♣♦	11.00
20	100	91294A214♣	12.13
22	50	91294A215♣♦	9.17
25	100	91294A216♣	12.12
30	50	91294A217♣	8.62
35	50	91294A218	9.90
40	50	91294A219	10.57
45	50	91294A220♦	8.02
50	50	91294A221	14.69
55	50	91294A224♦	13.60
M6—Pitch: 1 mm			
8	100	91294A232♣	11.91
10	100	91294A234♣	10.18
12	100	91294A236♣	10.60
14	100	91294A237♣♦	9.01
16	100	91294A238♣	11.27
18	100	91294A239♣♦	10.56
20	100	91294A240♣	13.83
22	50	91294A241♣♦	8.94
25	100	91294A242♣	13.05
30	100	91294A244♣	14.48
35	100	91294A246♣	14.36
40	50	91294A248	11.33
45	25	91294A249♣♦	10.09
50	25	91294A250	10.63
55	25	91294A251♣♦	10.09
60	25	91294A253	13.42
70	25	91294A258♦	8.55
M8—Pitch: 1.25 mm			
10	50	91294A278♣♦	8.00
12	50	91294A280♣	8.48
M8 (Cont.)			
14	25	91294A281♣♦	$10.09
16	50	91294A282♣	9.47
18	50	91294A283♣	10.35
20	50	91294A284♣	10.67
22	25	91294A285♣♦	8.25
25	50	91294A286♣	13.10
30	50	91294A287♣	14.67
35	25	91294A288♣	9.25
40	25	91294A289♣	9.30
45	25	91294A290♣	10.36
50	25	91294A291	11.46
55	10	91294A292♣♦	6.28
60	10	91294A293	6.72
65	5	91294A294♣♦	4.86
70	5	91294A296♣♦	4.63
80	10	91294A300♣♦	9.98
M10—Pitch: 1.5 mm			
12	25	91294A320♣	13.10
16	25	91294A326♣	8.76
20	25	91294A328♣	9.57
25	25	91294A330♣	11.37
30	25	91294A332♣	13.09
35	25	91294A334♣	13.87
40	25	91294A335♣	14.58
45	10	91294A336♣	8.09
50	10	91294A337♣	9.65
55	10	91294A338♦	5.96
60	10	91294A339	12.16
70	10	91294A343	13.72
80	5	91294A345	8.93
90	5	91294A348♣♦	10.09
100	10	91294A350♦	12.85
M12—Pitch: 1.75 mm			
20	10	91294A352♣	6.76
25	10	91294A354♣	7.24
30	10	91294A356♣	8.89
35	10	91294A358♣	9.74
40	10	91294A359♣	10.40
45	10	91294A360♣	11.55
M12 (Cont.)			
50	10	91294A362♣	$12.59
55	10	91294A363♣♦	11.62
60	10	91294A364♣	13.91
70	5	91294A366	10.11
80	5	91294A368	11.76
90	5	91294A370♣♦	12.63
100	1	91294A374♦	2.62
120	1	91294A378♦	2.93
130	1	91294A380♦	3.60
M14—Pitch: 2 mm			
30	5	91294A408♣♦	10.74
35	5	91294A410♣	9.48
40	5	91294A414♣	9.55
45	5	91294A415♣♦	11.23
50	5	91294A418♣	11.36
60	5	91294A420♣	13.79
70	1	91294A424♣♦	3.20
80	1	91294A426♣♦	3.81
M16—Pitch: 2 mm			
25	1	91294A438♣♦	3.73
30	5	91294A440♣	9.29
35	5	91294A444♣	9.83
40	5	91294A448♣	10.89
45	1	91294A450♣♦	2.20
50	5	91294A452♣	12.56
55	5	91294A453♦	12.30
60	5	91294A454♣	13.68
70	1	91294A456♣	3.58
80	1	91294A458	4.22
90	1	91294A460♦	3.08
100	1	91294A462	4.97
M20—Pitch: 2.5 mm			
40	1	91294A514♣	4.07
50	1	91294A518♣	4.69
60	1	91294A522♣	5.88
70	1	91294A526♣	10.89
80	1	91294A530	6.92
90	1	91294A532♦	5.88
100	1	91294A534	13.25

High-Visibility Blue Alloy Steel

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
8	25	92925A002♣	$6.95
10	25	92925A007♣	7.74
12	25	92925A012♣	7.74
16	25	92925A017♣	8.51
20	25	92925A022♣	8.89
25	25	92925A023♣	7.34
M4—Pitch: 0.7 mm			
8	25	92925A027♣	7.74
10	25	92925A032♣	8.51
12	25	92925A037♣	8.51
16	25	92925A042♣	8.88
20	25	92925A047♣	10.06
25	25	92925A052♣	11.21
30	25	92925A053	13.91
M5—Pitch: 0.8 mm			
8	25	92925A054♣	8.51
10	25	92925A057♣	8.51
12	25	92925A062♣	8.51
16	25	92925A067♣	8.89
20	25	92925A072♣	9.28
25	25	92925A077♣	9.98
30	25	92925A082♣	10.02
M6—Pitch: 1 mm			
10	25	92925A087♣	10.44
12	25	92925A092♣	10.05
16	25	92925A097♣	10.83
20	25	92925A102♣	11.21
25	25	92925A107♣	11.60
30	25	92925A112♣	12.76
M6 (Cont.)			
35	25	92925A117♣	14.69
40	25	92925A122	15.07
45	10	92925A123	6.12
50	10	92925A124	8.19
M8—Pitch: 1.25 mm			
12	25	92925A132♣	13.92
16	25	92925A137♣	13.91
20	25	92925A142♣	14.69
25	25	92925A147♣	14.31
30	25	92925A152♣	14.37
35	10	92925A157♣	6.81
40	10	92925A162♣	7.11
50	10	92925A164	9.28
M10—Pitch: 1.5 mm			
16	10	92925A167♣	6.18
20	10	92925A172♣	6.96
25	10	92925A177♣	7.58
30	10	92925A182♣	8.35
35	10	92925A187♣	8.81
40	10	92925A192♣	9.91
50	10	92925A202♣	12.21
M12—Pitch: 1.75 mm			
20	10	92925A207♣	13.14
25	10	92925A212♣	11.13
30	10	92925A217♣	11.75
45	5	92925A232♣	8.74

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See top of page for more thread length information.
♦ Meets DIN 7991.

For information about hex sizes, head dimensions, and thread lengths, see page 3128.

Metric Stainless Steel Flat Head

Perfect for light fastening jobs where flush mounting is desired. Screws are fully threaded and have a Class 6g thread fit. They may be mildly magnetic and have a minimum tensile strength of 100,000 psi. Not rated for hardness. Screw length is measured from the top of the head. *Note:* Flat head screws are not recommended for high strength applications.

Type 316 Stainless Steel— More corrosion resistant than 18-8 stainless steel. Contains molybdenum, which increases corrosion resistance to most chlorides and sulfates. ***18-8 Stainless Steel—*** Offers excellent corrosion resistance.

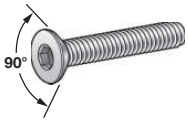

Type 316 Stainless Steel—DIN 7991-A4

Lg., mm	Pkg. Qty.		Per Pkg.
M2—Pitch: 0.4 mm			
8	10	93395A141	$4.17
10	10	93395A144	4.13
12	10	93395A147	4.18
16	10	93395A150	5.49
M2.5—Pitch: 0.45 mm			
8	10	93395A176	3.22
10	10	93395A179	2.85
12	10	93395A182	3.46
16	10	93395A185	4.12
M3—Pitch: 0.5 mm			
6	50	93395A198	6.72
8	100	93395A201	11.26
10	100	93395A204	10.53
12	100	93395A207	11.26
16	100	93395A210	12.35
20	50	93395A213	7.81
25	50	93395A216	10.30
35	25	93395A218	10.17
M4—Pitch: 0.7 mm			
6	100	93395A252	10.53
8	100	93395A251	13.08
10	100	93395A254	13.44
12	50	93395A257	7.99
16	50	93395A262	8.17
20	50	93395A263	8.99
25	25	93395A266	6.54
30	10	93395A267	5.01
M5—Pitch: 0.8 mm			
10	50	93395A301	$9.63
12	50	93395A304	9.63
16	50	93395A307	10.17
20	25	93395A310	6.45
25	25	93395A313	9.48
30	25	93395A316	10.03
M6—Pitch: 1 mm			
10	50	93395A351	11.08
12	25	93395A354	6.26
16	25	93395A357	6.90
20	25	93395A360	7.99
25	25	93395A363	10.62
30	25	93395A366	10.90
40	10	93395A368	7.77
M8—Pitch: 1.25 mm			
12	5	93395A400	4.20
16	10	93395A401	8.14
20	10	93395A404	7.56
25	10	93395A407	8.14
30	10	93395A410	8.86
35	5	93395A412	5.90
40	5	93395A414	6.10
M10—Pitch: 1.5 mm			
16	5	93395A448	10.55
20	5	93395A451	6.50
30	5	93395A457	10.31

18-8 Stainless Steel—DIN 7991-A2

Lg., mm	Pkg. Qty.		Per Pkg.
M2—Pitch: 0.4 mm			
4	50	92125A050	9.20
5	50	92125A051	9.20
6	50	92125A052	9.00
8	25	92125A054	6.60
10	25	92125A056	6.20
12	25	92125A058	7.90
M2.5—Pitch: 0.45 mm			
4	50	92125A082	9.20
5	25	92125A083	5.50
6	25	92125A084	6.50
8	25	92125A086	6.50
10	25	92125A088	5.00
12	25	92125A090	6.00
M3—Pitch: 0.5 mm			
6	100	92125A126	4.64
8	100	92125A128	5.78
M3 (Cont.)			
10	100	92125A130	4.58
12	100	92125A132	4.46
14	100	92125A133	3.93
16	100	92125A134	4.25
18	100	92125A135	7.10
20	100	92125A136	5.07
25	100	92125A138	7.60
30	25	92125A140	8.23
40	25	92125A150	3.98
M4—Pitch: 0.7 mm			
6	100	92125A186	3.23
8	100	92125A188	7.00
10	100	92125A190	4.18
12	100	92125A192	6.57
14	100	92125A193	6.70
16	100	92125A194	7.00
M4 (Cont.)			
18	100	92125A196	$8.85
20	100	92125A198	6.20
25	100	92125A202	9.09
30	100	92125A203	7.24
35	100	92125A204	10.76
40	50	92125A205	6.36
45	50	92125A207	8.97
50	50	92125A209	9.89
M5—Pitch: 0.8 mm			
8	50	92125A206	8.48
10	100	92125A208	12.92
12	100	92125A210	12.97
14	50	92125A211	7.68
16	50	92125A212	8.19
18	50	92125A213	8.50
20	50	92125A214	8.13
22	50	92125A215	12.04
25	50	92125A216	10.59
30	25	92125A220	7.85
35	25	92125A222	8.64
40	25	92125A224	9.47
45	25	92125A226	10.93
50	25	92125A228	10.92
60	10	92125A230	5.19
M6—Pitch: 1 mm			
8	50	92125A232	9.26
10	50	92125A234	9.08
12	50	92125A236	10.83
14	25	92125A237	6.36
16	25	92125A238	6.59
18	25	92125A239	7.45
20	25	92125A240	6.51
22	25	92125A241	7.87
25	25	92125A242	7.14
30	25	92125A244	7.78
35	25	92125A246	8.86
40	25	92125A248	11.24
45	25	92125A250	10.04
50	10	92125A252	6.46
60	25	92125A254	13.75
70	5	92125A258	8.14
80	5	92125A260	10.49
M8—Pitch: 1.25 mm			
10	25	92125A278	9.04
12	25	92125A280	8.50
M8 (Cont.)			
14	25	92125A281	$13.07
16	25	92125A282	9.01
18	10	92125A283	6.44
20	25	92125A284	10.88
22	10	92125A285	4.77
25	25	92125A286	12.76
30	10	92125A290	6.48
35	10	92125A292	6.96
40	10	92125A294	7.18
45	10	92125A296	9.00
50	5	92125A298	5.49
55	5	92125A300	7.48
60	5	92125A302	6.49
70	5	92125A304	9.69
80	5	92125A306	10.85
90	1	92125A309	2.98
100	1	92125A312	3.28
M10—Pitch: 1.5 mm			
16	10	92125A330	8.69
20	10	92125A333	7.17
25	10	92125A336	8.39
30	10	92125A337	8.69
35	10	92125A339	10.51
40	10	92125A342	12.60
50	5	92125A348	7.77
60	5	92125A351	9.51
70	5	92125A354	12.15
100	1	92125A363	5.22
M12—Pitch: 1.75 mm			
20	5	92125A410	6.87
25	5	92125A413	6.31
30	5	92125A416	7.68
35	5	92125A419	8.48
40	5	92125A423	8.77
50	5	92125A429	10.44
70	1	92125A435	3.97
80	1	92125A438	5.00
M16—Pitch: 2 mm			
25	1	92125A508	6.29
30	1	92125A510	8.83
35	1	92125A512	6.62
40	1	92125A515	6.15
45	1	92125A518	8.29
50	1	92125A520	7.06
60	1	92125A523	10.13

Button Head Assortments

300-Piece Assortment—18-8 Stainless Steel

Furnished in a 10⅞″ Lg.×6½″ Wd.×1¾″ Dp. compartmented plastic box with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.
4-40×¼″	25	10-32 × ⅜″	25
4-40×⅜″	25	10-32 × ½″	25
6-32×¼″	25	10-32 × ¾″	25
6-32×⅜″	25	¼″-20× ½″	25
8-32×⅜″	25	¼″-20× ¾″	25
8-32×½″	25	¼″-20×1″	25

92145A212 ..... **Each** $61.40

300-Piece Assortment—Black-Oxide Alloy Steel

Furnished in an 11″ Lg.×6¾″ Wd.×1¾″ Dp. compartmented plastic box with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
6-32×⅜″	25	10-32 ×⅜″	25	¼″-20 × ¾″	25
6-32×½″	25	10-32 ×½″	25	¼″-20 ×1″	25
8-32×⅜″	25	10-32 ×¾″	25	5/16″-18× ¾″	25
8-32×½″	25	¼″-20×½″	25	5/16″-18×1″	25

91930A512 ..... **Each** $74.92

Metric 300-Piece Assortment—18-8 Stain. Steel—ISO 7380-A2

Furnished in a 13⅛″ Lg.×9″ Wd.×2 5/16″ Dp. compartmented plastic box with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M3× 8	50	M5×10	25	M6×16	10
M4× 8	50	M5×12	25	M6×30	10
M4×10	50	M6×10	25	M8×12	10
M4×12	25	M6×12	10	M8×20	10

92600A111 ..... **Each** $40.42

Metric 258-Piece Assortment—Class 10.9 Alloy Steel—ISO 7380

Includes the screws listed below, plus two each of the following size hex keys: 2.5 mm, 3 mm, 4 mm, and 5 mm. Furnished in an 11″ Lg.×6¾″ Wd.×1¾″ Dp. compartmented plastic box with lid chart.

Size	No. of Pcs.	Size	No. of Pcs.	Size	No. of Pcs.
M4× 8	25	M5×25	10	M6×30	10
M4×10	25	M5×30	10	M8×20	10
M4×12	25	M6×16	10	M8×25	10
M4×16	25	M6×20	10	M8×30	10
M5×16	25	M6×25	10	M8×40	10
M5×20	25				

90115A032 ..... **Each** $58.84

Plastic Socket Head Cap Screw Covers

Covers protect your socket head screws and give them a finished look.

To Order: Please specify screw size and color: black or off-white.

For Head Style	Available Screw Sizes	Temperature Range	Pkg. Qty.		Per Pkg.
Socket Head	No. 10, 1/4″, 5/16″	–148° to +248°F	100	96306A100	$6.41
Button Head	No. 6, No. 8, No. 10, 1/4″	+32° to +250°F	100	97697A400	6.91

Button-Head Cap Screw Hex Sizes, Head Dimensions, and Thread Lengths

Sizes marked with a ♣ are always fully threaded.
For all other sizes, manufacturing standards allow threads to vary from the minimum length (below) to full thread.

Screw Size	No. 0	No. 2	No. 3	No. 4	No. 5	No. 6	No. 8	No. 10	No. 12	1/4″	5/16″	3/8″	1/2″	5/8″
Decimal Approx.	0.060″	0.086″	0.099″	0.112″	0.125″	0.138″	0.164″	0.190″	0.216″	0.250″	0.312″	0.375″	0.500″	0.625″
Hex Size	0.035″	0.05″	1/16″	1/16″	5/64″	5/64″	3/32″	1/8″	5/32″	5/32″	3/16″	7/32″	5/16″	3/8″
Head Height	0.032″	0.046″	0.052″	0.059″	0.066″	0.073″	0.087″	0.101″	0.114″	0.132″	0.166″	0.199″	0.265″	0.331″
Head Diameter	0.114″	0.164″	0.188″	0.213″	0.238″	0.262″	0.312″	0.361″	0.413″	0.437″	0.547″	0.656″	0.875″	1.000″
Min. Thread Lg.	Fully	5/8″	Fully	11/16″	Fully	3/4″	13/16″	7/8″	Fully	1″	1 1/8″	1 1/4″	1 1/2″	Fully

Button Head

Fully Threaded♣

Partially Threaded

Self Locking

Screws provide a wide bearing surface, low head, and a finished appearance. Class 3A thread fit. Screw length is measured from under the head. *Note:* Button head screws are not recommended for high strength applications.

Self-locking screws are reusable. A nylon patch bonded to the threads keeps them from vibrating loose. Patches withstand temperatures from –65° to +250° F.

Type 316 Stainless Steel— More corrosion resistant than 18-8 stainless steel. May be mildly magnetic. Screws have a minimum Rockwell hardness of B85 and minimum tensile strength of 120,000 psi.

18-8 Stainless Steel and Black-Oxide 18-8 Stainless Steel— Have excellent corrosion resistance. May be mildly magnetic. Minimum Rockwell hardness is B70. Minimum tensile strength is 70,000 psi. *Black oxide* provides a decorative finish.

Self-Locking 18-8 Stainless Steel— Screws have a minimum Rockwell hardness of B85 and minimum tensile strength of 85,000 psi.

Zinc-Plated Alloy Steel and Black-Oxide Alloy Steel— Exceed Grade 5 and conform to ASTM F835. Minimum Rockwell hardness is C39 for sizes up to and including 1/2″ diameter; C37 for sizes larger than 1/2″ diameter. Minimum tensile strength is 144,000 psi for sizes up to and including 1/2″ diameter; 135,000 psi for sizes larger than 1/2″ diameter. Zinc plating offers good rust resistance. *Black oxide* offers mild rust resistance and some lubricity.

Self-Locking Black-Oxide Alloy Steel— Screws have a minimum Rockwell hardness of B85 and minimum tensile strength of 85,000 psi.

Also Available: Brass screws in the same sizes as the Type 316 SS screws listed below. Minimum tensile strength is 55,000 psi. Please ask for 97715A555 and specify thread size and screw length.

Lg.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
6-32			
1/4″	100	98164A106♣	$9.16
3/8″	100	98164A107♣	10.00
8-32			
1/4″	100	98164A133♣	12.56
3/8″	100	98164A134♣	13.08
1/2″	50	98164A135♣	8.13
10-32			
1/4″	50	98164A176♣	8.34
3/8″	50	98164A177♣	8.48
1/2″	50	98164A178♣	9.54
1/4″-20			
1/2″	25	98164A211♣	$8.13
5/8″	25	98164A212♣	9.01
3/4″	25	98164A213♣	9.81
1″	25	98164A214♣	11.36
5/16″-18			
1/2″	10	98164A266♣	6.33
3/4″	10	98164A267♣	7.12
1″	10	98164A268♣	8.22
3/8″-16			
3/4″	10	98164A303♣	11.13
1″	10	98164A304♣	12.02
1 1/2″	5	98164A306♣	8.20
18-8 Stainless Steel			
0-80			
1/8″	100	92949A050♣	4.94
3/16″	50	92949A052♣	4.85
1/4″	50	92949A054♣	6.09
2-56			
1/8″	100	92949A074♣	4.71
3/16″	100	92949A076♣	5.13
1/4″	100	92949A077♣	5.66
5/16″	100	92949A078♣	5.97
3/8″	100	92949A079♣	6.43
1/2″	100	92949A081♣	6.86
5/8″	50	92949A082♣	6.41
3/4″	50	92949A084	10.81
1″	25	92949A086	9.12
4-40			
1/8″	100	92949A103♣	5.59
3/16″	100	92949A105♣	3.31
1/4″	100	92949A106♣	2.71
5/16″	100	92949A107♣	3.45
3/8″	100	92949A108♣	3.66
7/16″	100	92949A111♣	4.48
1/2″	100	92949A110♣	4.02
5/8″	100	92949A112♣	4.70
3/4″	100	92949A113♣	5.03
4-40 (Cont.)			
7/8″	100	92949A114	6.39
1″	100	92949A116	5.87
1 1/4″	25	92949A118	7.17
5-40			
1/4″	100	92949A131♣	4.58
3/8″	100	92949A133♣	4.71
1/2″	50	92949A135♣	3.19
6-32			
1/8″	100	92949A141♣	4.00
3/16″	100	92949A143♣	4.99
1/4″	100	92949A144♣	4.16
5/16″	100	92949A145♣	4.32
3/8″	100	92949A146♣	4.37
7/16″	100	92949A149♣	5.34
1/2″	100	92949A148♣	4.63
5/8″	100	92949A150♣	4.87
3/4″	100	92949A151♣	5.30
7/8″	100	92949A152	7.59
1″	100	92949A153	6.57
1 1/4″	100	92949A160	8.50
1 1/2″	50	92949A157	6.90
18-8 Stainless Steel (Cont.)			
8-32			
1/8″	50	92949A187♣	$7.76
3/16″	100	92949A189♣	11.47
1/4″	100	92949A190♣	3.63
5/16″	100	92949A191♣	3.67
3/8″	100	92949A192♣	4.64
7/16″	100	92949A193♣	5.44
1/2″	100	92949A194♣	5.37
5/8″	100	92949A196♣	6.20
3/4″	100	92949A197♣	6.39
7/8″	100	92949A198	7.78
1″	100	92949A199	8.05
1 1/4″	100	92949A201	9.26
1 1/2″	100	92949A203	8.78
1 3/4″	50	92949A205	10.83
2″	25	92949A207	6.57
10-24			
1/4″	100	92949A238♣	5.44
5/16″	100	92949A239♣	6.32
3/8″	100	92949A240♣	5.03
1/2″	100	92949A242♣	5.00
5/8″	100	92949A244♣	8.43
3/4″	50	92949A245♣	5.38
7/8″	50	92949A246♣	5.66
1″	50	92949A247	6.51
1 1/4″	50	92949A249	8.17
1 1/2″	50	92949A251	7.27
1 3/4″	25	92949A252	7.54
2″	10	92949A253	2.86
10-32			
3/16″	50	92949A259♣	7.80
1/4″	100	92949A261♣	5.52
5/16″	100	92949A262♣	5.52
3/8″	100	92949A263♣	5.10
7/16″	100	92949A264♣	7.67
1/2″	100	92949A265♣	5.97
5/8″	100	92949A267♣	8.43
3/4″	100	92949A269♣	10.15
7/8″	50	92949A270♣	5.65
1″	50	92949A271	6.41
1 1/4″	50	92949A272	7.64
1 1/2″	50	92949A273	7.84
1 3/4″	25	92949A274	6.40
2″	10	92949A275	2.86
2 1/2″	10	92949A277	6.19
3″	10	92949A279	6.40
1/4″-20			
5/16″	50	92949A533♣	7.87
3/8″	100	92949A535♣	8.41
1/2″	50	92949A537♣	5.70
5/8″	50	92949A539♣	6.64
3/4″	50	92949A540♣	7.80
7/8″	50	92949A541♣	8.10
1″	50	92949A542♣	9.15
1 1/4″	25	92949A544	5.82
1 1/2″	25	92949A546	7.00
1 3/4″	25	92949A548	7.19
2″	25	92949A550	8.69
2 1/4″	10	92949A551	5.64
2 1/2″	25	92949A552	12.70
3″	10	92949A554	7.22
3 1/2″	10	92949A556	10.26
4″	10	92949A558	11.66
1/4″-28			
1/4″	50	92949A559♣	11.11
3/8″	50	92949A560♣	10.22
1/2″	50	92949A562♣	10.41
5/8″	50	92949A563♣	11.67
1/4″-28 (Cont.)			
3/4″	25	92949A564♣	$6.59
1″	25	92949A566♣	7.87
1 1/4″	25	92949A567	9.99
1 1/2″	10	92949A571	4.75
2″	10	92949A573	6.76
5/16″-18			
3/8″	25	92949A576♣	6.02
1/2″	25	92949A578♣	6.04
5/8″	25	92949A580♣	6.58
3/4″	25	92949A581♣	6.91
7/8″	25	92949A583♣	8.53
1″	25	92949A582♣	9.21
1 1/4″	25	92949A585	10.67
1 1/2″	10	92949A587	5.48
1 3/4″	10	92949A589	6.21
2″	10	92949A591	6.20
2 1/2″	10	92949A593	8.82
3″	5	92949A594	8.28
3 1/2″	5	92949A711	6.97
4″	5	92949A592	7.64
5/16″-24			
3/8″	10	92949A595♣	6.08
1/2″	10	92949A597♣	6.33
5/8″	10	92949A598♣	6.68
3/4″	10	92949A599♣	7.09
1″	10	92949A603♣	7.67
1 1/4″	10	92949A605	9.57
1 1/2″	10	92949A607	10.14
2″	5	92949A609	8.06
3/8″-16			
1/2″	10	92949A619♣	6.18
5/8″	25	92949A621♣	13.28
3/4″	10	92949A622♣	4.42
7/8″	5	92949A623♣	5.63
1″	10	92949A624♣	5.85
1 1/4″	10	92949A626♣	6.17
1 1/2″	10	92949A628	7.28
1 3/4″	10	92949A630	10.26
2″	10	92949A632	8.91
2 1/4″	5	92949A633	8.21
2 1/2″	5	92949A634	4.28
2 3/4″	5	92949A635	9.32
3″	5	92949A636	7.81
3 1/4″	5	92949A637	9.42
3 1/2″	5	92949A639	10.32
4″	5	92949A641	12.48
3/8″-24			
3/4″	5	92949A650♣	4.97
1″	5	92949A652♣	6.33
1 1/2″	5	92949A655	6.82
1/2″-13			
3/4″	5	92949A710♣	4.63
1″	5	92949A712♣	5.60
1 1/4″	5	92949A714♣	6.27
1 1/2″	5	92949A716♣	6.93
1 3/4″	5	92949A718♣	9.14
2″	5	92949A720	8.40
2 1/2″	1	92949A722	2.19
3″	1	92949A724	3.02
3 1/2″	1	92949A726	3.80
4″	1	92949A728	4.80
1/2″-20			
1″	5	92949A751♣	9.70
1 1/4″	5	92949A753♣	10.31
1 1/2″	5	92949A756♣	12.35
5/8″-11			
1 1/2″	1	92949A765♣	5.83
2″	1	92949A769♣	7.75

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See top of page for more thread length information.

(Continued on following page)

Button Head *(Continued from previous page)*

Black-Oxide 18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/4"	100	97763A102♣	$6.45
3/8"	100	97763A103♣	7.14
1/2"	100	97763A104♣	7.79
6-32			
1/4"	100	97763A141♣	7.86
3/8"	100	97763A142♣	8.26
1/2"	50	97763A143♣	4.98
8-32			
1/4"	50	97763A176♣	4.76
3/8"	50	97763A177♣	5.19
1/2"	50	97763A178♣	5.94
10-24			
1/4"	50	97763A213♣	$7.44
3/8"	50	97763A214♣	7.69
1/2"	50	97763A215♣	8.35
10-32			
1/4"	50	97763A230♣	7.44
3/8"	50	97763A231♣	7.69
1/2"	50	97763A232♣	8.35
1/4"-20			
3/8"	50	97763A262♣	11.00
1/2"	50	97763A263♣	11.03
5/8"	25	97763A264♣	7.25
3/4"	25	97763A265♣	7.81
1"	25	97763A267♣	9.06

Self-Locking 18-8 Stainless Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/4"	50	93310A106♣	11.50
3/8"	50	93310A108♣	11.60
1/2"	10	93310A110♣	9.86
6-32			
1/4"	50	93310A144♣	12.67
3/8"	50	93310A146♣	12.82
1/2"	50	93310A148♣	13.15
5/8"	10	93310A150♣	7.71
8-32			
1/4"	50	93310A190♣	13.21
3/8"	50	93310A192♣	13.61
1/2"	25	93310A194♣	7.64
5/8"	10	93310A196♣	9.63
3/4"	10	93310A198♣	8.74
10-24			
1/4"	10	93310A238♣	12.05
3/8"	25	93310A240♣	8.35
1/2"	25	93310A242♣	8.60
5/8"	10	93310A243♣	12.05
3/4"	25	93310A245♣	9.13
1"	5	93310A248♣	7.25
10-32			
1/4"	10	93310A255♣	7.71
3/8"	25	93310A260♣	8.35
1/2"	25	93310A264♣	8.60
5/8"	10	93310A257♣	12.05
3/4"	25	93310A266♣	9.13
1"	10	93310A268♣	11.52
1/4"-20			
3/8"	25	93310A535♣	12.40
1/2"	25	93310A537♣	13.18
5/8"	10	93310A539♣	11.56
3/4"	10	93310A540♣	5.83
1"	10	93310A542♣	6.82
5/16"-18			
1/2"	10	93310A578♣	8.03
5/8"	5	93310A580♣	9.64
3/4"	10	93310A581♣	8.83
1"	10	93310A583♣	9.52
3/8"-16			
3/4"	5	93310A640♣	8.78
1 1/4"	5	93310A646♣	13.40

Zinc-Plated Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/4"	50	91306A311♣	8.10
3/8"	50	91306A315♣	8.42
1/2"	50	91306A318♣	8.73
6-32			
1/4"	50	91306A320♣	8.68
3/8"	50	91306A322♣	8.69
1/2"	50	91306A324♣	9.03
5/8"	50	91306A327♣	10.36
8-32			
1/4"	50	91306A333♣	9.03
3/8"	50	91306A335♣	9.16
1/2"	50	91306A337♣	9.60
5/8"	50	91306A338♣	10.43
3/4"	50	91306A339♣	10.78
1"	25	91306A340♣	6.65
10-24			
3/8"	50	91306A341♣	9.36
1/2"	50	91306A343♣	10.22
5/8"	50	91306A345♣	10.73
3/4"	50	91306A348♣	11.03
1"	25	91306A350♣	7.27
10-32			
1/4"	50	91306A352♣	9.22
3/8"	50	91306A354♣	9.36
1/2"	50	91306A356♣	10.22
3/4"	50	91306A358♣	11.03
1/4"-20			
1/4"	50	91306A371♣	10.92
3/8"	50	91306A373♣	11.18
1/2"	50	91306A375♣	11.43
5/8"	50	91306A377♣	11.86
3/4"	50	91306A379♣	12.22
1"	25	91306A383♣	7.33
1 1/2"	25	91306A384♣	9.04
1/4"-28			
1/2"	25	91306A512♣	6.23
5/16"-18			
3/8"	25	91306A601♣	6.86
1/2"	25	91306A385♣	6.82
3/4"	25	91306A387♣	7.63
1"	25	91306A391♣	8.79
1 1/4"	25	91306A404♣	10.15
1 1/2"	10	91306A410♣	4.76
3/8"-16			
1/2"	25	91306A414♣	10.20
3/4"	10	91306A416♣	4.70
1"	10	91306A419♣	4.98
1 1/4"	10	91306A423♣	5.42
1 1/2"	10	91306A427♣	5.31
1/2"-13			
1"	10	91306A432♣	8.75
1 1/4"	10	91306A435♣	9.94
1 1/2"	10	91306A437♣	11.25
2"	5	91306A439♣	6.79

Black-Oxide Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
2-56			
1/8"	25	91255A074♣	5.40
3/16"	25	91255A076♣	3.65
1/4"	25	91255A077♣	3.67
5/16"	25	91255A078♣	3.30
3/8"	25	91255A079♣	3.87
1/2"	25	91255A081♣	4.18
3-48			
3/16"	25	91255A091♣	14.59
1/4"	25	91255A092♣	14.80
3/8"	25	91255A094♣	14.85
4-40			
1/8"	50	91255A103♣	10.94
3/16"	100	91255A105♣	10.42
1/4"	100	91255A106♣	10.56
5/16"	100	91255A107♣	12.18
3/8"	100	91255A108♣	11.23
4-40 (Cont.)			
1/2"	100	91255A110♣	11.53
5/8"	50	91255A112♣	9.30
3/4"	50	91255A113♣	9.35
7/8"	50	91255A115	9.36
1"	50	91255A116	9.96
1 1/4"	25	91255A117♣	10.75
5-40			
1/4"	100	91255A121♣	11.19
3/8"	50	91255A123♣	9.88
1/2"	50	91255A125♣	10.79
6-32			
1/8"	50	91255A140♣	11.43
3/16"	50	91255A142♣	10.39
1/4"	100	91255A144♣	10.60
5/16"	50	91255A145♣	9.13
3/8"	100	91255A146♣	10.70

Black-Oxide Alloy Steel (Cont.)

Lg.	Pkg. Qty.		Per Pkg.
6-32 (Cont.)			
1/2"	100	91255A148♣	$11.54
5/8"	100	91255A150♣	12.62
3/4"	50	91255A151♣	9.33
7/8"	50	91255A152	9.71
1"	50	91255A153	9.97
1 1/4"	25	91255A155	7.15
1 1/2"	25	91255A157	8.84
8-32			
3/16"	50	91255A189♣	8.81
1/4"	100	91255A190♣	11.61
5/16"	50	91255A191♣	6.42
3/8"	100	91255A192♣	12.40
1/2"	100	91255A194♣	12.48
5/8"	100	91255A196♣	14.29
3/4"	100	91255A197♣	14.75
1"	50	91255A199	10.27
1 1/4"	10	91255A201	10.11
1 1/2"	10	91255A203	10.76
2"	5	91255A205♣	6.12
2 1/4"	5	91255A206♣	9.38
10-24			
1/4"	100	91255A238♣	12.79
3/8"	100	91255A240♣	13.06
1/2"	100	91255A242♣	13.64
5/8"	100	91255A244♣	14.24
3/4"	100	91255A245♣	14.85
7/8"	50	91255A246♣	10.76
1"	100	91255A247♣	13.54
1 1/4"	25	91255A248	10.65
1 1/2"	25	91255A250	10.94
2"	10	91255A252	5.95
10-32			
1/4"	100	91255A261♣	12.79
5/16"	25	91255A262♣	7.05
3/8"	100	91255A263♣	13.06
1/2"	100	91255A265♣	13.64
5/8"	100	91255A267♣	14.74
3/4"	50	91255A269♣	10.81
7/8"	50	91255A271♣	10.84
1"	50	91255A273♣	10.93
1 1/4"	10	91255A274	9.60
1 1/2"	10	91255A275	7.57
1 3/4"	10	91255A276	5.77
2"	10	91255A278	5.95
1/4"-20			
1/4"	50	91255A533♣	14.00
3/8"	100	91255A535♣	14.05
1/2"	100	91255A537♣	14.00
5/8"	100	91255A539♣	14.93
3/4"	50	91255A540♣	8.36
7/8"	50	91255A541♣	8.04
1"	50	91255A542♣	9.01
1 1/4"	25	91255A544	10.85
1 1/2"	10	91255A546♣	7.70
1 3/4"	10	91255A548	8.40
2"	10	91255A545	7.00
2 1/2"	10	91255A547	7.35
3"	10	91255A549	9.80
1/4"-28			
1/4"	25	91255A550♣	$10.80
3/8"	100	91255A551♣	14.05
1/2"	100	91255A553♣	14.07
5/8"	100	91255A555♣	14.95
3/4"	50	91255A557♣	8.36
1"	50	91255A559♣	9.04
1 1/2"	25	91255A563	12.58
5/16"-18			
3/8"	50	91255A576♣	8.04
1/2"	50	91255A578♣	8.15
5/8"	50	91255A580♣	10.26
3/4"	50	91255A581♣	10.74
7/8"	50	91255A582♣	10.29
1"	50	91255A583♣	10.33
1 1/4"	10	91255A585	6.64
1 1/2"	10	91255A587	7.93
2"	10	91255A588♣	4.81
2 1/4"	10	91255A589	7.06
2 1/2"	10	91255A592♣	6.00
5/16"-24			
3/8"	50	91255A376♣	9.52
1/2"	25	91255A378♣	5.35
5/8"	25	91255A380♣	5.34
3/4"	25	91255A381♣	4.69
1"	25	91255A383♣	4.77
3/8"-16			
1/2"	50	91255A619♣	10.15
5/8"	50	91255A621♣	12.54
3/4"	50	91255A622♣	13.80
7/8"	50	91255A623♣	14.28
1"	25	91255A624♣	8.39
1 1/4"	25	91255A626♣	7.95
1 1/2"	10	91255A628	9.42
1 3/4"	10	91255A629	10.48
2"	10	91255A632	10.90
2 1/4"	10	91255A634	11.26
2 1/2"	10	91255A635♣	8.81
2 3/4"	10	91255A636	10.37
3"	10	91255A638	10.73
3/8"-24			
1/2"	50	91255A641♣	12.52
3/4"	25	91255A643♣	8.26
1"	25	91255A645♣	8.58
1 1/4"	25	91255A647♣	6.81
1/2"-13			
3/4"	10	91255A710♣	9.51
1"	10	91255A712♣	6.09
1 1/4"	10	91255A714♣	7.14
1 1/2"	10	91255A716♣	6.52
1 3/4"	10	91255A718♣	11.86
2"	10	91255A720♣	9.89
2 1/2"	5	91255A724	10.73
5/8"-11			
1"	5	91255A114♣	5.44
1 1/4"	5	91255A796♣	6.23
1 1/2"	5	91255A798♣	6.27
1 3/4"	5	91255A810♣	7.21
2"	5	91255A120♣	7.95

Self-Locking Black-Oxide Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
4-40			
1/4"	25	92360A105♣	7.49
3/8"	25	92360A107♣	7.66
1/2"	25	92360A109♣	7.83
6-32			
1/4"	25	92360A130♣	5.16
3/8"	25	92360A134♣	5.25
1/2"	25	92360A138♣	5.38
5/8"	25	92360A142♣	7.68
8-32			
1/4"	25	92360A150♣	5.67
3/8"	25	92360A154♣	5.69
1/2"	25	92360A158♣	5.77
5/8"	25	92360A162♣	5.85
3/4"	25	92360A166♣	6.23
10-24			
1/4"	25	92360A210♣	8.33
3/8"	25	92360A214♣	6.02
1/2"	25	92360A218♣	6.19
3/4"	25	92360A222♣	6.28
10-32			
1/4"	25	92360A240♣	5.94
10-32 (Cont.)			
3/8"	25	92360A244♣	6.02
1/2"	25	92360A248♣	6.19
3/4"	25	92360A252♣	6.28
1/4"-20			
3/8"	25	92360A310♣	6.33
1/2"	25	92360A314♣	6.37
5/8"	25	92360A318♣	6.45
3/4"	25	92360A322♣	6.54
1"	25	92360A326♣	6.97
5/16"-18			
1/2"	10	92360A410♣	3.03
5/8"	10	92360A415♣	3.06
3/4"	10	92360A420♣	3.16
1"	10	92360A425♣	3.41
3/8"-16			
3/4"	10	92360A510♣	4.06
1"	10	92360A515♣	4.30
1/2"-13			
1"	10	92360A615♣	6.54
1 1/4"	10	92360A617♣	7.05
1 1/2"	5	92360A620♣	3.87

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3130 for more thread length information.

Flange Button Head

Like a built-in washer, the wide flange keeps the screw head from crushing thin or soft materials. Screws are fully threaded and have a Class 3A thread fit. Head height is measured from the bottom of the flange to the top of the head. Screw length is measured from under the flange. *Note:* Button head screws are not recommended for high strength applications.

18-8 Stainless Steel— Offers excellent corrosion resistance. May be mildly magnetic. Min. Rockwell hardness is B70. Min. tensile strength is 70,000 psi.

Black-Oxide Alloy Steel— Harder and stronger than 18-8 stainless steel, it has a black-oxide finish for lubricity and mild rust resistance. Min. Rockwell hardness is C39. Min. tensile strength is 145,000 psi.

Also Available: Metric sizes made from Class 10.9 alloy steel. They're fully threaded with a Class 6g thread fit. Min. Rockwell hardness is C32. Min. tensile strength is 150,000 psi. Please ask for 92137A100 and specify thread size and screw length.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel			
8-32—*Flange Dia.: 0.357″*			
1/4″	25	**97654A102**	$8.10
1/2″	25	**97654A104**	9.77
10-24—*Flange Dia.: 0.407″*			
3/8″	25	**97654A141**	9.25
1/2″	25	**97654A142**	9.96
3/4″	25	**97654A144**	11.53
10-32—*Flange Dia.: 0.407″*			
3/8″	25	**97654A172**	9.25
1/2″	25	**97654A173**	9.96
5/8″	25	**97654A174**	10.99
3/4″	25	**97654A175**	11.53
1/4″-20—*Flange Dia.: 0.560″*			
3/8″	25	**97654A261**	$12.04
1/2″	10	**97654A262**	5.93
3/4″	10	**97654A264**	6.68
1″	10	**97654A265**	6.84
5/16″-18—*Flange Dia.: 0.680″*			
1/2″	10	**97654A303**	8.34
5/8″	10	**97654A304**	9.62
3/4″	10	**97654A305**	10.60
1″	10	**97654A306**	10.63
3/8″-16—*Flange Dia.: 0.810″*			
3/4″	5	**97654A332**	8.33
1″	5	**97654A333**	8.93
1 1/4″	5	**97654A334**	10.08
Black-Oxide Alloy Steel			
8-32—*Flange Dia.: 0.357″*			
1/4″	50	**91355A072**	13.21
3/8″	25	**91355A074**	6.79
1/2″	25	**91355A075**	6.85
10-24—*Flange Dia.: 0.407″*			
3/8″	50	**91355A100**	13.48
1/2″	25	**91355A110**	6.84
5/8″	25	**91355A120**	8.06
3/4″	25	**91355A130**	8.61
10-32—*Flange Dia.: 0.407″*			
3/8″	50	**91355A076**	13.48
1/2″	25	**91355A077**	6.84
5/8″	25	**91355A078**	7.75
3/4″	25	**91355A079**	8.61
1/4″-20—*Flange Dia.: 0.560″*			
3/8″	25	**91355A080**	7.55
1/2″	25	**91355A081**	7.79
3/4″	25	**91355A082**	7.78
1″	25	**91355A083**	9.54
5/16″-18—*Flange Dia.: 0.680″*			
3/8″	25	**91355A084**	10.22
1/2″	25	**91355A085**	10.87
5/8″	25	**91355A093**	11.00
3/4″	25	**91355A086**	11.44
1″	25	**91355A087**	12.76
3/8″-16—*Flange Dia.: 0.810″*			
1/2″	10	**91355A088**	6.04
3/4″	10	**91355A089**	7.06
1″	10	**91355A090**	7.77
1 1/4″	10	**91355A091**	8.40

Torx Drive Alloy Steel Button Head

Along with a wide bearing surface and low head height, these button heads have a Torx drive that handles high torque and prevents your driver from slipping. Screws have a black-oxide finish which offers lubricity and mild rust resistance. They're fully threaded and have a Class 3A thread fit. Min. Rockwell hardness is C39; min. tensile strength is 145,000 psi. Screw length is measured from under the head. *Note:* Button head screws are not recommended for high strength applications.

For Torx tools, see pages 2823-2824 and 2848-2850.

Also Available: Metric sizes made from zinc-coated Class 8.8 alloy steel. They're fully threaded with a Class 6g thread fit. Min. Rockwell hardness is C22. Min. tensile strength is 116,000 psi. Please ask for 92832A200 and specify thread size and screw length.

Lg.	Pkg. Qty.		Per Pkg.
4-40—*Torx Size: T8*			
1/4″	100	**96452A106**	$13.03
3/8″	50	**96452A108**	6.88
1/2″	50	**96452A110**	7.05
6-32—*Torx Size: T10*			
1/4″	50	**96452A144**	6.80
3/8″	50	**96452A146**	6.88
1/2″	50	**96452A148**	7.19
5/8″	50	**96452A150**	7.64
8-32—*Torx Size: T15*			
1/4″	50	**96452A190**	7.45
3/8″	50	**96452A192**	7.52
1/2″	50	**96452A194**	9.04
3/4″	50	**96452A197**	9.42
10-24—*Torx Size: T25*			
1/4″	50	**96452A238**	7.60
1/2″	50	**96452A242**	8.40
3/4″	50	**96452A245**	8.60
1″	50	**96452A246**	11.28
10-32—*Torx Size: T25*			
3/8″	50	**96452A311**	$7.69
1/2″	50	**96452A314**	8.41
5/8″	50	**96452A319**	6.92
1″	50	**96452A331**	12.05
1/4″-20—*Torx Size: T27*			
3/8″	50	**96452A535**	8.58
1/2″	50	**96452A537**	9.15
3/4″	50	**96452A540**	8.54
1″	50	**96452A542**	11.45
5/16″-18—*Torx Size: T40*			
1/2″	50	**96452A578**	10.51
3/4″	50	**96452A581**	11.86
1″	25	**96452A585**	7.48
3/8″-16—*Torx Size: T45*			
1/2″	25	**96452A619**	8.21
3/4″	25	**96452A622**	9.41
1 1/4″	25	**96452A628**	11.63

Tamper-Resistant Button Head

Pin-in-Torx

Pin-in-Hex

Fully Threaded♣ Pin-in-Torx

With a pin in the drive, these screws are virtually impossible to remove without special tools. (For Torx tools, see pgs. 2824 and 2848-2850; for hex tools, see pgs. 2821 and 2840.) Class 3A thread fit. Length is measured from under the head. *Note:* Not recommended for high strength applications.

18-8 Stainless Steel— Offers excellent corrosion resistance. May be mildly magnetic. Min. Rockwell hardness is B70; min. tensile strength is 70,000 psi.

Black-Oxide Alloy Steel— Harder and stronger than 18-8 stainless steel. The black-oxide finish provides lubricity and mild rust resistance. Min. Rockwell hardness is C38; min. tensile strength is 137,000 psi.

Lg.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel—Pin-in-Torx Drive			
4-40—*Torx Size: T8*			
1/4″	25	**91900A106♣**	$9.03
1/2″	25	**91900A110♣**	9.03
6-32—*Torx Size: T10*			
1/4″	25	**91900A144♣**	7.76
3/8″	25	**91900A146♣**	7.76
1/2″	25	**91900A148♣**	7.76
3/4″	25	**91900A151♣**	7.76
1″	25	**91900A153**	7.76
8-32—*Torx Size: T15*			
3/8″	25	**91900A192♣**	8.49
1/2″	25	**91900A194♣**	8.48
3/4″	25	**91900A197♣**	9.14
1″	25	**91900A199**	9.19
10-24—*Torx Size: T25*			
1/2″	25	**91900A242♣**	12.73
3/4″	25	**91900A245♣**	12.73
1″	25	**91900A247♣**	14.07
1 1/4″	10	**91900A249**	7.50
10-32—*Torx Size: T25*			
3/8″	25	**91900A827♣**	9.08
10-32 (Cont.)			
1/2″	25	**91900A829♣**	$12.73
3/4″	25	**91900A831♣**	12.73
1″	25	**91900A833♣**	14.07
1/4″-20—*Torx Size: T27*			
1/2″	10	**91900A537♣**	7.10
3/4″	10	**91900A540♣**	7.10
1″	10	**91900A542♣**	7.88
1 1/4″	10	**91900A544**	9.68
1 1/2″	10	**91900A546**	9.68
2″	10	**91900A549**	10.84
5/16″-18—*Torx Size: T40*			
3/4″	10	**91900A605♣**	10.56
1″	10	**91900A608♣**	11.69
1 1/4″	10	**91900A611**	13.56
1 1/2″	5	**91900A614**	7.11
3/8″-16—*Torx Size: T45*			
3/4″	5	**91900A650♣**	7.99
1″	5	**91900A653♣**	9.51
1 1/4″	5	**91900A656♣**	10.04
1 1/2″	5	**91900A659**	10.53
Black-Oxide Alloy Steel—Pin-in-Torx Drive			
6-32—*Torx Size: T10*			
3/8″	50	**96075A111♣**	13.63
1/2″	25	**96075A115♣**	7.08
1″	25	**96075A123♣**	7.48
8-32—*Torx Size: T15*			
3/8″	50	**96075A135♣**	13.75
1/2″	25	**96075A139♣**	7.16
3/4″	25	**96075A143♣**	7.33
1″	25	**96075A147♣**	7.56
1 1/2″	25	**96075A155♣**	9.30
10-24—*Torx Size: T25*			
1/2″	50	**96075A163♣**	14.00
3/4″	25	**96075A167♣**	7.56
1″	25	**96075A171♣**	7.68
10-24 (Cont.)			
1 1/2″	25	**96075A179♣**	9.30
10-32—*Torx Size: T25*			
3/8″	25	**96075A183♣**	7.19
1/2″	25	**96075A187♣**	7.22
3/4″	25	**96075A191♣**	7.56
1″	25	**96075A195♣**	7.68
1 1/2″	25	**96075A203♣**	8.55
1/4″-20—*Torx Size: T27*			
3/8″	25	**96075A207♣**	8.96
1/2″	25	**96075A211♣**	9.18
3/4″	25	**96075A219♣**	9.52
1″	25	**96075A223♣**	9.56
1 1/2″	25	**96075A231♣**	11.37
18-8 Stainless Steel—Pin-in-Hex Drive			
6-32—*Hex Size: 1/8″*			
1/2″	25	**95635A339♣**	9.73
3/4″	25	**95635A347♣**	9.93
8-32—*Hex Size: 5/32″*			
1/2″	25	**95635A375♣**	9.84
3/4″	25	**95635A383♣**	10.17
1″	25	**95635A387**	10.07
1 1/2″	25	**95635A391**	11.41
10-24—*Hex Size: 5/32″*			
3/8″	25	**95635A240♣**	9.43
1/2″	25	**95635A242♣**	9.56
3/4″	25	**95635A245♣**	9.87
1″	25	**95635A403♣**	10.50
10-32—*Hex Size: 5/32″*			
1/4″	25	**95635A415♣**	5.92
3/8″	25	**95635A417♣**	6.72
1/2″	25	**95635A419♣**	9.56
3/4″	25	**95635A427♣**	9.87
1″	25	**95635A431♣**	10.50
1/4″-20—*Hex Size: 5/32″*			
1/2″	25	**95635A537♣**	11.45
5/8″	10	**95635A539♣**	5.32
3/4″	10	**95635A540♣**	5.38
1″	10	**95635A542♣**	5.46
1 1/4″	10	**95635A547**	5.98
1 1/2″	10	**95635A551**	6.27
2″	10	**95635A553**	8.25
5/16″-18—*Hex Size: 3/16″*			
3/4″	10	**95635A567♣**	10.29
1″	10	**95635A571♣**	10.47
1 1/4″	5	**95635A573**	6.06
1 1/2″	5	**95635A576**	6.64
2″	5	**95635A579**	7.85
3/8″-16—*Hex Size: 7/32″*			
3/4″	5	**95635A595♣**	7.35
1″	5	**95635A599♣**	7.57
1 1/4″	5	**95635A602**	6.00
1 1/2″	5	**95635A607**	8.47
Black-Oxide Alloy Steel—Pin-in-Hex Drive			
8-32—*Hex Size: 5/32″*			
3/8″	50	**90484A137♣**	14.44
1/2″	50	**90484A139♣**	14.59
3/4″	50	**90484A143♣**	14.92
1″	25	**90484A145♣**	7.85
10-24—*Hex Size: 5/32″*			
3/8″	50	**90484A240♣**	14.59
1/2″	50	**90484A242♣**	14.69
5/8″	50	**90484A244♣**	14.92
3/4″	25	**90484A245♣**	7.94
1″	25	**90484A247♣**	8.06
10-32—*Hex Size: 5/32″*			
1/2″	50	**90484A257♣**	14.70
3/4″	25	**90484A261♣**	7.94
1″	25	**90484A263♣**	8.06
12-24—*Hex Size: 5/32″*			
1/2″	25	**90484A269♣**	8.61
1/4″-20—*Hex Size: 5/32″*			
3/8″	25	**90484A535♣**	9.41
1/2″	25	**90484A537♣**	9.63
5/8″	25	**90484A539♣**	9.82
3/4″	25	**90484A540♣**	10.00
1″	25	**90484A542♣**	10.04
1 1/2″	25	**90484A547♣**	11.94
5/16″-18—*Hex Size: 3/16″*			
3/4″	10	**90484A555♣**	8.53
1″	10	**90484A557♣**	8.95
3/8″-16—*Hex Size: 7/32″*			
3/4″	10	**90484A569♣**	9.73
1″	10	**90484A571♣**	10.22

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3130 for more thread information.

High-Security 18-8 Stainless Steel Button Head

The rarer the drive, the more secure the screw. These have a drive configuration that you can get only from McMaster-Carr. They're fully threaded with a Class 2A thread fit, and made from 18-8 stainless steel, which offers excellent corrosion resistance and may be mildly magnetic. All have a min. Rockwell hardness of B80 and min. tensile strength of 85,000 psi. Screw length is measured from under the head. *Note:* Button head screws are not recommended for high strength applications.

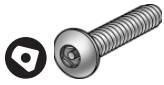

Screws with U10 Drive

Lg.	Pkg. Qty.		Per Pkg.
6-32—Head: Dia. 0.289"; Ht. 0.083"			
1/2"	5	99355A120	$5.63
1"	5	99355A129	6.13
8-32—Head: Dia. 0.312"; Ht. 0.087"			
1/2"	5	99355A145	5.63
3/4"	5	99355A148	5.75
1"	5	99355A151	6.13
10-24—Head: Dia. 0.360"; Ht. 0.101"			
1/2"	5	99355A210	5.75
3/4"	5	99355A216	6.00
10-24 (Cont.)			
1"	5	99355A219	$6.25
1 1/4"	5	99355A222	6.63
1 1/2"	5	99355A225	6.88
10-32—Head: Dia. 0.361"; Ht. 0.101"			
1/2"	5	99355A250	5.75
3/4"	5	99355A256	6.00
1"	5	99355A259	6.25
1 1/4"	5	99355A262	6.63
1 1/2"	5	99355A265	6.88

Screws with U25 Drive

Lg.	Pkg. Qty.		Per Pkg.
1/4"-20—Head: Dia. 0.430"; Ht. 0.132"			
1/2"	5	99355A305	$7.00
3/4"	5	99355A311	7.50
1"	5	99355A314	7.75
1 1/4"	5	99355A317	8.13
1 1/2"	5	99355A320	8.50

Driver Bits

U10 Bit	99355A623	Each	$14.70
U25 Bit	99355A624	Each	$14.70

Metric Button Head

Perfect when a wider bearing surface, low head height, or more finished appearance is desired. Screw length is measured from under the head. *Note:* Button head screws are not recommended for high strength applications.

18-8 Stainless Steel— Offers excellent corrosion resistance and may be mildly magnetic. Screws have a Class 6g thread fit, minimum tensile strength of 85,000 psi, and meet ISO 7380-A2. Not rated for hardness.

Class 10.9 Black-Finish Steel— Comparable to Grade 8 steel. The black finish provides mild rust resistance. Screws have a Class 5g6g thread fit. Minimum Rockwell hardness is C32. Minimum tensile strength is 150,800 psi. Dimensions meet ISO 7380 (unless noted).

Also Available: High-visibility blue coated screws with a minimum tensile strength of 145,000 psi in sizes marked with a ■. Made from Class 10.9 steel. Please ask for 94722A200 and specify thread size and screw length.

Screw Size	M2	M2.5	M3	M4	M5	M6	M8	M10	M12
Hex Size	1.3	1.5	2	2.5	3	4	5	6	8
Head Ht.	1.3	1.5	1.65	2.2	2.75	3.3	4.4	5.5	6.6
Head Dia.	3.5	4.5	5.7	7.6	9.5	10.5	14	17.5	21
Min. Thread Lg.	Fully	Fully	18	20	22	24	28	32	36
Max. Thread Lg.	Fully	Fully	Fully	Fully	Fully	Fully	Fully	Fully	Fully

18-8 Stainless Steel—ISO 7380-A2

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
5	100	92095A177♣	$5.42
6	100	92095A179♣	5.06
8	100	92095A181♣	9.37
10	100	92095A182♣	8.38
12	100	92095A183♣	4.00
14	50	92095A168♣	5.80
16	100	92095A184♣	8.85
20	50	92095A185♣	5.13
25	50	92095A186♣	6.13
30	50	92095A187♣	6.55
35	25	92095A201♣	4.57
40	25	92095A203♣	4.28
M4—Pitch: 0.7 mm			
6	100	92095A188♣	8.89
8	100	92095A189♣	8.89
10	100	92095A190♣	9.05
12	100	92095A192♣	8.60
14	50	92095A193♣	7.92
16	100	92095A194♣	10.43
20	50	92095A196♣	6.38
25	50	92095A197	7.34
30	50	92095A198	9.85
35	25	92095A199♣	5.26
40	25	92095A200♣	7.07
45	25	92095A205♣	6.81
50	10	92095A209	4.61
M5—Pitch: 0.8 mm			
6	25	92095A206♣	11.00
8	100	92095A207♣	11.98
10	100	92095A208♣	11.98
12	50	92095A210♣	7.34
14	25	92095A211♣	7.34
16	50	92095A212♣	8.31
20	50	92095A214♣	9.08
25	25	92095A216♣	5.60
30	25	92095A218♣	6.76
35	25	92095A220	7.34
40	25	92095A222	9.76
45	25	92095A223♣	11.69
M5 (Cont.)			
50	25	92095A228	$11.11
60	10	92095A225	8.24
M6—Pitch: 1 mm			
8	25	92095A239♣	7.44
10	50	92095A224♣	8.50
12	50	92095A226♣	9.27
14	25	92095A227♣	9.95
16	25	92095A238♣	5.41
20	25	92095A240♣	6.28
25	25	92095A242♣	7.25
30	25	92095A244♣	8.31
35	25	92095A246	9.37
40	25	92095A248	11.01
45	10	92095A250♣	5.03
50	10	92095A252	7.11
55	10	92095A253	7.15
60	10	92095A254	7.65
M8—Pitch: 1.25 mm			
10	10	92095A256♣	6.03
12	25	92095A258♣	11.30
16	25	92095A260♣	10.72
20	25	92095A284♣	12.07
25	10	92095A286♣	5.76
30	10	92095A290♣	6.49
35	10	92095A292♣	7.03
40	10	92095A294♣	7.38
45	10	92095A296	11.75
50	5	92095A298	5.58
55	5	92095A299	9.33
60	5	92095A300	7.34
M10—Pitch: 1.5 mm			
16	10	92095A408♣	8.27
20	10	92095A410♣	8.66
25	10	92095A413♣	10.39
30	10	92095A416♣	10.82
40	10	92095A420♣	11.90
50	5	92095A424	7.61
55	5	92095A426	11.63
60	1	92095A429	2.60

18-8 Stainless Steel—ISO 7380-A2 (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
M12—Pitch: 1.75 mm			
20	5	92095A428♣	$6.67
25	5	92095A427♣	6.72
30	5	92095A431♣	7.44
35	5	92095A432♣	10.51
40	1	92095A434♣	1.87
M12 (Cont.)			
45	1	92095A435♣	$2.45
50	1	92095A437♣	2.19
55	1	92095A440	3.38
60	1	92095A442	3.16
70	1	92095A446	8.80

Class 10.9 Black-Finish Steel—Dimensions meet ISO 7380

Lg., mm	Pkg. Qty.		Per Pkg.
M2—Pitch: 0.4 mm			
3	10	91239A700♣●	4.38
4	10	91239A703♣●	10.21
6	25	91239A704♣●	10.25
12	10	91239A707♣●	6.37
16	25	91239A711♣●	7.85
M2.5—Pitch: 0.45 mm			
3	10	91239A752♣●	4.66
4	25	91239A753♣●	7.11
5	25	91239A754♣●	7.15
6	25	91239A755♣●	7.65
8	25	91239A756♣●	6.97
10	25	91239A757♣●	7.05
12	25	91239A758♣●	8.58
14	25	91239A760♣●	6.43
16	25	91239A762♣●	8.73
20	25	91239A764♣●	8.81
25	25	91239A769♣●	9.16
M3—Pitch: 0.5 mm			
4	25	91239A109♣	5.50
5	50	91239A110♣	10.72
6	100	91239A111♣	6.88
8	100	91239A113♣■	6.43
10	100	91239A115♣■	6.88
12	100	91239A117♣■	8.25
14	100	91239A118♣	9.67
16	100	91239A120♣■	9.47
20	100	91239A122■	8.55
25	50	91239A126	6.96
M4—Pitch: 0.7 mm			
5	100	91239A136♣	9.95
6	100	91239A138♣	5.78
8	100	91239A140♣■	9.47
10	100	91239A144♣■	9.47
12	100	91239A148♣■	9.23
14	100	91239A149♣	10.40
16	100	91239A150♣■	10.46
20	100	91239A152♣■	10.54
25	100	91239A154■	12.95
30	100	91239A156	12.84
35	50	91239A158	12.30
40	25	91239A160	8.42
M5—Pitch: 0.8 mm			
6	100	91239A220♣	9.59
8	100	91239A222♣	9.50
10	100	91239A224♣■	8.97
12	100	91239A228♣■	8.12
14	100	91239A230♣	11.77
16	100	91239A232♣■	9.97
18	50	91239A241♣	6.23
20	100	91239A233♣■	10.09
22	100	91239A242♣	13.69
25	100	91239A234♣■	11.00
30	100	91239A236♣■	12.38
35	50	91239A238	10.30
40	10	91239A240	4.92
45	10	91239A244	5.65
M6—Pitch: 1 mm			
8	100	91239A314♣	8.42
10	100	91239A316♣■	11.46
12	100	91239A318♣■	10.58
14	100	91239A319♣	11.27
16	100	91239A321♣■	12.95
18	50	91239A323♣	10.57
20	100	91239A326♣■	13.95
22	50	91239A324♣	5.25
25	50	91239A327♣■	8.85
30	50	91239A328♣■	9.40
35	25	91239A330■	7.11
40	25	91239A332	8.49
45	25	91239A334	10.46
50	25	91239A336	13.91
55	10	91239A337	6.64
60	5	91239A340	3.38
M8—Pitch: 1.25 mm			
8	25	91239A412♣	8.91
10	25	91239A414♣■	6.90
12	25	91239A416♣■	6.72
14	25	91239A417♣	8.47
16	25	91239A418♣■	6.09
18	25	91239A420♣	7.59
20	25	91239A426♣■	6.85
25	25	91239A427♣■	6.99
30	25	91239A428♣■	7.91
35	25	91239A438♣■	8.94
40	25	91239A442♣■	9.74
45	10	91239A444	6.02
50	25	91239A448	10.77
55	10	91239A450	8.57
60	10	91239A453	8.89
70	10	91239A455	12.69
80	10	91239A457	9.75
M10—Pitch: 1.5 mm			
16	25	91239A512♣■	12.95
18	5	91239A511♣	7.87
20	25	91239A513♣■	9.97
25	25	91239A514♣■	10.40
30	25	91239A515♣■	12.26
35	10	91239A518♣■	5.90
40	10	91239A521♣■	6.92
45	10	91239A523	8.14
50	5	91239A525■	7.12
M12—Pitch: 1.75 mm			
16	5	91239A610♣	6.20
20	10	91239A612♣■	8.80
25	10	91239A614♣■	7.47
30	10	91239A616♣■	9.26
35	5	91239A618♣	5.11
40	5	91239A620♣	5.84
45	5	91239A621♣	7.08
50	5	91239A622♣	6.19

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. ● Does not meet ISO 7380.

Hex Head Cap Screw Thread Lengths and Head Dimensions

Sizes marked with a ♣ are always fully threaded. For all other sizes, manufacturing standards allow threads to fall between the minimum and maximum lengths shown below. For screws over 6″ long (except those made from stainless steel) add 1/4″ to thread lengths. For stainless steel screws 6 1/2″ to 11″ long, add 3 1/2″ to thread lengths; for those over 11″ long, add 5″.

Screw Dia.	1/4″	5/16″	3/8″	7/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1″	1 1/8″	1 1/4″	1 1/2″	1 3/4″	2″
Minimum Thread Lg.	3/4″	7/8″	1″	1 1/8″	1 1/4″	1 3/8″	1 1/2″	1 3/4″	2″	2 1/4″	2 1/2″	2 3/4″	3 1/4″	3 3/4″	4 1/4″
Maximum Thread Lg.	1″	1 3/16″	1 5/16″	1 1/2″	1 5/8″	1 13/16″	2″	2 1/4″	2 9/16″	2 7/8″	3 1/4″	3 1/2″	4 3/4″	9 1/4″	5 5/8″

Extreme-Strength Steel—Grade 9

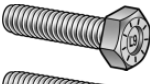

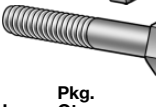

With a minimum tensile strength of 180,000 psi and a hefty head that's approximately 15-20% higher than a standard cap screw head, these are our strongest cap screws. All screws are made from high-grade alloy steel with a zinc yellow-chromate plating for added rust resistance. They have a Class 2A thread fit and a minimum Rockwell hardness of C38. Similar to PFC9, Tru-Torq, and Bow Malloy screws, they're also known as L9 screws and are grade-marked with nine radial lines, a dot, and the characters L9. Screw length is measured from under the head.

For best results, use with 95036A Grade 9 nuts on page 3188.

Lg.	Pkg. Qty.		Per Pkg.
1/4″-20—Head: Wd. 7/16″; Ht. 3/16″			
1/2″	25	90201A109♣	$9.57
3/4″	25	90201A111♣	10.95
1″	25	90201A113♣	9.82
1 1/4″	25	90201A115	11.34
1 1/2″	25	90201A117	10.40
2″	25	90201A119	11.42
5/16″-18—Head: Wd. 1/2″; Ht. 15/64″			
3/4″	25	90201A219♣	10.56
1″	25	90201A221♣	11.00
1 1/4″	25	90201A225♣	11.48
1 1/2″	10	90201A228	4.64
2″	10	90201A230	7.91
3/8″-16—Head: Wd. 9/16″; Ht. 9/32″			
3/4″	10	90201A312♣	8.11
1″	10	90201A314♣	7.75
1 1/4″	10	90201A316♣	7.95
1 1/2″	10	90201A319	8.78
1 3/4″	10	90201A321	8.20
2″	10	90201A323	7.99
3/8″-16 (Cont.)			
2 1/4″	10	90201A324	$13.72
2 1/2″	10	90201A327	9.03
3″	5	90201A331	8.70
3 1/2″	5	90201A333	10.48
4″	1	90201A336	2.75
4 1/2″	1	90201A339	3.12
5″	1	90201A342	3.21
6″	1	90201A345	3.34
7/16″-14—Head: Wd. 5/8″; Ht. 21/64″			
1 1/2″	5	90201A360♣	7.54
2″	5	90201A363	8.66
3″	5	90201A366	10.09
4″	1	90201A369	2.91
1/2″-13—Head: Wd. 3/4″; Ht. 3/8″			
1 1/4″	5	90201A416♣	8.34
1 1/2″	5	90201A418♣	8.77
1 3/4″	5	90201A423♣	9.38
2″	5	90201A426	10.38
2 1/2″	5	90201A429	10.78
1/2″-13 (Cont.)			
3″	5	90201A433	$13.49
3 1/2″	1	90201A437	3.20
4″	1	90201A440	3.71
4 1/2″	1	90201A443	4.91
5″	1	90201A446	5.47
6″	1	90201A449	7.08
5/8″-11—Head: Wd. 15/16″; Ht. 15/32″			
1 1/2″	1	90201A525♣	2.92
1 3/4″	1	90201A527♣	3.06
2″	1	90201A531♣	3.34
2 1/4″	1	90201A535	3.61
2 1/2″	1	90201A536	3.85
2 3/4″	1	90201A537	4.00
3″	1	90201A539	4.44
3 1/2″	1	90201A541	4.60
4″	1	90201A544	5.91
4 1/2″	1	90201A547	6.63
5″	1	90201A550	7.12
6″	1	90201A553	9.45
3/4″-10—Head: Wd. 1 1/8″; Ht. 9/16″			
1 1/2″	1	90201A638♣	$4.18
2″	1	90201A640♣	4.09
2 1/4″	1	90201A642♣	6.15
2 1/2″	1	90201A644♣	6.63
2 3/4″	1	90201A646	7.04
3″	1	90201A648	7.02
3 1/2″	1	90201A651	7.82
4″	1	90201A654	9.08
4 1/2″	1	90201A657	10.37
5″	1	90201A660	11.25
5 1/2″	1	90201A663	12.55
6″	1	90201A667	14.28
7″	1	90201A670	20.43
8″	1	90201A674	24.62
10″	1	90201A678	31.88

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See top of page for more thread length information.

High-Strength Steel—Grade 8

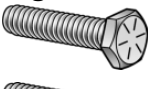

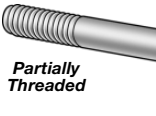

Made from alloy steel, these tough screws have a Class 2A thread fit and are marked on the head with six radial lines to indicate Grade 8. Screws are coated with zinc yellow-chromate for rust resistance, except 1 1/8″ and larger diameters, which are plain steel. All screws have a minimum Rockwell hardness of C33 and minimum tensile strength of 150,000 psi. All meet ASME B18.2.1 and SAE J429, except screws with a 2″ diameter, which meet ASTM A354BD.

Screw length is measured from under the head. Screws that are fully threaded are also known as tap bolts.

Also Available: Grade 8 screws with a locking patch in sizes marked with a ★. The patch withstands temperatures from −65° to +250° F. Screws have a minimum tensile strength of 150,000 psi and meet ASME B18.2.1 and SAE J429. Please ask for 90019A500 and specify thread size and screw length.

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/4″-20—Head: Wd. 7/16″; Ht. 5/32″				
3/8″	Fully Threaded	100	92620A535	$12.30
1/2″	Fully Threaded	100	92620A537★	10.74
5/8″	Fully Threaded	100	92620A539	8.15
3/4″	Fully Threaded	100	92620A540★	10.99
7/8″	Fully Threaded	100	92620A541	7.19
1″	Fully Threaded	100	92620A542★	10.92
1 1/8″	Fully Threaded	10	92620A545	2.78
1 1/4″	Fully Threaded	25	92620A544	8.79
1 1/4″	3/4″ to 1″	100	91257A544★	11.41
1 3/8″	3/4″ to 1″	25	91257A535	11.61
1 1/2″	Fully Threaded	25	92620A546	10.45
1 1/2″	3/4″ to 1″	100	91257A546★	12.80
1 5/8″	3/4″ to 1″	25	91257A549	12.16
1 3/4″	Fully Threaded	25	92620A548	14.28
1 3/4″	3/4″ to 1″	50	91257A548★	8.93
2″	Fully Threaded	25	92620A550	14.46
2″	3/4″ to 1″	50	91257A550★	8.85
2 1/4″	Fully Threaded	50	92620A551	14.71
2 1/4″	3/4″ to 1″	50	91257A551	9.21
2 1/2″	Fully Threaded	25	92620A552	13.12
2 1/2″	3/4″ to 1″	50	91257A552★	9.22
2 3/4″	3/4″ to 1″	25	91257A553	9.71
3″	Fully Threaded	5	92620A553	9.20
3″	3/4″ to 1″	25	91257A554★	10.33
3 1/4″	3/4″ to 1″	25	91257A555	11.32
3 1/2″	Fully Threaded	5	92620A554	9.20
1/4″-20 (Cont.)				
3 1/2″	3/4″ to 1″	25	91257A556	$11.30
3 3/4″	3/4″ to 1″	25	91257A557	11.78
4″	Fully Threaded	5	92620A555	9.94
4″	3/4″ to 1″	10	91257A558	4.06
4 1/4″	3/4″ to 1″	5	91257A103	8.12
4 1/2″	Fully Threaded	5	92620A556	12.16
4 1/2″	3/4″ to 1″	10	91257A559	5.30
4 3/4″	3/4″ to 1″	5	91257A105	9.06
5″	Fully Threaded	5	92620A557	13.38
5″	3/4″ to 1″	10	91257A560	7.53
5 1/4″	3/4″ to 1″	5	91257A107	9.63
5 1/2″	Fully Threaded	5	92620A558	14.70
5 1/2″	3/4″ to 1″	5	91257A561	5.34
6″	Fully Threaded	1	92620A559	3.18
6″	3/4″ to 1″	10	91257A562	6.47
6 1/2″	1″ to 1 1/4″	5	91257A563	8.63
7″	1″ to 1 1/4″	5	91257A411	10.23
7 1/2″	1″ to 1 1/4″	5	91257A413	12.86
8″	1″ to 1 1/4″	5	91257A415	11.14
9″	1″ to 1 1/4″	1	91257A416	5.27
10″	1″ to 1 1/4″	1	91257A418	5.41
12″	1″ to 1 1/4″	1	91257A420	6.54
1/4″-28—Head: Wd. 7/16″; Ht. 5/32″				
1/2″	Fully Threaded	100	92620A562	12.87
5/8″	Fully Threaded	100	92620A538	7.99
3/4″	Fully Threaded	100	92620A563	12.66
1/4″-28 (Cont.)				
7/8″	Fully Threaded	100	92620A565	$10.57
1″	Fully Threaded	50	92620A564	8.49
1 1/8″	Fully Threaded	5	92620A701	13.07
1 1/4″	Fully Threaded	5	92620A572	13.38
1 1/4″	3/4″ to 1″	50	91257A565	9.90
1 3/8″	3/4″ to 1″	25	91257A112	12.72
1 1/2″	Fully Threaded	5	92620A566	13.52
1 1/2″	3/4″ to 1″	50	91257A566	11.14
1 3/4″	3/4″ to 1″	50	91257A567	12.41
2″	Fully Threaded	5	92620A567	14.40
2″	3/4″ to 1″	50	91257A568	12.38
2 1/4″	3/4″ to 1″	25	91257A572	10.66
2 1/2″	Fully Threaded	1	92620A568	3.06
2 1/2″	3/4″ to 1″	25	91257A569	9.26
2 3/4″	3/4″ to 1″	25	91257A573	10.52
3″	Fully Threaded	1	92620A569	3.24
3″	3/4″ to 1″	25	91257A570	12.75
3 1/4″	3/4″ to 1″	10	91257A574	8.20
3 1/2″	Fully Threaded	1	92620A570	3.53
3 1/2″	3/4″ to 1″	10	91257A575	7.01
3 3/4″	3/4″ to 1″	10	91257A576	7.10
4″	Fully Threaded	1	92620A571	3.74
4″	3/4″ to 1″	10	91257A571	8.77
4 1/2″	3/4″ to 1″	5	91257A577	6.43
5″	3/4″ to 1″	5	91257A421	7.99

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High-Strength Steel—Grade 8 (Continued from previous page)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/4"-28 (Cont.)				
5½"	¾" to 1"	5	**91257A422**	$6.17
6"	¾" to 1"	5	**91257A423**	8.81
6½"	1" to 1¼"	5	**91257A424**	10.12
7"	1" to 1¼"	5	**91257A426**	11.50
7½"	1" to 1¼"	5	**91257A428**	12.22
8"	1" to 1¼"	5	**91257A430**	13.87
5/16"-18—Head: Wd. 1/2"; Ht. 13/64"				
½"	Fully Threaded	100	**92620A578**	13.16
⅝"	Fully Threaded	50	**92620A579**	8.98
¾"	Fully Threaded	50	**92620A581★**	7.89
⅞"	Fully Threaded	50	**92620A582**	9.00
1"	Fully Threaded	50	**92620A583★**	8.01
1¼"	Fully Threaded	50	**92620A585★**	9.26
1⅜"	Fully Threaded	25	**91257A585**	12.17
1½"	Fully Threaded	10	**92620A587**	7.23
1½"	⅞" to 1 3/16"	50	**91257A587★**	9.57
1⅝"	⅞" to 1 3/16"	25	**91257A588**	12.72
1¾"	Fully Threaded	10	**92620A589**	6.32
1¾"	⅞" to 1 3/16"	50	**91257A589★**	10.58
2"	Fully Threaded	10	**92620A591**	8.80
2"	⅞" to 1 3/16"	50	**91257A591★**	10.20
2¼"	Fully Threaded	25	**92620A301**	11.43
2¼"	⅞" to 1 3/16"	25	**91257A592**	6.03
2½"	Fully Threaded	10	**92620A593**	12.69
2½"	⅞" to 1 3/16"	25	**91257A593★**	9.28
2¾"	⅞" to 1 3/16"	25	**91257A596**	10.97
3"	Fully Threaded	5	**92620A595**	5.38
3"	⅞" to 1 3/16"	25	**91257A595★**	10.20
3¼"	⅞" to 1 3/16"	25	**91257A594**	13.12
3½"	Fully Threaded	5	**92620A596**	11.14
3½"	⅞" to 1 3/16"	10	**91257A597**	7.37
3¾"	⅞" to 1 3/16"	10	**91257A599**	7.55
4"	Fully Threaded	5	**92620A597**	12.16
4"	⅞" to 1 3/16"	10	**91257A598**	9.43
4¼"	⅞" to 1 3/16"	5	**91257A607**	8.23
4½"	Fully Threaded	5	**92620A598**	13.96
4½"	⅞" to 1 3/16"	10	**91257A600**	11.80
4¾"	⅞" to 1 3/16"	5	**91257A116**	9.51
5"	Fully Threaded	5	**92620A599**	14.70
5"	⅞" to 1 3/16"	5	**91257A603**	6.24
5¼"	⅞" to 1 3/16"	5	**91257A118**	10.21
5½"	Fully Threaded	1	**92620A600**	3.21
5½"	⅞" to 1 3/16"	5	**91257A601**	7.24
5¾"	⅞" to 1 3/16"	5	**91257A120**	10.68
6"	Fully Threaded	1	**92620A601**	3.51
6"	⅞" to 1 3/16"	5	**91257A602**	9.15
6½"	1⅛" to 1 7/16"	5	**91257A604**	10.40
7"	1⅛" to 1 7/16"	5	**91257A605**	11.26
7½"	1⅛" to 1 7/16"	1	**91257A606**	2.35
8"	1⅛" to 1 7/16"	1	**91257A435**	1.55
9"	1⅛" to 1 7/16"	1	**91257A122**	5.36
10"	1⅛" to 1 7/16"	1	**91257A126**	5.50
12"	1⅛" to 1 7/16"	1	**91257A130**	6.64
5/16"-24—Head: Wd. 1/2"; Ht. 13/64"				
½"	Fully Threaded	50	**92620A605**	8.76
⅝"	Fully Threaded	50	**92620A609**	9.35
¾"	Fully Threaded	50	**92620A606**	9.13
⅞"	Fully Threaded	50	**92620A610**	10.74
1"	Fully Threaded	50	**92620A607**	10.75
1¼"	Fully Threaded	50	**92620A608**	12.10
1½"	Fully Threaded	5	**92620A611**	14.70
1½"	⅞" to 1 3/16"	25	**91257A609**	9.28
1¾"	Fully Threaded	5	**92620A305**	14.86
1¾"	⅞" to 1 3/16"	25	**91257A610**	10.14
2"	Fully Threaded	1	**92620A612**	3.15
2"	⅞" to 1 3/16"	25	**91257A611**	11.40
2¼"	⅞" to 1 3/16"	25	**91257A614**	11.90
2½"	Fully Threaded	1	**92620A613**	3.30
2½"	⅞" to 1 3/16"	25	**91257A612**	11.43
2¾"	⅞" to 1 3/16"	25	**91257A615**	13.02
3"	Fully Threaded	1	**92620A614**	3.59
3"	⅞" to 1 3/16"	25	**91257A613**	14.67
3¼"	⅞" to 1 3/16"	10	**91257A616**	8.46
3½"	Fully Threaded	1	**92620A615**	3.80
3½"	⅞" to 1 3/16"	10	**91257A617**	7.24
4"	Fully Threaded	1	**92620A616**	4.04
4"	⅞" to 1 3/16"	10	**91257A441**	9.10
4½"	⅞" to 1 3/16"	5	**91257A443**	5.63
5"	⅞" to 1 3/16"	5	**91257A445**	8.18
5½"	⅞" to 1 3/16"	5	**91257A447**	9.02
6"	⅞" to 1 3/16"	5	**91257A449**	11.99
5/16"-24 (Cont.)				
6½"	1⅛" to 1 7/16"	1	**91257A451**	$2.11
7"	1⅛" to 1 7/16"	1	**91257A453**	2.89
8"	1⅛" to 1 7/16"	1	**91257A455**	2.54
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"				
½"	Fully Threaded	50	**92620A619**	12.33
⅝"	Fully Threaded	50	**92620A621**	10.25
¾"	Fully Threaded	50	**92620A622★**	10.34
⅞"	Fully Threaded	50	**92620A623**	12.87
1"	Fully Threaded	50	**92620A624★**	11.47
1⅛"	Fully Threaded	10	**92620A637**	14.26
1¼"	Fully Threaded	50	**92620A626★**	11.90
1⅜"	Fully Threaded	5	**92620A627**	7.87
1½"	Fully Threaded	10	**92620A628**	8.36
1½"	1" to 1 5/16"	50	**91257A628★**	10.19
1¾"	Fully Threaded	10	**92620A630**	10.73
1¾"	1" to 1 5/16"	50	**91257A630★**	14.23
2"	Fully Threaded	10	**92620A632**	11.46
2"	1" to 1 5/16"	25	**91257A632★**	8.26
2¼"	Fully Threaded	25	**92620A633**	14.50
2¼"	1" to 1 5/16"	25	**91257A633**	10.68
2½"	Fully Threaded	5	**92620A634**	7.96
2½"	1" to 1 5/16"	25	**91257A634★**	10.04
2¾"	Fully Threaded	10	**92620A635**	7.01
2¾"	1" to 1 5/16"	10	**91257A635**	6.30
3"	Fully Threaded	5	**92620A636**	9.91
3"	1" to 1 5/16"	25	**91257A636★**	13.84
3¼"	1" to 1 5/16"	10	**91257A637**	8.97
3½"	Fully Threaded	5	**92620A638**	13.24
3½"	1" to 1 5/16"	10	**91257A638★**	8.42
3¾"	1" to 1 5/16"	10	**91257A639**	9.56
4"	Fully Threaded	1	**92620A639**	3.17
4"	1" to 1 5/16"	10	**91257A640★**	10.40
4¼"	1" to 1 5/16"	5	**91257A651**	8.59
4½"	Fully Threaded	1	**92620A640**	3.30
4½"	1" to 1 5/16"	5	**91257A642**	8.70
4¾"	1" to 1 5/16"	5	**91257A643**	9.75
5"	Fully Threaded	1	**92620A641**	3.59
5"	1" to 1 5/16"	5	**91257A644**	9.72
5¼"	1" to 1 5/16"	5	**91257A645**	10.25
5½"	Fully Threaded	1	**92620A642**	3.74
5½"	1" to 1 5/16"	5	**91257A646**	8.29
5¾"	1" to 1 5/16"	5	**91257A647**	11.02
6"	Fully Threaded	1	**92620A643**	3.86
6"	1" to 1 5/16"	5	**91257A648**	10.93
6½"	1¼" to 1 9/16"	5	**91257A649**	12.42
7"	1¼" to 1 9/16"	5	**91257A650**	12.13
8"	1¼" to 1 9/16"	1	**91257A652**	2.95
8½"	1¼" to 1 9/16"	1	**91257A653**	5.32
9"	1¼" to 1 9/16"	1	**91257A654**	5.48
10"	1¼" to 1 9/16"	1	**91257A655**	5.59
12"	1¼" to 1 9/16"	1	**91257A656**	6.76
3/8"-24—Head: Wd. 9/16"; Ht. 15/64"				
½"	Fully Threaded	50	**92620A653**	14.90
⅝"	Fully Threaded	25	**92620A657**	5.92
¾"	Fully Threaded	25	**92620A654**	6.81
⅞"	Fully Threaded	25	**92620A658**	10.37
1"	Fully Threaded	25	**92620A655**	8.06
1⅛"	Fully Threaded	5	**92620A702**	14.40
1¼"	Fully Threaded	25	**92620A656**	11.18
1⅜"	Fully Threaded	1	**92620A703**	3.09
1½"	Fully Threaded	1	**92620A648**	3.06
1½"	1" to 1 5/16"	25	**91257A657**	11.26
1¾"	Fully Threaded	1	**92620A649**	3.24
1¾"	1" to 1 5/16"	25	**91257A658**	13.07
2"	Fully Threaded	1	**92620A650**	3.42
2"	1" to 1 5/16"	25	**91257A659**	14.18
2¼"	1" to 1 5/16"	10	**91257A660**	7.91
2½"	Fully Threaded	1	**92620A659**	3.71
2½"	1" to 1 5/16"	10	**91257A661**	6.79
2¾"	1" to 1 5/16"	10	**91257A662**	7.60
3"	Fully Threaded	1	**92620A660**	3.92
3"	1" to 1 5/16"	10	**91257A663**	8.51
3¼"	1" to 1 5/16"	10	**91257A462**	8.81
3½"	Fully Threaded	1	**92620A661**	3.87
3½"	1" to 1 5/16"	10	**91257A664**	11.25
3¾"	1" to 1 5/16"	10	**91257A464**	10.76
4"	Fully Threaded	1	**92620A662**	4.30
4"	1" to 1 5/16"	10	**91257A665**	12.61
4¼"	1" to 1 5/16"	5	**91257A141**	9.06
4½"	1" to 1 5/16"	5	**91257A666**	7.90
4¾"	1" to 1 5/16"	5	**91257A143**	10.44
3/8"-24 (Cont.)				
5"	1" to 1 5/16"	5	**91257A466**	$8.41
5¼"	1" to 1 5/16"	5	**91257A467**	11.02
5½"	1" to 1 5/16"	5	**91257A468**	9.21
5¾"	1" to 1 5/16"	5	**91257A469**	11.61
6"	1" to 1 5/16"	5	**91257A470**	14.95
6½"	1¼" to 1 9/16"	1	**91257A472**	3.63
7"	1¼" to 1 9/16"	1	**91257A474**	2.75
8"	1¼" to 1 9/16"	1	**91257A476**	2.91
10"	1¼" to 1 9/16"	1	**91257A478**	10.13
7/16"-14—Head: Wd. 5/8"; Ht. 9/32"				
¾"	Fully Threaded	25	**92620A667**	9.91
⅞"	Fully Threaded	25	**92620A668**	12.40
1"	Fully Threaded	25	**92620A669**	10.45
1¼"	Fully Threaded	25	**92620A671**	11.16
1½"	Fully Threaded	25	**92620A673**	13.16
1¾"	1⅛" to 1½"	10	**91257A675**	6.43
2"	Fully Threaded	1	**92620A677**	9.72
2"	1⅛" to 1½"	10	**91257A677**	6.87
2¼"	1⅛" to 1½"	10	**91257A678**	6.87
2½"	Fully Threaded	1	**92620A681**	10.48
2½"	1⅛" to 1½"	10	**91257A679**	8.59
2¾"	1⅛" to 1½"	10	**91257A680**	8.36
3"	Fully Threaded	1	**92620A685**	11.02
3"	1⅛" to 1½"	10	**91257A681**	10.31
3¼"	1⅛" to 1½"	10	**91257A682**	9.14
3½"	1⅛" to 1½"	10	**91257A683**	10.71
3¾"	1⅛" to 1½"	5	**91257A684**	5.44
4"	1⅛" to 1½"	10	**91257A685**	13.40
4¼"	1⅛" to 1½"	5	**91257A686**	9.06
4½"	1⅛" to 1½"	5	**91257A687**	6.55
4¾"	1⅛" to 1½"	5	**91257A688**	10.34
5"	1⅛" to 1½"	5	**91257A689**	9.19
5¼"	1⅛" to 1½"	5	**91257A152**	11.02
5½"	1⅛" to 1½"	5	**91257A690**	10.79
6"	1⅛" to 1½"	5	**91257A691**	11.52
6½"	1⅜" to 1¾"	1	**91257A692**	3.02
7"	1⅜" to 1¾"	1	**91257A693**	3.64
7½"	1⅜" to 1¾"	1	**91257A694**	3.59
8"	1⅜" to 1¾"	1	**91257A695**	4.37
9"	1⅜" to 1¾"	1	**91257A696**	6.38
10"	1⅜" to 1¾"	1	**91257A697**	6.66
12"	1⅜" to 1¾"	1	**91257A699**	7.45
7/16"-20—Head: Wd. 5/8"; Ht. 9/32"				
¾"	Fully Threaded	25	**92620A695**	10.11
⅞"	Fully Threaded	25	**92620A698**	13.42
1"	Fully Threaded	25	**92620A696**	12.23
1¼"	Fully Threaded	25	**92620A697**	12.32
1½"	Fully Threaded	10	**92620A699**	6.88
1¾"	1⅛" to 1½"	10	**91257A698**	8.04
2"	1⅛" to 1½"	10	**91257A701**	8.60
2¼"	1⅛" to 1½"	10	**91257A700**	8.90
2½"	1⅛" to 1½"	10	**91257A702**	9.68
2¾"	1⅛" to 1½"	10	**91257A703**	11.56
3"	1⅛" to 1½"	10	**91257A704**	11.72
3¼"	1⅛" to 1½"	10	**91257A708**	11.81
3½"	1⅛" to 1½"	10	**91257A705**	13.28
4"	1⅛" to 1½"	5	**91257A706**	7.63
4½"	1⅛" to 1½"	5	**91257A710**	9.00
5"	1⅛" to 1½"	5	**91257A707**	10.65
5½"	1⅛" to 1½"	5	**91257A711**	12.43
6"	1⅛" to 1½"	5	**91257A481**	13.10
6½"	1⅜" to 1¾"	1	**91257A483**	4.03
7"	1⅜" to 1¾"	1	**91257A485**	3.85
8"	1⅜" to 1¾"	1	**91257A487**	5.19
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"				
½"	Fully Threaded	10	**92620A707**	13.78
¾"	Fully Threaded	25	**92620A709**	14.84
⅞"	Fully Threaded	10	**92620A710**	7.05
1"	Fully Threaded	25	**92620A712★**	12.86
1⅛"	Fully Threaded	5	**92620A713**	5.24
1¼"	Fully Threaded	25	**92620A714★**	13.44
1⅜"	Fully Threaded	5	**92620A725**	8.61
1½"	Fully Threaded	25	**92620A716★**	13.94
1¾"	Fully Threaded	10	**92620A718★**	8.44
2"	Fully Threaded	5	**92620A720**	9.25
2"	1¼" to 1⅝"	10	**91257A720★**	9.17
2¼"	Fully Threaded	10	**92620A721**	11.85
2¼"	1¼" to 1⅝"	10	**91257A721**	10.38
2½"	Fully Threaded	5	**92620A722**	12.88
2½"	1¼" to 1⅝"	10	**91257A722★**	10.66

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High-Strength Steel—Grade 8 (Continued from previous page)

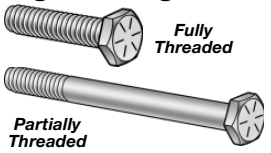

Made from alloy steel, these tough screws have a Class 2A thread fit and are marked on the head with six radial lines to indicate Grade 8. Screws are coated with zinc yellow-chromate for rust resistance, except 1 1/8″ and larger diameters, which are plain steel. All screws have a minimum Rockwell hardness of C33 and minimum tensile strength of 150,000 psi. All meet ASME B18.2.1 and SAE J429, except screws with a 2″ diameter, which meet ASTM A354BD.

Screw length is measured from under the head. Screws that are fully threaded are also known as tap bolts.

Also Available: Grade 8 screws with a locking patch in sizes marked with a ★. The patch withstands temperatures from −65° to +250° F. Screws have a minimum tensile strength of 150,000 psi and meet ASME B18.2.1 and SAE J429. Please ask for 90019A500 and specify thread size and screw length.

1/2″-13 (Cont.)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
2 3/4″	Fully Threaded	10	92620A723	$13.14
2 3/4″	1 1/4″ to 1 5/8″	10	91257A723	12.18
3″	Fully Threaded	5	92620A724	14.55
3″	1 1/4″ to 1 5/8″	10	91257A724★	13.16
3 1/4″	1 1/4″ to 1 5/8″	10	91257A725	11.49
3 1/2″	Fully Threaded	1	92620A726	3.91
3 1/2″	1 1/4″ to 1 5/8″	10	91257A726★	13.25
3 3/4″	1 1/4″ to 1 5/8″	5	91257A727	7.42
4″	Fully Threaded	1	92620A727	4.22
4″	1 1/4″ to 1 5/8″	5	91257A728★	8.66
4 1/4″	1 1/4″ to 1 5/8″	1	91257A719	3.53
4 1/2″	Fully Threaded	1	92620A728	4.42
4 1/2″	1 1/4″ to 1 5/8″	5	91257A730	11.43
4 3/4″	1 1/4″ to 1 5/8″	1	91257A731	3.74
5″	Fully Threaded	1	92620A729	4.72
5″	1 1/4″ to 1 5/8″	5	91257A732★	11.53
5 1/4″	1 1/4″ to 1 5/8″	1	91257A735	3.88
5 1/2″	Fully Threaded	1	92620A730	4.96
5 1/2″	1 1/4″ to 1 5/8″	5	91257A734	12.53
6″	Fully Threaded	1	92620A731	5.44
6″	1 1/4″ to 1 5/8″	5	91257A736	14.57
6 1/2″	1 1/2″ to 1 7/8″	1	91257A737	3.51
7″	Fully Threaded	1	92620A732	12.42
7″	1 1/2″ to 1 7/8″	1	91257A738	4.30
8″	Fully Threaded	1	92620A733	14.29
8″	1 1/2″ to 1 7/8″	1	91257A740	5.47
8 1/2″	1 1/2″ to 1 7/8″	1	91257A741	4.36
9″	1 1/2″ to 1 7/8″	1	91257A742	5.33
10″	1 1/2″ to 1 7/8″	1	91257A743	9.55
10 1/2″	1 1/2″ to 1 7/8″	1	91257A163	9.40
11″	1 1/2″ to 1 7/8″	1	91257A165	9.68
12″	1 1/2″ to 1 7/8″	1	91257A167	9.69

1/2″-20—Head: Wd. 3/4″; Ht. 5/16″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
3/4″	Fully Threaded	10	92620A735	6.75
7/8″	Fully Threaded	10	92620A737	5.61
1″	Fully Threaded	25	92620A744	14.36
1 1/8″	Fully Threaded	10	92620A852	8.92
1 1/4″	Fully Threaded	10	92620A745	6.62
1 1/2″	Fully Threaded	10	92620A746	7.77
1 3/4″	Fully Threaded	10	92620A747	10.39
2″	Fully Threaded	1	92620A748	4.06
2″	1 1/4″ to 1 5/8″	10	91257A748	10.10
2 1/4″	1 1/4″ to 1 5/8″	10	91257A749	13.37
2 1/2″	Fully Threaded	1	92620A749	4.22
2 1/2″	1 1/4″ to 1 5/8″	10	91257A750	12.54
2 3/4″	1 1/4″ to 1 5/8″	5	91257A744	7.34
3″	Fully Threaded	1	92620A750	4.33
3″	1 1/4″ to 1 5/8″	5	91257A751	8.80
3 1/4″	1 1/4″ to 1 5/8″	5	91257A745	8.86
3 1/2″	Fully Threaded	1	92620A751	4.39
3 1/2″	1 1/4″ to 1 5/8″	5	91257A752	10.38
3 3/4″	1 1/4″ to 1 5/8″	5	91257A757	8.08
4″	Fully Threaded	1	92620A752	4.91
4″	1 1/4″ to 1 5/8″	5	91257A753	11.10
4 1/4″	1 1/4″ to 1 5/8″	1	91257A172	3.60
4 1/2″	Fully Threaded	1	92620A753	5.02
4 1/2″	1 1/4″ to 1 5/8″	5	91257A754	11.80
4 3/4″	1 1/4″ to 1 5/8″	1	91257A174	3.67
5″	Fully Threaded	1	92620A754	5.15
5″	1 1/4″ to 1 5/8″	5	91257A755	12.77
5 1/2″	Fully Threaded	1	92620A755	5.46
5 1/2″	1 1/4″ to 1 5/8″	5	91257A758	12.60
6″	Fully Threaded	1	92620A756	5.91
6″	1 1/4″ to 1 5/8″	1	91257A756	3.18
6 1/2″	1 1/2″ to 1 7/8″	1	91257A490	3.94
7″	1 1/2″ to 1 7/8″	1	91257A491	4.31
7 1/2″	1 1/2″ to 1 7/8″	1	91257A492	5.03
8″	1 1/2″ to 1 7/8″	1	91257A493	5.20
9″	1 1/2″ to 1 7/8″	1	91257A497	9.40
10″	1 1/2″ to 1 7/8″	1	91257A501	9.68
12″	1 1/2″ to 1 7/8″	1	91257A505	10.29

9/16″-12—Head: Wd. 13/16″; Ht. 23/64″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1″	Fully Threaded	10	92620A758	$8.97
1 1/4″	Fully Threaded	10	92620A759	12.02
1 1/2″	Fully Threaded	10	92620A761	14.26
1 3/4″	Fully Threaded	5	92620A763	7.01
2″	Fully Threaded	5	92620A765	7.18
2 1/4″	1 3/8″ to 1 13/16″	5	91257A766	8.95
2 1/2″	1 3/8″ to 1 13/16″	5	91257A767	7.58
2 3/4″	1 3/8″ to 1 13/16″	5	91257A768	9.92
3″	1 3/8″ to 1 13/16″	5	91257A769	10.73
3 1/4″	1 3/8″ to 1 13/16″	5	91257A770	9.72
3 1/2″	1 3/8″ to 1 13/16″	5	91257A771	11.90
3 3/4″	1 3/8″ to 1 13/16″	5	91257A772	12.89
4″	1 3/8″ to 1 13/16″	5	91257A773	13.72
4 1/2″	1 3/8″ to 1 13/16″	1	91257A774	3.00
5″	1 3/8″ to 1 13/16″	1	91257A775	2.85
5 1/2″	1 3/8″ to 1 13/16″	1	91257A776	3.56
6″	1 3/8″ to 1 13/16″	1	91257A777	3.94
6 1/2″	1 5/8″ to 2 1/16″	1	91257A778	4.37
7″	1 5/8″ to 2 1/16″	1	91257A779	5.69
8″	1 5/8″ to 2 1/16″	1	91257A793	27.98

9/16″-18—Head: Wd. 13/16″; Ht. 23/64″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1″	Fully Threaded	10	92620A778	11.40
1 1/4″	Fully Threaded	10	92620A779	11.45
1 1/2″	Fully Threaded	10	92620A780	11.10
2″	Fully Threaded	10	92620A782	14.95
3″	1 3/8″ to 1 13/16″	5	91257A784	12.04
3 1/2″	1 3/8″ to 1 13/16″	5	91257A791	10.40
4″	1 3/8″ to 1 13/16″	5	91257A785	13.47
4 1/2″	1 3/8″ to 1 13/16″	5	91257A792	14.18
5″	1 3/8″ to 1 13/16″	1	91257A786	3.16
6″	1 3/8″ to 1 13/16″	1	91257A788	4.94

5/8″-11—Head: Wd. 15/16″; Ht. 25/64″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
3/4″	Fully Threaded	5	92620A792	9.66
1″	Fully Threaded	10	92620A794	7.51
1 1/4″	Fully Threaded	10	92620A796	8.93
1 1/2″	Fully Threaded	10	92620A798	10.85
1 3/4″	Fully Threaded	10	92620A800★	12.23
2″	Fully Threaded	10	92620A802★	13.29
2 1/4″	Fully Threaded	5	92620A807	8.58
2 1/4″	1 1/2″ to 2″	5	91257A803	6.66
2 1/2″	Fully Threaded	1	92620A804	3.42
2 1/2″	1 1/2″ to 2″	5	91257A804★	8.68
2 3/4″	Fully Threaded	5	92620A805	10.15
2 3/4″	1 1/2″ to 2″	5	91257A805	10.43
3″	Fully Threaded	1	92620A806	4.14
3″	1 1/2″ to 2″	5	91257A806★	10.15
3 1/4″	1 1/2″ to 2″	5	91257A811	9.95
3 1/2″	Fully Threaded	1	92620A808	4.92
3 1/2″	1 1/2″ to 2″	5	91257A808★	11.27
3 3/4″	1 1/2″ to 2″	5	91257A809	9.54
4″	Fully Threaded	1	92620A809	4.67
4″	1 1/2″ to 2″	5	91257A810	10.91
4 1/4″	1 1/2″ to 2″	1	91257A815	4.11
4 1/2″	Fully Threaded	1	92620A810	4.91
4 1/2″	1 1/2″ to 2″	1	91257A812	2.91
4 3/4″	1 1/2″ to 2″	1	91257A839	4.16
5″	Fully Threaded	1	92620A811	5.08
5″	1 1/2″ to 2″	1	91257A814	3.13
5 1/2″	Fully Threaded	1	92620A812	5.41
5 1/2″	1 1/2″ to 2″	1	91257A816	3.87
6″	Fully Threaded	1	92620A813	5.91
6″	1 1/2″ to 2″	1	91257A818	3.98
6 1/2″	1 3/4″ to 2 1/4″	1	91257A819	3.71
7″	1 3/4″ to 2 1/4″	1	91257A820	4.99
7 1/2″	1 3/4″ to 2 1/4″	1	91257A821	5.53
8″	1 3/4″ to 2 1/4″	1	91257A822	5.70
8 1/2″	1 3/4″ to 2 1/4″	1	91257A823	5.82
9″	1 3/4″ to 2 1/4″	1	91257A824	5.91
9 1/2″	1 3/4″ to 2 1/4″	1	91257A825	6.74
10″	1 3/4″ to 2 1/4″	1	91257A170	7.12
10 1/2″	1 3/4″ to 2 1/4″	1	91257A175	7.82

5/8″-11 (Cont.)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
11″	1 3/4″ to 2 1/4″	1	91257A178	$8.12
12″	1 3/4″ to 2 1/4″	1	91257A182	8.96

5/8″-18—Head: Wd. 15/16″; Ht. 25/64″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1″	Fully Threaded	10	92620A815	13.00
1 1/4″	Fully Threaded	10	92620A817	13.41
1 1/2″	Fully Threaded	10	92620A824	13.94
1 3/4″	Fully Threaded	10	92620A310	11.97
2″	Fully Threaded	5	92620A825	9.11
2 1/4″	Fully Threaded	1	92620A592	6.39
2 1/2″	Fully Threaded	1	92620A826	6.48
2 1/2″	1 1/2″ to 2″	5	91257A826	11.64
3″	Fully Threaded	1	92620A827	6.54
3″	1 1/2″ to 2″	5	91257A827	13.20
3 1/4″	1 1/2″ to 2″	5	91257A830	14.90
3 1/2″	Fully Threaded	1	92620A828	6.87
3 1/2″	1 1/2″ to 2″	5	91257A828	14.70
3 3/4″	1 1/2″ to 2″	5	91257A831	14.86
4″	Fully Threaded	1	92620A829	7.14
4″	1 1/2″ to 2″	5	91257A829	14.95
4 1/4″	1 1/2″ to 2″	1	91257A840	4.41
4 1/2″	1 1/2″ to 2″	1	91257A832	3.06
4 3/4″	1 1/2″ to 2″	1	91257A191	4.45
5″	Fully Threaded	1	92620A315	12.21
5″	1 1/2″ to 2″	5	91257A833	10.54
6″	1 1/2″ to 2″	1	91257A834	3.69
6 1/2″	1 3/4″ to 2 1/4″	1	91257A193	4.12
7″	1 3/4″ to 2 1/4″	1	91257A835	6.28
7 1/2″	1 3/4″ to 2 1/4″	1	91257A195	5.02
8″	1 3/4″ to 2 1/4″	1	91257A836	7.28
9″	1 3/4″ to 2 1/4″	1	91257A837	9.93
10″	1 3/4″ to 2 1/4″	1	91257A838	10.38
12″	1 3/4″ to 2 1/4″	1	91257A199	13.58

3/4″-10—Head: Wd. 1 1/8″; Ht. 15/32″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1″	Fully Threaded	5	92620A830	10.73
1 1/4″	Fully Threaded	5	92620A832	10.33
1 1/2″	Fully Threaded	5	92620A839	9.34
1 3/4″	Fully Threaded	5	92620A834	12.41
2″	Fully Threaded	5	92620A843★	11.15
2 1/4″	Fully Threaded	5	92620A846	13.62
2 1/2″	Fully Threaded	5	92620A845★	12.79
2 3/4″	1 3/4″ to 2 1/4″	5	91257A844	14.86
3″	Fully Threaded	1	92620A847	5.22
3″	1 3/4″ to 2 1/4″	1	91257A847★	3.15
3 1/4″	1 3/4″ to 2 1/4″	1	91257A848	3.97
3 1/2″	Fully Threaded	1	92620A849	6.39
3 1/2″	1 3/4″ to 2 1/4″	1	91257A849★	3.66
3 3/4″	1 3/4″ to 2 1/4″	1	91257A850	5.07
4″	Fully Threaded	1	92620A851	7.84
4″	1 3/4″ to 2 1/4″	1	91257A851★	4.09
4 1/4″	1 3/4″ to 2 1/4″	1	91257A200	4.83
4 1/2″	Fully Threaded	1	92620A853	8.53
4 1/2″	1 3/4″ to 2 1/4″	1	91257A852	4.27
4 3/4″	1 3/4″ to 2 1/4″	1	91257A854	4.90
5″	Fully Threaded	1	92620A855	8.85
5″	1 3/4″ to 2 1/4″	1	91257A855	3.95
5 1/4″	1 3/4″ to 2 1/4″	1	91257A856	5.06
5 1/2″	Fully Threaded	1	92620A856	9.21
5 1/2″	1 3/4″ to 2 1/4″	1	91257A857	4.56
5 3/4″	1 3/4″ to 2 1/4″	1	91257A858	5.20
6″	Fully Threaded	1	92620A857	9.57
6″	1 3/4″ to 2 1/4″	1	91257A859	4.77
6 1/2″	2″ to 2 1/2″	1	91257A860	6.87
7″	2″ to 2 1/2″	1	91257A861	6.77
7 1/2″	2″ to 2 1/2″	1	91257A862	9.52
8″	2″ to 2 1/2″	1	91257A863	8.81
8 1/2″	2″ to 2 1/2″	1	91257A204	7.02
9″	2″ to 2 1/2″	1	91257A864	8.85
9 1/2″	2″ to 2 1/2″	1	91257A865	7.52
10″	2″ to 2 1/2″	1	91257A866	13.32
10 1/2″	2″ to 2 1/2″	1	91257A206	10.46

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High-Strength Steel—Grade 8 (Continued from previous page)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
3/4"-10 (Cont.)				
11"	2" to 2½"	1	91257A869	$10.78
12"	2" to 2½"	1	91257A868	9.35
3/4"-16—Head: Wd. 1 1/8"; Ht. 15/32"				
1"	Fully Threaded	5	92620A868	12.25
1¼"	Fully Threaded	5	92620A869	10.67
1½"	Fully Threaded	5	92620A870	10.45
1¾"	Fully Threaded	5	92620A871	11.90
2"	Fully Threaded	5	92620A872	12.12
2½"	Fully Threaded	5	92620A874	13.93
2¾"	1¾" to 2¼"	1	91257A876	3.45
3"	Fully Threaded	1	92620A875	7.87
3"	1¾" to 2¼"	1	91257A877	3.58
3¼"	1¾" to 2¼"	1	91257A867	3.43
3½"	Fully Threaded	1	92620A876	8.47
3½"	1¾" to 2¼"	1	91257A878	4.32
4"	Fully Threaded	1	92620A877	8.73
4"	1¾" to 2¼"	1	91257A880	4.41
4¼"	1¾" to 2¼"	1	91257A211	5.69
4½"	Fully Threaded	1	92620A878	9.10
4½"	1¾" to 2¼"	1	91257A879	4.93
4¾"	1¾" to 2¼"	1	91257A213	5.76
5"	Fully Threaded	1	92620A879	9.54
5"	1¾" to 2¼"	1	91257A882	5.09
5½"	Fully Threaded	1	92620A880	9.98
5½"	1¾" to 2¼"	1	91257A881	4.89
6"	Fully Threaded	1	92620A881	10.34
6"	1¾" to 2¼"	1	91257A883	5.13
6½"	2" to 2½"	1	91257A884	10.69
7"	2" to 2½"	1	91257A885	11.44
7½"	2" to 2½"	1	91257A886	13.51
8"	2" to 2½"	1	91257A887	13.54
8½"	2" to 2½"	1	91257A889	15.47
9"	2" to 2½"	1	91257A890	16.91
9½"	2" to 2½"	1	91257A891	18.95
10"	2" to 2½"	1	91257A892	18.65
7/8"-9—Head: Wd. 1 5/16"; Ht. 35/64"				
1½"	Fully Threaded	1	92620A893	3.29
1¾"	Fully Threaded	1	92620A892	3.38
2"	Fully Threaded	1	92620A896	3.74
2½"	Fully Threaded	1	92620A911	3.26
3"	Fully Threaded	1	92620A912	11.44
3"	2" to 2 9/16"	1	91257A913	4.35
3½"	Fully Threaded	1	92620A913	13.34
3½"	2" to 2 9/16"	1	91257A915	4.57
4"	Fully Threaded	1	92620A914	15.56
4"	2" to 2 9/16"	1	91257A917	5.24
4¼"	2" to 2 9/16"	1	91257A918	7.50
4½"	Fully Threaded	1	92620A915	17.26
4½"	2" to 2 9/16"	1	91257A919	4.25
4¾"	2" to 2 9/16"	1	91257A920	8.10
5"	Fully Threaded	1	92620A916	18.84
5"	2" to 2 9/16"	1	91257A921	6.14
5½"	Fully Threaded	1	92620A917	21.54
5½"	2" to 2 9/16"	1	91257A923	7.02
6"	Fully Threaded	1	92620A918	28.11
6"	2" to 2 9/16"	1	91257A925	6.55
6½"	2¼" to 2 13/16"	1	91257A927	7.98
7"	2¼" to 2 13/16"	1	91257A929	8.32
7½"	2¼" to 2 13/16"	1	91257A224	9.69
8"	2¼" to 2 13/16"	1	91257A228	7.71
9"	2¼" to 2 13/16"	1	91257A930	12.80
10"	2¼" to 2 13/16"	1	91257A931	15.30
7/8"-14—Head: Wd. 1 5/16"; Ht. 35/64"				
1½"	Fully Threaded	1	92620A920	$3.23
1¾"	Fully Threaded	1	92620A922	4.94
2"	Fully Threaded	1	92620A924	4.48
2¼"	Fully Threaded	1	92620A926	3.33
2½"	Fully Threaded	1	92620A928	4.65
2¾"	Fully Threaded	1	92620A930	4.54
3"	2" to 2 9/16"	1	91257A932	5.43
3¼"	2" to 2 9/16"	1	91257A933	6.17
3½"	2" to 2 9/16"	1	91257A936	5.78
3¾"	2" to 2 9/16"	1	91257A937	7.08
4"	2" to 2 9/16"	1	91257A934	6.84
4½"	2" to 2 9/16"	1	91257A939	8.21
5"	2" to 2 9/16"	1	91257A941	7.21
5½"	2" to 2 9/16"	1	91257A943	7.81
6"	2" to 2 9/16"	1	91257A945	8.36
6½"	2¼" to 2 13/16"	1	91257A946	13.22
7"	2¼" to 2 13/16"	1	91257A947	14.39
7½"	2¼" to 2 13/16"	1	91257A948	15.75
8"	2¼" to 2 13/16"	1	91257A949	17.48
8½"	2¼" to 2 13/16"	1	91257A950	16.11
9"	2¼" to 2 13/16"	1	91257A951	18.35
10"	2¼" to 2 13/16"	1	91257A952	18.22
1"-8—Head: Wd. 1½"; Ht. 39/64"				
1½"	Fully Threaded	1	92620A951	3.62
1¾"	Fully Threaded	1	92620A952	4.59
2"	Fully Threaded	1	92620A953	4.02
2¼"	Fully Threaded	1	92620A954	4.08
2½"	Fully Threaded	1	92620A955	3.89
2¾"	Fully Threaded	1	92620A956	4.69
3"	Fully Threaded	1	92620A957	5.06
3¼"	Fully Threaded	1	92620A959	10.70
3½"	Fully Threaded	1	92620A961	19.07
3½"	2¼" to 2⅞"	1	91257A959	5.92
4"	Fully Threaded	1	92620A962	21.13
4"	2¼" to 2⅞"	1	91257A961	6.70
4¼"	2¼" to 2⅞"	1	91257A962	8.96
4½"	Fully Threaded	1	92620A963	22.63
4½"	2¼" to 2⅞"	1	91257A963	7.36
4¾"	2¼" to 2⅞"	1	91257A964	9.34
5"	Fully Threaded	1	92620A964	23.94
5"	2¼" to 2⅞"	1	91257A965	7.95
5½"	Fully Threaded	1	92620A965	25.72
5½"	2¼" to 2⅞"	1	91257A967	8.68
6"	Fully Threaded	1	92620A966	27.36
6"	2¼" to 2⅞"	1	91257A969	8.93
6½"	2½" to 3⅛"	1	91257A970	11.47
7"	2½" to 3⅛"	1	91257A973	8.36
7½"	2½" to 3⅛"	1	91257A975	14.87
8"	2½" to 3⅛"	1	91257A977	9.97
8½"	2½" to 3⅛"	1	91257A979	13.66
9"	2½" to 3⅛"	1	91257A981	13.60
9½"	2½" to 3⅛"	1	91257A983	15.28
10"	2½" to 3⅛"	1	91257A985	13.55
10½"	2½" to 3⅛"	1	91257A993	13.30
11"	2½" to 3⅛"	1	91257A986	15.15
12"	2½" to 3⅛"	1	91257A987	14.53
1"-14—Head: Wd. 1½"; Ht. 39/64"				
4"	2¼" to 2⅞"	1	91257A989	10.10
5"	2¼" to 2⅞"	1	91257A990	9.85
6"	2¼" to 2⅞"	1	91257A991	11.24
1"-14 (Cont.)				
7"	2½" to 3⅛"	1	91257A992	$12.37
8"	2½" to 3⅛"	1	91257A994	14.97
9"	2½" to 3⅛"	1	91257A996	19.46
10"	2½" to 3⅛"	1	91257A998	18.23
1 1/8"-7—Head: Wd. 1 11/16"; Ht. 11/16"				
2½"	Fully Threaded	1	91268A113	6.42
3"	Fully Threaded	1	91268A115	6.34
3½"	Fully Threaded	1	91268A117	6.37
4"	2½" to 3¼"	1	91268A119	7.93
4½"	2½" to 3¼"	1	91268A120	8.26
5"	2½" to 3¼"	1	91268A122	8.16
6"	2½" to 3¼"	1	91268A124	9.36
6½"	2¾" to 3½"	1	91268A125	13.47
8"	2¾" to 3½"	1	91268A128	15.66
10"	2¾" to 3½"	1	91268A132	17.84
1 1/4"-7—Head: Wd. 1 7/8"; Ht. 25/32"				
2½"	Fully Threaded	1	91268A213	7.20
3"	Fully Threaded	1	91268A215	9.71
3½"	Fully Threaded	1	91268A217	7.83
4"	2¾" to 3½"	1	91268A219	9.10
4½"	2¾" to 3½"	1	91268A221	9.76
5½"	2¾" to 3½"	1	91268A223	12.95
6½"	3" to 3¾"	1	91268A225	13.15
7"	3" to 3¾"	1	91268A226	14.33
8"	3" to 3¾"	1	91268A227	22.94
9"	3" to 3¾"	1	91268A228	18.68
10"	3" to 3¾"	1	91268A229	22.07
12"	3" to 3¾"	1	91268A230	38.00
14"	3" to 3¾"	1	91268A232	32.13
16"	3" to 3¾"	1	91268A235	38.30
1 1/4"-12—Head: Wd. 1 7/8"; Ht. 25/32"				
4"	2¾" to 3½"	1	91268A320	9.43
5"	2¾" to 3½"	1	91268A325	11.65
6"	2¾" to 3½"	1	91268A330	14.58
7"	3" to 3¾"	1	91268A335	20.14
8"	3" to 3¾"	1	91268A340	24.12
10"	3" to 3¾"	1	91268A345	25.84
1 1/2"-6—Head: Wd. 2 1/4"; Ht. 15/16"				
3"	Fully Threaded	1	91268A951	14.68
3½"	Fully Threaded	1	91268A953	16.65
4"	3¼" to 3½"	1	91268A955	19.26
4½"	Fully Threaded	1	91268A957	14.05
5"	3¼" to 4⅛"	1	91268A958	16.51
5½"	3¼" to 4¾"	1	91268A959	25.00
6"	3¼" to 4⅛"	1	91268A960	20.00
7"	3½" to 4⅜"	1	91268A962	24.17
8"	3½" to 4⅜"	1	91268A963	26.13
8½"	3½" to 4¾"	1	91268A402	34.26
9"	3½" to 4⅜"	1	91268A964	31.92
10"	3½" to 4⅜"	1	91268A965	32.09
12"	3½" to 4⅜"	1	91268A967	46.14
14"	3½" to 4⅜"	1	91268A969	53.93
1 3/4"-5—Head: Wd. 2 5/8"; Ht. 1 3/32"				
6"	3¾" to 5¼"	1	91268A450	37.94
8"	4" to 7¼"	1	91268A460	49.74
10"	4" to 9¼"	1	91268A470	62.36
2"-4 1/2—Head: Wd. 3"; Ht. 1 1/4"				
8"	4¼" to 5⅝"	1	91268A980	62.53
10"	4¼" to 5⅝"	1	91268A982	76.74

Tension-Indicating High-Strength Steel

You'll know these cap screws are properly tightened when the indicator dot changes from red to black. The indicator is reliable at temperatures from −4° to +167° F.

Screws are made from alloy steel and have a zinc yellow-chromate plating for added rust resistance. They have a Class 2A thread fit and a minimum Rockwell hardness of C33.

Although not rated for strength, these screws have not less than 85% the tensile strength of equivalent size Grade 8 hex head cap screws. Screw length is measured from under the head.

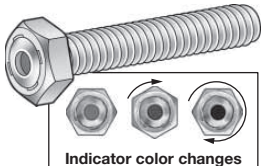

Indicator color changes as tension increases or decreases.

Lg.	Each
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"	
1½" 93734A120♣	$19.38
1¾" 93734A140♣	19.47
2" 93734A160	19.57
2½" 93734A180	19.66
3" 93734A200	19.75
5/8"-11—Head: Wd. 15/16"; Ht. 25/64"	
1½" 93734A310♣	$20.77
1¾" 93734A330♣	20.87
2" 93734A350♣	20.96
2½" 93734A370	21.06
3" 93734A390	21.16
3/4"-10—Head: Wd. 1 1/8"; Ht. 15/32"	
2" 93734A520♣	$22.15
2½" 93734A540♣	22.22
3" 93734A560	22.71

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3134 for more thread length information.

Ultra Corrosion-Resistant Coated High-Strength Steel—Grade 8

Fully Threaded♣

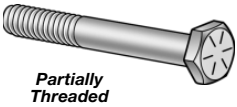

Partially Threaded

Compared to zinc plating, which can show rust in less than 200 hours, these screws can withstand 1,000 hours of salt spray resistance per ASTM B117. They have a silver-colored coating (also known as armor coat) that adds protection without affecting thread size.

Screws are made from alloy steel. They have a Class 2A thread fit and are marked on the head with six radial lines to indicate Grade 8. All have a minimum Rockwell hardness of C33, minimum tensile strength of 150,000 psi, and meet ASME B18.2.1 and SAE J429. Screw length is measured from under the head.

For nuts, see 93827A on page 3186; for washers, see 98180A on page 3219.

Lg.	Pkg. Qty.		Per Pkg.
1/4"-20—*Head: Wd. 7/16"; Ht. 5/32"*			
1/2"	100	91286A101♣	$9.08
3/4"	100	91286A105♣	10.50
7/8"	100	91286A109♣	11.91
1"	100	91286A111♣	11.94
1 1/4"	50	91286A113	7.45
1 1/2"	50	91286A116	8.38
1 3/4"	50	91286A119	10.67
2"	50	91286A121	12.49
2 1/2"	50	91286A123	14.26
2 3/4"	25	91286A125	8.27
3"	25	91286A128	9.15
4"	25	91286A131	9.41
5"	10	91286A133	9.18
1/4"-28—*Head: Wd. 7/16"; Ht. 5/32"*			
1/2"	100	91286A134♣	13.93
1"	100	91286A135♣	13.65
1 1/4"	50	91286A138	8.17
1 1/2"	50	91286A141	9.55
1 3/4"	50	91286A143	11.18
2"	50	91286A146	12.33
2 1/2"	50	91286A149	14.39
3"	25	91286A151	10.82
4"	25	91286A153	12.34
5/16"-18—*Head: Wd. 1/2"; Ht. 13/64"*			
1/2"	50	91286A608♣	8.03
5/8"	50	91286A610♣	6.92
3/4"	50	91286A154♣	7.17
7/8"	50	91286A612♣	8.88
1"	50	91286A155♣	9.75
1 1/4"	50	91286A157♣	11.65
1 1/2"	50	91286A159	13.87
1 3/4"	25	91286A162	7.75
2"	25	91286A164	8.27
2 1/2"	25	91286A166	11.50
2 3/4"	25	91286A169	11.56
3"	25	91286A171	12.43
3 1/2"	10	91286A174	6.19
4"	10	91286A177	6.62
5"	10	91286A179	11.20
5/16"-24—*Head: Wd. 1/2"; Ht. 13/64"*			
3/4"	50	91286A180♣	12.57
1"	50	91286A182♣	10.46
1 1/4"	50	91286A185♣	12.49
1 1/2"	25	91286A189	7.38
1 3/4"	25	91286A190	8.00
2"	25	91286A193	9.13
2 1/2"	25	91286A196	11.41
3"	25	91286A199	13.60
3/8"-16—*Head: Wd. 9/16"; Ht. 15/64"*			
1/2"	50	91286A200♣	$13.28
5/8"	50	91286A621♣	13.32
3/4"	50	91286A623♣	11.81
7/8"	25	91286A625♣	7.27
1"	50	91286A627♣	13.48
1 1/4"	50	91286A201♣	8.13
1 1/2"	50	91286A204	9.59
1 3/4"	25	91286A206	11.60
2"	25	91286A208	12.89
2 1/2"	10	91286A211	6.25
2 3/4"	10	91286A213	6.45
3"	10	91286A216	7.38
3 1/4"	10	91286A219	9.08
3 1/2"	10	91286A222	9.08
4"	10	91286A224	9.80
4 1/2"	10	91286A226	14.04
5"	5	91286A229	6.12
5 1/2"	5	91286A232	8.18
6"	5	91286A235	8.25
6 1/2"	5	91286A237	8.76
7"	5	91286A239	10.27
8"	5	91286A242	13.32
3/8"-24—*Head: Wd. 9/16"; Ht. 15/64"*			
3/4"	50	91286A241♣	13.38
1"	25	91286A243♣	7.75
1 1/4"	25	91286A244♣	8.40
1 1/2"	25	91286A246	10.27
1 3/4"	25	91286A249	11.89
2"	25	91286A252	13.19
2 1/4"	25	91286A254	13.59
2 1/2"	10	91286A257	6.43
2 3/4"	10	91286A260	6.68
3"	10	91286A262	7.53
3 1/2"	10	91286A264	8.90
4"	10	91286A266	10.13
7/16"-14—*Head: Wd. 5/8"; Ht. 9/32"*			
1"	25	91286A267♣	9.99
1 1/4"	25	91286A641♣	11.15
1 1/2"	25	91286A268♣	13.75
1 3/4"	10	91286A271	6.09
2"	10	91286A273	7.32
2 1/2"	10	91286A275	9.37
2 3/4"	10	91286A279	9.53
3"	10	91286A281	10.25
3 1/2"	10	91286A283	10.79
4"	10	91286A286	13.04
4 1/2"	5	91286A289	8.96
5"	5	91286A291	10.84
7/16"-20—*Head: Wd. 5/8"; Ht. 9/32"*			
1"	25	91286A292♣	$12.95
1 1/4"	10	91286A293♣	5.85
1 1/2"	10	91286A294♣	5.75
1 3/4"	10	91286A296	6.38
2"	10	91286A299	6.75
2 1/2"	10	91286A302	9.37
2 3/4"	10	91286A305	9.87
3"	10	91286A307	10.59
3 1/2"	10	91286A310	12.11
4"	10	91286A313	13.59
5"	5	91286A316	11.10
1/2"-13—*Head: Wd. 3/4"; Ht. 5/16"*			
3/4"	25	91286A317♣	13.40
1"	10	91286A319♣	5.87
1 1/4"	10	91286A320♣	6.51
1 1/2"	10	91286A318♣	7.46
1 3/4"	10	91286A322♣	11.82
2"	10	91286A325	9.10
2 1/4"	10	91286A327	10.44
2 1/2"	10	91286A330	11.31
2 3/4"	10	91286A334	11.75
3"	10	91286A337	13.10
3 1/2"	5	91286A339	7.43
4"	5	91286A344	8.29
4 1/2"	5	91286A347	10.79
5"	5	91286A351	11.66
5 1/2"	5	91286A354	12.40
6"	5	91286A357	13.48
6 1/2"	5	91286A361	14.00
7"	1	91286A364	2.89
8"	1	91286A366	3.95
1/2"-20—*Head: Wd. 3/4"; Ht. 5/16"*			
1"	10	91286A367♣	6.65
1 1/4"	10	91286A368♣	7.40
1 1/2"	10	91286A369♣	7.60
1 3/4"	10	91286A371♣	9.60
2"	10	91286A373	9.47
2 1/4"	10	91286A375	10.60
2 1/2"	10	91286A377	11.44
3"	10	91286A381	12.95
3 1/2"	5	91286A383	7.75
4"	5	91286A385	8.22
4 1/2"	5	91286A387	12.27
5"	5	91286A391	12.01
6"	5	91286A394	14.12
5/8"-11—*Head: Wd. 15/16"; Ht. 25/64"*			
1"	10	91286A395♣	$12.44
1 1/2"	10	91286A397♣	11.66
1 3/4"	10	91286A396♣	12.38
2"	10	91286A399♣	13.81
2 1/4"	10	91286A402	14.49
2 1/2"	5	91286A405	8.34
2 3/4"	5	91286A407	9.40
3"	5	91286A410	10.67
3 1/2"	5	91286A412	11.39
4"	5	91286A415	12.76
4 1/2"	1	91286A418	3.16
5"	1	91286A421	3.27
5 1/2"	1	91286A425	3.72
6"	1	91286A431	4.04
7"	1	91286A434	5.85
5/8"-18—*Head: Wd. 15/16"; Ht. 25/64"*			
1 1/2"	5	91286A435♣	7.56
2"	5	91286A437♣	8.37
2 1/2"	5	91286A442	8.31
3"	5	91286A444	10.39
3 1/2"	5	91286A447	10.81
4"	5	91286A451	13.05
3/4"-10—*Head: Wd. 1 1/8"; Ht. 15/32"*			
1 1/2"	5	91286A453♣	9.86
1 3/4"	5	91286A454♣	10.63
2"	5	91286A455♣	11.33
2 1/4"	5	91286A459♣	12.06
2 1/2"	5	91286A462♣	12.90
3"	1	91286A464	3.04
3 1/2"	1	91286A467	3.37
4"	1	91286A471	3.77
4 1/2"	1	91286A473	5.28
5"	1	91286A475	5.93
5 1/2"	1	91286A477	6.58
6"	1	91286A483	5.55
7"	1	91286A485	6.82
8"	1	91286A492	7.72
3/4"-16—*Head: Wd. 1 1/8"; Ht. 15/32"*			
2"	1	91286A495♣	2.44
2 1/2"	1	91286A501♣	2.78
2 3/4"	1	91286A506	2.96
3"	1	91286A509	3.18
3 1/2"	1	91286A512	3.69
4"	1	91286A514	4.04
4 1/2"	1	91286A517	5.54
5"	1	91286A520	5.71

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3134 for more thread information.

Left-Hand Thread High-Strength Steel—Grade 8

Ideal for places where counterclockwise motion would cause common right-hand threaded screws to come loose; these screws tighten when turned to the left. Fully threaded with a Class 2A thread fit, they're made from alloy steel with a zinc yellow-chromate plating for added rust resistance. They have a minimum Rockwell hardness of C33, minimum tensile strength of 150,000 psi, and meet SAE J429. Each screw is marked on the head with six radial lines to indicate Grade 8. Screw length is measured from under the head.

Also Available: Grade 5 medium strength steel screws in sizes marked with ♦. All are fully threaded, except sizes 5/8"-11×4" and 3/4"-10×4", which are partially threaded. Screws have a minimum tensile strength of 120,000 psi. They meet SAE J429 and ASME B18.2.1. Please ask for 92190A100 and specify thread size and screw length.

Lg.		Each
1/4"-20—*Head: Wd. 7/16"; Ht. 5/32"*		
3/4"	90211A222	$9.61
1"	90211A224	9.61
1 1/4"	90211A226	10.07
1 1/2"	90211A228	10.45
2"	90211A230	10.47
2 1/2"	90211A232	11.33
3"	90211A236	12.00
5/16"-18—*Head: Wd. 1/2"; Ht. 13/64"*		
3/4"	90211A250	10.28
1"	90211A252	10.28
1 1/2"	90211A256	10.28
5/16"-18 (Cont.)		
2"	90211A258	$10.88
2 1/2"	90211A261	11.76
3/8"-16—*Head: Wd. 9/16"; Ht. 15/64"*		
1"	90211A292	10.28
1 1/4"	90211A294	10.28
1 1/2"	90211A296♦	10.28
1 3/4"	90211A298♦	12.03
2"	90211A301♦	12.04
2 1/2"	90211A303♦	15.28
3"	90211A305♦	15.28
4"	90211A309	16.39
1/2"-13—*Head: Wd. 3/4"; Ht. 5/16"*		
1 1/2"	90211A334♦	$12.24
1 3/4"	90211A336♦	13.85
2"	90211A338♦	15.28
2 1/4"	90211A339	15.76
2 1/2"	90211A340♦	16.16
3"	90211A342♦	16.16
3 1/2"	90211A344	16.16
4"	90211A346♦	16.16
4 1/2"	90211A350	18.35
5/8"-11—*Head: Wd. 15/16"; Ht. 25/64"*		
1 1/2"	90211A360♦	$14.88
1 3/4"	90211A362	16.16
2"	90211A364♦	18.35
2 1/2"	90211A366	18.35
3"	90211A368♦	19.23
4"	90211A372♦	19.23
3/4"-10—*Head: Wd. 1 1/8"; Ht. 15/32"*		
1 1/2"	90211A420♦	19.67
2"	90211A424	20.11
2 1/2"	90211A426	22.75
3"	90211A428	22.75
4"	90211A432♦	22.75

Flange-Head High-Strength Steel—Grade 8

The flange increases contact area to give you extra holding power without a separate washer. Made from alloy steel, these screws have a black phosphate and oil finish that provides lubricity and mild rust resistance. They have a Class 2A thread fit and are marked on the head with six radial lines to indicate Grade 8. All have a minimum Rockwell hardness of C33, minimum tensile strength of 150,000 psi, and meet IFI-111 and SAE J429. Head height includes flange. Screw length is measured from under the flange.

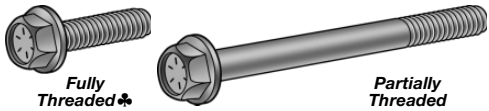

Fully Threaded♣ — Partially Threaded

Lg.	Pkg. Qty.		Per Pkg.
1/4"-20—*Head: Wd. 3/8"; Ht. 9/32"*			
Flange Dia.: 9/16"			
1/2"	50	92316A536♣	$8.56
5/8"	25	92316A538♣	9.20
3/4"	100	92316A540♣	14.29
1"	50	92316A542♣	7.69
1 1/4"	50	92316A544♣	8.25
1 1/2"	50	92316A546	8.80
1 3/4"	50	92316A548	8.96
2"	50	92316A550	12.01
2 1/2"	25	92316A552	7.84
3"	25	92316A554	9.28
5/16"-18—*Head: Wd. 1/2"; Ht. 21/64"*			
Flange Dia.: 11/16"			
1/2"	25	92316A579♣	10.35
3/4"	50	92316A581♣	12.51
1"	25	92316A583♣	6.67
1 1/4"	25	92316A585♣	7.21
1 1/2"	25	92316A587	8.04
1 3/4"	25	92316A589	8.60
2"	25	92316A591	9.18
2 1/4"	25	92316A593	10.39
2 1/2"	25	92316A595	11.89
3"	25	92316A597	13.22
3/8"-16—*Head: Wd. 9/16"; Ht. 25/64"*			
Flange Dia.: 13/16"			
5/8"	25	92316A621♣	8.83
3/4"	25	92316A622♣	8.92
3/8"-16 (Cont.)			
1"	25	92316A624♣	$6.75
1 1/4"	25	92316A626♣	7.10
1 1/2"	25	92316A628♣	7.48
1 3/4"	25	92316A630	8.12
2"	25	92316A632	11.74
2 1/4"	25	92316A633	12.30
2 1/2"	25	92316A634	12.86
2 3/4"	10	92316A636	6.44
3"	10	92316A638	6.72
4"	10	92316A640	8.47
7/16"-14—*Head: Wd. 5/8"; Ht. 15/32"*			
Flange Dia.: 15/16"			
1"	10	92316A650♣	7.16
1 1/2"	10	92316A652♣	8.03
2"	10	92316A654	9.35
3"	10	92316A656	11.32
1/2"-13—*Head: Wd. 3/4"; Ht. 33/64"*			
Flange Dia.: 1 5/64"			
3/4"	10	92316A710♣	14.40
1"	25	92316A712♣	11.11
1 1/4"	25	92316A714♣	11.85
1 1/2"	25	92316A716♣	12.81
1 3/4"	10	92316A718♣	5.50
2"	10	92316A720	5.94
2 1/4"	10	92316A721	6.32
2 1/2"	10	92316A722	6.73
2 3/4"	10	92316A723	7.14
3"	10	92316A724	7.68
1/2"-13 (Cont.)			
3 1/4"	10	92316A725	$8.09
3 1/2"	10	92316A726	8.51
4"	10	92316A729	11.21
4 1/2"	5	92316A731	8.49
5"	5	92316A733	9.40
6"	1	92316A737	13.09
1/2"-20—*Head: Wd. 3/4"; Ht. 33/64"*			
Flange Dia.: 1 5/64"			
1 1/4"	10	92316A750♣	6.52
1 1/2"	10	92316A754♣	7.13
1 3/4"	10	92316A758♣	8.03
2"	10	92316A762	7.96
2 1/4"	10	92316A766	9.30
2 1/2"	10	92316A770	8.77
2 3/4"	10	92316A772	9.13
3"	5	92316A774	6.89
4"	5	92316A776	8.56
5"	5	92316A778	10.77
5/8"-11—*Head: Wd. 15/16"; Ht. 5/8"*			
Flange Dia.: 1 21/64"			
1 1/4"	10	92316A797♣	11.21
1 1/2"	10	92316A798♣	9.36
1 3/4"	10	92316A800♣	9.82
2"	10	92316A802♣	10.45
2 1/4"	5	92316A803♣	5.53
2 1/2"	5	92316A804♣	5.85
2 3/4"	5	92316A805	6.16
3"	5	92316A806	6.51
3 1/4"	5	92316A807	6.65
5/8"-11 (Cont.)			
3 1/2"	5	92316A808	$7.19
4"	5	92316A810	11.10
4 1/2"	1	92316A812	3.24
5"	1	92316A814	3.28
6"	1	92316A816	4.56
5/8"-18—*Head: Wd. 15/16"; Ht. 5/8"*			
Flange Dia.: 1 21/64"			
1 1/2"	10	92316A820♣	12.78
2"	5	92316A824♣	7.07
2 1/2"	5	92316A828♣	9.60
3"	5	92316A830	11.23
4"	1	92316A832	3.13
3/4"-10—*Head: Wd. 1 1/8"; Ht. 47/64"*			
Flange Dia.: 1 19/32"			
1 3/4"	1	92316A839♣	3.06
2"	1	92316A841	4.30
2 1/2"	1	92316A843	5.52
3"	1	92316A847	5.72
3 1/2"	1	92316A849	6.79
4"	1	92316A851	5.21
5"	1	92316A853	8.62
6"	1	92316A855	11.96
3/4"-16—*Head: Wd. 1 1/8"; Ht. 47/64"*			
Flange Dia.: 1 19/32"			
2"	1	92316A920♣	5.47
2 1/4"	1	92316A922	5.48
3"	1	92316A924	6.51

♣ Fully threaded. For other sizes, see page 3134 and add 1/4" to the maximum thread length listed.

Wire-Lockable Medium-Strength Steel—Grade 5

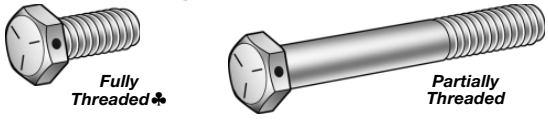

Fully Threaded♣ — Partially Threaded

Wire these drilled-head screws together and instead of vibrating loose, they'll hold tight. They're zinc plated for rust resistance and marked on top of the head with three radial lines to indicate Grade 5. Screws have a Class 2A thread fit, a minimum Rockwell hardness of C25, and minimum tensile strength of 120,000 psi. All meet ASME B18.2.1 and SAE J429. Screw length is measured from under the head.

For safety lock wire, see 8860K14 on page 3731. For wire twisting pliers, see page 2757.

Use safety lock wire (not included) to wire screws together.

Lg.	Pkg. Qty.		Per Pkg.
1/4"-20—*Head: Wd. 7/16"; Ht. 5/32"*			
Hole Dia.: 0.0625"			
1/2"	10	90124A537♣	$10.68
5/8"	10	90124A539♣	10.90
3/4"	10	90124A540♣	10.90
1"	10	90124A542♣	11.40
5/16"-18—*Head: Wd. 1/2"; Ht. 13/64"*			
Hole Dia.: 0.0625"			
3/4"	10	90124A581♣	12.77
7/8"	10	90124A582♣	12.86
1"	5	90124A583♣	7.06
1 1/2"	5	90124A587	8.17
3/8"-16—*Head: Wd. 9/16"; Ht. 15/64"*			
Hole Dia.: 0.0625"			
3/4"	5	90124A622♣	7.00
1"	5	90124A624♣	7.46
1 1/4"	5	90124A626♣	8.10
1 1/2"	5	90124A628	8.73
2"	5	90124A632	9.73
3"	5	90124A636	10.74
1/2"-13—*Head: Wd. 3/4"; Ht. 5/16"*			
Hole Dia.: 0.1094"			
3/4"	5	90124A710♣	$11.35
1"	5	90124A712♣	11.76
1 1/4"	5	90124A714♣	12.26
1 1/2"	5	90124A716♣	12.89
1 3/4"	5	90124A718♣	14.02
2"	5	90124A720	14.84
5/8"-11—*Head: Wd. 15/16"; Ht. 25/64"*			
Hole Dia.: 0.1562"			
1 1/2"	1	90124A798♣	4.30
1 3/4"	1	90124A800♣	4.48
2"	1	90124A802♣	4.63
2 1/2"	1	90124A804	5.03
3/4"-10—*Head: Wd. 1 1/8"; Ht. 15/32"*			
Hole Dia.: 0.1562"			
2"	1	90124A843♣	6.38
2 1/4"	1	90124A844♣	6.36
3"	1	90124A847	7.37

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3134 for more thread information.

Vibration-Resistant Flange-Head Medium-Strength Steel—Grade 5

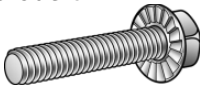

The serrated flange bites into surfaces and doesn't let go. Zinc plated for rust resistance, these screws are fully threaded with a Class 2A thread fit. Each head is marked with three radial lines to indicate Grade 5. All screws have a minimum Rockwell hardness of C25, tensile strength of 120,000 psi, and meet IFI-111 and SAE J429. Head height includes flange. Screw length is measured from under the head.

Also Available: Nonmarring flanged screws (without serrations) in sizes marked with a ★. Made from zinc-plated Grade 5 steel, they have a tensile strength of 120,000 psi and meet IFI-111 and SAE J429. Please ask for 92979A440 and specify thread size and screw length.

Lg.	Pkg. Qty.		Per Pkg.
1/4"-20—*Head: Wd. 3/8"; Ht. 9/32"*			
Flange Dia.: 9/16"			
3/8"	50	92323A510	$5.89
1/2"	100	92323A512★	14.86
5/8"	50	92323A514★	7.80
3/4"	50	92323A516★	8.39
7/8"	50	92323A517	7.55
1"	50	92323A518★	8.76
1 1/4"	50	92323A521★	10.70
1 1/2"	50	92323A523★	13.52
1 3/4"	25	92323A524★	7.02
2"	25	92323A525★	8.97
2 1/4"	25	92323A526	8.50
2 1/2"	25	92323A527	9.08
2 3/4"	25	92323A528	10.45
3"	25	92323A529	11.00
5/16"-18—*Head: Wd. 1/2"; Ht. 21/64"*			
Flange Dia.: 11/16"			
1/2"	50	92323A533★	11.70
5/8"	50	92323A534★	10.36
3/4"	50	92323A535★	13.10
7/8"	50	92323A536	11.51
1"	50	92323A537★	14.09
1 1/4"	25	92323A539★	7.85
1 1/2"	25	92323A541★	8.53
1 3/4"	25	92323A542★	8.50
2"	25	92323A544★	9.69
2 1/2"	25	92323A546	11.80
3"	10	92323A548	5.41
3/8"-16—*Head: Wd. 9/16"; Ht. 25/64"*			
Flange Dia.: 13/16"			
1/2"	25	92323A550★	$8.40
5/8"	25	92323A551★	9.35
3/4"	25	92323A552★	12.00
7/8"	25	92323A553	10.55
1"	25	92323A554★	12.67
1 1/4"	25	92323A556★	14.06
1 1/2"	25	92323A558★	14.65
1 3/4"	10	92323A560★	6.10
2"	10	92323A562★	5.89
2 1/4"	10	92323A563	6.19
2 1/2"	10	92323A564	6.44
2 3/4"	10	92323A565	6.79
3"	10	92323A566	8.57
7/16"-14—*Head: Wd. 5/8"; Ht. 15/32"*			
Flange Dia.: 15/16"			
1"	10	92323A567	6.13
1 1/4"	10	92323A568	6.54
1 1/2"	10	92323A569	6.84
1/2"-13—*Head: Wd. 3/4"; Ht. 33/64"*			
Flange Dia.: 1 5/64"			
3/4"	10	92323A570	7.34
1"	10	92323A571★	9.30
1 1/4"	10	92323A573★	10.06
1 1/2"	10	92323A575★	10.76
1 3/4"	10	92323A576★	10.80
2"	10	92323A577★	12.17
2 1/2"	5	92323A579★	5.84
3"	5	92323A582	6.98

Medium-Strength Steel—Grade 5

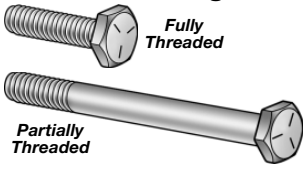

Our medium strength screws have a Class 2A thread fit and are marked on the head with three radial lines to indicate Grade 5. 1″ and smaller diameters have a rust-resistant zinc plating, a minimum Rockwell hardness of C25, and minimum tensile strength of 120,000 psi. 1 1/8″ to 1 1/2″ diameters are plain steel with a minimum Rockwell hardness of C19 and minimum tensile strength of 105,000 psi. 1 3/4″ and 2″ diameters are plain steel with a minimum Rockwell hardness of B90 and minimum tensile strength of 90,000 psi.

All meet ASME B18.2.1. Screws with 1 1/2″ and smaller diameters meet SAE J429; those with 1 3/4″ and 2″ diameters meet ASTM A449. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

1/4″-20—Head: Wd. 7/16″; Ht. 5/32″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
3/8″	Fully Threaded	100	92865A535	$12.30
1/2″	Fully Threaded	100	92865A537	5.75
5/8″	Fully Threaded	100	92865A938	6.95
3/4″	Fully Threaded	100	92865A540	6.70
7/8″	Fully Threaded	100	92865A541	8.06
1″	Fully Threaded	100	92865A542	8.05
1 1/4″	Fully Threaded	100	92865A544	14.41
1 1/4″	3/4″ to 1″	100	91247A544	8.09
1 1/2″	Fully Threaded	50	92865A546	8.62
1 1/2″	3/4″ to 1″	100	91247A546	9.34
1 3/4″	Fully Threaded	50	92865A548	9.10
1 3/4″	3/4″ to 1″	100	91247A548	10.56
2″	Fully Threaded	50	92865A549	10.70
2″	3/4″ to 1″	100	91247A550	12.00
2 1/4″	Fully Threaded	50	92865A551	10.60
2 1/4″	3/4″ to 1″	100	91247A551	14.73
2 1/2″	Fully Threaded	25	92865A552	7.89
2 1/2″	3/4″ to 1″	50	91247A552	8.09
2 3/4″	3/4″ to 1″	50	91247A553	8.61
3″	Fully Threaded	10	92865A554	5.84
3″	3/4″ to 1″	50	91247A554	8.65
3 1/4″	3/4″ to 1″	50	91247A555	10.64
3 1/2″	Fully Threaded	10	92865A556	6.40
3 1/2″	3/4″ to 1″	50	91247A556	12.83
3 3/4″	3/4″ to 1″	25	91247A557	6.69
4″	Fully Threaded	10	92865A558	7.50
4″	3/4″ to 1″	25	91247A558	6.29
4 1/2″	Fully Threaded	10	92865A560	6.67
4 1/2″	3/4″ to 1″	25	91247A560	7.21
5″	Fully Threaded	5	92865A562	5.43
5″	3/4″ to 1″	25	91247A562	8.68
5 1/2″	3/4″ to 1″	25	91247A564	9.45
6″	Fully Threaded	5	92865A564	5.30
6″	3/4″ to 1″	10	91247A566	4.30
6 1/2″	Fully Threaded	1	92865A566	9.27
6 1/2″	1″ to 1 1/4″	10	91247A567	5.30
7″	Fully Threaded	1	92865A568	9.87
7″	1″ to 1 1/4″	10	91247A568	6.40
7 1/2″	Fully Threaded	1	92865A570	10.43
7 1/2″	1″ to 1 1/4″	5	91247A569	3.34
8″	Fully Threaded	1	92865A572	10.78
8″	1″ to 1 1/4″	5	91247A570	3.93

1/4″-28—Head: Wd. 7/16″; Ht. 5/32″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2″	Fully Threaded	100	92865A002	8.36
5/8″	Fully Threaded	100	92865A004	9.40
3/4″	Fully Threaded	100	92865A006	9.68
1″	Fully Threaded	100	92865A008	13.43
1 1/4″	Fully Threaded	100	92865A010	12.71
1 1/4″	3/4″ to 1″	100	91247A010	10.00
1 1/2″	Fully Threaded	10	92865A012	11.65
1 1/2″	3/4″ to 1″	50	91247A012	8.68
1 3/4″	Fully Threaded	10	92865A014	13.40
1 3/4″	3/4″ to 1″	50	91247A014	7.87
2″	Fully Threaded	5	92865A016	7.33
2″	3/4″ to 1″	50	91247A016	11.06
2 1/4″	3/4″ to 1″	50	91247A018	12.36
2 1/2″	Fully Threaded	5	92865A018	9.47
2 1/2″	3/4″ to 1″	50	91247A020	13.83
2 3/4″	3/4″ to 1″	50	91247A022	13.43
3″	Fully Threaded	5	92865A020	10.11
3″	3/4″ to 1″	50	91247A024	12.22
3 1/4″	3/4″ to 1″	25	91247A025	8.79
3 1/2″	3/4″ to 1″	25	91247A026	8.09
3 3/4″	3/4″ to 1″	25	91247A027	10.21
4″	3/4″ to 1″	25	91247A028	8.03
4 1/2″	3/4″ to 1″	10	91247A030	6.89
5″	3/4″ to 1″	10	91247A032	5.59
5 1/2″	3/4″ to 1″	10	91247A033	6.09
6″	3/4″ to 1″	10	91247A034	8.39
6 1/2″	1″ to 1 1/4″	5	91247A036	7.22
7″	1″ to 1 1/4″	5	91247A039	4.62
7 1/2″	1″ to 1 1/4″	5	91247A042	8.15
8″	1″ to 1 1/4″	5	91247A045	8.64

5/16″-18—Head: Wd. 1/2″; Ht. 13/64″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2″	Fully Threaded	100	92865A578	$9.50
5/8″	Fully Threaded	100	92865A580	10.22
3/4″	Fully Threaded	100	92865A581	10.70
7/8″	Fully Threaded	100	92865A582	11.45
1″	Fully Threaded	100	92865A583	11.95
1 1/4″	Fully Threaded	100	92865A585	14.18
1 1/2″	Fully Threaded	50	92865A587	12.05
1 1/2″	7/8″ to 1 3/16″	100	91247A587	14.51
1 3/4″	Fully Threaded	50	92865A589	11.35
1 3/4″	7/8″ to 1 3/16″	50	91247A589	8.05
2″	Fully Threaded	25	92865A591	8.00
2″	7/8″ to 1 3/16″	50	91247A591	9.00
2 1/4″	Fully Threaded	25	92865A592	9.02
2 1/4″	7/8″ to 1 3/16″	50	91247A592	10.58
2 1/2″	Fully Threaded	25	92865A593	9.67
2 1/2″	7/8″ to 1 3/16″	50	91247A593	11.98
2 3/4″	Fully Threaded	25	92865A594	13.05
2 3/4″	7/8″ to 1 3/16″	50	91247A594	12.10
3″	Fully Threaded	25	92865A595	12.91
3″	7/8″ to 1 3/16″	50	91247A595	13.08
3 1/4″	7/8″ to 1 3/16″	25	91247A596	8.92
3 1/2″	Fully Threaded	5	92865A597	4.31
3 1/2″	7/8″ to 1 3/16″	25	91247A597	9.87
3 3/4″	7/8″ to 1 3/16″	25	91247A598	7.59
4″	Fully Threaded	5	92865A599	5.37
4″	7/8″ to 1 3/16″	25	91247A599	10.26
4 1/2″	Fully Threaded	5	92865A603	10.19
4 1/2″	7/8″ to 1 3/16″	25	91247A601	9.40
5″	Fully Threaded	1	92865A605	3.03
5″	7/8″ to 1 3/16″	10	91247A603	4.76
5 1/2″	Fully Threaded	1	92865A607	3.00
5 1/2″	7/8″ to 1 3/16″	10	91247A605	5.56
6″	Fully Threaded	1	92865A609	3.15
6″	7/8″ to 1 3/16″	10	91247A607	5.97
6 1/2″	Fully Threaded	1	92865A610	9.67
6 1/2″	1 1/8″ to 1 7/16″	10	91247A608	7.92
7″	Fully Threaded	1	92865A612	10.26
7″	1 1/8″ to 1 7/16″	5	91247A609	4.29
7 1/2″	Fully Threaded	1	92865A614	10.81
7 1/2″	1 1/8″ to 1 7/16″	5	91247A610	3.62
8″	Fully Threaded	1	92865A616	11.07
8″	1 1/8″ to 1 7/16″	5	91247A611	3.88

5/16″-24—Head: Wd. 1/2″; Ht. 13/64″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2″	Fully Threaded	100	92865A101	13.70
5/8″	Fully Threaded	100	92865A103	14.35
3/4″	Fully Threaded	100	92865A105	14.57
1″	Fully Threaded	50	92865A107	8.05
1 1/4″	Fully Threaded	50	92865A109	10.16
1 1/2″	Fully Threaded	50	92865A113	14.30
1 1/2″	7/8″ to 1 3/16″	50	91247A110	9.27
1 3/4″	7/8″ to 1 3/16″	50	91247A112	11.11
2″	Fully Threaded	25	92865A117	9.43
2″	7/8″ to 1 3/16″	50	91247A114	12.62
2 1/4″	7/8″ to 1 3/16″	50	91247A116	14.50
2 1/2″	7/8″ to 1 3/16″	25	91247A118	10.11
2 3/4″	7/8″ to 1 3/16″	25	91247A120	9.10
3″	Fully Threaded	25	92865A121	13.51
3″	7/8″ to 1 3/16″	25	91247A122	10.16
3 1/4″	7/8″ to 1 3/16″	25	91247A124	12.62
3 1/2″	7/8″ to 1 3/16″	25	91247A126	13.21
3 3/4″	7/8″ to 1 3/16″	25	91247A127	14.90
4″	7/8″ to 1 3/16″	25	91247A128	14.95
4 1/2″	7/8″ to 1 3/16″	10	91247A130	6.94
5″	7/8″ to 1 3/16″	10	91247A132	7.35
5 1/2″	7/8″ to 1 3/16″	10	91247A134	9.64
6″	7/8″ to 1 3/16″	10	91247A135	11.20
6 1/2″	1 1/8″ to 1 7/16″	5	91247A138	8.41
7″	1 1/8″ to 1 7/16″	5	91247A142	9.57
7 1/2″	1 1/8″ to 1 7/16″	5	91247A146	9.92
8″	1 1/8″ to 1 7/16″	5	91247A150	9.74

3/8″-16—Head: Wd. 9/16″; Ht. 15/64″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2″	Fully Threaded	50	92865A619	$7.61
5/8″	Fully Threaded	50	92865A621	7.15
3/4″	Fully Threaded	50	92865A622	7.44
7/8″	Fully Threaded	50	92865A623	9.76
1″	Fully Threaded	50	92865A624	8.54
1 1/4″	Fully Threaded	50	92865A626	9.89
1 1/2″	Fully Threaded	25	92865A628	8.48
1 1/2″	1″ to 1 5/16″	50	91247A628	10.33
1 3/4″	Fully Threaded	25	92865A630	8.83
1 3/4″	1″ to 1 5/16″	50	91247A630	11.22
2″	Fully Threaded	25	92865A632	11.10
2″	1″ to 1 5/16″	50	91247A632	13.31
2 1/4″	Fully Threaded	25	92865A633	14.50
2 1/4″	1″ to 1 5/16″	25	91247A633	7.37
2 1/2″	Fully Threaded	25	92865A634	14.51
2 1/2″	1″ to 1 5/16″	25	91247A634	8.02
2 3/4″	Fully Threaded	10	92865A635	7.30
2 3/4″	1″ to 1 5/16″	25	91247A635	9.16
3″	Fully Threaded	10	92865A636	6.16
3″	1″ to 1 5/16″	25	91247A636	9.39
3 1/4″	1″ to 1 5/16″	25	91247A637	11.17
3 1/2″	Fully Threaded	10	92865A638	8.05
3 1/2″	1″ to 1 5/16″	25	91247A638	11.35
3 3/4″	1″ to 1 5/16″	25	91247A639	11.65
4″	Fully Threaded	5	92865A641	6.96
4″	1″ to 1 5/16″	25	91247A640	12.42
4 1/2″	Fully Threaded	5	92865A643	8.70
4 1/2″	1″ to 1 5/16″	10	91247A642	5.99
5″	Fully Threaded	5	92865A645	8.60
5″	1″ to 1 5/16″	10	91247A644	7.77
5 1/2″	Fully Threaded	5	92865A647	9.27
5 1/2″	1″ to 1 5/16″	10	91247A646	8.91
6″	Fully Threaded	1	92865A648	3.83
6″	1″ to 1 5/16″	10	91247A648	8.61
6 1/2″	Fully Threaded	1	92865A650	9.87
6 1/2″	1 1/4″ to 1 9/16″	10	91247A649	9.34
7″	Fully Threaded	1	92865A652	10.64
7″	1 1/4″ to 1 9/16″	5	91247A650	6.17
7 1/2″	Fully Threaded	1	92865A654	10.95
7 1/2″	1 1/4″ to 1 9/16″	5	91247A651	5.82
8″	Fully Threaded	1	92865A656	11.44
8″	1 1/4″ to 1 9/16″	5	91247A652	6.03
8 1/2″	Fully Threaded	1	92865A658	12.25
9″	Fully Threaded	1	92865A660	12.74
9″	1 1/4″ to 1 9/16″	5	91247A654	10.71
10″	1 1/4″ to 1 9/16″	5	91247A658	11.34

3/8″-24—Head: Wd. 9/16″; Ht. 15/64″

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2″	Fully Threaded	50	92865A211	11.38
5/8″	Fully Threaded	25	92865A212	8.31
3/4″	Fully Threaded	50	92865A213	10.02
7/8″	Fully Threaded	50	92865A214	12.52
1″	Fully Threaded	50	92865A215	10.41
1 1/4″	Fully Threaded	50	92865A217	12.49
1 1/2″	Fully Threaded	10	92865A219	7.80
1 1/2″	1″ to 1 5/16″	50	91247A219	14.90
1 3/4″	Fully Threaded	25	92865A220	10.83
1 3/4″	1″ to 1 5/16″	25	91247A221	9.15
2″	Fully Threaded	5	92865A221	12.68
2″	1″ to 1 5/16″	25	91247A223	9.57
2 1/4″	1″ to 1 5/16″	25	91247A225	9.69
2 1/2″	Fully Threaded	1	92865A223	2.97
2 1/2″	1″ to 1 5/16″	25	91247A227	10.16
2 3/4″	1″ to 1 5/16″	25	91247A229	11.85
3″	Fully Threaded	1	92865A225	3.03
3″	1″ to 1 5/16″	25	91247A231	12.94
3 1/4″	1″ to 1 5/16″	25	91247A232	14.39
3 1/2″	Fully Threaded	1	92865A227	3.15
3 1/2″	1″ to 1 5/16″	25	91247A233	14.34
3 3/4″	1″ to 1 5/16″	10	91247A234	7.59
4″	Fully Threaded	1	92865A229	3.53
4″	1″ to 1 5/16″	10	91247A235	8.49

(Continued on following page)

Medium-Strength Steel—Grade 5 (Continued from previous page)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
3/8"-24 (Cont.)				
4½"	Fully Threaded	1	92865A231	$3.79
4½"	1" to 1 5/16"	10	91247A237	11.18
5"	Fully Threaded	1	92865A235	5.84
5"	1" to 1 5/16"	10	91247A239	11.47
5½"	1" to 1 5/16"	10	91247A241	11.47
6"	1" to 1 5/16"	10	91247A243	13.05
6½"	1¼" to 1 9/16"	5	91247A245	7.94
7"	1¼" to 1 9/16"	5	91247A247	8.57
7/16"-14—Head: Wd. 5/8"; Ht. 9/32"				
¾"	Fully Threaded	50	92865A667	13.17
⅞"	Fully Threaded	25	92865A668	5.75
1"	Fully Threaded	50	92865A669	12.29
1¼"	Fully Threaded	50	92865A671	14.90
1½"	Fully Threaded	25	92865A673	8.55
1¾"	1⅛" to 1½"	25	91247A675	9.81
2"	Fully Threaded	5	92865A675	6.47
2"	1⅛" to 1½"	25	91247A677	8.97
2¼"	1⅛" to 1½"	25	91247A678	10.64
2½"	Fully Threaded	5	92865A677	4.31
2½"	1⅛" to 1½"	25	91247A679	10.76
2¾"	1⅛" to 1½"	25	91247A680	12.07
3"	Fully Threaded	5	92865A679	5.82
3"	1⅛" to 1½"	10	91247A681	5.47
3½"	Fully Threaded	1	92865A681	4.03
3½"	1⅛" to 1½"	10	91247A683	7.16
3¾"	1⅛" to 1½"	10	91247A684	7.56
4"	Fully Threaded	1	92865A683	5.65
4"	1⅛" to 1½"	10	91247A685	8.49
4½"	Fully Threaded	1	92865A685	6.24
4½"	1⅛" to 1½"	10	91247A687	6.66
5"	Fully Threaded	1	92865A687	6.56
5"	1⅛" to 1½"	10	91247A689	7.46
5½"	Fully Threaded	1	92865A689	7.61
5½"	1⅛" to 1½"	10	91247A691	11.15
6"	Fully Threaded	1	92865A672	10.17
6"	1⅛" to 1½"	5	91247A693	5.61
6½"	1⅜" to 1¾"	5	91247A694	6.66
7"	Fully Threaded	1	92865A674	11.80
7"	1⅜" to 1¾"	5	91247A695	7.68
7½"	1⅜" to 1¾"	5	91247A696	9.68
8"	1⅜" to 1¾"	5	91247A698	9.84
7/16"-20—Head: Wd. 5/8"; Ht. 9/32"				
¾"	Fully Threaded	50	92865A310	14.72
1"	Fully Threaded	25	92865A312	8.82
1¼"	Fully Threaded	25	92865A314	9.65
1½"	Fully Threaded	25	92865A316	11.45
1¾"	1⅛" to 1½"	25	91247A318	12.94
2"	Fully Threaded	1	92865A318	3.97
2"	1⅛" to 1½"	25	91247A320	14.38
2¼"	1⅛" to 1½"	25	91247A322	14.86
2½"	Fully Threaded	1	92865A320	4.09
2½"	1⅛" to 1½"	10	91247A324	7.28
2¾"	1⅛" to 1½"	10	91247A326	6.35
3"	Fully Threaded	1	92865A322	4.74
3"	1⅛" to 1½"	10	91247A328	6.68
3¼"	1⅛" to 1½"	10	91247A331	11.94
3½"	Fully Threaded	1	92865A324	4.92
3½"	1⅛" to 1½"	10	91247A329	7.89
3¾"	1⅛" to 1½"	10	91247A332	9.18
4"	Fully Threaded	1	92865A326	5.19
4"	1⅛" to 1½"	10	91247A330	9.03
4½"	Fully Threaded	1	92865A328	5.42
4½"	1⅛" to 1½"	10	91247A333	11.84
5"	1⅛" to 1½"	10	91247A334	13.46
5½"	1⅛" to 1½"	5	91247A335	6.72
6"	1⅛" to 1½"	5	91247A339	9.90
6½"	1⅜" to 1¾"	5	91247A341	11.75
7"	1⅜" to 1¾"	5	91247A343	12.49
7½"	1⅜" to 1¾"	1	91247A345	2.54
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"				
¾"	Fully Threaded	25	92865A710	9.76
⅞"	Fully Threaded	25	92865A711	8.41
1"	Fully Threaded	25	92865A712	9.42
1¼"	Fully Threaded	25	92865A714	10.49
1½"	Fully Threaded	25	92865A716	10.49
1¾"	Fully Threaded	25	92865A718	10.62
2"	Fully Threaded	10	92865A720	7.85
2"	1¼" to 1 5/8"	25	91247A720	12.84
2¼"	Fully Threaded	10	92865A721	10.26
2¼"	1¼" to 1 5/8"	25	91247A721	14.38
2½"	Fully Threaded	10	92865A722	10.23
1/2"-13 (Cont.)				
2½"	1¼" to 1 5/8"	10	91247A722	$6.23
2¾"	Fully Threaded	10	92865A723	13.51
2¾"	1¼" to 1 5/8"	10	91247A723	6.68
3"	Fully Threaded	10	92865A724	13.28
3"	1¼" to 1 5/8"	10	91247A724	7.18
3¼"	1¼" to 1 5/8"	10	91247A725	8.02
3½"	Fully Threaded	10	92865A726	14.13
3½"	1¼" to 1 5/8"	10	91247A726	8.13
3¾"	1¼" to 1 5/8"	10	91247A729	8.63
4"	Fully Threaded	5	92865A728	8.74
4"	1¼" to 1 5/8"	10	91247A728	8.05
4½"	Fully Threaded	1	92865A730	2.95
4½"	1¼" to 1 5/8"	10	91247A730	11.36
5"	Fully Threaded	1	92865A732	2.72
5"	1¼" to 1 5/8"	10	91247A732	10.48
5½"	Fully Threaded	1	92865A734	2.79
5½"	1¼" to 1 5/8"	5	91247A734	7.29
6"	Fully Threaded	1	92865A736	3.00
6"	1¼" to 1 5/8"	5	91247A736	7.49
6½"	1½" to 1 7/8"	5	91247A737	8.48
7"	Fully Threaded	1	92865A738	5.07
7"	1½" to 1 7/8"	5	91247A738	8.50
7½"	1½" to 1 7/8"	5	91247A739	10.34
8"	Fully Threaded	1	92865A740	7.52
8"	1½" to 1 7/8"	5	91247A740	10.78
8½"	Fully Threaded	1	92865A742	13.14
9"	Fully Threaded	1	92865A744	14.25
9"	1½" to 1 7/8"	1	91247A742	3.83
9½"	Fully Threaded	1	92865A746	15.42
10"	Fully Threaded	1	92865A748	17.63
10"	1½" to 1 7/8"	1	91247A746	3.87
1/2"-20—Head: Wd. 3/4"; Ht. 5/16"				
¾"	Fully Threaded	25	92865A350	13.68
1"	Fully Threaded	25	92865A352	12.64
1¼"	Fully Threaded	25	92865A353	10.90
1½"	Fully Threaded	25	92865A354	11.71
1¾"	Fully Threaded	10	92865A355	6.84
2"	Fully Threaded	5	92865A356	8.76
2"	1¼" to 1 5/8"	10	91247A356	7.10
2¼"	1¼" to 1 5/8"	10	91247A357	9.18
2½"	Fully Threaded	1	92865A358	3.09
2½"	1¼" to 1 5/8"	10	91247A358	7.92
2¾"	1¼" to 1 5/8"	10	91247A359	8.83
3"	Fully Threaded	1	92865A360	3.29
3"	1¼" to 1 5/8"	10	91247A360	9.83
3¼"	1¼" to 1 5/8"	10	91247A361	10.34
3½"	Fully Threaded	1	92865A362	3.53
3½"	1¼" to 1 5/8"	10	91247A362	11.13
4"	Fully Threaded	1	92865A364	3.96
4"	1¼" to 1 5/8"	10	91247A364	12.97
4½"	Fully Threaded	1	92865A366	3.96
4½"	1¼" to 1 5/8"	5	91247A366	8.01
5"	Fully Threaded	1	92865A368	3.99
5"	1¼" to 1 5/8"	5	91247A368	9.88
5½"	Fully Threaded	1	92865A370	4.74
5½"	1¼" to 1 5/8"	5	91247A369	10.60
6"	1¼" to 1 5/8"	5	91247A370	10.60
6½"	1½" to 1 7/8"	1	91247A371	2.50
7"	1½" to 1 7/8"	1	91247A372	3.38
7½"	1½" to 1 7/8"	1	91247A373	3.65
8"	1½" to 1 7/8"	1	91247A374	3.75
9/16"-12—Head: Wd. 13/16"; Ht. 23/64"				
1"	Fully Threaded	10	92865A757	6.54
1¼"	Fully Threaded	10	92865A759	6.84
1½"	Fully Threaded	10	92865A761	7.97
1¾"	Fully Threaded	10	92865A763	8.86
2"	Fully Threaded	10	92865A765	7.92
2¼"	1⅜" to 1 13/16"	10	91247A766	8.99
2½"	1⅜" to 1¾"	10	91247A767	8.98
2¾"	1⅜" to 1 13/16"	10	91247A768	13.36
3"	1⅜" to 1 13/16"	10	91247A769	12.63
3¼"	1⅜" to 1 13/16"	10	91247A770	14.90
3½"	1⅜" to 1 13/16"	10	91247A771	14.95
3¾"	1⅜" to 1 13/16"	5	91247A772	7.93
4"	1⅜" to 1 13/16"	5	91247A773	8.56
4½"	1⅜" to 1 13/16"	5	91247A775	8.84
5"	1⅜" to 1 13/16"	5	91247A777	7.49
5½"	1⅜" to 1 13/16"	5	91247A779	10.09
6"	1⅜" to 1 13/16"	5	91247A781	8.65
6½"	1⅝" to 2 1/16"	1	91247A783	4.62
7"	1⅝" to 2 1/16"	1	91247A785	3.79
9/16"-18—Head: Wd. 13/16"; Ht. 23/64"				
1"	Fully Threaded	10	92865A401	$8.44
1¼"	Fully Threaded	10	92865A402	9.46
1½"	Fully Threaded	10	92865A403	7.46
2"	Fully Threaded	10	92865A405	8.99
2¼"	1⅜" to 1 13/16"	10	91247A406	12.41
2½"	1⅜" to 1¾"	10	91247A407	13.23
2¾"	1⅜" to 1 13/16"	10	91247A408	13.70
3"	1⅜" to 1 13/16"	10	91247A409	14.76
3¼"	1⅜" to 1 13/16"	5	91247A410	7.82
3½"	1⅜" to 1 13/16"	5	91247A411	7.82
4"	1⅜" to 1 13/16"	5	91247A413	8.39
4½"	1⅜" to 1 13/16"	5	91247A414	10.58
5"	1⅜" to 1 13/16"	5	91247A416	11.39
5½"	1⅜" to 1 13/16"	5	91247A418	12.48
6"	1⅜" to 1 13/16"	5	91247A420	13.24
5/8"-11—Head: Wd. 15/16"; Ht. 25/64"				
1"	Fully Threaded	10	92865A794	8.11
1¼"	Fully Threaded	10	92865A796	6.97
1½"	Fully Threaded	10	92865A798	7.67
1¾"	Fully Threaded	10	92865A800	8.42
2"	Fully Threaded	10	92865A802	9.61
2¼"	Fully Threaded	1	92865A803	3.37
2¼"	1½" to 2"	10	91247A803	10.60
2½"	Fully Threaded	5	92865A804	8.54
2½"	1½" to 2"	10	91247A804	9.56
2¾"	Fully Threaded	5	92865A805	12.68
2¾"	1½" to 2"	10	91247A805	10.99
3"	Fully Threaded	5	92865A806	10.41
3"	1½" to 2"	10	91247A806	11.29
3¼"	1½" to 2"	10	91247A807	12.04
3½"	Fully Threaded	5	92865A808	12.12
3½"	1½" to 2"	10	91247A808	12.79
3¾"	1½" to 2"	5	91247A811	7.26
4"	Fully Threaded	5	92865A810	14.93
4"	1½" to 2"	5	91247A810	7.05
4½"	Fully Threaded	1	92865A812	5.00
4½"	1½" to 2"	5	91247A812	8.80
5"	Fully Threaded	1	92865A814	4.80
5"	1½" to 2"	5	91247A814	8.83
5½"	Fully Threaded	1	92865A816	5.56
5½"	1½" to 2"	5	91247A816	9.57
6"	Fully Threaded	1	92865A818	6.07
6"	1½" to 2"	5	91247A818	10.77
6½"	Fully Threaded	1	92865A822	15.16
6½"	1¾" to 2¼"	5	91247A819	11.73
7"	Fully Threaded	1	92865A824	16.24
7"	1¾" to 2¼"	1	91247A820	4.05
7½"	Fully Threaded	1	92865A825	16.90
7½"	1¾" to 2¼"	1	91247A821	2.94
8"	Fully Threaded	1	92865A282	17.42
8"	1¾" to 2¼"	1	91247A822	3.09
8½"	Fully Threaded	1	92865A284	17.97
8½"	1¾" to 2¼"	1	91247A823	5.53
9"	Fully Threaded	1	92865A286	18.59
9"	1¾" to 2¼"	1	91247A824	5.52
9½"	Fully Threaded	1	92865A288	19.64
10"	Fully Threaded	1	92865A290	20.81
10"	1¾" to 2¼"	1	91247A826	4.75
5/8"-18—Head: Wd. 15/16"; Ht. 25/64"				
1"	Fully Threaded	10	92865A431	8.28
1¼"	Fully Threaded	10	92865A432	10.14
1½"	Fully Threaded	10	92865A433	9.81
1¾"	Fully Threaded	10	92865A435	9.31
2"	Fully Threaded	10	92865A436	9.69
2¼"	1½" to 2"	10	91247A437	8.98
2½"	Fully Threaded	1	92865A438	10.26
2½"	1½" to 2"	10	91247A438	12.37
2¾"	1½" to 2"	10	91247A439	13.93
3"	Fully Threaded	1	92865A440	10.81
3"	1½" to 2"	5	91247A440	7.42
3¼"	1½" to 2"	5	91247A441	8.66
3½"	Fully Threaded	1	92865A442	11.33
3½"	1½" to 2"	5	91247A442	9.22
4"	Fully Threaded	1	92865A444	11.86
4"	1½" to 2"	5	91247A444	9.84
4½"	Fully Threaded	1	92865A446	12.45
4½"	1½" to 2"	5	91247A446	14.10
5"	Fully Threaded	1	92865A448	13.52
5"	1½" to 2"	5	91247A448	13.54
5½"	Fully Threaded	1	92865A450	14.05

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Medium-Strength Steel—Grade 5 (Continued from previous page)

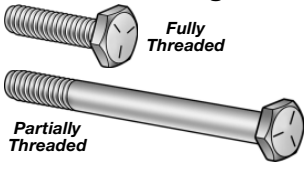

Our medium strength screws have a Class 2A thread fit and are marked on the head with three radial lines to indicate Grade 5. 1″ and smaller diameters have a rust-resistant zinc plating, a minimum Rockwell hardness of C25, and minimum tensile strength of 120,000 psi. 1⅛″ to 1½″ diameters are plain steel with a minimum Rockwell hardness of C19 and minimum tensile strength of 105,000 psi. 1¾″ and 2″ diameters are plain steel with a minimum Rockwell hardness of B90 and minimum tensile strength of 90,000 psi.

All meet ASME B18.2.1. Screws with 1½″ and smaller diameters meet SAE J429; those with 1¾″ and 2″ diameters meet ASTM A449. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
5/8″-18 (Cont.)				
5½″	1½″ to 2″	1	92147A449	$3.56
6″	Fully Threaded	1	92865A452	9.95
6″	1½″ to 2″	1	91247A450	3.56
6½″	1¾″ to 2¼″	1	91247A451	4.37
7″	1¾″ to 2¼″	1	91247A453	4.80
7½″	1¾″ to 2¼″	1	91247A455	4.72
8″	1¾″ to 2¼″	1	91247A457	5.06
8½″	1¾″ to 2¼″	1	91247A459	4.96
9″	1¾″ to 2¼″	1	91247A461	6.40
10″	1¾″ to 2¼″	1	91247A463	7.13
3/4″-10—Head: Wd. 1 1/8″; Ht. 15/32″				
1″	Fully Threaded	10	92865A835	12.08
1¼″	Fully Threaded	5	92865A837	10.91
1½″	Fully Threaded	10	92865A839	12.51
1¾″	Fully Threaded	10	92865A841	14.20
2″	Fully Threaded	5	92865A843	7.22
2¼″	Fully Threaded	5	92865A844	8.51
2½″	Fully Threaded	5	92865A845	8.33
2¾″	1¾″ to 2¼″	5	91247A846	8.07
3″	Fully Threaded	1	92865A847	3.36
3″	1¾″ to 2¼″	5	91247A847	8.60
3¼″	1¾″ to 2¼″	5	91247A848	9.73
3½″	Fully Threaded	1	92865A849	3.33
3½″	1¾″ to 2¼″	5	91247A849	10.05
3¾″	1¾″ to 2¼″	5	91247A854	12.65
4″	Fully Threaded	1	92865A851	3.88
4″	1¾″ to 2¼″	5	91247A851	10.99
4½″	1¾″ to 2¼″	5	91247A853	12.11
5″	Fully Threaded	1	92865A855	4.04
5″	1¾″ to 2¼″	1	91247A855	2.72
5½″	Fully Threaded	1	92865A857	7.51
5½″	1¾″ to 2¼″	1	91247A857	2.94
6″	Fully Threaded	1	92865A859	13.58
6″	1¾″ to 2¼″	1	91247A859	3.06
6½″	Fully Threaded	1	92865A861	15.97
6½″	2″ to 2½″	1	91247A860	3.83
7″	Fully Threaded	1	92865A863	17.08
7″	2″ to 2½″	1	91247A861	3.98
7½″	Fully Threaded	1	92865A865	17.75
7½″	2″ to 2½″	1	91247A862	5.38
8″	Fully Threaded	1	92865A867	18.33
8″	2″ to 2½″	1	91247A863	4.66
8½″	Fully Threaded	1	92865A869	18.91
8½″	2″ to 2½″	1	91247A864	6.19
9″	Fully Threaded	1	92865A872	19.58
9″	2″ to 2½″	1	91247A868	6.30
9½″	Fully Threaded	1	92865A874	20.69
10″	Fully Threaded	1	92865A879	21.57
10″	2″ to 2½″	1	91247A866	6.67
12″	2″ to 2½″	1	91247A870	10.72
3/4″-16—Head: Wd. 1 1/8″; Ht. 15/32″				
1″	Fully Threaded	5	92865A471	8.40
1¼″	Fully Threaded	5	92865A472	9.90
1½″	Fully Threaded	5	92865A473	10.04
1¾″	Fully Threaded	5	92865A878	10.14
2″	Fully Threaded	5	92865A475	10.43
2½″	Fully Threaded	5	92865A477	11.97
2¾″	1¾″ to 2¼″	5	91247A478	8.04
3″	Fully Threaded	1	92865A479	11.21
3″	1¾″ to 2¼″	5	91247A479	11.59
3¼″	1¾″ to 2¼″	5	91247A480	13.08
3½″	Fully Threaded	1	92865A481	11.77
3½″	1¾″ to 2¼″	5	91247A481	13.61
3¾″	1¾″ to 2¼″	1	91247A482	3.81
4″	Fully Threaded	1	92865A483	12.29
4″	1¾″ to 2¼″	5	91247A483	14.87
4½″	Fully Threaded	1	92865A485	13.58
4½″	1¾″ to 2¼″	1	91247A484	3.45
5″	Fully Threaded	1	92865A487	13.92
5″	1¾″ to 2¼″	1	91247A485	4.36
5½″	Fully Threaded	1	92865A489	14.54
5½″	1¾″ to 2¼″	1	91247A486	4.26
3/4″-16 (Cont.)				
6″	Fully Threaded	1	92865A502	$15.09
6″	1¾″ to 2¼″	1	91247A487	4.59
6½″	2″ to 2½″	1	91247A488	7.22
7″	2″ to 2½″	1	91247A489	5.98
7½″	2″ to 2½″	1	91247A490	6.67
8″	2″ to 2½″	1	91247A492	7.99
8½″	2″ to 2½″	1	91247A494	10.25
9″	2″ to 2½″	1	91247A496	9.00
10″	2″ to 2½″	1	91247A498	10.29
7/8″-9—Head: Wd. 1 5/16″; Ht. 35/64″				
1½″	Fully Threaded	5	92865A876	12.67
2″	Fully Threaded	5	92865A880	12.20
2¼″	Fully Threaded	5	92865A881	11.61
2½″	Fully Threaded	5	92865A884	14.07
2¾″	Fully Threaded	5	92865A883	14.95
3″	Fully Threaded	1	92865A885	9.99
3″	2″ to 2 9/16″	5	91247A884	14.19
3¼″	2″ to 2 9/16″	5	91247A885	12.93
3½″	Fully Threaded	1	92865A887	10.29
3½″	2″ to 2 9/16″	1	91247A886	3.13
3¾″	2″ to 2 9/16″	1	91247A887	2.98
4″	Fully Threaded	1	92865A889	10.52
4″	2″ to 2 9/16″	1	91247A888	3.55
4½″	Fully Threaded	1	92865A891	10.81
4½″	2″ to 2 9/16″	1	91247A890	3.94
5″	Fully Threaded	1	92865A893	11.44
5″	2″ to 2 9/16″	1	91247A892	3.76
5½″	2″ to 2 9/16″	1	91247A894	4.07
6″	2″ to 2 9/16″	1	91247A896	4.66
6½″	2¼″ to 2 13/16″	1	91247A897	4.99
7″	2¼″ to 2 13/16″	1	91247A898	6.23
7½″	2¼″ to 2 13/16″	1	91247A899	6.87
8″	2¼″ to 2 13/16″	1	91247A900	6.85
8½″	2¼″ to 2 13/16″	1	91247A901	8.17
9″	2¼″ to 2 13/16″	1	91247A903	7.80
10″	2¼″ to 2 13/16″	1	91247A906	8.67
7/8″-14—Head: Wd. 1 5/16″; Ht. 35/64″				
2″	Fully Threaded	5	92865A501	13.63
2¾″	Fully Threaded	1	92865A504	3.72
3″	2″ to 2 9/16″	1	91247A505	3.66
3¼″	2″ to 2 9/16″	1	91247A506	4.60
3½″	2″ to 2 9/16″	1	91247A508	4.11
3¾″	2″ to 2 9/16″	1	91247A509	4.75
4″	2″ to 2 9/16″	1	91247A507	3.67
4½″	2″ to 2 9/16″	1	91247A511	3.92
5″	2″ to 2 9/16″	1	91247A513	4.91
5½″	2″ to 2 9/16″	1	91247A510	4.62
6″	2″ to 2 9/16″	1	91247A514	7.01
6½″	2¼″ to 2 13/16″	1	91247A515	9.50
7″	2¼″ to 2 13/16″	1	91247A516	9.84
7½″	2¼″ to 2 13/16″	1	91247A517	10.05
8″	2¼″ to 2 13/16″	1	91247A518	11.39
10″	2¼″ to 2 13/16″	1	91247A521	14.72
1″-8—Head: Wd. 1½″; Ht. 39/64″				
1½″	Fully Threaded	1	92865A908	6.63
1¾″	Fully Threaded	1	92865A910	4.85
2″	Fully Threaded	1	92865A912	4.97
2½″	Fully Threaded	1	92865A914	3.32
3″	Fully Threaded	1	92865A916	3.81
3¼″	2¼″ to 2⅞″	1	91247A917	4.81
3½″	Fully Threaded	1	92865A918	10.90
3½″	2¼″ to 2⅞″	1	91247A918	4.26
3¾″	2¼″ to 2⅞″	1	91247A919	4.64
4″	Fully Threaded	1	92865A920	9.99
4″	2¼″ to 2⅞″	1	91247A920	4.40
4½″	Fully Threaded	1	92865A922	11.89
4½″	2¼″ to 2⅞″	1	91247A922	5.22
5″	Fully Threaded	1	92865A924	12.61
5″	2¼″ to 2⅞″	1	91247A924	5.52
5½″	Fully Threaded	1	92865A926	12.97
5½″	2¼″ to 2⅞″	1	91247A926	6.14
6″	Fully Threaded	1	92865A928	13.75
6″	2¼″ to 2⅞″	1	91247A928	6.34
1″-8 (Cont.)				
6½″	2½″ to 3⅛″	1	91247A929	$7.04
7″	2½″ to 3⅛″	1	91247A930	8.11
7½″	2½″ to 3⅛″	1	91247A931	8.70
8″	2½″ to 3⅛″	1	91247A932	8.92
8½″	2½″ to 3⅛″	1	91247A933	12.82
9″	2½″ to 3⅛″	1	91247A935	11.48
10″	2½″ to 3⅛″	1	91247A934	13.42
1″-14—Head: Wd. 1 1/2″; Ht. 39/64″				
2″	Fully Threaded	1	92865A520	4.65
2½″	Fully Threaded	1	92865A522	4.87
3″	Fully Threaded	1	92865A524	5.24
3¼″	2¼″ to 2⅞″	1	91247A525	5.41
3½″	2¼″ to 2⅞″	1	91247A527	4.36
3¾″	2¼″ to 2⅞″	1	91247A528	3.52
4″	2¼″ to 2⅞″	1	91247A526	5.84
4½″	2¼″ to 2⅞″	1	91247A531	5.25
5″	2¼″ to 2⅞″	1	91247A532	5.81
5½″	2¼″ to 2⅞″	1	91247A533	7.98
6″	2¼″ to 2⅞″	1	91247A529	8.75
6½″	2½″ to 3⅛″	1	91247A534	10.13
7″	2½″ to 3⅛″	1	91247A499	10.25
8″	2½″ to 3⅛″	1	91247A501	12.20
9″	2½″ to 3⅛″	1	91247A502	16.38
10″	2½″ to 3⅛″	1	91247A503	17.47
1 1/8″-7—Head: Wd. 1 11/16″; Ht. 11/16″				
2″	Fully Threaded	1	91283A128	4.71
2½″	Fully Threaded	1	91283A132	5.16
3″	Fully Threaded	1	91283A136	4.87
4″	2½″ to 3¼″	1	91283A144	5.61
4½″	2½″ to 3¼″	1	91283A148	6.00
5″	2½″ to 3¼″	1	91283A150	6.09
5½″	2½″ to 3¼″	1	91283A156	7.91
6½″	2¾″ to 3½″	1	91283A151	9.16
7½″	2¾″ to 3½″	1	91283A154	12.35
8″	2¾″ to 3½″	1	91283A176	10.29
1 1/4″-7—Head: Wd. 1 7/8″; Ht. 25/32″				
2″	Fully Threaded	1	91283A228	6.10
3″	Fully Threaded	1	91283A236	6.27
3½″	Fully Threaded	1	91283A240	7.14
4″	2¾″ to 3½″	1	91283A244	7.46
4½″	2¾″ to 3½″	1	91283A248	8.18
5″	2¾″ to 3½″	1	91283A252	9.12
5½″	2¾″ to 3½″	1	91283A256	10.43
6″	2¾″ to 3½″	1	91283A260	10.76
7″	3″ to 3¾″	1	91283A268	12.54
8″	3″ to 3¾″	1	91283A276	18.68
9″	3″ to 3¾″	1	91283A278	17.50
10″	3″ to 3¾″	1	91283A282	14.35
1 1/4″-12—Head: Wd. 1 7/8″; Ht. 25/32″				
4″	2¾″ to 3½″	1	91283A310	9.90
5″	2¾″ to 3½″	1	91283A315	11.66
6″	2¾″ to 3½″	1	91283A320	13.86
7″	3″ to 3¾″	1	91283A325	18.76
8″	3″ to 3¾″	1	91283A330	22.66
1 1/2″-6—Head: Wd. 2 1/4″; Ht. 15/16″				
3″	Fully Threaded	1	91283A436	9.36
3½″	Fully Threaded	1	91283A440	10.02
4″	Fully Threaded	1	91283A444	11.70
4½″	Fully Threaded	1	91283A446	10.87
5″	3¼″ to 4⅛″	1	91283A452	12.43
5½″	3¼″ to 4⅛″	1	91283A450	14.19
6″	3¼″ to 4⅛″	1	91283A460	11.58
7″	3½″ to 4⅜″	1	91283A468	16.28
8″	3½″ to 4⅜″	1	91283A476	20.69
1 3/4″-5—Head: Wd. 2 5/8″; Ht. 1 3/32″				
5″	3¾″ to 4¾″	1	91283A552	15.98
6″	3¾″ to 4¾″	1	91283A554	41.82
8″	4″ to 5″	1	91283A576	30.45
2″-4 1/2—Head: Wd. 3″; Ht. 1 7/32″				
5″	4″ to 5⅛″	1	91283A652	24.93
7″	4¼″ to 5⅜″	1	91283A668	29.67

Military Specification Medium-Strength Steel—Grade 5

Made to stringent military specifications, these screws have a cadmium plating that provides better rust resistance than zinc plating—especially in salt water environments. Screws are marked on top of the head with three radial lines to indicate Grade 5. They have a Class 2A thread fit, minimum Rockwell hardness of C25, and minimum tensile strength of 120,000 psi. All meet MS 90725. Screw length is measured from under the head.

Also Available: Grade 8 zinc yellow chromate-plated high-strength alloy steel B1821BH screws in sizes marked with a ■. (B1821BH supersedes MS 90727 and 90728.) Screws have a minimum tensile strength of 150,000 psi and meet ASME B18.2.1, SAE J429, and ASTM A354. Please ask for 95362A330 and specify thread size and screw length.

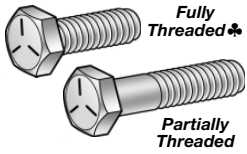

Lg.	Mil. Spec. 90725 Dash No.	Pkg. Qty.		Per Pkg.
1/4"-20—Head: Wd. 7/16"; Ht. 5/32"				
1"	8	25	99894A105■	$11.98
1 1/4"	10	10	99894A114■	5.92
1 1/2"	12	10	99894A123■	9.45
1 3/4"	13	10	99894A132	7.36
2"	14	5	99894A141■	4.26
2 1/2"	16	5	99894A150	7.94
3"	18	5	99894A159	8.42
5/16"-18—Head: Wd. 1/2"; Ht. 13/64"				
1"	34	10	99894A201■♣	9.53
1 1/2"	38	5	99894A209■	4.58
2"	40	5	99894A217■	5.48
2 1/2"	42	1	99894A225	3.18
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"				
1 1/4"	62	5	99894A304■♣	$7.09
1 1/2"	64	5	99894A316■	6.24
1 3/4"	65	5	99894A328■	10.32
2"	66	5	99894A340■	13.27
2 1/2"	68	1	99894A352■	4.20
3"	70	1	99894A364■	3.29
3 1/2"	72	1	99894A376	5.67
4"	74	1	99894A388	5.10
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"				
1 1/2"	113	1	99894A411■♣	2.72
1 3/4"	114	1	99894A418♣	2.92
2"	115	5	99894A423■	12.06
2 1/2"	117	1	99894A429	5.05
3"	119	1	99894A435■	3.70
1/2"-13 (Cont.)				
3 1/2"	121	1	99894A441■	$6.69
4"	123	1	99894A447■	6.00
5"	127	1	99894A453	13.04
5/8"-11—Head: Wd. 15/16"; Ht. 25/64"				
1 3/4"	163	1	99894A503■♣	6.46
2"	164	1	99894A509■♣	6.40
2 1/2"	166	1	99894A517■	7.94
3"	168	1	99894A532■	12.14
3/4"-10—Head: Wd. 1 1/8"; Ht. 15/32"				
2"	187	1	99894A620■♣	14.29
2 1/2"	189	1	99894A635■♣	8.18
3"	191	1	99894A640■	8.74
3 1/2"	193	1	99894A655■	9.96
4"	195	1	99894A660■	11.02

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3134 for more thread length information.

Black-Finish Medium-Strength Steel—Grade 5

When details matter, black screws provide a professional, high-end look. All have a Class 2A thread fit and are marked on the head with three radial lines to indicate Grade 5. They have a minimum Rockwell hardness of C25 and minimum tensile strength of 120,000 psi. All meet ASME B18.2.1 and SAE J429. Screw length is measured from under the head.

Black luster is a semigloss coating that's extremely durable and provides corrosion resistance superior to both matte black and zinc-plated finishes. It's resistant to 500 hours of salt spray per ASTM B117. ***Matte black*** is a nonreflective surface treatment that provides lubricity.

Lg.	Pkg. Qty.		Per Pkg.
Black Luster			
1/4"-20—Head: Wd. 7/16"; Ht. 5/32"			
1/2"	5	94967A352♣	$5.00
3/4"	5	94967A367♣	5.06
1"	5	94967A382♣	5.00
1 1/2"	5	94967A397♣	5.28
2"	5	94967A412♣	5.88
5/16"-18—Head: Wd. 1/2"; Ht. 13/64"			
1/2"	5	94967A427♣	5.58
3/4"	5	94967A442♣	5.62
1"	5	94967A457♣	5.66
1 1/4"	5	94967A472♣	5.86
1 1/2"	5	94967A487♣	6.37
2"	5	94967A502♣	6.58
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"			
3/4"	5	94967A517♣	$5.93
1"	5	94967A532♣	6.16
1 1/4"	5	94967A547♣	8.00
1 1/2"	5	94967A562♣	6.96
2"	5	94967A577♣	7.80
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"			
1"	1	94967A622♣	1.57
1 1/4"	1	94967A637♣	1.65
1 1/2"	1	94967A652♣	1.75
1 3/4"	1	94967A667♣	1.96
2"	1	94967A682♣	2.09

Lg.	Pkg. Qty.		Per Pkg.
Matte Black			
1/4"-20—Head: Wd. 7/16"; Ht. 5/32"			
1/2"	100	92965A537♣	$10.40
3/4"	100	92965A540♣	11.35
1"	100	92965A542♣	12.71
1 1/4"	50	92965A544	8.60
1 1/2"	50	92965A546	10.00
5/16"-18—Head: Wd. 1/2"; Ht. 13/64"			
3/4"	50	92965A581♣	8.97
1"	50	92965A583♣	8.78
1 1/2"	25	92965A587	7.85
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"			
1"	50	92965A624♣	$13.53
1 1/4"	25	92965A626♣	8.51
1 1/2"	25	92965A628	9.49
2"	25	92965A632	12.14
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"			
1 1/2"	10	92965A716♣	8.40
2"	10	92965A720	9.78

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3134 for more thread information.

Hex Head Cap Screw, Nut, and Washer Assortments

910-Piece Assortments—Zinc-Plated Steel

Assortments in Grade 8 and Grade 5 zinc-plated steel come in an 18" Lg.×12" Wd.×3" Dp. compartmented metal box with lid chart.

Coarse Thread

Size	Lg.	No. of Pcs.
Screws		
1/4"-20	1/2"	25
1/4"-20	3/4"	25
1/4"-20	1"	25
1/4"-20	1 1/2"	20
1/4"-20	2"	20
5/16"-18	3/4"	25
5/16"-18	1"	25
Screws (Cont.)		
5/16"-18	1 1/4"	20
5/16"-18	1 1/2"	20
5/16"-18	2"	10
3/8"-16	3/4"	20
3/8"-16	1"	20
3/8"-16	1 1/4"	10
3/8"-16	1 1/2"	10
3/8"-16	2"	10

Size	No. of Pcs.
Hex Nuts	
1/4"-20	50
5/16"-18	50
3/8"-16	25
Lock Washers	
1/4"	100
5/16"	100
3/8"	50
Flat Washers	
1/4"	100
5/16"	100
3/8"	50

Grade 8 Steel ..... 91350A112 Each $175.00
Grade 5 Steel ..... 91340A112 Each $114.17

Fine Thread

Size	Lg.	No. of Pcs.
Screws		
1/4"-28	1/2"	25
1/4"-28	3/4"	25
1/4"-28	1"	25
1/4"-28	1 1/2"	20
1/4"-28	2"	20
5/16"-24	3/4"	25
5/16"-24	1"	25
Screws (Cont.)		
5/16"-24	1 1/4"	20
5/16"-24	1 1/2"	20
5/16"-24	2"	10
3/8"-24	3/4"	20
3/8"-24	1"	20
3/8"-24	1 1/4"	10
3/8"-24	1 1/2"	10
3/8"-24	2"	10

Size	No. of Pcs.
Hex Nuts	
1/4"-28	50
5/16"-24	50
3/8"-24	25
Lock Washers	
1/4"	100
5/16"	100
3/8"	50
Flat Washers	
1/4"	100
5/16"	100
3/8"	50

Grade 8 Steel ..... 91350A317 Each $197.50
Grade 5 Steel ..... 91340A111 Each $129.03

1,020-Piece Assortment—Grade 5 Zinc-Plated Steel

Furnished in a 20 1/4" Lg. × 12 3/4" Wd. × 8 1/8" Dp. metal storage cabinet with two compartmented metal drawers.

Drawers are 18" Lg. × 12" Wd. × 3" Dp. They have a cover with lid chart.

Size	Lg.	No. of Pcs.
Screws		
1/4"-20	3/4"	25
1/4"-20	1"	25
1/4"-20	1 1/2"	20
1/4"-20	2"	20
1/4"-20	2 1/2"	10
5/16"-18	3/4"	25
5/16"-18	1"	25
5/16"-18	1 1/2"	20
5/16"-18	2"	10
5/16"-18	2 1/2"	10
3/8"-16	1"	20
3/8"-16	1 1/2"	10
3/8"-16	2"	10
Screws (Cont.)		
3/8"-16	2 1/2"	10
3/8"-16	3"	5
7/16"-14	1"	10
7/16"-14	1 1/2"	10
7/16"-14	2"	10
7/16"-14	2 1/2"	5
7/16"-14	3"	5
1/2"-13	1"	10
1/2"-13	1 1/2"	5
1/2"-13	2"	5
1/2"-13	2 1/2"	5
1/2"-13	3"	5

Size	No. of Pcs.
Hex Nuts	
1/4"-20	50
5/16"-18	50
3/8"-16	25
7/16"-14	20
1/2"-13	10
Lock Washers	
1/4"	50
5/16"	50
3/8"	50
7/16"	50
1/2"	25
Flat Washers	
1/4"	100
5/16"	100
3/8"	50
7/16"	50
1/2"	25

91308A220 ..... Each $387.50

Low-Strength Steel

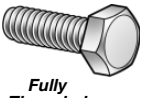

Fully Threaded

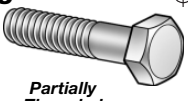

Partially Threaded

Stop here if you're looking for economical cap screws for general purpose, noncritical applications. Made from steel with strength similar to that of Grade 2 steel, they have a Class 2A thread fit, minimum Rockwell hardness of B69, and minimum tensile strength of 60,000 psi. All meet ASME B18.2.1 and ASTM A307 (unless noted). 3/8" and larger diameters are marked on the head with A307 (unless noted). Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

For low-strength steel hex-head screws in machine screw sizes, see page 3061.

Zinc-Plated Steel—Coated with a layer of zinc for corrosion resistance.

Hot-Dipped Galvanized Steel—Has a thicker coating than zinc plate for excellent protection from rust, weather, and corrosion.

Zinc-Plated Steel

1/4"-20—*Head: Wd. 7/16"; Ht. 5/32"*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
3/8"	Fully Threaded	100	91309A535 ◆	$9.95
1/2"	Fully Threaded	100	91309A537	3.18
5/8"	Fully Threaded	100	91309A539	3.29
3/4"	Fully Threaded	100	91309A540	4.14
7/8"	Fully Threaded	100	91309A541	4.43
1"	Fully Threaded	100	91309A542	5.61
1 1/4"	Fully Threaded	100	91309A544	8.49
1 1/4"	3/4" to 1"	100	91236A544	5.59
1 1/2"	Fully Threaded	100	91309A546	9.21
1 1/2"	3/4" to 1"	100	91236A546	6.94
1 3/4"	Fully Threaded	100	91309A548	10.30
1 3/4"	3/4" to 1"	100	91236A548	7.25
2"	Fully Threaded	50	91309A550	5.77
2"	3/4" to 1"	100	91236A550	7.91
2 1/4"	Fully Threaded	25	91309A551	4.13
2 1/4"	3/4" to 1"	100	91236A551	9.44
2 1/2"	Fully Threaded	25	91309A552	4.24
2 1/2"	3/4" to 1"	100	91236A552	10.80
2 3/4"	Fully Threaded	25	91309A553	4.51
2 3/4"	3/4" to 1"	100	91236A553	11.85
3"	Fully Threaded	25	91309A554	4.70
3"	3/4" to 1"	100	91236A554	10.80
3 1/2"	Fully Threaded	25	91309A556	8.75
3 1/2"	3/4" to 1"	50	91236A556	9.16
4"	Fully Threaded	25	91309A558	4.71
4"	3/4" to 1"	25	91236A558	5.23
4 1/2"	Fully Threaded	25	91309A560	6.98
4 1/2"	3/4" to 1"	25	91236A560	6.99
5"	Fully Threaded	25	91309A562	6.16
5"	3/4" to 1"	50	91236A562	13.47
5 1/2"	Fully Threaded	25	91309A564	7.13
5 1/2"	3/4" to 1"	50	91236A564	13.54
6"	Fully Threaded	25	91309A566	6.96
6"	3/4" to 1"	25	91236A566	9.82
7"	1" to 1 1/4"	10	91236A568	5.76
8"	1" to 1 1/4"	10	91236A570	9.06

1/4"-28—*Head: Wd. 7/16"; Ht. 5/32"*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2"	Fully Threaded	100	91309A501 ◆	8.76
3/4"	Fully Threaded	100	91309A505 ◆	10.47

5/16"-18—*Head: Wd. 1/2"; Ht. 13/64"*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2"	Fully Threaded	100	91309A578	5.79
5/8"	Fully Threaded	100	91309A580	6.18
3/4"	Fully Threaded	100	91309A581	7.55
7/8"	Fully Threaded	100	91309A582	7.03
1"	Fully Threaded	100	91309A583	8.13
1 1/4"	Fully Threaded	100	91309A585	9.29
1 1/2"	Fully Threaded	50	91309A587	7.13
1 1/2"	7/8" to 1 3/16"	100	91236A587	10.37
1 3/4"	Fully Threaded	25	91309A589	4.65
1 3/4"	7/8" to 1 3/16"	100	91236A589	10.32
2"	Fully Threaded	25	91309A591	4.82
2"	7/8" to 1 3/16"	100	91236A591	11.67
2 1/4"	Fully Threaded	50	91309A592	8.49
2 1/4"	7/8" to 1 3/16"	50	91236A592	6.95
2 1/2"	Fully Threaded	50	91309A593	9.31
2 1/2"	7/8" to 1 3/16"	50	91236A593	8.38
2 3/4"	Fully Threaded	25	91309A594	5.58
2 3/4"	7/8" to 1 3/16"	25	91236A594	5.74
3"	Fully Threaded	25	91309A595	6.15
3"	7/8" to 1 3/16"	25	91236A595	5.92
3 1/2"	Fully Threaded	10	91309A597	3.62
3 1/2"	7/8" to 1 3/16"	25	91236A597	6.90
4"	Fully Threaded	10	91309A599	3.76
4"	7/8" to 1 3/16"	25	91236A599	7.83
4 1/2"	7/8" to 1 3/16"	25	91236A601	7.49
5"	Fully Threaded	10	91309A603	5.52
5"	7/8" to 1 3/16"	25	91236A603	8.90
5 1/2"	7/8" to 1 3/16"	10	91236A605	5.18
6"	7/8" to 1 3/16"	25	91236A607	10.84

5/16"-18 (Cont.)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
7"	1 1/8" to 1 7/16"	10	91236A609	$6.47
8"	1 1/8" to 1 7/16"	10	91236A611	6.79

3/8"-16—*Head: Wd. 9/16"; Ht. 15/64"*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2"	Fully Threaded	100	91309A619	8.36
5/8"	Fully Threaded	50	91309A621 ◆	9.64
3/4"	Fully Threaded	100	91309A622	7.56
7/8"	Fully Threaded	50	91309A623 ◆	11.01
1"	Fully Threaded	100	91309A624	9.69
1 1/4"	Fully Threaded	25	91309A626	4.20
1 1/2"	Fully Threaded	25	91309A628	4.33
1 1/2"	1" to 1 5/16"	50	91236A628	9.73
1 3/4"	Fully Threaded	50	91309A630	10.58
1 3/4"	1" to 1 5/16"	25	91236A630	4.98
2"	Fully Threaded	25	91309A632	6.41
2"	1" to 1 5/16"	25	91236A632	5.45
2 1/4"	Fully Threaded	25	91309A633	7.51
2 1/4"	1" to 1 5/16"	50	91236A633	11.33
2 1/2"	Fully Threaded	25	91309A634	7.13
2 1/2"	1" to 1 5/16"	50	91236A634	11.76
2 3/4"	Fully Threaded	10	91309A635	3.82
2 3/4"	1" to 1 5/16"	50	91236A635	11.56
3"	Fully Threaded	10	91309A636	3.83
3"	1" to 1 5/16"	25	91236A636	6.73
3 1/4"	1" to 1 5/16"	25	91236A637	7.64
3 1/2"	Fully Threaded	25	91309A638	8.71
3 1/2"	1" to 1 5/16"	25	91236A638	8.38
4"	Fully Threaded	10	91309A640	4.73
4"	1" to 1 5/16"	10	91236A640	4.49
4 1/2"	Fully Threaded	10	91309A642	6.02
4 1/2"	1" to 1 5/16"	25	91236A642	11.70
5"	Fully Threaded	10	91309A644	4.95
5"	1" to 1 5/16"	25	91236A644	12.32
5 1/2"	1" to 1 5/16"	25	91236A646	13.06
6"	Fully Threaded	10	91309A648	6.16
6"	1" to 1 5/16"	10	91236A648	5.55
6 1/2"	1 1/4" to 1 9/16"	10	91236A649	6.80
7"	1 1/4" to 1 9/16"	10	91236A650	7.68
7 1/2"	1 1/4" to 1 9/16"	10	91236A651	8.08
8"	1 1/4" to 1 9/16"	10	91236A652	8.45
9"	1 1/4" to 1 9/16"	10	91236A654	9.49
10"	5 3/4" to 6 1/4"	5	91236A656	5.04
11"	5 3/4" to 6 1/4"	5	91236A657	5.46
12"	5 3/4" to 6 1/4"	5	91236A658	7.19

7/16"-14—*Head: Wd. 5/8"; Ht. 9/32"*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1"	Fully Threaded	25	91309A669	4.51
1 1/4"	Fully Threaded	50	91309A671	9.36
1 1/2"	Fully Threaded	50	91309A673	10.42
1 3/4"	1 1/8" to 1 1/2"	50	91236A675	12.90
2"	1 1/8" to 1 1/2"	25	91236A677	7.02
2 1/2"	1 1/8" to 1 1/2"	25	91236A679	9.44
3"	1 1/8" to 1 1/2"	10	91236A681	4.42
3 1/2"	1 1/8" to 1 1/2"	25	91236A683	12.15
4"	1 1/8" to 1 1/2"	25	91236A685	12.67
4 1/2"	1 1/8" to 1 1/2"	10	91236A687	6.28
5"	1 1/8" to 1 1/2"	10	91236A689	8.05
6"	1 1/8" to 1 1/2"	10	91236A694	8.05

1/2"-13—*Head: Wd. 3/4"; Ht. 5/16"*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2"	Fully Threaded	10	91309A706 ◆	10.02
3/4"	Fully Threaded	50	91309A710	10.46
7/8"	Fully Threaded	25	91309A711 ◆	11.25
1"	Fully Threaded	25	91309A712	5.79
1 1/4"	Fully Threaded	25	91309A714	6.58
1 1/2"	Fully Threaded	25	91309A716	7.41
1 3/4"	Fully Threaded	25	91309A718	8.24
2"	Fully Threaded	25	91309A720	9.09
2"	1 1/4" to 1 5/8"	10	91236A720	3.73
2 1/4"	Fully Threaded	10	91309A721	4.71
2 1/4"	1 1/4" to 1 5/8"	10	91236A721	4.61
2 1/2"	Fully Threaded	10	91309A722	4.64

1/2"-13 (Cont.)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
2 1/2"	1 1/4" to 1 5/8"	25	91236A722	$8.49
2 3/4"	Fully Threaded	10	91309A723	6.24
2 3/4"	1 1/4" to 1 5/8"	25	91236A723	11.95
3"	Fully Threaded	10	91309A724	6.82
3"	1 1/4" to 1 5/8"	25	91236A724	12.17
3 1/4"	Fully Threaded	5	91309A725	6.96
3 1/4"	1 1/4" to 1 5/8"	25	91236A725	12.94
3 1/2"	Fully Threaded	10	91309A726	6.98
3 1/2"	1 1/4" to 1 5/8"	10	91236A726	5.48
3 3/4"	Fully Threaded	5	91309A727	6.66
4"	Fully Threaded	10	91309A728	7.31
4"	1 1/4" to 1 5/8"	10	91236A728	6.82
4 1/2"	Fully Threaded	5	91309A730	7.48
4 1/2"	1 1/4" to 1 5/8"	10	91236A730	7.65
5"	Fully Threaded	5	91309A732	4.72
5"	1 1/4" to 1 5/8"	10	91236A732	6.66
5 1/2"	1 1/4" to 1 5/8"	10	91236A734	6.29
6"	Fully Threaded	5	91309A736	6.23
6"	1 1/4" to 1 5/8"	10	91236A736	11.89
6 1/2"	1 1/2" to 1 7/8"	10	91236A737	12.92
7"	1 1/2" to 1 7/8"	5	91236A738	7.07
8"	1 1/2" to 1 7/8"	5	91236A740	7.70
9"	1 1/2" to 1 7/8"	5	91236A742	7.41
10"	5 3/4" to 6 1/4"	5	91236A744	7.79
11"	5 3/4" to 6 1/4"	5	91236A746	9.53
12"	5 3/4" to 6 1/4"	5	91236A750	10.47
14"	5 3/4" to 6 1/4"	1	91236A969	2.65
16"	5 3/4" to 6 1/4"	1	91236A971	3.25
18"	5 3/4" to 6 1/4"	1	91236A972	2.84
20"	5 3/4" to 6 1/4"	1	91236A974	2.33

5/8"-11—*Head: Wd. 15/16"; Ht. 25/64"*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1"	Fully Threaded	25	91309A794	9.86
1 1/4"	Fully Threaded	25	91309A796	10.22
1 1/2"	Fully Threaded	25	91309A798	10.99
1 3/4"	Fully Threaded	10	91309A800	8.51
2"	Fully Threaded	10	91309A802	8.83
2 1/4"	1 1/2" to 2"	10	91236A803	6.91
2 1/2"	Fully Threaded	10	91309A804	12.27
2 1/2"	1 1/2" to 2"	10	91236A804	7.73
3"	Fully Threaded	10	91309A806	14.12
3"	1 1/2" to 2"	10	91236A806	6.80
3 1/4"	1 1/2" to 2"	10	91236A807	9.39
3 1/2"	Fully Threaded	5	91309A808	9.12
3 1/2"	1 1/2" to 2"	10	91236A808	10.37
4"	Fully Threaded	5	91309A810	9.12
4"	1 1/2" to 2"	10	91236A810	11.94
4 1/2"	1 1/2" to 2"	5	91236A812	7.23
5"	Fully Threaded	5	91309A814	10.82
5"	1 1/2" to 2"	5	91236A814	7.68
5 1/2"	1 1/2" to 2"	5	91236A816	7.25
6"	Fully Threaded	5	91309A818	14.65
6"	1 1/2" to 2"	5	91236A818	7.71
6 1/2"	1 3/4" to 2 1/4"	5	91236A819	10.81
7"	1 3/4" to 2 1/4"	5	91236A820	11.09
8"	1 3/4" to 2 1/4"	5	91236A822	11.80
9"	1 3/4" to 2 1/4"	5	91236A824	12.88
10"	5 3/4" to 6 1/4"	1	91236A826	2.73
11"	5 3/4" to 6 1/4"	1	91236A827	3.25
12"	5 3/4" to 6 1/4"	1	91236A828	2.16
14"	5 3/4" to 6 1/4"	1	91236A978	2.91

3/4"-10—*Head: Wd. 1 1/8"; Ht. 15/32"*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1"	Fully Threaded	10	91309A835	6.99
1 1/4"	Fully Threaded	5	91309A837 ◆	7.37
1 1/2"	Fully Threaded	10	91309A839	7.74
1 3/4"	Fully Threaded	10	91309A841	9.58
2"	Fully Threaded	10	91309A843	9.64
2 1/4"	Fully Threaded	5	91309A844 ◆	9.92
2 1/2"	Fully Threaded	10	91309A845	10.69
2 3/4"	Fully Threaded	5	91309A846 ◆	11.54
3"	Fully Threaded	5	91309A847	7.41

◆ Meets ASME B18.2.1 and SAE J429; head is not marked.

(Continued on following page)

For information about thread lengths and head dimensions, see page 3134. For nuts, see pages 3186-3216.

Low-Strength Steel *(Continued from previous page)*

Zinc-Plated Steel (Cont.)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
3/4"-10 (Cont.)				
3"	1 3/4" to 2 1/4"	5	91236A847	$6.44
3 1/2"	Fully Threaded	5	91309A849	8.79
3 1/2"	1 3/4" to 2 1/4"	5	91236A849	7.19
4"	Fully Threaded	5	91309A851	11.01
4"	1 3/4" to 2 1/4"	5	91236A851	9.22
4 1/2"	1 3/4" to 2 1/4"	5	91236A853	10.38
5"	Fully Threaded	5	91309A855	11.25
5"	1 3/4" to 2 1/4"	5	91236A855	10.72
5 1/2"	1 3/4" to 2 1/4"	5	91236A857	12.09
6"	Fully Threaded	5	91309A859	12.76
6"	1 3/4" to 2 1/4"	1	91236A859	2.88
6 1/2"	2" to 2 1/2"	1	91236A860	2.75
7"	2" to 2 1/2"	1	91236A861	3.15
7 1/2"	2" to 2 1/2"	1	91236A862	3.43
8"	2" to 2 1/2"	1	91236A863	2.20
3/4"-10 (Cont.)				
9"	2" to 2 1/2"	1	91236A865	$2.78
10"	5 3/4" to 6 1/4"	1	91236A866	3.28
12"	5 3/4" to 6 1/4"	1	91236A868	3.84
14"	5 3/4" to 6 1/4"	1	91236A872	4.07
7/8"-9—Head: Wd. 15/16"; Ht. 35/64"				
1 1/2"	Fully Threaded	5	91309A876	7.83
2"	Fully Threaded	5	91309A880	9.74
2 1/2"	Fully Threaded	1	91309A882	1.13
3"	2" to 2 9/16"	1	91236A884	1.18
4"	2" to 2 9/16"	1	91236A888	1.54
4 1/2"	2" to 2 9/16"	1	91236A890	1.64
5"	2" to 2 9/16"	1	91236A892	1.76
7"	2 1/4" to 2 13/16"	1	91236A898	2.48
8"	2 1/4" to 2 13/16"	1	91236A899	2.73
9"	2 1/4" to 2 13/16"	1	91236A901	3.06
1"-8—Head: Wd. 1 1/2"; Ht. 39/64"				
1 1/2"	Fully Threaded	1	91309A908 ♦	$3.62
2"	Fully Threaded	5	91309A912	13.08
2 1/4"	Fully Threaded	1	91309A913 ♦	4.46
2 1/2"	Fully Threaded	1	91309A914	1.56
2 3/4"	Fully Threaded	1	91309A918 ♦	5.09
3"	Fully Threaded	1	91309A922 ♦	5.30
3 1/2"	2 1/4" to 2 7/8"	1	91236A918	1.81
4"	2 1/4" to 2 7/8"	1	91236A920	1.96
5"	2 1/4" to 2 7/8"	1	91236A924	2.34
6"	2 1/4" to 2 7/8"	1	91236A928	2.82
8"	2 1/2" to 3 1/8"	1	91236A932	4.34
10"	5 3/4" to 6 1/4"	1	91236A934	4.43
12"	5 3/4" to 6 1/4"	1	91236A936	5.33

Hot-Dipped Galvanized Steel

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/4"-20—Head: Wd. 7/16"; Ht. 5/32"				
1"	Fully Threaded	100	95373A142	6.84
1 1/2"	3/4" to 1"	100	95373A146	9.74
2"	3/4" to 1"	100	95373A150	11.72
2 1/2"	3/4" to 1"	25	95373A152	6.81
3"	3/4" to 1"	25	95373A154	8.04
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"				
1"	Fully Threaded	50	95373A163	8.28
1 1/2"	1" to 1 5/16"	25	95373A165	5.84
2"	1" to 1 5/16"	25	95373A168	7.31
3/8"-16 (Cont.)				
2 1/2"	1" to 1 5/16"	25	95373A171	8.27
3"	1" to 1 5/16"	25	95373A174	9.65
3 1/2"	1" to 1 5/16"	5	95373A175	4.98
4"	1" to 1 5/16"	25	95373A176	11.24
5"	1" to 1 5/16"	10	95373A179	4.30
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"				
1 1/4"	Fully Threaded	25	95373A184 ♦	10.24
1 1/2"	Fully Threaded	25	95373A187	9.60
2"	1 1/4" to 1 5/8"	25	95373A193	11.91
1/2"-13 (Cont.)				
3"	1 1/4" to 1 5/8"	10	95373A198	6.45
3 1/2"	1 1/4" to 1 5/8"	5	95373A201	5.00
4"	1 1/4" to 1 5/8"	10	95373A205	8.20
5"	1 1/4" to 1 5/8"	10	95373A209	10.11
6"	1 1/4" to 1 5/8"	10	95373A213	11.53
5/8"-11—Head: Wd. 15/16"; Ht. 25/64"				
2"	Fully Threaded	10	95373A217	8.25
3"	1 1/2" to 2"	10	95373A221	11.26
4"	1 1/2" to 2"	10	95373A224 ●	12.70

♦ Meets ASME B18.2.1 and SAE J429; head is not marked. ● Head height is 27/64".

High-Strength Corrosion-Resistant Metal

Depend on these screws to stand up where others fail. They have a Class 2A thread fit and dimensions that meet ASME B18.2.1 (unless noted). Screw length is measured from under the head.

A286 Super Alloy—With approximately 26% nickel and 15% chrome, this iron-based super alloy brings you the strength of alloy steel with corrosion resistance similar to 18-8 stainless steel. It meets ASTM A453 Grade 660 and is not magnetic. Screws have a minimum Rockwell hardness of C31 and minimum tensile strength of 140,000 psi.

17-4 PH Stainless Steel Alloy—Combines the high strength of alloy steel with the corrosion resistance of stainless steel. It meets ASTM F593 Grade 630 and is magnetic. Screws have a minimum Rockwell hardness of C31 and minimum tensile strength of 140,000 psi.

Nickel-Copper Alloy 400—Comparable to Monel, this material is corrosion resistant in salt water, so it's well suited for marine applications. It's strong, heat resistant, and slightly magnetic. Screws have a minimum Rockwell hardness of B80 and minimum tensile strength of 80,000 psi. They meet ASTM F468 and MIL-S-1222H Amendment 3, but do not meet ASME B18.2.1.

Titanium—With outstanding resistance to corrosion and high temperatures, this titanium is nearly as strong as steel, yet approximately 60% lighter. Not magnetic. Screws have a minimum Rockwell hardness of B80 and minimum tensile strength of 50,000 psi.

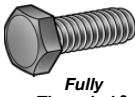

Fully Threaded♣

Partially Threaded

Also Available: Alloy 20 stainless steel (also known as Carpenter 20) screws in sizes marked with a ★. With excellent resistance to sulfuric acid, these screws have a minimum tensile strength of 80,000 psi. Please ask for 90765A100 and specify thread size and screw length.

A286 Super Alloy

Lg.	Each
1/4"-20—Head: Wd. 7/16"; Ht. 5/32"	
1/2"	98253A405♣ $8.90
3/4"	98253A408♣ 9.00
1"	98253A411♣ 9.13
1 1/2"	98253A415♣ 9.35
2"	98253A419♣ 9.58
5/16"-18—Head: Wd. 1/2"; Ht. 13/64"	
3/4"	98253A425♣ 10.30
1"	98253A428♣★ 10.48
1 1/4"	98253A432♣★ 10.65
1 1/2"	98253A436♣★ 10.85
2"	98253A439♣★ 11.20
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"	
1"	98253A450♣★ $12.25
1 1/4"	98253A453♣★ 12.50
1 1/2"	98253A456♣★ 13.20
2"	98253A459♣★ 14.56
2 1/2"	98253A462♣★ 15.88
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"	
1"	98253A481♣★ 15.08
1 1/2"	98253A485♣★ 16.85
2"	98253A489♣★ 18.70
2 1/2"	98253A492♣★ 20.58
3"	98253A499♣★ 22.43

Nickel-Copper Alloy 400

Lg.	Each
1/4"-20—Head: Wd. 7/16"; Ht. 5/32"	
1/2"	90780A538♣ $1.76
3/4"	90780A540♣ 2.12
1"	90780A542♣ 2.27
1 1/2"	90780A546 2.81
2"	90780A548 3.59
5/16"-18—Head: Wd. 1/2"; Ht. 13/64"	
3/4"	90780A580♣ 2.81
1"	90780A583♣ 3.22
1 1/2"	90780A587 4.65
2"	90780A589 5.75
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"	
1"	90780A624♣ $5.00
1 1/4"	90780A626♣ 4.43
1 1/2"	90780A628 7.54
2"	90780A630 7.93
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"	
1 1/2"	90780A716♣ 11.75
2"	90780A720 15.20
2 1/2"	90780A722 16.99
3"	90780A724 17.88
5/8"-11—Head: Wd. 15/16"; Ht. 25/64"	
2"	90780A805♣ 21.39
2 1/2"	90780A809 24.44
3"	90780A813 28.68

17-4 PH Stainless Steel Alloy

Lg.	Each
1/4"-20—Head: Wd. 7/16"; Ht. 5/32"	
1/2"	96870A201♣ 5.68
3/4"	96870A204♣ 5.72
1"	96870A208♣ 5.78
1 1/2"	96870A212♣ 5.90
2"	96870A216♣ 6.02
5/16"-18—Head: Wd. 1/2"; Ht. 13/64"	
3/4"	96870A225♣ 6.24
1"	96870A228♣ 6.32
1 1/4"	96870A231♣ 6.42
1 1/2"	96870A235♣ 6.50
2"	96870A239♣ 6.68
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"	
1"	96870A252♣ 7.06
1 1/4"	96870A255♣ 7.20
1 1/2"	96870A259♣ 7.32
2"	96870A262♣ 7.56
2 1/2"	96870A266♣ 7.82
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"	
1"	96870A282♣ 8.62
1 1/2"	96870A285♣ 9.06
2"	96870A289♣ 9.52
2 1/2"	96870A292♣ 9.96
3"	96870A296♣ 10.40

Titanium

Lg.	Each
10-24—Head: Wd. 5/16"; Ht. 1/8"	
1/2"	94081A142♣ 2.65
3/4"	94081A144♣ 2.83
1"	94081A147♣ 2.93
1 1/2"	94081A149♣ 4.73
2"	94081A153♣ 5.03
1/4"-20—Head: Wd. 7/16"; Ht. 5/32"	
1/2"	94081A337♣ 2.89
3/4"	94081A340♣ 3.24
1"	94081A342♣ 3.68
1 1/4"	94081A344♣ 3.93
1 1/2"	94081A346♣ 4.37
2"	94081A350♣ 5.01
5/16"-18—Head: Wd. 1/2"; Ht. 13/64"	
3/4"	94081A381♣ 5.14
1"	94081A384♣ 7.24
1 1/2"	94081A387♣ 7.83
2"	94081A391♣ 8.90
3/8"-16—Head: Wd. 9/16"; Ht. 15/64"	
1"	94081A424♣ 11.38
2"	94081A432♣ 16.90
2 1/2"	94081A434♣ 20.51

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3134 for more thread length information.

Type 316 Stainless Steel

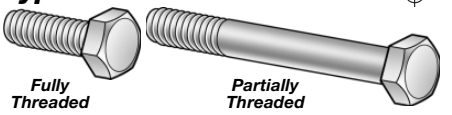

Step up to Type 316 stainless steel for superior corrosion resistance compared to 18-8 stainless steel. It contains molybdenum, which increases corrosion resistance to chlorides and sulfates. Screws may be mildly magnetic. They have a Class 2A thread fit, minimum Rockwell hardness of B70, and minimum tensile strength of 70,000 psi. Dimensions meet ASME B18.2.1. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

For Type 316 stainless steel hex-head screws in machine screw sizes, see pg. 3061.

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/4"-20—*Head: Wd. 7/16"; Ht. 5/32"*				
3/8"	Fully Threaded	25	93190A536	$6.35
1/2"	Fully Threaded	25	93190A537	5.57
5/8"	Fully Threaded	25	93190A539	6.62
3/4"	Fully Threaded	25	93190A540	6.66
7/8"	Fully Threaded	25	93190A541	7.29
1"	Fully Threaded	25	93190A542	7.69
1 1/8"	Fully Threaded	25	93190A543	12.02
1 1/4"	Fully Threaded	10	93190A544	5.63
1 1/4"	3/4" to 1"	25	92186A544	9.07
1 1/2"	Fully Threaded	10	93190A546	6.65
1 1/2"	3/4" to 1"	10	92186A546	4.43
1 3/4"	Fully Threaded	10	93190A547	7.37
1 3/4"	3/4" to 1"	10	92186A548	5.38
2"	Fully Threaded	10	93190A550	6.99
2"	3/4" to 1"	10	92186A550	5.54
2 1/4"	Fully Threaded	10	93190A551	8.88
2 1/4"	3/4" to 1"	10	92186A551	7.04
2 1/2"	Fully Threaded	10	93190A552	9.08
2 1/2"	3/4" to 1"	10	92186A552	7.10
2 3/4"	3/4" to 1"	10	92186A553	7.15
3"	Fully Threaded	10	93190A554	10.44
3"	3/4" to 1"	10	92186A554	7.99
3 1/4"	3/4" to 1"	10	92186A555	8.92
3 1/2"	Fully Threaded	5	93190A557	6.36
3 1/2"	3/4" to 1"	10	92186A556	10.14
4"	Fully Threaded	5	93190A560	6.99
4"	3/4" to 1"	5	92186A558	5.58
4 1/2"	Fully Threaded	5	93190A562	9.06
4 1/2"	3/4" to 1"	5	92186A560	6.47
5"	Fully Threaded	5	93190A564	10.40
5"	3/4" to 1"	5	92186A562	7.68
5 1/2"	Fully Threaded	5	93190A566	11.91
5 1/2"	3/4" to 1"	5	92186A563	8.34
6"	Fully Threaded	1	93190A568	2.84
6"	3/4" to 1"	5	92186A564	9.68
6 1/2"	1" to 4"	1	92186A565	4.31
7"	1" to 4"	1	92186A567	4.64
8"	1" to 4"	1	92186A569	4.86
9"	1" to 4"	1	92186A571	5.89
10"	1" to 4"	1	92186A573	6.33
1/4"-28—*Head: Wd. 7/16"; Ht. 5/32"*				
1/2"	Fully Threaded	25	93190A300	9.01
5/8"	Fully Threaded	25	93190A303	10.56
3/4"	Fully Threaded	10	93190A305	4.53
7/8"	Fully Threaded	10	93190A307	5.16
1"	Fully Threaded	10	93190A310	5.21
1 1/4"	3/4" to 1"	10	92186A315	6.15
1 1/2"	Fully Threaded	5	93190A312	4.50
1 1/2"	3/4" to 1"	10	92186A320	6.77
1 3/4"	Fully Threaded	5	93190A314	6.91
1 3/4"	3/4" to 1"	5	92186A321	4.25
2"	Fully Threaded	5	93190A320	5.54
2"	3/4" to 1"	10	92186A325	9.98
2 1/4"	3/4" to 1"	5	92186A326	5.37
2 1/2"	3/4" to 1"	10	92186A327	9.83
3"	3/4" to 1"	5	92186A329	5.62
3 1/2"	3/4" to 1"	5	92186A331	7.98
4"	3/4" to 1"	1	92186A333	2.11
5/16"-18—*Head: Wd. 1/2"; Ht. 13/64"*				
1/2"	Fully Threaded	10	93190A578	4.50
5/8"	Fully Threaded	10	93190A580	5.09
3/4"	Fully Threaded	10	93190A581	5.22
7/8"	Fully Threaded	10	93190A582	5.96
1"	Fully Threaded	10	93190A583	5.92
1 1/4"	Fully Threaded	10	93190A585	8.27
1 1/2"	Fully Threaded	10	93190A587	8.65
1 1/2"	7/8" to 1 3/16"	10	92186A587	6.63
1 3/4"	Fully Threaded	5	93190A589	6.41
1 3/4"	7/8" to 1 3/16"	10	92186A689	7.19
2"	Fully Threaded	5	93190A591	6.61
2"	7/8" to 1 3/16"	5	92186A591	4.79
2 1/4"	7/8" to 1 3/16"	10	92186A592	9.44
2 1/2"	Fully Threaded	5	93190A593	7.97
2 1/2"	7/8" to 1 3/16"	5	92186A693	4.97
5/16"-18 (Cont.)				
2 3/4"	7/8" to 1 3/16"	5	92186A594	$6.82
3"	Fully Threaded	5	93190A595	9.06
3"	7/8" to 1 3/16"	5	92186A595	6.82
3 1/4"	7/8" to 1 3/16"	5	92186A596	7.28
3 1/2"	Fully Threaded	5	93190A597	9.58
3 1/2"	7/8" to 1 3/16"	5	92186A597	7.58
3 3/4"	Fully Threaded	1	93190A599	2.36
4"	Fully Threaded	1	93190A601	2.38
4"	7/8" to 1 3/16"	5	92186A599	7.75
4 1/2"	Fully Threaded	1	93190A603	2.70
4 1/2"	7/8" to 1 3/16"	5	92186A701	9.61
5"	Fully Threaded	1	93190A605	3.05
5"	7/8" to 1 3/16"	5	92186A603	10.09
5 1/2"	Fully Threaded	1	93190A607	3.47
5 1/2"	7/8" to 1 3/16"	1	92186A604	1.94
6"	Fully Threaded	1	93190A609	3.83
6"	7/8" to 1 3/16"	1	92186A605	2.42
6 1/2"	1 1/8" to 1 1/2"	1	92186A607	4.63
7"	Fully Threaded	1	93190A611	7.85
7"	1 1/8" to 2"	1	92186A609	5.81
8"	Fully Threaded	1	93190A613	9.77
8"	1 1/8" to 3"	1	92186A611	6.67
9"	1 1/8" to 3"	1	92186A613	8.52
10"	1 1/8" to 4"	1	92186A615	9.39
5/16"-24—*Head: Wd. 1/2"; Ht. 13/64"*				
3/4"	Fully Threaded	10	93190A340	7.63
1"	Fully Threaded	10	93190A345	7.75
1 1/4"	Fully Threaded	10	93190A348	9.90
1 1/2"	Fully Threaded	5	93190A350	7.58
1 1/2"	7/8" to 1 3/16"	5	92186A350	5.40
1 3/4"	Fully Threaded	5	93190A352	9.90
1 3/4"	7/8" to 1 3/16"	5	92186A351	7.05
2"	Fully Threaded	5	93190A354	10.71
2"	7/8" to 1 3/16"	5	92186A352	6.58
2 1/4"	7/8" to 1 3/16"	5	92186A501	8.47
2 1/2"	Fully Threaded	5	93190A356	13.04
2 1/2"	7/8" to 1 3/16"	5	92186A353	9.45
3"	7/8" to 1 3/16"	5	92186A354	8.11
3 1/2"	7/8" to 1 3/16"	5	92186A356	10.95
4"	7/8" to 1 3/16"	1	92186A358	2.67
3/8"-16—*Head: Wd. 9/16"; Ht. 15/64"*				
3/8"	Fully Threaded	5	93190A617	7.54
1/2"	Fully Threaded	10	93190A619	6.16
5/8"	Fully Threaded	10	93190A621	6.17
3/4"	Fully Threaded	10	93190A622	6.44
7/8"	Fully Threaded	10	93190A623	7.25
1"	Fully Threaded	10	93190A624	7.33
1 1/8"	Fully Threaded	10	93190A625	10.09
1 1/4"	Fully Threaded	10	93190A626	9.71
1 1/2"	Fully Threaded	5	93190A628	6.00
1 1/2"	1" to 1 5/16"	10	92186A628	9.12
1 3/4"	Fully Threaded	5	93190A630	7.11
1 3/4"	1" to 1 5/16"	5	92186A630	5.55
2"	Fully Threaded	5	93190A632	9.11
2"	1" to 1 5/16"	5	92186A632	6.33
2 1/4"	1" to 1 5/16"	5	92186A633	7.06
2 1/2"	Fully Threaded	5	93190A634	9.96
2 1/2"	1" to 1 5/16"	5	92186A634	7.39
2 3/4"	1" to 1 5/16"	5	92186A635	8.01
3"	Fully Threaded	1	93190A636	2.49
3"	1" to 1 5/16"	5	92186A636	8.33
3 1/4"	1" to 1 5/16"	5	92186A637	8.12
3 1/2"	Fully Threaded	1	93190A638	2.74
3 1/2"	1" to 1 5/16"	1	92186A638	1.81
3 3/4"	1" to 1 5/16"	1	92186A639	1.90
4"	Fully Threaded	1	93190A640	3.52
4"	1" to 1 5/16"	1	92186A640	2.07
4 1/2"	Fully Threaded	1	93190A644	3.79
4 1/2"	1" to 1 5/16"	1	92186A642	2.22
5"	Fully Threaded	1	93190A648	3.78
5"	1" to 1 5/16"	1	92186A644	2.26
5 1/2"	Fully Threaded	1	93190A649	4.16
5 1/2"	1" to 1 5/16"	1	92186A646	2.27
6"	Fully Threaded	1	93190A650	4.26
3/8"-16 (Cont.)				
6"	1" to 1 5/16"	1	92186A648	$2.38
6 1/2"	1 1/4" to 3"	1	92186A650	3.25
7"	Fully Threaded	1	93190A652	8.25
7"	1 1/4" to 3"	1	92186A654	3.50
7 1/2"	1 1/4" to 3"	1	92186A660	4.57
8"	Fully Threaded	1	93190A654	9.42
8"	1 1/4" to 3"	1	92186A658	4.31
8 1/2"	1 1/4" to 3"	1	92186A662	4.98
9"	1 1/4" to 3"	1	92186A664	5.32
10"	1 1/4" to 4"	1	92186A666	5.83
3/8"-24—*Head: Wd. 9/16"; Ht. 15/64"*				
1/2"	Fully Threaded	10	93190A358	8.93
3/4"	Fully Threaded	5	93190A360	4.99
1"	Fully Threaded	5	93190A363	5.75
1 1/4"	Fully Threaded	5	93190A365	6.49
1 1/2"	Fully Threaded	5	93190A367	12.23
1 1/2"	1" to 1 5/16"	5	92186A367	7.25
1 3/4"	Fully Threaded	5	93190A674	13.11
1 3/4"	1" to 1 5/16"	5	92186A368	9.95
2"	Fully Threaded	1	93190A369	2.94
2"	1" to 1 5/16"	1	92186A369	1.71
2 1/4"	1" to 1 5/16"	1	92186A370	2.42
2 1/2"	1" to 1 5/16"	5	92186A371	8.32
2 3/4"	1" to 1 5/16"	1	92186A372	2.88
3"	Fully Threaded	1	93190A373	3.36
3"	1" to 1 5/16"	5	92186A373	10.09
3 1/2"	1" to 1 5/16"	1	92186A375	2.34
4"	1" to 1 5/16"	1	92186A377	2.76
7/16"-14—*Head: Wd. 5/8"; Ht. 9/32"*				
3/4"	Fully Threaded	5	93190A678	4.55
1"	Fully Threaded	5	93190A670	6.14
1 1/4"	Fully Threaded	5	93190A672	6.84
1 1/2"	Fully Threaded	5	93190A673	7.23
1 3/4"	1 1/8" to 1 1/2"	5	92186A675	9.40
2"	Fully Threaded	1	93190A675	3.33
2"	1 1/8" to 1 1/2"	5	92186A677	9.45
2 1/2"	Fully Threaded	1	93190A677	3.44
2 1/2"	1 1/8" to 1 1/2"	1	92186A679	2.07
3"	Fully Threaded	1	93190A679	3.81
3"	1 1/8" to 1 1/2"	1	92186A681	2.22
3 1/2"	1 1/8" to 1 1/2"	1	92186A683	2.79
4"	Fully Threaded	1	93190A681	4.34
4"	1 1/8" to 1 1/2"	1	92186A687	3.14
5"	1 1/4" to 1 1/2"	1	92186A690	3.92
6"	1 1/4" to 1 1/2"	1	92186A691	4.72
7/16"-20—*Head: Wd. 5/8"; Ht. 9/32"*				
1"	Fully Threaded	5	93190A685	8.94
1 1/4"	Fully Threaded	5	93190A687	10.16
1 1/2"	Fully Threaded	1	93190A689	2.99
1 3/4"	1 1/8" to 1 1/2"	5	92186A703	10.48
2"	1 1/8" to 1 1/2"	1	92186A705	2.44
2 1/2"	Fully Threaded	1	93190A693	3.69
2 1/2"	1 1/8" to 1 1/2"	1	92186A707	2.86
3"	1 1/8" to 1 1/2"	1	92186A709	3.28
1/2"-13—*Head: Wd. 3/4"; Ht. 5/16"*				
3/4"	Fully Threaded	5	93190A710	6.82
1"	Fully Threaded	5	93190A712	6.73
1 1/4"	Fully Threaded	5	93190A714	7.33
1 1/2"	Fully Threaded	5	93190A716	8.11
1 3/4"	Fully Threaded	5	93190A718	8.62
2"	Fully Threaded	1	93190A720	2.76
2"	1 1/4" to 1 5/8"	5	92186A720	9.34
2 1/4"	Fully Threaded	1	93190A721	3.01
2 1/4"	1 1/4" to 1 5/8"	1	92186A721	1.80
2 1/2"	Fully Threaded	1	93190A722	3.84
2 1/2"	1 1/4" to 1 5/8"	1	92186A722	2.03
2 3/4"	1 1/4" to 1 5/8"	1	92186A723	2.31
3"	Fully Threaded	1	93190A724	3.71
3"	1 1/4" to 1 5/8"	1	92186A724	2.19
3 1/4"	1 1/4" to 1 5/8"	1	92186A725	2.76
3 1/2"	Fully Threaded	1	93190A726	3.64
3 1/2"	1 1/4" to 1 5/8"	1	92186A726	2.76
3 3/4"	1 1/4" to 1 5/8"	1	92186A727	3.14

(Continued on following page)

For information about head dimensions, see page 3134. For nuts, see pages 3186-3216.

Type 316 Stainless Steel (Continued from previous page)

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1/2"-13 (Cont.)				
4"	Fully Threaded	1	93190A728	$4.59
4"	1¼" to 1⅝"	1	92186A728	3.15
4½"	Fully Threaded	1	93190A729	4.26
4½"	1¼" to 1⅝"	1	92186A730	3.09
5"	Fully Threaded	1	93190A730	4.53
5"	1¼" to 1⅝"	1	92186A732	3.15
5½"	Fully Threaded	1	93190A733	5.85
5½"	1¼" to 1⅝"	1	92186A734	4.12
6"	Fully Threaded	1	93190A735	6.21
6"	1¼" to 3"	1	92186A736	4.00
6½"	1¼" to 3"	1	92186A737	4.56
7"	Fully Threaded	1	93190A737	12.13
7"	1¼" to 3"	1	92186A738	4.86
7½"	1½" to 3"	1	92186A739	6.47
8"	Fully Threaded	1	93190A739	16.55
8"	1½" to 3"	1	92186A740	6.96
8½"	1½" to 3"	1	92186A741	7.22
9"	1½" to 3"	1	92186A742	7.51
9½"	1½" to 3"	1	92186A743	8.62
10"	1½" to 4"	1	92186A744	10.38
10½"	1½" to 4⅞"	1	92186A746	10.01
11"	1½" to 4"	1	92186A748	10.75
11½"	1½" to 5"	1	92186A750	11.56
12"	1½" to 6"	1	92186A752	11.76
14"	1½" to 6"	1	92186A754	15.16
1/2"-20—Head: Wd. 3/4"; Ht. 5/16"				
¾"	Fully Threaded	1	93190A378	2.24
1"	Fully Threaded	1	93190A380	2.19
1¼"	Fully Threaded	1	93190A382	2.47
1½"	Fully Threaded	1	93190A384	2.47
1¾"	Fully Threaded	1	93190A385	3.09
2"	Fully Threaded	1	93190A387	5.60
2"	1¼" to 1⅝"	1	92186A386	3.12
2¼"	1¼" to 1⅝"	1	92186A387	4.89
2½"	1¼" to 1⅝"	1	92186A388	3.32
3"	1¼" to 1⅝"	1	92186A390	4.33
3½"	1¼" to 1⅝"	1	92186A392	4.47
4"	1¼" to 1⅝"	1	92186A394	4.93
5"	1¼" to 1 11/16"	1	92186A398	6.05
9/16"-12—Head: Wd. 13/16"; Ht. 23/64"				
1"	Fully Threaded	1	93190A740	6.25
1½"	Fully Threaded	1	93190A751	6.42
2"	Fully Threaded	1	93190A753	7.76
2½"	1⅜" to 1 13/16"	1	92186A427	7.96
3"	1⅜" to 1 13/16"	1	92186A429	8.51
5/8"-11—Head: Wd. 15/16"; Ht. 25/64"				
1"	Fully Threaded	1	93190A794	2.51
1¼"	Fully Threaded	1	93190A796	2.52
1½"	Fully Threaded	1	93190A798	2.59
1¾"	Fully Threaded	1	93190A849	2.74
2"	Fully Threaded	1	93190A850	3.73
2¼"	Fully Threaded	1	93190A351	5.08
2¼"	1½" to 2"	1	92186A803	2.85
2½"	Fully Threaded	1	93190A852	4.84
2½"	1½" to 2"	1	92186A804	2.93
2¾"	1½" to 2"	1	92186A805	3.32
3"	Fully Threaded	1	93190A854	5.71
3"	1½" to 2"	1	92186A806	3.41
3¼"	1½" to 2"	1	92186A807	3.98
3½"	Fully Threaded	1	93190A856	7.10
3½"	1½" to 2"	1	92186A808	4.08
3¾"	1½" to 2"	1	92186A809	4.50
4"	Fully Threaded	1	93190A858	8.23
4"	1½" to 2"	1	92186A810	4.55
4¼"	1½" to 2"	1	92186A811	5.00
4½"	Fully Threaded	1	93190A861	9.10
4½"	1½" to 2"	1	92186A812	5.09
5"	Fully Threaded	1	93190A865	9.39
5"	1½" to 2"	1	92186A814	5.37
5½"	1½" to 2"	1	92186A816	5.92
6"	Fully Threaded	1	93190A868	11.17
6"	1½" to 2"	1	92186A818	6.90
6½"	Fully Threaded	1	93190A869	11.82
6½"	1¾" to 2½"	1	92186A820	7.46
7"	Fully Threaded	1	93190A870	17.19
7"	1¾" to 3"	1	92186A822	7.99
8"	Fully Threaded	1	93190A872	18.41
8"	1¾" to 3"	1	92186A826	8.69
8½"	1¾" to 3"	1	92186A828	12.12
9"	1¾" to 3"	1	92186A830	12.50
9½"	1¾" to 4"	1	92186A832	14.04
5/8"-11 (Cont.)				
10"	1¾" to 4"	1	92186A834	$14.94
10½"	1¾" to 4"	1	92186A836	16.17
11"	1¾" to 5"	1	92186A838	16.30
12"	1¾" to 6"	1	92186A842	16.86
5/8"-18—Head: Wd. 15/16"; Ht. 25/64"				
1"	Fully Threaded	1	93190A212	6.99
1¼"	Fully Threaded	1	93190A216	7.60
1½"	Fully Threaded	1	93190A220	7.79
2"	Fully Threaded	1	93190A224	10.53
2½"	Fully Threaded	1	93190A228	11.75
2½"	1½" to 2"	1	92186A557	6.94
3"	1½" to 2"	1	92186A559	7.99
3½"	1½" to 2"	1	92186A561	9.14
4"	1½" to 2"	1	92186A568	10.24
3/4"-10—Head: Wd. 1 1/8"; Ht. 15/32"				
1"	Fully Threaded	1	93190A837	3.94
1¼"	Fully Threaded	1	93190A838	4.19
1½"	Fully Threaded	1	93190A839	4.53
1¾"	Fully Threaded	1	93190A841	4.65
2"	Fully Threaded	1	93190A892	4.82
2¼"	Fully Threaded	1	93190A845	4.44
2½"	Fully Threaded	1	93190A844	8.08
2¾"	1¾" to 2¼"	1	92186A846	5.33
3"	Fully Threaded	1	93190A846	10.48
3"	1¾" to 2¼"	1	92186A847	5.56
3¼"	1¾" to 2¼"	1	92186A848	5.87
3½"	Fully Threaded	1	93190A848	12.23
3½"	1¾" to 2¼"	1	92186A849	5.92
3¾"	1¾" to 2¼"	1	92186A850	6.26
4"	Fully Threaded	1	93190A851	13.33
4"	1¾" to 2¼"	1	92186A851	6.58
4½"	Fully Threaded	1	93190A980	11.81
4½"	1¾" to 2½"	1	92186A853	7.22
5"	Fully Threaded	1	93190A981	14.11
5"	1¾" to 2½"	1	92186A855	7.42
5½"	1¾" to 2½"	1	92186A857	9.03
6"	Fully Threaded	1	93190A894	15.31
6"	1¾" to 2½"	1	92186A859	9.09
6½"	2" to 3"	1	92186A861	10.24
7"	Fully Threaded	1	93190A986	26.82
7"	2" to 3"	1	92186A864	10.48
7½"	2" to 3"	1	92186A866	12.43
8"	Fully Threaded	1	93190A989	30.13
8"	2" to 3"	1	92186A868	12.67
8½"	2" to 3"	1	92186A870	14.44
9"	2" to 3"	1	92186A872	15.59
9½"	2" to 3½"	1	92186A874	17.53
10"	2" to 4"	1	92186A876	18.39
10½"	2" to 4"	1	92186A878	22.22
11"	2" to 5"	1	92186A880	22.23
12"	2" to 6"	1	92186A889	24.42
14"	2" to 6"	1	92186A891	32.05
3/4"-16—Head: Wd. 1 1/8"; Ht. 15/32"				
1½"	Fully Threaded	1	93190A991	10.26
2"	Fully Threaded	1	93190A993	12.34
7/8"-9—Head: Wd. 1 5/16"; Ht. 35/64"				
1½"	Fully Threaded	1	93190A878	6.01
1¾"	Fully Threaded	1	93190A879	6.25
2"	Fully Threaded	1	93190A880	6.41
2¼"	Fully Threaded	1	93190A881	6.51
2½"	Fully Threaded	1	93190A882	6.73
2¾"	Fully Threaded	1	93190A883	7.22
3"	Fully Threaded	1	93190A884	12.70
3¼"	2" to 2 9/16"	1	92186A885	7.90
3½"	Fully Threaded	1	93190A885	14.19
3½"	2" to 2 9/16"	1	92186A886	7.91
3¾"	2" to 2 9/16"	1	92186A887	8.60
4"	Fully Threaded	1	93190A887	16.64
4"	2" to 2 9/16"	1	92186A888	8.98
4½"	Fully Threaded	1	93190A888	17.78
4½"	2" to 2 9/16"	1	92186A890	9.83
5"	Fully Threaded	1	93190A890	21.83
5"	2" to 2 9/16"	1	92186A893	10.74
5½"	2" to 2 9/16"	1	92186A894	11.88
6"	Fully Threaded	1	93190A973	26.45
6"	2" to 2 9/16"	1	92186A895	12.62
6½"	2¼" to 3"	1	92186A897	14.63
7"	2¼" to 3"	1	92186A901	15.47
7½"	2¼" to 3"	1	92186A902	19.99
8"	2¼" to 3"	1	92186A903	19.42
8½"	2¼" to 3"	1	92186A904	20.03
7/8"-9 (Cont.)				
9"	2¼" to 3"	1	92186A906	$20.99
10"	2¼" to 4"	1	92186A905	22.24
10½"	2¼" to 4"	1	92186A907	25.12
11"	2¼" to 5"	1	92186A909	26.10
12"	2¼" to 6"	1	92186A910	26.67
14"	2¼" to 6"	1	92186A912	36.61
1"-8—Head: Wd. 1 1/2"; Ht. 39/64"				
2"	Fully Threaded	1	93190A912	8.76
2½"	Fully Threaded	1	93190A914	9.53
2¾"	Fully Threaded	1	93190A915	10.75
3"	Fully Threaded	1	93190A916	10.82
3¼"	2¼" to 2⅞"	1	92186A917	12.29
3½"	2¼" to 2⅞"	1	92186A918	12.42
3¾"	2¼" to 2⅞"	1	92186A919	13.66
4"	Fully Threaded	1	93190A917	20.06
4"	2¼" to 2⅞"	1	92186A920	13.06
4½"	2¼" to 2⅞"	1	92186A922	24.38
5"	Fully Threaded	1	93190A919	23.24
5"	2¼" to 2⅞"	1	92186A924	26.00
5½"	2¼" to 2⅞"	1	92186A926	15.24
6"	Fully Threaded	1	93190A923	24.36
6"	2¼" to 2⅞"	1	92186A928	16.72
6½"	2½" to 3⅛"	1	92186A929	21.87
7"	2½" to 3⅛"	1	92186A932	20.01
8"	2½" to 3⅛"	1	92186A935	22.05
8½"	2½" to 3⅛"	1	92186A936	36.71
9"	2½" to 3⅛"	1	92186A937	37.10
10"	2½" to 4"	1	92186A939	37.17
11"	2½" to 5"	1	92186A942	38.98
12"	2½" to 6"	1	92186A944	40.46
14"	2½" to 6"	1	92186A946	50.39
1 1/8"-7—Head: Wd. 1 11/16"; Ht. 11/16"				
2½"	Fully Threaded	1	93190A936	15.47
3"	Fully Threaded	1	93190A938	16.57
3½"	Fully Threaded	1	93190A940	17.14
4"	Fully Threaded	1	93190A942	27.55
4"	2½" to 3¼"	1	92186A950	17.71
4½"	2½" to 3¼"	1	92186A952	18.29
5"	2½" to 3¼"	1	92186A152	19.44
5½"	2½" to 3¼"	1	92186A955	28.80
6"	Fully Threaded	1	93190A947	37.27
6"	2½" to 3¼"	1	92186A956	28.97
6½"	2½" to 3¼"	1	92186A957	30.01
7"	2½" to 3¼"	1	92186A958	37.45
7½"	2½" to 3½"	1	92186A959	34.61
8"	2½" to 3½"	1	92186A960	35.92
10"	2½" to 4"	1	92186A961	42.77
12"	2½" to 6"	1	92186A963	47.62
1 1/4"-7—Head: Wd. 1 7/8"; Ht. 25/32"				
2½"	Fully Threaded	1	93190A960	18.98
3"	Fully Threaded	1	93190A962	22.55
4"	Fully Threaded	1	93190A967	37.25
4"	2¾" to 3½"	1	92186A966	28.80
4½"	2¾" to 3 9/16"	1	92186A248	32.74
5"	2¾" to 3½"	1	92186A971	34.85
5½"	2¾" to 3 9/16"	1	92186A256	38.59
6"	Fully Threaded	1	93190A972	47.31
6"	2¾" to 3 9/16"	1	92186A260	41.52
6½"	2¾" to 3½"	1	92186A974	43.35
7"	2¾" to 3½"	1	92186A975	45.48
7½"	2¾" to 4"	1	92186A976	39.88
8"	2¾" to 4"	1	92186A977	40.00
10"	2¾" to 4"	1	92186A978	50.88
12"	2¾" to 6"	1	92186A979	55.26
1 1/2"-6—Head: Wd. 2 1/4"; Ht. 15/16"				
3½"	3¼" to 3½"	1	92186A981	29.93
4"	3¼" to 4"	1	92186A982	33.15
4½"	3¼" to 4½"	1	92186A983	35.75
5"	3¼" to 5"	1	92186A984	37.99
5½"	3¼" to 5½"	1	92186A985	52.81
6"	3¼" to 6"	1	92186A986	43.05
6½"	3¼" to 6½"	1	92186A987	45.82
7"	3¼" to 7"	1	92186A989	50.99
7½"	3¼" to 7½"	1	92186A990	54.97
8"	3¼" to 8"	1	92186A991	58.96
8½"	3¼" to 8½"	1	92186A992	72.38
9"	3¼" to 9"	1	92186A993	75.90
10"	3¼" to 10"	1	92186A995	80.70
1 3/4"-5—Head: Wd. 2 5/8"; Ht. 1 3/32"				
7"	3¾" to 7"	1	92186A997	85.50
9"	3¾" to 9"	1	92186A998	93.66

18-8 Stainless Steel

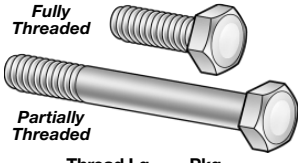

18-8 stainless steel offers excellent corrosion resistance and may be mildly magnetic. Screws have a Class 2A thread fit, minimum Rockwell hardness of B70, and minimum tensile strength of 70,000 psi. Dimensions meet ASME B18.2.1. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts. For 18-8 stainless steel hex head screws in machine screw sizes, see page 3061.

Also Available: Self-locking 18-8 stainless steel screws in sizes marked with a ♦. Each has a locking patch that withstands temperatures from −70° to +250° F. Screws have a minimum tensile strength of 70,000 psi. Please ask for 91412A770 and specify thread size and screw length.

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
***1/4"-20**—Head: Wd. 7/16"; Ht. 5/32"*				
3/8"	Fully Threaded	50	92240A535	$5.96
7/16"	Fully Threaded	50	92240A536	6.55
1/2"	Fully Threaded	50	92240A537	4.88
9/16"	Fully Threaded	50	92240A538	7.16
5/8"	Fully Threaded	50	92240A539	5.18
3/4"	Fully Threaded	50	92240A540 ♦	5.42
7/8"	Fully Threaded	50	92240A541	6.02
1"	Fully Threaded	50	92240A542 ♦	7.43
1 1/8"	Fully Threaded	50	92240A545	8.72
1 1/4"	Fully Threaded	50	92240A544	9.34
1 1/4"	3/4" to 1"	50	92198A544	8.17
1 3/8"	3/4" to 1"	25	92198A545	6.35
1 1/2"	Fully Threaded	50	92240A546	9.52
1 1/2"	3/4" to 1"	50	92198A546	9.67
1 5/8"	3/4" to 1"	25	92198A547	6.29
1 3/4"	Fully Threaded	25	92240A548	5.46
1 3/4"	3/4" to 1"	25	92198A548	4.92
1 7/8"	Fully Threaded	25	92240A549	11.65
2"	Fully Threaded	25	92240A550	6.99
2"	3/4" to 1"	25	92198A550	6.12
2 1/4"	Fully Threaded	25	92240A551	8.15
2 1/4"	3/4" to 1"	25	92198A551	6.78
2 1/2"	Fully Threaded	25	92240A552	8.46
2 1/2"	3/4" to 1"	25	92198A552	7.06
2 3/4"	Fully Threaded	25	92240A553	8.90
2 3/4"	3/4" to 1"	25	92198A553	7.50
3"	Fully Threaded	25	92240A554	9.25
3"	3/4" to 1"	25	92198A554	8.40
3 1/4"	3/4" to 1"	25	92198A555	8.52
3 1/2"	Fully Threaded	10	92240A556	5.30
3 1/2"	3/4" to 1"	10	92198A556	4.29
3 3/4"	3/4" to 1"	10	92198A557	5.02
4"	Fully Threaded	10	92240A558	5.72
4"	3/4" to 1"	10	92198A558	5.05
4 1/4"	Fully Threaded	10	92240A559	7.03
4 1/4"	3/4" to 1"	10	92198A559	5.57
4 1/2"	Fully Threaded	10	92240A561	7.78
4 1/2"	3/4" to 1"	10	92198A560	6.36
5"	Fully Threaded	10	92240A563	9.21
5"	3/4" to 1"	10	92198A562	7.60
5 1/2"	3/4" to 1"	10	92198A564	8.25
6"	Fully Threaded	10	92240A565	10.81
6"	3/4" to 1"	10	92198A566	8.85
6 1/2"	1" to 1 1/4"	5	92198A567	10.93
7"	1" to 1 1/4"	1	92198A570	2.99
8"	1" to 2 1/2"	1	92198A573	3.61
8 1/2"	1" to 3"	1	92198A572	5.03
9"	1" to 3"	1	92198A575	5.07
9 1/2"	1" to 4"	1	92198A576	5.66
10"	1" to 4"	1	92198A579	5.52
11"	1 1/4" to 4"	1	92198A580	7.95
12"	1 1/4" to 8"	1	92198A582	8.74
16"	1 1/4" to 8"	1	92198A596	9.97
***1/4"-28**—Head: Wd. 7/16"; Ht. 5/32"*				
3/8"	Fully Threaded	50	92240A101	5.59
1/2"	Fully Threaded	50	92240A103	6.20
5/8"	Fully Threaded	50	92240A105	5.72
3/4"	Fully Threaded	50	92240A106	7.20
7/8"	Fully Threaded	50	92240A107	7.65
1"	Fully Threaded	50	92240A108	9.61
1 1/8"	Fully Threaded	25	92240A109	6.21
1 1/4"	Fully Threaded	25	92240A104	7.80
1 1/4"	3/4" to 1"	25	92198A110	5.46
1 3/8"	Fully Threaded	25	92240A111	8.95
1 1/2"	Fully Threaded	25	92240A110	9.39
1 1/2"	3/4" to 1"	25	92198A111	5.88
1 3/4"	Fully Threaded	10	92240A113	4.09
1 3/4"	3/4" to 1"	25	92198A112	6.47
2"	Fully Threaded	25	92240A112	11.60
2"	3/4" to 1"	25	92198A113	8.56
2 1/4"	3/4" to 1"	25	92198A114	10.27
2 1/2"	Fully Threaded	10	92240A114	5.88
2 1/2"	3/4" to 1"	25	92198A115	10.23
1/4"-28 (Cont.)				
3"	Fully Threaded	10	92240A116	$6.53
3"	3/4" to 1"	10	92198A117	4.99
3 1/2"	3/4" to 1"	10	92198A119	5.58
4"	3/4" to 1"	10	92198A121	6.13
5"	3/4" to 1"	5	92198A123	7.15
6"	3/4" to 1"	5	92198A125	9.14
***5/16"-18**—Head: Wd. 1/2"; Ht. 13/64"*				
3/8"	Fully Threaded	50	92240A576	9.95
1/2"	Fully Threaded	50	92240A578	8.00
5/8"	Fully Threaded	50	92240A580	8.49
3/4"	Fully Threaded	50	92240A581 ♦	8.75
7/8"	Fully Threaded	25	92240A582	5.20
1"	Fully Threaded	25	92240A583 ♦	5.04
1 1/8"	Fully Threaded	25	92240A584	8.21
1 1/4"	Fully Threaded	25	92240A585 ♦	8.20
1 3/8"	7/8" to 1 3/16"	10	92198A686	4.97
1 1/2"	Fully Threaded	25	92240A587	9.12
1 1/2"	7/8" to 1 3/16"	25	92198A687 ♦	7.58
1 5/8"	7/8" to 1 3/16"	10	92198A688	4.61
1 3/4"	Fully Threaded	25	92240A589	10.11
1 3/4"	7/8" to 1 3/16"	25	92198A689	9.18
2"	Fully Threaded	10	92240A591	4.26
2"	7/8" to 1 3/16"	25	92198A691	9.34
2 1/4"	Fully Threaded	10	92240A932	5.50
2 1/4"	7/8" to 1 3/16"	10	92198A692	4.73
2 1/2"	Fully Threaded	10	92240A593	6.11
2 1/2"	7/8" to 1 3/16"	10	92198A693	5.07
2 3/4"	Fully Threaded	10	92240A594	5.79
2 3/4"	7/8" to 1 3/16"	10	92198A694	4.98
3"	Fully Threaded	10	92240A595	6.53
3"	7/8" to 1 3/16"	10	92198A695	5.76
3 1/4"	7/8" to 1 3/16"	10	92198A696	6.80
3 1/2"	Fully Threaded	10	92240A597	7.52
3 1/2"	7/8" to 1 3/16"	10	92198A697	6.84
3 3/4"	7/8" to 1 3/16"	10	92198A698	7.11
4"	Fully Threaded	10	92240A599	10.25
4"	7/8" to 1 3/16"	10	92198A699	8.48
4 1/4"	7/8" to 1 3/16"	10	92198A700	9.96
4 1/2"	Fully Threaded	10	92240A601	12.46
4 1/2"	7/8" to 1 3/16"	10	92198A701	11.22
5"	Fully Threaded	5	92240A603	7.03
5"	7/8" to 1 3/16"	10	92198A703	11.02
5 1/2"	7/8" to 1 3/16"	5	92198A705	6.01
6"	Fully Threaded	5	92240A606	7.98
6"	7/8" to 1 3/16"	5	92198A708	6.69
7"	1 1/8" to 2"	1	92198A711	4.21
8"	1 1/8" to 3"	1	92198A713	4.55
***5/16"-24**—Head: Wd. 1/2"; Ht. 13/64"*				
1/2"	Fully Threaded	25	92240A301	5.35
5/8"	Fully Threaded	25	92240A302	6.11
3/4"	Fully Threaded	25	92240A303	6.94
7/8"	Fully Threaded	25	92240A304	7.03
1"	Fully Threaded	25	92240A305	7.56
1 1/4"	Fully Threaded	10	92240A306	4.35
1 1/4"	7/8" to 1 3/16"	25	92198A306	9.21
1 1/2"	Fully Threaded	10	92240A307	5.01
1 1/2"	7/8" to 1 3/16"	25	92198A307	10.02
1 3/4"	Fully Threaded	10	92240A308	5.60
1 3/4"	7/8" to 1 3/16"	10	92198A308	4.38
2"	Fully Threaded	10	92240A310	6.86
2"	7/8" to 1 3/16"	10	92198A309	5.08
2 1/4"	7/8" to 1 3/16"	10	92198A310	5.66
2 1/2"	Fully Threaded	10	92240A312	8.58
2 1/2"	7/8" to 1 3/16"	10	92198A311	6.17
3"	Fully Threaded	10	92240A314	9.89
3"	7/8" to 1 3/16"	10	92198A313	7.40
3 1/2"	7/8" to 1 3/16"	10	92198A315	8.15
4"	7/8" to 1 3/16"	10	92198A317	10.58
***3/8"-16**—Head: Wd. 9/16"; Ht. 15/64"*				
3/8"	Fully Threaded	25	92240A617	9.21
1/2"	Fully Threaded	25	92240A619	5.86
5/8"	Fully Threaded	25	92240A621	6.56
3/4"	Fully Threaded	25	92240A622	7.61
3/8"-16 (Cont.)				
7/8"	Fully Threaded	25	92240A623	$8.06
1"	Fully Threaded	25	92240A624 ♦	8.94
1 1/8"	Fully Threaded	10	92240A625	4.20
1 1/4"	Fully Threaded	25	92240A626 ♦	9.21
1 3/8"	Fully Threaded	10	92240A627	5.90
1 1/2"	Fully Threaded	10	92240A628 ♦	5.15
1 1/2"	1" to 1 5/16"	10	92198A628	4.59
1 5/8"	1" to 1 5/16"	10	92198A629	7.52
1 3/4"	Fully Threaded	10	92240A630	6.16
1 3/4"	1" to 1 5/16"	10	92198A630	4.97
2"	Fully Threaded	10	92240A632	6.68
2"	1" to 1 5/16"	10	92198A632	5.76
2 1/4"	Fully Threaded	10	92240A633	8.00
2 1/4"	1" to 1 5/16"	10	92198A633	6.52
2 1/2"	Fully Threaded	10	92240A634	7.37
2 1/2"	1" to 1 5/16"	10	92198A634	6.69
2 3/4"	Fully Threaded	10	92240A637	8.53
2 3/4"	1" to 1 5/16"	10	92198A635	7.15
3"	Fully Threaded	5	92240A636	4.38
3"	1" to 1 5/16"	10	92198A636	7.61
3 1/4"	Fully Threaded	5	92240A950	5.08
3 1/4"	1" to 1 5/16"	10	92198A637	8.64
3 1/2"	Fully Threaded	5	92240A635	5.81
3 1/2"	1" to 1 5/16"	10	92198A638	9.69
3 3/4"	Fully Threaded	5	92240A638	6.80
3 3/4"	1" to 1 5/16"	10	92198A639	10.22
4"	Fully Threaded	5	92240A640	6.50
4"	1" to 1 5/16"	5	92198A640	5.56
4 1/4"	Fully Threaded	5	92240A641	8.03
4 1/4"	1" to 1 5/16"	5	92198A641	6.31
4 1/2"	Fully Threaded	5	92240A642	8.06
4 1/2"	1" to 1 5/16"	5	92198A642	6.64
4 3/4"	Fully Threaded	5	92240A643	9.33
4 3/4"	1" to 1 5/16"	5	92198A643	7.24
5"	Fully Threaded	5	92240A645	9.35
5"	1" to 1 5/16"	5	92198A644	7.31
5 1/2"	1" to 1 5/16"	5	92198A646	7.48
6"	Fully Threaded	5	92240A649	10.01
6"	1" to 1 5/16"	5	92198A648	8.09
6 1/2"	1 1/4" to 3"	5	92198A649	11.47
7"	Fully Threaded	1	92240A651	4.17
7"	1 1/4" to 3"	1	92198A650	2.40
7 1/2"	1 1/4" to 3"	1	92198A651	2.52
8"	Fully Threaded	1	92240A654	4.49
8"	1 1/4" to 3"	1	92198A652	2.96
8 1/2"	1 1/4" to 3"	1	92198A653	3.97
9"	1 1/4" to 6"	1	92198A654	3.68
9 1/2"	1 1/4" to 6"	1	92198A655	4.96
10"	1 1/4" to 6"	1	92198A656	4.34
11"	1 1/4" to 6"	1	92198A658	4.47
12"	1 1/4" to 6"	1	92198A660	4.66
***3/8"-24**—Head: Wd. 9/16"; Ht. 15/64"*				
1/2"	Fully Threaded	25	92240A350	7.57
5/8"	Fully Threaded	25	92240A351	8.60
3/4"	Fully Threaded	25	92240A352	9.32
1"	Fully Threaded	10	92240A354	4.28
1 1/4"	Fully Threaded	10	92240A356	4.53
1 1/2"	Fully Threaded	10	92240A358	6.87
1 1/2"	1" to 1 5/16"	10	92198A357	5.34
1 3/4"	Fully Threaded	10	92240A359	8.01
1 3/4"	1" to 1 5/16"	10	92198A358	6.31
2"	Fully Threaded	10	92240A360	9.10
2"	1" to 1 5/16"	10	92198A359	7.45
2 1/4"	Fully Threaded	5	92240A952	4.64
2 1/4"	1" to 1 5/16"	10	92198A360	8.43
2 1/2"	Fully Threaded	5	92240A361	5.64
2 1/2"	1" to 1 5/16"	10	92198A361	8.27
2 3/4"	1" to 1 5/16"	10	92198A367	8.54
3"	Fully Threaded	5	92240A362	8.10
3"	1" to 1 5/16"	10	92198A362	8.59
3 1/2"	1" to 1 5/16"	5	92198A364	5.79
4"	1" to 1 5/16"	5	92198A366	7.55
4 1/2"	1" to 1 5/16"	5	92198A368	9.02

(Continued on following page)

18-8 Stainless Steel *(Continued from previous page)*

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
7/16"-14—Head: Wd. 5/8"; Ht. 9/32"				
3/4"	Fully Threaded	10	92240A667	$4.82
1"	Fully Threaded	10	92240A669	5.36
1 1/4"	Fully Threaded	10	92240A671	6.03
1 1/2"	Fully Threaded	10	92240A365	6.81
1 3/4"	1 1/8" to 1 1/2"	10	92198A675	7.86
2"	Fully Threaded	5	92240A367	6.48
2"	1 1/8" to 1 1/2"	10	92198A677	8.56
2 1/4"	1 1/8" to 1 1/2"	10	92198A678	9.99
2 1/2"	Fully Threaded	5	92240A369	8.82
2 1/2"	1 1/8" to 1 1/2"	5	92198A679	5.33
2 3/4"	1 1/8" to 1 1/2"	5	92198A680	6.15
3"	Fully Threaded	5	92240A371	9.91
3"	1 1/8" to 1 1/2"	5	92198A681	6.28
3 1/4"	1 1/8" to 1 1/2"	5	92198A682	6.87
3 1/2"	Fully Threaded	5	92240A373	12.18
3 1/2"	1 1/8" to 1 1/2"	5	92198A683	7.95
4"	1 1/8" to 1 1/2"	5	92198A685	8.51
4 1/2"	1 1/8" to 1 1/2"	5	92198A670	10.86
5"	1 1/8" to 1 1/2"	1	92198A672	2.24
5 1/2"	1 1/8" to 1 1/2"	1	92198A674	2.60
6"	1 1/8" to 1 1/2"	1	92198A676	2.92
7/16"-20—Head: Wd. 5/8"; Ht. 9/32"				
3/4"	Fully Threaded	5	92240A399	4.23
1"	Fully Threaded	10	92240A401	6.04
1 1/4"	Fully Threaded	10	92240A403	7.00
1 1/2"	Fully Threaded	10	92240A404	8.18
1 3/4"	1 1/8" to 1 1/2"	10	92198A405	8.21
2"	Fully Threaded	5	92240A408	8.77
2"	1 1/8" to 1 1/2"	5	92198A406	4.93
2 1/4"	1 1/8" to 1 1/2"	5	92198A407	5.30
2 1/2"	1 1/8" to 1 1/2"	5	92198A408	6.40
3"	1 1/8" to 1 1/2"	5	92198A410	6.89
3 1/2"	1 1/8" to 1 1/2"	5	92198A412	6.90
4"	1 1/8" to 1 1/2"	5	92198A414	9.13
1/2"-13—Head: Wd. 3/4"; Ht. 5/16"				
1/2"	Fully Threaded	10	92240A750	6.99
5/8"	Fully Threaded	10	92240A751	7.01
3/4"	Fully Threaded	10	92240A710	5.57
7/8"	Fully Threaded	10	92240A711	6.13
1"	Fully Threaded	10	92240A712	6.35
1 1/8"	Fully Threaded	10	92240A713	9.67
1 1/4"	Fully Threaded	10	92240A714	7.53
1 3/8"	Fully Threaded	10	92240A716	11.31
1 1/2"	Fully Threaded	10	92240A715 ◆	8.33
1 3/4"	Fully Threaded	5	92240A718	5.58
2"	Fully Threaded	5	92240A720	5.83
2"	1 1/4" to 1 5/8"	5	92198A720 ◆	5.07
2 1/4"	Fully Threaded	5	92240A721	5.92
2 1/4"	1 1/4" to 1 5/8"	10	92198A721	9.83
2 1/2"	Fully Threaded	5	92240A722	6.68
2 1/2"	1 1/4" to 1 5/8"	5	92198A722	5.63
2 3/4"	Fully Threaded	5	92240A723	7.93
2 3/4"	1 1/4" to 1 5/8"	5	92198A723	6.07
3"	Fully Threaded	5	92240A724	8.54
3"	1 1/4" to 1 5/8"	5	92198A724 ◆	7.22
3 1/4"	1 1/4" to 1 5/8"	5	92198A752	7.97
3 1/2"	Fully Threaded	5	92240A726	9.00
3 1/2"	1 1/4" to 1 5/8"	5	92198A726	8.11
3 3/4"	1 1/4" to 1 5/8"	5	92198A753	8.50
4"	Fully Threaded	1	92240A728	2.18
4"	1 1/4" to 1 5/8"	1	92198A728	1.77
4 1/4"	1 1/4" to 1 5/8"	1	92198A729	2.05
4 1/2"	Fully Threaded	1	92240A730	2.40
4 1/2"	1 1/4" to 1 5/8"	1	92198A730	2.06
4 3/4"	Fully Threaded	1	92240A731	2.89
4 3/4"	1 1/4" to 1 5/8"	1	92198A731	2.10
5"	Fully Threaded	1	92240A732	3.09
5"	1 1/4" to 1 5/8"	1	92198A732	2.10
5 1/2"	Fully Threaded	1	92240A734	3.24
5 1/2"	1 1/4" to 1 5/8"	1	92198A734	2.55
6"	Fully Threaded	1	92240A736	3.68
6"	1 1/4" to 1 5/8"	1	92198A736	3.82
6 1/2"	1 1/2" to 3"	1	92198A754	2.85
7"	Fully Threaded	1	92240A738	7.43
7"	1 1/2" to 3"	1	92198A738	3.50
7 1/2"	1 1/2" to 3"	1	92198A755	4.09
8"	Fully Threaded	1	92240A740	7.53
8"	1 1/2" to 3"	1	92198A757	4.10
8 1/2"	1 1/2" to 3"	1	92198A758	4.48
9"	1 1/2" to 3"	1	92198A742	5.74
9 1/2"	1 1/2" to 3"	1	92198A743	6.13
1/2"-13 (Cont.)				
10"	1 1/2" to 4"	1	92198A744	$6.63
11"	1 1/2" to 4"	1	92198A746	7.92
12"	1 1/2" to 6"	1	92198A748	8.33
14"	1 1/2" to 6"	1	92198A750	10.68
16"	1 1/2" to 6"	1	92198A751	14.40
1/2"-20—Head: Wd. 3/4"; Ht. 5/16"				
3/4"	Fully Threaded	10	92240A430	6.38
1"	Fully Threaded	10	92240A432	8.42
1 1/4"	Fully Threaded	10	92240A434	8.82
1 1/2"	Fully Threaded	10	92240A435	10.64
1 3/4"	Fully Threaded	5	92240A436	5.66
2"	Fully Threaded	5	92240A437	9.42
2"	1 1/4" to 1 5/8"	5	92198A437	6.40
2 1/4"	Fully Threaded	1	92240A439	1.70
2 1/4"	1 1/4" to 1 5/8"	5	92198A438	7.02
2 1/2"	Fully Threaded	1	92240A441	1.83
2 1/2"	1 1/4" to 1 5/8"	5	92198A439	7.64
2 3/4"	1 1/4" to 1 5/8"	1	92198A440	2.17
3"	Fully Threaded	1	92240A443	2.01
3"	1 1/4" to 1 5/8"	5	92198A441	8.36
3 1/2"	1 1/4" to 1 5/8"	1	92198A443	1.99
4"	1 1/4" to 1 5/8"	1	92198A445	2.01
4 1/2"	1 1/4" to 1 5/8"	1	92198A447	2.29
5"	1 1/4" to 1 5/8"	1	92198A450	2.59
6"	1 1/4" to 1 5/8"	1	92198A452	4.24
9/16"-12—Head: Wd. 13/16"; Ht. 23/64"				
1"	Fully Threaded	5	92240A758	9.92
1 1/4"	Fully Threaded	5	92240A760	10.25
1 1/2"	Fully Threaded	5	92240A761	10.68
2"	Fully Threaded	5	92240A765	13.00
2 1/2"	1 3/8" to 1 13/16"	1	92198A767	2.76
3"	1 3/8" to 1 13/16"	1	92198A769	3.07
3 1/2"	1 3/8" to 1 13/16"	1	92198A662	3.34
4"	1 3/8" to 1 13/16"	1	92198A664	3.68
5"	1 3/8" to 1 13/16"	1	92198A665	4.82
6"	1 3/8" to 1 13/16"	1	92198A668	6.06
9/16"-18—Head: Wd. 13/16"; Ht. 23/64"				
1 1/2"	Fully Threaded	1	92240A460	6.74
2"	Fully Threaded	1	92240A462	7.11
2 1/2"	1 3/8" to 1 13/16"	1	92198A464	8.01
3"	1 3/8" to 1 13/16"	1	92198A466	8.50
5/8"-11—Head: Wd. 15/16"; Ht. 25/64"				
3/4"	Fully Threaded	1	92240A792	2.01
1"	Fully Threaded	5	92240A794	5.60
1 1/4"	Fully Threaded	5	92240A796	6.78
1 1/2"	Fully Threaded	5	92240A798	7.19
1 3/4"	Fully Threaded	5	92240A799	7.80
2"	Fully Threaded	5	92240A770	9.30
2 1/4"	Fully Threaded	1	92240A772	2.02
2 1/4"	1 1/2" to 2"	5	92198A803	8.28
2 1/2"	Fully Threaded	1	92240A774	2.28
2 1/2"	1 1/2" to 2"	1	92198A804	1.86
2 3/4"	1 1/2" to 2"	1	92198A805	1.94
3"	Fully Threaded	1	92240A780	2.73
3"	1 1/2" to 2"	1	92198A806	2.13
3 1/4"	1 1/2" to 2"	1	92198A807	2.53
3 1/2"	Fully Threaded	1	92240A782	3.05
3 1/2"	1 1/2" to 2"	1	92198A808	2.61
3 3/4"	1 1/2" to 2"	1	92198A809	2.70
4"	Fully Threaded	1	92240A784	3.70
4"	1 1/2" to 2"	1	92198A810	2.76
4 1/2"	Fully Threaded	1	92240A786	3.78
4 1/2"	1 1/2" to 2"	1	92198A812	3.25
5"	Fully Threaded	1	92240A788	3.96
5"	1 1/2" to 2"	1	92198A814	3.37
5 1/2"	1 1/2" to 2"	1	92198A816	3.80
6"	Fully Threaded	1	92240A790	5.31
6"	1 1/2" to 2"	1	92198A818	3.58
6 1/2"	1 3/4" to 2 1/2"	1	92198A819	4.21
7"	Fully Threaded	1	92240A793	9.99
7"	1 3/4" to 3"	1	92198A820	4.73
7 1/2"	1 3/4" to 3"	1	92198A821	5.43
8"	Fully Threaded	1	92240A795	11.42
8"	1 3/4" to 3"	1	92198A822	5.91
9"	1 3/4" to 3"	1	92198A824	7.80
10"	1 3/4" to 4"	1	92198A826	7.99
11"	1 3/4" to 6"	1	92198A828	12.44
12"	1 3/4" to 6"	1	92198A830	15.18
14"	1 3/4" to 6"	1	92198A834	20.28
16"	1 3/4" to 6"	1	92198A838	23.01
20"	1 3/4" to 6"	1	92198A840	26.78
5/8"-18—Head: Wd. 15/16"; Ht. 25/64"				
1"	Fully Threaded	5	92240A478	$11.57
1 1/4"	Fully Threaded	1	92240A480	2.45
1 1/2"	Fully Threaded	1	92240A481	2.55
1 3/4"	Fully Threaded	1	92240A482	2.64
2"	Fully Threaded	1	92240A483	2.78
2 1/4"	Fully Threaded	1	92240A485	3.73
2 1/2"	1 1/2" to 2"	1	92198A485	2.75
3"	1 1/2" to 2"	1	92198A487	3.55
3 1/2"	1 1/2" to 2"	1	92198A489	3.84
4"	1 1/2" to 2"	1	92198A490	4.30
5"	1 1/2" to 2"	1	92198A501	6.80
3/4"-10—Head: Wd. 1 1/8"; Ht. 15/32"				
1"	Fully Threaded	1	92240A835	1.88
1 1/4"	Fully Threaded	1	92240A837	1.98
1 1/2"	Fully Threaded	1	92240A839	2.04
1 3/4"	Fully Threaded	1	92240A841	2.05
2"	Fully Threaded	1	92240A842	3.02
2 1/4"	Fully Threaded	1	92240A843	2.67
2 1/2"	Fully Threaded	1	92240A844	3.60
2 3/4"	1 3/4" to 2 1/4"	1	92198A846	2.75
3"	Fully Threaded	1	92240A845	4.63
3"	1 3/4" to 2 1/4"	1	92198A847	3.42
3 1/4"	1 3/4" to 2 1/4"	1	92198A848	3.43
3 1/2"	Fully Threaded	1	92240A847	5.05
3 1/2"	1 3/4" to 2 1/4"	1	92198A849	3.46
3 3/4"	1 3/4" to 2 1/4"	1	92198A850	3.92
4"	Fully Threaded	1	92240A849	5.91
4"	1 3/4" to 2 1/4"	1	92198A851	3.63
4 1/4"	1 3/4" to 2 1/4"	1	92198A852	4.31
4 1/2"	Fully Threaded	1	92240A851	6.61
4 1/2"	1 3/4" to 2 1/4"	1	92198A853	4.79
5"	Fully Threaded	1	92240A853	7.47
5"	1 3/4" to 2 1/2"	1	92198A855	5.09
5 1/2"	1 3/4" to 2 1/2"	1	92198A857	5.54
6"	Fully Threaded	1	92240A857	8.92
6"	1 3/4" to 2 1/2"	1	92198A859	5.73
6 1/2"	2" to 3"	1	92198A860	6.48
7"	Fully Threaded	1	92240A859	12.65
7"	2" to 3"	1	92198A861	7.02
7 1/2"	2" to 3"	1	92198A862	8.93
8"	Fully Threaded	1	92240A861	16.29
8"	2" to 3"	1	92198A863	9.16
9"	2" to 3"	1	92198A865	11.54
10"	2" to 4"	1	92198A866	14.56
11"	2" to 6"	1	92198A868	17.00
12"	2" to 6"	1	92198A870	22.99
14"	2" to 6"	1	92198A874	26.23
16"	2" to 6"	1	92198A879	29.22
20"	2" to 6"	1	92198A887	36.80
3/4"-16—Head: Wd. 1 1/8"; Ht. 15/32"				
1 1/4"	Fully Threaded	1	92240A378	3.76
1 1/2"	Fully Threaded	1	92240A380	3.93
1 3/4"	Fully Threaded	1	92240A381	3.92
2"	Fully Threaded	1	92240A382	4.61
2 1/2"	Fully Threaded	1	92240A384	5.74
2 3/4"	1 3/4" to 2 1/4"	1	92198A391	5.41
3"	1 3/4" to 2 1/4"	1	92198A386	5.76
3 1/2"	1 3/4" to 2 1/4"	1	92198A388	5.80
4"	1 3/4" to 2 1/4"	1	92198A390	8.41
7/8"-9—Head: Wd. 1 5/16"; Ht. 35/64"				
1 1/2"	Fully Threaded	1	92240A876	4.09
1 3/4"	Fully Threaded	1	92240A878	4.15
2"	Fully Threaded	1	92240A880	4.46
2 1/4"	Fully Threaded	1	92240A383	4.63
2 1/2"	Fully Threaded	1	92240A882	5.05
2 3/4"	Fully Threaded	1	92240A385	4.91
3"	Fully Threaded	1	92240A884	6.64
3"	2" to 3"	1	92198A884	4.50
3 1/4"	2" to 2 1/2"	1	92198A387	5.27
3 1/2"	2" to 2 1/2"	1	92198A392	5.87
3 3/4"	2" to 2 1/2"	1	92198A389	6.19
4"	Fully Threaded	1	92240A886	8.74
4"	2" to 2 9/16"	1	92198A888	5.86
4 1/2"	2" to 2 9/16"	1	92198A890	6.15
5"	Fully Threaded	1	92240A888	10.63
5"	2" to 2 9/16"	1	92198A891	6.97
5 1/2"	2" to 2 9/16"	1	92198A893	7.77
6"	2" to 2 9/16"	1	92198A895	8.34
6 1/2"	2 1/4" to 3"	1	92198A897	9.11
7"	2 1/4" to 3"	1	92198A898	9.19
8"	2 1/4" to 3"	1	92198A899	12.35

(Continued on following page)

18-8 Stainless Steel *(Continued from previous page)*

Fully Threaded

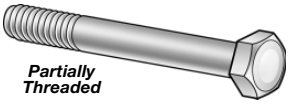

Partially Threaded

18-8 stainless steel offers excellent corrosion resistance and may be mildly magnetic. Screws have a Class 2A thread fit, min. Rockwell hardness of B70, and min. tensile strength of 70,000 psi. Dimensions meet ASME B18.2.1. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts. For 18-8 stainless steel hex head screws in machine screw sizes, see page 3061.

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
7/8"-9 (Cont.)				
9"	2¼" to 3"	1	92198A901	$17.11
10"	2¼" to 4"	1	92198A903	14.61
11"	2¼" to 6"	1	92198A904	22.19
12"	2¼" to 6"	1	92198A905	28.21
7/8"-14—Head: Wd. 1 5/16"; Ht. 35/64"				
2½"	Fully Threaded	1	92198A945	12.51
3"	2" to 2 9/16"	1	92198A947	13.25
1"-8—Head: Wd. 1½"; Ht. 39/64"				
2"	Fully Threaded	1	92240A912	6.50
2¼"	Fully Threaded	1	92240A914	6.58
2½"	Fully Threaded	1	92240A921	6.54
2¾"	Fully Threaded	1	92240A915	6.52
3"	Fully Threaded	1	92240A916	6.79
3½"	Fully Threaded	1	92240A925	12.00
3½"	2¼" to 2⅞"	1	92198A918	7.21
3¾"	2¼" to 2⅞"	1	92198A919	9.08
4"	Fully Threaded	1	92240A926	14.31
4"	2¼" to 2⅞"	1	92198A920	8.44
4½"	2¼" to 2⅞"	1	92198A922	9.03
5"	Fully Threaded	1	92240A927	17.93

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1"-8 (Cont.)				
5"	2¼" to 2⅞"	1	92198A924	$9.57
5½"	2¼" to 2⅞"	1	92198A926	10.43
6"	Fully Threaded	1	92240A930	19.49
6"	2¼" to 2⅞"	1	92198A928	10.79
6½"	2½" to 3⅛"	1	92198A929	14.98
7"	2½" to 3⅛"	1	92198A930	14.62
7½"	2½" to 3⅛"	1	92198A931	14.75
8"	2½" to 3⅛"	1	92198A932	14.68
9"	2½" to 3⅛"	1	92198A933	17.51
10"	2½" to 6"	1	92198A934	28.10
11"	2½" to 6"	1	92198A935	35.87
12"	2½" to 6"	1	92198A936	42.81
1⅛"-7—Head: Wd. 1 11/16"; Ht. 11/16"				
3"	Fully Threaded	1	92240A136	11.20
4"	2½" to 3¼"	1	92198A144	13.97
4½"	2½" to 3¼"	1	92198A148	16.22
5"	2½" to 3¼"	1	92198A152	16.16
5½"	2½" to 3¼"	1	92198A157	17.52
6"	2½" to 3¼"	1	92198A160	17.59
8"	2½" to 3⅞"	1	92198A178	21.43

Lg.	Thread Lg., Min. to Max.	Pkg. Qty.		Per Pkg.
1¼"-7—Head: Wd. 1⅞"; Ht. 25/32"				
3"	Fully Threaded	1	92240A236	$15.39
3½"	2¾" to 3 9/16"	1	92198A237	15.46
4"	2¾" to 3 9/16"	1	92198A238	14.32
4½"	2¾" to 3 9/16"	1	92198A245	15.85
5"	2¾" to 3 9/16"	1	92198A252	16.27
5½"	2¾" to 3 9/16"	1	92198A256	23.89
6"	2¾" to 3 9/16"	1	92198A260	24.15
6½"	2¾" to 4"	1	92198A264	27.33
7"	2¾" to 4"	1	92198A272	31.68
8"	2¾" to 4"	1	92198A280	33.71
1½"-6—Head: Wd. 2¼"; Ht. 15/16"				
4"	3¼" to 4"	1	92198A961	25.63
4½"	3¼" to 4½"	1	92198A963	26.57
5"	3¼" to 5"	1	92198A965	27.52
5½"	3¼" to 5½"	1	92198A967	39.05
6"	3¼" to 6"	1	92198A969	40.26
6½"	3¼" to 6½"	1	92198A286	46.29
7"	3¼" to 7"	1	92198A973	43.13
7½"	3¼" to 7½"	1	92198A975	48.34
8"	3¼" to 8"	1	92198A977	48.99

420-Piece 18-8 Stainless Steel Hex Head Cap Screw, Nut, and Washer Assortment

Furnished in an 18" Lg.×12" Wd.×3" Dp. compartmented metal box with lid chart. **91370A113** ..... **Each** $214.24

Size	Lg.	No. of Pcs.
Screws		
1/4"-20	1/2"	25
1/4"-20	1"	25
1/4"-20	1 1/2"	20
1/4"-20	2"	20
Screws (Cont.)		
5/16"-18	1/2"	25
5/16"-18	1"	25
5/16"-18	1 1/2"	20
5/16"-18	2"	10
Screws (Cont.)		
3/8"-16	1"	20
3/8"-16	1 1/2"	10
3/8"-16	2"	10
3/8"-16	2 1/2"	10
Hex Nuts		
1/4"-20		25
5/16"-18		20
3/8"-16		10
Flat Washers		
1/4"		25
5/16"		20
3/8"		10
Lock Washers		
1/4"		50
5/16"		20
3/8"		20

Military Specification Stainless Steel

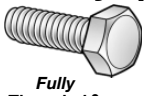

Fully Threaded♣

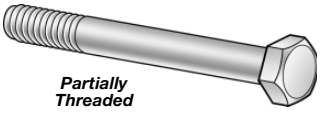

Partially Threaded

Made to more stringent specifications than standard screws, these 300 series stainless steel screws meet FF-S-85 and are passivated (a nitric acid treatment that creates a film to protect against oxidation and corrosion) to QQ-P-35. All have a Class 2A thread fit, min. Rockwell hardness of B80, and min. tensile strength of 80,000 psi, except ¾"-10 screws, which have a min. Rockwell hardness of B74 and min. tensile strength of 70,000 psi. Screw length is measured from under the head.

Lg.	Dash No.	Pkg. Qty.		Per Pkg.
1/4"-20—MS 35307; Head: Wd. 7/16"; Ht. 5/32"				
1/2"	303	10	92245A537♣	$5.37
9/16"	304	10	92245A538♣	6.90
5/8"	305	10	92245A539♣	6.37
3/4"	306	10	92245A540♣	6.56
7/8"	307	10	92245A541	7.13
1"	308	10	92245A542	7.95
1 1/8"	309	10	92245A543	8.57
1 1/4"	310	10	92245A544	8.93
1 3/8"	311	10	92245A545	9.14
1 1/2"	312	5	92245A546	5.04
1 3/4"	313	5	92245A548	5.68
2"	314	5	92245A550	6.30
2 1/4"	315	5	92245A552	7.44
2 1/2"	316	5	92245A553	8.53
2 3/4"	317	5	92245A554	9.36
3"	318	5	92245A555	11.02
1/4"-28—MS 35308; Head: Wd. 7/16"; Ht. 5/32"				
1/2"	303	10	92245A561♣	6.05
5/8"	305	10	92245A563♣	6.96
3/4"	306	10	92245A565♣	7.19
7/8"	307	10	92245A564♣	7.70
1"	308	10	92245A567	7.78
1 1/8"	309	10	92245A568	7.98
1 1/4"	310	10	92245A569	8.29
1 1/2"	312	10	92245A571	9.12
1 3/4"	313	10	92245A572	10.51
2"	314	5	92245A574	6.25
5/16"-18—MS 35307; Head: Wd. 1/2"; Ht. 13/64"				
1/2"	329	10	92245A682♣	8.93
5/8"	331	10	92245A580♣	9.18
3/4"	332	10	92245A581♣	10.97
7/8"	333	5	92245A582♣	6.62

Lg.	Dash No.	Pkg. Qty.		Per Pkg.
5/16"-18 (Cont.)				
1"	334	5	92245A583♣	$6.82
1 1/8"	335	5	92245A584	7.53
1 1/4"	336	5	92245A585	8.50
1 3/8"	337	5	92245A686	9.21
1 1/2"	338	5	92245A587	9.31
1 3/4"	339	5	92245A589	9.77
2"	340	1	92245A591	2.37
2 1/4"	341	1	92245A592	2.70
2 1/2"	342	1	92245A593	2.83
3"	344	1	92245A596	3.16
5/16"-24—MS 35308; Head: Wd. 1/2"; Ht. 13/64"				
3/4"	332	5	92245A600♣	5.13
1"	334	5	92245A602♣	6.53
1 1/4"	336	5	92245A604	8.62
1 1/2"	338	5	92245A606	9.65
2"	340	1	92245A608	2.23
3/8"-16—MS 35307; Head: Wd. 9/16"; Ht. 15/64"				
5/8"	357	5	92245A621♣	8.30
3/4"	358	5	92245A622♣	8.80
7/8"	359	5	92245A623♣	8.87
1"	360	5	92245A624♣	9.02
1 1/8"	361	5	92245A625♣	9.21
1 1/4"	362	1	92245A626	2.78
1 3/8"	363	1	92245A627	2.48
1 1/2"	364	1	92245A628	2.76
1 3/4"	365	1	92245A630	3.56
2"	366	1	92245A632	3.45
2 1/4"	367	1	92245A641	3.69
2 1/2"	368	1	92245A637	3.95
2 3/4"	369	1	92245A638	4.10
3"	370	1	92245A639	4.35

Lg.	Dash No.	Pkg. Qty.		Per Pkg.
3/8"-24—MS 35308; Head: Wd. 9/16"; Ht. 15/64"				
3/4"	358	5	92245A650♣	$8.37
1"	360	5	92245A652♣	10.25
1 1/4"	362	1	92245A654	2.50
1 1/2"	364	1	92245A657	2.69
1 3/4"	365	1	92245A659	3.09
2"	366	1	92245A661	3.30
1/2"-13—MS 35307; Head: Wd. 3/4"; Ht. 5/16"				
3/4"	407	1	92245A710♣	3.13
1"	409	1	92245A713♣	3.43
1 1/4"	411	1	92245A715♣	3.25
1 1/2"	413	1	92245A717	3.55
1 3/4"	414	1	92245A719	3.47
2"	415	1	92245A722	3.29
2 1/4"	416	1	92245A724	5.78
2 1/2"	417	1	92245A726	6.26
3"	419	1	92245A727	7.90
1/2"-20—MS 35308; Head: Wd. 3/4"; Ht. 5/16"				
1"	409	1	92245A751♣	3.99
1 1/4"	411	1	92245A753♣	5.09
1 1/2"	413	1	92245A755	5.55
1 3/4"	414	1	92245A757	5.59
5/8"-11—MS 35307; Head: Wd. 15/16"; Ht. 25/64"				
1"	458	1	92245A801♣	7.20
1 1/2"	462	1	92245A805♣	8.24
1 3/4"	463	1	92245A807♣	8.84
2"	464	1	92245A809	9.69
2 1/2"	466	1	92245A811	13.21
2 3/4"	467	1	92245A813	14.42
3"	468	1	92245A815	14.95
3/4"-10—MS 35307; Head: Wd. 1 1/8"; Ht. 15/32"				
1 1/2"	485	1	92245A851♣	13.26
2"	487	1	92245A853♣	13.97
2 1/2"	489	1	92245A855	17.58
3"	491	1	92245A857	19.78

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3134 for more thread length information.

Wire-Lockable 18-8 Stainless Steel

To stop screws from vibrating loose, wire them together. Each screw is drilled through the head to accommodate safety lock wire (not included). For safety wire, see 8860K14 on page 3731. For wire twisting pliers, see page 2757.

Screws are made from 18-8 stainless steel, which offers excellent corrosion resistance and may be mildly magnetic. They have a Class 2A thread fit, minimum Rockwell hardness of B70, and minimum tensile strength of 75,000 psi. Screw length is measured from under the head.

Lg.		Each
***1/4"-20—**Head: Wd. 7/16"; Ht. 5/32"*		
Hole Dia.: 1/16"		
1/2"	90121A537♣	$1.04
3/4"	90121A540♣	1.08
1"	90121A542♣	1.12
1 1/2"	90121A546	1.24
***5/16"-18—**Head: Wd. 1/2"; Ht. 13/64"*		
Hole Dia.: 1/16"		
3/4"	90121A581♣	1.28
1"	90121A583♣	1.36
1 1/2"	90121A587	1.48
***3/8"-16—**Head: Wd. 9/16"; Ht. 15/64"*		
Hole Dia.: 1/16"		
3/4"	90121A622♣	$1.56
1"	90121A624♣	1.64
1 1/4"	90121A626♣	1.68
***1/2"-13—**Head: Wd. 3/4"; Ht. 5/16"*		
Hole Dia.: 7/64"		
1 1/2"	90121A716♣	3.20

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3134 for more thread information.

Self-Sealing 18-8 Stainless Steel

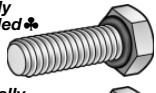

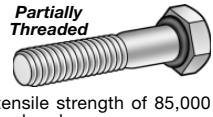

Each screw comes with a silicone O-ring that seals out contaminating liquids and gases at pressures up to 20,000 psi (when used in the hole sizes recommended below).

Screws are reusable. UL recognized and CSA certified, they're made from 18-8 stainless steel, which offers excellent corrosion resistance and may be mildly magnetic. Each has a Class 2A thread fit, min. Rockwell hardness of B85, and min. tensile strength of 85,000 psi. Screw length is measured from under the head.

Also Available: Replacement O-rings. *Silicone* rings have a temperature range of –150° to +500° F; *fluoroelastomer* rings have a range of –20° to +400° F and are resistant to chemicals and oil. Please ask for 97284A990 and specify material and screw size.

Lg.		Each
***1/4"-20—**Head: Wd. 7/16"; Ht. 5/32"*		
For Hole Dia.: 0.265" to 0.269"		
1/2"	92205A537♣	$2.27
3/4"	92205A540♣	2.31
1"	92205A542♣	2.38
1 1/4"	92205A544	2.45
1 1/2"	92205A547	3.13
2"	92205A550	3.35
2 1/2"	92205A555	3.55
***5/16"-18—**Head: Wd. 1/2"; Ht. 13/64"*		
For Hole Dia.: 0.332" to 0.336"		
3/4"	92205A581♣	3.52
1"	92205A583♣	3.69
1 1/4"	92205A585	3.76
1 1/2"	92205A588	3.86
2"	92205A591	4.13
***3/8"-16—**Head: Wd. 9/16"; Ht. 15/64"*		
For Hole Dia.: 0.395" to 0.399"		
3/4"	92205A622♣	$3.86
1"	92205A624♣	4.03
1 1/4"	92205A626	4.14
1 1/2"	92205A629	4.28
2"	92205A631	4.76
***1/2"-13—**Head: Wd. 3/4"; Ht. 5/16"*		
For Hole Dia.: 0.530" to 0.534"		
1"	92205A722♣	5.28
1 1/4"	92205A725♣	5.65
1 1/2"	92205A728	5.87
2"	92205A731	6.49
2 1/2"	92205A735	6.97
3"	92205A740	7.48
3 1/2"	92205A745	7.96

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3134 for more thread information.

Left-Hand Thread 18-8 Stainless Steel

Tighten these fully threaded screws by turning them counterclockwise. They're made from 18-8 stainless steel, which offers excellent corrosion resistance and may be mildly magnetic. Screws have a Class 2A thread fit, minimum Rockwell hardness of B65, and minimum tensile strength of 70,000 psi. Screw length is measured from under the head.

Lg.		Each
***1/4"-20—**Head: Wd. 7/16"; Ht. 5/32"*		
1/2"	90306A220	$17.86
3/4"	90306A222	10.17
1"	90306A224	10.17
1 1/4"	90306A226	10.17
1 1/2"	90306A228	10.17
***3/8"-16—**Head: Wd. 9/16"; Ht. 15/64"*		
3/4"	90306A290	20.29
1"	90306A292	11.83
3/8"-16 (Cont.)		
1 1/2"	90306A296	$11.16
2"	90306A301	12.62
***1/2"-13—**Head: Wd. 3/4"; Ht. 5/16"*		
1"	90306A330	28.66
1 1/2"	90306A334	14.12
2"	90306A338	13.63
2 1/2"	90306A340	14.46
3"	90306A348	31.60

Vibration-Resistant Flange-Head 18-8 Stainless Steel

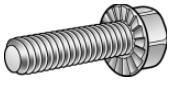

With a wide, serrated flange, these screws fight the tendency to jiggle free. Screws are made from 18-8 stainless steel, which offers excellent corrosion resistance and may be mildly magnetic. Screws have a Class 2A thread fit. Head dimensions meet IFI-111. Min. Rockwell hardness is B100. Min. tensile strength is 100,000 psi. Head height includes the thickness of the flange. Screw length is measured from under the flange.

Lg.	Pkg. Qty.		Per Pkg.
***1/4"-20—**Head Ht.: 0.28"*			
Flange Dia.: 0.56"			
3/4"	25	97646A110♣	$11.23
1"	10	97646A115♣	6.10
1 1/4"	10	97646A120	6.31
1 1/2"	10	97646A125	8.01
***5/16"-18—**Head Ht.: 0.32"*			
Flange Dia.: 0.68"			
3/4"	10	97646A150♣	8.05
1"	10	97646A155♣	8.68
5/16"-18 (Cont.)			
1 1/4"	10	97646A160♣	$10.02
1 1/2"	10	97646A165	11.94
***3/8"-16—**Head Ht.: 0.39"*			
Flange Dia.: 0.81"			
3/4"	10	97646A215♣	12.05
1"	5	97646A220♣	7.37
1 1/4"	5	97646A225♣	8.11
1 1/2"	5	97646A230	9.90

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3134 for more thread information.

Aluminum

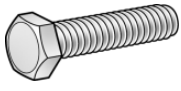

Made from Alloy 2024-T4, these cap screws have the strength of mild steel yet are only one-third the weight. They're nonmagnetic and resistant to corrosion caused by weather. All are fully threaded with a Class 2A thread fit, min. Rockwell hardness of B40, and min. tensile strength of 37,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
***1/4"-20—**Head: Wd. 7/16"; Ht. 5/32"*			
1/2"	25	93306A538	$8.75
3/4"	50	93306A540	14.95
1"	25	93306A542	8.31
1 1/4"	25	93306A543	10.21
1 1/2"	25	93306A546	10.79
2"	25	93306A550	12.07
2 1/2"	25	93306A555	14.79
3"	10	93306A558	7.15
***5/16"-18—**Head: Wd. 1/2"; Ht. 13/64"*			
3/4"	25	93306A580	11.85
1"	25	93306A583	12.32
1 1/4"	25	93306A585	11.75
1 1/2"	25	93306A587	13.12
2"	10	93306A560	7.87
2 1/2"	10	93306A562	9.29
3"	10	93306A565	11.22
***3/8"-16—**Head: Wd. 9/16"; Ht. 15/64"*			
3/4"	25	93306A622	10.72
3/8"-16 (Cont.)			
1"	25	93306A624	$12.36
1 1/4"	10	93306A626	7.14
1 1/2"	25	93306A628	13.18
2"	10	93306A632	7.82
3"	10	93306A635	12.62
***1/2"-13—**Head: Wd. 3/4"; Ht. 5/16"*			
1"	10	93306A712	11.08
1 1/2"	10	93306A716	14.76
2"	5	93306A720	10.15
2 1/2"	5	93306A722	8.82
3"	5	93306A725	8.78
3 1/2"	1	93306A728	2.09
4"	1	93306A730	2.33
***5/8"-11—**Head: Wd. 15/16"; Ht. 25/64"*			
1 1/2"	1	93306A805	2.25
2"	1	93306A808	2.51
2 1/2"	1	93306A811	2.84
3"	1	93306A814	3.07

Silicon Bronze

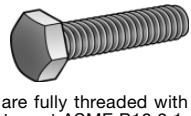

Made from Alloy 651 (which contains 96% copper with silicon for added strength), these cap screws are extremely resistant to the corrosive effects of sea water, gases, and sewage. They're also nonmagnetic and good conductors of heat and electricity. All screws are fully threaded with a Class 2A thread fit and head dimensions that meet ASME B18.2.1. They have a min. Rockwell hardness of B70 and min. tensile strength of 70,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
***1/4"-20—**Head: Wd. 7/16"; Ht. 5/32"*			
3/8"	25	93516A535	$10.59
1/2"	25	93516A537	9.87
5/8"	25	93516A539	13.98
3/4"	25	93516A540	11.44
1"	10	93516A542	5.83
1 1/4"	10	93516A544	6.45
1 1/2"	10	93516A546	7.58
2"	10	93516A550	7.96
2 1/2"	10	93516A552	11.49
3"	10	93516A554	13.31
***5/16"-18—**Head: Wd. 1/2"; Ht. 13/64"*			
3/4"	10	93516A581	8.05
1"	10	93516A583	10.20
1 1/4"	10	93516A585	12.25
1 1/2"	10	93516A587	13.55
2"	5	93516A591	7.10
***3/8"-16—**Head: Wd. 9/16"; Ht. 15/64"*			
1/2"	10	93516A620	10.49
3/4"	10	93516A622	11.70
1"	5	93516A624	7.83
1 1/4"	5	93516A626	8.76
3/8"-16 (Cont.)			
1 1/2"	5	93516A628	$9.33
1 3/4"	5	93516A630	10.11
2"	5	93516A632	12.14
3"	1	93516A635	2.83
4"	1	93516A638	2.90
5"	1	93516A640	5.15
6"	1	93516A644	6.19
***1/2"-13—**Head: Wd. 3/4"; Ht. 5/16"*			
3/4"	1	93516A711	2.21
1"	1	93516A712	2.36
1 1/4"	1	93516A714	2.71
1 1/2"	1	93516A716	2.31
1 3/4"	1	93516A718	2.35
2"	1	93516A720	3.47
2 1/2"	1	93516A722	3.81
3"	1	93516A724	4.28
3 1/2"	1	93516A726	5.93
4"	1	93516A728	7.45
***3/4"-10—**Head: Wd. 1 1/8"; Ht. 15/32"*			
1 1/2"	1	93516A780	13.08
2"	1	93516A782	15.48

Brass

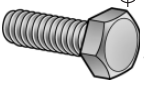

Fully Threaded♣

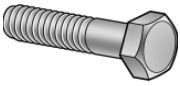

Partially Threaded

Often selected for their attractive gold tone, our brass cap screws are non-magnetic and corrosion resistant. They have a Class 2A thread fit, minimum Rockwell hardness of B55, and minimum tensile strength of 55,000 psi. Screw length is measured from under the head.

Lg.	Pkg. Qty.		Per Pkg.
***1/4"-20**—Head: Wd. 7/16"; Ht. 5/32"*			
3/8"	25	92941A535♣	$8.33
1/2"	25	92941A537♣	9.32
5/8"	25	92941A539♣	10.26
3/4"	25	92941A540♣	11.06
7/8"	25	92941A541♣	11.78
1"	25	92941A542♣	12.52
1 1/4"	10	92941A544	6.62
1 1/2"	10	92941A546	7.96
1 3/4"	10	92941A548	8.61
2"	10	92941A550	9.28
2 1/4"	10	92941A551	10.66
2 1/2"	10	92941A552	10.79
3"	10	92941A554	11.72
***1/4"-28**—Head: Wd. 7/16"; Ht. 5/32"*			
1/2"	10	92941A560♣	5.56
3/4"	10	92941A562♣	6.28
1"	10	92941A564♣	6.66
1 1/2"	10	92941A566	8.52

Lg.	Pkg. Qty.		Per Pkg.
***5/16"-18**—Head: Wd. 1/2"; Ht. 13/64"*			
1/2"	10	92941A578♣	$6.38
5/8"	10	92941A580♣	7.07
3/4"	10	92941A581♣	7.87
7/8"	10	92941A582♣	7.75
1"	10	92941A583♣	7.89
1 1/4"	10	92941A585♣	9.08
1 1/2"	10	92941A587	9.73
1 3/4"	10	92941A589	13.41
2"	10	92941A591	14.28
2 1/2"	5	92941A593	8.39
3"	5	92941A595	10.71
4"	5	92941A598	11.78
***3/8"-16**—Head: Wd. 9/16"; Ht. 15/64"*			
1/2"	10	92941A619♣	8.15
5/8"	10	92941A620♣	9.99
3/4"	10	92941A622♣	10.59
7/8"	10	92941A623♣	10.51
1"	10	92941A624♣	12.24
1 1/4"	10	92941A626♣	14.28
1 1/2"	5	92941A628	8.16

Lg.	Pkg. Qty.		Per Pkg.
3/8"-16 (Cont.)			
1 3/4"	5	92941A630	$8.91
2"	5	92941A632	10.17
2 1/4"	1	92941A633	2.24
2 1/2"	5	92941A634	12.91
3"	5	92941A636	14.04
3 1/2"	1	92941A638	2.85
4"	1	92941A640	3.43
***7/16"-14**—Head: Wd. 5/8"; Ht. 9/32"*			
1"	5	92941A669♣	9.04
1 1/2"	5	92941A671♣	10.55
2"	5	92941A677	14.95
***1/2"-13**—Head: Wd. 3/4"; Ht. 5/16"*			
3/4"	5	92941A710♣	10.31
1"	5	92941A712♣	11.76
1 1/4"	5	92941A714♣	13.35
1 1/2"	1	92941A716♣	3.18
1 3/4"	1	92941A718♣	3.52
2"	1	92941A720	3.65
2 1/4"	1	92941A721	3.51
2 1/2"	1	92941A722	3.78

Lg.	Pkg. Qty.		Per Pkg.
1/2"-13 (Cont.)			
3"	1	92941A724	$4.24
3 1/2"	1	92941A726	5.27
4"	1	92941A728	5.83
***5/8"-11**—Head: Wd. 15/16"; Ht. 25/64"*			
1"	1	92941A795♣	4.02
1 1/2"	1	92941A798♣	4.57
1 3/4"	1	92941A801♣	4.77
2"	1	92941A802♣	5.01
2 1/2"	1	92941A804	5.45
3"	1	92941A806	6.57
3 1/2"	1	92941A808	7.34
4"	1	92941A810	8.17
***3/4"-10**—Head: Wd. 1 1/8"; Ht. 15/32"*			
1 1/2"	1	92941A839♣	9.57
1 3/4"	1	92941A841♣	12.72
2"	1	92941A843♣	12.75
2 1/2"	1	92941A845●	11.80
3"	1	92941A847●	12.81
4"	1	92941A851●	13.87

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3134 for more thread length information.
● Minimum thread length is 1 3/4" up to fully threaded.

Plastic

Fully Threaded♣

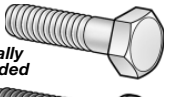

Partially Threaded

Fully Threaded♣ with Flange

Plastic cap screws resist chemicals and corrosion better than most of their metal counterparts. They're nonconductive and not rated for hardness or tensile strength. All have a Class 2A thread fit. Screw length is measured from under the head (or flange where applicable). Fully threaded screws are also known as tap bolts.

Nylon 6/6—An economical choice, nylon 6/6 screws resist aromatic, chlorinated, and ketone solvents; gasoline; oil; grease; and both animal and vegetable oils. They're reliable at temperatures from –40° to +185° F. *Note:* Nylon absorbs moisture, which can affect dimensions and other properties. **To Order:** Please specify color: black or off-white.

PVC—Resistant to corrosion caused by weak acids, alkalies, and alcohols, PVC screws withstand temperatures up to 120° F. Color is gray.

Fiberglass—Made from polyurethane reinforced with glass fiber, these screws are stronger than nylon screws. They tolerate corrosive environments, chemical exposure, and temperatures from –40° to +150° F. Screws *with flange* provide better grip thanks to the extra bearing surface the flange provides. All fiberglass screws are gray.

Also Available: PTFE screws in sizes marked with a ■. Fully threaded. Reliable at temperatures from –100° to +500° F. Color is white. Please ask for 91297A520 and specify thread size and screw length.

Nylon 6/6

Lg.	Pkg. Qty.		Per Pkg.
***1/4"-20**—Head: Wd. 7/16"; Ht. 3/16"*			
3/8"	100	91244A135♣	$11.72
1/2"	100	91244A137♣■	11.89
3/4"	100	91244A140♣■	12.08
1"	100	91244A142♣■	12.27
1 1/4"	100	91244A144	12.45
1 1/2"	100	91244A146	12.62
2"	100	91244A150	12.99
***5/16"-18**—Head: Wd. 1/2"; Ht. 15/64"*			
1/2"	50	91244A179♣	10.70
3/4"	50	91244A181♣■	10.85
1"	50	91244A183♣■	11.00
1 1/4"	25	91244A185	5.97
1 1/2"	25	91244A187■	6.06
2"	25	91244A191	6.75
2 1/2"	25	91244A193	6.94
3"	25	91244A195	7.24
***3/8"-16**—Head: Wd. 9/16"; Ht. 17/64"*			
1/2"	25	91244A220♣	6.09
3/4"	25	91244A221♣	4.93

Lg.	Pkg. Qty.		Per Pkg.
3/8"-16 (Cont.)			
1"	25	91244A224♣■	$5.73
1 1/4"	50	91244A226	12.72
1 1/2"	25	91244A228■	7.13
2"	25	91244A232■	8.31
2 1/2"	25	91244A234■	9.06
3"	25	91244A238	9.44
***1/2"-13**—Head: Wd. 3/4"; Ht. 23/64"*			
1/2"	10	91244A308♣	4.88
3/4"	10	91244A310♣	5.02
1"	10	91244A312♣	5.15
1 1/4"	10	91244A314♣	5.28
1 1/2"	10	91244A316	5.42
2"	10	91244A320	5.69
2 1/2"	10	91244A322	5.76
3"	10	91244A324	6.82
***5/8"-11**—Head: Wd. 15/16"; Ht. 7/16"*			
1/2"	10	91244A351♣	5.66
1"	10	91244A353♣	6.00
2"	10	91244A355	6.81

PVC

Lg.	Pkg. Qty.		Per Pkg.
***1/4"-20**—Head: Wd. 7/16"; Ht. 15/64"*			
1/2"	10	95841A538♣	10.45
3/4"	10	95841A540♣	11.50
1"	5	95841A542♣	5.92
1 1/2"	5	95841A546	8.36
2"	5	95841A550	9.23
3"	1	95841A554	4.88
***5/16"-18**—Head: Wd. 1/2"; Ht. 9/32"*			
1"	10	95841A583♣	14.64
1 1/4"	5	95841A585	9.55
1 1/2"	5	95841A587	10.91
2"	5	95841A589	14.09
***3/8"-16**—Head: Wd. 9/16"; Ht. 5/16"*			
1/2"	10	95841A623♣	14.24
1"	5	95841A624♣	8.89
1 1/4"	5	95841A626	10.61

Lg.	Pkg. Qty.		Per Pkg.
3/8"-16 (Cont.)			
1 1/2"	5	95841A628	10.80
2"	5	95841A632	14.98
3"	1	95841A636	5.40
***1/2"-13**—Head: Wd. 3/4"; Ht. 13/32"*			
1"	1	95841A712♣	3.65
1 1/2"	1	95841A716♥	4.22
2"	1	95841A720	5.36
3"	1	95841A724	7.12
4"	1	95841A726	16.53
***5/8"-11**—Head: Wd. 7/8"; Ht. 31/64"*			
1 1/2"	1	95841A800♣	7.39
2"	1	95841A802	8.82
3"	1	95841A806	8.73
4"	1	95841A810	18.73

Fiberglass

Lg.	Pkg. Qty.		Per Pkg.
***1/4"-20**—Head: Wd. 7/16"; Ht. 13/64"*			
1/2"	10	91345A552♣	$8.40
3/4"	10	91345A554♣	9.08
1"	10	91345A556♣	9.56
1 1/4"	10	91345A558♣	9.84
1 1/2"	10	91345A560♣	11.50
***5/16"-18**—Head: Wd. 1/2"; Ht. 7/32"*			
1 1/2"	10	91345A582	9.84
2"	10	91345A584★	12.52
***3/8"-16**—Head: Wd. 9/16"; Ht. 1/4"*			
1 1/2"	10	91345A628♣	9.84
2"	10	91345A632★	12.52
2 1/2"	10	91345A634★	13.40
3"	10	91345A636★	14.95

Lg.	Pkg. Qty.		Per Pkg.
***5/8"-11**—Head: Wd. 15/16"; Ht. 13/32"*			
1 1/2"	5	91345A640♣	$8.72
2"	5	91345A642♣	9.51
2 1/2"	5	91345A644♣	11.10
3"	5	91345A646♣	11.10
3 1/2"	5	91345A648♦	13.23
4"	1	91345A650♦	2.77
5"	1	91345A655♦	6.73
***3/4"-10**—Head: Wd. 1 1/8"; Ht. 15/32"*			
1 1/2"	1	91345A660♣	2.38
2"	1	91345A662♣	2.88
2 1/2"	1	91345A664♣	3.28
3"	1	91345A666♣	3.60
4"	1	91345A670♦	4.03
5"	1	91345A675♦	6.06

Fiberglass with Flange

Lg.	Pkg. Qty.		Per Pkg.
***1/4"-20**—Head: Wd. 3/8"; Ht. 9/32"*			
Flange Dia.: 0.560"			
1/2"	10	91345A680♣	8.60
5/8"	10	91345A682♣	9.44
3/4"	10	91345A684♣	9.96
7/8"	10	91345A686♣	9.50
1"	10	91345A688♣	9.96
1 1/4"	10	91345A690♣	10.94
1 1/2"	10	91345A692♣	11.40
***3/8"-16**—Head: Wd. 9/16"; Ht. 25/64"*			
Flange Dia.: 0.800"			
1/2"	10	91345A694♣	8.20
3/4"	10	91345A698♣	8.16
7/8"	10	91345A699♣	9.41
1"	10	91345A700♣	9.96
1 1/4"	10	91345A701♣	10.28

Lg.	Pkg. Qty.		Per Pkg.
3/8"-16 (Cont.)			
1 1/2"	10	91345A702♣	11.71
2"	10	91345A703★	12.87
2 1/2"	5	91345A704★	8.20
3"	5	91345A705★	8.88
***1/2"-13**—Head: Wd. 3/4"; Ht. 1/2"*			
Flange Dia.: 1.059"			
3/4"	10	91345A706♣	9.02
1"	10	91345A707♣	9.96
1 1/4"	10	91345A714♣	11.16
1 1/2"	5	91345A716♣	6.26
2"	5	91345A720♣	8.16
2 1/2"	5	91345A722♣	8.95
3"	5	91345A724♦	11.77
3 1/2"	1	91345A726♦	2.88
4"	1	91345A728★	3.36

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See pg. 3134 for more thread information.
♥ Minimum thread length is 1". ★ Minimum thread length is 1 1/2".
♦ Minimum thread length is 2 1/4".

For information about thread lengths and head dimensions, see page 3134. For nuts, see pages 3186-3216.

Extreme-Strength 12-Point Flange-Head—Alloy Steel and Stainless Steel

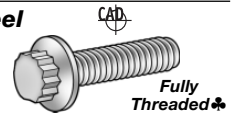

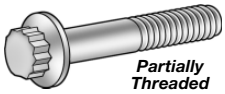

Stronger than Grade 8 steel, these cap screws have a 12-point drive that provides more driver contact than a hex head—so they can handle more torque. To install, use a 12-point wrench that matches the head width of your screw. All have a plain finish and Class 3A thread fit. Head height includes the thickness of the flange. Screw length is measured from under the flange.

For 12-point wrenches, see pages 2774-2775; for 12-point sockets, see pages 2790, 2795, and 2801.

Alloy Steel—Screws meet ASTM A574; dimensions meet IFI-115. Sizes through 1/2″-20 have a min. Rockwell hardness of C39 and min. tensile strength of 180,000 psi; larger sizes have a min. Rockwell hardness of C37 and min. tensile strength of 170,000 psi.

Stainless Steel—Screws up to 1″ long are made from Type 304 stainless steel; those longer than 1″ are made from Type 450 stainless steel. Minimum Rockwell hardness is C38 and minimum tensile strength is 170,000 psi. Unless noted, 1/4″-20 to 5/16″-24 screws have a 1″ thread length and 3/8″-16 to 3/8″-24 screws have a 1 1/8″ thread length.

Alloy Steel

Lg.	Pkg. Qty.		Per Pkg.
1/4″-20—*Flange Dia.: 3/8″ Head Wd./Ht.: 1/4″*			
1/2″	50	**91271A537♣**	$8.04
5/8″	50	**91271A539♣**	10.57
3/4″	50	**91271A540♣**	9.27
7/8″	50	**91271A541♣**	8.77
1″	50	**91271A542♣**	8.27
1 1/4″	50	**91271A544♣**	9.16
1 1/2″	50	**91271A546**	10.19
1 3/4″	25	**91271A547**	6.70
2″	25	**91271A550**	7.29
2 1/2″	25	**91271A548**	14.75
3″	25	**91271A558**	12.94
1/4″-28—*Flange Dia.: 3/8″ Head Wd./Ht.: 1/4″*			
3/4″	50	**91271A570♣**	10.31
1″	50	**91271A572♣**	10.02
1 1/4″	50	**91271A573♣**	10.11
1 1/2″	50	**91271A574**	13.61
1 3/4″	25	**91271A575**	10.50
5/16″-18—*Flange Dia.: 15/32″ Head Wd./Ht.: 5/16″*			
1/2″	25	**91271A580♣**	5.49
3/4″	50	**91271A581♣**	10.33
7/8″	50	**91271A584♣**	11.08
1″	50	**91271A583♣**	13.86
1 1/4″	50	**91271A585♣**	13.94
1 1/2″	25	**91271A587♣**	8.16
1 3/4″	25	**91271A589**	8.53
5/16″-18 (Cont.)			
2″	25	**91271A591**	$10.15
2 1/2″	25	**91271A593**	8.81
5/16″-24—*Flange Dia.: 15/32″ Head Wd./Ht.: 5/16″*			
3/4″	25	**91271A605♣**	6.56
7/8″	25	**91271A606♣**	8.26
1″	25	**91271A607♣**	7.43
1 1/4″	25	**91271A609♣**	8.51
1 1/2″	25	**91271A611♣**	8.69
2″	25	**91271A613**	11.20
3/8″-16—*Flange Dia.: 9/16″ Head Wd./Ht.: 3/8″*			
3/4″	25	**91271A622♣**	10.53
7/8″	10	**91271A623♣**	8.50
1″	25	**91271A624♣**	10.80
1 1/4″	25	**91271A626♣**	11.55
1 1/2″	25	**91271A628♣**	12.57
1 3/4″	25	**91271A630**	13.35
2″	25	**91271A632**	13.18
2 1/4″	10	**91271A633**	6.64
2 1/2″	10	**91271A634**	6.93
3″	10	**91271A636**	7.49
3 1/2″	10	**91271A638**	7.55
3/8″-24—*Flange Dia.: 9/16″ Head Wd./Ht.: 3/8″*			
1″	25	**91271A641♣**	12.20
1 1/4″	25	**91271A644♣**	11.40
1 1/2″	25	**91271A646♣**	12.13
3/8″-24 (Cont.)			
1 3/4″	25	**91271A647**	$14.69
2″	10	**91271A648**	6.08
2 1/2″	10	**91271A650**	7.82
7/16″-14—*Flange Dia.: 21/32″ Head Wd./Ht.: 7/16″*			
1 1/4″	10	**91271A671♣**	9.87
1 1/2″	10	**91271A673♣**	8.46
2″	10	**91271A677**	10.44
2 1/4″	10	**91271A678**	10.90
2 1/2″	10	**91271A679**	11.30
1/2″-13—*Flange Dia.: 3/4″ Head Wd./Ht.: 1/2″*			
1″	10	**91271A712♣**	10.05
1 1/4″	10	**91271A714♣**	8.82
1 1/2″	10	**91271A716♣**	9.42
1 3/4″	10	**91271A718♣**	11.90
2″	10	**91271A720♣**	10.56
2 1/4″	5	**91271A721**	5.71
2 1/2″	5	**91271A723**	5.99
3″	5	**91271A724**	5.94
3 1/2″	5	**91271A726**	7.92
4″	5	**91271A728**	7.47
5″	5	**91271A732**	10.90
1/2″-20—*Flange Dia.: 3/4″ Head Wd./Ht.: 1/2″*			
1″	10	**91271A758♣**	9.90
1 1/4″	10	**91271A759♣**	10.85
1 1/2″	10	**91271A760♣**	11.04
1/2″-20 (Cont.)			
1 3/4″	5	**91271A761♣**	$5.62
2″	5	**91271A765♣**	6.21
2 1/4″	5	**91271A767**	7.53
2 1/2″	5	**91271A770**	6.65
5/8″-11—*Flange Dia.: 15/16″ Head Wd./Ht.: 5/8″*			
1 1/4″	5	**91271A798♣**	7.41
1 1/2″	5	**91271A799♣**	7.15
1 3/4″	5	**91271A800♣**	7.16
2″	5	**91271A802♣**	7.18
2 1/4″	5	**91271A803♣**	7.92
2 1/2″	5	**91271A804**	8.55
2 3/4″	5	**91271A805**	8.00
3″	5	**91271A806**	9.19
3 1/2″	5	**91271A808**	9.64
4″	5	**91271A810**	12.71
5/8″-18—*Flange Dia.: 15/16″ Head Wd./Ht.: 5/8″*			
1 1/2″	5	**91271A818♣**	7.24
2″	5	**91271A820♣**	9.21
3/4″-10—*Flange Dia.: 1 1/8″ Head Wd./Ht.: 3/4″*			
1 1/2″	5	**91271A841♣**	11.63
2″	5	**91271A843♣**	14.11
2 1/2″	1	**91271A845♣**	3.21
3″	1	**91271A847**	3.04
3 1/2″	1	**91271A849**	3.35
4″	1	**91271A851**	3.68

Stainless Steel

Lg.		Each
1/4″-20—*Flange Dia.: 33/64″ Head: Wd. 5/16″; Ht. 1/4″*		
1/2″	**96242A502♣**	$1.80
3/4″	**96242A506♣**	1.90
1″	**96242A509♣**	2.08
1 1/4″	**96242A513**	2.10
1 1/2″	**96242A521**	2.92
1 3/4″	**96242A528**	2.98
2″	**96242A536**	3.02
2 1/4″	**96242A543**	3.10
2 1/2″	**96242A551**	3.16
2 3/4″	**96242A558**	3.22
3″	**96242A566**	3.26
1/4″-28—*Flange Dia.: 33/64″ Head: Wd. 5/16″; Ht. 1/4″*		
1 1/4″	**96242A573**	2.10
1 1/2″	**96242A581**	2.92
1/4″-28 (Cont.)		
1 3/4″	**96242A588**	$2.98
2″	**96242A596**	3.02
2 1/4″	**96242A603**	3.10
2 1/2″	**96242A611**	3.16
2 3/4″	**96242A618**	3.22
3″	**96242A626**	3.26
5/16″-18—*Flange Dia.: 5/8″ Head: Wd. 3/8″; Ht. 5/16″*		
9/16″	**96242A630♣**	2.00
3/4″	**96242A631♣**	2.10
1″	**96242A632♣**	2.26
1 1/2″	**96242A633**	3.28
1 3/4″	**96242A641**	3.46
2″	**96242A648**	3.60
2 1/4″	**96242A656**	3.76
2 1/2″	**96242A663**	3.84
5/16″-18 (Cont.)		
2 3/4″	**96242A671**	$3.90
3″	**96242A678**	4.02
5/16″-24—*Flange Dia.: 5/8″ Head: Wd. 3/8″; Ht. 5/16″*		
1 1/2″	**96242A686**	3.28
1 3/4″	**96242A693**	3.46
2″	**96242A701**	3.60
2 1/4″	**96242A708**	3.76
2 1/2″	**96242A716**	3.84
2 3/4″	**96242A723**	3.90
3″	**96242A731**	4.02
3/8″-16—*Flange Dia.: 5/8″ Head: Wd. 3/8″; Ht. 5/16″*		
1/2″	**96242A734♣**	2.22
3/4″	**96242A735♣**	2.34
1″	**96242A736♣**	2.50
3/8″-16 (Cont.)		
1 1/2″	**96242A738**	$3.64
1 3/4″	**96242A746**	3.82
2″	**96242A753**	3.98
2 1/4″	**96242A761**	4.12
2 1/2″	**96242A768**	4.18
2 3/4″	**96242A776**	4.44
3″	**96242A783**	4.58
3/8″-24—*Flange Dia.: 5/8″ Head: Wd. 3/8″; Ht. 5/16″*		
1 1/2″	**96242A791**	3.64
1 3/4″	**96242A798**	3.82
2″	**96242A806**	3.98
2 1/4″	**96242A813**	4.12
2 1/2″	**96242A821**	4.18
2 3/4″	**96242A828**	4.44
3″	**96242A836**	4.58

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See page 3134 for more thread length information; for alloy steel screws, add 1/4″ to the thread lengths listed.

Metric Maintenance Assortments

Two great 7,060-piece assortments—one in steel and one in 18-8 stainless steel. Furnished in a metal, 11 1/4″ Ht.× 15 1/4″ Wd.×11 3/4″ Dp. four-drawer cabinet. Drawers are 2″ Ht.×13 3/8″ Wd.×9 1/4″ Dp.; each has a lid chart. Pieces in the steel assortment are zinc-plated, except the DIN 916 and DIN 912 pieces which have a black finish.

- **Set Screws—DIN 916:** 10 each: M4×4, 6; M5×5, 8; M6×6, 8.
- **Machine Screws—DIN 7985:** 50 each: M3×5, 8, 10, 16; M4×5, 10, 16, 20, 25; M5×10, 16, 20. 25 each: M5×25; M6×10, 16, 20, 25, 30.
- **Socket Head Cap Screws—DIN 912:** 50 each: M4×16, 20, 25; M5×20, 25, 30. 25 each: M5×35, M6×20, 25, 30, 35, 40. 15 each: M8×16, 20, 25, 30. 10 each: M10×16, 20, 25, 30. 5 each: M12×20, 25, 30, 60.
- **Hex Head Cap Screws—DIN 933:** 50 each: M4×10, 16, 20; M5×16, 20, 25. 25 each: M6×16, 20, 25, 30, 35, 40. 15 each: M8×16, 20, 25, 30, 35. 10 each: M10×16, 20, 25, 35. 5 each: M12×20, 30, 60.
- **Flat Washers—DIN 125:** 500 each: M4. 300 each: M5. 200 each: M6. 100 each: M8. 75 each: M10. 50 each: M12.
- **Lock Washers—DIN 127:** 500 each: M3. 400 each: M4. 300 each: M5. 200 each: M6. 100 each: M8. 50 each: M10, M12.
- **Spring Washers—DIN 137:** 200 each: M4, M5, M6, M8.
- **Hex Nuts—DIN 934:** 500 each: M3, M4. 300 each: M5. 50 each: M6, M8, M10. 25 each: M12.

Steel ..... **91284A214** **Each** $692.86
18-8 Stainless Steel ..... **91284A376** **Each** $995.00

Metric Hex Head Cap Screw Thread Lengths and Head Dimensions

Screw Size	M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M20	M24	M30
Minimum Thread Lg., mm	Fully	14	16	18	20	22	26	30	34	38	46	54	Fully
Maximum Thread Lg., mm	Fully	17.6	20	23	25	28.3	33.5	38.8	44	48	58.5	69	Fully

Metric High-Strength Steel—Class 10.9

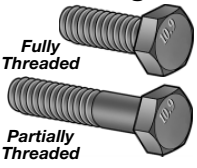

Made from steel that's comparable to Grade 8 steel, these screws come with your choice of a black finish or high-visibility blue coating. All have a Class 6g thread fit and are marked on the head with 10.9. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

Black finish screws have a minimum Rockwell hardness of C32 and minimum tensile strength of 150,000 psi.

High-visibility blue screws have a minimum Rockwell hardness of C33 and minimum tensile strength of 150,800 psi. Fully threaded screws meet DIN 933; partially threaded screws meet DIN 931.

Also Available: Class 10.9 steel screws with a zinc yellow-chromate plating. They have a Class 6h thread fit and minimum tensile strength of 150,000 psi. Please ask for 90854A113 for fully threaded DIN 933 screws and 95327A501 for partially threaded DIN 931 screws; then specify screw size and length.

Black Finish—DIN 933; Fully Threaded

Lg., mm	Pkg. Qty.		Per Pkg.
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 4 mm			
12	50	91310A330	$9.23
16	50	91310A332	8.79
20	50	91310A333	9.26
25	50	91310A335	9.14
30	50	91310A338	9.19
35	50	91310A341	10.99
40	25	91310A342	6.60
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
16	50	91310A530	10.69
20	50	91310A533	12.05
25	50	91310A535	13.17
30	50	91310A536	14.20
35	25	91310A539	8.45
40	25	91310A541	9.73
50	25	91310A543	11.50
60	25	91310A545	14.24
M10—Pitch: 1.5 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
16	25	91310A620	$10.27
20	25	91310A623	10.08
25	25	91310A626	11.10
30	10	91310A630	5.73
35	10	91310A633	6.10
40	10	91310A635	6.92
45	10	91310A637	7.54
50	10	91310A639	7.36
60	10	91310A641	9.34
M12—Pitch: 1.75 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
20	25	91310A706	12.45
25	25	91310A709	13.71
30	10	91310A712	6.35
35	10	91310A715	7.46
40	10	91310A718	8.69
50	10	91310A727	10.53
60	10	91310A725	11.91
M14—Pitch: 2 mm			
Head: Wd. 22 mm; Ht. 8.8 mm			
25	10	91310A760	$9.56
30	10	91310A762	10.33
35	10	91310A764	9.93
40	10	91310A766	10.73
45	10	91310A768	11.25
M16—Pitch: 2 mm			
Head: Wd. 24 mm; Ht. 10 mm			
30	10	91310A830	12.82
35	5	91310A833	7.96
40	5	91310A836	8.04
45	5	91310A839	8.49
50	5	91310A842	9.16
60	5	91310A845	11.74
M20—Pitch: 2.5 mm			
Head: Wd. 30 mm; Ht. 12.5 mm			
40	5	91310A870	12.50
45	5	91310A873	12.80
M20 (Cont.)			
50	5	91310A876	$13.57
60	1	91310A879	3.12
70	1	91310A881	4.43
M24—Pitch: 3 mm			
Head: Wd. 36 mm; Ht. 15 mm			
40	1	91310A403	4.44
50	1	91310A406	4.47
60	1	91310A409	4.66
65	1	91310A412	4.31
70	1	91310A415	5.46
M30—Pitch: 3.5 mm			
Head: Wd. 46 mm; Ht. 18.7 mm			
70	1	91310A425	23.38
80	1	91310A427	27.78
90	1	91310A429	27.87
100	1	91310A431	27.76

Black Finish—DIN 931; Partially Threaded

Lg., mm	Pkg. Qty.		Per Pkg.
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 4 mm			
25	100	91310A334	9.97
30	50	91310A438	8.71
40	50	91310A442	8.83
45	50	91310A444	9.75
50	50	91310A446	9.74
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
30	25	91310A538	9.41
40	25	91310A542	6.78
45	25	91310A544	8.26
50	25	91310A546	7.15
55	25	91310A548	10.35
60	25	91310A550	10.35
70	25	91310A554	10.47
75	10	91310A556	7.60
80	25	91310A558	12.90
90	10	91310A562	7.47
100	10	91310A566	8.51
M10—Pitch: 1.5 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
35	25	91310A636	10.48
40	25	91310A638	8.87
45	10	91310A640	7.09
50	10	91310A642	6.90
60	10	91310A646	6.47
65	10	91310A648	8.79
70	10	91310A650	7.19
75	10	91310A653	10.44
80	10	91310A654	11.19
90	10	91310A655	10.05
100	10	91310A658	10.35
110	5	91310A662	6.27
120	5	91310A665	6.31
M12—Pitch: 1.75 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
40	10	91310A720	6.88
45	10	91310A722	7.02
50	10	91310A724	6.42
55	10	91310A726	11.16
M12 (Cont.)			
60	10	91310A728	8.49
65	10	91310A730	9.33
70	10	91310A732	9.00
80	10	91310A736	9.78
90	5	91310A740	7.00
100	5	91310A742	5.85
110	5	91310A746	6.99
120	5	91310A750	7.89
M14—Pitch: 2 mm			
Head: Wd. 22 mm; Ht. 8.8 mm			
50	5	91310A786	7.96
60	5	91310A788	6.85
70	5	91310A790	8.91
80	5	91310A792	9.53
90	5	91310A794	8.07
100	5	91310A796	11.79
M16—Pitch: 2 mm			
Head: Wd. 24 mm; Ht. 10 mm			
50	5	91310A844	7.71
55	5	91310A846	7.01
60	5	91310A848	6.86
M16 (Cont.)			
70	5	91310A852	7.47
75	1	91310A853	2.69
80	5	91310A856	8.41
100	5	91310A860	10.36
110	5	91310A864	11.06
120	5	91310A868	11.62
M20—Pitch: 2.5 mm			
Head: Wd. 30 mm; Ht. 12.5 mm			
70	5	91310A889	13.93
80	1	91310A956	3.02
90	1	91310A957	3.07
100	1	91310A958	3.04
110	1	91310A960	3.72
120	1	91310A964	4.18
M24—Pitch: 3 mm			
Head: Wd. 36 mm; Ht. 15 mm			
80	1	91310A417	5.70
90	1	91310A419	5.99
100	1	91310A421	6.66
120	1	91310A422	7.48

High-Visibility Blue

Lg., mm	Pkg. Qty.		Per Pkg.
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 4 mm			
16	50	95430A317♣	10.65
20	50	95430A321♣	10.05
25	50	95430A323♣	10.40
30	50	95430A325	9.87
35	25	95430A327	8.74
40	50	95430A329	11.46
50	50	95430A331	13.76
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
16	25	95430A353♣	7.68
20	25	95430A357♣	8.60
25	50	95430A362♣	14.19
30	50	95430A364♣	11.18
35	25	95430A365	10.44
40	25	95430A366	9.70
50	25	95430A368	10.76
60	25	95430A370	11.67
70	25	95430A372	13.30
80	10	95430A374	9.88
M10—Pitch: 1.5 mm			
Head: Wd. 16 mm; Ht. 6.4 mm			
20	10	95430A382♣	4.80
25	10	95430A383♣	4.87
30	10	95430A384♣	5.03
35	25	95430A385♣	12.70
40	25	95430A387	13.85
50	10	95430A389	6.41
60	10	95430A391	7.12
70	10	95430A393	8.04
75	10	95430A394	8.26
80	10	95430A395	9.03
90	10	95430A396	9.21
100	10	95430A397	12.00
120	5	95430A399	7.66
M12—Pitch: 1.75 mm			
Head: Wd. 18 mm; Ht. 7.5 mm			
20	10	95430A408♣	6.00
25	10	95430A409♣	9.01
30	10	95430A410♣	9.62
35	10	95430A411♣	7.52
M12 (Cont.)			
40	10	95430A413♣	8.30
45	10	95430A415♣	11.46
50	10	95430A416	10.90
60	10	95430A418	12.99
70	10	95430A421	14.11
80	5	95430A423	7.72
90	5	95430A425	8.51
100	5	95430A427	9.60
110	1	95430A429	2.70
120	5	95430A432	11.45
M16—Pitch: 2 mm			
Head: Wd. 24 mm; Ht. 10 mm			
30	5	95430A446♣	11.11
35	5	95430A451♣	11.26
40	5	95430A456♣	11.31
45	5	95430A461♣	10.58
50	5	95430A466♣	10.62
60	5	95430A468	10.92
70	5	95430A471	11.99
80	5	95430A473	13.10
M16 (Cont.)			
100	1	95430A476	3.19
120	1	95430A478	3.64
140	1	95430A482	4.42
M20—Pitch: 2.5 mm			
Head: Wd. 30 mm; Ht. 12.5 mm			
60	1	95430A523♣	3.23
70	1	95430A533	4.17
80	1	95430A535	4.50
90	1	95430A537	4.87
100	1	95430A539	5.19
120	1	95430A542	5.94
140	1	95430A544	7.10
M24—Pitch: 3 mm			
Head: Wd. 36 mm; Ht. 15 mm			
80	1	95430A560	8.00
90	1	95430A563	9.08
100	1	95430A565	9.41
120	1	95430A568	12.64
140	1	95430A571	14.07
150	1	95430A574	15.37

♣ Fully threaded. For all other sizes, manufacturing standards allow thread length to vary. See top of page for more thread length information.

Metric Medium-Strength Steel—Class 8.8

Made from zinc-plated, heat-treated steel that's comparable to Grade 5 steel. All have a Class 6h thread fit. Sizes M6 and larger are marked on the head with 8.8. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

Sizes through M16 have a minimum Rockwell hardness of C21 and minimum tensile strength of 116,000 psi; larger sizes have a minimum Rockwell hardness of C23 and minimum tensile strength of 120,000 psi.

Also Available: Self-locking Class 8.8 steel screws in sizes marked with a ♦. Each has a locking patch that withstands temperatures from –58° to +392° F. Screws meet DIN 933 and have a minimum tensile strength of 116,000 psi. Please ask for 96755A880 and specify thread size and screw length.

Fully Threaded

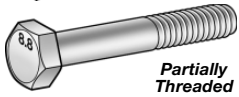

Partially Threaded

Fully Threaded—DIN 933

M3—Pitch: 0.5 mm
Head: Wd. 5.5 mm; Ht. 2 mm

Lg., mm	Pkg. Qty.		Per Pkg.
8	100	91280A104	$7.08
10	100	91280A106	7.31
12	100	91280A108	7.96
16	100	91280A112	8.89
20	100	91280A116	9.08
25	100	91280A121	9.73

M4—Pitch: 0.7 mm
Head: Wd. 7 mm; Ht. 2.8 mm

Lg., mm	Pkg. Qty.		Per Pkg.
6	100	91280A127	5.56
8	100	91280A128	5.76
10	100	91280A132	4.96
12	100	91280A134	5.88
16	100	91280A136	6.00
20	100	91280A140	6.52
25	100	91280A144	7.32
30	100	91280A148	7.44
35	100	91280A150	8.25
40	100	91280A152	9.43

M5—Pitch: 0.8 mm
Head: Wd. 8 mm; Ht. 3.5 mm

Lg., mm	Pkg. Qty.		Per Pkg.
6	100	91280A221	8.50
8	100	91280A223	8.51
10	100	91280A222 ♦	8.08
12	100	91280A224	7.71
14	100	91280A225	8.62
16	100	91280A226 ♦	9.09
20	100	91280A230	9.88
22	100	91280A232	9.03
25	100	91280A234	10.59
30	100	91280A238	12.65
35	100	91280A240	14.23
40	50	91280A242	8.21
45	50	91280A244	8.41
50	50	91280A246	10.47
60	25	91280A248	6.49

M6—Pitch: 1 mm
Head: Wd. 10 mm; Ht. 4 mm

Lg., mm	Pkg. Qty.		Per Pkg.
8	100	91280A321	$11.86
10	100	91280A322	4.08
12	100	91280A324	5.52
14	100	91280A325	6.62
16	100	91280A326 ♦	9.09
18	100	91280A328	13.75
20	100	91280A330 ♦	10.28
22	100	91280A332	10.86
25	100	91280A334 ♦	10.74
30	100	91280A338	12.77
35	50	91280A340	8.01
40	50	91280A342	8.80
45	50	91280A344	7.38
50	50	91280A346	6.95
60	50	91280A349	10.19
65	10	91280A361	3.02
70	50	91280A366	14.20

M7—Pitch: 1 mm
Head: Wd. 11 mm; Ht. 4.8 mm

Lg., mm	Pkg. Qty.		Per Pkg.
12	25	91280A410	7.11
16	25	91280A412	6.01
20	25	91280A414	6.02
25	25	91280A416	6.62
30	25	91280A418	7.21
35	10	91280A421	3.71
40	25	91280A423	8.37
45	25	91280A426	8.89
50	25	91280A429	9.74

M8—Pitch: 1.25 mm
Head: Wd. 13 mm; Ht. 5.3 mm

Lg., mm	Pkg. Qty.		Per Pkg.
10	100	91280A522	14.25
12	50	91280A524	7.91
14	50	91280A525	10.65
16	50	91280A526	10.69
18	50	91280A527	12.15

M8 (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
20	50	91280A530 ♦	$9.72
22	25	91280A532	8.03
25	50	91280A534 ♦	9.86
30	50	91280A538 ♦	10.12
35	50	91280A540 ♦	10.34
40	50	91280A542	12.92
45	50	91280A544	13.84
50	25	91280A546	8.09
60	25	91280A556	10.60

M10—Pitch: 1.5 mm
Head: Wd. 17 mm; Ht. 6.4 mm

Lg., mm	Pkg. Qty.		Per Pkg.
10	25	91280A616	11.69
12	25	91280A618	8.11
16	25	91280A622	8.84
20	50	91280A626 ♦	13.70
25	25	91280A630 ♦	7.83
30	25	91280A634 ♦	8.20
35	25	91280A636 ♦	8.92
40	25	91280A638	9.38
45	25	91280A640	9.69
50	25	91280A642	10.13

M12—Pitch: 1.75 mm
Head: Wd. 19 mm; Ht. 7.5 mm

Lg., mm	Pkg. Qty.		Per Pkg.
16	25	91280A710	11.21
20	25	91280A712	9.70
25	25	91280A714	9.68
30	25	91280A716	11.22
35	25	91280A718	11.58
40	25	91280A720	11.59
45	25	91280A722	13.16
50	25	91280A724	13.63
55	10	91280A727	9.35
60	10	91280A729	9.95
70	10	91280A733	9.97

M14—Pitch: 2 mm
Head: Wd. 22 mm; Ht. 8.8 mm

Lg., mm	Pkg. Qty.		Per Pkg.
20	10	91280A772	$8.11
25	10	91280A777	6.11
30	10	91280A778	6.46
35	10	91280A780	5.14
40	10	91280A782	8.46
45	10	91280A784	8.36
50	10	91280A786	7.23

M16—Pitch: 2 mm
Head: Wd. 24 mm; Ht. 10 mm

Lg., mm	Pkg. Qty.		Per Pkg.
25	10	91280A837	6.83
30	10	91280A838	6.15
35	10	91280A839	6.30
40	10	91280A840	9.13
45	10	91280A842	7.75
50	10	91280A844	9.61
55	5	91280A845	8.40
60	5	91280A851	8.93
65	5	91280A011	9.90
70	5	91280A012	9.29

M20—Pitch: 2.5 mm
Head: Wd. 30 mm; Ht. 12.5 mm

Lg., mm	Pkg. Qty.		Per Pkg.
30	5	91280A881	7.94
35	5	91280A882	9.56
40	5	91280A883	10.75
45	5	91280A884	10.92
50	1	91280A885	2.38
55	1	91280A886	3.48

M24—Pitch: 3 mm
Head: Wd. 36 mm; Ht. 15 mm

Lg., mm	Pkg. Qty.		Per Pkg.
40	1	91280A918	2.79
50	5	91280A923	14.42
60	1	91280A925	2.96

Partially Threaded—DIN 931

M4—Pitch: 0.7 mm
Head: Wd. 7 mm; Ht. 2.8 mm

Lg., mm	Pkg. Qty.		Per Pkg.
45	25	91280A149	1.57
50	100	91280A154	9.85

M5—Pitch: 0.8 mm
Head: Wd. 8 mm; Ht. 3.5 mm

Lg., mm	Pkg. Qty.		Per Pkg.
65	50	91280A249	13.03
70	25	91280A254	4.67
80	25	91280A264	4.99

M6—Pitch: 1 mm
Head: Wd. 10 mm; Ht. 4 mm

Lg., mm	Pkg. Qty.		Per Pkg.
55	50	91280A348	8.84
60	25	91280A350	5.28
65	25	91280A351	8.71
70	25	91280A352	5.03
80	25	91280A354	8.13
90	50	91280A356	14.24
100	25	91280A358	9.10
110	10	91280A368	4.07

M8—Pitch: 1.25 mm
Head: Wd. 13 mm; Ht. 5.3 mm

Lg., mm	Pkg. Qty.		Per Pkg.
55	25	91280A548	7.88
60	25	91280A550	8.06
65	25	91280A552	13.98
70	25	91280A554	8.66
75	25	91280A557	10.00
80	25	91280A558	10.18
85	10	91280A559	5.13
90	25	91280A560	13.03
100	25	91280A562	13.17
110	10	91280A565	7.62
120	10	91280A567	10.18
130	10	91280A569	10.54
140	10	91280A571	12.54

M8 (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
150	10	91280A574	10.70
160	10	91280A577	12.76
180	5	91280A580	7.54

M10—Pitch: 1.5 mm
Head: Wd. 17 mm; Ht. 6.4 mm

Lg., mm	Pkg. Qty.		Per Pkg.
55	25	91280A643	11.12
60	25	91280A644	11.77
65	25	91280A648	14.49
70	10	91280A649	7.14
75	10	91280A652	7.10
80	10	91280A654	7.34
90	10	91280A656	7.26
100	10	91280A658	10.29
110	10	91280A660	11.92
120	10	91280A661	12.93
130	5	91280A663	8.12
140	5	91280A666	9.18
150	5	91280A668	9.20
160	5	91280A670	8.05
180	5	91280A674	8.95
200	5	91280A680	6.41

M12—Pitch: 1.75 mm
Head: Wd. 19 mm; Ht. 7.5 mm

Lg., mm	Pkg. Qty.		Per Pkg.
60	10	91280A728	7.50
65	10	91280A730	9.01
70	10	91280A732	9.23
75	10	91280A734	9.53
80	10	91280A735	10.01
90	10	91280A737	11.04
100	10	91280A739	12.82
110	5	91280A740	9.70
120	5	91280A741	7.11
130	5	91280A745	8.95

M12 (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
140	5	91280A747	9.56
160	5	91280A752	9.93
180	5	91280A755	9.74
200	5	91280A758	9.98

M14—Pitch: 2 mm
Head: Wd. 22 mm; Ht. 8.8 mm

Lg., mm	Pkg. Qty.		Per Pkg.
60	10	91280A788	8.80
65	10	91280A789	14.59
70	10	91280A790	11.73
75	5	91280A791	7.58
80	5	91280A792	6.61
90	5	91280A794	7.12
100	5	91280A796	9.10
120	5	91280A798	10.56
130	5	91280A802	12.66
140	5	91280A804	13.25
150	1	91280A806	3.07
160	5	91280A809	11.19
180	5	91280A812	12.14

M16—Pitch: 2 mm
Head: Wd. 24 mm; Ht. 10 mm

Lg., mm	Pkg. Qty.		Per Pkg.
60	10	91280A846	12.09
65	5	91280A847	9.03
70	5	91280A848	4.45
75	5	91280A849	9.92
80	5	91280A850	7.88
90	5	91280A852	6.42
100	5	91280A854	6.38
110	5	91280A856	14.10
120	5	91280A858	11.01
130	5	91280A860	11.54
140	5	91280A862	12.12
150	5	91280A866	14.39

M16 (Cont.)

Lg., mm	Pkg. Qty.		Per Pkg.
160	1	91280A868	3.04
200	1	91280A748	4.88

M20—Pitch: 2.5 mm
Head: Wd. 30 mm; Ht. 12.5 mm

Lg., mm	Pkg. Qty.		Per Pkg.
60	5	91280A887	11.32
65	1	91280A888	3.36
70	5	91280A889	11.85
75	1	91280A971	3.55
80	5	91280A890	12.97
90	5	91280A891	10.41
100	1	91280A892	3.07
110	1	91280A893	5.33
120	1	91280A894	3.44
140	1	91280A896	6.34
150	1	91280A897	3.93
160	1	91280A899	4.92
180	1	91280A902	4.89
200	1	91280A905	5.34

M24—Pitch: 3 mm
Head: Wd. 36 mm; Ht. 15 mm

Lg., mm	Pkg. Qty.		Per Pkg.
70	1	91280A927	4.64
75	1	91280A928	8.07
80	1	91280A929	3.82
90	1	91280A931	4.28
100	1	91280A933	4.69
110	1	91280A015	7.56
120	1	91280A937	4.66
130	1	91280A939	4.79
140	1	91280A941	5.90
150	1	91280A943	5.47
160	1	91280A945	5.87
180	1	91280A948	7.07
200	1	91280A951	8.89

Metric Fine-Thread Medium-Strength Steel—Class 8.8

Fully Threaded

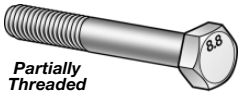

Partially Threaded

With finer threads than comparable hex head cap screws, these screws are perfect for your precision applications. They're made from zinc-plated, heat-treated steel that's comparable to Grade 5 steel. All have a Class 6h thread fit and are marked on the head with 8.8. They have a minimum Rockwell hardness of C22 and minimum tensile strength of 116,000 psi. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

Fully Threaded—DIN 961

Lg., mm	Pkg. Qty.		Per Pkg.
M8—Pitch: 1 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
10	25	91180A525	$13.01
16	25	91180A527	5.80
20	50	91180A530	9.46
25	50	91180A534	10.07
30	50	91180A538	10.32
35	25	91180A539	7.91
40	25	91180A540	13.28
M10—Pitch: 1 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
16	10	91180A363	6.50
20	10	91180A552	6.61
25	10	91180A553	7.15
30	10	91180A555	8.03
35	10	91180A557	8.73
M10—Pitch: 1.25 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
16	25	91180A624	10.25
20	25	91180A626	9.00
25	25	91180A630	9.03
30	25	91180A634	9.42
35	25	91180A636	10.31
40	10	91180A639	8.59
M12—Pitch: 1.25 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
20	10	91180A711	$9.89
25	25	91180A714	12.59
30	10	91180A716	6.35
35	10	91180A718	6.53
40	10	91180A720	6.67
M12—Pitch: 1.5 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
20	10	91180A743	9.89
25	25	91180A745	10.45
30	25	91180A747	11.03
35	25	91180A749	13.60
40	10	91180A751	6.44
M14—Pitch: 1.5 mm			
Head: Wd. 22 mm; Ht. 8.8 mm			
20	1	91180A774	2.07
30	10	91180A778	7.72
35	10	91180A780	8.83
40	10	91180A782	9.31
50	5	91180A786	6.31
55	5	91180A787	12.82
M16—Pitch: 1.5 mm			
Head: Wd. 24 mm; Ht. 10 mm			
30	5	91180A860	8.41
40	5	91180A870	10.53

Partially Threaded—DIN 960

Lg., mm	Pkg. Qty.		Per Pkg.
M8—Pitch: 1 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
40	25	91180A542	$8.15
45	10	91180A544	5.35
50	25	91180A546	8.83
55	10	91180A548	5.69
60	25	91180A550	11.74
80	10	91180A407	10.27
100	1	91180A559	1.22
M10—Pitch: 1 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
40	25	91180A620	14.45
45	10	91180A622	7.49
50	10	91180A625	10.93
60	10	91180A627	13.87
80	5	91180A632	8.37
100	5	91180A415	10.57
M10—Pitch: 1.25 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
35	10	91180A635	6.37
40	25	91180A638	10.93
45	25	91180A640	14.11
50	10	91180A642	6.50
55	10	91180A643	13.06
60	10	91180A644	6.73
65	10	91180A646	10.62
70	10	91180A649	6.97
75	5	91180A652	7.52
80	10	91180A654	7.73
90	5	91180A658	8.32
100	5	91180A662	8.99
120	5	91180A664	13.33
M12—Pitch: 1.25 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
40	5	91180A715	9.62
45	10	91180A717	13.11
50	10	91180A724	8.19
55	5	91180A726	7.30
60	10	91180A728	8.33
M12—Pitch: 1.25 mm (Cont.)			
65	5	91180A730	$10.95
70	10	91180A731	9.20
75	5	91180A733	6.31
80	10	91180A735	10.12
90	5	91180A737	11.06
100	5	91180A719	11.93
110	5	91180A721	14.51
120	1	91180A723	3.10
M12—Pitch: 1.5 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
40	10	91180A750	8.66
50	10	91180A753	7.44
55	5	91180A754	8.68
60	10	91180A755	8.55
65	5	91180A756	9.76
70	10	91180A757	10.01
75	5	91180A758	12.24
80	5	91180A760	5.61
90	5	91180A762	11.79
100	5	91180A765	13.00
M14—Pitch: 1.5 mm			
Head: Wd. 22 mm; Ht. 8.8 mm			
45	5	91180A785	6.67
50	5	91180A788	8.54
60	1	91180A790	3.25
65	1	91180A791	2.23
70	1	91180A792	3.30
80	1	91180A794	3.69
90	1	91180A798	4.16
100	1	91180A795	4.41
M16—Pitch: 1.5 mm			
Head: Wd. 24 mm; Ht. 10 mm			
50	1	91180A814	4.32
60	5	91180A818	13.66
70	1	91180A822	3.01
80	1	91180A826	3.34
100	1	91180A830	3.69

Metric Type 316 Stainless Steel

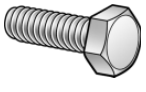

Made from Type 316 stainless steel, these fully threaded DIN 933-A4 screws are more corrosion resistant than 18-8 stainless steel screws and contain molybdenum, which increases resistance to chlorides and sulfates. Also known as tap bolts, they have a Class 6g thread fit and may be mildly magnetic. All have a minimum tensile strength of 101,500 psi but are not rated for hardness. Screw length is measured from under the head.

Also Available: Acidproof Bumax 88 screws (made from high-strength Type 316L stainless steel with a high molybdenum content) in sizes marked with a ★. Meet ISO 4017. Minimum tensile strength is 116,000 psi. Please ask for 93810A200 and specify thread size and screw length.

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
Head: Wd. 5.5 mm; Ht. 2 mm			
6	50	93635A002	$7.76
8	50	93635A005	7.78
10	50	93635A008	7.96
12	50	93635A010	9.84
16	50	93635A014	9.50
20	50	93635A017	10.75
25	25	93635A020	8.32
30	10	93635A025	5.37
M4—Pitch: 0.7 mm			
Head: Wd. 7 mm; Ht. 2.8 mm			
6	50	93635A102	9.65
8	50	93635A104	9.94
10	50	93635A106	11.18
12	50	93635A110	11.52
16	50	93635A114	11.68
20	50	93635A116	11.64
25	50	93635A118	13.32
30	25	93635A121	7.46
35	10	93635A126	5.26
M5—Pitch: 0.8 mm			
Head: Wd. 8 mm; Ht. 3.5 mm			
8	25	93635A148	6.81
10	50	93635A156	10.66
12	50	93635A160	10.13
16	50	93635A164	11.88
20	50	93635A168	13.68
25	25	93635A172	7.97
30	25	93635A175	9.17
35	25	93635A178	14.27
40	10	93635A181	5.87
45	10	93635A185	7.30
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 4 mm			
10	25	93635A204★	$9.09
12	25	93635A208★	9.28
16	25	93635A210★	8.99
20	25	93635A212★	7.83
25	25	93635A214★	7.91
30	25	93635A218★	11.05
35	25	93635A222	13.75
40	10	93635A229★	6.17
45	10	93635A232	6.95
50	10	93635A235	7.32
60	10	93635A241	5.79
70	10	93635A245	9.47
80	10	93635A248	12.86
90	5	93635A251	6.70
100	1	93635A255	2.53
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
10	10	93635A305	8.06
12	25	93635A310	14.43
16	10	93635A314★	6.12
20	10	93635A318★	6.50
22	10	93635A319	8.80
25	10	93635A322★	7.58
30	5	93635A326★	5.85
35	10	93635A330★	9.60
40	5	93635A336★	5.74
45	10	93635A337	14.25
50	10	93635A340★	14.28
55	5	93635A342	7.30
M8 (Cont.)			
60	5	93635A344	$7.60
65	5	93635A383	9.38
70	1	93635A345	2.14
80	5	93635A348	10.82
90	5	93635A350	11.82
100	1	93635A353	2.58
120	1	93635A369	4.00
M10—Pitch: 1.5 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
16	10	93635A412	9.25
20	10	93635A416	14.87
25	5	93635A420★	8.48
30	5	93635A424★	7.55
35	5	93635A428★	9.19
40	5	93635A438★	7.79
45	5	93635A442	11.55
50	5	93635A446★	12.42
55	5	93635A449	12.09
60	5	93635A453	12.38
70	1	93635A457	2.92
80	1	93635A462	2.92
90	1	93635A465	3.06
100	5	93635A471	14.33
120	1	93635A481	5.50
M12—Pitch: 1.75 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
20	5	93635A510	8.29
25	5	93635A515	10.42
30	5	93635A520★	11.18
35	5	93635A522★	11.85
40	1	93635A524★	3.25
M12 (Cont.)			
45	1	93635A528	$2.34
50	1	93635A532★	3.24
55	1	93635A535	3.35
60	1	93635A538	3.09
65	1	93635A541	3.93
70	1	93635A544	3.88
75	1	93635A546	4.09
80	1	93635A547	4.92
90	1	93635A550	5.11
100	1	93635A553	5.52
110	1	93635A559	5.66
M16—Pitch: 2 mm			
Head: Wd. 24 mm; Ht. 10 mm			
25	1	93635A650	4.95
30	1	93635A653	4.23
35	1	93635A656	5.30
40	1	93635A659	5.56
45	1	93635A662	6.71
50	1	93635A665	7.39
55	1	93635A667	6.07
60	1	93635A668	7.48
65	1	93635A670	7.04
70	1	93635A672	6.96
80	1	93635A674	7.96
90	1	93635A677	7.31
100	1	93635A680	10.15
110	1	93635A682	12.05
120	1	93635A686	11.76
130	1	93635A690	12.86

(Cont. on following page)

Metric Type 316 Stainless Steel *(Continued from previous page)*

Lg., mm	Pkg. Qty.		Per Pkg.
M16 (Cont.)			
140	1	93635A694	$14.04
150	1	93635A698	14.92
M20—Pitch: 2.5 mm			
Head: Wd. 30 mm; Ht. 12.5 mm			
40	1	93635A702	10.98
45	1	93635A706	11.62
50	1	93635A710	10.61
55	1	93635A714	10.81
M20 (Cont.)			
60	1	93635A718	$13.75
65	1	93635A722	17.62
70	1	93635A726	12.29
80	1	93635A730	13.88
90	1	93635A736	14.60
100	1	93635A740	15.79
120	1	93635A744	19.40
130	1	93635A748	20.63
M20 (Cont.)			
140	1	93635A752	$21.85
150	1	93635A756	28.75
M24—Pitch: 3 mm			
Head: Wd. 36 mm; Ht. 15 mm			
50	1	93635A801	20.85
60	1	93635A804	23.06
65	1	93635A807	19.57
70	1	93635A810	20.49
M24 (Cont.)			
80	1	93635A813	$23.06
90	1	93635A816	25.28
100	1	93635A819	25.95
110	1	93635A822	28.89
120	1	93635A825	29.38
130	1	93635A828	34.31
140	1	93635A831	36.29
150	1	93635A834	38.12

Metric 18-8 Stainless Steel

Made from 18-8 stainless steel, which offers excellent corrosion resistance, these metric cap screws have a Class 6g thread fit and may be mildly magnetic. They have a minimum tensile strength of 100,000 psi but are not rated for hardness. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

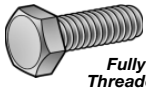

Fully Threaded

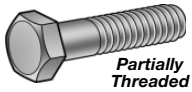

Partially Threaded

Fully Threaded—DIN 933-A2

Lg., mm	Pkg. Qty.		Per Pkg.
M3—Pitch: 0.5 mm			
Head: Wd. 5.5 mm; Ht. 2 mm			
6	100	91287A010	$8.42
8	100	91287A012	9.45
10	100	91287A014	9.90
12	100	91287A016	9.51
16	100	91287A018	11.53
20	100	91287A020	12.36
25	50	91287A022	11.03
30	50	91287A024	9.01
35	50	91287A026	8.44
40	50	91287A028	10.02
M4—Pitch: 0.7 mm			
Head: Wd. 7 mm; Ht. 2.8 mm			
6	100	91287A110	14.41
8	100	91287A111	11.46
10	100	91287A112	9.62
12	100	91287A113	11.90
16	100	91287A115	14.08
20	100	91287A116	14.85
25	50	91287A117	9.10
30	50	91287A118	8.93
35	50	91287A051	9.28
40	50	91287A053	8.96
45	50	91287A055	11.49
50	25	91287A057	5.78
60	10	91287A060	5.97
M5—Pitch: 0.8 mm			
Head: Wd. 8 mm; Ht. 3.5 mm			
6	50	91287A081	7.19
8	100	91287A119	8.48
10	100	91287A121	7.35
12	100	91287A122	9.60
16	50	91287A124	6.63
20	50	91287A125	9.83
25	50	91287A126	8.74
30	50	91287A127	9.39
35	50	91287A128	7.43
40	50	91287A329	8.80
45	50	91287A331	11.06
50	25	91287A333	5.64
55	25	91287A334	11.83
60	25	91287A335	6.14
70	10	91287A337	9.46
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 4 mm			
8	50	91287A250	10.31
10	100	91287A133	10.96
12	50	91287A134	6.30
16	50	91287A136	7.05
20	100	91287A137	10.88
25	50	91287A138	10.01
30	50	91287A139	9.79
35	50	91287A141	6.45
M6 (Cont.)			
40	25	91287A342	$8.44
45	25	91287A343	6.61
50	25	91287A344	11.17
55	25	91287A345	10.46
60	25	91287A346	12.84
65	25	91287A347	12.55
70	10	91287A351	8.14
80	10	91287A354	9.30
90	10	91287A358	10.20
100	10	91287A361	10.76
110	5	91287A363	9.66
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
10	25	91287A147	4.26
12	25	91287A149	7.79
16	25	91287A151	6.42
18	25	91287A300	11.12
20	25	91287A152	9.13
22	25	91287A303	6.57
25	25	91287A153	10.01
30	25	91287A154	12.23
35	25	91287A155	13.72
40	10	91287A305	5.59
45	10	91287A307	3.72
50	10	91287A309	6.88
55	10	91287A311	7.97
60	10	91287A313	7.08
65	10	91287A315	8.67
70	10	91287A451	10.93
80	5	91287A453	8.62
90	5	91287A455	9.51
100	5	91287A457	10.16
110	5	91287A459	12.80
120	5	91287A461	13.34
130	1	91287A463	3.30
140	1	91287A465	3.20
150	1	91287A467	3.35
M10—Pitch: 1.5 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
12	10	91287A167	6.33
16	10	91287A168	5.36
20	10	91287A169	6.63
25	10	91287A171	6.65
30	10	91287A172	7.15
35	10	91287A173	6.76
40	10	91287A374	9.94
45	10	91287A375	10.92
50	10	91287A376	10.30
55	10	91287A373	8.05
60	10	91287A377	12.12
65	10	91287A372	8.10
70	5	91287A378	8.66
M10 (Cont.)			
80	5	91287A379	$12.98
90	5	91287A380	13.31
100	5	91287A382	12.93
110	1	91287A384	3.59
120	1	91287A385	3.41
130	1	91287A386	3.94
140	1	91287A387	3.93
150	1	91287A388	3.97
M12—Pitch: 1.75 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
16	10	91287A186	5.74
20	10	91287A187	9.95
25	10	91287A188	11.88
30	10	91287A189	13.05
35	5	91287A191	5.02
40	10	91287A192	10.42
45	5	91287A393	7.36
50	5	91287A394	7.25
55	5	91287A395	9.14
60	5	91287A396	9.12
65	5	91287A397	11.92
70	5	91287A398	12.82
80	1	91287A399	2.80
90	1	91287A401	3.89
100	1	91287A402	3.85
110	1	91287A403	4.53
120	1	91287A404	4.82
130	1	91287A482	5.47
140	1	91287A483	5.85
150	1	91287A485	6.20
M14—Pitch: 2 mm			
Head: Wd. 22 mm; Ht. 8.8 mm			
20	5	91287A777	9.54
25	5	91287A776	9.54
30	5	91287A778	8.77
35	5	91287A780	6.11
40	5	91287A782	8.76
45	1	91287A784	3.75
50	5	91287A786	7.98
55	1	91287A787	4.05
60	1	91287A794	4.08
65	1	91287A796	3.76
70	1	91287A798	4.49
80	1	91287A800	4.70
90	1	91287A802	4.74
100	1	91287A804	6.37
110	1	91287A806	8.71
120	1	91287A808	9.97
M16—Pitch: 2 mm			
Head: Wd. 24 mm; Ht. 10 mm			
25	5	91287A220	10.50
30	5	91287A221	13.69
M16 (Cont.)			
35	5	91287A222	$11.60
40	5	91287A223	11.33
45	5	91287A324	12.77
50	5	91287A225	12.21
55	1	91287A237	2.89
60	1	91287A238	4.42
65	1	91287A239	4.72
70	1	91287A240	5.19
80	1	91287A242	5.29
90	1	91287A244	6.03
100	1	91287A245	6.52
120	1	91287A246	7.90
130	1	91287A247	8.93
140	1	91287A248	9.74
150	1	91287A249	10.02
M20—Pitch: 2.5 mm			
Head: Wd. 30 mm; Ht. 12.5 mm			
30	1	91287A405	5.19
35	1	91287A407	6.24
40	1	91287A409	5.76
45	1	91287A411	4.23
50	1	91287A413	6.35
55	1	91287A414	5.81
60	1	91287A415	7.52
65	1	91287A416	6.38
70	1	91287A417	6.68
80	1	91287A420	7.58
90	1	91287A421	10.17
100	1	91287A422	11.01
110	1	91287A425	11.56
120	1	91287A426	13.03
130	1	91287A427	13.86
140	1	91287A430	14.68
150	1	91287A431	16.48
M24—Pitch: 3 mm			
Head: Wd. 36 mm; Ht. 15 mm			
40	1	91287A825	8.77
50	1	91287A827	8.61
55	1	91287A829	9.88
60	1	91287A831	9.56
65	1	91287A833	10.92
70	1	91287A835	10.49
80	1	91287A837	13.08
90	1	91287A839	17.57
100	1	91287A841	18.96
110	1	91287A843	19.40
120	1	91287A845	21.46
130	1	91287A847	23.04
140	1	91287A849	24.35
150	1	91287A851	25.59

Partially Threaded—DIN 931-A2

Lg., mm	Pkg. Qty.		Per Pkg.
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 4 mm			
30	25	91287A903	5.68
40	25	91287A142	8.83
70	10	91287A252	6.47
80	25	91287A254	7.02
90	10	91287A256	5.05
M6 (Cont.)			
100	5	91287A258	2.74
120	5	91287A262	9.96
130	5	91287A264	10.59
140	5	91287A266	10.12
150	5	91287A268	13.16
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
40	10	91287A156	3.68
50	10	91287A158	8.21
60	10	91287A160	8.42
70	10	91287A162	11.05
80	5	91287A164	4.60
M8 (Cont.)			
90	5	91287A165	5.40
100	5	91287A166	8.35
110	5	91287A317	7.78
120	5	91287A319	4.41
130	5	91287A321	7.97
160	1	91287A322	4.67

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For information about thread lengths, see page 3154. For nuts, see pages 3186-3216.

Metric 18-8 Stainless Steel *(Continued from previous page)*

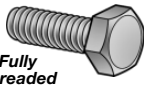
Fully Threaded

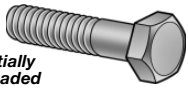
Partially Threaded

Made from 18-8 stainless steel, which offers excellent corrosion resistance, these metric cap screws have a Class 6g thread fit and may be mildly magnetic. They have a minimum tensile strength of 100,000 psi but are not rated for hardness. Screw length is measured from under the head. Fully threaded screws are also known as tap bolts.

Partially Threaded—DIN 931-A2

Lg., mm	Pkg. Qty.		Per Pkg.
M8 (Cont.)			
170	1	91287A323	$5.54
180	1	91287A325	5.31
190	1	91287A326	5.65
200	1	91287A327	5.48
M10—Pitch: 1.5 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
40	10	91287A174	11.90
50	10	91287A176	11.24
70	5	91287A181	9.04
80	5	91287A178	6.68
90	5	91287A179	11.39
100	5	91287A180	9.87
120	5	91287A381	14.43
130	5	91287A383	13.35
160	1	91287A389	7.03
170	1	91287A390	7.66
180	1	91287A391	9.32
190	1	91287A392	10.60
200	1	91287A406	9.76
M12—Pitch: 1.75 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
70	5	91287A198	$6.89
80	5	91287A199	14.37
90	1	91287A201	2.86
100	1	91287A202	3.77
110	1	91287A203	4.12
120	1	91287A204	4.48
130	1	91287A400	4.84
160	1	91287A439	8.14
170	1	91287A440	9.87
180	1	91287A441	9.18
190	1	91287A442	9.66
200	1	91287A443	10.14
M14—Pitch: 2 mm			
Head: Wd. 22 mm; Ht. 8.8 mm			
60	5	91287A788	11.03
70	5	91287A790	12.46
80	1	91287A792	3.35
130	1	91287A815	6.50
M14 (Cont.)			
140	1	91287A816	$7.42
150	1	91287A817	8.49
160	1	91287A818	11.91
M16—Pitch: 2 mm			
Head: Wd. 24 mm; Ht. 10 mm			
55	5	91287A226	10.95
60	1	91287A227	3.03
70	1	91287A229	3.53
75	1	91287A271	7.67
80	1	91287A230	3.26
90	1	91287A232	5.62
100	1	91287A233	5.07
110	1	91287A273	4.91
120	1	91287A235	3.10
130	1	91287A236	7.12
160	1	91287A275	14.57
170	1	91287A277	13.48
180	1	91287A279	14.56
190	1	91287A281	14.93
200	1	91287A283	17.85
M20—Pitch: 2.5 mm			
Head: Wd. 30 mm; Ht. 12.5 mm			
60	1	91287A418	$4.66
70	1	91287A423	6.66
80	1	91287A428	4.75
90	1	91287A433	7.44
100	1	91287A438	9.41
120	1	91287A445	9.99
140	1	91287A450	10.19
160	1	91287A475	20.49
170	1	91287A477	21.60
180	1	91287A479	22.71
190	1	91287A480	23.81
200	1	91287A481	24.92
M24—Pitch: 3 mm			
Head: Wd. 36 mm; Ht. 15 mm			
160	1	91287A875	37.15
170	1	91287A877	39.10
180	1	91287A879	41.06
190	1	91287A881	43.01
200	1	91287A883	36.08

Metric Vibration-Resistant Flange-Head Medium-Strength Steel

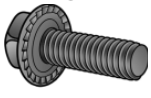

No need for a separate washer, these black finish screws have a serrated flange that bites into surfaces—adding shake resistance and holding power. All screws are fully threaded and have a Class 6g thread fit. Sizes M10 and smaller are made from steel similar to Class 9.8 steel; larger sizes are made from steel similar to Class 10.9 steel. All are stronger than both Grade 5 and Metric Class 8.8 steel screws.

Minimum Rockwell hardness is C27; minimum tensile strength is 130,500 psi. Head height includes the thickness of the flange. Screw length is measured from under the head.

Also Available: Nonmarring flanged screws (without serrations) in the sizes listed below. Made from Class 10.9 steel with a black-phosphate finish, they have a minimum tensile strength of 150,000 psi. Please ask for 98093A100 and specify thread size and screw length.

Lg., mm	Pkg. Qty.		Per Pkg.
M5—Pitch: 0.8 mm			
Head: Wd. 8 mm; Ht. 4.3 mm			
Flange Dia.: 11.2 mm			
10	25	92820A210	$13.33
12	25	92820A215	14.42
16	25	92820A220	14.99
20	10	92820A225	6.33
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 5.5 mm			
Flange Dia.: 14.2 mm			
10	25	92820A322	13.80
12	25	92820A320	12.25
16	25	92820A325	13.34
20	25	92820A330	12.81
25	10	92820A335	6.17
30	10	92820A340	6.67
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 7 mm			
Flange Dia.: 18.2 mm			
12	10	92820A415	7.00
16	10	92820A420	7.29
20	10	92820A425	7.33
25	10	92820A430	8.34
30	5	92820A435	4.96
35	5	92820A440	5.17
40	5	92820A445	6.03
M10—Pitch: 1.5 mm			
Head: Wd. 15 mm; Ht. 7.9 mm			
Flange Dia.: 21 mm			
16	5	92820A525	$6.19
20	5	92820A530	6.69
25	5	92820A535	7.24
30	5	92820A540	7.32
35	5	92820A520	8.25
40	5	92820A550	8.66
M12—Pitch: 1.75 mm			
Head: Wd. 17 mm; Ht. 8.7 mm			
Flange Dia.: 24 mm			
20	5	92820A625	9.47
25	5	92820A630	10.02
30	5	92820A635	10.19
35	5	92820A640	11.33
40	5	92820A645	12.06
45	5	92820A650	13.76
50	5	92820A655	13.63
M16—Pitch: 2 mm			
Head: Wd. 22 mm; Ht. 11.2 mm			
Flange Dia.: 31 mm			
35	1	92820A730	5.19
40	1	92820A735	6.65
50	1	92820A745	7.12
60	1	92820A755	7.69
70	1	92820A760	10.58

Metric Hex Head Cap Screw Assortments

465-Pc. Assort.—Zinc-Plated Steel Screws and Hex Nuts

Includes fully threaded Class 8.8 steel screws, Class 8 steel hex nuts, and one bottle of lock thread sealant. They come in a 13⅛″ Lg.×9″ Wd.×2 5/16″ Dp. compartmented plastic box with lid chart.

Size	No. of Pcs.
Screws—DIN 933	
M4×12	25
M4×16	25
M4×20	25
M4×25	25
M6×12	20
M6×16	20
M6×20	20
M6×30	20
Screws (Cont.)	
M6×40	20
M8×12	15
M8×16	15
M8×30	15
M8×40	15
M8×50	15
M10×20	10
M10×30	10
Screws (Cont.)	
M10×40	10
M10×50	10
Hex Nuts—DIN 934	
M4	50
M6	50
M8	25
M10	25

98735A040 ..... **Each** $92.50

575-Pc. Assort.—Black-Finish Screws, Hex Nuts, and Washers

Includes fully threaded Class 10.9 steel screws, Class 10 steel hex nuts, and lock washers made from spring steel. They come in a 13⅜″ Lg.×9¼″ Wd.×2″ Dp. compartmented steel box with lid chart.

Size	No. of Pcs.
Screws—DIN 933	
M6×16	25
M6×25	25
M6×35	25
M8×16	15
M8×25	15
M8×35	15
M10×16	10
M10×25	10
Screws (Cont.)	
M10×35	10
M12×20	5
M12×30	5
M12×40	5
Hex Nuts—DIN 934	
M6	75
M8	45
Hex Nuts (Cont.)	
M10	30
M12	15
Lock Washers—DIN 127B	
M6	100
M8	100
M10	30
M12	15

91310A100 ..... **Each** $99.75

2,295-Pc. Assorts.—Screws, Hex Nuts, and Washers

Include fully threaded screws made from Class 8.8 steel, hex nuts made from Class 8 steel, and lock washers made from spring steel.

Screws come in a 13⅜″ Lg.×9¼″ Wd.×2″ Dp. steel box. Hex nuts and lock washers come in an 11″ Lg.×6″ Wd.×1½″ Dp. plastic box. Boxes are compartmented and include a lid chart.

Size	No. of Pcs.
Screws—DIN 933	
M4×10	50
M4×16	50
M4×20	50
M4×25	50
M4×30	50
M4×35	50
M5×16	50
M5×20	50
M5×25	50
M5×30	50
M5×35	50
M5×40	50
Screws (Cont.)	
M6×16	25
M6×25	25
M6×35	25
M8×16	15
M8×25	15
M8×35	15
M10×16	10
M10×25	10
M10×35	10
M12×20	5
M12×30	5
M12×60	5
Hex Nuts—DIN 934	
M4	300
M5	300
M6	75
M8	45
M10	30
M12	15
Lock Washers—DIN 127B	
M4	300
M5	300
M6	75
M8	45
M10	30
M12	15

Black Finish ..... 98620A080★ **Each** $179.70
Zinc Plated ..... 98620A100 **Each** $207.92
★ Lock washers are zinc-plated.

For information about thread lengths, see page 3154. For nuts, see pages 3186-3216.

Metric Brass

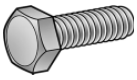

Softer than steel and stainless steel. Nonmagnetic. Made from corrosion-resistant CU2 or CU3 brass. Fully threaded with a Class 6g thread fit. Meet DIN 933. Min. Rockwell hardness is B55. Min. tensile strength is 53,000 psi. Screw length is measured from under the head.

Lg., mm	Pkg. Qty.		Per Pkg.
M5—Pitch: 0.8 mm			
Head: Wd. 8 mm; Ht. 3.5 mm			
10	10	93270A310	$6.67
12	10	93270A315	6.57
16	10	93270A320	7.20
20	10	93270A325	7.17
25	10	93270A330	7.06
30	10	93270A335	8.36
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 4 mm			
10	10	93270A420	7.96
12	10	93270A425	8.27
16	10	93270A430	8.37
20	10	93270A435	10.35
25	10	93270A440	11.00
30	10	93270A445	11.31
40	10	93270A455	13.20
50	5	93270A460	11.61
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 5.3 mm			
12	5	93270A520	8.40
16	10	93270A525	14.90
M8 (Cont.)			
20	5	93270A530	$8.60
25	5	93270A535	11.60
30	5	93270A540	13.00
35	1	93270A545	2.80
40	1	93270A550	3.19
50	5	93270A560	14.67
M10—Pitch: 1.5 mm			
Head: Wd. 17 mm; Ht. 6.4 mm			
20	1	93270A620	3.80
25	1	93270A626	3.30
30	1	93270A630	3.80
35	1	93270A635	5.40
40	1	93270A640	5.40
50	1	93270A650	5.60
M12—Pitch: 1.75 mm			
Head: Wd. 19 mm; Ht. 7.5 mm			
25	1	93270A740	5.20
40	1	93270A755	7.00
50	1	93270A785	5.77

Metric Nylon

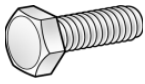

Our fully threaded nylon 6/6 cap screws are nonconductive and resistant to chemicals and solvents (except mineral acids). They withstand temperatures from –40° to +180°F, but are not rated for hardness or tensile strength. (*Note:* Nylon absorbs moisture which can affect dimensions and other properties.) Screw length is measured from under the head.

To Order: Please specify color: black or off-white.

Lg., mm	Pkg. Qty.		Per Pkg.
M4—Pitch: 0.7 mm			
Head: Wd. 7 mm; Ht. 3 mm			
8	100	94175A110	$9.38
10	100	94175A115	9.42
12	100	94175A120	9.48
16	100	94175A125	9.52
20	100	94175A130	9.59
M5—Pitch: 0.8 mm			
Head: Wd. 8 mm; Ht. 3.8 mm			
12	100	94175A220	10.26
16	100	94175A225	10.33
20	100	94175A230	10.39
25	100	94175A235	10.45
M6—Pitch: 1 mm			
Head: Wd. 10 mm; Ht. 4.7 mm			
10	100	94175A710	10.14
16	100	94175A720	11.76
20	100	94175A725	11.87
30	100	94175A735	12.07
40	100	94175A745	12.32
M8—Pitch: 1.25 mm			
Head: Wd. 13 mm; Ht. 6 mm			
16	25	94175A805	$7.84
20	25	94175A810	9.05
25	25	94175A815	9.10
30	25	94175A820	9.11
35	25	94175A825	9.23
50	25	94175A830	9.57
M10—Pitch: 1.5 mm			
Head: Wd. 16 mm; Ht. 7.5 mm			
20	25	94175A850	9.73
30	25	94175A860	10.43
35	25	94175A865	10.76
50	25	94175A870	11.97
M12—Pitch: 1.75 mm			
Head: Wd. 18 mm; Ht. 9 mm			
25	10	94175A905	6.69
30	10	94175A910	6.93
35	10	94175A915	7.16
40	5	94175A920	4.43
50	5	94175A925	4.66

The Difference Between a Bolt and a Screw

A ***bolt*** is designed to be inserted through a hole and secured with a nut, while a ***screw*** is designed to be used in a threaded hole—sometimes along with a nut. To learn more, see the American Society of Mechanical Engineers (ASME) standard B18.2.1 (1996).

Medium-Strength Steel Heavy Hex Head Structural Bolts—ASTM A325

Partially Threaded

Bolts meet ASME B18.2.6 and ASTM A325 Type 1 for structural steel joints. Marked with A325, the head is wider than a standard hex head. All bolts have a Class 2A thread fit. Bolts ½″ through 1″ dia. have a minimum Rockwell hardness of C24 and minimum tensile strength of 120,000 psi. 1¼″ dia. bolts have a minimum Rockwell hardness of C19 and minimum tensile strength of 105,000 psi. Bolt length is measured from under the head.

Plain Steel— For plain nuts, see 90580A on page 3189; for structural washers see 98038A on page 3219.

Hot-Dipped Galvanized Steel— Has a thick coating that offers excellent protection against rust, weather, and corrosion. For galvanized nuts, see 95025A on page 3190; for structural washers, see 98119A on page 3219.

Lg.	Pkg. Qty.		Per Pkg.
Plain Steel			
½″-13—Head: Ht. 5/16″; Wd. 7/8″			
Thread Lg.: 1″			
1½″	25	91571A250	$12.29
1¾″	25	91571A252	13.11
2″	10	91571A254	5.92
2½″	10	91571A256	7.46
3″	10	91571A258	8.64
4″	10	91571A260	10.10
⅝″-11—Head: Ht. 25/64″; Wd. 1 1/16″			
Thread Lg.: 1¼″			
1½″	10	91571A262	8.03
1¾″	10	91571A264	8.62
2″	10	91571A266	9.01
2¼″	10	91571A268	10.10
2½″	10	91571A270	10.07
2¾″	10	91571A272	12.31
3″	10	91571A274	12.97
3½″	5	91571A276	7.18
4″	5	91571A278	8.60
4½″	5	91571A280	10.92
5″	5	91571A282	11.11
6″	5	91571A284	12.22
¾″-10—Head: Ht. 15/32″; Wd. 1¼″			
Thread Lg.: 1⅜″			
1½″	10	91571A286♣	10.13
1¾″	5	91571A288♣	6.78
2″	5	91571A290	7.16
2¼″	5	91571A292	7.62
2½″	5	91571A294	8.06
2¾″	5	91571A296	8.56
3″	5	91571A298	9.01
3¼″	5	91571A302	10.20
¾″-10 (Cont.)			
3½″	5	91571A304	$10.67
4″	5	91571A306	10.88
4¼″	5	91571A308	11.85
5″	1	91571A310	2.89
6″	1	91571A312	3.29
7″	1	91571A314	4.60
8″	1	91571A316	6.21
⅞″-9—Head: Ht. 35/64″; Wd. 1 7/16″			
Thread Lg.: 1½″			
2″	5	91571A318	10.37
2½″	5	91571A320	11.57
3″	5	91571A322	12.41
3½″	1	91571A324	2.88
4″	1	91571A326	3.35
5″	1	91571A328	3.93
6″	1	91571A330	4.36
1″-8—Head: Ht. 39/64″; Wd. 1⅝″			
Thread Lg.: 1¾″			
2½″	1	91571A332	3.18
3″	1	91571A334	3.54
3½″	1	91571A336	3.91
4″	1	91571A338	4.24
5″	1	91571A340	4.84
6″	1	91571A342	6.01
8″	1	91571A344	9.97
1¼″-7—Head: Ht. 25/32″; Wd. 2″			
Thread Lg.: 2″			
4″	1	91571A352	8.56
5″	1	91571A354	10.29
6″	1	91571A356	11.57
Hot-Dipped Galvanized Steel			
½″-13—Head: Ht. 5/16″; Wd. 7/8″			
Thread Lg.: 1″			
1½″	10	91583A115	$7.16
1¾″	10	91583A118	7.81
2″	10	91583A121	8.51
2½″	10	91583A124	9.28
3″	10	91583A127	11.46
4″	5	91583A130	6.71
⅝″-11—Head: Ht. 25/64″; Wd. 1 1/16″			
Thread Lg.: 1¼″			
1½″	10	91583A133♣	12.11
1¾″	10	91583A136	13.03
2″	5	91583A139	7.05
2½″	5	91583A142	8.27
3″	5	91583A145	9.34
3½″	5	91583A148	10.98
4″	5	91583A151	12.11
4½″	1	91583A154	3.14
5″	1	91583A157	3.39
6″	1	91583A158	4.06
¾″-10—Head: Ht. 15/32″; Wd. 1¼″			
Thread Lg.: 1⅜″			
1½″	5	91583A160♣	9.63
1¾″	5	91583A163♣	10.25
2″	5	91583A166	10.86
2¼″	5	91583A169	11.60
2½″	5	91583A172	12.55
2¾″	5	91583A175	13.32
3″	1	91583A178	2.81
3¼″	1	91583A181	3.18
3½″	1	91583A184	3.27
3¾″	1	91583A187	3.43
¾″-10 (Cont.)			
4″	1	91583A190	$3.59
4¼″	1	91583A193	3.74
4½″	1	91583A196	4.02
5″	1	91583A199	4.58
6″	1	91583A202	4.62
⅞″-9—Head: Ht. 35/64″; Wd. 1 7/16″			
Thread Lg.: 1½″			
2″	1	91583A205	3.07
2½″	1	91583A208	3.51
2¾″	1	91583A211	3.71
3″	1	91583A214	3.91
3½″	1	91583A217	4.51
3¾″	1	91583A220	4.58
4″	1	91583A223	4.63
5″	1	91583A226	4.62
6″	1	91583A229	7.84
1″-8—Head: Ht. 39/64″; Wd. 1⅝″			
Thread Lg.: 1¾″			
2½″	1	91583A232	4.62
3″	1	91583A235	5.66
3½″	1	91583A238	6.32
4″	1	91583A241	6.86
4½″	1	91583A244	7.45
5″	1	91583A247	8.06
5½″	1	91583A250	10.16
6″	1	91583A253	10.78
1¼″-7—Head: Ht. 25/32″; Wd. 2″			
Thread Lg.: 2″			
3″	1	91583A302	11.77
4″	1	91583A331	14.00
5″	1	91583A345	16.70
6″	1	91583A359	19.50

♣ Fully threaded.

Heavy Hex Head Bolts—ASTM A193

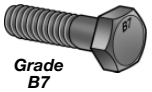

Grade B7

Designed for bolting pressure vessels, valves, and flanges, each bolt has a head that's wider than a standard hex head. All have a Class 2A thread fit. Bolt length is measured from under the head.

Alloy steel Grade B7 bolts are made from chromium-molybdenum alloy steel with a plain finish. Marked on the head with B7, they have a maximum Rockwell hardness of C35 and minimum tensile strength of 125,000 psi. For ASTM A194 Grade 7 nuts, see 94485A on page 3190.

18-8 stainless steel Grade B8 bolts are made from corrosion-resistant 18-8 stainless steel, which may be mildly magnetic. Marked on the head with B8, they have a maximum Rockwell hardness of B100 and minimum tensile strength of 75,000 psi. For ASTM A194 Grade 8 nuts, see 94252A on page 3190.

Also Available: Type 316 stainless steel ASTM Grade B8M bolts with a minimum tensile strength of 75,000 psi. Please ask for 92790A550 and specify thread size and bolt length.

Lg.		
Alloy Steel Grade B7		
1/2"-13—Head: Ht. 5/16"; Wd. 7/8"		
Thread Lg.: 1 1/4"		
1 1/2"	94705A206♣	$1.84
2"	94705A209	2.58
2 1/2"	94705A212	3.06
3"	94705A215	3.39
3 1/2"	94705A218	3.03
4"	94705A222	3.29
5/8"-11—Head: Ht. 25/64"; Wd. 1 1/16"		
Thread Lg.: 1 1/2"		
2"	94705A313♣	2.63
2 1/2"	94705A316	3.55
3"	94705A319	4.03
3 1/2"	94705A323	4.35
4"	94705A326	3.82
4 1/2"	94705A330	4.08
3/4"-10—Head: Ht. 15/32"; Wd. 1 1/4"		
Thread Lg.: 1 3/4"		
1 3/4"	94705A413♣	3.55
2"	94705A417♣	4.68
2 1/4"	94705A419♣	4.08
2 1/2"	94705A423♣	5.32
3/4"-10 (Cont.)		
2 3/4"	94705A425	$4.47
3"	94705A427	5.65
3 1/2"	94705A429	6.29
4"	94705A433	5.92
4 1/2"	94705A438	6.45
7/8"-9—Head: Ht. 35/64"; Wd. 1 7/16"		
Thread Lg.: 2"		
2 1/2"	94705A498♣	5.79
3"	94705A502	8.55
3 1/2"	94705A510	7.42
4"	94705A516	10.16
5"	94705A519	11.77
1"-8—Head: Ht. 39/64"; Wd. 1 5/8"		
Thread Lg.: 2 1/4"		
2 1/2"	94705A600♣	8.55
3"	94705A610♣	10.13
3 1/2"	94705A615	10.66
4"	94705A627	13.71
4 1/2"	94705A633	15.32
5"	94705A640	13.55

Lg.		
18-8 Stainless Steel Grade B8		
1/2"-13—Head: Ht. 11/32"; Wd. 7/8"		
Thread Lg.: 1 1/4"		
1 1/4"	92655A401♣	2.19
1 1/2"	92655A405	2.61
2"	92655A412	2.73
2 1/2"	92655A416	3.12
3"	92655A419	3.24
3 1/2"	92655A423	3.88
4"	92655A426	4.15
5/8"-11—Head: Ht. 27/64"; Wd. 1 1/16"		
Thread Lg.: 1 1/2"		
1 1/2"	92655A443♣	3.76
2"	92655A451	4.42
5/8"-11 (Cont.)		
3"	92655A456	5.70
3 1/2"	92655A461	6.48
4"	92655A465	7.12
3/4"-10—Head: Ht. 1/2"; Wd. 1 1/4"		
Thread Lg.: 1 3/4"		
1 1/2"	92655A481♣	5.97
2"	92655A486	6.48
2 1/2"	92655A489	7.00
3"	92655A492	8.03
3 1/2"	92655A495	9.21
4"	92655A499	9.85

♣ Fully threaded.

Low-Strength Steel T-Handle Bolts

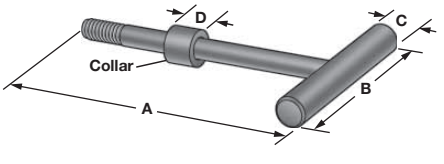

You decide where to locate the collar; just slide it along the shaft and weld it in place. Also called clamping pins, these T-handle bolts have a black-oxide finish that provides mild rust resistance.

All bolts have a Class 2A thread fit and 3/4" thread length. Minimum Rockwell hardness is C43; minimum tensile strength is 78,000 psi.

For Grade 2 plain steel nuts, see 90490A on page 3187.

Thread Size	(A)	(B)	(C)	(D)		
10-24	3 1/4"	1 1/2"	1/4"	1/2"	91660A120	$6.67
1/4"-20	4 3/8"	2 1/2"	3/8"	1/2"	91660A130	8.33
5/16"-18	4 7/16"	3"	7/16"	1/2"	91660A140	8.33
3/8"-16	5"	3 1/2"	1/2"	1/2"	91660A150	8.35
1/2"-13	5 5/8"	3 1/2"	5/8"	1/2"	91660A160	11.64
1/2"-13	7 5/8"	3 1/2"	5/8"	1/2"	91660A170	11.69
5/8"-11	6 3/8"	3 1/2"	7/8"	1/2"	91660A180	12.00
3/4"-10	6 7/8"	3 1/2"	7/8"	1/2"	91660A190	13.75

Round Countersunk-Head Bolts

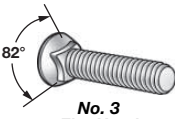

No. 3 Flat Head

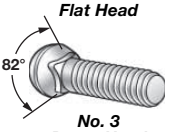

No. 3 Dome Head

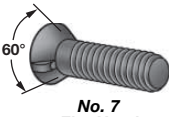

No. 7 Flat Head

Also known as plow bolts, these bolts are beveled under the head to sit within countersunk holes. Designed to resist turning when tightened with a nut, they conform to SAE J429 and are well-suited for heavy equipment. Each has a Class 2A thread fit and is marked on top of the head with three radial lines to indicate Grade 5 or six radial lines to indicate Grade 8. Bolt length is measured from the top of the head.

No. 3 Flat Head, Square Neck— Made from Grade 5 medium-strength steel with zinc plating for rust resistance. Minimum Rockwell hardness is C25. Minimum tensile strength is 120,000 psi. Dimensions meet ASME B18.9. For nuts, see 95462A on page 3186.

Also Available: Flat head, square neck, Grade 5 plain steel bolts with a min. tensile strength of 120,000 psi and dimensions that meet ASME B18.9. Please ask for 90005A583 and specify thread size and bolt length.

No. 3 Dome Head, Square Neck— Made from Grade 8 high-strength steel and zinc plated for rust resistance. Minimum Rockwell hardness is C33. Minimum tensile strength is 150,000 psi. For nuts, see 94895A on page 3186.

Also Available: Dome head, square neck, Grade 8 plain steel bolts with a minimum tensile strength of 150,000 psi. Please ask for 92315A669 and specify thread size and bolt length.

No. 7 Flat Head, Key Locking— Also known as reverse-key plow screws and bucket tooth bolts, key-locking bolts have a single integral locking key that holds the bolt still as you tighten the nut. They're made from Grade 8 high-strength plain steel. Minimum Rockwell hardness is C33. Minimum tensile strength is 150,000 psi. For nuts, see 90499A on page 3186.

Lg.	Pkg. Qty.		Pkg.
No. 3 Flat Head, Square Neck			
3/8"-16—Min. Thread Lg.: 1"			
Head: Ht. 0.312"; Dia. 0.708"			
1"	50	90911A624♣	$14.79
2"	25	90911A632♣	9.80
2 1/4"	25	90911A633♣	13.37
2 3/4"	25	90911A635	14.12
3"	25	90911A637	14.53
7/16"-14—Head: Ht. 0.364"; Dia. 0.826"			
1 1/2"	25	90911A673♣	12.35
2"	25	90911A677♣	15.61
1/2"-13—Head: Ht. 0.417"; Dia. 0.945"			
1 1/2"	10	90911A716♣	$6.80
1 3/4"	10	90911A718♣	6.91
2"	10	90911A720♣	7.99
2 1/2"	10	90911A722♣	9.85
3"	10	90911A724♣	12.37
4"	10	90911A732♣	11.90
No. 3 Dome Head, Square Neck			
5/8"-11—Min. Thread Lg.: 1 1/2"			
Head: Ht. 0.516"; Dia. 1.044"			
Dome Ht.: 0.100"			
1 1/2"	10	90934A778♣	12.83
2"	10	90934A802♣	12.18
2 1/4"	10	90934A803♣	12.00
2 1/2"	10	90934A804	14.16
3"	5	90934A806	7.52
3 1/2"	5	90934A808	11.32
3/4"-10—Min. Thread Lg.: 1 3/4"			
Head: Ht. 0.581"; Dia. 1.20"			
Dome Ht.: 0.110"			
2"	5	90934A841♣	9.49
2 1/2"	5	90934A845♣	10.50
2 3/4"	5	90934A846	11.82
3"	5	90934A847	11.52
3 1/2"	5	90934A849	12.88
4"	1	90934A853	3.48
No. 7 Flat Head, Key Locking			
5/8"-11—Min. Thread Lg.: 1 1/2"			
Head: Ht. 0.414"; Dia. 1.121"			
Key: Wd. 0.170"; Ht. 0.363"			
2"	1	91589A802♣	5.29
2 1/2"	1	91589A804	5.63
3"	1	91589A806	5.14
3 1/2"	1	91589A808	5.01
4"	1	91589A810	6.08
5"	1	91589A814	6.40
3/4"-10—Min. Thread Lg.: 1 3/4"			
Head: Ht. 0.440"; Dia. 1.277"			
Key: Wd. 0.170"; Ht. 0.390"			
3"	1	91589A847	6.48
3 1/2"	1	91589A849	7.81
3/4"-10 (Cont.)			
4"	1	91589A851	6.77
4 1/2"	1	91589A853	7.57
5"	1	91589A855	8.56
6"	1	91589A859	11.12
7/8"-9—Min. Thread Lg.: 2"			
Head: Ht. 0.616"; Dia. 1.516"			
Key: Wd. 0.190"; Ht. 0.473"			
3 1/2"	1	91589A887	11.08
4"	1	91589A889	16.01
4 1/2"	1	91589A890	15.28

♣ Fully threaded.

Medium-Strength Steel T-Handle Bolts—Grade 5

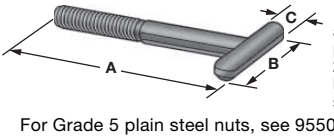

Also known as hold-down and tank-strap bolts, these plain steel bolts have a Class 2A thread fit, min. Rockwell hardness of C25, and min. tensile strength of 120,000 psi.

For Grade 5 plain steel nuts, see 95505A on page 3186.

Thread Size	Thread Lg.	(A)	(B)	(C)		
3/8"-16	1 1/2"	3 11/16"	2"	3/8"	91285A121	$7.36
1/2"-13	2 1/2"	3 3/4"	2"	1/2"	91285A123	7.64
1/2"-20	2 1/2"	3 3/4"	2"	1/2"	91285A124	8.20

Large Diameter Flush-Head Low-Strength Bolts with Nut

Also known as elevator and step bolts, these low-profile bolts sit flush when installed. Frequently used in industrial belting systems, they have a Class 2A thread fit, min. Rockwell hardness of B88, and min. tensile strength of 74,000 psi. Bolts are fully threaded except fanged versions, which have an unthreaded shoulder. Bolt length is measured from the top of the head.

1 ***Square Neck***—Bolts resist spinning when you tighten the nut.

2 ***Fanged***—Sharp "teeth" hold tight so the bolts can't spin.

3 ***Ribbed with Slotted Drive***—Also known as reliance bolts, these bolts provide a tight, vibration-free fit when used with a heavy washer. The head has a smaller diameter than the heads of square-neck and fanged styles.

18-8 stainless steel provides excellent corrosion resistance and may be slightly magnetic. For 18-8 stainless steel washers, see 93852A on pg. 3217. *Zinc-plated steel* is made from C1010-C1020 steel and offers good rust resistance. For steel washers, see 90108A on pg. 3217 .

Also Available: Metric zinc-plated steel bolts with nut in square-neck and fanged styles. Minimum tensile strength is 74,000 psi. For square-neck style, ask for 93226A100; for fanged style, ask for 92963A200; then specify thread size and bolt length.

Lg.	Pkg. Qty.		Pkg.
(1) Square Neck—*18-8 Stainless Steel*			
1/4"-20—*Head: Ht. 3/32"; Dia. 31/32"*			
3/4"	5	92361A450	$12.32
1"	5	92361A452	12.43
1 1/4"	5	92361A454	12.80
1 1/2"	5	92361A455	13.60
5/16"-18—*Head: Ht. 7/64"; Dia. 1 3/16"*			
1"	1	92361A463	4.51
1 1/4"	1	92361A465	4.56
(1) Square Neck—*Zinc-Plated Steel*			
1/4"-20—*Head: Ht. 3/32"; Dia. 31/32"*			
3/4"	25	92670A740	6.05
1"	25	92670A742	6.21
1 1/4"	25	92670A744	6.43
1 1/2"	25	92670A746	6.64
1 3/4"	25	92670A748	8.51
2"	25	92670A750	9.38
2 1/4"	25	92670A751	9.99
2 1/2"	25	92670A752	10.41
2 3/4"	10	92670A635	5.14
3"	10	92670A836	5.39
5/16"-18—*Head: Ht. 7/64"; Dia. 1 3/16"*			
3/4"	25	92670A781	6.92
1"	25	92670A783	7.28
1 1/4"	25	92670A785	7.63
(2) Fanged—*Zinc-Plated Steel*			
1/4"-20—*Head: Ht. 3/32"; Dia. 31/32"*			
3/4"	25	92221A240	11.21
1"	25	92221A242	12.20
1 1/4"	25	92221A244	12.55
1 1/2"	25	92221A246	12.95
5/16"-18—*Head: Ht. 7/64"; Dia. 1 3/16"*			
1"	10	92221A283	7.20
1 1/4"	10	92221A285	7.30
(3) Ribbed with Slotted Drive—*Zinc-Plated Steel*			
1/4"-20—*Head: Ht. 3/32"; Dia. 23/32"*			
3/4"	25	91488A240	8.35
1"	25	91488A242	8.57
1 1/4"	25	91488A244	8.90
1 1/2"	25	91488A246	9.20

Lg.	Pkg. Qty.		Pkg.
5/16"-18 (Cont.)			
1 1/2"	1	92361A467	$4.59
1 3/4"	1	92361A469	4.53
2"	1	92361A471	4.92
3/8"-16—*Head: Ht. 9/64"; Dia. 1 5/16"*			
1 1/4"	1	92361A426	6.91
1 1/2"	1	92361A428	7.38
2"	1	92361A435	8.40
5/16"-18 (Cont.)			
1 1/2"	25	92670A787	7.98
1 3/4"	25	92670A789	8.33
2"	25	92670A791	8.69
2 1/4"	25	92670A792	11.36
2 1/2"	25	92670A793	12.20
2 3/4"	10	92670A637	5.90
3"	10	92670A838	6.17
3/8"-16—*Head: Ht. 9/64"; Dia. 1 5/16"*			
1 1/4"	10	92670A826	6.89
1 1/2"	10	92670A828	7.40
1 3/4"	10	92670A630	7.77
2"	10	92670A632	8.27
2 1/2"	10	92670A834	9.33
3"	10	92670A840	10.77
5/16"-18 (Cont.)			
1 1/2"	10	92221A287	6.72
2"	10	92221A291	8.82
3/8"-16—*Head: Ht. 9/64"; Dia. 1 5/16"*			
1 1/4"	10	92221A326	13.51
1 1/2"	10	92221A328	13.84
1 3/4"	10	92221A330	14.10
2"	10	92221A332	14.39
5/16"-18—*Head: Ht. 7/64"; Dia. 7/8"*			
1"	25	91488A363	14.75
1 1/4"	10	91488A365	7.31
1 1/2"	10	91488A368	5.82

Square-Head Steel Bolts

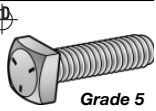

Square heads offer plenty of surface for your wrench to grip—and that means less slippage. All have a Class 2A thread fit. Bolt length is measured from under the head. For square nuts, see page 3195.

Medium-Strength Steel—Grade 5 bolts have a zinc yellow-chromate plating and are marked on the head with three radial lines to indicate Grade 5. Each bolt has a min. Rockwell hardness of C25, min. tensile strength of 120,000 psi, and meets ASME B18.2.1 and SAE J429.

Low-Strength Steel—ASTM A307 Grade A bolts have a plain finish, min. Rockwell hardness of B69, and min. tensile strength of 60,000 psi.

Medium-Strength Steel—Grade 5

Lg.		Each
3/8"-16—*Head: Ht. 1/4"; Wd. 9/16"*		
1"	92327A279♣	$2.24
1 1/2"	92327A283♣	2.33
2"	92327A288♣	2.70
3"	92327A291♣	2.85
4"	92327A294♣	3.17
1/2"-13—*Head: Ht. 21/64"; Wd. 3/4"*		
2"	92327A304♣	3.03
2 1/2"	92327A308♣	4.11
3"	92327A311♣	4.72
4"	92327A314♣	6.00
5"	92327A317♣	6.90
5/8"-11—*Head: Ht. 27/64"; Wd. 15/16"*		
2"	92327A323♣	$4.52
2 1/2"	92327A327♣	4.86
3"	92327A332♣	5.08
4"	92327A338♣	6.15
5"	92327A341♣	7.82
3/4"-10—*Head: Ht. 1/2"; Wd. 1 1/8"*		
3"	92327A362♣	8.03
4"	92327A365♣	8.37
5"	92327A367♣	9.27
6"	92327A369♣	11.76

♣ Fully threaded.

Low-Strength Steel—ASTM A307 Grade A

Lg.	Pkg. Qty.		Pkg.
1/4"-20—*Head: Ht. 11/64"; Wd. 3/8"*			
Minimum Thread Lg.: 3/4"			
1"	25	91465A101	$5.11
1 1/4"	25	91465A104	5.22
1 1/2"	50	91465A107	9.56
2"	25	91465A110	6.48
5/16"-18—*Head: Ht. 13/64"; Wd. 1/2"*			
Minimum Thread Lg.: 7/8"			
3/4"	25	91465A113♣	5.48
1"	25	91465A116	5.59
1 1/4"	25	91465A119	7.63
1 1/2"	10	91465A122	4.26
2"	10	91465A125	4.74
3"	10	91465A128	6.07
4"	10	91465A131	6.95
3/8"-16—*Head: Ht. 1/4"; Wd. 9/16"*			
Minimum Thread Lg.: 1"			
1"	10	91465A134♣	4.31
1 1/4"	25	91465A137	9.83
1 1/2"	10	91465A140	4.83
1 3/4"	10	91465A143	4.31
2"	10	91465A146	5.28
2 1/2"	5	91465A149	4.14
3"	5	91465A152	4.48
3 1/2"	10	91465A155	8.14
1/2"-13—*Head: Ht. 21/64"; Wd. 3/4"*			
Minimum Thread Lg.: 1 1/4"			
1"	5	91465A158♣	4.31
1 1/2"	5	91465A161	5.61
1 3/4"	10	91465A164	8.03
2"	10	91465A167	9.29
2 1/4"	5	91465A170	5.79
2 1/2"	5	91465A173	6.03
3"	1	91465A176	1.34
3 1/2"	1	91465A179	1.62
4"	5	91465A182	7.81
5"	1	91465A185	1.98

Lg.	Pkg. Qty.		Pkg.
1/2"-13 (Cont.)			
6"	1	91465A191	$2.11
8"	1	91465A194	2.69
5/8"-11—*Head: Ht. 27/64"; Wd. 15/16"*			
Minimum Thread Lg.: 1 1/2"			
2"	1	91465A209	1.72
2 1/2"	5	91465A212	10.40
3"	1	91465A215	2.03
3 1/2"	1	91465A218	2.38
4"	1	91465A221	2.52
4 1/2"	1	91465A224	2.72
5"	1	91465A227	2.99
6"	1	91465A230	3.27
7"	1	91465A233	4.03
11"	1	91465A236	10.31
3/4"-10—*Head: Ht. 1/2"; Wd. 1 1/8"*			
Minimum Thread Lg.: 1 3/4"			
2 1/2"	1	91465A242	2.36
3"	1	91465A245	2.97
3 3/4"	1	91465A248	3.33
4"	1	91465A251	3.39
4 1/2"	1	91465A254	4.03
5"	1	91465A257	4.33
5 1/2"	1	91465A260	4.53
6"	1	91465A263	4.44
7"	1	91465A266	4.66
8"	1	91465A269	5.03
9"	1	91465A272	6.70
10"	1	91465A275	6.91
12"	1	91465A278	8.06
1"-8—*Head: Ht. 21/32"; Wd. 1 1/2"*			
Minimum Thread Lg.: 2 1/4"			
6"	1	91465A287	11.05
7"	1	91465A290	11.14
9"	1	91465A293	11.20
10"	1	91465A296	13.40

♣ Fully threaded.

Square-Head Medium-Strength Steel T-Bolts

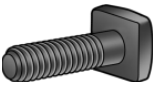

Also known as tugger bolts, these bolts clamp work securely without damaging your machine table. They're made from C1045 steel (which has strength comparable to Grade 5 steel) and have a black-oxide finish that offers lubricity and mild rust resistance. Each has a Class 2A thread fit, min. Rockwell hardness of C28, and min. tensile strength of 120,000 psi. Bolt length is measured from under the head. For nuts, see 91026A on page 3190.

Also Available: Heavy-duty black-oxide alloy-steel bolts in sizes marked with a ★. Forged from 4140 steel, they have a minimum tensile strength of 140,000 psi. Please ask for 91622A555 and specify thread size and bolt length.

Lg.	Thrd. Lg.		
3/8"-16—*Fits 3/8" Table Slot*			
Head: Ht. 1/4"; Wd. 11/16"			
1 1/2"	1"	90109A628★	$5.69
2"	1 1/2"	90109A632★	5.69
2 1/2"	2"	90109A634★	5.82
3"	2"	90109A636★	5.98
3 1/2"	2"	90109A638	6.13
4"	2"	90109A640	6.42
5"	2"	90109A644	6.60
6"	2"	90109A648	6.76
1/2"-13—*Fits 1/2" Table Slot*			
Head: Ht. 5/16"; Wd. 7/8"			
1 1/2"	1"	90109A716★	$5.82
2"	1 1/2"	90109A720★	5.82
2 1/2"	2"	90109A722★	6.29
3"	2"	90109A724★	6.42
3 1/2"	2"	90109A726★	6.42
4"	2"	90109A728★	6.94
4 1/2"	2"	90109A730	6.64
5"	2"	90109A732	7.38
6"	2"	90109A736★	7.56
5/8"-11—*Fits 5/8" Table Slot*			
Head: Ht. 13/32"; Wd. 1 1/8"			
2"	1 1/2"	90109A802★	$7.09
2 1/2"	2"	90109A804★	7.53
3"	2"	90109A806★	7.69
3 1/2"	2"	90109A808	8.20
4"	2"	90109A810	8.49
5"	2"	90109A814	8.88
6"	2"	90109A818★	9.54
8"	2"	90109A822★	11.36
10"	2"	90109A826	13.07
3/4"-10—*Fits 3/4" Table Slot*			
Head: Ht. 17/32"; Wd. 1 5/16"			
2 1/2"	2"	90109A845	$9.02
3"	2"	90109A847★	9.67
3 1/2"	2"	90109A849★	10.15
4"	2"	90109A851★	10.42
5"	2"	90109A855★	11.07
6"	2"	90109A859★	12.42
7"	2"	90109A861	13.87
8"	2"	90109A863★	14.13
10"	2"	90109A866	16.20

For T-slot nuts, see 90526A series on page 3210; for case-hardened heavy hex nuts, see 91026A series on page 3190; for flanged nuts, see 91030A series on page 3201 or 91045A series on page 3209.

Medium-Strength Steel T-Slot Bolts

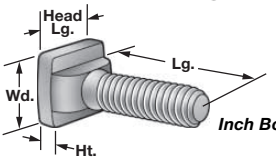

Inch Bolt

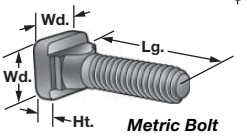

Metric Bolt

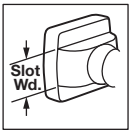

The bolt heads are designed to slide into the T-slot in your machine tool table without twisting—so they won't cause any damage.

Plain Steel—Bolts are forged from C1045 steel. They have a Class 3A thread fit, min. Rockwell hardness of C18, and min. tensile strength of 100,000 psi.

Black-Oxide Alloy Steel—Forged from 4140 steel, these bolts are stronger than those made from plain steel. They have a black-oxide finish that provides lubricity and mild rust resistance. Each has a Class 2A thread fit, min. Rockwell hardness of C32, and min. tensile strength of 140,000 psi.

Metric Black-Finish Steel—Made from class 10.9 steel (which is comparable to Grade 8 steel), these metric T-slot bolts meet DIN 787 and have a square head marked with 10.9. They have a black finish that provides lubricity and mild rust resistance. Each has a Class 6g thread fit, min. Rockwell hardness of C32, and min. tensile strength of 150,000 psi.

Plain Steel

3/8"-16—*Fits 3/8" Slot Wd.*
Hd.: Ht. 3/16"; Wd. 11/16"; Lg. 3/4"

Lg.	Thread Lg.		
1"	3/4"	91523A624	$4.00
1 1/4"	7/8"	91523A626	4.05
1 1/2"	1 1/8"	91523A628	4.09
1 3/4"	1 1/2"	91523A630	4.14
2"	1 1/2"	91523A632	4.21
2 1/4"	1 1/2"	91523A633	4.26
2 1/2"	1 1/2"	91523A634	4.32
3"	1 1/2"	91523A636	4.41
3 1/2"	1 3/4"	91523A638	4.51
4"	1 3/4"	91523A640	4.63
4 1/2"	1 3/4"	91523A642	4.74
5"	1 3/4"	91523A644	4.83

1/2"-13—*Fits 1/2" Slot Wd.*
Hd.: Ht. 9/32"; Wd. 7/8"; Lg. 1 1/8"

Lg.	Thread Lg.		
1 1/4"	3/4"	91523A714	4.79
1 1/2"	1"	91523A716	4.86
1 3/4"	1 1/4"	91523A718	4.92
2"	1 1/2"	91523A720	5.00
2 1/4"	1 1/2"	91523A721	5.07
2 1/2"	1 1/2"	91523A722	5.14
2 3/4"	1 1/2"	91523A723	5.20
3"	1 1/2"	91523A724	5.28
3 1/2"	1 3/4"	91523A726	5.42
4"	1 3/4"	91523A728	5.56
4 1/2"	1 3/4"	91523A730	5.70
5"	1 3/4"	91523A732	5.84
6"	2"	91523A736	6.12
7"	2"	91523A738	6.55
8"	2 1/2"	91523A740	6.99
9"	2 1/2"	91523A744	7.50

5/8"-11—*Fits 5/8" Slot Wd.*
Hd.: Ht. 11/32"; Wd. 1 3/32"; Lg. 1 5/16"

Lg.	Thread Lg.		
1 1/2"	7/8"	91523A798	$5.56
2"	1 1/2"	91523A802	5.73
2 1/4"	1 1/2"	91523A803	5.82
2 1/2"	1 1/2"	91523A804	5.89
2 3/4"	1 1/2"	91523A805	6.00
3"	1 1/2"	91523A806	6.09
3 1/2"	1 3/4"	91523A808	6.25
4"	1 3/4"	91523A810	6.43
4 1/2"	1 3/4"	91523A812	6.60
5"	1 3/4"	91523A814	6.78
5 1/2"	2"	91523A816	7.05
6"	2"	91523A818	7.32
7"	2"	91523A820	7.75
8"	2 1/2"	91523A822	8.19

3/4"-10—*Fits 3/4" Slot Wd.*
Hd.: Ht. 7/16"; Wd. 1 1/4"; Lg. 1 1/2"

Lg.	Thread Lg.		
2 1/2"	1 1/2"	91523A845	8.05
3"	1 1/2"	91523A847	8.32
3 1/2"	1 3/4"	91523A849	8.60
4"	1 3/4"	91523A851	8.85
4 1/2"	1 3/4"	91523A853	9.12
5"	1 3/4"	91523A855	9.38
5 1/2"	2"	91523A857	9.64
6"	2"	91523A859	9.99
7"	2"	91523A861	9.35
8"	2 1/2"	91523A863	9.88
10"	2 1/2"	91523A866	11.44

Plain Steel (Cont.)

3/4"-10—*Fits 7/8" Slot Wd.*
Hd.: Ht. 9/16"; Wd. 1 1/2"; Lg. 1 3/4"

Lg.	Thread Lg.		
4"	1 3/4"	91523A888	$13.87
5"	1 3/4"	91523A892	14.48
6"	2"	91523A896	15.11
8"	2 1/2"	91523A900	16.36

7/8"-9—*Fits 7/8" Slot Wd.*
Hd.: Ht. 9/16"; Wd. 1 1/2"; Lg. 1 3/4"

Lg.	Thread Lg.		
3"	1 1/2"	91523A939	13.32
4"	1 3/4"	91523A940	14.01
5"	1 3/4"	91523A942	14.72
6"	2"	91523A944	15.43
7"	2"	91523A946	16.12

7/8"-9—*Fits 1" Slot Wd.*
Hd.: Ht. 5/8"; Wd. 1 3/4"; Lg. 2"

Lg.	Thread Lg.		
4"	1 3/4"	91523A920	$18.23
5"	1 3/4"	91523A924	19.32
6"	2"	91523A928	20.40
7"	2"	91523A930	21.49
8"	2 1/2"	91523A932	22.59

1"-8—*Fits 1" Slot Wd.*
Hd.: Ht. 5/8"; Wd. 1 3/4"; Lg. 2"

Lg.	Thread Lg.		
4"	1 3/4"	91523A959	21.04
5"	1 3/4"	91523A983	22.16
6"	2"	91523A961	23.27
7"	2"	91523A962	24.39

Black-Oxide Alloy Steel

1/2"-13—*Fits 1/2" Slot Wd.*
Hd.: Ht. 5/16"; Wd. 7/8"; Lg. 1 1/4"

Lg.	Thread Lg.		
1 1/4"	1"	92640A714	11.30
1 1/2"	1"	92640A716	11.30
1 3/4"	1"	92640A718	11.30
2"	1"	92640A720	10.83
2 1/2"	1 1/4"	92640A722	10.00
3"	1 1/2"	92640A724	10.59
3 1/2"	1 1/2"	92640A726	10.67
4"	1 1/2"	92640A728	10.79
5"	2"	92640A732	14.59

5/8"-11—*Fits 5/8" Slot Wd.*
Hd.: Ht. 3/8"; Wd. 1 1/8"; Lg. 1 1/2"

Lg.	Thread Lg.		
2"	1 1/4"	92640A802	14.62
2 1/2"	1 1/4"	92640A804	15.27
2 3/4"	1 1/4"	92640A805	15.27
3"	1 1/2"	92640A806	15.05
3 1/2"	1 1/2"	92640A808	15.35
4"	1 1/2"	92640A810	15.46
4 1/2"	1 1/2"	92640A812	17.39
5"	1 1/2"	92640A814	17.61
6"	1 1/2"	92640A818	16.57
8"	3"	92640A822	17.57

3/4"-10—*Fits 3/4" Slot Wd.*
Hd.: Ht. 7/16"; Wd. 1 5/16"; Lg. 1 3/4"

Lg.	Thread Lg.		
2 1/2"	1 1/4"	92640A845	13.71
3"	1 1/2"	92640A847	14.05
3 1/2"	1 1/2"	92640A849	14.31
4"	1 1/2"	92640A851	14.37
4 1/2"	1 1/2"	92640A853	16.07
5"	1 1/2"	92640A855	16.57
6"	1 1/2"	92640A859	17.05
7"	3"	92640A861	17.91
8"	3"	92640A863	18.57
10"	3"	92640A872	23.52

1"-8—*Fits 1" Slot Wd.*
Hd.: Ht. 1/2"; Wd. 1 11/16"; Lg. 2 1/4"

Lg.	Thread Lg.		
3 1/2"	1 1/2"	92640A954	21.70
4"	2 1/2"	92640A956	20.36
4 1/2"	2 1/2"	92640A958	21.85
5"	2 1/2"	92640A960	21.85
6"	2 1/2"	92640A961	22.84
8"	3"	92640A963	25.93

Metric Black-Finish Steel

M6—*Fits M6 Slot Wd.*
Pitch: 1 mm
Head: Ht. 4 mm; Wd. 10 mm

Lg., mm	Thread Lg., mm		
25	15	92770A111	$13.07
40	28	92770A113	13.29
63	40	92770A115	14.39

M8—*Fits M8 Slot Wd.*
Pitch: 1.25 mm
Head: Ht. 6 mm; Wd. 13 mm

Lg., mm	Thread Lg., mm		
32	22	92770A117	14.19
50	35	92770A118	14.87

M10—*Fits M10 Slot Wd.*
Pitch: 1.5 mm
Head: Ht. 6 mm; Wd. 15 mm

Lg., mm	Thread Lg., mm		
40	30	92770A123	$13.93
63	45	92770A125	14.19

M12—*Fits M12 Slot Wd.*
Pitch: 1.75 mm
Head: Ht. 7 mm; Wd. 18 mm

Lg., mm	Thread Lg., mm		
50	35	92770A129	14.19
63	40	92770A131	14.87
80	55	92770A133	15.43

T-Slot Cleaner—Black-Oxide Steel

Use this handy 6" long tool to reach into T-slots and scrape out debris.

95379A214 ..... $1.38

Low-Strength Steel Hold-Down Bolts with Nut and Washer—ASTM A307 Grade A

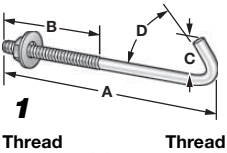

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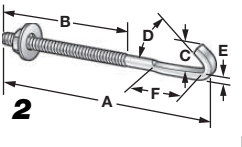

2

Zinc plated for rust resistance. Furnished with a nut and washer. Have a Class 2A thread fit, min. Rockwell hardness of B69, and min. tensile strength of 60,000 psi.

Thread Size	(A)	Thread Lg. (B)	(C)	(D)	(E)	(F)	Pkg. Qty.		Pkg.
(1) With Round Hook									
1/4"-20	5"	2 1/4"	3/4"	60°	—	—	2	98760A109	$10.98
1/4"-20	9 1/4"	2 3/4"	11/16"	55°	—	—	2	98760A111	10.57
5/16"-18	6 3/4"	2 1/4"	3/4"	60°	—	—	2	98760A110	11.74
5/16"-18	10 5/16"	8"	9/16"	60°	—	—	2	98760A112	9.73
(2) With Flat Hook									
1/4"-20	4 3/4"	2 3/4"	1/2"	45°	5/32"	1"	2	98760A120	9.27
1/4"-20	9"	2 3/4"	1/2"	45°	5/32"	1"	2	98760A121	13.27
5/16"-18	5 7/8"	2 9/16"	5/16"	20°	11/64"	3"	1	98760A118	11.64
5/16"-18	10 5/16"	2 3/4"	1/2"	45°	5/32"	1"	2	98760A122	12.97
3/8"-16	10"	2 3/4"	1/2"	45°	5/32"	1"	1	98760A123	9.02

Medium-Strength Acute-Angle Anchor Bolts

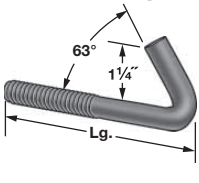

Similar to the L-hook anchor bolts on page 3149, but with a smaller, 63° interior angle. Intended for structural anchoring, these bolts are made from steel that's comparable to Grade 5 steel and meet SAE J429. They have a Class 2A thread fit, minimum Rockwell hardness of C25, and minimum tensile strength of 120,000 psi. Thread length is 2"-3 1/4".

For hex nuts, see pages 3186 and 3190. For flat washers, see pages 3218 and 3219.

1/2"-13

Lg.		
4"	91592A185	$2.77
4 1/2"	91592A190	2.97
5"	91592A195	2.99
6"	91592A200	3.02
7"	91592A205	3.26

5/8"-11

Lg.		
5"	91592A295	$4.39
6"	91592A300	4.54
7"	91592A305	5.15
8"	91592A310	4.90

Low-Strength Anchor Bolts

Designed for structural anchoring. All have a Class 2A thread fit and are not rated for hardness. Bolts with an ***L-hook*** have a right (90°) angle. For hex nuts, see pages 3186, 3187, and 3190. For flat washers, see pages 3218 and 3219.

Plain Steel— Made from steel that meets ASTM A36, these bolts have a min. tensile strength of 58,000 psi.

Hot-Dipped Galvanized Steel— Made from steel that meets ASTM A36. Thickly coated with zinc for excellent protection from rust and weather. Min. tensile strength is 58,000 psi.

18-8 Stainless Steel— Your best choice for corrosion resistance. May be mildly magnetic. Min. tensile strength is 70,000 psi.

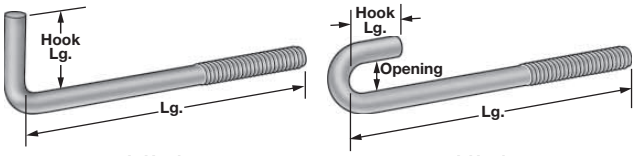

L-Hook *J-Hook*

Lg.	PLAIN STEEL L-Hook		PLAIN STEEL J-Hook		HOT-DIPPED GALVANIZED STEEL L-Hook		HOT-DIPPED GALVANIZED STEEL J-Hook		18-8 STAINLESS STEEL L-Hook		18-8 STAINLESS STEEL J-Hook	
3/8"-16— *Thread Lg.: 2 1/2"-3", L-Hook Lg.: 2", J-Hook Opening: 1/2", J-Hook Lg.: 3/4"*												
8"	91587A110	$2.46	91588A111	$2.96	91603A100	$3.43	91604A111	$4.68	91615A110	$6.16	91521A110	$6.48
10"	91587A120	2.71	91588A121	3.27	91603A110	3.64	91604A121	4.88	91615A120	7.10	91521A115	7.34
12"	91587A130	2.93	91588A130	3.52	91603A120	3.82	91604A130	5.12	91615A130	7.99	91521A120	8.29
14"	91587A140	3.06	91588A140	3.65	91603A130	4.03	91604A140	5.44	91615A140	8.88	91521A125	9.18
18"	91587A170	3.41	91588A150	3.81	91603A140	4.40	—	—	91615A170	10.69	—	—
1/2"-13— *Thread Lg.: 2 1/2"-3", L-Hook Lg.: 2", J-Hook Opening: 5/8", J-Hook Lg.: 1"*												
8"	91587A210	3.24	91588A210	3.91	91603A150	4.58	91604A210	5.56	91615A210	9.61	91521A150	9.93
10"	91587A220	3.54	91588A220	4.29	91603A155	5.05	91604A220	6.26	91615A220	10.92	91521A155	11.25
12"	91587A230	3.78	91588A230	4.52	91603A160	5.75	91604A230	6.84	91615A230	12.77	91521A160	12.50
16"	91587A245	4.29	91588A245	5.22	91603A165	7.48	91604A245	7.92	91615A240	17.51	91521A165	13.47
18"	91587A250	4.63	91588A250	5.60	91603A170	7.38	91604A250	8.56	91615A250	19.80	91521A170	14.96
5/8"-11— *Thread Lg.: 2 1/2"-3", L-Hook Lg.: 2", J-Hook Opening: 3/4", J-Hook Lg.: 1"*												
8"	91587A310	4.06	91588A310	4.91	91603A250	6.02	91604A310	6.95	91615A310	14.47	91521A205	15.00
10"	91587A320	4.37	91588A320	5.33	91603A255	6.58	91604A320	7.80	91615A320	16.84	91521A210	17.43
12"	91587A330	4.70	91588A330	5.71	91603A260	7.07	91604A330	8.48	91615A330	19.22	91521A215	19.74
14"	91587A340	5.03	—	—	—	—	—	—	91615A340	21.54	—	—
18"	91587A350	6.07	91588A350	7.36	91603A265	8.96	91604A340	11.12	91615A350	26.45	—	—
3/4"-10— *Thread Lg.: 3"-3 1/2", L-Hook Lg.: 2 3/4", J-Hook Opening: 1 1/8", J-Hook Lg.: 1 1/4"*												
8"	91587A410	5.15	91588A411	6.86	91603A300	7.04	91604A411	7.36	91615A410	23.22	91521A260	23.95
10"	91587A420	5.60	91588A420	7.44	91603A305	7.32	91604A420	8.89	91615A420	26.58	91521A305	27.30
12"	91587A430	6.66	91588A430	8.09	91603A310	8.46	91604A430	10.42	91615A430	30.10	91521A310	30.92
14"	91587A440	7.07	91588A440	8.58	91603A315	8.14	91604A435	12.13	91615A440	33.55	91521A315	21.42
18"	91587A450	8.43	91588A450	10.19	91603A320	10.61	91604A450	15.18	91615A450	39.74	91521A320	41.25
24"	91587A460	10.60	91588A460	12.87	91603A325	14.42	91604A495	16.84	91615A460	51.38	91521A325	52.43
1"-8— *Thread Lg.: 4"-5", L-Hook Lg.: 3 1/2", J-Hook Opening: 2 1/8", J-Hook Lg.: 2 1/8"*												
10"	91587A620	12.07	91588A620	9.07	—	—	91604A511	13.47	91615A520	46.69	91521A405	40.13
12"	91587A630	13.20	91588A630	10.32	91603A410	14.87	91604A513	12.79	91615A530	52.14	91521A410	44.78
14"	91587A640	14.20	91588A640	11.47	91603A420	17.01	91604A516	14.30	91615A540	57.57	91521A415	49.60
18"	91587A650	15.67	91588A650	12.23	91603A430	20.25	91604A519	16.48	91615A550	68.57	91521A420	60.56
24"	91587A660	17.30	91588A660	13.68	91603A440	22.31	91604A522	17.88	91615A560	84.57	91521A425	72.64

Flattened-End Hanger Bolts, Screws, Anchors, and Nuts

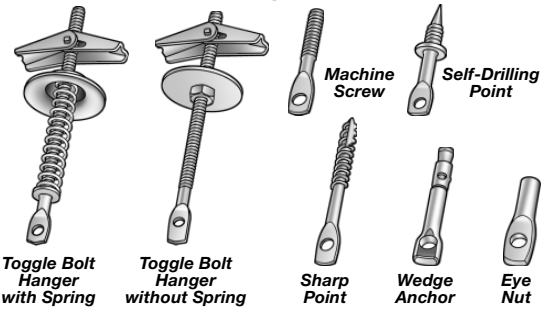

Each of these zinc-plated steel hangers has a flat end with a hole, making it ideal for tie-wire applications. Use them for wire guiding as well as for hanging pipe, fixtures, and other assemblies such as suspended ceilings.

Toggle Bolt Hangers— A popular choice for overhead applications. The *toggle bolt with spring* is easy to install because the spring holds the washer and toggle against opposite sides of the wall, so everything's in position before you begin tightening. Once tightened, the spring adds vibration resistance. Toggle bolts with spring are not rated for hardness; those without a spring have a minimum Rockwell hardness of B69.

Machine Screw Hangers— Also known as spade bolts, you can use these versatile hangers in a threaded hole (as you would a screw), or secure them with a nut (as you would a bolt). Minimum Rockwell hardness is B69. All meet ASTM A307.

Self-Drilling Hanger Screws— Use in steel up to 12-ga. thick. Install with a *driver tool* (at right). Not rated for hardness.

Sharp-Point Hanger Screws— Drive these into wood with an adjustable wrench, pliers, or a *driver tool* (sold separately at right). Not rated for hardness.

Wedge Anchor— Use in concrete and other solid materials. Minimum Rockwell hardness is B69.

Eye Nuts— Also known as eye couplings and tie-wire nuts, use eye nuts to add wire guides to threaded rod and expansion anchors. Minimum Rockwell hardness is B69.

Toggle Bolt Hangers

Shank Dia.	Drill Dia.	O'all Lg.	Maximum Usable Lg.	Thread Lg.	Hole Dia.	Pkg. Qty.		Pkg.
Toggle Bolt with Spring								
1/4"	3/4"	5"	2 1/4"	4"	7/32"	5	91705A352●	$8.97
Toggle Bolts without Spring								
1/4"	5/8"	4"	1 5/8"	3"	3/16"	10	91705A200	6.52
1/4"	5/8"	5"	2 1/2"	4"	3/16"	10	91705A300	7.63

● Zinc and yellow-chromate plated.

Screw Style Hangers

Thread Sz.	O'all Lg.	Thread Lg.	Hole Dia.	Pkg. Qty.		Pkg.
Machine Screw Hangers						
1/4"-20	2"	7/8"	7/32"	10	90172A542	$13.55
1/4"-20	3"	1 7/8"	7/32"	10	90172A545	14.17
3/8"-16	2 1/4"	7/8"	9/32"	10	90172A633	14.31
3/8"-16	4 1/4"	2 7/8"	9/32"	5	90172A639	9.66
1/2"-13	3 7/16"	2"	11/32"	5	90172A724	12.18
1/2"-13	4 7/16"	3"	11/32"	5	90172A729	12.14
Screw with Self-Drilling Point						
1/4"	2"	7/8"	7/32"	25	90171A700●	11.75
Screws with Sharp Point						
1/4"	3"	1 1/2"	7/32"	50	90171A554●	7.59
1/4"	4"	1 1/2"	7/32"	25	90171A558●	7.52
1/4"	5"	1 1/2"	7/32"	25	90171A562●	10.61
5/16"	3 1/2"	1 3/4"	9/32"	25	90171A597●	12.02

● Zinc and yellow-chromate plated.

Wedge Anchor

Shank Dia.	Drill Dia.	O'all Lg.	Minimum Embed. Depth	Hole Dia.	Pkg. Qty.		Pkg.
1/4"	1/4"	2 1/4"	1 1/8"	1/4"	10	91705A400	$5.70

Eye Nuts

Internal Thread	O'all Lg.	Hole Dia.	Pkg. Qty.		Pkg.
1/4"-20	1 9/16"	1/4"	25	91705A500	$11.58
3/8"-16	2"	3/8"	25	91705A600	13.55

Driver Tools

For self-drilling and sharp-point hanger screws. Each tool has a 1/4" hex shank.

For Screws with 1/4" Shank Dia.	5977A42	Each	$4.58
For Screws with 5/16" Shank Dia.	5977A43	Each	5.46

High-Strength Alloy Steel Threaded Rods—Grade 8

Made from heat-treated alloy steel that meets ASTM A354 BD, these threaded rods are ideal for applications requiring high strength.

They have a Class 2A thread fit, minimum Rockwell hardness of C33, and minimum tensile strength of 150,000 psi. Length is measured from end to end.

For matching hex nuts, see 98427A on page 3189 for all sizes except 3/8"-16. For 3/8"-16 size, see 90521A225 on page 3190.

Lg.		
3/8"-16		
3 ft.	90322A100	$7.17
6 ft.	90322A105	13.78
12 ft.	90322A110	29.03
1/2"-13		
3 ft.	90322A215	11.89
6 ft.	90322A220	22.88
12 ft.	90322A225	48.02
5/8"-11		
3 ft.	90322A330	13.43
6 ft.	90322A335	25.80
12 ft.	90322A340	53.90
3/4"-10		
3 ft.	90322A450	$18.75
6 ft.	90322A455	36.00
12 ft.	90322A460	75.39
7/8"-9		
3 ft.	90322A570	24.16
6 ft.	90322A575	46.20
12 ft.	90322A580	96.87
1"-8		
3 ft.	90322A610	32.11
6 ft.	90322A615	61.50
12 ft.	90322A620	129.24
1 1/8"-7		
3 ft.	90322A730	$42.82
6 ft.	90322A735	81.90
12 ft.	90322A740	172.32
1 1/4"-7		
3 ft.	90322A850	53.48
6 ft.	90322A855	102.30
12 ft.	90322A860	215.40
1 1/2"-6		
3 ft.	90322A970	110.89
6 ft.	90322A975	212.22
12 ft.	90322A980	445.51

Medium-Strength Alloy Steel Threaded Studs and Rods—ASTM A193 Grade B7

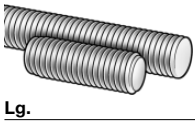

Considered the standard for bolting pressure vessels, valves, and flanges, these studs and rods are made from chromium-molybdenum AISI 4140 alloy steel. Length is measured from end to end (unless noted). All lengths have a Class 2A thread fit, maximum Rockwell hardness of C35, and minimum tensile strength of 125,000 psi.

For matching hex nuts, see 90521A on page 3190.

Lg.		
Plain Alloy Steel		
1/4"-20		
1"	98750A011	$1.02
1 1/4"	98750A013	1.09
1 1/2"	98750A015	1.13
1 3/4"	98750A017	1.17
2"	98750A019	1.20
2 1/2"	98750A021	1.28
3"	98750A023	1.36
4"	98750A025	1.66
2 ft.	98957A801	2.62
3 ft.	98957A633	1.78
6 ft.	98957A733	3.71
12 ft.	98957A029	7.85
1/4"-28		
3 ft.	92580A107	4.78
6 ft.	92580A207	8.75
12 ft.	92580A307	18.38
5/16"-18		
1"	98750A035	1.20
1 1/4"	98750A037	1.24
1 1/2"	98750A039	1.24
2"	98750A041	1.27
2 1/2"	98750A043	1.37
3"	98750A045	1.44
3 1/2"	98750A047	1.31
4"	98750A049	1.45
2 ft.	98957A802	1.78
3 ft.	98957A634	2.17
6 ft.	98957A734	4.43
12 ft.	98957A030	9.12
5/16"-24		
2 ft.	98957A803	4.72
3 ft.	92580A108	6.65
6 ft.	92580A208	13.18
12 ft.	92580A308	24.71
3/8"-16		
3/4"	98750A052♠	1.76
1"	98750A054	1.32
1 1/4"	98750A056	1.38
1 1/2"	98750A058	1.45
2"	98750A062	1.49
2 1/4"	98750A063	1.35
2 1/2"	98750A064	1.53
3"	98750A066	1.62
3 1/2"	98750A068	1.69
4"	98750A070	1.84
5"	98750A075	1.86
5 1/2"	98750A077	1.80
6"	98750A080	2.00
2 ft.	98957A804	2.31
3 ft.	98957A635	3.15
6 ft.	98957A735	6.78
12 ft.	98957A031	14.08
3/8"-24		
2 ft.	98957A805	3.43
3 ft.	92580A109	4.33
6 ft.	92580A209	8.66
12 ft.	92580A309	18.18
7/16"-14		
2 ft.	98957A806	2.99
3 ft.	98957A610	4.46
7/16"-14 (Cont.)		
6 ft.	98957A710	$8.47
12 ft.	98957A010	17.64
7/16"-20		
2 ft.	98957A807	4.37
3 ft.	92580A110	4.70
6 ft.	92580A210	9.38
12 ft.	92580A310	19.70
1/2"-13		
1"	98750A090	.91
1 1/4"	98750A093	1.07
1 1/2"	98750A096	1.18
1 3/4"	98750A098♠	.36
2"	98750A099♠	.43
2 1/4"	98750A100	.55
2 1/2"	98750A101	.85
3"	98750A103	.96
3 1/2"	98750A105	1.00
4"	98750A107	1.12
4 1/2"	98750A108	1.17
5"	98750A109	1.29
5 1/2"	98750A110	1.33
6"	98750A111	1.43
6 1/2"	98750A113	2.90
2 ft.	98957A808	4.35
3 ft.	98957A636	5.47
6 ft.	98957A736	10.86
12 ft.	98957A033	22.63
1/2"-20		
2 ft.	98957A809	7.60
3 ft.	92580A111	9.12
6 ft.	92580A211	18.24
12 ft.	92580A311	36.47
9/16"-12		
1 ft.	98957A500	3.16
3 ft.	98957A612	7.70
6 ft.	98957A712	13.63
12 ft.	98957A012	27.76
9/16"-18		
1 ft.	98957A407	8.72
3 ft.	92580A125	12.88
6 ft.	92580A225	25.76
5/8"-11		
2"	98750A208♠	.61
2 1/2"	98750A210	.94
2 3/4"	98750A211	.95
3"	98750A212	1.04
3 1/2"	98750A214	1.15
3 3/4"	98750A215	1.23
4"	98750A216	1.32
4 1/2"	98750A218	1.41
5"	98750A220	1.50
5 1/2"	98750A221	1.65
6"	98750A222	1.76
6 1/2"	98750A223	1.70
7"	98750A224	1.80
8"	98750A226	2.19
1 ft.	98957A501	3.15
2 ft.	98957A810	7.92
3 ft.	98957A637	8.17
6 ft.	98957A737	15.59
12 ft.	98957A035	31.34
5/8"-18		
1 ft.	98957A408	$7.24
2 ft.	98957A811	10.05
3 ft.	92580A112	14.47
6 ft.	92580A212	28.94
12 ft.	92580A312	57.88
3/4"-10		
2"	98750A300♠	.96
2 1/2"	98750A302♠	1.15
3"	98750A305	1.26
3 1/2"	98750A307	1.27
4"	98750A309	1.55
4 1/2"	98750A311	1.65
5"	98750A313	1.82
5 1/2"	98750A315	2.00
6"	98750A317	2.24
6 1/2"	98750A318	2.38
7"	98750A319	2.53
7 1/2"	98750A320	2.40
8"	98750A321	2.89
8 1/2"	98750A322	3.30
9"	98750A323	3.51
1 ft.	98957A502	4.46
2 ft.	98957A812	8.42
3 ft.	98957A638	10.70
6 ft.	98957A738	21.56
12 ft.	98957A036	44.19
3/4"-16		
1 ft.	98957A409	5.95
2 ft.	98957A813	13.86
3 ft.	92580A113	11.89
6 ft.	92580A213	23.78
12 ft.	92580A313	49.94
7/8"-9		
3"	98750A409	1.70
3 1/2"	98750A411	1.70
4"	98750A415	1.82
4 1/2"	98750A417	1.87
5"	98750A419	2.10
5 1/2"	98750A420	2.30
6"	98750A421	2.46
6 1/2"	98750A422	2.78
7"	98750A423♠	3.26
7 1/2"	98750A424	3.88
8"	98750A426	3.90
9"	98750A431	3.95
1 ft.	98957A503	4.40
2 ft.	98957A814	10.11
3 ft.	98957A639	13.40
6 ft.	98957A739	27.14
12 ft.	98957A037	56.23
7/8"-14		
1 ft.	98957A410	10.89
2 ft.	98957A815	19.16
3 ft.	92580A121	27.24
6 ft.	92580A221	54.47
12 ft.	92580A321	108.94
1"-8		
4"	98750A498	2.45
4 1/2"	98750A501	2.65
5"	98750A503	2.99
1"-8 (Cont.)		
5 1/2"	98750A505	$2.95
6"	98750A507	3.22
6 1/2"	98750A508	3.81
7"	98750A510	4.05
8"	98750A515♠	4.81
1 ft.	98957A504	8.02
2 ft.	98957A816	13.23
3 ft.	98957A641	19.44
6 ft.	98957A741	39.34
12 ft.	98957A038	79.09
1"-12		
1 ft.	98957A411	14.97
2 ft.	98957A817	22.97
3 ft.	92580A119	21.32
6 ft.	92580A219	42.64
12 ft.	92580A319	89.54
1"-14		
1 ft.	98957A412	13.80
2 ft.	98957A818	24.06
3 ft.	92580A114	36.06
6 ft.	92580A214	69.10
12 ft.	92580A314	119.18
1 1/8"-7		
1 ft.	98957A505	13.00
2 ft.	98957A819	19.08
3 ft.	98957A642	23.43
6 ft.	98957A742	42.79
12 ft.	98957A061	89.64
1 1/8"-8		
5"	98750A611	3.90
5 1/2"	98750A613	3.95
6"	98750A621	4.50
6 1/2"	98750A623	6.97
7"	98750A624	8.39
8"	98750A628	8.42
1 ft.	98957A506	8.47
3 ft.	98957A643	25.92
6 ft.	98957A743	49.85
1 1/8"-12		
1 ft.	98957A413	18.20
2 ft.	98957A820	28.00
3 ft.	92580A115	45.53
6 ft.	92580A215	91.06
1 1/4"-7		
1 ft.	98957A507	9.96
2 ft.	98957A822	20.31
3 ft.	98957A644	29.37
6 ft.	98957A744	61.37
12 ft.	98957A062	128.93
1 1/4"-8		
6"	98750A685	5.61
6 1/2"	98750A689	6.20
7"	98750A701	6.74
7 1/2"	98750A703	6.70
8"	98750A705	7.15
9"	98750A707	8.14
1 ft.	98957A508	10.97
3 ft.	98957A615	33.50
6 ft.	98957A715	67.00
12 ft.	98957A015	140.80
1 1/4"-12		
1 ft.	98957A414	$22.09
2 ft.	98957A821	34.22
3 ft.	92580A116	56.76
6 ft.	92580A216	110.43
12 ft.	92580A316	227.06
1 3/8"-6		
1 ft.	98957A509	10.94
2 ft.	98957A823	23.32
3 ft.	98957A618	32.90
6 ft.	98957A718	68.02
12 ft.	98957A018	143.53
1 3/8"-8		
1 ft.	98957A510	13.35
3 ft.	98957A619	38.89
6 ft.	98957A719	78.11
1 3/8"-12		
1 ft.	98957A415	27.72
3 ft.	92580A117	66.50
6 ft.	92580A217	134.95
12 ft.	92580A317	277.41
1 1/2"-6		
1 ft.	98957A511	14.88
2 ft.	98957A824	29.74
3 ft.	98957A645	45.83
6 ft.	98957A745	91.67
12 ft.	98957A041	188.65
1 1/2"-8		
1 ft.	98957A512	16.53
3 ft.	98957A646	49.10
6 ft.	98957A746	98.22
12 ft.	98957A048	206.65
1 1/2"-12		
1 ft.	98957A416	31.69
2 ft.	98957A825	58.56
3 ft.	92580A118	79.24
6 ft.	92580A218	158.48
12 ft.	92580A318	332.71
1 5/8"-8		
1 ft.	98957A513	31.77
3 ft.	98957A647	54.89
1 3/4"-5		
1 ft.	98957A514	20.64
2 ft.	98957A826	52.61
3 ft.	98957A648	61.92
6 ft.	98957A748	123.77
12 ft.	98957A044	260.99
1 3/4"-8		
1 ft.	98957A515	22.25
3 ft.	98957A660	64.75
6 ft.	98957A760	129.70
1 7/8"-8		
1 ft.	98957A516	41.09
3 ft.	98957A649	76.25
2"-4 1/2		
1 ft.	98957A517	44.57
3 ft.	98957A650	85.14
6 ft.	98957A750	169.11
12 ft.	98957A046	351.63

♠ Length is measured from first full thread to first full thread.

(Continued on following page)

Medium-Strength Alloy Steel Threaded Studs and Rods—ASTM A193 Grade B7

(Continued from previous page)

Black-Oxide Alloy Steel

Lg.		
1/4"-20		
1"	98758A305	$1.71
1 1/4"	98758A307	1.93
1 1/2"	98758A308	1.87
2"	98758A310	1.91
1 ft	94210A003	2.91
3 ft	94210A052	9.30
6 ft	94210A125	12.19
5/16"-18		
1 1/4"	98758A410	2.07
1 1/2"	98758A413	2.00
2"	98758A418	2.03
4"	98758A426	2.70
1 ft	94210A006	2.91
3 ft	94210A055	9.68
6 ft	94210A130	12.92
3/8"-16		
1 1/2"	98758A465	$2.43
2"	98758A468	2.71
2 1/2"	98758A472	2.75
3"	98758A475	2.82
3 1/2"	98758A480	2.10
4"	98758A484	2.38
5"	98758A488	3.03
6"	98758A492	3.38
1 ft	94210A009	2.94
3 ft	94210A058	10.03
6 ft	94210A135	15.12
1/2"-13		
1 1/2"	98758A502	1.96
2"	98758A506	1.30
2 1/2"	98758A510	1.24
1/2"-13 (Cont.)		
3"	98758A513	$1.43
3 1/2"	98758A516	1.55
4"	98758A518	1.73
5"	98758A523	2.30
6"	98758A528	1.94
1 ft	94210A012	4.27
3 ft	94210A061	10.40
6 ft	94210A140	23.30
5/8"-11		
2 1/2"	98758A572	1.90
3"	98758A576	2.03
3 1/2"	98758A580	1.50
4"	98758A583	1.86
4 1/2"	98758A585	2.40
5"	98758A586	2.27
5/8"-11 (Cont.)		
6"	98758A590	$2.95
8"	98758A595	4.60
1 ft	94210A015	6.89
3 ft	94210A064	14.02
6 ft	94210A145	27.30
3/4"-10		
2 1/2"	98758A602	3.25
3"	98758A604	3.25
3 1/2"	98758A606	3.50
4"	98758A610	2.96
4 1/2"	98758A615	3.20
5"	98758A620	3.40
5 1/2"	98758A623	4.43
6"	98758A625	4.12
7"	98758A632	5.43
3/4"-10 (Cont.)		
8"	98758A636	$6.62
1 ft	94210A018	10.06
3 ft	94210A067	20.45
6 ft	94210A150	37.16
7/8"-9		
1 ft	94210A021	13.76
3 ft	94210A070	29.40
6 ft	94210A155	52.16
1"-8		
1 ft	94210A024	18.00
3 ft	94210A073	34.32
6 ft	94210A160	62.48

Zinc Yellow-Chromate Plated Alloy Steel

Lg.		
1/4"-20		
3 ft	99086A111	6.02
6 ft	99086A186	11.45
12 ft	99086A233	19.63
1/4"-28		
3 ft	99086A114	6.56
6 ft	99086A187	14.11
5/16"-18		
3 ft	99086A117	7.41
6 ft	99086A189	14.15
12 ft	99086A237	26.44
5/16"-24		
3 ft	99086A120	7.57
6 ft	99086A190	16.65
3/8"-16		
3 ft	99086A123	8.40
6 ft	99086A192	16.53
12 ft	99086A240	26.70
3/8"-24		
3 ft	99086A126	9.00
6 ft	99086A194	17.93
1/2"-13		
3 ft	99086A129	10.27
6 ft	99086A195	20.30
12 ft	99086A243	39.17
1/2"-20		
3 ft	99086A132	15.45
6 ft	99086A196	34.14
5/8"-11		
1 ft	99086A300	8.97
3 ft	99086A135	15.85
6 ft	99086A198	27.27
12 ft	99086A247	51.08
5/8"-18		
3 ft	99086A138	21.24
6 ft	99086A199	46.15
3/4"-10		
1 ft	99086A302	13.19
3 ft	99086A141	20.90
6 ft	99086A201	36.21
12 ft	99086A251	66.24
3/4"-16		
3 ft	99086A144	27.01
6 ft	99086A202	66.39
1"-8		
1 ft	99086A304	21.81
3 ft	99086A147	32.28
6 ft	99086A204	61.75
12 ft	99086A254	124.12
1"-14		
3 ft	99086A151	45.87
6 ft	99086A206	118.27

Left-Hand Threaded Plain Alloy Steel

Lg.		
1/4"-20		
3 ft	95625A003	8.51
6 ft	95625A130	16.53
1/4"-28		
3 ft	95625A005	7.57
6 ft	95625A132	13.71
5/16"-18		
3 ft	95625A009	19.19
6 ft	95625A140	66.62
5/16"-24		
1 ft	95625A303	14.00
3 ft	95625A112	36.62
6 ft	95625A142	70.39
3/8"-16		
1 ft	95625A304	6.20
3 ft	95625A015	16.04
6 ft	95625A150	29.21
3/8"-24		
1 ft	95625A305	7.56
3 ft	95625A017	19.71
6 ft	95625A152	36.85
1/2"-13		
1 ft	95625A306	7.10
3 ft	95625A021	27.80
6 ft	95625A160	39.23
1/2"-20		
1 ft	95625A307	9.08
3 ft	95625A023	24.02
6 ft	95625A162	46.07
5/8"-11		
1 ft	95625A308	10.35
3 ft	95625A027	40.28
6 ft	95625A170	49.18
5/8"-18		
1 ft	95625A309	12.68
3 ft	95625A029	32.77
6 ft	95625A172	75.75
3/4"-10		
1 ft	95625A310	11.75
3 ft	95625A033	36.60
6 ft	95625A180	61.42
3/4"-16		
1 ft	95625A311	15.57
3 ft	95625A035	40.33
6 ft	95625A182	84.95
7/8"-9		
1 ft	95625A312	15.99
3 ft	95625A039	37.09
6 ft	95625A190	76.90
7/8"-14		
1 ft	95625A313	21.39
3 ft	95625A041	58.65
6 ft	95625A192	112.87
1"-8		
1 ft	95625A314	18.03
3 ft	95625A045	59.88
6 ft	95625A200	95.56
1"-14		
1 ft	95625A315	22.81
3 ft	95625A047	58.84
6 ft	95625A202	121.00

Seize-Resistant Medium-Strength Alloy Steel Threaded Studs—ASTM A193 Grade B7

Studs have a blue coating that contains PTFE and provides excellent rust resistance, great lubricity, and prevents the friction that causes nuts to stick. All studs are made from chromium-molybdenum alloy steel. They have a Class 2A thread fit, maximum Rockwell hardness of C35, and minimum tensile strength of 125,000 psi. Length is measured from end to end.

For matching hex nuts, see 90212A on page 3190.

Lg.		
1/2"-13		
2 1/2"	98752A101	$3.25
3"	98752A103	2.25
4"	98752A107	2.80
5"	98752A109	4.15
6"	98752A111	4.50
5/8"-11		
3"	98752A212	2.04
3 1/2"	98752A214	2.34
4"	98752A216	2.65
5"	98752A220	3.39
6"	98752A222	3.85
3/4"-10		
3"	98752A305	3.68
4"	98752A309	5.04
3/4"-10 (Cont.)		
4 1/2"	98752A311	$5.28
5"	98752A313	5.68
6"	98752A317	6.45
7"	98752A319	9.05
8"	98752A321	9.94
9"	98752A323	10.94
7/8"-9		
4"	98752A410	1.83
5"	98752A418	2.29
6"	98752A425	2.66
1"-8		
5"	98752A503	9.66
6"	98752A507	11.12
7"	98752A510	14.28

Medium-Strength Alloy Steel Threaded Studs and Rods for High Temperatures—ASTM A193 Grade B16

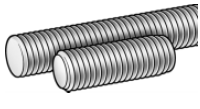

With the addition of vanadium, these chromium-molybdenum alloy steel fasteners can tolerate intense heat. Stronger than Grade B7 studs and rods, they're designed for use in pressure vessels, valves, and flanges.

All have a Class 2A thread fit, maximum Rockwell hardness of C35, and minimum tensile strength of 125,000 psi. Length is measured from end to end.

For matching hex nuts, see 94485A on page 3190.

Lg.		
1/4"-20		
3 ft	99065A120	$9.41
6 ft	99065A216	17.61
5/16"-18		
1 ft	99065A400	7.15
3 ft	99065A125	11.76
6 ft	99065A221	22.59
3/8"-16		
1 ft	99065A401	7.12
3 ft	99065A130	13.10
6 ft	99065A226	25.60
12 ft	99065A317	32.19
1/2"-13		
2 1/2"	95456A720	1.71
3"	95456A724	1.82
3 1/2"	95456A726	1.91
4"	95456A728	2.13
5"	95456A732	2.69
6"	95456A736	3.00
1 ft	99065A402	8.14
3 ft	99065A135	14.54
6 ft	99065A231	26.36
12 ft	99065A322	40.33
5/8"-11		
3"	95456A806	$2.28
3 1/2"	95456A808	2.41
4"	95456A810	2.80
5"	95456A814	3.11
6"	95456A818	3.80
7"	95456A822	4.02
8"	95456A826	4.37
1 ft	99065A403	9.69
3 ft	99065A140	18.66
6 ft	99065A236	34.81
12 ft	99065A327	59.47
3/4"-10		
3"	95456A847	3.65
4"	95456A851	4.07
4 1/2"	95456A853	4.58
5"	95456A855	4.45
6"	95456A859	5.16
7"	95456A863	5.82
8"	95456A866	6.28
9"	95456A869	6.82
1 ft	99065A404	10.02
3 ft	99065A145	25.09
6 ft	99065A241	47.61
12 ft	99065A332	81.67
7/8"-9		
4 1/2"	95456A889	$5.55
5"	95456A892	5.82
6"	95456A896	6.51
7"	95456A898	7.07
1 ft	99065A405	11.86
3 ft	99065A150	32.49
6 ft	99065A246	62.30
12 ft	99065A337	111.97
1"-8		
6"	95456A928	7.80
6 1/2"	95456A929	8.27
7"	95456A930	8.53
8"	95456A931	9.49
1 ft	99065A406	13.82
3 ft	99065A155	38.58
6 ft	99065A251	74.21
12 ft	99065A342	144.37
1 1/8"-7		
1 ft	99065A407	18.50
3 ft	99065A160	44.64
6 ft	99065A256	87.05
1 1/4"-7		
1 ft	99065A409	31.07
3 ft	99065A170	81.28
6 ft	99065A266	158.78

Hot-Dipped Galvanized Low-Strength Steel Threaded Studs and Rods

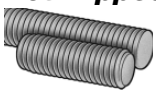

With a thick hot-dipped galvanized coating, these rods and studs are better protected against rust, weather, and corrosion than zinc-plated studs and rods. All have a Class 1A thread fit, minimum tensile strength of 53,000 psi, and are not rated for hardness. Length is measured from end to end.

Use with oversized tapped nuts (see 90371A on page 3187). For washers, see 98970A on page 3217.

Lg.		
3/8"-16		
6"	93335A110	$1.46
1 ft.	93335A185	2.68
2 ft.	93335A240	4.88
3 ft.	93335A331	6.70
6 ft.	93335A662	12.19
1/2"-13		
6"	93335A120	2.15
1 ft.	93335A190	3.94
2 ft.	93335A250	7.17
1/2"-13 (Cont.)		
3 ft.	93335A334	$9.86
6 ft.	93335A664	17.92
5/8"-11		
6"	93335A130	2.61
1 ft.	93335A195	4.79
2 ft.	93335A260	8.71
3 ft.	93335A337	11.98
6 ft.	93335A665	21.78
3/4"-10		
6"	93335A140	$3.93
1 ft.	93335A200	7.21
2 ft.	93335A270	13.11
3 ft.	93335A341	18.03
6 ft.	93335A666	32.78
7/8"-9		
1 ft.	93335A205	8.96
3 ft.	93335A344	22.41
6 ft.	93335A667	40.75
1"-8		
6"	93335A150	$6.32
1 ft.	93335A210	11.58
2 ft.	93335A280	21.05
3 ft.	93335A346	28.95
6 ft.	93335A668	52.63
1 1/8"-7		
1 ft.	93335A213	17.76
3 ft.	93335A347	44.41
6 ft.	93335A672	80.74
1 1/4"-7		
1 ft.	93335A215	$15.55
3 ft.	93335A349	38.86
6 ft.	93335A669	70.66
1 1/2"-6		
1 ft.	93335A220	24.80
3 ft.	93335A355	62.01
6 ft.	93335A678	112.75

Zinc-Plated Low-Strength Steel Threaded Studs and Rods

Made from general purpose low-strength steel, these threaded studs and rods are zinc plated for rust and weather resistance. Length is measured from end to end.

Lengths shorter than 1 ft. have a Class 1A thread fit; longer lengths have a Class 2A thread fit. All have a minimum Rockwell hardness of B61 and minimum tensile strength of 53,000 psi.

For matching hex nuts, see pages 3185-3192.

Lg.	Pkg. Qty.		Pkg.
Zinc-Plated Steel			
2-56			
1"	50	95475A110	$10.71
2"	50	95475A114	13.75
3"	25	95475A118	7.85
4-40			
1"	50	95475A150	8.75
2"	50	95475A154	13.03
3"	25	95475A158	9.64
2 ft.	1	90034A005	4.31
3 ft.	1	98841A005	4.78
5-40			
2 ft.	1	90034A006	4.40
3 ft.	1	98841A006	5.51
6-32			
1/2"	100	95475A220	9.91
3/4"	100	95475A222	10.71
1"	100	95475A224	11.29
1 1/2"	100	95475A226	14.39
2"	100	95475A228	14.90
3"	10	95475A238	2.01
6"	10	95475A244	3.59
2 ft.	1	90034A007	1.12
3 ft.	1	98841A007	1.88
6 ft.	1	98914A007	3.67
8-32			
1/2"	100	95475A320	10.61
3/4"	100	95475A322	11.24
1"	100	95475A324	12.89
1 1/2"	100	95475A326	14.90
2"	50	95475A328	9.80
2 1/2"	25	95475A330	5.73
3"	50	95475A335	13.91
4"	25	95475A338	7.98
6"	10	95475A348	4.31
2 ft.	1	90034A009	1.12
3 ft.	1	98841A009	1.88
6 ft.	1	98914A009	3.67
10-24			
3/4"	100	95475A440	11.54
1"	100	95475A442	12.72
1 1/2"	50	95475A444	8.38
2"	50	95475A446	10.48
2 1/2"	50	95475A449	11.73
3"	50	95475A450	13.96
4"	25	95475A455	10.51
5"	25	95475A459	13.28
1 ft.	1	90034A410	.81
2 ft.	1	90034A011	1.12
3 ft.	1	98841A011	1.88
6 ft.	1	98914A011	3.67
10-32			
1/2"	100	95475A500	12.01
3/4"	100	95475A502	13.39
1"	100	95475A505	14.90
1 1/2"	50	95475A507	9.13
2"	50	95475A509	10.57
2 1/2"	50	95475A512	13.51
3"	25	95475A513	9.27
4"	10	95475A515	5.97
10-32 (Cont.)			
6"	10	95475A525	$7.73
2 ft.	1	90032A011	1.66
3 ft.	1	98842A011	2.79
6 ft.	1	98915A011	5.43
12-24			
2 ft.	1	90034A013	1.18
3 ft.	1	98841A013	2.06
6 ft.	1	98914A013	4.12
1/4"-20			
1/2"	100	95475A538	12.52
5/8"	100	95475A539	13.04
3/4"	100	95475A540	14.90
7/8"	100	95475A541	13.97
1"	100	95475A542	13.88
1 1/4"	100	95475A544	14.47
1 1/2"	50	95475A546	9.00
1 3/4"	50	95475A547	10.88
2"	50	95475A550	12.14
2 1/4"	50	95475A551	12.80
2 1/2"	25	95475A552	7.24
2 3/4"	50	95475A555	14.31
3"	25	95475A554	9.47
3 1/2"	25	95475A556	11.25
4"	25	95475A558	13.46
4 1/2"	25	95475A560	11.81
5"	10	95475A562	9.10
5 1/2"	10	95475A564	10.00
6"	10	95475A566	10.89
7"	10	95475A569	12.50
8"	10	95475A572	13.04
10"	5	95475A576	7.38
1 ft.	1	90034A420	.85
2 ft.	1	90034A029	1.12
3 ft.	1	98841A029	1.70
6 ft.	1	98914A029	3.26
12 ft.	1	90038A029	6.83
1/4"-28			
3/4"	50	95475A101	9.56
1"	25	95475A103	6.25
1 1/4"	50	95475A106	12.64
1 1/2"	25	95475A105	8.93
2"	25	95475A107	12.14
2 1/4"	10	95475A108	8.22
2 1/2"	10	95475A109	9.10
3"	10	95475A111	9.82
2 ft.	1	90032A029	1.66
3 ft.	1	98842A029	2.50
6 ft.	1	98915A029	4.83
5/16"-18			
5/8"	50	95475A580	9.47
3/4"	50	95475A581	9.65
7/8"	50	95475A582	9.64
1"	50	95475A583	10.52
1 1/4"	25	95475A585	6.21
1 1/2"	50	95475A587	13.14
1 3/4"	25	95475A588	8.44
2"	25	95475A591	10.69
2 1/4"	25	95475A592	12.32
2 1/2"	25	95475A593	13.21
Zinc-Plated Steel (Cont.)			
5/16"-18 (Cont.)			
3"	10	95475A595	$7.99
3 1/2"	10	95475A597	9.82
4"	10	95475A599	9.52
5"	10	95475A603	12.33
6"	10	95475A607	13.40
7"	10	95475A611	14.47
8"	5	95475A615	8.75
1 ft.	1	90034A430	1.02
2 ft.	1	90034A030	1.43
3 ft.	1	98841A030	2.43
6 ft.	1	98914A030	4.54
12 ft.	1	90038A030	9.52
5/16"-24			
2 ft.	1	90032A030	2.11
3 ft.	1	98842A030	3.18
6 ft.	1	98915A030	6.73
3/8"-16			
3/4"	50	95475A623	14.50
1"	25	95475A624	8.54
1 1/4"	25	95475A626	8.85
1 1/2"	25	95475A628	10.32
1 3/4"	25	95475A630	13.03
2"	25	95475A632	12.94
2 1/4"	25	95475A633	14.60
2 1/2"	10	95475A634	6.60
2 3/4"	10	95475A635	9.46
3"	10	95475A636	8.10
3 1/2"	10	95475A638	12.33
4"	10	95475A640	10.76
4 1/2"	5	95475A642	9.82
5"	5	95475A644	10.36
5 1/2"	5	95475A646	10.54
6"	5	95475A648	10.72
7"	5	95475A652	12.33
8"	5	95475A656	10.76
10"	5	95475A660	13.79
2 ft.	1	90034A031	1.79
3 ft.	1	98841A031	3.03
6 ft.	1	98914A031	5.59
12 ft.	1	90038A031	11.47
3/8"-24			
1"	25	95475A665	14.64
1 1/2"	10	95475A667	6.98
2"	10	95475A669	10.17
3"	10	95475A671	14.47
2 ft.	1	90032A031	2.63
3 ft.	1	98842A031	4.30
6 ft.	1	98915A031	8.28
7/16"-14			
1 1/2"	10	95475A687	9.44
2"	10	95475A689	10.89
2 1/2"	10	95475A691	12.52
3"	10	95475A693	13.13
3 1/2"	5	95475A695	10.27
2 ft.	1	90034A032	2.55
3 ft.	1	98841A032	4.26
6 ft.	1	98914A032	7.79
7/16"-20			
2 ft.	1	90032A032	$3.77
3 ft.	1	98842A032	5.81
6 ft.	1	98915A032	10.98
1/2"-13			
1"	25	95475A714	14.50
1 1/4"	25	95475A715	14.95
1 1/2"	10	95475A716	8.39
1 3/4"	10	95475A718	9.64
2"	10	95475A720	9.82
2 1/4"	10	95475A721	10.53
2 1/2"	10	95475A722	11.43
3"	10	95475A724	13.21
4"	5	95475A728	8.93
4 1/2"	5	95475A730	12.15
5"	5	95475A733	12.86
5 1/2"	5	95475A735	13.75
6"	5	95475A738	14.60
7"	1	95475A742	3.34
8"	1	95475A746	4.39
1 ft.	1	90034A440	2.02
2 ft.	1	90034A033	2.86
3 ft.	1	98841A033	4.85
6 ft.	1	98914A033	9.05
12 ft.	1	90038A033	18.98
1/2"-20			
2 ft.	1	90032A033	4.22
3 ft.	1	98842A033	7.19
6 ft.	1	98915A033	13.40
9/16"-12			
2 ft.	1	90034A034	3.94
3 ft.	1	98841A034	7.34
6 ft.	1	98914A034	14.26
9/16"-18			
2 ft.	1	90032A034	6.89
3 ft.	1	98842A034	10.25
6 ft.	1	98915A034	20.48
5/8"-11			
1 1/2"	10	95475A817	14.64
2"	5	95475A819	8.93
2 1/2"	5	95475A820	11.35
3"	5	95475A822	12.41
3 1/2"	5	95475A825	13.75
4"	5	95475A827	14.65
4 1/2"	1	95475A829	3.41
5"	1	95475A831	3.57
6"	1	95475A835	4.29
7"	1	95475A839	5.18
1 ft.	1	90034A450	3.32
2 ft.	1	90034A035	4.69
3 ft.	1	98841A035	7.34
6 ft.	1	98914A035	14.26
12 ft.	1	90038A035	28.07
5/8"-18			
2 ft.	1	90032A035	6.89
3 ft.	1	98842A035	11.10
6 ft.	1	98915A035	21.11

(Continued on following page)

Zinc-Plated Low-Strength Steel Threaded Studs and Rods *(Continued from previous page)*

Lg.	Pkg. Qty.		Pkg.
Zinc-Plated Steel (Cont.)			
3/4"-10			
2"	5	95475A857	$14.17
4"	1	95475A865	3.90
6"	1	95475A874	5.75
10"	1	95475A882	6.61
2 ft.	1	90034A036	6.89
3 ft.	1	98841A036	11.12
6 ft.	1	98914A036	21.50
12 ft.	1	90038A036	31.72
3/4"-16			
2 ft.	1	90032A036	10.20
3 ft.	1	98842A036	16.82
6 ft.	1	98915A036	31.82
7/8"-9			
2 ft.	1	90034A037	9.64
3 ft.	1	98841A037	15.42
6 ft.	1	98914A037	29.91
7/8"-14			
2 ft.	1	90032A037	14.27
3 ft.	1	98842A037	23.32
6 ft.	1	98915A037	44.29
1"-8			
1 ft.	1	90034A310	10.76
2 ft.	1	90034A038	12.54
3 ft.	1	98841A038	20.71
6 ft.	1	98914A038	40.71
12 ft.	1	90038A038	82.88
1"-12			
1 ft.	1	90034A315	20.29
2 ft.	1	90032A047	29.31
3 ft.	1	98842A047	43.86
6 ft.	1	98915A047	86.71
1"-14			
1 ft.	1	90034A320	$15.87
2 ft.	1	90032A038	17.89
3 ft.	1	98842A038	24.94
6 ft.	1	98915A038	49.12
1 1/8"-7			
1 ft.	1	90034A325	19.92
2 ft.	1	90034A039	37.65
3 ft.	1	98841A049	32.03
6 ft.	1	98914A049	59.86
1 1/4"-7			
1 ft.	1	90034A330	16.46
2 ft.	1	90034A040	19.10
3 ft.	1	98841A040	31.88
6 ft.	1	98914A040	72.31
1 1/4"-12			
1 ft.	1	90034A335	26.29
2 ft.	1	90032A040	30.02
3 ft.	1	98842A040	45.39
6 ft.	1	98915A040	90.90
1 3/8"-6			
1 ft.	1	90034A338	22.05
2 ft.	1	90034A042	25.87
3 ft.	1	98841A042	44.94
6 ft.	1	98914A042	77.46
1 1/2"-6			
1 ft.	1	90034A339	32.93
2 ft.	1	90034A041	58.59
3 ft.	1	98841A041	60.23
6 ft.	1	98914A041	98.81
Zinc-Plated Steel (Cont.)			
1 1/2"-12			
1 ft.	1	90034A340	$42.20
2 ft.	1	90032A041	47.05
3 ft.	1	98842A041	70.65
6 ft.	1	98915A041	141.06
1 3/4"-5			
1 ft.	1	90034A345	58.62
2 ft.	1	90034A044	82.14
1 3/4"-5 (Cont.)			
3 ft.	1	98841A044	$69.33
6 ft.	1	98914A044	134.09
2"-4 1/2			
1 ft.	1	90034A350	72.86
2 ft.	1	90034A046	95.86
3 ft.	1	98841A046	104.56
6 ft.	1	98914A046	163.93

Left-Hand Threaded Zinc-Plated Steel

Lg.	Pkg. Qty.		Pkg.
6-32			
3 ft.	1	90036A007	2.21
8-32			
3 ft.	1	90036A010	2.21
10-24			
3 ft.	1	90036A011	2.21
1/4"-20			
3 ft.	1	90036A029	2.24
6 ft.	1	90036A229	4.31
5/16"-18			
3 ft.	1	90036A030	2.84
6 ft.	1	90036A230	6.04
3/8"-16			
3 ft.	1	90036A031	3.57
6 ft.	1	90036A231	6.98
7/16"-14			
3 ft.	1	90036A032	5.01
1/2"-13			
3 ft.	1	90036A033	5.70
6 ft.	1	90036A233	11.65
5/8"-11			
3 ft.	1	90036A035	9.19
6 ft.	1	90036A235	18.34
3/4"-10			
3 ft.	1	90036A036	13.90
6 ft.	1	90036A236	27.66
7/8"-9			
1 ft.	1	90036A105	11.53
3 ft.	1	90036A037	19.27
6 ft.	1	90036A237	38.49
1"-8			
1 ft.	1	90036A110	14.26
3 ft.	1	90036A038	25.12
6 ft.	1	90036A238	49.78
1 1/4"-7			
1 ft.	1	90036A115	31.17
3 ft.	1	90036A040	45.13
6 ft.	1	90036A240	106.33

Low-Strength Steel Threaded Studs and Rods

Keep expenses down with these economical studs and rods. Made from general purpose low-strength steel, they have a minimum Rockwell hardness of B61 and minimum tensile strength of 53,000 psi, unless noted. Lengths shorter than 1 ft. have a Class 1A thread fit; longer lengths have a Class 2A thread fit. Length is measured from end to end.

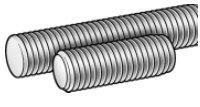

For matching hex nuts, see pages 3185-3192.

Lg.	Pkg. Qty.		Pkg.
Plain Steel			
2-56			
1"	50	91565A819	$8.04
1 1/2"	50	91565A820	10.71
2"	50	91565A821	11.60
3"	50	91565A300	11.55
2 ft.	1	98790A003★	4.02
3 ft.	1	98837A003★	3.75
6 ft.	1	98910A003	16.25
3-48			
3 ft.	1	98837A004★	1.87
4-40			
1/2"	100	91565A305	9.52
3/4"	100	91565A822	12.84
1"	100	91565A823	14.77
1 1/2"	50	91565A824	8.92
2"	50	91565A825	10.08
2 1/2"	50	91565A826	11.01
3"	50	91565A310	9.92
2 ft.	1	98790A005★	2.43
3 ft.	1	98837A005	3.18
6 ft.	1	98910A005	13.85
5-40			
2 ft.	1	98790A006★	2.58
3 ft.	1	98837A006	3.82
6 ft.	1	98910A006	16.77
6-32			
1/2"	100	91565A315	7.76
3/4"	100	91565A827	8.42
1"	100	91565A828	9.03
1 1/2"	100	91565A829	10.88
1 3/4"	100	91565A500	12.88
2"	100	91565A830	11.90
2 1/2"	100	91565A831	14.58
3"	50	91565A832	8.59
4"	50	91565A320	11.50
5"	50	91565A325	14.26
6"	25	91565A330	8.97
6-32 (Cont.)			
2 ft.	1	98790A007	$0.80
3 ft.	1	98837A007	1.22
6 ft.	1	98910A007	2.45
8-32			
1/2"	100	91565A333	8.80
3/4"	100	91565A833	9.66
1"	100	91565A834	10.06
1 1/2"	100	91565A835	11.91
2"	100	91565A836	13.77
2 1/2"	50	91565A837	8.42
3"	50	91565A838	9.25
4"	50	91565A839	14.60
5"	25	91565A335	9.91
6"	25	91565A340	11.06
7"	25	91565A345	12.79
2 ft.	1	98790A009	.80
3 ft.	1	98837A009	1.22
6 ft.	1	98910A009	2.45
10-24			
1/2"	100	91565A370	8.72
3/4"	100	91565A840	9.47
1"	100	91565A841	10.00
1 1/2"	100	91565A842	13.75
2"	100	91565A843	14.90
2 1/2"	50	91565A844	9.66
3"	50	91565A845	12.15
3 1/2"	50	91565A350	12.99
4"	25	91565A846	8.04
5"	25	91565A847	10.89
6"	10	91565A355	5.12
7"	10	91565A360	5.88
8"	10	91565A365	6.50
1 ft.	1	98790A300	.57
2 ft.	1	98790A011	.80
3 ft.	1	98837A011	1.22
6 ft.	1	98910A011	2.45
Plain Steel (Cont.)			
10-32			
1/2"	100	91565A848	$9.56
3/4"	100	91565A849	10.06
1"	100	91565A850	10.88
1 1/2"	100	91565A851	14.57
2"	100	91565A852	14.95
2 1/2"	50	91565A853	10.27
3"	50	91565A854	12.74
3 1/2"	25	91565A859	6.91
4"	25	91565A855	8.98
5"	25	91565A860	9.73
6"	25	91565A864	11.48
7"	10	91565A868	5.46
8"	10	91565A872	6.90
1 ft.	1	98790A310	.62
2 ft.	1	98791A011	1.17
3 ft.	1	98838A011	1.80
6 ft.	1	98911A011	3.62
12-24			
1 1/2"	10	91565A380	5.68
2"	10	91565A383	6.45
3"	10	91565A386	8.10
2 ft.	1	98790A013	.88
3 ft.	1	98837A013	1.31
6 ft.	1	98910A013	2.65
1/4"-20			
1/2"	100	91565A541	10.14
5/8"	100	91565A130	10.35
3/4"	100	91565A542	10.60
7/8"	100	91565A131	10.85
1"	100	91565A543	11.16
1 1/4"	100	91565A544	11.60
1 1/2"	100	91565A546	12.14
1 3/4"	100	91565A132	13.92
2"	100	91565A550	14.95
2 1/4"	50	91565A551	9.46
2 1/2"	50	91565A552	10.00
2 3/4"	50	91565A553	11.07
1/4"-20 (Cont.)			
3"	50	91565A554	$12.48
3 1/2"	50	91565A556	14.86
4"	25	91565A558	8.54
4 1/2"	25	91565A560	9.30
5"	10	91565A562	5.13
5 1/2"	10	91565A133	5.26
6"	10	91565A565	5.88
7"	10	91565A566	6.63
8"	10	91565A567	7.01
1 ft.	1	98790A320	.62
2 ft.	1	98790A029	.82
3 ft.	1	98837A029	1.25
6 ft.	1	98910A029	2.48
12 ft.	1	98950A029	5.19
1/4"-28			
3/4"	100	91565A569	13.94
1"	50	91565A570	9.65
1 1/4"	50	91565A571	11.89
1 1/2"	50	91565A572	14.46
2"	25	91565A574	9.47
2 1/4"	10	91565A575	4.44
2 1/2"	10	91565A576	4.70
3"	10	91565A578	5.24
2 ft.	1	98791A029	1.21
3 ft.	1	98838A029	1.84
6 ft.	1	98911A029	3.70
5/16"-18			
5/8"	100	91565A582	12.89
3/4"	100	91565A583	14.56
7/8"	100	91565A580	13.16
1"	100	91565A584	14.95
1 1/4"	50	91565A585	9.63
1 1/2"	50	91565A587	11.01
1 3/4"	50	91565A588	12.32
2"	25	91565A591	7.09
2 1/4"	25	91565A592	7.97
2 1/2"	25	91565A593	9.00

★ Not rated for hardness or tensile strength.

(Continued on following page)

Low-Strength Steel Threaded Studs and Rods *(Continued from previous page)*

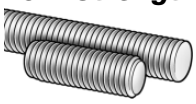

Keep expenses down with these economical studs and rods. Made from general purpose low-strength steel, they have a minimum Rockwell hardness of B61 and minimum tensile strength of 53,000 psi, unless noted. Lengths shorter than 1 ft. have a Class 1A thread fit; longer lengths have a Class 2A thread fit. Length is measured from end to end.

For matching hex nuts, see pages 3185-3192.

Plain Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
5/16"-18 (Cont.)			
3"	10	91565A595	$4.29
3½"	10	91565A597	5.12
4"	10	91565A599	5.77
5"	10	91565A603	6.25
6"	10	91565A605	7.76
7"	10	91565A607	8.79
8"	10	91565A609	10.10
1 ft.	1	98790A330	.79
2 ft.	1	98790A030	1.09
3 ft.	1	98837A030	1.66
6 ft.	1	98910A030	3.31
12 ft.	1	98950A030	6.93
5/16"-24			
2 ft.	1	98791A030	1.62
3 ft.	1	98838A030	2.56
6 ft.	1	98911A030	4.89
3/8"-16			
¾"	50	91565A624	9.60
1"	50	91565A625	12.00
1¼"	50	91565A626	14.11
1½"	25	91565A628	7.05
1¾"	25	91565A630	7.79
2"	25	91565A632	8.54
2¼"	25	91565A633	9.12
2½"	25	91565A634	9.70
2¾"	25	91565A635	10.62
3"	25	91565A636	11.38
3½"	10	91565A638	5.63
4"	10	91565A640	6.12
4½"	5	91565A642	4.88
5"	5	91565A644	5.00
5½"	5	91565A646	5.37
6"	5	91565A648	5.00
7"	5	91565A650	5.20
8"	5	91565A652	7.25
2 ft.	1	98790A031	1.38
3 ft.	1	98837A031	2.07
6 ft.	1	98910A031	4.14
12 ft.	1	98950A031	8.37
3/8"-24			
1"	25	91565A660	7.45
1½"	25	91565A662	9.16
2"	10	91565A664	5.52
3"	10	91565A668	7.11
2 ft.	1	98791A031	2.05
3 ft.	1	98838A031	3.06
6 ft.	1	98911A031	6.06
7/16"-14			
1½"	10	91565A676	4.45
2"	10	91565A677	5.19
2½"	10	91565A678	6.39
3"	10	91565A681	7.11
3½"	5	91565A683	5.47
2 ft.	1	98790A032	1.63
3 ft.	1	98837A032	2.99
6 ft.	1	98910A032	5.95
7/16"-20			
2 ft.	1	98791A032	2.88
3 ft.	1	98838A032	4.60
6 ft.	1	98911A032	8.57
1/2"-13			
1"	25	91565A712	$10.03
1¼"	25	91565A714	10.14
1½"	10	91565A716	4.88
1¾"	10	91565A718	5.25
2"	10	91565A720	5.37
2¼"	10	91565A390	6.00
2½"	10	91565A722	6.51
3"	10	91565A724	7.01
3½"	10	91565A721	7.88
4"	10	91565A728	8.38
4½"	5	91565A725	6.26
5"	5	91565A732	6.50
5½"	5	91565A734	7.22
6"	5	91565A736	5.84
8"	5	91565A740	9.00
10"	5	91565A742	9.88
1 ft.	1	98790A340	1.68
2 ft.	1	98790A033	2.33
3 ft.	1	98837A033	3.53
6 ft.	1	98910A033	4.89
12 ft.	1	98950A033	14.05
1/2"-20			
2 ft.	1	98791A033	3.46
3 ft.	1	98838A033	5.22
6 ft.	1	98911A033	10.35
12 ft.	1	98950A433	20.79
9/16"-18			
2 ft.	1	98791A034	5.55
3 ft.	1	98838A034	8.32
6 ft.	1	98911A034	16.69
5/8"-11			
1½"	10	91565A800	8.02
2"	10	91565A802	8.78
2½"	10	91565A804	9.71
2¾"	10	91565A805	11.38
3"	10	91565A806	12.12
3½"	10	91565A808	13.50
4"	10	91565A810	14.88
4½"	5	91565A812	11.95
5"	5	91565A880	13.38
6"	5	91565A818	11.00
7"	5	91565A882	14.95
8"	1	91565A884	3.01
10"	1	91565A886	3.63
1 ft.	1	98790A350	2.70
2 ft.	1	98790A035	3.73
3 ft.	1	98837A035	5.62
6 ft.	1	98910A035	11.29
12 ft.	1	98950A035	23.18
5/8"-18			
2 ft.	1	98791A035	5.55
3 ft.	1	98838A035	8.32
6 ft.	1	98911A035	16.69
3/4"-10			
2"	5	91565A068	7.21
4"	5	91565A076	11.24
6"	5	91565A080	14.60
8"	1	91565A082	3.88
2 ft.	1	98790A036	5.91
3 ft.	1	98837A036	8.77
6 ft.	1	98910A036	17.71
12 ft.	1	98950A036	36.35

Plain Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
3/4"-16			
2 ft.	1	98791A036	$8.68
3 ft.	1	98838A036	12.99
6 ft.	1	98911A036	25.75
12 ft.	1	98950A436	48.30
7/8"-9			
3"	1	91565A091	3.32
4"	1	91565A093	4.34
6"	1	91565A099	5.89
2 ft.	1	98790A037	8.11
3 ft.	1	98837A037	12.30
6 ft.	1	98910A037	24.54
12 ft.	1	98950A037	50.70
7/8"-14			
2 ft.	1	98791A037	12.00
3 ft.	1	98838A037	18.17
6 ft.	1	98911A037	36.31
1"-8			
4"	1	91565A110	4.58
6"	1	91565A113	6.25
1 ft.	1	98790A410	6.41
2 ft.	1	98790A038	10.80
3 ft.	1	98837A038	16.18
6 ft.	1	98910A038	32.46
12 ft.	1	98950A038	57.32
1"-12			
1 ft.	1	98790A415	15.58
2 ft.	1	98791A047	27.75
3 ft.	1	98838A047	33.86
6 ft.	1	98911A047	68.10
1"-14			
1 ft.	1	98790A420	15.58
2 ft.	1	98791A038	14.85
3 ft.	1	98838A038	21.84
6 ft.	1	98911A038	43.10
12 ft.	1	98950A438	80.32
1 1/8"-7			
1 ft.	1	98790A425	10.90
2 ft.	1	98790A039	12.39
3 ft.	1	98837A039	23.33
6 ft.	1	98910A039	37.11
1 1/8"-12			
1 ft.	1	98790A430	19.26
2 ft.	1	98791A039	24.37
3 ft.	1	98838A039	31.79
6 ft.	1	98911A039	58.33
1 1/4"-7			
1 ft.	1	98790A435	$13.02
2 ft.	1	98790A040	14.92
3 ft.	1	98837A040	28.62
6 ft.	1	98910A040	44.64
12 ft.	1	98950A040	86.67
1 1/4"-12			
1 ft.	1	98790A440	26.86
2 ft.	1	98791A040	29.31
3 ft.	1	98838A040	38.29
6 ft.	1	98911A040	70.19
1 1/2"-6			
1 ft.	1	98790A445	21.17
2 ft.	1	98790A041	23.80
3 ft.	1	98837A041	48.43
6 ft.	1	98910A041	71.32
12 ft.	1	98950A041	126.49
1 1/2"-12			
1 ft.	1	98790A450	46.29
2 ft.	1	98791A041	40.90
3 ft.	1	98838A041	61.23
6 ft.	1	98911A041	105.31
1 3/4"-5			
1 ft.	1	98790A455	46.64
2 ft.	1	98790A044	40.61
3 ft.	1	98837A044	52.00
6 ft.	1	98910A044	113.29
1 3/4"-12			
1 ft.	1	98790A460	70.71
2 ft.	1	98791A044	60.76
3 ft.	1	98838A044	91.13
6 ft.	1	98911A044	166.70
2"-4 1/2			
1 ft.	1	98790A465	49.51
2 ft.	1	98790A046	56.11
3 ft.	1	98837A046	56.44
6 ft.	1	98910A046	107.73
2"-12			
1 ft.	1	98790A470	79.57
2 ft.	1	98791A046	84.67
3 ft.	1	98838A046	127.00
6 ft.	1	98911A046	232.30

Left-Hand Threaded Plain Steel

Lg.	Pkg. Qty.		Pkg.
1/4"-20			
6 ft.	1	93240A029	$3.98
5/16"-18			
6 ft.	1	93240A030	4.98
3/8"-16			
6 ft.	1	93240A031	6.24
7/16"-14			
6 ft.	1	93240A032	8.97
1/2"-13			
6 ft.	1	93240A033	10.54
5/8"-11			
6 ft.	1	93240A035	17.03
3/4"-10			
1 ft.	1	93240A562	$8.97
6 ft.	1	93240A036	26.74
7/8"-9			
1 ft.	1	93240A565	11.17
6 ft.	1	93240A037	36.99
1"-8			
1 ft.	1	93240A569	13.83
6 ft.	1	93240A038	48.96
1 1/4"-7			
1 ft.	1	93240A574	28.07
6 ft.	1	93240A040	96.14

Threaded Stud Assortments

44-Pc. Assort.—ASTM A193 Grade B7 Alloy Steel

Furnished in a 13⅜" Lg.×9¼" Wd.×2" Dp. compartmented metal case with lid chart.

Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.
½"-13	2"	5	⅝"-11	4"	4
½"-13	2½"	5	¾"-10	3"	3
½"-13	3"	5	¾"-10	4"	3
½"-13	4"	5	¾"-10	4½"	3
⅝"-11	3"	4	¾"-10	5"	3
⅝"-11	3½"	4			

93745A400 ..... $93.20

60-Pc. Assort.—18-8 Stainless Steel

Furnished in an 11" Lg.×6¾" Wd.×1¾" Dp. compartmented plastic case with lid chart.

Size	Lg.	No. of Pcs.	Size	Lg.	No. of Pcs.
¼"-20	1"	7	5/16"-18	2"	5
¼"-20	1½"	7	⅜"-16	1"	4
¼"-20	2"	7	⅜"-16	1½"	4
¼"-20	3"	7	⅜"-16	2"	3
5/16"-18	1"	5	⅜"-16	3"	3
5/16"-18	1½"	5	⅜"-16	4"	3

93745A800 ..... $90.93

Type 316 Stainless Steel Threaded Studs and Rods

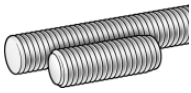

With the addition of molybdenum, Type 316 stainless steel studs and rods are more corrosion resistant than those made from 18-8 stainless steel. They're also resistant to chemicals and solvents. Length is measured from end to end. For matching hex nuts, see pages 3185-3192.

Type 316 stainless steel may be mildly magnetic. Unless noted, studs and rods have a Class 1A thread fit and min. Rockwell hardness of B70. All have a min. tensile strength of 70,000 psi.

Type 316 stainless steel—ASTM A193 Grade B8M may be mildly magnetic. Studs and rods have a Class 2A thread fit and min. tensile strength of 75,000 psi. Diameters up to ¾″ have a max. Rockwell hardness of B100; larger diameters have a max. Rockwell hardness of B96.

High-strength Type 316 stainless steel—ASTM A193 Grade B8M is strain hardened to increase its strength and may be mildly magnetic. Studs and rods have a Class 2A thread fit, max. Rockwell hardness of C35, and min. tensile strength of 95,000 psi.

Type 316 Stainless Steel

Lg.		
2-56		
1 ft.	93250A001	$1.41
2 ft.	93250A405	2.82
3 ft.	93250A095	4.24
6 ft.	93250A003	8.49
4-40		
1 ft.	93250A002	1.68
2 ft.	93250A410	3.34
3 ft.	93250A099	5.02
6 ft.	93250A005	10.05
6-32		
1 ft.	93250A050	1.76
2 ft.	93250A415	2.62
3 ft.	93250A105	5.54
6 ft.	93250A007	11.05
8-32		
½″	90575A240	.54
¾″	90575A245	.68
1″	90575A250	.78
2″	90575A255	.87
3″	90575A260	1.06
1 ft.	93250A052	2.54
2 ft.	93250A420	3.76
3 ft.	93250A110	6.01
6 ft.	93250A009	12.02
10-24		
1″	90575A350	.89
1¼″	90575A353	.92
1½″	90575A355	.95
2″	90575A358	.98
2½″	90575A361	1.26
3″	90575A364	1.37
4″	90575A367	1.57
1 ft.	93250A054	3.16
2 ft.	93250A430	4.68
3 ft.	93250A115	6.15
6 ft.	93250A011	12.30
10-32		
¾″	90575A410	.79
1″	90575A415	.83
1¼″	90575A420	.87
1½″	90575A425	.91
10-32 (Cont.)		
2″	90575A430	$0.96
2½″	90575A433	1.11
3″	90575A436	1.23
4″	90575A439	1.49
1 ft.	93250A056	3.40
2 ft.	93250A435	5.05
3 ft.	93250A120	6.15
6 ft.	93250A012	12.30
¼″-20		
½″	90575A537	.58
¾″	90575A540	.67
1″	90575A542	.70
1¼″	90575A544	.77
1½″	90575A546	.84
1¾″	90575A547	.90
2″	90575A550	.92
2¼″	90575A553	.99
2½″	90575A556	1.04
3″	90575A559	1.15
3½″	90575A365	1.55
4″	90575A563	1.36
6″	90575A570	2.04
1 ft.	93250A058	2.28
2 ft.	93250A440	4.35
3 ft.	93250A125	6.02
6 ft.	93250A029	12.04
12 ft.	93250A310	24.08
¼″-28		
1 ft.	93250A060	2.50
2 ft.	93250A445	4.76
3 ft.	93250A130	6.61
6 ft.	93250A042	14.28
5/16″-18		
¾″	90575A581	.71
1″	90575A583	.82
1¼″	90575A585	.94
1½″	90575A587	1.02
1¾″	90575A588	.99
2″	90575A591	1.04
2½″	90575A593	1.43
5/16″-18 (Cont.)		
3″	90575A595	$1.71
4″	90575A600	2.08
6″	90575A605	2.94
1 ft.	93250A062	3.73
2 ft.	93250A450	7.11
3 ft.	93250A135	9.87
6 ft.	93250A030	19.74
12 ft.	93250A320	39.47
5/16″-24		
1 ft.	93250A064	4.12
2 ft.	93250A455	7.87
3 ft.	93250A140	10.90
3/8″-16		
1″	90575A626	1.01
1¼″	90575A628	1.06
1½″	90575A630	1.09
1¾″	90575A631	1.22
2″	90575A632	1.30
2¼″	90575A633	1.49
2½″	90575A634	1.45
3″	90575A636	1.66
3½″	90575A638	1.87
4″	90575A642	2.02
6″	90575A650	3.19
1 ft.	93250A066	5.46
2 ft.	93250A460	10.41
3 ft.	93250A145	14.46
6 ft.	93250A031	28.91
12 ft.	93250A330	57.83
3/8″-24		
1 ft.	93250A026	5.67
2 ft.	93250A465	11.66
3 ft.	93250A150	16.19
6 ft.	93250A551	34.99
½″-13		
1¼″	90575A713	1.77
1½″	90575A716	1.82
2″	90575A720	2.26
2½″	90575A722	2.77
3″	90575A724	3.33
½″-13 (Cont.)		
3½″	90575A726	$3.92
4″	90575A728	4.41
5″	90575A732	5.51
6″	90575A736	5.79
7″	90575A739	7.68
8″	90575A743	10.22
1 ft.	93250A070	9.95
2 ft.	93250A470	18.93
3 ft.	93250A155	26.30
6 ft.	93250A033	52.60
12 ft.	93250A340	105.20
½″-20		
1 ft.	93250A027	10.68
2 ft.	93250A475	21.98
3 ft.	93250A160	30.50
6 ft.	93250A034	65.89
5/8″-11		
2½″	90575A801	5.58
3″	90575A805	6.40
3½″	90575A808	6.37
4″	90575A810	7.19
5″	90575A814	8.88
6″	90575A818	10.52
7″	90575A823	14.96
8″	90575A828	13.88
1 ft.	93250A016	14.55
2 ft.	93250A480	29.97
3 ft.	93250A165	41.59
6 ft.	93250A035	83.19
12 ft.	93250A350	166.39
5/8″-18		
1 ft.	93250A028	17.15
2 ft.	93250A485	35.30
3 ft.	93250A168	49.02
6 ft.	93250A044	105.88
¾″-10		
3″	90575A847	8.75
4″	90575A851	13.80
5″	90575A855	13.83
6″	90575A859	16.40
¾″-10 (Cont.)		
7″	90575A863	$19.00
8″	90575A866	21.62
1 ft.	93250A017	21.33
2 ft.	93250A490	43.88
3 ft.	93250A170	60.93
6 ft.	93250A036	121.86
12 ft.	93250A355	243.73
¾″-16		
1 ft.	93250A032	26.02
2 ft.	93250A495	53.51
3 ft.	93250A173	74.30
6 ft.	93250A046	160.48
⅞″-9		
3″	90575A875	15.45
4″	90575A877	19.47
6″	90575A879	25.48
1 ft.	93250A018	31.14
3 ft.	93250A175	88.95
6 ft.	93250A037	177.90
12 ft.	93250A360	355.82
1″-8		
4″	90575A890	21.63
6″	90575A895	28.67
1 ft.	93250A019	32.58
2 ft.	93250A500	67.07
3 ft.	93250A180	93.11
6 ft.	93250A038	186.21
12 ft.	93250A365	372.42
1⅛″-7		
1 ft.	93250A020	41.06
3 ft.	93250A185	117.33
6 ft.	93250A039	234.65
1¼″-7		
1 ft.	93250A021	51.67
3 ft.	93250A190	147.63
6 ft.	93250A040	295.21
1½″-6		
1 ft.	93250A022	74.83
3 ft.	93250A195	213.79
6 ft.	93250A041	427.51

Type 316 Stainless Steel—ASTM A193 Grade B8M

Lg.		
¼″-20		
1″	96545A110	2.93
1½″	96545A112	2.97
2″	96545A114	3.07
3 ft.	94400A510	12.47
6 ft.	94400A150	19.96
5/16″-18		
1″	96545A120	3.00
1½″	96545A123	3.14
2″	96545A126	3.24
3 ft.	94400A515	16.96
6 ft.	94400A155	28.30
3/8″-16		
1″	96545A130	3.21
3/8″-16 (Cont.)		
1½″	96545A132	3.45
2″	96545A134	3.66
2½″	96545A136	3.83
3″	96545A137	4.07
1 ft.	94400A345	11.18
3 ft.	94400A520	21.26
6 ft.	94400A160	34.43
½″-13		
2″	96545A141	3.97
2½″	96545A143	4.52
3″	96545A150	4.88
3½″	96545A155	5.15
4″	96545A160	5.55
½″-13 (Cont.)		
5″	96545A165	6.18
6″	96545A170	7.26
1 ft.	94400A350	18.23
3 ft.	94400A525	32.23
6 ft.	94400A165	55.22
5/8″-11		
3″	96545A220	6.60
3½″	96545A225	6.45
4″	96545A230	7.00
5″	96545A235	6.60
6″	96545A246	8.94
1 ft.	94400A355	26.27
3 ft.	94400A530	50.27
5/8″-11 (Cont.)		
6 ft.	94400A170	82.07
¾″-10		
3″	96545A260	9.00
4″	96545A265	7.80
4½″	96545A270	8.35
5″	96545A275	9.05
6″	96545A280	12.39
1 ft.	94400A360	33.27
3 ft.	94400A535	76.15
6 ft.	94400A175	131.71
⅞″-9		
4″	96545A310	13.59
5″	96545A315	15.90
⅞″-9 (Cont.)		
6″	96545A320	18.14
7″	96545A325	17.00
1 ft.	94400A365	45.23
3 ft.	94400A540	86.61
6 ft.	94400A180	187.43
1″-8		
4″	96545A360	16.93
5″	96545A365	20.45
6″	96545A370	21.60
7″	96545A375	25.79
1 ft.	94400A370	57.05
3 ft.	94400A545	129.33
6 ft.	94400A185	224.28

High-Strength Type 316 Stainless Steel—ASTM A193 Grade B8M

Lg.		
5/16″-18		
3 ft.	93565A225	16.87
6 ft.	93565A125	32.17
3/8″-16		
1½″	98865A520	2.74
2″	98865A525	2.75
2½″	98865A530	2.94
3″	98865A535	3.18
3/8″-16 (Cont.)		
3 ft.	93565A230	22.29
6 ft.	93565A130	42.30
½″-13		
2½″	98865A625	4.09
3″	98865A630	4.78
4″	98865A635	6.35
5″	98865A640	7.43
½″-13 (Cont.)		
1 ft.	93565A253	13.80
3 ft.	93565A235	30.92
6 ft.	93565A135	60.94
5/8″-11		
3½″	98865A730	6.59
4″	98865A735	6.90
5″	98865A740	10.65
6″	98865A745	14.44
5/8″-11 (Cont.)		
1 ft.	93565A254	20.60
3 ft.	93565A240	47.18
6 ft.	93565A140	93.87
¾″-10		
4″	98865A760	12.62
4½″	98865A765	14.27
5″	98865A770	14.04
6″	98865A775	17.55
¾″-10 (Cont.)		
1 ft.	93565A255	29.54
3 ft.	93565A245	70.69
6 ft.	93565A145	139.01
1″-8		
1 ft.	93565A256	45.13
3 ft.	93565A250	113.58
6 ft.	93565A150	199.64

Left-Hand Threaded Type 316 Stainless Steel

Lg.		
¼″-20		
3 ft.	96155A005 ♦	22.20
6 ft.	96155A140 ♦	42.60
5/16″-18		
3 ft.	96155A008 ♦	26.40
6 ft.	96155A145 ♦	50.40
3/8″-16		
1 ft.	96155A178	20.99
3 ft.	96155A011 ♦	35.00
6 ft.	96155A150 ♦	66.60
½″-13		
1 ft.	96155A179	31.67
3 ft.	96155A014 ♦	48.40
6 ft.	96155A155 ♦	92.60
¾″-10		
1 ft.	96155A181	71.17
3 ft.	96155A018 ♦	84.80
6 ft.	96155A165 ♦	162.40
1″-8		
1 ft.	96155A183	85.67
3 ft.	96155A026 ♦	150.40

♦ Has a Class 2A thread fit and maximum Rockwell hardness of B100.

18-8 Stainless Steel Threaded Studs and Rods

Made from 18-8 stainless steel, these studs and rods are corrosion resistant and may be mildly magnetic. All have a Class 1A thread fit, unless noted. Length is measured from end to end.

18-8 stainless steel studs and rods have a minimum Rockwell hardness of B70 (unless noted) and minimum tensile strength of 70,000 psi. For matching hex nuts, see pages 3185-3192.

Black-oxide 18-8 stainless steel studs and rods have a matte-black finish that provides a bit of lubricity. They have a minimum tensile strength of 75,000 psi and are not rated for hardness. For matching hex nuts, see 97149A on page 3187.

18-8 stainless steel—ASTM A193 Grade B8 studs and rods are made from Type 304 stainless steel. They're designed for bolting applications in pressure vessels, valves, and flanges. Those with diameters up to 3/4" have a maximum Rockwell hardness of B100; larger diameters have a maximum Rockwell hardness of B96. Minimum tensile strength is 75,000 psi. For matching hex nuts, see 94252A on page 3190.

18-8 Stainless Steel

Lg.	Pkg. Qty.		Pkg.
0-80			
1"	10	95412A300	$8.79
2-56			
1"	10	95412A864	4.32
1¼"	10	95412A350	5.52
1½"	10	95412A865	5.61
2"	10	95412A866	6.82
2 ft.	1	98804A003	1.93
3 ft.	1	98847A003	2.90
6 ft.	1	98920A003	5.80
3-48			
2 ft.	1	98804A004	6.86
3 ft.	1	98847A004	10.29
6 ft.	1	98920A004	20.57
4-40			
½"	25	95412A409	4.85
¾"	25	95412A867	4.86
1"	25	95412A868	5.15
1¼"	25	95412A360	6.67
1½"	25	95412A869	7.11
2"	25	95412A870	7.50
2½"	10	95412A871	4.38
3"	10	95412A410	7.42
4"	10	95412A413	10.51
2 ft.	1	98804A005	1.59
3 ft.	1	98847A005	2.38
6 ft.	1	98920A005	4.76
5-40			
2 ft.	1	98804A006	2.55
3 ft.	1	98847A006	3.83
6 ft.	1	98920A006	7.65
6-32			
½"	100	95412A415	14.09
¾"	50	95412A872	9.39
1"	50	95412A873	10.66
1¼"	50	95412A365	11.36
1½"	50	95412A874	12.57
2"	25	95412A875	7.06
2½"	25	95412A876	9.41
3"	10	95412A420	4.93
4"	10	95412A423	6.71
5"	10	95412A370	10.00
6"	10	95412A373	11.56
2 ft.	1	98804A007	1.45
3 ft.	1	98847A007	2.17
6 ft.	1	98920A007	4.34
8-32			
½"	50	95412A425	8.28
¾"	50	95412A878	10.97
1"	50	95412A879	13.30
1¼"	25	95412A375	8.10
1½"	25	95412A880	8.03
2"	10	95412A881	3.88
2½"	10	95412A882	4.38
3"	10	95412A883	5.50
4"	10	95412A819	8.48
5"	10	95412A820	13.28
6"	10	95412A821	14.83
2 ft.	1	98804A009	1.94
3 ft.	1	98847A009	2.90
6 ft.	1	98920A009	5.80
10-24			
½"	50	95412A884	10.23
¾"	50	95412A885	14.52
1"	25	95412A886	8.98
1¼"	25	95412A431	8.65
1½"	25	95412A887	10.89
2"	10	95412A889	5.43
2½"	10	95412A890	5.86
3"	10	95412A891	7.42
4"	10	95412A892	9.39
5"	5	95412A430	5.88
6"	5	95412A435	6.88
10-24 (Cont.)			
8"	5	95412A437	$8.25
2 ft.	1	98804A011	2.07
3 ft.	1	98847A011	3.10
6 ft.	1	98920A011	6.21
10-32			
½"	50	95412A440	10.61
¾"	50	95412A893	14.21
1"	25	95412A894	8.47
1¼"	25	95412A471	9.03
1½"	25	95412A895	11.49
2"	25	95412A896	13.63
2½"	10	95412A897	4.89
3"	10	95412A445	6.75
4"	10	95412A450	7.88
5"	5	95412A455	5.00
6"	5	95412A460	5.33
8"	5	95412A470	8.76
2 ft.	1	98805A011	2.15
3 ft.	1	98848A011	3.10
6 ft.	1	98921A011	6.21
12 ft.	1	98960A411	12.00
12-24			
2 ft.	1	98804A013	3.79
3 ft.	1	98847A013	6.62
6 ft.	1	98920A013	11.39
1/4"-20			
½"	50	95412A538	10.91
⅝"	50	95412A378	14.48
¾"	50	95412A540	12.89
⅞"	50	95412A539	14.47
1"	25	95412A542	7.89
1¼"	25	95412A544	9.74
1½"	10	95412A546	3.67
1¾"	10	95412A548	4.56
2"	10	95412A550	4.89
2¼"	10	95412A551	5.11
2½"	10	95412A552	5.22
2¾"	10	95412A553	6.62
3"	10	95412A554	6.33
3½"	10	95412A556	9.05
4"	10	95412A558	8.00
4½"	10	95412A560	10.54
5"	10	95412A562	10.81
6"	10	95412A564	13.14
7"	5	95412A566	9.06
8"	5	95412A568	9.87
1 ft.	1	98804A487	2.76
2 ft.	1	98804A029	2.14
3 ft.	1	98847A029	3.20
6 ft.	1	98920A029	6.42
12 ft.	1	98960A029	12.40
1/4"-28			
½"	10	95412A563	5.91
¾"	10	95412A565	6.06
1"	10	95412A567	6.21
1¼"	5	95412A569	3.72
1½"	5	95412A571	4.25
2"	5	95412A573	5.26
3"	5	95412A575	7.64
2 ft.	1	98805A029	3.27
3 ft.	1	98848A029	4.90
6 ft.	1	98921A029	9.80
12 ft.	1	98960A429	17.82
5/16"-18			
¾"	25	95412A581	9.70
⅞"	10	95412A582	4.24
1"	10	95412A583	4.00
1¼"	10	95412A585	4.75
1½"	10	95412A587	5.12
1¾"	10	95412A589	6.62
2"	10	95412A591	7.12
2¼"	10	95412A592	8.12
2½"	10	95412A593	8.41

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
5/16"-18 (Cont.)			
3"	5	95412A595	$4.77
3½"	5	95412A596	6.03
4"	5	95412A597	7.22
6"	5	95412A600	11.38
10"	1	95412A602	3.88
1 ft.	1	98804A492	5.00
2 ft.	1	98804A030	2.65
3 ft.	1	98847A030	3.97
6 ft.	1	98920A030	7.95
12 ft.	1	98960A030	15.89
5/16"-24			
1"	5	95412A605	4.24
1½"	5	95412A607	4.85
2"	5	95412A609	6.37
2½"	5	95412A611	7.79
3"	5	95412A613	9.09
2 ft.	1	98805A030	3.78
3 ft.	1	98848A030	5.68
6 ft.	1	98921A030	11.35
12 ft.	1	98960A430	22.70
3/8"-16			
¾"	25	95412A622	9.70
1"	25	95412A624	11.67
1¼"	25	95412A626	12.00
1½"	10	95412A628	6.47
1¾"	10	95412A630	9.29
2"	10	95412A632	8.38
2¼"	5	95412A633	4.00
2½"	5	95412A634	4.50
2¾"	5	95412A635	6.31
3"	5	95412A636	4.90
3½"	5	95412A638	5.71
4"	5	95412A640	6.22
5"	5	95412A644	10.00
6"	5	95412A646	12.18
7"	5	95412A648	12.43
8"	1	95412A650	2.83
9"	1	95412A651	3.00
10"	1	95412A652	3.71
11"	1	95412A653	3.62
1 ft.	1	98804A496	4.00
2 ft.	1	98804A031	3.95
3 ft.	1	98847A031	5.92
6 ft.	1	98920A031	11.84
12 ft.	1	98960A031	23.68
3/8"-24			
1"	5	95412A655	4.86
1¼"	5	95412A657	5.14
1½"	5	95412A659	5.85
2"	5	95412A661	7.71
3"	5	95412A663	11.66
4"	5	95412A665	14.90
2 ft.	1	98805A031	5.62
3 ft.	1	98848A031	8.43
6 ft.	1	98921A031	16.86
12 ft.	1	98960A431	33.73
7/16"-14			
2 ft.	1	98804A032	6.27
3 ft.	1	98847A032	9.41
6 ft.	1	98920A032	18.81
7/16"-20			
2 ft.	1	98805A032	9.30
3 ft.	1	98848A032	13.95
6 ft.	1	98921A032	27.89
1/2"-13			
1¼"	10	95412A718	9.39
1½"	10	95412A716	10.21
1¾"	10	95412A719	12.15
2"	10	95412A720	13.37
2½"	5	95412A722	8.00
3"	5	95412A724	9.50
3½"	5	95412A726	10.70
4"	5	95412A728	11.70
1/2"-13 (Cont.)			
4½"	1	95412A730	$2.54
5"	1	95412A732	2.90
5½"	1	95412A734	3.10
6"	1	95412A736	3.30
7"	1	95412A738	4.33
8"	1	95412A740	6.97
9"	1	95412A741	6.62
10"	1	95412A742	8.12
1 ft.	1	98804A501	7.75
2 ft.	1	98804A033	7.08
3 ft.	1	98847A033	10.62
6 ft.	1	98920A033	21.24
12 ft.	1	98960A033	42.49
1/2"-20			
1"	10	95412A750	13.33
2"	1	95412A752	3.03
2 ft.	1	98805A033	11.78
3 ft.	1	98848A033	17.68
6 ft.	1	98921A033	35.35
12 ft.	1	98960A433	70.70
9/16"-12			
3 ft.	1	98847A034	23.76
6 ft.	1	98920A034	47.51
5/8"-11			
1½"	5	95412A800	9.50
2"	5	95412A802	10.50
2½"	1	95412A804	2.44
3"	1	95412A806	3.00
3½"	1	95412A808	3.40
4"	1	95412A810	3.57
4½"	1	95412A812	4.22
5"	1	95412A814	4.67
6"	1	95412A818	6.65
7"	1	95412A822	7.06
8"	1	95412A824	6.76
2 ft.	1	98804A035	10.97
3 ft.	1	98847A035	16.46
6 ft.	1	98920A035	32.92
12 ft.	1	98960A035	65.84
5/8"-18			
2 ft.	1	98805A035	19.35
3 ft.	1	98848A035	29.03
6 ft.	1	98921A035	58.05
3/4"-10			
2"	1	95412A843	2.40
3"	1	95412A847	3.70
3½"	1	95412A849	4.50
4"	1	95412A851	4.85
5"	1	95412A855	8.71
6"	1	95412A859	10.88
7"	1	95412A861	11.94
8"	1	95412A863	14.00
9"	1	95412A826	13.75
1 ft.	1	98804A505	13.90
2 ft.	1	98804A036	16.00
3 ft.	1	98847A036	24.00
6 ft.	1	98920A036	48.00
12 ft.	1	98960A036	96.00
3/4"-16			
1 ft.	1	98804A508	21.00
2 ft.	1	98805A036	26.38
3 ft.	1	98848A036	39.57
6 ft.	1	98921A036	79.14
7/8"-9			
3"	1	95412A835	11.38
4"	1	95412A837	14.48
6"	1	95412A839	20.86
1 ft.	1	98804A511	24.03
2 ft.	1	98804A037	24.76
3 ft.	1	98847A037	37.14
6 ft.	1	98920A037	74.27

(Cont. on following page)

18-8 Stainless Steel Threaded Studs and Rods *(Continued from previous page)*

18-8 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
7/8"-14			
1 ft.	1	98804A513	$31.79
2 ft.	1	98805A037	43.00
3 ft.	1	98848A037	61.17
6 ft.	1	98921A037	122.36
1"-8			
4"	1	95412A390	17.85
6"	1	95412A395	25.18
1 ft.	1	98804A516	28.29
2 ft.	1	98804A038	33.62
3 ft.	1	98847A038	50.43
6 ft.	1	98920A038	99.74
12 ft.	1	98960A038	201.73
1"-14			
1 ft.	1	98804A519	47.08
2 ft.	1	98805A038	52.81
3 ft.	1	98848A038	79.22
6 ft.	1	98921A038	158.43
1 1/4"-7			
1 ft.	1	98804A522	$81.08
2 ft.	1	98804A040	58.97
3 ft.	1	98847A040	88.46
6 ft.	1	98920A040	176.92
1 1/2"-6			
1 ft.	1	98804A525	88.00
2 ft.	1	98804A041	93.08
3 ft.	1	98847A041	139.62
6 ft.	1	98920A041	279.24
1 3/4"-5			
1 ft.	1	98804A528	88.73
2 ft.	1	98804A044 ♦	161.82
3 ft.	1	98847A044 ♦	196.78
6 ft.	1	98920A044 ♦	374.32
2"-4 1/2			
1 ft.	1	98804A531	133.33
2 ft.	1	98804A046 ♦	215.39
3 ft.	1	98847A046 ♦	261.71
6 ft.	1	98920A046 ♦	494.27

Black-Oxide 18-8 Stainless Steel

Lg.	Pkg. Qty.		Pkg.
1/4"-20			
1 ft.	1	95853A111	15.14
3 ft.	1	95853A312	36.84
6 ft.	1	95853A615	72.08
5/16"-18			
1 ft.	1	95853A114	15.96
3 ft.	1	95853A316	38.50
6 ft.	1	95853A620	73.80
3/8"-16			
1 ft.	1	95853A118	17.60
3 ft.	1	95853A321	40.16
6 ft.	1	95853A625	77.00
1/2"-13			
1 ft.	1	95853A122	17.94
3 ft.	1	95853A325	42.86
6 ft.	1	95853A630	80.26
5/8"-11			
1 ft.	1	95853A126	27.12
3 ft.	1	95853A329	51.64
6 ft.	1	95853A635	103.30
3/4"-10			
1 ft.	1	95853A130	30.76
3 ft.	1	95853A332	67.85
6 ft.	1	95853A640	135.70
7/8"-9			
1 ft.	1	95853A134	36.00
3 ft.	1	95853A336	89.36
6 ft.	1	95853A645	178.72
1"-8			
1 ft.	1	95853A138	40.08
3 ft.	1	95853A340	98.07
6 ft.	1	95853A650	215.75

18-8 Stainless Steel—ASTM A193 Grade B8

Lg.	Pkg. Qty.		Pkg.
1/4"-20			
1"	1	91187A100	1.80
1 1/2"	1	91187A102	1.88
2"	1	91187A104	1.95
1 ft.	1	91187A124	3.74
2 ft.	1	91187A129	5.90
3 ft.	1	91187A134	6.42
6 ft.	1	91187A139	10.92
1/4"-28			
1 ft.	1	91187A150	5.92
2 ft.	1	91187A155	9.66
3 ft.	1	91187A160	10.82
6 ft.	1	91187A165	18.90
5/16"-18			
1"	1	91187A200	1.92
1 1/2"	1	91187A202	2.00
2"	1	91187A204	2.10
1 ft.	1	91187A224	4.92
2 ft.	1	91187A229	8.37
3 ft.	1	91187A234	9.46
6 ft.	1	91187A239	17.04
5/16"-24			
1 ft.	1	91187A250	5.43
2 ft.	1	91187A255	9.46
3 ft.	1	91187A260	10.96
6 ft.	1	91187A265	20.01

♦ Class 2A thread fit.
■ Has a Class 2A thread fit and maximum Rockwell hardness of B98.

18-8 Stainless Steel—ASTM A193 Grade B8 (Cont.)

Lg.	Pkg. Qty.		Pkg.
3/8"-16			
1"	1	91187A301	$1.98
1 1/2"	1	91187A303	2.10
2"	1	91187A305	2.30
2 1/2"	1	91187A307	2.45
3"	1	91187A309	2.63
1 ft.	1	91187A330	5.35
2 ft.	1	91187A335	9.23
3 ft.	1	91187A340	10.35
6 ft.	1	91187A345	18.34
3/8"-24			
1 ft.	1	91187A350	6.76
2 ft.	1	91187A355	12.43
3 ft.	1	91187A360	14.55
6 ft.	1	91187A365	27.48
7/16"-14			
1 ft.	1	91187A401	7.45
2 ft.	1	91187A406	13.58
3 ft.	1	91187A411	16.00
6 ft.	1	91187A416	28.98
7/16"-20			
1 ft.	1	91187A425	8.59
2 ft.	1	91187A430	16.50
3 ft.	1	91187A435	19.63
6 ft.	1	91187A440	35.71
1/2"-13			
2"	1	91187A502	1.82
2 1/2"	1	91187A504	2.08
3"	1	91187A506	2.38
3 1/2"	1	91187A508	2.73
4"	1	91187A510	3.12
5"	1	91187A514	3.62
6"	1	91187A518	4.22
1 ft.	1	91187A538	8.45
2 ft.	1	91187A543	15.27
3 ft.	1	91187A548	17.88
6 ft.	1	91187A553	31.60
1/2"-20			
1 ft.	1	91187A560	9.91
2 ft.	1	91187A565	19.26
3 ft.	1	91187A570	23.02
6 ft.	1	91187A575	42.05
5/8"-11			
3"	1	91187A602	$3.33
3 1/2"	1	91187A604	4.23
4"	1	91187A606	4.96
5"	1	91187A610	6.72
6"	1	91187A614	7.45
1 ft.	1	91187A634	11.71
2 ft.	1	91187A639	22.58
3 ft.	1	91187A644	26.80
6 ft.	1	91187A647	48.05
5/8"-18			
1 ft.	1	91187A650	15.33
2 ft.	1	91187A655	29.79
3 ft.	1	91187A660	35.89
6 ft.	1	91187A665	69.74
3/4"-10			
3"	1	91187A701	4.40
4"	1	91187A705	6.03
4 1/2"	1	91187A709	6.65
5"	1	91187A713	7.48
6"	1	91187A717	8.30
1 ft.	1	91187A737	16.88
2 ft.	1	91187A742	32.70
3 ft.	1	91187A747	39.27
6 ft.	1	91187A752	76.81
3/4"-16			
1 ft.	1	91187A760	19.43
2 ft.	1	91187A765	38.06
3 ft.	1	91187A770	46.56
6 ft.	1	91187A775	91.08
1"-8			
4"	1	91187A904	11.83
5"	1	91187A908	14.43
6"	1	91187A912	16.98
7"	1	91187A916	20.00
1 ft.	1	91187A936	28.12
2 ft.	1	91187A941	58.03
3 ft.	1	91187A946	71.59
6 ft.	1	91187A951	139.98
1"-14			
1 ft.	1	91187A970	32.29
2 ft.	1	91187A975	67.01
3 ft.	1	91187A980	82.12
6 ft.	1	91187A985	160.91

Left-Hand Threaded 18-8 Stainless Steel

Lg.	Pkg. Qty.		Pkg.
1/4"-20			
3 ft.	1	95050A003 ■	16.67
6 ft.	1	95050A120 ■	32.14
5/16"-18			
3 ft.	1	95050A007 ■	19.84
6 ft.	1	95050A125 ■	37.90
3/8"-16			
3 ft.	1	95050A011 ■	26.19
6 ft.	1	95050A130 ■	49.74
1/2"-13			
1 ft.	1	95050A154	21.36
3 ft.	1	95050A016 ■	36.31
6 ft.	1	95050A135 ■	69.44
5/8"-11			
1 ft.	1	95050A155	32.80
6 ft.	1	95050A140 ■	92.60
3/4"-10			
1 ft.	1	95050A156	40.40
3 ft.	1	95050A020 ■	58.13
6 ft.	1	95050A145 ■	119.56
7/8"-9			
1 ft.	1	95050A157	62.40
3 ft.	1	95050A024 ■	87.70
1"-8			
1 ft.	1	95050A158	51.76
3 ft.	1	95050A027 ■	77.03
6 ft.	1	95050A150 ■	147.03

Titanium Threaded Rods

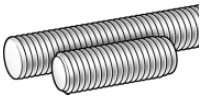

Made from nonmagnetic Grade 2 titanium, these lightweight rods have a high strength-to-weight ratio and are exceptionally resistant to corrosion from salt water and numerous chemicals. They have a Class 2A thread fit, minimum Rockwell hardness of B80, and minimum tensile strength of 50,000 psi. Length is measured from end to end.

For matching hex nuts, see 90545A on page 3187.

Lg.			
8-32			
1 ft.	96095A145	$34.00
3 ft.	96095A120	90.65
10-24			
1 ft.	96095A150	33.10
3 ft.	96095A125	87.45
1/4"-20			
1 ft.	96095A155	36.21
3 ft.	96095A130	82.32
5/16"-18			
1 ft.	96095A160	$50.86
3 ft.	96095A135	121.68
3/8"-16			
1 ft.	96095A165	52.14
3 ft.	96095A140	142.38

Silicon Bronze Threaded Studs and Rods

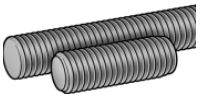

Made from 98% copper with a small amount of silicon for strength, silicon bronze is more resistant to corrosion from salt water than brass. It's nonmagnetic, an excellent conductor of electricity, and meets ASTM B98.

Studs and rods have a Class 1A thread fit (unless noted). They have a minimum tensile strength of 55,000 psi, but are not rated for hardness. Length is measured from end to end.

For matching hex nuts, see 93439A on page 3187.

Lg.		
1/4"-20		
1"	96104A167	$3.44
1 1/4"	96104A170	3.63
1 1/2"	96104A173	3.97
2"	96104A176	4.66
1 ft.	94995A470	16.75
3 ft.	94995A425	50.25
6 ft.	94995A120	89.33
5/16"-18		
1 1/4"	96104A192	4.14
1 1/2"	96104A195	4.49
2"	96104A198	4.83
1 ft.	94995A475 ♦	13.59
3 ft.	94995A430 ♦	27.88
6 ft.	94995A125 ♦	56.54

♦ Class 2A thread fit.

Lg.		
3/8"-16		
1 1/2"	96104A222	$5.00
2"	96104A225	5.35
2 1/2"	96104A228	5.69
3"	96104A231	6.55
1 ft.	94995A480	22.57
3 ft.	94995A435	54.40
6 ft.	94995A130	81.37
1/2"-13		
2 1/2"	96104A254	8.28
3"	96104A257	9.14
3 1/2"	96104A260	9.83
4"	96104A263	10.34
1 ft.	94995A485 ♦	24.32
3 ft.	94995A440 ♦	65.59
6 ft.	94995A135 ♦	116.91

Lg.		
1/2"-20		
3 ft.	94995A445	$99.74
6 ft.	94995A137	167.55
5/8"-11		
1 ft.	94995A495 ♦	36.68
3 ft.	94995A450 ♦	88.68
6 ft.	94995A140 ♦	165.04
3/4"-10		
1 ft.	94995A505 ♦	56.80
3 ft.	94995A460 ♦	153.01
6 ft.	94995A145 ♦	275.25
1"-8		
1 ft.	94995A520 ♦	95.27
3 ft.	94995A465 ♦	260.04
6 ft.	94995A150 ♦	480.00

High-Strength Corrosion-Resistant Threaded Rods

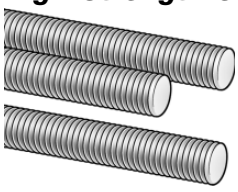

For your most challenging environments, we offer rods in a variety of materials—each with a unique set of problem-solving benefits. All rods have a Class 2A thread fit. Length is measured from end to end.

Alloy 20 stainless steel is also known as Carpenter 20 and is the most resistant to hot sulfuric acid and cracking from stress and corrosion. A high-nickel stainless steel with about four times as much nickel as 18-8 stainless steel, it may be slightly magnetic and meets ASTM B473. Rods have a minimum Rockwell hardness of B85 and minimum tensile strength of 80,000 psi. For matching hex nuts, see 90775A on page 3187.

Type 410 stainless steel—ASTM A193 Grade B6 is stronger and harder than 18-8 and Type 316 stainless steels. It's magnetic and ideal for mildly corrosive environments such as steam and weak acids. Rods have a minimum Rockwell hardness of B98 and minimum tensile strength of 110,000 psi. For matching hex nuts, see 99129A on page 3187.

Hastelloy C276 is a nonmagnetic nickel super alloy that meets ASTM B574 and is suitable for welding. It's resistant to pitting, cracking from stress and corrosion, oxidation, and corrosive chemicals such as chlorine. Rods have a minimum tensile strength of 110,000 psi but are not rated for hardness. For matching hex nuts, see 95012A on page 3187.

Nickel-copper Alloy 400 is sometimes called Monel. It's a nickel super alloy that's stronger than brass and particularly resistant to heat and corrosion caused by salt water and caustic solutions. It may be slightly magnetic and meets ASTM B164. Rods have a minimum Rockwell hardness of B70 and minimum tensile strength of 80,000 psi. For matching hex nuts, see 90810A on page 3187.

Lg.		
Alloy 20 Stainless Steel		
1/4"-20		
1 ft.	95745A050	$35.98
3 ft.	95745A021	76.26
6 ft.	95745A130	151.04
5/16"-18		
1 ft.	95745A051	34.35
3 ft.	95745A027	72.74
6 ft.	95745A140	144.08
3/8"-16		
1 ft.	95745A052	$36.39
3 ft.	95745A033	80.85
6 ft.	95745A150	154.14
1/2"-13		
1 ft.	95745A053	62.08
3 ft.	95745A039	126.95
6 ft.	95745A160	245.64
Type 410 Stainless Steel—ASTM A193 Grade B6		
1/4"-20		
1 ft.	98827A381	12.12
3 ft.	98827A310	32.03
1/2"-13		
1 ft.	98827A382	22.49
3 ft.	98827A340	61.04
5/8"-11		
1 ft.	98827A383	26.50
3 ft.	98827A350	67.40
3/4"-10		
1 ft.	98827A384	29.98
3 ft.	98827A360	73.34
7/8"-9		
1 ft.	98827A385	33.94
3 ft.	98827A370	101.30
1"-8		
1 ft.	98827A386	43.51
3 ft.	98827A380	119.78
Hastelloy C276		
3/8"-16		
1 ft.	98887A405	81.97
3 ft.	98887A250	231.18
1/2"-13		
1 ft.	98887A410	122.29
3 ft.	98887A300	329.96
5/8"-11		
1 ft.	98887A415	192.17
3 ft.	98887A350	555.93
3/4"-10		
1 ft.	98887A420	268.43
3 ft.	98887A400	766.67
Nickel-Copper Alloy 400		
1/4"-20		
1 ft.	95815A510	35.71
3 ft.	95815A520	92.86
6 ft.	95815A530	175.22
3/8"-16		
1 ft.	95815A392	30.43
3 ft.	95815A340	65.53
6 ft.	95815A130	129.18
1/2"-13		
1 ft.	95815A393	43.81
3 ft.	95815A350	113.74
6 ft.	95815A135	226.09
5/8"-11		
1 ft.	95815A394	71.95
3 ft.	95815A360	165.98
6 ft.	95815A140	336.13

Brass Threaded Studs and Rods

Brass studs and rods resist rust and atmospheric corrosion. They're also nonmagnetic and good conductors of electricity. Lengths shorter than 1 ft. are made from Alloy 270 to Alloy 360 brass; longer lengths are made from Alloy 360 brass. All have a Class 1A thread fit (unless noted), minimum Rockwell hardness of B55, and minimum tensile strength of 50,000 psi. Length is measured from end to end. For matching hex nuts, see 92671A on page 3185 and 92676A on page 3187.

Lg.	Pkg. Qty.		Pkg.
2-56			
1/2"	25	93025A360	$8.80
1"	25	93025A362	8.81
1 1/2"	25	93025A363	12.50
2"	10	93025A364	8.62
2 ft.	1	98812A003	1.43
3 ft.	1	98853A003	2.15
6 ft.	1	98926A003	4.30
4-40			
1/2"	50	93025A459	8.89
3/4"	50	93025A461	10.40
1"	50	93025A462	11.40
1 1/2"	25	93025A463	5.42
2"	25	93025A465	7.07
2 ft.	1	98812A005	1.92
3 ft.	1	98853A005	2.88
6 ft.	1	98926A005	5.77
5-40			
2 ft.	1	98812A006	2.42
3 ft.	1	98853A006	3.63
6 ft.	1	98926A006	7.26
6-32			
1/2"	50	93025A559	6.98
3/4"	50	93025A561	11.20
1"	50	93025A562	11.40
1 1/2"	25	93025A563	7.60
2"	25	93025A564	9.00
3"	25	93025A568	10.00
2 ft.	1	98812A007	2.00
3 ft.	1	98853A007	3.00
6 ft.	1	98926A007	5.99
8-32			
1/2"	50	93025A659	11.92
3/4"	25	93025A661	7.00
1"	25	93025A662	7.54
1 1/2"	25	93025A663	9.80
2"	25	93025A664	12.10
3"	10	93025A668	7.40
2 ft.	1	98812A009	2.86
3 ft.	1	98853A009	4.27
6 ft.	1	98926A009	8.53
10-24			
3/4"	50	93025A761	$13.80
1"	25	93025A762	9.00
1 1/2"	25	93025A763	12.20
2"	25	93025A764	10.60
2 1/2"	10	93025A765	6.79
3"	10	93025A767	8.65
2 ft.	1	98812A011	3.41
3 ft.	1	98853A011	5.11
6 ft.	1	98926A011	10.21
10-32			
1/2"	50	93025A855	12.78
3/4"	25	93025A861	8.20
1"	25	93025A862	9.52
1 1/4"	10	93025A892	4.80
1 1/2"	25	93025A863	11.68
2"	25	93025A864	10.79
3"	10	93025A870	8.28
4"	10	93025A875	10.00
2 ft.	1	98813A011	3.70
3 ft.	1	98854A011	5.55
6 ft.	1	98927A011	11.10
1/4"-20			
1/2"	25	93025A958	9.28
3/4"	25	93025A960	10.61
1"	25	93025A961	13.15
1 1/4"	10	93025A001	7.18
1 1/2"	10	93025A962	7.09
1 3/4"	10	93025A893	9.00
2"	10	93025A963	8.33
2 1/4"	5	93025A865	6.20
3"	10	93025A964	12.33
4"	5	93025A966	8.70
1 ft.	1	98812A039	2.65
2 ft.	1	98812A029	5.04
3 ft.	1	98853A029	7.51
6 ft.	1	98926A029	15.03
1/4"-28			
2 ft.	1	98813A029	5.99
3 ft.	1	98854A029	8.98
6 ft.	1	98927A029	17.95
5/16"-18			
3/4"	10	93025A967	$12.40
1"	5	93025A968	7.20
1 1/2"	5	93025A969	8.20
1 3/4"	5	93025A971	9.60
2"	5	93025A973	8.18
2 1/2"	1	93025A975	2.60
3"	5	93025A976	11.36
2 ft.	1	98812A030	7.91
3 ft.	1	98853A030	11.86
6 ft.	1	98926A030	23.73
5/16"-24			
2 ft.	1	98813A030	9.21
3 ft.	1	98854A030	13.82
6 ft.	1	98927A030	27.64
3/8"-16			
3/4"	5	93025A111	8.51
1"	5	93025A112	8.79
1 1/4"	5	93025A113	9.31
1 1/2"	5	93025A114	10.90
2"	5	93025A116	13.10
2 1/2"	1	93025A120	3.08
3"	1	93025A128	3.80
2 ft.	1	98812A031	11.40
3 ft.	1	98853A031	17.11
6 ft.	1	98926A031	34.22
3/8"-24			
2 ft.	1	98813A031	13.04
3 ft.	1	98854A031	19.57
6 ft.	1	98927A031 ♦	78.71
7/16"-14			
2 ft.	1	98812A032	16.04
3 ft.	1	98853A032	24.01
6 ft.	1	98926A032	48.02
1/2"-13			
1 1/2"	1	93025A295	4.00
2"	1	93025A297	5.20
3"	1	93025A299	7.98
4"	1	93025A305	9.60
1 ft.	1	98812A050	10.73
1/2"-13 (Cont.)			
2 ft.	1	98812A033	$20.46
3 ft.	1	98853A033	30.50
6 ft.	1	98926A033	61.01
1/2"-20			
1 ft.	1	98812A051	12.07
2 ft.	1	98813A033	22.93
3 ft.	1	98854A033	34.40
6 ft.	1	98927A033	68.79
5/8"-11			
1 ft.	1	98812A040	16.99
2 ft.	1	98812A035	32.28
3 ft.	1	98853A035	48.42
6 ft.	1	98926A035	96.84
5/8"-18			
1 ft.	1	98812A052	19.29
2 ft.	1	98813A035	36.65
3 ft.	1	98854A035	54.98
6 ft.	1	98927A035	109.95
3/4"-10			
1 ft.	1	98812A041	25.91
2 ft.	1	98812A036	49.23
3 ft.	1	98853A036	74.03
6 ft.	1	98926A036	147.67
3/4"-16			
1 ft.	1	98812A053	30.68
2 ft.	1	98813A036	58.17
3 ft.	1	98854A036	87.26
6 ft.	1	98927A036	174.52
7/8"-9			
1 ft.	1	98812A042	35.41
2 ft.	1	98812A037	67.92
3 ft.	1	98853A037	101.88
6 ft.	1	98926A037	203.76
1"-8			
1 ft.	1	98812A043	45.42
2 ft.	1	98812A038	88.09
3 ft.	1	98853A038	132.14
6 ft.	1	98926A038	264.28

♦ Class 2A thread fit.

Plastic Threaded Studs and Rods

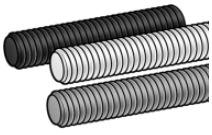

For corrosive environments and electrical applications, nonmetallic studs and rods are often your best choice. They're nonconductive, have a Class 2A thread fit (unless noted), and are not rated for hardness or tensile strength. Length is measured from end to end.

For matching hex nuts, see page 3188.

General Purpose Nylon 6/6— Resistant to chemicals and solvents (except mineral acids), these economical studs and rods are reliable at temperatures up to +185° F. *Note:* Nylon absorbs moisture, which can affect dimensions and other properties.

High Strength Fiberglass— Stronger than nylon, fiberglass is made from vinyl ester reinforced with glass fiber. Rods tolerate corrosive environments, chemicals, and temperatures from –31° to +140° F.

Chemical Resistant PVC— Resistant to moisture, acids, alkalies, salt solutions, and alcohols, these studs and rods tolerate temperatures up to 120° F.

Gen. Pur. Nylon 6/6—To Order: *Please specify black or off-white.*

Lg.	Pkg.	Qty.		Pkg.
4-40				
2 ft.	1	98831A310		$5.45
6 ft.	1	98831A520		15.34
6-32				
2 ft.	1	98831A320		4.56
6 ft.	1	98831A530		13.54
8-32				
2 ft.	1	98831A330		4.53
6 ft.	1	98831A540		13.99
10-24				
2 ft.	1	98831A340		4.23
6 ft.	1	98831A550		12.91
10-32				
3/4″	100	93665A309		5.47
1″	50	93665A314		3.90
1½″	50	93665A319		5.25
2″	25	93665A324		3.30
2 ft.	1	98831A350		4.26
6 ft.	1	98831A560		13.01
1/4″-20				
3/4″	50	93665A409		4.09
1″	50	93665A414		5.41
1½″	25	93665A419		4.02
2″	10	93665A424		2.66
2½″	10	93665A429		2.17
3″	10	93665A434		2.76
2 ft.	1	98831A360		3.53
6 ft.	1	98831A570		10.74
5/16″-18				
1″	25	93665A514		3.55
1½″	25	93665A519		4.53
2″	25	93665A524		5.01
2½″	25	93665A529		5.75
3″	10	93665A534		3.07
2 ft.	1	98831A370		5.46
6 ft.	1	98831A580		16.59
3/8″-16				
1″	25	93665A614		$5.77
1½″	25	93665A619		6.19
2″	25	93665A624		6.88
2½″	10	93665A629		3.63
3″	10	93665A634		3.81
4″	10	93665A639		6.39
2 ft.	1	98831A380		7.22
6 ft.	1	98831A590		21.06
1/2″-13				
1½″	10	93665A659		3.71
2″	10	93665A664		4.21
2½″	10	93665A669		5.09
3″	5	93665A674		3.36
4″	5	93665A679		5.72
5″	5	93665A684		6.90
2 ft.	1	98831A390		11.43
6 ft.	1	98831A710		33.96
5/8″-11				
1 ft.	1	98831A110		9.80
2 ft.	1	98831A410		16.90
6 ft.	1	98831A720		45.03
3/4″-10				
1 ft.	1	98831A120		10.40
2 ft.	1	98831A420		16.56
6 ft.	1	98831A730		47.85
7/8″-9				
1 ft.	1	98831A130		14.60
2 ft.	1	98831A430		23.26
6 ft.	1	98831A740		67.17
1″-8				
1 ft.	1	98831A140		17.80
2 ft.	1	98831A510		28.23
6 ft.	1	98831A750		81.43

High Strength Fiberglass— *Color is Gray*

Lg.	Pkg.	Qty.		Pkg.
3/8″-16				
1 ft.	1	91315A010		13.79
4 ft.	1	91315A031		35.14
8 ft.	1	91315A231	●	58.74
1/2″-13				
1 ft.	1	91315A015		16.38
4 ft.	1	91315A033		40.43
8 ft.	1	91315A233	●	64.23
5/8″-11				
1 ft.	1	91315A020		17.07
4 ft.	1	91315A035		45.43
8 ft.	1	91315A235	●	70.86
3/4″-10				
1 ft.	1	91315A025		18.97
4 ft.	1	91315A036		49.57
8 ft.	1	91315A236	●	81.60
1″-8				
1 ft.	1	91315A028		25.34
4 ft.	1	91315A038		70.86
8 ft.	1	91315A238	●	112.46

Chemical Resistant PVC— *Color is Gray*

Lg.	Pkg.	Qty.		Pkg.
1/4″-20				
3 ft.	1	98871A040	●	12.93
5/16″-18				
3 ft.	1	98871A043	●	13.06
3/8″-16				
1 ft.	1	98871A200		19.57
3 ft.	1	98871A041	●	18.48
1/2″-13				
1 ft.	1	98871A205		20.68
3 ft.	1	98871A042	●	22.20
5/8″-11				
1 ft.	1	98871A210		29.85
3 ft.	1	98871A120	●	27.76
3/4″-10				
1 ft.	1	98871A215		35.83
3 ft.	1	98871A130	●	29.52

● Class 1A thread fit.

Also Available: Acetal and PTFE rods (shown below). Please specify thread size. Package quantity is 1.

Acetal— Color is White

Lg.	Max. Temp.	
2 ft.	210° F	98873A800
4 ft.	210° F	98873A900

PTFE— Color is White

Lg.	Max. Temp.	
1 ft.	500° F	90206A100
4 ft.	500° F	90206A200

Aluminum Threaded Studs and Rods

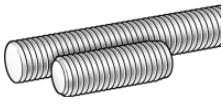

Made from general purpose Alloy 6061-T6 aluminum, these corrosion-resistant studs and rods are not only ideal for outdoor use, they're also nonmagnetic and one-third the weight of steel.

All have a Class 1A thread fit and minimum tensile strength of 42,000 psi, but are not rated for hardness. Length is measured from end to end.

For matching hex nuts, see 93181A on page 3185 and 90670A on page 3187.

Lg.	Pkg.	Qty.		Pkg.
4-40				
1/2″	100	93225A467		$14.20
3/4″	100	93225A469		14.90
1″	100	93225A471		13.62
1½″	100	93225A472		14.95
2″	50	93225A473		10.89
2½″	50	93225A474		14.44
3 ft.	1	94435A315		3.13
6 ft.	1	94435A349		6.24
6-32				
3/4″	100	93225A569		13.80
1″	100	93225A571		13.88
1½″	50	93225A572		8.53
2″	50	93225A573		7.96
2½″	50	93225A574		11.28
3″	5	93225A578		3.16
3 ft.	1	94435A317		2.63
6 ft.	1	94435A351		5.25
8-32				
3/4″	100	93225A671		14.90
1″	50	93225A672		8.44
1½″	50	93225A673		8.62
2″	50	93225A674		11.89
2½″	50	93225A675		14.70
3″	25	93225A677		10.12
3 ft.	1	94435A319		3.00
6 ft.	1	94435A353		6.03
10-24				
1″	100	93225A771		14.90
1½″	50	93225A772		8.45
2″	50	93225A773		13.20
3″	25	93225A775		9.42
4″	25	93225A776		12.78
5″	25	93225A777		14.95
6″	10	93225A778		7.52
3 ft.	1	94435A321		3.38
6 ft.	1	94435A355		6.76
10-32				
1″	50	93225A780		13.96
1½″	25	93225A782		9.86
2″	25	93225A784		11.07
2½″	10	93225A302		3.74
3″	10	93225A785		6.85
4″	10	93225A787		8.95
3 ft.	1	94435A336		3.66
6 ft.	1	94435A357		7.32
1/4″-20				
3/4″	50	93225A869		$14.95
1″	50	93225A871		14.90
1½″	25	93225A891		11.20
2″	25	93225A872		13.69
2½″	10	93225A800		6.54
3″	10	93225A873		6.84
3½″	10	93225A305		5.38
4″	10	93225A874		8.82
5″	10	93225A878		11.12
6″	10	93225A882		11.45
8″	10	93225A886		11.50
1 ft.	1	94435A313		2.96
3 ft.	1	94435A338		4.46
6 ft.	1	94435A325		8.91
5/16″-18				
1″	10	93225A910		8.20
1¼″	10	93225A914		8.80
1½″	10	93225A918		9.00
2″	10	93225A922		10.00
3 ft.	1	94435A342		7.03
6 ft.	1	94435A361		14.07
3/8″-16				
3/4″	5	93225A940		8.60
1″	5	93225A944		8.80
1½″	5	93225A948		9.60
2″	5	93225A952		10.20
4″	10	93225A961		12.75
1 ft.	1	94435A314		6.96
3 ft.	1	94435A344		8.91
6 ft.	1	94435A327		17.83
1/2″-13				
6″	1	93225A980		3.75
3 ft.	1	94435A346		16.42
6 ft.	1	94435A365		32.83
5/8″-11				
1 ft.	1	94435A370		17.83
3 ft.	1	94435A348		25.80
6 ft.	1	94435A367		51.60
3/4″-10				
1 ft.	1	94435A371		27.83
3 ft.	1	94435A352		44.00
6 ft.	1	94435A369		88.00

Metric Medium-Strength Steel Threaded Rods—*Class 8.8*

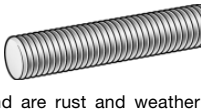

Made from heat-treated Class 8.8 steel, these threaded rods have a Class 6g thread fit, minimum Rockwell hardness of C20, and minimum tensile strength of 115,000 psi. Length is measured from end to end.

Zinc-plated steel rods meet DIN 975 and are rust and weather resistant; ***plain steel*** rods are free of coatings and finishes.

For matching hex nuts, see 90591A Class 8 nuts on page 3193.

Size	Pitch, mm	***ZINC PLATED*** 1-meter Lg.		***PLAIN*** 300-mm Lg.		***PLAIN*** 1-meter Lg.	
M4	0.7					99055A110	$9.52
M5	0.8	99067A242	$6.23			99055A115	5.03
M6	1	99067A245	5.20			99055A120	2.31
M8	1.25	99067A248	10.29			99055A125	4.29
M10	1.5	99067A251	10.55	99055A231	$4.85	99055A130	6.47
M12	1.75	99067A254	16.30	99055A236	25.61	99055A135	8.06
M14	2	99067A257	28.34				
M16	2	99067A260	27.30	99055A239	13.60	99055A140	18.13
M18	2.5	99067A263	66.50	99055A241	20.51	99055A143	27.50
M20	2.5	99067A266	51.13	99055A242	17.29	99055A145	23.06
M22	2.5	99067A269	71.46				
M24	3	99067A272	64.60	99055A245	26.90	99055A150	35.87
M27	3	99067A275	95.55	99055A248	40.09	99055A155	53.45
M30	3.5	99067A278	97.56	99055A251	42.20	99055A160	56.27

Metric Medium-Strength Alloy Steel Threaded Studs and Rods—ASTM A193 Grade B7

The standard for bolting pressure vessels, valves, and flanges, these studs and rods are made from chromium-molybdenum AISI 4140 alloy steel. They have a Class 6g thread fit, maximum Rockwell hardness of C35, and minimum tensile strength of 124,000 psi. Length is measured from end to end (unless noted).

Zinc yellow-chromate plated alloy steel rods are rust and weather resistant. ***Plain alloy steel*** studs and rods are free of coatings and finishes; those with a ***fine thread*** allow precision adjustment.

For matching hex nuts, see pages 3192-3194.

Zinc Yellow-Chromate Plated Alloy Steel

Size	Pitch, mm	1-meter Lg.		2-meter Lg.	
M6	1	98942A114	$6.36	98942A214	$12.24
M8	1.25	98942A115	10.80	98942A215	20.76
M10	1.5	98942A116	14.35	98942A216	27.59
M12	1.75	98942A117	20.44	98942A217	39.31
M14	2	98942A118	24.12	98942A218	46.39
M16	2	98942A119	25.86	98942A219	49.74
M18	2.5	98942A121	32.32	98942A221	62.15
M20	2.5	98942A122	38.38	98942A222	73.81
M24	3	98942A124	51.86	98942A224	99.74

Plain Alloy Steel

Lg.		
M6—Pitch: 1 mm		
40 mm	93675A225 ♦	$7.60
50 mm	93675A230 ♦	8.16
1 meter	93325A170	7.13
2 meter	93325A070	11.77
M8—Pitch: 1.25 mm		
25 mm	93675A250 ♦	5.31
30 mm	93675A255 ♦	5.39
40 mm	93675A260 ♦	6.11
50 mm	93675A265 ♦	6.51
M8 (Cont.)		
1 meter	93325A180	$10.99
2 meter	93325A080	19.87
M10—Pitch: 1.5 mm		
40 mm	93675A325 ♦	6.81
50 mm	93675A330 ♦	7.00
60 mm	93675A335 ♦	8.58
1 meter	93325A190	15.47
2 meter	93325A090	26.99

Plain Alloy Steel (Cont.)

Lg.		
M12—Pitch: 1.75 mm		
50 mm	93675A365 ♦	$8.02
60 mm	93675A370 ♦	10.05
80 mm	93675A380 ♦	9.92
300 mm	93325A335	5.36
1 meter	93325A200	20.53
2 meter	93325A100	35.76
M14—Pitch: 2 mm		
300 mm	93325A340	6.63
1 meter	93325A210	23.82
2 meter	93325A110	45.42
M16—Pitch: 2 mm		
50 mm	93675A430 ♦	8.95
80 mm	93675A445 ♦	10.72
100 mm	93675A450 ♦	15.43
300 mm	93325A345	8.16
1 meter	93325A220	26.28
2 meter	93325A120	51.18
M18—Pitch: 2.5 mm		
300 mm	93325A350	9.68
1 meter	93325A230	27.95
2 meter	93325A130	52.91
M20—Pitch: 2.5 mm		
100 mm	93675A490 ♦	$13.33
300 mm	93325A355	12.19
1 meter	93325A240	32.76
2 meter	93325A140	62.63
M24—Pitch: 3 mm		
300 mm	93325A360	16.07
1 meter	93325A260	46.68
2 meter	93325A160	88.07
M30—Pitch: 3.5 mm		
300 mm	93325A325	69.41
1 meter	93325A300 ♦	176.11
2 meter	93325A315 ♦	292.41
M36—Pitch: 4 mm		
300 mm	93325A330	90.34
1 meter	93325A305 ♦	214.51
2 meter	93325A320 ♦	358.43
M42—Pitch: 4.5 mm		
300 mm	93325A375	83.00
1 meter	93325A370	199.74

♦ Length is measured from first full thread to first full thread.

Fine Thread Plain Alloy Steel

Size	Pitch, mm	300-mm Lg.		1-meter Lg.	
M10	1	95245A100	$30.09	95245A130	$62.18
M10	1.25	95245A105	29.63	95245A135	60.82
M12	1.25	95245A110	30.76	95245A140	64.02
M12	1.5	95245A115	30.76	95245A145	64.02
M16	1.5	95245A120	39.91	95245A150	90.47
M20	1.5	95245A125	46.60	95245A155	109.78

Metric Low-Strength Steel Threaded Studs and Rods

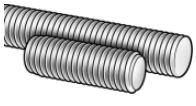

The economical choice for your general purpose needs, these studs and rods have a Class 6g thread fit, minimum Rockwell hardness of B49, and minimum tensile strength of 58,000 psi. Length is measured from end to end.

Zinc-plated steel studs and rods are rust and weather resistant.

Class 4.6 plain steel studs and rods are free of coatings and finishes; those with a ***fine thread*** allow precision adjustment.

For matching hex nuts, see pages 3192-3194.

Also Available: 300-mm (11.8″) rods made from Class 4.6 plain steel. Please ask for 98861A222, and specify thread size.

Also Available: Fine thread studs made from Class 4.6 plain steel. Please ask for 98833A300, and specify thread size and length.

Zinc-Plated Steel

Lg.		
M3—Pitch: 0.5 mm		
1 meter	93000A512	$11.97
M4—Pitch: 0.7 mm		
1 meter	93000A513	8.10
M5—Pitch: 0.8 mm		
1 meter	93000A514	6.22
2 meter	93000A571	9.85
M6—Pitch: 1 mm		
20 mm	94595A315	.56
25 mm	94595A320	.69
30 mm	94595A323	.93
40 mm	94595A326	1.10
50 mm	94595A329	1.26
1 meter	93000A515	7.20
2 meter	93000A572	12.02
M8—Pitch: 1.25 mm		
25 mm	94595A355	.80
30 mm	94595A357	.97
40 mm	94595A359	1.18
50 mm	94595A361	1.27
1 meter	93000A516	9.02
2 meter	93000A573	16.55
M10—Pitch: 1.5 mm		
30 mm	94595A425	.95
M10 (Cont.)		
40 mm	94595A427	$1.18
50 mm	94595A429	1.40
60 mm	94595A431	1.66
1 meter	93000A517	11.40
2 meter	93000A574	18.81
M12—Pitch: 1.75 mm		
40 mm	94595A460	1.15
50 mm	94595A463	1.47
70 mm	94595A466	2.02
80 mm	94595A469	2.30
1 meter	93000A518	15.60
2 meter	93000A575	24.91
M14—Pitch: 2 mm		
1 meter	93000A519	18.90
2 meter	93000A576	32.01
M16—Pitch: 2 mm		
1 meter	93000A520	20.60
2 meter	93000A577	40.39
M20—Pitch: 2.5 mm		
1 meter	93000A522	27.24
2 meter	93000A579	47.89
M24—Pitch: 3 mm		
1 meter	93000A523	33.55

Class 4.6 Plain Steel

Lg.		
M2—Pitch: 0.4 mm		
1 meter	98861A010	8.33
M3—Pitch: 0.5 mm		
1 meter	98861A040	1.39
M4—Pitch: 0.7 mm		
1 meter	98861A050	1.05
M5—Pitch: 0.8 mm		
20 mm	90435A102	.28
M5 (Cont.)		
25 mm	90435A103	.35
30 mm	90435A104	.42
1 meter	98861A060	1.07
M6—Pitch: 1 mm		
16 mm	90435A109	.27
20 mm	90435A110	.31
25 mm	90435A111	.38

Class 4.6 Plain Steel (Cont.)

Lg.		
M6 (Cont.)		
30 mm	90435A112	$0.52
40 mm	90435A114	.61
50 mm	90435A116	.69
1 meter	98861A070	1.26
M8—Pitch: 1.25 mm		
16 mm	90435A118	.30
20 mm	90435A120	.33
25 mm	90435A122	.35
30 mm	90435A123	.53
40 mm	90435A125	.66
50 mm	90435A127	.70
1 meter	98861A080	2.27
M10—Pitch: 1.5 mm		
20 mm	90435A135	.49
25 mm	90435A136	.53
30 mm	90435A138	.55
40 mm	90435A140	.67
50 mm	90435A142	.80
60 mm	90435A144	.95
1 meter	98861A090	3.56
M12—Pitch: 1.75 mm		
40 mm	90435A155	.69
50 mm	90435A157	.88
60 mm	90435A159	1.07
M12 (Cont.)		
80 mm	90435A163	$1.44
1 meter	98861A100	5.53
M14—Pitch: 2 mm		
1 meter	98861A110	8.51
M16—Pitch: 2 mm		
60 mm	90435A189	2.26
70 mm	90435A191	2.44
100 mm	90435A197	3.07
1 meter	98861A120	10.11
M18—Pitch: 2.5 mm		
1 meter	98861A130	16.20
M20—Pitch: 2.5 mm		
100 mm	90435A223	5.27
1 meter	98861A140	14.89
M22—Pitch: 2.5 mm		
1 meter	98861A150	27.59
M24—Pitch: 3 mm		
1 meter	98861A160	20.57
M30—Pitch: 3.5 mm		
1 meter	98861A170	55.17
M33—Pitch: 3.5 mm		
1 meter	98861A175	75.86
M36—Pitch: 4 mm		
1 meter	98861A180	75.86

Size	Pitch, mm	300-mm Lg.		1-meter Lg.	
Fine Thread—Class 4.6 Plain Steel					
M5	0.5	—	—	98861A314	$29.99
M6	0.75	—	—	98861A317	30.29
M8	1	98861A525	$11.00	98861A320	13.06
M10	1	98861A530	14.59	98861A324	19.45
M10	1.25	98861A535	14.16	98861A328	18.88
M12	1.25	98861A540	19.36	98861A332	25.81
M12	1.5	98861A545	18.08	98861A333	24.10
M14	1.5	98861A550	21.22	98861A336	28.29
M16	1.5	98861A554	21.77	98861A340	29.02
M18	1.5	98861A560	32.70	98861A344	43.60
M20	1.5	98861A565	36.14	98861A350	48.19
M24	2	98861A570	50.43	98861A360	67.24
Left-Hand Threaded—Class 4.6 Plain Steel					
M6	1	—	—	98817A240	5.86
M8	1.25	—	—	98817A250	6.91
M10	1.5	—	—	98817A260	14.23
M12	1.75	98817A105	11.40	98817A270	15.20
M16	2	98817A115	15.00	98817A290	20.00
M20	2.5	98817A120	22.59	98817A300	30.12

Metric Stainless Steel Threaded Studs and Rods

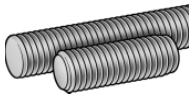

These threaded studs and rods have a Class 6g thread fit and minimum tensile strength of 70,000 psi, but are not rated for hardness. Length is measured from end to end.

Type 316 stainless steel contains molybdenum for better corrosion resistance than 18-8 stainless steel. It's resistant to chemicals, solvents, and pitting, and may be mildly magnetic. Lengths 300 mm and longer meet DIN 975. For matching hex nuts, see 94150A on page 3193 ***18-8 stainless steel*** provides excellent corrosion resistance. 1- and 2-meter long rods meet DIN 975. For matching hex nuts, see 91828A on page 3193.

Type 316 Stainless Steel Studs

Lg., mm			Lg., mm			Lg., mm			Lg., mm			Lg., mm		
M6—Pitch: 1 mm			***M8—Pitch: 1.25 mm***			***M10—Pitch: 1.5 mm***			***M12—Pitch: 1.75 mm***			***M16—Pitch: 2 mm***		
20	98863A243	$2.31	25	98863A310	$8.84	30	98863A350	$9.92	40	98863A410	$12.46	50	98863A510	$14.00
25	98863A250	7.87	30	98863A315	9.08	40	98863A355	10.42	50	98863A415	12.88	60	98863A515	14.46
30	98863A255	8.00	40	98863A320	9.29	50	98863A360	10.87	70	98863A420	13.67	80	98863A520	15.76
40	98863A260	8.04	50	98863A325	9.76	60	98863A365	11.20	80	98863A425	14.09	100	98863A525	16.34
50	98863A265	8.83	60	98863A328	5.14	80	98863A368	10.64						
60	98863A270	3.97												

18-8 Stainless Steel Studs

Lg., mm			Lg., mm			Lg., mm			Lg., mm			Lg., mm		
M4—Pitch: 0.7 mm			***M6—Pitch: 1 mm***			***M8 (Cont.)***			***M10 (Cont.)***			***M16—Pitch: 2 mm***		
10	93805A250	.40	10	93805A312	.64	30	93805A357	1.31	60	93805A431	4.27	40	93805A510	5.03
12	93805A253	.43	12	93805A314	.67	35	93805A358	1.54	70	93805A434	4.98	50	93805A515	5.70
16	93805A256	.55	16	93805A316	.73	40	93805A359	1.77	80	93805A436	5.70	60	93805A518	6.75
20	93805A259	.69	20	93805A318	.80	50	93805A361	2.20	100	93805A440	6.64	70	93805A519	7.75
25	93805A263	.62	25	93805A320	.89	60	93805A363	2.68				80	93805A521	8.73
30	93805A266	.83	30	93805A323	1.07	70	93805A366	3.15				100	93805A524	10.71
			35	93805A325	1.24	80	93805A369	3.67						
			40	93805A326	1.42	100	93805A375	4.78						
			50	93805A329	1.79									
			60	93805A333	2.17									
M5—Pitch: 0.8 mm			***M8—Pitch: 1.25 mm***			***M10—Pitch: 1.5 mm***			***M12—Pitch: 1.75 mm***			***M20—Pitch: 2.5 mm***		
10	93805A285	.37	12	93805A347	.64	20	93805A420	1.52	25	93805A450	1.94	40	93805A600	10.30
12	93805A286	.41	16	93805A350	.87	25	93805A422	1.78	30	93805A454	2.36	50	93805A603	11.44
16	93805A289	.53	20	93805A353	.96	30	93805A425	2.12	35	93805A457	2.79	60	93805A606	12.60
20	93805A292	.65	25	93805A355	1.08	35	93805A426	2.47	40	93805A460	3.00	70	93805A608	13.79
25	93805A293	.74				40	93805A427	2.83	50	93805A463	3.63	80	93805A609	14.79
30	93805A295	.86				50	93805A429	3.56	60	93805A464	4.25	100	93805A612	17.20
									70	93805A466	4.87	120	93805A620	19.44
									80	93805A469	5.52			
									100	93805A480	7.74			

Size	Pitch, mm	300-mm Lg.		1-meter Lg.		2-meter Lg.	
Type 316 Stainless Steel Rods							
M2	0.40			94185A135	$12.36		
M3	0.50			94185A140	7.84		
M4	0.70			94185A145	4.60		
M5	0.80			94185A150	8.92	94185A205	$14.27
M6	1.00			94185A155	10.69	94185A210	17.10
M8	1.25			94185A160	12.86	94185A215	20.58
M10	1.50			94185A165	25.60	94185A220	40.96
M12	1.75	94185A561	$17.00	94185A170	34.00	94185A225	54.40
M16	2.00	94185A564	33.27	94185A175	63.99	94185A230	102.38
M20	2.50	94185A567	47.34	94185A180	86.08	94185A235	137.73
M24	3.00	94185A570	66.61	94185A190	121.11	94185A240	193.78

Size	Pitch, mm	300-mm Lg.		1-meter Lg.		2-meter Lg.	
18-8 Stainless Steel Rods							
M3	0.50			90024A040	$4.27		
M4	0.70			90024A050	3.93		
M5	0.80			90024A060	3.76		
M6	1.00			90024A070	4.36	90024A461	$6.98
M8	1.25			90024A080	8.31	90024A462	13.30
M10	1.50			90024A090	13.04	90024A463	20.86
M12	1.75	90024A003	$9.07	90024A100	13.96	90024A464	22.34
M14	2.00	90024A005	18.90	90024A110	29.07	90024A465	46.51
M16	2.00	90024A010	21.68	90024A120	33.35	90024A466	53.36
M18	2.50	90024A015	28.03	90024A130	43.13	90024A467	69.01
M20	2.50	90024A020	38.06	90024A140	58.55	90024A468	93.68
M24	3.00	90024A030	45.28	90024A160	69.66	90024A469	111.46

Metric Brass Threaded Rods—*DIN 975*

Made from CU2 or CU3 brass, these rods are resistant to rust and weather-related corrosion. They're also nonmagnetic and good conductors of electricity. Each has a Class 6g thread fit, minimum Rockwell hardness of B77, and minimum tensile strength of 53,000 psi. Length is measured from end to end.

For matching hex nuts, see 90690A on page 3193.

Size	Pitch, mm			Size	Pitch, mm		
1-meter Lg.							
M2	0.40	90162A030	$16.55	M8	1.25	90162A080	$42.11
M2.5	0.45	90162A035	24.14	M10	1.50	90162A090	47.48
M3	0.50	90162A040	12.69	M12	1.75	90162A100	74.83
M4	0.70	90162A050	18.46	M16	2.00	90162A120	99.74
M5	0.80	90162A060	21.30	M20	2.50	90162A140	144.00
M6	1.00	90162A070	26.15	M24	3.00	90162A160	177.83
2-meter Lg.							
M6	1.00	90162A461	77.78	M10	1.50	90162A463	155.56
M8	1.25	90162A462	120.00	M12	1.75	90162A464	160.00

Metric Nylon Threaded Rods

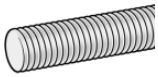

Our economical, off-white nylon 6/6 rods are nonconductive and resistant to chemicals and solvents (except mineral acids). They're reliable at temperatures up to 185° F and have a Class 6g thread fit. (*Note*: Nylon absorbs moisture, which can affect dimensions and other properties.) Not rated for hardness or tensile strength. All are 1 meter long. Length is measured from end to end.

For matching hex nuts, see 93800A on page 3193.

Size	Pitch, mm			Size	Pitch, mm		
M4	0.70	98882A400	$9.29	M10	1.50	98882A900	$30.00
M5	0.80	98882A500	7.67	M12	1.75	98882A110	32.44
M6	1.00	98882A600	8.90	M16	2.00	98882A140	37.75
M8	1.25	98882A800	9.76	M20	2.50	98882A160	87.50

18-8 Stainless Steel One-End-Threaded Studs

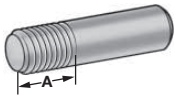

Screw the threaded end into a tapped hole and use these studs as locator pins. All studs are made from 18-8 stainless steel, which provides corrosion resistance and may be mildly magnetic. They have a Class 2A thread fit and minimum tensile strength of 75,000 psi, but are not rated for hardness. Overall length is measured from end to end.

For matching hex nuts, see page 3187.

O'all Lg.	Thread Lg. (A)		
1/4"-20			
1 1/2"	3/4"	97042A216	$20.96
2"	3/4"	97042A224	21.84
3"	3/4"	97042A240	23.59
4"	3/4"	97042A252	25.33
6"	3/4"	97042A268	27.96
3/8"-16			
1 1/2"	5/8"	97042A316	7.52
2"	3/4"	97042A324	7.88
3"	3/4"	97042A340	8.28
4"	1"	97042A352	8.72
6"	1 1/2"	97042A368	9.76
1/2"-13			
1 1/2"	5/8"	97042A516	8.56
2"	3/4"	97042A524	9.40
3"	3/4"	97042A540	10.20
4"	1"	97042A552	10.96
6"	1 1/2"	97042A568	12.44

O'all Lg.	Thread Lg. (A)		
5/8"-11			
1 1/2"	5/8"	97042A716	$10.44
2"	3/4"	97042A724	10.96
3"	3/4"	97042A740	12.28
4"	1"	97042A752	13.32
6"	1 1/2"	97042A768	15.88
3/4"-10			
2"	3/4"	97042A824	12.32
3"	3/4"	97042A840	14.88
4"	1"	97042A852	16.76
6"	1 1/2"	97042A868	20.04
1"-8			
3"	2 1/4"	97042A940	36.69
4"	2 1/4"	97042A952	40.18
6"	2 1/4"	97042A968	45.43

High-Strength Steel Socket-Drive Thread Adapter Studs

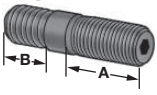

With a hex socket in one end, these studs are easy to install with a hex key. Also known as step studs, they're made from high-strength Alloy 8740 chrome-moly steel and have a black-oxide finish. All have a Class 3A thread fit and minimum Rockwell hardness of C38. Minimum tensile strength is 170,000 psi (similar to that of SAE Grade 8 steel). Length is measured from end to end.

O'all Lg.	Hex Size	Thread (A) Size	Thread (A) Lg.	Thread (B) Size	Thread (B) Lg.		
1/4" Unthreaded Diameter							
1"	3/32"	1/4"-28	7/16"	1/4"-20	3/8"	94358A110	$2.51
1 1/4"	3/32"	1/4"-28	3/4"	1/4"-20	3/8"	94358A120	2.87
2"	3/32"	1/4"-28	1"	1/4"-20	3/8"	94358A130	3.20
3"	3/32"	1/4"-28	1"	1/4"-20	3/8"	94358A140	3.78
5/16" Unthreaded Diameter							
1"	1/8"	5/16"-24	7/16"	5/16"-18	3/8"	94358A250	2.98
1 1/4"	1/8"	5/16"-24	3/4"	5/16"-18	3/8"	94358A260	3.31
5/16" Unthreaded Diameter (Cont.)							
2"	1/8"	5/16"-24	1"	5/16"-18	1/2"	94358A270	$3.60
3"	1/8"	5/16"-24	1"	5/16"-18	1/2"	94358A280	3.93
3/8" Unthreaded Diameter							
1"	5/32"	3/8"-24	7/16"	3/8"-16	3/8"	94358A310	3.42
1 1/4"	5/32"	3/8"-24	3/4"	3/8"-16	7/16"	94358A320	3.78
2"	5/32"	3/8"-24	1"	3/8"-16	5/8"	94358A330	4.13
3"	5/32"	3/8"-24	1"	3/8"-16	5/8"	94358A340	4.69
4"	5/32"	3/8"-24	1"	3/8"-16	5/8"	94358A350	5.29

Spacing Studs

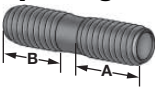

Also known as setup and driver studs, these studs are typically used in clamping applications. Inch sizes have a Class 2A thread fit; metric have a Class 6g thread fit.

18-8 stainless steel studs have a min. Rockwell hardness of B83 and min. tensile strength of 85,000 psi (unless noted). They have excellent corrosion resistance and may be mildly magnetic. For matching hex nuts, see page 3187.

Black-oxide steel studs are made of C1541 steel. The black-oxide finish provides lubricity and mild rust resistance. Studs have a min. Rockwell hardness of C27 and min. tensile strength of 125,000 psi. Those marked with a ★ have flat areas on the shank that facilitate installation with a wrench. For matching hex nuts in inch sizes see 95479A on page 3186; for metric sizes see page 3193.

Black Class 8.8 steel studs are made from medium-strength steel and provide mild rust resistance. They have a minimum Rockwell hardness of C22 and minimum tensile strength of 116,000 psi. For matching hex nuts, see page 3193.

18-8 Stainless Steel

O'all Lg.	Thread Lg. (A)	Thread Lg. (B)		
1/4"-20				
1 1/2"	7/8"	3/8"	92997A305	$2.33
2"	1"	3/8"	92997A308	2.42
2 1/2"	1"	3/8"	92997A311	2.48
3"	1"	1"	98962A225●	2.96
3"	1 1/2"	3/8"	92997A314	2.55
4"	1"	1"	98962A230●	3.19
4"	1 3/4"	3/8"	92997A317	2.68
5"	1"	1"	98962A235●	3.45
5"	1 3/4"	3/8"	92997A320	2.80
6"	2"	3/8"	92997A323	2.93
7"	2"	3/8"	92997A326	3.10
8"	2 1/2"	3/8"	92997A329	3.25
5/16"-18				
1 1/2"	3/4"	1/2"	92997A332	2.45
2"	1"	1/2"	92997A335	2.55
2 1/2"	1"	1/2"	92997A338	2.65
3"	1"	1"	98962A325●	3.67
3"	1 1/2"	1/2"	92997A341	2.75
4"	1 1/8"	1 1/8"	98962A330●	4.16
4"	1 1/2"	1/2"	92997A344	2.98
5"	1 3/4"	1/2"	92997A347	3.18
5/16"-18 (Cont.)				
6"	2"	1/2"	92997A350	$3.40
7"	2"	1/2"	92997A353	3.61
8"	2 1/2"	1/2"	92997A356	3.88
3/8"-16				
1 1/2"	5/8"	5/8"	92997A359	2.55
2"	1"	5/8"	92997A362	2.68
3"	1 1/8"	1 1/8"	98962A425●	3.14
3"	1 1/2"	5/8"	92997A365	2.98
4"	1 1/4"	1 1/4"	98962A430●	3.38
4"	1 1/2"	5/8"	92997A368	3.25
5"	1 1/4"	1 1/4"	98962A435●	3.78
5"	1 3/4"	5/8"	92997A371	3.56
6"	1 1/4"	1 1/4"	98962A440●	4.09
6"	2"	5/8"	92997A374	3.83
8"	1 1/4"	1 1/4"	98962A445●	4.71
8"	2 1/2"	5/8"	92997A377	4.46
1/2"-13				
1 1/2"	5/8"	5/8"	92997A380	2.88
2"	1"	5/8"	92997A383	3.18
1/2"-13 (Cont.)				
3"	1 1/2"	3/4"	92997A386	$3.71
4"	1 1/2"	3/4"	92997A389	4.21
4"	1 1/2"	1 1/2"	98962A530●	3.98
5"	1 1/2"	1 1/2"	98962A535●	4.42
5"	1 3/4"	3/4"	92997A392	4.76
5 1/2"	1 3/4"	3/4"	92997A395	5.03
6"	1 1/2"	1 1/2"	98962A540●	4.91
6"	2"	3/4"	92997A398	5.30
6 1/2"	2"	3/4"	92997A401	5.61
7"	2"	3/4"	92997A404	5.80
8"	1 1/2"	1 1/2"	98962A555●	5.80
8"	2 1/2"	3/4"	92997A407	6.40
9"	2 1/2"	3/4"	92997A410	7.01
5/8"-11				
2"	7/8"	5/8"	92997A419	3.76
2 1/2"	1"	7/8"	92997A422	4.17
3"	1 1/2"	7/8"	92997A425	4.60
4"	1 3/4"	7/8"	92997A428	5.38
4"	1 3/4"	1 3/4"	98962A630●	4.66
5"	1 3/4"	7/8"	92997A431	6.18
5"	1 3/4"	1 3/4"	98962A635●	5.29
5/8"-11 (Cont.)				
5 1/2"	2"	7/8"	92997A434	$6.68
6"	1 3/4"	1 3/4"	98962A640●	5.91
6"	2"	7/8"	92997A437	7.08
8"	1 3/4"	1 3/4"	98962A655●	7.18
3/4"-10				
3"	1 1/4"	1 1/4"	98962A725●	5.31
3"	1 1/2"	1"	92997A461	5.70
4"	1 3/4"	1"	92997A464	6.83
4"	1 3/4"	1 3/4"	98962A730●	6.07
5"	1 3/4"	1"	92997A467	8.00
6"	2"	1"	92997A470	9.28
6"	2"	2"	98962A740●	6.92
7"	2"	1"	92997A473	10.36
8"	2"	2"	98962A755●	8.51
8"	2 1/2"	1"	92997A476	11.80
9"	2 1/2"	1"	92997A479	13.07
10"	2"	2"	98962A765●	10.74
10"	2 1/2"	1"	92997A482	13.88
12"	3"	1"	92997A485	17.10
14"	3"	1"	92997A488	18.58

Black-Oxide Steel

O'all Lg.	Thread Lg. (A)	Thread Lg. (B)		
1/4"-20				
1 1/2"	1/2"	1/2"	90281A095	1.56
1 1/2"	7/8"	3/8"	91025A548	1.51
2"	3/4"	3/4"	90281A097	1.56
2"	1"	3/8"	91025A550	1.56
2 1/2"	1"	3/8"	91025A552	1.51
2 1/2"	1"	1"	90281A094	1.60
3"	1"	1"	90281A098	1.60
3"	1 1/2"	3/8"	91025A554	1.60
3 1/2"	1"	1"	90281A092	1.62
4"	1"	1"	90281A099	1.65
4"	1 3/4"	3/8"	91025A558	1.65
4 1/2"	1"	1"	90281A093	1.67
5"	1"	1"	90281A100	1.67
5"	1 3/4"	3/8"	91025A562	1.67
6"	1"	1"	90281A101	1.69
6"	2"	3/8"	91025A566	1.69
7"	2"	3/8"	91025A568	1.71
8"	1"	1"	90281A102	1.74
8"	2 1/2"	3/8"	91025A570	1.73
5/16"-18				
1 1/2"	1/2"	1/2"	90281A110	1.75
1 1/2"	3/4"	1/2"	91025A589	1.69
2"	3/4"	3/4"	90281A103	1.75
2"	1"	1/2"	91025A591	1.73
2 1/2"	1"	1/2"	91025A593	1.71
2 1/2"	1"	1"	90281A112	1.79
3"	1 1/8"	1 1/8"	90281A104	1.84
3"	1 1/2"	1/2"	91025A595	1.81
5/16"-18 (Cont.)				
3 1/2"	1 1/8"	1 1/8"	90281A116	1.86
4"	1 1/8"	1 1/8"	90281A105	1.88
4"	1 1/2"	1/2"	91025A599	1.84
4 1/2"	1 1/8"	1 1/8"	90281A340	1.89
5"	1 1/8"	1 1/8"	90281A114	1.99
5"	1 3/4"	1/2"	91025A603	1.87
6"	1 1/8"	1 1/8"	90281A106	2.06
6"	2"	1/2"	91025A607	1.96
6 1/2"	1 1/8"	1 1/8"	90281A118	2.11
7"	1 1/8"	1 1/8"	90281A120	2.20
7"	2"	1/2"	91025A609	2.07
8"	1 1/8"	1 1/8"	90281A107	2.24
8"	2 1/2"	1/2"	91025A612	2.13
3/8"-16				
1 1/2"	1/2"	1/2"	90281A630	1.54
1 1/2"	5/8"	5/8"	91025A630	1.51
2"	3/4"	3/4"	90281A632	1.54
2"	1"	5/8"	91025A632	1.54
2 1/2"	1"	1"	90281A634	1.54
3"	1"	1"	90281A636★	1.54
3"	1 1/2"	5/8"	91025A636	1.54
3 1/2"	1 1/4"	1 1/4"	90281A638★	1.54
4"	1 1/4"	1 1/4"	90281A640★	1.56
4"	1 1/2"	5/8"	91025A640	1.56
4 1/2"	1 1/4"	1 1/4"	90281A642★	1.56
5"	1 1/4"	1 1/4"	90281A644★	1.60
5"	1 3/4"	5/8"	91025A644	1.60
5 1/2"	1 1/4"	1 1/4"	90281A646★	1.56
3/8"-16 (Cont.)				
6"	1 1/4"	1 1/4"	90281A648★	1.67
6"	2"	5/8"	91025A648	1.67
6 1/2"	1 1/4"	1 1/4"	90281A649★	1.69
7"	1 1/4"	1 1/4"	90281A650★	1.71
8"	1 1/4"	1 1/4"	90281A651★	1.74
8"	2 1/2"	5/8"	91025A652	1.71
7/16"-14				
1 1/2"	1/2"	1/2"	90281A305	2.36
2"	3/4"	3/4"	90281A309	2.44
3"	1"	1"	90281A313★	2.62
4"	1 3/8"	1 3/8"	90281A317★	3.10
6"	1 3/8"	1 3/8"	90281A325★	2.98
1/2"-13				
1 1/2"	1/2"	1/2"	90281A719	1.56
1 1/2"	5/8"	5/8"	91025A718	1.51
2"	3/4"	3/4"	90281A721	1.56
2"	1"	5/8"	91025A720	1.56
2 1/2"	1"	1"	90281A722	1.60
3"	1"	1"	90281A724★	1.60
3"	1 1/2"	3/4"	91025A724	1.60
3 1/2"	1 1/4"	1 1/4"	90281A726★	1.69
4"	1 1/2"	3/4"	91025A728	1.71
4"	1 1/2"	1 1/2"	90281A728★	1.71
4 1/2"	1 1/2"	1 1/2"	90281A730★	1.74
5"	1 1/2"	1 1/2"	90281A732★	1.75
5"	1 3/4"	3/4"	91025A732	1.75
5 1/2"	1 1/2"	1 1/2"	90281A733★	1.79
5 1/2"	1 3/4"	3/4"	91025A734	1.67
1/2"-13 (Cont.)				
6"	1 1/2"	1 1/2"	90281A736★	1.84
6"	2"	3/4"	91025A736	1.84
6 1/2"	1 1/2"	1 1/2"	90281A735★	2.05
6 1/2"	2"	3/4"	91025A737	1.91
7"	1 1/2"	1 1/2"	90281A739★	2.07
7"	2"	3/4"	91025A738	1.98
7 1/2"	1 1/2"	1 1/2"	90281A771★	2.13
8"	1 1/2"	1 1/2"	90281A740★	2.24
8"	2 1/2"	3/4"	91025A740	2.22
9"	1 1/2"	1 1/2"	90281A742★	4.26
9"	2 1/2"	3/4"	91025A742	3.64
10"	1 1/2"	1 1/2"	90281A744★	4.80
10"	3"	3/4"	91025A744	3.78
12"	1 1/2"	1 1/2"	90281A748★	5.82
12"	3"	3/4"	91025A748	4.25
14"	1 1/2"	1 1/2"	90281A775★	5.80
5/8"-11				
2"	3/4"	3/4"	90281A804	1.98
2"	1"	5/8"	91025A802	1.96
2 1/2"	1"	7/8"	91025A804	1.85
2 1/2"	1"	1"	90281A805	1.98
3"	1"	1"	90281A806★	1.98
3"	1 1/2"	7/8"	91025A806	1.96
3 1/2"	1 1/4"	1 1/4"	90281A808★	2.13
4"	1 1/2"	1 1/2"	90281A810★	2.15
4"	1 3/4"	7/8"	91025A810	2.22
4 1/2"	1 3/4"	1 3/4"	90281A812★	2.31
5"	1 3/4"	7/8"	91025A814	2.42

● Minimum Rockwell hardness is C25; minimum tensile strength is 100,000 psi. ★ Shank has flat sides.

(Continued on following page)

Spacing Studs *(Continued from previous page)*

Black-Oxide Steel (Cont.)

O'all Lg.	Thread Lg. (A)	Thread Lg. (B)		
5/8"-11 (Cont.)				
5"	1 3/4"	1 3/4"	90281A814★	$2.42
5 1/2"	1 3/4"	1 3/4"	90281A816★	2.57
5 1/2"	2"	7/8"	91025A816	2.44
6"	1 3/4"	1 3/4"	90281A818★	2.60
6"	2"	7/8"	91025A818	2.60
6 1/2"	1 3/4"	1 3/4"	90281A819★	2.85
6 1/2"	2"	7/8"	91025A819	2.69
7"	1 3/4"	1 3/4"	90281A820★	2.96
7"	2"	7/8"	91025A820	2.96
7 1/2"	1 3/4"	1 3/4"	90281A821★	2.93
8"	1 3/4"	1 3/4"	90281A822★	3.18
8"	2 1/2"	7/8"	91025A822	3.19
9"	1 3/4"	1 3/4"	90281A824★	5.45
9"	2 1/2"	7/8"	91025A824	4.27
10"	1 3/4"	1 3/4"	90281A826★	5.98
10"	2 1/2"	7/8"	91025A826	4.60
12"	1 3/4"	1 3/4"	90281A830★	6.72
12"	3"	7/8"	91025A828	5.20
14"	1 3/4"	1 3/4"	90281A834★	7.75
14"	3"	7/8"	91025A830	5.87
16"	1 3/4"	1 3/4"	90281A838★	7.69
3/4"-10				
3"	1"	1"	90281A847★	$2.53
3"	1 1/2"	1"	91025A847	2.55
3 1/2"	1 1/4"	1 1/4"	90281A849★	2.68
4"	1 1/2"	1 1/2"	90281A851★	2.85
4"	1 3/4"	1"	91025A851	2.82
4 1/2"	1 3/4"	1 3/4"	90281A853★	3.12
5"	1 3/4"	1"	91025A855	3.19
5"	2"	2"	90281A856★	3.18
5 1/2"	2"	2"	90281A858★	3.16
6"	2"	1"	91025A859	3.45
6"	2"	2"	90281A859★	3.45
6 1/2"	2"	2"	90281A860★	3.42
7"	2"	1"	91025A861	3.78
7"	2"	2"	90281A861★	3.86
7 1/2"	2"	2"	90281A862★	3.84
8"	2"	2"	90281A863★	4.13
8"	2 1/2"	1"	91025A863	4.11
9"	2"	2"	90281A864★	7.56
9"	2 1/2"	1"	91025A865	6.29
10"	2"	2"	90281A866★	8.14
10"	2 1/2"	1"	91025A866	6.31
12"	2"	2"	90281A868★	9.23
3/4"-10 (Cont.)				
12"	3"	1"	91025A868	$6.74
14"	2"	2"	90281A871★	10.14
14"	3"	1"	91025A870	7.38
16"	2"	2"	90281A872★	11.02
18"	2"	2"	90281A874★	11.84
20"	2"	2"	90281A875★	11.73
24"	2"	2"	90281A876★	14.04
7/8"-9				
3"	1"	1"	90281A878★	5.56
3"	1"	1 1/4"	91025A886	5.31
4"	1 1/2"	1 1/2"	90281A880★	6.34
4"	1 3/4"	1 1/4"	91025A888	6.18
5"	1 3/4"	1 1/4"	91025A892	6.94
5"	2"	2"	90281A881★	7.23
6"	2"	1 1/4"	91025A896	7.09
6"	2 1/4"	2 1/4"	90281A896★	7.75
7"	2 1/4"	2 1/4"	90281A883★	8.92
7"	2 1/2"	1 1/4"	91025A898	8.51
8"	2 1/4"	2 1/4"	90281A884★	9.91
8"	2 1/2"	1 1/4"	91025A900	7.76
9"	2 1/4"	2 1/4"	90281A885★	11.24
7/8"-9 (Cont.)				
9"	3"	1 1/4"	91025A901	$10.64
10"	2 1/4"	2 1/4"	90281A886★	12.29
10"	3"	1 1/4"	91025A904	9.60
12"	2 1/4"	2 1/4"	90281A888★	13.16
12"	3"	1 1/4"	91025A902	11.64
1"-8				
4"	1 1/2"	1 1/2"	90281A890★	7.29
4"	1 3/4"	1 1/2"	91025A920	7.13
5"	1 3/4"	1 1/2"	91025A924	7.80
5"	2"	2"	90281A891★	8.06
6"	2"	1 1/2"	91025A928	8.55
6"	2 1/2"	2 1/2"	90281A892★	8.92
7"	2 1/2"	2 1/2"	90281A893★	10.00
7 1/2"	2 1/2"	2 1/2"	90281A879★	10.47
8"	2 1/2"	1 1/2"	91025A932	10.07
8"	2 1/2"	2 1/2"	90281A894★	10.52
10"	2 1/2"	2 1/2"	90281A897★	14.05
12"	2 1/2"	2 1/2"	90281A898★	15.69
12"	3"	1 1/2"	91025A935	13.71
16"	2 1/2"	2 1/2"	90281A902★	15.30
20"	2 1/2"	2 1/2"	90281A906★	16.79
24"	2 1/2"	2 1/2"	90281A910★	21.17

Metric Black-Oxide Steel

O'all Lg., mm	Thread Lg., mm (A)	Thread Lg., mm (B)		
M6—Pitch: 1 mm				
50	20.0	12.0	93210A016	$3.07
50	20.0	20.0	93275A014	2.98
65	20.0	12.0	93210A017	3.56
80	27.0	12.0	93210A018	3.90
80	27.0	27.0	93275A019	3.32
95	27.0	12.0	93210A019	4.13
95	27.0	27.0	93275A020	3.79
110	31.0	12.0	93210A020	3.89
110	31.0	31.0	93275A022	3.79
175	35.0	35.0	93275A028	4.47
M8—Pitch: 1.25 mm				
50	20.0	12.0	93210A030	2.41
50	20.0	20.0	93275A030	2.45
65	20.0	12.0	93210A031	2.42
65	20.0	20.0	93275A031	2.49
80	27.0	12.0	93210A032	2.52
80	27.0	27.0	93275A032	2.56
95	31.0	12.0	93210A033	2.66
95	31.0	31.0	93275A033	2.72
110	31.0	12.0	93210A034	2.76
110	31.0	31.0	93275A034	2.75
140	35.0	12.0	93210A035	3.21
M8 (Cont.)				
140	35.0	35.0	93275A035	$3.23
150	35.0	35.0	93275A036	3.25
175	35.0	35.0	93275A037	3.39
200	35.0	35.0	93275A038	3.61
M10—Pitch: 1.5 mm				
50	20.0	16.0	93210A039	2.31
50	20.0	20.0	93275A039	2.33
65	20.0	16.0	93210A040	2.41
65	20.0	20.0	93275A040	2.45
80	27.0	16.0	93210A041	2.42
80	27.0	27.0	93275A041	2.45
95	31.0	16.0	93210A042	2.42
95	31.0	31.0	93275A042	2.49
110	35.0	16.0	93210A043	2.52
110	35.0	35.0	93275A043	2.49
125	35.0	35.0	93275A044	2.65
140	35.0	16.0	93210A045	2.60
140	35.0	35.0	93275A045	2.75
150	35.0	35.0	93275A046	2.79
175	35.0	35.0	93275A047	2.86
200	35.0	35.0	93275A048	2.98
M12—Pitch: 1.75 mm				
50	20.0	16.0	93210A049	$2.88
50	20.0	20.0	93275A049	2.86
65	20.0	16.0	93210A050	2.93
65	20.0	20.0	93275A050	2.91
80	27.0	16.0	93210A051	3.02
80	27.0	27.0	93275A051	3.11
95	31.0	16.0	93210A052	3.23
95	31.0	31.0	93275A052	3.28
110	39.0	39.0	93275A053	3.42
125	39.0	39.0	93275A054	3.53
140	39.0	39.0	93275A055	3.61
150	39.0	39.0	93275A056	3.84
175	39.0	39.0	93275A057	4.28
200	39.0	39.0	93275A058	4.42
M16—Pitch: 2 mm				
80	21.0	21.0	93275A059	3.61
95	31.0	31.0	93275A060	3.61
110	47.0	18.0	93210A061	3.50
110	47.0	47.0	93275A061	3.93
125	47.0	47.0	93275A066	4.35
150	47.0	18.0	93210A062	4.29
M16 (Cont.)				
150	47.0	47.0	93275A062	$4.56
175	47.0	47.0	93275A063	4.81
200	47.0	47.0	93275A064	5.14
250	47.0	47.0	93275A065	7.30
300	47.0	47.0	93275A101	5.06
M20—Pitch: 2.5 mm				
80	27.0	27.0	93275A067	4.56
95	31.0	31.0	93275A105	4.49
110	47.0	20.0	93210A068	5.19
110	47.0	47.0	93275A068	5.54
125	55.0	55.0	93275A108	5.46
150	55.0	20.0	93210A069	6.19
150	55.0	55.0	93275A069	6.59
175	55.0	55.0	93275A070	7.07
200	55.0	55.0	93275A071	7.67
M24—Pitch: 3 mm				
100	39.0	39.0	93275A075	7.49
125	55.0	55.0	93275A076	7.49
150	63.0	63.0	93275A077	9.56
160	100.0	35.0	93210A084	10.17

Metric Black Class 8.8 Steel—DIN 939 Fo

O'all Lg.	Thread Lg. (A)	Thread Lg. (B)		
M6—Pitch: 1 mm				
23.5	10.5	6.25	98867A250	.61
27.5	14.5	6.25	98867A255	.78
37.5	18.0	6.25	98867A260	.60
47.5	18.0	6.25	98867A265	.71
57.5	18.0	6.25	98867A270	.97
M8—Pitch: 1.25 mm				
30	13.8	8.4	98867A310	.64
35	18.8	8.4	98867A315	.53
M8 (Cont.)				
50	22.0	8.4	98867A320	.63
60	22.0	8.4	98867A325	.84
70	22.0	8.4	98867A330	1.06
M10—Pitch: 1.5 mm				
37	18.2	10.1	98867A350	.81
62	26.0	10.1	98867A355	1.18
72	26.0	10.1	98867A360	1.28
92	26.0	10.1	98867A365	1.52
M12—Pitch: 1.75 mm				
45	22.7	12.8	98867A410	1.30
65	30.0	12.8	98867A415	1.32
75	30.0	12.8	98867A420	1.91
95	30.0	12.8	98867A425	2.60
115	30.0	12.8	98867A430	3.20
M16—Pitch: 2 mm				
55	27.0	17.5	98867A510	1.80
70	38.0	17.5	98867A515	3.15
85	38.0	17.5	98867A520	3.68
100	38.0	17.5	98867A525	3.96
120	38.0	17.5	98867A530	4.60

★ Shank has flat sides.

Steel Right- and Left-Hand Threaded Studs

For complicated assemblies, these studs have right-hand threads on one end and left-hand threads on the other. Threads are the same length on both ends.

Studs are made from C1018-C1117 steel. They have a black-oxide finish that provides lubricity and mild rust resistance. Each has a Class 2A thread fit, minimum Rockwell hardness of B67, and minimum tensile strength of 70,000 psi. For matching hex nuts, see pages 3186, 3187, and 3189.

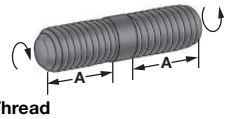

O'all Lg.	Thread Lg. (A)			
1/4"-20				
1 1/2"	5/8"	94455A110	$1.11
2"	1/2"	94455A112	1.11
2 1/2"	3/4"	94455A116	1.11
3"	3/4"	94455A120	1.22
4"	1"	94455A124	1.22
5/16"-18			
2"	1/2"	94455A200	1.50
2 1/2"	3/4"	94455A205	1.50
3"	3/4"	94455A211	1.50
4"	1"	94455A220	1.56
3/8"-16			
1 1/2"	5/8"	94455A312	$1.11
2"	3/4"	94455A317	1.39
2 1/2"	3/4"	94455A323	1.42
3"	3/4"	94455A325	1.50
3 1/2"	1"	94455A327	1.50
4"	1"	94455A328	1.50
5"	1 1/4"	94455A340	1.56
6"	1 1/2"	94455A344	1.56
1/2"-13			
1 3/4"	3/4"	94455A410	1.36
2"	3/4"	94455A413	1.36
1/2"-13 (Cont.)			
2 1/4"	3/4"	94455A416	$1.36
2 1/2"	3/4"	94455A419	1.36
3"	3/4"	94455A422	1.50
4"	1 1/4"	94455A425	1.61
5"	1 1/4"	94455A429	1.61
6"	1 1/2"	94455A433	1.61
7"	1 3/4"	94455A437	1.69
8"	1 3/4"	94455A441	1.69
5/8"-11			
2 1/2"	7/8"	94455A526	1.83
3"	1"	94455A529	1.83
5/8"-11 (Cont.)			
4"	1 1/4"	94455A534	$2.31
5"	1 1/4"	94455A535	2.44
6"	1 1/2"	94455A537	2.31
7"	2"	94455A541	2.58
8"	2"	94455A545	2.78
3/4"-10			
4"	1 3/4"	94455A610	4.44
5"	1 3/4"	94455A614	4.61
6"	1 3/4"	94455A621	3.22
7"	2"	94455A625	4.75
8"	2"	94455A629	5.22

Self-Locking Studs—Thread Lengths Are Different

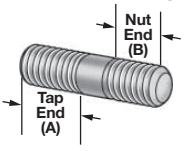

Studs are threaded for a nut on one end and threaded (with self-locking friction-fit threads) for insertion into a threaded hole on the other. Also known as milled and tap-end studs, they have a Class 5 thread fit on the tap end (metric have Class SK6) and a Class 2A thread fit on the nut end (metric have Class 6g). For matching hex nuts in inch sizes, see pages 3186-3191; for metric sizes, see pages 3192-3194.

18-8 stainless steel studs provide excellent corrosion resistance and may be mildly magnetic. They have a tensile strength of 85,000 psi but are not rated for hardness. ***Plain steel*** studs are made from C1215 low-strength steel. They have a tensile strength of 65,000 psi but are not rated for hardness. ***Metric plain steel*** studs are made from Class 8.8 medium-strength steel. They have a minimum Rockwell hardness of C22 and tensile strength of 116,000 psi.

18-8 Stainless Steel

O'all Lg.	Thread Lg. (A)	Thread Lg. (B)		
3/8"-16				
1 1/4"	1/2"	5/8"	92386A626	$1.29
1 1/2"	1/2"	5/8"	92386A628	1.34
1 3/4"	1/2"	5/8"	92386A630	1.44
2"	1/2"	3/4"	92386A632	1.53
2 1/4"	1/2"	3/4"	92386A633	1.61
2 1/2"	1/2"	3/4"	92386A634	1.72
3"	1/2"	3/4"	92386A636	1.92
7/16"-14				
1 1/2"	9/16"	3/4"	92386A673	1.69
2"	9/16"	3/4"	92386A677	1.99
2 1/4"	9/16"	3/4"	92386A678	2.74
7/16"-14 (Cont.)				
2 1/2"	9/16"	3/4"	92386A679	$2.31
3"	9/16"	7/8"	92386A681	2.62
1/2"-13				
1 1/4"	1/2"	5/8"	92386A714	1.77
1 1/2"	1/2"	3/4"	92386A716	1.86
1 3/4"	5/8"	3/4"	92386A718	2.03
2"	5/8"	3/4"	92386A720	2.19
2 1/4"	5/8"	3/4"	92386A721	2.70
2 1/2"	5/8"	3/4"	92386A722	2.52
3"	3/4"	7/8"	92386A724	2.86
3 1/2"	3/4"	1"	92386A726	3.19
1/2"-13 (Cont.)				
4"	3/4"	1 1/4"	92386A728	$3.54
5"	7/8"	1 1/4"	92386A732	4.25
5/8"-11				
2"	3/4"	7/8"	92386A802	3.10
2 1/4"	3/4"	7/8"	92386A803	3.34
2 1/2"	3/4"	7/8"	92386A804	3.58
3"	7/8"	1"	92386A806	4.07
3 1/4"	7/8"	1"	92386A807	3.91
3 1/2"	7/8"	1"	92386A808	4.55
4"	7/8"	1 1/4"	92386A810	5.03
4 1/2"	7/8"	1 1/4"	92386A812	5.51
5/8"-11 (Cont.)				
5"	7/8"	1 1/2"	92386A814	$6.01
3/4"-10				
2"	7/8"	7/8"	92386A843	5.01
2 1/2"	7/8"	7/8"	92386A845	5.18
3"	7/8"	1"	92386A847	5.60
3 1/2"	7/8"	1 1/4"	92386A849	6.30
3 3/4"	7/8"	1 1/4"	92386A850	6.16
4"	1"	1 1/4"	92386A851	7.01
5"	1"	1 1/2"	92386A855	8.40
6"	1"	1 3/4"	92386A859	9.80

Plain Steel

O'all Lg.	Thread Lg. (A)	Thread Lg. (B)		
3/8"-16				
1 1/4"	1/2"	5/8"	91563A126	.48
1 1/2"	1/2"	5/8"	91563A128	.48
1 3/4"	1/2"	5/8"	91563A130	.54
2"	1/2"	3/4"	91563A132	.54
2 1/4"	1/2"	3/4"	91563A133	.54
2 1/2"	1/2"	3/4"	91563A134	.58
2 3/4"	1/2"	3/4"	91563A135	.58
3"	1/2"	3/4"	91563A136	.58
7/16"-14				
1 1/2"	9/16"	3/4"	91563A173	.64
2"	9/16"	3/4"	91563A177	.70
2 1/4"	9/16"	3/4"	91563A178	.70
7/16"-14 (Cont.)				
2 1/2"	9/16"	3/4"	91563A179	.70
3"	9/16"	7/8"	91563A181	.75
1/2"-13				
1 1/2"	1/2"	3/4"	91563A216	.71
1 3/4"	5/8"	3/4"	91563A218	.71
2"	5/8"	3/4"	91563A220	.83
2 1/4"	5/8"	3/4"	91563A221	.83
2 1/2"	5/8"	3/4"	91563A222	.89
2 3/4"	3/4"	7/8"	91563A223	.89
3"	3/4"	7/8"	91563A224	.92
3 1/2"	3/4"	1"	91563A226	.99
4"	3/4"	1 1/4"	91563A228	1.05
1/2"-13 (Cont.)				
4 1/2"	7/8"	1 1/4"	91563A230	1.13
5"	7/8"	1 1/4"	91563A232	1.17
5/8"-11				
2"	3/4"	7/8"	91563A302	1.07
2 1/4"	3/4"	7/8"	91563A303	1.15
2 1/2"	3/4"	7/8"	91563A304	1.15
3"	7/8"	1"	91563A306	1.20
3 1/2"	7/8"	1"	91563A308	1.32
4"	7/8"	1 1/4"	91563A310	1.37
4 1/2"	7/8"	1 1/4"	91563A312	1.37
5"	7/8"	1 1/2"	91563A314	1.43
6"	7/8"	1 1/2"	91563A316	1.56
3/4"-10				
2 1/2"	7/8"	7/8"	91563A345	1.57
3"	7/8"	1"	91563A347	1.64
3 1/2"	7/8"	1 1/4"	91563A349	1.74
4"	1"	1 1/4"	91563A351	1.85
4 1/2"	1"	1 1/2"	91563A353	1.90
5"	1"	1 1/2"	91563A355	2.02
7/8"-9				
3 1/2"	1"	1 1/4"	91563A386	2.90
4"	1"	1 1/4"	91563A388	3.12
1"-8				
4"	1 1/4"	1 1/2"	91563A390	4.30
5"	1 1/4"	2"	91563A391	4.73
6"	1 1/2"	2"	91563A392	5.22

Metric Plain Steel—DIN 939

O'all Lg.	Thread Lg. (A)	Thread Lg. (B)		
M8—*Pitch: 1.25 mm*				
35 mm	10 mm	18.8 mm	91059A510	$0.98
45 mm	10 mm	22 mm	91059A515	1.96
60 mm	10 mm	22 mm	91059A520	2.57
70 mm	10 mm	22 mm	91059A525	2.47
M10—*Pitch: 1.5 mm*				
37 mm	12 mm	18.2 mm	91059A551	$2.19
42 mm	12 mm	26 mm	91059A556	2.40
52 mm	12 mm	26 mm	91059A561	2.24
62 mm	12 mm	26 mm	91059A566	3.83
M12—*Pitch: 1.75 mm*				
40 mm	15 mm	17.7 mm	91059A605	$4.24
50 mm	15 mm	30 mm	91059A610	4.11
60 mm	15 mm	30 mm	91059A615	5.14
70 mm	15 mm	30 mm	91059A620	5.56

Hollow Threaded Studs—Thread Lengths Are the Same

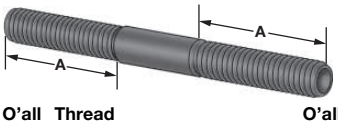

With a hollow center, these studs are ideal to use as axles, vents, or passageways for wiring. Studs are made from 4130 chromium-molybdenum alloy steel. They have a black-oxide finish that provides mild rust resistance and some lubricity. All studs have a Class 2A thread fit and minimum Rockwell hardness of B90 but are not rated for tensile strength. Length is measured from end to end.

O'all Lg.	Thread Lg. (A)		
1/4"-20—*Hole Dia.: 1/8"*			
4"	1 1/2"	94624A210	$14.88
5"	2"	94624A215	22.41
6"	2 1/2"	94624A220	23.12
8"	2 3/4"	94624A230	24.20
5/16"-18—*Hole Dia.: 3/16"*			
4"	1 1/2"	94624A315	$14.88
5"	2"	94624A320	21.18
6"	2 1/2"	94624A325	21.79
8"	2 3/4"	94624A335	26.62
3/8"-16—*Hole Dia.: 7/32"*			
4"	1 1/2"	94624A420	$17.06
5"	2"	94624A425	22.41
6"	2 1/2"	94624A430	23.12
8"	2 3/4"	94624A440	18.61
1/2"-13—*Hole Dia.: 11/32"*			
4"	1 1/2"	94624A525	$19.05
5"	2"	94624A530	17.70
6"	2 1/2"	94624A535	25.05
8"	2 3/4"	94624A545	27.84

Coil-Threaded Rods, Nuts, and Bolts

Rod

Hex Nut

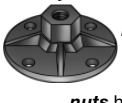
Flange Nut

Wing Nut

Bolt

Coil threads are shallow so they don't collect debris. Clean threads allow fast nut threading, which makes them great for quick assembly and dismantling.

Rods are made from plain C1040 steel. They have a min. Rockwell hardness of C23 and min. tensile strength of 80,000 psi. Length is measured from end to end. Nuts are not rated for hardness. ***Hex nuts*** are plain C1008-C1010 steel. ***Flange nuts*** have a large bearing surface that's great for covering holes. They're made from plain ductile iron. ***Wing nuts*** lend themselves to easy hand assembly. They're made from plain ductile iron.

Bolts are made from plain C1040 steel. They have a min. tensile strength of 80,000 psi and are not rated for hardness. Length is measured from under the head.

Size	Approx. Threads Per Inch	Rod Lg.		Hex Nut Wd.	Hex Nut Ht.			Flange Nut Flange Dia., ±1/4"	Flange Nut Wd.	Flange Nut Ht.		
1/2"	6	6 ft.	95465A201	$16.75	7/8"	31/64"	95525A201	$1.02	4"	1 3/16"	3/4"	95020A111	$15.82
3/4"	4 1/2	6 ft.	95465A205	38.20	1 1/4"	47/64"	95525A205	2.90	4"	1 1/8"	1 1/8"	95020A222	20.74
1"	3 1/2	6 ft.	95465A209	62.38	1 5/8"	63/64"	95525A209	7.68	5"	2"	2"	95020A333	25.91

Size	Approx. Threads Per Inch	Wing Span, ±1/4"	O'all Ht.	Base Dia.		
1/2"	6	4 7/8"	2 3/8"	1 1/4"	95180A300	$19.58
3/4"	4 1/2	5 1/4"	2 1/2"	1 3/4"	95180A400	20.91
1"	3 1/2	6"	3"	1 3/4"	95180A500	22.96

Lg.		
1/2" Size		
1 1/2"	95465A711	$3.30
2"	95465A714	3.30
3"	95465A719	3.55
4"	95465A727	4.28
6"	95465A731	5.80
3/4" Size		
2"	95465A739	$7.53
3"	95465A744	7.88
5"	95465A755	14.28
6"	95465A759	14.55

Through-Hole Weld Studs

Make these studs a permanent part of almost any assembly. Simply pass them through a hole and weld them in place with a spot or MIG welder. Projections under the head increase the weld area. Studs are made from plain C1008-C1010 welding quality steel. They have a Class 2A thread fit. Length is measured from under the head.

Screw Size	Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
6-32	5/8″	0.323″	0.052″	100	93865A120	$8.93
8-32	3/8″	0.385″	0.068″	100	93865A135	8.93
8-32	1″	0.385″	0.068″	100	93865A155	10.87
10-24	3/8″	0.448″	0.068″	100	93865A160	10.39
10-24	1/2″	0.448″	0.068″	100	93865A165	11.39
10-32	1/2″	0.448″	0.068″	100	93865A190	11.75
10-32	5/8″	0.448″	0.068″	100	93865A195	12.35
10-32	1″	0.448″	0.068″	50	93865A205	9.14
1/4″-20	3/8″	0.575″	0.083″	50	93865A215	9.14
1/4″-20	1/2″	0.575″	0.083″	50	93865A220	10.02
1/4″-20	5/8″	0.575″	0.083″	50	93865A225	10.10
1/4″-20	3/4″	0.575″	0.083″	50	93865A230	10.02
1/4″-20	1″	0.575″	0.083″	50	93865A235	10.09

Right-Angle Weld Studs

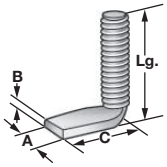

Perfect when you need a permanent stud in a confined area such as a narrow channel or tight corner. The flat spade accommodates various electrode tip sizes for spot welding to (or through) metal surfaces. All have a Class 2A thread fit.

18-8 stainless steel offers excellent corrosion resistance and may be mildly magnetic.

Plain steel is made from C1010 welding quality steel.

Lg.	(A)	(B)	(C)	18-8 Stainless Steel Pkg. Qty.		Pkg.	Plain Steel Pkg. Qty.		Pkg.
6-32									
1/2″	7/32″	3/64″	9/16″	25	96466A010	$14.07	50	94445A110	$5.46
8-32									
3/8″	1/4″	1/16″	5/8″	10	96466A020	5.77	50	94445A150	6.82
1/2″	1/4″	1/16″	5/8″	25	96466A025	14.44	50	94445A200	6.53
10-24									
1/2″	5/16″	1/16″	11/16″	10	96466A030	6.24	50	94445A300	7.13
10-32									
3/8″	11/32″	1/16″	11/16″	10	96466A035	6.37	50	94445A350	7.09
1/2″	11/32″	1/16″	11/16″	10	96466A040	6.46	50	94445A400	6.82
1/4″-20									
1/2″	3/8″	3/32″	3/4″	10	96466A045	9.44	25	94445A450	5.23
5/8″	3/8″	3/32″	3/4″	10	96466A050	9.96	25	94445A500	5.24
3/4″	3/8″	3/32″	3/4″	10	96466A055	10.03	25	94445A550	5.22
1″	3/8″	3/32″	3/4″	5	96466A060	5.57	25	94445A600	5.68

Low-Profile Button Head Machine Screws

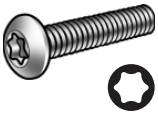

Choose shallow-head machine screws when space is limited. With plenty of surface area for your driver, the Torx drive ensures slip resistant installation. For drivers, see pages 2848-2850; for bits, see pages 2823-2824.

Screws are made from zinc-plated steel. Length is measured from under the head.

Lg.	Pkg. Qty.		Pkg.
6-32—T10 Torx Size			
3/8″	100	90910A146	$8.89
1 1/4″	100	90910A155	12.58
1 1/2″	100	90910A157	14.18
2″	100	90910A159	14.40
8-32—T15 Torx Size			
1/2″	100	90910A194	14.11
3/4″	100	90910A197	11.88
1″	100	90910A199	13.80
1 1/4″	100	90910A201	14.43
1 1/2″	100	90910A202	14.57
2″	50	90910A204	7.50
10-24—T25 Torx Size			
1/2″	100	90910A242	$12.34
3/4″	100	90910A245	13.17
1″	100	90910A247	14.85
1 1/4″	50	90910A249	9.04
1 1/2″	50	90910A251	9.65
2″	50	90910A255	10.51
2 1/2″	25	90910A260	8.16
1/4″-20—T27 Torx Size			
3/4″	100	90910A540	14.47
1″	50	90910A542	8.53
1 1/4″	50	90910A543	5.37
1 1/2″	50	90910A546	9.53
2″	25	90910A550	7.39
2 1/2″	25	90910A555	9.08
3″	25	90910A558	9.97

Perforated Base Studs

Thanks to a perforated base, you can screw, weld, or rivet a stud wherever you need one. Base plates (0.047″ thick) have a 1 1/2″ overall diameter and are perforated with 0.157″ dia. and 0.197″ dia. holes. All studs have a Class 2A thread fit.

Type 316 stainless steel offers superior corrosion resistance.

Zinc-plated steel studs are made from C1008 steel with a yellow-chromate finish.

Studs—Stud length does not include the thickness of the base.

Stud Lg.	Type 316 SS Pkg. Qty.		Pkg.	Zinc-Plated Steel Pkg. Qty.		Pkg.
8-32						
3/8″	10	97590A520	$13.44	10	97590A110	$7.40
1/2″	10	97590A526	13.44	10	97590A115	7.45
5/8″	10	97590A531	13.54	10	97590A120	7.45
3/4″	10	97590A537	13.60	10	97590A125	7.63
1″	10	97590A542	14.36	10	97590A130	8.39
10-32						
1/2″	10	97590A551	13.76	10	97590A215	7.50
5/8″	10	97590A556	13.93	10	97590A220	7.50
3/4″	10	97590A561	14.45	10	97590A225	7.99
1″	5	97590A567	7.97	10	97590A230	8.58
1 1/4″	5	97590A569	8.22	10	97590A235	9.26
1/4″-20						
1/2″	10	97590A574	14.94	10	97590A315	7.75
5/8″	5	97590A578	7.51	10	97590A320	8.11
3/4″	5	97590A582	7.63	10	97590A325	8.52
1″	5	97590A586	7.93	10	97590A330	9.01
1 1/4″	5	97590A589	8.02	10	97590A335	9.70
1 1/2″	5	97590A591	8.04	10	97590A340	10.38
5/16″-18						
5/8″	5	97590A598	8.15	10	97590A420	9.08
3/4″	5	97590A603	8.71	10	97590A425	9.27
1″	5	97590A606	9.74	10	97590A430	10.44
1 1/4″	5	97590A609	10.20	10	97590A435	10.89
1 1/2″	5	97590A613	10.31	10	97590A440	12.02
2″	5	97590A616	11.02	10	97590A445	12.74

Insulation Hanger Studs

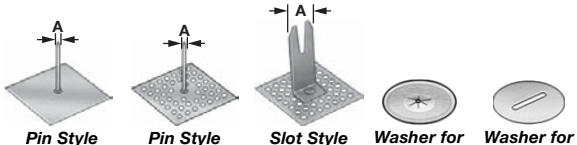

Pin Style Self-Adhesive Stud ***Pin Style Plain Stud*** ***Slot Style Plain Stud*** ***Washer for Pin Style Stud*** ***Washer for Slot Style Stud***

Here's a great way to attach insulation to almost any flat surface. Secure the hanger studs to a wall, press your insulating material onto the spikes, then follow up with washers (required, sold separately) to keep it all snug.

Base plates are made from galvanized C1008 steel. They have a minimum Rockwell hardness of B85, but are not rated for tensile strength.

Use ***self-adhesive hanger studs*** for interior, metal surfaces. The peel-off adhesive backing makes installation quick and easy. Adhesive is reliable at temperatures from 0° to +140° F.

Install ***plain hanger studs*** using adhesive (sold separately) or a MIG welder.

Adhesive is compliant under all state VOC rules in effect on January 1, 2012, except in California, Connecticut, Delaware, Maine, Maryland, New Jersey, New York, Pennsylvania, Rhode Island, and Northern Virginia. Reliable at temperatures from −30° to +250° F. *Note:* Apply adhesive at temperatures from −30° to +120° F.

Hanger Studs

Pin/Slot Lg.	(A)	Self-Adhesive Pkg. Qty.		Pkg.	Plain Pkg. Qty.		Pkg.
Pin Style—Base Plate is 2″ Lg. × 2″ Wd. × 0.015″ Thick.							
1 5/8″	0.105″	100	93610A310	$23.30	100	93610A210	$14.45
2 1/2″	0.105″	100	93610A320	24.60	100	93610A220	15.77
3 1/2″	0.105″	100	93610A330	25.70	100	93610A230	18.11
6 1/2″	0.105″	100	93610A340	40.91	100	93610A240	39.12
Slot Style—Base Plate is 2″ Lg. × 2″ Wd. × 0.022″ Thick.							
1 7/8″	0.75″	—	—	—	100	93610A710	31.08
2 7/8″	0.75″	—	—	—	100	93610A720	34.76

Washers (Required)

For	Pkg. Qty.		Pkg.
Pin	100	93610A410	$6.69
Slot	100	93610A610	8.59

Adhesive

1 qt.	93610A640	$19.75
1 gal.	93610A646	65.36

Press-In Captive Studs

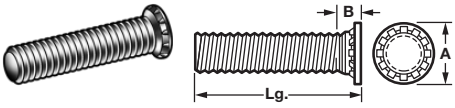

Thread Size	Max. Head Dia. (A)	Max. Unthreaded Length (B)	Min. Sheet Thick.	Center of Hole to Panel Edge, min.	Hole Size, +0.003″/ –0.000″
4-40	0.191″	0.085″	0.040″	7/32″	0.111″
6-32	0.221″	0.090″	0.040″	1/4″	0.137″
8-32	0.252″	0.090″	0.040″	9/32″	0.163″
10-24	0.271″	0.100″	0.040″	9/32″	0.189″
10-32	0.271″	0.100″	0.040″	9/32″	0.189″
1/4″-20	0.352″	0.135″	0.062″	5/16″	0.249″
5/16″-18	0.391″	0.160″	0.093″	3/8″	0.311″

Use an arbor press or similar pressure tool to press the stud head into a drilled or punched hole. Ribs hold the stud firmly in place, so it won't spin when you add a nut. All studs have a Class 2A thread fit. ***18-8 stainless steel*** may be mildly magnetic and is more corrosion resistant than ***zinc-plated steel***.

Stud Lg.	PEM® Part No.	Pkg. Qty.		Pkg.
18-8 Stainless Steel				
4-40				
3/8″	FHS440-6	50	93580A115	$9.78
1/2″	FHS440-8	50	93580A120	11.06
6-32				
3/8″	FHS632-6	25	93580A215	5.25
1/2″	FHS632-8	25	93580A220	5.79
5/8″	FHS632-10	25	93580A225	6.00
3/4″	FHS632-12	25	93580A230	6.29
1″	FHS632-16	25	93580A240	6.73
8-32				
3/8″	FHS832-6	25	93580A415	6.15
1/2″	FHS832-8	25	93580A420	6.36
5/8″	FHS832-10	25	93580A425	6.65
3/4″	FHS832-12	25	93580A430	7.13
1″	FHS832-16	25	93580A440	8.62
10-32				
1/2″	FHS032-8	25	93580A520	6.73
5/8″	FHS032-10	25	93580A525	7.31
3/4″	FHS032-12	25	93580A530	7.91
1″	FHS032-16	25	93580A540	9.05
1/4″-20				
1/2″	FHS0420-8	10	93580A625	4.15
5/8″	FHS0420-10	25	93580A620	11.39
3/4″	FHS0420-12	10	93580A630	5.00
1″	FHS0420-16	10	93580A635	6.15
1 1/2″	FHS0420-24	10	93580A640	9.26

Stud Lg.	PEM® Part No.	Pkg. Qty.		Pkg.
Zinc-Plated Steel				
4-40				
1/4″	FH440-4	100	93580A004	$12.15
3/8″	FH440-6	100	93580A006	12.48
1/2″	FH440-8	100	93580A008	12.59
5/8″	FH440-10	100	93580A010	13.37
6-32				
1/4″	FH632-4	100	93580A012	12.30
5/16″	FH632-5	100	93580A014	12.48
3/8″	FH632-6	100	93580A016	12.59
1/2″	FH632-8	100	93580A018	12.85
5/8″	FH632-10	100	93580A020	13.67
3/4″	FH632-12	100	93580A022	14.07
1″	FH632-16	100	93580A024	14.37
8-32				
1/4″	FH832-4	50	93580A112	6.83
5/16″	FH832-5	50	93580A114	6.93
3/8″	FH832-6	100	93580A116	14.00
1/2″	FH832-8	100	93580A118	14.59
5/8″	FH832-10	100	93580A122	14.96
3/4″	FH832-12	50	93580A124	7.50
1″	FH832-16	50	93580A126	9.07
1 1/4″	FH832-20	50	93580A128	9.80
1 1/2″	FH832-24	50	93580A130	14.71
10-24				
3/8″	FH024-6	50	93580A143	7.90
1/2″	FH024-8	50	93580A145	7.99

Stud Lg.	PEM® Part No.	Pkg. Qty.		Pkg.
Zinc-Plated Steel (Cont.)				
10-24 (Cont.)				
5/8″	FH024-10	50	93580A147	$8.76
3/4″	FH024-12	50	93580A149	9.50
7/8″	FH024-14	50	93580A155	10.50
1″	FH024-16	50	93580A153	11.00
10-32				
3/8″	FH032-6	50	93580A166	7.88
1/2″	FH032-8	50	93580A168	7.94
5/8″	FH032-10	50	93580A172	8.76
3/4″	FH032-12	50	93580A174	9.50
7/8″	FH032-14	50	93580A175	10.59
1″	FH032-16	50	93580A176	11.00
1 1/4″	FH032-20	50	93580A178	11.44
1/4″-20				
1/2″	FH0420-8	50	93580A187	12.83
5/8″	FH0420-10	50	93580A189	14.39
3/4″	FH0420-12	50	93580A191	14.76
7/8″	FH0420-14	25	93580A192	8.59
1″	FH0420-16	25	93580A195	9.17
1 1/8″	FH0420-18	25	93580A197	14.43
1 1/4″	FH0420-20	25	93580A199	10.46
1 1/2″	FH0420-24	25	93580A202	12.09
2″	FH0420-32	10	93580A210	7.38
5/16″-18				
1 1/4″	FH0518-20	10	93580A325	6.15
1 1/2″	FH0518-24	10	93580A328	6.80

Wood-Screw-Threaded Studs

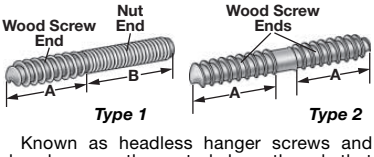

Known as headless hanger screws and dowel screws, these studs have threads that penetrate wood. They are not rated for tensile strength.

Type 1— One end is threaded for wood; the other is threaded to receive a nut. The nut-receiving end has a Class 1A thread fit. For nuts, see pages 3186-3187. For a driver tool, see 6197A on page 2835.

18-8 stainless steel studs have excellent corrosion resistance and may be mildly magnetic. They are not rated for hardness. *Zinc-plated steel* studs are made from low-strength C1006-C1010 steel. They have a minimum Rockwell hardness of B80.

Type 2— Both ends are threaded for wood. Studs are made from plain low-strength C1006-C1010 steel and have a minimum Rockwell hardness of B70.

Metric Type 1— Like the Type 1 studs above, one end is threaded for wood; the other is threaded to receive a nut. The nut-receiving end has a combination drive that accepts both Phillips and slotted blade drivers. Studs are made from Type 316 stainless steel, which may be mildly magnetic and contains molybdenum for resistance to chemicals and solvents. All have a Class 6g thread fit. For nuts, see pages 3193-3194.

O'all Lg.	Thread Lg. (A)	(B)	Pkg. Qty.		Pkg.
Type 1— *18-8 Stainless Steel*					
10-24 (Nut End)					
1 1/2″	7/8″	5/8″	25	90915A410	$9.78
2″	1″	1″	25	90915A414	11.56
3″	1 1/2″	1″	10	90915A418	5.96
Type 1— *18-8 Stainless Steel (Cont.)*					
1/4″-20 (Nut End)					
2″	1″	1″	10	90915A550	$5.20
2 1/2″	1 1/2″	1″	10	90915A552	6.38
3″	1 1/2″	1 1/2″	10	90915A554	7.78
3 1/2″	2″	1 1/2″	10	90915A555	9.10
5/16″-18 (Nut End)					
2 1/2″	1 1/2″	1″	10	90915A593	9.79
3″	1 1/2″	1 1/2″	10	90915A595	11.91
3 1/2″	2″	1 1/2″	10	90915A597	13.86
3/8″-16 (Nut End)					
3″	1 1/2″	1 1/2″	5	90915A636	9.33
3 1/2″	2″	1 1/2″	5	90915A638	11.12
4″	2″	2″	5	90915A640	12.96
Type 1— *Zinc-Plated Steel*					
8-32 (Nut End)					
1 1/2″	7/8″	5/8″	100	90207A182	6.42
1 3/4″	1″	3/4″	100	90207A185	7.09
2″	1″	1″	100	90207A189	7.52
10-24 (Nut End)					
1 1/2″	7/8″	5/8″	100	90207A251	11.08
2″	1″	1″	100	90207A253	14.52
2 1/2″	1 1/2″	1″	50	90207A255	9.95
3″	1 1/2″	1 1/2″	50	90207A257	9.83
1/4″-20 (Nut End)					
2″	1″	1″	50	90207A550	10.32
2 1/2″	1 1/2″	1″	50	90207A552	12.22
3″	1 1/2″	1 1/2″	50	90207A554	14.90
5/16″-18 (Nut End)					
2 1/2″	1 1/2″	1″	50	90207A593	11.04
3″	1 1/2″	1 1/2″	25	90207A595	7.70
3 1/2″	2″	1 1/2″	50	90207A597	12.95
3/8″-16 (Nut End)					
3″	1 1/2″	1 1/2″	25	90207A636	11.68
3 1/2″	2″	1 1/2″	10	90207A638	5.12
4″	2″	2″	10	90207A640	5.94
5″	3″	1 3/8″	10	90207A647	8.39
6″	3″	1 1/2″	10	90207A648	10.24
10″	3″	2 1/2″	1	90207A656	2.68
12″	3″	2 1/2″	1	90207A658	3.73
Type 1— *Zinc-Plated Steel (Cont.)*					
1/2″-13 (Nut End)					
6″	3″	2 1/2″	1	90207A736	$3.93
12″	3″	2 1/2″	1	90207A748	4.36

O'all Lg.	Thread Lg. (A)	Pkg. Qty.		Pkg.
Type 2— *Plain Steel*				
3/16″ Dia.				
1 1/2″	3/4″	50	91685A110	$6.18
2″	7/8″	50	91685A120	8.61
2 1/2″	1 1/8″	50	91685A130	8.29
3″	1 3/8″	50	91685A140	8.18
1/4″ Dia.				
1 1/2″	3/4″	50	91685A112	6.90
2″	7/8″	50	91685A114	7.93
2 1/2″	1 1/8″	50	91685A116	10.97
3″	1 3/8″	50	91685A118	12.80
3 1/2″	1 5/8″	25	91685A150	8.02
5/16″ Dia.				
2 1/2″	1 1/8″	25	91685A170	7.14
3″	1 3/8″	25	91685A180	8.63
3 1/2″	1 5/8″	25	91685A190	8.89
4″	1 5/8″	25	91685A210	8.12
3/8″ Dia.				
2 1/2″	1 1/8″	10	91685A220	4.10
3″	1 3/8″	10	91685A231	4.51
3 1/2″	1 5/8″	10	91685A241	5.49
4″	1 5/8″	10	91685A251	6.66

O'all Lg., mm	Thread Lg., mm (A)	(B)	Pkg. Qty.		Pkg.
Metric Type 1— *Type 316 Stainless Steel*					
M5— *#0 Drive; Pitch: 0.8 mm*					
50	30	20	1	98828A100	$3.22
M6— *#1 Drive; Pitch: 1 mm*					
70	40	30	1	98828A200	5.02
M8— *#2 Drive; Pitch: 1.25 mm*					
100	60	40	1	98828A300	12.42

About General Purpose Acme Products

General purpose Acme products have threads that are broader, stronger, and more square than standard V-shaped threads, so they're better for quick threading and carrying loads.

Acme threaded items are great for frequent assembly and disassembly, as well as projects subject to dirt and debris. They're used in highway construction and screw presses, and also as hanger rods, adjusting screws, and scaffold-leveling screws.

General purpose Acme threaded products have a Class 2G thread fit, which is looser than the Class 2C thread fit of our precision Acme threaded products.

Precision Acme rods come with multiple speed ratios to provide faster nut travel. Find them—and other precision Acme products—on pages 1107-1110.

Medium- and Low-Strength Steel General Purpose Acme Studs and Rods

All are right-hand threaded. Length is measured from end to end.

Grade B7 alloy steel studs and rods are made from plain 4140 alloy steel that meets ASTM A193. They have a maximum Rockwell hardness of C35, and minimum tensile strength of 125,000 psi.

Zinc-plated steel studs and rods offer good rust resistance and meet ASTM A108. They have a minimum Rockwell hardness of B70 and are not rated for tensile strength.

Plain steel studs and rods are similar to Grade 2 low-strength steel and meet ASTM A108. They have a minimum Rockwell hardness of B70 and are not rated for tensile strength.

Also Available: 12-ft. long (right-hand threaded) Acme rods in sizes marked with a ▲. Please ask for 93410A600 for Grade B7 alloy steel and 98935A800 for plain steel; then specify Acme size.

Also Available: Left-hand threaded Grade B7 alloy steel and plain steel rods in 3-ft. and 6-ft. lengths. Please ask for 93410A500 for Grade B7 alloy steel and 98935A400 for plain steel; then specify Acme size and length.

Grade B7 Alloy Steel

Lg.		
1/4"-16 Acme Size		
12"	93410A904	$10.00
3 ft.	93410A606	17.07
6 ft.	93410A305	27.76
3/8"-8 Acme Size		
12"	93410A908	10.00
3 ft.	93410A607	17.07
6 ft.	93410A310	27.76
3/8"-10 Acme Size		
12"	93410A912	10.00
3 ft.	93410A608	17.07
6 ft.	93410A315	27.76
3/8"-12 Acme Size▲		
12"	93410A916	10.00
3 ft.	93410A609	17.07
6 ft.	93410A110	27.76
1/2"-8 Acme Size		
12"	93410A920	14.66
3 ft.	93410A611	25.86
6 ft.	93410A320	41.35
1/2"-10 Acme Size▲		
6"	93420A110	$13.56
8"	93420A130	18.06
10"	93420A150	22.57
12"	93410A924	14.66
3 ft.	93410A615	25.86
6 ft.	93410A120	41.35
5/8"-6 Acme Size		
12"	93410A928	21.21
3 ft.	93410A617	39.63
6 ft.	93410A325	66.00
5/8"-8 Acme Size▲		
6"	93420A210	14.58
12"	93410A932	18.28
3 ft.	93410A620	32.05
6 ft.	93410A130	52.91
3/4"-5 Acme Size▲		
12"	93410A936	20.69
3 ft.	93410A625	39.63
6 ft.	93410A140	66.00
3/4"-6 Acme Size▲		
12"	93410A940	20.69
3/4"-6 Acme Size▲ (Cont.)		
3 ft.	93410A626	$39.63
6 ft.	93410A150	66.00
3/4"-8 Acme Size		
12"	93410A944	23.80
3 ft.	93410A628	47.47
6 ft.	93410A330	78.93
7/8"-6 Acme Size		
12"	93410A948	23.94
3 ft.	93410A630	49.01
6 ft.	93410A160	81.17
1"-4 Acme Size		
12"	93410A952	29.78
3 ft.	93410A632	61.45
6 ft.	93410A335	102.04
1"-5 Acme Size▲		
12"	93410A956	28.83
3 ft.	93410A634	58.98
6 ft.	93410A170	98.24
1"-6 Acme Size▲		
12"	93410A960	28.83
3 ft.	93410A635	58.98
1"-6 Acme Size▲ (Cont.)		
6 ft.	93410A180	$98.24
1"-8 Acme Size		
12"	93410A964	29.96
3 ft.	93410A637	61.45
6 ft.	93410A340	102.04
1"-10 Acme Size▲		
12"	93410A968	29.96
3 ft.	93410A639	61.45
6 ft.	93410A190	104.34
1 1/8"-5 Acme Size		
12"	93410A975	41.35
3 ft.	93410A645	84.78
6 ft.	93410A210	141.48
1 1/4"-4 Acme Size▲		
12"	93410A976	56.33
3 ft.	93410A650	113.80
6 ft.	93410A220	188.89
1 1/4"-5 Acme Size▲		
12"	93420A650	62.89
3 ft.	93410A651	113.80
6 ft.	93410A230	188.89
1 3/8"-4 Acme Size		
12"	93410A984	$72.07
3 ft.	93410A655	143.37
6 ft.	93410A240	238.59
1 1/2"-4 Acme Size▲		
12"	93420A750	74.11
3 ft.	93410A660	163.67
6 ft.	93410A250	261.83
1 1/2"-5 Acme Size		
12"	93410A990	84.83
3 ft.	93410A665	173.00
6 ft.	93410A345	275.23
2"-4 Acme Size		
12"	93410A993	134.28
3 ft.	93410A671	273.36
6 ft.	93410A260	455.30
2 1/2"-4 Acme Size		
12"	93410A998	205.27
3 ft.	93410A681	431.35
6 ft.	93410A280	718.57

Zinc-Plated Steel

Lg.		
3/8"-8 Acme Size		
12"	98941A730	9.04
3 ft.	98941A420	17.47
6 ft.	98941A240	28.16
1/2"-10 Acme Size		
6"	93255A431	11.07
7"	93255A432	11.81
8"	93255A433	12.80
10"	93255A435	14.47
12"	98941A735	9.71
14"	93255A439	16.16
3 ft.	98941A425	19.90
6 ft.	98941A250	28.28
5/8"-8 Acme Size		
6"	93255A441	12.26
7"	93255A442	13.39
5/8"-8 Acme Size (Cont.)		
8"	93255A443	14.47
10"	93255A445	16.55
12"	98941A740	11.65
14"	93255A449	18.67
3 ft.	98941A430	24.16
6 ft.	98941A260	34.59
3/4"-5 Acme Size		
6"	93255A205	14.32
8"	93255A213	16.46
10"	93255A217	18.47
12"	98941A745	13.42
14"	93255A225	22.37
18"	93255A233	26.21
3 ft.	98941A435	30.42
6 ft.	98941A268	43.27
3/4"-6 Acme Size		
6"	93255A451	14.32
8"	93255A453	16.49
10"	93255A455	18.48
12"	98941A750	13.43
14"	93255A459	22.37
16"	93255A461	24.23
18"	93255A463	26.21
3 ft.	98941A440	32.27
6 ft.	98941A270	46.73
1"-5 Acme Size		
6"	93255A471	17.98
8"	93255A473	21.05
10"	93255A475	24.07
12"	98941A755	16.59
14"	93255A479	30.20
1"-5 Acme Size (Cont.)		
16"	93255A501	33.23
18"	93255A505	36.37
3 ft.	98941A445	48.28
6 ft.	98941A280	74.18
1"-6 Acme Size		
12"	98941A760	23.25
3 ft.	98941A450	49.74
6 ft.	98941A282	77.46
1 1/4"-5 Acme Size		
6"	93255A481	22.99
8"	93255A483	26.81
10"	93255A485	31.03
12"	93255A487	35.23
14"	93255A489	38.10
1 1/4"-5 Acme Size (Cont.)		
18"	93255A493	46.49
3 ft.	98941A455	82.11
6 ft.	98941A290	129.28
1 1/2"-4 Acme Size		
6"	93255A621	27.91
8"	93255A629	37.19
10"	93255A633	46.39
12"	98941A770	38.92
14"	93255A641	64.91
18"	93255A649	83.44
3 ft.	98941A460	184.94
6 ft.	98941A300	305.56

Plain Steel

Lg.		
1/4"-16 Acme Size		
12"	98935A703	5.43
3 ft.	98935A803	7.71
6 ft.	98935A205	12.72
3/8"-8 Acme Size		
12"	98935A706	8.00
3 ft.	98935A807	12.72
6 ft.	98935A211	21.14
3/8"-10 Acme Size		
12"	98935A709	8.00
3 ft.	98935A812	12.72
6 ft.	98935A212	21.14
3/8"-12 Acme Size▲		
12"	98935A712	4.13
3 ft.	98935A817	5.00
6 ft.	98935A217	10.72
1/2"-8 Acme Size		
12"	98935A715	10.71
3 ft.	98935A820	17.71
6 ft.	98935A031	29.71
1/2"-10 Acme Size▲		
12"	98935A718	5.38
3 ft.	98935A823	7.00
6 ft.	98935A033	13.86
5/8"-6 Acme Size		
12"	98935A721	10.51
3 ft.	98935A827	17.75
6 ft.	98935A034	29.63
5/8"-8 Acme Size▲		
12"	98935A724	6.38
3 ft.	98935A829	8.88
6 ft.	98935A035	17.98
3/4"-5 Acme Size▲		
12"	98935A728	8.63
3 ft.	98935A837	14.01
6 ft.	98935A218	23.62
3/4"-6 Acme Size▲		
12"	98935A732	8.25
3 ft.	98935A838	12.75
6 ft.	98935A036	24.54
3/4"-8 Acme Size		
12"	98935A736	13.50
3 ft.	98935A842	28.43
6 ft.	98935A039	47.57
7/8"-6 Acme Size▲		
12"	98935A739	11.25
3 ft.	98935A846	19.63
6 ft.	98935A037	35.48
1"-4 Acme Size		
12"	98935A741	20.38
3 ft.	98935A853	46.00
6 ft.	98935A109	76.50
1"-5 Acme Size▲		
12"	98935A744	11.50
3 ft.	98935A861	20.88
6 ft.	98935A110	33.72
1"-6 Acme Size▲		
12"	98935A748	13.88
3 ft.	98935A862	23.13
6 ft.	98935A111	26.47
1"-8 Acme Size		
12"	98935A751	14.58
3 ft.	98935A864	28.71
6 ft.	98935A041	47.71
1"-10 Acme Size▲		
12"	98935A754	12.50
3 ft.	98935A866	24.51
6 ft.	98935A219	27.58
1 1/8"-5 Acme Size		
12"	98935A757	16.75
3 ft.	98935A873	27.76
6 ft.	98935A328	52.65
1 1/4"-4 Acme Size▲		
12"	98935A761	22.51
3 ft.	98935A877	36.01
6 ft.	98935A112	59.90
1 1/4"-5 Acme Size▲		
12"	98935A764	22.51
3 ft.	98935A878	36.75
6 ft.	98935A131	69.53
1 3/8"-4 Acme Size		
12"	98935A767	30.86
3 ft.	98935A882	46.00
6 ft.	98935A329	83.89
1 1/2"-4 Acme Size▲		
12"	98935A771	44.44
3 ft.	98935A885	73.22
6 ft.	98935A113	117.54
1 1/2"-5 Acme Size		
12"	98935A774	44.44
3 ft.	98935A889	73.22
6 ft.	98935A331	122.33
2"-4 Acme Size		
12"	98935A779	47.22
3 ft.	98935A893	78.56
6 ft.	98935A114	177.18
2 1/4"-4 Acme Size		
12"	98935A782	59.00
3 ft.	98935A897	122.28
6 ft.	98935A216	216.61
2 1/2"-4 Acme Size		
12"	98935A785	65.78
3 ft.	98935A901	175.67
6 ft.	98935A215	251.08

For information about general purpose Acme products, see page 3181.

Stainless Steel General Purpose Acme Studs and Rods

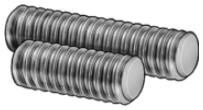

Our stainless steel Acme studs and rods have a Class 2G thread fit, maximum Rockwell hardness of B100 (unless noted), and are not rated for tensile strength. Length is measured from end to end.

Type 316 stainless steel meets ASTM A193 Grade B8M. It's more corrosion resistant than 18-8 stainless steel and contains molybdenum, which increases corrosion resistance to chlorides and sulfates. It may be mildly magnetic.

18-8 stainless steel offers excellent corrosion resistance and may be mildly magnetic.

Also Available: 12-ft. long 18-8 stainless steel (right-hand threaded) Acme rods in sizes marked with a ♠. Please ask for 95061A700 and specify Acme size.

Also Available: Left-hand threaded 18-8 stainless steel rods in 3-ft. and 6-ft. lengths. Please ask for 95061A400 and specify Acme size and length.

Type 316 Stainless Steel

Lg.		
3/8"-8 Acme Size		
12"	95014A590	$28.10
3 ft.	97014A310	48.45
6 ft.	97014A130	77.59
1/2"-10 Acme Size		
12"	97014A595	35.00
3 ft.	97014A315	65.17
6 ft.	97014A140	108.45
5/8"-8 Acme Size		
12"	97014A600	$45.34
3 ft.	97014A320	86.55
6 ft.	97014A150	143.97
3/4"-5 Acme Size		
12"	97014A605	61.38
3 ft.	97014A325	120.17
6 ft.	97014A160	199.74
3/4"-6 Acme Size		
12"	97014A610	$61.38
3 ft.	97014A330	120.17
6 ft.	97014A170	199.74
1"-5 Acme Size		
12"	97014A615	98.79
3 ft.	97014A335	196.55
6 ft.	97014A180	327.93
1"-6 Acme Size		
12"	97014A620	$101.90
3 ft.	97014A340	203.45
6 ft.	97014A182	340.34
1 1/4"-5 Acme Size		
12"	97014A625	156.38
3 ft.	97014A345	309.31
6 ft.	97014A190	515.00
1 1/2"-4 Acme Size		
12"	97014A630	$210.86
3 ft.	97014A350	422.07
6 ft.	97014A200	714.14

18-8 Stainless Steel

Lg.		
1/4"-16 Acme Size		
12"	95061A601	26.00
3 ft.	95061A801	46.14
6 ft.	95061A505	76.76
3/8"-8 Acme Size		
12"	95061A603	26.00
3 ft.	95061A807	46.82
6 ft.	95061A513	77.85
3/8"-10 Acme Size		
12"	95061A606	26.00
3 ft.	95061A810	46.82
6 ft.	95061A518	77.85
3/8"-12 Acme Size♠		
12"	95061A609	26.00
3 ft.	95061A813	46.82
6 ft.	95061A191★	96.00
1/2"-8 Acme Size		
12"	95061A612	32.12
3 ft.	95061A816	57.37
6 ft.	95061A524	95.39
1/2"-10 Acme Size♠		
6"	94330A110★	23.71
8"	94330A130★	31.41
10"	94330A150★	36.97
12"	95061A615	32.12
1/2"-10♠ (Cont.)		
3 ft.	95061A819	58.48
6 ft.	95061A212	81.73
5/8"-6 Acme Size		
12"	95061A618	47.60
3 ft.	95061A823	91.80
6 ft.	95061A528	153.47
5/8"-8 Acme Size♠		
6"	94330A210★	29.54
8"	94330A230★	39.33
10"	94330A250★	49.13
12"	95061A621	41.80
3 ft.	95061A825	79.01
6 ft.	95061A213★	124.94
3/4"-5 Acme Size♠		
6"	94330A310★	38.31
8"	94330A330★	51.07
10"	94330A340★	63.86
12"	95061A624	56.04
3 ft.	95061A831	111.15
6 ft.	95061A217★	160.46
3/4"-6 Acme Size♠		
6"	94330A410★	38.31
8"	94330A430★	51.07
10"	94330A440★	63.86
3/4"-6♠ (Cont.)		
12"	95061A627	56.04
18"	94330A480★	103.86
3 ft.	95061A832	111.15
6 ft.	95061A214★	170.00
3/4"-8 Acme Size		
12"	95061A630	58.95
3 ft.	95061A835	117.02
6 ft.	95061A533	194.84
7/8"-6 Acme Size♠		
12"	95061A633	71.57
3 ft.	95061A837	144.21
6 ft.	95061A193★	195.25
1"-4 Acme Size		
12"	95061A636	85.93
3 ft.	95061A840	172.12
6 ft.	95061A538	273.77
1"-5 Acme Size♠		
6"	94330A510★	38.69
8"	94330A530★	53.67
10"	94330A540★	62.84
12"	95061A639	50.78
16"	94330A570★	99.74
18"	94330A580★	102.19
3 ft.	95061A843	180.92
6 ft.	95061A215★	244.40
1"-6 Acme Size♠		
12"	95061A641	93.17
3 ft.	95061A844	163.97
6 ft.	95061A196★	229.97
1"-8 Acme Size		
12"	95061A644	112.29
3 ft.	95061A846	176.67
6 ft.	95061A541	295.76
1"-10 Acme Size♠		
12"	95061A647	112.29
3 ft.	95061A847	143.60
6 ft.	95061A198★	229.97
1 1/8"-5 Acme Size		
12"	95061A650	123.08
3 ft.	95061A853	228.79
6 ft.	95061A220★	303.25
1 1/4"-4 Acme Size		
12"	95061A653	132.73
3 ft.	95061A857	207.82
6 ft.	95061A201★	329.57
1 1/4"-5 Acme Size♠		
10"	94330A640★	90.67
12"	94330A650★	106.32
18"	94330A680★	162.99
3 ft.	95061A862	239.12
6 ft.	95061A218★	329.57
1 3/8"-4 Acme Size		
12"	95061A659	160.80
3 ft.	95061A866	275.81
6 ft.	95061A203★	480.56
1 1/2"-4 Acme Size		
3 ft.	95061A871	224.96
6 ft.	95061A216★	632.96
1 1/2"-5 Acme Size		
12"	95061A665	197.76
3 ft.	95061A877	321.82
6 ft.	95061A562	536.36
2"-4 Acme Size		
12"	95061A668	232.54
3 ft.	95061A883	483.13
6 ft.	95061A205★	732.03
2 1/4"-4 Acme Size		
12"	95061A671	269.41
3 ft.	95061A889	551.88
6 ft.	95061A207★	879.84
2 1/2"-4 Acme Size		
12"	95061A674	285.81
3 ft.	95061A894	603.45
6 ft.	95061A209★	1,049.09

★ Not rated for hardness.

General Purpose Acme Hex Nuts

Use these nuts with general purpose Acme threaded rods. They have a Class 2G thread fit but are not rated for tensile strength.

18-8 stainless steel nuts offer excellent corrosion resistance and may be slightly magnetic. They're not rated for hardness.

Plain steel nuts are made from low-strength steel and have a minimum Rockwell hardness of B75.

Zinc-plated steel nuts are made from low-strength steel with a zinc plating for enhanced corrosion resistance. They have a Rockwell hardness of B75.

Alloy 360 brass nuts are made from brass that meets ASTM B16, is nonmagnetic, and provides good corrosion resistance. They have a Rockwell hardness of B75.

Also Available: Left-hand threaded general purpose Acme hex nuts. For 18-8 stainless steel, please ask for 95066A555; for plain steel, ask for 91808A200; for zinc-plated steel, ask for 98948A110; and for Alloy 360 brass, ask for 95155A300; then specify Acme size.

Acme Size	Wd.	Ht.	Zinc-Plated Steel		Alloy 360 Brass	
3/8"-12	3/4"	3/8"	—	—	95155A111▲	$5.12
1/2"-10	7/8"	1/2"	98948A730	$8.85	95155A114	6.02
5/8"-8	1"	5/8"	—	—	95155A119	7.73
5/8"-8	1 1/16"	5/8"	98948A740	10.00	—	—
3/4"-5	1 1/4"	3/4"	—	—	95155A123	9.74
3/4"-6	1 1/4"	3/4"	98948A750	10.19	95155A127	9.74
7/8"-6	1 1/2"	7/8"	—	—	95155A143	13.33
1"-5	1 5/8"	1"	98948A770	12.53	95155A147	15.62
1"-6	1 5/8"	1"	—	—	95155A151	15.62
1"-10	1 5/8"	1"	—	—	95155A155	15.62
1 1/8"-5	1 3/4"	1 1/8"	—	—	95155A159	22.04
1 1/4"-5	2"	1 1/4"	98948A820	24.11	95155A163	29.60
1 1/2"-4	2 1/4"	1 1/2"	—	—	95155A167	40.66
2"-4	3"	2"	—	—	95155A171	90.55
2 1/2"-4	3 1/2"	2 1/2"	—	—	95155A179	132.98

▲ Not available with left-hand threads.

Acme Size	Wd.	Ht.	18-8 Stainless Steel		Plain Steel	
1/4"-16	1/2"	15/64"	95066A105	$8.11	94815A007	$2.02
3/8"-8	11/16"	23/64"	95066A206	17.50	94815A011	2.82
3/8"-10	11/16"	23/64"	95066A207	17.50	94815A018	2.82
3/8"-12	11/16"	23/64"	95066A208	11.48	94815A106	2.28
1/2"-8	7/8"	31/64"	95066A209	14.81	94815A024	3.34
1/2"-10	7/8"	31/64"	95066A212	13.24	94815A107	2.52
5/8"-6	11/16"	39/64"	95066A141	18.64	94815A029	3.86
5/8"-8	11/16"	39/64"	95066A213	15.10	94815A108	2.80
3/4"-5	1 1/4"	47/64"	95066A214	18.22	94815A117	5.22
3/4"-6	1 1/4"	47/64"	95066A217	18.22	94815A109	3.18
3/4"-8	1 1/4"	47/64"	95066A152	18.40	94815A034	4.52
7/8"-6	1 1/2"	55/64"	95066A226	21.24	—	—
7/8"-6	1 7/16"	55/64"	—	—	94815A123	4.95
1"-4	1 5/8"	63/64"	95066A166	32.03	94815A037	6.46
1"-5	1 5/8"	63/64"	95066A215	27.88	94815A110	4.53
1"-6	1 5/8"	63/64"	95066A218	27.88	94815A111	5.35
1"-8	1 5/8"	63/64"	95066A168	28.68	94815A045	6.42
1"-10	1 5/8"	63/64"	95066A219	27.88	94815A118	5.38
1 1/8"-5	1 3/4"	1 7/64"	95066A220	35.15	—	—
1 1/8"-5	1 13/16"	1 7/64"	—	—	94815A119	8.29
1 1/4"-4	2"	1 7/32"	95066A225	51.98	94815A112	9.60
1 1/4"-5	2"	1 7/32"	95066A221	51.98	94815A116	9.11
1 3/8"-4	2 3/16"	1 11/32"	—	—	94815A122	15.07
1 1/2"-4	2 1/4"	1 15/32"	95066A216	74.68	—	—
1 1/2"-4	2 3/8"	1 15/32"	—	—	94815A113	16.18
1 1/2"-5	2 1/4"	1 1/2"	95066A175	92.65	—	—
1 1/2"-5	2 3/8"	1 15/32"	—	—	94815A121	16.18
2"-4	3"	1 31/32"	95066A233	133.68	94815A114	38.54
2 1/4"-4	3 1/2"	2 1/2"	95066A185	224.96	94815A125	68.48
2 1/2"-4	3 1/2"	2 1/2"	95066A195	346.89	94815A115	68.48

For information about general purpose Acme products, see page 3181.

General Purpose Acme Cylinder Nuts

Use to transmit linear motion, as a spacer, or as a bearing. All are machinable and have a Class 2G thread fit.

Gray Iron—Nuts are not rated for hardness.

Bronze—Meets ASTM B505, Grade 932. Nuts are not rated for hardness.

Brass—Made of Alloy 360 brass that meets ASTM B16. Nuts have a minimum Rockwell hardness of B55.

Also Available: Left-hand threaded general purpose Acme cylinder nuts in the sizes marked with a ★. Please ask for 95080A400 for gray iron; 95090A500 for bronze; and 95100A600 for brass; then specify Acme size.

Acme Size	OD	Ht.		
Gray Iron				
1/2″-10	1.465″	1.00″	**95080A103★**	$17.73
5/8″-8	1.860″	1.25″	**95080A108★**	25.30
3/4″-5	2.235″	1.50″	**95080A112★**	32.51
3/4″-6	2.235″	1.50″	**95080A113★**	32.51
1″-5	2.985″	2.00″	**95080A122★**	48.03
1″-6	2.985″	2.00″	**95080A123**	48.03
1″-10	2.985″	2.00″	**95080A125**	48.03
1 1/4″-5	3.730″	2.50″	**95080A128**	84.09
1 1/2″-4	4.470″	3.00″	**95080A132**	104.23
Bronze				
1/2″-10	0.911″	0.90″	**95090A104★**	18.84
5/8″-8	1.286″	1.03″	**95090A108★**	22.42
3/4″-5	1.411″	1.28″	**95090A112★**	28.66
3/4″-6	1.411″	1.28″	**95090A117★**	28.66
1″-5	1.661″	1.53″	**95090A127★**	46.20
1 1/4″-5	2.161″	2.02″	**95090A129★**	80.00
1 1/2″-4	2.787″	3.00″	**95090A133**	177.00
2″-4	3.286″	4.03″	**95090A136**	187.00
Brass				
3/8″-12	0.750″	0.38″	**95100A101**	4.99
1/2″-10	0.875″	0.50″	**95100A103★**	5.94
5/8″-8	1.000″	0.63″	**95100A105★**	7.64
3/4″-5	1.250″	0.75″	**95100A107★**	9.69
3/4″-6	1.250″	0.75″	**95100A109★**	9.69
7/8″-6	1.500″	0.88″	**95100A117★**	13.58
1″-5	1.625″	1.00″	**95100A119★**	16.01
1″-6	1.625″	1.00″	**95100A121★**	16.01
1″-10	1.625″	1.00″	**95100A123★**	16.01
1 1/4″-5	2.000″	1.25″	**95100A127★**	30.21
1 1/2″-4	2.500″	1.50″	**95100A129**	44.11

General Purpose Acme Thumb and Handle Nuts

Easy to finger tighten. All nuts have a Class 2G thread fit and are made from malleable cast iron. Min. Rockwell hardness is B67.

Thumb Nuts

Acme Size	Wing-Span	Ht.		
1/2″-10	2 1/4″	1″	**98675A115**	$8.36
5/8″-8	2 3/4″	1 3/16″	**98675A119**	8.98

Handle Nuts

Acme Size	Flange Dia. (F)	O'all Lg.		
3/8″-12	15/16″	4 1/4″	**98890A111**	$9.85
1/2″-10	1 1/4″	4 1/2″	**98890A115**	10.99
5/8″-8	1 1/4″	4 3/4″	**98890A119**	13.26

General Purpose Acme Square Nuts

Made from brass that meets ASTM B16, these low-friction nuts travel quickly along threaded rod. All have a Class 2G thread fit and min. Rockwell hardness of B55.

Also Available: Left-hand threaded brass Acme square nuts in the sizes listed below (unless noted). Please ask for 95270A500 and specify Acme size.

Acme Size	Wd.	Ht.		
3/8″-12	3/4″	3/8″	**95270A111**	$5.94
1/2″-10	7/8″	1/2″	**95270A114**	6.89
5/8″-8	1″	5/8″	**95270A119**	10.22
3/4″-5	1 1/4″	3/4″	**95270A123**	11.81
3/4″-6	1 1/4″	3/4″	**95270A127**	11.81
7/8″-6	1 1/2″	7/8″	**95270A143**	17.08
1″-5	1 5/8″	1″	**95270A147**	22.33
1″-6	1 5/8″	1″	**95270A151**	22.33
1″-10	1 5/8″	1″	**95270A155**	22.33
1 1/8″-5	1 3/4″	1 1/8″	**95270A159▲**	31.12
1 1/4″-5	2″	1 1/4″	**95270A163**	40.62
1 1/2″-4	2 1/4″	1 1/2″	**95270A167**	57.26
2″-4	3″	2″	**95270A171▲**	112.32

▲ Not available with left-hand threads.

General Purpose Acme Wing Nuts

With a wingspan of 9 1/2″, these nuts are easy to grip—even with greasy hands or thick welding gloves. Made from ductile cast iron. Class 2G thread fit. Min. Rockwell hardness is B72.

Flat Style—Body height is 1 1/8″; wing height is 5/8″.

Ball Style—Body height is 1″; wing height is 1/2″; ball diameter is 1 1/8″.

To Order: Please specify flat or ball style.

Acme Size		
3/4″-5	**92428A210**	$34.67
3/4″-6	**92428A220**	34.78
1″-5	**92428A230**	37.73
1″-6	**92428A240**	39.29
1 1/4″-4	**92428A250**	40.52
1 1/4″-5	**92428A260**	39.18
1 1/2″-4	**92428A270**	43.50

Metric General Purpose Acme Rods and Hex Nuts

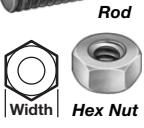

Rods measure 2 meters end to end. They're made from black-oxide steel that meets ASTM A108. Thread fit is Class 7e. Min. Rockwell hardness is B70.

Hex nuts are made from plain steel. Thread fit is Class 7H. Not rated for hardness.

Acme Size	Pitch, mm	Wd., mm	Ht., mm		
Rods					
M12	3	—	—	**97048A711**	$45.48
M16	4	—	—	**97048A715**	65.24
M20	4	—	—	**97048A719**	91.90
M26	5	—	—	**97048A725**	145.95
M40	7	—	—	**97048A739**	295.71
Hex Nuts					
M12	3	22.20	12.0	**94353A120**	24.25
M16	4	27.00	16.0	**94353A160**	25.77
M20	4	31.75	20.0	**94353A200**	29.11
M26	5	41.30	25.4	**94353A260**	41.79
M40	7	60.33	39.9	**94353A400**	96.15

General Purpose Acme Coupling Nuts

Use to join two lengths of general purpose Acme threaded rods or studs. All nuts have a Class 2G thread fit. *Note:* Not for linear motion applications. Nuts will not run the length of most threaded rod without binding.

18-8 stainless steel nuts offer excellent corrosion resistance. May be mildly magnetic. Not rated for hardness. ***Plain steel*** nuts are made from low-strength steel. They have a min. Rockwell hardness of B75.

Also Available: Left-hand threaded plain steel Acme coupling nuts in the sizes listed below (unless noted). Please ask for 93026A300 and specify Acme size.

Acme Size	Wd.	Ht.	*18-8 SS*		*Plain Steel*	
3/8″-12	1/2″	1 7/8″	—	—	**93023A661▲**	$13.36
1/2″-10	5/8″	1 1/4″	**93030A106**	$27.57	**93023A673**	14.97
5/8″-8	7/8″	2 1/8″	**93030A109**	32.66	**93023A662**	18.13
3/4″-5	1″	2 1/4″	**93030A112**	43.69	**93023A664**	20.28
3/4″-6	1″	2 1/4″	**93030A113**	43.69	**93023A663**	20.28
7/8″-6	1 1/4″	2 1/2″	**93030A115**	50.98	**93023A665**	20.80
1″-5	1 3/8″	2 3/4″	**93030A119**	61.41	**93023A667**	21.82
1″-6	1 3/8″	2 3/4″	**93030A117**	59.36	**93023A666**	21.82
1″-10	1 3/8″	2 3/4″	**93030A118**	59.36	**93023A680**	21.82
1 1/8″-5	1 1/2″	3″	**93030A122**	76.18	**93023A668**	31.97
1 1/4″-4	1 5/8″	3″	**93030A123**	102.85	**93023A671**	42.63
1 1/4″-5	1 5/8″	3″	**93030A124**	102.85	**93023A669**	42.63
1 3/8″-4	1 7/8″	3 1/4″	—	—	**93023A672**	58.58
1 1/2″-4	2″	3 1/2″	**93030A127**	132.24	**93023A674**	65.53
2″-4	3″	4″	**93030A129**	174.04	**93023A675**	123.17
2 1/2″-4	3 1/2″	5″	—	—	**93023A327▲**	133.09

▲ Not available with left-hand threads.

General Purpose Acme Flange Nuts

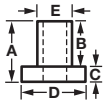

Mount these one-piece flanged nuts to walls and floors to support Acme threaded rod. The wide flange sustains heavy loads and is machinable, so you can drill holes for custom mounting.

Nuts are made from SAE 660 bronze, which is nonmagnetic and highly resistant to corrosion from salt water, gasses, and sewage. They have a Class 2G thread fit (unless noted) and are not rated for hardness.

Also Available: Left-hand threaded Acme flange nuts in the sizes listed below. Please ask for 95120A100 and specify Acme size.

Acme Size	(A)	(B)	(C)	(D)	(E)		
1/2″-10	1″	7/8″	1/8″	1 1/4″	3/4″	**95120A111**	$83.62
5/8″-8	1 1/4″	1″	1/4″	1 1/2″	7/8″	**95120A119**	91.92
3/4″-5	1 1/2″	1 1/8″	3/8″	2″	1″	**95120A123**	106.48
3/4″-6	1 1/2″	1 1/8″	3/8″	2″	1″	**95120A127**	106.48
7/8″-6	1 3/4″	1 1/4″	1/2″	2 1/4″	1 1/4″	**95120A143**	120.90
1″-5	2″	1 1/2″	1/2″	2 1/2″	1 1/2″	**95120A151**	133.06
1″-6	2″	1 1/2″	1/2″	2 1/2″	1 1/2″	**95120A155**	133.06
1 1/8″-5	2 1/4″	1 5/8″	5/8″	2 3/4″	1 3/4″	**95120A167**	158.50
1 1/4″-4	2 1/2″	1 3/4″	3/4″	3″	2″	**95120A171**	182.26
1 1/4″-5	2 1/2″	1 3/4″	3/4″	3″	2″	**95120A175**	182.26
1 1/2″-4	3″	2 1/4″	3/4″	3 1/2″	2 1/2″	**95120A183**	237.84
2″-4	4″	3″	1″	4″	3″	**95120A191♦**	240.30

♦ Class 2C thread fit.

About Nuts, Materials, and Finishes

Types of Nuts

- ***Hex nuts*** (pages 3186-3189 [inch] and 3193-3194 [metric]) are the most common nuts for general fastening applications. ***Heavy hex nuts*** (page 3190 [inch] and 3192 [metric]), though similar, are slightly taller and wider for added thread engagement and greater bearing surface.

- ***Thin hex nuts*** (pages 3191-3192 [inch] and page 3194 [metric]) are also known as jam nuts and half-height nuts. Often used in pairs, one can be "jammed" against the other to prevent loosening.

- ***Nylon-insert hex locknuts*** (page 3196) feature a nylon locking element that resists vibration when engaged on the threads of a mating part.

- ***Flex-top expanding hex locknuts*** (page 3198) have a slotted top that expands when tightened to resist loosening from vibration. They're stronger than nylon insert locknuts of the same size.

- ***Distorted-thread hex locknuts*** (page 3199) have deformed threads that create a vibration-resistant friction fit against mating threads. They cannot be reused.

- ***Flange hex nuts*** (page 3201) have a wide base that eliminates the need for a separate washer. ***Serrated-flange*** (page 3201) versions act like locknuts—biting into surfaces to resist loosening.

- ***Coupling nuts*** (page 3204) are also known as extension nuts. They're commonly used to join lengths of threaded rod or in spacing applications with leveling feet or jig fixtures.

- ***Acorn nuts*** (page 3206) have a dome that covers and protects exposed threads while adding a finished appearance.

- ***Wing nuts*** (page 3207) are designed to be tightened or loosened by hand so you won't need tools to make adjustments.

- ***Thumb nuts*** (page 3209) are similar to wing nuts; they often have a knurled surface that makes them easy to turn with your fingers.

Measuring Widths and Heights

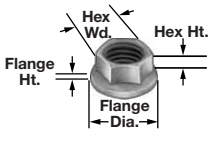

Steels

Extreme Strength *(Grade 9 Alloy Steel)*—Commonly used with Grade 9 cap screws. Stronger than Grade 8 steel. Minimum Rockwell hardness is C28.

High Strength *(Grade 8 Alloy Steel)*—Designed for use with Grade 8 hex head cap screws. Minimum Rockwell hardness is C24 (unless noted).

Metric High Strength *(Class 10 Alloy Steel)*—Typically used with Grade 10.9 screws. Equivalent to Grade 8 steel. Minimum Rockwell hardness is C25 (unless noted).

Medium Strength *(Grade 5 Steel)*—Commonly used with Grade 5 hex head cap screws. Not rated for hardness (unless noted).

Metric Medium Strength *(Class 8 Steel)*—Used with Grade 8.8 screws. Equivalent to Grade 5 steel. Minimum Rockwell hardness is B80 (unless noted).

Low Strength *(Grade 2 Steel)*—Commonly used with Grade 2 steel or ASTM A307 hex head cap screws. Not rated for hardness.

Low-Strength General Purpose Steel—Frequently used for general purpose machine screw applications. Minimum Rockwell hardness is B55 (unless noted).

Metric Low-Strength General Purpose Steel—*(Class 4, Class 5, Class 5.8, and Class 6)*—Comparable to low-strength steel. Classes 4 and 6 have a minimum Rockwell hardness of B75 (unless noted). Classes 5 and 5.8 are not rated for hardness.

Case-Hardened Steel—Wear resistant with a minimum surface hardness of Rockwell C32.

Stainless Steels

Super Corrosion Resistant *(Type 316 Stainless Steel)*—Sometimes referred to as Grade A4 stainless steel for metric fasteners, this material contains molybdenum for better corrosion resistance than 18-8 stainless steel. Minimum Rockwell hardness is B55 (unless noted).

General Purpose *(18-8 Stainless Steel)*—Sometimes referred to as Grade A2 stainless steel for metric fasteners, this material offers excellent corrosion resistance. Contains approximately 18% chromium and 8% nickel. May be mildly magnetic. Minimum Rockwell hardness is B55 (unless noted).

Wear Resistant *(Type 410 Stainless Steel)*—Magnetic and stronger than Type 316 and 18-8 stainless steel. Use in mildly corrosive environments, such as those with steam and weak acids. Not rated for hardness.

High-Strength Wear Resistant *(17-4 PH Stainless Steel)*—Combines the high strength of hardened alloy steel with excellent corrosion resistance that's similar to 18-8 stainless steel. Minimum Rockwell hardness is C28.

Very High Strength *(A286 Super Alloy)*—Iron-based. Contains 26% nickel and 15% chromium for the strength of alloy steel with corrosion resistance similar to 18-8 stainless steel. Minimum Rockwell hardness is C22 (unless noted).

Acid Resistant *(Alloy 20 Stainless Steel)*—Also known as Carpenter 20, this alloy is the most resistant to pitting and corrosion cracking from sulfuric acid. May be slightly magnetic. Minimum Rockwell hardness is B85.

Other Materials

Lightweight Aluminum—Aluminum has the strength of mild steel at one-third the weight. It's also corrosion resistant and nonmagnetic. Minimum Rockwell hardness is B40 (unless noted).

Brass—Made from approximately two-thirds copper and one-third zinc, brass is resistant to rust and mild atmospheric corrosion. It's nonmagnetic, durable, corrosion resistant, and electrically conductive. Minimum Rockwell hardness is B44.

High-Strength High-Temperature Nickel Alloy *(Hastelloy C276)*—This nonmagnetic alloy is resistant to chemical corrosion and stress-corrosion cracking. It's made from approximately 55% nickel, 16% chromium, and 16% molybdenum and has a minimum Rockwell hardness of C20 (unless noted).

Saltwater-Resistant Nickel-Copper Alloy 400—Also known as Monel. Stronger than brass and resistant to heat and corrosion, especially in salty and brackish water. Slightly magnetic, it's made from approximately 65% nickel and 30% copper. Minimum Rockwell hardness is B75 (unless noted).

Nylon 6/6—Very economical, nylon is the most common plastic fastener material. It's nonconductive, and resistant to chemicals and solvents (except mineral acids). It absorbs moisture, which can affect dimensions and other properties. Not rated for hardness.

Silicon Bronze—Made from approximately 95% copper with silicon for added strength, silicon bronze is nonmagnetic and more resistant to corrosion caused by salt water, gases, and sewage than brass. Minimum Rockwell hardness is B60.

Super-Corrosion-Resistant Titanium—Made from commercial Grade 2 titanium, this material is extremely resistant to rust, salt water, and many chemicals and acids. It meets ASTM B348 and is not rated for hardness.

Zinc Alloy—Typically used to cast intricate shapes. Offers good corrosion resistance. Not rated for hardness.

Coatings and Finishes

Ultra Coat—Also known as armorcoat, this silver-gray polymer coating adds 1000 hours of salt spray resistance and offers better corrosion resistance than zinc, hot-dipped galvanized, and cadmium platings.

Black Luster—Durable and attractive, this semigloss coating adds 500 hours of salt spray resistance.

Cadmium Plated—Provides excellent rust and weather resistance and adds lubricity.

Hot-Dipped Galvanized—Adds excellent protection against rust, weather, and corrosion.

Zinc and Zinc Yellow-Chromate Plated—Provide good to excellent rust and weather resistance.

Nickel Plated—Often added as a decorative finish; it provides fair rust and weather resistance.

Black Oxide—Provides mild rust resistance and some lubricity.

High-Visibility Blue—A coating used on some metric nuts to make them easy to distinguish from inch sizes.

Machine Screw Hex Nuts

Often used on machine screws and threaded rods, and great for tight spaces. Top of nut is flat and has chamfered corners; bottom may be flat or chamfered. Nuts have a Class 2B thread fit and dimensions that meet ANSI/ASME B18.6.3.

Zinc-plated steel nuts are not rated for hardness.

Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.
0-80	5/32″	3/64″	4-40	1/4″	3/32″	8-32	11/32″	1/8″	1/4″-20	7/16″	3/16″
1-64	5/32″	3/64″	4-48	1/4″	3/32″	8-36	11/32″	1/8″	1/4″-28	7/16″	3/16″
1-72	5/32″	3/64″	5-40	5/16″	7/64″	10-24	3/8″	1/8″	5/16″-18	9/16″	7/32″
2-56	3/16″	1/16″	5-44	5/16″	7/64″	10-32	3/8″	1/8″	5/16″-24	9/16″	7/32″
2-64	3/16″	1/16″	6-32	5/16″	7/64″	12-24	7/16″	5/32″	3/8″-16	5/8″	1/4″
3-48	3/16″	1/16″	6-40	5/16″	7/64″	12-28	7/16″	5/32″	3/8″-24	5/8″	1/4″
3-56	3/16″	1/16″									

Thread Size	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel			
0-80	100	90480A001	$5.02
1-64	50	90480A036	8.19
1-72	100	90480A002	2.96
2-56	100	90480A003	1.04
2-64	100	90480A135	1.40
3-48	100	90480A004	1.20
3-56	50	90480A041	8.21
4-40	100	90480A005	.81
4-48	100	90480A155	1.78
5-40	100	90480A006	1.59
5-44	100	90480A165	2.36
6-32	100	90480A007	1.16
6-40	100	90480A175	1.80
8-32	100	90480A009	1.49
8-36	100	90480A185	2.34
10-24	100	90480A011	1.72
10-32	100	90480A195	1.71
12-24	100	90480A013	1.92
12-28	100	90480A205	3.82
1/4″-20	100	90480A029	3.15
1/4″-28	100	90480A215	2.60
5/16″-18	100	90480A030	5.87
5/16″-24	100	90480A225	7.05
3/8″-16	100	90480A031	8.15
3/8″-24	100	90480A235	10.66
Type 316 Stainless Steel			
4-40	100	90257A005	5.99
6-32	100	90257A007	8.03
8-32	100	90257A009	8.95
10-24	100	90257A011	10.12
10-32	100	90257A411	10.12
12-24	50	90257A038	10.42
1/4″-20	25	90257A029	4.75
1/4″-28	25	90257A033	10.09
5/16″-18	10	90257A045	4.99
5/16″-24	10	90257A051	6.33

Thread Size	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel (Cont.)			
3/8″-16	10	90257A063	$6.75
3/8″-24	10	90257A081	10.86
Plain 18-8 Stainless Steel			
0-80	100	91841A115	7.85
1-64	100	91841A038	8.10
1-72	100	91841A125	8.16
2-56	100	91841A003	2.77
2-64	100	91841A135	7.78
3-48	100	91841A004	2.97
3-56	100	91841A145	4.25
4-40	100	91841A005	2.75
4-48	100	91841A155	8.00
5-40	100	91841A006	5.26
5-44	100	91841A165	8.43
6-32	100	91841A007	3.31
6-40	100	91841A175	7.73
8-32	100	91841A009	4.25
8-36	100	91841A185	8.93
10-24	100	91841A011	4.30
10-32	100	91841A195	4.30
12-24	100	91841A013	8.12
12-28	100	91841A205	11.21
1/4″-20	100	91841A029	6.15
1/4″-28	100	91841A215	8.85
5/16″-18	50	91841A030	9.39
5/16″-24	50	91841A225	10.82
3/8″-16	25	91841A035	5.69
3/8″-24	25	91841A235	7.21
PTFE-Coated 18-8 SS			
6-32	50	94600A100	7.49
8-32	50	94600A200	8.64
10-24	50	94600A400	10.64
10-32	50	94600A300	8.78
1/4″-20	25	94600A500	8.82

Thread Size	Pkg. Qty.		Per Pkg.
Black-Oxide 18-8 SS			
2-56	100	96537A110	$3.79
4-40	100	96537A120	4.56
6-32	100	96537A130	5.61
8-32	100	96537A140	6.84
10-24	100	96537A150	7.68
10-32	100	96537A160	7.68
1/4″-20	100	96537A170	12.13
1/4″-28	50	96537A180	9.18
5/16″-18	25	96537A190	7.66
Brass			
0-80	100	92671A115	3.27
1-64	100	92671A002	4.03
1-72	100	92671A125	4.38
2-56	100	92671A003	2.57
2-64	100	92671A135	4.23
3-48	100	92671A004	2.99
3-56	100	92671A145	3.37
4-40	100	92671A005	4.62
4-48	100	92671A155	6.35
5-40	100	92671A006	7.10
5-44	100	92671A165	9.05
6-32	100	92671A007	7.06
6-40	100	92671A175	9.32
8-32	100	92671A009	8.49

Thread Size	Pkg. Qty.		Per Pkg.
Brass (Cont.)			
8-36	50	92671A185	$7.53
10-24	100	92671A011	9.49
10-32	100	92671A195	9.49
12-24	50	92671A013	8.87
12-28	50	92671A205	11.06
1/4″-20	50	92671A029	9.95
1/4″-28	50	92671A215	11.18
5/16″-18	25	92671A030	9.21
5/16″-24	25	92671A225	12.05
3/8″-16	25	92671A035	12.22
3/8″-24	10	92671A235	6.46
Silicon Bronze			
8-32	50	93435A009	6.96
10-32	50	93435A411	7.62
1/4″-20	25	93435A029	7.22
5/16″-18	10	93435A036	6.22
3/8″-16	10	93435A041	6.48
Aluminum			
4-40	100	93181A003	3.80
6-32	100	93181A007	3.94
8-32	100	93181A009	3.96
10-24	100	93181A011	3.98
10-32	100	93181A411	3.98
1/4″-20	100	93181A029	5.56
5/16″-18	50	93181A030	6.16

700-Piece Assortments

Nuts have a Class 2B thread fit. Furnished in an 11″ Lg. × 6 3/4″ Wd. × 1 3/4″ Dp. compartmented plastic case with lid chart.

Zinc-plated steel nuts meet ANSI/ASME B18.6.3. ***18-8 stainless steel*** nut dimensions meet ANSI/ASME B18.6.3.

Thread Size	No. of Pcs.	Thread Size	No. of Pcs.	Thread Size	No. of Pcs.	Thread Size	No. of Pcs.
2-56	100	6-32	100	10-24	100	1/4″-20	100
4-40	100	8-32	100	10-32	100		

Zinc-Plated Steel	90740A107	Each	$33.82
18-8 Stainless Steel	90625A207	Each	$45.83

Military Specification Stainless Steel Machine Screw Hex Nuts

Designed to meet stringent military specifications, these nuts are made from 300 series stainless steel. They may be mildly magnetic and are not rated for hardness. Each is passivated (treated with nitric acid to protect against oxidation and corrosion) to meet QQ-P-35 and meets MS 35649 and FF-N-836 (unless noted). All nuts have a Class 2B thread fit.

Thread Size	Dash No.	Wd.	Ht.	Pkg. Qty.		Per Pkg.
0-80	314	5/32″	3/64″	5	91240A001★	$9.06
2-56	224	3/16″	1/16″	25	91240A003	8.70
4-40	244	1/4″	3/32″	25	91240A005	10.17
6-32	264	5/16″	7/64″	25	91240A007	10.92
8-32	284	11/32″	1/8″	10	91240A009	6.09
10-24	204	3/8″	1/8″	10	91240A011	6.70
10-32	304	3/8″	1/8″	10	91240A411★	$6.47
1/4″-20	2254	7/16″	3/16″	10	91240A029	9.21
1/4″-28	3254	7/16″	3/16″	5	91240A078★	6.45
5/16″-18	2314	9/16″	7/32″	5	91240A030	10.04
3/8″-16	2384	5/8″	1/4″	5	91240A031	10.54

★ Meets MS 35650.

Undersized Machine Screw Hex Nuts

Also known as small-pattern nuts, these nuts are narrower than standard machine screw nuts. All have a Class 2B thread fit (unless noted). ***Zinc-plated steel*** nuts as well as ***brass*** nuts with thread sizes 0000-160 to 1-72 are not rated for hardness.

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel					
4-40	3/16″	1/16″	100	90760A005	$2.36
6-32	1/4″	3/32″	100	90760A007	2.61
8-32	1/4″	3/32″	100	90760A009	3.11
8-32	5/16″	7/64″	100	90760A199	3.14
10-32	5/16″	7/64″	100	90760A411	6.81
Type 316 Stainless Steel					
8-32	1/4″	3/32″	50	90205A309	10.26
10-24	5/16″	7/64″	50	90205A313	11.29
10-32	5/16″	7/64″	50	90205A319	11.29
18-8 Stainless Steel					
0000-160	1/16″	0.028″	1	90001A201■	14.55
000-120	5/64″	0.036″	5	90001A302■	9.00

■ Not rated for thread fit.

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel (Cont.)					
00-90	5/64″	0.044″	5	90001A403■	$6.80
0-80	1/8″	3/64″	50	90730A001	6.55
1-72	7/64″	0.067″	5	90001A605■	9.86
2-56	5/32″	1/16″	100	90730A003	4.59
4-40	3/16″	1/16″	100	90730A005	2.99
5-40	1/4″	3/32″	100	90730A006	5.30
6-32	1/4″	3/32″	100	90730A007	3.97
8-32	1/4″	3/32″	100	90730A009	4.06
8-32	5/16″	7/64″	100	90730A010	5.70
10-24	5/16″	7/64″	100	90730A011	5.88
10-32	5/16″	7/64″	100	90730A411	6.34
10-32	11/32″	1/8″	100	90730A015	8.02

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Brass					
0000-160	3/64″	0.028″	5	92736A109■	$13.64
000-120	5/64″	0.036″	25	92736A110■	12.92
00-90	5/64″	0.044″	25	92736A112■	9.20
0-80	3/32″	0.052″	25	92736A001■	9.20
1-72	7/64″	0.067″	25	92736A002■	9.20
2-56	5/32″	1/16″	100	95130A105	2.84
4-40	3/16″	1/16″	100	95130A110	3.23
6-32	1/4″	3/32″	100	95130A120	5.04
8-32	1/4″	3/32″	100	95130A130	5.27
8-32	5/16″	7/64″	100	95130A140	7.15
10-24	5/16″	7/64″	100	95130A150	7.74
10-32	5/16″	7/64″	100	95130A160	7.74
10-32	11/32″	1/8″	100	95130A170	10.38

Hex Nuts

Also known as full or finished nuts, these common nuts are also our most popular. They typically come in sizes 1/4" and larger and have a Class 2B thread fit. Sizes 1 1/2" and smaller have dimensions that meet ANSI/ASME B18.2.2 (unless noted).

Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.
2-56	1/4"	1/16"	7/16"-14	11/16"	3/8"	7/8"-9	15/16"	3/4"	1 5/8"-12	27/16"	1 25/64"
4-40	1/4"	3/32"	7/16"-20	11/16"	3/8"	7/8"-14	15/16"	3/4"	1 3/4"-5	2 5/8"	1 1/2"
6-32	5/16"	7/64"	7/16"-28	11/16"	3/8"	7/8"-20	15/16"	31/64"	1 3/4"-12	2 5/8"	1 1/2"
8-32	11/32"	1/8"	1/2"-13	3/4"	7/16"	1"-8	1 1/2"	55/64"	1 7/8"-5	2 3/4"	1 3/4"
10-24	3/8"	1/8"	1/2"-20	3/4"	7/16"	1"-12	1 1/2"	55/64"	1 7/8"-12	2 3/4"	1 3/4"
10-32	3/8"	1/8"	1/2"-28	3/4"	3/8"	1"-14	1 1/2"	55/64"	2"-4 1/2	3"	1 23/32"
1/4"-20	7/16"	7/32"	9/16"-12	7/8"	31/64"	1 1/8"-7	1 11/16"	31/32"	2"-12	3"	1 23/32"
1/4"-28	7/16"	7/32"	9/16"-18	7/8"	31/64"	1 1/8"-12	1 11/16"	31/32"	2 1/4"-4 1/2	3 3/8"	1 15/16"
1/4"-32	7/16"	7/32"	5/8"-11	15/16"	35/64"	1 1/4"-7	1 7/8"	1 1/16"	2 1/4"-12	3 3/8"	1 15/16"
5/16"-18	1/2"	17/64"	5/8"-18	15/16"	35/64"	1 1/4"-12	1 7/8"	1 1/16"	2 1/2"-4	3 3/4"	2 5/32"
5/16"-24	1/2"	17/64"	5/8"-24	15/16"	3/8"	1 3/8"-6	2 1/16"	1 11/64"	2 1/2"-12	3 3/4"	2 5/32"
5/16"-32	1/2"	17/64"	11/16"-24	1"	27/64"	1 3/8"-12	2 1/16"	1 11/64"	2 3/4"-4	4 1/8"	2 3/8"
3/8"-16	9/16"	21/64"	3/4"-10	1 1/8"	41/64"	1 1/2"-6	2 1/4"	1 9/32"	3"-4	4 1/2"	2 5/8"
3/8"-24	9/16"	21/64"	3/4"-16	1 1/8"	41/64"	1 1/2"-12	2 1/4"	1 9/32"	3"-12	4 1/2"	2 5/8"
3/8"-32	9/16"	21/64"	3/4"-20	1"	27/64"	1 5/8"-5 1/2	2 7/16"	1 25/64"	3 1/2"-4	5 3/8"	3 1/2"

Grade 8 Steel

Ultra Coated

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	93827A211	$6.42
1/4"-28	100	93827A216	6.78
5/16"-18	100	93827A219	9.28
5/16"-24	100	93827A222	9.54
3/8"-16	100	93827A225	12.49
3/8"-24	100	93827A228	13.20
7/16"-14	50	93827A236	9.40
7/16"-20	50	93827A241	9.52
1/2"-13	50	93827A245	14.60
1/2"-20	25	93827A249	8.11
9/16"-12	25	93827A250	12.49
9/16"-18	25	93827A251	13.50
5/8"-11	25	93827A253	14.45
5/8"-18	25	93827A255	14.53
3/4"-10	10	93827A259	9.43
3/4"-16	10	93827A267	9.56
7/8"-9	10	93827A271	12.35
7/8"-14	10	93827A273	12.55
1"-8	5	93827A277	8.69
1"-14	5	93827A279	9.40
1 1/8"-7	1	93827A282	3.36
1 1/8"-12	1	93827A284	3.55
1 1/4"-7	1	93827A287	4.16
1 1/4"-12	1	93827A289	4.29
1 3/8"-6	1	93827A292	7.99
1 3/8"-12	1	93827A295	8.22
1 1/2"-6	1	93827A297	7.81
1 1/2"-12	1	93827A299	8.39

Zinc Yellow-Chromate Plated

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	94895A029	3.31
1/4"-28	100	94895A805	4.61
5/16"-18	100	94895A030	5.04
5/16"-24	100	94895A810	5.42
3/8"-16	100	94895A031	7.65
3/8"-24	100	94895A815	7.43
7/16"-14	100	94895A817	14.32
7/16"-20	100	94895A820	12.82
1/2"-13	100	94895A823	14.90
1/2"-20	50	94895A825	8.41
9/16"-12	25	94895A827	7.76
9/16"-18	25	94895A830	8.15
5/8"-11	25	94895A035	8.39
5/8"-18	25	94895A835	7.28
3/4"-10	20	94895A036	10.75
3/4"-16	25	94895A840	14.64
7/8"-9	10	94895A842	7.99
7/8"-14	10	94895A845	7.97
1"-8	10	94895A038	12.88

Zinc Yellow-Chromate Plated (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
1"-12	1	94895A850	$3.26
1"-14	10	94895A855	12.60
1 1/8"-7	5	94895A857	12.02
1 1/8"-12	5	94895A858	12.36
1 1/4"-7	5	94895A859	12.25
1 1/4"-12	1	94895A860	5.26
1 3/8"-6	1	94895A042	4.82
1 3/8"-12	1	94895A863	6.90
1 1/2"-6	1	94895A041	5.82
1 1/2"-12	1	94895A865	7.46
1 3/4"-5	1	94895A044	15.91
1 3/4"-12	1	94895A868	15.75
2"-4 1/2	1	94895A045	16.50
2"-12	1	94895A870	16.74

Plain

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	90499A029	2.97
1/4"-28	100	90499A805	3.21
5/16"-18	100	90499A030	4.28
5/16"-24	100	90499A810	4.93
3/8"-16	100	90499A031	6.51
3/8"-24	100	90499A815	6.93
7/16"-14	100	90499A032	12.12
7/16"-20	100	90499A820	10.72
1/2"-13	50	90499A033	7.83
1/2"-20	50	90499A825	9.34
9/16"-12	50	90499A827	12.42
9/16"-18	50	90499A830	10.87
5/8"-11	50	90499A832	12.04
5/8"-18	25	90499A835	8.03
3/4"-10	25	90499A837	12.12
3/4"-16	25	90499A840	14.25
7/8"-9	10	90499A842	7.96
7/8"-14	20	90499A845	14.14
1"-8	10	90499A847	12.70
1"-12	1	90499A850	3.08
1"-14	10	90499A855	12.72
1 1/8"-7	5	90499A857	7.23
1 1/8"-12	5	90499A858	9.25
1 1/4"-7	5	90499A859	11.16
1 1/4"-12	5	90499A860	11.11
1 3/8"-6	1	90499A042	3.41
1 3/8"-12	1	90499A863	3.42
1 1/2"-6	1	90499A041	4.55
1 1/2"-12	1	90499A865	4.57
1 3/4"-5	1	90499A044	9.85
1 3/4"-12	1	90499A868	9.75
2"-4 1/2	1	90499A045	13.46
2"-12	1	90499A870	13.66

Grade 5 Steel

Zinc Plated

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	95462A029	3.29
1/4"-28	100	95462A505	2.94
5/16"-18	100	95462A030	5.40
5/16"-24	100	95462A510	4.08
3/8"-16	100	95462A031	6.32
3/8"-24	100	95462A515	6.06

Zinc Plated (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
7/16"-14	100	95462A032	10.96
7/16"-20	100	95462A520	10.29
1/2"-13	100	95462A033	13.77
1/2"-20	100	95462A525	14.76
9/16"-12	50	95462A528	10.77
9/16"-18	25	95462A530	8.08

Grade 5 Steel (Cont.)

Zinc Plated (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
5/8"-11	50	95462A533	$11.52
5/8"-18	50	95462A535	13.36
3/4"-10	25	95462A538	10.29
3/4"-16	25	95462A540	9.51
7/8"-9	10	95462A542	6.13
7/8"-14	10	95462A545	7.32
1"-8	10	95462A548	13.17
1"-12	1	95462A550	3.68
1"-14	10	95462A555	9.94
1 1/8"-7	10	95462A557	13.53
1 1/8"-12	10	95462A558	13.44
1 1/4"-7	5	95462A559	10.61
1 1/4"-12	5	95462A560	11.02
1 3/8"-6	1	95462A562	3.60
1 3/8"-12	1	95462A563	3.60
1 1/2"-6	1	95462A564	5.33
1 1/2"-12	1	95462A565	5.03

Black Luster

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	10	98797A029	5.73
5/16"-18	10	98797A030	6.81
3/8"-16	5	98797A031	4.94
1/2"-13	5	98797A523	5.70

Black Oxide

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	95479A111	8.78
1/4"-28	50	95479A113	8.35
5/16"-18	50	95479A115	9.43
5/16"-24	50	95479A117	6.56
3/8"-16	50	95479A118	9.92
3/8"-24	25	95479A119	8.45
7/16"-14	25	95479A211	13.16
7/16"-20	25	95479A215	13.43
1/2"-13	25	95479A121	11.00
1/2"-20	10	95479A122	5.90
9/16"-12	10	95479A123	7.40
5/8"-11	10	95479A125	7.14
5/8"-18	10	95479A127	8.31
3/4"-10	10	95479A128	10.47
3/4"-16	10	95479A129	12.08
7/8"-9	10	95479A131	14.50

Black Oxide (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
7/8"-14	5	95479A132	$8.26
1"-8	5	95479A135	12.37
1 1/8"-7	1	95479A140	3.10
1 1/4"-7	1	95479A145	4.06

Plain

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	95505A601	2.53
1/4"-28	100	95505A611	3.22
5/16"-18	100	95505A602	3.71
5/16"-24	100	95505A612	3.85
3/8"-16	100	95505A603	4.90
3/8"-24	100	95505A613	5.23
7/16"-14	100	95505A604	8.39
7/16"-20	100	95505A614	8.83
1/2"-13	100	95505A605	13.72
1/2"-20	100	95505A615	14.19
9/16"-12	25	95505A606	6.10
9/16"-18	25	95505A616	5.92
5/8"-11	25	95505A607	5.78
5/8"-18	25	95505A617	6.26
3/4"-10	25	95505A608	7.22
3/4"-16	25	95505A618	9.31
7/8"-9	10	95505A609	8.05
7/8"-14	10	95505A619	5.79
1"-8	5	95505A610	4.62
1"-12	1	95505A620	3.14
1"-14	5	95505A621	5.40
1 1/8"-7	5	95505A622	8.18
1 1/8"-12	5	95505A626	8.84
1 1/4"-7	5	95505A623	7.93
1 1/4"-12	5	95505A627	12.62
1 3/8"-6	1	95505A624	4.75
1 3/8"-12	1	95505A628	3.04
1 1/2"-6	1	95505A625	3.63
1 1/2"-12	1	95505A629	3.48
1 3/4"-5	1	95505A642	7.24
1 3/4"-12	1	95505A630	12.52
2"-4 1/2	1	95505A661	8.61
2"-12	1	95505A631	9.29

Grade 2 Steel

Zinc Plated

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	90473A029	2.68
1/4"-28	100	90473A205	2.60
5/16"-18	100	90473A030	3.42
5/16"-24	100	90473A210	3.15
3/8"-16	100	90473A031	5.58
3/8"-24	100	90473A215	4.83
7/16"-14	100	90473A217	8.33
7/16"-20	100	90473A220	9.61
1/2"-13	100	90473A223	12.15
1/2"-20	100	90473A225	14.90
9/16"-12	50	90473A227	11.73
9/16"-18	50	90473A230	11.91
5/8"-11	50	90473A233	12.86
5/8"-18	50	90473A235	14.95
3/4"-10	25	90473A237	11.39

Zinc Plated (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
3/4"-16	25	90473A240	12.92
7/8"-9	10	90473A242	7.00
7/8"-14	10	90473A245	10.40
1"-8	10	90473A038	12.88
1"-12	5	90473A250	10.27
1"-14	10	90473A255	7.87
1 1/8"-7	10	90473A039	11.09
1 1/8"-12	5	90473A258	6.08
1 1/4"-7	10	90473A040	14.95
1 1/4"-12	5	90473A260	7.16
1 3/8"-6	5	90473A042	13.09
1 3/8"-12	5	90473A263	12.75
1 1/2"-6	1	90473A041	5.25
1 1/2"-12	1	90473A265	2.25

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Hex Nuts *(Continued from previous page)*

Grade 2 Steel (Cont.)

Hot-Dipped Galvanized

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	90371A029	$4.18
5/16"-18	100	90371A019	5.19
3/8"-16	100	90371A031	7.36
7/16"-14	100	90371A032	14.86
1/2"-13	50	90371A045	9.56
9/16"-12	25	90371A049	9.37
5/8"-11	25	90371A050	8.49
3/4"-10	25	90371A055	14.08
7/8"-9	10	90371A060	9.71
1"-8	10	90371A065	14.41
1 1/8"-7	1	90371A067	1.97
1 1/4"-7	1	90371A070	2.96
1 1/2"-6	1	90371A073	4.29

Plain

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	90490A029	1.82
1/4"-28	100	90490A205	2.00
5/16"-18	100	90490A030	2.99
5/16"-24	100	90490A210	2.76
3/8"-16	100	90490A031	4.58
3/8"-24	100	90490A215	3.77
7/16"-14	100	90490A032	7.55
7/16"-20	100	90490A220	7.24
1/2"-13	100	90490A033	7.21
1/2"-20	100	90490A225	9.06
9/16"-12	50	90490A034	8.82
9/16"-18	50	90490A230	9.85
5/8"-11	50	90490A035	9.55
5/8"-18	50	90490A235	9.95
3/4"-10	50	90490A436	12.18
3/4"-16	50	90490A240	14.95

Plain (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
7/8"-9	25	90490A037	$11.23
7/8"-14	25	90490A245	14.11
1"-8	20	90490A438	14.57
1"-12	10	90490A250	9.81
1"-14	20	90490A255	14.90
1 1/8"-7	10	90490A439	12.08
1 1/8"-12	10	90490A258	9.81
1 1/4"-7	10	90490A440	14.95
1 1/4"-12	5	90490A260	10.31
1 3/8"-6	5	90490A442	14.88
1 3/8"-12	5	90490A263	11.68
1 1/2"-6	5	90490A441	14.95
1 1/2"-12	5	90490A265	14.98
1 5/8"-5 1/2	1	90490A061	5.58
1 5/8"-12	1	90490A266	7.78
1 3/4"-5	1	90490A044	6.38
1 3/4"-12	1	90490A268	5.01
1 7/8"-5	1	90490A065	10.40
1 7/8"-12	1	90490A269	11.24
2"-4 1/2	1	90490A046	5.45
2"-12	1	90490A270	9.12
2 1/4"-4 1/2	1	90490A048	11.53
2 1/4"-12	1	90490A273	11.90
2 1/2"-4	1	90490A051	12.67
2 1/2"-12	1	90490A275	19.40
2 3/4"-4	1	90490A053	23.88
3"-4	1	90490A055	23.90
3"-12	1	90490A280	31.01
3 1/2"-4	1	90490A310	125.00

Type 316 Stainless Steel

Plain

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	94804A029	10.10
1/4"-28	50	94804A305	6.85
5/16"-18	50	94804A030	6.71
5/16"-24	50	94804A315	9.69
3/8"-16	50	94804A320	11.16
3/8"-24	25	94804A325	6.98
7/16"-14	25	94804A330	12.10
7/16"-20	10	94804A335	5.22
1/2"-13	10	94804A340	5.47
1/2"-20	10	94804A345	6.95
9/16"-12	5	94804A348	6.93
9/16"-18	5	94804A349	8.80
5/8"-11	10	94804A351	10.00
5/8"-18	5	94804A355	6.91
3/4"-10	5	94804A360	7.30
3/4"-16	5	94804A365	11.72
7/8"-9	1	94804A370	2.53
7/8"-14	1	94804A375	3.43
1"-8	1	94804A038	3.92
1"-12	1	94804A152	5.62
1"-14	1	94804A156	5.09
1 1/8"-7	1	94804A039	7.93
1 1/4"-7	1	94804A040	10.28

Plain (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
1 3/8"-6	1	94804A169	14.71
1 1/2"-6	1	94804A041	14.48
1 3/4"-5	1	94804A055	28.14
2"-4 1/2	1	94804A065	44.73

Plain ASTM F594

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	94819A043	7.64
5/16"-18	25	94819A046	6.83
3/8"-16	25	94819A049	11.30
7/16"-14	10	94819A052	9.52
1/2"-13	5	94819A055	3.88
5/8"-11	5	94819A058	6.84
3/4"-10	1	94819A061	2.14
7/8"-9	1	94819A064	4.57
1"-8	1	94819A067	5.68

Plain ASTM A194 Grade 8M Strain Hardened

Thread Size	Pkg. Qty.		Per Pkg.
5/16"-18	5	95005A125●	9.52
3/8"-16	1	95005A130●	2.97
1/2"-13	1	95005A135●	3.41
5/8"-11	1	95005A140●	4.73
3/4"-10	1	95005A145●	8.75
1"-8	1	95005A150●	19.95

18-8 Stainless Steel

Plain

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	91845A029	5.05
1/4"-28	100	91845A105	5.72
1/4"-32	1	95621A100♣	4.06
5/16"-18	100	91845A030	7.15
5/16"-24	100	91845A115	8.27
5/16"-32	1	95621A200♣	4.31
3/8"-16	100	91845A031	10.32
3/8"-24	50	91845A125	6.05
3/8"-32	1	95621A300♣	4.58
7/16"-14	50	91845A300	10.91
7/16"-20	50	91845A135	11.75
7/16"-28	1	95621A400♣	6.06
1/2"-13	25	91845A310	6.18
1/2"-20	25	91845A145	7.57
1/2"-28	1	95621A500♣	10.97
9/16"-12	10	91845A315	6.94
9/16"-18	10	91845A320	7.25
5/8"-11	10	91845A325	5.21
5/8"-18	10	91845A165	6.60
5/8"-24	1	95621A600♣	12.42
11/16"-24	1	95621A700♣	16.33

Plain (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
3/4"-10	10	91845A330	8.18
3/4"-16	5	91845A175	5.88
3/4"-20	1	95621A800♣	17.92
7/8"-9	5	91845A335	7.51
7/8"-14	5	91845A185	9.01
7/8"-20	1	95621A900♣	20.83
1"-8	5	91845A038	11.12
1"-12	1	91845A203	3.45
1"-14	1	91845A205	2.60
1 1/8"-7	1	91845A039	4.17
1 1/8"-12	1	91845A215	6.64
1 1/4"-7	1	91845A040	5.88
1 1/4"-12	1	91845A235	9.60
1 3/8"-6	1	91845A042	8.62
1 1/2"-6	1	91845A041	11.45
1 1/2"-12	1	91845A265	14.36
1 3/4"-5	1	91845A044	18.63
2"-4 1/2	1	91845A045	26.44

18-8 Stainless Steel (Cont.)

Plain ASTM F594

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	92673A113	$3.95
1/4"-28	50	92673A116	5.77
5/16"-18	50	92673A119	6.09
5/16"-24	50	92673A122	7.86
3/8"-16	25	92673A125	3.87
3/8"-24	25	92673A128	5.28
7/16"-14	10	92673A131	4.19
7/16"-20	10	92673A134	4.74
1/2"-13	10	92673A137	5.47
1/2"-20	10	92673A141	6.67
5/8"-11	5	92673A144	4.53
3/4"-10	5	92673A147	6.19
7/8"-9	1	92673A150	2.10
1"-8	1	92673A153	3.07

Black Oxide

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	97149A100	$7.07
1/4"-28	50	97149A120	7.09
5/16"-18	25	97149A150	5.77
5/16"-24	25	97149A170	5.69
3/8"-16	25	97149A200	7.11
3/8"-24	25	97149A210	7.07
7/16"-14	10	97149A230	5.86
7/16"-20	10	97149A240	5.90
1/2"-13	10	97149A250	6.38
1/2"-20	10	97149A270	6.28
5/8"-11	5	97149A300	7.85
5/8"-18	5	97149A310	7.76
3/4"-10	1	97149A350	2.52
3/4"-16	1	97149A370	2.48

Type 410 Stainless Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	5	99129A029	6.31
5/16"-18	5	99129A051	3.40
3/8"-16	5	99129A310	8.09
1/2"-13	5	99129A325	11.18

17-4 PH Stainless Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	1	93061A113	5.98
5/16"-18	1	93061A117	6.75
3/8"-16	1	93061A122	7.55
1/2"-13	1	93061A127	10.35

Alloy 20 Stainless Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	1	90775A029	1.44
5/16"-18	1	90775A030	3.52
3/8"-16	1	90775A031	4.49
1/2"-13	1	90775A033	21.99
5/8"-11	1	90775A035	30.70
3/4"-10	1	90775A037	33.58
1"-8	1	90775A038	57.44

A286 Super Alloy

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	1	93043A327	8.11
5/16"-18	1	93043A332	9.50
3/8"-16	1	93043A339	11.98
1/2"-13	1	93043A346	15.73

Brass

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	92676A029	8.45
1/4"-28	50	92676A429	11.67
5/16"-18	50	92676A030	12.18
5/16"-24	25	92676A430	8.50
3/8"-16	25	92676A450	10.42
3/8"-24	10	92676A455	5.41
7/16"-14	10	92676A460	7.71
7/16"-20	10	92676A465	8.94
1/2"-13	10	92676A470	8.42
1/2"-20	5	92676A475	5.66
9/16"-12	5	92676A480	11.12
5/8"-11	5	92676A485	8.50
5/8"-18	1	92676A490	2.44
3/4"-10	5	92676A495	13.05
3/4"-16	1	92676A510●	4.28
7/8"-9	1	92676A515	4.05
7/8"-14	1	92676A437●	9.08
1"-8	1	92676A038	5.70
1 1/8"-7	1	92676A039●	14.95
1 1/4"-7	1	92676A040●	16.67
1 1/2"-6	1	92676A041●	37.71

Silicon Bronze

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	93439A610	11.87
1/4"-28	25	93439A615	10.40
5/16"-18	25	93439A620	9.41
5/16"-24	10	93439A625	6.17
3/8"-16	25	93439A630	12.49
3/8"-24	10	93439A635	8.64
7/16"-14	10	93439A640	12.92
7/16"-20	5	93439A646	7.40
1/2"-13	10	93439A650	11.32
1/2"-20	5	93439A656	8.81
5/8"-11	5	93439A665	12.48
3/4"-10	1	93439A036	4.88
7/8"-9	1	93439A037	14.76
1"-8	1	93439A038	20.31
1 1/4"-7	1	93439A040	53.45
1 1/2"-6	1	93439A041	113.21

Hastelloy C276

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	1	95012A229	10.95
5/16"-18	1	95012A236	19.02
3/8"-16	1	95012A241	18.48
1/2"-13	1	95012A248	26.65
5/8"-11	1	95012A256	43.12
3/4"-10	1	95012A264	74.30
1"-8	1	95012A269	139.00

Nickel-Copper Alloy 400

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	10	90810A029	8.36
5/16"-18	5	90810A030	6.82
3/8"-16	1	90810A031	2.36
1/2"-13	1	90810A033	4.73
5/8"-11	1	90810A035	6.73
3/4"-10	1	90810A036●	20.82

Titanium

Thread Size	Pkg. Qty.		Per Pkg.
2-56	1	90545A003♣	7.78
4-40	1	90545A005★	4.90
6-32	1	90545A007★	3.63
8-32	1	90545A009★	3.83
10-24	1	90545A011★	2.74
10-32	1	90545A111★	2.63
1/4"-20	1	90545A029	2.57
5/16"-18	1	90545A030	3.57
3/8"-16	1	90545A031	5.28
1/2"-13	1	90545A034	7.47
5/8"-11	1	90545A037	14.67
3/4"-10	1	90545A041	23.37

Aluminum

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	90670A029	5.63
5/16"-18	100	90670A030	8.68
3/8"-16	100	90670A031	13.05
1/2"-13	25	90670A033	8.79
5/8"-11	10	90670A135	7.92
3/4"-10	5	90670A140	7.08

● Not rated for hardness. ♣ Does not meet ANSI/ASME B18.2.2. ★ Dimensions meet ANSI/ASME B18.6.3.

Hex Nut Assortments

Our handy 90-piece assortments contain the most common nut sizes. All nuts have a Class 2B thread fit and dimensions that meet ANSI/ASME B18.2.2. They come furnished in an 8¼″ Lg. × 4½″ Wd. × 1⅜″ Dp. compartmented plastic case with lid chart.

Thread Size	No. of Pcs.	Thread Size	No. of Pcs.	Thread Size	No. of Pcs.
¼″-20	30	⅜″-16	15	⅝″-11	5
5/16″-18	25	½″-13	10	¾″-10	5

Zinc Yellow-Chromate Plated Grade 8 Steel	93608A600	Each	$21.31
Zinc-Plated Grade 5 Steel	93608A400	Each	$18.07
18-8 Stainless Steel	93608A200	Each	$43.71

Extreme-Strength Hex Nuts—Grade 9

Heavy Nut

20% stronger than Grade 8 nuts, Grade 9 nuts handle high-strength applications. Also known as L9 nuts, they're made from Grade 9 alloy steel. All have a cadmium yellow-chromate plating and a Class 2B thread fit.

Choose from standard ***heavy nuts*** and ***oval locknuts***, which resist vibration thanks to an oval-shaped threaded area that locks them in place.

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Heavy Nuts					
¼″-20	7/16″	17/64″	50	95036A012	$9.76
5/16″-18	½″	5/16″	25	95036A016	7.90
⅜″-16	9/16″	⅜″	25	95036A020	12.45
7/16″-14	11/16″	7/16″	10	95036A022	7.95
½″-13	¾″	½″	10	95036A024	10.34
⅝″-11	15/16″	21/32″	5	95036A029	11.21
¾″-10	1⅛″	49/64″	1	95036A033	3.82
Oval Locknuts					
¼″-20	7/16″	19/64″	25	93591A100	9.07
5/16″-18	½″	21/64″	25	93591A200	12.33
⅜″-16	9/16″	25/64″	10	93591A300	7.01
7/16″-14	11/16″	7/16″	10	93591A400	10.69
½″-13	¾″	33/64″	5	93591A500	6.99
⅝″-11	15/16″	21/32″	1	93591A600	3.94
¾″-10	1⅛″	49/64″	1	93591A700	6.95

Military Specification Hex Nuts

Made to strict military specifications, all of these nuts have a Class 2B thread fit and meet FF-N-836. Additionally, ***300 series stainless steel*** nuts are passivated (treated with nitric acid to protect against oxidation and corrosion) to meet QQ-P-35, may be mildly magnetic, and are not rated for hardness.

Thread Size	Wd.	Ht.	Mil. Spec. Dash No.	Pkg. Qty.		Per Pkg.
300 Series Stainless Steel						
¼″-20	7/16″	7/32″	MS51971-1	10	90762A112	$6.20
¼″-28	7/16″	7/32″	MS51972-1	10	90762A115	6.64
5/16″-18	½″	17/64″	MS51971-2	10	90762A118	8.52
5/16″-24	½″	17/64″	MS51972-2	5	90762A123	5.65
⅜″-16	9/16″	21/64″	MS51971-3	5	90762A127	6.34
⅜″-24	9/16″	21/64″	MS51972-3	5	90762A132	6.85
½″-13	¾″	7/16″	MS51971-5	1	90762A136	3.11
½″-20	¾″	7/16″	MS51972-5	1	90762A139	2.96
⅝″-11	15/16″	35/64″	MS51971-7	1	90762A144	5.89
¾″-10	1⅛″	41/64″	MS51971-8	1	90762A147	10.39
Cadmium Yellow-Chromate Plated Grade 8 Steel						
¼″-20	7/16″	7/32″	MS51967-3	25	94191A100	7.59
¼″-28	7/16″	7/32″	MS51968-3	25	94191A150	7.59
5/16″-18	½″	17/64″	MS51967-6	25	94191A200	9.61
5/16″-24	½″	17/64″	MS51968-6	25	94191A250	9.61
⅜″-16	9/16″	21/64″	MS51967-9	10	94191A300	5.31
⅜″-24	9/16″	21/64″	MS51968-9	10	94191A350	5.31
½″-13	¾″	7/16″	MS51967-15	5	94191A500	4.73
½″-20	¾″	7/16″	MS51968-15	5	94191A550	4.73
¾″-10	1⅛″	41/64″	MS51967-24	1	94191A650	3.25
Cadmium Yellow-Chromate Plated Grade 5 Steel						
¼″-20	7/16″	7/32″	MS51967-2	25	94575A110	7.15
¼″-28	7/16″	7/32″	MS51968-2	25	94575A120	7.15
5/16″-18	½″	17/64″	MS51967-5	25	94575A230	8.98
5/16″-24	½″	17/64″	MS51968-5	25	94575A240	8.98
⅜″-16	9/16″	21/64″	MS51967-8	10	94575A350	5.33
⅜″-24	9/16″	21/64″	MS51968-8	10	94575A360	5.33
½″-13	¾″	7/16″	MS51967-14	10	94575A470	8.40
½″-20	¾″	7/16″	MS51968-14	10	94575A480	8.40
⅝″-11	15/16″	35/64″	MS51967-20	5	94575A510	7.17
¾″-10	1⅛″	41/64″	MS51967-23	1	94575A630	2.95

Plastic Hex Nuts

Black Nylon 6/6

Lightweight alternatives to metal hex nuts, our plastic nuts have a Class 2B thread fit and are not rated for hardness.

Nylon 6/6—Nylon is not only the most popular choice for plastic fasteners, it's economical as well. Nonconductive and resistant to most solvents and oils, it has a temperature range of –40° to +185° F. *Note:* Nylon absorbs moisture which can affect dimensions and other properties. **To Order:** Please specify black or off-white.

Also Available: Glass-filled nylon nuts in sizes marked with a ★. Stronger than nylon 6/6 nuts, they have a temperature range of –40° to +230° F. Please ask for 90387A300 and specify thread size.

Acetal—More resistant than nylon to wear, gasoline, solvents, and other neutral chemicals, acetal resists moisture absorption, so it's also less susceptible to dimensional changes. Temperature range is –40° to +210° F. Color is off-white.

Fiberglass—Made from polyurethane reinforced with glass fibers, this material is stronger than nylon and resists many acids, solvents, salt water, and oils. Maximum temperature is +150° F. Color is gray.

PVC—Resistant to acids, alkalies, salt solutions, and alcohols. Maximum temperature is +120° F. Color is gray.

PTFE—Made from the lowest friction plastic we offer, PTFE nuts resist seizing and are the easiest to thread. Impervious to moisture and chemicals, they withstand temperatures up to +500° F. Color is white.

PEEK—An excellent electrical insulator, PEEK is perfect for electrical applications. It's stable in hostile environments and withstands water and steam without loss of physical properties. Maximum temperature is +599° F. Color is brown.

Also Available: Polypropylene nuts in sizes marked with a ●. They're chemical resistant and have a temperature range of –20° to +212° F. Please ask for 96169A400 and specify thread size.

Polycarbonate—This tough material is extremely impact resistant and does not absorb moisture. Not rated for temperature. Color is clear.

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Nylon 6/6					
2-56	3/16″	1/16″	100	94812A100	$5.47
4-40	¼″	7/64″	100	94812A200	5.47
6-32	5/16″	⅛″	100	94812A300★	5.57
8-32	11/32″	9/64″	100	94812A400★	5.67
10-24	⅜″	9/64″	100	94812A500	5.78
10-32	⅜″	9/64″	100	94812A600★	5.78
¼″-20	7/16″	15/64″	100	94812A700★	6.09
¼″-28	7/16″	15/64″	100	94812A800	6.09
5/16″-18	½″	9/32″	100	94812A910	11.04
⅜″-16	9/16″	11/32″	50	94812A920	7.98
½″-13	¾″	7/16″	50	94812A930	11.04
⅝″-11	15/16″	9/16″	25	94812A940	9.81
¾″-10	1 7/64″	41/64″	20	94812A950	12.91
⅞″-9	1 9/32″	¾″	10	94812A960	8.70
1″-8	1 31/64″	⅞″	10	94812A970	8.81
Acetal					
10-32	⅜″	⅛″	100	99223A022	14.91
¼″-20	7/16″	7/32″	50	99223A029	8.52
5/16″-18	½″	17/64″	25	99223A038	8.40
⅜″-16	9/16″	21/64″	25	99223A055	11.23
½″-13	¾″	7/16″	10	99223A067	6.96

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Fiberglass					
¼″-20	7/16″	7/32″	10	91395A029	$12.67
5/16″-18	½″	17/64″	10	91395A030	13.40
⅜″-16	9/16″	21/64″	10	91395A031	14.16
½″-13	¾″	7/16″	10	91395A033	14.90
⅝″-11	15/16″	35/64″	5	91395A035	9.20
¾″-10	1⅛″	41/64″	5	91395A036	10.54
1″-8	1½″	55/64″	1	91395A038	2.49
PVC					
¼″-20	7/16″	7/32″	10	94806A029	5.88
5/16″-18	½″	17/64″	10	94806A030	6.88
⅜″-16	9/16″	21/64″	10	94806A031	7.41
½″-13	¾″	7/16″	5	94806A034	10.60
⅝″-11	⅞″	35/64″	5	94806A044	12.40
¾″-10	1″	41/64″	1	94806A052	4.98
PTFE					
4-40	¼″	3/32″	1	90059A005	2.92
6-32	5/16″	⅛″	1	90059A007●	3.12
8-32	5/16″	⅛″	1	90059A009●	3.44
10-24	⅜″	⅛″	1	90059A011	3.52
10-32	⅜″	⅛″	1	90059A111●	3.52
¼″-20	7/16″	7/32″	1	90059A029●	3.52

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
PTFE (Cont.)					
5/16″-18	½″	17/64″	1	90059A030	$3.80
⅜″-16	9/16″	21/64″	1	90059A031	4.12
½″-13	¾″	7/16″	1	90059A033	5.72
⅝″-11	⅞″	35/64″	1	90059A035	9.44
¾″-10	1⅛″	41/64″	1	90059A036	13.72
PEEK					
6-32	5/16″	⅛″	1	98886A100	3.11
8-32	11/32″	⅛″	1	98886A200	3.17
10-32	⅜″	⅛″	1	98886A300	3.22
¼″-20	7/16″	3/16″	1	98886A400	3.34
5/16″-18	9/16″	7/32″	1	98886A500	3.46
⅜″-16	⅝″	¼″	1	98886A600	3.67
Polycarbonate					
4-40	¼″	3/32″	25	94905A005	6.41
6-32	5/16″	⅛″	25	94905A007	6.55
8-32	11/32″	⅛″	10	94905A009	4.55
10-32	⅜″	9/64″	10	94905A011	4.66
¼″-20	7/16″	¼″	10	94905A013	6.72

Left-Hand-Threaded Hex Nuts

Also known as hex finished nuts, these general purpose nuts typically come in sizes 1/4″ and larger. All have a Class 2B thread fit and dimensions that meet ANSI/ASME B18.2.2 (unless noted).

Thread Sz.	Wd.	Ht.	Thread Sz.	Wd.	Ht.	Thread Sz.	Wd.	Ht.	Thread Sz.	Wd.	Ht.
6-32	5/16″	7/64″	3/8″-16	9/16″	21/64″	9/16″-18	7/8″	31/64″	1″-4	1 1/2″	55/64″
8-32	11/32″	1/8″	3/8″-24	9/16″	21/64″	5/8″-11	15/16″	35/64″	1″-8	1 1/2″	55/64″
10-24	3/8″	1/8″	7/16″-14	11/16″	3/8″	5/8″-18	15/16″	35/64″	1″-14	1 1/2″	55/64″
10-32	3/8″	1/8″	7/16″-20	11/16″	3/8″	3/4″-10	1 1/8″	41/64″	1 1/8″-7	1 11/16″	31/32″
1/4″-20	7/16″	7/32″	1/2″-13	3/4″	7/16″	3/4″-16	1 1/8″	41/64″	1 1/4″-7	1 7/8″	1 1/16″
1/4″-28	7/16″	7/32″	1/2″-20	3/4″	7/16″	7/8″-9	1 5/16″	3/4″	1 1/4″-12	1 7/8″	1 1/16″
5/16″-18	1/2″	17/64″	9/16″-12	7/8″	31/64″	7/8″-14	1 5/16″	3/4″	1 1/2″-6	2 1/4″	19/32″
5/16″-24	1/2″	17/64″									

Thread Size	Pkg. Qty.		Per Pkg.	Thread Size	Pkg. Qty.		Per Pkg.
Zinc Yellow-Chromate Plated Grade 8 Steel							
1/4″-20	50	99891A100	$9.36	5/8″-11	5	99891A160	$6.55
1/4″-28	50	99891A105	8.38	5/8″-18	5	99891A165	7.75
5/16″-18	25	99891A110	5.88	3/4″-10	5	99891A170	9.65
5/16″-24	25	99891A115	6.05	3/4″-16	5	99891A175	11.93
3/8″-16	25	99891A120	8.20	7/8″-9	1	99891A180	4.20
3/8″-24	25	99891A125	10.87	7/8″-14	1	99891A185	3.74
7/16″-14	25	99891A130	14.08	1″-8	1	99891A190	5.10
7/16″-20	10	99891A135	6.44	1″-14	1	99891A195	5.61
1/2″-13	10	99891A140	9.00	1 1/8″-7	1	99891A200	7.33
1/2″-20	10	99891A145	6.84	1 1/4″-7	1	99891A205	8.32
9/16″-12	10	99891A150	6.53	1 1/4″-12	1	99891A210	12.64
9/16″-18	10	99891A155	9.83	1 1/2″-6	1	99891A215	12.18
Plain Grade 5 Steel							
1/4″-20	100	95140A111	7.34	5/8″-11	10	95140A155	6.39
1/4″-28	100	95140A115	9.63	5/8″-18	10	95140A159	4.34
5/16″-18	50	95140A119	5.56	3/4″-10	10	95140A163	6.87
5/16″-24	50	95140A123	5.73	3/4″-16	10	95140A165	7.60
3/8″-16	50	95140A127	8.65	7/8″-9	5	95140A167	8.39
3/8″-24	50	95140A131	8.75	7/8″-14	5	95140A169	8.36
7/16″-14	25	95140A135	6.48	1″-8	5	95140A171	13.46
7/16″-20	25	95140A139	6.29	1 1/8″-7	1	95140A175	6.72
1/2″-13	25	95140A143	9.84	1 1/4″-7	1	95140A177	6.08
1/2″-20	25	95140A147	8.76	1 1/4″-12	1	95140A179	8.30
9/16″-18	25	95140A153	11.49	1 1/2″-6	1	95140A181	16.10
Zinc-Plated Grade 2 Steel							
6-32	25	99961A210★	10.69	7/16″-20	25	93425A225	14.80
8-32	25	99961A330★	10.76	1/2″-13	25	93425A230	12.67
10-24	25	99961A450★	10.90	1/2″-20	20	93425A235	14.66
10-32	25	99961A520★	11.06	5/8″-11	10	93425A237	8.82
1/4″-20	100	93425A029	11.18	5/8″-18	10	93425A245	13.00
1/4″-28	100	93425A205	10.83	3/4″-10	10	93425A248	13.47
5/16″-18	50	93425A030	7.62	3/4″-16	5	93425A250	8.33
5/16″-24	100	93425A210	11.47	7/8″-9	1	93425A252	2.56
3/8″-16	50	93425A214	11.29	7/8″-14	1	93425A255	5.30
3/8″-24	50	93425A215	12.67				

★ Dimensions meet ANSI/ASME B18.6.3

Thread Size	Pkg. Qty.		Per Pkg.	Thread Size	Pkg. Qty.		Per Pkg.
Zinc-Plated Grade 2 Steel (Cont.)							
1″-8	5	93425A038	$15.53	1″-14	1	93425A260	$5.24
Plain Grade 2 Steel							
1/4″-20	100	90519A029	7.25	3/4″-10	5	90519A247	5.59
1/4″-28	100	90519A205	7.76	3/4″-16	10	90519A250	7.80
5/16″-18	100	90519A030	8.59	7/8″-9	10	90519A253	11.74
5/16″-24	100	90519A210	8.78	7/8″-14	5	90519A255	4.98
3/8″-16	100	90519A031	9.39	1″-8	5	90519A257	9.75
3/8″-24	50	90519A215	9.38	1″-14	5	90519A260	9.94
7/16″-14	50	90519A261	8.84	1 1/8″-7	1	90519A039	4.24
7/16″-20	25	90519A225	7.68	1 1/4″-7	1	90519A040	6.09
1/2″-20	25	90519A235	9.20	1 1/4″-12	1	90519A266	8.79
5/8″-11	10	90519A240	5.18	1 1/2″-6	1	90519A041	10.57
5/8″-18	10	90519A245	6.57				
Plain Type 316 Stainless Steel							
1/4″-20	1	95355A215	15.18	5/8″-11	1	95355A259	20.57
1/4″-28	1	95355A219	14.11	5/8″-18	1	95355A263	20.30
5/16″-18	1	95355A223	15.90	3/4″-16	1	95355A271	24.85
5/16″-24	1	95355A227	16.12	7/8″-9	1	95355A275	27.38
3/8″-16	1	95355A231	17.54	7/8″-14	1	95355A279	28.80
3/8″-24	1	95355A235	18.05	1″-8	1	95355A281	30.37
7/16″-14	1	95355A239	18.07	1″-14	1	95355A284	32.69
7/16″-20	1	95355A243	18.48	1 1/4″-7	1	95355A290	36.00
1/2″-13	1	95355A247	18.10	1 1/4″-12	1	95355A293	36.18
1/2″-20	1	95355A251	18.82	1 1/2″-6	1	95355A294	50.54
Plain 18-8 Stainless Steel							
1/4″-20	25	95195A120	9.65	3/4″-10	1	95195A220	9.05
1/4″-28	25	95195A130	11.24	3/4″-16	1	95195A230	9.53
5/16″-18	10	95195A140	6.04	7/8″-9	1	95195A240	8.03
5/16″-24	10	95195A150	6.67	7/8″-14	1	95195A245	19.10
3/8″-16	10	95195A160	10.76	1″-8	1	95195A250	7.79
3/8″-24	10	95195A170	11.65	1″-14	1	95195A260	13.50
1/2″-13	5	95195A180	9.63	1 1/8″-7	1	95195A270	30.73
1/2″-20	5	95195A190	11.78	1 1/4″-7	1	95195A280	35.87
5/8″-11	1	95195A200	5.65	1 1/4″-12	1	95195A290	37.28
5/8″-18	1	95195A210	7.10	1 1/2″-6	1	95195A300	48.30

Self-Sealing Hex Nuts

Prevent leaks at pressures up to 6000 psi. When nuts are tightened, a silicone O-ring seals along the threads and the contact surface. The O-ring withstands temperatures of −160° to +500° F.

All nuts have a Class 2B thread fit. They're also vibration resistant, reusable, and UL recognized.

Thread Size	18-8 Stainless Steel Wd.	Ht.	Each	Nickel-Plated Brass Wd.	Ht.	Each
6-32	5/16″	9/64″	91339A110 $4.15	1/2″	7/32″	90215A010 $2.81
8-32	11/32″	5/32″	91339A115 4.15	1/2″	7/32″	90215A410 2.81
10-24	3/8″	5/32″	91339A125 4.15	1/2″	7/32″	90215A011 2.81
10-32	3/8″	5/32″	91339A120 4.15	1/2″	7/32″	90215A411 2.78
1/4″-20	7/16″	7/32″	91339A130 4.68	5/8″	7/32″	90215A029 2.92
1/4″-28	7/16″	7/32″	91339A135 4.68	5/8″	7/32″	90215A429 2.92
5/16″-18	1/2″	17/64″	91339A140 4.63	5/8″	7/32″	90215A030 3.04
5/16″-24	1/2″	17/64″	91339A145 4.63	5/8″	7/32″	90215A430 3.04
3/8″-16	9/16″	21/64″	91339A150 5.06	5/8″	7/32″	90215A031 3.14
3/8″-24	9/16″	21/64″	91339A155 5.06	5/8″	7/32″	90215A431 3.14
7/16″-20	11/16″	3/8″	91339A160 4.76	3/4″	7/32″	90215A032 3.20
1/2″-13	3/4″	27/64″	91339A165 4.96	3/4″	7/32″	90215A033 2.87
1/2″-20	3/4″	27/64″	91339A170 4.96	3/4″	7/32″	90215A433 2.82
5/8″-18	15/16″	35/64″	91339A175 6.08	15/16″	3/8″	90215A034 4.63

Heavy Hex Structural Nuts for ASTM A325 Bolts

Recommended for use with ASTM A325 bolts in structural joints. All have a Class 2B thread fit and meet ASTM A563. Dimensions meet ANSI/ASME B18.2.2.

Grade DH nuts are marked with DH. With a min. Rockwell hardness of C24, they're harder than Grade C nuts. ***Grade C*** nuts are marked with three curved lines. They have a min. Rockwell hardness of B78.

Thread Sz.	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Hot-Dipped Galvanized Grade DH Steel					
1/2″-13	7/8″	31/64″	25	91694A315	$10.56
5/8″-11	1 1/16″	39/64″	10	91694A320	7.58
3/4″-10	1 1/4″	47/64″	10	91694A325	10.60
7/8″-9	1 7/16″	55/64″	10	91694A330	12.72
1″-8	1 5/8″	63/64″	5	91694A335	9.76
Plain Grade DH Steel					
1/2″-13	7/8″	31/64″	25	98427A150	12.14
5/8″-11	1 1/16″	39/64″	10	98427A200	7.76
3/4″-10	1 1/4″	47/64″	10	98427A250	13.40
7/8″-9	1 7/16″	55/64″	5	98427A300	8.03
1″-8	1 5/8″	63/64″	1	98427A350	2.78
1 1/8″-7	1 13/16″	17/64″	1	98427A400	3.98
1 1/4″-7	2″	17/32″	1	98427A450	5.20
1 1/2″-6	2 3/8″	11/2″	1	98427A600	11.84
Grade C Steel					
1/2″-13	7/8″	31/64″	25	90580A315	8.77
5/8″-11	1 1/16″	39/64″	10	90580A320	6.45
3/4″-10	1 1/4″	47/64″	10	90580A325	8.17
7/8″-9	1 7/16″	55/64″	10	90580A330	8.82
1″-8	1 5/8″	63/64″	10	90580A335	14.86
1 1/4″-7	2″	17/32″	5	90580A345	14.93

Heavy Hex Nut Dimensions

Thread Sz.	Wd.	Ht.
1/4″-20	1/2″	15/64″
1/4″-28	1/2″	15/64″
5/16″-18	9/16″	19/64″
5/16″-24	9/16″	19/64″
3/8″-16	11/16″	23/64″
3/8″-24	11/16″	23/64″
7/16″-14	3/4″	27/64″
7/16″-20	3/4″	27/64″
1/2″-13	7/8″	31/64″
1/2″-20	7/8″	31/64″
9/16″-12	15/16″	35/64″
5/8″-11	1 1/16″	39/64″
5/8″-18	1 1/16″	39/64″
3/4″-10	1 1/4″	47/64″
3/4″-16	1 1/4″	47/64″
7/8″-9	1 7/16″	55/64″
7/8″-14	1 7/16″	55/64″
1″-8	1 5/8″	63/64″
1″-12	1 5/8″	63/64″
1″-14	1 5/8″	63/64″
1 1/8″-7	1 13/16″	17/64″
1 1/8″-8	1 13/16″	17/64″
1 1/8″-12	1 13/16″	17/64″
1 1/4″-7	2″	17/32″
1 1/4″-8	2″	17/32″
1 1/4″-12	2″	17/32″
1 3/8″-6	2 3/16″	1 11/32″
1 3/8″-8	2 3/16″	1 11/32″
1 3/8″-12	2 3/16″	1 11/32″
1 1/2″-6	2 3/8″	1 15/32″
1 1/2″-8	2 3/8″	1 15/32″
1 1/2″-12	2 3/8″	1 15/32″
1 5/8″-8	2 9/16″	1 19/32″
1 3/4″-5	2 3/4″	1 23/32″
1 3/4″-8	2 3/4″	1 23/32″
1 3/4″-12	2 3/4″	1 23/32″
1 7/8″-8	2 15/16″	1 27/32″
2″-4 1/2	3 1/8″	1 31/32″
2″-8	3 1/8″	1 31/32″
2 1/4″-4 1/2	3 1/2″	2 13/64″
2 1/4″-8	3 1/2″	2 13/64″
2 1/2″-4	3 7/8″	2 29/64″

Heavy Hex Nuts

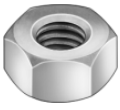

Wide and thick for better thread engagement and more bearing surface than standard hex nuts. Class 2B thread fit. Dimensions meet ANSI/ASME B18.2.2.

Also Available: Left-hand-threaded heavy hex nuts in thread sizes marked with a ★. Grade 5 steel. Please ask for 90570A700 and specify thread size.

Thread Size	Pkg. Qty.		Per Pkg.
Grade 5 Steel			
1/4″-20	100	95045A029★	$7.26
5/16″-18	100	95045A030★	8.61
3/8″-16	50	95045A031★	8.93
7/16″-14	50	95045A032	14.85
1/2″-13	25	95045A033★	8.28
9/16″-12	25	95045A034	9.80
5/8″-11	25	95045A035★	14.91
3/4″-10	25	95045A036★	14.90
7/8″-9	10	95045A037	14.84
1″-8	5	95045A038★	9.10
1 1/8″-7	1	95045A039	3.66
1 1/4″-7	1	95045A040	3.36
1 3/8″-6	1	95045A041	4.97
1 1/2″-6	1	95045A042	7.71
1 3/4″-5	1	95045A044	11.30
2″-4 1/2	1	95045A046	21.38
2 1/4″-4 1/2	1	95045A048	29.89
2 1/2″-4	1	95045A049	37.62
Zinc-Plated Grade 2 Steel			
1/4″-20	100	94811A029	3.72
5/16″-18	100	94811A030	5.41
3/8″-16	100	94811A031	7.79
7/16″-14	100	94811A230	14.83
1/2″-13	100	94811A235	14.60
9/16″-12	25	94811A240	7.50
5/8″-11	50	94811A245	14.75
3/4″-10	25	94811A250	14.85
7/8″-9	20	94811A255	14.33
1″-8	10	94811A038	15.45
1 1/8″-7	5	94811A265	9.38
1 1/8″-8	1	94811A268	21.73
1 1/4″-7	5	94811A270	14.95
1 3/8″-6	1	94811A042	2.92
1 1/2″-6	1	94811A041	4.43
1 7/8″-8	1	94811A050	22.59
2″-4 1/2	1	94811A075	13.94
Plain Grade 2 Steel			
1/4″-20	100	90498A029	2.94
5/16″-18	100	90498A030	3.51
3/8″-16	100	90498A031	7.56
7/16″-14	100	90498A032	11.30
1/2″-13	100	90498A033	13.81
9/16″-12	50	90498A345	12.42
5/8″-11	50	90498A355	14.83
3/4″-10	25	90498A365	12.48
7/8″-9	20	90498A375	12.99
1″-8	10	90498A385	13.48
1 1/8″-7	5	90498A395	8.92
1 1/4″-7	5	90498A410	12.63
1 3/8″-6	1	90498A042	2.86
1 1/2″-6	1	90498A041	4.73
1 3/4″-5	1	90498A044	7.02
2″-4 1/2	1	90498A046	10.82
Type 316 Stainless Steel			
1/4″-20	50	91850A029	10.86
Type 316 Stainless Steel (Cont.)			
1/4″-28	25	91850A128	$10.30
5/16″-18	25	91850A185	8.80
5/16″-24	10	91850A188	6.21
3/8″-16	10	91850A190	6.92
3/8″-24	5	91850A193	5.75
7/16″-14	10	91850A195	10.70
1/2″-13	5	91850A210	6.66
1/2″-20	5	91850A204	9.98
5/8″-11	5	91850A220	9.95
3/4″-10	1	91850A225	3.00
7/8″-9	1	91850A037	5.30
1″-8	1	91850A038	8.25
1 1/8″-7	1	91850A039	10.34
1 1/4″-7	1	91850A040	12.01
1 3/8″-6	1	91850A042	22.66
1 1/2″-6	1	91850A043	22.50
1 3/4″-5	1	91850A046	50.66
2″-4 1/2	1	91850A049	59.44
18-8 Stainless Steel			
1/4″-20	100	91849A029	10.72
1/4″-28	50	91849A128	7.03
5/16″-18	50	91849A030	8.54
5/16″-24	25	91849A131	4.76
3/8″-16	25	91849A625	7.83
3/8″-24	10	91849A628	4.23
7/16″-14	10	91849A630	6.32
1/2″-13	10	91849A635	7.19
1/2″-20	5	91849A636	4.62
9/16″-12	5	91849A637	6.65
5/8″-11	10	91849A640	12.90
3/4″-10	5	91849A645	10.31
7/8″-9	1	91849A650	2.74
1″-8	1	91849A038	4.26
1 1/8″-7	1	91849A039	7.93
1 1/4″-7	1	91849A040	9.71
1 3/8″-6	1	91849A042	12.36
1 1/2″-6	1	91849A043	15.77
1 3/4″-5	1	91849A044	29.39
2″-4 1/2	1	91849A048	32.78
Brass			
1/4″-20	25	92680A029	8.44
5/16″-18	25	92680A610	12.73
3/8″-16	10	92680A615	6.63
7/16″-14	10	92680A620	10.04
1/2″-13	5	92680A625	7.13
9/16″-12	1	92680A627	2.27
5/8″-11	5	92680A630	12.76
3/4″-10	1	92680A635	4.08
7/8″-9	1	92680A037	5.69
1″-8	1	92680A038	8.67
1 1/8″-7	1	92680A041	11.45
1 1/4″-7	1	92680A049	16.11
1 3/8″-6	1	92680A055	23.96
1 1/2″-6	1	92680A058	28.39
1 3/4″-5	1	92680A061	47.84

Nut Torque Tightening Guide

Use this handy guide to reference torque requirements for inch nuts in 1/4″ to 4″ sizes and metric nuts in M4 to M100 sizes. The guide has 56 pages and measures 3 1/2″ Wd. × 5 3/4″ Ht.

90662A050 ..... **Each** $7.18

Heavy Hex Nuts for High-Pressure Applications—ASTM A194

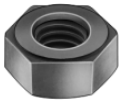

Designed to meet ASTM A194 for high-pressure service in applications such as pressure vessels, valves, flanges, and fittings. Taller and wider than standard hex nuts, they provide more thread engagement and bearing surface. All have a Class 2B thread fit. Dimensions meet ANSI/ASME B18.2.2 (unless noted).

Grade 2H nuts are marked with 2H and are not rated for hardness. ***Grade 7*** nuts are marked with 7; min. Rockwell hardness is C24. ***Grade 8*** nuts are marked with 8 or 8B; min. Rockwell hardness is B60.

Also Available: Grade 8M Type 316 stainless steel nuts in thread sizes marked with a ●. Please ask for 97619A100 and specify thread size.

Thread Size	Pkg. Qty.		Per Pkg.
Grade 2H Steel			
Seize-Resistant PTFE Coated			
1/2″-13	25	90212A300	$9.94
5/8″-11	10	90212A400	6.12
3/4″-10	10	90212A500	9.29
7/8″-9	5	90212A600	6.72
1″-8	5	90212A700	8.84
Zinc Yellow-Chromate Plated			
1/4″-20	100	96460A110	9.97
1/4″-28	50	96460A120	10.26
5/16″-18	50	96460A230	7.64
5/16″-24	25	96460A240	8.10
3/8″-16	50	96460A250	10.89
3/8″-24	25	96460A260	10.39
1/2″-13	25	96460A370	10.11
1/2″-20	10	96460A380	5.80
5/8″-11	10	96460A510	6.15
5/8″-18	10	96460A530	8.68
3/4″-10	10	96460A620	10.89
3/4″-16	10	96460A640	13.35
1″-8	5	96460A750	11.78
1″-14	1	96460A780	2.98
Black Oxide ♣			
1/4″-20	25	91026A029	8.53
5/16″-18	10	91026A030	5.13
3/8″-16	10	91026A031	5.45
1/2″-13	10	91026A033	6.86
5/8″-11	5	91026A035	4.37
3/4″-10	5	91026A036	6.74
7/8″-9	1	91026A037	2.77
1″-8	1	91026A038	2.96
Hot-Dipped Galvanized			
1/4″-20	50	95025A370	12.56
3/8″-16	50	95025A380	13.44
1/2″-13	25	95025A405	8.01
5/8″-11	10	95025A410	5.72
3/4″-10	10	95025A415	10.76
7/8″-9	5	95025A420	7.08
1″-8	5	95025A425	11.52
1 1/8″-8	1	95025A432	3.24
1 1/4″-7	1	95025A435	4.44
1 1/4″-8	1	95025A436	4.44
1 3/8″-6	1	95025A437	5.18
1 1/2″-6	1	95025A440	6.68
1 3/4″-5	1	95025A445	9.72
Plain			
1/4″-20	100	90521A106	11.24
1/4″-28	50	90521A104	8.63
5/16″-18	100	90521A107	14.75
5/16″-24	50	90521A108	11.59
3/8″-16	50	90521A225	7.43
3/8″-24	25	90521A229	8.12
7/16″-14	50	90521A109	12.97
7/16″-20	25	90521A110	9.23
1/2″-13	50	90521A235	14.06
1/2″-20	25	90521A236	9.40
5/8″-11	25	90521A240	11.75
5/8″-18	25	90521A242	11.93
Grade 2H Steel (Cont.)			
Plain (Cont.)			
3/4″-10	10	90521A245	$6.95
3/4″-16	10	90521A247	6.53
7/8″-9	10	90521A250	10.81
7/8″-14	10	90521A253	9.22
1″-8	10	90521A255	12.06
1″-12	1	90521A257	4.15
1″-14	5	90521A259	7.81
1 1/8″-7	5	90521A260	11.09
1 1/8″-8	5	90521A265	13.12
1 1/8″-12	1	90521A267	2.73
1 1/4″-7	5	90521A270	12.80
1 1/4″-8	5	90521A275	14.98
1 1/4″-12	1	90521A278	3.50
1 3/8″-6	1	90521A290	4.10
1 3/8″-8	1	90521A042	5.15
1 3/8″-12	1	90521A295	5.06
1 1/2″-6	1	90521A039	4.78
1 1/2″-8	1	90521A041	4.98
1 1/2″-12	1	90521A052	9.73
1 5/8″-8	1	90521A055	7.88
1 3/4″-5	1	90521A043	8.35
1 3/4″-8	1	90521A044	9.84
1 7/8″-8	1	90521A037	10.59
2″-4 1/2	1	90521A038	11.44
2″-8	1	90521A046	13.55
2 1/4″-8	1	90521A050	13.78
Grade 7 Alloy Steel			
3/8″-16	10	94485A029	5.82
1/2″-13	10	94485A033	6.30
5/8″-11	10	94485A035	8.24
3/4″-10	10	94485A036	9.58
7/8″-9	5	94485A037	6.06
1″-8	5	94485A038	8.12
1 1/8″-7	1	94485A041	5.30
1 1/4″-7	1	94485A044	5.72
Grade 8 18-8 Stainless Steel			
1/4″-20	25	94252A703	11.03
1/4″-28	1	94252A705	9.10
5/16″-18	10	94252A706●	6.71
5/16″-24	1	94252A707	10.08
3/8″-16	10	94252A709●	7.34
3/8″-24	1	94252A710	9.48
7/16″-14	1	94252A711●	9.80
7/16″-20	1	94252A713	10.13
1/2″-13	10	94252A712●	10.29
1/2″-20	1	94252A714	10.52
5/8″-11	5	94252A715●	9.77
5/8″-18	1	94252A716	12.10
3/4″-10	1	94252A719●	2.35
3/4″-16	1	94252A720	14.18
7/8″-9	1	94252A722●	4.17
1″-8	1	94252A725●	6.37
1″-14	1	94252A726	19.22
1 1/8″-7	1	94252A730	8.06
1 1/4″-7	1	94252A735	10.03

♣ Does not meet ANSI/ASME B18.2.2.

For information about nuts, materials, and finishes, see page 3184.

Thin Hex Nuts

Also known as jam nuts and half-height nuts; perfect in tight spaces. Often used in pairs, one is "jammed" against the other to prevent loosening. All have a Class 2B thread fit. Sizes 1½" and smaller have dimensions that meet ANSI/ASME B18.2.2 (unless noted).

Nylon 6/6 nuts have a temperature range of –40° to +185° F. **To Order:** Please specify black or off-white.

Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.
1/4"-20	7/16"	5/32"	7/16"-20	11/16"	1/4"	3/4"-10	1 1/8"	27/64"	1"-14	1 1/2"	35/64"	1 1/2"-6	2 1/4"	27/32"	2"-4 1/2	3"	1 3/32"
1/4"-28	7/16"	5/32"	1/2"-13	3/4"	5/16"	3/4"-16	1 1/8"	27/64"	1 1/8"-7	1 11/16"	39/64"	1 1/2"-12	2 1/4"	27/32"	2"-12	3"	1 3/32"
5/16"-18	1/2"	3/16"	1/2"-20	3/4"	5/16"	7/8"-9	1 5/16"	31/64"	1 1/8"-12	1 11/16"	39/64"	1 5/8"-12	2 7/16"	29/32"	2 1/4"-12	3 3/8"	1 7/32"
5/16"-24	1/2"	3/16"	9/16"-12	7/8"	5/16"	7/8"-14	1 5/16"	31/64"	1 1/4"-7	1 7/8"	23/32"	1 3/4"-5	2 5/8"	31/32"	2 1/2"-4	3 3/4"	1 11/32"
3/8"-16	9/16"	7/32"	9/16"-18	7/8"	5/16"	1"-8	1 1/2"	35/64"	1 1/4"-12	1 7/8"	23/32"	1 3/4"-12	2 5/8"	31/32"	2 1/2"-12	3 3/4"	1 11/32"
3/8"-24	9/16"	7/32"	5/8"-11	15/16"	3/8"	1"-12	1 1/2"	35/64"	1 3/8"-12	2 1/16"	25/32"	1 7/8"-12	2 13/16"	1 1/32"	3"-12	4 1/2"	1 19/32"
7/16"-14	1 1/16"	1/4"	5/8"-18	15/16"	3/8"												

Zinc Yellow-Chromate Plated Grade 8 Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	93839A029	$9.55
1/4"-28	100	93839A805	11.45
5/16"-18	100	93839A030	14.39
5/16"-24	100	93839A810	14.33
3/8"-16	50	93839A031	9.36
3/8"-24	50	93839A815	9.85
7/16"-14	25	93839A818	8.98
7/16"-20	25	93839A820	10.57
1/2"-13	25	93839A823	10.40
1/2"-20	25	93839A825	11.53
9/16"-18	20	93839A830	13.21
5/8"-11	10	93839A832	7.35
5/8"-18	10	93839A835	7.45
3/4"-10	10	93839A837	10.27
3/4"-16	10	93839A840	11.71
7/8"-9	5	93839A843	7.37
7/8"-14	5	93839A845	8.20
1"-8	5	93839A852	13.19
1"-14	5	93839A855	13.51
1 1/8"-7	1	93839A039	4.59
1 1/8"-12	1	93839A858	5.34
1 1/4"-7	1	93839A040	5.95
1 1/4"-12	1	93839A860	6.30
1 1/2"-6	1	93839A043	10.97
1 1/2"-12	1	93839A865	11.04

Zinc-Plated Grade 5 Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	94846A029	3.59
1/4"-28	100	94846A505	3.47
5/16"-18	100	94846A030	5.19
5/16"-24	100	94846A510	4.97
3/8"-16	100	94846A031	8.09
3/8"-24	100	94846A515	7.06
7/16"-14	50	94846A517	5.39
7/16"-20	50	94846A520	5.83
1/2"-13	50	94846A523	6.78
1/2"-20	50	94846A525	6.97
9/16"-12	25	94846A527	4.65
9/16"-18	25	94846A530	5.02
5/8"-11	25	94846A533	7.77
5/8"-18	25	94846A535	6.61
3/4"-10	20	94846A537	10.25
3/4"-16	20	94846A540	8.33
7/8"-9	10	94846A543	10.64
7/8"-14	10	94846A545	7.42
1"-8	5	94846A550	7.74
1"-14	5	94846A555	7.67
1 1/8"-7	1	94846A039	2.63
1 1/8"-12	1	94846A558	2.24
1 1/4"-7	1	94846A040	3.07
1 1/4"-12	1	94846A560	3.02
1 1/2"-6	1	94846A043	6.56
1 1/2"-12	1	94846A565	5.34

Zinc-Plated Grade 2 Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	91078A029	3.04
1/4"-28	100	91078A205	2.48
5/16"-18	100	91078A030	3.44
5/16"-24	100	91078A210	3.79
3/8"-16	100	91078A031	4.29
3/8"-24	100	91078A215	4.25
7/16"-14	100	91078A218	6.76
7/16"-20	100	91078A220	7.61
1/2"-13	100	91078A222	9.75
1/2"-20	100	91078A225	11.07
9/16"-18	50	91078A230	8.47

Zinc-Plated Grade 2 Steel (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
5/8"-11	50	91078A233	$8.10
5/8"-18	50	91078A235	8.91
3/4"-10	50	91078A238	13.07
3/4"-16	25	91078A240	7.47
7/8"-9	25	91078A242	11.43
7/8"-14	25	91078A245	11.58
1"-8	10	91078A251	6.63
1"-14	10	91078A255	6.74
1 1/8"-7	10	91078A039	10.40
1 1/8"-12	5	91078A258	6.79
1 1/4"-7	5	91078A040	7.98
1 1/4"-12	5	91078A260	8.22
1 1/2"-6	1	91078A043	2.29
1 1/2"-12	1	91078A265	3.03

Plain Grade 2 Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	90494A029	1.34
1/4"-28	100	90494A229	1.54
5/16"-18	100	90494A030	2.48
5/16"-24	100	90494A230	2.31
3/8"-16	100	90494A031	2.72
3/8"-24	100	90494A231	2.68
7/16"-14	100	90494A032	5.08
7/16"-20	100	90494A232	4.86
1/2"-13	100	90494A033	6.60
1/2"-20	100	90494A233	5.73
9/16"-18	100	90494A234	10.50
5/8"-11	100	90494A035	11.97
5/8"-18	100	90494A235	12.48
3/4"-10	50	90494A136	9.31
3/4"-16	50	90494A236	8.28
7/8"-9	25	90494A137	8.19
7/8"-14	25	90494A237	8.39
1"-8	20	90494A138	9.88
1"-14	20	90494A238	14.97
1 1/8"-7	10	90494A139	7.92
1 1/8"-12	10	90494A239	11.76
1 1/4"-7	10	90494A140	14.90
1 1/4"-12	10	90494A240	13.57
1 3/8"-12	5	90494A141	11.05
1 1/2"-6	5	90494A142	12.47
1 1/2"-12	5	90494A241	13.97
1 5/8"-12	1	90496A061	4.64
1 3/4"-5	1	90496A063	4.76
1 3/4"-12	1	90496A044	4.84
1 7/8"-12	1	90496A065	7.55
2"-4 1/2	1	90496A066	7.10
2"-12	1	90496A046	8.27
2 1/4"-12	1	90496A048	13.25
2 1/2"-4	1	90496A068	15.43
2 1/2"-12	1	90496A051	14.53
3"-12	1	90496A055	26.09

Black-Oxide Case-Hardened Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/2"-20	1	90475A033★♦	1.60
5/8"-18	1	90475A035★■	1.77
3/4"-16	1	90475A036★▲	2.05
1"-14	1	90475A038★♠	3.39
1 1/4"-12	1	90475A040★●	5.00

Type 316 Stainless Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	94805A029	5.38
1/4"-28	50	94805A209	7.26
5/16"-18	25	94805A110	4.29
5/16"-24	25	94805A213	5.35
3/8"-16	25	94805A115	5.38
3/8"-24	25	94805A217	8.25

Type 316 Stainless Steel (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
7/16"-20	10	94805A221	$8.41
1/2"-13	10	94805A125	5.50
1/2"-20	10	94805A224	7.77
9/16"-18	1	94805A228	2.88
5/8"-11	5	94805A130	5.76
5/8"-18	5	94805A231	8.67
3/4"-10	1	94805A135	1.45
3/4"-16	1	94805A233	2.14
7/8"-9	1	94805A037	3.06
7/8"-14	1	94805A041	8.59
1"-8	1	94805A038	6.24
1"-14	1	94805A237	6.96
1 1/4"-7	1	94805A247	11.53

Black-Oxide 18-8 Stainless Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	98514A029	6.81
5/16"-18	25	98514A035	5.73
3/8"-16	25	98514A041	6.81
1/2"-13	10	98514A520	6.03
5/8"-11	5	98514A540	6.89

Plain 18-8 Stainless Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	91847A029	4.99
1/4"-28	100	91847A429	6.12
5/16"-18	100	91847A030	7.47
5/16"-24	100	91847A430	8.54
3/8"-16	100	91847A031	9.56
3/8"-24	100	91847A431	10.96
7/16"-14	50	91847A510	11.67
7/16"-20	50	91847A515	12.73
1/2"-13	25	91847A520	5.99
1/2"-20	25	91847A525	8.20
9/16"-12	20	91847A530	13.39
9/16"-18	10	91847A434	7.47
5/8"-11	10	91847A540	6.38
5/8"-18	10	91847A545	7.14
3/4"-10	10	91847A550	9.73
3/4"-16	10	91847A555	10.56
7/8"-9	5	91847A560	9.09
7/8"-14	5	91847A565	10.75
1"-8	1	91847A570	2.62

Plain 18-8 Stainless Steel (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
1"-12	1	91847A436	$3.43
1"-14	1	91847A438	3.24
1 1/8"-7	1	91847A039	4.13
1 1/8"-12	1	91847A439	6.32
1 1/4"-7	1	91847A040	5.41
1 1/4"-12	1	91847A440	8.50
1 1/2"-6	1	91847A041	7.99
1 1/2"-12	1	91847A441	11.68
1 3/4"-5	1	91847A051	23.86
2"-4 1/2	1	91847A071	29.65

Brass

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	92174A029	9.00
1/4"-28	50	92174A661	9.74
5/16"-18	50	92174A030	13.94
5/16"-24	50	92174A662	14.56
3/8"-16	25	92174A031	9.05
3/8"-24	25	92174A663	9.67
7/16"-20	10	92174A430	6.42
1/2"-13	10	92174A435	8.20
1/2"-20	10	92174A440	8.42
9/16"-18	1	92174A039	2.16
5/8"-11	5	92174A455	8.00
5/8"-18	5	92174A460	8.35
3/4"-10	5	92174A465	10.79
3/4"-16	5	92174A470	11.71
7/8"-9	1	92174A475	3.21
7/8"-14	1	92174A668	3.77
1"-8	1	92174A038	4.11
1"-14	1	92174A675	4.50
1 1/8"-12	1	92174A680	11.59
1 1/4"-12	1	92174A685	10.07
1 1/2"-12	1	92174A690★	29.95

Nylon 6/6

Thread Size	Pkg. Qty.		Per Pkg.
5/16"-18	50	96557A109★	7.53
3/8"-16	50	96557A114★◇	10.91
1/2"-13	25	96557A129★□	7.54
5/8"-11	10	96557A139★	5.41
3/4"-10	10	96557A144★♤	8.72
1"-8	10	96557A154★♡	10.81

Left Hand Threaded

Zinc-Plated Grade 5 Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	100	99612A100	12.83
1/4"-28	100	99612A105	13.48
5/16"-18	50	99612A110	8.77
5/16"-24	50	99612A112	7.98
3/8"-16	50	99612A117	13.02
3/8"-24	50	99612A119	13.17
7/16"-20	25	99612A127	9.22
1/2"-13	25	99612A133	10.57
1/2"-20	25	99612A136	12.03
5/8"-11	10	99612A156	6.78
5/8"-18	10	99612A159	7.38
3/4"-10	10	99612A162	10.21
3/4"-16	10	99612A164	11.53
7/8"-9	5	99612A175	10.98
7/8"-14	5	99612A178	11.96
1"-8	1	99612A182	3.82
1"-14	1	99612A186	4.39
1 1/8"-12	1	99612A197	8.05
1 1/4"-7	1	99612A201	7.51
1 1/4"-12	1	99612A204	8.43
1 1/2"-6	1	99612A224	17.21
1 1/2"-12	1	99612A227	18.23

Grade 2 Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	50	90083A029	8.03

Grade 2 Steel (Cont.)

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-28	100	90083A205	4.14
5/16"-18	50	90083A030	7.47
5/16"-24	100	90083A210	12.25
3/8"-16	25	90083A031	6.06
3/8"-24	50	90083A215	11.97
1/2"-13	25	90083A222	9.55
1/2"-20	25	90083A225	9.95
5/8"-11	10	90083A230	9.46
5/8"-18	10	90083A235	11.14
3/4"-10	20	90083A240	10.85
3/4"-16	10	90083A245	11.79
1"-8	5	90083A255	10.47
1"-14	5	90083A260	13.08
1 1/4"-7	1	90083A263	5.73
1 1/4"-12	1	90083A265	7.95

18-8 Stainless Steel

Thread Size	Pkg. Qty.		Per Pkg.
1/4"-20	5	94450A218	2.94
1/4"-28	5	94450A220	3.11
5/16"-18	5	94450A238	3.92
5/16"-24	5	94450A240	4.20
3/8"-16	5	94450A257	4.97
3/8"-24	5	94450A260	5.33
1/2"-13	5	94450A270	8.69
1/2"-20	5	94450A280	9.87

★ Does not meet ANSI/ASME B18.2.2. ♦ Ht. is 3/16". ■ Wd. is 11/16"; Ht. is 1/4". ▲ Ht. is 5/16". ♠ Ht. is 3/8". ● Wd. is 1 3/4"; Ht. is 7/16". ◇ Wd. is 1/2"; Ht. is 1/8". □ Wd. is 11/16"; Ht. is 7/32". ♤ Ht. is 1/4". ♡ Ht. is 13/32".

Military Specification Stainless Steel Thin Hex Nuts

Designed to meet stringent military specifications, these nuts are also known as jam nuts and half-height nuts. Made from 300 series stainless steel, they may be mildly magnetic and are not rated for hardness. All have a Class 2B thread fit and meet MS 35691 and FF-N-836.

Thread Size	Dash No.	Wd.	Ht.	Pkg. Qty.		Per Pkg.
1/4″-20	3	7/16″	5/32″	5	92101A210	$10.22
1/4″-28	7	7/16″	5/32″	1	92101A320	3.07
5/16″-18	11	1/2″	3/16″	5	92101A430	10.00
5/16″-24	15	1/2″	3/16″	5	92101A540	10.44
3/8″-16	19	9/16″	7/32″	1	92101A650	$3.07
3/8″-24	23	9/16″	7/32″	1	92101A760	4.67
1/2″-13	35	3/4″	5/16″	1	92101A870	7.78
1/2″-20	39	3/4″	5/16″	1	92101A980	7.78

Extra-Wide Thin Hex Nuts

Also known as heavy jam nuts, these nuts provide the same width and bearing surface as the heavy hex nuts on page 3190, but are not as thick. All nuts have a Class 2B thread fit and dimensions that meet ANSI/ASME B18.2.2 (unless noted).

Grade 2H nuts are not rated for hardness. They meet ASTM A194 for high-pressure applications and are marked with 2H to indicate grade.

Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.
1/4″-20	1/2″	11/64″	1/2″-13	7/8″	19/64″	7/8″-9	1 7/16″	31/64″	1 1/4″-7	2″	23/32″	1 3/4″-5	2 3/4″	31/32″
5/16″-18	9/16″	13/64″	5/8″-11	1 1/16″	23/64″	1″-8	1 5/8″	35/64″	1 3/8″-6	2 3/16″	25/32″	2″-4 1/2	3 1/8″	1 3/32″
3/8″-16	11/16″	15/64″	3/4″-10	1 1/4″	27/64″	1 1/8″-7	1 13/16″	39/64″	1 1/2″-6	2 3/8″	27/32″	2 1/2″-4	3 7/8″	1 29/64″
7/16″-14	3/4″	17/64″												

Thread Size	Pkg. Qty.		Per Pkg.
Grade 2 Steel			
1/4″-20	100	90502A029	$4.32
5/16″-18	100	90502A030	5.29
3/8″-16	100	90502A031	7.57
7/16″-14	100	90502A032	14.62
1/2″-13	50	90502A033	9.00
5/8″-11	50	90502A410	13.79
3/4″-10	25	90502A415	11.13
7/8″-9	10	90502A420	7.34
1″-8	10	90502A425	13.53
1 1/8″-7	5	90502A430	8.24
1 1/4″-7	5	90502A435	13.85
1 1/2″-6	1	90502A440	4.32
1 3/4″-5	1	90502A044	6.67
2″-4 1/2	1	90502A046	9.48
2 1/2″-4	1	90502A049	19.98

Thread Size	Pkg. Qty.		Per Pkg.
Grade 2H Steel			
1/4″-20	1	95010A130	$3.48
3/8″-16	5	95010A140	13.92
7/16″-14	1	95010A145	3.53
1/2″-13	5	95010A150	10.57
5/8″-11	1	95010A160	3.22
3/4″-10	1	95010A165	2.88
7/8″-9	1	95010A170	2.95
1″-8	1	95010A175	5.02
1 1/8″-7	1	95010A180	5.33
1 1/4″-7	1	95010A190	5.87
1 3/8″-6	1	95010A320	5.99
1 1/2″-6	1	95010A210	7.78
1 3/4″-5	1	95010A220	18.61
2″-4 1/2	1	95010A240	31.09
Black-Oxide Case-Hardened Steel ●			
1/4″-20	25	91015A029	5.50
5/16″-18	25	91015A030	5.50

Thread Size	Pkg. Qty.		Per Pkg.
Black-Oxide Case-Hardened Steel ● (Cont.)			
3/8″-16	25	91015A031	$7.53
7/16″-14	25	91015A032	9.28
1/2″-13	10	91015A033	5.45
5/8″-11	10	91015A035	6.46
3/4″-10	5	91015A036	4.97
7/8″-9	5	91015A037	10.37
1″-8	1	91015A038	2.68
18-8 Stainless Steel			
1/4″-20	25	91851A620	6.65
5/16″-18	20	91851A030	7.48
3/8″-16	10	91851A630	6.96
1/2″-13	10	91851A640	11.88
5/8″-11	5	91851A645	9.98
3/4″-10	1	91851A650	3.68
7/8″-9	1	91851A037	4.71
1″-8	1	91851A038	8.77

Thread Size	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel (Cont.)			
1 1/8″-7	1	91851A655	$10.18
1 1/4″-7	1	91851A660	11.40
1 1/2″-6	1	91851A665	17.83
1 3/4″-5	1	91851A670	27.96
Brass			
1/4″-20	25	92683A029	7.50
5/16″-18	25	92683A840	9.25
3/8″-16	25	92683A845	13.20
7/16″-14	10	92683A847	8.37
1/2″-13	10	92683A855	11.65
5/8″-11	5	92683A860	9.65
3/4″-10	1	92683A865	2.91
7/8″-9	1	92683A869	3.19
1″-8	1	92683A872	4.74
1 1/8″-7	1	92683A879	8.36
1 1/4″-7	1	92683A882	9.96
1 1/2″-6	1	92683A885	17.08

● Does not meet ANSI/ASME B18.2.2.

Metric Hex Nut Assortments—*DIN 934*

The nuts in these assortments have a Class 6H thread fit.

215-Piece Assortment—Class 8 Steel

Furnished in an 8 1/4″ Lg. × 4 1/2″ Wd. × 1 3/8″ Dp. compartmented plastic case.

Thread Size	Pitch, mm	No. of Pcs.	Thread Size	Pitch, mm	No. of Pcs.
M4	0.7	40	M7	1	30
M5	0.8	40	M8	1.25	50
M6	1	35	M10	1.5	20

98566A131 ..... **Each** $70.21

600-Piece Assortment—18-8 Stainless Steel

Furnished in a 10 1/2″ Lg. × 6 3/16″ Wd. × 1 9/16″ Dp. compartmented plastic case with lid chart.

Thread Size	Pitch, mm	No. of Pcs.	Thread Size	Pitch, mm	No. of Pcs.	Thread Size	Pitch, mm	No. of Pcs.
M2	0.4	100	M5	0.8	100	M10	1.5	25
M3	0.5	100	M6	1	100	M12	1.75	25
M4	0.7	100	M8	1.25	50			

98185A414 ..... **Each** $71.50

720-Piece Assortment—Zinc-Plated Steel

M3, M4 and M5 nuts are made from Class 6 steel; all other sizes are made from Class 8 steel. All come furnished in a 12 3/4″ Lg. × 8 1/2″ Wd. × 2 1/8″ Dp. compartmented plastic case with lid chart. Nuts are not rated for hardness.

Thread Size	Pitch, mm	No. of Pcs.	Thread Size	Pitch, mm	No. of Pcs.	Thread Size	Pitch, mm	No. of Pcs.
M3	0.5	100	M8	1.25	50	M12	1.75	25
M4	0.7	100	M10	1	50	M16	1.5	25
M5	0.8	100	M10	1.25	50	M16	2	10
M6	1	100	M10	1.5	50	M20	2.5	10
M8	1	50						

98188A912 ..... **Each** $77.14

Metric Heavy Hex Nuts

Because they're slightly thicker than standard hex nuts, these nuts have added strength and better thread engagement. All have a Class 6H thread fit.

Zinc-plated steel nuts meet ISO 4033. Thread sizes M2-M5 are made from Class 6 steel; sizes M6-M30 are made from Class 8 steel.

Black-finish Grade 2H steel nuts meet DIN 6915 and ASTM A194 for high-pressure applications and are marked with 2H to indicate grade. They are not rated for hardness.

Thread Size	Pitch, mm	Wd., mm	Ht., mm	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel						
M2	0.4	4	2	25	90725A010	$7.82
M2.5	0.45	5	2.5	25	90725A015	7.69
M3	0.5	5.5	3	50	90725A020	3.81
M4	0.7	7	4	50	90725A025	4.05
M5	0.8	8	5	50	90725A030	7.00
M6	1	10	6	100	90725A043	5.06
M8	1.25	13	8	50	90725A715	8.50
M10	1.5	17	10	25	90725A720	7.35
M12	1.75	19	12	10	90725A725	4.13
M14	2	22	14	10	90725A730	10.12
M16	2	24	16	10	90725A735	9.84
M20	2.5	30	20	5	90725A740	10.04
M24	3	36	24	1	90725A760	3.89
M30	3.5	46	30	1	90725A770	8.45
Black-Finish Grade 2H Steel						
M12	1.75	21	12	5	98498A100	5.26
M16	2	27	17	5	98498A300	8.03
M20	2.5	33	20	5	98498A500	8.42
M24	3	41	24	1	98498A600	3.29
M30	3.5	50	30	1	98498A700	10.53
M36	4	60	36	1	98498A800	21.05

For information about nuts, materials, and finishes, see page 3184.

Metric Hex Nut (DIN 934) and Metric Left-Hand Hex Nut (DIN 934L) Dimensions

Thread Size	Pitch, mm	Wd., mm	Ht., mm
M1	0.25	2.5	0.8
M1.2	0.25	3	1
M1.4	0.3	3	1.2
M1.6	0.35	3.2	1.3
M2	0.4	4	1.6
M2.5	0.45	5	2
M2.6	0.45	5	2
M3	0.5	5.5	2.4
M3.5	0.6	6	2.8
M4	0.7	7	3.2
M5	0.8	8	4
M6	1	10	5
M7	1	11	5.5
M8	1.25	13	6.5
M10	1.5	17	8
M12	1.75	19	10
M14	2	22	11
M16	2	24	13
M18	2.5	27	15
M20	2.5	30	16
M22	2.5	32	18
M24	3	36	19
M27	3	41	22
M30	3.5	46	24
M36	4	55	29
M42	4.5	65	34
M48	5	75	38

Metric Hex Nuts—DIN 934

All of these metric hex nuts have a Class 6H thread fit and meet DIN 934, except those made from Bumax 88 stainless steel and nylon 6/6.

Zinc-plated steel and ***plain steel*** nuts in thread sizes M1.6-M5 are made from Class 6 steel; sizes M6-M36 are made from Class 8 steel. ***Bumax 88 stainless steel*** nuts have the strength of Class 8 steel combined with the corrosion resistance of Type 316 stainless steel, plus they're acid resistant, meet ISO 4032, and have a minimum Rockwell hardness of C28.

Nylon 6/6 nuts have a temperature range of –40° to +185° F. **To Order:** Please specify black or off-white.

Thrd. Size	Pkg. Qty.		Per Pkg.
Zinc Yellow-Chromate Plated Class 10 Steel			
M3	50	92497A200	$14.18
M4	100	92497A250	14.07
M5	100	92497A300	7.81
M6	100	92497A350	8.34
M8	100	92497A400	14.60
M10	50	92497A450	14.85
M12	25	92497A500	13.02
M14	10	92497A550	9.12
M16	10	92497A600	10.73
M18	5	92497A650	7.34
M20	5	92497A700	11.02
M22	5	92497A750	14.85
M24	1	92497A800	3.29
M30	1	92497A850	8.36
M36	1	92497A900	13.38
Black-Finish Class 10 Steel			
M3	25	90685A037	7.92
M4	100	90685A039	9.68
M5	100	90685A041	7.37
M6	100	90685A043	5.48
M8	100	90685A045	10.00
M10	50	90685A046	9.89
M12	50	90685A110	14.98
M14	25	90685A115	11.91
M16	25	90685A120	14.15
M18	20	90685A125	13.94
M20	10	90685A130	10.00
M24	5	90685A060	9.29
M30	1	90685A070	3.83
M36	1	90685A080	12.38
High-Visibility Blue Class 10 Steel			
M6	100	99899A211	13.25
M8	50	99899A216	9.54
M10	25	99899A222	9.54
M12	25	99899A227	12.47
M14	10	99899A231	9.64
M16	10	99899A236	9.46
M20	1	99899A243	2.52
M24	1	99899A247	2.56
M30	1	99899A251	5.67
M36	1	99899A255	12.38
Zinc-Plated Steel			
M1.6	50	90591A109	$8.51
M2	100	90591A111	1.39
M2.5	100	90591A113	1.39
M2.6	100	90591A114	1.39
M3	100	90591A121	1.39
M3.5	100	90591A131	1.73
M4	100	90591A141	1.39
M5	100	90591A146	2.08
M6	100	90591A151	2.30
M7	100	90591A154	3.16
M8	100	90591A161	5.07
M10	100	90591A171	8.79
M12	50	90591A181	8.60
M14	50	90591A215	13.54
M16	50	90591A220	12.51
M18	25	90591A225	13.90
M20	10	90591A230	6.58
M24	10	90591A235	9.26
M30	1	90591A240	3.58
M36	1	90591A245	6.61
Plain Steel			
M2	100	90592A004	1.04
M2.5	100	90592A006	1.04
M2.6	100	90592A008	1.04
M3	100	90592A009	1.04
M3.5	100	90592A010	1.73
M4	100	90592A011	1.39
M5	100	90592A012	1.73
M6	100	90592A016	2.29
M7	100	90592A018	3.16
M8	100	90592A022	4.51
M10	100	90592A024	8.52
M12	100	90592A028	13.15
M14	25	90592A032	6.51
M16	25	90592A034	6.91
M18	25	90592A045	11.81
M20	25	90592A050	11.91
M24	10	90592A055	9.69
M30	5	90592A065	12.99
M36	1	90592A070	5.95
Type 316 Stainless Steel			
M2	50	94150A305	2.66
M2.5	50	94150A310	3.69
Type 316 Stainless Steel (Cont.)			
M3	50	94150A325	$3.08
M3.5	50	94150A330	7.61
M4	50	94150A335	3.42
M5	50	94150A340	4.12
M6	50	94150A345	9.58
M8	50	94150A355	13.38
M10	10	94150A358	12.66
M12	5	94150A360	6.51
M14	5	94150A363	12.35
M16	5	94150A365	13.90
M18	1	94150A368	3.50
M20	1	94150A370	3.90
M22	1	94150A372	8.42
M24	1	94150A373	8.87
M30	1	94150A376	12.87
M36	1	94150A379	27.60
M42	1	94150A389	35.15
M48	1	94150A397	71.30
Plain 18-8 Stainless Steel			
M1	5	91828A003●	10.01
M1.2	5	91828A004●	8.38
M1.4	1	91828A005●	2.38
M1.6	25	91828A006	9.19
M2	100	91828A111	4.50
M2.5	100	91828A113	5.64
M3	100	91828A211	5.55
M3.5	100	91828A220	8.68
M4	100	91828A231	6.45
M5	100	91828A241	5.55
M6	100	91828A251	8.73
M7	25	91828A255	4.34
M8	50	91828A410	9.98
M10	25	91828A415	9.81
M12	25	91828A420	11.85
M14	10	91828A425	8.18
M16	10	91828A430	11.42
M18	5	91828A435	8.74
M20	5	91828A440	11.31
M22	1	91828A442	3.17
M24	1	91828A316	3.74
M27	1	91828A318●	7.50
M30	1	91828A445	13.71
M36	1	91828A450	21.81
Plain 18-8 Stainless Steel (Cont.)			
M42	1	91828A465	$26.77
M48	1	91828A480	39.35
Black-Oxide 18-8 SS ●			
M3	100	98676A100	5.39
M4	100	98676A200	8.08
M5	100	98676A300	9.85
M6	50	98676A400	7.27
Bumax 88 Stainless Steel			
M6	10	96621A110	9.56
M8	5	96621A220	7.96
M10	1	96621A330♥	2.47
M12	1	96621A440■	3.45
Brass			
M2	100	90690A030	4.48
M2.5	100	90690A035	5.17
M2.6	50	90690A026●	9.24
M3	100	90690A037	5.55
M3.5	100	90690A036	12.41
M4	100	90690A044	5.97
M5	100	90690A046	13.79
M6	50	90690A047	13.79
M7	25	90690A052	13.79
M8	25	90690A055	12.50
M10	10	90690A059	9.09
M12	10	90690A063	13.64
M14	5	90690A064	9.39
M16	5	90690A060	13.28
M18	1	90690A065	4.10
M20	1	90690A070	5.31
M24	1	90690A080	10.01
M30	1	90690A090	17.65
M36	1	90690A110●	60.42
Nylon 6/6			
M2	100	93800A300♣	10.53
M2.5	100	93800A350	9.32
M3	100	93800A400	10.57
M3.5	100	93800A450▲	9.32
M4	100	93800A500	10.56
M5	100	93800A550	10.77
M6	100	93800A600★	11.21
M8	100	93800A650	14.58
M10	50	93800A700♦	9.87
M12	10	93800A750♠	6.36

● Not rated for hardness. ♥ Width is 16 mm; height is 8.4 mm. ■ Width is 18 mm; height is 10.8 mm. ♣ Height is 1.2 mm.
▲ Width is 6.9 mm. ★ Height is 5.4 mm. ♦ Width is 14.8 mm; height is 9.8 mm. ♠ Width is 17.7 mm; height is 10.5 mm.

Metric Left-Hand Hex Nuts—DIN 934L

Just like standard metric hex nuts, but with a left-hand thread to mate with left-hand threaded screws and rods. All have a Class 6H thread fit.

Thread Size	Pkg. Qty.		Per Pkg.
Zinc-Plated Class 8 Steel			
M3	25	93695A120	$7.47
M4	25	93695A125	4.94
M5	100	93695A130	11.06
M6	100	93695A135	12.72
M8	50	93695A170	7.48
M10	50	93695A180	12.88
M12	25	93695A190	8.57
M14	10	93695A200	7.44
M16	20	93695A210	11.20
Zinc-Plated Class 8 Steel (Cont.)			
M20	10	93695A220	$12.73
M24	1	93695A230	3.18
M30	1	93695A240	5.42
M36	1	93695A250	18.18
18-8 Stainless Steel			
M3	10	93510A105	8.23
M4	10	93510A110	6.01
M5	25	93510A115	9.86
M6	10	93510A120	3.94
18-8 Stainless Steel (Cont.)			
M8	10	93510A125	$9.71
M10	5	93510A130	7.77
M12	5	93510A135	12.31
M14	1	93510A138	3.25
M16	1	93510A140	4.49
M20	1	93510A145	11.32
M24	1	93510A155	10.34
M30	1	93510A165	32.50

Metric Fine-Thread Hex Nuts—DIN 934

Use these nuts with fine-thread screws. All have a Class 6H thread fit. ***Zinc-plated steel*** nuts in thread sizes M3-M6 are made from Class 6 steel; sizes M8-M36 are made from Class 8 steel.

Thrd. Size	Pitch, mm	Wd., mm	Ht., mm	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel						
M3	0.35	5.5	2.4	10	91415A010	$7.38
M4	0.5	7	3.2	25	91415A020	9.82
M5	0.5	8	4	50	91415A030	9.76
M6	0.75	10	5	50	91415A040	7.39
M8	1	13	6.5	100	91415A105	9.27
M10	1	17	8	50	91415A215	12.01
M10	1.25	17	8	50	91415A225	10.64
M12	1	19	10	10	91415A150	7.76
M12	1.25	19	10	25	91415A235	9.41
M12	1.5	19	10	25	91415A125	8.20
M14	1.5	22	11	25	91415A255	10.23
Zinc-Plated Steel (Cont.)						
M16	1.5	24	13	20	91415A265	$12.67
M18	1.5	27	15	10	91415A270	9.14
M20	1.5	30	16	10	91415A275	9.15
M22	1.5	32	18	1	91415A280	3.13
M24	1.5	36	19	1	91415A285	3.31
M24	2	36	19	1	91415A290	3.97
M30	2	46	24	1	91415A310	9.11
M36	3	55	29	1	91415A340	14.51
18-8 Stainless Steel						
M8	1	13	6.5	10	93850A320	7.94
M10	1	17	8	10	93850A330	12.27
18-8 Stainless Steel (Cont.)						
M10	1.25	17	8	5	93850A335	$9.68
M12	1.25	19	10	5	93850A337	7.55
M12	1.5	19	10	5	93850A340	10.09
M14	1.5	22	11	1	93850A350	2.42
M16	1.5	24	13	1	93850A360	4.17
M18	1.5	27	15	1	93850A365	7.27
M20	1.5	30	16	1	93850A370	7.29
M22	1.5	32	18	1	93850A375	9.65
M24	1.5	36	19	1	93850A380	12.30
M30	1.5	46	24	1	93850A390	24.14
M36	1.5	55	29	1	93850A400	51.72

Metric JIS Hex Nuts

All meet JIS (Japanese Industrial Standard) B1181 and have a Class 6H thread fit. They are not rated for hardness.

Thread Size	Pitch, mm	Wd., mm	Ht., mm	Pkg. Qty.		Per Pkg.
Zinc-Plated Class 8 Steel						
M3	0.5	5.5	2.4	100	91028A411	$6.73
M4	0.7	7	3.2	100	91028A413	8.67
M5	0.8	8	4	100	91028A415	9.89
M6	1	10	5	50	91028A417	10.70
M8	1.25	12	6.5	25	91028A419	5.13
M10	1.25	14	8	10	91028A421	4.74
18-8 Stainless Steel						
M3	0.5	5.5	2.4	50	91028A652	$7.31
M4	0.7	7	3.2	50	91028A655	7.31
M5	0.8	8	4	50	91028A658	7.56
M6	1	10	5	25	91028A661	7.95
M8	1.25	12	6.5	10	91028A664	4.48
M10	1.25	14	8	5	91028A667	6.54

Metric Thin Hex Nuts—DIN 439B

Also known as half-height nuts, these fasteners are perfect for tight spaces. Frequently used in pairs, they're sometimes called jam nuts because one is "jammed" against the other to prevent loosening. All nuts have a Class 6H thread fit.

Thrd. Size	Pitch, mm	Wd., mm	Ht., mm	Pkg. Qty.		Per Pkg.
High-Visibility Blue Class 4 Steel						
M6	1	10	3.2	50	96276A110	$7.84
M8	1.25	13	4	50	96276A210	8.97
M10	1.5	17	5	50	96276A310	10.09
M12	1.75	19	6	25	96276A410	5.61
M16	2	24	8	10	96276A610	8.50
M20	2.5	30	10	10	96276A810	10.09
M24	3	36	12	1	96276A910	2.73
Zinc-Plated Class 4 Steel						
M2	0.4	4	1.2	100	90695A025	3.64
M2.5	0.45	5	1.6	100	90695A031	6.84
M3	0.5	5.5	1.8	100	90695A033	3.10
M4	0.7	7	2.2	100	90695A035	2.00
M5	0.8	8	2.7	100	90695A037	2.78
M6	1	10	3.2	100	90695A038	2.92
M8	1.25	13	4	100	90695A040	4.69
M10	1.5	17	5	100	90695A041	9.43
M12	1.75	19	6	50	90695A115	8.84
M14	2	22	7	25	90695A120	8.62
M16	2	24	8	25	90695A125	8.69
M20	2.5	30	10	10	90695A130	7.50
M24	3	36	12	5	90695A135	7.67
Zinc-Plated Class 4 Steel (Cont.)						
M30	3.5	46	15	1	90695A141	$5.62
M36	4	55	18	1	90695A149	11.40
Type 316 Stainless Steel						
M2	0.4	4	1.2	25	93935A305	3.04
M2.5	0.45	5	1.6	50	93935A310	5.34
M3	0.5	5.5	1.8	100	93935A320	7.92
M4	0.7	7	2.2	50	93935A325	4.69
M5	0.8	8	2.7	50	93935A330	3.36
M6	1	10	3.2	50	93935A335	5.60
M8	1.25	13	4	50	93935A340	9.58
M10	1.5	17	5	20	93935A345	9.20
M12	1.75	19	6	10	93935A350	5.70
M14	2	22	7	5	93935A355	10.93
M16	2	24	8	5	93935A360	5.83
M20	2.5	30	10	1	93935A365	3.10
M24	3	36	12	1	93935A370	8.41
M30	3.5	46	15	1	93935A375	14.80
M36	4	55	18	1	93935A380	14.95
18-8 Stainless Steel						
M2	0.4	4	1.2	50	90710A020	3.24
M2.5	0.45	5	1.6	50	90710A025	2.35
18-8 Stainless Steel (Cont.)						
M3	0.5	5.5	1.8	100	90710A030	$6.86
M4	0.7	7	2.2	100	90710A035	5.28
M5	0.8	8	2.7	100	90710A037	5.55
M6	1	10	3.2	100	90710A038	5.80
M8	1.25	13	4	50	90710A120	6.86
M10	1.5	17	5	25	90710A125	4.78
M12	1.75	19	6	20	90710A130	4.87
M14	2	22	7	5	90710A135	4.15
M16	2	24	8	5	90710A140	6.16
M20	2.5	30	10	5	90710A045	10.10
M24	3	36	12	1	90710A047	6.94
M30	3.5	46	15	1	90710A050	10.99
M36	4	55	18	1	90710A060	16.83
Brass						
M3	0.5	5.5	1.8	100	93187A100	7.59
M4	0.7	7	2.2	100	93187A150	9.31
M5	0.8	8	2.7	100	93187A200	12.42
M6	1	10	3.2	50	93187A250	10.00
M8	1.25	13	4	25	93187A300	9.48
M10	1.5	17	5	5	93187A350	3.79
M12	1.75	19	6	10	93187A400	10.35

Metric Fine-Thread Thin Hex Nuts—DIN 439B

Use these nuts with metric fine-thread screws. Also known as half-height nuts, they're perfect for tight spaces. All have a Class 6H thread fit.

Thread Size	Pitch, mm	Wd., mm	Ht., mm	Pkg. Qty.		Per Pkg.
Zinc-Plated Class 4 Steel						
M8	1	13	4	100	90326A105	$4.66
M10	1	17	5	100	90326A110	11.14
M10	1.25	17	5	100	90326A115	11.55
M12	1.25	19	6	50	90326A120	7.25
M12	1.5	19	6	25	90326A125	6.01
M14	1.5	22	7	25	90326A130	6.29
M16	1.5	24	8	10	90326A135	6.20
M18	1.5	27	9	10	90326A140	6.59
M20	1.5	30	10	10	90326A145	4.45
M22	1.5	32	11	10	90326A150	7.90
M24	1.5	36	12	5	90326A155	10.90
18-8 Stainless Steel						
M8	1	13	4	25	91938A105	$9.42
M10	1	17	5	10	91938A110	7.21
M10	1.25	17	5	10	91938A115	7.02
M12	1.25	19	6	10	91938A120	11.12
M12	1.5	19	6	10	91938A125	6.13
M14	1.5	22	7	5	91938A130	8.85
M16	1.5	24	8	5	91938A135	10.54
M20	1.5	30	10	1	91938A145	3.75
M24	1.5	36	12	1	91938A155	9.36

Square Nuts

Square nuts have a large bearing surface and plenty of surface area for your wrench to grip. Choose from flat top and round top styles. Nuts with a flat top are also known as machine screw square nuts. Inch size nuts have a Class 2B thread fit; metric size nuts have a Class 7H thread fit and meet DIN 557.

Flat-top nuts (except those made from fiberglass) and ***round-top*** nuts made from 18-8 stainless steel have dimensions that meet ANSI/ASME B18.6.3. All other ***round-top*** nuts have dimensions that meet ANSI/ASME B18.2.2.

Fiberglass nuts are gray.

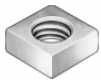

Flat Top

Round Top

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Flat Top					
Zinc-Plated Grade 2 Steel					
6-32	5/16"	7/64"	100	94855A201	$2.03
8-32	11/32"	1/8"	100	94855A216	2.08
10-24	3/8"	1/8"	100	94855A232	2.48
1/4"-20	7/16"	3/16"	100	94855A247	4.42
5/16"-18	9/16"	7/32"	100	94855A263	8.06
3/8"-16	5/8"	1/4"	50	94855A278	6.88
Plain Grade 2 Steel					
6-32	5/16"	7/64"	100	94855A115	1.20
8-32	11/32"	1/8"	100	94855A119	1.45
10-24	3/8"	1/8"	100	94855A123	1.83
1/4"-20	7/16"	3/16"	100	94855A127	3.72
5/16"-18	9/16"	7/32"	100	94855A131	5.48
3/8"-16	5/8"	1/4"	100	94855A135	9.07
Black Zinc-Plated Steel ■					
1/4"-20	7/16"	3/16"	100	94859A111	6.56
5/16"-18	9/16"	7/32"	50	94859A122	8.93
3/8"-16	5/8"	1/4"	50	94859A133	7.92
Fiberglass ■					
3/8"-16	11/16"	7/16"	1	91332A031	2.80
1/2"-13	7/8"	9/16"	1	91332A033	4.00
5/8"-11	1 1/16"	11/16"	1	91332A035	5.40
3/4"-10	1 1/4"	13/16"	1	91332A036	7.00
1"-8	1 5/8"	1 1/16"	1	91332A038	11.00
Round Top					
Zinc-Plated Grade 5 Steel					
1/4"-20	7/16"	7/32"	100	98694A110	5.90
5/16"-18	9/16"	17/64"	100	98694A115	9.45

■ Not rated for hardness. ♣ May have flat or rounded top.

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Round Top					
Zinc-Plated Grade 5 Steel (Cont.)					
3/8"-16	5/8"	21/64"	50	98694A120	$7.86
7/16"-14	3/4"	3/8"	25	98694A125	8.62
1/2"-13	13/16"	7/16"	25	98694A130	11.56
5/8"-11	1"	35/64"	10	98694A135	6.71
3/4"-10	1 1/8"	21/32"	10	98694A140	9.63
7/8"-9	1 5/16"	49/64"	5	98694A145	11.04
1"-8	1 1/2"	7/8"	5	98694A150	13.99
1 1/8"-7	1 11/16"	1"	1	98694A155	5.26
1 1/4"-7	1 7/8"	1 3/32"	1	98694A160	7.05
1 1/2"-6	2 1/4"	1 5/16"	1	98694A165	9.89
Hot-Dipped Galvanized Grade 2 Steel					
5/16"-18	9/16"	17/64"	100	93430A410	10.40
3/8"-16	5/8"	21/64"	100	93430A415	10.48
1/2"-13	13/16"	7/16"	50	93430A421	10.68
5/8"-11	1"	35/64"	25	93430A425	10.53
3/4"-10	1 1/8"	21/32"	10	93430A430	5.95
7/8"-9	1 5/16"	49/64"	10	93430A435	11.44
1"-8	1 1/2"	7/8"	5	93430A440	10.34
Plain Grade 2 Steel					
1/4"-20	7/16"	7/32"	100	90043A029	4.24
5/16"-18	9/16"	17/64"	100	90043A030	7.35
3/8"-16	5/8"	21/64"	100	90043A031	10.65
7/16"-14	3/4"	3/8"	50	90043A034	10.19
1/2"-13	13/16"	7/16"	50	90043A055	11.79
5/8"-11	1"	35/64"	25	90043A065	10.86
3/4"-10	1 1/8"	21/32"	10	90043A075	5.98
7/8"-9	1 5/16"	49/64"	10	90043A085	10.60
1"-8	1 1/2"	7/8"	5	90043A095	7.86

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Round Top					
Plain Grade 2 Steel (Cont.)					
1 1/8"-7	1 11/16"	1"	5	90043A105	$13.64
1 1/4"-7	1 7/8"	1 3/32"	1	90043A115	4.20
1 1/2"-6	2 1/4"	1 5/16"	1	90043A125	5.54
Type 316 Stainless Steel					
1/4"-20	7/16"	3/16"	25	92891A100	7.84
5/16"-18	9/16"	7/32"	10	92891A200	5.76
3/8"-16	5/8"	1/4"	10	92891A300	9.63
1/2"-13	13/16"	7/16"	1	92891A400	2.63
18-8 Stainless Steel ♣					
6-32	5/16"	7/64"	100	94785A007	9.82
8-32	11/32"	1/8"	100	94785A009	9.05
10-24	3/8"	1/8"	100	94785A013	10.00
10-32	3/8"	1/8"	100	94785A411	10.00
1/4"-20	7/16"	3/16"	50	94785A415	7.40
5/16"-18	9/16"	7/32"	25	94785A419	7.29
3/8"-16	5/8"	1/4"	25	94785A423	9.88
1/2"-13	13/16"	7/16"	5	94785A427	5.84
5/8"-11	1"	35/64"	1	94785A431	5.93
3/4"-10	1 1/8"	21/32"	1	94785A435	9.05
1"-8	1 1/2"	7/8"	1	94785A438	17.92

Thrd. Size	Pitch	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Metric Round Top— *Dimensions in mm*						
Zinc-Plated Class 5 Steel						
M6	1	10	5	100	96887A319	$12.00
M8	1.25	13	6.5	25	96887A322	5.00
M10	1.5	17	8	25	96887A325	8.00
M12	1.75	19	10	10	96887A328	5.38

Concave Square Locknuts

Also known as utility-pole nuts, these hot-dipped galvanized steel nuts have a cupped shape with corners that bite into soft materials to hold securely. The cupped shape assures a flush fit against round-top square nuts and that they'll resist loosening when jammed against flat-top square nuts. Locknuts are not rated for thread fit or hardness.

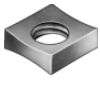

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
3/8"-16	5/8"	15/64"	25	99453A100	$9.18
1/2"-13	13/16"	9/32"	10	99453A200	6.36
5/8"-11	15/16"	11/32"	10	99453A300	9.08
3/4"-10	1 1/8"	13/32"	5	99453A400	$5.74
7/8"-9	1 5/16"	27/64"	5	99453A500	8.65

Nylon-Insert Heavy Hex Locknuts

To provide extra strength and greater thread engagement, these reusable locknuts are thicker than standard nylon-insert locknuts. When fully tightened, the nylon insert provides vibration resistance and prevents loosening—without damaging mating threads. Each locknut has a Class 2B thread fit and is reliable at temperatures up to 250° F.

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Zinc-Plated Grade 2 Steel					
1/4"-20	1/2"	3/8"	100	90648A029	$7.91
5/16"-18	9/16"	29/64"	100	90648A030	8.72
3/8"-16	11/16"	35/64"	50	90648A215	9.97
7/16"-14	3/4"	39/64"	25	90648A220	10.61
1/2"-13	7/8"	45/64"	25	90648A225	10.97
9/16"-12	15/16"	13/16"	5	90648A230	7.37
5/8"-11	1 1/16"	55/64"	10	90648A235	7.61
3/4"-10	1 1/4"	1 1/64"	5	90648A240	5.93
Zinc-Plated Grade 2 Steel (Cont.)					
7/8"-9	1 7/16"	19/64"	5	90648A245	$6.95
1"-8	1 5/8"	15/16"	1	90648A250	4.53
1 1/4"-7	2"	1 41/64"	1	90648A260	6.77
1 1/2"-6	2 3/8"	1 59/64"	1	90648A265	10.62
18-8 Stainless Steel					
1/4"-20	1/2"	3/8"	10	90099A029	6.64
5/16"-18	9/16"	29/64"	5	90099A030	3.94
3/8"-16	11/16"	35/64"	5	90099A031	7.71
18-8 Stainless Steel (Cont.)					
7/16"-14	3/4"	19/32"	1	90099A032	$4.91
1/2"-13	7/8"	45/64"	1	90099A033	2.80
5/8"-11	1 1/16"	55/64"	1	90099A035	4.48
3/4"-10	1 1/4"	1"	1	90099A036	14.69
7/8"-9	1 7/16"	1 9/64"	1	90099A037	18.35
1"-8	1 5/8"	1 5/16"	1	90099A038	28.56

Nylon-Insert Extra-Wide Thin Hex Locknuts

These reusable locknuts have an extra-wide bearing surface and a nylon insert that provides vibration resistance and prevents loosening—without damaging mating threads. They have a Class 2B thread fit and are reliable at temperatures up to 250° F.

Black-phosphate Grade C steel nuts have a minimum Rockwell hardness of C25. Grade C steel is equivalent to high-strength alloy steel (Grade 8).

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Black-Phosphate Grade C Steel					
1 1/4"-12	2"	1 1/8"	1	93126A110	$6.96
1 1/2"-12	2 3/8"	1 11/32"	1	93126A120	9.12
1 3/4"-12	2 3/4"	1 17/32"	1	93126A130	12.80
2"-12	3 1/8"	1 47/64"	1	93126A140	15.44
2 1/4"-12	3 1/2"	2"	1	93126A150	24.62
2 1/2"-12	4"	2 1/4"	1	93126A160	34.23
2 3/4"-12	4"	2 1/4"	1	93126A170	35.38
Zinc-Plated Grade 2 Steel					
1/4"-20	1/2"	9/32"	100	90652A029	$7.95
5/16"-18	9/16"	5/16"	100	90652A030	11.11
3/8"-16	11/16"	13/32"	50	90652A040	11.15
1/2"-13	7/8"	17/32"	25	90652A050	9.28
5/8"-11	1 1/16"	39/64"	10	90652A055	8.40
3/4"-10	1 1/4"	45/64"	10	90652A060	13.38
1"-8	1 5/8"	57/64"	1	90652A065	3.71
1 1/4"-7	2"	17/64"	1	90652A070	9.06
18-8 Stainless Steel					
1/4"-20	1/2"	9/32"	25	90098A110	$13.22
5/16"-18	9/16"	5/16"	20	90098A115	12.10
3/8"-16	11/16"	13/32"	10	90098A120	13.52
7/16"-14	3/4"	7/16"	1	90098A125	3.98
1/2"-13	7/8"	17/32"	1	90098A130	4.03
5/8"-11	1 1/16"	39/64"	1	90098A035	8.87
3/4"-10	1 1/4"	45/64"	1	90098A036	11.40

Nylon-Insert Hex Locknuts

The nylon insert provides vibration resistance and prevents loosening—without damaging mating threads. Nuts are reusable. Each has a Class 2B thread fit and is reliable at temperatures up to 250° F (unless noted).

Black-luster-coated Grade 2 steel nuts are resistant to 500 hours of salt spray per ASTM B117.

Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.
2-56	1/4"	9/64"	10-32	3/8"	15/64"	3/8"-24	9/16"	29/64"	5/8"-11	15/16"	3/4"	1"-14	17/16"	13/64"
3-48	1/4"	9/64"	12-24	7/16"	5/16"	7/16"-14	5/8"	29/64"	5/8"-18	15/16"	3/4"	1 1/8"-7	1 5/8"	13/16"
4-40	1/4"	9/64"	1/4"-20	7/16"	5/16"	7/16"-20	5/8"	29/64"	3/4"-10	1 1/16"	7/8"	1 1/4"-7	1 13/16"	1 13/32"
5-40	1/4"	9/64"	1/4"-28	7/16"	5/16"	1/2"-13	3/4"	19/32"	3/4"-16	1 1/16"	7/8"	1 1/2"-6	2 3/16"	1 5/8"
6-32	5/16"	11/64"	5/16"-18	1/2"	11/32"	1/2"-20	3/4"	19/32"	7/8"-9	1 1/4"	63/64"			
8-32	11/32"	15/64"	5/16"-24	1/2"	11/32"	9/16"-12	7/8"	41/64"	7/8"-14	1 1/4"	63/64"			
10-24	3/8"	15/64"	3/8"-16	9/16"	29/64"	9/16"-18	7/8"	41/64"	1"-8	1 7/16"	1 3/64"			

Thread Size	Pkg. Qty.		Per Pkg.
Zinc Yellow-Chromate Plated Grade 8 Steel			
1/4"-20	25	97135A210	$3.54
1/4"-28	25	97135A215	3.62
5/16"-18	20	97135A220	3.80
5/16"-24	20	97135A225	3.88
3/8"-16	20	97135A230	4.14
3/8"-24	20	97135A235	4.14
7/16"-14	10	97135A240	3.45
7/16"-20	10	97135A245	3.45
1/2"-13	10	97135A250	4.44
1/2"-20	10	97135A255	4.53
9/16"-12	5	97135A260	4.14
9/16"-18	5	97135A265	4.14
5/8"-11	5	97135A270	4.53
5/8"-18	5	97135A275	4.53
3/4"-10	5	97135A280	5.82
3/4"-16	5	97135A285	5.82
7/8"-9	1	97135A290	1.29
7/8"-14	1	97135A295	1.38
1"-8	1	97135A038	1.81
1"-14	1	97135A059	1.94
1 1/8"-7	1	97135A350	6.51
1 1/4"-7	1	97135A355	8.80
1 1/2"-6	1	97135A360	11.86
Plain Grade 8 Steel			
1/4"-20	25	90630A110	3.18
1/4"-28	25	90630A145	2.77
5/16"-18	20	90630A115	2.91
5/16"-24	20	90630A150	2.98
3/8"-16	20	90630A121	3.17
3/8"-24	20	90630A155	3.17
1/2"-13	10	90630A125	3.41
1/2"-20	10	90630A160	3.46
5/8"-11	5	90630A130	3.46
5/8"-18	5	90630A165	3.46
3/4"-10	5	90630A135	4.45
3/4"-16	5	90630A170	4.45
1"-8	1	90630A140	1.63
1"-14	1	90630A175	1.75
Zinc-Plated Grade 5 Steel			
1/4"-20	100	95615A120	4.35
1/4"-28	100	95615A130	4.35
5/16"-18	100	95615A160	6.33
5/16"-24	100	95615A170	5.75
3/8"-16	100	95615A140	8.83
3/8"-24	100	95615A150	9.31
7/16"-14	100	95615A180	11.95
7/16"-20	100	95615A190	11.23
1/2"-13	50	95615A210	9.96
1/2"-20	50	95615A220	9.96
9/16"-12	25	95615A230	8.22
9/16"-18	25	95615A240	8.28
Zinc-Plated Grade 5 Steel (Cont.)			
5/8"-11	25	95615A250	$9.63
5/8"-18	25	95615A260	10.66
3/4"-10	10	95615A270	7.14
3/4"-16	10	95615A280	7.14
7/8"-9	5	95615A290	8.62
7/8"-14	5	95615A310	6.15
1"-8	5	95615A320	9.06
1"-14	5	95615A330	9.71
1 1/8"-7	1	95615A340	5.56
1 1/4"-7	1	95615A350	7.48
1 1/2"-6	1	95615A360	9.96
Zinc-Plated Grade 2 Steel			
2-56	100	90631A003	3.45
3-48	100	90631A004	3.23
4-40	100	90631A005	2.55
5-40	100	90631A006	2.61
6-32	100	90631A007	2.67
8-32	100	90631A009	2.35
10-24	100	90631A011	2.79
10-32	100	90631A411	2.81
12-24	100	90631A120	4.77
1/4"-20	100	90640A129	3.23
1/4"-28	100	90640A140	3.87
5/16"-18	100	90640A130	4.70
5/16"-24	100	90640A145	4.55
3/8"-16	100	90640A131	6.90
3/8"-24	100	90640A150	6.79
7/16"-14	100	90640A132●	8.81
7/16"-20	100	90640A155●	9.34
1/2"-13	100	90640A133	14.95
1/2"-20	100	90640A160	14.09
9/16"-12	50	90640A134	14.20
9/16"-18	25	90640A165	7.25
5/8"-11	25	90640A135	8.38
5/8"-18	25	90640A170	8.58
3/4"-10	10	90640A320	6.18
3/4"-16	10	90640A330	6.26
7/8"-9	5	90640A340	7.98
7/8"-14	5	90640A350	4.70
1"-8	5	90640A360♦	6.75
1"-14	5	90640A370♦	7.23
1 1/8"-7	1	90640A400♠	4.14
1 1/4"-7	1	90640A410	5.57
1 1/2"-6	1	90640A420	6.44
Black Luster-Coated Grade 2 Steel ♥			
6-32	5	91333A110	7.01
8-32	5	91333A120	6.90
10-24	5	91333A130	7.24
10-32	5	91333A140	7.24
1/4"-20	5	91333A150	7.24
5/16"-18	5	91333A160	7.34
Black Luster-Coated Grade 2 Steel ♥ (Cont.)			
3/8"-16	5	91333A170	$7.67
1/2"-13	5	91333A180	8.55
Type 316 Stainless Steel			
4-40	100	90715A005♥	8.13
5-40	50	90715A006♥	6.13
6-32	100	90715A007	7.25
8-32	100	90715A009	11.08
10-24	100	90715A011	10.83
10-32	50	90715A115	5.93
1/4"-20	50	90715A125	9.26
1/4"-28	50	90715A130	11.65
5/16"-18	50	90715A135	12.45
5/16"-24	25	90715A140	7.85
3/8"-16	25	90715A145	9.92
3/8"-24	25	90715A148	12.67
7/16"-14	10	90715A032	8.63
7/16"-20	10	90715A034	10.08
1/2"-13	10	90715A165	9.34
1/2"-20	10	90715A170	11.46
9/16"-12	1	90715A173	3.44
5/8"-11	5	90715A185	10.51
5/8"-18	1	90715A187	2.54
3/4"-10	1	90715A036	2.96
3/4"-16	1	90715A038	5.36
7/8"-9	1	90715A045	17.24
1"-8	1	90715A055	22.58
1 1/8"-7	1	90715A210	20.69
1 1/4"-7	1	90715A215	30.32
1 1/2"-6	1	90715A220	59.48
18-8 Stainless Steel			
2-56	50	91831A002■	7.01
3-48	25	91831A004	1.95
4-40	100	91831A005	3.93
5-40	100	91831A006	4.62
6-32	100	91831A007	4.88
8-32	100	91831A009	6.06
10-24	100	91831A011	7.04
10-32	100	91831A411	7.04
12-24	50	91831A025	6.80
1/4"-20	50	91831A029	5.01
18-8 Stainless Steel (Cont.)			
1/4"-28	50	91831A120	$6.09
5/16"-18	50	91831A030	7.01
5/16"-24	50	91831A125	10.12
3/8"-16	25	91831A127	7.43
3/8"-24	25	91831A130	6.79
7/16"-14	25	91831A133	9.36
7/16"-20	25	91831A135	9.68
1/2"-13	10	91831A137	6.24
1/2"-20	10	91831A140	7.39
9/16"-12	1	91831A034	2.52
9/16"-18	1	91831A143	2.82
5/8"-11	5	91831A144	6.43
5/8"-18	5	91831A145	8.34
3/4"-10	5	91831A147	9.23
3/4"-16	1	91831A150	1.94
7/8"-9	1	91831A037	5.27
7/8"-14	1	91831A155	7.05
1"-8	1	91831A038	5.92
1"-14	1	91831A160	6.28
1 1/8"-7	1	91831A039	20.74
1 1/4"-7	1	91831A040	27.35
1 1/2"-6	1	91831A041	32.59
Brass			
6-32	25	92092A021	3.22
8-32	25	92092A023	5.02
10-24	25	92092A025♣	6.04
10-32	25	92092A027♣	5.91
1/4"-20	25	92092A029■	13.64
5/16"-18	10	92092A030■	11.91
3/8"-16	10	92092A031■	12.95
1/2"-13	5	92092A033■	14.74
5/8"-11	1	92092A035■	11.45
3/4"-10	1	92092A036■	14.89
Aluminum			
8-32	25	95856A215	3.67
10-24	25	95856A225	3.76
10-32	25	95856A235	3.76
1/4"-20	25	95856A245	4.32
5/16"-18	25	95856A255	7.27
3/8"-16	10	95856A265	4.06
1/2"-13	5	95856A275	3.99

550-Piece Assortments

Handy assortments come furnished in an 8 1/4" Lg. × 4 1/2" Wd. × 1 3/8" Dp. compartmented plastic case with lid chart.

Thread Size	No. of Pcs.	Thread Size	No. of Pcs.	Thread Size	No. of Pcs.
4-40	100	8-32	100	10-32	100
6-32	100	10-24	100	1/4"-20	50

Zinc-Plated Grade 2 Steel	93949A600	Each	$22.78
18-8 Stainless Steel	93949A300	Each	$43.80

● Height is 17/32". ♦ Height is 15/64". ♠ Height is 119/64". ♥ Maximum temperature is 194° F. ♣ Class 3B thread fit. ■ Not rated for hardness.

Military Specification Nylon-Insert Hex Locknuts

Made to precise military specifications, these locknuts have a nylon insert that provides vibration resistance and prevents loosening—without damaging mating threads. ***Hex*** meet MS 21044; ***thin hex*** meet MS 21083. All have a Class 3B thread fit. They're reliable at temperatures up to 250° F but are not rated for hardness.

18-8 stainless steel locknuts are passivated (treated with nitric acid to protect against oxidation and corrosion) to meet QQ-P-35.

Thread Size	Wd.	Dash No.	Pkg. Qty.	CADMIUM-PLATED STEEL Hex Ht.		Per Pkg.	CADMIUM-PLATED STEEL Thin Hex Ht.		Per Pkg.	Dash No.	Pkg. Qty.	18-8 STAINLESS STEEL Hex Ht.		Per Pkg.	18-8 STAINLESS STEEL Thin Hex Ht.		Per Pkg.
4-40	1/4"	N04	10	5/32"	95154A110	$7.78	1/8"	95496A310	$6.90	C04	10	5/32"	96345A210	$10.22	1/8"	97231A410	$10.00
6-32	5/16"	N06	10	3/16"	95154A120	6.22	9/64"	95496A320	7.67	C06	10	3/16"	96345A220	8.23	9/64"	97231A420	11.11
8-32	11/32"	N08	10	9/32"	95154A130	6.67	3/16"	95496A330	4.00	C08	10	9/32"	96345A230	7.78	3/16"	97231A430	14.20
10-32	3/8"	N3	10	9/32"	95154A140	4.00	3/16"	95496A340	4.44	C3	10	9/32"	96345A240	7.67	3/16"	97231A440	14.95
1/4"-28	7/16"	N4	10	23/64"	95154A150	8.89	7/32"	95496A350	7.11	C4	5	23/64"	96345A250	5.78	7/32"	97231A450	10.00

Nylon-Insert Thin Hex Locknuts

Also known as jam locknuts, these reusable locknuts are thinner than standard nylon-insert hex locknuts. They can be used individually where clearance is limited or in conjunction with a regular locknut for extra resistance to loosening from vibration. All have a Class 2B thread fit and are reliable at temperatures up to 225° F.

Black-luster-coated Grade 2 steel nuts are resistant to 500 hours of salt spray per ASTM B117.

Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.	Thread Size	Wd.	Ht.
4-40	1/4"	7/64"	1/4"-20	7/16"	13/64"	7/16"-14	5/8"	5/16"	3/4"-10	1 1/16"	13/32"	1 1/8"-7	1 5/8"	21/32"
5-40	1/4"	7/64"	1/4"-28	7/16"	13/64"	7/16"-20	5/8"	5/16"	3/4"-16	1 1/16"	13/32"	1 1/4"-7	1 13/16"	3/4"
6-32	5/16"	1/8"	5/16"-18	1/2"	1/4"	1/2"-13	3/4"	5/16"	7/8"-9	1 1/4"	15/32"	1 1/4"-12	1 13/16"	3/4"
8-32	11/32"	11/64"	5/16"-24	1/2"	1/4"	1/2"-20	3/4"	5/16"	7/8"-14	1 1/4"	15/32"	1 3/8"-6	2"	13/16"
10-24	3/8"	11/64"	3/8"-16	9/16"	17/64"	5/8"-11	15/16"	25/64"	1"-8	1 7/16"	9/16"	1 1/2"-6	2 3/16"	13/16"
10-32	3/8"	11/64"	3/8"-24	9/16"	17/64"	5/8"-18	15/16"	25/64"	1"-14	1 7/16"	9/16"			

Thread Size	Pkg. Qty.		Per Pkg.
Zinc-Plated Grade 8 Steel			
1/4"-20	100	94945A205 ♠	$6.70
1/4"-28	10	94945A210	9.23
5/16"-18	100	94945A213 ♠	9.90
5/16"-24	10	94945A215	9.85
3/8"-16	100	94945A217 ♠	12.70
3/8"-24	50	94945A218 ♠	9.50
1/2"-13	25	94945A224 ♠	6.61
1/2"-20	5	94945A225	6.47
5/8"-11	25	94945A227 ♠	14.00
5/8"-18	5	94945A230	8.09
3/4"-16	1	94945A235	2.75
7/8"-14	1	94945A240	4.21
1"-14	1	94945A250	4.96
Zinc-Plated Grade 5 Steel			
5/8"-11	25	91342A210	9.49
5/8"-18	25	91342A220	9.81
3/4"-10	10	91342A230	6.80
3/4"-16	10	91342A240	6.93
7/8"-14	5	91342A250	7.86
1"-8	1	91342A260	3.30
1"-14	1	91342A270	3.20
1 1/8"-7	1	91342A280	7.73
1 1/4"-7	1	91342A290	8.55
1 1/2"-6	1	91342A310	13.00

Thread Size	Pkg. Qty.		Per Pkg.
Zinc-Plated Grade 2 Steel			
4-40	100	90633A005	$2.29
5-40	100	90633A006	4.43
6-32	100	90633A007	2.30
8-32	100	90633A009	2.30
10-24	100	90633A011	2.39
10-32	100	90633A411	3.18
1/4"-20	100	90566A029	3.65
1/4"-28	100	90566A210	3.61
5/16"-18	100	90566A030	4.51
5/16"-24	100	90566A215	4.61
3/8"-16	100	90566A031	5.32
3/8"-24	100	90566A220	5.46
7/16"-14	100	90566A032	6.59
7/16"-20	100	90566A225	6.89
1/2"-13	100	90566A033	9.63
1/2"-20	100	90566A230	9.97
5/8"-11	50	90566A035	10.29
5/8"-18	50	90566A235	10.27
3/4"-10	10	90566A240	5.52
3/4"-16	10	90566A243	5.62
7/8"-9	5	90566A246	5.43
7/8"-14	5	90566A249	5.48
1"-8	1	90566A253	1.46
1"-14	1	90566A256	1.39

Thread Size	Pkg. Qty.		Per Pkg.
Zinc-Plated Grade 2 Steel (Cont.)			
1 1/8"-7	1	90566A259	$3.17
1 1/4"-7	1	90566A262	3.49
1 1/4"-12	1	90566A265	3.49
1 3/8"-6	1	90566A268	4.92
1 1/2"-6	1	90566A271	6.51
Black-Luster-Coated Grade 2 Steel			
6-32	5	91581A315	6.80
8-32	5	91581A325	6.80
10-24	5	91581A335	6.90
10-32	5	91581A345	6.90
1/4"-20	5	91581A355	7.24
5/16"-18	5	91581A365	7.12
3/8"-16	5	91581A375	7.49
1/2"-13	5	91581A385	7.78
18-8 Stainless Steel			
4-40	50	90101A004	4.31
6-32	100	90101A007	9.52
8-32	100	90101A009	8.52
10-24	100	90101A011	8.52
10-32	50	90101A225	4.81
1/4"-20	50	90101A230	6.41
1/4"-28	50	90101A235	6.89

Thread Size	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel (Cont.)			
5/16"-18	50	90101A237	$8.99
5/16"-24	50	90101A240	11.78
3/8"-16	25	90101A243	7.33
3/8"-24	25	90101A245	8.37
7/16"-14	10	90101A247	12.06
7/16"-20	5	90101A250	6.62
1/2"-13	10	90101A252	8.75
1/2"-20	5	90101A255	5.13
5/8"-11	1	90101A038	1.77
5/8"-18	1	90101A260	2.44
3/4"-10	1	90101A050	4.90
3/4"-16	1	90101A055 ■	4.83
7/8"-9	1	90101A060	8.20
7/8"-14	1	90101A065 ■	11.42
1"-8	1	90101A070	9.62
1"-14	1	90101A075 ■	10.03
1 1/8"-7	1	90101A080	14.67
1 1/4"-7	1	90101A090	18.70
1 1/4"-12	1	90101A095 ■	22.24
1 1/2"-6	1	90101A150	27.66

♠ Zinc yellow-chromate plated. ■ Not rated for hardness.

Metric Nylon-Insert Hex Locknuts—DIN 985

The metric version of our popular nylon-insert hex locknuts, these nuts resist loosening from vibration and can be reused. They meet DIN 985, have a Class 6H thread fit, and are reliable at temperatures up to 248° F.

Thread Size	Wd., mm	Ht., mm	Thread Size	Wd., mm	Ht., mm	Thread Size	Wd., mm	Ht., mm	Thread Size	Wd., mm	Ht., mm
M3	5.5	4	M8	13	8	M16	24	16	M24	36	24
M4	7	5	M10	17	10	M18	27	18.5	M27	41	27
M5	8	5	M12	19	12	M20	30	20	M30	46	30
M6	10	6	M14	22	14						

Thread Size	Pitch, mm	Pkg. Qty.		Per Pkg.
Standard Thread				
Zinc-Plated Class 10 Steel				
M6	1	100	94645A205	$9.82
M8	1.25	50	94645A210	8.19
M10	1.5	25	94645A220	9.28
M12	1.75	10	94645A230	8.08
M14	2	10	94645A240	11.08
M16	2	10	94645A250	13.15
M18	2.5	5	94645A260	10.40
M20	2.5	5	94645A270	11.56
M24	3	1	94645A280	5.26
Zinc-Plated Class 8 Steel				
M3	0.5	100	90576A102	3.09
M4	0.7	100	90576A103	3.73
M5	0.8	100	90576A104	4.09
M6	1	100	90576A115	4.32
M8	1.25	100	90576A117	9.36
M10	1.5	50	90576A118	8.45
M12	1.75	50	90576A119	11.09
M14	2	25	90576A120	9.66
M16	2	25	90576A122	12.16
M18	2.5	10	90576A123	9.86
M20	2.5	10	90576A125	8.97
M24	3	5	90576A129	12.84
M27	3	1	90576A140	8.24
M30	3.5	1	90576A150	10.27

Thread Size	Pitch, mm	Pkg. Qty.		Per Pkg.
Standard Thread				
Type 316 Stainless Steel				
M3	0.5	50	94205A220	$4.75
M4	0.7	50	94205A230	5.49
M5	0.8	50	94205A240	6.09
M6	1	50	94205A250	6.52
M8	1.25	25	94205A260	7.44
M10	1.5	10	94205A270	8.19
M12	1.75	10	94205A280	10.88
M14	2	5	94205A290	14.29
M16	2	5	94205A310	14.80
M18	2.5	1	94205A315 ■	12.74
M20	2.5	1	94205A320	7.81
M24	3	1	94205A330	14.71
M27	3	1	94205A350	27.86
M30	3.5	1	94205A380	38.47
18-8 Stainless Steel				
M3	0.5	100	93625A100	5.31
M4	0.7	100	93625A150	7.11
M5	0.8	100	93625A200	7.44
M6	1	100	93625A250	8.80
M8	1.25	50	93625A300	9.98
M10	1.5	10	93625A350	5.75
M12	1.75	10	93625A400	7.37
M14	2	5	93625A450	7.91
M16	2	5	93625A500	8.81

Thread Size	Pitch, mm	Pkg. Qty.		Per Pkg.
Standard Thread				
18-8 Stainless Steel (Cont.)				
M18	2.5	1	93625A510 ■	$9.38
M20	2.5	1	93625A550	2.96
M24	3	1	93625A600	8.57
M27	3	1	93625A700	20.00
M30	3.5	1	93625A750	20.00
Fine Thread				
Zinc-Plated Class 10 Steel				
M10	1	25	94645A213	6.42
M12	1.5	10	94645A229	6.27
Zinc-Plated Class 8 Steel				
M8	1	25	90576A116	6.55
M10	1	25	90576A131	11.13
M10	1.25	25	90576A132	11.18
M12	1	10	90576A137	7.75
M12	1.25	25	90576A141	11.76
M12	1.5	20	90576A144	12.03
M14	1.5	10	90576A147	9.17
M16	1.5	10	90576A152	8.55

■ Not rated for hardness.

Flex-Top Expanding Hex Locknuts

Hex

Heavy Hex

Thin Hex

Extra-Wide Thin Hex

Stronger than nylon-insert locknuts of the same size, these nuts are made from a single piece of metal. Also known as Flexloc nuts, they have a slotted top that expands when the nuts are tightened—locking them in place and providing superior vibration resistance. Nuts are not rated for hardness. Inch sizes have a Class 2B thread fit; metric have a Class 6H thread fit. ***Cadmium-plated steel*** nuts are made from low strength steel.

Also Available: Military specification flex-top expanding hex locknuts that meet MS 21045 and National Aircraft Standard (NASM) 25027. Made from cadmium yellow-chromate plated steel. Please ask for 99638A990 and specify thread size.

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Hex					
Cadmium-Plated Steel					
2-56	1/4"	5/32"	10	94820A100	$4.73
4-40	1/4"	5/32"	25	94820A210	11.77
6-32	5/16"	3/16"	25	94820A215	11.36
8-32	11/32"	1/4"	25	94820A220	10.13
10-24	3/8"	1/4"	25	94820A225	9.78
10-32	3/8"	1/4"	25	94820A230	9.78
1/4"-20	7/16"	19/64"	25	94820A232	11.12
1/4"-28	7/16"	21/64"	25	94820A235	11.12
5/16"-18	1/2"	23/64"	10	94820A237	6.10
5/16"-24	1/2"	23/64"	10	94820A240	6.71
3/8"-16	9/16"	15/32"	10	94820A242	7.29
3/8"-24	9/16"	15/32"	10	94820A245	8.01
7/16"-14	5/8"	15/32"	5	94820A247	9.06
1/2"-13	3/4"	39/64"	5	94820A249	9.07
1/2"-20	3/4"	39/64"	5	94820A250	9.06
5/8"-11	15/16"	49/64"	1	94820A252	3.38
5/8"-18	15/16"	49/64"	1	94820A255	3.07
3/4"-10	11/16"	57/64"	1	94820A036	5.00
3/4"-16	11/16"	57/64"	1	94820A260	5.00
18-8 Stainless Steel					
2-56	1/4"	5/32"	5	91839A105	7.38
4-40	1/4"	5/32"	10	91839A220	14.76
6-32	5/16"	3/16"	10	91839A225	14.76
8-32	11/32"	1/4"	10	91839A230	13.35
10-24	3/8"	1/4"	10	91839A235	14.85
10-32	3/8"	1/4"	10	91839A120	11.83
1/4"-20	7/16"	19/64"	10	91839A123	14.50
1/4"-28	7/16"	21/64"	10	91839A125	14.50
5/16"-18	1/2"	23/64"	5	91839A127	14.09
5/16"-24	1/2"	23/64"	5	91839A130	14.80
3/8"-16	9/16"	15/32"	1	91839A132	3.27
3/8"-24	9/16"	15/32"	1	91839A135	3.44
7/16"-20	5/8"	15/32"	1	91839A140	8.49
1/2"-13	3/4"	39/64"	1	91839A033	7.86
1/2"-20	3/4"	39/64"	1	91839A145	9.07

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Heavy Hex					
Cadmium-Plated Steel					
1/4"-20	1/2"	19/64"	10	94827A110	$6.48
5/16"-18	9/16"	21/64"	10	94827A120	8.66
3/8"-16	5/8"	25/64"	10	94827A130	9.82
1/2"-13	13/16"	1/2"	5	94827A150	11.89
5/8"-11	1"	41/64"	1	94827A160	4.07
3/4"-10	1 1/8"	49/64"	1	94827A036	6.14
7/8"-9	15/16"	57/64"	1	94827A037	10.01
1"-8	1 1/2"	11/64"	1	94827A038	18.00
18-8 Stainless Steel					
1/4"-20	1/2"	19/64"	10	95070A210	13.90
5/16"-18	9/16"	21/64"	5	95070A310	9.67
3/8"-16	5/8"	25/64"	1	95070A410	2.09
7/16"-14	3/4"	29/64"	1	95070A510	7.70
1/2"-13	13/16"	1/2"	1	95070A610	5.63
Thin Hex					
Cadmium-Plated Steel					
6-32	5/16"	9/64"	25	94830A485	11.14
8-32	11/32"	3/16"	25	94830A490	11.06
10-24	3/8"	3/16"	25	94830A495	8.98
10-32	3/8"	3/16"	25	94830A505	10.70
1/4"-20	7/16"	7/32"	25	94830A510	10.76
1/4"-28	7/16"	7/32"	25	94830A515	10.76
5/16"-18	1/2"	17/64"	10	94830A520	6.57
5/16"-24	1/2"	17/64"	10	94830A525	6.57
3/8"-16	9/16"	9/32"	10	94830A530	7.21
3/8"-24	9/16"	9/32"	10	94830A535	7.21
7/16"-20	5/8"	21/64"	5	94830A540	8.18
1/2"-13	3/4"	21/64"	5	94830A545	8.18
1/2"-20	3/4"	21/64"	5	94830A550	8.18
5/8"-11	15/16"	25/64"	5	94830A560	14.42
5/8"-18	15/16"	25/64"	5	94830A565	14.16
3/4"-10	1 1/16"	27/64"	1	94830A570	2.57
3/4"-16	1 1/16"	27/64"	1	94830A436	3.53
1"-8	1 7/16"	37/64"	1	94830A038	5.95
1"-14	1 7/16"	37/64"	1	94830A438	9.99

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Thin Hex (Cont.)					
18-8 Stainless Steel					
6-32	5/16"	9/64"	10	94140A100	$12.36
8-32	11/32"	3/16"	10	94140A103	12.76
10-24	3/8"	3/16"	10	94140A105	14.05
10-32	3/8"	3/16"	10	94140A107	10.99
1/4"-20	7/16"	7/32"	10	94140A131	14.47
1/4"-28	7/16"	7/32"	5	94140A109	6.42
5/16"-18	1/2"	17/64"	5	94140A139	10.56
5/16"-24	1/2"	17/64"	5	94140A143	13.54
3/8"-16	9/16"	9/32"	5	94140A147	14.64
3/8"-24	9/16"	9/32"	5	94140A151	14.65
1/2"-13	3/4"	21/64"	1	94140A155	7.04
1/2"-20	3/4"	21/64"	1	94140A159	7.04
Extra-Wide Thin Hex					
Cadmium-Plated Steel					
1/4"-20	1/2"	7/32"	25	94828A410	7.60
5/16"-18	9/16"	17/64"	10	94828A420	6.55
3/8"-16	5/8"	9/32"	10	94828A425	8.49
7/16"-14	3/4"	21/64"	1	94828A430	1.21
1/2"-13	13/16"	21/64"	10	94828A435	14.77
5/8"-11	1"	13/32"	1	94828A440	3.23
3/4"-10	1 1/8"	27/64"	1	94828A036	4.52
7/8"-9	15/16"	31/64"	1	94828A037	7.47
1"-8	1 1/2"	37/64"	1	94828A038	10.85

Thrd. Size	Pitch	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Metric Hex— *Dimensions in millimeters*						
Cadmium-Plated Class 8 Steel						
M6	1	10	7.8	5	94235A080	$5.01
M8	1.25	13	10.4	1	94235A090	1.57
M10	1.5	17	13	1	94235A110	2.66
M12	1.75	19	15.6	1	94235A120	4.98
18-8 Stainless Steel						
M6	1	10	7.8	1	94560A060	2.65
M8	1.25	13	10.4	1	94560A080	5.23
M10	1.5	17	13	1	94560A100	6.93
M12	1.75	19	15.6	1	94560A120	12.21

Nylon-Insert Hex Flange Locknuts

No need to search for a separate washer, these vibration-resistant locknuts provide the extra bearing surface you need and they're great for covering oversized holes. They have a Class 2B thread fit, are reliable at temperatures up to 250° F, and are rated for maximum Rockwell hardness of C28, unless noted.

You can pair ***zinc yellow-chromate plated Grade G steel*** nuts with high-strength Grade 8 hex head cap screws.

Zinc-plated Grade F steel nuts are made from steel equivalent to Grade 5 steel.

Also Available: Metric zinc-plated Class 8 steel nylon-insert hex flange locknuts. Nuts meet DIN 6926 and are reliable at temperatures up to 248° F. Please ask for 92461A100 and specify thread size.

Thread Size	Wd.	O'all Ht.	Flange Dia.	Flange Ht.	Pkg. Qty.		Per Pkg.
Zinc Yellow-Chromate Plated Grade G Steel							
1/4"-20	7/16"	5/16"	0.56"	0.07"	100	92018A210★	$6.59
5/16"-18	1/2"	3/8"	0.68"	0.09"	50	92018A320★	4.96
3/8"-16	9/16"	7/16"	0.81"	0.11"	50	92018A430★	7.21
1/2"-13	3/4"	9/16"	1.07"	0.14"	25	92018A540★	5.17
5/8"-11	15/16"	45/64"	1.33"	0.16"	10	92018A650★	6.18
3/4"-10	1 1/8"	53/64"	1.59"	0.18"	5	92018A760★	6.75
Zinc-Plated Grade F Steel							
10-24	3/8"	1/4"	0.51"	0.05"	100	93298A108★	6.74
10-32	3/8"	1/4"	0.51"	0.05"	100	93298A109★	6.74
1/4"-20	7/16"	5/16"	0.56"	0.04"	100	93298A110	6.73
1/4"-28	7/16"	5/16"	0.56"	0.07"	100	93298A115	5.13
5/16"-18	1/2"	3/8"	0.68"	0.05"	50	93298A120	5.45
3/8"-16	9/16"	7/16"	0.81"	0.06"	50	93298A130	8.49
7/16"-14	11/16"	1/2"	0.93"	0.07"	25	93298A140	6.55
1/2"-13	3/4"	9/16"	1.07"	0.08"	25	93298A150	8.43
1/2"-20	3/4"	9/16"	1.07"	0.14"	25	93298A155	6.04
5/8"-11	15/16"	45/64"	1.33"	0.1"	10	93298A170	7.15
3/4"-10	1 1/8"	53/64"	1.59"	0.17"	5	93298A180★	5.07

★ Not rated for Rockwell hardness.

Nylon Hex Locknuts

These off-white nylon 6/6 nuts form threads as they're tightened. Use them in light duty applications that require vibration resistance. Temperature range is –40° to +185° F.

Self-locking nuts are partially tapped with a locking thread; the balance of the nut is tapped as the nuts are tightened. ***Self-threading*** nuts are not tapped; threads form as the nuts are tightened.

Thread Size	Wd.	Ht.	Pkg. Qty.	Self Locking	Per Pkg.	Self Threading	Per Pkg.
2-56	3/16"	9/64"	100	94909A002	$11.23	94909A147	$8.74
4-40	1/4"	3/16"	100	94909A005	11.23	94909A153	8.74
6-32	5/16"	13/64"	100	94909A007	11.55	94909A159	8.95
8-32	11/32"	15/64"	100	94909A009	10.73	94909A165	9.06
10-24	3/8"	1/4"	100	94909A011	10.92	94909A172	9.25
10-32	3/8"	1/4"	100	94909A022	10.92	94909A177	9.25
1/4"-20	7/16"	9/32"	100	94909A029	11.93	94909A181	10.07

Left-Hand Distorted-Thread Hex Locknuts

Designed to tighten in a counterclockwise direction, these locknuts have a slight indent in the center that distorts the threads enough to cause a vibration-resistant friction grip against mating threads. Sometimes called two-way locknuts because they can be threaded on from either end, they're made from zinc-plated Grade 8 steel and have a Class 2B thread fit. Not reusable.

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
1/4"-20	7/16"	7/32"	25	90392A028	$4.87
5/16"-18	1/2"	17/64"	25	90392A033	9.36
3/8"-16	9/16"	21/64"	10	90392A039	6.06
1/2"-13	3/4"	7/16"	10	90392A050	9.24
5/8"-11	15/16"	35/64"	5	90392A061	6.64
3/4"-10	1 1/8"	41/64"	5	90392A067	8.33

Distorted-Thread Hex Locknuts

Also known as all-metal and Stover locknuts, these one-piece nuts feature distorted threads that create a vibration-resistant friction fit—so the nuts stay put. Reusable up to three times.

Oval Lock—One end has a complete thread distorted into an oval shape. Versions *with flange* cover oversized holes. Grade G have a min. Rockwell hardness of C24; Grade C have a min. Rockwell hardness of C26. Both grades are equivalent to high-strength alloy steel (Grade 8).

Toplock—Like oval locknuts, but with threads deformed in two or three separate areas.

Centerlock—Also known as two-way locknuts, these nuts are compressed in the center. This allows them to be threaded on from either end.

Oval Lock with Flange — *Oval Lock with Conical Top* — *Toplock* — *Centerlock*

Oval Lock with Flange—Black-Phosphate Grade G Steel

Thread Size	Wd.	O'all Ht.	Flange Dia.	Flange Ht.	Pkg. Qty.		Per Pkg.
1/4″-20	7/16″	9/32″	35/64″	0.06″	100	90949A016	$5.63
1/4″-28	7/16″	9/32″	35/64″	0.06″	100	90949A018	5.83
5/16″-18	1/2″	23/64″	43/64″	0.08″	100	90949A025	8.78
5/16″-24	1/2″	23/64″	43/64″	0.08″	100	90949A029	9.06
3/8″-16	9/16″	25/64″	13/16″	0.11″	50	90949A031	10.13
1/2″-13	3/4″	33/64″	11/16″	0.15″	25	90949A033	10.72
1/2″-20	3/4″	17/32″	11/16″	0.12″	25	90949A037	8.01
5/8″-11	15/16″	39/64″	121/64″	0.18″	20	90949A110	14.73
5/8″-18	15/16″	21/32″	121/64″	0.16″	10	90949A112	$4.59
3/4″-10	1 1/8″	43/64″	137/64″	0.19″	10	90949A115	10.06
3/4″-16	1 1/8″	13/16″	19/16″	0.18″	10	90949A119	8.54
7/8″-9	1 5/16″	49/64″	1 3/4″	0.18″	5	90949A124	8.63
7/8″-14	1 5/16″	49/64″	1 3/4″	0.18″	5	90949A127	8.93
1″-8	1 1/2″	57/64″	2 3/64″	0.21″	5	90949A133	10.01
1″-14	1 1/2″	57/64″	2 3/64″	0.21″	5	90949A135	11.01

Oval Lock with Conical Top—Cadmium-Plated Grade C Steel—ASTM A563

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
1/4″-20	7/16″	7/32″	100	92501A029	$7.82
1/4″-28	7/16″	7/32″	100	92501A420	9.98
5/16″-18	1/2″	17/64″	100	92501A030	11.52
5/16″-24	1/2″	17/64″	100	92501A425	10.94
3/8″-16	9/16″	21/64″	100	92501A031	13.88
3/8″-24	9/16″	21/64″	100	92501A430	14.41
7/16″-14	11/16″	3/8″	50	92501A433	10.68
7/16″-20	11/16″	3/8″	50	92501A435	$11.35
1/2″-13	3/4″	7/16″	50	92501A437	14.19
1/2″-20	3/4″	7/16″	50	92501A440	13.87
9/16″-12	7/8″	31/64″	25	92501A442	10.56
9/16″-18	7/8″	31/64″	25	92501A445	10.73
5/8″-11	15/16″	35/64″	25	92501A035	13.82
5/8″-18	15/16″	35/64″	25	92501A450	13.67
3/4″-10	1 1/8″	21/32″	10	92501A036	$9.23
3/4″-16	1 1/8″	21/32″	10	92501A455	9.37
7/8″-9	1 5/16″	49/64″	10	92501A457	11.76
7/8″-14	1 5/16″	49/64″	5	92501A460	6.65
1″-8	1 1/2″	7/8″	5	92501A462	9.49
1″-14	1 1/2″	7/8″	5	92501A465	9.75

Metric Oval Lock with Conical Top—Zinc-Plated Class 8 Steel—DIN 980V

Thread Size	Pitch, mm	Wd., mm	Ht., mm	Pkg. Qty.		Per Pkg.
M3	0.5	5.5	3.7	50	93795A200	$8.25
M4	0.7	7	4.2	100	93795A205	10.20
M5	0.8	8	5.1	100	93795A210	8.84
M6	1	10	6	100	93795A220	8.92
M8	1.25	13	8	50	93795A230	5.60
M10	1.5	17	10	25	93795A240	5.42
M12	1.75	19	12	25	93795A250	$8.56
M14	2	22	14	10	93795A257	7.87
M16	2	24	16	10	93795A260	7.64
M18	2.5	27	18	5	93795A265	9.41
M20	2.5	30	20	5	93795A270	8.78
M24	3	36	24	1	93795A280	5.06

Toplock

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Zinc-Plated Grade 5 Steel					
1/4″-20	7/16″	7/32″	100	95065A150	$10.29
5/16″-18	1/2″	17/64″	100	95065A160	14.03
3/8″-16	9/16″	21/64″	50	95065A171	8.39
1/2″-13	3/4″	7/16″	25	95065A191	8.37
5/8″-11	15/16″	35/64″	20	95065A220	14.58
3/4″-10	1 1/8″	41/64″	10	95065A230	13.31
Zinc-Plated Grade 2 Steel					
6-32	5/16″	7/64″	100	91837A008	4.77
8-32	11/32″	1/8″	100	91837A011	4.21
10-24	3/8″	1/8″	100	91837A014	4.38
10-32	3/8″	1/8″	100	91837A017	5.71
1/4″-20	7/16″	7/32″	100	91837A029	7.85
1/4″-28	7/16″	7/32″	100	91837A250	5.89
5/16″-18	1/2″	17/64″	100	91837A030	9.04
5/16″-24	1/2″	17/64″	100	91837A253	10.24
3/8″-16	9/16″	21/64″	100	91837A031	14.77
Zinc-Plated Grade 2 Steel (Cont.)					
3/8″-24	9/16″	21/64″	100	91837A255	$13.24
1/2″-13	3/4″	7/16″	50	91837A262	14.05
1/2″-20	3/4″	7/16″	50	91837A265	13.06
Type 316 Stainless Steel					
8-32	11/32″	1/8″	10	95885A410	3.53
10-24	3/8″	1/8″	10	95885A415	3.62
10-32	3/8″	1/8″	10	95885A420	3.62
1/4″-20	7/16″	7/32″	10	95885A425	4.49
5/16″-18	1/2″	17/64″	10	95885A430	5.55
3/8″-16	9/16″	21/64″	10	95885A435	7.73
1/2″-13	3/4″	7/16″	5	95885A440	5.75
18-8 Stainless Steel					
6-32	5/16″	7/64″	50	90045A010	7.61
8-32	11/32″	1/8″	50	90045A013	8.08
10-24	3/8″	1/8″	50	90045A016	8.50
10-32	3/8″	1/8″	50	90045A018	8.50
18-8 Stainless Steel (Cont.)					
1/4″-20	7/16″	7/32″	50	90045A445	$11.13
1/4″-28	7/16″	7/32″	25	90045A450	7.57
5/16″-18	1/2″	17/64″	25	90045A453	8.26
5/16″-24	1/2″	17/64″	25	90045A455	11.68
3/8″-16	9/16″	21/64″	25	90045A457	11.07
3/8″-24	9/16″	21/64″	10	90045A461	6.76
7/16″-14	11/16″	3/8″	10	90045A462	9.84
7/16″-20	11/16″	3/8″	5	90045A465	7.12
1/2″-13	3/4″	7/16″	10	90045A467	10.30
1/2″-20	3/4″	7/16″	5	90045A471	6.62
5/8″-11	15/16″	35/64″	5	90045A472	10.51
5/8″-18	15/16″	35/64″	1	90045A475	4.01
3/4″-10	1 1/8″	41/64″	1	90045A480	3.73
3/4″-16	1 1/8″	41/64″	1	90045A495	4.65
1″-8	1 1/2″	55/64″	1	90045A500	8.74

Centerlock

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Zinc Yellow-Chromate Plated Grade 8 Steel					
1/4″-20	7/16″	7/32″	50	90636A038	11.16
1/4″-28	7/16″	7/32″	50	90636A041	10.74
5/16″-18	1/2″	17/64″	50	90636A043	11.52
5/16″-24	1/2″	17/64″	50	90636A046	12.12
3/8″-16	9/16″	21/64″	25	90636A049	6.38
3/8″-24	9/16″	21/64″	25	90636A051	9.06
7/16″-14	11/16″	3/8″	10	90636A054	4.89
7/16″-20	11/16″	3/8″	10	90636A057	4.72
1/2″-13	3/4″	7/16″	10	90636A060	6.00
1/2″-20	3/4″	7/16″	10	90636A063	7.17
9/16″-12	7/8″	31/64″	10	90636A066	8.75
5/8″-11	15/16″	35/64″	5	90636A071	5.49
5/8″-18	15/16″	35/64″	5	90636A074	6.12
3/4″-10	1 1/8″	41/64″	5	90636A077	8.21
3/4″-16	1 1/8″	41/64″	5	90636A080	8.90
7/8″-9	1 5/16″	3/4″	5	90636A083	11.93
1″-8	1 1/2″	55/64″	1	90636A089	3.59
Zinc-Plated Grade 2 Steel					
1/4″-20	7/16″	7/32″	100	90040A029	4.76
1/4″-28	7/16″	7/32″	100	90040A120	3.29
5/16″-18	1/2″	17/64″	100	90040A030	6.21
5/16″-24	1/2″	17/64″	100	90040A125	7.25
3/8″-16	9/16″	21/64″	100	90040A031	9.42
3/8″-24	9/16″	21/64″	100	90040A130	8.83
7/16″-14	11/16″	3/8″	100	90040A032	14.59
7/16″-20	11/16″	3/8″	100	90040A135	14.30
1/2″-13	3/4″	7/16″	50	90040A137	9.81
1/2″-20	3/4″	7/16″	50	90040A140	10.54
5/8″-11	15/16″	35/64″	25	90040A143	9.31
5/8″-18	15/16″	35/64″	25	90040A145	9.31
3/4″-10	1 1/8″	41/64″	25	90040A147	14.90
3/4″-16	1 1/8″	41/64″	25	90040A150	14.98
1″-14	1 1/2″	55/64″	5	90040A155	11.41
Type 316 Stainless Steel					
1/4″-20	7/16″	7/32″	10	95878A300	4.09
5/16″-18	1/2″	17/64″	10	95878A310	5.72
3/8″-16	9/16″	21/64″	10	95878A320	7.84
1/2″-13	3/4″	7/16″	5	95878A330	8.15
Type 316 Stainless Steel (Cont.)					
5/8″-11	15/16″	35/64″	1	95878A340	2.51
3/4″-10	1 1/8″	41/64″	1	95878A350	3.70
18-8 Stainless Steel					
1/4″-20	7/16″	7/32″	50	90047A029	7.94
1/4″-28	7/16″	7/32″	50	90047A110	12.95
5/16″-18	1/2″	17/64″	50	90047A115	13.25
5/16″-24	1/2″	17/64″	25	90047A120	8.18
3/8″-16	9/16″	21/64″	25	90047A125	8.43
3/8″-24	9/16″	21/64″	25	90047A130	12.18
7/16″-14	11/16″	3/8″	10	90047A131	8.36
7/16″-20	11/16″	3/8″	10	90047A133	12.25
1/2″-13	3/4″	7/16″	10	90047A135	9.01
1/2″-20	3/4″	7/16″	10	90047A140	11.68
5/8″-11	15/16″	35/64″	5	90047A145	8.26
5/8″-18	15/16″	35/64″	5	90047A150	12.70
3/4″-10	1 1/8″	41/64″	5	90047A155	10.11
3/4″-16	1 1/8″	41/64″	1	90047A160	4.13
7/8″-9	1 5/16″	3/4″	1	90047A165	5.26
1″-8	1 1/2″	55/64″	1	90047A170	7.99
1″-14	1 1/2″	55/64″	1	90047A175	12.16

Distorted-Thread Steel-Insert Hex Locknuts

Hex *Heavy Hex* *Thin Hex*

If severe vibration is the problem, these reusable, all-steel locknuts are your solution. Designed in two pieces; the elliptically-shaped locking insert isolates the vibration allowing the separate nut body to carry the load without coming loose. They're stronger and more vibration resistant than expanding hex locknuts, and they stand up to chemicals and extreme temperatures better than nuts that rely on thread adhesives for holding strength. Inch sizes have a Class 2B thread fit; metric sizes have a Class 6H thread fit.

Thread Size	Wd.	Ht.		Each
Hex				
Grade 5 Steel				
1/2"-13	3/4"	1/2"	90619A410	$3.95
1/2"-20	3/4"	1/2"	90619A413	3.94
5/8"-11	15/16"	5/8"	90619A415	4.54
5/8"-18	15/16"	5/8"	90619A420	4.60
3/4"-10	1 1/8"	3/4"	90619A425	5.74
3/4"-16	1 1/8"	3/4"	90619A430	5.74
7/8"-9	1 5/16"	7/8"	90619A435	7.62
7/8"-14	1 5/16"	7/8"	90619A440	7.72
1"-8	1 1/2"	1"	90619A445	9.40
1"-14	1 1/2"	1"	90619A450	10.19
1 1/8"-12	1 11/16"	1 1/8"	90619A460	15.31
1 1/4"-7	1 7/8"	1 1/4"	90619A465	17.03
1 1/4"-12	1 7/8"	1 1/4"	90619A470	17.89
1 1/2"-6	2 1/4"	1 1/2"	90619A475	26.29
1 1/2"-12	2 1/4"	1 1/2"	90619A480	27.60
1 3/4"-12	2 5/8"	1 3/4"	90619A485	84.37
2"-12	3"	2"	90619A495	64.80

Thread Size	Wd.	Ht.		Each
Heavy Hex				
Grade 8 Steel				
1 1/8"-7	1 13/16"	1 17/64"	90621A039	$15.86
1 1/4"-7	2"	1 13/32"	90621A060	18.65
1 1/2"-6	2 3/8"	1 11/16"	90621A065	28.74
1 3/4"-5	2 3/4"	1 31/32"	90621A070	84.05
Grade 5 Steel				
1/2"-13	7/8"	9/16"	90621A033	3.73
5/8"-11	1 1/16"	45/64"	90621A035	4.35
3/4"-10	1 1/4"	27/32"	90621A036	5.29
7/8"-9	1 7/16"	63/64"	90621A037	7.29
1"-8	1 5/8"	1 1/8"	90621A038	9.64
Thin Hex				
Grade 5 Steel				
1/2"-13	3/4"	3/8"	90619A021	3.88
1/2"-20	3/4"	3/8"	90619A033	4.68
5/8"-11	15/16"	29/64"	90619A151	4.60
5/8"-18	15/16"	29/64"	90619A159	5.54
3/4"-10	1 1/8"	9/16"	90619A167	6.79
3/4"-16	1 1/8"	9/16"	90619A036	7.13
7/8"-9	1 5/16"	19/32"	90619A175	7.72

Thread Size	Wd.	Ht.		Each
Thin Hex (Cont.)				
Grade 5 Steel (Cont.)				
7/8"-14	1 5/16"	19/32"	90619A037	$8.69
1"-8	1 1/2"	23/32"	90619A189	10.19
1"-14	1 1/2"	23/32"	90619A038	12.09
1 1/8"-12	1 11/16"	3/4"	90619A039	17.08
1 1/4"-7	1 7/8"	7/8"	90619A213	19.71
1 1/4"-12	1 7/8"	7/8"	90619A040	20.71
1 1/2"-6	2 1/4"	1"	90619A228	24.37
1 1/2"-12	2 1/4"	1"	90619A041	31.26

Thread Size	Pitch	Wd.	Ht.		Each
Metric Hex— *Dimensions in millimeters*					
Class 8 Steel					
M12	1.75	19	11.5	93520A205	$3.88
M16	2	24	14.2	93520A209	4.35
M20	2.5	30	18.4	93520A213	5.59
M22	2.5	32	20.7	93520A217	7.13
M24	3	36	21.8	93520A221	8.81
M27	3	41	25.3	93520A225	11.11
M30	3.5	46	27.6	93520A229	15.62

Military Specification Distorted-Thread Hex Locknuts for High Temperatures

Also known as jet nuts, these nuts are made to exacting military standards. The thread area is crimped into an oval shape that provides a vibration-resistant friction grip against mating threads. Nuts have a flange that adds clamping strength and scaled down proportions that make them ideal in tight spaces. All have a Class 3B thread fit and are not rated for hardness.

Cadmium-plated steel nuts meet MS 21042 and withstand temperatures up to 450° F. ***Silver-plated A286 super alloy*** nuts meet MS 21043 and withstand temperatures up to 800° F.

Thread Size	Dash No.	Wd.	O'all Ht.	Flange Dia.	Flange Ht.	Cadmium-Plated Steel Pkg. Qty.		Per Pkg.	Silver-Plated A286 Super Alloy Pkg. Qty.		Per Pkg.
4-40	04	5/32"	1/8"	0.206"	0.027"	5	95307A100	$7.78	1	98892A100	$2.67
6-32	06	3/16"	9/64"	0.244"	0.031"	5	95307A200	5.50	5	98892A200	9.11
8-32	08	7/32"	3/16"	0.29"	0.031"	5	95307A300	4.89	1	98892A300	2.44
10-32	3	1/4"	3/16"	0.33"	0.031"	5	95307A400	5.11	1	98892A400	2.58
1/4"-28	4	5/16"	7/32"	0.42"	0.036"	5	95307A500	6.89	5	98892A500	9.89
5/16"-24	5	3/8"	17/64"	0.52"	0.042"	1	95307A600	2.58	1	98892A600	6.00
3/8"-24	6	7/16"	9/32"	0.62"	0.042"	1	95307A700	2.44	1	98892A700	6.44

Machine Screw Hex Nuts with Lock Washer

With Tooth Washer *With Conical Washer*

To make your job a little bit easier, these nuts come with a free-spinning lock washer already attached. Also known as Keps and K-lock nuts, inch sizes have a Class 2B thread fit; metric sizes have a Class 6H thread fit.

Nuts ***with tooth washer*** resist vibration when the washer teeth bite into the surface they're tightened against. Nuts ***with conical washer*** have a smooth rim that's less likely to scratch soft materials. Tension holds them tight.

Inch Sizes

Thread Size	Nut Wd.	WITH TOOTH WASHER — Zinc-Plated Grade 2 Steel: Nut Ht.	Washer Dia.	Pkg. Qty.		Per Pkg.	18-8 Stainless Steel: Nut Ht.	Washer Dia.	Pkg. Qty.		Per Pkg.	WITH CONICAL WASHER — Zinc-Plated Grade 2 Steel: Nut Ht.	Washer Dia.	Pkg. Qty.		Per Pkg.
4-40	1/4"	3/32"	9/32"	100	90675A005	$3.44	3/32"	9/32"	100	96278A005	$6.27	3/32"	21/64"	50	95170A350	$14.92
6-32	5/16"	7/64"	11/32"	100	90675A007	3.79	7/64"	11/32"	100	96278A007	7.27	3/32"	21/64"	25	95170A355	8.44
8-32	11/32"	1/8"	3/8"	100	90675A009	3.00	1/8"	3/8"	100	96278A009	8.67	1/8"	3/8"	50	95170A360	13.18
10-24	3/8"	1/8"	13/32"	100	90675A011	3.16	1/8"	13/32"	100	96278A011	9.57	—	—	—	—	—
10-32	3/8"	1/8"	13/32"	100	90675A195	3.27	1/8"	13/32"	100	96278A411	9.57	1/8"	13/32"	25	95170A370	8.24
1/4"-20	7/16"	3/16"	1/2"	100	90675A029	5.34	7/32"	1/2"	50	96278A511	8.17	1/8"	1/2"	25	95170A390	9.76
1/4"-28	7/16"	3/16"	1/2"	100	90675A215	4.44	7/32"	1/2"	50	96278A515	9.51	—	—	—	—	—
5/16"-18	1/2"	17/64"	37/64"	100	90675A030	7.62	17/64"	37/64"	25	96278A519	7.12	—	—	—	—	—
5/16"-24	1/2"	17/64"	37/64"	100	90675A225	8.34	17/64"	37/64"	25	96278A523	9.56	—	—	—	—	—
3/8"-16	9/16"	3/8"	21/32"	100	90675A031	10.57	21/64"	21/32"	25	96278A527	9.72	—	—	—	—	—
3/8"-24	9/16"	3/8"	21/32"	100	90675A235	13.01	21/64"	21/32"	10	96278A531	6.34	—	—	—	—	—

Metric Sizes— Dimensions in millimeters

Thread Size	Pitch	Nut Wd.	Nut Ht.	WITH TOOTH WASHER — Zinc-Plated Class 6 Steel: Washer Dia.	Pkg. Qty.		Per Pkg.	18-8 Stainless Steel■: Washer Dia.	Pkg. Qty.		Per Pkg.	WITH CONICAL WASHER — Zinc-Plated Class 8 Steel: Washer Dia.	Pkg. Qty.		Per Pkg.
M3	0.5	5.5	2.4	7.1	100	93825A110	$10.91	6.5	50	90923A216	$13.79	—	—	—	—
M4	0.7	7	3.2	8.5	100	93825A120	11.56	8.2	50	90923A219	12.41	10	100	91270A310	$8.42
M5	0.8	8	4	9.5	100	93825A130	12.37	9.5	25	90923A222	6.70	12	100	91270A320	9.60
M6	1	10	5	12	100	93825A140	12.49	11.5	25	90923A227	8.79	14	50	91270A330	5.98
M8	1.25	13	6.5	15.5	25	93825A160	9.66	15.5	5	90923A241	5.65	18	100	91270A340	12.19
M10	1.5	17	8	20.1	10	93825A170	7.64	20.1	5	90923A282	9.83	22	100	91270A350	14.90
M12	1.75	19	10	—	—	—	—	—	—	—	—	25.5	100	91270A360	14.95

■ Not rated for hardness.

Machine Screw Hex Nuts with Lock Washer Assortments

We're offering these convenient 600-piece assortments in your choice of zinc-plated Grade 2 steel and 18-8 stainless steel. Nuts have a toothed washer, a Class 2B thread fit, and come in an 11″ Lg. × 6¾″ Wd. × 1¾″ Dp. compartmented plastic case with lid chart.

Thread Size	No. of Pcs.	Thread Size	No. of Pcs.
4-40	100	10-24	100
6-32	100	10-32	100
8-32	100	¼″-20	100

Zinc-Plated Grade 2 Steel	90740A106	Each	$70.42
18-8 Stainless Steel	90625A500	Each	$99.58

Flange Hex Nuts

A thick, nonmarring flange adds clamping strength to these hefty one-piece nuts. Also called collar nuts, inch sizes have a Class 2B thread fit, metric sizes have a Class 6H thread fit.

Fiberglass nuts are reliable at temperatures up to 150° F.

Thread Size	Wd.	O'all Ht.	Flange Dia.	Flange Ht.		Each
Black-Oxide Case-Hardened Steel						
¼″-20	½″	5/16″	⅝″	3/32″	91030A028	$1.83
¼″-28	½″	5/16″	⅝″	3/32″	91030A420	2.05
5/16″-18	9/16″	⅜″	¾″	⅛″	91030A029	1.95
5/16″-24	9/16″	⅜″	¾″	⅛″	91030A425	2.21
⅜″-16	11/16″	½″	⅞″	⅛″	91030A031	2.16
⅜″-24	11/16″	½″	⅞″	⅛″	91030A430	2.26
7/16″-14	¾″	9/16″	1″	5/32″	91030A032	2.49
7/16″-20	¾″	9/16″	1″	5/32″	91030A435	2.53
½″-13	⅞″	11/16″	1⅛″	3/16″	91030A033	2.49
½″-20	⅞″	11/16″	1⅛″	3/16″	91030A440	2.47
⅝″-11	1 1/16″	13/16″	1⅜″	3/16″	91030A035	3.16
⅝″-18	1 1/16″	13/16″	1⅜″	3/16″	91030A445	3.35
¾″-10	1¼″	1″	1⅝″	¼″	91030A036	4.70
¾″-16	1¼″	1″	1⅝″	¼″	91030A450	4.70
⅞″-9	1 7/16″	1⅛″	1¾″	¼″	91030A037	6.51
⅞″-14	1 7/16″	1⅛″	1¾″	¼″	91030A455	6.86
1″-8	1⅝″	1¼″	2″	¼″	91030A038	7.79
1″-14	1⅝″	1¼″	2″	¼″	91030A460	7.79
1¼″-7	1 13/16″	1¼″	2½″	¼″	91030A040	16.09
18-8 Stainless Steel						
¼″-20	½″	5/16″	⅝″	3/32″	94758A028	4.86
¼″-28	½″	5/16″	⅝″	3/32″	94758A615	5.04
5/16″-18	9/16″	⅜″	¾″	⅛″	94758A029	4.86
5/16″-24	9/16″	⅜″	¾″	3/32″	94758A625	5.82
⅜″-16	11/16″	½″	⅞″	⅛″	94758A031	6.08
⅜″-24	11/16″	½″	⅞″	⅛″	94758A635	6.08
7/16″-14	¾″	9/16″	1″	5/32″	94758A032	7.10
7/16″-20	¾″	9/16″	1″	5/32″	94758A645	7.06
½″-13	⅞″	11/16″	1⅛″	5/32″	94758A033	7.70
½″-20	⅞″	11/16″	1⅛″	5/32″	94758A655	7.70
⅝″-11	1 1/16″	13/16″	1⅜″	3/16″	94758A035	9.28
⅝″-18	1 1/16″	13/16″	1⅜″	3/16″	94758A665	9.30
¾″-10	1¼″	1″	1⅝″	¼″	94758A036	12.96
¾″-16	1¼″	1″	1⅝″	¼″	94758A675	13.00
⅞″-9	1 7/16″	1⅛″	1¾″	¼″	94758A037	15.68
1″-8	1⅝″	1¼″	2″	¼″	94758A038	21.20
1″-14	1⅝″	1¼″	2″	¼″	94758A695	21.20
1¼″-7	1 13/16″	1¼″	2½″	¼″	94758A700	40.77
Fiberglass ■						
⅜″-16	9/16″	¾″	¾″	⅛″	98945A041	1.19
½″-13	¾″	⅞″	1″	9/64″	98945A043	1.71
⅝″-11	15/16″	1¼″	1¼″	9/64″	98945A045	2.02
¾″-10	1⅛″	1½″	1½″	3/16″	98945A048	2.40

■ Not rated for hardness.

Thread Size	Pitch	Wd.	O'all Ht.	Flange Dia.	Flange Ht.		Each
Metric Black-Oxide Case-Hardened Steel—*Dimensions in millimeters*							
M6	1	10	8	16	2	91005A033	$2.40
M8	1.25	13	10	19	2.5	91005A035	2.42
M10	1.5	17	13	22	3	91005A037	3.12
M12	1.75	19	17	27	4	91005A038	3.48
M16	2	24	21	33	5	91005A039	3.96
M20	2.5	30	25	40	6	91005A041	5.44
M24	3	36	32	49	7	91005A045	7.02

High-Strength 12-Point Flange Nuts

Stronger than Grade 8 steel nuts, these one-piece nuts are made from chrome-moly alloy steel. They feature a 12-point drive that provides more contact points than a hex head to handle more tightening torque. Each has a smooth, nonmarring flange that distributes the load for maximum holding power. All have a black-oxide finish, a Class 3B thread fit, and a minimum Rockwell hardness of C34.

Also Available: A286 super alloy 12-point flange nuts in sizes marked with a ●. Please ask for 90997A660 and specify thread size.

Thread Size	Wd.	O'all Ht.	Flange Dia.	Flange Ht.		Each
¼″-20	5/16″	19/64″	7/16″	1/16″	90759A100●	$1.64
¼″-28	5/16″	19/64″	7/16″	1/16″	90759A150●	1.64
5/16″-18	⅜″	11/32″	17/32″	5/64″	90759A200●	1.68
5/16″-24	⅜″	11/32″	17/32″	5/64″	90759A250●	1.70
⅜″-16	7/16″	25/64″	⅝″	3/32″	90759A300●	1.74
⅜″-24	7/16″	25/64″	⅝″	3/32″	90759A350●	1.56
7/16″-14	½″	7/16″	45/64″	7/64″	90759A400	2.06
7/16″-20	½″	7/16″	45/64″	7/64″	90759A450	2.06
½″-13	9/16″	33/64″	53/64″	11/64″	90759A500	3.28
½″-20	9/16″	33/64″	53/64″	⅛″	90759A550	3.28

Serrated-Flange Hex Locknuts

Armed with teeth-like serrations, these one-piece locknuts bite into surfaces to resist vibration. Dimensions meet IFI-145. Inch sizes have a Class 2B thread fit; metric sizes have a Class 6H thread fit.

Zinc-plated Grade 2 steel nuts have a maximum Rockwell hardness of C40.

Thread Size	Wd.	O'all Ht.	Flange Dia.	Flange Ht.	Pkg. Qty.		Per Pkg.
Grade 8 Steel							
¼″-20	7/16″	15/64″	19/32″	0.08″	100	95922A110	$6.66
5/16″-18	½″	9/32″	43/64″	0.1″	100	95922A120	9.59
⅜″-16	9/16″	11/32″	¾″	0.1″	100	95922A130	12.73
½″-13	¾″	29/64″	1 1/32″	0.13″	25	95922A140	8.65
⅝″-11	15/16″	9/16″	1 9/32″	0.15″	10	95922A150	6.43
¾″-10	1⅛″	43/64″	1½″	0.17″	10	95922A160	11.58
Zinc-Plated Grade 2 Steel							
6-32	5/16″	11/64″	27/64″	0.06″	100	94831A001	2.79
8-32	11/32″	13/64″	15/32″	0.06″	100	94831A005	3.90
10-24	⅜″	7/32″	½″	0.07″	100	94831A011	4.69
10-32	⅜″	7/32″	½″	0.07″	100	94831A611	4.37
12-24	7/16″	15/64″	19/32″	0.08″	50	94831A615	2.97
¼″-20	7/16″	15/64″	19/32″	0.08″	100	94831A029	5.00
¼″-28	7/16″	15/64″	19/32″	0.08″	100	94831A629	5.31
5/16″-18	½″	9/32″	43/64″	0.1″	100	94831A030	6.55
5/16″-24	½″	9/32″	43/64″	0.1″	100	94831A630	7.03
⅜″-16	9/16″	11/32″	¾″	0.1″	100	94831A031	9.38
⅜″-24	9/16″	11/32″	¾″	0.1″	100	94831A631	10.83
7/16″-14	11/16″	25/64″	15/16″	0.11″	50	94831A641	10.78
7/16″-20	11/16″	25/64″	15/16″	0.11″	50	94831A651	11.41
½″-13	¾″	29/64″	1 1/32″	0.13″	50	94831A661	12.50
½″-20	¾″	29/64″	1 1/32″	0.13″	25	94831A671	7.03
9/16″-12	⅞″	½″	1 3/16″	0.13″	10	94831A680	3.58
⅝″-11	15/16″	9/16″	1 9/32″	0.15″	25	94831A700	13.05
⅝″-18	15/16″	9/16″	1 9/32″	0.15″	10	94831A730	6.29
¾″-10	1 1/8″	43/64″	1½″	0.17″	10	94831A740	11.44
¾″-16	1 1/8″	43/64″	1½″	0.17″	10	94831A745	9.66
⅞″-9	1 5/16″	25/32″	1 45/64″	0.22″	5	94831A750	12.66
Type 316 Stainless Steel							
¼″-20	7/16″	15/64″	19/32″	0.08″	10	91343A100	3.83
5/16″-18	½″	9/32″	43/64″	0.1″	10	91343A200	5.72
⅜″-16	9/16″	11/32″	¾″	0.1″	10	91343A300	6.71
½″-13	¾″	29/64″	1 1/32″	0.13″	5	91343A400	9.94
18-8 Stainless Steel							
6-32	5/16″	11/64″	27/64″	0.06″	50	93776A370	4.96
8-32	11/32″	13/64″	15/32″	0.06″	50	93776A381	5.95
10-24	⅜″	7/32″	½″	0.07″	50	93776A391	6.55
10-32	⅜″	7/32″	½″	0.07″	50	93776A401	6.55
¼″-20	7/16″	15/64″	19/32″	0.08″	50	93776A421	7.62
¼″-28	7/16″	15/64″	19/32″	0.08″	25	93776A431	6.41
5/16″-18	½″	9/32″	43/64″	0.1″	25	93776A441	6.80
5/16″-24	½″	9/32″	43/64″	0.1″	10	93776A451	5.22
⅜″-16	9/16″	11/32″	¾″	0.1″	25	93776A461	8.21
⅜″-24	9/16″	11/32″	¾″	0.1″	10	93776A471	6.92
½″-13	¾″	29/64″	1 1/32″	0.13″	10	93776A500	8.18

Thread Size	Pitch	Wd.	O'all Ht.	Flange Dia.	Flange Ht.	Pkg. Qty.		Per Pkg.
Metric Black Finish Class 8 Steel—*Dimensions in millimeters*								
M5	0.8	8	4.3	11.2	1.75	50	94920A300	$14.79
M6	1	10	5.5	14.25	2.2	25	94920A400	7.61
M8	1.25	13	7	18.25	2.6	25	94920A500	11.43
M10	1.5	15	7.9	21	2.8	10	94920A600	6.51

Easy-On Flange Hex Locknuts

Just spin them on; these locknuts don't require tedious tightening with a wrench—great news if you're working with a long bolt or stud. Unlike distorted-thread and nylon-insert locknuts that lock by interfering with the thread fit, these reusable one-piece locknuts have a cupped, non-marring flange that does the locking. All have a Class 2B thread fit.

Thread Size	Wd.	O'all Ht.	Flange Dia.	Flange Ht.	Zinc-Plated Grade 8 Steel Pkg. Qty.		Per Pkg.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.
1/4"-20	7/16"	1/4"	19/32"	0.08"	50	98233A100	$8.09	25	97858A100	$7.51
5/16"-18	1/2"	9/32"	11/16"	0.1"	50	98233A200	10.41	25	97858A200	10.41
3/8"-16	9/16"	11/32"	3/4"	0.1"	25	98233A300	6.94	10	97858A300	5.09
1/2"-13	3/4"	7/16"	1"	0.13"	25	98233A400	10.41	5	97858A400	5.20
5/8"-11	15/16"	9/16"	1 1/4"	0.15"	10	98233A500	5.31	5	97858A500	9.82
3/4"-10	1 1/8"	11/16"	1 1/2"	0.17"	10	98233A600	6.24	1	97858A600	2.80

Two-Piece Thread-Clamping Locknuts

Also known as drake-style locknuts, these reusable, two-piece locknuts have greater holding power in high-vibration applications than expanding and nylon-insert locknuts. To use, first tighten the lower nut, and then the mating upper nut. The flexible slotted crown on the lower nut compresses and clamps the nut to your bolt or stud. Ideal for use with Grade 5 and B7 bolts and studs. Nuts are made from steel and have a Class 2B thread fit.

Thread Size	Wd.	O'all Ht.		Each
1/4"-28	7/16"	29/64"	90623A150	$15.95
5/16"-24	1/2"	1/2"	90623A160	16.12
3/8"-24	9/16"	35/64"	90623A170	17.35
7/16"-20	5/8"	5/8"	90623A180	19.97
1/2"-20	3/4"	45/64"	90623A190	18.96
5/8"-18	15/16"	7/8"	90623A200	23.35
3/4"-16	1 1/16"	1 5/64"	90623A210	25.98
7/8"-14	1 1/4"	1 13/32"	90623A220	27.66

Slotted Hex Nuts

A

B

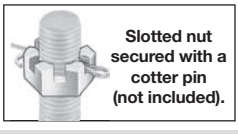

To lock these nuts, insert a cotter pin or safety wire through the slots and through a drilled hole in your fastener. Inch sizes have a Class 2B thread fit and dimensions that meet ANSI/ASME B18.2.2 (except those made from 18-8 stainless steel). Metric sizes have a Class 7H thread fit and meet DIN 935.

For safety wire, see 8860K14 on page 3731. For wire twisting pliers, see page 2757. For cotter pins, see page 3356.

Inch Sizes

Thread Size	Wd.	O'all Ht.	Min. Slot Wd.	Min. Slot Dp.	Cotter Pin Dia.	Pkg. Qty.		Per Pkg.
(A) Zinc-Plated Grade 5 Steel								
1/4"-20	7/16"	7/32"	0.07"	0.09"	1/16"	25	97190A005	$10.14
5/16"-18	1/2"	17/64"	0.09"	0.09"	5/64"	25	97190A010	10.44
3/8"-16	9/16"	21/64"	0.12"	0.13"	3/32"	25	97190A015	8.22
7/16"-14	11/16"	3/8"	0.12"	0.14"	3/32"	25	97190A020	8.44
1/2"-13	3/4"	7/16"	0.15"	0.15"	1/8"	10	97190A025	4.74
5/8"-11	15/16"	35/64"	0.18"	0.21"	5/32"	10	97190A030	6.14
3/4"-10	1 1/8"	41/64"	0.18"	0.24"	5/32"	5	97190A035	5.85
1"-8	1 1/2"	55/64"	0.24"	0.28"	3/16"	1	97190A040	3.46
(A) Zinc-Plated Grade 2 Steel								
1/4"-20	7/16"	7/32"	0.07"	0.09"	1/16"	50	95030A110	11.92
1/4"-28	7/16"	7/32"	0.07"	0.09"	1/16"	50	95030A120	12.45
5/16"-18	1/2"	17/64"	0.09"	0.09"	5/64"	25	95030A130	5.46
5/16"-24	1/2"	17/64"	0.09"	0.09"	5/64"	25	95030A140	7.27
3/8"-16	9/16"	21/64"	0.12"	0.13"	3/32"	25	95030A150	6.25
3/8"-24	9/16"	21/64"	0.12"	0.13"	3/32"	25	95030A160	6.85
7/16"-14	11/16"	3/8"	0.12"	0.15"	7/64"	50	95030A170	14.38
7/16"-20	11/16"	3/8"	0.12"	0.15"	7/64"	25	95030A180	11.61
1/2"-13	3/4"	7/16"	0.15"	0.15"	1/8"	25	95030A190	8.45
1/2"-20	3/4"	7/16"	0.15"	0.15"	1/8"	25	95030A210	6.71
9/16"-12	7/8"	31/64"	0.15"	0.18"	1/8"	25	95030A220	11.15
9/16"-18	7/8"	31/64"	0.15"	0.18"	1/8"	5	95030A230	5.45
5/8"-11	15/16"	35/64"	0.18"	0.21"	5/32"	25	95030A240	13.98
5/8"-18	15/16"	35/64"	0.18"	0.21"	5/32"	10	95030A250	5.99
3/4"-10	1 1/8"	21/32"	0.18"	0.23"	5/32"	10	95030A260	6.34
3/4"-16	1 1/8"	21/32"	0.18"	0.23"	5/32"	10	95030A270	7.40
7/8"-9	1 5/16"	3/4"	0.18"	0.25"	5/32"	5	95030A280	7.21
7/8"-14	1 5/16"	3/4"	0.18"	0.25"	5/32"	5	95030A290	6.19
1"-8	1 1/2"	55/64"	0.24"	0.28"	3/16"	5	95030A310	11.51
1"-14	1 1/2"	55/64"	0.24"	0.28"	3/16"	5	95030A320	11.70
1 1/4"-7	1 7/8"	1 3/32"	0.31"	0.36"	7/32"	1	95030A350	3.20
1 1/4"-12	1 7/8"	1 1/16"	0.31"	0.37"	7/32"	1	95030A360	3.35
1 1/2"-6	2 1/4"	1 5/16"	0.37"	0.42"	1/4"	1	95030A370	5.58
1 1/2"-12	2 1/4"	1 5/16"	0.37"	0.42"	1/4"	1	95030A380	9.14
1 3/4"-5	2 5/8"	1 1/2"	0.43"	0.5"	5/16"	1	95030A390	9.73
1 3/4"-12	2 5/8"	1 1/2"	0.43"	0.5"	5/16"	1	95030A410	11.22

Thread Size	Wd.	O'all Ht.	Min. Slot Wd.	Min. Slot Dp.	Cotter Pin Dia.	Pkg. Qty.		Per Pkg.
(A) Zinc-Plated Grade 2 Steel (Cont.)								
2"-4 1/2	3"	1 23/32"	0.43"	0.55"	5/16"	1	95030A420	$19.46
2"-12	3"	1 23/32"	0.43"	0.55"	5/16"	1	95030A430	19.68
(B) 18-8 Stainless Steel								
10-32	3/8"	1/4"	0.06"	0.09"	3/64"	5	91853A510	11.23
1/4"-20	7/16"	9/32"	0.07"	0.09"	1/16"	5	91853A029	8.63
1/4"-28	7/16"	9/32"	0.07"	0.09"	1/16"	5	91853A515	10.38
5/16"-18	1/2"	21/64"	0.09"	0.09"	5/64"	5	91853A030	11.93
5/16"-24	1/2"	21/64"	0.09"	0.09"	5/64"	5	91853A520	12.61
3/8"-16	9/16"	13/32"	0.12"	0.13"	3/32"	1	91853A031	3.40
3/8"-24	9/16"	13/32"	0.12"	0.13"	3/32"	1	91853A525	3.51
1/2"-13	3/4"	9/16"	0.15"	0.15"	1/8"	1	91853A033	3.84
1/2"-20	3/4"	9/16"	0.15"	0.15"	1/8"	1	91853A535	4.19
5/8"-11	15/16"	23/32"	0.18"	0.21"	5/32"	1	91853A035	9.16
5/8"-18	15/16"	23/32"	0.18"	0.21"	5/32"	1	91853A545	9.02
3/4"-10	1 1/8"	13/16"	0.18"	0.24"	5/32"	1	91853A036	13.04
3/4"-16	1 1/8"	13/16"	0.18"	0.24"	5/32"	1	91853A550	14.59
7/8"-9	1 5/16"	29/32"	0.18"	0.25"	5/32"	1	91853A037	18.34
1"-8	1 1/2"	1"	0.24"	0.28"	3/16"	1	91853A038	22.82
1 1/4"-7	1 7/8"	1 1/4"	0.31"	0.37"	7/32"	1	91853A040	58.31
1 1/2"-6	2 1/4"	1 1/2"	0.37"	0.42"	1/4"	1	91853A041	130.55

Metric Sizes—Dimensions in millimeters

Thread Size	Pitch	Wd.	O'all Ht.	Min. Slot Wd.	Min. Slot Dp.	Cotter Pin Dia.	Pkg. Qty.		Per Pkg.
(A) Zinc-Plated Class 8 Steel									
M6	1	10	7.5	2	2.5	2	5	93760A212	$2.38
M8	1.25	13	9.5	2.5	3	2.5	5	93760A222	2.58
M10	1.5	17	12	2.8	4	2.8	5	93760A233	5.04
(B) Zinc-Plated Class 8 Steel									
M12	1.75	19	15	3.5	5	3.5	5	93760A317	5.28
M16	2	24	19	4.5	6	4.5	5	93760A328	7.07
M20	2.5	30	22	4.5	6	4.5	5	93760A337	9.63
M24	3	36	27	5.5	8	5.5	1	93760A340	4.10

Safety Wire Locking Nut Retainers

Prevent nuts and bolts from working loose, even under extreme vibration. Just insert a retainer between the nut (or bolt head) and the mating surface, then attach safety wire. Made from spring steel.

For safety wire, see 8860K14 on page 3731. For wire twisting pliers, see page 2757. For cotter pins, see page 3356.

Screw Size	Inside Width	O'all Ht.	Wrench Size	Wire Dia. (Hole Size)	Pkg. Qty.		Per Pkg.
1/4"	0.43"	0.42"	1/2"	0.078"	10	94818A029	$9.42
5/16"	0.50"	0.47"	9/16"	0.099"	10	94818A030	10.13
3/8"	0.56"	0.51"	5/8"	0.099"	10	94818A031	12.00
1/2"	0.75"	0.59"	13/16"	0.099"	5	94818A033	5.75
5/8"	0.93"	0.67"	1"	0.099"	5	94818A035	14.00
3/4"	1.12"	0.75"	1 3/16"	0.099"	5	94818A036	11.00
1"	1.50"	0.89"	1 9/16"	0.099"	1	94818A038	3.30

Twist-On Quick-Threading Nuts

Threading nuts up a long length of rod can be a nuisance. These nuts swivel open so you can put them right where you need them, then simply twist them closed. Nuts are reusable and they won't damage threads. Inch sizes have a Class 2B thread fit; metric sizes have a Class 6H thread fit.

Thread Size	Wd.	Ht.	Zinc-Plated Steel	Each	18-8 Stainless Steel	Each
1/4"-20	5/8"	3/8"	90125A029	$2.70	90125A083	$11.75
5/16"-18	3/4"	3/8"	90125A030	3.20	—	—
3/8"-16	7/8"	1/2"	90125A031	3.57	90125A086	17.12
1/2"-13	1 1/16"	5/8"	90125A033	4.23	90125A088	21.68
5/8"-11	1 5/16"	21/32"	90125A035	5.76	—	—
3/4"-10	1 5/8"	13/16"	90125A036	19.50	90125A094	51.12
7/8"-9	2"	1"	90125A038	26.10	—	—
1"-8	2"	1"	90125A040	26.10	—	—

Metric Zinc-Plated Steel

Thread Size	Pitch, mm	Wd., mm	Ht., mm		Each
M6	1	16	10	90125A061	$2.70
M10	1.5	22	12	90125A063	3.57
M12	1.75	27	16	90125A065	4.23
M16	2	33	17	90125A067	5.76

Push-Button Quick-Threading Nuts

Hex

Hex with Flange

Round with Knurl

Making adjustments couldn't be easier. Just push the button and slide the nut where you need it. When you release the button, the nut is once again engaged and ready to tighten. Nuts are made from black-oxide case-hardened steel. All have a Class 2B thread fit.

Thread Size	Wd.	O'all Ht.	Flange Dia.	Flange Ht.		Each
Hex						
1/4"-20	7/8"	9/16"	—	—	98150A110	$7.38
5/16"-18	1"	5/8"	—	—	98150A130	8.93
3/8"-16	1"	5/8"	—	—	98150A150	8.93
1/2"-13	1 3/8"	1 1/8"	—	—	98150A170	11.43
5/8"-11	1 3/8"	1 1/8"	—	—	98150A190	11.43
Hex with Flange						
1/4"-20	7/8"	5/8"	1"	1/8"	98150A320	7.62
5/16"-18	1"	13/16"	1 1/4"	3/16"	98150A340	9.29
3/8"-16	1"	13/16"	1 1/4"	3/16"	98150A360	9.29
1/2"-13	1 3/8"	1 1/8"	1 5/8"	1/4"	98150A380	11.43
5/8"-11	1 3/8"	1 1/8"	1 5/8"	1/4"	98150A420	11.43
Round with Knurl						
1/4"-20	1"	9/16"	—	—	98150A710	7.38
5/16"-18	1 1/8"	3/4"	—	—	98150A730	9.17
3/8"-16	1 1/8"	3/4"	—	—	98150A750	9.17
1/2"-13	1 1/2"	1 1/8"	—	—	98150A770	11.55
5/8"-11	1 1/2"	1 1/8"	—	—	98150A790	11.55

Tamper-Resistant Nuts

Prevent the theft of your property. These tamper-resistant nuts are frequently used to secure signs, outdoor lighting, and displays. Use with carriage screws (see pages 3020-3021) or in places where screw heads are inaccessible.

All except breakaway nuts are reusable. All nuts have a Class 2B thread fit, except spanner nuts which have a Class G3 thread fit.

Sloped Nuts

With a wide base, these nuts are ideal for securing larger items. They're made from zinc yellow-chromate plated steel and are not rated for hardness.

Thread Size (Pitch)	Base Wd.	Ht.	Pkg. Qty.		Per Pkg.
1/4"-20	1.05"	0.23"	5	98789A110	$4.76
5/16"-18	1.05"	0.23"	5	98789A120	4.94
3/8"-16	1.05"	0.23"	5	98789A130	5.26
M6 (1 mm)	1.05"	0.23"	5	98789A210	4.76
M8 (1.25 mm)	1.05"	0.23"	5	98789A220	4.94
M10 (1.5 mm)	1.05"	0.23"	5	98789A230	5.26

Nonremovable Breakaway Nuts

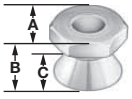

Once installed, these nuts cannot be removed, so they're perfect for securing valuable equipment. After installation, the hex part of the nut breaks away, leaving only the nonremovable cone. Install with a standard wrench. Made from corrosion-resistant aluminum alloy 2011-T3.

Thread Size	Breaking Torque, in.-lbs.	(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
10-24	30-40	7/16"	3/8"	3/16"	10	90013A150	$6.57
1/4"-20	70	9/16"	31/64"	7/32"	10	90013A175	7.88
5/16"-18	150	5/8"	1/2"	7/32"	10	90013A200	9.15
3/8"-16	185-195	3/4"	19/32"	1/4"	10	90013A225	12.00

Spanner Nuts and Driver

Ideal for securing objects that require a nut with a large bearing surface. Made from a rust-resistant zinc alloy, you can install and remove these nuts with a spanner driver (sold separately).

Thread Size	Base Dia.	Ht.	Pkg. Qty.		Per Pkg.
1/4"-20	1"	1/4"	10	90078A110	$12.00
5/16"-18	1"	1/4"	10	90078A120	12.00
3/8"-16	1"	1/4"	10	90078A130	12.00

Spanner Driver ..... 90078A041 Each $10.00

Tri-Groove Nuts and Sockets

Made from zinc-plated steel with a hardened surface for extra durability. Install and remove them with a 3/8" tri-groove socket bit and drive handle (sold separately).

Thread Size	Base Dia.	Ht.	Nuts Pkg. Qty.		Per Pkg.	Tri-Groove Socket Bits	Each
10-24	0.66"	1/4"	25	90080A220	$11.43	7393A37	$25.76
10-32	0.66"	1/4"	25	90080A230	11.43	7393A37	25.76
1/4"-20	0.66"	1/4"	25	90080A240	12.86	7393A37	25.76
5/16"-18	0.86"	0.345"	25	90080A250	14.00	7393A38	29.13
3/8"-16	0.86"	0.345"	25	90080A260	14.00	7393A38	29.13

Drive Handle for Socket Bits ..... 5522A77 Each $8.32

Serrated-Edge Nuts and Driver

Designed to secure small signs, these corrosion-resistant nuts are made from aluminum alloy 2011-T3. Install and remove them with a serrated-edge driver (sold separately). Not rated for hardness.

Thread Size	Base Dia.	Ht.	Pkg. Qty.		Per Pkg.
10-24	1/2"	3/16"	25	98577A110	$13.50
1/4"-20	1/2"	3/16"	10	98577A120	4.00
5/16"-18	1/2"	3/16"	10	98577A130	4.40

Serrated-Edge Driver ..... 98577A200 Each $62.00

High Hex Nuts

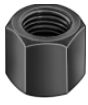

The long length makes wrench-tightening easier, which is especially helpful in spaces where access is difficult. Each nut is fully threaded, has a Class 2B thread fit, and is made from Grade 8 steel (except thread size 3/8"-24, which is made from Grade 5 steel). Materials meet SAE J995; dimensions meet SAE J482.

Thread Size	Lg.	Wd.	Pkg. Qty.		Per Pkg.
3/8"-24	17/32"	9/16"	25	90565A320	$3.68
7/16"-20	39/64"	5/8"	25	90565A325	7.04
1/2"-20	11/16"	3/4"	25	90565A330	8.29
9/16"-18	49/64"	7/8"	10	90565A333	4.26
5/8"-18	27/32"	15/16"	10	90565A335	5.26
3/4"-16	1"	1 1/8"	10	90565A340	$7.39
7/8"-14	1 5/32"	1 5/16"	5	90565A345	5.98
1"-14	1 5/16"	1 7/16"	5	90565A350	8.17
1 1/4"-12	1 5/8"	1 13/16"	1	90565A355	3.77
1 1/2"-12	2"	2 3/16"	1	90565A061	19.76

Coupling Nuts

Also known as extension nuts, you can use these coupling nuts to join lengths of threaded rod or in spacing applications with leveling feet or jig fixtures.

Inch Sizes— Nuts shorter than 4″ are fully threaded; nuts 4″ and longer are partially threaded on both ends. All have a Class 2B thread fit except hot-dipped galvanized nuts, which are tapped oversized. ***Grade 2H steel*** nuts meet ASTM A194 and have a minimum Rockwell hardness of C24.

Metric Sizes— All are fully threaded and have a Class 6H thread fit.

Note: If you can't find the coupling nut you need, see our Female Threaded Hex Standoffs on page 3258. They're used in spacing and joining applications, and are available in sizes 2-56 to ¼″-20 in a variety of widths and lengths.

Inch Sizes

Thread Size	Lg.	Wd.		Each ♦
Zinc-Plated Grade 8 Steel				
¼″-20	⅞″	½″	90983A205	$13.68
⅜″-16	1¾″	⅝″	90983A211	13.76
½″-13	1¾″	¾″	90983A217	14.04
⅝″-11	2⅛″	15⁄16″	90983A223	14.40
¾″-10	2¼″	1⅛″	90983A229	17.60
⅞″-9	2½″	15⁄16″	90983A234	53.28
1″-8	2¾″	1½″	90983A240	61.44
1¼″-7	3″	1⅞″	90983A246	62.80
1½″-6	3½″	2¼″	90983A251	99.74
Zinc-Plated Grade 5 Steel				
8-32	⅝″	½″	90977A013	4.80
10-24	¾″	½″	90977A017	5.47
10-32	¾″	½″	90977A021	4.87
¼″-20	⅞″	½″	90977A130	2.90
¼″-28	⅞″	½″	90977A140	4.70
5⁄16″-18	1⅛″	½″	90977A150	4.73
5⁄16″-24	1⅛″	½″	90977A160	4.67
⅜″-16	1¾″	⅝″	90977A165	3.53
⅜″-24	1¾″	⅝″	90977A170	4.77
7⁄16″-14	1¾″	⅝″	90977A180	4.77
7⁄16″-20	1¾″	⅝″	90977A190	4.80
½″-13	1¾″	¾″	90977A195	4.23
½″-20	1¾″	¾″	90977A034	5.27
⅝″-11	2⅛″	13⁄16″	90977A205	5.70
⅝″-18	2⅛″	13⁄16″	90977A210	5.40
¾″-10	2¼″	1″	90977A215	7.67
¾″-16	2¼″	1″	90977A220	7.47
⅞″-9	2½″	1¼″	90977A037	12.43
1″-8	2¾″	1⅜″	90977A038	16.30
1⅛″-7	3″	1½″	90977A235	22.67
1¼″-7	3″	1⅝″	90977A240	22.63
1½″-6	3½″	2″	90977A245	37.59
Zinc-Plated Grade 2 Steel				
4-40	7⁄16″	5⁄16″	90264A410	2.04
6-32	½″	5⁄16″	90264A415	1.92
8-32	⅝″	5⁄16″	90264A420	1.39
10-24	¾″	5⁄16″	90264A425	.48
10-32	¾″	5⁄16″	90264A430	.58
¼″-20	⅞″	⅜″	90264A435	.23
¼″-20	1½″	7⁄16″	90264A437	1.87
¼″-28	⅞″	⅜″	90264A440	.56
5⁄16″-18	⅞″	½″	90264A445	.45
5⁄16″-18	1¾″	½″	90264A447	.99
5⁄16″-24	1⅛″	½″	90264A450	1.93
⅜″-16	1⅛″	11⁄16″	90264A213	1.69
⅜″-16	1¾″	⅝″	90264A460	.81
⅜″-16	4″	¾″	90264A212	9.78
⅜″-24	1¾″	9⁄16″	90264A470	2.03
7⁄16″-14	1¾″	⅝″	90264A475	.89
7⁄16″-20	1¾″	⅝″	90264A480	2.08
½″-13	1¾″	11⁄16″	90264A485	.92
½″-13	1¾″	⅞″	90264A221	1.85
½″-13	4″	⅞″	90264A222	6.65
½″-20	1¾″	11⁄16″	90264A505	2.29
9⁄16″-12	2⅛″	13⁄16″	90264A515	3.41
9⁄16″-18	2⅛″	13⁄16″	90264A520	3.35
⅝″-11	2⅛″	13⁄16″	90264A525	1.48
⅝″-11	2⅛″	1 1⁄16″	90264A231	4.03
⅝″-11	5″	1⅛″	90264A233	10.22
Zinc-Plated Grade 2 Steel (Cont.)				
⅝″-18	2⅛″	13⁄16″	90264A235	$2.28
¾″-10	1½″	1¼″	90264A242	2.77
¾″-10	2¼″	1″	90264A241	2.51
¾″-10	2¼″	1¼″	90264A243	5.26
¾″-10	3″	1″	90264A500	5.60
¾″-10	5″	1¼″	90264A244	12.52
¾″-16	2¼″	1″	90264A245	3.16
⅞″-9	2½″	1¼″	90264A250	4.31
⅞″-9	7″	1⅜″	90264A253	22.90
⅞″-14	2½″	1¼″	90264A255	7.37
1″-8	2¾″	1⅜″	90264A260	6.11
1″-8	3″	1⅝″	90264A262	9.87
1″-8	7″	1⅝″	90264A263	25.58
1″-14	2¾″	1⅜″	90264A265	15.32
1¼″-7	3″	1⅝″	90264A270	12.03
1¼″-12	3″	1⅝″	90264A275	14.83
1½″-6	3½″	2″	90264A290	17.32
1½″-12	3½″	2″	90264A295	18.98
1¾″-5	5″	2⅜″	90264A300	29.30
2″-4½	4½″	2¾″	90264A310	38.16
2¼″-4½	5″	3¼″	90264A600	96.10
2½″-4	5½″	3½″	90264A610	103.84
3″-4	6¾″	4″	90264A615	177.38
Hot-Dipped Galvanized Grade 2 Steel				
⅜″-16	1¾″	⅝″	93350A100	3.07
7⁄16″-14	1¾″	⅝″	93350A105	3.31
½″-13	1¾″	11⁄16″	93350A110	3.20
⅝″-11	2⅛″	13⁄16″	93350A115	4.15
¾″-10	2¼″	1″	93350A120	5.76
¾″-10	3″	1″	93350A125	7.65
⅞″-9	2½″	1¼″	93350A037	9.81
1″-8	2¾″	1⅜″	93350A038	10.35
1″-8	3″	1⅜″	93350A136	10.27
1⅛″-7	3″	1½″	93350A147	16.92
1¼″-7	3″	1⅝″	93350A040	19.85
1½″-6	3½″	2″	93350A158	28.44
Grade 2H Steel				
¼″-20	⅞″	½″	90654A305	40.37
⅜″-16	1¾″	11⁄16″	90654A311	33.75
½″-13	1¾″	⅞″	90654A317	34.60
⅝″-11	2⅛″	1 1⁄16″	90654A323	35.76
¾″-10	2¼″	1¼″	90654A329	37.33
⅞″-9	2½″	1 7⁄16″	90654A334	38.39
1″-8	2¾″	1⅝″	90654A340	52.74
1¼″-7	3″	2″	90654A346	62.24
1½″-6	3½″	2½″	90654A351	70.99
Black-Oxide Case-Hardened Steel				
¼″-20	⅝″	½″	91034A100	2.08
5⁄16″-18	⅞″	9⁄16″	91034A105	2.23
⅜″-16	1″	11⁄16″	91034A110	2.43
7⁄16″-14	1¼″	¾″	91034A115	2.84
½″-13	1¼″	⅞″	91034A120	3.05
⅝″-11	1⅝″	1 1⁄16″	91034A125	4.38
¾″-10	1⅞″	1¼″	91034A130	6.04
⅞″-9	2¼″	1 7⁄16″	91034A135	9.19
1″-8	2½″	1⅝″	91034A140	9.56
Type 316 Stainless Steel				
¼″-20	⅞″	⅜″	90104A005	3.21
¼″-28	⅞″	½″	90104A006	10.82
Type 316 Stainless Steel (Cont.)				
5⁄16″-18	1″	7⁄16″	90104A007	$2.72
⅜″-16	1⅛″	½″	90104A010	3.86
⅜″-24	1⅛″	½″	90104A012	12.35
½″-13	1¼″	⅝″	90104A015	5.10
½″-20	1¼″	⅝″	90104A017	13.03
⅝″-11	2⅛″	13⁄16″	90104A020	18.94
¾″-10	2¼″	1″	90104A025	25.88
⅞″-9	2½″	1¼″	90104A037	34.91
1″-8	2½″	1⅜″	90104A038	37.41
1⅛″-7	3″	1⅝″	90104A045	104.18
1¼″-7	3″	1⅝″	90104A055	104.63
18-8 Stainless Steel				
8-32	⅝″	⅜″	90268A009	5.15
10-24	¾″	⅜″	90268A011	4.88
10-32	¾″	⅜″	90268A320	4.12
¼″-20	⅞″	⅜″	90268A029	.76
¼″-28	⅞″	⅜″	90268A325	1.18
5⁄16″-18	1″	7⁄16″	90268A030	1.06
5⁄16″-24	1″	7⁄16″	90268A330	1.76
⅜″-16	1⅛″	½″	90268A031	1.22
⅜″-16	1¾″	⅝″	90268A032	6.92
⅜″-24	1⅛″	½″	90268A335	2.25
7⁄16″-14	1¼″	9⁄16″	90268A034	2.91
7⁄16″-20	1¼″	9⁄16″	90268A340	3.94
½″-13	1¼″	⅝″	90268A033	2.21
½″-13	1¾″	11⁄16″	90268A125	7.32
½″-20	1¼″	⅝″	90268A345	2.96
⅝″-11	1¾″	⅞″	90268A035	4.90
⅝″-18	2⅛″	13⁄16″	90268A350	11.62
¾″-10	2¼″	1″	90268A036	7.95
¾″-16	2¼″	1″	90268A355	18.47
⅞″-9	2½″	1¼″	90268A037	15.08
1″-8	2½″	1⅜″	90268A038	18.29
Brass				
¼″-20	⅞″	⅜″	90465A210	3.76
5⁄16″-18	⅞″	½″	90465A215	5.96
⅜″-16	1⅛″	½″	90465A220	5.79
⅜″-16	1¾″	⅝″	90465A222	5.80
½″-13	1¼″	⅝″	90465A225	6.20
½″-13	1¾″	11⁄16″	90465A228	7.88
⅝″-11	2⅛″	13⁄16″	90465A230	10.96
¾″-10	2¼″	1″	90465A235	20.05
1″-8	2¾″	1⅜″	90465A245	55.80
Aluminum				
⅝″-11	2⅛″	⅞″	90012A100	12.59
¾″-10	2¼″	1″	90012A120	13.52
⅞″-9	2½″	1¼″	90012A130	33.17
1″-8	2¾″	1⅜″	90012A140	38.03

Thread Size	Lg.	Wd.		Each ♦
Left-Hand Threaded				
Zinc-Plated Grade 2 Steel				
⅜″-16	1¾″	⅝″	93345A231	$3.42
½″-13	1¾″	11⁄16″	93345A233	3.61
⅝″-11	2⅛″	13⁄16″	93345A235	4.17
¾″-10	2¼″	1″	93345A236	5.76
⅞″-9	2½″	1¼″	93345A239	8.83
1″-8	2¾″	1⅜″	93345A038	10.47
1¼″-7	3″	1⅝″	93345A240	12.55

Metric Sizes—Dimensions in millimeters

Thread Size	Pitch	Lg.	Wd.		Each ♦
Zinc-Plated Class 5.8 Steel					
M4	0.7	11	10	93355A950	$7.40
M6	1	38	11	93355A100	3.20
M8	1.25	38	16	93355A105	3.54
M10	1.5	38	16	93355A110	3.64
M12	1.75	38	16	93355A115	3.96
M16	2	54	21	93355A125	7.10
M20	2.5	57	25	93355A135	8.13
Black-Oxide Case-Hardened Steel					
M6	1	16	13	93020A775	$3.88
M8	1.25	19	14	93020A781	3.88
M10	1.5	24	16	93020A782	4.13
M12	1.75	32	22	93020A783	5.46
M16	2	40	27	93020A786	6.95
M20	2.5	51	32	93020A785	9.56
M24	3	64	38	93020A791	13.09
18-8 Stainless Steel					
M4	0.7	11	11	93590A205	$13.33
M6	1	38	13	93590A210	8.20
M8	1.25	38	16	93590A220	8.50
M10	1.5	38	16	93590A230	8.81
M12	1.75	38	16	93590A240	9.33
M16	2	54	21	93590A250	16.14
M20	2.5	57	25	93590A260	18.51

♦ Prices are 15% lower when you buy in multiples of 10.

Reducing Coupling Nuts

Also known as thread adapters, you can use reducing coupling nuts to connect different sizes of threaded rod. Each end is right-hand threaded to a depth at least equal to the screw diameter it accommodates. All nuts have a Class 2B thread fit.

Connects Screw Sizes	Lg.	Wd.		Each 1-9	Each 10-Up
Zinc-Plated Grade 2 Steel (Unless Noted)					
1/4″-20 and 5/16″-18	1″	1/2″	97088A190	$2.40	$2.07
1/4″-20 and 3/8″-16	1″	1/2″	97088A195	1.63	1.43
1/4″-20 and 1/2″-13	1 1/4″	5/8″	97088A205	2.56	2.18
5/16″-18 and 3/8″-16	1″	1/2″	97088A200	1.94	1.75
5/16″-18 and 1/2″-13	1 1/4″	5/8″	97088A208	5.39	4.85
3/8″-16 and 1/2″-13	1 1/4″	5/8″	97088A210	1.74	1.52
3/8″-16 and 5/8″-11	1 1/4″	13/16″	97088A215	2.63	2.30
1/2″-13 and 5/8″-11	1 1/4″	13/16″	97088A220	2.57	2.25
1/2″-13 and 3/4″-10	1 1/2″	1″	97088A225	3.28	2.31
5/8″-11 and 3/4″-10	1 1/2″	1″	97088A230	3.19	2.80
5/8″-11 and 7/8″-9	1 3/4″	1 1/4″	97088A235	3.60	3.15
3/4″-10 and 7/8″-9	1 3/4″	1 1/4″	97088A240	5.71	5.01
3/4″-10 and 1″-8	2 1/64″	1 3/8″	97088A245★	10.31	9.28
3/4″-10 and 1 1/4″-7	3 1/64″	1 5/8″	97088A250★	10.51	9.45
7/8″-9 and 1″-8	2″	1 3/8″	97088A301	8.34	7.31
7/8″-9 and 1 1/4″-7	3 1/64″	1 5/8″	97088A320★	16.27	14.65
1″-8 and 1 1/4″-7	3 1/64″	1 5/8″	97088A390★	17.23	15.50
18-8 Stainless Steel					
1/4″-20 and 5/16″-18	1″	7/16″	98434A110	2.32	2.02
1/4″-20 and 3/8″-16	1 1/8″	1/2″	98434A210	3.11	2.71
5/16″-18 and 3/8″-16	1 1/8″	1/2″	98434A310	3.82	3.32
3/8″-16 and 1/2″-13	1 1/4″	5/8″	98434A410	4.53	3.94
1/2″-13 and 5/8″-11	1 3/4″	7/8″	98434A510	9.31	8.10
5/8″-11 and 3/4″-10	2″	1″	98434A610	13.18	11.47

★ Made from zinc-plated Grade 5 steel.

Right- and Left-Hand Threaded Coupling Nuts

Join two lengths of rod with one turn of a nut—these nuts have right-hand threads in one half and left-hand threads in the other. They're made from zinc-plated Grade 2 steel and have a Class 2B thread fit.

Thread Size	Lg.	Wd.		Each 1-9	Each 10-Up
3/8″-16	4″	3/4″	94280A115	$12.90	$10.93
1/2″-13	4″	7/8″	94280A119	8.25	6.98
5/8″-11	5″	1 1/8″	94280A123	14.21	12.03
3/4″-10	5″	1 1/4″	94280A127	19.49	16.50
7/8″-9	7″	1 3/8″	94280A131	40.56	34.34
1″-8	7″	1 5/8″	94280A135	40.69	34.44

High-Crown Acorn Nuts

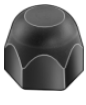

Taller and wider than standard-size acorn nuts, high-crown nuts are designed to cover the exposed ends of extra-long studs and screws. All have a Class 2B thread fit.

Thread Size	Wd.	Ht.	Thread Depth	Black-Oxide Case-Hardened Steel	Each	18-8 Stainless Steel	Each
5/16″-18	5/8″	5/8″	3/8″	90790A185	$4.58	92040A110	$5.50
3/8″-16	3/4″	3/4″	15/32″	90790A204	4.60	92040A120	6.03
1/2″-13	7/8″	15/16″	19/32″	90790A216	5.66	92040A130	8.58
5/8″-11	1 1/16″	1 3/16″	25/32″	90790A299	7.71	92040A140	13.20
3/4″-10	1 1/4″	1 3/8″	29/32″	90790A417	9.38	92040A150	15.62
7/8″-9	1 7/16″	1 5/8″	1 1/16″	90790A419	10.76	92040A160	20.38

Open-End Acorn Nuts

With an open dome, you can use these nuts with screws and studs of any length. They're made from 18-8 stainless steel and have a Class 2B thread fit.

Thread Size	Wd.	Ht.		Each
4-40	5/16″	1/4″	94301A105	$2.18
6-32	5/16″	1/4″	94301A110	2.18
8-32	3/8″	1/4″	94301A115	2.24
10-24	7/16″	5/16″	94301A120	2.45
10-32	7/16″	5/16″	94301A125	2.45
1/4″-20	1/2″	5/16″	94301A130	3.03
5/16″-18	9/16″	5/16″	94301A135	3.66
3/8″-16	11/16″	3/8″	94301A140	4.70
1/2″-13	3/4″	1/2″	94301A160	6.15

Coupling Nuts with Sight Hole

Don't guess at thread engagement—the sight hole in the center of the nut lets you peek to see how far in a rod has been threaded. Nuts are fully threaded. They're made from zinc-plated Grade 2 steel, meet IFI-128, and have a Class 2B thread fit.

Thread Size	Lg.	Wd.	Sight Hole Size		Each 1-9	Each 10-Up
8-32	5/8″	5/16″	1/16″	93525A277	$3.99	$3.41
10-24	3/4″	5/16″	1/16″	93525A280	4.00	3.41
10-32	3/4″	5/16″	1/16″	93525A283	4.83	4.11
1/4″-20	3/4″	3/8″	7/64″	93525A286	8.27	7.04
1/4″-28	3/4″	3/8″	7/64″	93525A289	8.66	7.37
5/16″-18	15/16″	1/2″	1/8″	93525A292	8.29	7.06
3/8″-16	1 1/8″	9/16″	1/8″	93525A301	2.83	2.40
3/8″-24	1 1/8″	9/16″	1/8″	93525A298	8.75	7.46
1/2″-13	1 1/2″	3/4″	3/16″	93525A308	4.09	3.47
5/8″-11	1 7/8″	15/16″	3/16″	93525A315	4.59	3.91
3/4″-10	2 1/4″	1 1/8″	3/16″	93525A322	5.78	4.91
1″-8	3″	1 1/2″	1/4″	93525A329	13.86	11.77

Protective Cap Hex Nuts

The attractive black cap covers exposed threads and acts as a leak-resistant seal. It seals internal and external pressures up to 80 psi and remains effective at temperatures up to 250° F.

Nuts are made from zinc-plated Grade 2 steel (unless noted) and have a Class 2B thread fit. Caps are made from nylon 6/6.

Thread Size	Wd.	Ht.	Thread Depth	Pkg. Qty.		Per Pkg.
8-32	11/32″	23/64″	9/64″	25	98190A130	$3.67
10-24	3/8″	23/64″	9/64″	25	98190A150	4.96
10-32	3/8″	23/64″	9/64″	25	98190A170	4.96
1/4″-20	7/16″	31/64″	7/32″	25	98190A190	5.29
5/16″-18	1/2″	1/2″	1/4″	10	98190A210	3.40
3/8″-24	9/16″	5/8″	21/64″	10	98190A270★	7.66

★ Made from zinc-plated Grade 5 steel.

Self-Locking Acorn Nuts

To resist vibrating loose, these nuts have distorted threads in the hex area that create a tight, friction fit. Nuts are made from 18-8 stainless steel and have a Class 2B thread fit.

Thread Size	Wd.	Ht.	Thread Depth	Pkg. Qty.		Per Pkg.
6-32	5/16″	11/32″	5/32″	20	90507A210	$14.56
8-32	5/16″	11/32″	5/32″	20	90507A215	14.56
10-24	3/8″	13/32″	3/16″	20	90507A220	14.87
10-32	3/8″	13/32″	3/16″	20	90507A225	14.87
1/4″-20	7/16″	15/32″	1/4″	10	90507A230	9.51
1/4″-28	7/16″	15/32″	1/4″	10	90507A235	10.87
5/16″-18	1/2″	17/32″	5/16″	10	90507A240	13.73
5/16″-24	1/2″	17/32″	5/16″	10	90507A245	13.73
3/8″-16	9/16″	5/8″	3/8″	5	90507A250	9.58
3/8″-24	9/16″	5/8″	3/8″	5	90507A255	9.58
1/2″-13	3/4″	13/16″	1/2″	1	90507A033	6.75
1/2″-20	3/4″	13/16″	1/2″	1	90507A044	6.75
5/8″-11	1″	1″	19/32″	1	90507A260	5.28
3/4″-10	1 1/16″	1 3/16″	1 1/16″	1	90507A270	8.12

Acorn Nut Assortments

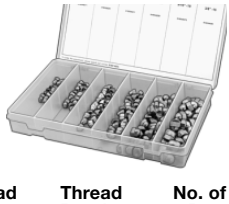

If you frequently use acorn nuts, you'll love these handy 200-piece assortments. All nuts have a Class 2B thread fit and come in a compartmented plastic case with lid chart.

Nickel-plated steel nuts come in an 8 1/4″ Lg. × 4 1/2″ Wd. × 1 3/8″ Dp. case.

18-8 stainless steel nuts come in an 11″ Lg. × 6 3/4″ Wd. × 1 3/4″ Dp. case.

Thread Size	Thread Depth	No. of Pcs.	Thread Size	Thread Depth	No. of Pcs.
6-32	9/64″	35	1/4″-20	13/64″	35
8-32	9/64″	35	5/16″-18	7/32″	35
10-32	3/16″	35	3/8″-16	1/4″	25

Nickel-Plated Steel	91987A300	Each	$26.19
18-8 Stainless Steel	91987A800	Each	$96.50

Acorn Nuts

Also known as cap nuts, acorn nuts provide a finished appearance by covering exposed threads. Inch sizes have a Class 2B thread fit. Metric sizes have a Class 6H thread fit and meet DIN 1587 (unless noted).

Nylon 6/6 nuts are reliable at temperatures from −40° to +185° F. **To Order:** Please specify black or off-white.

Thread Size	Minimum Thread Depth	Thread Size	Minimum Thread Depth	Thread Size	Minimum Thread Depth
4-40	3/32"	1/4"-28	5/32"	1/2"-13	5/16"
6-32	1/8"	5/16"-18	7/32"	1/2"-20	3/8"
8-32	1/8"	5/16"-24	9/32"	5/8"-11	15/64"
10-24	5/32"	3/8"-16	1/4"	5/8"-18	7/16"
10-32	5/32"	3/8"-24	5/16"	3/4"-10	1/2"
12-24	5/32"	7/16"-14	5/16"	3/4"-16	1/2"
1/4"-20	5/32"	7/16"-20	3/8"	1"-8	5/8"

Inch Sizes

Thread Size	Wd.	Ht.	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel					
4-40	1/4"	1/4"	50	91875A105	$13.41
6-32	5/16"	11/32"	50	91875A110	9.88
8-32	5/16"	11/32"	50	91875A115	9.88
10-24	3/8"	13/32"	50	91875A120	11.21
10-32	3/8"	13/32"	50	91875A125	11.21
1/4"-20	7/16"	15/32"	25	91875A130	7.44
1/4"-28	7/16"	15/32"	25	91875A135	7.44
5/16"-18	1/2"	17/32"	25	91875A140	9.26
5/16"-24	1/2"	17/32"	25	91875A145	9.26
3/8"-16	9/16"	5/8"	25	91875A150	12.32
3/8"-24	9/16"	5/8"	25	91875A155	12.32
7/16"-14	5/8"	11/16"	20	91875A160	12.14
7/16"-20	5/8"	11/16"	20	91875A165	12.14
1/2"-13	3/4"	13/16"	10	91875A170	8.48
1/2"-20	3/4"	13/16"	10	91875A175	8.48
5/8"-11	15/16"	1"	5	91875A180	8.45
5/8"-18	15/16"	1"	5	91875A185	8.45
3/4"-10	1 1/16"	1 5/32"	5	91875A190	13.57
3/4"-16	1 1/16"	1 5/32"	5	91875A195	13.57
1"-8	1 7/16"	1 35/64"	1	91875A038	5.17
Nickel-Plated Steel					
6-32	5/16"	1/4"	100	90532A100	6.60
8-32	5/16"	1/4"	100	90532A125	6.16
10-24	3/8"	5/16"	100	90532A150	7.27
10-32	3/8"	21/64"	100	90532A175	11.91
1/4"-20	7/16"	3/8"	100	90532A200	10.20
5/16"-18	9/16"	15/32"	50	90532A225	9.60
3/8"-16	5/8"	1/2"	50	90532A250	11.84
1/2"-13	3/4"	9/16"	25	90532A275	10.80
5/8"-11	15/16"	53/64"	10	90532A300	8.89
3/4"-10	1 1/8"	1 1/8"	5	90532A325	13.26
Black Luster-Coated Steel					
6-32	5/16"	11/32"	10	98667A110	10.40
8-32	5/16"	11/32"	10	98667A130	10.65
10-24	3/8"	13/32"	5	98667A150	6.25
10-32	3/8"	13/32"	5	98667A190	6.38
1/4"-20	7/16"	15/32"	5	98667A210	6.91
5/16"-18	1/2"	17/32"	5	98667A230	7.80
3/8"-16	9/16"	5/8"	1	98667A250	2.50
Zinc Alloy					
10-24	3/8"	11/32"	5	95553A150	4.34
10-32	3/8"	11/32"	5	95553A160	4.34
1/4"-20	7/16"	3/8"	5	95553A180	5.43
5/16"-18	9/16"	7/16"	5	95553A190	6.50
3/8"-16	5/8"	1/2"	5	95553A200	7.98
Type 316 Stainless Steel					
4-40	1/4"	1/4"	5	92994A005	7.15
6-32	5/16"	11/32"	5	92994A007	7.56
8-32	5/16"	11/32"	5	92994A009	7.56
10-24	3/8"	25/64"	5	92994A011	8.32
10-32	3/8"	25/64"	5	92994A311	8.32
1/4"-20	7/16"	15/32"	1	92994A029	2.02
1/4"-28	7/16"	15/32"	1	92994A329	2.10
Type 316 Stainless Steel (Cont.)					
5/16"-18	9/16"	17/32"	1	92994A030	$2.63
5/16"-24	1/2"	17/32"	1	92994A330	2.52
3/8"-16	5/8"	5/8"	1	92994A031	3.24
3/8"-24	9/16"	5/8"	1	92994A331	3.16
1/2"-13	3/4"	13/16"	1	92994A033	5.43
1/2"-20	3/4"	13/16"	1	92994A034	5.93
5/8"-11	15/16"	1"	1	92994A035	10.95
3/4"-10	1 1/16"	1 5/32"	1	92994A038	28.70
18-8 Stainless Steel					
4-40	1/4"	1/4"	25	91855A005	10.54
6-32	5/16"	19/64"	25	91855A271	6.04
8-32	5/16"	5/16"	25	91855A281	6.14
10-24	3/8"	25/64"	25	91855A291	6.81
10-32	3/8"	25/64"	25	91855A311	6.81
12-24	3/8"	27/64"	10	91855A015	6.20
1/4"-20	7/16"	15/32"	25	91855A350	6.17
1/4"-20	7/16"	19/32"	10	91855A360	7.31
1/4"-28	7/16"	15/32"	25	91855A329	11.43
5/16"-18	9/16"	17/32"	10	91855A370	5.02
5/16"-24	9/16"	17/32"	10	91855A032	8.04
3/8"-16	5/8"	5/8"	10	91855A380	6.24
3/8"-24	9/16"	5/8"	5	91855A331	7.47
7/16"-14	5/8"	23/32"	1	91855A330	1.88
7/16"-20	5/8"	23/32"	1	91855A332	2.18
1/2"-13	3/4"	13/16"	1	91855A033	1.01
1/2"-20	3/4"	13/16"	1	91855A333	1.88
5/8"-11	1"	63/64"	1	91855A035	3.91
5/8"-18	1"	63/64"	1	91855A335	4.09
3/4"-10	1 1/16"	1 3/16"	1	91855A036	5.24
Brass					
4-40	1/4"	1/4"	50	92716A005	7.97
6-32	5/16"	9/32"	50	92716A007	8.48
8-32	5/16"	9/32"	50	92716A009	9.08
10-24	3/8"	11/32"	25	92716A011	7.24
10-32	3/8"	11/32"	25	92716A511	7.24
12-24	3/8"	11/32"	25	92716A015	8.93
1/4"-20	7/16"	3/8"	25	92716A519	9.05
1/4"-28	7/16"	3/8"	25	92716A529	10.37
5/16"-18	9/16"	7/16"	10	92716A610	6.47
5/16"-24	9/16"	7/16"	25	92716A530	11.73
3/8"-16	5/8"	1/2"	10	92716A620	8.51
3/8"-24	5/8"	1/2"	10	92716A531	6.25
7/16"-14	3/4"	9/16"	5	92716A630	8.10
7/16"-20	3/4"	9/16"	10	92716A532	10.48
1/2"-13	3/4"	9/16"	10	92716A640	13.58
1/2"-20	3/4"	9/16"	10	92716A533	10.85
5/8"-11	1"	3/4"	1	92716A035	2.92
5/8"-18	1"	3/4"	1	92716A535	5.16
3/4"-10	1 1/16"	7/8"	1	92716A036	4.09
Chrome-Plated Brass					
6-32	5/16"	9/32"	10	92720A681	6.74
8-32	5/16"	9/32"	10	92720A691	7.56
10-24	3/8"	11/32"	10	92720A701	7.27
Chrome-Plated Brass (Cont.)					
10-32	3/8"	11/32"	10	92720A711	$7.34
1/4"-20	7/16"	3/8"	10	92720A721	7.44
1/4"-28	7/16"	3/8"	10	92720A729	9.06
5/16"-18	9/16"	7/16"	10	92720A740	9.10
5/16"-24	9/16"	7/16"	10	92720A730	8.99
3/8"-16	5/8"	1/2"	5	92720A750	6.96
3/8"-24	5/8"	1/2"	10	92720A731	9.54
7/16"-20	3/4"	9/16"	5	92720A732	7.86
1/2"-13	3/4"	9/16"	5	92720A765	9.88
1/2"-20	3/4"	9/16"	5	92720A733	8.94
5/8"-11	1"	3/4"	1	92720A035	6.27
3/4"-10	1 1/16"	7/8"	1	92720A770	12.39
1"-8	1 7/16"	1 1/4"	1	92720A780	22.00
Nickel-Plated Brass					
6-32	5/16"	9/32"	50	92718A381	14.68
8-32	5/16"	9/32"	50	92718A391	14.29
10-24	3/8"	11/32"	25	92718A401	8.81
10-32	3/8"	11/32"	25	92718A411	8.81
1/4"-20	7/16"	3/8"	25	92718A421	13.11
1/4"-28	7/16"	3/8"	10	92718A429	6.32
5/16"-18	9/16"	7/16"	10	92718A441	9.04
5/16"-24	9/16"	7/16"	25	92718A430	13.03
3/8"-16	5/8"	1/2"	10	92718A451	10.79
3/8"-24	5/8"	1/2"	10	92718A431	7.31
1/2"-20	3/4"	9/16"	5	92718A460	6.95
5/8"-11	15/16"	3/4"	1	92718A462	2.98
5/8"-18	15/16"	3/4"	1	92718A465	2.98
3/4"-10	1 1/16"	7/8"	1	92718A468	9.45
3/4"-16	1 1/16"	7/8"	1	92718A471	11.00
1"-8	1 7/16"	1 1/4"	1	92718A474	17.50
Aluminum ■					
6-32	5/16"	19/64"	25	91884A213	11.79
10-24	3/8"	11/32"	25	91884A216	8.54
10-32	3/8"	11/32"	25	91884A219	8.54
1/4"-20	7/16"	3/8"	25	91884A224	8.88
5/16"-18	9/16"	7/16"	10	91884A227	6.74
3/8"-16	5/8"	1/2"	10	91884A235	9.37
Nylon 6/6					
4-40	1/4"	9/32"	100	94922A300	9.21
6-32	19/64"	11/32"	100	94922A305	9.48
8-32	21/64"	3/8"	100	94922A310	9.75
10-24	23/64"	13/32"	100	94922A315	9.21
10-32	23/64"	13/32"	100	94922A320	9.21
1/4"-20	27/64"	15/32"	100	94922A325	9.70
1/4"-28	27/64"	15/32"	100	94922A330	10.58
5/16"-18	1/2"	17/32"	50	94922A335	9.50
5/16"-24	1/2"	17/32"	50	94922A340	11.31
3/8"-16	9/16"	5/8"	50	94922A345	13.56
3/8"-24	9/16"	5/8"	25	94922A350	6.64
1/2"-13	3/4"	13/16"	25	94922A355	9.98
1/2"-20	3/4"	13/16"	10	94922A360	4.52
5/8"-11	15/16"	31/32"	20	94922A365	12.39

■ Not rated for hardness.

Metric Sizes—Dimensions in millimeters

Thread Size	Pitch	Wd.	Ht.	Thread Depth	Zinc-Plated Class 6 Steel Pkg. Qty.		Per Pkg.	Chrome-Plated Class 6 Steel Pkg. Qty.		Per Pkg.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Nylon 6/6♣ Pkg. Qty.		Per Pkg.
M3	0.5	5.5	6.	5.5	—	—	—	—	—	—	10	94000A330	$3.04	—	—	—
M4	0.7	7	8.	3.86	50	91880A035	$9.32	5	91982A200	$9.05	25	94000A035	3.90	100	90527A505	$11.59
M5	0.8	8	10.	5.61	50	91880A037	10.51	5	91982A225	9.59	25	94000A037	4.95	100	90527A510	11.92
M6	1	10	12.	5.71	50	91880A045	11.42	5	91982A250	9.96	20	94000A038	4.89	100	90527A515	12.94
M8	1.25	13	15.	7.84	25	91880A050	8.81	1	91982A275	2.73	10	94000A039	5.66	50	90527A520	10.24
M10	1.5	17	18.	9.65	10	91880A056	7.43	1	91982A300	3.63	5	94000A040	5.11	25	90527A525	8.16
M12	1.75	19	22.	9.25	10	91880A060	10.48	1	91982A325	4.73	5	94000A041	7.96	25	90527A530●	11.18
M14	2	22	25.	10.35	—	—	—	—	—	—	1	94000A431	4.38	—	—	—
M16	2	24	28.	13.28	—	—	—	—	—	—	1	94000A461	4.91	—	—	—
M18	2.5	27	32.	15.28	—	—	—	—	—	—	1	94000A490	6.75	—	—	—
M20	2.5	30	34.	16.28	—	—	—	—	—	—	1	94000A510	7.01	—	—	—

♣ Does not meet DIN 1587. ● Height is 20.5 mm.

Wing Nuts

Tighten or loosen by hand—no tools required. Great for frequent adjustments. Each wing nut has a Class 2B thread fit.

Nylon 6/6 nuts have temperature range of –40° to +185° F. **To Order:** Please specify black or off-white.

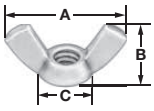

Thread Size	(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel						
4-40	23/32"	13/32"	21/64"	25	90866A005 ■	$13.69
6-32	23/32"	13/32"	21/64"	100	90866A007	7.91
8-32	29/32"	15/32"	7/16"	100	90866A009	8.31
10-24	29/32"	15/32"	7/16"	100	90866A011	8.49
10-32	29/32"	15/32"	7/16"	100	90866A111	8.49
12-24	13/32"	9/16"	1/2"	25	90866A116	10.26
1/4"-20	13/32"	9/16"	1/2"	100	90866A029	9.83
1/4"-28	13/32"	9/16"	1/2"	100	90866A129	11.60
5/16"-18	1 1/4"	21/32"	37/64"	100	90866A030	12.57
5/16"-24	1 1/4"	21/32"	37/64"	25	90866A130	14.36
3/8"-16	17/16"	51/64"	45/64"	50	90866A140	10.66
7/16"-14	1 15/16"	1"	59/64"	25	90866A150	13.56
1/2"-13	1 15/16"	1"	59/64"	25	90866A160	12.71
5/8"-11	2 3/4"	17/16"	1 3/16"	5	90866A170	11.14
3/4"-10	2 3/4"	17/16"	1 3/16"	5	90866A180	12.52
Black Luster-Coated Steel ■						
6-32	23/32"	13/32"	23/64"	5	98671A110	4.35
8-32	29/32"	15/32"	13/32"	5	98671A130	4.35
10-24	29/32"	15/32"	3/8"	5	98671A150	4.90
10-32	29/32"	15/32"	13/32"	5	98671A190	5.00
1/4"-20	13/32"	9/16"	15/32"	5	98671A210	5.43
5/16"-18	1 1/4"	21/32"	9/16"	5	98671A230	6.17
3/8"-16	17/16"	25/32"	5/8"	5	98671A250	7.45
Type 316 Stainless Steel						
10-24	29/32"	15/32"	13/32"	5	93575A011	6.53
10-32	29/32"	15/32"	13/32"	5	93575A015	6.53
1/4"-20	13/32"	9/16"	31/64"	5	93575A029	6.76
5/16"-18	1 1/4"	21/32"	35/64"	5	93575A030	9.72
3/8"-16	17/16"	51/64"	43/64"	5	93575A031	13.38
1/2"-13	1 15/16"	1"	29/32"	1	93575A035	8.05
5/8"-11	2 3/4"	17/16"	1 3/16"	1	93575A039	21.78
18-8 Stainless Steel						
6-32	23/32"	15/32"	13/32"	25	92001A281	6.65
8-32	29/32"	13/32"	13/32"	25	92001A291	6.85
10-24	29/32"	15/32"	13/32"	25	92001A301	7.55
10-32	29/32"	15/32"	13/32"	25	92001A311	7.55
12-24	13/32"	9/16"	1/2"	10	92001A316	5.52
1/4"-20	13/32"	9/16"	31/64"	25	92001A321	8.48
1/4"-28	13/32"	9/16"	31/64"	25	92001A329	11.21
5/16"-18	1 1/4"	21/32"	35/64"	25	92001A330	11.79
5/16"-24	1 1/4"	21/32"	35/64"	10	92001A331	6.03
3/8"-16	17/16"	51/64"	43/64"	10	92001A339	7.59
3/8"-24	17/16"	51/64"	45/64"	5	92001A342	6.85
7/16"-14	1 15/16"	1"	15/16"	1	92001A345	3.62
1/2"-13	1 15/16"	1"	29/32"	5	92001A349	10.16
5/8"-11	2 5/16"	17/16"	15/32"	1	92001A034	5.09
3/4"-10	2 3/4"	17/16"	15/32"	1	92001A400	6.63
Brass						
6-32	23/32"	15/32"	13/32"	50	92771A481	13.60
8-32	29/32"	15/32"	13/32"	50	92771A491	14.17
10-24	29/32"	15/32"	13/32"	25	92771A501	7.77
10-32	29/32"	15/32"	13/32"	25	92771A511	7.73
12-24	13/32"	9/16"	31/64"	10	92771A515	6.35
1/4"-20	13/32"	9/16"	31/64"	25	92771A521	10.84
1/4"-28	13/32"	9/16"	31/64"	10	92771A529	6.15
5/16"-18	1 1/4"	21/32"	35/64"	10	92771A525	7.16
5/16"-24	1 1/4"	21/32"	35/64"	10	92771A530	9.65
3/8"-16	17/16"	51/64"	43/64"	5	92771A535	5.89
1/2"-13	1 15/16"	1"	29/32"	5	92771A545	11.78
5/8"-11	2 5/16"	17/16"	15/32"	1	92771A035	5.43
3/4"-10	2 3/4"	17/16"	15/32"	1	92771A038	5.95
Aluminum ■						
8-32	55/64"	7/16"	13/32"	25	98568A110	14.25
10-24	55/64"	7/16"	13/32"	25	98568A120	14.17
1/4"-20	13/32"	37/64"	31/64"	10	98568A130	11.75
5/16"-18	1 15/64"	41/64"	37/64"	10	98568A140	9.00
Nylon 6/6						
4-40	29/32"	31/64"	25/64"	100	94924A100	11.93
6-32	29/32"	31/64"	25/64"	100	94924A200	11.93
8-32	29/32"	31/64"	25/64"	100	94924A300	11.93
10-24	29/32"	31/64"	25/64"	100	94924A400	11.93
10-32	29/32"	31/64"	25/64"	100	94924A500	11.93
1/4"-20	13/32"	5/8"	9/16"	50	94924A600	7.67
3/8"-16	13/8"	23/32"	41/64"	50	94924A700	8.93
1/2"-13	1 49/64"	29/32"	27/32"	50	94924A800	11.20

■ Not rated for hardness.

Cast Metal Wing Nuts

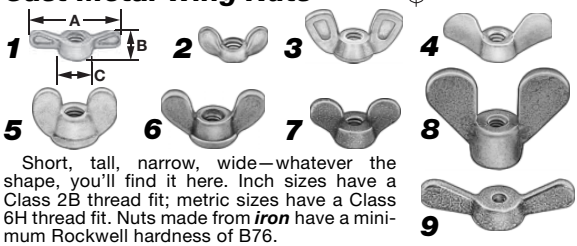

Short, tall, narrow, wide—whatever the shape, you'll find it here. Inch sizes have a Class 2B thread fit; metric sizes have a Class 6H thread fit. Nuts made from ***iron*** have a minimum Rockwell hardness of B76.

Inch Sizes

Thread Size	(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
Zinc Alloy						
1 1/4"-20	13/16"	5/16"	5/8"	1	99862A110	$2.22
2 10-24	3/4"	11/32"	21/64"	5	99862A210	6.86
2 10-32	3/4"	11/32"	21/64"	5	99862A220	6.86
2 1/4"-20	7/8"	7/16"	3/8"	5	99862A230	7.28
3 8-32	27/32"	27/64"	3/8"	5	99862A410	7.10
3 10-24	27/32"	27/64"	3/8"	5	99862A420	7.10
3 1/4"-20	1"	31/64"	7/16"	5	99862A350	8.81
3 1/4"-20	1 7/32"	5/8"	1/2"	5	99862A440	9.40
3 1/4"-20	1 9/32"	1 1/32"	7/16"	5	99862A510	5.90
3 5/16"-18	1"	31/64"	7/16"	5	99862A360	8.81
3 5/16"-18	1 7/32"	5/8"	1/2"	5	99862A450	9.75
3 5/16"-18	1 9/32"	1 1/32"	7/16"	5	99862A520	5.90
3 3/8"-16	1 1/2"	1 3/16"	39/64"	5	99862A530	8.16
Zinc-Plated Steel						
4 1/4"-20	1 3/8"	5/8"	1/2"	5	90876A560	8.87
4 3/8"-16	1 5/8"	13/16"	5/8"	5	90876A575●	10.09
4 1/2"-13	2 1/4"	1"	13/16"	5	90876A580●	14.62
5 1/4"-20	1"	15/32"	3/4"	5	90876A650	8.72
5 1/4"-20	1 1/16"	11/16"	5/8"	5	90876A600	9.60
5 1/4"-20	1 5/8"	9/16"	7/8"	5	90876A655	9.38
5 5/16"-18	1 5/8"	9/16"	7/8"	5	90876A660	9.96
5 5/16"-18	1 5/8"	1"	7/8"	5	90876A605	10.12
5 3/8"-16	1 5/8"	1"	7/8"	5	90876A610	11.44
Plain Steel						
4 8-32	1"	7/16"	1/4"	5	90876A140♥	13.14
4 10-24	1 1/8"	1/2"	3/8"	5	90876A146♥	8.95
4 1/4"-20	1 3/8"	5/8"	1/2"	5	90876A150	8.24
4 5/16"-18	1 7/16"	11/16"	1/2"	5	90876A155	8.35
4 3/8"-16	1 5/8"	13/16"	5/8"	5	90876A160♥	9.38
4 1/2"-13	2 1/4"	1"	13/16"	5	90876A166♥	13.86
4 5/8"-11	2 3/4"	1 3/16"	11/16"	1	90876A170	3.39
4 3/4"-10	2 15/16"	1 3/16"	1 1/4"	1	90876A175	3.93
5 1/4"-20	1"	15/32"	3/4"	5	90876A335	8.26
5 1/4"-20	1 1/16"	11/16"	5/8"	5	90876A180	8.76
5 1/4"-20	1 1/2"	9/16"	7/8"	5	90876A340	8.77
5 5/16"-18	1 1/2"	9/16"	7/8"	5	90876A345	9.41
5 5/16"-18	1 5/8"	1"	7/8"	5	90876A185	9.13
5 3/8"-16	1 5/8"	1"	7/8"	5	90876A190	10.18
6 1/4"-20	1 5/16"	11/16"	9/16"	5	90876A310	10.38
6 5/16"-18	1 1/2"	3/4"	5/8"	5	90876A315	10.41
6 3/8"-16	1 5/8"	7/8"	11/16"	5	90876A320	10.50
6 1/2"-13	2"	1 1/8"	7/8"	1	90876A326♥	4.72
6 5/8"-11	2 7/16"	1 1/4"	1 1/16"	1	90876A331	5.28
7 1/4"-20	1 1/8"	5/8"	7/16"	5	90876A350♥	9.12
7 5/16"-18	1 1/4"	21/32"	15/32"	5	90876A355	11.12
7 3/8"-16	1 1/2"	3/4"	9/16"	5	90876A360♥	10.82
7 1/2"-13	2"	29/32"	3/4"	1	90876A366♥	3.53
8 1/4"-20	1 7/8"	1 3/8"	11/16"	5	90876A370	14.12
8 5/16"-18	1 7/8"	1 3/8"	11/16"	5	90876A375	14.56
8 3/8"-16	1 7/8"	1 3/8"	11/16"	5	90876A380	14.94
9 1/4"-20	3"	3/4"	1"	1	90876A435♥	4.02
9 5/16"-18	3"	3/4"	1"	1	90876A440♥	4.34
9 3/8"-16	3"	3/4"	1"	1	90876A445	4.60
9 1/2"-13	3"	3/4"	1"	1	90876A450	4.87

Metric Sizes—Dimensions in millimeters

Thread Size	Pitch	(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel							
4 M5	0.8	28.58	12.7	9.53	5	94309A145●	$11.23
4 M6	1	34.93	15.88	12.7	5	94309A150	10.88
4 M8	1.25	36.51	17.46	12.7	5	94309A155	11.17
4 M16	2	69.85	30.16	26.99	1	94309A170	4.60
5 M6	1	25.4	11.9	19.05	5	94309A350	10.72
5 M6	1	26.99	17.46	15.88	5	94309A250	11.73
5 M8	1.25	41.28	25.4	22.23	5	94309A255	12.34
5 M10	1.5	41.28	25.4	22.23	5	94309A260	13.90

● Made from zinc-plated iron. ♥ Made from plain iron.

Metric Wing Nuts

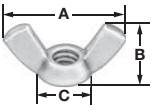

Designed for metric applications, these wing nuts meet DIN 315 (except those made from nylon 6/6) and have a Class 6H thread fit.

Nylon 6/6 nuts have a temperature range of –40° to +185° F. **To Order:** Please specify black or off-white.

Thread Size	Pitch, mm	(A), mm	(B), mm	(C), mm	Pkg. Qty.		Per Pkg.
Zinc-Plated Class 5 Steel							
M4	0.7	17.6	8.6	8	50	94300A310	$11.30
M5	0.8	22.5	11	10.3	25	94300A320	4.96
M6	1	27.8	13.6	12.7	25	94300A330	5.45
M8	1.25	30.3	14.8	13.8	20	94300A340	5.95
M10	1.5	36.2	17.7	16.5	10	94300A350	5.28
M12	1.75	49.4	24.1	22.5	5	94300A360	4.53
Type 316 Stainless Steel							
M6	1	26.3	12.7	13	5	94543A420	4.48
M8	1.25	30.1	15.1	15.3	5	94543A440	5.19
M10	1.5	34.9	18.3	18	1	94543A460	2.91
18-8 Stainless Steel							
M4	0.7	21.5	10.3	9	10	94545A220	5.72
M5	0.8	21.5	10.3	10.5	10	94545A225	6.21
M6	1	26.3	12.7	13	10	94545A230	6.79
M8	1.25	30.1	15.1	15.3	10	94545A235	9.89
M10	1.5	34.9	18.3	18	5	94545A240	9.12
M12	1.75	47.6	23.8	23	1	94545A245	2.95
Nylon 6/6							
M4	0.7	22.8	12.2	10.2	50	92124A510	7.79
M5	0.8	22.8	12.2	10.2	50	92124A520	7.79
M6	1	27.7	16	14.2	50	92124A530	9.35
M8	1.25	34.8	18.3	16.2	50	92124A540	10.90
M10	1.5	34.8	18.3	16.2	50	92124A550	10.90
M12	1.75	44.7	22.7	21.1	50	92124A560	14.03

Nylon-Insert Locking Wing Nuts

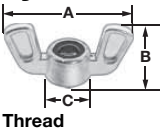

If you're worried about wing nuts vibrating loose, these have a nylon 6/6 insert that provides vibration resistance and is reliable at temperatures up to 250° F. Nuts are cast from zinc alloy and have a Class 2B thread fit.

Thread Size	(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
10-24	1 1/32″	1/2″	3/8″	25	98520A101	$11.97
10-32	1 1/32″	1/2″	3/8″	25	98520A111	11.97
1/4″-20	1 1/4″	19/32″	7/16″	20	98520A119	12.00
1/4″-28	1 1/4″	19/32″	7/16″	20	98520A129	12.00
5/16″-18	1 1/2″	23/32″	9/16″	10	98520A140	8.57
5/16″-24	1 1/2″	23/32″	9/16″	10	98520A130	8.57
3/8″-16	1 1/2″	23/32″	9/16″	10	98520A145	9.01
3/8″-24	1 1/2″	23/32″	9/16″	10	98520A131	9.33

Flange Wing Nuts

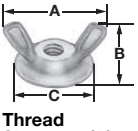

Use these one-piece flanged wing nuts to cover oversized holes. They're cast from a zinc alloy and have a Class 2B thread fit.

Thread Size	(A)	(B)	(C)	Flange Ht.	Pkg. Qty.		Per Pkg.
8-32	7/8″	7/16″	5/8″	0.03″	25	92239A100	$9.31
10-24	7/8″	7/16″	5/8″	0.03″	25	92239A125	9.31
10-32	7/8″	7/16″	5/8″	0.03″	25	92239A150	9.31
1/4″-20	1″	1/2″	3/4″	0.04″	25	92239A175	9.52
1/4″-20	1 1/8″	37/64″	7/8″	0.04″	25	92239A200	10.48
5/16″-18	1 1/8″	37/64″	7/8″	0.04″	25	92239A225	10.48
3/8″-16	1 1/8″	37/64″	7/8″	0.04″	25	92239A250	10.48

Wing Nut Assortment

Whether you're building or repairing, you'll want to keep this 175-piece assortment close at hand. All nuts are made from zinc-plated steel and have a Class 2B thread fit. They come furnished in an 11″ Lg. × 6 3/4″ Wd. × 1 3/4″ Dp. compartmented plastic case with lid chart.

Thread Size	No. of Pcs.	Thread Size	No. of Pcs.	Thread Size	No. of Pcs.
6-32	45	10-24	30	5/16″-18	20
8-32	40	1/4″-20	25	3/8″-16	15

98191A416 ..... Each $49.74

Heavy Duty Wing Nuts

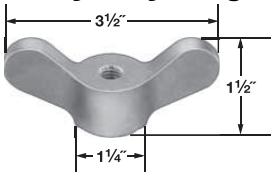

Use these rugged oversized wing nuts to tackle tough jobs. All have a Class 2B thread fit.

Alloy steel nuts are cast from 8620 alloy steel and have a hammered finish. Stronger than 18-8 stainless steel nuts, they have a minimum Rockwell hardness of B100.

18-8 stainless steel nuts are cast and polished to a fine finish. They are not rated for hardness.

Blank nuts come without a threaded hole. You can custom machine them with a hole up to 3/4″ in diameter.

Thread Size	Alloy Steel	Each	18-8 Stainless Steel	Each
3/8″-16	92902A150	$37.56	90750A100	$66.62
1/2″-13	92902A275	37.56	90750A200	59.54
5/8″-11	92902A400	37.56	90750A300	59.54
3/4″-10	92902A525	37.56	90750A400	59.54
Blank	92902A650	31.48	90750A450	57.98

Light Duty Wing Nuts

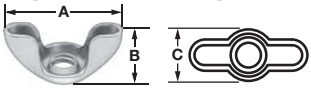

Stamped from steel that's 0.03″ to 0.06″ thick, these zinc-plated nuts are a good choice for light duty applications. They have dimensions that meet ANSI/ASME B18.17 and a Class 2B thread fit.

Thread Size	(A)	(B)	(C)	Pkg. Qty.		Per Pkg.
6-32	25/32″	13/32″	13/32″	100	94225A300	$11.05
8-32	25/32″	13/32″	13/32″	100	94225A310	12.42
10-24	59/64″	31/64″	33/64″	50	94225A320	7.01
10-32	59/64″	31/64″	33/64″	50	94225A330	7.01
1/4″-20	1 1/8″	1/2″	39/64″	50	94225A340	10.34
3/8″-16	1 27/64″	43/64″	53/64″	50	94225A360	11.03

Tube Connecting Nuts

Use inside round or square steel tubing to create tee joints. Connectors consist of a zinc-plated 12L14 steel nut surrounded by two heat-treated spring steel retaining clips. The clips grip the sides of the tube and hold the nut ready to receive a screw or threaded rod. Nuts have a Class 2B thread fit. Connectors are not rated for hardness and are not reusable.

Tube OD	For Thread Size	Fits Tube ID	Pkg. Qty.		Per Pkg.
5/8″	1/4″-20	0.53″-0.54″	10	94290A509	$10.34
3/4″	1/4″-20	0.62″-0.65″	25	94290A510	13.84
3/4″	5/16″-18	0.62″-0.65″	10	94290A515	7.44
7/8″	1/4″-20	0.75″-0.77″	25	94290A520	14.27
1″	1/4″-20	0.87″-0.9″	10	94290A550	5.90
1″	5/16″-18	0.87″-0.9″	10	94290A555	6.41
1″	3/8″-16	0.91″-0.94″	5	94290A553	4.20
1 1/8″	1/4″-20	1″-1.02″	5	94290A557	4.10
1 1/4″	1/4″-20	1.12″-1.15″	10	94290A571	6.83
1 1/4″	5/16″-18	1.12″-1.15″	10	94290A573	6.73
1 3/8″	1/4″-20	1.25″-1.27″	5	94290A581	4.01
1 1/2″	1/4″-20	1.37″-1.4″	10	94290A591	6.95
1 1/2″	5/16″-18	1.37″-1.4″	10	94290A593	6.80
1 3/4″	1/4″-20	1.62″-1.65″	10	94290A600	9.05
2″	1/4″-20	1.93″-1.94″	10	94290A610	10.61

Rotating Flange Nuts

The nut rotates 360°, but the flat-bottom flange washer holds firm upon contact—so it won't spin and scratch your workpiece. The nut is made from steel with a black-oxide finish and has a minimum Rockwell hardness of C20. The flange is made from case-hardened steel with a black-oxide finish and has a minimum surface hardness of Rockwell C55.

Thread Size	Wd.	O'all Ht.	Flange Dia.	Flange Ht.		Each
1/4″-20	1/2″	3/8″	5/8″	1/8″	90477A029	$3.51
5/16″-18	9/16″	7/16″	3/4″	9/64″	90477A030	3.76
3/8″-16	11/16″	17/32″	7/8″	5/32″	90477A031	4.27
1/2″-13	7/8″	23/32″	1 1/8″	7/32″	90477A033	4.88
5/8″-11	1 1/16″	29/32″	1 3/8″	1/4″	90477A035	5.82
3/4″-10	1 1/4″	1 1/64″	1 5/8″	9/32″	90477A036	7.29
7/8″-9	1 7/16″	1 1/8″	1 3/4″	7/16″	90477A037	10.20
1″-8	1 5/8″	1 15/64″	2″	15/32″	90477A038	13.20

Thumb Nuts

Like wing nuts, you need only your fingers to thread these nuts into position. Round thumb nuts ***(Styles 1-4)*** have knurls to prevent your fingers from slipping and hex shaped nuts ***(Style 5)*** accommodate a wrench so you can get them extra tight. Unless noted, all nuts are fully threaded. Inch sizes have a Class 2B thread fit; metric sizes have a Class 6H thread fit.

Nylatron nuts are wear resistant and reliable at temperatures up to 220° F. Color is black.

Acetal nuts have a threaded insert made from aluminum 6061-T6. They're wear resistant and reliable at temperatures up to 180° F. Color (excluding insert) is black.

For more information about nuts, materials, and finishes, see page 3184.

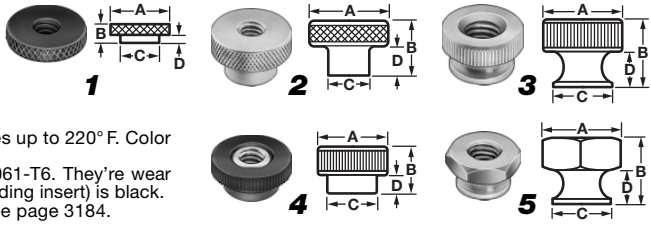

Inch Sizes

Thread Size	(A)	(B)	(C)	(D)	Pkg. Qty.		Per Pkg.
Black-Oxide Steel							
1 ... 10-32	¾″	7/32″	½″	1/16″	1	92815A111	$2.69
1 ... ¼″-20	¾″	7/32″	½″	1/16″	1	92815A115	2.69
1 ... 5/16″-18	¾″	5/16″	½″	1/16″	1	92815A119	2.93
1 ... ⅜″-16	¾″	5/16″	½″	1/16″	1	92815A123	2.93
1 ... ½″-13	1″	⅜″	¾″	⅛″	1	92815A127	3.05
1 ... ⅝″-11	1″	⅜″	¾″	⅛″	1	92815A131	3.69
18-8 Stainless Steel—Meet ASTM A581/A582							
2 ... 4-40	½″	⅜″	¼″	¼″	1	91833A112★	3.41
2 ... 6-32	½″	⅜″	¼″	¼″	1	91833A116★	3.41
2 ... 6-32	¾″	⅜″	¼″	¼″	1	91833A118★	4.42
2 ... 8-32	½″	⅜″	5/16″	¼″	1	91833A121	3.54
2 ... 8-32	½″	⅝″	5/16″	½″	1	91833A122★	3.56
2 ... 10-24	½″	7/16″	⅜″	¼″	1	91833A125	3.56
2 ... 10-32	1″	7/16″	⅜″	¼″	1	91833A132	5.39
2 ... ¼″-20	¾″	½″	½″	¼″	1	91833A134	4.41
2 ... ¼″-20	1″	1″	½″	¾″	1	91833A138★	6.67
3 ... 2-56	¼″	¼″	3/16″	⅛″	1	95150A110	1.63
3 ... 4-40	5/16″	¼″	¼″	⅛″	1	95150A120	2.02
3 ... 6-32	⅜″	9/32″	11/32″	5/32″	1	95150A130	2.28
3 ... 8-32	7/16″	9/32″	⅜″	5/32″	1	95150A140	2.46
3 ... 10-24	½″	11/32″	13/32″	3/16″	1	95150A150	2.97
3 ... 10-32	½″	11/32″	13/32″	3/16″	1	95150A160	3.43
3 ... ¼″-20	9/16″	⅜″	15/32″	7/32″	1	95150A170	3.96
3 ... 5/16″-18	⅝″	13/32″	17/32″	7/32″	1	95150A180	4.64
3 ... ⅜″-16	¾″	15/32″	⅝″	¼″	1	95150A190	5.25
5 ... 4-40	5/16″	¼″	¼″	⅛″	1	94365A340	2.31
5 ... 6-32	⅜″	9/32″	11/32″	5/32″	1	94365A350	2.77
5 ... 8-32	7/16″	9/32″	⅜″	5/32″	1	94365A360	3.20
5 ... 10-32	½″	11/32″	13/32″	3/16″	1	94365A380	4.45
5 ... ¼″-20	9/16″	⅜″	15/32″	7/32″	1	94365A390	5.46
5 ... 5/16″-18	⅝″	13/32″	17/32″	7/32″	1	94365A400	5.56
Brass							
3 ... 4-40	⅜″	¼″	5/16″	9/64″	25	92741A100	8.04
3 ... 6-32	⅜″	¼″	5/16″	9/64″	25	92741A110	8.06
3 ... 8-32	7/16″	5/16″	⅜″	3/16″	25	92741A120	10.12
3 ... 10-24	½″	21/64″	7/16″	13/64″	25	92741A130	13.54
3 ... 10-32	½″	21/64″	7/16″	13/64″	25	92741A140	13.54
3 ... 12-24	9/16″	11/32″	½″	13/64″	25	92741A150	14.98

★ Partially threaded. ■ Not rated for hardness.

Inch Sizes (Cont.)

Thread Size	(A)	(B)	(C)	(D)	Pkg. Qty.		Per Pkg.
Brass (Cont.)							
3 ... ¼″-20	⅝″	⅜″	9/16″	7/32″	10	92741A160	$9.20
3 ... 5/16″-18	11/16″	13/32″	39/64″	15/64″	10	92741A170	11.07
Nylatron ■							
2 ... 6-32	½″	⅜″	¼″	¼″	1	93995A300	4.27
2 ... 8-32	½″	⅜″	5/16″	¼″	1	93995A320	4.30
2 ... 10-32	1″	7/16″	⅜″	¼″	1	93995A350	4.94
2 ... ¼″-20	¾″	½″	½″	¼″	1	93995A360	4.76
2 ... ¼″-20	1″	1″	½″	¾″	1	93995A370	5.45
Acetal ■							
4 ... 6-32	⅜″	7/32″	23/64″	3/64″	10	93886A110	8.03
4 ... 8-32	½″	17/64″	25/64″	3/32″	10	93886A120	8.03
4 ... 10-32	⅝″	19/64″	29/64″	⅛″	10	93886A130	8.48
4 ... ¼″-20	¾″	23/64″	17/32″	3/16″	10	93886A140	8.94
4 ... 5/16″-18	1″	27/64″	41/64″	⅛″	10	93886A150	10.76

Metric Sizes—Dimensions in millimeters

Thread Size	Pitch	(A)	(B)	(C)	(D)		Each
18-8 Stainless Steel—Meet ASTM A581/A582 (Style 2 Meet DIN 466)							
2 ... M3	0.5	12	7.5	6	5	90368A150	$1.67
2 ... M4	0.7	16	9.5	8	6	90368A200	2.68
2 ... M5	0.8	20	11.5	10	7.5	90368A250	3.01
2 ... M6	1	24	15	12	10	90368A300	4.18
2 ... M8	1.25	30	18	16	12	90368A325	7.89
2 ... M10	1.5	36	23	20	15	90368A350	11.58
3 ... M3	0.5	8	6	6	3	96445A330	1.80
3 ... M3.5	0.6	10	7	9	4	96445A340	2.08
3 ... M4	0.7	10	7	9	4	96445A350	2.39
3 ... M5	0.8	13	9	11	5	96445A360	2.92
3 ... M6	1	13	9	12	5	96445A370	3.07
3 ... M8	1.25	19	12	16	6	96445A380	6.26
Zinc-Plated Brass—Meet ASTM B16/B633							
3 ... M2.5	0.45	6	6	5	3	96115A410	1.06
3 ... M3	0.5	8	6	6	3	96115A420	1.11
3 ... M4	0.7	10	7	9	4	96115A440	1.44
3 ... M5	0.8	13	9	11	5	96115A450	1.65
3 ... M6	1	13	9	12	5	96115A460	1.68
3 ... M8	1.25	19	12	16	6	96115A470	2.81

High-Torque Thumb Nuts

Four holes around the perimeter allow these reusable nuts to be easily tightened with any rod or pin that fits the hole size. Also known as check nuts or jam nuts, they're often used for jam locking in jig and fixture applications.

Black-oxide case-hardened steel nuts have a minimum surface hardness of Rockwell C48; ***18-8 stainless steel*** nuts have a minimum Rockwell hardness of B84.

Thread Size	(A)	(B)	Hole Size	Black-Oxide Case-Hardened Steel	Each	18-8 Stainless Steel	Each
10-24	¾″	¼″	3/32″	94775A021	$3.33	91725A100	$4.81
¼″-20	⅞″	¼″	3/32″	94775A029	3.55	91725A110	4.95
5/16″-18	1″	⅜″	3/16″	94775A030	3.73	91725A120	6.14
⅜″-16	1″	⅜″	3/16″	94775A031	3.96	91725A130	6.86
½″-13	1⅛″	7/16″	7/32″	94775A033	4.37	91725A140	7.85
⅝″-11	1⅜″	½″	¼″	94775A035	4.91	91725A150	8.43

Self-Leveling Flange Nuts with Washers

Also known as spherical collar nuts, the convex nut swivels against the concave surface of the washer to remain level against slightly uneven surfaces. All have a Class 2B thread fit.

Black-oxide case-hardened steel nuts are rust resistant and have a minimum surface hardness of Rockwell C55. ***18-8 stainless steel*** nuts offer excellent corrosion resistance and may be mildly magnetic. They are not rated for hardness.

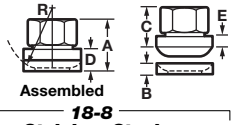

Thread Size	Wd.	Flange Dia.	(A)	(B)	(C)	Radius (R)	Max. Correction	Black-Oxide Case-Hardened Steel (D)	(E)		Each	18-8 Stainless Steel (D)	(E)		Each
¼″-20	½″	⅝″	7/16″	⅛″	5/16″	¾″	21/2°	7/32″	3/32″	91045A029	$3.26	7/32″	3/32″	91346A200	$12.60
5/16″-18	9/16″	¾″	17/32″	5/32″	⅜″	11/4″	21/2°	9/32″	⅛″	91045A030	3.56	¼″	3/32″	91346A210	13.64
⅜″-16	11/16″	⅞″	21/32″	5/32″	½″	11/4″	11/2°	9/32″	⅛″	91045A031	3.68	9/32″	⅛″	91346A220	15.58
½″-13	⅞″	1⅛″	⅞″	3/16″	11/16″	11/2″	1°	⅜″	3/16″	91045A033	4.26	11/32″	5/32″	91346A230♣	17.94
⅝″-11	1 1/16″	1⅜″	11/32″	7/32″	13/16″	13/4″	1°	13/32″	3/16″	91045A035	5.16	13/32″	3/16″	91346A240	20.34
¾″-10	1¼″	1⅝″	17/64″	17/64″	1″	21/4″	1°	33/64″	¼″	91045A036	7.10	33/64″	¼″	91346A250	27.74
1″-8	1⅝″	2″	135/64″	19/64″	1¼″	23/4″	11/2°	35/64″	¼″	91045A038	10.92	—	—	—	—

♣ Flange diameter is 1 3/16″.

T-Slot Nuts

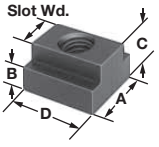

Designed to fit into T-slots in machine tool tables. Inch sizes have a Class 2B thread fit; metric sizes have a Class 6G thread fit. For more fixturing components, see page 2596.

Fully threaded nuts (also known as tapped-through nuts) are threaded all the way through so a stud can extend beyond the bottom. ***Partially threaded*** nuts keep studs from traveling past the bottom of the nut and causing damage to your work table.

Black-oxide case-hardened steel nuts are made from rust resistant case-hardened C1018 steel and have a minimum surface hardness of Rockwell C55. ***18-8 stainless steel*** nuts offer excellent corrosion resistance, may be mildly magnetic, and have a minimum Rockwell hardness of B80.

Thread Size	For Slot Wd.	(A)	(B)	(C)	(D)		Each
Fully Threaded							
Black-Oxide Case-Hardened Steel							
1/4″-20	5/16″	9/16″	3/16″	1/4″	9/16″	94750A588	$2.90
1/4″-20	3/8″	9/16″	15/64″	3/8″	9/16″	94750A594	2.92
5/16″-18	3/8″	5/8″	1/4″	3/8″	7/8″	94750A580	2.43
5/16″-18	7/16″	11/16″	7/32″	1/2″	7/8″	94750A602	2.44
3/8″-16	7/16″	11/16″	7/32″	1/2″	7/8″	94750A581	2.43
3/8″-16	1/2″	7/8″	9/32″	1/2″	7/8″	94750A582	2.43
7/16″-14	1/2″	7/8″	9/32″	1/2″	7/8″	94750A589	3.25
1/2″-13	9/16″	7/8″	11/32″	5/8″	1 1/8″	94750A583	2.90
1/2″-13	5/8″	1″	11/32″	5/8″	1 1/8″	94750A584	3.03
1/2″-13	11/16″	1 1/8″	7/16″	3/4″	1 1/4″	94750A585	3.25
5/8″-11	11/16″	1 1/8″	7/16″	3/4″	1 1/4″	94750A586	3.34
5/8″-11	3/4″	1 1/4″	15/32″	3/4″	1 1/4″	94750A587	3.59
3/4″-10	13/16″	1 1/4″	9/16″	1″	1 1/2″	94750A590	5.67
3/4″-10	1″	1 5/8″	5/8″	1″	1 3/4″	94750A591	6.95
7/8″-9	1″	1 5/8″	5/8″	1″	1 3/4″	94750A592	7.37
1″-8	1 1/4″	2″	7/8″	1 1/4″	2″	94750A603	18.02
Partially Threaded							
Black-Oxide Case-Hardened Steel							
1/4″-20	5/16″	9/16″	3/16″	1/4″	9/16″	90526A581	3.23
5/16″-18	3/8″	5/8″	1/4″	3/8″	7/8″	90526A580	2.72
3/8″-16	7/16″	11/16″	7/32″	1/2″	7/8″	90526A584	2.72
3/8″-16	1/2″	7/8″	9/32″	1/2″	7/8″	90526A588	2.72
3/8″-16	9/16″	7/8″	11/32″	5/8″	1 1/8″	90526A592	3.00
7/16″-14	1/2″	7/8″	9/32″	1/2″	7/8″	90526A593	3.63
1/2″-13	9/16″	7/8″	11/32″	5/8″	1 1/8″	90526A596	3.23
1/2″-13	5/8″	1″	11/32″	5/8″	1 1/8″	90526A600	3.37
1/2″-13	5/8″	1 1/8″	3/8″	3/4″	1 1/8″	90526A601	4.44
1/2″-13	11/16″	1 1/8″	7/16″	3/4″	1 1/4″	90526A604	3.63
1/2″-13	3/4″	1 1/4″	15/32″	3/4″	1 1/4″	90526A602	4.91
5/8″-11	11/16″	1 1/8″	7/16″	3/4″	1 1/4″	90526A612	3.72
5/8″-11	3/4″	1 1/4″	15/32″	3/4″	1 1/4″	90526A616	4.00
5/8″-11	13/16″	1 1/4″	9/16″	1″	1 1/2″	90526A620	5.84
3/4″-10	13/16″	1 1/4″	9/16″	1″	1 1/2″	90526A624	6.33
3/4″-10	7/8″	1 1/2″	9/16″	1″	1 1/2″	90526A628	6.98
3/4″-10	1″	1 5/8″	5/8″	1″	1 3/4″	90526A632	7.77
3/4″-10	1″	1 3/4″	3/4″	1 1/2″	1 3/4″	90526A633	9.98
3/4″-10	1 1/16″	1 5/8″	11/16″	1 1/8″	2″	90526A640	9.09
7/8″-9	1″	1 5/8″	5/8″	1″	1 3/4″	90526A636	8.23
1″-8	1 1/16″	1 5/8″	11/16″	1 1/8″	2″	90526A648	9.30
1 1/4″-7	1 3/8″	2 1/2″	1 1/8″	1 3/4″	2 1/2″	90526A658	25.19
18-8 Stainless Steel							
1/4″-20	5/16″	1/2″	3/16″	1/4″	9/16″	94762A459	6.43
5/16″-18	3/8″	5/8″	7/32″	13/32″	3/4″	94762A461	5.60
3/8″-16	7/16″	3/4″	7/32″	1/2″	1″	94762A462	6.07
3/8″-16	1/2″	7/8″	1/4″	5/8″	7/8″	94762A463	6.07
1/2″-13	9/16″	7/8″	11/32″	3/4″	1 1/4″	94762A464	7.33
1/2″-13	5/8″	1″	3/8″	3/4″	1 1/4″	94762A465	7.67
1/2″-13	5/8″	1 1/8″	7/16″	3/4″	1 1/4″	94762A466	7.76
5/8″-11	11/16″	1 1/8″	15/32″	1 1/8″	1 1/2″	94762A467	9.57
5/8″-11	11/16″	1 1/4″	15/32″	1″	1 1/2″	94762A468	9.57

Thread Size	Pitch	For Slot Wd.	(A)	(B)	(C)	(D)		Each
Metric Partially Threaded—*Dimensions in millimeters*								
Black-Oxide Case-Hardened Steel								
M6	1	8	14	6	10	19	90974A111	$4.44
M6	1	10	16	6	11	22	90974A113	4.46
M8	1.25	10	16	6	11	22	90974A115	4.51
M10	1.5	12	19	7	13	22	90974A116	4.51
M10	1.5	14	22	9	16	29	90974A118	5.27
M12	1.75	14	22	9	16	29	90974A117	5.27
M12	1.75	16	25	9	16	29	90974A119	5.27
M12	1.75	17	29	11	19	32	90974A120	6.29
M16	2	18	29	11	19	32	90974A121	6.29
M16	2	20	32	14	25	38	90974A122	6.77
M20	2.5	22	35	14	25	38	90974A123	7.76
M24	3	27	41	18	29	51	90974A128	8.51
M24	3	33	51	24	32	51	90974A130	9.16

Hex Speed Nuts

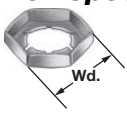

Also known as palnuts, these reusable nuts can be used alone in light duty assemblies or along with an ordinary hex nut to ensure tightness in higher stress assemblies. They're made from spring steel and have a zinc plating (unless noted) for corrosion resistance. All have a Class 2B thread fit and a minimum Rockwell hardness of C36.

Thread Size	Wd.	O'all Ht.	Pkg. Qty.		Per Pkg.
1/4″-20	7/16″	1/8″	25	92043A140	$8.36
5/16″-18	1/2″	9/64″	10	92043A150	4.40
3/8″-16	9/16″	5/32″	10	92043A160	5.22
3/8″-24	9/16″	9/64″	100	92043A100	9.55
1/2″-13	3/4″	3/16″	10	92043A170	8.59
1/2″-20	3/4″	11/64″	50	92043A200	7.27
5/8″-11	15/16″	7/32″	5	92043A180♠	5.19
3/4″-10	1 1/8″	1/4″	10	92043A320♠	6.56
1″-8	1 5/8″	23/64″	10	92043A390♠	10.12

♠ Has a hot-dipped galvanized coating.

Flange Speed Nuts

For Threaded Screws and Studs

With a wide base, these reusable one-piece washer locknuts are a good choice to cover oversized holes. They're made from spring steel and have a zinc plating for rust resistance. Minimum Rockwell hardness is C41.

Nuts ***for threaded screws and studs*** have a single thread with a Class 2B thread fit. Nuts ***for unthreaded shafts*** cut their own threads.

Size	Flange Dia.	Wd.	O'all Ht.	Pkg. Qty.		Per Pkg.
For Threaded Screws and Studs						
6-32	7/16″	5/16″	7/32″	100	90533A111	$5.18
8-32	15/32″	11/32″	7/32″	100	90533A113	7.06
10-24	1/2″	3/8″	15/64″	100	90533A117	6.91
10-24	3/4″	3/8″	17/64″	100	90533A120	11.21
10-32	1/2″	3/8″	7/32″	100	90533A115	6.91
1/4″-20	19/32″	7/16″	1/4″	100	90533A124	9.70
1/4″-20	13/16″	7/16″	19/64″	100	90533A126	12.52
For Unthreaded Shafts						
1/8″	7/16″	5/16″	3/16″	100	90533A131	4.98
1/8″	17/32″	5/16″	13/64″	100	90533A132	10.45
5/32″	9/16″	11/32″	7/32″	100	90533A150	7.73
3/16″	1/2″	3/8″	15/64″	100	90533A133	5.90
3/16″	5/8″	3/8″	1/4″	100	90533A134	12.73
1/4″	19/32″	7/16″	15/64″	100	90533A135	10.36
1/4″	11/16″	7/16″	1/4″	100	90533A136	7.40
5/16″	7/8″	1/2″	5/16″	50	90533A140	9.82

Rectangular Speed Nuts

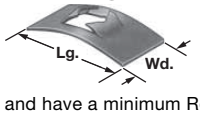

Also known as flat-style speed nuts, these nuts are often chosen as quicker, easier to thread alternatives to threaded nuts and lock washers. All are made from spring steel with a black-phosphate finish and have a minimum Rockwell hardness of C20 (unless noted).

Nuts ***for threaded screws and studs*** have a single thread with a Class 2B thread fit and are reusable. Nuts ***for sheet metal and thread-forming screws*** have a single thread and are reusable. Nuts ***for unthreaded shafts*** have no threads and are not reusable.

Size	Lg.	Wd.	Pkg. Qty.		Per Pkg.
For Threaded Screws and Studs					
2-56	3/8″	7/32″	100	90528A003	$13.35
4-40	7/16″	1/4″	25	90528A110▲	7.42
6-32	1/2″	5/16″	100	90528A111	8.77
6-32	7/8″	1/2″	100	90528A112	14.62
8-32	7/8″	1/2″	100	90528A113	14.08
10-24	3/4″	7/16″	100	90528A114	11.50
10-32	3/4″	7/16″	50	90528A117	11.53
1/4″-20	1″	9/16″	100	90528A115	13.54
For Sheet Metal and Thread-Forming Screws					
No. 8	5/8″	13/32″	100	90528A220	12.88
No. 10	7/8″	1/2″	50	90528A240	9.46
For Unthreaded Shafts					
1/16″	3/8″	7/32″	100	90528A121	9.69
3/32″	7/16″	1/4″	100	90528A127	9.23
1/8″	9/16″	5/16″	100	90528A124	10.00
5/32″	9/16″	3/8″	100	90528A122	10.58
3/16″	5/8″	3/8″	100	90528A125	9.15
1/4″	5/8″	7/16″	100	90528A126	11.88
5/16″	11/16″	1/2″	100	90528A073	10.96
3/8″	3/4″	9/16″	100	90528A031	13.15

▲ Made from 18-8 stainless steel; not rated for hardness.

Push Nuts for Threaded Rods and Studs

Also known as bolt retainers, these push nuts slide easily over threads to securely hold fasteners in place. They're made from spring steel and are not reusable. Inch sizes have a black-phosphate finish and metric sizes are zinc plated (unless noted).

For optional installation drivers, see 93633A (sold separately on this page; driver numbers listed below).

Inch Sizes

For Screw Size	OD	Ht.	Driver No.	Pkg. Qty.		Per Pkg.
No. 6	11/32″	1/16″	1	100	94800A705♣	$5.77
No. 8	3/8″	1/16″	2	100	94800A700	7.20
No. 10	7/16″	5/64″	3	100	94800A710	7.20
1/4″	1/2″	5/64″	4	100	94800A720	7.60
5/16″	5/8″	3/32″	5	100	94800A730	8.80
3/8″	25/32″	3/32″	6	100	94800A740	10.55
7/16″	27/32″	7/64″	7	100	94800A750	13.10
1/2″	15/16″	1/8″	8	100	94800A760	14.00

♣ Zinc plated.

Metric Sizes—Dimensions in millimeters

For Screw Size	Pitch	OD	Ht.	Driver No.	Pkg. Qty.		Per Pkg.
M5	0.8	11	1.7	3	100	94813A100	$6.55
M6	1	12.7	1.9	4	100	94813A200	8.33
M6	1	17	2	4	100	94813A300	9.61
M8	1.25	15.9	2	5	100	94813A400	9.09
M10	1.5	19.8	2.3	6	50	94813A600★	6.67
M12	1.75	21.4	3.2	8	50	94813A800	6.67
M14	2	25	3.2	–	50	94813A900★	8.33

★ Has a black-phosphate finish.

Push Nuts for Unthreaded Shafts

Also known as push-on retainers, you can use these nuts on unthreaded rods, shafts, and axles to keep attachments firmly in place. They are not reusable.

Styles A and ***B*** are made from spring steel and have a minimum Rockwell hardness of C39. Inch sizes are zinc plated; metric sizes have a black finish (unless noted).

Style C are also known as grooveless retainers. They're made from 300 series stainless steel and have a minimum Rockwell hardness of C30.

For optional installation drivers, see 93633A (sold separately on this page; driver numbers listed below).

Inch Sizes

	For Shaft Dia.	OD	Ht.	Driver No.	Pkg. Qty.		Per Pkg.
A	1/16″	13/64″	3/64″	1	200	94807A015★	$4.70
A	3/32″	13/64″	3/64″	1	200	94807A019★	9.41
A	1/8″	3/8″	1/16″	1	200	94807A024	9.02
A	5/32″	7/16″	1/16″	1	25	94807A025	12.03
A	3/16″	7/16″	5/64″	2	200	94807A026	9.17
A	7/32″	17/32″	5/64″	3	200	94807A027	13.24
A	1/4″	17/32″	5/64″	4	200	94807A029	14.44
A	5/16″	5/8″	5/64″	5	100	94807A030	9.41
A	3/8″	3/4″	3/32″	6	50	94807A031★	8.25
A	7/16″	7/8″	7/64″	7	50	94807A032	7.25
A	1/2″	1″	1/8″	8	25	94807A034	8.51
A	5/8″	1″	5/64″	–	50	94807A035★	13.03
B	1/4″	15/16″	3/32″	4	50	94807A800	6.00
B	5/16″	15/16″	7/64″	5	50	94807A810	6.25
B	3/8″	15/16″	3/32″	6	50	94807A820	6.50
B	7/16″	15/16″	5/64″	7	50	94807A830	9.62
C	3/32″	7/32″	1/32″	1	50	97200A010	4.52
C	1/8″	7/32″	1/32″	1	50	97200A020	4.70
C	1/8″	1/4″	1/32″	1	50	97200A025	6.50
C	1/8″	21/64″	1/32″	1	50	97200A100	6.61
C	5/32″	17/64″	1/32″	1	50	97200A110	4.59
C	3/16″	5/16″	1/32″	2	50	97200A120	4.53
C	3/16″	21/64″	1/32″	2	50	97200A130	4.33
C	3/16″	3/8″	1/32″	2	50	97200A140	5.69
C	1/4″	5/16″	1/32″	4	50	97200A150	5.20
C	1/4″	7/16″	1/16″	4	50	97200A200	8.78
C	5/16″	7/16″	1/32″	5	50	97200A310	8.92
C	3/8″	5/8″	1/32″	6	50	97200A410	12.62
C	7/16″	37/64″	1/32″	7	50	97200A440	13.29
C	1/2″	3/4″	1/32″	8	50	97200A450	10.36

★ Has a black-phosphate finish.

Metric Sizes—Dimensions in millimeters

	For Shaft Dia.	OD	Ht.	Driver No.	Pkg. Qty.		Per Pkg.
A	4	11	1.47	1	100	96415A124	$8.92
A	5	11	1.52	3	100	96415A126	11.32
A	6	13.5	1.75	4	100	96415A128♣	13.55
A	8	15.9	1.78	5	50	96415A130	7.72
B	1.5	5	0.7	1	200	96415A110	13.70
B	2	7	1.2	1	200	96415A120	9.60
B	3	10.5	1.6	1	200	96415A125	11.30
B	3.5	11	1.6	1	100	96415A140	6.69
B	4	12	1.8	1	100	96415A150	6.76
B	5	14	2	3	100	96415A160	8.26
B	6	16	2.3	4	100	96415A170	9.77
B	7	17	2.3	4	100	96415A180	11.27
B	8	18	2.4	5	100	96415A190	11.66
B	10	20	2.4	6	25	96415A210	6.82

♣ Zinc plated.

Installation Tools for Push Nuts

A magnetized shank holds push nuts and retainers in place to make installation a snap. The shaft is made from hardened tool steel for durability; the handle is made from smooth plastic for a comfortable grip.

Driver No.	For Shaft/ Stud Size	Lg.	Dia.	Clearance Depth		Each
1	No. 6, 1/16″-5/32″, 1.5-4 mm	3 1/2″	0.438″	2 1/2″	93633A010	$56.28
2	No. 8, 3/16″	3 1/2″	0.5″	2 1/2″	93633A020	56.29
3	No. 10, 7/32″, 5 mm	3 1/2″	0.5″	2 1/2″	93633A030	56.29
4	1/4″, 6-7 mm	4″	0.563″	3″	93633A040	57.26
5	5/16″, 8 mm	4″	0.688″	3″	93633A050	57.84
6	3/8″, 10 mm	5″	0.875″	3″	93633A060	60.13
7	7/16″	5″	0.938″	3″	93633A070	60.74
8	1/2″, 12 mm	5″	1″	3″	93633A080	60.67

Cap Nuts for Unthreaded Shafts

Also known as axle caps, these nuts give axles and shafts a finished look. Just push them onto the end of a shaft and they're locked in place. All (except 97036A) are vibration resistant. Not reusable.

Black-luster coated spring steel nuts have a decorative black finish that's durable, corrosion resistant, and can withstand 500 hours of salt spray.

Nickel-plated steel nuts are also known as washer cap push nuts. They have a decorative silver finish.

Stainless steel nuts are made from Type 430 stainless steel with a 300 series stainless steel insert. They offer excellent corrosion resistance.

Plastic nuts are made from high-density black plastic with a spring-steel insert. They withstand temperatures of –97° to +152° F.

	For Shaft Dia.	OD	Ht.	Pkg. Qty.		Per Pkg.
Black-Luster Coated Spring Steel						
1	1/4″	9/16″	7/32″	5	97036A010	$6.58
1	5/16″	5/8″	1/4″	5	97036A020	6.78
1	3/8″	3/4″	9/32″	5	97036A030	7.20
1	1/2″	15/16″	21/64″	5	97036A040	8.23
Nickel-Plated Steel *(unless noted)*						
1	3/16″	7/16″	13/64″	100	94803A027♣	14.90
1	1/4″	9/16″	7/32″	50	94803A029	14.93
1	5/16″	5/8″	1/4″	50	94803A030	14.95
1	3/8″	11/16″	15/64″	50	94803A031	14.97
1	7/16″	7/8″	21/64″	25	94803A040	14.18
1	1/2″	15/16″	21/64″	25	94803A050	12.29
1	5/8″	1 3/16″	27/64″	25	94803A060♣	12.66
Stainless Steel						
2	1/8″	27/64″	1/8″	10	94802A100	6.49
2	3/16″	1/2″	5/32″	25	94802A110	9.18
2	1/4″	41/64″	13/64″	25	94802A120	14.80
2	5/16″	41/64″	13/64″	10	94802A130	6.00
2	3/8″	25/32″	15/64″	10	94802A140	5.88
2	1/2″	1 1/32″	19/64″	5	94802A150	6.35
Plastic						
3	1/8″	21/32″	23/64″	50	90310A315	13.05
3	5/32″	21/32″	23/64″	50	90310A325	11.44
3	3/16″	21/32″	23/64″	50	90310A335	13.40
3	1/4″	27/32″	15/32″	50	90310A345	12.80
3	5/16″	27/32″	29/64″	25	90310A355	8.60

♣ Zinc plated.

Electrical Panel Nuts

Hex Nut

Locking Nut

Round Nut

Also known as dress nuts, electrical panel nuts are designed for mounting common electrical switches (such as push-button switches and rotary output switches) into panel cutouts. Each has a Class 2B thread fit (unless noted).

Thread Types: NPS=National Pipe Straight Thread; NEF=National Extra Fine Thread; NS=National Special Thread; and NPSM=National Pipe Straight Mechanical Thread.

For more information about nuts, materials, and finishes, see page 3184.

Thread Size	Type	Wd.	Ht.	Pkg. Qty.	Zinc-Plated Steel Hex Nuts	Per Pkg.	18-8 Stainless Steel Hex Nuts	Per Pkg.	Plain Brass Hex Nuts	Per Pkg.	Nickel-Plated Brass Hex Nuts	Per Pkg.
1/8″-27	NPS	1/2″	1/8″	10	—	—	—	—	—	—	91862A511	$2.58
1/8″-27	NPS	5/8″	1/8″	1	91862A101	$1.86	91862A306	$3.11	91862A212	$3.10	—	—
1/8″-27	NPS	5/8″	3/16″	1	91862A104	2.09	91862A310	3.93	91862A215	3.36	—	—
1/4″-32	NEF	5/16″	5/64″	10	91862A105	7.24	91862A311	5.86	91862A216	2.07	91862A516	1.72
1/4″-32	NEF	3/8″	3/32″	10	91862A106	6.21	91862A313	4.83	91862A218	1.72	91862A515	1.72
1/4″-40	NS	5/16″	1/16″	10	—	—	—	—	—	—	91862A517	2.16
1/4″-40	NS	5/8″	3/16″	1	91862A108	2.51	91862A315	4.19	—	—	—	—
5/16″-32	NEF	7/16″	7/64″	10	91862A110	9.66	91862A316	7.93	91862A223	2.76	91862A518	2.58
3/8″-32	NEF	1/2″	3/32″	10	—	—	—	—	—	—	91862A521	1.65
3/8″-32	NEF	5/8″	3/32″	1	91862A112	2.24	91862A318	2.60	91862A225	2.92	—	—
7/16″-28	NEF	5/8″	3/32″	1	91862A116	4.71	91862A320	6.59	91862A228	5.16	91862A523	5.24
15/32″-32	NEF	9/16″	5/64″	1	91862A119★	4.64	91862A325★	4.51	—	—	91862A525★▲	2.58
15/32″-32	NEF	9/16″	3/32″	10	—	—	—	—	—	—	91862A526★	2.58
15/32″-32	NEF	5/8″	3/32″	1	91862A123★	1.56	91862A329★	3.17	91862A236★	3.18	—	—
1/2″-28	NEF	5/8″	3/32″	1	91862A127	6.22	91862A330	8.81	—	—	—	—
1/2″-28	NEF	5/8″	1/8″	10	—	—	—	—	—	—	91862A527	4.31
5/8″-27	NS	3/4″	1/8″	1	91862A129★	2.16	91862A338★	3.50	91862A243★	3.58	91862A529★	2.11

★ Not rated for thread fit. ▲ Package quantity is 10.

Zinc-Alloy Locking Nuts ★■

Thread Size	Type	OD	Ht.	Pkg. Qty.		Per Pkg.
1/2″-14	NPSM	1″	1/8″	25	91843A211	$5.72
3/4″-14	NPSM	1 1/4″	5/32″	25	91843A213	7.46

★ Not rated for thread fit. ■ Not rated for hardness.

Zinc-Plated Steel Round Nuts ★

Thread Size	Type	OD	Ht.		Each
3/8″-32	NEF	5/8″	3/32″	91843A109	$2.47
15/32″-32	NEF	5/8″	3/32″	91843A118	2.39
5/8″-27	NS	3/4″	1/8″	91843A123	2.63

No-Slip Clip-On Nuts

Standard

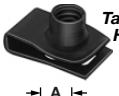

Tapped Hole

Wide Panel

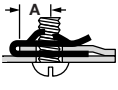

Screws pass through both the top and bottom of these one-piece reusable nuts, so the nuts don't slip or turn as they're tightened down. Also known as U-style nuts, each is made from spring steel and has a black-phosphate finish, unless noted. All have a minimum Rockwell hardness of C20. Inch sizes for machine screws have a Class 2B thread fit; metric have a Class 6H thread fit.

Standard nuts are easy-to-install, single-thread speed nuts.

Wide panel nuts are single-thread speed nuts that accommodate a wide range of panel- and channel-edge thicknesses. They can also be used with tapping screws in service panel applications.

Tapped hole nuts are multiple-thread extruded nuts that are also known as fold-over nuts. They provide a tapped hole for high-strength fastening of sheet-metal components.

Screw Size	For Panel Thickness	Ctr. of Hole to Panel Edge (A)	Pkg. Qty.		Per Pkg.
***Standard—**For Machine Screws*					
6-32	0.025″-0.04″	0.218″	25	94808A101	$7.35
6-32	0.025″-0.04″	0.468″	25	94808A102	7.83
6-32	0.045″-0.062″	0.218″	25	94808A103	8.05
6-32	0.045″-0.062″	0.296″	25	94808A105	9.71
6-32	0.045″-0.062″	0.468″	25	94808A107	7.93
6-32	0.05″-0.062″	0.156″	50	94808A130	13.36
8-32	0.025″-0.04″	0.234″	25	94808A135	8.79
8-32	0.025″-0.04″	0.328″	25	94808A144	12.13
8-32	0.025″-0.04″	0.515″	25	94808A147	8.00
8-32	0.045″-0.062″	0.234″	25	94808A140	7.66
8-32	0.045″-0.062″	0.328″	25	94808A143	8.27
8-32	0.045″-0.062″	0.515″	25	94808A146	9.49
8-32	0.05″-0.063″	0.265″	25	94808A148	8.20
10-24	0.025″-0.04″	0.203″	25	94808A149	7.63
10-24	0.025″-0.04″	0.359″	25	94808A155	12.30
10-24	0.025″-0.064″	0.5″	25	94808A150	7.96
10-24	0.025″-0.081″	0.312″	25	94808A152	8.63
10-24	0.045″-0.062″	0.25″	25	94808A151	8.32
10-24	0.045″-0.062″	0.562″	25	94808A159	8.32
10-24	0.115″-0.13″	0.25″	25	94808A153	8.05
10-32	0.025″-0.062″	0.312″	25	94808A300	9.64
10-32	0.06″-0.07″	0.312″	25	94808A310 ♣	7.57
1/4″-20	0.051″-0.109″	0.312″	25	94808A154	6.91
1/4″-20	0.064″-0.125″	0.5″	25	94808A156	7.32
1/4″-20	0.18″-0.19″	0.375″	25	94808A350	10.51
1/4″-20	0.276″-0.286″	0.562″	10	94808A360	6.50
***Standard—**For Sheet Metal and Thread-Forming Screws*					
No. 4	0.051″-0.064″	0.145″	50	94808A158	13.27
No. 6	0.025″-0.04″	0.218″	25	94808A160	8.63
No. 6	0.045″-0.062″	0.468″	25	94808A165	8.75
No. 8	0.025″-0.04″	0.234″	50	94808A167	14.17
No. 8	0.025″-0.04″	0.328″	25	94808A169	12.66
No. 8	0.025″-0.04″	0.515″	25	94808A168	9.66
No. 8	0.045″-0.062″	0.234″	25	94808A172	9.73
No. 8	0.045″-0.062″	0.515″	25	94808A176	12.67
No. 8	0.05″-0.09″	0.296″	25	94808A180	8.46
No. 8	0.11″-0.187″	0.312″	25	94808A185	8.25

♣ Zinc plated.

Screw Size	For Panel Thickness	Ctr. of Hole to Panel Edge (A)	Pkg. Qty.		Per Pkg.
***Standard—**For Sheet Metal and Thread-Forming Screws (Cont.)*					
No. 10	0.025″-0.04″	0.25″	25	94808A193	$14.49
No. 10	0.025″-0.04″	0.359″	25	94808A195	7.80
No. 10	0.04″-0.094″	0.343″	25	94808A200	9.46
No. 10	0.045″-0.062″	0.359″	25	94808A500	11.52
No. 10	0.045″-0.062″	0.562″	25	94808A210	7.71
No. 10	0.102″-0.125″	0.406″	25	94808A190	9.98
***Wide Panel—**For Sheet Metal Screws*					
No. 6	0.025″-0.125″	0.375″	50	94810A005	7.35
No. 8	0.025″-0.125″	0.375″	25	94810A006	5.91
No. 8	0.025″-0.15″	0.625″	50	94810A100	7.45
No. 10	0.025″-0.125″	0.344″	25	94810A007	6.48
No. 10	0.025″-0.15″	0.563″	50	94810A200	7.62
No. 14 (1/4″)	0.025″-0.125″	0.375″	25	94810A008	7.21
***Tapped Hole—**For Machine Screws*					
8-32	0.025″-0.15″	0.562″	25	94850A110	7.72
8-32	0.079″-0.118″	0.375″	25	94850A105	7.41
10-24	0.025″-0.125″	0.468″	25	94850A120	9.34
1/4″-20	0.025″-0.15″	0.531″	25	94850A129	5.51
1/4″-20	0.025″-0.15″	0.781″	25	94850A140	6.62
5/16″-18	0.025″-0.15″	0.562″	25	94850A150	6.09
5/16″-18	0.025″-0.15″	0.625″	25	94850A155	5.70
5/16″-18	0.025″-0.15″	0.843″	25	94850A160	10.86
5/16″-18	0.025″-0.15″	0.875″	25	94850A158	14.14
3/8″-16	0.05″-0.2″	0.75″	25	94850A170	13.43
3/8″-16	0.05″-0.2″	1.125″	10	94850A179	8.77

Thread Size	Pitch	For Panel Thickness	Ctr. of Hole to Panel Edge (A)	Pkg. Qty.		Per Pkg.
***Metric Tapped Hole—**For Machine Screws (Dimensions in mm)*						
M4	0.7	0.8-4	13.5	50	95210A110	$13.88
M5	0.8	0.6-3.8	11	25	95210A120	5.61
M5	0.8	0.8-4	15.8	25	95210A130	7.44
M6	1	0.34-4	19.5	25	95210A175	7.33
M6	1	0.8-4	12	50	95210A150	13.38
M6	1	3.4-6.3	13.5	25	95210A170	12.63
M8	1.25	0.8-4	14.5	25	95210A190	7.62
M8	1.25	0.8-4.5	20	25	95210A200	9.67
M8	1.25	4-7	21	10	95210A210	5.95
M10	1.5	1-6	19	10	95210A240	5.33

Clip-On Nuts

Snap these simple-to-use reusable nuts onto panels for a tight hold during blind assembly.

Styles 1 and ***2*** are often used on electric consoles. Also known as J-style clip-on speed nuts, they have a minimum Rockwell hardness of C20. Nuts *for machine screws* have a Class 2B thread fit.

Styles 3 and ***4*** offer the security and holding power of a multiple-thread nut so they're great for heavy duty applications. Also known as cage clip-on nuts, they have a minimum Rockwell hardness of C45.

Style 3 have a spring steel clip and a steel nut with a Class 2B thread fit.

Style 4 have a heat treated steel clip and a steel nut with a Class 3B thread fit. With an S-style shape, they have more bearing surface than J-style nuts.

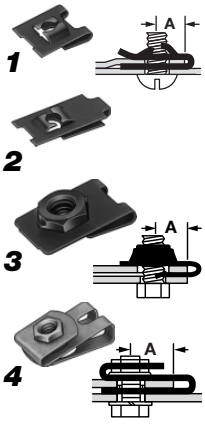

Screw Size	Style	For Panel Thickness	(A)	Pkg. Qty.		Per Pkg.
For Machine Screws						
J-Style—*Black-Phosphate Spring Steel*						
6-32	1	0.025″-0.04″	0.218″	25	94809A100	$6.85
6-32	2	0.045″-0.062″	0.296″	25	94809A104	7.03
8-32	1	0.025″-0.04″	0.234″	25	94809A106	7.04
8-32	2	0.025″-0.04″	0.514″	25	94809A107	10.47
8-32	1	0.045″-0.062″	0.234″	50	94809A108	13.06
8-32	2	0.094″-0.102″	0.25″	50	94809A200	11.31
10-24	1	0.025″-0.04″	0.203″	25	94809A205	9.54
10-24	1	0.045″-0.062″	0.203″	25	94809A215	9.61
10-24	2	0.045″-0.062″	0.562″	25	94809A220	10.33
10-32	1	0.025″-0.04″	0.203″	25	94809A225	8.25
1/4″-20	2	0.031″-0.062″	0.5″	25	94809A230	8.73
1/4″-20	3	0.032″-0.093″	0.5″	25	90679A032	10.60
1/4″-20	1	0.075″-0.094″	0.687″	10	94809A240	6.85
5/16″-18	3	0.087″-0.093″	0.469″	10	90679A200	7.51
3/8″-16	3	0.05″-0.09″	0.563″	25	90679A031	14.40
S-Style—*Cadmium-Plated Heat-Treated Steel (Unless Noted)*						
6-32	4	0.02″-0.08″	0.18″	1	98065A111	4.11
8-32	4	0.02″-0.12″	0.25″	1	98065A115	3.20
8-32	4	0.02″-0.12″	0.281″	1	98065A120	3.43
8-32	4	0.02″-0.12″	0.375″	1	98065A125	3.09
8-32	4	0.02″-0.12″	0.5″	1	98065A130	3.63
10-32	4	0.02″-0.09″	0.375″	5	98065A140	8.70
10-32	4	0.02″-0.09″	0.5″	5	98065A155	11.99
10-32	4	0.02″-0.12″	0.281″	5	98065A150♣	14.90
10-32	4	0.05″-0.19″	0.25″	5	98065A135	10.09
10-32	4	0.09″-0.125″	0.281″	5	98065A145♣	14.95
For Sheet Metal and Thread-Forming Screws						
J-Style—*Black-Phosphate Spring Steel*						
No. 6	1	0.025″-0.04″	0.218″	25	94809A605	8.21
No. 6	2	0.025″-0.04″	0.468″	25	94809A610	9.11
No. 6	1	0.045″-0.062″	0.218″	25	94809A615	8.21
No. 8	2	0.025″-0.04″	0.515″	25	94809A635	10.07
No. 8	1	0.025″-0.045″	0.234″	25	94809A630	9.69
No. 8	1	0.045″-0.062″	0.234″	25	94809A640	11.10
No. 8	2	0.045″-0.062″	0.515″	50	94809A118	11.32
No. 10	1	0.025″-0.04″	0.25″	25	94809A130	12.70
No. 10	2	0.025″-0.04″	0.562″	10	94809A131	6.05
No. 10	1	0.045″-0.062″	0.25″	25	94809A120	11.53
No. 10	2	0.045″-0.062″	0.562″	10	94809A125	5.48
No. 14	2	0.028″-0.056″	0.421″	25	94809A140	11.82

♣ Zinc plated.

Easy-Align Clip-On Nuts

Also known as floating nuts, these nuts "float" within a retainer for easy alignment with off-center holes.

Square style clip-on nuts are designed to fit into square holes. Use your fingers or pliers to insert. Mounting legs expand to lock the fastener in place. Nuts for #6 to 1/4″ size screws fit into 11/32″ or 3/8″ square holes. Those for 5/16″ size screws fit into 15/32″ or 1/2″ square holes; and those for 3/8″ and 1/2″ screws fit into 15/32″, 1/2″, 37/64″, or 19/32″ square holes.

U-style and ***G-style*** clip-on nuts slide right onto the edge of a panel—no special tools required. G-style are commonly used for computer racks and shelves.

Zinc-plated steel nuts have a zinc-plated spring steel retainer and a minimum Rockwell hardness of C44. *18-8 stainless steel* nuts have a Type 301 stainless steel retainer and are not rated for hardness.

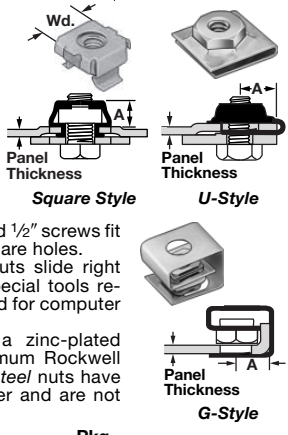

Screw Size	For Panel Thickness	(A)	Wd.	Pkg. Qty.		Per Pkg.
Square Style						
With Zinc-Plated Steel Nut						
6-32	0.025″-0.063″	0.25″	0.52″	25	90680A090	$13.68
8-32	0.025″-0.063″	0.25″	0.52″	25	90680A115	9.00
8-32	0.064″-0.105″	0.25″	0.52″	25	90680A100	12.66
8-32	0.093″-0.126″	0.25″	0.52″	25	90680A101	14.31
10-24	0.025″-0.063″	0.25″	0.52″	25	90680A120	10.80
10-24	0.064″-0.105″	0.25″	0.52″	25	90680A121	10.99
10-32	0.025″-0.063″	0.25″	0.52″	25	90680A125	9.38
10-32	0.064″-0.105″	0.25″	0.52″	25	90680A126	10.32
10-32	0.093″-0.126″	0.25″	0.52″	25	90680A127	10.56
1/4″-20	0.025″-0.063″	0.25″	0.52″	25	90680A135	9.91
1/4″-20	0.093″-0.126″	0.25″	0.52″	25	90680A137	10.84
1/4″-20	0.125″-0.156″	0.25″	0.52″	25	90680A138	10.78
5/16″-18	0.028″-0.056″	0.3″	0.66″	20	90680A145	14.75
5/16″-18	0.093″-0.126″	0.3″	0.66″	10	90680A146	8.03
5/16″-18	0.127″-0.162″	0.3″	0.66″	10	90680A147	10.91
3/8″-16	0.028″-0.056″	0.3″	0.66″	10	90680A155	9.09
3/8″-16	0.093″-0.126″	0.3″	0.66″	10	90680A156	8.04
3/8″-16	0.162″-0.21″	0.41″	0.87″	5	90680A157	12.73
3/8″-16	0.24″-0.26″	0.41″	0.87″	5	90680A158	14.80
1/2″-13	0.093″-0.126″	0.41″	0.87″	5	90680A172	9.37
With 18-8 Stainless Steel Nut						
10-32	0.064″-0.105″	0.25″	0.52″	5	90680A300	6.64
1/4″-20	0.125″-0.156″	0.25″	0.52″	5	90680A310	7.44
U-Style						
With Zinc-Plated Steel Nut (Unless Noted)						
1/4″-20	0.05″-0.075″	0.375″	—	10	90542A242♦	7.90
1/4″-20	0.12″-0.13″	0.84″	—	10	90542A247	13.56
5/16″-18	0.096″-0.141″	0.5″	—	5	90542A258	10.17
5/16″-18	0.12″-0.13″	0.84″	—	10	90542A253	14.98
G-Style						
With Zinc-Plated Steel Nut						
10-32	0.069″-0.079″	0.285″	—	10	90542A343	7.71

♦ Nut is black-phosphate steel.

Screw Size	Pitch	For Panel Thickness	(A)	Pkg. Qty.		Per Pkg.
Metric G-Style—*Dimensions in millimeters*						
With Zinc-Plated Steel Nut						
M5	0.8	1.75-2	7.2	10	90542A349	$9.88

Flush-Mount Captive Nuts

Great where space is limited, loads are light, and panels are too thin to tap with threads. Install using an arbor press or similar pressure tool. They're made from 18-8 stainless steel and may be mildly magnetic. Each has a Class 2B thread fit and a minimum Rockwell hardness of B98.

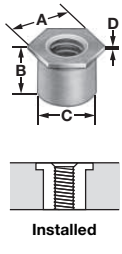

Thread Size	For Min. Panel Thick.	Mounting Hole Dia.	(A)	(B)	(C)	(D)	Pkg. Qty.		Per Pkg.
4-40	0.04″	0.161″	3/16″	0.036″	0.159″	0.014″	50	94674A485	$12.78
4-40	0.062″	0.161″	3/16″	0.058″	0.159″	0.018″	50	94674A490	11.45
6-32	0.062″	0.203″	1/4″	0.058″	0.201″	0.018″	50	94674A510	11.49
6-32	0.125″	0.203″	1/4″	0.117″	0.201″	0.029″	50	94674A515	12.67
8-32	0.062″	0.265″	5/16″	0.058″	0.263″	0.018″	50	94674A520	12.78
10-32	0.093″	0.265″	5/16″	0.085″	0.263″	0.029″	25	94674A525	7.68
10-32	0.125″	0.265″	5/16″	0.117″	0.263″	0.029″	25	94674A528	7.94
1/4″-20	0.125″	0.386″	7/16″	0.117″	0.384″	0.029″	25	94674A533	13.07
1/4″-20	0.187″	0.386″	7/16″	0.177″	0.384″	0.029″	10	94674A537	7.76
1/4″-20	0.375″	0.386″	7/16″	0.359″	0.384″	0.029″	10	94674A540	8.57

Captive Nuts

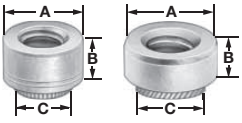

Round Head Broach Style *Round Head Clinch Style*

Also known as insert nuts, these fasteners are well-suited for use in lightweight materials. To install, simply press the knurled end into a hole using an arbor press or similar pressure tool. The knurls cut into the panel to hold the nut in place. Inch sizes have a Class 2B thread fit (except nylon-insert locknuts which have a Class 3B thread fit); metric have a Class 6H thread fit. Nuts are not rated for hardness (unless noted).

Use ***broach style*** nuts in soft aluminum, polycarbonates, glass, epoxy, and resin laminates. Use ***clinch style*** nuts in sheet metal. ***Easy-align round head clinch style*** two-piece nuts (also called floating nuts) can freely move up to 0.030″—making alignment with mating holes and/or male threaded fasteners easier. ***Round head clinch style nylon-insert locknuts*** come with a nylon 6/6 insert that keeps screws from coming loose. Inserts are reliable up to 250° F.

Tin-plated steel nuts are good for soldering. *18-8 stainless steel* nuts provide excellent corrosion resistance and may be mildly magnetic. *Zinc-plated steel* nuts provide good corrosion resistance (metric sizes are case hardened to a minimum surface hardness of C52).

Thread Size	For Min. Panel Thick.	Mounting Hole Dia.	(A)	(B)	(C)	Tin-Plated Steel PEM Part No.	Pkg. Qty.		Per Pkg.	18-8 Stainless Steel PEM Part No.	Pkg. Qty.		Per Pkg.
Round Head Broach Style													
2-56	0.06″	0.147″	0.22″	0.07″	0.17″	KF2-256	50	95117A411	$12.68	KFS2-256	25	94648A310	$10.22
4-40	0.06″	0.166″	0.22″	0.07″	0.19″	KF2-440	50	95117A422	12.23	KFS2-440	25	94648A320	9.82
6-32	0.06″	0.213″	0.29″	0.07″	0.24″	KF2-632	50	95117A433	12.26	KFS2-632	25	94648A330	11.49
8-32	0.06″	0.25″	0.35″	0.1″	0.27″	KF2-832	25	95117A444	4.65	KFS2-832	25	94648A340	13.49
10-24	0.06″	0.272″	0.38″	0.13″	0.29″	KF2-024	25	95117A455	8.11	KFS2-024	10	94648A350	6.65
10-32	0.06″	0.272″	0.38″	0.13″	0.29″	KF2-032	25	95117A466	8.07	KFS2-032	25	94648A360	14.95
1/4″-20	0.06″	0.328″	0.44″	0.24″	0.35″	—	—	—	—	KFS2-420	10	94648A370	10.31
Round Head Clinch Style													
						Zinc-Plated Steel				18-8 Stainless Steel			
4-40	0.03″	0.166″	0.25″	0.07″	0.17″	S-440-0	50	95185A110	$10.95	CLS-440-0	25	96439A100	$11.50
4-40	0.04″	0.166″	0.25″	0.07″	0.17″	S-440-1	50	95185A120	10.95	CLS-440-1	25	96439A120	7.48
4-40	0.056″	0.166″	0.25″	0.07″	0.17″	S-440-2	50	95185A125	9.16	CLS-440-2	25	96439A140	7.48
4-40	0.091″	0.166″	0.25″	0.07″	0.17″	S-440-3	25	95185A127	10.01	CLS-440-3	25	96439A160	11.68
6-32	0.03″	0.188″	0.28″	0.07″	0.19″	S-632-0	50	95185A130	11.00	CLS-632-0	25	96439A200	7.97
6-32	0.04″	0.188″	0.28″	0.07″	0.19″	S-632-1	50	95185A140	10.94	CLS-632-1	25	96439A210	9.69
6-32	0.056″	0.188″	0.28″	0.07″	0.19″	S-632-2	50	95185A150	10.94	CLS-632-2	25	96439A230	7.97
6-32	0.091″	0.188″	0.28″	0.07″	0.19″	S-632-3	50	95185A153	10.42	CLS-632-3	25	96439A250	12.49
8-32	0.03″	0.213″	0.31″	0.09″	0.22″	S-832-0	50	95185A155	10.71	CLS-832-0	25	96439A300	13.76
8-32	0.04″	0.213″	0.31″	0.09″	0.22″	S-832-1	50	95185A160	11.00	CLS-832-1	25	96439A320	8.95
8-32	0.056″	0.213″	0.31″	0.09″	0.22″	S-832-2	50	95185A170	11.00	CLS-832-2	25	96439A340	8.95
8-32	0.091″	0.213″	0.31″	0.09″	0.22″	S-832-3	25	95185A171	6.48	CLS-832-3	25	96439A360	12.06
10-24	0.056″	0.25″	0.34″	0.09″	0.25″	SS-024-2	50	95185A176	12.45	CLSS-024-2	10	96439A430	6.34
10-24	0.091″	0.25″	0.34″	0.09″	0.25″	SS-024-3	25	95185A178	10.38	CLSS-024-3	10	96439A450	6.79
10-32	0.03″	0.25″	0.34″	0.09″	0.25″	SS-032-0	50	95185A180	12.11	CLSS-032-0	10	96439A500	6.84
10-32	0.04″	0.25″	0.34″	0.09″	0.25″	SS-032-1	25	95185A185	6.05	CLSS-032-1	10	96439A520	6.11
10-32	0.056″	0.25″	0.34″	0.09″	0.25″	SS-032-2	50	95185A190	12.11	CLSS-032-2	10	96439A540	6.11
10-32	0.091″	0.25″	0.34″	0.09″	0.25″	SS-032-3	25	95185A191	8.64	CLSS-032-3	10	96439A560	6.84
1/4″-20	0.047″	0.344″	0.44″	0.17″	0.35″	S-0420-0	25	95185A199	7.81	CLS-0420-0	10	96439A580	11.22
1/4″-20	0.056″	0.344″	0.44″	0.17″	0.35″	S-0420-1	25	95185A200	9.82	CLS-0420-1	10	96439A600	10.47
1/4″-20	0.091″	0.344″	0.44″	0.17″	0.35″	S-0420-2	25	95185A210	10.17	CLS-0420-2	5	96439A610	5.92
1/4″-20	0.125″	0.344″	0.44″	0.17″	0.35″	S-0420-3	25	95185A205	11.93	CLS-0420-3	5	96439A630	6.61
5/16″-18	0.056″	0.413″	0.5″	0.23″	0.42″	S-0518-1	10	95185A251	4.18	CLS-0518-1	5	96439A700	9.05
5/16″-18	0.091″	0.413″	0.5″	0.23″	0.42″	S-0518-2	10	95185A260	6.03	CLS-0518-2	5	96439A720	9.41
5/16″-18	0.125″	0.413″	0.5″	0.23″	0.42″	S-0518-3	10	95185A270	7.74	CLS-0518-3	5	96439A740	9.45
5/16″-24	0.056″	0.413″	0.5″	0.23″	0.42″	S-0524-1	10	95185A280	5.47	—	—	—	—
5/16″-24	0.091″	0.413″	0.5″	0.23″	0.42″	S-0524-2	10	95185A290	6.03	—	—	—	—
Easy-Align Round Head Clinch Style													
						Zinc-Plated Steel				18-8 Stainless Steel			
4-40	0.054″	0.29″	0.36″	0.13″	0.29″	AS-440-2	5	90936A200	$4.96	AC-440-2	5	99051A200	$7.10
6-32	0.054″	0.328″	0.39″	0.13″	0.33″	AS-632-2	5	90936A400	5.07	AC-632-2	5	99051A400	7.18
8-32	0.054″	0.368″	0.44″	0.13″	0.37″	AS-832-2	5	90936A600	5.49	AC-832-2	5	99051A600	8.28
10-32	0.054″	0.406″	0.47″	0.17″	0.41″	AS-032-2	5	90936A800	5.80	AC-032-2	5	99051A800	9.32
1/4″-20	0.054″	0.515″	0.6″	0.21″	0.52″	AS-0420-2	5	90936A900	6.90	AC-0420-2	1	99051A900	2.70
Round Head Clinch Style Nylon-Insert Locknuts													
										18-8 Stainless Steel			
2-56	0.06″	0.125″	0.15″	0.08″	0.13″	—	—	—	—	—	10	91835A510	$6.54
4-40	0.06″	0.156″	0.18″	0.09″	0.16″	—	—	—	—	—	10	91835A520	6.85
6-32	0.06″	0.188″	0.24″	0.13″	0.19″	—	—	—	—	—	10	91835A530	8.48
8-32	0.06″	0.219″	0.27″	0.16″	0.22″	—	—	—	—	—	10	91835A540	10.91
10-32	0.06″	0.25″	0.29″	0.18″	0.25″	—	—	—	—	—	10	91835A550	10.56

Metric Hex Head Clinch Style—*Dimensions in millimeters*

Thread Size	Pitch	For Min. Panel Thick.	Mounting Hole Dia.	(A)	(B)	(C)	Zinc-Plated Steel Pkg. Qty.		Per Pkg.	18-8 Stainless Steel PEM Part No.	Pkg. Qty.		Per Pkg.
M2.5	0.45	1	4.5	5.5	2.1	4.7	25	99437A125	$13.84	—	—	—	—
M3	0.5	1	4.5	5.5	2.1	4.7	25	99437A130	8.39	—	10	97648A410	$7.24
M3	0.5	1.53	4.22	5.56	1.5	4.68	—	—	—	KFS2-M3	20	94100A110★	6.35
M3	0.5	2	4.5	5.5	1.2	4.7	10	99437A135	5.71	—	—	—	—
M4	0.7	1	5.5	7	2.3	5.7	25	99437A140	8.70	—	10	97648A420	8.15
M4	0.7	1.53	6.4	8.74	2	6.86	—	—	—	KFS2-M4	20	94100A130★	9.56
M4	0.7	2	5.5	7	2.7	5.7	25	99437A145	10.76	—	—	—	—
M5	0.8	1	6.5	8	3.1	6.75	25	99437A150	10.26	—	10	97648A430	7.79
M5	0.8	1.53	6.9	9.53	3	7.37	—	—	—	KFS2-M5	20	94100A140★	10.75
M5	0.8	2	6.5	8	3.2	6.75	25	99437A155	10.80	—	—	—	—
M6	1	1	8	10	4.1	8.25	10	99437A160	5.34	—	5	97648A440♥	6.81
M6	1	2	8	10	3.2	8.25	10	99437A165	5.80	—	—	—	—
M8	1.25	2	10	13	4.7	10.35	10	99437A170	6.48	—	1	97648A450■	2.46
M10	1.5	2	12.5	15	6.2	12.85	5	99437A175	7.10	—	1	97648A460	3.44

★ Round head, broach style. ♥ (C) dimension is 8.3 mm. ■ (C) dimension is 10.3 mm.

Weld Nuts

Designed for flat surfaces, each nut has a fully threaded hole through the base.

Round-base nuts have ample surface area for your weld; more than slab- and tab-base nuts provide. Nuts *with projections* have three weld nibs (also known as bosses) located on the barrel side.

Tab-base nuts have a smaller welding surface so they're perfect near edges, in narrow channels, and in square tubing. Nuts with a pilot have a low profile so they're a good choice for confined spaces. (The pilot guides them into position and shields threads from weld spatter.) Nuts *with offset pilot* allow you to position threads near edges and in corners. Nuts *with center pilot* are designed for bridging corners and depressions. Nuts *with center pilot and projections* have two weld nibs on the pilot side.

Steel nuts have a minimum Rockwell hardness of B50. Inch sizes have a Class 1B thread fit, except 94579A and 98001A, which have a Class 2B thread fit. Metric sizes have a Class 6H thread fit. ***18-8 stainless steel*** nuts have a minimum Rockwell hardness of B65 and may be mildly magnetic. Inch sizes have a Class 2B thread fit; metric have a Class 6H.

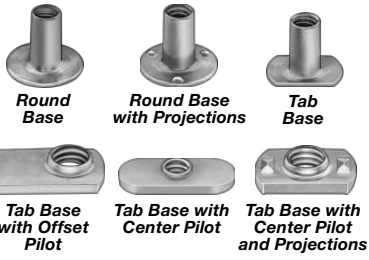

Round Base

Thread Size	Base Dia.	Base Thick.	Barrel Dia.	Barrel Ht.	Pkg. Qty.		Per Pkg.
Steel							
4-40	3/8"	1/32"	9/64"	1/8"	100	90596A005	$6.03
6-32	9/16"	1/32"	11/64"	1/4"	100	90596A007	7.24
8-32	23/32"	1/32"	7/32"	1/4"	100	90596A009	7.24
10-24	3/4"	3/64"	1/4"	9/32"	100	90596A011	6.89
10-32	45/64"	3/64"	1/4"	7/16"	100	90596A023	8.30
10-32	3/4"	3/64"	1/4"	9/32"	100	90596A021	7.65
1/4"-20	3/4"	1/16"	5/16"	5/16"	100	90596A025	6.38
1/4"-20	3/4"	1/16"	5/16"	7/16"	100	90596A029	6.70
1/4"-20	3/4"	1/16"	5/16"	9/16"	100	90596A300	7.27
5/16"-18	7/8"	1/16"	3/8"	3/8"	100	90596A030	11.38
5/16"-18	7/8"	1/16"	3/8"	5/8"	50	90596A032	6.89
5/16"-18	7/8"	1/16"	3/8"	7/8"	25	90596A400	7.84
3/8"-16	1"	5/64"	29/64"	7/16"	50	90596A031	7.32
1/2"-13	1 1/4"	3/32"	19/32"	3/8"	10	90596A033	5.43
5/8"-11	1 7/16"	3/32"	47/64"	3/8"	10	90596A039	7.22
18-8 Stainless Steel							
8-32	1/2"	3/64"	7/32"	1/4"	10	90860A100	7.23
10-24	3/4"	3/64"	15/64"	9/32"	10	90860A105	7.77
10-32	3/4"	3/64"	15/64"	9/32"	10	90860A107	7.77
1/4"-20	3/4"	1/16"	5/16"	5/16"	10	90860A110	10.21
1/4"-20	3/4"	1/16"	5/16"	3/8"	10	90860A111	10.25
1/4"-20	3/4"	1/16"	5/16"	7/16"	10	90860A112	10.80
1/4"-20	3/4"	1/16"	5/16"	1/2"	5	90860A113	5.60
5/16"-18	7/8"	1/16"	25/64"	3/8"	5	90860A114	6.24
5/16"-18	7/8"	1/16"	25/64"	1/2"	5	90860A115	7.22
3/8"-16	1"	5/64"	15/32"	7/16"	5	90860A120	10.03

Thread Size	Base Dia.	Base Thick.	Barrel Dia.	Barrel Ht.	Pkg. Qty.		Per Pkg.
With Projections—Steel							
8-32	23/32"	1/32"	7/32"	1/4"	50	90607A100	$10.77
10-24	3/4"	3/64"	1/4"	9/32"	50	90607A200	10.57
10-32	3/4"	3/64"	1/4"	9/32"	50	90607A230	11.03
1/4"-20	3/4"	1/16"	5/16"	5/16"	50	90607A300	10.23
1/4"-20	3/4"	1/16"	5/16"	7/16"	50	90607A310	14.67
1/4"-20	3/4"	1/16"	5/16"	9/16"	50	90607A320	10.83
1/4"-20	3/4"	1/16"	5/16"	7/8"	25	90607A330	11.55
5/16"-18	7/8"	1/16"	3/8"	3/8"	50	90607A350	13.79
5/16"-18	7/8"	1/16"	3/8"	5/8"	50	90607A400	14.37
5/16"-18	7/8"	1/16"	3/8"	7/8"	25	90607A410	13.14
3/8"-16	1"	5/64"	29/64"	7/16"	25	90607A420	7.97
1/2"-13	1 1/4"	3/32"	19/32"	3/8"	10	90607A450	8.10

Thread Size	Pitch	Base Dia.	Base Thick.	Barrel Dia.	Barrel Ht.	Pkg. Qty.		Per Pkg.
Metric Steel—Dimensions in millimeters								
M4	0.7	18	0.8	5.3	6.3	100	90563A610	$14.85
M6	1	19.1	1.2	7.7	7.9	100	90563A620	10.90
M6	1	19.1	1.2	7.7	11.1	100	90563A630	11.20
M6	1	19.1	1.2	7.7	14.3	100	90563A640	11.80
M8	1.25	22.2	1.4	9.4	9.5	100	90563A650	14.90
M8	1.25	22.2	1.4	9.4	15.9	50	90563A660	12.02
M10	1.5	25.4	1.6	11.5	11.1	50	90563A670	11.69

Tab Base

Thread Size	Base Lg.	Base Wd.	Base Thick.	Barrel Dia.	Barrel Ht.	Pkg. Qty.		Per Pkg.
Steel								
8-32	23/32"	7/16"	1/32"	7/32"	1/4"	100	90594A009	$13.65
10-24	45/64"	1/2"	3/64"	1/4"	7/16"	50	90594A013	8.24
10-24	3/4"	1/2"	3/64"	1/4"	9/32"	100	90594A011	13.45
10-32	45/64"	1/2"	3/64"	1/4"	7/16"	50	90594A023	8.45
10-32	3/4"	1/2"	3/64"	1/4"	9/32"	100	90594A021	13.35
1/4"-20	3/4"	1/2"	1/16"	5/16"	1/4"	100	90594A024	13.90
1/4"-20	3/4"	1/2"	1/16"	5/16"	5/16"	100	90594A025	12.23
1/4"-20	3/4"	1/2"	1/16"	5/16"	7/16"	100	90594A029	13.45
1/4"-20	3/4"	1/2"	1/16"	5/16"	9/16"	100	90594A027	13.33
1/4"-20	3/4"	1/2"	1/16"	5/16"	7/8"	25	90594A028	9.90
1/4"-28	3/4"	1/2"	1/16"	5/16"	21/64"	50	90594A040	12.50
5/16"-18	7/8"	9/16"	1/16"	3/8"	3/8"	50	90594A030	9.05
3/8"-16	1"	5/8"	5/64"	29/64"	7/16"	50	90594A031	9.66
1/2"-13	1 1/4"	3/4"	3/32"	19/32"	3/8"	25	90594A033	10.03

Thread Size	Base Lg.	Base Wd.	Base Thick.	Barrel Dia.	Barrel Ht.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel								
8-32	3/4"	1/2"	3/64"	7/32"	1/4"	10	90572A100	$7.40
10-24	3/4"	1/2"	3/64"	15/64"	9/32"	10	90572A200	7.92
10-32	3/4"	1/2"	3/64"	15/64"	9/32"	10	90572A300	7.92
1/4"-20	3/4"	1/2"	1/16"	5/16"	5/16"	10	90572A400	10.28
5/16"-18	7/8"	9/16"	1/16"	25/64"	3/8"	5	90572A500	6.33
3/8"-16	1"	21/32"	5/64"	15/32"	7/16"	5	90572A600	10.49

Thread Size	Pitch	Base Lg.	Base Wd.	Base Thick.	Barrel Dia.	Barrel Ht.	Pkg. Qty.		Per Pkg.
Metric Steel—Dimensions in millimeters									
M5	0.8	19.1	12.7	1	6.2	7.9	100	90594A300	$13.67
M6	1	19.1	12.7	1.2	7.7	7.9	50	90594A330	8.00
M6	1	19.1	12.7	1.2	7.7	11.1	100	90594A350	14.95
M6	1	19.1	12.7	1.2	7.7	14.3	50	90594A370	9.11

Tab Base with Pilot

Thread Size	Base Lg.	Base Wd.	Base Thick.	Pilot Dia.	Pilot Ht.	Hole Size	Pkg. Qty.		Per Pkg.
With Offset Pilot—Steel									
6-32	5/8"	7/16"	3/32"	3/16"	1/32"	13/64"	50	94579A100	$6.68
8-32	5/8"	7/16"	3/32"	13/64"	1/32"	7/32"	50	94579A200	6.68
10-24	5/8"	7/16"	3/32"	15/64"	1/32"	1/4"	50	94579A250	6.49
10-32	5/8"	7/16"	3/32"	15/64"	1/32"	1/4"	50	94579A300	6.68
1/4"-20	13/16"	1/2"	1/8"	19/64"	1/16"	5/16"	50	94579A400	7.50
1/4"-28	13/16"	1/2"	1/8"	19/64"	1/16"	5/16"	50	94579A450	13.30
5/16"-18	63/64"	5/8"	9/64"	23/64"	3/32"	3/8"	25	94579A500	6.77
5/16"-24	63/64"	5/8"	9/64"	23/64"	3/32"	3/8"	25	94579A550	8.00
3/8"-16	1 1/8"	5/8"	9/64"	7/16"	3/32"	29/64"	25	94579A600	6.20
3/8"-24	1 1/8"	5/8"	9/64"	7/16"	3/32"	29/64"	25	94579A650	9.39
With Offset Pilot—18-8 Stainless Steel									
8-32	5/8"	3/8"	3/32"	13/64"	1/32"	7/32"	10	94581A117	7.55
10-24	5/8"	3/8"	3/32"	15/64"	1/32"	1/4"	10	94581A123	8.17
10-32	5/8"	3/8"	3/32"	15/64"	1/32"	1/4"	10	94581A128	7.86
1/4"-20	13/16"	1/2"	1/8"	19/64"	1/16"	5/16"	10	94581A132	10.69
1/4"-28	13/16"	1/2"	1/8"	19/64"	1/16"	5/16"	10	94581A136	10.69
5/16"-18	1 1/8"	5/8"	9/64"	23/64"	3/32"	3/8"	10	94581A139	14.90
5/16"-24	1 1/8"	5/8"	9/64"	23/64"	3/32"	3/8"	10	94581A144	14.95

Thread Size	Base Lg.	Base Wd.	Base Thick.	Pilot Dia.	Pilot Ht.	Hole Size	Pkg. Qty.		Per Pkg.
With Offset Pilot—18-8 Stainless Steel (Cont.)									
3/8"-16	1 1/8"	5/8"	9/64"	7/16"	3/32"	29/64"	10	94581A148	$14.90
3/8"-24	1 1/8"	5/8"	9/64"	7/16"	3/32"	29/64"	10	94581A151	14.95
With Center Pilot—Steel									
6-32	7/8"	7/16"	3/32"	3/16"	1/32"	13/64"	25	98001A110	4.77
8-32	7/8"	7/16"	3/32"	13/64"	1/32"	7/32"	25	98001A115	4.93
10-24	7/8"	7/16"	3/32"	15/64"	1/32"	1/4"	25	98001A120	4.90
10-32	7/8"	7/16"	3/32"	15/64"	1/32"	1/4"	25	98001A125	4.94
1/4"-20	1"	7/16"	3/32"	19/64"	1/32"	5/16"	25	98001A130	4.90
1/4"-20	1 1/8"	1/2"	1/8"	19/64"	1/16"	5/16"	25	98001A135	6.25
5/16"-18	1 1/2"	5/8"	9/64"	23/64"	5/64"	3/8"	10	98001A140	3.80
3/8"-16	1 1/2"	5/8"	9/64"	7/16"	3/32"	29/64"	10	98001A145	3.86
With Center Pilot and Projections—18-8 Stainless Steel									
8-32	5/8"	3/8"	3/32"	13/64"	1/32"	7/32"	10	98697A510	7.38
10-24	5/8"	3/8"	3/32"	15/64"	1/32"	1/4"	10	98697A520	7.38
10-32	5/8"	3/8"	3/32"	15/64"	1/32"	1/4"	10	98697A530	7.38
1/4"-20	13/16"	1/2"	1/8"	19/64"	1/16"	5/16"	10	98697A540	9.96
5/16"-18	63/64"	5/8"	9/64"	23/64"	3/32"	3/8"	5	98697A550	6.93
3/8"-16	63/64"	5/8"	9/64"	7/16"	3/32"	29/64"	5	98697A560	6.93

Weld Nuts with Holes

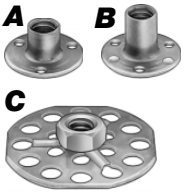

Weld, nail, screw, rivet, or mold these versatile nuts into place.

Style A have three holes to accept fasteners. They have a Class 1B thread fit.

Style B have three holes, plus three protrusions that add twist resistance and extra weld surface for a strong bond. They have a Class 1B thread fit.

Style C are drilled with multiple holes that allow glue or plastic to flow through. They have a Class 2B thread fit.

Plain steel nuts are made from C1006-C1008 steel. They have a minimum Rockwell hardness of B50.

Zinc yellow-chromate plated steel nuts resist rust. They're made from C1008 steel and have a minimum Rockwell hardness of B80.

Type 316 stainless steel nuts provide superior corrosion resistance and may be mildly magnetic. Minimum Rockwell hardness is B95.

Thread Size	Base Dia.	Base Thick.	Barrel Dia.	Barrel Ht.	Base Hole Dia.	Pkg. Qty.	Plain Steel	Per Pkg.
Style A								
6-32	9/16"	1/32"	11/64"	1/4"	5/64"	50	90611A200	$10.77
8-32	23/32"	3/64"	7/32"	1/4"	7/64"	50	90611A250	10.52
10-32	3/4"	3/64"	1/4"	9/32"	7/64"	50	90611A300	11.03
1/4"-20	3/4"	1/16"	5/16"	5/16"	7/64"	50	90611A350	10.23
5/16"-18	7/8"	1/16"	3/8"	3/8"	7/64"	50	90611A400	13.33
3/8"-16	1"	5/64"	29/64"	7/16"	5/32"	50	90611A450	14.95
1/2"-13	1 1/4"	3/32"	19/32"	3/8"	11/64"	10	90611A500	8.10
Style B								
1/4"-20	3/4"	1/16"	5/16"	7/16"	7/64"	50	90611A600	13.77
5/16"-18	7/8"	1/16"	3/8"	3/8"	7/64"	50	90611A610	13.33

Thread Size	Base Dia.	Base Thick.	Nut Wd.	Nut Ht.	Base Hole Diameters	Zinc Yellow-Chromate Plated Steel Pkg. Qty.		Per Pkg.	Type 316 Stainless Steel Pkg. Qty.		Per Pkg.
Style C											
8-32	1 1/2"	3/64"	11/32"	1/8"	11/64", 13/64"	10	98007A110	$6.37	10	98007A013	$14.44
10-32	1 1/2"	3/64"	3/8"	1/8"	11/64", 13/64"	10	98007A150	6.37	10	98007A024	14.53
1/4"-20	1 1/2"	3/64"	7/16"	7/32"	11/64", 13/64"	10	98007A200	7.46	5	98007A029	8.16
5/16"-18	1 1/2"	3/64"	35/64"	1/4"	11/64", 13/64"	10	98007A250	7.46	5	98007A033	9.19

Weld Nuts with Projections

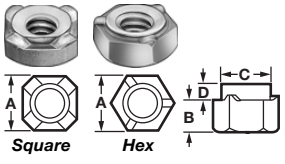

Projections add surface area so your weld results in a strong bond. Position nuts over pierced or drilled holes; each has a pilot that guides it into position and prevents welding spatter from getting into threads.

Square nuts have four projections for a strong weld on flat surfaces. ***Hex nuts*** have three projections that ensure a reliable weld, even on surfaces that aren't perfectly flat.

Steel nuts have a minimum Rockwell hardness of B70. Inch sizes have a Class 2B thread fit; metric have a Class 6H thread fit.

18-8 stainless steel nuts may be mildly magnetic and have a minimum Rockwell hardness of B94. Inch sizes have a Class 2B thread fit; metric have a Class 6G thread fit.

Inch Sizes

Thread Size	Wd. (A)	Ht. (B)	Pilot Dia. (C)	Pilot Ht. (D)	Hole Size	Pkg. Qty.		Per Pkg.
Square—Steel								
1/4"-20	1/2"	5/32"	13/32"	1/16"	27/64"	50	93975A100	$8.57
1/4"-28	1/2"	5/32"	13/32"	1/16"	27/64"	50	93975A120	8.74
5/16"-18	9/16"	3/16"	15/32"	1/16"	31/64"	50	93975A200	8.06
5/16"-24	9/16"	3/16"	15/32"	1/16"	31/64"	50	93975A220	8.38
3/8"-16	5/8"	1/4"	17/32"	1/16"	35/64"	25	93975A300	4.74
3/8"-24	5/8"	1/4"	17/32"	1/16"	35/64"	50	93975A320	10.62
7/16"-14	3/4"	5/16"	21/32"	1/16"	43/64"	50	93975A350	14.85
7/16"-20	3/4"	5/16"	21/32"	1/16"	43/64"	50	93975A360	14.85
1/2"-13	13/16"	3/8"	23/32"	1/16"	47/64"	25	93975A400	9.66
1/2"-20	13/16"	3/8"	23/32"	1/16"	47/64"	25	93975A420	9.49
5/8"-11	7/8"	7/16"	25/32"	3/32"	51/64"	25	93975A450	12.94
Hex—Steel								
1/4"-20	1/2"	3/16"	13/32"	3/64"	27/64"	50	93560A140	8.54
5/16"-18	9/16"	7/32"	15/32"	3/64"	31/64"	50	93560A150	9.06
3/8"-16	5/8"	1/4"	17/32"	3/64"	35/64"	50	93560A160	10.15
1/2"-13	13/16"	3/8"	23/32"	1/16"	47/64"	25	93560A180	9.75
Hex—18-8 Stainless Steel								
1/4"-20	1/2"	3/16"	13/32"	3/64"	27/64"	10	95508A100	7.17
5/16"-18	9/16"	7/32"	15/32"	3/64"	31/64"	5	95508A200	4.45
3/8"-16	5/8"	1/4"	17/32"	3/64"	35/64"	5	95508A300	4.71

Metric Sizes—Dimensions in millimeters

Thread Size	Pitch	Wd. (A)	Ht. (B)	Pilot Dia. (C)	Pilot Ht. (D)	Hole Size	Pkg. Qty.		Per Pkg.
Hex—Steel									
M6	1	13	5.6	9.1	1.13	9.5	50	93337A100	$8.50
M8	1.25	15	7.1	11.1	1.13	11.5	50	93337A200	10.41
M10	1.5	18	7.7	13.6	1.29	14.0	25	93337A300	8.27
Hex—18-8 Stainless Steel									
M3	0.5	7.5	2.5	4.5	0.55	4.6	100	93418A200	8.44
M4	0.7	9	2.9	6	0.65	6.1	50	93418A300	5.41
M5	0.8	10	3.3	7	0.7	7.1	50	93418A400	7.41
M6	1	11	4.3	8	0.75	8.1	25	93418A500	5.18
M8	1.25	14	5.6	10.5	0.9	10.6	25	93418A600	10.56
M10	1.5	17	6.9	12.5	1.15	12.6	10	93418A700	6.43

Easy-Align Weld Nuts

Also called bridge or floating weld nuts, these nuts float within a retainer to compensate for misalignment. Weld them to steel parts or punch holes in the flanges and secure them with rivets.

Nuts are made of plain or zinc-plated C1008-C1010 steel and have a min. Rockwell hardness of B40. Inch sizes have a Class 2B thread fit; metric have a Class 6H thread fit. Thread size is imprinted on flange.

Zinc-plated steel nuts have a rust-resistant aluminum 5052-H32 retainer; ***plain steel*** nuts have a C1008-C1010 steel retainer.

Thread Size	Base Lg.	Base Wd.	Base Thick.	O'all Ht.	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel Nuts with Aluminum Retainer							
1/4"-20	1 3/4"	9/16"	1/16"	11/32"	10	90955A126	$10.39
5/16"-18	2"	25/32"	1/16"	33/64"	10	90955A128	12.33
3/8"-16	2"	25/32"	1/16"	33/64"	10	90955A129	13.80
Plain Steel Nuts with Steel Retainer							
8-32	1 1/2"	1/2"	3/64"	11/32"	10	90955A105	6.70
10-24	1 1/2"	1/2"	3/64"	11/32"	10	90955A107	6.77
10-32	1 1/2"	1/2"	3/64"	11/32"	10	90955A109	6.77
1/4"-20	1 3/4"	9/16"	1/16"	7/16"	20	90955A112	14.38
1/4"-28	1 3/4"	9/16"	1/16"	7/16"	10	90955A113	7.21
5/16"-18	2"	25/32"	1/16"	33/64"	10	90955A115	9.34
5/16"-24	2"	25/32"	1/16"	33/64"	10	90955A116	10.22
3/8"-16	2"	25/32"	1/16"	33/64"	10	90955A123	9.88
3/8"-24	2"	25/32"	1/16"	11/32"	10	90955A120	12.61
1/2"-13	2 1/4"	15/16"	1/16"	51/64"	5	90955A121	11.49

Thread Size	Pitch	Base Lg.	Base Wd.	Base Thick.	O'all Ht.	Pkg. Qty.		Per Pkg.
Metric Plain Steel Nuts with Steel Retainer—*Dimensions in mm*								
M6	1	38.1	12.7	1.06	9	10	90955A101	$8.52
M8	1.25	50.8	19.8	1.27	9	5	90955A103	9.93

Tube-End Weld Nuts

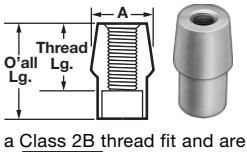

Use these nuts to add threads to the ends of tubes. Also known as tube adapters and weldable threaded tube ends, they weld easily to both mild steel and alloy steel but cannot be welded to coated metal. Nuts are made from 4130 alloy steel. They have a Class 2B thread fit and are not rated for hardness.

To Order: Please specify right-hand or left-hand threads.

For Tube OD (A)	Wall Thick.	Thread Size	Thread Lg.	O'all Lg.		Each
3/4"	0.065"	5/16"-24	7/8"	1 3/8"	94640A510	$5.04
3/4"	0.065"	3/8"-24	15/16"	1 3/8"	94640A515	5.04
7/8"	0.058"	7/16"-20	1 1/8"	1 3/8"	94640A555	5.14
7/8"	0.058"	1/2"-20	1 1/4"	1 3/8"	94640A560	5.14
1"	0.058"	1/2"-20	1 1/4"	1 1/2"	94640A620	5.40
1"	0.065"	1/2"-20	1 1/4"	1 1/2"	94640A640	5.40
1"	0.083"	1/2"-20	1 1/4"	1 1/2"	94640A665	5.40
1"	0.095"	1/2"-20	1 1/4"	1 1/2"	94640A685	5.40
1 1/4"	0.095"	5/8"-18	1 1/2"	1 1/2"	94640A750	6.12
1 1/4"	0.095"	3/4"-16	1 1/2"	1 1/2"	94640A755	6.12
1 1/4"	0.12"	5/8"-18	1 9/16"	1 7/8"	94640A760	6.12
1 1/4"	0.12"	3/4"-16	1 7/8"	1 7/8"	94640A765	6.12
1 1/2"	0.12"	3/4"-16	1 7/8"	2"	94640A810	6.12

General Purpose Washers—USS and SAE (Type A)

USS Standard

SAE Standard

USS and SAE (Type A) are the most widely used types of washers. SAE standard washers generally have a smaller ID and OD than USS standard washers. Commonly used with bolts, screws, and nuts, all (except washers made from Type 316 stainless steel) meet ASME B18.22.1. 18-8 stainless steel washers have a minimum Rockwell hardness of B75; all others are not rated for hardness.

Type 316 stainless steel and ***18-8 stainless steel*** washers have excellent corrosion resistance and may be mildly magnetic. ***Black-luster-coated steel*** washers have a durable finish that while decorative, also provides 500 hours of salt spray resistance per ASTM B117 and corrosion resistance superior to zinc-plated and black-oxide finishes. ***Hot-dipped galvanized steel*** and ***zinc-plated steel*** washers have good rust resistance. ***Black-oxide steel*** washers have mild rust resistance.

Package quantities for zinc-plated and plain steel washers are approximate, except for packages of 100.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
USS Standard						
18-8 Stainless Steel						
No. 10	1/4"	9/16"	0.03"-0.07"	50	93852A101	$3.41
1/4"	5/16"	3/4"	0.05"-0.08"	50	93852A102	5.88
5/16"	3/8"	7/8"	0.06"-0.11"	25	93852A103	5.60
3/8"	7/16"	1"	0.06"-0.11"	10	93852A104	3.31
7/16"	1/2"	1 1/4"	0.06"-0.11"	10	93852A105	5.69
1/2"	9/16"	1 3/8"	0.08"-0.14"	10	93852A113	6.74
9/16"	5/8"	1 1/2"	0.08"-0.14"	5	93852A106	5.78
5/8"	11/16"	1 3/4"	0.1"-0.16"	5	93852A107	6.86
3/4"	13/16"	2"	0.12"-0.18"	1	93852A108	1.80
7/8"	15/16"	2 1/4"	0.13"-0.2"	1	93852A109	2.94
1"	1 1/16"	2 1/2"	0.13"-0.2"	1	93852A110	4.20
Black-Luster-Coated Steel						
1/4"	5/16"	47/64"	0.05"-0.08"	10	96582A304	9.88
5/16"	3/8"	7/8"	0.06"-0.11"	10	96582A321	10.20
3/8"	7/16"	1"	0.06"-0.11"	10	96582A338	11.00
1/2"	9/16"	1 3/8"	0.08"-0.14"	5	96582A352	5.70
5/8"	11/16"	1 3/4"	0.1"-0.16"	5	96582A371	6.10
3/4"	13/16"	2"	0.12"-0.18"	5	96582A389	7.10
7/8"	15/16"	2 1/4"	0.13"-0.2"	5	96582A406	8.80
1"	1 1/16"	2 1/2"	0.13"-0.2"	5	96582A423	9.30
Hot-Dipped Galvanized Steel						
1/4"	5/16"	47/64"	0.05"-0.08"	100	98970A129	1.85
5/16"	3/8"	7/8"	0.06"-0.11"	100	98970A130	3.24
3/8"	7/16"	1"	0.06"-0.11"	100	98970A131	5.74
7/16"	1/2"	1 1/4"	0.06"-0.11"	100	98970A132	9.55
1/2"	9/16"	1 3/8"	0.08"-0.14"	50	98970A133	6.19
5/8"	11/16"	1 3/4"	0.1"-0.16"	25	98970A135	4.66
3/4"	13/16"	2"	0.12"-0.18"	25	98970A136	7.53
7/8"	15/16"	2 1/4"	0.13"-0.2"	10	98970A137	4.52
1"	1 1/16"	2 1/2"	0.13"-0.2"	10	98970A138	4.97
1 1/4"	1 3/8"	3"	0.13"-0.2"	10	98970A141	9.20
1 1/2"	1 5/8"	3 1/2"	0.15"-0.22"	5	98970A143	6.61
Zinc-Plated Steel						
No. 10	1/4"	9/16"	0.03"-0.07"	100	90108A411	2.19
No. 10	1/4"	9/16"	0.03"-0.07"	1785	90108A027	20.94
1/4"	5/16"	47/64"	0.05"-0.08"	100	90108A413	3.21
1/4"	5/16"	47/64"	0.05"-0.08"	745	90108A029	18.12
5/16"	3/8"	7/8"	0.06"-0.11"	100	90108A415	4.17
5/16"	3/8"	7/8"	0.06"-0.11"	435	90108A030	18.14
3/8"	7/16"	1"	0.06"-0.11"	100	90108A417	6.65
3/8"	7/16"	1"	0.06"-0.11"	335	90108A031	17.19
7/16"	1/2"	1 1/4"	0.06"-0.11"	100	90108A032	8.44
1/2"	9/16"	1 3/8"	0.08"-0.14"	50	90108A033	6.47
9/16"	5/8"	1 15/32"	0.08"-0.14"	50	90108A034	8.58
5/8"	11/16"	1 3/4"	0.1"-0.16"	25	90108A035	6.51
3/4"	13/16"	2"	0.12"-0.18"	25	90108A036	9.17
7/8"	15/16"	2 1/4"	0.13"-0.2"	10	90108A037	5.10
1"	1 1/16"	2 1/2"	0.13"-0.2"	10	90108A038	6.24
1 1/8"	1 1/4"	2 3/4"	0.13"-0.2"	10	90108A039	7.67
1 1/4"	1 3/8"	3"	0.13"-0.2"	10	90108A040	9.08
1 3/8"	1 1/2"	3 1/4"	0.15"-0.22"	5	90108A042	6.08
1 1/2"	1 5/8"	3 1/2"	0.15"-0.22"	5	90108A041	7.02
1 5/8"	1 3/4"	3 3/4"	0.15"-0.22"	5	90108A043	7.93
1 3/4"	1 7/8"	4"	0.15"-0.22"	5	90108A044	8.84
2"	2 1/8"	4 1/2"	0.15"-0.22"	5	90108A046	11.19
2 1/4"	2 3/8"	4 3/4"	0.19"-0.25"	1	90108A047	3.18
2 1/2"	2 5/8"	5"	0.21"-0.28"	1	90108A048	3.81
3"	3 1/8"	5 1/2"	0.24"-0.33"	1	90108A050	4.76
Plain Steel						
No. 10	1/4"	9/16"	0.03"-0.07"	100	91081A127	1.20
No. 10	1/4"	9/16"	0.03"-0.07"	1785	91081A027	17.12
1/4"	5/16"	47/64"	0.05"-0.08"	100	91081A129	2.58
1/4"	5/16"	47/64"	0.05"-0.08"	745	91081A029	15.32
5/16"	3/8"	7/8"	0.06"-0.11"	100	91081A130	4.37
5/16"	3/8"	7/8"	0.06"-0.11"	435	91081A030	15.32
3/8"	7/16"	1"	0.06"-0.11"	100	91081A131	5.43
3/8"	7/16"	1"	0.06"-0.11"	335	91081A031	14.44
7/16"	1/2"	1 1/4"	0.06"-0.11"	185	91081A032	10.50
1/2"	9/16"	1 3/8"	0.08"-0.14"	130	91081A033	9.85
9/16"	5/8"	1 15/32"	0.08"-0.14"	110	91081A034	13.55
5/8"	11/16"	1 3/4"	0.1"-0.16"	65	91081A035	10.42
USS Standard (Cont.)						
Plain Steel (Cont.)						
3/4"	13/16"	2"	0.12"-0.18"	45	91081A036	$9.85
7/8"	15/16"	2 1/4"	0.13"-0.2"	32	91081A037	10.42
1"	1 1/16"	2 1/2"	0.13"-0.2"	26	91081A038	9.03
1 1/8"	1 1/4"	2 3/4"	0.13"-0.2"	22	91081A039	14.25
1 1/4"	1 3/8"	3"	0.13"-0.2"	19	91081A040	14.25
1 3/8"	1 1/2"	3 1/4"	0.15"-0.22"	5	91081A042	5.00
1 1/2"	1 5/8"	3 1/2"	0.15"-0.22"	5	91081A041	5.79
1 5/8"	1 3/4"	3 3/4"	0.15"-0.22"	5	91081A043	6.61
1 3/4"	1 7/8"	4"	0.15"-0.22"	5	91081A044	7.50
2"	2 1/8"	4 1/2"	0.15"-0.22"	1	91081A046	1.90
2 1/4"	2 3/8"	4 3/4"	0.19"-0.25"	1	91081A047	2.80
2 1/2"	2 5/8"	5"	0.21"-0.28"	1	91081A048	2.99
3"	3 1/8"	5 1/2"	0.24"-0.33"	1	91081A050	4.15
SAE Standard						
Type 316 Stainless Steel						
No. 10	7/32"	1/2"	0.03"-0.07"	100	91950A027	8.30
1/4"	9/32"	5/8"	0.05"-0.08"	50	91950A029	7.55
5/16"	11/32"	11/16"	0.05"-0.08"	50	91950A030	9.05
3/8"	13/32"	13/16"	0.05"-0.08"	50	91950A031	11.35
1/2"	17/32"	1 1/16"	0.07"-0.13"	25	91950A033	11.91
5/8"	21/32"	1 5/16"	0.07"-0.13"	10	91950A035	8.54
3/4"	13/16"	1 1/2"	0.1"-0.16"	5	91950A036	8.06
18-8 Stainless Steel						
No. 4	1/8"	5/16"	0.02"-0.04"	100	96659A101	2.96
No. 6	5/32"	3/8"	0.03"-0.07"	100	96659A102	3.44
No. 8	3/16"	7/16"	0.03"-0.07"	100	96659A103	3.89
No. 10	7/32"	1/2"	0.03"-0.07"	100	96659A104	4.48
No. 12	1/4"	9/16"	0.05"-0.08"	100	96659A105	8.37
1/4"	9/32"	5/8"	0.05"-0.08"	50	96659A106	4.78
5/16"	11/32"	11/16"	0.05"-0.08"	50	96659A107	5.56
3/8"	13/32"	13/16"	0.05"-0.08"	50	96659A108	7.00
7/16"	15/32"	59/64"	0.05"-0.08"	10	96659A109	3.20
1/2"	17/32"	1 1/16"	0.07"-0.13"	10	96659A110	4.80
5/8"	21/32"	1 5/16"	0.07"-0.13"	10	96659A111	6.44
3/4"	13/16"	1 1/2"	0.1"-0.16"	5	96659A112	7.20
1"	1 1/16"	2"	0.1"-0.16"	1	96659A113	2.07
Black-Luster-Coated Steel						
1/4"	9/32"	5/8"	0.05"-0.08"	10	91434A115	9.68
5/16"	11/32"	11/16"	0.05"-0.08"	10	91434A135	10.00
3/8"	13/32"	13/16"	0.05"-0.08"	10	91434A155	10.20
1/2"	17/32"	1 1/16"	0.07"-0.13"	10	91434A175	10.40
5/8"	21/32"	1 5/16"	0.07"-0.13"	10	91434A195	10.60
3/4"	13/16"	1 15/32"	0.1"-0.16"	5	91434A215	5.90
7/8"	15/16"	1 3/4"	0.1"-0.16"	5	91434A235	6.30
1"	1 1/16"	2"	0.1"-0.16"	5	91434A255	6.80
Zinc-Plated Steel						
No. 2	3/32"	7/32"	0.01"-0.03"	100	90126A501	1.19
No. 2	3/32"	7/32"	0.01"-0.03"	2100	90126A303	21.95
No. 3	7/64"	1/4"	0.01"-0.03"	100	90126A503	1.36
No. 3	7/64"	1/4"	0.01"-0.03"	1400	90126A304	19.02
No. 4	1/8"	5/16"	0.02"-0.04"	100	90126A505	1.09
No. 4	1/8"	5/16"	0.02"-0.04"	1450	90126A005	11.05
No. 5	9/64"	9/32"	0.02"-0.04"	100	90126A507	1.39
No. 5	9/64"	9/32"	0.02"-0.04"	1100	90126A306	14.43
No. 6	5/32"	3/8"	0.03"-0.07"	100	90126A509	1.31
No. 6	5/32"	3/8"	0.03"-0.07"	765	90126A007	6.63
No. 8	3/16"	7/16"	0.03"-0.07"	100	90126A512	1.42
No. 8	3/16"	7/16"	0.03"-0.07"	555	90126A009	6.63
No. 10	7/32"	1/2"	0.03"-0.07"	100	90126A514	1.97
No. 10	7/32"	1/2"	0.03"-0.07"	435	90126A011	6.13
No. 12	1/4"	9/16"	0.05"-0.08"	280	90126A013	5.65
1/4"	9/32"	5/8"	0.05"-0.08"	222	90126A029	4.63
5/16"	11/32"	11/16"	0.05"-0.08"	192	90126A030	4.63
3/8"	13/32"	13/16"	0.05"-0.08"	140	90126A031	3.71
7/16"	15/32"	59/64"	0.05"-0.08"	105	90126A032	4.63
1/2"	17/32"	1 1/16"	0.07"-0.13"	55	90126A033	3.27
9/16"	19/32"	1 5/32"	0.07"-0.13"	43	90126A034	3.27
5/8"	21/32"	1 5/16"	0.07"-0.13"	36	90126A035	3.27
3/4"	13/16"	1 15/32"	0.1"-0.16"	21	90126A036	3.27
7/8"	15/16"	1 3/4"	0.1"-0.16"	16	90126A037	3.27
1"	1 1/16"	2"	0.1"-0.16"	12	90126A038	3.27

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General Purpose Washers—USS and SAE (Type A) (Continued from previous page)

USS Standard

SAE Standard

USS and SAE (Type A) are the most widely used types of washers. SAE standard washers generally have a smaller ID and OD than USS standard washers. Commonly used with bolts, screws, and nuts, all (except washers made from Type 316 stainless steel) meet ASME B18.22.1. 18-8 stainless steel washers have a minimum Rockwell hardness of B75; all others are not rated for hardness.

Type 316 stainless steel and ***18-8 stainless steel*** washers have excellent corrosion resistance and may be mildly magnetic. ***Black-luster-coated steel*** washers have a durable finish that while decorative, also provides 500 hours of salt spray resistance per ASTM B117 and corrosion resistance superior to zinc-plated and black-oxide finishes. ***Hot-dipped galvanized steel*** and ***zinc-plated steel*** washers have good rust resistance. ***Black-oxide steel*** washers have mild rust resistance.

Package quantities for zinc-plated and plain steel washers are approximate, except for packages of 100.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
SAE Standard (Cont.)						
Zinc-Plated Steel (Cont.)						
1 1/8"	1 1/4"	2 1/4"	0.1"-0.16"	9	90126A039	$4.41
1 1/4"	1 3/8"	2 1/2"	0.13"-0.2"	6	90126A040	4.41
1 3/8"	1 1/2"	2 3/4"	0.13"-0.2"	5	90126A041	4.41
1 1/2"	1 5/8"	3"	0.13"-0.2"	4	90126A042	4.41
Black-Oxide Steel						
No. 6	5/32"	3/8"	0.03"-0.07"	100	97416A111	2.10
No. 8	3/16"	7/16"	0.03"-0.07"	100	97416A113	3.06
No. 10	7/32"	1/2"	0.03"-0.07"	100	97416A115	3.82
1/4"	9/32"	5/8"	0.05"-0.08"	100	97416A119	8.70
5/16"	11/32"	11/16"	0.05"-0.08"	100	97416A123	10.06
3/8"	13/32"	13/16"	0.05"-0.08"	100	97416A127	13.61
7/16"	15/32"	59/64"	0.05"-0.08"	100	97416A132	12.70
1/2"	17/32"	1 1/16"	0.07"-0.13"	50	97416A135	11.37
5/8"	21/32"	1 5/16"	0.07"-0.13"	25	97416A139	8.18
3/4"	13/16"	1 1/2"	0.1"-0.16"	25	97416A142	14.03
1"	1 1/16"	2"	0.1"-0.16"	10	97416A146	9.80
Plain Steel						
No. 4	1/8"	5/16"	0.02"-0.04"	1450	91083A005	14.95
No. 6	5/32"	3/8"	0.03"-0.07"	765	91083A007	5.78
SAE Standard (Cont.)						
Plain Steel (Cont.)						
No. 8	3/16"	7/16"	0.03"-0.07"	555	91083A009	$5.78
No. 10	7/32"	1/2"	0.03"-0.07"	435	91083A011	5.16
No. 12	1/4"	9/16"	0.05"-0.08"	280	91083A013	5.16
1/4"	9/32"	5/8"	0.05"-0.08"	222	91083A029	4.28
5/16"	11/32"	11/16"	0.05"-0.08"	192	91083A030	4.28
3/8"	13/32"	13/16"	0.05"-0.08"	140	91083A031	3.42
7/16"	15/32"	59/64"	0.05"-0.08"	105	91083A032	4.28
1/2"	17/32"	1 1/16"	0.07"-0.13"	55	91083A033	3.00
9/16"	19/32"	1 5/32"	0.07"-0.13"	43	91083A034	3.00
5/8"	21/32"	1 5/16"	0.07"-0.13"	36	91083A035	3.00
3/4"	13/16"	1 15/32"	0.1"-0.16"	21	91083A036	3.00
7/8"	15/16"	1 3/4"	0.1"-0.16"	16	91083A037	3.00
1"	1 1/16"	2"	0.1"-0.16"	12	91083A038	3.00
1 1/8"	1 1/4"	2 1/4"	0.1"-0.16"	9	91083A039	3.76
1 1/4"	1 3/8"	2 1/2"	0.13"-0.2"	6	91083A040	4.20
1 3/8"	1 1/2"	2 3/4"	0.13"-0.2"	5	91083A041	4.20
1 1/2"	1 5/8"	3"	0.13"-0.2"	4	91083A042	4.20

General Purpose Stainless Steel Washers

Why pay for precision you don't need? These washers are not made to USS or SAE standards, so they're economical alternatives when tight tolerances are not important. Made from stainless steel for excellent corrosion resistance, they may be mildly magnetic and are not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Type 316 Stainless Steel Pkg. Qty.		Per Pkg.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Black-Oxide 18-8 Stainless Steel Pkg. Qty.		Per Pkg.
No. 000	0.04"	5/64"	0.01"-0.02"	—	—	—	10	92141A204	$9.04	—	—	—
No. 00	0.05"	7/64"	0.01"-0.02"	—	—	—	25	92141A207	13.28	—	—	—
No. 0	1/16"	5/32"	0.01"-0.04"	100	90107A001	$2.36	100	92141A001	1.27	—	—	—
No. 0	5/64"	3/16"	0.01"-0.03"	100	90107A002	2.50	100	92141A002	1.79	—	—	—
No. 1	0.08"	5/32"	0.01"-0.02"	—	—	—	25	92141A211	13.28	—	—	—
No. 2	3/32"	1/4"	0.01"-0.04"	100	90107A003	2.64	100	92141A003	1.40	100	96765A105	$3.94
No. 3	7/64"	1/4"	0.01"-0.04"	100	90107A004	2.73	100	92141A004	1.50	—	—	—
No. 4	1/8"	5/16"	0.02"-0.04"	100	90107A005	3.37	100	92141A005	1.40	100	96765A110	4.09
No. 5	9/64"	9/32"	0.02"-0.04"	100	90107A006	3.27	100	92141A006	1.40	—	—	—
No. 6	9/64"	3/8"	0.02"-0.04"	100	90107A101	4.32	100	92141A007	2.00	100	96765A115	3.68
No. 6	5/32"	5/16"	0.02"-0.04"	100	90107A007	3.39	100	92141A008	1.17	—	—	—
No. 8	11/64"	3/8"	0.02"-0.04"	100	90107A010	3.45	100	92141A009	2.00	100	96765A120	3.87
No. 10	13/64"	7/16"	0.02"-0.04"	100	90107A011	3.85	100	92141A011	2.33	100	96765A125	4.09
No. 12	15/64"	1/2"	0.03"-0.05"	100	90107A012	8.18	100	92141A013	3.30	—	—	—
No. 12	1/4"	9/16"	0.04"-0.06"	100	90107A013	8.00	—	—	—	—	—	—
1/4"	9/32"	5/8"	0.04"-0.06"	100	90107A029	8.25	100	92141A029	3.37	100	96765A140	6.11
5/16"	11/32"	3/4"	0.04"-0.06"	100	90107A030	12.40	100	92141A030	5.10	100	96765A145	6.22
3/8"	13/32"	7/8"	0.04"-0.06"	50	90107A031	8.36	100	92141A031	6.83	100	96765A150	8.49
3/8"	13/32"	1"	0.04"-0.06"	50	90107A051	7.93	100	92141A051	8.53	—	—	—
7/16"	1/2"	1 1/8"	0.05"-0.08"	25	90107A032	8.70	100	92141A032	13.34	—	—	—
1/2"	17/32"	1 1/4"	0.05"-0.08"	25	90107A033	9.71	50	92141A033	8.58	25	96765A160	6.93
9/16"	37/64"	1 1/16"	0.05"-0.08"	25	90107A106	9.48	100	92141A034	13.63	—	—	—
9/16"	5/8"	1 3/8"	0.05"-0.08"	10	90107A034	9.68	25	92141A102	8.33	—	—	—
5/8"	11/16"	1 1/2"	0.06"-0.09"	10	90107A035	7.93	50	92141A035	14.90	10	96765A175	5.93
3/4"	13/16"	1 3/4"	0.09"-0.12"	5	90107A107	11.34	25	92141A056	14.90	—	—	—
3/4"	13/16"	1 7/8"	0.09"-0.12"	5	90107A036	8.67	10	92141A036	7.02	5	96765A180	4.94
7/8"	15/16"	2"	0.09"-0.13"	5	90107A037	9.67	10	92141A037	8.33	5	96765A190	8.46
1"	1 1/16"	2"	0.11"-0.14"	5	90107A038	9.35	10	92141A038	8.35	5	96765A210	8.80
1 1/8"	1 3/16"	2 1/2"	0.09"-0.16"	1	90107A039	3.13	10	92141A039	13.67	—	—	—
1 1/4"	1 5/16"	2 3/4"	0.09"-0.16"	1	90107A040	3.65	5	92141A040	8.99	—	—	—
1 3/8"	1 1/2"	3 1/4"	0.1"-0.18"	—	—	—	5	92141A049	11.51	—	—	—
1 1/2"	1 9/16"	3 1/4"	0.1"-0.18"	1	90107A041	5.43	5	92141A041	11.98	—	—	—
1 3/4"	1 13/16"	3 1/2"	0.1"-0.18"	1	90107A042	5.80	1	92141A044	3.11	—	—	—
2"	2 1/8"	4"	0.15"-0.22"	1	90107A043	10.41	1	92141A046	4.27	—	—	—

Highly Polished Chrome-Plated Washers

Polished for an attractive, finished appearance, these chrome-plated steel Type A washers are wear and corrosion resistant. All meet SAE standards, except 93960A120, which meets USS standards. Dimensions meet ASME B18.22.1. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
1/4"	5/16"	47/64"	0.05"-0.08"	10	93960A120	$9.40
5/16"	11/32"	11/16"	0.05"-0.08"	25	93960A140	10.23
3/8"	13/32"	13/16"	0.05"-0.08"	25	93960A160	10.23
7/16"	15/32"	59/64"	0.05"-0.08"	10	93960A170	9.12
1/2"	17/32"	1 1/16"	0.07"-0.13"	10	93960A180	9.85
9/16"	19/32"	1 5/32"	0.07"-0.13"	10	93960A190	11.31

General Purpose Washer Assortments

Assortments are furnished in a compartmented plastic case with lid chart. SAE and USS standard washers are Type A.

350-Pc. Assortments—SAE Standard

Choose from zinc plated and 18-8 stainless steel. Case is 8¼″ Lg. × 4¼″ Wd. × 1¼″ Dp.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
No. 8	100	¼″	50	⅜″	25
No. 10	100	5/16″	50	½″	25

Zinc-Plated Steel .. 91535A200 Each $18.00
18-8 Stain. Steel ... 91535A300 Each $30.43

850-Pc. Assortment—SAE Standard

Washers are made from zinc-plated steel. Case is 11″ Lg. × 6¾″ Wd. × 1¾″ Dp.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
No. 8	200	¼″	200	⅜″	100
No. 10	200	5/16″	100	½″	50

91535A130 ..... Each $56.27

590-Pc. Assortment—USS Standard

Washers are made from zinc-plated steel. Case is 11″ Lg. × 6¾″ Wd. × 1¾″ Dp.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
¼″	200	⅜″	100	⅝″	25
5/16″	200	½″	50	¾″	15

91535A110 ..... Each $51.24

550-Piece Assortments

Choose from Type 316 and 18-8 stainless steel. Case is 11″ Lg. × 6¾″ Wd. × 1¾″ Dp.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
No. 8	100	¼″	100	⅜″	100
No. 10	100	5/16″	100	½″	50

Type 316 Stainless Steel..... 92075A406 Each $79.58
18-8 Stainless Steel ..... 92075A206 Each $48.93

1680-Piece Assortment

Washers are made from 18-8 stainless steel. Case is 13 5/16″ Lg. × 9¼″ Wd. × 2″ Dp.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
No. 2	200	No. 8	200	5/16″	200	⅝″	25
No. 4	200	No. 10	200	⅜″	200	¾″	15
No. 6	200	¼″	200	½″	25	1″	15

92075A212 ..... Each $99.81

High-Strength Grade 8 Steel Washers—USS and SAE (Type A)

Suited for use in Grade 5 and Grade 8 fastening applications, these washers are made from C1035-C1050 steel. They're through-hardened to a minimum Rockwell hardness of C38 and have dimensions that meet ASME B18.22.1.

Zinc yellow-chromate plated steel washers have good rust resistance.

Ultra-coated steel washers are treated with a silver water-based inorganic coating that provides better corrosion resistance than zinc yellow-chromate steel. They meet ASTM F436 (Type 3).

		USS STANDARD					SAE STANDARD					
					Zinc Yellow-Chromate Plated Steel					Zinc Yellow-Chromate Plated Steel	Ultra-Coated Steel	
Screw Size	Thick., Min.-Max.	ID	OD	Pkg. Qty.		Per Pkg.	ID	OD	Pkg. Qty.		Per Pkg.		Per Pkg.
¼″	0.05″-0.08″	5/16″	¾″	100	98026A029	$7.24	9/32″	⅝″	100	98023A029	$6.18	98180A110	$7.63
5/16″	0.05″-0.08″	⅜″	⅞″	50	98026A030	6.21	11/32″	11/16″	50	98023A030	4.69	98180A120	4.17
⅜″	0.05″-0.08″	7/16″	1″	50	98026A031	6.90	13/32″	13/16″	50	98023A031	5.55	98180A130	6.42
7/16″	0.05″-0.08″	½″	1¼″	25	98026A032	6.00	15/32″	59/64″	25	98023A032	4.36	98180A140	4.34
½″	0.09″-0.18″	9/16″	1⅜″	25	98026A033	7.97	17/32″	1 1/16″	25	98023A033	5.83	98180A150	7.22
9/16″	0.09″-0.13″	⅝″	1½″	25	98026A034	9.71	19/32″	1 5/32″	25	98023A034	7.05	—	—
⅝″	0.09″-0.18″	—	—	—	—	—	1 1/16″	1 5/16″	25	—	—	98180A160	11.58
⅝″	0.12″-0.15″	11/16″	1¾″	25	98026A035	13.11	21/32″	1 5/16″	25	98023A035	8.88	—	—
¾″	0.12″-0.18″	13/16″	2″	10	98026A036	7.67	13/16″	1 15/32″	20	98023A036	8.70	98180A170	11.30
⅞″	0.13″-0.16″	15/16″	2¼″	10	98026A037	12.65	15/16″	1¾″	10	98023A037	6.95	—	—
1″	0.13″-0.16″	1 1/16″	2½″	10	98026A038	14.08	1 1/16″	2″	10	98023A038	8.29	—	—
1⅛″	0.13″-0.16″	1¼″	2¾″	5	98026A039	9.67	1¼″	2¼″	10	98023A039	13.59	—	—
1¼″	0.13″-0.16″	1⅜″	3″	5	98026A040	11.44	1⅜″	2½″	5	98023A041	7.19	—	—
1⅜″	0.13″-0.16″	1½″	3¼″	1	98026A041	3.03	1½″	2¾″	5	98023A042	9.19	—	—
1½″	0.13″-0.16″	1⅝″	3½″	1	98026A042	2.96	1⅝″	3″	5	98023A043	10.80	—	—
1⅝″	0.15″-0.22″	—	—	—	—	—	1¾″	3¾″	1	98023A051	3.99	—	—
1¾″	0.17″-0.21″	—	—	—	—	—	1⅞″	3⅜″	5	98023A044	12.12	—	—
1⅞″	0.15″-0.22″	—	—	—	—	—	2″	4¼″	1	98023A053	5.22	—	—
2″	0.17″-0.21″	—	—	—	—	—	2⅛″	3¾″	1	98023A045	3.08	—	—

Structural Washers for ASTM A325 Bolts

Use these ASTM F436 (Type 1) structural washers with A325 bolts, studs, and nuts for construction and exterior building applications. They're made from C1035-C1050 steel and have a minimum Rockwell hardness of C38. Thickness range is 0.09″ to 0.18″. ***Plain steel*** washers are free of coatings and finishes. ***Hot-dipped galvanized steel*** washers are coated for excellent resistance to rust, weather, and corrosion.

			Plain Steel			Hot-Dipped Galvanized Steel		
Screw Size	ID	OD	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
½″	17/32″	1 1/16″	100	98038A265	$10.97	50	98119A033	$10.88
⅝″	11/16″	1 5/16″	50	98038A268	9.04	25	98119A035	5.66
¾″	13/16″	1 15/32″	50	98038A274	10.55	25	98119A036	8.72
⅞″	15/16″	1¾″	25	98038A279	8.76	25	98119A037	13.60
1″	1⅛″	2″	25	98038A282	11.69	10	98119A038★	7.07
1⅛″	1¼″	2¼″	10	98038A285	6.69	10	98119A041●	10.22
1¼″	1⅜″	2½″	10	98038A289	8.35	10	98119A044	12.29
1½″	1⅝″	3″	10	98038A293	12.42	—	—	—

★ ID is 1 1/16″. ● ID is 1 3/16″.

Extreme-Strength Grade 9 Steel Washers

Designed expressly for use with our popular Grade 9 hex head cap screws and nuts, these very high strength washers are also known as L9 washers. Each is made from zinc yellow-chromate plated Grade 9 steel (C1050) and has a minimum Rockwell hardness of C43.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
¼″	9/32″	⅝″	0.05″-0.08″	50	90850A100	$7.09
5/16″	11/32″	11/16″	0.05″-0.08″	50	90850A150	8.55
⅜″	13/32″	13/16″	0.09″-0.12″	25	90850A200	5.63
7/16″	15/32″	59/64″	0.09″-0.12″	25	90850A250	7.05
½″	17/32″	1 1/16″	0.09″-0.12″	10	90850A300	5.58
⅝″	21/32″	1 5/16″	0.14″-0.18″	10	90850A350	9.02
¾″	13/16″	1 15/32″	0.14″-0.18″	5	90850A400	6.03

Tension-Indicating Structural Washers for ASTM A325 Bolts

A quick glance is all it takes to check that your joints are secure. These unique washers emit an orange dye once they've been installed correctly. Use with Grade 2H or DH nuts and ASTM A325 bolts. Washers meet ASTM F959. Dimensions meet ASME B18.2.6. They're made from C1045 steel and are not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
½″	0.52″	1 3/16″	0.1″-0.18″	5	91358A005	$7.31
⅝″	0.65″	1⅜″	0.12″-0.22″	5	91358A010	7.89
¾″	0.78″	1⅝″	0.12″-0.23″	5	91358A015	8.75
⅞″	0.91″	1⅞″	0.14″-0.24″	5	91358A020	9.75
1″	1.05″	2″	0.15″-0.27″	5	91358A025	11.25

Military Specification Washers

Made to stringent specifications, these washers conform to criteria defined by MS (Military Standard), NAS (National Aerospace Standard), AN (Air Force/Navy Aeronautical Standard), and NASM (National Aerospace Standard Military). Material and dimensions meet FF-W-92, unless noted. Washers are not rated for hardness.

Cadmium-plated steel washers are made from C1005-C1025 steel. They have a cadmium plating that adds excellent rust and weather resistance. All meet QQ-P-416 (Type 2, Class 2) except MS 27183 washers, which meet QQ-P-416 (Type 2, Class 3).

300 series stainless steel washers are passivated (treated with nitric acid for protection against oxidation and corrosion). They may be mildly magnetic.

Cadmium-Plated Steel

Screw Size	Dash No.	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
MS 27183							
No. 0	1	0.08″	0.19″	0.01″-0.03″	100	98032A413	$6.03
No. 2	2	0.09″	0.25″	0.01″-0.03″	100	98032A417	6.18
No. 4	3	0.12″	0.25″	0.01″-0.03″	100	98032A421	1.75
No. 4	4	0.12″	0.32″	0.02″-0.04″	100	98032A425	1.92
No. 4	44	0.12″	0.38″	0.02″-0.04″	100	98032A429	2.04
No. 5	45	0.14″	0.29″	0.02″-0.04″	100	98032A432	3.49
No. 6	43	0.16″	0.25″	0.01″-0.02″	100	98032A436	1.66
No. 6	5	0.16″	0.32″	0.02″-0.05″	100	98032A443	1.89
No. 6	6	0.16″	0.38″	0.03″-0.07″	100	98032A447	5.23
No. 8	7	0.19″	0.38″	0.03″-0.07″	100	98032A451	2.21
No. 8	41	0.19″	0.44″	0.03″-0.07″	100	98032A457	6.92
No. 8	46	0.19″	0.5″	0.05″-0.08″	100	98032A462	3.47
No. 10	47	0.22″	0.37″	0.02″-0.04″	100	98032A466	1.99
No. 10	8	0.22″	0.44″	0.03″-0.07″	100	98032A469	1.94
No. 10	42	0.22″	0.5″	0.03″-0.07″	100	98032A472	6.77
No. 10	49	0.25″	0.57″	0.02″-0.04″	100	98032A477	6.23
No. 10	9	0.25″	0.57″	0.05″-0.08″	100	98032A481	7.67
No. 10	50	0.25″	0.63″	0.02″-0.04″	100	98032A485	6.72
No. 10	48	0.25″	0.94″	0.05″-0.08″	25	98032A489	4.06
No. 10	51	0.25″	1″	0.05″-0.08″	25	98032A492	3.64
1/4″	10	0.28″	0.63″	0.05″-0.08″	100	98032A495	8.22
1/4″	52	0.28″	0.74″	0.05″-0.08″	100	98032A498	11.94
1/4″	11	0.31″	0.74″	0.05″-0.08″	100	98032A501	13.57
5/16″	12	0.34″	0.69″	0.05″-0.08″	100	98032A505	9.40
5/16″	13	0.37″	0.88″	0.06″-0.11″	50	98032A509	4.57
3/8″	14	0.4″	0.82″	0.05″-0.08″	50	98032A514	6.38
NAS 1149 ●							
No. 2	FN232P	0.09″	0.25″	0.02″-0.04″	100	95229A230	3.76
No. 4	FN416P	0.12″	0.32″	0.01″-0.02″	100	95229A260	2.26
No. 4	FN432P	0.12″	0.32″	0.02″-0.04″	100	95229A270	3.21
No. 6	FN616P	0.14″	0.38″	0.01″-0.02″	100	95229A310	2.14
No. 6	FN632P	0.14″	0.38″	0.02″-0.04″	100	95229A320	2.57
No. 8	FN816P	0.17″	0.38″	0.01″-0.02″	100	95229A330	2.27
No. 8	FN832P	0.17″	0.38″	0.02″-0.04″	100	95229A340	2.43
No. 10	F0332P	0.2″	0.44″	0.02″-0.04″	100	95229A370	2.59
No. 10	F0363P	0.2″	0.44″	0.05″-0.07″	100	95229A380	3.96
1/4″	F0432P	0.26″	0.5″	0.02″-0.04″	100	95229A420	3.09
1/4″	F0463P	0.26″	0.5″	0.05″-0.07″	100	95229A430	4.52
5/16″	F0532P	0.32″	0.57″	0.02″-0.04″	100	95229A450	3.21
5/16″	F0563P	0.32″	0.57″	0.05″-0.07″	100	95229A460	5.58
3/8″	F0632P	0.39″	0.63″	0.02″-0.04″	100	95229A480	3.72
3/8″	F0663P	0.39″	0.63″	0.05″-0.07″	100	95229A490	6.07
7/16″	F0732P	0.45″	0.75″	0.02″-0.04″	100	95229A510	6.07
7/16″	F0763P	0.45″	0.75″	0.05″-0.07″	100	95229A520	7.24
1/2″	F0832P	0.51″	0.88″	0.02″-0.04″	100	95229A540	6.58
1/2″	F0863P	0.51″	0.88″	0.05″-0.07″	100	95229A550	10.04
9/16″	F0963P	0.57″	1.07″	0.05″-0.07″	50	95229A580	8.14
5/8″	F1032P	0.64″	1.19″	0.02″-0.04″	50	95229A600	5.40
5/8″	F1063P	0.64″	1.19″	0.05″-0.07″	50	95229A610	10.89
AN 970/NASM 970							
No. 10	3	0.2″	0.88″	0.05″-0.08″	100	95229A910	9.01
1/4″	4	0.26″	1.13″	0.05″-0.08″	50	95229A920	8.20
5/16″	5	0.32″	1.38″	0.05″-0.08″	50	95229A930	11.20
3/8″	6	0.39″	1.63″	0.05″-0.08″	50	95229A940	14.82
1/2″	8	0.51″	2″	0.09″-0.12″	10	95229A960	8.79
9/16″	9	0.57″	2.19″	0.11″-0.14″	5	95229A970	6.77

300 Series Stainless Steel

Screw Size	Dash No.	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
MS 15795/NASM 15795							
No. 0	801	0.08″	0.19″	0.01″-0.03″	500	98019A395	11.68
No. 2	802	0.09″	0.25″	0.01″-0.03″	500	98019A300	11.38
No. 4	803	0.12″	0.25″	0.01″-0.03″	500	98019A309	9.63
No. 4	804	0.12″	0.32″	0.02″-0.04″	500	98019A310	12.95
No. 6	805	0.16″	0.32″	0.02″-0.05″	500	98019A314	14.59
No. 6	806	0.16″	0.38″	0.03″-0.07″	250	98019A315	11.86
No. 8	807	0.19″	0.38″	0.03″-0.07″	250	98019A325	11.84
No. 8	841	0.19″	0.44″	0.03″-0.07″	250	98019A326	14.56
No. 10	808	0.22″	0.44″	0.03″-0.07″	250	98019A330	13.57
No. 10	842	0.22″	0.5″	0.03″-0.07″	100	98019A333	8.51
No. 12	809	0.25″	0.57″	0.05″-0.08″	100	98019A335	12.83
1/4″	810	0.28″	0.63″	0.05″-0.08″	100	98019A355	14.65
1/4″	811	0.31″	0.74″	0.05″-0.08″	25	98019A360	6.75
300 Series Stainless Steel (Cont.)							
MS 15795/NASM 15795 (Cont.)							
5/16″	812	0.34″	0.69″	0.05″-0.08″	25	98019A385	$6.00
5/16″	813	0.37″	0.88″	0.06″-0.11″	25	98019A390	10.28
3/8″	814	0.4″	0.82″	0.05″-0.08″	50	98019A399	12.75
3/8″	815	0.44″	1″	0.06″-0.11″	10	98019A500	6.39
7/16″	816	0.47″	0.93″	0.05″-0.08″	25	98019A502	9.08
7/16″	817	0.5″	1.25″	0.06″-0.11″	10	98019A505	7.27
1/2″	818	0.53″	1.07″	0.07″-0.13″	10	98019A509	6.97
1/2″	819	0.56″	1.38″	0.08″-0.14″	10	98019A510	11.50
5/8″	820	0.65″	1.32″	0.07″-0.13″	10	98019A514	9.10
5/8″	821	0.69″	1.75″	0.1″-0.16″	5	98019A515	14.37
3/4″	822	0.81″	1.47″	0.1″-0.16″	10	98019A519	14.90
3/4″	823	0.81″	2″	0.12″-0.18″	5	98019A520	14.95
7/8″	824	0.94″	1.75″	0.1″-0.16″	5	98019A524	11.33
7/8″	825	0.94″	2.25″	0.13″-0.2″	1	98019A525	6.67
1″	826	1.06″	2″	0.1″-0.16″	1	98019A529	4.12
1″	827	1.06″	2.5″	0.13″-0.2″	1	98019A530	6.34
NAS 1149 ●							
No. 2	CN216R	0.09″	0.25″	0.01″-0.02″	500	98017A600	6.45
No. 2	CN232R	0.09″	0.25″	0.02″-0.04″	500	98017A601	6.83
No. 3	CN316R	0.1″	0.25″	0.01″-0.02″	500	98017A103	8.49
No. 3	CN332R	0.1″	0.25″	0.02″-0.04″	500	98017A605	8.41
No. 4	CN416R	0.12″	0.32″	0.01″-0.02″	500	98017A609	9.39
No. 4	CN432R	0.12″	0.32″	0.02″-0.04″	500	98017A610	9.46
No. 6	CN616R	0.14″	0.38″	0.01″-0.02″	500	98017A614	8.78
No. 6	CN632R	0.14″	0.38″	0.02″-0.04″	500	98017A615	9.06
No. 8	CN816R	0.17″	0.38″	0.01″-0.02″	500	98017A624	8.14
No. 8	CN832R	0.17″	0.38″	0.02″-0.04″	500	98017A625	9.49
No. 10	C0332R	0.2″	0.44″	0.02″-0.04″	250	98017A635	11.92
No. 10	C0363R	0.2″	0.44″	0.05″-0.07″	250	98017A640	11.42
1/4″	C0432R	0.26″	0.5″	0.02″-0.04″	250	98017A655	10.03
1/4″	C0463R	0.26″	0.5″	0.05″-0.07″	100	98017A660	6.75
5/16″	C0532R	0.32″	0.57″	0.02″-0.04″	100	98017A689	4.85
5/16″	C0563R	0.32″	0.57″	0.05″-0.07″	100	98017A690	8.30
3/8″	C0632R	0.39″	0.63″	0.02″-0.04″	100	98017A199	5.66
3/8″	C0663R	0.39″	0.63″	0.05″-0.07″	100	98017A200	9.36
7/16″	C0732R	0.45″	0.75″	0.02″-0.04″	100	98017A204	7.91
7/16″	C0763R	0.45″	0.75″	0.05″-0.07″	25	98017A205	6.62
1/2″	C0832R	0.51″	0.88″	0.02″-0.04″	100	98017A209	8.71
1/2″	C0863R	0.51″	0.88″	0.05″-0.07″	50	98017A210	8.99
9/16″	C0963R	0.57″	1.07″	0.05″-0.07″	25	98017A214	9.27
5/8″	C1063R	0.64″	1.19″	0.05″-0.07″	25	98017A215	10.18
3/4″	C1290R	0.76″	1.32″	0.08″-0.1″	10	98017A220	7.93
7/8″	C1490R	0.89″	1.5″	0.08″-0.1″	10	98017A225	11.71
1″	C1690R	1.01″	1.75″	0.08″-0.1″	5	98017A230	7.01
NAS 620							
No. 0	C0	0.07″	0.1″	0.01″-0.02″	250	90945A700	8.35
No. 2	C2	0.09″	0.15″	0.01″-0.02″	500	90945A705	11.14
No. 3	C3L	0.11″	0.18″	0.01″-0.02″	500	90945A707	11.67
No. 3	C3	0.11″	0.18″	0.02″-0.04″	500	90945A708	13.20
No. 4	C4L	0.12″	0.21″	0.01″-0.02″	500	90945A710	13.66
No. 4	C4	0.12″	0.21″	0.02″-0.04″	500	90945A711	13.57
No. 5	C5L	0.13″	0.24″	0.01″-0.02″	500	90945A712	10.97
No. 5	C5	0.13″	0.24″	0.02″-0.04″	250	90945A713	4.85
No. 6	C6L	0.15″	0.27″	0.01″-0.02″	250	90945A715	4.49
No. 6	C6	0.15″	0.27″	0.02″-0.04″	250	90945A716	9.72
No. 8	C8L	0.17″	0.31″	0.01″-0.02″	250	90945A725	9.69
No. 8	C8	0.17″	0.31″	0.02″-0.04″	250	90945A726	10.56
No. 10	C10L	0.2″	0.36″	0.02″-0.04″	250	90945A740	10.28
No. 10	C10	0.2″	0.36″	0.06″-0.07″	100	90945A741	9.22
1/4″	C416L	0.26″	0.47″	0.02″-0.04″	100	90945A760	6.78
1/4″	C416	0.26″	0.47″	0.06″-0.07″	100	90945A761	10.85

Black-Oxide 300 Series Stainless Steel

Screw Size	Dash No.	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
MS 15795/NASM 15795							
No. 4	803B	0.12″	0.25″	0.01″-0.03″	100	90618A200	3.24
No. 6	805B	0.15″	0.32″	0.02″-0.05″	100	90618A300	4.22
No. 8	807B	0.18″	0.38″	0.03″-0.07″	100	90618A400	5.00
No. 10	808B	0.21″	0.44″	0.03″-0.07″	100	90618A500	5.95
1/4″	810B	0.28″	0.63″	0.05″-0.08″	100	90618A600	14.35
5/16″	812B	0.34″	0.69″	0.05″-0.08″	50	90618A700	8.13
3/8″	814B	0.4″	0.82″	0.05″-0.08″	50	90618A800	11.75
1/2″	818B	0.53″	1.07″	0.07″-0.13″	10	90618A900	5.73

● Do not meet FF-W-92.

High-Strength Corrosion-Resistant Washers

Each of the washer materials below has a unique combination of features including high strength and corrosion resistance.

A286 Super Alloy— A nonmagnetic iron-based material containing 26% nickel and 15% chromium, it has the strength of alloy steel plus corrosion resistance similar to 18-8 stainless steel. All washers are Type A. They meet ASME B18.22.1 and have a minimum Rockwell hardness of C22. Sizes No. 2 thru No. 10 meet SAE standards; sizes 1/4″ and larger meet USS standards.

Hastelloy— Resists corrosive chemicals and is nonmagnetic. All washers are Type A. They meet ASME B18.22.1 and USS standards and are not rated for hardness.

17-7 PH Stainless Steel— Combines the high strength of hardened alloy steel with corrosion resistance that's similar to 18-8 stainless steel. Washers may be mildly magnetic and have a minimum Rockwell hardness of C40.

Alloy 20 Stainless Steel— Also known as Carpenter 20, this stainless steel alloy is especially resistant to pitting and corrosion from sulfuric and other acids. Washers may be mildly magnetic and are not rated for hardness.

Nickel-Copper Alloy 400— Also known as Monel, this material has exceptional resistance to temperature extremes and corrosion in salty or brackish water, so it's well suited for marine applications. Washers may be mildly magnetic and have a minimum Rockwell hardness of C45.

Titanium (Grade 2)— Offers outstanding corrosion resistance—even better than 18-8 or Type 316 stainless steel. As strong as steel with only 57% of the weight, it's nonmagnetic and has excellent temperature resistance. Washers have a minimum Rockwell hardness of B80, unless noted.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
A286 Super Alloy						
No. 2	3/32″	1/4″	0.01″-0.03″	1	98189A050	$4.00
No. 4	1/8″	5/16″	0.02″-0.04″	1	98189A080	4.50
No. 6	5/32″	3/8″	0.03″-0.07″	1	98189A100	5.00
No. 8	3/16″	7/16″	0.03″-0.07″	1	98189A130	5.13
No. 10	7/32″	1/2″	0.03″-0.07″	1	98189A160	5.30
1/4″	5/16″	47/64″	0.05″-0.08″	1	98189A200	3.92
5/16″	3/8″	7/8″	0.06″-0.11″	1	98189A300	5.06
3/8″	7/16″	1″	0.06″-0.11″	1	98189A400	8.50
1/2″	9/16″	13/8″	0.08″-0.14″	1	98189A500	12.72
Hastelloy						
1/4″	5/16″	47/64″	0.05″-0.08″	1	99096A200	11.27
5/16″	3/8″	7/8″	0.06″-0.11″	1	99096A300	11.89
3/8″	7/16″	1″	0.06″-0.11″	1	99096A400	14.14
1/2″	9/16″	13/8″	0.08″-0.14″	1	99096A500	26.25
5/8″	11/16″	13/4″	0.1″-0.16″	1	99096A600	56.25
3/4″	13/16″	2″	0.12″-0.18″	1	99096A700	73.62
17-7 PH Stainless Steel						
1/4″	5/16″	3/4″	0.05″-0.07″	10	91860A029	8.47
5/16″	3/8″	7/8″	0.07″-0.09″	5	91860A030	8.10
3/8″	7/16″	1″	0.07″-0.09″	5	91860A031	9.94
7/16″	1/2″	11/4″	0.07″-0.09″	5	91860A032	10.52
1/2″	9/16″	13/8″	0.07″-0.09″	5	91860A033	13.14
9/16″	5/8″	11/2″	0.08″-0.1″	1	91860A034	3.81
5/8″	11/16″	13/4″	0.11″-0.13″	1	91860A035	6.08
17-7 PH Stainless Steel (Cont.)						
3/4″	13/16″	2″	0.12″-0.15″	1	91860A036	$8.43
1″	11/16″	2″	0.12″-0.15″	1	91860A038	7.83
Alloy 20 Stainless Steel						
1/4″	17/64″	5/8″	0.05″-0.07″	5	90770A029	5.86
5/16″	11/32″	3/4″	0.05″-0.07″	5	90770A030	7.97
3/8″	13/32″	7/8″	0.05″-0.07″	1	90770A031	1.72
1/2″	17/32″	11/4″	0.06″-0.09″	1	90770A033	4.20
5/8″	11/16″	11/2″	0.06″-0.09″	1	90770A035	4.86
Nickel-Copper Alloy 400						
1/4″	17/64″	11/16″	0.04″-0.06″	10	90785A029	10.86
5/16″	11/32″	3/4″	0.04″-0.06″	5	90785A030	7.71
3/8″	25/64″	1″	0.05″-0.07″	5	90785A031	10.00
1/2″	9/16″	11/4″	0.07″-0.09″	1	90785A033	4.80
5/8″	11/16″	11/2″	0.07″-0.09″	1	90785A035	7.66
3/4″	13/16″	13/4″	0.08″-0.11″	1	90785A036	11.37
Titanium (Grade 2)						
No. 2	3/32″	3/16″	0.01″-0.03″	1	94051A204★	5.01
No. 4	1/8″	3/8″	0.03″-0.07″	1	94051A206★	3.78
No. 6	9/64″	1/2″	0.03″-0.05″	5	94051A208	7.50
No. 8	3/16″	5/8″	0.03″-0.05″	5	94051A209	9.08
No. 10	13/64″	3/4″	0.03″-0.05″	5	94051A210	8.95
1/4″	17/64″	3/4″	0.03″-0.05″	1	94051A220	1.91
5/16″	11/32″	1″	0.04″-0.06″	1	94051A229	1.77
3/8″	13/32″	1″	0.05″-0.08″	1	94051A230	4.66

★ Not rated for hardness.

Lightweight Aluminum Washers

As strong as mild steel with just one-third the weight, aluminum washers resist weather-related corrosion and are nonmagnetic. They have a minimum Rockwell hardness of B67.

Alloy 1100-H14 offers excellent corrosion resistance and workability. It's good for use in low-strength applications.

Alloy 2024-T3/T4 has slightly lower strength than soft steel and lower corrosion resistance than Alloy 6061-T6. It's commonly used as an aircraft alloy.

Alloy 6061-T6 has good corrosion resistance and is stronger than Alloy 1100-H14.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
Alloy 1100-H14						
1/4″	0.26″	11/16″	0.04″-0.06″	100	93286A029	$6.80
5/16″	0.32″	7/8″	0.06″-0.07″	100	93286A030	9.50
3/8″	0.43″	1″	0.07″-0.08″	50	93286A031	7.00
1/2″	0.56″	11/4″	0.08″-0.1″	50	93286A142	12.00
5/8″	0.68″	11/2″	0.09″-0.11″	25	93286A146	13.12
3/4″	0.81″	17/8″	0.12″-0.13″	10	93286A149	6.64
Alloy 2024-T3/T4						
No. 2	0.09″	1/4″	0.02″-0.04″	100	93286A003	3.84
No. 4	0.12″	5/16″	0.02″-0.04″	100	93286A005	4.16
No. 6	0.14″	3/8″	0.02″-0.04″	100	93286A007	4.32
No. 8	0.17″	3/8″	0.02″-0.04″	100	93286A009	4.36
No. 10	0.2″	7/16″	0.02″-0.04″	100	93286A011	4.28
1/4″	0.26″	11/16″	0.03″-0.06″	100	93286A013	6.64
5/16″	0.34″	3/4″	0.05″-0.08″	100	93286A015	7.88
Alloy 2024-T3/T4 (Cont.)						
3/8″	0.4″	7/8″	0.05″-0.08″	100	93286A017	$9.68
1/2″	0.56″	11/4″	0.06″-0.09″	50	93286A019	14.90
5/8″	0.68″	11/2″	0.06″-0.09″	25	93286A021	13.19
3/4″	0.81″	17/8″	0.08″-0.11″	10	93286A023	8.57
Alloy 6061-T6						
No. 6	0.14″	3/8″	0.02″-0.04″	5	93286A041	2.99
No. 8	0.17″	3/8″	0.02″-0.04″	5	93286A042	2.99
No. 10	0.2″	7/16″	0.05″-0.07″	5	93286A043	3.98
1/4″	0.26″	1/2″	0.06″-0.07″	5	93286A044	5.98
3/8″	0.39″	5/8″	0.05″-0.07″	5	93286A045	2.50
1/2″	0.51″	7/8″	0.05″-0.07″	10	93286A049	5.50
5/8″	0.65″	11/4″	0.08″-0.1″	10	93286A054	5.75
3/4″	0.81″	11/2″	0.08″-0.1″	10	93286A058	6.25

Military Specification Aluminum Washers

Chemically treated with an electrically conductive gold-colored film, these Alloy 2024-T3 washers meet the stringent military standards established in NAS (National Aerospace Standard) 1149. All (except 94589A300 and A420) can be used as substitutes for AN 960 washers. Washers are nonmagnetic and not rated for hardness.

Screw Size	Dash No.	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 4	DN416J	0.12″	0.32″	0.01″-0.02″	100	94589A150	$2.83
No. 4	DN432J	0.12″	0.32″	0.02″-0.04″	100	94589A160	3.90
No. 6	DN616J	0.14″	0.38″	0.01″-0.02″	100	94589A200	5.07
No. 6	DN632J	0.14″	0.38″	0.02″-0.04″	100	94589A210	5.35
No. 8	DN816J	0.17″	0.38″	0.01″-0.02″	100	94589A220	5.07
No. 8	DN832J	0.17″	0.38″	0.02″-0.04″	100	94589A230	5.73
No. 10	D0332J	0.2″	0.44″	0.02″-0.04″	100	94589A260	5.76
No. 10	D0363J	0.2″	0.44″	0.05″-0.07″	100	94589A270	6.06
1/4″	D0432J	0.26″	0.5″	0.02″-0.04″	100	94589A300	$6.13
1/4″	D0463J	0.26″	0.5″	0.05″-0.07″	50	94589A310	4.29
5/16″	D0516J	0.32″	0.57″	0.01″-0.02″	50	94589A320	4.05
5/16″	D0563J	0.32″	0.57″	0.05″-0.07″	50	94589A340	6.44
3/8″	D0616J	0.39″	0.63″	0.01″-0.02″	50	94589A350	5.07
3/8″	D0663J	0.39″	0.63″	0.05″-0.07″	25	94589A370	4.22
1/2″	D0832J	0.51″	0.88″	0.02″-0.04″	25	94589A420	5.84
1/2″	D0863J	0.51″	0.88″	0.05″-0.07″	25	94589A430	8.06

Brass Washers

Resistant to rust and mild atmospheric corrosion, brass washers are also nonmagnetic and not rated for hardness. ***Brass*** washers have an attractive gold tone. ***Nickel-plated brass*** washers have a decorative silver tone.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
Brass						
No. 000	0.04″	5/64″	0.01″-0.02″	25	92916A270	$9.34
No. 00	0.05″	7/64″	0.01″-0.02″	25	92916A280	8.25
No. 0	0.06″	1/8″	0.01″-0.02″	25	92916A290	8.25
No. 1	0.08″	5/32″	0.01″-0.02″	25	92916A300	8.25
No. 2	0.09″	3/16″	0.01″-0.03″	100	92916A310	2.48
No. 3	0.1″	1/4″	0.01″-0.03″	100	92916A315	2.88
No. 4	0.12″	9/32″	0.01″-0.04″	100	92916A320	3.46
No. 5	0.13″	9/32″	0.01″-0.04″	100	92916A322	3.39
No. 6	0.14″	5/16″	0.01″-0.04″	100	92916A325	3.36
No. 6	0.14″	3/8″	0.02″-0.04″	100	92916A330	5.00
No. 8	0.17″	3/8″	0.02″-0.04″	100	92916A335	5.04
No. 8	0.17″	7/16″	0.02″-0.05″	100	92916A340	6.07
No. 10	0.2″	7/16″	0.02″-0.05″	100	92916A345	5.75
No. 10	0.2″	1/2″	0.03″-0.05″	100	92916A350	8.21
No. 12	0.22″	1/2″	0.03″-0.05″	100	92916A355	8.43
No. 12	0.22″	9/16″	0.03″-0.05″	100	92916A360	10.71
1/4″	0.26″	9/16″	0.03″-0.05″	100	92916A365	8.96
1/4″	0.26″	11/16″	0.04″-0.07″	100	92916A370	14.85
17/64″	0.28″	5/8″	0.03″-0.05″	100	92916A375	14.86
17/64″	0.28″	3/4″	0.05″-0.08″	50	92916A380	14.88
9/32″	0.31″	11/16″	0.04″-0.07″	100	92916A385	14.90
9/32″	0.31″	7/8″	0.04″-0.07″	50	92916A181	14.95
5/16″	0.34″	3/4″	0.05″-0.08″	50	92916A395	11.91
5/16″	0.34″	7/8″	0.05″-0.08″	50	92916A191	14.95
3/8″	0.39″	7/8″	0.05″-0.08″	50	92916A405	14.89
3/8″	0.39″	1″	0.07″-0.1″	25	92916A410	14.95
7/16″	0.5″	1 1/8″	0.07″-0.1″	25	92916A206	14.95
1/2″	0.56″	1 1/4″	0.08″-0.11″	10	92916A420	10.80
1/2″	0.56″	1 3/8″	0.08″-0.11″	10	92916A425	14.35
9/16″	0.62″	1 1/2″	0.08″-0.11″	10	92916A427	14.98
5/8″	0.68″	1 1/2″	0.09″-0.12″	10	92916A431	14.98
5/8″	0.68″	1 3/4″	0.09″-0.12″	5	92916A433	14.98
3/4″	0.81″	1 7/8″	0.1″-0.13″	5	92916A435	14.98

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
Brass (Cont.)						
3/4″	0.81″	2″	0.1″-0.13″	1	92916A438	$3.75
7/8″	0.93″	2 1/4″	0.11″-0.15″	1	92916A440	5.18
1″	1.06″	2 1/2″	0.12″-0.16″	1	92916A231	7.61
1 1/8″	1.18″	2 3/4″	0.14″-0.18″	1	92916A451	8.44
1 1/4″	1.31″	3″	0.12″-0.19″	1	92916A456	8.42
1 1/2″	1.56″	3 1/2″	0.12″-0.19″	1	92916A461	11.40
Nickel-Plated Brass						
No. 2	0.09″	3/16″	0.01″-0.03″	100	92917A105	1.69
No. 4	0.12″	9/32″	0.01″-0.04″	100	92917A110	2.58
No. 6	0.14″	5/16″	0.01″-0.04″	100	92917A115	2.36
No. 6	0.14″	3/8″	0.02″-0.04″	100	92917A120	3.77
No. 8	0.17″	3/8″	0.02″-0.04″	100	92917A125	3.42
No. 8	0.17″	7/16″	0.02″-0.05″	100	92917A130	5.38
No. 10	0.2″	7/16″	0.02″-0.05″	100	92917A135	5.05
No. 10	0.2″	1/2″	0.03″-0.05″	100	92917A140	7.39
No. 12	0.22″	1/2″	0.03″-0.05″	100	92917A146	7.06
1/4″	0.26″	9/16″	0.03″-0.05″	100	92917A155	8.34
1/4″	0.26″	11/16″	0.04″-0.07″	50	92917A160	8.41
5/16″	0.34″	3/4″	0.05″-0.08″	25	92917A185	5.90
5/16″	0.34″	7/8″	0.05″-0.08″	25	92917A190	8.07
3/8″	0.39″	7/8″	0.05″-0.08″	25	92917A195	8.23
3/8″	0.39″	1″	0.07″-0.1″	10	92917A200	5.80
7/16″	0.5″	1 1/8″	0.07″-0.1″	10	92917A205	6.97

550-Piece Brass Assortment

Washers come in an 11″ Lg. × 6 3/4″ Wd. × 1 3/4″ Dp. compartmented plastic case with lid chart.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
No. 8	100	1/4″	100	3/8″	100
No. 10	100	5/16″	100	1/2″	50

92075A306 ..... **Each** $95.25

Corrosion-Resistant Silicon Bronze Washers

Silicon bronze washers are more resistant to corrosion caused by salt water and gases than brass washers. They're also nonmagnetic and not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 6	0.14″	3/8″	0.02″-0.04″	100	93490A007	$6.78
No. 8	0.17″	3/8″	0.02″-0.04″	100	93490A009	7.24
No. 10	0.2″	7/16″	0.02″-0.05″	100	93490A011	11.19
No. 12	0.22″	1/2″	0.03″-0.05″	50	93490A013	7.68
1/4″	0.26″	11/16″	0.03″-0.05″	50	93490A029	11.17
5/16″	0.34″	3/4″	0.05″-0.08″	25	93490A017	10.72
5/16″	0.34″	7/8″	0.05″-0.08″	25	93490A030	14.93
3/8″	0.39″	7/8″	0.05″-0.08″	25	93490A018	12.75

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
3/8″	0.39″	1″	0.05″-0.08″	10	93490A031	$6.68
7/16″	0.5″	1 1/8″	0.05″-0.08″	10	93490A032	9.67
1/2″	0.56″	1 1/4″	0.06″-0.09″	10	93490A033	11.24
5/8″	0.68″	1 1/2″	0.08″-0.11″	5	93490A035	12.79
3/4″	0.81″	1 7/8″	0.09″-0.12″	1	93490A036	3.94
7/8″	0.93″	2 1/4″	0.09″-0.13″	1	93490A037	8.00
1″	1.06″	2 1/2″	0.11″-0.15″	1	93490A038	10.31

Electrically Conductive Copper Washers

When you need exceptional electrical conductivity, use these Alloy 110 copper washers. They're nonmagnetic and have a minimum Rockwell hardness of F77.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 10	0.2″	1/2″	0.03″-0.05″	50	93744A120	$7.75
1/4″	0.26″	5/8″	0.05″-0.08″	50	93744A130	14.62
5/16″	0.34″	3/4″	0.05″-0.08″	25	93744A140	10.94
3/8″	0.39″	1″	0.05″-0.08″	25	93744A160	14.89

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
7/16″	0.5″	1 1/8″	0.06″-0.09″	10	93744A170	$10.72
1/2″	0.56″	1 3/8″	0.06″-0.09″	10	93744A180	14.90
5/8″	0.68″	1 3/4″	0.08″-0.11″	5	93744A190	14.95
3/4″	0.81″	2″	0.08″-0.11″	1	93744A210	4.07

Large-Diameter Plain Steel Washers

Ideal to distribute wide loads. Washers are made from case-hardened C1008-C1018 steel and have a black-oxide finish. They have a minimum surface hardness of Rockwell C40.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 6	5/32″	9/16″	0.11″-0.14″	10	92140A101	$4.08
No. 8	3/16″	3/4″	0.11″-0.14″	10	92140A104	4.08
No. 10	13/64″	1″	0.11″-0.14″	10	92140A108	5.15
1/4″	9/32″	1″	0.11″-0.14″	10	92140A112	5.45
1/4″	9/32″	1 1/2″	0.11″-0.14″	10	92140A114	11.52
5/16″	11/32″	1 1/4″	0.11″-0.14″	10	92140A116	8.53

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
3/8″	13/32″	1 5/8″	0.11″-0.14″	10	92140A118	$11.77
1/2″	17/32″	2″	0.11″-0.14″	5	92140A120	7.71
5/8″	21/32″	1 3/4″	0.14″-0.17″	1	92140A122	2.99
3/4″	13/16″	2″	0.24″-0.26″	1	92140A124	6.63
1″	1 1/16″	2 1/2″	0.24″-0.26″	1	92140A126	8.31

Large-Diameter Washers

An extra-large bearing surface makes these washers great for covering oversized holes. Also known as fender washers, they're not rated for hardness.

Type 316 stainless steel offers corrosion resistance that's superior to 18-8 stainless steel. It may be mildly magnetic.

18-8 stainless steel has excellent corrosion resistance and may be mildly magnetic.

Zinc-plated steel has good rust resistance.

Screw Size	ID	OD	Thick. Min.-Max.	Type 316 Stainless Steel Pkg. Qty.		Per Pkg.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Zinc-Plated Steel Thick. Min.-Max.	Pkg. Qty.		Per Pkg.
No. 6	9/64″	5/8″	0.02″-0.04″	100	91525A103	$7.85	100	90313A101	$7.22	0.02″-0.04″	100	91090A100	$2.03
No. 6	5/32″	9/16″	0.04″-0.06″	50	91525A104	5.60	50	90313A201	10.15	0.04″-0.06″	100	91090A102	3.04
No. 6	5/32″	3/4″	0.03″-0.07″	25	91525A105	8.40	25	90313A301	5.72	0.03″-0.07″	25	98264A100	5.77
No. 8	11/64″	3/4″	0.03″-0.05″	50	91525A107	7.50	100	90313A102	10.46	0.04″-0.06″	50	91090A124	8.38
No. 8	3/16″	3/4″	0.04″-0.06″	50	91525A108	9.99	50	90313A202	13.00	0.04″-0.06″	100	91090A101	3.10
No. 8	3/16″	1″	0.03″-0.07″	10	91525A268	4.60	25	90313A302	7.54	0.03″-0.07″	25	98264A125	7.18
No. 10	13/64″	1/2″	0.03″-0.05″	100	91525A109	6.72	100	90313A200	7.54	0.04″-0.06″	100	91090A103	4.02
No. 10	13/64″	11/16″	0.03″-0.05″	100	91525A110	11.34	100	90313A103	8.34	0.04″-0.06″	50	91090A125	8.34
No. 10	13/64″	3/4″	0.03″-0.05″	50	91525A115	8.28	100	90313A400	10.43	0.04″-0.06″	50	91090A126	8.52
No. 10	13/64″	1″	0.03″-0.05″	50	91525A114	11.16	50	90313A104	7.16	0.04″-0.06″	100	91090A120	3.65
No. 10	7/32″	1 1/4″	0.04″-0.06″	—	—	—	25	90313A105	11.87	0.04″-0.06″	100	91090A104	7.66
No. 10	7/32″	1 1/2″	0.03″-0.07″	10	91525A271	7.87	10	90313A156	4.90	0.03″-0.07″	25	98264A150	9.53
1/4″	17/64″	1/2″	0.04″-0.06″	100	91525A117	6.90	50	90313A203	10.01	0.04″-0.06″	100	91090A105	4.19
1/4″	17/64″	9/16″	0.05″-0.08″	50	91525A118	5.86	50	90313A204	10.80	0.04″-0.06″	100	91090A106	4.95
1/4″	17/64″	7/8″	0.05″-0.08″	25	91525A119	8.19	25	90313A205	8.94	0.04″-0.06″	100	91090A107	4.60
1/4″	9/32″	1″	0.04″-0.06″	25	91525A120	6.66	50	90313A107	8.25	0.04″-0.06″	100	91090A108	3.90
1/4″	9/32″	1 1/4″	0.04″-0.06″	25	91525A124	11.45	50	90313A108	12.14	0.04″-0.06″	100	91090A109	5.85
1/4″	9/32″	1 1/2″	0.05″-0.08″	10	91525A128	7.51	25	90313A109	9.78	0.04″-0.06″	100	91090A113	8.20
1/4″	9/32″	2″	0.05″-0.08″	5	91525A129	6.80	10	90313A106	9.84	0.04″-0.06″	50	91090A116	8.76
1/4″	9/32″	2 1/2″	0.05″-0.08″	5	91525A235	10.12	5	90313A307	6.17	0.05″-0.08″	10	98264A175	9.17
1/4″	9/32″	3″	0.05″-0.08″	1	91525A237	2.88	5	90313A309	8.92	0.05″-0.08″	5	98264A200	6.13
5/16″	21/64″	5/8″	0.05″-0.08″	50	91525A229	6.72	50	90313A206	13.28	0.04″-0.06″	100	91090A110	3.87
5/16″	11/32″	1 1/4″	0.04″-0.06″	10	91525A230	5.43	25	90313A111	7.10	0.04″-0.06″	100	91090A111	6.26
5/16″	11/32″	1 1/2″	0.05″-0.08″	10	91525A130	10.08	25	90313A110	10.51	0.04″-0.06″	100	91090A119	9.00
5/16″	11/32″	2″	0.05″-0.08″	5	91525A133	7.12	10	90313A112	10.28	0.04″-0.06″	25	91090A127	9.01
5/16″	11/32″	2 1/2″	0.05″-0.08″	5	91525A134	10.12	5	90313A321	6.17	0.05″-0.08″	5	98264A225	4.58
5/16″	11/32″	3″	0.05″-0.08″	1	91525A135	2.88	5	90313A327	8.92	0.05″-0.08″	5	98264A250	6.13
3/8″	13/32″	1″	0.05″-0.08″	10	91525A136	5.15	10	90313A329	4.86	0.05″-0.08″	100	91090A112	11.78
3/8″	13/32″	1 1/4″	0.04″-0.06″	10	91525A141	5.35	25	90313A114	6.91	0.04″-0.06″	100	91090A121	5.40
3/8″	13/32″	1 1/2″	0.05″-0.08″	10	91525A140	7.31	25	90313A115	9.76	0.04″-0.06″	100	91090A115	9.78
3/8″	13/32″	1 5/8″	0.05″-0.08″	10	91525A142	9.14	10	90313A207	9.70	0.04″-0.06″	50	91090A122	8.47
3/8″	13/32″	2″	0.05″-0.08″	5	91525A143	6.90	10	90313A116	10.63	0.04″-0.06″	50	91090A117	9.98
3/8″	13/32″	3″	0.05″-0.08″	1	91525A144	2.88	5	90313A333	8.92	0.05″-0.08″	5	98264A275	6.13
1/2″	17/32″	1 1/2″	0.05″-0.08″	10	91525A145	7.42	25	90313A117	12.37	0.04″-0.06″	50	91090A114	7.43
1/2″	17/32″	2″	0.05″-0.08″	5	91525A150	6.59	10	90313A118	10.38	0.04″-0.06″	50	91090A118	8.42
1/2″	17/32″	3″	0.05″-0.08″	1	91525A152	2.97	5	90313A351	9.19	0.05″-0.08″	5	98264A300	6.46

386-Piece Assortment—Zinc-Plated Steel

Washers come in an 11″ Lg. × 6 3/4″ Wd. × 1 3/4″ Dp. compartmented plastic case with lid chart.

98661A252 ..... **Each** $84.09

Screw Size	OD	No. of Pcs.	Screw Size	OD	No. of Pcs.	Screw Size	OD	No. of Pcs.
No. 5	3/4″	40	1/4″	1″	48	5/16″	1 1/2″	24
No. 6	7/8″	40	1/4″	1 1/4″	30	5/16″	1 5/8″	24
No. 10	1″	48	1/4″	1 1/2″	24	3/8″	1 1/4″	24
No. 10	1 1/4″	40	5/16″	1 1/4″	20	3/8″	1 1/2″	24

Washers for Soft Materials (Type B)

Wider than Type A washers, these washers disperse holding force over a large area, which limits damage to soft materials. All meet ASME B18.22.1.

18-8 stainless steel washers provide excellent corrosion resistance. They may be mildly magnetic and are not rated for hardness.

Zinc-plated steel washers are rust resistant and have a minimum Rockwell hardness of B40.

Screw Size	ID	Thick., Min.-Max.	Pkg. Qty.	Narrow OD		Per Pkg.	Regular OD		Per Pkg.	Wide OD		Per Pkg.
18-8 Stainless Steel												
No. 0	0.06″	0.02″-0.03″	10	1/8″	92217A310	$4.86	3/16″	92217A315	$4.35	1/4″	92217A319	$4.36
No. 2	3/32″	0.02″-0.04″	25	3/16″	92217A350	10.87	1/4″	92217A355	6.98	11/32″	92217A359	6.78
No. 4	1/8″	0.02″-0.05″	25	1/4″	92217A360	7.75	3/8″	92217A365	6.26	7/16″	92217A369	6.37
No. 6	5/32″	0.02″-0.05″	25	5/16″	92217A420	7.16	7/16″	92217A425	7.16	9/16″	92217A429	7.46
No. 8	3/16″	0.03″-0.08″	25	3/8″	92217A430	8.80	1/2″	92217A435	9.13	5/8″	92217A439	11.60
No. 10	13/64″	0.03″-0.08″	25	13/32″	92217A440	8.88	9/16″	92217A445	9.33	47/64″	92217A449	12.28
1/4″	9/32″	0.05″-0.08″	10	1/2″	92217A470	4.34	47/64″	92217A475	4.91	1″	92217A479	6.23
5/16″	11/32″	0.05″-0.08″	10	5/8″	92217A490	4.64	7/8″	92217A495	6.10	1 1/8″	92217A499	6.55
3/8″	13/32″	0.05″-0.12″	10	47/64″	92217A520	6.54	1″	92217A525	6.08	1 1/4″	92217A529	10.88
1/2″	17/32″	0.05″-0.12″	5	1″	92217A540	3.04	1 1/4″	92217A545	5.44	1 3/4″	92217A549	7.78
Zinc-Plated Steel												
No. 0	0.06″	0.02″-0.03″	25	1/8″	94744A110	2.83	3/16″	94744A114	2.83	1/4″	94744A118	2.83
No. 2	3/32″	0.02″-0.04″	50	3/16″	94744A150	5.26	1/4″	94744A154	5.26	11/32″	94744A158	5.26
No. 4	1/8″	0.02″-0.05″	50	1/4″	94744A155	4.91	3/8″	94744A159	4.91	7/16″	94744A163	4.91
No. 6	5/32″	0.02″-0.05″	50	5/16″	94744A160	7.21	7/16″	94744A164	7.21	9/16″	94744A168	7.21
No. 8	3/16″	0.03″-0.08″	25	3/8″	94744A220	4.09	1/2″	94744A224	4.09	5/8″	94744A228	4.09
No. 10	13/64″	0.03″-0.08″	25	13/32″	94744A225	4.09	9/16″	94744A229	4.09	47/64″	94744A233	4.09
1/4″	9/32″	0.05″-0.08″	25	1/2″	94744A240	6.55	47/64″	94744A244	6.55	1″	94744A248	6.55
5/16″	11/32″	0.05″-0.08″	25	5/8″	94744A245	8.19	7/8″	94744A249	8.19	1 1/8″	94744A253	8.19
3/8″	13/32″	0.05″-0.12″	25	47/64″	94744A265	8.19	1″	94744A269	8.19	1 1/4″	94744A273	8.19
1/2″	17/32″	0.05″-0.12″	5	1″	94744A285	4.43	1 1/4″	94744A289	4.43	1 3/4″	94744A293	4.43

Thick Washers

Also known as finished, setup, and fixture washers, these precision washers are often used in die-and-jig fixture setups.

18-8 stainless steel washers offer excellent corrosion resistance. They may be mildly magnetic and have a minimum Rockwell hardness of B70. ***Brass*** washers are corrosion resistant, electrically conductive, nonmagnetic, and not rated for hardness. ***Black-oxide case-hardened steel*** washers are made from C1008, C1010, or 12L14 steel and have a minimum surface hardness of Rockwell C40.

Also Available: 17-4 PH stainless steel washers (with better corrosion resistance than 18-8 stainless steel washers) in sizes marked with a bullet. Please ask for 98049A200 and specify screw size.

Screw Size	ID	OD	Thick., Min.-Max.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Brass Pkg. Qty.		Per Pkg.	Black-Oxide Case-Hardened Steel Pkg. Qty.		Per Pkg.
No. 0	1/16″	1/8″	0.01″-0.03″	25	98370A001	$5.75	25	95395A101	$3.83	25	98029A021	$7.14
No. 1	5/64″	5/32″	0.01″-0.03″	25	98370A002	5.75	25	95395A102	3.83	25	98029A022	7.74
No. 2	3/32″	3/16″	0.02″-0.04″	25	98370A003	5.00	25	95395A103	3.83	25	98029A023	4.76
No. 4	1/8″	1/4″	0.05″-0.08″	10	98370A005	6.47	10	95395A104	3.83	25	98029A024	5.36
No. 4	1/8″	5/16″	0.06″-0.09″	10	98370A024	8.42	—	—	—	25	98029A041	5.00
No. 6	5/32″	5/16″	0.05″-0.08″	10	98370A007	6.47	10	95395A105	4.21	25	98029A025	5.71
No. 6	5/32″	3/8″	0.06″-0.09″	5	98370A025	3.95	—	—	—	25	98029A042	7.18
No. 8	11/64″	3/8″	0.05″-0.08″	10	98370A009	6.47	5	95395A106	2.11	25	98029A026	5.95
No. 8	3/16″	7/16″	0.06″-0.09″	10	98370A011	7.65	5	95395A207	5.44	25	98029A043	3.75
No. 10	13/64″	1/2″	0.08″-0.11″	5	98370A027	4.74	5	95395A210	9.49	25	98029A011	4.74
1/4″	9/32″	1/2″	0.06″-0.09″	10	98370A013	5.29	5	95395A215	6.50	25	98029A027	6.55
1/4″	9/32″	5/8″	0.11″-0.14″	10	98370A028●	5.94	5	95395A220	8.80	25	98029A029	4.74
1/4″	9/32″	5/8″	0.17″-0.2″	1	98125A029	2.76	5	95395A310	9.86	10	98099A029	7.63
5/16″	11/32″	5/8″	0.08″-0.11″	10	98370A015	6.47	5	95395A107	2.88	25	98029A028	7.14
5/16″	11/32″	11/16″	0.11″-0.14″	10	98370A017	6.47	5	95395A226	4.72	25	98029A044	8.33
5/16″	11/32″	3/4″	0.11″-0.14″	10	98370A029●	7.37	5	95395A230	9.14	25	98029A030	6.50
5/16″	11/32″	3/4″	0.17″-0.2″	1	98125A030	2.86	1	95395A320	2.80	10	98099A030	8.18
3/8″	13/32″	3/4″	0.08″-0.11″	10	98370A019	6.47	5	95395A235	6.72	25	98029A045	8.33
3/8″	13/32″	7/8″	0.11″-0.14″	10	98370A030●	8.33	5	95395A240	9.14	25	98029A031	8.17
3/8″	13/32″	1″	0.11″-0.14″	10	98370A021	7.89	5	95395A242	8.45	10	98029A046	4.76
3/8″	13/32″	1″	0.17″-0.2″	1	98125A031	2.48	5	95395A330	13.15	10	98099A031	8.34
7/16″	15/32″	59/64″	0.11″-0.14″	10	98370A022	9.47	—	—	—	—	—	—
7/16″	15/32″	1″	0.11″-0.14″	5	98370A032	8.60	—	—	—	25	98029A032	8.52
7/16″	15/32″	1″	0.17″-0.2″	5	98125A432	11.72	—	—	—	5	98099A032	5.34
1/2″	17/32″	11/16″	0.17″-0.2″	10	98125A443	7.59	5	95395A343	14.41	5	98099A034	5.33
1/2″	17/32″	1 1/8″	0.11″-0.14″	5	98370A033●	9.58	5	95395A250	11.90	25	98029A033	8.94
1/2″	17/32″	1 1/8″	0.17″-0.2″	1	98125A033	3.17	1	95395A340	3.07	5	98099A033	5.34
9/16″	19/32″	1 3/16″	0.17″-0.2″	5	98125A034	7.36	—	—	—	—	—	—
5/8″	21/32″	1 5/16″	0.19″-0.24″	5	98125A445	6.73	1	95395A353	3.18	1	98099A045	4.27
5/8″	21/32″	1 3/8″	0.11″-0.14″	5	98370A035●	10.60	1	95395A260	2.59	10	98029A035	5.37
5/8″	21/32″	1 3/8″	0.17″-0.2″	1	98125A035	2.99	5	95395A350	13.47	5	98099A035	4.76
3/4″	25/32″	1 5/8″	0.14″-0.17″	1	98370A036●	2.71	1	95395A270	3.03	10	98029A036	8.15
3/4″	25/32″	1 5/8″	0.23″-0.26″	1	98125A036	5.17	1	95395A360	4.17	5	98099A036	7.68
3/4″	13/16″	1 1/2″	0.19″-0.24″	5	98125A446	9.31	1	95395A356	4.71	1	98099A046	4.67
7/8″	29/32″	1 3/4″	0.14″-0.17″	1	98370A037	2.86	1	95395A280	3.69	5	98029A037	5.24
7/8″	29/32″	1 3/4″	0.23″-0.26″	1	98125A037	5.47	1	95395A370	4.17	5	98099A037	10.08
1″	1 1/32″	2″	0.17″-0.2″	1	98370A038	4.66	1	95395A290	4.04	5	98029A038	7.62
1″	1 1/32″	2″	0.23″-0.27″	1	98125A450	6.71	—	—	—	1	98099A048	6.90
1″	1 1/32″	2″	0.26″-0.3″	1	98125A038	7.08	1	95395A380	5.23	1	98099A038	3.55
1 1/8″	1 5/32″	2 1/4″	0.2″-0.23″	1	98370A039	7.33	—	—	—	1	98029A039	2.79
1 1/4″	1 9/32″	2 1/2″	0.26″-0.3″	1	98370A040	7.31	—	—	—	1	98029A040	2.96

Extra-Thick High-Strength Steel Washers

Perfect for use with Grade 8 steel screws and socket head cap screws, these alloy steel washers are also useful as spacers and levelers on uneven surfaces. They're heat treated and marked with the bolt size for easy identification. Made from C1048 or C1050 steel, each has a zinc yellow-chromate finish and a minimum Rockwell hardness of C43.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
1/4″	9/32″	5/8″	0.09″-0.11″	100	98025A029	$12.31
5/16″	11/32″	11/16″	0.09″-0.11″	50	98025A030	7.91
3/8″	13/32″	13/16″	0.11″-0.13″	50	98025A031	9.67
7/16″	15/32″	59/64″	0.11″-0.13″	25	98025A132	7.25
1/2″	17/32″	1 1/16″	0.19″-0.21″	25	98025A133	10.55
9/16″	19/32″	1 11/64″	0.16″-0.2″	10	98025A034	6.52
5/8″	21/32″	1 5/16″	0.21″-0.23″	10	98025A035	7.38
3/4″	13/16″	1 15/32″	0.21″-0.23″	10	98025A036	9.86
7/8″	15/16″	1 3/4″	0.23″-0.27″	5	98025A037	7.25
1″	1 1/16″	2″	0.23″-0.27″	5	98025A038	7.79
1 1/8″	1 3/16″	2 1/4″	0.23″-0.27″	5	98025A139	11.09
1 1/4″	1 3/8″	2 1/2″	0.23″-0.27″	5	98025A040	9.68
1 3/8″	1 7/16″	2 3/4″	0.23″-0.27″	1	98025A043	3.45
1 1/2″	1 9/16″	3″	0.23″-0.27″	1	98025A045	4.22

Extra-Thick Steel Washers

Use these extra-thick, beveled-edge washers in spacing applications and as tooling and fixturing components.

Hot-dipped galvanized steel washers are made from C1008 steel. They have a larger OD and are more corrosion resistant than plain steel washers. Minimum Rockwell hardness is B40.

Plain steel washers are made from 12L14 steel. Free of coatings and finishes, they have a minimum Rockwell hardness of B80.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
Hot-Dipped Galvanized Steel						
1/2″	9/16″	3″	0.23″-0.27″	1	98970A100	$2.75
5/8″	11/16″	3″	0.23″-0.27″	1	98970A125	2.75
3/4″	13/16″	3″	0.23″-0.27″	1	98970A150	2.79
7/8″	15/16″	3″	0.23″-0.27″	1	98970A175	2.87
1″	1 1/16″	3 1/4″	0.23″-0.27″	1	98970A200	3.11
1 1/4″	1 3/8″	4″	0.46″-0.54″	1	98970A225	7.30
Plain Steel						
No. 10	13/64″	1/2″	0.08″-0.11″	25	91201A011	7.23
1/4″	9/32″	5/8″	0.11″-0.14″	25	91201A029	7.23
5/16″	11/32″	3/4″	0.11″-0.14″	25	91201A030	9.64
3/8″	13/32″	7/8″	0.11″-0.14″	25	91201A031	12.05
7/16″	15/32″	1″	0.14″-0.17″	10	91201A032	9.27
1/2″	17/32″	1″	0.17″-0.2″	10	91201A033	9.27
5/8″	21/32″	1 1/4″	0.24″-0.26″	5	91201A035	8.17
3/4″	25/32″	1 1/2″	0.24″-0.26″	5	91201A036	8.82
7/8″	29/32″	1 3/4″	0.24″-0.26″	5	91201A037	10.94
1″	1 1/32″	2″	0.3″-0.33″	1	91201A038	3.15
1 1/8″	1 5/32″	2 1/4″	0.3″-0.33″	1	91201A039	4.00
1 1/4″	1 9/32″	2 1/4″	0.3″-0.33″	1	91201A040	4.24

Jumbo Washers

Extra wide and thick, these washers have a large bearing surface that enables wide load distribution.

18-8 stainless steel washers provide excellent corrosion resistance. They may be mildly magnetic and have a minimum Rockwell hardness of B70.

Steel sizes through 1¼″ are zinc plated; larger sizes have a black-oxide finish. All have a min. Rockwell hardness of B40.

Screw Size	ID	OD	Thick., Min.-Max.	18-8 Stainless Steel	Each	Pkg. Qty.	Steel	Per Pkg.
No. 10	7/32″	1″	0.11″-0.14″	92303A101	$5.93	5	91117A201	$6.14
No. 10	7/32″	1″	0.23″-0.27″	—	—	5	91117A204	7.93
1/4″	9/32″	1 1/2″	0.11″-0.14″	92303A102	5.93	5	91117A207	6.14
1/4″	9/32″	1 1/2″	0.23″-0.27″	—	—	5	91117A210	7.93
5/16″	11/32″	2″	0.11″-0.14″	92303A103	6.86	5	91117A213	6.44
5/16″	11/32″	2″	0.23″-0.27″	92303A104	16.98	5	91117A216	8.07
3/8″	13/32″	2″	0.11″-0.14″	92303A105	7.15	5	91117A219	6.58
3/8″	13/32″	2″	0.23″-0.27″	92303A106	17.52	5	91117A222	8.37
1/2″	17/32″	2″	0.11″-0.14″	92303A107	7.23	5	91117A225	6.88
1/2″	17/32″	2″	0.23″-0.27″	92303A108	18.66	5	91117A228	8.53
1/2″	9/16″	3″	0.23″-0.27″	—	—	5	91117A229	13.61
5/8″	11/16″	2 1/2″	0.11″-0.14″	92303A109	9.49	5	91117A231	9.27
5/8″	11/16″	2 1/2″	0.23″-0.27″	92303A110	19.78	5	91117A234	10.02
5/8″	11/16″	3″	0.23″-0.27″	—	—	5	91117A235	13.61
3/4″	13/16″	3″	0.11″-0.14″	—	—	5	91117A237	9.57
3/4″	13/16″	3″	0.23″-0.27″	92303A111	22.50	5	91117A240	10.32
3/4″	13/16″	3″	0.35″-0.4″	—	—	1	91117A243	5.59
7/8″	15/16″	3″	0.23″-0.27″	—	—	1	91117A244	2.87
7/8″	15/16″	3 1/4″	0.11″-0.14″	—	—	1	91117A245	2.67
7/8″	15/16″	3 1/4″	0.23″-0.27″	92303A112	27.13	5	91117A246	10.47
7/8″	15/16″	3 1/4″	0.35″-0.4″	—	—	1	91117A249	5.66
1″	1 1/16″	3 1/4″	0.23″-0.27″	—	—	1	91117A250	3.05
1″	1 1/16″	3 1/2″	0.11″-0.14″	92303A113	32.19	1	91117A251	2.99
1″	1 1/16″	3 1/2″	0.23″-0.27″	—	—	1	91117A252	3.29
1″	1 1/16″	3 1/2″	0.35″-0.4″	—	—	1	91117A255	5.77
1 1/4″	1 3/8″	4″	0.46″-0.54″	92303A114	38.34	1	91117A260	6.27
1 3/8″	1 1/2″	2 3/4″	0.24″-0.26″	98900A316	16.12	1	93550A110	12.35
1 1/2″	1 5/8″	3″	0.24″-0.26″	98900A318	18.49	1	93550A115	14.18
1 3/4″	1 7/8″	3 3/8″	0.24″-0.26″	98900A322	21.34	1	93550A120	16.38
2″	2 1/8″	3 3/4″	0.24″-0.26″	98900A326	26.28	1	93550A125	20.16
2 1/2″	2 5/8″	4 1/2″	0.3″-0.33″	98900A334	36.76	1	93550A130	29.82

General Purpose Nylon Washers

An economical choice, these multi-tasking nylon washers provide electrical insulation, reduce friction, and can minimize wear between parts. They are not rated for hardness. *Note:* Nylon absorbs moisture which can affect dimensions and other properties.

Nylon 6/6 washers are reliable up to 180° F. **To Order:** Please specify black or off-white.

Glass-filled nylon washers are reliable up to 230° F and stronger than nylon 6/6 washers. Color is off-white.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
Nylon 6/6						
No. 0	0.06″	0.18″	0.07″-0.09″	100	90295A310	$5.17
No. 0	0.06″	0.19″	0.02″-0.03″	50	90295A312	3.42
No. 1	0.08″	0.22″	0.02″-0.03″	50	90295A314	3.46
No. 2	0.09″	0.19″	0.01″-0.03″	100	90295A320	5.60
No. 2	0.09″	0.25″	0.05″-0.07″	100	90295A325	3.71
No. 2	0.09″	0.25″	0.02″-0.04″	50	90295A322	3.38
No. 3	0.1″	0.22″	0.02″-0.04″	100	90295A330	3.81
No. 3	0.1″	0.32″	0.02″-0.04″	50	90295A332	3.50
No. 4	0.11″	0.21″	0.04″-0.06″	100	90295A340	4.87
No. 4	0.12″	0.22″	0.02″-0.04″	100	90295A359	3.00
No. 4	0.11″	0.25″	0.05″-0.07″	100	90295A345	3.46
No. 4	0.12″	0.28″	0.02″-0.04″	100	90295A362	3.62
No. 5	0.13″	0.29″	0.05″-0.07″	100	90295A370	4.61
No. 5	0.14″	0.41″	0.03″-0.05″	50	90295A373	4.17
No. 6	0.15″	0.32″	0.02″-0.04″	100	90295A380	4.89
No. 6	0.16″	0.32″	0.05″-0.07″	100	90295A390	4.04
No. 6	0.14″	0.32″	0.05″-0.07″	100	90295A375	4.37
No. 6	0.15″	0.44″	0.03″-0.05″	50	90295A384	4.33
No. 8	0.17″	0.38″	0.05″-0.07″	100	90295A400	5.35
No. 8	0.17″	0.41″	0.05″-0.07″	100	90295A410	5.70
No. 8	0.18″	0.5″	0.03″-0.05″	50	90295A414	5.02
No. 10	0.19″	0.44″	0.02″-0.04″	100	90295A420	5.60
No. 10	0.2″	0.45″	0.02″-0.04″	100	90295A422	5.25
No. 10	0.2″	0.57″	0.03″-0.05″	50	90295A424	4.96
No. 12	0.25″	0.38″	0.01″-0.02″	100	95606A410	7.54
No. 12	0.25″	0.38″	0.02″-0.04″	100	95606A420	8.13
No. 12	0.24″	0.47″	0.01″-0.02″	100	90295A430	5.90
No. 12	0.23″	0.63″	0.05″-0.07″	50	90295A426	5.13
1/4″	0.25″	0.48″	0.05″-0.07″	100	90295A440	5.95
1/4″	0.31″	0.5″	0.02″-0.04″	100	95606A430	5.51
1/4″	0.26″	0.69″	0.05″-0.07″	100	90295A450	7.95
1/4″	0.28″	0.74″	0.05″-0.07″	50	90295A455	3.92
5/16″	0.38″	0.57″	0.02″-0.04″	100	95606A440	6.23
5/16″	0.34″	0.74″	0.05″-0.07″	100	90295A460	6.94
5/16″	0.34″	0.88″	0.05″-0.07″	50	90295A464	5.50
3/8″	0.44″	0.63″	0.02″-0.04″	100	95606A450	8.19
3/8″	0.39″	0.75″	0.05″-0.07″	100	90295A470	6.94
3/8″	0.4″	1″	0.05″-0.07″	50	90295A473	8.40
Nylon 6/6 (Cont.)						
7/16″	0.5″	0.69″	0.02″-0.04″	100	95606A470	$7.48
7/16″	0.44″	0.75″	0.05″-0.07″	100	90295A485	6.57
7/16″	0.46″	1.13″	0.05″-0.07″	50	90295A490	7.88
1/2″	0.5″	0.75″	0.05″-0.07″	100	90295A492	5.80
1/2″	0.56″	0.75″	0.02″-0.04″	100	95606A480	9.82
1/2″	0.53″	1.25″	0.09″-0.11″	5	90295A494	2.26
9/16″	0.63″	0.82″	0.02″-0.04″	100	95606A510	11.27
9/16″	0.63″	0.82″	0.05″-0.07″	100	95606A520	13.01
9/16″	0.59″	1.47″	0.09″-0.11″	5	90295A496	6.15
5/8″	0.66″	0.85″	0.05″-0.07″	50	95606A540	12.50
5/8″	0.69″	0.88″	0.02″-0.04″	100	95606A550	14.95
5/8″	0.75″	1″	0.05″-0.07″	50	95606A560	9.18
5/8″	0.65″	1.75″	0.09″-0.11″	5	90295A498	6.08
3/4″	0.81″	1.06″	0.11″-0.14″	100	90295A500	12.76
3/4″	0.88″	1.13″	0.05″-0.07″	50	95606A570	9.29
3/4″	0.81″	2″	0.09″-0.11″	5	90295A503	9.42
7/8″	1″	1.25″	0.05″-0.07″	50	95606A580	9.64
7/8″	0.93″	2.25″	0.15″-0.17″	1	90295A505	7.25
1″	1.06″	2.5″	0.15″-0.17″	1	90295A509	9.98
Glass-Filled Nylon						
No. 6	0.14″	0.31″	0.05″-0.07″	10	99872A100	8.67
No. 8	0.17″	0.38″	0.05″-0.07″	10	99872A200	8.72
No. 10	0.19″	0.38″	0.05″-0.07″	10	99872A300	8.76
1/4″	0.25″	0.5″	0.05″-0.07″	10	99872A400	8.81

1050-Piece Assortment—Nylon 6/6

This handy assortment of off-white washers comes in an 8½″ Lg. × 4½″ Wd. × 1⅜″ Dp. compartmented plastic case with lid chart.

Screw Size	ID	OD	Thick.	No. of Pcs.	Screw Size	ID	OD	Thick.	No. of Pcs.
No. 4	0.12″	0.25″	0.03″	200	No. 10	0.19″	0.44″	0.03″	100
No. 4	0.12″	0.25″	0.06″	100	No. 10	0.19″	0.44″	0.06″	50
No. 6	0.14″	0.32″	0.03″	100	1/4″	0.26″	0.5″	0.03″	75
No. 6	0.14″	0.38″	0.06″	100	1/4″	0.26″	0.5″	0.06″	50
No. 8	0.17″	0.38″	0.03″	100	5/16″	0.34″	0.69″	0.05″	50
No. 8	0.17″	0.38″	0.06″	100	3/8″	0.4″	1″	0.06″	25

98740A080 ..... Each $35.75

Low-Friction PTFE Washers

With the lowest friction of all thermoplastics and excellent dimensional stability, these washers are well suited for use between moving parts. They're reliable up to 500° F. Color is white. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 2	0.09″	0.25″	0.002″-0.004″	10	95630A410	$1.84
No. 2	0.09″	0.25″	0.008″-0.012″	10	95630A415	.83
No. 2	0.09″	0.25″	0.027″-0.035″	10	95630A232	2.56
No. 4	0.12″	0.25″	0.002″-0.004″	10	95630A420	2.69
No. 4	0.12″	0.25″	0.008″-0.012″	10	95630A425	2.30
No. 4	0.12″	0.25″	0.027″-0.035″	10	95630A234	2.56
No. 4	0.12″	0.38″	0.035″-0.045″	10	95630A418	2.93
No. 5	0.13″	0.25″	0.008″-0.012″	10	95630A235	3.16
No. 5	0.13″	0.25″	0.027″-0.035″	10	95630A435	2.67
No. 6	0.14″	0.5″	0.027″-0.035″	10	95630A236	3.57
No. 6	0.15″	0.32″	0.045″-0.055″	10	95630A237	2.94
No. 6	0.15″	0.44″	0.035″-0.045″	10	95630A438	3.93
No. 8	0.18″	0.5″	0.035″-0.045″	10	95630A238	3.69
No. 8	0.19″	0.28″	0.013″-0.017″	10	95630A239	2.11
No. 8	0.19″	0.28″	0.045″-0.055″	10	95630A240	2.93
No. 8	0.19″	0.75″	0.027″-0.035″	10	95630A445	4.79
No. 10	0.2″	0.31″	0.022″-0.028″	10	95630A241	2.58
No. 10	0.2″	0.57″	0.035″-0.045″	10	95630A455	3.68
No. 10	0.21″	0.88″	0.017″-0.023″	10	95630A460	4.34
No. 12	0.25″	0.5″	0.057″-0.067″	10	95630A242	3.99
No. 12	0.25″	0.67″	0.193″-0.203″	5	95630A212	1.61
No. 12	0.25″	0.82″	0.203″-0.213″	1	95630A214	1.55
1/4″	0.25″	0.82″	0.235″-0.245″	1	95630A216	1.48
1/4″	0.26″	0.34″	0.022″-0.028″	10	95630A217	2.31
1/4″	0.28″	0.5″	0.027″-0.035″	10	95630A470	3.15
1/4″	0.28″	0.74″	0.057″-0.067″	10	95630A475	4.59
5/16″	0.32″	0.75″	0.017″-0.023″	10	95630A219	3.61
5/16″	0.34″	0.88″	0.074″-0.086″	5	95630A480	4.90
5/16″	0.37″	0.76″	0.185″-0.195″	1	95630A244	1.66
5/16″	0.37″	1.09″	0.226″-0.236″	1	95630A218	2.72
3/8″	0.37″	1.25″	0.057″-0.067″	1	95630A486	.39
3/8″	0.37″	1.5″	0.057″-0.067″	1	95630A487	1.25
3/8″	0.38″	0.82″	0.027″-0.035″	10	95630A245	3.65
3/8″	0.39″	0.88″	0.057″-0.067″	10	95630A256	5.53
3/8″	0.4″	1″	0.057″-0.067″	10	95630A485	6.98
1/2″	0.5″	0.69″	0.027″-0.035″	10	95630A246	3.17
1/2″	0.5″	1.01″	0.057″-0.067″	10	95630A248	7.14
1/2″	0.53″	1.25″	0.093″-0.107″	1	95630A500	1.55
1/2″	0.53″	1.5″	0.017″-0.023″	10	95630A505	6.17
5/8″	0.65″	1.75″	0.093″-0.107″	1	95630A510	1.63
5/8″	0.75″	1″	0.057″-0.067″	10	95630A251	7.30
5/8″	0.75″	1.25″	0.057″-0.067″	5	95630A253	4.87
5/8″	0.75″	1.5″	0.057″-0.067″	5	95630A254	6.71
3/4″	0.78″	1.63″	0.298″-0.308″	1	95630A223	5.25
3/4″	0.78″	1.64″	0.33″-0.35″	1	95630A225	4.15
3/4″	0.81″	2″	0.093″-0.107″	1	95630A520	3.95
7/8″	0.87″	1.5″	0.057″-0.067″	1	95630A530	2.60
7/8″	0.87″	2″	0.087″-0.099″	1	95630A531	3.23
1″	1″	2.5″	0.087″-0.099″	1	95630A228	4.32
1″	1.06″	1.99″	0.298″-0.308″	1	95630A227	6.61

Low-Friction and Wear-Resistant UHMW Polyethylene Washers

Ultra-high molecular weight washers are more wear resistant than PTFE washers, but have similar low-friction and chemical-resistance properties. They're reliable up to 180° F. Color is off-white. Not rated for hardness.

Also Available: Chemical resistant polypropylene washers in sizes marked with a ★. Reliable up to 212° F. Please ask for 98594A990 and specify screw size.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 2	0.09″	0.19″	0.02″-0.04″	50	95649A018	$14.85
No. 4	0.12″	0.25″	0.02″-0.04″	50	95649A019	14.85
No. 6	0.15″	0.38″	0.02″-0.04″	50	95649A221★	14.06
No. 8	0.17″	0.38″	0.02″-0.04″	50	95649A225★	14.06
No. 10	0.2″	0.44″	0.02″-0.04″	50	95649A229★	14.90
1/4″	0.26″	0.5″	0.02″-0.04″	50	95649A232★	14.90
5/16″	0.32″	0.57″	0.02″-0.04″	25	95649A236	7.81
3/8″	0.39″	0.63″	0.02″-0.04″	25	95649A241	7.81
1/2″	0.51″	0.89″	0.05″-0.07″	10	95649A244	6.25
5/8″	0.64″	1.07″	0.05″-0.07″	10	95649A247	8.12
3/4″	0.76″	1.32″	0.05″-0.07″	10	95649A256	9.38
1″	1.02″	1.75″	0.05″-0.07″	10	95649A263	14.95

Low-Friction High-Strength PEEK Washers

Washers made from this slick material are stronger than those made from PTFE. They're nonconductive, extremely stable in hostile environments, and withstand water and steam without loss of physical properties. All are reliable up to 500° F. Color is tan. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 6	5/32″	3/8″	0.03″-0.07″	10	93785A300	$4.31
No. 8	3/16″	7/16″	0.03″-0.07″	10	93785A400	4.37
No. 10	7/32″	1/2″	0.03″-0.07″	10	93785A500	4.43
1/4″	9/32″	5/8″	0.05″-0.08″	10	93785A600	4.80
5/16″	11/32″	11/16″	0.05″-0.08″	10	93785A700	4.94

Wear- and Chemical-Resistant Nylatron Washers

Our long-lasting Nylatron washers are nonabrasive and impregnated with lubricant for low friction. Chemical resistance makes them good alternatives to corrosion-susceptible metal washers. All are reliable up to 220° F. Color is dark gray. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 4	0.12″	0.22″	0.02″-0.04″	5	91545A210	$1.88
No. 6	0.14″	0.32″	0.02″-0.04″	5	91545A220	1.91
No. 8	0.17″	0.38″	0.02″-0.04″	5	91545A230	1.58
No. 10	0.2″	0.46″	0.02″-0.04″	5	91545A240	1.60
1/4″	0.26″	0.5″	0.02″-0.04″	5	91545A250	1.70
5/16″	0.32″	0.57″	0.02″-0.04″	5	91545A260	2.02
3/8″	0.38″	0.51″	0.02″-0.04″	5	91545A270	2.05
1/2″	0.53″	0.88″	0.02″-0.04″	5	91545A280	1.83

Wear-Resistant Delrin® Acetal Resin Washers

Wear-resistant Delrin® acetal resin washers are an economical alternative to Nylatron washers. They're reliable up to 210° F. Color is white. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 2	0.09″	0.19″	0.02″-0.04″	50	95647A111	$13.33
No. 4	0.12″	0.25″	0.02″-0.04″	50	95647A112	13.33
No. 6	0.15″	0.38″	0.02″-0.04″	50	95647A113	12.50
No. 8	0.17″	0.38″	0.02″-0.04″	50	95647A117	12.50
No. 10	0.2″	0.44″	0.02″-0.04″	50	95647A121	12.50
1/4″	0.26″	0.5″	0.02″-0.04″	50	95647A125	12.50
5/16″	0.32″	0.57″	0.02″-0.04″	50	95647A129	14.06
3/8″	0.39″	0.63″	0.02″-0.04″	50	95647A133	14.06
1/2″	0.51″	0.89″	0.05″-0.07″	25	95647A137	14.06
5/8″	0.64″	1.07″	0.05″-0.07″	25	95647A141	14.84
3/4″	0.76″	1.32″	0.05″-0.07″	10	95647A145	6.88
1″	1.02″	1.75″	0.05″-0.07″	10	95647A149	12.50

Chemical-Resistant PVC Washers

Offering high resistance to acids, alkalies, and alcohols, these washers also work well as electrical insulators. They're reliable up to 160° F. Color is gray. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
1/4″	5/16″	3/4″	0.05″-0.07″	100	95611A029	$12.92
5/16″	3/8″	7/8″	0.05″-0.07″	50	95611A030	9.35
3/8″	7/16″	1″	0.05″-0.07″	50	95611A031	9.76
1/2″	9/16″	1 1/4″	0.05″-0.07″	50	95611A033	10.50
5/8″	11/16″	1 1/2″	0.11″-0.14″	25	95611A037	8.61
3/4″	13/16″	1 1/2″	0.08″-0.11″	25	95611A038	9.03

Durable Polycarbonate Washers

More durable than nylon washers, these clear thermoplastic washers resist moisture, offer good mechanical properties, and are nonconductive. They're reliable up to 212° F. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 2	0.09″	0.25″	0.02″-0.04″	100	90940A003	$8.00
No. 4	0.11″	0.25″	0.02″-0.04″	100	90940A005	8.00
No. 6	0.14″	0.32″	0.02″-0.04″	100	90940A007	9.13
No. 8	0.17″	0.38″	0.02″-0.04″	25	90940A009	10.36
No. 10	0.19″	0.38″	0.02″-0.04″	25	90940A011	10.36
1/4″	0.25″	0.5″	0.05″-0.07″	25	90940A013	11.50
5/16″	0.31″	0.5″	0.05″-0.07″	25	90940A015	11.50
3/8″	0.38″	0.63″	0.05″-0.07″	25	90940A017	11.50
1/2″	0.5″	0.75″	0.05″-0.07″	25	90940A019	13.72

Insulating Hard Fiber Washers

Made of plant-based fiber, these washers protect surfaces from scratches and withstand compression better than washers made from soft fibers such as felt. Use them as insulating washers, light duty sealing washers, and dielectric barriers. All are reliable at temperatures up to 230° F. Not rated for hardness.

Note: Fiber absorbs moisture, which can affect dimensions and other properties.

Gray or Red—Thickness tolerance is ±0.005″.

Screw Size	ID	OD	Pkg. Qty.	GRAY 1/64″ Thick Per Pkg.	RED 1/32″ Thick Per Pkg.
No. 2	3/32″	1/4″	100	90089A290 $5.29	95601A290 $3.48
No. 4	1/8″	1/4″	100	90089A295 2.12	95601A295 2.12
No. 6	5/32″	5/16″	100	90089A300 2.12	95601A300 2.12
No. 8	3/16″	3/8″	100	90089A305 2.12	95601A305 2.73
1/4″	1/4″	3/8″	100	90089A310 2.12	95601A310 2.73
1/4″	1/4″	1/2″	100	90089A315 2.12	95601A315 2.73
5/16″	5/16″	7/16″	100	90089A320 2.12	95601A320 3.02
5/16″	5/16″	9/16″	100	90089A325 5.29	95601A325 3.02
3/8″	3/8″	1/2″	100	90089A330 3.94	95601A330 3.02
3/8″	3/8″	5/8″	100	90089A335 2.42	95601A335 3.02
7/16″	7/16″	5/8″	50	90089A340 1.21	95601A340▲ 3.02
1/2″	1/2″	5/8″	100	— —	95601A345 2.75
1/2″	1/2″	11/16″	100	90089A350 2.42	95601A350 3.63
1/2″	1/2″	3/4″	100	90089A355 2.42	95601A355 3.63
9/16″	9/16″	13/16″	100	90089A360 9.98	95601A360 3.63
5/8″	5/8″	3/4″	100	— —	95601A365 3.63
5/8″	5/8″	7/8″	50	90089A375 2.42	95601A375▲ 4.84
5/8″	11/16″	15/16″	100	— —	95601A390 6.05
3/4″	3/4″	1″	100	90089A395 4.84	95601A395 6.05
3/4″	3/4″	1 1/16″	100	— —	95601A400 6.05
3/4″	13/16″	1 1/8″	100	90089A405 14.90	95601A405● 3.02
7/8″	7/8″	13/16″	100	90089A410 4.84	95601A410 10.89
7/8″	15/16″	1 1/4″	50	— —	95601A415 5.45
1″	1″	1 1/4″	100	90089A420 4.84	95601A420 10.89
1″	1 1/32″	1 5/16″	50	90089A425 8.47	95601A425 5.45
1 1/8″	1 3/16″	1 9/16″	100	— —	95601A430 10.43
1 1/4″	1 1/4″	1 5/8″	50	— —	95601A435 8.46

▲ Package quantity is 100. ● Package quantity is 50.

Black

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.	Per Pkg.
No. 2	3/32″	1/4″	0.01″-0.02″	100	96100A110 $11.90
No. 4	1/8″	5/16″	0.01″-0.02″	100	96100A115 11.91
No. 6	9/64″	3/8″	0.02″-0.04″	100	96100A120 11.90
No. 8	11/64″	3/8″	0.02″-0.04″	100	96100A125 10.95
No. 10	13/64″	3/8″	0.04″-0.06″	100	96100A137 10.95
No. 10	13/64″	7/16″	0.04″-0.06″	100	96100A130 10.95
No. 12	15/64″	1/2″	0.04″-0.06″	100	96100A135 14.90
1/4″	9/32″	5/8″	0.05″-0.07″	25	96100A140 10.71
5/16″	21/64″	11/16″	0.05″-0.07″	100	96100A142 10.95
3/8″	13/32″	7/8″	0.08″-0.11″	25	96100A145 10.71
1/2″	17/32″	1″	0.08″-0.11″	25	96100A150 10.71
5/8″	41/64″	1 11/16″	0.08″-0.11″	25	96100A152 11.90
3/4″	13/16″	1 1/8″	0.11″-0.14″	25	96100A155 14.98
7/8″	15/16″	1 1/4″	0.11″-0.14″	10	96100A157 11.90
1″	1 1/8″	2″	0.11″-0.14″	10	96100A160 8.21
1 1/4″	1 5/16″	2 1/8″	0.11″-0.14″	5	96100A170 8.83

Large OD Gray

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.	Per Pkg.
3/8″	3/8″	2 1/4″	0.11″-0.14″	10	90132A552 $8.57
1/2″	1/2″	2 1/4″	0.11″-0.14″	10	90132A553 8.45
5/8″	5/8″	2 1/4″	0.11″-0.14″	10	90132A554 8.54
3/4″	3/4″	2 1/4″	0.11″-0.14″	10	90132A555 8.54
7/8″	7/8″	2 1/4″	0.11″-0.14″	10	90132A556 8.54
1″	1″	2 1/4″	0.11″-0.14″	10	90132A557 8.54

Insulating Fiberglass Washers

Fiberglass provides good electrical and thermal insulation and gives these washers a high strength-to-weight ratio. They're resistant to chemicals and reliable up to 212° F. Color varies from light tan to light green. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.	Per Pkg.
No. 2	0.09″	0.25″	0.01″-0.02″	10	93493A228 $3.09
No. 4	0.12″	0.22″	0.01″-0.02″	10	93493A229 2.15
No. 4	0.12″	0.31″	0.02″-0.04″	10	93493A105 4.10
No. 4	0.12″	0.32″	0.05″-0.07″	10	93493A106 2.55
No. 6	0.14″	0.5″	0.05″-0.07″	10	93493A231 2.50
No. 8	0.17″	0.38″	0.02″-0.04″	10	93493A107 2.93
No. 8	0.17″	0.57″	0.05″-0.07″	10	93493A232 2.68
No. 10	0.2″	0.45″	0.05″-0.07″	10	93493A233 2.58
1/4″	0.25″	0.5″	0.02″-0.04″	10	93493A234 2.44
1/4″	0.25″	2″	0.11″-0.14″	1	90800A350 2.74
5/16″	0.31″	0.57″	0.05″-0.07″	10	93493A235 3.36
3/8″	0.37″	2″	0.11″-0.14″	1	90800A360 2.74
3/8″	0.38″	0.75″	0.05″-0.07″	10	93493A108 3.28
1/2″	0.5″	2″	0.11″-0.14″	1	90800A370 2.74
1/2″	0.51″	0.88″	0.05″-0.07″	10	93493A236 3.47
5/8″	0.62″	2″	0.11″-0.14″	1	90800A380 2.74
5/8″	0.64″	1.2″	0.08″-0.11″	5	93493A109 5.19
3/4″	0.76″	1.32″	0.08″-0.11″	5	93493A237 6.37
1″	1.01″	1.76″	0.08″-0.11″	5	93493A110 6.05

High-Temperature Polyimide Washers

Reliable up to 464° F and nonconductive—these washers are excellent electrical insulators. They won't chip or flake under loads. Color varies from red-brown to yellow-orange. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.	Per Pkg.
No. 0	0.06″	0.22″	0.004″-0.006″	10	91435A120 $6.66
No. 2	0.09″	0.25″	0.004″-0.006″	10	91435A140 6.76
No. 3	0.1″	0.25″	0.004″-0.006″	10	91435A150 6.85
No. 4	0.12″	0.32″	0.004″-0.006″	10	91435A160 6.90
No. 6	0.15″	0.38″	0.004″-0.006″	10	91435A170 6.95
No. 8	0.19″	0.5″	0.004″-0.006″	10	91435A180 6.99
No. 10	0.2″	0.63″	0.004″-0.006″	10	91435A190 7.28

Very-High-Temperature Mica Washers

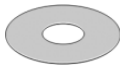

Reliable up to 752° F, mica washers are excellent electrical insulators. Material meets ASTM D1430. Color is gray. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.	Per Pkg.
No. 0	0.06″	0.23″	0.004″-0.006″	5	91619A200 $7.37
No. 2	0.09″	0.28″	0.001″-0.003″	10	91619A300 8.73
No. 3	0.1″	0.33″	0.004″-0.006″	5	91619A400 4.29
No. 4	0.11″	0.39″	0.001″-0.003″	10	91619A500 9.25
No. 6	0.15″	0.31″	0.001″-0.003″	10	91619A600 9.20
No. 8	0.17″	0.39″	0.004″-0.006″	10	91619A700 9.48
No. 10	0.19″	0.76″	0.004″-0.006″	10	91619A800 9.13

Durable Phenolic Plastic Washers

Rigid and tough, these washers are resistant to moisture, chemicals, and temperatures up to 250° F. Electrically nonconductive. Color varies from red-brown to yellow-brown. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.	Per Pkg.
No. 4	0.12″	0.32″	0.05″-0.07″	5	91225A020 $4.46
No. 6	0.15″	0.5″	0.05″-0.07″	5	91225A040 4.00
No. 8	0.17″	0.5″	0.03″-0.06″	5	91225A050 4.03
No. 10	0.2″	0.64″	0.05″-0.07″	5	91225A060 4.05
1/4″	0.28″	0.63″	0.05″-0.07″	5	91225A070 4.11
5/16″	0.32″	0.57″	0.05″-0.07″	5	91225A080 4.15
3/8″	0.38″	0.63″	0.05″-0.07″	5	91225A090 2.82

Ultra-High-Temperature Ceramic Washers

Our ceramic washers won't melt—even at temperatures up to 3000° F. Made from 99.8% aluminum oxide, they're also nonconductive and resistant to hydrochloric and nitric acid gases. Color is off-white. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.	Per Pkg.
No. 0	0.06″	0.19″	0.02″-0.03″	5	94610A205 $14.90
No. 2	0.08″	0.25″	0.02″-0.04″	1	94610A210 3.12
No. 4	0.12″	0.39″	0.03″-0.05″	1	94610A215 3.14
No. 6	0.15″	0.45″	0.03″-0.05″	1	94610A220 3.33
No. 8	0.18″	0.51″	0.03″-0.05″	1	94610A225 3.56
No. 10	0.19″	0.57″	0.03″-0.05″	1	94610A230 3.89
1/4″	0.27″	0.75″	0.05″-0.08″	1	94610A236 4.63

General Purpose Metric Washers—DIN 125

Offered in standard metric sizes, these washers have dimensions that meet DIN 125 (unless noted).

Type 316 stainless steel washers are more corrosion resistant than 18-8 stainless steel washers and may be mildly magnetic. Not rated for hardness.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. Not rated for hardness.

Brass washers are corrosion resistant, nonmagnetic, electrically conductive, and softer than washers made from stainless steel and Class 4 steel. Not rated for hardness.

Zinc-plated Class 4 steel washers offer good rust resistance and have a minimum Rockwell hardness of B74.

Also Available: Black-oxide 18-8 stainless steel washers in sizes marked with a ♥. Please ask for 98269A410 and specify screw size.

				Type 316 Stainless Steel			18-8 Stainless Steel			Brass			Zinc-Plated Class 4 Steel		
Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
M1	1.1	3.2	0.25-0.35	—	—	—	100	93475A154♣	$3.30	—	—	—	—	—	—
M1.2	1.3	3.8	0.25-0.35	—	—	—	100	93475A165♣	2.63	—	—	—	—	—	—
M1.4	1.5	3.8	0.25-0.35	—	—	—	100	93475A179♣	3.36	—	—	—	—	—	—
M1.6	1.7	4	0.25-0.35	—	—	—	100	93475A190	2.20	—	—	—	100	91166A170	$1.32
M2	2.2	5	0.25-0.35	100	90965A110	$1.48	100	93475A195	1.06	100	91635A170	$1.91	100	91166A180	1.37
M2.5	2.7	6	0.45-0.55	100	90965A115	1.66	100	93475A196	1.58	100	91635A180	1.89	100	91166A190	1.46
M3	3.2	7	0.45-0.55	100	90965A130	1.76	100	93475A210♥	1.56	100	91635A190	3.09	100	91166A210	1.55
M3.5	3.7	8	0.45-0.55	100	90965A140	2.72	100	93475A220	1.66	—	—	—	100	91166A220	1.65
M4	4.3	9	0.7-0.9	100	90965A150	2.43	100	93475A230♥	1.86	100	91635A210	4.93	100	91166A230	1.89
M5	5.3	10	0.9-1.1	100	90965A160	4.62	100	93475A240♥	2.57	100	91635A230	5.57	100	91166A240	2.00
M6	6.4	12	1.4-1.8	100	90965A170	6.86	100	93475A250♥	4.86	100	91635A240	7.92	100	91166A250	2.12
M7	7.4	14	1.4-1.8	100	90965A180	9.85	100	93475A260	5.34	—	—	—	100	91166A260	3.17
M8	8.4	16	1.4-1.8	100	90965A190	10.80	100	93475A270	7.90	50	91635A260	9.89	100	91166A270	3.15
M10	10.5	20	1.8-2.2	100	90965A200	12.91	50	93475A280	4.68	25	91635A270	9.22	100	91166A280	4.36
M12	13	24	2.3-2.7	25	90965A210	7.17	25	93475A290	6.49	25	91635A280	9.90	100	91166A290	6.55
M14	15	28	2.3-2.7	25	90965A220	10.34	25	93475A300	7.13	10	91635A300	9.03	100	91166A300	9.41
M16	17	30	2.7-3.3	25	90965A230	13.01	25	93475A310	9.97	10	91635A310	9.95	100	91166A310	9.75
M18	19	34	2.7-3.3	10	90965A240	7.07	10	93475A315	5.64	—	—	—	50	91166A315	8.56
M20	21	37	2.7-3.3	10	90965A250	7.98	10	93475A320	6.43	5	91635A320	7.83	50	91166A320	9.95
M24	25	44	3.7-4.3	5	90965A260	7.79	10	93475A330	9.62	—	—	—	25	91166A330	7.96
M30	31	56	3.7-4.3	5	90965A270	12.10	1	93475A350	1.71	—	—	—	10	91166A340	5.62
M36	37	66	4.4-5.6	1	90965A280	5.98	1	93475A360	3.15	—	—	—	10	91166A360	8.80
M39	40	72	5.4-6.6	1	90965A290	9.98	1	93475A370	5.55	—	—	—	1	91166A380	2.70
M42	43	78	6-8	1	90965A300	12.50	1	93475A380	7.46	—	—	—	1	91166A400	4.25

♣ Does not meet DIN 125.

825-Pc. Assortment—Zinc-Plated Class 4 Steel

Washer dimensions meet DIN 125. Furnished in an 8″ Lg.× 4½″ Wd.×1½″ Dp. compartmented plastic case with lid chart.

98018A424 ..... **Each** $59.43

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
M3	225	M6	120	M12	20
M4	200	M8	50	M14	15
M5	150	M10	30	M16	15

Metric High-Visibility Blue Washers

A quick glance is all it takes to distinguish these blue-coated metric washers from inch sizes. They're made from Class 10 steel and have a minimum Rockwell hardness of C38.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Pkg. Qty.		Per Pkg.
M6	7	13.6	2.7-4	25	93162A310	$10.50
M8	9	17	2.5-3.5	50	93162A320	4.71
M10	11	21.5	3-4.5	25	93162A330	10.15
M12	14	27	3.1-4.8	10	93162A340	5.48
M16	18	34	3.1-4.6	5	93162A350	6.36
M20	22	42	3.1-4.6	5	93162A360	5.83
M24	26	50	3.4-4.6	5	93162A370	9.66
M30	33	60	3.4-4.6	1	93162A380	3.15
M36	39	72	3.4-4.6	1	93162A390	4.34

Metric High-Strength Steel Washers—DIN 125A

You can use these washers with metric Class 8.8 (medium strength) and Class 10.9 (high strength) screws and studs. They're made from rust-resistant zinc-plated steel and have a minimum Rockwell hardness of B90.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Pkg. Qty.		Per Pkg.
M5	5.3	10	0.9-1.1	100	91455A110	$3.70
M6	6.4	12	1.4-1.8	100	91455A120	3.70
M8	8.4	16	1.4-1.8	100	91455A130	6.09
M10	10.5	20	1.8-2.2	100	91455A140	8.97
M12	13	24	2.3-2.7	50	91455A150	7.41
M14	15	28	2.3-2.7	50	91455A160	12.93
M16	17	30	2.7-3.3	50	91455A170	12.59
M18	19	34	2.7-3.3	25	91455A175	9.48
M20	21	37	2.7-3.3	25	91455A180	12.07
M24	25	44	3.7-4.3	5	91455A190	5.52
M30	31	56	3.7-4.3	5	91455A220	6.90

Metric Electrically Conductive Copper Washers—DIN 125A

When you need exceptional electrical conductivity, choose these Alloy 110-120 washers. They're nonmagnetic and not rated for hardness.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Pkg. Qty.		Per Pkg.
M3	3.2	7	0.45-0.55	25	98044A212	$7.81
M4	4.3	9	0.7-0.9	25	98044A216	6.43
M5	5.3	10	0.9-1.1	25	98044A220	6.19
M6	6.4	12	1.4-1.8	25	98044A224	10.01
M8	8.4	16	1.4-1.8	10	98044A228	7.86
M10	10.5	20	1.8-2.2	5	98044A232	7.62
M12	13	24	2.3-2.7	5	98044A235	10.61
M14	15	28	2.3-2.7	1	98044A238	3.18
M16	17	30	2.7-3.3	1	98044A241	2.34

Metric Acid-Resistant Bumax 88 Stainless Steel Washers

Made from a special stainless steel that's equal in strength to Class 8 steel and highly resistant to acids. Washers meet DIN 9021/ISO 7093, unless noted. They may be mildly magnetic and have a minimum Rockwell hardness of B90.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Pkg. Qty.		Per Pkg.
M6	6.4	12	1.4-1.8	10	94316A410▲	$5.98
M6	6.4	18	1.4-1.8	5	94316A510	6.18
M8	8.4	16	1.4-1.8	10	94316A420▲	7.35
M8	8.4	24	1.8-2.2	5	94316A520	8.80
M10	10.5	20	1.8-2	5	94316A430▲	7.28
M10	10.5	30	2.3-2.7	1	94316A530	2.95
M12	13	24	2.3-2.7	5	94316A440▲	10.98
M12	13	37	2.7-3.3	1	94316A540	5.87

▲ Meets ISO 7089.

Metric Large-Diameter Washers—DIN 9021

Cover oversized holes with these extra-wide washers.

Type 316 stainless steel washers are more corrosion resistant than 18-8 stainless steel washers and may be mildly magnetic. Not rated for hardness.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. They have a minimum Rockwell hardness of B52.

Zinc-plated steel washers offer good rust resistance and have a minimum Rockwell hardness of B56.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Type 316 Stainless Steel Pkg. Qty.		Per Pkg.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Zinc-Plated Steel Pkg. Qty.		Per Pkg.
M2.5	2.7	8	0.7-0.9	100	95211A110	$9.52	100	91116A110	$1.90	100	91100A110	$1.71
M3	3.2	9	0.7-0.9	50	95211A120	4.76	100	91116A120	2.00	100	91100A120	1.10
M4	4.3	12	0.9-1.1	50	95211A140	5.71	100	91116A130	2.67	100	91100A130	2.01
M5	5.3	15	1-1.4	50	95211A150	10.00	100	91116A140	6.05	100	91100A140	3.45
M6	6.4	18	1.4-1.8	25	95211A160	7.74	50	91116A150	5.98	100	91100A150	5.66
M8	8.4	24	1.8-2.2	10	95211A180	7.63	25	91116A160	4.29	100	91100A160	10.02
M10	10.5	30	2.3-2.7	5	95211A190	7.25	10	91116A170	4.89	50	91100A170	7.97
M12	13	37	2.7-3.3	5	95211A200	14.29	10	91116A180	5.89	25	91100A180	7.63
M14	15	44	2.7-3.3	1	95211A210	4.29	1	91116A019	2.86	25	91100A240■	6.90
M16	17	50	2.7-3.3	1	95211A220	5.24	5	91116A200	8.98	25	91100A200	11.65
M18	20	56	3.4-4.6	1	95211A230	7.38	1	91116A210	5.71	10	91100A210	11.30
M20	22	60	3.4-4.6	1	95211A240	8.57	1	91116A220	3.00	10	91100A220	13.18

■ Plain steel.

Metric Extra-Thick Washers

Also known as finish, setup, and fixture washers, these hefty washers are frequently used in die-and-jig setups.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. They have a minimum Rockwell hardness of B70.

Black-oxide case-hardened steel washers are mildly rust resistant. They are not rated for hardness.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	18-8 Stainless Steel	Each	Black-Oxide Case-Hardened Steel Pkg. Qty.		Per Pkg.
M3	3.2	8	1.4-2.4	93849A101	$0.83	25	98035A101	$10.00
M3	3.2	12	2.5-3.4	94768A101	2.80	5	98040A101	5.30
M4	4.3	10	1.4-2.4	93849A102	.83	25	98035A102	10.00
M4	4.3	14	2.5-3.4	94768A102	2.82	5	98040A102	5.43
M5	5.3	11	1.4-2.4	93849A103	.92	10	98035A103	4.86
M5	5.3	15	3-3.9	94768A103	4.00	5	98040A103	6.43
M6	6.4	13	2-2.9	93849A104	1.03	10	98035A104	4.86
M6	6.4	18	4-4.9	94768A104	4.52	5	98040A104	7.14
M8	8.4	16	2.5-3.4	93849A105	1.03	10	98035A105	4.86
M8	8.4	22	4.5-5.4	94768A105	4.86	5	98040A105	5.71
M10	10.5	19	2.5-3.4	93849A106	1.09	10	98035A106	4.90
M10	10.5	23	4.5-5.4	94768A106	5.15	5	98040A106	6.15
M12	13	22	2.5-3.4	93849A107	1.12	10	98035A107	5.10
M12	13	26	4.5-5.4	94768A107	5.88	5	98040A107	6.45
M14	15	25	2.5-3.4	93849A108	1.49	10	98035A108	6.30
M14	15	27	4.5-5.4	94768A108	7.85	5	98040A108	6.70
M16	17	28	3-3.9	93849A109	1.83	10	98035A109	6.30
M16	17	32	4.5-5.4	94768A109	9.00	5	98040A109	7.15
M20	21	35	3-3.9	93849A110	1.95	10	98035A110	8.00
M20	21	35	4.5-5.4	94768A110	11.49	5	98040A110	8.00
M24	25	40	3.5-4.4	93849A111	3.46	5	98035A111	5.45
M24	25	43	6-6.9	94768A111	13.86	5	98040A111	9.70
M30	31	44	3.5-4.4	93849A112	4.58	5	98035A112	7.70
M30	31	48	6-6.9	94768A112	17.57	1	98040A112	2.69
M36	37	50	4.5-5.4	93849A113	13.00	5	98035A113	10.45
M36	37	50	7-7.9	94768A113	27.00	1	98040A113	3.54

Metric Nylon Washers

Great for insulating, reducing friction, and minimizing wear between parts. Made from nylon 6/6, they're reliable up to 185° F. Not rated for hardness. *Note:* Nylon absorbs moisture which can affect dimensions and other properties.

To Order: Please specify color: black or off-white.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Pkg. Qty.		Per Pkg.
M2	2.1	5	0.67-0.93	100	95610A510	$2.48
M3	3.2	8	0.67-0.93	100	95610A530	2.76
M4	4.3	9	0.67-0.93	100	95610A550	3.37
M5	5.3	11	0.87-1.13	100	95610A560	4.06
M6	6.4	12	1.37-1.63	100	95610A570	4.68
M8	8.4	18	1.87-2.13	100	95610A580	6.48
M10	10.5	22	2.37-2.63	100	95610A600	8.04
M12	13.4	26	2.4-2.66	50	95610A620	8.08
M16	17	30	2.7-3.3	25	95610A640	6.75
M20	21	37	2.7-3.3	10	95610A660	4.68

Metric Insulating Hard-Fiber Washers

Made from plant-based fiber, these washers withstand compression better than washers made from leather and soft fibers such as felt, yet they won't mar surfaces. Useful as insulating washers and light duty sealing washers, they're reliable up to 230° F. Color is black. *Note:* Washers absorb moisture which can affect dimensions and other properties.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Pkg. Qty.		Per Pkg.
M2.5	2.7	6.5	0.44-0.56	100	95225A310	$11.42
M3	3.2	7	0.44-0.56	100	95225A315	10.91
M4	4.3	9	0.7-0.9	100	95225A320	11.73
M6	6.4	12.5	1.47-1.73	100	95225A325	13.98
M8	8.4	17	1.47-1.73	100	95225A330	14.81
M10	10.5	21	1.8-2.2	50	95225A335	9.71
M12	13	24	2.01-2.79	50	95225A340	10.52
M16	17	30	2.01-2.79	50	95225A345	13.61
M20	21	37	2.01-2.79	25	95225A350	10.35
M24	25	44	2.91-3.69	10	95225A355	7.97
M30	31	56	2.91-3.69	10	95225A360	9.43

Blind Rivet Washers

Use with rivets for extra support when fastening soft materials. Also known as backup plates, washers are 0.05″-0.07″ thick. Not rated for hardness.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic.

Aluminum washers are corrosion resistant and nonmagnetic.

Zinc-plated steel washers are made from C1006-C1015 steel. They offer good rust resistance.

For Rivet Body Dia.	ID	OD	ROUND 18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Aluminum Pkg. Qty.		Per Pkg.	Zinc-Plated Steel Pkg. Qty.		Per Pkg.	SQUARE Zinc-Plated Steel ID	Square Size	Pkg. Qty.		Per Pkg.
3/32″	0.098″	5/16″	50	90183A308	$5.10	100	90183A205	$7.70	100	90183A210■	$7.70	0.098″	1/2″	500	90183A452	$11.98
1/8″	0.134″	3/8″	100	90183A311	6.43	500	90183A213	9.52	500	90183A212	9.45	0.129″	1/2″	500	90183A455	11.41
5/32″	0.163″	7/16″	50	90183A314	6.14	250	90183A222	7.89	250	90183A218	9.43	—	—	—	—	—
3/16″	0.192″	3/8″	50	90183A315	4.88	250	90183A214	9.86	250	90183A215	8.50	0.192″	1/2″	500	90183A458	14.16
3/16″	0.197″	1/2″	100	90183A316	6.66	500	90183A217	14.24	500	90183A216	14.95	—	—	—	—	—
1/4″	0.256″	1/2″	50	90183A325	6.94	100	90183A224	7.32	250	90183A220	12.10	—	—	—	—	—

■ Plain steel.

Self-Aligning Washer Sets

Male Half

Female Half

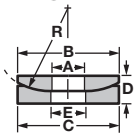

Also known as spherical washers and self-aligning setup washers, these two-piece washer sets swivel to compensate for uneven surfaces. They're frequently used in clamping and die-and-jig fixturing applications.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. Inch sizes have a minimum Rockwell hardness of B80; metric sizes are not rated for hardness.

Black-oxide and ***black case-hardened steel*** washers are mildly rust resistant. Inch sizes are made from 12L14 steel and have a minimum surface hardness of Rockwell C48. Metric sizes are not rated for hardness.

Also Available: Individual male and female halves. Please specify screw size. For 18-8 stainless steel inch sizes, please ask for 91944A555 for male halves and 91944A777 for female halves. For black-oxide steel inch sizes, please ask for 91131A555 for male halves and 91131A777 for female halves. For 18-8 stainless steel metric sizes, please ask for 94007A444 for male halves and 94007A888 for female halves. For black case-hardened steel metric sizes, please ask for 98148A555 for male halves and 98148A777 for female halves.

Inch Sizes

	Male					18-8 Stainless Steel			Black-Oxide Case-Hardened Steel		
Screw Size	ID (A)	OD (B)	Female OD (C)	Thick., Min.-Max. (D)	Radius (R)	Max. Correction	Female ID (E)	Per Set	Max. Correction	Female ID (E)	Per Set
No. 4	1/8″	9/32″	3/8″	0.18″-0.22″	3/16″	4°	5/32″	91944A024★	4°	5/32″	91131A024★ $2.63
No. 6	9/64″	9/32″	3/8″	0.18″-0.22″	3/16″	4°	11/64″	91944A025★	4°	11/64″	91131A025★ 2.74
No. 8	11/64″	5/16″	3/8″	0.18″-0.22″	7/32″	4°	3/16″	91944A026★	4°	3/16″	91131A026★ 2.74
No. 10	13/64″	3/8″	7/16″	0.21″-0.25″	1/4″	4°	7/32″	91944A027★	4°	7/32″	91131A027★ 2.80
No. 10, 1/4″	9/32″	5/8″	5/8″	0.17″-0.21″	3/4″	5°	5/16″	91944A430	5°	5/16″	91131A030 1.70
1/4″	17/64″	7/16″	1/2″	0.25″-0.29″	9/32″	4°	9/32″	91944A028★	4°	9/32″	91131A028★ 2.97
5/16″	21/64″	1/2″	9/16″	0.31″-0.35″	5/16″	4°	11/32″	91944A029★	4°	11/32″	91131A029★ 3.09
5/16″, 3/8″	13/32″	7/8″	7/8″	0.23″-0.27″	1 1/4″	3°	7/16″	91944A450	3°	7/16″	91131A050 1.91
3/8″	25/64″	5/8″	11/16″	0.4″-0.44″	3/8″	4°	13/32″	91944A030★	4°	13/32″	91131A060★ 3.71
7/16″, 1/2″	17/32″	1 1/8″	1 1/8″	0.29″-0.33″	1 1/2″	2°	9/16″	91944A470	2°	9/16″	91131A070 2.43
5/8″	21/32″	1 3/8″	1 3/8″	0.29″-0.33″	1 3/4″	2°	11/16″	91944A480	2°	11/16″	91131A080 2.94
3/4″	25/32″	1 5/8″	1 5/8″	0.35″-0.4″	2 1/4″	3°	13/16″	91944A490	3°	13/16″	91131A090 3.78
7/8″	15/16″	1 3/4″	1 3/4″	0.35″-0.4″	2 1/2″	4°	31/32″	91944A031	3°	1″	91131A100 5.26
1″	1 1/16″	2″	2″	0.48″-0.52″	2 3/4″	4°	1 3/32″	91944A032	3°	1 1/8″	91131A110 6.22
1 1/8″	1 3/16″	2 1/4″	2 1/4″	0.48″-0.52″	3″	4°	1 1/4″	91944A034	3°	1 1/4″	91131A122 11.28
1 1/4″	1 5/16″	2 1/2″	2 1/2″	0.48″-0.52″	3″	4°	1 3/8″	91944A035	3°	1 3/8″	91131A123 12.31
1 1/2″	1 9/16″	2 7/8″	2 7/8″	0.48″-0.52″	3 1/2″	4°	1 5/8″	91944A037	3°	1 5/8″	91131A124♣ 16.97
1 5/8″	1 11/16″	3 1/4″	3 1/4″	0.67″-0.71″	3 1/2″	4°	1 3/4″	91944A040	4°	1 3/4″	91131A140 22.67
1 3/4″	1 13/16″	3 1/4″	3 1/4″	0.67″-0.71″	3 1/2″	4°	1 7/8″	91944A042	4°	1 7/8″	91131A150 24.71
2″	2 1/16″	3 7/8″	3 7/8″	0.73″-0.77″	3 1/2″	4°	2 1/8″	91944A044	4°	2 1/8″	91131A160 29.61

★ Radius is for male half only. ♣ Radius is 3″.

Metric Sizes—Dimensions meet DIN 6319 (Dimensions in millimeters)

	Male		Female					18-8 Stainless Steel		Black Case-Hardened Steel	
Screw Size	ID (A)	OD (B)	ID (E)	OD (C)	Thick., Min.-Max. (D)	Radius (R)	Max. Correction		Per Set		Per Set
M6	6.4	12	7.1	12	4.1-4.3	9	3°	94007A030	$8.36	98148A150	$2.25
M8	8.4	17	9.6	17	5.4-5.8	12	3°	94007A034	12.18	98148A154	2.46
M10	10.5	21	12	21	6.3-6.7	15	3°	94007A038	16.32	98148A158	3.32
M12	13	24	14.2	24	7.8-8.2	17	3°	94007A042	18.96	98148A162	3.95
M16	17	30	19	30	9.4-9.8	22	3°	94007A049	29.69	98148A170	7.21
M20	21	36	23.2	36	11.5-11.9	27	3°	94007A053	40.55	98148A174	9.17
M24	25	44	28	44	15-15.4	32	3°	94007A057	59.89	98148A178	18.50
M30	31	56	35	56	19-19.4	41	3°	94007A061	97.44	98148A182	36.53

Square Washers

Square washers are wider and thicker than standard washers, so they distribute heavy loads more efficiently.

Small washers are made from rust-resistant zinc-plated C1008-C1020 steel.

Medium, ***large***, and ***jumbo*** washers provide wide load distribution. Each is 1/4″ (±0.03″) thick.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. They have a min. Rockwell hardness of B70.

Galvanized steel washers are weather resistant and made from C1006-C1015 steel. They have a minimum Rockwell hardness of B40.

Black-oxide case-hardened steel washers are mildly rust resistant and have a minimum surface hardness of Rockwell C40.

Medium: 2″×2″

Screw Size	ID	18-8 Stainless Steel	Each	Galvanized Steel	Each	Black-Oxide Case-Hardened Steel	Each
1/4″	5/16″	91122A110	$3.19	—	—	91128A110	$1.30
3/8″	7/16″	91122A115	3.21	91133A115	$2.23	91128A115	1.25
1/2″	9/16″	91122A120	3.49	91133A120	2.78	91128A120	1.30
5/8″	11/16″	91122A125	3.58	91133A125	2.82	91128A125	1.30
3/4″	13/16″	91122A130	3.74	91133A130	3.18	91128A130	1.30
7/8″	15/16″	91122A135	4.11	91133A135	3.66	91128A135	1.55
1″	1 1/16″	91122A140	4.30	—	—	91128A140	1.55

Small

Screw Size	ID	Sq.	Thick., Min.-Max.	Pkg. Qty.	Zinc-Plated Steel	Per Pkg.
1/4″	5/16″	3/4″	0.11″-0.13″	10	99041A103	$8.28
5/16″	3/8″	7/8″	0.12″-0.14″	10	99041A105	8.28
3/8″	7/16″	1″	0.12″-0.14″	10	99041A109	8.28
1/2″	9/16″	1 3/8″	0.17″-0.2″	10	99041A111	8.28
5/8″	11/16″	1 3/4″	0.17″-0.2″	5	99041A113	4.62

Large: 3″×3″

Screw Size	ID	Galvanized Steel	Each
1/2″	9/16″	91133A140	$2.73
5/8″	11/16″	91133A150	4.15
3/4″	13/16″	91133A160	4.15
7/8″	15/16″	91133A170	4.15
1″	1 1/16″	91133A180	4.15

Jumbo: 4″×4″

Screw Size	ID	Galvanized Steel	Each
5/8″	11/16″	91133A155	$6.25
3/4″	13/16″	91133A165	6.25
7/8″	15/16″	91133A175	7.43
1″	1 1/16″	91133A185	7.43

Anti-Rotating Clipped Washers

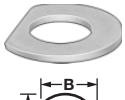

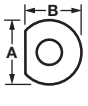

Cropped to fit where standard washers can't, these D-shaped washers won't rotate when you position the clipped edge against a flat surface. Made from C1008-C1010 steel, they offer mild rust resistance and have a minimum surface hardness of Rockwell B90.

Screw Size	ID	(A)	(B)	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 2	0.09″	0.19″	0.17″	0.02″-0.04″	10	96025A105	$6.79
No. 4	0.12″	0.32″	0.26″	0.02″-0.04″	10	96025A124	6.91
No. 6	0.15″	0.38″	0.32″	0.05″-0.07″	10	96025A135	7.11
No. 8	0.17″	0.38″	0.32″	0.02″-0.04″	10	96025A141	7.15
No. 10	0.2″	0.63″	0.5″	0.02″-0.04″	10	96025A147	7.16
1/4″	0.25″	0.75″	0.63″	0.04″-0.06″	10	96025A154	7.57
5/16″	0.34″	0.69″	0.6″	0.05″-0.07″	10	96025A167	7.59
3/8″	0.44″	0.88″	0.75″	0.05″-0.07″	10	96025A170	8.08

Notched Washers for Wood

Temporarily secure these malleable iron washers by driving nails in the notches. Also called No. 10 Western Timber, and Victor washers, they meet ASTM A47 and have a minimum Rockwell hardness of B62.

Screw Size	ID	OD	O'all Ht.	Pkg. Qty.		Per Pkg.
3/8"	15/32"	2 1/2"	1/4"	5	91153A031	$9.72
1/2"	19/32"	2 1/2"	5/16"	5	91153A033	11.43
5/8"	23/32"	2 5/8"	5/16"	5	91153A035	12.85
3/4"	27/32"	2 7/8"	7/16"	5	91153A036	14.29
1"	1 3/32"	4"	1/2"	1	91153A038	5.71

Easy-Install Slotted Washers

You can install and remove these washers without removing the nut or bolt first. Made from black-oxide case-hardened steel, they offer mild rust resistance and have a minimum surface hardness of Rockwell C40.

Screw Size	Slot Wd.	OD	Thick., Min.-Max.		Each
No. 10, 1/4"	9/32"	3/4"	0.24"-0.26"	90339A031	$3.90
No. 10, 1/4"	9/32"	1"	0.24"-0.26"	90339A032	3.99
5/16"	11/32"	1 1/4"	0.3"-0.33"	90339A033	4.83
5/16", 3/8"	13/32"	1 1/4"	0.36"-0.39"	90339A034	4.39
5/16", 3/8"	13/32"	1 1/2"	0.36"-0.39"	90339A035	5.64
7/16", 1/2"	17/32"	1 7/8"	0.36"-0.39"	90339A037	6.63
7/16", 1/2"	17/32"	2"	0.36"-0.39"	90339A140	7.88
5/8"	21/32"	2 1/8"	0.36"-0.39"	90339A039	8.17
3/4"	25/32"	2 1/2"	0.42"-0.45"	90339A040	10.64

Split Lock Washers

Compared to regular flat washers, split lock (or spring lock) washers reduce the likelihood that your fastened joint will loosen under shock or vibration. Under compression, spring tension forces the split ends to dig into mating surfaces and hold tight. Washer dimensions meet ASME B18.21.1 (unless noted).

Type 316 stainless steel provides better corrosion resistance than 18-8 stainless steel. ***18-8 stainless steel*** offers excellent corrosion resistance. Both materials may be mildly magnetic and have a minimum Rockwell hardness of C35.

Aluminum is ideal for outdoor use. It's nonmagnetic and has a minimum Rockwell hardness of B87.

Nickel-copper Alloy K500 (also known as Monel) resists heat and corrosion. It's slightly magnetic and not rated for hardness.

Silicon bronze is mildly corrosion resistant, nonmagnetic, and has a minimum Rockwell hardness of B90.

Hot-dipped galvanized steel provides excellent protection against rust, weather, and corrosion. ***Zinc-plated steel*** provides good rust resistance. ***Plain steel*** is made from high-strength steel. Each has a minimum Rockwell hardness of C38.

Screw Size	ID	OD	Min. Thick.
No. 0	0.06"	0.14"	0.01"
No. 1	0.08"	0.15"	0.01"
No. 2	0.09"	0.18"	0.02"
No. 3	0.1"	0.2"	0.02"
No. 4	0.12"	0.21"	0.02"
No. 5	0.13"	0.24"	0.03"
No. 6	0.14"	0.25"	0.03"
No. 8	0.17"	0.3"	0.04"
No. 8	0.17"	0.3"	0.04"
No. 10	0.19"	0.34"	0.04"
No. 12	0.22"	0.38"	0.05"
1/4"	0.25"	0.49"	0.06"
5/16"	0.32"	0.59"	0.07"
3/8"	0.38"	0.68"	0.09"
7/16"	0.44"	0.78"	0.1"
1/2"	0.5"	0.87"	0.12"
9/16"	0.57"	0.97"	0.14"
5/8"	0.63"	1.08"	0.15"
3/4"	0.75"	1.27"	0.18"
7/8"	0.88"	1.46"	0.21"
1"	1"	1.66"	0.25"
1 1/8"	1.13"	1.85"	0.28"
1 1/4"	1.25"	2.04"	0.31"
1 3/8"	1.38"	2.22"	0.34"
1 1/2"	1.5"	2.42"	0.37"
1 5/8"	1.63"	2.56"	0.38"
1 3/4"	1.75"	2.68"	0.38"
2"	2"	2.94"	0.42"

Screw Size	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel			
No. 2	100	92147A410	$2.27
No. 2	1000	92147A003	9.64
No. 4	100	92147A415	2.58
No. 4	1000	92147A005	15.14
No. 6	100	92147A420	2.83
No. 6	1000	92147A007	17.48
No. 8	100	92147A425	3.25
No. 8	1000	92147A009	18.72
No. 10	100	92147A430	3.45
No. 10	1000	92147A011	18.34
1/4"	100	92147A029	5.21
5/16"	100	92147A030	8.97
3/8"	50	92147A031	6.97
7/16"	25	92147A032	7.42
1/2"	25	92147A033	6.67
9/16"	25	92147A034	13.51
5/8"	10	92147A035	5.37
3/4"	10	92147A036	9.85
7/8"	5	92147A037	8.19
1"	5	92147A038	13.24
1 1/8"	1	92147A039	4.17
1 1/4"	1	92147A040	4.57
1 1/2"	1	92147A041	9.56
18-8 Stainless Steel			
No. 0	100	92146A510★	3.98
No. 0	1000	92146A001★	25.70
No. 1	100	92146A515★	3.66
No. 1	1000	92146A002★	23.62
No. 2	100	92146A520	1.57
No. 2	1000	92146A003	6.92
No. 3	100	92146A525	1.65
No. 3	1000	92146A004	8.14
No. 4	100	92146A530	1.60
No. 4	1000	92146A005	6.70
No. 5	100	92146A535	1.77
No. 5	1000	92146A006	8.49
No. 6	100	92146A540	1.69
No. 6	1000	92146A007	7.41
No. 8	100	92146A545	1.78
No. 8	1000	92146A009	9.62
No. 10	100	92146A550	2.22
No. 10	1000	92146A011	12.84
No. 12	100	92146A013	2.71

★ Does not meet ASME B18.21.1.

Screw Size	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel (Cont.)			
1/4"	100	92146A029	$4.03
5/16"	100	92146A030	6.20
3/8"	100	92146A031	8.01
7/16"	50	92146A032	7.77
1/2"	50	92146A033	9.96
9/16"	25	92146A066	8.50
5/8"	25	92146A035	10.67
3/4"	10	92146A036	6.96
7/8"	5	92146A037	6.36
1"	5	92146A038	10.53
1 1/8"	1	92146A039	3.21
1 1/4"	1	92146A040	4.38
1 3/8"	1	92146A050	5.82
1 1/2"	1	92146A041	7.28
1 3/4"	1	92146A043	13.01
2"	1	92146A049	21.99
Aluminum 7075-T6			
No. 6	100	91013A711	3.68
No. 8	100	91013A715	3.82
No. 10	100	91013A718	4.20
1/4"	100	91013A721	8.22
5/16"	100	91013A724	12.80
3/8"	50	91013A727	10.02
1/2"	25	91013A730	10.85
5/8"	10	91013A733	8.67
3/4"	10	91013A736	9.22
Nickel-Copper Alloy K500			
1/4"	10	91118A112	6.71
5/16"	5	91118A116	8.16
3/8"	5	91118A120	13.23
1/2"	1	91118A128	5.13
5/8"	1	91118A132	8.65
Silicon Bronze			
No. 2	100	93496A403	3.24
No. 3	100	93496A404	3.41
No. 4	100	93496A405	3.39
No. 6	100	93496A407	4.06
No. 8	100	93496A409	6.13
No. 10	100	93496A415	4.89
No. 12	100	93496A418	8.23
1/4"	100	93496A029	11.55
5/16"	50	93496A030	11.53
3/8"	25	93496A031	9.37

Screw Size	Pkg. Qty.		Per Pkg.
Silicon Bronze (Cont.)			
7/16"	25	93496A432	$13.83
1/2"	10	93496A433	7.23
5/8"	5	93496A435	7.54
3/4"	5	93496A436	11.06
Hot-Dipped Galvanized Steel			
1/4"	100	95160A210	4.14
5/16"	100	95160A215	9.14
3/8"	100	95160A220	9.71
7/16"	50	95160A225	10.95
1/2"	50	95160A230	10.43
5/8"	25	95160A240	8.98
3/4"	25	95160A250	12.57
7/8"	10	95160A260	8.13
1"	10	95160A270	11.59
1 1/4"	5	95160A280	9.49
Zinc-Plated Steel			
No. 2	100	91102A710	2.05
No. 2	1000	91102A003	14.44
No. 3	100	91102A715	1.38
No. 3	1000	91102A004	11.25
No. 4	100	91102A720	.64
No. 4	1000	91102A005	5.68
No. 5	100	91102A725	.72
No. 5	1000	91102A006	5.86
No. 6	100	91102A730	.76
No. 6	1000	91102A007	6.43
No. 8	100	91102A735	1.06
No. 8	1000	91102A009	8.24
No. 10	100	91102A740	1.32
No. 10	1000	91102A011	10.54
No. 12	100	91102A745	1.83
No. 12	1000	91102A013	15.00
1/4"	100	91102A750	2.11
1/4"	1000	91102A029	17.37
5/16"	100	91102A755	3.32
5/16"	1000	91102A030	27.31
3/8"	100	91102A760	5.28
3/8"	1000	91102A031	39.36
7/16"	100	91102A765	6.93
7/16"	1000	91102A032	55.33
1/2"	100	91102A770	10.15
1/2"	1000	91102A033	79.21
9/16"	100	91102A034	12.62

Screw Size	Pkg. Qty.		Per Pkg.
Zinc-Plated Steel (Cont.)			
5/8"	100	91102A035	$14.90
3/4"	50	91102A036	12.67
7/8"	25	91102A037	11.11
1"	25	91102A038	14.17
1 1/8"	10	91102A039	11.05
1 1/4"	10	91102A040	14.90
1 3/8"	5	91102A056	11.77
1 1/2"	5	91102A041	14.99
1 3/4"	1	91102A044	6.75
2"	1	91102A047	5.50
Plain Steel			
No. 2	1000	91101A003	7.44
No. 3	1000	91101A004	9.31
No. 4	1000	91101A005	4.04
No. 5	1000	91101A006	7.72
No. 6	1000	91101A007	4.78
No. 8	1000	91101A009	6.44
No. 10	1000	91101A011	9.03
No. 12	1000	91101A013	13.02
1/4"	100	91101A229	2.28
1/4"	1000	91101A029	19.27
5/16"	100	91101A230	2.58
5/16"	1000	91101A030	24.30
3/8"	100	91101A231	4.25
3/8"	1000	91101A031	35.04
7/16"	100	91101A232	6.31
7/16"	1000	91101A032	52.24
1/2"	100	91101A233	8.68
1/2"	1000	91101A033	69.13
9/16"	50	91101A234	5.59
9/16"	500	91101A034	46.05
5/8"	50	91101A235	7.29
5/8"	500	91101A035	61.96
3/4"	50	91101A236	12.44
3/4"	500	91101A036	102.58
7/8"	25	91101A237	9.83
7/8"	500	91101A037	154.54
1"	25	91101A038	14.95
1 1/8"	10	91101A039	10.87
1 1/4"	10	91101A040	10.89
1 1/2"	5	91101A041	10.39
1 5/8"	1	91101A045	3.57
1 3/4"	1	91101A051	4.30
2"	1	91101A059	4.90

Split Lock Washer Assortments

350-Piece Assortments—Dimensions meet ASME B18.21.1

Washers come in an 8¼″ Lg. × 4¼″ Wd. × 1½″ Dp. compartmented plastic case with lid chart.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
No. 8	100	5/16″	50
No. 10	100	3/8″	25
1/4″	50	1/2″	25

Zinc-Plated Steel ..... **91765A224** **Each** $16.80

18-8 Stainless Steel ..... **92155A320** **Each** $27.54

1350-Piece Assortments—Dimensions meet ASME B18.21.1

Washers come in a 13½″ Lg. × 9½″ Wd. × 2⅛″ Dp. compartmented metal case with lid chart.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
No. 4	200	3/8″	100
No. 6	200	7/16″	50
No. 8	200	1/2″	50
No. 10	200	5/8″	20
1/4″	200	3/4″	20
5/16″	100	1″	10

Zinc-Plated Steel ..... **91765A112** **Each** $79.12

18-8 Stainless Steel ..... **92155A212** **Each** $117.10

Metric 755-Piece Assortments—DIN 127B

Washers come in a 10⅞″ Lg. × 6¾″ Wd. × 1¾″ Dp. compartmented plastic case with lid chart.

Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
M3	100	M6	100	M12	100	M16	20
M4	100	M8	100	M14	25	M20	10
M5	100	M10	100				

Black-Finish Steel ..... **91170A109** **Each** $50.53

18-8 Stainless Steel ..... **91170A409** **Each** $84.30

Heavy Duty Split Lock Washers

Choose these split lock washers when your application calls for extra strength. Washers meet ASME B18.21.1.

18-8 stainless steel offers excellent corrosion resistance. Washers may be mildly magnetic and have a minimum Rockwell hardness of C35.

Zinc yellow-chromate plated alloy steel and ***steel*** washers have a minimum Rockwell hardness of C38. They're used with Grade 5 and Grade 8 fasteners. Alloy steel are made from through-hardened Alloy 4037 steel. Steel are made from rust-resistant C1060 steel.

Screw Size	ID	OD	Min. Thick.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel						
No. 4	0.12″	0.23″	0.03″	100	**91007A614**	$3.36
No. 6	0.14″	0.27″	0.04″	100	**91007A619**	4.28
No. 8	0.17″	0.31″	0.04″	100	**91007A623**	6.50
No. 10	0.2″	0.35″	0.05″	100	**91007A628**	7.17
1/4″	0.26″	0.49″	0.07″	50	**91007A632**	9.38
5/16″	0.32″	0.6″	0.09″	50	**91007A636**	9.99
3/8″	0.38″	0.69″	0.11″	25	**91007A641**	8.77
1/2″	0.51″	0.88″	0.15″	10	**91007A652**	7.78
5/8″	0.64″	1.09″	0.18″	5	**91007A676**	7.30
3/4″	0.76″	1.29″	0.22″	1	**91007A681**	5.29
Zinc Yellow-Chromate Plated Alloy Steel						
1/4″	0.26″	0.49″	0.06″	100	**91104A029**	2.11
5/16″	0.32″	0.59″	0.07″	100	**91104A030**	3.48
3/8″	0.38″	0.68″	0.09″	100	**91104A031**	4.96
7/16″	0.45″	0.78″	0.1″	100	**91104A032**	7.11
1/2″	0.51″	0.87″	0.12″	100	**91104A033**	10.67
9/16″	0.57″	0.97″	0.14″	50	**91104A034**	7.65
5/8″	0.64″	1.08″	0.15″	50	**91104A035**	9.76
3/4″	0.76″	1.27″	0.18″	25	**91104A047**	8.71
7/8″	0.89″	1.46″	0.21″	10	**91104A048**	4.90
1″	1.02″	1.66″	0.25″	10	**91104A049**	7.39
Zinc Yellow-Chromate Plated Steel						
1 1/8″	1.15″	1.91″	0.34″	5	**91104A050**	9.71
1 1/4″	1.28″	2.11″	0.38″	1	**91104A055**	2.64
1 3/8″	1.4″	2.31″	0.42″	1	**91104A060**	3.68
1 1/2″	1.53″	2.5″	0.45″	1	**91104A065**	4.54
2″	2.03″	3.15″	0.49″	1	**91104A070**	7.35

Military Specification Stainless Steel Split Lock Washers

Made from 300 series stainless steel, these washers meet the stringent military standards FF-W-84 and MS 35338, plus they're passivated (treated with nitric acid for protection against oxidation and corrosion) to QQ-P-35. Each has a minimum Rockwell hardness of C35 and may be mildly magnetic.

Screw Size	Dash No.	ID	OD	Min. Thick.	Pkg. Qty.		Per Pkg.
No. 2	134	0.09″	0.18″	0.02″	100	**91475A015**	$3.02
No. 4	135	0.12″	0.21″	0.02″	100	**91475A018**	3.21
No. 6	136	0.14″	0.25″	0.03″	100	**91475A020**	4.35
No. 8	137	0.17″	0.3″	0.04″	100	**91475A025**	5.52
No. 10	138	0.2″	0.34″	0.04″	100	**91475A027**	3.53
1/4″	139	0.26″	0.49″	0.06″	50	**91475A029**	6.28
5/16″	140	0.32″	0.59″	0.07″	25	**91475A030**	$5.24
3/8″	141	0.38″	0.68″	0.09″	25	**91475A031**	8.27
1/2″	143	0.51″	0.87″	0.12″	10	**91475A033**	4.82
5/8″	145	0.64″	1.08″	0.15″	10	**91475A035**	11.70
3/4″	146	0.76″	1.27″	0.18″	5	**91475A040**	10.70

Metric Split Lock Washers—*DIN 127B*

Sized to work with metric screws and nuts, these washers use spring tension to resist loosening from shock and vibration. Stainless steel washers are not rated for hardness. Spring steel washers have a minimum Rockwell hardness of C44.

Type 316 stainless steel washers offer superior corrosion resistance and may be mildly magnetic. ***18-8 stainless steel*** washers offer very good corrosion resistance and may be mildly magnetic. ***Zinc-plated spring steel*** washers offer good rust resistance. ***Black-finish spring steel*** washers offer mild rust resistance.

Also Available: High-visibility blue split lock washers that meet ASME B18.21.2M in screw sizes marked with a ★. Please ask for 93279A220 and specify screw size.

Screw Size	ID, mm	OD, mm	Min. Thick., mm	*Type 316 Stainless Steel* Pkg. Qty.		Per Pkg.	*18-8 Stainless Steel* Pkg. Qty.		Per Pkg.	*Zinc-Plated Spring Steel* Pkg. Qty.		Per Pkg.	*Black-Finish Spring Steel* Pkg. Qty.		Per Pkg.
M2	2.4	4.4	0.4	100	**92153A406**	$3.65	100	**92148A050**	$1.18	100	**91202A214**	$2.84	100	**91169A050**	$2.37
M2.5	2.9	5.1	0.5	100	**92153A411**	4.14	100	**92148A070**	1.24	100	**91202A218**	2.84	100	**91169A070**	2.37
M2.6	3	5.2	0.6	—	—	—	100	**92148A110**	2.44	—	—	—	100	**91169A110**	2.37
M3	3.4	6.2	0.7	100	**92153A416**	2.71	100	**92148A150**	.99	100	**91202A222**	1.89	100	**91169A150**	1.42
M3.5	3.9	6.7	0.7	—	—	—	100	**92148A155**	1.59	—	—	—	100	**91169A155**	1.89
M4	4.4	7.6	0.8	100	**92153A418**	2.91	100	**92148A160**	1.62	100	**91202A226**	1.89	100	**91169A160**	1.42
M5	5.4	9.2	1.1	100	**92153A422**	3.46	100	**92148A170**	2.35	100	**91202A230**	2.37	100	**91169A170**	2.37
M6	6.5	11.8	1.5	100	**92153A426**	6.42	100	**92148A180**	3.56	100	**91202A234★**	2.84	100	**91169A180**	2.84
M8	8.5	14.8	1.9	100	**92153A429**	11.01	100	**92148A200**	7.20	100	**91202A238★**	3.79	100	**91169A200**	3.32
M10	10.7	18.1	2.05	50	**92153A434**	7.45	100	**92148A210**	9.39	100	**91202A242★**	5.22	100	**91169A210**	5.22
M12	12.7	21.1	2.35	50	**92153A436**	10.65	50	**92148A214**	9.07	100	**91202A246★**	8.06	100	**91169A214**	7.12
M14	14.7	24.1	2.85	25	**92153A439**	10.17	25	**92148A221**	7.83	100	**91202A250**	11.86	100	**91169A220**	9.96
M16	17	27.4	3.3	10	**92153A442**	6.06	25	**92148A241**	9.79	50	**91202A253★**	9.08	50	**91169A240**	8.84
M18	19	29.4	3.3	10	**92153A445**	6.52	10	**92148A251**	6.30	—	—	—	50	**91169A242**	9.61
M20	21.2	33.6	3.8	10	**92153A447**	11.86	10	**92148A261**	6.54	25	**91202A257★**	8.72	25	**91169A245**	8.49
M24	25.5	40	4.8	5	**92153A449**	7.25	10	**92148A271**	11.17	25	**91202A261★**	13.16	25	**91169A248**	13.39
M30	31.7	48.2	5.8	—	—	—	1	**92148A281**	2.97	10	**91202A263**	7.93	5	**91169A244**	12.59
M36	37.7	58.2	5.8	—	—	—	1	**92148A291**	4.39	5	**91202A265**	7.85	1	**91169A249**	3.86

Split Lock Washers for Socket Head Cap Screws

Also called high-collar lock washers, these washers have smaller ODs for use with socket head cap screws.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. Inch sizes have a minimum Rockwell hardness of C35; metric are not rated for hardness. ***Plain steel*** washers are made from C1055-C1065 steel. As a result of heat treatment, they have a dark surface and resist rust. Minimum Rockwell hardness is C38. ***Black-finish spring steel*** washers have a black finish that adds rust resistance. Minimum Rockwell hardness is C44.

Inch Sizes— *Washer dimensions meet ASME B18.21.1*

Screw Size	ID	OD	Min. Thick.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel						
No. 4	0.12″	0.18″	0.02″	100	98437A102	$2.78
No. 6	0.14″	0.22″	0.03″	100	98437A104	2.87
No. 8	0.17″	0.27″	0.04″	100	98437A106	3.91
No. 10	0.2″	0.3″	0.04″	100	98437A108	6.00
1/4″	0.26″	0.37″	0.07″	100	98437A110	7.38
5/16″	0.32″	0.46″	0.09″	50	98437A112	8.23
3/8″	0.38″	0.55″	0.12″	50	98437A115	10.67
1/2″	0.5″	0.73″	0.17″	25	98437A130	9.05
5/8″	0.63″	0.92″	0.2″	10	98437A135	9.15
3/4″	0.75″	1.11″	0.21″	10	98437A140	10.73
7/8″	0.88″	1.3″	0.23″	5	98437A150	9.11
Plain Steel						
No. 4	0.12″	0.18″	0.02″	100	90073A005	1.00
No. 5	0.13″	0.21″	0.03″	100	90073A006	.97
No. 6	0.14″	0.22″	0.03″	100	90073A007	1.37
No. 8	0.17″	0.27″	0.04″	100	90073A009	1.37
No. 10	0.19″	0.3″	0.04″	100	90073A011	1.34
1/4″	0.25″	0.37″	0.07″	100	90073A029	2.02
5/16″	0.32″	0.46″	0.09″	100	90073A030	2.81
3/8″	0.38″	0.55″	0.12″	100	90073A231	5.27
7/16″	0.44″	0.65″	0.14″	100	90073A234	7.92
1/2″	0.5″	0.74″	0.17″	100	90073A237	11.56
5/8″	0.63″	0.92″	0.2″	50	90073A240	10.14
3/4″	0.75″	1.11″	0.21″	25	90073A243	7.13
7/8″	0.88″	1.3″	0.23″	25	90073A246	11.80
1″	1″	1.48″	0.25″	10	90073A038	6.16
1 1/4″	1.25″	1.79″	0.31″	10	90073A040	11.11
1 1/2″	1.5″	2.16″	0.37″	5	90073A042	12.16

Metric Sizes— *DIN 7980 (Dimensions in millimeters)*

Screw Size	ID	OD	Min. Thick.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel						
M3	3.4	5.6	0.9	100	91111A118	$1.62
M4	4.4	7	1.1	100	91111A121	2.10
M5	5.4	8.8	1.5	100	91111A124	2.90
M6	6.5	9.9	1.5	100	91111A129	3.33
M8	8.5	12.7	1.9	100	91111A132	7.00
M10	10.7	16	2.35	100	91111A135	12.67
M12	12.7	18	2.35	100	91111A138	14.24
M14	14.7	21.1	2.8	10	91111A141	5.72
M16	17	24.4	3.3	10	91111A143	6.66
M20	21.2	30.6	4.3	10	91111A147	10.95
M24	25.5	35.9	4.8	5	91111A151	8.10
Black-Finish Spring Steel						
M3	3.4	5.6	0.9	100	91190A510	2.72
M3.5	3.9	6.1	0.9	100	91190A515	2.77
M4	4.4	7	1.1	100	91190A520	2.72
M5	5.4	8.8	1.5	100	91190A530	3.27
M6	6.5	9.9	1.5	100	91190A540	3.82
M8	8.5	12.7	1.9	100	91190A550	4.36
M10	10.7	16	2.35	100	91190A560	7.64
M12	12.7	18	2.35	100	91190A570	8.19
M14	14.7	21.1	2.8	100	91190A580	9.09
M16	17	24.4	3.3	50	91190A590	12.00
M18	19	26.4	3.3	25	91190A600	7.32
M20	21.2	30.6	4.3	25	91190A610	7.70
M22	23.5	32.9	4.3	10	91190A620	7.24
M24	25.5	35.9	4.8	10	91190A630	4.48
M30	31.7	44.1	5.8	5	91190A670	7.76

External-Tooth Lock Washers

For maximum holding power, these washers have multiple teeth that dig into mating surfaces to resist vibration and loosening. They're perfect for use with binding head, pan head, and round head screws, which have heads large enough to make contact with the teeth. Washer dimensions meet ASME B18.21.1 (unless noted).

18-8 stainless steel washers provide excellent corrosion resistance, may be mildly magnetic, and are not rated for hardness. ***400 series stainless steel*** washers are stronger and more magnetic than 18-8 stainless steel. They're also corrosion resistant and have a minimum Rockwell hardness of C34. ***Zinc-plated steel*** washers are made from C1050 steel and are rust resistant. They have a minimum Rockwell hardness of C40. ***Phosphor bronze*** washers are corrosion resistant, nonmagnetic, and have a minimum Rockwell hardness of B60.

Also Available: Type 316 stainless steel external-tooth lock washers in sizes marked with a ●. Please ask for 90375A880 and specify screw size.

Screw Size	ID	OD	Thick., Min.-Max.	18-8 SS Pkg. Qty.		Per Pkg.	400 Series SS Pkg. Qty.		Per Pkg.	Zinc-Plated Steel Pkg. Qty.		Per Pkg.	Phosphor Bronze Pkg. Qty.		Per Pkg.
No. 2	0.08″	0.19″	0.01″-0.02″	—	—	—	100	98438A200	$2.69	100	91114A003★	$9.54	—	—	—
No. 3	0.1″	0.24″	0.01″-0.02″	—	—	—	100	98438A205	2.81	100	91114A004	7.51	—	—	—
No. 4	0.11″	0.26″	0.01″-0.02″	100	95584A200●	$2.29	100	98438A210	2.84	100	91114A005	3.87	100	92164A005	$2.99
No. 5	0.12″	0.29″	0.01″-0.02″	—	—	—	100	98438A215	2.95	100	91114A006	6.43	—	—	—
No. 6	0.14″	0.32″	0.01″-0.03″	100	95584A201●	2.34	100	98438A220	2.98	100	91114A007	2.15	100	92164A007	3.51
No. 8	0.16″	0.39″	0.01″-0.03″	100	95584A203●	2.39	100	98438A225	3.03	100	91114A009	2.40	100	92164A009	3.79
No. 10	0.19″	0.41″	0.01″-0.03″	100	95584A205●	2.77	100	98438A230	3.05	100	91114A011	3.57	100	92164A011	4.86
No. 12	0.22″	0.48″	0.02″-0.03″	—	—	—	100	98438A235	3.83	100	91114A013	3.40	—	—	—
1/4″	0.25″	0.51″	0.02″-0.03″	100	95584A207	3.88	100	98438A240	3.95	100	91114A029	2.93	100	92164A029	5.84
5/16″	0.32″	0.61″	0.02″-0.04″	50	95584A209	4.72	100	98438A030	5.44	100	91114A030	5.65	50	92164A030	6.82
3/8″	0.38″	0.7″	0.03″-0.04″	25	95584A211	4.29	50	98438A031	3.86	100	91114A031	5.69	25	92164A031	4.88
7/16″	0.44″	0.76″	0.03″-0.04″	—	—	—	50	98438A032	6.15	100	91114A032	11.36	25	92164A032	7.30
1/2″	0.51″	0.9″	0.03″-0.05″	—	—	—	25	98438A033	3.78	100	91114A033	10.98	25	92164A033	8.53
9/16″	0.57″	0.99″	0.03″-0.05″	—	—	—	—	—	—	50	91114A034	14.95	—	—	—
5/8″	0.64″	1.07″	0.04″-0.05″	—	—	—	25	98438A035	6.11	50	91114A035	10.26	10	92164A040	7.05
3/4″	0.76″	1.26″	0.04″-0.06″	—	—	—	25	98438A036	9.61	25	91114A036	9.76	—	—	—
7/8″	0.89″	1.41″	0.05″-0.06″	—	—	—	—	—	—	25	91114A037	10.60	—	—	—
1″	1.02″	1.62″	0.05″-0.07″	—	—	—	—	—	—	10	91114A038	7.03	—	—	—

★ Does not meet ASME B18.21.1.

Countersunk External-Tooth Lock Washers

Washer teeth lock onto the heads of 82° flat and oval head countersunk screws to resist loosening. Dimensions meet ASME B18.21.1.

400 series stainless steel washers are corrosion resistant, magnetic, and have a minimum Rockwell hardness of C34. ***Zinc-plated steel*** washers are made from C1050 steel. They offer good rust resistance and have a minimum Rockwell hardness of C44.

Screw Size	ID	OD	Thick., Min.-Max.	400 Series SS Pkg. Qty.		Per Pkg.	Zinc-Plated Steel Pkg. Qty.		Per Pkg.
No. 4	0.11″	0.22″	0.01″-0.02″	—	—	—	50	90069A103	$5.52
No. 6	0.14″	0.29″	0.01″-0.03″	100	90900A007	$9.70	100	90069A105	5.05
No. 8	0.16″	0.33″	0.01″-0.03″	100	90900A009	12.83	100	90069A110	7.87
No. 10	0.19″	0.36″	0.02″-0.03″	25	90900A012	5.11	100	90069A115	8.75
No. 12	0.22″	0.43″	0.02″-0.03″	—	—	—	100	90069A120	6.56
1/4″	0.25″	0.46″	0.02″-0.03″	25	90900A030	6.59	100	90069A125	8.98
5/16″	0.31″	0.6″	0.02″-0.03″	—	—	—	100	90069A130	8.79
3/8″	0.38″	0.77″	0.02″-0.04″	—	—	—	25	90069A136	5.89
1/2″	0.51″	0.98″	0.03″-0.05″	—	—	—	10	90069A137	5.89

Metric External-Tooth Lock Washers

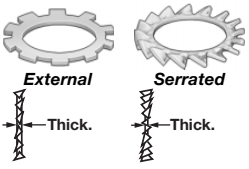

With external teeth that dig into mating surfaces, these washers are a good choice for metric parts that require vibration resistance.

External—Use with screws that have large enough heads to make contact with the washer teeth (such as round, pan, and binding head). Dimensions meet DIN 6797.

Serrated—Angled teeth absorb shock and vibration to maintain fastening tension. Dimensions meet DIN 6798.

18-8 stainless steel washers offer excellent corrosion resistance. They may be mildly magnetic and have a minimum Rockwell hardness of B85.

Zinc-plated spring steel washers offer good rust resistance. They have a minimum Rockwell hardness of C35.

				EXTERNAL						SERRATED					
				18-8 Stainless Steel			Zinc-Plated Spring Steel			18-8 Stainless Steel			Zinc-Plated Spring Steel		
Screw Size	ID, mm	OD, mm	Thick., mm	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
M3	3.2	6	0.4	100	95060A320	$2.29	100	97985A520	$2.17	100	91120A120	$1.95	100	97985A720	$2.20
M4	4.3	8	0.5	100	95060A330	2.53	100	97985A530	1.45	100	91120A130	2.40	100	97985A730	1.64
M5	5.3	10	0.6	100	95060A350	2.91	100	97985A550	2.76	100	91120A140	2.83	100	97985A740	2.40
M6	6.4	11	0.7	100	95060A360	3.00	100	97985A560	3.24	100	91120A160	3.60	100	97985A760	2.80
M8	8.4	15	0.8	100	95060A390	5.43	100	97985A590	4.29	100	91120A180	7.60	100	97985A780	4.91
M10	10.5	18	0.9	100	95060A400	8.23	50	97985A600	3.28	100	91120A200	12.45	50	97985A800	3.79
M12	13	20.5	1	50	95060A411	7.19	25	97985A611	3.14	50	91120A211	9.05	50	97985A810	5.05
M14	15	24	1	50	95060A420	8.08	25	97985A620	3.57	—	—	—	—	—	—
M16	17	26	1.2	—	—	—	25	97985A630	4.00	50	91120A235	11.43	—	—	—
M18	19	30	1.4	10	95060A440	7.82	5	97985A640	3.21	—	—	—	—	—	—
M20	21	33	1.4	10	95060A450	6.53	5	97985A650	3.17	10	91120A241	5.65	—	—	—
M24	25	38	1.5	—	—	—	5	97985A660	4.43	10	91120A245	9.84	—	—	—

Internal-Tooth Lock Washers

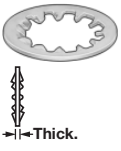

Internal teeth dig in to resist loosening and the smooth outside edge won't snag nearby objects. Dimensions meet B18.21.1 (unless noted).

18-8 stainless steel washers provide excellent corrosion resistance. They may be mildly magnetic and are not rated for hardness.

400 series stainless steel washers are corrosion resistant and magnetic. Minimum Rockwell hardness is C34.

Zinc-plated steel washers are made from C1050-C1065 steel and are rust resistant. Minimum Rockwell hardness is C44.

Phosphor bronze washers are corrosion resistant and nonmagnetic. Minimum Rockwell hardness is B60.

Also Available: Type 316 stainless steel internal-tooth lock washers in sizes marked with a ●. Please ask for 91108A900 and specify screw size.

				18-8 Stainless Steel			400 Series Stainless Steel			Zinc-Plated Steel			Phosphor Bronze		
Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
No. 2	0.08″	0.2″	0.01″-0.02″	—	—	—	100	98449A500	$2.50	100	91113A003	$4.78	100	92165A002	$4.27
No. 3	0.1″	0.24″	0.01″-0.02″	—	—	—	100	98449A505	2.61	100	91113A004	4.57	—	—	—
No. 4	0.11″	0.27″	0.01″-0.02″	100	91757A101●	$3.01	100	98449A510	2.65	100	91113A005	2.69	100	92165A005	3.25
No. 5	0.12″	0.28″	0.01″-0.02″	—	—	—	100	98449A515	2.74	100	91113A006	3.37	—	—	—
No. 6	0.14″	0.3″	0.01″-0.03″	100	91757A103●	3.06	100	98449A520	2.78	100	91113A007	2.67	100	92165A007	3.79
No. 8	0.16″	0.34″	0.01″-0.03″	100	91757A105●	3.13	100	98449A525	2.82	100	91113A009	2.88	100	92165A009	4.57
No. 10	0.19″	0.39″	0.01″-0.03″	100	91757A107●	3.63	100	98449A530	2.84	100	91113A011	2.10	100	92165A011	5.46
No. 12	0.22″	0.41″	0.02″-0.03″	—	—	—	100	98449A535	3.57	100	91113A013	3.13	—	—	—
1/4″	0.25″	0.48″	0.02″-0.03″	100	91757A109●	5.09	100	98449A540	3.67	100	91113A029	4.51	100	92165A029	6.34
5/16″	0.32″	0.61″	0.02″-0.04″	50	91757A111●	6.19	100	98449A030	4.95	100	91113A030	4.19	50	92165A030	8.45
3/8″	0.38″	0.7″	0.03″-0.04″	25	91757A113●	5.62	100	98449A031	6.20	100	91113A031	6.03	50	92165A031	10.41
7/16″	0.44″	0.79″	0.03″-0.04″	—	—	—	100	98449A032	10.63	100	91113A032	9.11	25	92165A032	8.06
1/2″	0.51″	0.9″	0.03″-0.05″	10	91757A117	5.96	50	98449A033	6.14	100	91113A033	12.68	25	92165A033	10.94
9/16″	0.57″	0.99″	0.03″-0.05″	10	91757A122	7.66	50	98449A034	12.71	50	91113A034	9.24	—	—	—
5/8″	0.64″	1.08″	0.04″-0.05″	10	91757A128	10.32	50	98449A035	10.42	50	91113A035	12.84	5	92165A055	4.01
3/4″	0.76″	1.25″	0.04″-0.06″	5	91757A131	6.96	25	98449A036	8.68	25	91113A036	8.50	—	—	—
7/8″	0.89″	1.41″	0.05″-0.06″	—	—	—	—	—	—	25	91113A037	8.46	—	—	—
1″	1.01″	1.64″	0.05″-0.07″	—	—	—	—	—	—	10	91113A038	7.77	—	—	—
1 1/8″	1.14″	1.83″	0.05″-0.07″	—	—	—	—	—	—	10	91113A039	8.51	—	—	—
1 1/4″	1.27″	1.98″	0.05″-0.07″	—	—	—	—	—	—	5	91113A040	9.55	—	—	—
1 3/8″	1.39″	1.95″	0.06″-0.07″	—	—	—	—	—	—	1	91113A051★	5.79	—	—	—
1 1/2″	1.5″	2.52″	0.07″-0.08″	—	—	—	—	—	—	1	91113A063★	12.20	—	—	—

★ Does not meet ASME B18.21.1.

1335-Piece Assortment—Zinc-Plated Steel

Includes 700 internal-tooth and 635 external-tooth lock washers furnished in an 11″ Lg. × 6 3/4″ Wd × 1 3/4″ Dp. compartmented plastic case with lid chart. Dimensions meet ASME B18.21.1.

98651A192 ..... Each $35.43

Internal Tooth				External Tooth			
Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.	Screw Size	No. of Pcs.
No. 2	100	No. 10	100	No. 4	100	1/4″	75
No. 4	100	1/4″	80	No. 6	100	5/16″	72
No. 6	100	5/16″	72	No. 8	100	3/8″	48
No. 8	100	3/8″	48	No. 10	100	1/2″	40

Military Specification Internal-Tooth Lock Washers

Designed to rigorous military specifications, these lock washers meet MS (Military Standard) and NASM (National Aerospace Standard Military) 35333. Passivated (treated with nitric acid for protection against oxidation and corrosion) to meet QQ-P-35, they have internal teeth that dig into surfaces to prevent loosening. Made from Type 410 stainless steel. Magnetic. Not rated for hardness.

Also Available: Type 410 stainless steel external-tooth lock washers that meet MS 35335. Please ask for 97775A100 and specify screw size.

Screw Size	Dash No.	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.	Screw Size	Dash No.	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 4	70	0.11″	0.27″	0.01″-0.02″	25	96551A550	$7.20	No. 10	73	0.19″	0.39″	0.02″-0.03″	25	96551A770	$8.29
No. 6	71	0.14″	0.3″	0.01″-0.03″	25	96551A610	7.71	1/4″	74	0.25″	0.48″	0.02″-0.03″	25	96551A790	8.18
No. 8	72	0.16″	0.34″	0.01″-0.03″	25	96551A670	8.11								

Heavy Duty Internal-Tooth Lock Washers

Count on these washers to retain locking tension under heavy loads. Often used with heavy bolts and nuts on castings and heavy machinery, they have strong internal teeth that dig into surfaces to resist loosening. Washers meet ASME B18.21.1 and are made from C1050 steel. They're zinc plated for rust resistance and have a minimum Rockwell hardness of C44.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
1/4"	0.25"	0.54"	0.03"-0.05"	100	91150A110	$12.83
5/16"	0.32"	0.61"	0.04"-0.05"	50	91150A113	11.00
3/8"	0.38"	0.75"	0.04"-0.05"	50	91150A114	14.19
1/2"	0.51"	0.93"	0.05"-0.07"	25	91150A120	13.75
5/8"	0.64"	1.14"	0.05"-0.07"	10	91150A126	14.09
3/4"	0.76"	1.27"	0.07"-0.09"	5	91150A130	10.47

Metric Internal-Tooth Lock Washers

Just like our popular inch size internal-tooth lock washers, these have internal teeth that dig into surfaces to resist loosening. The external edge is smooth and snag-free. Dimensions meet DIN 6797.

18-8 stainless steel washers provide excellent corrosion resistance. They may be mildly magnetic and have a minimum Rockwell hardness of B85.

Black-finish spring steel washers are mildly rust resistant and have a minimum Rockwell hardness of C35.

Screw Size	ID, mm	OD, mm	Min. Thick., mm	Pkg. Qty.	18-8 Stainless Steel	Per Pkg.	Black-Finish Spring Steel	Per Pkg.
M2	2.2	4.5	0.3	100	93925A210	$2.33	91106A120	$4.36
M2.5	2.7	5.5	0.4	100	93925A220	2.52	91106A150	5.46
M2.6	2.8	5.5	0.4	100	—	—	91106A121	5.46
M3	3.2	6	0.4	100	93925A240	2.26	91106A122	2.18
M3.5	3.7	7	0.5	100	—	—	91106A123	2.38
M4	4.3	8	0.5	100	93925A250	2.44	91106A124	2.72
M5	5.3	10	0.6	100	93925A260	3.15	91106A126	3.82
M6	6.4	11	0.7	100	93925A270	3.26	91106A128	4.91
M8	8.4	15	0.8	100	93925A280	6.51	91106A131	8.19
M10	10.5	18	0.9	50	93925A290	7.69	91106A133	6.60
M12	13	20.5	1	50	93925A300	8.94	91106A135	7.20
M14	15	24	1	25	93925A310	6.24	91106A137	7.78
M16	17	26	1.2	25	93925A320	6.45	91106A139	8.05
M18	19	30	1.4	10	93925A330	3.78	91106A142	8.57
M20	21	33	1.4	10	93925A340	5.01	91106A146	9.67

Internal/External-Tooth Lock Washers

Made from C1050 steel. Zinc plated for rust resistance.

Washers ***for extra grip*** have multiple teeth for more holding power. Ideal for electrical connections, they meet ASME B18.21.1 (unless noted). Minimum Rockwell hardness is C40.

Washers ***for soft materials*** are slightly domed and have a large overall diameter that distributes loads over a wide area. They're also great for covering oversized holes. Minimum Rockwell hardness is C44.

For Extra Grip

For Soft Materials

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
For Extra Grip						
No. 4	0.11"	0.48"	0.01"-0.03"	50	95795A005	$8.61
No. 6	0.14"	0.51"	0.02"-0.03"	50	95795A006	8.10
No. 8	0.16"	0.51"	0.02"-0.03"	100	95795A007♥	6.47
No. 10	0.19"	0.61"	0.02"-0.04"	100	95795A012	11.99
No. 12	0.22"	0.76"	0.03"-0.04"	25	95795A016	10.43
1/4"	0.25"	0.76"	0.03"-0.04"	100	95795A020	11.36
5/16"	0.32"	0.9"	0.03"-0.04"	50	95795A024	10.81
3/8"	0.38"	0.99"	0.03"-0.05"	50	95795A030	9.43
7/16"	0.44"	1.07"	0.04"-0.05"	10	95795A032	7.06
1/2"	0.51"	1.26"	0.04"-0.06"	25	95795A035	11.30
9/16"	0.57"	1.43"	0.05"-0.06"	10	95795A046	7.68
5/8"	0.64"	1.62"	0.05"-0.07"	5	95795A053	8.26
For Soft Materials						
No. 6	0.14"	0.57"	0.02"-0.03"	10	97527A001	4.88
No. 8	0.16"	0.57"	0.02"-0.03"	10	97527A003	5.83
No. 10	0.19"	0.57"	0.02"-0.04"	10	97527A005	2.21
1/4"	0.25"	0.7"	0.04"-0.06"	5	97527A007	5.14
5/16"	0.32"	0.89"	0.06"-0.07"	5	97527A009	6.17
3/8"	0.38"	1.01"	0.06"-0.07"	5	97527A011	7.07

♥ Does not meet ASME B18.21.1.

Wedge Lock Washers

Also called NORD-LOCK® washers, these reusable washers hold tight under extreme vibration. They include a pair of washers (one top and one bottom) with wedges that lock against each other to resist loosening. Washers have an ID and OD tolerance of ±0.012" and an assembly thickness tolerance of –0.02" to +0.01".

Type 316 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. They have a minimum Rockwell hardness of C51.

Zinc-coated steel washers are suitable for use with Grade 8 and Class 10.9 metric bolts. They're made from through-hardened steel and have a coating of zinc for resistance to both rust and 600 hours of salt-spray. Minimum Rockwell hardness is C44.

Screw Size Inch	Screw Size Metric	ID	OD	Assembly Thick.	Pairs/ Pkg.		Per Pkg.
Type 316 Stainless Steel							
No. 5	M3	0.13"	0.28"	0.09"	5	91812A212	$7.89
No. 8	M4	0.17"	0.3"	0.09"	5	91812A215	7.89
No. 8	M4	0.17"	0.35"	0.09"	5	91812A415	7.89
No. 10	M5	0.21"	0.35"	0.09"	5	91812A227	7.89
No. 10	M5	0.21"	0.43"	0.09"	5	91812A427	7.89
1/4"	—	0.28"	0.45"	0.09"	5	91812A229	7.89
1/4"	—	0.28"	0.53"	0.09"	5	91812A429	8.35
5/16"	M8	0.34"	0.53"	0.09"	5	91812A230	8.35
5/16"	M8	0.34"	0.65"	0.09"	5	91812A430	9.55
3/8"	—	0.41"	0.65"	0.09"	5	91812A231	9.55
3/8"	—	0.41"	0.83"	0.09"	1	91812A431	4.09
7/16"	M11	0.45"	0.73"	0.09"	1	91812A232	4.09
1/2"	—	0.53"	0.77"	0.09"	1	91812A233	4.09
1/2"	—	0.53"	1"	0.13"	1	91812A433	6.07
5/8"	M16	0.67"	1"	0.13"	1	91812A235	5.34
5/8"	M16	0.67"	1.21"	0.13"	1	91812A435	7.28
Zinc-Coated Steel							
No. 5	M3	0.13"	0.28"	0.07"	25	91074A112	11.46
No. 8	M4	0.17"	0.3"	0.07"	25	91074A115	11.46
No. 8	M4	0.17"	0.35"	0.07"	10	91074A312	5.45
No. 10	M5	0.21"	0.35"	0.07"	25	91074A127	11.46
No. 10	M5	0.21"	0.43"	0.07"	10	91074A327	5.45
1/4"	—	0.28"	0.45"	0.07"	25	91074A129	11.71
1/4"	—	0.28"	0.53"	0.1"	10	91074A329	5.33
5/16"	M8	0.34"	0.53"	0.1"	25	91074A130	12.14
5/16"	M8	0.34"	0.65"	0.1"	10	91074A330	6.35
3/8"	—	0.41"	0.65"	0.1"	10	91074A131	6.16
3/8"	—	0.41"	0.83"	0.1"	5	91074A331	5.53
7/16"	M11	0.45"	0.73"	0.1"	10	91074A132	8.82
1/2"	—	0.53"	0.77"	0.1"	10	91074A133	9.32
1/2"	—	0.53"	1"	0.13"	5	91074A333	5.55
9/16"	M14	0.6"	0.91"	0.13"	10	91074A134	11.98
5/8"	M16	0.67"	1"	0.13"	5	91074A135	7.10
5/8"	M16	0.67"	1.21"	0.13"	1	91074A335	3.04
3/4"	—	0.79"	1.21"	0.13"	5	91074A136	10.08
3/4"	—	0.79"	1.54"	0.13"	1	91074A336	4.36
7/8"	M22	0.92"	1.36"	0.13"	1	91074A137	3.80
7/8"	M22	0.92"	1.65"	0.18"	1	91074A337	5.87
1"	—	1.1"	1.54"	0.13"	2	91074A138	7.31
1"	—	1.1"	1.91"	0.18"	1	91074A338	6.87
1 1/8"	M30	1.24"	1.85"	0.26"	2	91074A140	11.42
1 1/4"	M33	1.35"	1.91"	0.26"	1	91074A145	6.95
1 3/8"	M36	1.47"	2.17"	0.26"	1	91074A150	8.43
1 1/2"	M39	1.59"	2.3"	0.26"	1	91074A160	8.72

Corrosion-Resistant Acetal Spring Washers

The lubricity of these white acetal washers provides corrosion resistance and allows them to be used underwater and in rotating assemblies. Washers are also electrically and thermally insulating. Not rated for hardness. Temperature range is –40° to +200° F. Package quantity is 100 (unless noted).

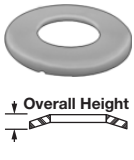

Screw Size Inch	Screw Size Metric	ID	OD	Thick., Min.-Max.	O'all Ht.		Per Pkg.
No. 6	M3.5	0.15"	0.31"	0.02"-0.03"	0.04"	3573A11	$4.83
No. 8	M4	0.17"	0.29"	0.02"-0.03"	0.04"	3573A12	4.83
No. 10	M5	0.2"	0.36"	0.02"-0.03"	0.05"	3573A13	5.10
No. 10	M5	0.23"	0.41"	0.03"-0.04"	0.06"	3573A14	5.36
1/4"	M6	0.26"	0.56"	0.03"-0.04"	0.06"	3573A15	7.48
5/16"	M8	0.32"	0.66"	0.04"-0.05"	0.08"	3573A16	7.52
3/8"	M10	0.45"	0.84"	0.05"-0.06"	0.09"	3573A17♦	4.21

♦ Package quantity is 25.

Belleville Spring Lock Washers

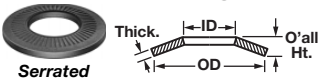

Serrated

Also known as conical washers, these washers have a slightly cupped shape that gives them spring-like flexibility to resist loosening due to heat and vibration. ***Serrated*** washers have small grooves for extra grip against surfaces. For Belleville disc springs, see pages 1229-1232.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. Minimum Rockwell hardness is B85.

Steel washers with a *black finish* are mildly rust resistant; those with a *zinc plating* offer good rust resistance. All steel washers are made from C1060-C1075 steel and have a minimum Rockwell hardness of C40.

Type 301 stainless steel washers offer good corrosion resistance and may be mildly magnetic. Minimum Rockwell hardness is B85.

Note: Overall height listed is the minimum uncompressed height.

Serrated on Top and Bottom—For Socket Head Cap Screws

Screw Size Inch	Screw Size Metric	ID	OD	Thick.	O'all Ht.	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Black-Finish Steel Pkg. Qty.		Per Pkg.
—	M2	0.08″	0.16″	0.01″	0.02″	50	90895A001	$11.03	100	93501A001	$6.00
—	M2.5	0.1″	0.19″	0.02″	0.04″	50	90895A003	11.03	100	93501A003	6.00
No. 5	M3	0.12″	0.22″	0.02″	0.04″	50	90895A005	11.03	100	93501A005	6.00
No. 6	M3.5	0.14″	0.24″	0.02″	0.04″	50	90895A007	9.65	100	93501A007	6.50
No. 8	M4	0.16″	0.28″	0.02″	0.04″	50	90895A009	11.03	100	93501A009	6.75
No. 10	M5	0.2″	0.36″	0.02″	0.04″	25	90895A027	11.03	100	93501A027	8.00
1/4″	M6	0.26″	0.38″	0.03″	0.05″	25	90895A029	14.90	100	93501A029	8.50
5/16″	M8	0.33″	0.52″	0.03″	0.06″	10	90895A030	8.71	100	93501A030	10.25
3/8″	M10	0.41″	0.63″	0.04″	0.06″	10	90895A031	13.95	100	93501A031	11.50
7/16″	M11	0.45″	0.63″	0.04″	0.06″	—	—	—	100	93501A032	12.26
1/2″	M12	0.53″	0.75″	0.04″	0.07″	5	90895A033	11.05	50	93501A033	11.56
9/16″	M14	0.59″	0.87″	0.05″	0.08″	5	90895A037	14.80	50	93501A034	12.00
5/8″	M16	0.66″	0.95″	0.05″	0.08″	1	90895A035	3.62	50	93501A035	12.01
—	M18	0.74″	1.07″	0.06″	0.09″	1	90895A021	4.32	10	93501A021	7.25
3/4″	M19	0.78″	1.19″	0.06″	0.1″	1	90895A036	3.83	25	93501A036	12.01
—	M20	0.82″	1.19″	0.06″	0.1″	—	—	—	10	93501A022	10.00
7/8″	M22	0.9″	1.3″	0.06″	0.11″	—	—	—	20	93501A037	12.00
1″	M25	1.06″	1.5″	0.08″	0.12″	—	—	—	10	93501A038	12.05
1 1/8″	M30	1.24″	1.78″	0.08″	0.14″	—	—	—	5	93501A023	10.00
1 3/8″	M36	1.49″	2.13″	0.1″	0.17″	—	—	—	5	93501A040	12.26

Serrated on Top Only—For Machine and Hex Head Cap Screws

Screw Size	ID	OD	Thick.	O'all Ht.	Plain Steel Pkg. Qty.		Per Pkg.
No. 6	0.14″	0.37″	0.03″	0.06″	100	90127A007	$8.50
No. 8	0.16″	0.41″	0.04″	0.07″	100	90127A009	11.00
No. 10	0.2″	0.49″	0.05″	0.08″	100	90127A011	14.25
1/4″	0.25″	0.56″	0.05″	0.1″	50	90127A029	8.27
5/16″	0.32″	0.72″	0.06″	0.11″	50	90127A030	13.38
3/8″	0.4″	0.88″	0.06″	0.12″	25	90127A031	10.32
7/16″	0.48″	1.08″	0.08″	0.13″	10	90127A032	6.53
1/2″	0.51″	1.08″	0.08″	0.13″	10	90127A033	6.58
5/8″	0.64″	1.28″	0.1″	0.17″	5	90127A035	7.94

Nonserrated—For Machine and Hex Head Cap Screws

Screw Size	ID	OD	Thick.	O'all Ht.	Type 301 SS Pkg. Qty.		Per Pkg.
No. 6	0.14″	0.35″	0.03″	0.05″	50	91235A102 ★	$11.03
No. 8	0.16″	0.41″	0.03″	0.06″	50	91235A105 ★	12.12
No. 10	0.19″	0.47″	0.04″	0.07″	25	91235A109 ★	8.27
1/4″	0.25″	0.69″	0.05″	0.09″	10	91235A112	5.66
5/16″	0.32″	0.82″	0.06″	0.1″	10	91235A115	5.54
3/8″	0.38″	0.94″	0.07″	0.12″	10	91235A120	7.22
1/2″	0.51″	1.19″	0.1″	0.17″	5	91235A126	7.08

★ Made from 17-7 PH stainless steel.

Metric Nonserrated (DIN 6796)

Screw Size	ID, mm	OD, mm	Thick., mm	O'all Ht., mm	18-8 Stainless Steel Pkg. Qty.		Per Pkg.	Zinc-Plated Steel Pkg. Qty.		Per Pkg.	Plain Steel Pkg. Qty.		Per Pkg.
M2	2.2	5	0.4	0.6	—	—	—	100	95221A101	$9.66	100	93497A100	$6.89
M3	3.2	7	0.6	0.85	100	91477A121	$5.20	100	95221A103	10.00	100	93497A120	7.24
M4	4.3	9	1	1.3	25	91477A141	1.88	100	95221A105	11.38	100	93497A140	8.97
M5	5.3	11	1.2	1.55	—	—	—	50	95221A107	9.31	100	93497A150	10.69
M6	6.4	14	1.5	2	25	91477A161	3.02	25	95221A109	8.28	50	93497A161	8.28
M8	8.4	18	2	2.6	10	91477A181	4.39	25	95221A111	8.28	25	93497A181	8.62
M10	10.5	23	2.5	3.2	10	91477A190	5.84	10	95221A113	12.41	10	93497A191	5.86
M12	13	29	3	3.95	10	91477A200	8.54	5	95221A115	12.41	10	93497A200	12.41

Wave Washers

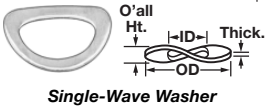

Single-Wave Washer

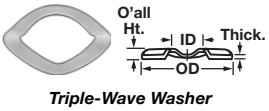

Triple-Wave Washer

Use these curved, flexible washers to compensate for tolerance variations, cushion light loads, and dampen rattling connections. ***18-8 stainless steel*** washers provide excellent corrosion resistance. They may be mildly magnetic and have a minimum Rockwell hardness of B78. ***Spring steel*** washers are made from C1050-C1075 steel and are not rated for hardness. ***Steel*** washers are made from C1050-C1065 steel and have a minimum Rockwell hardness of C44.

Screw Size	ID	OD	Thick.	O'all Ht.	Pkg. Qty.		Per Pkg.
Single-Wave Washers							
18-8 Stainless Steel							
No. 0	0.06″	0.18″	0.01″	0.05″	10	99842A101	$6.03
No. 2	0.09″	0.14″	0.01″	0.04″	10	99842A103	8.10
No. 4	0.11″	0.25″	0.01″	0.06″	10	99842A105	7.07
No. 5	0.13″	0.25″	0.01″	0.06″	10	99842A107	7.41
No. 6	0.14″	0.28″	0.01″	0.06″	10	99842A109	7.41
No. 8	0.16″	0.29″	0.01″	0.05″	10	99842A111	7.41
No. 10	0.19″	0.31″	0.01″	0.06″	10	99842A113	7.76
Spring Steel							
No. 2	0.09″	0.2″	0.01″	0.03″	10	96697A100	4.85
No. 4	0.12″	0.29″	0.01″	0.09″	10	96697A200	4.86
No. 6	0.15″	0.45″	0.01″	0.1″	10	96697A300	4.88
Single-Wave Washers (Cont.)							
Spring Steel (Cont.)							
No. 8	0.18″	0.31″	0.01″	0.07″	10	96697A350	$4.90
No. 10	0.18″	0.37″	0.01″	0.06″	10	96697A400	4.93
1/4″	0.26″	0.43″	0.01″	0.07″	10	96697A500	4.97
Triple-Wave Washers							
18-8 Stainless Steel							
No. 2	0.09″	0.18″	0.01″	0.04″	10	92161A021	8.10
No. 4	0.12″	0.26″	0.01″	0.03″	10	92161A022	8.10
No. 5	0.12″	0.2″	0.01″	0.04″	10	92161A023	8.10
No. 6	0.14″	0.25″	0.01″	0.05″	10	92161A024	8.10

(Continued on following page)

Wave Washers *(Continued from previous page)*

Screw Size	ID	OD	Thick.	O'all Ht.	Pkg. Qty.		Per Pkg.
Triple-Wave Washers (Cont.)							
18-8 Stainless Steel (Cont.)							
No. 8	0.19″	0.25″	0.01″	0.06″	10	92161A025	$8.10
No. 10	0.2″	0.39″	0.01″	0.04″	10	92161A026	8.45
1/4″-5/16″	0.31″	0.7″	0.01″	0.07″	10	92161A029	12.18
5/16″-3/8″	0.37″	0.71″	0.01″	0.08″	25	92161A030	11.55
3/8″-7/16″	0.44″	0.86″	0.01″	0.1″	10	92161A031	5.70
7/16″-1/2″	0.5″	0.87″	0.01″	0.1″	10	92161A032	8.07
1/2″-9/16″	0.56″	1.01″	0.02″	0.1″	10	92161A033	9.86
5/8″-11/16″	0.69″	1.13″	0.02″	0.14″	10	92161A035	11.74
3/4″-13/16″	0.81″	1.45″	0.02″	0.14″	5	92161A036	8.57
7/8″-15/16″	0.94″	1.57″	0.02″	0.14″	10	92161A037	14.90
1″	0.99″	1.7″	0.02″	0.14″	5	92161A038	8.26
Steel							
No. 6-8	0.14″	0.39″	0.01″	0.06″	50	90134A007	11.15
No. 10	0.2″	0.26″	0.01″	0.05″	100	90134A011	6.01
1/4″	0.24″	0.39″	0.01″	0.06″	50	90134A029	11.70
5/16″	0.31″	0.45″	0.01″	0.04″	50	90134A030	7.08
3/8″	0.38″	0.51″	0.01″	0.07″	50	90134A031	7.20
7/16″	0.44″	0.76″	0.02″	0.09″	50	90134A032	12.61
Triple-Wave Washers (Cont.)							
Steel (Cont.)							
1/2″	0.51″	0.76″	0.02″	0.09″	50	90134A033	$8.83
5/8″	0.65″	0.86″	0.01″	0.07″	50	90134A035	11.46
3/4″	0.74″	1.08″	0.02″	0.12″	25	90134A036	11.14
1″	1.05″	1.37″	0.02″	0.11″	25	90134A038	8.31

Screw Size	ID, mm	OD, mm	Thick., mm	O'all Ht., mm	Pkg. Qty.		Per Pkg.
Metric Single-Wave Washers							
18-8 Stainless Steel							
M3	3.2	8	0.5	1.6	100	92168A101	$5.05
M4	4.3	9	0.5	2	100	92168A103	5.68
M5	5.3	11	0.5	2.2	100	92168A105	6.32
M6	6.4	12	0.5	2.6	100	92168A107	6.65
M8	8.4	15	0.8	3	50	92168A109	4.90
M10	10.5	21	1	4.2	25	92168A111	4.41
M12	13	24	1.2	5	10	92168A113	3.39
M16	17	30	1.6	6.4	10	92168A115	6.91
M20	21	36	1.6	7.4	5	92168A117	5.61

Countersunk Washers

Give flat and oval head countersunk-head screws a neat, finished appearance. Washers are not rated for hardness, except 18-8 stainless steel metric washers which have a minimum Rockwell hardness of B78.

Type 316 stainless steel washers are the most corrosion resistant. They may be mildly magnetic.

18-8 stainless steel washers provide excellent corrosion resistance and may be mildly magnetic.

Brass washers are rust resistant, electrically conductive, and nonmagnetic. ***Black zinc-plated brass*** washers have an attractive black surface. ***Nickel-plated brass*** washers have a decorative silver surface.

Nickel-plated steel washers are made from C1006-C1010 steel. They have a decorative silver surface and are fairly resistant to rust and weather.

Zinc-plated steel washers are made from C1006-C1010 steel. They offer good rust resistance.

Also Available: Nickel-plated brass washers in sizes marked with a ♥. Please ask for 92922A100 and specify screw size.

Standard

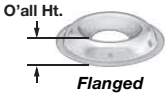

Flanged

Inch—Standard (For 80°–82° Countersunk Screws)

Screw Size	ID	OD	O'all Ht.	Pkg. Qty.		Per Pkg.
Type 316 Stainless Steel						
No. 4	0.14″	0.39″	0.11″	50	94695A170	$4.31
No. 6	0.18″	0.46″	0.11″	50	94695A190	5.09
No. 8	0.21″	0.53″	0.13″	50	94695A210	3.78
No. 10	0.25″	0.59″	0.13″	50	94695A230	4.92
No. 12	0.28″	0.69″	0.16″	25	94695A250	3.63
1/4″	0.32″	0.78″	0.18″	25	94695A270	4.54
18-8 Stainless Steel						
No. 4	0.14″	0.38″	0.11″	100	98466A005	3.22
No. 6	0.18″	0.44″	0.11″	100	98466A007	3.60
No. 8	0.21″	0.53″	0.13″	100	98466A009	4.19
No. 10	0.25″	0.59″	0.13″	100	98466A011	4.74
No. 12	0.28″	0.69″	0.16″	100	98466A013	6.16
1/4″	0.32″	0.78″	0.18″	100	98466A029	7.54
5/16″	0.38″	0.94″	0.18″	50	98466A030	7.29
Brass						
No. 4	0.14″	0.38″	0.11″	100	92921A005	3.69
No. 6	0.18″	0.44″	0.11″	100	92921A007	4.09
No. 8	0.21″	0.53″	0.13″	100	92921A009	5.90
No. 10	0.25″	0.59″	0.13″	100	92921A011	7.08
No. 12	0.28″	0.69″	0.16″	100	92921A013	9.64
1/4″	0.32″	0.78″	0.18″	100	92921A029	10.84
3/8″	0.47″	1.13″	0.29″	10	92921A032	4.87
Black Zinc-Plated Brass						
No. 6	0.18″	0.44″	0.11″	100	92918A130	5.88
No. 8	0.21″	0.53″	0.12″	100	92918A135	7.13
No. 10	0.25″	0.59″	0.13″	100	92918A140	7.88
Nickel-Plated Steel						
No. 4	0.14″	0.38″	0.1″	100	90068A005 ♥	2.63
No. 6	0.18″	0.44″	0.11″	100	90068A007 ♥	3.20
No. 8	0.21″	0.53″	0.12″	100	90068A009 ♥	3.77
No. 10	0.25″	0.59″	0.13″	100	90068A011 ♥	3.89
No. 12	0.28″	0.69″	0.16″	100	90068A013 ♥	4.69

Inch (Cont.)—Standard (For 80°-82° Countersunk Screws)

Screw Size	ID	OD	O'all Ht.	Pkg. Qty.		Per Pkg.
Nickel-Plated Steel (Cont.)						
1/4″	0.32″	0.78″	0.16″	100	90068A029 ♥	$6.69
5/16″	0.38″	0.94″	0.19″	50	90068A038 ♥	8.99
3/8″	0.44″	1.13″	0.25″	25	90068A045 ♥	6.32

Inch—Flanged (For 80°-82° Countersunk Screws)

Screw Size	ID	Flange OD	O'all Ht.	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel						
No. 6	0.18″	0.5″	0.11″	100	90333A007	$4.23
No. 8	0.21″	0.615″	0.13″	100	90333A009	5.08
No. 10	0.25″	0.719″	0.13″	100	90333A011	5.99

Metric—Standard (For 90° Countersunk Screws)

Screw Size	ID, mm	OD, mm	O'all Ht., mm	Pkg. Qty.		Per Pkg.
18-8 Stainless Steel						
M3	3.2	10	2	10	98472A200	$5.62
M4	4.3	14	2.5	10	98472A250	6.92
M5	5.3	16	3	5	98472A300	4.90
M6	6.4	18	3.5	5	98472A350	5.75
Nickel-Plated Brass						
M3	4.1	9	2	25	99435A500	5.84
M4	6	13	2.5	25	99435A600	8.52
M5	7	15	2.7	10	99435A650	4.29
M6	8	16	3.2	10	99435A700	6.69
Zinc-Plated Steel						
M2.5	2.7	9	1.8	25	98424A100	8.04
M3	3.2	10	2	25	98424A200	6.72
M4	4.3	14	2.5	25	98424A250	8.24
M5	5.3	16	3	25	98424A300	8.33
M6	6.4	18	3.5	10	98424A350	4.57
M8	8.4	25	5	5	98424A400	4.99

Nylon Countersunk Washers

Use these nylon 6/6 washers with standard 82° flat and oval head countersunk-head screws to insulate, cushion, and add space between parts. They won't scratch smooth surfaces and are reliable from –40° to +185° F.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.	Off-White	Per Pkg.	Black	Per Pkg.
No. 6	0.14″	0.44″	0.09″-0.11″	100	90262A007	$8.35	95481A007	$8.35
No. 8	0.17″	0.51″	0.11″-0.12″	100	90262A009	8.95	95481A009	8.95
No. 10	0.19″	0.58″	0.14″-0.16″	100	90262A011	9.66	95481A011	9.66
No. 12	0.22″	0.61″	0.15″-0.17″	100	90262A013	10.03	95481A013	10.02
1/4″	0.26″	0.69″	0.17″-0.19″	100	90262A029	10.74	95481A029	10.74

Countersunk Washers for Socket Head Screws

Also known as dress washers, these washers add a finished appearance to flat head socket head cap screws (or any other flat head screw). Inch sizes accept 82° screws and have an OD and thickness tolerance of ±0.010″. Metric sizes accept 90° screws and have an OD and thickness tolerance of ±0.3 mm.

18-8 stainless steel washers offer excellent corrosion resistance and may be mildly magnetic. Minimum Rockwell hardness is B60. ***Black-oxide hardened steel*** washers are made from hardened 12L14 steel. The black-oxide finish adds mild rust resistance. Minimum surface hardness is Rockwell C40.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
Inch						
18-8 Stainless Steel						
No. 8	3/16″	3/4″	0.11″-0.14″	1	92538A330	$4.79
No. 8	3/16″	1″	0.11″-0.14″	1	92538A335	6.09
No. 10	13/64″	13/16″	0.13″-0.16″	1	92538A340	6.36
No. 10	13/64″	1 1/4″	0.13″-0.16″	1	92538A350	11.29
1/4″	9/32″	1 1/4″	0.27″-0.3″	1	92538A355	11.89
1/4″	9/32″	2″	0.27″-0.3″	1	92538A375	11.82
Black-Oxide Hardened Steel						
No. 8	3/16″	3/4″	0.11″-0.14″	5	92908A130	8.07
No. 8	3/16″	1″	0.11″-0.14″	5	92908A135	11.36
No. 10	13/64″	13/16″	0.13″-0.16″	5	92908A140	11.36
No. 10	13/64″	1 1/4″	0.13″-0.16″	1	92908A150	3.59
1/4″	9/32″	1 1/4″	0.27″-0.3″	1	92908A155	3.59
1/4″	9/32″	2″	0.27″-0.3″	1	92908A175	9.60
Metric *(Dimensions in millimeters)*						
18-8 Stainless Steel						
M4	4.3	16	2.7-3.3	1	92538A440	4.78
M5	5.3	22	3.2-3.8	1	92538A450	6.96
M5	5.3	25	3.2-3.8	1	92538A455	7.91
M6	6.4	32	3.7-4.3	1	92538A465	12.27
M6	6.4	40	4.7-5.3	1	92538A475	13.87
Black-Oxide Hardened Steel						
M4	4.3	16	2.7-3.3	5	92908A240	6.44
M5	5.3	22	3.2-3.8	5	92908A250	10.62
M5	5.3	25	3.2-3.8	5	92908A255	13.76
M6	6.4	32	3.7-4.3	1	92908A265	3.41
M6	6.4	40	4.7-5.3	1	92908A275	4.40

Nylon Sleeve Washers

Plain

Flanged

Use these nylon 6/6 washers as a barrier around fasteners to prevent corrosive reactions between different metals, block electric current, and reduce vibration. They're resistant to hot oils, saltwater, and alkalies, as well as many other chemicals. Reliable from –40° to +185° F, color is off-white.

Flanged washers have a minimum Rockwell hardness of R118 (plain washers are not rated for hardness).

Note: Nylon absorbs moisture which can affect dimensions and other properties.

Screw Size	ID	OD	Flange OD	O'all Ht.	Pkg. Qty.		Per Pkg.
Plain							
No. 4	0.24″	0.31″	—	0.16″	100	97215A101	$4.29
No. 6	0.3″	0.36″	—	0.19″	100	97215A104	4.45
No. 8	0.35″	0.42″	—	0.21″	100	97215A107	5.15
No. 10	0.41″	0.47″	—	0.23″	100	97215A110	5.29
1/4″	0.53″	0.6″	—	0.29″	100	97215A113	6.55
Flanged							
No. 2	0.09″	0.12″	0.18″	0.06″	25	90097A040	7.22
No. 4	0.12″	0.14″	0.2″	0.08″	25	90097A080	7.22
No. 6	0.13″	0.18″	0.23″	0.09″	25	90097A130	7.22
No. 8	0.17″	0.2″	0.27″	0.11″	25	90097A150	7.22
No. 10	0.2″	0.23″	0.3″	0.11″	25	90097A170	7.22
No. 10	0.2″	0.23″	0.3″	0.33″	25	90097A180	8.42
No. 12	0.22″	0.26″	0.33″	0.12″	25	90097A190	7.22
1/4″	0.25″	0.3″	0.37″	0.12″	25	90097A210	7.94
1/4″	0.25″	0.3″	0.37″	0.35″	25	90097A220	8.42
1/4″	0.25″	0.3″	0.37″	0.6″	25	90097A520	8.42
5/16″	0.32″	0.36″	0.46″	0.35″	25	90097A540	8.82
3/8″	0.38″	0.42″	0.54″	0.16″	25	90097A230	8.66
3/8″	0.38″	0.42″	0.54″	0.37″	25	90097A240	8.82
1/2″	0.5″	0.55″	0.65″	0.19″	25	90097A250	9.87
1/2″	0.5″	0.55″	0.65″	0.65″	25	90097A260	8.82
5/8″	0.63″	0.68″	0.8″	0.41″	25	90097A550	8.82
3/4″	0.75″	0.81″	0.94″	0.92″	25	90097A570	9.46

Cup Washers for Oversized Holes

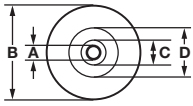

Cover oversized holes such as the end of a pipe or tube with these bowl-shaped, flanged washers. You can even press them into soft surfaces to create a flush recess for screw and bolt heads. Made from zinc-plated C1008-C1010 steel, they have a minimum Rockwell hardness of B40 and an overall height of 0.197″.

Screw Size	ID (A)	OD (B)	(C)	(D)	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 10	7/32″	1 1/2″	0.44″	0.73″	0.03″-0.07″	5	92856A101	$5.63
No. 12	1/4″	2 1/2″	0.63″	1.02″	0.05″-0.08″	5	92856A103	7.94
1/4″	9/32″	3″	0.56″	0.92″	0.05″-0.08″	5	92856A105	9.42
5/16″	11/32″	2 1/2″	0.63″	1.02″	0.05″-0.08″	5	92856A107	7.94
3/8″	13/32″	3″	0.75″	1.22″	0.05″-0.08″	5	92856A109	9.42

Sleeve Washers for Soft Materials

When the fastener you're using is harder than the material you're mounting it in, use these washers to reinforce the top of the hole. Made from high-strength Alloy 8740 chrome-moly steel, they have a black-oxide finish and a minimum Rockwell hardness of C35.

Screw Size	ID	OD	Flange OD	Flange Ht.	O'all Ht.		Each
1/4″	0.26″	0.32″	0.56″	0.09″	0.32″	93762A100	$4.55
5/16″	0.32″	0.38″	0.63″	0.1″	0.32″	93762A200	4.66
3/8″	0.38″	0.45″	0.75″	0.12″	0.32″	93762A300	4.80
7/16″	0.44″	0.53″	0.88″	0.12″	0.46″	93762A500	4.91
7/16″	0.44″	0.57″	0.81″	0.12″	0.41″	93762A400	4.91
1/2″	0.51″	0.57″	0.88″	0.12″	0.34″	93762A600	5.04

Curved Washers for Tubes

Also known as saddle washers, these zinc-plated steel washers are curved to fit around the outside of tubes, pipe, or any other curved surface. They're made from C1008-C1020 steel and have a minimum Rockwell hardness of B50.

For Tube OD	Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
3/4″	1/4″	0.28″	1″	0.05″-0.07″	25	91844A220	$9.55
3/4″	5/16″	0.33″	1″	0.05″-0.07″	25	91844A230	9.63
3/4″	3/8″	0.41″	1″	0.05″-0.07″	25	91844A240	9.72
7/8″	1/4″	0.28″	1″	0.05″-0.07″	25	91844A350	9.55
7/8″	5/16″	0.33″	1″	0.05″-0.07″	25	91844A360	9.63
7/8″	3/8″	0.41″	1″	0.05″-0.07″	25	91844A370	9.72
1″	1/4″	0.28″	1″	0.05″-0.07″	25	91844A410	9.55
1″	5/16″	0.33″	1″	0.05″-0.07″	25	91844A420	9.63
1″	3/8″	0.41″	1″	0.05″-0.07″	25	91844A430	9.72

Large OD Washers for Foam Insulation and Plaster

Tab

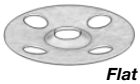

Flat

Repair foam insulation and sagging, cracked plaster with these washers. Use with self-sinking flat head (bugle head) screws. Made from corrosion-resistant galvanized steel, they have a minimum Rockwell hardness of B35.

Tab washers have four 5/16″ long prongs that pierce insulation so they stay in place and won't spin. ***Flat*** washers have four 0.23″ dia. holes that allow plaster to flow through to form a secure bond between washer and wall.

	Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
Tab	No. 8	0.17″	1 1/4″	0.02″-0.03″	50	95880A900	$6.90
Flat	No. 10	0.23″	1 1/4″	0.02″-0.03″	50	95880A500	6.90

Terminal Cup Washers

Our all-brass terminal cup washers prevent wires from slipping out from under screw heads—so your electrical connections stay intact. Made from Alloy 360 brass, except 93720A035 is made from Alloy 260 brass. Minimum Rockwell hardness is B62, unless noted.

Screw Size	ID	OD	O'all Ht.	Pkg. Qty.		Per Pkg.
No. 6	0.15″	0.51″	0.11″	10	93720A011	$10.00
No. 8	0.16″	0.46″	0.09″	10	93720A015	9.51
No. 8	0.17″	0.52″	0.14″	10	93720A020	10.32
No. 10	0.2″	0.46″	0.09″	10	93720A030	9.44
No. 10	0.2″	0.51″	0.1″	10	93720A025	9.38
1/4″	0.26″	0.58″	0.11″	10	93720A035★	8.23

★ Not rated for hardness.

Washers with Tag Hole

Attach a chain, wire, cord, or tag (not included) to the small offset hole in these handy washers. Made from C1008-C1010 steel, they have a minimum Rockwell hardness of B90.

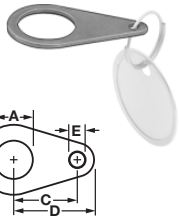

Screw Size	(A)	(B)	(C)	(D)	(E)	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 10	0.21″	0.33″	0.47″	0.57″	0.1″	0.02″-0.04″	10	96995A110	$10.85
No. 12	0.22″	0.5″	0.66″	0.8″	0.1″	0.02″-0.04″	10	96995A120	12.55
1/4″	0.27″	0.42″	0.5″	0.6″	0.1″	0.02″-0.04″	10	96995A130	10.91
5/16″	0.33″	0.51″	0.63″	0.76″	0.13″	0.02″-0.04″	10	96995A140	11.48
5/16″	0.33″	0.57″	0.82″	0.96″	0.13″	0.02″-0.04″	10	96995A150	14.90
5/16″	0.37″	0.64″	0.47″	0.72″	0.19″	0.11″-0.14″	10	96995A160	14.90
5/8″	0.64″	1″	0.7″	0.95″	0.12″	0.02″-0.04″	10	96995A170	14.90
5/8″	0.64″	0.91″	0.98″	1.14″	0.12″	0.05″-0.07″	10	96995A180	14.90
1 1/8″	1.14″	1.56″	1.04″	1.15″	0.12″	0.03″-0.04″	5	96995A190	14.95

Washers for Ball Joint Rod Ends

Also known as retaining safety washers, these beveled washers allow a full range of ball joint movement while reducing the chance of rod end failure. They're made from zinc-plated C1018 steel and are not rated for hardness.

Fits Shank Size	ID	Flange OD	Flange Ht.	O'all Ht.		Each
1/4″	0.25″	0.7″	0.07″	0.15″	95034A100	$3.10
5/16″	0.31″	0.83″	0.07″	0.18″	95034A200	3.33
3/8″	0.37″	0.93″	0.09″	0.19″	95034A300	3.31
1/2″	0.5″	1.24″	0.09″	0.24″	95034A500	3.31
5/8″	0.62″	1.42″	0.09″	0.28″	95034A600	3.38
3/4″	0.75″	1.63″	0.09″	0.31″	95034A700	3.80

Washers with Guide Tabs

With bent sides, these washers are perfect for aligning tie-down straps. Made from zinc-plated C1008-C1010 steel, they have a minimum Rockwell hardness of B41.

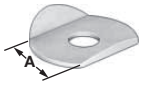

Screw Size	ID	OD	Thick., Min.-Max.	O'all Ht.	(A)	Pkg. Qty.		Per Pkg.
No. 10	1/4″	1″	0.04″-0.06″	0.22″	0.67″	10	95990A101	$12.11
1/4″	5/16″	1 1/4″	0.05″-0.07″	0.27″	0.84″	10	95990A103	12.91
5/16″	3/8″	1 1/2″	0.07″-0.1″	0.34″	1″	10	95990A105	13.45
3/8″	7/16″	2″	0.07″-0.1″	0.42″	1.34″	10	95990A107	14.25
1/2″	9/16″	2″	0.09″-0.12″	0.44″	1.34″	10	95990A109	14.90

Nylon Self-Retaining Washers

When you slip this washer onto a screw shank, the specially shaped center grips it tightly. Washers are made from off-white nylon 6/6. They're reliable from –40° to +185° F and are not rated for hardness. *Note:* Nylon absorbs moisture, which can affect dimensions and other properties.

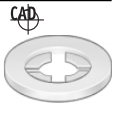

Screw Size Inch	Metric	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 2	M2	5/64″	13/64″	0.02″-0.04″	100	91755A200	$2.08
No. 4	M3	7/64″	17/64″	0.02″-0.04″	100	91755A205	2.08
No. 6	M3.5	1/8″	21/64″	0.02″-0.04″	100	91755A210	2.31
No. 8	M4	5/32″	25/64″	0.05″-0.07″	100	91755A215	3.53
No. 10	M5	11/64″	29/64″	0.05″-0.07″	100	91755A220	3.53
1/4″	M6	15/64″	19/32″	0.05″-0.07″	100	91755A225	3.90
5/16″	M7	19/64″	47/64″	0.05″-0.07″	100	91755A230	3.90
3/8″	M8	23/64″	57/64″	0.05″-0.07″	100	91755A240	3.99

Vented 18-8 Stainless Steel Washers

Tiny channels allow fluids and gases to escape. Suitable for use in Class 100 clean room environments, they're made from 18-8 stainless steel and may be mildly magnetic. Not rated for hardness.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 2	0.08″	0.15″	0.01″-0.03″	10	96861A100	$5.55
No. 4	0.11″	0.21″	0.01″-0.03″	10	96861A200	5.33
No. 6	0.14″	0.27″	0.01″-0.03″	10	96861A300	5.55
No. 8	0.16″	0.3″	0.02″-0.04″	10	96861A400	6.01
No. 10	0.19″	0.35″	0.02″-0.04″	10	96861A500	6.01
1/4″	0.25″	0.47″	0.02″-0.04″	10	96861A600	6.01
5/16″	0.32″	0.56″	0.02″-0.04″	10	96861A700	7.77
3/8″	0.38″	0.63″	0.02″-0.04″	10	96861A800	8.01

Washers for Square-Neck Bolts

Use these pronged washers with square-neck bolts (such as carriage bolts) to dig into ductile materials and prevent rotation. Washers are made from rust-resistant zinc-plated C1006 steel and have a minimum Rockwell hardness of B47.

Screw Size	Square ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
1/4″	0.27″	1.1″	0.04″-0.06″	10	97449A101	$6.73
5/16″	0.34″	1.1″	0.04″-0.06″	10	97449A102	7.20
3/8″	0.4″	1.1″	0.04″-0.06″	10	97449A103	7.20
1/2″	0.53″	1.75″	0.05″-0.07″	5	97449A104	7.43

Pressure-Sealing Washers

Create a reliable seal against oil, water, fuels, and gases. These reusable washers consist of a molded Buna-N (nitrile) rubber seal in a steel washer. When compressed, they form a seal around the fastener shank that's reliable at temperatures from -30° to +225° F.

Thickness given includes steel portion only.

For Nuts and Washers— Also known as thread-sealing washers. Use under nuts and washers.

For Screws and Bolts— Also known as stat-o-seal washers. Use under fastener heads.

Inch sizes are made from zinc-plated steel, which has a minimum Rockwell hardness of B71. Seals have a minimum durometer hardness of 55A.

Metric sizes are made from zinc-plated chrome-moly Alloy 4130 steel, which is not rated for hardness. Seals have a minimum durometer hardness of 85A.

For Nuts and Washers

For Screws and Bolts

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
For Nuts and Washers—*Inch Sizes*						
Max. Operating Pressure: 1,000 psi (fluids); 200 psi (gases)						
No. 6	0.14″	0.41″	0.04″-0.06″	5	93781A008	$8.87
No. 8	0.16″	0.41″	0.04″-0.06″	5	93781A010	8.76
No. 10	0.19″	0.47″	0.04″-0.06″	10	93781A011	14.28
Max. Operating Pressure: 2,000 psi (fluids); 200 psi (gases)						
1/4″	0.25″	0.57″	0.04″-0.06″	5	93781A029	7.93
5/16″	0.31″	0.69″	0.05″-0.07″	5	93781A037	9.46
3/8″	0.38″	0.75″	0.05″-0.07″	5	93781A038	10.77
7/16″	0.44″	0.91″	0.07″-0.09″	5	93781A032	13.75
1/2″	0.51″	1″	0.07″-0.09″	5	93781A033	14.37
9/16″	0.57″	1.1″	0.08″-0.1″	1	93781A034	3.15
5/8″	0.63″	1.19″	0.08″-0.1″	5	93781A035	11.62
3/4″	0.76″	1.38″	0.1″-0.12″	1	93781A039	3.56
7/8″	0.89″	1.57″	0.1″-0.12″	1	93781A046	4.78
1″	1.02″	1.75″	0.11″-0.13″	1	93781A051	10.64
For Screws and Bolts—*Inch Sizes*						
Max. Operating Pressure: 3,400 psi (fluids); 200 psi (gases)						
No. 6	0.13″	0.39″	0.03″-0.05″	10	93783A007	9.67
No. 8	0.15″	0.39″	0.03″-0.05″	10	93783A009	9.33
No. 10	0.18″	0.45″	0.04″-0.06″	10	93783A011	8.34
1/4″	0.24″	0.51″	0.04″-0.06″	10	93783A029	8.34
5/16″	0.3″	0.61″	0.04″-0.06″	10	93783A030	8.93
3/8″	0.36″	0.67″	0.04″-0.06″	10	93783A031	9.90
7/16″	0.42″	0.76″	0.04″-0.06″	5	93783A032	8.67
1/2″	0.49″	0.88″	0.04″-0.06″	10	93783A033	12.94
9/16″	0.55″	1.07″	0.04″-0.06″	5	93783A034	7.84
5/8″	0.61″	1.2″	0.04″-0.06″	5	93783A035	8.71
3/4″	0.74″	1.33″	0.05″-0.07″	5	93783A036	11.00
7/8″	0.86″	1.51″	0.05″-0.07″	1	93783A046	3.34
1″	0.98″	1.76″	0.05″-0.07″	1	93783A051	3.86
For Screws and Bolts—*Metric Sizes (Dimensions in mm)*						
Max. Operating Pressure: 10,500 psi (fluids); 200 psi (gases)						
M5	4.83	9.78	0.89-1.15	10	93786A100	14.80
M6	5.79	11.25	1.14-1.4	10	93786A125	14.80
M8	7.77	13.49	1.14-1.4	10	93786A150	14.80
M10	9.73	15.32	1.14-1.4	10	93786A175	14.80
M12	11.71	19.3	1.14-1.4	10	93786A200	14.80
M14	13.67	22.35	1.14-1.4	5	93786A225	7.51
M16	15.67	27.1	1.14-1.4	5	93786A250	11.63

Very High-Pressure Metal-Bonded Sealing Washers

Lock out up to 8,500 psi of liquid pressure with these high-strength, one-piece washers. They're made from Type 316 stainless steel bonded to a special black plastic sealant. When tightened, the sealant flows under the washer and around fastener threads to create an impervious 360° seal. Frequently used in compressor, electronic, filter, lighting, and marine applications, they have a minimum Rockwell hardness of B75 and are reliable from –60° to +275° F.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 6	0.14″	0.49″	0.06″-0.08″	25	94154A100	$9.65
No. 8	0.17″	0.49″	0.06″-0.08″	25	94154A200	9.65
No. 10	0.2″	0.56″	0.06″-0.08″	25	94154A300	11.03
1/4″	0.25″	0.62″	0.06″-0.08″	25	94154A400	11.55
5/16″	0.31″	0.68″	0.07″-0.09″	25	94154A500	12.48
3/8″	0.38″	0.8″	0.07″-0.09″	10	94154A600	7.40
1/2″	0.5″	1″	0.08″-0.11″	5	94154A800	8.48

Metal-Bonded Sealing Washers

Cushion bolt heads and seal leaky joints with these resilient, one-piece rubber-to-metal bonded washers.

The *18-8 stainless steel backing* has a minimum Rockwell hardness of B80. It offers excellent corrosion resistance and may be mildly magnetic. The *galvanized steel backing* has a minimum Rockwell hardness of B50. It's made from 20-gauge steel, which offers good corrosion resistance. The *aluminum backing* has a minimum Rockwell hardness of B64. It's made from alloy 5052, which is ideal for outdoor use.

Neoprene Bonded— Washers are 1/8″ thick. They are not rated for pressure. The neoprene portion is black with a temperature range of –45° to +250° F and a durometer hardness of 65A-75A.

Silicone Bonded— Washers are 5/32″ thick and have a maximum pressure rating of 100 psi for fluids and gases. The silicone portion is green with a temperature range of –160° to +500° F and a durometer hardness of 65A-75A.

Neoprene Bonded

Screw Size	ID	OD	With 18-8 Stainless Steel Backing: Pkg. Qty.		Per Pkg.	With Galvanized Steel Backing: Pkg. Qty.		Per Pkg.
No. 6	0.15″	3/8″	100	94709A111	$12.66	100	94708A111	$4.60
No. 8	0.18″	3/8″	100	94709A112	12.66	100	94708A112	4.60
No. 8	0.18″	1/2″	100	94709A211	13.67	100	94708A211	5.48
No. 10	0.2″	3/8″	100	94709A113	12.66	100	94708A113	4.60
No. 10	0.2″	1/2″	100	94709A212	13.67	100	94708A212	5.48
No. 10	0.2″	5/8″	50	94709A315	10.11	100	94708A311	7.19
No. 10	0.2″	1 1/8″	5	94709A613	5.17	25	94708A613	8.64
No. 12	0.24″	3/8″	100	94709A114	12.66	100	94708A114	4.60
No. 12	0.24″	1/2″	100	94709A213	13.67	100	94708A213	5.48
No. 12	0.24″	5/8″	50	94709A316	10.11	100	94708A312	7.19
No. 12	0.24″	3/4″	25	94709A415	8.21	100	94708A411	10.51
No. 14	0.27″	1″	10	94709A119	6.78	50	94708A119	13.07
1/4″	0.26″	1/2″	100	94709A214	13.67	100	94708A214	5.48
1/4″	0.27″	5/8″	50	94709A317	10.11	100	94708A313	7.19
1/4″	0.27″	3/4″	50	94709A416	14.56	100	94708A412	10.51
5/16″	0.33″	5/8″	50	94709A318	10.11	100	94708A314	7.19
5/16″	0.33″	3/4″	25	94709A417	8.21	100	94708A413	10.51
3/8″	0.43″	3/4″	25	94709A418	8.21	100	94708A414	10.51
3/8″	0.43″	1″	10	94709A516	6.47	50	94708A516	10.51
1/2″	0.53″	1″	10	94709A518	6.47	50	94708A517	9.53
5/8″	0.65″	1 3/16″	5	94709A526	10.08	10	94708A525	8.10
3/4″	0.81″	1 1/2″	5	94709A531	13.18	10	94708A530	12.70
7/8″	0.91″	1 1/2″	5	94709A536	13.18	10	94708A535	12.70
1″	1.05″	2″	1	94709A541	3.59	5	94708A540	7.91

With Aluminum Backing

Screw Size	ID	OD	Pkg. Qty.		Per Pkg.
No. 10	0.2″	1/2″	50	94240A110	$4.44
No. 12	0.24″	1/2″	50	94240A120	4.44
No. 14	0.27″	5/8″	50	94240A130	6.36

Silicone Bonded

With 18-8 Stainless Steel Backing

Screw Size	ID	OD	Pkg. Qty.		Per Pkg.
No. 8	0.18″	1″	1	91195A104	$3.12
No. 10	0.2″	1″	1	91195A105	3.12
1/4″	0.26″	1″	1	91195A107	3.12
5/16″	0.32″	1″	1	91195A111	3.12
3/8″	0.38″	1″	1	91195A112	3.12

Metric Metal Sealing Washers

Also known as crush washers, these all-metal sealing washers are more durable and better able to withstand extreme environments than nonmetallic types. They're also a good choice for sealing out fluids such as oil and fuel. Not rated for hardness. Screw sizes M16 and larger meet DIN 7603.

Screw Size	ID, mm	OD, mm	Thick., Min.-Max., mm	Pkg. Qty.		Per Pkg.
Copper						
M6	6.05	9.95	0.75-0.89	50	97725A100	$10.87
M8	8.05	11.95	0.75-0.89	50	97725A150	11.96
M10	10.05	13.95	0.75-0.89	25	97725A200	7.61
M12	12.07	15.95	1.32-1.5	25	97725A250	8.70
M16	16.14	19.95	1.32-1.5	10	97725A350	10.87
M18	18.14	23.95	1.32-1.5	10	97725A450	10.87
M22	22.14	26.95	1.32-1.5	10	97725A500	11.96
Aluminum						
M6	6.02	9.9	0.8-0.9	50	97725A600	8.65
M8	8.31	11.76	0.8-0.9	50	97725A700	8.65
M10	10.29	13.85	0.8-0.9	50	97725A750	9.62
M12	12.04	15.85	1.25-1.39	50	97725A800	10.58
M16	16.19	19.84	1.25-1.39	25	97725A850	11.54
M18	18.08	23.85	1.25-1.39	10	97725A860	8.65
M22	22.08	26.9	1.3-1.49	10	97725A950	8.65

Rubber Washers

Choose these weather resistant, black rubber washers for superior cushioning, sealing, and vibration damping.

Neoprene— These abrasion resistant all-purpose washers are resistant to flame, oil, and contact with many chemicals. They have a durometer hardness of 55A-65A and a temperature range of –30° to +220° F. Thickness tolerance is ±0.015″.

EPDM— Perfect for outdoor use, these washers are resistant to ozone, steam, and water. They have a durometer hardness of 55A-65A and a temperature range of –20° to +212° F. Thickness tolerance is ±0.02″.

Screw Size	ID	OD	Neoprene: Pkg. Qty.		Per Pkg.	EPDM: Pkg. Qty.		Per Pkg.
0.062″ Thick								
No. 6	0.12″	1/4″	100	90133A005	$6.81	100	90130A007	$5.86
No. 8	0.15″	5/16″	100	90133A009	6.81	100	90130A009	5.86
0.093″ Thick								
No. 10	0.17″	3/8″	100	90133A013	7.50	100	90130A011	9.04
No. 10	0.17″	1/2″	100	90133A017	8.72	100	90130A012	8.48
No. 12	0.19″	7/16″	100	90133A021	8.81	100	90130A013	9.05
No. 12	0.19″	9/16″	100	90133A025	13.63	100	90130A025	10.67
1/4″	0.23″	1/2″	100	90133A029	8.84	100	90130A029	9.86
1/4″	0.23″	5/8″	100	90133A032	11.56	100	90130A027	10.95
5/16″	0.29″	9/16″	100	90133A036	10.25	100	90130A030	10.48
5/16″	0.29″	11/16″	100	90133A040	11.56	100	90130A040	11.24
3/8″	0.35″	5/8″	100	90133A044	10.88	100	90130A031	10.47
3/8″	0.35″	13/16″	50	90133A048	7.16	100	90130A050	11.52
1/2″	0.49″	1 1/16″	50	90133A053	11.59	100	90130A033	13.33
5/8″	0.61″	1 5/16″	50	90133A056	14.90	50	90130A060	12.32
3/4″	0.74″	1 1/2″	25	90133A060	8.80	25	90130A070	8.42
1″	0.99″	2″	25	90133A064	14.35	10	90130A080	6.86
0.125″ Thick								
3/8″	0.35″	13/16″	50	90133A420	8.10	50	90130A120	13.80
1/2″	0.49″	1 1/16″	50	90133A425	8.87	50	90130A125	14.95
5/8″	0.61″	1 5/16″	25	90133A430	6.12	25	90130A130	11.00
3/4″	0.74″	1 1/2″	25	90133A435	7.31	25	90130A135	12.00
1″	0.99″	2″	10	90133A440	4.33	10	90130A140	6.93

Polyurethane Washers

These rubberlike washers dampen vibration and remain flexible at low temperatures. They're perfect for light duty sealing and are resistant to moisture and chemicals. Durometer hardness is 40A-75A. Temperature range is –10° to +150° F. Color is orange.

Screw Size	ID	OD	Thick., Min.-Max.	Pkg. Qty.		Per Pkg.
No. 6	0.14″	1/4″	0.06″-0.07″	50	93650A100	$7.89
No. 8	0.17″	5/16″	0.06″-0.07″	50	93650A110	12.14
No. 10	0.19″	3/8″	0.06″-0.07″	100	93650A120	11.46
No. 12	0.2″	7/16″	0.08″-0.11″	25	93650A135	9.00
1/4″	0.25″	1/2″	0.08″-0.11″	50	93650A145	10.41
5/16″	0.31″	9/16″	0.08″-0.11″	25	93650A155	9.20
3/8″	0.38″	5/8″	0.08″-0.11″	25	93650A165	9.25
1/2″	0.53″	1″	0.08″-0.11″	10	93650A195	10.94

Sealing Washers

Great for sealing, but also excellent for shock absorption, vibration control, cushioning, and insulating.

Aramid/Buna-N—Made from strong aramid fibers with a Buna-N binder, these washers resist mild acids, most alkalies, salt, water, steam, grease, oil, and detergents. Materials meet ASTM F104. Temp. range is –20° to +460° F. Durometer hardness is 70A. Color is green.

Expanded PTFE—Softer and more flexible than standard PTFE, these washers conform easily to irregular surfaces and will not discolor. Resistant to salts, water, steam, grease, oil, detergents, alkalies (excluding molten alkali metals and elemental fluorine), and acids. Temperature range is –200° to +400° F. Not rated for hardness. Color is white.

Cork Rubber—Washers made from this blend of cork granules and neoprene are highly compressible with excellent cushioning and vibration damping properties. Oil and fuel resistant, the material also meets ASTM P2256A. Temperature range is –10° to +120° F. Durometer hardness is 65A. Color is tan.

Viton® Fluoroelastomer—This fluorocarbon elastomer is one of the best materials available for fuel, oil, and chemical resistance. It meets ASTM D2000. Temperature range is –13° to +500° F. Durometer hardness is 75A. Color is black.

Fluorosilicone—Better than silicone rubber in corrosive conditions, these rubber washers also resist fuel, solvents, and ozone. Material meets ASTM D2000. Temperature range is –65° to +400° F. Durometer hardness is 60A. Color is blue.

Silicone—FDA compliant and ideal for a wide range of temperatures. Material meets ASTM D2000 and ZZR-765. Temperature range is –100° to +450° F. Durometer hardness is 60A. Color is red.

Santoprene—This advanced elastomer provides excellent ozone and weather resistance, plus good chemical resistance. Temperature range is –40° to +275° F. Durometer hardness is 64A. Color is black.

Screw Size/ID	OD	Aramid/Buna-N 0.062″ Thick Pkg. Qty.		Per Pkg.	Expanded PTFE 0.062″ Thick Pkg. Qty.		Per Pkg.	Cork Rubber 0.062″ Thick Pkg. Qty.		Per Pkg.
1/4″	1/2″	10	93303A101	$8.58	5	96371A201	$6.29	10	98884A301	$8.58
1/4″	5/8″	10	93303A102	8.58	5	96371A202	8.66	10	98884A302	8.58
5/16″	5/8″	10	93303A103	8.58	5	96371A203	8.38	10	98884A303	8.58
5/16″	3/4″	10	93303A104	9.05	5	96371A204	8.38	10	98884A304	9.05
3/8″	5/8″	10	93303A105	8.58	5	96371A205	8.38	10	98884A305	8.58
3/8″	3/4″	10	93303A106	9.05	5	96371A206	8.90	10	98884A306	9.05
1/2″	7/8″	5	93303A107	4.53	5	96371A207	9.43	5	98884A307	4.53
1/2″	1″	5	93303A108	8.58	1	96371A208	4.28	5	98884A308	8.58
5/8″	1″	5	93303A109	8.58	1	96371A209	4.28	5	98884A309	8.58
5/8″	1 1/2″	5	93303A110	8.81	1	96371A210	5.34	5	98884A310	8.81
3/4″	1 1/2″	5	93303A111	8.81	1	96371A211	5.34	5	98884A311	8.81
3/4″	2″	5	93303A112	8.81	1	96371A212	6.81	5	98884A312	8.81
1″	1 1/2″	5	93303A113	8.81	1	96371A213	5.34	5	98884A313	8.81
1″	2″	5	93303A114	8.81	1	96371A214	8.38	5	98884A314	8.81

Screw Size	ID	OD	Viton® Fluoroelastomer 0.062″ Thick Pkg. Qty.		Per Pkg.	Fluorosilicone 0.062″ Thick Pkg. Qty.		Per Pkg.	Silicone 0.093″ Thick Pkg. Qty.		Per Pkg.	Santoprene 0.078″ Thick Pkg. Qty.		Per Pkg.
No. 6	0.12″	1/4″	50	93412A401	$9.78	50	91367A901	$11.72	100	99604A101	$11.60	100	94733A701	$11.13
No. 8	0.15″	5/16″	50	93412A403	12.08	25	91367A903	7.76	100	99604A103	13.66	100	94733A703	12.95
No. 10	0.17″	1/2″	25	93412A407	9.78	25	91367A907	13.98	50	99604A107	9.19	50	94733A707	7.49
No. 12	0.19″	9/16″	25	93412A411♣	7.60	10	91367A911	6.73	50	99604A111	10.57	50	94733A711	7.76
1/4″	0.23″	5/8″	10	93412A415	5.98	10	91367A915	8.12	50	99604A115	12.55	50	94733A715	8.63
5/16″	0.29″	11/16″	10	93412A419	6.30	10	91367A919	8.71	50	99604A119	12.08	50	94733A719	8.40
3/8″	0.35″	13/16″	10	93412A423	8.40	5	91367A923	6.34	50	99604A123	14.77	50	94733A723	10.26
1/2″	0.49″	1 1/16″	5	93412A425	6.42	5	91367A925	9.58	25	99604A125	11.25	50	94733A725	13.82
5/8″	0.61″	1 5/16″	5	93412A427	9.31	1	91367A927	3.21	10	99604A127	6.10	25	94733A727	9.11
3/4″	0.74″	1 1/2″	1	93412A429	3.17	1	91367A929	4.51	10	99604A129	9.43	25	94733A729	12.79
1″	0.99″	2″	1	93412A431	4.40	1	91367A931	8.12	10	99604A131	12.08	10	94733A731	6.34

♣ OD is 7/16″.

Vibration-Damping Rubber Washers

A deeply indented grid pattern gives these vibration-damping washers the unique ability to prevent sideways shifting. They're reliable to 150° F. Color is black.

Buna-N (Nitrile)—Offer great oil and fuel resistance, but are not as weather resistant as neoprene washers. Durometer hardness is 20A-30A.

Neoprene—These weather resistant, all-purpose washers also resist abrasion, flame, oil, and contact with many chemicals. Durometer hardness is 65A-75A.

Screw Size/ ID	OD	Pkg. Qty.	Buna-N 5/16″ Thick	Per Pkg.	Neoprene 5/16″ Thick	Per Pkg.	Neoprene 1/2″ Thick	Per Pkg.
1/4″	3/4″	5	5916K31	$7.00	5916K32	$7.23	5916K33	$10.34
1/2″	1 3/8″	1	5916K34	3.09	5916K35	3.31	5916K36	4.63
5/8″	1 3/4″	1	5916K37	4.40	5916K38	4.71	5916K39	6.06
3/4″	2″	1	5916K51	5.49	5916K52	5.86	5916K53	8.23
1″	2 1/2″	1	5916K54	7.86	5916K55	8.34	5916K56	11.83
1 1/4″	3″	1	5916K57	10.30	5916K58	10.36	5916K59	11.53

Felt Washers

They're ideal for insulating, cushioning, sealing, and vibration damping, but you can also soak these all-wool, gray felt washers with oil and use them for lubrication. They meet ASTM D2475 and SAE F-3. Temperature range is –80° to +200° F. Not rated for hardness.

Screw Size/ID	OD	Thick.	Pkg. Qty.		Per Pkg.
1/4″	3/4″	1/4″	25	95571A550	$8.86
1/4″	1″	7/16″	25	95571A840	13.94
3/8″	1″	1/4″	25	95571A842	10.58
1/2″	1 1/4″	1/4″	25	95571A845	11.25
1/2″	1 1/2″	1/4″	25	95571A847	14.73
3/4″	1 1/4″	1/4″	25	95571A837	10.80
1″	2″	1/2″	10	95571A850	12.51

Abrasion-Resistant Rubber Washers

Reinforced with cloth cords for abrasion resistance, these large-OD, 1/8″ thick rubber washers are reliable to 170° F. Not rated for hardness. Color is black. Package quantity is 10 (unless noted).

Screw Size/ ID	OD		Per Pkg.	Screw Size/ ID	OD		Per Pkg.
No. 10	9/16″	90131A101●	$2.97	5/8″	3″	90131A314★	$6.04
1/4″	3/4″	90131A102	3.34	3/4″	2″	90131A106	6.06
1/4″	1″	90131A305	3.75	3/4″	2 1/4″	90131A555	7.34
3/8″	1″	90131A103	3.58	3/4″	3″	90131A317★	6.04
3/8″	1 1/2″	90131A308	4.25	7/8″	2 1/4″	90131A107	6.06
3/8″	2 1/4″	90131A552	6.87	7/8″	3″	90131A320★	6.04
1/2″	1 3/8″	90131A104	4.82	1″	2 1/4″	90131A557	6.26
1/2″	2 1/4″	90131A553	7.33	1″	2 1/2″	90131A108	8.93
1/2″	3″	90131A311★	6.04	1″	3″	90131A323★	6.04
5/8″	1 3/4″	90131A105	5.97	1 1/2″	2 1/2″	90131A327★	3.74
5/8″	2 1/4″	90131A554	6.62	1 1/2″	3″	90131A331★	6.04

● ID is 3/16″. ★ Package quantity is 5.

Leather Washers

Reduce wear and marring with these untreated light-brown washers. Reliable to 150° F, they meet ASTM D2209 and D7256. Durometer hardness is 75A-90A.

Screw Size/ID	OD	Thick.	Pkg. Qty.		Per Pkg.
1/4″	3/4″	1/8″	100	95576A029	$14.70
5/16″	1″	5/32″	50	95576A030	8.53
3/8″	1″	5/32″	50	95576A031	9.24
1/2″	1 5/16″	1/8″	50	95576A033	11.63
5/8″	15/16″	1/8″	100	95576A035	14.70
3/4″	1 3/16″	1/8″	50	95576A036	9.45
1″	1 1/2″	1/8″	50	95576A038	11.63

Stainless Steel Shims

Accurately align, level, and adjust spacing on all types of shafts and machinery. Shims have an ID tolerance of +0.011″ and an OD tolerance of ±0.002″. They have a minimum Rockwell hardness of B70, meet ASTM A240, and may be mildly magnetic.

Type 316 stainless steel shims are more corrosion resistant than 18-8 stainless steel shims. ***18-8 stainless steel*** shims offer excellent corrosion resistance.

Type 316 Stainless Steel

ID	OD	Pkg. Qty.	Pkg.	
0.001″ Thick *(±0.0003″)*				
1/4″	3/8″	10	97022A121	$11.55
11/32″	13/16″	5	97022A124	6.36
3/8″	5/8″	5	97022A128	6.21
1/2″	3/4″	5	97022A132	6.36
5/8″	1″	5	97022A136	7.27
3/4″	1 1/8″	5	97022A139	7.42
7/8″	1 3/8″	5	97022A143	7.42
1″	1 1/2″	5	97022A147	7.58
1 1/4″	1 3/4″	5	97022A151	7.58
1 3/8″	1 7/8″	5	97022A155	7.73
1 1/2″	2 1/8″	5	97022A159	8.03
0.002″ Thick *(±0.0003″)*				
1/4″	3/8″	10	97022A207	9.09
11/32″	13/16″	10	97022A211	10.00
3/8″	5/8″	10	97022A216	3.18
1/2″	3/4″	10	97022A237	4.36
5/8″	1″	10	97022A258	4.35
3/4″	1 1/8″	5	97022A749	9.82
7/8″	1 3/8″	5	97022A762	7.27
1″	1 1/2″	5	97022A770	11.10
1 1/4″	1 3/4″	5	97022A771	7.73
1 3/8″	1 7/8″	5	97022A777	7.88
1 1/2″	2 1/8″	5	97022A781	8.18
0.003″ Thick *(±0.0003″)*				
1/4″	3/8″	10	97022A162	9.09
11/32″	13/16″	10	97022A166	10.15
3/8″	5/8″	10	97022A169	9.39
1/2″	3/4″	10	97022A173	9.85
5/8″	1″	5	97022A175	6.21
3/4″	1 1/8″	5	97022A178	6.52
7/8″	1 3/8″	5	97022A181	6.67
1″	1 1/2″	5	97022A184	6.97
0.004″ Thick *(±0.0003″)*				
1/4″	3/8″	10	97022A187	9.09
11/32″	13/16″	10	97022A190	10.15
3/8″	5/8″	10	97022A193	9.39
1/2″	3/4″	10	97022A196	9.85
5/8″	1″	10	97022A199	10.76
3/4″	1 1/8″	5	97022A202	6.52
7/8″	1 3/8″	5	97022A206	6.67
1″	1 1/2″	5	97022A210	6.82
0.005″ Thick *(±0.0005″)*				
1/4″	3/8″	10	97022A323	8.18
11/32″	13/16″	10	97022A328	9.09
3/8″	5/8″	10	97022A331	4.67
1/2″	3/4″	10	97022A333	5.40
5/8″	1″	10	97022A335	7.12
3/4″	1 1/8″	10	97022A337	6.52
7/8″	1 3/8″	5	97022A344	6.67
1″	1 1/2″	10	97022A341	9.92
1 1/4″	1 3/4″	5	97022A347	6.97
1 3/8″	1 7/8″	5	97022A350	7.27
1 1/2″	2 1/8″	5	97022A353	8.03
1 3/4″	2 3/4″	5	97022A356	8.33
2″	2 3/4″	5	97022A359	8.33
0.010″ Thick *(±0.001″)*				
1/4″	3/8″	10	97022A372	7.27
11/32″	13/16″	10	97022A374	8.18
3/8″	5/8″	10	97022A378	4.95
1/2″	3/4″	10	97022A380	6.91
5/8″	1″	10	97022A382	9.23
3/4″	1 1/8″	10	97022A384	6.99
7/8″	1 3/8″	10	97022A391	10.76
1″	1 1/2″	5	97022A388	10.29
1 1/8″	1 5/8″	10	97022A394	10.91
1 1/4″	1 3/4″	10	97022A397	11.21
1 3/8″	1 7/8″	10	97022A399	11.52
1 1/2″	2 1/8″	10	97022A403	11.97
1 3/4″	2 3/4″	5	97022A406	6.36
2″	2 3/4″	5	97022A409	6.36
0.012″ Thick *(±0.001″)*				
1/4″	3/8″	10	97022A002	7.58
11/32″	13/16″	10	97022A005	8.79
0.012″ Thick *(±0.001″) (Cont.)*				
3/8″	5/8″	10	97022A008	$8.03
1/2″	3/4″	10	97022A011	8.48
5/8″	1″	10	97022A014	9.09
3/4″	1 1/8″	10	97022A016	10.61
7/8″	1 3/8″	10	97022A019	11.06
1″	1 1/2″	10	97022A022	11.36
0.016″ Thick *(±0.002″)*				
1/4″	3/8″	10	97022A038	5.45
11/32″	13/16″	10	97022A044	6.36
3/8″	5/8″	10	97022A425	5.76
1/2″	3/4″	10	97022A427	7.62
5/8″	1″	10	97022A429	13.45
3/4″	1 1/8″	5	97022A431	8.50
7/8″	1 3/8″	10	97022A047	11.06
1″	1 1/2″	5	97022A435	8.88
1 1/8″	1 5/8″	10	97022A049	11.36
1 1/4″	1 3/4″	10	97022A052	11.97
1 3/8″	1 7/8″	5	97022A057	6.36
1 1/2″	2 1/8″	5	97022A060	6.67
1 3/4″	2 3/4″	5	97022A063	6.82
2″	2 3/4″	5	97022A066	6.82
0.020″ Thick *(±0.0025″)*				
1/4″	3/8″	10	97022A440	4.55
11/32″	13/16″	10	97022A444	5.15
3/8″	5/8″	10	97022A448	6.03
1/2″	3/4″	10	97022A450	6.88
5/8″	1″	10	97022A452	9.42
3/4″	1 1/8″	5	97022A454	8.30
7/8″	1 3/8″	10	97022A461	11.21
1″	1 1/2″	5	97022A458	12.71
1 1/8″	1 5/8″	10	97022A464	11.52
1 1/4″	1 3/4″	10	97022A467	12.12
1 3/8″	1 7/8″	5	97022A470	6.36
1 1/2″	2 1/8″	5	97022A473	6.67
1 3/4″	2 3/4″	5	97022A476	6.97
2″	2 3/4″	5	97022A479	6.97
0.025″ Thick *(±0.0025″)*				
1/4″	3/8″	10	97022A213	4.55
11/32″	13/16″	10	97022A217	6.06
3/8″	5/8″	10	97022A219	5.69
1/2″	3/4″	10	97022A240	5.42
5/8″	1″	10	97022A261	6.92
3/4″	1 1/8″	10	97022A752	5.71
7/8″	1 3/8″	10	97022A764	11.36
1″	1 1/2″	10	97022A773	10.38
1 1/8″	1 5/8″	10	97022A784	11.67
1 1/4″	1 3/4″	5	97022A787	6.36
1 3/8″	1 7/8″	5	97022A790	6.36
1 1/2″	2 1/8″	5	97022A793	6.82
1 3/4″	2 3/4″	5	97022A796	7.12
2″	2 3/4″	5	97022A799	7.12
0.030″ Thick *(±0.003″)*				
1/4″	3/8″	10	97022A489	5.30
11/32″	13/16″	10	97022A492	6.82
3/8″	5/8″	10	97022A495	5.78
1/2″	3/4″	10	97022A497	6.15
5/8″	1″	10	97022A499	8.93
3/4″	1 1/8″	10	97022A501	10.84
7/8″	1 3/8″	10	97022A503	11.52
1″	1 1/2″	5	97022A505	11.86
1 1/8″	1 5/8″	10	97022A509	11.82
1 1/4″	1 3/4″	5	97022A512	6.21
1 3/8″	1 7/8″	5	97022A516	6.36
1 1/2″	2 1/8″	5	97022A519	6.82
1 3/4″	2 3/4″	5	97022A523	7.27
2″	2 3/4″	5	97022A527	7.27
0.045″ Thick *(±0.0035″)*				
1/4″	3/8″	10	97022A212	9.09
11/32″	13/16″	10	97022A215	9.70
3/8″	5/8″	10	97022A222	8.89
1/2″	3/4″	10	97022A243	11.13
5/8″	1″	10	97022A264	9.28
3/4″	1 1/8″	5	97022A755	6.92
7/8″	1 3/8″	10	97022A765	11.67

Type 316 Stainless Steel (Cont.)

ID	OD	Pkg. Qty.	Pkg.	
0.045″ Thick *(±0.0035″) (Cont.)*				
1″	1 1/2″	5	97022A776	$7.67
1 1/8″	1 5/8″	10	97022A803	11.97
1 1/4″	1 3/4″	5	97022A806	6.67
1 3/8″	1 7/8″	5	97022A809	6.97
1 1/2″	2 1/8″	5	97022A812	6.97
1 3/4″	2 3/4″	5	97022A816	9.85
2″	2 3/4″	5	97022A819	9.85
0.060″ Thick *(±0.004″)*				
1/4″	3/8″	5	97022A535	8.03
11/32″	13/16″	10	97022A538	7.27
3/8″	5/8″	10	97022A541	8.33
1/2″	3/4″	10	97022A543	10.98
5/8″	1″	5	97022A545	10.05
3/4″	1 1/8″	5	97022A547	11.48
7/8″	1 3/8″	10	97022A549	11.97
1″	1 1/2″	5	97022A551	12.83
1 1/8″	1 5/8″	5	97022A562	6.21
1 1/4″	1 3/4″	5	97022A565	6.36
1 3/8″	1 7/8″	5	97022A569	6.97
1 1/2″	2 1/8″	5	97022A573	7.42
1 3/4″	2 3/4″	5	97022A577	11.36
2″	2 3/4″	5	97022A580	11.67
0.090″ Thick *(±0.008″)*				
11/32″	13/16″	10	97022A223	12.45
3/8″	5/8″	5	97022A225	9.69
0.090″ Thick *(±0.008″) (Cont.)*				
1/2″	3/4″	5	97022A246	$10.36
5/8″	1″	5	97022A267	9.04
3/4″	1 1/8″	5	97022A758	8.99
7/8″	1 3/8″	5	97022A763	6.36
1″	1 1/2″	1	97022A779	3.52
1 1/8″	1 5/8″	5	97022A822	7.58
1 1/4″	1 3/4″	5	97022A825	9.39
1 3/8″	1 7/8″	5	97022A829	11.06
1 1/2″	2 1/8″	5	97022A833	11.82
1 3/4″	2 3/4″	1	97022A837	3.49
2″	2 3/4″	1	97022A840	3.49
0.125″ Thick *(±0.013″)*				
11/32″	13/16″	10	97022A227	11.82
3/8″	5/8″	5	97022A228	5.82
1/2″	3/4″	5	97022A249	6.43
5/8″	1″	5	97022A247	6.67
3/4″	1 1/8″	5	97022A255	6.82
7/8″	1 3/8″	5	97022A768	7.88
1″	1 1/2″	1	97022A782	3.87
1 1/8″	1 5/8″	5	97022A845	9.70
1 1/4″	1 3/4″	5	97022A848	12.58
1 3/8″	1 7/8″	5	97022A852	13.64
1 1/2″	2 1/8″	1	97022A855	2.85
1 3/4″	2 3/4″	1	97022A859	4.55
2″	2 3/4″	1	97022A863	4.55

18-8 Stainless Steel

ID	OD	Pkg. Qty.	Pkg.	
0.001″ Thick *(±0.0003″)*				
1/4″	3/8″	10	98126A116	10.00
11/32″	13/16″	5	98126A119	6.06
3/8″	5/8″	10	98126A123	9.37
1/2″	3/4″	10	98126A126	9.96
5/8″	1″	10	98126A129	10.55
3/4″	1 1/8″	10	98126A132	11.22
7/8″	1 3/8″	10	98126A135	11.93
1″	1 1/2″	10	98126A138	12.96
1 1/8″	1 5/8″	10	98126A141	12.34
1 1/4″	1 3/4″	10	98126A144	14.30
1 3/8″	1 7/8″	5	98126A147	7.12
1 1/2″	2 1/8″	5	98126A151	7.58
1 3/4″	2 3/4″	5	98126A155	7.88
2″	2 3/4″	5	98126A159	7.88
0.002″ Thick *(±0.0003″)*				
1/4″	3/8″	10	98126A161	7.58
11/32″	13/16″	10	98126A163	8.33
3/8″	5/8″	10	98126A165	8.74
1/2″	3/4″	10	98126A168	8.41
5/8″	1″	10	98126A171	8.83
3/4″	1 1/8″	10	98126A174	9.60
7/8″	1 3/8″	10	98126A177	9.66
1″	1 1/2″	10	98126A180	9.99
1 1/8″	1 5/8″	10	98126A183	10.34
1 1/4″	1 3/4″	10	98126A186	11.51
1 3/8″	1 7/8″	10	98126A189	11.12
1 1/2″	2 1/8″	10	98126A192	14.26
1 3/4″	2 3/4″	5	98126A195	8.73
2″	2 3/4″	5	98126A198	9.03
0.003″ Thick *(±0.0003″)*				
1/4″	3/8″	10	98126A197	7.58
11/32″	13/16″	10	98126A199	8.33
3/8″	5/8″	10	98126A210	9.15
1/2″	3/4″	10	98126A213	6.99
5/8″	1″	10	98126A216	9.82
3/4″	1 1/8″	10	98126A219	10.30
7/8″	1 3/8″	10	98126A222	10.75
1″	1 1/2″	10	98126A225	11.12
1 1/8″	1 5/8″	10	98126A228	13.47
1 1/4″	1 3/4″	10	98126A231	13.82
1 3/8″	1 7/8″	10	98126A234	14.48
1 1/2″	2 1/8″	5	98126A237	9.03
1 3/4″	2 3/4″	5	98126A240	14.13
2″	2 3/4″	5	98126A243	14.15
0.004″ Thick *(±0.0004″)*				
1/4″	3/8″	10	98126A246	7.58
11/32″	13/16″	10	98126A248	8.33
3/8″	5/8″	10	98126A250	8.85
1/2″	3/4″	10	98126A253	9.54
5/8″	1″	10	98126A256	10.15
3/4″	1 1/8″	10	98126A259	10.67
7/8″	1 3/8″	10	98126A262	13.34
1″	1 1/2″	10	98126A265	11.68
1 1/8″	1 5/8″	10	98126A268	13.50
1 1/4″	1 3/4″	10	98126A271	14.90
1 3/8″	1 7/8″	10	98126A274	14.95
1 1/2″	2 1/8″	5	98126A277	8.71
1 3/4″	2 3/4″	5	98126A280	10.24
2″	2 3/4″	5	98126A283	10.31
0.005″ Thick *(±0.0005″)*				
1/4″	3/8″	10	98126A286	6.82
11/32″	13/16″	10	98126A288	7.58
3/8″	5/8″	10	98126A291	8.72
1/2″	3/4″	10	98126A294	8.96
5/8″	1″	10	98126A297	9.13
3/4″	1 1/8″	10	98126A300	9.56
7/8″	1 3/8″	10	98126A303	10.45
1″	1 1/2″	10	98126A306	11.65
1 1/8″	1 5/8″	10	98126A309	11.31
1 1/4″	1 3/4″	10	98126A312	13.28
1 3/8″	1 7/8″	10	98126A315	12.82
1 1/2″	2 1/8″	10	98126A318	13.53
1 3/4″	2 3/4″	5	98126A321	10.37
2″	2 3/4″	5	98126A324	10.55
0.006″ Thick *(±0.0006″)*				
1/4″	3/8″	10	98126A327	6.82
11/32″	13/16″	10	98126A330	7.58
3/8″	5/8″	10	98126A333	9.05
1/2″	3/4″	10	98126A336	9.29
5/8″	1″	10	98126A339	10.02
3/4″	1 1/8″	10	98126A342	10.39
7/8″	1 3/8″	10	98126A345	10.77
1″	1 1/2″	10	98126A348	12.24
1 1/8″	1 5/8″	10	98126A351	12.45
1 1/4″	1 3/4″	10	98126A354	13.45
1 3/8″	1 7/8″	10	98126A357	12.03
1 1/2″	2 1/8″	5	98126A360	9.31
1 3/4″	2 3/4″	5	98126A363	10.30
2″	2 3/4″	5	98126A366	10.40

(Continued on following page)

Stainless Steel Shims *(Continued from previous page)*

18-8 Stainless Steel (Cont.)

0.007″ Thick *(±0.0007″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A368	$6.82
11/32″	13/16″	10	98126A370	7.58
3/8″	5/8″	10	98126A371	8.29
1/2″	3/4″	10	98126A374	9.20
5/8″	1″	10	98126A377	10.57
3/4″	1 1/8″	10	98126A380	9.98
7/8″	1 3/8″	10	98126A383	12.79
1″	1 1/2″	10	98126A386	12.79
1 1/8″	1 5/8″	10	98126A389	11.18
1 1/4″	1 3/4″	10	98126A392	14.23
1 3/8″	1 7/8″	5	98126A395	8.28
1 1/2″	2 1/8″	5	98126A398	9.01
1 3/4″	2 3/4″	5	98126A401	9.52
2″	2 3/4″	5	98126A404	11.22

0.008″ Thick *(±0.0008″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A406	6.82
11/32″	13/16″	10	98126A409	7.58
3/8″	5/8″	10	98126A412	8.39
1/2″	3/4″	10	98126A415	9.44
5/8″	1″	10	98126A418	9.54
3/4″	1 1/8″	10	98126A421	10.45
7/8″	1 3/8″	10	98126A424	11.61
1″	1 1/2″	10	98126A427	12.37
1 1/8″	1 5/8″	10	98126A430	13.89
1 1/4″	1 3/4″	5	98126A433	8.86
1 3/8″	1 7/8″	5	98126A436	8.40
1 1/2″	2 1/8″	5	98126A439	8.69
1 3/4″	2 3/4″	5	98126A442	9.99
2″	2 3/4″	5	98126A445	10.81

0.010″ Thick *(±0.001″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A447	6.06
11/32″	13/16″	10	98126A449	6.82
3/8″	5/8″	10	98126A450	8.68
1/2″	3/4″	10	98126A453	8.67
5/8″	1″	10	98126A456	7.05
3/4″	1 1/8″	10	98126A459	8.90
7/8″	1 3/8″	10	98126A462	9.29
1″	1 1/2″	10	98126A465	11.25
1 1/8″	1 5/8″	10	98126A468	12.56
1 1/4″	1 3/4″	10	98126A471	12.87
1 3/8″	1 7/8″	10	98126A474	13.81
1 1/2″	2 1/8″	5	98126A477	8.61
1 3/4″	2 3/4″	5	98126A480	10.22
2″	2 3/4″	5	98126A483	12.31

0.012″ Thick *(±0.002″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A486	$5.76
11/32″	13/16″	10	98126A489	6.52
3/8″	5/8″	10	98126A491	8.71
1/2″	3/4″	10	98126A494	9.41
5/8″	1″	10	98126A497	9.82
3/4″	1 1/8″	10	98126A500	9.53
7/8″	1 3/8″	10	98126A503	11.27
1″	1 1/2″	10	98126A506	11.46
1 1/8″	1 5/8″	10	98126A509	12.99
1 1/4″	1 3/4″	10	98126A512	13.61
1 3/8″	1 7/8″	5	98126A515	8.68
1 1/2″	2 1/8″	5	98126A518	9.00
1 3/4″	2 3/4″	5	98126A521	10.86
2″	2 3/4″	5	98126A524	10.56

0.015″ Thick *(±0.002″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A528	4.55
11/32″	13/16″	10	98126A530	5.30
3/8″	5/8″	10	98126A532	7.91
1/2″	3/4″	10	98126A535	8.90
5/8″	1″	10	98126A538	9.35
3/4″	1 1/8″	10	98126A541	8.67
7/8″	1 3/8″	10	98126A544	9.58
1″	1 1/2″	10	98126A547	10.15
1 1/8″	1 5/8″	10	98126A550	10.76
1 1/4″	1 3/4″	10	98126A553	11.43
1 3/8″	1 7/8″	10	98126A556	12.57
1 1/2″	2 1/8″	10	98126A559	14.12
1 3/4″	2 3/4″	5	98126A562	9.88
2″	2 3/4″	5	98126A565	10.27

0.020″ Thick *(±0.0025″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A568	3.79
11/32″	13/16″	10	98126A570	4.24
3/8″	5/8″	10	98126A573	8.86
1/2″	3/4″	10	98126A576	8.97
5/8″	1″	10	98126A579	9.37
3/4″	1 1/8″	10	98126A582	9.61
7/8″	1 3/8″	10	98126A585	10.41
1″	1 1/2″	10	98126A588	11.37
1 1/8″	1 5/8″	10	98126A591	10.95
1 1/4″	1 3/4″	10	98126A594	11.44
1 3/8″	1 7/8″	10	98126A597	12.62
1 1/2″	2 1/8″	10	98126A600	14.49
1 3/4″	2 3/4″	5	98126A603	10.03
2″	2 3/4″	5	98126A606	10.08

18-8 Stainless Steel (Cont.)

0.025″ Thick *(±0.0035″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A608	$3.64
11/32″	13/16″	10	98126A610	4.09
3/8″	5/8″	10	98126A612	8.82
1/2″	3/4″	10	98126A615	9.15
5/8″	1″	10	98126A618	9.68
3/4″	1 1/8″	10	98126A621	7.65
7/8″	1 3/8″	10	98126A624	11.22
1″	1 1/2″	10	98126A627	12.01
1 1/8″	1 5/8″	10	98126A630	12.88
1 1/4″	1 3/4″	10	98126A633	12.18
1 3/8″	1 7/8″	5	98126A636	10.12
1 1/2″	2 1/8″	5	98126A639	10.21
1 3/4″	2 3/4″	1	98126A642	3.27
2″	2 3/4″	1	98126A645	2.89

0.030″ Thick *(±0.003″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A647	3.64
11/32″	13/16″	10	98126A649	4.09
3/8″	5/8″	10	98126A650	9.08
1/2″	3/4″	10	98126A653	8.71
5/8″	1″	10	98126A656	9.25
3/4″	1 1/8″	10	98126A659	10.67
7/8″	1 3/8″	10	98126A662	11.80
1″	1 1/2″	10	98126A665	12.52
1 1/8″	1 5/8″	10	98126A668	13.58
1 1/4″	1 3/4″	10	98126A671	14.19
1 3/8″	1 7/8″	5	98126A674	9.35
1 1/2″	2 1/8″	5	98126A677	10.90
1 3/4″	2 3/4″	5	98126A680	13.92
2″	2 3/4″	5	98126A683	14.01

0.048″ Thick *(±0.0035″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	98126A686	7.58
11/32″	13/16″	10	98126A689	4.85
3/8″	5/8″	10	98126A691	9.13
1/2″	3/4″	10	98126A694	9.41
5/8″	1″	10	98126A697	10.63
3/4″	1 1/8″	10	98126A700	10.93
7/8″	1 3/8″	10	98126A703	11.63
1″	1 1/2″	5	98126A706	7.21
1 1/8″	1 5/8″	5	98126A709	7.68
1 1/4″	1 3/4″	5	98126A712	9.10
1 3/8″	1 7/8″	5	98126A715	9.17
1 1/2″	2 1/8″	5	98126A718	10.43
1 3/4″	2 3/4″	1	98126A721	3.94
2″	2 3/4″	1	98126A724	4.12

0.062″ Thick *(±0.004″)*

ID	OD	Pkg. Qty.		Pkg.
11/32″	13/16″	10	98126A733	$9.73
3/8″	5/8″	10	98126A736	9.26
1/2″	3/4″	10	98126A739	9.46
5/8″	1″	10	98126A742	10.90
3/4″	1 1/8″	10	98126A745	11.66
7/8″	1 3/8″	10	98126A748	12.98
1″	1 1/2″	5	98126A751	9.00
1 1/8″	1 5/8″	5	98126A754	8.64
1 1/4″	1 3/4″	5	98126A757	9.61
1 3/8″	1 7/8″	1	98126A760	3.89
1 1/2″	2 1/8″	5	98126A763	12.02
1 3/4″	2 3/4″	1	98126A766	4.63
2″	2 3/4″	1	98126A769	4.15

0.090″ Thick *(±0.008″)*

ID	OD	Pkg. Qty.		Pkg.
11/32″	13/16″	10	98126A782	6.82
3/8″	5/8″	10	98126A785	11.27
1/2″	3/4″	10	98126A788	11.21
5/8″	1″	5	98126A791	7.16
3/4″	1 1/8″	5	98126A794	8.37
7/8″	1 3/8″	5	98126A797	9.98
1″	1 1/2″	5	98126A800	11.97
1 1/8″	1 5/8″	5	98126A803	10.75
1 1/4″	1 3/4″	1	98126A806	3.34
1 3/8″	1 7/8″	1	98126A809	3.22
1 1/2″	2 1/8″	1	98126A812	3.46
1 3/4″	2 3/4″	1	98126A815	5.36
2″	2 3/4″	1	98126A818	5.36

0.125″ Thick *(±0.013″)*

ID	OD	Pkg. Qty.		Pkg.
11/32″	13/16″	10	98126A831	10.30
3/8″	5/8″	10	98126A834	12.83
1/2″	3/4″	10	98126A837	13.25
5/8″	1″	5	98126A840	7.85
3/4″	1 1/8″	5	98126A843	9.16
7/8″	1 3/8″	5	98126A846	13.51
1″	1 1/2″	1	98126A849	3.24
1 1/8″	1 5/8″	1	98126A852	4.15
1 1/4″	1 3/4″	1	98126A855	3.69
1 3/8″	1 7/8″	1	98126A858	5.03
1 1/2″	2 1/8″	1	98126A860	3.80
1 3/4″	2 3/4″	1	98126A863	4.65
2″	2 3/4″	1	98126A866	4.74

Steel Shims

Use for fast, accurate spacing on all types of shafts and machinery. Shims have an ID tolerance of +0.011″ and an OD tolerance of ±0.002″.

Plain steel shims are made from C1008-C1010 steel. They have a minimum Rockwell hardness of B65. ***Spring steel*** shims are harder and hold their shape better than plain steel shims. They have a minimum Rockwell hardness of C44.

Plain Steel

0.001″ Thick *(±0.0001″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A119	$5.22
11/32″	13/16″	10	3088A701	5.94
3/8″	5/8″	10	3088A121	4.51
1/2″	3/4″	10	3088A122	4.51
5/8″	1″	10	3088A123	5.38
3/4″	1 1/8″	10	3088A124	6.36
7/8″	1 3/8″	10	3088A125	7.26
1″	1 1/2″	10	3088A126	7.28
1 1/8″	1 5/8″	10	3088A127	7.78
1 1/4″	1 3/4″	10	3088A128	7.73
1 3/8″	1 7/8″	10	3088A129	8.17
1 1/2″	2 1/8″	10	3088A131	8.37
1 3/4″	2 3/4″	10	3088A132	13.74
2″	2 3/4″	10	3088A133	14.84

0.002″ Thick *(±0.0002″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A159	4.32
11/32″	13/16″	10	3088A708	4.96
3/8″	5/8″	10	3088A161	4.46
1/2″	3/4″	10	3088A162	4.45
5/8″	1″	10	3088A163	5.31
3/4″	1 1/8″	10	3088A164	6.48
7/8″	1 3/8″	10	3088A165	7.23

0.002″ Thick *(±0.0002″) (Cont.)*

ID	OD	Pkg. Qty.		Pkg.
1″	1 1/2″	10	3088A166	$7.23
1 1/8″	1 5/8″	10	3088A167	7.74
1 1/4″	1 3/4″	10	3088A168	7.74
1 3/8″	1 7/8″	10	3088A169	8.09
1 1/2″	2 1/8″	10	3088A171	8.11
1 3/4″	2 3/4″	10	3088A172	13.52
2″	2 3/4″	10	3088A173	14.59

0.003″ Thick *(±0.0003″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A179	4.28
11/32″	13/16″	10	3088A714	4.88
3/8″	5/8″	10	3088A181	4.25
1/2″	3/4″	10	3088A182	4.26
5/8″	1″	10	3088A183	5.09
3/4″	1 1/8″	10	3088A184	5.95
7/8″	1 3/8″	10	3088A185	6.77
1″	1 1/2″	10	3088A186	6.77
1 1/8″	1 5/8″	10	3088A187	7.58
1 1/4″	1 3/4″	10	3088A188	7.58
1 3/8″	1 7/8″	10	3088A189	7.93
1 1/2″	2 1/8″	10	3088A191	7.95
1 3/4″	2 3/4″	10	3088A192	12.87
2″	2 3/4″	10	3088A193	13.93

Plain Steel (Cont.)

0.004″ Thick *(±0.0005″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A209	$3.66
11/32″	13/16″	10	3088A716	4.20
3/8″	5/8″	10	3088A211	4.28
1/2″	3/4″	10	3088A212	4.22
5/8″	1″	10	3088A213	5.14
3/4″	1 1/8″	10	3088A214	5.98
7/8″	1 3/8″	10	3088A215	6.77
1″	1 1/2″	10	3088A216	6.77
1 1/8″	1 5/8″	10	3088A217	7.58
1 1/4″	1 3/4″	10	3088A218	7.58
1 3/8″	1 7/8″	10	3088A219	7.93
1 1/2″	2 1/8″	10	3088A221	7.93
1 3/4″	2 3/4″	10	3088A222	12.87
2″	2 3/4″	10	3088A223	13.93

0.005″ Thick *(±0.0005″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A229	3.66
11/32″	13/16″	10	3088A729	4.20
3/8″	5/8″	10	3088A231	3.69
1/2″	3/4″	10	3088A232	3.69
5/8″	1″	10	3088A233	4.43
3/4″	1 1/8″	10	3088A234	4.66
7/8″	1 3/8″	10	3088A235	5.14

0.005″ Thick *(±0.0005″) (Cont.)*

ID	OD	Pkg. Qty.		Pkg.
1″	1 1/2″	10	3088A236	$5.14
1 1/8″	1 5/8″	10	3088A237	5.51
1 1/4″	1 3/4″	10	3088A238	5.45
1 3/8″	1 7/8″	10	3088A239	6.19
1 1/2″	2 1/8″	10	3088A241	6.19
1 3/4″	2 3/4″	10	3088A242	8.22
2″	2 3/4″	10	3088A243	8.82

0.006″ Thick *(±0.0005″)*

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A249	3.62
11/32″	13/16″	10	3088A736	4.13
3/8″	5/8″	10	3088A251	3.67
1/2″	3/4″	10	3088A252	3.70
5/8″	1″	10	3088A253	4.47
3/4″	1 1/8″	10	3088A254	4.63
7/8″	1 3/8″	10	3088A255	5.14
1″	1 1/2″	10	3088A256	5.09
1 1/8″	1 5/8″	10	3088A257	5.51
1 1/4″	1 3/4″	10	3088A258	5.51
1 3/8″	1 7/8″	10	3088A259	6.19
1 1/2″	2 1/8″	10	3088A261	6.19
1 3/4″	2 3/4″	10	3088A262	8.22
2″	2 3/4″	10	3088A263	8.82

(Continued on following page)

Steel Shims *(Continued from previous page)*

Use for fast, accurate spacing on all types of shafts and machinery. Shims have an ID tolerance of +0.011″ and an OD tolerance of ±0.002″.

Plain steel shims are made from C1008-C1010 steel. They have a minimum Rockwell hardness of B65. ***Spring steel*** shims are harder and hold their shape better than plain steel shims. They have a minimum Rockwell hardness of C44.

Plain Steel (Cont.)

0.007″ Thick (±0.00075″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A269	$3.62
3/8″	5/8″	10	3088A271	3.70
1/2″	3/4″	10	3088A272	3.70
5/8″	1″	10	3088A273	4.53
3/4″	1 1/8″	10	3088A274	4.65
7/8″	1 3/8″	10	3088A275	5.14
1″	1 1/2″	10	3088A276	5.39
1 1/8″	1 5/8″	10	3088A277	5.51
1 1/4″	1 3/4″	10	3088A278	5.45
1 3/8″	1 7/8″	10	3088A279	6.19
1 1/2″	2 1/8″	10	3088A281	6.14
1 3/4″	2 3/4″	10	3088A282	8.11
2″	2 3/4″	10	3088A283	8.84

0.008″ Thick (±0.00075″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A289	3.66
3/8″	5/8″	10	3088A291	3.80
1/2″	3/4″	10	3088A292	3.70
5/8″	1″	10	3088A293	4.53
3/4″	1 1/8″	10	3088A294	4.70
7/8″	1 3/8″	10	3088A295	5.07
1″	1 1/2″	10	3088A296	5.06
1 1/8″	1 5/8″	10	3088A297	5.51
1 1/4″	1 3/4″	10	3088A298	5.55
1 3/8″	1 7/8″	10	3088A299	6.19
1 1/2″	2 1/8″	10	3088A311	6.23
1 3/4″	2 3/4″	10	3088A312	8.22
2″	2 3/4″	10	3088A313	8.83

0.010″ Thick (±0.00075″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A319	3.62
11/32″	13/16″	10	3088A758	4.13
3/8″	5/8″	10	3088A321	3.69
1/2″	3/4″	10	3088A322	3.69
5/8″	1″	10	3088A323	4.43
3/4″	1 1/8″	10	3088A324	4.56
7/8″	1 3/8″	10	3088A325	5.01
1″	1 1/2″	10	3088A326	5.14
1 1/8″	1 5/8″	10	3088A327	5.61
1 1/4″	1 3/4″	10	3088A328	5.55
1 3/8″	1 7/8″	10	3088A329	6.23
1 1/2″	2 1/8″	10	3088A331	6.19
1 3/4″	2 3/4″	10	3088A332	8.19
2″	2 3/4″	10	3088A333	8.82

0.012″ Thick (±0.00075″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A339	5.96
11/32″	13/16″	10	3088A777	6.80
3/8″	5/8″	10	3088A341	3.74
1/2″	3/4″	10	3088A342	3.74
5/8″	1″	10	3088A343	4.46
3/4″	1 1/8″	10	3088A344	4.56
7/8″	1 3/8″	10	3088A345	5.18
1″	1 1/2″	10	3088A346	5.14
1 1/8″	1 5/8″	10	3088A347	5.64
1 1/4″	1 3/4″	10	3088A348	5.50
1 3/8″	1 7/8″	10	3088A349	6.14
1 1/2″	2 1/8″	10	3088A351	6.28
1 3/4″	2 3/4″	10	3088A352	8.17
2″	2 3/4″	10	3088A353	8.79

0.015″ Thick (±0.001″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A359	5.25
11/32″	13/16″	10	3088A779	5.25
3/8″	5/8″	10	3088A361	3.69
1/2″	3/4″	10	3088A362	3.69
5/8″	1″	10	3088A363	4.52
3/4″	1 1/8″	10	3088A364	4.62
7/8″	1 3/8″	10	3088A365	5.24
1″	1 1/2″	10	3088A366	5.14
1 1/8″	1 5/8″	10	3088A367	5.57
1 1/4″	1 3/4″	10	3088A368	5.47
1 3/8″	1 7/8″	10	3088A369	6.11
1 1/2″	2 1/8″	10	3088A371	6.24
1 3/4″	2 3/4″	10	3088A372	8.21
2″	2 3/4″	10	3088A373	8.84

0.020″ Thick (±0.001″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A379	5.25
11/32″	13/16″	10	3088A78	5.25

0.020″ Thick (±0.001″) (Cont.)

ID	OD	Pkg. Qty.		Pkg.
3/8″	5/8″	10	3088A381	$3.69
1/2″	3/4″	10	3088A382	3.76
5/8″	1″	10	3088A383	4.89
3/4″	1 1/8″	10	3088A384	5.56
7/8″	1 3/8″	10	3088A385	6.19
1″	1 1/2″	10	3088A386	6.16
1 1/8″	1 5/8″	10	3088A387	6.42
1 1/4″	1 3/4″	10	3088A388	6.33
1 3/8″	1 7/8″	10	3088A389	7.28
1 1/2″	2 1/8″	10	3088A391	7.69
1 3/4″	2 3/4″	10	3088A392	11.08
2″	2 3/4″	10	3088A393	14.20

0.025″ Thick (±0.0015″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A409	5.28
11/32″	13/16″	10	3088A785	5.25
3/8″	5/8″	10	3088A411	3.74
1/2″	3/4″	10	3088A412	3.69
5/8″	1″	10	3088A413	4.85
3/4″	1 1/8″	10	3088A414	5.50
7/8″	1 3/8″	10	3088A415	6.26
1″	1 1/2″	10	3088A416	6.24
1 1/8″	1 5/8″	10	3088A417	6.37
1 1/4″	1 3/4″	10	3088A418	6.41
1 3/8″	1 7/8″	10	3088A419	7.30
1 1/2″	2 1/8″	10	3088A421	7.77
1 3/4″	2 3/4″	10	3088A422	11.06
2″	2 3/4″	10	3088A423	14.15

0.031″ Thick (±0.0015″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A429	4.97
11/32″	13/16″	10	3088A793	4.75
3/8″	5/8″	10	3088A431	3.69
1/2″	3/4″	10	3088A432	3.69
5/8″	1″	10	3088A433	4.83
3/4″	1 1/8″	10	3088A434	5.51
7/8″	1 3/8″	10	3088A435	6.20
1″	1 1/2″	10	3088A436	6.21
1 1/8″	1 5/8″	10	3088A437	6.39
1 1/4″	1 3/4″	10	3088A438	6.40
1 3/8″	1 7/8″	10	3088A439	7.30
1 1/2″	2 1/8″	10	3088A441	7.78
1 3/4″	2 3/4″	10	3088A442	11.09
2″	2 3/4″	10	3088A443	14.20

0.047″ Thick (±0.002″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A449	5.05
11/32″	13/16″	10	3088A799	5.45
3/8″	5/8″	10	3088A451	4.17
1/2″	3/4″	10	3088A452	4.22
5/8″	1″	10	3088A453	5.77
3/4″	1 1/8″	10	3088A454	7.07
7/8″	1 3/8″	10	3088A455	7.59
1″	1 1/2″	10	3088A456	7.98
1 1/8″	1 5/8″	10	3088A457	8.49
1 1/4″	1 3/4″	10	3088A458	8.45
1 3/8″	1 7/8″	10	3088A459	9.80
1 1/2″	2 1/8″	10	3088A461	10.42
1 3/4″	2 3/4″	5	3088A462	8.32
2″	2 3/4″	5	3088A463	10.32

0.062″ Thick (±0.0025″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A464	5.05
11/32″	13/16″	10	3088A806	5.74
3/8″	5/8″	10	3088A466	4.20
1/2″	3/4″	10	3088A467	4.17
5/8″	1″	10	3088A468	5.74
3/4″	1 1/8″	10	3088A469	7.06
7/8″	1 3/8″	10	3088A471	7.55
1″	1 1/2″	10	3088A472	7.98
1 1/8″	1 5/8″	10	3088A473	8.46
1 1/4″	1 3/4″	10	3088A474	8.46
1 3/8″	1 7/8″	10	3088A475	9.71
1 1/2″	2 1/8″	10	3088A476	10.42
1 3/4″	2 3/4″	5	3088A477	8.34
2″	2 3/4″	5	3088A478	9.75

0.093″ Thick (±0.003″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A48	5.17
11/32″	13/16″	10	3088A813	6.09
3/8″	5/8″	10	3088A482	4.42

Plain Steel (Cont.)

0.093″ Thick (±0.003″) (Cont.)

ID	OD	Pkg. Qty.		Pkg.
1/2″	3/4″	10	3088A483	$4.51
5/8″	1″	10	3088A484	6.19
3/4″	1 1/8″	10	3088A485	7.26
7/8″	1 3/8″	10	3088A486	7.75
1″	1 1/2″	10	3088A487	8.22
1 1/8″	1 5/8″	10	3088A488	8.85
1 1/4″	1 3/4″	10	3088A489	9.02
1 3/8″	1 7/8″	10	3088A491	10.44
1 1/2″	2 1/8″	10	3088A492	11.36
1 3/4″	2 3/4″	5	3088A493	9.80
2″	2 3/4″	5	3088A494	10.75

0.125″ Thick (±0.003″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	10	3088A509	5.28
11/32″	13/16″	10	3088A82	7.43
3/8″	5/8″	10	3088A511	4.50
1/2″	3/4″	10	3088A512	4.45
5/8″	1″	10	3088A513	6.16
3/4″	1 1/8″	10	3088A514	7.31
7/8″	1 3/8″	10	3088A515	7.90
1″	1 1/2″	10	3088A516	8.22
1 1/8″	1 5/8″	10	3088A517	9.02
1 1/4″	1 3/4″	10	3088A518	9.02
1 3/8″	1 7/8″	10	3088A519	10.44
1 1/2″	2 1/8″	10	3088A521	11.85
1 3/4″	2 3/4″	5	3088A522	11.09
2″	2 3/4″	5	3088A523	10.61

0.188″ Thick (±0.007″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	1	3088A877	$2.24
11/32″	13/16″	1	3088A88	2.90
3/8″	5/8″	1	3088A884	2.71
1/2″	3/4″	1	3088A887	3.13
5/8″	1″	1	3088A981	6.89
3/4″	1 1/8″	1	3088A894	6.90
1″	1 1/2″	1	3088A897	6.49
1 1/8″	1 5/8″	1	3088A9	6.85
1 1/4″	1 3/4″	1	3088A903	6.90
1 3/8″	1 7/8″	1	3088A908	7.03
1 1/2″	2 1/8″	1	3088A911	7.38

0.250″ Thick (±0.009″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	1	3088A951	2.36
11/32″	13/16″	1	3088A954	3.12
3/8″	5/8″	1	3088A957	2.85
1/2″	3/4″	1	3088A96	3.30
5/8″	1″	1	3088A963	7.82
3/4″	1 1/8″	1	3088A966	8.07
7/8″	1 3/8″	1	3088A969	6.90
1″	1 1/2″	1	3088A972	7.00
1 1/8″	1 5/8″	1	3088A975	7.34
1 1/4″	1 3/4″	1	3088A978	7.45
1 3/8″	1 7/8″	1	3088A98	7.65
1 1/2″	2 1/8″	1	3088A988	8.14

Spring Steel

0.005″ Thick (±0.0005″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	25	90482A111	8.40
3/8″	5/8″	25	90482A117	9.20
1/2″	3/4″	25	90482A125	9.48
5/8″	1″	25	90482A132	9.60
3/4″	1 1/8″	25	90482A136	10.00
1″	1 1/2″	25	90482A144	12.12

0.010″ Thick (±0.00075″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	25	90482A203	8.08
3/8″	5/8″	25	90482A212	9.12
1/2″	3/4″	25	90482A215	9.60
5/8″	1″	25	90482A222	9.92
3/4″	1 1/8″	25	90482A228	10.20
1″	1 1/2″	25	90482A236	13.00

0.015″ Thick (±0.001″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	25	90482A303	8.88
3/8″	5/8″	25	90482A313	9.68
1/2″	3/4″	25	90482A317	9.80
5/8″	1″	25	90482A326	10.08
3/4″	1 1/8″	25	90482A331	10.40
1″	1 1/2″	25	90482A339	13.20

0.020″ Thick (±0.001″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	25	90482A414	8.88
3/8″	5/8″	25	90482A425	9.60
1/2″	3/4″	25	90482A432	9.80
5/8″	1″	25	90482A438	10.08
3/4″	1 1/8″	25	90482A444	10.32
1″	1 1/2″	25	90482A449	13.20

0.032″ Thick (±0.0015″)

ID	OD	Pkg. Qty.		Pkg.
1/4″	3/8″	25	90482A512	9.00
3/8″	5/8″	25	90482A515	9.80
1/2″	3/4″	25	90482A522	9.96
5/8″	1″	25	90482A527	10.20
3/4″	1 1/8″	25	90482A534	10.56
1″	1 1/2″	10	90482A540	7.72

0.062″ Thick (±0.0025″)

ID	OD	Pkg. Qty.		Pkg.
3/8″	5/8″	25	90482A625	10.56
1/2″	3/4″	25	90482A630	10.68
5/8″	1″	25	90482A636	12.00
3/4″	1 1/8″	10	90482A641	7.72
1″	1 1/2″	10	90482A648	11.32

0.125″ Thick (±0.003″)

ID	OD	Pkg. Qty.		Pkg.
3/4″	1 1/8″	5	90482A734	10.32
1″	1 1/2″	5	90482A741	10.92

19-Piece Plain Steel Shim Assortments

Include one each of these thicknesses: 0.001″, 0.0015″, 0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.007″, 0.008″, 0.010″, 0.012″, 0.015″, 0.020″, 0.025″, 0.031″, 0.047″, 0.062″, 0.093″, and 0.125″.

ID	OD		Each
1/4″	3/8″	3088A928	$8.40
11/32″	13/16″	3088A929	9.67
3/8″	5/8″	3088A931	8.79
1/2″	3/4″	3088A932	8.79
5/8″	1″	3088A933	10.79
3/4″	1 1/8″	3088A934	12.57
7/8″	1 3/8″	3088A935	13.58
1″	1 1/2″	3088A936	$13.79
1 1/8″	1 5/8″	3088A937	14.85
1 1/4″	1 3/4″	3088A938	14.85
1 3/8″	1 7/8″	3088A939	16.62
1 1/2″	2 1/8″	3088A941	17.06
1 3/4″	2 3/4″	3088A942	25.64
2″	2 3/4″	3088A943	29.04

150-Piece Plain Steel Shim Assortments

***Thin Assortment*—**Includes 10 each of five sizes in 0.005″, 0.010″, and 0.015″ thicknesses. Sizes (ID×OD): 3/8″×5/8″, 1/2″×3/4″, 5/8″×1″, 3/4″×1 1/8″, and 7/8″×1 3/8″. Furnished in a compartmented plastic box.

98085A210 ..... **Each** $66.08

***Thick Assortment*—**Includes 10 each of five sizes in 0.020″, 0.031″, and 0.125″ thicknesses. Sizes (ID×OD): 3/8″×5/8″, 1/2″×3/4″, 5/8″×1″, 3/4″×1 1/8″, and 1″×1 1/2″. Furnished in a compartmented plastic box.

98085A310 ..... **Each** $93.24

Aluminum, Brass, and Copper Shims

Accurately align, level, and adjust spacing on all types of shafts and machinery. Shims have an ID tolerance of +0.011″ and an OD tolerance of ±0.002″. All are nonmagnetic.

Aluminum shims are made from Alloy 5052. They offer mild resistance to weather-related corrosion and have a minimum Rockwell hardness of B72.

Brass shims provide good strength and corrosion resistance. They meet ASTM B36, except 0.125″ thick shims, which meet ASTM B36 or B16. Minimum Rockwell hardness is B60.

Copper shims are corrosion resistant and provide excellent electrical conductivity. They meet ASTM B152 and are not rated for hardness.

ID	OD	Pkg. Qty.		Pkg.
Aluminum				
0.005″ Thick (±0.0005″)				
1/4″	3/8″	10	92661A528	$8.33
3/8″	5/8″	10	92661A531	7.27
1/2″	3/4″	10	92661A533	7.10
5/8″	1″	10	92661A535	8.41
3/4″	1 1/8″	10	92661A537	8.58
1″	1 1/2″	10	92661A541	10.29
0.010″ Thick (±0.002″)				
1/4″	3/8″	10	92661A575	7.58
3/8″	5/8″	10	92661A578	6.71
1/2″	3/4″	10	92661A580	6.38
5/8″	1″	10	92661A582	7.96
3/4″	1 1/8″	10	92661A584	8.30
1″	1 1/2″	10	92661A588	9.08
0.016″ Thick (±0.002″)				
1/4″	3/8″	10	92661A622	8.48
3/8″	5/8″	10	92661A625	6.80
1/2″	3/4″	10	92661A627	6.88
5/8″	1″	10	92661A629	7.00
3/4″	1 1/8″	10	92661A631	7.49
1″	1 1/2″	10	92661A635	7.62
0.020″ Thick (±0.002″)				
1/4″	3/8″	10	92661A645	9.09
3/8″	5/8″	10	92661A648	6.82
0.020″ Thick (±0.002″) (Cont.)				
1/2″	3/4″	10	92661A650	$7.06
5/8″	1″	10	92661A652	7.12
3/4″	1 1/8″	10	92661A654	7.22
1″	1 1/2″	10	92661A658	7.96
0.032″ Thick (±0.003″)				
1/4″	3/8″	10	92661A691	9.85
3/8″	5/8″	10	92661A695	7.20
1/2″	3/4″	10	92661A697	6.92
5/8″	1″	10	92661A699	7.67
3/4″	1 1/8″	10	92661A701	7.30
1″	1 1/2″	10	92661A705	8.27
0.063″ Thick (±0.004″)				
1/4″	3/8″	10	92661A736	8.25
3/8″	5/8″	10	92661A741	5.53
1/2″	3/4″	10	92661A743	6.24
5/8″	1″	10	92661A745	7.05
3/4″	1 1/8″	10	92661A747	6.82
1″	1 1/2″	10	92661A751	8.05
0.125″ Thick (+0.013″)				
3/8″	5/8″	5	92661A811	9.09
1/2″	3/4″	5	92661A821	9.24
5/8″	1″	5	92661A831	9.39
3/4″	1 1/8″	5	92661A841	10.15
Brass				
0.002″ Thick (±0.0006″)				
3/8″	5/8″	10	92678A161	$3.43
1/2″	3/4″	10	92678A164	4.65
5/8″	1″	10	92678A167	3.68
3/4″	1 1/8″	10	92678A170	3.72
1″	1 1/2″	10	92678A173	5.13
0.005″ Thick (±0.0008″)				
1/4″	3/8″	10	92678A227	6.82
3/8″	5/8″	10	92678A231	8.15
1/2″	3/4″	10	92678A233	7.84
5/8″	1″	10	92678A235	8.71
3/4″	1 1/8″	10	92678A237	8.11
7/8″	1 3/8″	10	92678A214	7.58
1″	1 1/2″	10	92678A241	9.75
1 1/4″	1 3/4″	10	92678A245	8.33
0.010″ Thick (±0.0013″)				
1/4″	3/8″	10	92678A274	5.61
3/8″	5/8″	10	92678A278	8.61
1/2″	3/4″	10	92678A280	8.21
5/8″	1″	10	92678A282	9.01
3/4″	1 1/8″	10	92678A284	9.13
7/8″	1 3/8″	10	92678A286	8.33
1″	1 1/2″	10	92678A288	9.70
1 1/4″	1 3/4″	10	92678A292	9.09
0.016″ Thick (±0.0025″)				
3/8″	5/8″	10	92678A325	7.41
1/2″	3/4″	10	92678A327	9.11
5/8″	1″	10	92678A329	9.56
3/4″	1 1/8″	10	92678A331	10.12
1″	1 1/2″	10	92678A335	12.07
0.020″ Thick (±0.003″)				
1/4″	3/8″	10	92678A344	6.21
3/8″	5/8″	10	92678A348	7.87
1/2″	3/4″	10	92678A350	9.20
5/8″	1″	10	92678A352	10.27
3/4″	1 1/8″	10	92678A354	10.90
7/8″	1 3/8″	10	92678A356	8.94
1″	1 1/2″	10	92678A358	12.75
1 1/4″	1 3/4″	10	92678A362	9.70
0.025″ Thick (±0.003″)				
3/8″	5/8″	10	92678A182	4.79
1/2″	3/4″	10	92678A185	4.45
5/8″	1″	10	92678A188	5.69
3/4″	1 1/8″	10	92678A191	5.88
1″	1 1/2″	10	92678A194	7.16
0.032″ Thick (±0.0035″)				
1/4″	3/8″	10	92678A393	6.36
3/8″	5/8″	10	92678A395	8.87
Brass (Cont.)				
0.032″ Thick (±0.0035″) (Cont.)				
1/2″	3/4″	10	92678A397	$10.40
5/8″	1″	10	92678A399	8.60
3/4″	1 1/8″	10	92678A401	9.62
7/8″	1 3/8″	10	92678A403	9.24
1″	1 1/2″	10	92678A405	10.27
1 1/4″	1 3/4″	10	92678A408	10.00
0.045″ Thick (±0.004″)				
3/8″	5/8″	10	92678A203	5.70
1/2″	3/4″	10	92678A206	6.20
5/8″	1″	10	92678A209	8.96
3/4″	1 1/8″	10	92678A212	8.03
1″	1 1/2″	5	92678A215	8.65
0.063″ Thick (±0.005″)				
3/8″	5/8″	10	92678A441	8.49
1/2″	3/4″	10	92678A443	11.06
5/8″	1″	10	92678A445	10.53
Copper				
0.005″ Thick (±0.0005″)				
1/4″	3/8″	10	94397A428	7.12
3/8″	5/8″	10	94397A431	6.00
1/2″	3/4″	10	94397A433	6.04
5/8″	1″	10	94397A435	7.79
3/4″	1 1/8″	10	94397A437	7.97
1″	1 1/2″	10	94397A441	9.87
0.010″ Thick (±0.001″)				
1/4″	3/8″	10	94397A475	5.91
3/8″	5/8″	10	94397A478	6.26
1/2″	3/4″	10	94397A480	6.62
5/8″	1″	10	94397A482	8.13
3/4″	1 1/8″	10	94397A484	8.91
1″	1 1/2″	10	94397A488	10.40
0.016″ Thick (±0.002″)				
1/4″	3/8″	10	94397A521	6.36
3/8″	5/8″	10	94397A525	6.62
1/2″	3/4″	10	94397A527	7.01
5/8″	1″	10	94397A529	8.91
3/4″	1 1/8″	10	94397A531	10.41
1″	1 1/2″	10	94397A535	14.63
0.021″ Thick (±0.002″)				
1/4″	3/8″	10	94397A545	6.52
3/8″	5/8″	10	94397A548	8.46
1/2″	3/4″	10	94397A550	8.81
5/8″	1″	10	94397A552	10.18
3/4″	1 1/8″	10	94397A554	12.10
1″	1 1/2″	5	94397A558	9.64
0.032″ Thick (±0.003″)				
1/4″	3/8″	10	94397A542	6.82
3/8″	5/8″	10	94397A595	13.19
0.032″ Thick (±0.003″) (Cont.)				
1/2″	3/4″	10	94397A597	9.52
5/8″	1″	10	94397A599	10.26
3/4″	1 1/8″	10	94397A601	11.58
1″	1 1/2″	5	94397A605	8.78
0.045″ Thick (±0.004″)				
1/4″	3/8″	10	94397A352	7.42
3/8″	5/8″	10	94397A358	7.73
1/2″	3/4″	10	94397A363	7.88
5/8″	1″	10	94397A367	8.03
3/4″	1 1/8″	10	94397A374	8.33
1″	1 1/2″	10	94397A378	8.79
0.064″ Thick (±0.005″)				
1/4″	3/8″	10	94397A637	9.09
3/8″	5/8″	10	94397A641	10.70
1/2″	3/4″	10	94397A643	11.10
5/8″	1″	5	94397A645	8.14
3/4″	1 1/8″	5	94397A647	10.68
1″	1 1/2″	1	94397A651	3.28
0.090″ Thick (±0.008″)				
3/8″	5/8″	10	94397A666	9.09
1/2″	3/4″	10	94397A669	9.39
5/8″	1″	10	94397A673	9.70
3/4″	1 1/8″	10	94397A678	10.91
1″	1 1/2″	5	94397A681	9.55
0.125″ Thick (+0.013″)				
3/8″	5/8″	10	94397A702	11.21
1/2″	3/4″	10	94397A708	11.36
5/8″	1″	5	94397A711	7.88
3/4″	1 1/8″	5	94397A716	8.64
1″	1 1/2″	5	94397A719	11.52

Slotted Round Shims

Slip them on, pull them off—no disassembly required. Shims are not rated for hardness.

18-8 stainless steel shims provide excellent corrosion resistance and may be mildly magnetic. ***Zinc-plated steel*** shims are made from C1006-C1015 and are zinc-plated for good rust resistance.

Screw Size	OD	Slot Wd.	Slot Dp.	Thickness Range	Pkg. Qty.		Pkg.
18-8 Stainless Steel							
1/4″	1 1/2″	9/32″	7/8″	0.02″-0.026″	10	91080A026	$7.29
1/4″	1 1/2″	9/32″	7/8″	0.043″-0.051″	10	91080A024	7.92
1/4″	1 1/2″	9/32″	7/8″	0.084″-0.104″	10	91080A028	13.60
Zinc-Plated Steel							
1/4″	1 1/2″	9/32″	7/8″	0.031″-0.062″	50	91080A022	14.95

Color-Coded Plastic Shims

Identify thickness by color. Nonconductive; oil resistant. ID tolerance is +0.015″; OD tolerance is ±0.005″; thickness tolerance is ±5%.

To Order: Please specify thickness from the chart below.

13-piece shim assortments include one of every thickness listed in the chart below.

Thickness/Color	
Polyester (–90° to +300°F)	***PVC*** (–10° to +155°F)
• 0.001″/Amber • 0.003″/Green	• 0.0075″/Gray • 0.020″/Yellow
• 0.0015″/Purple • 0.004″/Tan	• 0.010″/Brown • 0.025″/White
• 0.002″/Red • 0.005″/Blue	• 0.0125″/Black • 0.030″/Coral
	• 0.015″/Pink

ID	OD	Individual Shims Pkg. Qty.		Pkg.	13-Piece Assortments	Each
3/8″	5/8″	10	98090A100	$11.54	98090A955	$14.87
1/2″	3/4″	10	98090A180	11.54	98090A958	14.87
5/8″	1″	10	98090A250	11.54	98090A961	14.87
3/4″	1 1/8″	10	98090A320	11.54	98090A964	14.87
1″	1 1/2″	10	98090A460	11.54	98090A971	14.87
1 1/4″	1 3/4″	10	98090A605	11.54	98090A983	14.87
1 1/2″	2 1/8″	10	98090A745	11.54	98090A989	14.87
1 3/4″	2 3/4″	10	98090A815	11.54	98090A991	14.87
2″	2 3/4″	10	98090A885	11.54	98090A994	14.87

Metric Shims

Align, level, and make accurate adjustments to metric components. Stainless steel shims have an ID tolerance of ±0.3 mm, an OD tolerance of ±0.05 mm, and may be mildly magnetic. Plain steel shims have an ID tolerance of ±0.5 mm and an OD tolerance of –0.5 mm.

Type 316 stainless steel shims are more corrosion resistant than 18-8 stainless steel shims. Minimum Rockwell hardness is B70.

18-8 stainless steel shims are more corrosion resistant than spring steel shims. Minimum Rockwell hardness is B85.

Spring steel shims meet DIN 988 and have a minimum Rockwell hardness of B84.

Type 316 Stainless Steel

0.1 mm Thick *(±0.013 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
6	12	10	90214A111	$10.36
8	14	10	90214A115	10.67
10	16	10	90214A119	10.97
12	18	10	90214A123	11.12
14	20	10	90214A127	11.27
16	22	10	90214A131	11.42
20	28	5	90214A135	14.40
25	36	1	90214A140	1.82
30	42	1	90214A144	2.58

0.2 mm Thick *(±0.023 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
6	12	10	90214A212	10.67
8	14	10	90214A216	10.97
10	16	10	90214A220	11.27
12	18	10	90214A225	11.42
14	20	10	90214A229	11.58
16	22	10	90214A233	11.73
20	28	5	90214A236	7.72
25	36	5	90214A239	7.48
30	42	5	90214A244	8.03

0.5 mm Thick *(±0.064 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
6	12	10	90214A414	$11.12
8	14	10	90214A418	11.42
10	16	10	90214A422	11.73
12	18	10	90214A428	11.88
14	20	10	90214A433	12.03
16	22	10	90214A438	12.18
20	28	5	90214A441	7.58
25	36	5	90214A445	7.61
30	42	5	90214A449	9.24

1 mm Thick *(±0.105 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
6	12	10	90214A515	11.27
8	14	10	90214A518	11.58
10	16	10	90214A523	11.88
12	18	10	90214A527	11.94
14	20	10	90214A531	12.21
16	22	10	90214A536	12.33
20	28	5	90214A539	7.66
25	36	5	90214A543	8.67
30	42	5	90214A548	9.39

18-8 Stainless Steel

0.1 mm Thick *(±0.013 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	25	98089A201	$6.21
5	10	25	98089A205	6.72
6	12	10	98089A208	6.43
8	14	50	98089A212	10.82
10	16	50	98089A216	12.18
12	18	25	98089A220	7.42
14	20	25	98089A224	9.88
16	22	25	98089A228	8.44
18	25	25	98089A230	7.76
20	28	25	98089A232	9.53
22	30	25	98089A234	9.83
25	36	25	98089A236	11.55
30	42	10	98089A240	6.59
35	45	10	98089A244	8.08
40	50	10	98089A248	8.91
50	62	5	98089A501	6.15
55	68	5	98089A505	6.53
60	75	5	98089A509	5.72
70	90	1	98089A513	1.01

0.2 mm Thick *(±0.023 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	25	98089A245	6.48
5	10	25	98089A246	7.00
6	12	25	98089A247	7.54
8	14	25	98089A251	7.05
10	16	25	98089A255	7.38
12	18	25	98089A259	5.90
14	20	25	98089A263	5.88
16	22	25	98089A267	6.80
18	25	25	98089A270	8.03
20	28	25	98089A272	9.04
22	30	25	98089A274	8.55
25	36	25	98089A276	10.26
30	42	10	98089A280	8.86
35	45	10	98089A284	9.69
40	50	10	98089A288	10.75
45	55	25	98089A620	7.86
50	62	5	98089A622	7.55
55	68	5	98089A626	7.14
60	75	5	98089A630	6.61
70	90	1	98089A634	1.15

0.3 mm Thick *(±0.055 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	25	98089A282	6.48
5	10	25	98089A286	7.00
6	12	25	98089A289	7.45
8	14	25	98089A293	5.38
10	16	25	98089A297	8.68
12	18	25	98089A301	6.26
14	20	25	98089A305	8.12
16	22	25	98089A309	8.43
18	25	25	98089A311	8.03
20	28	25	98089A313	10.64
22	30	25	98089A315	8.55

0.3 mm Thick *(±0.055 mm) (Cont.)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
25	36	10	98089A317	6.64
30	42	10	98089A321	8.38
35	45	10	98089A325	8.79
40	50	10	98089A329	9.77
45	55	25	98089A732	9.59
50	62	5	98089A734	6.61
55	68	5	98089A738	7.52
60	75	5	98089A742	7.63
70	90	1	98089A746	1.26

0.5 mm Thick *(±0.064 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	25	98089A330	6.62
5	10	25	98089A331	7.14
6	12	25	98089A332	8.12
8	14	50	98089A336	11.42
10	16	50	98089A340	12.60
12	18	25	98089A344	7.76
14	20	25	98089A348	8.28
16	22	25	98089A352	8.67
18	25	25	98089A354	8.17
20	28	25	98089A356	9.59
22	30	25	98089A358	8.69
25	36	25	98089A360	12.23
30	42	10	98089A364	7.51
35	45	10	98089A368	8.12
40	50	10	98089A372	9.77
45	55	25	98089A842	11.90
50	62	5	98089A846	7.15
55	68	5	98089A850	8.08
60	75	5	98089A854	7.94
70	90	1	98089A858	1.66

1 mm Thick *(±0.105 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	25	98089A373	6.69
5	10	25	98089A375	7.21
6	12	25	98089A377	8.77
8	14	25	98089A381	8.18
10	16	25	98089A385	8.85
12	18	25	98089A389	8.97
14	20	25	98089A392	10.24
16	22	25	98089A396	12.37
18	25	25	98089A398	8.24
20	28	25	98089A400	13.06
22	30	25	98089A402	8.76
25	36	10	98089A404	8.44
30	42	10	98089A408	12.51
35	45	10	98089A412	12.88
40	50	10	98089A416	13.88
45	55	10	98089A420	8.69
50	62	5	98089A958	8.52
55	68	5	98089A962	11.02
60	75	1	98089A966	2.86
70	90	1	98089A970	2.62

18-8 Stainless Steel (Cont.)

1.5 mm Thick *(±0.14 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	25	98089A101	$10.34
5	10	25	98089A105	10.86
6	12	10	98089A110	7.07
8	14	10	98089A119	7.38
10	16	10	98089A123	8.10
12	18	10	98089A126	8.41
14	20	10	98089A129	9.03
16	22	10	98089A133	9.79
18	25	10	98089A137	10.48
20	28	10	98089A141	10.90
22	30	10	98089A144	11.38
25	36	10	98089A148	12.28
30	42	10	98089A152	13.31
45	55	5	98089A156	8.83
50	62	5	98089A159	11.76

2 mm Thick *(±0.21 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	25	98089A430	$11.38
5	10	25	98089A434	12.41
6	12	10	98089A438	6.76
8	14	10	98089A441	7.03
10	16	10	98089A445	7.38
12	18	10	98089A449	7.66
14	20	10	98089A453	8.34
16	22	10	98089A456	9.17
18	25	10	98089A460	10.21
20	28	10	98089A463	11.31
22	30	10	98089A467	11.86
25	36	10	98089A472	12.83
30	42	5	98089A476	8.03
45	55	5	98089A480	10.34
50	62	5	98089A484	12.76

Spring Steel

0.1 mm Thick *(±0.03 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	50	98055A085	$5.17
5	10	50	98055A095	6.90
6	12	50	98055A105	5.69
8	14	50	98055A111	6.90
10	16	50	98055A117	7.93
12	18	50	98055A125	6.90
14	20	25	98055A211	5.17
16	22	25	98055A218	5.52
18	25	25	98055A228	6.03
22	30	25	98055A242	6.90
25	36	25	98055A251	7.24
30	42	10	98055A321	3.28
35	45	10	98055A342	3.69
40	50	10	98055A357	3.79

0.2 mm Thick *(±0.04 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	50	98055A086	6.03
5	10	50	98055A096	6.90
6	12	50	98055A106	5.17
8	14	50	98055A112	6.90
10	16	50	98055A118	8.10
12	18	50	98055A126	8.62
14	20	25	98055A212	5.17
16	22	25	98055A219	5.69
18	25	25	98055A229	6.03
20	28	25	98055A234	5.95
22	30	25	98055A243	6.90
25	36	25	98055A252	8.10
30	42	10	98055A322	3.45
35	45	10	98055A343	4.41
40	50	10	98055A358	4.83
45	55	10	98055A381	4.14
50	62	5	98055A429	3.10
55	68	5	98055A444	4.05
60	75	5	98055A465	5.17
70	90	5	98055A513	8.62
80	100	1	98055A718	1.72

0.3 mm Thick *(±0.05 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	50	98055A087	6.03
5	10	50	98055A097	7.76
6	12	50	98055A107	5.86
8	14	50	98055A113	7.76
10	16	50	98055A119	8.62
12	18	50	98055A127	8.62
14	20	25	98055A213	6.90
16	22	25	98055A221	7.16
18	25	25	98055A230	6.47
20	28	25	98055A235	6.72
22	30	25	98055A244	8.62
25	36	25	98055A253	9.22
30	42	10	98055A323	4.14
35	45	10	98055A344	4.83
40	50	10	98055A359	5.17
45	55	10	98055A382	5.17
50	62	5	98055A431	3.10
55	68	5	98055A446	4.66
60	75	5	98055A467	5.17

0.3 mm Thick *(±0.05 mm) (Cont.)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
70	90	5	98055A515	8.62
80	100	1	98055A719	2.41

0.5 mm Thick *(±0.05 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	50	98055A088	8.62
5	10	50	98055A098	8.62
6	12	50	98055A108	6.55
8	14	50	98055A114	9.14
10	16	50	98055A121	9.14
12	18	50	98055A128	10.00
14	20	25	98055A214	6.90
16	22	25	98055A222	7.41
18	25	25	98055A231	6.47
20	28	25	98055A236	7.41
22	30	25	98055A245	8.62
25	36	25	98055A254	12.59
30	42	10	98055A324	5.86
35	45	10	98055A345	6.10
40	50	10	98055A362	5.52
45	55	10	98055A383	6.21
50	62	5	98055A433	3.45
55	68	5	98055A448	5.17
60	75	5	98055A469	5.69
70	90	5	98055A517	8.62
80	100	1	98055A720	2.76

1 mm Thick *(±0.05 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
4	8	50	98055A089	8.62
5	10	50	98055A099	8.62
6	12	50	98055A109	7.76
8	14	50	98055A115	9.14
10	16	50	98055A122	10.69
12	18	50	98055A129	10.17
14	20	25	98055A215	7.84
16	22	25	98055A223	7.41
18	25	25	98055A232	7.76
20	28	25	98055A237	9.22
22	30	25	98055A246	9.48
25	36	10	98055A255	6.28
30	42	10	98055A325	6.83
35	45	10	98055A346	7.66
40	50	10	98055A363	6.90
45	55	10	98055A384	8.62
50	62	5	98055A435	4.66
55	68	5	98055A450	5.69
60	75	5	98055A472	8.62
70	90	5	98055A519	9.48
80	100	1	98055A721	3.45

1.5 mm Thick *(±0.05 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
25	36	10	98055A531	6.07
30	42	10	98055A535	9.13
50	62	5	98055A539	11.62
60	75	1	98055A541	3.07

2 mm Thick *(±0.05 mm)*

ID, mm	OD, mm	Pkg. Qty.		Pkg.
30	42	5	98055A572	9.12
32	45	10	98055A576	10.76
50	62	1	98055A583	2.98
70	90	1	98055A590	10.34

Peel-Away Shims

Make on-the-spot adjustments—just peel away the thin layers until you get the thickness you need. Layers are 0.002″ thick and bonded with adhesive. ID and OD tolerances are ±0.008″. Tolerance for 0.032″ thickness is ±0.005″; for 0.062″ thickness it's +0.006″ to –0.002″; and for 0.125″ thickness it's +0.012″ to –0.003″.

18-8 stainless steel shims offer excellent corrosion resistance. May be mildly magnetic. Min. Rockwell hardness is B75. ***Aluminum*** shims are made from Alloy 1100. Lightweight and nonmagnetic, they're more corrosion resistant than brass, but not rated for hardness. ***Brass*** shims are corrosion resistant, nonmagnetic, and have a min. Rockwell hardness of B59.

ID	OD		
18-8 Stainless Steel			
0.032″ Thick—16 Layers			
3/8″	5/8″	90902A221	$7.54
1/2″	3/4″	90902A223	7.80
5/8″	1″	90902A225	8.31
0.062″ Thick—31 Layers			
3/8″	5/8″	90902A222	8.51
1/2″	3/4″	90902A224	8.94
5/8″	1″	90902A226	9.91
0.125″ Thick—62 Layers			
5/8″	1″	90902A227	13.40
3/4″	1 1/8″	90902A228	15.17
7/8″	1 3/8″	90902A229	18.23

ID	OD		
Aluminum			
0.032″ Thick—16 Layers			
3/8″	5/8″	92850A400	$5.00
1/2″	3/4″	92850A405	5.00
5/8″	1″	92850A410	5.91
0.062″ Thick—31 Layers			
3/8″	5/8″	92850A600	5.66
1/2″	3/4″	92850A605	6.14
1″	1 1/2″	92850A625	12.06
0.125″ Thick—62 Layers			
5/8″	1″	92850A810	11.20
1″	1 1/2″	92850A825	19.63
1 1/2″	2 1/8″	92850A840	35.43

ID	OD		
Brass			
0.032″ Thick—16 Layers			
0.135″	0.234″	90805A156	$2.17
0.193″	3/8″	90805A157	2.17
0.255″	1/2″	90805A158	3.11
3/8″	5/8″	90805A161	5.54
1/2″	3/4″	90805A162	5.54
5/8″	1″	90805A163	6.66
3/4″	1 1/8″	90805A164	6.80
7/8″	1 3/8″	90805A165	8.43
1″	1 1/2″	90805A166	9.06
1 1/4″	1 3/4″	90805A168	10.31
1 1/2″	2 1/8″	90805A171	13.29
0.062″ Thick—31 Layers			
3/8″	5/8″	90805A181	6.31
1/2″	3/4″	90805A182	6.97

ID	OD		
Brass (Cont.)			
0.062″ Thick—31 Layers (Cont.)			
5/8″	1″	90805A183	$8.63
3/4″	1 1/8″	90805A184	9.17
7/8″	1 3/8″	90805A185	12.09
1″	1 1/2″	90805A186	13.40
1 1/4″	1 3/4″	90805A188	15.57
1 1/2″	2 1/8″	90805A191	20.39
0.125″ Thick—62 Layers			
5/8″	1″	90805A213	12.54
3/4″	1 1/8″	90805A214	13.40
7/8″	1 3/8″	90805A215	19.00
1″	1 1/2″	90805A216	20.21
1 1/4″	1 3/4″	90805A218	24.84
1 1/2″	2 1/8″	90805A221	34.65

Shims for D-Profile Precision Shafts

Shaped to fit. Made from 18-8 stainless steel. ID tolerance is +0.015″; OD tolerance is ±0.005″. Thickness tolerance is ±0.005″. Minimum Rockwell hardness is B80. **To Order:** Please specify thickness: 1/32″, 1/16″, or 1/8″.

Fits Shaft Dia.	Shim ID	Shim OD		
1/4″	1/4″	3/4″	97502A500	$6.00
3/8″	3/8″	1″	97502A510	6.00
1/2″	1/2″	1 1/8″	97502A521	7.80
5/8″	5/8″	1 1/4″	97502A531	$8.67
3/4″	3/4″	1 5/8″	97502A541	9.78
1″	1″	1 3/4″	97502A551	12.00

Shims for Shafts and Bearings

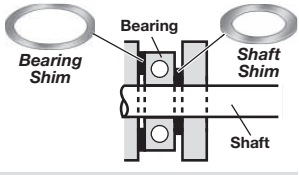

For spacing of gears and bearings. *Type 316 stainless steel* shims are more corrosion resistant than *18-8 stainless steel* shims (both may be mildly magnetic). *Brass* shims, our softest shims, are nonmagnetic and resistant to mild corrosion. *Alloy steel*, our hardest shims, are Alloy 4140. Stainless steel shims have a minimum Rockwell hardness of B65; for brass it's B60; and for alloy steel it's C40.

Shaft shims fit snug to shafts. ID tolerance is +0.005″. OD tolerance is ±0.005″. Tolerance for 0.001″-0.008″ thicknesses is ±0.0005″ and for 0.010″-0.016″ thicknesses is ±0.001″, except alloy steel shims which have a thickness tolerance of ±0.002″.

Bearing shims fit the outer rim of the bearing. ID tolerance is +0.005″. OD tolerance is –0.005″. Tolerance for 0.003″ to 0.007″ thicknesses is ±0.0005″ and for 0.010″ to 0.020″ thicknesses is ±0.001″.

Shaft Shims

To Order: For stainless steel and brass shims, please specify thickness: 0.001″, 0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.008″, 0.010″, 0.012″, 0.014″, or 0.016″. *Note:* Type 316 stainless steel shims are not available in 0.001″, 0.002″, 0.003″, and 0.004″ thicknesses.

Fits Shaft Dia.	Shim ID	Shim OD	Pkg. Qty.		Pkg.
Type 316 Stainless Steel					
3/32″	0.093″	0.203″	10	90917A310	$10.34
1/8″	0.125″	0.187″	10	90917A410	10.34
3/16″	0.187″	0.250″	10	90917A510	10.34
1/4″	0.250″	0.375″	10	90917A610	11.38
5/16″	0.313″	0.500″	10	90917A710	11.38
3/8″	0.375″	0.562″	10	90917A810	11.38
1/2″	0.500″	0.750″	10	90917A910	11.38
18-8 Stainless Steel					
1/32″	0.032″	0.109″	25	99040A900	9.48
3/64″	0.047″	0.125″	25	99040A110	9.05
1/16″	0.063″	0.156″	25	99040A120	8.62
5/64″	0.078″	0.164″	25	99040A100	8.62
3/32″	0.093″	0.203″	25	99040A200	8.62
1/8″	0.125″	0.187″	25	99040A300	8.62
3/16″	0.187″	0.250″	25	99040A400	8.62
1/4″	0.250″	0.375″	25	99040A500	9.48
5/16″	0.313″	0.500″	25	99040A600	9.48
3/8″	0.375″	0.562″	25	99040A700	9.48
1/2″	0.500″	0.750″	25	99040A800	9.48
Brass					
3/32″	0.093″	0.203″	10	93268A200	6.90
1/8″	0.125″	0.187″	10	93268A300	6.90
3/16″	0.187″	0.250″	10	93268A400	6.90
1/4″	0.250″	0.375″	10	93268A500	7.59
5/16″	0.313″	0.500″	10	93268A600	7.59
3/8″	0.375″	0.562″	10	93268A700	7.59
1/2″	0.500″	0.750″	10	93268A800	7.59

Fits Shaft Dia.	Shim ID	Shim OD	Thickness		Each
Alloy Steel					
1/8″	0.128″	0.250″	0.062″	92668A148	$4.88
3/16″	0.190″	0.375″	0.062″	92668A164	4.93
1/4″	0.253″	0.500″	0.062″	92668A172	5.07
5/16″	0.316″	0.625″	0.093″	92668A187	11.18
3/8″	0.378″	0.750″	0.125″	92668A195	11.78

Bearing Shims

To Order: Please specify thickness: 0.003″, 0.005″, 0.007″, 0.010″, or 0.020″. *Note:* Type 316 stainless steel shims are not available in the 0.003″ thickness.

Fits Bearing Size ID	Shim ID	Shim OD	Pkg. Qty.		Pkg.
Type 316 Stainless Steel					
0.055″	3/16″	0.123″	0.178″	91182A120	$10.34
5/64″	1/4″	0.167″	0.248″	91182A130	10.34
1/8″	1/4″	0.167″	0.248″	91182A130	10.34
3/32″	5/16″	0.206″	0.310″	91182A140	10.34
1/8″	5/16″	0.206″	0.310″	91182A140	10.34
1/8″	3/8″	0.253″	0.373″	91182A150	11.38
3/16″	3/8″	0.253″	0.373″	91182A150	11.38
3/16″	1/2″	0.378″	0.498″	91182A160	11.38
1/4″	1/2″	0.378″	0.498″	91182A160	11.38
1/4″	5/8″	0.503″	0.623″	91182A170	11.38
18-8 Stainless Steel					
3/64″	5/32″	0.088″	0.153″	93574A150	8.62
0.055″	3/16″	0.123″	0.178″	93574A175	8.62
5/64″	1/4″	0.167″	0.248″	93574A200	8.62
1/8″	1/4″	0.167″	0.248″	93574A200	8.62
3/32″	5/16″	0.206″	0.310″	93574A425	8.62
1/8″	5/16″	0.206″	0.310″	93574A425	8.62
1/8″	3/8″	0.253″	0.373″	93574A500	9.48
3/16″	3/8″	0.253″	0.373″	93574A500	9.48
3/16″	1/2″	0.378″	0.498″	93574A700	9.48
1/4″	1/2″	0.378″	0.498″	93574A700	9.48
1/4″	5/8″	0.503″	0.623″	93574A800	9.48
3/8″	7/8″	0.687″	0.873″	93574A850	9.48
Brass					
0.055″	3/16″	0.123″	0.178″	92409A200	6.90
5/64″	1/4″	0.167″	0.248″	92409A300	6.90
1/8″	1/4″	0.167″	0.248″	92409A300	6.90
3/32″	5/16″	0.206″	0.310″	92409A400	6.90
1/8″	5/16″	0.206″	0.310″	92409A400	6.90
1/8″	3/8″	0.253″	0.373″	92409A500	7.59
3/16″	3/8″	0.253″	0.373″	92409A500	7.59
3/16″	1/2″	0.378″	0.498″	92409A600	7.59
1/4″	1/2″	0.378″	0.498″	92409A600	7.59
1/4″	5/8″	0.503″	0.623″	92409A700	7.59

Shims for Die Punches

Place these shims under sharpened dies to restore their original height and extend the life of the dies. ID and OD tolerance is ±0.020″. Minimum Rockwell hardness is C44.

0.005″ thick shims are C1095 spring steel. ***0.015″*** and ***0.032″ thick*** shims are C1075 spring steel.

450-Piece Assortment— Contains 25 each of 0.005″ and 0.015″ thicknesses in these ODs: 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, 3/4″, 7/8″, and 1″.

99432A214 ..... **Each** $178.42

ID	OD	Pkg. Qty.	0.005″ Thick (±0.0005″)	Pkg.	0.015″ Thick (±0.00075″)	Pkg.	0.032″ Thick (±0.0015″)	Pkg.
0.170″	1/4″	10	99432A340	$7.10	99432A342	$7.10	99432A401	$8.44
0.230″	5/16″	10	99432A344	7.10	99432A346	7.10	99432A409	8.44
0.285″	3/8″	10	99432A348	7.10	99432A350	7.10	99432A417	8.44
0.310″	7/16″	10	99432A352	7.10	99432A354	7.10	99432A425	8.44
0.350″	1/2″	10	99432A356	7.10	99432A358	7.10	99432A433	8.44
0.470″	5/8″	10	99432A360	7.10	99432A362	7.10	99432A441	8.44
0.595″	3/4″	10	99432A364	7.10	99432A366	7.10	99432A449	8.44
0.625″	7/8″	10	99432A368	7.10	99432A372	7.10	99432A457	8.44
0.750″	1″	10	99432A374	7.10	99432A376	7.10	99432A465	8.44

Shims for Shortening Screw Shoulders

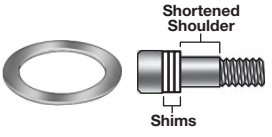

Slide onto your screw to shorten the shoulder length.

Type 316 stainless steel shims are more corrosion resistant than 18-8 stainless steel shims. They may be mildly magnetic. Minimum Rockwell hardness is B70. ID tolerance is +0.011″. OD tolerance is ±0.002″.

18-8 stainless steel shims are more corrosion resistant than spring steel shims. They may be mildly magnetic. Not rated for hardness. ID tolerance is +0.011″. OD tolerance is ±0.002″.

Spring steel shims are made from C1075 steel, except shims that are 0.005″ thick, which are C1095 steel. All have a minimum Rockwell hardness of C44. ID tolerance is +0.005″. OD tolerance is –0.005″.

Fits Shoulder Dia.	ID	OD	Pkg. Qty.		Pkg.
Type 316 Stainless Steel					
0.005″ Thick (±0.0005″)					
3/16″	0.189″	0.313″	10	90792A212	$10.20
1/4″	0.251″	0.375″	10	90792A221	10.34
5/16″	0.314″	0.438″	10	90792A229	10.91
3/8″	0.376″	0.563″	10	90792A236	11.54
1/2″	0.501″	0.750″	10	90792A245	11.60
0.010″ Thick (±0.001″)					
3/16″	0.189″	0.313″	10	90792A312	10.06
1/4″	0.251″	0.375″	10	90792A321	10.34
5/16″	0.314″	0.438″	10	90792A329	10.91
3/8″	0.376″	0.563″	10	90792A336	11.49
1/2″	0.501″	0.750″	10	90792A345	11.54
0.030″ Thick (±0.003″)					
3/16″	0.189″	0.313″	10	90792A412	10.06
1/4″	0.251″	0.375″	10	90792A421	10.40
5/16″	0.314″	0.438″	10	90792A429	10.77
3/8″	0.376″	0.563″	10	90792A436	11.49
1/2″	0.501″	0.750″	10	90792A445	11.49
18-8 Stainless Steel					
0.005″ Thick (±0.0005″)					
1/4″	0.251″	0.375″	50	94773A610	10.74
5/16″	0.314″	0.438″	50	94773A612	11.88
3/8″	0.376″	0.563″	50	94773A614	12.84
1/2″	0.501″	0.750″	25	94773A616	4.41
0.010″ Thick (±0.001″)					
1/4″	0.251″	0.375″	100	94773A651	11.22
5/16″	0.314″	0.438″	50	94773A653	11.33
3/8″	0.376″	0.563″	50	94773A655	6.38
1/2″	0.501″	0.750″	50	94773A657	13.25
5/8″	0.626″	0.875″	25	94773A659	8.92
3/4″	0.751″	1.000″	25	94773A661	12.22
0.016″ Thick (±0.002″)					
1/4″	0.251″	0.375″	50	94773A683	10.90
5/16″	0.314″	0.438″	25	94773A686	7.87
3/8″	0.376″	0.563″	25	94773A688	8.22
1/2″	0.501″	0.750″	25	94773A689	6.24
5/8″	0.626″	0.875″	50	94773A691	12.85
3/4″	0.751″	1.000″	10	94773A693	8.51
0.020″ Thick (±0.0025″)					
1/4″	0.251″	0.375″	50	94773A710	9.49
5/16″	0.314″	0.438″	50	94773A712	12.59
3/8″	0.376″	0.563″	25	94773A714	7.35
1/2″	0.501″	0.750″	25	94773A716	9.37
5/8″	0.626″	0.875″	25	94773A718	10.70
3/4″	0.751″	1.000″	25	94773A720	10.90
0.030″ Thick (±0.003″)					
1/4″	0.251″	0.375″	50	94773A741	8.25
5/16″	0.314″	0.438″	100	94773A743	12.72
3/8″	0.376″	0.563″	50	94773A745	11.25
1/2″	0.501″	0.750″	50	94773A747	13.81
5/8″	0.626″	0.875″	25	94773A749	11.51
3/4″	0.751″	1.000″	25	94773A751	12.57

Fits Shoulder Dia.	ID	OD	Pkg. Qty.		Pkg.
18-8 Stainless Steel (Cont.)					
0.060″ Thick (±0.0035″)					
1/4″	0.251″	0.375″	50	94773A770	$11.99
5/16″	0.314″	0.438″	50	94773A772	13.32
3/8″	0.376″	0.563″	25	94773A774	7.33
1/2″	0.501″	0.750″	25	94773A776	10.29
5/8″	0.626″	0.875″	10	94773A778	6.83
3/4″	0.751″	1.000″	10	94773A780	8.77
Spring Steel					
0.005″ Thick (±0.0005″)					
1/4″	0.252″	0.366″	50	91124A010	13.44
5/16″	0.313″	0.424″	50	91124A012	13.63
3/8″	0.376″	0.557″	25	91124A014	8.82
1/2″	0.501″	0.738″	25	91124A016	10.45
5/8″	0.626″	0.870″	25	91124A018	12.90
3/4″	0.751″	0.995″	25	91124A020	14.04
0.010″ Thick (±0.002″)					
1/4″	0.250″	0.375″	25	91124A059	4.70
5/16″	0.313″	0.438″	25	91124A061	4.98
3/8″	0.375″	0.562″	25	91124A062	5.15
1/2″	0.500″	0.750″	25	91124A063	5.33
5/8″	0.625″	0.875″	25	91124A064	5.73
3/4″	0.750″	1.000″	25	91124A065	5.88
0.015″ Thick (±0.002″)					
1/4″	0.250″	0.375″	25	91124A047	4.88
5/16″	0.313″	0.438″	25	91124A048	5.08
3/8″	0.375″	0.562″	25	91124A049	5.23
1/2″	0.500″	0.750″	25	91124A050	5.45
5/8″	0.625″	0.875″	25	91124A057	5.88
3/4″	0.750″	1.000″	25	91124A058	6.03
0.020″ Thick (±0.002″)					
1/4″	0.250″	0.375″	25	91124A030	4.98
5/16″	0.313″	0.438″	25	91124A034	5.25
3/8″	0.375″	0.562″	25	91124A037	5.45
1/2″	0.500″	0.750″	25	91124A038	5.45
5/8″	0.625″	0.875″	25	91124A039	6.03
3/4″	0.750″	1.000″	25	91124A040	6.08
0.032″ Thick (±0.002″)					
1/4″	0.250″	0.375″	100	91124A160	12.10
5/16″	0.313″	0.438″	100	91124A170	12.60
3/8″	0.375″	0.562″	100	91124A180	14.30
1/2″	0.500″	0.750″	50	91124A190	7.90
5/8″	0.625″	0.875″	25	91124A201	4.58
3/4″	0.750″	1.000″	25	91124A211	4.13
0.062″ Thick (±0.002″)					
1/4″	0.250″	0.375″	100	91124A060	12.60
5/16″	0.313″	0.438″	100	91124A070	12.10
3/8″	0.375″	0.562″	100	91124A080	14.30
1/2″	0.500″	0.750″	50	91124A090	7.47
5/8″	0.625″	0.875″	25	91124A101	5.20
3/4″	0.750″	1.000″	25	91124A111	5.58

Assortments

198-Piece Spring Steel Assortment— Includes 16 of 0.015″ and 17 of 0.032″ thicknesses in sizes for these shoulder diameters: 1/4″, 5/16″, 3/8″, 1/2″, 5/8″, and 3/4″. Furnished in a plastic box.

91124A600 ..... **Each** $127.87

270-Piece Spring Steel Assortment— Includes 15 each of 0.005″, 0.015″, and 0.032″ thicknesses in sizes for these shoulder diameters: 1/4″, 5/16″, 3/8″, 1/2″, 5/8″, and 3/4″. Furnished in a plastic box.

91124A800 ..... **Each** $102.31

Shims for Lengthening Screw Shoulders

Spin these tight-fitting shims onto your screw's threads to extend shoulder length.

Type 316 stainless steel shims are more corrosion resistant than 18-8 stainless steel shims. They may be mildly magnetic. Minimum Rockwell hardness is B70. ID tolerance is +0.011″. OD tolerance is ±0.002″.

18-8 stainless steel shims are more corrosion resistant than spring steel shims. They may be mildly magnetic. Not rated for hardness. ID tolerance is +0.011″. OD tolerance is ±0.002″.

Spring steel shims are made from C1075-C1095 steel and have a minimum Rockwell hardness of C44. ID tolerance is +0.005″. OD tolerance is –0.005″.

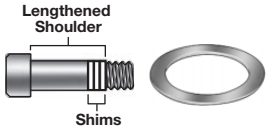

Fits Shoulder Dia.	Fits Screw Size	ID	OD	Pkg. Qty.		Pkg.
Type 316 Stainless Steel						
0.005″ Thick *(±0.0005″)*						
3/16″	No. 8	0.154″	0.178″	10	**91017A451**	$9.77
1/4″	No. 10	0.171″	0.241″	10	**91017A456**	10.06
5/16″	1/4″	0.234″	0.303″	10	**91017A464**	10.20
3/8″	5/16″	0.289″	0.365″	10	**91017A469**	10.34
1/2″	3/8″	0.352″	0.491″	10	**91017A475**	11.49
0.016″ Thick *(±0.002″)*						
1/4″	No. 10	0.171″	0.241″	10	**91017A556**	10.20
5/16″	1/4″	0.234″	0.303″	10	**91017A564**	10.34
3/8″	5/16″	0.289″	0.365″	10	**91017A569**	10.49
1/2″	3/8″	0.352″	0.491″	10	**91017A575**	10.54
0.030″ Thick *(±0.003″)*						
1/4″	No. 10	0.171″	0.241″	10	**91017A656**	10.11
5/16″	1/4″	0.234″	0.303″	10	**91017A664**	10.17
3/8″	5/16″	0.289″	0.365″	10	**91017A669**	10.40
1/2″	3/8″	0.352″	0.491″	10	**91017A675**	11.54
18-8 Stainless Steel						
0.005″ Thick *(±0.0005″)*						
1/4″	No. 10	0.171″	0.241″	50	**90135A431**	12.46
5/16″	1/4″	0.234″	0.303″	50	**90135A433**	13.77
3/8″	5/16″	0.289″	0.365″	50	**90135A435**	11.12
1/2″	3/8″	0.352″	0.491″	25	**90135A437**	7.68
0.016″ Thick *(±0.002″)*						
1/4″	No. 10	0.171″	0.241″	50	**90135A443**	13.75
5/16″	1/4″	0.234″	0.303″	50	**90135A445**	14.39
3/8″	5/16″	0.289″	0.365″	50	**90135A447**	14.23
1/2″	3/8″	0.352″	0.491″	25	**90135A449**	8.10
5/8″	1/2″	0.473″	0.616″	25	**90135A451**	9.82

Fits Shoulder Dia.	Fits Screw Size	ID	OD	Pkg. Qty.		Pkg.
18-8 Stainless Steel (Cont.)						
0.030″ Thick *(±0.003″)*						
1/4″	No. 10	0.171″	0.241″	25	**90135A455**	$8.91
5/16″	1/4″	0.234″	0.303″	25	**90135A457**	4.88
3/8″	5/16″	0.289″	0.365″	25	**90135A459**	10.34
1/2″	3/8″	0.352″	0.491″	25	**90135A461**	11.41
5/8″	1/2″	0.473″	0.616″	25	**90135A463**	13.02
Spring Steel						
0.005″ Thick *(±0.0005″)*						
1/4″	No. 10	0.171″	0.248″	50	**91140A231**	13.34
5/16″	1/4″	0.234″	0.308″	50	**91140A233**	13.68
3/8″	5/16″	0.289″	0.371″	50	**91140A235**	14.38
1/2″	3/8″	0.352″	0.496″	50	**91140A237**	14.38
5/8″	1/2″	0.473″	0.621″	25	**91140A239**	8.23
3/4″	5/8″	0.598″	0.746″	25	**91140A241**	8.78
0.015″ Thick *(±0.00075″)*						
1/4″	No. 10	0.171″	0.248″	50	**91140A243**	12.98
5/16″	1/4″	0.234″	0.308″	50	**91140A245**	12.98
3/8″	5/16″	0.289″	0.371″	50	**91140A247**	14.03
1/2″	3/8″	0.352″	0.496″	50	**91140A249**	14.38
5/8″	1/2″	0.473″	0.621″	25	**91140A251**	8.02
3/4″	5/8″	0.598″	0.746″	25	**91140A253**	8.47
0.032″ Thick *(±0.0015″)*						
1/4″	No. 10	0.187″	0.248″	50	**91140A255**	14.38
5/16″	1/4″	0.234″	0.308″	50	**91140A257**	14.38
3/8″	5/16″	0.296″	0.371″	25	**91140A259**	8.23
1/2″	3/8″	0.352″	0.496″	25	**91140A261**	9.47
5/8″	1/2″	0.473″	0.621″	25	**91140A264**	10.73
3/4″	5/8″	0.598″	0.746″	25	**91140A266**	10.73

Assortments

270-Piece Spring Steel Assortment—Includes 15 each of 0.005″, 0.015″, and 0.032″ thicknesses in sizes for these shoulder diameters: 1/4″, 5/16″, 3/8″, 1/2″, 5/8″, and 3/4″. Furnished in a plastic box.

91140A800 ..... **Each** $92.76

300-Piece Spring Steel Assortment—Includes fifty 0.015″ thick shims in sizes for these shoulder diameters: 1/4″, 5/16″, 3/8″, 1/2″, 5/8″, and 3/4″. Furnished in a plastic box.

91140A600 ..... **Each** $65.82

300-Piece Assortment

Shims for Shortening Screw Shoulders—Metric

Slide onto metric screws to shorten shoulder length. Shims are made from 18-8 stainless steel, which offers excellent corrosion resistance and may be mildly magnetic. Minimum Rockwell hardness is B70. ID tolerance is +0.254 mm. OD tolerance is –0.254 mm.

Also Available: C1075 spring steel shims in 0.005″ and 0.01″ thicknesses. To order, please ask for 91437A777 and specify thickness and shoulder diameter.

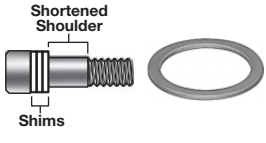

Fits Shoulder Dia., mm	ID, mm	OD, mm	Pkg. Qty.		Pkg.
0.005″ Thick *(±0.0005″)*					
6	6	9.78	10	**91437A155**	$9.17
8	8	12.73	10	**91437A248**	9.29
10	10	14.73	10	**91437A352**	9.94
12	12	17.73	10	**91437A448**	10.86
16	16	23.67	5	**91437A555**	5.62
20	20	29.67	5	**91437A654**	6.51
0.01″ Thick *(±0.001″)*					
6	6	9.78	10	**91437A162**	8.91
8	8	12.73	10	**91437A255**	8.91
10	10	14.73	10	**91437A357**	9.66
12	12	17.73	10	**91437A457**	10.26
16	16	23.67	5	**91437A560**	5.46
20	20	29.67	5	**91437A659**	6.21
0.015″ Thick *(±0.001″)*					
6	6	9.78	10	**91437A166**	8.14
8	8	12.73	10	**91437A263**	8.37
10	10	14.73	10	**91437A361**	9.09

Fits Shoulder Dia., mm	ID, mm	OD, mm	Pkg. Qty.		Pkg.
0.015″ Thick *(±0.001″) (Cont.)*					
12	12	17.73	10	**91437A462**	$9.31
16	16	23.67	5	**91437A566**	5.10
20	20	29.67	5	**91437A666**	5.64
0.02″ Thick *(±0.0015″)*					
6	6	9.78	10	**91437A171**	8.77
8	8	12.73	10	**91437A269**	9.43
10	10	14.73	10	**91437A366**	10.26
12	12	17.73	5	**91437A468**	5.41
16	16	23.67	5	**91437A572**	6.17
20	20	29.67	5	**91437A669**	6.81
0.025″ Thick *(±0.002″)*					
6	6	9.78	10	**91437A176**	9.20
8	8	12.73	10	**91437A274**	9.91
10	10	14.73	10	**91437A370**	10.74
12	12	17.73	5	**91437A473**	5.76
16	16	23.67	5	**91437A577**	6.64
20	20	29.67	5	**91437A673**	7.40

Fits Shoulder Dia., mm	ID, mm	OD, mm	Pkg. Qty.		Pkg.
0.031″ Thick *(±0.002″)*					
6	6	9.78	10	**91437A181**	$10.54
8	8	12.73	5	**91437A278**	5.66
10	10	14.73	5	**91437A374**	6.51
12	12	17.73	5	**91437A478**	7.26
16	16	23.67	5	**91437A581**	9.09
20	20	29.67	5	**91437A677**	10.33
0.062″ Thick *(±0.002″)*					
6	6	9.78	5	**91437A188**	7.22
8	8	12.73	10	**91437A282**	11.59
10	10	14.73	10	**91437A377**	11.90
12	12	17.73	10	**91437A483**	12.06
16	16	23.67	5	**91437A586**	7.22
20	20	29.67	5	**91437A688**	9.31

Shims for Lengthening Screw Shoulders—Metric

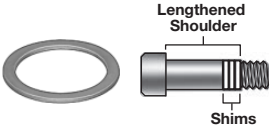

Spin these tight-fitting shims onto your screw's threads to extend shoulder length. All shims have an ID tolerance of +0.25″ and an OD tolerance of –0.25″.

18-8 stainless steel shims are more corrosion resistant than spring steel shims and may be mildly magnetic. They have a minimum Rockwell hardness of B70.

Spring steel shims are made from C1075 steel and have a minimum Rockwell hardness of C40.

Fits Shoulder Dia., mm	Fits Screw Size, mm	ID, mm	OD, mm	Pkg. Qty.		Pkg.
18-8 Stainless Steel						
0.005″ Thick (±0.0005″)						
6	5	4.98	5.98	10	91437A221	$8.83
8	6	5.85	7.95	10	91437A304	9.03
10	8	7.69	9.95	10	91437A416	9.89
12	10	9.52	11.97	10	91437A508	9.54
16	12	11.36	15.94	10	91437A610	9.97
20	16	15.19	19.93	10	91437A701	10.66
0.01″ Thick (±0.001″)						
6	5	4.98	5.98	10	91437A228	8.14
8	6	5.85	7.95	10	91437A312	8.40
10	8	7.69	9.95	10	91437A424	9.00
12	10	9.52	11.97	10	91437A511	9.09
16	12	11.36	15.94	10	91437A618	9.60
20	16	15.19	19.93	10	91437A712	10.03
0.015″ Thick (±0.001″)						
6	5	4.98	5.98	10	91437A236	7.80
8	6	5.85	7.95	10	91437A318	7.94
10	8	7.69	9.95	10	91437A433	8.11
12	10	9.52	11.97	10	91437A517	8.51
16	12	11.36	15.94	10	91437A623	8.97
20	16	15.19	19.93	10	91437A717	9.23
0.02″ Thick (±0.0015″)						
8	6	5.85	7.95	10	91437A326	8.31
10	8	7.69	9.95	10	91437A439	8.77
12	10	9.52	11.97	10	91437A522	9.60
16	12	11.36	15.94	10	91437A628	10.31
20	16	15.19	19.93	10	91437A725	11.03
0.025″ Thick (±0.002″)						
8	6	5.85	7.95	10	91437A331	8.66
10	8	7.69	9.95	10	91437A444	9.20
18-8 Stainless Steel (Cont.)						
0.025″ Thick (±0.002″) (Cont.)						
12	10	9.52	11.97	10	91437A526	$10.31
16	12	11.36	15.94	5	91437A634	5.57
20	16	15.19	19.93	5	91437A734	6.89
0.031″ Thick (±0.002″)						
8	6	5.85	7.95	10	91437A337	9.29
10	8	7.69	9.95	10	91437A450	10.60
12	10	9.52	11.97	10	91437A532	9.46
16	12	11.36	15.94	5	91437A640	6.89
20	16	15.19	19.93	5	91437A738	7.97
Spring Steel						
0.005″ Thick (±0.0005″)						
5	4	3.98	4.99	5	92927A121	9.79
6	5	4.98	5.98	5	92927A129	10.00
8	6	5.85	7.95	5	92927A137	6.23
10	8	7.69	9.95	5	92927A150	6.32
12	10	9.52	11.97	5	92927A161	6.37
0.015″ Thick (±0.001″)						
5	4	3.98	4.99	5	92927A125	10.86
6	5	4.98	5.98	5	92927A133	11.17
8	6	5.85	7.95	5	92927A142	5.89
10	8	7.69	9.95	5	92927A154	5.94
12	10	9.52	11.97	5	92927A164	6.60
16	12	11.36	15.94	5	92927A172	6.75
0.031″ Thick (±0.002″)						
8	6	5.85	7.95	5	92927A146	7.17
10	8	7.69	9.95	5	92927A158	7.23
12	10	9.52	11.97	5	92927A167	7.29
16	12	11.36	15.94	5	92927A175	7.46
20	16	15.19	19.93	5	92927A179	7.46

Wide-Rim Shims

Cover a greater surface area than you can with standard shims. Commonly called machinery bushings, they also reduce friction and wear between moving parts. Shims up to 0.134″ thick have a minimum Rockwell hardness of B20. The 0.187″ thick shims are not rated for hardness.

18-8 stainless steel shims offer excellent corrosion resistance and may be mildly magnetic.

Zinc-plated steel and ***plain steel*** shims are made from C1006-C1020 steel. Zinc plating adds good rust resistance.

ID	OD	Pkg. Qty.		Pkg.
18-8 Stainless Steel				
0.048″ Thick (±0.007″)				
1/2″	7/8″	5	96853A100	$8.33
9/16″	1″	5	96853A105	8.75
5/8″	1 1/4″	5	96853A111	8.79
3/4″	1 1/4″	5	96853A128	8.79
3/4″	1 1/2″	5	96853A141	10.64
1″	1 1/2″	5	96853A150	9.13
1″	2″	1	96853A155	2.92
0.075″ Thick (±0.007″)				
1/2″	7/8″	5	96853A169	9.25
9/16″	1″	5	96853A175	10.14
5/8″	1 1/4″	5	96853A183	10.64
3/4″	1 1/4″	5	96853A197	10.87
3/4″	1 1/2″	1	96853A211	2.10
1″	1 1/2″	1	96853A220	3.60
1″	2″	1	96853A225	2.94
1 1/4″	1 7/8″	1	96853A239	2.38
1 1/2″	2 1/4″	1	96853A253	3.05
0.134″ Thick (±0.009″)				
3/4″	1 1/4″	1	96853A267	3.80
3/4″	1 1/2″	1	96853A281	3.69
7/8″	1 3/8″	1	96853A285	3.76
1″	1 1/2″	1	96853A240	4.72
1″	2″	1	96853A295	5.79
1 1/4″	1 7/8″	1	96853A309	5.33
1 1/2″	2 1/4″	1	96853A323	6.07
2″	3″	1	96853A337	9.89
2 1/2″	3 1/2″	1	96853A351	11.00
Zinc-Plated Steel				
0.048″ Thick (±0.007″)				
1/2″	7/8″	25	97669A200	2.59
9/16″	1″	25	97669A205	5.36
0.048″ Thick (±0.007″) (Cont.)				
5/8″	1″	25	97669A210	$2.72
5/8″	1 1/4″	25	97669A215	4.75
3/4″	1 1/4″	25	97669A220	3.28
3/4″	1 1/2″	25	97669A225	5.64
7/8″	1 3/8″	25	97669A230	3.72
1″	1 1/2″	25	97669A240	4.35
1″	2″	25	97669A207	6.20
0.075″ Thick (±0.007″)				
1/2″	7/8″	25	97669A290	3.26
9/16″	1″	25	97669A295	4.51
5/8″	1″	25	97669A300	3.75
5/8″	1 1/4″	25	97669A305	6.70
3/4″	1 1/4″	25	97669A310	4.87
3/4″	1 1/2″	25	97669A315	8.06
7/8″	1 3/8″	25	97669A320	8.45
1″	1 1/2″	25	97669A330	5.82
1″	2″	25	97669A335	8.44
1 1/4″	2 1/4″	10	97669A350	8.14
0.134″ Thick (±0.007″)				
3/4″	1 1/4″	25	97669A400	7.13
7/8″	1 3/8″	25	97669A408	9.33
1″	1 1/2″	25	97669A415	8.91
1″	2″	25	97669A420	12.91
1 1/8″	1 3/4″	25	97669A425	13.62
1 1/4″	1 7/8″	10	97669A430	6.59
2″	3″	5	97669A475	9.91
Plain Steel				
0.048″ Thick (±0.007″)				
1/2″	7/8″	25	97063A110	2.04
9/16″	1″	25	97063A111	2.11
5/8″	1″	25	97063A112	2.15
Plain Steel				
0.048″ Thick (±0.007″) (Cont.)				
5/8″	1 1/4″	25	97063A410	$3.72
3/4″	1 1/4″	25	97063A113	2.39
3/4″	1 1/2″	25	97063A411	4.30
7/8″	1 3/8″	25	97063A114	3.13
7/8″	1 3/4″	25	97063A412	6.15
1″	1 1/2″	25	97063A115	3.20
1″	2″	25	97063A414	7.25
1 1/8″	1 3/4″	25	97063A116	4.15
1 1/4″	1 7/8″	25	97063A117	4.47
1 1/4″	2 1/4″	25	97063A417	7.72
1 3/8″	2 1/8″	25	97063A118	5.88
1 1/2″	2 1/4″	25	97063A119	7.71
1 1/2″	3″	10	97063A419	7.93
1 3/4″	2 1/2″	25	97063A120	10.45
2″	3 1/2″	5	97063A423	11.46
0.075″ Thick (±0.007″)				
1/2″	7/8″	25	97063A121	2.83
9/16″	1″	25	97063A122	2.84
5/8″	1″	25	97063A123	2.86
5/8″	1 1/4″	25	97063A429	5.25
3/4″	1 1/4″	25	97063A124	3.75
3/4″	1 1/2″	25	97063A430	6.32
7/8″	1 3/8″	25	97063A125	3.85
7/8″	1 3/4″	25	97063A431	8.21
1″	1 1/2″	25	97063A126	4.57
1″	2″	25	97063A433	9.99
1 1/8″	1 3/4″	25	97063A127	10.29
1 1/4″	1 7/8″	25	97063A128	6.75
1 1/4″	2 1/4″	25	97063A436	14.89
1 3/8″	2 1/8″	25	97063A129	9.00
1 1/2″	2 1/4″	25	97063A130	9.75
Plain Steel				
0.075″ Thick (±0.007″) (Cont.)				
1 1/2″	3″	5	97063A438	$11.58
1 5/8″	2 3/8″	10	97063A131	7.49
1 3/4″	2 1/2″	25	97063A132	11.07
2″	3″	10	97063A134	8.40
3″	4 1/4″	5	97063A136	10.93
0.134″ Thick (±0.007″)				
3/4″	1 1/4″	25	97063A139	5.36
3/4″	1 1/2″	25	97063A448	10.76
7/8″	1 3/8″	25	97063A140	8.54
1″	1 1/2″	25	97063A141	5.94
1″	2″	5	97063A451	9.13
1 1/8″	1 3/4″	25	97063A142	8.87
1 1/4″	1 7/8″	25	97063A143	12.04
1 1/4″	2 1/4″	5	97063A454	10.03
1 3/8″	2 1/8″	25	97063A144	13.00
1 3/8″	2 1/2″	5	97063A455	9.96
1 1/2″	2 1/4″	10	97063A145	7.57
1 1/2″	3″	5	97063A520	10.78
1 5/8″	2 3/8″	10	97063A146	8.36
1 3/4″	2 1/2″	5	97063A147	8.03
1 3/4″	3 1/4″	1	97063A535	2.11
2″	3″	10	97063A540	10.39
2″	3 1/2″	1	97063A545	2.70
2 1/2″	3 1/2″	5	97063A550	9.47
2 1/2″	3 7/8″	1	97063A555	4.05
3″	4 1/4″	1	97063A560	4.25
0.187″ Thick (±0.007″)				
2″	3″	5	97063A570	14.88
2 1/2″	3 1/2″	5	97063A575	14.85
2 3/4″	3 3/4″	1	97063A580	5.27
3″	4″	1	97063A585	4.16

Shims for Keyed Drive Shafts

Shims are notched to fit over keyed shafts. Also known as arbor spacers, they're made from C1008-C1010 steel and have a minimum Rockwell hardness of B84. ID tolerance is +0.011″. OD tolerance is ±0.002″. Notch width tolerance is +0.010″ to +0.019″; notch depth tolerance is +0.017″ to +0.052″.

Also Available: 18-8 stainless steel shims. To order, please ask for 98116A777 and specify thickness and ID.

Shims

ID	OD	Notch Wd.	Notch Dp.		Pkg. of 10
0.001″ Thick *(±0.0001″)*					
5/8″	1″	3/16″	1/16″	3088A553	$5.47
3/4″	1 1/8″	3/16″	5/64″	3088A554	6.49
7/8″	1 3/8″	3/16″	5/64″	3088A555	7.49
1″	1 1/2″	1/4″	3/32″	3088A556	7.43
1 1/4″	1 3/4″	5/16″	1/8″	3088A558	7.86
1 1/2″	2 1/8″	3/8″	5/32″	3088A561	8.52
0.002″ Thick *(±0.0002″)*					
5/8″	1″	3/16″	1/16″	3088A584	5.48
3/4″	1 1/8″	3/16″	5/64″	3088A585	6.58
7/8″	1 3/8″	3/16″	5/64″	3088A586	7.37
1″	1 1/2″	1/4″	3/32″	3088A587	7.37
1 1/4″	1 3/4″	5/16″	1/8″	3088A589	7.90
1 1/2″	2 1/8″	3/8″	5/32″	3088A592	8.32
2″	2 3/4″	1/2″	3/16″	3088A594	14.85
0.003″ Thick *(±0.0003″)*					
5/8″	1″	3/16″	1/16″	3088A613	5.19
3/4″	1 1/8″	3/16″	5/64″	3088A614	6.14
7/8″	1 3/8″	3/16″	5/64″	3088A615	6.93
1″	1 1/2″	1/4″	3/32″	3088A616	6.93
1 1/4″	1 3/4″	5/16″	1/8″	3088A618	7.68
1 1/2″	2 1/8″	3/8″	5/32″	3088A621	8.08
2″	2 3/4″	1/2″	3/16″	3088A623	14.25
0.005″ Thick *(±0.0005″)*					
5/8″	1″	3/16″	1/16″	3088A644	4.53
3/4″	1 1/8″	3/16″	5/64″	3088A645	4.80
0.005″ Thick *(±0.0005″) (Cont.)*					
7/8″	1 3/8″	3/16″	5/64″	3088A646	$5.24
1″	1 1/2″	1/4″	3/32″	3088A647	5.24
1 1/4″	1 3/4″	5/16″	1/8″	3088A649	5.59
1 1/2″	2 1/8″	3/8″	5/32″	3088A652	6.33
2″	2 3/4″	1/2″	3/16″	3088A654	8.98
0.010″ Thick *(±0.00075″)*					
1/2″	3/4″	1/8″	3/64″	3088A722	4.56
5/8″	1″	3/16″	1/16″	3088A723	4.84
3/4″	1 1/8″	3/16″	5/64″	3088A724	4.70
7/8″	1 3/8″	3/16″	5/64″	3088A725	5.15
1″	1 1/2″	1/4″	3/32″	3088A726	5.22
1 1/4″	1 3/4″	5/16″	1/8″	3088A728	5.62
1 1/2″	2 1/8″	3/8″	5/32″	3088A731	6.35
2″	2 3/4″	1/2″	3/16″	3088A733	8.96
0.015″ Thick *(±0.001″)*					
1/2″	3/4″	1/8″	3/64″	3088A753	4.56
5/8″	1″	3/16″	1/16″	3088A754	4.92
3/4″	1 1/8″	3/16″	5/64″	3088A755	4.71
7/8″	1 3/8″	3/16″	5/64″	3088A756	5.20
1″	1 1/2″	1/4″	3/32″	3088A757	5.21
1 1/4″	1 3/4″	5/16″	1/8″	3088A759	5.61
1 1/2″	2 1/8″	3/8″	5/32″	3088A762	6.46
2″	2 3/4″	1/2″	3/16″	3088A764	8.97
0.020″ Thick *(±0.001″)*					
1/2″	3/4″	1/8″	3/64″	3088A772	5.28
5/8″	1″	3/16″	1/16″	3088A773	5.68
0.020″ Thick *(±0.001″) (Cont.)*					
3/4″	1 1/8″	3/16″	5/64″	3088A774	$5.67
7/8″	1 3/8″	3/16″	5/64″	3088A775	6.35
1″	1 1/2″	1/4″	3/32″	3088A776	6.34
1 1/4″	1 3/4″	5/16″	1/8″	3088A778	6.53
1 1/2″	2 1/8″	3/8″	5/32″	3088A781	7.88
2″	2 3/4″	1/2″	3/16″	3088A783	14.48
0.025″ Thick *(±0.0015″)*					
1″	1 1/2″	1/4″	3/32″	3088A792	6.34
1 1/4″	1 3/4″	5/16″	1/8″	3088A794	6.65
1 1/2″	2 1/8″	3/8″	5/32″	3088A796	7.88
2″	2 3/4″	1/2″	3/16″	3088A798	14.45
0.031″ Thick *(±0.0015″)*					
1″	1 1/2″	1/4″	3/32″	3088A817	6.25
1 1/4″	1 3/4″	5/16″	1/8″	3088A819	6.65
1 1/2″	2 1/8″	3/8″	5/32″	3088A822	7.88
2″	2 3/4″	1/2″	3/16″	3088A824	14.46
0.062″ Thick *(±0.0025″)*					
1″	1 1/2″	1/4″	3/32″	3088A852	8.26
1 1/4″	1 3/4″	5/16″	1/8″	3088A854	8.78
1 1/2″	2 1/8″	3/8″	5/32″	3088A856	10.82
2″	2 3/4″	1/2″	3/16″	3088A858	14.45
0.125″ Thick *(±0.003″)*					
1″	1 1/2″	1/4″	3/32″	3088A916	8.95
1 1/4″	1 3/4″	5/16″	1/8″	3088A918	9.66
1 1/2″	2 1/8″	3/8″	5/32″	3088A921	12.11
2″	2 3/4″	1/2″	3/16″	3088A923	14.84

19-Piece Plain Steel Assortments

Assortments contain one of each of these thicknesses: 0.001″, 0.0015″, 0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.007″, 0.008″, 0.010″, 0.012″, 0.015″, 0.020″, 0.025″, 0.031″, 0.047″, 0.062″, 0.093″, and 0.125″.

ID	OD		Each
3/8″	5/8″	3088A526	$8.95
1/2″	3/4″	3088A527	8.95
5/8″	1″	3088A528	11.02
3/4″	1 1/8″	3088A529	12.79
7/8″	1 3/8″	3088A531	$13.87
1″	1 1/2″	3088A532	14.05
1 1/8″	1 5/8″	3088A533	15.14
1 1/4″	1 3/4″	3088A534	15.14
1 3/8″	1 7/8″	3088A535	$16.94
1 1/2″	2 1/8″	3088A536	17.42
1 3/4″	2 3/4″	3088A537	26.18
2″	2 3/4″	3088A538	29.65

Extra-Thick Shims for Keyed Drive Shafts

Also known as milling machine arbor spacers, these durable shims are thicker than other shims with internal notches. They're made from hardened C4045 steel and have a minimum Rockwell hardness of C40.

ID tolerance is +0.003″. OD tolerance is ±0.005″. Thickness tolerance is ±0.005″. Notch width and depth tolerance is ±0.004″.

ID	OD	Notch Wd.	Notch Dp.	*0.250″ Thick*	*0.375″ Thick*	*0.500″ Thick*	*0.750″ Thick*	*1.000″ Thick*
1″	1 1/2″	1/4″	3/32″	30965A112 $4.44	30965A212 $5.35	30965A312 $5.72	30965A412 $8.15	30965A512 $9.78
1 1/4″	1 3/4″	5/16″	1/8″	30965A113 5.94	30965A213 6.04	30965A313 7.36	30965A413 8.58	30965A513 10.70
1 1/2″	2 1/8″	3/8″	5/32″	30965A114 7.65	30965A214 9.09	30965A314 10.06	30965A414 11.52	30965A514 13.04
2″	2 3/4″	1/2″	3/16″	30965A115 9.89	30965A215 12.42	30965A315 13.38	30965A415 17.59	30965A515 20.77

Plastic Horseshoe Shims

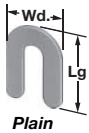

Plain Shim

Our horseshoe shims are resistant to moisture and color-coded for quick identification.

Plain shims have a maximum temperature of 192° F. Thickness tolerance is ±0.031″. ***Nesting*** shims have grooves that keep them from sliding apart. They have a maximum temperature of 380° F. Thickness tolerance is ±0.01″.

Lg.	Wd.	Slot Wd.	0.063″ THICK Blue Pkg. Qty.		Pkg.	0.125″ THICK Red Pkg. Qty.		Pkg.	0.250″ THICK Black Pkg. Qty.		Pkg.
Plain											
2″	1 1/2″	1/2″	100	9731K11	$4.22	100	9731K21	$7.18	100	9731K31	$11.63
2 5/8″	1 7/8″	5/8″	100	9731K15	8.07	100	9731K25	10.88	50	9731K35	9.68
3″	2 5/16″	13/16″	100	9731K13	8.09	100	9731K23	11.63	50	9731K33	9.30
3 1/2″	1 1/2″	1/2″	100	9731K12	7.23	100	9731K22	11.63	50	9731K32	8.61
Nesting											
3″	1 1/2″	1/2″	25	97299A113	6.97	25	97299A116	7.17	25	97299A119	8.68
4″	3″	3/4″	25	97299A221	9.71	25	97299A224	12.81	25	97299A228	14.06

Nesting Shims Shown Stacked

Tapered Shims

Level and align everything from windows to furniture.

Wood shims are scored, and wood/plastic ***composite*** shims are dimpled. Both allow you to snap off any excess.

Plastic shims have ridges that interlock when stacked together. Rigid plastic shims are polypropylene. Flexible plastic shims are polyvinyl, which is vibration resistant and easy to trim.

Material	Thick.	Lg.	Wd.	Pkg. Qty.		Pkg.
Wood	1/32″-1/4″	4″	1 3/8″	14	9704K8	$1.56
Wood	1/32″-3/8″	6″	1 3/8″	12	9704K9	1.64
Composite	1/32″-1/4″	8″	1 3/8″	12	9704K2	3.37
Rigid Plastic	1/32″-1/4″	1 15/16″	1 1/8″	30	97203A200	13.00
Flexible Plastic	1/32″-1/4″	1 15/16″	1 1/8″	30	97203A300	14.95

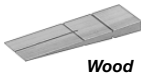

Wood

Rigid Plastic

18-8 Stainless Steel Slotted Shims with Tab

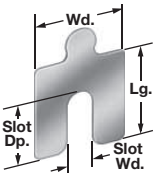

Insertion Tool

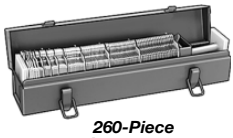

260-Piece Assortment

Use the tab to insert, remove, or make adjustments. Shims are etched with thickness. They're made from 18-8 stainless steel for excellent corrosion resistance and may be mildly magnetic. Minimum Rockwell hardness is B54.

Insertion tools hook onto the tab to give you leverage and reach. They're made from 18-8 stainless steel and are 5″ long.

Trade Size	AA	A	BB	B	C	D	E	G	H
Slot Wd.×Dp.	7/16″×61/64″	9/16″×19/32″	11/16″×119/32″	13/16″×129/32″	13/16″×219/32″	19/16″×39/32″	115/16″×4″	25/16″×43/16″	25/16″×53/16″
Max. Bolt Size	3/8″	1/2″	5/8″	3/4″	1 1/8″	1 1/2″	1 7/8″	2 1/4″	2 1/4″

Shims

Thickness	Trade Size AA 1 1/2″×1 1/2″	Each★	Trade Size A 2″×2″	Each★	Trade Size BB 2 1/2″×2 1/2″	Each★	Trade Size B 3″×3″	Each★	Trade Size C 4″×4″	Each★
0.001″ (±0.00005″)	97235K121	$0.95	9722K21	$1.34	97235K261	$1.53	9722K22	$1.70	9722K23	$2.25
0.002″ (±0.0001″)	97235K125	.95	9722K25	1.45	97235K266	1.53	9722K26	1.70	9722K27	2.25
0.003″ (±0.00015″)	97235K129	.95	9722K31	1.45	97235K272	1.53	9722K32	1.70	9722K33	2.25
0.004″ (±0.0002″)	97235K134	.95	9722K35	1.39	97235K278	1.53	9722K36	1.70	9722K37	2.22
0.005″ (±0.00025″)	97235K138	.95	9722K41	1.39	97235K283	1.53	9722K42	1.70	9722K43	2.22
0.010″ (±0.0005″)	97235K143	.90	9722K45	1.37	97235K288	1.53	9722K46	1.62	9722K47	2.52
0.015″ (±0.00075″)	97235K147	.90	9722K51	1.37	97235K294	1.53	9722K52	1.69	9722K53	2.65
0.020″ (±0.001″)	97235K152	1.02	9722K55	1.53	97235K299	1.70	9722K56	1.78	9722K57	2.59
0.025″ (±0.00125″)	97235K156	1.09	9722K61	1.53	97235K305	1.70	9722K62	2.04	9722K63	2.70
0.030″ (±0.002″)	97235K611	1.98	9722K633	1.83	97235K31	2.21	9722K653	2.23	9722K689	3.50
0.050″ (±0.002″)	97235K161	1.78	9722K65	2.24	97235K316	2.45	9722K66	2.43	9722K67	4.17
0.060″ (±0.002″)	97235K612	2.05	9722K642	2.31	97235K321	3.63	9722K685	3.52	9722K714	5.24
0.075″ (±0.002″)	97235K165	1.85	9722K71	2.74	97235K327	3.63	9722K72	4.06	9722K73	5.87
0.100″ (±0.004″)	97235K169	2.12	9722K75	3.22	97235K332	4.32	9722K76	4.20	9722K77	7.70
0.125″ (±0.004″)	97235K174	2.20	9722K81	3.53	97235K338	4.72	9722K82	4.72	9722K83	8.68
0.250″ (±0.01″)	97235K613	13.02	9722K113	15.75	97235K343	28.90	9722K115	16.95	9722K117	25.80
0.375″ (±0.01″)	97235K665	14.44	9722K116	24.30	97235K349	36.19	9722K122	36.85	9722K126	49.78
0.500″ (±0.01″)	97235K67	16.06	9722K118	32.06	97235K354	40.95	9722K124	41.49	9722K128	69.18

★ Prices are 15% lower when you buy in multiples of 10.

Thickness	Trade Size D 5″×5″	Each★	Trade Size E 6″×6″	Each★	Trade Size G 6″×6″	Each★	Trade Size H 8″×8″	Each★
0.001″ (±0.00005″)	9722K24	$3.08	97235K122	$4.83	97235K123	$4.83	97235K124	$5.40
0.002″ (±0.0001″)	9722K28	3.08	97235K126	4.83	97235K127	4.83	97235K128	5.40
0.003″ (±0.00015″)	9722K34	3.08	97235K131	4.83	97235K132	4.83	97235K133	5.40
0.004″ (±0.0002″)	9722K38	3.05	97235K135	5.64	97235K136	5.64	97235K137	5.98
0.005″ (±0.00025″)	9722K44	3.05	97235K139	5.64	97235K141	5.64	97235K142	5.98
0.010″ (±0.0005″)	9722K48	3.47	97235K144	5.36	97235K145	5.36	97235K146	5.88
0.015″ (±0.00075″)	9722K54	3.47	97235K148	5.36	97235K149	5.36	97235K151	5.88
0.020″ (±0.001″)	9722K58	3.91	97235K153	6.20	97235K154	6.20	97235K155	6.76
0.025″ (±0.00125″)	9722K64	4.42	97235K157	6.20	97235K158	6.20	97235K159	6.76
0.030″ (±0.002″)	9722K753	4.78	97235K614	8.13	97235K617	8.13	97235K621	8.85
0.050″ (±0.002″)	9722K68	5.77	97235K162	8.13	97235K163	8.13	97235K164	8.85
0.060″ (±0.002″)	9722K759	6.70	97235K615	11.51	97235K618	11.51	97235K622	12.63
0.075″ (±0.002″)	9722K74	9.36	97235K166	11.51	97235K167	11.51	97235K168	12.63
0.100″ (±0.004″)	9722K78	10.36	97235K171	15.37	97235K172	15.37	97235K173	16.90
0.125″ (±0.004″)	9722K84	12.00	97235K175	17.30	97235K176	17.30	97235K177	19.07
0.250″ (±0.01″)	9722K119	29.78	97235K616	29.26	97235K619	29.26	97235K623	32.50
0.375″ (±0.01″)	9722K133	54.14	97235K63	41.68	97235K64	41.68	97235K65	53.02
0.500″ (±0.01″)	9722K135	62.23	97235K633	56.45	97235K643	56.45	97235K653	116.92

★ Prices are 15% lower when you buy in multiples of 10.

Insertion Tools

For Trade Size		Each	For Trade Size		Each	For Trade Size		Each
AA	97235K9	$4.70	B and C	97235K93	$5.67	E and G	97235K96	$6.35
A and BB	97235K915	5.03	D	97235K945	6.04	H	97235K985	7.02

Assortments

Include the following thicknesses: 0.001″, 0.002″, 0.003″, 0.004″, 0.005″, 0.010″, 0.015″, 0.020″, 0.025″, 0.050″, 0.075″, 0.100″, and 0.125″.

26-piece assortments have two of each thickness and come organized in a cardboard box.
130-piece assortments have 10 of each thickness and come organized in a steel case.
260-piece assortments have 20 of each thickness and come organized in a steel case.

Trade Size	26-Piece Assortments	Each	130-Piece Assortments	Each	260-Piece Assortments	Each
AA	97235K808	$25.63	97235K81	$167.74	97235K815	$294.85
A	97235K816	25.15	97235K82	191.35	97235K825	308.40
BB	97235K817	31.33	97235K818	180.98	97235K819	304.32
B	97235K828	30.76	97235K83	229.45	97235K835	412.73
C	97235K838	45.12	97235K84	311.67	97235K845	570.11
D	97235K848	67.33	97235K85	513.23	97235K855	836.18
E	97235K858	166.00	97235K86	792.31	97235K865	1,347.39
G	97235K868	191.54	97235K87	792.31	97235K875	1,347.39
H	97235K878	180.98	97235K88	1,151.40	97235K885	1,650.71

Type 316 Stainless Steel Slotted Shims with Tab

Shims are more corrosion resistant than those made from 18-8 stainless steel. They have a tab for insertion and removal and are etched with thickness. May be mildly magnetic. Minimum Rockwell hardness is C36.

Insertion tool hooks onto the tab to give you leverage and reach. It's made from 18-8 stainless steel and is 7 1/8″ long.

94420A500 ..... $5.79

Trade Size	A	B	C
Slot Wd. × Dp.	5/8″ × 19/32″	7/8″ × 2 1/8″	1 1/4″ × 2 3/4″
Max. Bolt Size	9/16″	3/4″	1 1/8″

Thick.	Thick. Tolerance	Trade Size A 2″×2″		Trade Size B 3″×3″		Trade Size C 4″×4″	
0.005″	±0.00025″	94420A115	$2.08	94420A220	$2.53	94420A340	$3.53
0.010″	±0.0005″	94420A122	2.45	94420A227	3.11	94420A347	4.03
0.015″	±0.0005″	94420A130	2.89	94420A235	3.61	94420A355	4.74
0.020″	±0.0005″	94420A137	3.18	94420A242	3.95	94420A362	5.29
0.025″	±0.00075″	94420A145	3.71	94420A250	4.58	94420A370	6.08
0.050″	±0.010″	94420A152	4.00	94420A257	4.37	94420A377	5.74
0.125″	±0.010″	94420A160	4.24	94420A265	5.47	94420A385	7.16

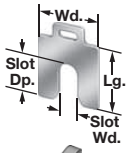

Aluminum and Plastic Color-Coded Slotted Shims

Shims are color-coded by thickness for easy identification. ***Aluminum*** shims are stronger and more resistant to high temperatures than plastic shims. They're made from rust- and compression-resistant Alloy 1100 or 3003. ***Plastic*** shims are oil resistant. They're made from polyester and have a maximum temperature of 140° F.

Assortments— Include 20 shims in each of these thicknesses: 0.002″, 0.003″, 0.004″, 0.005″, 0.010″, 0.015″, 0.020″, 0.030″, and 0.060″, except aluminum trade size AA and C assortments, which do not include the 0.060″ thickness.

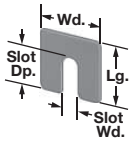

Trade Size	AA	A	B	C
Slot Wd. × Dp.	3/8″ × 15/16″	7/16″ × 1 1/4″	9/16″ × 1 3/4″	1″ × 2 1/2″
Max. Bolt Size	1/4″	5/16″	7/16″	7/8″

Thick.	Thick. Tolerance	Color	Trade Size AA 1 1/2″×1 1/2″ Pkg. Qty.		Pkg.	Trade Size A 2″×2″ Pkg. Qty.		Pkg.	Trade Size B 3″×3″ Pkg. Qty.		Pkg.	Trade Size C 4″×4″ Pkg. Qty.		Pkg.
Shims														
Aluminum														
0.002″	±0.0002″	Red	20	9302K01	$4.98	20	9302K22	$5.65	20	9302K42	$7.11	20	9302K62	$10.20
0.003″	±0.0002″	Green	20	9302K011	4.98	20	9302K23	5.65	20	9302K43	7.11	20	9302K63	10.20
0.005″	±0.0002″	Blue	20	9302K013	4.98	20	9302K25	5.65	20	9302K45	7.11	20	9302K65	10.20
0.010″	±0.0005″	Brown	20	9302K015	5.62	20	9302K31	6.37	20	9302K51	13.98	10	9302K81	13.36
0.015″	±0.0015″	Pink	20	9302K016	7.74	20	9302K32	8.74	20	9302K52	14.98	10	9302K82	14.11
0.020″	±0.002″	Yellow	20	9302K017	8.23	20	9302K33	9.36	10	9302K53	8.84	5	9302K83	8.56
0.025″	±0.0025″	White	20	9302K018	10.36	20	9302K34	11.87	10	9302K54	8.58	5	9302K84	9.45
0.030″	±0.003″	Coral	20	9302K019	10.36	20	9302K35	11.87	10	9302K55	10.49	5	9302K85	8.51
0.060″	±0.006″	Natural	—	—	—	20	9302K36	12.99	10	9302K57	11.87	—	—	—
Plastic														
0.005″	±0.0002″	Blue	20	9303K05	4.88	20	9303K25	5.03	20	9303K45	6.21	20	9303K65	7.69
0.010″	±0.0005″	Brown	20	9303K011	5.77	20	9303K31	6.06	20	9303K51	11.09	10	9303K81	9.23
0.015″	±0.0015″	Pink	20	9303K012	9.32	20	9303K32	10.05	20	9303K52	14.94	10	9303K82	14.83
0.020″	±0.002″	Yellow	20	9303K013	9.32	20	9303K33	10.05	10	9303K53	10.41	5	9303K83	8.34
0.025″	±0.0025″	White	20	9303K014	11.94	20	9303K34	13.20	10	9303K54	10.39	5	9303K84	9.72
0.030″	±0.003″	Coral	20	9303K015	11.94	20	9303K35	13.20	10	9303K55	10.39	5	9303K85	9.72
0.060″	±0.006″	Clear	5	9303K016	12.64	10	9303K36	11.86	5	9303K66	12.36	1	9303K86	3.28
Assortments														
					Each			Each			Each			Each
Aluminum				9302K91	$44.15		9302K92	$50.25		9302K93	$94.81		9302K94	$135.35
Plastic				9303K91	44.92		9303K92	46.13		9303K93	88.58		9303K94	163.66

Leveling Shims

Commonly called beveled washers, these shims are designed for structural I-beams.

18-8 stainless steel shims are corrosion resistant and may be mildly magnetic. They meet ASTM B783 and have a minimum Rockwell hardness of B45. ***Aluminum*** shims are made from Alloy 319 and are not rated for hardness. ***Iron*** shims meet ASTM A47. Minimum Rockwell hardness is B62. ***Hardened steel*** shims conform to ASTM F436 for use with A325/A490 structural bolts. They're made from C1035-C1055 steel. Minimum Rockwell hardness is C38. ***Zinc-plated steel*** metric shims meet DIN 435. They're corrosion resistant and not rated for hardness.

Also Available: Galvanized iron shims in 1/4″ -1″ screw sizes. Please ask for 91152A777 and specify screw size.

Inch Sizes

Screw Size	Hole Dia.	Size (Square)	Thickness (A)	Thickness (B)	Pkg. Qty.		Pkg.
18-8 Stainless Steel							
1/4″	9/32″	7/8″	17/64″	1/8″	5	90845A010	$12.12
5/16″	11/32″	7/8″	17/64″	1/8″	5	90845A015	13.03
3/8″	7/16″	1 1/4″	11/32″	1/8″	1	90845A037	6.11
1/2″	9/16″	1 1/4″	11/32″	1/8″	1	90845A038	6.11
5/8″	11/16″	1 1/2″	3/8″	1/8″	1	90845A039	7.04
3/4″	13/16″	1 1/2″	7/16″	3/16″	1	90845A040	7.65
Aluminum							
1/4″	5/16″	11/16″	7/32″	5/64″	5	92810A110	5.56
5/16″	3/8″	1″	1/4″	3/32″	5	92810A120	4.97
3/8″	7/16″	1 1/4″	11/32″	5/32″	5	92810A130	7.99
1/2″	9/16″	1 1/4″	11/32″	5/32″	5	92810A140	8.00
5/8″	11/16″	1 1/2″	13/32″	5/32″	5	92810A150	14.90
3/4″	13/16″	1 1/2″	15/32″	7/32″	5	92810A160	11.88
Iron							
1/4″	5/16″	11/16″	7/32″	5/64″	25	91151A029	10.00
5/16″	3/8″	1″	5/16″	5/32″	25	91151A030	12.15
3/8″	7/16″	1 1/4″	11/32″	1/8″	25	91151A031	14.00
1/2″	9/16″	1 1/4″	11/32″	1/8″	25	91151A033	14.00
5/8″	11/16″	1 1/2″	3/8″	1/8″	10	91151A035	7.71
3/4″	13/16″	1 1/2″	7/16″	3/16″	10	91151A036	7.71

Inch Sizes (Cont.)

Screw Size	Hole Dia.	Size (Square)	Thickness (A)	Thickness (B)	Pkg. Qty.		Pkg.
Iron (Cont.)							
7/8″	15/16″	2″	9/16″	7/32″	10	91151A037	$14.00
1″	1 1/16″	2″	9/16″	7/32″	10	91151A038	14.00
1 1/8″	1 1/4″	2 1/4″	5/8″	1/4″	1	91151A039	3.75
1 1/4″	1 3/8″	2 1/2″	23/32″	5/16″	1	91151A040	4.38
1 1/2″	1 5/8″	2 3/4″	13/16″	5/16″	1	91151A050	4.71
Hardened Steel							
1/2″	35/64″	1 3/4″	7/16″	5/32″	5	91573A034	9.59
5/8″	45/64″	1 3/4″	7/16″	5/32″	5	91573A035	9.59
3/4″	53/64″	1 3/4″	7/16″	5/32″	5	91573A036	9.59
7/8″	61/64″	1 3/4″	7/16″	5/32″	5	91573A037	9.59
1″	1 9/64″	1 3/4″	7/16″	5/32″	5	91573A038	9.59

Metric Sizes—Dimensions in millimeters

Screw Size	Hole Dia.	Lg.	Wd.	Thickness (A)	Thickness (B)	Pkg. Qty.		Pkg.
Zinc-Plated Steel								
M8	9	22	22	4.6	1.5	10	91146A100	$7.98
M10	11	22	22	4.6	1.5	10	91146A110	8.00
M12	14	30	26	6.2	2	10	91146A120	9.15
M16	18	36	32	7.5	2.5	10	91146A130	12.57
M20	22	44	40	9.2	3	5	91146A140	11.43

About Spacers and Standoffs

Use spacers and standoffs to separate or connect parts, and to position components in assemblies. They come in round and hex shapes; choose the hex shape if you need to use a wrench or pliers for grip and torque.

Spacers *are not* threaded. Standoffs *are* threaded. Inch sizes have a Class 2B thread fit, metric sizes have a Class 6h thread fit.

Material Information

18-8 Stainless Steel— Strong, electrically conductive, and nonmagnetic, this stainless steel offers excellent corrosion resistance. It meets ASTM A581 and A582. Minimum Rockwell hardness is B60. Tensile strength is 80,000 psi.

Brass— Like 18-8 stainless steel, it's strong, electrically conductive, nonmagnetic, and corrosion resistant. It can also be soldered for grounding. Brass meets ASTM B16. Minimum Rockwell hardness is B55. Tensile strength is 45,000 psi.

Aluminum— One-third the weight of steel and mildly resistant to corrosion. Minimum Rockwell hardness is B20. Tensile strength is 45,000 psi. *Black-finish aluminum* has an anodized finish that meets MIL-A-8625E.

Steel— Made from 12L14 steel (unless otherwise stated). Minimum Rockwell hardness is B60. Tensile strength is 55,000 psi. *Zinc plating* adds corrosion resistance; *chrome plating* adds a decorative, mirror-like finish.

Nylon 6/6— Nonconductive and resistant to chemicals and solvents (except mineral acids). Withstands temperatures from –40° to +180° F. Absorbs moisture, which can affect dimensions and other properties. Not rated for hardness or tensile strength.

Plastic— *Low-density polyethylene (LDPE)* is nonconductive, noncorrosive, and moisture and chemical resistant. Temperature range is –60° to +175° F. *Polypropylene* is FDA compliant for food contact. It's resistant to chemicals, nonconductive, and has a temperature range of –40° to +160° F. *Acetal* is strong, wear resistant, and chemical resistant. It meets ASTM D4181 and has a temperature range of –40° to +250° F. *PTFE* is low friction, chemical resistant, and a good electrical insulator. Minimum temperature is not rated; maximum temperature is +550° F. Plastic is not rated for hardness or tensile strength.

Rubber— Fabric reinforced and oil resistant, rubber compresses to dampen vibration, shock, and noise. It has a temperature range of –65° to +200° F. Not rated for hardness or tensile strength.

Garolite (G-10/FR4)— This epoxy-grade laminate is a good electrical insulator with high strength and low moisture absorption. Temperature range is 0° to +300° F. Minimum Rockwell hardness is M110. Tensile strength is 35,000 psi.

Hard Fiber— Lightweight, impact resistant, and impervious to most organic solvents and petroleum-based oils. Minimum Rockwell hardness is R50. Tensile strength is 6,000 psi.

Ceramic— Made from Grade L4 or L5 ceramic that maintains tensile and compression strength at high temperatures and in high-voltage applications. Minimum temperature is not rated; maximum temperature is +1700° F. Not rated for hardness or tensile strength.

Unthreaded Spacers

Also called clearance spacers. They have an OD tolerance of ±0.005″, ID tolerance of +0.01″, and length tolerance of ±0.005″, except nylon. Nylon have an OD tolerance of ±0.015″, ID tolerance of ±0.005″, and length tolerance of ±0.015″. Nylon is off-white.

Screw Size	No. 0	No. 2	No. 4	No. 6	No. 8	No. 10	No. 12	1/4″	5/16″	3/8″	1/2″	5/8″	3/4″	1″
ID	0.064″	0.090″	0.115″	0.140″	0.166″	0.192″	0.218″	0.252″	0.315″	0.380″	0.505″	0.630″	0.755″	1.005″

Lg.	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★	Black-Finish Aluminum	Each★	Zinc-Plated Steel	Each★	Nylon 6/6 Pkg. Qty.		Pkg.
1/8″ OD—To Order: *Please specify screw size: No. 0 or 2*													
1/8″	92320A977	$1.86	90309A935	$1.27	92510A854	$1.45	—	—	92415A874	$1.36	25	94639A147	$6.13
3/16″	92320A978	1.86	90309A936	1.28	92510A855	1.45	—	—	92415A875	1.36	25	94639A148	6.13
1/4″	92320A979	1.86	90309A937	1.33	92510A856	1.45	—	—	92415A876	1.37	25	94639A149	6.13
5/16″	92320A980	2.10	90309A938	1.34	92510A857	1.44	—	—	92415A877	1.45	25	94639A150	6.13
3/8″	92320A981	2.15	90309A939	1.35	92510A858	1.56	—	—	92415A878	1.46	10	94639A151	6.50
3/16″ OD—To Order: *Please specify screw size: No. 2 or 4*													
1/8″	92320A194	1.56	90309A077	1.06	92510A294	.33	—	—	92415A179	1.24	100	94639A610	6.85
5/32″	92320A103	1.63	90309A384	.93	92510A103	.33	—	—	92415A180	1.24	25	94639A612	6.20
3/16″	92320A195	1.61	90309A078	1.10	92510A295	.33	—	—	92415A181	1.25	100	94639A615	7.08
7/32″	92320A104	1.63	90309A385	1.10	92510A104	.33	—	—	92415A182	1.25	25	94639A617	6.20
1/4″	92320A196	1.63	90309A079	1.10	92510A296	.33	—	—	92415A676	1.26	100	94639A620	7.29
9/32″	92320A105	1.63	90309A386	1.14	92510A105	.34	—	—	92415A183	1.26	25	94639A623	6.20
5/16″	92320A197	1.63	90309A080	1.15	92510A297	.34	—	—	92415A672	1.26	100	94639A625	7.47
11/32″	92320A106	1.71	90309A387	1.15	92510A106	.39	—	—	92415A184	1.31	25	94639A628	6.20
3/8″	92320A198	1.71	90309A081	1.17	92510A298	.39	—	—	92415A673	1.35	100	94639A630	7.67
13/32″	92320A107	1.71	90309A388	1.17	92510A107	.38	—	—	92415A185	1.36	25	94639A633	6.20
7/16″	92320A199	1.71	90309A082	1.20	92510A299	.39	—	—	92415A674	1.36	100	94639A635	7.86
15/32″	92320A108	1.75	90309A389	1.20	92510A108	.38	—	—	92415A186	1.37	25	94639A637	6.20
1/2″	92320A200	1.75	90309A083	1.28	92510A300	.39	—	—	92415A675	1.37	100	94639A640	8.12
9/16″	92320A109	1.80	90309A390	1.28	92510A109	.44	—	—	92415A187	1.65	100	94639A015	9.49
5/8″	92320A110	1.80	90309A391	1.29	92510A110	.44	—	—	92415A188	1.66	100	94639A016	9.72
11/16″	92320A111	1.99	90309A392	1.31	92510A111	.49	—	—	92415A189	1.66	100	94639A017	9.75
3/4″	92320A112	2.76	90309A393	1.33	92510A112	.50	—	—	92415A190	1.84	100	94639A018	9.80
7/8″	92320A113	2.06	90309A394	1.56	92510A113	.50	—	—	92415A191	1.89	100	94639A019	9.85
1″	92320A114	2.18	90309A395	1.60	92510A114	.50	—	—	92415A192	1.93	100	94639A020	9.90
1/4″ OD—To Order: *Please specify screw size: No. 2, 4, 6, or 8*													
1/8″	92320A201	1.22	90309A001	.81	92510A301	.27	93013A260	$1.47	92415A401	1.26	100	94639A101	7.11
5/32″	92320A115	1.29	90309A396	.81	92510A115	.34	—	—	92415A193	1.26	25	94639A152	6.30
3/16″	92320A202	1.26	90309A002	.83	92510A302	.27	93013A262	1.47	92415A402	1.27	100	94639A102	7.48
7/32″	92320A116	1.29	90309A397	.83	92510A116	.34	—	—	92415A194	1.28	25	94639A153	6.30
1/4″	92320A203	1.28	90309A003	.83	92510A303	.27	93013A264	1.47	92415A403	1.28	100	94639A103	7.63
9/32″	92320A117	1.29	90309A398	.85	92510A117	.34	—	—	92415A195	1.29	25	94639A154	6.30
5/16″	92320A204	1.30	90309A004	.85	92510A304	.27	93013A266	1.49	92415A404	1.30	100	94639A104	7.99

(Continued on following page)

★Prices are 15% lower when you buy in multiples of 10.

Unthreaded Spacers *(Continued from previous page)*

Lg.	18-8 Stainless Steel	Each ★	Zinc-Plated Brass	Each ★	Aluminum	Each ★	Black-Finish Aluminum	Each ★	Zinc-Plated Steel	Each ★	Nylon 6/6 Pkg. Qty.		Pkg.
1/4" OD (Cont.)—To Order: *Please specify screw size: No. 2, 4, 6, or 8*													
11/32"	92320A118	$1.41	90309A399	$0.86	92510A118	$0.44	—	—	92415A196	$1.34	25	94639A155	$6.30
3/8"	92320A205	1.35	90309A005	.88	92510A305	.34	93013A268	$1.49	92415A405	1.39	100	94639A105	8.18
13/32"	92320A119	1.41	90309A400	.88	92510A119	.44	—	—	92415A197	1.40	25	94639A156	6.30
7/16"	92320A120	1.41	90309A401	.89	92510A120	.44	—	—	92415A198	1.40	100	94639A026	9.62
15/32"	92320A121	1.41	90309A402	1.01	92510A121	.44	—	—	92415A199	1.40	25	94639A157	6.30
1/2"	92320A206	1.40	90309A006	1.01	92510A306	.34	93013A272	1.51	92415A406	1.42	100	94639A106	8.43
9/16"	92320A122	1.69	90309A403	1.03	92510A122	.44	—	—	92415A200	1.70	100	94639A028	9.94
5/8"	92320A207	1.55	90309A007	.90	92510A307	.34	93013A274	1.53	92415A407	1.71	100	94639A107	8.77
11/16"	92320A123	1.84	90309A404	1.03	92510A123	.44	—	—	92415A201	1.80	100	94639A029	9.06
3/4"	92320A208	1.84	90309A008	.95	92510A308	.44	93013A276	1.54	92415A408	1.70	100	94639A108	9.08
13/16"	92320A124	1.84	90309A405	1.12	92510A124	.44	—	—	92415A202	2.07	100	94639A030	9.25
7/8"	92320A209	1.84	90309A009	1.09	92510A309	.44	93013A278	1.56	92415A409	1.73	100	94639A109	9.35
15/16"	92320A125	1.84	90309A406	1.27	92510A125	.44	—	—	92415A203	2.10	100	94639A031	9.45
1"	92320A210	1.89	90309A010	1.24	92510A310	.44	93013A280	1.58	92415A410	1.75	100	94639A110	9.80
1 1/8"	92320A126	3.71	90309A407	1.39	92510A126	.66	93013A281	1.69	92415A204	2.27	5	94639A032	5.15
1 3/16"	92320A127	3.71	90309A408	1.50	92510A127	.67	—	—	92415A205	2.28	5	94639A033	5.72
1 1/4"	92320A211	3.48	90309A011	1.69	92510A311	.66	93013A283	1.71	92415A411	1.91	50	94639A111■	9.17
1 5/16"	92320A128	3.71	90309A409	1.82	92510A128	.97	—	—	92415A206	2.30	5	94639A034	5.75
1 3/8"	92320A129	3.71	90309A410	1.92	92510A129	.97	93013A285	1.73	92415A207	2.33	5	94639A035	5.42
1 7/16"	92320A130	3.71	90309A411	2.04	92510A130	1.03	—	—	92415A208	2.34	5	94639A036	5.90
1 1/2"	92320A212	3.71	90309A012	2.16	92510A312	1.03	93013A287	1.76	92415A412	1.95	50	94639A112■	9.34
1 3/4"	92320A131	6.68	90309A412	2.44	92510A131	1.51	93013A288	1.80	92415A209	2.38	5	94639A037	6.25
2"	92320A132	7.40	90309A413	2.80	92510A132	1.75	93013A289	1.83	92415A210	3.37	1	94639A042	1.80
5/16" OD—To Order: *Please specify screw size: No. 6, 8, or 10*													
1/8"	92320A213	1.83	90309A013	1.00	92510A313	1.05	—	—	92415A413	1.16	100	94639A113	7.04
5/32"	92320A133	1.94	90309A414	1.06	92510A133	1.05	—	—	92415A211	1.17	25	94639A158	6.39
3/16"	92320A214	1.94	90309A014	1.09	92510A314	1.05	—	—	92415A414	1.18	100	94639A114	7.24
7/32"	92320A134	2.19	90309A415	1.11	92510A134	1.04	—	—	92415A212	1.19	25	94639A159	6.39
1/4"	92320A215	2.01	90309A015	1.13	92510A315	1.00	—	—	92415A415	1.20	100	94639A115	7.45
9/32"	92320A135	2.19	90309A416	1.17	92510A135	1.04	—	—	92415A213	1.20	25	94639A160	6.39
5/16"	92320A216	2.01	90309A016	1.17	92510A316	1.01	—	—	92415A416	1.21	100	94639A116	7.64
11/32"	92320A136	2.19	90309A417	1.21	92510A136	1.10	—	—	92415A214	1.25	25	94639A161	6.39
3/8"	92320A217	2.28	90309A017	1.07	92510A317	1.04	—	—	92415A417	1.30	100	94639A117	7.83
13/32"	92320A137	2.19	90309A418	1.26	92510A137	1.10	—	—	92415A215	1.31	25	94639A162	6.39
7/16"	92320A138	2.19	90309A419	1.29	92510A138	1.10	—	—	92415A216	1.31	100	94639A044	9.12
15/32"	92320A139	2.19	90309A420	1.31	92510A139	1.10	—	—	92415A217	1.32	25	94639A163	6.39
1/2"	92320A218	2.19	90309A018	1.20	92510A318	1.07	—	—	92415A418	1.34	100	94639A118	8.21
9/16"	92320A140	2.53	90309A421	1.41	92510A140	1.10	—	—	92415A218	1.43	100	94639A046	9.57
5/8"	92320A219	2.52	90309A019	1.46	92510A319	1.15	—	—	92415A419	1.45	100	94639A119	8.67
11/16"	92320A141	3.09	90309A422	1.50	92510A141	1.22	—	—	92415A219	1.46	100	94639A047	8.85
3/4"	92320A220	2.67	90309A020	1.54	92510A320	1.28	—	—	92415A420	1.75	100	94639A120	9.06
13/16"	92320A142	3.09	90309A423	1.71	92510A142	1.22	—	—	92415A220	1.81	100	94639A048	9.40
7/8"	92320A221	3.07	90309A021	1.76	92510A321	1.40	—	—	92415A421	1.83	100	94639A121	9.44
15/16"	92320A143	3.09	90309A424	1.85	92510A143	1.22	—	—	92415A221	1.85	100	94639A049	9.85
1"	92320A222	3.08	90309A022	1.70	92510A322	1.38	—	—	92415A422	1.86	100	94639A122	9.91
1 1/8"	92320A144	4.78	90309A425	2.17	92510A144	1.32	—	—	92415A222	1.99	5	94639A050	6.60
1 3/16"	92320A145	4.78	90309A426	2.28	92510A145	1.43	—	—	92415A223	2.08	5	94639A051	6.60
1 1/4"	92320A223	4.78	90309A023	2.33	92510A323	1.43	—	—	92415A423	2.10	50	94639A123	9.95
1 5/16"	92320A146	4.99	90309A427	2.50	92510A146	1.54	—	—	92415A224	2.46	5	94639A052	8.23
1 3/8"	92320A147	5.25	90309A428	2.55	92510A147	1.54	—	—	92415A225	2.48	5	94639A053	8.30
1 7/16"	92320A148	5.25	90309A429	2.91	92510A148	1.60	—	—	92415A226	2.50	5	94639A054	8.37
1 1/2"	92320A224	5.20	90309A024	2.96	92510A324	2.01	—	—	92415A424	2.52	50	94639A124	9.95
1 3/4"	92320A149	5.78	90309A430	3.14	92510A149	2.07	—	—	92415A227	2.59	5	94639A055	9.80
2"	92320A150	5.83	90309A431	3.41	92510A150	2.44	—	—	92415A228	3.09	5	94639A056	9.90
3/8" OD—To Order: *Please specify screw size: No. 6, 8, 10, or 12*													
1/8"	92320A225	1.96	90309A025	1.12	92510A325	1.10	93013A601	1.70	92415A425	1.24	100	94639A125●	7.72
5/32"	92320A151	1.89	90309A432	1.16	92510A151	1.10	—	—	92415A229	1.25	25	94639A164	6.55
3/16"	92320A226	1.58	90309A026	1.20	92510A326	1.10	—	—	92415A426	1.27	100	94639A126●	7.51
7/32"	92320A152	2.25	90309A433	1.22	92510A152	1.10	—	—	92415A230	1.28	25	94639A165	6.55
1/4"	92320A227	2.23	90309A027	1.25	92510A327	1.10	93013A605	1.92	92415A427	1.29	100	94639A127●	7.67
9/32"	92320A153	2.25	90309A434	1.28	92510A153	1.10	—	—	92415A231	1.30	25	94639A166	6.55
5/16"	92320A228	2.24	90309A028	1.31	92510A328	1.10	—	—	92415A428	1.31	100	94639A128●	7.89
11/32"	92320A154	2.25	90309A435	1.36	92510A154	1.15	—	—	92415A232	1.36	25	94639A167	6.55
3/8"	92320A229	2.24	90309A029	1.40	92510A329	1.13	93013A609	2.01	92415A429	1.42	100	94639A129●	8.05
13/32"	92320A155	2.25	90309A436	1.43	92510A155	1.15	—	—	92415A233	1.43	25	94639A168	6.55
7/16"	92320A156	2.25	90309A437	1.46	92510A156	1.15	—	—	92415A234	1.45	100	94639A062●	9.52
15/32"	92320A157	2.25	90309A438	1.50	92510A157	1.15	—	—	92415A235	1.45	25	94639A169	6.55
1/2"	92320A230	2.24	90309A030	1.32	92510A330	1.13	93013A613	2.09	92415A430	1.47	100	94639A130●	8.44
9/16"	92320A158	2.58	90309A439	1.62	92510A158	1.15	—	—	92415A236	1.58	100	94639A064●	9.98
5/8"	92320A231	2.57	90309A031	1.48	92510A331	1.16	93013A615	2.35	92415A431	1.61	100	94639A131●	8.84
11/16"	92320A159	2.73	90309A440	1.78	92510A159	1.27	—	—	92415A237	1.63	100	94639A065●	9.10
3/4"	92320A232	2.73	90309A032	1.91	92510A332	1.27	93013A617	2.41	92415A432	1.99	100	94639A132●	9.29
13/16"	92320A160	3.25	90309A441	2.06	92510A160	1.27	—	—	92415A238	2.02	100	94639A066●	9.41
7/8"	92320A233	3.12	90309A033	2.02	92510A333	1.24	93013A619	2.48	92415A433	2.04	100	94639A133●	9.64

■ Not available in screw sizes No. 2 and No. 8. ● Not available in screw size No. 12.

(Continued on following page)

★Prices are 15% lower when you buy in multiples of 10.

Unthreaded Spacers *(Continued from previous page)*

Also called clearance spacers. They have an OD tolerance of ±0.005″, ID tolerance of +0.01″, and length tolerance of ±0.005″, except nylon. Nylon have an OD tolerance of ±0.015″, ID tolerance of ±0.005″, and length tolerance of ±0.015″. Nylon is off-white.

Screw Size	No. 0	No. 2	No. 4	No. 6	No. 8	No. 10	No. 12	1/4″	5/16″	3/8″	1/2″	5/8″	3/4″	1″
ID	0.064″	0.090″	0.115″	0.140″	0.166″	0.192″	0.218″	0.252″	0.315″	0.380″	0.505″	0.630″	0.755″	1.005″

	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★	Black Finish Aluminum	Each★	Zinc-Plated Steel	Each★	Nylon 6/6 Pkg. Qty.		Pkg.
3/8″ OD (Cont.)—To Order: *Please specify screw size: No. 6, 8, 10, or 12*													
15/16″	92320A161	$3.25	90309A442	$2.18	92510A161	$1.27	—	—	92415A239	$2.07	100	94639A067 ●	$9.75
1″	92320A234	3.25	90309A034	1.97	92510A334	1.27	93013A621	$2.56	92415A434	2.09	100	94639A134 ●	9.80
1 1/8″	92320A162	4.95	90309A443	2.51	92510A162	1.44	93013A622	2.75	92415A240	2.22	5	94639A068 ▲	7.05
1 3/16″	92320A163	4.95	90309A444	2.64	92510A163	1.54	—	—	92415A241	2.34	5	94639A069 ▲	7.12
1 1/4″	92320A235	4.52	90309A035	2.71	92510A335	1.54	93013A623	2.94	92415A435	2.36	50	94639A135 ●	9.28
1 5/16″	92320A164	5.54	90309A445	2.89	92510A164	1.60	—	—	92415A242	2.64	5	94639A070 ▲	8.26
1 3/8″	92320A165	5.54	90309A446	2.95	92510A165	1.60	93013A625	3.27	92415A243	2.65	5	94639A071 ▲	8.76
1 7/16″	92320A166	5.54	90309A447	3.39	92510A166	1.66	—	—	92415A244	2.69	5	94639A072 ▲	8.94
1 1/2″	92320A236	5.06	90309A036	3.47	92510A336	1.66	93013A627	3.59	92415A436	3.16	50	94639A136 ●	9.26
1 3/4″	92320A167	6.85	90309A448	3.73	92510A167	2.26	93013A628	4.53	92415A245	2.81	5	94639A073 ▲	9.87
2″	92320A168	7.47	90309A449	4.25	92510A168	2.65	93013A629	4.67	92415A246	3.61	5	94639A074 ▲	9.95
2 1/4″	92320A263	7.50	90309A276	6.02	92510A202	4.42	—	—	92415A477	4.58	1	94639A090	6.52
2 1/2″	92320A266	7.92	90309A277	6.48	92510A206	4.60	—	—	92415A479	4.94	1	94639A091	6.85
1/2″ OD—To Order: *Please specify screw size: No. 6, 8, 10, or 1/4″*													
1/8″	92320A237	2.73	90309A037	1.64	92510A337	1.49	93013A801	2.41	92415A437	1.53	100	94639A137	7.58
3/16″	92320A238	2.95	90309A038	1.73	92510A338	1.49	—	—	92415A438	1.59	100	94639A138	7.89
1/4″	92320A239	2.97	90309A039	1.77	92510A339	1.49	93013A803	2.48	92415A439	1.66	100	94639A139	8.22
5/16″	92320A240	3.25	90309A040	1.85	92510A340	1.49	—	—	92415A440	1.68	100	94639A140	8.54
3/8″	92320A241	3.37	90309A041	1.93	92510A341	1.65	93013A805	2.69	92415A441	1.83	100	94639A141	8.87
7/16″	92320A169	3.37	90309A450	2.13	92510A169	1.66	—	—	92415A247	1.69	100	94639A075	8.97
1/2″	92320A242	3.37	90309A042	2.34	92510A342	1.65	93013A807	2.85	92415A442	1.99	100	94639A142	9.38
9/16″	92320A170	3.94	90309A451	2.46	92510A170	1.66	—	—	92415A248	1.88	100	94639A076	9.55
5/8″	92320A243	3.75	90309A043	2.46	92510A343	1.60	93013A809	3.19	92415A443	2.15	100	94639A143	9.60
11/16″	92320A171	3.86	90309A452	2.69	92510A171	1.71	—	—	92415A249	2.05	100	94639A077	9.70
3/4″	92320A244	3.86	90309A044	2.81	92510A344	1.71	93013A811	3.39	92415A444	2.25	100	94639A144	9.80
13/16″	92320A172	4.78	90309A453	3.28	92510A172	1.71	—	—	92415A250	2.31	100	94639A078	9.83
7/8″	92320A245	4.78	90309A045	2.90	92510A345	1.71	93013A813	3.57	92415A445	2.35	100	94639A145	9.87
15/16″	92320A173	4.78	90309A454	3.49	92510A173	1.71	—	—	92415A251	2.39	100	94639A079	9.95
1″	92320A246	4.45	90309A046	3.06	92510A346	1.71	93013A815	3.75	92415A446	2.43	100	94639A146	9.98
1 1/16″	92320A174	6.00	90309A455	3.93	92510A174	2.75	—	—	92415A252	2.90	5	94639A080	8.92
1 1/8″	92320A175	6.00	90309A456	4.07	92510A175	2.75	93013A817	4.13	92415A253	2.96	5	94639A081	8.98
1 3/16″	92320A176	6.00	90309A457	4.35	92510A176	3.03	—	—	92415A254	3.12	5	94639A082	9.81
1 1/4″	92320A247	6.00	90309A047	3.52	92510A347	2.98	93013A819	4.45	92415A447	3.03	5	94639A083	9.94
1 5/16″	92320A177	6.49	90309A458	4.56	92510A177	3.14	—	—	92415A255	3.34	5	94639A084	9.79
1 3/8″	92320A178	6.81	90309A459	4.81	92510A178	3.31	93013A821	4.83	92415A256	3.40	5	94639A085	9.80
1 7/16″	92320A179	6.81	90309A460	4.96	92510A179	3.36	—	—	92415A257	3.47	5	94639A086	9.85
1 1/2″	92320A248	6.41	90309A048	3.98	92510A348	3.48	93013A823	5.11	92415A448	3.52	5	94639A087	9.90
1 3/4″	92320A180	8.95	90309A461	5.53	92510A180	3.63	93013A824	5.96	92415A258	3.77	5	94639A088	9.95
2″	92320A181	8.95	90309A462	6.01	92510A181	3.81	93013A825	6.27	92415A259	4.24	5	94639A089	9.98
2 1/4″	92320A268	10.50	90309A279	8.20	92510A210	4.88	—	—	92415A481	6.31	1	94639A093	6.86
2 1/2″	92320A270	10.83	90309A280	8.61	92510A214	5.05	—	—	92415A483	6.82	1	94639A094	7.19
5/8″ OD—To Order: *Please specify screw size: No. 10 or 1/4″*													
1/4″	92320A182	5.49	90309A463	2.15	92510A182	1.90	—	—	92415A260	1.65	25	94639A170	6.80
5/16″	92320A183	5.86	90309A464	2.31	92510A183	1.91	—	—	92415A261	1.72	25	94639A171	6.97
3/8″	92320A249	6.45	90309A049	3.24	92510A349	1.87	—	—	92415A468	1.83	25	94639A172	7.14
7/16″	92320A184	5.93	90309A465	2.83	92510A184	1.90	—	—	92415A262	1.90	25	94639A173	7.32
1/2″	92320A250	6.66	90309A050	3.86	92510A350	1.90	—	—	92415A449	1.98	25	94639A174	7.49
9/16″	92320A185	7.04	90309A466	3.41	92510A185	1.90	—	—	92415A263	2.13	25	94639A175	7.66
5/8″	92320A251	7.41	90309A051	4.53	92510A351	1.90	—	—	92415A450	2.21	25	94639A176	7.84
3/4″	92320A252	8.29	90309A052	4.99	92510A352	2.54	—	—	92415A451	2.91	25	94639A177	8.18
7/8″	92320A186	8.67	90309A467	4.58	92510A186	2.52	—	—	92415A264	3.11	25	94639A178	8.53
1″	92320A253	9.47	90309A053	5.74	92510A353	2.67	—	—	92415A452	3.30	25	94639A179	8.88
1 1/8″	92320A187	9.68	90309A468	5.23	92510A187	3.77	—	—	92415A265	3.59	10	94639A180	6.24
1 1/4″	92320A188	9.96	90309A469	5.58	92510A188	3.77	—	—	92415A266	3.90	10	94639A181	6.38
1 3/8″	92320A189	9.96	90309A470	6.06	92510A189	4.34	—	—	92415A267	4.22	10	94639A182	6.51
1 1/2″	92320A254	10.78	90309A054	7.29	92510A354	4.34	—	—	92415A453	4.48	10	94639A183	6.65
1 3/4″	92320A190	10.84	90309A471	7.27	92510A190	4.69	—	—	92415A268	4.87	10	94639A184	6.93
2″	92320A255	10.95	90309A055	9.01	92510A355	4.69	—	—	92415A454	6.59	10	94639A185	7.21
2 1/4″	92320A272	13.10	90309A282	10.63	92510A218	5.90	—	—	92415A488	7.58	1	94639A360	7.42
2 1/2″	92320A274	13.58	90309A284	10.91	92510A102	6.11	—	—	92415A489	7.88	1	94639A362	7.67
3/4″ OD—To Order: *Please specify screw size: 5/16″ or 3/8″*													
3/8″	92320A256	11.23	90309A056	4.25	92510A356	2.32	—	—	92415A455	2.08	25	94639A211	7.47
1/2″	92320A257	11.24	90309A057	5.05	92510A357	2.32	—	—	92415A456	2.55	25	94639A212	7.74
5/8″	92320A258	11.17	90309A058	5.57	92510A358	2.30	—	—	92415A457	2.91	25	94639A213	8.37
3/4″	92320A259	11.17	90309A059	6.18	92510A359	2.75	—	—	92415A458	3.49	25	94639A214	8.56
7/8″	92320A191	11.77	90309A472	5.87	92510A191	2.67	—	—	92415A269	3.79	25	94639A215	9.28
1″	92320A260	11.80	90309A060	7.24	92510A360	2.88	—	—	92415A459	4.13	25	94639A216	9.73

● Not available in screw size No. 12. ▲ Not available in screw size No. 6.

(Continued on following page)

★Prices are 15% lower when you buy in multiples of 10.

For information about spacers and standoffs, see page 3254.

Unthreaded Spacers (Continued from previous page)

Lg.	18-8 Stainless Steel	Each ★	Zinc-Plated Brass	Each ★	Aluminum	Each ★	Zinc-Plated Steel	Each ★	Pkg. Qty.	Nylon 6/6	Pkg.
3/4" OD (Cont.)—To Order: *Please specify screw size: 5/16" or 3/8"*											
1 1/4"	92320A192	$11.76	90309A473	$7.92	92510A192	$4.34	92415A270	$4.89	10	94639A217	$6.80
1 1/2"	92320A261	13.63	90309A061	8.05	92510A361	4.63	92415A460	5.65	10	94639A218	7.17
1 3/4"	92320A193	13.64	90309A474	9.40	92510A193	5.21	92415A271	7.10	10	94639A219	7.53
2"	92320A262	15.34	90309A062	9.59	92510A362	5.21	92415A461	8.39	10	94639A220	7.89
2 1/4"	92320A276	16.62	90309A286	11.53	92510A412	6.49	92415A492	9.22	10	94639A638	8.26
2 1/2"	92320A278	17.33	90309A288	11.85	92510A413	6.72	92415A494	9.78	10	94639A639	8.62
1" OD—To Order: *Please specify screw size: 1/2" or 5/8"*											
3/8"					92510A363	7.19	92415A462	9.24	25	94639A221	8.29
1/2"					92510A364	7.19	92415A463	9.34	25	94639A222	9.02
3/4"					92510A365	7.98	92415A464	10.57	25	94639A223	10.48
1"					92510A366	8.38	92415A465	11.41	25	94639A224	11.94
1 1/2"					92510A367	12.57	92415A466	12.78	10	94639A225	8.49
2"					92510A369	12.57	92415A467	14.50	10	94639A226	9.66
1 1/2" OD—To Order: *Please specify screw size: 3/4" or 1"*											
3/8"					92510A370	8.38	92415A469	10.42	25	94639A227	11.04
1/2"					92510A371	8.38	92415A470	10.95	25	94639A228	12.68
3/4"					92510A372	9.80	92415A471	11.76	10	94639A229	7.10
1"					92510A373	9.80	92415A472	12.57	10	94639A230	8.42
1 1/2"					92510A374	12.15	92415A473	16.15	5	94639A231	7.04
2"					92510A375	12.15	92415A474	19.90	5	94639A232	8.35

Metric Unthreaded Spacers

Also known as clearance and through-hole spacers. OD and length tolerances are ±0.13 mm. ID tolerance is +0.3 mm. Nylon is off-white.

Screw Size	M2.5	M3	M4	M5	M6
ID	2.7 mm	3.2 mm	4.2 mm	5.3 mm	6.3 mm

Lg., mm	18-8 Stainless Steel	Each ★	Zinc-Plated Brass	Each ★	Aluminum	Each ★	Nylon 6/6	Each ★
4.5 mm OD—To Order: *Please specify screw size: M2.5 or M3*								
2	92871A100	$1.13	93295A200	$0.43	94669A210	$0.34	93657A700	$0.87
3	92871A503	1.13	93295A413	.43	94669A603	.34	93657A702	.89
4	92871A507	1.20	93295A417	.43	94669A606	.34	93657A704	.90
5	92871A510	1.25	93295A421	.44	94669A609	.34	93657A706	.92
6	92871A514	1.30	93295A425	.45	94669A612	.34	93657A708	.94
8	92871A517	1.37	93295A429	.47	94669A615	.40	93657A712	1.04
10	92871A520	1.40	93295A432	.50	94669A618	.40	93657A714	1.07
13	92871A529	1.52	93295A441	.63	94669A629	.44	93657A717	1.11
14	92871A532	1.57	93295A444	.67	94669A631	.56	93657A720	1.14
16	92871A535	1.73	93295A447	.71	94669A634	.56	93657A724	1.19
19	92871A538	1.89	93295A449	.78	94669A637	.62	93657A728	1.24
20	92871A541	1.90	93295A453	.85	94669A640	.62	93657A730	1.25
25	92871A548	1.93	93295A459	.99	94669A644	.76	93657A740	1.29
6 mm OD—To Order: *Please specify screw size: M3 or M4*								
2	92871A600	1.46	93295A500	1.17	94669A700	1.18	93657A800	.97
3	92871A603	1.47	93295A503	1.20	94669A703	1.20	93657A803	.98
4	92871A606	1.50	93295A506	1.22	94669A706	1.20	93657A806	.98
5	92871A609	1.52	93295A509	1.24	94669A709	1.22	93657A809	.99
6	92871A612	1.53	93295A512	1.27	94669A712	1.23	93657A812	1.00
8	92871A615	1.56	93295A515	1.18	94669A715	1.24	93657A815	1.01
10	92871A618	1.59	93295A518	1.38	94669A718	1.25	93657A818	1.03
13	92871A624	1.65	93295A524	1.47	94669A724	1.27	93657A824	1.11
14	92871A627	1.66	93295A527	1.49	94669A727	1.28	93657A827	1.12
16	92871A630	1.82	93295A530	1.53	94669A730	1.43	93657A830	1.14
19	92871A633	1.85	93295A533	1.72	94669A733	1.45	93657A833	1.21
20	92871A636	1.87	93295A536	1.74	94669A736	1.47	93657A836	1.23
25	92871A639	2.33	93295A539	1.85	94669A739	1.50	93657A839	1.28
30	92871A662	2.21	93295A543	1.98	94669A743	1.26	93657A810	1.69
35	92871A671	2.43	93295A546	2.01	94669A746	1.33	93657A826	1.82
40	92871A679	2.62	93295A549	2.01	94669A749	1.37	93657A832	2.23
45	92871A685	2.83	93295A552	2.10	94669A752	1.37	93657A838	2.28
51	92871A689	2.97	93295A555	2.17	94669A755	1.43	93657A841	2.33
8 mm OD—To Order: *Please specify screw size: M3, M4, or M5*								
2	92871A642	1.62	93295A542	1.23	94669A742	1.20	93657A842	.97
3	92871A645	1.65	93295A545	1.26	94669A745	1.22	93657A845	.98
4	92871A648	1.67	93295A548	1.29	94669A748	1.24	93657A848	.98
5	92871A651	1.71	93295A551	1.33	94669A751	1.25	93657A851	.99
6	92871A654	1.73	93295A554	1.36	94669A754	1.27	93657A854	1.00
8	92871A657	1.78	93295A557	1.42	94669A757	1.30	93657A857	1.01
10	92871A660	1.84	93295A560	1.52	94669A760	1.34	93657A860	1.03
13	92871A666	1.92	93295A566	1.62	94669A766	1.37	93657A866	1.09
14	92871A669	1.94	93295A569	1.67	94669A769	1.38	93657A869	1.09
16	92871A672	2.10	93295A572	1.74	94669A772	1.48	93657A872	1.20
19	92871A675	2.18	93295A575	1.96	94669A775	1.59	93657A875	1.24

(Continued on following page)

★Prices are 15% lower when you buy in multiples of 10.

For information about spacers and standoffs, see page 3254.

Metric Unthreaded Spacers *(Continued from previous page)*

Also known as clearance and through-hole spacers. OD and length tolerances are ±0.13 mm. ID tolerance is +0.3 mm. Nylon is off-white.

Screw Size	M2.5	M3	M4	M5	M6
ID	2.7 mm	3.2 mm	4.2 mm	5.3 mm	6.3 mm

Lg., mm	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★	Nylon 6/6	Each★
8 mm OD (Cont.)—To Order: *Please specify screw size: M3, M4, or M5*								
20	92871A678	$2.21	93295A578	$1.99	94669A778	$1.60	93657A878	$1.25
25	92871A681	2.75	93295A581	2.20	94669A781	1.74	93657A881	1.34
30	92871A686	2.77	93295A585	2.47	94669A785	1.54	93657A855	1.60
35	92871A691	2.97	93295A588	2.54	94669A788	1.61	93657A862	1.86
40	92871A698	3.23	93295A591	2.74	94669A791	1.66	93657A864	2.27
45	92871A707	3.46	93295A594	2.83	94669A794	1.66	93657A870	2.31
51	92871A715	3.68	93295A597	2.97	94669A797	1.70	93657A874	2.37
10 mm OD—To Order: *Please specify screw size: M4 or M5*								
2	92871A684	1.92	93295A584	1.39	94669A784	1.29	93657A884	.99
3	92871A687	1.97	93295A587	1.45	94669A787	1.31	93657A887	1.00
4	92871A690	2.01	93295A590	1.50	94669A790	1.33	93657A890	1.01
5	92871A693	2.06	93295A593	1.56	94669A793	1.34	93657A893	1.02
6	92871A696	2.10	93295A596	1.63	94669A796	1.36	93657A896	1.04
8	92871A699	2.18	93295A599	1.73	94669A799	1.39	93657A899	1.06
10	92871A702	2.27	93295A602	1.89	94669A802	1.43	93657A902	1.09
13	92871A708	2.40	93295A608	2.10	94669A808	1.49	93657A908	1.15
14	92871A711	2.43	93295A611	2.19	94669A811	1.50	93657A911	1.16
16	92871A714	2.64	93295A614	2.31	94669A814	1.61	93657A914	1.29
19	92871A717	2.78	93295A617	2.56	94669A817	1.74	93657A917	1.33
20	92871A720	3.25	93295A620	2.69	94669A820	1.74	93657A920	1.34
25	92871A723	3.47	93295A623	2.89	94669A823	1.92	93657A921	1.84
30	92871A727	3.27	93295A627	2.89	94669A827	1.45	93657A924	2.19
35	92871A730	3.47	93295A630	3.03	94669A830	1.52	93657A928	2.34
40	92871A733	3.73	93295A633	3.21	94669A833	1.57	93657A931	2.50
45	92871A736	3.99	93295A636	3.37	94669A836	1.57	93657A935	2.70
51	92871A739	4.19	93295A638	3.55	94669A838	1.64	93657A938	2.93
13 mm OD—To Order: *Please specify screw size: M4, M5, or M6*								
2	92871A195	2.45	93295A300	1.10	94669A300	.64	93657A751	1.26
3	92871A740	2.45	93295A702	1.10	94669A904	.64	93657A752	1.33
4	92871A744	2.50	93295A707	1.12	94669A907	.64	93657A753	1.37
5	92871A747	2.57	93295A710	1.15	94669A910	.64	93657A754	1.42
6	92871A751	2.64	93295A713	1.17	94669A913	.64	93657A755	1.46
8	92871A758	2.77	93295A718	1.26	94669A919	.80	93657A757	1.60
10	92871A762	2.93	93295A729	1.43	94669A925	.80	93657A759	1.69
13	92871A771	3.17	93295A736	1.63	94669A934	.84	93657A762	1.89
14	92871A774	3.26	93295A739	1.70	94669A938	.90	93657A763	1.95
16	92871A780	3.45	93295A745	1.83	94669A946	.90	93657A765	2.00
19	92871A783	3.56	93295A748	1.92	94669A949	.95	93657A770	2.06
20	92871A786	3.72	93295A751	2.16	94669A953	.95	93657A771	2.07
25	92871A792	4.18	93295A757	2.47	94669A959	1.20	93657A777	2.52
30	92871A799	4.63	93295A769	4.17	94669A969	1.98	93657A781	2.86
35	92871A810	5.00	93295A775	4.43	94669A979	2.03	93657A785	3.07
40	92871A820	5.43	93295A782	4.68	94669A989	2.16	93657A789	3.44
45	92871A830	5.85	93295A789	5.27	94669A992	2.16	93657A792	3.64
51	92871A840	6.30	93295A795	5.24	94669A996	2.28	93657A796	3.95

★ Prices are 15% lower when you buy in multiples of 10.

Adjustable Unthreaded Spacers

The lengthwise split allows expansion when you need flexibility. Spacers can also be used as tension sleeves. They're made from low-strength zinc-plated steel. ID tolerance is +0.008″ and length tolerance is ±0.005″. OD tolerance is not available.

Lg.	Pkg. Qty.		Pkg.
0.190″ OD, 0.144″ ID— *Screw size is No. 6*			
1/4″	25	93441A110	$5.81
1/2″	25	93441A130	6.14
0.230″ OD, 0.172″ ID— *Screw size is No. 8*			
1/4″	25	93441A140	5.93
1/2″	25	93441A160	6.37
0.255″ OD, 0.198″ ID— *Screw size is No. 10*			
1/4″	25	93441A170	5.99
3/8″	25	93441A175	6.23
1/2″	25	93441A180	6.48
3/4″	25	93441A190	6.97
0.335″ OD, 0.260″ ID— *Screw size is 1/4″*			
3/8″	25	93441A210	6.36
1/2″	25	93441A215	6.64
3/4″	25	93441A220	7.19
1″	25	93441A225	7.73

Chrome-Plated Steel Unthreaded Spacers

Made from polished nickel-chrome-plated steel, these round spacers are a must when appearances matter. They're long-wearing and tarnish resistant. OD, ID, and length tolerances are ±0.01″.

Lg.	Pkg. Qty.		Pkg.
5/8″ OD, 0.344″ ID— *Screw size is 5/16″*			
1/4″	5	93320A205	$11.15
3/8″	5	93320A210	12.02
1/2″	1	93320A215	3.14
3/4″	1	93320A220	3.14
1″	1	93320A225	3.17
3/4″ OD, 0.406″ ID— *Screw size is 3/8″*			
1/8″	5	93320A300	11.15
1/4″	5	93320A305	12.02
3/8″	5	93320A310	12.90
1/2″	1	93320A315	3.17
3/4″	1	93320A321	3.73

For information about spacers and standoffs, see page 3254.

Plastic Unthreaded Spacers

Space components with the nonconductive and chemical-resistant properties of plastic.

Low-density polyethylene (LDPE) spacers have OD and ID tolerances of ±0.015″ for ODs up to ½″ and ±0.025″ for ODs over ½″. Length tolerance is ±0.062″ for lengths up to 2″ and ±0.09″ for lengths over 2″.

Polypropylene spacers have OD and ID tolerances of ±0.015″ for ODs up to ⅜″ and ±0.025″ for ODs over ⅜″. Length tolerance is ±0.062″.

Acetal spacers have an OD tolerance of ±0.01″, ID tolerance of +0.01″, and length tolerance of ±0.01″.

Polypropylene and Acetal

Low-Density Polyethylene (LDPE)—Black

Lg.	Pkg. Qty.		Pkg.
3/16″ OD, 0.115″ ID—			
Screw size is No. 4			
3/16″	20	92825A003	$5.96
1/4″	20	92825A005	6.18
5/16″	20	92825A007	6.37
3/8″	20	92825A009	6.59
1/2″	20	92825A010	6.74
1/4″ OD, 0.115″ ID—			
Screw size is No. 4			
3/16″	20	92825A018	5.99
1/4″	20	92825A020	6.29
5/16″	20	92825A022	6.52
3/8″	20	92825A024	6.78
1/2″	20	92825A026	7.23
1/4″ OD, 0.140″ ID—			
Screw size is No. 6			
3/16″	20	92825A032	5.96
1/4″	20	92825A034	6.22
5/16″	20	92825A036	6.40
3/8″	20	92825A038	6.63
1/2″	20	92825A040	7.00
5/16″ OD, 0.192″ ID—			
Screw size is No. 10			
3/16″	20	92825A047	6.25
1/4″	20	92825A049	6.52
5/16″	20	92825A051	6.44
3/8″	20	92825A053	7.12
1/2″	20	92825A055	7.68

Lg.	Pkg. Qty.		Pkg.
3/8″ OD, 0.192″ ID—			
Screw size is No. 10			
1/4″	20	92825A065	$7.38
3/8″	20	92825A068	8.28
1/2″	20	92825A071	9.10
3/4″	20	92825A074	10.13
1″	20	92825A077	10.33
1 1/2″	20	92825A080	11.40
1/2″ OD, 0.192″ ID—			
Screw size is No. 10			
3/16″	20	92825A104	6.44
1/4″	20	92825A106	6.67
3/8″	20	92825A110	6.89
1/2″	20	92825A112	7.75
3/4″	20	92825A116	9.48
1″	20	92825A120	10.95
1/2″ OD, 0.260″ ID—			
Screw size is 1/4″			
3/16″	20	92825A129	7.98
1/4″	20	92825A131	6.11
5/16″	20	92825A710	8.24
3/8″	20	92825A132	8.24
1/2″	20	92825A133	8.67
5/8″	20	92825A715	8.65
3/4″	20	92825A134	8.91
7/8″	20	92825A720	9.25
1″	20	92825A135	9.36

Lg.	Pkg. Qty.		Pkg.
1/2″ OD, 0.260″ ID (Cont.)—			
Screw size is 1/4″			
1 1/2″	20	92825A137	$10.57
1 3/4″	10	92825A138	7.57
2″	10	92825A139	7.12
3″	5	92825A140	7.80
4″	5	92825A142	9.45
6″	5	92825A143	13.45
3/4″ OD, 0.260″ ID—			
Screw size is 1/4″			
1/2″	20	92825A145	8.40
3/4″	20	92825A146	9.55
1″	20	92825A147	10.57
1 3/4″	10	92825A151	7.73
2″	10	92825A153	12.02
3/4″ OD, 0.325″ ID—			
Screw size is 5/16″			
1/2″	20	92825A201	9.51
3/4″	20	92825A203	13.18
1″	10	92825A205	7.51
1 1/2″	10	92825A209	8.00
1 3/4″	10	92825A210	9.45
2″	10	92825A213	11.77
3/4″ OD, 0.385″ ID—			
Screw size is 3/8″			
1/2″	20	92825A241	7.83
3/4″	20	92825A243	8.67

Lg.	Pkg. Qty.		Pkg.
3/4″ OD, 0.385″ ID (Cont.)—			
Screw size is 3/8″			
1″	20	92825A245	$10.97
1 1/2″	20	92825A250	11.71
1 3/4″	20	92825A251	12.04
2″	10	92825A253	10.12
2 1/2″	10	92825A257	13.22
2 3/4″	5	92825A258	7.88
3″	5	92825A259	7.67
4″	5	92825A262	11.45
6″	1	92825A264	3.45
1″ OD, 0.510″ ID—			
Screw size is 1/2″			
1/2″	20	92825A337	11.00
3/4″	20	92825A338	13.00
1″	10	92825A339	7.86
1 1/2″	10	92825A341	10.12
1 3/4″	10	92825A342	10.97
2″	5	92825A348	11.95
2 1/2″	5	92825A349	12.66
2 3/4″	5	92825A350	12.96
3″	5	92825A351	13.75
4″	1	92825A355	3.42
6″	1	92825A359	5.13

Polypropylene—White

Lg.	Pkg. Qty.		Pkg.
1/4″ OD, 0.140″ ID—			
Screw size is No. 6			
3/16″	10	94729A105	$6.67
1/4″	10	94729A110	6.88
3/8″	10	94729A115	7.04
1/2″	10	94729A120	7.30
3/8″ OD, 0.192″ ID—			
Screw size is No. 10			
1/4″	10	94729A150	7.54
3/8″	10	94729A155	8.28
1/2″	10	94729A160	8.99
3/4″	10	94729A165	9.52
1″	10	94729A170	9.95
1/2″ OD, 0.252″ ID—			
Screw size is 1/4″			
1/4″	10	94729A215	6.78
3/8″	10	94729A230	6.93
1/2″	10	94729A250	7.19

Lg.	Pkg. Qty.		Pkg.
1/2″ OD, 0.252″ ID (Cont.)—			
Screw size is 1/4″			
3/4″	10	94729A255	$7.79
1″	10	94729A260	8.36
1 1/2″	10	94729A275	8.98
1 3/4″	10	94729A305	9.53
2″	10	94729A310	10.00
3/4″ OD, 0.380″ ID—			
Screw size is 3/8″			
1/2″	10	94729A315	7.98
3/4″	10	94729A325	8.54
1″	10	94729A330	9.89
1 1/2″	10	94729A335	9.90
1″ OD, 0.505″ ID—			
Screw size is 1/2″			
1/2″	10	94729A340	9.86
1″	10	94729A345	10.90
1 1/2″	10	94729A350	13.10

Acetal—White

Lg.	Each		Each
1/4″ OD, 0.140″ ID—			
Screw size is No. 6			
3/16″	93717A212	$2.50	
1/4″	93717A215	2.82	
3/8″	93717A218	2.91	
1/2″	93717A221	3.02	
3/8″ OD, 0.192″ ID—			
Screw size is No. 10			
1/4″	93717A304	2.83	
3/8″	93717A309	3.01	
1/2″	93717A314	3.22	
3/4″	93717A319	3.38	
1″	93717A322	3.88	
1/2″ OD, 0.252″ ID—			
Screw size is 1/4″			
1/4″	93717A416	2.94	
3/8″	93717A425	3.11	
3/4″	93717A431	3.28	

Lg.	Each		Each
1/2″ OD, 0.252″ ID (Cont.)—			
Screw size is 1/4″			
1″	93717A436	$3.31	
1 1/2″	93717A442	3.68	
1 3/4″	93717A448	3.91	
2″	93717A451	4.30	
3/4″ OD, 0.380″ ID—			
Screw size is 3/8″			
1/2″	93717A500	3.91	
3/4″	93717A505	4.10	
1″	93717A515	4.40	
1 1/2″	93717A520	4.80	
1″ OD, 0.505″ ID—			
Screw size is 1/2″			
1/2″	93717A636	4.61	
1″	93717A641	5.02	
1 1/2″	93717A645	5.81	

Unthreaded Spacer Stock

Cut this 12″ long spacer stock to any length you need.

Polypropylene stock has an OD tolerance of ±0.015″, ID tolerance of +0.03″, and length tolerance of ±0.062″.

Aluminum stock has an OD tolerance of ±0.003″, ID tolerance of +0.01″, and length tolerance of ±0.005″.

Gray Polypropylene

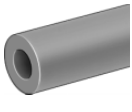

OD	ID	Screw Size	Lg.		
Polypropylene—Black					
0.448″	0.192″	No. 10	12″	92377A310	$4.44
0.508″	0.252″	1/4″	12″	92377A120	4.69
0.571″	0.315″	5/16″	12″	92377A130	4.91
0.642″	0.380″	3/8″	12″	92377A140	5.38
0.770″	0.505″	1/2″	12″	92377A150	5.64

OD	ID	Screw Size	Lg.		
Polypropylene—Gray					
0.448″	0.192″	No. 10	12″	92377A100	$4.44
0.508″	0.252″	1/4″	12″	92377A200	4.69
0.571″	0.315″	5/16″	12″	92377A300	4.91
0.642″	0.380″	3/8″	12″	92377A400	5.38
0.770″	0.505″	1/2″	12″	92377A500	5.64

OD	ID	Screw Size	Lg.		
Aluminum					
0.250″	0.140″	No. 6	12″	92377A211	$8.10
0.250″	0.166″	No. 8	12″	92377A210	8.10
0.313″	0.140″	No. 6	12″	92377A213	9.05
0.313″	0.166″	No. 8	12″	92377A212	9.05

Rubber Unthreaded Spacers

Reduce shock, vibration, and noise between metal parts. Made from black fabric-reinforced oil-resistant rubber. Temperature range is –65° to +200° F. OD, ID, and length tolerances are ±0.031″.

OD	ID	Screw Size	Lg.		
1/2″	1/4″	No. 12	1″	99025A120	$12.62
3/4″	1/2″	1/2″	1″	99025A125	12.62
7/8″	5/8″	5/8″	1″	99025A130	12.82
1″	3/4″	3/4″	1″	99025A135	12.82
1 1/4″	1″	1″	1″	99025A140	14.36

For information about spacers and standoffs, see page 3254.

Garolite (G-10/FR4) Unthreaded Spacers

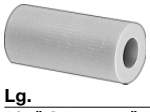

Near zero water absorption makes these spacers outstanding electrical insulators. OD and ID tolerances are ±0.005″. Length tolerance is ±0.013″. Color is light green.

Lg.		
3/16″ OD, 0.115″ ID— *Screw size is No. 4*		
3/16″	92273A003	$1.24
1/4″	92273A005	1.38
5/16″	92273A007	1.48
3/8″	92273A009	1.62
1/2″	92273A011	1.89
1/4″ OD, 0.115″ ID— *Screw size is No. 4*		
3/16″	92273A023	1.38
1/4″	92273A025	1.52
5/16″	92273A027	1.62
3/8″	92273A029	1.82
1/2″	92273A031	2.10
1/4″ OD, 0.140″ ID— *Screw size is No. 6*		
3/16″	92273A043	1.35
1/4″	92273A045	1.48
5/16″	92273A047	1.59
3/8″	92273A049	1.79
1/2″	92273A051	2.07
5/16″ OD, 0.192″ ID— *Screw size is No. 10*		
3/16″	92273A063	1.14
1/4″	92273A065	1.24
5/16″	92273A067	1.31

Lg.		
5/16″ OD, 0.192″ ID (Cont.)— *Screw size is No. 10*		
3/8″	92273A069	$1.41
1/2″	92273A071	1.62
3/8″ OD, 0.192″ ID— *Screw size is No. 10*		
1/4″	92273A083	1.35
3/8″	92273A085	1.55
1/2″	92273A087	1.82
3/4″	92273A089	2.38
1″	92273A091	2.73
1 1/2″	92273A094	3.65
1/2″ OD, 0.192″ ID— *Screw size is No. 10*		
3/16″	92273A102	1.45
1/4″	92273A104	1.59
3/8″	92273A106	1.93
1/2″	92273A108	2.24
3/4″	92273A110	2.97
1″	92273A112	3.48
1/2″ OD, 0.260″ ID— *Screw size is 1/4″*		
3/16″	92273A122	1.38
1/4″	92273A124	1.52
5/16″	92273A126	1.66
3/8″	92273A128	1.82

Lg.		
1/2″ OD, 0.260″ ID (Cont.)— *Screw size is 1/4″*		
1/2″	92273A132	$2.13
5/8″	92273A134	2.52
3/4″	92273A136	2.83
7/8″	92273A138	3.00
1″	92273A140	3.27
1 1/2″	92273A142	4.48
1 3/4″	92273A144	5.14
2″	92273A146	6.03
3/4″ OD, 0.260″ ID— *Screw size is 1/4″*		
1/2″	92273A152	3.38
3/4″	92273A154	4.58
1″	92273A156	5.38
1 3/4″	92273A158	8.66
2″	92273A160	10.24
3/4″ OD, 0.325″ ID— *Screw size is 5/16″*		
1/2″	92273A172	2.31
3/4″	92273A174	3.07
1″	92273A176	3.55
1 1/2″	92273A178	4.86
1 3/4″	92273A180	5.59
2″	92273A182	6.63

Lg.		
3/4″ OD, 0.385″ ID— *Screw size is 3/8″*		
1/2″	92273A192	$2.17
3/4″	92273A194	2.90
1″	92273A196	3.38
1 1/2″	92273A198	4.58
1 3/4″	92273A201	5.28
2″	92273A204	6.21
2 1/2″	92273A207	7.62
2 3/4″	92273A209	8.66
3″	92273A212	10.04
1″ OD, 0.510″ ID— *Screw size is 1/2″*		
1/2″	92273A222	3.00
3/4″	92273A224	4.07
1″	92273A226	4.79
1 1/2″	92273A228	6.63
1 3/4″	92273A230	7.62
2″	92273A233	9.04
2 1/2″	92273A236	11.21
2 3/4″	92273A239	12.72
3″	92273A242	14.76

Ceramic Unthreaded Spacers

Ceramic stays strong in high-temperature and high-voltage applications. OD, ID, and length tolerances are ±0.01″. Color is white.

Lg.		
1/4″ OD, 0.115″ ID— *Screw size is No. 4*		
3/16″	96109A110	$2.32
1/4″	96109A115	2.32
3/8″	96109A120	2.32

Lg.		
1/4″ OD, 0.140″ ID— *Screw size is No. 6*		
3/16″	96109A155	$2.20
1/4″	96109A160	2.20
3/8″	96109A165	2.17
1/2″	96109A170	2.17
5/8″	96109A175	2.54
3/4″	96109A180	2.54

Lg.		
3/8″ OD, 0.192″ ID— *Screw size is No. 10*		
1/4″	96109A205	$2.90
3/8″	96109A210	2.90
1/2″	96109A220	3.10
3/4″	96109A225	3.10
1″	96109A235	3.32

Lg.		
1/2″ OD, 1/4″ ID— *Screw size is 1/4″*		
3/8″	96109A420	$3.49
1/2″	96109A425	3.98
3/4″	96109A435	3.98
1″	96109A450	3.98

Unthreaded Hex Spacers

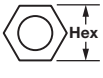

Wrenches and pliers won't slip on the hex shape. Hex width tolerance is ±0.002″. ID tolerance is +0.006″. Length tolerance is ±0.005″.

Lg.	18-8 SS Each★		Aluminum Each★	
3/16″ Hex— *Screw size is No. 4*				
1/8″	99492A101	$1.95	97732A101	$1.21
5/32″	99492A104	2.20	97732A104	1.35
3/16″	99492A107	2.21	97732A107	1.21
7/32″	99492A110	2.22	97732A110	1.38
1/4″	99492A113	2.25	97732A113	1.24
9/32″	99492A116	2.26	97732A116	1.43
5/16″	99492A119	2.03	97732A119	1.33
11/32″	99492A122	2.28	97732A122	1.52
3/8″	99492A125	2.08	97732A125	1.36
7/16″	99492A128	2.14	97732A128	1.44
1/2″	99492A131	2.18	97732A131	1.48
1/4″ Hex— **To Order:** *Please specify screw size: No. 6 or 8*				
3/16″	99492A152	1.62	97732A152	1.11
7/32″	99492A156	1.86	97732A156	1.23
1/4″	99492A160	1.72	97732A160	1.11
9/32″	99492A164	1.77	97732A164	1.23
5/16″	99492A168	1.84	97732A168	1.12
11/32″	99492A172	2.10	97732A172	1.25
3/8″	99492A176	2.09	97732A176	1.12
7/16″	99492A180	2.09	97732A180	1.26
1/2″	99492A184	2.24	97732A184	1.28
9/16″	99492A188	2.34	97732A188	1.31
5/8″	99492A192	2.49	97732A192	1.31

Lg.	18-8 SS Each★		Aluminum Each★	
1/4″ Hex (Cont.)— **To Order:** *Please specify screw size: No. 6 or 8*				
11/16″	99492A196	$2.64	97732A196	$1.51
3/4″	99492A200	2.78	97732A200	1.58
7/8″	99492A204	3.38	97732A204	1.87
1″	99492A208	3.98	97732A208	1.96
5/16″ Hex— *Screw size is No. 10*				
1/8″	99492A250	1.58	97732A250	1.10
5/32″	99492A254	1.64	97732A254	1.18
3/16″	99492A258	1.71	97732A258	1.29
7/32″	99492A262	1.76	97732A262	1.34
1/4″	99492A266	1.46	97732A266	1.34
9/32″	99492A270	1.85	97732A270	1.34
5/16″	99492A274	1.95	97732A274	1.34
11/32″	99492A278	2.02	97732A278	1.34
3/8″	99492A282	2.08	97732A282	1.34
7/16″	99492A286	2.29	97732A286	1.47
1/2″	99492A294	2.51	97732A294	1.48
9/16″	99492A298	2.73	97732A298	1.51
5/8″	99492A302	2.94	97732A302	1.52
11/16″	99492A306	3.01	97732A306	1.70
3/4″	99492A310	3.16	97732A310	1.76
7/8″	99492A314	3.83	97732A314	2.06
1″	99492A322	4.44	97732A322	2.11
1 1/4″	99492A326	5.45	97732A326	3.98

Lg.	18-8 SS Each★		Aluminum Each★	
5/16″ Hex (Cont.)— *Screw size is No. 10*				
1 3/8″	99492A330	$5.99	97732A330	$4.10
1 1/2″	99492A334	6.51	97732A334	4.28
3/8″ Hex— *Screw size is No. 10*				
1/8″	99492A353	2.16	97732A353	1.61
5/32″	99492A357	2.20	97732A357	1.39
3/16″	99492A361	2.28	97732A361	1.62
7/32″	99492A365	2.55	97732A365	1.62
1/4″	99492A369	2.72	97732A369	1.62
9/32″	99492A373	2.81	97732A373	1.62
5/16″	99492A377	2.88	97732A377	1.65
11/32″	99492A381	2.96	97732A381	1.65
3/8″	99492A385	3.03	97732A385	1.66
7/16″	99492A389	3.27	97732A389	1.79
1/2″	99492A393	3.49	97732A393	1.81
9/16″	99492A397	3.36	97732A397	1.83
5/8″	99492A401	4.02	97732A401	1.85
11/16″	99492A405	4.36	97732A405	2.04
3/4″	99492A409	4.69	97732A409	2.11
7/8″	99492A413	5.15	97732A413	2.42
1″	99492A417	6.13	97732A417	2.47
1 1/4″	99492A421	7.50	97732A421	4.92
1 3/8″	99492A425	8.32	97732A425	5.06
1 1/2″	99492A429	9.12	97732A429	5.27

★ Prices are 15% lower when you buy in multiples of 10.

For information about spacers and standoffs, see page 3254.

Hard Fiber Unthreaded Spacers

Insulate electrically conductive materials and protect them from organic solvents and petroleum-based oils. OD tolerance is ±0.02″, ID tolerance is +0.02″, and length tolerance is ±0.062″. Color is gray.

Lg.	Pkg. Qty.		Pkg.
1/4″ OD, 0.140″ ID—Screw size is No. 6			
1/2″	20	93646A363	$3.79
3/4″	20	93646A365	4.83
1″	20	93646A367	5.86
1/4″ OD, 0.166″ ID—Screw size is No. 8			
1/2″	20	93646A463	$4.31
3/4″	20	93646A465	5.17
1″	20	93646A467	6.38
1/2″ OD, 0.250″ ID—Screw size is 1/4″			
1/2″	20	93646A563	$4.83
1″	20	93646A565	7.28
1 1/2″	20	93646A567	10.24

Unthreaded Shoulder Spacers with Flange

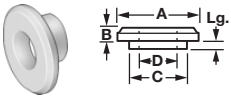

Short Barrel

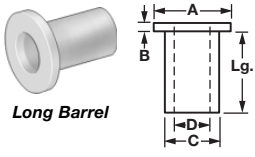

Long Barrel

Also known as insulator or shoulder washers, shoulder spacers insulate and protect screws, wire, and tubing from corrosion.

Short Barrel

Screw Size	Lg.	Flange (A)	Flange (B)	Shoulder (C)	Shoulder (D)	Pkg. Qty.		Pkg.
Nylon 6/6—Off-White								
No. 2	0.040″	0.250″	0.040″	0.156″	0.093″	100	90062A003	$4.54
No. 4	0.040″	0.281″	0.040″	0.187″	0.122″	100	90062A005	5.12
No. 6	0.040″	0.328″	0.040″	0.218″	0.146″	100	90062A007	5.26
No. 8	0.050″	0.375″	0.050″	0.250″	0.174″	100	90062A009	5.40
No. 10	0.050″	0.437″	0.050″	0.281″	0.201″	100	90062A011	5.69
1/4″	0.060″	0.562″	0.060″	0.375″	0.260″	100	90062A015	5.82
3/8″	0.060″	0.750″	0.060″	0.500″	0.385″	100	90062A017	6.38
Nylon 6/6—Black								
No. 2	0.040″	0.250″	0.040″	0.156″	0.093″	100	90061A003	4.54
No. 4	0.040″	0.281″	0.040″	0.187″	0.122″	100	90061A005	5.12
No. 6	0.040″	0.328″	0.040″	0.218″	0.146″	100	90061A007	5.26
No. 8	0.050″	0.375″	0.050″	0.250″	0.174″	100	90061A009	5.40
No. 10	0.050″	0.437″	0.050″	0.281″	0.201″	100	90061A011	5.69
1/4″	0.060″	0.562″	0.060″	0.375″	0.260″	100	90061A015	5.82
3/8″	0.060″	0.750″	0.060″	0.500″	0.385″	100	90061A017	6.38
PTFE—White								
No. 2	0.062″	0.312″	0.063″	0.125″	0.091″	10	93835A310	14.84
No. 4	0.030″	0.200″	0.030″	0.136″	0.115″	10	93835A320	11.17
No. 6	0.039″	0.312″	0.023″	0.187″	0.140″	10	93835A330	12.99
No. 8	0.045″	0.375″	0.049″	0.265″	0.169″	10	93835A340	13.25
No. 10	0.032″	0.375″	0.032″	0.252″	0.193″	5	93835A350	8.97
1/4″	0.045″	0.545″	0.049″	0.355″	0.260″	5	93835A360	7.39
3/8″	0.060″	0.750″	0.060″	0.500″	0.385″	5	93835A370	8.51
Ceramic—White								
No. 6	0.062″	0.500″	0.094″	0.281″	0.150″	5	92107A410	11.43
No. 8	0.062″	0.625″	0.094″	0.406″	0.175″	5	92107A416	11.71
No. 10	0.062″	0.750″	0.109″	0.468″	0.200″	5	92107A418	12.14
1/4″	0.062″	0.875″	0.125″	0.593″	0.265″	5	92107A421	12.71
Hard Fiber—Black								
No. 2	0.025″	0.250″	0.030″	0.154″	0.090″	50	93920A110	8.59
No. 4	0.025″	0.250″	0.030″	0.186″	0.116″	100	93920A120	19.67
No. 6	0.030″	0.313″	0.040″	0.186″	0.142″	100	93920A130	14.93
No. 8	0.030″	0.375″	0.040″	0.246″	0.168″	100	93920A140	14.95
No. 10	0.030″	0.375″	0.040″	0.312″	0.194″	100	93920A150	14.98
1/4″	0.030″	0.500″	0.040″	0.312″	0.254″	50	93920A160	8.34
3/8″	0.040″	0.625″	0.060″	0.437″	0.380″	50	93920A170	11.32

Long Barrel

Screw Size	Lg.	Flange (A)	Flange (B)	Shoulder (C)	Shoulder (D)	Pkg. Qty.		Pkg.
Nylon 6/6—Off-White								
No. 2	0.125″	0.181″	0.047″	0.120″	0.090″	100	91145A110	$4.68
No. 2	0.250″	0.181″	0.047″	0.120″	0.090″	100	91145A114	4.68
No. 2	0.375″	0.181″	0.047″	0.120″	0.090″	100	91145A118	4.68
No. 4	0.125″	0.235″	0.047″	0.145″	0.115″	100	91145A129	5.28
No. 4	0.250″	0.235″	0.047″	0.145″	0.115″	100	91145A133	5.28
No. 4	0.375″	0.235″	0.047″	0.145″	0.115″	100	91145A134	5.28
No. 4	0.500″	0.235″	0.047″	0.145″	0.115″	100	91145A138	5.28
No. 6	0.125″	0.290″	0.047″	0.170″	0.140″	100	91145A141	5.44
No. 6	0.250″	0.290″	0.047″	0.170″	0.140″	100	91145A143	5.44
No. 6	0.375″	0.290″	0.047″	0.170″	0.140″	100	91145A144	5.44
No. 6	0.500″	0.290″	0.047″	0.170″	0.140″	100	91145A145	5.44
No. 8	0.250″	0.344″	0.063″	0.205″	0.173″	100	91145A148	5.60
No. 8	0.375″	0.344″	0.063″	0.205″	0.173″	100	91145A149	5.18
No. 8	0.500″	0.344″	0.063″	0.205″	0.173″	100	91145A151	5.60
No. 8	0.625″	0.344″	0.063″	0.205″	0.173″	100	91145A153	5.60
No. 8	0.750″	0.344″	0.063″	0.205″	0.173″	100	91145A154	5.18
No. 10	0.250″	0.399″	0.063″	0.260″	0.200″	100	91145A156	5.90
No. 10	0.375″	0.399″	0.063″	0.260″	0.200″	100	91145A157	5.90
No. 10	0.500″	0.399″	0.063″	0.260″	0.200″	100	91145A158	5.90
No. 10	0.625″	0.399″	0.063″	0.260″	0.200″	100	91145A160	5.90
No. 10	0.750″	0.399″	0.063″	0.260″	0.200″	100	91145A161	5.90
1/4″	0.125″	0.513″	0.063″	0.312″	0.260″	100	91145A162	6.06
1/4″	0.250″	0.513″	0.063″	0.312″	0.260″	100	91145A165	5.59
1/4″	0.375″	0.513″	0.063″	0.312″	0.260″	100	91145A166	6.05
1/4″	0.500″	0.513″	0.063″	0.312″	0.260″	100	91145A167	6.05
1/4″	0.625″	0.513″	0.063″	0.312″	0.260″	100	91145A168	6.05
1/4″	0.750″	0.513″	0.063″	0.312″	0.260″	100	91145A169	6.05
5/16″	0.125″	0.620″	0.063″	0.360″	0.320″	100	91145A178	6.20
5/16″	0.250″	0.625″	0.063″	0.360″	0.320″	100	91145A180	5.73
5/16″	0.375″	0.620″	0.063″	0.360″	0.320″	100	91145A185	5.73
5/16″	0.500″	0.620″	0.063″	0.360″	0.320″	100	91145A190	5.73
5/16″	0.625″	0.620″	0.063″	0.360″	0.320″	100	91145A195	5.73
Ceramic—White								
No. 6	0.250″	0.500″	0.235″	0.281″	0.150″	5	92107A450	11.43
No. 8	0.250″	0.625″	0.234″	0.406″	0.175″	5	92107A456	11.71
No. 10	0.250″	0.750″	0.234″	0.468″	0.200″	5	92107A458	12.14
1/4″	0.250″	0.875″	0.250″	0.593″	0.265″	5	92107A461	12.71

245-Piece Nylon Shoulder Spacer Assortment

Includes spacers in a variety of barrel lengths for the following screw sizes: 40 for No. 2, 50 for No. 4, 30 for No. 6, 40 each for No. 8 and No. 10, 30 for 1/4″, and 15 for 5/16″. Made from off-white nylon 6/6. Furnished in a plastic box.

90062A600 ..... **Each** $35.62

Unthreaded Spacers for Angled Surfaces

The 45° end fits against angle iron and other angled surfaces. OD and ID tolerances are ±0.01″. Length tolerance is ±0.02″.

To Order: Please specify material: Type 316 stainless steel, plain steel, or nylon.

Screw Size	OD	ID	Lg.		Pkg.
No. 4	0.315″	0.129″	0.438″	95543A501	$6.32
No. 6	0.394″	0.169″	0.500″	95543A502	7.06
No. 10	0.394″	0.216″	0.500″	95543A503	7.79
1/4″	0.512″	0.287″	0.563″	95543A504	9.46
5/16″	0.709″	0.334″	0.813″	95543A505	9.87
3/8″	0.866″	0.413″	0.969″	95543A506	9.00
1/2″	0.945″	0.571″	1.078″	95543A507	8.83
5/8″	1.260″	0.669″	1.375″	95543A508	14.15
3/4″	1.260″	0.826″	1.375″	95543A509	14.36

Unthreaded Curved Spacers for Tubes

Also known as saddle washers, spacers have a concave end that fits snugly against curved items such as tube and pipe. Made from off-white nylon 6/6, they have an ID tolerance of ±0.005″ and OD and length tolerances of ±0.015″.

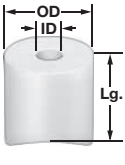

For Tube OD	Screw Size	OD	ID	Lg.	Pkg. Qty.		Pkg.
3/4″	1/4″	0.750″	0.260″	0.125″	50	92842A100	$6.81
7/8″	1/4″	0.843″	0.257″	0.156″	50	92842A200	7.15
1″	No. 12	0.835″	0.218″	0.500″	25	92842A300	7.22
1″	1/4″	1.000″	0.260″	0.250″	25	92842A400	6.37
1″	5/16″	1.000″	0.325″	0.250″	25	92842A500	6.28
1 7/64″	No. 12	1.000″	0.250″	0.125″	25	92842A600	7.67
1 1/8″	5/16″	0.875″	0.375″	0.250″	25	92842A700	5.66

For information about spacers and standoffs, see page 3254.

Captive Unthreaded Spacers

Press these 18-8 stainless steel spacers to panels as thin as 0.06″. They resist pushing, pulling, and twisting forces thanks to splines that cut into the material they're mounted in. Both ends are open. To install, drill a hole in your panel and use an arbor press (sold separately on pages 2327-2328).

Spacers meet MIL-S-7742, Class 2B. Length does not include splined portion. Length and OD tolerances are ±0.005″. ID tolerance is +0.004″. Not rated for hardness.

OD	ID	Screw Size	Lg.	For Hole Dia.	Pkg. Qty.		Pkg.
7/32″	0.115″	No. 4	1/8″	0.166″	25	92985A410	$9.37
7/32″	0.115″	No. 4	3/16″	0.166″	25	92985A420	9.61
7/32″	0.115″	No. 4	1/4″	0.166″	25	92985A430	9.69
9/32″	0.140″	No. 6	1/8″	0.213″	25	92985A510	10.16
9/32″	0.140″	No. 6	3/16″	0.213″	25	92985A520	$10.23
9/32″	0.140″	No. 6	1/4″	0.213″	25	92985A530	10.39
9/32″	0.140″	No. 6	3/8″	0.213″	25	92985A540	11.25
9/32″	0.140″	No. 6	1/2″	0.213″	25	92985A550	12.04

Press-Fit Bolt Liners

Reinforce bolt holes with zinc-plated steel split-seam liners. Beveled ends aid insertion.

Liners ***for metal*** protect bolts from sideways pressure. Length tolerance is –0.003″; OD tolerance is ±0.005″. Liners ***for plastic,*** also known as compression limiters, keep plastic components from getting crushed when bolts are tightened. Length tolerance is –0.01″; OD tolerance is –0.016″.

For Metal

Bolt Size	Lg.	OD	For Hole Dia.	Pkg. Qty.		Pkg.
1/4″	1/2″	0.333″	0.313″-0.318″	25	97305A100	$10.22
1/4″	3/4″	0.333″	0.313″-0.318″	25	97305A110	12.68
1/4″	1″	0.333″	0.313″-0.318″	10	97305A120	6.05
5/16″	1/2″	0.411″	0.391″-0.396″	10	97305A200	5.90
5/16″	3/4″	0.411″	0.391″-0.396″	10	97305A210	7.45
5/16″	1″	0.411″	0.391″-0.396″	10	97305A220	9.02
3/8″	3/4″	0.489″	0.469″-0.474″	10	97305A330	9.53
3/8″	1″	0.489″	0.469″-0.474″	10	97305A340	11.77
3/8″	1 1/4″	0.489″	0.469″-0.474″	5	97305A350	7.03
1/2″	1″	0.645″	0.625″-0.63″	5	97305A400	8.58
1/2″	1 1/4″	0.645″	0.625″-0.63″	5	97305A410	10.37
1/2″	1 1/2″	0.645″	0.625″-0.63″	1	97305A420	2.43

For Plastic

Bolt Size	Lg.	OD	For Hole Dia.	Pkg. Qty.		Pkg.
1/4″	3/8″	0.381″	0.368″-0.372″	25	91868A210	$7.88
1/4″	1/2″	0.381″	0.368″-0.372″	25	91868A220	8.38
1/4″	3/4″	0.381″	0.368″-0.372″	25	91868A230	9.39
5/16″	3/8″	0.480″	0.462″-0.466″	25	91868A240	8.84
5/16″	1/2″	0.480″	0.462″-0.466″	25	91868A250	9.66
5/16″	3/4″	0.480″	0.462″-0.466″	10	91868A260	4.52
3/8″	3/8″	0.574″	0.552″-0.556″	10	91868A270	9.18
3/8″	1/2″	0.574″	0.552″-0.556″	10	91868A280	9.51
3/8″	3/4″	0.574″	0.552″-0.556″	5	91868A290	5.09
3/8″	1″	0.574″	0.552″-0.556″	5	91868A300	5.37

Female Threaded Hex Standoffs

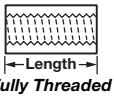

Fully Threaded

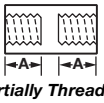

Partially Threaded

Tighten with a wrench or pliers—the flat sides ensure you'll get a firm grip. Hex tolerance is ±0.005″. Length tolerance is ±0.005″ for standoffs up to 4″ long. Longer lengths have a tolerance of ±0.008″, except longer lengths of nylon, which have a tolerance of ±0.01″. Nylon is off-white.

Standoffs are fully threaded, except the lengths listed in the chart, which are partially threaded.

Screw Size	Partially Threaded Lengths: 18-8 Stainless Steel	Partially Threaded Lengths: Brass, Aluminum, Steel, Nylon	Min. Thread Length (A)
0-80	7/16″-1/2″	7/16″-1/2″	3/16″
2-56	3/4″-2″	7/8″-2″	3/16″
4-40	7/8″-4″	1 1/4″-4″	1/4″
6-32 & 8-32	1 1/4″-6″	1 1/4″-6″	3/8″
10-32	1 1/4″-6″	1 1/4″-6″	1/2″
1/4″-20	1 1/2″-6″	1 1/2″-6″	5/8″

Lg.	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★	Zinc-Plated Steel	Each★	Nylon 6/6	Each★
1/8″ Hex Size—To Order: *Please specify screw size: 0-80 or 2-56*										
1/8″	91115A004	$1.43	90308A009	$0.68	91780A010	$0.33	91920A106	$1.40	92319A101	$1.29
3/16″	91115A009	1.52	90308A020	.69	91780A011	.33	91920A108	1.43	92319A104	1.32
1/4″	91115A010	1.61	90308A021	.70	91780A012	.34	91920A110	1.47	92319A107	1.34
9/32″	91115A011	1.72	90308A022	.74	91780A013	.34	91920A112	1.48	92319A110	1.34
5/16″	91115A012	1.82	90308A023	.76	91780A014	.37	91920A114	1.49	92319A113	1.36
3/8″	91115A013	2.30	90308A024	.79	91780A015	.39	91920A116	1.51	92319A116	1.39
7/16″	91115A014	2.48	90308A025	.91	91780A016	.42	91920A118	2.11	92319A120	1.63
1/2″	91115A015	2.69	90308A026	.97	91780A017	.43	91920A120	2.14	92319A124	1.77
3/16″ Hex Size—To Order: *Please specify screw size: 2-56 or 4-40*										
1/8″	91115A701	1.98	90308A500	.56	91780A501	.42	91920A501	1.36	92319A201	1.14
5/32″	91115A702	1.82	90308A501	.70	91780A502	.61	91920A502	1.35	92319A204	1.15
3/16″	91115A703	1.91	90308A502	.65	91780A503	.46	91920A503	1.51	92319A207	1.17
7/32″	91115A704	1.92	90308A503	.72	91780A504	.66	91920A504	1.37	92319A212	1.18
1/4″	91115A706	2.01	90308A504	.64	91780A505	.50	91920A505	1.44	92319A216	1.19
9/32″	91115A707	2.37	90308A505	.75	91780A506	.82	91920A506	1.39	92319A219	1.20
5/16″	91115A708	2.14	90308A506	.75	91780A507	.52	91920A507	1.47	92319A223	1.21
11/32″	91115A709	2.15	90308A507	.78	91780A508	.69	91920A508	1.45	92319A228	1.23
3/8″	91115A711	2.14	90308A508	.81	91780A509	.57	91920A509	1.47	92319A233	1.24
13/32″	91115A712	2.18	90308A509	.81	91780A510	.72	91920A510	1.45	92319A239	1.27
7/16″	91115A713	2.15	90308A510	.82	91780A511	.67	91920A511	1.45	92319A242	1.29
15/32″	91115A714	2.18	90308A511	.84	91780A512	.86	91920A512	1.45	92319A248	1.30
1/2″	91115A716	2.19	90308A512	.86	91780A513	.60	91920A513	1.52	92319A252	1.31
5/8″	91115A717	2.20	90308A513	.90	91780A514	.65	91920A514	1.53	92319A258	1.41
3/4″	91115A718	2.25	90308A514	.94	91780A515	.71	91920A515	1.69	92319A263	1.52
7/8″	91115A719	2.29	90308A515	1.01	91780A516	.77	91920A516	1.69	92319A268	1.88
1″	91115A721	2.34	90308A516	1.06	91780A517	.81	91920A517	1.69	92319A272	1.93
1 1/4″	91115A116	2.40	90308A116	1.16	91780A118	.55	91920A124	1.71	92319A286	2.00
1 1/2″	91115A117	2.40	90308A117	1.22	91780A120	.58	91920A126	1.74	92319A287	2.09
1 3/4″	91115A118	2.45	90308A118	1.29	91780A124	.60	91920A128	1.79	92319A288	2.18
2″	91115A119	2.45	90308A120	1.35	91780A126	.63	91920A130	1.82	92319A289	2.36

(Continued on following page)

★Prices are 15% lower when you buy in multiples of 10.

Female Threaded Hex Standoffs *(Continued from previous page)*

Lg.	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★	Zinc-Plated Steel	Each★	Nylon 6/6	Each★
1/4″ Hex Size—To Order: *Please specify screw size: 4-40, 6-32, 8-32, or 10-32*										
1/8″	91115A510	$1.79	90308A610	$0.71	91780A710	$0.29	91920A810	$1.25	92319A290	$1.19
5/32″	91115A513	1.79	90308A612	.80	91780A712	.39	91920A812	1.25	92319A295	1.20
3/16″	91115A515	1.79	90308A615	.77	91780A715	.29	91920A815	1.25	92319A300	1.23
7/32″	91115A517	1.79	90308A617	.80	91780A717	.39	91920A817	1.25	92319A305	1.24
1/4″	91115A520	1.79	90308A620	.77	91780A720	.27	91920A820	1.25	92319A310	1.25
9/32″	91115A523	1.79	90308A622	.80	91780A722	.44	91920A822	1.25	92319A315	1.26
5/16″	91115A525	1.79	90308A625	.78	91780A725	.29	91920A825	1.25	92319A320	1.27
11/32″	91115A527	1.91	90308A627	.80	91780A727	.44	91920A827	1.33	92319A325	1.28
3/8″	91115A530	1.91	90308A630	.62	91780A730	.34	91920A830	1.33	92319A330	1.30
13/32″	91115A531	2.08	90308A632	1.14	91780A732	.44	91920A832	1.45	92319A335	1.32
7/16″	91115A532	2.08	90308A633	1.16	91780A733	.44	91920A833	1.45	92319A340	1.34
15/32″	91115A533	2.08	90308A634	1.18	91780A734	.44	91920A834	1.45	92319A345	1.36
1/2″	91115A535	2.10	90308A635	.62	91780A735	.34	91920A835	1.47	92319A350	1.37
5/8″	91115A540	2.10	90308A640	.93	91780A740	.34	91920A840	1.47	92319A355	1.50
3/4″	91115A545	2.20	90308A645	1.01	91780A745	.45	91920A845	1.54	92319A360	1.59
7/8″	91115A550	2.20	90308A650	1.13	91780A750	.45	91920A850	1.54	92319A365	1.71
1″	91115A555	2.36	90308A655	1.14	91780A755	.45	91920A855	1.68	92319A370	1.77
1 1/4″	91115A560	2.72	90308A660	1.15	91780A760	.69	91920A860	1.68	92319A375	2.20
1 1/2″	91115A565	2.97	90308A665	1.19	91780A765	.85	91920A865	1.38	92319A380	2.31
2″	91115A570	3.22	90308A670	1.43	91780A770	.97	91920A870	1.76	92319A385	2.53
2 1/4″	91115A571	2.98	90308A671	1.63	91780A771	.63	91920A872	1.79	92319A386	2.66
2 1/2″	91115A572	3.15	90308A672	1.70	91780A772	.65	91920A876	1.84	92319A387	2.77
3″	91115A573	3.46	90308A673	1.86	91780A773	.68	91920A886	1.93	92319A388	2.99
3 1/2″	91115A574	3.78	90308A674	2.02	91780A774	.72	91920A891	2.03	92319A389	3.04
4″	91115A576	4.10	90308A676	2.17	91780A776	.75	91920A896	2.26	92319A391	3.56
5/16″ Hex Size—To Order: *Please specify screw size: 6-32, 8-32, or 10-32*										
1/8″	91115A575	2.12	90308A675	1.56	91780A775	1.05	91920A875	1.48	92319A390	1.20
5/32″	91115A577	2.12	90308A677	1.58	91780A777	1.05	91920A877	1.48	92319A395	1.23
3/16″	91115A580	2.12	90308A680	1.60	91780A780	1.05	91920A880	1.48	92319A400	1.25
7/32″	91115A583	2.12	90308A682	1.62	91780A782	1.05	91920A882	1.48	92319A405	1.27
1/4″	91115A585	2.12	90308A685	1.65	91780A785	1.04	91920A885	1.48	92319A410	1.28
9/32″	91115A587	2.12	90308A687	1.65	91780A787	1.10	91920A887	1.48	92319A415	1.29
5/16″	91115A590	2.12	90308A690	1.67	91780A790	1.10	91920A890	1.48	92319A420	1.31
11/32″	91115A592	2.12	90308A692	1.70	91780A792	1.10	91920A892	1.48	92319A425	1.33
3/8″	91115A595	2.12	90308A695	1.69	91780A795	1.10	91920A895	1.48	92319A430	1.34
13/32″	91115A601	2.12	90308A697	1.73	91780A797	1.10	91920A897	1.48	92319A435	1.37
7/16″	91115A603	2.12	90308A698	1.75	91780A798	1.10	91920A898	1.48	92319A440	1.40
15/32″	91115A604	2.12	90308A699	1.78	91780A799	1.10	91920A899	1.48	92319A445	1.42
1/2″	91115A615	2.12	90308A700	1.78	91780A800	1.10	91920A900	1.48	92319A450	1.45
5/8″	91115A605	2.74	90308A705	1.82	91780A805	1.10	91920A905	1.79	92319A455	1.58
3/4″	91115A610	2.74	90308A710	1.82	91780A810	1.27	91920A910	1.78	92319A460	1.70
1″	91115A620	2.88	90308A720	1.94	91780A820	1.27	91920A920	1.98	92319A465	1.89
1 1/4″	91115A625	4.20	90308A725	2.16	91780A825	1.44	91920A925	1.98	92319A470	2.33
1 1/2″	91115A630	4.29	90308A730	2.40	91780A830	1.60	91920A930	1.98	92319A475	2.50
2″	91115A635	4.42	90308A735	2.45	91780A835	1.71	91920A935	1.98	92319A480	2.88
2 1/4″	91115A637	4.13	90308A738	2.56	91780A837	1.05	91920A937	2.04	92319A481	3.04
2 1/2″	91115A639	4.36	90308A741	2.70	91780A839	1.12	91920A939	2.26	92319A482	3.29
3″	91115A642	4.88	90308A744	2.91	91780A842	1.19	91920A943	2.45	92319A483	3.58
3 1/2″	91115A644	5.23	90308A747	3.23	91780A846	1.23	91920A947	2.71	92319A484	3.94
4″	91115A648	5.67	90308A749	3.48	91780A848	1.27	91920A949	2.90	92319A486	4.24
3/8″ Hex Size—To Order: *Please specify screw size: 6-32, 8-32, or 10-32*										
1/4″	91115A650	2.27	90308A750	1.59	91780A850	1.10	91920A950	1.26	92319A485	1.39
3/8″	91115A660	2.27	90308A760	1.59	91780A860	1.15	91920A960	1.38	92319A490	1.48
1/2″	91115A665	2.27	90308A765	1.59	91780A865	1.15	91920A965	1.56	92319A495	1.58
5/8″	91115A670	3.33	90308A770	2.46	91780A870	1.15	91920A970	1.76	92319A500	1.73
3/4″	91115A675	3.33	90308A775	2.46	91780A875	1.32	91920A975	1.97	92319A505	1.81
1″	91115A685	3.49	90308A785	2.73	91780A885	1.32	91920A985	2.29	92319A510	2.13
1 1/4″	91115A690	5.09	90308A790	3.67	91780A890	1.54	91920A990	2.41	92319A515	2.98
1 1/2″	91115A695	5.84	90308A795	3.80	91780A895	1.66	91920A995	2.57	92319A520	3.17
2″	91115A700	5.90	90308A800	4.40	91780A900	1.76	91920A998	2.75	92319A525	3.54
2 1/2″	91115A731	6.63	90308A801	4.63	91780A901	1.89	91920A967	2.87	92319A526	3.95
3″	91115A732	7.52	90308A802	5.08	91780A902	2.13	91920A969	3.14	92319A527	4.33
3 1/2″	91115A733	8.23	90308A803	5.67	91780A903	2.23	91920A978	3.43	92319A528	4.45
4″	91115A734	9.04	90308A804	6.11	91780A904	2.33	91920A980	3.77	92319A529	4.84
6″	91115A736	9.20	90308A807	7.50	91780A906	3.60	91920A982	3.91	92319A531	5.78
1/2″ Hex Size—To Order: *Please specify screw size: 10-32 or 1/4″-20*										
1/2″	91115A705	5.90	90308A805	3.44	91780A905	2.08	92230A001	2.55	92319A530	2.08
5/8″	91115A710	6.88	90308A810	4.59	91780A910	1.98	92230A002	2.69	92319A535	2.25
3/4″	91115A715	6.64	90308A815	4.94	91780A915	2.15	92230A003	2.92	92319A540	2.41
7/8″	91115A720	7.47	90308A820	5.69	91780A920	2.15	92230A004	2.99	92319A545	2.59
1″	91115A725	7.47	90308A825	6.37	91780A925	2.15	92230A005	3.21	92319A550	2.76
1 1/4″	91115A730	8.26	90308A830	6.39	91780A930	3.03	92230A006	3.82	92319A555	3.85
1 1/2″	91115A735	8.71	90308A835	7.00	91780A935	3.55	92230A007	4.02	92319A560	4.07
2″	91115A740	8.85	90308A840	8.51	91780A940	4.68	92230A008	3.71	92319A565	4.84
2 1/2″	91115A745	9.18	90308A845	8.60	91780A945	4.97	92230A009	3.89	92319A570	5.37
3″	91115A750	10.49	90308A850	8.60	91780A950	5.23	92230A010	4.11	92319A575	6.31
3 1/2″	91115A757	12.70	90308A857	8.75	91780A960	5.30	92230A013	4.92	92319A585	6.34

(Continued on following page)

★Prices are 15% lower when you buy in multiples of 10.

Female Threaded Hex Standoffs *(Continued from previous page)*

Fully Threaded

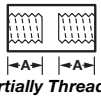

Partially Threaded

Tighten with a wrench or pliers—the flat sides ensure you'll get a firm grip. Hex tolerance is ±0.005″. Length tolerance is ±0.005″ for standoffs up to 4″ long. Longer lengths have a tolerance of ±0.008″, except longer lengths of nylon, which have a tolerance of ±0.01″. Nylon is off-white.

Standoffs are fully threaded, except the lengths listed in the chart, which are partially threaded.

Screw Size	Partially Threaded Lengths: 18-8 Stainless Steel	Partially Threaded Lengths: Brass, Aluminum, Steel, Nylon	Min. Thread Length (A)
10-32	1¼″-6″	1¼″-6″	½″
¼″-20	1½″-6″	1½″-6″	⅝″
⅜″-16	1½″-6″	1½″-6″	⅝″

Lg.	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★	Zinc-Plated Steel	Each★	Nylon 6/6	Each★
½″ Hex Size (Cont.)—To Order: *Please specify screw size: 10-32 or ¼″-20*										
4″	91115A755	$11.80	90308A855	$9.20	91780A955	$5.79	92230A011	$4.87	92319A580	$7.84
5″	91115A759	11.90	90308A859	9.50	91780A965	5.80	92230A022	6.44	92319A590	9.33
6″	91115A761	11.95	90308A861	9.75	91780A970	5.90	92230A028	7.17	92319A595	10.94
⅝″ Hex Size—To Order: *Please specify screw size: 10-32, ¼″-20, or ⅜″-16*										
1″	91115A765	7.24	90308A865	5.17	91780A971	1.03	91920A321	5.50	92319A800	5.22
1¼″	91115A766	7.72	90308A867	5.90	91780A972	1.87	91920A323	6.05	92319A805	6.69
1½″	91115A769	8.76	90308A869	10.70	91780A974	1.96	91920A325	6.44	92319A810	7.27
1¾″	91115A772	10.17	90308A872	11.48	91780A976	2.05	91920A327	6.90	92319A815	8.03
2″	91115A774	11.39	90308A874	12.35	91780A979	2.11	91920A329	7.37	92319A820	8.94
2½″	91115A777	13.22	90308A876	15.91	91780A981	2.80	91920A331	8.20	92319A825	10.40
3″	91115A780	15.22	90308A878	17.74	91780A983	2.98	91920A333	9.32	92319A830	12.04
3½″	———	———	90308A884	19.83	91780A986	3.26	91920A336	10.25	92319A835	13.57
4″	91115A783	24.00	90308A881	21.74	91780A988	3.63	91920A338	11.43	92319A840	15.03
5″	91115A785	29.74	90308A886	24.52	91780A990	4.61	91920A340	13.15	92319A845	18.05
6″	91115A788	33.74	90308A889	27.39	91780A993	5.32	91920A348	14.83	92319A850	21.13

★ Prices are 15% lower when you buy in multiples of 10.

Metric Female Threaded Hex Standoffs

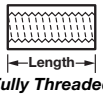

Fully Threaded

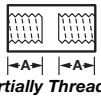

Partially Threaded

Install our metric standoffs with a wrench or pliers—your tool won't slip on the flat sides. Hex and length tolerances are ±0.13 mm.

Standoffs are fully threaded, except the lengths listed in the chart, which are partially threaded.

Screw Size	Partially Threaded Lengths: 18-8 Stainless Steel	Partially Threaded Lengths: Brass and Aluminum	Minimum Thread Length (A)
M2.5	20-37 mm	20-37 mm	4.8 mm
M3	20-52 mm	25-52 mm	6.3 mm
M3.5	30-52 mm	30-52 mm	9.5 mm
M4	30-52 mm	30-52 mm	11.1 mm
M5	30-37 mm	30-37 mm	12.7 mm

Lg., mm	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★
4.5 mm Hex Size—To Order: *Please specify screw size: M2.5 or M3*						
6	94868A204	$0.87	92080A104	$0.62	95947A110	$0.44
8	94868A207	.92	92080A107	.65	95947A113	.52
10	94868A210	1.04	92080A110	.70	95947A117	.52
12	94868A214	1.09	92080A113	.79	95947A121	.56
14	94868A218	1.09	92080A116	.95	95947A125	.68
16	94868A222	1.10	92080A119	1.03	95947A128	.68
19	94868A226	1.10	92080A122	1.08	95947A132	.76
20	94868A229	1.11	92080A126	1.31	95947A138	.76
25	94868A233	1.12	92080A129	1.82	95947A140	.91
37	94868A246	1.16	92080A141	2.10	95947A160	1.44
6 mm Hex Size—To Order: *Please specify screw size: M3, M3.5, or M4*						
3	94868A101	1.79	92080A200	1.56	95947A200	.48
4	94868A102	1.85	92080A201	1.56	95947A204	.48
5	94868A103	1.93	92080A211	1.63	95947A207	.48
6	94868A104	2.00	92080A202	1.63	95947A210	.48
8	94868A106	2.12	92080A212	1.64	95947A213	.56
10	94868A108	2.28	92080A203	1.64	95947A217	.61
12	94868A110	2.40	92080A213	1.64	95947A221	.61
13	94868A111	2.44	92080A204	1.65	95947A223	.61
14	94868A112	2.47	92080A214	1.84	95947A225	.74
16	94868A114	2.73	92080A205	1.85	95947A228	.83
19	94868A117	2.89	92080A206	2.30	95947A232	.83
20	94868A118	3.40	92080A215	2.30	95947A236	.83
25	94868A123	3.61	92080A207	2.40	95947A240	1.00
30	94868A125	2.94	92080A220	2.17	95947A250	1.40
31	94868A129	3.84	92080A208	2.40	95947A253	1.47
35	94868A131	3.10	92080A224	2.32	———	———
37	94868A137	4.09	92080A209	2.80	95947A260	1.44

★ Prices are 15% lower when you buy in multiples of 10.

Lg., mm	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★
6 mm Hex Size (Cont.)—To Order: *Please specify screw size: M3, M3.5, or M4*						
40	94868A138	$3.15	92080A228	$2.49	95947A264	$1.53
45	94868A141	3.17	92080A234	2.57	95947A272	1.53
51	94868A143	3.20	92080A236	2.67	95947A277	1.58
52	94868A150	4.70	92080A210	2.80	95947A280	1.80
8 mm Hex Size—To Order: *Please specify screw size: M3 or M4*						
6	94868A304	.96	92080A245	.87	95947A310	.56
8	94868A307	1.04	92080A248	.95	95947A313	.62
10	94868A310	1.51	92080A251	1.04	95947A317	.62
12	94868A314	1.25	92080A256	1.20	95947A321	.66
14	94868A318	1.38	92080A259	1.36	95947A325	.82
16	94868A322	1.39	92080A261	1.47	95947A328	.82
19	94868A326	1.40	92080A263	1.51	95947A332	.83
20	94868A329	1.42	92080A267	1.63	95947A336	.83
25	94868A333	1.51	92080A272	1.97	95947A340	1.08
37	94868A346	1.71	92080A286	2.10	95947A360	1.93
10 mm Hex Size—To Order: *Please specify screw size: M4 or M5*						
6	94868A404	1.26	92080A306	1.17	95947A410	.66
8	94868A407	1.38	92080A310	1.34	95947A413	.78
10	94868A410	1.47	92080A312	1.42	95947A417	.78
12	94868A414	1.56	92080A315	1.64	95947A421	.82
14	94868A418	1.67	92080A318	1.82	95947A425	.91
16	94868A422	1.80	92080A321	1.96	95947A428	.91
19	94868A426	1.85	92080A323	2.26	95947A432	.96
20	94868A429	1.92	92080A325	2.57	95947A436	.96
25	94868A433	2.10	92080A328	3.46	95947A440	1.24
37	94868A446	2.51	92080A339	3.86	95947A460	2.58

Vibration-Damping Standoffs

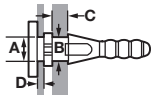

Designed for the miniature cooling fans found in compact electronics, these mounts prevent the transfer of vibration. Made from an elastomer with a durometer hardness of 56A. Temperature range is 55° to 105° F. Color is blue.

For Hole Dia. (A)	(B)	Panel Thick. (C)	(D)	Pkg. Qty.		Pkg.
0.108″	0.098″	0.197″	0.031″	20	5801K4	$11.00
0.138″	0.138″	0.150″	0.051″	20	5801K8	11.00
0.173″	0.173″	0.118″	0.051″	20	5801K6	11.00

For information about spacers and standoffs, see page 3254.

Female Threaded Round Standoffs

The smooth surface keeps your work looking clean and professional. OD and length tolerances are ±0.005″. Nylon is off-white.

Standoffs up to 1″ long are fully threaded, except 18-8 stainless steel standoffs with a 4-40 screw size, which are fully threaded up to ¾″ long. All others are partially threaded (see chart for thread lengths).

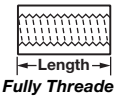

Fully Threaded

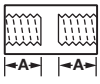

Partially Threaded

Lg.	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★	Zinc-Plated Steel	Each★	Nylon 6/6	Each★
1/8″ OD — To Order: *Please specify screw size: 0-80 or 2-56*										
1/4″	91125A142	$1.24	92474A142	$0.91	93330A210	$0.70	93265A317	$1.23	96110A416	$1.23
5/16″	91125A151	2.25	92474A147	1.10	93330A230	.77	93265A323	1.25	96110A423	1.25
3/8″	91125A159	2.27	92474A154	1.11	93330A250	.79	93265A329	1.27	96110A427	1.28
1/2″	91125A178	2.31	92474A166	1.43	93330A280	1.28	93265A342	1.80	96110A442	1.63
1/4″ OD — To Order: *Please specify screw size: 4-40, 6-32, 8-32, or 10-32*										
1/8″	91125A120	1.28	92474A220	.41	93330A320	.31	93265A420	.99	96110A520	1.03
5/32″	91125A125	1.31	92474A225	.54	93330A325	.35	93265A425	.99	96110A525	1.03
3/16″	91125A130	1.34	92474A230	.55	93330A330	.29	93265A430	1.00	96110A530	1.05
7/32″	91125A135	1.36	92474A235	.56	93330A335	.35	93265A434	1.00	96110A535	1.05
1/4″	91125A140	1.39	92474A240	.43	93330A340	.33	93265A440	1.01	96110A540	1.05
9/32″	91125A145	1.39	92474A245	.58	93330A345	.40	93265A444	1.01	96110A545	1.11
5/16″	91125A150	1.43	92474A250	.81	93330A350	.34	93265A450	1.02	96110A550	1.11
11/32″	91125A155	1.45	92474A255	.61	93330A355	.40	93265A454	1.02	96110A555	1.11
3/8″	91125A160	1.49	92474A260	.61	93330A360	.36	93265A460	1.03	96110A560	1.11
13/32″	91125A162	1.51	92474A262	.64	93330A362	.40	93265A621	1.03	96110A562	1.11
7/16″	91125A164	1.53	92474A264	.68	93330A364	.40	93265A465	1.04	96110A564	1.15
15/32″	91125A166	1.55	92474A266	.68	93330A366	.40	93265A479	1.14	96110A566	1.15
1/2″	91125A170	1.52	92474A270	.68	93330A370	.44	93265A470	1.24	96110A570	1.15
5/8″	91125A180	1.83	92474A280	.75	93330A380	.46	93265A480	1.26	96110A580	1.15
3/4″	91125A190	1.86	92474A290	.88	93330A390	.51	93265A490	1.38	96110A590	1.15
7/8″	91125A210	2.19	92474A310	.96	93330A410	.54	93265A510	1.43	96110A610	1.24
1″	91125A220	2.49	92474A320	1.09	93330A420	.60	93265A520	1.45	96110A620	1.26
1 1/4″	91125A230	2.61	92474A330	1.19	93330A430	1.23	93265A530	1.48	96110A630	1.58
1 1/2″	91125A240	2.72	92474A340	1.44	93330A440	1.31	93265A540	1.52	96110A640	1.62
2″	91125A250	2.98	92474A350	1.49	93330A450	1.36	93265A550	1.59	96110A650	1.72
2 1/2″	91125A270	3.43	92474A360	1.57	93330A530	1.47	93265A565	1.75	96110A660	2.03
3″	91125A290	3.79	92474A370	1.81	93330A540	1.58	93265A575	1.83	96110A670	2.14
3 1/2″	91125A310	4.16	92474A380	1.99	93330A550	1.69	93265A585	1.91	96110A680	2.29
4″	91125A320	4.46	92474A390	2.22	93330A560	1.80	93265A395	1.98	96110A690	2.33

★ Prices are 15% lower when you buy in multiples of 10.

Screw Size	Lengths that are Partially Threaded	Min. Thread Length (A)
18-8 Stainless Steel		
4-40	7/8″-4″	1/4″
6-32	1 1/4″-4″	3/8″
8-32	1 1/4″-4″	7/16″
10-32	1 1/4″-4″	1/2″
Brass, Aluminum, Steel, and Nylon 6/6		
4-40	1 1/4″-4″	1/4″
6-32	1 1/4″-4″	3/8″
8-32	1 1/4″-4″	7/16″
10-32	1 1/4″-4″	1/2″

Caps for Female Threaded Round Standoffs

Give open-ended standoffs an attractive appearance and protect them from dirt and debris. Thread length is 3/8″. Cap diameter and height is 1/4″.

To Order: Please specify screw size: 4-40, 6-32, 8-32, or 10-32.

18-8 Stainless Steel	93558A710	$1.57
Zinc-Plated Brass	93558A725	2.37
Aluminum	93558A715	1.48
Zinc-Plated Steel	93558A720	1.98

Ceramic Female Threaded Round Standoffs

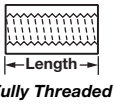

Fully Threaded

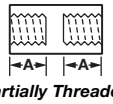

Partially Threaded

Ceramic stays strong in high-temperature and high-voltage applications. Standoffs have an off-white exterior glaze. OD and length tolerances are ±0.012″.

Lg.	Min. Thread Lg. (A)	6-32 Screw Size	
1/4″ OD			
1/4″	Full	94335A110	$2.40
1/2″	5/32″	94335A115	2.48
3/4″	1/4″	94335A118	2.82
1″	3/8″	94335A119	3.42
1 1/2″	3/8″	94335A121	5.03
3/8″ OD			
3/8″	5/32″	94335A120	2.62
1/2″	5/32″	94335A125	2.40
3/4″	1/4″	94335A126	3.05
1″	3/8″	94335A128	3.29
1 1/2″	3/8″	94335A129	4.69
1/2″ OD			
1/2″	9/64″	94335A130	2.56
3/4″	1/4″	94335A135	3.14
1″	3/8″	94335A140	2.63
1 1/2″	9/16″	94335A145	3.11
2″	3/8″	94335A147	3.80
2 1/2″	3/8″	94335A148	6.30
3″	3/8″	94335A149	6.87

Lg.	Min. Thread Lg. (A)	1/4″-20 Screw Size	
3/4″ OD			
1″	3/8″	94335A151	$4.24
1 1/2″	3/8″	94335A152	4.88
2″	3/4″	94335A154	5.36
2 1/2″	3/4″	94335A155	5.87
3″	3/4″	94335A163	6.63
3 1/2″	3/8″	94335A153	7.90
4″	3/4″	94335A160	7.95
1″ OD			
1″	3/8″	94335A211	6.60
1 1/2″	1/2″	94335A214	7.60
2″	5/8″	94335A217	8.04
3″	5/8″	94335A224	9.67
4″	5/8″	94335A231	12.80
1 1/4″ OD			
1 1/2″	5/8″	94335A328	8.97
2″	5/8″	94335A332	9.57
3″	5/8″	94335A342	12.20
4″	5/8″	94335A350	14.90
5″	5/8″	94335A357	17.37

Hinged Threaded Round Standoffs

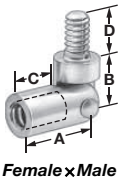

Female × Male

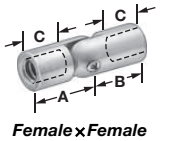

Female × Female

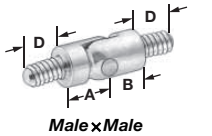

Male × Male

Install on panels for hinged access to your equipment. Standoffs swing open 180°. Made from zinc-plated brass. OD tolerance is ±0.006″. Length tolerance is ±1/64″. Not rated for hardness or tensile strength.

Screw Size	OD	(A)	(B)	Thread Lg. (C)	Thread Lg. (D)		
Female × Male							
4-40	3/16″	3/8″	1/4″	5/32″	3/16″	98010A410	$3.04
4-40	3/16″	5/8″	1/4″	1/4″	3/16″	98010A420	3.04
6-32	1/4″	3/8″	1/4″	3/32″	1/4″	98010A430	3.10
6-32	1/4″	5/8″	1/4″	11/32″	1/4″	98010A440	3.18
8-32	1/4″	3/8″	1/4″	5/64″	3/8″	98010A450	3.12
8-32	1/4″	5/8″	1/4″	11/32″	3/8″	98010A460	3.14
Female × Female							
4-40	3/16″	3/8″	3/8″	5/32″, 5/32″	—	98010A210	3.04
4-40	3/16″	7/16″	5/8″	7/32″, 1/4″	—	98010A220	3.04
6-32	1/4″	3/8″	3/8″	3/32″, 3/32″	—	98010A240	3.12
6-32	1/4″	5/8″	5/8″	11/32″, 11/32″	—	98010A260	3.28
8-32	1/4″	3/8″	5/8″	5/64″, 11/32″	—	98010A280	3.12
8-32	1/4″	5/8″	5/8″	11/32″, 11/32″	—	98010A290	3.18
Male × Male							
4-40	3/16″	1/4″	1/4″	—	3/16″	98010A510	3.06
6-32	1/4″	1/4″	1/4″	—	1/4″	98010A520	3.16
8-32	1/4″	1/4″	1/4″	—	3/8″	98010A530	3.18

For information about spacers and standoffs, see page 3254.

Female Threaded Swage Round Standoffs

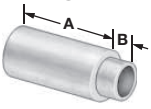

Separate circuit boards and other components with permanent, swage-in-place standoffs. Made from zinc-plated brass. Body has a 1/4″ OD. Body OD and length tolerances are ±0.005″. Swage end has a 0.188″ OD; tolerance is –0.003″. Fully threaded.

Also Available: Swage tools for installation. For punch, please ask for 93500A555 and specify body length. For anvil, please ask for 93500A888 and specify body length.

Body Lg. (A)	Swage Lg. (B)	For Panel Thick.	Pkg. Qty.	4-40 Screw Size	Pkg.	6-32 Screw Size	Pkg.
1/8″	0.105″	1/16″	25	93500A105	$7.57	93500A205	$7.57
3/16″	0.105″	1/16″	25	93500A115	10.81	93500A220	9.73
1/4″	0.105″	1/16″	10	93500A125	4.43	93500A235	4.33
1/4″	0.135″	3/32″	10	93500A130	4.43	93500A240	4.33
3/8″	0.105″	1/16″	10	93500A135	4.65	93500A250	4.65
1/2″	0.105″	1/16″	10	93500A145	7.57	93500A265	6.60

Male-Female Threaded Hex Standoffs (Jack Screws)

Secure computer and telephone connector panels. Each screw comes with two flat washers, a lock washer, and a hex nut. Made from zinc-plated steel. Screw size is 4-40. Hex size is 3/16″. Hex and length tolerances are ±0.005″. Minimum female thread length is 0.1″.

Also Available: Screw only. Please ask for 92710A555 and specify thread length.

Male Thread Lg.	Pkg. Qty.		Pkg.	Male Thread Lg.	Pkg. Qty.		Pkg.
3/16″	25	92710A203	$12.21	7/16″	25	92710A211	$13.78
1/4″	25	92710A205	12.21	1/2″	10	92710A212	6.23
5/16″	25	92710A207	12.21	9/16″	10	92710A213	6.54
3/8″	25	92710A209	13.02	5/8″	10	92710A214	8.19

Captive Female Threaded Round Standoffs

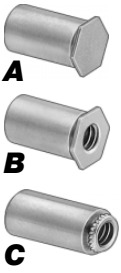

For panel hardware that won't push, pull, or twist out, try these 18-8 stainless steel standoffs. Install in a hole with an arbor press (sold separately on pages 2327-2328). All meet MIL-S-7742. Length and body OD tolerances are ±0.005″. Not rated for hardness.

(A&B) Clinch style standoffs have a recess under the hex that pinches panel material. When mounted, the hex sits flush with the surface. Length includes hex.

(C) Splined style standoffs have ridges that bite into panel material. When mounted, a portion of the standoff sits slightly above the surface. Length does not include the splined segment.

OD	Screw Size	Lg.	For Min. Panel Thick.	Thread Lg.	Pkg. Qty.		Pkg.
(A) Clinch Style with Closed End							
0.164″	4-40	5/16″	0.04″	5/32″	25	93090A320	$10.55
0.164″	4-40	3/8″	0.04″	5/32″	25	93090A330	10.86
0.211″	6-32	5/16″	0.04″	5/32″	25	93090A340	11.41
0.211″	6-32	3/8″	0.04″	5/32″	25	93090A350	12.19
0.211″	6-32	1/2″	0.04″	1/4″	25	93090A360	13.21
0.279″	8-32	3/8″	0.05″	5/32″	25	93090A370	12.81
0.279″	8-32	1/2″	0.05″	1/4″	25	93090A380	14.45
0.279″	8-32	5/8″	0.05″	1/4″	10	93090A390	6.58
(B) Clinch Style with Through Hole							
0.164″	4-40	1/4″	0.04″	1/4″	25	93090A110	8.99
0.164″	4-40	3/8″	0.04″	3/16″	25	93090A120	9.76
0.211″	6-32	1/4″	0.04″	1/4″	25	93090A130	9.68
0.211″	6-32	3/8″	0.04″	3/16″	25	93090A140	10.55
0.211″	6-32	1/2″	0.04″	5/16″	25	93090A150	13.05
0.279″	8-32	3/8″	0.05″	3/16″	25	93090A160	12.81
0.279″	8-32	1/2″	0.05″	5/16″	25	93090A170	14.46
0.279″	8-32	5/8″	0.05″	5/16″	10	93090A180	6.49
(C) Splined Style with Through Hole							
0.219″	4-40	1/4″	0.06″	1/4″	25	92985A210	11.72
0.281″	6-32	1/4″	0.06″	1/4″	25	92985A310	12.34
0.281″	6-32	3/8″	0.06″	3/8″	25	92985A320	14.22
0.281″	6-32	1/2″	0.06″	3/8″	10	92985A330	6.12

Metric Male-Female Threaded Hex Standoffs

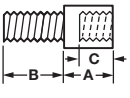

Connect metric male threads to metric female threads. Threads are the same size on both ends. Install with a wrench or pliers—the flat hex surface ensures a firm grip. Hex and length tolerances are ±0.15 mm. Nylon is off-white.

Screw Size	Thread Lengths: Male (B)	Female (C)
M2.5	3.9 mm	Up to 4.8 mm
M3	4.7 mm	Up to 6.4 mm
M3.5	6.3 mm	Up to 9.5 mm
M4	9.5 mm	Up to 11.1 mm
M5	9.5 mm	Up to 12.7 mm

Hex Lg. (A), mm	18-8 Stainless Steel Each★	Zinc-Plated Brass Each★	Aluminum Each★	Nylon 6/6 Each★
4.5 mm Hex Size—To Order: *Please specify screw size: M2.5 or M3*				
5	93655A800 $2.53	93655A600 $1.59	98952A202 $1.24	95783A301 $1.53
6	93655A804 2.58	93655A604 1.62	98952A204 1.25	95783A305 1.56
8	93655A807 2.70	93655A607 1.66	98952A207 1.28	95783A308 1.65
10	93655A810 2.81	93655A610 1.70	98952A209 1.31	95783A312 1.67
12	93655A813 2.93	93655A613 1.73	98952A212 1.32	95783A315 1.70
14	93655A815 3.04	93655A615 1.77	98952A215 1.36	95783A319 1.73
16	93655A819 3.18	93655A619 1.82	98952A218 1.38	95783A321 1.77
19	93655A821 3.36	93655A621 1.87	98952A222 1.43	95783A324 1.83
20	93655A824 3.41	93655A624 1.89	98952A225 1.43	95783A327 1.83
25	93655A827 3.70	93655A627 1.99	98952A229 1.48	95783A332 1.91
31	93655A830 4.17	93655A630 2.17	98952A232 1.67	95783A336 2.01
6 mm Hex Size—To Order: *Please specify screw size: M3, M3.5, or M4*				
5	93655A525 2.75	93655A560 1.52	98952A302 1.51	95783A403 1.50
6	93655A509 2.80	93655A501 1.52	98952A307 1.52	95783A408 1.52
8	93655A530 2.98	93655A565 1.53	98952A312 1.58	95783A413 1.56
10	93655A510 3.13	93655A502 1.54	98952A317 1.62	95783A418 1.60
12	93655A535 3.31	93655A570 1.54	98952A322 1.68	95783A423 1.64
13	93655A511 3.32	93655A503 1.55	98952A327 1.69	95783A428 1.66
14	93655A540 3.46	93655A575 1.55	98952A332 1.71	95783A433 1.67
16	93655A512 3.65	93655A504 1.55	98952A337 1.77	95783A438 1.72
19	93655A513 3.68	93655A505 1.56	98952A342 1.84	95783A443 1.78
20	93655A545 3.69	93655A580 1.56	98952A347 1.85	95783A448 1.80
22	93655A514 3.69	93655A506 1.60	98952A352 1.91	95783A453 1.83
25	93655A515 3.81	93655A507 1.66	98952A357 1.98	95783A458 1.89
31	93655A516 3.89	93655A508 1.84	98952A362 2.21	95783A463 1.98
8 mm Hex Size—To Order: *Please specify screw size: M3.5, M4, or M5*				
5	93655A851 2.37	93655A651 2.08	98952A250 1.33	____ ____
6	93655A854 2.39	93655A654 2.10	98952A254 1.34	____ ____
8	93655A857 2.45	93655A657 2.14	98952A256 1.36	____ ____
10	93655A860 2.51	93655A660 2.19	98952A258 1.39	____ ____
12	93655A862 2.59	93655A662 2.30	98952A261 1.42	____ ____
14	93655A865 2.69	93655A665 2.37	98952A263 1.49	____ ____
16	93655A868 2.77	93655A668 2.50	98952A265 1.54	____ ____
19	93655A870 2.83	93655A670 2.57	98952A269 1.57	____ ____
20	93655A812 2.88	93655A672 2.68	98952A272 1.61	____ ____
25	93655A876 3.12	93655A676 3.03	98952A275 1.70	____ ____
30	93655A879 3.40	93655A679 3.27	98952A278 2.18	____ ____

★ Prices are 15% lower when you buy in multiples of 10.

For information about spacers and standoffs, see page 3254.

Male-Female Threaded Hex Standoffs

Connect inch male threads to inch female threads. Both ends have the same size threads. Install with a wrench or pliers—the flat hex surface ensures you'll get a firm grip. Hex and length tolerances are ±0.005″, except nylon, for which they're ±0.015″. Nylon is off-white.

Screw Size	Male Thread Lg. (B)	Female Thread Lg. (C)
2-56	5/32″	Up to 3/16″
4-40	3/16″	Up to 1/4″
6-32	1/4″	Up to 3/8″
8-32	3/8″	Up to 7/16″
10-32	3/8″	Up to 1/2″
1/4″-20	1/2″	Up to 5/8″

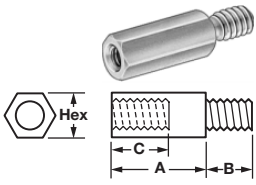

Hex Lg. (A)	18-8 Stainless Steel	Each★	Zinc-Plated Brass	Each★	Aluminum	Each★	Zinc-Plated Steel	Each★	Nylon 6/6 Pkg. Qty.		Pkg.
3/16″ Hex Size—To Order: *Please specify screw size: 2-56, 4-40, or 6-32*											
3/16″	91075A653	$2.37	92700A753	$1.35	93505A853	$0.76	93620A503	$1.40	5	92745A355	$9.03
7/32″	91075A654	2.37	92700A754	1.30	93505A854	.77	93620A504	1.40	5	92745A375	9.11
1/4″	91075A655	2.15	92700A755	1.06	93505A855	.44	93620A505	1.54	5	92745A385	9.19
9/32″	91075A656	2.38	92700A756	1.43	93505A856	.78	93620A506	1.51	5	92745A395	9.23
5/16″	91075A657	2.38	92700A757	1.43	93505A857	.80	93620A507	1.51	5	92745A405	9.27
11/32″	91075A658	2.38	92700A758	1.43	93505A858	.78	93620A508	1.51	5	92745A415	9.32
3/8″	91075A660	2.16	92700A760	1.57	93505A116	.44	93620A510	1.66	5	92745A425	9.38
13/32″	91075A661	2.38	92700A761	1.62	93505A128	.76	93620A511	1.51	5	92745A435	9.43
7/16″	91075A662	2.42	92700A762	1.43	93505A134	.82	93620A512	1.54	5	92745A445	9.48
15/32″	91075A663	2.42	92700A763	1.43	93505A124	.80	93620A513	1.54	5	92745A455	9.56
1/2″	91075A665	2.20	92700A765	1.61	93505A117	.44	93620A515	1.69	5	92745A465	8.56
3/4″	91075A675	2.22	92700A775	1.27	93505A119	.48	93620A525	1.70	5	92745A475	9.92
1″	91075A685	2.22	92700A785	1.43	93505A121	.48	93620A535	1.70	5	92745A485	9.95
1/4″ Hex Size—To Order: *Please specify screw size: 4-40, 6-32, or 8-32*											
1/4″	91075A605	1.72	92700A705	1.10	93505A805	.49	93620A905	1.20	50	92745A505	12.24
9/32″	91075A606	1.72	92700A706	1.10	93505A806	.49	93620A906	1.20	5	92745A506	8.01
5/16″	91075A607	1.72	92700A707	1.10	93505A807	.49	93620A907	1.20	5	92745A507	8.19
11/32″	91075A608	1.72	92700A708	1.10	93505A808	.56	93620A908	1.20	5	92745A508	8.32
3/8″	91075A610	1.72	92700A710	1.10	93505A810	.51	93620A910	1.20	50	92745A510	12.47
13/32″	91075A611	1.72	92700A711	1.10	93505A811	.56	93620A911	1.20	5	92745A511	8.58
7/16″	91075A612	1.86	92700A712	1.12	93505A812	.56	93620A912	1.30	5	92745A512	8.70
15/32″	91075A613	1.86	92700A713	1.12	93505A813	.56	93620A913	1.30	5	92745A513	8.82
1/2″	91075A615	1.86	92700A715	1.12	93505A815	.56	93620A915	1.30	50	92745A515	12.93
5/8″	91075A620	1.86	92700A720	1.12	93505A820	.56	93620A920	1.30	50	92745A520	13.16
3/4″	91075A625	1.99	92700A725	1.12	93505A825	.61	93620A925	1.39	50	92745A525	13.39
7/8″	91075A630	1.99	92700A730	1.12	93505A830	.61	93620A930	1.39	50	92745A530	13.63
1″	91075A635	1.99	92700A735	1.12	93505A835	.61	93620A935	1.39	50	92745A535	13.86
1 1/4″	91075A640	2.20	92700A740	1.23	93505A840	.66	93620A940	1.54	50	92745A540	14.09
1 1/2″	91075A645	2.39	92700A745	1.55	93505A845	.78	93620A945	1.67	50	92745A545	14.73
1 3/4″	91075A670	2.39	92700A752	1.84	93505A126	1.08	93620A955	2.00	5	92745A560	14.80
2″	91075A650	2.39	92700A750	1.55	93505A850	1.12	93620A950	1.67	50	92745A550	14.85
2 1/4″	91075A690	3.02	92700A759	2.29	93505A136	1.12	93620A960	2.14	5	92745A565	14.90
2 1/2″	91075A695	3.17	92700A768	2.47	93505A143	1.43	93620A965	2.21	5	92745A570	14.95
3″	91075A700	3.61	92700A778	2.50	93505A152	1.80	93620A970	2.34	5	92745A575	14.95
5/16″ Hex Size—To Order: *Please specify screw size: 6-32 or 8-32*											
1/4″	91075A705	2.81	92700A805	1.91	93505A905	1.38	93620A555	1.98			
5/16″	91075A707	2.81	92700A807	1.91	93505A907	1.38	93620A557	2.01			
3/8″	91075A710	2.81	92700A810	1.91	93505A146	1.38	93620A560	2.04			
7/16″	91075A712	2.81	92700A812	1.91	93505A156	1.38	93620A562	2.07			
1/2″	91075A715	2.81	92700A815	1.91	93505A147	1.38	93620A565	2.09			
3/4″	91075A725	3.31	92700A825	2.15	93505A149	1.44	93620A575	2.32			
1″	91075A735	3.31	92700A835	2.15	93505A151	1.44	93620A585	2.32			
1 1/2″	91075A745	3.31	92700A845	2.15	93505A153	1.66	93620A595	2.32			
2″	91075A750	3.65	92700A850	2.37	93505A154	1.93	93620A600	2.56			
3/8″ Hex Size—To Order: *Please specify screw size: 8-32 or 10-32*											
1/4″	91075A753	3.55	92700A852	2.12	93505A104	1.43	93620A602	2.38			
5/16″	91075A757	3.55	92700A856	2.12	93505A106	1.43	93620A607	2.38			
3/8″	91075A760	3.55	92700A860	2.25	93505A176	1.44	93620A610	2.43			
7/16″	91075A762	3.83	92700A862	2.35	93505A108	1.49	93620A612	2.45			
1/2″	91075A765	3.84	92700A865	2.43	93505A177	1.44	93620A615	2.53			
5/8″	91075A770	3.92	92700A868	2.35	93505A109	1.49	93620A618	2.50			
3/4″	91075A775	3.92	92700A875	2.67	93505A179	1.49	93620A625	2.77			
7/8″	91075A780	4.11	92700A880	2.70	93505A110	1.49	93620A630	2.90			
1″	91075A785	4.11	92700A885	2.67	93505A181	1.49	93620A635	2.94			
1 1/4″	91075A790	4.78	92700A887	2.83	93505A118	1.76	93620A640	3.05			
1 1/2″	91075A795	4.83	92700A895	3.13	93505A005	1.76	93620A645	3.39			
1 3/4″	91075A796	4.95	92700A897	3.50	93505A120	2.04	93620A648	3.50			
2″	91075A800	4.95	92700A900	3.75	93505A010	2.04	93620A650	3.65			
2 1/2″	91075A797	5.80	92700A905	4.14	93505A160	2.28	93620A657	4.67			
3″	91075A799	6.20	92700A910	4.60	93505A166	2.32	93620A664	4.81			
1/2″ Hex Size—To Order: *Please specify screw size: 10-32 or 1/4″-20*											
1/2″	91075A815	7.70	92700A915	5.00	93505A025	2.76	93620A665	3.09			
3/4″	91075A825	8.64	92700A925	5.13	93505A035	2.90	93620A675	3.80			
1″	91075A835	8.75	92700A935	5.30	93505A045	2.90	93620A685	4.21			
1 1/2″	91075A845	9.27	92700A945	5.57	93505A055	4.97	93620A695	5.24			
2″	91075A850	9.45	92700A950	5.83	93505A060	5.24	93620A700	6.23			
2 1/2″	91075A855	9.78	92700A955	7.38	93505A171	6.67	93620A698	6.75			
3″	91075A860	10.67	92700A960	8.00	93505A182	7.62	93620A699	7.25			
4″	91075A865	12.89	92700A965	9.76	93505A194	10.00	93620A735	9.50			

★Prices are 15% lower when you buy in multiples of 10.

Panel Standoffs

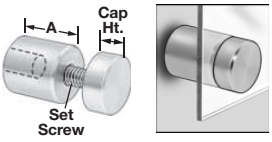

Round

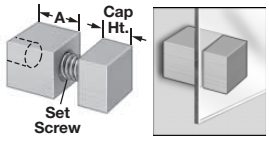

Square

Give mounted glass and other display panels an updated look. Standoffs are aluminum and include a barrel, cap, and set screw. Not rated for hardness or tensile strength. Mounting hardware for round standoffs is sold separately. Square standoffs include a threaded stud for mounting.

Also Available: Black aluminum square standoffs. Please ask for 92082A555 and specify square size and length.

Round Standoffs

Max. Panel Thick.	Lg. (A)		
5/8″ OD—*Cap Ht.: 5/16″; Mounting Thread: 5/16″-18*			
1/2″	1/2″	**94706A100**	$8.43
1/2″	3/4″	**94706A120**	8.75
1/2″	1″	**94706A140**	9.94
1/2″	1 1/2″	**94706A160**	10.82
1/2″	2″	**94706A180**	11.86
1/2″	3″	**94706A200**	12.26
1″ OD—*Cap Ht.: 3/8″; Mounting Thread: 5/16″-18*			
1/2″	1/2″	**94706A310**	10.89
1/2″	1″	**94706A330**	10.98
1/2″	1 1/2″	**94706A350**	13.37
1/2″	2″	**94706A370**	13.85
1/2″	3″	**94706A390**	15.05
1/2″	4″	**94706A410**	16.01
1 1/4″ OD—*Cap Ht.: 1/2″; Mounting Thread: 5/16″-18*			
3/8″	5/8″	**94706A620**	13.70
3/8″	1″	**94706A650**	15.14
3/8″	1 1/2″	**94706A680**	16.81
3/8″	2″	**94706A710**	17.29
3/8″	3″	**94706A740**	18.17
3/8″	4″	**94706A770**	19.44
3/8″	6″	**94706A800**	21.76

Square Standoffs

Max. Panel Thick.	Lg. (A)		
3/8″ Square—*Cap Ht.: 3/8″; Mounting Thread: 10-24*			
1/8″	1/2″	**92082A211**	$10.42
1/8″	3/4″	**92082A215**	10.83
1/8″	1″	**92082A221**	12.08
1/8″	2″	**92082A225**	13.33
1/2″ Square—*Cap Ht.: 3/8″; Mounting Thread: 1/4″-20*			
1/8″	1/2″	**92082A231**	10.42
1/8″	3/4″	**92082A235**	11.25
1/8″	1″	**92082A241**	12.25
1/8″	2″	**92082A245**	14.17
1/8″	3″	**92082A251**	15.83
1″ Square—*Cap Ht.: 3/8″; Mounting Thread: 5/16″-18*			
1/4″	1/2″	**92082A255**	13.15
1/4″	3/4″	**92082A261**	13.33
1/4″	1″	**92082A265**	13.75
1/4″	2″	**92082A271**	16.25
1/4″	3″	**92082A275**	17.33

Mounting Hardware for Round Standoffs

Toggle bolt anchors include one steel headless toggle bolt. Use in drywall up to 3/4″ thick. 94706A992 requires a 1/2″ dia. hole; 94706A990 requires a 7/8″ dia. hole.

Threaded anchors include one steel threaded stud.

For Use In	For Standoff OD	O'all Lg.		
Toggle Bolt Anchors				
Drywall	1″	3″	**94706A992**	$3.19
Drywall	1 1/4″	3″	**94706A990**	1.82
Threaded Anchors				
Drywall	5/8″	1 15/16″	**94706A991**	3.30
Wood	5/8″	1 1/2″	**94706A910**	2.28
Wood	1″ and 1 1/4″	1 1/2″	**94706A950**	1.18

Panel Supports

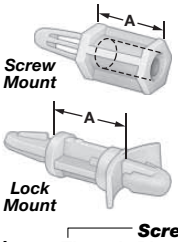

Space 1/16″ thick circuit boards and other panels with our nylon 6/6 supports. Color is off-white. Length tolerance is ±0.015″.

Screw Mount— Great for tight spaces. Snap the post into a 5/32″ dia. hole and secure with a No. 6 sheet metal screw (not included). Supports are not reusable.

Lock Mount— Snap the post into a 3/16″ dia. hole. "Wings" provide tension, which adds strength to the connection.

Lg. (A)	Screw Mount: Thread Lg.	Screw Mount: Pkg. Qty.		Screw Mount: Pkg.	Lock Mount: Pkg. Qty.		Lock Mount: Pkg.
3/16″	—	—	—	—	100	**94662A510**	$11.85
1/4″	13/64″	50	**94662A421**	$10.71	100	**94662A520**	12.52
3/8″	5/16″	50	**94662A431**	10.88	100	**94662A530**	13.08
1/2″	5/16″	50	**94662A441**	11.03	100	**94662A540**	13.96
3/4″	5/16″	50	**94662A451**	12.13	100	**94662A550**	14.37
7/8″	5/16″	50	**94662A461**	12.75	—	—	—

Edge-Grip Panel Standoffs

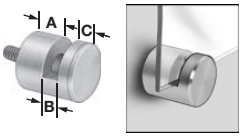

Hang display panels without drilling into them. Standoffs are aluminum. Each includes a barrel with mounting screw and a nylon-tipped set screw under a removable cap. Tighten the set screw to hold panel in place. Not rated for hardness or tensile strength. Use optional mounting hardware (sold separately) to mount into drywall and wood.

Standoffs

Max. Panel Thick.	(A)	(B)	(C)		
1″ OD—*Mounting Screw: 5/16″-18×1/2″*					
1/4″	17/32″	9/32″	1/4″	**98173A100**	$21.27
3/8″	13/32″	13/32″	1/4″	**98173A200**	21.75
1/2″	9/32″	17/32″	1/4″	**98173A300**	21.91

Optional Mounting Hardware

For Drywall— Includes one self-tapping screw and one 1 5/8″ long self-drilling drywall anchor. Use in drywall 1/2″ to 3/4″ thick.

For Wood— Include one No. 12 zinc-plated steel pan head screw.

For Use In	Screw Lg.		
Drywall	1 1/4″	**98173A910**	$0.78
Wood	3/4″	**98173A920**	.21
Wood	1 1/4″	**98173A930**	.32

Peg-Style Panel Standoffs

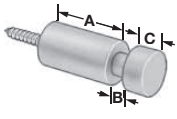

Use four standoffs to mount panels, or use a single standoff as a decorative hook. Each comes with a wall anchor. Not rated for hardness or tensile strength.

Aluminum standoffs have a brushed finish. ***Acrylic*** standoffs are translucent with a frosted finish and a temperature range of 0° to 120° F.

Max. Panel Thick.	(A)	(B)	(C)		
3/4″ OD Aluminum—*Mounting Screw: No. 10×1″*					
1/4″	15/16″	5/16″	3/8″	**99656A100**	$5.30
7/8″ OD Acrylic—*Mounting Screw: No. 10×1″*					
1/4″	15/16″	5/16″	3/8″	**99656A500**	5.20

Brass Thread Adapters

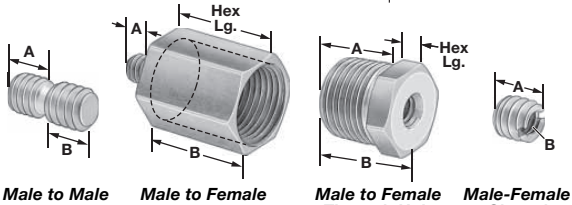

Male to Male *Male to Female* *Male to Female Through Hole* *Male-Female Slotted*

Adapters are made from brass. Inch threads have a Class 2A/2B thread fit; metric have Class 6g. Hex and length tolerances are ±0.01″. Not rated for hardness or tensile strength.

(A) Screw Size	(A) Thread Lg.	(B) Screw Size	(B) Thread Lg.	Hex Lg.	Hex Size		
Male to Male							
8-32	13/64″	1/4″-20	1/4″	—	—	**97437A300**	$8.42
8-32	13/64″	M6×1.0	1/4″	—	—	**97437A200**	8.21
M4×0.7	7/32″	8-32	3/16″	—	—	**97437A500**	8.65
M4×0.7	13/64″	1/4″-20	1/4″	—	—	**97437A400**	8.42
M4×0.7	13/64″	M6×1.0	1/4″	—	—	**97437A100**	8.21
M6×1.0	1/4″	1/4″-20	1/4″	—	—	**97437A600**	8.65
Male to Female							
1/4″-20	5/16″	5/16″-18	7/16″	11/16″	7/16″	**4624K34**	2.48
1/4″-20	3/8″	3/8″-16	3/8″	5/8″	9/16″	**4624K35**	3.66
1/4″-20	1/4″	1/8″ NPT	1/2″	3/4″	5/8″	**4624K31**	3.62
1/4″-20	3/8″	1/4″ NPT	5/8″	7/8″	3/4″	**4624K32**	5.28
1/4″-20	3/8″	3/8″ NPT	5/8″	7/8″	3/4″	**4624K33**	5.17
5/16″-18	3/8″	1/4″-20	1/4″	3/8″	3/8″	**4624K36**	2.38
Male to Female Through Hole							
1/4″ NPT	3/16″	1/4″-20	5/8″	7/16″	9/16″	**4624K99**	1.92
3/8″ NPT	1/2″	1/4″-20	3/4″	1/4″	3/4″	**4624K41**	3.14
3/8″ NPT	1/2″	3/8″-16	3/4″	1/4″	11/16″	**4624K47**	3.41
1/2″ NPT	5/8″	1/4″-20	7/8″	1/4″	7/8″	**4624K42**	5.34
1/2″ NPT	9/16″	3/8″-16	1″	7/16″	5/8″	**4624K48**	5.21
Male-Female Slotted							
1/4″-20	7/32″	8-32	7/32″	—	—	**97437A700**	8.89

18-8 Stainless Steel Male-Female Thread Adapters

Connect male and female threads of different sizes. Adapters are made from 18-8 stainless steel, which may be mildly magnetic and meets ASTM 581. Inch male threads have a Class 2A thread fit, female have Class 2B. Metric male threads have a Class 6g thread fit; female have Class 6H. All have a minimum Rockwell hardness of B83 and minimum tensile strength of 85,000 psi. Hex and length tolerances are ±0.01″ (±0.254 mm).

Also Available: Heat-treated steel adapters in sizes marked with a ♣. Please ask for 94402A770 and specify male and female screw sizes.

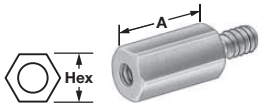

Male Screw Size	Male Thread Lg.	Female Screw Size	Female Thread Lg.	Hex Lg. (A)	Hex Size		
Inch to Inch							
2-56	5/32″	4-40	1/4″	1/2″	1/4″	92499A010	$5.45
4-40	3/16″	2-56	3/16″	1/2″	1/4″	92499A019	5.55
4-40	3/16″	6-32	1/4″	1/2″	1/4″	92499A028	5.55
6-32	1/4″	4-40	1/4″	1/2″	1/4″	92499A037	5.81
6-32	1/4″	8-32	7/16″	3/4″	3/8″	92499A046	7.10
8-32	3/8″	6-32	1/4″	1/2″	3/8″	92499A055	7.26
8-32	3/8″	10-24	7/16″	3/4″	3/8″	92499A064	7.91
8-32	21/64″	10-32	9/32″	3/4″	3/8″	92499A073♣	6.00
10-24	3/8″	10-32	1/2″	3/4″	3/8″	92499A082	7.91
10-32	3/8″	8-32	9/32″	3/4″	3/8″	92499A091♣	5.53
10-32	3/8″	10-24	7/16″	3/4″	3/8″	92499A100	7.91
10-32	3/8″	1/4″-20	3/8″	3/4″	1/2″	92499A109♣	5.53
10-32	3/8″	5/16″-18	3/8″	3/4″	1/2″	92499A118♣	5.53
1/4″-20	5/8″	10-24	7/16″	3/4″	1/2″	92499A127	9.82
1/4″-20	1/2″	10-32	9/32″	3/4″	1/2″	92499A136♣	5.53
1/4″-20	5/8″	1/4″-28	5/8″	1″	1/2″	92499A145	8.09
1/4″-20	1/2″	5/16″-18	15/32″	1″	1/2″	92499A154♣	5.53
1/4″-20	1/2″	3/8″-16	9/16″	1″	5/8″	92499A172♣	6.58
1/4″-20	1/2″	1/2″-13	3/4″	1 1/2″	3/4″	92499A181♣	8.40
5/16″-18	5/8″	10-24	7/16″	3/4″	1/2″	92499A190	9.82
5/16″-18	5/8″	10-32	9/32″	3/4″	1/2″	92499A199♣	5.53
5/16″-18	5/8″	1/4″-20	3/8″	1″	1/2″	92499A208♣	5.53
5/16″-18	5/8″	5/16″-24	5/8″	1″	1/2″	92499A217	8.90
5/16″-18	5/8″	3/8″-16	9/16″	1″	5/8″	92499A226♣	7.51
5/16″-24	5/8″	5/16″-18	5/8″	1″	1/2″	92499A235	8.10
3/8″-16	3/4″	1/4″-20	3/8″	1″	5/8″	92499A244♣	7.74
3/8″-16	3/4″	5/16″-18	15/32″	1″	5/8″	92499A262♣	7.87
3/8″-16	1/2″	3/8″-24	5/8″	1″	1/2″	92499A271	9.57
3/8″-16	3/4″	1/2″-13	3/4″	1 1/2″	3/4″	92499A289♣	9.77
3/8″-24	1/2″	3/8″-16	7/8″	1 1/2″	5/8″	92499A298	10.13
1/2″-13	7/8″	1/4″-20	3/8″	1 1/2″	3/4″	92499A307♣	10.50
1/2″-13	7/8″	3/8″-16	9/16″	1 1/2″	3/4″	92499A316♣	10.50
1/2″-13	3/4″	1/2″-20	7/8″	1 1/2″	3/4″	92499A325	12.57
1/2″-20	3/4″	1/2″-13	7/8″	1 1/2″	3/4″	92499A334	12.57
Inch to Metric							
6-32	1/4″	M4×0.7	1/8″	1/2″	1/4″	92499A352	7.18
8-32	3/8″	M5×0.8	3/8″	3/4″	3/8″	92499A361	9.88
10-32	3/8″	M5×0.8	3/8″	3/4″	3/8″	92499A370	9.88
10-32	3/8″	M6×1.0	7/16″	3/4″	3/8″	92499A379	10.87
1/4″-20	5/8″	M6×1.0	7/16″	3/4″	1/2″	92499A388	12.00
1/4″-20	5/8″	M8×1.25	3/8″	3/4″	1/2″	92499A397	12.00
5/16″-18	5/8″	M8×1.25	3/8″	3/4″	5/8″	92499A406	12.93
Inch to Metric (Cont.)							
5/16″-18	5/8″	M10×1.5	9/16″	1″	5/8″	92499A415	$12.07
3/8″-16	1/2″	M10×1.5	9/16″	1″	5/8″	92499A424	12.23
3/8″-16	1/2″	M12×1.75	7/8″	1 1/2″	5/8″	92499A433	12.67
1/2″-13	3/4″	M12×1.75	7/8″	1 1/2″	3/4″	92499A442	13.10
Metric to Inch— *Metric dimensions in millimeters.*							
M4 ×0.7	9.5	6-32	1/4″	1/2″	1/4″	92499A460	8.46
M5 ×0.8	9.5	8-32	7/16″	3/4″	3/8″	92499A469	8.78
M5 ×0.8	9.5	10-24	7/16″	3/4″	3/8″	92499A478	9.67
M5 ×0.8	9.5	10-32	1/2″	3/4″	3/8″	92499A487	9.67
M6 ×1.0	12.7	10-24	7/16″	3/4″	3/8″	92499A496	10.45
M6 ×1.0	12.7	10-32	1/2″	3/4″	3/8″	92499A505	10.45
M8 ×1.25	12.7	1/4″-20	5/8″	1″	1/2″	92499A514	10.55
M8 ×1.25	12.7	5/16″-18	5/8″	1″	5/8″	92499A523	10.55
M10×1.5	16.0	5/16″-18	5/8″	1″	5/8″	92499A532	10.98
M10×1.5	16.0	3/8″-16	7/8″	1 1/2″	5/8″	92499A541	12.52
M12×1.75	18.0	3/8″-16	7/8″	1 1/2″	5/8″	92499A550	13.16
M12×1.75	18.0	1/2″-13	7/8″	1 1/2″	3/4″	92499A559	13.95
Metric to Metric— *Dimensions in millimeters.*							
M4 ×0.7	9.5	M5 ×0.8	9.5	19.1	11	92499A577	9.87
M5 ×0.8	9.5	M4 ×0.7	3.2	12.7	11	92499A586	9.87
M5 ×0.8	9.5	M6 ×1.0	11.1	19.1	13	92499A595	11.62
M6 ×1.0	12.7	M5 ×0.8	9.5	19.1	13	92499A604	12.89
M6 ×1.0	12.7	M8 ×1.25	9.5	19.1	14	92499A613	12.89
M8 ×1.0	12.7	M8 ×1.25	9.5	19.1	14	92499A622	12.89
M8 ×1.25	12.7	M6 ×1.0	11.1	19.1	13	92499A631	13.40
M8 ×1.25	12.7	M8 ×1.0	11.1	19.1	14	92499A640	13.55
M8 ×1.25	12.7	M10×1.0	17.4	25.4	16	92499A649	13.68
M8 ×1.25	12.7	M10×1.5	14.3	25.4	16	92499A658	13.68
M10×1.0	16.0	M10×1.25	15.9	25.4	16	92499A667	13.68
M10×1.0	16.0	M10×1.5	14.3	25.4	16	92499A676	13.68
M10×1.25	16.0	M10×1.5	14.3	25.4	16	92499A685	13.68
M10×1.5	16.0	M8 ×1.25	9.5	19.1	14	92499A694	13.95
M10×1.5	16.0	M10×1.0	17.4	25.4	16	92499A703	13.95
M10×1.5	16.0	M10×1.25	15.9	25.4	16	92499A712	13.95
M10×1.5	16.0	M12×1.75	22.2	38.1	22	92499A721	19.90
M12×1.25	18.0	M12×1.5	22.2	38.1	22	92499A730	19.90
M12×1.25	18.0	M12×1.75	22.2	38.1	22	92499A739	19.90
M12×1.5	18.0	M12×1.25	22.2	38.1	22	92499A748	19.90
M12×1.5	18.0	M12×1.75	22.2	38.1	22	92499A757	19.90
M12×1.75	18.0	M10×1.5	14.3	38.1	16	92499A766	19.90
M12×1.75	18.0	M12×1.25	22.2	38.1	22	92499A775	19.95
M12×1.75	18.0	M12×1.5	22.2	38.1	22	92499A784	19.95

18-8 Stainless Steel Male-Male Thread Adapters

Make a secure connection between female threads. Adapters are made from 18-8 stainless steel, which may be mildly magnetic. Inch threads have a Class 2A thread fit; metric threads have Class 6g. All have a minimum Rockwell hardness of B83 and minimum tensile strength of 85,000 psi. Hex and length tolerances are ±0.01″ (±0.254 mm).

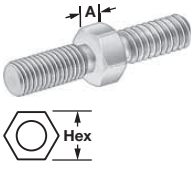

Male Screw Size	Male Thread Lg.	Male Screw Size	Male Thread Lg.	Hex Lg. (A)	Hex Size		
Inch to Inch							
2-56	5/32″	4-40	3/16″	1/8″	3/16″	95316A050	$3.18
4-40	3/16″	4-40	3/16″	1/8″	1/4″	95316A100	3.24
4-40	3/16″	6-32	1/4″	1/8″	1/4″	95316A150	3.30
6-32	1/4″	6-32	1/4″	1/4″	1/4″	95316A200	3.45
6-32	1/4″	8-32	3/8″	1/8″	1/4″	95316A250	3.42
8-32	3/8″	8-32	3/8″	1/8″	5/16″	95316A340	3.71
8-32	3/8″	8-32	3/8″	3/16″	1/4″	95316A300	3.48
8-32	3/8″	10-32	3/8″	1/8″	1/4″	95316A320	3.59
10-24	3/8″	10-32	3/8″	1/8″	5/16″	95316A330	3.62
10-32	3/8″	10-32	3/8″	1/8″	1/4″	95316A400	4.08
10-32	3/8″	10-32	3/8″	1/8″	5/16″	95316A450	4.28
10-32	3/8″	1/4″-20	5/8″	1/8″	5/16″	95316A470	4.38
10-32	3/8″	5/16″-18	5/8″	1/8″	5/16″	95316A490	4.48
1/4″-20	5/8″	1/4″-28	5/8″	3/16″	3/8″	95316A510	5.59
1/4″-20	5/8″	5/16″-18	5/8″	3/16″	1/2″	95316A530	8.11
1/4″-20	5/8″	3/8″-16	1/2″	1/4″	1/2″	95316A550	8.11
1/4″-20	5/8″	1/2″-13	3/4″	3/8″	3/4″	95316A570	8.89
Inch to Inch (Cont.)							
5/16″-18	5/8″	5/16″-24	5/8″	3/16″	1/2″	95316A590	$8.29
5/16″-18	5/8″	3/8″-16	1/2″	1/4″	9/16″	95316A610	8.47
3/8″-16	1/2″	3/8″-24	1/2″	1/4″	9/16″	95316A630	8.00
3/8″-16	1/2″	1/2″-13	3/4″	3/8″	3/4″	95316A650	8.53
1/2″-13	3/4″	1/2″-20	3/4″	3/8″	3/4″	95316A670	9.90
Inch to Metric— *Metric dimensions in millimeters.*							
6-32	1/4″	M4 ×0.7	9.53	1/8″	1/4″	95316A700	3.38
8-32	3/8″	M5 ×0.8	9.53	1/8″	1/4″	95316A710	3.76
10-32	3/8″	M5 ×0.8	9.53	1/8″	5/16″	95316A720	3.88
10-32	3/8″	M6 ×1.0	12.7	1/8″	5/16″	95316A730	4.29
1/4″-20	5/8″	M6 ×1.0	12.7	3/16″	3/8″	95316A740	5.69
1/4″-20	5/8″	M8 ×1.25	12.7	3/16″	1/2″	95316A750	7.80
5/16″-18	5/8″	M8 ×1.25	12.7	3/16″	1/2″	95316A760	7.80
5/16″-18	5/8″	M10×1.5	16	3/16″	1/2″	95316A770	8.77
3/8″-16	1/2″	M10×1.5	16	1/4″	9/16″	95316A790	9.55
3/8″-16	1/2″	M12×1.75	18	1/4″	9/16″	95316A780	8.90
1/2″-13	3/4″	M12×1.75	18	3/8″	3/4″	95316A800	9.98
Metric to Metric— *Dimensions in millimeters.*							
M4 ×0.7	9.53	M5 ×0.8	9.53	3.2	8	95316A850	4.08
M5 ×0.8	9.53	M6 ×1.0	12.7	4.8	10	95316A860	6.29
M6 ×1.0	12.7	M8 ×1.25	12.7	4.8	13	95316A870	9.57
M8 ×1.25	12.7	M8 ×1.0	12.7	4.8	13	95316A880	9.60
M8 ×1.25	12.7	M10×1.0	16	6.3	17	95316A890	10.38
M8 ×1.25	12.7	M10×1.5	16	6.3	17	95316A900	10.77
M10×1.5	16	M10×1.0	16	6.3	17	95316A910	11.11
M10×1.5	16	M10×1.25	16	6.3	17	95316A920	11.53
M12×1.25	18	M12×1.75	18	9.5	19	95316A950	12.62

External Retaining Rings

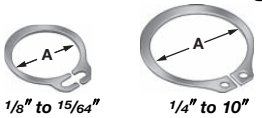

1/8″ to 15/64″ 1/4″ to 10″

Pull rings open to pass over the end of a shaft and release to spring into the groove. They meet ASME B18.27.1 and are magnetic.

Black-finish and ***zinc and yellow chromate-plated steel*** rings have a minimum Rockwell hardness of C40. ***Stainless steel*** rings are made of Type 15-7 or 17-7 PH stainless steel. Minimum Rockwell hardness is C43.

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Black-Finish Steel Pkg. Qty.	Black-Finish Steel	Black-Finish Steel Pkg.	Zinc and Yellow Chromate-Plated Steel Pkg. Qty.	Zinc and Yellow Chromate-Plated Steel	Zinc and Yellow Chromate-Plated Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
1/8″	0.117″	0.012″	0.112″	0.01″	100	97633A110	$6.30	100	98410A107	$5.64	—	—	—
5/32″	0.146″	0.012″	0.142″	0.01″	100	97633A115	6.72	100	98410A104	8.14	—	—	—
3/16″	0.175″	0.018″	0.168″	0.015″	100	97633A120	7.82	100	98410A109	7.90	—	—	—
7/32″	0.205″	0.018″	0.196″	0.015″	100	97633A125	9.52	100	98410A105	10.64	—	—	—
15/64″	0.222″	0.018″	0.215″	0.015″	100	97633A127	11.52	50	98410A106	6.43	—	—	—
1/4″	0.23″	0.029″	0.225″	0.025″	100	97633A130	7.82	100	98410A113	9.27	10	91590A113	$8.50
9/32″	0.261″	0.029″	0.256″	0.025″	100	97633A140	8.84	100	98410A112	10.14	10	91590A112	8.55
5/16″	0.29″	0.029″	0.281″	0.025″	100	97633A150	8.84	100	98410A115	9.44	10	91590A115	8.59
11/32″	0.321″	0.029″	0.309″	0.025″	100	97633A160	8.84	100	98410A116	10.50	10	91590A116	8.63
3/8″	0.352″	0.029″	0.338″	0.025″	100	97633A170	8.74	100	98410A117	10.32	10	91590A117	8.36
13/32″	0.382″	0.029″	0.366″	0.025″	100	97633A180	9.24	100	98410A118	10.89	10	91590A118	8.88
7/16″	0.412″	0.029″	0.395″	0.025″	100	97633A190	9.68	100	98410A119	10.89	10	91590A119	8.46
15/32″	0.443″	0.029″	0.428″	0.025″	50	97633A195	6.80	50	98410A123	7.68	10	91590A121	10.08
1/2″	0.468″	0.039″	0.461″	0.035″	100	97633A200	10.13	100	98410A122	11.64	10	91590A122	9.37
9/16″	0.53″	0.039″	0.521″	0.035″	100	97633A210	12.60	100	98410A124	13.14	10	91590A124	10.02
19/32″	0.559″	0.039″	0.55″	0.035″	100	97633A220	13.04	100	98410A125	13.89	10	91590A125	10.30
5/8″	0.588″	0.039″	0.579″	0.035″	100	97633A230	12.45	100	98410A126	13.50	10	91590A126	10.65
11/16″	0.646″	0.046″	0.635″	0.042″	100	97633A240	13.44	50	98410A127	8.25	5	91590A127	6.38
3/4″	0.704″	0.046″	0.693″	0.042″	100	97633A250	12.30	50	98410A128	7.67	5	91590A128	7.22
25/32″	0.733″	0.046″	0.722″	0.042″	50	97633A255	8.33	50	98410A515	11.25	5	91590A801	9.33
13/16″	0.762″	0.046″	0.751″	0.042″	50	97633A260	7.00	50	98410A130	9.01	5	91590A129	7.90
7/8″	0.821″	0.046″	0.81″	0.042″	50	97633A270	8.58	50	98410A142	9.75	5	91590A131	7.39
15/16″	0.882″	0.046″	0.867″	0.042″	50	97633A280	8.75	50	98410A132	10.87	5	91590A132	7.94
63/64″	0.926″	0.046″	0.91″	0.042″	50	97633A290	9.45	50	98410A134	11.45	5	91590A134	8.38
1″	0.94″	0.046″	0.925″	0.042″	50	97633A300	8.91	50	98410A133	11.45	5	91590A133	8.54
1 1/16″	0.998″	0.056″	0.982″	0.05″	50	97633A310	10.85	50	98410A136	13.50	5	91590A136	8.07
1 1/8″	1.059″	0.056″	1.041″	0.05″	25	97633A320	5.60	25	98410A143	7.04	1	91590A135	1.98
1 3/16″	1.118″	0.056″	1.098″	0.05″	25	97633A330	6.30	25	98410A144	7.42	1	91590A138	2.10
1 1/4″	1.176″	0.056″	1.156″	0.05″	25	97633A340	6.57	25	98410A145	8.26	1	91590A137	2.24
1 5/16″	1.232″	0.056″	1.214″	0.05″	25	97633A350	8.14	25	98410A250	9.75	1	91590A250	2.03
1 3/8″	1.291″	0.056″	1.272″	0.05″	25	97633A360	7.27	25	98410A249	9.19	1	91590A249	2.26
1 7/16″	1.35″	0.056″	1.333″	0.05″	25	97633A370	9.10	25	98410A255	12.29	1	91590A255	2.20
1 1/2″	1.406″	0.056″	1.387″	0.05″	25	97633A380	9.10	25	98410A139	11.06	1	91590A139	2.66
1 9/16″	1.468″	0.068″	1.446″	0.062″	10	97633A390	4.66	25	98410A261	13.20	1	91590A260	3.20
1 5/8″	1.529″	0.068″	1.503″	0.062″	10	97633A400	5.43	25	98410A140	13.88	1	91590A140	3.60
1 11/16″	1.589″	0.068″	1.56″	0.062″	10	97633A411	6.02	10	98410A146	7.17	1	91590A144	5.46
1 3/4″	1.65″	0.068″	1.618″	0.062″	10	97633A410	5.96	10	98410A141	6.45	1	91590A141	4.21
1 13/16″	1.708″	0.068″	1.675″	0.062″	10	97633A412	7.30	10	98410A148	9.18	1	91590A143	6.91
1 7/8″	1.769″	0.068″	1.735″	0.062″	10	97633A414	5.81	10	98410A147	7.35	1	91590A145	6.94
2″	1.886″	0.068″	1.85″	0.062″	10	97633A420	6.23	10	98410A152	7.87	1	91590A152	5.20
2 1/16″	1.946″	0.086″	1.906″	0.078″	5	97633A425	6.52	5	98410A520	7.75	1	91590A155	13.44
2 1/8″	2.003″	0.086″	1.964″	0.078″	5	97633A429	5.06	5	98410A153	6.06	1	91590A156	14.21
2 5/32″	2.032″	0.086″	1.993″	0.078″	5	97633A810	6.37	5	98410A154	8.38	1	91590A157	17.98
2 1/4″	2.12″	0.086″	2.081″	0.078″	5	97633A430	6.09	5	98410A155	6.47	1	91590A159	10.80
2 5/16″	2.178″	0.086″	2.139″	0.078″	5	97633A435	7.82	5	98410A156	9.04	1	91590A162	12.74
2 3/8″	2.239″	0.086″	2.197″	0.078″	5	97633A440	6.47	5	98410A157	8.28	1	91590A164	11.73
2 7/16″	2.299″	0.086″	2.255″	0.078″	5	97633A449	6.11	5	98410A158	8.10	1	91590A166	17.67
2 1/2″	2.36″	0.086″	2.313″	0.078″	5	97633A450	6.93	5	98410A231	8.01	1	91590A168	12.69
2 5/8″	2.481″	0.086″	2.428″	0.078″	5	97633A460	6.84	5	98410A233	9.45	1	91590A174	13.58
2 11/16″	2.541″	0.086″	2.485″	0.078″	5	97633A465	10.27	1	98410A238	2.67	1	91590A176	20.44
2 3/4″	2.602″	0.103″	2.543″	0.093″	5	97633A470	8.68	1	98410A310	2.43	1	91590A178	18.73
2 7/8″	2.721″	0.103″	2.659″	0.093″	5	97633A475	9.24	1	98410A311	2.49	1	91590A181	33.20
2 15/16″	2.779″	0.103″	2.717″	0.093″	1	97633A478	2.27	1	98410A316	2.94	1	91590A183	38.41
3″	2.838″	0.103″	2.775″	0.093″	1	97633A480	1.77	1	98410A320	2.77	1	91590A185	21.65
3 1/8″	2.957″	0.103″	2.892″	0.093″	1	97633A482	2.46	1	98410A330	3.40	1	91590A190	43.33
3 1/4″	3.076″	0.103″	3.006″	0.093″	1	97633A483	1.99	1	98410A345	3.40	1	91590A210	43.33
3 1/2″	3.316″	0.12″	3.237″	0.109″	1	97633A490	3.52	1	98410A350	4.03	1	91590A220	55.92
3 5/8″	3.435″	0.12″	3.352″	0.109″	1	97633A493	3.41	1	98410A355	10.52	1	91590A234	55.92
3 3/4″	3.552″	0.12″	3.468″	0.109″	1	97633A495	3.47	1	98410A360	4.53	1	91590A236	55.92
3 7/8″	3.673″	0.12″	3.584″	0.109″	1	97633A497	3.82	1	98410A365	11.55	1	91590A238	61.72
4″	3.792″	0.12″	3.7″	0.109″	1	97633A500	4.80	1	98410A370	5.80	1	91590A251	62.22
4 1/8″	3.915″	0.12″	3.8″	0.109″	1	97633A512	6.04	1	98410A372	23.51	—	—	—
4 1/4″	4.065″	0.12″	3.989″	0.109″	1	97633A513	5.77	1	98410A374	9.48	1	91590A256	74.34
4 3/8″	4.19″	0.12″	4.106″	0.109″	1	97633A516	6.05	1	98410A376	9.49	1	91590A259	74.40
4 1/2″	4.31″	0.12″	4.223″	0.109″	1	97633A519	5.99	1	98410A378	9.49	1	91590A262	74.68
4 3/4″	4.55″	0.12″	4.458″	0.109″	1	97633A524	6.54	1	98410A380	11.62	1	91590A265	96.18
5″	4.79″	0.12″	4.692″	0.109″	1	97633A530	8.84	1	98410A390	11.52	1	91590A280	108.38
5 1/2″	5.265″	0.139″	5.162″	0.125″	1	97633A541	40.02	1	98410A395	34.67	—	—	—
6″	5.745″	0.139″	5.631″	0.125″	1	97633A550	50.69	1	98410A400	50.44	—	—	—
6 1/2″	6.225″	0.174″	6.1″	0.156″	1	97633A558	53.90	—	—	—	—	—	—
7″	6.705″	0.174″	6.57″	0.156″	1	97633A600	57.00	—	—	—	—	—	—
7 1/2″	7.18″	0.209″	7.009″	0.187″	1	97633A610	60.64	—	—	—	—	—	—
8″	7.66″	0.209″	7.478″	0.187″	1	97633A620	65.49	—	—	—	—	—	—
9″	8.62″	0.209″	8.415″	0.187″	1	97633A640	76.40	—	—	—	—	—	—
10″	9.575″	0.209″	9.355″	0.187″	1	97633A650	77.95	—	—	—	—	—	—

Nonmagnetic External Retaining Rings

Made of beryllium copper, rings are nonmagnetic, corrosion resistant, and electrically conductive. They meet ASME B18.27.1. Minimum Rockwell hardness is C36 for shaft diameters 5/16″ and larger (1/8″-1/4″ shaft diameters are not rated).

1/8″ to 15/64″

1/4″ to 1 1/4″

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Pkg. Qty.		Pkg.
1/8″	0.117″	0.012″	0.112″	0.01″	100	98410A111	$13.00
3/16″	0.175″	0.018″	0.168″	0.015″	100	98410A110	12.39
7/32″	0.205″	0.018″	0.196″	0.015″	25	98410A605	6.05
15/64″	0.222″	0.018″	0.215″	0.015″	25	98410A620	6.14
1/4″	0.23″	0.029″	0.225″	0.025″	25	98410A635	9.71
5/16″	0.29″	0.029″	0.281″	0.025″	10	98410A650	5.04
3/8″	0.352″	0.029″	0.338″	0.025″	10	98410A665	5.75
7/16″	0.412″	0.029″	0.395″	0.025″	10	98410A680	6.63
1/2″	0.468″	0.039″	0.461″	0.035″	10	98410A695	9.89
5/8″	0.588″	0.039″	0.579″	0.035″	5	98410A710	6.68
3/4″	0.704″	0.046″	0.693″	0.042″	5	98410A725	9.43
7/8″	0.821″	0.046″	0.81″	0.042″	1	98410A740	2.47
1″	0.94″	0.046″	0.925″	0.042″	1	98410A755	2.82
1 1/4″	1.176″	0.056″	1.156″	0.05″	1	98410A800	4.41

Metric External Retaining Rings

Rings meet DIN 471. ***Black-finish steel*** rings have a minimum Rockwell hardness of C44. ***Stainless steel*** rings are made of DIN 1.4122 stainless steel, which has similar properties to 400 series. They are magnetic and have a minimum Rockwell hardness of C47.

3 to 9 mm

10 to 200 mm

For Shaft Dia., mm	Fits Groove, mm Dia.	Fits Groove, mm Width	Ring Size, mm (A)	Ring Size, mm Thick.	Black-Finish Steel Pkg. Qty.		Pkg.	Stainless Steel Pkg. Qty.		Pkg.
3	2.8	0.5	2.7	0.4	100	98541A111	$5.00	–		—
4	3.8	0.5	3.7	0.4	100	98541A112	5.19	–		—
5	4.8	0.7	4.7	0.6	100	98541A113	5.00	5	90967A109	$9.12
6	5.7	0.8	5.6	0.7	100	98541A114	6.00	10	90967A110	5.71
7	6.7	0.9	6.5	0.8	100	98541A115	8.40	10	90967A115	6.01
8	7.6	0.9	7.4	0.8	100	98541A116	8.00	10	90967A120	6.13
9	8.6	1.1	8.4	1	100	98541A117	8.30	10	90967A155	8.28
10	9.6	1.1	9.3	1	100	98541A118	6.89	5	90967A160	4.24
11	10.5	1.1	10.2	1	100	98541A445	8.17	5	90967A163	6.06
12	11.5	1.1	11	1	100	98541A119	8.62	5	90967A165	4.41
13	12.4	1.1	11.9	1	100	98541A405	9.43	5	90967A170	4.49
14	13.4	1.1	12.9	1	100	98541A120	11.52	5	90967A175	4.58
15	14.3	1.1	13.8	1	100	98541A410	10.50	5	90967A180	4.62
16	15.2	1.1	14.7	1	100	98541A121	11.55	5	90967A205	4.70
17	16.2	1.1	15.7	1	50	98541A420	8.17	5	90967A210	5.17
18	17	1.3	16.5	1.2	50	98541A122	8.41	5	90967A220	6.11
19	18	1.3	17.5	1.2	50	98541A430	9.76	5	90967A225	6.43
20	19	1.3	18.5	1.2	50	98541A123	10.50	5	90967A235	6.72
21	20	1.3	19.5	1.2	25	98541A461	6.34	5	90967A237	9.56
22	21	1.3	20.5	1.2	25	98541A463	6.57	5	90967A241	9.74
23	22	1.3	21.5	1.2	25	98541A465	7.48	5	90967A246	10.56
24	22.9	1.3	22.2	1.2	25	98541A125	6.04	5	90967A265	8.13
25	23.9	1.3	23.2	1.2	25	98541A440	8.77	5	90967A270	8.82
26	24.9	1.3	24.2	1.2	25	98541A128	9.30	1	90967A275	2.09
27	25.6	1.3	24.9	1.2	10	98541A129	5.91	1	90967A281	2.45
28	26.6	1.6	25.9	1.5	10	98541A130	6.29	1	90967A286	2.50
29	27.6	1.6	26.9	1.5	10	98541A132	8.00	1	90967A292	3.06
30	28.6	1.6	27.9	1.5	10	98541A134	7.53	1	90967A297	3.55
32	30.3	1.6	29.6	1.5	10	98541A139	7.56	1	90967A312	3.65
34	32.3	1.6	31.5	1.5	10	98541A143	8.15	1	90967A323	3.65
35	33	1.6	32.2	1.5	10	98541A146	8.65	1	90967A325	4.38
36	34	1.85	33.2	1.75	10	98541A149	11.05	1	90967A330	4.75
38	36	1.85	35.2	1.75	10	98541A152	12.29	1	90967A333	4.80
40	37.5	1.85	36.5	1.75	10	98541A156	14.75	1	90967A341	2.40
45	42.5	1.85	41.5	1.75	5	98541A161	9.63	1	90967A345	2.96
50	47	2.15	45.8	2	5	98541A167	12.40	1	90967A350	4.16
55	52	2.15	50.8	2	5	98541A171	14.43	1	90967A360	5.44
60	57	2.15	55.8	2	1	98541A174	3.13	1	90967A375	5.88
65	62	2.65	60.8	2.5	1	98541A178	4.23	1	90967A390	7.36
70	67	2.65	65.5	2.5	1	98541A182	4.62	1	90967A410	8.40
75	72	2.65	70.5	2.5	1	98541A185	5.01	1	90967A425	8.97
80	76.5	2.65	74.5	2.5	1	98541A189	5.24	1	90967A440	9.50
85	81.5	3.15	79.5	3	1	98541A193	4.71	–		—
90	86.5	3.15	84.5	3	1	98541A210	5.09	–		—
95	91.5	3.15	89.5	3	1	98541A215	5.54	–		—
100	96.5	3.15	94.5	3	1	98541A224	5.61	–		—
110	106	4.15	103	4	1	98541A236	6.74	–		—
120	116	4.15	113	4	1	98541A247	7.47	–		—
130	126	4.15	123	4	1	98541A258	8.25	–		—
140	136	4.15	133	4	1	98541A269	8.89	–		—
150	145	4.15	142	4	1	98541A278	10.57	–		—
160	155	4.15	151	4	1	98541A288	11.36	–		—
170	165	4.15	160.5	4	1	98541A296	14.04	–		—
180	175	4.15	170.5	4	1	98541A307	16.38	–		—
190	185	4.15	180.5	4	1	98541A312	17.27	–		—
200	195	4.15	190.5	4	1	98541A323	19.70	–		—

For retaining ring pliers and tools, see pages 2758-2760.

Military Specification External Retaining Rings

Meets stringent military specification MS 16624.

Cadmium-plated steel rings have better corrosion resistance than zinc. Minimum Rockwell hardness is 45N 52 for shaft diameters up to 1.5″ and C46 for shaft diameters 1.625″ and larger.

Stainless steel rings are made of Type 15-7 PH stainless steel, which is more corrosion resistant than cadmium-plated steel. They're magnetic and passivated in accordance with QQ-P-35. Minimum Rockwell hardness is 30N 63 for shaft diameters up to 0.812″ and C44 for shaft diameters 0.875″ and larger.

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Cadmium-Plated Steel Dash No.	Pkg. Qty.		Pkg.	Stainless Steel Dash No.	Pkg. Qty.		Pkg.
0.25″	0.23″	0.03″	0.225″	0.025″	1025	25	96363A528	$5.31	4025	10	95304A226	$10.93
0.312″	0.29″	0.03″	0.281″	0.025″	1031	25	96363A533	5.39	4031	10	95304A232	11.31
0.375″	0.352″	0.03″	0.338″	0.025″	1037	25	96363A540	5.52	4037	10	95304A238	11.71
0.438″	0.412″	0.03″	0.395″	0.025″	1043	25	96363A546	5.65	4043	5	95304A244	5.93
0.5″	0.468″	0.04″	0.461″	0.035″	1050	25	96363A553	5.72	4050	5	95304A251	5.93
0.562″	0.53″	0.04″	0.521″	0.035″	1056	25	96363A559	5.98	4056	5	95304A257	6.60
0.625″	0.588″	0.04″	0.579″	0.035″	1062	25	96363A565	6.14	4062	5	95304A263	6.77
0.688″	0.646″	0.047″	0.635″	0.042″	1068	25	96363A571	8.23	4068	5	95304A269	7.10
0.75″	0.704″	0.047″	0.693″	0.042″	1075	25	96363A578	8.48	4075	5	95304A276	8.93
0.812″	0.762″	0.047″	0.751″	0.042″	1081	10	96363A584	3.49	4081	5	95304A282	9.93
0.875″	0.821″	0.047″	0.81″	0.042″	1087	10	96363A591	3.79	4087	5	95304A288	10.10
0.938″	0.882″	0.047″	0.867″	0.042″	1093	10	96363A596	3.88	4093	5	95304A294	10.77
1″	0.94″	0.047″	0.925″	0.042″	1100	10	96363A604	4.20	4100	5	95304A302	11.43
1.125″	1.059″	0.056″	1.041″	0.05″	1112	1	96363A608	3.14	4112	1	95304A314	2.93
1.25″	1.176″	0.056″	1.156″	0.05″	1125	1	96363A629	3.29	4125	1	95304A327	3.13
1.375″	1.291″	0.056″	1.272″	0.05″	1137	1	96363A641	3.51	4137	1	95304A339	3.45
1.5″	1.406″	0.056″	1.387″	0.05″	1150	1	96363A654	3.71	4150	1	95304A352	4.12
1.625″	1.529″	0.068″	1.583″	0.062″	1162	1	96363A667	3.77	4162	1	95304A364	5.34
1.75″	1.65″	0.068″	1.618″	0.062″	1175	1	96363A679	3.86	4175	1	95304A377	6.83

Heavy Duty External Retaining Rings

Rings are thicker than standard external retaining rings. They meet ASME B18.27.2.

Black-finish steel rings have a minimum Rockwell hardness of C47. ***Stainless steel*** rings are made of Type 15-7 or 17-7 PH stainless steel, which is magnetic. Minimum Rockwell hardness is C44.

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Black-Finish Steel Pkg. Qty.		Pkg.	Stainless Steel Pkg. Qty.		Pkg.
1/2″	0.468″	0.056″	0.46″	0.05″	10	98585A109	$2.17	1	93416A303	$3.52
5/8″	0.588″	0.056″	0.575″	0.05″	10	98585A112	2.63	1	93416A306	3.91
3/4″	0.704″	0.086″	0.689″	0.078″	10	98585A115	3.89	1	93416A309	6.01
7/8″	0.821″	0.086″	0.804″	0.078″	10	98585A118	4.49	1	93416A312	6.79
1″	0.938″	0.086″	0.906″	0.078″	10	98585A121	5.04	1	93416A315	7.95
1 1/8″	1.059″	0.103″	1.036″	0.093″	10	98585A124	7.30	1	93416A318	8.67
1 1/4″	1.174″	0.103″	1.15″	0.093″	10	98585A127	8.37	1	93416A324	11.40
1 3/8″	1.291″	0.103″	1.268″	0.093″	10	98585A130	8.85	1	93416A327	13.51
1 1/2″	1.406″	0.12″	1.38″	0.109″	5	98585A133	11.30	1	93416A329	15.14
1 9/16″	1.468″	0.12″	1.437″	0.109″	5	98585A136	11.12	1	93416A331	15.14
1 3/4″	1.65″	0.12″	1.608″	0.109″	5	98585A139	11.86	—	—	—
2″	1.88″	0.139″	1.84″	0.125″	5	98585A141	13.53	1	93416A339	21.23

Spiral External Retaining Rings

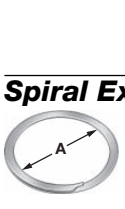

Install these coiled rings by winding them into the groove on a shaft. No tools are required for installation so they're ideal for tight spaces. Rings have 360° contact with the shaft so there is no gap. Not rated for hardness.

Stainless steel rings are made of 18-8 stainless steel and may be mildly magnetic.

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Steel Pkg. Qty.		Pkg.	Stainless Steel Pkg. Qty.		Pkg.
1/4″	0.23″	0.029″	0.228″	0.025″	25	91665A320	$10.59	10	91650A320	$9.79
5/16″	0.29″	0.029″	0.287″	0.025″	25	91665A330	10.59	10	91650A330	9.79
3/8″	0.352″	0.029″	0.349″	0.025″	25	91665A340	10.59	10	91650A340	10.76
7/16″	0.412″	0.029″	0.409″	0.025″	25	91665A350	10.59	10	91650A350	10.76
15/32″	0.443″	0.029″	0.439″	0.025″	10	91665A380	8.52	10	91650A380	11.84
1/2″	0.468″	0.039″	0.464″	0.035″	10	91665A420	4.66	10	91650A420	10.76
9/16″	0.53″	0.039″	0.525″	0.035″	10	91665A422	6.72	5	91650A422	5.47
19/32″	0.559″	0.039″	0.554″	0.035″	10	91665A426	6.84	5	91650A426	5.50
5/8″	0.588″	0.039″	0.583″	0.035″	10	91665A430	3.68	5	91650A430	5.24
11/16″	0.646″	0.046″	0.641″	0.042″	5	91665A435	6.48	5	91650A435	6.97
3/4″	0.704″	0.046″	0.698″	0.042″	5	91665A440	6.06	5	91650A440	6.35
25/32″	0.733″	0.046″	0.727″	0.042″	5	91665A443	6.58	5	91650A443	7.53
13/16″	0.762″	0.046″	0.756″	0.042″	5	91665A446	6.61	5	91650A446	7.63
7/8″	0.821″	0.046″	0.814″	0.042″	5	91665A450	6.18	5	91650A450	7.25
15/16″	0.882″	0.046″	0.875″	0.042″	5	91665A453	8.26	5	91650A453	8.58
1″	0.94″	0.046″	0.932″	0.042″	5	91665A460	6.24	5	91650A460	8.30
1 1/16″	0.998″	0.056″	0.986″	0.05″	5	91665A467	8.28	1	91650A467	2.43
1 1/8″	1.059″	0.056″	1.047″	0.05″	5	91665A470	6.26	1	91650A470	1.87
1 3/16″	1.118″	0.056″	1.105″	0.05″	5	91665A475	8.42	1	91650A475	2.74
1 1/4″	1.176″	0.056″	1.163″	0.05″	5	91665A480	5.14	1	91650A480	1.87
1 5/16″	1.232″	0.056″	1.218″	0.05″	5	91665A485	8.46	1	91650A485	2.90
1 3/8″	1.291″	0.056″	1.277″	0.05″	5	91665A490	6.36	1	91650A490	2.00
1 7/16″	1.35″	0.056″	1.336″	0.05″	5	91665A500	8.50	1	91650A500	3.02
1 1/2″	1.406″	0.056″	1.39″	0.05″	5	91665A510	6.40	1	91650A510	2.26
1 9/16″	1.468″	0.068″	1.453″	0.062″	5	91665A515	8.37	1	91650A515	4.00
1 5/8″	1.529″	0.068″	1.513″	0.062″	5	91665A520	6.48	1	91650A520	3.01
1 11/16″	1.589″	0.068″	1.573″	0.062″	5	91665A523	8.54	1	91650A523	4.25
1 3/4″	1.65″	0.068″	1.633″	0.062″	5	91665A530	6.50	1	91650A530	3.14

(Continued on following page)

Spiral External Retaining Rings *(Continued from previous page)*

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Steel Pkg. Qty.	Steel	Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
1 13/16″	1.708″	0.068″	1.69″	0.062″	5	91665A535	$8.66	1	91650A535	$4.36
1 7/8″	1.769″	0.068″	1.751″	0.062″	5	91665A540	6.80	1	91650A540	3.26
2″	1.886″	0.068″	1.867″	0.062″	5	91665A550	6.17	1	91650A550	3.17
2 1/8″	2.003″	0.086″	1.989″	0.078″	5	91665A560	6.45	1	91650A560	4.54
2 1/4″	2.12″	0.086″	2.105″	0.078″	5	91665A570	7.33	1	91650A570	4.65
2 3/8″	2.239″	0.086″	2.223″	0.078″	5	91665A580	11.71	1	91650A580	7.13
2 1/2″	2.36″	0.086″	2.343″	0.078″	5	91665A590	11.74	1	91650A590	7.54
2 5/8″	2.481″	0.086″	2.464″	0.078″	5	91665A600	11.18	1	91650A600	7.54
2 3/4″	2.602″	0.103″	2.584″	0.093″	5	91665A610	12.93	1	91650A610	8.19
2 7/8″	2.721″	0.103″	2.702″	0.093″	5	91665A620	13.16	1	91650A620	8.31
3″	2.838″	0.103″	2.818″	0.093″	5	91665A630	13.41	1	91650A630	8.44
3 1/4″	3.076″	0.103″	3.054″	0.093″	1	91665A640	6.18	1	91650A640	15.62
3 1/2″	3.316″	0.12″	3.293″	0.111″	1	91665A650	8.27	1	91650A650	20.01
3 3/4″	3.552″	0.12″	3.527″	0.111″	1	91665A660	9.19	1	91650A660	22.13
4″	3.792″	0.12″	3.765″	0.111″	1	91665A670	13.87	1	91650A670	33.52
4 1/2″	4.31″	0.12″	4.28″	0.111″	1	91665A690	18.29	1	91650A690	44.24
5″	4.79″	0.12″	4.756″	0.111″	1	91665A710	20.96	1	91650A710	46.06

Easy-to-Install Spiral External Retaining Rings

Also called single-turn rings, install by sliding them into the groove on a shaft with one twist. Thinner than standard rings, they fit into smaller grooves. They are not rated for hardness.

Stainless steel rings are made of 18-8 stainless steel and may be mildly magnetic.

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Steel Pkg. Qty.	Steel	Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
1/4″	0.238″	0.015″	0.236″	0.012″	25	94540A300	$9.38	10	93576A100	$8.84
3/8″	0.351″	0.018″	0.348″	0.015″	25	94540A310	9.50	10	93576A110	9.16
1/2″	0.472″	0.022″	0.467″	0.018″	25	94540A320	9.86	10	93576A120	9.20
5/8″	0.597″	0.022″	0.591″	0.018″	25	94540A330	9.43	10	93576A130	8.13
3/4″	0.722″	0.022″	0.715″	0.018″	10	94540A340	4.16	5	93576A140	5.23
7/8″	0.833″	0.026″	0.825″	0.021″	10	94540A350	4.44	5	93576A150	5.79
1″	0.958″	0.026″	0.949″	0.021″	10	94540A360	6.56	5	93576A160	6.16
1 1/4″	1.206″	0.031″	1.194″	0.025″	10	94540A380	7.76	5	93576A180	6.34
1 1/2″	1.456″	0.031″	1.442″	0.025″	10	94540A410	9.00	5	93576A210	7.31
1 3/4″	1.693″	0.039″	1.674″	0.031″	10	94540A430	9.52	5	93576A230	9.68
2″	1.943″	0.039″	1.922″	0.031″	10	94540A450	7.66	1	93576A250	2.98
2 1/2″	2.424″	0.039″	2.397″	0.031″	5	94540A490	5.84	1	93576A290	3.72
3″	2.924″	0.039″	2.892″	0.031″	5	94540A540	5.86	1	93576A340	3.27

Self-Locking External Retaining Rings

No groove required for installation. Rings dig in to the shaft material, so expect minor scratching. Use with an unhardened shaft. They're tougher to remove compared to standard retaining rings.

Black-finish steel rings have a minimum Rockwell hardness of C47 for shaft diameters 1/4″ and larger (3/32″-3/16″ shaft diameters are not rated).

Stainless steel rings are made of Type 15-7 or 17-7 PH stainless steel, which is magnetic. Minimum Rockwell hardness is C44 for shaft diameters 1/4″ and larger (3/32″-3/16″ shaft diameters are not rated).

For Shaft Dia.	OD	O'all Ht.	Black-Finish Steel Pkg. Qty.	Black-Finish Steel	Black-Finish Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
3/32″	0.326″	0.029″	100	98430A114	$4.76	5	97622A101	$4.43
1/8″	0.366″	0.029″	100	98430A116	4.52	5	97622A102	3.35
5/32″	0.397″	0.029″	100	98430A119	5.23	5	97622A104	4.59
3/16″	0.444″	0.031″	100	98430A118	5.12	5	97622A107	3.48
1/4″	0.522″	0.042″	100	98430A120	5.08	5	97622A111	3.96
5/16″	0.584″	0.042″	100	98430A132	6.52	5	97622A116	4.65
3/8″	0.645″	0.042″	100	98430A134	7.34	5	97622A121	5.26
7/16″	0.737″	0.045″	100	98430A136	8.58	5	97622A123	8.98
1/2″	0.828″	0.054″	100	98430A138	9.52	5	97622A126	7.33
9/16″	0.889″	0.054″	50	98430A161	6.43	5	97622A128	9.11
5/8″	0.951″	0.054″	50	98430A140	6.44	5	97622A130	10.22
3/4″	1.076″	0.054″	50	98430A152	8.33	5	97622A132	8.78
7/8″	1.203″	0.054″	25	98430A154	4.88	5	97622A134	13.59
1″	1.327″	0.054″	25	98430A156	5.12	5	97622A137	12.57

Metric External Clips

Slide clip into a groove that is near the end of the shaft. A tab locks them into place. Lift the tab to remove. They are made of black-finish steel and have a minimum Rockwell hardness of C40.

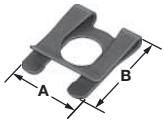

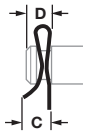

Installed

For Shaft Dia., mm	Fits Groove, mm Dia.	Fits Groove, mm Width	(A)	(B)	(C)	(D)	Pkg. Qty.		Pkg.
4	3.2	0.64	7	8.5	2.3	2	10	94824A100	$4.29
6	5	0.74	11	14.1	3.8	3	10	94824A300	4.59
8	6	0.94	14	17.5	3.5	3.5	10	94824A400	5.17
10	8	1.05	18	22.1	5	4.5	10	94824A500	8.29

External Retaining Ring Assortments

195-Piece Stainless Steel— 12 sizes for shaft diameters: 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 3/4″, 13/16″, 7/8″, 1″, and 1 1/4″.

98575A212 ..... $221.76

240-Piece Metric Black-Finish Steel— 12 sizes for shaft diameters: 5 mm, 6 mm, 7 mm, 8 mm, 9 mm, 10 mm, 12 mm, 14 mm, 16 mm, 18 mm, 20 mm, and 24 mm.

98875A150 ..... $84.37

300-Piece— 12 sizes for shaft diameters: 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 3/4″, 13/16″, 7/8″, 1″, and 1 1/4″.

Black-Finish Steel 98552A230 $39.63
Zinc and Yellow Chromate-Plated Steel.. 98552A040 48.59

300-Piece Self-Locking Black-Finish Steel— 12 sizes for shaft diameters: 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 3/4″, 7/8″, and 1″.

98430A500 ..... $66.82

540-Piece External/E-Style Black-Finish Steel— 23 sizes. 265 external rings for shaft diameters: 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, 3/4″, 15/16″, 63/64″, 1″, 1 1/8″, 1 1/4″, 1 3/8″, and 1 1/2″, plus 275 side-mount (E-style) rings for shaft diameters: 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 5/8″, 3/4″, and 7/8″. Includes external ring pliers.

93352A660 ..... $137.59

630-Piece— 25 sizes for shaft diameters: 1/8″, 3/16″, 1/4″, 5/16″, 3/8″, 7/16″, 1/2″, 9/16″, 5/8″, 3/4″, 13/16″, 7/8″, 1″, 1 1/8″, 1 1/4″, 1 5/16″, 1 3/8″, 1 1/2″, 1 5/8″, 1 3/4″, 2″, 2 1/4″, 2 1/2″, 2 5/8″, and 3″.

Black-Finish Steel 92389A730 $75.20
Zinc and Yellow Chromate-Plated Steel.. 92389A410 91.95

Side-Mount External Retaining Rings (E-Style)

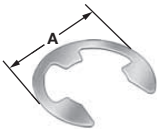

Snap rings into the groove from the side of the shaft. Their three prongs make contact with the shaft and provide a wider shoulder than other external retaining rings for a larger retaining surface. They are magnetic.

Black-finish and ***zinc and yellow chromate-plated steel*** rings have a minimum Rockwell hardness of C47. ***Stainless steel*** rings are made of Type 15-7 or 17-7 PH stainless steel. Minimum Rockwell hardness is C44.

Also Available: Nonmagnetic beryllium copper rings in sizes marked with a ♦. Please ask for 92725A500 and specify shaft diameter.

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Black-Finish Steel Pkg. Qty.		Black-Finish Steel Pkg.	Zinc and Yellow Chromate-Plated Steel Pkg. Qty.		Zinc and Yellow Chromate-Plated Steel Pkg.	Stainless Steel Pkg. Qty.		Stainless Steel Pkg.
1/16″	0.052″	0.012″	0.14″	0.01″	100	97431A210 ♦	$4.14	100	98407A112	$4.72	50	98408A112	$8.91
3/32″	0.074″	0.02″	0.187″	0.015″	100	97431A220 ♦	3.99	100	98407A114	4.33	50	98408A114	9.31
7/64″	0.079″	0.02″	0.375″	0.015″	100	97431A230	4.00	100	98407A115	5.45	50	98408A123	10.61
1/8″	0.095″	0.02″	0.23″	0.015″	100	97431A240 ♦	3.99	100	98407A116	5.16	50	98408A116	9.39
9/64″	0.102″	0.02″	0.203″	0.015″	100	97431A250	4.00	100	98407A117	5.45	50	98408A117	8.49
5/32″	0.116″	0.029″	0.282″	0.025″	100	97431A260 ♦	3.99	100	98407A119	5.16	25	98408A124	5.20
11/64″	0.127″	0.029″	0.312″	0.025″	100	97431A270	4.34	100	98407A121	6.48	25	98408A125	5.30
3/16″	0.147″	0.029″	0.335″	0.025″	100	97431A280 ♦	3.99	100	98407A118	4.47	25	98408A126	5.26
7/32″	0.188″	0.029″	0.437″	0.025″	100	97431A290 ♦	5.07	100	98407A122	5.38	25	98408A122	5.75
1/4″	0.21″	0.029″	0.527″	0.025″	100	97431A300 ♦	5.55	100	98407A120	6.46	25	98408A120	6.60
5/16″	0.25″	0.029″	0.5″	0.025″	100	97431A310 ♦	5.34	100	98407A132	6.33	25	98408A132	5.55
3/8″	0.303″	0.039″	0.66″	0.035″	100	97431A320 ♦	7.82	100	98407A134	8.30	10	98408A134	4.45
7/16″	0.343″	0.039″	0.687″	0.035″	100	97431A330	9.24	100	98407A136	10.08	10	98408A136	4.95
1/2″	0.396″	0.046″	0.8″	0.042″	100	97431A340 ♦	9.78	100	98407A138	11.89	10	98408A138	6.44
5/8″	0.485″	0.046″	0.94″	0.042″	100	97431A350 ♦	14.84	50	98407A140	7.67	10	98408A140	9.03
3/4″	0.625″	0.056″	1″	0.05″	50	97431A360	9.88	50	98407A152	10.58	10	98408A152	11.80
7/8″	0.675″	0.056″	1.3″	0.05″	50	97431A370	10.86	50	98407A154	11.05	1	98408A154	1.56
63/64″, 1″	0.835″	0.056″	1.5″	0.05″	25	97431A380	7.16	25	98407A156	7.42	1	98408A156	2.11
1 3/16″	1.079″	0.068″	1.626″	0.062″	25	97431A390	9.18	25	98407A158	9.23	1	98408A158	3.12
1 3/8″	1.23″	0.068″	1.875″	0.062″	10	97431A400	4.53	25	98407A160	12.56	1	98408A162	3.13

Metric Side-Mount External Retaining Rings (E-Style)

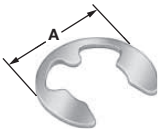

Rings meet DIN 6799. They snap directly into the groove from the side of the shaft. The three prongs make contact with the shaft and provide a wider shoulder than other external retaining rings. They are magnetic.

Black-finish steel rings have a minimum Rockwell hardness of C46. ***Stainless steel*** rings are made of DIN 1.4122 stainless steel, which has similar properties to 400 series. Minimum Rockwell hardness is C44, unless noted.

For Shaft Dia., mm	Fits Groove, mm Dia.	Fits Groove, mm Width	Ring Size, mm (A)	Ring Size, mm Thick.	Black-Finish Steel Pkg. Qty.		Black-Finish Steel Pkg.	Stainless Steel Pkg. Qty.		Stainless Steel Pkg.
1-1.4	0.8	0.24	1.95	0.2	100	98543A050	$13.20	—	—	—
1.4-2	1.2	0.34	2.9	0.3	100	98543A060	5.33	50	98317A202 ▲	$6.60
2-2.5	1.5	0.44	3.9	0.4	100	98543A070	3.33	50	98317A203 ▲	6.80
2.5-3	1.9	0.54	4.4	0.5	100	98543A080	4.53	50	98317A204 ▲	8.80
3-4	2.3	0.64	5.9	0.6	100	98543A101	3.15	50	98317A207	6.20
4-5	3.2	0.64	6.9	0.6	100	98543A103	2.85	50	98317A211	6.30
5-7	4	0.74	8.85	0.7	100	98543A112	3.15	50	98317A214	6.30
6-8	5	0.74	10.85	0.7	100	98543A113	3.39	50	98317A217	7.56
7-9	6	0.74	11.8	0.7	100	98543A114	5.45	25	98317A220	4.62
8-11	7	0.94	13.8	0.9	100	98543A115	7.35	25	98317A224	6.41
9-12	8	1.05	15.75	1	100	98543A116	7.90	10	98317A227	4.20
10-14	9	1.15	18.2	1.1	100	98543A117	11.05	10	98317A231	5.71
11-15	10	1.25	19.7	1.2	50	98543A218	7.10	5	98317A233	3.28
13-18	12	1.35	22.7	1.3	50	98543A219	7.88	5	98317A237	4.79
16-24	15	1.55	28.7	1.5	25	98543A120	10.34	1	98317A240	1.83
20-31	19	1.8	36.5	1.75	10	98543A121	5.20	—	—	—
25-38	24	2.05	43.5	2	10	98543A222	9.40	—	—	—
32-42	30	2.55	51.3	2.5	5	98543A123	7.07	—	—	—

▲ Not rated for hardness.

Heavy Duty Side-Mount External Retaining Rings

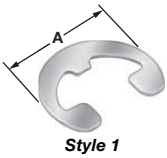

Style 1

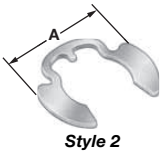

Style 2

Rings are wider than our standard side-mount retaining rings to provide a larger retaining surface.

Black-finish steel rings have a minimum Rockwell hardness of C47. ***Stainless steel*** rings are made of Type 15-7 or 17-7 PH stainless steel. They have a minimum Rockwell hardness of C43 and are magnetic.

Style 1 rings are interchangeable with standard side-mount (E-style) rings and meet ASME B18.27.2. ***Style 2*** rings, also known as clip or poodle rings, are thicker and have wide "ears" that form an extra-wide retaining surface.

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Black-Finish Steel Pkg. Qty.		Black-Finish Steel Pkg.	Stainless Steel Pkg. Qty.		Stainless Steel Pkg.
Style 1										
3/32″	0.074″	0.02″	0.206″	0.015″	100	99620A510	$6.82	25	94981A110	$8.97
1/8″	0.095″	0.02″	0.27″	0.015″	100	99620A525	7.14	25	94981A120	9.63
5/32″	0.116″	0.029″	0.335″	0.025″	100	99620A540	7.62	10	94981A130	5.13
3/16″	0.147″	0.029″	0.375″	0.025″	100	99620A555	8.57	10	94981A140	5.53
7/32″	0.188″	0.029″	0.446″	0.025″	100	99620A570	7.62	10	94981A150	5.87
1/4″	0.21″	0.029″	0.516″	0.025″	50	99620A585	5.00	10	94981A160	7.00
5/16″	0.25″	0.029″	0.588″	0.025″	50	99620A615	5.48	10	94981A170	7.47
3/8″	0.303″	0.039″	0.66″	0.035″	50	99620A630	6.43	10	94981A180	9.60
1/2″	0.396″	0.046″	0.81″	0.042″	50	99620A660	9.76	5	94981A210	7.57
9/16″	0.437″	0.046″	0.87″	0.042″	50	99620A675	10.00	5	94981A220	7.67
Style 2										
5/32″	0.12″	0.039″	0.32″	0.035″	100	98420A119	9.27	10	94751A751	5.14
3/16″	0.148″	0.039″	0.4″	0.035″	100	98420A118	9.16	10	94751A754	5.29
1/4″	0.21″	0.039″	0.482″	0.035″	100	98420A120	10.23	10	94751A757	6.33
5/16″	0.272″	0.046″	0.588″	0.042″	50	98420A132	6.45	10	94751A761	7.76
3/8″	0.331″	0.046″	0.68″	0.042″	50	98420A134	7.41	10	94751A764	8.76
7/16″	0.39″	0.056″	0.752″	0.05″	50	98420A136	8.36	5	94751A767	6.79

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Heavy Duty Side-Mount External Retaining Rings *(Continued from previous page)*

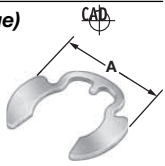

Style 2

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Black-Finish Steel Pkg. Qty.		Black-Finish Steel Pkg.	Stainless Steel Pkg. Qty.		Stainless Steel Pkg.
Style 2 (Cont.)										
1/2"	0.44"	0.056"	0.826"	0.05"	50	98420A138	$8.36	5	94751A771	$7.05
5/8"	0.531"	0.056"	0.966"	0.05"	50	98420A140	10.27	5	94751A773	9.19
3/4"	0.632"	0.068"	1.095"	0.062"	25	98420A152	7.28	1	94751A778	2.41
1"	0.86"	0.086"	1.415"	0.078"	25	98420A157	16.83	1	94751A782	8.80
1 1/4"	1.09"	0.103"	1.8"	0.093"	1	98420A161	2.59	1	94751A785	12.17
1 1/2"	1.317"	0.12"	2.05"	0.109"	1	98420A167	5.15	1	94751A788	13.49
1 3/4"	1.48"	0.139"	2.3"	0.125"	1	98420A175	3.35	1	94751A790	14.00
2"	1.73"	0.139"	2.65"	0.125"	1	98420A182	7.24	1	94751A793	18.69

Bowed Side-Mount External Retaining Rings

Also known as bowed E-style rings, their concave design provides spring-like retention for a tight hold. They snap directly into the groove from the side of the shaft. Rings are made of steel and have a black finish. They meet ASME B18.27.3. Minimum Rockwell hardness is C47, except 1/8" shaft diameter is not rated.

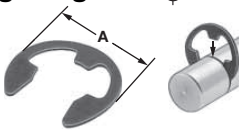

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Pkg. Qty.		Pkg.
1/8"	0.095"	0.022"	0.23"	0.01"	100	98398A116	$6.54
3/16"	0.147"	0.03"	0.335"	0.015"	100	98398A118	7.16
1/4"	0.21"	0.047"	0.527"	0.025"	100	98398A120	9.00
3/8"	0.303"	0.06"	0.66"	0.035"	100	98398A134	10.81
1/2"	0.396"	0.073"	0.8"	0.042"	100	98398A138	14.01
5/8"	0.485"	0.077"	0.94"	0.042"	50	98398A140	8.29
3/4"	0.58"	0.085"	1.12"	0.05"	25	98398A153	4.92

Crimp-On External Retaining Rings

Commonly called X-washers, install these rings using any standard pliers. Place into the groove and squeeze tight to form a 360° closure. To remove, squeeze tabs on the opposite side of the opening.

Zinc-plated steel rings have a Rockwell hardness of B60. ***Stainless steel*** rings are made of 18-8 stainless steel which, may be mildly magnetic. Minimum Rockwell hardness is B82.

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Fits Groove Thick.	Zinc-Plated Steel Pkg. Qty.		Zinc-Plated Steel Pkg.	Stainless Steel Pkg. Qty.		Stainless Steel Pkg.
5/32"	0.086"	0.031"	0.025"	50	90102A011	$8.92	—	—	—
3/16", 7/32"	0.093"	0.062"	0.055"	50	90102A012	8.11	1	90838A650	$2.36
1/4", 9/32"	0.125"	0.062"	0.055"	50	90102A029	8.73	1	90838A680	2.40
5/16", 11/32"	0.156"	0.075"	0.065"	50	90102A030	9.09	1	90838A710	2.43
3/8", 13/32"	0.187"	0.075"	0.065"	50	90102A031	9.56	1	90838A740	2.46
7/16", 15/32"	0.218"	0.083"	0.075"	50	90102A032	12.34	1	90838A770	2.50
1/2", 17/32"	0.25"	0.083"	0.075"	50	90102A033	10.77	1	90838A820	2.58
9/16", 19/32"	0.279"	0.083"	0.075"	25	90102A034	9.19	—	—	—
5/8", 21/32"	0.311"	0.097"	0.089"	25	90102A035	9.34	—	—	—
11/16", 23/32"	0.341"	0.097"	0.089"	25	90102A036	10.06	—	—	—
3/4", 25/32"	0.375"	0.097"	0.089"	25	90102A037	12.45	—	—	—

Side-Mount External Retaining Ring Assortments

Assortments come in a compartmented plastic box with lid chart, unless noted.

225-Piece Low-Clearance Zinc-Plated Steel— 9 sizes for shaft diameters: 7/32", 1/4", 9/32", 5/16", 3/8", 7/16", 1/2", 5/8", and 3/4".

98555A070 ..... $32.81

265-Piece E-Style— 12 sizes for shaft diameters: 1/8", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", and 7/8".

Zinc and Yellow Chromate-Plated Steel.. 98554A060 $37.11
Stainless Steel..... 98460A212 142.93

300-Piece Metric E-Style Black-Finish Steel— 12 sizes for shaft diameters: 3 mm, 4 mm, 5 mm, 6 mm, 7 mm, 8 mm, 9 mm, 10 mm, 11 mm, 13 mm, 16 mm, and 20 mm.

98554A660 ..... $29.38

555-Piece E-Style Zinc and Yellow Chromate-Plated Steel— 18 sizes for shaft diameters: 1/8", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" and 3/4", plus heavy duty steel rings for shaft diameters: 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", and 1/2".

98554A070 ..... $72.40

1,500-Piece E-Style Black-Finish Steel— 19 sizes for shaft diameters: 1/16", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", 7/8", 63/64", and 1 3/16". Comes in a plastic carrying case that holds four boxes.

98554A090 ..... $85.31

Low-Clearance Side-Mount External Retaining Rings

Also known as crescent rings, these are ideal where space and access is limited and a large shoulder is not required. They meet ASME B18.27.2.

Black-finish steel and ***zinc and yellow chromate-plated steel*** have a minimum Rockwell hardness of C47 for shaft diameters 7/32" and larger (shaft diameters 1/8"-3/16" are not rated).

Stainless steel rings are Type 15-7 or 17-7 PH and magnetic. Minimum Rockwell hardness is C43 for shaft diameters 7/32" and larger (shaft diameters 1/8"-3/16" are not rated).

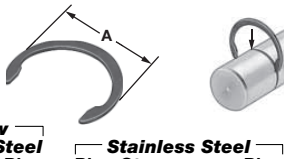

For Shaft Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Black-Finish Steel Pkg. Qty.		Black-Finish Steel Pkg.	Zinc and Yellow Chromate-Plated Steel Pkg. Qty.		Zinc and Yellow Chromate-Plated Steel Pkg.	Stainless Steel Pkg. Qty.		Stainless Steel Pkg.
1/8"	0.106"	0.02"	0.165"	0.015"	100	97414A610	$9.40	50	98555A003	$7.67	25	98808A305	$6.80
5/32"	0.135"	0.02"	0.205"	0.015"	100	97414A615	8.00	100	98555A005	10.54	25	98808A310	6.80
3/16"	0.165"	0.02"	0.244"	0.015"	100	97414A620	8.95	100	98555A007	10.54	25	98808A315	6.97
7/32"	0.193"	0.029"	0.275"	0.025"	100	97414A625	8.95	100	98555A110	10.74	25	98808A320	7.97
1/4"	0.22"	0.029"	0.311"	0.025"	100	97414A630	9.43	100	98555A120	10.24	25	98808A330	8.13
9/32"	0.247"	0.029"	0.346"	0.025"	50	97414A635	5.40	100	98555A130	11.21	25	98808A335	8.47
5/16"	0.276"	0.029"	0.376"	0.025"	50	97414A640	4.60	100	98555A140	10.66	25	98808A340	8.80
3/8"	0.335"	0.029"	0.448"	0.025"	50	97414A645	5.48	100	98555A150	12.59	25	98808A345	9.63
7/16"	0.393"	0.029"	0.517"	0.025"	50	97414A655	6.19	100	98555A160	12.59	25	98808A355	10.80
1/2"	0.45"	0.039"	0.581"	0.035"	50	97414A660	8.10	50	98555A170	8.83	10	98808A360	6.33
9/16"	0.507"	0.039"	0.653"	0.035"	50	97414A665	8.81	50	98555A175	9.47	10	98808A365	6.73
5/8"	0.563"	0.039"	0.715"	0.035"	50	97414A670	9.05	50	98555A180	9.73	10	98808A370	7.13
11/16"	0.619"	0.046"	0.784"	0.042"	50	97414A675	9.29	25	98555A185	9.30	10	98808A375	9.93
3/4"	0.676"	0.046"	0.845"	0.042"	25	97414A680	6.29	25	98555A190	6.86	5	98808A380	7.83
13/16"	0.732"	0.046"	0.915"	0.042"	25	97414A685	7.24	10	98555A191	5.60	5	98808A385	9.33
7/8"	0.789"	0.046"	0.991"	0.042"	25	97414A690	7.48	10	98555A192	5.73	5	98808A390	10.00
15/16"	0.843"	0.046"	1.058"	0.042"	25	97414A695	7.83	10	98555A193	5.87	5	98808A395	10.67
1"	0.9"	0.046"	1.13"	0.042"	25	97414A705	7.60	10	98555A195	4.35	1	98808A405	3.40
1 1/8"	1.013"	0.056"	1.267"	0.05"	25	97414A710	8.31	10	98555A205	4.76	1	98808A410	3.92
1 1/4"	1.126"	0.056"	1.415"	0.05"	25	97414A715	8.79	10	98555A210	5.11	1	98808A415	4.77
1 3/8"	1.237"	0.056"	1.555"	0.05"	10	97414A720	5.86	10	98555A230	9.00	—	—	—
1 1/2"	1.35"	0.056"	1.691"	0.05"	10	97414A725	6.62	10	98555A250	9.27	1	98808A425	7.27

Internal Retaining Rings

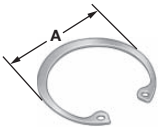

Compress rings into the groove inside a bore or housing. Once installed, they provide a shoulder to hold components in place. All rings meet ASME B18.27.1 and are magnetic.

Black-finish and ***zinc and yellow chromate-plated steel*** rings have a minimum Rockwell hardness of C40. ***Stainless steel*** rings are made of Type 15-7 or 17-7 PH stainless steel. Minimum Rockwell hardness is C43.

Also Available: Nonmagnetic beryllium copper rings in sizes marked with a ♣. Please ask for 91482A100 and specify bore diameter.

For Bore Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Black-Finish Steel Pkg. Qty.	Black-Finish Steel	Black-Finish Steel Pkg.	Zinc and Yellow Chromate-Plated Steel Pkg. Qty.	Zinc and Yellow Chromate-Plated Steel	Zinc and Yellow Chromate-Plated Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
1/4″	0.268″	0.02″	0.28″	0.015″	50	99142A310♣	$5.78	50	98409A114	$7.62	10	91580A115	$9.13
5/16″	0.33″	0.02″	0.346″	0.015″	50	99142A320♣	6.05	50	98409A116	7.70	10	91580A117	9.55
3/8″	0.397″	0.029″	0.415″	0.025″	50	99142A330♣	6.05	50	98409A131	7.78	10	91580A132	9.83
7/16″	0.461″	0.029″	0.482″	0.025″	50	99142A340	6.05	50	98409A141	7.88	10	91580A141	10.19
29/64″	0.477″	0.029″	0.498″	0.025″	50	99142A345	7.25	50	98409A146	11.00	10	91580A146	12.14
1/2″	0.53″	0.039″	0.548″	0.035″	50	99142A350♣	7.78	50	98409A151	9.92	10	91580A151	11.07
9/16″	0.596″	0.039″	0.62″	0.035″	50	99142A360	8.07	50	98409A161	10.22	10	91580A161	12.11
5/8″	0.665″	0.039″	0.694″	0.035″	50	99142A370♣	8.58	50	98409A171	11.08	10	91580A171	12.54
11/16″	0.732″	0.039″	0.763″	0.035″	50	99142A380	8.75	50	98409A176	11.61	5	91580A175	7.61
3/4″	0.796″	0.039″	0.831″	0.035″	50	99142A390♣	9.79	50	98409A181	12.62	5	91580A181	7.64
0.777″	0.825″	0.046″	0.859″	0.042″	50	99142A400	9.65	50	98409A183	12.83	5	91580A183	8.22
13/16″	0.862″	0.046″	0.901″	0.042″	50	99142A410	10.81	50	98409A186	13.73	5	91580A185	8.55
7/8″	0.931″	0.046″	0.971″	0.042″	50	99142A420	11.60	50	98409A191	14.92	5	91580A191	8.27
0.901″	0.959″	0.046″	1″	0.042″	50	99142A430	11.67	50	98409A198	15.36	5	91580A193	9.26
15/16″	1″	0.046″	1.041″	0.042″	50	99142A440	14.00	25	98409A204	8.29	5	91580A195	9.42
1″	1.066″	0.046″	1.111″	0.042″	50	99142A450♣	12.83	25	98409A211	8.55	5	91580A211	9.16
1.023″	1.091″	0.046″	1.136″	0.042″	50	99142A460	13.14	25	98409A214	9.11	1	91580A213	1.84
1 1/16″	1.13″	0.056″	1.18″	0.05″	25	99142A470	7.88	25	98409A218	9.32	1	91580A216	2.14
1 1/8″	1.197″	0.056″	1.249″	0.05″	25	99142A480♣	8.17	25	98409A221	10.47	1	91580A221	2.25
1 3/16″	1.262″	0.056″	1.319″	0.05″	25	99142A490	9.04	25	98409A226	10.99	1	91580A224	2.36
1 1/4″	1.33″	0.056″	1.388″	0.05″	25	99142A500	9.64	25	98409A240	11.81	1	91580A231	2.37
1 5/16″	1.396″	0.056″	1.456″	0.05″	25	99142A510	10.12	25	98409A232	12.02	1	91580A233	2.62
1 3/8″	1.461″	0.056″	1.526″	0.05″	25	99142A520	10.32	25	98409A233	12.21	1	91580A234	2.62
1 7/16″	1.528″	0.056″	1.596″	0.05″	25	99142A530	10.49	25	98409A234	13.00	1	91580A235	2.75
1 1/2″	1.594″	0.056″	1.66″	0.05″	25	99142A540♣	11.74	25	98409A236	14.56	1	91580A236	2.79
1 9/16″	1.658″	0.068″	1.734″	0.062″	25	99142A550♣	15.03	10	98409A237	6.60	1	91580A237	3.80
1 5/8″	1.725″	0.068″	1.804″	0.062″	25	99142A560♣	15.41	10	98409A238	7.32	1	91580A238	3.63
1 11/16″	1.792″	0.068″	1.874″	0.062″	10	99142A565	8.29	10	98409A245	9.68	1	91580A240	4.14
1 3/4″	1.858″	0.068″	1.942″	0.062″	10	99142A570	7.43	10	98409A241	9.05	1	91580A241	4.25
1 13/16″	1.922″	0.068″	2.012″	0.062″	10	99142A575	8.96	10	98409A242	11.26	1	91580A243	5.73
1 7/8″	1.989″	0.068″	2.072″	0.062″	10	99142A580	6.72	10	98409A244	9.05	1	91580A242	5.01
1 15/16″	2.056″	0.068″	2.141″	0.062″	10	99142A585	9.30	10	98409A243	12.48	1	91580A245	15.80
2″	2.122″	0.068″	2.21″	0.062″	10	99142A590	8.82	10	98409A246	11.87	1	91580A246	4.91
2 1/16″	2.186″	0.086″	2.28″	0.078″	5	99142A592	6.69	5	98409A001	8.33	1	91580A395	19.91
2 1/8″	2.251″	0.086″	2.35″	0.078″	5	99142A595	6.07	5	98409A247	8.20	1	91580A283	10.87
2 3/16″	2.318″	0.086″	2.415″	0.078″	5	99142A597	7.00	5	98409A003	8.50	1	91580A398	21.64
2 1/4″	2.382″	0.086″	2.49″	0.078″	5	99142A600	6.46	5	98409A248	8.20	1	91580A247	11.85
2 5/16″	2.45″	0.086″	2.56″	0.078″	5	99142A605	7.45	5	98409A249	8.72	1	91580A248	20.88
2 3/8″	2.517″	0.086″	2.63″	0.078″	5	99142A610	8.05	5	98409A251	9.01	1	91580A249	12.96
2 7/16″	2.584″	0.086″	2.702″	0.078″	5	99142A625	7.90	5	98409A253	9.70	1	91580A257	13.46
2 1/2″	2.648″	0.086″	2.775″	0.078″	5	99142A620	8.00	5	98409A254	9.02	1	91580A253	13.88
2 9/16″	2.714″	0.103″	2.844″	0.093″	5	99142A615	9.64	5	98409A259	11.74	1	91580A259	29.79
2 5/8″	2.781″	0.103″	2.91″	0.093″	5	99142A630	9.40	5	98409A264	10.36	1	91580A261	22.30
2 11/16″	2.848″	0.103″	2.98″	0.093″	5	99142A635	9.67	1	98409A269	2.86	1	91580A263	32.10
2 3/4″	2.914″	0.103″	3.05″	0.093″	5	99142A640	9.42	1	98409A274	2.58	1	91580A265	20.26
2 13/16″	2.98″	0.103″	3.121″	0.093″	5	99142A645	10.17	1	98409A279	2.73	1	91580A267	32.43
2 7/8″	3.051″	0.103″	3.191″	0.093″	5	99142A650	8.49	1	98409A284	2.57	1	91580A269	27.63
3″	3.182″	0.103″	3.325″	0.093″	5	99142A660	8.74	1	98409A294	2.59	1	91580A272	23.06
3 1/8″	3.315″	0.12″	3.488″	0.109″	1	99142A662	2.74	1	98409A301	3.69	1	91580A279	53.69
3 1/4″	3.446″	0.12″	3.623″	0.109″	1	99142A665	2.55	1	98409A305	3.91	1	91580A287	43.43
3 1/2″	3.71″	0.12″	3.89″	0.109″	1	99142A670	2.90	1	98409A311	5.26	1	91580A292	64.27
3 5/8″	3.841″	0.12″	4.024″	0.109″	1	99142A672	3.85	1	98409A318	5.72	1	91580A297	66.40
3 3/4″	3.974″	0.12″	4.157″	0.109″	1	99142A675	4.41	1	98409A322	6.58	1	91580A301	70.79
3 7/8″	4.107″	0.12″	4.291″	0.109″	1	99142A676	4.57	1	98409A329	7.41	1	91580A313	74.85
4″	4.24″	0.12″	4.424″	0.109″	1	99142A680	5.47	1	98409A334	9.48	1	91580A322	77.19
4 1/8″	4.365″	0.12″	4.558″	0.109″	1	99142A681	5.82	1	98409A336	9.79	1	91580A324	75.40
4 1/4″	4.49″	0.12″	4.691″	0.109″	1	99142A685	5.73	1	98409A339	10.00	1	91580A326	80.00
4 1/2″	4.74″	0.12″	4.94″	0.109″	1	99142A690	6.25	1	98409A342	10.12	1	91580A332	84.01
4 5/8″	4.865″	0.12″	5.076″	0.109″	1	99142A691	7.88	1	98409A348	18.76	1	91580A336	79.57
4 3/4″	4.995″	0.12″	5.213″	0.109″	1	99142A695	6.66	1	98409A355	10.50	1	91580A341	89.76
5″	5.26″	0.12″	5.485″	0.109″	1	99142A700	8.94	1	98409A361	11.89	1	91580A343	89.89
5 1/2″	5.77″	0.139″	6.066″	0.125″	1	99142A750	14.14	1	98409A368	23.25	1	91580A349	224.20
6″	6.27″	0.139″	6.62″	0.125″	1	99142A775	15.16	1	98409A374	31.25	—	—	—
6 1/2″	6.79″	0.174″	7.17″	0.156″	1	99142A687	36.80	—	—	—	—	—	—
7″	7.315″	0.174″	7.72″	0.156″	1	99142A800	26.95	1	98409A381	54.75	—	—	—
7 1/2″	7.84″	0.209″	8.27″	0.187″	1	99142A825	54.00	—	—	—	—	—	—
8″	8.36″	0.209″	8.82″	0.187″	1	99142A850	50.40	1	98409A387	57.44	—	—	—
8 1/2″	8.88″	0.209″	9.285″	0.187″	1	99142A875	85.80	—	—	—	—	—	—
9″	9.405″	0.209″	9.83″	0.187″	1	99142A900	77.48	1	98409A393	116.88	—	—	—
9 1/2″	9.93″	0.209″	10.375″	0.187″	1	99142A925	98.40	—	—	—	—	—	—
10″	10.45″	0.209″	10.92″	0.187″	1	99142A950	103.76	1	98409A399	129.88	—	—	—

For retaining ring pliers and tools, see pages 2758-2760.

Metric Internal Retaining Rings

Rings meet DIN 472. Compress rings into the groove of a bore or housing. Once installed, they provide a shoulder to hold components in place.

Black-finish steel rings have a minimum Rockwell hardness of C44. ***Stainless steel*** rings are made of DIN 1.4122 stainless steel, which has similar properties to 400 series and is magnetic.

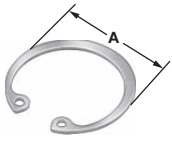

For Bore Dia., mm	Fits Groove, mm Dia.	Fits Groove, mm Width	Ring Size, mm (A)	Ring Size, mm Thick.	Black-Finish Steel Pkg. Qty.	Black-Finish Steel	Black-Finish Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
8	8.4	0.9	8.7	0.8	50	98455A108	$7.66	–		
9	9.4	0.9	9.8	0.8	50	98455A109	7.66	–		
10	10.4	1.1	10.8	1	50	98455A110	7.00	5	98394A417	$4.99
11	11.4	1.1	11.8	1	50	98455A111	7.00	5	98394A421	5.04
12	12.5	1.1	13	1	50	98455A112	8.07	5	98394A424	5.23
13	13.6	1.1	14.1	1	50	98455A113	7.33	5	98394A425	7.39
14	14.6	1.1	15.1	1	50	98455A114	7.83	5	98394A427	5.44
15	15.7	1.1	16.2	1	50	98455A115	8.33	5	98394A429	7.91
16	16.8	1.1	17.3	1	50	98455A116	8.22	5	98394A431	5.90
17	17.8	1.1	18.3	1	50	98455A117	11.00	5	98394A433	8.30
18	19	1.1	19.5	1	50	98455A119	10.87	5	98394A434	7.42
19	20	1.1	20.5	1	50	98455A224	11.33	5	98394A435	10.02
20	21	1.1	21.5	1	50	98455A120	11.57	5	98394A437	9.05
21	22	1.1	22.5	1	50	98455A121	12.97	5	98394A439	10.20
22	23	1.1	23.5	1	50	98455A122	12.33	5	98394A440	9.32
23	24.1	1.3	24.6	1.2	25	98455A123	6.67	1	98394A441	2.45
24	25.2	1.3	25.9	1.2	25	98455A124	6.51	1	98394A443	2.17
25	26.2	1.3	26.9	1.2	25	98455A125	11.67	1	98394A444	2.40
26	27.2	1.3	27.9	1.2	25	98455A226	11.33	1	98394A445	2.54
28	29.4	1.3	30.1	1.2	25	98455A126	8.19	1	98394A447	2.72
30	31.4	1.3	32.1	1.2	10	98455A127	3.93	1	98394A450	2.85
32	33.7	1.3	34.4	1.2	10	98455A129	3.92	1	98394A453	2.95
34	35.7	1.6	36.5	1.5	10	98455A131	8.80	1	98394A467	3.10
36	38	1.6	38.8	1.5	10	98455A134	9.40	1	98394A471	3.25
38	40	1.6	40.8	1.5	10	98455A137	11.20	1	98394A475	3.65
40	42.5	1.85	43.5	1.75	5	98455A139	9.40	1	98394A479	3.66
45	47.5	1.85	48.5	1.75	5	98455A141	11.87	1	98394A488	3.59
50	53	2.15	54.2	2	5	98455A142	11.75	1	98394A496	4.49
55	58	2.15	59.2	2	5	98455A144	12.03	1	98394A504	5.42
60	63	2.15	64.2	2	1	98455A146	2.91	1	98394A512	5.58
65	68	2.65	69.2	2.5	1	98455A147	3.26	1	98394A520	8.65
70	73	2.65	74.5	2.5	1	98455A149	4.65	1	98394A524	9.60
75	78	2.65	79.5	2.5	1	98455A150	4.21	1	98394A528	9.45
80	83.5	2.65	85.5	2.5	1	98455A151	7.09	1	98394A538	11.18
85	88.5	3.15	90.5	3	1	98455A153	5.97	1	98394A552	13.57
90	93.5	3.15	95.5	3	1	98455A156	6.28	1	98394A556	14.21
95	98.5	3.15	100.5	3	1	98455A159	6.99	1	98394A560	14.52
100	103.5	3.15	105.5	3	1	98455A161	7.09	–		
120	124	4.15	127	4	1	98455A167	16.29	–		
130	134	4.15	137	4	1	98455A170	18.84	–		
140	144	4.15	147	4	1	98455A173	21.33	–		
160	165	4.15	169	4	1	98455A179	28.28	–		
180	185	4.15	189.5	4	1	98455A185	34.28	–		
200	205	4.15	209.5	4	1	98455A191	39.83	–		

Spiral Internal Retaining Rings

Wind these rings into the groove inside a bore or housing to form 360° contact with the shaft. Not rated for hardness.

Stainless steel rings are made of 18-8 stainless steel and may be mildly magnetic.

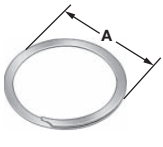

For Bore Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Steel Pkg. Qty.	Steel	Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
1/4″	0.268″	0.02″	0.27″	0.015″	25	91985A105	$9.48	10	92370A111	$9.70
5/16″	0.33″	0.02″	0.333″	0.015″	25	91985A109	9.48	10	92370A115	9.70
3/8″	0.397″	0.029″	0.4″	0.025″	25	91985A111	9.48	10	92370A117	9.70
7/16″	0.461″	0.029″	0.464″	0.025″	25	91985A113	9.48	10	92370A119	9.70
1/2″	0.53″	0.039″	0.538″	0.035″	25	91985A121	9.52	10	92370A121	7.88
5/8″	0.665″	0.039″	0.675″	0.035″	25	91985A131	8.60	10	92370A131	8.72
3/4″	0.796″	0.039″	0.807″	0.035″	25	91985A141	9.10	10	92370A141	9.23
7/8″	0.931″	0.046″	0.943″	0.042″	5	91985A151	5.96	5	92370A151	6.83
1″	1.066″	0.046″	1.08″	0.042″	5	91985A161	5.98	5	92370A161	7.27
1 1/16″	1.13″	0.056″	1.138″	0.05″	5	91985A167	8.98	5	92370A167	12.55
1 1/8″	1.197″	0.056″	1.205″	0.05″	5	91985A171	6.16	5	92370A171	8.30
1 3/16″	1.262″	0.056″	1.271″	0.05″	5	91985A176	9.06	1	92370A176	2.48
1 1/4″	1.33″	0.056″	1.339″	0.05″	5	91985A181	6.10	1	92370A181	1.61
1 5/16″	1.396″	0.056″	1.406″	0.05″	5	91985A185	8.88	1	92370A185	2.66
1 3/8″	1.461″	0.056″	1.471″	0.05″	5	91985A191	6.16	1	92370A191	1.74
1 7/16″	1.528″	0.056″	1.539″	0.05″	5	91985A201	10.18	1	92370A201	2.64
1 1/2″	1.594″	0.056″	1.605″	0.05″	5	91985A211	6.26	1	92370A211	2.17
1 5/8″	1.725″	0.068″	1.742″	0.062″	5	91985A221	6.34	1	92370A221	2.78
1 3/4″	1.858″	0.068″	1.876″	0.062″	5	91985A231	6.40	1	92370A231	2.97
1 7/8″	1.989″	0.068″	2.008″	0.062″	5	91985A241	6.48	1	92370A241	3.18
2″	2.122″	0.068″	2.142″	0.062″	5	91985A251	5.80	1	92370A251	3.06
2 1/8″	2.251″	0.086″	2.267″	0.078″	5	91985A261	6.66	1	92370A261	4.24
2 1/4″	2.382″	0.086″	2.399″	0.078″	5	91985A271	6.80	1	92370A271	4.34
2 3/8″	2.517″	0.086″	2.535″	0.078″	5	91985A281	7.94	1	92370A281	5.09
2 1/2″	2.648″	0.086″	2.667″	0.078″	5	91985A291	8.07	1	92370A291	5.18
2 5/8″	2.781″	0.103″	2.801″	0.093″	5	91985A311	9.66	1	92370A311	6.19

(Continued on following page)

Spiral Internal Retaining Rings *(Continued from previous page)*

Wind these rings into the groove inside a bore or housing to form 360° contact with the shaft. Not rated for hardness. ***Stainless steel*** rings are made of 18-8 stainless steel and may be mildly magnetic.

For Bore Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Steel Pkg. Qty.	Steel	Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
2¾″	2.914″	0.103″	2.934″	0.093″	5	91985A321	$9.91	1	92370A321	$6.33
2⅞″	3.051″	0.103″	3.072″	0.093″	5	91985A331	10.26	1	92370A331	6.57
3″	3.182″	0.103″	3.204″	0.093″	5	91985A341	10.47	1	92370A341	6.70
3¼″	3.446″	0.12″	3.47″	0.111″	1	91985A346	6.69	1	92370A351	16.22
3½″	3.71″	0.12″	3.736″	0.111″	1	91985A351	7.61	1	92370A355	18.34
3¾″	3.974″	0.12″	4.002″	0.111″	1	91985A356	7.92	1	92370A361	21.07
4″	4.24″	0.12″	4.27″	0.111″	1	91985A361	13.23	1	92370A365	32.00
4½″	4.74″	0.12″	4.77″	0.111″	1	91985A371	15.37	1	92370A375	37.13
5″	5.26″	0.12″	5.297″	0.111″	1	91985A381	17.95	1	92370A385	43.36

Easy-to-Install Spiral Internal Retaining Rings

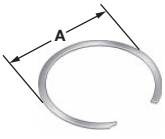

Install with one twist into the groove inside a bore or housing. Also called single-turn rings, they are thinner than standard retaining rings. They are not rated for hardness.

Stainless steel rings are made of 18-8 stainless steel and may be mildly magnetic.

For Bore Dia.	Fits Groove Dia.	Fits Groove Width	Ring Size (A)	Ring Size Thick.	Steel Pkg. Qty.	Steel	Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
¼″	0.262″	0.015″	0.264″	0.012″	25	91663A510	$9.02	10	92479A710	$8.32
⅜″	0.395″	0.018″	0.398″	0.015″	25	91663A520	9.02	10	92479A720	8.44
½″	0.528″	0.022″	0.531″	0.018″	25	91663A530	9.14	10	92479A730	8.68
⅝″	0.653″	0.022″	0.656″	0.018″	25	91663A540	7.98	10	92479A740	7.65
¾″	0.779″	0.022″	0.783″	0.018″	25	91663A550	8.38	10	92479A750	8.29
⅞″	0.917″	0.026″	0.926″	0.021″	10	91663A560	4.48	5	92479A760	5.55
1″	1.042″	0.026″	1.052″	0.021″	10	91663A570	4.68	5	92479A770	5.79
1¼″	1.294″	0.031″	1.307″	0.025″	10	91663A590	6.24	5	92479A790	6.39
1½″	1.544″	0.031″	1.559″	0.025″	10	91663A620	8.08	5	92479A820	6.58
1¾″	1.807″	0.039″	1.827″	0.031″	10	91663A640	11.20	5	92479A840	9.21
2″	2.057″	0.039″	2.079″	0.031″	10	91663A660	9.66	1	92479A860	2.81
2½″	2.576″	0.039″	2.605″	0.031″	5	91663A710	5.53	1	92479A910	3.51
3″	3.076″	0.039″	3.11″	0.031″	5	91663A740	5.93	1	92479A940	3.82

Self-Locking Internal Retaining Rings

No groove required for installation. Rings dig into the shaft material, so expect minor scratching. Use with an unhardened shaft. They're tougher to remove compared to other retaining rings. Rings for bore diameters 5/16″-5/8″ are 0.01″ thick; ¾″ and larger rings are 0.015″ thick.

Black-finish steel rings have a minimum Rockwell hardness of C47. ***Stainless steel*** rings are made of Type 15-7 or 17-7 PH stainless steel, which is magnetic. Minimum Rockwell hardness is C44.

For Bore Dia.	ID	Black-Finish Steel Pkg. Qty.	Black-Finish Steel	Black-Finish Steel Pkg.	Stainless Steel Pkg. Qty.	Stainless Steel	Stainless Steel Pkg.
5/16″	0.136″	100	98435A132	$8.58	5	99701A110	$4.96
⅜″	0.175″	100	98435A134	9.04	5	99701A115	5.04
7/16″	0.237″	100	98435A136	8.57	5	99701A116	5.78
½″	0.258″	100	98435A138	9.04	5	99701A120	5.26
9/16″	0.312″	100	98435A161	9.05	5	99701A121	6.24
⅝″	0.39″	100	98435A140	9.52	5	99701A122	6.89
¾″	0.5″	100	98435A152	11.43	5	99701A125	7.43
⅞″	0.625″	100	98435A131	$11.90	5	99701A126	$9.37
15/16″	0.687″	50	98435A133	8.10	5	99701A127	10.04
1″	0.75″	50	98435A141	10.17	5	99701A130	8.61
1¼″	0.938″	50	98435A145	11.83	1	99701A140	4.58
1½″	1.188″	25	98435A150	11.19	1	99701A150	3.66
1¾″	1.438″	10	98435A155	7.29	—	—	—
2″	1.6″	10	98435A160	9.00	—	—	—

Internal Retaining Ring Assortments

150-Piece Zinc and Yellow Chromate-Plated Steel—12 sizes for bore diameters: ¼″, ⅜″, ½″, ⅝″, ¾″, ⅞″, 1″, 1⅛″, 1¼″, 1½″, 1⅝″, and 1¾″.

98553A050 ..... $39.95

180-Piece Stainless Steel—12 sizes for bore diameters: ¼″, 5/16″, ⅜″, 7/16″, ½″, 9/16″, ⅝″, ¾″, ⅞″, 1″, 1⅛″, and 1¼″.

91605A212 ..... $232.62

240-Piece Metric Black-Finish Steel—12 sizes for bore diameters: 8 mm, 9 mm, 10 mm, 11 mm, 12 mm, 14 mm, 16 mm, 18 mm, 20 mm, 24 mm, 28 mm, and 32 mm.

98365A260 ..... $84.37

261-Piece Black-Finish Steel—20 sizes for bore diameters: ¼″, ½″, ⅝″, 11/16″, ¾″, ⅞″, 1″, 1⅛″, 1¼″, 1⅜″, 1 7/16″, 1½″, 1 9/16″, 1⅝″, 1¾″, 1⅞″, 2″, 2⅛″, 2¼″, and 2½″.

98553A470 ..... $58.13

300-Piece Self-Locking Black-Finish Steel—12 sizes for bore diameters: 5/16″, ⅜″, 7/16″, 0.44″, ½″, 9/16″, ⅝″, ¾″, ⅞″, 15/16″, 1″, 1¼″.

98435A600 ..... $63.03

333-Piece Zinc and Yellow Chromate-Plated Steel—25 sizes for bore diameters: ⅜″, 7/16″, ½″, ⅝″, 11/16″, ¾″, 13/16″, ⅞″, 1″, 1 1/16″, 1⅛″, 1¼″, 1⅜″, 1½″, 1⅝″, 1¾″, 1⅞″, 2″, 2¼″, 2⅜″, 2½″, 2⅝″, 2¾″, 2⅞″, and 3″.

98553A060 ..... $74.91

395-Piece Zinc and Yellow Chromate-Plated Steel—24 sizes for bore diameters: ¼″, ⅜″, 7/16″, ½″, 9/16″, ⅝″, ¾″, 0.777″, 13/16″, ⅞″, 0.901″, 15/16″, 1″, 1.023″, 1 1/16″, 1⅛″, 1 3/16″, 1¼″, 1 5/16″, 1⅜″, 1 7/16″, 1½″, 1 9/16″, and 1⅝″. Includes one pair of internal pliers.

98411A660 ..... $141.72

Combined External/Internal Retaining Ring Assortments

126-Piece Zinc and Yellow Chromate-Plated Steel External/Internal—20 sizes; 60 external rings for shaft diameters: 15/16″, 1″, 1 1/32″, 1 1/16″, 1⅛″, 1 3/16″, 1¼″, 1 5/16″, 1⅜″, and 1 7/16″, plus 66 internal rings for bore diameters: 1 1/16″, 1⅛″, 1 3/16″, 1¼″, 1 5/16″, 1⅜″, 1 7/16″, 1½″, 1 9/16″, and 1⅝″. Includes one pair of external/internal pliers.

98605A020 ..... $84.37

216-Piece Spiral—12 external rings and 12 internal rings for bore/shaft diameters: ½″, ⅝″, ¾″, ⅞″, 1″, 1⅛″, 1¼″, 1⅜″, and 1½″.

Steel ..... 91665A120 ... $114.53
Stainless Steel ..... 91650A200 ... 282.82

220-Piece External/Internal—20 sizes; 105 external rings for shaft diameters: ¼″, 5/16″, ⅜″, 7/16″, ½″, ⅝″, 11/16″, ¾″, ⅞″, and 1″, plus 115 internal rings for bore diameters: ⅜″, 7/16″, ½″, 9/16″, ⅝″, ¾″, ⅞″, 1″, 1⅛″, and 1¼″. Includes one pair of external/internal pliers.

Zinc and Yellow Chromate-Plated Steel ..... 98605A010 ... $77.19
Stainless Steel ..... 98645A220 ... 298.74

380-Piece Black-Finish Steel External/Internal and E-Style—22 sizes; 120 external rings and 120 internal rings for shaft diameters: 8 mm, 10 mm, 12 mm, 14 mm, 16 mm, 18 mm, and 20 mm, plus 140 E-style rings for shaft diameters 3 mm, 4 mm, 5 mm, 6 mm, 7 mm, 8 mm, 10 mm, and 12 mm. Includes one pair of external/internal pliers.

93352A100 ..... $151.45

1,000-Piece Black-Finish Steel External/Internal—20 sizes; 550 external rings for shaft diameters: ¼″, 5/16″, ⅜″, 7/16″, ½″, 9/16″, ⅝″, ¾″, ⅞″, 1″, and 1⅛″, plus 450 internal rings for bore diameters: ⅜″, 7/16″, ½″, 9/16″, ⅝″, ¾″, ⅞″, 1″, and 1⅛″. Also includes one pair of external pliers, one pair of internal pliers, and replacement tips.

98605A001 ..... $144.04

About Captive Fasteners

A captive fastener consists of a screw that's attached to an outer panel, which means you don't have to use hinges, latches, and other hardware that could easily be lost. They provide fast and easy access to panels that require infrequent but complete removal.

Retractable Captive Screws

When unfastened, threads will partially retract. Unfasten screws manually or use a Phillips screwdriver for easier access in hard-to-reach places. Body is 400 series stainless steel; knob is 3000-6000 series aluminum. Ferrule is aluminum for snap-in and flare-in styles and zinc-plated steel for press-in style. Internal spring is Type 302 stainless steel. Screws are used with press-in flush captive nuts (sold separately; see 94674A on page 3213).

Snap-In Style— Provides easy hand installation into thin panels.

Press-In Style— Designed for sheet metal panels with a Rockwell hardness of B85 or softer. Using an arbor press or similar tool, press the screw into the panel until only the top of the press-in ribs are visible.

Flare-In Style— Ideal for near-edge applications and thicker panels. Requires less installation force than press-in style. To install, insert flare-in installation tool (required; sold separately) in an arbor press. Insert screw assembly into prepared hole in panel (requires a 90° flared hole). Center tool over screw thread and flare ferrule into panel.

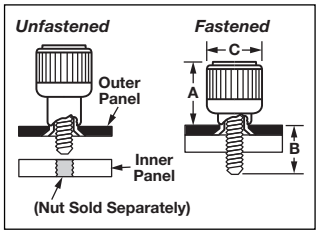

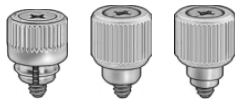

Thread Size	Outer Panel Thickness	(A)	(B)	(C)	Hole Size		
Snap-In Style							
6-32	0.020″-0.039″	27/64″	7/32″	29/64″	1/4″	92060A010	$3.55
6-32	0.039″-0.063″	27/64″	9/32″	29/64″	1/4″	92060A015	3.55
8-32	0.039″-0.063″	7/16″	11/32″	33/64″	1/4″	92060A110	3.80
8-32	0.063″-0.098″	7/16″	11/32″	33/64″	1/4″	92060A116	3.45
8-32	0.098″-0.125″	7/16″	13/32″	33/64″	1/4″	92060A120	3.98
10-32	0.039″-0.063″	7/16″	11/32″	33/64″	1/4″	92060A210	4.01
10-32	0.063″-0.098″	7/16″	11/32″	33/64″	1/4″	92060A215	4.01
10-32	0.098″-0.125″	7/16″	13/32″	33/64″	1/4″	92060A220	4.33
Press-In Style							
4-40	0.036″ min.	21/64″	3/16″	27/64″	7/32″	92060A310	2.20
6-32	0.036″ min.	7/16″	7/32″	29/64″	1/4″	92060A316	2.20
8-32	0.036″ min.	7/16″	15/64″	33/64″	5/16″	92060A320	2.57
10-32	0.036″ min.	7/16″	7/32″	33/64″	5/16″	92060A325	2.60
1/4″-20	0.036″ min.	17/32″	9/32″	37/64″	3/8″	92060A330	4.57
Flare-In Style							
4-40	0.059″-0.099″	21/64″	13/64″	27/64″	3/16″	92060A510	2.20
6-32	0.058″-0.125″	13/32″	1/4″	29/64″	7/32″	92060A516	2.20

Thread Size	Outer Panel Thickness	(A)	(B)	(C)	Hole Size		
Flare-In Style (Cont.)							
6-32	0.059″-0.125″	13/32″	3/8″	29/64″	7/32″	92060A530	$2.20
6-32	0.059″-0.125″	13/32″	7/16″	29/64″	7/32″	92060A535	1.48
8-32	0.058″-0.125″	7/16″	19/64″	33/64″	17/64″	92060A545	2.57
8-32	0.058″-0.125″	7/16″	23/64″	29/64″	17/64″	92060A550	2.57
10-32	0.058″-0.125″	7/16″	15/64″	33/64″	17/64″	92060A555	2.60
10-32	0.058″-0.125″	13/32″	5/16″	33/64″	17/64″	92060A565	2.60
10-32	0.058″-0.125″	7/16″	7/16″	33/64″	17/64″	92060A570	2.60
10-32	0.251″-0.312″	13/32″	7/16″	33/64″	17/64″	92060A560	2.60
1/4″-20	0.058″-0.125″	1/2″	5/16″	37/64″	21/64″	92060A575	4.57

Flare-In Installation Tools

For Thread Size

4-40	92060A711	$38.93
6-32	92060A722	38.93
8-32	92060A733	38.93
10-32	92060A744	38.93
1/4″-20	92060A755	38.93

Retractable Narrow-Body Captive Screws

A slim design makes these screws perfect for confined areas. When unfastened, screw has an internal spring that retracts flush with the back side of the outer panel. All have a knurled Phillips drive head that tightens by hand or with a screwdriver. Body and spring are 18-8 stainless steel; screw is Type 430 stainless steel. Screws are used with press-in flush captive nuts (sold separately; see 94674A on page 3213).

Press-In Style— Designed for sheet metal panels with a Rockwell hardness of B85 or softer. Use an arbor press or similar tool for installation.

Flare-In Style— Ideal for near-edge applications and thicker panels. Requires less installation force than press-in style. To install, insert flare-in installation tool (required; sold separately) in an arbor press. Insert screw assembly into prepared hole in panel (requires a 90° flared hole). Center tool over screw thread and flare ferrule into panel.

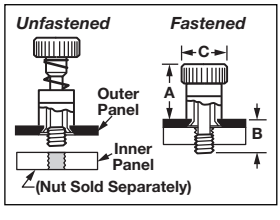

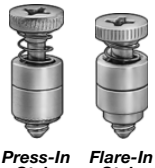

Thread Size	Outer Panel Thickness	(A)	(B)	(C)	Hole Size		
Press-In Style							
4-40	0.036″ min.	3/8″	11/64″	9/32″	7/32″	94465A410	$2.79
4-40	0.036″ min.	3/8″	17/64″	9/32″	7/32″	94465A415	2.79
6-32	0.036″ min.	13/32″	9/32″	19/64″	1/4″	94465A420	2.83
6-32	0.036″ min.	13/32″	19/64″	19/64″	1/4″	94465A425	2.83
Flare-In Style							
4-40	0.031″-0.094″	3/8″	1/4″	9/32″	3/16″	94465A120	2.79
4-40	0.095″-0.156″	23/64″	9/32″	9/32″	3/16″	94465A125	2.79
6-32	0.058″-0.125″	3/8″	9/32″	19/64″	7/32″	94465A130	2.83
6-32	0.126″-0.187″	3/8″	11/32″	19/64″	7/32″	94465A135	2.83

Flare-In Installation Tools

For Thread Size		
4-40	92060A711	$38.93
6-32	92060A722	38.93

Retractable Captive Panel Pins

Spring-loaded pins quickly retract to release sliding parts. Just pull the knob to withdraw the pin from inner panel. For use as a locator or hinge pin on removable doors. Pins *with hold-open* keep the plunger in the retracted position when you pull and rotate it 90°. To determine pin projection into your inner panel, subtract your outer panel thickness from dimension (B) shown in table. For the thread-in panel pin, you'll need to add 0.030″ to your outer panel thickness to allow for the threaded sleeve.

Press-In Style— Use an arbor press to insert into a panel. Knob is nickel-plated steel; stud is zinc-plated C1006 steel.

Thread-In Style— Manually insert pin into panel; thread on sleeve nut and tighten using installation wrench (sold separately). Knob is 6262-T9 aluminum; pin is zinc-plated 12L14 steel.

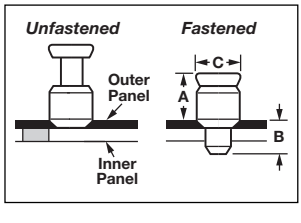

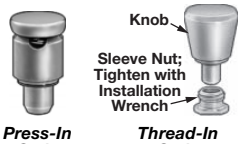

Style	Outer Panel Thickness	Stud Dia.	Hole Dia. Outer Panel	Hole Dia. Inner Panel	(A)	(B)	(C)	With Hold-Open		Without Hold-Open		Installation Wrench	
Press In	0.060″-0.150″	0.247″	0.328″	0.250″	0.48″	0.32″	0.45″	96063A110	$3.59	96063A120	$3.59	—	—
Thread In	0.025″-0.060″	0.183″	0.281″	0.188″	0.53″	0.25″	0.53″	96063A130	4.99	96063A140	4.55	96063A570	$24.35
Thread In	0.031″-0.125″	0.245″	0.359″	0.250″	0.72″	0.31″	0.69″	96063A150	5.60	96063A160	6.13	96063A670	24.29

For information about captive fasteners, see page 3279.

Flush-Mount Captive Screws

Phillips

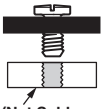

Unfastened

(Nut Sold Separately)

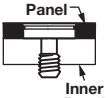

Fastened

When fastened, the heads of these screws are protected inside an 18-8 stainless steel shell that mounts flush against the outer panel's surface. Use an arbor press or punch to install screws into aluminum and low-carbon steel panels. Screws are used with press-in flush captive nuts (sold separately; see 94674A on page 3213).

Outer Panel Thick. (Min.)	Hole Dia.	O'all Lg.		
Phillips Drive— *Type 430 Stainless Steel Screw*				
8-32—*Head Dia.: 13/32″; Head Ht.: 1/8″; Thread Lg.: 11/64″*				
0.060″	0.375″	11/32″	94350A130	$1.71
0.060″	0.375″	3/8″	94350A135	1.71
0.060″	0.375″	29/64″	94350A145	1.71
Slotted Drive— *18-8 Stainless Steel Screw*				
4-40—*Head Dia.: 9/32″; Head Ht.: 1/16″; Thread Lg.: 5/32″*				
0.050″	0.257″	15/64″	94350A175	1.55
0.050″	0.257″	5/16″	94350A180	1.55
6-32—*Head Dia.: 5/16″; Head Ht.: 5/64″; Thread Lg.: 5/32″*				
0.055″	0.295″	1/4″	94350A185	1.65
0.055″	0.295″	21/64″	94350A190	1.65
0.055″	0.295″	3/8″	94350A195	1.65
8-32—*Head Dia.: 13/32″; Head Ht.: 3/32″; Thread Lg.: 13/64″*				
0.060″	0.375″	11/32″	94350A210	1.71
0.060″	0.375″	25/64″	94350A215	1.71
0.060″	0.375″	7/16″	94350A220	1.71

Push/Pull Plastic Captive Fasteners

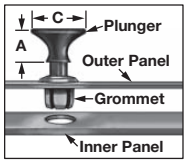

This two-piece fastener is ideal for quick-access applications. Just press the grommet into the outer panel and then insert plunger into the grommet. Push the plunger all the way in, forcing it to expand and lock the panels together; pull to release. Plungers are black nylon; grommets are black polycarbonate. Temp. range is –20° to +185° F. Total installation thickness is the outer plus the inner panel thicknesses. Meet UL 94V2. Each package includes 10 plungers and 10 grommets.

Total Install. Thick. Min.	Max.	Max Outer Panel Thick.	(A)	(C)		Pkg.
Hole Dia.: 0.294″ outer panel, 0.316″ inner panel						
0.059″	0.148″	0.042″	0.30″	0.38″	93040A101	$12.63
0.084″	0.173″	0.065″	0.30″	0.38″	93040A102	12.63
0.118″	0.207″	0.098″	0.30″	0.38″	93040A103	12.97
0.182″	0.271″	0.162″	0.30″	0.38″	93040A104	12.63
Hole Dia.: 0.238″ outer panel, 0.250″ inner panel						
0.059″	0.148″	0.042″	0.28″	0.32″	93040A106	13.44
0.084″	0.173″	0.065″	0.28″	0.32″	93040A107	13.55
0.118″	0.207″	0.098″	0.28″	0.32″	93040A108	13.55
0.182″	0.271″	0.162″	0.28″	0.32″	93040A109	13.55
Hole Dia.: 0.180″ outer panel, 0.189″ inner panel						
0.056″	0.153″	0.042″	0.26″	0.25″	93040A110	13.82
0.079″	0.176″	0.065″	0.26″	0.25″	93040A111	13.55
0.112″	0.209″	0.098″	0.26″	0.25″	93040A112	13.55
0.152″	0.249″	0.138″	0.26″	0.25″	93040A113	13.13

Expandable-Bushing Captive Fasteners

Fastened

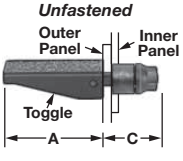

Flip the toggle to quickly and easily fasten and unfasten panels. To install, push the threaded end through the hole in the outer panel, slide on the bushing, and tighten the nut. Then, insert assembly through the inner panel hole and flip the handle. The rubber bushing expands radially to draw the panels together. Use for fastening panels with misaligned or blind holes and when vibration could be a problem. Handle and nut are black nylon. 90702A810 has a cast zinc screw, and 90702A910 has a brass screw; both are zinc-plated with a black finish. Bushing is black SBR (styrene-butadiene) rubber. Temperature range is not rated. Total installation thickness is the outer plus the inner panel thicknesses.

Outer Panel Thick.	Total Install. Thick.	*Panel Hole Size* Outer, Ht. × Wd.	Inner, Dia.	(A)	(B)	(C)	(D)	Toggle Width		
0.01″-0.13″	0.26″	0.161″ × 0.130″	0.375″	1.09″	0.31″	0.61″	0.52″	0.47″	90702A810	$5.61
0.01″-0.19″	0.38″	0.228″ × 0.177″	0.547″	1.53″	0.45″	0.89″	0.75″	0.66″	90702A910	6.00

Quick-Threading Captive Screws and Nuts

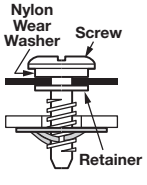

Unfastened

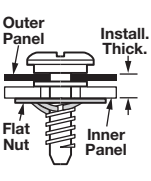

Fastened

A special "fast-lead" design means these screws thread twice as fast as standard screws, allowing quick access to panels. A complete fastener consists of a screw with retainer and a nut (sold separately).

For line art, extra dimensions, and product materials, go to mcmaster.com and search for **94220AAC**.

Screws with Retainers

Screws are held captive in the outer panel by a retainer. Each screw includes a nylon wear washer to prevent it from marring the panel. Sold in packages of four (unless noted) zinc-plated C1008 steel screws with four 18-8 stainless steel retainers. Screw diameter is 0.230″. Head diameter is 1/2″. Screw head height is 7/16″ for knurled slotted and 7/64″ for slotted. To select the correct screws and retainers, calculate the installation thickness using the following formulas:

- *Flat Nuts*: Installation Thickness = Inner Panel + Outer Panel + 0.015″
- *Press-In Nuts*: Installation Thickness = Inner Panel + Outer Panel – 0.050″
- *Clip-On Nuts*: Installation Thickness = Inner Panel + Outer Panel + 0.045″

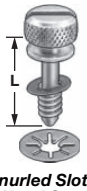

Knurled Slotted Head Screw with Retainer

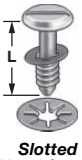

Slotted Head Screw with Retainer

Install. Thick. Min.	Max.	Max. Outer Panel Thick.	Hole Size, Outer Panel	(L)	*Knurled Slotted Head*	Pkg.	*Slotted Head*	Pkg.
0.100″	0.250″	0.075″	1/4″	39/64″	93765A120	$14.91	93910A320	$11.56
0.100″	0.375″	0.075″	1/4″	47/64″	93765A135	14.57	93910A335	12.52
0.150″	0.250″	0.125″	1/4″	39/64″	93765A125	14.91	93910A325	11.56
0.150″	0.375″	0.125″	1/4″	47/64″	93765A140★	4.98	93910A340	12.52
0.150″	0.500″	0.125″	1/4″	55/64″	93765A150★	4.98	93910A350	13.29
0.200″	0.250″	0.175″	1/4″	39/64″	93765A130	14.91	93910A330	11.56
0.200″	0.375″	0.175″	1/4″	47/64″	93765A145★	4.98	93910A345	12.52
0.200″	0.500″	0.175″	1/4″	55/64″	93765A155★	4.98	93910A355	13.29
0.300″	0.500″	0.275″	1/4″	55/64″	93765A160★	4.98	93910A360	13.29
Replacement Retainers (10/Pkg.)							94220A575	Pkg. $4.63

★ Sold in packages of one.

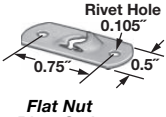

Flat Nut Rivet Style

Flat Nut Weld Style

Nuts

Nuts attach to the inner panel. Package quantity is four.

Flat— Can be used anywhere in panel. *Rivet-style* nuts are C1064 zinc-plated steel and have 0.105″ rivet holes. *Weld-style* nuts are 18-8 stainless steel.

Press In— Use for metal panels that have a Rockwell hardness of B85 or softer. To install, use an arbor press or similar tool and press the nut into the hole until the top is barely visible. Made of zinc-plated 12L14 case-hardened steel.

Clip On— For quick installation near panel edges. Made of zinc-plated C1064 steel.

Press-In Nut

Clip-On Nut

Style	Hole Size, Inner Panel	Pkg.	Style	For Inner Panel Thick.	Hole Size, Inner Panel	Pkg.
Flat Rivet	1/2″	94220A520	Clip On	0.031″-0.109″	7/16″	94220A535
Flat Weld	1/2″	94220A525	Clip On	0.109″-0.161″	7/16″	94220A540
Press In	3/8″	94220A530	Clip On	0.161″-0.213″	7/16″	94220A545

Flat Rivet	1/2″	94220A520	$1.92	Clip On	0.031″-0.109″	7/16″	94220A535	$2.57
Flat Weld	1/2″	94220A525	4.28	Clip On	0.109″-0.161″	7/16″	94220A540	3.20
Press In	3/8″	94220A530	4.45	Clip On	0.161″-0.213″	7/16″	94220A545	3.30

For information about captive fasteners, see page 3279.

Quarter-Turn Captive Fasteners

A quarter-turn of the stud quickly fastens and removes access panels, doors, and covers. To select a fastener, choose a stud with retainer and then choose a nut style (studs with retainers and nuts sold separately).

ⓘ For additional information such as line art, extra dimensions, and product materials, go to mcmaster.com and search for **93450AAC**.

Studs with Retainers

Studs are held captive in outer panel by retainers (retainer installation tool sold separately). Each package includes 10 studs with 10 retainers. To select the correct stud, calculate installation thickness (see formulas below). Then find nut style and thickness in the table. Follow the row across to locate compatible studs. Studs are zinc-plated C1008 steel and have a diameter of 0.240″. Retainers are Type 304 stainless steel. Studs fit an outer panel hole size of ¼″.

- *Clip-On Nuts*:
  When space between panels is 0.025″ thick or less,
  Installation Thickness = Inner Panel + Outer Panel + 0.055″
  OR When space between panel and frame is 0.026″ thick or greater,
  Installation Thickness = Inner Panel + Outer Panel + 0.030″
- *Leaf-Spring* and *Back Press-In Nuts*:
  Installation Thickness = Inner Panel★ + Outer Panel + Space
  ★ When using back press-in nuts, if inner panel is less than 0.051″ thick, substitute 0.051″ for inner panel thickness.
- *Front Press-In Nuts*:
  Installation Thickness = Outer Panel + Space

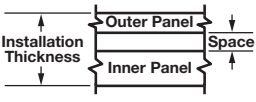

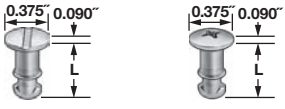

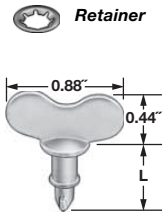

INSTALLATION THICKNESS For Clip On and Leaf Spring	For Front Press In	For Back Press In	(L)	Slotted Head	Pkg.	Phillips Head	Pkg.	Wing Head	Pkg.
0.110″-0.129″	—	—	0.415″	93685A310	$9.87	93755A415	$10.11	94170A510	$11.95
0.130″-0.149″	—	—	0.435″	93685A315	9.87	93755A420	10.11	94170A515	11.95
0.150″-0.169″	0.000″-0.019″	0.050″-0.069″	0.455″	93685A320	9.87	93755A425	10.11	94170A520	11.95
0.170″-0.189″	0.020″-0.039″	0.070″-0.089″	0.475″	93685A325	9.87	93755A430	10.11	94170A525	11.95
0.190″-0.209″	0.040″-0.059″	0.090″-0.109″	0.495″	93685A330	9.87	93755A435	10.11	94170A530	11.95
0.210″-0.229″	0.060″-0.079″	0.110″-0.129″	0.515″	93685A335	9.87	93755A440	10.11	94170A535	11.95
0.230″-0.249″	0.080″-0.099″	0.130″-0.149″	0.535″	93685A340	9.87	93755A445	10.11	94170A540	11.95
0.250″-0.269″	0.100″-0.119″	0.150″-0.169″	0.555″	93685A345	9.87	93755A450	10.11	94170A545	11.95

Nuts

Nuts attach to the inner panel. Choose a style based on your application.

Clip On—For quick installation near inner panel edges.

Leaf Spring—Can be used when the back of the inner panel is accessible. *Rivet* style uses 3/32″ rivets; *weld* styles require a welding clamp (see pages 2578-2581 for welding clamps).

Press In—For use with metal panels. Install with an arbor press or similar tool. *Back press-in* styles are for use when the back of the inner panel is accessible; use *front press-in* styles when back is inaccessible.

Clip On

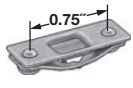

Leaf Spring

Style	Fits Inner Panel Thick.	Hole Dia.	Pkg. Qty.		Pkg.
Clip On (zinc-plated C1064 steel)	0.020″-0.195″	0.312″	10	93450A110	$3.87
Clip On (17-7 PH stainless steel)	0.020″-0.195″	0.312″	10	93450A120	8.69
Leaf Spring—Rivet Style (zinc-plated C1010 steel)	—	0.44″	10	93450A130	5.56
Leaf Spring—Weld Style (zinc-plated C1010 steel)	—	0.44″	10	93450A140	10.25
Back Press In (zinc-plated C1010 steel)	0.035″ min.	0.437″	5	93450A160	9.92
Front Press In (zinc-plated C1010 steel)	0.080″ min.	0.469″	5	93450A150	7.74

Back Press In

Front Press In

Accessories

Retainer Installation Tool	93450A400	Each	$26.18
Replacement Retainers (10/pkg.)	93450A437	Pkg.	$1.03

Plastic Quarter-Turn Captive Fasteners

Designed like the captive fasteners above, these lightweight plastic fasteners withstand extreme temperatures and corrosive environments. A complete fastener consists of a stud, retainer, and nut (each sold separately). Temperature range is –40° to +194° F continuous; to +248° F intermittent. Color is black.

ⓘ For additional information such as line art, extra dimensions, and product materials, go to mcmaster.com and search for **93442AAC**.

Studs

To select the correct studs, calculate the installation thickness using the formulas below. Then locate the nut style and thickness in the table. Follow the row across to locate the compatible studs. Package quantity is 10.

- *Rivet-In Nuts*:
  Installation Thickness =
  Inner Panel + Outer Panel +
  Space + (Rivet Head Thick.
  OR Retainer Thick.■)
  ■ Use the greater thickness.
- *Clip-On Nuts*:
  Installation Thickness =
  Inner Panel + Outer Panel +
  Space + 0.079″

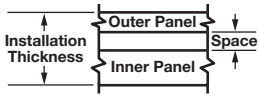

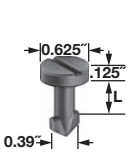

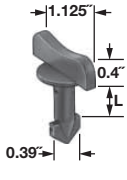

INSTALLATION THICKNESS For Rivet In	For Clip On	(L)	Slotted Head	Pkg.	Wing Head	Pkg.
0.100″-0.149″	0.170″-0.219″	0.45″	93442A413	$8.52	93442A534	$12.78
0.150″-0.199″	0.220″-0.269″	0.50″	93442A417	8.52	—	—
0.200″-0.249″	0.270″-0.319″	0.55″	93442A422	8.52	—	—
0.250″-0.299″	0.320″-0.369″	0.60″	—	—	93442A547	13.22
0.300″-0.349″	0.370″-0.419″	0.65″	93442A436	11.29	93442A552	10.32
0.400″-0.449″	0.470″-0.519″	0.75″	93442A442	13.80	93442A561	13.39
0.450″-0.499″	0.520″-0.569″	0.80″	93442A445	13.28	—	—

Nuts

Rivet-in nuts mount permanently anywhere. Package quantity is 10.

Clip-on nuts are for quick installation near panel edges. They are for use with a 0.027″-0.090″ inner panel thickness. Package quantity is 5.

Inner Panel Hole Dia.	Rivet In	Pkg.	Clip On	Pkg.
0.512″-0.600″	93442A212	$9.87	93442A223	$7.30

Retainers

Retainers hold studs to outer panel. Buy one retainer for every stud/nut combination. Thickness is 0.045″. Package quantity is 10.

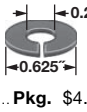

93442A311 ..... Pkg. $4.40

18-8 Stainless Steel Helical Inserts

Repair threads with these corrosion-resistant coil inserts to restore parts that would otherwise have to be scrapped. Once installed, each spring-like coil expands to permanently anchor the insert. Insert length in table refers to installed length. Rockwell hardness is C42-C50. Minimum tensile strength is 200,000 psi.

Standard inserts provide a smooth free-running thread. All inch inserts meet MS-122 or MS-124 except 91732A021, A023, A731, 92335A111, A115, A119, 92090A (left-hand thread), and 91733A (NPT).

Screw-lock inserts put a self-locking pressure on the bolt, so you don't need other thread-locking devices. Resist impact and vibration. All inch inserts meet Mil. Spec. series 21209 except 90296A037 and 90296A038. Inch inserts are dyed red for easy identification.

Insert taps are straight flute plug style and made of high-speed steel.

Repair kits include standard inserts, one insert tap, one installation tool, one high-speed drill bit to fit ½″ chuck (unless noted), and instructions.

Also Available: High-speed steel bottoming taps for blind holes. Please ask for 91709A555 and specify internal thread size.

To Install—*Drill* hole using bit size shown in table. *Tap* using screw thread insert tap. Drills and taps are sold separately. Screw the insert onto the installation tool (see page 3285 for tools). The tang (the prong the tool grips during installation) must be properly engaged in the tool's driving contour. Install the insert ¼ to ½ turn below the work surface of the hole. You must *remove tang* to allow full passage of screw into the insert.

Inch Inserts

Internal Thread Size	Max. OD	Suggested Drill Bit Size
2-56	0.119″	#41
3-48	0.139″	7/64″
3-56	0.146″	#36
4-40	0.159″	#31
4-48	0.162″	#31
5-40	0.173″	#29
6-32	0.193″	#25
6-40	0.193″	#25
8-32	0.220″	#16
8-36	0.224″	#16
10-24	0.259″	#5
10-32	0.256″	13/64″
12-24	0.285″	#1
¼″-20	0.330″	H
¼″-28	0.326″	6.7 mm
5/16″-18	0.400″	Q
5/16″-24	0.400″	21/64″
3/8″-16	0.472″	X
3/8″-24	0.468″	25/64″
7/16″-14	0.551″	29/64″
7/16″-20	0.549″	29/64″
1/2″-13	0.622″	17/32″
1/2″-20	0.617″	33/64″
9/16″-12	0.694″	19/32″
9/16″-18	0.691″	37/64″
5/8″-11	0.767″	21/32″
5/8″-18	0.758″	41/64″
3/4″-10	0.906″	25/32″
3/4″-16	0.901″	49/64″
7/8″-9	1.052″	29/32″
7/8″-14	1.051″	57/64″
1″-8	1.196″	1 1/32″
1″-12	1.199″	1 1/32″
1″-14	1.186″	1 1/32″
1 1/8″-7	1.355″	1 11/64″
1 1/8″-12	1.334″	1 5/32″
1 1/4″-7	1.483″	1 19/64″
1 1/4″-8	1.431″	1 1/4″
1 1/4″-12	1.469″	1 9/32″
1 1/2″-6	1.772″	1 35/64″
1 1/2″-8	1.694″	1 1/2″
1 1/2″-12	1.745″	1 17/32″
1 3/4″-8	2.039″	1 3/4″
NPT		
1/8″-27	0.511″	W
1/4″-18	0.680″	33/64″
3/8″-18	0.828″	21/32″
1/2″-14	1.035″	13/16″

Metric Inserts

Internal Thread Size	Pitch, mm	Max. OD, mm	Suggested Drill Bit Size
M2.5	0.45	3.70	#37
M3	0.50	4.35	3.20 mm
M4	0.70	5.60	#19
M5	0.80	6.80	5.30 mm
M6	1.00	7.95	6.30 mm
M7	1.00	9.20	7.30 mm
M8	1.00	10.25	8.30 mm
M8	1.25	10.35	8.40 mm
M10	1.00	12.50	13/32″
M10	1.25	12.65	13/32″
M10	1.50	12.50	10.50 mm
M12	1.25	15.00	31/64″
M12	1.50	14.95	12.50 mm
M12	1.75	15.00	12.50 mm
M14	1.50	17.25	37/64″
M14	2.00	17.35	14.50 mm
M16	2.00	19.60	16.50 mm
M18	2.50	22.00	47/64″
M20	2.50	24.40	13/16″
M24	3.00	29.00	31/32″
M30	3.50	36.00	1 7/32″
M36	4.00	42.90	1 15/32″

Inch Inserts

Internal Thread Size	Insert Length	Standard Inserts Pkg. Qty.		Pkg.	Screw-Lock Inserts Pkg. Qty.		Pkg.	Insert Taps	Each	Repair Kits Qty. Per Lg.	Length(s) Included		Kit
2-56	0.086″	10	91732A203	$4.71	10	90296A094	$6.28	91709A098	$17.57	—	—	—	—
2-56	0.129″	10	91732A204	4.20	10	90296A095	6.74	91709A098	17.57	10	0.129″ (no drill bit)	91732A892	$35.18
3-48	0.099″	10	91732A205	4.57	5	90296A184	5.25	91709A099	51.30	—	—	—	—
3-48	0.148″	10	91732A207	3.70	10	90296A098	6.26	91709A099	51.30	10	0.148″ (no drill bit)	91732A895	35.18
3-56	0.099″	10	91732A001	4.82	10	90296A012	6.87	91709A055	48.59	—	—	—	—
3-56	0.148″	10	91732A003	4.80	5	90296A185	4.25	91709A055	48.59	10	0.148″ (no drill bit)	91732A898	36.70
4-40	0.112″	10	91732A351	4.59	10	90296A101	6.26	91709A101	15.66	12	0.112″, 0.168″, 0.224″	91732A901	53.79
4-40	0.168″	10	91732A285	4.00	10	90296A102	6.62	91709A101	15.66	10	0.168″ (no drill bit)	91732A899	33.71
4-40	0.224″	10	91732A701	5.91	5	90296A103	4.03	91709A101	15.66	—	—	—	—
4-48	0.112″	10	91732A005	5.31	10	90296A016	9.95	91709A057	34.84	—	—	—	—
4-48	0.168″	10	91732A007	4.80	10	90296A018	7.23	91709A057	34.84	10	0.168″ (no drill bit)	91732A902	36.70
5-40	0.125″	10	91732A009	8.04	10	90296A020	6.87	91709A061	24.39	12	0.125″, 0.188″, 0.25″	91732A903	159.14
5-40	0.188″	10	91732A010	6.53	10	90296A022	7.95	91709A061	24.39	10	0.188″ (no drill bit)	91732A904	33.70
5-40	0.25″	10	91732A704	6.04	5	90296A023	4.03	91709A061	24.39	—	—	—	—
6-32	0.138″	10	91732A355	4.59	10	90296A106	6.26	91709A102	18.09	12	0.138″, 0.207″, 0.276″	91732A905	53.79
6-32	0.207″	10	91732A286	4.00	10	90296A107	6.62	91709A102	18.09	10	0.207″ (no drill bit)	91732A906	30.20
6-32	0.276″	10	91732A707	5.79	5	90296A108	4.03	91709A102	18.09	—	—	—	—
6-40	0.138″	10	91732A012	5.31	10	90296A024	6.87	91709A063	24.39	12	0.138″, 0.207″, 0.276″	91732A907	130.78
6-40	0.207″	10	91732A014	4.80	5	90296A189	3.91	91709A063	24.39	10	0.207″ (no drill bit)	91732A908	36.70
6-40	0.276″	10	91732A710	6.91	5	90296A190	3.73	91709A063	24.39	—	—	—	—
8-32	0.164″	10	91732A359	4.59	10	90296A111	6.26	91709A103	14.92	12	0.164″, 0.246″, 0.328″	91732A909	53.98
8-32	0.246″	10	91732A287	4.00	10	90296A112	6.62	91709A103	14.92	10	0.246″ (no drill bit)	91732A910	30.42
8-32	0.328″	10	91732A713	5.91	10	90296A551	7.83	91709A103	14.92	—	—	—	—
8-36	0.164″	10	91732A017	5.31	10	90296A028	6.87	91709A065	24.39	12	0.164″, 0.246″, 0.328″	91732A911	130.78
8-36	0.246″	10	91732A019	4.80	10	90296A030	7.23	91709A065	24.39	10	0.246″ (no drill bit)	91732A912	36.70
8-36	0.328″	10	91732A716	6.04	5	90296A193	4.50	91709A065	24.39	—	—	—	—
10-24	0.19″	10	91732A364	3.50	10	90296A116	6.26	91709A104	16.65	12	0.190″, 0.285″, 0.38″	91732A913	50.56
10-24	0.285″	10	91732A211	4.00	10	90296A117	6.62	91709A104	16.65	10	0.285″ (no drill bit)	91732A914	31.95
10-24	0.38″	10	91732A719	5.91	5	90296A118	4.03	91709A104	16.65	—	—	—	—
10-32	0.19″	10	91732A511	3.25	10	90296A201	6.26	91709A151	13.53	12	0.190″, 0.285″, 0.38″	91732A915	56.48
10-32	0.285″	10	91732A231	4.10	10	90296A202	6.62	91709A151	13.53	10	0.285″ (no drill bit)	91732A916	35.30
10-32	0.38″	10	91732A725	5.91	10	90296A554	7.58	91709A151	13.53	—	—	—	—
12-24	0.216″	10	91732A021	5.31	10	90296A032	11.00	91709A067	26.71	12	0.216″, 0.324″, 0.432″	91732A917	62.61
12-24	0.324″	10	91732A023	4.80	10	90296A034	13.08	91709A067	26.71	10	0.324″ (no drill bit)	91732A918	32.22
12-24	0.432″	10	91732A731	6.04	—	—	—	91709A067	26.71	—	—	—	—
1/4″-20	0.25″	10	91732A368	3.50	10	90296A121	6.26	91709A105	13.96	12	0.250″, 0.375″, 0.5″	91732A921	46.93
1/4″-20	0.375″	10	91732A212	4.00	10	90296A122	6.62	91709A105	13.96	10	0.375″ (no drill bit)	91732A922	32.63
1/4″-20	0.5″	10	91732A734	5.91	10	90296A557	7.83	91709A105	13.96	—	—	—	—
1/4″-28	0.25″	10	91732A515	4.69	10	90296A206	6.26	91709A152	17.18	12	0.250″, 0.375″, 0.5″	91732A923	58.09
1/4″-28	0.375″	10	91732A232	4.10	10	90296A207	6.62	91709A152	17.18	10	0.375″ (no drill bit)	91732A924	35.64
1/4″-28	0.5″	10	91732A737	6.04	5	90296A208	4.03	91709A152	17.18	—	—	—	—
5/16″-18	0.312″	10	91732A372	4.58	10	90296A126	6.99	91709A106	15.00	12	0.312″, 0.469″, 0.625″	91732A925	49.74
5/16″-18	0.469″	10	91732A213	5.50	10	90296A127	8.56	91709A106	15.00	10	0.469″ (no drill bit)	91732A926	34.89
5/16″-18	0.625″	10	91732A740	8.20	1	90296A128	.93	91709A106	15.00	—	—	—	—
5/16″-24	0.312″	10	91732A519	5.20	10	90296A211	7.36	91709A153	18.48	12	0.312″, 0.469″, 0.625″	91732A927	60.24
5/16″-24	0.469″	10	91732A233	5.90	10	90296A212	8.67	91709A153	18.48	10	0.469″ (no drill bit)	91732A928	36.60

(Continued on following page)

18-8 Stainless Steel Helical Inserts *(Continued from previous page)*

Inch Inserts (Cont.)

Internal Thread Size	Insert Length	INSERTS AND INSERT TAPS: Standard Inserts Pkg. Qty.	Standard Inserts Pkg.	Screw-Lock Inserts Pkg. Qty.	Screw-Lock Inserts Pkg.	Insert Taps Each	REPAIR KITS: Qty. Per Lg.	Length(s)	Kit
5/16″-24	0.625″	10	91732A743	$8.33	1	90296A213	$0.93	91709A153	$18.48	—	—	—	—
3/8″-16	0.375″	10	91732A376	6.02	10	90296A131	8.31	91709A107	18.84	6	0.375″, 0.562″, 0.75″	91732A929	$46.92
3/8″-16	0.562″	10	91732A214	6.20	5	90296A132	5.25	91709A107	18.84	10	0.562″ (no drill bit)	91732A930	38.24
3/8″-16	0.75″	5	91732A746	5.42	1	90296A133	1.05	91709A107	18.84	—	—	—	—
3/8″-24	0.375″	10	91732A524	6.02	5	90296A216	4.78	91709A154	22.91	6	0.375″, 0.562″, 0.75″	91732A931	63.45
3/8″-24	0.562″	10	91732A234	6.20	5	90296A217	5.48	91709A154	22.91	10	0.562″ (no drill bit)	91732A932	40.33
3/8″-24	0.75″	5	91732A749	5.91	1	90296A218	1.05	91709A154	22.91	—	—	—	—
7/16″-14	0.438″	10	91732A381	6.51	5	90296A136	5.66	91709A108	29.22	6	0.438″, 0.656″, 0.875″	91732A933	58.62
7/16″-14	0.656″	10	91732A215	7.30	5	90296A137	7.19	91709A108	29.22	5	0.656″ (no drill bit)	91732A934	39.95
7/16″-14	0.875″	5	91732A752	6.98	1	90296A138	1.43	91709A108	29.22	—	—	—	—
7/16″-20	0.438″	10	91732A528	7.35	5	90296A221	5.66	91709A155	27.53	6	0.438″, 0.656″, 0.875″	91732A935	66.70
7/16″-20	0.656″	10	91732A235	7.40	5	90296A222	7.11	91709A155	27.53	5	0.656″ (no drill bit)	91732A936	42.05
7/16″-20	0.875″	5	91732A755	7.27	1	90296A223	1.22	91709A155	27.53	—	—	—	—
1/2″-13	0.5″	10	91732A385	7.82	5	90296A141	5.66	91709A109	26.08	6	0.500″, 0.750″, 1″	91732A937	68.32
1/2″-13	0.75″	5	91732A216	5.30	5	90296A142	8.39	91709A109	26.08	5	0.750″ (no drill bit)	91732A938	47.49
1/2″-13	1″	5	91732A815	9.18	1	90296A143	1.65	91709A109	26.08	—	—	—	—
1/2″-20	0.5″	10	91732A533	7.82	5	90296A226	6.33	91709A156	30.99	6	0.5″, 0.75″, 1″	91732A939	91.46
1/2″-20	0.75″	5	91732A236	5.30	5	90296A227	9.03	91709A156	30.99	5	0.750″ (no drill bit)	91732A940	49.57
1/2″-20	1″	5	91732A758	10.27	1	90296A228	1.65	91709A156	30.99	—	—	—	—
9/16″-12	0.562″	5	91732A389	8.72	1	90296A140	2.35	91709A111	48.41	—	—	—	—
9/16″-12	0.844″	5	91732A217	10.24	1	90296A147	3.59	91709A111	48.41	6	0.844″	91732A317	115.36
9/16″-18	0.562″	5	91732A537	8.50	1	90296A231	2.88	91709A157	48.41	—	—	—	—
9/16″-18	0.844″	5	91732A237	10.25	1	90296A232	3.59	91709A157	48.41	6	0.844″	91732A337	124.04
5/8″-11	0.625″	5	91732A394	9.03	1	90296A151	3.82	91709A112	48.92	—	—	—	—
5/8″-11	0.938″	1	91732A218	3.36	1	90296A152	4.73	91709A112	48.92	6	0.938″	91732A018	98.70
5/8″-18	0.625″	1	91732A541	2.25	1	90296A236	3.91	91709A158	55.73	—	—	—	—
5/8″-18	0.938″	1	91732A238	3.36	1	90296A237	4.96	91709A158	55.73	6	0.938″	91732A038	130.41
3/4″-10	0.75″	1	91732A398	3.84	1	90296A156	5.03	91709A113	60.09	—	—	—	—
3/4″-10	1.125″	1	91732A219	3.80	1	90296A157	6.72	91709A113	60.09	4	1.125″	91732A319	120.31
3/4″-16	0.75″	1	91732A545	3.07	1	90296A241	5.03	91709A159	68.40	—	—	—	—
3/4″-16	1.125″	1	91732A239	4.94	1	90296A242	6.72	91709A159	68.40	4	1.125″	91732A339	164.03
7/8″-9	0.875″	1	91732A403	4.29	1	90296A163	4.86	91709A114	85.81	—	—	—	—
7/8″-9	1.312″	1	91732A220	6.76	1	90296A162	9.01	91709A114	85.81	6	1.312″	91732A320	187.98
7/8″-14	0.875″	1	91732A549	4.28	1	90296A248	4.86	91709A161	85.49	—	—	—	—
7/8″-14	1.312″	1	91732A240	6.82	1	90296A247	9.01	91709A161	85.49	6	1.312″	91732A340	265.19
1″-8	1″	1	91732A407	5.42	1	90296A166	9.01	91709A115	121.74	—	—	—	—
1″-8	1.5″	1	91732A221	8.71	1	90296A167	11.58	91709A115	121.74	6	1.5″	91732A321	277.77
1″-12	1″	1	91732A029	6.82	1	90296A040	8.72	91709A073	102.98	—	—	—	—
1″-12	1.5″	1	91732A030	8.77	1	90296A042	11.33	91709A073	102.98	6	1.5″	91732A123	423.49
1″-14	1″	1	91732A025	6.82	1	90296A037	6.03	91709A071	102.98	—	—	—	—
1″-14	1.5″	1	91732A027	8.96	1	90296A038	12.29	91709A071	102.98	6	1.5″	91732A121	369.46
1 1/8″-7	1.125″	1	91732A141	13.50	—	—	—	91709A116	163.11	—	—	—	—
1 1/8″-7	1.688″	1	91732A143	16.03	—	—	—	91709A116	163.11	5	1.688″	91732A322	327.15
1 1/8″-12	1.125″	1	91732A031	13.50	1	90296A044	17.45	91709A075	143.79	—	—	—	—
1 1/8″-12	1.688″	1	91732A034	16.03	—	—	—	91709A075	143.79	5	1.688″	91732A125	485.57
1 1/4″-7	1.25″	1	91732A032	14.69	—	—	—	91709A117	199.74	—	—	—	—
1 1/4″-7	1.875″	1	91732A037	17.96	1	90296A050	24.98	91709A117	199.74	4	1.875″	91732A323	360.14
1 1/4″-8	1.875″	1	92335A111	9.17	—	—	—	92335A311	169.43	—	—	—	—
1 1/4″-12	1.25″	1	91732A039	14.69	—	—	—	91709A077	138.16	—	—	—	—
1 1/4″-12	1.875″	1	91732A041	17.96	—	—	—	91709A077	138.16	4	1.875″	91732A129	557.20
1 1/2″-6	1.5″	1	91732A050	18.73	1	90296A064	24.12	91709A119	263.49	—	—	—	—
1 1/2″-6	2.25″	1	91732A052	24.18	—	—	—	91709A119	263.49	4	2.25″	91732A325	444.21
1 1/2″-8	2.25″	1	92335A115	16.68	—	—	—	92335A315	199.74	—	—	—	—
1 1/2″-12	2.25″	1	91732A054	24.18	—	—	—	91709A083	243.20	4	2.25″	91732A137	658.98
1 3/4″-8	2.625″	1	92335A119	24.75	—	—	—	92335A319	247.57	—	—	—	—
***Left-Hand Threaded—**Repair kits do not include a drill bit.*													
1/4″-20	0.375″	5	92090A111	27.50	—	—	—	92090A311	38.57	6	0.375″	92090A627	79.80
1/4″-28	0.375″	5	92090A115	27.50	—	—	—	92090A315	38.57	6	0.375″	92090A631	79.80
5/16″-18	0.469″	1	92090A121	5.42	—	—	—	92090A321	41.29	6	0.469″	92090A633	84.37
5/16″-24	0.469″	1	92090A123	5.42	—	—	—	92090A323	41.29	6	0.469″	92090A635	87.74
3/8″-16	0.562″	5	92090A127	28.33	—	—	—	92090A327	47.57	6	0.562″	92090A639	92.59
3/8″-24	0.562″	5	92090A131	28.33	—	—	—	92090A331	47.57	6	0.562″	92090A643	87.74
1/2″-13	0.75″	1	92090A143	5.83	—	—	—	92090A343	56.43	4	0.750″	92090A647	105.84
1/2″-20	0.75″	1	92090A147	5.83	—	—	—	92090A347	56.43	4	0.750″	92090A651	105.84
5/8″-11	0.938″	1	92090A151	5.83	—	—	—	92090A351	75.00	2	0.938″	92090A655	116.16
5/8″-18	0.938″	1	92090A155	5.83	—	—	—	92090A355	75.00	2	0.938″	92090A659	116.16
3/4″-10	1.125″	1	92090A159	8.17	—	—	—	92090A359	87.14	2	1.125″	92090A663	150.25
NPT (National Pipe Taper)													
1/8″-27	0.273″	5	91733A401	8.07	—	—	—	91711A251	31.06	12	0.273″	91733A421	169.00
1/4″-18	0.394″	5	91733A402	11.21	—	—	—	91711A252	35.96	12	0.394″	91733A422	228.37
3/8″-18	0.407″	1	91733A403	3.48	—	—	—	91711A253	67.29	10	0.407″	91733A423	292.75
1/2″-14	0.534″	1	91733A404	4.58	—	—	—	91711A254	88.26	10	0.534″	91733A424	353.04

Metric Inserts

Internal Thread Size	Pitch, mm	Insert Length, mm	INSERTS AND INSERT TAPS: Standard Inserts Pkg. Qty.	Standard Inserts Pkg.	Screw-Lock Inserts Pkg. Qty.	Screw-Lock Inserts Pkg.	Insert Taps Each	REPAIR KITS: Qty. Per Lg.	Length(s) Included, mm	Kit
M2.5	0.45	2.5	10	91732A764	$5.66	10	90296A401	$4.95	91709A678	$19.74	—	—	—	—
M2.5	0.45	3.8	10	91732A767	4.40	10	90296A402	5.25	91709A678	19.74	10	3.8 (no drill bit)	91732A873	$58.40
M2.5	0.45	5	10	91732A770	5.90	10	90296A403	6.25	91709A678	19.74	—	—	—	—
M3	0.5	3	10	91732A645	7.22	10	90296A405	7.59	91709A355	20.73	12	3, 4.5, 6	91732A941	116.82
M3	0.5	4.5	10	91732A647	6.30	10	90296A406	8.07	91709A355	20.73	10	4.5 (no drill bit)	91732A942	51.56

(Continued on following page)

18-8 Stainless Steel Helical Inserts *(Continued from previous page)*

Metric Inserts (Cont.)

Internal Thread Size	Pitch, mm	Insert Lg., mm	INSERTS AND INSERT TAPS: Standard Inserts Pkg. Qty.	Standard Inserts Pkg.	Screw-Lock Inserts Pkg. Qty.	Screw-Lock Inserts Pkg.	Insert Taps Each	REPAIR KITS: Qty. Per Lg.	Length(s) Included, mm	Kit
M3	0.5	6	10 91732A773	$7.94	10 90296A404	$5.84	91709A355 $20.73	—	—	—
M4	0.7	4	10 91732A649	6.04	10 90296A407	7.59	91709A359 20.73	6	4, 6, 8	91732A943 $65.01
M4	0.7	6	10 91732A656	4.40	10 90296A409	8.07	91709A359 20.73	10	6 (no drill bit)	91732A944 35.92
M4	0.7	8	10 91732A776	5.92	10 90296A410	5.84	91709A359 20.73	—	—	—
M5	0.8	5	10 91732A631	4.69	10 90296A301	6.97	91709A201 16.65	6	5, 7.5, 10	91732A945 54.67
M5	0.8	7.5	10 91732A261	4.10	10 90296A302	7.24	91709A201 16.65	10	7.5 (no drill bit)	91732A946 35.51
M5	0.8	10	10 91732A779	5.91	10 90296A303	5.16	91709A201 16.65	—	—	—
M6	1	6	10 91732A635	3.49	10 90296A306	6.86	91709A202 13.96	6	6, 9, 12	91732A947 43.76
M6	1	9	10 91732A262	4.10	10 90296A307	6.40	91709A202 13.96	10	9 (no drill bit)	91732A948 35.86
M6	1	12	10 91732A782	5.67	10 90296A308	5.16	91709A202 13.96	—	—	—
M7	1	7	10 91732A639	9.70	10 90296A311	7.60	91709A203 18.48	6	7, 10.5, 14	91732A949 56.70
M7	1	10.5	10 91732A263	5.80	10 90296A312	10.18	91709A203 18.48	10	10.5 (no drill bit)	91732A950 36.84
M7	1	14	10 91732A785	10.25	5 90296A313	3.90	91709A203 18.48	—	—	—
M8	1	8	10 91732A791	6.04	5 90296A314	3.48	91709A650 21.27	—	—	—
M8	1	12	10 91732A794	5.70	5 90296A315	6.33	91709A650 21.27	10	12 (no drill bit)	91732A820 35.11
M8	1	16	10 91732A797	7.79	5 90296A318●	4.13	91709A650 21.27	—	—	—
M8	1.25	8	10 91732A644	4.59	10 90296A316	7.60	91709A204 18.72	6	8, 12, 16	91732A951 44.46
M8	1.25	12	10 91732A264	5.50	10 90296A317	6.15	91709A204 18.72	10	12 (no drill bit)	91732A952 36.84
M8	1.25	16	10 91732A788	8.20	5 90296A319	5.00	91709A204 18.72	—	—	—
M10	1	10	10 91732A818	7.25	5 90296A323●	4.13	91709A672 26.40	6	10, 15, 20	91732A959 78.28
M10	1	15	5 91732A821	3.65	5 90296A324	4.63	91709A672 26.40	10	15 (no drill bit)	91732A962 52.40
M10	1	20	5 91732A823	6.17	5 90296A325	5.01	91709A672 26.40	—	—	—
M10	1.25	10	10 91732A803	7.22	5 90296A341●	3.75	91709A653 26.40	—	—	—
M10	1.25	15	10 91732A806	7.40	5 90296A343	3.85	91709A653 26.40	10	15 (no drill bit)	91732A822 43.25
M10	1.25	20	5 91732A809	5.96	5 90296A344●	5.63	91709A653 26.40	—	—	—
M10	1.5	10	10 91732A648	5.18	10 90296A321	8.08	91709A205 21.38	6	10, 15, 20	91732A955 58.25
M10	1.5	15	10 91732A265	5.80	5 90296A322	5.00	91709A205 21.38	10	15 (no drill bit)	91732A956 40.51
M10	1.5	20	5 91732A800	5.91	5 90296A345●	4.76	91709A205 21.38	—	—	—
M12	1.25	12	10 91732A827	4.16	5 90296A352●	5.00	91709A675 35.71	6	12, 18, 24	91732A963 103.00
M12	1.25	18	5 91732A830	5.80	1 90296A355	1.18	91709A675 35.71	5	18 (no drill bit)	91732A964 56.37
M12	1.25	24	10 91732A833	8.41	1 90296A358●	1.25	91709A675 35.71	—	—	—
M12	1.5	18	10 91732A301	7.79	1 90296A361	1.18	91709A656 35.72	5	18 (no drill bit)	91732A824 46.56
M12	1.75	12	10 91732A653	7.82	5 90296A326	6.84	91709A206 25.04	6	12, 18, 24	91732A961 60.36
M12	1.75	18	5 91732A266	5.30	5 90296A327	7.82	91709A206 25.04	5	18 (no drill bit)	91732A967 49.86
M12	1.75	24	5 91732A812	9.47	1 90296A364	1.83	91709A206 25.04	—	—	—
M14	1.5	21	5 91732A303	7.57	1 90296A414	2.88	91709A659 48.55	5	21 (no drill bit)	91732A826 65.15
M14	2	14	5 91732A658	10.25	1 90296A412●	1.23	91709A368 68.76	—	—	—
M14	2	21	1 91732A671	2.79	1 90296A416	2.13	91709A368 68.76	12	21	91732A068 147.34
M16	2	16	1 91732A673	2.95	1 90296A415	4.00	91709A371 144.75	—	—	—
M16	2	24	1 91732A675	3.69	1 90296A417	5.01	91709A371 144.75	6	24	91732A071 164.45
M18	2.5	18	1 91732A677	4.06	1 90296A419	5.32	91709A373 191.11	—	—	—
M18	2.5	27	1 91732A679	5.16	1 90296A422●	2.88	91709A373 191.11	6	27	91732A073 194.99
M20	2.5	20	1 91732A681	4.06	1 90296A427●	2.90	91709A375 267.07	—	—	—
M20	2.5	30	1 91732A683	5.16	1 90296A425	7.02	91709A375 267.07	4	30	91732A075 215.45
M24	3	36	1 92450A125	5.60	1 90296A431	9.01	92450A325 102.00	5	36 (no drill bit)	91732A969 204.00
M30	3.5	45	1 92450A145	8.03	1 90296A436	9.21	92450A345 118.86	5	45 (no drill bit)	91732A972 255.66
M36	4	54	1 92450A161	9.84	—	—	92450A361 178.21	4	54 (no drill bit)	91732A975 288.30

● Dyed red for easy identification.

Antiseizing Helical Inserts

There's no need to lubricate these gall-resistant inserts. Galling, also called seizing, is when two metals stick together and cannot be easily loosened. Inserts reduce friction to minimize thread wear with no additional plating or coating required. They are nonmagnetic and made of superior corrosion-resistant 18-8 stainless steel (also known as Nitronic 60). Compatible with stainless steel screws. Rockwell hardness is C43-C50. Tensile strength is approximately 200,000 psi.

Standard inserts provide a smooth free-running thread.

Screw-lock inserts put a self-locking pressure on the bolt so you don't need other threadlocking devices. They resist impact and vibration.

Inch Inserts

Internal Thread Size	Insert Lg.	Max. OD	Drill Size	Standard Inserts Pkg. Qty.	Standard Inserts Pkg.	Screw-Lock Inserts Pkg. Qty.	Screw-Lock Inserts Pkg.	Insert Taps Each
2-56	0.086″	0.119″	#41	5 96246A004	$6.65	5 96246A503	$7.97	91709A098 $17.57
2-56	0.129″	0.119″	#41	5 96246A018	6.99	5 96246A517	8.44	91709A098 17.57
4-40	0.112″	0.159″	#31	5 96246A032	6.65	5 96246A545	8.72	91709A101 15.66
4-40	0.168″	0.159″	#31	5 96246A046	6.99	5 96246A559	9.15	91709A101 15.66
4-40	0.224″	0.159″	#31	5 96246A060	7.40	5 96246A573	9.68	91709A101 15.66
6-32	0.138″	0.193″	#25	5 96246A074	6.65	5 96246A587	8.72	91709A102 18.09
6-32	0.207″	0.193″	#25	5 96246A088	6.99	5 96246A601	9.15	91709A102 18.09
6-32	0.276″	0.193″	#25	5 96246A102	7.40	—	—	91709A102 18.09
8-32	0.164″	0.220″	#16	5 96246A116	6.65	5 96246A629	8.72	91709A103 14.92
8-32	0.246″	0.220″	#16	5 96246A130	6.99	5 96246A643	9.15	91709A103 14.92
8-32	0.328″	0.220″	#16	5 96246A144	7.40	5 96246A657	9.68	91709A103 14.92
10-24	0.190″	0.259″	#5	5 96246A158	7.12	5 96246A671	8.72	91709A104 16.65
10-24	0.285″	0.259″	#5	5 96246A172	6.99	5 96246A685	9.15	91709A104 16.65
10-24	0.380″	0.259″	#5	5 96246A186	7.40	—	—	91709A104 16.65
10-32	0.190″	0.256″	13/64″	5 96246A200	6.65	5 96246A699	8.72	91709A151 13.53
10-32	0.285″	0.256″	13/64″	5 96246A214	6.99	5 96246A713	9.15	91709A151 13.53
10-32	0.380″	0.256″	13/64″	5 96246A228	7.40	—	—	91709A151 13.53
1/4″-20	0.250″	0.330″	H	5 96246A242	6.65	5 96246A727	8.72	91709A105 13.96
1/4″-20	0.375″	0.330″	H	5 96246A256	6.99	5 96246A741	9.15	91709A105 13.96
1/4″-20	0.500″	0.330″	H	5 96246A270	7.40	5 96246A755	9.68	91709A105 13.96
5/16″-18	0.312″	0.400″	Q	5 96246A326	7.40	5 96246A769	9.68	91709A106 15.00
5/16″-18	0.469″	0.400″	Q	5 96246A340	8.45	5 96246A783	10.36	91709A106 15.00
5/16″-18	0.625″	0.400″	Q	5 96246A354	10.23	5 96246A797	13.21	91709A106 15.00

Metric Standard Inserts

Internal Thread Size	Pitch, mm	Insert Lg., mm	Max. OD, mm	Drill Size, mm	Inserts Pkg. Qty.	Inserts Pkg.	Insert Taps Each
M2.5	0.45	2.5	3.70	2.65	5 93914A009	$6.65	91709A678 $19.74
M2.5	0.45	3.8	3.70	2.65	5 93914A026	6.99	91709A678 19.74
M2.5	0.45	5.0	3.70	2.65	5 93914A043	7.68	91709A678 19.74
M3	0.50	3.0	4.35	3.20	5 93914A060	8.71	91709A355 20.73

(Continued on following page)

Antiseizing Helical Inserts *(Continued from previous page)*

Metric Standard Inserts (Cont.)—Pkg. quantity is 5.

Internal Thread Size	Pitch, mm	Insert Lg., mm	Max. OD, mm	Drill Size, mm	Inserts	Pkg.	Insert Taps	Each
M3	0.50	4.5	4.35	3.20	93914A077	$9.14	91709A355	$20.73
M3	0.50	6.0	4.35	3.20	93914A094	9.67	91709A355	20.73
M4	0.70	4.0	5.60	4.25	93914A111	6.65	91709A359	20.73
M4	0.70	6.0	5.60	4.25	93914A128	6.99	91709A359	20.73
M4	0.70	8.0	5.60	4.25	93914A145	7.40	91709A359	20.73
M5	0.80	5.0	6.80	5.30	93914A162	6.65	91709A201	16.65
M5	0.80	7.5	6.80	5.30	93914A179	6.99	91709A201	16.65
M5	0.80	10.0	6.80	5.30	93914A196	$7.40	91709A201	$16.65
M6	1.00	6.0	7.95	6.30	93914A213	6.65	91709A202	13.96
M6	1.00	9.0	7.95	6.30	93914A230	6.99	91709A202	13.96
M6	1.00	12.0	7.95	6.30	93914A247	7.40	91709A202	13.96
M8	1.25	8.0	10.35	8.40	93914A264	7.40	91709A650	21.27
M8	1.25	12.0	10.35	8.40	93914A281	8.45	91709A650	21.27
M8	1.25	16.0	10.35	8.40	93914A298	10.23	91709A204	18.72

Helical Insert Installation Tools

Tools are steel, unless noted. For use with standard and screw-lock inserts. Not for use with tangless inserts.

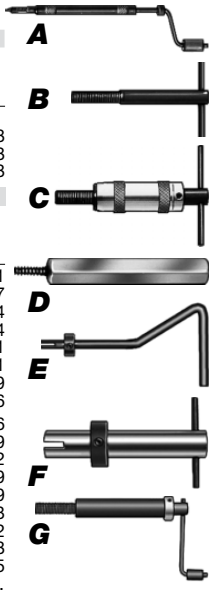

Inch

Internal Thread Size	Style		
2-56	D	90261A140■	$47.59
3-48	D	90261A150■	77.52
3-56	A	90261A101	106.61
4-40	A	90261A151	86.80
4-48	A	90261A102	89.77
5-40	A	90261A104	107.60
6-32	A	90261A152	86.80
6-40	A	90261A106	92.52
8-32	A	90261A153	87.79
10-24	A	90261A154♠	82.69
10-32	A	90261A161♠	82.41
12-24	A	90261A110♠	93.24
1/4″-20	A	90261A155♠	82.41
1/4″-28	A	90261A162♠	82.68
5/16″-18	A	90261A156♠	95.74
5/16″-24	A	90261A163♠	111.07
3/8″-16	A	90261A157♠	99.58
3/8″-24	A	90261A164♠	111.07
7/16″-14	A	90261A158♠	111.07
7/16″-20	A	90261A165♠	111.07
1/2″-13	A	90261A159♠	107.25
1/2″-20	A	90261A166♠	111.07
9/16″-12	B	90261A171	43.69
9/16″-18	C	90261A112●	112.08
5/8″-11	B	90261A172	45.34

Inch (Cont.)

Internal Thread Size	Style		
5/8″-18	C	90261A182●	$124.99
3/4″-10	B	90261A173	49.64
3/4″-16	C	90261A183●	132.99
7/8″-9	B	90261A174	49.64
7/8″-14	C	90261A114●	141.78
1″-8	B	90261A175	49.64
1 1/4″-7	B	90261A124	86.76
Left-Hand Threaded			
1/4″-20	E	92090A511	16.38
1/4″-28	E	92090A515	16.38
5/16″-18	E	92090A519	16.38
5/16-24	E	92090A523	16.88
3/8″-16	E	92090A527	16.88
3/8″-24	E	92090A531	17.50
1/2″-13	F	92090A543	18.75
1/2″-20	F	92090A547	18.67
5/8″-11	F	92090A551	18.67
5/8″-18	F	92090A555	25.11
3/4″-10	F	92090A559	22.60
NPT (National Pipe Taper Thread)			
1/8″-27	A	90261A201	104.84
1/4″-18	A	90261A202	111.20
3/8″-18	C	90261A203	132.73
1/2″-14	C	90261A204	139.99

Inch (Cont.)

Internal Thread Size	Style		
8-Pitch			
1 1/4″-8	F	92335A511	$81.88
1 1/2″-8	F	92335A515	81.88
1 3/4″-8	F	92335A519	81.88

Metric

Internal Thread Size	Pitch, mm	Style		
M2	0.4	C	90261A185★	$85.51
M2.5	0.45	A	90261A187♠	84.37
M3	0.5	A	90261A188♠	92.44
M4	0.7	A	90261A190♠	92.44
M5	0.8	A	90261A191♠	71.91
M6	1	A	90261A192♠	71.91
M7	1	A	90261A193♠	96.59
M8	1.25	A	90261A194♠	95.76
M10	1.25	A	90261A197	132.66
M10	1.5	A	90261A195♠	96.59
M12	1.75	A	90261A196♠	89.82
M14	2	G	90261A198	116.29
M16	2	G	90261A208	126.89
M20	2.5	C	90261A212	145.23
M24	3	F	92450A523	17.92
M30	3.5	F	92450A543	23.88
M36	4	F	92450A555	26.75

■ Has an aluminum handle. ♠ Has a plastic body. ● Has an aluminum and steel body. ★ Does not have a T-handle.

Economy Installation Tools

Mandrels—For inserts that don't require a reduction in diameter during installation. Made of steel.

Mandrels with Winder—Reduce the insert's diameter for easier installation.

Internal Thread Size		
Mandrels		
4-40	93060A001	$23.66
6-32	93060A003	23.66
8-32	93060A005	23.66
10-24	93060A007	23.66
1/4″-20	93060A009	22.14
5/16″-18	93060A011	22.14
3/8″-16	93060A013	22.14
7/16″-14	93060A015	22.14
1/2″-13	93060A017	22.14
Mandrels (Cont.)		
5/8″-11	93060A021	$34.18
3/4″-10	93060A023	34.18
Mandrels with Winder		
10-32	93060A037	36.57
1/4″-28	93060A039	36.57
5/16″-24	93060A041	36.57
3/8″-24	93060A043	36.57
7/16″-20	93060A045	36.57
1/2″-20	93060A047	36.57
5/8″-18	93060A051	36.57
3/4″-16	93060A053	36.57

Internal Thread Size	Pitch, mm		
Metric Mandrels			
M8	1.25	93060A059	$21.29
M10	1.5	93060A061	21.29
M12	1.75	93060A063	21.29
Metric Mandrels with Winder			
M5	0.8	93060A055	$32.96
M6	1	93060A057	32.96

Helical Insert Extracting Tools

Just place the tip of the tool in the insert and strike a light blow to the tool's head. Then, turn the tool counterclockwise with pressure to extract the insert.

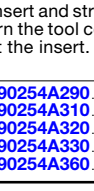

Internal Thread Size		
No. 2 and M2.2	90254A290	$29.68
No. 3 to No. 8 and M2.5 to M4	90254A310	31.21
No. 10 to 3/8″ and M5 to M10	90254A320	32.38
7/16″ to 1″ and M12 to M24	90254A330	36.75
1 1/8″ to 1 1/2″ and M27 to M39	90254A360	68.25

Tang Break-Off Tools

Tangs can interfere with bolts. Use these spring-loaded steel tools to strike a sharp, uniform blow against tangs for easy removal.

Internal Thread Size		
2-56, 3-48, 3-56	92955A101	$60.60
4-40, 4-48, 5-40	92955A103	60.60
6-32, 6-40	92955A105	60.60
8-32, 8-36	92955A107	60.60
10-24, 10-32, 12-24	92955A109	60.60
1/4″-20, 1/4″-28	92955A111	$60.60
5/16″-18	92955A113	97.89
5/16″-24	92955A121	97.89
3/8″-16	92955A115	97.89
3/8″-24	92955A123	97.89
1/2″-13	92955A119	97.89
1/2″-20	92955A127	94.15

Metric

Internal Thread Size	Pitch, mm		
M3	0.5	92955A155	$64.31
M4	0.7	92955A160	64.31
M5	0.8	92955A129	59.24
M6	1	92955A131	59.24
M8	1.25	92955A133	$97.89
M10	1.5	92955A135	97.89
M12	1.75	92955A137	94.15

Master Helical Insert Assortments

Each includes 18-8 stainless steel helical inserts, drill bit, tap, installation tool for each size, and instructions in a molded plastic case.

Coarse Thread—*54 Inserts.* Sizes: 1/4″-20×3/8″, 5/16″-18×15/32″, 3/8″-16×9/16″, 7/16″-14×21/32″, 1/2″-13×3/4″, and 5/8″-11×15/16″.

90285A121 ..... $424.27

Fine Thread—*60 Inserts.* Sizes: 10-32×0.285″, 1/4″-28×3/8″, 5/16″-24×15/32″, 3/8″-24×9/16″, 7/16″-20×21/32″, and 1/2″-20×3/4″.

90285A124 ..... $406.79

Miniature Thread—*144 Inserts and 144 Screw-Lock Inserts (12 each per size).* Sizes: 1-64×0.110″, 2-56×0.129″, 3-48×0.148″, 4-40×0.168″, 6-32×0.207″, and 8-32×0.246″.

90285A134 ..... $467.61

Metric Thread—*48 Inserts.* Sizes: M5×0.8 in 7.5 mm lg., M6×1 in 9 mm lg., M8×1.25 in 12 mm lg., and M10×1.5 in 15 mm lg.

90285A131 ..... $223.93

Spark Plug Repair Kits

Repair spark plug ports with this kit, which includes inserts, piloted reamer tap, installation tool, and instructions. Furnished in a molded plastic case unless otherwise noted.

30-Pc. M14×1.25 mm Helical Insert Assort.— Has 30 inserts, six each of 3/8″, 7/16″, 0.472″, 1/2″, and 3/4″ lengths.
91732A091 ..... $166.89

24-Pc. M18×1.5 mm Helical Insert Assort.— 24 inserts, 1/2″ long.
91732A055 ..... $186.12

3-Pc. M14×1.25 mm Solid-Style Insert Assort.— Has three inserts (one short reach, one normal reach, and one long reach). Use to repair gasket-seat and taper-seat spark plug ports. Does not include a case.
91732A095 ..... $50.99

18-Pc. M14×1.25 mm Solid Style Insert Assort.— Has 18 inserts (six short reach, six normal reach, and six long reach). Use to repair gasket-seat and taper-seat spark plug ports.
91732A097 ..... $75.03

Tangless Helical & Key-Locking Inserts

18-8 Stainless Steel Tangless Helical Inserts

INSERT DRIVING NOTCH

Installation Tool

Inserts have no tangs to break off, retrieve, or lose. Designed to replace tanged helical inserts (see pages 3282-3284), they have driving notches on each side to improve alignment and a bidirectional design so you don't have to worry about installing them upside down. Rockwell hardness is C43-C50; tensile strength is approximately 200,000 psi. Inserts meet National Aerospace Standard (NAS) 1130.

Standard inserts provide a smooth, free-running thread. ***Screw-lock inserts*** put a self-locking pressure on the bolt, so you don't need other threadlocking devices. They're impact and vibration resistant and are dyed red for easy identification. ***Insert taps*** are plug style and made of high-speed steel.

You will need special ***installation and removal tools*** (sold separately). Both tools have a hollow handle with a plastic cap for storing replacement tips. *Replacement tips* come with one installation or removal tip, two pins, and two springs, unless noted. **To Order:** Please specify internal thread size.

Internal Thread Size	Insert Lg.	Drill Size	Standard Inserts Pkg. Qty.	Standard Inserts Pkg.	Screw-Lock Inserts Pkg. Qty.	Screw-Lock Inserts Pkg.	Insert Taps Each
2-56	0.086″	#41	10	**91990A201**	$6.54	5	**91630A421**	$4.63	**91709A098**	$17.57
2-56	0.129″	#41	10	**91990A204**	7.18	5	**91630A424**	4.93	**91709A098**	17.57
2-56	0.172″	#41	10	**91990A207**	7.76	5	**91630A427**	5.28	**91709A098**	17.57
4-40	0.112″	#31	10	**91990A210**	6.54	5	**91630A430**	4.63	**91709A101**	15.66
4-40	0.168″	#31	10	**91990A213**	7.18	5	**91630A433**	4.93	**91709A101**	15.66
4-40	0.224″	#31	10	**91990A216**	7.76	5	**91630A436**	5.25	**91709A101**	15.66
6-32	0.138″	#25	10	**91990A219**	6.54	5	**91630A439**	4.63	**91709A102**	18.09
6-32	0.207″	#25	10	**91990A222**	7.18	5	**91630A442**	4.93	**91709A102**	18.09
6-32	0.276″	#25	10	**91990A225**	7.76	5	**91630A445**	5.59	**91709A102**	18.09
8-32	0.164″	#16	10	**91990A228**	6.97	5	**91630A448**	4.63	**91709A103**	14.92
8-32	0.246″	#16	10	**91990A231**	7.18	5	**91630A451**	4.93	**91709A103**	14.92
8-32	0.328″	#16	10	**91990A234**	7.76	5	**91630A454**	4.98	**91709A103**	14.92
10-24	0.190″	#5	10	**91990A237**	6.97	5	**91630A457**	4.67	**91709A104**	16.65
10-24	0.285″	#5	10	**91990A240**	7.43	5	**91630A460**	4.98	**91709A104**	16.65
10-24	0.380″	#5	10	**91990A243**	7.99	5	**91630A463**	5.28	**91709A104**	16.65
10-32	0.190″	13/64″	10	**91990A246**	6.97	5	**91630A466**	4.67	**91709A151**	13.53
10-32	0.285″	13/64″	10	**91990A249**	7.43	5	**91630A469**	4.98	**91709A151**	13.53
10-32	0.380″	13/64″	10	**91990A252**	7.99	5	**91630A472**	5.28	**91709A151**	13.53
1/4″-20	0.250″	H	10	**91990A255**	6.97	5	**91630A475**	4.67	**91709A105**	13.96
1/4″-20	0.375″	H	10	**91990A258**	7.43	5	**91630A478**	4.98	**91709A105**	13.96
1/4″-20	0.500″	H	10	**91990A261**	7.99	5	**91630A481**	5.28	**91709A105**	13.96

Installation and Removal Tools

Installation Tool	**91049A100**	Each	$270.42
Replacement Tip for Installation Tool●	**91049A200**	Each	$64.81
Removal Tool	**91049A400**	Each	$310.77
Replacement Tip for Removal Tool	**91049A500**	Each	$64.81

● Tip for 10-32 internal thread size does not come with pins or springs.

Key-Locking Threaded Inserts

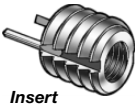

Insert

Installation Tool

Quickly and permanently repair stripped threads in stainless steel, aluminum, magnesium, and other metals. To install, screw in the insert until it is slightly below the surface, then hammer its locking keys into the material using the installation tools sold separately.

Inserts with 1/4″ internal thread size and smaller have two locking keys; 5/16″ and larger sizes have four locking keys. Inserts have a thread class of 2A for external threads and 2B for internal threads. Choose from 18-8 stainless steel and C1215 black-phosphate steel.

Thick-wall inserts, also known as heavy duty inserts, are the most common key-locking inserts.
Extra-thick-wall inserts, also known as extra heavy duty inserts, are 1/16″ to 1/8″ thicker than thick-wall inserts.
Thin-wall inserts, also known as lightweight inserts, are 1/16″ to 1/8″ thinner than thick-wall inserts.
Repair kits include inserts, an installation tool, and instructions.

Thick Wall—Inch

Internal Thread Size	External Thread/ Tap Size	Insert Length	Drill Size	Inserts	Each★	Installation Tools	Each	Repair Kits No. of Inserts	Repair Kits	Kit
18-8 Stainless Steel										
8-32	5/16″-18	5/16″	I	**91731A047**	$2.82	**92100A708**	$17.60	9	**91731A007**	$44.64
10-24	3/8″-16	5/16″	Q	**91731A051**	3.31	**92100A709**	17.59	9	**91731A011**	36.69
10-32	3/8″-16	5/16″	Q	**91731A049**	3.22	**92100A709**	17.59	9	**91731A009**	36.33
1/4″-20	7/16″-14	3/8″	X	**91731A052**	3.18	**92100A711**	11.42	8	**91731A012**	31.72
1/4″-28	7/16″-14	3/8″	X	**91731A064**	2.99	**92100A711**	11.42	8	**91731A026**	36.95
5/16″-18	1/2″-13	7/16″	29/64″	**91731A053**	4.71	**92100A715**	11.42	7	**91731A013**	39.93
5/16″-24	1/2″-13	7/16″	29/64″	**91731A071**	4.37	**92100A715**	11.42	7	**91731A027**	45.53
3/8″-16	9/16″-12	1/2″	33/64″	**91731A054**	5.67	**92100A717**	11.80	6	**91731A014**	41.88
3/8″-24	9/16″-12	1/2″	33/64″	**91731A065**	5.67	**92100A717**	11.80	6	**91731A025**	28.40
7/16″-14	5/8″-11	5/8″	37/64″	**91731A055**	9.00	**92100A721**	12.47	6	**91731A015**	58.33
7/16″-20	5/8″-11	5/8″	37/64″	**91731A066**	8.58	**92100A721**	12.47	6	**91731A031**	67.87
1/2″-13	3/4″-16	5/8″	45/64″	**91731A061**	10.71	**92100A723**	13.18	4	**91731A019**	43.51
1/2″-20	3/4″-16	5/8″	45/64″	**91731A022**	12.75	**92100A723**	13.18	4	**91731A048**	46.78
9/16″-12	3/4″-16	13/16″	45/64″	**91731A057**	11.25	**92100A725**	13.40	3	**91731A017**	42.90

(Continued on following page)

★Prices are 15% lower when you buy in multiples of 10.

Key-Locking Threaded Inserts *(Continued from previous page)*

Thick Wall—Inch (Cont.)

Internal Thread Size	External Thread/ Tap Size	Insert Length	Drill Size	Inserts	Each★	Installation Tools	Each	Repair Kits: No. of Inserts	Repair Kits: Kit	Kit
18-8 Stainless Steel (Cont.)										
9/16"-18	3/4"-16	13/16"	45/64"	91731A067	$11.27	92100A725	$13.40	3	91731A033	$49.74
5/8"-11	7/8"-14	7/8"	53/64"	91731A058	15.24	92100A731	14.54	3	91731A018	46.01
5/8"-18	7/8"-14	7/8"	53/64"	91731A068	12.07	92100A731	14.54	3	91731A070	52.78
3/4"-10	1 1/8"-12	1 1/8"	1 1/16"	91731A063	18.77	92100A735	18.00	3	91731A023	82.80
3/4"-16	1 1/8"-12	1 1/8"	1 1/16"	91731A069	18.80	92100A735	18.00	3	91731A035	93.60
7/8"-9	1 1/4"-12	1 1/4"	1 3/16"	91731A074	37.04	92100A739	18.45	3	91731A038	167.39
7/8"-14	1 1/4"-12	1 1/4"	1 3/16"	91731A079	37.04	92100A739	18.45	3	91731A041	167.27
1"-8	1 3/8"-12	1 3/8"	1 5/16"	91731A083	39.84	92100A744	23.90	2	91731A044	129.23
1"-12	1 3/8"-12	1 3/8"	1 5/16"	91731A088	39.84	92100A744	23.90	2	91731A037	129.11
Black-Phosphate Steel										
8-32	5/16"-18	5/16"	I	90245A069	2.30	92100A708	17.60	9	90245A049	36.63
10-24	3/8"-16	5/16"	Q	90245A031	1.32	92100A709	17.59	9	90245A011	29.04
10-32	3/8"-16	5/16"	Q	90245A071	1.32	92100A709	17.59	9	90245A051	28.96
1/4"-20	7/16"-14	3/8"	X	90245A032	1.37	92100A711	11.42	8	90245A012	21.29
1/4"-28	7/16"-14	3/8"	X	90245A072	1.37	92100A711	11.42	8	90245A052	21.23
5/16"-18	1/2"-13	7/16"	29/64"	90245A033	1.54	92100A715	11.42	7	90245A013	21.02
5/16"-24	1/2"-13	7/16"	29/64"	90245A073	1.54	92100A715	11.42	7	90245A053	20.94
3/8"-16	9/16"-12	1/2"	33/64"	90245A034	1.81	92100A717	11.80	6	90245A014	21.27
3/8"-24	9/16"-12	1/2"	33/64"	90245A074	1.81	92100A717	11.80	6	90245A054	21.22
7/16"-14	5/8"-11	5/8"	37/64"	90245A035	2.28	92100A721	12.47	6	90245A015	21.74
7/16"-20	5/8"-11	5/8"	37/64"	90245A075	2.39	92100A721	12.47	6	90245A055	24.24
1/2"-13	3/4"-16	5/8"	45/64"	90245A036	2.61	92100A723	13.18	4	90245A016	21.89
1/2"-20	3/4"-16	5/8"	45/64"	90245A076	2.61	92100A723	13.18	4	90245A056	22.09
9/16"-12	3/4"-16	13/16"	45/64"	90245A037	3.67	92100A725	13.40	3	90245A017	23.79
9/16"-18	3/4"-16	13/16"	45/64"	90245A077	3.67	92100A725	13.40	3	90245A057	23.71
5/8"-11	7/8"-14	7/8"	53/64"	90245A038	4.39	92100A731	14.54	3	90245A018	25.10
5/8"-18	7/8"-14	7/8"	53/64"	90245A078	4.39	92100A731	14.54	3	90245A058	27.06
3/4"-10	1 1/8"-12	1 1/8"	1 1/16"	90245A039	6.06	92100A735	18.00	3	90245A019	33.29
3/4"-16	1 1/8"-12	1 1/8"	1 1/16"	90245A079	6.16	92100A735	18.00	3	90245A059	35.83
7/8"-9	1 1/4"-12	1 1/4"	1 3/16"	90245A041	8.07	92100A739	18.45	3	90245A021	38.97
7/8"-14	1 1/4"-12	1 1/4"	1 3/16"	90245A081	8.15	92100A739	18.45	3	90245A061	42.05
1"-8	1 3/8"-12	1 3/8"	1 5/16"	90245A042	16.52	92100A744	23.90	2	90245A022	49.74
1"-12	1 3/8"-12	1 3/8"	1 5/16"	90245A082	16.52	92100A744	23.90	2	90245A062	53.27
1"-14	1 3/8"-12	1 3/8"	1 5/16"	90245A085	21.34	92100A744	23.90	2	90245A070	63.53
1 1/8"-7	1 1/2"-12	1 5/8"	1 7/16"	90245A091	50.86	92100A749	87.98	2	90245A063	153.38
1 1/8"-12	1 1/2"-12	1 5/8"	1 7/16"	90245A096	50.86	92100A749	87.98	2	90245A064	153.38
1 1/4"-7	1 5/8"-12	1 13/16"	1 9/16"	90245A101	62.29	92100A754	95.42	2	90245A065	179.83
1 1/4"-12	1 5/8"-12	1 13/16"	1 9/16"	90245A104	62.29	92100A754	95.42	2	90245A066	178.50
1 1/2"-6	1 7/8"-12	2"	1 13/16"	90245A108	116.14	92100A758	112.36	2	90245A067	298.74
1 1/2"-12	1 7/8"-12	2"	1 13/16"	90245A113	116.14	92100A758	112.36	2	90245A068	298.74

Extra-Thick-Wall—Black-Phosphate Steel—Inch

Internal Thread Size	External Thread/ Tap Size	Insert Length	Drill Size	Inserts	Each★	Installation Tools	Each	Repair Kits: No. of Inserts	Repair Kits: Kit	Kit
1/4"-20	1/2"-13	3/8"	29/64"	93302A100	$18.75	93302A210	$47.30	8	93302A410	$195.40
5/16"-18	9/16"-12	7/16"	33/64"	93302A120	19.55	93302A220	47.30	7	93302A420	183.14
3/8"-16	5/8"-11	1/2"	37/64"	93302A140	19.89	93302A240	42.90	6	93302A430	160.96
1/2"-13	7/8"-14	11/16"	53/64"	93302A160	24.09	93302A260	42.90	4	93302A440	136.90
5/8"-11	1"-12	7/8"	15/16"	93302A170	29.43	93302A270	58.60	3	93302A450	141.66
3/4"-10	1 1/4"-12	1 1/8"	1 3/16"	93302A180	32.16	93302A280	59.20	3	93302A460	150.24

Thin Wall—Inch

Internal Thread Size	External Thread/ Tap Size	Insert Length	Drill Size	18-8 Stainless Steel Inserts	Each★	Black-Phosphate Steel Inserts	Each★	Installation Tools	Each	REPAIR KITS: No. of Inserts	For 18-8 Stainless Steel	Kit	For Black-Phosphate Steel	Kit
10-24	5/16"-18	5/16"	I	93340A405	$2.93	92070A110	$1.64	93875A001	$17.77	9	93340A607	$48.79	92070A306	$34.90
10-32	5/16"-18	5/16"	I	93340A305	2.93	92070A240	1.64	93875A001	17.77	9	93340A618	48.91	92070A312	35.02
1/4"-20	3/8"-16	3/8"	Q	93340A410	3.16	92070A115	1.70	93875A010	14.20	8	93340A629	46.98	92070A319	27.78
1/4"-28	3/8"-16	3/8"	Q	93340A310	3.16	92070A245	1.70	93875A010	14.20	8	93340A640	46.98	92070A325	27.78
5/16"-18	7/16"-14	7/16"	X	93340A415	4.85	92070A120	1.97	93875A015	11.60	7	93340A651	56.40	92070A331	27.49
5/16"-24	7/16"-14	7/16"	X	93340A315	4.84	92070A250	1.97	93875A015	11.60	7	93340A662	56.40	92070A337	27.46
3/8"-16	1/2"-13	1/2"	29/64"	93340A420	6.19	92070A125	2.23	93875A020	15.02	6	93340A673	65.70	92070A344	27.78
3/8"-24	1/2"-13	1/2"	29/64"	93340A320	6.19	92070A255	2.23	93875A020	15.02	6	93340A684	71.26	92070A350	27.78
7/16"-14	9/16"-12	9/16"	33/64"	93340A425	10.60	92070A130	2.78	93875A025	12.34	6	93340A695	90.22	92070A357	32.12
7/16"-20	9/16"-12	9/16"	33/64"	93340A325	10.60	92070A260	2.78	93875A025	12.34	6	93340A706	90.46	92070A363	32.12
1/2"-13	5/8"-11	5/8"	37/64"	93340A330	10.48	92070A135	3.18	93875A030	12.79	4	93340A717	62.32	92070A370	28.62
1/2"-20	5/8"-11	5/8"	37/64"	93340A430	11.57	92070A265	3.17	93875A030	12.79	4	93340A728	64.86	92070A376	28.62

Insert Sets

Sets contain various size inserts (in your choice of 18-8 stainless steel or C1215 black-phosphate steel), an installation tool, and instructions packed in a molded plastic case. Internal thread sizes are shown.

Inch Coarse-Thread Thick Wall—*77 Inserts.* Sizes: 20 ea. 1/4"-20; 15 ea. 5/16"-18; 10 ea. 3/8"-16, 7/16"-14; 6 ea. 1/2"-13; 5 ea. 9/16"-12; 3 ea. 5/8"-11, 3/4"-10, 7/8"-9; 2 ea. 1"-8.

18-8 Stainless Steel ..... 90284A411 **Set** $654.55
Black-Phosphate Steel ..... 90284A211 **Set** $305.59

Inch Fine-Thread Thick Wall—*77 Inserts.* Sizes: 20 ea. 1/4"-28; 15 ea. 5/16"-24; 10 ea. 3/8"-24, 7/16"-20; 6 ea. 1/2"-20; 5 ea. 9/16"-18; 3 ea. 5/8"-18, 3/4"-16, 7/8"-14; 2 ea. 1"-12.

18-8 Stainless Steel ..... 90284A415 **Set** $654.55
Black-Phosphate Steel ..... 90284A215 **Set** $305.59

Inch Fine-Thread Thin Wall—*81 Inserts.* Sizes: 20 ea. 10-32, 1/4"-28; 15 ea. 5/16"-24; 10 ea. 3/8"-24, 7/16"-20; 6 ea. 1/2"-20.

18-8 Stainless Steel ..... 90284A500 **Set** $433.64
Black-Phosphate Steel ..... 90284A300 **Set** $194.08

Inch Coarse-Thread Thin Wall—*81 Inserts.* Sizes: 20 ea. 10-24, 1/4"-20; 15 ea. 5/16"-18; 10 ea. 3/8"-16, 7/16"-14; 6 ea. 1/2"-13.

18-8 Stainless Steel ..... 90284A400 **Set** $433.64
Black-Phosphate Steel ..... 90284A200 **Set** $194.08

Prices are 15% lower when you buy in multiples of 10.

Metric Key-Locking Threaded Inserts

Insert

Installation Tool

Ideal for quick, permanent repair for stripped threads in stainless steel, aluminum, magnesium, and other metals. To install, screw in the insert until it is slightly below the surface; then hammer its locking keys into the material using the installation tools sold separately. Inserts with internal thread sizes up to M6 have two locking keys; larger sizes have four locking keys.

Inserts are thread class 6g for external threads and 6H for internal threads except metric/inch, which are 2A for external threads and 6H for internal threads. Choose from 18-8 stainless steel and C1215 black-phosphate steel.

Metric/metric inserts are only offered in a standard configuration with no thick/thin designation. ***Metric/inch inserts*** let you use inch drills and taps to establish metric internal threads.

Repair kits include inserts, an installation tool, and instructions.

Metric/Metric

Internal Thread Size	Internal Pitch, mm	External Thread/ Tap Size	External Pitch, mm	Insert Lg., mm	Drill Size, mm	Inserts	Inserts Each★	Installation Tools	Installation Tools Each	Repair Kits No. of Inserts	Repair Kits	Repair Kits Kit
18-8 Stainless Steel												
M5	0.8	M8	1.25	8	6.9	93715A605	$7.08	94010A310	$47.50	8	93715A415	$114.00
M6	1	M10	1.25	10	8.8	93715A610	5.95	94010A325	29.36	8	93715A420	110.36
M8	1	M12	1.25	12	10.8	93715A620	12.23	94010A315	27.91	6	93715A425	90.24
M8	1.25	M12	1.25	12	10.8	93715A615	12.23	94010A315	27.91	6	93715A430	90.24
M10	1.25	M14	1.5	14	12.8	93715A630	14.40	94010A330	35.79	4	93715A435	82.69
M10	1.5	M14	1.5	14	12.8	93715A625	14.40	94010A330	35.79	4	93715A440	82.69
M12	1.25	M16	1.5	16	14.75	93715A640	23.67	94010A320	31.08	3	93715A445	67.96
M12	1.75	M16	1.5	16	14.75	93715A635	23.84	94010A320	31.08	3	93715A450	67.96
M14	1.50	M20	1.5	20	18.75	93715A650	26.54	94010A340	49.36	3	93715A460	142.29
M14	2.00	M20	1.5	20	18.75	93715A645	26.51	94010A340	49.36	4	93715A455	142.29
M16	1.50	M22	1.5	22	20.50	93715A660	32.69	94010A345	49.36	3	93715A470	133.77
M16	2.00	M22	1.5	22	20.50	93715A655	32.69	94010A345	49.36	3	93715A465	133.77
M18	1.50	M24	1.5	24	22.50	93715A665	35.00	94010A350	49.78	2	93715A475	103.48
M20	1.50	M30	2.0	30	28.00	93715A675	39.66	94010A355	59.98	3	93715A485	162.49
M20	2.50	M30	2.0	30	28.00	93715A670	39.69	94010A355	59.98	3	93715A480	162.49
M22	1.50	M32	2.0	32	30.00	93715A680	50.71	94010A360	60.49	3	93715A490	198.41
M24	2.00	M33	2.0	33	31.00	93715A690	66.37	94010A365	62.51	2	93715A500	183.09
M24	3.00	M33	2.0	33	31.00	93715A685	66.43	94010A365	62.51	2	93715A495	178.89
Black-Phosphate Steel												
M5	0.8	M8	1.25	8	6.9	90245A161	2.34	94010A310	47.50	8	90245A160	58.93
M6	1	M10	1.25	10	8.8	90245A171	2.40	94010A325	29.36	8	90245A162	44.52
M8	1	M12	1.25	12	10.8	90245A172	2.72	94010A315	27.91	6	90245A163	40.62
M8	1.25	M12	1.25	12	10.8	90245A173	2.62	94010A315	27.91	6	90245A164	40.23
M10	1.25	M14	1.5	14	12.8	90245A174	3.39	94010A330	35.79	4	90245A165	44.94
M10	1.5	M14	1.5	14	12.8	90245A175	3.28	94010A330	35.79	4	90245A166	44.53
M12	1.25	M16	1.5	16	14.75	90245A178	4.50	94010A320	31.08	3	90245A169	40.88
M12	1.75	M16	1.5	16	14.75	90245A177	4.50	94010A320	31.08	3	90245A168	40.50
M14	1.50	M20	1.5	20	18.75	90245A185	11.92	94010A340	49.36	4	90245A306	81.43
M14	2.00	M20	1.5	20	18.75	90245A186	11.92	94010A340	49.36	4	90245A301	81.43
M16	1.50	M22	1.5	22	20.50	90245A193	12.63	94010A345	49.36	3	90245A316	70.92
M16	2.00	M22	1.5	22	20.50	90245A189	12.63	94010A345	49.36	3	90245A311	70.92
M18	1.50	M24	1.5	24	22.50	90245A197	14.83	94010A350	49.78	2	90245A321	60.72
M20	1.50	M30	2.0	30	28.00	90245A205	17.43	94010A355	59.98	3	90245A331	92.08
M20	2.50	M30	2.0	30	28.00	90245A201	17.43	94010A355	59.98	3	90245A326	92.08
M22	1.50	M32	2.0	32	30.00	90245A209	20.37	94010A360	60.49	3	90245A336	99.74
M24	2.00	M33	2.0	33	31.00	90245A217	34.71	94010A365	62.51	2	90245A346	111.86
M24	3.00	M33	2.0	33	31.00	90245A213	34.71	94010A365	62.51	2	90245A341	111.86

Metric/Inch—Black-Phosphate Steel

Internal Thread Size	Internal Pitch, mm	External Thread/ Tap Size	Insert Length	Drill Size	Inserts	Inserts Each★	Installation Tools	Installation Tools Each	Repair Kits No. of Inserts	Repair Kits	Repair Kits Kit
M6	1	3/8″-16	0.31″	Q	90699A310	$7.10	90699A545	$42.49	8	90699A110	$52.50
M8	1.25	1/2″-13	0.43″	29/64″	90699A315	6.66	90699A550	43.26	8	90699A115	47.50
M10	1.5	5/8″-11	0.5″	37/64″	90699A320	7.66	90699A555	44.00	6	90699A120	48.10
M12	1.75	3/4″-16	0.62″	45/64″	90699A325	8.81	90699A560	45.54	4	90699A125	47.74
M14	2	7/8″-14	0.81″	53/64″	90699A330	9.97	90699A565	47.06	3	90699A130	47.98
M16	2	1″-12	0.87″	15/16″	90699A335	15.06	90699A570	54.00	3	90699A135	62.62

Insert Sets

Metric/Metric—Sets contain 82 various size inserts, installation tools, and instructions packed in a molded plastic case. Internal thread sizes are shown. Sizes: 20 ea. M6×1.00; 15 ea. M8×1.00 and M8×1.25; 10 ea. M10×1.25 and M10×1.50; 6 ea. M12×1.25 and M12×1.75.

18-8 Stainless Steel ..... **90284A511** **Set** $868.18 Black-Phosphate Steel ..... **90284A311** **Set** $316.53

Threaded Inserts with Locking Element

Zinc-Plated Steel

A nylon locking element on the external threads secures these inserts in place so they won't back out or loosen from vibration. Use them to repair damaged, load-bearing threads in magnesium, aluminum, cast iron, copper, masonite, and plastics. To install, drill and tap hole. Then, turn insert into place with a bolt and nut. Thread class is 2A for exterior and 2B for interior. ***Zinc-plated steel inserts*** are made from C12L14 steel.

Internal Thread Size	External Thread/ Tap Size	Insert Length	Drill Size	Pkg. Qty.		Pkg.
18-8 Stainless Steel—*With Nylon Locking Patch*						
4-40	10-32	7/32″	21	5	94165A415	$10.79
6-32	12-28	1/4″	14	5	94165A419	10.79
8-32	1/4″-28	9/32″	3	5	94165A423	10.32
10-24	5/16″-24	5/16″	I	5	94165A427	9.86
10-32	5/16″-24	5/16″	I	5	94165A431	9.86
1/4″-20	3/8″-24	3/8″	Q	5	94165A435	11.23
1/4″-28	3/8″-24	3/8″	Q	1	94165A439	2.51
5/16″-18	7/16″-20	7/16″	25/64″	1	94165A443	2.66
5/16″-24	7/16″-20	7/16″	25/64″	1	94165A447	2.74
3/8″-16	1/2″-20	15/32″	29/64″	1	94165A451	3.84
3/8″-24	1/2″-20	15/32″	29/64″	1	94165A455	3.84
7/16″-14	9/16″-18	17/32″	33/64″	1	94165A459	5.18
7/16″-20	9/16″-18	17/32″	33/64″	1	94165A463	5.32
1/2″-13	5/8″-18	19/32″	37/64″	1	94165A467	5.84
1/2″-20	5/8″-18	19/32″	37/64″	1	94165A471	5.84
5/8″-11	3/4″-16	11/16″	11/16″	1	94165A475	6.83
5/8″-18	3/4″-16	11/16″	11/16″	1	94165A479	6.83

Internal Thread Size	External Thread/ Tap Size	Insert Length	Drill Size	Pkg. Qty.		Pkg.
Zinc-Plated Steel—*With Nylon Locking Pellet*						
10-24	3/8″-16	13/32″	5/16″	5	90250A021	$8.28
10-32	3/8″-16	13/32″	5/16″	5	90250A068	8.28
1/4″-20	7/16″-14	7/16″	U	5	90250A024	8.81
1/4″-28	7/16″-14	7/16″	U	5	90250A074	8.96
5/16″-18	1/2″-13	31/64″	27/64″	5	90250A027	10.37
5/16″-24	1/2″-13	31/64″	27/64″	5	90250A078	8.31
3/8″-16	9/16″-12	33/64″	31/64″	5	90250A031	9.99
3/8″-24	9/16″-12	33/64″	31/64″	5	90250A082	10.17
7/16″-14	5/8″-11	21/32″	17/32″	5	90250A034	8.85
1/2″-13	3/4″-10	21/32″	21/32″	5	90250A038	9.00
1/2″-20	3/4″-10	21/32″	21/32″	5	90250A086	9.20
5/8″-11	7/8″-9	11/16″	49/64″	1	90250A044	2.80
5/8″-11	7/8″-9	1 1/8″	49/64″	1	90250A045	3.81
3/4″-10	1″-8	25/32″	7/8″	1	90250A051	3.34
1″-8	1 3/8″-12	1 1/4″	1 19/64″	1	90250A054	6.71

★***Prices are 15% lower when you buy in multiples of 10.***

Self-Locking Threaded Inserts for Metals

Also known as E-Z Lok inserts, these threaded inserts don't require special tools for installation—plus, they have Loctite® adhesive on their external threads to keep them in place.

Install inserts in a tapped hole using a screwdriver or a wrench, bolt, and locknut. To save time during high-volume installations, use a plain steel power driver tool (94110A sold separately). Once inserts are installed, the adhesive on their external threads begins to harden, and within minutes the inserts are ready to accept fasteners. The adhesive bonds to virtually all metals and reaches full strength after 72 hours. Then, the inserts won't back out or vibrate loose. Once it has reached full strength, the adhesive can withstand liquids and gases at pressures up to 6,000 psi.

Inch thread class is 2A external and 2B internal.

Metric thread class is 6g external and 6H internal.

Inch/metric inserts let you use metric drills and taps plus a power driver to establish inch internal threads.

Metric/inch inserts let you use inch drills and taps plus a power driver to establish metric internal threads.

Thick-wall inserts are the most common inserts used to repair and reinforce threads that are prone to stripping. *Spark plug inserts* can be threaded onto a spark plug and manually installed in a tapped hole.

Extra-thick-wall inserts work well in oversized and worn holes.

Thin-wall inserts have smaller external threads than thick-wall inserts, so they require a smaller drilled hole.

Black-Phosphate Steel— The strength of 12L14 steel combined with a black-phosphate coating for mild rust resistance and some lubricity. Rockwell hardness is B68. Minimum tensile strength is 30,000 psi.

18-8 Stain. Steel— Has excellent corrosion resistance. May be mildly magnetic. Rockwell hardness is B92. Min. tensile strength is 30,000 psi.

Type 316 Stainless Steel— Has better corrosion resistance than 18-8 steel because it contains molybdenum, which increases resistance to chlorides and sulfates. May be mildly magnetic. Rockwell hardness is B92. Minimum tensile strength is 30,000 psi.

Thick Wall—Inch

Internal Thread Size	External Thread/ Tap Size	Insert Lg.	Drill Size	INSERTS Black-Phosphate Steel Pkg. Qty.		Pkg.	INSERTS 18-8 Stainless Steel Pkg. Qty.		Pkg.	POWER DRIVERS Hex Shank Size		Each
4-40	10-32	1/4"	5/32"	10	90248A016	$6.25	5	90247A007	$8.13	—	—	—
6-32	1/4"-20	9/32"	7	10	90248A017	6.75	5	90247A008	10.43	1/4"	94110A110	$9.26
8-32	5/16"-18	19/64"	F	10	90248A018	7.50	5	90247A009	11.46	1/4"	94110A120	9.26
10-24	3/8"-16	13/32"	5/16"	10	90248A021	8.25	5	90247A011	12.67	1/4"	94110A130	8.62
10-32	3/8"-16	13/32"	5/16"	10	90248A068	8.25	5	90247A021	12.62	1/4"	94110A130	8.62
1/4"-20	7/16"-14	7/16"	23/64"	10	90248A024	8.75	5	90247A012	13.53	1/4"	94110A140	8.62
1/4"-28	7/16"-14	7/16"	23/64"	10	90248A074	8.75	5	90247A022	13.53	1/4"	94110A140	8.62
5/16"-18	1/2"-13	31/64"	27/64"	10	90248A027	10.25	5	90247A013	13.90	1/4"	94110A150	9.26
5/16"-24	1/2"-13	31/64"	27/64"	10	90248A078	10.25	5	90247A023	13.91	1/4"	94110A150	9.26
3/8"-16	9/16"-12	33/64"	31/64"	10	90248A031	10.75	5	90247A014	14.43	3/8"	94110A160	9.26
3/8"-24	9/16"-12	33/64"	31/64"	10	90248A082	10.75	5	90247A024	14.43	3/8"	94110A160	9.26
7/16"-14	5/8"-11	21/32"	17/32"	5	90248A034	6.76	1	90247A015	3.70	3/8"	94110A170	9.26
7/16"-20	5/8"-11	21/32"	17/32"	5	90248A084	6.76	1	90247A025	3.70	3/8"	94110A170	9.26
1/2"-13	3/4"-10	21/32"	21/32"	5	90248A038	7.88	1	90247A016	4.74	3/8"	94110A180	10.65
1/2"-13	3/4"-10	1"	21/32"	5	90248A039	11.00	—	—	—	3/8"	94110A180	10.65
1/2"-20	3/4"-10	21/32"	21/32"	5	90248A086	7.88	1	90247A026	4.74	3/8"	94110A180	10.65
9/16"-12	3/4"-10	21/32"	21/32"	5	90248A041	8.50	—	—	—	3/8"	94110A180	10.65
9/16"-18	3/4"-10	21/32"	21/32"	5	90248A090	8.50	—	—	—	3/8"	94110A180	10.65
5/8"-11	7/8"-9	11/16"	49/64"	5	90248A044	9.88	1	90247A017	5.58	3/8"	94110A190	10.65
5/8"-11	7/8"-9	1 1/8"	49/64"	5	90248A045	14.71	—	—	—	3/8"	94110A190	10.65
5/8"-18	7/8"-9	11/16"	49/64"	5	90248A087	9.88	—	—	—	3/8"	94110A190	10.65
3/4"-10	1"-8	25/32"	7/8"	5	90248A051	13.38	1	90247A018	7.86	3/8"	94110A210	10.65
3/4"-16	1"-8	25/32"	7/8"	5	90248A088	13.38	—	—	—	3/8"	94110A210	10.65
7/8"-9	1 1/4"-7	1 1/8"	17/64"	1	90248A052	5.91	—	—	—	—	—	—
7/8"-14	1 1/4"-7	1 1/8"	17/64"	1	90248A093	5.91	—	—	—	—	—	—
1"-8	1 3/8"-12	1 1/4"	19/32"	1	90248A054	6.65	—	—	—	—	—	—
1"-14	1 3/8"-12	1 1/4"	19/32"	1	90248A089	6.65	—	—	—	—	—	—

Internal Thread Size	External Thread/ Tap Size	Insert Lg.	Drill Size	Type 316 Stainless Steel Inserts	Each	Power Drivers Hex Shank Size		Each
8-32	5/16"-18	19/64"	F	90266A338	$9.00	1/4"	94110A120	$9.26
10-24	3/8"-16	13/32"	5/16"	90266A340	9.50	1/4"	94110A130	8.62
10-32	3/8"-16	13/32"	5/16"	90266A342	9.50	1/4"	94110A130	8.62
1/4"-20	7/16"-14	7/16"	23/64"	90266A346	10.00	1/4"	94110A140	8.62
5/16"-18	1/2"-13	31/64"	27/64"	90266A350	10.50	1/4"	94110A150	9.26
3/8"-16	9/16"-12	33/64"	31/64"	90266A354	11.00	3/8"	94110A160	9.26

Thick Wall—Metric

Internal Thread Size	Internal Pitch, mm	External Thread/ Tap Size	External Pitch, mm	Insert Lg., mm	Drill Size, mm	INSERTS Black-Phosphate Steel Pkg. Qty.		Pkg.	INSERTS 18-8 Stainless Steel Pkg. Qty.		Pkg.	POWER DRIVERS Hex Shank Size		Each
M3	0.5	M6	1	6.5	5.1	10	97084A190	$11.67	5	97120A190	$9.79	—	—	—
M4	0.7	M8	1.25	7.5	6.9	10	97084A200	12.62	5	97120A200	11.72	1/4"	94110A120	$9.26
M5	0.8	M8	1.25	7.5	6.9	10	97084A220	12.40	5	97120A220	12.94	1/4"	94110A120	9.26
M6	1	M10	1.5	10.5	8.6	5	97084A230	7.38	5	97120A230	13.78	1/4"	94110A140	8.62
M8	1.25	M12	1.75	12.5	10.4	5	97084A240	9.17	1	97120A240	3.08	1/4"	94110A150	9.26
M10	1.5	M16	2	17	14	5	97084A250	11.90	1	97120A250	4.07	3/8"	94110A160	9.26
M12	1.75	M16	2	17	14	5	97084A260	12.96	1	97120A260	4.90	3/8"	94110A170	9.26
M16	2	M24	3	20	21	1	97084A270	3.30	1	97120A270	6.39	3/8"	94110A190	10.65
M20	2.5	M36	4	30	33	1	97084A310	7.59	—	—	—	—	—	—

Thick Wall—Inch/Metric

Internal Thread Size	External Thread/ Tap Size	External Pitch, mm	Insert Lg., mm	Drill Size, mm	Black-Phosphate Steel Inserts Pkg. Qty.		Pkg.	Power Drivers Hex Shank Size		Each
6-32	M6	1	6.5	5.1	5	97224A110	$6.52	1/4"	94110A110	$9.26
8-32	M8	1.25	7.5	6.9	5	97224A130	6.92	1/4"	94110A120	9.26
10-24	M8	1.25	7.5	6.9	5	97224A150	8.05	1/4"	94110A130	8.62
10-32	M8	1.25	7.5	6.9	5	97224A170	7.50	1/4"	94110A130	8.62
1/4"-20	M10	1.5	10.5	8.6	5	97224A190	9.63	1/4"	94110A140	8.62
5/16"-18	M12	1.75	12.5	10.4	5	97224A210	10.05	1/4"	94110A150	9.26
3/8"-16	M16	2	17	14	5	97224A230	12.38	3/8"	94110A160	9.26
1/2"-13	M16	2	17	14	5	97224A250	12.78	3/8"	94110A180	10.65

(Continued on following page)

Self-Locking Threaded Inserts for Metals *(Continued from previous page)*

Insert

Power Driver

Also known as E-Z Lok inserts, these threaded inserts don't require special tools for installation—plus, they have Loctite® adhesive on their external threads to keep them in place.

Inch thread class is 2A external and 2B internal. *Metric* thread class is 6g external and 6H internal. *Inch/metric inserts* let you use metric drills and taps plus a power driver to establish inch internal threads. *Metric/inch inserts* let you use inch drills and taps plus a power driver to establish metric internal threads.

Thick-wall inserts are the most common inserts used to repair and reinforce threads that are prone to stripping. *Spark plug inserts* can be threaded onto a spark plug and manually installed in a tapped hole.

Extra-thick-wall inserts work well in oversized and worn holes.

Thin-wall inserts have smaller external threads than thick-wall inserts, so they require a smaller drilled hole.

Black-Phosphate Steel— The strength of 12L14 steel combined with a black-phosphate coating for mild rust resistance and some lubricity. Rockwell hardness is B68. Minimum tensile strength is 30,000 psi.

18-8 Stainless Steel— Has excellent corrosion resistance. May be mildly magnetic. Rockwell hardness is B92. Minimum tensile strength is 30,000 psi.

Thick Wall—Metric/Inch

Internal Thread Size	Pitch, mm	External Thread/ Tap Size	Insert Lg.	Drill Size	INSERTS Black-Phosphate Steel Pkg. Qty.		Pkg.	INSERTS 18-8 Stainless Steel Pkg. Qty.		Pkg.	POWER DRIVERS Hex Shank Size		Each
M6	1	3/8″-16	13/32″	5/16″	10	97084A110	$8.57	5	97120A110	$13.53	1/4″	94110A140	$8.62
M8	1.25	1/2″-13	31/64″	27/64″	10	97084A120	10.71	1	97120A120	3.08	1/4″	94110A150	9.26
M10	1.25	9/16″-12	33/64″	31/64″	10	97084A125	11.67	1	97120A125	3.56	3/8″	94110A160	9.26
M10	1.5	9/16″-12	33/64″	31/64″	10	97084A130	11.67	1	97120A130	3.56	3/8″	94110A160	9.26
M12	1.75	3/4″-10	21/32″	21/32″	5	97084A140	7.74	1	97120A140	5.36	3/8″	94110A170	9.26
M14	2	7/8″-9	11/16″	49/64″	5	97084A150	10.48	1	97120A150	5.97	3/8″	94110A180	10.65
M16	2	1″-8	25/32″	7/8″	5	97084A160	13.33	1	97120A160	6.75	3/8″	94110A190	10.65

Thick Wall—Spark Plug

Internal Thread Size	External Thread/ Tap Size	Insert Lg.	Drill Size	Pkg. Qty.	Black-Phosphate Steel Inserts	Pkg.
M14	3/4″-16	21/64″	11/16″	5	90248A092	$7.12
M14	3/4″-16	29/64″	11/16″	5	90248A095	7.12

Extra-Thick Wall and Thin Wall—Inch

Internal Thread Size	External Thread/ Tap Size	Insert Lg.	Drill Size	Black-Phosphate Steel Inserts Pkg. Qty.		Pkg.	Power Drivers Hex Shank Size		Each
Extra-Thick Wall									
1/4″-20	1/2″-13	31/64″	27/64″	10	90246A024	$10.80	1/4″	94110A140	$8.62
5/16″-18	9/16″-12	33/64″	31/64″	10	90246A027	11.70	1/4″	94110A150	9.26
3/8″-16	5/8″-11	21/32″	17/32″	5	90246A031	7.18	3/8″	94110A160	9.26
1/2″-13	7/8″-9	11/16″	49/64″	5	90246A038	10.20	—	—	—
5/8″-11	1″-8	25/32″	7/8″	5	90246A044	13.38	—	—	—
Thin Wall									
10-24	5/16″-18	5/16″	I	10	90259A124	8.25	1/4″	94110A130	8.62
10-32	5/16″-18	5/16″	I	10	90259A129	8.25	1/4″	94110A130	8.62
1/4″-20	3/8″-16	3/8″	Q	10	90259A132	8.75	1/4″	94110A140	8.62
1/4″-28	3/8″-16	3/8″	Q	10	90259A136	8.75	1/4″	94110A140	8.62
5/16″-18	7/16″-14	7/16″	X	10	90259A139	10.25	1/4″	94110A150	9.26
5/16″-24	7/16″-14	7/16″	X	10	90259A141	10.25	1/4″	94110A150	9.26
3/8″-16	1/2″-13	1/2″	29/64″	10	90259A144	11.75	3/8″	94110A160	9.26
3/8″-24	1/2″-13	1/2″	29/64″	10	90259A147	11.75	3/8″	94110A160	9.26
7/16″-14	9/16″-12	9/16″	33/64″	5	90259A154	7.01	3/8″	94110A170	9.26
7/16″-20	9/16″-12	9/16″	33/64″	5	90259A158	7.01	3/8″	94110A170	9.26
1/2″-13	5/8″-11	5/8″	37/64″	5	90259A163	8.25	3/8″	94110A180	10.65
1/2″-20	5/8″-11	5/8″	37/64″	5	90259A169	8.25	3/8″	94110A180	10.65

Repair Kits

Kits include an assortment of thick-wall inserts that repair damaged threads. Choose kits for inch, metric, or metric/inch threads. Steel inserts have a black-phosphate finish. Sizes listed are internal thread size. For external thread/tap sizes, see individual insert listings. Furnished in a plastic case.

Inch Coarse Thread—*22 Inserts.* Sizes: six each 1/2″-13; seven each 5/8″-11 and 3/4″-10; two each 1″-8.
Steel ..... 90248A111 **Kit** $59.40

Inch Coarse Thread—*46 Inserts.* Sizes: 10 each 10-24, 1/4″-20, 5/16″-18, and 3/8″-16; and six each 1/2″-13.
Steel ..... 90248A112 **Kit** $52.00
18-8 Stainless Steel ..... 90247A031 **Kit** $192.61

Inch Fine Thread—*22 Inserts.* Sizes: six each 1/2″-20; seven each 5/8″-18 and 3/4″-16; and two each 1″-14.
Steel ..... 90248A115 **Kit** $59.40

Inch Fine Thread—*46 Inserts.* Sizes: 10 each 10-32, 1/4″-28, 5/16″-24, and 3/8″-24; and six each 1/2″-20.
Steel ..... 90248A114 **Kit** $52.00
18-8 Stainless Steel ..... 90247A032 **Kit** $192.61

Metric—*33 Inserts.* Sizes: 10 each M8×1.25 and M10×1.5; eight each M12×1.75; and five each M16×2.0.
Steel ..... 97084A290 **Kit** $86.43
18-8 Stainless Steel ..... 97120A035 **Kit** $149.56

Metric—*50 Inserts.* Sizes: 10 each M3×0.5, M4×0.7, M5×0.8, M6×1.0, and M8×1.25.
Steel ..... 97084A280 **Kit** $77.00
18-8 Stainless Steel ..... 97120A034 **Kit** $149.56

Metric/Inch—*36 Inserts.* Sizes: 10 each M6×1.0, M8×1.25, and M10×1.5; and six each M12×1.75.
Steel ..... 97084A210 **Kit** $52.00
18-8 Stainless Steel ..... 97120A033 **Kit** $133.69

Self-Tapping Inserts for Metal and Plastics

Insert

Drive Tool

Designed to cut their own threads, these zinc-plated steel inserts are for use in soft metals, plastics, and tough-to-tap materials. Install in a drilled hole using the plain steel drive tool (sold separately); the inserts lock into the base material. The drive tools can also be placed in a chuck on a drill press; turn the chuck by hand to install the insert (do not use power). Or, use drive tools in conjunction with a ratchet wrench or bit brace. Class 2B internal thread fit. Not rated for Rockwell hardness. Minimum tensile strength is 80,000 psi.

Thread Size Internal	External	Insert Lg.	Drill Size	Inserts Pkg. Qty.		Pkg.	Drive Tools Square Size		Each
10-32	19/64″	3/8″	9/32″	5	90240A006	$8.14	1/4″	90240A028	$140.56
1/4″-20	3/8″	31/64″	11/32″	5	90240A001	12.43	9/32″	90240A029	140.56
5/16″-18	15/32″	9/16″	7/16″	5	90240A002	13.88	3/8″	90240A030	175.69
3/8″-16	9/16″	11/16″	17/32″	1	90240A003	3.61	7/16″	90240A031	175.69
1/2″-13	47/64″	29/32″	11/16″	1	90240A004	6.05	9/16″	90240A033	210.84
5/8″-11	29/32″	1 1/8″	55/64″	1	90240A005	10.64	43/64″	90240A034	327.97

Self-Tapping Inserts for Wood and Plastics

Insert

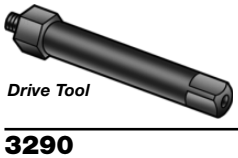
Drive Tool

These Alloy 360 brass inserts have widely spaced external threads for a strong hold in wood, soft metals, and weak or brittle plastics. Three external flutes retain chips while cutting to keep the inside threads clean. Install in a drilled hole using the alloy steel drive tool (sold separately). Inserts resist rust and mild atmospheric corrosion. Nonmagnetic. Class 2B thread fit. Not rated for Rockwell hardness. Min. tensile strength is 7,800 psi.

Internal Thread Size	Insert Lg.	Drill Size	Inserts Pkg. Qty.		Pkg.	Drive Tools Square Size		Each
2-56	3/16″	0.127″	10	99362A100	$7.78	11/64″	90240A021	$117.13
4-40	15/64″	0.152″	10	99362A200	7.49	11/64″	90240A022	117.13
6-32	9/32″	0.194″	10	99362A300	7.95	11/64″	90240A023	117.13
8-32	21/64″	0.226″	10	99362A400	8.47	3/16″	90240A025	117.13
10-24	3/8″	0.264″	10	99362A500	10.02	1/4″	90240A027	140.56
10-32	3/8″	0.264″	10	99362A600	10.02	1/4″	90240A028	140.56
1/4″-20	31/64″	0.336″	10	99362A700	11.52	9/32″	90240A029	140.56

12-Point Insert Nuts for Metals and Plastics

Also known as Allen nuts, these multipurpose insert nuts deliver compact holding power. They have a knurled surface so you can tighten them by hand until a wrench is needed, plus they have a 12-point (double hex) socket for easier hex key engagement. Class 2B thread fit. Use these nuts like inserts to replace stripped and worn threads. Press or draw them into any nonhardened steel, cast iron, or softer nonferrous metal for a strong thread with extra load-carrying capacity. You can even mold them into plastics, ceramics, fiber, and similar materials. Great for use with socket-head screws, hex-head screws, and studs.

18-8 stainless steel has excellent corrosion resistance. May be mildly magnetic. Not rated for Rockwell hardness or tensile strength. ***Alloy steel*** meets load requirements of ASTM A194 for 2H nuts. Rockwell hardness is C33-C39. Not rated for tensile strength.

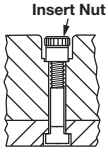

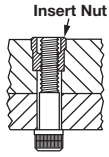

Internal Thread Size	Insert Dia.	Insert Lg.	Hex Key Size	Pkg. Qty.		Pkg.
18-8 Stainless Steel						
4-40	0.187″	0.179″	1/8″	10	90372A311	$14.90
6-32	0.257″	0.230″	5/32″	5	90372A313	9.18
8-32	0.280″	0.273″	3/16″	5	90372A317	9.66
10-24	0.307″	0.319″	3/16″	5	90372A321	11.44
1/4″-20	0.403″	0.419″	1/4″	5	90372A325	12.88
5/16″-18	0.498″	0.522″	5/16″	1	90372A329	3.06
3/8″-16	0.590″	0.621″	3/8″	1	90372A332	4.52
Alloy Steel						
4-40	0.187″	0.179″	1/8″	10	92066A005	9.51
5-40	0.187″	0.205″	1/8″	10	92066A006	9.74
6-32	0.257″	0.230″	5/32″	10	92066A007	9.74
8-32	0.280″	0.273″	3/16″	10	92066A009	10.14
10-24	0.307″	0.319″	3/16″	10	92066A011	10.37
10-32	0.307″	0.319″	3/16″	10	92067A011	10.96
1/4″-20	0.403″	0.419″	1/4″	10	92066A029	11.56
1/4″-28	0.403″	0.419″	1/4″	10	92067A029	11.56
Alloy Steel (Cont.)						
5/16″-18	0.498″	0.522″	5/16″	10	92066A030	$14.47
5/16″-24	0.498″	0.522″	5/16″	10	92067A030	14.90
3/8″-16	0.590″	0.621″	3/8″	5	92066A031	9.63
3/8″-24	0.590″	0.621″	3/8″	5	92067A031	9.63
7/16″-14	0.710″	0.733″	7/16″	5	92066A032	14.90
7/16″-20	0.710″	0.733″	7/16″	5	92067A032	14.95
1/2″-13	0.800″	0.836″	1/2″	5	92066A033	14.95
1/2″-20	0.800″	0.836″	1/2″	5	92067A033	14.98
5/8″-11	0.986″	1.010″	5/8″	1	92066A035	5.66
5/8″-18	0.986″	1.010″	5/8″	1	92067A035	5.63
3/4″-10	1.158″	1.185″	3/4″	1	92066A036	7.05
3/4″-16	1.158″	1.185″	3/4″	1	92067A036	7.10
7/8″-9	1.361″	1.358″	7/8″	1	92066A037	11.10
7/8″-14	1.361″	1.358″	7/8″	1	92067A037	10.27
1″-8	1.533″	1.532″	1″	1	92066A038	14.62
1″-14	1.533″	1.532″	1″	1	92067A038	14.63

Threaded Inserts for Thermoplastics

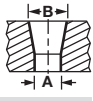

Specially designed for heat installation in thermoplastics and structural foam, these tapered brass inserts provide superior strength. To install, thread an installation tip into the soldering iron (sold separately) and tighten with a set screw. The tip transfers heat from the soldering iron to the insert, melting the surrounding plastic so that it flows into the insert's diagonal knurls and undercuts. When the plastic resolidifies, you get a molded-in insert with excellent torque and pull-out resistance. To extract, thread an extraction tip into the soldering iron. When the plastic melts, pull out the insert. Soldering iron, installation tips, and extraction tips are sold separately.

Inserts are made of Alloy 360 brass to resist rust and mild atmospheric corrosion. They're nonmagnetic with good electrical conductivity. Internal thread class is 2B for inch threads and 6H for metric threads. Not rated for Rockwell hardness, except for inch inserts with a 3/8″ internal thread size, which have a Rockwell hardness of B60-B80. Minimum tensile strength for all inserts is 57,000 psi. **Also Available:** Extraction tips. Please ask for 92160A100 and specify internal thread size.

Inch Inserts and Installation Tips

Internal Thread Size	Tapered Hole Dia. (A)	Tapered Hole Dia. (B)	Insert Lg.	Inserts Pkg. Qty.		Inserts Pkg.	Installation Tips	Installation Tips Each
2-56	0.118″	0.123″	0.115″	100	93365A110	$9.28	92160A111	$14.42
2-56	0.107″	0.123″	0.188″	100	93365A112	10.25	92160A111	14.42
4-40	0.153″	0.159″	0.135″	100	93365A120	9.89	92160A115	14.42
4-40	0.141″	0.159″	0.219″	100	93365A122	11.19	92160A115	14.42
6-32	0.199″	0.206″	0.150″	100	93365A130	11.81	92160A119	14.42
6-32	0.185″	0.206″	0.250″	100	93365A132	14.76	92160A119	14.42
8-32	0.226″	0.234″	0.185″	100	93365A140	13.68	92160A123	14.42
8-32	0.208″	0.234″	0.312″	50	93365A142	8.27	92160A123	14.42
10-24	0.267″	0.277″	0.225″	50	93365A150	8.92	92160A127	14.42
10-24	0.246″	0.277″	0.375″	50	93365A152	11.72	92160A127	14.42
10-32	0.267″	0.277″	0.225″	50	93365A154	8.92	92160A127	14.42
10-32	0.246″	0.277″	0.375″	50	93365A156	11.72	92160A127	14.42
1/4″-20	0.349″	0.363″	0.300″	25	93365A160	8.91	92160A131	14.42
1/4″-20	0.321″	0.363″	0.500″	25	93365A162	11.76	92160A131	14.42
1/4″-28	0.349″	0.363″	0.300″	25	93365A170	8.91	92160A131	14.42
1/4″-28	0.321″	0.363″	0.500″	25	93365A172	11.76	92160A131	14.42
5/16″-18	0.431″	0.448″	0.335″	25	93365A180	13.83	92160A135	14.42
5/16″-18	0.401″	0.448″	0.562″	10	93365A182	7.83	92160A135	14.42
3/8″-16	0.523″	0.540″	0.375″	10	93365A190	8.53	92160A139	14.42
3/8″-16	0.488″	0.540″	0.625″	10	93365A192	10.37	92160A139	14.42
3/8″-24	0.523″	0.540″	0.375″	10	93365A210	8.53	92160A139	14.42

Metric Inserts

Internal Thread Size	Pitch, mm	Tapered Hole Dia., mm (A)	Tapered Hole Dia., mm (B)	Insert Lg., mm	Pkg. Qty.		Pkg.
M2.5	0.45	3.89	4.04	3.4	100	94180A321	$9.89
M2.5	0.45	3.58	4.04	5.6	100	94180A323	11.19
M3	0.5	5.05	5.23	3.8	100	94180A331	11.81
M3	0.5	4.70	5.23	6.4	100	94180A333	14.76
M4	0.7	5.74	5.94	4.7	100	94180A351	13.68
M4	0.7	5.28	5.94	7.9	50	94180A353	8.27
M5	0.8	7.70	8.00	6.7	50	94180A361	10.97
M5	0.8	7.06	8.00	11.1	50	94180A363	14.34
M6	1	8.86	9.22	7.6	25	94180A371	8.55
M6	1	8.15	9.22	12.7	25	94180A373	11.76

Metric Installation Tips

Tip Size		Each	Tip Size		Each
M2.5	92160A115	$14.42	M5	92160A127	$14.42
M3	92160A119	14.42	M6	92160A131	14.42
M4	92160A123	14.42			

Soldering Iron

Soldering iron has a chisel-style tip and a temperature of 900°F. Use it with the installation and extraction tips sold separately above. Operates on 120 VAC, 60 Hz, 40 watts and has a 6-ft. cord with two-prong plug.

7662A696 ..... **Each** $23.18

Knock-In Threaded Inserts for Wood and Plastics

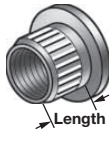

Hammer these inserts into a drilled hole in soft materials. You can also mold or sonic weld them into plastic parts. A knurled exterior keeps the inserts in place, and the open-end flange keeps the inserts flush with the surface. Made of low-strength plain 12L13 steel. Class 2B thread fit. Not rated for Rockwell hardness or tensile strength. Length is measured from under the flange.

Internal Thread Size	Lg.	Flange Thick.	Drill Size	Pkg. Qty.		Pkg.
8-32	0.276″	0.039″	7/32″	25	94738A100	$8.29
1/4″-20	0.244″	0.059″	19/64″	10	94738A200	6.07
1/4″-20	0.414″	0.059″	19/64″	10	94738A300	$4.65
5/16″-18	0.394″	0.079″	25/64″	10	94738A400	7.71

Press-Fit Threaded Inserts for Metals

Installation is easy—just press these inserts into a drilled hole and use an arbor press to permanently secure them. For use in aluminum and other soft metals. Inserts are tapered and self-aligning. Made of zinc-plated 12L14 steel. Class 2B thread fit. Not rated for Rockwell hardness. Minimum tensile strength is 70,000 psi.

Internal Thread Size	Insert Lg.	Drill Size	Pkg. Qty.		Pkg.
2-56	5/32″	0.189″	10	97191A110	$9.63
4-40	3/16″	0.220″	10	97191A130	7.76
6-32	1/4″	0.252″	10	97191A150	8.83
8-32	9/32″	0.282″	10	97191A170	10.77
10-24	5/16″	0.314″	10	97191A190	12.24
10-32	5/16″	0.314″	10	97191A210	$12.24
1/4″-20	15/32″	0.439″	10	97191A230	14.98
5/16″-18	5/8″	0.564″	5	97191A250	12.10
3/8″-16	3/4″	0.689″	1	97191A270	3.64

Brass Expansion Inserts for Plastics

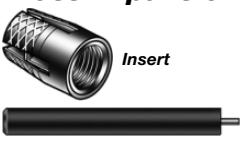

When the installation tool depresses the spreader plate inside these inserts, a knurled section expands to permanently anchor them in place. For use in straight, blind-hole applications. You can mount inserts flush or let them protrude above the surface. Either way, they provide strong, long-lasting brass threads in thermoplastics.

Made of Alloy 360 brass to resist rust and mild atmospheric corrosion. Nonmagnetic with good strength, durability, and electrical conductivity. Class 2B internal thread fit. Rockwell hardness is B60-B80. Minimum tensile strength is 57,000 psi.

Installation tools (required) quickly and easily install the expansion inserts. Use with a hammer, an arbor press, or a foot press.

Internal Thread Size	Insert Lg.	Drill Size	Pkg. Qty.	*Brass Inserts*	Pkg.	*Installation Tools*	Each
4-40	1/4″	5/32″	50	93415A021	$9.71	93735A201	$58.66
6-32	5/16″	3/16″	50	93415A031	10.75	93735A401	58.66
6-32	3/8″	3/16″	50	93415A034	12.20	93735A402	58.66
8-32	5/16″	7/32″	50	93415A042	13.62	93735A501	58.66
8-32	3/8″	7/32″	50	93415A044	14.94	93735A502	58.66
10-24	3/8″	1/4″	25	93415A052	8.42	93735A601	58.66
10-24	7/16″	1/4″	25	93415A054	8.96	93735A602	58.66
10-32	3/8″	1/4″	25	93415A061	8.42	93735A601	58.66
10-32	7/16″	1/4″	25	93415A063	8.96	93735A602	58.66
1/4″-20	1/2″	5/16″	25	93415A071	14.38	93735A701	58.66

Hex Press-Fit Inserts for Plastics

Press-fit inserts make installation in plastics easy—no heat or ultrasonics required. Drill a hole and press insert into place using an arbor press to create strong, reusable threads. The body is hex shaped and won't twist in the hole, so you get extra strength and pull-out resistance. Internal thread fit is Class 2B for inch sizes and 6H for metric sizes. Not rated for Rockwell hardness or tensile strength.

7075-T6 Aluminum—Has one-third the weight of steel. Material is nonmagnetic.

18-8 Stainless Steel—Offers excellent corrosion resistance. May be mildly magnetic.

Inch

Internal Thread Size	Insert Lg.	Drill Size	*7075-T6 Aluminum* Pkg. Qty.		Pkg.	*18-8 Stainless Steel* Pkg. Qty.		Pkg.
4-40	15/64″	3/16″	50	92397A112	$11.68	25	92398A112	$9.88
6-32	15/64″	3/16″	50	92397A113	13.27	25	92398A113	10.22
8-32	17/64″	1/4″	50	92397A114	14.76	25	92398A114	14.72
10-32	17/64″	1/4″	50	92397A115	13.58	25	92398A115	14.65
1/4″-20	5/16″	5/16″	25	92397A116	11.57	10	92398A116	7.74

Metric

Internal Thread Size	Pitch, mm	Insert Lg., mm	Drill Size, mm	Pkg. Qty.	*18-8 Stainless Steel*	Pkg.
M3	0.5	5.8	4.7	25	92398A121	$8.98
M4	0.7	6.7	6.3	25	92398A123	12.92
M5	0.8	6.7	6.3	25	92398A125	12.85
M6	1	8	7.9	10	92398A127	6.79

Brass Press-Fit Inserts for Wood and Plastics

Two-Fin Style

Also called finsert, these inserts have sharp exterior fins that become embedded into the wall of a drilled hole, providing gripping power in wood, composite sheets, and plastics. Fins offer higher holding strength in softer materials. To install, place insert in a drilled hole and hammer or press in place with an arbor press. Minimum material thickness is 1/4″ for one-fin inserts, 7/16″ for two-fin inserts, and 5/8″ for three-fin inserts.

Made of Alloy 360 brass to resist rust and mild atmospheric corrosion. Nonmagnetic with good strength, durability, and electrical conductivity. Class 2B internal thread fit. Rockwell hardness is B78. Minimum tensile strength is 18,000 psi.

Internal Thread Size	Insert Lg.	Drill Size	No. of Fins	Pkg. Qty.		Pkg.
6-32	3/16″	#5	1	50	90363A017	$14.17
6-32	3/8″	#5	2	50	90363A044	14.52
8-32	3/16″	15/64″	1	50	90363A018	14.17
8-32	3/8″	15/64″	2	25	90363A045	7.75
10-24	3/8″	G	2	25	90363A047	10.15
10-32	3/16″	G	1	50	90363A019	14.88
10-32	3/8″	G	2	25	90363A046	8.26
10-32	9/16″	11/32″	3	10	90363A029	5.66
1/4″-20	3/8″	21/64″	2	25	90363A028	11.50
1/4″-20	9/16″	13/32″	3	25	90363A034	14.14
5/16″-18	9/16″	15/32″	3	10	90363A035	14.62

Press-Fit Inserts for Plastics

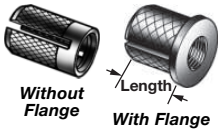

Knurled press inserts are designed to replace molded-in inserts in plastic. Just press into a drilled hole (a precise hole depth is not required). Installing a screw causes the knurls to dig into the plastic to lock in place. No special tool needed. Internal thread fit is Class 2B for inch sizes and 6H for metric sizes.

18-8 Stainless Steel—Offers excellent corrosion resistance. May be mildly magnetic. Rockwell hardness is B92. Minimum tensile strength is 30,000 psi.

Brass—This Alloy 360 brass resists rust and mild atmospheric corrosion. Nonmagnetic with good strength, durability, and electrical conductivity. Rockwell hardness is B78. Min. tensile strength is 18,000 psi.

Inserts ***without flange*** can be installed flush with or below the surface. Inserts ***with flange*** offer a large bearing surface and have a large area for electrical contact. Length includes flange. Flange thickness is 0.020″ for 2-56 to 8-32 sizes; 0.031″ for 10-32 to 3/8″-16 sizes.

Inch

Internal Thread Size	Insert Lg.	Drill Size	Pkg. Qty.	*Without Flange*	Pkg.	*With Flange*	Pkg.
18-8 Stainless Steel							
2-56	5/32″	1/8″	10	92394A111	$6.12	95110A111	$6.89
4-40	3/16″	5/32″	10	92394A112	9.57	95110A112	10.69
6-32	1/4″	3/16″	10	92394A113	9.57	95110A113	12.57
8-32	5/16″	7/32″	5	92394A114	7.96	95110A114	6.48
10-32	3/8″	1/4″	5	92394A515	9.95	95110A115	8.76
1/4″-20	1/2″	5/16″	5	92394A116	11.68	95110A116	11.97
5/16″-18	9/16″	3/8″	5	92394A030	11.98	—	—
3/8″-16	5/8″	7/16″	1	92394A031	3.30	—	—
Brass							
0-80	1/8″	3/32″	25	92395A109	8.50	—	—
2-56	5/32″	1/8″	50	92395A111	11.00	94615A111	10.29
4-40	3/16″	5/32″	50	92395A112	11.00	94615A112	10.29
6-32	1/4″	3/16″	50	92395A113	12.00	94615A113	10.52
8-32	5/16″	7/32″	50	92395A114	12.60	94615A114	11.24
10-24	3/8″	1/4″	25	92395A513	8.60	—	—
10-32	3/8″	1/4″	25	92395A515	8.60	94615A115	7.51
1/4″-20	1/2″	5/16″	25	92395A116	9.30	94615A116	8.83
5/16″-18	9/16″	3/8″	10	92395A030	6.95	94615A117	6.55
3/8″-16	5/8″	7/16″	10	92395A031	8.24	94615A118	6.86

Metric

Internal Thread Size	Pitch, mm	Insert Lg.	Drill Size	Pkg. Qty.	*Brass Inserts without Flange*	Pkg.
M3	0.5	3/16″	5/32″	50	94510A030	$10.63
M3.5	0.6	1/4″	3/16″	50	94510A035	10.63
M4	0.7	5/16″	7/32″	25	94510A040	7.33
M5	0.8	3/8″	1/4″	25	94510A045	7.39
M6	1.0	1/2″	5/16″	25	94510A050	10.71

Closed-End Cap Inserts for Wood and Plastics

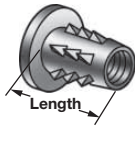

With a low-profile flange and a closed end, these inserts are perfect for exposed applications in wood and plastics. To install, just place insert in a drilled hole and hammer in place. Inserts can also be molded into plastic parts. Made of die cast zinc for good rust and weather resistance. Class 2B internal thread fit. Not rated for Rockwell hardness or tensile strength. Length is measured from under the flange.

Internal Thread Size	Lg.	Barrel Dia.	Flange Thick.	Drill Size	Pkg. Qty.		Pkg.
8-32	0.394″	0.236″	0.098″	15/64″-1/4″	50	91316A150	$11.67
10-24	0.394″	0.236″	0.098″	15/64″-1/4″	50	91316A165	11.95
10-32	0.394″	0.236″	0.098″	15/64″-1/4″	50	91316A180	12.61
1/4″-20	0.410″	0.331″	0.210″	21/64″-11/32″	25	91316A185	9.62
1/4″-20	0.611″	0.331″	0.083″	21/64″-11/32″	25	91316A200	9.19
5/16″-18	0.611″	0.394″	0.091″	3/8″-25/64″	25	91316A215	11.95

Zinc Alloy Inserts with Screw Holes

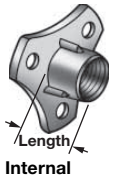

The flange on these inserts has countersunk holes to accept No. 6 screws—perfect for attaching glides and levelers to wood and particleboard. Ribbed barrel prevents the fastener from turning when tightened and aids fastener retention. Made of die cast zinc alloy for excellent rust resistance. Class 2B internal thread fit. Not rated for Rockwell hardness or tensile strength. Length is measured from under the flange.

Internal Thread Size	Lg.	Barrel Dia.	Flange Thick.	Drill Size	Pkg. Qty.		Pkg.
5/16″-18	0.394″	0.472″	0.098″	29/64″-15/32″	10	94122A100	$6.05
3/8″-16	0.394″	0.472″	0.098″	29/64″-15/32″	10	94122A200	7.79

Knife-Thread Inserts for Wood

Knife threads are self-tapping and provide superior holding power in hard and soft woods and particleboard. Inch internal thread fit is Class 2B; metric is Class 6H. Power drivers have a 1/4″ hex shank, unless noted.

Slotted-drive inserts are ideal for high-volume installations—all you need is a screwdriver. For even faster installation, use our slotted plain steel power drivers (sold separately). *Brass* resists rust and mild atmospheric corrosion. Nonmagnetic. Rockwell hardness is B78. Min. tensile strength is 18,000 psi. *18-8 stainless steel* offers excellent corrosion resistance. May be mildly magnetic. Rockwell hardness is B92. Min. tensile strength is 30,000 psi.

High-strength hex drive inserts are made of high-strength plain steel so you can use them in harder materials. To install, drill a hole and screw in insert with a hex drive. Not rated for hardness or tensile strength.

Hex-drive inserts have a tapered body (except 92105A779, which has a straight body). Made of zinc alloy for good rust resistance. To install, drill a hole and screw in insert with a hex drive. Not rated for hardness or tensile strength. Inserts *without flange* are set beneath the surface; inserts *with flange* let you control insertion depth. Flange thickness is 0.01″-0.02″. For faster installation, use our hex drive plain steel power drivers (sold separately).

Slotted Drive—Inch

Internal Thread Size	Insert Lg.	Drill Size	Brass Inserts Pkg. Qty.	Brass Inserts Pkg.	Power Drivers	Power Drivers Each
4-40	3/8″	1/4″	25	90016A005	$8.47	—
6-32	3/8″	1/4″	25	90016A007	8.79	94110A110 $9.26
8-32	3/8″	1/4″	25	90016A009	8.79	94110A120 9.26
10-24	1/2″	3/8″	25	90016A011	11.00	94110A130 8.62
10-32	1/2″	3/8″	25	90016A021	11.00	94110A130 8.62
1/4″-20	1/2″	3/8″	25	90016A029	12.00	94110A140 8.62
1/4″-28	1/2″	3/8″	25	90016A032	11.15	94110A140 8.62
5/16″-18	5/8″	1/2″	10	90016A030	6.55	94110A150 9.26
5/16″-24	5/8″	1/2″	10	90016A033	6.55	94110A150 9.26
3/8″-16	5/8″	1/2″	10	90016A031	7.24	94110A160★ 9.26
3/8″-24	5/8″	1/2″	10	90016A034	7.24	94110A160★ 9.26

			18-8 SS Inserts Pkg. Qty.	18-8 SS Inserts Pkg.	Power Drivers Each	Power Drivers Each
8-32	3/8″	1/4″	—	95807A100	$2.80	94110A120 $9.26
10-24	1/2″	3/8″	—	95807A200	3.88	94110A130 8.62
1/4″-20	1/2″	3/8″	—	95807A300	3.97	94110A140 8.62

★ Hex shank is 3/8″.

Slotted Drive—Metric

Internal Thread Size	Pitch, mm	Insert Lg., mm	Drill Size	Brass Inserts Pkg. Qty.	Brass Inserts Pkg.	Power Drivers Each
M3	0.50	9.53	1/4″	10	95631A050	$4.09	94110A110 $9.26
M4	0.70	9.53	1/4″	10	95631A075	4.09	94110A120 9.26
M5	0.80	12.70	3/8″	10	95631A100	4.69	94110A130 8.62
M6	1.00	12.70	3/8″	10	95631A125	5.52	94110A140 8.62
M8	1.25	15.88	1/2″	10	95631A150	7.22	94110A150 9.26

High-Strength Hex Drive—Inch

Internal Thread Size	Insert Lg.	Drill Size	Hex Key Size	Pkg. Qty.	Steel Inserts	Steel Inserts Pkg.
10-24	15/32″	19/64″	M5	25	90192A114	$12.91
1/4″-20	15/32″	3/8″	M6	10	90192A117	7.57
1/4″-20	19/32″	3/8″	M6	10	90192A121	6.05
1/4″-20	25/32″	3/8″	M6	10	90192A124	11.62
5/16″-18	45/64″	29/64″	M8	10	90192A127	13.29
3/8″-16	13/16″	39/64″	M10	10	90192A132	9.28

Hex Drive—Inch

Internal Thread Size	Insert Lg.	Drill Size	Hex Key Size	Zinc-Alloy Inserts Pkg. Qty.	Zinc-Alloy Inserts Pkg.	Power Drivers	Power Drivers Each
Without Flange							
8-32	25/64″	15/64″	M4	100	92105A660	$12.73	96924A110 $11.82
10-24	33/64″	9/32″	M5	50	92105A665	6.38	96924A220 11.82
10-32	33/64″	9/32″	M5	50	92105A670	6.38	96924A220 11.82
1/4″-20	33/64″	23/64″	M6	100	92105A675	12.21	96924A330 11.82
1/4″-20	25/32″	23/64″	M6	50	92105A676	9.75	96924A330 11.82
5/16″-18	25/32″	7/16″	M8	50	92105A678	13.70	96924A450★ 13.89
5/16″-18	63/64″	7/16″	M8	25	92105A779	8.78	96924A450★ 13.89
With Flange—*Length is measured under the flange.*							
8-32	25/64″	15/64″	M4	100	92105A002	12.86	96924A110 11.82
10-24	25/64″	9/32″	M5	50	92105A006	7.60	96924A220 11.82
10-24	25/32″	9/32″	M5	50	92105A010	9.70	96924A220 11.82
10-32	25/64″	9/32″	M5	50	92105A014	6.36	96924A220 11.82
10-32	33/64″	9/32″	M5	50	92105A016	6.62	96924A220 11.82
10-32	25/32″	9/32″	M5	25	92105A018	4.83	96924A220 11.82
1/4″-20	33/64″	23/64″	M6	100	92105A100	13.84	96924A330 11.82
1/4″-20	25/32″	23/64″	M6	50	92105A200	8.68	96924A330 11.82
1/4″-20	63/64″	23/64″	M6	50	92105A300	12.07	96924A330 11.82
5/16″-18	33/64″	7/16″	M8	50	92105A410	12.34	96924A450★ 13.89
5/16″-18	63/64″	7/16″	M8	25	92105A415	9.01	96924A450★ 13.89
3/8″-16	33/64″	15/32″	M10	25	92105A420	9.98	96924A560★ 13.89
3/8″-16	63/64″	15/32″	M10	25	92105A430	13.70	96924A560★ 13.89

★ Hex shank is 3/8″.

Hex Drive—Metric (Hex key size is the same as internal thread size.)

Internal Thread Size	Pitch, mm	Insert Lg., mm	Drill Size, mm	Zinc-Alloy Inserts Pkg. Qty.	Zinc-Alloy Inserts Pkg.	Power Drivers	Power Drivers Each
Without Flange							
M6	1.00	13	9	50	95596A100	$9.26	96924A330 $11.82
M8	1.00	20	9	50	95596A110	11.19	96924A330 11.82
M8	1.25	13	11	25	95596A200	7.00	96924A450★ 13.89
M8	1.25	20	11	25	95596A210	9.00	96924A450★ 13.89
With Flange—*Length is measured under the flange.*							
M6	1.00	13	9	50	95596A500	10.26	96924A330 11.82
M6	1.00	20	9	50	95596A510	14.01	96924A330 11.82
M8	1.25	13	11	25	95596A600	7.88	96924A450★ 13.89
M8	1.25	20	11	25	95596A610	9.88	96924A450★ 13.89

★ Hex shank is 3/8″.

Knock-In Inserts for Wood

External teeth provide holding power. Simply drill a hole and hammer insert into place. Made of weather-resistant cast zinc alloy. Class 2B internal thread fit.

Inserts ***without flange*** are for blind holes. Inserts ***with flange*** have more holding power. Flange thickness is 0.059″-0.098″. Length is measured under flange.

Internal Thread Size	Insert Lg.	Drill Size	Without Flange Pkg. Qty.	Without Flange Pkg.	With Flange Pkg. Qty.	With Flange Pkg.
8-32	0.315″	7/32″	50	90267A563	$10.67	— —
8-32	0.394″	7/32″	50	90267A567	7.21	50 90267A693 $9.54
10-24	0.394″	9/32″	50	90267A568	10.29	50 90267A695 12.29
1/4″-20	0.394″	11/32″	50	90267A571	6.68	— —
1/4″-20	0.512″	11/32″	50	90267A572	10.04	25 90267A697 8.41
5/16″-18	0.450″	3/8″	—	—	—	25 90267A698 8.96
5/16″-18	0.830″	3/8″	—	—	—	25 90267A705 12.00

Nylon Screw Receptacle Inserts

For solid screw attachment in thin panels from 1/32″ to 5/32″ thick. These receptacle inserts snap into a square hole. When a screw is driven in, they become tight against the panel. Inserts withstand temperatures up to 167°F. Color is off-white. Not rated for hardness. Min. tensile strength is 12,000 psi. Package quantity is 50, unless noted.

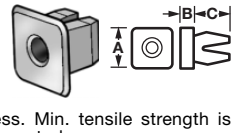

For Panel Thick.	Screw Size	Square Hole Size Range (A)	Flange Size (B)	Flange Ht. (B)	Prong Lg. (C)	Pkg.
1/32″-5/32″	8	0.265″-0.281″	3/8″	1/32″	21/64″	98550A475 $12.71
1/32″-5/32″	8, 10	0.275″-0.290″	13/32″	1/16″	21/64″	98550A485 10.19
1/32″-5/32″	10	0.375″-0.390″	5/8″	1/16″	21/64″	98550A495▲ 9.52
1/32″-5/32″	1/4″	0.330″-0.343″	9/16″	1/16″	21/64″	98550A515■ 12.33

▲ Package quantity is 25. ■ Round head (not illustrated).

Tapered-Barrel Tee Nuts

Made of rust-resistant zinc-plated C1006-C1008 steel. Press fit the tapered barrel into a pilot hole. Hook prongs provide retention in soft materials. Class 2B thread fit.

Internal Thread Size	Base Size	Barrel Dia.	Barrel Ht.	Drill Size	Pkg. Qty.	Pkg.
10-24	11/16″×45/64″	0.230″	3/8″	1/4″	50	90244A316 $8.09
10-32	11/16″×45/64″	0.230″	7/16″	1/4″	50	90244A319 9.00
1/4″-20	53/64″×13/16″	0.305″	3/8″	5/16″	50	90244A325 9.70
1/4″-20	11/16″×45/64″	0.305″	9/16″	5/16″	50	90244A329 8.96
5/16″-18	53/64″×13/16″	0.370″	5/8″	25/64″-13/32″	50	90244A336 12.30

Zinc-Plated Steel Self-Locking Tee Nuts

Distorted internal threads firmly lock screws in place. To install, drill a hole, insert tee nut, and hammer in the four locking prongs. Made from rust-resistant zinc-plated C1006-C1008 steel. Class 2B thread fit. Not rated for hardness or tensile strength.

Internal Thread Size	Base Dia.	Barrel Dia.	Barrel Ht.	Drill Size	Pkg. Qty.	Pkg.
1/4″-20	3/4″	0.305″	5/16″	5/16″	50	93766A200 $8.50
1/4″-20	3/4″	0.305″	7/16″	5/16″	50	93766A300 8.78
3/8″-16	1″	0.440″	7/16″	29/64″	25	93766A500 11.55

Tee Nuts

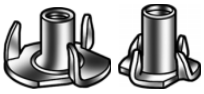

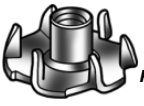

Here's an easy way to put steel threads in wood, plastic, and particleboard. Just drill a hole to fit the barrel, insert tee nut, and hammer in the prongs until the base of the tee nut is flush with the surface. Inch internal thread fit is Class 2B. Metric internal thread fit is Class 6H. Not rated for Rockwell hardness or tensile strength. Nuts with fewer prongs minimize splitting in hard materials.

Zinc-plated steel offers good rust resistance. *18-8 stainless steel* offers excellent corrosion resistance. May be mildly magnetic. *Plain steel* is low-strength C1006-C1008 steel.

Internal Thread Size	Base Dia.	Barrel Dia.	Barrel Ht.	Drill Size	Pkg. Qty.		Pkg.
Inch							
Three Prongs—Zinc-Plated Steel							
4-40	23/64″	0.130″	1/8″	9/64″	100	90975A002	$11.06
6-32	9/16″	0.162″	1/4″	11/64″	100	90975A007	7.38
8-32	23/32″	0.209″	1/4″	7/32″	100	90975A009	7.93
8-32	1/2″	0.220″	1/4″	7/32″	100	90975A012	7.87
8-32	19/32″	0.220″	1/4″	1/4″	100	90975A014	8.10
10-24	45/64″	0.243″	5/16″	1/4″	100	90975A042	8.59
10-24	45/64″	0.243″	7/16″	1/4″	100	90975A050	9.78
10-24	3/4″	0.243″	3/16″	1/4″	100	90975A043	10.32
10-24	3/4″	0.243″	9/32″	1/4″	100	90975A038	9.53
10-24	3/4″	0.243″	3/8″	1/4″	100	90975A041	11.17
10-32	1/2″	0.243″	3/16″	1/4″	100	90975A015	12.10
10-32	45/64″	0.243″	5/16″	1/4″	100	90975A018	9.21
10-32	45/64″	0.243″	7/16″	1/4″	100	90975A021	10.35
10-32	3/4″	0.243″	9/32″	1/4″	100	90975A023	9.97
1/4″-20	3/4″	0.305″	5/16″	5/16″	100	90975A053	8.95
1/4″-20	3/4″	0.305″	3/8″	5/16″	50	90975A055	5.77
1/4″-20	3/4″	0.305″	9/16″	5/16″	50	90975A057	5.24
3/8″-16	1″	0.440″	7/16″	29/64″	50	90975A059	12.73
Four Prongs—18-8 Stainless Steel							
10-24	3/4″	0.232″	9/32″	15/64″	10	90973A040	5.74
1/4″-20	3/4″	0.311″	3/8″	5/16″	10	90973A029	5.95
1/4″-20	3/4″	0.311″	1/2″	5/16″	10	90973A114	8.79
5/16″-18	7/8″	0.391″	3/8″	13/32″	10	90973A115	9.94
5/16″-18	7/8″	0.391″	1/2″	13/32″	10	90973A116	11.14
3/8″-16	1″	0.468″	7/16″	31/64″	1	90973A120	3.11
Four Prongs—Zinc-Plated Steel							
1/4″-20	3/4″	0.305″	5/16″	5/16″	100	90975A025	8.78
1/4″-20	3/4″	0.305″	7/16″	5/16″	100	90975A027	9.63
1/4″-20	3/4″	0.305″	9/16″	5/16″	100	90975A029	10.71
1/4″-20	1 1/4″	0.305″	5/16″	5/16″	50	90975A060	12.43
1/4″-20	1 1/4″	0.305″	9/16″	5/16″	25	90975A063	8.77
5/16″-18	7/8″	0.370″	3/8″	3/8″	100	90975A030	12.72
5/16″-18	7/8″	0.370″	5/8″	3/8″	50	90975A036	8.14
5/16″-18	7/8″	0.370″	7/8″	3/8″	25	90975A039	10.49
3/8″-16	1″	0.440″	7/16″	29/64″	50	90975A031	14.06
Four Prongs—Plain Steel							
1/2″-13	1 1/4″	0.591″	3/8″	19/32″	20	90975A033	12.94
Six Prongs—Zinc-Plated Steel							
10-24	45/64″	0.243″	7/16″	1/4″	100	90975A138	9.83
10-24	3/4″	0.243″	9/32″	1/4″	100	90975A133	9.44
10-32	45/64″	0.243″	7/16″	1/4″	100	90975A148	10.44
10-32	3/4″	0.243″	9/32″	1/4″	100	90975A143	10.20
1/4″-20	3/4″	0.305″	5/16″	5/16″	100	90975A153	9.20
1/4″-20	3/4″	0.305″	7/16″	5/16″	100	90975A158	9.87
3/8″-16	1″	0.440″	7/16″	29/64″	50	90975A163	12.87
Metric (mm)							
Four Prongs—Zinc-Plated Steel							
M4	15	5.6	6	6.6	100	98965A110	12.56
M4	15	5.6	8	6.6	100	98965A120	13.53
M5	17	6.5	8	7.5	100	98965A210	14.55
M6	19	7.7	9	8.7	50	98965A310	8.76
M6	19	7.7	12	8.7	50	98965A320	8.76
M8	22	10	11	11	50	98965A410	9.26
M8	22	10	15	11	50	98965A420	10.65
M10	25.5	12	13	13	25	98965A510	8.05

18-8 Stainless Steel Pillar Posts

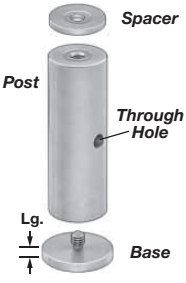

Combine posts, spacers, and bases to build structures of varying heights. ***Posts*** are solid stainless steel with a 1/4″-20 threaded hole on each end and a through hole for a tightening rod. Stack posts on a threaded rod (sold separately) to increase height or use ***spacers*** to make smaller adjustments. Spacers have a center clearance hole that allows a 1/4″ dia. stud to pass through to components on either side. Add a ***base*** to give your pillar post a wide, stable foundation. It has a 1/4″-20×5/16″ long male stud that threads into the posts.

OD	Lg.		
Post			
1″	1/2″	93322A350	$19.69
1″	3/4″	93322A380	20.92
1″	1″	93322A404	22.15
1″	1 1/2″	93322A416	24.00
1″	3″	93322A422	28.31
1″	4″	93322A430	30.77
1″	6″	93322A446	35.69
1″	12″	93322A460	66.46
Spacer			
1″	1/8″	93322A601	8.37
1″	13/64″	93322A603	9.11
1″	5/16″	93322A606	9.72
1″	25/64″	93322A609	10.34
Base			
1 1/4″	3/16″	93322A525	11.20

18-8 Stainless Steel Mounting Posts

Construct assemblies with flexibility and precision. Often used for cage assemblies, ***male×male*** posts come with a 4-40 stud on each end and ***female×male*** posts come with a 1/4″-20 threaded hole on one end, a 8-32 male stud on the other, and a through hole for a tightening rod. Posts are solid and have a length tolerance of ±0.005″.

OD	Lg.	Thread Lg. (A)		
Male×Male				
5/32″	1/2″	5/32″	94033A232	$6.40
5/32″	1″	5/32″	94033A238	6.71
5/32″	1 1/2″	5/32″	94033A244	7.02
5/32″	2″	5/32″	94033A248	7.63
5/32″	3″	5/32″	94033A252	8.55
5/32″	4″	5/32″	94033A256	9.17
5/32″	6″	5/32″	94033A260	10.71
5/32″	8″	5/32″	94033A264	12.25
1/4″	1/2″	1/4″	94033A325	6.15
1/4″	1″	1/4″	94033A329	6.40
1/4″	1 1/2″	1/4″	94033A333	6.77
1/4″	2″	1/4″	94033A337	7.26
1/4″	3″	1/4″	94033A345	8.12
1/4″	4″	1/4″	94033A349	8.74
1/4″	6″	1/4″	94033A353	10.22
1/4″	8″	1/4″	94033A359	12.25
1/4″	10″	1/4″	94033A362	14.77
1/4″	12″	1/4″	94033A365	19.82
1/4″	18″	1/4″	94033A358	30.89
Female×Male				
1/2″	3/4″	3/16″	94033A416	5.83
1/2″	1″	3/16″	94033A421	5.83
1/2″	1 1/2″	3/16″	94033A426	6.12
1/2″	2″	3/16″	94033A432	6.39
1/2″	3″	3/16″	94033A437	6.67
1/2″	4″	3/16″	94033A444	7.22
1/2″	6″	3/16″	94033A449	8.33
1/2″	8″	3/16″	94033A453	9.99
1/2″	10″	3/16″	94033A455	11.10
1/2″	12″	3/16″	94033A460	13.32

Tee Nuts without Prongs

Great for hard plastic, wood, and other nonmetallic materials that prong-style tee nuts might split. Also known as propel nuts, these tee nuts are popular for use with glides and levelers in blind and end-grain applications. To install, place nuts in a drilled hole and hammer into place. Made of plain, low-strength C1006-C1008 steel. Class 2B internal thread fit. Not rated for Rockwell hardness or tensile strength.

Internal Thread Size	Base Dia.	Barrel Dia.	Barrel Ht.	Drill Size	Pkg. Qty.		Pkg.
8-32	23/32″	0.203″	1/4″	13/64″	50	90598A041	$9.00
10-24	45/64″	0.255″	5/16″	1/4″	50	90598A011	8.20
10-32	45/64″	0.255″	5/16″	1/4″	50	90598A015	8.35
1/4″-20	5/8″	0.305″	1/2″	5/16″	50	90598A043	8.10
1/4″-20	3/4″	0.305″	5/16″	5/16″	50	90598A027	8.09
1/4″-20	3/4″	0.305″	7/16″	5/16″	50	90598A029	7.84
1/4″-20	3/4″	0.305″	9/16″	5/16″	50	90598A050	12.05
5/16″-18	3/4″	0.370″	5/8″	25/64″	25	90598A049	$10.95
5/16″-18	7/8″	0.375″	3/8″	3/8″	50	90598A030	10.10
5/16″-18	7/8″	0.370″	5/8″	3/8″	50	90598A045	12.37
5/16″-18	7/8″	0.385″	7/8″	25/64″	25	90598A048	10.89
3/8″-16	1″	0.440″	7/16″	29/64″	20	90598A031	8.22
1/2″-13	1 1/4″	0.580″	3/8″	19/32″	10	90598A033	9.20

Knurled Rivet Nuts

Ideal for materials that are too thin to tap, these knurled nuts will expand when installed, providing extra strength and increased resistance against spin and pullout.

To install, first determine material thickness. Next, thread nut onto mandrel of an installation tool (see pages 3297-3298 for installation tools), place in drilled hole of material, and crimp to create a backside flange. A secure permanent fit between the top flange and the crimped bottom section (see illustration) is formed. Once in place, the internal threads are ready for a screw or bolt (sold separately).

18-8 stainless steel nuts have excellent corrosion resistance. Aluminum nuts are made of 5056 aluminum and are ideal for outdoor use. Zinc yellow chromate-plated steel nuts are made of C1008-C1010 steel and have good rust resistance. *Inch* sizes have Class 2B thread fit. *Metric* sizes have Class 6H thread fit.

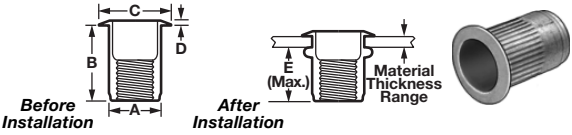

Open End— Nut is open at bottom, allowing the use of a longer screw or bolt if desired.

Closed End— Thread area is enclosed, which prevents leakage past the threads from either side of your application.

Self-Sealing— Nuts have a PVC foam seal bonded under the flange.

Inch Sizes

Thread Size	Drill Size	Material Thick. Range	(A)	(B)	(C)	(D)	(E) Max.	Pkg. Qty.	Aluminum	Pkg.	Zinc Yellow Chromate-Plated Steel	Pkg.
Open End												
6-32	17/64″	0.020″-0.080″	0.265″	0.420″	0.390″	0.030″	0.305″	25	94020A311	$6.70	95105A111	$5.39
6-32	17/64″	0.080″-0.130″	0.265″	0.470″	0.390″	0.030″	0.305″	25	94020A315	8.03	95105A115	6.70
8-32	17/64″	0.020″-0.080″	0.265″	0.420″	0.390″	0.030″	0.305″	25	94020A319	6.98	95105A119	5.64
8-32	17/64″	0.080″-0.130″	0.265″	0.470″	0.390″	0.030″	0.305″	25	94020A323	8.44	95105A123	6.94
10-24	19/64″	0.020″-0.130″	0.296″	0.475″	0.415″	0.030″	0.315″	25	94020A327	8.08	95105A127	6.49
10-24	19/64″	0.130″-0.225″	0.296″	0.585″	0.415″	0.030″	0.315″	25	94020A331	11.37	95105A131	8.10
10-32	19/64″	0.020″-0.130″	0.296″	0.475″	0.415″	0.030″	0.315″	25	94020A335	8.43	95105A135	6.49
10-32	19/64″	0.130″-0.225″	0.296″	0.585″	0.415″	0.030″	0.315″	25	94020A339	10.96	95105A139	8.10
1/4″-20	25/64″	0.027″-0.165″	0.390″	0.580″	0.500″	0.030″	0.380″	25	94020A343	12.29	95105A143	9.08
1/4″-20	25/64″	0.165″-0.260″	0.390″	0.680″	0.500″	0.030″	0.380″	10	94020A347	6.24	95105A147★	11.45
5/16″-18	17/32″	0.027″-0.150″	0.530″	0.690″	0.685″	0.035″	0.470″	10	94020A351	6.26	95105A151	5.04
5/16″-18	17/32″	0.150″-0.312″	0.530″	0.805″	0.685″	0.035″	0.425″	10	94020A355	6.32	95105A155	6.24
3/8″-16	17/32″	0.027″-0.150″	0.530″	0.690″	0.685″	0.035″	0.470″	10	94020A359	6.60	95105A159	6.61
3/8″-16	17/32″	0.150″-0.312″	0.530″	0.805″	0.685″	0.035″	0.425″	10	94020A364	12.45	95105A168	9.52
1/2″-13	11/16″	0.063″-0.200″	0.685″	1.150″	0.865″	0.047″	0.850″	10	—	—	95105A169	11.65
1/2″-13	11/16″	0.200″-0.350″	0.685″	1.300″	0.865″	0.047″	0.850″	10	—	—	95105A170	12.71
1/2″-13	11/16″	0.350″-0.500″	0.685″	1.450″	0.865″	0.047″	0.860″	10	—	—	95105A172	13.91
Closed End												
6-32	17/64″	0.020″-0.080″	0.265″	0.740″	0.390″	0.030″	0.640″	25	—	—	98280A140	9.56
6-32	17/64″	0.080″-0.130″	0.265″	0.740″	0.390″	0.030″	0.580″	25	—	—	98280A170	11.84
8-32	17/64″	0.020″-0.080″	0.265″	0.740″	0.390″	0.030″	0.640″	25	—	—	98280A210	9.96
8-32	17/64″	0.080″-0.130″	0.265″	0.740″	0.390″	0.030″	0.580″	25	—	—	98280A240	11.62
10-24	19/64″	0.020″-0.130″	0.296″	0.990″	0.415″	0.030″	0.845″	25	—	—	98280A270	11.56
10-24	19/64″	0.130″-0.225″	0.296″	0.990″	0.415″	0.030″	0.735″	25	—	—	98280A310	14.39
10-32	19/64″	0.020″-0.130″	0.296″	0.990″	0.415″	0.030″	0.845″	25	—	—	98280A340	11.69
10-32	19/64″	0.130″-0.225″	0.296″	0.990″	0.415″	0.030″	0.735″	25	—	—	98280A370	14.12
1/4″-20	25/64″	0.027″-0.165″	0.390″	1.190″	0.500″	0.030″	1.005″	10	—	—	98280A410	6.78
1/4″-20	25/64″	0.165″-0.260″	0.390″	1.190″	0.500″	0.030″	0.905″	10	—	—	98280A430	6.83

★ Package quantity is 25.

Self-Sealing (Inch Sizes)— Have the same dimensions as open-end nuts of the same size.

Thread Size	Drill Size	Material Thick. Range	Pkg. Qty.	Zinc Yellow Chromate-Plated Steel	Pkg.
6-32	17/64″	0.020″-0.060″	10	93484A630	$5.47
6-32	17/64″	0.060″-0.100″	10	93484A635	6.08
8-32	17/64″	0.020″-0.060″	10	93484A640	6.32
10-24	19/64″	0.020″-0.100″	10	93484A650	7.07
10-24	19/64″	0.100″-0.175″	10	93484A661	6.92
10-32	19/64″	0.020″-0.100″	10	93484A670	6.52
10-32	19/64″	0.100″-0.175″	10	93484A681	6.50
1/4″-20	25/64″	0.027″-0.125″	10	93484A690	$8.66
1/4″-20	25/64″	0.125″-0.195″	10	93484A711	8.91
5/16″-18	17/32″	0.027″-0.115″	5	93484A735	5.83
5/16″-18	17/32″	0.115″-0.250″	5	93484A740	6.93
3/8″-16	17/32″	0.027″-0.115″	5	93484A744	8.71
3/8″-16	17/32″	0.115″-0.250″	5	93484A752	10.51

Open End (Metric Sizes)— Dimensions given in mm.

Thread Size	Drill Size	Material Thick. Range	(A)	(B)	(C)	(D)	(E) Max.	Pkg. Qty.	18-8 Stainless Steel	Pkg.	Aluminum	Pkg.	Zinc Yellow Chromate-Plated Steel	Pkg.
M4 ×0.70	6.10	0.5- 2.5	6.00	10.00	9.00	1.00	6.50	10	97467A612	$8.91	—	—	—	—
M4 ×0.70	6.75	0.5- 2.0	6.73	10.67	9.91	0.76	7.75	25	—	—	94020A367	$8.50	95105A167	$5.64
M4 ×0.70	6.75	2.0- 3.3	6.73	11.94	9.91	0.76	7.75	25	—	—	94020A371	10.40	95105A171	6.94
M5 ×0.80	7.00	0.5- 3.0	7.00	11.00	10.00	1.00	7.50	10	97467A639	9.50	—	—	—	—
M5 ×0.80	7.60	0.5- 3.3	7.52	12.07	10.54	0.76	8.00	25	—	—	94020A375	10.84	95105A175	6.49
M5 ×0.80	7.60	3.3- 5.7	7.52	14.86	10.54	0.76	8.00	25	—	—	94020A379	12.28	95105A179	8.10
M6 ×1.00	9.00	0.5- 3.0	9.00	13.00	12.00	1.50	9.50	5	97467A666	7.03	—	—	—	—
M6 ×1.00	10.00	0.7- 4.2	9.91	14.73	12.70	0.76	9.65	25	—	—	94020A383	12.74	95105A183	9.08
M6 ×1.00	10.00	4.2- 6.6	9.91	17.27	12.70	0.76	9.65	10	—	—	94020A387	6.34	95105A187	4.91
M8 ×1.25	11.10	0.7- 3.0	11.00	15.00	15.00	1.50	11.50	5	97467A693	8.59	—	—	—	—
M8 ×1.25	13.50	0.7- 3.8	13.46	17.53	17.40	0.89	11.94	10	—	—	94020A391	6.61	95105A191	5.04
M8 ×1.25	13.50	3.8- 7.9	13.46	20.45	17.40	0.89	10.80	10	—	—	94020A395	6.51	95105A195	5.45
M10×1.50	13.50	0.7- 3.8	13.46	17.53	17.40	0.89	11.94	10	—	—	94020A399	6.62	95105A199	6.66
M10×1.50	13.50	3.8- 7.9	13.46	20.45	17.40	0.89	10.80	10	—	—	94020A404	12.46	95105A207	9.52
M12×1.75	17.45	1.6- 5.1	17.40	29.21	21.97	1.19	21.59	10	—	—	—	—	95105A208	11.65
M12×1.75	17.45	5.1- 8.9	17.40	33.02	21.97	1.19	21.59	10	—	—	—	—	95105A209	12.71
M12×1.75	17.45	8.9-12.7	17.40	36.83	21.97	1.19	21.84	5	—	—	—	—	95105A210	8.31

Kits— All nuts are zinc yellow chromate-plated steel.

50-Piece Open-End Inch Kit— Includes 12 each 8-32, 10-24, and 10-32 nuts, and 14 each 1/4″-20 nuts. Overall material thickness range is 0.020″ to 0.260″. Also includes three nosepieces, four mandrels, and a plier-style installation tool. Furnished in a plastic case.

95105A400 ..... **Each** $95.70

50-Piece Open-End Metric Kit— Includes 12 each 4 mm nuts, 24 each 5 mm nuts, and 14 each 6 mm nuts. Overall material thickness range is 0.5 mm to 6.6 mm. Also includes two nosepieces, three mandrels, and a plier-style installation tool. Furnished in a plastic case.

95105A500 ..... **Each** $104.44

Standard Rivet Nuts

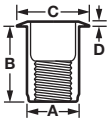

Before Installation

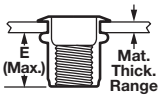

After Installation

Similar to open-end knurled rivet nuts, standard rivet nuts provide a thicker flange profile to resist push-through. To install, first determine the material thickness, then thread nut onto mandrel of installation tool (see pages 3297-3298 for installation tools), place in drilled hole, and crimp to create a backside flange. A secure fit between the top flange and the crimped bottom section (see illustration) is formed. Once in place, the internal threads are ready for a screw or bolt (sold separately). Threads meet Class 2B. ***Aluminum*** (5154/6061) nuts weigh one-third as much as steel and offer mild corrosion resistance. ***Zinc-plated steel*** nuts are made of C1006-C1010 steel and have excellent corrosion resistance.

Thread Size	Drill Size	Material Thick. Range	(A)	(B)	(C)	(D)	(E) Max.	Pkg. Qty.	***Aluminum***	Pkg.	***Zinc-Plated Steel***	Pkg.
6-32	#12	0.010″-0.075″	0.189″	0.438″	0.325″	0.032″	0.328″	50	93482A605	$10.76	—	—
8-32	#2	0.010″-0.075″	0.221″	0.438″	0.357″	0.032″	0.428″	50	93482A611	9.12	93483A611	$10.15
8-32	#2	0.075″-0.120″	0.221″	0.500″	0.357″	0.032″	0.425″	25	93482A631	4.64	93483A631	7.45
8-32	#2	0.120″-0.160″	0.221″	0.500″	0.357″	0.032″	0.380″	25	93482A641	4.71	93483A641	8.13
10-24	1/4″	0.010″-0.080″	0.250″	0.531″	0.406″	0.038″	0.416″	25	93482A643	12.26	—	—
10-24	1/4″	0.080″-0.130″	0.250″	0.594″	0.406″	0.038″	0.429″	25	93482A646	7.18	—	—
10-32	E	0.010″-0.080″	0.250″	0.531″	0.406″	0.038″	0.521″	25	93482A651	5.21	93483A651	6.74
10-32	E	0.080″-0.130″	0.250″	0.594″	0.406″	0.038″	0.514″	25	93482A661	5.54	93483A661	9.14
10-32	E	0.130″-0.180″	0.250″	0.641″	0.406″	0.038″	0.511″	25	93482A671	5.80	93483A671	10.02
1/4″-20	Q	0.020″-0.080″	0.332″	0.625″	0.475″	0.058″	0.605″	25	93482A681	6.94	93483A681	8.76
1/4″-20	Q	0.080″-0.140″	0.332″	0.687″	0.475″	0.058″	0.607″	25	93482A691	7.31	93483A691	9.87
1/4″-20	Q	0.140″-0.200″	0.332″	0.750″	0.475″	0.058″	0.610″	25	93482A711	7.39	93483A711	10.45
1/4″-20	Q	0.200″-0.260″	0.332″	0.812″	0.475″	0.058″	0.612″	25	93482A721	8.29	93483A721	14.52
5/16″-18	27/64″	0.030″-0.125″	0.413″	0.750″	0.665″	0.062″	0.550″	25	93482A810	12.06	93483A810	11.01
5/16″-18	Z	0.125″-0.200″	0.413″	0.875″	0.665″	0.062″	0.640″	25	93482A815	5.56	—	—
3/8″-16	1/2″	0.030″-0.115″	0.490″	0.844″	0.781″	0.088″	0.644″	25	93482A910	12.58	93483A910	13.52
3/8″-16	12.5 mm	0.115″-0.200″	0.490″	0.938″	0.781″	0.088″	0.703″	25	93482A916	6.45	—	—

103-Piece Inch Kit—Includes 25 aluminum 6-32 nuts, 25 steel 8-32 nuts, 25 steel 10-24 nuts, 20 aluminum 1/4″-20 nuts, and 8 steel 1/4″-20 nuts. Overall material thickness range is 0.010″ to 0.165″. Also includes three nosepieces, four mandrels, and a plier-style installation tool. Furnished in a 13 1/2″ Lg.×7 1/4″ Wd.×2″ Dp. plastic case.
95585A300 ..... **Each** $94.22

200-Piece Kits—Each includes 200 nuts, two nosepieces with mandrels, and a plier-style installation tool. Furnished in a 12 1/2″ Lg.×8 1/2″ Wd.×1 7/8″ Dp. plastic case. *Inch kit* includes 80 each 8-32 nuts and 120 each 10-32 nuts. Overall material thickness range is 0.010″ to 0.180″. *Metric kits* include 120 each M4 nuts and 80 each M5 nuts. Overall material thickness range is 0.25 to 5 mm.

Inch Kit—Aluminum	92387A690	**Each**	$168.81
Metric Kit—Aluminum	92387A810	**Each**	$172.48
Metric Kit—Zinc-Plated Steel	92387A850	**Each**	$184.23

Slotted-Body Rivet Nuts for Thin Materials

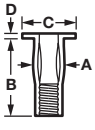

A larger backside flange increases strength, making these slotted-body nuts ideal for use in plastic and thin materials. They can accommodate a wider range of material thicknesses as well as slightly oversized holes. To install, first determine the material thickness, then thread nut onto the mandrel of an installation tool (see 96349A on page 3297 or 92894A on page 3298), place in drilled hole, and crimp. Made of C1008-C1010 zinc yellow chromate steel. Threads meet Class 2B.

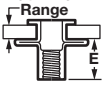

Thread Size	Drill Size	Material Thick. Range	(A)	(B)	(C)	(D)	(E) Max.	Pkg. Qty.		Pkg.
10-32	R	0.020″-0.175″	0.329″	0.828″	0.510″	0.038″	0.410″	10	97217A359	$5.71
10-32	R	0.175″-0.320″	0.329″	0.921″	0.510″	0.038″	0.410″	10	97217A376	6.22
1/4″-20	X	0.020″-0.280″	0.384″	1.000″	0.645″	0.059″	0.505″	10	97217A393	6.50
1/4″-20	X	0.280″-0.500″	0.384″	1.234″	0.645″	0.059″	0.505″	5	97217A410	4.46
5/16″-18	1/2″	0.020″-0.280″	0.492″	1.141″	0.770″	0.062″	0.570″	5	97217A427	4.94
M6×1.0	10 mm	0.50 mm-7.10 mm	9.70 mm	25.40 mm	16.38 mm	1.50 mm	12.80 mm	10	97217A444	6.50
M8×1.25	1/2″	0.50 mm-7.10 mm	12.57 mm	28.95 mm	19.56 mm	1.57 mm	14.48 mm	5	97217A461	4.94

Screwdriver-Installed Rivet Nuts for Thin Materials

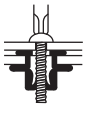

Also known as jack nuts, these steel rivet nuts are ideal for use in thin, soft, and brittle materials and can be easily installed with a screwdriver—no special tools needed. When tightened, the body collapses to form legs, which grip the inside of the mounting surface. *Zinc-plated* nuts are rust resistant. *Self-sealing coated* nuts seal out moisture to prevent corrosion. *PVC-coated* nuts protect from scratches and corrosion.

Friction-wrench tool (included) installs a limited number of jack nuts. To use, press tool against head of jack nut and run in screw (not included) to set. ***Jack-nut tool*** allows quicker and easier installation. To use, thread pull rod (required; sold separately) into jack nut, insert into hole, and squeeze handles to set.

Thread Size	Material Thick. Range	Hole Size	Head Dia.	Head Ht.	O'all Lg.	Pkg. Qty.		Pkg.
Zinc Plated								
6-32	1/64″-3/16″	0.324″	0.468″	0.073″	0.653″	25	90186A211	$5.69
6-32	3/16″-3/8″	0.324″	0.468″	0.073″	0.841″	25	90186A311	9.16
1/4″-20	1/64″-3/16″	0.444″	0.625″	0.073″	0.731″	25	90186A213	11.18
1/4″-20	3/16″-3/8″	0.444″	0.625″	0.073″	0.919″	25	90186A313	11.37
Self-Sealing Coated								
1/4″-20	1/64″-3/16″	0.444″	0.625″	0.073″	0.731″	10	90186A500	8.35
PVC Coated								
1/4″-20	1/64″-3/16″	0.444″	0.625″	0.073″	0.731″	10	90186A600	8.12

Replacement Parts and Accessories

Replacement Friction-Wrench Tool	90186A411	**Each**	$0.78
Optional Jack-Nut Tool	90186A811	**Each**	$42.00
Pull Rod for Jack-Nut Tool (6-32 thread size)	90186A821	**Each**	$11.56
Pull Rod for Jack-Nut Tool (1/4″-20 thread size)	90186A823	**Each**	$11.56

Screwdriver-Installed Rubber-Insulated Rivet Nuts

Also known as well nuts and well-nut threaded inserts, these flanged neoprene bushings have a brass insert and are great for fastening metal to plastic, damping vibration, and sealing out moisture. They can be installed easily with a screwdriver—no special tools needed. To use, place bushing in a hole and insert a machine screw (not included). Tightening the screw causes the bushing to expand, securing the nut.

115-Piece Kit—Includes 40 8-32 nuts, 40 10-32 nuts, and 35 1/4″-20 nuts. Overall material thickness range is 0.015″ to 0.643″.
93495A111 ..... **Each** $53.91

Thread Size	Material Thick. Range	Hole Size	Head Dia.	Head Ht.	O'all Lg.	Pkg. Qty.		Pkg.
6-32	0.015″-0.156″	5/16″	0.452″	0.062″	0.499″	25	93495A120	$13.65
6-32	0.375″-0.607″	1/4″	0.554″	0.035″	0.981″	10	93495A110	6.37
8-32	0.015″-0.156″	5/16″	0.438″	0.052″	0.499″	25	93495A130	14.50
10-32	0.015″-0.192″	3/8″	0.500″	0.036″	0.554″	10	93495A180	6.72
10-32	0.035″-0.232″	3/8″	0.562″	0.040″	0.665″	10	93495A250	6.72
10-32	0.312″-0.643″	3/8″	0.562″	0.051″	1.051″	10	93495A190	8.12
1/4″-20	0.015″-0.111″	1/2″	0.630″	0.051″	0.630″	10	93495A310	8.08
1/4″-20	0.031″-0.187″	1/2″	0.750″	0.187″	0.829″	10	93495A321	9.48
1/4″-20	0.250″-0.457″	1/2″	0.635″	0.051″	1.051″	10	93495A331	9.85
5/16″-18	0.015″-0.156″	5/8″	0.875″	0.125″	0.725″	5	93495A431	10.49
3/8″-16	0.015″-0.437″	3/4″	1.250″	0.187″	1.062″	5	93495A441	13.13

Rivet Nut Inserts

Inserts can be installed into most any material that is 0.030″ or thicker. As the insert is installed, the threaded portion is drawn into the sleeve, creating pressure against the hole and securing the insert. Drill size listed in table is for material with a 0.030″-0.090″ thickness. Thicker material may require larger holes. The inch flange (D) is 0.015″ thick; metric flange (D) is 0.38 mm thick. Inserts are for use with Grade 8 (Class 2B thread fit) and metric Class 12.9 screws (Class 6H thread fit). ***Cadmium-plated inserts*** offer excellent resistance to rust. *Steel* is C1010-C1110. Weather-resistant *aluminum* is 6061-T6. ***Tin-plated 18-8 stainless steel inserts*** resist food acids and offer excellent corrosion resistance. ***Insert kits*** include a nut insert tool, mandrels, and inserts. Kits in sizes 8-32, 10-32, and ¼″-20 have 100 inserts; all others have 50. Furnished in a 10″ Lg.×7″ Wd.×2″ Dp. plastic case.

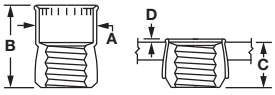

Before Installation *After Installation*

Inserts and Insert Kits

Thread Size	Drill Size	(A)	(B)	(C)	INSERTS: Cadmium-Plated Steel Pkg. Qty.	Pkg.	INSERTS: Cadmium-Plated Aluminum Pkg. Qty.	Pkg.	INSERTS: Tin-Plated 18-8 Stainless Steel Pkg. Qty.	Pkg.	INSERT KITS Cadmium-Plated Steel	Each
Inch Sizes												
4-40	3/16″	0.187″	0.370″	0.205″	25	98560A526	10	98560A636	1	98005A110		
6-32	7/32″	0.218″	0.370″	0.205″	25	98560A531	10	98560A172	5	98005A120		
8-32	1/4″	0.249″	0.370″	0.205″	25	98560A541	10	98560A173	5	98005A130	98560A123	$109.25
10-24	9/32″	0.280″	0.370″	0.205″	25	98560A551	10	98560A174	5	98005A140		
10-32	9/32″	0.280″	0.370″	0.205″	25	98560A561	25	98560A176	5	98005A150	98560A124	109.25
12-24	3/8″	0.374″	0.515″	0.275″	25	98560A566						
1/4″-20	3/8″	0.374″	0.515″	0.275″	10	98560A571	10	98560A266	1	98005A160	98560A125	109.25
1/4″-28	3/8″	0.374″	0.515″	0.275″	10	98560A576	10	98560A668	1	98005A330		
5/16″-18	1/2″	0.499″	0.615″	0.325″	10	98560A581	5	98560A175	1	98005A170	98560A126	109.25
5/16″-24	1/2″	0.499″	0.615″	0.325″	10	98560A586						
3/8″-16	9/16″	0.561″	0.745″	0.390″	10	98560A591	5	98560A177	1	98005A180	98560A046	109.25
3/8″-24	9/16″	0.561″	0.745″	0.390″	10	98560A521			1	98005A190		
1/2″-13	3/4″	0.748″	0.935″	0.485″	5	98560A593						
1/2″-20	3/4″	0.748″	0.935″	0.485″	5	98560A594						
Metric—Dimensions given in mm.												
M3×0.5	4.75	4.76	9.40	5.21	25	91230A001	10	91230A211	5	98005A410		
M4×0.7	6.35	6.34	9.40	5.21	25	91230A002	10	91230A221	5	98005A420		
M5×0.8	7.14	7.12	9.40	5.21	25	91230A004	10	91230A231	5	98005A430		
M6×1.0	9.52	9.51	13.08	6.99	10	91230A009	5	91230A241	1	98005A440		
M8×1.25	12.70	12.69	15.62	8.26	10	91230A011	5	91230A251	1	98005A450		
M10×1.5	14.28	14.26	18.92	9.91	5	91230A015			1	98005A460		

Insert Combination Kits

All inserts are cadmium-plated steel. All kits contain a nut insert tool and are furnished in a 13½″ Lg.×10″ Wd.×2″ Dp. plastic case.

300-Piece Inch Kit— Contains 50 each of sizes 4-40, 6-32, 8-32, 10-32, ¼″-20, and 5/16″-18; and six mandrels.
98560A131 ..... $239.98

225-Piece Metric Kit— Contains 50 each of sizes M3, M4, M5, and M6, and 25 each of size M8; and five mandrels.
91230A600 ..... $222.28

Accessories

Nut Insert Tool— To use, thread a nut insert onto the mandrel of the same size (sold separately) and place it into hole. Then push down on the T-handle and turn clockwise to install. Tool is all metal; handle is aluminum.
98590A100 ..... $62.50

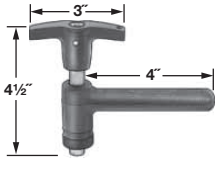

Mandrels— No special tools are needed to change mandrels.

Thread Size		
4-40	98590A210	$22.88
6-32	98590A220	22.88
8-32	98590A230	22.88
10-24	98590A240	22.88
10-32	98590A250	22.88
12-24	98590A255	22.88
1/4″-20	98590A260	22.88
1/4″-28	98590A270	22.88
5/16″-18	98590A280	22.88
5/16″-24	98590A285	$22.88
3/8″-16	98590A290	22.88
3/8″-24	98590A300	22.88
M3×0.5	98590A310	22.88
M4×0.7	98590A320	22.88
M5×0.8	98590A330	22.88
M6×1.0	98590A340	22.88
M8×1.25	98590A350	22.88
M10×1.50	98590A360	22.88

Wrench-Drive Rivet Nut Installation Tools

Easily install knurled and standard rivet nuts as well as rivet nut inserts with these manual installation tools. Each includes two mandrels per thread size. Use with steel, aluminum, and stainless steel rivet nuts and nut inserts. Use a 7/8″ wrench (not included) to hold the tool and a 11/16″ ratchet (not included) to tighten the nut.

Thread Size		
6-32	96349A101	$28.84
8-32	96349A152	28.84
10-24, 10-32	96349A203	30.04
1/4″-20, 1/4″-28	96349A305	30.04
5/16″-18, 5/16″-24	96349A407	30.04
3/8″-16, 3/8″-24	96349A509	30.04
M3	96349A611	$23.60
M4	96349A662	23.60
M5	96349A713	23.60
M6	96349A764	24.59
M8	96349A815	24.59
M10	96349A866	23.60

Rivet-Type Studs

These unique threaded studs are an ideal alternative to weld-and-clinch studs. To install, thread stud into the nosepiece of the installation tool (see 92388A on page 3298). Insert body into hole. The installation tool continues to install the studs, forming a backside flange that resists pullout. *Note:* Dimension (F) is based on maximum installation thickness.

Studs are made of C1038 steel with a zinc-plated finish for excellent resistance to rust. Threads meet Class 2A. Bodies are made of C1008-C1010 steel. Use with Grade 5 nuts.

Thread Size	Drill Size	Material Thick. Range	(A)	(B)	(C)	(D)	(E)	(F)	Pkg. Qty.		Pkg.
6-32	17/64″	0.020″-0.080″	0.265″	0.485″	0.390″	0.030″	0.360″	0.500″	10	98075A111	$7.52
6-32	17/64″	0.080″-0.130″	0.265″	0.535″	0.390″	0.030″	0.360″	0.450″	10	98075A115	8.91
8-32	17/64″	0.020″-0.080″	0.265″	0.485″	0.390″	0.030″	0.360″	0.500″	10	98075A119	7.49
8-32	17/64″	0.080″-0.130″	0.265″	0.535″	0.390″	0.030″	0.360″	0.450″	10	98075A123	8.80
10-24	19/64″	0.020″-0.130″	0.296″	0.545″	0.415″	0.030″	0.380″	0.500″	10	98075A127	8.60
10-32	19/64″	0.020″-0.130″	0.296″	0.545″	0.415″	0.030″	0.380″	0.500″	10	98075A135	8.77
10-32	19/64″	0.130″-0.225″	0.296″	0.655″	0.415″	0.030″	0.380″	0.405″	10	98075A139	10.79
1/4″-20	25/64″	0.027″-0.165″	0.390″	0.670″	0.500″	0.030″	0.465″	0.625″	10	98075A143	8.54
1/4″-20	25/64″	0.165″-0.260″	0.390″	0.770″	0.500″	0.030″	0.465″	0.530″	10	98075A147	12.98
5/16″-18	17/32″	0.027″-0.150″	0.530″	0.810″	0.685″	0.035″	0.600″	0.625″	10	98075A151	12.22
5/16″-18	17/32″	0.150″-0.312″	0.530″	0.925″	0.685″	0.035″	0.555″	0.463″	10	98075A155	14.45
3/8″-16	17/32″	0.027″-0.150″	0.530″	0.810″	0.685″	0.035″	0.600″	0.750″	5	98075A159	7.81
3/8″-16	17/32″	0.150″-0.312″	0.530″	0.925″	0.685″	0.035″	0.535″	0.588″	5	98075A163	11.40

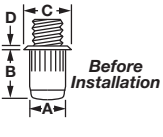

Before Installation

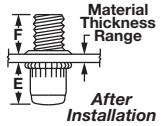

After Installation

Rivet Nut Installation Tools

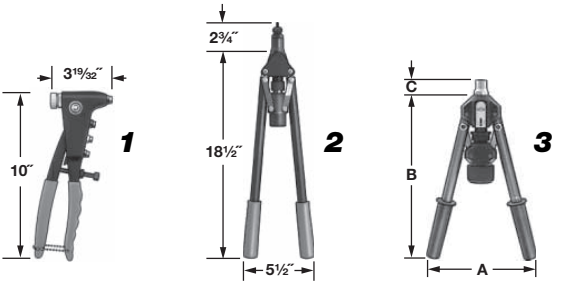

(1) Plier-Style Tool

A bearing design extends tool life. Sets all styles of aluminum rivet nuts up to 5/16″ and steel rivet nuts up to 1/4″. Includes mandrels and nosepieces to set 8-32, 10-24, and 10-32 sizes (additional sizes sold separately). Weighs 1.75 lbs.

95585A600 ..... Each $56.28

MANDREL AND NOSEPIECE SETS

Thread Size		Set	Thread Size		Set
6-32	95585A610	$12.96	3/8″-16	95585A670●	$12.96
8-32	95585A620	12.33	M4	95585A680	14.93
10-24	95585A630	12.96	M5	95585A690	14.93
10-32	95585A640	12.96	M6	95585A710	18.91
1/4″-20	95585A650	12.96	M8	95585A720●	12.96
5/16″-18	95585A660●	12.96			

● Mandrel only (no nosepiece needed).

(2) Lever-Style Tool

Extra-long handles give additional leverage. Sets all types of aluminum and steel rivet nuts. Tool includes one 1/4″-20 mandrel and nosepiece set (additional sizes sold separately). Weighs 4.25 lbs.

95603A770 ..... Each $134.63

MANDREL AND NOSEPIECE SETS

Thread Size		Set	Thread Size		Set
10-24	95603A880	$15.56	M5	95603A930	$15.56
10-32	95603A890	15.56	M6	95603A940	15.56
1/4″-20	95603A900	15.56	M8	95603A950	15.56
5/16″-18	95603A910	15.56	M10	95603A960	15.56
3/8″-16	95603A920	15.56			

(3) Adjustable-Stroke Tools

A stroke indicator ensures proper installation. Tools install a wide range of sizes and set aluminum and steel rivet nuts and steel rivet-type studs (unless noted). *Regular tool* has a spin-to-reverse knob for quick removal. Weighs 3.5 lbs. *Heavy duty tool* has a quick-acting, pull-to-remove plunger. Does not set rivet-type studs. Weighs 5 lbs. Mandrel and nosepiece sets (required; sold separately) are interchangeable between both tools (unless noted).

	(A)	(B)	(C)		Each
Regular	5 1/2″	14 1/2″	1 3/16″	92388A110	$275.53
Heavy Duty	6″	19″	1 3/16″	92388A115	495.97

MANDREL AND NOSEPIECE SETS

Thread Size	For Knurled Rivet Nuts	Set	For Standard Rivet Nuts	Set	For Rivet-Type Studs	Set
6-32	92388A223	$40.88	92388A423	$40.88	92388A623	$40.88
8-32	92388A226	40.88	92388A426	40.88	92388A626	40.88
10-24	92388A229	40.88	92388A429	40.88	92388A629	40.88
10-32	92388A232	40.88	92388A432	40.88	92388A632	40.88
1/4″-20	92388A235	40.88	92388A435♦	40.88	92388A635	40.88
1/4″-28	92388A236	40.88	92388A436♦	40.88	—	—
5/16″-18	92388A238	40.88	92388A438♦	40.88	92388A638	40.88
3/8″-16	92388A241	40.88	92388A441♦★	40.88	92388A641	40.88
1/2″-13	92388A243♦	40.88	—	—	—	—
1/2″-20	92388A245♦	40.88	—	—	—	—
M4	92388A244	40.88	92388A444	40.88	—	—
M5	92388A247	40.88	92388A447	40.88	—	—
M6	92388A251	40.88	92388A451♦	40.88	—	—
M8	92388A254	40.88	92388A454♦	40.88	—	—
M10	92388A257	40.88	—	—	—	—

♦ Does not work on regular tool; for use with heavy duty tool only.
★ Only sets aluminum rivet nuts.

Power-Driven Rivet Nut Installation Tools

A simple "spin-pull-spin" sequence quickly and efficiently installs all styles of aluminum and steel rivet nuts (unless noted). To use, thread insert onto mandrel and depress trigger to "spin" the insert onto the tool. Place insert into application and depress ("pull") trigger; tool will automatically set insert. Press trigger to reverse ("spin") the mandrel off.

Cordless Rechargeable 14.4-Volt Tool

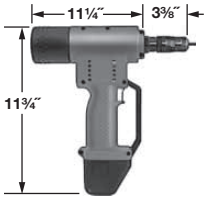

Battery pack fully charges in one hour; tool will set 180 to 600 rivet nuts per charge (depending on size and material). Tool provides 2,800 lbs. of pulling power with an adjustable stroke up to 0.216″ and includes mandrels and nosepieces for setting 8-32, 10-32, and 1/4″-20 rivet nuts (additional sizes sold separately); battery pack; charger; and 14″ Lg.×11″ Wd.×3 3/4″ Dp. steel carrying case. Weighs 4.8 lbs.

Tool	90336A110	$1,393.85
Extra Battery Pack	90336A730	283.72
Extra Battery Charger	90336A720	241.46

Thread Size	Mandrel		Nosepiece	
6-32	90336A410	$25.97	90336A300	$24.43
8-32	90336A420	25.98	90336A310	24.55
10-32	90336A440	25.98	90336A330	24.55
1/4″-20	90336A460	25.98	90336A350	24.55
5/16″-18	90336A470	25.98	90336A360	24.44
3/8″-16	90336A480★	25.98	90336A370★	24.44
M4	90336A610	19.86	90336A510	24.45
M5	90336A620	19.86	90336A520	24.45
M6	90336A640	19.86	90336A540	24.45
M8	90336A660	19.86	90336A360	24.44
M10	90336A680	19.86	90336A580	24.45

★ Only sets aluminum rivet nuts.

Air-Powered Tools

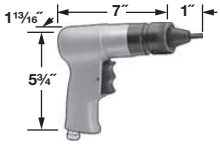

Ideal for use in a range of material thicknesses, this tool has a quick-change nosepiece for head assembly replacement without tools. Only sets thin wall aluminum and steel rivet nuts. Operating pressure is 35-120 psi. Connection is 1/4″ NPT. Weighs 4 lbs.

Also Available: Replacement head assembly kit. Includes hex drive, mandrel, bearing set, and nose cone. Can be replaced without tools. Please ask for 94675A660 and specify thread size.

Also Available: Replacement mandrel. Ask for 94675A550 and specify thread size.

TOOLS WITH NOSEPIECE

Thread Size			Thread Size		
4-40	94675A001	$603.83	3/8″-16	94675A019	$650.53
6-32	94675A003	605.35	3/8″-24	94675A021	650.53
8-32	94675A005	606.87	1/2″-13	94675A023	1,242.87
10-24	94675A007	609.93	1/2″-20	94675A025	1,242.87
10-32	94675A009	609.93	M4	94675A042	608.40
1/4″-20	94675A011	611.48	M5	94675A044	613.03
1/4″-28	94675A013	611.48	M6	94675A046	613.03
5/16″-18	94675A015	648.90	M8	94675A048	652.16
5/16″-24	94675A017	648.90	M10	94675A050	653.80
			M12	94675A052	1,245.98

Hydraulic/Air-Powered Tool

One-step operation makes this fully automated tool perfect for high-speed installation; tool can place inserts at 2.5-second intervals. With one touch, tool will thread insert onto mandrel (nosepiece required; sold separately), install insert, and reverse out. Tool provides 4,380 lbs. of pulling power with an adjustable stroke up to 0.276″. Operating pressure is 75-100 psi. Connection is 1/4″ NPT. Weighs 4.8 lbs.

92894A700 ..... Each $1,873.02

NOSEPIECES

Thread Size		Set	Thread Size		Set
8-32	92894A550	$97.53	M4	92894A810	$97.53
10-24	92894A560	97.53	M5	92894A820	97.53
10-32	92894A570	97.53	M6	92894A830	97.53
1/4″-20	92894A580	97.53	M8	92894A840	97.53
5/16″-18	92894A600	97.53	M10	92894A850	97.53
3/8″-16	92894A620	97.53			

Fabric Snaps

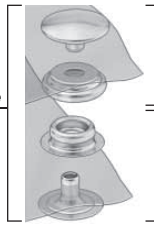

Join leather, canvas, and other soft, heavy fabrics with these heavy duty 9/16″ diameter snaps. All snaps require a tool (sold separately on this page) to install. Use ***stacker snaps*** when you want to stack one snap on top of another. They require special dies (sold separately on this page) for installation.

Pkg. Qty.	Nickel-Plated Brass	Pkg.	Black-Finished Brass	Pkg.	18-8 Stainless Steel	Pkg.
Complete Snaps						
10	95691A745	$5.30	95691A775	$5.82	95691A715	$8.60
100	95691A660	45.38	95691A270	55.62	95691A700	82.00
Snap Halves						
10 Female	95690A251	4.25	95690A451	5.28	95690A151	6.90
10 Male	95690A201	3.49	95690A401	5.15	95690A101	4.06
Stacker Snaps						
10 Female/ Male	95690A299	5.69	———	——	———	——
10 Male/ Male	95690A275	5.27	———	——	———	——

Adhesive-Backed Male Snap Halves

No drilling or holes are required with these male snap halves. Peel off the backing and stick to flat and curved surfaces. Temperature range is –31° to +230° F.

	Pkg. Qty.	Pkg.
Male Snap Halves		
Black Plastic	8	95690A905 $12.68
White Plastic	8	95690A902 12.68
Optional Female Snap Halves		
Nickel-Plated Brass	10	95690A251 5.28
Black-Finished Brass	10	95690A451 4.25
18-8 Stainless Steel	10	95690A151 6.90

Male Snap Halves for Solid Surfaces

When you need to fasten a fabric snap to a solid surface, pair one of these snap halves with a female snap half or a male/female stacker snap (sold separately on this page).

Threaded Stud-Style

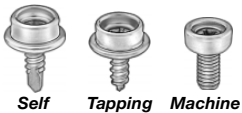

All have a Phillips drive for easy installation.

Self Drilling— Use in steel, aluminum, and fiberglass. Choose from ***Type 410 SS screws*** (may be magnetic), and ***18-8 SS screws*** (mildly magnetic).

Tapping— For drilled holes in wood, metal, and fiberglass.

Machine Screw— For threaded holes in metal and fiberglass.

Screw Size	Snap	Screw	Pkg. Qty.	Pkg.
Self Drilling				
#8 × 1/2″	Nickel-Plated Brass	410 SS	10	95707A780 $7.89
#8 × 1/2″	Nickel-Plated Brass	18-8 SS	10	95707A782 7.38
#8 × 3/4″	Nickel-Plated Brass	18-8 SS	10	95707A786 7.89
Tapping				
#8 × 3/8″	18-8 Stainless Steel	18-8 SS	10	95707A720 6.88
#8 × 3/8″	Nickel-Plated Brass	18-8 SS	10	95707A781 5.86
#8 × 5/8″	18-8 Stainless Steel	18-8 SS	10	95707A740 6.04
#8 × 5/8″	Nickel-Plated Brass	18-8 SS	10	95707A783 6.19
#10 × 5/8″	Nickel-Plated Brass	18-8 SS	10	95707A684 7.14
Machine Screw				
8-32 × 1/2″	18-8 Stainless Steel	18-8 SS	10	95707A870 7.46
10-32 × 3/8″	Nickel-Plated Brass	Brass	10	95707A685 5.88

Blind-Rivet Style

Fasten a snap to a solid surface when you only have access to one side. The snap is nickel-plated brass; the mandrel is 18-8 stainless steel. Requires a 1/8″ diameter drilled hole and a blind rivet tool for installation.

For Material Thickness	Pkg. Qty.	Pkg.
1/8″ to 3/16″	25	95707A688 $8.74
3/16″ to 3/8″	25	95707A687 9.91

Fabric Snap and Tool Kits

Repair tarps, tents, and awnings with one convenient kit. Each kit includes a hand punch tool with a die, and six complete 9/16″ diameter nickel-plated brass snaps.

The fabric-to-wood kit has #7 × 5/8″ tapping screw studs to attach fabric to wood or similar materials.

Replacement snaps include six complete snaps.

	Snap and Tool Kits		Replacement Snaps	
Fabric-to-Fabric	95730A210	$7.03	95730A320	$4.36
Fabric-to-Wood	95730A230	8.68	95730A440	6.12

Installation Tools for Fabric Snaps

All the tools you need to swiftly install 9/16″ dia. fabric snaps.

Hand Press and Dies

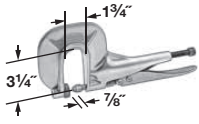

Squeeze the adjustable pliers-grip handle to easily install snaps. Made of aluminum. Comes with a 4-piece die set to install male and female snap halves. *Note:* Also installs grommets (see pages 3774-3775 for grommets and dies).

Hand Press	95720A690	$139.54
Die for Stacker Snaps	95720A350	45.51
Replacement 4-Pc. Die Set	95720A692	91.50

Hand Punch and Dies

Strike the punch with a mallet to set snaps. Made of stainless steel. Dies are sold separately.

Hand Punch	95710A690	$14.09
Die for Female Snap Halves	95710A696	10.97
Die for Male Snap Halves	95710A698	10.97

Bench-Mount Press and Dies

Install snaps with one easy push. Made of iron, it has a deep throat and a long padded handle. Dies are sold separately. The *4-piece die set* installs male and female snap halves.

Bench-Mount Press	95715A690	$264.24
4-Pc. Die Set	95715A692	210.19
Die for Stacker Snaps	95715A360	72.93

Locking Hammer-Set Fabric Snaps

Also known as slam rivets. Use a hammer to lock these two-piece snaps together. Snaps must be destroyed to be removed.

Cap Dia.	Max. Material Thickness	Pkg. Qty.	Pkg.
Nickel-Plated Brass			
9/32″	1/4″	50	97362A100 $8.60
Nickel-Plated Steel			
3/8″	1/4″	100	97362A300 7.22
1/2″	3/16″	50	97362A500 8.48

Turn-Button Fasteners

Attach leather, canvas, and other fabrics to solid surfaces such as wood and fiberglass. Fasteners are made from nickel-plated brass.

To install, cut the fabric using the *cutting punch* (sold separately). Push the *eyelet* prongs through the fabric and crimp the prongs over the *washer* on the opposite side. Install the *stud base* with screws or screw in the *screw stud* with the required *hand driver* (sold separately).

Eyelet is 1 1/16″ Lg. × 13/16″ Wd. Stud base has two holes for #6 screws (not included). Screw stud size is #7 × 5/8″.

Eyelets and Washers (5 pairs)	95678A678	Pkg.	$2.45
Stud Base (5/Pkg.)	95678A671	Pkg.	5.85
Screw Stud (5/Pkg.)	95678A674	Pkg.	12.44
Cutting Punch	95678A690	Each	55.64
Hand Driver for Screw Stud	95678A695	Each	17.95

About Blind Rivets

Blind rivets join materials together when you don't have access to both sides. They consist of a *rivet* (a hollow body with a head) and a *mandrel* (a thin nail with a bulbed end). Rivets require a setting tool for installation (see pages 3305-3307).

To hold rivets in large holes and soft materials use Blind Rivet Washers (see 90183A on page 3229).

To select the proper rivet there are several factors to consider:

Material Thickness— Make sure the combined thickness of the materials you are joining falls within the rivet's material thickness range.

Diameter— The diameter of the rivet body determines the hole size.

Material— To maximize strength and minimize corrosion, use rivets made of the same material as the components you are fastening. When an exact match isn't possible, choose rivets that are painted or coated.

Shear and Tensile Strengths— To ensure rivets have the strength you need, consider *shear strength* (the amount of force it takes to break a rivet from the side) and *tensile strength* (the amount of pull a rivet can withstand without breaking). *Note:* Joint strength is also affected by the space between the rivets, their distance from the edge of the work, and hole size.

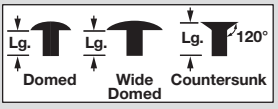

Head Style— *Domed* rivets are suitable for most applications. They have a low profile and a neat appearance. *Wide-domed* rivets have a large head diameter that provides extra holding strength for soft, thin materials or oversized holes. *Countersunk* rivets have an angled head that sits flush when installed.

How to Install a Blind Rivet

Insert the rivet through a hole that passes through the materials being joined. Using a rivet tool with the same size nosepiece as the rivet diameter, grip the mandrel and pull the trigger or lever. The tool pulls the mandrel through the rivet, deforming the rivet's body and breaking off the excess mandrel.

Blind Rivets

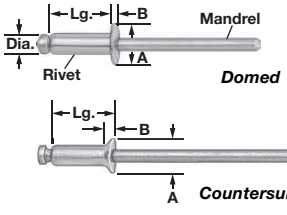

Also known as Pop and open-end rivets, these blind rivets meet IFI 114 (Industrial Fasteners Institute) standards, unless noted.

18-8 stainless steel rivets and mandrels have excellent corrosion resistance and may be mildly magnetic.

Aluminum rivets and mandrels are corrosion resistant and nonmagnetic.

Zinc-plated steel rivets with steel mandrels have good rust resistance.

Aluminum rivets with steel mandrels meet military specification MIL-R-24243/1E wherever a dash number is shown. They are corrosion resistant and nonmagnetic.

Head Dimensions

Dia.	Domed (A)	Domed (B)	Wide Domed (A)	Wide Domed (B)	Countersunk (A)	Countersunk (B)
3/32″	0.198″	0.032″	—	—	—	—
1/8″	0.262″	0.04″	0.39″	0.073″	0.233″	0.031″
5/32″	0.328″	0.05″	—	—	—	—
3/16″	0.394″	0.063″	0.65″	0.092″	0.361″	0.05″
1/4″	0.525″	0.08″	—	—	—	—

Shear and Tensile Strengths

Dia.	18-8 Stainless Steel Shear, lbs.	18-8 Stainless Steel Tensile, lbs.	Aluminum Shear, lbs.	Aluminum Tensile, lbs.	Zinc-Plated Steel with Steel Mandrel Shear, lbs.	Zinc-Plated Steel with Steel Mandrel Tensile, lbs.	Aluminum with Steel Mandrel Shear, lbs.	Aluminum with Steel Mandrel Tensile, lbs.
3/32″	230	280	80	130	150	200	120	170
1/8″	420	530	120	150	260	310	170	220
5/32″	650	820	220	350	410	570	260	350
3/16″	950	1,200	310	500	590	810	380	500
1/4″	1,700	2,100	600	750	1,240	1,500	700	920

Material Thickness Range	Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Aluminum Pkg. Qty.		Pkg.	Zinc-Plated Steel with Steel Mandrel Pkg. Qty.		Pkg.	Aluminum with Steel Mandrel Dash No.	Pkg. Qty.		Pkg.
Domed														
3/32″ Dia.— *For Hole Size: 0.097″-0.1″ (Drill Size #41)*														
0.032″-0.125″	0.25″	100	97525A300	$12.03	250	97447A105	$7.47	250	97519A003	$10.47	—	250	97517A105	$7.85
0.126″-0.25″	0.375″	100	97525A305	10.78	250	97447A110	8.06	250	97519A005	13.79	—	250	97517A110	7.87
1/8″ Dia.— *For Hole Size: 0.129″-0.133″ (Drill Size #30)*														
0.032″-0.062″	0.212″	100	97525A410	9.12	250	97447A010	6.68	250	97519A010	7.77	A401	250	97517A010	6.33
0.063″-0.125″	0.275″	100	97525A415	8.47	250	97447A015	6.97	250	97519A015	8.94	A402	250	97517A015	7.07
0.126″-0.187″	0.337″	100	97525A420	9.12	250	97447A020	6.23	250	97519A020	8.30	A403	250	97517A020	6.76
0.188″-0.25″	0.4″	100	97525A425	9.61	250	97447A025	7.45	250	97519A025	7.80	A404	250	97517A025	6.82
0.251″-0.312″	0.462″	100	97525A430	10.29	250	97447A125	7.87	250	97519A026	8.33	A405	250	97517A125	8.41
0.313″-0.375″	0.525″	100	97525A435	10.70	250	97447A130	11.08	250	97519A130	9.37	A406	250	97517A130	8.28
0.376″-0.5″	0.65″	100	97525A440	14.48	250	97447A135	9.50	250	97519A140	12.73	A408	100	97517A140	3.53
0.501″-0.625″	0.775″	50	97525A442	10.56	250	97447A145	9.46	100	97519A145	5.70	—	100	97517A145	6.18
5/32″ Dia.— *For Hole Size: 0.16″-0.164″ (Drill Size #20)*														
0.063″-0.125″	0.3″	100	97525A455	13.12	250	97447A030	11.62	250	97519A030	10.77	A502	250	97517A030	8.28
0.126″-0.187″	0.362″	50	97525A458	6.16	250	97447A032	11.65	250	97519A031	10.13	A503	250	97517A032	7.74
0.188″-0.25″	0.425″	50	97525A465	7.46	250	97447A035	11.22	250	97519A035	11.33	A504	250	97517A035	8.03
0.251″-0.375″	0.55″	50	97525A470	9.39	250	97447A040	11.95	250	97519A040	12.08	A506	250	97517A040	9.81
0.376″-0.5″	0.675″	50	97525A473	12.41	250	97447A041	13.76	250	97519A042	9.93	A508	250	97517A041	10.91
3/16″ Dia.— *For Hole Size: 0.192″-0.196″ (Drill Size #11)*														
0.063″-0.125″	0.325″	50	97525A485	10.34	250	97447A045	13.96	250	97519A045	13.00	A602	250	97517A045	9.78
0.126″-0.25″	0.45″	50	97525A490	11.17	250	97447A050	15.37	250	97519A050	13.25	—	250	97517A050	9.26
0.251″-0.375″	0.575″	50	97525A505	13.00	250	97447A055	11.64	250	97519A055	15.19	A606	250	97517A055	12.74
0.376″-0.5″	0.7″	50	97525A510	12.12	100	97447A060	7.88	100	97519A060	7.47	A608	250	97517A060	12.35
0.501″-0.625″	0.825″	25	97525A515	9.95	100	97447A065	9.29	100	97519A065	9.14	A610	100	97517A065	6.71
0.626″-0.75″	0.95″	25	97525A520	10.51	100	97447A070	8.67	100	97519A070	9.72	A612	100	97517A070	7.83
0.751″-0.875″	1.075″	25	97525A522	10.69	50	97447A071	8.82	50	97519A072	8.15	—	100	97517A071	10.39
0.876″-1″	1.2″	—	—	—	50	97447A072	6.47	50	97519A073	8.62	A616	100	97517A072	10.73
3/16″ Dia.— *For Hole Size: 0.201″-0.204″ (Drill Size #7)*														
0.985″-1.181″	1.417″	—	—	—	—	—	—	10	97519A080★	7.11	—	25	97517A073★	8.69
1.182″-1.338″	1.614″	—	—	—	—	—	—	10	97519A082★	10.01	—	25	97517A074★	11.17
1.378″-1.535″	1.811″	—	—	—	—	—	—	10	97519A084★	9.07	—	25	97517A076★	12.28
1.575″-1.732″	2.008″	—	—	—	—	—	—	10	97519A086★	10.15	—	25	97517A077★	13.45
1/4″ Dia.— *For Hole Size: 0.257″-0.261″ (Drill Size F)*														
0.063″-0.25″	0.5″	10	97525A550	4.72	50	97447A651	8.40	100	97519A651	10.09	A804	100	97517A651	10.39
0.251″-0.375″	0.625″	10	97525A553	6.82	100	97447A652	14.89	100	97519A652	12.30	A806	100	97517A652	11.03

★ Does not meet IFI 114.

(Continued on following page)

Blind Rivets *(Continued from previous page)*

Material Thickness Range	Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Aluminum Pkg. Qty.		Pkg.	Zinc-Plated Steel with Steel Mandrel Pkg. Qty.		Pkg.	Aluminum with Steel Mandrel Dash No.	Pkg. Qty.		Pkg.
Domed (Cont.)														
***1/4" Dia.—**For Hole Size: 0.257"-0.261" (Drill Size F) (Cont.)*														
0.376"-0.5"	0.75"	10	97525A556	$6.97	50	97447A653	$8.88	100	97519A653	$13.81	A808	100	97517A653	$12.45
0.501"-0.625"	0.875"	5	97525A568	8.79	50	97447A700	8.25	100	97519A654	14.83	A810	100	97517A654	12.91
0.626"-0.75"	1"	5	97525A570	10.00	50	97447A654	9.46	50	97519A655	8.08	A812	100	97517A655	13.09
0.876"-1"	1.25"	5	97525A572	8.03	25	97447A656	9.23	50	97519A656	9.82	—	50	97517A656	11.76
Wide Domed														
***1/8" Dia.—**For Hole Size: 0.129"-0.133" (Drill Size #30)*														
0.063"-0.125"	0.25"	100	97525A615	12.96	250	97447A310	8.91	250	97519A400	14.15	—	100	97517A310	3.72
0.126"-0.187"	0.313"	100	97525A620	12.98	100	97447A313	4.24	250	97519A410	15.03	—	100	97517A315	3.72
0.188"-0.25"	0.375"	100	97525A625	12.76	100	97447A315	5.15	250	97519A415	14.01	—	100	97517A320	3.75
0.313"-0.375"	0.525"	50	97525A627	9.35	100	97447A317	5.75	—	—	—	—	100	97517A323	4.70
***3/16" Dia.—**For Hole Size: 0.192"-0.196" (Drill Size #11)*														
0.126"-0.25"	0.45"	25	97525A635	8.57	100	97447A325	8.10	100	97519A325	8.70	—	100	97517A325	7.11
0.251"-0.375"	0.575"	25	97525A640	8.38	100	97447A155	9.87	100	97519A155	9.01	—	100	97517A330	7.19
0.376"-0.5"	0.7"	25	97525A645	10.46	100	97447A075	10.59	100	97519A075	9.60	—	100	97517A075	7.84
0.501"-0.625"	0.825"	25	97525A650	12.59	100	97447A090	12.56	50	97519A090	10.84	—	100	97517A090	8.33
0.626"-0.75"	0.95"	10	97525A655	5.38	100	97447A095	13.18	50	97519A095	11.16	—	100	97517A095	9.61
0.876"-1"	1.2"	10	97525A658	6.13	25	97447A097	6.91	—	—	—	—	50	97517A097	8.82
Countersunk														
***1/8" Dia.—**For Hole Size: 0.129"-0.133" (Drill Size #30)*														
0.092"-0.125"	0.275"	100	97525A665	12.95	250	97447A210	8.56	250	97519A096	10.00	—	250	97517A210	8.29
0.126"-0.187"	0.337"	100	97525A670	13.55	250	97447A215	9.62	250	97519A097	10.06	—	250	97517A215	8.56
0.188"-0.25"	0.4"	100	97525A675	14.22	250	97447A220	9.72	250	97519A098	11.22	—	250	97517A220	8.64
***3/16" Dia.—**For Hole Size: 0.192"-0.196" (Drill Size #11)*														
0.188"-0.25"	0.45"	25	97525A680	6.29	50	97447A230	5.16	100	97519A204	10.32	—	50	97517A240	6.14
0.251"-0.375"	0.575"	25	97525A685	7.27	50	97447A240	5.71	100	97519A208	10.42	—	50	97517A250	6.92

Corrosion-Resistant Blind Rivets

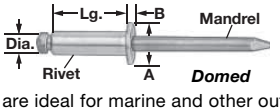

Rivets are ideal for marine and other outdoor applications.

Type 316 stainless steel rivets and mandrels have better corrosion resistance than 18-8 stainless steel. May be mildly magnetic.

Copper and ***nickel-copper*** rivets are corrosion resistant and nonmagnetic. They have steel mandrels. Rivets meet IFI 114 (Industrial Fasteners Institute) standards.

Dia.	Head Dimensions (A)	Head Dimensions (B)	Shear Strength, lbs.	Tensile Strength, lbs.
Type 316 Stainless Steel				
1/8"	0.256"	0.039"	440	560
5/32"	0.315"	0.047"	890	1,050
3/16"	0.374"	0.051"	1,320	1,610
Copper and Nickel-Copper with Steel Mandrel				
1/8"	0.262"	0.04"	210	300
3/16"	0.34"	0.055"	740	840

Material Thickness Range	Lg.	Pkg. Qty.		Pkg.
***Type 316 Stainless Steel—**Domed*				
***1/8" Dia.—**For Hole Size: 0.122"-0.125" (Drill Size 1/8")*				
0.04" -0.118"	0.236"	10	97550A105	$8.17
0.119"-0.196"	0.315"	10	97550A110	8.76
0.197"-0.255"	0.394"	10	97550A115	10.08
0.256"-0.334"	0.472"	10	97550A120	12.07
***5/32" Dia.—**For Hole Size: 0.161"-0.165" (Drill Size #20)*				
0.04" -0.098"	0.236"	10	97550A205	10.89
0.099"-0.177"	0.315"	10	97550A210	11.32
0.178"-0.255"	0.394"	10	97550A215	12.75
0.256"-0.334"	0.472"	10	97550A220	13.05
0.335"-0.472"	0.63"	5	97550A225	8.64
***3/16" Dia.—**For Hole Size: 0.2"-0.204" (Drill Size 13/64")*				
0.02" -0.125"	0.325"	10	97550A405	13.33
0.079"-0.157"	0.315"	5	97550A310	8.79
0.158"-0.236"	0.394"	5	97550A315	8.58
0.237"-0.314"	0.472"	5	97550A320	9.11
0.315"-0.433"	0.63"	5	97550A325	10.21
0.434"-0.59"	0.787"	5	97550A330	11.64
***Copper with Steel Mandrel—**Domed*				
***1/8" Dia.—**For Hole Size: 0.129"-0.133" (Drill Size #30)*				
0.063"-0.125"	0.25"	100	90217A010	4.82
0.126"-0.187"	0.337"	100	90217A015	5.31
0.188"-0.25"	0.375"	100	90217A020	5.30
0.251"-0.375"	0.525"	100	90217A025	6.83
***Nickel-Copper with Steel Mandrel—**Countersunk*				
***3/16" Dia.—**For Hole Size: 0.192"-0.196" (Drill Size #11)*				
0.259"-0.367"	0.547"	10	90217A500	6.51

Choose-a-Color Blind Rivets

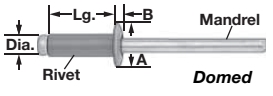

Select a color that makes your rivets stand out or blend in. Rivets and mandrels are aluminum, which is corrosion resistant and nonmagnetic. They meet IFI 114 (Industrial Fasteners Institute) standards.

To Order: Please specify color: black, blue, dark brown, gray, red, white, or yellow.

Dia.	Head Dimensions (A)	Head Dimensions (B)	Shear Strength, lbs.	Tensile Strength, lbs.
Domed				
1/8"	0.25"	0.04"	120	150
3/16"	0.375"	0.06"	260	320
1/4"	0.5"	0.08"	460	560
Wide Domed				
1/8"	0.375"	0.065"	120	150
3/16"	0.625"	0.092"	260	320
1/4"	0.75"	0.107"	460	560

Material Thickness Range	Lg.	Pkg. Qty.		Pkg.
Domed				
***1/8" Dia.—**For Hole Size: 0.129"-0.133" (Drill Size #30)*				
0.063"-0.125"	0.275"	250	97526A120	$8.28
0.126"-0.187"	0.337"	250	97526A125	8.03
0.188"-0.25"	0.4"	250	97526A130	10.38
***3/16" Dia.—**For Hole Size: 0.192"-0.196" (Drill Size #11)*				
0.126"-0.25"	0.45"	100	97526A140	7.81
0.251"-0.375"	0.575"	100	97526A150	8.28
0.376"-0.5"	0.7"	100	97526A160	8.94
***1/4" Dia.—**For Hole Size: 0.257"-0.261" (Drill Size F)*				
0.126"-0.25"	0.5"	50	97526A170	11.31
0.251"-0.375"	0.625"	50	97526A180	11.62
Wide Domed				
***1/8" Dia.—**For Hole Size: 0.129"-0.133" (Drill Size #30)*				
0.063"-0.125"	0.275"	100	97526A310	5.47
0.126"-0.187"	0.337"	100	97526A320	5.84
0.188"-0.25"	0.4"	100	97526A330	6.22
***3/16" Dia.—**For Hole Size: 0.192"-0.196" (Drill Size #11)*				
0.126"-0.25"	0.45"	100	97526A340	10.19
0.251"-0.375"	0.575"	100	97526A350	10.53
0.376"-0.5"	0.7"	100	97526A360	11.03
***1/4" Dia.—**For Hole Size: 0.257"-0.261" (Drill Size F)*				
0.126"-0.25"	0.5"	25	97526A370	9.69
0.251"-0.375"	0.625"	25	97526A380	10.66

Plastic Blind Rivets and Tools

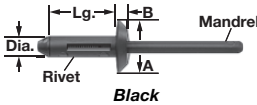

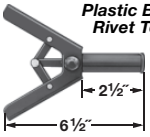

Fasten plastics to wood, metal, fiberglass, acrylics, and other synthetics. All rivets are nylon; choose from off-white rivets with nylon mandrels and black rivets with acetal mandrels. Acetal is more moisture resistant than nylon. Nylon absorbs moisture which can affect dimensions and other properties. Rivets are electrically non-conductive. Temperature range is –22° to +176° F. Head is domed.

Install with the *plastic blind rivet tool* sold separately below.

	Dia.	Head Dimensions (A)	Head Dimensions (B)	Shear Strength, lbs.	Tensile Strength, lbs.
Off-White	0.157″	0.362″	0.055″	40	___
	0.197″	0.445″	0.071″	60	___
	0.236″	0.524″	0.071″	100	___
Black	0.195″	0.472″	0.071″	60	120
	0.246″	0.669″	0.098″	120	190

Material Thick. Range	Lg.	Pkg. Qty.		Pkg.
Off-White				
0.157″ Dia.—For Hole Size: 0.16″-0.164″ (Drill Size #20)				
0.02″-0.197″	0.354″	50	90219A042	$11.13
0.197″-0.354″	0.512″	50	90219A043	11.46
0.197″ Dia.—For Hole Size: 0.2″-0.204″ (Drill Size #7)				
0.02″-0.197″	0.354″	50	90219A044	11.87
0.197″-0.354″	0.512″	50	90219A045	12.22
0.236″ Dia.—For Hole Size: 0.241″-0.245″ (Drill Size C)				
0.02″-0.197″	0.354″	50	90219A046	13.44
0.197″-0.354″	0.512″	50	90219A047	13.79
Black				
0.195″ Dia.—For Hole Size: 0.197″-0.217″ (Drill Size 13/64″)				
0.059″-0.177″	0.728″	20	90219A315♣	4.00
0.118″-0.177″	0.787″	20	90219A320	4.34
0.118″-0.236″	0.787″	20	90219A325	4.00
0.236″-0.394″	0.984″	20	90219A330	4.34
0.246″ Dia.—For Hole Size: 0.25″-0.27″ (Drill Size 1/4″)				
0.157″-0.394″	1.102″	20	90219A340	6.31

♣ Head height (B) is 0.13″.

Plastic Blind Rivet Tool

Installs all sizes of plastic blind rivets. It takes one hand to operate and installs most rivets with a single stroke. Closed height is 1¾″.

97540A210 ..... $51.84

Sealing Blind Rivets

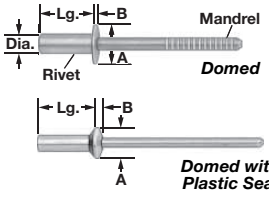

Also known as closed-end sealing rivets, they prevent water and air from passing through or around them. Because most of the mandrel is retained, they have higher shear and tensile strengths than standard blind rivets of the same size and material.

Stainless steel rivets and mandrels have excellent corrosion resistance and may be mildly magnetic. Rivets are 18-8 stainless steel; mandrels are 300 series stainless steel. ***Aluminum*** rivets and mandrels are corrosion resistant and nonmagnetic. ***Aluminum with steel mandrel*** rivets have corrosion resistant and nonmagnetic bodies.

Domed with plastic seal rivets have a sealant bonded underneath the head to reduce leaks. The sealant withstands temperatures of –60° to 250° F. Rivets and mandrels are aluminum, which is corrosion resistant and nonmagnetic.

HEAD DIMENSIONS

	Domed				Domed with Plastic Seal		Countersunk	
	18-8 Stainless Steel		Aluminum and Aluminum with Steel Mandrel		Aluminum		Aluminum with Steel Mandrel	
Dia.	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
1/8″	0.262″	0.039″	0.248″	0.051″	0.25″	0.04″	0.245″	0.055″
5/32″	0.338″	0.042″	0.327″	0.066″	___	___	0.327″	0.055″
3/16″	0.393″	0.049″	0.393″	0.081″	0.375″	0.06″	0.395″	0.065″
1/4″	___	___	0.525″	0.099″	___	___	___	___

Shear and Tensile Strengths

	18-8 Stainless Steel		Aluminum		Aluminum with Steel Mandrel	
Dia.	Shear, lbs.	Tensile, lbs.	Shear, lbs.	Tensile, lbs.	Shear, lbs.	Tensile, lbs.
1/8″	470	490	100	110	300	380
5/32″	740	890	150	240	430	600
3/16″	960	990	210	250	570	840
1/4″	___	___	___	___	900	1,100

Material Thick. Range	Lg.	Pkg. Qty.		Pkg.
Domed				
18-8 Stainless Steel				
1/8″ Dia.—For Hole Size: 0.13″-0.134″ (Drill Size #30)				
0.125″-0.188″	0.382″	50	97524A040	$20.42
5/32″ Dia.—For Hole Size: 0.161″-0.165″ (Drill Size #20)				
0.125″-0.188″	0.402″	25	97524A042	17.22
3/16″ Dia.—For Hole Size: 0.193″-0.197″ (Drill Size #11)				
0″-0.125″	0.362″	10	97524A044	7.55
0.188″-0.25″	0.492″	10	97524A046	10.33
Aluminum				
1/8″ Dia.—For Hole Size: 0.129″-0.133″ (Drill Size #30)				
0.063″-0.125″	0.301″	100	97524A030	9.33
0.126″-0.187″	0.362″	100	97524A031	9.42
0.188″-0.25″	0.425″	100	97524A032	9.43
5/32″ Dia.—For Hole Size: 0.16″-0.164″ (Drill Size #20)				
0.188″-0.25″	0.44″	100	97524A114	14.39
3/16″ Dia.—For Hole Size: 0.192″-0.196″ (Drill Size #11)				
0.063″-0.125″	0.33″	100	97524A033	15.31
0.126″-0.25″	0.455″	100	97524A034	15.36
0.251″-0.375″	0.58″	50	97524A116	9.60
0.376″-0.5″	0.705″	50	97524A117	9.58
Aluminum with Steel Mandrel				
1/8″ Dia.—For Hole Size: 0.129″-0.133″ (Drill Size #30)				
0.032″-0.062″	0.237″	100	97524A019	7.97
0.063″-0.125″	0.301″	100	97524A020	8.53
0.126″-0.187″	0.362″	100	97524A021	9.12
0.188″-0.25″	0.425″	100	97524A024	9.21
0.251″-0.312″	0.487″	100	97524A025	11.37
0.313″-0.375″	0.55″	100	97524A026	12.23
0.376″-0.5″	0.675″	100	97524A027	12.10
5/32″ Dia.—For Hole Size: 0.16″-0.164″ (Drill Size #20)				
0.063″-0.125″	0.315″	100	97524A103	11.83
0.126″-0.187″	0.377″	100	97524A104	12.02
0.251″-0.312″	0.502″	100	97524A105	17.05

Material Thick. Range	Lg.	Pkg. Qty.		Pkg.
Domed (Cont.)				
Aluminum with Steel Mandrel (Cont.)				
3/16″ Dia.—For Hole Size: 0.192″-0.196″ (Drill Size #11)				
0.063″-0.125″	0.33″	100	97524A106	$11.34
0.126″-0.187″	0.392″	100	97524A035	14.54
0.188″-0.25″	0.455″	100	97524A029	15.11
0.313″-0.375″	0.58″	100	97524A107	14.69
0.376″-0.5″	0.705″	100	97524A108	15.46
1/4″ Dia.—For Hole Size: 0.257″-0.261″ (Drill Size F)				
0.126″-0.25″	0.485″	50	97524A109	12.16
0.251″-0.375″	0.61″	50	97524A110	13.83
Domed with Plastic Seal				
Aluminum				
1/8″ Dia.—For Hole Size: 0.129″-0.133″ (Drill Size #30)				
0.063″-0.125″	0.36″	10	97721A100	9.28
0.126″-0.187″	0.422″	10	97721A150	9.28
0.188″-0.25″	0.485″	10	97721A200	9.28
3/16″ Dia.—For Hole Size: 0.192″-0.196″ (Drill Size #11)				
0.188″-0.25″	0.531″	10	97721A400	9.91
0.251″-0.375″	0.656″	10	97721A450	10.09
0.376″-0.5″	0.781″	10	97721A500	10.22
Countersunk				
Aluminum with Steel Mandrel				
1/8″ Dia.—For Hole Size: 0.129″-0.133″ (Drill Size #30)				
0.063″-0.125″	0.341″	100	97524A050	8.52
0.126″-0.187″	0.402″	100	97524A055	8.97
5/32″ Dia.—For Hole Size: 0.16″-0.164″ (Drill Size #20)				
0.126″-0.187″	0.432″	100	97524A060	13.36
3/16″ Dia.—For Hole Size: 0.192″-0.196″ (Drill Size #11)				
0.126″-0.25″	0.52″	100	97524A065	15.59
0.251″-0.375″	0.645″	100	97524A070	16.73

High-Strength Blind Rivets

Also known as structural rivets, they have higher shear and tensile strengths than standard blind rivets of the same size and material.

Domed—Also known as Q-rivets, they're resistant to vibration.

Domed for Wide Thickness Ranges—Also known as ultra-grip rivets, they can handle a wide range of thicknesses.

18-8 stainless steel rivets and mandrels have excellent corrosion resistance and may be mildly magnetic. ***Zinc-plated steel*** rivets and mandrels have good corrosion resistance. ***Aluminum*** rivets and mandrels are corrosion resistant and nonmagnetic.

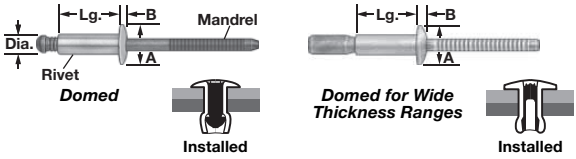

Dia.	Head Dimensions: Domed (A)	Domed (B)	Domed for Wide Thickness Ranges (A)	Domed for Wide Thickness Ranges (B)
1/8″	0.25″	0.04″	———	———
3/16″	0.375″	0.06″	0.385″	0.085″
1/4″	0.5″	0.08″	0.525″	0.117″

Dia.	SHEAR AND TENSILE STRENGTHS: Domed, 18-8 SS Shear, lbs.	Domed, 18-8 SS Tensile, lbs.	Domed, Zinc-Plated Steel Shear, lbs.	Domed, Zinc-Plated Steel Tensile, lbs.	Domed for Wide Thickness Ranges, 18-8 SS and Zinc-Plated Steel Shear, lbs.	18-8 SS and Zinc-Plated Steel Tensile, lbs.	Aluminum Shear, lbs.	Aluminum Tensile, lbs.
1/8″	700	600	500	400	———	———	———	———
3/16″	1,650	1,300	1,050	825	1,400	1,000	700	500
1/4″	2,450	2,250	1,750	1,450	2,750	2,200	1,300	890

Material Thick. Range	Lg.	Pkg. Qty.		Pkg.
Domed				
18-8 Stainless Steel				
1/8″ Dia.—*For Hole Size: 0.129″-0.133″ (Drill Size #30)*				
0.126″-0.25″	0.4″	10	98780A111	$7.24
0.188″-0.312″	0.462″	10	98780A112	8.24
0.251″-0.375″	0.535″	10	98780A113	8.24
3/16″ Dia.—*For Hole Size: 0.192″-0.196″ (Drill Size #11)*				
0.126″-0.25″	0.45″	10	98780A212	14.12
0.251″-0.375″	0.575″	5	98780A213	8.06
0.376″-0.5″	0.7″	5	98780A214	8.16
1/4″ Dia.—*For Hole Size: 0.257″-0.261″ (Drill Size F)*				
0.126″-0.25″	0.5″	5	98780A412	12.58
0.251″-0.375″	0.625″	1	98780A413	2.87
0.376″-0.5″	0.75″	1	98780A414	3.18
0.501″-0.625″	0.9″	1	98780A415	3.31
Zinc-Plated Steel				
1/8″ Dia.—*For Hole Size: 0.129″-0.133″ (Drill Size #30)*				
0.126″-0.25″	0.4″	25	98777A111	8.00
0.188″-0.312″	0.462″	25	98777A112	8.05
0.251″-0.375″	0.535″	25	98777A113	8.19
3/16″ Dia.—*For Hole Size: 0.192″-0.196″ (Drill Size #11)*				
0.062″-0.125″	0.325″	25	98777A211	8.46
0.126″-0.25″	0.45″	25	98777A212	9.44
0.251″-0.375″	0.575″	25	98777A213	9.82
0.376″-0.5″	0.7″	25	98777A214	10.29
0.501″-0.625″	0.85″	25	98777A215	10.63
1/4″ Dia.—*For Hole Size: 0.257″-0.261″ (Drill Size F)*				
0.062″-0.125″	0.375″	25	98777A311	10.23
0.126″-0.25″	0.5″	25	98777A312	10.36

Material Thick. Range	Lg.	Pkg. Qty.		Pkg.
Domed (Cont.)				
Zinc-Plated Steel (Cont.)				
1/4″ Dia.—*For Hole Size: 0.257″-0.261″ (Drill Size F) (Cont.)*				
0.251″-0.375″	0.625″	25	98777A313	$12.21
0.376″-0.5″	0.75″	10	98777A314	5.69
0.501″-0.625″	0.9″	10	98777A315	6.68
Domed for Wide Thickness Ranges				
18-8 Stainless Steel				
3/16″ Dia.—*For Hole Size: 0.191″-0.201″ (Drill Size #11)*				
0.062″-0.27″	0.415″	10	98778A525	9.76
1/4″ Dia.—*For Hole Size: 0.261″-0.272″ (Drill Size F)*				
0.08″-0.375″	0.56″	10	98778A531	12.17
0.35″-0.625″	0.81″	10	98778A528	9.04
Aluminum				
3/16″ Dia.—*For Hole Size: 0.191″-0.201″ (Drill Size #11)*				
0.062″-0.27″	0.415″	50	98778A501	10.06
0.062″-0.437″	0.572″	50	98778A502	12.95
1/4″ Dia.—*For Hole Size: 0.261″-0.272″ (Drill Size F)*				
0.08″-0.375″	0.56″	25	98778A503	9.25
0.08″-0.625″	0.81″	25	98778A504	11.15
Zinc-Plated Steel				
3/16″ Dia.—*For Hole Size: 0.191″-0.201″ (Drill Size #11)*				
0.062″-0.27″	0.415″	50	98778A511	11.73
0.062″-0.437″	0.572″	50	98778A512	12.68
1/4″ Dia.—*For Hole Size: 0.261″-0.272″ (Drill Size F)*				
0.08″-0.375″	0.56″	25	98778A513	8.94
0.08″-0.625″	0.81″	25	98778A514	11.33

Blind Rivets for Soft and Brittle Materials

When installed, rivet bodies fan out to provide a uniform grip. They're good for oversized holes. Heads are domed.

Peel Style—Fasten soft materials such as plastic and fiberglass to thin materials such as sheet metal. When installed, the body splits into "petals" that draw materials together without pulling through them. Rivets are aluminum, which is corrosion resistant and nonmagnetic. Mandrels are steel.

Bulb Style—Part of the mandrel is retained, which increases shear strength. They're designed to fasten brittle materials such as plastic and laminates without damaging them. Rivets and mandrels are aluminum, which is corrosion resistant and nonmagnetic.

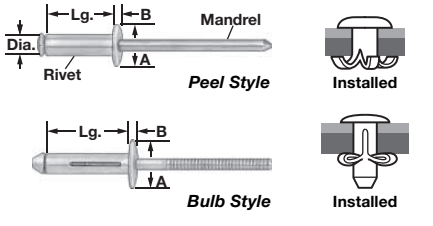

Material Thick. Range	Lg.	Pkg. Qty.		Pkg.
Peel Style				
1/8″ Dia.—*For Hole Size: 0.142″ (Drill Size #27)*				
0.039″-0.138″	0.354″	100	93372A310	$10.49
0.098″-0.197″	0.433″	100	93372A315	10.81
0.177″-0.276″	0.512″	100	93372A320	11.13
0.256″-0.354″	0.59″	100	93372A325	13.73
0.335″-0.433″	0.669″	100	93372A330	14.21
5/32″ Dia.—*For Hole Size: 0.173″ (Drill Size #17)*				
0.039″-0.118″	0.354″	100	93372A340	11.71
0.098″-0.197″	0.433″	100	93372A345	11.94
0.177″-0.256″	0.512″	100	93372A350	13.38
0.236″-0.315″	0.59″	100	93372A355	14.24
0.295″-0.394″	0.669″	50	93372A360	9.34
0.354″-0.422″	0.748″	50	93372A365	8.60
0.452″-0.551″	0.827″	50	93372A370	10.88
3/16″ Dia.—*For Hole Size: 0.204″ (Drill Size #6)*				
0.039″-0.118″	0.354″	100	93372A072	13.68
0.098″-0.197″	0.433″	100	93372A375	14.71
0.177″-0.276″	0.512″	50	93372A377	7.92
0.256″-0.354″	0.59″	50	93372A379	9.26
0.335″-0.394″	0.669″	50	93372A380	9.41
0.375″-0.472″	0.748″	50	93372A382	11.37
0.453″-0.551″	0.827″	50	93372A385	12.17
0.531″-0.748″	1.024″	50	93372A387	13.37

	Dia.	Head Dimensions (A)	Head Dimensions (B)	Shear Strength, lbs.	Tensile Strength, lbs.
Peel Style	1/8″	0.256″	0.048″	180	210
	5/32″	0.315″	0.059″	310	450
	3/16″	0.374″	0.063″	450	600
Bulb Style	5/32″	0.375″	0.057″	160	220
	3/16″	0.455″	0.062″	400	450

Material Thick. Range	Lg.	Pkg. Qty.		Pkg.
Bulb Style				
5/32″ Dia.—*For Hole Size: 0.162″-0.167″ (Drill Size #20)*				
0.125″-0.25″	0.79″	50	97545A010	$14.18
0.187″-0.375″	0.852″	50	97545A020	14.37
0.25″-0.5″	0.977″	25	97545A030	8.54
3/16″ Dia.—*For Hole Size: 0.209″-0.221″ (Drill Size #4)*				
0.125″-0.25″	0.77″	25	97545A050	8.54
0.187″-0.375″	0.895″	25	97545A060	8.59
0.25″-0.5″	1.02″	25	97545A070	8.80
0.375″-0.625″	1.145″	25	97545A080	8.96
0.5″-0.75″	1.27″	25	97545A090	10.30

Wide Thickness Range Blind Rivets

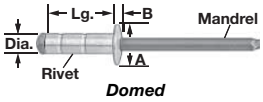

Also called multigrip rivets, the rivet body expands to fill slightly oversized and irregular holes. Each size has up to twice the material thickness range of standard blind rivets. When installed, the mandrel remains in the body which reduces vibration and forms a moisture-resistant seal. Rivets are aluminum, which is corrosion resistant and nonmagnetic. Mandrels are steel.

To Order: For painted rivets, please specify color: black or white.

Dia.	Head Dimensions: Domed (A)	Domed (B)	Wide Domed (A)	Wide Domed (B)	Countersunk (A)	Countersunk (B)	Strength, lbs.: Shear	Tensile
1/8″	0.262″	0.04″	0.39″	0.052″	0.233″	0.036″	150	220
5/32″	0.327″	0.047″	—	—	—	—	250	360
3/16″	0.394″	0.06″	0.65″	0.083″	0.363″	0.08″	350	500
1/4″	0.525″	0.073″	—	—	—	—	460	560

Material Thickness Range	Lg.	Pkg. Qty.		Pkg.
Domed				
1/8″ Dia. — *For Hole Size: 0.129″-0.142″ (Drill Size #30)*				
0.039″-0.187″	0.313″	100	97530A020	$5.91
0.157″-0.312″	0.453″	100	97530A025	7.68
0.251″-0.437″	0.594″	100	97530A030	7.87
5/32″ Dia. — *For Hole Size: 0.16″-0.173″ (Drill Size #20)*				
0.047″-0.25″	0.4″	100	97530A035	7.04
0.126″-0.312″	0.485″	100	97530A040	10.08
0.376″-0.5″	0.715″	100	97530A042	10.04
3/16″ Dia. — *For Hole Size: 0.192″-0.205″ (Drill Size #11)*				
0.063″-0.25″	0.425″	100	97530A050	9.44
0.188″-0.375″	0.605″	100	97530A070	11.44
0.251″-0.5″	0.716″	100	97530A090	11.59
0.438″-0.75″	1.05″	100	97530A091	13.87
1/4″ Dia. — *For Hole Size: 0.257″-0.275″ (Drill Size F)*				
0.08″-0.35″	0.6″	50	97530A100	13.23
Painted Domed				
1/8″ Dia. — *For Hole Size: 0.129″-0.142″ (Drill Size #30)*				
0.032″-0.437″	0.605″	100	97530A200	8.47
0.157″-0.312″	0.525″	100	97530A300	8.45
3/16″ Dia. — *For Hole Size: 0.196″-0.205″ (Drill Size #11)*				
0.032″-0.375″	0.575″	100	97530A350	11.94
0.063″-0.25″	0.45″	100	97530A400	10.69
0.251″-0.5″	0.7″	100	97530A500	13.76
Wide Domed				
1/8″ Dia. — *For Hole Size: 0.129″-0.142″ (Drill Size #30)*				
0.039″-0.187″	0.313″	100	97530A023	7.36
0.157″-0.312″	0.453″	100	97530A027	9.68
3/16″ Dia. — *For Hole Size: 0.192″-0.205″ (Drill Size #11)*				
0.063″-0.25″	0.425″	100	97530A060	14.34
0.251″-0.5″	0.716″	50	97530A092	8.09
Countersunk				
1/8″ Dia. — *For Hole Size: 0.129″-0.142″ (Drill Size #30)*				
0.039″-0.252″	0.437″	100	97530A097	7.87
3/16″ Dia. — *For Hole Size: 0.192″-0.205″ (Drill Size #11)*				
0.126″-0.375″	0.565″	100	97530A098	12.33
0.251″-0.5″	0.716″	100	97530A099	13.31

Flush-on-Both-Sides Countersunk Blind Rivets

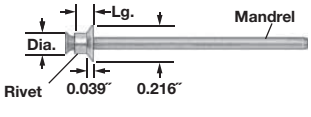

Completely flush when installed into countersunk holes. Rivets and mandrels are made of zinc-plated steel. Shear strength is 180 lbs. and tensile strength is 150 lbs.

Material Thickness Range	Lg.	Pkg. Qty.		Pkg.
0.118″ Dia. — *For Hole Size: 0.129″-0.134″ (Drill Size #29)*				
0.059″-0.079″	0.091″	50	95372A100	$11.29
0.079″-0.098″	0.11″	50	95372A200	11.66
0.098″-0.118″	0.13″	50	95372A300	11.94
0.118″-0.138″	0.15″	50	95372A400	12.41
0.138″-0.157″	0.169″	50	95372A500	12.73

Tamper-Resistant Two-Piece Rivets

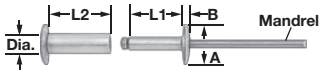

A solid, smooth head makes these rivets difficult to pry or remove. They accommodate extra-wide thicknesses and have a large diameter head on each side to grip soft materials tightly without crushing them. Rivets are aluminum, which is corrosion resistant and nonmagnetic. Mandrels are steel. Not rated for shear strength.

Dia.	Head Dimensions (A)	Head Dimensions (B)	Tensile Strength, lbs.
3/16″	0.375″	0.098″	230
1/4″	0.625″	0.095″	450

Material Thickness Range	(L1)	(L2)	Pkg. Qty.		Pkg.
3/16″ Dia. — *For Hole Size: 0.25″ (Drill Size 1/4″)*					
0.625″-0.75″	0.52″	0.58″	10	92352A005	$7.38
0.687″-0.875″	0.52″	0.64″	10	92352A010	7.47
0.875″-1.062″	0.52″	0.82″	10	92352A015	7.75
1.062″-1.25″	0.52″	1.01″	10	92352A035	7.88
1.25″-1.437″	0.52″	1.195″	10	92352A045	8.00
1.437″-1.625″	0.52″	1.38″	10	92352A055	8.16
1/4″ Dia. — *For Hole Size: 0.3125″ (Drill Size 5/16″)*					
0.625″-0.75″	0.454″	0.58″	10	92352A140	5.36
0.75″-0.875″	0.608″	0.695″	10	92352A150	5.54
0.875″-1.125″	0.608″	0.82″	10	92352A160	5.65
1.125″-1.375″	0.608″	1.07″	10	92352A170	6.57
1.375″-1.625″	0.608″	1.32″	10	92352A180	6.95
1.625″-1.875″	0.608″	1.57″	10	92352A190	7.76
1.875″-2.125″	0.608″	1.82″	10	92352A210	8.10
2.125″-2.375″	0.608″	2.07″	10	92352A220	8.20

Grooved Blind Rivets for Wood

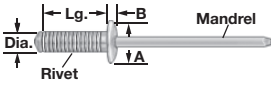

As it's installed, the rivet body expands and the grooves dig into the wood for a tight hold. Rivets are aluminum, which is corrosion resistant and nonmagnetic. They have steel mandrels. Head is domed. Not rated for shear and tensile strengths.

Min. Hole Depth	Head Dimensions (A)	Head Dimensions (B)	Lg.	Pkg. Qty.		Pkg.
0.133″ Dia. — *For Hole Size: 0.138″ (Drill Size #29)*						
0.482″	1/4″	0.043″	0.382″	100	98919A042	$7.55
0.163″ Dia. — *For Hole Size: 0.169″ (Drill Size #18)*						
0.435″	5/16″	0.053″	0.335″	100	98919A051	9.43
0.576″	5/16″	0.053″	0.476″	100	98919A063	10.51
0.197″ Dia. — *For Hole Size: 0.205″ (Drill Size #5)*						
0.411″	3/8″	0.063″	0.311″	50	98919A074	6.85
0.545″	3/8″	0.063″	0.445″	50	98919A088	7.54
0.628″	3/8″	0.063″	0.528″	50	98919A033	7.74
0.691″	3/8″	0.063″	0.591″	50	98919A027	8.24

Blind Rivet Assortment

Includes 585 domed aluminum rivets, which are corrosion resistant and nonmagnetic. Mandrels are steel. Contains 1/8″ and 3/16″ diameter rivets in the following thickness ranges: 0.063″-0.125″, 0.126″-0.187″, 0.126″-0.25″, 0.188″-0.25″, 0.251″-0.375″, and 0.376″-0.5″. Packaged in a compartmented plastic box with lid chart.

97455A300 ..... $58.42

Manual Tools for 3/32″-3/16″ Diameter Blind Rivets

All tools come with four nosepieces, unless noted. Tools install 3/32″, 1/8″, 5/32″, and 3/16″ dia. standard blind rivets that are all aluminum, aluminum with steel mandrels, and all steel. They also install 3/32″, 1/8″, and 5/32″ dia. standard blind rivets in 18-8 stainless steel and Type 316 stainless steel, as well as 1/8″ dia. copper rivets with steel mandrels. They do not install nickel-copper blind rivets.

Heavy Duty Tool

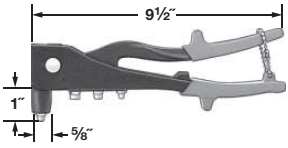

Our most popular manual blind rivet tool.

The *rivet tool kit* includes the tool plus 175 domed rivets (100 1/8″ dia. all-steel, 50 1/8″ dia. all-aluminum, and 25 3/16″ dia. aluminum with steel mandrel) and 25 countersunk rivets (1/8″ dia. all-steel). Includes 0.063″-0.125″ and 0.188″-0.25″ material thickness ranges.

Rivet Tool	6659A21	$29.76
Rivet Tool Kit	6659A23	43.93
Replacement 3/32″ Nosepiece	6659A242	3.15
Replacement 1/8″ Nosepiece	6659A243	3.15
Replacement 5/32″ Nosepiece	6659A244	3.15
Replacement 3/16″ Nosepiece	6659A245	3.15
Replacement Jaw (2 Parts)	6659A232	6.97
Replacement Opening Spring	6659A233	.56
Replacement Jaw Pusher	6659A234	2.74
Replacement Jaw Pusher Spring	6659A235	.56
Replacement Retaining Screw for Jaw Pusher Spring	6659A237	1.00

Comfort Grip Tool

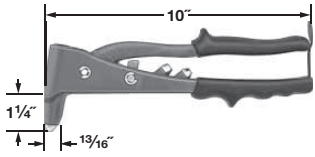

Handles have gentle contours that fit your hand for comfort and control.

The *rivet tool kit* includes the tool and an assortment of 185 domed rivets in 1/8″ and 3/16″ diameters (105 all-aluminum and 80 all-steel). Includes 0.063″-0.125″, 0.126″-0.25″, and 0.188″-0.25″ material thickness ranges.

Rivet Tool	6862A21	$62.47
Rivet Tool Kit	6862A26	84.33
Replacement 3/32″ Nosepiece	6862A659	14.37
Replacement 1/8″ Nosepiece	6862A661	14.37
Replacement 5/32″ Nosepiece	6862A662	14.37
Replacement 3/16″ Nosepiece	6862A663	14.37
Replacement Jaw (2 Parts)	6862A22	19.48
Replacement Opening Spring	6862A23	6.27
Replacement Jaw Pusher	6862A24	10.76
Replacement Jaw Pusher Spring	6862A25	5.03

Ratchet-Action Tool with Mandrel Collector

Easiest to use; lets you install rivets with up to 40% less force. It has a mandrel collector that catches spent mandrels and stores nosepieces.

The tool comes with three nosepieces to install 1/8″, 5/32″, and 3/16″ dia. blind rivets. To install 3/32″ dia. blind rivets, order the optional 3/32″ nosepiece (sold separately).

Rivet Tool	97543A120	$75.41
Optional 3/32″ Nosepiece	6862A659	14.37
Replacement 1/8″ Nosepiece	6862A661	14.37
Replacement 5/32″ Nosepiece	6862A662	14.37
Replacement 3/16″ Nosepiece	6862A663	14.37
Replacement Jaw (2 Parts)	97543A133	19.48
Replacement Jaw Pusher	97543A137	16.75
Replacement Jaw Pusher Spring	97543A142	6.90

360° Swivel Head Tool

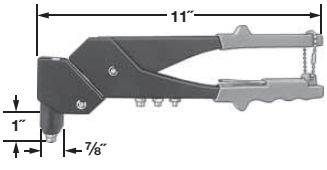

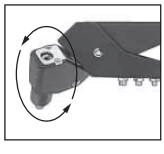

Swivel the head to install rivets at any angle.

Rivet Tool	98300A150	$27.00
Replacement 3/32″ Nosepiece	98300A210	2.70
Replacement 1/8″ Nosepiece	98300A220	2.70
Replacement 5/32″ Nosepiece	98300A230	2.70
Replacement 3/16″ Nosepiece	98300A240	2.70
Replacement Jaw (2 Parts)	98300A250	6.65
Replacement Jaw Pusher	98300A260	2.33
Replacement Jaw Pusher Spring	98300A270	.47

Manual Lever-Handle Tools for 1/8″-1/4″ Diameter Blind Rivets

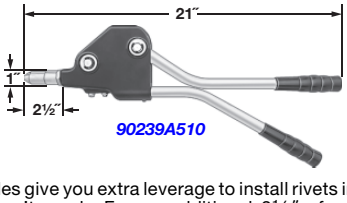

Long handles give you extra leverage to install rivets in areas where other tools can't reach. For an additional 2½″ of reach, add the optional nose extension (sold separately).

Tool comes with three nosepieces to install 5/32″, 3/16″, and 1/4″ dia. blind rivets in all materials. To install 1/8″ dia. blind rivets, order the optional 1/8″ nosepiece (sold separately).

The *rivet tool with mandrel collector* includes a built-in mandrel receptacle.

Rivet Tool	90239A510	$112.35
Rivet Tool with Mandrel Collector	90239A520	129.82
Optional 2½″ Nose Extension	90239A550	30.73
Optional 1/8″ Nosepiece	90239A630	15.98
Replacement 5/32″ Nosepiece	90239A650	15.98
Replacement 3/16″ Nosepiece	90239A670	15.98
Replacement 1/4″ Nosepiece	90239A690	15.98
Replacement Jaw (2 Parts)	90239A570	17.38
Replacement Jaw Pusher	90239A590	3.68
Replacement Jaw Pusher Spring	90239A610	2.40

Hydraulic Powered Tools for 3/32″-1/4″ Diameter Blind Rivets and Rivet Nuts

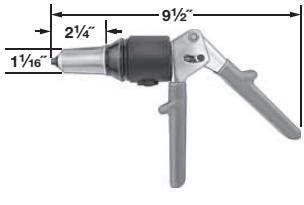

This self-contained hydraulic tool lets you install blind rivets and knurled and standard rivet nuts with one hand. (See pages 3295-3296 for rivet nuts.)

Tool comes with five nosepieces to install 3/32″, 1/8″, 5/32″, 3/16″, and 1/4″ dia. blind rivets, plus pull-up studs and anvils to install 10-24 and 1/4″-20 aluminum and steel rivet nuts. Furnished in a plastic case.

Also Available: Pull-up studs and driving anvils for 6-32 to 3/8″-16 and M3 to M10 rivet nuts. Please ask for 6879A555 and specify size.

Blind Rivet and Rivet Nut Tool	6879A21	$303.96
Replacement 3/32″ and 1/8″ Nosepiece	6879A81	10.43
Replacement 5/32″ and 3/16″ Nosepiece	6879A815	10.43
Replacement 1/4″ Nosepiece	6879A82	10.43
Replacement Jaw (3 Parts)	6879A312	18.75
Replacement Master Shaft	6879A313	31.40
Replacement Nose Tube	6879A311	22.50

Air-Powered Tools for Blind Rivets

A Mandrel Collecting

B&C Standard and Long Reach

D Heavy Duty

E Super Heavy Duty

F Vertical

G Low Clearance

H Super Low Clearance

J Economy

(A) Mandrel Collecting Tool— Comes with three nosepieces and a plastic mandrel collection bottle. A vacuum system holds rivets in place during installation. Maximum air pressure is 100 psi. Air hose is 6 ft. long. Hose fitting is 3/8″ NPT female. Overall size is 9″ Ht.×11″ Wd.

(B) Standard Tool and ***(C) Long Reach Tool—*** Come with three nosepieces. A *3/32″ nosepiece* (sold separately) lets you install 3/32″ dia. rivets in all materials. Maximum air pressure is 85 psi. Air hose is 6 ft. long. Hose fitting is 3/8″ NPT female. *Style B* includes an extra pair of jaws, a jaw pusher, and a jaw pusher spring. Overall size is 9 1/2″ Ht.×9 1/2″ Wd. *Style C* has an extra-long nosepiece for hard-to-reach applications. Overall size is 9 1/2″ Ht.×11 1/2″ Wd.

(D) Heavy Duty Tool— Comes with three nosepieces. A *3/32″ nosepiece* (sold separately) lets you install 3/32″ dia. blind rivets. Maximum air pressure is 90 psi. Air hose is 6 ft. long. Hose fitting is 3/8″ NPT female. Overall size is 10 1/2″ Ht.×11 1/2″ Wd.

(E) Super Heavy Duty Tool— Comes with four nosepieces. Maximum air pressure is 90 psi. Air hose is 6 ft. long. Hose fitting is 3/8″ NPT female. Overall size is 12 1/2″ Ht.×12″ Wd. Use the *3/16″* and *1/4″ nosepieces* (sold separately) to set T-rivets and Monobolt rivets (except for stainless steel T-rivets).

(F) Vertical Tool— Can be suspended over a workbench. Comes with four nosepieces. A vacuum system holds rivets in place during installation. Maximum air pressure is 85 psi. Hose fitting is 1/4″ NPT male (air hose not included). Overall size is 16″ Ht.×3″ Wd.

(G) Low Clearance Tool— Comes with four nosepieces and an adjustable mandrel deflector. Maximum air pressure is 85 psi. Hose fitting is 1/4″ NPT male (air hose not included). Overall size is 8″ Ht.×11 1/2″ Wd.

(H) Super Low Clearance Tool— The handle is separate from the body to provide easier reach into tight spaces. Comes with five nosepieces. Maximum air pressure is 92 psi. Air hose is 5 ft. long. Hose fitting is 1/4″ NPT male. Overall size is 5 1/2″ Ht.×9″ Wd.

(J) Economy Tool— Comes with three nosepieces, a plastic mandrel collection bottle, and an extra set of jaws. A vacuum system holds rivets in place during installation. Maximum air pressure is 90 psi. Hose fitting is 1/4″ NPT female (air hose not included). Overall size is 11 1/2″ Ht.×10 1/2″ Wd.

Tools

All tools come with nosepieces to install blind rivets up to the body diameters listed below.

	Pull Cap., lbs.	Stroke Lg.	Nose Dia.	Nose Lg.	Blind Rivets: Aluminum	Blind Rivets: Aluminum w/ Steel Mandrel	Blind Rivets: Steel	Blind Rivets: 18-8 SS	Blind Rivets: Type 316 SS	Sealing Blind Rivets: Aluminum	Sealing Blind Rivets: Aluminum w/ Steel Mandrel	Sealing Blind Rivets: 18-8 SS		
A	1,000	11/16″	3/4″	1 3/4″	5/32″	5/32″	5/32″	1/8″	1/8″	5/32″	5/32″	1/8″	**94145A200**	$468.97
B	1,000	5/8″	11/16″	2″	3/16″	3/16″	5/32″	1/8″	1/8″	3/16″	5/32″	1/8″	**66705A51**	311.16
C	1,000	5/8″	11/16″	4″	3/16″	3/16″	5/32″	1/8″	1/8″	3/16″	5/32″	1/8″	**66705A511**	470.46
D	2,100	11/16″	13/16″	2″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	**66775A8**	714.76
E	4,100	1″	7/8″	2 1/2″	1/4″	1/4″	1/4″	1/4″	3/16″	3/16″	1/4″	3/16″	**67025A72**	952.27
F	1,700	5/8″	15/16″	3 1/4″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	**90163A250**	892.63
G	1,700	1/2″	15/16″	3 1/2″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	3/16″	**6884A11**	538.50
H	2,800	5/8″	1″	2 3/4″	1/4″	1/4″	1/4″	3/16″	3/16″	3/16″	1/4″	3/16″	**92456A710**	1,022.54
J	2,000	3/4″	15/16″	2 3/4″	3/16″	—	—	—	—	3/16″	—	—	**6684A75**	151.65

Replacement Nosepieces

	For Styles A-E		For Styles F & G		For Style H		For Style J	
3/32″ Nosepiece	**66775A4**■	$11.97	**6884A242**	$5.70	**92456A310**	$12.57	—	—
1/8″ Nosepiece	**66775A405**	11.97	**6884A243**	5.70	**92456A320**	12.57	**6684A341**	$4.56
5/32″ Nosepiece	**66775A41**	11.97	**6884A244**	5.70	**92456A330**	12.57	**6684A342**	4.56
3/16″ Nosepiece	**66775A415**▲	11.97	**6884A245**	5.70	**92456A340**	12.57	**6684A343**	4.56
1/4″ Nosepiece	**66775A42**●	11.97	—	—	**92456A370**	12.57	—	—

■ Optional for Styles B and C. ▲ Not available for Style A. ● Not available for Styles A-D.

Replacement Jaws and Other Accessories

For Styles		
2 Pc. Jaw for 3/16″ Dia. and Smaller Rivets		
A-C	**66705A2**	$27.38
E	**66775A2**	39.53
F-H	**6751A43**	42.84
2 Pc. Jaw for 1/4″ Dia. Rivets		
E	**67025A52**	39.53
H	**92456A530**	52.92
3 Pc. Jaw		
D	**66775A7**	39.53
J	**6684A34**	20.13
Jaw Lubricant		
A-E	**66705A61**	11.87

For Styles		
Jaw Seal Kit		
J	**6684A36**	$15.99
Jaw Pusher for 3/16″ Dia. and Smaller Rivets		
A	**94145A466**	10.03
B & C	**66705A21**	23.34
D	**66775A31**	12.23
E	**67025A74**	15.33
F & G	**6884A32**	5.85
H	**92456A550**	7.53
J	**6684A409**	6.98
Jaw Pusher for 1/4″ Dia. Rivets		
E	**67025A74**	15.33
H	**92456A570**	7.53

For Styles		
Jaw Pusher Spring		
A	**94145A471**	$3.18
B & C	**66705A22**	5.60
D	**66775A33**	4.93
E	**67025A78**	4.76
F & G	**6884A34**	1.23
H	**92456A590**	1.20
J	**6684A402**	2.11
Optional Mandrel Collection Kits		
B & C	**66705A1**	225.75
D	**66775A81**	108.51
E	**67025A49**	122.43

Drill Attachments for 1/8"-1/4" Diameter Blind Rivets

Insert the hex shaft of these attachments into a 3/8" diameter or larger drill chuck and tighten to convert a cordless, electric, or air-powered drill into a blind rivet tool. Operate in forward to set rivets and in reverse to eject mandrels.

Style 1

Style 2

Drill Attachments—*Install blind rivets up to the body dia. listed below.*

Style	Pull Cap., lbs.	Stroke Lg.	Min. Battery Required	Overall Lg.	Blind Rivets: Aluminum	Blind Rivets: Aluminum w/ Steel Mandrel	Blind Rivets: Steel	Blind Rivets: 18-8 SS	Blind Rivets: Type 316 SS	Sealing Blind Rivets: Aluminum	Sealing Blind Rivets: Aluminum w/ Steel Mandrel	Sealing Blind Rivets: 18-8 SS		
1	1,350	3/8"	12 volt	6 1/2"	3/16"	3/16"	5/32"	1/8"	1/8"	3/16"	3/16"	5/32"	98716A100	$74.25
2	2,250	1 1/8"	14 volt	7"	1/4"	3/16	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	98716A500	177.83

Replacement Jaws and Nosepieces

For Style 1

Replacement Jaw (2 Parts)	98716A110	$12.27
Replacement 1/8" Nosepiece	98716A111	8.91
Replacement 5/32" Nosepiece	98716A112	8.91
Replacement 3/16" Nosepiece	98716A113	8.91

For Style 2

Replacement Jaw (3 Parts)	98716A515	$70.43
Replacement 1/8" Nosepiece	98716A511	13.59
Replacement 5/32" Nosepiece	98716A512	13.59
Replacement 3/16" Nosepiece	98716A513	13.59
Replacement 1/4" Nosepiece	98716A514	13.59

Cordless Tools for 3/32"-3/16" Diameter Blind Rivets

Perfect when there's no power source nearby. Comes with four nosepieces to install 3/32", 1/8", 5/32", and 3/16" blind rivets (except 3/16" dia. all-stainless steel and nickel-copper blind rivets). A 12-volt battery and battery charger are included. Installs up to 210 rivets with a full charge. Pull capacity is 1,900 lbs.; stroke length is 3/4". Nose is 7/8" Dia.×2 3/4" Lg. Overall size is 9" Ht. ×12" Wd. Comes in a plastic case.

Tool

66645A317		$783.46

Replacement Nosepieces

3/32"	6884A242	$5.70
1/8"	6884A243	5.70
5/32"	6884A244	5.70
3/16"	6884A245	5.70

High-Strength Bolt-Type Rivets and Air-Powered Installation Tools

Rivets

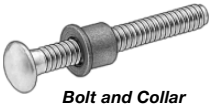
Bolt and Collar

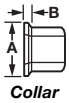

Collar

Choose these rivets when you need a strong permanent joint that delivers high uniform clamp force and vibration resistance. Also called Magna-Grip lockbolts, they are made of zinc-plated steel. Length is measured from under the head.

A complete rivet consists of a ribbed (not threaded) bolt and a collar (each sold separately). A tool and a nosepiece (sold separately below) are required for installation.

	3/16" Dia.	1/4" Dia.
Head Dia.	0.394"	0.525"
Head Ht.	0.125"	0.152"
Hole Size	0.203"	0.265"
Shear Strength, lbs.	1,700	2,200
Tensile Strength, lbs.	1,400	2,550
Collar (A)	0.385"	0.52"
Collar (B)	0.052"	0.07"

Material Thick. Range	Bolts: Lg.	Bolts: Pkg. Qty.	Bolts: Pkg.	Collars: Pkg. Qty.	Collars: Pkg.
3/16" Dia.					
1/16"- 5/8"	1 7/8"	10	96899A171	10	96899A509
5/16"-1 1/4"	2 3/4"	10	96899A172	10	96899A509
1/4" Dia.					
1/16"- 5/8"	2"	10	96899A214	10	96899A604
5/16"-1 1/4"	2 5/8"	10	96899A234	10	96899A604

96899A171	$3.42	$2.74
96899A172	4.20	2.74
96899A214	4.10	3.18
96899A234	4.44	3.18

Tool

Required to install the bolt-type rivets above, this tool shapes the collar to the workpiece to lock the joint in place. It is hydraulic and air powered. A nosepiece (sold separately below) is required. Pull capacity is 5,200 lbs.; stroke length is 5/8". Maximum air pressure is 100 psi. Air hose fitting is 1/4" NPT female (air hose not included). Overall size is 12 1/2" Ht.×8 1/2" Wd.

96899A400	$1,615.51

Nosepieces

3/16"	96899A401	$391.07
1/4"	96899A402	376.79

Military Specification Solid Rivets

Made of heat-treated aluminum with a matte gold finish per MIL-C-5541.

Low-profile domed rivets meet MS 20470 and NASM 20470. Head height is approximately 65% of other domed head rivets. Length is measured from under the head.

Countersunk rivets meet MS 20426 and NASM 20426. Head is countersunk 100°. Length is measured from the top of the head.

Low-Profile Domed

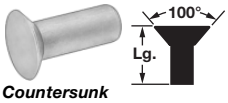

Countersunk

Dia.	Lg.	Dash No.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Low-Profile Domed							
1/16"	1/8"	AD2-2	0.131"	0.037"	250	94439A210	$9.89
1/16"	3/16"	AD2-3	0.131"	0.037"	250	94439A225	9.93
1/16"	1/4"	AD2-4	0.131"	0.037"	250	94439A240	10.00
3/32"	3/16"	AD3-3	0.196"	0.05"	250	94439A270	9.29
3/32"	1/4"	AD3-4	0.196"	0.05"	250	94439A285	10.97
3/32"	5/16"	AD3-5	0.196"	0.05"	250	94439A300	11.86
1/8"	3/16"	AD4-3	0.262"	0.064"	250	94439A330	11.69
1/8"	1/4"	AD4-4	0.262"	0.064"	100	94439A345	5.48
1/8"	5/16"	AD4-5	0.262"	0.064"	100	94439A360	5.57
1/8"	3/8"	AD4-6	0.262"	0.064"	100	94439A375	6.86
5/32"	1/4"	AD5-4	0.328"	0.077"	100	94439A405	7.95
5/32"	5/16"	AD5-5	0.328"	0.077"	100	94439A420	8.14
5/32"	3/8"	AD5-6	0.328"	0.077"	100	94439A435	8.20
3/16"	5/16"	AD6-5	0.394"	0.09"	50	94439A505	8.58
3/16"	3/8"	AD6-6	0.394"	0.09"	50	94439A530	8.93
3/16"	1/2"	AD6-8	0.394"	0.09"	50	94439A545	9.84
1/4"	3/8"	AD8-6	0.525"	0.117"	25	94439A595	9.49
1/4"	7/16"	AD8-7	0.525"	0.117"	25	94439A625	9.98
1/4"	1/2"	AD8-8	0.525"	0.117"	25	94439A650	10.61
1/4"	9/16"	AD8-9	0.525"	0.117"	25	94439A675	11.16
1/4"	5/8"	AD8-10	0.525"	0.117"	25	94439A680	11.72
Countersunk							
1/16"	1/8"	AD2-2	0.118"	0.022"	250	96685A110	9.72
1/16"	3/16"	AD2-3	0.118"	0.022"	250	96685A125	9.43
1/16"	1/4"	AD2-4	0.118"	0.022"	250	96685A140	10.35
3/32"	3/16"	AD3-3	0.183"	0.036"	250	96685A143	6.38
3/32"	1/4"	AD3-4	0.183"	0.036"	250	96685A146	6.97
3/32"	5/16"	AD3-5	0.183"	0.036"	250	96685A149	7.35
1/8"	3/16"	AD4-3	0.229"	0.042"	250	96685A155	8.43
1/8"	1/4"	AD4-4	0.229"	0.042"	250	96685A170	10.78
1/8"	5/16"	AD4-5	0.229"	0.042"	250	96685A185	11.01
1/8"	3/8"	AD4-6	0.229"	0.042"	250	96685A200	11.29
5/32"	1/4"	AD5-4	0.29"	0.055"	100	96685A203	8.72
5/32"	5/16"	AD5-5	0.29"	0.055"	100	96685A206	9.28
5/32"	3/8"	AD5-6	0.29"	0.055"	100	96685A209	9.98
3/16"	5/16"	AD6-5	0.357"	0.07"	100	96685A215	9.29
3/16"	3/8"	AD6-6	0.357"	0.07"	100	96685A230	9.86
3/16"	1/2"	AD6-8	0.357"	0.07"	100	96685A245	9.99
1/4"	1/4"	AD8-4	0.48"	0.095"	50	96685A270	10.40
1/4"	3/8"	AD8-6	0.48"	0.095"	50	96685A273	12.00
1/4"	1/2"	AD8-8	0.48"	0.095"	50	96685A276	13.60
1/4"	5/8"	AD8-10	0.48"	0.095"	25	96685A279	9.35

Domed and Flat Head Solid Rivets

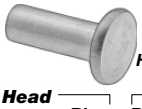

Length is measured from under the head. ***18-8 stainless steel*** rivets have excellent corrosion resistance; may be mildly magnetic. ***Aluminum*** rivets are nonmagnetic and have mild corrosion resistance. ***Brass*** rivets are nonmagnetic with good strength, durability, corrosion resistance, and electrical conductivity. ***Copper*** rivets are electrically conductive and corrosion resistant.

Lg.	Domed Head Pkg. Qty.		Domed Head Pkg.	Flat Head Pkg. Qty.		Flat Head Pkg.
18-8 Stainless Steel						
3/32" Dia. *Head: 0.182" Dia. × 0.077" Ht.*				*Head: 0.200" Dia. × 0.038" Ht.*		
1/4"	250	**97387A161**	$10.98	250	**97386A139**	$12.58
1/2"	100	**97387A165**	6.93	100	**97386A143**	7.03
1/8" Dia. *Head: 0.235" Dia. × 0.100" Ht.*				*Head: 0.260" Dia. × 0.048" Ht.*		
3/16"	100	**97387A169**	6.73	250	**97386A172**	14.11
1/4"	100	**97387A173**	7.84	100	**97386A173**	6.31
5/16"	100	**97387A174**	8.73	100	**97386A174**	8.66
3/8"	100	**97387A175**	9.92	100	**97386A175**	9.07
1/2"	100	**97387A177**	10.85	100	**97386A177**	9.52
5/8"	100	**97387A179**	12.08	100	**97386A179**	9.72
3/4"	50	**97387A181**	7.11	100	**97386A181**	10.34
1"	50	**97387A183**	8.77	100	**97386A183**	11.69
5/32" Dia. *Head: 0.290" Dia. × 0.124" Ht.*				*Head: 0.323" Dia. × 0.059" Ht.*		
1/4"	100	**97387A207**	10.28	100	**97386A207**	8.23
3/8"	100	**97387A209**	11.81	100	**97386A209**	9.89
1/2"	100	**97387A651**	13.33	100	**97386A211**	13.93
3/4"	50	**97387A655**	8.22	50	**97386A215**	9.06
1"	50	**97387A659**	10.35	50	**97386A219**	11.30
3/16" Dia. *Head: 0.348" Dia. × 0.147" Ht.*				*Head: 0.387" Dia. × 0.069" Ht.*		
1/4"	100	**97387A241**	13.71	100	**97386A241**	12.00
5/16"	50	**97387A242**	8.13	50	**97386A242**	8.18
3/8"	50	**97387A243**	8.04	50	**97386A243**	8.09
1/2"	50	**97387A245**	9.16	50	**97386A245**	9.32
5/8"	50	**97387A247**	10.03	50	**97386A247**	10.19
3/4"	50	**97387A249**	10.82	50	**97386A249**	10.80
1"	50	**97387A251**	12.65	50	**97386A251**	11.82
1 1/4"	25	**97387A253**	7.57	25	**97386A253**	7.68
1 1/2"	25	**97387A255**	8.05	25	**97386A255**	8.99
1/4" Dia. *Head: 0.460" Dia. × 0.196" Ht.*				*Head: 0.515" Dia. × 0.091" Ht.*		
3/8"	50	**97387A341**	11.80	50	**97386A341**	11.91
1/2"	25	**97387A343**	7.36	50	**97386A343**	13.36
5/8"	25	**97387A345**	7.51	25	**97386A345**	7.58
3/4"	25	**97387A347**	8.35	25	**97386A347**	9.02
1"	25	**97387A349**	9.67	25	**97386A349**	9.83
1 1/4"	25	**97387A351**	10.98	25	**97386A351**	10.34
1 1/2"	25	**97387A353**	11.90	25	**97386A355**	11.45
2"	10	**97387A357**	5.96	10	**97386A359**	6.25
5/16" Dia. *Head: 0.572" Dia. × 0.243" Ht.*				*Head: 0.641" Dia. × 0.113" Ht.*		
5/8"	25	**97387A361**	17.95	25	**97386A443**	12.64
1"	10	**97387A369**	10.01	10	**97386A447**	6.51
Steel						
1/8" Dia. *Head: 0.235" Dia. × 0.100" Ht.*				*Head: 0.260" Dia. × 0.048" Ht.*		
3/16"	750	**97300A650**	8.19	725	**97032A172**	7.71
1/4"	650	**97300A653**	7.30	625	**97032A173**	7.83
5/16"	550	**97300A654**	7.71	550	**97032A174**	7.94
3/8"	500	**97300A655**	7.94	500	**97032A175**	7.99
1/2"	400	**97300A657**	8.06	400	**97032A177**	8.06
3/4"	300	**97300A659**	8.18	300	**97032A181**	8.18
5/32" Dia. *Head: 0.290" Dia. × 0.124" Ht.*				*Head: 0.323" Dia. × 0.059" Ht.*		
1/4"	375	**97300A100**	8.19	375	**97032A201**	7.71
3/8"	300	**97300A105**	8.19	300	**97032A205**	7.83
1/2"	250	**97300A110**	8.19	250	**97032A209**	7.94
3/4"	175	**97300A115**	8.19	175	**97032A213**	8.06
1"	150	**97300A120**	8.19	150	**97032A217**	8.19
3/16" Dia. *Head: 0.348" Dia. × 0.147" Ht.*				*Head: 0.387" Dia. × 0.069" Ht.*		
1/4"	225	**97300A661**	6.86	225	**97032A241**	6.76
3/8"	175	**97300A663**	6.96	175	**97032A243**	6.86
1/2"	150	**97300A665**	7.06	150	**97032A245**	6.96
5/8"	125	**97300A667**	7.08	125	**97032A247**	7.06
3/4"	125	**97300A669**	7.10	125	**97032A249**	7.08
7/8"	100	**97300A670**	7.14	100	**97032A250**	7.17
1"	100	**97300A671**	7.19	100	**97032A251**	7.32
1 1/2"	50	**97300A675**	7.23	70	**97032A255**	7.38
2"	50	**97300A677**	7.27	50	**97032A259**	7.50
1/4" Dia. *Head: 0.460" Dia. × 0.196" Ht.*				*Head: 0.515" Dia. × 0.091" Ht.*		
3/8"	90	**97300A681**	6.86	90	**97032A341**	6.86
1/2"	80	**97300A683**	6.96	80	**97032A343**	6.96
3/4"	60	**97300A685**	7.06	60	**97032A347**	7.06
1"	50	**97300A689**	7.10	50	**97032A349**	7.08
1 1/4"	40	**97300A691**	7.14	40	**97032A353**	7.17
1 1/2"	30	**97300A696**	7.21	30	**97032A357**	7.27
2"	30	**97300A697**	7.27	30	**97032A363**	7.38
5/16" Dia. *Head: 0.572" Dia. × 0.243" Ht.*				*Head: 0.641" Dia. × 0.113" Ht.*		
5/8"	40	**97300A701**	7.27	40	**97032A371**	6.86
3/4"	30	**97300A705**	6.86	30	**97032A375**	6.96
1"	30	**97300A709**	6.96	30	**97032A379**	7.27
3/8" Dia. *Head: 0.684" Dia. × 0.291" Ht.*				*Head: 0.769" Dia. × 0.135" Ht.*		
1/2"	30	**97300A715**	7.06	30	**97032A385**	6.86
5/8"	20	**97300A719**	7.06	20	**97032A389**	6.96
3/4"	20	**97300A723**	7.17	20	**97032A393**	7.06
1"	20	**97300A727**	7.27	20	**97032A397**	7.27

Lg.	Domed Head Pkg. Qty.		Domed Head Pkg.	Flat Head Pkg. Qty.		Flat Head Pkg.
Aluminum						
1/16" Dia. *Head: 0.130" Dia. × 0.051" Ht.*				*Head: 0.130" Dia. × 0.027" Ht.*		
1/8"	500	**97482A010**	$4.11	500	**97481A050**	$4.06
3/16"	500	**97482A015**	4.86	500	**97481A055**	4.74
1/4"	500	**97482A020**	5.54	500	**97481A060**	5.43
3/8"	500	**97482A025**	6.94	500	**97481A065**	6.77
3/32" Dia. *Head: 0.194" Dia. × 0.076" Ht.*				*Head: 0.194" Dia. × 0.041" Ht.*		
1/4"	250	**97482A035**	4.66	250	**97481A075**	4.49
3/8"	250	**97482A040**	5.66	250	**97481A080**	5.46
1/2"	250	**97482A045**	6.63	250	**97481A085**	6.46
3/4"	250	**97482A050**	8.85	250	**97481A090**	7.38
1"	250	**97482A055**	11.18	100	**97481A095**	8.00
1/8" Dia. *Head: 0.260" Dia. × 0.101" Ht.*				*Head: 0.260" Dia. × 0.054" Ht.*		
3/16"	250	**97482A065**	7.52	250	**97481A110**	3.97
1/4"	250	**97482A070**	5.82	250	**97481A115**	5.14
5/16"	250	**97482A075**	6.39	250	**97481A120**	5.69
3/8"	250	**97482A080**	6.94	250	**97481A125**	6.23
7/16"	250	**97482A085**	7.52	250	**97481A130**	6.77
1/2"	250	**97482A090**	8.09	250	**97481A135**	7.29
5/8"	250	**97482A179**	9.24	250	**97481A179**	8.37
3/4"	250	**97482A181**	10.39	250	**97481A181**	9.46
1"	100	**97482A183**	6.09	250	**97481A183**	11.63
5/32" Dia. *Head: 0.324" Dia. × 0.126" Ht.*				*Head: 0.324" Dia. × 0.067" Ht.*		
1/4"	250	**97482A207**	8.40	250	**97481A207**	7.86
5/16"	250	**97482A208**	9.26	250	**97481A208**	8.69
3/8"	250	**97482A209**	10.09	250	**97481A209**	9.51
1/2"	250	**97482A211**	11.77	250	**97481A211**	11.20
3/4"	100	**97482A215**	6.91	100	**97481A215**	6.69
1"	100	**97482A217**	8.26	100	**97481A219**	8.06
3/16" Dia. *Head: 0.390" Dia. × 0.152" Ht.*				*Head: 0.390" Dia. × 0.081" Ht.*		
5/16"	100	**97482A269**	5.35	250	**97481A264**	10.54
3/8"	100	**97482A273**	5.76	100	**97481A266**	5.41
1/2"	100	**97482A275**	6.54	100	**97481A269**	6.19
5/8"	100	**97482A277**	7.32	100	**97481A271**	7.03
3/4"	100	**97482A249**	8.08	100	**97481A249**	7.53
1"	100	**97482A251**	9.65	100	**97481A251**	8.82
1/4" Dia. *Head: 0.520" Dia. × 0.203" Ht.*				*Head: 0.520" Dia. × 0.108" Ht.*		
3/8"	100	**97482A341**	9.70	100	**97481A341**	9.47
1/2"	50	**97482A343**	6.12	100	**97481A343**	10.84
5/8"	50	**97482A345**	6.78	100	**97481A345**	12.18
3/4"	50	**97482A347**	7.40	100	**97481A347**	13.58
1"	50	**97482A349**	8.68	50	**97481A349**	8.60
1 1/4"	50	**97482A351**	10.26	50	**97481A351**	10.13
1 1/2"	50	**97482A355**	11.25	50	**97481A353**	11.47
2"	50	**97482A357**	13.82	50	**97481A357**	14.24
Brass						
1/8" Dia. *Head: 0.235" Dia. × 0.100" Ht.*				*Head: 0.260" Dia. × 0.048" Ht.*		
5/16"	100	**97391A174**	5.20	—	—	—
3/8"	100	**97391A175**	5.79	200	**97500A110**	11.21
1/2"	100	**97391A177**	6.51	200	**97500A115**	13.99
5/8"	100	**97391A178**	8.18	100	**97500A120**	8.00
3/4"	100	**97391A181**	8.68	100	**97500A125**	9.34
1"	50	**97391A183**	6.51	100	**97500A130**	12.44
3/16" Dia. *Head: 0.348" Dia. × 0.147" Ht.*				*Head: 0.387" Dia. × 0.069" Ht.*		
3/8"	50	**97391A243**	8.26	50	**97500A140**	8.02
1/2"	50	**97391A245**	8.66	50	**97500A145**	9.39
5/8"	50	**97391A247**	10.39	50	**97500A150**	11.25
3/4"	25	**97391A249**	6.49	50	**97500A155**	11.25
1"	25	**97391A251**	8.66	25	**97500A160**	8.78
1 1/2"	25	**97391A255**	10.82	25	**97500A165**	11.72
1/4" Dia. *Head: 0.460" Dia. × 0.196" Ht.*				*Head: 0.515" Dia. × 0.091" Ht.*		
1/2"	25	**97391A343**	8.63	25	**97500A175**	9.36
3/4"	25	**97391A347**	10.78	25	**97500A180**	11.70
1"	10	**97391A349**	6.47	25	**97500A185**	14.02
Copper						
1/8" Dia. *Head: 0.235" Dia. × 0.100" Ht.*				*Head: 0.260" Dia. × 0.048" Ht.*		
1/4"	200	**97531A491**	8.82	200	**97440A325**	8.71
3/8"	200	**97531A492**	11.04	200	**97440A330**	10.96
1/2"	100	**97531A493**	7.20	100	**97440A335**	7.16
3/4"	100	**97531A494**	9.40	25	**97440A340**	3.18
1"	50	**97531A495**	6.36	25	**97440A345**	3.73
3/16" Dia. *Head: 0.348" Dia. × 0.147" Ht.*				*Head: 0.387" Dia. × 0.069" Ht.*		
3/8"	50	**97531A503**	7.44	50	**97440A355**	7.44
1/2"	50	**97531A505**	8.73	25	**97440A360**	4.84
3/4"	50	**97531A508**	11.17	25	**97440A365**	6.07
1"	25	**97531A510**	7.44	25	**97440A370**	7.44
1 1/2"	25	**97531A514**	9.73	25	**97440A375**	11.17
1/4" Dia. *Head: 0.460" Dia. × 0.196" Ht.*				*Head: 0.515" Dia. × 0.091" Ht.*		
1/2"	25	**97531A537**	8.64	25	**97440A385**	8.49
3/4"	25	**97531A540**	11.13	25	**97440A390**	11.12
1"	10	**97531A542**	5.84	25	**97440A395**	12.76

Low-Profile Domed Head Solid Rivets

A lower head height than other solid rivets provides a more finished appearance when installed. Length is measured from under the head.

Domed—*Steel* rivets are also known as truss head rivets. *Aluminum* rivets are also known as universal head rivets. They are nonmagnetic and have mild corrosion resistance.

Wide Domed—Also known as brazier head rivets. All are aluminum and are nonmagnetic and have mild corrosion resistance.

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Domed—*Steel*					
3/16″ Dia.					
1/4″	0.442″	0.069″	250	97030A241	$7.27
3/8″	0.442″	0.069″	200	97030A243	7.27
1/2″	0.442″	0.069″	150	97030A245	7.27
3/4″	0.442″	0.069″	125	97030A249	7.27
1″	0.442″	0.069″	100	97030A251	7.27
1/4″ Dia.					
3/8″	0.59″	0.091″	100	97030A341	7.27
1/2″	0.59″	0.091″	75	97030A343	7.27
3/4″	0.59″	0.091″	60	97030A347	7.27
1″	0.59″	0.091″	50	97030A349	7.27
1 1/4″	0.59″	0.091″	40	97030A351	7.27
1 1/2″	0.59″	0.091″	40	97030A352	7.27
Domed—*Aluminum*					
1/8″ Dia.					
3/16″	0.26″	0.064″	250	97490A228	4.63
1/4″	0.26″	0.064″	250	97490A231	4.60
5/16″	0.26″	0.064″	250	97490A234	5.63
3/8″	0.26″	0.064″	250	97490A237	6.11
1/2″	0.26″	0.064″	250	97490A240	7.14

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Domed—*Aluminum (Cont.)*					
3/16″ Dia.					
3/8″	0.39″	0.092″	250	97490A243	$11.37
1/2″	0.39″	0.092″	100	97490A245	6.23
5/8″	0.39″	0.092″	100	97490A247	7.09
3/4″	0.39″	0.092″	100	97490A249	7.97
1″	0.39″	0.092″	100	97490A251	9.66
1/4″ Dia.					
3/8″	0.52″	0.121″	100	97490A341	8.66
1/2″	0.52″	0.121″	100	97490A343	10.40
5/8″	0.52″	0.121″	100	97490A345	12.14
3/4″	0.52″	0.121″	100	97490A347	14.03
Wide Domed—*Aluminum*					
3/32″ Dia.					
1/8″	0.243″	0.051″	250	97484A050	4.03
1/4″	0.243″	0.051″	250	97484A055	5.00
3/8″	0.243″	0.051″	250	97484A060	5.97
1/8″ Dia.					
3/16″	0.324″	0.067″	250	97484A065	4.91
1/4″	0.324″	0.067″	250	97484A070	5.46
5/16″	0.324″	0.067″	250	97484A075	5.97
3/8″	0.324″	0.067″	250	97484A080	6.51
1/2″	0.324″	0.067″	250	97484A085	7.60

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Wide Domed—*Aluminum (Cont.)*					
1/8″ Dia. (Cont.)					
5/8″	0.324″	0.067″	250	97484A179	$8.69
3/4″	0.324″	0.067″	250	97484A181	9.77
1″	0.324″	0.067″	250	97484A183	11.91
5/32″ Dia.					
1/4″	0.407″	0.084″	250	97484A207	7.38
3/8″	0.407″	0.084″	250	97484A209	8.85
3/16″ Dia.					
1/4″	0.488″	0.101″	250	97484A241	8.40
5/16″	0.488″	0.101″	250	97484A242	9.20
3/8″	0.488″	0.101″	100	97484A243	4.67
1/2″	0.488″	0.101″	100	97484A245	5.31
5/8″	0.488″	0.101″	100	97484A247	5.96
3/4″	0.488″	0.101″	100	97484A249	6.72
1″	0.488″	0.101″	100	97484A251	8.64
1/4″ Dia.					
3/8″	0.65″	0.135″	100	97484A341	9.92
1/2″	0.65″	0.135″	100	97484A343	10.70
5/8″	0.65″	0.135″	100	97484A345	12.00
3/4″	0.65″	0.135″	50	97484A347	7.25
1″	0.65″	0.135″	50	97484A349	8.57
1 1/4″	0.65″	0.135″	50	97484A351	9.85

Low-Profile Flat Head Solid Rivets

Use for HVAC ducts and other sheet metal applications. Also known as tinners' rivets. All are made of steel. Length is measured from under the head.

Dia.	Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
0.088″	5/32″	0.215″	0.03″	500	97358A008	$4.05
0.104″	3/16″	0.255″	0.031″	500	97358A012	6.58
0.11″	13/64″	0.275″	0.034″	500	97358A100	6.06
0.119″	7/32″	0.285″	0.039″	500	97358A101	7.21
0.129″	15/64″	0.305″	0.04″	500	97358A102	8.42
0.143″	17/64″	0.33″	0.043″	250	97358A104	6.82
0.147″	9/32″	0.3″	0.062″	100	97358A105	6.11

Dia.	Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
0.159″	5/16″	0.316″	0.066″	100	97358A106	$7.78
0.175″	11/32″	0.355″	0.069″	100	97358A108	11.56
0.186″	3/8″	0.375″	0.077″	200	97358A109	10.61
0.202″	25/64″	0.406″	0.083″	150	97358A110	10.61
0.223″	7/16″	0.46″	0.093″	125	97358A112	10.61
0.237″	15/32″	0.49″	0.096″	100	97358A114	10.61
0.257″	1/2″	0.515″	0.099″	80	97358A115	10.61

Countersunk Head Solid Rivets

Head is flush when installed. Length is measured from the top of the head.

18-8 stainless steel rivets have a 90° countersunk head. They have excellent corrosion resistance and may be mildly magnetic.

Steel rivets have a 90° countersunk head.

Aluminum rivets have a 78° countersunk head. They offer mild corrosion resistance and are nonmagnetic.

Brass rivets have a 90° countersunk head. They are nonmagnetic with good strength, durability, corrosion resistance, and electrical conductivity.

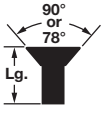

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
18-8 Stainless Steel					
1/8″ Dia.					
3/8″	0.235″	0.053″	100	97388A175	$6.93
1/2″	0.235″	0.053″	100	97388A177	8.96
5/8″	0.235″	0.053″	100	97388A179	11.17
3/4″	0.235″	0.053″	100	97388A181	12.62
1″	0.235″	0.053″	50	97388A183	7.39
3/16″ Dia.					
3/8″	0.351″	0.079″	100	97388A243	11.68
1/2″	0.351″	0.079″	50	97388A245	7.35
5/8″	0.351″	0.079″	50	97388A247	8.35
3/4″	0.351″	0.079″	50	97388A249	10.81
1″	0.351″	0.079″	50	97388A251	12.82
1 1/4″	0.351″	0.079″	25	97388A253	7.72
1/4″ Dia.					
1/2″	0.469″	0.106″	50	97388A343	14.39
3/4″	0.469″	0.106″	25	97388A347	8.08
Steel					
3/16″ Dia.					
3/8″	0.351″	0.079″	250	97304A244	7.27
1/2″	0.351″	0.079″	200	97304A245	7.27
5/8″	0.351″	0.079″	175	97304A246	7.27
3/4″	0.351″	0.079″	150	97304A247	7.27
7/8″	0.351″	0.079″	125	97304A248	7.27
1″	0.351″	0.079″	125	97304A249	7.27
1 1/4″	0.351″	0.079″	100	97304A251	7.27
1/4″ Dia.					
1/2″	0.469″	0.106″	125	97304A243	7.27
5/8″	0.469″	0.106″	100	97304A344	7.27

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Steel (Cont.)					
1/4″ Dia. (Cont.)					
3/4″	0.469″	0.106″	80	97304A345	$7.27
1″	0.469″	0.106″	60	97304A349	7.27
Aluminum					
1/16″ Dia.					
3/16″	0.116″	0.033″	250	97483A040	3.06
1/2″	0.116″	0.033″	250	97483A045	4.77
3/32″ Dia.					
3/16″	0.177″	0.051″	250	97483A050	3.39
1/4″	0.177″	0.051″	250	97483A055	3.84
5/16″	0.177″	0.051″	250	97483A060	4.18
3/8″	0.177″	0.051″	250	97483A065	4.74
1/2″	0.177″	0.051″	250	97483A070	5.51
1/8″ Dia.					
1/4″	0.234″	0.067″	250	97483A075	4.09
5/16″	0.234″	0.067″	250	97483A080	4.63
3/8″	0.234″	0.067″	250	97483A085	5.17
1/2″	0.234″	0.067″	250	97483A090	6.26
5/8″	0.234″	0.067″	250	97483A095	7.31
3/4″	0.234″	0.067″	250	97483A181	8.40
1″	0.234″	0.067″	250	97483A183	10.49
5/32″ Dia.					
1/2″	0.293″	0.084″	250	97483A211	7.18
3/16″ Dia.					
5/16″	0.352″	0.101″	250	97483A242	7.42
3/8″	0.352″	0.101″	250	97483A243	7.95
1/2″	0.352″	0.101″	100	97483A245	4.65
3/4″	0.352″	0.101″	100	97483A249	6.08
1″	0.352″	0.101″	100	97483A251	7.50

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Aluminum (Cont.)					
1/4″ Dia.					
1/2″	0.47″	0.135″	50	97483A343	$4.47
5/8″	0.47″	0.135″	50	97483A345	5.10
3/4″	0.47″	0.135″	50	97483A347	5.75
1″	0.47″	0.135″	50	97483A349	7.05
1 1/4″	0.47″	0.135″	50	97483A351	8.32
1 1/2″	0.47″	0.135″	50	97483A353	9.62
Brass					
1/8″ Dia.					
1/4″	0.235″	0.053″	100	97029A173	5.70
3/8″	0.235″	0.053″	100	97029A175	7.21
1/2″	0.235″	0.053″	100	97029A177	9.15
5/8″	0.235″	0.053″	100	97029A179	10.82
1″	0.235″	0.053″	50	97029A183	8.72
3/16″ Dia.					
3/8″	0.351″	0.079″	100	97029A243	11.38
1/2″	0.351″	0.079″	100	97029A245	13.09
5/8″	0.351″	0.079″	50	97029A247	8.36
3/4″	0.351″	0.079″	50	97029A249	9.62
1″	0.351″	0.079″	50	97029A251	12.13
1 1/4″	0.351″	0.079″	25	97029A252	7.89
1 1/2″	0.351″	0.079″	25	97029A253	9.16
1/4″ Dia.					
3/4″	0.469″	0.106″	25	97029A347	8.38
1″	0.469″	0.106″	25	97029A349	10.51
1 1/4″	0.469″	0.106″	10	97029A351	5.42
1 1/2″	0.469″	0.106″	10	97029A353	6.53
2″	0.469″	0.106″	10	97029A355	8.31

Wide-Countersunk Head Solid Rivets with Bearing Washer

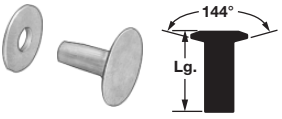

Heads are countersunk 144° to provide a flush surface when set—just what you need for fastening leather, conveyor belts, and copper-alloy assemblies. Also known as belt rivets. All have a tapered shank and are made of corrosion-resistant copper. An equal quantity of washers is included with the rivets. Length is measured from the top of the head.

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
No. 12 Dia.—Shank Dia.: 0.137″					
3/8″	3/8″	0.045″	50	97537A289	$6.53
1/2″	3/8″	0.045″	25	97537A291	4.73
5/8″	3/8″	0.045″	25	97537A293	5.04
3/4″	3/8″	0.045″	25	97537A294	5.93
1″	3/8″	0.045″	25	97537A296	7.31
1 1/4″	3/8″	0.045″	25	97537A298	8.33
1 1/2″	3/8″	0.045″	10	97537A299	4.56
No. 10 Dia.—Shank Dia.: 0.151″					
3/8″	7/16″	0.055″	25	97537A240	5.29
1/2″	7/16″	0.055″	25	97537A242	6.11
5/8″	7/16″	0.055″	25	97537A244	7.36
3/4″	7/16″	0.055″	25	97537A245	8.24
7/8″	7/16″	0.055″	10	97537A246	4.44
1″	7/16″	0.055″	10	97537A247	5.11
1 1/4″	7/16″	0.055″	10	97537A249	6.11
1 1/2″	7/16″	0.055″	10	97537A252	6.11
No. 9 Dia.—Shank Dia.: 0.161″					
3/8″	15/32″	0.058″	50	97537A216	$9.56
1/2″	15/32″	0.058″	50	97537A218	11.67
5/8″	15/32″	0.058″	25	97537A220	7.13
3/4″	15/32″	0.058″	25	97537A221	8.16
7/8″	15/32″	0.058″	25	97537A222	9.56
1″	15/32″	0.058″	25	97537A223	9.56
1 1/4″	15/32″	0.058″	25	97537A225	11.67
1 1/2″	15/32″	0.058″	25	97537A227	12.84
No. 8 Dia.—Shank Dia.: 0.181″					
3/8″	1/2″	0.063″	25	97537A192	6.40
1/2″	1/2″	0.063″	25	97537A194	7.13
5/8″	1/2″	0.063″	25	97537A196	8.17
3/4″	1/2″	0.063″	25	97537A197	9.54
7/8″	1/2″	0.063″	10	97537A198	5.32
1″	1/2″	0.063″	10	97537A199	5.32
1 1/4″	1/2″	0.063″	10	97537A201	6.40
1 1/2″	1/2″	0.063″	10	97537A203	6.73
No. 7 Dia.—Shank Dia.: 0.191″					
1/2″	9/16″	0.07″	10	97537A170	$5.56
5/8″	9/16″	0.07″	10	97537A172	5.56
3/4″	9/16″	0.07″	10	97537A173	6.68
7/8″	9/16″	0.07″	10	97537A174	7.29
1″	9/16″	0.07″	10	97537A175	8.07
1 1/4″	9/16″	0.07″	10	97537A177	9.04
1 1/2″	9/16″	0.07″	10	97537A179	10.38
No. 6 Dia.—Shank Dia.: 0.228″					
3/4″	11/16″	0.09″	10	97537A151	11.47
1″	11/16″	0.09″	5	97537A153	7.49
1 1/2″	11/16″	0.09″	5	97537A157	9.00

Installation Tools for Solid Rivets

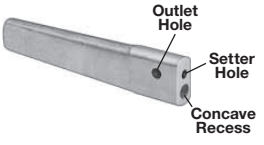

Set solid rivets using this tool and your hammer. For proper installation, choose a tool with a setter hole diameter slightly larger than the rivet being set. Use the setter hole and concave recess to draw sheet metal around the rivet, flatten the shank, and form a domed head. Use the outlet hole on the side of the tools to dislodge metal slugs. Made of steel.

Setter Hole Dia.	For Rivet Dia.		
0.109″	3/32″	6663A21	$25.82
0.125″	3/32″	6663A19	25.82
0.14″	1/8″	6663A18	25.82
0.149″	—	6663A17	25.82
0.166″	5/32″	6663A16	25.82
0.191″	3/16″	6663A15	27.61
0.213″	3/16″	6663A14	27.61
0.234″	7/32″	6663A13	27.61
0.281″	1/4″	6663A12	31.10
0.312″	9/32″	6663A11	31.10

Squeeze Tools for Aluminum and Brass Solid Rivets

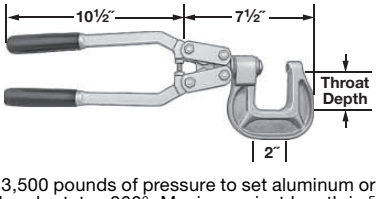

You'll get 3,500 pounds of pressure to set aluminum or brass solid rivets. Tool head rotates 360°. Maximum rivet length is 5/8″.

Note: Not for use with steel or stainless steel rivets.

Die sets are sold separately and include check nuts.

Tools

Throat Depth	Wt., lbs.		
2 1/2″	6 1/2	6616A14	$399.92
6″	9	6616A15	405.91

Die Sets

Rivet Dia.	Head Dia., min.-max.	Head Ht., min.-max.		
For Domed Head				
3/32″	0.162″-0.182″	0.065″-0.077″	6616A62	$69.53
1/8″	0.215″-0.235″	0.088″-0.1″	6616A64	69.53
5/32″	0.268″-0.29″	0.11″-0.124″	6616A66	69.53
For Low-Profile Domed Head				
3/32″	0.177″-0.197″	0.039″-0.051″	6616A51	74.17
1/8″	0.24″-0.26″	0.053″-0.065″	6616A52	74.17
5/32″	0.301″-0.323″	0.065″-0.079″	6616A53	74.17
For Flat Head				
3/32″	0.18″-0.2″	0.026″-0.038″	6616A96	69.39
1/8″	0.24″-0.26″	0.036″-0.048″	6616A96	69.39
5/32″	0.301″-0.323″	0.045″-0.059″	6616A96	69.39
3/16″	0.361″-0.387″	0.055″-0.069″	6616A96	69.39

Air-Powered Squeeze Tools for Aluminum and Steel Solid Rivets

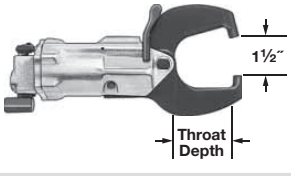

Tools

Also known as alligator squeezers, these tools offer uniform results and quiet operation when setting solid metal rivets. Tools have a throttle to control speed. They have a 1/4″ NPT female swivel air inlet. Maximum air pressure is 90 psi.

93970A330 and 93970A310 have two cylinders for twice the setting force.

Max. Rivet Dia. Soft Alum.	Max. Rivet Dia. Plain Steel	Max. Force, psi	Throat Depth	Overall Lg.	Wt., lbs.		
3/32″	1/16″	1,800	3″	10 3/4″	5	93970A270	$1,160.13
3/32″	3/32″	2,400	2 1/4″	10″	4 1/2	93970A230	1,126.98
1/8″	3/32″	3,000	1 1/2″	9 1/4″	4	93970A210	1,067.32
3/16″	1/8″	4,600	2 1/4″	12 3/4″	5 1/2	93970A330	1,259.56
3/16″	5/32″	6,000	1 1/2″	12″	5 1/2	93970A310	1,199.90

Die Sets

To Order: Please specify domed, low-profile domed, or flat head.

Rivet Dia.	Rivet Length 3/16″	3/8″	1/2″	5/8″	
3/32″	93970A500	93970A600	93970A700	93970A800	$33.10
1/8″	93970A501	93970A601	93970A701	93970A801	33.10
5/32″	93970A502	93970A602	93970A702	93970A802	33.10
3/16″	93970A503	93970A603	93970A703	93970A803	33.10

Rivets for Soft Materials

Join lightweight materials such as leather, canvas, plastics, wood, fiberboard, and light gauge metals.

Split rivets are also known as truss-head rivets. To install, punch a hole, drive in with a hammer, and split legs. *Nickel-plated steel* rivets have fair rust and weather resistance. *Brass* rivets are corrosion resistant and nonmagnetic.

Semi tubular rivets are also known as brake-lining rivets. Head is countersunk 150°. All are made of brass so they are corrosion resistant. They are also nonmagnetic. Internal hole depth is 1/8″ to 1/4″. A punched hole is required. Use an installation tool (sold separately on this page) for proper installation.

Full tubular rivets are self piercing and have an internal hole that extends nearly the full length of the shaft, which eliminates the need for a punched hole. Internal hole depth is 1/4″ to 1/2″. Head is countersunk 150°. All are made of copper-plated steel that has fair rust and weather resistance. Use the installation tool (sold separately on this page) for proper installation.

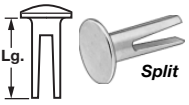

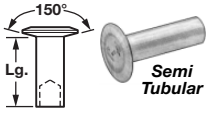

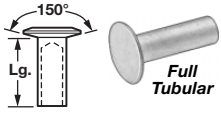

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Split—*Nickel-Plated Steel*					
9/64″ Dia.—*Hole Size: 0.141″ (Drill Size #27)*					
5/16″	5/16″	3/64″	100	97351A762	$6.19
3/8″	5/16″	3/64″	100	97351A763	6.19
7/16″	5/16″	3/64″	100	97351A764	6.21
1/2″	5/16″	3/64″	100	97351A765	7.21
5/8″	5/16″	3/64″	100	97351A767	8.13
3/4″	5/16″	3/64″	100	97351A768	13.09
Split—*Brass*					
9/64″ Dia.—*Hole Size: 0.141″ (Drill Size #27)*					
3/8″	5/16″	3/64″	25	97461A673	6.06
7/16″	5/16″	3/64″	25	97461A674	5.97
5/8″	5/16″	3/64″	25	97461A677	7.68
Semi Tubular—*Brass*					
9/64″ Dia.—*Hole Size: 0.156″ (Drill Size #23)*					
1/4″	5/16″	3/64″	100	97451A650	8.78
9/32″	5/16″	3/64″	100	97451A651	9.06
5/16″	5/16″	3/64″	100	97451A652	9.35
5/16″	3/8″	3/64″	100	97451A662	9.91
3/8″	5/16″	3/64″	100	97451A653	9.59
3/8″	3/8″	3/64″	100	97451A663	10.24
7/16″	5/16″	3/64″	100	97451A654	10.15
7/16″	3/8″	3/64″	100	97451A664	10.69
1/2″	5/16″	3/64″	100	97451A655	10.49
1/2″	3/8″	3/64″	100	97451A665	11.09
5/8″	3/8″	3/64″	100	97451A667	11.93
3/4″	3/8″	3/64″	100	97451A668	12.74

Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Semi Tubular—*Brass (Cont.)*					
3/16″ Dia.—*Hole Size: 0.199″ (Drill Size #8)*					
1/4″	3/8″	3/64″	100	97451A670	$9.91
5/16″	3/8″	3/64″	100	97451A671	10.07
3/8″	3/8″	3/64″	100	97451A672	10.99
7/16″	3/8″	3/64″	100	97451A673	11.79
1/2″	3/8″	3/64″	100	97451A674	12.50
1/2″	1/2″	1/16″	50	97451A681	7.16
9/16″	3/8″	3/64″	50	97451A675	7.28
5/8″	3/8″	3/64″	50	97451A676	7.71
5/8″	1/2″	1/16″	50	97451A682	7.59
3/4″	3/8″	3/64″	50	97451A677	8.20
3/4″	1/2″	1/16″	50	97451A683	8.19
7/8″	3/8″	3/64″	50	97451A678	8.24
7/8″	1/2″	1/16″	50	97451A684	8.54
1″	3/8″	3/64″	50	97451A679	9.04
1″	1/2″	1/16″	50	97451A685	9.45
1/4″ Dia.—*Hole Size: 0.265″ (Drill Size 17/64″)*					
1/2″	1/2″	1/16″	25	97451A691	4.78
5/8″	1/2″	1/16″	25	97451A692	5.20
3/4″	1/2″	1/16″	25	97451A693	5.64
7/8″	1/2″	1/16″	25	97451A694	6.12
1″	1/2″	1/16″	25	97451A695	6.61
Full Tubular—*Copper-Plated Steel*					
9/64″ Dia.—*Hole Size: 0.104″ (Drill Size #37)*					
1/4″	5/16″	3/64″	50	97342A701	9.90
3/8″	5/16″	3/64″	50	97342A703	7.51
7/16″	5/16″	3/64″	50	97342A704	14.56
1/2″	5/16″	3/64″	25	97342A705	3.46

Installation Tools for Tubular Rivets

One of these tools and your hammer are all you need to clinch or expand the base of semi tubular and full tubular rivets. Tools are made of steel. Use on aluminum, steel, brass, and copper rivets.

Fits Dia.	Dia.	Lg.		
1/16″	5/16″	3 1/2″	6667A001	$48.61
0.087″	3/8″	4 1/4″	6667A002	48.61
1/8″	3/8″	4 1/4″	6667A4	48.61
9/64″	1/2″	5″	6667A1	48.61
5/32″	1/2″	5″	6667A5	48.61
3/16″	1/2″	5″	6667A2	48.61
7/32″	1/2″	5″	6667A6	56.25
1/4″	1/2″	5″	6667A3	48.61
5/16″	5/8″	5″	6667A7	58.33

Two-Piece Press-Fit Tubular Rivets

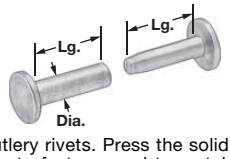

Also known as cutlery rivets. Press the solid male shank into the tubular female piece to fasten wood to metal and metal to metal. Rivets are made of brass.

Dia.	Material Thickness Range	Lg.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
0.112″	3/8″-9/16″	3/8″	3/16″	1/16″	10	96082A100	$3.97
0.149″	1/2″-3/4″	1/2″	5/16″	3/64″	10	96082A200	4.09
0.149″	5/8″-7/8″	5/8″	5/16″	3/64″	10	96082A300	5.00

Vibration-Resistant Panel Screws

Also known as Fab-Lok fasteners, these combination rivet/screws have enough holding power to withstand excessive vibration, expansion, and contraction. After tightening, the sleeve stays in place even if the screw is removed. Use for fastening metal and insulated panels.

Each panel screw consists of a 10-24 machine screw with a hex-washer head, a 1/2″ dia. EPDM sealing washer, and an aluminum sleeve that fans out when installed for added strength. A corrosion-resistant coating provides 100 hours of salt-spray resistance and acts as a lubricant to reduce friction.

Like blind rivets, they install from one side only. Set them in a 5/16″ dia. hole using a 5/16″ closed-end wrench. For faster installation, use a torque adjustable power driver along with the *holding tool and socket* (sold separately).

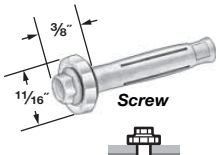

Screw

Installed

Holding Tool and Socket

Material Thickness Range	Penetrating Depth	Pkg. Qty.		Pkg.
Steel				
0.062″-0.25″	1.373″	10	97111A212	$13.92
0.25″-0.5″	1.612″	10	97111A216	14.50
0.5″-0.75″	1.807″	5	97111A218	8.92
18-8 Stainless Steel				
0.062″-0.25″	1.373″	5	97111A416	10.02
0.25″-0.5″	1.612″	5	97111A418	11.26
0.5″-0.75″	1.807″	5	97111A423	12.56
Holding Tool and Socket			97111A137	Each $150.18

Easy-to-Install Plastic Rivets

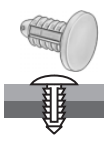
Ribbed Shank

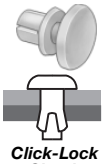
Click-Lock Shank

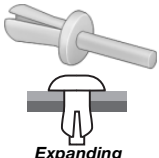
Expanding Shank

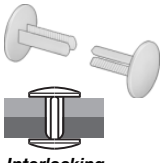
Interlocking Shank

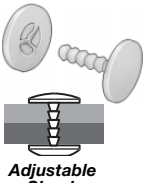
Adjustable Shank

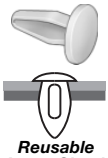
Reusable Arrow Shank

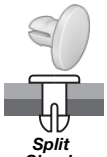
Split Shank

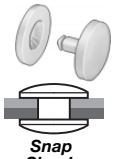
Snap Shank

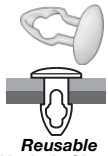
Reusable Keyhole Shank

No special tools required when you use these rivets to join plastic, composite, metal, wood, foam, and particleboard panels. Also known as push, panel, and tree clips, each rivet fastens a specific material thickness or thickness range. All are made of nylon. Temperature range is –40° to +149°F. *Note:* Nylon absorbs environmental moisture, which can affect dimensions and other properties.

To Order: Please specify color: black or off-white (unless noted).

Ribbed Shank— Shank grips and holds materials for a secure, permanent joint. A removal tool is sold separately below.

Click-Lock Shank— Place in a hole and press the head. When you hear a snap, you know the shaft has expanded and the rivet is secured. Pry to remove.

Expanding Shank— Insert the rivet in a hole and press the pin. This expands the shaft and locks the rivet in place.

Interlocking Shank— Identical parts with internally serrated prongs ratchet together. Two heads provide a finished look on both sides.

Adjustable Shank— Consist of a rivet and a washer. Insert the rivet in the hole and push the washer to the desired length. Clip excess length if needed. Pry apart or cut to remove.

Reusable Arrow Shank— Arrow shape collapses when pushed through a hole then springs back completely to hold fast. Pry to remove.

Split Shank— A rounded, split shank compresses to slide through a hole, then expands to form a strong joint.

Snap Shank— Push the male and female parts together. Two heads provide a finished look on both sides. Pull apart to remove.

Reusable Keyhole Shank— The extra-flexible body slips effortlessly through small holes and takes up slack to provide a tight, reliable joint. Pry to remove.

Hole Dia.	Material Thick. Range	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Ribbed Shank						
0.187″	0.03″-0.312″	0.734″	0.07″	25	90221A414	$4.50
0.187″	0.03″-0.33″	0.442″	0.068″	25	90221A412	2.93
0.187″	0.03″-0.512″	0.437″	0.07″	25	90221A413	3.34
0.25″	0.062″-0.375″	0.7″	0.1″	25	90221A416	4.33
0.25″	0.062″-0.5″	0.7″	0.1″	25	90221A418	4.41
0.25″	0.062″-0.875″	0.7″	0.1″	25	90221A419	4.64
0.25″	0.095″-0.32″	0.75″	0.044″	25	90221A415	4.62
0.281″	0.062″-1″	0.787″	0.1″	25	90221A421	5.95
0.394″	0.06″-0.787″	0.846″	0.07″	25	90221A422	6.19
Click-Lock Shank						
0.124″	0.039″-0.079″	0.252″	0.063″	100	91020A098	13.00
0.124″	0.079″-0.118″	0.252″	0.063″	100	91020A108	13.33
0.124″	0.118″-0.158″	0.252″	0.063″	100	91020A118	13.12
0.124″	0.158″-0.197″	0.252″	0.063″	100	91020A128	13.12
0.124″	0.217″-0.256″	0.252″	0.063″	100	91020A138	14.04
0.163″	0.098″-0.138″	0.315″	0.071″	100	91020A198	14.04
0.163″	0.138″-0.177″	0.315″	0.071″	100	91020A208	14.73
0.163″	0.177″-0.217″	0.315″	0.071″	50	91020A218	9.36
0.163″	0.217″-0.256″	0.315″	0.071″	50	91020A228	9.68
0.163″	0.295″-0.335″	0.315″	0.071″	50	91020A238	9.18
0.203″	0.138″-0.177″	0.354″	0.087″	50	91020A318	9.31
0.203″	0.177″-0.217″	0.354″	0.087″	50	91020A328	10.07
0.203″	0.217″-0.256″	0.354″	0.087″	50	91020A338	9.98
0.203″	0.256″-0.295″	0.354″	0.087″	50	91020A348	10.31
0.203″	0.295″-0.335″	0.354″	0.087″	50	91020A358	10.66
0.242″	0.098″-0.158″	0.472″	0.098″	50	91020A428	10.62
0.242″	0.138″-0.217″	0.472″	0.118″	50	91020A438	11.58
Expanding Shank						
0.189″	0.039″-0.375″	0.28″	0.06″	50	90137A429	12.86
0.189″	0.158″-0.281″	0.43″	0.06″	50	90137A319	10.75
0.217″	0.094″-0.158″	0.37″	0.08″	50	90137A309	10.18
0.252″	0.28″-0.5″	0.47″	0.08″	10	90137A340★	6.22
Interlocking Shank						
0.281″	0.235″-0.297″	0.75″	0.093″	100♣	90243A719	13.76
0.281″	0.346″-0.502″	0.75″	0.093″	100♣	90243A739	13.91
0.281″	0.5″-0.812″	0.75″	0.093″	100♣	90243A759	14.35
0.281″	0.781″-1.375″	0.75″	0.093″	100♣	90243A779	14.98
Adjustable Shank						
0.094″	0.01″-0.25″	0.354″	0.062″	25	98295A200	4.95
0.094″	0.01″-0.375″	0.354″	0.062″	25	98295A100	5.01
0.125″	0.01″-2.187″	0.5″	0.062″	25	98295A300	6.01
Reusable Arrow Shank						
0.064″	0.01″-0.031″	0.1″	0.02″	100	90218A220	6.37
0.128″	0.062″-0.125″	0.27″	0.04″	100	90218A216	6.39
0.131″	0.125″-0.14″	0.27″	0.07″	100	90218A223	5.90
0.133″	0.062″-0.125″	0.27″	0.06″	100	90218A212	5.90
0.148″	0.29″-0.3″	0.27″	0.07″	100	90218A224	5.98
0.156″	0.062″-0.125″	0.28″	0.04″	100	90218A213	6.47
0.156″	0.062″-0.145″	0.28″	0.08″	100	90218A214	5.98

★ Not available in black. ♣ 50 pairs.

Hole Dia.	Material Thick. Range	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Reusable Arrow Shank (Cont.)						
0.163″	0.032″-0.125″	0.28″	0.08″	100	90218A210	$4.87
0.187″	0.062″-0.125″	0.36″	0.06″	100	90218A211	6.06
0.187″	0.165″-0.185″	0.375″	0.06″	100	90218A221	5.89
0.218″	0.062″-0.125″	0.37″	0.06″	100	90218A217	5.89
0.218″	0.125″-0.187″	0.37″	0.06″	100	90218A215	6.22
0.255″	0.125″-0.187″	0.484″	0.06″	100	90218A219	6.73
0.255″	0.125″-0.25″	0.5″	0.05″	100	90218A218	5.86
0.335″	0.125″-0.35″	0.685″	0.07″	100	90218A222	7.69

Hole Dia.	Material Thick.	Head Dia.	Head Ht.	Pkg. Qty.		Pkg.
Split Shank						
0.093″	0.063″	0.281″	0.024″	100	90136A572	$5.36
0.093″	0.093″	0.281″	0.029″	100	90136A560	4.97
0.093″	0.115″	0.25″	0.04″	100	90136A565	4.97
0.115″	0.121″	0.203″	0.034″	100	90136A530	5.39
0.115″	0.135″	0.203″	0.025″	100	90136A532	5.82
0.115″	0.156″	0.203″	0.029″	100	90136A550	5.39
0.115″	0.235″	0.203″	0.04″	100	90136A552	5.82
0.115″	0.25″	0.203″	0.039″	100	90136A570	5.82
0.165″	0.125″	0.344″	0.043″	100	90136A574	5.53
0.18″	0.556″	0.344″	0.071″	100	90136A576	6.95
0.2″	0.121″	0.469″	0.05″	100	90136A578	5.70
0.2″	0.156″	0.469″	0.052″	100	90136A580	5.81
0.245″	0.25″	0.594″	0.06″	100	90136A582	6.09
0.245″	0.365″	0.594″	0.07″	100	90136A583	6.31
0.245″	0.48″	0.594″	0.07″	100	90136A584	6.31
Snap Shank						
0.13″	0.032″	0.5″	0.1″	25	94570A309	9.67
0.13″	0.045″	0.5″	0.1″	25	94570A314	9.67
0.13″	0.062″	0.5″	0.1″	25	94570A319	9.67
0.13″	0.093″	0.5″	0.1″	25	94570A324	9.67
0.13″	0.125″	0.5″	0.1″	25	94570A329	9.67
0.13″	0.187″	0.5″	0.1″	25	94570A334	9.67
Reusable Keyhole Shank						
0.125″	0.093″	0.25″	0.062″	100	91010A009	6.13
0.125″	0.125″	0.25″	0.062″	100	91010A014	6.13
0.125″	0.156″	0.25″	0.062″	100	91010A019	6.13
0.156″	0.093″	0.312″	0.062″	100	91010A109	7.07
0.156″	0.125″	0.312″	0.062″	100	91010A114	7.07
0.156″	0.156″	0.312″	0.062″	100	91010A119	7.07
0.156″	0.187″	0.312″	0.062″	100	91010A124	7.07
0.187″	0.156″	0.312″	0.062″	100	91010A129	7.07
0.187″	0.187″	0.312″	0.062″	100	91010A134	7.07
0.187″	0.25″	0.312″	0.062″	100	91010A139	7.07
0.187″	0.375″	0.312″	0.062″	100	91010A159	7.07
0.25″	0.187″	0.5″	0.062″	100	91010A199	8.31
0.25″	0.25″	0.5″	0.062″	100	91010A209	8.73
0.25″	0.312″	0.5″	0.062″	100	91010A214	8.73
0.25″	0.375″	0.5″	0.062″	100	91010A219	8.73
0.25″	0.5″	0.5″	0.062″	100	91010A239	9.15

Removal Tool for Ribbed-Shank Rivets— Easy-to-use hand tool minimizes panel damage when removing ribbed-shank rivets.

97576A500 ..... **Each** $27.64

Anchoring Adhesives for Concrete

Cartridge

Dual Cartridge

Applicator 7498A12

Applicators 7498A155 and 92378A160

Single-Use Polyester Pouch

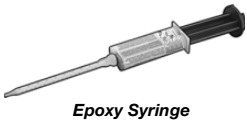
Epoxy Syringe

Applicator 7622T23

Applicator 7497A16

Permanently set threaded rods, studs, and rebar into solid concrete, block, and brick. Adhesives form a weather-resistant chemical bond that seals out moisture and resists vibration and dynamic loads better than mechanical anchors. Use all adhesives in clean, drilled holes and let fully harden before applying any load. Color is gray. These products are compliant under all state VOC rules in effect as of June 1, 2011.

Threaded rod is sold separately below. For studs, see pages 3164-3175. For clean-out brushes, see 7221T on page 2707.

Quick-set acrylic adhesive sets the fastest and works well in low temperatures. It also hardens the fastest (higher temperatures reduce hardening time).

Epoxy adhesives work well for room temperature conditions and give you the most working time.

Bulk epoxy lets you mix as much as you need and does not require an applicator. *Note:* Not rated for pull-out strength.

Single-use polyester adhesive lets you open the pouch, mix, and dispense. No applicator needed. Not as strong as acrylic and epoxy.

Ultimate Pull-Out Strength, lbs. (in 4,000 psi Concrete)					
Threaded Rod Dia.	Install. Depth	Quick-Set Acrylic	Epoxy	Quick-Set Epoxy	Single-Use Polyester
3/8″	3 1/2″	10,900	8,700	10,700	7,400
1/2″	4 1/2″	17,100	15,300	19,900	10,900
5/8″	5 5/8″	26,500	22,500	32,500	19,600
3/4″	6 3/4″	29,500	35,000	43,000	21,000
7/8″	7 7/8″	44,500	43,500	56,500	28,000
1″	9″	48,000	47,000	54,500	30,500
1 1/4″	11 1/4″	56,500	77,000	80,000	46,500

Adhesives, Mixing Nozzles, and Applicators— Mixing nozzle and applicator required (unless noted in table).

Container	Begins to Harden	Reaches Full Strength	No. of 1/2″ Dia. Rods Set at 4 1/2″ Installation Depth	Mixing Nozzles Included	*Adhesives*		*Mixing Nozzles*		*Applicators*	
Quick-Set Acrylic— *Temperature range is 0° to +100° F.*										
5-oz. Cartridge	7 min. @ 60° F	35 min.	15 in 9/16″ dia. hole	No	7498A11	$14.56	7498A115	$1.94	7498A12	$7.31
8-oz. Dual Cartridge	7 min. @ 60° F	35 min.	24 in 9/16″ dia. hole	No	7498A14	20.42	7498A115	1.94	7498A155	103.40
9.3-oz. Cartridge	7 min. @ 60° F	35 min.	28 in 9/16″ dia. hole	Yes	7498A453	25.31	7498A115	1.94	7622T23	14.82
Epoxy— *Temperature range is +40° to +110° F.*										
1.7-oz. Syringe	5-7 min. @ 40° F	24 hrs.	2 in 5/8″ dia. hole	Yes (2)	74995A94	17.00	—	—	—	—
6-oz. Dual Cartridge	30 min. @ 60° F	12 hrs.	12 in 5/8″ dia. hole	No	92378A275	22.04	92378A190	2.82	92378A160	56.56
8.5-oz. Cartridge	5-7 min. @ 60° F	24 hrs.	13 in 5/8″ dia. hole	Yes (2)	7505A7	28.82	7505A71	1.74	7622T23	14.82
22-oz. Dual Cartridge	5-7 min. @ 60° F	24 hrs.	35 in 5/8″ dia. hole	No	7497A41	32.51	7497A49	3.38	7497A16	75.34
Quick-Set Epoxy— *Temperature range is −15° to +120° F.*										
9.3-oz. Cartridge	8 min. @ 60° F	45 min.	24 in 9/16″ dia. hole	Yes	7505A55	30.97	7505A56	3.90	7622T23	14.82
Bulk Epoxy— *Temperature range is +50° to +110° F.*										
10-lbs. (2-gal.) Pail	30-45 min @ 75° F	24 hrs.	100 in 1″ dia. hole	—	7625T53	52.71	—	—	—	—
45-lbs. (5-gal.) Pail	30-45 min @ 75° F	24 hrs.	500 in 1″ dia. hole	—	7625T55	95.50	—	—	—	—
Single-Use Polyester— *Temperature range is 0° to +110° F.*										
5.5-oz. Pouch	20-30 min. @ 60° F	90 min.	16 in 9/16″ dia. hole	—	92378A440	12.13	—	—	—	—

Adhesive Kits— Includes adhesive, mixing nozzle(s), and applicator.

Type	Size	Container	Mixing Nozzles		
Quick-Set Acrylic	5 oz.	Cartridge	1	7498A125	$21.78
Epoxy	6 oz. (3)	Dual Cartridge	3	92378A255	124.14

Optional Threaded Rod

Thread Size	Lg.	*Type 316 Stainless Steel*		*18-8 Stainless Steel*		*Galvanized Steel*	
3/8″-16	1 ft.	93250A066	$5.46	98804A496	$4.00	93335A185	$2.68
1/2″-13	1 ft.	93250A070	9.95	98804A501	7.75	93335A190	3.94
5/8″-11	1 ft.	93250A016	14.55	—	—	93335A195	4.79
3/4″-10	1 ft.	93250A017	21.33	98804A505	13.90	93335A200	7.21
7/8″-9	1 ft.	93250A018	31.14	98804A511	24.03	93335A205	8.96
1″-8	1 ft.	93250A019	32.58	98804A516	28.29	93335A210	11.58

Adhesive-Grip Internally Threaded Anchors for Concrete

Anchors are internally threaded for high pull-out strength in shallow concrete holes as well as where high vibration is present. Fill a clean, drilled hole half full with epoxy adhesive (sold separately on this page), then insert the anchor until it's flush with the surface. All have Class 2B thread fit. Ultimate pull-out strength is based on tests using epoxy adhesive in 3,000 psi concrete.

Type 316 stainless steel is more corrosion resistant than zinc-plated steel and may be mildly magnetic.

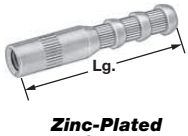

For Screw Size	Lg.	Drill Size	Drilled Hole Dp.	Ultimate Pull-Out Strength, lbs.	Thread Dp.	*Type 316 Stainless Steel*		*Zinc-Plated Steel*	
1/4″-20	1 5/8″	5/16″	1 3/4″	2,900	1/2″	93980A530	$6.21	93980A110	$1.16
5/16″-18	2 3/8″	7/16″	2 3/4″	7,500	3/4″	93980A550	10.11	93980A130	1.57
3/8″-16	2 3/4″	1/2″	3 1/4″	9,300	1″	93980A570	12.49	93980A150	2.04
1/2″-13	3 3/4″	5/8″	4 1/8″	13,100	1″	93980A590	18.34	93980A170	3.22
5/8″-11	5 3/4″	7/8″	6 1/4″	26,000	1 1/2″	93980A630	54.90	93980A190	17.37
3/4″-10	6 1/2″	1″	7 1/2″	36,000	1 1/2″	93980A650	76.51	93980A210	21.22
1″-8	8 1/2″	1 1/2″	9 1/2″	51,000	2″	93980A670	111.36	93980A230	58.52

Warning! *Allowable pull-out strength is 25% of ultimate values or less, as req'd by building authorities.*

Stud Anchors for Concrete

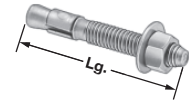

Also known as wedge anchors, drive these into a hole, and tighten the nut to leave a threaded stud in concrete (nut and washer are included). They are not reusable. Ultimate shear strength is the force the side of an anchor can withstand before breaking. ***Stainless steel*** anchors are UL listed and FM approved. Type 316 is more corrosion resistant than 18-8. ***Galvanized steel*** anchors are more corrosion resistant than zinc-plated steel anchors. ***Zinc-plated steel*** anchors are ICC listed for use in cracked concrete, except 1/4″ dia. are ICC listed for uncracked concrete only. 3/8″ dia. anchors are FM approved. 1/2″ dia. anchors are UL listed and FM approved except for 2 3/4″ Lg. ***Grade 5 steel*** anchors have a Grade 5 steel body which is plated with zinc yellow-chromate and offers higher strength than zinc-plated steel and stainless steel. 3/8″ to 3/4″ dia. anchors are UL listed; 3/8″, 1/2″, and 3/4″ dia. are also FM approved.

	Ultimate Pull-Out and Shear Strength in 4,000 psi Concrete							
Diameter	1/4″	3/8″	1/2″	5/8″	3/4″	7/8″	1″	1 1/4″
Min. Installation Depth	1 1/4″	1 3/4″	2 1/4″	2 3/4″	3 3/4″	4″	4 1/2″	5 5/8″
Ultimate Pull-Out Strength, lbs.	850	2,300	4,700	5,500	8,900	9,600	13,800	22,000
Ultimate Shear Strength, lbs.	1,000	2,200	4,900	8,000	11,300	15,800	21,000	31,500

			Type 316 SS			***18-8 SS***			***Galvanized Steel***			***Zinc-Plated Steel***		
Lg.	**Min. Thread Lg.**	**Pkg. Qty.**		**Each Partial Pkg.**	**Each Full Pkg.**		**Each Partial Pkg.**	**Each Full Pkg.**	**Pkg. Qty.**		**Each Partial Pkg.**	**Each Full Pkg.**	**Pkg. Qty.**		**Each Partial Pkg.**	**Each Full Pkg.**
1/4″ Diameter— *Thread: 1/4″-20; Washer OD: 5/8″ to 3/4″ (Drill Size 1/4″)*																
1 3/4″	5/8″	20	**97799A100**	$2.50	$1.76	**92188A100**	$1.49	$1.05	50	**97110A100**	$0.66	$0.53	100	**91578A103**	$0.37	$0.29
2 1/4″	1 1/8″	20	**97799A101**	2.04	1.43	**92188A101**	1.81	1.27	50	**97110A101**	.83	.66	100	**91578A104**	.39	.32
3 1/4″	2 1/8″	20	**97799A102**	2.31	1.62	**92188A102**	2.28	1.60	50	**97110A102**	1.02	.82	100	**91578A105**	.46	.34
3/8″ Diameter— *Thread: 3/8″-16; Washer OD: 3/4″ to 1 1/16″ (Drill Size 3/8″)*																
2 1/4″	7/8″	20	**97799A200**	3.33	2.56	**92188A200**	2.38	1.68	50	**97110A200**	.87	.69	50	**91578A106**	.52	.41
2 3/4″	1 3/8″	20	**97799A201**	3.53	2.72	**92188A201**	2.67	1.88	50	**97110A201**	.90	.72	50	**91578A107**	.56	.44
3″	1 5/8″	20	**97799A205**	3.63	2.79	**92188A205**	3.05	2.17	50	**97110A204**	.95	.76	50	**91578A108**	.57	.44
3 1/2″	2 1/8″	20	**97799A202**	4.00	3.08	**92188A202**	3.20	2.73	—	—	—	—	50	**91578A109**	.62	.48
3 3/4″	2 3/8″	20	**97799A222**	4.23	3.26	**92188A222**	2.75	2.20	50	**97110A222**	1.04	.84	50	**91578A112**	.68	.49
5″	3 1/8″	10	**97799A203**	6.50	5.00	**92188A203**	3.27	2.72	50	**97110A203**	1.18	.93	50	**91578A113**	.77	.56
7″	4 1/2″	10	**97799A220**	7.13	5.49	**92188A225**	4.68	3.90	10	**97110A231**	2.02	1.62	10	**91578A225**●	2.21	1.59
1/2″ Diameter— *Thread: 1/2″-13; Washer OD: 1 1/16″ to 1 7/16″ (Drill Size 1/2″)*																
2 3/4″	1″	10	**97799A300**	7.29	5.71	**92188A305**	3.81	3.18	25	**97110A300**	1.60	1.28	50	**91578A115**	.88	.65
3 3/4″	2″	10	**97799A301**	8.43	6.66	**92188A301**	4.24	3.53	25	**97110A301**	1.74	1.37	50	**91578A116**	.95	.73
4 1/2″	2 3/4″	10	**97799A306**	11.11	8.77	**92188A306**	5.83	4.11	—	—	—	—	50	**91578A117**	1.17	.89
5 1/2″	3 5/8″	10	**97799A302**	10.63	8.39	**92188A302**	5.71	4.76	25	**97110A302**	2.08	1.67	25	**91578A118**	1.85	1.32
7″	4 3/8″	4	**97799A303**	12.47	9.84	**92188A303**	6.35	5.29	25	**97110A303**	2.97	2.37	25	**91578A119**	1.27	1.11
8 1/2″	2″	4	**97799A304**	24.70	20.89	**92188A304**	18.75	15.62	10	**97110A304**	3.74	2.99	10	**91578A307**●	3.28	2.56
5/8″ Diameter— *Thread: 5/8″-11; Washer OD: 1 1/4″ to 1 13/16″ (Drill Size 5/8″)*																
3 1/2″	1 3/8″	10	**97799A400**	13.17	10.54	**92188A400**	7.91	6.69	10	**97110A400**	2.94	2.35	25	**91578A206**	1.71	1.25
4 1/2″	2″	10	**97799A401**	13.67	11.08	**92188A401**	9.48	7.89	10	**97110A401**	3.42	2.70	25	**91578A207**	1.86	1.36
5″	3″	10	**97799A444**	14.77	11.97	**92188A454**	10.16	8.46	10	**97110A454**	3.21	2.57	25	**91578A208**	1.91	1.35
6″	3 7/8″	10	**97799A452**	17.26	13.48	**92188A452**	11.34	9.45	10	**97110A452**	3.78	3.02	10	**91578A209**	3.29	2.43
7″	3 1/2″	4	**97799A455**	19.06	16.49	**92188A405**	11.91	10.08	10	**97110A455**	4.83	4.02	10	**91578A211**	3.87	2.83
8 1/2″	4 7/8″	4	**97799A454**	21.99	19.03	**92188A456**	18.25	15.78	10	**97110A456**	5.76	4.63	10	**91578A212**	4.17	3.18
10″	2″	4	**97799A411**	36.15	31.39	**92188A411**	23.25	19.68	10	**97110A411**	8.30	6.76	4	**91578A410**●	7.30	5.88
12″	2″	4	**97799A462**	51.70	44.89	**92188A462**	53.73	46.76	4	**97110A462**	9.73	8.10	4	**91578A415**●	9.21	7.37
3/4″ Diameter— *Thread: 3/4″-10; Washer OD: 1 7/16″ to 2 1/16″ (Drill Size 3/4″)*																
4 1/4″	1 3/4″	4	**97799A555**	16.91	14.80	**92188A503**	11.68	9.72	10	**97110A500**	4.41	3.67	20	**91578A213**	2.76	2.22
4 3/4″	2 1/4″	4	**97799A556**	17.87	15.93	**92188A504**	12.24	10.40	10	**97110A554**	4.68	3.90	20	**91578A216**	2.80	2.39
5 1/2″	3″	4	**97799A501**	20.78	18.18	**92188A501**	14.12	11.96	10	**97110A501**	5.17	4.22	20	**91578A217**	2.98	2.38
6 1/4″	3 5/8″	4	**97799A560**	23.37	20.45	**92188A555**	14.62	12.43	10	**97110A555**	5.92	4.76	10	**91578A218**	4.17	3.36
7″	4 3/8″	4	**97799A502**	33.87	29.64	**92188A502**	18.44	14.75	10	**97110A502**	6.53	5.27	10	**91578A219**	4.63	3.73
8 1/2″	2 1/4″	4	**97799A503**	37.77	33.05	**92188A508**	24.97	21.23	4	**97110A503**	7.69	6.27	10	**91578A220**	4.27	3.33
10″	2 1/4″	4	**97799A510**	48.06	42.05	**92188A556**	32.88	27.95	4	**97110A504**	9.35	7.52	4	**91578A504**●	7.93	6.81
12″	2 1/4″	4	**97799A515**	46.57	40.75	**92188A560**	35.80	31.32	4	**97110A506**	12.60	10.15	4	**91578A221**	9.16	7.38
7/8″ Diameter— *Thread: 7/8″-9; Washer OD: 1 3/4″ to 2 5/16″ (Drill Size 7/8″)*																
6″	2 1/8″	4	**97799A610**	60.41	52.24	**92188A565**	33.56	28.52	4	**97110A600**	12.07	9.72	10	**91578A600**●	4.86	3.91
8″	2 1/8″	4	**97799A615**	66.88	57.84	**92188A570**	30.01	25.51	4	**97110A601**	14.58	11.74	4	**91578A601**●	8.57	6.90
10″	2 1/8″	4	**97799A620**	74.94	64.81	**92188A575**	42.63	37.30	4	**97110A602**	16.29	13.13	4	**91578A602**●	9.27	7.46
1″ Diameter— *Thread: 1″-8; Washer OD: 1 15/16″ to 2 9/16″ (Drill Size 1″)*																
6″	2 1/4″	4	**97799A720**	61.69	53.35	**92188A601**	33.94	29.70	4	**97110A700**	12.07	10.09	4	**91578A700**●	11.98	9.82
9″	2 1/4″	4	**97799A730**	81.84	70.78	**92188A602**	37.59	32.89	4	**97110A701**	15.23	12.86	4	**91578A701**●	15.20	12.46
12″	2 1/4″	4	**97799A740**	95.34	82.46	**92188A605**	52.95	46.33	4	**97110A702**	17.80	14.83	4	**91578A227**	12.32	10.10
1 1/4″ Diameter— *Thread: 1 1/4″-7; Washer OD: 2 7/16″ to 3 1/16″ (Drill Size 1 1/4″)*																
9″	2 3/4″	4	**97799A810**	116.91	102.30	**92188A610**	87.03	75.72	4	**97110A805**	30.06	26.26	4	**91578A805**●	14.93	13.47
12″	2 3/4″	4	**97799A815**	140.57	123.00	**92188A615**	101.52	88.32	4	**97110A808**	31.62	27.62	4	**91578A808**●	17.90	16.12

● Not ICC listed.

Grade 5 Steel

Lg.	**Min. Thread Lg.**	**Pkg. Qty.**		**Each Partial Pkg.**	**Each Full Pkg.**
1/4″ Diameter— *Thread: 1/4″-20; Washer OD: 5/8″ (Drill Size 1/4″)*					
1 3/4″	7/8″	50	**98880A110**	$0.82	$0.66
2 1/4″	1 3/8″	50	**98880A130**	.96	.77
3 1/4″	2 1/4″	50	**98880A150**	1.20	.97
3/8″ Diameter— *Thread: 3/8″-16; Washer OD: 13/16″ (Drill Size 3/8″)*					
2 1/4″	1 3/16″	50	**98880A210**	1.53	1.21
3″	1 7/8″	50	**98880A230**	1.67	1.33
3 3/4″	2 5/8″	50	**98880A250**	1.80	1.44
5″	4″	50	**98880A270**	1.89	1.57
1/2″ Diameter— *Thread: 1/2″-13; Washer OD: 1 1/16″ (Drill Size 1/2″)*					
2 3/4″	1 1/2″	25	**98880A311**	2.13	1.70
4 1/4″	3″	25	**98880A331**	2.26	1.81
5 1/2″	4″	25	**98880A351**	2.83	2.27
7″	1 1/4″	25	**98880A371**	3.36	2.69

Lg.	**Min. Thread Lg.**	**Pkg. Qty.**		**Each Partial Pkg.**	**Each Full Pkg.**
5/8″ Diameter— *Thread: 5/8″-11; Washer OD: 1 5/16″ (Drill Size 5/8″)*					
3 1/2″	1 5/8″	10	**98880A411**	$3.66	$2.93
4 1/2″	2 5/8″	10	**98880A421**	3.86	3.08
5″	3 1/4″	10	**98880A431**	4.00	3.21
6″	4 1/8″	10	**98880A451**	4.53	3.62
8 1/2″	1 1/2″	10	**98880A491**	7.13	5.72
3/4″ Diameter— *Thread: 3/4″-10; Washer OD: 1 7/16″ (Drill Size 3/4″)*					
4 1/4″	2 3/8″	10	**98880A510**	4.90	3.93
5 1/2″	3 5/8″	10	**98880A540**	5.81	4.65
6 1/4″	4 1/4″	10	**98880A560**	7.17	5.75
7″	2″	10	**98880A570**	8.13	6.52
8 1/2″	2″	10	**98880A580**	9.52	7.60
10″	2″	10	**98880A590**	11.55	9.63

(Continued on following page)

Warning! ***Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.***

Stud Anchors for Concrete *(Continued from previous page)*

Grade 5 Steel (Cont.)

Lg.	Min. Thread Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
***7/8" Diameter—** Thread: 7/8"-9; Washer OD: 1 3/4" (Drill Size 7/8")*					
6"	2 1/4"	10	98880A630	$11.81	$9.84
8"	2 1/4"	4	98880A650	15.91	12.69
10"	2 1/4"	4	98880A670	18.90	15.13
***1" Diameter—** Thread: 1"-8; Washer OD: 2" (Drill Size 1")*					
6"	2 1/4"	4	98880A740	$15.91	$12.69
9"	2 1/4"	4	98880A780	22.58	18.01

Vibration-Resistant Stud Anchors for Concrete

The original wedge anchors—all have two locking wedges that keep fixtures solidly in place and won't shake loose. To install, insert the anchor into a hole and tighten the nut. Anchors are made of zinc-plated steel and include a washer and nut. All are class 2A thread fit. They are not reusable. Ultimate pull-out and shear strength are based on 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

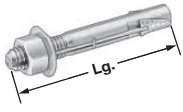

Lg.	Min. Install. Dp.	Thread Lg.	Ultimate Strength, lbs. Pull Out	Ultimate Strength, lbs. Shear	Pkg. Qty.		Pkg.
***1/4" Dia.—** Thread: 1/4"-20; Washer OD: 5/8" (Drill Size 1/4")*							
1 3/4"	1 1/8"	1/2"	1,500	2,000	6	94475A125	$7.91
2 3/4"	1 1/8"	1/2"	1,500	2,000	6	94475A143	8.68
3"	1 1/8"	1/2"	1,500	2,000	6	94475A166	8.77
***5/16" Dia.—** Thread: 5/16"-18; Washer OD: 11/16" (Drill Size 5/16")*							
2"	1 1/4"	5/8"	2,400	2,100	6	94475A185	8.58
3"	1 1/4"	5/8"	2,400	2,100	4	94475A197	6.29
***3/8" Dia.—** Thread: 3/8"-16; Washer OD: 13/16" (Drill Size 3/8")*							
2"	1 1/2"	3/4"	3,300	4,700	4	94475A214	6.84
2 3/4"	1 1/2"	3/4"	3,300	4,700	4	94475A223	7.67
3 1/2"	1 1/2"	3/4"	3,300	4,700	4	94475A246	8.37
5"	1 1/2"	3/4"	3,300	4,700	2	94475A248	4.98
6"	1 1/2"	3/4"	3,300	4,700	2	94475A250	5.34
***1/2" Dia.—** Thread: 1/2"-13; Washer OD: 1 1/16" (Drill Size 1/2")*							
2 3/4"	2 1/4"	1"	4,600	8,900	4	94475A255	9.89
3 1/2"	2 1/4"	1"	4,600	8,900	2	94475A263	5.72
5"	2 1/4"	1"	4,600	8,900	1	94475A279	3.46
6"	2 1/4"	1"	4,600	8,900	1	94475A281	3.58
7"	2 1/4"	1"	4,600	8,900	1	94475A283	4.28
***5/8" Dia.—** Thread: 5/8"-11; Washer OD: 1 5/16" (Drill Size 5/8")*							
3 1/2"	3 1/2"	1 1/4"	10,100	13,100	1	94475A285	$3.92
4 1/2"	3 1/2"	1 1/4"	10,100	13,100	1	94475A286	4.08
5"	3 1/2"	1 1/4"	10,100	13,100	1	94475A287	4.68
6"	3 1/2"	1 1/4"	10,100	13,100	1	94475A289	4.60
7"	3 1/2"	1 1/4"	10,100	13,100	1	94475A295	6.44
***3/4" Dia.—** Thread: 3/4"-10; Washer OD: 1 1/2" (Drill Size 3/4")*							
4"	3"	1 1/2"	15,400	18,200	1	94475A310	5.77
5"	3"	1 1/2"	15,400	18,200	1	94475A312	6.16
6"	3"	1 1/2"	15,400	18,200	1	94475A314	6.92
7"	3"	1 1/2"	15,400	18,200	1	94475A317	7.78
8 1/2"	3"	1 1/2"	15,400	18,200	1	94475A319	9.95
10"	3"	1 1/2"	15,400	18,200	1	94475A321	10.94
***1" Dia.—** Thread: 1"-8; Washer OD: 2" (Drill Size 1")*							
10"	5 1/2"	2"	21,500	_____	1	94475A335	22.66

Stud Anchors for Concrete, Block, and Brick

Count on these anchors for secure, permanent holding power in a variety of applications. Also known as sleeve anchors, they provide a threaded stud when installed. Use them to hold steel, wood panels, doors, framing, and shelving to concrete. To install, drive the anchor into a hole, then tighten the bolt to expand the end. They are not removable. Ultimate pull-out and shear strength are based on 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Anchors with hex or acorn nut include a washer.

Anchors with removable flat head sit flush when installed. Unscrew the combination head to reveal the threaded stud.

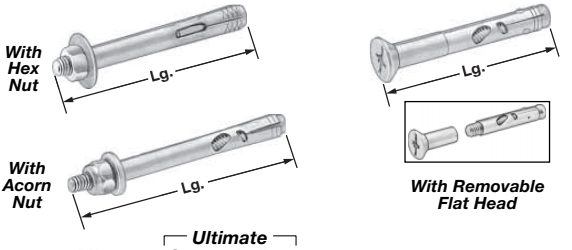

Lg.	Min. Install. Dp.	Ultimate Strength, lbs. Pull Out	Ultimate Strength, lbs. Shear	Pkg. Qty.		Pkg.
***With Hex Nut—** 18-8 Stainless Steel*						
***5/16" Dia.—** Thread: 1/4"-20; Washer OD: 11/16" (Drill Size 5/16")*						
1 7/8"	1 1/8"	1,900	1,700	5	96892A231	$13.38
2 3/4"	1 1/8"	1,900	1,700	1	96892A244	3.48
***3/8" Dia.—** Thread: 5/16"-18; Washer OD: 7/8" (Drill Size 3/8")*						
2 1/8"	1 1/4"	3,000	2,100	1	96892A258	3.23
3 1/4"	1 1/4"	3,000	2,100	1	96892A274	3.49
***1/2" Dia.—** Thread: 3/8"-16; Washer OD: 1" (Drill Size 1/2")*						
2 5/8"	1 1/2"	5,000	6,200	1	96892A287	6.49
4 1/2"	1 1/2"	5,000	6,200	1	96892A300	12.71
***5/8" Dia.—** Thread: 1/2"-13; Washer OD: 1 1/4" (Drill Size 5/8")*						
5"	2"	6,100	8,500	1	96892A314	18.99
***3/4" Dia.—** Thread: 5/8"-11; Washer OD: 1 3/4" (Drill Size 3/4")*						
3 3/8"	2"	9,000	12,500	1	96892A329	20.75
5"	2"	9,000	12,500	1	96892A343	24.98
***With Hex Nut—** Zinc-Plated Steel*						
***5/16" Dia.—** Thread: 1/4"-20; Washer OD: 5/8" (Drill Size 5/16")*						
2 1/8"	1 1/4"	1,500	2,300	25	97046A111	7.89
2 3/4"	1 1/4"	1,500	2,300	25	97046A112	10.61
***3/8" Dia.—** Thread: 5/16"-18; Washer OD: 13/16" (Drill Size 3/8")*						
2 1/4"	1 5/8"	2,300	4,100	25	97046A113	14.71
3 3/8"	1 5/8"	2,300	4,100	25	97046A114	14.12
4 3/8"	1 5/8"	2,300	4,100	10	97046A115	6.99
***1/2" Dia.—** Thread: 3/8"-16; Washer OD: 1" (Drill Size 1/2")*						
2 7/8"	2"	2,600	4,800	10	97046A116	12.24
3 3/8"	2"	2,600	4,800	10	97046A117	11.47
4 3/8"	2"	2,600	4,800	10	97046A118	13.65
5 3/4"	2"	2,600	4,800	5	97046A119	12.37
6 3/4"	2"	2,600	4,800	5	97046A121	10.34
***With Hex Nut—** Zinc-Plated Steel (Cont.)*						
***5/8" Dia.—** Thread: 1/2"-13; Washer OD: 1 3/8" (Drill Size 5/8")*						
3 1/4"	2"	5,100	4,800	10	97046A122	$11.11
3 3/4"	2"	5,100	4,800	10	97046A123	11.65
5"	2"	5,100	4,800	10	97046A124	14.86
6 1/4"	2"	5,100	4,800	5	97046A125	10.15
***3/4" Dia.—** Thread: 5/8"-11; Washer OD: 1 3/4" (Drill Size 3/4")*						
3 5/8"	2 1/4"	7,000	11,000	5	97046A126	12.37
5 1/8"	2 1/4"	7,000	11,000	5	97046A127	14.55
7 1/8"	2 1/4"	7,000	11,000	1	97046A128	3.49
***With Acorn Nut—** Zinc-Plated Steel*						
***1/4" Dia.—** Thread: 10-24; Washer OD: 1/2" (Drill Size 1/4")*						
1 1/8"	1/2"	650	1,000	25	97046A129	11.34
1 5/8"	1/2"	650	1,000	25	97046A131	14.26
2 5/8"	1/2"	650	1,000	25	97046A132	13.39
***With Removable Flat Head—** Zinc-Plated Steel*						
***1/4" Dia.—** Thread: 10-24; (Drill Size 1/4")*						
1 1/2"	5/8"	650	1,000	25	97480A141	9.15
2 1/4"	5/8"	650	1,000	25	97480A142	9.66
3"	5/8"	650	1,000	25	97480A143	10.52
4"	5/8"	650	1,000	25	97480A144	14.29
5 1/4"	5/8"	650	1,000	10	97480A145	9.25
***5/16" Dia.—** Thread: 1/4"-20; (Drill Size 5/16")*						
2 1/2"	1 1/4"	1,500	2,300	10	97480A146	6.64
***3/8" Dia.—** Thread: 5/16"-18; (Drill Size 3/8")*						
2 3/4"	1 5/8"	2,300	4,100	10	97480A148	7.76
4"	1 5/8"	2,300	4,100	10	97480A149	9.94
5"	1 5/8"	2,300	4,100	10	97480A151	11.52
6"	1 5/8"	2,300	4,100	10	97480A152	12.03

Warning! ***Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.***

Removable-Bolt Anchors for Concrete

Turn the bolt to expand the nut for a powerful friction grip. The bolt can then be removed and used in another hole along with a replacement nut. Also known as taper bolt anchors. To install, thread the nut on the tapered bolt and insert into a hole. Can also be used in stone. Bolts are Grade 5 zinc-plated steel; nuts are zinc alloy. Ultimate pull-out and shear strength are based on tests in 3,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Also Available: Replacement nuts, please ask for 92914A900 and specify anchor diameter.

Lg.	Min. Install. Dp.	Ultimate Strength, lbs. Pull Out	Shear	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
3/8" Dia.—Head Width: 9/16" (Drill Size 3/8")							
2 1/4"	1 7/8"	4,000	7,100	50	92914A610	$2.03	$1.70
2 5/8"	1 7/8"	4,000	7,100	50	92914A620	2.22	1.85
3"	1 7/8"	4,000	7,100	25	92914A630	2.58	2.05
4"	1 7/8"	4,000	7,100	25	92914A640	3.12	2.50
1/2" Dia.—Head Width: 3/4" (Drill Size 1/2")							
2 7/8"	2 3/8"	8,100	12,100	25	92914A410	3.14	2.51
4"	2 3/8"	8,100	12,100	25	92914A420	3.75	3.00
5"	2 3/8"	8,100	12,100	20	92914A430	4.67	3.74
5/8" Dia.—Head Width: 15/16" (Drill Size 5/8")							
3 1/2"	2 7/8"	9,900	17,000	20	92914A440	$6.12	$4.89
4 1/2"	2 7/8"	9,900	17,000	10	92914A450	7.58	6.07
3/4" Dia.—Head Width: 1 1/8" (Drill Size 3/4")							
4 1/8"	3 3/8"	11,900	27,500	20	92914A460	7.89	6.31
5 1/2"	3 3/8"	11,900	27,500	10	92914A470	8.27	7.45
8"	3 3/8"	11,900	27,500	10	92914A480	14.82	13.34
1" Dia.—Head Width: 1 1/2" (Drill Size 1")							
5 5/8"	4 5/8"	28,000	36,000	10	92914A755	20.13	18.11
7 1/4"	4 5/8"	28,000	36,000	1	92914A760	——	19.63

Removable-Bolt Anchors for Concrete, Solid Block, and Brick

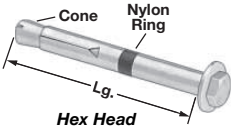

Hex Head

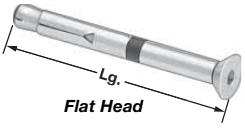

Flat Head

Also known as sleeve anchors, an expanding cone provides extra grip inside the hole. The bolt can be removed and reused in the same anchor hole. Anchors are stronger and more vibration resistant than stud anchors. To install, tap the anchor into a hole and tighten the bolt to expand the sleeve. As you tighten, the nylon ring compresses to secure the fixture against the base material. Ultimate pull-out and shear strength are based on tests in 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking. Anchors are UL listed and FM approved.

Lg.	Min. Install. Dp.	Ultimate Strength, lbs. Pull Out	Shear	Pkg. Qty.		Each Partial Pkg.	Full Pkg.
18-8 Stainless Steel—Hex Head							
1/4" Dia.—Thread: 10-24; Head Width: 5/16"; Washer OD: 1/2" (Drill Size 1/4")							
1 3/4"	1 1/4"	1,500	2,100	4	92405A194	$5.41	$4.71
3"	1 1/4"	1,500	2,100	4	92405A198	6.84	6.08
3/8" Dia.—Thread: 5/16"-18; Head Width: 1/2"; Washer OD: 13/16" (Drill Size 3/8")							
2 1/4"	2"	4,500	6,400	4	92405A200	6.31	5.49
3 1/2"	2"	4,500	6,400	4	92405A202	8.39	7.31
4"	2"	4,500	6,400	4	92405A203	9.44	8.22
1/2" Dia.—Thread: 3/8"-16; Head Width: 9/16"; Washer OD: 1" (Drill Size 1/2")							
2 3/4"	2 1/2"	6,500	8,200	4	92405A300	11.83	9.80
4 3/4"	2 1/2"	6,500	8,200	4	92405A302	16.22	14.12
Grade 8 Zinc-Plated Steel—Hex Head							
1/4" Dia.—Thread: 10-24; Head Width: 5/16"; Washer OD: 1/2" (Drill Size 1/4")							
1"	7/8"	1,400	1,600	10	92403A100	1.85	1.48
1 3/4"	1 1/4"	1,500	2,100	10	92403A103	1.94	1.55
3"	1 1/4"	1,500	2,100	10	92403A106	2.67	2.16
5/16" Dia.—Thread: 1/4"-20; Head Width: 7/16"; Washer OD: 5/8" (Drill Size 5/16")							
1 3/4"	1 1/2"	2,500	3,200	10	92403A150	2.65	2.12
2 1/2"	1 1/2"	2,500	3,200	10	92403A160	2.79	2.23
3 1/2"	1 1/2"	2,500	3,200	10	92403A170	3.54	2.83
Grade 5 Zinc-Plated Steel—Hex Head							
3/8" Dia.—Thread: 5/16"-18; Head Width: 1/2"; Washer OD: 13/16" (Drill Size 3/8")							
2 1/4"	2"	4,500	6,400	10	92403A200	2.32	1.86
3"	2"	4,500	6,400	10	92403A201	2.74	2.06
3 1/2"	2"	4,500	6,400	10	92403A202	2.88	2.30
4"	2"	4,500	6,400	10	92403A203	3.31	2.77
Grade 5 Zinc-Plated Steel—Hex Head (Cont.)							
1/2" Dia.—Thread: 3/8"-16; Head Width: 9/16"; Washer OD: 1" (Drill Size 1/2")							
2 3/4"	2 1/2"	6,500	8,200	10	92403A300	$3.61	$3.01
3 3/4"	2 1/2"	6,500	8,200	10	92403A301	3.83	3.13
4 3/4"	2 1/2"	6,500	8,200	10	92403A302	4.77	3.98
5 3/4"	2 1/2"	6,500	8,200	10	92403A303	5.85	4.88
5/8" Dia.—Thread: 1/2"-13; Head Width: 3/4"; Washer OD: 1 1/4" (Drill Size 5/8")							
3"	2 3/4"	7,700	11,900	10	92403A400	5.10	4.25
4"	2 3/4"	7,700	11,900	10	92403A401	5.39	4.49
5"	2 3/4"	7,700	11,900	4	92403A402	5.98	4.98
6"	2 3/4"	7,700	11,900	4	92403A403	7.79	6.49
8 1/2"	2 3/4"	7,700	11,900	4	92403A404	10.34	8.60
3/4" Dia.—Thread: 5/8"-11; Head Width: 15/16"; Washer OD: 1 1/2" (Drill Size 3/4")							
3 1/4"	3"	9,500	16,100	4	92403A500	7.20	6.01
4 1/4"	3"	9,500	16,100	4	92403A501	9.21	7.68
5 1/4"	3"	9,500	16,100	4	92403A502	10.60	8.96
7 1/4"	3"	9,500	16,100	4	92403A503	11.54	10.04
8 1/4"	3"	9,500	16,100	4	92403A504	12.72	11.06
Grade 5 Zinc-Plated Steel—Flat Head							
3/8" Dia.—Thread: 5/16"-18 (Drill Size 3/8"; Hex Key Size 7/32")							
3 3/4"	2"	4,500	6,400	10	92403A803	3.94	3.26
5"	2"	4,500	6,400	10	92403A805	4.25	3.54
6"	2"	4,500	6,400	10	92403A806	4.52	3.77
1/2" Dia.—Thread: 3/8"-16 (Drill Size 1/2"; Hex Key Size 5/16")							
5"	2 1/2"	6,500	8,200	10	92403A801	5.15	4.29
5/8" Dia.—Thread: 1/2"-13 (Drill Size 5/8"; Hex Key Size 3/8")							
5 1/2"	2 3/4"	7,700	11,900	4	92403A802	8.35	6.96

Heavy Duty Screws for Concrete and Block

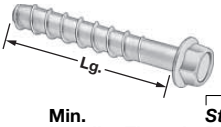

Serrated threads cut into masonry for easy insertion and holding strength along the entire length of the bolt. Install in a hole using a standard bit or a socket wrench. Anchors are zinc-plated steel and have a hex-washer head. Can be removed. Ultimate pull-out and shear strength are based on tests in 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Lg.	Min. Install. Dp.	Thread Lg.	Ultimate Strength, lbs. Pull Out	Shear	Pkg. Qty.		Pkg.
3/8" Dia.—Head Width: 9/16" (Drill Size 3/8")							
3"	2 3/4"	3"	6,200	6,900	10	99795A103	$11.52
4"	2 3/4"	4"	6,200	6,900	4	99795A107	6.14
5"	2 3/4"	5"	6,200	6,900	4	99795A111	7.07
1/2" Dia.—Head Width: 3/4" (Drill Size 1/2")							
3"	2 3/4"	3"	6,500	9,900	4	99795A120	7.98
4"	2 3/4"	4"	6,500	9,900	4	99795A123	9.11
5"	2 3/4"	5"	6,500	9,900	4	99795A125	10.45
6"	2 3/4"	6"	6,500	9,900	4	99795A127	11.26
5/8" Dia.—Head Width: 15/16" (Drill Size 5/8")							
4"	2 3/4"	4"	6,500	9,900	1	99795A132	$4.01
5"	2 3/4"	5"	6,500	9,900	1	99795A135	4.41
6"	2 3/4"	6"	6,500	9,900	1	99795A136	5.18
3/4" Dia.—Head Width: 1 1/8" (Drill Size 3/4")							
4"	2 3/4"	4"	6,500	11,400	1	99795A141	5.92
5"	2 3/4"	5"	6,500	11,400	1	99795A144	6.23
6"	2 3/4"	5"	6,500	11,400	1	99795A146	7.49
7"	2 3/4"	6"	6,500	11,400	1	99795A148	6.65

Warning! *Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.*

Screws for Concrete and Block

Hex-Washer Head Slotted

Flat Head Phillips

Installation Tools 90161A310

Drive these self-tapping screws into a hole with a hammer drill or socket wrench, or use one of the specialized tools (sold separately). Screws are removable.

Ultimate pull-out and shear strength are based on tests with minimum installation depth of 1″ in 3,000 psi concrete, except for 5/16″ dia. silver-coated steel, which is based on 3,500 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Hex-Washer Head Slotted Screws—Head width is 5/16″ for 1/4″ and 5/16″ dia. and 1/4″ for 3/16″ dia.

Flat Head Phillips Screws—Head width is 1/2″ for 1/4″ dia.; 3/8″ for 3/16″ dia.; and 9/16″ for 5/16″ dia.

Blue- and ***silver-coated*** screws can also be used in wood. They are made of hardened steel and resist 700 hours of salt spray. ***Blue-coated*** screws are also known as Tapcons.

Screws and Drill Bits

	SCREWS				DRILL BITS			
		Hex-Washer Head Slotted		Flat Head Phillips		Hammer Drill Bits		Rotary Hammer SDS-Plus Drill Bits
Lg.	Pkg. Qty.		Pkg.		Pkg.		Each		Each
18-8 Stainless Steel									
1/4″ Dia.—Ultimate Pull-Out Strength: 600 lbs.; Shear Strength: 600 lbs. (Drill Size 3/16″)									
1 1/4″	10	90950A110●	$8.89	90950A210	$7.66	90950A480	$8.66	90950A580	$11.79
1 3/4″	10	90950A112●	9.61	90950A212	7.68	90950A480	8.66	90950A580	11.79
2 1/4″	10	90950A114●	9.85	90950A214	7.74	90950A490	9.12	90950A580	11.79
2 3/4″	10	90950A116●	10.37	90950A216	11.57	90950A490	9.12	90950A580	11.79
Blue-Coated Steel									
3/16″ Dia.—Ultimate Pull-Out Strength: 400 lbs.; Shear Strength: 600 lbs. (Drill Size 5/32″)									
1 1/4″	50	90161A512	7.69	90161A612	7.94	90161A712	3.39	90161A120	9.57
1 3/4″	50	90161A525	8.84	90161A625	8.66	90161A712	3.39	90161A120	9.57
2 1/4″	50	90161A527	10.00	90161A627	9.41	90161A713	3.71	90161A125	12.22
2 3/4″	50	90161A529	11.94	90161A629	11.53	90161A713	3.71	90161A125	12.22
3 1/4″	25	90161A531	8.26	90161A631	7.90	90161A718	4.08	90161A125	12.22
3 3/4″	25	90161A533	8.70	90161A633	8.91	90161A718	4.08	90161A125	12.22
4″	25	90161A535	9.88	90161A635	9.41	90161A718	4.08	—	—
1/4″ Dia.—Ultimate Pull-Out Strength: 600 lbs.; Shear Strength: 600 lbs. (Drill Size 3/16″)									
1 1/4″	50	90161A544	10.19	90161A644	10.69	90161A714	3.68	90161A240	11.63
1 3/4″	50	90161A548	11.91	90161A648	11.94	90161A714	3.68	90161A240	11.63
2 1/4″	50	90161A551	13.89	90161A651	13.56	90161A715	4.08	90161A250	15.45
2 3/4″	25	90161A553	8.07	90161A653	7.89	90161A715	4.08	90161A250	15.45
3 1/4″	25	90161A555	10.18	90161A655	10.03	90161A719	4.33	90161A250	15.45
3 3/4″	25	90161A557	11.98	90161A657	11.74	90161A719	4.33	90161A250	15.45
4″	25	90161A559	12.68	90161A659	12.41	90161A719	4.33	—	—
5″	10	90161A564	10.75	90161A665	10.69	90161A723	5.97	—	—
6″	10	90161A568	14.13	90161A669	13.97	90161A728	7.22	—	—
Silver-Coated Steel									
3/16″ Dia.—Ultimate Pull-Out Strength: 400 lbs.; Shear Strength: 600 lbs. (Drill Size 5/32″)									
1 1/4″	50	—	—	90161A305	9.25	90161A712	3.39	90161A120	9.57
1 3/4″	50	—	—	90161A309	10.03	90161A712	3.39	90161A120	9.57
2 1/4″	50	—	—	90161A314	10.83	90161A713	3.71	90161A125	12.22
1/4″ Dia.—Ultimate Pull-Out Strength: 600 lbs.; Shear Strength: 600 lbs. (Drill Size 3/16″)									
1 3/4″	25	90161A109●	8.03	—	—	90161A714	3.68	90161A240	11.63
2 1/4″	25	90161A112●	9.05	—	—	90161A715	4.08	90161A250	15.45
5/16″ Dia.—Ultimate Pull-Out Strength: 700 lbs.; Shear Strength: 850 lbs. (Drill Size 1/4″)									
2 1/4″	25	90161A381●	7.65	90161A395	7.73	90161A751	4.32	90161A131	11.27
2 3/4″	25	90161A385●	8.39	90161A398	8.51	90161A751	4.32	90161A131	11.27

● Head is not slotted.

Optional Installation Tools

For 3/16″ and 1/4″ Dia. Hex-Washer Head Slotted and Flat Head Phillips Screws—For screws of all lengths. Use with 3/8″ and 1/2″ hammer drills or SDS-Plus drive rotary hammer drills. Comes with a drill adapter, drive sleeve, two hex sockets, two Phillips bits with an adapter, a magnetic guide for steel hex head screws, and a hex key. Drill bits sold separately.

90161A110 ..... $55.11

For 1/4″ Dia. Hex-Washer Head Slotted Screws—For 1/4″ dia. hex-washer screws in 1 1/4″ and 1 3/4″ lengths. Use with 3/8″ and 1/2″ hammer drills. Includes a drive sleeve, 3/16″×3 1/2″ hammer drill bit, and a hex key. To use with SDS-Plus drive rotary hammer drills, order the SDS-Plus drill bit 90161A240 sold separately.

90161A310 ..... $31.36

For 5/16″ Dia. Hex-Washer Head Slotted and Flat Head Phillips Screws—For screws of all lengths. Use with 3/8″ and 1/2″ hammer drills or standard SDS-Max drive rotary hammer drills. Comes with a drill adapter, drive sleeve, Phillips bit, and a hex key. Drill bits sold separately.

90161A510 ..... $69.14

Installation Tool Kits with Screws

Kits contain 50 each of 1/4″×1″ and 1/4″×1 1/4″ hex-washer head slotted blue-coated steel screws and a drill bit. Come in a plastic case.

Kit for 3/8″ and 1/2″ Hammer Drills—Also includes a hex key.

90161A100 ..... $40.99

Kit for SDS-Plus Drive Rotary Hammer Drills—Also includes a drive sleeve.

90161A105 ..... $46.63

High-Strength Drive Anchors for Concrete

Anchors are one piece and compress when driven in, expanding inside a hole for a forceful grip. All have a round head. Can also be used in solid block. They are not reusable. Ultimate pull-out and shear strength are based on tests in 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Type 316 stainless steel anchors offer excellent corrosion resistance. They may be mildly magnetic. ***Zinc-plated steel*** anchors are UL listed and FM approved.

Type 316 Stainless Steel

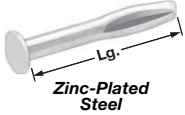

Zinc-Plated Steel

Lg.	Min. Install. Dp.	Ultimate Strength, lbs. Pull Out	Shear	Pkg. Qty.		Pkg.
Type 316 Stainless Steel						
3/16″ Dia.—Head Dia.: 7/16″; Head Ht.: 7/64″ (Drill Size 3/16″)						
1″	7/8″	850	1,200	10	97073A800	$10.24
1 1/2″	7/8″	850	1,200	5	97073A820	6.56
2″	7/8″	850	1,200	5	97073A830	7.00
1/4″ Dia.—Head Dia.: 1/2″; Head Ht.: 7/64″ (Drill Size 1/4″)						
1 1/4″	7/8″	850	1,700	5	97073A840	7.41
1 1/2″	7/8″	850	1,700	5	97073A850	7.57
2″	7/8″	850	1,700	5	97073A860	8.51
2 1/2″	7/8″	850	1,700	5	97073A870	10.20
3″	7/8″	850	1,700	5	97073A880	11.30

Lg.	Min. Install. Dp.	Ultimate Strength, lbs. Pull Out	Shear	Pkg. Qty.		Pkg.
Zinc-Plated Steel						
1/4″ Dia.—Head Dia.: 1/2″; Head Ht.: 1/8″ (Drill Size 1/4″)						
1 1/4″	1 1/8″	1,700	2,000	25	97073A544	$8.73
1 1/2″	1 1/8″	1,700	2,000	25	97073A546	8.79
2″	1 1/8″	1,700	2,000	25	97073A550	9.83
2 1/2″	1 1/8″	1,700	2,000	10	97073A552	8.27
3/8″ Dia.—Head Dia.: 3/4″; Head Ht.: 3/16″ (Drill Size 3/8″)						
2″	1 7/8″	4,200	7,000	10	97073A620	9.79
2 1/2″	1 7/8″	4,200	7,000	10	97073A634	11.65
3 1/2″	1 7/8″	4,200	7,000	5	97073A638	8.29
1/2″ Dia.—Head Dia.: 1″; Head Ht.: 1/4″ (Drill Size 1/2″)						
3″	2 5/8″	4,900	10,200	5	97073A720	13.22

Warning! ***Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.***

Plastic Drive Anchors for Concrete

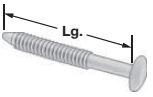

Also known as tap-in or uni-tap rivets, these anchors are barbed to resist pull out when fastening panels to concrete, hollow block, wood, and metal. To install, hammer into a hole that's slightly longer than the anchor.

Anchor diameter is 9/32″; head diameter is 5/8″; head height is 1/8″. Drill size is 1/4″ for masonry and 9/32″ for wood and metal. Anchors are white nylon. Temperature range is –20° to +160° F. Not removable or reusable. Ultimate pull-out strength is 150 lbs. Ultimate shear strength is 220 lbs. Strengths are based on tests in 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Lg.	Min. Install. Depth	Pkg. Qty.		Pkg.
1″	1″	100	92410A411	$12.45
1 5/8″	1″	100	92410A412	15.05
2 1/8″	1″	50	92410A413	10.80
2 5/8″	1″	50	92410A414	14.88
3 1/8″	1″	25	92410A415	8.73

Heavy Duty Pin-Drive Anchors for Concrete and Solid Block

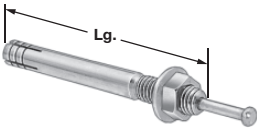

Stud Style

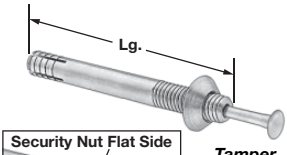

Tamper Resistant

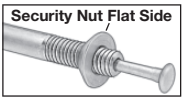

Fasten panels with our strongest pin-drive anchors. To install, insert into a hole and hammer the pin to expand the end. When the pin is flush, the anchor is set. Not reusable. Ultimate pull-out and shear strength are based on tests in 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Stud Style—Use to add a threaded stud above the surface. Can also be used in stone. Made of zinc yellow-chromate plated steel. Each anchor includes a hex nut with an integral washer and has a Class 2A thread fit.

Tamper Resistant—Can also be used in brick, mortar, stone, and wood. A reversible security nut threads on to prevent removal. Turn the nut round side up for a domed look or countersink the nut flat side up for a flush surface. Made of steel.

Lg.	Thread Lg.	Min. Install. Depth	Ultimate Strength, lbs. Pull Out	Ultimate Strength, lbs. Shear	Pkg. Qty.		Pkg.
Stud Style							
1/4″ Dia.—*Thread: 1/4″-20; Washer OD: 9/16″ (Drill Size 1/4″)*							
1 3/4″	5/8″	1 1/8″	1,500	1,000	4	92960A105	$3.12
2 3/8″	3/4″	1 1/8″	1,500	1,000	4	92960A110	3.23
5/16″ Dia.—*Thread: 5/16″-18; Washer OD: 11/16″ (Drill Size 5/16″)*							
2″	3/4″	1 1/2″	3,100	1,300	4	92960A115	3.73
2 3/4″	1″	1 1/2″	3,100	1,300	4	92960A120	4.23
3/8″ Dia.—*Thread: 3/8″-16; Washer OD: 3/4″ (Drill Size 3/8″)*							
2 3/8″	1″	1 7/8″	3,300	3,500	4	92960A125	4.90
3 1/2″	1 1/8″	1 7/8″	3,300	3,500	4	92960A130	5.42
4 3/4″	1 3/8″	1 7/8″	3,300	3,500	4	92960A135	8.16
1/2″ Dia.—*Thread: 1/2″-13; Washer OD: 15/16″ (Drill Size 1/2″)*							
2 3/4″	1″	2 1/2″	5,600	4,900	4	92960A140	7.49
3 1/2″	1 1/8″	2 1/2″	5,600	4,900	4	92960A145	9.11
4 3/4″	1 3/8″	2 1/2″	5,600	4,900	4	92960A150	11.03
6″	1 1/2″	2 1/2″	5,600	4,900	1	92960A155	4.29
5/8″ Dia.—*Thread: 5/8″-11; Washer OD: 15/16″ (Drill Size 5/8″)*							
4″	1 1/2″	2 3/4″	7,700	9,200	4	92960A160	17.35
6″	1 1/2″	2 3/4″	7,700	9,200	1	92960A170	5.56
Tamper Resistant							
1/4″ Dia.—*(Drill Size 1/4″)*							
1 3/4″	5/8″	1″	1,300	1,600	10	99080A120	11.41
2 3/8″	3/4″	1″	1,300	1,600	10	99080A140	13.59
3/8″ Dia.—*(Drill Size 3/8″)*							
2 3/8″	1″	1 1/2″	3,400	3,400	10	99080A360	15.41
3 1/2″	1 1/8″	1 1/2″	3,400	3,400	5	99080A390	9.98

Pin-Drive Anchors

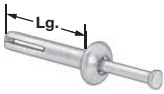

Domed Head

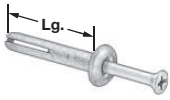

Domed Head and Removable Screw

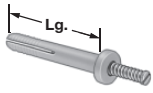

Flat Head

Also known as drive rivets, the body flares out to hold securely. To install, hammer the pin or screw into the body. To remove *domed head* and *flat head* anchors, pry out the pin; for *domed head with removable screw*, unthread the screw. Anchors are not reusable or rated for pull out and shear strength.

Aluminum—For thin steel and wood.

Zinc—For concrete, block, and brick. FM approved.

Nylon—For concrete, block, brick, stone, steel panels, wood, and drywall. Vibration resistant. Install in a hole slightly deeper than the anchor is long. Temperature range is –40° to +185° F.

Lg.	Matl. Thick. Range	Pin Matl.	Pkg. Qty.		Pkg.
Aluminum with Domed Head					
3/16″ Dia.—*Head: Dia. 3/8″; Ht. 3/32″ (Drill Size 13/64″)*					
5/16″	3/32″ - 5/32″	Aluminum	50	97510A499	$7.90
3/8″	5/32″ - 7/32″	Aluminum	50	97510A500	7.90
7/16″	7/32″ - 9/32″	Aluminum	50	97510A501	7.90
3/16″ Dia.—*Head: Dia. 15/32″; Ht. 3/32″ (Drill Size 3/16″)*					
9/16″	11/32″- 13/32″	Aluminum	50	97086A505	8.34
11/16″	15/32″- 17/32″	Aluminum	50	97086A506	8.34
13/16″	19/32″- 21/32″	Aluminum	50	97086A508	7.86
1 3/16″	31/32″-1 1/32″	Aluminum	25	97086A511	11.16
1/4″ Dia.—*Head: Dia. 1/2″; Ht. 1/8″ (Drill Size F)*					
3/8″	5/32″ - 7/32″	Aluminum	50	97510A532	7.08
7/16″	7/32″ - 9/32″	Aluminum	50	97510A533	7.08
9/16″	11/32″- 13/32″	Aluminum	25	97510A535	7.38
11/16″	15/32″- 17/32″	Aluminum	25	97510A537	7.38
13/16″	19/32″- 21/32″	Aluminum	25	97510A538	7.38
1/4″ Dia.—*Head: Dia. 5/8″; Ht. 1/8″ (Drill Size F)*					
11/16″	15/32″- 17/32″	Aluminum	25	97086A538	9.10
13/16″	19/32″- 21/32″	Aluminum	25	97086A540	9.32
15/16″	23/32″- 25/32″	Aluminum	10	97086A541	5.58
1 1/16″	27/32″- 29/32″	Aluminum	10	97086A542	6.28
1 3/16″	31/32″-1 1/32″	Aluminum	10	97086A543	6.41
1 5/16″	1 3/32″ -1 5/32″	Aluminum	10	97086A544	7.10
1 9/16″	1 11/32″-1 13/32″	Aluminum	10	97086A545	8.02

Lg.	Max. Matl. Thick.	Pin Matl.	Pkg. Qty.		Pkg.
Zinc with Domed Head					
3/16″ Dia.—*Head: Dia. 7/16″; Ht. 7/64″ (Drill Size 3/16″)*					
7/8″	1/8″	Steel	100	97090A102	$9.57
1/4″ Dia.—*Head: Dia. 9/16″; Ht. 9/64″ (Drill Size 1/4″)*					
3/4″	1/8″	Steel	50	97090A104	11.45
1″	3/8″	18-8 SS	25	97090A130	11.04
1″	3/8″	Steel	50	97090A106	13.22
1 1/4″	5/8″	18-8 SS	25	97090A135	11.61
1 1/4″	5/8″	Steel	50	97090A108	13.71
1 1/2″	7/8″	18-8 SS	25	97090A140	13.07
1 1/2″	7/8″	Steel	25	97090A110	10.38
2″	1 3/8″	18-8 SS	25	97090A145	14.13
2″	1 3/8″	Steel	25	97090A112	10.64
Zinc with Domed Head and Removable Screw					
1/4″ Dia.—*Head: Dia. 9/16″; Ht. 5/32″ (Drill Size 1/4″)*					
3/4″	1/8″	Steel	100	97090A305	14.28
1″	3/8″	Steel	50	97090A310	11.04
1 1/4″	5/8″	Steel	50	97090A315	14.36
1 1/2″	7/8″	Steel	50	97090A320	13.28
2″	1 3/8″	Steel	25	97090A325	11.04
Nylon with Domed Head					
3/16″ Dia.—*Head: Dia. 9/16″; Ht. 1/8″ (Drill Size 3/16″)*					
3/4″	3/4″	Zinc-Plated Steel	100	97066A017	9.30
1″	1″	Zinc-Plated Steel	100	97066A010	10.17
1/4″ Dia.—*Head: Dia. 9/16″; Ht. 7/64″ (Drill Size 1/4″)*					
3/4″	3/4″	Acetal	100	97067A050	9.30
1″	1″	Acetal	100	97067A051	10.17
1 1/2″	1 1/2″	Acetal	100	97067A052	11.04
1/4″ Dia.—*Head: Dia. 9/16″; Ht. 1/8″ (Drill Size 1/4″)*					
3/4″	3/4″	Zinc-Plated Steel	100	97066A013	9.74
1″	1″	Zinc-Plated Steel	100	97066A016	10.61
1 1/2″	1 1/2″	Zinc-Plated Steel	100	97066A043	11.48
Nylon with Flat Head					
3/16″ Dia.—*Head: Dia. 7/16″; Ht. 1/8″ (Drill Size 3/16″)*					
1″	1″	Zinc-Plated Steel	100	97066A020	10.17
1/4″ Dia.—*Head: Dia. 7/16″; Ht. 1/8″ (Drill Size 1/4″)*					
1″	1″	Zinc-Plated Steel	100	97066A026	10.61
1 1/2″	1 1/2″	Zinc-Plated Steel	100	97066A028	11.48

Warning! ***Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.***

Internally Threaded Anchors for Concrete

Also known as drop-in anchors. Often used for overhead applications because the anchor's internal plug expands in four directions to hold it firmly inside the hole. To install, place the anchor into the hole, insert the required installation tool (sold separately on this page) into the anchor, and drive with a hammer until the thicker portion of the tool makes contact with the anchor. When installed, anchors sit flush with the surface.

UL listed and FM approved, except 97095A111. Ultimate pull-out and shear strength are based on tests in 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking. Anchors have a Class 2B thread fit.

Type 316 stainless steel is more corrosion resistant than 18-8. It may be mildly magnetic.

18-8 stainless steel has excellent corrosion resistance and may be mildly magnetic.

Zinc-plated steel is coated for corrosion resistance.

Anchors

For Screw Size	Lg.	Min. Install. Depth	Drill Size	Ultimate Strength, lbs. Pull Out	Ultimate Strength, lbs. Shear	Type 316 Stainless Steel Pkg. Qty.	Type 316 Stainless Steel Pkg.	18-8 Stainless Steel Pkg. Qty.	18-8 Stainless Steel Pkg.	Zinc-Plated Steel Pkg. Qty.	Zinc-Plated Steel Pkg.
1/4″-20	1″	1″	3/8″	1,800	1,900	1	97095A111	4	97082A150	25	97083A290
3/8″-16	1 9/16″	1 9/16″	1/2″	3,900	4,100	1	97095A121	1	97082A031	10	97083A310
1/2″-13	2″	2″	5/8″	5,700	6,400	1	97095A131	1	97082A033	10	97083A330
5/8″-11	2 1/2″	2 1/2″	7/8″	7,400	11,000	1	97095A141	1	97082A035	4	97083A350
3/4″-10	3 3/16″	3 3/16″	1″	9,400	15,600	1	97095A151	1	97082A036	4	97083A360

Pkg.	Type 316	18-8	Zinc-Plated
	$3.71	$9.17	$9.83
	4.92	4.07	10.29
	8.36	8.86	11.43
	17.90	16.40	10.54
	27.70	24.06	15.31

Installation Tools

For Screw Size	Lg.		
1/4″-20	4 1/2″	97077A110	$3.10
3/8″-16	5″	97077A120	3.67
1/2″-13	5 1/2″	97077A130	$5.22
5/8″-11	6″	97077A140	8.91
3/4″-10	6″	97077A150	$11.51

Variable-Depth Internally Threaded Anchors for Concrete

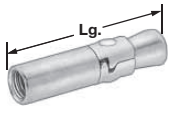

Also known as recessed wedge anchors, these zinc-plated steel fasteners can be installed to any depth greater than the installation depth.

To install, thread a nut, washer, and an anchor onto the end of a threaded rod (nut, washer, and rod not included). Use a hammer to drive the entire assembly into a hole. When the washer and nut are flush with the hole, tighten to ensure secure contact.

Ultimate pull-out strength is based on tests in 3,000 psi concrete. Anchors have a Class 2A thread fit.

For Screw Size	Lg.	Min. Install. Depth	Drill Size	Ultimate Pull-Out Strength, lbs.	Pkg. Qty.	Pkg.	
3/8″-16	2 3/8″	1 5/8″	1/2″	3,400	4	97045A041	$11.48
1/2″-13	2 1/2″	2 1/4″	5/8″	5,400	4	97045A043	14.57

Internally Threaded Anchors for Concrete, Block, and Brick

All you need is a hammer—just tap into a drilled hole and position your fixture. Then insert a compatible threaded fastener (screw, rod, or lag screw not included) and tighten. Ultimate pull-out and shear strength are based on tests in 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Standard expansion anchors provide a reliable grip. Also known as double expansion anchors, when installed, each half makes full contact against the wall of the hole. For maximum expansion, the anchor should protrude slightly above the surface before threading the screw. Anchors are zinc and have a Class 2B thread fit.

Vibration resistant expansion anchors use the force of an interior nut to expand in four directions. Sometimes called four-way expansion anchors, they can also be used in stone. Anchors are zinc and have a Class 2B thread fit.

Hollow material anchors hold fast in hollow base materials, but perform well in solid materials, too. Install cone end first. Cone is zinc-plated steel; sleeve is zinc. All have a Class 2B thread fit. 3/8″ to 5/8″ dia. anchors are UL listed and FM approved.

Lag screw anchors have a slight taper that prevents spinning. Install flush or slightly below the surface. Designed for use with lag screws (not included, see pages 3018-3019). Each diameter is available in two lengths. The shorter length reduces drilling time; the longer length provides more strength. Made of zinc.

For Screw Size	Lg.	Min. Install. Depth	Drill Size	Ultimate Strength, lbs. Pull Out	Ultimate Strength, lbs. Shear	Pkg. Qty.		Pkg.
Standard Expansion								
1/4″-20	1 3/8″	1 1/4″	1/2″	900	1,100	10	97031A039	$8.69
5/16″-18	1 5/8″	1 1/2″	5/8″	1,500	2,000	10	97031A040	9.88
3/8″-16	2″	1 3/4″	3/4″	2,000	3,000	5	97031A041	12.69
1/2″-13	2 1/2″	2 1/4″	7/8″	3,500	4,300	5	97031A043	13.92
5/8″-11	2 3/4″	2 1/2″	1″	6,100	10,200	4	97031A045	12.19
3/4″-10	3 15/16″	3 1/2″	1 1/4″	8,100	13,300	2	97031A046	14.76
Vibration Resistant Expansion								
1/4″-20	1 1/4″	1 1/4″	1/2″	2,300	2,100	10	92915A110	12.45
5/16″-18	1 1/2″	1 1/2″	9/16″	2,600	3,300	10	92915A120	12.98
3/8″-16	1 3/4″	1 3/4″	11/16″	3,600	3,800	10	92915A130	14.54
1/2″-13	2 1/4″	2 1/4″	7/8″	5,100	8,100	4	92915A140	9.89
5/8″-11	2 5/8″	2 5/8″	1 1/8″	5,800	14,100	1	92915A150	4.49
3/4″-10	3 1/8″	3 1/8″	1 1/4″	9,800	15,300	1	92915A160	6.33
Hollow Material								
1/4″-20	7/8″	3/4″	3/8″	1,100	1,200	10	97016A972	14.81
5/16″-18	1 5/16″	1″	5/8″	1,600	1,900	5	97016A973	9.64
3/8″-16	1 5/16″	1″	5/8″	2,000	2,500	5	97016A974	9.67
1/2″-13	1 3/4″	1 1/2″	3/4″	4,000	4,000	1	97016A975	3.20
5/8″-11	2″	2 1/4″	1″	9,400	6,400	1	97016A976	7.55
Lag Screw								
1/4″	1″	1″	1/2″	250	1,000	10	97040A029	5.23
1/4″	1 1/2″	1 1/2″	1/2″	300	1,000	10	97039A029	6.13
5/16″	1 1/4″	1 1/4″	1/2″	500	1,100	10	97040A030	6.25
5/16″	1 3/4″	1 3/4″	1/2″	550	1,100	10	97039A030	6.05
3/8″	1 3/4″	1 3/4″	5/8″	850	1,400	10	97040A031	7.80
3/8″	2 1/2″	2 1/2″	5/8″	1,000	1,400	10	97039A031	9.52
1/2″	2″	2″	3/4″	1,100	1,600	5	97040A033	5.50
1/2″	3″	3″	3/4″	2,100	1,600	5	97039A033	9.64
5/8″	2″	2″	7/8″	1,200	2,200	4	97040A035	7.27
5/8″	3 1/2″	3 1/2″	7/8″	2,600	2,200	4	97039A035	10.02
3/4″	2″	2″	1″	1,500	2,400	4	97040A036	8.36
3/4″	3 1/2″	3 1/2″	1″	2,800	2,400	4	97039A036	13.69

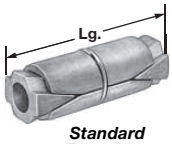

Standard Expansion

Vibration Resistant Expansion

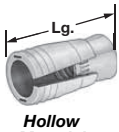

Hollow Material

Lag Screw

Warning! ***Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.***

Shallow Hole Internally Threaded Anchors for Concrete, Solid Block, and Brick

Shorter than other internally threaded anchors, these anchors hold on when there's not much material to hold. Also known as caulk-in and machine-bolt anchors, they consist of a lead sleeve around an internally threaded zinc cone. When installed, the cone expands the sleeve to hold it firmly inside the hole. To install, insert the anchor cone end first and use an installation tool (required, sold separately) to drive the sleeve over the cone. Then position your fixture, insert a screw or bolt (not included), and tighten. Ultimate pull-out and shear strength are based on tests in 4,000 psi concrete. Ultimate shear strength is the force the side of an anchor can withstand before breaking. Class 2B thread fit.

Standard Installation Tools— Use with a hammer to expand anchors. Made of zinc-plated steel.

Adjustable Shoulder Installation Tools— An adjustable shoulder acts as a stop so you can set your anchors at consistent depths. Use with a hammer. Made of hardened steel.

Quickset Installation Tools— The fastest and easiest way to install these anchors. Just insert the tip of the tool into the anchor and insert the cone end into the hole. Made of zinc-plated steel.

ANCHORS								INSTALLATION TOOLS					
				Ultimate Strength, lbs.				Standard			Adjustable Shoulder		
For Screw Size	Lg.	Min. Install. Depth	Drill Size	Pull Out	Shear	Pkg. Qty.	Pkg.	Lg.	Each	Open Lg.	Closed Lg.	Each
8-32	9/16″	1/2″	5/16″	350	350	25	97041A611 $12.21	2 15/16″	97020A111 $3.18	—	—	—
10-24	3/4″	5/8″	3/8″	950	900	25	97041A612 9.93	3 1/4″	97020A112 2.32	2 1/4″	2″ 97105A020	$55.23
1/4″-20	7/8″	7/8″	1/2″	1,500	1,400	25	97041A028 7.44	3 3/4″	97020A114 3.45	2 1/4″	2″ 97105A040	52.36
5/16″-18	1″	1″	5/8″	1,900	2,000	10	97041A613 9.07	4 3/8″	97020A115 4.77	—	—	—
3/8″-16	1 1/4″	1 1/4″	3/4″	2,400	3,300	5	97041A614 7.38	4 5/8″	97020A121 4.73	2 3/4″	2 1/4″ 97105A060	79.33
1/2″-13	1 9/16″	1 1/2″	7/8″	3,400	4,500	5	97041A615 7.75	5″	97020A122 7.86	—	—	—
5/8″-11	1 7/8″	2″	1 1/8″	3,900	6,300	1	97041A717 5.04	6 1/2″	97020A123 14.15	—	—	—
3/4″-10	2″	2 1/4″	1 1/4″	5,600	7,700	1	97041A719 6.96	6 1/2″	97020A124 21.83	—	—	—

QUICKSET INSTALLATION TOOLS

For Screw Size	Each	For Screw Size	Each	For Screw Size	Each
10-24	97041A505 $46.75	1/4″-20	97041A520 $44.64	3/8″-16	97041A535 $66.96

Light Duty Anchors for Concrete, Solid Block, and Brick

Conical

Finned

Flange Mount

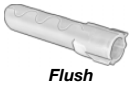
Flush Mount

Tri-Lobe

Also known as plug anchors, use these anchors for light duty mounting in concrete, solid block, brick, and other materials as noted below. To install, drill a hole slightly deeper than the anchor is long and insert the anchor until it's flush with the surface. Next, thread a screw through your fixture and into the anchor, and tighten. To determine screw length, add the anchor length to the fixture thickness and choose a screw longer than this. For sheet metal screws, see pages 3022-3030; for wood screws, see pages 3014-3021. Not rated for shear strength.

Conical— Anchors expand and distort during screw installation to provide a high strength connection point. They're rustproof and can also be used in hollow block. Ultimate pull-out strength is based on tests in 4,000 psi concrete.

Finned— Large fins prevent rotation. Also called mungo anchors, these reliable anchors can also be used in hollow block and stone. Temperature range is –104° to +176° F. Ultimate pull-out strength is based on tests in solid brick.

Flange Mount and ***Flush Mount—*** All-purpose anchors split in half when a screw is inserted. They can also be used in hollow block and stone. Temperature range is –20° to +212° F. Ultimate pull-out strength is based on tests in 3,500 psi concrete.

Tri-Lobe— The lobed shape prevents twisting. Temperature range is 0° to 120° F. Ultimate pull-out strength is based on tests in 2,000 psi concrete.

Anchors

For Screw Size	Lg.	Drill Size	Ultimate Pull-Out Strength, lbs.	Pkg. Qty.		Pkg.
Conical— *Lead*						
No. 6-8	3/4″	1/4″	250	25	97026A015	$4.16
No. 6-8	1″	1/4″	250	25	97026A021	4.83
No. 6-8	1 1/2″	1/4″	400	25	97026A026	6.61
No. 10-14	1″	5/16″	600	25	97026A031	7.42
No. 10-14	1 1/2″	5/16″	800	10	97026A036	3.71
No. 16-18	1 1/2″	3/8″	1,000	25	97026A045	8.20
Finned— *Nylon; color is orange.*						
No. 4-6	1″	3/16″	250	100	97225A113	5.74
No. 8-10	1 3/16″	3/16″	400	100	97225A115	8.61
No. 10-12	1 1/2″	5/16″	700	100	97225A140	10.53
1/4″ to 5/16″	2″	3/8″	850	50	97225A150	12.54
Flange Mount— *Polypropylene; color is off-white.*						
No. 4-9	1″	3/16″	500	50	97065A100	7.50
No. 6-12	1 3/16″	1/4″	650	50	97065A110	9.60
No. 8-14	1 3/16″	5/16″	1,000	25	97065A120	6.40
Flush Mount— *Polypropylene; color is off-white.*						
No. 4-9	15/16″	3/16″	500	50	97065A200	7.50
No. 6-12	1 1/8″	1/4″	650	50	97065A210	9.60
No. 8-14	1 3/4″	5/16″	1,000	25	97065A220	5.55

For Screw Size	Color	Lg.	Drill Size	Ultimate Pull-Out Strength, lbs.	Pkg. Qty.		Pkg.
Tri-Lobe— *PVC*							
No. 4	Yellow	1″	5/32″	160	100	95482A130	$2.31
No. 6	White	1″	3/16″	750	100	95482A131	2.52
No. 8	Red	1″	15/64″	900	100	95482A125	2.69
No. 10	Green	1″	1/4″	1,000	100	95482A132	3.17
No. 10	Green	1 1/2″	1/4″	1,500	100	95482A142	4.28
No. 10	Green	2″	1/4″	2,100	100	95482A143	5.36
No. 14, 1/4″	Blue	1″	5/16″	1,200	100	95482A144	4.24
No. 14, 1/4″	Blue	1 1/2″	5/16″	1,700	100	95482A145	5.56
No. 14, 1/4″	Blue	2″	5/16″	2,300	100	95482A133	6.21
No. 16, 5/16″	Orange	1 1/2″	3/8″	1,500	100	95482A134	6.69
No. 16, 5/16″	Orange	2 1/2″	3/8″	2,500	100	95482A135	9.66
No. 20, 3/8″	Gray	2″	7/16″	4,800	50	95482A138	10.96
No. 20, 3/8″	Gray	3″	7/16″	6,600	50	95482A139	11.44

Anchors with Screws

You'll get anchors and an equal number of pan head Phillips/slotted combination tapping screws. Tri-lobe anchors also include a drill bit. Packed in a plastic box.

Screw Size	Lg.	Color	Lg.	Drill Size	Ultimate Pull-Out Strength, lbs.	Pkg. Qty.		Pkg.
Flange Mount— *Polypropylene*								
No. 10	1 1/2″	Off-White	1 3/16″	1/4″	650	50	97065A400	$19.38
Tri-Lobe— *PVC*								
No. 6	1″	White	1″	3/16″	750	100	98612A010	7.41
No. 8	1″	Red	1″	15/64″	1,100	100	98612A015	9.28
No. 10	1″	Green	1″	1/4″	1,000	100	98612A020	9.66
No. 14	1 1/2″	Blue	1 1/2″	5/16″	1,700	50	98612A025	10.76

Warning! ***Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.***

Anchors for Drywall

Tackle all kinds of light duty fastening with these plug-style anchors. Install anchors flush with the surface. Then, thread a screw through your fixture, into the anchor, and tighten. To determine screw length for all except self-drilling anchors, add the anchor length to the fixture thickness and choose a screw equal to or longer than this. For self-drilling anchors, choose a screw equal to or shorter than this. Not rated for shear strength.

Self Drilling— Use with sheet metal screws at least 1¼″ long. Ultimate pull-out strength is 30 lbs. based on tests in ⅜″ thick drywall. Temperature range for nylon is 30° to 170° F.

Conical— Can also be used in plaster and wood paneling. They have a ridged body with fins that prevent spinning during installation. Temperature range is 30° to 150° F. Pull-out strength is not rated.

Twist-Action— The twist-action creates a knot behind hollow materials, which holds the anchor in place. Also called polysets, they can also be used in wood. Temperature range is 14° to 120° F. Ultimate pull-out strength is 110 lbs. based on tests in ½″ drywall.

Twist-Action Finned— Fins prevent anchors from spinning during installation. The twist-action creates a knot behind hollow materials, which holds the anchor in place. Temperature range is –104° to +176° F. Not rated for pull-out strength.

Toggle— Vibration resistant. Fins on the shaft prevent spinning during installation. Can also be used in plywood and paneling. Temperature range is –20° to +212° F. Ultimate pull-out strength is 120 lbs. based on the maximum wall thickness listed.

Hammer In— Easy to install; just tap in like a nail. When you thread in a screw the anchor bends to hold against the wall. Not rated for temperature. Ultimate pull-out strength is 80 lbs. based on tests in ½″ thick drywall.

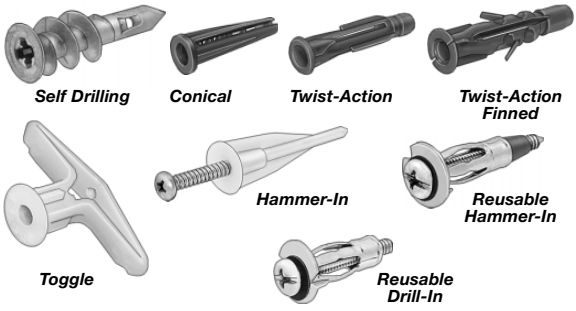

Reusable Hammer-In and ***Reusable Drill-In Anchors—*** Also called hollow wall and molly anchors. Once installed, the screw can be removed repeatedly without affecting the anchor. To install, tap the anchor into the base material, then turn the screw to expand it. Two prongs under the flange prevent the anchors from turning inside the hole. *Reusable drill-in* anchors require a drilled hole for installation; *reusable hammer-in* anchors do not. Can also be used in plaster and plywood. Ultimate pull-out strength is 80 lbs. based on tests in ⅜″ drywall. For high volume tasks, take advantage of our optional installation tool—it doesn't require any twisting.

Anchors—For screws, see pages 3014-3030.

For Screw Size	Lg.	Drill Size	For Wall Thick.	Pkg. Qty.		Pkg.
Self Drilling—Zinc						
No. 6-8	1¼″	—	⅜″- ¾″	50	66615A3	$8.99
No. 8	1⅝″	—	⅜″- ¾″	50	66615A1	9.22
Self Drilling—Nylon; color is off-white.						
No. 6	1⅜″	—	⅜″- ⅝″	100	66615A7	9.80
No. 6-10	1⅝″	—	⅜″- ⅝″	50	66615A25	11.18
No. 8	1⅝″	—	⅜″- ¾″	50	66615A67	8.15
Conical—Polyethylene; color is blue.						
No. 4-8	¾″	3/16″	—	100	97068A110	2.50
No. 6-10	⅞″	3/16″	—	100	97068A120	2.61
No. 10-12	1″	¼″	—	100	97068A130	4.28
No.14-16	1⅜″	5/16″	—	100	97068A140	5.80

For Screw Size	Lg.	Drill Size	For Wall Thick.	Pkg. Qty.		Pkg.
Twist-Action—Polyethylene; color is red.						
No. 6-8	1¼″	3/16″	⅜″- ¾″	100	90466A210	$7.46
No. 10-12	1½″	9/32″	½″-1″	100	90466A220	10.22
Twist-Action Finned—Nylon; color is orange.						
No. 8	1½″	¼″	—	50	93370A400	10.65
No. 10-14	2″	5/16″	—	50	93370A500	9.57
No. 14	2⅜″	⅜″	—	25	93370A600	9.61
Toggle—Polypropylene; color is off-white.						
No. 6-14	1¼″	5/16″	⅜″- ½″	20	92392A230	7.88
No. 6-14	1⅜″	5/16″	⅝″- ¾″	20	92392A240	8.69
No. 6-14	1¾″	5/16″	1″	25	92392A250	9.54
No. 8-12	¾″	5/16″	⅛″- ¼″	20	92392A220	7.45

Anchors with Screws

Screw Size	Screw Lg.	Lg.	Drill Size	For Wall Thick.	Pkg. Qty.		Pkg.
Self Drilling—Zinc							
No. 8	1¼″	1⅝″	—	⅜″- ¾″	25	66615A2	$10.93
Self Drilling—Nylon; color is off-white.							
No. 6	1″	1⅜″	—	⅜″- ⅝″	50	66615A5	9.78
No. 8	1¼″	1½″	—	⅜″- ¾″	25	66615A4	8.43
No. 8	1½″	1¾″	—	⅜″- ⅝″	50	66615A28	17.00
Conical—Polyethylene; color is blue.							
No. 6	1″	¾″	3/16″	—	100	98547A110■	9.86
No. 10	1″	1⅛″	¼″	—	100	98547A114■	10.81
No. 14	1¼″	1⅝″	5/16″	—	50	98547A116■	12.21
Conical—Polyethylene; color is red.							
No. 6	1″	1″	3/16″	—	100	98547A112■	8.90
Twist-Action—Polyethylene; color is red.							
No. 8	1¼″	1¼″	3/16″	⅜″- ¾″	100	90466A310■	38.10
No. 12	1½″	1⅜″	9/32″	½″-1″	50	90466A320■	29.80
Hammer-In—Nylon; color is green.							
No. 8	1¼″	2″	—	½″- ⅝″	10	66615A92	6.77

■ Includes a drill bit.

Screw Size	Screw Lg.	Lg.	Drill Size	For Wall Thick.	Pkg. Qty.		Pkg.
Reusable Hammer-In—Steel							
6-32	1⅜″	1½″	—	⅛″- ¼″	25	97087A200	$9.03
6-32	2″	2″	—	⅜″- ½″	25	97087A300	6.53
6-32	2⅜″	2⅝″	—	½″- ¾″	25	97087A700	11.44
Reusable Drill-In—Steel							
6-32	1 1/16″	1⅛″	5/16″	⅛″- ¼″	50	97102A462	11.58
6-32	1¾″	1¾″	5/16″	⅜″- ½″	25	97102A478	7.88
6-32	2¼″	2¼″	5/16″	⅝″-1″	25	97102A480	11.69
6-32	2 11/16″	2⅜″	5/16″	1¼″-1½″	25	97102A481	13.34
10-24	2″	2⅝″	⅜″	⅜″- ⅝″	25	97102A517	13.08
10-24	2½″	2⅝″	⅜″	¾″-1⅛″	25	97102A519	13.43
¼″-20	2¼″	2⅜″	7/16″	⅜″- ½″	25	97102A551	14.62
¼″-20	2¾″	2⅞″	7/16″	⅝″-1⅛″	10	97102A553	7.57

Optional Install. Tool for Reusable Anchors ... 90228A110 **Each** $21.19

230-Piece Reusable-Anchor Assortment

Includes: *Hammer-In Style*—50 each 6-32×1 5/16″; 25 each 6-32×1 11/16″, 2¼″. *Drill-In Style*—25 each 6-32×1″, 1½″, 2″; 20 each 6-32×2½″; 10 each 10-24×2¼″, 2¾″, and ¼″-20×2¼″; 5 each ¼″-20×2¾″. Comes in a compartmented plastic box.

90228A211 ..... $96.69

Self-Drilling Toggle Bolts

Save time using a toggle bolt that drills its own hole in ⅜″-⅝″ thick drywall. To install, simply drive the toggle bolt into the wall, then position your fixture and the included steel screw over it. The toggle is drawn against the wall as you tighten the screw. Ultimate pull-out strength is based on tests in ½″ drywall.

Screw Size	Screw Lg.	Lg.	Head Dia.	Head Ht.	Wing Span	Ultimate Pull-Out Strength, lbs.	Pkg. Qty.		Pkg.
Zinc									
No. 8	2⅛″	2½″	0.57″	0.025″	1½″	85	10	66625A65	$10.44
Nylon and Zinc									
6-32	2″	2⅛″	0.68″	0.05″	1¾″	100	6	66625A1	7.23
6-32	3″	2⅛″	0.68″	0.05″	1¾″	100	6	66625A11	7.34
10-24	2″	2 7/16″	0.75″	0.05″	2″	120	6	66625A12	7.23
¼″-20	3″	2¾″	0.81″	0.05″	2 5/16″	140	4	66625A13	7.40

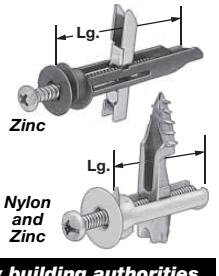

Warning! ***Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.***

Toggle Bolts

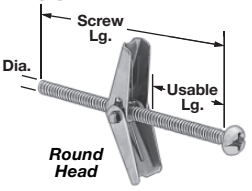

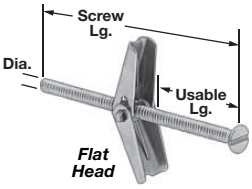

Toggle bolts use a spring-loaded, wing-like toggle (included) to hold against the back of hollow base materials. To install, insert the bolt through your fixture and thread the toggle onto it. Next, fold the toggle wings flush against the bolt and push them through a drilled hole until they pop open on the other side. Pull back on the bolt and tighten. The bolt is reusable, but the toggle will fall behind the wall when the bolt is removed. Extra toggles sold separately.

Round head toggle bolts have a slotted/Phillips combination drive; *flat head* have a slotted drive. *Low profile* are also known as binding head toggle bolts. Bolts and toggles are zinc-plated steel. Bolts have a Class 2A thread fit; toggles have a Class 2B. Ultimate pull-out and shear strength are based on tests in ½″ drywall. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Screw Lg.	Usable Lg.	Thread Lg.	Ultimate Strength, lbs. Pull Out	Shear	Pkg. Qty.		Pkg.
Round Head Toggle Bolts							
⅛″ Dia.—Thread: 6-32; Wing Span: 1½″ (Drill Size ⅜″)							
2″	1⅛″	1⅞″	150	130	50	97121A011	$6.28
3″	2⅛″	2⅞″	150	130	50	97121A013	6.77
4″	3⅛″	3⅞″	150	130	50	97121A015	7.73
3/16″ Dia.—Thread: 10-24; Wing Span: 2⅛″ (Drill Size ½″)							
2″	⅞″	1⅞″	180	190	50	97121A017	10.02
3″	1⅞″	2⅞″	180	190	50	97121A019	10.42
4″	2⅞″	3⅞″	180	190	50	97121A021	10.16
5″	3⅞″	4⅞″	180	190	50	97121A025	12.97
6″	4⅞″	5⅞″	180	190	25	97121A041	10.34
¼″ Dia.—Thread: ¼″-20; Wing Span: 2⅛″ (Drill Size 5/8″)							
3″	1⅞″	2⅞″	200	200	25	97121A043	10.05
4″	2⅞″	3⅞″	200	200	25	97121A045	10.21
5″	3⅞″	4⅞″	200	200	25	97121A047	10.38
6″	4⅞″	5⅞″	200	200	25	97121A049	11.04
5/16″ Dia.—Thread: 5/16″-18; Wing Span: 2⅝″ (Drill Size ⅞″)							
3″	1½″	2⅞″	250	250	10	97121A051	8.36
4″	2½″	3⅞″	250	250	10	97121A053	8.58
5″	3½″	4⅞″	250	250	10	97121A055	10.29
6″	4⅝″	5⅞″	250	250	10	97121A057	12.54
⅜″ Dia.—Thread: ⅜″-16; Wing Span: 3″ (Drill Size ⅞″)							
3″	1⅜″	2⅞″	250	250	10	97121A059	10.35
4″	2⅝″	3⅞″	250	250	10	97121A061	11.07
5″	3⅜″	4⅞″	250	250	10	97121A063	11.60
6″	4⅜″	5⅞″	250	250	10	97121A065	13.08
½″ Dia.—Thread: ½″-13; Wing Span: 4¾″ (Drill Size 11/4″)							
4″	1½″	3⅞″	300	300	5	97121A067	10.20
6″	3½″	4⅞″	300	300	5	97121A069	11.70
Low-Profile Round Head Toggle Bolts							
⅛″ Dia.—Thread: 6-32; Wing Span: 1½″ (Drill Size ⅜″)							
3″	2⅛″	2 31/32″	150	130	50	97121A071	7.23
4″	3⅛″	3 31/32″	150	130	50	97121A073	8.44
Flat Head Toggle Bolts							
⅛″ Dia.—Thread: 6-32; Wing Span: 1½″ (Drill Size ⅜″)							
2″	1″	1⅞″	150	130	50	97121A075	18.14
3″	2″	2⅞″	150	130	50	97121A077	7.58
4″	3⅛″	3⅞″	150	130	50	97121A079	20.05
3/16″ Dia.—Thread: 10-24; Wing Span: 2⅛″ (Drill Size ½″)							
3″	1¾″	2¾″	180	190	50	97121A081	11.47
4″	2¾″	3¾″	180	190	50	97121A083	11.81
¼″ Dia.—Thread: ¼″-20; Wing Span: 2⅛″ (Drill Size 5/8″)							
3″	1⅝″	2¾″	200	200	25	97121A085	12.72
4″	2⅝″	3¾″	200	200	10	97121A087	10.93

Extra Toggles

For Screw Dia.	Wing Span	Thread Size	Pkg. Qty.		Pkg.
⅛″	1½″	6-32	50	97132A023	$9.06
3/16″	2⅛″	10-24	50	97132A027	12.32
¼″	2⅛″	¼″-20	25	97132A029	8.45
5/16″	2⅝″	5/16″-18	25	97132A030	11.05
⅜″	3″	⅜″-16	25	97132A031	11.87
½″	4¾″	½″-13	10	97132A033	12.36

100-Piece Round-Head Toggle Bolt Assortment

Contains bolt sizes (Dia.×Lg.): 25 each of ⅛″×3″, ⅛″×4″; 15 each of 3/16″×3″, 3/16″×4″; and 10 each of ¼″×3″, ¼″×4″. Packed in a plastic box.

97121A600 ..... $108.50

Stud and Internally Threaded Toggle Anchors

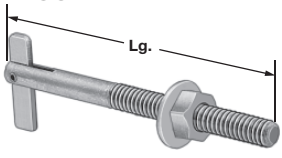

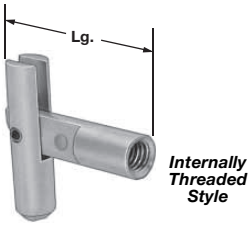

Add a threaded stud or socket connection point. A pivoting toggle bar holds tight against hollow base materials. To install, push through a drilled hole; gravity drops the toggle into position. Anchors are made of zinc yellow-chromate plated steel and are removable. Ultimate pull-out and shear strength are based on tests in 1,500 psi concrete block. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

Stud Style—Furnished with a nut and washer. Class 2A thread fit.

Internally Threaded Style—Provides an internally threaded socket connection for a threaded rod (not included). Class 2B thread fit. Not rated for shear strength.

Stud Style

Lg.	Usable Lg.	Thread Lg.	Ultimate Strength, lbs. Pull Out	Shear	Pkg. Qty.		Pkg.
¼″ Dia.—Thread: ¼″-20; Wing Span: 1″; Washer OD: 5/8″ (Drill Size 5/16″)							
1¾″	1″	⅝″	700	1,500	4	94040A110	$6.30
2½″	1¾″	1″	700	1,500	4	94040A120	6.79
3¼″	2½″	1⅞″	700	1,500	4	94040A130	7.03
5/16″ Dia.—Thread: 5/16″-18; Wing Span: 1¼″; Washer OD: 11/16″ (Drill Size 5/16″)							
3¼″	2¼″	1¾″	900	2,300	4	94040A150	7.52
⅜″ Dia.—Thread: ⅜″-16; Wing Span: 1½″; Washer OD: 13/16″ (Drill Size ⅜″)							
3¾″	2½″	1⅝″	1,000	3,000	4	94040A180	9.82
4½″	3⅛″	3¼″	1,000	3,000	4	94040A190	11.39
6″	4½″	4″	1,800	3,000	1	94255A500	5.55

Internally Threaded Style

Thread Size	Lg.	Usable Lg.	Wing Span	Drill Size	Ultimate Pull Out Strength, lbs.	Pkg. Qty.		Pkg.
⅜″-16	2″	1½″	2″	½″	3,200	1	94255A100	$10.14
½″-13	2¼″	1⅝″	2″	⅝″	5,800	1	94255A200	15.39

Never-Drop Toggle Anchors

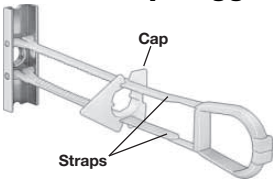

Stop replacing anchors every time you change a fixture. When you unthread the screw, these anchors stay put. To install, push the toggle through a drilled hole and pull the anchor back toward you until the toggle rests flush against the wall. Then slide the cap up to the wall and snap off the straps. Next, position your fixture, insert a machine screw (not included), and tighten. Minimum screw length equals wall and fixture thicknesses plus ½″.

Anchor body is plastic. Class 2B thread fit. Ultimate pull-out and shear strengths are based on tests in concrete block. Ultimate shear strength is the force the side of an anchor can withstand before breaking.

For Screw Size	Usable Lg.	Drill Size	Ultimate Strength, lbs. Pull Out	Shear	Pkg. Qty.		Pkg.
With Zinc-Plated Steel Toggle—Wing Span: 2″							
10-24	⅜″-3⅝″	½″	800	800	10	97802A314	$8.03
¼″-20	⅜″-3⅝″	½″	1,000	1,000	10	97802A316	8.03
¼″-20	2″ -9½″	½″	1,000	1,000	5	97802A319	8.80
⅜″-16	⅜″-2½″	¾″	1,700	1,700	5	97802A317	7.31
½″-13	⅜″-2½″	¾″	2,000	2,000	5	97802A318	7.79
With 18-8 Stainless Steel Toggle—Wing Span: 2″							
10-24	⅜″-3⅝″	½″	800	800	1	98184A411	3.61
¼″-20	⅜″-3⅝″	½″	1,000	1,000	1	98184A413	3.64
⅜″-16	⅜″-2½″	¾″	1,000	1,000	1	98184A415	5.75
½″-13	⅜″-2½″	¾″	2,000	2,000	1	98184A417	5.97

Warning! ***Allowable pull-out and shear strength are 25% of ultimate values or less, as req'd by building authorities.***

About Spring Pins

Because spring pins are larger than the hole into which they're installed, tension against the hole wall holds them in place.

Slotted Spring Pins

End View

Slotted spring pins are also known as roll, tension, split, and expansion pins. Because the slot is pressed closed when the pins are inserted, they don't flex after installation.

Coiled Spring Pins

End View

Coiled spring pins are flexible after installation so they absorb shock and vibration better than slotted spring pins. They also have higher dynamic load capacities and accommodate wider hole tolerances.

For technical drawings and 3-D models, go to mcmaster.com.

Slotted Spring Pins

Use these versatile pins for fastening, pivoting, and holding. Ends are beveled or rounded to aid insertion. Actual diameter is slightly larger than the diameter shown, allowing pins to fit tightly when installed. Wall thickness is approx. 20% of the diameter. For the best fit, your hole should be equal to or slightly larger than the diameter shown. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Meet ASME B18.8.2.

***18-8 Stainless Steel*—**The most corrosion resistant. May be mildly magnetic. Not rated for hardness.

***Type 420 Stainless Steel*—**Stronger than 18-8 stainless steel and more corrosion resistant than steel. It is magnetic. Minimum Rockwell hardness is C43.

Zinc-Plated Steel and ***Steel*—**Stronger than 18-8 stainless steel and just as strong as Type 420 stainless steel. Zinc-plated steel is more rust resistant than steel. Minimum Rockwell hardness is C43.

	18-8 Stainless Steel			Type 420 Stainless Steel			Zinc-Plated Steel			Steel		
Lg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.
1/16" Dia.*—*Breaks at 250 lbs. (18-8 Stainless Steel), 430 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)												
3/16"	100	92373A103	$3.12	100	92383A100	$4.76	500	90692A074	$8.26	500	98296A015	$7.75
1/4"	100	92373A105	5.44	100	92383A102	4.32	500	90692A078	8.49	500	98296A019	7.71
5/16"	100	92373A106	5.47	100	92383A103	4.42	500	90692A079	8.63	500	98296A021	8.26
3/8"	100	92373A107	5.89	100	92383A104	4.73	500	90692A082	8.74	500	98296A023	8.37
7/16"	100	92373A108	6.21	100	92383A105	6.00	500	90692A084	8.83	500	98296A025	8.34
1/2"	100	92373A109	6.49	100	92383A106	5.76	250	90692A086	5.53	250	98296A027	4.97
9/16"	100	92373A110	5.38	100	92383A107	6.63	250	90692A088	5.70	250	98296A026	6.60
5/8"	100	92373A111	6.75	100	92383A108	6.79	250	90692A090	5.93	250	98296A031	5.50
11/16"	100	92373A112	6.81	100	92383A109	7.10	250	90692A092	7.80	250	98296A029	6.74
3/4"	100	92373A113	7.06	100	92383A110	7.34	250	90692A094	6.17	250	98296A035	5.70
13/16"	100	92373A014	9.26	100	92383A037	5.90	100	90692A111	5.34	100	98296A037	5.20
7/8"	100	92373A114	9.40	100	92383A112	7.21	100	90692A096	5.40	100	98296A039	2.40
15/16"	100	92373A015	9.06	100	92383A041	6.52	100	90692A113	5.88	100	98296A041	5.70
1"	100	92373A115	10.12	100	92383A114	8.46	100	90692A098	2.94	100	98296A043	2.61
5/64" Dia.*—*Breaks at 450 lbs. (18-8 Stainless Steel), 800 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)												
3/16"	100	92373A117	6.04	100	92383A149	5.57	250	90692A100	13.02	250	98296A119	6.61
1/4"	100	92373A118	5.29	100	92383A151	5.58	250	90692A101	5.68	250	98296A121	5.21
5/16"	100	92373A120	4.97	100	92383A152	5.61	250	90692A102	6.73	250	98296A122	5.89
3/8"	100	92373A122	5.24	100	92383A153	5.71	250	90692A103	5.90	250	98296A123	5.44
7/16"	100	92373A124	6.61	100	92383A154	6.59	250	90692A104	7.96	250	98296A124	6.44
1/2"	100	92373A126	5.16	100	92383A155	6.09	250	90692A905	5.77	250	98296A125	5.22
9/16"	100	92373A027	6.61	100	92383A156	6.75	250	90692A906	6.55	250	98296A126	6.60
5/8"	100	92373A128	6.75	100	92383A157	8.14	250	90692A907	6.86	250	98296A127	6.10
11/16"	100	92373A129	6.92	100	92383A161	7.43	250	90692A908	8.88	250	98296A128	8.28
3/4"	100	92373A130	7.43	100	92383A159	8.63	250	90692A909	6.19	250	98296A129	6.26
13/16"	100	92373A029	7.28	100	92383A162	8.90	250	90692A910	8.42	250	98296A130	10.27
7/8"	100	92373A131	7.42	100	92383A160	10.20	250	90692A911	7.68	250	98296A131	6.90
1"	100	92373A132	8.33	100	92383A163	8.28	250	90692A913	8.54	250	98296A133	7.60
1 1/4"	100	92373A133	7.59	100	92383A165	8.03	250	90692A915	6.76	250	98296A143	10.36
1 1/2"	100	92373A134	12.24	100	92383A167	10.47	250	90692A117	8.25	250	98296A149	9.49
3/32" Dia.*—*Breaks at 650 lbs. (18-8 Stainless Steel), 1,100 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)												
3/16"	100	92373A138	5.00	100	92383A198	5.21	500	90692A137	9.60	500	98296A821	17.97
1/4"	100	92373A139	2.85	100	92383A200	4.57	500	90692A139	9.78	500	98296A825	7.59
5/16"	100	92373A140	2.96	100	92383A201	4.82	500	90692A140	9.50	500	98296A829	8.57
3/8"	100	92373A141	3.18	100	92383A202	4.97	500	90692A141	10.09	500	98296A833	7.65
7/16"	100	92373A142	3.38	100	92383A203	5.21	500	90692A142	10.03	500	98296A837	8.74
1/2"	100	92373A143	3.62	100	92383A204	6.46	500	90692A143	10.36	500	98296A841	8.35
9/16"	100	92373A144	3.79	100	92383A205	5.96	500	90692A144	10.56	500	98296A845	8.75
5/8"	100	92373A145	3.84	100	92383A206	7.11	500	90692A145	12.23	500	98296A849	8.18
11/16"	100	92373A146	7.25	100	92383A207	6.49	500	90692A146	11.30	250	98296A851	7.22
3/4"	100	92373A147	4.01	100	92383A208	7.77	250	90692A147	7.75	250	98296A853	6.38
13/16"	100	92373A011	5.78	100	92383A209	8.34	250	90692A009	9.98	250	98296A855	9.54
7/8"	100	92373A148	5.70	100	92383A210	8.13	250	90692A148	8.05	250	98296A857	6.94
15/16"	100	92373A048	7.54	100	92383A859	7.76	250	90692A150	12.46	250	98296A859	11.62
1"	100	92373A149	5.06	100	92383A212	8.67	250	90692A149	8.36	250	98296A861	7.38
1 1/8"	100	92373A151	13.29	100	92383A213	9.15	250	90692A153	10.85	250	98296A865	9.00
1 1/4"	100	92373A152	13.94	100	92383A214	9.80	250	90692A155	14.87	250	98296A869	8.67
1 3/8"	100	92373A013	9.56	100	92383A215	14.28	250	90692A157	16.31	250	98296A871	12.17
1 1/2"	100	92373A153	7.30	100	92383A216	14.98	250	90692A159	17.36	250	98296A873	9.44
1/8" Dia.*—*Breaks at 1,000 lbs. (18-8 Stainless Steel), 1,800 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)												
1/4"	100	92373A173	5.08	100	92383A690	5.80	250	90692A690	5.15	500	98296A959	8.77
5/16"	100	92373A174	5.76	100	92383A707	6.70	250	90692A691	7.44	500	98296A875	9.73
3/8"	100	92373A175	4.18	100	92383A691	6.69	250	90692A692	6.13	500	98296A876	9.12
7/16"	100	92373A176	4.49	100	92383A692	6.73	250	90692A693	5.96	500	98296A960	9.61
1/2"	100	92373A177	4.48	100	92383A693	7.04	250	90692A694	6.27	500	98296A877	9.96
9/16"	100	92373A178	4.75	100	92383A694	7.36	250	90692A695	6.60	500	98296A878	10.47

(Continued on following page)

Slotted Spring Pins *(Continued from previous page)*

Use these versatile pins for fastening, pivoting, and holding. Ends are beveled or rounded to aid insertion. Actual diameter is slightly larger than the diameter shown, allowing pins to fit tightly when installed. Wall thickness is approx. 20% of the diameter. For the best fit, your hole should be equal to or slightly larger than the diameter shown. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Meet ASME B18.8.2.

***18-8 Stainless Steel*—**The most corrosion resistant. May be mildly magnetic. Not rated for hardness.

***Type 420 Stainless Steel*—**Stronger than 18-8 stainless steel and more corrosion resistant than steel. It is magnetic. Minimum Rockwell hardness is C43.

Zinc-Plated Steel and ***Steel*—**Stronger than 18-8 stainless steel and just as strong as Type 420 stainless steel. Zinc-plated steel is more rust resistant than steel. Minimum Rockwell hardness is C43.

	18-8 Stainless Steel			Type 420 Stainless Steel			Zinc-Plated Steel			Steel		
Lg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.
1/8″ Dia. (Cont.)—Breaks at 1,000 lbs. (18-8 Stainless Steel), 1,800 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)												
5/8″	100	92373A179	$4.92	100	92383A695	$7.90	250	90692A696	$6.06	250	98296A879	$7.08
11/16″	100	92373A180	5.24	100	92383A696	8.05	250	90692A697	7.66	250	98296A880	7.39
3/4″	100	92373A181	5.47	100	92383A697	8.57	250	90692A698	8.90	250	98296A881	8.61
13/16″	100	92373A022	10.07	100	92383A698	9.24	250	90692A015	8.75	250	98296A965	10.41
7/8″	100	92373A182	6.38	100	92383A699	9.64	250	90692A699	9.53	250	98296A882	8.53
15/16″	100	92373A082	10.26	100	92383A099	7.05	100	90692A016	7.60	100	98296A082	6.90
1″	100	92373A183	7.17	100	92383A700	9.11	250	90692A700	10.13	250	98296A883	8.83
1 1/8″	100	92373A184	7.75	100	92383A701	10.04	250	90692A017	14.83	250	98296A884	8.86
1 1/4″	100	92373A185	8.59	100	92383A702	13.81	250	90692A701	10.90	250	98296A885	9.00
1 3/8″	100	92373A186	9.42	100	92383A703	14.94	250	90692A787	11.17	250	98296A886	9.37
1 1/2″	100	92373A187	10.36	100	92383A704	15.82	250	90692A702	12.60	250	98296A887	10.70
1 5/8″	50	92373A188	11.84	50	92383A010	8.43	100	90692A019	6.28	100	98296A888	4.97
1 3/4″	50	92373A189	7.40	50	92383A705	8.70	100	90692A703	6.55	100	98296A889	4.47
1 7/8″	50	92373A190	12.63	50	92383A012	9.34	100	90692A704	6.47	100	98296A966	8.15
2″	25	92373A191	7.16	25	92383A706	5.08	100	90692A705	7.73	100	98296A890	5.47
2 1/4″	25	92373A193	8.23	25	92383A708	5.13	100	90692A706	8.46	100	98296A967	29.07
2 1/2″	25	92373A195	8.72	25	92383A709	6.12	100	90692A707	9.09	100	98296A969	10.86
9/64″ Dia.—Breaks at 1,200 lbs. (18-8 Stainless Steel), 2,100 lbs. (Type 420 Stainless Steel, Zinc Plated Steel, and Steel)												
1/2″	50	92373A201	8.90	50	92383A501	12.83	50	90692A801	10.72	50	98296A201	11.51
3/4″	50	92373A203	11.06	25	92383A503	8.80	50	90692A803	6.50	50	98296A203	5.00
1″	50	92373A205	7.00	25	92383A505	5.94	50	90692A805	7.12	50	98296A205	5.71
1 1/2″	50	92373A207	8.76	25	92383A510	7.20	50	90692A809	11.22	50	98296A210	7.00
5/32″ Dia.—Breaks at 1,600 lbs. (18-8 Stainless Steel), 2,700 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)												
3/8″	100	92373A212	6.27	100	92383A710	8.80	100	90692A708	5.91	100	98296A891	4.17
7/16″	100	92373A012	8.20	100	92383A226	8.36	100	90692A008	8.74	100	98296A091	6.49
1/2″	100	92373A211	7.62	100	92383A711	7.78	100	90692A709	3.19	100	98296A892	2.58
9/16″	100	92373A024	9.82	100	92383A227	8.94	100	90692A010	8.09	100	98296A092	7.60
5/8″	100	92373A213	7.33	100	92383A712	8.12	100	90692A710	3.43	100	98296A893	2.85
3/4″	100	92373A215	8.20	100	92383A713	9.51	100	90692A711	4.15	100	98296A894	3.14
7/8″	100	92373A216	9.04	100	92383A714	13.24	100	90692A712	4.56	100	98296A895	3.36
1″	100	92373A217	10.13	100	92383A715	13.25	100	90692A713	4.92	100	98296A896	4.04
1 1/8″	100	92373A225	12.78	100	92383A716	13.11	100	90692A021	5.82	100	98296A899	4.69
1 1/4″	100	92373A218	11.88	100	92383A717	16.40	100	90692A714	5.62	100	98296A897	4.79
1 3/8″	25	92373A031	5.43	25	92383A718	4.50	100	90692A023	6.55	100	98296A971	6.76
1 1/2″	25	92373A219	3.80	25	92383A719	4.36	100	90692A715	6.50	100	98296A898	5.57
1 3/4″	25	92373A221	9.27	25	92383A720	4.99	100	90692A716	6.97	100	98296A900	6.09
2″	25	92373A223	12.70	25	92383A721	5.84	100	90692A717	7.79	100	98296A901	6.94
2 1/2″	25	92373A229	14.68	25	92383A722	7.39	100	90692A718	10.13	100	98296A902	8.83
3/16″ Dia.—Breaks at 2,400 lbs. (18-8 Stainless Steel), 4,100 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)												
3/8″	50	92373A241	10.62	50	92383A736	3.53	250	90692A719	9.57	250	98296A903	18.09
7/16″	50	92373A243	11.34	50	92383A021	14.82	250	90692A720	10.37	250	98296A904	8.37
1/2″	50	92373A245	5.57	50	92383A724	5.05	250	90692A721	8.27	250	98296A905	7.53
9/16″	50	92373A246	5.88	50	92383A723	5.91	250	90692A731	9.00	250	98296A906	7.98
5/8″	50	92373A247	6.17	50	92383A725	5.62	250	90692A722	8.59	250	98296A907	8.58
11/16″	50	92373A248	12.46	50	92383A726	6.14	250	90692A784	11.17	250	98296A991	14.88
3/4″	50	92373A249	6.92	50	92383A727	6.48	250	90692A723	11.00	250	98296A908	8.73
13/16″	50	92373A042	13.32	50	92383A728	7.49	250	90692A032	14.75	250	98296A874	9.17
7/8″	50	92373A250	7.53	50	92383A729	7.34	250	90692A724	10.85	250	98296A909	9.63
1″	50	92373A251	10.26	50	92383A730	8.08	250	90692A725	12.66	250	98296A910	10.10
1 1/8″	50	92373A252	10.81	50	92383A731	9.54	250	90692A726	14.77	250	98296A911	11.80
1 1/4″	50	92373A253	8.88	50	92383A732	9.72	100	90692A727	7.17	100	98296A912	6.05
1 3/8″	50	92373A254	13.02	50	92383A733	10.51	100	90692A786	7.70	100	98296A913	6.51
1 1/2″	25	92373A261	8.61	25	92383A734	5.86	100	90692A728	8.00	100	98296A914	7.01
1 5/8″	25	92373A262	8.40	25	92383A735	7.33	100	90692A732	9.10	100	98296A915	7.60
1 3/4″	25	92373A263	10.56	25	92383A737	7.13	100	90692A729	9.43	100	98296A916	7.80
1 7/8″	25	92373A264	12.28	25	92383A740	8.00	100	90692A733	10.45	100	98296A917	8.73
2″	25	92373A265	10.21	25	92383A738	7.86	100	90692A730	10.09	100	98296A918	7.23
2 1/4″	25	92373A266	11.45	25	92383A739	8.09	100	90692A734	12.10	100	98296A919	9.72
2 1/2″	25	92373A267	11.11	25	92383A741	9.52	100	90692A735	12.58	100	98296A920	10.20
2 3/4″	25	92373A269	14.26	25	92383A028	13.05	50	90692A736	7.17	50	98296A998	10.17
3″	25	92373A271	14.97	25	92383A742	15.89	50	90692A737	8.50	50	98296A921	7.53
7/32″ Dia.—Breaks at 3,400 lbs. (18-8 Stainless Steel), 5,800 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)												
1/2″	50	92373A301	6.52	50	92383A399	4.38	100	90692A293	10.83	100	98296A275	6.43
5/8″	25	92373A305	8.35	25	92383A401	3.53	100	90692A295	10.31	100	98296A280	6.15
3/4″	25	92373A309	9.55	25	92383A403	4.07	100	90692A297	6.50	100	98296A296	5.36
1″	25	92373A313	10.46	25	92383A407	5.21	100	90692A299	7.73	100	98296A310	6.17
1 1/4″	25	92373A318	7.47	25	92383A409	6.30	100	90692A301	8.93	100	98296A312	7.19
1 1/2″	25	92373A322	7.80	25	92383A411	7.44	100	90692A304	10.13	100	98296A315	7.80

(Continued on following page)

For information about spring pins, see page 3323.

Slotted Spring Pins *(Continued from previous page)*

Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Type 420 Stainless Steel Pkg. Qty.		Pkg.	Zinc-Plated Steel Pkg. Qty.		Pkg.	Steel Pkg. Qty.		Pkg.
7/32" Dia. (Cont.)— *Breaks at 3,400 lbs. (18-8 Stainless Steel), 5,800 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)*												
1 3/4"	25	92373A326	$12.06	25	92383A414	$8.51	100	90692A306	$10.57	100	98296A316	$11.96
2"	25	92373A331	10.33	25	92383A416	9.65	100	90692A308	12.57	100	98296A317	9.46
2 1/4"	10	92373A333	8.48	10	92383A417	4.66	50	90692A310	7.47	50	98296A319	6.48
2 1/2"	10	92373A336	7.38	10	92383A418	4.82	50	90692A312	8.54	50	98296A323	7.22
2 3/4"	10	92373A338	9.49	10	92383A422	5.51	50	90692A314	10.50	50	98296A327	9.56
3"	10	92373A341	10.71	10	92383A426	5.64	50	90692A316	9.10	50	98296A331	9.11
1/4" Dia.— *Breaks at 4,100 lbs. (18-8 Stainless Steel), 7,000 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)*												
3/8"	50	92373A360	9.38	—	—	—	—	—	—	—	—	—
1/2"	25	92373A366	6.34	100	92383A743	11.36	100	90692A738	7.26	100	98296A922	6.55
9/16"	50	92373A361	8.14	50	92383A370	8.78	100	90692A038	9.60	100	98296A022	10.60
5/8"	50	92373A363	8.67	50	92383A744	7.97	100	90692A739	6.31	100	98296A923	5.28
11/16"	50	92373A364	9.10	50	92383A364	9.82	100	90692A039	10.80	100	98296A024	11.86
3/4"	50	92373A365	10.35	50	92383A745	10.12	100	90692A740	6.80	100	98296A924	5.64
7/8"	50	92373A367	11.04	50	92383A746	11.59	100	90692A741	7.54	100	98296A925	6.21
1"	50	92373A369	12.51	50	92383A747	13.50	100	90692A742	8.20	100	98296A926	6.76
1 1/8"	25	92373A371	8.87	25	92383A748	7.30	100	90692A743	8.84	100	98296A927	7.23
1 1/4"	25	92373A373	8.61	25	92383A749	8.12	100	90692A744	9.83	100	98296A928	7.35
1 3/8"	25	92373A375	7.71	25	92383A750	9.43	100	90692A745	10.42	100	98296A929	8.02
1 1/2"	25	92373A377	8.22	25	92383A751	9.74	100	90692A746	11.30	100	98296A930	8.73
1 5/8"	25	92373A378	10.00	25	92383A752	12.39	50	90692A043	6.64	50	98296A981	9.46
1 3/4"	25	92373A379	10.27	25	92383A753	14.66	50	90692A748	7.87	50	98296A931	5.85
1 7/8"	10	92373A380	8.08	10	92383A030	4.48	50	90692A747	8.02	50	98296A932	6.05
2"	10	92373A381	6.10	10	92383A754	4.85	50	90692A749	8.71	50	98296A933	6.37
2 1/4"	10	92373A382	7.34	10	92383A755	5.64	50	90692A750	8.45	50	98296A934	7.00
2 1/2"	10	92373A385	6.59	10	92383A756	6.43	50	90692A751	9.59	50	98296A935	7.79
2 3/4"	10	92373A386	7.97	10	92383A757	6.54	50	90692A752	8.93	50	98296A075	9.79
3"	10	92373A387	8.21	10	92383A758	7.83	50	90692A753	11.04	50	98296A936	8.89
3 1/4"	10	92373A388	8.62	10	92383A759	9.08	50	90692A754	10.97	50	98296A081	12.46
3 1/2"	10	92373A389	13.08	10	92383A769	8.96	50	90692A755	12.47	50	98296A937	9.49
4"	5	92373A391	8.00	5	92383A069	9.90	5	90692A055	8.34	5	98296A038	8.31
5/16" Dia.— *Breaks at 6,300 lbs. (18-8 Stainless Steel), 10,800 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)*												
3/4"	25	92373A457	14.96	25	92383A770	8.32	50	90692A756	6.46	50	98296A938	5.26
1"	25	92373A459	11.36	25	92383A771	10.07	50	90692A757	6.73	50	98296A939	5.58
1 1/4"	25	92373A461	13.90	25	92383A773	11.81	50	90692A758	7.87	50	98296A940	6.50
1 1/2"	25	92373A463	15.68	25	92383A772	13.58	50	90692A759	9.24	50	98296A941	7.70
1 3/4"	25	92373A465	18.46	25	92383A774	16.46	50	90692A760	10.37	50	98296A942	8.45
2"	10	92373A467	10.56	10	92383A775	7.49	50	90692A761	11.50	50	98296A943	8.51
2 1/4"	10	92373A468	14.94	10	92383A776	8.20	50	90692A762	12.07	50	98296A001	12.10
2 1/2"	10	92373A469	10.94	10	92383A777	8.97	50	90692A763	14.35	50	98296A944	10.67
2 3/4"	10	92373A470	12.26	10	92383A042	8.95	50	90692A764	13.46	50	98296A003	14.06
3"	10	92373A471	12.80	10	92383A778	9.89	25	90692A765	9.07	25	98296A945	7.03
3 1/4"	5	92373A472	8.91	5	92383A044	5.84	25	90692A766	9.04	25	98296A005	8.81
3 1/2"	5	92373A473	13.20	5	92383A779	6.54	25	90692A767	9.83	25	98296A007	9.00
3 3/4"	5	92373A474	9.45	5	92383A046	7.24	25	90692A768	10.63	25	98296A009	9.63
4"	5	92373A475	10.08	5	92383A780	10.89	25	90692A769	10.78	25	98296A012	9.51
3/8" Dia.— *Breaks at 9,500 lbs. (18-8 Stainless Steel), 16,300 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)*												
3/4"	10	92373A554	5.31	10	92383A781	5.97	50	90692A770	11.86	50	98296A946	10.23
1"	10	92373A556	10.36	10	92383A782	6.94	50	90692A771	9.80	50	98296A947	7.63
1 1/4"	10	92373A557	8.97	10	92383A783	8.96	50	90692A772	11.43	50	98296A948	8.74
1 1/2"	10	92373A558	10.10	10	92383A784	10.07	50	90692A773	12.55	50	98296A949	9.19
1 3/4"	10	92373A559	16.10	10	92383A785	11.46	50	90692A774	14.27	50	98296A950	10.40
2"	10	92373A560	12.08	10	92383A786	14.67	25	90692A775	10.73	25	98296A951	6.99
2 1/4"	10	92373A561	15.83	10	92383A787	15.74	25	90692A776	9.50	25	98296A952	7.75
2 1/2"	5	92373A562	8.81	5	92383A788	8.58	25	90692A778	10.30	25	98296A953	8.34
2 3/4"	5	92373A563	10.56	5	92383A789	9.25	25	90692A785	11.43	25	98296A954	8.54
3"	5	92373A564	9.05	5	92383A790	10.01	25	90692A779	12.17	25	98296A956	8.90
3 1/4"	1	92373A566	2.90	1	92383A051	3.47	25	90692A780	14.55	25	98296A053	12.48
3 1/2"	1	92373A568	3.16	1	92383A791	2.20	25	90692A781	14.44	25	98296A955	10.63
3 3/4"	1	92373A570	3.01	1	92383A053	2.86	10	90692A782	7.03	10	98296A957	7.16
4"	1	92373A572	4.25	1	92383A792	2.73	10	90692A783	8.16	10	98296A958	6.48
7/16" Dia.— *Breaks at 11,500 lbs. (18-8 Stainless Steel), 19,800 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)*												
1 3/4"	5	92373A600	8.80	5	92383A604	8.64	25	90692A589	8.90	25	98296A801	7.16
2"	5	92373A602	13.30	5	92383A605	7.76	25	90692A591	9.86	25	98296A803	7.94
2 1/2"	5	92373A606	25.21	5	92383A607	9.30	10	90692A592	5.70	10	98296A805	6.69
3"	5	92373A611	23.20	5	92383A609	10.85	10	90692A593	6.96	10	98296A808	5.07
4"	1	92373A629	3.25	1	92383A611	2.76	10	90692A595	7.48	10	98296A816	8.65
1/2" Dia.— *Breaks at 15,800 lbs. (18-8 Stainless Steel), 27,000 lbs. (Type 420 Stainless Steel, Zinc-Plated Steel, and Steel)*												
1 1/4"	5	92373A671	11.61	5	92383A670	7.54	25	90692A661	9.22	25	98296A661	7.61
1 1/2"	5	92373A675	18.05	5	92383A672	7.60	25	90692A662	10.38	25	98296A662	8.58
1 3/4"	5	92373A677	7.49	5	92383A673	6.76	10	90692A659	4.90	10	98296A063	8.87
2"	1	92373A679	2.93	1	92383A674	3.04	10	90692A668	6.38	10	98296A663	4.72
2 1/4"	1	92373A680	4.46	1	92383A675	3.18	10	90692A664	6.44	10	98296A067	5.97
2 1/2"	1	92373A681	3.97	1	92383A676	3.68	10	90692A680	7.43	10	98296A671	5.82
2 3/4"	1	92373A682	3.11	1	92383A677	3.57	10	90692A682	7.51	10	98296A069	6.31
3"	1	92373A683	9.70	1	92383A678	3.55	10	90692A672	7.22	10	98296A675	6.62
3 1/4"	1	92373A684	3.40	1	92383A679	4.27	10	90692A684	8.47	10	98296A072	9.82
3 1/2"	1	92373A685	3.60	1	92383A680	4.50	10	90692A676	9.87	10	98296A679	7.38
3 3/4"	1	92373A686	3.72	1	92383A681	4.78	10	90692A686	11.70	10	98296A074	10.49
4"	1	92373A687	11.44	1	92383A682	5.42	10	90692A688	11.63	10	98296A683	8.00
5/8" Dia.— *Breaks at 46,000 lbs. (Steel)*												
3"	—	—	—	—	—	—	—	—	—	1	98296A691	13.94
4"	—	—	—	—	—	—	—	—	—	1	98296A693	19.09

For information about spring pins, see page 3323.

Metric Slotted Spring Pins

Often used for fastening, pivoting, and holding. To aid insertion, M1 to M8 diameter pins are beveled on both ends; M10 and M12 diameter pins have at least one beveled end. Actual diameter is slightly larger than the diameter shown, allowing pins to fit tightly when installed. Wall thickness is approx. 20% of the diameter. For the best fit, your hole should be equal to or slightly larger than the diameter shown. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. All meet ISO 8752 (similar to DIN 1481).

18-8 Stainless Steel— More corrosion resistant than steel. May be mildly magnetic. Not rated for hardness or breaking strength.

Steel— Heat treated and stronger than 18-8 stainless steel. Minimum Rockwell hardness is C42.

Lg., mm	18-8 Stainless Steel Pkg. Qty.		Pkg.	Steel Pkg. Qty.		Pkg.
M1 Dia.—Breaks at 150 lbs. (Steel); 18-8 SS not rated						
4	100	91610A080	$5.59	100	91611A065	$13.33
6	100	91610A082	5.71	100	91611A067	4.12
8	100	91610A084	5.71	100	91611A069	4.12
M1.5 Dia.—Breaks at 350 lbs. (Steel); 18-8 SS not rated						
4	100	91610A104	4.88	100	91611A076	10.34
5	100	91610A106	4.88	100	91611A079	7.93
6	25	91610A108	6.81	100	91611A081	8.26
8	25	91610A112	4.52	100	91611A083	9.56
10	25	91610A114	1.52	100	91611A084	3.47
12	25	91610A116	7.88	100	91611A085	9.66
M2 Dia.—Breaks at 600 lbs. (Steel); 18-8 SS not rated						
4	100	91610A200	4.00	200	91611A100	5.26
5	100	91610A201	4.00	200	91611A101	5.55
6	25	91610A202	2.49	200	91611A102	14.12
8	25	91610A204	3.02	200	91611A103	13.14
10	25	91610A205	2.34	200	91611A104	13.27
12	25	91610A206	2.39	200	91611A105	13.32
14	25	91610A207	2.52	200	91611A106	13.45
16	25	91610A208	2.69	200	91611A107	13.49
18	25	91610A209	3.32	200	91611A108	13.55
20	25	91610A210	3.42	100	91611A109	8.24
22	25	91610A213	1.59	100	91611A110	4.24
24	25	91610A211	6.02	100	91611A111	8.58
30	25	91610A212	5.10	100	91611A114	10.38
M2.5 Dia.—Breaks at 950 lbs. (Steel); 18-8 SS not rated						
10	25	91610A247	6.38	100	91611A096	4.15
14	25	91610A249	1.94	100	91611A095	4.24
20	25	91610A251	6.60	100	91611A097	8.74
24	—	—	—	100	91611A098	4.88
30	25	91610A254	7.40	100	91611A099	12.60
M3 Dia.—Breaks at 1,400 lbs. (Steel); 18-8 SS not rated						
4	100	91610A400	5.06	200	91611A149	6.96
6	100	91610A402	5.29	200	91611A151	7.44
8	25	91610A404	5.80	200	91611A153	10.73
10	25	91610A405	4.12	200	91611A154	10.54
12	25	91610A406	3.69	200	91611A155	10.65
14	25	91610A407	4.51	200	91611A156	10.65
16	25	91610A408	4.54	200	91611A157	11.03
18	25	91610A409	6.10	200	91611A158	11.63
20	10	91610A410	1.97	200	91611A159	12.11
22	10	91610A413	.98	100	91611A160	5.41
24	10	91610A411	2.08	100	91611A161	7.01
26	10	91610A418	3.60	100	91611A170	7.08
28	10	91610A421	3.72	100	91611A171	5.49
30	10	91610A412	2.29	100	91611A172	7.97
35	—	—	—	100	91611A173	7.00
40	10	91610A414	3.15	100	91611A175	9.39
M3.5 Dia.—Breaks at 2,000 lbs. (Steel); 18-8 SS not rated						
10	50	91610A450	10.65	100	91611A185	5.59
20	50	91610A452	11.65	100	91611A187	5.29
30	50	91610A454	12.65	100	91611A189	7.53
M4 Dia.—Breaks at 2,500 lbs. (Steel); 18-8 SS not rated						
6	10	91610A502	3.36	100	91611A202	6.69
8	10	91610A503	1.23	100	91611A203	5.29
10	10	91610A504	3.32	100	91611A204	7.07
12	10	91610A506	1.90	100	91611A205	6.90
14	10	91610A507	3.60	100	91611A206	7.11
16	10	91610A508	2.40	100	91611A207	7.19
18	10	91610A509	2.77	100	91611A208	7.29
20	10	91610A510	2.87	100	91611A209	7.41
22	10	91610A518	1.65	100	91611A210	6.24
24	10	91610A511	2.85	100	91611A211	7.66
M4 Dia. (Cont.)						
26	10	91610A519	$3.71	100	91611A212	$7.73
30	10	91610A512	3.22	100	91611A213	8.52
32	10	91610A513	3.68	100	91611A215	9.02
36	10	91610A521	4.66	100	91611A216	9.29
40	10	91610A514	4.03	100	91611A217	10.09
45	10	91610A515	4.52	100	91611A218	10.71
50	10	91610A517	13.79	50	91611A219	8.65
M5 Dia.—Breaks at 3,900 lbs. (Steel); 18-8 SS not rated						
10	10	91610A599	3.43	100	91611A303	5.96
12	10	91610A601	3.46	100	91611A304	8.38
14	10	91610A603	2.13	100	91611A305	7.00
16	10	91610A605	3.54	100	91611A306	8.71
18	10	91610A607	2.30	100	91611A307	7.71
20	10	91610A610	3.55	100	91611A308	9.35
22	10	91610A621	4.80	100	91611A309	9.70
24	10	91610A611	4.56	100	91611A310	10.09
26	10	91610A624	5.16	100	91611A312	10.36
28	10	91610A626	2.75	100	91611A311	9.41
30	10	91610A612	5.49	100	91611A313	10.99
32	10	91610A628	2.92	100	91611A314	10.06
36	10	91610A613	5.51	100	91611A315	12.79
40	10	91610A614	6.95	100	91611A316	13.71
45	10	91610A615	3.52	100	91611A317	12.29
50	10	91610A616	7.95	100	91611A318	14.46
M6 Dia.—Breaks at 5,800 lbs. (Steel); 18-8 SS not rated						
12	10	91610A702	4.96	100	91611A401	9.02
14	10	91610A703	3.65	100	91611A402	9.22
16	10	91610A705	5.08	100	91611A403	9.77
20	10	91610A710	5.75	100	91611A405	10.99
24	10	91610A711	6.77	100	91611A407	12.23
26	10	91610A719	6.52	100	91611A408	12.96
30	10	91610A712	7.31	100	91611A410	14.40
36	10	91610A713	8.64	50	91611A412	8.70
40	10	91610A714	9.94	50	91611A413	8.79
45	10	91610A722	10.12	50	91611A414	10.59
50	5	91610A716	7.68	50	91611A415	10.67
60	5	91610A724	3.13	25	91611A417	5.04
100	—	—	—	10	91611A447	1.05
M8 Dia.—Breaks at 9,600 lbs. (Steel); 18-8 SS not rated						
22	10	91610A805	9.00	50	91611A508	9.06
26	10	91610A807	8.92	50	91611A509	10.37
30	10	91610A812	12.55	50	91611A510	11.57
40	5	91610A814	10.08	50	91611A513	13.86
50	1	91610A816	2.35	25	91611A515	8.53
55	1	91610A821	3.57	25	91611A520	9.52
60	1	91610A825	2.41	25	91611A521	10.53
100	1	91610A845	9.97	5	91611A544	4.90
M10 Dia.—Breaks at 15,700 lbs. (Steel); 18-8 SS not rated						
24	1	91610A907	2.25	25	91611A607	9.95
30	1	91610A916	1.98	25	91611A610	8.75
36	1	91610A919	2.75	25	91611A612	13.92
40	1	91610A923	2.50	25	91611A613	10.73
50	1	91610A927	3.36	25	91611A615	12.83
60	1	91610A931	5.08	10	91611A621	6.97
80	1	91610A936	6.00	10	91611A625	10.97
100	1	91610A957	6.86	5	91611A641	6.75
M12 Dia.—Breaks at 23,000 lbs. (Steel); 18-8 SS not rated						
30	—	—	—	10	91611A711	14.96
40	—	—	—	10	91611A713	14.20
50	—	—	—	10	91611A715	14.83
60	—	—	—	5	91611A721	8.66

Pin Insertion Tools with Sleeve-Style Pin Holder

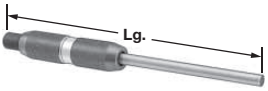

To install spring, dowel, and taper pins, slide the sleeve over the pin and strike the head of the tool with a hammer. O-rings hold the pin securely in the tool. Can also be used for pin removal and disassembly.

5-piece assortment includes one of each tool listed. Comes in a plastic case.

For Pin Dia.	Lg.		
1/8″ (M3)	5″	98290A110	$24.00
3/16″	5 3/8″	98290A130	23.91
1/4″ (M6)	6 1/4″	98290A150	25.20
5/16″	6 3/8″	98290A170	25.28
3/8″	6 1/2″	98290A190	26.62
5-Piece Assortment		98290A230	$123.54

Mil. Spec. Slotted Spring Pins

Pins meet more stringent specifications (MS16562) than standard slotted spring pins. Use to fasten, pivot, and hold a variety of materials. Ends are beveled or rounded to aid insertion. Actual diameter is slightly larger than the diameter shown, allowing pins to fit tightly when installed. Wall thickness is approx. 20% of the diameter. For the best fit, your hole should be equal to or slightly larger than the diameter shown. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces.

Black Steel—Stronger than 400 series stainless steel. Finish is black phosphate. Min. Rockwell hardness is C46.

400 Series Stainless Steel—More corrosion resistant than black steel. Pins are passivated. Min. Rockwell hardness is C43.

Black Steel

Lg.	Dash No.	Pkg. Qty.		Pkg.
1/16" Dia.—*Breaks at 400 lbs.*				
1/4"	96	50	97855A110	$8.65
3/8"	98	50	97855A120	8.80
3/32" Dia.—*Breaks at 1,000 lbs.*				
1/2"	119	50	97855A130	9.65
3/4"	122	50	97855A140	10.43
1/8" Dia.—*Breaks at 2,100 lbs.*				
1/2"	127	25	97855A150	7.85
5/8"	129	25	97855A160	7.95
3/4"	130	25	97855A170	8.10
1"	132	25	97855A180	8.88
3/16" Dia.—*Breaks at 4,400 lbs.*				
3/4"	142	25	97855A190	$9.68
1"	144	25	97855A200	9.98
1/4" Dia.—*Breaks at 7,700 lbs.*				
3/4"	156	10	97855A210	8.80
7/8"	157	10	97855A220	8.98
1"	158	10	97855A230	9.20
1 1/4"	159	10	97855A240	9.43
1 1/2"	160	10	97855A250	9.75
2"	162	10	97855A260	10.45
3/8" Dia.—*Breaks at 17,600 lbs.*				
1"	171	5	97855A270	$9.30
1 1/2"	173	5	97855A280	10.20
2"	175	5	97855A290	11.18
1/2" Dia.—*Breaks at 25,500 lbs.*				
1 1/2"	184	1	97855A300	4.98
2"	186	1	97855A310	5.25
3"	188	1	97855A320	5.98

400 Series Stainless Steel

Lg.	Dash No.	Pkg. Qty.		Pkg.
1/16" Dia.—*Breaks at 400 lbs.*				
1/4"	190	50	97855A510	7.22
3/8"	192	50	97855A520	7.44
1/2"	194	50	97855A530	7.50
1/8" Dia.—*Breaks at 2,100 lbs.*				
3/8"	219	25	97855A540	8.55
1/2"	221	25	97855A550	8.65
3/4"	224	25	97855A560	9.03
1"	226	25	97855A570	10.08
3/16" Dia.—*Breaks at 4,400 lbs.*				
3/4"	236	10	97855A580	5.38
1"	238	10	97855A590	5.90
1 1/4"	239	10	97855A600	6.35
1/4" Dia.—*Breaks at 7,700 lbs.*				
3/4"	250	5	97855A610	7.83
1"	252	5	97855A620	8.30
1 1/2"	254	5	97855A630	8.98
1/2" Dia.—*Breaks at 25,500 lbs.*				
2"	280	1	97855A640	6.23
3"	282	1	97855A650	7.40

Slotted Spring Pin Assortments

Come in a plastic box.

25-Piece Assortments

Diameter	No. of Pcs.	Length Range		
1/8"	8	1"-1 1/2"		
3/16"	4	1"-1 1/2"		
7/32"	2	1 1/2"		
1/4"	5	1 1/4"-2"		
5/16"	3	1 1/2"-2"		
3/8"	3	1 1/2"-2"		
Type 420 Stainless Steel			90148A540	$8.78
Zinc-Plated Steel			98596A790	5.20

68-Piece Assortments

Diameter	No. of Pcs.	Length		
1/8"	24	1 1/2"		
3/16"	15	1 1/2"		
7/32"	10	1 1/2"		
1/4"	8	1 1/2"		
5/16"	6	1 1/2"		
3/8"	5	1 1/2"		
Type 420 Stainless Steel			90148A810	$18.78
Zinc-Plated Steel			98596A320	10.64

300-Piece Assortments

Diameter	No. of Pcs.	Length Range		
1/16"	45	1/4"-3/4"		
3/32"	45	1/2"-1"		
1/8"	75	5/16"-1"		
3/16"	40	1/2"-1 1/2"		
1/4"	55	1/2"-2 1/2"		
5/16"	20	1"-2 1/2"		
3/8"	20	1"-2 1/2"		
18-8 Stainless Steel			93730A500	$87.92
Type 420 Stainless Steel			90148A316	78.26
Zinc-Plated Steel			98596A412	49.74
Steel			91575A310	42.85

500-Piece Assortments

Diameter	No. of Pcs.	Length Range		
1/16"	75	1/4"-1"		
3/32"	60	1/4"-1"		
1/8"	135	5/16"-2"		
5/32"	20	3/4"-1"		
3/16"	80	1/2"-2"		
1/4"	65	1/2"-3"		
5/16"	30	3/4"-3"		
3/8"	25	1"-3"		
7/16"	10	2"-3"		
18-8 Stainless Steel			93730A300	$139.73
Type 420 Stainless Steel			90148A715	131.40
Zinc-Plated Steel			98596A615	76.08
Steel			91575A620	59.27

750-Piece Assortments

Diameter	No. of Pcs.	Length Range		
1/16"	135	3/16"-1"		
3/32"	90	1/4"-1"		
1/8"	180	5/16"-2"		
5/32"	40	1/2"-1 1/2"		
3/16"	120	1/2"-2 1/2"		
1/4"	85	1/2"-3"		
5/16"	40	3/4"-3"		
3/8"	50	3/4"-3"		
7/16"	10	2"-3"		
18-8 Stainless Steel			93730A900	$219.20
Type 420 Stainless Steel			90148A112	204.99
Zinc-Plated Steel			98596A211	115.70
Steel			91575A930	82.95

Metric 520-Piece Assortments

Diameter	No. of Pcs.	Length Range, mm		
M2	75	10-30		
M3	140	10-40		
M4	115	12-40		
M5	75	20-50		
M6	115	14-50		
18-8 Stainless Steel			98418A147●	$153.33
Zinc-Plated Steel			98418A151	83.75
Steel			98418A148	73.64

●Length range for M3 diameter is 10-30 mm.

Pin Insertion Tools with Magnetic Pin Holder

A magnetic tip holds on to pins making this tool especially handy for angles and hard to reach areas. Use it to install and remove magnetic spring, dowel, and taper pins. Strike the head of the tool with a hammer to insert pins; a spring retracts the tool after insertion.

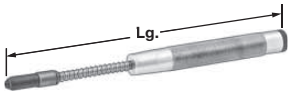

For Pin Dia.	Lg.		
1/16"	5 1/2"	91625A110	$58.04
3/32" (M2.5)	5 3/4"	91625A130	58.04
1/8" (M3)	6"	91625A140	58.04
5/32" (M4)	8 1/2"	91625A150	$68.46
3/16" (M5)	9"	91625A160	63.57
1/4" (M6)	10"	91625A180	63.57

For information about spring pins, see page 3323.

Coiled Spring Pins

After installation, pins remain flexible so they absorb shock and vibration better than slotted spring pins. Ends are beveled or rounded to aid insertion. Actual diameter is slightly larger than the diameter shown, allowing pins to fit tightly when installed. For the best fit, your hole should be equal to or slightly larger than the diameter shown. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. All meet ASME B18.8.2.

18-8 Stainless Steel—More corrosion resistant than Type 420 stainless steel. It may be mildly magnetic. Not rated for hardness.

Type 420 Stainless Steel—Stronger than 18-8 stainless steel and more corrosion resistant than steel. Minimum Rockwell hardness is C46.

Steel—Stronger than 18-8 stainless steel and just as strong as Type 420 stainless steel. Minimum Rockwell hardness is C42. Pins are heat treated.

Extra strength pins are thicker, making them roughly 30% stronger than their standard counterparts.

18-8 Stainless Steel

Lg.	Pkg. Qty.		Pkg.
1/32" Dia.—*Breaking strength not rated*			
1/8"	25	98195A005	$11.90
3/16"	25	98195A010	5.57
1/4"	25	98195A015	9.65
3/8"	25	98195A020	9.88
1/2"	25	98195A025	10.09
5/8"	25	98195A030	11.97
0.039" Dia.—*Breaking strength not rated*			
3/16"	25	98195A050	9.40
1/4"	25	98195A055	9.51
3/8"	25	98195A060	9.72
1/2"	25	98195A065	9.94
3/64" Dia.—*Breaking strength not rated*			
3/16"	25	98195A110	9.18
1/4"	25	98195A115	9.32
3/8"	25	98195A120	9.63
1/2"	25	98195A125	9.94
5/8"	10	98195A130	8.57
0.052" Dia.—*Breaks at 190 lbs.*			
1/8"	25	98195A205	$8.10
1/4"	25	98195A210	8.37
3/8"	25	98195A215	8.60
1/2"	25	98195A220	8.80
1/16" Dia.—*Breaks at 250 lbs.*			
5/16"	50	98195A310	11.40
1/2"	50	98195A315	11.87
7/64" Dia.—*Breaks at 800 lbs.*			
1/4"	25	98195A420	9.30
1/2"	25	98195A425	9.83
1/8" Dia.—*Breaks at 1,100 lbs.*			
3/8"	25	98195A505	10.20
1/2"	25	98195A510	10.90
9/16"	25	98195A515	11.23
3/4"	25	98195A520	11.97
15/16"	10	98195A525	7.17
1/4" Dia.—*Breaks at 4,300 lbs.*			
1"	5	98195A705	8.50
1 1/2"	5	98195A710	11.23
2"	5	98195A715	11.53

Type 420 Stainless Steel

Lg.	Pkg. Qty.		Pkg.
1/32" Dia.—*Breaks at 90 lbs.*			
1/8"	50	93740A005	10.79
3/16"	50	93740A010	11.68
1/4"	50	93740A015	11.76
3/8"	50	93740A020	12.03
1/2"	50	93740A025	12.30
5/8"	25	93740A030	12.50
0.039" Dia.—*Breaks at 130 lbs.*			
3/16"	25	93740A050	12.59
1/4"	25	93740A055	6.63
3/8"	25	93740A060	11.90
1/2"	25	93740A065	6.89
3/64" Dia.—*Breaks at 190 lbs.*			
1/8"	50	93740A070	10.38
3/16"	50	93740A072	10.43
1/4"	50	93740A074	10.69
3/8"	50	93740A076	11.00
1/2"	50	93740A078	11.28
5/8"	25	93740A080	11.69
0.052" Dia.—*Breaks at 250 lbs.*			
1/8"	25	93740A090	8.97
1/4"	25	93740A092	9.86
3/8"	25	93740A094	10.07
1/2"	25	93740A096	7.10
1/16" Dia.—*Breaks at 300 lbs.*			
1/4"	50	93740A101	10.34
5/16"	50	93740A103	7.68
3/8"	50	93740A105	7.91
1/2"	50	93740A106	8.02
5/8"	50	93740A107	8.71
3/4"	50	93740A109	8.86
1"	50	93740A112	9.18
5/64" Dia.—*Breaks at 550 lbs.*			
5/16"	50	93740A622	8.02
3/8"	50	93740A623	8.17
1/2"	50	93740A624	8.99
5/8"	50	93740A625	9.29
3/4"	50	93740A626	9.62
1"	50	93740A627	9.77
3/32" Dia.—*Breaks at 750 lbs.*			
1/4"	50	93740A172	8.92
3/8"	50	93740A175	9.29
1/2"	50	93740A179	9.64
5/8"	50	93740A181	10.08
3/4"	50	93740A184	10.49
1"	50	93740A186	11.27
1 1/2"	50	93740A189	13.59
7/64" Dia.—*Breaks at 1,000 lbs.*			
1/4"	25	93740A192	10.34
1/2"	25	93740A194	10.90
3/4"	10	93740A196	5.60
1"	10	93740A198	6.74
1/8" Dia.—*Breaks at 1,400 lbs.*			
3/8"	50	93740A203	10.58
7/16"	50	93740A206	11.05
1/2"	50	93740A209	12.41
5/8"	50	93740A212	12.49
3/4"	50	93740A215	13.39
7/8"	25	93740A218	7.31
1"	25	93740A221	7.18
1 1/4"	25	93740A224	8.02
1 1/2"	25	93740A227	10.47
2"	25	93740A231	11.68
5/32" Dia.—*Breaks at 2,200 lbs.*			
1/2"	25	93740A264	7.40
3/4"	25	93740A266	8.33
1"	25	93740A269	10.49
1 1/2"	25	93740A272	12.61
2"	10	93740A275	6.22
3/16" Dia.—*Breaks at 3,100 lbs.*			
1/2"	25	93740A311	10.12
5/8"	10	93740A313	7.04
3/4"	10	93740A315	5.02
7/8"	10	93740A317	8.00
1"	10	93740A319	5.67
1 1/2"	10	93740A324	6.28
2"	10	93740A327	7.70
7/32" Dia.—*Breaks at 4,200 lbs.*			
3/4"	25	93740A352	13.65
1"	10	93740A355	6.14
1 1/2"	10	93740A358	7.78
2"	10	93740A362	11.66
1/4" Dia.—*Breaks at 5,500 lbs.*			
3/4"	10	93740A411	10.55
1"	10	93740A413	7.63
1 1/8"	10	93740A418	7.79
1 1/4"	10	93740A422	8.24
1 3/8"	5	93740A424	8.92
1 1/2"	5	93740A426	5.08
1 3/4"	5	93740A427	9.64
2"	5	93740A429	6.02
2 1/2"	5	93740A432	6.98
3"	1	93740A436	3.63

Type 420 Stainless Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
5/16" Dia.—*Breaks at 8,700 lbs.*			
1"	10	93740A608	$11.51
1 1/2"	5	93740A611	7.52
2"	5	93740A613	10.18
5/16" Dia. (Cont.)			
2 1/2"	1	93740A616	$3.10
2 3/4"	1	93740A619	3.23

Extra Strength Type 420 Stainless Steel

Lg.	Pkg. Qty.		Pkg.
3/32" Dia.—*Breaks at 1,100 lbs.*			
1/4"	50	95765A204	13.24
3/8"	50	95765A209	13.91
1/2"	50	95765A215	14.45
5/8"	25	95765A219	7.08
3/4"	25	95765A225	7.43
1"	25	95765A231	8.02
1 1/2"	25	95765A238	10.17
1/8" Dia.—*Breaks at 2,000 lbs.*			
3/8"	25	95765A316	7.75
7/16"	25	95765A321	7.99
1/2"	25	95765A327	8.38
5/8"	25	95765A334	9.03
3/4"	25	95765A339	9.28
7/8"	25	95765A342	10.88
1"	25	95765A348	11.51
1 1/4"	25	95765A354	12.82
1 1/2"	10	95765A359	5.90
2"	10	95765A361	7.39
3/16" Dia.—*Breaks at 4,500 lbs.*			
1/2"	10	95765A408	6.13
5/16" Dia. (Cont.)			
3/4"	10	95765A413	7.09
7/8"	10	95765A415	2.50
1"	10	95765A417	8.09
1 1/4"	5	95765A419	10.78
1 1/2"	5	95765A422	5.39
1 3/4"	5	95765A424	3.10
2"	5	95765A426	6.64
2 1/2"	5	95765A433	8.73
1/4" Dia.—*Breaks at 7,800 lbs.*			
1/2"	5	95765A512	8.56
3/4"	5	95765A514	9.13
1"	5	95765A516	7.73
1 1/8"	5	95765A524	7.33
1 1/4"	5	95765A533	7.72
1 3/8"	5	95765A536	10.98
1 1/2"	5	95765A539	9.10
1 3/4"	5	95765A542	11.24
2"	5	95765A545	9.90
2 1/2"	5	95765A551	11.67

Steel

Lg.	Pkg. Qty.		Pkg.
1/16" Dia.—*Breaks at 300 lbs.*			
1/4"	100	91598A105	4.82
5/16"	100	91598A103	4.79
3/8"	100	91598A104	7.88
1/2"	100	91598A106	4.85
5/8"	100	91598A108	8.32
3/4"	100	91598A110	4.91
1"	100	91598A114	5.23
5/64" Dia.—*Breaks at 550 lbs.*			
5/16"	100	91598A632	4.79
3/8"	100	91598A633	4.85
1/2"	100	91598A634	5.06
5/8"	100	91598A635	5.20
3/4"	100	91598A636	5.00
1"	100	91598A637	5.21
3/32" Dia.—*Breaks at 750 lbs.*			
1/4"	100	91598A200	5.09
3/8"	100	91598A202	5.12
1/2"	100	91598A204	5.17
5/8"	100	91598A206	5.67
3/4"	100	91598A208	5.97
1"	100	91598A212	6.38
1 1/2"	100	91598A216	7.62
7/64" Dia.—*Breaks at 1,000 lbs.*			
1/4"	50	91598A230	7.49
1/2"	50	91598A234	7.94
3/4"	50	91598A238	8.74
1"	50	91598A242	9.51
1 1/2"	25	91598A246	12.69
1/8" Dia.—*Breaks at 1,400 lbs.*			
3/8"	100	91598A250	5.55
7/16"	100	91598A251	5.67
1/2"	100	91598A252	5.80
5/8"	100	91598A253	6.22
3/4"	100	91598A256	6.72
7/8"	100	91598A258	6.81
1"	100	91598A260	7.56
1 1/4"	100	91598A262	8.49
1 1/2"	100	91598A264	10.28
2"	100	91598A268	13.45
5/32" Dia.—*Breaks at 2,200 lbs.*			
1/2"	100	91598A301	7.89
5/8"	100	91598A303	7.92
3/4"	100	91598A305	8.49
7/8"	100	91598A307	10.32
1"	100	91598A309	10.34
1 1/2"	100	91598A313	12.75
2"	50	91598A317	8.61
3/16" Dia.—*Breaks at 3,100 lbs.*			
1/2"	100	91598A350	9.87
5/8"	50	91598A352	10.32
3/4"	50	91598A354	7.11
7/8"	50	91598A356	11.68
1"	50	91598A358	8.09
1 1/4"	25	91598A360	7.44
1 1/2"	25	91598A362	5.41
1 3/4"	25	91598A366	8.60
2"	25	91598A372	6.21
2 1/2"	25	91598A376	8.89
7/32" Dia.—*Breaks at 4,200 lbs.*			
3/4"	50	91598A413	6.83
1"	50	91598A417	8.17
1 1/2"	50	91598A419	10.54
2"	50	91598A423	13.89
1/4" Dia.—*Breaks at 5,500 lbs.*			
3/4"	50	91598A470	13.02
1"	50	91598A474	9.53
1 1/8"	50	91598A478	10.23
1 1/4"	50	91598A482	10.74
1 3/8"	25	91598A484	10.54
1 1/2"	25	91598A486	7.31
1 3/4"	25	91598A488	10.50
2"	25	91598A490	8.77
2 1/4"	10	91598A492	6.24
2 1/2"	10	91598A494	4.34
3"	10	91598A498	4.65
3 1/2"	10	91598A502	5.34
5/16" Dia.—*Breaks at 8,700 lbs.*			
1"	25	91598A524	6.43
1 1/4"	25	91598A526	8.26
1 1/2"	25	91598A528	8.75
1 3/4"	25	91598A530	10.84

(Continued on following page)

Coiled Spring Pins *(Continued from previous page)*

Lg.	Pkg. Qty.		Pkg.
Steel (Cont.)			
5/16″ Dia. (Cont.)—Breaks at 8,700 lbs.			
2″	25	91598A532	$11.93
2½″	25	91598A536	14.33
3″	10	91598A540	6.76
4″	10	91598A544	9.06
3/8″ Dia.—Breaks at 12,600 lbs.			
1″	10	91598A565	8.17
1½″	10	91598A567	12.30
3/8″ Dia. (Cont.)			
2″	10	91598A572	$9.94
2½″	5	91598A574	13.06
3″	5	91598A576	10.77
3½″	5	91598A578	13.06
Extra Strength Steel			
1/16″ Dia.—Breaks at 450 lbs.			
¼″	50	95755A051	8.21
½″	50	95755A053	8.62
1″	10	95755A057	6.72
3/32″ Dia.—Breaks at 1,100 lbs.			
¼″	100	95755A111	8.52
3/8″	100	95755A116	7.24
½″	100	95755A119	7.49
5/8″	100	95755A123	7.85
¾″	100	95755A127	8.13
1″	100	95755A131	8.82
1½″	100	95755A136	10.72
1/8″ Dia.—Breaks at 2,000 lbs.			
¼″	100	95755A210	8.51
3/8″	100	95755A212	8.75
7/16″	100	95755A216	8.74
½″	100	95755A221	9.48
5/8″	100	95755A227	10.23
¾″	100	95755A231	10.95
7/8″	100	95755A236	11.67
1″	100	95755A239	12.30
1¼″	100	95755A242	13.84
1/8″ Dia. (Cont.)			
1½″	50	95755A246	8.35
2″	50	95755A249	10.93
3/16″ Dia.—Breaks at 4,500 lbs.			
½″	50	95755A313	8.66
5/8″	50	95755A315	9.26
¾″	50	95755A319	9.96
7/8″	50	95755A321	11.08
1″	50	95755A324	11.34
1¼″	25	95755A328	7.03
1½″	25	95755A331	8.57
1¾″	10	95755A138	6.55
2″	10	95755A336	4.17
2½″	10	95755A342	4.20
1/4″ Dia.—Breaks at 7,800 lbs.			
¾″	50	95755A402	8.70
1″	25	95755A404	8.79
1⅛″	25	95755A409	9.38
1¼″	25	95755A415	9.87
1⅜″	10	95755A417	5.16
1½″	10	95755A419	5.33
Extra Strength Steel (Cont.)			
1/4″ Dia. (Cont.)			
1¾″	10	95755A421	$5.84
2″	10	95755A423	6.45
2½″	10	95755A429	7.04
3″	5	95755A433	5.34
5/16″ Dia.—Breaks at 12,000 lbs.			
1″	5	95755A471	11.97
1¼″	5	95755A473	6.72
1½″	5	95755A474	12.60
1¾″	1	95755A475	3.02
2″	1	95755A477	.71
2½″	1	95755A481	.87
3″	1	95755A485	1.02
3/8″ Dia.—Breaking strength not rated			
¾″	10	95755A503	11.26
1″	10	95755A508	11.73
1¼″	5	95755A514	6.19
1½″	5	95755A519	7.31
2″	5	95755A525	9.54
2½″	5	95755A530	11.78
3″	1	95755A536	2.80
1/2″ Dia.—Breaking strength not rated			
1¼″	5	95755A641	$9.54
1½″	5	95755A646	9.94
1¾″	1	95755A652	2.30
2″	1	95755A658	2.69
2½″	1	95755A665	3.47
3″	1	95755A673	4.26
5/8″ Dia.—Breaking strength not rated			
2″	1	95755A732	9.68
2½″	1	95755A737	10.26
3″	1	95755A746	10.84
3½″	1	95755A749	11.42
3/4″ Dia.—Breaking strength not rated			
2″	1	95755A867	11.98
2½″	1	95755A873	12.39
3″	1	95755A880	13.22
3½″	1	95755A887	14.04
4″	1	95755A889	23.80
5″	1	95755A897	25.47

Assortments—Come in a compartmented plastic box with lid chart.

Material	Dia. Range	Lg. Range		
230-Piece Assortment				
Type 420 SS	1/16″-5/16″	3/8″-2″	93740A642	$119.13
1,000-Piece Assortment				
Steel	1/16″-5/16″	1/4″-3½″	91598A645	138.14

Metric Coiled Spring Pins

Pins remain flexible after installation so they absorb shock and vibration better than slotted spring pins. Ends are beveled or rounded to aid insertion. Actual diameter is slightly larger than the diameter shown, allowing pins to fit tightly when installed. For the best fit, your hole should be equal to or slightly greater than the diameter shown. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Meet ISO 8750.

18-8 Stainless Steel—More corrosion resistant than steel. May be mildly magnetic. Not rated for hardness.

Steel—Stronger than 18-8 stainless steel. Minimum Rockwell hardness is C43.

Lg., mm	18-8 Stainless Steel Pkg. Qty.		Pkg.	Steel Pkg. Qty.		Pkg.
M1 Dia.—Breaks at 100 lbs. (18-8 Stainless Steel), 130 lbs. (Steel)						
4	50	91612A101	$11.05	50	91612A205	$8.36
6	50	91612A103	9.83	50	91612A207	9.05
10	50	91612A107	10.31	—	—	—
M2 Dia.—Breaks at 400 lbs. (18-8 Stainless Steel), 550 lbs. (Steel)						
8	50	91612A111	11.48	50	91612A211	8.66
10	25	91612A113	7.11	50	91612A216	8.66
12	25	91612A115	5.86	50	91612A217	8.80
18	25	91612A121	6.63	50	91612A219	9.10
M2.5 Dia.—Breaks at 650 lbs. (18-8 Stainless Steel), 850 lbs. (Steel)						
8	25	91612A125	5.75	50	91612A253	8.06
12	25	91612A129	8.67	50	91612A255	8.36
16	25	91612A132	11.25	50	91612A257	9.04
20	10	91612A136	2.93	50	91612A263	8.90
M3 Dia.—Breaks at 900 lbs. (18-8 Stainless Steel), 1,200 lbs. (Steel)						
8	25	91612A141	7.32	50	91612A221	10.13
10	25	91612A143	7.08	50	91612A222	7.88
12	25	91612A145	8.01	50	91612A224	10.99
14	25	91612A147	8.48	50	91612A223	5.86
16	25	91612A149	8.64	50	91612A225	9.79
18	25	91612A151	12.80	25	91612A226	6.32
20	25	91612A153	10.60	25	91612A227	5.12
25	—	—	—	25	91612A229	7.07
30	10	91612A159	6.07	25	91612A230	6.65
M4 Dia.—Breaks at 1,700 lbs. (18-8 Stainless Steel), 2,100 lbs. (Steel)						
9.5	—	—	—	25	91612A231	7.37
12	10	91612A161	4.83	25	91612A232	3.40
M4 Dia. (Cont.)						
14	10	91612A163	$6.17	25	91612A233	$7.98
19	—	—	—	25	91612A236	9.60
24	10	91612A169	7.64	25	91612A239	11.88
30	—	—	—	25	91612A240	9.68
35	10	91612A173	11.33	25	91612A241	9.68
M5 Dia.—Breaks at 2,500 lbs. (18-8 Stainless Steel), 3,300 lbs. (Steel)						
12	10	91612A175	6.17	25	91612A702	7.99
20	10	91612A179	8.21	25	91612A719	8.06
30	5	91612A182	6.45	25	91612A736	9.67
35	5	91612A185	6.98	25	91612A753	10.49
40	5	91612A190	7.36	10	91612A758	6.55
M6 Dia.—Breaks at 3,700 lbs. (18-8 Stainless Steel), 4,900 lbs. (Steel)						
16	5	91612A191	4.26	25	91612A787	8.46
20	5	91612A193	4.87	25	91612A804	10.06
24	5	91612A195	6.31	25	91612A821	10.08
30	5	91612A197	7.10	25	91612A838	14.51
35	5	91612A199	7.93	5	91612A855	3.22
40	5	91612A201	8.37	5	91612A860	2.98
M8 Dia.—Breaks at 8,700 lbs. (Steel)						
19	—	—	—	10	91612A242	11.03
25	—	—	—	10	91612A244	13.81
30	—	—	—	5	91612A245	5.32
35	—	—	—	5	91612A246	8.80
40	—	—	—	5	91612A249	7.04
45	—	—	—	5	91612A248	10.70

Dowel Pin Stock

Ready to cut, these pin blanks are 12″ long and have flat ends. Not rated for breaking strength. Diameter tolerance is ± 0.002″.

18-8 Stainless Steel—Corrosion resistant and may be mildly magnetic. Min. Rockwell hardness is B83. ***Alloy Steel—***Easier to machine than high-speed steel. Min. Rockwell hardness is B90. ***High-Speed Tool Steel—***Harder than 18-8 stainless steel and alloy steel. Min. Rockwell hardness is C60.

Dia.	18-8 Stainless Steel		Alloy Steel		High-Speed Tool Steel	
1/8″	95609A010	$12.54	98912A710	$12.07	99585A340	$33.62
5/32″	95609A030	9.58	98912A730	9.52	99585A360	35.33
3/16″	95609A050	3.06	98912A750	4.38	99585A380	35.33
1/4″	95609A070	4.57	98912A770	6.16	99585A400	35.33
5/16″	95609A090	6.92	98912A790	7.43	99585A420	37.60
3/8″	95609A110	8.80	98912A810	9.45	99585A440	39.84
1/2″	95609A150	16.18	98912A850	17.40	99585A480	43.31
9/16″	95609A170	21.83	98912A870	23.49	99585A500	50.56

Dowel Pins

Pins are commonly used as pivots, hinges, shafts, jigs, and fixtures to locate or hold parts. They are precision ground (unless noted) for more accurate alignment, and slightly oversized for a tight fit. To aid insertion, ends are beveled or rounded (except alloy steel pins, which have at least one rounded end). For a tight fit, your hole should be equal to or slightly smaller than the diameter shown. Breaking strength and Rockwell hardness are not rated (unless noted). Materials that have a breaking strength are measured as double shear, which is the force required to break a pin into three pieces.

Type 316 Stainless Steel— Our most corrosion resistant dowel pins. May be magnetic. Diameter tolerance is +0.0002″.

18-8 Stainless Steel— More corrosion resistant than Type 416 stainless steel. May be magnetic. Diameter tolerance is +0.0002″ (unless noted). The 1/64″ has a diameter tolerance of –0.0001″ to +0.0005″, cut ends, and is machined.

Type 416 Stainless Steel— Stronger than both Type 316 and 18-8 stainless steel, and magnetic. All are passivated to guard against oxidation. Diameter tolerance is +0.0001″ to +0.0003″. Meet Mil. Spec. 16555 wherever a dash number is shown.

Alloy Steel— Our strongest dowel pins. Made from hardened steel. Diameter tolerance is +0.0001″ to +0.0003″ (unless noted). Meet ASME B18.8.2 (unless noted). The 1/32″ has a diameter tolerance of +0.0003″, cut ends, is machined, and does not meet ASME specifications.

Black-Oxide Alloy Steel— Provides slightly more rust resistance and friction reduction than alloy steel. Easy to locate because of its dark color. Diameter tolerance is +0.0001″ to +0.0003″. Meet ASME B18.8.2.

Titanium— Nearly as strong as steel, yet 60% lighter and resistant to high temperatures. Nonmagnetic. Diameter tolerance is +0.0001″ to +0.0003″.

Nickel-Copper— Comparable to Monel, it's corrosion resistant in salt water so it's well suited for marine applications. It is heat resistant and may be magnetic. Diameter tolerance is +0.0001″ to +0.0003″.

Type 316 Stainless Steel—*Strength not rated*

Lg.	Pkg. Qty.		Pkg.
1/32″ Dia.			
1/8″	10	97395A351	$5.54
3/16″	10	97395A354	5.60
1/4″	10	97395A357	6.26
3/8″	10	97395A361	6.46
1/2″	10	97395A363	7.03
5/8″	10	97395A366	8.11
1/16″ Dia.			
1/8″	25	97395A394	12.38
3/16″	25	97395A397	12.71
1/4″	25	97395A401	10.21
5/16″	25	97395A403	13.33
3/8″	25	97395A405	10.73
7/16″	25	97395A409	13.75
1/2″	25	97395A410	11.68
5/8″	10	97395A412	6.07
3/4″	10	97395A414	5.27
7/8″	10	97395A416	6.48
1″	10	97395A418	5.95
1 1/4″	10	97395A419	10.44
1 1/2″	5	97395A420	6.88
2″	5	97395A601	8.29
3/32″ Dia.			
1/4″	25	97395A421	12.13
3/8″	25	97395A425	13.71
1/2″	25	97395A431	15.00
5/8″	10	97395A432	5.85
3/4″	10	97395A433	7.45
7/8″	10	97395A602	7.22
1″	10	97395A434	8.01
1 1/4″	10	97395A603	12.50
1 1/2″	5	97395A604	7.84
2″	5	97395A605	9.24
1/8″ Dia.			
3/16″	10	97395A438	5.34
1/4″	10	97395A439	5.95
5/16″	10	97395A606	5.59
3/8″	10	97395A435	6.18
7/16″	10	97395A440	6.10
1/2″	10	97395A441	6.71
9/16″	10	97395A443	6.61
5/8″	10	97395A445	7.36
3/4″	10	97395A451	7.90
7/8″	10	97395A607	8.54
1″	10	97395A452	9.52
1 1/8″	5	97395A608	6.00
1 1/4″	5	97395A453	4.77
1 3/8″	5	97395A609	7.00
1 1/2″	5	97395A454	5.73
1 3/4″	5	97395A610	8.29
2″	5	97395A611	9.24
2 1/4″	5	97395A612	10.50
2 1/2″	5	97395A613	11.67
3″	5	97395A614	12.83
5/32″ Dia.			
1/2″	5	97395A701	6.25
1″	5	97395A708	9.00
3/16″ Dia.			
1/4″	10	97395A456	7.45
5/16″	10	97395A457	7.20
3/8″	10	97395A455	7.34
7/16″	10	97395A458	7.17
1/2″	10	97395A461	8.18
9/16″	10	97395A463	8.16
5/8″	10	97395A465	8.99
3/4″	10	97395A471	9.84
3/16″ Dia. (Cont.)			
7/8″	10	97395A472	$11.25
1″	10	97395A473	12.34
1 1/8″	5	97395A474	8.75
1 1/4″	5	97395A615	10.14
1 1/2″	5	97395A616	12.83
1 3/4″	5	97395A617	13.33
2″	1	97395A618	3.43
2 1/4″	1	97395A619	3.56
2 1/2″	1	97395A620	3.71
3″	1	97395A621	3.96
1/4″ Dia.			
3/8″	10	97395A622	8.91
1/2″	10	97395A475	9.92
9/16″	10	97395A477	9.82
5/8″	10	97395A481	10.81
3/4″	10	97395A485	11.66
7/8″	10	97395A488	10.82
1″	10	97395A491	12.78
1 1/8″	5	97395A623	7.07
1 1/4″	5	97395A492	8.48
1 3/8″	5	97395A493	10.00
1 1/2″	5	97395A494	11.19
1 3/4″	5	97395A496	11.24
2″	1	97395A497	2.68
2 1/4″	1	97395A498	2.80
2 1/2″	1	97395A499	2.98
3″	1	97395A500	3.21
3 1/2″	1	97395A624	3.38
5/16″ Dia.			
3/4″	5	97395A495	8.06
1″	5	97395A501	10.17
1 1/4″	5	97395A505	12.08
1 1/2″	5	97395A510	14.16
2″	1	97395A511	3.27
2 1/2″	1	97395A512	3.62
3″	1	97395A513	3.90
3/8″ Dia.			
3/4″	5	97395A515	10.94
1″	5	97395A521	12.24
1 1/4″	1	97395A525	3.10
1 1/2″	1	97395A531	3.31
1 3/4″	1	97395A535	3.38
2″	1	97395A539	3.56
2 1/2″	1	97395A545	4.08
3″	1	97395A550	4.50
3 1/2″	1	97395A556	5.02
4″	1	97395A562	5.43
1/2″ Dia.			
1″	1	97395A759	4.60
1 1/4″	1	97395A764	4.97
1 1/2″	1	97395A768	5.30
1 3/4″	1	97395A772	5.70
2″	1	97395A776	6.07
2 1/2″	1	97395A781	6.77
3″	1	97395A785	7.47
4″	1	97395A789	8.98
5″	1	97395A790	10.50
5/8″ Dia.			
1 1/2″	1	97395A821	6.33
2″	1	97395A825	7.58
3″	1	97395A829	9.73
3/4″ Dia.			
1 1/2″	1	97395A850	7.58
2″	1	97395A855	8.98
3″	1	97395A859	11.77

18-8 Stainless Steel—*Strength not rated*

Lg.	Pkg. Qty.		Pkg.
1/64″ Dia.			
1/4″	1	90145A290	$20.33
3/8″	1	90145A293	13.66
1/2″	1	90145A296	13.66
1/32″ Dia.			
1/8″	100	90145A305	10.21
3/16″	100	90145A310	10.78
1/4″	100	90145A312	11.51
5/16″	100	90145A313	11.93
3/8″	50	90145A315	6.42
7/16″	50	90145A316	6.38
1/2″	50	90145A317	6.91
5/8″	50	90145A318	7.50
3/4″	25	90145A322	12.50
1″	10	90145A328	7.70
1/16″ Dia.			
1/8″	100	90145A413	7.64
3/16″	100	90145A414	8.00
1/4″	100	90145A415	8.34
5/16″	100	90145A416	8.42
3/8″	100	90145A417	8.95
7/16″	100	90145A418	9.35
1/2″	100	90145A419	9.75
9/16″	100	90145A420	10.19
5/8″	100	90145A421	10.97
3/4″	100	90145A422	11.39
7/8″	100	90145A424	11.80
1″	100	90145A423	11.96
1 1/4″	100	90145A425	15.56
1 1/2″	50	90145A427	8.76
1 3/4″	10	90145A428	11.75
2 1/2″	5	90145A431	9.57
3″	5	90145A432	10.43
3/32″ Dia.			
3/16″	100	90145A433	10.40
1/4″	100	90145A434	10.81
5/16″	100	90145A435	11.23
3/8″	100	90145A436	12.12
7/16″	100	90145A437	13.02
1/2″	100	90145A438	13.91
9/16″	100	90145A439	14.33
5/8″	100	90145A440	15.40
3/4″	50	90145A441	8.44
7/8″	50	90145A442	9.22
1″	50	90145A443	9.85
1 1/8″	50	90145A444	9.70
1 1/4″	50	90145A445	14.94
1 1/2″	25	90145A447	8.36
1 3/4″	25	90145A449	10.34
2″	25	90145A451	12.15
1/8″ Dia.			
3/16″	100	90145A876	13.38
1/4″	100	90145A469	13.72
5/16″	100	90145A878	13.93
3/8″	100	90145A470	14.20
7/16″	100	90145A481	14.36
1/2″	100	90145A471	15.24
9/16″	100	90145A483	15.91
5/8″	50	90145A472	8.31
3/4″	50	90145A473	10.08
7/8″	50	90145A474	11.63
1″	50	90145A475	14.72
1 1/8″	50	90145A882	15.42
1 1/4″	25	90145A477	8.68
1/8″ Dia. (Cont.)			
1 3/8″	10	90145A478	$8.75
1 1/2″	10	90145A884	3.62
1 5/8″	10	90145A886	9.64
1 3/4″	10	90145A479	4.27
2″	10	90145A480	5.11
2 1/4″	10	90145A482	6.40
2 1/2″	10	90145A487	6.93
3″	5	90145A887	10.50
3 1/2″	5	90145A888	10.78
4″	5	90145A889	11.67
5/32″ Dia.			
1/4″	50	90145A489	11.77
3/8″	50	90145A484	12.83
1/2″	50	90145A486	14.66
5/8″	25	90145A488	8.84
3/4″	25	90145A490	10.13
7/8″	10	90145A491	7.92
1″	10	90145A492	4.91
1 1/8″	10	90145A493	8.17
1 1/4″	10	90145A494	6.29
1 3/8″	10	90145A495	9.00
1 1/2″	10	90145A496	6.93
1 3/4″	10	90145A497	10.17
2″	10	90145A498	7.12
2 1/4″	5	90145A499	10.43
3/16″ Dia.			
1/4″	20	90145A501	4.51
5/16″	20	90145A502	4.50
3/8″	20	90145A503	4.59
7/16″	20	90145A504	4.59
1/2″	20	90145A505	4.65
9/16″	20	90145A506	5.09
5/8″	20	90145A507	5.60
3/4″	20	90145A508	7.02
7/8″	20	90145A509	7.57
1″	20	90145A510	7.83
1 1/8″	20	90145A511	9.37
1 1/4″	20	90145A512	9.82
1 3/8″	20	90145A513	11.31
1 1/2″	20	90145A514	12.18
1 5/8″	10	90145A518	10.50
1 3/4″	20	90145A516	10.04
2″	10	90145A515	8.14
2 1/4″	10	90145A517	9.22
2 1/2″	10	90145A519	10.21
2 3/4″	5	90145A521	12.25
3″	5	90145A523	13.42
3 1/2″	1	90145A525	2.87
4″	1	90145A529	2.93
1/4″ Dia.			
1/4″	10	90145A534	8.18
3/8″	10	90145A536	3.05
7/16″	10	90145A890	7.83
1/2″	10	90145A537	3.33
9/16″	10	90145A891	8.67
5/8″	10	90145A539	4.46
3/4″	10	90145A540	5.51
7/8″	10	90145A541	5.72
1″	10	90145A542	6.05
1 1/8″	10	90145A543	6.37
1 1/4″	10	90145A544	7.79
1 3/8″	10	90145A545	8.18

(Continued on following page)

Dowel Pins *(Continued from previous page)*

18-8 Stainless Steel (Cont.)—*Strength not rated*

Lg.	Pkg. Qty.		Pkg.
1/4" Dia. (Cont.)			
1 1/2"	10	90145A546	$8.34
1 3/4"	10	90145A548	8.95
2"	10	90145A549	9.76
2 1/4"	10	90145A550	13.71
2 1/2"	5	90145A551	8.10
2 3/4"	5	90145A552	9.94
3"	5	90145A553	11.11
3 1/4"	1	90145A555	3.15
3 1/2"	1	90145A557	3.27
3 3/4"	1	90145A559	3.50
4"	1	90145A561	4.53
4 1/2"	1	90145A563	4.77
5"	1	90145A567	5.00
6"	1	90145A572	5.42
5/16" Dia.			
3/8"	20	90145A577	10.75
1/2"	20	90145A578	13.14
5/8"	10	90145A579	7.28
3/4"	10	90145A581	8.24
7/8"	10	90145A580	8.16
1"	10	90145A583	8.53
1 1/4"	10	90145A585	11.36
1 1/2"	10	90145A587	14.60
1 3/4"	5	90145A589	8.48
2"	5	90145A591	10.05
2 1/4"	5	90145A892	11.71
2 1/2"	5	90145A592	13.44
2 3/4"	1	90145A893	2.62
3"	1	90145A593	2.96
3 1/2"	1	90145A597	3.33
4"	1	90145A599	4.20
4 1/2"	1	90145A603	4.40
5"	1	90145A605	4.57
6"	1	90145A609	4.90
3/8" Dia.			
1/2"	10	90145A619	8.70
5/8"	10	90145A620	9.92
3/4"	10	90145A622	12.62
7/8"	10	90145A623	12.08
1"	10	90145A624	14.77
1 1/4"	5	90145A626	8.91
1 3/8"	5	90145A627	9.11
1 1/2"	5	90145A628	10.24
1 3/4"	5	90145A630	12.88
2"	5	90145A632	13.20
2 1/4"	5	90145A885	11.15
2 1/2"	1	90145A633	3.52
2 3/4"	1	90145A894	3.29
3"	1	90145A634	3.78
3 1/4"	1	90145A636	4.08
3 1/2"	1	90145A640	4.20
3 3/4"	1	90145A644	4.43
4"	1	90145A648	5.17
4 1/2"	1	90145A650	5.47
5"	1	90145A654	5.77
6"	1	90145A658	6.37
7/16" Dia.			
1"	5	90145A669	7.93
1 1/4"	5	90145A671	10.50
1 1/2"	5	90145A673	11.17
1 3/4"	5	90145A675	11.83
2"	5	90145A677	11.40
2 1/4"	1	90145A679	3.47
2 1/2"	1	90145A681	4.05
3"	1	90145A685	5.87
7/16" Dia. (Cont.)			
4"	1	90145A689	$7.00
5"	1	90145A693	7.93
6"	1	90145A697	8.93
1/2" Dia.			
1/2"	5	90145A708	9.11
5/8"	5	90145A709	9.27
3/4"	5	90145A710	9.46
7/8"	5	90145A711	9.59
1"	5	90145A712	10.55
1 1/4"	5	90145A714	14.49
1 1/2"	1	90145A716	3.38
1 3/4"	1	90145A718	4.00
2"	1	90145A720	4.51
2 1/4"	1	90145A721	4.67
2 1/2"	1	90145A722	5.46
2 3/4"	1	90145A723	5.09
3"	1	90145A725	5.77
3 1/4"	1	90145A895	5.58
3 1/2"	1	90145A726	5.10
3 3/4"	1	90145A727	6.15
4"	1	90145A729	7.93
4 1/2"	1	90145A731	7.87
5"	1	90145A733	8.50
6"	1	90145A737	9.60
5/8" Dia.			
1"	1	90145A739	4.12
1 1/2"	1	90145A741	5.16
1 3/4"	1	90145A750	5.53
2"	1	90145A742	6.49
2 1/4"	1	90145A755	6.47
2 1/2"	1	90145A804	5.52
2 3/4"	1	90145A756	6.68
3"	1	90145A743	9.31
3 1/4"	1	90145A759	7.10
4"	1	90145A810	7.33
4 1/2"	1	90145A765	9.57
5"	1	90145A769	10.36
6"	1	90145A774	11.94
3/4" Dia.			
1"	1	90145A795	7.00
1 1/2"	1	90145A797	7.58
2"	1	90145A801	10.22
2 1/2"	1	90145A803	10.92
3"	1	90145A802	13.91
3 1/2"	1	90145A805	13.09
4"	1	90145A806	14.95
4 1/2"	1	90145A807	16.44
5"	1	90145A808	18.56
6"	1	90145A809	21.52
7/8" Dia.			
1"	1	90145A211	14.85
1 1/2"	1	90145A212	15.55
2"	1	90145A213	16.03
2 1/2"	1	90145A214	17.63
3"	1	90145A215	19.63
1" Dia.			
1"	1	90145A900	8.93
1 1/4"	1	90145A902	10.33
1 1/2"	1	90145A904	11.50
2"	1	90145A906	13.97
3"	1	90145A910	18.90
4"	1	90145A914	20.57
5"	1	90145A918	24.71
6"	1	90145A924	36.13

Type 416 Stainless Steel

Lg.	Dash No.	Pkg. Qty.		Pkg.
1/64" Dia.—Strength not rated				
3/32"	—	1	98380A005	$3.63
1/8"	—	1	98380A008	3.63
3/16"	—	1	98380A010	3.63
1/4"	—	1	98380A012	3.80
3/8"	—	1	98380A014	3.97
1/2"	—	1	98380A020	4.03
1/32" Dia.—Strength not rated				
3/16"	—	1	98380A030	2.53
1/4"	—	1	98380A034	2.53
3/8"	—	1	98380A038	2.63
3/64" Dia.—Strength not rated				
1/4"	—	25	98380A311	$6.78
1/2"	—	5	98380A401	8.50
3/4"	—	5	98380A403	9.13
1/16" Dia.—Breaks at 600 lbs.				
1/8"	—	50	98380A413	13.51
3/16"	601	50	98380A414	12.37
1/4"	602	50	98380A415	12.37
5/16"	603	50	98380A416	12.37
3/8"	604	50	98380A417	12.37

Type 416 Stainless Steel (Cont.)

Lg.	Dash No.	Pkg. Qty.		Pkg.
1/16" Dia. (Cont.)				
7/16"	605	50	98380A418	$12.37
1/2"	606	50	98380A419	12.37
5/8"	607	50	98380A421	14.83
3/4"	608	25	98380A422	8.26
7/8"	—	25	98380A420	9.49
1"	—	25	98380A423	10.64
1 1/4"	—	10	98380A424	8.91
1 1/2"	—	10	98380A425	10.40
2"	—	10	98380A427	11.60
5/64" Dia.—Breaks at 700 lbs.				
1/2"	—	5	98380A429	5.75
1"	—	5	98380A431	6.38
3/32" Dia.—Breaks at 1,000 lbs.				
3/16"	—	50	98380A433	14.86
1/4"	—	50	98380A434	14.03
5/16"	617	50	98380A435	14.02
3/8"	618	50	98380A436	14.02
7/16"	619	50	98380A437	14.02
1/2"	620	50	98380A438	14.86
9/16"	—	25	98380A439	14.86
5/8"	621	25	98380A440	7.83
3/4"	622	25	98380A441	7.89
7/8"	623	25	98380A442	9.08
1"	624	25	98380A443	9.90
1 1/4"	—	25	98380A445	14.87
1 1/2"	—	10	98380A447	8.67
2"	—	10	98380A451	10.73
7/64" Dia.—Strength not rated				
1/2"	—	5	98380A455	6.75
1"	—	5	98380A457	7.75
1 1/2"	—	5	98380A459	8.38
1/8" Dia.—Breaks at 1,800 lbs.				
3/16"	—	25	98380A467	6.25
1/4"	—	25	98380A469	8.26
5/16"	—	25	98380A878	7.43
3/8"	625	25	98380A470	7.01
7/16"	626	25	98380A481	6.77
1/2"	627	25	98380A471	7.01
9/16"	—	25	98380A901	7.50
5/8"	628	25	98380A472	7.01
3/4"	629	25	98380A473	8.26
7/8"	630	25	98380A474	8.43
1"	631	25	98380A475	10.73
1 1/8"	—	25	98380A476	10.71
1 1/4"	632	10	98380A477	6.28
1 3/8"	—	10	98380A478	4.57
1 1/2"	633	10	98380A479	6.60
1 3/4"	—	5	98380A480	8.06
2"	—	5	98380A902	4.00
2 1/4"	—	5	98380A903	9.29
2 1/2"	—	5	98380A904	10.00
2 3/4"	—	5	98380A905	11.86
3"	—	1	98380A906	3.29
3 1/2"	—	1	98380A907	3.86
4"	—	1	98380A908	5.43
5/32" Dia.—Breaks at 2,800 lbs.				
3/8"	—	25	98380A482	15.69
1/2"	634	10	98380A483	6.61
5/8"	635	10	98380A485	6.74
3/4"	636	10	98380A487	6.77
1"	638	10	98380A489	8.06
1 1/4"	639	10	98380A491	8.46
1 1/2"	—	5	98380A492	9.69
1 3/4"	—	5	98380A493	11.41
2"	—	5	98380A494	11.86
3"	—	1	98380A498	3.34
3/16" Dia.—Breaks at 4,000 lbs.				
1/4"	—	25	98380A501	10.71
5/16"	—	25	98380A502	13.16
3/8"	—	25	98380A503	13.04
7/16"	—	25	98380A504	13.75
1/2"	—	25	98380A505	14.87
5/8"	640	25	98380A507	14.85
3/4"	641	10	98380A508	7.55
7/8"	—	10	98380A509	9.17
1"	643	10	98380A510	8.92
1 1/4"	644	10	98380A512	9.67
1 1/2"	645	10	98380A514	9.74
1 3/4"	—	5	98380A516	8.12
3/16" Dia. (Cont.)				
2"	—	5	98380A518	$9.38
2 1/2"	—	5	98380A520	10.25
2 3/4"	—	5	98380A522	11.00
3"	—	1	98380A523	2.88
4"	—	1	98380A527	4.88
7/32" Dia.—Strength not rated				
1/4"	—	5	98380A530	5.88
1/2"	—	5	98380A531	7.00
3/4"	—	5	98380A532	7.63
1"	—	5	98380A533	8.13
2"	—	5	98380A534	11.00
1/4" Dia.—Breaks at 7,200 lbs.				
3/8"	—	10	98380A535	10.06
1/2"	—	10	98380A537	7.76
5/8"	—	10	98380A539	8.59
3/4"	646	10	98380A540	9.09
7/8"	—	10	98380A541	7.11
1"	648	10	98380A542	11.01
1 1/8"	—	10	98380A543	11.84
1 1/4"	649	10	98380A544	11.01
1 3/8"	—	5	98380A545	5.83
1 1/2"	650	5	98380A546	6.26
1 3/4"	651	5	98380A547	10.24
2"	652	5	98380A548	11.31
2 1/4"	—	5	98380A550	11.43
2 1/2"	—	5	98380A552	12.86
2 3/4"	—	1	98380A554	2.71
3"	—	1	98380A556	2.86
3 1/2"	—	1	98380A560	5.71
4"	—	1	98380A562	8.00
5"	—	1	98380A566	9.14
6"	—	1	98380A570	11.00
5/16" Dia.—Breaks at 11,000 lbs.				
1/2"	—	10	98380A578	11.43
5/8"	—	10	98380A579	15.03
3/4"	—	10	98380A581	15.03
7/8"	—	5	98380A582	6.14
1"	653	5	98380A583	8.17
1 1/4"	654	5	98380A585	9.32
1 1/2"	655	5	98380A587	10.48
1 3/4"	656	5	98380A588	13.70
2"	657	1	98380A589	3.22
2 1/2"	659	1	98380A591	4.27
3"	—	1	98380A593	4.84
3 1/2"	—	1	98380A595	6.50
4"	—	1	98380A597	7.25
5"	—	1	98380A602	8.75
6"	—	1	98380A606	10.13
3/8" Dia.—Breaks at 16,000 lbs.				
1/2"	—	5	98380A620	8.20
5/8"	—	5	98380A621	8.33
3/4"	—	5	98380A622	8.91
7/8"	—	5	98380A623	11.00
1"	—	5	98380A624	12.55
1 1/4"	660	5	98380A626	14.44
1 3/8"	—	1	98380A619	2.26
1 1/2"	661	1	98380A618	3.04
1 3/4"	662	1	98380A627	3.04
2"	663	1	98380A628	4.54
2 1/4"	—	1	98380A629	4.24
2 1/2"	665	1	98380A630	5.68
3"	667	1	98380A632	5.97
3 1/2"	—	1	98380A634	6.33
4"	—	1	98380A636	7.78
5"	—	1	98380A640	8.22
6"	—	1	98380A644	9.56
7/16" Dia.—Breaks at 22,000 lbs.				
1"	—	1	98380A650	4.11
1 1/4"	—	1	98380A652	4.38
1 1/2"	668	1	98380A654	4.78
2"	670	1	98380A658	5.44
3"	674	1	98380A672	6.51
4"	—	1	98380A676	7.29
5"	—	1	98380A680	8.09
1/2" Dia.—Breaks at 29,000 lbs.				
3/8"	—	1	98380A690	3.44
1/2"	—	1	98380A692	3.67
7/8"	—	1	98380A697	3.84
1"	—	1	98380A698	4.04
1 1/4"	—	1	98380A699	4.47

(Continued on following page)

Dowel Pins *(Continued from previous page)*

Type 416 Stainless Steel (Cont.)

Lg.	Dash No.	Pkg. Qty.		Pkg.
1/2" Dia. (Cont.)				
1½"	677	1	98380A700	$4.98
1¾"	678	1	98380A701	5.47
2"	679	1	98380A702	6.29
2¼"	680	1	98380A703	6.91
2½"	681	1	98380A704	7.13
2¾"	682	1	98380A705	7.62
3"	683	1	98380A706	8.27
3¼"	684	1	98380A707	8.69
3½"	685	1	98380A708	9.16
3¾"	686	1	98380A709	9.69
4"	687	1	98380A710	10.11
4½"	—	1	98380A711	10.38
5"	—	1	98380A712	10.67
5/8" Dia.—Breaks at 45,000 lbs.				
1"	—	1	98380A720	8.89
1¼"	—	1	98380A721	10.33
1½"	—	1	98380A722	10.56
2"	688	1	98380A723	10.84
2½"	690	1	98380A724	11.58
3"	692	1	98380A725	12.62
3½"	694	1	98380A726	13.78
4"	696	1	98380A727	15.00
5"	700	1	98380A728	16.42
6"	—	1	98380A729	18.33
3/4" Dia.—Breaks at 65,000 lbs.				
1"	—	1	98380A740	10.20
1¼"	—	1	98380A741	10.51
1½"	—	1	98380A742	10.80
3/4" Dia. (Cont.)				
1¾"	—	1	98380A743	$11.16
2"	—	1	98380A744	11.49
2½"	702	1	98380A745	12.16
3"	704	1	98380A746	12.89
3½"	706	1	98380A747	14.11
4"	708	1	98380A748	15.44
4½"	710	1	98380A749	16.22
5"	712	1	98380A750	16.80
6"	716	1	98380A751	19.31
7/8" Dia.—Breaks at 88,000 lbs.				
1"	—	1	98380A760	10.89
2"	—	1	98380A762	12.44
3"	718	1	98380A764	13.89
4"	722	1	98380A766	17.09
5"	726	1	98380A768	19.36
1" Dia.—Breaks at 110,000 lbs.				
1½"	—	1	98380A780	15.56
2"	—	1	98380A782	16.20
3"	732	1	98380A784	16.87
4"	736	1	98380A786	19.82
6"	744	1	98380A788	24.16
1 1/4" Dia.—Strength not rated				
1½"	—	1	98380A790	16.44
2"	—	1	98380A792	17.13
3"	—	1	98380A794	18.67
4"	—	1	98380A796	20.78
6"	—	1	98380A798	26.67

Alloy Steel

Lg.	Pkg. Qty.		Pkg.
1/64" Dia.—Strength not rated			
1/4"	25	98381A048	$11.71
1/2"	25	98381A051	12.37
1/32" Dia.—Strength not rated			
1/8"	5	98381A361	9.64
3/16"	5	98381A364	9.66
1/4"	5	98381A367	9.98
5/16"	5	98381A370	9.40
3/8"	5	98381A374	10.98
7/16"	1	98381A377	3.63
1/2"	1	98381A381	3.99
5/8"	1	98381A385	4.19
3/4"	1	98381A057	5.16
1"	1	98381A060	5.24
3/64" Dia.—Strength not rated			
1/4"	50	98381A971	7.48
3/8"	50	98381A972	7.75
1/2"	50	98381A973	8.13
3/4"	50	98381A974	8.30
1"	50	98381A975	8.55
1/16" Dia.—Breaks at 750 lbs.			
3/32"	10	98381A411	6.00
1/8"	100	98381A413	15.89
5/32"	10	98381A401	6.17
3/16"	100	98381A414	12.93
1/4"	100	98381A415	13.02
5/16"	100	98381A416	13.20
3/8"	100	98381A417	13.56
7/16"	100	98381A418	13.83
1/2"	100	98381A419	15.33
9/16"	100	98381A420	15.71
5/8"	100	98381A421	16.21
3/4"	50	98381A422	9.36
7/8"	50	98381A423	10.22
1"	50	98381A424	10.28
1¼"	5	98381A425	6.61
1½"	5	98381A426	8.23
1¾"	1	98381A427	2.15
2"	1	98381A428	4.08
2½"	1	98381A429	2.53
3"	1	98381A431	3.67
5/64" Dia.—Breaks at 850 lbs.			
3/16"	1	98381A010	1.09
1/4"	1	98381A011	1.11
3/8"	1	98381A013	1.17
1/2"	1	98381A015	1.26
3/4"	1	98381A018	1.37
1"	1	98381A019	1.69
3/32" Dia.—Breaks at 1,400 lbs.			
1/8"	10	98381A432	$3.67
3/16"	100	98381A433	11.41
1/4"	100	98381A434	9.68
5/16"	100	98381A435	9.92
3/8"	100	98381A436	9.77
7/16"	100	98381A437	13.87
1/2"	100	98381A438	9.27
9/16"	50	98381A439	8.23
5/8"	50	98381A440	4.85
3/4"	50	98381A441	5.27
7/8"	50	98381A442	8.58
1"	50	98381A443	5.64
1 1/8"	5	98381A145	8.25
1 1/4"	5	98381A444	3.12
1 1/2"	5	98381A446	5.57
1 3/4"	5	98381A447	11.25
2"	5	98381A449	8.10
3"	1	98381A453	5.00
7/64" Dia.—Strength not rated			
3/8"	1	98381A020	1.17
1/2"	1	98381A021	1.26
5/8"	1	98381A022	1.34
3/4"	1	98381A023	1.40
1"	1	98381A024	1.71
1 1/2"	1	98381A025	3.13
1/8" Dia.—Breaks at 2,600 lbs.			
1/8"	10	98381A467	5.17
3/16"	100	98381A468	14.82
1/4"	100	98381A469	14.82
5/16"	100	98381A216	11.08
3/8"	100	98381A470	9.30
7/16"	100	98381A218	12.89
1/2"	100	98381A471	9.71
9/16"	100	98381A220	12.83
5/8"	100	98381A472	13.26
11/16"	5	98381A172	5.75
3/4"	100	98381A473	13.89
13/16"	5	98381A173	6.08
7/8"	100	98381A474	15.13
15/16"	5	98381A174	6.33
1"	100	98381A475	15.46
1 1/8"	50	98381A476	7.56
1 1/4"	50	98381A477	10.04
1 3/8"	5	98381A494	2.89
1 1/2"	50	98381A478	10.31
1 5/8"	1	98381A178	4.65

Alloy Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
1/8" Dia. (Cont.)			
1¾"	50	98381A479	$11.41
2"	50	98381A480	11.63
2¼"	5	98381A481	8.50
2½"	5	98381A482	11.81
2¾"	5	98381A483	14.17
3"	5	98381A484	15.34
3½"	1	98381A084	6.00
4"	1	98381A185	6.75
5/32" Dia.—Breaks at 4,100 lbs.			
1/4"	25	98381A485	7.81
3/8"	25	98381A486	9.61
1/2"	25	98381A487	14.99
5/8"	25	98381A488	16.23
3/4"	25	98381A489	13.99
7/8"	25	98381A495	15.61
1"	10	98381A490	7.04
1 1/8"	1	98381A190	1.68
1 1/4"	10	98381A491	9.77
1 3/8"	1	98381A191	1.80
1 1/2"	10	98381A492	10.54
1 3/4"	5	98381A496	5.59
2"	10	98381A493	12.63
2 1/2"	1	98381A497	5.65
3"	1	98381A498	6.38
4"	1	98381A499	7.08
3/16" Dia.—Breaks at 5,900 lbs.			
1/4"	50	98381A501	10.72
5/16"	50	98381A502	6.16
3/8"	50	98381A503	7.41
7/16"	50	98381A504	7.98
1/2"	50	98381A505	7.14
9/16"	50	98381A506	9.25
5/8"	50	98381A507	7.41
11/16"	10	98381A107	6.33
3/4"	50	98381A508	7.57
13/16"	10	98381A108	6.83
7/8"	50	98381A509	9.34
15/16"	10	98381A109	7.83
1"	50	98381A510	10.38
1 1/8"	5	98381A511	9.01
1 1/4"	50	98381A512	12.48
1 3/8"	5	98381A519	9.31
1 1/2"	50	98381A514	12.93
1 5/8"	1	98381A115	3.38
1 3/4"	50	98381A515	15.57
2"	25	98381A516	8.31
2 1/4"	5	98381A518	5.30
2 1/2"	5	98381A521	7.79
2 3/4"	5	98381A523	10.55
3"	5	98381A525	10.70
3 1/2"	1	98381A526	6.15
4"	1	98381A527	6.83
7/32" Dia.—Strength not rated			
1/4"	1	98381A030	1.37
3/8"	1	98381A031	1.40
1/2"	1	98381A032	1.49
3/4"	1	98381A033	1.66
1"	1	98381A034	1.97
1 1/2"	1	98381A035	3.14
2"	1	98381A036	4.50
1/4" Dia.—Breaks at 10,000 lbs.			
1/4"	10	98381A534	5.83
5/16"	10	98381A535	6.67
3/8"	25	98381A536	3.79
7/16"	25	98381A538	10.12
1/2"	25	98381A537	3.62
9/16"	25	98381A543	13.01
5/8"	25	98381A539	3.87
11/16"	10	98381A139	11.33
3/4"	25	98381A540	5.24
13/16"	10	98381A140	12.50
7/8"	25	98381A541	5.91
15/16"	5	98381A141	7.42
1"	25	98381A542	6.75
1 1/8"	25	98381A556	9.33
1 1/4"	25	98381A544	6.87
1 3/8"	25	98381A545	10.35
1 1/2"	25	98381A546	6.81
1 5/8"	5	98381A547	12.08
1/4" Dia. (Cont.)			
1¾"	25	98381A548	$8.44
2"	25	98381A550	9.34
2¼"	25	98381A551	9.56
2½"	25	98381A552	12.63
2¾"	5	98381A553	6.87
3"	5	98381A554	6.75
3¼"	1	98381A154	4.67
3½"	1	98381A555	3.47
3¾"	1	98381A557	5.08
4"	1	98381A558	6.60
4½"	1	98381A559	7.30
5"	1	98381A560	7.80
6"	1	98381A561	8.56
5/16" Dia.—Breaks at 16,000 lbs.			
3/8"	10	98381A577	6.83
1/2"	50	98381A578	12.78
9/16"	10	98381A278	7.67
5/8"	50	98381A579	12.94
3/4"	50	98381A581	15.08
7/8"	25	98381A582	8.31
1"	25	98381A583	8.52
1 1/8"	5	98381A584	10.00
1 1/4"	25	98381A585	9.29
1 3/8"	5	98381A285	10.50
1 1/2"	25	98381A587	10.14
1 5/8"	5	98381A588	11.25
1 3/4"	25	98381A589	13.01
2"	25	98381A591	13.71
2 1/4"	25	98381A592	12.26
2 1/2"	10	98381A593	7.74
2 3/4"	10	98381A594	8.61
3"	10	98381A595	10.35
3 1/4"	5	98381A596	6.15
3 1/2"	1	98381A598	6.73
3 3/4"	1	98381A289	6.56
4"	1	98381A599	6.95
5"	1	98381A601	8.20
3/8" Dia.—Breaks at 23,000 lbs.			
3/8"	10	98381A617	7.83
1/2"	50	98381A619	12.88
9/16"	10	98381A620	9.67
5/8"	50	98381A621	16.17
3/4"	25	98381A622	9.21
7/8"	25	98381A623	9.18
1"	25	98381A624	10.38
1 1/8"	5	98381A625	10.50
1 1/4"	25	98381A626	13.79
1 3/8"	25	98381A629	12.54
1 1/2"	25	98381A628	13.89
1 5/8"	5	98381A631	11.50
1 3/4"	10	98381A630	7.10
2"	10	98381A632	7.34
2 1/4"	10	98381A633	8.31
2 1/2"	10	98381A634	7.99
2 3/4"	1	98381A635	3.67
3"	10	98381A636	9.92
3 1/4"	1	98381A637	4.97
3 1/2"	5	98381A638	10.42
3 3/4"	1	98381A639	5.20
4"	1	98381A640	3.29
5"	1	98381A644	7.00
6"	1	98381A648	7.47
7/16" Dia.—Breaks at 32,000 lbs.			
1/2"	5	98381A665	5.50
5/8"	5	98381A666	5.92
3/4"	5	98381A667	6.75
7/8"	5	98381A668	7.17
1"	10	98381A669	6.68
1 1/8"	5	98381A670	9.42
1 1/4"	10	98381A671	7.77
1 1/2"	10	98381A673	7.29
1 3/4"	5	98381A674	11.67
2"	10	98381A677	11.24
2 1/2"	10	98381A679	14.59
3"	10	98381A681	15.85
4"	5	98381A683	9.84
5"	1	98381A684	7.42

(Continued on following page)

Dowel Pins *(Continued from previous page)*

Alloy Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
1/2" Dia.—Breaks at 42,000 lbs.			
1/2"	5	98381A708	$14.72
5/8"	5	98381A709	7.50
3/4"	10	98381A710	7.38
7/8"	10	98381A711	13.43
1"	10	98381A712	10.15
1 1/8"	5	98381A713	10.00
1 1/4"	10	98381A714	9.63
1 3/8"	5	98381A715	11.67
1 1/2"	10	98381A716	9.67
1 5/8"	1	98381A717	2.70
1 3/4"	5	98381A718	5.38
2"	10	98381A720	13.08
2 1/4"	10	98381A721	13.27
2 1/2"	10	98381A722	14.19
2 3/4"	10	98381A723	15.58
3"	5	98381A724	10.07
3 1/4"	10	98381A725	17.05
3 1/2"	5	98381A726	10.44
3 3/4"	5	98381A728	12.95
4"	5	98381A727	13.33
4 1/2"	5	98381A731	13.47
5"	5	98381A734	11.95
6"	1	98381A735	8.67
8"	1	98381A736	10.25
10"	1	98381A737	13.53
9/16" Dia.—Strength not rated			
1"	1	98381A040	3.43
1 1/2"	1	98381A041	5.14
2"	1	98381A042	6.29
3"	1	98381A043	8.83
4"	1	98381A044	11.86
5/8" Dia.—Breaks at 65,000 lbs.			
5/8"	5	98381A791	9.92
3/4"	10	98381A792	10.96
7/8"	5	98381A793	10.67
1"	10	98381A794	11.11
1 1/8"	5	98381A795	11.83
1 1/4"	10	98381A796	12.14
1 3/8"	1	98381A797	2.72
1 1/2"	10	98381A798	12.83
1 3/4"	5	98381A799	6.97
2"	10	98381A802	15.26
2 1/4"	10	98381A803	17.91
2 1/2"	5	98381A804	9.54
2 3/4"	5	98381A805	11.38
3"	5	98381A806	10.31
3 1/4"	1	98381A207	5.75
3 1/2"	5	98381A808	13.01
3 3/4"	1	98381A209	6.17
4"	5	98381A810	14.40
4 1/2"	5	98381A812	17.63
5/8" Dia. (Cont.)			
5"	1	98381A814	$3.99
6"	1	98381A114	8.89
3/4" Dia.—Breaks at 94,000 lbs.			
3/4"	1	98381A800	2.30
1"	5	98381A801	8.72
1 1/4"	5	98381A103	9.96
1 1/2"	5	98381A105	10.50
1 3/4"	5	98381A807	10.80
2"	5	98381A843	11.42
2 1/4"	5	98381A809	13.25
2 1/2"	5	98381A845	12.72
2 3/4"	5	98381A143	14.34
3"	5	98381A847	15.07
3 1/4"	1	98381A848	3.38
3 1/2"	1	98381A849	3.66
4"	1	98381A851	4.09
4 1/2"	1	98381A853	4.69
5"	1	98381A815	4.92
6"	1	98381A818	6.20
8"	1	98381A819	15.42
10"	1	98381A820	17.67
7/8" Dia.—Breaks at 120,000 lbs.			
7/8"	1	98381A879	4.60
1"	1	98381A880	5.11
1 1/2"	1	98381A881	5.69
2"	1	98381A882	7.96
2 1/2"	1	98381A883	9.92
3"	1	98381A884	9.89
3 1/2"	1	98381A886	11.81
4"	1	98381A888	13.48
5"	1	98381A889	17.00
6"	1	98381A890	18.00
1" Dia.—Breaks at 160,000 lbs.			
1"	1	98381A908	3.32
1 1/4"	1	98381A909	5.02
1 1/2"	1	98381A910	4.34
1 3/4"	1	98381A911	4.46
2"	1	98381A912	5.08
2 1/4"	1	98381A913	5.09
2 1/2"	1	98381A914	5.65
2 3/4"	1	98381A915	5.81
3"	1	98381A916	6.15
3 1/4"	1	98381A917	18.53
3 1/2"	1	98381A918	7.27
4"	1	98381A920	8.48
4 1/2"	1	98381A922	9.82
5"	1	98381A924	11.18
6"	1	98381A928	13.26
8"	1	98381A930	25.83
10"	1	98381A932	28.60

Alloy Steel (Cont.)

Lg.	Pkg. Qty.		Pkg.
1 1/4" Dia.—Strength not rated			
1 1/2"	1	98381A950	$16.80
2"	1	98381A952	18.60
3"	1	98381A956	21.00
1 1/4" Dia. (Cont.)			
4"	1	98381A960	$26.51
6"	1	98381A968	30.77

Black-Oxide Alloy Steel

Lg.	Pkg. Qty.		Pkg.
1/8" Dia.—Breaks at 2,600 lbs.			
3/8"	25	98381A302	4.91
1/2"	25	98381A304	5.00
5/8"	25	98381A306	5.13
3/4"	25	98381A308	5.24
1"	25	98381A310	6.02
3/16" Dia.—Breaks at 5,900 lbs.			
1/2"	25	98381A314	5.27
3/4"	25	98381A316	5.76
1"	25	98381A318	6.24
1 1/4"	25	98381A320	6.84
1 1/2"	25	98381A322	7.67
1/4" Dia.—Breaks at 10,000 lbs.			
1/2"	25	98381A326	5.93
3/4"	25	98381A328	6.49
1"	25	98381A330	7.20
1 1/4"	25	98381A332	7.91
1 1/2"	25	98381A334	8.67
2"	25	98381A336	10.38
5/16" Dia.—Breaks at 16,000 lbs.			
3/4"	25	98381A340	7.87
1"	25	98381A342	8.76
1 1/4"	25	98381A344	9.60
1 1/2"	25	98381A346	10.56
2"	25	98381A348	12.33
3/8" Dia.—Breaks at 23,000 lbs.			
3/4"	25	98381A352	9.82
1"	25	98381A354	11.09
1 1/4"	10	98381A356	5.20
1 1/2"	10	98381A358	5.71
2"	10	98381A360	6.73
1/2" Dia.—Breaks at 42,000 lbs.			
1"	10	98381A362	8.73
1 1/2"	10	98381A363	9.09
2"	10	98381A365	10.82
2 1/2"	5	98381A366	6.71
5/8" Dia.—Breaks at 65,000 lbs.			
2"	5	98381A368	8.13
3"	5	98381A369	11.42

Titanium—*Strength not rated*

Lg.	Pkg. Qty.		Pkg.
1/8" Dia.			
1/4"	1	97395A861	10.15
5/16"	1	97395A862	10.28
3/8"	1	97395A863	10.41
1/2"	1	97395A864	10.43
5/8"	1	97395A865	11.35
3/4"	1	97395A866	14.85
1"	1	97395A867	15.68
3/16" Dia.			
3/8"	1	97395A868	10.53
1/2"	1	97395A869	11.55
3/16" Dia. (Cont.)			
5/8"	1	97395A871	15.10
3/4"	1	97395A872	14.83
1"	1	97395A873	15.83
1/4" Dia.			
1/2"	1	97395A879	9.38
5/8"	1	97395A874	10.13
3/4"	1	97395A875	13.13
1"	1	97395A876	12.65
1 1/2"	1	97395A877	15.25
2"	1	97395A878	19.88

Nickel-Copper—*Strength not rated*

Lg.	Pkg. Qty.		Pkg.
1/8" Dia.			
1/4"	1	97395A101	5.95
5/16"	1	97395A103	6.10
3/8"	1	97395A105	6.26
1/2"	1	97395A107	6.51
5/8"	1	97395A109	7.11
3/4"	1	97395A111	8.60
1"	1	97395A113	9.08
3/16" Dia.			
3/8"	1	97395A121	6.40
1/2"	1	97395A123	7.03
3/16" Dia. (Cont.)			
5/8"	1	97395A125	8.92
3/4"	1	97395A127	9.42
1"	1	97395A129	10.03
1/4" Dia.			
1/2"	1	97395A141	6.73
5/8"	1	97395A143	7.37
3/4"	1	97395A145	9.63
1"	1	97395A147	10.17
1 1/2"	1	97395A149	11.15
2"	1	97395A151	14.52

Low-Strength Dowel Pins

Easier to machine than standard dowel pins, these multipurpose, low-strength pins have at least one beveled end to aid insertion. They are slightly oversized for a tight fit.

Steel— Magnetic. Diameter tolerance is +0.0001" to +0.0003".

Brass— Also known as shear pins. Our "softest" material, brass is nonmarring, corrosion resistant, and electrically conductive. Nonmagnetic. Diameter tolerance is +0.0002".

Also Available: Aluminum low-strength pins. Please ask for 97325A300 and specify diameter and length.

Steel

Lg.	Pkg. Qty.		Pkg.
1/8" Dia.			
3/8"	50	98372A450	$8.43
1/2"	50	98372A460	8.46
3/4"	50	98372A470	8.83
1"	50	98372A480	9.43
3/16" Dia.			
3/4"	50	98372A117	9.54
1"	50	98372A127	10.40
1 1/4"	50	98372A137	11.69
1 1/2"	25	98372A147	6.97
1/4" Dia.			
3/4"	50	98372A217	10.83
1"	50	98372A227	12.03
1 1/4"	50	98372A237	13.32
1 1/2"	50	98372A247	14.91
5/16" Dia.			
1"	50	98372A317	$14.71
1 1/2"	25	98372A327	9.57
2"	25	98372A337	13.42
3/8" Dia.			
1"	25	98372A417	10.03
1 1/4"	25	98372A510	11.05
1 1/2"	25	98372A427	12.77
2"	10	98372A437	6.46
1/2" Dia.			
1"	10	98372A520	7.02
1 1/4"	10	98372A530	7.66
1 1/2"	10	98372A540	8.11
1 3/4"	10	98372A550	9.26
2"	10	98372A560	10.26
2 1/2"	5	98372A570	6.63

Brass

Lg.	Pkg. Qty.		Pkg.
1/16" Dia.			
1/4"	25	97325A101	$7.70
3/8"	25	97325A105	8.59
1/2"	25	97325A110	9.51
3/32" Dia.			
1/4"	25	97325A115	8.89
3/8"	25	97325A121	10.01
1/2"	25	97325A125	11.32
1/8" Dia.			
3/8"	25	97325A131	11.35
1/2"	25	97325A135	12.76
5/8"	10	97325A141	5.56
3/4"	10	97325A145	6.10
3/16" Dia.			
1/2"	10	97325A155	7.52
5/8"	10	97325A161	9.13
3/4"	10	97325A165	10.67
1/4" Dia.			
1/2"	10	97325A171	$10.58
5/8"	10	97325A175	10.96
3/4"	10	97325A181	11.27
1"	10	97325A185	11.95
5/16" Dia.			
3/4"	5	97325A191	11.28
1"	5	97325A195	13.30
1 1/4"	5	97325A201	14.69
1 1/2"	5	97325A205	16.97
3/8" Dia.			
3/4"	5	97325A210	15.40
1"	1	97325A215	4.20
1 1/4"	1	97325A220	5.07
1 1/2"	1	97325A225	5.83

Metric Dowel Pins

These metric pins are commonly used as pivots, hinges, shafts, jigs, and fixtures to locate or hold parts. They are precision ground, and slightly oversized for a tight fit. To aid insertion, pins are rounded or beveled on both ends.

Type 316 Stainless Steel— Our most corrosion resistant metric dowel pins, they are passivated to guard against oxidation. May be magnetic. Not rated for hardness. Meet DIN7-m6.

18-8 Stainless Steel— More corrosion resistant than alloy steel and passivated. May be magnetic. Not rated for hardness. Meet DIN DIN7-m6.

Alloy Steel— Our strongest metric dowel pins. Breaking strength is measured as single shear, which is the force required to break a pin into two pieces. Minimum Rockwell hardness is C52. Meet DIN6325-m6.

Diameter	M0.8 to M3	M4 to M6	M8 and M10	M12 to M16	M20
Diameter Tolerance, mm	+0.002 to +0.008	+0.004 to +0.012	+0.006 to +0.015	+0.007 to +0.018	+0.008 to +0.021

Type 316 Stainless Steel—*Strength not rated*

Lg., mm	Pkg. Qty.		Pkg.
M1 Dia.			
4	10	93600A030	$8.12
5	10	93600A031	8.32
6	10	93600A032	8.36
8	10	93600A033	8.44
10	10	93600A034	8.68
M1.5 Dia.			
4	50	93600A050	8.00
5	50	93600A052	8.00
6	50	93600A054	8.00
8	50	93600A056	8.40
10	50	93600A058	8.40
12	50	93600A060	8.80
14	50	93600A062	9.20
16	50	93600A064	9.60
M2 Dia.			
6	50	93600A070	12.40
8	50	93600A072	13.20
10	50	93600A074	13.60
12	50	93600A076	14.00
14	50	93600A078	14.80
16	25	93600A080	7.80
18	25	93600A082	8.00
20	25	93600A084	8.20
M2.5 Dia.			
6	25	93600A090	8.60
8	25	93600A092	9.00
10	25	93600A094	9.50
12	25	93600A096	9.90
M3 Dia.			
6	25	93600A108	7.53
8	25	93600A110	8.12
10	25	93600A112	9.21
12	25	93600A114	9.42
14	25	93600A115	10.19
16	25	93600A116	13.00
18	25	93600A118	12.66
20	10	93600A120	6.32
24	10	93600A122	7.38
28	10	93600A326	7.20
30	10	93600A328	7.60
M4 Dia.			
6	10	93600A123	6.75
8	10	93600A125	6.87
12	10	93600A129	7.11
16	10	93600A133	8.13
18	10	93600A135	8.00
20	10	93600A137	8.29
22	10	93600A138	8.80
M4 Dia. (Cont.)			
24	10	93600A139	$8.30
28	10	93600A141	8.99
30	10	93600A341	10.48
32	10	93600A142	9.48
36	10	93600A143	12.00
40	10	93600A144	13.58
M5 Dia.			
8	10	93600A146	7.47
10	10	93600A147	7.54
12	10	93600A149	8.64
14	10	93600A150	9.03
16	10	93600A151	9.66
18	10	93600A152	10.09
20	10	93600A153	10.52
24	5	93600A157	6.81
30	5	93600A159	7.80
36	5	93600A269	9.18
40	5	93600A273	9.98
50	5	93600A283	11.93
M6 Dia.			
10	10	93600A162	9.77
12	10	93600A164	11.62
14	10	93600A166	12.69
16	10	93600A168	14.11
18	5	93600A169	7.47
20	5	93600A170	8.88
M8 Dia.			
16	5	93600A185	11.96
20	5	93600A187	13.00
24	5	93600A172	14.40
30	1	93600A175	3.80
36	1	93600A178	3.83
40	1	93600A180	4.22
50	1	93600A182	5.05
M10 Dia.			
14	1	93600A199	3.25
16	1	93600A201	4.55
20	1	93600A203	4.55
24	1	93600A205	3.91
30	1	93600A206	6.44
32	1	93600A207	4.56
36	1	93600A209	5.58
40	1	93600A210	6.25
50	1	93600A215	7.47
M12 Dia.			
24	1	93600A220	5.59
36	1	93600A230	7.87
50	1	93600A240	10.55
60	1	93600A245	12.45

18-8 Stainless Steel—*Strength not rated*

Lg., mm	Pkg. Qty.		Pkg.
M0.8 Dia.			
3	10	91585A701	8.12
4	10	91585A702	8.20
5	10	91585A703	8.36
6	10	91585A704	8.48
8	10	91585A706	9.04
M1 Dia.			
3	100	91585A901	8.56
4	100	91585A903	7.28
5	100	91585A001	10.00
6	100	91585A002	10.32
8	100	91585A003	10.56
10	100	91585A004	11.00
14	100	91585A905	11.36
20	50	91585A005	7.09
M1.5 Dia.			
3	100	91585A907	9.38
4	100	91585A908	10.00
M1.5 Dia. (Cont.)			
5	100	91585A006	9.48
6	100	91585A007	10.16
8	100	91585A008	10.48
10	100	91585A009	10.96
12	100	91585A011	11.00
14	100	91585A012	11.84
16	50	91585A913	7.81
20	50	91585A014	7.96
M2 Dia.			
4	100	91585A912	8.73
5	100	91585A915	9.46
6	100	91585A015	9.52
8	100	91585A017	10.64
10	100	91585A018	10.88
12	100	91585A010	12.80
14	100	91585A013	13.56
16	50	91585A016	6.92
M2 Dia. (Cont.)			
18	50	91585A019	$7.16
20	50	91585A022	7.48
24	50	91585A024	9.16
M2.5 Dia.			
5	50	91585A028	5.71
6	50	91585A030	6.58
8	50	91585A033	7.20
10	50	91585A036	7.88
12	50	91585A037	8.29
14	50	91585A039	8.88
16	50	91585A040	9.12
18	50	91585A041	10.29
20	50	91585A042	10.34
24	50	91585A045	11.16
M3 Dia.			
5	50	91585A050	9.09
6	50	91585A051	9.21
8	50	91585A054	9.46
10	50	91585A057	10.38
12	50	91585A060	11.28
14	50	91585A063	12.14
16	50	91585A065	13.22
18	50	91585A066	13.40
20	50	91585A069	14.32
24	50	91585A072	14.90
26	25	91585A073	7.77
28	25	91585A070	8.43
30	25	91585A071	8.79
32	25	91585A074	10.25
40	25	91585A076	10.57
M4 Dia.			
5	50	91585A078	11.03
6	50	91585A077	11.04
8	50	91585A080	11.70
10	50	91585A084	12.11
12	50	91585A083	12.58
14	50	91585A085	14.20
16	25	91585A086	8.53
18	25	91585A088	8.65
20	25	91585A089	9.00
22	25	91585A090	10.07
24	25	91585A092	10.26
28	10	91585A095	6.26
30	10	91585A099	7.20
32	10	91585A098	7.41
36	10	91585A105	8.08
40	10	91585A101	8.74
50	5	91585A102	9.62
M5 Dia.			
6	25	91585A103	6.88
8	25	91585A104	7.08
10	25	91585A107	7.59
12	25	91585A110	8.63
14	25	91585A113	8.97
16	25	91585A117	9.62
18	25	91585A118	10.94
20	25	91585A120	11.30
24	25	91585A123	13.82
28	25	91585A127	15.12
32	10	91585A130	6.67
40	10	91585A134	8.41
45	10	91585A138	10.55
50	10	91585A139	11.83
60	1	91585A140	2.57
M6 Dia.			
10	25	91585A145	9.75
12	25	91585A148	13.10
14	25	91585A151	14.49
M6 Dia. (Cont.)			
16	10	91585A154	$5.92
18	10	91585A157	7.39
20	10	91585A160	7.76
22	10	91585A161	8.06
24	10	91585A163	8.24
28	10	91585A167	9.50
30	10	91585A169	10.56
32	10	91585A170	10.82
36	10	91585A173	12.12
40	10	91585A175	13.90
45	10	91585A176	14.48
50	5	91585A177	7.44
55	5	91585A178	7.73
60	5	91585A179	7.94
70	1	91585A180	2.86
80	1	91585A182	4.72
M8 Dia.			
10	10	91585A181	9.66
12	10	91585A184	9.75
14	10	91585A187	10.28
16	10	91585A190	11.06
18	10	91585A192	11.94
20	10	91585A193	12.34
24	10	91585A196	14.35
28	10	91585A199	14.91
30	5	91585A200	7.78
32	5	91585A202	9.16
36	5	91585A205	9.41
40	5	91585A208	9.96
45	5	91585A206	10.62
50	5	91585A204	10.70
55	5	91585A207	12.47
60	5	91585A209	13.01
70	1	91585A613	4.04
80	1	91585A216	5.22
M10 Dia.			
14	5	91585A750	9.83
16	5	91585A751	8.03
18	5	91585A752	8.64
20	5	91585A753	8.86
24	5	91585A754	9.24
28	5	91585A755	11.32
30	5	91585A757	11.36
32	5	91585A756	11.54
36	5	91585A761	13.10
40	5	91585A759	13.24
45	1	91585A763	3.03
50	1	91585A765	3.09
60	1	91585A769	4.76
70	1	91585A773	5.41
80	1	91585A776	7.14
90	1	91585A779	7.85
M12 Dia.			
20	1	91585A801	2.85
24	1	91585A802	3.14
28	1	91585A803	3.24
30	1	91585A805	3.29
36	1	91585A804	3.40
40	1	91585A809	4.42
50	1	91585A813	4.88
60	1	91585A821	5.30
70	1	91585A823	6.06
80	1	91585A825	6.67
90	1	91585A827	6.88
M16 Dia.			
40	1	91585A951	7.88
50	1	91585A953	9.06
60	1	91585A955	10.30

(Continued on following page)

Metric Dowel Pins (Continued from previous page)

Alloy Steel

Lg., mm	Pkg. Qty.		Pkg.
M1 Dia.—Strength not rated			
4	50	91595A951	$7.36
5	50	91595A952	7.40
6	50	91595A953	7.70
8	50	91595A954	9.52
10	50	91595A955	10.60
M1.5 Dia.—Breaks at 400 lbs.			
4	50	91595A002	13.94
5	50	91595A004	7.14
6	50	91595A005	9.03
8	50	91595A008	10.31
10	50	91595A009	8.57
12	50	91595A011	7.05
14	50	91595A013	8.94
16	50	91595A015	9.81
M2 Dia.—Breaks at 700 lbs.			
4	50	91595A018	12.57
5	50	91595A019	6.40
6	50	91595A020	7.69
8	50	91595A023	7.82
10	50	91595A026	7.36
12	50	91595A029	7.95
14	50	91595A030	7.29
16	50	91595A031	7.70
18	50	91595A032	6.68
20	50	91595A034	10.70
24	25	91595A037	8.03
30	25	91595A043	5.38
M2.5 Dia.—Breaks at 1,100 lbs.			
6	50	91595A061	10.89
8	50	91595A064	12.42
10	50	91595A067	12.61
12	50	91595A068	9.55
14	50	91595A070	15.67
16	25	91595A074	8.88
18	25	91595A076	6.07
20	25	91595A078	4.27
22	25	91595A080	5.97
24	25	91595A082	7.45
M3 Dia.—Breaks at 1,600 lbs.			
4	10	91595A098	5.52
5	10	91595A099	5.33
6	100	91595A100	11.08
8	100	91595A104	12.61
10	100	91595A108	13.37
12	100	91595A112	14.33
14	100	91595A114	11.41
16	100	91595A116	14.90
18	100	91595A118	15.28
20	50	91595A122	8.28
22	50	91595A126	16.43
24	50	91595A130	10.51
M3 Dia. (Cont.)			
28	50	91595A133	$10.42
30	50	91595A134	12.03
32	25	91595A138	8.11
36	25	91595A140	8.77
40	25	91595A142	9.37
45	10	91595A143	6.06
50	10	91595A144	9.14
60	10	91595A146	8.34
M4 Dia.—Breaks at 2,700 lbs.			
6	100	91595A148	14.17
8	100	91595A150	15.28
10	100	91595A152	16.81
12	50	91595A155	9.08
14	50	91595A158	10.09
16	50	91595A161	10.18
18	50	91595A164	10.70
20	50	91595A167	11.08
22	50	91595A170	11.81
24	50	91595A173	12.42
26	25	91595A175	8.00
28	25	91595A176	9.85
30	25	91595A179	7.51
32	25	91595A182	7.57
36	25	91595A184	6.32
40	25	91595A185	7.47
50	25	91595A188	12.75
60	10	91595A192	13.10
M5 Dia.—Breaks at 4,600 lbs.			
8	50	91595A178	13.67
10	50	91595A340	14.52
12	50	91595A344	12.42
14	50	91595A348	11.88
16	50	91595A352	12.93
18	50	91595A354	12.50
20	50	91595A356	13.68
22	50	91595A360	13.75
24	50	91595A364	14.33
28	50	91595A368	15.66
30	25	91595A372	9.94
32	25	91595A376	12.03
36	25	91595A380	12.07
40	25	91595A384	12.20
45	25	91595A388	13.28
50	25	91595A392	13.54
60	10	91595A396	9.43
70	5	91595A399	10.00
M6 Dia.—Breaks at 6,600 lbs.			
8	25	91595A436	11.92
10	25	91595A438	7.70
12	25	91595A440	8.32
M6 Dia. (Cont.)			
14	25	91595A443	$8.24
16	25	91595A446	8.33
18	25	91595A449	8.43
20	25	91595A452	8.52
22	25	91595A455	8.99
24	25	91595A458	9.46
26	25	91595A461	9.55
28	25	91595A464	9.88
30	25	91595A467	10.70
32	25	91595A470	11.56
36	25	91595A473	12.50
40	25	91595A476	12.99
45	10	91595A479	7.64
50	10	91595A482	6.77
55	10	91595A484	7.57
60	10	91595A485	8.02
70	10	91595A487	10.66
80	10	91595A490	14.33
M8 Dia.—Breaks at 11,800 lbs.			
12	10	91595A548	5.35
14	10	91595A550	5.89
16	10	91595A552	6.08
18	10	91595A555	6.46
20	10	91595A558	6.54
22	10	91595A561	7.04
24	10	91595A564	7.04
26	10	91595A565	8.00
28	10	91595A566	7.00
30	10	91595A567	7.08
32	10	91595A570	7.08
40	10	91595A573	8.14
45	10	91595A576	10.35
50	10	91595A579	9.55
55	10	91595A582	13.52
60	10	91595A585	11.54
70	5	91595A588	9.92
80	5	91595A591	11.86
M10 Dia.—Breaks at 18,500 lbs.			
14	10	91595A634	12.80
16	10	91595A636	12.72
18	10	91595A638	14.40
20	10	91595A640	7.75
22	10	91595A642	8.00
24	10	91595A643	8.44
26	10	91595A645	11.27
28	10	91595A646	10.11
30	10	91595A649	9.47
32	10	91595A650	9.60
36	10	91595A652	10.85
40	10	91595A655	11.96
M10 Dia. (Cont.)			
45	10	91595A658	$13.37
50	10	91595A661	13.98
55	5	91595A663	13.22
60	5	91595A664	8.18
70	5	91595A667	9.67
80	5	91595A670	10.63
90	5	91595A673	15.41
M12 Dia.—Breaks at 26,500 lbs.			
14	5	91595A727	11.00
16	5	91595A729	5.60
18	5	91595A731	7.30
20	5	91595A733	5.94
22	5	91595A734	6.80
26	5	91595A735	8.17
30	5	91595A737	7.14
32	5	91595A738	3.60
36	5	91595A741	9.07
40	5	91595A745	9.44
45	5	91595A749	10.89
50	5	91595A753	9.47
55	1	91595A755	3.04
60	1	91595A757	2.59
70	1	91595A761	2.99
80	1	91595A765	2.65
90	1	91595A769	3.43
100	1	91595A773	4.37
M14 Dia.—Breaks at 30,500 lbs.			
30	1	91595A901	3.45
40	1	91595A905	3.74
50	1	91595A909	4.72
80	1	91595A913	5.93
M16 Dia.—Breaks at 47,000 lbs.			
30	1	91595A839	4.67
36	1	91595A841	3.63
40	1	91595A845	3.37
45	1	91595A849	4.26
50	1	91595A853	4.09
60	1	91595A857	4.49
70	1	91595A861	5.15
80	1	91595A865	5.91
90	1	91595A869	7.32
100	1	91595A873	7.69
M20 Dia.—Breaks at 74,000 lbs.			
50	1	91595A877	6.20
60	1	91595A881	7.26
70	1	91595A885	8.71
80	1	91595A889	8.72
90	1	91595A893	9.61
100	1	91595A897	12.94

Dowel Pin Assortments

Come in a plastic box.

24-Piece Assortments—Alloy Steel

Dia.	No. of Pieces	Length Range	
1/16"	4	5/8"	
1/8"	4	2"	
1/4"	12	1/2"-1"	
3/8"	4	1"	
93832A300			$32.58

50-Piece Assortments—Alloy Steel

Diameter	No. of Pcs.	Length Range	
1/16"	15	1/4"-5/8"	
1/8"	5	1/2"	
3/16"	5	3/8"	
1/4"	15	1/2"-1 1/4"	
3/8"	5	3/4"	
1/2"	5	1 1/2"	
93832A400			$40.10

120-Piece Assortments—Alloy Steel

Diameter	No. of Pcs.	Length Range	
5/16"	30	3/4"-1 1/2"	
3/8"	30	1"-2"	
1/2"	40	1"-2 1/2"	
5/8"	20	2"-3"	
93832A220			$157.89

210-Piece Assortments—Alloy Steel

Diameter	No. of Pcs.	Length Range	
1/16"	15	3/4"	
1/8"	45	5/8"-1"	
3/16"	75	1/2"-2"	
1/4"	75	1/2"-2"	
93832A210			$79.86

220-Piece Assortments—Type 416 SS

Diameter	No. of Pcs.	Length Range	
1/16"	40	1/4"-1/2"	
3/32"	60	3/8"-1"	
1/8"	60	3/8"-1"	
3/16"	40	1/2"-1"	
1/4"	20	1/2"-1"	
93845A210			$149.68

Metric 540-Piece Assortments

Dia.	No. of Pieces	Length Range, mm	
M3	150	8-32	
M4	140	10-40	
M5	125	12-50	
M6	125	12-50	
18-8 SS	93860A110		$164.89
Alloy Steel	93753A720		144.44

220-Piece Assortment

940-Piece Assortments—18-8 SS

Diameter	No. of Pcs.	Length Range	
1/16"	100	3/8"	
3/32"	100	1/2"	
1/8"	400	3/8"-3/4"	
3/16"	200	3/8"-3/4"	
1/4"	100	1/2"-1"	
5/16"	20	1"-1 1/2"	
3/8"	20	1"-1 1/2"	
93834A100			$190.45

Oversized Dowel Pins

Oversized to fit worn and enlarged holes, these pins have one beveled end to aid insertion. *0.001″ oversized pins* have a diameter tolerance of +0.0009″ to +0.0012″; *0.002″ pins* have a diameter tolerance of +0.0019″ to +0.0021″. Breaking strength not rated.

18-8 Stainless Steel— More corrosion resistant than alloy steel. May be magnetic. Not rated for hardness.

Alloy Steel— Stronger than 18-8 stainless steel. Minimum Rockwell hardness is C60.

0.001″ Oversized—*18-8 Stainless Steel*

Lg.		Each
1/8″ Dia.		
3/8″	99010A111	$1.33
1/2″	99010A115	1.39
5/8″	99010A119	1.44
3/4″	99010A123	1.56
1″	99010A127	1.72
3/16″ Dia.		
1/2″	99010A145	1.53
5/8″	99010A149	1.63
3/4″	99010A153	1.64
1″	99010A157	1.85
1 1/4″	99010A161	1.96
1 1/2″	99010A165	2.07
2″	99010A169	2.18
1/4″ Dia.		
1/2″	99010A181	2.24
3/4″	99010A185	2.44
1″	99010A189	2.54
1 1/4″	99010A193	2.63
1 1/2″	99010A197	2.73
2″	99010A201	2.76
5/16″ Dia.		
3/4″	99010A261	$2.54
1″	99010A265	2.61
1 1/4″	99010A269	2.62
1 1/2″	99010A273	2.68
2″	99010A277	2.84
3/8″ Dia.		
3/4″	99010A295	2.54
1″	99010A299	2.56
1 1/4″	99010A303	2.59
1 1/2″	99010A307	2.77
2″	99010A311	2.84
1/2″ Dia.		
1″	99010A334	2.73
1 1/4″	99010A337	2.89
1 1/2″	99010A341	3.43
2″	99010A345	3.56
2 1/2″	99010A349	3.71
3″	99010A353	3.89

0.001″ Oversized—*Alloy Steel*

Lg.	Pkg. Qty.		Pkg.
1/16″ Dia.			
1/4″	25	98385A120	$7.33
5/16″	25	98385A123	7.38
3/8″	25	98385A126	7.45
1/2″	25	98385A129	7.83
5/8″	25	98385A132	7.88
3/4″	25	98385A135	7.99
3/32″ Dia.			
1/4″	25	98385A141	7.38
5/16″	25	98385A144	7.45
3/8″	25	98385A147	7.51
1/2″	25	98385A150	7.88
5/8″	25	98385A153	7.99
3/4″	25	98385A165	8.08
1/8″ Dia.			
3/8″	25	98385A170	6.04
1/2″	25	98385A171	6.10
5/8″	25	98385A172	6.16
3/4″	25	98385A173	6.41
1″	25	98385A175	6.98
1 1/4″	25	98385A179	7.74
1 1/2″	25	98385A183	8.50
3/16″ Dia.			
1/2″	25	98385A205	$6.01
5/8″	25	98385A207	6.59
3/4″	25	98385A208	6.89
1″	25	98385A210	7.59
1 1/4″	25	98385A212	8.35
1 1/2″	25	98385A214	9.38
2″	25	98385A216	11.20
1/4″ Dia.			
1/2″	25	98385A237	7.13
5/8″	25	98385A238	7.35
3/4″	25	98385A240	7.59
1″	25	98385A242	8.35
1 1/4″	25	98385A244	9.17
1 1/2″	25	98385A246	10.35
2″	25	98385A250	12.60
2 1/2″	10	98385A254	6.98
5/16″ Dia.			
1/2″	20	98385A279	5.89
3/4″	20	98385A281	6.34
1″	20	98385A283	6.74
1 1/4″	20	98385A285	7.56

0.001″ Oversized—*Alloy Steel (Cont.)*

Lg.	Pkg. Qty.		Pkg.
5/16″ Dia. (Cont.)			
1 1/2″	20	98385A287	$8.56
2″	20	98385A291	10.78
2 1/2″	10	98385A293	7.59
3″	10	98385A295	9.05
3/8″ Dia.			
3/4″	10	98385A622	4.10
1″	10	98385A624	4.46
1 1/4″	10	98385A626	4.83
1 1/2″	10	98385A628	5.49
2″	10	98385A632	6.68
2 1/2″	5	98385A634	4.55
3″	5	98385A636	5.28
7/16″ Dia.			
1″	5	98385A651	4.31
1 1/2″	5	98385A654	5.01
2″	5	98385A658	5.68
2 1/2″	5	98385A662	6.62
3″	5	98385A665	7.89
1/2″ Dia.			
1″	5	98385A712	4.74
1 1/4″	5	98385A714	5.04
1/2″ Dia. (Cont.)			
1 1/2″	5	98385A716	$5.40
2″	5	98385A720	6.07
2 1/2″	5	98385A722	7.13
3″	5	98385A724	8.44
3 1/2″	5	98385A728	9.86
4″	5	98385A732	11.54
5/8″ Dia.			
1 1/4″	5	98385A741	6.97
1 1/2″	5	98385A745	7.43
1 3/4″	5	98385A749	8.03
2″	5	98385A753	8.94
2 1/2″	5	98385A757	10.31
3″	5	98385A761	11.69
3/4″ Dia.			
2″	5	98385A771	11.54
2 1/2″	1	98385A778	2.52
3″	1	98385A779	3.13
3 1/2″	1	98385A783	3.73
4″	1	98385A787	4.46

0.002″ Oversized—*Alloy Steel*

Lg.	Pkg. Qty.		Pkg.
1/8″ Dia.			
3/8″	10	98985A211	5.65
1/2″	10	98985A214	5.71
5/8″	10	98985A217	5.74
3/4″	10	98985A221	5.95
1″	10	98985A225	6.50
1 1/4″	10	98985A229	7.16
1 1/2″	10	98985A232	7.83
3/16″ Dia.			
1/2″	10	98985A309	5.62
5/8″	10	98985A312	6.13
3/4″	10	98985A315	6.41
1″	10	98985A319	7.04
1 1/4″	5	98985A323	4.16
1 1/2″	5	98985A329	4.61
2″	5	98985A333	5.43
1/4″ Dia.			
1/2″	10	98985A408	6.62
5/8″	10	98985A411	6.77
3/4″	10	98985A414	7.04
1″	5	98985A418	4.16
1 1/4″	5	98985A422	4.52
1 1/2″	5	98985A427	5.07
2″	5	98985A431	6.07
5/16″ Dia.			
3/4″	5	98985A501	4.19
1″	5	98985A505	4.55
1 1/4″	5	98985A508	5.04
1 1/2″	5	98985A512	5.62
2″	5	98985A515	6.80
2 1/2″	5	98985A519	8.23
3/8″ Dia.			
3/4″	5	98985A606	4.83
1″	5	98985A610	5.16
1 1/4″	5	98985A614	5.65
1 1/2″	5	98985A619	6.44
2″	5	98985A621	7.28
2 1/2″	5	98985A625	8.82
3″	5	98985A628	10.41
1/2″ Dia.			
1″	5	98985A711	9.24
1 1/4″	5	98985A716	9.93
1 1/2″	5	98985A721	10.63
2″	1	98985A726	2.43
2 1/2″	1	98985A731	2.89
3″	1	98985A735	3.46

Undersized Dowel Pins

Not every hole is precisely sized; these pins have a slightly smaller diameter to fit inconsistent holes. One end is beveled or rounded to aid insertion. Diameter tolerance is –0.0002″.

18-8 Stainless Steel— More corrosion resistant than alloy steel, plus pins are passivated to guard against oxidation. May be magnetic. Minimum Rockwell hardness is B83. Not rated for breaking strength. Meet Mil. Spec. MIL-P-21143/2 wherever a dash number is shown.

Alloy Steel— Stronger than 18-8 stainless steel. Minimum Rockwell hardness is C50. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces.

Lg.	Dash No.	18-8 Stainless Steel		Alloy Steel	
1/16″—Steel breaks at 750 lbs.					
1/4″	26	98105A050	$1.38	98105A077	$1.16
3/8″	28	98105A051	1.59	98105A078	1.33
1/2″	30	98105A052	1.83	98105A079	1.53
3/32″—Steel breaks at 1,400 lbs.					
1/4″	46	98105A053	1.71	98105A080	1.42
3/8″	48	98105A054	1.97	98105A081	1.64
1/2″	50	98105A055	2.28	98105A082	1.92
1/8″—Steel breaks at 2,600 lbs.					
3/8″	68	98105A056	2.47	98105A083	2.09
1/2″	70	98105A057	2.82	98105A084	2.38
5/8″	71	98105A058	3.14	98105A085	2.62
3/4″	72	98105A059	3.62	98105A086	3.02
3/16″—Steel breaks at 5,900 lbs.					
1/2″	110	98105A060	3.11	98105A087	2.62
5/8″	111	98105A061	3.45	98105A088	2.89
3/4″	112	98105A062	3.78	98105A089	3.18
1/4″—Steel breaks at 10,000 lbs.					
1/2″	150	98105A063	$3.52	98105A090	$2.96
3/4″	—	98105A064	3.80	98105A091	3.42
1″	—	98105A065	4.38	98105A092	3.93
5/16″—Steel breaks at 16,000 lbs.					
3/4″	—	98105A066	3.33	98105A093	3.00
1″	—	98105A067	4.67	98105A094	4.20
1 1/4″	—	98105A068	5.00	98105A095	4.49
1 1/2″	—	98105A069	5.33	98105A096	4.80
3/8″—Steel breaks at 23,000 lbs.					
3/4″	—	98105A070	4.67	98105A097	4.20
1″	—	98105A071	5.00	98105A098	4.49
1 1/4″	—	98105A072	5.33	98105A099	4.80
1 1/2″	—	98105A073	5.67	98105A100	5.11
1/2″—Steel breaks at 42,000 lbs.					
1″	—	98105A074	5.33	98105A101	4.80
1 1/2″	—	98105A075	5.67	98105A102	5.11
2″	—	98105A076	6.00	98105A103	5.40

Plastic Dowel Pins

Pins are made of acetal so they are nonmarring and resistant to gas, oil, and other neutral chemicals. Diameter tolerance is ±0.005″. Maximum temperature is 220° F. Rockwell hardness is M80. Color is white.

Also Available: PTFE pins in lengths marked with a ★. Please ask for 98703A330 and specify diameter and length.

Lg.		Pkg. of 50
3/64″ Dia.		
1/8″	97155A106	$2.96
1/4″	97155A109	3.00
3/8″	97155A112	3.04
1/2″	97155A115	3.08
1/16″ Dia.		
1/8″	97155A202	3.00
1/4″	97155A206	3.04
3/8″	97155A211	3.08
1/2″	97155A216	3.11
3/32″ Dia.		
1/8″	97155A307	3.04
1/4″	97155A314	3.08
3/8″	97155A319	3.11
1/2″	97155A323	3.14
1/8″ Dia.		
1/8″	97155A405	3.08
3/16″	97155A409	3.09
1/4″	97155A413★	3.11
1/8″ Dia. (Cont.)		
3/8″	97155A419★	$3.14
1/2″	97155A426★	3.54
3/16″ Dia.		
1/4″	97155A519	3.18
3/8″	97155A525★	3.21
1/2″	97155A529★	3.26
3/4″	97155A533★	3.33
7/32″ Dia.		
1/2″	97155A582	3.28
1/4″ Dia.		
1/4″	97155A622	3.21
3/8″	97155A627	3.25
1/2″	97155A636★	3.27
3/4″	97155A639★	3.37
5/16″ Dia.		
3/8″	97155A718	3.29
1/2″	97155A724	3.33
3/4″	97155A737	3.39

Weld-On Pins

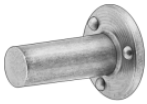

Through Hole

Because these heavy duty steel pins are welded in place, they provide greater rigidity and strength than standard pins. For the best fit, your hole should be equal to or slightly larger than the diameter shown. Not rated for hardness. Three projections on the side of the base increase the weld area.

Base mount pins require no mounting hole, so they can be welded directly to a surface. In ***through hole*** applications, the pin's base is welded directly to a component, allowing its body to pass through an opening that is slightly larger than the dia. shown below.

Also Available: 18-8 stainless steel pins. For surface mount, please ask for 94742A300 and specify dia. and length. For through hole, please ask for 94742A800 and specify dia. and length.

Shaft Dia.	Shaft Lg.	Base Dia.	Base Thick.		Pkg. of 10
Base Mount					
1/8″	1/2″	1/4″	3/64″	94742A105	$2.65
3/16″	1/2″	7/16″	1/16″	94742A210	2.78
3/16″	5/8″	7/16″	1/16″	94742A220	2.83
1/4″	5/16″	1/2″	5/64″	94742A250	3.26
1/4″	1/2″	1/2″	5/64″	94742A260	3.35
1/4″	3/4″	1/2″	5/64″	94742A270	3.61
1/4″	1″	1/2″	5/64″	94742A280	3.83
Through Hole					
5/32″	1/2″	7/16″	1/16″	94742A535	3.00
3/16″	3/4″	1/2″	5/64″	94742A560	3.48
3/16″	1″	1/2″	5/64″	94742A580	3.48
1/4″	3/4″	5/8″	5/64″	94742A605	3.74
1/4″	1″	5/8″	5/64″	94742A610	3.87
1/4″	1 1/4″	5/8″	5/64″	94742A615	4.74
1/4″	2″	5/8″	5/64″	94742A620	5.78

Grooved Dowel Pins

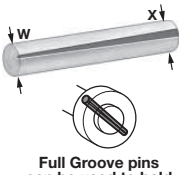

Full Groove pins can be used to hold a wheel to a shaft.

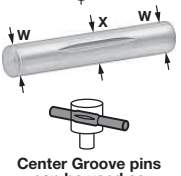

Center Groove pins can be used as T-handles.

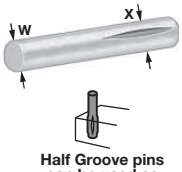

Half Groove pins can be used as pivot or hinge pins.

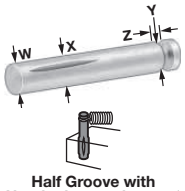

Half Groove with Notch pins can be used as anchors for springs.

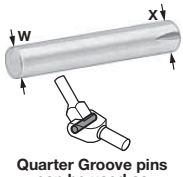

Quarter Groove pins can be used as linkage pins.

Each pin is grooved so it contracts as it's forced into a hole, creating tension to lock it in place. Pin ends are beveled or rounded. Pins are zinc-plated steel. For the best fit, your hole should be equal to or slightly larger than the diameter shown. Diameter tolerance is –0.002″ for (W) and ±0.003″ for (X). Length tolerance is +0.08″.

Full Groove—Also known as Type A grooved pins. Use them in place of standard dowel, spring, and taper pins. **Also Available:** Full groove pins in 18-8 stainless steel. Please ask for 98400A666 and specify diameter and length.

Center Groove—Also known as Type E pins. Use them in place of cotter and pivot pins to create T-handles.

Half Groove—Also known as Type H pins. Use them as pivot or hinge pins.

Half Groove with Notch—Also known as Type G pins. Often used as anchors for tension springs. Diameter tolerance is ±0.005″ for (Y).

Quarter Groove—Also known as Type C pins. They are well suited for linkage or pivot applications.

To Order: Please specify full groove, center groove, half groove, half groove with notch, or quarter groove.

Lg.	Diameter (W)	Diameter (X)	Diameter (Y)	Wd. (Z)	Pkg. Qty.		Pkg.
3/32″ Dia.—Breaks at 850 lbs.							
1/4″	0.0938″	0.101″	0.062″	0.033″	25	98400A485	$8.86
1/2″	0.0938″	0.101″	0.062″	0.033″	25	98400A486	8.86
1/8″ Dia.—Breaks at 1,600 lbs.							
1/2″	0.125″	0.134″	0.083″	0.064″	25	98400A487	9.06
3/4″	0.125″	0.134″	0.083″	0.064″	25	98400A488	9.81
1″	0.125″	0.133″	0.083″	0.064″	25	98400A489	10.83
5/32″ Dia.—Breaks at 2,300 lbs.							
1/2″	0.1563″	0.166″	0.104″	0.064″	25	98400A490	10.83
3/4″	0.1563″	0.166″	0.104″	0.064″	25	98400A491	11.56
1″	0.1563″	0.165″	0.104″	0.064″	25	98400A492	11.94
3/16″ Dia.—Breaks at 3,300 lbs.							
1/2″	0.1875″	0.198″	0.125″	0.064″	25	98400A493	11.56
3/4″	0.1875″	0.198″	0.125″	0.064″	25	98400A494	11.56
3/16″ Dia. (Cont.)							
1″	0.1875″	0.198″	0.125″	0.064″	10	98400A495	$6.14
1 1/2″	0.1875″	0.197″	0.125″	0.064″	10	98400A514	8.09
1/4″ Dia.—Breaks at 5,850 lbs.							
3/4″	0.25″	0.263″	0.167″	0.096″	25	98400A496	10.83
1″	0.25″	0.263″	0.167″	0.096″	25	98400A497	11.56
1 1/4″	0.25″	0.263″	0.167″	0.096″	10	98400A498	5.38
1 1/2″	0.25″	0.262″	0.167″	0.096″	10	98400A518	7.51
5/16″ Dia.—Breaks at 7,650 lbs.							
3/4″	0.3125″	0.329″	0.209″	0.127″	10	98400A499	5.64
1″	0.3125″	0.329″	0.209″	0.127″	10	98400A500	6.28
1 1/4″	0.3125″	0.329″	0.209″	0.127″	10	98400A501	6.72
3/8″ Dia.—Breaks at 11,000 lbs.							
1″	0.375″	0.394″	0.25″	0.127″	10	98400A502	9.24

Captive Pins

Also known as pilot pins and PEM® brand Type TPS pins, these flush-mount fasteners position, pivot, and align components. To install, punch or drill a hole into sheet metal. Use a punch and anvil or arbor press to clinch the head to the metal. Made of 300 series stainless steel. May be mildly magnetic. Minimum sheet metal thickness is +0.04″. Not rated for breaking strength or hardness.

Also Available: Miniature captive pins. Please ask for 95648A100 and specify diameter (M1, M1.5, or M2) and length (2-6 mm, 8, or 10 mm).

Dia.	O'all Lg.	PEM® Part No.	Pkg. Qty.		Pkg.
1/8″	3/8″	TPS-125-6	50	95648A400	$11.16
1/8″	1/2″	TPS-125-8	50	95648A410	11.99
1/8″	5/8″	TPS-125-10	50	95648A420	12.75
3/16″	3/8″	TPS-187-6	25	95648A530	7.53
3/16″	1/2″	TPS-187-8	25	95648A540	8.35
3/16″	5/8″	TPS-187-10	25	95648A550	$9.28
1/4″	1/2″	TPS-250-8	25	95648A660	10.47
1/4″	5/8″	TPS-250-10	25	95648A670	12.25
1/4″	3/4″	TPS-250-12	25	95648A680	14.28

Pull-Out Dowel Pins

Standard

Flat Vent

Spiral Vent

You can reuse these removable pins—they're internally threaded on one end, so you can pull them out with a screw or the tool sold separately on this page. Because these pins are precision ground, they're great for accurately aligning parts. Diameter tolerance is +0.0001″ to +0.0003″. For the best fit, your hole should be equal to or slightly smaller than the diameter shown. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces.

Standard pins have a smooth finish and are used in through holes. ***Vented*** pins relieve trapped air, making them easier to insert and remove from blind holes. ***Flat vent*** pins are ground flat along one side, while ***spiral vent*** pins have grooves cut from end to end.

Alloy Steel—Our strongest pull-out dowel pins. Minimum Rockwell hardness is C47. Meet ASME B18.8.2.

18-8 Stainless Steel—Pins are corrosion resistant and may be mildly magnetic. Not rated for hardness or breaking strength. Dimensions meet ASME B18.8.2, except 1″ diameter.

Also Available: Standard and spiral vent 18-8 stainless steel pins. Please ask for 97175A800 for standard pins and 97352A600 for spiral vent pins, then specify diameter and length.

Diameter	1/4″	5/16″	3/8″	7/16″	1/2″	5/8″	3/4″	1″
Thread	8-32	10-32	10-32	1/4″-20	1/4″-20	1/4″-20	5/16″-18	5/16″-18

Standard—Alloy Steel

Lg.		
1/4″ Dia.—*Breaks at 6,400 lbs.*		
1/2″	97175A309	$1.50
3/4″	97175A311	1.58
1″	97175A315	1.66
1 1/4″	97175A316	1.91
1 1/2″	97175A318	1.85
1 3/4″	97175A319	2.06
2″	97175A321	2.23
2 1/2″	97175A325	2.33
5/16″ Dia.—*Breaks at 10,000 lbs.*		
3/4″	97175A329	1.91
1″	97175A332	1.97
1 1/4″	97175A334	2.06
1 1/2″	97175A336	2.14
2″	97175A390	2.67
2 1/4″	97175A338	2.45
2 1/2″	97175A341	2.58
3/8″ Dia.—*Breaks at 14,300 lbs.*		
3/4″	97175A344	2.47
1″	97175A348	1.84
1 1/4″	97175A349	1.94
1 1/2″	97175A352	2.04
1 3/4″	97175A353	2.12
2″	97175A355	2.27
2 1/4″	97175A357	2.45
2 1/2″	97175A358	2.85
3″	97175A364	2.95
7/16″ Dia.—*Breaks at 19,500 lbs.*		
1″	97175A366	2.71
1 1/2″	97175A369	2.60
2″	97175A374	2.96

Lg.		
1/2″ Dia.—*Breaks at 25,500 lbs.*		
3/4″	97175A376	$2.75
1″	97175A377	2.12
1 1/4″	97175A378	2.14
1 1/2″	97175A379	2.19
1 3/4″	97175A381	2.30
2″	97175A383	2.46
2 1/4″	97175A385	2.66
2 1/2″	97175A391	3.01
3″	97175A395	3.30
3 1/2″	97175A397	3.70
4″	97175A399	4.39
5/8″ Dia.—*Breaks at 39,000 lbs.*		
1 1/4″	97175A410	3.05
1 1/2″	97175A411	3.16
2″	97175A413	3.42
2 1/4″	97175A414	3.43
2 1/2″	97175A415	3.85
3″	97175A417	4.06
4″	97175A421	4.86
3/4″ Dia.—*Breaks at 57,000 lbs.*		
1 1/2″	97175A426	3.93
2″	97175A431	3.96
2 1/2″	97175A435	4.58
3″	97175A439	5.08
4″	97175A440	6.26
1″ Dia.—*Breaks at 102,000 lbs.*		
2″	97175A443	5.92
2 1/2″	97175A446	7.36
3″	97175A449	7.59
4″	97175A453	7.82

Flat Vent—18-8 Stainless Steel (Breaking strength not rated)

Lg.		
1/4″ Dia.		
3/4″	97365A110	4.11
1″	97365A120	4.16
1 1/4″	97365A130	4.24
1 1/2″	97365A140	4.34
1 3/4″	97365A150	4.45
2″	97365A160	4.53
2 1/2″	97365A170	4.76
5/16″ Dia.		
3/4″	97365A180	4.30
1″	97365A190	4.43
1 1/4″	97365A200	4.59
1 1/2″	97365A210	4.74
2″	97365A222	5.03
2 1/2″	97365A240	5.35
3/8″ Dia.		
1″	97365A250	4.96
1 1/4″	97365A260	5.18
1 1/2″	97365A270	5.39
2″	97365A290	5.75
2 1/2″	97365A310	6.18
3″	97365A320	6.59

Lg.		
1/2″ Dia.		
1″	97365A330	6.57
1 1/4″	97365A340	6.65
1 1/2″	97365A350	6.96
1 3/4″	97365A360	7.27
2″	97365A370	7.58
2 1/2″	97365A390	8.23
3″	97365A400	8.85
5/8″ Dia.		
1 1/2″	97365A430	10.36
2″	97365A440	11.33
2 1/2″	97365A490	12.67
3″	97365A470	13.27
3/4″ Dia.		
2″	97365A500	13.88
3″	97365A510	16.31
1″ Dia.		
2″	97365A530	16.55
3″	97365A620	20.35
4″	97365A580	24.14

Flat Vent—Alloy Steel

Lg.		
1/4″ Dia.—*Breaks at 6,400 lbs.*		
3/4″	97360A110	$2.88
1″	97360A120	2.93
1 1/4″	97360A130	3.31
1 1/2″	97360A140	3.44
1 3/4″	97360A150	3.57
2″	97360A160	3.66
2 1/2″	97360A170	4.30
5/16″ Dia.—*Breaks at 10,000 lbs.*		
3/4″	97360A180	3.54
1″	97360A190	3.69
1 1/4″	97360A200	3.87
1 1/2″	97360A210	4.03
2″	97360A222	4.36
2 1/2″	97360A240	5.50
3/8″ Dia.—*Breaks at 14,300 lbs.*		
1″	97360A250	3.79
1 1/4″	97360A260	4.19
1 1/2″	97360A270	4.30
2″	97360A290	4.74
2 1/4″	97360A300	5.12
2 1/2″	97360A310	5.27
3″	97360A320	6.15

Lg.		
1/2″ Dia.—*Breaks at 25,500 lbs.*		
1″	97360A330	$4.63
1 1/4″	97360A340	4.68
1 1/2″	97360A350	5.07
1 3/4″	97360A360	5.23
2″	97360A370	5.39
2 1/2″	97360A390	5.67
3″	97360A400	6.15
3 1/2″	97360A410	6.70
5/8″ Dia.—*Breaks at 39,000 lbs.*		
1 1/2″	97360A430	5.00
2″	97360A440	5.34
2 1/4″	97360A480	5.63
2 1/2″	97360A490	6.75
3″	97360A470	7.03
3/4″ Dia.—*Breaks at 57,000 lbs.*		
2″	97360A500	7.08
3″	97360A510	7.34
4″	97360A570	11.12
1″ Dia.—*Breaks at 102,000 lbs.*		
2″	97360A530	9.31
3″	97360A550	10.79
4″	97360A580	15.57

Spiral Vent—Alloy Steel

Lg.		
1/4″ Dia.—*Breaks at 6,400 lbs.*		
3/4″	97352A110	3.37
1″	97352A120	3.55
1 1/4″	97352A130	3.71
1 1/2″	97352A140	3.86
2″	97352A160	4.42
2 1/2″	97352A170	5.48
5/16″ Dia.—*Breaks at 10,000 lbs.*		
3/4″	97352A180	4.01
1″	97352A190	4.24
1 1/4″	97352A200	4.42
1 1/2″	97352A210	4.58
2″	97352A220	5.22
2 1/2″	97352A240	5.86
3/8″ Dia.—*Breaks at 14,300 lbs.*		
1″	97352A250	4.16
1 1/4″	97352A260	4.35
1 1/2″	97352A270	4.54
1 3/4″	97352A280	4.84
2″	97352A290	5.22
2 1/4″	97352A300	5.52
2 1/2″	97352A310	5.90
3″	97352A320	6.47
1/2″ Dia.—*Breaks at 25,500 lbs.*		
1″	97352A330	4.42
1 1/4″	97352A340	4.69

Lg.		
1/2″ Dia. (Cont.)		
1 1/2″	97352A350	4.92
1 3/4″	97352A360	5.26
2″	97352A370	5.67
2 1/4″	97352A380	6.01
2 1/2″	97352A390	6.43
3″	97352A400	7.07
3 1/2″	97352A410	7.90
5/8″ Dia.—*Breaks at 39,000 lbs.*		
1 1/2″	97352A430	6.92
2″	97352A440	8.02
2 1/4″	97352A480	8.55
2 1/2″	97352A460	9.11
3″	97352A470	10.06
3/4″ Dia.—*Breaks at 57,000 lbs.*		
2″	97352A490	10.32
2 1/2″	97352A500	11.69
3″	97352A510	12.90
4″	97352A570	16.15
1″ Dia.—*Breaks at 102,000 lbs.*		
2″	97352A530★	13.80
3″	97352A550★	17.51
4″	97352A580★	21.86

★ Thread is 3/8″-16.

Pull-Out Dowel Pin Tools

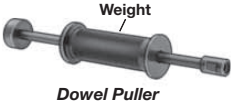

Dowel Puller

Optional Extension

Stud

Install and remove pull-out dowel pins with ease. For a complete tool you'll need a ***dowel puller*** and a ***large*** or ***small stud*** (each sold separately) that fits the diameter of your pull-out pin. The small stud fits 3/16″ to 5/8″ and M6 to M12 diameter pins, large fits 3/4″ to 1 1/2″ and M13 to M20 diameters.

You'll also need a socket head cap screw. The dowel puller fits 6-32 to 1/4″ and M4 to M6 screws and the extension fits 5/16″ to 3/8″ and M8 to M10 screws. For inch sizes see 91251A on pages 3105-3107, for metric sizes see 91290A on pages 3105-3106.

To use, thread one end of the stud into the dowel puller, and fit the other end over the cap screw that you've threaded into your pin, then slide the weight.

The dowel puller has an overall length of 12 1/4″ and a reach of 6 1/2″. Add the optional extension for an additional 5 1/2″ of reach.

Dowel Puller	92330A300	$65.55
Stud for Small Dia. Pin	92330A411	27.80
Stud for Large Dia. Pin	92330A511	27.80
Optional Extension	92330A220	13.64

Metric Pull-Out Dowel Pins

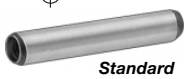
Standard

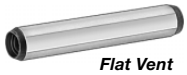
Flat Vent

They're internally threaded on one end, so you can pull them out with a screw or a threaded puller such as the Pull-Out Dowel Pin Tool on page 3338. Pins are precision ground for accurate alignment. For the best fit, your hole should be equal to or slightly smaller than the diameter shown. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Pins are made from alloy steel and meet DIN 7979D-m6. Minimum Rockwell hardness is C52.

Standard pins have a smooth finish and are used in through holes.

Flat vent pins are ground flat on one side. They relieve trapped air, so they're easy to insert and remove from blind holes.

Diameter	M6	M8	M10	M12	M16	M20
Thread	M4	M5	M6	M6	M8	M10
Pitch, mm	0.7	0.8	1	1	1.25	1.5
Diameter Tolerance, mm	+0.004 to +0.012	+0.006 to +0.015		+0.007 to +0.018		+0.008 to +0.021

Standard

Lg., mm		
M6 Dia.—Breaks at 6,600 lbs.		
16	97355A292	$1.32
18	97355A296	1.43
20	97355A300	1.46
24	97355A302	1.31
28	97355A303	1.56
30	97355A306	1.81
32	97355A310	1.87
36	97355A314	2.06
40	97355A318	2.08
50	97355A326	2.12
60	97355A334	3.55
M8 Dia.—Breaks at 10,400 lbs.		
20	97355A401	1.42
24	97355A405	1.94
28	97355A414	1.98
30	97355A418	2.00
32	97355A404	2.00
36	97355A422	2.03
40	97355A406	2.08
50	97355A426	2.06
60	97355A430	2.81
70	97355A434	3.91
80	97355A439	4.38
M10 Dia.—Strength not rated		
24	97355A492	2.16
28	97355A496	2.03

Lg., mm		
M10 Dia. (Cont.)		
30	97355A500	$2.15
32	97355A504	2.50
36	97355A505	2.81
40	97355A506	3.09
50	97355A507	2.66
60	97355A515	3.52
70	97355A518	4.69
80	97355A520	5.17
M12 Dia.—Breaks at 24,000 lbs.		
24	97355A531	2.58
30	97355A535	2.54
36	97355A539	2.64
45	97355A543	3.44
50	97355A547	4.07
60	97355A551	4.84
M16 Dia.—Breaks at 33,500 lbs.		
32	97355A563	3.70
36	97355A567	3.88
40	97355A571	4.08
50	97355A579	4.20
60	97355A587	4.47
70	97355A591	4.99
M20 Dia.—Breaks at 51,500 lbs.		
50	97355A605	7.00
60	97355A609	8.75
80	97355A613	9.38

Flat Vent

Lg., mm		
M6 Dia.—Breaks at 6,600 lbs.		
16	98432A206	1.32
18	98432A210	1.44
20	98432A216	1.20
24	98432A220	1.27
28	98432A224	1.24
30	98432A228	1.24
36	98432A236	1.28
40	98432A240	1.48
50	98432A244	1.72
M8 Dia.—Breaks at 10,400 lbs.		
20	98432A261	1.38
24	98432A265	1.46
28	98432A269	1.56
30	98432A274	1.62
36	98432A282	1.78
40	98432A286	1.90
50	98432A290	2.15
60	98432A294	2.44
70	98432A298	3.00
M10 Dia.—Strength not rated		
24	98432A303	1.98
28	98432A307	2.02

Lg., mm		
M10 Dia. (Cont.)		
30	98432A311	2.02
36	98432A315	2.23
40	98432A319	2.27
50	98432A323	2.43
60	98432A327	2.80
70	98432A332	3.39
M12 Dia.—Breaks at 24,000 lbs.		
24	98432A341	2.56
30	98432A345	2.59
36	98432A349	2.83
40	98432A353	2.83
45	98432A357	3.71
50	98432A362	3.71
60	98432A366	4.00
M16 Dia.—Breaks at 33,500 lbs.		
32	98432A382	4.39
40	98432A386	4.37
50	98432A390	4.70
60	98432A394	6.03
70	98432A398	6.67
80	98432A402	6.67

Hollow Dowel Pins

Use these lightweight dowels as pass-throughs for wires and other components. They're precision ground for accurate alignment and have beveled ends to aid insertion. Wall thickness is approximately 15-20% of the diameter. For the best fit, your hole should be equal to or slightly smaller than the diameter shown. Pins are made from alloy steel. Not rated for hardness or breaking strength.

Lg., mm	Pkg. Qty.		Pkg.
M6 Dia.			
12	10	97184A120	$9.49
20	10	97184A160	11.74
24	5	97184A170	7.69
30	5	97184A180	8.37
M8 Dia.			
12	10	97184A220	12.43
16	5	97184A230	8.86
20	5	97184A250	10.66
24	5	97184A260	12.46
30	1	97184A270	4.40
32	1	97184A280	4.57

Lg., mm	Pkg. Qty.		Pkg.
M10 Dia.			
12	5	97184A300	$8.46
20	1	97184A340	3.66
24	1	97184A350	4.11
30	1	97184A360	4.86
M12 Dia.			
20	1	97184A410	4.43
24	1	97184A420	5.11
30	1	97184A430	6.26
M16 Dia.			
20	1	97184A470	4.66
24	1	97184A480	5.43
30	1	97184A490	6.57

High-Tension Dowel Pins

Knurled

Two-Way Barbed

Barbed with Cap

With a rougher surface than standard dowel pins, these pins grip in place with knurls or barbs. Not rated for hardness or breaking strength.

Knurled pins have the roughest gripping surface and flat ends. Made of steel.

Two-way barbed pins have beveled ends that aid insertion and opposing barbs that pull panels together. Also known as Barb-Lok™ pins, they work best with softer materials and plastics. Made of zinc-plated steel.

Barbed with cap pins have barbs for grip and a capped end for a finished appearance. End is beveled to aid insertion. Also known as Barb-Lok™ pins, they work best with softer materials and plastics. Made of zinc-plated steel.

Lg.	Pkg. Qty.		Pkg.
Knurled			
1/8" Dia.			
1"	10	98388A216	$5.26
2"	10	98388A219	5.33
3"	10	98388A223	5.38
3/16" Dia.			
1"	10	98388A251	5.34
2"	10	98388A256	5.46
3"	10	98388A259	5.58
Two-Way Barbed			
1/8" Dia.			
1/2"	10	98388A324	12.00
3/4"	10	98388A325	12.57
1"	10	98388A326	12.86
3/16" Dia.			
1/2"	10	98388A327	13.14
3/4"	10	98388A328	13.43
1"	10	98388A329	14.00
Barbed with Cap			
7/64" Dia.			
5/16"	1	98388A311	4.29
3/8"	1	98388A312	4.29
1/2"	1	98388A313	4.34
1/8" Dia.			
3/8"	1	98388A314	4.34
1/2"	1	98388A315	4.37
3/4"	1	98388A316	4.46

Lg.	Pkg. Qty.		Pkg.
1/4" Dia.			
1"	10	98388A284	$5.44
2"	10	98388A287	5.65
3"	10	98388A293	5.87
1/4" Dia.			
3/4"	5	98388A331	7.69
1"	5	98388A332	8.11
1 1/4"	5	98388A333	8.54
9/64" Dia.			
3/8"	1	98388A317	4.80
1/2"	1	98388A318	4.80
3/4"	1	98388A319	4.97
11/64" Dia.			
1/2"	1	98388A321	4.80
3/4"	1	98388A322	4.97
1"	1	98388A323	5.09

Wood Dowel Pins

Use ***grooved*** pins in plywood and particleboard and ***spiral*** pins in solid wood.

Dia./Recommended Hole Size	Lg.	Grooved Pkg. of 100		Spiral Pkg. of 100	
1/4"	1 1/2"	97195A416	$4.20	97195A847	$3.92
1/4"	2"	97195A419	4.67	97195A852	4.67
1/4"	2 1/2"	97195A423	6.10	97195A855	6.00
5/16"	1 1/2"	97195A425	3.92	97195A861	3.92
5/16"	2"	97195A427	4.67	97195A864	4.67
3/8"	1 1/2"	97195A429	4.20	97195A873	3.92
3/8"	2"	97195A434	4.67	97195A877	4.67
3/8"	2 1/2"	97195A438	6.12	97195A883	5.92

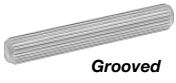
Grooved

Spiral

Precision Perforator Pins

Flat Head

Countersunk Head

Well suited for perforating and punching applications, these pins are also known as core, mold, forged, and pilot pins, and pin blanks. Made of high-speed tool steel. Minimum Rockwell hardness is C60.

Flat head pins provide a wide bearing surface. *0.001″ increments* and *fractional* sizes have a shaft diameter tolerance of +0.0002″ for 2½″ long pins and +0.0003″ for 6″ long pins. *0.0001″ increments* have a shaft diameter tolerance of +0.0003″. **To Order:** Please specify shaft diameter from the size ranges listed below. Fractional sizes are only available in the sizes listed.

Countersunk head pins are beveled 60° under the head for a flush surface when countersunk. Shaft diameter tolerance is +0.0003″.

Shaft Dia.	Head Dia.	Ht.	2½″ O'all Lg.		6″ O'all Lg.	
Flat Head						
0.001″ Increments						
0.010″-.014″	1/32″	1/16″	98378A005★	$11.54	—	—
0.015″-.019″	1/32″	1/16″	98378A015★	9.63	—	—
0.020″-.029″	3/64″	1/16″	98378A025★	7.72	—	—
0.030″-.036″	1/16″	1/16″	98378A100	4.12	—	—
0.037″-.046″	5/64″	1/16″	98378A200	4.12	—	—
0.047″-.055″	3/32″	3/32″	98378A300	4.12	—	—
0.056″-.064″	7/64″	3/32″	98378A400	4.39	98378A450	$20.28
0.065″-.078″	1/8″	3/32″	98378A500	4.39	98378A550	20.28
0.079″-.087″	9/64″	3/32″	98378A600	4.39	98378A650	20.28
0.088″-.099″	5/32″	3/32″	98378A700	4.91	98378A750	19.77
0.100″-.120″	11/64″	3/32″	98378A800	4.91	98378A850	19.77
0.121″-.131″	3/16″	1/8″	98378A900	4.91	98378A950	19.77
0.132″-.147″	13/64″	1/8″	98378A125	7.72	98378A175	19.95
0.148″-.163″	7/32″	1/8″	98378A225	7.72	98378A275	19.95
0.164″-.179″	15/64″	1/8″	98378A325	7.72	98378A375	19.95
0.180″-.194″	1/4″	1/8″	98378A425	8.89	98378A475	20.46
0.195″-.210″	17/64″	1/8″	98378A525	8.89	98378A575	20.46
0.211″-.225″	9/32″	1/8″	98378A625	8.89	98378A675	20.46
0.226″-.241″	19/64″	1/8″	98378A725	10.24	98378A775	21.20
0.242″-.250″	5/16″	3/16″	98378A825	10.24	98378A875	21.20
0.0001″ Increments						
0.0309″-.0328″	1/4″	1/8″	—	—	95203A130	22.00
0.0621″-.0640″	1/4″	1/8″	—	—	95203A240	20.96
0.0934″-.0953″	1/4″	1/8″	—	—	95203A350	20.40
0.1251″-.1265″	1/4″	1/8″	—	—	95203A460	17.60
0.1559″-.1578″	9/32″	5/32″	—	—	95203A570	19.60
0.1876″-.1890″	3/8″	3/16″	—	—	95203A680	19.60
0.2496″-.2515″	7/16″	3/16″	—	—	95203A790	19.60
Fractional Increments						
1/32″	1/16″	1/16″	98378A916	6.19	—	—
3/64″	3/32″	3/32″	98378A918	6.19	—	—
5/64″	1/8″	3/32″	98378A922	6.59	98378A957	20.28
3/32″	5/32″	3/32″	98378A924	7.36	98378A959	19.77
7/64″	11/64″	3/32″	98378A926	7.36	98378A961	19.77
9/64″	13/64″	1/8″	98378A933	5.16	98378A963	19.96
5/32″	7/32″	1/8″	98378A936	5.16	98378A966	19.96
3/16″	1/4″	1/8″	98378A942	5.92	98378A972	20.47
7/32″	9/32″	1/8″	98378A949	5.92	98378A978	20.47
9/32″	11/32″	3/16″	98378A951	10.24	98378A992	21.20

★ 2″ overall length.

Shaft Dia.	Head Dia.	Ht.	2½″ O'all Lg.		6″ O'all Lg.	
Countersunk Head						
Fractional Increments						
1/32″	0.06″	0.02″	93757A450	$5.66	—	—
3/64″	0.08″	0.03″	93757A451	5.66	—	—
1/16″	0.11″	0.04″	93757A452	6.86	93757A952	$22.12
5/64″	0.14″	0.05″	93757A453	6.86	93757A953	22.12
3/32″	0.17″	0.07″	93757A454	7.63	93757A954	21.42
7/64″	0.20″	0.08″	93757A455	7.63	93757A955	21.42
5/32″	0.28″	0.11″	93757A456	8.14	93757A956	21.83
3/16″	0.34″	0.13″	93757A457	9.29	93757A957	22.53
7/32″	0.39″	0.15″	93757A458	9.29	93757A958	22.53

Precision Ejector Pins

Straight Style

Shoulder Style

Also known as pin blanks, knockout pins, forged pins, and pilot pins. Use these pins to eject plastic or alloyed materials from molds. They can also be used for locating and punching. Pins are ground to tight tolerances for minimal friction and long life. Heads are forged for high strength and ends are flat. Made from tool steel. Shaft diameter tolerance for pins up to ½″ diameter is –0.0005″ to –0.0008″, and –0.0003″ to –0.0008″ for diameters larger than ½″. Minimum Rockwell hardness is C41.

Shoulder style pins are more rigid than straight style pins. Shoulder diameter is ⅛″. **To Order:** Please specify ⅜″ or 1⅞″ shoulder length.

Shaft Dia.	Head Dia.	Ht.	6″ O'all Lg.		10″ O'all Lg.	
Straight Style						
3/64″	1/4″	1/8″	93772A104	$7.57	—	—
1/16″	1/4″	1/8″	93772A103	7.15	93772A235	$10.14
3/32″	1/4″	1/8″	93772A105	6.47	93772A239	7.35
1/8″	1/4″	1/8″	93772A112	3.51	93772A241	3.91
9/64″	1/4″	1/8″	93772A113	4.28	93772A242	4.36
5/32″	9/32″	5/32″	93772A114	3.67	93772A243	4.09
3/16″	3/8″	3/16″	93772A115	3.83	93772A244	4.68
7/32″	13/32″	3/16″	93772A116	4.28	93772A245	5.36
15/64″	13/32″	3/16″	—	—	93772A246	5.88
1/4″	7/16″	3/16″	93772A118	4.48	93772A247	5.84
17/64″	7/16″	1/4″	—	—	93772A248	6.90
9/32″	7/16″	1/4″	93772A144	5.62	93772A249	7.16
19/64″	1/2″	1/4″	—	—	93772A273	7.56
5/16″	1/2″	1/4″	93772A121	6.20	93772A250	7.96
21/64″	9/16″	1/4″	—	—	93772A251	8.52
11/32″	9/16″	1/4″	93772A123	6.98	93772A252	8.92
23/64″	5/8″	1/4″	—	—	93772A275	9.50
3/8″	5/8″	1/4″	93772A124	7.36	93772A253	9.90
7/16″	11/16″	1/4″	93772A127	8.92	93772A256	12.14
1/2″	3/4″	1/4″	93772A130	10.66	93772A259	14.46
5/8″	7/8″	1/4″	93772A133	15.28	93772A261	21.10
3/4″	1″	1/4″	93772A136	21.30	93772A264	28.58
1″	1 1/4″	1/4″	93772A142	48.80	93772A270	54.80
Shoulder Style						
1/32″	1/4″	1/8″	93779A511	12.77	—	—
3/64″	1/4″	1/8″	93779A521	7.84	93779A728	10.38
1/16″	1/4″	1/8″	93779A533	6.98	93779A740	8.93
5/64″	1/4″	1/8″	93779A544	6.98	93779A751	8.93
3/32″	1/4″	1/8″	93779A552	6.29	93779A759	8.09
7/64″	1/4″	1/8″	93779A561	6.29	93779A768	8.09

L-Shaped Pins

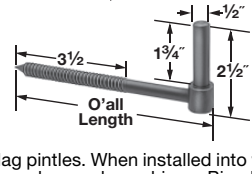

Also known as lag pintles. When installed into wood, provide a free-standing pin that can be used as a hinge. Pins have a black finish.

18-8 Stainless Steel—More corrosion resistant than galvanized steel. May be magnetic.

Galvanized Steel—Stronger than 18-8 stainless steel. May be mildly magnetic.

O'all Lg.	18-8 Stainless Steel		Galvanized Steel	
5¼″	96328A300	$23.91	96328A100	$17.39
6¼″	96328A400	24.46	96328A200	19.57

Precision Punch Pins

Made of high-speed tool steel, use these pins as wear-resistant components in molding applications. Also known as pin blanks. Not recommended for use as ejector pins. Shafts are ground flat. Minimum Rockwell hardness is C40. Diameter tolerance is +0.0002″ to +0.0005″.

Shaft Dia.	Head Dia.	Ht.	2″ O'all Lg.		2½″ O'all Lg.		3″ O'all Lg.		3½″ O'all Lg.	
3/16″	5/16″	1/8″	93770A205	$12.12	93770A305	$12.12	—	—	—	—
1/4″	3/8″	1/8″	93770A210	13.13	93770A310	13.13	93770A410	$13.46	—	—
5/16″	7/16″	1/8″	93770A215	13.13	93770A315	13.13	93770A415	13.46	—	
3/8″	1/2″	3/16″	93770A220	15.54	93770A320	15.54	93770A420	15.54	—	—
7/16″	9/16″	3/16″	93770A225	15.54	93770A325	15.54	93770A425	15.54	93770A525	$15.54
1/2″	5/8″	3/16″	93770A230	15.54	93770A330	15.54	93770A430	15.54	93770A530	15.54
5/8″	3/4″	1/4″	93770A235	19.63	93770A335	20.54	93770A435	19.63	93770A535	19.63
3/4″	7/8″	1/4″	—	—	93770A340	28.81	93770A440	28.81	93770A540	28.81

Taper Pins

Commonly used for positioning components and securing assemblies. These pins have slightly rounded edges to aid insertion. Pins taper at a uniform rate of 1/4″ per 12 inches. To install, drive pins into tapered holes (for tapered drill bits, see 8831A on page 2483). Diameter tolerance at the larger pin end is –0.0007″ to +0.0013″. Meet ANSI/ASME B18.8.2.

18-8 Stainless Steel— Our most corrosion resistant taper pins. May be magnetic. Breaking strength is 54,000 psi. Rockwell hardness is B85.

Steel— Breaking strength is 46,500 psi. Rockwell hardness is B85.

		18-8 Stainless Steel			Steel	
Lg.	Small End Dia.	Pkg. Qty.		Pkg.	Pkg. Qty.	Pkg.
0.063″ Large End Dia. (No. 7/0)						
1/2″	0.052″	25	90681A001	$13.94	50 98390A003	$14.03
3/4″	0.047″	25	90681A002	13.94	50 98390A004	14.74
0.078″ Large End Dia. (No. 6/0)						
1/2″	0.068″	25	90681A003	13.94	50 98390A009	13.68
3/4″	0.062″	25	90681A005	13.94	50 98390A010	14.38
1″	0.057″	25	90681A007	16.73	50 98390A011	14.38
0.094″ Large End Dia. (No. 5/0)						
1/2″	0.084″	25	90681A038	13.94	50 98390A006	13.68
3/4″	0.078″	25	90681A040	13.94	50 98390A040	14.10
1″	0.073″	25	90681A042	16.73	50 98390A041	14.38
1 1/2″	0.063″	10	90681A048	8.93	50 98390A043	15.45
0.109″ Large End Dia. (No. 4/0)						
1/2″	0.099″	25	90681A069	13.94	50 98390A069	9.25
1″	0.088″	25	90681A073	16.73	50 98390A071	10.85
1 1/2″	0.078″	10	90681A075	8.93	50 98390A082	14.71
0.125″ Large End Dia. (No. 3/0)						
1/2″	0.115″	25	90681A099	13.94	50 98390A099	9.25
3/4″	0.109″	25	90681A101	13.94	50 98390A100	9.54
1″	0.104″	25	90681A103	16.73	50 98390A101	10.85
1 1/4″	0.099″	10	90681A104	7.57	50 98390A102	12.36
1 1/2″	0.094″	10	90681A105	8.93	50 98390A103	13.91
0.141″ Large End Dia. (No. 2/0)						
3/4″	0.125″	25	90681A131	13.67	50 98390A130	9.31
1″	0.12″	25	90681A133	16.41	50 98390A131	10.85
1 1/4″	0.115″	10	90681A132	7.66	50 98390A132	12.36
1 1/2″	0.11″	10	90681A135	8.35	50 98390A133	13.91
2″	0.099″	10	90681A137	10.45	50 98390A135	16.19
2 1/2″	0.089″	10	90681A139	13.03	25 98390A137	9.90
0.156″ Large End Dia. (No. 0)						
3/4″	0.14″	25	90681A160	13.67	50 98390A160	9.31
1″	0.135″	25	90681A162	16.41	50 98390A161	10.85
1 1/4″	0.13″	10	90681A163	7.44	50 98390A162	12.36
1 1/2″	0.125″	10	90681A164	8.35	50 98390A163	13.91
2″	0.114″	10	90681A169	11.89	50 98390A165	15.83
3″	0.094″	5	90681A175	8.16	25 98390A169	12.91
0.172″ Large End Dia. (No. 1)						
3/4″	0.156″	10	90681A189	5.84	50 98390A190	9.89
1″	0.151″	10	90681A191	7.37	50 98390A191	11.31
1 1/4″	0.146″	10	90681A192	8.61	50 98390A192	12.83
1 1/2″	0.141″	10	90681A193	9.81	50 98390A193	14.29
2″	0.13″	10	90681A195	12.27	25 98390A195	8.45
3″	0.11″	10	90681A198	16.85	25 98390A199	12.60
4″	0.089″	5	90681A210	13.75	25 98390A202	16.68
0.193″ Large End Dia. (No. 2)						
3/4″	0.177″	10	90681A220	6.91	50 98390A220	11.12
1″	0.172″	10	90681A221	8.14	50 98390A221	12.33
1 1/4″	0.167″	10	90681A222	9.36	50 98390A222	13.81
1 1/2″	0.162″	10	90681A223	10.56	50 98390A223	15.31
2″	0.151″	10	90681A225	13.01	25 98390A225	9.16
3″	0.131″	10	90681A229	16.81	25 98390A229	13.08
4″	0.11″	1	90681A249	3.25	25 98390A232	17.03
0.219″ Large End Dia. (No. 3)						
3/4″	0.203″	5	90681A250	3.86	50 98390A250	11.80
1″	0.198″	10	90681A251	8.99	50 98390A251	13.32
1 1/4″	0.193″	10	90681A252	10.20	50 98390A252	14.80
1 1/2″	0.188″	10	90681A253	11.43	50 98390A253	16.34
1 3/4″	0.183″	10	90681A254	12.64	25 98390A254	8.62
2″	0.177″	10	90681A255	13.85	25 98390A255	9.62
2 1/2″	0.167″	5	90681A257	8.60	25 98390A257	11.60
3″	0.157″	5	90681A259	11.30	25 98390A259	13.58
4″	0.136″	1	90681A261	3.44	10 98390A263	6.87
0.25″ Large End Dia. (No. 4)						
3/4″	0.234″	10	90681A279	8.53	50 98390A280	13.32
1″	0.229″	10	90681A281	9.75	50 98390A281	14.80
1 1/4″	0.224″	10	90681A282	10.96	50 98390A282	16.34
1 1/2″	0.219″	10	90681A283	12.19	25 98390A283	8.62
1 3/4″	0.214″	10	90681A284	13.40	25 98390A284	9.62
2″	0.208″	10	90681A285	14.62	25 98390A285	10.36
2 1/4″	0.203″	5	90681A286	7.97	25 98390A286	11.36
2 1/2″	0.198″	5	90681A287	9.48	25 98390A287	12.35
2 3/4″	0.193″	5	90681A288	11.28	25 98390A288	13.32
3″	0.188″	5	90681A289	12.81	25 98390A289	14.32
4″	0.167″	1	90681A293	3.75	10 98390A293	7.30
4 1/2″	0.156″	1	90681A295	4.67	10 98390A294	8.09
0.289″ Large End Dia. (No. 5)						
1 1/2″	0.258″	10	90681A313	$14.94	25 98390A313	$9.62
1 3/4″	0.253″	5	90681A314	8.24	25 98390A314	9.89
2″	0.247″	5	90681A315	8.92	25 98390A315	9.93
2 1/4″	0.242″	5	90681A316	10.44	25 98390A316	11.28
2 1/2″	0.237″	5	90681A317	11.82	25 98390A317	12.21
3″	0.227″	5	90681A319	15.01	25 98390A319	14.05
3 1/2″	0.216″	1	90681A320	3.61	10 98390A321	6.80
4″	0.206″	1	90681A321	4.25	10 98390A323	7.59
5″	0.185″	1	90681A323	5.46	10 98390A327	9.17
6″	0.164″	1	90681A328	6.73	10 98390A331	10.76
7″	0.143″	1	90681A334	7.83	10 98390A335	12.28
0.341″ Large End Dia. (No. 6)						
1 1/2″	0.31″	5	90681A343	9.46	25 98390A343	12.35
1 3/4″	0.305″	5	90681A344	10.82	25 98390A344	13.58
2″	0.299″	5	90681A345	12.35	25 98390A345	14.81
2 1/4″	0.294″	5	90681A346	13.49	25 98390A346	16.02
2 1/2″	0.289″	5	90681A347	14.82	10 98390A347	6.78
2 3/4″	0.284″	1	90681A348	3.19	10 98390A348	7.40
3″	0.279″	1	90681A349	3.43	10 98390A349	7.90
3 1/4″	0.273″	1	90681A350	3.65	10 98390A350	8.39
3 1/2″	0.268″	1	90681A351	3.98	10 98390A351	8.89
4″	0.258″	1	90681A353	4.65	10 98390A353	9.88
4 1/2″	0.247″	1	90681A354	5.36	10 98390A354	11.05
5″	0.237″	1	90681A355	6.01	10 98390A357	12.23
6″	0.216″	1	90681A357	7.34	10 98390A361	14.62
0.409″ Large End Dia. (No. 7)						
1 3/4″	0.373″	5	90681A382	13.41	10 98390A370	7.90
2″	0.367″	5	90681A371	15.66	10 98390A371	8.39
2 1/4″	0.362″	1	90681A372	3.88	10 98390A372	9.54
2 1/2″	0.357″	1	90681A373	4.34	10 98390A373	10.16
2 3/4″	0.352″	1	90681A374	4.98	10 98390A374	11.05
3″	0.347″	1	90681A375	5.26	10 98390A375	11.94
3 1/4″	0.341″	1	90681A376	5.62	10 98390A376	12.83
3 1/2″	0.336″	1	90681A377	5.97	10 98390A377	13.72
4″	0.326″	1	90681A379	6.80	10 98390A379	15.21
4 1/2″	0.315″	1	90681A381	7.48	5 98390A381	8.56
5″	0.305″	1	90681A383	8.24	5 98390A383	9.63
6″	0.284″	1	90681A385	9.76	5 98390A388	11.47
0.492″ Large End Dia. (No. 8)						
1 1/2″	0.461″	1	90681A395	3.37	10 98390A413	8.88
2″	0.45″	1	90681A415	4.48	10 98390A415	10.13
2 1/2″	0.44″	1	90681A417	5.48	10 98390A417	12.12
2 3/4″	0.435″	1	90681A418	5.92	10 98390A418	13.10
3″	0.43″	1	90681A419	6.40	10 98390A419	14.08
3 1/2″	0.419″	1	90681A421	8.14	10 98390A421	16.03
4″	0.409″	1	90681A423	9.22	5 98390A423	8.88
4 1/2″	0.398″	1	90681A425	10.31	5 98390A425	9.92
5″	0.388″	1	90681A427	11.28	5 98390A427	11.20
5 1/2″	0.378″	1	90681A428	12.35	5 98390A429	12.40
6″	0.367″	1	90681A429	13.43	5 98390A431	13.53
7″	0.346″	1	90681A440	15.27	5 98390A433	16.46
0.591″ Large End Dia. (No. 9)						
2″	0.549″	1	90681A445	7.10	10 98390A445	13.94
2 1/2″	0.539″	1	90681A447	8.21	10 98390A447	16.20
3″	0.529″	1	90681A449	9.49	5 98390A449	9.39
3 1/2″	0.518″	1	90681A451	11.02	5 98390A451	10.56
4″	0.508″	1	90681A453	12.77	5 98390A453	11.61
4 1/2″	0.497″	1	90681A455	13.94	5 98390A455	12.97
5″	0.487″	1	90681A457	15.09	5 98390A457	14.32
5 1/2″	0.477″	1	90681A459	16.24	5 98390A459	15.68
6″	0.466″	1	90681A461	17.41	1 98390A461	3.41
7″	0.445″	1	90681A465	19.87	1 98390A463	4.79
0.706″ Large End Dia. (No. 10)						
2″	0.664″	1	90681A470	9.04	5 98390A475	8.81
3″	0.644″	1	90681A479	12.64	5 98390A479	11.72
4″	0.623″	1	90681A483	16.01	5 98390A483	15.00
4 1/2″	0.612″	1	90681A485	17.99	1 98390A485	3.39
5″	0.602″	1	90681A487	20.07	1 98390A487	3.74
6″	0.581″	1	90681A489	24.60	1 98390A491	4.50
7″	0.56″	1	90681A497	26.54	1 98390A493	5.54

Metric Taper Pins

Position components and secure assemblies with these steel pins. Pins taper at a uniform rate of 1 mm per 50 mm. To install, drive pins into tapered holes (for tapered drill bits, see 8831A on page 2483). Diameter tolerance is –0.04 mm for M3 diameters, –0.048 mm for M4 to M6 diameters, –0.058 mm for M8 to M10 diameters, and –0.07 mm for M12 diameters. Not rated for breaking strength. Rockwell hardness is B52. Meet ISO 2339.

Lg., mm	Large End Dia., mm	Pkg. Qty.		Pkg.
M3 Small End Dia.				
16	3.3	25	98445A311	$7.77
20	3.4	25	98445A313	7.89
32	3.6	10	98445A318	5.82
40	3.8	10	98445A320	5.44
50	4	10	98445A324	7.12
60	4.2	10	98445A328	9.21
M4 Small End Dia.				
20	4.4	10	98445A414	5.52
26	4.5	10	98445A415	7.14
30	4.6	10	98445A417	6.72
40	4.8	10	98445A420	7.14
45	4.9	10	98445A422	7.56
50	5	10	98445A424	8.71
60	5.2	5	98445A428	6.53
M5 Small End Dia.				
20	5.4	10	98445A513	6.10
26	5.5	10	98445A515	6.49
30	5.6	10	98445A517	10.87
40	5.8	5	98445A520	6.85
45	5.9	5	98445A522	4.89
M5 Small End Dia. (Cont.)				
50	6	5	98445A524	$5.23
55	6.1	5	98445A526	5.29
60	6.2	5	98445A528	6.35
M6 Small End Dia.				
20	6.4	25	98445A613	12.97
26	6.5	10	98445A615	7.31
30	6.6	10	98445A617	10.04
40	6.8	10	98445A620	10.47
45	6.9	5	98445A622	6.57
50	7	10	98445A624	13.04
55	7.1	5	98445A626	9.25
60	7.2	10	98445A628	13.59
70	7.4	5	98445A632	8.88
80	7.6	5	98445A636	9.17
M8 Small End Dia.				
26	8.5	5	98445A715	8.44
30	8.6	5	98445A717	9.33
40	8.8	5	98445A720	9.30
45	8.9	5	98445A722	10.26
50	9	5	98445A724	10.29
M8 Small End Dia. (Cont.)				
55	9.1	5	98445A726	$11.88
60	9.2	5	98445A728	12.09
70	9.4	1	98445A732	2.98
80	9.6	1	98445A736	3.27
M10 Small End Dia.				
40	10.8	5	98445A820	9.70
45	10.9	5	98445A822	10.23
50	11	5	98445A824	13.73
55	11.1	1	98445A826	3.40
60	11.2	1	98445A828	3.43
70	11.4	1	98445A832	4.54
80	11.6	1	98445A836	4.65
M12 Small End Dia.				
40	12.8	1	98445A860	4.68
50	13	5	98445A864	13.27
55	13.1	1	98445A866	3.22
60	13.2	1	98445A868	3.86
70	13.4	1	98445A872	4.56
80	13.6	1	98445A876	4.66

Threaded Taper Pins with Hex Nuts

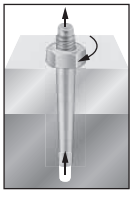

Tighten the nut to draw the pin out of the hole.

You only need to access one end of these threaded pins for removal; just tighten the hex nut to draw them out. Pins taper at a uniform rate of 1/4″ per 12 inches. Install pins into tapered holes. Large end diameter tolerance is –0.0007″ to +0.0013″.

18-8 Stainless Steel— Our most corrosion resistant threaded taper pins. Breaking strength is 54,000 psi. May be magnetic. Rockwell hardness is B90.

Steel— Breaking strength is 46,500 psi. Rockwell hardness is B85.

Lg.	Small End Dia.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Steel Pkg. Qty.		Pkg.
0.17″ Large End Dia. (No. 1)—Thread: 8-32×1/4″							
1″	0.149″	5	92284A191	$9.05	5	92281A191	$4.68
1¼″	0.144″	5	92284A192	9.86	5	92281A192	4.89
0.191″ Large End Dia. (No. 2)—Thread: 10-32×1/4″							
1¼″	0.165″	5	92284A221	10.64	5	92281A221	5.37
1½″	0.16″	5	92284A222	11.67	5	92281A222	5.63
2″	0.149″	5	92284A225	13.40	5	92281A225	6.15
0.217″ Large End Dia. (No. 3)—Thread: 10-32×1/4″							
¾″	0.201″	5	92284A250	9.81	5	92281A250	5.17
1″	0.196″	5	92284A251	10.69	5	92281A251	5.43
1¼″	0.191″	5	92284A252	11.56	5	92281A252	5.69
1½″	0.186″	5	92284A253	12.43	5	92281A253	5.96
2″	0.175″	5	92284A255	14.18	5	92281A255	6.46
0.248″ Large End Dia. (No. 4)—Thread: 1/4″-28×3/8″							
¾″	0.232″	5	92284A280	10.62	5	92281A280	5.83
1″	0.227″	5	92284A281	11.88	5	92281A281	6.10
1¼″	0.222″	5	92284A282	12.49	5	92281A282	6.36
1½″	0.217″	5	92284A283	12.93	5	92281A283	6.60
2″	0.206″	5	92284A285	14.38	5	92281A285	7.13
2½″	0.196″	5	92284A287	16.98	5	92281A287	7.65
3″	0.186″	1	92284A289	4.07	5	92281A289	8.15
4″	0.165″	1	92284A293	5.50	5	92281A293	9.10
0.287″ Large End Dia. (No. 5)—Thread: 1/4″-28×3/8″							
1″	0.266″	5	92284A311	13.01	5	92281A311	6.87
1½″	0.256″	5	92284A313	15.96	5	92281A313	7.91
1¾″	0.251″	5	92284A314	16.45	5	92281A314	8.41
2″	0.245″	1	92284A315	3.44	5	92281A315	8.84
2½″	0.235″	1	92284A317	4.12	5	92281A317	9.85
3″	0.225″	1	92284A319	4.90	5	92281A319	10.62
4″	0.204″	1	92284A323	6.23	5	92281A323	12.35
5″	0.183″	1	92284A327	8.31	5	92281A327	14.35
0.339″ Large End Dia. (No. 6)—Thread: 5/16″-24×3/8″							
1¼″	0.313″	1	92284A342	3.23	5	92281A342	8.23
1½″	0.308″	1	92284A343	3.78	5	92281A343	9.27
1¾″	0.303″	1	92284A344	4.05	5	92281A344	9.70
2″	0.297″	1	92284A345	4.41	5	92281A345	10.11
2¼″	0.292″	1	92284A346	4.63	5	92281A346	10.43
2½″	0.287″	1	92284A347	4.82	5	92281A347	10.84
3″	0.277″	1	92284A349	5.38	5	92281A349	12.06
4″	0.256″	1	92284A353	6.76	5	92281A353	13.80
5″	0.235″	1	92284A357	8.49	5	92281A357	15.68
6″	0.214″	1	92284A361	9.99	1	92281A361	3.44
0.407″ Large End Dia. (No. 7)—Thread: 3/8″-24×1/2″							
1½″	0.376″	1	92284A369	$4.40	5	92281A369	$11.27
1¾″	0.371″	1	92284A370	4.84	5	92281A370	11.78
2″	0.365″	1	92284A371	5.36	5	92281A371	12.29
2½″	0.355″	1	92284A373	6.50	5	92281A373	13.31
2¾″	0.35″	1	92284A374	7.06	5	92281A374	13.82
3″	0.345″	1	92284A375	7.58	5	92281A375	14.33
3½″	0.334″	1	92284A377	8.74	1	92281A377	3.05
4″	0.324″	1	92284A379	9.01	1	92281A379	3.30
4½″	0.313″	1	92284A381	10.53	1	92281A381	3.55
5″	0.303″	1	92284A383	11.41	1	92281A383	3.79
6″	0.282″	1	92284A388	12.54	1	92281A388	4.27
0.49″ Large End Dia. (No. 8)—Thread: 7/16″-20×5/8″							
1¾″	0.454″	1	92284A414	6.84	1	92281A414	3.08
2″	0.448″	1	92284A415	7.33	1	92281A415	3.15
2½″	0.438″	1	92284A417	8.05	1	92281A417	3.39
3″	0.428″	1	92284A419	8.95	1	92281A419	3.64
3½″	0.417″	1	92284A421	11.45	1	92281A421	3.88
4″	0.407″	1	92284A423	12.59	1	92281A423	4.08
4½″	0.396″	1	92284A425	13.72	1	92281A425	4.33
5″	0.386″	1	92284A427	14.84	1	92281A427	4.57
6″	0.365″	1	92284A431	17.09	1	92281A431	5.09
0.589″ Large End Dia. (No. 9)—Thread: 1/2″-20×3/4″							
2″	0.547″	1	92284A515	11.53	1	92281A515	3.88
2½″	0.537″	1	92284A516	12.79	1	92281A516	4.12
3″	0.527″	1	92284A517	14.16	1	92281A517	4.35
3½″	0.516″	1	92284A518	15.91	1	92281A518	4.60
4″	0.506″	1	92284A519	17.85	1	92281A519	4.88
4½″	0.495″	1	92284A520	19.17	1	92281A520	5.16
5″	0.485″	1	92284A521	20.43	1	92281A521	5.44
6″	0.464″	1	92284A522	22.97	1	92281A522	5.99
0.704″ Large End Dia. (No. 10)—Thread: 5/8″-18×7/8″							
3″	0.642″	1	92284A615	21.36	1	92281A615	7.06
3½″	0.631″	1	92284A616	23.73	1	92281A616	7.40
4″	0.621″	1	92284A617	25.22	1	92281A617	7.90
4½″	0.61″	1	92284A618	27.59	1	92281A618	8.35
5″	0.6″	1	92284A619	28.92	1	92281A619	8.83
6″	0.579″	1	92284A622	33.64	1	92281A622	9.78

Aluminum-Handle Push-Button Quick-Release Pins

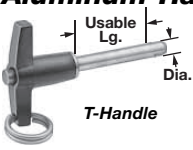

T-Handle

T-Handle with Lanyard

High Profile

High Profile with Lanyard

L-Handle

A push of a button is all that's necessary to insert and remove these pins. Pins have black aluminum handles and stainless steel shafts. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Rockwell hardness is C40.

T-Handle with Lanyard—Have a 12″ long plastic-coated stainless steel lanyard with an aluminum tab.

High Profile—Extra height and a smaller width makes the release button more accessible in tight spaces.

High Profile with Lanyard—Have a 12″ long plastic-coated stainless steel lanyard with an aluminum tab.

L-Handle—Often used where T-handles won't fit.

Usable Lg.	T-Handle		T-Handle with Lanyard		High Profile		High Profile with Lanyard		L-Handle	
3/16″ Dia.—*Breaks at 5,100 lbs.*										
1/2″	90293A100	$16.12	93750A190	$19.69	90985A100	$20.11	94748A101	$23.73	90302A041	$17.04
3/4″	90293A101	16.38	93750A195	19.99	90985A101	20.41	94748A106	24.04	90302A044	17.33
1″	90293A102	16.58	93750A205	20.40	90985A102	20.74	94748A111	24.42	90302A047	17.61
1 1/4″	90293A103	17.10	93750A207	20.77	90985A103	20.87	94748A116	24.46	90302A050	18.00
1 1/2″	90293A104	18.64	93750A210	22.28	90985A104	20.88	94748A121	24.44	90302A053	18.53
1 3/4″	90293A105	18.80	93750A213	22.44	90985A105	21.30	94748A123	24.94	90302A055	18.63
2″	90293A106	18.80	93750A215	22.45	90985A106	21.38	94748A126	24.35	90302A056	18.72
2 1/4″	90293A107	19.18	93750A217	22.82	90985A107	21.86	94748A128	25.50	90302A057	19.21
2 1/2″	90293A108	19.27	93750A220	23.01	90985A108	22.18	94748A131	24.99	90302A059	19.27
3″	90293A109	21.09	93750A225	24.73	90985A110	23.81	94748A136	27.29	90302A062	19.39
4″	90293A110	26.98	93750A227	30.63	90985A117	28.40	94748A141	32.04	90302A067	21.63
1/4″ Dia.—*Breaks at 9,200 lbs.*										
1/2″	90293A111	16.12	93750A300	19.76	90985A111	14.90	94748A202	18.85	90302A111	18.17
3/4″	90293A135	16.24	93750A303	19.87	90985A125	15.87	94748A207	19.55	90302A149	17.84
7/8″	90293A140	16.45	93750A304	20.09	90985A126	15.88	94748A209	19.57	90302A151	18.19
1″	90293A112	16.71	93750A305	20.35	90985A112	15.90	94748A212	19.62	90302A112	18.52
1 1/4″	90293A137	17.67	93750A308	21.31	90985A127	18.13	94748A217	21.75	90302A152	18.89
1 1/2″	90293A113	18.21	93750A310	21.84	90985A113	18.10	94748A222	21.76	90302A113	19.79
1 3/4″	90293A139	18.70	93750A312	22.34	90985A129	18.03	94748A227	21.70	90302A155	19.73
2″	90293A114	18.71	93750A315	22.39	90985A114	19.13	94748A232	22.74	90302A114	20.36
2 1/4″	90293A141	19.18	93750A317	22.82	90985A132	20.83	94748A234	24.47	90302A121	21.01
2 1/2″	90293A115	20.28	93750A320	23.90	90985A115	21.27	94748A237	24.81	90302A115	21.79
2 3/4″	90293A142	20.54	93750A323	24.18	90985A135	21.75	94748A239	25.38	90302A123	21.86
3″	90293A116	20.61	93750A325	23.73	90985A116	21.93	94748A242	25.51	90302A116	21.94
3 1/4″	90293A117	21.59	93750A327	25.23	90985A140	23.18	94748A244	26.82	90302A126	22.11
3 1/2″	90293A118	21.11	93750A330	24.00	90985A120	24.42	94748A247	27.86	90302A158	22.28
4″	90293A120	21.41	93750A335	25.04	90985A122	29.57	94748A252	32.86	90302A161	22.47
5″	90293A121	23.98	93750A341	27.62	90985A145	32.25	94748A255	35.89	90302A166	24.82
5/16″ Dia.—*Breaks at 14,400 lbs.*										
1/2″	90293A122	17.94	93750A390	21.58	90985A205	18.56	94748A300	22.20	90302A171	18.21
3/4″	90293A210	18.23	93750A395	21.87	90985A210	19.19	94748A303	22.79	90302A243	20.44
1″	90293A211	20.55	93750A400	23.99	90985A211	19.16	94748A308	22.89	90302A211	23.05
1 1/4″	90293A225	20.91	93750A402	24.37	90985A225	22.12	94748A313	25.75	90302A245	23.16
1 1/2″	90293A212	20.24	93750A405	24.60	90985A212	22.46	94748A318	25.96	90302A212	23.18
1 3/4″	90293A260	21.38	93750A407	25.02	90985A230	22.75	94748A321	26.39	90302A217	23.16
2″	90293A213	22.51	93750A410	26.11	90985A213	23.16	94748A323	26.65	90302A213	23.16
2 1/4″	90293A254	24.02	93750A412	27.66	90985A233	26.52	94748A326	30.16	90302A218	25.05
2 1/2″	90293A255	24.10	93750A413	27.88	90985A235	27.82	94748A328	31.20	90302A247	25.53
3″	90293A214	25.48	93750A415	30.02	90985A214	28.11	94748A333	31.35	90302A214	25.63
4″	90293A215	27.06	93750A420	30.81	90985A215	30.22	94748A338	33.55	90302A215	26.25
3/8″ Dia.—*Breaks at 20,500 lbs.*										
1/2″	90293A307	21.28	93750A485	24.92	90985A303	20.29	94748A401	23.93	90302A309	20.28
3/4″	90293A309	21.73	93750A490	25.38	90985A309	19.66	94748A404	23.13	90302A365	20.96
1″	90293A311	21.02	93750A495	24.65	90985A311	20.66	94748A409	24.07	90302A311	21.39
1 1/4″	90293A327	21.35	93750A497	25.09	90985A319	23.25	94748A414	26.54	90302A368	21.44
1 1/2″	90293A312	22.18	93750A500	25.81	90985A312	24.57	94748A419	27.84	90302A312	24.60
1 3/4″	90293A290	22.51	93750A502	26.15	90985A324	25.68	94748A423	29.32	90302A376	24.78
2″	90293A313	22.95	93750A505	26.63	90985A313	24.84	94748A424	28.33	90302A313	24.96
2 1/4″	90293A291	25.32	93750A507	28.97	90985A326	27.85	94748A426	31.49	90302A378	26.56
2 1/2″	90293A314	25.91	93750A510	29.43	90985A314	29.88	94748A429	33.15	90302A314	28.17
2 3/4″	90293A292	26.28	93750A513	29.92	90985A327	29.88	94748A431	33.52	90302A381	28.60
3″	90293A315	26.49	93750A515	30.13	90985A315	29.88	94748A434	33.17	90302A315	29.03
3 1/4″	90293A293	27.56	93750A517	31.20	90985A328	32.76	94748A436	36.40	90302A385	30.57
3 1/2″	90293A316	27.62	93750A520	31.26	90985A316	35.61	94748A439	38.75	90302A316	31.96
3 3/4″	90293A294	28.82	93750A523	32.46	90985A329	36.55	94748A442	40.19	90302A386	30.93
4″	90293A317	30.00	93750A525	33.71	90985A317	37.41	94748A444	40.43	90302A317	31.05
4 1/2″	90293A318	30.88	93750A528	34.43	90985A318	40.15	94748A449	43.17	90302A318	32.35
5″	90293A319	30.93	93750A530	34.44	90985A321	46.98	94748A454	49.90	90302A371	31.63
6″	90293A810	32.81	93750A535	36.45	90985A355	51.57	94748A459	54.30	90302A374	36.46
7/16″ Dia.—*Breaks at 28,000 lbs.*										
1″	90293A320	22.01	93750A600	25.64	90985A320	24.64	94748A511	28.07	90302A621	20.47
1 1/2″	90293A325	26.18	93750A603	29.82	90985A325	30.13	94748A516	33.45	90302A626	25.92
2″	90293A330	24.92	93750A605	28.40	90985A330	30.36	94748A521	33.64	90302A631	26.30
2 1/2″	90293A335	27.24	93750A610	30.67	90985A335	45.81	94748A524	48.66	90302A636	26.42
1/2″ Dia.—*Breaks at 36,500 lbs.*										
1″	90293A409	28.04	93750A700	31.67	90985A410	29.94	94748A613	33.21	90302A478	27.44
1 1/4″	90293A410	28.06	93750A701	31.70	90985A409	31.33	94748A615	34.96	90302A482	27.56
1 1/2″	90293A411	28.10	93750A703	31.73	90985A411	32.71	94748A619	35.97	90302A411	27.68
1 3/4″	90293A435	28.23	93750A704	31.87	90985A424	33.29	94748A622	36.93	90302A485	28.36

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Aluminum-Handle Push-Button Quick-Release Pins *(Continued from previous page)*

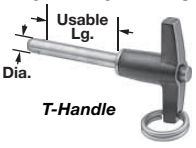

T-Handle

T-Handle with Lanyard

High Profile

High Profile with Lanyard

L-Handle

A push of a button is all that's necessary to insert and remove these pins. Pins have black aluminum handles and stainless steel shafts. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Rockwell hardness is C40.

T-Handle with Lanyard—Have a 12″ long plastic-coated stainless steel lanyard with an aluminum tab.

High Profile—Extra height and a smaller width makes the release button more accessible in tight spaces.

High Profile with Lanyard—Have a 12″ long plastic-coated stainless steel lanyard with an aluminum tab.

L-Handle—Often used where T-handles won't fit.

Usable Lg.	T-Handle		T-Handle with Lanyard		High Profile		High Profile with Lanyard		L-Handle	
1/2″ Dia. (Cont.)—*Breaks at 36,500 lbs.*										
2″	90293A412	$28.42	93750A705	$32.06	90985A412	$33.88	94748A625	$37.10	90302A412	$29.09
2 1/4″	90293A436	29.43	93750A707	33.07	90985A425	37.35	94748A628	40.99	90302A488	30.29
2 1/2″	90293A413	30.36	93750A710	34.00	90985A413	38.77	94748A631	41.79	90302A413	31.44
2 3/4″	90293A437	33.29	93750A713	36.93	90985A426	39.28	94748A634	42.93	90302A489	32.10
3″	90293A414	34.14	93750A715	37.78	90985A414	39.80	94748A637	42.83	90302A414	32.67
3 1/4″	90293A438	35.55	93750A718	39.18	90985A427	43.03	94748A640	46.68	90302A491	35.57
3 1/2″	90293A415	36.09	93750A720	39.72	90985A415	46.26	94748A643	49.09	90302A415	38.79
3 3/4″	90293A439	35.88	93750A723	39.52	90985A432	46.34	94748A646	49.98	90302A495	40.20
4″	90293A416	35.93	93750A725	38.69	90985A416	46.39	94748A649	49.23	90302A416	41.66
4 1/2″	90293A417	35.05	93750A727	39.57	90985A417	50.43	94748A655	53.19	90302A417	44.64
5″	90293A419	37.36	93750A730	40.98	90985A420	52.24	94748A661	54.94	90302A481	45.15
5 1/2″	90293A425	53.14	93750A733	56.61	90985A428	54.39	94748A667	58.04	90302A484	45.38
6″	90293A430	56.38	93750A736	60.12	90985A429	57.17	94748A672	60.80	90302A487	48.60
7″	90293A440	57.74	93750A741	61.38	90985A431	60.69	94748A677	64.32	90302A498	52.93
5/8″ Dia.—*Breaks at 57,500 lbs.*										
1″	90293A505	35.13	93750A791	38.78	90985A510	42.92	94748A714	45.85	90302A507	32.27
1 1/2″	90293A511	35.09	93750A795	40.81	90985A511	44.68	94748A719	47.54	90302A511	33.10
2″	90293A529	36.35	93750A798	41.76	90985A529	47.21	94748A721	49.42	90302A513	34.33
2 1/2″	90293A512	36.38	93750A803	40.01	90985A512	49.73	94748A724	52.46	90302A515	35.88
3″	90293A513	37.99	93750A805	41.63	90985A513	51.62	94748A729	54.32	90302A519	37.50
3 1/2″	90293A514	41.09	93750A808	44.74	90985A514	53.51	94748A734	56.02	90302A523	38.79
4″	90293A515	41.09	93750A810	44.73	90985A515	55.37	94748A739	57.86	90302A527	40.53
4 1/2″	90293A516	49.16	93750A812	52.68	90985A516	68.71	94748A744	70.93	90302A531	47.96
5″	90293A517	48.45	93750A815	52.74	90985A517	77.59	94748A749	79.49	90302A535	51.33
5 1/2″	90293A520	49.90	93750A817	53.54	90985A521	79.04	94748A753	82.68	90302A539	52.42
6″	90293A525	51.53	93750A822	55.17	90985A525	80.35	94748A758	83.97	90302A543	53.24
3/4″ Dia.—*Breaks at 82,500 lbs.*										
1 1/2″	90293A611	47.32	93750A891	50.68	90985A611	55.75	94748A813	58.29	90302A732	47.32
2″	90293A655	51.42	93750A896	55.05	90985A618	60.66	94748A816	64.29	90302A735	47.67
2 1/2″	90293A612	47.84	93750A902	51.47	90985A612	65.34	94748A818	67.52	90302A738	47.84
3″	90293A613	51.71	93750A905	55.34	90985A613	66.19	94748A823	68.39	90302A741	49.99
4″	90293A614	54.46	93750A910	58.08	90985A614	73.12	94748A828	75.18	90302A744	52.15
5″	90293A615	58.55	93750A915	62.28	90985A615	80.43	94748A833	82.21	90302A747	54.92
5 1/2″	90293A620	79.48	93750A918	83.03	90985A621	83.60	94748A838	87.23	90302A750	57.30
6″	90293A625	85.23	93750A921	88.87	90985A625	84.53	94748A843	88.16	90302A753	60.03
1″ Dia.—*Breaks at 147,000 lbs.*										
2″	90293A711	68.74	93750A107	72.39	90985A711	99.78	94748A909	103.41	90302A804	65.84
2 1/2″	90293A712	70.66	93750A110	74.05	90985A712	103.24	94748A910	97.23	90302A807	67.53
3″	90293A713	71.76	93750A115	75.47	90985A713	106.69	94748A917	106.11	90302A810	68.73
4″	90293A714	77.83	93750A123	81.47	90985A714	108.11	94748A924	109.11	90302A813	74.54
5″	90293A715	95.65	93750A129	99.79	90985A715	113.93	94748A927	117.58	90302A816	95.65
6″	90293A716	115.86	93750A135	119.25	90985A716	118.48	94748A931	122.13	90302A819	110.95
7″	90293A720	117.10	93750A140	120.75	90985A722	124.45	94748A943	128.10	90302A822	112.15

All-Stainless Steel Heavy Duty Push-Button Quick-Release Pins

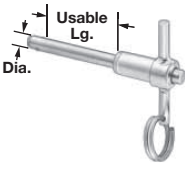

Also known as ground handling pins, these corrosion-resistant, extra-rugged pins have a handle welded directly to the head. Diameter tolerance is –0.003″ to –0.001″. Pin diameter equals hole size. Handle and push button are 18-8 stainless steel; shaft is 17-4 stainless steel. Rockwell hardness is C40. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Meet NASM 23460. Split ring included.

Usable Lg.		
1/4″ Dia.—*Breaks at 9,200 lbs.*		
1/2″	90980A125	$28.64
1″	90980A130	30.13
1 1/2″	90980A135	31.41
2″	90980A140	32.14
2 1/2″	90980A145	33.02
3″	90980A150	33.49
4″	90980A160	35.37
4 1/2″	90980A165	38.73
5/16″ Dia.—*Breaks at 14,400 lbs.*		
1/2″	90980A225	27.43
1″	90980A230	28.13
1 1/2″	90980A235	30.39
2″	90980A240	31.17
2 1/2″	90980A245	31.90
3″	90980A250	32.72
3/8″ Dia.—*Breaks at 20,500 lbs.*		
1/2″	90980A325	28.46
1″	90980A330	31.32

Usable Lg.		
3/8″ Dia. (Cont.)		
1 1/2″	90980A335	$34.12
2″	90980A340	35.09
2 1/2″	90980A345	38.57
3″	90980A350	39.67
3 1/2″	90980A355	39.75
4″	90980A360	40.89
4 1/2″	90980A365	42.58
1/2″ Dia.—*Breaks at 36,500 lbs.*		
1/2″	90980A525	29.85
1″	90980A530	44.19
1 1/2″	90980A535	46.48
2″	90980A540	48.40
2 1/2″	90980A545	51.54
3″	90980A550	52.92
3 1/2″	90980A555	61.12
4″	90980A560	61.12
4 1/2″	90980A565	63.89

Usable Lg.		
5/8″ Dia.—*Breaks at 57,500 lbs.*		
1 1/2″	90980A635	$57.84
2 1/2″	90980A645	64.34
3″	90980A650	64.34
4″	90980A660	70.02
5″	90980A670	73.31
3/4″ Dia.—*Breaks at 83,000 lbs.*		
1 1/2″	90980A735	67.90
2 1/2″	90980A745	72.80
3″	90980A750	74.92
4″	90980A760	81.01
5″	90980A770	88.90
1″ Dia.—*Breaks at 147,000 lbs.*		
2″	90980A840	87.79
3″	90980A850	93.47
4″	90980A860	99.74
5″	90980A870	104.82
6″	90980A880	106.26

All-Stainless Steel Push-Button Quick-Release Pins

For improved corrosion resistance in harsh environments, choose these pins. Shaft diameter tolerance is –0.0015″. Shaft is made of 17-4 PH stainless steel and has a Rockwell hardness of C40. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces.

Ring Grip—Also known as R-style marine pins, they have an easy-to-pull ring.

Recessed—Also known as M-style marine pins, they have a recessed button that prevents accidental pin removal. Pin has a hole to attach to a ring and lanyard (sold separately on page 3346).

Also Available: Type 316 stainless steel ring grip pins marked with a ★. Please ask for 92384A500 and specify diameter and length.

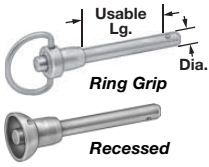

Usable Lg.		
Ring Grip		
3/16″ Dia.—*Breaks at 4,600 lbs.*		
1/2″	92384A012	$18.29
3/4″	92384A013	19.37
1″	92384A014★	20.44
1 1/4″	92384A015	21.52
1 1/2″	92384A016	22.60
2″	92384A018	23.67
2 1/2″	92384A021	24.75
3″	92384A023	25.82
1/4″ Dia.—*Breaks at 8,200 lbs.*		
1/2″	92384A032	18.08
3/4″	92384A033	19.28
1″	92384A034★	20.49
1 1/4″	92384A035★	21.69
1 1/2″	92384A036★	20.35
1 3/4″	92384A037	21.57
2″	92384A038★	22.65
2 1/2″	92384A041	24.80
3″	92384A043	26.96
4″	92384A045	29.12
5/16″ Dia.—*Breaks at 12,800 lbs.*		
3/4″	92384A051	21.69
1″	92384A052★	22.90
1 1/4″	92384A053	24.10
1 1/2″	92384A054★	24.10
2″	92384A056	24.86
2 1/2″	92384A058	27.03
3″	92384A061	29.19
3 1/2″	92384A063	31.35
4″	92384A065	29.89
5″	92384A068	31.81
6″	92384A070	33.74

Usable Lg.		
3/8″ Dia.—*Breaks at 18,400 lbs.*		
1″	92384A072★	$25.31
1 1/2″	92384A074★	27.96
2″	92384A076★	30.62
2 1/2″	92384A078	31.68
3″	92384A081	31.92
3 1/2″	92384A083	34.28
4″	92384A085	36.64
1/2″ Dia.—*Breaks at 32,500 lbs.*		
1 1/2″	92384A092★	39.62
2″	92384A094★	40.15
2 1/2″	92384A096	45.94
3″	92384A098	47.26
3 1/2″	92384A101	49.74
4″	92384A103	51.41
4 1/2″	92384A144	50.77
5/8″ Dia.—*Breaks at 51,000 lbs.*		
1 1/2″	92384A112	48.80
2″	92384A114	48.81
2 1/2″	92384A116	53.89
3″	92384A118	53.89
3 1/2″	92384A121	59.25
4″	92384A123	59.25
3/4″ Dia.—*Breaks at 73,500 lbs.*		
1 1/2″	92384A132	58.95
2″	92384A134	58.96
2 1/2″	92384A136	64.63
3″	92384A138	64.63
3 1/2″	92384A141	71.22
4″	92384A143	71.22
4 1/2″	92384A145	77.77

Usable Lg.		
Recessed		
3/16″ Dia.—*Breaks at 4,600 lbs.*		
1/2″	92385A012	$23.52
3/4″	92385A013	24.64
1″	92385A014	25.19
1 1/4″	92385A015	26.88
1 1/2″	92385A016	28.00
2″	92385A018	29.12
2 1/2″	92385A022	31.08
3″	92385A026	32.08
1/4″ Dia.—*Breaks at 8,200 lbs.*		
1/2″	92385A032	24.46
3/4″	92385A033	24.45
1″	92385A034	25.87
1 1/4″	92385A035	29.13
1 1/2″	92385A036	29.13
1 3/4″	92385A037	29.14
2″	92385A038	30.80
2 1/2″	92385A041	33.74
3″	92385A043	33.74
4″	92385A046	35.65
5/16″ Dia.—*Breaks at 12,800 lbs.*		
3/4″	92385A051	27.10
1″	92385A052	27.89
1 1/4″	92385A053	29.09
1 1/2″	92385A054	31.17
2″	92385A056	32.20
2 1/2″	92385A058	31.56
3″	92385A060	32.77
3 1/2″	92385A063	35.69
4″	92385A065	36.56
5″	92385A067	37.65
3/8″ Dia.—*Breaks at 18,400 lbs.*		
3/4″	92385A071	29.33
1″	92385A072	29.79

Usable Lg.		
3/8″ Dia. *(Cont.)*		
1 1/4″	92385A073	$31.68
1 1/2″	92385A074	33.23
2″	92385A076	33.21
2 1/2″	92385A078	38.72
3″	92385A081	38.84
3 1/2″	92385A084	42.90
4″	92385A085	43.68
4 1/2″	92385A086	45.50
5″	92385A087	48.82
6″	92385A089	47.18
1/2″ Dia.—*Breaks at 32,500 lbs.*		
1 1/2″	92385A092	46.25
2″	92385A094	46.26
2 1/2″	92385A096	50.80
3″	92385A098	50.80
3 1/2″	92385A100	60.48
4″	92385A103	60.50
4 1/2″	92385A144	65.77
5″	92385A150	68.74
6″	92385A155	71.69
5/8″ Dia.—*Breaks at 51,000 lbs.*		
2″	92385A210	59.52
2 1/2″	92385A215	65.42
3″	92385A118	65.42
4″	92385A225	72.98
3/4″ Dia.—*Breaks at 73,600 lbs.*		
2″	92385A255	78.25
2 1/2″	92385A260	84.53
3″	92385A138	86.12
3 1/2″	92385A265	91.55
4″	92385A270	93.60
5″	92385A280	98.55
6″	92385A290	102.05

All-Stainless Steel High-Tension Push-Button Quick-Release Pins

Unlike ordinary quick-release pins with two locking balls, these have four to provide almost double the holding power. Diameter tolerance is –0.003″ to –0.0015″. Pin diameter equals hole size. Made of 17-4 PH stainless steel with a Rockwell hardness of C40. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Meet NASM 23460.

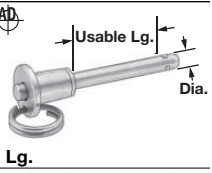

Usable Lg.		
1/4″ Dia.—*Breaks at 9,200 lbs.*		
1/2″	92851A110	$56.87
1″	92851A115	59.99
1 1/2″	92851A120	62.70
2″	92851A125	65.28
2 1/2″	92851A130	67.21
3″	92851A135	67.21
4″	92851A140	71.97
4 1/2″	92851A145	79.63

Usable Lg.		
5/16″ Dia.—*Breaks at 14,400 lbs.*		
1/2″	92851A205	$62.64
1″	92851A210	62.64
1 1/2″	92851A215	69.83
2″	92851A220	69.83
2 1/2″	92851A225	73.54
3″	92851A230	73.54
4″	92851A235	74.90
4 1/2″	92851A240	80.32

Usable Lg.		
3/8″ Dia.—*Breaks at 20,500 lbs.*		
1/2″	92851A315	$64.42
1″	92851A320	64.42
2″	92851A325	70.63
2 1/2″	92851A330	80.41
3″	92851A335	80.41
4″	92851A340	82.99
4 1/2″	92851A345	89.20

Usable Lg.		
1/2″ Dia.—*Breaks at 36,500 lbs.*		
1/2″	92851A405	$95.47
1″	92851A410	95.47
1 1/2″	92851A415	95.35
2″	92851A420	99.10
2 1/2″	92851A425	108.72
3″	92851A430	108.72
4″	92851A435	125.22
4 1/2″	92851A440	130.45

Metric Push-Button Quick-Release Pins

Choose from standard T-handle quick-release pins and narrow head pins, which work well in space-restricted areas. Diameter tolerance is –0.04 mm to –0.08 mm. Pin diameter equals hole size. Shaft is made of 17-4 PH stainless steel. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. Rockwell hardness is C40.

T-Handle—Have a lightweight black aluminum handle.

Narrow Head—Head diameter is 4 mm wider than the pin diameter, except for M12, which is 8 mm wider than the pin diameter. Includes a 250 mm long plastic lanyard.

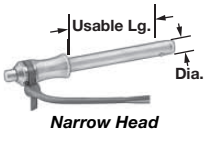

Usable Lg., mm		
T- Handle		
M6 Dia.—*Breaks at 7,800 lbs.*		
25	93680A210	$20.10
40	93680A215	22.10
65	93680A225	23.79
75	93680A230	24.86
M8 Dia.—*Breaks at 14,600 lbs.*		
25	93680A310	20.06
65	93680A325	24.34
M10 Dia.—*Breaks at 22,000 lbs.*		
40	93680A365	32.66
50	93680A370	33.48
65	93680A375	33.64

Usable Lg., mm		
M12 Dia.—*Breaks at 32,000 lbs.*		
25	93680A410	$35.88
50	93680A415	31.75
75	93680A420	37.56
100	93680A425	40.93
M16 Dia.—*Breaks at 57,500 lbs.*		
50	93680A465	38.45
75	93680A470	42.04
M20 Dia.—*Breaks at 90,500 lbs.*		
50	93680A515	62.45
100	93680A525	78.87

Usable Lg., mm		
Narrow Head		
M6 Dia.—*Breaks at 7,800 lbs.*		
25	93871A110	$28.80
40	93871A180	31.04
50	93871A250	31.73
M8 Dia.—*Breaks at 14,100 lbs.*		
25	93871A320	30.82
40	93871A390	33.52
50	93871A460	34.27
Replacement Lanyard	92658A550	$1.38

Usable Lg., mm		
M10 Dia.—*Breaks at 22,000 lbs.*		
25	93871A530	$46.07
40	93871A600	47.13
50	93871A670	48.18
M12 Dia.—*Breaks at 32,000 lbs.*		
25	93871A740	46.84
40	93871A810	47.78
50	93871A880	48.84

Plastic-Handle Quick-Release Pins

Each of these general purpose pins have a single locking ball and a durable, black handle. Shafts are made of zinc-plated steel and have a diameter tolerance of ±0.003″. Pin diameter equals hole size. Breaking strength is measured as single shear, which is the force required to break a pin into two pieces. Rockwell hardness is B85.

T-Handle—Have a 2″ wide handle, except the ½″ dia. pins have a 3½″ wide handle.

T-Handle with Lanyard—Have a 2¼″ handle. Lanyard is black plastic and is 6″ long when coiled and 6 feet long when extended.

Ball Handle—Have a 1⅜″ diameter handle.

Usable Lg.		
T-Handle		
¼″ Dia.—*Breaks at 4,300 lbs.*		
1″	92490A648	$4.32
1½″	92490A650	4.87
2″	92490A651	4.82
2½″	92490A310	5.32
3″	92490A320	5.04
5/16″ Dia.—*Breaks at 6,700 lbs.*		
1″	92490A330	6.47
1½″	92490A340	5.29
2″	92490A652	5.62
2½″	92490A350	5.89
3″	92490A653	5.44

Usable Lg.		
⅜″ Dia.—*Breaks at 9,700 lbs.*		
1½″	92490A360	$5.53
2″	92490A654	5.11
2½″	92490A655	4.51
3″	92490A656	5.44
3½″	92490A657	5.93
4″	92490A658	4.67
5″	92490A659	7.38
½″ Dia.—*Breaks at 17,200 lbs.*		
2½″	92490A660	6.49
4″	92490A661	7.33

Usable Lg.		
T-Handle with Lanyard		
¼″ Dia.—*Breaks at 1,900 lbs.*		
2″	92490A511	$8.80
3″	92490A514	9.05
4″	92490A518	9.12
Ball Handle		
¼″ Dia.—*Breaks at 1,900 lbs.*		
2″	92490A567	4.78
3″	92490A571	4.97
4″	92490A575	5.08

Usable Lg.		
⅜″ Dia.—*Breaks at 4,300 lbs.*		
2⅛″	92490A533	$10.00
3⅛″	92490A536	10.32
½″ Dia.—*Breaks at 7,700 lbs.*		
3¼″	92490A539	13.32
⅜″ Dia.—*Breaks at 4,300 lbs.*		
2⅛″	92490A582	6.00
3⅛″	92490A585	6.65
½″ Dia.—*Breaks at 7,700 lbs.*		
3¼″	92490A589	9.43

Receptacles and Retaining Caps for Push-Button Quick-Release Pins

Diamond

Oval

Round

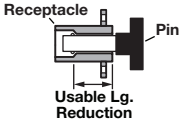

When your pin doesn't have a surface to lock against, use these receptacles for a permanent mating hole. Receptacle mounting hole size is 6-32, except ½″ diameter is 10-32. Use retaining caps when a hole is too big for your pin to lock into.

Retaining Cap

Receptacles

Fits Pin Dia.	Barrel OD	O'all Lg.	Flange Wd.	Flange Ht.	Usable Lg. Reduction		
Diamond							
¼″	⅜″	11/16″	⅝″	1¼″	⅜″	94715A515	$25.04
5/16″	½″	¾″	⅝″	1¼″	½″	94715A520	26.59
⅜″	9/16″	⅞″	⅝″	1¼″	9/16″	94715A525	26.92
½″	¾″	13/16″	⅞″	1½″	¾″	94715A530	33.72
Oval							
¼″	⅜″	11/16″	⅝″	1¼″	⅜″	94715A715	25.04
5/16″	½″	¾″	⅝″	1¼″	½″	94715A720	26.59
⅜″	9/16″	⅞″	⅝″	1¼″	9/16″	94715A725	26.92
½″	¾″	13/16″	⅞″	1½″	¾″	94715A730	33.72
Round							
¼″	⅜″	11/16″	1¼″	1¼″	⅜″	94715A815	25.04
5/16″	½″	¾″	1¼″	1¼″	½″	94715A820	26.59

Receptacles (Cont.)

Fits Pin Dia.	Barrel OD	O'all Lg.	Flange Wd.	Flange Ht.	Usable Lg. Reduction		
Round (Cont.)							
⅜″	9/16″	⅞″	1¼″	1¼″	9/16″	94715A825	$26.92
½″	¾″	13/16″	1½″	1½″	¾″	94715A830	33.72

Retaining Caps

Fits Pin Dia.	Cap OD	Overall Lg.	Usable Lg. Reduction		
¼″	⅜″	9/16″	⅛″	90487A213	$10.23
5/16″	½″	⅝″	⅛″	90487A217	10.74
⅜″	9/16″	¾″	3/16″	90487A221	12.18
½″	¾″	1″	¼″	90487A225	13.89

Locking Push-Pull Quick-Release Pins

Also known as double-acting pins. Push or pull the handle to insert and remove. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces.

Also Available: T-handle quick-release pins in lengths marked with a ★. Please ask for 94505A100 and specify dia. and length.

Usable Lg.		
3/16″ Dia.—*Breaks at 5,100 lbs.*		
1″	94505A502★	$33.74
2″	94505A506	37.70
¼″ Dia.—*Breaks at 9,200 lbs.*		
1″	94505A530★	16.10
2″	94505A533★	18.20
3″	94505A536★	20.50
5/16″ Dia.—*Breaks at 14,400 lbs.*		
1″	94505A545★	15.70
2″	94505A548★	20.40
3″	94505A551	25.10
⅜″ Dia.—*Breaks at 20,500 lbs.*		
1″	94505A561★	17.20
2″	94505A564★	22.20
3″	94505A567★	27.30

Usable Lg.		
½″ Dia.—*Breaks at 36,500 lbs.*		
2″	94505A596★	$28.80
3″	94505A599★	34.40
4″	94505A602	39.70
⅝″ Dia.—*Breaks at 57,500 lbs.*		
1″	94505A620	52.70
2″	94505A623	63.12
3″	94505A626	75.30
4″	94505A629	85.88
6″	94505A635	104.36

Clamping-Action Push-Button Quick-Release Pins

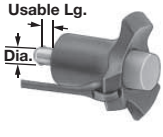

Pins have two locking balls for holding power. The shaft retracts up to 5 mm into the pin to hold thin sheets of material together. Pin diameter equals hole size. The shaft is stainless steel with a minimum hardness of 150 Brinell. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. The handle, button, and 250 mm lanyard are made of plastic.

Usable Lg., mm		
M6 Dia.—*Breaks at 4,700 lbs.*		
0-5	93042A510	$49.74
5-10	93042A540	49.74
M8 Dia.—*Breaks at 8,500 lbs.*		
0-5	93042A570	51.49
5-10	93042A600	51.49
Replacement Lanyard	92658A550	$1.38

Usable Lg., mm		
M10 Dia.—*Breaks at 13,400 lbs.*		
0-5	93042A630	$57.89
5-10	93042A660	57.89
M12 Dia.—*Breaks at 19,500 lbs.*		
0-5	93042A690	60.74
5-10	93042A720	60.74

Accessories for Quick-Release Pins

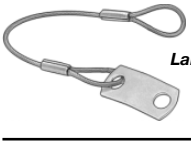

Lanyards— Lanyards are made of wire rope with a clear nylon coating. Not load rated. Use a 12″ long lanyard for pins with usable lengths over 3½″. See page 1422 for more lanyards.

Ring—Use to attach a lanyard to a quick-release pin. Made of stainless steel. For other rings, see page 3359.

6″ Long Lanyard	30345T21	$2.36
12″ Long Lanyard	30345T24	2.64
Ring	90905A655	.66

Quick-Release Pins

Also known as faspins, these pins have a ring grip. The ball springs inward during installation and pops out to lock the pin in place. The ball and spring are Type 316 stainless steel. The pin diameter equals the hole size. The pin end (A) extends beyond the ball by a length up to 30% greater than the pin diameter. Shaft diameter tolerance is –0.003″. Shafts have a minimum Rockwell hardness of B85, except aluminum have a minimum Rockwell hardness of B56. Breaking strength is measured as single shear, which is the force required to break a pin into two pieces.

Type 316 stainless steel pins are the most corrosion resistant. May be mildly magnetic.

18-8 stainless steel pins are more corrosion resistant than zinc-plated pins and may be mildly magnetic.

Pins with lanyard that have a usable length up to 2.9″ have a 6″ long lanyard; all others have a 12″ long lanyard. All lanyards are nylon coated.

Zinc-plated steel pins have good rust resistance.

Aluminum pins are lightweight, corrosion resistant, and nonmagnetic.

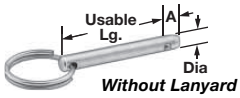

Without Lanyard

With Lanyard

Type 316 Stainless Steel—*Strength not rated*

Usable Lg.		
3/16″ Dia.		
0.8″	95255A216	$3.68
1″	95255A219	3.68
1.4″	95255A224	3.89
1.5″	95255A225	3.89
2″	95255A231	4.01
1/4″ Dia.		
0.5″	95255A256	3.65
0.8″	95255A261	3.86
1″	95255A263	3.91
1.2″	95255A265	3.98
1.3″	95255A266	3.98
1.5″	95255A268	4.01
2″	95255A272	4.21
2.3″	95255A275	4.47
1/4″ Dia. (Cont.)		
2.5″	95255A279	$4.47
3″	95255A285	4.65
5/16″ Dia.		
1″	95255A356	4.32
1.5″	95255A364	4.46
2″	95255A371	4.63
2.5″	95255A376	4.57
3″	95255A381	5.01
3/8″ Dia.		
1.5″	95255A411	5.00
1.8″	95255A415	4.85
2″	95255A419	5.24
2.5″	95255A425	5.36
3″	95255A432	5.62

18-8 Stainless Steel

Usable Lg.		
5/32″ Dia.—*Strength not rated*		
0.8″	98404A101	1.76
1″	98404A103	1.80
1.3″	98404A105	1.82
1.5″	98404A107	1.84
1.8″	98404A109	1.90
3/16″ Dia.—*Breaks at 2,700 lbs.*		
0.4″	98404A004	1.86
0.5″	98404A005	1.83
0.6″	98404A006	1.86
0.7″	98404A007	1.83
0.8″	98404A008	1.86
0.9″	98404A009	1.86
1″	98404A010	1.85
1.1″	98404A011	1.95
1.2″	98404A012	1.95
1.3″	98404A013	1.98
1.4″	98404A014	1.98
1.5″	98404A015	1.98
1.6″	98404A016	1.99
1.7″	98404A017	2.02
1.8″	98404A018	2.02
1.9″	98404A019	2.02
2″	98404A020	1.96
2.5″	98404A025	2.13
2.6″	98404A026	2.13
3″	98404A030	2.18
3.5″	98404A035	2.32
4″	98404A040	2.32
1/4″ Dia.—*Breaks at 4,800 lbs.*		
0.4″	98404A124	1.88
0.5″	98404A125	1.88
0.6″	98404A126	1.88
0.7″	98404A127	1.88
0.8″	98404A128	1.82
0.9″	98404A129	1.88
1″	98404A959	1.89
1.1″	98404A131	1.95
1.2″	98404A132	1.95
1.3″	98404A133	1.95
1.4″	98404A134	1.95
1.5″	98404A135	1.95
1.6″	98404A136	1.99
1.7″	98404A137	2.02
1.8″	98404A138	1.95
1.9″	98404A139	2.02
2″	98404A960	2.00
2.1″	98404A141	2.18
2.2″	98404A142	2.10
2.3″	98404A143	2.21
2.4″	98404A144	2.21
2.5″	98404A145	2.19
2.7″	98404A147	2.21
3″	98404A150	2.22
3.2″	98404A152	2.37
1/4″ Dia. (Cont.)		
3.5″	98404A155	2.42
4″	98404A160	2.37
5″	98404A170	2.62
6″	98404A180	2.84
5/16″ Dia.—*Breaks at 7,500 lbs.*		
0.8″	98404A248	2.13
1″	98404A250	2.18
1.2″	98404A252	2.29
1.3″	98404A253	2.29
1.4″	98404A254	2.29
1.5″	98404A255	2.29
1.6″	98404A251	2.29
1.7″	98404A256	2.29
1.8″	98404A257	2.29
1.9″	98404A258	2.32
2″	98404A260	2.32
2.2″	98404A264	2.44
2.5″	98404A265	2.44
3″	98404A270	2.44
3.5″	98404A275	2.72
4″	98404A280	2.72
5″	98404A290	2.91
6″	98404A298	3.21
3/8″ Dia.—*Breaks at 11,000 lbs.*		
0.5″	98404A365	2.36
0.6″	98404A366	2.36
0.7″	98404A367	2.36
0.8″	98404A368	2.38
0.9″	98404A369	2.38
1″	98404A961	2.38
1.1″	98404A371	2.60
1.2″	98404A372	2.60
1.3″	98404A373	2.60
1.4″	98404A374	2.60
1.5″	98404A375	2.60
1.6″	98404A376	2.62
1.7″	98404A377	2.62
1.8″	98404A378	2.62
1.9″	98404A379	2.62
2″	98404A925	2.62
2.1″	98404A381	2.86
2.2″	98404A382	2.86
2.3″	98404A383	2.86
2.4″	98404A384	2.90
2.5″	98404A385	2.90
2.6″	98404A386	2.90
2.7″	98404A387	2.90
2.8″	98404A388	2.90
2.9″	98404A389	2.90
3″	98404A390	2.90
3.5″	98404A395	3.32
4″	98404A400	3.40
4.5″	98404A405	3.56
5″	98404A410	3.70

18-8 Stainless Steel (Cont.)

Usable Lg.		
3/8″ Dia. (Cont.)		
6″	98404A420	$3.96
6.2″	98404A624	4.16
7″	98404A430	4.46
7/16″ Dia.—*Breaks at 14,900 lbs.*		
1″	98404A450	4.22
1.5″	98404A455	4.50
2″	98404A460	4.53
2.5″	98404A465	4.81
3″	98404A466	4.81
3.5″	98404A467	5.32
4″	98404A468	5.32
4.5″	98404A469	5.60
5″	98404A470	5.66
1/2″ Dia.—*Breaks at 19,500 lbs.*		
0.5″	98404A485	5.74
0.6″	98404A486	5.74
0.8″	98404A487	5.74
1″	98404A490	5.74
1.1″	98404A491	6.08
1.2″	98404A492	6.08
1.3″	98404A493	6.08
1.4″	98404A494	6.08
1.5″	98404A495	6.08
1.6″	98404A496	6.08
1.7″	98404A497	6.08
1.8″	98404A498	6.08
1.9″	98404A506	6.08
2″	98404A962	6.08
2.1″	98404A501	6.48
2.2″	98404A502	6.48
2.3″	98404A503	6.48
2.4″	98404A504	6.48
2.5″	98404A505	6.48
2.6″	98404A508	6.48
2.8″	98404A509	6.48
3″	98404A510	6.48
3.1″	98404A511	7.10
3.2″	98404A512	7.10
3.3″	98404A513	7.10
3.5″	98404A515	7.10
3.8″	98404A518	7.14
4″	98404A520	7.11
4.3″	98404A522	7.36
4.5″	98404A525	7.36
5″	98404A530	7.36
5.5″	98404A535	7.70
6″	98404A540	7.70
7″	98404A550	8.26
8″	98404A560	8.62
5/8″ Dia.—*Breaks at 30,500 lbs.*		
1″	98404A610	$8.08
1.3″	98404A613	8.28
1.5″	98404A615	8.28
1.7″	98404A617	8.28
2″	98404A620	8.28
2.5″	98404A625	8.70
3″	98404A630	8.70
3.5″	98404A635	9.48
4″	98404A640	9.48
4.5″	98404A645	9.84
5″	98404A650	9.84
5.5″	98404A655	10.17
6″	98404A660	10.18
7″	98404A670	10.88
8″	98404A680	12.00
3/4″ Dia.—*Breaks at 44,000 lbs.*		
1″	98404A741	13.43
1.5″	98404A735	13.41
2″	98404A740	13.41
2.3″	98404A743	13.95
2.5″	98404A745	13.95
3″	98404A750	13.98
3.5″	98404A755	14.87
4″	98404A760	14.87
4.5″	98404A765	15.29
5″	98404A770	15.29
5.5″	98404A775	15.71
6″	98404A780	15.71
7″	98404A785	16.55
8″	98404A790	16.97
1″ Dia.—*Breaks at 79,000 lbs.*		
2″	98404A860	18.14
2.5″	98404A865	18.22
2.6″	98404A866	18.22
3″	98404A870	18.22
3.5″	98404A869	19.40
4″	98404A872	19.10
4.5″	98404A871	19.94
4.8″	98404A873	19.64
5″	98404A874	19.64
5.5″	98404A875	20.68
6″	98404A876	20.37
6.5″	98404A877	23.00
7″	98404A878	22.68
8″	98404A880	24.82

18-8 Stainless Steel with Lanyard

Usable Lg.		
5/32″ Dia.—*Strength not rated*		
0.8″	94975A201	4.10
1″	94975A203	4.13
1.3″	94975A205	4.15
1.5″	94975A207	4.19
1.8″	94975A209	4.24
3/16″ Dia.—*Breaks at 2,700 lbs.*		
0.4″	94975A281	4.10
0.5″	94975A285	4.31
0.6″	94975A290	4.10
0.7″	94975A294	4.31
0.8″	94975A299	4.10
0.9″	94975A303	4.10
1″	94975A113	4.35
1.1″	94975A308	4.26
1.2″	94975A312	4.26
1.3″	94975A317	4.28
1.4″	94975A321	4.28
1.5″	94975A117	4.28
1.6″	94975A326	4.30
3/16″ Dia. (Cont.)		
1.7″	94975A330	4.27
1.8″	94975A335	4.27
1.9″	94975A339	4.27
2″	94975A123	4.43
2.5″	94975A344	4.86
2.6″	94975A348	4.86
3″	94975A353	6.05
3.5″	94975A357	6.24
4″	94975A362	6.60
1/4″ Dia.—*Breaks at 4,800 lbs.*		
0.4″	94975A366	4.30
0.5″	94975A145	3.58
0.6″	94975A371	4.11
0.7″	94975A148	4.11
0.8″	94975A153	4.30
0.9″	94975A375	4.11
1″	94975A157	4.37
1.1″	94975A380	4.31
1.2″	94975A159	4.42

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Quick-Release Pins *(Continued from previous page)*

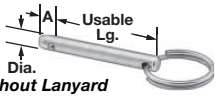

Without Lanyard

With Lanyard

Also known as faspins, these pins have a ring grip. The ball springs inward during installation and pops out to lock the pin in place. The ball and spring are Type 316 stainless steel. The pin diameter equals the hole size. The pin end (A) extends beyond the ball by a length up to 30% greater than the pin diameter. Shaft diameter tolerance is –0.003″. Shafts have a minimum Rockwell hardness of B85, except aluminum have a minimum Rockwell hardness of B56. Breaking strength is measured as single shear, which is the force required to break a pin into two pieces.

Type 316 stainless steel pins are the most corrosion resistant. May be mildly magnetic.

18-8 stainless steel pins are more corrosion resistant than zinc-plated pins and may be mildly magnetic.

Pins with lanyard that have a usable length up to 2.9″ have a 6″ long lanyard; all others have a 12″ long lanyard. All lanyards are nylon coated.

Zinc-plated steel pins have good rust resistance.

Aluminum pins are lightweight, corrosion resistant, and nonmagnetic.

18-8 Stainless Steel with Lanyard (Cont.)

Usable Lg.		
1/4″ Dia. (Cont.)		
1.3″	94975A162	$4.42
1.4″	94975A384	4.31
1.5″	94975A166	4.42
1.6″	94975A389	4.26
1.7″	94975A393	4.26
1.8″	94975A169	4.26
1.9″	94975A398	4.26
2″	94975A174	4.35
2.1″	94975A402	4.52
2.2″	94975A407	4.50
2.3″	94975A411	4.50
2.4″	94975A416	4.50
2.5″	94975A177	4.64
2.7″	94975A420	4.50
3″	94975A185	5.18
3.2″	94975A425	5.44
3.5″	94975A429	5.48
4″	94975A434	5.74
5″	94975A438	5.72
6″	94975A443	5.98
5/16″ Dia.— *Breaks at 7,500 lbs.*		
0.8″	94975A447	4.41
1″	94975A211	4.41
1.2″	94975A452	4.59
1.3″	94975A456	4.59
1.4″	94975A461	4.59
1.5″	94975A215	4.59
1.6″	94975A465	4.59
1.7″	94975A470	4.59
1.8″	94975A474	4.60
1.9″	94975A479	4.60
2″	94975A219	4.60
2.2″	94975A483	4.75
2.5″	94975A488	4.75
3″	94975A492	5.27
3.5″	94975A497	5.58
4″	94975A501	6.09
5″	94975A506	6.06
6″	94975A510	6.40
3/8″ Dia.— *Breaks at 11,000 lbs.*		
0.5″	94975A515	5.17
0.6″	94975A519	5.17
0.7″	94975A524	5.17
0.8″	94975A528	4.68
0.9″	94975A533	4.68
1″	94975A231	5.19
1.1″	94975A537	4.93
1.2″	94975A542	4.93
1.3″	94975A546	4.93
1.4″	94975A551	4.93
1.5″	94975A235	4.93
1.6″	94975A555	4.95
1.7″	94975A563	4.95
1.8″	94975A564	4.95
1.9″	94975A569	4.95
2″	94975A242	4.95
2.1″	94975A573	5.22
2.2″	94975A578	5.22
2.3″	94975A582	5.22
2.4″	94975A587	5.26
2.5″	94975A247	5.26
2.6″	94975A591	5.26
2.7″	94975A596	5.26
2.8″	94975A600	5.22
2.9″	94975A605	5.22
3″	94975A253	5.78
3.5″	94975A257	6.24
4″	94975A609	6.62
4.5″	94975A614	6.83

Usable Lg.		
3/8″ Dia. (Cont.)		
5″	94975A618	$7.14
6″	94975A623	7.46
6.2″	94975A627	7.52
7″	94975A632	8.06
7/16″ Dia.— *Breaks at 14,900 lbs.*		
1″	94975A636	6.73
1.5″	94975A641	7.21
2″	94975A645	7.22
2.5″	94975A650	7.40
3″	94975A654	7.91
3.5″	94975A659	8.49
4″	94975A663	8.68
4.5″	94975A668	8.80
5″	94975A672	9.02
1/2″ Dia.— *Breaks at 19,500 lbs.*		
0.5″	94975A677	8.44
0.6″	94975A681	8.44
0.8″	94975A686	8.44
1″	94975A690	8.44
1.1″	94975A695	8.82
1.2″	94975A699	8.82
1.3″	94975A704	8.82
1.4″	94975A708	8.82
1.5″	94975A271	8.82
1.6″	94975A713	8.82
1.7″	94975A717	8.82
1.8″	94975A722	8.82
1.9″	94975A726	8.74
2″	94975A731	8.74
2.1″	94975A735	9.26
2.2″	94975A740	9.26
2.3″	94975A744	10.60
2.4″	94975A749	10.60
2.5″	94975A753	9.18
2.6″	94975A758	9.18
2.8″	94975A762	9.20
3″	94975A279	9.78
3.1″	94975A767	9.61
3.2″	94975A771	9.61
3.3″	94975A776	9.61
3.5″	94975A780	9.61
3.8″	94975A785	9.65
4″	94975A789	9.65
4.3″	94975A794	10.39
4.5″	94975A798	10.02
5″	94975A803	9.94
5.5″	94975A807	10.37
6″	94975A812	10.31
5/8″ Dia.— *Breaks at 30,500 lbs.*		
1″	94975A825	10.96
1.3″	94975A830	11.49
1.5″	94975A834	11.49
1.7″	94975A839	11.38
2″	94975A843	11.42
2.5″	94975A848	11.89
3″	94975A852	12.46
3.5″	94975A857	13.33
4″	94975A861	13.33
4.5″	94975A866	13.73
5″	94975A870	13.73
5.5″	94975A875	14.11
6″	94975A879	14.11
3/4″ Dia.— *Breaks at 44,000 lbs.*		
1″	94975A893	16.64
1.5″	94975A897	17.20
2″	94975A902	17.53
2.3″	94975A906	17.74
2.5″	94975A911	17.74
3″	94975A915	18.24

18-8 Stainless Steel with Lanyard (Cont.)

Usable Lg.		
3/4″ Dia. (Cont.)		
3.5″	94975A920	$19.26
4″	94975A924	19.22
4.5″	94975A929	19.71
3/4″ Dia. (Cont.)		
5″	94975A933	$19.76
5.5″	94975A938	20.25
6″	94975A942	20.20

Zinc-Plated Steel

Usable Lg.		
3/16″ Dia.— *Breaks at 2,400 lbs.*		
0.4″	98320A004	1.49
0.5″	98320A005	1.49
0.7″	98320A007	1.50
0.9″	98320A009	1.46
1″	98320A010	1.51
1.2″	98320A012	1.50
1.3″	98320A013	1.59
1.5″	98320A015	1.60
1.6″	98320A016	1.60
1.7″	98320A017	1.50
2″	98320A020	1.50
2.5″	98320A025	1.70
3″	98320A030	1.69
1/4″ Dia.— *Breaks at 4,300 lbs.*		
0.4″	98320A124	1.30
0.5″	98320A125	1.44
0.7″	98320A127	1.44
0.8″	98320A128	1.45
1″	98320A130	1.45
1.1″	98320A131	1.49
1.2″	98320A132	1.40
1.3″	98320A133	1.40
1.4″	98320A134	1.49
1.5″	98320A135	1.49
1.6″	98320A136	1.40
1.7″	98320A137	1.41
1.8″	98320A138	1.41
2″	98320A140	1.51
2.1″	98320A141	1.53
2.2″	98320A142	1.53
2.3″	98320A143	1.53
2.5″	98320A145	1.55
3″	98320A150	1.56
3.5″	98320A155	1.65
4″	98320A160	1.65
4.5″	98320A165	2.39
5″	98320A170	2.52
5/16″ Dia.— *Breaks at 6,700 lbs.*		
1″	98320A250	1.49
1.3″	98320A253	1.55
1.5″	98320A255	1.55
2″	98320A260	1.57
2.5″	98320A265	1.58
3″	98320A270	1.74
3.5″	98320A275	1.86
4″	98320A280	1.79
3/8″ Dia.— *Breaks at 9,700 lbs.*		
0.5″	98320A365	1.64
0.8″	98320A368	1.59
0.9″	98320A369	1.64
1″	98320A370	1.59
1.1″	98320A371	1.74
1.2″	98320A372	1.74
1.3″	98320A373	1.67
1.5″	98320A375	1.67
1.8″	98320A378	1.88
1.9″	98320A379	1.74
2″	98320A380	1.90
2.1″	98320A381	1.87
2.3″	98320A383	1.79
2.5″	98320A385	1.79
2.6″	98320A386	1.87
2.8″	98320A388	1.87
3″	98320A390	1.98

Usable Lg.		
3/8″ Dia. (Cont.)		
3.5″	98320A395	1.92
3.7″	98320A397	2.00
4″	98320A400	1.95
4.5″	98320A405	2.05
5″	98320A410	2.08
6″	98320A420	2.46
7/16″ Dia.— *Breaks at 13,200 lbs.*		
1.5″	98320A975	1.92
2″	98320A980	2.04
3″	98320A985	2.08
4″	98320A990	2.24
5″	98320A995	2.34
1/2″ Dia.— *Breaks at 17,200 lbs.*		
0.5″	98320A485	2.04
0.6″	98320A486	2.10
0.8″	98320A488	2.10
1″	98320A490	2.13
1.1″	98320A491	2.20
1.2″	98320A492	2.20
1.3″	98320A493	2.46
1.4″	98320A494	2.46
1.5″	98320A495	2.22
1.8″	98320A498	2.22
1.9″	98320A499	2.22
2″	98320A500	2.30
2.1″	98320A501	2.41
2.3″	98320A503	2.43
2.4″	98320A504	2.43
2.5″	98320A505	2.47
2.6″	98320A506	2.47
2.8″	98320A508	2.47
3″	98320A510	2.48
3.1″	98320A511	2.61
3.2″	98320A512	2.64
3.3″	98320A513	2.64
3.5″	98320A515	2.60
4″	98320A520	2.52
4.3″	98320A523	2.84
4.5″	98320A525	2.84
5″	98320A530	2.80
5.5″	98320A535	2.99
6″	98320A540	2.98
6.5″	98320A545	3.15
7″	98320A550	3.19
8″	98320A560	3.57
8.5″	98320A565	3.79
5/8″ Dia.— *Breaks at 27,000 lbs.*		
1″	98320A750	2.76
1.3″	98320A613	2.89
1.5″	98320A615	2.89
1.7″	98320A617	2.92
2″	98320A620	2.92
2.5″	98320A625	3.22
3″	98320A630	3.22
3.1″	98320A631	3.46
3.5″	98320A635	3.46
3.8″	98320A638	3.50
4″	98320A640	3.48
4.5″	98320A649	3.69
5″	98320A650	3.69
6″	98320A660	3.94
6.5″	98320A665	4.14
7″	98320A670	4.14

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Quick-Release Pins *(Continued from previous page)*

Usable Lg.		
Zinc-Plated Steel (Cont.)		
3/4″ Dia.—Breaks at 39,000 lbs.		
1″	98320A730	$3.92
1.5″	98320A735	4.04
2″	98320A740	4.21
2.3″	98320A743	4.23
2.5″	98320A745	4.23
2.6″	98320A746	4.25
2.8″	98320A748	4.25
3″	98320A610	4.27
3.1″	98320A751	4.52
3.5″	98320A755	4.54
4″	98320A760	4.58
4.2″	98320A762	4.87
4.4″	98320A764	4.89
3/4″ Dia. (Cont.)		
4.5″	98320A765	$4.91
5″	98320A770	4.93
5.5″	98320A769	5.29
6″	98320A771	5.31
6.5″	98320A776	5.51
7″	98320A801	5.55
8″	98320A901	6.04
1″ Dia.—Breaks at 70,000 lbs.		
2″	98320A860	6.56
2.5″	98320A858	6.79
2.6″	98320A866	6.83
3″	98320A870	6.89
3.5″	98320A875	7.20

Usable Lg.		
Zinc-Plated Steel (Cont.)		
1″ Dia. (Cont.)		
4″	98320A880	$7.28
4.5″	98320A885	7.66
4.8″	98320A887	7.70
5″	98320A886	7.74
5.5″	98320A892	8.22
1″ Dia. (Cont.)		
6″	98320A891	$8.28
6.5″	98320A893	8.66
7″	98320A895	8.76
8″	98320A897	9.34
Aluminum		
1/4″ Dia.—Strength not rated		
0.5″	95255A801	2.63
1″	95255A805	2.69
1.5″	95255A809	2.74
2″	95255A813	2.83
3/8″ Dia.—Strength not rated		
0.8″	95255A823	3.31
1″	95255A825	3.43
1.5″	95255A829	3.57
2″	95255A833	3.74

Metric Quick-Release Pins

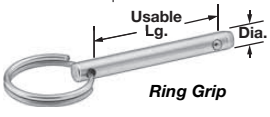

Ring Grip

High Profile

The spring-loaded ball retracts during installation and pops out to lock your pin in place. The shaft is 18-8 stainless steel, the ball and spring are stainless steel; may be mildly magnetic. Shaft diameter tolerance is –0.004 mm to –0.08 mm. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces.

Ring-grip pins are easy to grab and allow you to add a lanyard. Also known as faspins. Shaft has a minimum Rockwell hardness of B96. **Also Available:** Zinc-plated ring-grip pins. Please ask for 95335A500 and specify dia. and length.

High-profile pins have a handle and a hole for adding a lanyard. Shaft hardness is 150 Brinell.

Usable Lg., mm		
Ring Grip—Strength not rated		
M5 Dia.		
12	95335A011	$2.93
18	95335A013	2.97
25	95335A016	2.99
40	95335A031	3.26
M6 Dia.		
12	95335A125	2.95
20	95335A134	3.05
25	95335A138	3.12
40	95335A142	3.37
50	95335A145	3.50
M8 Dia.		
25	95335A163	$3.39
40	95335A168	3.84
50	95335A171	3.94
M10 Dia.		
25	95335A176	4.59
40	95335A182	5.17
50	95335A189	5.38
M12 Dia.		
40	95335A206	6.16
50	95335A215	6.52
75	95335A226	7.52
High Profile		
M6 Dia.—Breaks at 4,900 lbs.		
25	95335A623	20.08
30	95335A624	20.42
50	95335A625	20.86
M8 Dia.—Breaks at 8,900 lbs.		
25	95335A626	22.54
30	95335A627	23.30
50	95335A628	24.10
M10 Dia.—Breaks at 13,900 lbs.		
25	95335A629	26.08
30	95335A631	26.84
50	95335A632	27.66
M12 Dia.—Breaks at 20,000 lbs.		
30	95335A633	29.40
40	95335A634	30.58
50	95335A635	31.82

Heavy Duty Quick-Release Pins

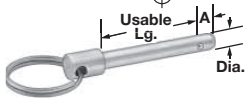

Two spring-loaded locking balls deliver superior holding power. Pins meet MIL-P-45952/1. Balls are steel, spring is 17-7 stainless steel, and shaft and ring are 18-8 stainless steel. The shaft has a minimum Rockwell hardness of C40. Shaft diameter tolerance is –0.003″. Pin end (A) extends beyond the ball by a length of the pin diameter plus 1/8″. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces.

Usable Lg.		
1/4″ Dia.—Breaks at 4,500 lbs.		
1/2″	95165A032	$5.51
3/4″	95165A033	6.09
1″	95165A034	4.90
1 1/4″	95165A035	5.72
1 1/2″	95165A036	5.84
2″	95165A038	5.11
2 1/2″	95165A041	5.49
3″	95165A043	5.48
5/16″ Dia.—Breaks at 7,100 lbs.		
3/4″	95165A051	6.35
1″	95165A052	6.14
1 1/4″	95165A053	6.57
1 1/2″	95165A054	5.46
2″	95165A056	6.61
3″	95165A061	6.15
3 1/2″	95165A063	9.10
4″	95165A067	8.24
3/8″ Dia.—Breaks at 10,300 lbs.		
1″	95165A072	6.85
1 1/4″	95165A073	6.30
1 1/2″	95165A074	7.22
2″	95165A076	6.43
2 1/2″	95165A078	6.66
3″	95165A081	6.85
3 1/2″	95165A083	7.01
4″	95165A085	7.27
4 1/2″	95165A087	7.48
7/16″ Dia.—Breaks at 14,000 lbs.		
1″	95165A205	11.22
1 1/2″	95165A207	14.29
7/16″ Dia. (Cont.)		
2″	95165A209	$14.25
2 1/2″	95165A211	15.45
1/2″ Dia.—Breaks at 18,400 lbs.		
1″	95165A090	9.77
2″	95165A094	11.69
2 1/2″	95165A096	10.66
3″	95165A098	12.22
4″	95165A102	12.47
5″	95165A106	12.67
5/8″ Dia.—Breaks at 28,500 lbs.		
1″	95165A304	17.73
1 1/2″	95165A306	19.84
2 1/2″	95165A310	21.86
3″	95165A312	21.87
3 1/2″	95165A314	23.87
4″	95165A316	23.87
4 1/2″	95165A318	25.94
5″	95165A320	25.95
3/4″ Dia.—Breaks at 41,500 lbs.		
1 1/2″	95165A406	25.69
2 1/2″	95165A410	28.49
3″	95165A416	28.48
4″	95165A420	31.35
5″	95165A424	34.19
1″ Dia.—Breaks at 74,500 lbs.		
2″	95165A508	35.34
2 1/2″	95165A510	39.71
3″	95165A514	39.70
4″	95165A518	43.91
5″	95165A522	48.21
6″	95165A526	52.59

High Visibility Quick-Release Pins

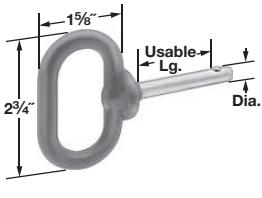

A bright-orange plastic-coated handle makes these pins easy to see and gives you more gripping leverage. The ball springs inward during installation and pops out to lock pin in place. The ball is stainless steel. The shaft is steel and has a minimum Rockwell hardness of B96. Shaft diameter tolerance is +0.004″ to –0.005″. Pin diameter is slightly larger than the hole size. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces.

Usable Lg.		
5/16″ Dia.—Breaks at 8,000 lbs.		
1″	92627A111	$5.63
1 1/2″	92627A113	5.71
2″	92627A115	5.51
2 1/2″	92627A117	6.01
3″	92627A119	5.71
4″	92627A123	5.86
3/8″ Dia.—Breaks at 11,000 lbs.		
1″	92627A204	6.08
1 1/2″	92627A206	6.15
2″	92627A208	6.15
2 1/2″	92627A211	6.20
3/8″ Dia. (Cont.)		
3″	92627A216	$6.36
4″	92627A222	6.45
1/2″ Dia.—Breaks at 21,000 lbs.		
1″	92627A305	6.32
1 1/2″	92627A315	6.63
2″	92627A320	6.45
2 1/2″	92627A325	6.68
3″	92627A330	6.88
4″	92627A335	7.26
5/8″ Dia.—Breaks at 33,000 lbs.		
1 1/2″	92627A414	6.83
2″	92627A419	7.21
5/8″ Dia. (Cont.)		
2 1/2″	92627A424	$7.38
3″	92627A429	7.25
4″	92627A434	7.58
5″	92627A439	8.03
3/4″ Dia.—Breaks at 47,000 lbs.		
1 1/2″	92627A518	7.80
2″	92627A522	7.90
2 1/2″	92627A527	8.13
3″	92627A531	8.56
4″	92627A536	8.88
5″	92627A540	11.08

Shoulder-Style Quick-Release Pins

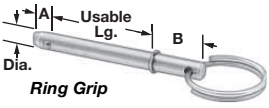

Ring Grip

T-Handle

The shoulder keeps a portion of the pin outside the hole. It also makes the ring grip or T-handle easy to grab. All have a Type 316 stainless steel ball and spring. The ball has a minimum Rockwell hardness of C25. Shaft diameter tolerance is –0.003″. Pin diameter equals the hole size. Breaking strength is measured as single shear, which is the force required to break the pin into two pieces.

18-8 stainless steel pins are more corrosion resistant than zinc-plated steel pins. May be mildly magnetic. The shaft has a minimum Rockwell hardness of B85.

Zinc-plated steel pins offer good rust resistance. The shaft has a minimum Rockwell hardness of B96.

To Order: Please specify ring grip or T-handle.

Dia.	3/16″	1/4″	5/16″	3/8″	1/2″	5/8″	3/4″	1″
A	3/16″	5/16″	3/8″	1/2″	5/8″	3/4″	15/16″	1 1/4″
B	11/16″	3/4″	3/4″	3/4″	1″	1 1/16″	1 3/8″	1 1/2″
C	1″	1 1/4″	1 1/4″	1 3/4″	2″	2 1/4″	2 1/4″	2 1/2″

18-8 Stainless Steel

Usable Lg.		
3/16″ Dia.—Breaks at 2,700 lbs.		
0.2″	98700A002	$2.73
0.6″	98700A006	2.73
1″	98700A010	2.73
1.3″	98700A012	2.92
1.5″	98700A014	2.92
2″	98700A020	2.93
3″	98700A030	3.01
1/4″ Dia.—Breaks at 4,800 lbs.		
0.6″	98700A126	2.84
1″	98700A130	2.92
1.3″	98700A133	3.01
1.5″	98700A135	3.01
1.6″	98700A136	3.08
2″	98700A140	3.08
2.1″	98700A141	3.23
2.5″	98700A145	3.23
3″	98700A150	3.33
5.1″	98700A171	4.11
5/16″ Dia.—Breaks at 7,500 lbs.		
1.8″	98700A258	3.50
2″	98700A260	3.37
2.5″	98700A265	3.62
3″	98700A270	3.62
3/8″ Dia.—Breaks at 11,000 lbs.		
0.6″	98700A366	3.58
1″	98700A370	3.65
1.3″	98700A167	3.94
1.5″	98700A375	3.94
1.8″	98700A378	4.01
2″	98700A380	4.01
2.3″	98700A382	4.29
2.5″	98700A385	4.29
3/8″ Dia. (Cont.)		
2.9″	98700A389	$4.41
3″	98700A390	4.41
4″	98700A164	4.94
1/2″ Dia.—Breaks at 19,500 lbs.		
1″	98700A490	7.55
1.3″	98700A491	8.26
1.5″	98700A492	8.26
1.8″	98700A493	8.39
2″	98700A500	8.44
2.5″	98700A505	8.48
2.8″	98700A507	9.06
3″	98700A510	9.19
3.5″	98700A514	9.91
4″	98700A520	10.03
4.6″	98700A523	10.36
5″	98700A530	10.53
7″	98700A550	11.78
5/8″ Dia.—Breaks at 30,500 lbs.		
1.5″	98700A621	12.31
2″	98700A623	12.23
2.5″	98700A624	12.89
3″	98700A630	13.03
3.5″	98700A627	13.83
4″	98700A640	13.93
5″	98700A650	14.39
3/4″ Dia.—Breaks at 44,000 lbs.		
2″	98700A751	22.13
2.5″	98700A753	22.76
3″	98700A755	22.97
4″	98700A760	24.28
4.5″	98700A762	24.85

Zinc-Plated Steel

Usable Lg.		
3/16″ Dia.—Breaks at 2,400 lbs.		
0.2″	97320A002	$1.78
0.6″	97320A006	1.78
1″	97320A010	1.76
1.3″	97320A013	1.88
1.5″	97320A015	1.88
2″	97320A020	1.82
1/4″ Dia.—Breaks at 4,300 lbs.		
0.6″	97320A126	1.66
1″	97320A130	1.59
1.3″	97320A133	1.77
1.5″	97320A135	1.77
1.6″	97320A136	1.77
2″	97320A140	1.73
2.1″	97320A141	1.87
2.5″	97320A145	1.87
3″	97320A162	1.87
5.1″	97320A171	2.27
5/16″ Dia.—Breaks at 6,700 lbs.		
1.8″	97320A258	1.83
2″	97320A260	2.07
2.5″	97320A265	1.99
3″	97320A270	2.01
3/8″ Dia.—Breaks at 9,700 lbs.		
0.6″	97320A366	1.96
1″	97320A163	1.96
1.3″	97320A167	2.10
1.5″	97320A375	2.38
1.8″	97320A378	2.10
2″	97320A380	2.10
2.3″	97320A383	2.20
2.5″	97320A385	2.20
2.9″	97320A389	2.20
3″	97320A390	2.20
4″	97320A164	2.40
1/2″ Dia.—Breaks at 17,200 lbs.		
1″	97320A490	$2.41
1.3″	97320A168	2.68
1.5″	97320A495	2.68
1.8″	97320A498	2.68
2″	97320A165	2.68
2.5″	97320A505	2.87
2.8″	97320A508	2.87
3″	97320A166	3.27
3.5″	97320A515	3.12
4″	97320A520	3.12
4.6″	97320A526	3.36
5″	97320A530	3.36
7″	97320A550	3.76
5/8″ Dia.—Breaks at 27,000 lbs.		
1.5″	97320A615	3.58
2.5″	97320A625	3.91
3.5″	97320A635	4.14
4″	97320A640	4.14
5″	97320A650	4.37
3/4″ Dia.—Breaks at 39,000 lbs.		
1.5″	97320A735	4.75
2″	97320A740	4.75
2.5″	97320A745	5.00
3″	97320A750	5.02
3.5″	97320A755	5.47
4″	97320A760	5.51
4.5″	97320A765	5.71
5″	97320A770	6.34
1″ Dia.—Breaks at 70,000 lbs.		
2.5″	97320A865	7.92
3″	97320A870	7.96
3.5″	97320A875	8.40
4″	97320A880	8.50
5″	97320A885	9.75
6″	97320A890	10.54

Add-a-Knob Quick-Release Pins

Customize these pins with the knob or handle of your choice. Pins have an 18-8 stainless steel shaft, ball, and spring. Shaft has a minimum Rockwell hardness of B85. Shaft diameter tolerance is –0.003″. Pin diameter equals the hole size. Breaking strength is measured as single shear, which is the force required to break a pin into two pieces. See pages 2211-2215 for knobs.

Usable Lg.	O'all Lg.		
3/16″ Dia.—Breaks at 2,700 lbs.			
Thread: 10-32×5/16″			
1/2″	1″	93460A005	$1.80
1″	1 1/2″	93460A010	1.96
1 1/2″	2″	93460A015	2.08
2″	2 1/2″	93460A020	2.31
1/4″ Dia.—Breaks at 4,800 lbs.			
Thread: 1/4″-20×3/8″			
1/2″	1 3/16″	93460A125	2.04
1″	1 11/16″	93460A130	2.29
1/4″ Dia. (Cont.)			
1 1/2″	2 3/16″	93460A135	$2.49
2″	2 1/4″	93460A140	2.73
2 1/2″	3 3/16″	93460A145	2.92
5/16″ Dia.—Breaks at 7,500 lbs.			
Thread: 5/16″-18×3/8″			
1″	1 3/4″	93460A250	2.75
1 1/2″	2 1/4″	93460A255	3.07
3/8″ Dia.—Breaks at 11,000 lbs.			
Thread: 3/8″-16×1/2″			
1 1/2″	2 1/2″	93460A375	$3.50
2″	3″	93460A380	3.54
2 1/2″	3 1/2″	93460A385	3.75
1/2″ Dia.—Breaks at 19,500 lbs.			
Thread: 1/2″-13×1/2″			
1 1/2″	2 5/8″	93460A495	4.86
2 1/2″	3 5/8″	93460A505	6.38
3″	4 1/8″	93460A510	6.70

Expanding Diameter Quick-Release Pins

Flip the handle 180° to expand and contract the shaft for a tight, vibration-resistant fit. All are passivated 17-4 PH stainless steel with a gray anodized aluminum handle. Breaking strength is measured as double shear, which is the force required to break a pin into three pieces. *Note:* Install pins their entire usable length.

Usable Lg.	Lg.	Shoulder Dia.		
1/4″ Dia.—Breaks at 8,000 lbs.				
1″	1 1/4″	5/8″	97787A661	$114.68
2″	2 1/4″	5/8″	97787A662	187.17
5/16″ Dia.—Breaks at 12,500 lbs.				
1″	1 5/16″	3/4″	97787A671	111.84
2″	2 5/16″	3/4″	97787A672	150.93
3/8″ Dia.—Breaks at 18,000 lbs.				
1″	1 3/8″	3/4″	97787A681	$98.27
2″	2 3/8″	3/4″	97787A682	125.60
3″	3 3/8″	3/4″	97787A683	196.81
1/2″ Dia.—Breaks at 32,000 lbs.				
1″	1 1/2″	1″	97787A691	105.01
2″	2 1/2″	1″	97787A692	148.76
3″	3 1/2″	1″	97787A693	183.80

Weld-In Pull Pins

The pin can't fall out when you weld the barrel in place. Also known as pop pins and clamp pins. Pull the handle to retract the pin; release it and the pin springs back to the extended position. All have a 1″ diameter barrel. Pin diameter tolerance is ±0.01″. Not rated for breaking strength.

Threaded shank pins have a 1/2″ long 3/8″-16 threaded stud so you can add the handle of your choice (see pages 2211-2219).

T-handle and ***ball handle*** pins have a black plastic handle. *Locking pins* lock in the retracted position with a quarter turn of the knob. Temperature range is 0° to 165° F.

18-8 stainless steel pins offer the most corrosion resistance and may be mildly magnetic. ***Zinc-plated steel*** pins have good rust resistance.

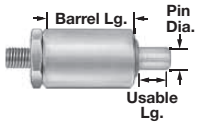

Threaded Shank

Pin Dia.	Barrel Lg.	Usable Lg.	Style		
18-8 Stainless Steel					
Threaded Shank					
3/8″	1 1/2″	9/16″	Nonlocking	91712A556	$19.23
1/2″	1 1/2″	9/16″	Nonlocking	91712A564	19.23
1/2″	2 1/4″	9/16″	Nonlocking	91712A580	21.63
T-Handle					
3/8″	1 1/2″	9/16″	Nonlocking	91712A101	20.68
3/8″	1 1/2″	9/16″	Locking	91712A335	23.53
1/2″	1 1/2″	9/16″	Nonlocking	91712A119	20.61
1/2″	1 1/2″	9/16″	Locking	91712A351	23.53
1/2″	2 1/4″	9/16″	Nonlocking	91712A155	23.88
1/2″	2 1/4″	9/16″	Locking	91712A383	26.46
Ball Handle					
3/8″	1 1/2″	9/16″	Nonlocking	91712A222	20.68
3/8″	1 1/2″	9/16″	Locking	91712A443	23.53
1/2″	1 1/2″	9/16″	Nonlocking	91712A240	20.61
1/2″	1 1/2″	9/16″	Locking	91712A461	23.53
1/2″	2 1/4″	9/16″	Nonlocking	91712A276	23.88
1/2″	2 1/4″	9/16″	Locking	91712A497	26.46

Pin Dia.	Barrel Lg.	Usable Lg.	Style		
Zinc-Plated Steel					
Threaded Shank					
3/8″	1 1/2″	9/16″	Nonlocking	90222A742	$7.90
1/2″	1 1/2″	9/16″	Nonlocking	90222A760	9.25
1/2″	2 1/4″	9/16″	Nonlocking	90222A796	11.19
T-Handle					
3/8″	1 1/2″	9/16″	Locking	90222A503	13.22
3/8″	1 1/2″	5/8″	Nonlocking	90222A112	9.31
1/2″	1 1/2″	9/16″	Locking	90222A518	14.59
1/2″	1 1/2″	5/8″	Nonlocking	90222A116	9.31
1/2″	2 1/4″	9/16″	Locking	90222A548	16.73
1/2″	3″	5/8″	Nonlocking	90222A118	13.62
Ball Handle					
3/8″	1 1/2″	9/16″	Locking	90222A625	13.31
3/8″	1 1/2″	5/8″	Nonlocking	90222A415	9.09
3/8″	3″	5/8″	Nonlocking	90222A423	13.41
1/2″	1 1/2″	9/16″	Locking	90222A643	14.69
1/2″	1 1/2″	5/8″	Nonlocking	90222A419	9.09
1/2″	2 1/4″	9/16″	Locking	90222A679	16.73

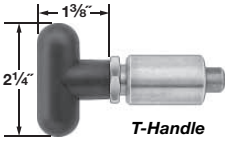

T-Handle

Ball Handle

Quick-Release Button Connectors for Telescoping Tubing

Also known as snap buttons and tubing buttons, connectors use spring force and a pin-like button to hold telescoping pieces of tubing together. Install a connector in the smaller tube and push the smaller tube inside your larger tube until the connector button pops into a hole.

Type 410 stainless steel pins are more corrosion resistant and just as strong as zinc-plated steel connectors. They are magnetic. Minimum Rockwell hardness is C42.

Zinc-plated steel pins have good rust resistance. Minimum Rockwell hardness is C44.

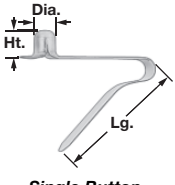

Single Button Dog Leg

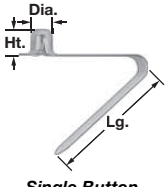

Single Button Straight Leg

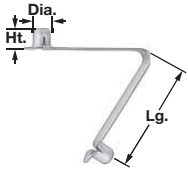

Double Button Straight Leg

Single Button Straight Leg Installed

For Tubing ID Round	For Tubing ID Square	Button Dia.	Button Ht.	Leg Wd.	Leg Lg.	Type 410 SS Pkg. Qty.	Type 410 SS	Type 410 SS Pkg.	Zinc-Plated Steel Pkg. Qty.	Zinc-Plated Steel	Zinc-Plated Steel Pkg.
Single Button—Dog Leg											
1/2″ - 3/4″	3/8″ - 3/4″	1/4″	1/4″	3/8″	1 3/8″	5	92988A650	$7.66	10	94282A250	$5.10
9/16″ -1″	7/16″-1″	5/16″	3/8″	7/16″	1 7/8″	5	92988A670	10.63	10	94282A270	7.02
9/16″ -1″	9/16″-1″	1/4″	3/8″	3/8″	1 7/8″	5	92988A660	10.63	10	94282A260	6.94
5/8″ -1 1/8″	9/16″-1 1/8″	3/8″	3/8″	1/2″	2 1/16″	1	92988A690	2.50	10	94282A290	7.35
Single Button—Straight Leg											
1/2″ - 7/8″	7/16″- 7/8″	1/4″	1/4″	3/8″	1 7/16″	5	92988A510	7.66	10	94282A110	5.10
1/2″ -1 1/4″	7/16″-1 1/4″	1/4″	3/8″	3/8″	1 7/8″	5	92988A530	10.63	10	94282A130	6.94
5/8″ -1 1/4″	7/16″-1 1/4″	5/16″	3/8″	7/16″	1 15/16″	5	92988A550	10.63	10	94282A150	6.94
11/16″-1 3/8″	9/16″-1 3/8″	3/8″	3/8″	1/2″	2 1/8″	1	92988A570	2.50	10	94282A170	7.35
Double Button—Straight Leg											
5/8″ - 7/8″	5/8″ - 7/8″	1/4″	1/4″	3/8″	1 1/2″	5	92988A730	10.94	5	94282A330	4.08
7/8″ -1 1/8″	7/8″ -1 1/8″	5/16″	3/8″	7/16″	2 1/16″	1	92988A750	2.50	5	94282A350	5.51
1″ -1 7/8″	1″ -1 7/8″	3/8″	7/16″	1/2″	2 13/16″	1	92988A770	3.44	5	94282A370	6.94

Quick-Release Clevis Pins with Head

Instead of a cotter pin that can get lost, these use a spring-loaded stainless steel ball to hold them in place. The shaft and head are made of rust-resistant zinc-plated steel. Minimum Rockwell hardness is B60. Shaft diameter tolerance is –0.0015″ to –0.009″. Pin diameter equals hole size. Not rated for breaking strength.

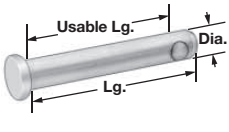

Usable Lg.	Lg.		Pkg. of 10
3/16″ Dia.—Head: 5/16″ Dia. × 1/16″ Ht.			
13/16″	1″	90156A204	$5.49
1 5/16″	1 1/2″	90156A208	5.24
1 13/16″	2″	90156A212	5.45
2 5/16″	2 1/2″	90156A216	5.87
1/4″ Dia.—Head: 3/8″ Dia. × 3/32″ Ht.			
3/4″	1″	90156A259	4.72
1 1/4″	1 1/2″	90156A263	4.99
1 3/4″	2″	90156A267	5.20

Usable Lg.	Lg.		Pkg. of 10
1/4″ Dia. (Cont.)			
2 1/4″	2 1/2″	90156A271	$5.57
2 3/4″	3″	90156A275	6.28
5/16″ Dia.—Head: 7/16″ Dia. × 3/32″ Ht.			
5/8″	1″	90156A402	5.68
1 1/8″	1 1/2″	90156A406	6.14
3/8″ Dia.—Head: 1/2″ Dia. × 1/8″ Ht.			
5/8″	1″	90156A276	6.51
1 5/8″	2″	90156A277	7.56

Usable Lg.	Lg.		Pkg. of 10
3/8″ Dia. (Cont.)			
2 5/8″	3″	90156A285	$8.34
3 5/8″	4″	90156A293	9.35
1/2″ Dia.—Head: 5/8″ Dia. × 5/32″ Ht.			
1″	1 1/2″	90156A383	8.72
1 1/2″	2″	90156A387	9.43
2″	2 1/2″	90156A391	10.16
2 1/2″	3″	90156A395	11.01
3″	3 1/2″	90156A399	12.00

About Clevis Pin Tolerances

Pin Dia.		3/16″	1/4″	5/16″	3/8″	7/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1″	1 1/8″	1 1/4″	1 1/2″
Shank Dia.	Minimum	0.180″	0.243″	0.304″	0.364″	0.431″	0.491″	0.553″	0.616″	0.741″	0.866″	0.991″	1.105″	1.230″	1.480″
	Maximum	0.191″	0.254″	0.316″	0.379″	0.436″	0.504″	0.558″	0.621″	0.752″	0.871″	0.996″	1.125″	1.250″	1.500″
Head Dia.	Minimum	0.297″	0.360″	0.420″	0.485″	0.550″	0.610″	0.800″	0.802″	0.860″	1.020″	1.170″	1.355″	1.470″	1.980″
	Maximum	0.327″	0.390″	0.440″	0.515″	0.570″	0.640″	0.820″	0.820″	0.940″	1.040″	1.190″	1.395″	1.500″	2.020″
Head Ht.	Minimum	0.050″	0.080″	0.080″	0.110″	0.140″	0.140″	0.193″	0.190″	0.240″	0.302″	0.334″	0.312″	0.330″	0.500″
	Maximum	0.070″	0.100″	0.100″	0.130″	0.160″	0.160″	0.210″	0.260″	0.320″	0.320″	0.350″	0.402″	0.350″	0.590″

Clevis Pins

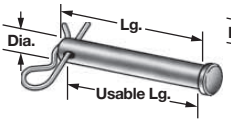

With Hairpin Cotter Pin

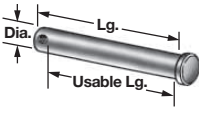

Without Cotter Pin

Use in place of bolts and rivets for temporary, quick-disconnect, and permanent fastening. Pin diameter equals hole size.

Type 316 stainless steel pins are our most corrosion resistant clevis pins. They may be mildly magnetic and have a minimum Rockwell hardness of B95.

18-8 stainless steel pins are more corrosion resistant than zinc-plated steel and plain steel pins. They may be mildly magnetic and have a minimum Rockwell hardness of B80.

Zinc-plated steel pins are more rust resistant than plain steel pins. They're made from C1010-C1018 steel and have a minimum Rockwell hardness of B80.

Plain steel pins with 3/16″ to 1″ diameters are made from C1010-C1018 steel and have a minimum Rockwell hardness of B80. Those with 1 1/8″ to 1 1/2″ diameters are made from C1038-C1045 steel and have a minimum Rockwell hardness of B63.

With Hairpin Cotter Pin—Each clevis pin comes with a cotter pin of the same material.

Type 316 Stainless Steel

Lg.	Usable Lg.	Pkg. Qty.		Pkg.
1/4″ Dia.				
1/2″	23/64″	5	92401A625	$10.38
3/4″	39/64″	5	92401A628	10.62
1″	55/64″	5	92401A631	10.90
1 1/4″	1 7/64″	5	92401A634	11.20
1 1/2″	1 23/64″	5	92401A637	11.71
2″	1 55/64″	5	92401A643	12.81
3/8″ Dia.				
3/4″	33/64″	1	92401A673	$4.60
1″	49/64″	1	92401A676	4.75
1 1/4″	1 1/64″	1	92401A679	4.95
1 1/2″	1 17/64″	1	92401A682	5.10
2″	1 49/64″	1	92401A688	5.57
2 1/2″	2 17/64″	1	92401A694	6.24
3″	2 49/64″	1	92401A697	6.57
1/2″ Dia.				
1″	49/64″	1	92401A703	$6.52
1 1/4″	1 1/64″	1	92401A706	6.76
1 1/2″	1 17/64″	1	92401A709	7.86
1 3/4″	1 33/64″	1	92401A712	8.43
2″	1 49/64″	1	92401A715	8.61
2 1/2″	2 17/64″	1	92401A721	9.24
3″	2 49/64″	1	92401A727	9.91
3 1/2″	3 17/64″	1	92401A730	10.39

Lg.	Usable Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Zinc-Plated Steel Pkg. Qty.		Pkg.
3/16″ Dia.							
1/2″	23/64″	5	92390A815	$5.37	10	97245A601	$3.80
3/4″	39/64″	5	92390A818	5.52	10	97245A604	3.62
1″	55/64″	5	92390A821	5.63	10	97245A607	3.68
1 1/4″	1 7/64″	5	92390A824	5.74	10	97245A610	3.72
1 1/2″	1 23/64″	5	92390A827	5.83	10	97245A613	3.76
1 3/4″	1 39/64″	5	92390A830	5.93	10	97245A616	3.89
2″	1 55/64″	5	92390A833	6.04	10	97245A619	4.07
1/4″ Dia.							
1/2″	23/64″	5	92390A839	6.18	10	97245A625	3.94
3/4″	39/64″	5	92390A842	6.33	10	97245A628	3.65
1″	55/64″	5	92390A845	6.44	10	97245A631	3.76
1 1/4″	1 7/64″	5	92390A848	6.66	10	97245A634	3.91
1 1/2″	1 23/64″	5	92390A851	6.95	10	97245A637	4.13
2″	1 55/64″	5	92390A857	7.47	10	97245A643	4.55
5/16″ Dia.							
3/4″	17/32″	5	92390A863	7.45	10	97245A649	4.43
1″	25/32″	5	92390A866	7.65	10	97245A652	4.59
1 1/4″	1 1/32″	5	92390A869	8.17	10	97245A655	4.91
1 1/2″	1 9/32″	5	92390A872	8.57	10	97245A658	5.20
1 3/4″	1 17/32″	5	92390A875	9.09	10	97245A661	5.56
2″	1 25/32″	5	92390A878	9.61	10	97245A664	5.95
2 1/2″	2 9/32″	5	92390A881	10.82	10	97245A667	6.58
3/8″ Dia.							
3/4″	33/64″	1	92390A887	$2.60	5	97245A673	$3.37
1″	49/64″	1	92390A890	2.67	5	97245A676	3.53
1 1/4″	1 1/64″	1	92390A893	2.82	5	97245A679	3.75
1 1/2″	1 17/64″	1	92390A896	2.91	5	97245A682	3.94
1 3/4″	1 33/64″	1	92390A899	3.01	5	97245A685	4.07
2″	1 49/64″	1	92390A902	3.15	5	97245A688	4.27
2 1/4″	2 1/64″	1	92390A905	3.24	5	97245A691	4.40
2 1/2″	2 17/64″	1	92390A908	3.33	5	97245A694	4.61
3″	2 49/64″	1	92390A911	3.51	5	97245A697	5.01
1/2″ Dia.							
1″	49/64″	1	92390A917	4.37	5	97245A703	5.65
1 1/4″	1 1/64″	1	92390A920	4.58	5	97245A706	5.80
1 1/2″	1 17/64″	1	92390A923	4.72	5	97245A709	6.10
1 3/4″	1 33/64″	1	92390A926	4.85	5	97245A712	6.20
2″	1 49/64″	1	92390A929	4.98	5	97245A715	6.31
2 1/4″	2 1/64″	1	92390A932	5.17	5	97245A718	6.56
2 1/2″	2 17/64″	1	92390A935	5.34	5	97245A721	7.00
2 3/4″	2 33/64″	1	92390A938	5.54	5	97245A724	7.24
3″	2 49/64″	1	92390A941	5.73	5	97245A727	7.36
3 1/2″	3 17/64″	1	92390A944	5.98	5	97245A730	8.21
4″	3 49/64″	1	92390A947	6.22	5	97245A733	8.58

Without Cotter Pin—Require a cotter pin to lock in place. See pages 3356-3358 for cotter pins.

Also Available: Zinc-plated steel clevis pins without cotter pin. Please ask for 97245A555 and specify diameter and length.

Lg.	Usable Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Plain Steel Pkg. Qty.		Pkg.
3/16″ Dia.—Recommended Cotter Pin Dia.: 1/16″							
1/2″	23/64″	10	92390A100	$7.52	25	98306A100	$6.09
19/32″	29/64″	10	92390A105	7.61	25	98306A149	8.46
5/8″	31/64″	10	92390A101	7.66	25	98306A101	6.39
3/4″	39/64″	10	92390A102	7.91	25	98306A102	6.28
7/8″	47/64″	10	92390A109	8.12	25	98306A103	6.60
1″	55/64″	10	92390A104	8.19	25	98306A104	6.67
1 1/4″	1 7/64″	10	92390A106	8.47	25	98306A106	6.31
1 1/2″	1 23/64″	10	92390A108	8.73	25	98306A108	5.83
1 3/4″	1 39/64″	10	92390A110	8.97	25	98306A110	6.77
2″	1 55/64″	10	92390A112	9.40	25	98306A112	6.27
2 1/2″	2 23/64″	10	92390A114	9.84	25	98306A116	9.45
3″	2 55/64″	10	92390A116	10.31	25	98306A120	9.13
1/4″ Dia.—Recommended Cotter Pin Dia.: 1/16″							
1/2″	23/64″	10	92390A155	9.14	25	98306A155	5.66
5/8″	31/64″	10	92390A156	9.49	25	98306A156	7.07
3/4″	39/64″	10	92390A157	9.60	25	98306A157	5.09
1/4″ Dia.—Recommended Cotter Pin Dia.: 1/16″ (Cont.)							
51/64″	21/32″	10	92390A158	$9.78	25	98306A151	$5.18
7/8″	47/64″	10	92390A186	9.76	25	98306A158	5.34
1″	55/64″	10	92390A159	9.90	25	98306A159	5.50
1 1/8″	63/64″	10	92390A160	10.13	25	98306A160	5.61
1 1/4″	1 7/64″	10	92390A161	10.38	25	98306A161	5.76
1 3/8″	1 15/64″	10	92390A162	10.95	25	98306A162	6.10
1 1/2″	1 23/64″	10	92390A163	11.12	25	98306A163	6.36
1 5/8″	1 31/64″	10	92390A164	11.84	25	98306A164	6.27
1 3/4″	1 39/64″	10	92390A165	12.08	25	98306A165	6.47
1 7/8″	1 47/64″	5	92390A166	6.17	25	98306A166	6.67
2″	1 55/64″	5	92390A167	6.29	25	98306A167	6.76
2 1/8″	1 63/64″	5	92390A168	6.42	25	98306A168	6.96
2 1/4″	2 7/64″	5	92390A169	6.56	25	98306A169	7.16
2 3/8″	2 15/64″	5	92390A170	6.67	25	98306A170	7.25
2 1/2″	2 23/64″	5	92390A174	7.58	25	98306A171	7.44

(Continued on following page)

For information about clevis pin tolerances, see page 3352.

Clevis Pins *(Continued from previous page)*

Without Cotter Pin (Cont.)—Require a cotter pin to lock in place. See pages 3356-3358 for cotter pins.

Also Available: Zinc-plated steel clevis pins without cotter pin. Please ask for 97245A555 and specify diameter and length.

Lg.	Usable Lg.	18-8 Stainless Steel Pkg. Qty.		Pkg.	Plain Steel Pkg. Qty.		Pkg.
***1/4" Dia.—**Recommended Cotter Pin Dia.: 1/16" (Cont.)*							
2 3/4"	2 39/64"	5	92390A175	$8.53	25	98306A173	$7.84
3"	2 55/64"	5	92390A180	8.87	25	98306A175	8.13
3 1/2"	3 23/64"	5	92390A182	9.80	25	98306A179	11.96
4"	3 55/64"	5	92390A184	10.73	25	98306A183	10.61
***5/16" Dia.—**Recommended Cotter Pin Dia.: 1/8"*							
1/2"	9/32"	5	92390A210	5.32	25	98306A210	7.94
3/4"	17/32"	5	92390A212	5.60	25	98306A212	6.32
7/8"	21/32"	5	92390A213	5.77	25	98306A213	6.46
31/32"	3/4"	5	92390A228	5.83	25	98306A206	6.61
1"	25/32"	5	92390A214	5.87	25	98306A214	6.69
1 1/8"	29/32"	5	92390A215	6.28	25	98306A215	6.89
1 3/16"	31/32"	—	—	—	25	98306A207	7.27
1 1/4"	1 1/32"	5	92390A216	6.62	25	98306A216	6.98
1 3/8"	1 5/32"	5	92390A217	6.74	25	98306A217	7.17
1 1/2"	1 9/32"	5	92390A218	6.94	25	98306A218	7.46
1 5/8"	1 13/32"	5	92390A219	7.35	25	98306A219	7.64
1 11/16"	1 15/32"	—	—	—	25	98306A208	7.83
1 3/4"	1 17/32"	5	92390A220	7.58	25	98306A220	7.92
1 7/8"	1 21/32"	5	92390A221	7.79	25	98306A221	8.22
2"	1 25/32"	5	92390A222	8.18	25	98306A222	8.39
2 1/8"	1 29/32"	5	92390A223	8.37	25	98306A223	8.68
2 3/16"	1 31/32"	5	92390A229	8.69	25	98306A716	9.02
2 1/4"	2 1/32"	5	92390A224	8.78	25	98306A224	9.11
2 3/8"	2 5/32"	5	92390A225	9.08	25	98306A228	9.15
2 1/2"	2 9/32"	5	92390A226	9.60	25	98306A226	9.60
2 5/8"	2 13/32"	5	92390A227	10.53	25	98306A227	9.91
2 3/4"	2 17/32"	—	—	—	25	98306A225	10.11
3"	2 25/32"	5	92390A231	11.00	25	98306A229	10.63
3 1/4"	3 1/32"	—	—	—	25	98306A231	11.13
3 1/2"	3 9/32"	5	92390A234	12.42	25	98306A233	11.42
4"	3 25/32"	5	92390A236	13.76	10	98306A236	9.07
***3/8" Dia.—**Recommended Cotter Pin Dia.: 1/8"*							
3/4"	33/64"	5	92390A267	8.39	25	98306A267	7.12
1"	49/64"	5	92390A269	8.79	25	98306A269	7.74
1 3/32"	55/64"	5	92390A721	9.24	25	98306A721	8.17
1 1/8"	57/64"	5	92390A270	9.02	25	98306A270	8.27
1 1/4"	1 1/64"	5	92390A271	9.58	25	98306A271	8.65
1 5/16"	1 5/64"	5	92390A809	9.78	25	98306A809	8.85
1 3/8"	1 9/64"	5	92390A272	9.99	25	98306A272	9.03
1 1/2"	1 17/64"	5	92390A273	10.36	25	98306A273	9.29
1 5/8"	1 25/64"	5	92390A274	10.61	25	98306A274	9.69
1 3/4"	1 33/64"	5	92390A275	10.97	25	98306A275	10.07
1 7/8"	1 41/64"	5	92390A276	11.32	25	98306A276	10.36
2"	1 49/64"	5	92390A277	11.81	25	98306A277	10.74
2 1/8"	1 57/64"	5	92390A278	12.39	25	98306A278	11.12
2 1/4"	2 1/64"	5	92390A279	12.64	25	98306A279	11.46
2 23/64"	2 1/8"	5	92390A722	12.23	10	98306A722	5.84
2 3/8"	2 9/64"	5	92390A280	12.96	10	98306A280	5.85
2 1/2"	2 17/64"	1	92390A281	2.63	10	98306A281	6.04
2 5/8"	2 25/64"	1	92390A282	2.69	10	98306A282	6.16
2 3/4"	2 33/64"	1	92390A283	2.75	10	98306A283	6.30
3"	2 49/64"	1	92390A285	2.86	10	98306A285	6.57
3 1/4"	3 1/64"	—	—	—	10	98306A287	6.88
3 1/2"	3 17/64"	1	92390A289	3.10	10	98306A289	7.13
4"	3 49/64"	1	92390A293	3.35	10	98306A293	8.29
4 1/2"	4 17/64"	—	—	—	10	98306A295	11.63
5 1/2"	5 17/64"	—	—	—	5	98306A297	7.59
6 1/8"	5 57/64"	—	—	—	5	98306A310	7.50
***7/16" Dia.—**Recommended Cotter Pin Dia.: 1/8"*							
1"	49/64"	1	92390A314	2.35	10	98306A324	7.87
1 1/4"	1 1/64"	1	92390A316	2.57	10	98306A326	6.57
1 1/2"	1 17/64"	1	92390A317	2.71	10	98306A328	6.87
1 3/4"	1 33/64"	1	92390A319	2.86	10	98306A330	7.50
2"	1 49/64"	1	92390A320	3.02	10	98306A332	8.51
2 1/4"	2 1/64"	1	92390A321	3.17	10	98306A334	10.27
2 1/2"	2 17/64"	1	92390A323	3.32	10	98306A336	9.05
2 3/4"	2 33/64"	1	92390A325	3.42	10	98306A338	11.98
3"	2 49/64"	1	92390A326	3.48	10	98306A340	8.86
3 1/2"	3 17/64"	1	92390A327	3.90	10	98306A344	12.67
4"	3 49/64"	1	92390A328	4.23	5	98306A348	8.11
***1/2" Dia.—**Recommended Cotter Pin Dia.: 1/8"*							
1"	49/64"	1	92390A379	$2.92	10	98306A379	$5.93
1 1/4"	1 1/64"	1	92390A381	3.12	10	98306A381	6.53
1 3/8"	1 9/64"	—	—	—	10	98306A382	6.77
1 27/64"	1 3/16"	1	92390A382	3.27	10	98306A730	6.79
1 1/2"	1 17/64"	1	92390A383	3.30	10	98306A383	7.11
1 3/4"	1 33/64"	1	92390A385	3.45	10	98306A385	8.18
2"	1 49/64"	1	92390A387	3.60	10	98306A387	8.45
2 1/4"	2 1/64"	1	92390A389	4.13	10	98306A389	8.99
2 1/2"	2 17/64"	1	92390A391	4.02	10	98306A391	10.05
2 5/8"	2 25/64"	1	92390A392	4.24	10	98306A392	10.31
2 3/4"	2 33/64"	1	92390A393	4.25	10	98306A393	10.59
3"	2 49/64"	1	92390A395	4.49	10	98306A395	10.87
3 1/2"	3 17/64"	1	92390A399	4.84	10	98306A399	11.53
4"	3 49/64"	1	92390A403	5.17	5	98306A403	6.80
4 1/2"	4 17/64"	1	92390A405	6.06	5	98306A407	7.99
5"	4 49/64"	1	92390A407	7.08	5	98306A411	8.46
6"	5 49/64"	—	—	—	5	98306A417	11.36
***9/16" Dia.—**Recommended Cotter Pin Dia.: 1/8"*							
2"	1 49/64"	—	—	—	1	98306A442	3.17
2 1/2"	2 17/64"	—	—	—	5	98306A444	9.02
3"	2 49/64"	—	—	—	5	98306A446	11.91
***5/8" Dia.—**Recommended Cotter Pin Dia.: 1/8"*							
1 1/4"	1 1/64"	—	—	—	10	98306A491	10.66
1 1/2"	1 17/64"	1	92390A493	8.83	10	98306A493	10.90
1 3/4"	1 33/64"	1	92390A495	9.26	10	98306A495	12.08
2"	1 49/64"	1	92390A497	9.47	10	98306A497	12.49
2 1/4"	2 1/64"	1	92390A499	9.89	5	98306A499	7.80
2 1/2"	2 17/64"	1	92390A501	10.12	5	98306A501	8.10
3"	2 49/64"	1	92390A506	10.73	5	98306A506	9.14
3 1/2"	3 17/64"	1	92390A516	11.79	5	98306A510	10.33
4"	3 49/64"	—	—	—	5	98306A511	12.13
5"	4 49/64"	—	—	—	1	98306A512	3.33
6"	5 49/64"	—	—	—	1	98306A513	3.93
***3/4" Dia.—**Recommended Cotter Pin Dia.: 1/8"*							
2"	1 49/64"	1	92390A521	12.54	5	98306A554	8.41
2 1/2"	2 17/64"	1	92390A523	13.25	5	98306A558	9.95
2 3/4"	2 33/64"	1	92390A525	14.14	5	98306A560	10.14
3"	2 49/64"	1	92390A527	14.32	5	98306A562	11.16
3 1/2"	3 17/64"	1	92390A529	16.05	5	98306A566	12.29
3 3/4"	3 33/64"	1	92390A531	16.43	1	98306A868	2.75
4"	3 49/64"	1	92390A534	16.49	1	98306A570	4.48
4 1/2"	4 17/64"	1	92390A536	20.41	1	98306A574	4.55
5"	4 49/64"	1	92390A539	25.73	1	98306A576	4.72
6"	5 49/64"	—	—	—	1	98306A578	5.23
6 1/2"	6 17/64"	—	—	—	1	98306A590	5.75
***7/8" Dia.—**Recommended Cotter Pin Dia.: 3/16"*							
3"	2 45/64"	—	—	—	1	98306A593	5.04
4"	3 45/64"	—	—	—	1	98306A595	5.59
***1" Dia.—**Recommended Cotter Pin Dia.: 3/16"*							
2"	1 45/64"	—	—	—	1	98306A677	4.56
2 1/4"	1 61/64"	—	—	—	1	98306A679	5.02
2 1/2"	2 13/64"	—	—	—	1	98306A681	4.78
2 3/4"	2 29/64"	—	—	—	1	98306A683	4.94
3"	2 45/64"	—	—	—	1	98306A685	5.32
3 1/4"	2 61/64"	—	—	—	1	98306A687	5.45
3 1/2"	3 13/64"	—	—	—	1	98306A688	5.74
4"	3 45/64"	—	—	—	1	98306A672	6.62
4 1/2"	4 13/64"	—	—	—	1	98306A675	6.70
5"	4 45/64"	—	—	—	1	98306A682	7.41
6"	5 45/64"	—	—	—	1	98306A678	8.21
***1 1/8" Dia.—**Recommended Cotter Pin Dia.: 3/16"*							
4"	3 3/8"	—	—	—	1	98306A841	15.45
5"	4 3/8"	—	—	—	1	98306A842	17.14
6"	5 3/8"	—	—	—	1	98306A843	17.87
***1 1/4" Dia.—**Recommended Cotter Pin Dia.: 3/16"*							
4"	3 3/8"	—	—	—	1	98306A851	18.98
5"	4 3/8"	—	—	—	1	98306A852	21.19
6"	5 3/8"	—	—	—	1	98306A853	22.45
***1 1/2" Dia.—**Recommended Cotter Pin Dia.: 3/16"*							
4"	3 3/8"	—	—	—	1	98306A901	34.57
5"	4 3/8"	—	—	—	1	98306A904	37.47
6"	5 3/8"	—	—	—	1	98306A907	39.64

120-Piece Assortment without Cotter Pins—See pages 3356-3358 for cotter pins.

Contains 10 each of the following sizes: 3/16"×1/2", 3/4", 1", 1 1/4"; 1/4"×3/4", 1", 1 1/4", 1 1/2" and; 3/8"×1", 1 1/4", 1 1/2", and 2". Furnished in an 11" Lg.×7" Wd.×1 3/4" Dp. compartmented plastic box with lid chart.

18-8 Stainless Steel	98345A006	$98.54
Plain Steel	98345A005	37.81
Zinc-Plated Steel	98345A102	40.93

For information about clevis pin tolerances, see page 3352.

Wear-Resistant Clevis Pins

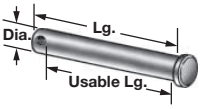

Made of zinc yellow-chromate plated case-hardened C1010-C1018 steel, these pins are harder and more corrosion resistant than plain steel pins. Rockwell hardness is C58. Pin dia. equals hole size.

Each requires a cotter pin to lock in place (not included, see pages 3356-3358).

Lg.	Usable Lg.	Pkg. Qty.		Pkg.
3/16″ Dia.—Rec'd Cotter Pin Dia.: 3/32″				
3/4″	39/64″	25	94380A510	$11.39
1″	55/64″	25	94380A515	11.46
1 1/4″	1 7/64″	25	94380A520	11.39
1 1/2″	1 23/64″	25	94380A525	11.17
1/4″ Dia.—Rec'd Cotter Pin Dia.: 3/32″				
3/4″	39/64″	25	94380A540	10.30
1″	55/64″	25	94380A545	10.41
1 1/4″	1 7/64″	25	94380A550	10.56
1 1/2″	1 23/64″	25	94380A560	10.69
3/8″ Dia.—Rec'd Cotter Pin Dia.: 5/32″				
1″	49/64″	10	94380A610	$5.91
1 1/4″	1 1/64″	10	94380A615	5.96
1 1/2″	1 17/64″	10	94380A620	9.47
2″	1 49/64″	10	94380A625	9.75
1/2″ Dia.—Rec'd Cotter Pin Dia.: 5/32″				
1 1/2″	1 17/64″	10	94380A640	10.18
2″	1 49/64″	10	94380A645	10.63
3″	2 49/64″	10	94380A650	11.56

Adjustable-Length Clevis Pins

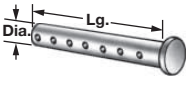

Also called universal clevis pins, these pins have multiple holes so you can "adjust" the length by moving the cotter pin (not included, see pages 3356-3358). Starting from the end opposite the head, holes are spaced 1/4″ apart, center to center. Excess pin length can be cut.

Pins are made from rust-resistant C1010-C1022 zinc-plated steel and have a clear finish.

Lg.	No. of Holes	Pkg. Qty.		Pkg.
3/16″ Dia.—Rec'd Cotter Pin Dia.: 3/32″				
1 1/2″	5	10	98330A115	$4.38
2″	5	10	98330A120	4.45
2 1/2″	7	10	98330A125	5.59
1/4″ Dia.—Rec'd Cotter Pin Dia.: 7/64″				
1″	3	10	98330A135	4.11
1 1/2″	5	10	98330A140	4.23
2″	6	10	98330A145	4.56
2 1/2″	7	10	98330A150	4.86
3″	7	10	98330A155	5.14
5/16″ Dia.—Rec'd Cotter Pin Dia.: 7/64″				
1″	3	10	98330A165	4.66
1 1/2″	4	10	98330A170	4.91
2″	6	10	98330A175	5.16
2 1/2″	7	10	98330A180	5.60
3″	7	10	98330A185	5.87
3 1/2″	7	10	98330A190	7.49
4″	7	10	98330A210	8.23
3/8″ Dia.—Rec'd Cotter Pin Dia.: 9/64″				
1″	3	10	98330A230	4.87
1 1/2″	5	10	98330A235	5.55
2″	6	10	98330A240	6.04
3/8″ Dia. (Cont.)				
2 1/2″	7	10	98330A245	$6.69
3″	7	10	98330A250	7.86
3 1/2″	7	10	98330A255	9.44
4″	7	10	98330A260	9.34
7/16″ Dia.—Rec'd Cotter Pin Dia.: 5/32″				
2″	6	10	98330A270	6.59
2 1/2″	7	10	98330A275	8.45
3″	7	10	98330A280	9.66
1/2″ Dia.—Rec'd Cotter Pin Dia.: 5/32″				
2″	6	10	98330A310	8.58
2 1/2″	7	10	98330A315	9.76
3″	7	10	98330A320	11.11
3 1/2″	7	10	98330A325	16.46
4″	7	5	98330A330	9.67
5/8″ Dia.—Rec'd Cotter Pin Dia.: 5/32″				
2″	6	5	98330A350	10.76
3″	7	5	98330A355	8.49
4″	7	5	98330A360	12.69
3/4″ Dia.—Rec'd Cotter Pin Dia.: 5/32″				
2″	6	5	98330A370	12.52
3″	7	1	98330A375	2.72

Grooved Clevis Pins with Retaining Ring

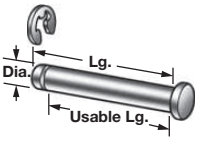

No need for a cotter pin, these 18-8 stainless steel clevis pins are grooved to accommodate a Type PH 15-7 MO stainless steel E-style retaining ring (included). Retaining ring also acts as a stop. Pins may be mildly magnetic and have a minimum Rockwell hardness of B80. Package quantity is 5 (unless noted).

For replacement E-style retaining rings, see page 3274.

Lg.	Usable Lg.		Pkg.
3/16″ Dia.—Groove: 0.147″×0.029″▲			
1/2″	13/32″	92735A110	$5.49
3/4″	21/32″	92735A120	5.55
1″	29/32″	92735A130	5.63
1 1/4″	1 5/32″	92735A140	5.68
1 1/2″	1 13/32″	92735A150	5.76
2″	1 29/32″	92735A160	5.90
2 1/2″	2 13/32″	92735A165	6.14
3″	2 29/32″	92735A170	6.19
1/4″ Dia.—Groove: 0.210″×0.029″▲			
1/2″	13/32″	92735A210	6.99
3/4″	21/32″	92735A220	7.05
1″	29/32″	92735A230	7.18
1 1/4″	1 5/32″	92735A240	7.28
1 1/2″	1 13/32″	92735A250	7.50
2″	1 29/32″	92735A260	7.90
2 1/4″	2 5/32″	92735A263	8.58
2 1/2″	2 13/32″	92735A266	9.56
3″	2 29/32″	92735A270	9.90
5/16″ Dia.—Groove: 0.250″×0.029″▲			
3/4″	39/64″	92735A320	8.48
5/16″ Dia. (Cont.)			
1″	55/64″	92735A330	$7.80
1 1/4″	1 7/64″	92735A340	8.22
1 1/2″	1 23/64″	92735A350	8.92
2″	1 55/64″	92735A360	10.04
2 1/4″	2 7/64″	92735A363	11.33
2 1/2″	2 23/64″	92735A366	11.84
3″	2 55/64″	92735A370	10.97
3/8″ Dia.—Groove: 0.303″×0.039″▲			
1″	27/32″	92735A430	11.46
1 1/4″	1 3/32″	92735A440	12.19
1 1/2″	1 11/32″	92735A450	12.54
2″	1 27/32″	92735A460	14.02
2 1/4″	2 3/32″	92735A463 ♣	2.96
2 1/2″	2 11/32″	92735A466 ♣	3.00
3″	2 27/32″	92735A470 ♣	3.02
1/2″ Dia.—Groove: 0.396″×0.046″▲			
1 1/2″	1 11/32″	92735A510 ♣	4.28
2″	1 27/32″	92735A515 ♣	4.69
2 1/2″	2 11/32″	92735A520 ♣	5.31
3″	2 27/32″	92735A525 ♣	6.38

▲Groove dimensions are Dia.×Wd. ♣Quantity is 1.

SAE Clevis Pins

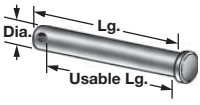

Manufactured to standard SAE (Society of Automotive Engineers) dimensions. All pins are C1010-C1018 steel. Rockwell hardness is B80-B100. Pin diameter equals hole size.

Pins require a cotter pin to lock in place (not included, see pages 3356-3356).

Dia.	Lg.	Usable Lg.	Rec'd Cotter Pin Dia.	Pkg. Qty.		Pkg.
3/16″	0.58″	29/64″	1/16″	25	98340A110	$4.16
1/4″	0.77″	41/64″	1/16″	25	98340A120	4.32
5/16″	0.94″	49/64″	3/32″	25	98340A130	5.11
3/8″	1.06″	57/64″	3/32″	25	98340A140	6.39
7/16″	1.19″	1 1/64″	3/32″	25	98340A150	11.79
1/2″	1.36″	1 9/64″	1/8″	10	98340A160	5.38
5/8″	1.61″	1 25/64″	1/8″	10	98340A170	8.45
3/4″	1.91″	1 41/64″	5/32″	5	98340A180	7.08
7/8″	2.16″	1 57/64″	5/32″	1	98340A190	3.07
1″	2.41″	2 9/64″	5/32″	1	98340A210	3.43

Headless Clevis Pins with Cotter Pins and Retaining Rings

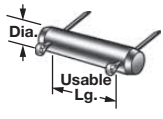

Drilled with Cotter Pins

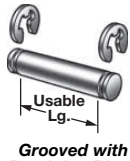

Grooved with Retaining Rings

Also known as hydraulic cylinder pins, these pins are headless for maximum versatility. Pins are made from rust-resistant zinc-plated C1010-C1018 steel. They have a length tolerance of +0.020″ and a dia. tolerance of –0.002″. Minimum Rockwell hardness is B80.

Drilled pins come with two zinc-plated C1006 steel cotter pins.

Grooved pins come with two black phosphate E-style retaining rings. For replacement E-style retaining rings, see page 3274.

O'all Lg.	Usable Lg.	***Drilled with Cotter Pins***		***Grooved with Retaining Rings***	
3/16″ Dia.					
Cotter Pin: 5/64″ Dia.×3/4″ Lg.; Groove: 0.147″ Dia.×0.029″ Wd.					
1 1/32″	3/4″	93890A401	$2.79	93890A552	$4.27
1 9/32″	1″	93890A405	2.79	93890A556	4.28
1 17/32″	1 1/4″	93890A409	2.80	93890A560	4.29
1 25/32″	1 1/2″	93890A413	2.82	93890A564	4.31
1/4″ Dia.					
Cotter Pin: 5/64″ Dia.×3/4″ Lg.; Groove: 0.210″ Dia.×0.029″ Wd.					
1 1/32″	3/4″	93890A417	2.79	93890A568	4.29
1 9/32″	1″	93890A421	2.81	93890A572	4.31
1 17/32″	1 1/4″	93890A425	2.83	93890A576	4.32
1 25/32″	1 1/2″	93890A429	2.84	93890A580	4.34
5/16″ Dia.					
Cotter Pin: 7/64″ Dia.×3/4″ Lg.; Groove: 0.250″ Dia.×0.029″ Wd.					
1 3/32″	3/4″	93890A433	2.84	93890A584	4.35
1 11/32″	1″	93890A437	2.85	93890A588	4.36
1 19/32″	1 1/4″	93890A441	2.88	93890A592	4.40
1 27/32″	1 1/2″	93890A445	2.89	93890A596	4.41
3/8″ Dia.					
Cotter Pin: 7/64″ Dia.×3/4″ Lg.; Groove: 0.303″ Dia.×0.039″ Wd.					
1 11/32″	1″	93890A449	2.89	93890A600	4.45
1 19/32″	1 1/4″	93890A453	2.91	93890A604	4.48
1 27/32″	1 1/2″	93890A457	2.95	93890A608	4.51
2 11/32″	2″	93890A461	2.98	93890A612	4.55
2 27/32″	2 1/2″	93890A465	3.04	93890A616	4.60
3 11/32″	3″	93890A469	3.12	93890A620	4.65
1/2″ Dia.					
Cotter Pin: 9/64″ Dia.×1″ Lg.; Groove: 0.396″ Dia.×0.046″ Wd.					
1 13/32″	1″	93890A473	3.18	93890A624	4.72
1 21/32″	1 1/4″	93890A477	3.22	93890A628	4.76
1 29/32″	1 1/2″	93890A481	3.30	93890A632	4.80
2 13/32″	2″	93890A485	3.34	93890A636	4.89
2 29/32″	2 1/2″	93890A489	3.44	93890A640	4.98
3 13/32″	3″	93890A493	3.52	93890A644	5.06

For information about clevis pin tolerances, see page 3352.

Extra-Long Headless Clevis Pins with Cotter Pins

Great when you need extra length. Clevis pin and cotter pins are made from 18-8 stainless steel, which is corrosion resistant and may be mildly magnetic. Clevis pins have a minimum Rockwell hardness of B83.

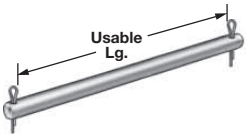

O'all Lg.	Usable Lg.		
3/16″ Dia.— *Cotter Pin Dia.: 5/64″*			
12″	11″	93673A100	$10.24
16″	15″	93673A125	12.17
20″	19″	93673A150	13.65
24″	23″	93673A175	15.15
1/4″ Dia.— *Cotter Pin Dia.: 5/64″*			
12″	11″	93673A200	13.12
16″	15″	93673A225	14.79
20″	19″	93673A250	16.62
24″	23″	93673A275	18.47
5/16″ Dia.— *Cotter Pin Dia.: 7/64″*			
12″	11″	93673A300	17.50
16″	15″	93673A325	20.48
5/16″ Dia. (Cont.)			
20″	19″	93673A350	$23.37
24″	23″	93673A375	26.25
3/8″ Dia.— *Cotter Pin Dia.: 7/64″*			
12″	11″	93673A400	20.65
16″	15″	93673A425	24.50
20″	19″	93673A450	28.09
24″	23″	93673A475	31.15
1/2″ Dia.— *Cotter Pin Dia.: 5/32″*			
12″	11″	93673A500	27.12
16″	15″	93673A525	33.00
20″	19″	93673A550	38.33
24″	23″	93673A575	42.62

Threaded Clevis Pins with Hairpin Cotter Pin

Also known as hood pins, they're threaded so you can bolt or thread them to a component. Clevis and hairpin cotter pin are 18-8 stainless steel, corrosion resistant, and may be mildly magnetic. Minimum Rockwell hardness is B89. Class 2A thread fit.

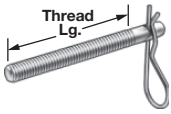

Thread Size	Thread Lg.	O'all Lg.		
5/16″-24	1″	2″	93712A100	$5.45
5/16″-24	2″	3″	93712A200	5.75
5/16″-24	3″	4″	93712A300	6.05
3/8″-24	1″	2″	93712A400	5.53
3/8″-24	2″	3″	93712A500	5.88
3/8″-24	3″	4″	93712A600	6.20
1/2″-20	1″	2″	93712A700	6.40
1/2″-20	2″	3″	93712A800	7.15
1/2″-20	3″	4″	93712A900	7.93

Bent-Pull Hitch Pins

A simple bend makes these pins easy to insert and pull out. Black luster-coated steel and 18-8 stainless steel pins have a minimum Rockwell hardness of B80; zinc-plated steel pins are not rated. All pins are not class rated for towing.

Padlockable pins have a 0.32″ hole to accept a lock with a 5/16″ or smaller shackle (lock not included, see pages 2932-2943). Minimum horizontal shackle clearance is 5/8″. Minimum vertical clearance is 1″ for 5/8″ dia. pins and 1 1/2″ for 3/4″ dia. pins. Pins are made from black luster-coated C1018 steel, which provides 700 hours of salt spray resistance per ASTM B117 compared to zinc plating, which provides 200 hours or less.

Hitch pins with hairpin cotter pin come in 18-8 stainless steel and zinc-plated steel. *18-8 stainless steel* offers the most corrosion resistance and may be mildly magnetic. *Zinc-plated steel* pins are rust resistant and made from C1005-C1022 steel.

Padlockable (Padlock not included.)

With Hairpin Cotter Pin

Dia.	Usable Lg.		
Padlockable— *Black Luster-Coated Steel*			
5/8″	3″	97228A100	$7.07
5/8″	4″	97228A200	7.58
3/4″	3 1/2″	97228A300	8.77
3/4″	4 1/2″	97228A400	9.39
With Hairpin Cotter Pin— *18-8 Stainless Steel*			
3/8″	3″	94563A571	5.65
1/2″	3″	94563A811	7.93
1/2″	4″	94563A812	8.65
1/2″	5″	94563A890	10.21
5/8″	3″	94563A913	10.96
5/8″	4″	94563A920	12.06
5/8″	5″	94563A935	14.29
3/4″	3 1/2″	94563A974	21.99
3/4″	4 1/2″	94563A975	23.45

Dia.	Usable Lg.		
With Hairpin Cotter Pin— *Zinc-Plated Steel*			
5/16″	2 1/2″	90146A059	$2.41
5/16″	3″	90146A063	2.55
3/8″	2 1/2″	90146A067	2.65
3/8″	3″	90146A071	2.69
3/8″	4″	90146A205	2.42
1/2″	2 1/2″	90146A210	2.31
1/2″	3″	90146A211	2.35
1/2″	4″	90146A212	2.76
1/2″	5″	90146A090	3.24
5/8″	3″	90146A213	3.28
5/8″	4″	90146A100	3.46
5/8″	5″	90146A105	4.38
3/4″	3 1/2″	90146A214	4.36
3/4″	4 1/2″	90146A215	5.64
1″	4 3/4″	90146A221	12.26
1″	6 3/4″	90146A233	14.30

Heavy Duty Hitch Pins

A black PVC-coated steel T-handle is welded to the pin for extra strength. Pins are rust-resistant black zinc-plated C1045 steel. They have a collar that acts as a stop and a 1/4″ dia. hole for a hairpin cotter pin (not included, see pg. 3357). Min. Rockwell hardness is B90. Not class rated for towing.

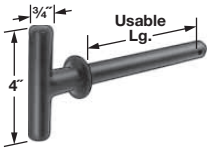

Dia.	Usable Lg.		
5/8″	4″	91640A100	$14.70
5/8″	6″	91640A110	16.23
3/4″	4″	91640A120	16.76
3/4″	6″	91640A130	17.58
7/8″	4″	91640A140	$15.85
7/8″	6″	91640A150	16.85
1″	6″	91640A160	22.43
1 1/4″	7″	91640A170	26.61

Swivel-Lock Hitch Pins

An integral swivel mechanism locks these hitch pins in place until you flip the swivel to release them. Pins are made from rust-resistant zinc-plated C1045 steel and have a min. Rockwell hardness of B90. Not class rated for towing.

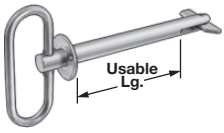

Dia.	Usable Lg.		
3/8″	2 3/4″	97141A650●	$10.12
3/8″	4″	97141A590●	9.20
1/2″	3 1/2″	97141A651	12.72
1/2″	5 1/2″	97141A610	11.97
5/8″	3 1/2″	97141A652	16.88
5/8″	5 1/2″	97141A620	15.34
3/4″	3 1/2″	97141A653	$17.44
3/4″	6″	97141A654	18.96
7/8″	3 1/2″	97141A660	20.24
7/8″	6″	97141A665	23.16
1″	3 1/2″	97141A670	23.64
1″	6″	97141A675	25.12

●Has a round handle.

Tethered Hitch Pins

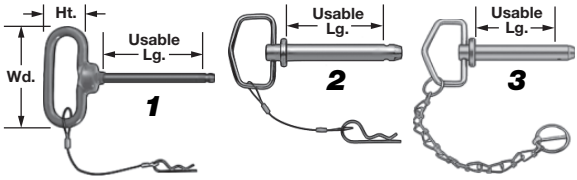

Keep the retaining pin close at hand. Not class rated for towing.

Style 1 pins are hardened C1045 steel and have a 3 3/4″ Wd. × 1 5/8″ Ht. (unless noted) red PVC-coated steel handle. Hairpin cotter pin is steel such as C1045-C1050 and connected to a galvanized steel cable lanyard. Pins with usable lengths up to 4 1/2″ have a 6″ long lanyard; those with 5 1/2″ and 6 1/2″ usable lengths have a 12″ lanyard; those with 7 1/2″ and 8 1/2″ usable lengths have a 15″ long lanyard. Min. Rockwell hardness is C32.

Style 2 pins are zinc yellow-chromate plated hardened steel such as C1038-C1541; handle is C1008 steel. The zinc-plated spring steel wire hairpin cotter pin is connected to a nylon-coated galvanized steel cable lanyard. Pins with 4″ and 4 1/4″ usable lengths have an 8″ long lanyard. Pins with 5 3/4″ to 6 1/4″ usable lengths have a 9″ long lanyard; those with 6 1/2″ to 7″ usable lengths have a 12″ long lanyard. Pins up to 1″ dia. have a min. Rockwell hardness of C25; pins with 1 1/8″ dia. and over have a min. Rockwell hardness of C19.

Style 3 pins are hardened zinc yellow-chromate plated C1541 steel. Handle is hardened steel such as C1010-C1020 steel. Each has a C1010-C1018 steel ring-snap pin connected to a 12″ long zinc-plated low-carbon steel chain. Min. Rockwell hardness is C28.

Dia.	Usable Lg.		
Style 1			
3/8″	4″	91594A250	$5.73
1/2″	3 5/8″	91594A310	6.50
5/8″	4″	91594A315	6.66
5/8″	5 1/2″	91594A320	7.36
3/4″	4″	91594A325	7.25
3/4″	6 1/2″	91594A330	8.13
7/8″	4″	91594A335	8.98
7/8″	6 1/2″	91594A340	9.90
1″	4 1/2″	91594A345	10.73
1″	7 1/2″	91594A350	12.82
1 1/8″	8 1/2″	91594A355★	17.27
1 1/4″	8 1/2″	91594A360★	21.05
1 1/2″	8 1/2″	91594A365■	31.58
Style 2			
3/8″	4″	98412A211	3.22
1/2″	4″	98412A215♥	4.31
1/2″	5 3/4″	98412A219♥	4.82
5/8″	4″	98412A223♥	4.96

Dia.	Usable Lg.		
Style 2 (Cont.)			
5/8″	6″	98412A226♥	$6.55
3/4″	4 1/4″	98412A229	6.81
3/4″	6 1/4″	98412A231	8.09
7/8″	6 1/2″	98412A235	10.40
1″	6 3/4″	98412A239	13.09
1 1/8″	7″	98412A244	21.12
1 1/4″	7″	98412A247	28.64
Style 3			
3/8″	4″	98497A595	4.65
1/2″	4″	98497A660	8.38
1/2″	5 3/4″	98497A661	9.10
5/8″	4″	98497A686	9.48
5/8″	5 3/4″	98497A663	10.04
3/4″	4″	98497A664	11.05
3/4″	6 1/4″	98497A665	11.62
7/8″	7″	98497A666	14.67
1″	7″	98497A667	19.38
1 1/8″	7″	98497A671	25.12
1 1/4″	7″	98497A675	34.49

★ Handle is 4″ Wd. × 1 7/8″ Ht. ■ Handle is 4 7/8″ Wd. × 2″ Ht.
♥ Has a round handle.

Cotter Pins

Designed with one prong slightly longer than the other so they're easy to open.
Type 316 and ***18-8 Stainless Steel—*** Type 316 is more resistant to corrosion than 18-8 stainless steel. Both may be mildly magnetic.
Brass— Alloy 70/30. Resists rust and mild atmospheric corrosion. Is electrically conductive and nonmagnetic.
Zinc-Plated Steel— Made from rust-resistant zinc-plated C1005-C1022 steel (unless noted).

	TYPE 316 SS			18-8 SS			BRASS			ZINC-PLATED STEEL					
Lg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.
3/64" Dia.															
1/2"				100	98401A910	$2.38				500	98338A361★	$10.50	100	98338A022	$2.45
3/4"				100	98401A915	3.08				500	98338A363	9.53	100	98338A029	3.35
1/16" Dia.															
1/2"	100	98355A010	$7.04	100	98401A409	1.63	100	98450A104	$3.36	1,000	98338A419	7.46	100	98338A100	1.07
3/4"	100	98355A020	8.86	100	98401A413	2.05	100	98450A106	4.16	1,000	98338A422	9.27	100	98338A105	1.05
1"	100	98355A030	10.62	100	98401A417	2.35	100	98450A108	4.88	1,000	98338A424	11.40	100	98338A110	1.37
1 1/4"	100	98355A040	12.47	100	98401A421	2.86				1,000	98338A426	11.79	100	98338A115	1.70
1 1/2"	50	98355A050	7.14	100	98401A428	3.18				1,000	98338A427	15.81	100	98338A120	1.86
2"				100	98401A431	4.08				1,000	98338A429	25.71	100	98338A125	2.49
3/32" Dia.															
1/2"	100	98355A060	12.19	100	98401A439	2.95	100	98450A116	5.00	1,000	98338A438	8.22	100	98338A130	1.22
3/4"	50	98355A070	7.76	100	98401A442	3.88	100	98450A118	5.52	1,000	98338A441	10.35	100	98338A135	1.34
1"	50	98355A080	9.93	100	98401A444	3.34	100	98450A120	6.48	1,000	98338A443	12.07	100	98338A140	1.59
1 1/4"	50	98355A085	11.14	100	98401A450	5.54	100	98450A135	7.64	1,000	98338A445	14.66	100	98338A145	1.90
1 1/2"	50	98355A090	12.81	100	98401A451	6.11				1,000	98338A446	17.25	100	98338A150	2.21
1 3/4"	25	98355A110	6.97	100	98401A452	6.71				1,000	98338A447	19.61	100	98338A155	2.69
2"	25	98355A120	7.87	100	98401A453	7.36				1,000	98338A448	21.27	100	98338A160	2.83
2 1/2"				100	98401A449	9.14				500	98338A449	21.82	100	98338A165	4.15
7/64" Dia.															
1"				100	98401A615	14.52				500	98338A452	9.11	100	98338A734	2.85
1 1/2"				100	98401A620	19.13				500	98338A455	11.89	100	98338A737	4.17
2"				100	98401A625	24.02				500	98338A458	16.94	100	98338A740	5.32
1/8" Dia.															
1/2"				100	98401A469	5.28				1,000	98338A471	11.94	100	98338A170	2.31
3/4"	50	98355A130	11.04	100	98401A474	6.75	100	98450A172	8.40	1,000	98338A473	15.33	100	98338A175	2.48
1"	50	98355A140	13.52	100	98401A476	8.18	100	98450A174	10.08	1,000	98338A475	19.34	100	98338A180	2.87
1 1/4"	25	98355A145	7.84	100	98401A483	9.63	100	98450A176	11.88	1,000	98338A477	22.87	100	98338A185	3.51
1 1/2"	25	98355A150	8.02	100	98401A485	11.09	100	98450A178	13.76	1,000	98338A478	26.36	100	98338A190	3.84
1 3/4"	25	98355A160	9.85	100	98401A479	12.20				500	98338A479	15.03	100	98338A195	4.22
2"	25	98355A170	11.90	50	98401A480	6.97	50	98450A195	8.64	500	98338A480	16.94	100	98338A200	4.94
2 1/2"	10	98355A173	5.67	50	98401A481	8.38				500	98338A481	18.81	100	98338A205	5.72
3"				25	98401A482	4.81				500	98338A482	22.27	100	98338A210	6.98
5/32" Dia.															
3/4"				100	98401A488	8.94				1,000	98338A488	23.00	100	98338A215	3.81
1"	25	98355A180	10.61	100	98401A490	10.63				1,000	98338A490	30.21	100	98338A220	5.11
1 1/4"	25	98355A185	12.05	100	98401A492	11.63				500	98338A492	18.10	100	98338A225	5.41
1 1/2"	25	98355A190	13.43	100	98401A493	13.14	50	98450A230	10.52	500	98338A493	20.73	100	98338A230	5.78
1 3/4"	10	98355A200	6.21	50	98401A491	7.67				500	98338A494	23.27	100	98338A235	6.32
2"	10	98355A210	6.30	50	98401A494	7.56	25	98450A240	6.68	500	98338A495	25.76	100	98338A240	6.85
2 1/4"	10	98355A215	8.67	50	98401A498	10.92				250	98338A496	15.86	50	98338A245	4.15
2 1/2"	10	98355A220	8.67	50	98401A501	12.93				250	98338A497	16.99	50	98338A250	4.51
3"				50	98401A503	12.27				250	98338A499	18.17	50	98338A255	5.51
3/16" Dia.															
1"	10	98355A230	5.71	50	98401A510	7.87				500	98338A510	24.83	100	98338A260	6.62
1 1/4"	10	98355A235	6.92	50	98401A512	9.61				500	98338A512	23.32	100	98338A265	7.42
1 1/2"	10	98355A240	7.33	50	98401A514	9.14	25	98450A275	7.80	250	98338A514	15.66	50	98338A270	3.71
1 3/4"	10	98355A245	9.14	50	98401A515	12.54				250	98338A515	17.20	50	98338A275	4.05
2"	10	98355A250	8.35	50	98401A517	13.06	25	98450A285	9.84	250	98338A516	19.10	50	98338A280	4.50
2 1/2"	10	98355A260	11.10	25	98401A518	6.82				250	98338A518	23.48	50	98338A285	6.20
3"	10	98355A270	12.48	25	98401A520	7.60				250	98338A520	23.00	50	98338A290	7.04
3 1/2"				25	98401A522	7.88				250	98338A522	26.21	50	98338A295	8.44
4"				25	98401A524	9.27				50	98338A524	7.15			
1/4" Dia.															
1 1/2"	10	98355A290	12.95	25	98401A546	10.58				250	98338A546	21.74	50	98338A315	6.20
2"	5	98355A300	7.84	25	98401A550	11.42	25	98450A330	16.56	250	98338A550	27.45	50	98338A320	7.64
2 1/2"	5	98355A310	9.58	25	98401A552	13.33				125	98338A552	17.24	50	98338A325	9.12
3"	5	98355A320	9.73	10	98401A556	6.01	10	98450A340	7.85	125	98338A554	20.12	50	98338A330	10.60
3 1/2"	5	98355A330	11.76	10	98401A557	5.66				50	98338A556	9.24			
4"	5	98355A340	13.05	10	98401A558	7.87	5	98450A350	5.88	50	98338A558	10.35			
5/16" Dia.															
1 1/2"	5	98355A350	10.10	5	98401A587	8.20				250	98338A587	33.97	50	98338A345	9.36
2"	5	98355A360	13.29	5	98401A591	2.66				250	98338A591	42.52	50	98338A350	11.64
2 1/2"	1	98355A370	3.14	10	98401A593	10.38				50	98338A593	10.41			
3"	1	98355A380	3.17	10	98401A595	11.38				50	98338A595	11.96			
3 1/2"	2	98355A390	9.19	5	98401A597	7.03				50	98338A597	13.55			
4"	2	98355A400	9.19	5	98401A599	7.76				50	98338A599	15.09			
5"	2	98355A405	10.86	5	98401A603	8.16				50	98338A603	18.92	10	98338A355	5.47
3/8" Dia.															
2 1/2"	2	98355A530	8.57	5	98401A634	7.70				50	98338A632	15.00			
3"	2	98355A540	10.10	5	98401A636	8.87				50	98338A636	17.30	10	98338A359	4.56
3 1/2"	2	98355A550	12.09	5	98401A638	9.39				50	98338A638	19.24	10	98338A360	4.38
4"	2	98355A560	12.67	5	98401A640	12.40				50	98338A640	21.34	10	98338A365	4.86
5"	2	98355A570	13.95	5	98401A644	10.01				25	98338A644	16.70	5	98338A366	3.84
6"				1	98401A648	3.19				25	98338A648	16.81	5	98338A368	4.40
1/2" Dia.															
3"				2	98401A752	9.44				25	98338A652	18.88	5	98338A370	4.31
4"				1	98401A754	7.30				10	98338A654	8.99			
5"				1	98401A755	8.62				10	98338A655	14.63			
6"				1	98401A756	10.61				10	98338A656	15.38			

★ Made from cadmium-plated C1005-C1022 steel.

Cotter Pin Assortments

100-Piece Assortment

Dia.	No. of Pcs.	Lengths
3/32″	24	3/4″, 1″, 1 1/2″
1/8″	28	1″, 1 1/4″, 1 1/2″
5/32″	4	1 1/2″
3/16″	28	1″, 1 1/2″, 2″
1/4″	12	1 1/2″, 2″
5/16″	4	2″, 2 1/2″

Furnished in a 4 1/2″ Lg.×2 3/4″ Wd.×1 1/4″ Ht. clear plastic box (unless noted).

18-8 SS ..... **90160A318** ★ $27.38
Zinc-Plated Steel .. **90158A100** 7.98
★ Box is 3 3/4″ Lg.×3 3/4″ Wd.×1 1/2″ Ht.

550-Piece Assortment

Dia.	No. of Pcs.	Lengths
1/16″	125	1″
3/32″	275	3/4″, 1″, 1 1/2″
1/8″	150	1″, 1 1/2″, 2″

Furnished in an 8 1/4″ Lg.×4 1/2″ Wd.×1 3/8″ Ht. compartmented clear plastic box.

18-8 SS **90160A212** $73.28
Zinc-Plated Steel **98600A290** 21.71

1,200-Piece Assortment

Dia.	No. of Pcs.	Lengths
1/16″	350	1/2″, 1″
3/32″	575	3/4″, 1″, 1 1/2″
1/8″	240	1″, 1 1/2″, 2″
5/32″	20	2″
3/16″	15	2″

Furnished in an 11″ Lg.×6 3/4″ Wd.×1 3/4″ Ht. compartmented clear plastic box.

18-8 SS **90160A214** $129.27
Zinc-Plated Steel **98600A135** 34.59

100-Pc. Metric Assort.

Dia., mm	No. of Pcs.	Lengths, mm
2.5	26	20, 25, 40
3.2	28	25, 32, 40
4	6	40
5	20	32, 40
6.3	14	40, 50
8	6	50, 63

Zinc-plated steel; furnished in a 4 1/2″ Lg.×2 3/4″ Wd.×1 1/4″ Ht. clear plastic box.

98350A300 ..... $13.60

Hairpin Cotter Pins

Also known as hitch pin clips, these cotter pins are ideal for quick assembly. They're commonly used with clevis pins and shafts. ***Type 316 stainless steel*** is more corrosion resistant than 18-8 stainless steel and may be mildly magnetic. ***18-8 stainless steel*** is more corrosion resistant than zinc-plated steel and may be mildly magnetic. ***Zinc-plated steel*** is made from rust-resistant C1045-C1050 steel.

Fits Clevis Pin Dia.	Wire Dia.	Eye Dia. (A)	O'all Lg.	*Type 316 Stainless Steel* Pkg. Qty.		Pkg.	*18-8 Stainless Steel* Pkg. Qty.		Pkg.	*Zinc-Plated Steel* Pkg. Qty.		Pkg.
1/16″ to 1/8″	0.042″	0.080″	7/16″	—	—	—	100	**92391A005**	$7.28	100	**98335A027**	$7.79
7/64″ to 9/64″	0.032″	0.078″	7/16″	—	—	—	100	**92391A110**	6.48	100	**98335A029**	8.24
1/8″	0.030″	3/16″	19/32″	—	—	—	100	**92391A014**	7.65	100	**98335A024**	5.04
1/8″ to 3/16″	0.047″	1/8″	19/32″	—	—	—	50	**92391A019**	6.76	100	**98335A031**	5.67
3/16″ to 1/4″	0.042″	1/4″	15/16″	—	—	—	100	**92391A024**	8.24	100	**98335A034**	5.17
1/4″ to 5/16″	0.059″	1/4″	1 1/8″	—	—	—	100	**92391A034**	11.41	100	**98335A044**	5.42
1/4″ to 3/8″	0.047″	5/16″	19/16″	25	**92375A008**	$11.13	25	**92391A115**	7.21	100	**98335A039**	10.24
1/4″ to 3/8″	0.080″	1/4″	1 3/16″	25	**92375A100**	6.87	50	**92391A130**	8.97	100	**98335A060**	9.07
1/4″ to 1/2″	0.062″	5/16″	1 5/16″	25	**92375A152**	9.83	50	**92391A120**	12.76	100	**98335A049**	10.65
1/4″ to 1/2″	0.093″	3/8″	1 5/8″	25	**92375A200**	7.90	50	**92391A140**	12.10	100	**98335A062**	10.66
5/16″ to 3/8″	0.073″	5/16″	1 7/16″	—	—	—	50	**92391A044**	8.76	100	**98335A054**●	4.84
5/16″ to 3/8″	0.091″	3/8″	1 5/8″	—	—	—	25	**92391A049**	7.03	50	**98335A058**	7.98
3/8″ to 7/16″	0.092″	11/16″	1 7/8″	—	—	—	25	**92391A054**	9.31	100	**98335A064**◆	9.36
3/8″ to 1/2″	0.080″	3/8″	1 9/16″	25	**92375A300**	9.42	50	**92391A135**	12.24	100	**98335A061**	10.89
3/8″ to 5/8″	0.093″	5/8″	2 5/16″	25	**92375A175**	11.74	25	**92391A145**	6.79	100	**98335A065**	13.14
7/16″ to 3/4″	0.125″	9/16″	2 9/16″	10	**92375A325**	11.35	10	**92391A056**	5.74	50	**98335A127**	11.55
1/2″ to 5/8″	0.120″	23/32″	2 3/8″	—	—	—	10	**92391A058**	7.88	50	**98335A074**	8.76
1/2″ to 3/4″	0.093″	9/16″	2 1/2″	—	—	—	25	**92391A150**	8.76	50	**98335A066**	8.07
1/2″ to 3/4″	0.125″	7/16″	1 15/16″	10	**92375A341**	8.20	25	**92391A165**	10.41	50	**98335A069**	8.45
5/8″ to 3/4″	0.148″	25/32″	2 11/16″	—	—	—	10	**92391A778**	6.67	50	**98335A084**	11.42
5/8″ to 7/8″	0.125″	5/8″	2 1/2″	10	**92375A348**	13.29	10	**92391A155**	7.66	50	**98335A067**	13.25
5/8″ to 1″	0.177″	15/16″	3 1/4″	5	**92375A356**	10.41	10	**92391A066**	10.55	25	**98335A087**	11.21
3/4″ to 1″	0.243″	15/16″	4″	—	—	—	1	**92391A190**■	3.48	10	**98335A095**	12.24
3/4″ to 1 1/16″	0.177″	15/16″	3 1/2″	—	—	—	5	**92391A185**	9.79	10	**98335A088**	5.79
3/4″ to 1 1/8″	0.148″	3/4″	3 5/16″	5	**92375A367**	7.22	10	**92391A175**	8.31	25	**98335A085**	7.69
7/8″ to 1″	0.178″	1 1/32″	3 3/4″	—	—	—	5	**92391A210**	10.88	25	**98335A094**	10.14
7/8″ to 1″	0.310″	7/8″	4 1/16″	—	—	—	—	—	—	5	**98335A118**	10.79
1 1/8″ to 1 1/2″	0.243″	1 7/32″	5″	—	—	—	—	—	—	10	**98335A114**	8.86

●Eye diameter is 3/8″. ◆Eye diameter is 5/8″. ■Wire diameter is 0.250″.

50-Piece Assortment

Fits Pin Dia.	No. of Pcs.	Fits Pin Dia.	No. of Pcs.
1/8″	10	5/16″ to 3/8″	10
3/16″ to 1/4″	10	3/8″ to 7/16″	10
1/4″ to 5/16″	10		

Furnished in a 4 1/2″ Lg.×2 3/4″ Wd.×1 1/8″ Dp. (unless noted) plastic box.

18-8 Stainless Steel **90150A212** $11.56
Zinc-Plated Steel ..... **98574A460**♣ 8.58
♣Box is 3 1/2″ Lg.×2 3/4″ Wd.×1 1/2″ Dp.

74-Piece Assortment

Fits Pin Dia.	No. of Pcs.	Fits Pin Dia.	No. of Pcs.
1/8″	10	3/8″ to 7/16″	10
3/16″ to 1/4″	10	5/8″ to 3/4″	10
1/4″ to 5/16″	10	7/8″ to 1″	10
5/16″ to 3/8″	10	1 1/8″ to 1 1/2″	4

Furnished in an 8″ Lg.×4 1/2″ Wd.×1 1/2″ Dp. compartmented plastic box.

Zinc-Plated Steel **98574A470** $23.91

130-Piece Assortment

Fits Pin Dia.	No. of Pcs.	Fits Pin Dia.	No. of Pcs.
3/16″ to 1/4″	20	1/2″ to 5/8″	20
1/4″ to 5/16″	20	5/8″ to 3/4″	20
5/16″ to 3/8″	20	7/8″ to 1″	10
3/8″ to 7/16″	20		

Furnished in an 8″ Lg.×4 1/2″ Wd.×1 1/2″ Dp. compartmented plastic box.

Zinc-Plated Steel **98681A494** $21.51

Aluminum Clevis Pins with Cotter Pin

Made from nonmagnetic 7075-T6 aluminum, these clevis pins have a C1065 zinc-plated steel ring grip and a 5056 aluminum cotter pin. Rockwell hardness is B87. Pin diameter equals hole size.

Lg.	Usable Lg.		
1/4″ Dia.			
1 21/32″	3/4″	**92393A220**	$9.52
1 29/32″	1″	**92393A240**	9.79
2 5/32″	1 1/4″	**92393A260**	9.97
2 13/32″	1 1/2″	**92393A280**	10.19
3/8″ Dia.			
2 9/64″	1″	**92393A310**	12.44
2 25/64″	1 1/4″	**92393A330**	12.73
2 41/64″	1 1/2″	**92393A350**	12.99
2 57/64″	1 3/4″	**92393A370**	13.33
3 9/64″	2″	**92393A390**	13.69
1/2″ Dia.			
2 61/64″	1 1/2″	**92393A440**	$15.53
3 13/64″	1 3/4″	**92393A460**	15.96
3 29/64″	2″	**92393A480**	16.55
3 61/64″	2 1/2″	**92393A520**	17.16
4 29/64″	3″	**92393A540**	18.07
3/4″ Dia.			
4 1/16″	2″	**92393A630**	24.65
4 9/16″	2 1/2″	**92393A660**	26.01
5 1/16″	3″	**92393A690**	27.31
5 9/16″	3 1/2″	**92393A720**	28.58
6 1/16″	4″	**92393A750**	29.93

Dissolvable Shims

There's no cutting and grinding necessary for removal—spray with water and shims instantly melt away. Use to create a gap while welding plates, flanges, and pipes. Made from a bendable mixture of wood pulp and paper, they leave no harmful residue.

Thickness	Lg.	Wd.		Pkg. of 25
1/32″	4″	3/8″	**7135A11**	$14.10
1/16″	4″	3/8″	**7135A13**	14.53
3/32″	4″	3/8″	**7135A15**	14.67
1/8″	4″	3/8″	**7135A17**	14.71

Bow Tie Cotter Pins

You can push or pull these pins from either side of the hole thanks to their unique double-headed design. Once they're locked on to a pin there's little chance for them to be accidentally knocked or shaken off. All are made from rust-resistant zinc-plated C1045-C1050 steel.

Fits Pin Dia.	Wire Dia.	O'all Lg.	Minimum Hole Dia.	Pkg. Qty.		Pkg.
1/4" to 5/16"	0.072"	1 3/8"	3/32"	50	92418A225	$4.85
5/16" to 3/8"	0.091"	1 7/8"	7/64"	50	92418A229	5.88
7/16" to 1/2"	0.120"	2 3/4"	9/64"	25	92418A233	5.22
5/8"	0.120"	2 3/4"	5/32"	25	92418A237	8.07
5/8"	0.148"	3 37/64"	13/64"	10	92418A241	6.59
3/4"	0.120"	2 3/4"	5/32"	25	92418A245	8.89
3/4"	0.148"	3 37/64"	13/64"	10	92418A248	7.01
1"	0.177"	4 37/64"	7/32"	10	92418A262	10.85

Self-Locking Ring-Snap Pins

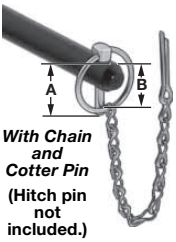

With Chain and Cotter Pin

(Hitch pin not included.)

Also known as linch pins and click pins, these quick-disconnect pins have a solid shank and a self-locking ring that snaps down to lock the pin in place. Pins are offered with and without an 8 1/4" long zinc-plated steel chain and 3/16" Dia. x 1 3/8" Lg. cotter pin.

Shank is made from rust-resistant zinc yellow-chromate plated C1010-C1020 steel; ring is made from spring steel (unless noted). Shank diameter tolerance is +0.0079" to –0.0118". Length (A) tolerance is ±0.039". Hitch pin diameter (B) is the maximum diameter that the snap pin will fit.

Dia. (A)	(B)	***With Chain and Cotter Pin*** Pkg. Qty.		Pkg.	***Without Chain*** Pkg. Qty.		Pkg.
3/16"	19/16"	1 1/4"	5	90170A651	$12.91	10	90170A650 $7.35
1/4"	19/16"	1 1/4"	5	90170A652	13.01	10	90170A212 7.83
5/16"	19/16"	1 1/4"	5	90170A227	12.99	10	90170A226 8.91
7/16"	19/16"	1 11/32"	5	90170A224	13.53	10	90170A221 9.71
7/16"	1 3/4"	1 1/2"	—	—	—	5	90170A500 8.95
7/16"	1 31/32"	1 11/32"	5	90170A225	13.58	5	90170A222 10.27
7/16"	1 31/32"	1 1/2"	—	—	—	5	90170A550 ● 8.72

● Ring has black phosphate finish.

Clip Style Retaining Pins

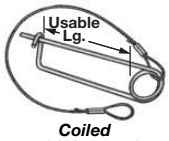

Coiled with Lanyard

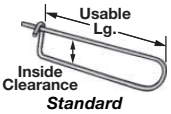

Standard

Tension keeps these pins locked. Easy to open and close.

Use ***coiled*** pins to secure hitch pins and gates and to replace hairpin clips and cotter pins. Choose from pins with and without a lanyard. The lanyard is made of 1/16" diameter 18-8 stainless steel cable and is 6" long on 1/16" and 3/32" diameter pins; 12" long on 1/8" and 5/32" diameter pins.

Use ***standard*** pins for securing hitch and clevis pins.

18-8 stainless steel pins are more corrosion resistant than zinc-plated steel and may be mildly magnetic. ***Zinc-plated steel*** pins are made from rust-resistant C1045-C1050 spring-steel wire.

Wire Dia.	O'all Lg.	Usable Lg.	Inside Clearance	***With Lanyard*** Each		***Without Lanyard*** Each	
Coiled—18-8 Stainless Steel							
1/16"	2 5/8"	1 5/8"	1/2"	90995A110	$5.30	90026A103	$1.92
3/32"	2 3/4"	1 5/8"	1/2"	90995A120	5.61	90026A104	2.08
3/32"	3 1/4"	2"	1/2"	90995A130	5.66	90026A105	2.15
3/32"	3 3/4"	2 1/2"	1/2"	90995A140	5.73	90026A106	2.15
1/8"	3 3/4"	2"	3/4"	90995A150	6.11	90026A107	2.35
1/8"	4 1/4"	2 1/2"	3/4"	90995A160	6.35	90026A108	2.58
1/8"	5"	3"	3/4"	90995A170	6.38	90026A109	2.66
5/32"	4 1/4"	2 1/2"	3/4"	90995A180	6.30	90026A110	2.54
5/32"	5"	3"	3/4"	90995A190	6.43	90026A120	2.65

Wire Dia.	O'all Lg.	Usable Lg.	Inside Clearance	***Without Lanyard*** Pkg. Qty.		Pkg.
Coiled—Zinc-Plated Steel						
0.047"	1 9/16"	15/16"	3/8"	25	90174A112	$6.57
0.058"	1 3/4"	1 1/16"	3/8"	25	90174A113	6.73
0.091"	2 3/4"	1 11/16"	5/8"	25	90174A114	8.46
0.120"	4 3/8"	2 13/16"	13/16"	10	90174A115	8.32
0.148"	5 3/4"	3 3/4"	1 1/8"	10	90174A116	7.55
Standard—Zinc-Plated Steel						
3/64"	1 5/8"	1 1/4"	5/16"	100	90319A110	6.28
3/64"	1 7/8"	1 1/2"	5/16"	100	90319A120	7.07
1/16"	3"	2 1/2"	11/16"	50	90319A130	6.98

Cotter Pin Extractor

Pry out cotter pins with ease. Has a pointed end to remove any size pin. Handle is plastic. Overall length is 7 3/4".

98436A120 ..... $11.92

Gravity Pin

Connects telescoping pipe. Fits pipe ODs from 1 1/2" to 1 5/8". Fits in 7/16" holes. Made from rust-resistant zinc-plated C1018 steel.

97529A100 ..... $1.89

Locking Pins

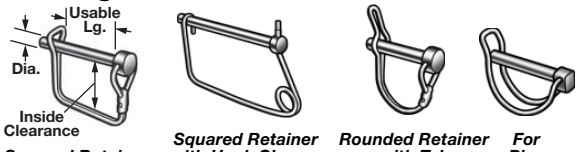

Squared Retainer | *Squared Retainer with Hook Closure* | *Rounded Retainer with Tab* | *For Pipe*

Also known as linch pins and PTO pins, these pins take the place of clevis/cotter pin combinations.

Pins with ***squared*** and ***rounded retainer*** snap closed. Pins *with tab* have an extended retainer so they're easier to open. Pins *with hook closure* use tension to stay closed.

Pins ***for pipe*** have a rounded retainer designed to fit standard pipe sizes. They use spring force to stay closed.

18-8 stainless steel pins are more corrosion resistant than zinc-plated steel and may be mildly magnetic. ***Zinc-plated steel*** pins are made from C1008-C1038 steel (unless noted).

With Squared and Rounded Retainer

Pin Dia.	Usable Lg.	O'all Pin Lg.	Inside Clearance	***18-8 Stainless Steel***		***Zinc-Plated Steel***	
Squared Retainer							
1/4"	2 1/4"	2 13/16"	1 5/8"	98480A012	$6.81	98416A009	$2.12
1/4"	2 1/2"	3 1/16"	1 3/4"	98480A013	6.96	98416A013	2.16
5/16"	2 1/4"	2 13/16"	1 9/16"	98480A017	6.36	98416A017	1.98
5/16"	2 1/2"	3 1/16"	1 11/16"	98480A125	6.48	98416A014	2.05
5/16"	3"	3 9/16"	1 11/16"	—	—	98416A525	2.30
3/8"	2 1/4"	2 13/16"	1 1/2"	98480A019	6.69	98416A018	2.09
3/8"	2 1/2"	3 1/16"	1 5/8"	98480A135	6.81	98416A019	2.12
3/8"	3"	3 9/16"	1 5/8"	—	—	98416A531	2.40
1/2"	3"	3 13/16"	1 5/8"	—	—	98416A562	6.61
Squared Retainer with Tab							
1/4"	2 1/2"	3 1/32"	1 3/4"	—	—	98416A401	1.66
5/16"	2 1/2"	3 3/64"	1 3/4"	—	—	98416A409	1.80
3/8"	2 1/2"	3 1/16"	1 3/4"	—	—	98416A417	2.00
Squared Retainer with Hook Closure							
1/4"	3"	3 11/16"	1 1/2"	—	—	97143A600	4.65
1/4"	3 1/2"	4 3/16"	1 3/4"	—	—	97143A610	4.72
1/4"	4"	4 11/16"	2"	—	—	97143A615	4.85
5/16"	3"	3 11/16"	1 1/2"	—	—	97143A620	4.72
5/16"	4"	4 11/16"	2"	—	—	97143A630	4.99
3/8"	3"	3 11/16"	1 1/2"	—	—	97143A635	4.82
3/8"	3 1/2"	4 3/16"	1 3/4"	—	—	97143A640	4.99
3/8"	4"	4 11/16"	2"	—	—	97143A645	5.20
1/2"	3 1/2"	5 1/8"	2 1/2"	—	—	97143A650	6.87
5/8"	4"	5 3/4"	3 3/8"	—	—	97143A651	7.58
3/4"	4"	5 3/4"	3 5/16"	—	—	97143A652	8.95
3/4"	6"	7 5/16"	3 1/4"	—	—	97143A653	10.87
Rounded Retainer							
1/4"	1 3/8"	1 15/16"	1 5/8"	98480A009	6.35	98416A011	1.98
1/4"	1 3/4"	2 5/16"	1 9/16"	98480A011	6.48	98416A012	2.05
1/4"	2 1/2"	3 1/16"	1 3/4"	—	—	98416A120	2.22
5/16"	1 3/8"	1 15/16"	1 9/16"	98480A014	6.03	98416A015	1.91
5/16"	1 3/4"	2 5/16"	1 1/2"	98480A015	6.26	98416A125	1.95
5/16"	2 1/2"	3 1/16"	1 11/16"	—	—	98416A130	2.09
3/8"	1 3/8"	1 15/16"	1 1/2"	98480A016	6.36	98416A016	1.98
3/8"	1 3/4"	2 5/16"	1 7/16"	98480A018	6.48	98416A135	2.05
3/8"	2 1/2"	3 1/16"	1 5/8"	—	—	98416A140	2.16
Rounded Retainer with Tab							
1/4"	1 3/4"	2 5/16"	1 9/16"	98480A031	6.93	98416A211	2.16
5/16"	1 3/4"	2 5/16"	1 1/2"	98480A034	6.69	98416A215	2.09
3/8"	1 3/4"	2 5/16"	1 7/16"	98480A037	6.93	98416A219	2.16

For Pipe

Fits Pipe OD	***Shank*** Dia.	Usable Lg.	***Head*** Ht.	Dia.	***Zinc-Plated Steel***	
1 3/8"	3/16"	1 9/16"	0.34"	0.47"	90978A100 ■	$1.76
1 3/8"	1/4"	1 9/16"	0.34"	0.47"	90978A200 ■	1.88
1 3/8"	5/16"	1 9/16"	0.34"	0.51"	90978A300 ■	2.04
1 3/4"	5/16"	1 31/32"	0.36"	0.51"	90978A400 ■	2.68
2 3/16"	25/64"	2 23/64"	0.39"	0.59"	90978A500 ■	2.88

■ Plated with zinc yellow-chromate.

Cotter Rings

Also known as circle cotters, cotter rings are a great way to avoid the sharp ends of a cotter pin. To install, insert the center prong into a hole and turn until the ring snaps in place.

18-8 stainless steel rings are the most corrosion resistant and may be mildly magnetic. ***Zinc-plated steel*** rings are made from rust-resistant C1045-C1050 steel.

For Shaft Dia. Range	Wire Dia.	OD	Pkg. Qty.	*18-8 Stainless Steel*	Pkg.	*Zinc-Plated Steel*	Pkg.
3/16″-1/4″	0.048″	5/8″	100	95390A316	$9.73	95390A421	$4.96
1/4″-5/16″	0.048″	3/4″	100	95390A317	10.46	95390A422	4.90
3/8″-7/16″	0.060″	1″	50	95390A318	7.27	95390A435★	7.57
7/16″-1/2″	0.072″	1 1/8″	50	95390A319	9.98	95390A438★	9.04

★ Package quantity is 100.

Split Rings

Also known as key rings, these classic split rings are made from heavy duty half-round wire. The ends are offset to make the rings easier to attach.

18-8 stainless steel rings are the most corrosion resistant and may be mildly magnetic. ***Brass*** rings are made from Alloy 260. They're rust resistant, electrically conductive, and nonmagnetic. ***Zinc-plated steel*** rings are made from rust-resistant C1065 heat-treated spring steel.

OD	ID	Thick.	Pkg. Qty.		Pkg.
18-8 Stainless Steel					
0.220″	0.150″	0.054″	100	90990A110	$11.76
0.254″	0.174″	0.062″	100	90990A120	12.23
0.292″	0.212″	0.062″	100	90990A130	12.65
0.334″	0.242″	0.068″	100	90990A140	10.68
0.380″	0.288″	0.068″	100	90990A150	11.28
0.430″	0.328″	0.074″	100	90990A160	12.71
Brass					
0.380″	0.288″	0.068″	100	93830A130	15.01
0.430″	0.328″	0.074″	50	93830A135	10.32
0.484″	0.382″	0.074″	50	93830A140	10.76
0.542″	0.428″	0.083″	50	93830A145	12.35
0.604″	0.460″	0.105″	50	93830A150	14.28
0.740″	0.596″	0.105″	50	93830A160	15.03
0.970″	0.802″	0.110″	25	93830A170	13.95
1.100″	0.932″	0.110″	25	93830A175	16.33
Zinc-Plated Steel					
0.165″	0.107″	0.040″	100	90177A202	9.80
0.190″	0.128″	0.046″	100	90177A205	9.80
0.220″	0.150″	0.054″	100	90177A206	10.96
0.292″	0.212″	0.062″	100	90177A208	9.45
0.334″	0.242″	0.068″	100	90177A209	10.52
0.334″	0.268″	0.104″	100	90177A312♣	15.59
0.380″	0.288″	0.068″	100	90177A210	11.08
0.380″	0.306″	0.116″	100	90177A318♣	16.57
0.430″	0.328″	0.074″	100	90177A211	12.60
0.484″	0.382″	0.074″	100	90177A212	12.84
0.542″	0.428″	0.083″	100	90177A213	11.23
0.604″	0.460″	0.105″	100	90177A214	13.63
0.670″	0.526″	0.105″	100	90177A215	14.43
0.740″	0.596″	0.105″	50	90177A216	10.14
0.875″	0.707″	0.110″	50	90177A217	11.25
0.970″	0.802″	0.110″	50	90177A218	10.67
0.990″	0.740″	0.170″	25	90177A228	12.22
1.100″	0.932″	0.110″	50	90177A219	11.52
1.250″	1.062″	0.130″	50	90177A221	13.79
1.375″	1.159″	0.142″	25	90177A222	9.60
1.480″	1.264″	0.142″	25	90177A223	10.20
1.640″	1.396″	0.168″	25	90177A224	13.50
1.865″	1.635″	0.175″	25	90177A226	15.11
2.240″	2.016″	0.180″	10	90177A225	7.23

♣ Has a 3-ring coil.

420-Piece Zinc-Plated Steel Assortment

Includes rings with the following ODs: 0.542″, 0.670″, 0.740″, 0.875″, 0.970″, 1.100″, 1.250″, 1.375″, 1.480″, 1.640″, and 2.240″. Furnished in a 13 1/8″ Lg.×9″ Wd.×2 5/16″ Dp. clear plastic compartmented box with lid chart.

90177A600 ..... $104.49

Split Ring Pliers

Attach and remove split rings with ease.

1 ***Light Duty Pliers***—Made from zinc-plated steel. Overall length is 5 1/4″.

98215A210 ..... $5.71

2 ***Heavy Duty Pliers***—Made from high carbon steel. They have rubber grips and a return spring that automatically opens the jaw. Overall length is 5 1/4″.

98215A390 ..... $17.87

Type 316 Stainless Steel Split Rings

A heavier gauge wire than our cotter rings and more corrosion resistant than our other split rings. Often used as handles for quick-release pins. May be mildly magnetic.

OD	ID	Thick.	Pkg. Qty.		Pkg.
0.545″	0.455″	0.09″	10	90905A651	$5.75
0.680″	0.570″	0.11″	10	90905A652	5.82
0.820″	0.680″	0.14″	10	90905A653	5.79
0.945″	0.805″	0.14″	10	90905A654	5.82
1.070″	0.930″	0.14″	10	90905A673	6.57
1.340″	1.160″	0.18″	10	90905A656	8.13
1.605″	1.395″	0.21″	10	90905A657	11.52
2.120″	1.880″	0.24″	5	90905A658	9.60
2.655″	2.345″	0.31″	5	90905A659	12.45
3.155″	2.845″	0.31″	1	90905A660	3.71

Open D-Rings

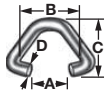

Since these rings are open, you can use them on finished assemblies—just squeeze them closed with pliers. Rings are snag resistant and excellent for tents and tarps. Made from rust-resistant zinc-plated C1065 steel. Package quantity is 100.

Ring Size	(A)	(B) Open	(B) Closed	(C)	(D)		Pkg.
3/8″	0.170″	0.375″	0.248″	0.467″	0.072″	98175A211	$9.26
7/16″	0.197″	0.418″	0.290″	0.550″	0.072″	98175A213	9.57
1/2″	0.230″	0.491″	0.358″	0.610″	0.072″	98175A215	10.64
5/8″	0.260″	0.625″	0.450″	0.700″	0.082″	98175A217	11.62

Retaining Pins

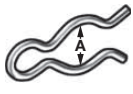

Also known as hairpin and hitch pin clips, these pins are designed for use on grooved shafts. *Note:* Dimension (A) should match the groove diameter.

18-8 stainless steel pins are the most corrosion resistant and may be mildly magnetic. ***Zinc-plated steel*** pins are made from rust-resistant C1045-C1050 steel.

Fits Pin Dia.	(A)	Wire Dia.	O'all Lg.	Pkg. Qty.		Pkg.
18-8 Stainless Steel						
1/8″	5/64″	0.029″	5/16″	100	90153A212	$5.88
3/16″	9/64″	0.031″	1/2″	100	90153A214	7.40
1/4″	7/32″	0.033″	5/8″	100	90153A216	7.72
5/16″	1/4″	0.048″	3/4″	100	90153A218	12.34
3/8″	5/16″	0.052″	31/32″	100	90153A221	10.61
7/16″	3/8″	0.055″	1 1/8″	100	90153A223	7.94
1/2″	7/16″	0.064″	1 1/8″	50	90153A225	7.94
5/8″	17/32″	0.087″	1 1/2″	25	90153A227	12.42
3/4″	21/32″	0.093″	1 13/16″	25	90153A229	12.14
7/8″	25/32″	0.105″	2 5/64″	25	90153A232	9.06
1″	7/8″	0.125″	2 9/32″	10	90153A234	16.87
Zinc-Plated Steel						
1/8″	5/64″	0.029″	5/16″	100	98395A212	6.00
3/16″	9/64″	0.031″	1/2″	100	98395A214	4.03
1/4″	7/32″	0.033″	5/8″	100	98395A216	4.55
5/16″	1/4″	0.048″	3/4″	100	98395A218	6.59
3/8″	5/16″	0.052″	31/32″	100	98395A221	5.66
7/16″	3/8″	0.055″	1 1/8″	100	98395A223	6.74
1/2″	7/16″	0.064″	1 1/8″	100	98395A225	6.37
5/8″	17/32″	0.087″	1 1/2″	100	98395A227	7.81
3/4″	21/32″	0.093″	1 13/16″	100	98395A229	9.55
7/8″	25/32″	0.105″	2 5/64″	50	98395A232	6.32
1″	7/8″	0.125″	2 9/32″	50	98395A234	11.81

276-Piece Zinc-Plated Steel Assortment

Pins fit shafts with 1/8″ to 1″ diameters.

Assortment includes the following: 50 each for 1/8″, 3/16″, and 1/4″ shaft dia.; 40 each for 5/16″ shaft dia.; 30 each for 3/8″ shaft dia.; 20 each for 1/2″ shaft dia.; 15 each for 5/8″ and 3/4″ shaft dia.; 6 each for 1″ shaft dia. Furnished in an 8″ Lg.×4 1/2″ Wd.×1 1/2″ Dp. compartmented plastic box.

98572A570 ..... $26.45

Locking Spring-Loaded Clevis Pins

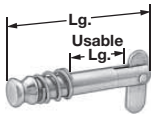

When installed, the spring holds the pin tight while the toggle locks it in place. Pin diameter is 1/4″. For best fit, your hole should be slightly larger than 1/4″. Pins are made of Type 316 stainless steel and may be mildly magnetic.

Lg.	Usable Lg. Min.	Usable Lg. Max.		
1 1/4″	5/16″	3/8″	95087A100	$15.77
1 3/8″	7/16″	1/2″	95087A200	17.05
1 1/2″	9/16″	5/8″	95087A300	17.98
1 3/4″	13/16″	15/16″	95087A400	19.00

Woodruff Keys

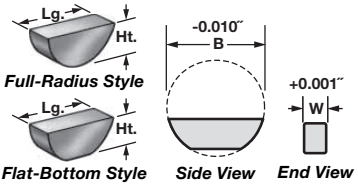

Lock pulleys and gears tightly to transmission shafts. Woodruff keys reach deep into the keyway shaft for a firm grip, yet they can rock in their seat and adjust to an angular spine. They can withstand great strain, so rollover is unlikely. Tolerances: width (W), +.001″; full diameter (B), –.010″; actual length, –.010″; actual height (full radius), –.005″, (flat bottom) –.006″.

Plain Steel— Made from C1035 steel. They are nonhardened, so they're easy to machine. Use these keys for general purpose applications. Tensile strength is 84,000 psi. Rockwell hardness is B86.

Alloy Steel— Made from 8630 alloy steel. For use in high-strength applications. Tensile strength is 112,500 psi. Rockwell hardness is C40-C50.

Type 316 Stainless Steel— Has excellent corrosion resistance and can withstand many chemicals. It may be slightly magnetic. Tensile strength is 85,000 psi. Rockwell hardness is B85-B95.

Key No.	USA Std. No.	Nominal Key Size, W×B	Actual Lg.	Actual Ht.	Plain Steel Pkg. Qty.	Plain Steel	Plain Steel Pkg.	Alloy Steel Pkg. Qty.	Alloy Steel	Alloy Steel Pkg.	Type 316 Stainless Steel Pkg. Qty.	Type 316 Stainless Steel	Type 316 Stainless Steel Pkg.
Full-Radius Style													
201	202	1/16″ × 1/4″	0.248″	0.109″	50	98481A050	$9.88	25	98525A050	$6.45	5	97940A050	$10.59
206	202½	1/16″ × 5/16″	0.311″	0.140″	50	98481A055	10.19	25	98525A055	5.67	5	97940A055	10.63
211	203	1/16″ × 3/8″	0.374″	0.172″	100	98481A065	11.17	50	98525A065	6.09	5	97940A065	10.51
207	302½	3/32″ × 5/16″	0.311″	0.140″	50	98481A060	8.51	25	98525A060	5.12	5	97940A060	10.47
212	303	3/32″ × 3/8″	0.374″	0.172″	50	98481A070	5.92	50	98525A070	6.93	5	97940A070	10.59
213	403	1/8″ × 3/8″	0.374″	0.172″	50	98481A075	6.83	50	98525A075	7.66	5	97940A075	11.50
VX	1622-1	1/2″ × 2¾″	2.000″	0.594″	5	98481A310	9.00	5	98525A310	12.12	—	—	—
V	1622	1/2″ × 2¾″	2.317″	0.750″	5	98481A335	12.19	1	98525A335	6.00	—	—	—
Flat-Bottom Style													
1	204	1/16″ × 1/2″	0.491″	0.194″	100	98481A080	7.78	100	98525A080	8.81	5	97940A080	8.75
2	304	3/32″ × 1/2″	0.491″	0.194″	100	98481A085	8.17	100	98525A085	8.28	5	97940A085	9.10
4	305	3/32″ × 5/8″	0.612″	0.240″	100	98481A095	8.40	100	98525A095	9.23	—	—	—
3	404	1/8″ × 1/2″	0.491″	0.194″	100	98481A090	8.31	100	98525A090	9.00	5	97940A090	9.41
5	405	1/8″ × 5/8″	0.612″	0.240″	100	98481A100	8.66	100	98525A100	9.50	5	97940A100	10.74
7	406	1/8″ × 3/4″	0.740″	0.303″	100	98481A115	9.29	50	98525A115	5.64	1	97940A115	2.57
6	505	5/32″ × 5/8″	0.612″	0.240″	100	98481A105	8.85	50	98525A105	5.17	5	97940A105	12.54
8	506	5/32″ × 3/4″	0.740″	0.303″	100	98481A120	11.86	50	98525A120	7.05	5	97940A120	14.58
10	507	5/32″ × 7/8″	0.866″	0.365″	50	98481A135	7.42	50	98525A135	8.61	—	—	—
61	605	3/16″ × 5/8″	0.612″	0.240″	100	98481A110	11.03	50	98525A110	6.80	5	97940A110★	13.72
9	606	3/16″ × 3/4″	0.740″	0.303″	100	98481A125	11.65	50	98525A125	7.65	5	97940A125	14.72
11	607	3/16″ × 7/8″	0.866″	0.365″	50	98481A140	9.07	25	98525A140	5.23	1	97940A140	2.85
13	608	3/16″ × 1″	0.992″	0.428″	25	98481A160	6.12	25	98525A160	7.19	—	—	—
16	609	3/16″ × 1⅛″	1.114″	0.475″	25	98481A195	7.76	10	98525A195	4.03	—	—	—
19	610	3/16″ × 1¼″	1.240″	0.537″	25	98481A220	9.64	10	98525A220	4.82	—	—	—
12	707	7/32″ × 7/8″	0.866″	0.365″	50	98481A145	11.29	25	98525A145	6.64	—	—	—
14	708	7/32″ × 1″	0.992″	0.428″	25	98481A165	6.63	25	98525A165	8.55	—	—	—
17	709	7/32″ × 1⅛″	1.114″	0.475″	25	98481A200	10.12	10	98525A200	3.93	—	—	—
20	710	7/32″ × 1¼″	1.240″	0.537″	25	98481A225	12.16	10	98525A225	5.71	—	—	—
91	806	1/4″ × 3/4″	0.740″	0.303″	50	98481A130	9.08	25	98525A130	5.53	1	97940A130●	2.85
A	807	1/4″ × 7/8″	0.866″	0.365″	50	98481A150	12.17	25	98525A150	6.75	1	97940A150	2.88
141	—	1/4″ × 1″	0.975″	0.365″	25	98481A190	8.13	25	98525A190	9.34	—	—	—
15	808	1/4″ × 1″	0.992″	0.428″	25	98481A170	7.37	25	98525A170	8.95	1	97940A170	2.72
18	809	1/4″ × 1⅛″	1.114″	0.475″	25	98481A205	10.31	10	98525A205	4.91	—	—	—
21	810	1/4″ × 1¼″	1.240″	0.537″	25	98481A230	12.18	10	98525A230	6.04	—	—	—
22	811	1/4″ × 1⅜″	1.362″	0.584″	10	98481A243	6.35	10	98525A243	7.78	—	—	—
24	812	1/4″ × 1½″	1.484″	0.631″	10	98481A255	6.49	10	98525A255	8.11	—	—	—
B	1008	5/16″ × 1″	0.992″	0.428″	25	98481A175	9.90	10	98525A175	4.69	—	—	—
C	1009	5/16″ × 1⅛″	1.114″	0.475″	25	98481A210	12.56	10	98525A210	6.14	—	—	—
D	1010	5/16″ × 1¼″	1.240″	0.537″	10	98481A235	6.78	10	98525A235	7.82	—	—	—
23	1011	5/16″ × 1⅜″	1.362″	0.584″	10	98481A245	7.30	10	98525A245	8.54	—	—	—
25	1012	5/16″ × 1½″	1.484″	0.631″	10	98481A260	8.24	10	98525A260	9.80	—	—	—
152	1208	3/8″ × 1″	0.992″	0.428″	25	98481A185	12.54	10	98525A185	5.89	—	—	—
E	1210	3/8″ × 1¼″	1.240″	0.537″	10	98481A240	7.80	10	98525A240	9.53	—	—	—
F	1211	3/8″ × 1⅜″	1.362″	0.584″	10	98481A250	8.79	5	98525A250	5.71	—	—	—
G	1212	3/8″ × 1½″	1.484″	0.631″	10	98481A265	10.02	5	98525A265	7.11	—	—	—
TX	1222-1	3/8″ × 2¾″	2.000″	0.594″	10	98481A300	11.48	5	98525A300	7.11	—	—	—

★ Full radius style, height is 0.25″. ● Full radius style, height is 0.3125″.

Plain Steel Woodruff Key Assortments

97 Keys in 35 Sizes— Includes the following key numbers: 1 each of 1, 2, 4, 5, 12, 14, 16, 17, 19, 20, 21, D, E, 22, 23, 24, 26, 27, 28, 29; 3 each of 10, 13, 15, B, 152; 4 each of 3, 6, 7, 8, 91; 5 each of 18, G; 10 each of 11, A; and 12 each of 9. Furnished in an 8¼″ Lg.× 4¼″ Wd.×1⅜″ Dp. compartmented plastic box.

98584A170 ..... $62.79

225 Keys in 18 Sizes— Includes the following key numbers: 15 each of 211, 212, 213, 1, 2, 3, 5, 7, 6, 61, 9, 91; 10 each of 11, 13, A; and 5 each of 15, 18, E. Furnished in a 10¾″ Lg.×6½″ Wd.×1¾″ Dp. compartmented plastic box with a lid chart.

98540A120 ..... $113.78

Metric Woodruff Keys

Made to DIN 6888, these plain steel woodruff keys are the same as above, except in metric sizes. All are full-radius style. Width (W) tolerance is +.025 mm for 1.5 to 3 mm keys; +.030 mm for 4 to 6 mm keys; +.036 mm for 8 to 10 mm keys. Tensile strength is 85,000 psi. Rockwell hardness is C24.

Nominal Key Size, W×B, mm	Actual Lg., mm	Actual Ht., mm	Pkg. Qty.		Pkg.
1.5× 7	6.76	2.6	25	98490A110	$9.27
2 × 7	6.76	2.6	25	98490A120	7.93
2 ×10	9.66	3.7	25	98490A130	7.68
2 ×13	12.65	5	25	98490A140	11.67
2.5×10	9.66	3.7	25	98490A150	6.75
3 ×10	9.66	3.7	25	98490A160	6.51
3 ×13	12.65	5	25	98490A170	5.29
3 ×16	15.72	6.5	25	98490A180	7.67
4 ×13	12.65	5	25	98490A190	7.17
4 ×16	15.72	6.5	25	98490A200	6.93
4 ×19	18.57	7.5	25	98490A210	9.55
5 ×16	15.72	6.5	25	98490A220	8.00
5×19	18.57	7.5	25	98490A230	$9.73
5×22	21.63	9	25	98490A240	11.81
5×25	24.49	10	10	98490A250	8.94
6×22	21.63	9	10	98490A260	5.30
6×25	24.49	10	10	98490A270	7.01
6×28	27.35	11	10	98490A280	9.00
8×22	21.63	9	10	98490A290	8.88
8×28	27.35	11	10	98490A300	11.59
8×32	31.43	13	10	98490A310	12.83
10×32	31.43	13	5	98490A320	9.20
10×45	43.08	16	5	98490A330	11.46

About Key Stock Tolerances

Tolerance is the amount of variation in the size for each piece of bar stock. The tolerance can be oversized, undersized, or both.

Oversized— Size may be larger than stated for a tighter fit. The size variation will measure as a plus tolerance.

Undersized— Size may be slightly smaller than stated for a looser fit. The size variation will measure as a minus tolerance.

Standard— Size may be slightly smaller or larger than stated. The variation may measure from a minus to a plus tolerance.

Key Stock

Make your own machine keys from key stock. They're ready to cut, file, and fit. Length tolerance is –.125″.

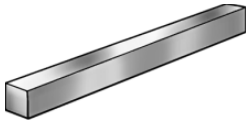

Type 416 Stainless Steel (Undersized)— Can be heat treated for greater strength, but is less corrosion resistant than Type 316 and 18-8 stainless steel. This material is magnetic. Tolerances: 3/16″ to 1/4″ sizes: –.002″; 5/16″ to 3/8″ sizes: –.003″; 1/2″ to 3/4″ sizes: –.004″. Tensile strength is not rated. Rockwell hardness is B89.

Type 316 Stainless Steel (Undersized)— This alloy resists corrosion better than 18-8 stainless steel. It withstands many chemicals, even the pitting caused by chlorides. May be mildly magnetic. Tolerances: 3/16″ to 5/16″ sizes: –.002″; 3/8″ size: –.003″; 1/2″ to 1″ sizes: –.004″. Minimum tensile strength is 75,000 psi. Not rated for hardness.

18-8 Stainless Steel— Corrosion resistant and may be mildly magnetic. Minimum tensile strength is 75,000 psi. Not rated for hardness. *(Oversized)*—Tolerance: +.002″. *(Undersized)*—Tolerances: 1/8″ to 1/4″ sizes: –.002″; 5/16″ to 7/16″ sizes: –.003″; 1/2″ to 7/8″ sizes: –.004″; 1″ size: –.006″; 1 1/4″ to 2″ sizes: –.008″. *(Standard)*—Tolerances: 3/16″ to 3/8″ sizes: ±.008″; 1/2″ to 3/4″ sizes: ±.010″.

Brass (Standard)— Made from alloy 360 brass, which contains lead for good machinability. It's corrosion resistant and nonmagnetic. Tolerances: 1/8″ to 1/2″ sizes: ±.0035″; 5/8″ to 1″ sizes: ±.0045″; 1 1/4″ size: ±.005″. Minimum tensile strength is 40,000 psi. Minimum Rockwell hardness is B35.

Aluminum (Standard)— This lightweight alloy 6061 aluminum is one-third the weight of steel. Offers good resistance to weather-related corrosion. Tolerances: 1/4″ to 3/8″ sizes: ±.008″; 1/2″ to 5/8″ sizes: ±.009″. Minimum tensile strength is 38,000 psi. Not rated for hardness.

Alloy Steel (Oversized)— Made from Alloy 8630 steel. Tolerance: +.001″. Minimum tensile strength is 90,000 psi. Minimum Rockwell hardness is B90. Can be heat treated to Rockwell hardness C40-50.

High-Carbon Plain Steel (Standard)— Annealed for easy machining, this C1090-C1095 steel is heat treatable. Ideal where hardenability is required. Tolerances: 1/16″ to 3/16″ sizes: ±.0005″; 1/4″ to 5/8″ sizes: ±.001″; 3/4″ to 1″ sizes: ±.0015″. Minimum tensile strength is 90,000 psi. Rockwell hardness is B90.

Plain Steel (Oversized)— All are made from low strength steel. Tolerances: 1/16″ to 3/4″ sizes: +.002″; 13/16″ to 1 1/4″ sizes: +.003″. Minimum tensile strength is 55,000 psi. Not rated for hardness.

Zinc-Plated Steel— Zinc plated for corrosion resistance. All are made from low strength steel. Minimum tensile strength is 55,000 psi. Not rated for hardness. *(Oversized)*—Tolerances: 1/16″ to 3/4″ sizes: +.003″; 13/16″ to 1 1/2″ sizes: +.004″; 1 5/8″ to 2″ sizes: +.005″. *(Undersized)*—Tolerances: 1/8″ to 3/4″ sizes: –.002″; 7/8″ to 1 1/2″ sizes: –.003″; 1 5/8″ to 2″ sizes: –.004″.

12″ Length

Size			
Type 416 SS—Undersized			
3/16″ × 3/16″	98374A100	$11.20	
1/4″ × 1/4″	99374A110	7.68	
5/16″ × 5/16″	99374A120	17.66	
3/8″ × 3/8″	99374A130	15.79	
1/2″ × 1/2″	99374A140	24.10	
5/8″ × 5/8″	99374A150	59.20	
3/4″ × 3/4″	99374A160	48.48	
Type 316 SS—Undersized			
3/16″ × 3/16″	98530A177	12.80	
1/4″ × 1/4″	98530A136	17.47	
5/16″ × 5/16″	98530A150	19.19	
3/8″ × 3/8″	98530A165	26.52	
1/2″ × 1/2″	98530A187	33.57	
5/8″ × 5/8″	98530A206	48.71	
3/4″ × 3/4″	98530A226	74.29	
1″ × 1″	98530A229	138.87	
18-8 SS—Oversized			
1/8″ × 1/8″	98493A100	2.34	
3/16″ × 3/16″	98493A117	4.23	
1/4″ × 1/4″	98493A136	4.31	
5/16″ × 5/16″	98493A150	6.89	
3/8″ × 3/8″	98493A165	9.09	
7/16″ × 7/16″	98493A179	14.91	
1/2″ × 1/2″	98493A187	16.43	
9/16″ × 9/16″	98493A188	21.27	
5/8″ × 5/8″	98493A206	25.02	
3/4″ × 3/4″	98493A226	34.10	
7/8″ × 7/8″	98493A245	49.90	
1″ × 1″	98493A257	78.81	
18-8 SS—Undersized			
1/8″ × 1/8″	92530A100	2.08	
3/16″ × 3/16″	92530A117	3.21	
1/4″ × 1/4″	92530A136	4.32	
5/16″ × 5/16″	92530A150	6.73	
3/8″ × 3/8″	92530A165	8.68	
7/16″ × 7/16″	92530A179	30.23	
1/2″ × 1/2″	92530A187	17.67	
9/16″ × 9/16″	92530A188	20.21	
5/8″ × 5/8″	92530A206	23.14	
3/4″ × 3/4″	92530A226	33.53	
7/8″ × 7/8″	92530A245	42.57	
1″ × 1″	92530A257	52.90	
1 1/4″ × 1 1/4″	92530A260	98.08	
1 1/2″ × 1 1/2″	92530A265	141.49	
1 3/4″ × 1 3/4″	92530A270	197.51	
2″ × 2″	92530A275	265.87	
18-8 SS—Standard			
3/16″ × 1/4″	92530A110	19.36	
18-8 SS—Standard (Cont.)			
3/16″ × 1/2″	92530A118	$11.20	
1/4″ × 1/2″	92530A137	12.88	
3/8″ × 1/2″	92530A166	20.36	
3/8″ × 3/4″	92530A167	27.95	
1/2″ × 3/4″	92530A180	36.86	
5/8″ × 3/4″	92530A207	44.80	
5/8″ × 1″	92530A208	64.19	
3/4″ × 1″	92530A227	67.86	
Brass—Standard			
1/8″ × 1/8″	98500A100	1.10	
3/16″ × 3/16″	98500A117	1.85	
1/4″ × 1/4″	98500A136	3.12	
5/16″ × 5/16″	98500A150	4.94	
3/8″ × 3/8″	98500A165	6.89	
7/16″ × 7/16″	98500A179	9.15	
1/2″ × 1/2″	98500A187	11.89	
5/8″ × 5/8″	98500A206	18.66	
3/4″ × 3/4″	98500A226	44.57	
1″ × 1″	98500A257	46.00	
1 1/4″ × 1 1/4″	98500A274	136.40	
Aluminum—Standard			
1/4″ × 1/4″	99108A100	3.83	
3/8″ × 3/8″	99108A110	10.43	
1/2″ × 1/2″	99108A120	5.91	
5/8″ × 5/8″	99108A130	9.64	
Alloy Steel—Oversized			
1/8″ × 1/8″	99020A415	.80	
3/16″ × 3/16″	99020A420	.99	
1/4″ × 1/4″	99020A425	1.88	
5/16″ × 5/16″	99020A430	2.66	
3/8″ × 3/8″	99020A435	2.83	
1/2″ × 1/2″	99020A440	5.69	
High Carbon Plain Steel—Standard			
1/16″ × 1/16″	98535A120	.87	
3/32″ × 3/32″	98535A125	1.50	
1/8″ × 1/8″	98535A130	1.87	
3/16″ × 3/16″	98535A140	2.74	
1/4″ × 1/4″	98535A150	3.55	
5/16″ × 5/16″	98535A160	5.03	
3/8″ × 3/8″	98535A170	7.42	
7/16″ × 7/16″	98535A180	9.99	
1/2″ × 1/2″	98535A190	15.10	
5/8″ × 5/8″	98535A210	23.79	
3/4″ × 3/4″	98535A220	33.74	
High Carbon Plain Steel—Standard (Cont.)			
7/8″ × 7/8″	98535A230	$45.53	
1″ × 1″	98535A240	59.33	
Plain Steel—Oversized			
1/16″ × 1/16″	98830A005	.85	
3/32″ × 3/32″	98830A050	1.05	
1/8″ × 1/8″	98830A100	.99	
5/32″ × 5/32″	98830A125	.73	
3/16″ × 3/16″	98830A150	1.01	
7/32″ × 7/32″	98830A135	7.64	
1/4″ × 1/4″	98830A200	1.51	
9/32″ × 9/32″	98830A225	1.82	
5/16″ × 5/16″	98830A250	1.78	
3/8″ × 3/8″	98830A300	2.72	
7/16″ × 7/16″	98830A325	2.29	
1/2″ × 1/2″	98830A350	4.29	
9/16″ × 9/16″	98830A360	3.86	
5/8″ × 5/8″	98830A370	3.96	
11/16″ × 11/16″	98830A380	7.02	
3/4″ × 3/4″	98830A390	5.40	
13/16″ × 13/16″	98830A400	15.24	
7/8″ × 7/8″	98830A410	7.80	
1″ × 1″	98830A420	8.55	
Zinc-Plated Steel—Oversized			
1/16″ × 1/16″	98491A097	1.08	
3/32″ × 3/32″	98491A098	1.32	
1/8″ × 1/8″	98491A100	.72	
1/8″ × 3/16″	98491A101	1.75	
1/8″ × 1/4″	98491A102	3.03	
1/8″ × 3/8″	98491A104	15.33	
1/8″ × 1/2″	98491A106	16.12	
1/8″ × 5/8″	98491A108	8.67	
1/8″ × 3/4″	98491A110	6.02	
5/32″ × 5/32″	98491A112	1.03	
3/16″ × 3/16″	98491A117	.85	
3/16″ × 1/4″	98491A118	2.49	
3/16″ × 5/16″	98491A119	2.47	
3/16″ × 3/8″	98491A120	4.73	
3/16″ × 7/16″	98491A123	6.52	
3/16″ × 1/2″	98491A121	6.73	
3/16″ × 5/8″	98491A125	8.89	
3/16″ × 7/8″	98491A127	28.83	
7/32″ × 7/32″	98491A131	10.83	
1/4″ × 1/4″	98491A136	1.20	
1/4″ × 5/16″	98491A137	2.13	
1/4″ × 3/8″	98491A138	2.66	
1/4″ × 7/16″	98491A139	7.77	
1/4″ × 1/2″	98491A140	3.70	
Zinc-Plated Steel—Oversized (Cont.)			
1/4″ × 9/16″	98491A141	$17.74	
1/4″ × 5/8″	98491A142	10.63	
1/4″ × 3/4″	98491A144	16.72	
9/32″ × 9/32″	98491A143	2.07	
5/16″ × 5/16″	98491A150	2.15	
5/16″ × 3/8″	98491A151	11.86	
5/16″ × 7/16″	98491A156	7.89	
5/16″ × 1/2″	98491A153	17.56	
5/16″ × 9/16″	98491A154	6.35	
5/16″ × 5/8″	98491A155	5.68	
5/16″ × 3/4″	98491A161	10.48	
3/8″ × 3/8″	98491A165	2.07	
3/8″ × 7/16″	98491A166	5.09	
3/8″ × 1/2″	98491A167	5.68	
3/8″ × 9/16″	98491A170	16.03	
3/8″ × 5/8″	98491A168	6.09	
3/8″ × 3/4″	98491A169	6.33	
3/8″ × 1″	98491A175	9.22	
7/16″ × 7/16″	98491A179	3.49	
7/16″ × 1/2″	98491A180	5.17	
7/16″ × 9/16″	98491A178	6.77	
7/16″ × 5/8″	98491A181	8.74	
7/16″ × 3/4″	98491A182	9.09	
1/2″ × 1/2″	98491A187	3.84	
1/2″ × 9/16″	98491A202	10.25	
1/2″ × 5/8″	98491A188	8.69	
1/2″ × 11/16″	98491A189	9.85	
1/2″ × 3/4″	98491A190	8.19	
1/2″ × 7/8″	98491A201	9.73	
1/2″ × 1″	98491A203	13.68	
9/16″ × 9/16″	98491A204	6.45	
9/16″ × 5/8″	98491A205	14.67	
9/16″ × 3/4″	98491A210	17.23	
9/16″ × 1″	98491A211	26.45	
9/16″ × 1 1/4″	98491A212	28.48	
5/8″ × 5/8″	98491A206	7.25	
5/8″ × 11/16″	98491A213	19.28	
5/8″ × 3/4″	98491A207	13.01	
5/8″ × 7/8″	98491A208	12.59	
5/8″ × 1″	98491A209	15.86	
5/8″ × 1 1/4″	98491A214	22.01	
11/16″ × 11/16″	98491A220	11.44	
11/16″ × 3/4″	98491A221	22.45	
11/16″ × 7/8″	98491A222	21.53	
11/16″ × 1″	98491A223	32.16	
3/4″ × 3/4″	98491A226	8.67	
3/4″ × 7/8″	98491A227	13.47	

(Continued on following page)

For information about key stock tolerances, see page 3361.

Key Stock *(Continued from previous page)*

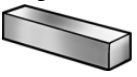

Length tolerance is –.125″. For information about zinc-plated steel, Type 316 stainless steel, and plain steel key stock, please see page 3361.

12″ Length

Size			
Zinc-Plated Steel—*Oversized (Cont.)*			
3/4″	×1″	98491A228	$25.92
3/4″	×1 1/8″	98491A229	19.50
3/4″	×1 1/4″	98491A238	22.26
3/4″	×1 1/2″	98491A239	36.19
3/4″	×1 3/4″	98491A243	27.76
13/16″	× 13/16″	98491A241	16.94
7/8″	× 7/8″	98491A242	12.32
7/8″	×1″	98491A246	27.18
7/8″	×1 1/8″	98491A247	35.16
7/8″	×1 1/4″	98491A249	27.08
15/16″	× 15/16″	98491A253	32.02
1″	×1″	98491A257	14.61
1″	×1 1/8″	98491A259	28.86
1″	×1 1/4″	98491A258	23.56
1″	×1 1/2″	98491A261	33.68
1″	×2″	98491A264	51.18

Size			
Zinc-Plated Steel—*Oversized (Cont.)*			
1 1/16″	×1 1/16″	98491A266	$30.44
1 1/8″	×1 1/8″	98491A263	34.36
1 1/8″	×1 1/4″	98491A265	28.89
1 3/16″	×1 3/16″	98491A267	30.87
1 1/4″	×1 1/4″	98491A268	32.83
1 1/4″	×1 3/8″	98491A269	51.87
1 1/4″	×1 1/2″	98491A271	36.29
1 1/4″	×1 3/4″	98491A273	43.97
1 5/16″	×1 5/16″	98491A350	49.21
1 3/8″	×1 3/8″	98491A275	54.79
1 1/2″	×1 1/2″	98491A278	45.60
1 1/2″	×1 3/4″	98491A280	41.35
1 1/2″	×2″	98491A282	74.05
1 5/8″	×1 5/8″	98491A284	52.24
1 3/4″	×1 3/4″	98491A286	69.86
2″	×2″	98491A290	93.42

Size			
Zinc-Plated Steel—*Undersized*			
1/8″	×1/8″	98510A100	$0.74
1/8″	×3/16″	98510A115	1.75
1/8″	×1/4″	98510A120	4.87
3/16″	×3/16″	98510A117	.84
3/16″	×1/4″	98510A125	1.85
3/16″	×5/16″	98510A140	2.80
3/16″	×3/8″	98510A155	3.70
1/4″	×1/4″	98510A136	1.22
1/4″	×5/16″	98510A145	2.34
1/4″	×3/8″	98510A157	2.78
1/4″	×7/16″	98510A167	3.97
1/4″	×1/2″	98510A181	3.63
5/16″	×5/16″	98510A150	1.79
5/16″	×3/8″	98510A160	3.85
5/16″	×1/2″	98510A182	4.76
5/16″	×5/8″	98510A194	7.28
3/8″	×3/8″	98510A165	2.28
3/8″	×7/16″	98510A170	5.22

Size			
Zinc-Plated Steel—*Undersized (Cont.)*			
3/8″	× 1/2″	98510A184	$5.23
3/8″	× 5/8″	98510A196	5.40
7/16″	× 7/16″	98510A179	3.44
7/16″	× 1/2″	98510A186	8.41
1/2″	× 1/2″	98510A187	4.17
1/2″	× 5/8″	98510A198	8.80
9/16″	× 9/16″	98510A190	5.84
5/8″	× 5/8″	98510A206	7.03
3/4″	× 3/4″	98510A226	9.52
7/8″	× 7/8″	98510A245	15.15
1″	×1″	98510A257	16.35
1 1/8″	×1 1/8″	98510A260	23.75
1 1/4″	×1 1/4″	98510A270	28.39
1 3/8″	×1 3/8″	98510A280	38.77
1 1/2″	×1 1/2″	98510A290	37.47
1 3/4″	×1 3/4″	98510A300	63.04
2″	×2″	98510A310	86.13

36″ Length

Size			
Type 316 SS—*Undersized*			
3/16″	× 3/16″	98530A410	$27.76
1/4″	× 1/4″	98530A415	41.71
5/16″	× 5/16″	98530A420	57.48
3/8″	× 3/8″	98530A425	79.52
1/2″	× 1/2″	98530A430	101.62
5/8″	× 5/8″	98530A434	148.23
3/4″	× 3/4″	98530A442	218.14
1″	×1″	98530A446	486.02

Size			
Plain Steel—*Oversized*			
1/16″	×1/16″	98830A701	$2.53
3/32″	×3/32″	98830A722	3.58
1/8″	×1/8″	98830A743	2.07
5/32″	×5/32″	98830A765	2.13
3/16″	×3/16″	98830A782	3.37
7/32″	×7/32″	98830A812	7.29
1/4″	×1/4″	98830A836	4.32
9/32″	×9/32″	98830A854	38.88

Size			
Plain Steel—*Oversized (Cont.)*			
5/16″	×5/16″	98830A879	$5.13
3/8″	×3/8″	98830A891	7.14
7/16″	×7/16″	98830A906	6.86
1/2″	×1/2″	98830A911	9.63
9/16″	×9/16″	98830A936	11.72
5/8″	×5/8″	98830A949	13.09
11/16″	×11/16″	98830A963	19.72

Size			
Plain Steel—*Oversized (Cont.)*			
3/4″	× 3/4″	98830A971	$17.69
13/16″	× 13/16″	98830A979	65.86
7/8″	× 7/8″	98830A985	22.94
1″	×1″	98830A989	25.20
1 1/4″	×1 1/4″	98830A993	37.62

Metric Key Stock

Same as key stock shown above and on the previous page, in metric sizes. All are 12″ long. Length tolerance is –3.175 mm.

Type 316 Stainless Steel (Undersized)—DIN 178. Tolerances: 2×2 mm and 3×3 mm: –.06 mm; 4×4 mm to 6×6 mm: –.075 mm; 7×7 mm to 10×10 mm: –.09 mm; 12×12 mm to 16×16 mm: –.11 mm. Tensile strength is 85,000 psi. Rockwell hardness is B85-B95.

18-8 Stainless Steel (Oversized)—Tolerance: +.127 mm. Tensile strength is 90,000 psi. Rockwell hardness is B85-B95.

Zinc-Plated C1045 Steel (Oversized)—Tolerance: +.076 mm. Tensile strength is 98,000 psi. Rockwell hardness is B95.

Size, mm		
Type 316 SS—*Undersized*		
2× 2	90457A100	$11.60
3× 3	90457A110	11.60
4× 4	90457A120	14.80
5× 5	90457A130	20.93
6× 6	90457A140	21.97
7× 7	90457A150	30.07
8× 8	90457A160	39.53
10×10	90457A170	64.70
12×12	90457A180	89.23
14×14	90457A190	111.43
16×16	90457A200	142.93
18-8 SS—*Oversized*		
4× 4	98810A100	28.00
5× 5	98810A110	27.29
6× 6	98810A120	27.24
7× 7	98810A130	30.33
7× 8	98810A140	32.95
8× 8	98810A150	33.05
8×10	98810A152	37.90
8×12	98810A155	40.86
9×14	98810A160	67.24
10×10	98810A170	39.57
12×12	98810A180	43.48
14×14	98810A200	74.48
16×16	98810A210	78.62
18×18	98810A220	81.48
20×20	98810A230	104.63
22×22	98810A240	124.98
24×24	98810A250	143.54
Zinc-Plated Steel—*Oversized*		
4× 4	92288A110	3.16
5× 5	92288A120	3.49
5× 8	92288A125	4.36
6× 6	92288A140	4.13

Size, mm		
Zinc-Plated Steel—*Oversized (Cont.)*		
6×10	92288A145	$6.75
6×12	92288A150	9.29
6×14	92288A152	9.25
7× 7	92288A155	5.06
7× 8	92288A160	5.63
7×16	92288A170	11.54
7×18	92288A180	11.71
8× 8	92288A230	5.74
8×10	92288A240	8.43
8×12	92288A245	9.44
8×20	92288A247	15.82
9×14	92288A255	11.59
9×22	92288A280	14.74
10×10	92288A290	8.23
10×12	92288A295	10.81
10×16	92288A300	16.23
11×18	92288A320	19.12
12×12	92288A330	10.69
12×20	92288A340	19.24
14×14	92288A350	16.38
14×22	92288A355	23.93
14×25	92288A360	27.52
16×16	92288A375	23.88
16×28	92288A400	32.47
18×18	92288A425	24.53
18×32	92288A428	35.14
20×20	92288A430	36.32
20×36	92288A440	50.64
22×22	92288A450	30.19
22×40	92288A515	59.85
25×25	92288A600	37.42
25×28	92288A620	55.42

Step Key Stock

Type 1

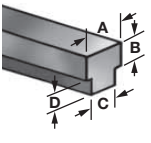

Type 2

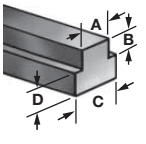

Oversized key stock is ground down to the tolerances listed below. Made from C1018 steel and zinc plated for corrosion resistance. Tensile strength is 85,000 psi. Rockwell hardness is B85. All are 12″ long. Length tolerance is –.125″.

Type 1—Use for repair of damaged keyways in shafts.

Type 2—For gears, pulleys, and similar parts.

(A)	(B)	(C)	(D)	Tolerances A & C	Tolerances B & D		
Type 1—*For Shafts*							
3/16″	3/32″	1/8″	1/16″	+.002″	±.004″	92271A111♣	$17.07
3/8″	3/16″	5/16″	1/8″	+.002″	±.004″	92271A112	18.87
3/8″	3/16″	5/16″	5/32″	+.002″	±.004″	92271A113♣	25.29
1/2″	1/4″	7/16″	5/32″	+.002″	±.004″	92271A114	34.46
5/8″	5/16″	3/8″	3/16″	+.002″	±.004″	92271A115	32.04
3/4″	3/8″	1/2″	1/4″	+.002″	±.004″	92271A116	47.42
3/4″	3/8″	5/8″	3/16″	+.002″	±.004″	92271A117	52.95
3/4″	3/8″	5/8″	5/16″	+.002″	±.004″	92271A118	44.34
1″	1/2″	7/8″	7/16″	+.002″	±.004″	92271A119	64.79
Type 2—*For Gears*							
3/16″	3/32″	1/4″	3/32″	+.002″	±.005″	92271A211	16.37
3/16″	3/32″	1/4″	1/8″	+.002″	±.005″	92271A212♣	17.46
1/4″	1/8″	5/16″	1/8″	+.002″	±.005″	92271A213♣	17.27
1/4″	1/8″	3/8″	1/8″	+.002″	±.005″	92271A214	20.70
1/4″	1/8″	3/8″	3/16″	+.002″	±.005″	92271A215♣	21.67
3/8″	3/16″	7/16″	5/32″	+.002″	±.005″	92271A216	29.54
3/8″	3/16″	1/2″	3/16″	+.002″	±.005″	92271A217	26.47
3/8″	3/16″	1/2″	1/4″	+.002″	±.005″	92271A218♣	29.88
1/2″	1/4″	9/16″	3/16″	+.002″	±.005″	92271A219	39.57
1/2″	1/4″	5/8″	3/16″	+.002″	±.005″	92271A221	31.10
1/2″	1/4″	5/8″	5/16″	+.002″	±.005″	92271A222♣	29.79
1/2″	1/4″	11/16″	1/4″	+.002″	±.005″	92271A220	45.54
5/8″	5/16″	11/16″	1/4″	+.002″	±.005″	92271A224	66.76
3/4″	3/8″	7/8″	7/16″	+.002″	±.005″	92271A226	57.75
3/4″	3/8″	1″	1/2″	+.002″	±.005″	92271A228	55.95

7-Piece Assortment—Includes one each of the sizes marked with a ♣. Packed in a cardboard box.

92271A410 ..... $82.38

Oversized Key Stock Assortments

7 Pieces in 7 Sizes— Bars are 12″ long. Includes one of each size: 1/8″×1/8″, 3/16″×3/16″, 1/4″×1/4″, 5/16″×5/16″, 3/8″×3/8″, 7/16″×7/16″, and 1/2″×1/2″. Furnished in a cardboard box.

18-8 Stainless Steel **90143A200** $99.74

7 Pieces in 7 Sizes— Bars are 12″ long. Includes one each of sizes: 1/8″×1/8″, 3/16″×3/16″, 3/16″×1/4″, 1/4″×5/16″, 5/16″×3/8″, 3/8″×7/16″, and 7/16″×1/2″. Furnished in a cardboard box.

Zinc-Plated Steel **90142A160** $15.95

31 Pieces in 7 Sizes— Bars are 12″ long. Includes 5 each of 1/8″×1/8″, 3/16″×3/16″, 1/4″×1/4″, 5/16″×5/16″, 3/8″×3/8″, and 3 each of 7/16″×7/16″, 1/2″×1/2″. Furnished in a compartmented cardboard box.

18-8 Stainless Steel **90143A140** $203.12
Zinc-Plated Steel **90142A140** 55.73

Tapered Machine Keys with Gib Head

Use these keys on power transmission shafts to hold pulleys and gears tightly on the shaft. Keys taper 1/8″ per foot and fit snugly into the keyway. Made from plain C1018 steel. The square dimension is measured under the head at A and B. Tolerances for the square dimension are: 3/16″ to 1/2″: –.002″; 5/8″ to 1″: –.003″. Tolerance for the C dimension is ±.005″. Tensile strength is 82,000 psi. Rockwell hardness is B85.

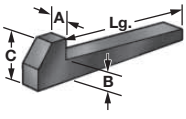

Lg.	(C)		
3/16″ Square			
1 1/2″	5/16″	**98471A117**	$2.10
2″	5/16″	**98471A118**	2.25
3″	5/16″	**98471A120**	2.56
1/4″ Square			
1 1/2″	7/16″	**98471A132**	2.39
2″	7/16″	**98471A133**	2.68
2 1/2″	7/16″	**98471A134**	2.85
3″	7/16″	**98471A135**	2.92
3 1/2″	7/16″	**98471A136**	3.09
4″	7/16″	**98471A137**	3.23
5/16″ Square			
2″	1/2″	**98471A142**	3.02
2 1/2″	1/2″	**98471A143**	3.10
3″	1/2″	**98471A144**	3.24
4″	1/2″	**98471A146**	3.44
3/8″ Square			
1″	5/8″	**98471A169**	2.48
1 1/2″	5/8″	**98471A171**	2.69
2″	5/8″	**98471A172**	3.07
2 1/2″	5/8″	**98471A173**	3.29
3″	5/8″	**98471A174**	3.57
3 1/2″	5/8″	**98471A175**	3.73
4″	5/8″	**98471A176**	4.05
4 1/2″	5/8″	**98471A177**	4.34
5″	5/8″	**98471A178**	4.63
7/16″ Square			
4″	3/4″	**98471A192**	4.43
4 1/2″	3/4″	**98471A195**	4.57

Lg.	(C)		
1/2″ Square			
2″	3/4″	**98471A237**	$4.00
2 1/2″	3/4″	**98471A238**	4.18
3″	3/4″	**98471A239**	4.54
3 1/2″	3/4″	**98471A240**	4.82
4″	3/4″	**98471A241**	5.10
4 1/2″	3/4″	**98471A242**	5.72
5″	3/4″	**98471A243**	5.79
5 1/2″	3/4″	**98471A244**	6.02
6″	3/4″	**98471A245**	6.29
5/8″ Square			
3″	1″	**98471A318**	6.35
3 1/2″	1″	**98471A319**	6.87
4″	1″	**98471A320**	7.27
4 1/2″	1″	**98471A321**	7.78
5″	1″	**98471A322**	8.20
5 1/2″	1″	**98471A323**	8.70
6″	1″	**98471A324**	9.11
3/4″ Square			
4″	1 1/8″	**98471A360**	10.29
4 1/2″	1 1/8″	**98471A361**	10.99
5″	1 1/8″	**98471A362**	11.69
5 1/2″	1 1/8″	**98471A363**	12.38
6″	1 1/8″	**98471A364**	12.99
7/8″ Square			
4″	1 1/4″	**98471A404**	14.53
5 1/2″	1 1/4″	**98471A407**	16.79
6″	1 1/4″	**98471A408**	17.71
1″ Square			
5″	1 1/2″	**98471A455**	20.99
6″	1 1/2″	**98471A457**	23.47

Square End Machine Key Assortments

Zinc-Plated Steel— 58 undersized keys in 13 sizes. Includes the following sizes: 3 each of 1/8″ square×3/4″ lg., 1/8″ square×1″ lg.; 5 each 3/16″ square×3/4″ lg., 3/16″ square×1″ lg., 3/16″ square×1 1/4″ lg., 1/4″ square×3/4″ lg., 1/4″ square×1 1/4″ lg., 1/4″ square×1 1/2″ lg., 5/16″ square×1 1/4″ lg., 5/16″ square×1 1/2″ lg., 3/8″ square×1 1/4″ lg., 3/8″ square×1 1/2″ lg., and 2 each of 1/2″ square×1 1/2″ lg. Tolerance: –.002″. Furnished in an 8 1/4″ Lg.×4 1/4″ Wd.×1 5/8″ Dp. compartmented plastic box with lid chart.

98800A110 ..... $77.72

Metric Steel— 25 oversized keys in 13 sizes. All are made of plain C1045 steel and are 3 3/8″ Lg. Includes the following sizes: 2 each in square sizes of 4 mm, 5 mm, 7 mm, 10 mm, 12 mm; 3 each in square sizes of 6 mm, 8 mm; 2 each of rectangular sizes 7 mm×8 mm, 8 mm×10 mm, 8 mm×12 mm; and 1 each of rectangular sizes 10 mm×16 mm, 11 mm×18 mm, 12 mm×20 mm. Tolerance: +.0762 mm (+.002″). Furnished in an 8″ Lg.×4 3/8″ Wd.×1 1/4″ Dp. compartmented plastic box with label.

98505A018 ..... $29.39

Machine Key and Woodruff Key Assortment

401 Keys in 18 Sizes— Includes 248 machine keys and 153 woodruff keys. *Machine keys* are made of plain C1018 carbon steel and are 1 1/2″ long. Includes 25 each of rectangular size 3/16″×1/4″, and the following square sizes: 50 each 1/8″; 30 each 3/16″; 18 each 1/4″; 15 each 5/16″ and 3/8″. *Woodruff keys* are plain C1035 steel. Includes the following key numbers: 45 each: 3 and 5; 22 each: 6 and 7; 30 each 9; 15 each: 10 and A; 12 each: 13; 20 each: 15; 9 each: C and 21; and 4 each: G. Furnished in a 13″ Lg.×8 11/16″ Wd.×2 1/2″ Dp. compartmented plastic box with lid chart.

90141A212 ..... $136.33

Machine Keys

Made from plain C1018 steel. Tensile strength is 82,000 psi. Rockwell hardness is B85. Tolerances: *Undersized:* –.002″; *Oversized:* +.002″. Length tolerance is –.030″.

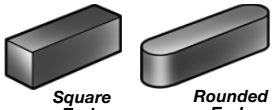

Lg.	Pkg. Qty.		Pkg.
Square Ends— *Undersized*			
1/8″ Square			
3/4″	10	**98870A100**	$2.85
1″	10	**98870A110**	3.24
1 1/4″	10	**98870A115**	3.59
3/16″ Square			
1/2″	10	**98870A120**	3.39
3/4″	10	**98870A130**	3.39
1″	10	**98870A140**	3.39
1 1/4″	10	**98870A150**	3.39
1 1/2″	10	**98870A160**	3.39
1 3/4″	10	**98870A170**	3.70
2″	10	**98870A180**	3.95
2 1/2″	10	**98870A190**	4.54
1/4″ Square			
3/4″	10	**98870A195**	3.95
1″	10	**98870A205**	3.95
1 1/4″	10	**98870A215**	3.95
1 1/2″	10	**98870A230**	4.43
1 3/4″	10	**98870A240**	4.43
2″	10	**98870A245**	4.67
2 1/4″	10	**98870A255**	5.86
2 1/2″	10	**98870A260**	5.97
3″	10	**98870A265**	6.46
5/16″ Square			
1 1/4″	10	**98870A275**	5.81
1 1/2″	10	**98870A277**	7.00
2″	10	**98870A281**	8.25
2 1/2″	10	**98870A283**	9.83
3/8″ Square			
1 1/4″	10	**98870A287**	7.21
1 1/2″	10	**98870A288**	7.12
2″	10	**98870A289**	8.71
2 1/2″	10	**98870A290**	9.10
1/2″ Square			
1 1/2″	10	**98870A292**	14.77
2″	10	**98870A293**	12.32
2 1/2″	5	**98870A294**	10.43
Square Ends— *Oversized*			
1/8″ Square			
1/2″	10	**98870A305**	5.51
3/4″	10	**98870A310**	7.22
1″	10	**98870A315**	8.59
3/16″ Square			
1/2″	10	**98870A320**	4.52

Lg.	Pkg. Qty.		Pkg.
Square Ends— *Oversized (Cont.)*			
3/16″ Square (Cont.)			
3/4″	10	**98870A330**	$5.20
1″	10	**98870A340**	4.52
1 1/4″	10	**98870A355**	5.20
1 1/2″	10	**98870A365**	7.14
1 3/4″	10	**98870A370**	7.63
2″	10	**98870A375**	7.51
1/4″ Square			
3/4″	10	**98870A385**	7.02
1″	10	**98870A395**	5.10
1 1/4″	10	**98870A405**	7.51
1 1/2″	10	**98870A415**	5.86
1 3/4″	10	**98870A420**	6.85
2″	10	**98870A430**	8.31
2 1/4″	10	**98870A435**	10.50
2 1/2″	10	**98870A440**	14.01
3/8″ Square			
1″	10	**98870A450**	9.34
1 1/4″	10	**98870A455**	11.05
1 3/4″	10	**98870A460**	10.51
2″	10	**98870A465**	10.69
2 1/4″	10	**98870A470**	11.54
2 3/4″	10	**98870A475**	13.55
1/2″ Square			
1″	10	**98870A480**	28.57
1 5/8″	10	**98870A485**	15.71
2″	10	**98870A490**	16.42
Rounded Ends— *Oversized*			
3/16″ Square			
1/2″	5	**98870A560**	6.22
3/4″	5	**98870A570**	6.42
1 1/2″	5	**98870A575**	6.98
3/8″ Square			
1″	5	**98870A580**	12.16
1 1/4″	5	**98870A585**	10.37
1 1/2″	5	**98870A590**	10.45
2″	5	**98870A595**	12.10
2 1/2″	5	**98870A600**	14.57
1/2″ Square			
1″	5	**98870A605**	16.71
2″	1	**98870A610**	4.25
2 1/2″	1	**98870A615**	4.62
3″	1	**98870A620**	4.71
3 1/2″	1	**98870A625**	5.29

Metric Machine Keys

DIN 6885A. Made from plain C1045 steel with rounded ends. The square size tolerance is –.030 mm. Length tolerance is –.200 mm for all sizes, except the 6 mm sizes in 30 mm, 36 mm, and 40 mm lengths, which are –.300 mm. Tensile strength is 110,000 psi. Rockwell hardness is B97. Package quantity is 25, unless noted.

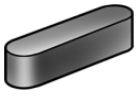

Square Size, mm	Lg., mm		Pkg.
4	8	**96717A100**	$15.60
4	10	**96717A110**	12.67
4	12	**96717A120**	12.78
4	14	**96717A130**	15.79
4	16	**96717A140**	10.80
5	14	**96717A150**	13.22
5	16	**96717A160**	13.26
5	18	**96717A170**	16.41
5	20	**96717A180**	$11.38
5	25	**96717A190**	12.76
6	20	**96717A200**	13.04
6	25	**96717A210★**	8.30
6	30	**96717A220★**	8.77
6	36	**96717A230★**	9.78
6	40	**96717A240★**	9.25

★ Package quantity is 10.

For office staplers and staples, see page 1986.

Staples for Air-Powered, Electric, Cordless, and Manual Staplers

A **B, D, E&G** **C&H** **F&X** **J, K, N, Q, S&T** **L, M, R, V, Z, AA&BB** **P** **W** **Y**

Galvanized steel has excellent rust and weather resistance.
Monel is resistant to corrosion, especially from salt water, and may be mildly magnetic.
Stainless steel is corrosion resistant and may be mildly magnetic.
High-carbon galvanized steel is a durable, general purpose steel.

Find your stapler brand name and model number to see which staple group it fits.
Then go to that staple group key letter in the first column in the table on the following page and choose leg length.

Model No.	Fits
Arrow	
ET150	X
ET50	J
ETC50	J
ETF50BN	J
ETF50PBN	J
ETN50	J
HT30	K
HT50	J
HT50P	J
JT21M	Q
JT21CM	Q
P-22	T
P-35	R
P35S	R
P66	S
T25	Y
T27	Q
T30	K
T50	J
T500C	J
T50PBN	J
T55	J
T55C	J
T59	W
T75	Z
Atro	
90/40	F
BEA	
763	G
800	G
SK325-521	F
SK332-556	F
SK338-616	F
Black & Decker	
9713	M
9715	M
9717	M
1000E	Q
3000E	J
4000E	J
6000E	J
Bostitch	
438S2	C
438S4	B
450S2	C

Model No.	Fits
Bostitch (Cont.)	
538S4	B
650S4	B
650S5	G
EHS3000	P
H30-8	P
P6C-8	P
PC1000	P
PC2000	P
PC4000	P
PC5000	P
S32SX	A
SB-150SX	A
SB-1850BN	F
SB-2IN1	A
SX150	A
T15	P
T40S2	C
T40S4-CT	B
T40SX-CT	A
T508D4	P
T5-8	P
T5-80C2	P
T5-90C1	P
Campbell-Hausfeld	
NB003099AV	F
NB004099	F
Craftsman	
68423	L
68434	J
68492	J
68496	L
Duo-Fast	
CS-5000	L
CT-850	L
CT-859A	L
DWS-5020	L
EWC-5018A	L
HT-550	L
HT-755	N
KN1848	F
KS-7648	D
KWR-1748A	H
SM-7664	D
SW-1748	H

Model No.	Fits
Grizzly	
G6043	F
Haubold	
KG7000	D
PN6030	F
PN6040	F
PN750A	D
PN750X	D
Hitachi	
N3804A	F
N3804AB	F
N3824A	H
N5008AA	G
N5008AB	G
N5008AC	G
Josef Kihlberg	
JK20T777L	BB
JK20T779PN	AA
Makita	
AT638	F
T220DW	J
Master Mechanic	
5580MM	Q
5600MM	J
5650MM	J
5685MM	J
5800MM	J
5900MM	J
M2100	Q
M5000	J
M5100	J
M5500	J
Max	
TA-551 16-11	G
McMaster-Carr	
1952T1	R
2055T41	S
2055T51	T
2055T61	R
36165A72	J
57025A35	W
6008A13	L
6009A8	L

Model No.	Fits
McMaster-Carr (Cont.)	
6009A9	N
6009A11	K
6009A12	J
6010A1	L
6010A5	X
6013A14	J
6013A15	J
6017A11	Y
6017A61	Z
6046A32	J
6056A25	J
60765A69	J
60765A6	J
61075A71	L
6107A15	F
6107A41	F
61085A65	C
6110A65	B
7418A31	BB
7418A51	AA
93458A6	J
96132A2	J
Orca	
E2-1	J
EZ-1	V
Paslode	
3150	G
3200-S16	E
CS5000	L
IM200-S16	E
Porter Cable	
MS200	G
Power Shot	
5650	Q
5800	J
8000	J
Senco	
KN4450	F
LN4450	F
M1	G
M2	G
MW	H
PW	H
SKSL 11-15	F

Model No.	Fits
Senco (Cont.)	
SKSL 11-17	F
SLS15	F
SLS18	F
SLS20	F
SNS40	G
SNS45XP	G
SNS50	G
SPS	H
Spotnail	
HL1612AT	C
XS1640	C
XS1650	C
XS76-8650	G
Surebonder	
2500	T
5500	Q
5525	Q
5580	Q
5600	J
5650	J
5650	M
5685	L
5700	J
5800	J
5850	J
5900	J
9600	J
9610	L
9625	F
9630	F
Sure Shot	
1832	F
1848	F
Swingline, Desa/Powerfast	
800	M
1000	M
10060	M
10401	J
31600	M
31690	J
31800	M
31890	J
80020	M

(Continued on following page)

For office staplers and staples, see page 1986.

Staples for Air-Powered, Electric, Cordless, and Manual Staplers *(Cont. from previous pg.)*

Staple Wd.	Leg Lg.	Small Quantity Box Qty.		Box	Large Quantity Box Qty.		Box
Galvanized Steel							
A 7/32"	1/2"	1,000	58515A131	$4.83	7,000	58515A531	$27.69
A 7/32"	5/8"	1,000	58515A132	6.65	5,000	58515A532	23.74
A 7/32"	3/4"	1,000	58515A133	8.00	5,000	58515A533	28.57
A 7/32"	7/8"	1,000	58515A134	9.66	5,000	58515A534	34.51
A 7/32"	1"	1,000	58515A135	10.30	5,000	58515A535	36.78
A 7/32"	1 1/8"	1,000	58515A136	11.81	3,000	58515A536	26.25
A 7/32"	1 3/16"	1,000	58515A137	12.24	3,000	58515A537	27.20
A 7/32"	1 1/4"	1,000	58515A138	12.86	3,000	58515A538	28.57
A 7/32"	1 3/8"	1,000	58515A139	13.45	3,000	58515A539	29.89
B 1/2"	3/4"	1,000	58515A282	14.89	10,000	58515A482	99.28
B 1/2"	1"	1,000	58515A283	15.40	10,000	58515A483	102.69
B 1/2"	1 1/4"	1,000	58515A284	17.46	10,000	58515A484	116.41
B 1/2"	1 1/2"	1,000	58515A285	19.09	10,000	58515A485	127.30
B 1/2"	1 3/4"	1,000	58515A286	17.85	11,400	58515A686	137.30
B 1/2"	2"	1,000	58515A287	16.56	11,400	58515A687	127.42
C 1"	3/4"	1,000	58515A291	14.38	10,000	58515A491	95.87
C 1"	7/8"	1,000	58515A292	15.05	12,000	58515A692	125.44
C 1"	1"	1,000	58515A313	15.44	10,500	58515A713	102.95
C 1"	1 1/4"	1,000	58515A314	15.05	9,000	58515A714	94.07
C 1"	1 1/2"	1,000	58515A315	18.65	7,500	58515A715	93.25
D 7/16"	1 1/2"	1,000	58525A571	10.01	10,050	58525A671	66.71
D 7/16"	1 3/4"	1,000	58525A572	12.13	8,040	58525A672	63.86
D 7/16"	2"	1,000	58525A573	13.58	8,040	58525A673	71.47
E 1/2"	1 1/2"	1,000	58525A551	9.45	10,500	58525A651	62.98
E 1/2"	2"	1,000	58525A553	16.23	7,500	58525A653	81.16
F 1/4"	3/8"	1,000	6107A61	3.07	5,000	6107A21	10.60
F 1/4"	1/2"	1,000	6107A62	3.32	5,000	6107A22	11.46
F 1/4"	5/8"	1,000	6107A63	4.26	5,000	6107A23	14.69
F 1/4"	3/4"	1,000	6107A64	4.72	5,000	6107A24	16.27
F 1/4"	7/8"	1,000	6107A651	5.06	5,000	6107A25	17.44
F 1/4"	1"	1,000	6107A661	5.14	5,000	6107A26	17.71
F 1/4"	1 1/8"	1,000	6107A821	5.55	5,000	6107A52	19.13
F 1/4"	1 1/4"	1,000	6107A831	6.13	5,000	6107A53	21.15
F 1/4"	1 1/2"	1,000	6107A841	6.75	5,000	6107A54	23.29
F 1/4"	1 9/16"	1,000	6107A85	7.52	5,000	6107A55	25.92
G 7/16"	1 1/2"	1,000	58535A451	8.74	10,000	58535A651	58.27
G 7/16"	1 3/4"	1,000	58535A452	9.07	10,000	58535A652	60.47
G 7/16"	2"	1,000	58535A453	9.81	10,000	58535A653	65.39
H 1"	7/8"	1,000	58535A461	7.19	10,000	58535A661	47.92
H 1"	1"	1,000	58535A462	7.66	10,000	58535A662	51.08
H 1"	1 1/4"	1,000	58535A463	8.67	10,000	58535A663	57.83
H 1"	1 1/2"	1,000	58535A464	9.87	10,000	58535A664	65.81
J 3/8"	1/4"	1,250	60135A19	3.40	5,000	60135A019	11.74
J 3/8"	5/16"	1,250	60135A21	3.40	5,000	60135A021	11.74
J 3/8"	3/8"	1,250	60135A22	3.83	5,000	60135A022	13.22
J 3/8"	1/2"	1,250	60135A23	4.15	5,000	60135A023	14.30
J 3/8"	17/32"	1,250	60135A25	9.03	5,000	60135A025	31.15
J 3/8"	9/16"	1,250	60135A24	4.49	5,000	60135A024	15.48
K 15/32"	1/4"	1,000	5959A73	2.84	5,040	5959A23	8.36
K 15/32"	5/16"	1,000	5959A74	2.90	5,040	5959A24	9.17
K 15/32"	3/8"	1,000	5959A75	3.00	5,040	5959A25	9.31
L 1/2"	3/16"	____	____	____	5,000	60085A16	8.67
L 1/2"	1/4"	1,000	60085A67	2.10	5,000	60085A17	7.24
L 1/2"	5/16"	1,000	60085A68	2.21	5,000	60085A18	7.63
L 1/2"	3/8"	1,000	60085A69	2.84	5,000	60085A19	9.78
Galvanized Steel (Cont.)							
L 1/2"	1/2"	1,000	60085A72	$2.73	5,000	60085A22	$9.40
L 1/2"	9/16"	1,000	60085A75	3.47	5,000	60085A25	11.95
M 1/2"	1/4"	1,000	60095A65	2.64	5,000	60095A15	11.43
M 1/2"	5/16"	1,000	60095A66	3.49	5,000	60095A16	12.02
M 1/2"	3/8"	1,000	60095A67	3.81	5,000	60095A17	13.20
M 1/2"	1/2"	1,000	60095A68	4.16	5,000	60095A18	14.40
M 1/2"	9/16"	1,000	60095A71	4.50	5,000	60095A21	15.58
N 15/32"	3/8"	1,000	6009A115	3.65	5,000	6009A4	6.08
N 15/32"	1/2"	1,000	6009A21	4.10	5,000	6009A6	14.14
N 15/32"	9/16"	1,000	6009A91	4.54	5,000	6009A7	15.64
P 7/16"	1/4"	1,000	60105A22	5.78	6,000	60105A72	30.40
P 7/16"	3/8"	1,000	60105A17	5.51	5,000	60105A67	19.00
Q 7/16"	1/4"	1,000	60135A71	2.18	5,000	60135A11	7.53
Q 7/16"	5/16"	1,000	60135A72	2.29	5,000	60135A12	7.89
R 1/2"	1/4"	____	____	____	5,000	1952T2	8.79
R 1/2"	3/8"	____	____	____	5,000	1952T3	10.06
S 13/32"	3/16"	2,400	2055T49	3.01	____	____	____
T 7/16"	1/4"	1,050	2055T71	1.02	5,000	2055T52	3.59
T 7/16"	5/16"	1,050	2055T72	1.07	5,000	2055T53	3.18
V 3/16"	1/4"	____	____	____	4,000	4149A39	9.88
V 3/16"	3/8"	2,000	4149A41	5.84	____	____	____
V 1/2"	1/4"	1,600	4149A31	5.98	____	____	____
V 1/2"	3/8"	800	4149A32	4.18	____	____	____
V 1/2"	1/2"	800	4149A33	4.90	____	____	____
V 1/2"	5/8"	800	4149A34	4.80	____	____	____
X 3/16"	3/8"	1,000	6010A63	4.91	5,000	6010A23	6.54
X 3/16"	1/2"	1,000	6010A64	5.03	5,000	6010A24	7.18
X 3/16"	9/16"	1,000	6010A65	7.02	5,000	6010A25	7.58
Y 1/4"	3/8"	____	____	____	5,000	6017A13	12.36
Y 1/4"	7/16"	____	____	____	5,000	6017A14	12.36
Y 1/4"	9/16"	____	____	____	5,000	6017A15	12.95
Z 1/2"	9/16"	1,000	6017A62	6.65	____	____	____
Z 1/2"	5/8"	1,000	6017A63	6.65	____	____	____
Z 1/2"	7/8"	1,000	6017A64	7.32	____	____	____
AA 1/2"	5/16"	____	____	____	5,000	7418A52	9.76
AA 1/2"	3/8"	____	____	____	5,000	7418A53	11.57
AA 1/2"	1/2"	____	____	____	5,000	7418A54	12.19
AA 1/2"	9/16"	____	____	____	5,000	7418A55	12.53
AA 1/2"	5/8"	____	____	____	5,000	7418A56	15.20
BB 1/2"	3/8"	2,400	7418A32	12.46	____	____	____
BB 1/2"	1/2"	2,400	7418A33	13.66	____	____	____
BB 1/2"	5/8"	2,400	7418A34	15.60	____	____	____
Clear Insulated Galvanized Steel							
W 5/16"	11/16"	300	57025A41	7.68	____	____	____
Black Insulated Galvanized Steel							
W 5/16"	11/16"	300	57025A42	7.68	____	____	____
Noncorrosive Monel							
J 3/8"	1/4"	1,000	60135A51	22.52	____	____	____
J 3/8"	5/16"	1,000	60135A52	25.85	____	____	____
J 3/8"	3/8"	1,000	60135A53	28.35	____	____	____
J 3/8"	1/2"	1,000	60135A54	37.54	____	____	____
Stainless Steel							
J 3/8"	3/8"	1,000	60135A61	12.90	5,000	60135A061	44.50
High-Carbon Galvanized Steel							
L 1/2"	9/16"	1,000	60085A26	4.90	____	____	____

Electric Staplers

Choose these staplers when speed and continuous use are essential. To drive a staple, either touch the work surface then pull the trigger or pull the trigger then touch the work surface. You can drive additional staples without lifting the stapler, so it is ready for immediate use. They do not clinch the staple.

Style 1 has a plastic housing and includes a 10-ft. power cord with three-prong plug. Furnished in a 10"×8"×3½" plastic carrying case. UL and C-UL listed.

Style 2 has a magnesium housing with steel base and includes a 12-ft. power cord with three-prong plug. It is self-lubricating and has a nose design that allows quick jam clearing. Furnished in a 13"×10"×4" plastic carrying case. UL listed.

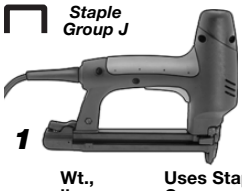

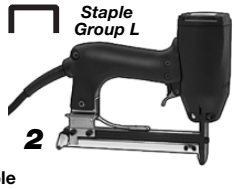

	Staple Wd.	Staple Leg Lg.	Staple Cap.	Electrical Specifications Volts	Amps	Hz	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Staple Group		
1	3/8"	1/4"-9/16"	82	120 VAC	14	60	8"×6"	3.5	J	96132A200	$89.97
2	1/2"	5/32"-9/16"	84	120 VAC	15	60	9"×7½"	4.2	L	6010A1	286.29

Cordless Stapler

All the benefits of an electric stapler without the constraints of a cord. This stapler has a flush front so you can easily maneuver into tight corners. Comes with a depth of drive control and an LED light to indicate when the stapler is ready to fire again. Stapler sets approximately 1,500 staples on a single charge; it does not clinch the staple. Housing is high impact plastic. Stapler has a safety trigger lock and includes a 10.8 volt rechargeable battery pack and a 60-minute battery charger. Furnished in a 15"×13"×3 15/16" plastic carrying case. UL listed.

Staple Wd.	Staple Leg Lg.	Staple Cap.	Volts	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Staple Group		
3/8"	1/4"-9/16"	156	10.8	9½"×8"	3.9	J	60765A6	$136.24

Staplers

For staples, see pages 3364-3365. For brad nails, see page 3369.

Air-Powered Staplers

Known for their durability, these staplers have a rugged aluminum housing. To drive a staple, hold the nose against the work surface and then pull the trigger. Tools do not clinch the staple. ***Style 3*** has an anti-jam mechanism in the magazine.

Connections: NPT female.

	Staple Wd.	Staple Leg Lg.	Staple Cap.	Air Inlet	Operating Pressure, psi	O'all Size, Lg. × Ht.	Wt., lbs.	Uses Staple Group		
1	1/4″	1/2″-1″	90	1/4″	70-100	8″ × 8 7/8″	2.6	F	**6107A15**	$265.90
2	1/4″	1/2″-1 1/2″	180	1/4″	70-105	13 1/4″ × 9 3/4″	4.0	F	**6107A41**	365.45
3	1″	1/2″-1 1/2″	160	1/4″	70-120	14″ × 8″	4.7	C	**61085A65**	427.24

Economy Air-Powered Stapler

Just like most manual staplers, this air-powered model works with 3/8″ wide staples. To drive a staple, either hold the nose against the work surface then pull the trigger or pull the trigger then touch the work surface. You can drive additional staples without lifting the stapler, so it is ready for immediate use. Does not clinch the staple. This stapler has an aluminum alloy housing and is furnished in a 11 1/2″ × 9″ × 2 1/4″ plastic carrying case.

Connections: NPT female.

Staple Wd.	Staple Leg Lg.	Staple Cap.	Air Inlet	Operating Pressure, psi	O'all Size, Lg. × Ht.	Wt., lbs.	Uses Staple Group		
3/8″	1/4″-9/16″	100	3/8″	60-100	9 1/2″ × 6 1/2″	2.9	J	**93458A600**	$52.58

Air-Powered Stapler for Upholstery

Stapler has a lightweight aluminum housing. It will not clinch the staple.

To drive a staple, hold the nose against the work surface then pull the trigger; you can drive a second staple without lifting the stapler. Furnished in a 11 1/2″ × 9 1/2″ × 2 1/4″ plastic carrying case.

Connections: NPT female.

Staple Wd.	Staple Leg Lg.	Staple Cap.	Air Inlet	Operating Pressure, psi	O'all Size, Lg. × Ht.	Wt., lbs.	Uses Staple Group		
1/2″	1/4″-9/16″	100	1/4″	60-100	9″ × 6″	2.9	L	**61075A71**	$47.70

Air-Powered Clinch Staplers

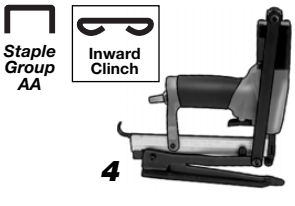

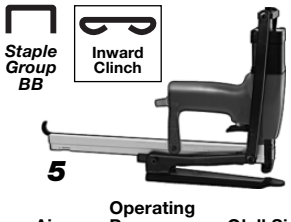

Great for packaging applications—these plier-style staplers compress the material as the staple is driven for a tight clinch. Just pull the trigger to actuate the tool. Both clinch the staple inward. They have an aluminum housing.

Connections: NPT female.

	Staple Wd.	Staple Leg Lg.	Staple Cap.	Air Inlet	Operating Pressure, psi	O'all Size, Lg. × Ht.	Throat Dp.	Throat Opening	Wt., lbs.	Uses Staple Group		
4	1/2″	5/16″-5/8″	84	1/4″	72-87	9″ × 9 7/8″	5 7/8″	7/8″	4.2	AA	**7418A51**	$708.53
5	1/2″	3/8″, 1/2″, 5/8″	100	1/4″	72-87	14 1/2″ × 9 7/8″	5 7/8″	7/8″	4.6	BB	**7418A31**	844.29

Hammer Staplers

Staple Groups J, K&N

Staple Group L

Balanced for one-handed use, these hammer staplers reduce fatigue and drive staples as fast as you can swing them. Use at arm's length, overhead, or at floor level. Staplers are made of steel and have heavy duty machined jaws to help prevent jamming plus quick and easy back-end loading; they do not clinch the staples.

Staple Wd.	Staple Leg Lg.	Staple Capacity	O'all Size, Lg. × Ht.	Wt., lbs.	Uses Staple Group		
3/8″	5/16″, 3/8″, 1/2″	125	11″ × 3 1/2″	2.3	J	**6009A12**	$41.72
15/32″	1/4″, 5/16″, 3/8″	158	11″ × 1 1/2″	1.1	K	**6009A11**	24.26
15/32″	3/8″, 1/2″, 9/16″	168	11 3/8″ × 3 3/4″	2.5	N	**6009A9**	91.73
1/2″	3/16″, 1/4″, 5/16″	168	11 3/8″ × 3 3/4″	2	L	**6009A8**	75.71
Replacement Feed Bar for 6009A9						**6009A32**	5.75

For staples, see pages 3364-3365. For brad nails, see page 3369.

Manual Staplers

Staple Group J

1

Staple Group J

Outward Clinch

2

Staple Group L

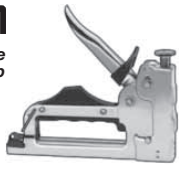

3

You can depend on these classics for any stapling job in your plant. ***Standard drive*** staplers are steel with a chrome finish and have a see-through refill window. *Style* 1 does not clinch; it is furnished alone or as a kit. The kit is packed in an 8½″×6¼″×2¼″ plastic case and includes the stapler, 1,250 starter staples, a staple lifter, and nose attachments for stapling screens and wires. *Style 2* provides an outward clinch, which is ideal for surface-tacking jobs, such as installing fiberglass installation around duct work.

The ***adjustable drive*** stapler lets you select a power setting for the best drive depth. It also has a handle stop, built-in jam clear mechanism, adjustable power knob for drive depth, and hold-down storage clip. Made of steel with a bright-nickel finish, it does not clinch the staple.

	Staple Wd.	Staple Leg Lg.	Staple Cap.	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Staple Group	Stapler		Stapler Kit	
Standard Drive										
1	3/8″	1/4″-9/16″	79	7¼″×6″	2.25	J	6013A15	$25.10	6013A14	$33.26
2	3/8″	1/4″-9/16″	79	7¼″×6″	2.25	J	6046A32	40.86	—	—
Adjustable Drive										
3	1/2″	3/16″-9/16″	84	7⅜″×6 11/16″	2	L	6008A13	57.00	—	—

Manual Wire and Cable Staplers

Install telephone, TV, and other cables safely. A grooved cable guide in the stapler prevents the staples from penetrating the wire or cable jacket. Made of steel with a chrome finish, they do not clinch the staple.

Staple Group Y

4

Staple Group Z

5

Staple Group W

6

	For Wire/ Cable Dia.	Staple Wd.	Staple Leg Lg.	Staple Cap.	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Staple Group		
4	1/4″ Round	1/4″	9/32″-9/16″	84	7¼″×6″	2	Y	6017A11	$41.61
5	1/2″ Flat	1/2″	9/16″-7/8″	50	7¼″×6¼″	2.25	Z	6017A61	42.31
6	5/16″ Round	5/16″	11/16″	30	7″ ×5¾″	2	W	57025A35	47.07

Manual Clinch Staplers

The tongue on these plier-type staplers holds the material while you staple. Plus they have cam-actuated double leverage so they're easy to squeeze, reducing operator fatigue. Staplers are made of steel with a chrome finish. Staples clinch inward.

Heavy duty stapler with spear point penetrates the edges of corrugated containers to seal them from within.

Medium Duty Staple Group T

Heavy Duty Staple Group R

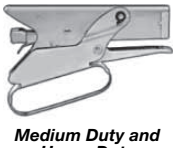

Medium Duty and Heavy Duty

Staple Group R

Heavy Duty with Spear Point

Inward Clinch

	Staple Wd.	Staple Leg Lg.	Staple Cap.	O'all Size, Lg.×Ht.	Throat Dp.	Throat Opening	Wt., lbs.	Uses Staple Group		
Medium Duty	7/16″	1/4″, 5/16″	158	7″ ×4½″	2½″	1/2″	1	T	2055T51	$19.11
Heavy Duty	1/2″	1/4″, 3/8″	72	7″ ×4½″	2½″	1/2″	1.1	R	2055T61	26.36
Heavy Duty with Spear Point	1/2″	1/4″, 3/8″	72	7¼″×6¼″	2½″	1/2″	1.2	R	1952T1	38.43

Manual Stapler/Brad Nailer

The ergonomic design positions your hand up front to eliminate kickback and drive staples and nails deeper. This stapler has a staple indicator for precise positioning and a see-through refill window. Made of steel with a brushed silver-gray finish and a rubberized grip. Nailer does not clinch staples.

Staple Group J

Nail Group K

Staple Wd.	Staple Leg Lg.	Brad. Lg.	Staple/ Brad Cap.	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Staple Group	Uses Nail Group		
3/8″	1/4″-9/16″	9/16″	80	7″×6¼″	2.25	J	K	36165A72	$33.43

Staple Removers and Pullers

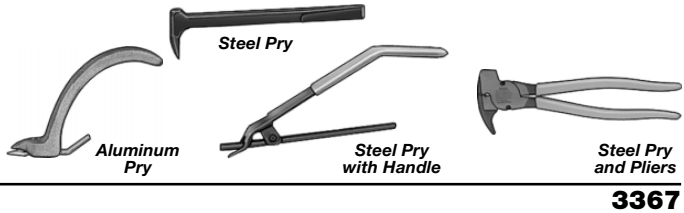

	Lg.	Wt., lbs.		
Aluminum Pry	5½″	1/4	1957T14	$10.10
Steel Pry	7½″	1/2	61815A66	8.96
Steel Pry with Handle	7½″	1	61815A65	13.16
Steel Pry and Pliers	10 5/16″	1½	5636A4	18.89

Nails for Air-Powered, Electric, and Cordless Nailers

Framing Nail Smooth Shank — *Framing Nail Ring Shank* — *Finishing/Brad Nail Smooth Shank* — *Framing Clipped Head* — *Full Round Head* — *Finishing Clipped Head* — *Brad Head*

AA, A&B

C

D&E

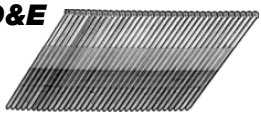

F-K

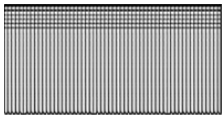

Plain steel is made of general purpose low-strength steel.
Galvanized steel offers excellent protection against rust and weather.
18-8 stainless steel has excellent corrosion resistance. May be mildly magnetic.

Type 316 stainless steel contains molybdenum for even better corrosion resistance than 18-8 stainless steel. May be mildly magnetic.
Finishing nails and ***brad nails*** have small, discreet heads that are easy to conceal. Finishing nails have a thicker shank than brad nails. Length is measured from the top of the head.

Find your nailer brand name and model number to see which nail group it fits. Then go to that nail group and choose from those listed.

Model No.	Fits
Arrow	
ET100, ET125, ET200	*H*
Atro	
928CH28	*A*
CHS933	*B*
MINOR 30, 38	*G*
MINOR 600	*F*
TIP 50	*F*
Bostitch	
BT125, BT1855, BT200, BT35B, BT50B	*G*
F28WW	*A*
N100C	*C*
N100S	*A*
N80C	*C*
N80CB-1	*C*
N80SB	*A*
N86C	*C*
N86S	*A*
N88WW	*A*
N88RH	*AA*
SB-1664FN	*F*
SB-1842BN	*G*
SB-1850BN	*G*
T29-30, T31-1B	*G*
T35-40, T36-35	*F*
T40-B	*F*
Campbell Hausfeld	
NB0033000	*G*
NB006500	*F*
NB008500	*F*
NB356500	*D*
NS2890	*A*
Craftsman	
18309, 18310	*G*
18314, 18321	*F*
18323	*G*
18329	*D*
18424	*G*
18430	*A*

Model No.	Fits
Craftsman (Cont.)	
18431	*F*
18442, 18448	*D*
18496, 18499	*G*
DeWalt	
D51238K	*G*
D51256	*F*
D51275K	*D*
D51822	*B*
D51823	*B*
D51844	*AA*
DC612KA	*F*
Duo-Fast	
ABFN 740	*F*
BB4440	*G*
CN-325	*A*
CN-350B	*AA*
CNW-75	*C*
DAFN-6432 & -6480	*D*
DBN-40525C	*G*
DBN-4440 & -4450	*G*
LFN-748A & -764	*F*
PRO-5	*G*
Fasco	
F20PGN31CT	*G*
F20TGN40CT	*G*
F26CFN-50	*F*
F3PBA-50	*D*
F3PFN-50	*F*
F3TFN50 & N70	*D*
F4 BA-65	*D*
F4PFN70	*D*
GN31	*G*
R3CBA50CT	*D*
R3CFN-50	*F*
R3TFN-70	*F*
R4BA65CT	*D*
R5CHHN28-90SS-CT	*A*
R5CN15-W-65	*C*
R5NCN15W-90SSCT	*C*
RSCGN50CT	*G*

Model No.	Fits
Haubold	
SKN30JN/12	*G*
SKN40V/12	*G*
SKN64A	*F*
Hilti	
BN136B	*G*
BN196B	*F*
Hitachi	
NR65AK	*B*
NR83AA, NR83AA2	*B*
NR90AC2	*AA*
NR90AD	*B*
NT32AE, NT45A	*G*
NT50AD, NT50AE	*G*
NT65A, NT65A2	*F*
NT65AA, NT65MA, NT65MA2	*D*
NV83A	*C*
Makita	
AF501, 502 & 503	*G*
AF631, AF632	*D*
AN901	*C*
Max	
80F	*C*
CN565D, CN565S	*C*
CN665	*C*
CN70, CN80	*C*
NF201/18-35	*G*
NF211/18-25	*G*
NF211/18-50	*G*
NF352-ST	*F*
NF550	*D*
SN890CH/28	*A*
SN890CH/34	*B*
McMaster-Carr	
36165A72	*K*
36185A34	*D*
36275A65	*C*
5869A26	*B*
5869A36	*E*
5869A94	*F*
5903A41	*H*

Model No.	Fits
McMaster-Carr (Cont.)	
5903A42	*H*
5906A46	*A*
6101A61, 6101A62	*G*
96384A21	*AA*
Orca	
EZ-1	*J*
Paslode	
902200	*B*
900600	*E*
2138-F18 & -F8II	*G*
3200-F16	*F*
3250-F16	*F*
4275/CN70	*C*
5250/655 PP	*B*
5300C	*C*
5300S	*B*
5325/CN80	*C*
5325S	*B*
5325SRH	*AA*
5350C	*C*
5350S	*B*
F275C, F325C	*C*
F350S	*B*
IM200-F18	*G*
IM250A	*E*
IM250-F16, IM250II	*F*
IM325, IM350	*B*
IMCT325	*B*
IMF250A	*D*
MU-112-F & -212-F	*F*
P275C, P325C, P350C	*C*
SK312	*B*
T125-F18	*G*
T200-F18	*G*
T250-F16	*F*
Porter-Cable	
BN125	*G*
BN200, BN200V12	*G*
CDA250, CDA250A	*D*
CFN250	*F*

Model No.	Fits
Porter-Cable (Cont.)	
Coil 350	*C*
DA250A	*D*
FC350, FC350A, FC350S	*B*
FN200, FN250, FN250A, FN250B	*F*
FR350	*AA*
Powershot	
5700	*K*
8000	*K*
Senco	
Air Free 25	*G*
Air Free 41	*D*
FinishPro 15, 18, 25XP, 2N1	*G*
FinishPro 32	*F*
FinishPro 35, 41	*D*
FramePro 600, 650, 651, 750XL, 751XP	*B*
FramePro 602, 652	*AA*
SCN 300, 60, 65	*C*
SFN 1, 1+, 2B, 40	*D*
SLP20	*G*
SN1	*D*
SN2+	*B*
SN325, SN325+, SN4, SN70	*B*
Spotnails	
CB1820, DB1825	*G*
FB1632	*F*
GB1832	*G*
KB1564, XB1564	*F*
MCW64	*C*
YCN63	*C*
YTD90	*B*
Surebonder	
5950	*H*
9725, 9750	*G*
9755	*F*
9756	*D*
9772	*AA*

	Nail Group	Nail Material	Size	Lg.	Shank Dia.	Shank Type	Small Quantity Box Qty.		Box	Large Quantity Box Qty.		Box
Framing Nails— *Full Round Head; 21° Angled Strip*												
	AA	Plain Steel	8d	2⅜″	0.113″	Smooth	500	**96384A320**	$18.50	2,500	**96384A620**	$63.80
	AA	Plain Steel	10d	3″	0.120″	Smooth	500	**96384A330**	26.19	2,000	**96384A630**	90.31
	AA	Plain Steel	12d	3¼″	0.131″	Smooth	500	**96384A350**	26.05	2,000	**96384A650**	89.84

(Continued on following page)

Nails for Air-Powered, Electric, and Cordless Nailers *(Continued from previous page)*

Nail Group	Nail Material	Size	Lg.	Shank Dia.	Shank Type	Small Quantity Box Qty.		Box	Large Quantity Box Qty.		Box
***Framing Nails**—Clipped Head; 28° Angled Strip*											
A	Plain Steel	6d	2″	0.113″	Smooth	250	**58505A11**	$10.83	2,000	**58505A51▲**	$34.92
A	Plain Steel	8d	2⅜″	0.120″	Smooth	250	**58505A12**	9.22	2,000	**58505A52▲**	34.85
A	Plain Steel	12d	3¼″	0.120″	Smooth	250	**58505A14**	14.38	2,000	**58505A54▲**	47.60
A	Plain Steel	12d	3¼″	0.131″	Ring	250	**58505A97**	27.16	—	—	—
A	Plain Steel	16d	3½″	0.131″	Smooth	250	**58505A15**	13.30	2,000	**58505A55▲**	63.35
A	Galvanized Steel	8d	2⅜″	0.120″	Smooth	250	**58505A22**	19.16	2,000	**58505A62▲**	58.07
A	Galvanized Steel	10d	3″	0.120″	Smooth	250	**58505A91**	15.31	2,000	**58505A31▲**	72.91
A	Galvanized Steel	12d	3¼″	0.120″	Smooth	250	**58505A24■**	16.16	2,000	**58505A64▲**	76.95
A	18-8 Stain. Steel	8d	2⅜″	0.113″	Ring	250	**58505A81**	47.56	—	—	—
A	18-8 Stain. Steel	10d	3″	0.120″	Ring	250	**58505A83**	56.00	—	—	—
A	18-8 Stain. Steel	12d	3¼″	0.131″	Ring	250	**58505A85**	63.58	—	—	—
***Framing Nails**—Clipped Head; 30°–34° Angled Strip*											
B	Plain Steel	8d	2⅜″	0.113″	Smooth	250	**58555A263**	12.90	5,000	**58555A763**	114.90
B	Plain Steel	10d	3″	0.120″	Smooth	250	**58555A264**	15.87	3,000	**58555A764**	67.58
B	Plain Steel	12d	3¼″	0.131″	Smooth	250	**58555A265**	11.66	2,500	**58555A765**	72.88
B	18-8 Stain. Steel	8d	2⅜″	0.113″	Ring	250	**58555A363**	46.67	—	—	—
B	18-8 Stain. Steel	10d	3″	0.120″	Ring	250	**58555A364**	58.33	—	—	—
B	18-8 Stain. Steel	12d	3¼″	0.131″	Ring	250	**58555A365**	63.00	—	—	—
***Framing Nails**—Full Round Head; Coil*											
C	Plain Steel	4d	1½″	0.099″	Ring	900	**58915A35**	8.68	9,000	**58915A45**	62.00
C	Plain Steel	6d	2″	0.099″	Smooth	900	**58915A36**	14.81	3,600	**58915A46**	41.13
C	Plain Steel	8d	2½″	0.120″	Smooth	675	**58915A37**	14.63	2,700	**58915A47**	40.65
C	Plain Steel	12d	3¼″	0.120″	Smooth	675	**58915A4**	20.45	2,700	**58915A49**	56.80
C	Galvanized Steel	8d	2½″	0.099″	Smooth	675	**58915A38**	21.24	3,600	**58915A48**	78.65
C	Galvanized Steel	10d	3″	0.120″	Smooth	675	**58915A39**	40.47	2,700	**58915A51**	112.41
C	18-8 Stain. Steel	4d	1½″	0.099″	Ring	300	**58915A71**	23.41	—	—	—
C	18-8 Stain. Steel	6d	2″	0.099″	Ring	300	**58915A73**	25.43	—	—	—
C	18-8 Stain. Steel	8d	2⅜″	0.113″	Ring	300	**58915A75**	34.08	—	—	—
***Finishing Nails**—Clipped Head; Angled Strip*											
D	Plain Steel	15 ga.	1¼″	0.072″	Smooth	1,000	**36185A62**	9.11	4,000	**36185A42**	25.30
D	Plain Steel	15 ga.	1½″	0.072″	Smooth	1,000	**36185A63**	15.82	4,000	**36185A43**	26.36
D	Plain Steel	15 ga.	1¾″	0.072″	Smooth	1,000	**36185A64**	18.20	4,000	**36185A44**	30.34
D	Plain Steel	15 ga.	2″	0.072″	Smooth	1,000	**36185A65**	21.23	4,000	**36185A45**	35.38
D	Plain Steel	15 ga.	2¼″	0.072″	Smooth	1,000	**36185A66**	16.21	4,000	**36185A46**	45.02
D	Plain Steel	15 ga.	2½″	0.072″	Smooth	1,000	**36185A67**	17.29	4,000	**36185A47**	48.03
***Finishing Nails**—Brad Head; Angled Strip*											
D	Type 316 Stain. Steel	15 ga.	1½″	0.072″	Smooth	500	**36185A81**	38.15	—	—	—
D	Type 316 Stain. Steel	15 ga.	2″	0.072″	Smooth	500	**36185A82**	54.50	—	—	—
D	Type 316 Stain. Steel	15 ga.	2½″	0.072″	Smooth	500	**36185A83**	61.90	—	—	—
E	Galvanized Steel	16 ga.	1¼″	0.0625″	Smooth	—	—	—	2,000	**5869A81**	15.40
E	Galvanized Steel	16 ga.	1½″	0.0625″	Smooth	—	—	—	2,000	**5869A82**	18.40
E	Galvanized Steel	16 ga.	1¾″	0.0625″	Smooth	—	—	—	2,000	**5869A83**	20.10
E	Galvanized Steel	16 ga.	2″	0.0625″	Smooth	—	—	—	2,000	**5869A84**	21.35
E	Galvanized Steel	16 ga.	2½″	0.0625″	Smooth	—	—	—	2,000	**5869A85**	23.67
E	Type 316 Stain. Steel	16 ga.	1½″	0.0625″	Smooth	500	**5869A011**	32.70	—	—	—
E	Type 316 Stain. Steel	16 ga.	2″	0.0625″	Smooth	500	**5869A022**	43.60	—	—	—
E	Type 316 Stain. Steel	16 ga.	2½″	0.0625″	Smooth	500	**5869A033**	49.05	—	—	—
***Finishing Nails**—Brad Head; Straight Strip*											
F	Galvanized Steel	16 ga.	1¼″	0.0625″	Smooth	1,000	**60125A64**	12.32	2,500	**60125A42**	25.66
F	Galvanized Steel	16 ga.	1½″	0.0625″	Smooth	1,000	**60125A66**	15.16	2,500	**60125A44**	31.58
F	Galvanized Steel	16 ga.	1¾″	0.0625″	Smooth	1,000	**60125A67**	17.12	2,500	**60125A45**	35.66
F	Galvanized Steel	16 ga.	2″	0.0625″	Smooth	1,000	**60125A68**	18.44	2,500	**60125A46**	38.42
F	Galvanized Steel	16 ga.	2½″	0.0625″	Smooth	1,000	**60125A69**	24.42	2,500	**60125A47**	50.88
F	Type 316 Stain. Steel	16 ga.	1¼″	0.0625″	Smooth	500	**60125A81**	33.25	—	—	—
F	Type 316 Stain. Steel	16 ga.	1½″	0.0625″	Smooth	500	**60125A82**	37.50	—	—	—
F	Type 316 Stain. Steel	16 ga.	2″	0.0625″	Smooth	500	**60125A83**	42.00	—	—	—
F	Type 316 Stain. Steel	16 ga.	2½″	0.0625″	Smooth	500	**60125A84**	45.48	—	—	—
***Brad Nails**—Brad Head; Straight Strip*											
G	Galvanized Steel	18 ga.	⅝″	0.0475″	Smooth	1,000	**60015A12**	5.28	5,000	**60015A72**	18.85
G	Galvanized Steel	18 ga.	¾″	0.0475″	Smooth	1,000	**60015A13**	5.15	5,000	**60015A73**	18.40
G	Galvanized Steel	18 ga.	1″	0.0475″	Smooth	1,000	**60015A14**	6.93	5,000	**60015A74**	24.76
G	Galvanized Steel	18 ga.	1 3/16″	0.0475″	Smooth	1,000	**60015A15**	6.87	5,000	**60015A75**	24.55
G	Galvanized Steel	18 ga.	1¼″	0.0475″	Smooth	1,000	**60015A16**	10.16	5,000	**60015A77**	36.29
G	Galvanized Steel	18 ga.	1⅜″	0.0475″	Smooth	1,000	**60015A17**	6.19	3,000	**60015A79**	14.73
G	Galvanized Steel	18 ga.	1½″	0.0475″	Smooth	1,000	**60015A18**	9.12	5,000	**60015A76**	32.56
G	Galvanized Steel	18 ga.	1 9/16″	0.0475″	Smooth	1,000	**60015A19**	6.47	2,000	**60015A81**	10.78
G	Galvanized Steel	18 ga.	1⅝″	0.0475″	Smooth	1,000	**60015A2**	11.29	5,000	**60015A78**	40.33
G	Galvanized Steel	18 ga.	2″	0.0475″	Smooth	1,000	**60015A21**	11.62	5,000	**60015A82**	41.49
G	Type 316 Stain. Steel	18 ga.	¾″	0.0475″	Smooth	500	**60015A22**	27.50	—	—	—
G	Type 316 Stain. Steel	18 ga.	1″	0.0475″	Smooth	500	**60015A23**	31.25	—	—	—
H	Galvanized Steel	18 ga.	⅝″	0.0475″	Smooth	500	**60015A64★**	2.81	—	—	—
H	Galvanized Steel	18 ga.	¾″	0.0475″	Smooth	—	—	—	2,000	**5903A52★**	5.96
H	Galvanized Steel	18 ga.	1″	0.0475″	Smooth	—	—	—	2,000	**5903A54★**	7.05
H	Galvanized Steel	18 ga.	1″	0.0475″	Smooth	—	—	—	2,000	**5903A53●**	7.05
H	Galvanized Steel	18 ga.	1¼″	0.0475″	Smooth	—	—	—	2,000	**5903A55**	7.60
J	Galvanized Steel	18 ga.	⅝″	0.0475″	Smooth	—	—	—	3,000	**4149A45**	6.54
K	Galvanized Steel	18 ga.	9/16″	0.0475″	Smooth	—	—	—	1,600	**36165A75**	6.67

▲ Head is round. ■ Has a ring shank. ★ Head is painted brown. ● Head is painted white.

Nailers & Hog Rings

For nails, see pages 3368-3369.

Air-Powered Angled Framing Nailers

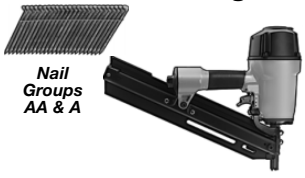

Nail Groups AA & A

An angled magazine provides balance and allows for maneuvering into tight spaces. Nailers have a sequential trigger so each time you drive a nail, you must hold the nose of the tool against your work surface. Tools have a lightweight, rugged cast housing and adjustable nail-depth control. Connections: NPT female.

Nail Size	Nail Lg.	Nail Capacity	Air Inlet	Operating Pressure, psi	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Nail Group		
For Full Round-Head Nails; 21° Angled Strip									
8d-12d	2″-3½″	80	¼″	80-100	21½″×14¼″	8.4	AA	**96384A210**	$333.55
For Clipped-Head Nails; 28° Angled Strip									
6d-16d	2″-3½″	100	¼″	80-120	20″ ×14¼″	7.6	A	**5906A46**	407.87

Paslode Cordless Angled Nailers

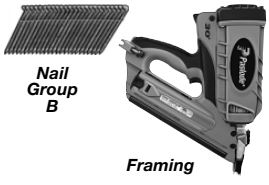

Nail Group B — Framing

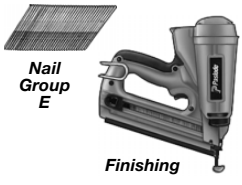

Nail Group E — Finishing

Nailers are powered by a disposable fuel cell and a rechargeable battery for complete freedom from cords, hoses, and compressors. Nailers have a sequential trigger so the operator must hold the nose of the tool against the work surface before pulling the trigger. This action must be repeated each time the tool drives a nail. They have a plastic housing, an adjustable drive depth, and a built-in belt hook. Plus they come with a 6-volt NiCad battery, battery charger, safety glasses, and a 19″ Lg.×19″ Ht.×5″ Dp. plastic carrying case. Fully charged battery sets about 4,000 nails; one fuel cell sets about 1,200 nails. Nails and fuel cells are sold separately. ***Angled finishing nailer*** gives you easy access to corners and tight spots. Includes a nonmarring tip.

	Nail Size	Nail Lg.	Nail Cap.	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Nail Group	Nailers		Fuel Cells Pkg. Qty.	
Framing	6d-12d	2″ -3¼″	48	12″×14½″	6.1	B	**5869A46**	$433.75	1	**5869A53** $14.32
Finishing	16 ga.	1¼″-2½″	100	11″×11½″	4.9	E	**5869A36**	391.25	4	**5869A91** 31.50

Air-Powered Coil-Fed Framing Nailer

Nail Group C

When repeated reloading would hamper your productivity, this lightweight, quick-loading, high-volume tool delivers. Nailers have a sequential trigger so the operator must hold the nose of the tool against the work surface before pulling the trigger. This action must be repeated each time the tool drives a nail. Includes a kit to convert it to contact trigger nose, which allows you to depress the trigger at the same time the nose is placed against the work surface. The nailer has an aluminum housing and a rubber hand grip. Connections: NPT female.

Nail Size	Nail Lg.	Nail Capacity	Air Inlet	Operating Pressure, psi	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Nail Group		
4d-12d	1½″-3¼″	225-300	¼″	70-100	12 1/16″×13″	8.4	C	**36275A65**	$404.12

Brad Nailers

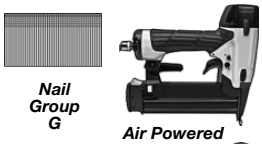

Nail Group G — Air Powered

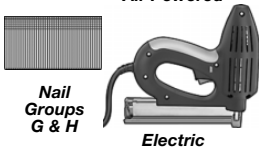

Nail Groups G & H — Electric

Use these powerful brad nailers for a variety of applications. Nailers have a sequential trigger so the operator must hold the nose of the tool against the work surface before pulling the trigger. This action must be repeated each time the tool drives a nail. ***Air-powered nailer*** has a selectable trigger that also allows conversion from sequential mode to contact mode. Also has a durable magnesium housing, a molded-in rubber grip, and comes in a 11.8″ Lg.×12.2″ Wd.×4.6″ Ht. plastic carrying case. Connections: NPT male. ***Electric nailer*** has a plastic body with a comfort-grip handle, a safety trigger, and a nonmoving nosepiece. Comes in a 14″ Lg.×10¾″ Wd.×3¼″ Dp. plastic carrying case. Includes a 9½″ cord with three-prong plug and operates on 120 VAC, 60 Hz. *Note:* Use only with 12-ga. extension cord with a three-prong plug.

Nail Ga.	Nail Lg.	Nail Capacity	Air Inlet	Operating Pressure, psi	O'all Size, Lg.×Ht.	Wt., lbs.	Uses Nail Group		
Air-Powered Nailer									
18	5/8″-2⅛″	100	¼″	70-100	9¼″×9½″	2.7	G	**6101A62**	$123.34
Electric Nailer									
18	5/8″-1¼″	100	—	—	9″ ×8½″	4.25	G or H	**5903A42**	89.67

Compact Air-Powered Nailer

Fits in the palm of your hand and can be used in any position. The nailer drives the nail and stops when the nail is set. Has a magnet in the guide to hold the nail for one hand operation. Sets 5d-70d common nails, weighs 2½ lbs., runs on 2-4 cfm of compressed air, operates on 70-100 psi. Connection: ¼″ NPT female.

6078A35 ..... $57.86

Hog Rings and Pliers

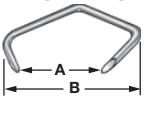

Ideal for sack closure, for tagging, and for repairing fences. Rings are made from 12½-ga. (0.099″) steel wire with a rust-resistant copper coating. Use the optional hog-ring pliers to make closing hog rings easier. Pliers are malleable steel and 6⅝″ long.

Hog Rings

(A)	(B)	Pkg. Qty.		Pkg.
5/8″	1 5/32″	100	**92258A670**	$6.60
¾″	1 5/16″	100	**92258A671**	6.60
7/8″	1½″	100	**92258A672**	6.60

Pliers

5416A15 ..... $12.03

Hog-Ring Assortment

400 rings plus pliers. Includes 100 each ½″, ⅝″, ¾″, and ⅞″ wide rings. All are made of copper-coated 12½-ga. (0.099″) steel wire, except ½″ wide rings, which are made of plain 14-ga. (0.078″) steel wire. Packed in a 13″ Lg.×8¾″ Wd.×2¼″ Dp. plastic case.

92305A250 ..... $36.96

Auto-Feed Hog-Ring Pliers and Rings

Pliers

Ring

No need to constantly load, these hog-ring pliers hold up to 50 rings for continuous action. ***Pliers*** have a steel body and are 7″ long. ***Hog rings*** are 19-gauge (0.041″) galvanized steel. Box qty. is 2,500.

Pliers	**3406A71**	**Each**	$41.73
Hog Rings	**3406A75**	**Box**	$16.27

Comfort-Grip Hog-Ring Pliers and Rings

Auto-Feed

Standard

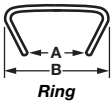

Ring

Pliers are cushioned for comfortable, long-term use. ***Standard pliers*** hold one ring at a time. ***Auto-feed pliers*** hold up to 50 rings. Both are plastic and 7½″ long.

Hog rings are made from 15-gauge galvanized steel.

Pliers

Standard	**90155A025**	$27.72
Auto-Feed	**90155A065**	57.19

Hog Rings

	(A)	(B)	Clinched Dia.	Pkg. Qty.		Pkg.
Standard	½″	¾″	⅛″ -5/32″	1,000	**90155A032**	$21.25
Auto-Feed	7/16″	¾″	3/16″-¼″	215	**90155A071**	8.88

About Nails

Aluminum—Resistant to chemical and atmospheric corrosion. ***Stainless Steel***—Excellent corrosion resistance. ***Copper*** and ***Brass***—Decorative and corrosion resistant. ***Steel***—*General purpose, zinc plated,* and *galvanized* provide rust resistance. Package quantity for nails is approximate.

Common Nails

Our most popular framing nails have a larger shank to provide greater resistance to bending.
Also Available: Plain steel common nails in 5-lb. packages. Please ask for 97801A100 and specify size.

Size	Lg.	Gauge	Head Dia.	Type 316 Stainless Steel Pkg. Qty.		Pkg.	18-8 Stainless Steel Pkg. Qty.		Pkg.
2d	1″	15 (0.072″)	3/16″	800	97990A100	$22.00	800	97946A100	$14.82
3d	1 1/4″	14 (0.083″)	7/32″	450	97990A101	22.00	450	97946A101	14.82
4d	1 1/2″	12 (0.109″)	1/4″	200	97990A102	22.00	200	97946A102	14.82
6d	2″	11 (0.120″)	17/64″	125	97990A104	22.00	125	97946A104	14.82
7d	2 1/4″	11 (0.120″)	17/64″	125	97990A106	22.00	—	—	—
8d	2 1/2″	10 (0.134″)	9/32″	50	97990A105	10.94	50	97946A105	8.12
10d	3″	9 (0.148″)	5/16″	50	97990A107	13.15	50	97946A107	9.34
12d	3 1/4″	9 (0.148″)	5/16″	50	97990A108	22.00	50	97946A108	14.82
16d	3 1/2″	8 (0.165″)	11/32″	25	97990A109	8.07	25	97946A109	7.14
20d	4″	6 (0.203″)	7/16″	25	97990A111	22.00	25	97946A111	14.82

Size	Lg.	Gauge	Head Dia.	Copper Pkg. Qty.		Pkg.	Aluminum Pkg. Qty.		Pkg.	Plain Steel Pkg. Qty.		Pkg.
2d	1″	15 (0.072″)	11/64″	800	97952A100	$23.70	2,200	97807A100	$14.26	—	—	—
3d	1 1/4″	14 (0.083″)	13/64″	450	97952A101	23.70	1,350	97807A101	14.00	500	97801A501	$4.80
4d	1 1/2″	12 (0.109″)	1/4″	200	97952A102	23.70	800	97807A102	13.12	275	97801A502▲	2.70
6d	2″	11 (0.120″)	17/64″	125	97952A104	23.70	400	97807A104	13.03	150	97801A504▲	2.70
7d	2 1/4″	11 1/2 (0.113″)	17/64″	—	—	—	—	—	—	125	97801A505	2.60
8d	2 1/2″	10 (0.134″)	9/32″	50	97952A106	14.91	200	97807A106	12.97	75	97801A506	2.71
10d	3″	9 (0.148″)	5/16″	50	97952A108	23.70	150	97807A108	12.89	60	97801A508	2.71
12d	3 1/4″	9 (0.148″)	5/16″	—	—	—	—	—	—	60	97801A509	2.71
16d	3 1/2″	8 (0.165″)	11/32″	25	97952A110	14.91	100	97807A110	12.80	40	97801A510	2.71
20d	4″	6 (0.203″)	13/32″	25	97952A111	23.70	75	97807A111	12.86	25	97801A511	2.71

▲Gauge is a half size larger than shown.

Ring-Shank Common Nails

A grooved shank prevents the nail from backing out. Use where vibration can shake ordinary nails loose. **Also Available:** Galvanized steel nails in 5-lb. packages. Please ask for 90755A200 and specify size.

Size	Lg.	Gauge	Head Dia.	Pkg. Qty.		Pkg.
Type 316 Stainless Steel						
—	3/4″	14 (0.080″)	7/32″	650	97015A110	$19.23
3d	1 1/4″	14 (0.080″)	7/32″	450	97015A130	19.23
4d	1 1/2″	12 (0.105″)	1/4″	200	97015A150	19.23
6d	2″	11 (0.120″)	17/64″	100	97015A170	10.37
8d	2 1/2″	10 (0.135″)	9/32″	50	97015A190	8.51
10d	3″	9 (0.148″)	5/16″	50	97015A210	10.60
16d	3 1/2″	8 (0.162″)	11/32″	25	97015A250	8.26
20d	4″	6 (0.192″)	7/16″	25	97015A270	19.23
Galvanized Steel						
6d	2″	11 (0.120″)	9/32″	125	90755A410	4.02
8d	2 1/2″	11 (0.120″)	9/32″	100	90755A415	4.01
10d	3″	10 (0.135″)	9/32″	75	90755A420	4.23
16d	3 1/2″	9 (0.148″)	5/16″	50	90755A425	4.42
20d	4″	7 (0.177″)	3/8″	25	90755A430	4.24
40d	5″	5 1/2 (0.200″)	15/32″	20	90755A435	4.24
60d	6″	5 1/2 (0.200″)	15/32″	15	90755A440	3.99

Vinyl-Coated Steel Nails

Also called sinker nails, these nails have a smooth shank. Use with sheathing.

Size	Lg.	Gauge	Head Dia.	Pkg. Qty.		Pkg.
4d	1 3/8″	14 (0.080″)	13/64″	2,400	97804A102	$11.63
6d	1 7/8″	13 (0.092″)	15/64″	1,350	97804A104	11.63
7d	2 1/8″	12 1/2 (0.099″)	1/4″	1,050	97804A105	11.63
8d	2 3/8″	11 1/2 (0.113″)	17/64″	700	97804A106	11.63
10d	2 7/8″	11 (0.120″)	9/32″	500	97804A108	11.63
12d	3 1/8″	10 (0.135″)	5/16″	350	97804A109	11.63
16d	3 1/4″	9 (0.148″)	11/32″	300	97804A110	11.63

Type 316 Stainless Steel Small-Head Nails

Slender shank and blunt point keep wood siding from splitting. Diamond-patterned head accepts paint and stain.

Size	Lg.	Gauge	Head Dia.	Pkg. Qty.		Pkg.
5d	1 3/4″	14 (0.083″)	5/32″	350	97860A310	$19.23
6d	2″	13 (0.095″)	5/32″	200	97860A315	19.23
7d	2 1/4″	13 (0.095″)	5/32″	200	97860A320	19.23
8d	2 1/2″	13 (0.095″)	5/32″	100	97860A325	9.40
10d	3″	12 (0.109″)	7/32″	100	97860A330	19.60
16d	3 1/2″	11 (0.120″)	1/4″	50	97860A335	11.47

Spiral-Shank Common Nails

Turn as they're driven; excellent for wood joints with substantial loads. **Also Available:** Plain steel nails in 5-lb. packages. Please ask for 90745A600 and specify size.

Size	Lg.	Gauge	Head Dia.	Pkg. Qty.		Pkg.
18-8 Stainless Steel						
2d	1″	15 (0.072″)	3/16″	800	97830A100	$16.80
4d	1 1/2″	12 (0.109″)	1/4″	200	97830A102	15.87
6d	2″	12 (0.109″)	1/4″	100	97830A104	10.45
8d	2 1/2″	10 (0.135″)	9/32″	50	97830A106	10.12
10d	3″	9 (0.148″)	5/16″	50	97830A108	10.20
16d	3 1/2″	8 (0.162″)	11/32″	25	97830A110	7.78
20d	4″	6 (0.192″)	7/16″	25	97830A115	15.99
40d	5″	6 (0.192″)	7/16″	10	97830A120	7.83
Plain Steel						
8d	2 1/2″	11 (0.120″)	9/32″	100	90745A702	4.96
10d	3″	10 (0.135″)	9/32″	75	90745A713	4.22
16d	3 1/2″	9 (0.148″)	5/16″	50	90745A724	4.65
20d	4″	7 (0.177″)	3/8″	25	90745A735	4.44
40d	5″	5 1/2 (0.200″)	15/32″	20	90745A746	3.98

Plain Steel Large-Head Nails

Nails have a thinner shank to reduce wood splitting. **Also Available:** Galvanized steel. Please ask for 97024A100 and specify size.

Size	Lg.	Gauge	Head Dia.	Pkg. Qty.		Pkg.
4d	1 1/2″	14 (0.080″)	7/32″	2,300	97816A120	$12.65
6d	2″	12 1/2 (0.099″)	17/64″	1,150	97816A140	17.43
8d	2 1/2″	11 1/2 (0.113″)	19/64″	700	97816A150	12.99
10d	3″	10 1/2 (0.128″)	5/16″	450	97816A160	12.65
16d	3 1/2″	10 (0.135″)	11/32″	350	97816A170	12.84

Finishing Nails

The small, brad head can easily be driven flush with the surface. **Also Available:** Plain steel nails in 5-lb. packages. Please ask for 97808A100 and specify size.

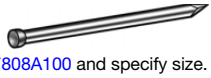

Size	Lg.	Gauge	Head Dia.	Pkg. Qty.		Pkg.
18-8 Stainless Steel						
3d	1 1/4″	15 (0.072″)	7/64″	600	97835A201	$16.18
4d	1 1/2″	14 (0.083″)	1/8″	400	97835A202	16.97
6d	2″	13 (0.095″)	9/64″	200	97835A203	16.24
8d	2 1/2″	12 (0.109″)	5/32″	125	97835A204	15.84
10d	3″	11 (0.120″)	5/32″	100	97835A205	15.53
16d	3 1/2″	11 (0.120″)	5/32″	75	97835A206	15.43
Plain Steel						
3d	1 1/4″	15 1/2 (0.067″)	7/64″	775	97808A501	3.73
4d	1 1/2″	15 (0.072″)	7/64″	575	97808A502	3.78
6d	2″	13 (0.091″)	9/64″	250	97808A503	3.83
8d	2 1/2″	12 1/2 (0.095″)	9/64″	175	97808A504	3.89
10d	3″	11 1/2 (0.113″)	5/32″	100	97808A505	3.95

For information about nails, see page 3371.

Small Finishing Nails

Brad Nail

Wire Nail

Nails are steel with a slender shank to minimize wood splitting.
Brad nails are a smaller version of finishing nails. Head is driven below the surface and puttied over.
Wire nails have a flat head and thinner shank than common and box nails.

Lg.	Pkg. Qty.	Brad Nails Head Dia.		Pkg.	Wire Nails Head Dia.		Pkg.
20 Gauge (0.035″)							
1/2″	7,000	1/16″	97828A736	$11.67	5/64″	97820A736	$9.62
3/4″	4,500	1/16″	97828A738	10.45	5/64″	97820A738	8.62
7/8″	3,000	1/16″	97828A739	10.45	—	—	—
18 Gauge (0.048″)							
1/2″	3,500	1/16″	97828A666	9.24	7/64″	97820A666	7.63
5/8″	3,000	1/16″	97828A667	8.94	7/64″	97820A667	7.38
3/4″	2,500	1/16″	97828A668	8.03	7/64″	97820A668	6.62
1″	1,900	1/16″	97828A670	7.73	7/64″	97820A670	6.38
1 1/4″	1,500	1/16″	97828A672	7.73	7/64″	97820A672	6.38
1 1/2″	1,300	1/16″	97828A673	7.73	7/64″	97820A673	6.38
17 Gauge (0.054″)							
3/4″	1,900	5/64″	97828A633	8.03	1/8″	97820A633	6.63
7/8″	1,500	5/64″	97828A634	7.73	1/8″	97820A634	6.37
1″	1,400	5/64″	97828A635	7.42	1/8″	97820A635	6.12
1 1/4″	1,100	5/64″	97828A637	7.42	1/8″	97820A637	6.12
16 Gauge (0.063″)							
3/4″	1,400	3/32″	97828A598	7.73	5/32″	97820A598	6.37
1″	1,000	3/32″	97828A600	7.42	5/32″	97820A600	6.12
1 1/4″	850	3/32″	97828A602	7.12	5/32″	97820A602	5.88
1 1/2″	700	3/32″	97828A603	7.12	5/32″	97820A603	5.88

Decorative Finishing Nails

Also known as escutcheon pins, these nails have an oval head for a smooth, finished appearance. Perfect for wood and thin sheet metal.

Lg.	Head Dia.	Brass Pkg. Qty.		Pkg.	18-8 Stainless Steel Pkg. Qty.		Pkg.
18 Gauge (0.048″)							
3/8″	7/64″	300	97936A109	$2.85	500	92154A751	$14.87
1/2″	7/64″	300	97936A112	3.11	400	92154A756	14.87
3/4″	7/64″	250	97936A115	3.43	300	92154A767	14.87
1″	7/64″	175	97936A118	3.01	200	92154A774	14.87
16 Gauge (0.063″)							
3/8″	1/8″	200	97936A132	2.86	300	92154A790	14.87
1/2″	1/8″	200	97936A135	3.29	200	92154A798	14.87
5/8″	1/8″	175	97936A138	3.33	175	92154A806	14.87
3/4″	1/8″	150	97936A141	3.33	150	92154A814	14.87
1″	1/8″	100	97936A144	3.30	125	92154A822	14.87
14 Gauge (0.083″)							
1/4″	11/64″	200	97936A155	4.21	—	—	—
3/8″	11/64″	150	97936A158	3.73	—	—	—
1/2″	11/64″	125	97936A161	3.29	—	—	—
3/4″	11/64″	100	97936A167	3.62	75	92154A846	14.87
1″	11/64″	75	97936A170	3.39	75	92154A854	14.87
1 1/4″	11/64″	50	97936A173	3.49	50	92154A862	14.87
1 1/2″	11/64″	25	97936A176	2.43	25	92154A870	14.87
12 Gauge (0.105″)							
1/2″	7/32″	50	97936A184	10.36	75	92154A894	14.87
3/4″	7/32″	50	97936A189	11.07	50	92154A902	14.87

Plain Steel Double-Headed Nails

Also known as scaffold (duplex) nails, these nails drive into wood up to the first head. The second head remains exposed for easy removal. **Also Available:** 5-lb. packages. Please ask for 97812A100 and specify size.

Size	Lg.	Gauge	Top Head Dia.	Pkg. Qty.		Pkg.
8d	2 1/4″	10 1/4 (0.131″)	5/32″	75	97812A606	$4.17
16d	3″	8 (0.162″)	7/32″	40	97812A609	4.29

Easy-Drive Screw Nails for Wood

Flat Head

Designed to drive into hardwoods and dense materials like nails, but hold like screws. Made of zinc-plated steel for good rust resistance.

Head Style	Lg.	Gauge	Head Dia.	Pkg. Qty.		Pkg.
Flat	1/2″	14 (0.080″)	3/16″	100	97810A110	$5.91
Flat	3/4″	13 (0.092″)	7/32″	100	97810A115	7.97
Flat	1″	12 (0.106″)	1/4″	100	97810A120	9.17
Flat	1 1/4″	11 (0.121″)	17/64″	100	97810A125	10.11
Flat	1 1/2″	11 (0.121″)	17/64″	100	97810A130	10.71
Flat	2″	10 (0.135″)	9/32″	50	97810A135	7.90
Flat	2 1/2″	10 (0.135″)	9/32″	50	97810A140	9.73
Round	1/2″	14 (0.080″)	5/32″	100	97810A210	5.80
Round	3/4″	14 (0.080″)	5/32″	100	97810A215	6.40
Round	1″	14 (0.080″)	5/32″	100	97810A220	8.17
Large Round	1″	13 (0.092″)	9/32″	100	97810A310	8.77

Easy-Drive Screw Nails for Thin Material

Also known as flat head Type 21 screws, they fasten fabric, fiber, leather, and cardboard to sheet metal. Drive like nails yet hold like screws. Made of zinc-plated steel for good rust resistance, nails can be used with either drilled or punched holes. Length is measured from under the head. Packaged in quantities of 100.

Lg.	Gauge	Head Dia.	Head Ht.	Recom. Hole Size (Drill No.)		Pkg.
11/32″	4 (0.114″)	0.256″	0.027″	0.098″ (40)	90085A110	$6.07
7/16″	6 (0.138″)	0.302″	0.047″	0.116″ (32)	90085A210	6.39
7/16″	8 (0.164″)	0.307″	0.052″	0.136″ (29)	90085A310	7.18
1/2″	10 (0.179″)	0.321″	0.058″	0.157″ (22)	90085A410	8.21

Easy-Drive Screw Nails for Sheet Metal, Plastic, and Plywood

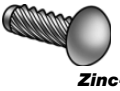

Use these screws for permanent fastening of sheet metal, plastic, and plywood. Also known as round head Type U drive screws, they can be used with either drilled or punched holes. Length is measured from under the head. Packaged in quantities of 100.

Lg.	Zinc-Plated Steel Pkg.		18-8 Stainless Steel Pkg.	
No. 00—0.060″ Dia.; Hole Size: 0.052″ (Drill #55) Head: 0.099″ Dia. × 0.034″ Ht.				
1/8″	90081A003	$3.86	91654A032	$4.79
3/16″	90081A005	3.86	91654A034	4.85
1/4″	90081A006	3.86	91654A035	5.33
3/8″	90081A008	4.04	91654A036	3.00
No. 0—0.075″ Dia.; Hole Size: 0.067″ (Drill #51) Head: 0.127″ Dia. × 0.049″ Ht.				
1/8″	90081A052	3.51	91654A052	3.31
3/16″	90081A054	3.56	91654A054	3.28
1/4″	90081A055	3.47	91654A055	3.54
3/8″	90081A057	3.73	91654A057	2.46
No. 2—0.100″ Dia.; Hole Size: 0.086″ (Drill #44) Head: 0.162″ Dia. × 0.069″ Ht.				
1/8″	90081A074	3.10	91654A074	3.20
3/16″	90081A076	3.09	91654A076	3.42
1/4″	90081A077	3.09	91654A077	3.53
5/16″	90081A078	3.26	91654A078	2.35
3/8″	90081A079	3.34	91654A079	2.40
No. 2 (Cont.)				
1/2″	90081A081	$4.16	91654A081	$2.54
No. 4—0.116″ Dia.; Hole Size: 0.104″ (Drill #37) Head: 0.211″ Dia. × 0.086″ Ht.				
3/16″	90081A105	2.40	91654A105	2.59
1/4″	90081A106	2.52	91654A106	2.63
5/16″	90081A107	2.51	91654A107	4.11
3/8″	90081A108	3.46	91654A108	4.08
No. 6—0.140″ Dia.; Hole Size: 0.120″ (Drill #31) Head: 0.260″ Dia. × 0.103″ Ht.				
1/4″	90081A144	2.85	91654A144	3.13
5/16″	90081A145	2.85	91654A145	3.39
3/8″	90081A146	2.79	91654A146	3.47
No. 7—0.154″ Dia.; Hole Size: 0.136″ (Drill #29) Head: 0.285″ Dia. × 0.111″ Ht.				
5/16″	90081A167	3.47	—	—
3/8″	90081A168	3.62	—	—
1/2″	90081A170	3.77	—	—
No. 8—0.167″ Dia.; Hole Size: 0.144″ (Drill #27) Head: 0.309″ Dia. × 0.120″ Ht.				
1/4″	90081A190	$4.35	91654A190	$4.91
3/8″	90081A192	3.21	91654A192	4.91
1/2″	90081A194	3.38	91654A194	7.10
5/8″	90081A196	4.07	91654A196	12.00
No. 10—0.182″ Dia.; Hole Size: 0.161″ (Drill #20) Head: 0.359″ Dia. × 0.137″ Ht.				
3/8″	90081A240	3.89	91654A240	7.07
1/2″	90081A242	4.19	91654A242	7.73
5/8″	90081A244	4.35	91654A244	13.40
No. 12—0.212″ Dia.; Hole Size: 0.191″ (Drill #11) Head: 0.408″ Dia. × 0.153″ Ht.				
1/2″	90081A291	5.55	91654A291	8.57
3/4″	90081A294	6.26	—	—
No. 14—0.242″ Dia.; Hole Size: 0.221″ (Drill #2) Head: 0.457″ Dia. × 0.170″ Ht.				
1/2″	90081A310	6.92	—	—
3/4″	90081A313	7.63	—	—

Zinc-Plated Steel and 18-8 Stainless Steel Assortments

12 sizes, 1,200 pieces. Contains 100 each of No. 0 × 3/16″, × 1/4″; No. 2 × 1/8″, × 3/16″, × 1/4″; No. 4 × 3/16″, × 1/4″, × 5/16″, × 3/8″; No. 6 × 1/4″, × 5/16″, × 3/8″. Packed in a clear plastic, 10 7/8″ Lg. × 6 1/2″ Wd. × 1 3/4″ Dp. compartmented box.

Zinc-Plated Steel Assortment ..... 90081A700 .... $93.96
18-8 Stainless Steel Assortment ... 91654A600 .... 106.16

McMASTER-CARR®

For information about nails, see page 3371.

Extra-Wide Head Nails

An extra-wide head gives increased holding power and reduces pull through. Use for roofing and sheathing applications. Nails are 11 gauge (0.120″).

Galvanized steel nails are for use with asphalt shingles, roofing felt, and insulation board. Head dia. is 7/16″. **Also Available:** 5-lb. packages. Please ask for 97850A100 and specify size. ***Copper*** nails (also known as slating nails) are more corrosion resistant, softer, and easier to cut than galvanized steel, so they're easier to replace. Head dia. is 3/8″.

		Galvanized Steel			Copper		
Size	Lg.	Approx. Pkg. Qty.		Pkg.	Approx. Pkg. Qty.		Pkg.
2d	1″	250	97850A225	$3.87	—	—	—
3d	1 1/4″	225	97850A227	3.93	150	97875A330	$25.45
4d	1 1/2″	175	97850A228	4.00	125	97875A340	25.45
6d	2″	150	97850A230	4.07	100	97875A360	25.45

Zinc-Plated Steel Masonry Nails

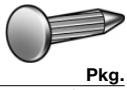

Rust-resistant nails have a flat head, a spiral-fluted shank, and a tapered point. Use in softer materials, such as "green" concrete.

Size	Lg.	Head Dia.	Pkg. Qty.		Pkg.
3/32″	1/2″	17/64″	50	97814A101	$14.97
1/8″	3/4″	11/32″	50	97814A102	9.39
5/32″	1″	13/32″	50	97814A103	14.11
3/16″	1 1/4″	15/32″	25	97814A104	10.17
1/4″	1 1/2″	9/16″	25	97814A105	13.88
1/4″	2″	9/16″	25	97814A106	15.84
1/4″	2 1/2″	9/16″	10	97814A107	8.02

Upholstery Tacks

Flat-head tacks are great for securing all kinds of fabric. ***Copper*** tacks are weather resistant—ideal for marine applications.

Size	Lg.	Head Dia.	Approx. Pkg. Qty.		Pkg.
Steel					
No. 3	3/8″	3/16″	1,800	97839A103	$13.72
No. 6	1/2″	7/32″	1,000	97839A105	12.64
No. 8	9/16″	15/64″	900	97839A106	9.45
No. 10	5/8″	15/64″	850	97839A107	12.08
No. 14	3/4″	1/4″	650	97839A109	12.08
Copper					
No. 6	1/2″	7/32″	175	97839A210	9.46
No. 10	5/8″	1/4″	100	97839A216	9.02
No. 14	3/4″	17/64″	90	97839A219	8.14

Pull-Tight Wood Joiners

Use joiners to connect and repair wood pieces and joints. All are made of plain steel.

Prong-style joiners have sharp points to pull joints together. ***Corrugated*** have five corrugations.

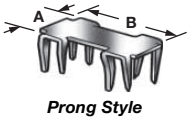

Prong Style

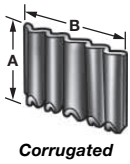

Corrugated

Size (A)	Size (B)	Pkg. Qty.		Pkg.
Prong Style				
3/8″	1″	30	90050A211	$7.55
3/8″	15/16″	25	90050A213	7.55
1/2″	1 1/8″	16	90050A215	7.55
1/2″	1 11/16″	12	90050A217	7.55
Corrugated				
1/4″	1 1/16″	100	97846A432	3.79
1/2″	1 1/16″	100	97846A440	4.44
5/8″	1 1/16″	100	97846A444	5.76

Heavy Duty Spikes

With a thicker shank than common nails, these spikes are perfect for heavy duty fastening. ***Plain steel*** have a flat head and smooth shank with a diamond point. ***Copper*** have a flat head and barbed shank with a diamond point.

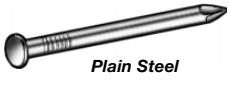

Plain Steel

Size	Lg.	Head Dia.	Approx. Pkg. Qty.		Pkg.
Plain Steel					
5/16″	7″	5/8″	15	97033A300	$7.62
3/8″	8″	3/4″	10	97033A310	6.93
3/8″	10″	3/4″	5	97033A315	4.40
3/8″	12″	3/4″	5	97033A320	5.13
Copper					
0.238″	7″	15/32″	5	97033A610	16.29
0.238″	8″	15/32″	5	97033A615	16.97
0.238″	10″	15/32″	1	97033A620	18.86

Nails with Plastic Caps

Round caps (heads) on these nails keep them from cutting into felt and foam board. Caps are 1″ dia., brightly colored, high-density polyethylene. Nails are 12-gauge galvanized steel. All have diamond points and deep ring shanks for superior penetration and holding power.

Lg.	Approx. Pkg. Qty.		Pkg.	Lg.	Approx. Pkg. Qty.		Pkg.
1″	250	97945A300	$17.74	1 1/2″	175	97945A500	$18.76
1 1/4″	200	97945A400	18.29	2″	150	97945A600	21.36

Nail-In Staples

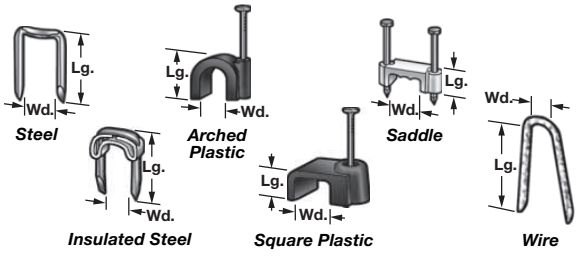

Use these staples to attach wire and cable to wood.

Steel Staples—Choose plain or zinc-plated steel.

Insulated Steel Staples—Come with a paper insulator, except 97910A240 which has a polyethylene insulator. Those for low-voltage wire can be used for bell, thermostat, and phone wire.

Plastic Staples—Black plastic body with galvanized steel nail. Can also be used in plaster, stucco, and masonry.

Saddle Staples—Polyethylene body with two zinc-plated nails.

Wire Staples—Also known as fence staples. Made of galvanized steel.

Wd.	Lg.	For Wire Type	Pkg. Qty.		Pkg.
Steel Staples—*For Electrical Wire*					
Plain					
1/2″	1″	2-Conductor 12 and 14 Gauge	25	97900A210	$1.50
9/16″	1 1/16″	3-Conductor 10, 12, 14 Gauge	100	97900A220	5.41
Zinc Plated					
9/16″	1 1/16″	3-Conductor 10, 12, 14 Gauge	100	97900A230	6.23
Insulated Steel Staples—*For Low Voltage Wire*					
Copper Coated					
3/16″	3/4″	Low Voltage	100	97910A105	6.10
1/4″	5/8″	Low Voltage	50	97910A130	1.82
1/4″	3/4″	Low Voltage	100	97910A135	6.38
3/8″	7/8″	Up to 14 Gauge	100	97910A140	12.16
1/2″	7/8″	Up to 14 Gauge	100	97910A145	10.99
Plain					
19/32″	1 1/16″	2-Conductor 12 and 14 Gauge	100	97910A240	5.87
White Painted					
1/4″	5/8″	Low Voltage	40	97910A120	2.65
Brown Painted					
1/4″	5/8″	Low Voltage	40	97910A110	2.65
Arched Plastic Staples—*For Cable and Phone Wire*					
5/32″	17/64″	75 Coax (4.0 mm)	100	97905A610	5.61
3/32″	19/64″	RG-58 (5.0 mm)	100	97905A630	5.61
15/64″	23/64″	RG-6 (7.0 mm)	100	97905A640	6.53
5/16″	29/64″	59 Triax (8.0 mm)	100	97905A650	7.82
Square Plastic Staples—*For Cable and Phone Wire*					
7/32″	7/32″	Bell (4.5 mm)	100	97905A620	5.48
11/32″	5/16″	Dual RG-6 (9.0 mm)	100	97905A660	5.84
Saddle Staples—*For Romex*					
1/2″	5/16″	2-Conductor Romex	100	98140A140	7.27
3/4″	5/16″	3-Conductor Romex	100	98140A180	7.42
Wire Staples—*For Suspended Ceilings, Securing Insulation & Fencing*					
3/16″	3/4″	Up to 14 Gauge	500	97884A020	13.00
1/4″	1 1/4″	Up to 9 Gauge	80	97884A040	11.72
1/4″	1 1/2″	Up to 9 Gauge	70	97884A041	11.72

Railroad Spikes

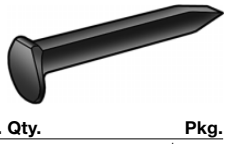

These steel spikes with square shanks are manufactured according to AREA (American Railroad Engineering Association) specifications.

Size	Lg.	Head Size, Lg.×Wd.	Pkg. Qty.		Pkg.
9/16″	5 1/2″	1 1/2″ × 1 1/4″	5	97897A779	$10.72
5/8″	6″	1 9/16″ × 1 5/16″	5	97897A818	10.52

Plastic-Welding Kits

Variable-Output Fabrication Kit with Built-in Compressor

Combination Tip

High-Speed Tip

Using hot air, these kits weld any thermoplastic (PVC, polycarbonate, polyethylene, polypropylene, HMW/UHMW, CPVC, Kynar, and ABS). Use with the Plastic-Welding Rods sold separately on this page. Kits include a welding torch, a 12-ft. air hose with a 1/4″ NPT male fitting, an air regulator, a pressure gauge, a 6-ft. cord with three-prong plug, and a plastic carrying case except 7885A12, which has a steel and plastic case. Operate on 120 VAC.

Fabrication Kit— Includes a 450-watt heating element (700° F @ 3 psi) and a combination tip for making continuous welds and small dot-like welds (tack welds) to prepare materials for later continuous welds. Air compressor not included. Can also be used with nitrogen gas when welding polyethylene or polypropylene to prevent possible oxidation (air bubbles).

Variable-Output Fabrication Kit— Includes 450-watt, 550-watt, and 650-watt heating elements (range is 700° to 880° F @ 3 psi); a tip for making continuous welds; a tip for making small dot-like welds (tack welds) to prepare materials for later continuous welds; and a combination tip that does both. Air compressor not included. Can also be used with nitrogen gas when welding polyethylene or polypropylene to prevent possible oxidation (air bubbles).

Variable-Output Fabrication Kit with Built-in Compressor— Includes a built-in air compressor that produces 2 1/2 cfm at 3 psi. Also includes 450-watt and 550-watt heating elements (range is 700° to 800° F @ 3 psi) and a combination tip for making continuous welds and small dot-like welds (tack welds) to prepare materials for later continuous welds.

Optional high-speed tips heat the welding rod and the materials being welded at the same time to make faster, more uniform welds.

Kits		
Fabrication Kit	7890A3	$355.65
Variable-Output Fabrication Kit	7890A45	495.83
Variable-Output Fabrication Kit with Built-in Compressor	7885A12	1,429.66
Replacement Parts and Accessories		
Combination Tip	7890A25	38.18
Optional High-Speed Tip—for 1/8″ and 5/32″ Dia. Rod	7890A22	102.67
Optional High-Speed Tip—for 3/16″ Dia. Rod	7890A34	102.67
450-Watt Heating Element	7890A28	50.91
550-Watt Heating Element	7890A29	50.91
650-Watt Heating Element	7890A23	56.00

Plastic-Welding Rods

Choose the rod material that is the same as the material you are welding. *PVC Type I* is rigid; *PVC Type II* is more pliable and has a higher impact strength. **Also Available:** 5-lb., 10-lb., and 15-lb. coil sizes. Please ask for 7889A11 and specify the McMaster-Carr part number for the material, color, and diameter and the coil weight you need.

Rod Material	Coil Size	Color	1/8″ Diameter Coil Lg., ft.			5/32″ Diameter Coil Lg., ft.			3/16″ Diameter Coil Lg., ft.		
PVC–Type I	1 lb.	Dark Gray	142	7889A15	$9.49	90	7889A16	$9.49	63	7889A17	$9.49
PVC–Type I	1 lb.	Transparent	147	7889A18	12.04	95	7889A19	12.04	65	7889A69	12.04
PVC–Type I	1 lb.	White	147	7889A65	10.31	95	7889A66	10.31	65	7889A67	10.31
PVC–Type II	1 lb.	Light Gray	147	7889A25	9.69	95	7889A26	9.69	65	7889A27	9.69
PVC–Type II	1 lb.	White	147	7889A21	11.73	95	7889A28	11.73	65	7889A29	11.73
Polycarbonate	1 lb.	Clear	189	7889A91	32.65	137	7889A92	32.65	92	7889A93	32.65
Polyethylene–Low Density	1 lb.	Natural	210	7889A31	10.00	137	7889A38	10.00	92	7889A39	10.00
Polyethylene–High Density	1 lb.	Natural	210	7889A35	9.59	137	7889A36	9.59	92	7889A37	9.59
Polypropylene	1 lb.	Black	221	7889A44	10.20	142	7889A48	10.20	95	7889A49	10.20
Polypropylene	1 lb.	Natural	221	7889A45	9.49	142	7889A46	9.49	95	7889A47	9.49
Polypropylene	1 lb.	White	221	7889A58	10.20	142	7889A59	10.20	95	7889A68	10.20
HMW (for HMW/UHMW)	1 lb.	Black	210	7889A13	12.04	137	7889A22	12.55	92	7889A24	12.55
HMW (for HMW/UHMW)	1 lb.	Natural	210	7889A12	12.34	137	7889A14	12.34	92	7889A23	12.34
CPVC	1 lb.	Gray	121	7889A55	19.80	79	7889A56	19.80	55	7889A57	19.80
Kynar	2.7 oz.	Natural	20	7889A75	12.98	12	7889A76	12.97	8	7889A77	12.97
ABS	1 lb.	Black	189	7889A95	16.22	121	7889A96	16.22	84	7889A97	16.22
ABS	1 lb.	Natural	189	7889A85	16.22	121	7889A86	16.22	84	7889A87	16.22

Welding Inspection Gauges

Weld-Alignment Gauge

Gauge has inch markings on one side and millimeter markings on the other. It's stainless steel and 6 1/4″×2 1/2″.

Measures:
- 37 1/2° bevel angles.
- Internal misalignment of pipe ID.
- Pipe wall thickness after tack welding.
- Alignment and length between scribe lines to 16ths of an inch.
- Fit/gap on butt welds after alignment.
- Go and no go between 1/16″ and 3/32″ (see page 2289 for information on go/no go).
- Corner, or fillet, weld size on socket welds.
- Crown height of butt welds.

8970A11 ..... $123.66

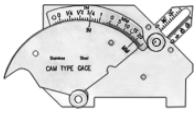

Multicheck Weld Gauge

Gauge has scales graduated in inches (to 16ths) and millimeters. It's stainless steel and 4″×2 3/4″. Includes a plastic carrying case.

Measures:
- 0° to 60° bevel angles.
- Misalignment.
- Excess weld metal (capping size).
- Length of a corner, or fillet, weld leg to 1″ and throat to 3/4″.

7871A11 ..... $65.60

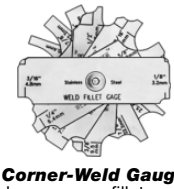

Corner-Weld Gauge

Also known as a fillet gauge, this gauge measures 14 of the most popular concave and convex corner, or fillet, weld dimensions from 1/8″ to 1″ in both inches and millimeters. Gauge is stainless steel and 4″×1 1/4″. Includes a plastic carrying case.

7928A11 ..... $35.31

Welders' Antispatter

Keep weld spatter from sticking to welding nozzles, electrode holders, positioners, fixtures, and clamps. All resist heat and protect metal.

Spray— Ideal for contact tips, welding nozzles, and electrode holders.

Nozzle Tip Dip— Dip MIG gun nozzles into can. Can also be brushed on.

Brush On— Paste for heavy duty applications.

	Size		
Spray	11-oz. Aerosol Can	7881A61	$7.39
Nozzle Tip Dip	16-oz. Plastic Jar	77435A28	5.49
Nozzle Tip Dip	16-oz. Metal Can	77435A25	6.16
Brush On	1-gal. Plastic Can	7881A71	42.98

Welding Positioners

Designed for rotary workholding and positioning, these compact units have a forward and reverse switch, a foot pedal with on/off control, speed control, a grounding stud, and a turntable with slots for mounting jigs. Operate on 115 VAC, 60 Hz (unless noted).

The *5″ dia. table* has three 1/4″ Wd. × 1″ Lg. positioning slots and a 5-ft. long power cord with three-prong plug; the *9″ dia. table* has four 3/8″ Wd. × 2 3/4″ Lg. slots and a 10-ft. long power cord with three-prong plug; and the *10″ dia. table* has four 3/8″ Wd. × 3 1/4″ Lg. slots and a 5-ft. long power cord with three-prong plug.

Note: Do not exceed the maximum load capacities listed in the table below.

Optional ***3-jaw chucks*** allow inside and outside clamping. To mount the chucks, you'll need to drill three holes in the positioner table. See pages 2596-2597 for hold-down clamps.

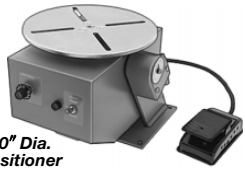

10″ Dia. Positioner

Table Dia.	Max. Load Cap., lbs.♠	Degree of Tilt	rpm	Max. Arc Ground Cap., amps	Ht.	Wd.	Lg.	Wt., lbs.	Positioners		3-Jaw Chucks Cap.	
5″	25	0° to 90°	0.25-10	170	9 1/8″	5″	7″	16	7860A71■	$925.68	—	—
9″	100	None	0-11	200	7 3/4″	11 1/4″	9″	32	7860A74	1,214.52	5″ 7860A84	$353.46
10″	200	–15° to +130°	0-9.5	200	9 1/4″	11″	12 1/2″	41	7860A77	1,572.66	5″ 7860A84	353.46

♠ Load capacity is determined in horizontal position, it is reduced as tables are tilted. ■ Operates on 50/60 Hz.

Weld Clamping Plate and Accessories

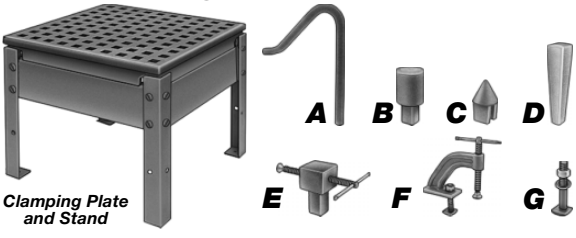

Clamping Plate and Stand

Speed production, save setup time, and reduce the need for building workholders. Load capacity is 4 tons. Made of gray cast iron, the top surface and side ledges are machined to within 0.005″ of flatness per linear foot. It has 1 3/4″ square holes spaced 3 1/2″ center-to-center. Size is 2 1/2 ft. × 5 ft.

Stand is steel and holds the clamping plate 30″ from the floor. Has 7/8″ dia. mounting holes for mounting to the floor.

Clamping Plate Wt., lbs.			Stand Wt., lbs.		
850	7891A68	$2,027.03	180	7891A69	$604.80

Accessories

A	Gooseneck Holddown	7891A41	$99.74
B	Bending Post	7891A42	66.67
C	Cone Post (2″ Ht. × 9/16″ Wd. Slot)	7891A51	14.18
D	10″ Lg. Tapered Drift Pin	7891A43	75.33
E	90° Horizontal Clamp	7891A44	115.50
F	Arm Clamp with 3 3/4″ Holddown Bolt and Nut	7891A67	139.34
G	4 3/4″ Lg. Holddown Bolt, Nut, and Washer	7891A72	16.36

Welding Backup Plates

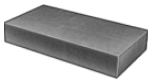

Also known as carbon plates, these high-density burn-resistant graphite plates are used as a backing for arc and gas welding, for making vertical welds, and as a dam or mold for repairing broken or missing machine parts and gear teeth. Cut plates to the desired size and shape with any saw or cutting tool.

Thickness	6″ × 12″ Plates		12″ × 12″ Plates	
1/4″	7971A11	$20.41	7971A12	$38.10
1/2″	7971A15	32.61	7971A16	62.24
5/8″	7971A17	38.10	7971A18	73.10
1″	7971A22	55.44	7971A23	105.71

Welding-Rod Carriers

Leather Carrier— Has a double-reinforced bottom and a spring clip. Holds rods up to 14″ long. Includes belt clip.

Plastic Carrier— Resists impact and includes an airtight, watertight, twist-off cap. Holds rods up to 14″ long. Includes belt clip.

Wall Bracket— Lets you hang three plastic carriers on the wall. Size is 5 1/2″ Ht. × 12″ Wd. × 4 1/2″ Dp.

Leather *Plastic*

	Cap., lbs.		
Leather Carrier	3.5	7998A11	$9.13
Plastic Carrier	10	80005A11	12.24
Wall Bracket	30	80005A12	16.84

Welding-Rod Ovens

Keep your rods dry and in prime condition. Ovens are made from heavy-gauge steel with a painted, high-gloss blue finish. They hold rods up to 18″ long and have an 8-ft. cord with three-prong plug, except 7876A15, which does not include a plug. CSA certified.

Portable oven is the perfect size for protecting rods during transfer from the holding oven to the job. Comes set to operate at 120 VAC.

Bench top ovens are compact ovens for optimum storage of rods in your shop.

(H) Has a thermostat factory set at 275° F and can be adjusted from 150° to 300° F.

(J) Has an adjustable thermostat dial with a range of 100° to 300° F.

(K) Has an adjustable thermostat dial with a range of 150° to 550° F.

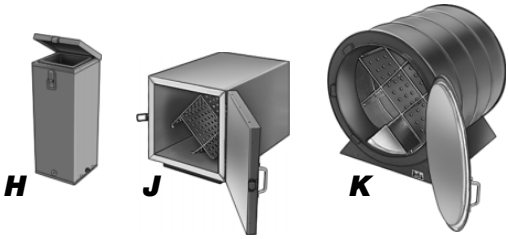

	Style	Cap., lbs.	Volts	Watts	Overall Size, Ht. × Wd. × Dp.	Inside Size, Ht. × Wd. × Dp.	Wt., lbs.		
H	Portable	50	120/240 VAC	150	21″ × 8″ × 8″	19″ × 6″ × 6″	18	7912A11	$287.59
J	Bench Top	200	120 VAC	500	16 1/2″ × 16 1/2″ × 24″	13″ × 13″ × 19″	53	8005A15	687.04
K	Bench Top	450	120 VAC	1,000	25 3/4″ × 25″ × 26″	19 1/2″ Dia. × 20″ Dp.	73	7876A13	962.66
K	Bench Top	450	240 VAC	1,000	25 3/4″ × 25″ × 26″	19 1/2″ Dia. × 20″ Dp.	73	7876A15	962.66

Quick-Action Cable Connectors

Give your welding set-up greater versatility with these temporary connectors that allow for quick changes. Male connector locks into the female connectors. All internal components are brass.

Male and Female Cable Connectors— Have an oil- and temperature-resistant, black molded-plastic cover. To attach cable, just tighten the screws with a 1/4″ hex key wrench.

Lug-Style Female Connectors— Connect and disconnect welding cable at the power source. Attach one end to a cable with a male connector (7841A14, A16, and A22) and the other to the stud on your welding power source. Include a nylon cover and a 17/32″ stud hole.

Female Cable Connector *Male Cable Connector*

45° Angle Lug-Style Female Connector

Male and Female Cable Connectors

For Cable Size (AWG)	Max. Cable Dia.	Max. Amps	O'all Dia.	Male	Female	Male × Female
				Each	Each	Pair
4-1/0	0.500″	250	1 1/4″	7841A14 $8.96	7841A15 $8.96	7841A11 $16.89
1/0-2/0	0.5625″	350	1 7/16″	7841A16 10.90	7841A21 10.90	7841A12 20.57
3/0-4/0	0.641″	500	1 7/16″	7841A22 13.80	7841A23 13.80	7841A13 26.04

Lug-Style Female Connectors

For Cable Size	Straight Each	45° Angle Each
4-1/0	7854A1 $16.12	7854A2 $16.12
1/0-4/0	7854A3 16.88	7854A4 16.88

Welding Cable

This extremely flexible cable delivers up to 600 volts of power and resists oil, flame, heat, and abrasion.

Standard Cable— Jacket is EPDM rubber with Class K 30 AWG copper stranding. Temperature range is –58° to +221° F (–50° to +105° C).

Heavy Duty Cable— This cable resists solvents and is more resistant to weather than standard cable. Jacket is chlorinated polyethylene with Class M 34 AWG copper stranding. Temperature range is –58° to +194° F (–50° to +90° C). Color is high-visibility orange. MSHA (Mine Safety and Health Administration) approved. UL listed. CSA certified.

Also Available: Other lengths up to 250 continuous feet.

How to determine proper cable size— Read across the table to determine your standard and heavy duty cable sizes. For example, a circuit with a total length of 150 ft. at 150 amps would require a 2/0 standard cable or a 2 heavy duty cable. For voltages under 600 volts only.

Note: 6 AWG cable size has a maximum length of 50 ft. at 50 power source amps and a maximum length of 75 ft. at 25 power source amps.

Recommended Cable Sizes for Welding Applications

Power Source Amps	AWG CABLE SIZE: Up to 100 ft.• Standard	Up to 100 ft.• Heavy Duty	100-150 ft.• Standard	100-150 ft.• Heavy Duty	150-200 ft.• Standard	150-200 ft.• Heavy Duty	200-250 ft.• Standard	200-250 ft.• Heavy Duty
100	2	4	1	4	1/0	2	—	2
150	1	4	2/0	2	3/0	1	4/0	1/0
200	1/0	2	3/0	1	4/0	1/0	—	2/0
250	2/0	1	4/0	1/0	—	2/0	—	3/0
300	3/0	1/0	—	2/0	—	3/0	—	4/0
350	4/0	1/0	—	3/0	—	4/0	—	—
400	4/0	2/0	—	3/0	—	—	—	—
450	—	2/0	—	4/0	—	—	—	—
500	—	3/0	—	4/0	—	—	—	—
550	—	3/0	—	4/0	—	—	—	—
600	—	4/0	—	—	—	—	—	—

• Refers to the combined length of electrode and ground cable.

AWG Cable Size	Standard Lengths, ft.	STANDARD O'all OD	STANDARD No. of Strands	Black	Black Per Foot 10-249	Black Per Foot 250-Up	Red	Red Per Foot 10-249	Red Per Foot 250-Up	HEAVY DUTY O'all OD	HEAVY DUTY No. of Strands	HEAVY DUTY	HEAVY DUTY Per Foot 10-249	HEAVY DUTY Per Foot 250-Up
6	10, 20, 25, 30, 50, 100, 250	0.320″	259	7940A21	$1.54	$1.37	7940A61	$1.45	$1.28	0.370″	660	7818A18	$2.04	$1.89
4	10, 20, 25, 30, 50, 100, 250	0.348″	364	7940A22	2.09	1.71	7940A62	1.99	1.63	0.420″	1,045	7818A11	3.61	2.90
2	10, 20, 25, 30, 50, 100, 250	0.420″	624	7940A24	3.12	2.61	7940A63	3.04	2.55	0.475″	1,650	7818A12	5.56	4.47
1	10, 20, 25, 30, 50, 100, 250	0.503″	780	7940A25	4.12	3.24	7940A64	4.04	3.17	0.525″	2,090	7818A13	5.88	5.03
1/0	10, 20, 25, 30, 50, 100, 250	0.533″	988	7940A26	5.13	4.12	7940A65	5.08	4.07	0.610″	2,640	7818A14	6.90	5.81
2/0	10, 20, 25, 30, 50, 100, 250	0.586″	1,235	7940A27	5.19	4.46	7940A66	6.14	4.59	0.635″	3,300	7818A15	8.03	6.59
3/0	10, 20, 25, 30, 50, 100, 250	0.625″	1,539	7940A28	7.88	6.01	7940A67	7.86	6.01	0.700″	4,180	7818A16	10.38	8.91
4/0	10, 20, 25, 30, 50, 100, 250	0.720″	2,014	7940A29	7.97	6.69	7940A68	9.86	7.74	0.800″	5,225	7818A17	12.73	11.07

Cable Lugs

Hammer-Tight Style

As simple as driving a nail; just slide lug onto cable and strike it with your hammer for a durable connection. Lugs are made of copper alloy for high conductivity and are not rated for temperature or voltage.

For Cable Size (AWG)	Cable Socket Inside Dia.	Stud Hole Size		
2-1	0.406″	33/64″	69575K2	$10.28
1/0-2/0	0.516″	17/32″	69575K3	12.57
3/0-4/0	0.625″	21/32″	69575K4	14.87

Crimp/Solder Style

Made from copper tube. *Crimping block and punch* can be used with all crimp/solder style lugs below. Place lug and cable in block and hit punch with a hammer for a solid connection.

For Cable Size (AWG)	Cable Socket Inside Dia.	Stud Hole Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
6-2	0.461″	17/32″	50	7913A1	$1.99	$1.73
1-2/0	0.559″	17/32″	50	7913A2	3.02	2.64
3/0-4/0	0.660″	17/32″	25	7913A3	4.92	4.30
4/0	0.776″	21/32″	25	7913A4	8.81	7.71

Lug Crimping Block and Punch 7913A76 $60.76

Screw-Locking Style

Lug with cover on.

Lug with cover removed.

Remove cover first, then use a 1/4″ hex key wrench to tighten the screw connection. Lugs are heavy duty cast-copper alloy with a nylon cover.

For Cable Size (AWG)	Cable Socket Inside Dia.	Stud Hole Size	Straight		45° Angle	
6-1/0	0.500″	17/32″	7866A12	$16.00	7866A11	$15.50
2/0-4/0	0.641″	17/32″	7866A14	17.45	7866A13	17.45

Grounding Clamps

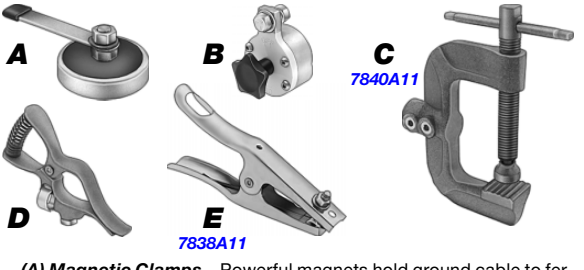

(A) Magnetic Clamps— Powerful magnets hold ground cable to ferrous metal. Clamps have a 3½″ dia. heavy duty steel housing, a 5⅛″ long handle, and a bolt-and-nut cable connection with a ½″ stud. Stud is brass on *250-amp style* and copper on *800-amp style*.

(B) Magnetic Clamps with On/Off Switch— Just flip a switch to turn the magnet on or off. Made of steel. Clamps have a bolt-and-nut cable connection with a ½″ stud. The *300-amp style* measures 2½″ Ht. × 1½″ Wd. The *600-amp style* measures 2½″ Ht. × 2¾″ Wd.

(C) C-Clamps— Made from CDA-836 brass. Clamps have a threaded drive for strong contact. The *300-amp style* includes a detachable male and female cam-action cable connector. The *600-amp style* has a double oval-point screw cable connection.

(D) Spring Clamps— Jaws are 98% copper alloy and the hinge pin is copper, so both jaws carry current. Clamps feature an extended jaw lip for easy clamping and a support ring to prevent cable strand breakage. They have a ball-point screw cable connection.

(E) Light Duty Spring Clamps— Made from steel, these clamps have a bolt-and-nut cable connection and a cable support. The *300-amp style* has a 5/16″ stud bolt. The *500-amp style* has a ½″ stud bolt and a braided copper shunt that lets both jaws carry current.

	Amp Cap.	For Cable Size (AWG)	Max. Cable Outlet Dia.	Max. Jaw Opening	Max. Jaw Depth	O'all Lg.		
A	250	—	—	—	—	6⅞″	7992A1	$24.65
A	800	—	—	—	—	6⅞″	7992A5	29.95
B	300	—	—	—	—	2¾″	7992A7	61.12
B	600	—	—	—	—	4″	7992A9	134.93
C	300	1/0-2/0	0.5625″	2″	1⅛″	5″	7840A12	53.27
C	600	3/0-4/0	0.656″	3⅜″	2½″	5¼″	7840A11	81.53
D	200	2-1/0	0.505″	1″	3″	6″	7991A4	33.61
D	300	1/0-3/0	0.540″	1½″	4″	8½″	7991A5	46.98
D	500	2/0-4/0	0.640″	2″	5¼″	10″	7991A6	71.11
E	300	1/0-2/0	—	2″	2¼″	8½″	7838A11	9.91
E	500	3/0-4/0	—	2″	2½″	9½″	7838A12	20.79

Retractable Reels for Welding Cable

Keep welding cable out of the way. These reels are cast aluminum and have a self-winding spring that retracts the cable after use. Cable locks in place when pulled out; give it a quick pull to rewind it. Include a four-roller guide that prevents cable from tangling and an adjustable guide arm that holds the cable in position. Size is 14½″ Ht. × 13½″ Wd. For use indoors and out.

Cable Size	Cable Lg.	Max. Amp Rating		
Reels with Cable				
1	50 ft.	250	7833A62	$1,031.27
1/0	40 ft.	350	7833A61	1,045.51
Reel without Cable				
—	▲	375	7833A65	775.92

▲ Maximum reel capacity is 50 ft. for cable sizes 2 and 1; 40 ft. for cable sizes 1/0 and 2/0.

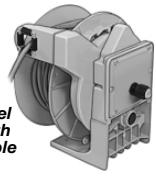

Reel with Cable

Spot-Welding Electrodes

Use these Class 2 alloy (copper chromium) electrodes with electric resistance spot welders in production operations. All have tapered shanks for easy press-fit installation and meet RWMA (Resistance Welding Manufacturers Assn.) standards. ***Point-faced tips*** are best for tight areas or for a small weld. ***Flat-faced tips*** create a larger weld and can be used when appearance is not important.

Cap Style with Point-Faced Tip

Cap Style with Flat-Faced Tip

Standard Style with Point-Faced Tip

Standard Style with Flat-Faced Tip

RWMA Shank Taper	Body Dia.	O'all Lg.	Point-Faced Tips Face Dia.			Flat-Faced Tips Face Dia.		
Cap-Style Electrodes								
4	31/64″	1⅛″	3/16″	7819A31	$2.35	31/64″	7819A41	$2.33
5	⅝″	1¼″	¼″	7819A32	3.47	⅝″	7819A42	3.47
Standard-Style Electrodes								
4	31/64″	3″	3/16″	7819A11	5.67	31/64″	7819A21	5.62
5	⅝″	3″	¼″	7819A12	9.60	⅝″	7819A22	9.28

Spot-Welding Electrode Cleaner

Use this ratchet-style tool to clean (dress) and shape upper and lower electrodes without disassembly. Works with No. 4 and No. 5 RWMA (Resistance Welding Manufacturers Assn.) taper electrodes and dome-nose electrodes. Cleaner is 8″ Lg. × ¾″ Wd. with a 1¼″ wide head.

Complete Tool	7821A11	$86.40
Replacement Cutter	7821A12	70.61

Cable Lug Cover

Protect against accidental contact with other welding connections. Simply slide the soft PVC cover up and over the lug and cable, then pull it back over the completed connection. Fits cable sizes 6 through 4/0 and both straight and angled lugs.

7828A11 ..... $10.56

Stud Welding System

Weld up to ¼″ dia. threaded studs and unthreaded pins to thin metal without marring or distortion. For steel and stainless steel. Includes a control unit with 20-ft. power cord and three-prong plug; a welding gun with 21-ft. cable; collets for 6-32, 8-32, 10-24, and ¼″-20 studs; and a 16-ft. ground cable with two grounding clamps. Operates on 115 VAC, 60 Hz, 10 amps. Size is 9¾″ Ht. × 7¼″ Wd. × 16½″ Dp.

Collets must be the same size as the stud or pin you are welding and are not interchangeable with studs from other systems.

Threaded studs and unthreaded pins can be used for most fastening applications.

Also Available: 12- and 10-gauge unthreaded pins in 1″ to 6″ lengths for installing insulation and acoustical lining. Please ask for 7845A81 and specify gauge and length.

Threaded Stud

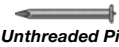

Unthreaded Pin

Stud Welding System

7845A28 ..... $4,164.18

Collets—To Order: Please specify size.

Available Sizes

6-32 (10 Gauge), 8-32, 10-24, ¼″-20	7845A25	$60.00
4-40 (12 Gauge)	7845A256	90.00

Threaded Studs

Size	Head Dia.	Lg.	Pkg. Qty.	Copper-Coated Steel	Pkg.	18-8 Stainless Steel	Pkg.
4-40	0.187″	½″	100	7845A55	$16.00	—	—
6-32	0.218″	½″	100	7845A51	5.51	7845A88	$6.80
6-32	0.218″	¾″	100	7845A72	6.50	7845A82	24.00
6-32	0.218″	1½″	100	7845A77	20.00	7845A83	25.20
8-32	0.250″	½″	100	7845A52	6.00	7845A89	8.20
8-32	0.250″	¾″	100	7845A78	9.75	7845A84	10.60
10-24	0.250″	½″	100	7845A56	8.50	7845A91	11.80
10-24	0.250″	1″	100	7845A57	8.50	7845A92	19.20
¼″-20	0.312″	½″	100	7845A53	9.68	7845A85	13.40
¼″-20	0.312″	¾″	100	—	—	7845A86	14.80
¼″-20	0.312″	1″	100	7845A58	10.50	7845A87	16.60

Portable Resistance Spot Welders

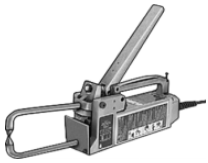

Resistance welding is faster than arc welding and brazing and may be preferred over riveting and screwing. Use this welder to spot weld mild, galvanized, and stainless steel; not designed for use with aluminum, copper, or copper alloys. Welders are air cooled and can be used left- or right-handed. Include 6″ tongs with ⅜″-24 threaded welding tips that hold and weld metal pieces together. Tongs in other lengths are sold separately. Throat height is 3½″ for all tongs when closed. 7870A32 has a 10-ft. long power cord with three-prong plug; 7870A34 has a 10-ft. long power cord without a plug.

Note: Welding capacities below are based on the total thickness of multiple sheets of uncoated mild steel when using 6″ tongs. Capacities are slightly reduced when welding galvanized steel and stainless steel and when using 12″ or 18″ tongs.

Spot Welders—Operate on 50/60 Hz, single phase.

Input Volts	Input Amps	Welding Cap.	Output, kVA ♦	Wt., lbs.		
110 VAC	30	⅛″	1.5	22	7870A32	$763.17
220 VAC	30	3/16″	2.5	30	7870A34	863.68

♦ Rated for 5 minutes on and 5 minutes off using 6″ tongs.

Accessories

		Pair
Repl. 6″ Tongs with Pointed Welding Tips	7870A15	$104.63
Repl. Pointed Welding Tips (⅜″-24 threads)	7870A22	20.37
Optional 12″ Tongs with Pointed Welding Tips	7870A19	135.36
Optional 18″ Tongs with Pointed Welding Tips	7870A35	171.17

Lincoln Arc Welders

Welders include an 11-ft. No. 4 welding cable with insulated rod holder, an 8-ft. No. 5 welding cable with ground clamp, and a 7-ft. power cord with NEMA 6-50 plug. Both weld 16-gauge and thicker metals. Rated for two minutes on and 8 minutes off. Operate on 230 VAC, 60 Hz, single phase. Size is 24″ Ht. × 17¼″ Wd. × 12″ Dp. UL listed.

Lincoln K-1170 225-Amp AC Welder— For general fabrication, equipment modification, and repairs. Rated for 50 input amps. Weighs 109 lbs.

Lincoln K-1297 225/125-Amp AC/DC Welder— A built-in polarity switch lets you select AC, DC positive, or DC negative welding. AC is rated for 50 input amps and DC is rated for 36. Weighs 124 lbs.

Wheel Assembly— Easily installs on welders for mobility. Includes two 6″ dia. wheels, an axle, and hardware.

Lincoln No.	Output Volts	Output Amps		
K-1170	25	225 (AC)	7967A33	$364.21
K-1297	25	225 (AC)/125 (DC)	7967A67	633.63
Wheel Assembly (Lincoln No. K-761)			7967A65	14.26

Arc-Welding Rods

Get excellent arc stability, speed, and performance with these high-quality flux-coated welding rods (electrodes). Rods are 12″ to 14″ long (unless noted). **To Order:** Please specify package size from the quantities listed in the tables below.

Mild Steel Welding Rods

Pipe Welding (E6010)—DC electrode positive. For welding pipe and for general structural fabrication.

Vertical/Overhead (E6011)—AC/DC electrode positive. Fast solidifying allows for vertical and overhead welding.

All Purpose (E6013)—AC/DC electrode positive and negative. For mild steel fabrication and a superior bead appearance.

High Speed (E7014)—AC/DC electrode positive and negative. For high-speed welding with outstanding bead appearance and slag removal.

Inspection Quality (E7018)—AC/DC electrode positive. Low hydrogen for X-ray quality welds and high tensile strength.

Inspection Quality (E7018AC)—AC/DC electrode positive. Similar to E7018 above, but designed for optimum performance when used with an AC power source.

Fast Deposit (E7024)—AC/DC electrode negative. Rods deposit quickly on welds making them ideal for high-speed single-pass welds with easy slag removal and shallow penetration.

Stainless Steel Welding Rods

All Purpose (E308L)—AC/DC electrode positive. For welding Types 201, 202, 301, 302, 304, 305, and 308 stainless steel.

Type 309 (E309L)—AC/DC electrode positive. For welding heat-resistant Type 309 stainless steel and other stainless steel where pre- and post-heat treatment aren't possible. Also for joining dissimilar metals.

Type 316 (E316L)—AC/DC electrode positive. For welding Type 316 stainless steel and food-processing equipment. Also makes high-temperature corrosion-resistant welds on molybdenum-bearing steels.

Specialty Welding Rods

Nickel (ENi-CI [Ni 99])—AC/DC electrode positive. Rods are 91.5% pure nickel for machinable welds joining cast iron, mild steel, and stainless steel to themselves.

Cast Iron (ESt [Castarc])—AC/DC electrode positive and negative. Rods are iron for making nonmachinable welds on cast iron.

Gray Cast Iron (ENiFe-CI [Ni 55])—AC/DC electrode positive. Use for joining gray iron, ductile iron, malleable iron, and alloy cast iron to themselves, to each other, and to mild steel.

Copper Based (ECuSnC/Phosphorus Bronze C)—AC/DC electrode positive and negative. Weld in flat positions. For metallic carbon arc welding of brass, bronze, and copper to themselves and to mild steel, stainless steel, and cast iron.

Aluminum (E4043)—DC electrode positive, reverse polarity. For arc welding on aluminum alloys 3003, 3004, 5052, 6061, and 6063.

Surface Repair—AC/DC electrode positive. Rods are multipurpose for preventing wear and for repairing worn parts. Rockwell hardness is C57-C61.

Multi-Material—AC/DC electrode positive, reverse polarity. For welding all steels including tool and stainless.

Cutting/Chamfer—AC/DC electrode negative. Designed for cutting all grades of steel including stainless and cast iron.

Mild Steel Welding Rods

Dia.	Approximate Rods per lb.		1 lb.	Package 5 lbs.	50 lbs.
Pipe Welding (E6010)					
3/32″	28	7973A511	$7.11	$16.52	$146.25
1/8″	17	7973A514	6.28	16.08	137.63
5/32″	11	7973A517	6.18	17.22	134.62
Vertical/Overhead (E6011)					
3/32″	25	7973A521	5.96	14.20	122.12
1/8″	16	7973A524	6.53	13.30	121.15
5/32″	11	7973A527	5.86	15.56	120.19
All Purpose (E6013)					
1/16″	73	7973A114●	10.11	29.00	211.54
5/64″	43	7973A595	8.80	26.11	196.43
3/32″	23	7973A598	5.28	12.22	86.36
1/8″	14	7973A544	5.18	12.11	90.38
5/32″	9	7973A547	5.22	12.00	89.42
3/16″	7	7973A551	5.22	12.00	89.42
High Speed (E7014)					
3/32″	23	7973A554	5.42	13.00	98.08
1/8″	13	7973A557	5.40	12.89	97.12
5/32″	9	7973A561	5.38	12.77	96.15
Inspection Quality (E7018)					
3/32″	23	7973A574	5.48	13.33	120.19
1/8″	13	7973A577	5.46	13.11	112.73
5/32″	9	7973A581	5.42	13.00	110.91
Inspection Quality (E7018AC)					
3/32″	22	7973A71	6.31	14.78	139.03
1/8″	13	7973A72	6.04	13.47	130.40
5/32″	9	7973A73	5.98	13.47	131.67
Fast Deposit (E7024)					
1/8″	9	7973A144	5.50	13.30	96.36

Stainless Steel Welding Rods

Dia.	Approximate Rods per lb.		1/2 lb.	Package 1 lb.	5 lbs.
All Purpose (E308L)					
1/16″	52	7973A191	$11.71	$19.69	$67.27
3/32″	26	7973A193	—	12.56	38.00
1/8″	13	7973A194	—	11.58	32.84
5/32″	8	7973A195	—	11.58	31.96

● Available in 1-lb., 5-lb., and 40-lb. packages.

Stainless Steel Welding Rods (Cont.)

Dia.	Approximate Rods per lb.		1/2 lb.	Package 1 lb.	5 lbs.
All Purpose (E308L) (Cont.)					
3/16″	5	7973A196♣	—	$11.58	$32.30
Type 309 (E309L)					
3/32″	25	7973A656	—	14.27	45.27
1/8″	12	7973A659	—	14.20	39.17
Type 316 (E316L)					
1/16″	52	7973A201	$11.99	20.31	70.96
3/32″	24	7973A203	—	14.98	47.91
1/8″	13	7973A204	—	14.69	46.82

Specialty Welding Rods

Dia.	Approximate Rods per lb.		1/2 lb.	Package 1 lb.	5 lbs.
Nickel (ENi-CI [Ni 99])					
3/32″	24	7973A612	$25.89	$47.78	$197.18
1/8″	12	7973A241	27.00	47.74	197.18
Cast Iron (ESt [Castarc])					
3/32″	22	7973A628	—	15.77	46.74
1/8″	15	7973A261	—	15.04	45.54
Gray Cast Iron (ENiFe-CI [Ni 55])					
3/32″	24	7973A761	23.10	41.00	164.09
1/8″	14	7973A251	23.29	42.33	160.33
3/16″	7	7973A253	—	38.42	160.33
Copper Based (ECuSnC/Phosphorus Bronze C)					
1/8″	14	7973A231	16.92	27.93	108.55
Aluminum (E4043)					
3/32″	50	7973A271	17.06	29.81	106.73
1/8″	32	7973A272	16.34	28.02	99.45
Surface Repair					
3/32″	14	7973A646	—	18.73	57.27
1/8″	15	7973A649	—	12.76	34.55
5/32″	9	7973A653	—	12.76	34.55
Multi-Material					
3/32″	24	7973A771	—	22.03	89.97
1/8″	12	7973A781	—	21.48	86.46
Cutting/Chamfer					
3/32″	24	7973A811	—	11.98	41.88
1/8″	14	7973A821	—	11.00	37.23

♣ Rods are 14″ to 18″ long.

Arc-Welding Rod Holders

Standard

Big Grip

Stub Grip

Get a grip on your arc-welding rods (electrodes). All holders have a fully insulated body.

Standard—Jaws are copper alloy for maximum conductivity and strength.

Big Grip—Easy to use and allow greater hand clearance than standard holders. Jaws are copper alloy.

Stub Grip—It grips the welding rod closer to the end, which lets you use up to 2″ more of the rod than with standard and big-grip holders. Plus, it has an angled head for better control. Includes a high-impact replaceable head. Jaws are steel.

Max. Amps	Max. Rod Dia.	Max. AWG Cable Size	Standard Lg.			Big Grip Lg.			Stub Grip Lg.		
250	5/32″	1/0	8 1/4″	7939A9	$21.91	9″	7937A2	$21.91	—	—	—
300	3/16″	2/0	8 1/2″	7939A7	27.63	9 3/4″	7937A3	27.63	—	—	—
350	1/4″	2/0	10″	7939A5	31.90	10 1/2″	7937A4	31.90	—	—	—
400	1/4″	3/0	10″	7939A6	35.39	10 1/2″	7937A5	35.39	8 3/4″	7868A12	$48.50
500	3/8″	4/0	10 1/2″	7939A3	38.36	10 1/2″	7937A6	38.36	—	—	—

Air Carbon-Gouging Electrode Holders

Make weld removal, edge preparation, gouging, and repairs easier. These holders have a 15° angle that allows you to maintain normal wrist and arm movements for maximum comfort. Include a bolt-down lug with a 17/64″ dia. hole for connection to a power source and 3/8″ NPT female threads for connection to an air compressor. Also include a cable that swivels 360°. Use with the Air Carbon-Gouging Electrodes on this page.

Max. Amps	Electrode Capacity Round	Electrode Capacity Flat	Max. Air Supply	Cable Lg., ft.		
450	1/8″ -1/4″ dia.	3/8″	40 psi	7	7804A11	$299.27
450	1/8″ -1/4″ dia.	3/8″	40 psi	10	7804A21	407.28
600	1/8″ -3/8″ dia.	3/8″, 5/8″	80 psi	7	7804A23	418.47
600	1/8″ -3/8″ dia.	3/8″, 5/8″	80 psi	10	7804A13	422.33
1,000	5/32″-1/2″ dia.	3/8″, 5/8″	80 psi	10	7804A12	506.88

Air Carbon-Gouging Electrodes

Gouge and cut carbon steel, stainless steel, copper, aluminum, and some high-temperature alloys. Electrodes are 12″ long and made for use with DC power supplies. Use with Air Carbon-Gouging Electrode Holders on this page.

Copper-coated electrodes offer improved conductivity.

Dia.	Pkg. Qty.	Copper Coated	Pkg.	Plain	Pkg.
5/32″	10	7979A41	$6.40	7979A11	$2.66
3/16″	10	7979A42	6.40	7979A12	3.84
1/4″	10	7979A43	6.93	7979A13	4.34
5/16″	10	7979A44	10.27	7979A14	3.84
3/8″	10	7979A45	11.21	7979A15	5.66
1/2″	10	7979A47	22.03	7979A17	10.61
5/8″	5			7979A18	9.34
3/4″	5			7979A19	12.00

Lincoln Easy-MIG 140 Welder

Compact and easy to use, this welder can be used with flux-core and solid-core wire. Welds 24-ga. to 10-ga. mild steel and uses 0.025″-0.035″ solid wire and 0.030″-0.035″ flux-core wire. Includes a 10-ft., 8-ga. ground cable with clamp; an argon-mixed gas regulator for MIG welding; a hose; a 2-lb. spool of 0.025″ solid wire; a 1-lb. spool of 0.035″ flux-core wire; contact tips; a gas nozzle for MIG welding; a gasless nozzle for flux-core welding; and a face shield. Welder is rated for 2 minutes on and 8 minutes off. Operates on 120 VAC, 60 Hz, single phase, 30-140 amps; includes an 8-ft. power cord with a three-prong plug. Size is 14″ Ht. × 10 1/8″ Wd. × 18 5/8″ Dp. Weight is 58 lbs. Requires a shielding gas (not included) for MIG welding.

Optional utility cart holds a welder, a gas cylinder, and tools. Has a handle, front casters, and rear wheels. ***Optional aluminum welding kit*** includes gun with spool mount, a spool of 0.035″ aluminum alloy 4043 wire, contact tips, an electric harness with toggle switch, and a carrying case.

Model No.	Input Amps	Rated Output Amps	Rated Output Volts		
K2697-1	20	90	19.5	7264A12	$650.96
Optional Utility Cart				7264A113	104.47
Optional Aluminum Welding Kit				7264A15	262.12

MIG/Flux-Core Welding Wire

1- and 2-lb. spools have a 4″ dia. wheel with a 5/8″ arbor. *3-, 5-, 10-,* and *11-lb. spools* have an 8″ dia. wheel with a 2 1/16″ arbor. *33-lb. spools* have a 12″ dia. wheel with a 2 1/16″ arbor (unless noted). *Flux-core* wire is self-shielding and does not require a shielding gas (unless otherwise stated).

Approximate Feet/lb. for MIG Welding Wire Listed

Wire Size	Approximate Feet/lb. Solid	Flux Core	Metal Core	Aluminum
0.023″	600	—	—	—
0.030″	500	544	—	1,130
0.035″	350	380	380	975
0.045″	195	212	212	650

Steel

All Purpose (ER 70S-6)— For low-carbon steel. Ideal for scaled, rusty, and oily plates.

High Porosity (ER 80S-D2)— For mild steel when porosity or high sulfur or carbon content is a concern.

Fast Deposit (E70C-6M)— A high-productivity wire that provides faster welding speeds, low fumes, and clean welds.

Vertical/Overhead (E71T-1)— Fast solidifying for vertical and overhead welding. Requires a shielding gas.

Thin Gauge (E71T-GS)— Great for thin-gauge galvanized and mild steel.

Surface Repair (55 FC-0)— This hard and durable multipurpose wire is designed to prevent wear and repair worn parts.

Wire Dia.	2-lbs.		11-lbs.		33-lbs.	
All Purpose (ER 70S-6)—Solid Core						
0.023″	7678A5	$9.99	7678A86	$29.80	7678A655■	$77.40
0.030″	7678A6	8.57	7678A87	23.80	7678A656■	59.81
0.035″	7678A651	8.58	7678A88	23.80	7678A657■	59.40
0.045″	7678A21	8.58	7678A22	26.00	7678A23■	61.38
High Porosity (ER 80S-D2)—Solid Core						
0.030″	7678A11	13.65	7678A13	48.60	7678A15	123.32
0.035″	7678A12	13.38	7678A14	47.20	7678A16	121.16
0.045″	—	—	—	—	7678A17	115.70
Fast Deposit (E70C-6M)—Composite Metal Core						
0.035″	—	—	7678A572	71.26	7678A573	177.46
Vertical/Overhead (E71T-1)—Flux Core						
0.035″	—	—	7678A661	58.18	7678A662	154.73
0.045″	—	—	—	—	7678A664	81.10

	2-lbs.		10-lbs.			
Thin Gauge (E71T-GS)—Flux Core						
0.030″	7678A673	$18.00	7678A675	$57.27	—	—
0.035″	7678A674	16.67	7678A676	52.00	—	—
0.045″	7678A24	14.62	7678A25	45.45	—	—

	1-lb.		3-lbs.	
Surface Repair (55 FC-0)—Flux Core				
0.035″	—	—	7678A72	$29.06	7678A74	$77.66

■ Has a 10″ dia. wheel with a 2 1/16″ arbor.

Stainless Steel

General Purpose Solid Core (ER 308L)— For Types 301, 302, 303, 304, 304L, 308, 308L, 312, and 347 stainless steel. Resists impact and abrasion.

General Purpose Flux Core (ER 308L FC-0)— For Types 301, 302, 304, and 308 stainless steel.

Stainless Steel/Mild Steel (ER 309L)— For joining Type 309 stainless steel to base metals. Also recommended for Type 304 stainless steel to mild steel and for overlay work.

Type 316 Stainless Steel (ER 316L)— For Type 316 stainless steel. Has molybdenum for strength in high-temperature applications, resistance to weld deposits, and resistance to pitting caused by corrosive liquids.

Wire Dia.	2-lbs.		5-lbs.		10-lbs.	
General Purpose (ER 308L)—Solid Core						
0.023″	7678A31	$27.07	—	—	7678A33	$92.51
0.030″	7678A3	22.57	—	—	7678A34	83.64
0.035″	7678A29	22.27	—	—	7678A35	82.36
0.045″	7678A32	21.96	—	—	7678A93	81.09
General Purpose (ER 308L FC-0)—Flux Core						
0.035″	7678A56♦	44.91	7678A58	$198.98	—	—
Stainless Steel/Mild Steel (ER 309L)—Solid Core						
0.023″	7678A94	32.99	—	—	7678A95	117.82
0.030″	7678A36	27.33	—	—	7678A39	93.80
0.035″	7678A37	27.02	—	—	7678A41	91.20
Type 316 Stainless Steel (ER 316L)—Solid Core						
0.023″	7678A91	27.47	—	—	7678A92	97.64
0.030″	7678A49	29.86	—	—	7678A53	105.82
0.035″	7678A51	29.55	—	—	7678A54	104.73

♦ 1-lb.

Additional Metals

Aluminum (ER 4043)— For aluminum alloys 3003, 3004, 5052, 6061, and 6063, and casting alloys 43, 355, 356, and 214.

Hard Aluminum (ER 5356)— Similar to ER 4043, but it's harder and can be anodized. For aluminum alloys 5050, 5052, 5083, 5454, and 5456.

Cast Iron (NI 55)— For joining cast iron to itself and to other metals.

Silicon Bronze— For silicon bronze and copper.

Wire Dia.	1-lb.		2-lbs.		3-lbs.	
Aluminum (ER 4043)—Solid Core						
0.030″	7678A717	$10.58	—	—	7678A63	$36.27
0.035″	7678A61	9.76	—	—	7678A64	33.41
0.045″	7678A62	9.34	—	—	7678A65	34.70
Hard Aluminum (ER 5356)—Solid Core						
0.030″	7678A7	10.73	—	—	7678A68	36.47
0.035″	7678A66	9.87	—	—	7678A69	35.70
0.045″	7678A67	9.47	—	—	—	—
Cast Iron (NI 55)—Composite Metal Core						
0.035″	7678A76	69.45	—	—	7678A78	205.00
Silicon Bronze—Solid Core						
0.035″	—	—	7678A81	$37.06	—	—

MIG Torch Light

Stop guessing where to start welding. This LED light attaches to your MIG gun to illuminate the area so you know exactly where to weld—even while wearing dark welding lenses. It has a flexible mounting bracket that attaches to ½″ to ¾″ dia. gun necks, a lens cover to protect LED from spatter, and auto shut-off. Operates on one AAA battery (included).

Torch Light **7741A77** $28.49
Repl. AAA Battery **14715T101** $0.79

MIG Welding Pliers

Handle multiple jobs with just one tool—remove weld spatter from nozzles; install/remove contact tips and nozzles; cut wire; draw out wire; and tighten/loosen fittings, nuts, and bolts. Also use as a chisel, hammer, and long-nose pliers. Pliers are high carbon steel, spring loaded, and have cushion-grip handles. Measure 8″ long.

79405A65 ..... $14.37

Welding Wire Cleaning and Lubricating Pads

Cleaning Pad

Improve wire feed and reduce weld spatter. Use ***cleaning pads*** with all types of wire. Color is red. ***Lubricating pads*** have a lubricant that allows wire with poor surface finish and rust to feed smoothly. Color is black.

Cleaning Pads (6/Pkg.) ..... **1664K1** **Pkg.** $9.20
Lubricating Pads (6/Pkg.) ..... **1664K2** **Pkg.** $10.50

Spool Keeper

Ensure high quality welds by protecting your welding wire from humidity and corrosion. This high-impact plastic case holds up to five 4″ dia. spools of wire. Size is 9½″ Lg. × 4¼″ Ht.

7684A11 ..... $14.18

MIG Guns

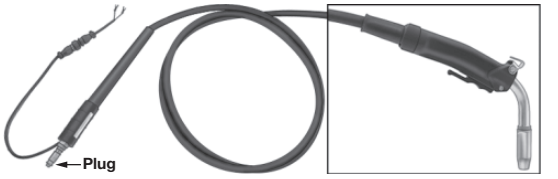

Plug Styles

A	A	B	C	C
160 Amps	*250 Amps*	*160 Amps 250 Amps*	*160 Amps*	*250 Amps*

Guns plug into your MIG welder and include contact tips and nozzles.

160-Amp Guns—Comparable to Tweco Mini MIG guns, these light duty guns are rated 6 minutes on and 4 minutes off using CO_2 gas. Use with 0.023″ to 0.035″ diameter wire.
Style A fits Thermal Arc Fabricator 130-180 and Hobart Handler.
Style B fits Millermatic 135, 175, 210, 251, and 300.
Style C fits Lincoln SP100 and SP130.

250-Amp Guns—Comparable to the Tweco Spraymaster series, these guns are rated 8 minutes on and 2 minutes off using Argon/CO_2 gas. Use with 0.035″ to 0.045″ diameter wire.
Style A fits Lincoln Power MIG 250, 255, and 300, SP 100, SP 130, and Weld-Pak 150; Hobart 19, 2000, 2200, 2210, 2400, 2410, Hefty, Porta Wire, Beta MIG 83, and MIG Man.
Style B fits Millermatic 135, 175, 210, 251, and 300.
Style C fits Lincoln LN4, LN7, LN8, LN9, and SP200.

	160 Amps			250 Amps		
	Lg., ft.			Lg., ft.		
A	10	**77365A12**	$219.16	12	**77365A14**	$333.72
B	10	**77365A18**	192.76	12	**77365A21**	333.72
C	10	**77365A25**	192.76	12	**77365A27**	324.45

Replacement Parts for Tweco, Lincoln, Miller, Bernard, and Tregaskiss MIG Guns

Contact Tips for Tweco Guns—Package quantity is 10.

D ***E***

Style D have M6-1 threads. *Style E* have ¼″-28 threads.

	Wire Size	Tweco Number	Fits Tweco Guns		Pkg.
D	0.023″/0.6 mm	11-23	Mini, No. 1★	**78375A606**	$6.00
D	0.030″/0.8 mm	11-30	Mini, No. 1★	**78375A607**	6.00
D	0.035″/0.9 mm	11-35	Mini, No. 1★	**78375A608**	6.00
D	0.035″/0.9 mm	11H-35	Spraymaster 250	**78375A623**	8.67
D	0.040″/1.0 mm	11-40	Mini, No. 1	**78375A609**	6.00
D	0.045″/1.1 mm	11-45	Mini, No. 1	**78375A610**	6.00
E	0.023″/0.6 mm	14-23	Nos. 2, 3, 4♠	**78375A611**	9.33
E	0.030″/0.8 mm	14-30	Nos. 2, 3, 4♠	**78375A612**	9.33
E	0.035″/0.9 mm	14-35	Nos. 2, 3, 4♠	**78375A613**	9.33
E	0.040″/1.0 mm	14-40	Nos. 2, 3, 4♠	**78375A614**	9.33
E	0.045″/1.1 mm	14-45	Nos. 2, 3, 4♠	**78375A615**	9.33
E	0.052″/1.3 mm	14-52	Nos. 2, 3, 4♠	**78375A621**	9.33
E	0.0625″/1.6 mm	14-116	Nos. 2, 3, 4♠	**78375A622**	9.33

★ Also fits Lincoln Magnum 100L gun.
♠ Also fits Lincoln Magnum 200, 250L, 300, and 400 guns.

Nozzles for Tweco Guns

F ***G*** ***H***

	Bore Size	Tweco Number	Fits Tweco Guns		Each
F	½″	21-50	Mini, No. 1	**78375A648**	$9.09
F	½″	23-50	Nos. 3, 4✓	**78375A661**	11.29
F	½″	HD22-50	Spraymaster 250	**78375A673**	14.65
F	⅝″	21-62	Mini, No. 1	**78375A649**	9.09
F	⅝″	23-62	Nos. 3, 4✓	**78375A662**	11.29
G	⅝″	22-62	No. 2▲	**78375A674**	4.30
H	⅜″	21-37	Mini, No. 1	**78375A647**	9.09
H	½″	22-50	No. 2▲	**78375A651**	4.30
H	½″	24A-50	Nos. 3, 4	**78375A653**	4.54
H	⅝″	24A-62	Nos. 3, 4	**78375A654**	4.54

✓ Also fits Lincoln Magnum 300 and 400 guns.
▲ Also fits Lincoln Magnum 200 and 250L guns.

Insulators for Tweco Guns

Length	Tweco Number	Fits Tweco Guns		Each
⅞″	32	No. 2	**78375A663**	$1.77
1 1/16″	34A	No. 4	**78375A664**	1.93

15-ft. Wire Conduit Assemblies for Tweco Guns

Fits Wire Size	Tweco Number	Fits Tweco Guns		Each
0.030″-0.035″	42-3035-15	Nos. 1, 2	**78375A732**■	$14.71
0.035″-0.045″	44-3545-15	Nos. 3, 4	**78375A734**✓	15.29

■ Also fits Lincoln Magnum 250L gun.
✓ Also fits Lincoln Magnum 300 and 400 guns.

Contact Tips for Miller Guns—Package quantity is 10.

Wire Size	Miller Number	Fits Miller Guns		Pkg.
0.030″/0.8 mm	000067	M15, M25, M40	**78375A681**	$13.00
0.035″/0.9 mm	000068	M15, M25, M40	**78375A682**	13.00
0.045″/1.1 mm	000069	M15, M25, M40	**78375A683**	13.00

Nozzles for Miller Guns

Bore Size	Miller Number	Fits Miller Guns		Each
½″	169715	M15	**78375A685**	$11.37
½″	169724	M25, M40	**78375A686**	14.23
⅝″	169725	M25, M40	**78375A687**	14.23

Contact Tips for Bernard Guns—Package quantity is 10.

J ***K***

	Wire Size	Bernard Number	Fits Bernard Guns♦		Pkg.
J	0.035″/0.9 mm	1589L	SW4, 5, 6	**78375A642**	$13.78
K	0.035″/0.9 mm	7489	SW4, 5, 6	**78375A634**	9.80

♦ Also fits EZ Feed 200-, 300-, 350-, 400-, 500-, and 600-amp guns.

Nozzles for Bernard Guns

L ***M***

	Bore Size	Bernard Number	Fits Bernard Guns		Each
L	½″	4392	Q150, 200, 300, 400	**78375A676**	$7.73
M	⅝″	4391	Q150, 200, 300, 400	**78375A675**	7.73

Contact Tips for Tregaskiss Guns—Package quantity is 10.

Wire Size	Tregaskiss Number	Fits Tregaskiss Guns		Pkg.
0.035″/0.9 mm	403-35	T30, T40	**78375A711**	$9.51
0.045″/1.1 mm	403-45	T30, T40	**78375A712**	9.51

Tungsten Electrodes

Electrodes have a ground finish for a close fit in TIG torch collets. They're 7″ long and conform to AWS (American Welding Society) standards. Package quantity is 10.

General Purpose (2% Thoriated Tungsten)—Provide excellent arc stability. For welding stainless steel, carbon steel, nickel alloys, and titanium. Use with an AC or DC power source. Tip is red.

Wear Resistant (1.5% Lanthanated Tungsten)—Have a reduced rate of vaporization or burn off. For welding stainless steel, carbon steel, nickel alloys, and titanium. Use with an AC or a DC power source. Tip is gold.

Easy Start (2% Ceriated Tungsten)—Provide an easier start, excellent arc stability, and a reduced rate of vaporization or burn off. For welding stainless steel, carbon steel, nickel alloys, and titanium. Use with an AC or a DC power source. Tip is orange.

Aluminum and Magnesium (Pure Tungsten)—Weld aluminum and magnesium alloys. Use with an AC or a DC power source. Tip is green.

Diameter	Diameter Tolerance	General Purpose Each Partial Pkg.	General Purpose Each Full Pkg.	Wear Resistant Each Partial Pkg.	Wear Resistant Each Full Pkg.
		Easy Start		**Alum./Magnesium**	
1/25″ (0.040″)	±0.002″	8000A85 $0.86	$0.75	8000A61 $1.16	$0.95
1/16″ (0.0625″)	±0.002″	8000A96 1.78	1.53	8000A62 2.39	1.95
3/32″ (0.0937″)	±0.002″	8000A97 3.91	3.37	8000A63 5.15	4.20
1/8″ (0.125″)	±0.004″	8000A98 6.96	6.00	8000A64 9.37	7.64
5/32″ (0.156″)	±0.004″	8000A73 10.84	9.34	8000A65 14.58	11.89
		Easy Start		**Alum./Magnesium**	
1/25″ (0.040″)	±0.002″	8000A41 $0.86	$0.75	8000A81 $0.86	$0.75
1/16″ (0.0625″)	±0.002″	8000A42 1.75	1.53	8000A82 1.76	1.53
3/32″ (0.0937″)	±0.002″	8000A43 3.86	3.37	8000A83 3.86	3.37
1/8″ (0.125″)	±0.004″	8000A44 6.88	6.01	8000A84 6.88	6.00
5/32″ (0.156″)	±0.004″	8000A45 10.71	9.34	8000A72 10.70	9.34

TIG Welding Rods

ER 70S-2 Mild Steel—Rods are copper coated. For welding all grades of mild and carbon steel, even over rust and scale.

ER 308L Stainless Steel—For AISI 200 and 300 series stainless steel up to and including Type 308L stainless steel.

ER 312 Stainless Steel—For joining dissimilar ferrous metals.

ER 316L Stainless Steel—For Type 316 and Type 316L stainless steel. Excellent corrosion resistance.

ER 4043 Aluminum—For aluminum alloys 3003, 3004, 5052, 6061, 6063, and casting alloys 43, 214, 355, and 356.

ER 5356 Aluminum—For aluminum alloys 5050, 5052, 5083, 5356, 5454, and 5456.

Ni 99 Cast Iron—For machinable welds on cast iron.

ERTi 2 Titanium—For titanium.

ERAZ 61A Magnesium—For magnesium sheets and extrusions.

ERAZ 92A Magnesium—For cast magnesium alloys.

Dia.	Lg.	Approx. Rods per lb.	1-lb. Pkg.	5-lb. Pkg.
ER 70S-2 Mild Steel				
1/16″	36″	32	7972A235 $7.43	7972A236 $20.40
3/32″	36″	14	7972A239 7.33	7972A241 20.10
1/8″	36″	8	7972A244 7.29	7972A245 19.80
ER 308L Stainless Steel				
1/16″	36″	32	7972A248 13.34	7972A249 47.50
3/32″	36″	14	7972A253 12.31	7972A254 42.90
1/8″	36″	8	7972A257 12.11	7972A258 42.10
ER 312 Stainless Steel				
1/16″	36″	32	7972A262 16.82	7972A263 63.20
3/32″	36″	14	7972A266 16.67	7972A267 62.50
1/8″	36″	8	7972A271 16.49	7972A272 61.80
ER 316L Stainless Steel				
1/16″	36″	32	7972A275 16.66	7972A276 62.50
3/32″	36″	14	7972A279 16.49	7972A281 61.80
1/8″	36″	8	7972A284 16.33	7972A285 61.10
ER 4043 Aluminum				
1/16″	36″	94	7972A298 13.07	7972A65 43.30
3/32″	36″	42	7972A302 12.31	7972A66 40.10
1/8″	36″	23	7972A305 12.16	7972A67 39.40
ER 5356 Aluminum				
1/16″	36″	94	7972A288 13.23	7972A68 43.90
3/32″	36″	42	7972A292 12.46	7972A69 40.70
1/8″	36″	23	7972A295 12.22	7972A71 39.70
Ni 99 Cast Iron			**1/2-lb.**	**1-lb.**
1/16″	36″	28	7972A35 $40.31	7972A308 $75.98
3/32″	36″	12	7972A36 40.42	7972A312 80.31
1/8″	36″	6	7972A37 40.43	7972A315 80.31
ERTi 2 Titanium				
1/16″	36″	52	7972A51 83.33	____ ____
3/32″	36″	24	7972A52 74.75	____ ____
ERAZ 61A Magnesium				
1/16″	36″	146	7972A81 87.27	____ ____
3/32″	36″	66	7972A82 83.98	____ ____
1/8″	36″	36	7972A83 81.60	____ ____
ERAZ 92A Magnesium				
1/16″	36″	146	7972A84 87.27	____ ____
3/32″	36″	66	7972A85 83.98	____ ____
1/8″	36″	36	7972A86 81.60	____ ____

Grinder for Tungsten Electrodes

Keep your electrode tips ground at the proper 20° angle to ensure high quality welds. It has a double-sided diamond grinding wheel and includes collets for 1/16″, 3/32″, and 1/8″ electrodes, a hex key, and a plastic case. Operates on 120 VAC.

Grinder	7652A51	$252.57
Repl. Diamond Wheel	7652A64	37.50

Lincoln TIG Welder

Welder with Optional Cart

This welder can be used for TIG and arc welding and is perfect for welding thin material. You can select AC or DC amperage. Output range is 5 to 225 amps AC/DC.

Welder includes 12½-ft. welding cable with TIG torch, 12-ft. ground cable with ground clamp, gas regulator and hose, foot-pedal control, and 9-ft. power cord with three-prong plug. Requires a cylinder of shielding gas (not included) when used for TIG welding. Rated for 1 minute on and 9 minutes off. Operates on 208/230 VAC, 60 Hz, single phase. Size is 20.7″ Ht.×14.5″ Wd.×25.6″ Dp. Weight is 212 lbs.

Torch kit includes a back cap; 0.040″, 1/16″, and 3/32″ collets and collet bodies; 1/4″, 5/16″, and 3/8″ alumina nozzles; and three 7″ long tungsten electrodes (0.040″ dia., 1/16″ dia., and 3/32″ dia.).

Optional cart provides mobility. Includes single gas cylinder platform, bracket, and chain. Measures 33½″ Lg.×27″ Wd. with two 4″ dia. casters in front and two 10″ dia. wheels in back. Designed for gas cylinders up to 10″ Dia.×60″ Ht.

	Model Number	Input Amps	Rated Output Amps	Rated Output Volts		
Welder	K2535-1	42/39	225	15.7	7373A32	$2,527.36
Torch Kit					7373A22	78.29
Optional Cart					7373A23	337.52

Welding Water Coolers

Two Gallon

Cool the heat generated in guns and torches. These recirculating coolers work with MIG, TIG, resistance, and plasma welders. The *2-gal. cooler* is for guns and torches up to 300 amps; *3-gal. cooler* up to 600 amps. Maximum flow is 1.7 gpm. Operate on 115 VAC, 50/60 Hz, single phase, 6.4/5.6 amps.

Inlet and outlet hose connections are 1/4″ NPT female. The outlet connects to a hose running to your welder or torch and the inlet connects to a hose running back (recirculating) from your welder or torch.

Coolants keep your cooler running in prime condition. Use instead of tap water to prevent mineral deposit buildup and frozen lines in any recirculating (closed-loop) system. For MIG, TIG, and resistance welding, as well as plasma cutting and welding. Coolants are nonconductive.

Coolers

Cap.	BTU/hr.	Wt.	Lg.	Wd.	Ht.		
2 gal.	10,000	34 lbs.	17″	11″	14″	7993A14	$697.74
3 gal.	12,000	44 lbs.	21¼″	13⅛″	16¾″	7993A11	788.66

Coolants

Size	For Minimum Temperature	Percent of Ethylene Glycol		
1-gal. Bottle	+19° F (–7° C)	17%	7888A21	$12.33
1-gal. Bottle	–60° F (–52° C)	56%	7888A23	23.62

MIG and TIG Cable Covers

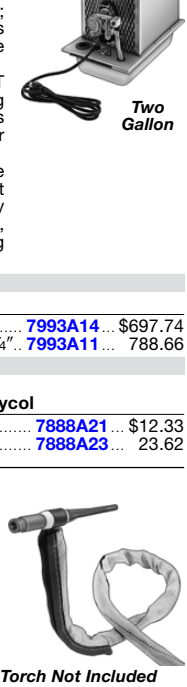

Torch Not Included

Protect the cables on your MIG guns and TIG torches from weld spatter. Covers are made from Zytol, a tear- and abrasion-resistant fabric with a maximum temperature of 2100° F. A zipper down the length of the cover lets you enclose your cable without disconnecting the torch; a flap protects the zipper. ***MIG covers*** have an ID of approximately 1¼″ and can also be used in plasma applications. ***TIG covers*** have an ID of approximately 1″.

MIG Covers Size, Lg.×Wd.			TIG Covers Size, Lg.×Wd.		
10′×4″	77415A54	$48.10	10′×3″	77415A51	$41.70
15′×4″	77415A55	67.15	20′×3″	77415A52	74.60
20′×4″	77415A56	88.60	23′×3″	77415A53	88.21

TIG Torches and Accessories

TIG Torch Kits

Air-Cooled TIG Torch Kit

Include a torch body, a long-lasting hose assembly, and a handle. *Kits in Series 9* and *20* include a medium back cap. *Kits in Series 17, 18,* and *26* include a long back cap.

Note: For use with TIG welders including Lincoln, Miller, and Hobart welders that meet torch amp requirements.

Torch Series No.	Head Style	Cable/ Hose Lg.	Amps		
Air-Cooled TIG Torch Kits					
9F-12R	70° Flexible	12½ ft.	125	77405A41	$109.81
9F-25R	70° Flexible	25 ft.	125	77405A42	122.35
9FV-12R	70° Flexible	12½ ft.	125	77405A43♣	126.26
9FV-25R	70° Flexible	25 ft.	125	77405A44♣	134.69
17F-12R	70° Flexible	12½ ft.	150	77405A81	117.84
17F-25R	70° Flexible	25 ft.	150	77405A82	126.26
17FV-12R	70° Flexible	12½ ft.	150	77405A83♣	130.02
17FV-25R	70° Flexible	25 ft.	150	77405A84♣	142.82
26F-12R	70° Flexible	12½ ft.	200	77405A71	130.76
26F-25R	70° Flexible	25 ft.	200	77405A72	157.47
26FV-12R	70° Flexible	12½ ft.	200	77405A73♣	149.99
26FV-25R	70° Flexible	25 ft.	200	77405A74♣	177.03
Water-Cooled TIG Torch Kits					
18-12	70° Rigid	12½ ft.	350	7736A71	110.46
18-25	70° Rigid	25 ft.	350	7736A72	118.44
18-12-R	70° Rigid	12½ ft.	350	7736A81	145.38
18-25-R	70° Rigid	25 ft.	350	7736A82	189.77
20-12-R	70° Rigid	12½ ft.	250	7736A83	148.69
20-25-R	70° Rigid	25 ft.	250	7736A84	191.28
20F-12	70° Flexible	12½ ft.	225	7736A21	128.07
20F-25	70° Flexible	25 ft.	225	7736A22	139.66
20F-12-R	70° Flexible	12½ ft.	225	7736A85	165.66
20F-25-R	70° Flexible	25 ft.	225	7736A86	199.85

♣ Torch body has a gas valve.

TIG Replacement Parts

Torch Body with Gas Valve

Long Back Cap

Medium Back Cap

Short Back Cap

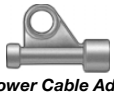

Power Cable Adapter

Fits Torch Series No.	Industry Number		
Torch Bodies			
9F	—	77405A45	$50.41
9FV (w/gas valve)	—	77405A46	63.93
17F	—	77405A85	58.33
17FV (w/gas valve)	—	77405A86	72.10
18	—	7736A73	58.43
20	—	7736A87	57.20
20F	—	7736A23	75.82
26F	—	77405A75	60.67
26FV (w/gas valve)	—	77405A76	77.28
Long Back Caps			
9, 20	41V24	77405A47	3.17
17, 18, 26	57Y02	77405A87	2.50
Medium Back Cap			
9, 20	41V35	77405A49	2.92
Short Back Caps			
9, 20	41V33	77405A48	2.92
17, 18, 26	57Y04	77405A88	2.17
Power Cable Adapters			
9, 17	105Z57	7763A21	10.20
18, 20, 22, 25	45V11	7763A22	15.71
26	45V62	7763A23	15.89

Accessory Kits

Series 9 Torch Kit— Includes a long back cap; 0.040″ and 1/16″ collets and collet bodies; sizes 4, 5, and 6 alumina nozzles; and two 7″ long 1.5% lanthanated tungsten electrodes (0.040″ dia., 1/16″ dia.).
7740A23 ..... $34.29

Series 17 Torch Kit— Includes a short back cap; 0.040″, 1/16″, and 3/32″ collets and collet bodies; sizes 4, 5, and 6 alumina nozzles; and three 7″ long 1.5% lanthanated tungsten electrodes (0.040″ dia., 1/16″ dia., 3/32″ dia.).
7740A24 ..... $40.07

Series 18 and 26 Torch Kit— Includes a short back cap; 1/16″, 3/32″, and 1/8″ collets and collet bodies; sizes 5, 6, and 8 alumina nozzles; and three 7″ long 1.5% lanthanated tungsten electrodes (1/16″ dia., 3/32″ dia., 1/8″ dia.).
7740A25 ..... $45.21

Series 20 Torch Kit— Includes a long back cap; 1/16″, 3/32″, and 1/8″ collets and collet bodies; sizes 5, 6, and 7 alumina nozzles; and three 7″ long 1.5% lanthanated tungsten electrodes (1/16″ dia., 3/32″ dia., 1/8″ dia.).
7740A26 ..... $43.28

Collets for Standard and Wide Gas Coverage

Size	1″ Length: Fits Torch Series Nos.	Industry Number			1 15/16″ Length: Fits Torch Series Nos.	Industry Number		
1/25″ (0.040″)	9, 20, 25	13N21	77425A237	$1.81	17, 18, 26	10N22	77425A236	$2.36
1/16″	9, 20, 25	13N22	77425A225	1.81	17, 18, 26	10N23	77425A222	2.36
3/32″	9, 20, 25	13N23	77425A226	1.81	17, 18, 26	10N24	77425A223	2.36
1/8″	9, 20, 25	13N24	77425A227	1.81	17, 18, 26	10N25	77425A224	2.36

Alumina Nozzles for Standard Gas Coverage

Size	Nozzle ID	1 1/8″ Length: Fits Torch Series Nos.	Industry Number			1 13/16″ Length: Fits Torch Series Nos.	Industry Number		
4	1/4″	9, 20, 25	13N08	77425A235	$2.75	17, 18, 26	10N50	77425A234	$2.75
5	5/16″	9, 20, 25	13N09	77425A217	2.75	17, 18, 26	10N49	77425A211	2.75
6	3/8″	9, 20, 25	13N10	77425A218	2.75	17, 18, 26	10N48	77425A212	2.75
7	7/16″	9, 20, 25	13N11	77425A219	2.75	17, 18, 26	10N47	77425A213	2.75
8	1/2″	9, 20, 25	13N12	77425A22	2.75	17, 18, 26	10N46	77425A214	2.75
10	5/8″	9, 20, 25	13N13	77425A221	2.75	17, 18, 26	10N45	77425A215	2.75
12	3/4″	—	—	—	—	17, 18, 26	10N44	77425A216	2.75

Collet Bodies for Standard Gas Coverage

Size	13/16″ Length: Fits Torch Series Nos.	Industry Number			1 7/8″ Length: Fits Torch Series Nos.	Industry Number		
1/25″ (0.040″)	9, 20, 25	13N26	77425A239	$3.62	17, 18, 26	10N30	77425A238	$4.73
1/16″	9, 20, 25	13N27	77425A231	3.62	17, 18, 26	10N31	77425A228	4.68
3/32″	9, 20, 25	13N28	77425A232	3.62	17, 18, 26	10N32	77425A229	4.73
1/8″	9, 20, 25	13N29	77425A233	3.62	17, 18, 26	10N28	77425A23	4.66

Alumina Nozzles for Wide Gas Coverage

Size	Nozzle ID	1″ Length: Fits Torch Series Nos.	Industry Number			1 5/8″ Length: Fits Torch Series Nos.	Industry Number		
4	1/4″	9, 20	53N58	77425A269	$2.75	17, 18, 26	54N18	77425A254	$2.83
5	5/16″	9, 20	53N59	77425A261	2.75	17, 18, 26	54N17	77425A255	2.83
6	3/8″	9, 20	53N60	77425A262	2.75	17, 18, 26	54N16	77425A256	2.83
7	7/16″	9, 20	53N61	77425A263	2.75	17, 18, 26	54N15	77425A257	2.83
8	1/2″	9, 20	53N61S	77425A264	2.75	17, 18, 26	54N14	77425A258	2.83

Gas Lenses for Wide Gas Coverage

Size	7/8″ Length: Fits Torch Series Nos.	Industry Number			2″ Length: Fits Torch Series Nos.	Industry Number		
1/25″ (0.040″)	9, 20	45V42	77425A432	$10.35	17, 18, 26	45V24	77425A428	$11.37
1/16″	9, 20	45V43	77425A433	10.35	17, 18, 26	45V25	77425A429	11.37
3/32″	9, 20	45V44	77425A434	10.35	17, 18, 26	45V26	77425A43	10.69
1/8″	9, 20, 22	45V45	77425A435	10.35	17, 18, 26	45V27	77425A431	11.37

Gas Lens Insulator (Industry Number 54N01—Fits Torch Series Nos. 17, 18, 26, 28, 29, SW-418) **77425A265** $4.45

Plasma Arc Cutting Systems

Using compressed air and electricity, these cutters make accurate cuts with minimal heat buildup and distortion. They cut through steel, stainless steel, aluminum, brass, copper, and other conductive materials. All systems include a cutting torch with a 20-ft. cable; a 20-ft. ground cable and ground clamp; a pressure regulator with gauge; a power cord with three-prong plug (8½ ft. for 15-amp cutter, 10 ft. for 20-amp cutter, 8 ft. for 60-amp cutter); cutting tips (1 for 15-amp cutter, 2 for 20-amp cutter, 3 for 60-amp cutter); electrodes (1 for 15-amp and 20-amp cutters, 3 for 60-amp cutter); and a ¼″ compressed air connection (except for 15-amp cutter).

15-amp cutter has a built-in air compressor and is lightweight for easier portability. Operates on 60 Hz, single phase.

20-amp cutter requires 396 cfh (cubic feet per hour) of air at 65 psi. Operates on 50/60 Hz, single phase.

60-amp cutter requires 402 cfh of air at 75 psi. Operates on 50/60 Hz, single or 3 phase.

20 Amp

Rated Amps	Rated On/Off, min.	Input Volts	Cutting Cap. ♦	Cutting Speed ♦	Size, Ht. × Wd. × Dp.	Wt., lbs.		
15	3.5/10	120 VAC	⅛″	⅛″ @ 25″/min.	9½″ × 6½″ × 18″	29	65935A21	$1,440.56
20	3/10	115/230 VAC	⅜″	¼″ @ 16″/min.	14¾″ × 8¼″ × 20″	44	65935A9	1,727.12
60	4/6	208/230/460 VAC	½″	½″ @ 28″/min.	15″ × 12″ × 24″	43	65935A8	2,315.55

♦ For mild steel. Cutting capacity and speed will be approximately 20% less for stainless steel and aluminum.

	For 15-Amp Cutter		For 20-Amp Cutter		For 60-Amp Cutter	
Repl. Gas Distributor/Start Cartridge	65935A25	$30.38	65935A85	$45.20	65935A85	$45.20
Repl. Shield Cup	65935A27	50.31	65935A84	34.90	65935A84	34.90
Repl. Electrode	65935A26	11.61	65935A83	11.09	65935A83	11.09
Repl. Cutting Tip	65935A24	8.16	65935A12	7.66	65935A88	9.16

Thermal Dynamics and ESAB Plasma Torch Parts

Shield Cup

Cutting Tip

Electrode

Start Cartridge

For Thermal Dynamics Torch No. PCH/M-51

Part	Thermal Dynamics Part No.		
Ceramic Shield Cup	9-5630	7829A14	$6.15
Phenolic Shield Cup	8-2159	7829A15	9.88
Cutting Tip	9-5631	7829A13	3.43
Electrode	9-5633	7829A11	5.57
Electrode (4XI)	9-5720	7829A12	9.12

For Thermal Dynamics Torch No. PCH-10

Part	Thermal Dynamics Part No.		
Shield Cup	9-6003	65935A27	$50.31
Cutting Tip	9-6099	65935A24	8.16
Electrode	9-6006	65935A26	11.61
Gas Distributor/Start Cartridge	9-6007	65935A25	30.38

For Thermal Dynamics Torch No. SL60

Part	Thermal Dynamics Part No.		
Shield Cup	9-8218	65935A84	$34.90
Cutting Tip, 20 amp	9-8206	65935A12	7.66
Cutting Tip, 60 amp	9-8252	65935A88	9.16
Electrode	9-8215	65935A83	11.09
Gas Distributor/Start Cartridge	9-8213	65935A85	45.20

For ESAB Torch No. PT-23/27

Part	ESAB Part No.		
Shield Cup (only for PT27)	21616	7829A24	$19.96
Cutting Tip, 30 amp	33368	7829A22	5.75
Cutting Tip, 50-70 amp	33369	7829A23	5.75
Electrode	33366	7829A21	10.75

Victor Oxygen/Acetylene Welding and Cutting Kits

These kits offer a complete system for welding, cutting, and heating. All include single-stage regulators, torches with check valves and flashback arresters to prevent the reverse flow of gas, a torch handle, a cutting attachment, a welding nozzle, a cutting tip, a torch lighter, goggles, and hose. Meet CGA (Compressed Gas Association) standards.

(A) Victor Cutskill Kits— Include regulators for oxygen (CGA540) and acetylene (CGA510).

(B) Victor Professional Kits— Include regulators for oxygen (CGA540) and acetylene (CGA510). *Journeyman* model includes two additional welding nozzles.

(C) Victor TurboTorch Kits with Portable Tote— Include two additional welding nozzles, regulators for oxygen (CGA540) and acetylene (CGA200), and a rugged plastic carrying tote. *Kit with cylinders* includes one unfilled 20 cubic ft. oxygen cylinder and one unfilled 10 cubic ft. acetylene cylinder.

A

B

C
With Cylinders

Duty	Model/Series	Capacity Cuts	Capacity Welds	Gauge OD	Hose Lg.	Hose ID		
(A) Victor Cutskill Kits								
Medium	250 Series	½″	5/64″	2″	20 ft.	3/16″	78825A87	$309.20
Heavy	350 Series	¾″	⅛″	2″	25 ft.	¼″	78825A88	432.11
(B) Victor Professional Kits								
Medium	Performer	½″	5/64″	1½″	12½ ft.	3/16″	7901A31	375.71
Heavy	Journeyman	¾″	½″	1½″	25 ft.	¼″	7901A12	939.75

Duty	Capacity Cuts	Capacity Welds	Gauge OD	Hose Lg.	Hose ID	With Cylinders		Without Cylinders	
(C) Victor TurboTorch Kits with Portable Tote									
Medium	¾″	¼″	1½″	12 ft.	3/16″	7835A44	$799.52	7835A45	$616.13
Portable Tote Only								7835A43	$63.16

Victor Oxygen/Acetylene Torch Parts

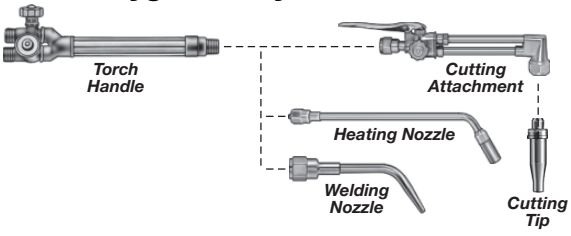

Torch Handles

Handles include check valves and flashback arresters to prevent the reverse flow of gas and flame. Have 9/16″-18 (B size) male hose connections. Attach a welding nozzle, heating nozzle, or cutting attachment and cutting tip (all sold separately).

Duty	Model No.		
Victor Cutskill Series			
Medium	WH270FC-V	79275A65	$180.00
Heavy	WH370FC-V	79275A67	204.79
Victor Professional Series			
Medium	100FC	79275A2	195.68
Heavy	315FC	79275A3	253.31

Welding Nozzles—Include a mixer and a tip.

Tip Size	Welding Capacity, Thick.	SERIES W-1 FOR MED. DUTY HANDLES Nozzle		Repl. Tip		SERIES W FOR HEAVY DUTY HANDLES Nozzle		Repl. Tip	
00	3/64″	79275A211	$56.02	79275A652	$49.74	79275A221	$59.60	79275A652	$49.74
0	5/64″	79275A212	57.67	79275A653	34.81	79275A222	60.00	79275A653	34.81
1	3/32″	79275A213	57.67	79275A654	36.60	79275A223	63.12	79275A654	36.60
2	1/8″	79275A214	58.46	79275A655	35.00	79275A224	63.12	79275A655	35.00
3	3/16″	79275A215	60.00	79275A656	42.79	79275A225	63.12	79275A676	55.00
4	1/4″	79275A216	61.60	79275A714	42.79	79275A226	66.27	79275A677	51.12
5	1/2″	79275A217	62.62	79275A648	47.27	79275A227	71.85	79275A678	57.17
6	3/4″	79275A218	82.40	79275A649	48.87	79275A228	71.85	79275A679	56.02

Cutting Attachments

Can be connected to one of the torch handles sold separately. Use with the cutting tips at right. Head is at 90° to body, unless noted.

Duty	Model No.	Lg.	Cutting Cap., Thick.	For Torch Handle Model No.		
Victor Cutskill Series						
Medium	CA270-V	8″	5″	WH270FC-V	79275A66	$173.54
Heavy	CA370-V	10 1/2″	6″	WH370FC-V	79275A68	204.79
Victor Professional Series						
Medium	CA1350	8″	6″	100FC	79275A4	253.31
Heavy	CA2460	10 1/2″	8″	315FC	79275A5	299.63
Heavy	CA2461	10 1/2″	8″	315FC	79275A241★	299.63

★ Head is at 75° to body.

Cutting Tips

Tip Size	Cutting Cap., Thick.	Series 3-101 for Medium Duty Cutting Attachments		Series 1-101 for Heavy Duty Cutting Attachments♣	
000	1/8″	79275A233	$23.13	79275A231	$23.13
00	1/4″	79275A662	23.13	79275A682	23.13
0	1/2″	79275A663	23.13	79275A683	23.13
1	3/4″	79275A664	23.13	79275A684	23.13
2	1 1/2″	79275A665	23.13	79275A685	23.13
3	2 1/2″	79275A234	23.13	79275A232	23.13
4	3″	79275A667	23.13	79275A687	23.13
5	5″	79275A895	23.13	79275A688	17.92
6	8″	———	———	79275A689	23.13
7	10″	———	———	79275A616	17.71

♣ Tips also fit Straight Cutting Torch (ST900FC).

Heating Nozzles

Also known as rosebud heads, these multiflame nozzles are for heat treating and straightening bent materials. For acetylene and hydrogen.

Size No.	Lg.	Model MFA-1 for Med. Duty Handles		Model MFA for Heavy Duty Handles	
4	12″	79275A611	$109.92	79275A333	$151.98
6	12″	79275A613	91.27	79275A334	151.98
8	12″	79275A612	112.10	79275A614	151.98

Straight Cutting Torch (ST900FC)

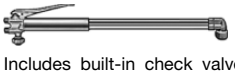

Use with Series 1-101 cutting tips (sold separately). Cutting capacity is 1/8″ to 5″. Head is at 90° to body. Includes built-in check valves and flashback arresters. Has 9/16″-18 (B size) male hose connections. Length is 21″. *Torch with regulators* includes single-stage oxygen (CGA540) regulator that operates at 5-125 psi and acetylene (CGA510) regulator that operates at 2 to 15 psi.

Torch	79275A615	$340.60
Torch with Regulators	66315A21	478.27

Harris Oxygen/Acetylene Torch Parts

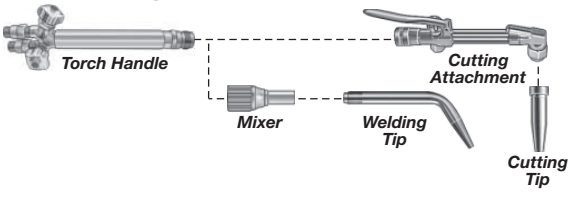

Torch Handles

Torches include check valves and have 9/16″-18 (B size) male hose connections.

Medium Duty—Use with Model No. 72-3 cutting attachment or Series 23A90 welding tips. Includes mixer.

Heavy Duty—Use with Model No. 73-3 cutting attachment or Series 23A90 welding tips. Mixer sold separately.

Duty	Model No.		
Medium	85	7980A54	$176.64
Heavy	43-2	7980A69	239.04

Oxygen and Acetylene Mixers

Duty	For Torch Handle Model No.		
Medium	85	7980A84	$53.87
Heavy	43-2	7980A81	53.87

Cutting Attachments

For Series 6290 cutting tips. Head is at 90° to body.

Duty	Model No.	Lg.	Cutting Cap., Thick.	For Torch Handle Model No.		
Medium	72-3	9 1/2″	5″	85	7980A68	$273.05
Heavy	73-3	9 1/2″	6″	43-2	7980A71	286.25

Welding Tips (Series 23A90)

Fit Model Nos. 85 and 43-2 torch handles.

Tip Size	Welding Cap., Thick.		
1	1/32″	7980A672	$15.56
3	1/16″	7980A674	15.56
5	1/8″	7980A676	15.56
7	1/4″	7980A678	17.49
9	3/8″	7980A681	28.30
10	1/2″	7980A3	28.18

Cutting Tips (Series 6290)

For light, medium, and heavy duty jobs. Fit Model Nos. 72-3 and 73-3 cutting attachments.

Tip Size	Cutting Cap., Thick.		
00	3/8″	7980A663	$13.99
0	5/8″	7980A664	13.99
1	1″	7980A665	13.99
2	2″	7980A666	13.99
3	3″	7980A11	13.99
4	6″	7980A12	13.99

ESAB Oxygen/Acetylene Torch Parts

ESAB is also known as L-Tec Purox.

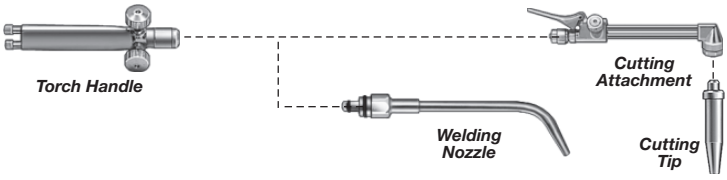

Torch Handle

Use with welding nozzles and cutting attachment sold separately. Has 9/16″-18 (B size) male hose connections.

Duty	Model No.		
Med./Heavy	W-400	7883A66	$150.65

Welding Nozzles—Include a mixer and a tip.

Fit W-300 and W-400 torch handles.

Tip Size	Welding Cap., Thick.		
2	25 ga.	7883A44	$33.88
4	1/32″	7883A46	33.88
6	1/16″	7883A47	33.88
9	1/8″	7883A49	39.89
15	1/4″	7883A53	39.89
30	3/8″	7883A57	39.89
55	5/8″	7883A61	48.16

Cutting Attachment

Fits W-400 torch handle. Head is at 90° to the body. Cutting capacity is 8″. Use with Series 4202 cutting tips. Length is 10″.

Duty	Model No.		
Med./Heavy	CW-300	7884A12	$176.98

Cutting Tips (Series 4202)

For light to heavy duty applications. Fit CW-200 and CW-300 cutting attachments.

Tip Size	Cutting Cap., Thick.		
1/8	1/8″	7884A23	$10.86
1/4	1/4″	7884A24	10.86
1/2	1/2″	7884A25	10.86
1 1/2	1 1/2″	7884A54	10.86
4	4″	7884A55	10.86
6	6″	7884A56	10.86
10	10″	7884A57	10.86

Precision Oxygen/Acetylene Mini Torch

Kit

With a needle-point flame, these torches allow for precision welding, brazing, soldering, and heating. Great for electronics, plumbing, and jewelry repair. Torch produces enough heat to weld steel up to 3/32″ thick. Flame reaches up to 6000° F using oxygen and acetylene. Hydrogen and propane can also be used, unless noted.

Kit—Includes torch, five welding tips in 0.011″ to 0.047″ sizes, and two 8-ft. hoses with 9/16″-18 (B size) female fittings.

7932A12 ..... $173.45

Premium Kit—Includes everything in the kit above, plus an R (20 cubic feet) oxygen cylinder, an MC (10 cubic feet) acetylene cylinder, a single-stage oxygen regulator (CGA540), a single-stage acetylene regulator (CGA200), and a plastic carrying case. Cylinders are shipped unfilled.

7932A11 ..... $717.55

Optional Magnetic Torch Stand—Holds torch and organizes tips.

7932A13 ..... $32.97

Replacement Tips

Use ***welding tips*** for pin-point heat. ***Twin-flame tips*** are designed for heating both sides of a material.

Orifice Size	Welding Tip		Twin-Flame Tip	
0.006″	7932A22■	$28.40	—	—
0.011″	7932A23	28.40	—	—
0.020″	7932A24	28.40	7932A34	$52.90
0.029″	7932A25	28.40	7932A35	52.90
0.037″	7932A26	28.40	7932A36	52.90
0.047″	7932A27	28.40	—	—

■ Use with oxygen, acetylene, and hydrogen only.

Twin-Flame Tip

Torch-Tip Cleaners

Keep torch tips clear for a pinpoint flame. Tip cleaners are stainless steel with tip sizes stamped on the back of the case for quick reference. Include a pocket-size aluminum case.

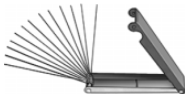

No. Per Set	For Drill Sizes (Decimal Equivalents)	Length		Set
12	75-49 (0.021″-0.073″)	3″	7946A1	$5.85
13	77-49 (0.018″-0.073″)	4 1/4″	7946A2	5.15
22	77-30 (0.018″-0.1285″)	2 1/4″	7946A3	6.13

Gas-Saver Torch Holders

Stop wasting gas during torch start-up, shutdown, and between uses. Just hang torch on the support lever to turn off the gas flow and extinguish the flame. Start the gas flow by lifting the torch off the support lever; pass the tip over the pilot light to ignite.

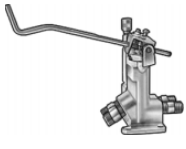

For Gas

Acetylene and Oxygen	7948A11	$175.04
Propane or Natural Gas and Oxygen (4 psi min.)	7948A13	172.13
MAPP or Propylene Gas and Oxygen	7948A14	187.64
Replacement Pilot Light Assembly for 7948A11	7948A21	23.92
Replacement Pilot Light Assembly for 7948A13	7948A22	18.24
Replacement Pilot Light Assembly for 7948A14	7948A23	44.41

Torch Cutting Guide

Cut straight, circular, beveled, and irregular shapes easily and precisely. This guide holds your torch and pivots on the centering pin. Cuts circles up to 39″ in diameter. Has a universal bushing that accepts all torches.

8001A11 ..... $88.66

Air/Acetylene Torch Kits

No oxygen tank required. Use for HVAC work and general purpose soldering, heating, and brazing (unless noted). Tanks are not included.

Prest-O-Lite Torch Kits and Replacement Tips

Include a No. 403 torch handle (with rear valve); one each of fine, light, medium, and heavy screw-in tips; an acetylene pressure regulator; and a 12 1/2-ft., 3/16″ ID hose with 3/8″-24 (A size) female fittings.

Torch Kits: For Tank	Regulator Connection		
B (40 cubic ft.)	CGA520	7858A11	$179.63
MC (10 cubic ft.)	CGA200	7858A13	179.63
Repl. Torch Handle No. 403		7824A11	43.45

Replacement Tip: Tip Style	Mfr. No.		
Fine	1-A	7856A7	$24.71
Light	3-A	7856A3	21.95
Medium	4-A	7856A4	25.78
Heavy	5-A	7856A5	31.02
Extra Heavy	6-A	7856A6	44.67
Soldering Iron	8-A	7856A8 ♦	165.25

♦ Not for brazing.

Turbo Torch Kit and Replacement Tips

Includes a torch handle with 3/8″-24 male hose fitting and a quick disconnect for the torch tips, 3/16″ dia. and 7/16″ dia. swirl combustion quick-disconnect tip, acetylene pressure regulator, and a 12-ft. long 3/16″ ID hose with 3/8″-24 (A size) female fittings.

Torch Kits: For Tank	Regulator Connection		
B (40 cubic ft.)	CGA520	7984A11	$342.95

Replacement Tip: Tip Dia.	Mfr. No.		
3/16″	A-3	7984A12	$73.22
1/4″	A-5	7984A13	86.67
5/16″	A-8	7984A14	94.84
7/16″	A-11	7984A15	99.74

Gas Pressure Control Regulators

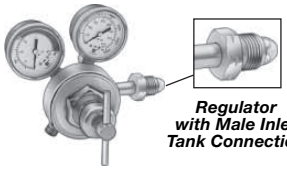

Regulator with Male Inlet Tank Connection

Outlet Fitting to Welding Hose

Regulator with Female Inlet Connection Attached to Tank

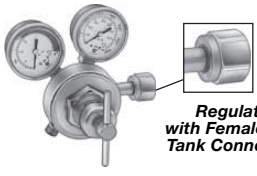

Regulator with Female Inlet Tank Connection

Safely reduce gas pressure with these regulators. Meet CGA (Compressed Gas Association) standards. All regulators have two gauges (one for measuring operating pressure and one for measuring cylinder contents), except for liquid cylinder style, which only has an operating pressure gauge. Cylinder content gauge for oxygen, argon, helium, nitrogen, carbon dioxide, and hydrogen measures 0-4,000 psi and 0-400 psi for acetylene, propane, MAPP, and propylene. For replacement gauges, see 4000K series on page 563.

Single-stage regulators reduce pressure to a selected delivery pressure. ***Two-stage regulators*** ensure a constant, steady delivery pressure, despite inlet pressure fluctuations. Use when even delivery pressure is needed at all times (full tank to empty tank) during use.

Standard Duty— For general purpose welding. Made of steel and brass. Include two 2″ dia. gauges and a neoprene diaphragm.

Heavy Duty— Made of forged brass for a long life. Include two 2½″ dia. gauges and a neoprene diaphragm.

Super Duty— Withstand extreme conditions in abusive environments. Made of forged brass with a stainless steel diaphragm. *Single-stage regulators* have two 2½″ dia. gauges. *Two-stage regulators* have two 2″ dia. gauges.

Liquid Cylinder— For withdrawing gas from liquid cylinders. Made of forged brass. Include one 2½″ dia. gauge and a stainless steel diaphragm. *Note:* Regulators are rated for 3,000 psi cylinder pressure but have no cylinder content gauge.

Type	Stage	Operating Pressure, psi	Outlet Fitting to Welding Hose♣		
For Oxygen— *Inlet CGA No. 540 (female); for tanks with male threads.*					
Standard Duty	Single	0-100	9/16″-18 RH Male	**7897A61**	$113.29
Standard Duty	Two	0-125	9/16″-18 RH Male	**7897A3**	265.16
Heavy Duty	Single	0-125	9/16″-18 RH Male	**7897A31**	146.18
Heavy Duty	Single	0-200	9/16″-18 RH Male	**7897A1**	146.18
Super Duty	Single	0-125	9/16″-18 LH Male	**7897A51**	224.36
Super Duty	Two	0-125	9/16″-18 RH Male	**7897A74**	296.17
Super Duty	Two	0-250	1/4″ NPT RH Female	**7897A75**	327.19
Liquid Cylinder	Single	0-125	9/16″-18 RH Male	**7897A84**	279.05
For Acetylene— *Inlet CGA No. 300 (female); for tanks w/ male threads.*					
Standard Duty	Single	0- 15	9/16″-18 LH Male	**7897A62**	113.29
Standard Duty	Two	0- 15	9/16″-18 LH Male	**7897A4**	265.16
Heavy Duty	Single	0- 15	9/16″-18 LH Male	**7897A2**	146.18
Super Duty	Two	0- 15	9/16″-18 LH Male	**7897A79**	296.17
For Acetylene— *Inlet CGA No. 510 (male); for tanks w/ female threads.*					
Standard Duty	Single	0- 15	9/16″-18 LH Male	**7897A63**	113.29
Standard Duty	Two	0- 15	9/16″-18 LH Male	**7897A14**	265.16
Heavy Duty	Single	0- 15	9/16″-18 LH Male	**7897A7**	146.18
Super Duty	Single	0- 15	9/16″-18 LH Male	**7897A53**	224.36
Super Duty	Two	0- 15	9/16″-18 LH Male	**7897A81**	296.17
For Carbon Dioxide— *Inlet CGA No. 320 (female); for tanks with male threads.*					
Standard Duty	Two	0-125	5/8″-18 RH Female	**7897A17**	265.16
Heavy Duty	Single	0-125	9/16″-18 RH Male	**7897A39**	146.18
Liquid Cylinder	Single	0-350	9/16″-18 RH Male	**7897A83**	287.95
For Propane, MAPP, Propylene— *Inlet CGA No. 510 (male); for tanks with female threads.*					
Standard Duty	Single	0- 50	9/16″-18 LH Male	**7897A66**	113.29
Standard Duty	Two	0- 50	9/16″-18 LH Male	**7897A18**	265.16
Heavy Duty	Single	0- 50	9/16″-18 LH Male	**7897A13**	146.18
For Argon, Helium, Nitrogen— *Inlet CGA No. 580 (male); for tanks with female threads.*					
Standard Duty	Single	0-100	9/16″-18 RH Male	**7897A65**	113.29
Standard Duty	Two	0-125	5/8″-18 RH Female	**7897A16**	265.16
Heavy Duty	Single	0-125	9/16″-18 RH Male	**7897A38**	146.18
Heavy Duty	Single	0-200	9/16″-18 RH Male	**7897A12**	146.18
Super Duty	Two	0- 50	5/8″-18 RH Female	**7897A22**	296.17
Super Duty	Two	0-125	5/8″-18 RH Female	**7897A23**	296.17
For Hydrogen— *Inlet CGA No. 350 (female); for tanks w/ male threads.*					
Heavy Duty	Single	0-125	9/16″-18 LH Male	**7897A5**	214.07
For Argon, Nitrogen— *Inlet CGA No. 580 (male); for tanks with female threads.*					
Liquid Cylinder	Single	0-125	9/16″-18 RH Male	**7897A86**	279.05
Liquid Cylinder	Single	0-350	9/16″-18 RH Male	**7897A87**	287.95

♣ RH = right hand, LH = left hand.

Gas Flowmeter/Regulators

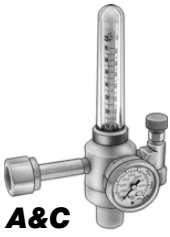

A&C

B

Easy to see at a distance, these flowmeters measure and control gas flow for MIG and TIG welding. Include a gauge that measures cylinder contents from 0-4,000 psi.

(A) Single Flowmeters— Include a single-flow tube with dual scale (one for argon and one for carbon dioxide) that is calibrated for measuring gas flow from 0-70 scfh (standard cubic feet per hour). Also include a valve for adjusting and controlling flow. Use the optional 5/8″-18 to 9/16″ male outlet adapter to change outlet fitting.

(B) Dual Flowmeter— Eliminates the need for two cylinders and two flowmeter regulators. This unit allows two torches to run simultaneously from one cylinder of either argon or helium. Includes two flow tubes with a dual scale on each tube, one for argon that's calibrated to measure gas flow from 0-45 scfh and one for helium calibrated for 0-140 scfh. Also includes a valve to adjust and control flow. Conforms to CGA (Compressed Gas Association) E-4.

(C) Multigas Flowmeter— Use with argon, nitrogen, C-25, and helium. Includes four scales and a single-flow tube with a valve for adjusting and controlling the gas flow. Scales measure gas flow from 10-70 scfh for argon, 10-80 scfh for nitrogen, 10-65 scfh for C-25, and 20-220 scfh for helium. Flow tube rotates for viewing the different scales.

For Gas	Inlet CGA No.★	Outlet Fitting to Welding Hose♣		
(A) Single Flowmeters				
Argon	580	5/8″-18 RH Female	**78595A43**	$131.82
Carbon Dioxide	320	5/8″-18 RH Female	**78595A46**	131.82
Optional 5/8″-18 to 9/16″-18 Male Outlet Adapter for A			**78595A49**	9.20
(B) Dual Flowmeter				
Argon, Helium	580	5/8″-18 RH Female	**7952A49**	284.55
(C) Multigas Flowmeter				
Argon, Nitrogen, C-25, Helium	580	5/8″-18 RH Female	**7988A11**	308.18

★ CGA 580 connection is male for tanks with female threads; CGA 320 is female for tanks with male threads. ♣ RH = right hand.

Gas Flowgauge/Regulators

With Male Inlet Tank Connection

Measure and control gas flow for MIG and TIG welding. These brass regulators have two 2″ dia. gauges (one for measuring gas flow and one for measuring cylinder contents). Cylinder content gauge measures 0 to 4,000 psi; operating gas flow is 0-60 scfh (standard cubic feet per hour).

Kits include a flowgauge/regulator and a 10-ft. 3/16″ dia. hose with 5/8″-18 male fittings on both ends.

For Gas	Inlet CGA No.★	Outlet Fitting to Welding Hose♣		
Flowgauge/Regulators				
Argon	580	5/8″-18 RH Female	**7997A65**	$109.21
Carbon Dioxide	320	5/8″-18 RH Female	**7997A66**	109.21
Kits				
Argon	580	5/8″-18 RH Female	**7997A67**	152.09
Carbon Dioxide	320	5/8″-18 RH Female	**7997A68**	152.09

★ CGA 580 connection is male for tanks with female threads; CGA 320 is female for tanks with male threads. ♣ RH = right hand.

Line Regulators

Perfect for remote-line operations (such as multiple welding booths) and gas distribution (pipeline) systems. Regulators are single stage and made of brass. All connections are 1/4″ NPT female and flush with the regulator. Include a threaded brass plug to close outlets when not in use.

Note: Designed for line use only; do not mount directly on gas cylinders.

7864A13 has a neoprene diaphragm and a 2½″ dia. gauge. Has one inlet on the right side and one outlet on the bottom, back, and left side. For use with acetylene.

7864A11 and *A12* have a nickel and stainless steel diaphragm and a 2″ dia. gauge. They have one inlet on the right side and one outlet on the bottom and left side. Use with nitrogen, argon, oxygen, helium, hydrogen, propane, carbon dioxide, air, and water.

Operating Pressure, psi	Gauge, psi	Max. Inlet Pressure, psi		
2- 15	0- 30	350	**7864A13**	$237.15
0- 60	0- 60	500	**7864A11**	85.09
0-200	0-200	500	**7864A12**	86.36

High-Pressure Gas Control Regulators

Get precise gas control at high inlet and delivery pressures. These brass single-stage regulators work with pressurized systems and high-pressure testing. Include two 2½″ dia. gauges (one measures operating pressure and one measures cylinder contents); a cartridge-type seat assembly; and one ¼″ female Swagelok® (Yor-Lok) outlet fitting on the bottom of the regulator, Type 316 stainless steel tube fitting. Conform to CGA (Compressed Gas Association) standards.

With Male Inlet Tank Connection

For Gas	Inlet CGA No.●	Operating Pressure, psi	psi for Cylinder Content Gauge		
Argon, Helium, Nitrogen	580	100-1,500	0-4,000	6677A12★	$334.58
Argon, Helium, Nitrogen	580	200-3,000	0-4,000	6677A13	334.58
Inert	677	300-4,500	0-7,500	6677A14	865.73

● CGA 580 connection is male for tanks with female threads; CGA 677 is female for tanks with male threads.
★ Includes a relief valve.

Regulators for Nitrogen Gas Purging

Designed for nitrogen purging and joint-testing applications on air conditioning, refrigeration, and plumbing systems. These forged-brass, single-stage regulators can also be used with argon and helium. Include two 2″ dia. gauges (one measures operating pressure and one measures cylinder contents). Cylinder content gauge measures 0-4,000 psi. Meet CGA (Compressed Gas Association) standards.

66325A41 and *A42* have a fabric-reinforced nylon diaphragm and a 7⁄16″-20 UNF male outlet connection (to air conditioning hose) with 37° flare. 66325A23 has a neoprene diaphragm and a ¼″ NPT male outlet connection (to air conditioning hose) with 45° flare.

With Male Inlet Tank Connection

Inlet CGA No.▲	Operating Pressure, psi		
580	5-125	66325A41	$136.96
580	10-200	66325A42	139.07
580	0-500	66325A23	143.10

▲ CGA 580 connection is male for tanks with female threads.

High-Purity Gas Pressure Control Regulators

Machined from brass and Type 316L stainless steel with a smooth finish for precise control when working with specialty gases. Use in research sample systems, emission monitoring systems, and chromatography. Include two 2″ dia. gauges (one measures operating pressure and one measures cylinder contents), a Type 316L stainless steel diaphragm to eliminate contamination from diffusion or outgassing, and an encased one-piece seat with filter to protect seat from particle contamination. Seat and seals are PTFE. Cylinder content gauge measures 0-4,000 psi.

Single-stage regulators reduce pressure to a selected delivery pressure. ***Two-stage regulators*** ensure a constant, even delivery pressure, despite inlet pressure fluctuations. Use when delivery pressure affects work results.

With Male Inlet Tank Connection

For Gas	Inlet CGA No.■	Operating Pressure, psi	Outlet Gauge	Outlet Fitting to Welding Hose ♦	Single-Stage Regulators		Two-Stage Regulators	
Nitrogen	580	0- 15	30″ Hg Vac to 30 psi/2 Bar	¼″ Swagelok® (Yor-Lok)	7951A14	$407.21	7951A24	$498.28
Nitrogen	580	0-125	30″ Hg Vac to 200 psi/14 Bar	¼″ Swagelok® (Yor-Lok)	7951A16	407.21	7951A26	498.28
Hydrogen	350	0- 15	30″ Hg Vac to 30 psi/2 Bar	¼″ Swagelok® (Yor-Lok)	7951A17	407.21	7951A27	498.28
Hydrogen	350	0-125	30″ Hg Vac to 200 psi/14 Bar	¼″ Swagelok® (Yor-Lok)	7951A19	407.21	7951A29	498.28

■ CGA 580 connection is male for tanks with female threads; CGA 350 is female for tanks with male threads. ♦ Connection is female.

Flashback Arresters

Stop flames from traveling back into your welding system (also known as flashback). Arresters extinguish flames and have a check valve to stop reverse flow. They are reusable; no resetting required after flashback. Choose an arrester for oxygen, fuel gas, or a pair of each. Meet ISO 5175, Class 1, and European Safety Specification EN730.

Maximum pressure is 143 psi for oxygen; 15 psi for acetylene; 22 psi for MPS; and 50 psi for hydrogen and propane. Connections for oxygen have right-hand threads; connections for gas have left-hand threads.

Arresters for Torches— Attach directly to a torch. *Standard* are for torches that cut up to 9″ thick steel or have up to a No. 2 welding tip. *Small* are designed for small torches (jewelry, refrigeration, and HVAC) that cut up to ½″ thick steel or have up to a No. 00 welding tip.

Arresters for Regulators— Attach to a regulator's outlet connection. They have a thermal shut-off valve that automatically shuts off the gas flow in the event of internal or external fire, burn backs, or multiple flashbacks. *Standard* are for torches that cut up to 11″ thick steel or have up to a No. 2 welding tip. *High-gas-flow* are for torches that cut up to 20″ thick steel or have up to No. 5 welding tips. *Small* are for torches that cut up to ½″ thick steel or have up to a No. 00 welding tip.

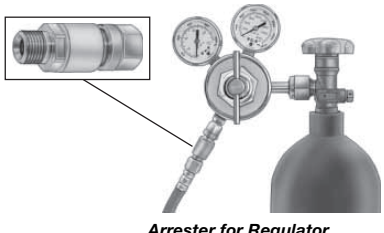

Arrester for Regulator with Gas Tank, Regulator, and Hose

	Connection♠	Oxygen	Each	Fuel Gas	Each	Oxygen/Fuel Gas	Pair
Arresters for Torches							
Standard	9⁄16″-18 (B Size)	78335A31	$40.17	78335A22	$40.17	78335A41	$79.62
Small	3⁄8″-24 (A Size)	7942A11	47.58	7942A12	47.58	7942A24	86.33
Arresters for Regulators							
Standard	9⁄16″-18 (B Size)	78335A67	40.82	78335A25	40.82	78335A43	80.44
High Gas Flow	9⁄16″-18 (B Size)	78335A36	106.11	78335A28	106.11	78335A45	204.04
Small	3⁄8″-24 (A Size)	7942A51	48.98	7942A52	48.98	7942A64	88.82

♠ Each end has same threads; one end male, one end female.

Reverse Gas-Flow Check Valves

Just 10 oz. of reverse pressure closes these valves, stopping the reverse flow of gas in your torch, hose, or regulator. All are brass with a stainless steel spring. Maximum operating pressure is 125 psi for oxygen; 50 psi for fuel gas. Connections for oxygen have right-hand threads; connections for gas have left-hand threads.

Note: Valves do not stop flashbacks.

For Torches with 3⁄8″-24 (A Size) Connections— Connection to torch is 3⁄8″-24 female; connection to hose is 3⁄8″-24 male.

For Torches with 9⁄16″-18 (B Size) Connections— Connection to torch is 9⁄16″-18 female; connection to hose is 9⁄16″-18 male.

For Regulators— These valves replace the regulator's outlet fitting. They have a 9⁄16″-18 male thread outlet connection (to hose) and a ¼″ NPT male connection (to regulator).

Valve for Torches

Valve for Regulators

	Oxygen		Fuel Gas	
For Torches with 3⁄8″-24 (A Size) Connections	7957A7	$17.47	7957A8	$17.47
For Torches with 9⁄16″-18 (B Size) Connections	7957A1	7.88	7957A2	7.88
For Regulators	7957A3	11.06	7957A4	11.06

Regulator Fittings

Outlet Fitting

Inlet Nut (Female)

Inlet Nipple

Outlet Fittings for Hose

¼″ NPT male threads on one end, 9/16″-18 (B Size) male on other.

	Material		
Right-Hand Threads—For Oxygen	Brass	79215A1	$1.19
Left-Hand Threads—For Fuel Gas	Brass	79215A2	1.11

Inlet Nuts and Nipples—Brass

Nuts have female threads, unless noted. Nipples have ¼″ NPT male threads on one end, unless noted; CGA No. connection fitting on the other.

CGA No.	Inlet Nuts Lg.			Inlet Nipples Lg.		
200	0.562″	79215A648	$3.02	1.25″	79215A649▲	$4.26
300	0.950″	79215A651	3.54	1.938″	79215A652	4.35
320	0.950″	79215A653	3.09	2.5″	79215A654	4.70
326	0.952″	79215A672	4.27	2.5″	79215A673	6.14
346	0.950″	79215A655	3.36	2.5″	79215A656	3.99
350	0.955″	79215A666	3.75	2.5″	79215A667	4.20
500	0.950″	79215A671	7.44	—	—	—
510	1.143″	79215A657■	3.05	2.5″	79215A658	3.30
520	0.667″	79215A659	3.46	1.75″	79215A661	4.67
540	0.954″	79215A662	2.67	2.063″	79215A663	3.06
555	0.959″	79215A772	4.23	2.063″	79215A773	4.38
580	1.143″	79215A664■	3.69	3″	79215A665	3.23
590	1.138″	79215A668■	4.83	3.5″	79215A669	5.93

■ Has male threads. ▲ Has 1/8″ NPT male threads.

Quick Connectors for Gas Welding

Gas Flow Direction →

Hose-to-Torch Set

Make setting up and taking down equipment faster and easier. Connectors allow you to quickly link and unlink welding hoses, torches, and regulators. They have a spring-loaded lock for quick, gas-tight connections and integral reverse-flow check valves to prevent the reverse flow of gas. Each set has one right-hand connection for oxygen and one left-hand for fuel gas. Connections are 9/16″-18 (B size); torch and regulator connections are female, hose connections are male.

Hose-to-Torch Set	7934A1	$57.05
Hose-to-Hose Set	7934A2	60.05
Regulator-to-Hose Set	7934A3	60.05

Welding Hose

This flexible hose is abrasion, weather, and ozone resistant. Meets Compressed Gas Association (CGA) and Rubber Makers Association (RMA) requirements. Working pressure is 200 psi.

Hose with 9/16″-18 (B size) female fittings on both ends has right-hand threads for oxygen and left-hand threads for acetylene.

Grade R Welding Hose—For use with oxygen and acetylene. *Single-line* hose comes in your choice of green for oxygen or red for acetylene. *Twin-line* has green (oxygen) joined with red (acetylene) hose. **To Order:** For single-line hose, please specify color: green (for oxygen) or red (for acetylene).

Grade T Welding Hose—For use with oxygen and fuel gases such as propane and natural gas. This twin-line oil- and flame-resistant hose has green hose for oxygen joined with red hose for fuel gas.

Hose with 9/16″-18 (B Size) Female Fittings on Both Ends

Grade	Line	Hose Lg., ft.	3/16″ ID×7/16″ OD Each		1/4″ ID×17/32″ OD Each	
R	Single	12½	—	—	7915A29	$15.15
R	Single	25	7915A16	$22.60	7915A36	25.74
R	Single	50	7915A24	40.69	7915A46	46.92
R	Single	100	7915A31	78.36	7915A47	89.34
R	Twin	12½	7915A51	22.40	7915A102	26.88
R	Twin	25	7915A52	34.62	7915A55	39.85
R	Twin	50	7915A53	50.53	7915A56	70.66
R	Twin	100	7915A54	99.74	7915A57	132.73
T	Twin	12½	—	—	7915A42	35.97
T	Twin	25	—	—	7915A43	58.53
T	Twin	50	—	—	7915A44	109.41
T	Twin	100	—	—	7915A45	196.63

Hose without Fittings—Standard Lengths: 12, 25, 50, and 100 ft.

Grade	Line	3/16″ ID×7/16″ OD Per Foot★ 12-99	100-Up	1/4″ ID×17/32″ OD Per Foot★ 12-99	100-Up
R	Single 7915A13	$0.90	$0.75	7915A14 $1.06	$0.88
R	Twin 7915A58	1.50	1.27	7915A59 1.68	1.41
T	Twin —	—	—	7915A71 2.76	2.30

★ **To Order:** Please specify length. Max. continuous length is 700 ft.

Cylinder-to-Regulator Adapters

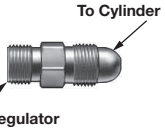

7923A11

Connect regulators and cylinders with different Compressed Gas Association (CGA) numbers. Adapters are brass.

Cylinder CGA No.	Regulator CGA No.		
200	300	7923A22	$18.03
200	510	7923A23	15.11
200	520	7923A24	11.62
300	510	7923A12	4.70
320	580	7923A13	16.34
346	540	7923A18	19.13
346	580	7923A19	23.98
350	580	7923A25	23.89
510	300	7923A11	6.77
510	520	7923A15	14.81
520	200	7923A16	11.14
520	510	7923A28	14.51
540	580	7923A29	18.61
580	320	7923A32	16.78
580	346	7923A21	23.98
580	350	7923A33	19.58
580	540	7923A34	16.12
590	580	7923A35	22.28

Welding Hose Fittings

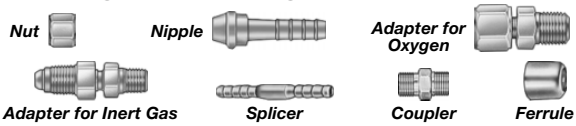
Nut · Nipple · Adapter for Oxygen · Adapter for Inert Gas · Splicer · Coupler · Ferrule

Working pressure for nuts, nipples, adapters, splicers, and couplers is 200 psi. All fittings are brass. See page 291 for hose crimper.

Note: RH = right hand; LH = left hand.

Nuts—*9/16″-18 (B Size) Female Threads*		
RH Threads—For Oxygen (CGA 022)	7919A3	$0.71
LH Threads—For Fuel Gas (CGA 023)	7919A4	.71
Nipples—*1 15/32″ long*		
3/16″ Hose ID (B Size)	7919A2	.71
1/4″ Hose ID (B Size)	7919A1	.71
Adapter for Oxygen—*Regulator to Hose*		
1/4″ NPT Male RH to 9/16″-18 Female RH	7919A51	8.08
Adapter for Fuel Gas—*Regulator to Hose*		
1/4″ NPT Male RH to 9/16″-18 Female LH	7919A53	8.47
Adapter for Inert Gas (MIG and TIG)—*Flowmeter to Hose*		
5/8″-18 Male RH to 1/4″ NPT Male RH	7919A52	12.92
Splicers		
3/16″-to-3/16″ Hose ID	7918A1	1.51
1/4″-to-1/4″ Hose ID	7918A2	1.46
Couplers—*9/16″-18 (B Size) Male Threads*		
RH-to-RH Threads—For Oxygen	7920A3	1.32
LH-to-LH Threads—For Fuel Gas	7920A4	1.35

ID	Lg.		
Ferrules			
0.450″	9/16″	79205A655	$0.41
0.478″	11/16″	79205A656	.82
0.500″	½″	79205A657	.31
0.500″	1″	79205A658	.97
0.525″	½″	79205A659	.40
0.525″	1″	79205A661	.93
0.548″	31/64″	79205A662	.55
Ferrules (Cont.)			
0.562″	1″	79205A663	$0.79
0.564″	¾″	79205A664	.73
0.575″	31/64″	79205A665	.56
0.593″	1″	79205A666	.82
0.625″	½″	79205A668	.62
0.625″	1″	79205A669	.85
0.656″	1″	79205A672	.85

Welding Hose Fitting Kits

Include brass fittings and a plastic case.

3/16″ and 1/4″ Hose ID Kit:

- One crimping tool
- Four each 3/8″-24 (A size) female right-hand (RH) and left-hand (LH) nuts
- Eight each 9/16″-18 (B size) RH and LH nuts
- Eight 3/16″ hose ID (A size) nipples
- Six 3/16″ hose ID (B size) nipples
- Ten 1/4″ hose ID (B size) nipples
- Two 3/16″ ID hose splicers
- Four 1/4″ ID hose splicers
- One each 3/8″-24 (A size) male RH and LH and 9/16″-18 (B size) male RH and LH hose couplers
- Twelve each 0.450″ and 0.593″ ID ferrules
- Ten 0.562″ ID ferrules

7869A23 ..... $80.36

5/16″ and 3/8″ Hose ID Kit:

- One crimping tool
- Eight each 9/16″-18 (B size) female RH and LH nuts
- Eight each 5/16″ and 3/8″ hose ID (B size) nipples
- Two each 5/16″ ID and 3/8″ ID hose splicers
- Two each 9/16″-18 (B size) male RH and LH hose couplers
- Eight each 0.625″ ID, 0.656″ ID, and 0.718″ ID ferrules
- Six 0.687″ ID ferrules

7869A24 ..... $116.68

Welding Hose Reels

Keep welding hose out of the way. Hose locks in place when extended; tug on the hose to release lock and rewind hose. Reels hold 1/4″ hose and include four 1/2″ dia. mounting holes.

Reels with hose have a twin-line hose with 9/16″-18 (B-size) female connections. Working pressure is 200 psi.

Grade R hose is for oxygen and acetylene.

Grade T hose is oil and flame resistant; for MAPP, acetylene, hydrogen, natural gas, propane, and propylene.

Hose Cap.	Overall Reel Size Dia.	Width	Height	Mounting Base●		
Reels with 1/4″ ID × 17/32″ OD Grade R Hose						
25 ft.	17 1/4″	8 1/2″	18 1/4″	4″ × 5″	7911A4	$323.29
50 ft.	19 5/8″	10 7/8″	21″	4″ × 5″	7911A22	422.53
75 ft.	23″	10 7/8″	25 1/4″	4″ × 5″	7911A6	513.58
Reels with 1/4″ ID × 17/32″ OD Grade T Hose						
50 ft.	19 5/8″	10 7/8″	21″	4″ × 5″	7861A13	405.21
75 ft.	23″	10 7/8″	25 1/4″	4″ × 5″	7861A14	538.21
Reels without Hose						
50 ft.	19 5/8″	10 7/8″	21″	4″ × 5″	7911A11	346.82
75 ft.	23″	10 7/8″	25 1/4″	4″ × 5″	7911A77	423.55

● Measured at mounting holes, center to center.

Empty Gas Tanks

HP

MC

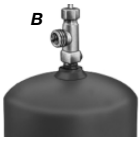
B

Made of steel, these tanks come unfilled.

High-Pressure Inert Service— For argon, argon/CO_2 blends, nitrogen, and helium. Meet D.O.T. 3AA-2015. Maximum pressure is 2,015 psi.

High-Pressure Oxygen Service— For oxygen. Meets D.O.T. 3AA-2015. Maximum pressure is 2,015 psi.

Acetylene Service— For acetylene. Meet D.O.T. 8AL. Maximum pressure is 250 psi.

Tank Style	Outlet CGA No.	Cap., cu. ft.	Size, Dia. × Ht.♠	Wt., lbs.		
High-Pressure Inert Service						
HP20	580 Female	20	5 1/4″ × 14″	9.6	7822A11	$131.35
HP40	580 Female	40	6 3/4″ × 18 1/4″	22	7822A12	194.70
HP55	580 Female	55	6 3/4″ × 23 1/2″	26.5	7822A13	216.74
HP80	580 Female	80	7″ × 31 1/2″	40	7822A14	303.63
High-Pressure Oxygen Service						
HP20	540 Male	20	5 1/4″ × 14″	9.6	7986A31	136.13
Acetylene Service						
MC	200 Male	10	3 7/8″ × 13″	7.4	7986A41	84.14
B	520 Male	40	6 3/16″ × 19 11/16″	25.8	7986A51	133.40

♠ Does not include the height of the valve.

Gas-Torch Lighters

Standard

Heavy Duty Triple Flint

Pistol Grip

Multispark

Long Reach

Standard

Lighter (includes one flint) ..... 7907A1 **Each** $3.57
Replacement Flints (5/pkg.) ..... 7907A3 **Pkg.** $1.69

Heavy Duty Triple-Flint

Lighter ..... 7908A1 **Each** $5.88
Replacement Triple Flint ..... 7908A3 **Each** $1.33

Pistol Grip

Lighter (includes one flint) ..... 7909A1 **Each** $6.64
Replacement Flints (12/pkg.) ..... 7909A2 **Pkg.** $5.66

Multispark— Never needs flints, batteries, or charging.

7751A11 ..... **Each** $13.45

Long Reach— No flints, batteries, or combustible fuel needed; simply press the button for ignition.

12 3/4″ Length ..... 79075A65 **Each** $22.25
17″ Length ..... 79075A66 **Each** $25.25

Tank Wrenches

L-Handle

L-Handle— For NCG, Burdette, Airco, Liquid Air, and all commercial acetylene cylinders with 3/8″ sq. drive valve stems (0.390″ actual opening). Wrench is forged steel and 5″ long.

7930A11 ..... $3.26

T-Handle

T-Handle— For Linde, POL, and Pyrofax acetylene cylinders with 9/32″ sq. drive valve stems (0.290″ actual opening). Wrench is forged steel and 6″ long.

7930A12 ..... $3.46

Double End

Double End— For 3/16″ sq. drive B and MC acetylene valves (0.194″ actual opening). Wrench is stamped steel and 3 1/8″ long.

7848A11 ..... $1.87

10 Way

10 Way— For most tank styles. Has 10 openings from 7/16″ to 1 1/8″, including a boxed opening for B and MC acetylene valves and a socket opening for commercial acetylene cylinders. Wrench is forged steel and 9″ long.

7935A14 ..... $8.93

Two-in-One

Two-in-One— Loosens 3 3/4″ cylinder caps and 1 1/8″ regulator inlet nuts. Wrench is hard cast aluminum and 13 1/2″ long.

7935A6 ..... $28.13

Gas Tank Safety Cap and Collar

Cap

Collar

Both are safe for highway transport with the regulator still attached. They fit tanks with and without a regulator. Meet D.O.T., OSHA, and MSHA requirements.

	Thread Size	Fits Tank Style		
High-Pressure Cap	3 1/8″-11, Fine	K, T	7784A32	$64.92
Acetylene Collar	3 1/2″-11, Fine	5	7784A33	38.58

Continuous-Flame Butane Gas Ignitors

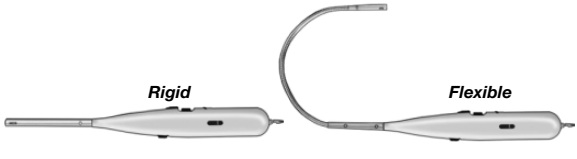
Rigid *Flexible*

A continuous ignition system keeps these ignitors lit. They include a slide-button starter, an adjustable flame, a fuel-viewing window, and a ring for hanging. Require butane (included) and one AA battery (included).

Rigid tube is good for lighting torches and bunsen burners.

Flexible tube gets into hard-to-reach areas.

Tube Style	Tube Length	Overall Length		
Rigid	4 3/4″	14 3/4″	77115A31	$32.02
Flexible	15″	26″	77115A21	52.18
Replacement AA Battery			65605T72	.68
Butane Gas Refill (5 1/8 oz.)			7694A5	4.88

Economy Butane Gas Ignitor

Tube Length	Overall Length		
4 3/4″	11″	7065A11	$4.72
Butane Gas Refill (5 1/8 oz.)		7694A5	4.88

Propane Gas Torches

Economy Torch

Self-Igniting Economy Torch

Self-Igniting Standard Torch

Self-Igniting High-Output Torch

Torches have 1″-20 female threads for connection to Fuel Cylinders on page 3391. With propane, the flame temperature reaches 3400° F (unless otherwise stated). Self-igniting torches have an on/off button.

Economy Torches

For use only with propane. Use one of the Gas-Torch Lighters on page 3389 to ignite.

Torch has a pencil-point tip for a concentrated flame for detail work. Torch generates 2,534 BTUs per hour and can soft solder up to 3″ dia. copper tubing.

Five-piece torch kit includes a torch with pencil-point tip, 1.5-oz. lead-free solder, 1-oz. flux, one acid brush, and a 14.1-oz. propane cylinder. Torch generates 2,780 BTUs per hour and can soft solder 1″ dia. copper tubing. Flame temperature reaches 3300° F. This product is ANSI certified for use with drinking (potable) water in all states as of October 1, 2010.

Torch	**8011A14**	$15.29
Five-Piece Torch Kit	**78175A44**	26.50

Self-Igniting Economy Torches

For use only with propane, these torches are a good choice for light and medium duty jobs. Soft solder 1″ dia. copper tubing. Include an adjustable flame, a stainless steel burn tube, and an easy-to-hold plastic handle with rubber grip. Generate 4,142 BTUs per hour.

Torch	**78245A3**	$34.26
Torch with 14.1-oz. Propane Cylinder	**78245A53**	38.85

Self-Igniting Standard Torches

With propane it soft solders 2″ dia. copper tubing. Torches have swirl-flame tip, a cast aluminum body, and a stainless steel burn tube. Generates 6,732 BTUs per hour with propane. With propylene gas, the flame temperature reaches 3650° F.

Torch with adjustable flame has a knob for controlling flame height.

Torch	**78155A81**	$53.80
Torch with Adjustable Flame	**7834A69**	62.44
Replacement Swirl-Flame Tip	**7834A691**	5.81

Self-Igniting Wide-Flame Torch

With a tip that produces a wide-spread flame, this torch can heat large surfaces quickly and easily. It soft solders 2″ dia. copper tubing using propane. Torch has a cast aluminum body, a brass burn tube, and a trigger guard to prevent accidental ignition. Generates 12,750 BTUs per hour for propane and 11,500 BTUs for propylene gas. With propylene gas, the flame temperature reaches 3600° F.

Torch	**8015A66**	$91.71
Replacement Wide-Flame Tip	**8015A68**	10.18

Self-Igniting High-Output Torch

With higher output capabilities, this torch can heat wider and thicker surfaces. Includes a swirl-flame tip and a knob for controlling flame height. With propane, it soft solders 3″ dia. copper tubing and silver solders 1″ dia. copper tubing. Torch has a cast aluminum body and a brass burn tube. Generates 12,936 BTUs per hour. With propylene gas, the flame temperature reaches 3600° F.

Repair kit includes a swirl-flame tip and orifice.

Torch	**7820A51**	$86.63
Repair Kit	**7820A63**	24.05
Replacement Swirl-Flame Tip	**7820A52**	12.44

Propane Gas Torch Kits w/ Flexible Hose

Pistol Grip

Get into hard-to-reach areas. Kits include an adjustable-flame torch, a pressure regulator, and 5-ft. long flexible hose; a 14.1-oz. propane cylinder; and a belt clip. Use with propane only.

Economy Standard Torch Kit— Use an ignitor (sold separately, see page 3389) to light torch. Burn tube is brass. It can soft solder 3″ dia. copper tubing. Generates 2,780 BTUs per hour. Flame temp. reaches 3300° F.

78615A91 ..... $37.36

Pistol-Grip Torch Kit— Just turn the gas valve and push the trigger to ignite this torch. To extinguish, close the valve. Burn tube is stainless steel. Torch can soft solder 3″ dia. copper tubing. Generates 4,142 BTUs per hour. Flame temperature reaches 3400° F.

78225A82 ..... $59.76

Swivel-Tip Propane Gas Torches

Single Burner

Put the heat exactly where you need it with tips that swivel 360°. Ideal for brazing and soldering. Torches have a 1″-20 female fitting for connecting to standard disposable fuel cylinders and a pressure regulator for consistent heat.

Single-Burner Torch— This self-igniting torch lights with the push of a button. Torch is brass with a stainless steel burn tube and can also be used with propylene. Using propane, it can soft solder 3″ dia. copper tubing. Generates 11,993 BTUs per hour with propane. Flame temperature reaches 3400° F with propane and 3650° F with propylene gas.

78525A65 ..... $45.95

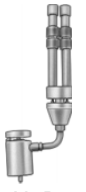
Double Burner

Double-Burner Torch— Provides a short, wide flame, concentrating heat over a large area and can also be used with propylene gas. Made from aircraft-quality aluminum with twin replaceable stainless steel burn tubes. Using propane, it can soft solder 2½″ dia. copper tubing and silver solder 1½″ dia. copper tubing. Generates 19,050 BTUs per hour with propane. Flame temperature reaches 3200° F with propane and 3700° F with propylene gas. Use a Gas-Torch Lighter (sold separately, see page 3389), to light this torch.

7969A41 ..... $98.12

Heavy Duty Propane Gas Torch

Torch

Use this propane torch for roofing, heavy duty heating applications, and to soft solder copper tubing. Torch includes a 4″ long angled brass extension and has a 9/16″-18 left-hand (B size) male fitting for connection to hose. Torch is brass with a high-impact ABS handle. Flame temperature reaches 2950° F. Tips not included; sold separately below. For propane only.

Use hose and adapter (sold separately, see 7976A on page 3391) to connect torch to a bulk propane tank.

Propane Torch **78505A22** $70.02

Med. Brush

Dia.	Soft Solder	Max. BTUs per hr.	Flame Lg. @ 40 psi		
Medium-Brush Torch Tips					
1⅛″	3″	43,000	8″	**78505A23**	$42.29
1⅜″	4″	57,000	8″	**78505A24**	46.79
Large-Brush Torch Tips					
2⅛″	5″	300,000	24″▲	**78505A25**	46.95

▲ Flame length @ 50 psi.

Oxygen-Propane Gas Torch Kit

This torch has adjustable oxygen flow and can use propane and propylene. Kit includes a torch, a 4-ft. hose, a disposable 1.4-oz. oxygen cylinder, a disposable 14.1-oz. propylene cylinder, five brazing rods, a torch lighter, an instruction manual, and a cylinder stand. Flame temperature reaches 4579° F using propane and oxygen; 5193° F using propylene and oxygen. Using propylene or propane you can cut, weld, and braze up to 3/16″ thick steel.

78645A39 ..... $61.54

Quick-Connect Propane Gas Torch Kit

Quickly connect and disconnect your torch tips for greater versatility and productivity. Plus, this kit can be used with propane, Apachi, HPG, and propylene. With propane, flame temperature reaches 3040° F. Using propylene gas, torch can soft solder 6″ dia. copper tubing and silver solder 4″ dia. copper tubing.

Includes a quick-disconnect handle with one ½″ dia. and one 1″ dia. brass and stainless steel tip, a pressure regulator with POL (CGA 510) ⅞″-14 inlet for connecting to bulk propane tanks and a 9/16″-18 left-hand (B size) male outlet that connects to hose, a 12-ft. hose with 9/16″-18 left-hand (B size) female fitting, and a torch lighter.

Propane Torch Kit **78365A11** $318.58

Dia.	Copper Tubing Cap.■ Soft Solder	Silver Solder	BTUs per hr.■		
Replacement Tips					
7/16″	1″ dia.	½″ dia.	5,396	**78365A12**	$86.33
½″	1½″ dia.	¾″ dia.	8,418	**78365A13**	104.22
¾″	2½″ dia.	1¼″ dia.	23,781	**78365A14**	109.22
1″	4″ dia.	2″ dia.	45,389	**78365A15**	131.05

■ When using propane.

Fuel Cylinders

These cylinders come filled and have a 1″-20 male fuel outlet valve. Cylinders measure 2 15/16″ Dia. × 10 5/8″ Ht., except for the 16.4-oz. propane cylinder, which is 3 7/8″ Dia. × 7 3/4″ Ht. Cylinders are not refillable.

All cylinders meet D.O.T. 39.

Propane—Use to heat, solder, heat shrink, and thaw.

Propylene—Produces the highest flame temperature and is better than propane for brazing.

Oxygen—Use with other fuels to increase flame temperature.

14.1-oz. Propane Cylinder

For Gas	Fuel Capacity	Flame Temp. Without Oxygen	Flame Temp. With Oxygen		1-11	12-Up
Propane	14.1 oz.	3600° F	5110° F	8003A14	$7.00	$6.30
Propane	16.4 oz.	3600° F	5110° F	8003A24	7.58	6.58
Propylene	14.1 oz.	3730° F	5360° F	8003A45	10.73	9.68
Oxygen	1.4 oz.	—	—	7817A48	12.90	11.53

Propane Tank Refill Indicator Gauge

Know at a glance if your propane gas supply is running low. Plus, this gauge detects leaks within 45 seconds of turning off the tank. It has a 1 5/16″ female Type 1 Acme inlet connection and a female POL (CGA510) 7/8″-14 outlet connection as well as external 1 5/16″ Acme threads for Type 1 quick-close connections.

Note: For use with tanks manufactured after 1995.

76775A2 ..... $25.45

Empty Propane Tanks

Durable and reliable, tanks are manufactured in accordance with D.O.T. regulations and are unfilled. They have a valve with side outlet and a collar that protects the valve.

Steel tanks are heavy-gauge steel with a rust-resistant painted finish.

Composite tanks have translucent sides so you can see propane level. They're lightweight, stackable, and corrosion resistant. Color is beige.

Steel

Also Available: Empty tanks for propylene, Apachi, and HPG gases. Please ask for 79955A999 and specify type of gas and capacity: 6, 25.5, 60, or 100 lbs.

Cap., lbs.	Gas Cap., gal.	Dia.	Ht.		
Steel—*Type 1 valve with overfill prevention device.*★					
4.25	1.0	9 1/8″	11 3/4″	79955A32	$77.79
11	2.6	9 1/8″	16 3/4″	79955A34	82.07
20	4.7	12 1/4″	17 3/4″	79955A36	45.18
30	7.1	12 1/4″	23 3/4″	79955A38	77.91
40	9.4	12 1/4″	29 1/4″	79955A39	115.62
Steel—*Female POL (CGA510) 7/8″-14 valve.*					
100	23.6	14 5/8″	48 1/2″	79955A42	176.07
Composite—*Type 1 valve with overfill prevention device.*★					
10	3.0	9 11/16″	17 5/16″	79955A16	111.74
20	5.5	12 13/32″	18″	79955A17	113.07

★ Meet NFPA 58 requirements. Have an internal female POL (CGA510) 7/8″-14 outlet connection as well as external 1 5/16″ male Acme threads that accept Type 1 quick-close connections.

Replacement Valves for Propane Tanks

Valves meet NFPA 58 requirements. *Note:* These valves are not for the 7777A lift truck tanks on this page.

Valves for 10-, 20-, 30-, and 40-lb. capacity tanks are Type 1 valves equipped with an overflow protection device. Inlet is 3/4″ male NPT. Outlet has both an external 1 5/16″ Acme Type 1 connection and an internal female POL (CGA510) 7/8″-14 connection.

Valve for 100-lb. capacity tank is a standard tank valve with a 3/4″ NGT inlet and a female POL (CGA510) 7/8″-14 outlet connection.

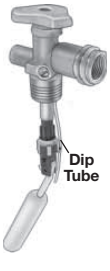

Tank Cap., lbs.	Dip Tube Length	*For Steel Cylinders*		*For Aluminum Cylinders*	
10	4.0″	—	—	65945A13	$16.04
20	4.0″	65945A13	$16.04	65945A14●	21.43
30	4.8″	65945A14	21.43	—	—
40	6.5″	65945A15	21.43	—	—
100	11.6″	65945A16	32.00	65945A16	32.00

● Dip tube length is 4.8″.

Propane Gas Torch with Extended Handle

An extended handle allows you to easily get into hard-to-reach areas. Great for heating, thawing, and sterilizing, torch produces a 2050° F flame. Torch is steel and includes a flame-adjusting valve, a torch lighter, a 10-ft. hose with 1/4″ NPT female fitting, and a POL (CGA510) 7/8″-14 male fitting to connect to propane tanks. Use only with propane.

BTUs per hr.	Max. Flame Lg.	Max. Flame Dia.	O'all Lg.		
500,000	24″	12″	33 1/2″	78265A41	$92.31

Adapters and Hose for Torch to Propane Tank Connections

Use these adapters and one of the hoses to connect a propane torch (that would normally connect to a fuel cylinder) to a propane tank. Ideal for extended use or when the tank cannot be moved.

Torch-to-Hose Adapter

Torch-to-Hose Adapter—Has a 1″-20 male fitting that connects to a propane torch and a 9/16″-18 left hand (B size) male fitting that connects to the hoses below.

7976A22 ..... $12.59

Tank-to-Hose Adapter

Propane Tank-to-Hose Adapter—Has a male POL (CGA510) 7/8″-14 fitting that connects to a propane tank and a 9/16″-18 left hand (B size) male fitting that connects to the hoses below.

7976A21 ..... $8.73

Hose

Hoses—Have a 9/16″-18 left-hand (B size) female nut on both ends. Use with the adapters above to connect a propane torch to a propane tank.

12-ft. Hose 7976A34 $33.07
24-ft. Hose 7976A35 $62.16

Complete Assembly—Includes both adapters sold above and the 12-ft. hose sold above.

7976A24 ..... $50.53

Empty Propane Tanks for Lift Trucks

Tanks come unfilled and meet D.O.T. regulations for use with lift trucks. Include an on/off valve, a pressure relief valve, a built-in overflow device, a coupler that connects the on/off valve to the fuel line, and a fuel-level gauge.

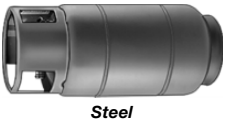

Steel

Steel tanks include a damage-resistant footring. Meet D.O.T. 4BA240.

Aluminum tanks are lightweight and nonsparking. Meet D.O.T. 4E240.

End View

	Cap., lbs.	Gas Cap., gal.	Dia.	Ht.		
Steel	20	4.7	12 3/32″	19 3/16″	7777A17	$213.30
Steel	33.5	7.9	12 3/32″	26 7/8″	7777A11	185.71
Steel	43.5	10.3	12 3/32″	32 53/64″	7777A14	228.56
Aluminum	20	4.7	12 1/2″	20 1/4″	7777A27	279.42
Aluminum	33.5	7.9	12 1/2″	28 1/4″	7777A21	239.98
Aluminum	43.5	10.3	12 1/2″	34 1/8″	7777A24	323.81

Replacement Valve for Lift-Truck Propane Tanks

This valve is designed to fit lift-truck propane tanks. It permits withdrawal of liquid or vapor and has easy-grip wrenching pads for installation. The valve inlet is 3/4″ NPT male to fit propane tank; the valve outlet is 3/8″ NPT male to fit the male lift-truck connector (sold separately).

To link the valve to the lift truck fuel line, you need a male and a female lift truck connector. Female connector connects to your vehicle fuel line and to the male connector for a quick disconnect. Valve and connectors are brass.

Valve

Male Connector

Female Connector

		Each
Valve	77445A81	$23.60
Male Lift-Truck Connector	77445A82	16.88
Female Lift-Truck Connector	77445A83	19.72
Replacement Parts		**Pkg.**
Washers for Male Lift-Truck Connector (10/Pkg.)	77445A91	$4.24
O-Rings for Male Lift-Truck Connector (10/Pkg.)	77445A92	2.79

Silver Brazing Alloys

Brazing makes bonds that are stronger than a solder on materials that welding would melt. These brazing alloys join most metals and alloys except aluminum and magnesium. Meet Fed. Spec. QQB-654A and AWS specifications.

Alloys with Cadmium— *Tight-joint silver* is also for induction brazing (using electrical current to create localized heat).

Alloys without Cadmium— *Extra-strong silver* is excellent for food-handling equipment. *Silver/copper/phosphorus* uses phosphorus as a fluxing agent.

Prices may fluctuate with the cost of silver.

Composition % ■ Ag	Cu	Zn	Cd	Sn	Ni	Melting Temperature	Size	1-troy-oz. Coils Lg., ft.●			5-troy-oz. Coils Lg., ft.●		
Alloys with Cadmium													
Gap-Fill Silver— *For ferrous and nonferrous metals.*													
35	26	21	18	—	—	1125°-1295° F	3/64″ Dia.	9.6	7675A4	$55.77	48	7675A2	$252.75
35	26	21	18	—	—	1125°-1295° F	1/16″ Dia.	5.4	7675A3	55.77	27	7675A1	252.75
Tight-Joint Silver— *For ferrous and nonferrous metals and alloys.*													
45	15	16	24	—	—	1125°-1145° F	3/64″ Dia.	9.6	7676A7	69.84	48	7676A2	333.25
45	15	16	24	—	—	1125°-1145° F	1/16″ Dia.	5.4	7676A6	69.84	27	7676A1	214.24
45	15	16	24	—	—	1125°-1145° F	1″ Wd. × 0.005″ Thick.	3.2	7676A8	81.10	16	7676A3	350.72
45	15	16	24	—	—	1125°-1145° F	1″ Wd. × 0.010″ Thick.	1.6	7676A9	81.10	8	7676A5	350.72
Extra-Strong Silver— *For ferrous and nonferrous metals.*													
50	15.5	16.5	18	—	—	1160°-1175° F	3/64″ Dia.	9.6	7673A5	79.40	48	7673A2	366.87
50	15.5	16.5	18	—	—	1160°-1175° F	1/16″ Dia.	5.4	7673A4	79.40	27	7673A1	366.87
50	15.5	16.5	18	—	—	1160°-1175° F	1/2″ Wd. × 0.005″ Thick.	6.5	7617A14	87.91	—	—	—
50	15.5	16.5	18	—	—	1160°-1175° F	5/8″ Wd. × 0.005″ Thick.	4.5	7617A15	87.91	—	—	—
50	15.5	16.5	18	—	—	1160°-1175° F	3/4″ Wd. × 0.005″ Thick.	4.3	7617A16	87.91	—	—	—
50	15.5	16.5	18	—	—	1160°-1175° F	1″ Wd. × 0.005″ Thick.	3.3	7673A6	87.88	16	7673A3	395.24
Silver with Nickel— *For hard-to-braze metals; aluminum bronze to steel; steel, tool steel, 300 series stainless steel, tungsten carbide, and nickel alloy.*													
50	15.5	15.5	16	—	3	1170°-1270° F	3/64″ Dia.	9.6	7674A5	79.40	48	7674A2	366.87
50	15.5	15.5	16	—	3	1170°-1270° F	1/16″ Dia.	5.4	7674A4	79.40	27	7674A1	366.87
50	15.5	15.5	16	—	3	1170°-1270° F	1″ Wd. × 0.005″ Thick.	3.3	7674A6	83.84	16	7674A3	376.03
Alloys without Cadmium— *All are ROHS compliant.*													
Gap-Fill Silver— *For ferrous and nonferrous metals.*													
45	30	25	—	—	—	1225°-1370° F	3/64″ Dia.	9.6	7761A14	69.84	48	7761A12	333.25
45	30	25	—	—	—	1225°-1370° F	1/16″ Dia.	5.4	7761A13	69.84	27	7761A11	333.25
Tight-Joint Silver— *For ferrous and nonferrous metals and alloys.*													
45	27	25	—	3	—	1185°-1260° F	3/64″ Dia.	9.6	76975A63	69.84	48	76975A61	333.25
45	27	25	—	3	—	1185°-1260° F	1/16″ Dia.	5.4	76975A64	69.84	27	76975A62	333.25
Extra-Strong Silver— *For ferrous and nonferrous alloys.*													
56	22	17	—	5	—	1145°-1205° F	3/64″ Dia.	9.6	76955A71	68.57	48	76955A61	310.66
56	22	17	—	5	—	1145°-1205° F	1/16″ Dia.	5.4	76955A72	68.57	27	76955A62	310.66
56	22	17	—	5	—	1145°-1205° F	1″ Wd. × 0.005″ Thick.	3.2	76955A73	72.35	16	76955A63	314.07
Silver with Nickel— *For 300 series stainless steel, tungsten carbide, nickel- and iron-based alloys.*													
50	20	28	—	—	2	1220°-1305° F	3/64″ Dia.	9.6	76965A64	79.40	48	76965A61	366.87
50	20	28	—	—	2	1220°-1305° F	1/16″ Dia.	5.4	76965A65	79.40	27	76965A62	366.87
50	20	28	—	—	2	1220°-1305° F	1″ Wd. × 0.005″ Thick.	3.2	76965A66	83.84	16	76965A63	376.03

■ Ag = Silver, Cu = Copper, Zn = Zinc, Cd = Cadmium, Sn = Tin, and Ni = Nickel. ● Lg. is approximate.

Composition % ■ Ag	Cu	Zn	Sn	Ni	P	Melting Temperature	Size	Lg.●	Pkg. Qty.	Rods	Pkg.
Alloys without Cadmium— *All are ROHS compliant.*											
Flux-Coated Silver— *For tool steel, oxidized stainless steel, and tungsten carbide.*											
45	30	25	—	—	—	1175°-1235° F	1/16″ Dia.	18″	8	76935A11	$210.26
57	23	17	3	—	—	1140°-1200° F	1/16″ Dia.	18″	8	76935A12	255.69
Silver/Copper/Phosphorus— *For copper. Not for nickel or ferrous metals.*											
5	89	—	—	—	6	1190°-1500° F	1/8″ Wd. × 0.05″ Thick.	20″	7	7795A14	32.78
5	89	—	—	—	6	1190°-1500° F	1/8″ Wd. × 0.05″ Thick.	20″	28	7795A16	122.31
5	89	—	—	—	6	1190°-1500° F	1/16″ Dia.	20″	12	7795A18	32.78
5	89	—	—	—	6	1190°-1500° F	1/16″ Dia.	20″	50	7795A17	122.31
15	80	—	—	—	5	1190°-1480° F	1/8″ Wd. × 0.05″ Thick.	20″	7	7810A19	80.16
15	80	—	—	—	5	1190°-1480° F	1/8″ Wd. × 0.05″ Thick.	20″	28	7810A11	338.94
15	80	—	—	—	5	1190°-1480° F	1/16″ Dia.	20″	12	7810A15	80.16
15	80	—	—	—	5	1190°-1480° F	1/16″ Dia.	20″	50	7810A14	338.94

■ Ag = Silver, Cu = Copper, Zn = Zinc, Sn = Tin, Ni = Nickel, and P = Phosphorus. ● Lg. is approximate.

Brazing Alloy Assortment

Includes these ROHS-compliant brazing alloys and flux:

- 1 troy oz. (one 1/16″ Dia. × 5.4 ft. Lg. coil) of 45/30/25 silver/copper/zinc alloy without cadmium for joining dissimilar metals. Melting temperature is 1225° to 1370° F.
- 1 troy oz. (three 10″ Lg. × 1/8″ Wd. × 0.05″ Thick.) of 15/80/5 silver/copper/phosphorous alloy without cadmium for copper and copper alloys. Melting temperature is 1300° to 1475° F.
- 4-oz. jar of brazing flux.

Price may fluctuate with the cost of silver.

7666A1 ..... $85.26

Brazing Strips for Carbide Tool Inserts

Also known as trimetal brazing strips, these strips have silver with nickel alloy sides and a copper core. Ideal for brazing carbide tool inserts and aluminum bronze to steel. Strips are 1″ Wd. × 0.015″ Thick.

Prices may fluctuate with the cost of silver.

With Cadmium— Melting temperature is 1170° to 1270° F.

Without Cadmium— Melting temperature is 1220° to 1305° F. ROHS compliant.

	1 troy oz. Lg.			5 troy oz. Lg.		
With Cadmium	13 11/16″	7759A11	$59.49	68″	7759A14	$270.84
Without Cadmium	13 11/16″	7759A12	59.49	68″	7759A68	270.84

Brazing Kit for Aluminum

Join aluminum to aluminum alloys, brass, copper, and most other metals. Kit includes a 0.3-oz. coil of 1/16″ Dia. × 9′6″ Lg. 88.5/11.5 aluminum/silicon brazing wire with a melting temperature of 1070° F and a 0.25-oz. tube of liquid flux. ROHS compliant.

7797A11 ..... $9.05

Brazing Paste Fluxes

Ideal for cleaning and preparing a surface for brazing. Use with silver brazing alloys for brazing a variety of ferrous and nonferrous alloys including brass, copper, carbon steel, stainless steel, nickel, and carbides (not titanium). Residue washes off with hot water.

White Flux— Meets Fed. Spec. O-F-499, Type B; AWS A5.31-92, Type FB3A; and AMS 3410.

Black Flux— Boron-modified, high-temperature flux. Meets Fed. Spec. O-F-499, Type B; AWS A5.31-91, Type FB3C; and AMS 3411. ROHS compliant.

	Maximum Temperature	1/2-lb. Jar		1-lb. Jar	
White Flux	1600° F	7693A1	$8.86	7693A2	$13.03
Black Flux	1700° F	7645A41	12.77	7645A51	17.81

Solder without Flux

Without a flux core, this solid wire and bar solder allows you to choose the flux that works best with your application. (See page 3394 for flux.) Meets ASTM specifications.

63/37 Tin/Lead— Has a low melting point and exceptional flow. For electronics and stainless steel.

60/40 Tin/Lead— The most popular solder for joining electrical leads and wires. Its low melting point makes it ideal for delicate work.

50/50 Tin/Lead— General purpose solder handles standard soldering and sheet metal work.

40/60 Tin/Lead— A good general purpose solder.

30/70 Tin/Lead— For machine and torch soldering.

High Melting Point— Its high melting point prevents remelting when soldering successive joints with another solder.

Extra Strong— For use on stainless steel, it has exceptional strength and is nondulling with a long-lasting bright finish.

Wire

Composition %■ Sn	Pb	Ag	Melting Temp.	Wt., lbs.	0.062″ Dia.		0.125″ Dia.	
Tin/Lead								
63	37	—	361° F	1	7657A6	$37.83	7657A1	$37.53
63	37	—	361° F	5	7657A7	170.23	7657A2	168.88
60	40	—	370° F	1	7667A31	36.57	7667A11	36.24
60	40	—	370° F	5	7667A35	164.56	7667A15	163.08
50	50	—	413° F	1	7667A32	31.41	7667A12	31.08
50	50	—	413° F	5	7667A42	141.34	7667A22	139.86
40	60	—	460° F	1	7667A34	26.89	7667A14	28.59
40	60	—	460° F	5	7667A41	121.00	7667A21	128.66
30	70	—	496° F	1	7667A45	22.32	7667A25	22.03
30	70	—	496° F	5	7667A46	100.44	7667A26	99.14
High Melting Point								
1	97.5	1.5	588° F	1	7667A43	41.41	7667A23	41.08
1	97.5	1.5	588° F	5	7667A44	186.34	7667A24	184.86
Extra Strong								
45	54	1	440° F	1	—	—	7656A4	47.54
Tin/Lead							***0.031″ Dia.***	
63	37	—	361° F	1	—	—	7657A4	$39.12
60	40	—	370° F	1	—	—	7667A51	38.77

■ Sn = Tin, Pb = Lead, and Ag = Silver.

Bars

Composition %■ Sn	Pb	Ag	Melting Temp.	Wt., lbs.♦		
Tin/Lead						
63	37	—	361° F	1	7657A3	$36.83
60	40	—	376° F	1	7663A11	35.26
50	50	—	421° F	1	7663A12	29.95
40	60	—	460° F	1	7663A14	25.20
30	70	—	482° F	1	7663A17	20.18
High Melting Point						
1	97.5	1.5	588° F	1	7663A15	35.54

■ Sn = Tin, Pb = Lead, and Ag = Silver. ♦ Weight is approximate.

Solder for Aluminum

For soldering aluminum to itself and to its alloys. ROHS compliant.

98/2 Zinc/Aluminum— Solders aluminum without the use of flux. It also solders copper and stainless steel when used with external fluxes. Melting temperature is 732° to 760° F.

60/40 Tin/Zinc— Recommended for use with flux, see 7696A on page 3394. Melting temperature is 390° to 635° F.

	Approx. Wt.		
98/2 Zinc/Aluminum			
Approx. 38 Rods (0.125″ Dia. × 18″ Lg.)	2 lbs.	7664A4	$35.60
60/40 Tin/Zinc			
Stick (0.280″ Dia. × 13½″ Lg.)	3.4 oz.	7664A21	9.44
Rod (0.562″ Dia. × 13½″ Lg.)	0.85 lb.	7664A11	36.33
Wire (0.125″ Dia.)	1 lb.	7664A31	33.53

Paste Solder

To solder difficult-to-reach joints this paste solder is the perfect alternative to regular solder and flux. Made of a finely powdered solder combined with a flux paste, you simply apply a thin coat of paste to the surfaces you want joined, then heat, and wipe with a damp cloth.

50/50 tin/lead handles copper, brass, zinc, steel, and bronze.

95/5 lead-free tin/antimony is for copper, zinc, and mild and galvanized steel. ROHS compliant.

	Size	Melting Temp.		
50/50	½ lb.	356°-421° F	7683A4	$19.24
50/50	1 lb.	380°-420° F	7683A3	42.92
95/5 Lead Free	1 lb.	430°-473° F	7774A15	55.95

Solder with Flux Core

No need to add flux—the core of this wire solder is flux.

Single Core

Multiple Cores

Single Flux Core

Tin/Lead with Acid Flux— Has strong cleaning action but leaves residue. Use on common metals such as mild steel, copper, brass, and stainless steel. Also for use on highly oxidized and difficult-to-solder metals. Residue is corrosive and electrically conductive.

Tin/Lead with Activated-Rosin Flux— Activated flux is quick acting and has strong cleaning action, but leaves residue. It dissolves surface oxides for good solder flow and strong connections. For use on brass and copper. Residue is electrically conductive. Ideal for electrical work. Meets Fed. Spec. QQ-S-571.

Tin/Lead with Easy-Clean Flux— Flux residue washes off with water. For use with difficult-to-solder metals.

Tin/Lead with No-Clean Flux— A good general purpose solder that leaves minimal flux residue so you don't have to clean afterward.

Tin/Lead/Silver High Melting Point with Rosin Flux— Ideal for electric motors, radiators, and high-temperature lamps. Also good for first connections since its high melting point prevents remelting when soldering successive joints. Meets J-STD-004.

Multiple Flux Cores

With five rosin flux cores, you'll get fast soldering that uses less solder and transmits less heat to the joint area.

Tin/Lead with Rosin Flux— The best choice for electronic and printed circuit work. Meets J-STD-006.

Tin/Lead/Silver/Antimony with Rosin Flux— For silver-plated surfaces, heat-sensitive components, and near previously soldered joints. Meets Fed. Spec. QQ-S-571E and J-STD-006.

Single Flux Core

Composition %■ Sn	Pb	Ag	Wire Dia.	Melting Temp.	Wt., lbs.		
Tin/Lead with Acid Flux							
50	50	—	0.125″	421° F	1	7658A4	$26.20
50	50	—	0.125″	421° F	5	7658A5	131.00
40	60	—	0.125″	460° F	1	7658A1	22.07
40	60	—	0.125″	460° F	5	7658A2	110.33
30	70	—	0.125″	496° F	1	7658A6	17.84
Tin/Lead with Activated-Rosin Flux							
63	37	—	0.015″	361° F	1	7659A64	61.91
63	37	—	0.025″	361° F	1	7659A67	32.67
63	37	—	0.031″	361° F	1	7659A65	32.76
63	37	—	0.050″	361° F	1	7659A68	32.80
63	37	—	0.062″	361° F	1	7659A66	32.22
62	36	2	0.031″	354° F	1	7659A74	76.22
60	40	—	0.025″	370° F	1	7659A15	32.53
60	40	—	0.031″	370° F	1	7659A5	30.98
60	40	—	0.031″	370° F	4	7659A7	124.98
60	40	—	0.050″	370° F	1	7659A14	30.44
60	40	—	0.062″	370° F	1	7659A3	29.49
60	40	—	0.062″	370° F	5	7659A4	154.00
60	40	—	0.093″	370° F	1	7659A13	30.18
50	50	—	0.062″	413° F	1	7659A12	26.20
40	60	—	0.062″	460° F	1	7659A11	22.60
40	60	—	0.093″	460° F	1	7659A1	22.22
40	60	—	0.093″	460° F	5	7659A2	111.11
Tin/Lead with Easy-Clean Flux							
63	37	—	0.015″	361° F	1	7756A3	62.36
63	37	—	0.020″	361° F	1	7756A1	32.30
63	37	—	0.031″	361° F	1	7756A2	33.94
Tin/Lead with No-Clean Flux							
63	37	—	0.015″	361° F	1	7758A6	62.36
63	37	—	0.020″	361° F	1	7758A1	35.53
63	37	—	0.031″	361° F	1	7758A2	34.09
63	37	—	0.050″	361° F	1	7758A3	34.11
62	36	2	0.031″	354° F	1	7758A4	81.33
Tin/Lead/Silver High Melting Point with Rosin Flux							
5	93	2	0.050″	598° F	1	7685A12	53.67
5	93	2	0.062″	598° F	1	7685A11	53.82

■ Sn = Tin, Pb = Lead, and Ag = Silver.

Multiple Flux Cores

Composition %■ Sn	Pb	Ag	Sb	Wire Dia.	Melting Temp.	Wt., lbs.		
Tin/Lead with Rosin Flux								
63	37	—	—	0.015″	361° F	1	7745A4	$78.00
63	37	—	—	0.025″	361° F	1	7745A3	44.41
63	37	—	—	0.050″	361° F	1	7745A5	42.84
63	37	—	—	0.062″	361° F	1	7745A1	42.43
60	40	—	—	0.025″	376° F	1	7744A3	42.78
60	40	—	—	0.032″	376° F	1	7744A6	40.92
60	40	—	—	0.050″	376° F	1	7744A5	40.27
60	40	—	—	0.062″	376° F	1	7744A1	40.70
Tin/Lead/Silver/Antimony with Rosin Flux								
62	35.75	2	0.25	0.025″	372° F	1	7687A63	106.62
62	35.75	2	0.25	0.062″	372° F	1	7687A61	99.62

■ Sn = Tin, Pb = Lead, Ag = Silver, and Sb = Antimony.

Lead-Free Solder

All are ROHS compliant.

Tin/Silver—For use on food-service equipment, refrigeration, plumbing, heating, and air conditioning.

Tin/Antimony—For air conditioning, refrigeration, and high-temperature applications. Has high strength and a matte finish. Melts and flows like 50/50 tin/lead solder.

100% Tin—Ideal for food-service equipment. Has good strength and is nondulling.

Tin/Silver/Copper—For electronics and electrical applications. Also known as SAC 305, it melts and flows like 50/50 tin/lead solder.

Tin/Copper—The economical choice for electronics and electrical applications.

Water Safe—Melts and flows like 50/50 tin/lead solder. *Wires* are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010. *Bar* can be used with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012.

Composition % ■ Sn	Ag	Sb	Cu	Wire Dia.	Melting Temp.	Wt., lbs. ♦		
Solder without Flux								
Tin/Silver—*Wire*								
96	4	—	—	0.062″	430°F	1	**7791A43**	$128.02
96	4	—	—	0.125″	430°F	1	**7791A11**	127.42
Tin/Antimony—*Wire*								
95	—	5	—	0.062″	464°F	1	**7668A6**	37.16
95	—	5	—	0.125″	464°F	1	**7668A1**	35.44
Tin/Antimony—*Bar*								
95	—	5	—	—	464°F	1	**7668A16**	41.67
100% Tin—*Wire*								
100	—	—	—	0.125″	450°F	1	**7656A1**	57.68
100% Tin—*Bar*								
100	—	—	—	—	450°F	1	**8886K11**	54.55
Tin/Copper—*Wire*								
97	—	—	3	0.031″	482°F	1	**7827A11**	43.03
97	—	—	3	0.125″	482°F	1	**7827A15**	42.69
Water Safe—*Wire*								
95.8	0.2	—	4	0.118″	440°F	1	**76805A61**	35.00
95.8	0.2	—	4	0.118″	440°F	5	**76805A62**	159.09
Water Safe—*Bar*								
97	0.2	0.8	2	—	482°F	1	**76805A53**	36.94
Solder with Flux								
Tin/Silver with Rosin Flux Core—*Wire*								
96	4	—	—	0.031″	430°F	1	**7859A23**	130.89
96	4	—	—	0.062″	430°F	1	**7859A26**	130.74
96	4	—	—	0.125″	430°F	1	**7859A25**	129.66
Tin/Silver with Acid Flux Core—*Wire*								
96	4	—	—	0.125″	464°F	1	**7791A22**	130.79
Tin/Antimony with Rosin Flux Core—*Wire*								
95	—	5	—	0.031″	464°F	1	**7830A21**	38.42
95	—	5	—	0.125″	464°F	1	**7830A25**	37.98
Tin/Antimony with No-Clean Flux Core—*Wire*								
95	—	5	—	0.031″	464°F	1	**7837A34**	38.53
95	—	5	—	0.125″	464°F	1	**7837A38**	38.53
Tin/Antimony with Easy-Clean Flux Core—*Wire*								
95	—	5	—	0.031″	464°F	1	**7843A42**	38.09
95	—	5	—	0.125″	464°F	1	**7843A46**	38.13
Tin/Silver/Copper with Rosin Flux Core—*Wire*								
96.5	3	—	0.5	♣	422°F	0.08	**7872A57**	18.95
96.5	3	—	0.5	0.031″	422°F	1	**7872A46**	112.16
Tin/Copper with Rosin Flux Core—*Wire*								
97	—	—	3	0.031″	482°F	1	**7857A12**	40.93
97	—	—	3	0.125″	482°F	1	**7857A16**	40.25
Tin/Copper with Acid Flux Core—*Wire*								
97	—	—	3	0.031″	482°F	1	**7844A4**	43.28
97	—	—	3	0.125″	482°F	1	**7844A6**	42.93

■ Sn = Tin, Ag = Silver, Sb = Antimony, and Cu = Copper.
♦ Weight of bars is approximate.
♣ 0.040″ Dia. × 125″ Lg. wire is coiled inside a pocket-size dispenser.

Heat Barriers and Transfers

7689A17

Heat-Sink Clips—These chrome-plated copper jaws clip onto circuit board components to dissipate heat.

1⅛″ Long Clip **7689A13** $9.83
2½″ Long Clip **7689A17** 17.66

Heat Barriers—Stop heat from traveling to adjoining surfaces during soldering, welding, and brazing.

Putty can be formed around pipes and tubing or spread onto a flat surface. It's nontoxic, reusable, and for use on most metals. Maximum temperature is 2000°F.

Spray gel protects components and surrounding surfaces from heat damage and discoloration. It's clear, nontoxic, nonstaining, and won't leave residue.

Putty (1-pt. Jar) **76685A65** $13.22
Spray Gel (32-oz. Spray Bottle) **7654A2** 18.80

Silicone-Free Heat-Transfer Paste—Apply under power transistors and other devices to transfer heat (but not electricity) to metal frame for dissipation. Temperature range is –40° to +392°F. Meets MIL-C-47113.

4-oz. Tube **76645A12** $31.30
1-lb. Jar **76645A14** 68.47

Solder Spool Holder

Keep your solder spools in order. This plastic, static-safe holder has a self-adhesive bottom and holds up to 1 lb. of solder.

7706A67 ..... $38.26

Soldering Fluxes for Plumbing

Flux cleans and prepares surface for soldering. Use this flux to solder common metals such as copper, brass, tin, and steel. Not for aluminum, stainless steel, magnesium, or for use with electronics (unless otherwise stated). All are water soluble except Nokorode. All products except Rubyfluid and Nonacid Liquid are NSF 61 certified for use with drinking (potable) water in all states as of January 1, 2010.

Rubyfluid Flux—Causes solder to flow in a thin film for strong joints with minimal solder use. Can be used on aluminum. These products can be used with drinking (potable) water in all states except California, Maryland, and Vermont as of January 1, 2012.

Nonacid Liquid and ***Nonacid Paste Fluxes***—Clean while soldering. Liquid can be used for non-potable plumbing applications. Paste meets MIL-F-4995, Type II.

Fast-Flushing Paste Flux—Extremely water soluble for fast removal from pipe lines. Meets ASTM Spec. B813.

Nokorode Paste Flux—Has a special oil base to protect the solder joint from corrosion. Meets Fed. Spec. O-F-506, Type 1A; A-A-51145; and MIL-FS-6872A.

Size		
Rubyfluid		
1-pt. Bottle	**7699A1**	$3.33
1-qt. Bottle	**7699A2**	5.48
1-gal. Bottle	**7699A3**	18.67
Nonacid Liquid		
1-pt. Bottle	**7765A21**	11.86
1-qt. Bottle	**7765A22**	18.76
1-gal. Bottle	**7765A23**	48.45

Size		
Nonacid Paste		
2-oz. Jar	**7765A16**	$3.12
4-oz. Jar	**7765A14**	5.02
1-lb. Jar	**7765A15**	13.52
Fast-Flushing Paste		
4-oz. Jar	**77005A71**	7.26
Nokorode Paste		
1.7-oz. Jar	**7698A1**	2.70
1-lb. Jar	**7698A2**	12.73

Soldering Fluxes for Electronics

Needle-Point Dispenser

Flux cleans and prepares surface for soldering. This flux is excellent for soldering electrical assemblies and printed circuit boards. All meet J-STD-004 and are ROHS compliant.

Rosin Flux—The more activated the flux, the stronger the cleaning action, but has more residue.

Easy Clean—Residue is water soluble.

No Clean—Leaves minimal residue.

Dispensing pens are similar in function to a felt-tip marker but dispense flux instead of ink, putting it only where needed.

Needle-point dispenser has a 0.013″ tip opening for precise applications. Includes 0.2 ounces of mildly activated rosin flux and is refillable.

Standard-point dispenser has a 0.031″ tip opening. Comes empty.

	Size		
Rosin Flux (Nonactivated)	1-gal. Bottle	**7798A14**	$45.62
Rosin Flux (Mildly Activated)	1-gal. Bottle	**7798A16**	49.07
Rosin Flux (Fully Activated)	1-gal. Bottle	**7798A12**	48.49
Easy-Clean Flux	1-pt. Bottle	**7755A1**	13.51
Easy-Clean Flux	1-qt. Bottle	**7755A2**	18.47
Easy-Clean Flux	1-gal. Bottle	**7755A3**	44.13
Dispensing Pen with No-Clean Flux	0.32 oz.	**7893A21**	7.95
Dispensing Pen with Rosin Flux	0.32 oz.	**7893A22**	7.67
Dispensing Pen with Easy-Clean Flux	0.32 oz.	**7893A23**	7.60
Dispensing Pen with Lead-Free Flux	0.32 oz.	**7893A24**	8.66
Needle-Point Dispenser with Rosin Flux	0.2 oz.	**7799A11**	7.91
Standard-Point Dispenser (Empty)	—	**7799A12**	5.18

Soldering Flux for Aluminum

Use this paste flux to prepare aluminum and aluminum alloy surfaces for soldering with tin/lead solder. Also for copper, chrome, and brass. Not for electronics. Meets DOD 1866 and is ROHS compliant.

4-oz. Jar **7696A2** $14.64
1-lb. Jar **7696A1** 41.25

Soldering Flux for Stainless Steel

Flux cleans and prepares surface for soldering. This is a fast-acting liquid-acid flux for most grades of stainless steel as well as chrome, copper, and brass. Use with all types of soft solder. Not for stainless steel water tubing or for electronics. Meets Fed. Spec. O-F-506C, Type II and A-A-51145C, Type IIB and is ROHS compliant.

1-pt. Bottle **7695A1** $12.00
1-qt. Bottle **7695A4** 17.14
1-gal. Bottle **7695A3** 45.46

Flux Removers

Removers will not harm circuit performance. ROHS compliant.

Spray dissolves all conventional flux. ***Pens*** are good for spot cleaning and precise removal from printed circuit boards.

12-oz. Spray **7655A12** $15.25
0.32-oz. Pen with No-Clean Flux Remover **7655A21** 11.49
0.32-oz. Pen with Lead-Free Flux Remover **7655A25** 11.07

Butane Torches

Easily solder and desolder with these torches. They also handle light brazing, except 75195A15. All have a self-ignition system and a refillable fuel tank. Flame reaches temperatures up to 2500° F. Butane gas is not included; sold separately below.

Pocket Size Torch—Has a fuel-level window.

Palm Size Torch—The perfect size for your tool kit, this torch is for use on small, intermittent jobs. Has a fuel-level window. Fill the included empty fuel cell with butane gas or replace it with a filled fuel cell (sold separately).

Bench-Top Torch—A wide, stable base allows hands-free use. Has a slide lock for continuous hands-free use.

Combination Torch—Like the Bench-Top torch, it has a wide, stable base for hands-free use and a slide lock for continuous hands-free use. Plus, it has tips for applications that require heat without an exposed flame. Includes a solder tip (maximum temperature is 752° F) and a heat tip (maximum temperature is 932° F).

Combination Torch Kit—Includes the Combination torch and the two tips mentioned above, plus a hot-knife tip, a heat-shrink attachment, a foam cutter, a 5″ wire cutter, 5″ needle-nose pliers, 60/40 tin/lead solder, a sponge, and a black plastic case.

	Overall Size, Lg. × Wd. × Dp.	Run Time		Each
Pocket Size Torch	2.9″ × 1.3″ × 0.9″	20 min.	75195A15	$11.00
Palm Size Torch	4.3″ × 2.5″ × 1″	20 min.	75195A23	11.00
Bench-Top Torch	6.1″ × 3″ × 1.3″	2 hrs.	75195A16	27.51
Combination Torch	6.5″ × 3.8″ × 1.3″	2 hrs.	75195A18	49.51
Combination Torch Kit	6.5″ × 3.8″ × 1.3″	2 hrs.	75195A17	69.31
Butane Gas (5⅛ oz.)			7694A5	4.88
Refillable Fuel Cell for 75195A23 (includes fuel)—2/Pkg.			75195A14 Pkg.	$5.51

Economy Cordless Soldering Iron

Get the ease of cordless soldering without the wait of charging. For intermittent use. Includes a conical tip (0.031″ wd.), lead-free solder, a tip wrench, and a safety cap. Runs on four included AA batteries; solders up to 150 joints.

		Each
Soldering Iron	7924A11	$22.34
Replacement 0.031″ wd. Conical Tip	7924A17	10.78
Optional 0.125″ wd. Chisel Tip	7924A18	10.78
AA Batteries (4/Pkg.)	71455K53 Pkg.	$2.94

Cordless Soldering Irons

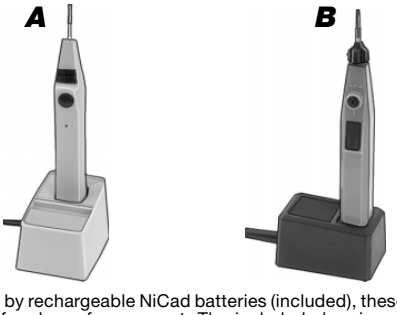

Powered by rechargeable NiCad batteries (included), these cordless irons offer freedom of movement. The included charging stands run on 110 VAC, 60 Hz. Stands have a 6-ft. cord with two-prong plug. UL listed.

(A) Standard Duty Irons—7768A34 includes a 1/16″ wd. pointed tip and a 5/32″ wd. chisel tip. 7768A22 includes a 1/16″ wd. pointed tip and a 3/16″ wd. conical tip.

(B) Heavy Duty Iron—Includes a 3/32″ wd. pointed tip, a 1/32″ wd. conical tip, a 1/8″ wd. chisel tip, a 4-gram coil of 60/40 tin/lead rosin-core solder, a tip cover, a cleaning sponge, and a screwdriver.

Soldering Irons

	Approx. Joints Per Charge	Charge Time	Tip Temp.	Heat-Up Time	Max. Watts		
A	125	1 hour	900°	10 sec.	25	7768A34	$81.86
A	125	4 hours	900°	10 sec.	25	7768A22	59.90
B	350	8 hours	662°	9 sec.	30	7715A31	198.69

Additional Tips

Tip Style	Point Wd.		
For (A) Standard Duty Irons			
Pointed	1/64″	7665A16	$7.20
Pointed	1/16″	7665A14	7.20
Conical	5/32″	7665A13	7.20
Conical	3/16″	7665A15	7.80
Chisel	5/32″	7665A21	7.20
Knife	1/32″	7665A25	7.20
For (B) Heavy Duty Iron			
Pointed	3/32″	7715A33	14.24
Conical	1/16″	7715A36	14.24
Screwdriver	1/4″	7715A35	14.24

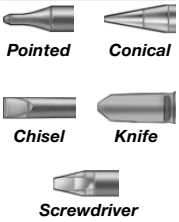

Butane Soldering Irons

Never worry about an exposed flame again—these irons keep flames completely enclosed in the tip. They are self-igniting, ready to use in 30-40 seconds, and include a protective cap. Do not include butane gas (sold separately below).

Economy Iron—Includes a 3/32″ wd. double-flat tip that adjusts up to 850° F. Run time is 60 minutes.

Economy Iron Kit—Includes the economy iron and 3/32″ wd. double-flat tip, plus a 7/32″ wd. flame tip, a 1/2″ wd. hot-knife tip, a 51/64″ wd. blowtorch tip, a 5/32″ ID hot-air tip, a sponge, a safety stand, and a plastic storage case. Temperature adjusts up to 850° F for all tips, except the blowtorch tip, which reaches 2372° F.

Standard Duty Iron—Tip temperature adjusts up to 1200° F. Includes a 3/32″ wd. chisel tip and a 3/16″ ID hot-air tip. Run time is 75 minutes.

Heavy Duty Iron—Tip temperature adjusts from 482° to 932° F; 1202° F when used with a hot-air tip. Has a 5/64″ wd. chisel tip. Run time is 3 hours. UL listed.

Irons

	O'all Lg.		
Economy Iron	7″	7694A21	$44.80
Economy Iron Kit	7″	7694A22	67.53
Standard Duty Iron	8 1/4″	7931A24	56.60
Heavy Duty Iron	10 1/2″	77125A65	119.78
Butane Gas (5⅛ oz.)		7694A5	4.88

Replacement and Additional Tips

	Point Size		
For Economy Iron			
Single Flat	1/32″ Wd.	7694A31	$11.53
Single Flat	3/32″ Wd.	7694A32	11.53
Double Flat	1/32″ Wd.	7694A33	11.53
Double Flat	3/32″ Wd.	7694A34	11.53
For Standard Duty Iron			
Chisel	3/32″ Wd.	7931A15	17.82
Hot Air	3/16″ ID	7931A16	17.82
For Heavy Duty Iron			
Conical	1/32″ Wd.	77125A661	16.96
Chisel	5/64″ Wd.	77125A662	16.96
Chisel	5/16″ Wd.	77125A667	20.38
Bevel	5/64″ Wd.	77125A663	16.96
Hot Air	3/16″ ID	77125A665	16.96

Mini Pencil-Grip Soldering Irons

Use these ultra-thin irons for precision work. They heat quickly, operate on 115 VAC, 60 Hz, and include a 6-ft. cord with three-prong plug.

Tips, sold separately, are plug style and made of copper alloy with iron plating for durability.

Soldering Irons

Watts	Temp. Range		
15	665°-700° F	7016A34	$33.16
18	700°-750° F	7016A36	33.93

Tips

	Point Wd.		
Chisel	0.055″-0.070″	7016A41	$7.15
Chisel	0.070″-0.080″	7016A42	7.15
Needle	0.022″-0.032″	7016A43	8.48

Pencil-Grip Soldering Irons

Fiberglass Grip

Cork Grip

A slender, lightweight design makes these pencil-grip irons comfortable to use for high-volume and continuous duty jobs. All include a plug-style screwdriver tip. For additional tips, see series 7747A on page 3397. Irons operate on 115 VAC, 60 Hz and have a 5½-ft. cord with three-prong plug. ***Cork grip*** provides an extra layer of insulation between your hand and the iron.

Also Available: Replacement heating elements. For 40-, 50-, or 60-watt fiberglass-grip replacement elements, ask for 7722A38 and specify wattage and tip shank diameter. For cork-grip replacement elements, ask for 7732A55 and specify wattage and tip shank diameter.

Watts	Tip Temp.	Tip Shank Dia.	Tip O'all Lg.	Tip Point Wd.		
Fiberglass Grip						
15	675° F	1/8″	2 1/4″	3/32″	**7722A4**	$77.61
20	775° F	1/8″	2 1/4″	3/32″	**7722A3**	77.61
25	850° F	1/8″	2 1/4″	3/32″	**7722A8**	77.61
25	850° F	3/16″	2 1/4″	3/32″	**7722A1**	77.78
35	975° F	3/16″	2 1/4″	3/32″	**7722A5**	77.78
40	925° F	1/4″	2 1/4″	3/16″	**7722A2**	90.21
50	1000° F	1/4″	2 1/4″	3/16″	**7722A63**	90.21
60	1075° F	1/4″	2 1/4″	3/16″	**7722A64**	90.21
Cork Grip						
30	875° F	1/8″	2 1/4″	3/32″	**7732A1**	89.27
30	900° F	3/16″	2 1/4″	3/32″	**7732A4**	91.41
40	1000° F	3/16″	2 1/4″	3/32″	**7732A6**	91.41
50	1000° F	1/4″	2 1/4″	3/16″	**7732A7**	91.67
50	1100° F	3/16″	2 1/4″	3/32″	**7732A3**	91.41
60	1075° F	1/4″	2 1/4″	3/16″	**7732A8**	91.67

Fixed-Temperature Pencil-Grip Soldering Irons

Select a tip with the right temperature and width for your soldering job. ***60-watt iron*** includes a 700° F, plug-style 1/16″ wd. screwdriver tip. ***100-watt iron*** includes a 700° F, plug-style 3/8″ wd. screwdriver tip. Both irons operate on 120 VAC, 50/60 Hz and have a 6-ft. cord with three-prong plug. UL listed. ***Additional plug-style screwdriver tips*** (sold separately) produce different temperatures.

Soldering Irons and Replacement Heating Elements

60-Watt Iron	**6997A23**	$86.14
100-Watt Iron	**6997A25**	92.73
Replacement 60-Watt Heating Element	**6997A24**	43.45
Replacement 100-Watt Heating Element	**6997A26**	50.98

Additional Plug-Style Screwdriver Tips

To Order: Please specify tip temperature. 700° or 800° F for 60-watt irons. 600°, 700°, or 800° F for 100-watt irons.

Point Wd.	*For 60-Watt Irons*		*For 100-Watt Irons*	
1/16″	**6997A32**	$5.61	—	—
1/8″	**6997A34**	5.61	**6997A42**	$8.00
3/16″	**6997A36**	5.61	**6997A44**	7.75
1/4″	—	—	**6997A46**	7.75
3/8″	—	—	**6997A48**	7.75

Soldering Guns

Soldering

Smoothing

Plastic Cutting

Instant heat with a quick cool down make these trigger-activated guns great for intermittent use. They have two temperature settings, a light to illuminate your work area, and a 6-ft. cord with two-prong plug (7720A7 has three-prong plug). Guns are 10″ Lg.×2¼″ Wd.×6¼″ Ht. Operate on 120 VAC, 50/60 Hz. UL listed.

Kits include gun, soldering tip, smoothing tip, plastic-cutting tip, rosin core solder, hex wrench, instruction manual, and fitted plastic case.

	Watts, Low/High	Tip Temp.	*Gun Only*	Each	*Kits*	Each
A	100/140	900°/1020° F	**7719A8**	$47.96	**7728A2**	$55.68
B	200/260	900°/1100° F	**7720A2**	62.52	**7728A1**	72.33
C	200/300	900°/1100° F	**7720A7**	79.59	**7728A8**	83.15

Soldering Tips for A (2/Pkg.)	**7719A3**	**Pkg.**	$5.52
Smoothing Tips for A (2/Pkg.)	**7719A4**	**Pkg.**	$5.16
Plastic Cutting Tips for A and B (2/Pkg.)	**7719A6**	**Pkg.**	$5.96
Soldering Tip for B	**7720A3**	**Each**	$5.48
Smoothing Tip for B	**7720A4**	**Each**	$5.48
Soldering Tips for C (2/Pkg.)	**7720A11**	**Pkg.**	$5.76

Economy Pencil-Grip Soldering Irons

25 Watt

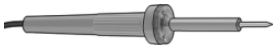

From electronics to metal sealing, these economically priced irons handle most light duty soldering jobs. All have a light to indicate the unit is on. Operate on 120 VAC, 50/60 Hz and have a 6-ft. cord with two-prong plug. UL listed.

25-watt iron includes a screw-in conical tip with 10-24 male threads; ***40-*** and ***80-watt irons*** include a plug-style chisel tip.

Watts	Tip Temp.	Tip Shank Dia.	Tip Point Wd.		
25	750° F	1/8″	1/32″	**7662A695**	$17.48
40	900° F	1/4″	1/4″	**7662A696**	23.18
80	900° F	3/8″	3/8″	**7662A697**●	32.05

● Includes iron stand.

Additional Tips

Screwdriver

Conical

Chisel

Knife Blade

	Shank Dia.	Point Wd.		
Screw-In Tips for 25-Watt Iron				
Screwdriver	1/8″	1/8″	**7662A701**	$2.46
Conical	1/8″	1/32″	**7662A698**	2.52
Knife Blade Tip & Chuck	1/8″	—	**7662A702**★	8.38
Plug-Style Tips for 40-Watt Iron				
Chisel	1/4″	1/4″	**7662A685**	4.59
Plug-Style Tips for 80-Watt Iron				
Chisel	3/8″	1/4″	**7662A703**	9.14
Chisel	3/8″	3/8″	**7662A686**	9.14

★ Converts iron to hot knife. Blade is 3/4″ Lg.×5/16″ Wd.

Build-Your-Own Pencil-Grip Soldering Irons

Handle

Heating Element

Tip

Build the soldering iron you need. A complite iron requires a handle, a heating element, and a tip; the pieces are interchangeable. For continuous duty applications. ***Handles*** have a 5-ft. cord with three-prong plug. UL listed. ***Heating elements*** operate on 120 VAC, 50/60 Hz. ***Tips*** have 1/4″-28 female threads.

Soldering Iron Handles

With Standard Cord	**77045A11**	$24.94
With Burn-Resistant Cord	**77045A12**	36.13

Heating Elements

Watts	Temp.			Watts	Temp.		
23	700° F	**77045A21**	$21.90	45	900° F	**77045A23**	$27.96
33	800° F	**77045A22**	24.08	50	1000° F	**77045A24**	40.10

Tips

Screwdriver

Conical

Chisel

	Point Wd.	O'all Lg.		
Screwdriver	1/8″	1 1/4″	**77045A36**	$6.56
Conical	3/64″	1 1/16″	**77045A31**	6.19
Long Conical	1/32″	1 1/4″	**77045A32**	6.50
Chisel	5/32″	1 1/16″	**77045A34**	7.37
Chisel	13/64″	1 1/16″	**77045A35**	7.92
Chisel	13/32″	1 1/16″	**77045A37**	12.13
Long Chisel	1/8″	1 1/4″	**77045A33**	6.46

Pistol-Grip Soldering Irons

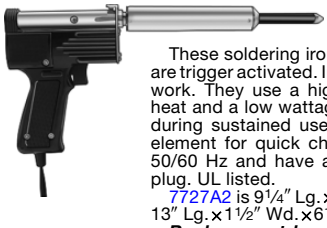

These soldering irons have a pistol-style grip and are trigger activated. Include a light to illuminate your work. They use a high wattage to provide instant heat and a low wattage to maintain tip temperature during sustained use. Tip is built into the heating element for quick changes. Operate on 120 VAC, 50/60 Hz and have a 4½-ft. cord with two-prong plug. UL listed.

7727A2 is 9¼″ Lg.×1½″ Wd.×6¼″ Ht. 7727A3 is 13″ Lg.×1½″ Wd.×6¼″ Ht.

Replacement heating elements have a built-in pyramid-shaped tip, plug into gun with two-prong connector, and are interchangeable.

Watts, Low/High	Tip Temp.	Tip Dia.	*Soldering Irons*		*Replacement Heating Elements*	
150/400	1000° F	1/4″	**7727A2**	$95.11	**7727A4**	$55.85
300/550	1050° F	1/2″	**7727A3**	126.28	**7727A5**	82.45

Heavy Duty Soldering Irons for Metal Fabrication

With large tips, these irons have excellent heat transfer, making them ideal for running seams in sheet metal. Handles are wood with an enamel finish. Include an iron stand.

Soldering Irons with Plug-Style Tip— Tips slide into place and lock in with a hold-down screw on the iron. For replacement and additional tips, see 7747A on this page. Operate on 110/120 VAC and have a 6-ft. cord with three-prong plug.

Also Available: Soldering irons with heat-dissipating cushion grips; please ask for 7711A37 and specify wattage and tip style. Prices are about 10% higher. Replacement heating elements; ask for 7711A66 and specify wattage. Replacement handles/cord sets for 100- to 550-watt irons; ask for 7711A32 for wood handle; ask for 7711A34 for cushion-grip handle.

Soldering Irons with Screw-On Tip— The screw-on design allows for an extra-large tip width, which means maximum coverage on large electrical connectors and sheet metal joints. Operate on 115 VAC and have a 5½-ft. cord with three-prong plug.

Also Available: Replacement heating elements, ask for 7714A92 and specify wattage.

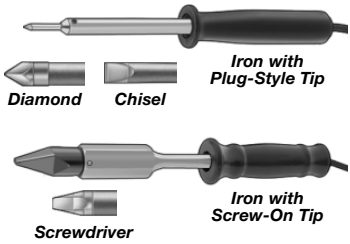

Watts	Tip Temp.	Tip Shank Dia.	Tip O'all Lg.	Tip Point Wd.	Tip Thread Size	Tip Style	Irons		Repl. Tip	
Soldering Irons with Plug-Style Tip										
60	850° F	¼″	3⅜″	1/32″	—	Diamond	7711A16	$92.17	7747A71	$15.85
60	850° F	¼″	3⅜″	¼″	—	Chisel	7711A18	92.17	7747A72	15.85
75	930° F	¼″	3⅜″	1/32″	—	Diamond	7711A17	92.17	7747A71	15.85
100	855° F	⅜″	4⅜″	1/16″	—	Diamond	7711A12	122.86	7747A73	24.89
150	1010° F	⅜″	4⅜″	1/16″	—	Diamond	7711A19	122.86	7747A73	24.89
175	1025° F	⅜″	4⅜″	1/16″	—	Diamond	7711A21	132.27	7747A73	24.89
200	1000° F	⅝″	4 11/16″	1/16″	—	Diamond	7711A13	170.09	7747A74	49.74
300	1000° F	⅞″	5 5/32″	⅞″	—	Chisel	7711A14	201.88	7747A75	68.37
550	1010° F	1⅛″	5⅞″	1⅛″	—	Chisel	7711A15	249.58	7747A76	110.00
Soldering Irons with Screw-On Tip										
175	1000° F	1″	—	⅜″	½″-13	Screwdriver	7714A15	248.98	7714A23	45.87
250	930° F	1⅛″	—	7/16″	⅝″-11	Screwdriver	7714A26	286.84	7714A36	59.22
350	1010° F	1⅜″	—	½″	⅝″-11	Screwdriver	7714A16	363.15	7714A27	77.37
500	1075° F	1⅝″	—	9/16″	⅝″-11	Screwdriver	7714A19	405.46	7714A24	111.25
700	1125° F	1¾″	—	⅝″	⅝″-11	Screwdriver	7714A21	576.60	7714A25	134.89
800	1165° F	1¾″	—	⅝″	⅝″-11	Screwdriver	7714A22	588.25	7714A25	134.89

Plug-Style Tips for Soldering Irons

Match the shank diameter and overall length of your existing tip with one from below to find your replacement. Tips have a cylindrical body with a flat bottom and are pure copper plated with nickel and chrome (unless noted). Use with 7711A irons on this page and 7722A and 7732A irons on page 3396. *Note:* Not for Weller irons.

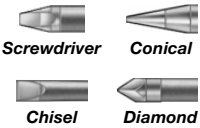

Tip Shank Dia.	Screwdriver O'all Lg.	Screwdriver Point Wd.			Conical O'all Lg.	Conical Point Wd.		
⅛″	2¼″	1/16″	7747A29	$13.58	2¼″	1/64″	7747A81	$14.13
⅛″	2¼″	3/32″	7747A23	13.58	—	—	—	—
3/16″	2¼″	⅛″	7747A27	16.13	2¼″	1/32″	7747A82	16.13
3/16″	2¼″	3/32″	7747A24	14.45	—	—	—	—
¼″	2¼″	3/16″	7747A25	12.64	—	—	—	—
¼″	3″	⅛″	7747A67	15.85	2¼″	1/16″	7747A83	14.16
⅜″	4″	3/16″	7747A33	24.89	4¼″	1/16″	7747A84	25.53
⅝″	4″	5/16″	7747A44	49.74	—	—	—	—
⅞″	4⅛″	⅜″	7747A77	65.18	—	—	—	—
1⅛″	4¾″	½″	7747A78	106.82	—	—	—	—

Tip Shank Dia.	Chisel O'all Lg.	Chisel Point Wd.			Diamond O'all Lg.	Diamond Point Wd.		
⅛″	2¼″	⅛″	7747A66	$15.78	—	—	—	—
3/16″	2¼″	3/16″	7747A32	16.13	—	—	—	—
¼″	3″	¼″	7747A72	15.85	3¾″	1/32″	7747A71	$15.85
⅜″	4¼″	⅜″	7747A14	24.89	4¼″	1/16″	7747A73	24.89
⅝″	4¼″	⅝″	7747A15	50.28	4¼″	1/16″	7747A74	49.74
⅝″	—	—	—	—	4¼″	1/16″	7747A63 ♦	32.91
⅞″	4¾″	⅞″	7747A75	68.37	5 5/32″	5/64″	7747A68	51.13
⅞″	4¾″	⅞″	7747A64 ♦	44.38	—	—	—	—
1⅛″	5¼″	1⅛″	7747A76	110.00	5⅞″	7/64″	7747A69	76.17
1⅛″	5¼″	1⅛″	7747A65 ♦	71.45	—	—	—	—

♦ Pure copper tip, not plated.

Soldering Iron Sponges

	Size			Thick.	Pkg. Qty.		Pkg.
Single Hole	1½″	×	2⅛″	1″	10	7002A21	$18.84
Single Hole	2 7/64″	×	3 13/64″	1″	10	7002A23	24.56
Single Hole	2¼″	×	3½″	1″	10	7002A29	27.12
Single Hole	2 45/64″	×	2 45/64″	⅝″	10	7002A33	17.40
Single Hole	3½″	×	4½″	⅝″	10	7002A37	24.81
Multiple Hole	2 5/32″	×	2¾″	1″	10	7002A27	22.51
Multiple Hole	2 45/64″	×	2 45/64″	1″	10	7002A35	26.09
Solid	2 5/32″	×	2¾″	1″	10	7002A25	15.81
Solid	8½″	×	16½″	⅝″	1	7002A61	23.13

Soldering Coppers

Heat in an oven or furnace. Coppers have a steel shank and a copper head with a wide tip for thorough heat transfer.

Note: Coppers are often used in pairs; the weight stamped on each copper is the weight per pair, not the weight per each as shown in table.

Weight, lbs.	Tip Wd.	Chisel Head		Pointed Head		Wood Handle	
½	¾″	7739A26	$31.30	7739A22	$31.30	7599A5	$3.02
¾	⅞″	7739A35	31.50	7739A21	31.50	7599A1	3.02
1	1″	7739A34	42.40	7739A19	42.40	7599A1	3.02
1½	1⅛″	7739A33	55.40	7739A18	55.40	7599A1	3.02
2	1¼″	7739A32	67.00	7739A17	67.00	7599A1	3.02

Soldering Iron Tip Cleaners

Dry Brass-Wool Cleaner— Includes an ESD-safe holder and one brass-wool ball that cleans tips exposed to high temperatures.

Cleaner	5153A32	Each	$21.93
Replacement Brass-Wool Balls (2/Pkg.)	5153A34	Pkg.	$6.78

Liquid Tinner/Cleaner— Removes excess oxide and replenishes the tip's original coating. Made of lead-free alloys and special fluxing agents.

0.7-oz. Can	5153A46	Each	$7.56

Bar Cleaner— Made of ammonium chloride (also known as sal ammoniac), these bars remove heavy oxidation from soldering tips and coppers.

0.5-lb. Bar	7701A1	Each	$6.90
1-lb. Bar	7701A2	Each	$8.34

Soldering Iron Stands

Iron stand with sponge tray holds 25- to 60-watt pencil-grip irons with ⅜″ and ½″ barrel diameters. Stand is 2½″ Lg.×⅝″ ID with a 4½″ long protective spring coil. Includes a 3½″ Lg.×4½″ Wd. sponge with hole.

Iron stand holds irons up to 800 watts. Size is 6″ Lg.×1½″ Dia.

Iron sponge tray includes one 3½″ Lg.×4½″ Wd. sponge with hole.

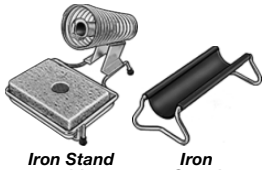

		Each
Iron Stand with Sponge Tray	7764A11	$83.66
Iron Stand	7764A21	12.82
Iron Sponge Tray	7750A11	12.46
Replacement Sponges (10/Pkg.)	7002A37	Pkg. $24.81

Variable-Temperature Soldering Stations

Complete Analog-Display Station

Build-Your-Own Station (With All Parts)

Complete Stations— Temperature adjusts from 350° to 850°F. Include a 50-watt soldering iron with a 1/16″ wd. screwdriver tip, a soldering iron stand, and a tip sponge. Operate on 120 VAC and have a 5-ft. cord with three-prong plug. Control units are UL listed. *Analog-display station* is marked in 10° increments. *Digital-display station* has a three-digit LED and adjusts in 1° increments.

Build-Your-Own Stations— Irons heat up quickly and temperature adjusts in 1° increments. *Digital-display control unit* has a three-digit LED. Operates on 120 VAC and has a 6-ft. cord with three-prong plug. *40-watt soldering iron* is for general purpose soldering and adjusts from 350° to 850°F. Includes a 1/16″ wd. screwdriver tip. *80-watt mini soldering iron* adjusts from 150° to 850°F and works with lead-free solder. Includes a 3/32″ wd. chisel tip. *Stands* include a tip sponge.

			Each
Complete Stations			
Analog-Display Soldering Station	7734A18		$134.55
Digital-Display Soldering Station	7734A44		190.12
Replacement 50-Watt Soldering Iron	7734A19		45.46
Build-Your-Own Stations			
Digital-Display Control Unit	7724A24		188.85
40-Watt Soldering Iron	7724A143		99.74
80-Watt Mini Soldering Iron	7724A28		119.43
Stand for 40-Watt Soldering Iron	7724A48		24.42
Stand for 80-Watt Mini Soldering Iron	7724A49		43.84
Replacement Sponges (10/Pkg.)	7002A33	Pkg.	$17.40

Additional Plug-Style Tips

	Point Wd.		
For 40-Watt and 50-Watt Irons— *1/4″ Dia. Shank*			
Screwdriver — Screwdriver	1/32″	7008A45	$5.14
Screwdriver	1/16″	7008A41	5.14
Screwdriver	3/32″	7008A42	5.14
Screwdriver	1/8″	7008A43	5.14
Narrow Screwdriver — Narrow Screwdriver	1/16″	7008A48	5.14
Long Screwdriver	3/64″	7008A46	5.14
Long Screwdriver	5/64″	7008A47	5.14
Conical	1/32″	7008A92	5.14
Long Conical	1/64″	7008A49	5.14
Long Conical	1/32″	7008A44	5.14
For 80-Watt Mini Iron— *1/4″ Dia. Shank*			
Conical — Conical	0.010″	7724A33	7.08
Conical	1/16″	7724A51	7.08
Conical	1/8″	7724A53	7.08
Long Conical	0.008″	7724A34	7.08
Chisel — Chisel	1/16″	7724A54	7.08
Chisel	3/32″	7724A52	7.08
Chisel	1/8″	7724A55	7.08

Fixed-Temperature Soldering Stations

These soldering stations include a 700°F tip with a sensor to maintain a fixed temperature and prevent overheating or burning out the iron. To solder at a different temperature simply choose another tip from the *additional plug-style tips* sold separately below. The included tip is plug style 1/16″ wd. screwdriver. Stations also include a 42-watt iron, a soldering iron stand, a tip storage area, a sponge, and a 5-ft. power cord with three-prong plug. Stations are 60 watts, static free, ESD (electrostatic discharge) safe, and UL listed.

			Each
120 VAC, 50/60 Hz Station	7718A11		$152.15
220/240 VAC, 50/60 Hz Station	7718A22		153.66
Replacement Soldering Iron	7718A12		93.18
Replacement Heater Assembly	7718A41		18.44
Replacement Switch Assembly	7718A42		30.47
Replacement Sponges (10/Pkg.)	7002A33	Pkg.	$17.40

Additional Plug-Style Tips— *1/4″ Dia. Shank*

To Order: Please specify temperature: 600°, 700°, or 800°F.

	Point Wd.		
Screwdriver — Screwdriver	1/16″	7008A11	$5.05
Screwdriver	3/32″	7008A12	5.05
Screwdriver	1/8″	7008A13	5.05
Screwdriver	3/16″	7008A14	5.05
Conical — Long Screwdriver	3/64″	7008A16	5.05
Conical	1/32″	7008A19	5.05

Tips for Soldering Stations

Screwdriver *Conical* *Bevel* *Chisel* *Needle*

Tips are equivalent to original manufacturers' specifications. Do not use with *Soldering Stations for Heat-Sensitive Components* on page 3399.

Weller Stations— *ET series* is for EC1002, EC2002, MC5001, and DEC-1000 soldering stations with an EC1201A soldering iron handpiece, and WES50/51 soldering station with a PES50/51 soldering iron handpiece.

LT series is for WD1001 soldering stations with a WSP80 soldering pencil.

PT series is for WTCPL, WTCPN, WTCPR, WTCPS, and WTCPT soldering stations with a TC201T soldering iron handpiece.

RT series is for WD1000M and WD2000M soldering stations with a WMRP soldering pencil.

Hakko and ***OK Industries Stations—*** For Hakko 926, 927, 928, 933, and 937 soldering stations with M926, 900M, or 907ESD handpieces, and for OK Industries SA 1000 station with a SAI-640 handpiece.

Pace Stations— For IR-70 and SP-2A SODR-PEN soldering irons.

Part No.	Style	Shank Dia.	Point Wd.	O'all Lg.		
Weller ET Series						
ETH	Screwdriver	1/4″	1/32″	1 3/8″	7008A45	$5.14
ETA	Screwdriver	1/4″	1/16″	1 3/8″	7008A41	5.14
ETB	Screwdriver	1/4″	3/32″	1 3/8″	7008A42	5.14
ETC	Screwdriver	1/4″	1/8″	1 3/8″	7008A43	5.14
ETR	Narrow Screwdriver	1/4″	1/16″	1 3/8″	7008A48	5.14
ETK	Long Screwdriver	1/4″	3/64″	1 3/4″	7008A46	5.14
ETL	Long Screwdriver	1/4″	5/64″	1 3/4″	7008A47	5.14
ETT	Conical	1/4″	1/64″	1 3/8″	7008A51	5.14
ETP	Conical	1/4″	1/32″	1 3/4″	7008A92	5.14
ETO	Long Conical	1/4″	1/32″	1 3/4″	7008A44	5.14
ETS	Long Conical	1/4″	1/64″	1 3/8″	7008A49	5.14
Weller LT Series						
LT1	Conical	1/4″	0.010″	31/64″	7724A33	7.08
LTAS	Conical	1/4″	1/16″	7/16″	7724A51	7.08
LTCS	Conical	1/4″	1/8″	31/64″	7724A53	7.08
LT1S	Long Conical	1/4″	0.008″	19/32″	7724A34	7.08
LTA	Chisel	1/4″	1/16″	7/16″	7724A54	7.08
LTB	Chisel	1/4″	3/32″	31/64″	7724A52	7.08
LTC	Chisel	1/4″	1/8″	31/64″	7724A55	7.08
Weller PT Series— **To Order:** Please specify 600°, 700°, or 800°F tip.						
PTH	Screwdriver	1/4″	1/32″	1 7/16″	7008A15	5.05
PTA	Screwdriver	1/4″	1/16″	1 7/16″	7008A11	5.05
PTB	Screwdriver	1/4″	3/32″	1 7/16″	7008A12	5.05
PTC	Screwdriver	1/4″	1/8″	1 7/16″	7008A13	5.05
PTD	Screwdriver	1/4″	3/16″	1 7/16″	7008A14	5.05
PTK	Long Screwdriver	1/4″	3/64″	1 13/16″	7008A16	5.05
PTL	Long Screwdriver	1/4″	5/64″	1 13/16″	7008A17	5.05
PTP	Conical	1/4″	1/32″	1 7/16″	7008A19	5.05
PTO	Long Conical	1/4″	1/32″	1 13/16″	7008A18	5.05
PTS	Long Conical	1/4″	1/64″	1 13/16″	7008A21	5.05
PTAA	Bevel	1/4″	1/16″	1 7/16″	7008A23	5.02
PTCC	Bevel	1/4″	1/8″	1 7/16″	7008A24	5.05
Weller RT Series						
RT1	Needle	—	—	3 5/16″	7008A31	36.86
RT2	Conical	—	0.032″	3 5/16″	7008A32	36.86
RT3	Chisel	—	0.051″	3 5/16″	7008A33	36.86
RT4	Chisel	—	0.059″	3 5/16″	7008A34	36.86
RT5	Chisel (Bent 30°)	—	0.031″	3 5/16″	7008A35	36.86
RT6	Conical	—	0.047″	3 5/16″	7008A36	36.86
RT7	Knife	—	0.087″	3 5/16″	7008A37	38.71
Hakko and OK Industries						
900M-T-B	Conical	1/4″	0.040″	1 11/16″	7008A61	5.99
900M-T-4C	Bevel	1/4″	5/32″	1 5/8″	7008A74	5.99
900M-T-2C	Bevel	1/4″	5/64″	1 21/32″	7008A62	5.99
900M-T-1C	Bevel	1/4″	3/64″	1 19/32″	7008A63	5.99
900M-T-I	Conical	1/4″	1/64″	1 5/8″	7008A64	6.28
900M-T-1.2LD	Chisel	1/4″	3/64″	1 7/8″	7008A73	6.90
900M-T-2.4D	Chisel	1/4″	3/32″	1 21/32″	7008A65	5.99
900M-T-3.2D	Chisel	1/4″	1/8″	1 21/32″	7008A66	5.99
900M-T-1.6D	Chisel	1/4″	1/16″	1 21/32″	7008A67	5.99
900M-T-K	Beveled Chisel	1/4″	3/16″	1 25/32″	7008A68	8.95
900M-T-LB	Conical	1/4″	1/64″	1 15/16″	7008A69	6.69
900M-T-SMD	Conical	1/4″	0.008″	1 11/32″	7008A75	8.07
900M-T-0.8D	Chisel	1/4″	1/32″	1 11/16″	7008A71	6.91
900M-T-1.2D	Chisel	1/4″	3/64″	1 21/32″	7008A72	5.99
900M-T-S3	Chisel	1/4″	13/64″	1 21/32″	7008A76	8.57
Pace						
1121-0499	Screwdriver	3/16″	1/16″	1 13/16″	7008A81	5.48
1121-0335	Chisel	3/16″	1/16″	1 19/32″	7008A83	5.48
1121-0357	Conical	3/16″	1/64″	1 7/8″	7008A86	5.48
1121-0359	Chisel	3/16″	1/32″	1 7/8″	7008A88	5.48
1121-0336	Conical	3/16″	1/32″	1 11/16″	7008A89	5.48

Soldering Stations for Heat-Sensitive Components

A&B **C&E** **D&F**

Tweezer-Style Handpiece

Plier-Style Handpiece

Keep the heat only where it's needed. Also known as resistance-soldering stations, these stations provide instant, concentrated heat only where the electrode tip touches. Include a power unit, a handpiece, two electrode tips, and a footswitch. Stations operate on 110/120 VAC, 50/60 Hz and have a 6-ft. cord with three-prong plug.

A ***Low-Capacity with Tweezer-Style Handpiece—*** Use for small connections. Includes a 5″ long handpiece with a 3/8″ maximum opening. Adjustable up to 100 watts.

B ***High-Capacity with Tweezer-Style Handpiece—*** Use for antenna leads, coaxial cable, lugs, posts, and connections up to 1/4″ dia. Includes a 7″ long handpiece with a 3/4″ maximum opening. Adjustable up to 250 watts.

C&D ***Medium-Capacity with Plier-Style Handpiece—*** *Style C* is for copper tubing and terminal connections up to 1/2″ dia. and microwave housing. Includes a 7″ long handpiece with a 9/16″ maximum opening. Adjustable up to 1,100 watts. *Style D* is for thin-walled copper tubing up to 1 1/2″ dia., large cables, battery terminals, and for HVAC and plumbing applications. Includes a 10″ long handpiece with a 3″ maximum opening. Has three wattages: 500, 1,300, and 1,800.

E&F ***High-Capacity with Plier-Style Handpiece—*** *Style E* is for thin-walled copper tubing up to 1 1/2″ dia. and heavy duty soldering where control of high heat is critical. Includes a 10″ long handpiece with a 3″ maximum opening. Adjustable up to 1,800 watts. *Style F* is for thin-walled copper tubing up to 3″ dia., large cables, battery terminals, and for HVAC and plumbing applications. Includes a 10″ long handpiece with a 3″ maximum opening. Has three wattages: 1,000, 2,000, and 3,000.

Soldering Stations

		Each
A	7762A21	$443.03
B	7762A22	622.98
C	7762A23	942.69
D	7725A21	1,134.72
E	7762A24	1,255.10
F	7725A51	1,407.41

Replacement Power Units

For Station	Max. Watts		Each
A	100	7762A6	$272.69
B	250	7762A7	355.37
C	1,100	7762A31	686.11
D	1,800	7725A27	756.48
E	1,800	7762A27	775.83
F	3,000	7725A57	1,096.02

Replacement Handpieces

For Station	Style		Each
A	Tweezer	7762A4	$130.19
B	Tweezer	7762A12	226.94
C	Plier	7762A28	236.62
D, E, F	Plier	7725A22	401.11

Replacement Electrode Tips

For Station	Pkg. Qty.		Pkg.
A	6	7762A11	$18.44
B	6	7762A13	50.29
C	2	7762A32	19.37
D, E, F	2	7725A19	19.37

Replacement Footswitches

For Stations		Each
A, B, C	7725A23	$50.29
D, E, F	7762A29	59.22

Soldering Stations for Small Heat-Sensitive Parts

Get instant heat only where you need it. Stations include a plier-style handpiece that confines the heat to where it touches. Ideal for heat treating, brazing, butt welding, and silver soldering small parts. Stations also include a power unit and either a hand or footswitch to control power.

Handpieces have carbon electrodes and a 4-ft., two-wire cord that connects directly to the power unit with screw terminal connections for high (200) watt output and low (64) watt output. Power unit operates on 115 VAC, 60 Hz and has a 6 1/2-ft. cord with a three-prong plug.

Optional chrome alloy wire connectors are for intricate soldering work.

	Soldering Stations	Each	Repl. Handpiece	Each
With Hand Switch	7713A2	$322.48	7713A1	$138.44
With Foot Switch	7713A6	393.69	7713A5	191.18
Replacement Carbon Electrodes	7713A3	Pair	$12.18	
Optional Chrome Alloy Wire Connectors	7713A4	Pair	$24.66	

Copper Braids for Solder Removal

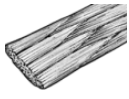

Place these braids and a hot iron tip over unwanted solder; the braids absorb molten solder.

Fluxed— Has a rosin-core flux, which is ideal for lead-free and electrical solder applications.

Static-Free Fluxed— Braid is on a static dissipative spool to eliminate electrostatic discharge when using and has a rosin-core flux for lead-free and electrical solder applications.

Flux Free— With no flux on the braid, you can apply the flux (not included) that best fits your application.

Wd.	Lg.	Fluxed		Static-Free Fluxed		Flux Free	
1/32″	5 ft.	7782A9	$4.75	76855A7	$5.08	7836A4	$4.51
1/32″	10 ft.	7782A11	7.12	76855A8	7.45	7836A5	6.76
1/16″	5 ft.	7782A1	4.75	76855A1	5.08	7836A8	4.51
1/16″	10 ft.	7782A7	6.76	76855A4	7.45	7836A9	6.76
5/64″	5 ft.	7782A3	4.75	76855A2	5.08	7836A1	4.57
5/64″	10 ft.	7782A8	7.10	76855A5	7.45	7836A3	6.76
7/64″	5 ft.	7782A4	7.12	76855A3	7.45	7836A7	6.20
7/64″	10 ft.	7782A5	8.76	76855A6	9.25	7836A2	8.45
5/32″	5 ft.	7782A14	7.63	76855A16	8.12	7836A11	6.75

Solder Removal Tools

Pump-Action Tool

Squeeze-Action Tool

Remove heated, liquid solder easily. Tools have a non-stick tip. ***Static-free pump-action tools*** are for use on charge-sensitive components. ***Squeeze-action tools*** are also known as solder suckers.

Tip ID	Tip Lg.	O'all Lg.	Tools		Repl. Tip	
Pump-Action Tool						
0.125″	1/2″	13″	7752A13	$28.00	7752A14	$5.02
Static-Free Pump-Action Tools						
0.080″	1″	7 1/2″	7775A26	26.82	7775A27	7.22
0.125″	1/2″	8 3/4″	7775A15	28.78	7775A16	5.50
Squeeze-Action Tools						
0.070″	3/4″	3″	7753A13	11.20	____	____
0.070″	1 1/4″	4 1/2″	7753A11	13.78	7753A12	9.96

Electric Pistol-Grip Solder Removal Tool

This tool has fast-heating tips and a built-in vacuum pump to draw solder into a disposable filter. Temperature adjusts from 715° to 895°F. Includes a 0.040″ (1.0 mm) tip, three aluminum filters, four ceramic paper filters, a wrench, and a plastic carrying case. Operates on 120 VAC, 60 Hz and has a 5-ft. cord with three-prong plug.

			Each
Solder Removal Tool	7511A21		$244.33
Replacement 0.040″ (1.0 mm) Tip	7511A22		18.36
Optional 0.051″ (1.3 mm) Tip	7511A23		18.36
Optional 0.091″ (2.3 mm) Tip	7511A24		18.36
Repl. Ceramic Paper Filters (10/Pkg.)	7511A26	Pkg.	$12.60
Repl. Aluminum Filters (5/Pkg.)	7511A27	Pkg.	$7.80

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Volatile Organic Compounds (VOCs)—Emit vapor/gas into the atmosphere under normal circumstances; when the container is opened they begin to vaporize. VOCs are regulated at the federal, state, and local level. VOCs lead to poor air quality and are most strictly regulated in areas of poor air quality like Los Angeles, CA.

Adhesive Types

Acrylics—Bond plastic to metal, plastic to plastic, and rubber to metal. They're also good for filling spaces between surfaces and tolerate moisture and dirty, unprepared surfaces. Begin to harden within minutes and provide high-strength bonds. Two-part acrylics require mixing. Two-step acrylics don't need mixing but are used with a primer/activator.

Construction Adhesives—Also called panel adhesives, they bond drywall, fiberglass (FRP), metal, plaster, plywood, and wood. Also excellent for filling spaces between surfaces. Begin to harden quickly and remain flexible when dry. Made of a thick formulation of natural or synthetic rubber dispersed in a solvent or water.

Contact Cements—Bond fabric, leather, metal, paper, rubber, and wood. Apply on both surfaces to be joined, air dry, and bring together; stick instantly and permanently. Made of a synthetic rubber (usually neoprene) dispersed in a solvent or water.

Epoxies—Bond ceramic, cement, fiberglass (FRP), glass, metal, some plastics, rubber, urethane, and wood. Also good for filling spaces between surfaces and have good resistance to high temperatures, solvents, and impact. Begin to harden within a few minutes to several hours and provide high-strength bonds. Two-part epoxies require mixing.

Hot Melts—Bond most materials, especially porous surfaces such as leather, paper, and wood. Also excellent for filling spaces between surfaces. Begin to harden quickly and provide rigid-to-flexible low-strength bonds. They melt when heated and solidify when cooled. Require dispensing equipment.

Metal-Filled Epoxies—Also called liquid metals, they're like regular epoxies with powdered metal fillers added. Bond aluminum, brass, iron, ceramic, glass, and some plastic. They're nonrusting and resist water, most chemicals, and extreme temperatures. Begin to harden slowly but can be machined at full strength.

Silicones—Bond canvas, cement, ceramic, fiberglass (FRP), glass, metal, rubber, and wood. Great as gap fillers and sealants and for vertical and overhead applications because they don't run. Have excellent resistance to temperature extremes and chemicals. Reach full strength in 24-72 hours with exposure to moisture in air. They keep their rubber properties under most conditions.

Super Glues—Also called cyanoacrylates, crazy glues, super bonders, and instant adhesives. They bond a wide range of materials including metal, plastic, and rubber. Not recommended for use on glass. Begin to harden quickly.

Threadlockers and Retaining Compounds—Also called anaerobics, they bond metal. Begin to harden quickly; reach full strength in the absence of air and the presence of metal, such as when confined between the threads of a nut and bolt assembly. Can also be used as sealants for pipe joints and threads. Excellent resistance to solvents and water. Bonds can be permanent or not.

Urethanes—Bond metal, polycarbonate, PVC, rubber, and wood; often used on ABS, acrylic, and stretchy materials. Begin to harden within a range of a few minutes to a couple of hours and provide flexible bonds. Two-part urethanes require mixing.

Adhesive Removers, Cleaners & Primers

Epoxy Remover

Remove unhardened and fully hardened epoxies. Remover is a nonflammable liquid with a temperature range of 68° to 120°F. Not for use on PVC, rubber, or urethane. This product is compliant under all state VOC rules in effect on September 1, 2010.

1-gal. Bottle ..... **7532A15** **Each** $68.25

Surface Cleaner for Epoxies and Urethanes

Increase the bonding effectiveness of epoxies, silicones, urethanes, and other adhesives by removing dirt, grease, grime, and tar from metal, plastic, rubber, and wood. This chemical-based cleaner evaporates quickly and doesn't require mixing. Temp. range is 55° to 90°F. This product is compliant under all state VOC rules in effect on October 1, 2008.

1-pt. Bottle ..... **7527A66** **Each** $37.61

Primer for Hard-to-Bond Materials

Promotes adhesion to EPDM rubber, polyolefins (TPO), and thermoplastic elastomers (TPE). Use with acrylic, epoxy, and urethane adhesives. This product is compliant under all state VOC rules in effect on June 1, 2011, except in California.

8-oz. Can ..... **66595A4** **Each** $34.84

Loctite® Fixmaster® Epoxies in Mixer Cups

1. Pull off lid.

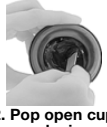

2. Pop open cup and mix.

Resin and hardener come measured in a two-part cup for convenient mixing. Bond ceramic, concrete, glass, metal, hard plastic, rubber, and wood. Temperature range is –65° to +180°F. Come in a can of 10 two-part mixing cups. These products are compliant under all state VOC rules in effect on October 1, 2008.

21425 and ***21426*** are gray. ***21427*** is translucent and also bonds stone.

Loctite No.	Size	Begins to Harden	Reaches Full Strength		Each
21425	0.12 oz. (3 g)	5 min.	12 hrs.	**7512A15**	$27.93
21426	1 oz. (28 g)	5 min.	12 hrs.	**7512A16**	68.67
21427	0.12 oz. (3 g)	1 hr.	24 hrs.	**7512A14**	28.57

For information about adhesives, see page 3400.

3M Scotch-Weld Adhesive Duo-Pak Cartridges

Bond aluminum, brass, copper, stainless steel, steel, ABS, acrylic, polycarbonate, ceramic, fiberglass (FRP), glass, and rubber. Adhesives can also fill spaces between surfaces. Use an EPX applicator gun with a mixer nozzle to simultaneously mix and dispense these two-part adhesives. Applied at 0.005″ thick, a 1.25-oz. cartridge will cover 3.125 sq. ft.; 1.6 oz.-cartridge, 4 sq. ft.; 1.7-oz. cartridge, 4.25 sq. ft.; and 6.8-oz. cartridge, 17 sq. ft. (all approximate).

These products are compliant under all state VOC rules in effect on October 1, 2008.

Manual EPX applicator guns (sold separately) include 1:1 and 2:1 mix ratio plungers.

Air-Powered EPX applicator gun (sold separately) has a 1/4″ NPT male air inlet and a maximum pressure of 145 psi; includes 1:1 and 2:1 mix ratio plungers for 1.6- and 1.7-oz. cartridges.

Mixer nozzles for EPX guns (sold separately) attach to the adhesive cartridge and mix adhesive as you dispense. 7467A12 is 6 1/4″ long; 7467A93 is 6 21/32″ long; 7467A45 is 3 3/4″ long. For additional mixer nozzles, see 74695A on page 3430.

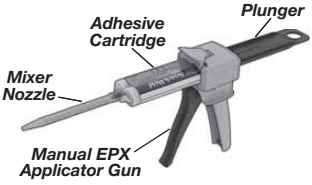

Epoxy Adhesives

Offer high strength and resistance to chemicals and weather.

DP-100 Low Viscosity— Thin for easier flowing. Meets UL 94HB.

DP-100FR Flame Retardant— Meets UL 94V0 burn test requirements.

DP-100 Plus High Strength— Exhibits much higher shear strength and resistance to peeling than DP-100 and is slightly flexible. Meets UL 94HB.

DP-100NS High Viscosity— Thicker version of DP-100 for use on vertical surfaces.

DP-105 Flexible— Very flexible; ideal for bonding dissimilar surfaces that expand and contract differently.

DP-110 Shock Resistant— Flexible with good shock and impact resistance.

DP-125 Peel Resistant— Very high resistance to peeling.

DP-190 Shock Resistant— Impact and shock resistant with more time before it begins to harden. Also bonds masonry products.

DP-420 High Strength— Excellent durability and shear strength plus resists peeling.

DP-460 High Strength— Similar to DP-420 but with more time before it begins to harden.

DP-460NS High Strength— Thicker version of DP-460 for use on vertical surfaces.

Acrylic Adhesives

Have excellent shear and peel strength and resist impact and weather.

DP-805 High Viscosity— Thick for use on vertical surfaces. Has good peel strength. Bonds metal and plastic.

DP-810 Dirty Surfaces— For oily steel, aluminum, plastic, glass, and painted surfaces.

DP-810NS High-Viscosity Dirty Surfaces— Thicker version of DP-810 for use on vertical surfaces.

DP-820 Slow-Hardening High Viscosity— Similar to DP-805 with a longer hardening time.

Urethane Adhesives

More flexible than epoxies and acrylics and thick for use on vertical surfaces. Prime metal before bonding. Also bond plastic and wood.

DP-604NS High Viscosity Concrete— Ideal for bonding metal and wood to concrete.

DP-605NS High Viscosity— Creates tough, flexible bonds with excellent adhesion.

DP-640 High-Viscosity Impact Resistant— Resists peeling and impact.

Structural Plastic Adhesives

Ideal for difficult-to-bond plastic like ABS, polycarbonate, and PVC.

DP-8005 High Strength— Bond polypropylene and polyethylene; no surface preparation needed. Has excellent water and humidity resistance and good chemical resistance. A great replacement for screws, rivets, and plastic welding.

DP-8010 Slow Hardening— Similar to DP-8005 but with more time before it begins to harden.

DP-8010NS Slow-Hardening High Viscosity— Thicker version of DP-8010 for use on vertical surfaces.

3M No.	Cartridge Size	Begins to Harden	Reaches Full Strength	Color	Mix Ratio	Adhesive Cartridges	Each	Manual EPX Applicator Guns	Each	Mixer Nozzles Pkg. Qty.		Per Pkg.
Epoxy Adhesives— *Temperature range is –60° to +350°F.*												
DP-100	1.7 oz. (50 ml)	4 min.	48 hrs.	Clear	1:1	7467A21	$17.11	7467A43	$65.30	12	7467A12	$21.87
DP-100	6.7 oz. (200 ml)	4 min.	48 hrs.	Clear	1:1	7467A95	48.46	7467A91	488.71	12	7467A93	40.49
DP-100FR	1.7 oz. (50 ml)	5-8 min.	48 hrs.	Off-White	1:1	7467A28	27.82	7467A43	65.30	12	7467A12	21.87
DP-100 Plus	1.7 oz. (50 ml)	3-4 min.	48 hrs.	Clear	1:1	7467A55	21.93	7467A43	65.30	12	7467A12	21.87
DP-100NS	1.7 oz. (50 ml)	5 min.	48 hrs.	Translucent	1:1	7467A16	21.90	7467A43	65.30	12	7467A12	21.87
DP-105	1.7 oz. (50 ml)	4-5 min.	48 hrs.	Clear	1:1	7467A58	24.66	7467A43	65.30	12	7467A12	21.87
DP-110	1.7 oz. (50 ml)	8-13 min.	48 hrs.	Gray	1:1	7467A23	22.61	7467A43	65.30	12	7467A12	21.87
DP-110	1.7 oz. (50 ml)	8-13 min.	48 hrs.	Translucent	1:1	7467A22	22.61	7467A43	65.30	12	7467A12	21.87
DP-110	6.7 oz. (200 ml)	8-13 min.	48 hrs.	Gray	1:1	7467A96	62.15	7467A91	488.71	12	7467A93	40.49
DP-125	1.7 oz. (50 ml)	15-25 min.	7 days	Gray	1:1	7467A65	24.66	7467A43	65.30	12	7467A12	21.87
DP-125	1.7 oz. (50 ml)	18-25 min.	7 days	Translucent	1:1	7467A68	24.66	7467A43	65.30	12	7467A12	21.87
DP-190	1.7 oz. (50 ml)	60-80 min.	14 days	Translucent	1:1	7467A72	22.61	7467A43	65.30	12	7467A12	21.87
DP-190	1.7 oz. (50 ml)	90 min.	7 days	Gray	1:1	7467A24	21.88	7467A43	65.30	12	7467A12	21.87
DP-190	6.7 oz. (200 ml)	60-80 min.	14 days	Translucent	1:1	7467A122	62.15	7467A91	488.71	12	7467A93	40.49
DP-190	6.7 oz. (200 ml)	90 min.	7 days	Gray	1:1	7467A97	62.15	7467A91	488.71	12	7467A93	40.49
DP-420	1.25 oz. (37 ml)	15-30 min.	24 hrs.	Black	2:1	7467A51	23.88	7467A43	65.30	12	7467A12	21.87
DP-420	1.25 oz. (37 ml)	15-30 min.	24 hrs.	Off-White	2:1	7467A25	21.36	7467A43	65.30	12	7467A12	21.87
DP-420	6.7 oz. (200 ml)	15-30 min.	24 hrs.	Off-White	2:1	7467A99	85.48	7467A91	488.71	12	7467A93	40.49
DP-460	1.25 oz. (37 ml)	60-90 min.	48 hrs.	Off-White	2:1	7467A26	22.61	7467A43	65.30	12	7467A12	21.87
DP-460	6.7 oz. (200 ml)	60-90 min.	48 hrs.	Off-White	2:1	7467A85	85.48	7467A91	488.71	12	7467A93	40.49
DP-460NS	1.25 oz. (37 ml)	60 min.	24 hrs.	Off-White	2:1	7467A66	23.18	7467A43	65.30	12	7467A12	21.87
Acrylic Adhesives— *Temperature range is –60° to +250°F.*												
DP-805	1.6 oz. (47 ml)	3-4 min.	8-24 hrs.	Light Yellow	1:1	7467A75	26.90	7467A43	65.30	12	7467A12	21.87
DP-810	1.7 oz. (50 ml)	10 min.	8-24 hrs.	Tan	1:1	7467A127	25.68	7467A43	65.30	12	7467A12	21.87
DP-810NS	1.7 oz. (50 ml)	10 min.	8-24 hrs.	Tan	1:1	7467A135	26.11	7467A43	65.30	12	7467A12	21.87
DP-820	1.6 oz. (47 ml)	15-20 min.	24-48 hrs.	Light Yellow	1:1	7467A82	32.55	7467A43	65.30	12	7467A12	21.87
Urethane Adhesives— *Temperature range is –60° to +250°F.*												
DP-604NS	1.7 oz. (50 ml)	4 min.	6 hrs.	Black	1:1	7467A19	13.71	7467A43	65.30	12	7467A12	21.87
DP-605NS	1.7 oz. (50 ml)	5 min.	48 hrs.	Off-White	1:1	7467A27	22.61	7467A43	65.30	12	7467A12	21.87
DP-640	1.7 oz. (50 ml)	40-70 min.	7 days	Brown	1:1	7467A78	21.84	7467A43	65.30	12	7467A12	21.87
Structural Plastic Adhesives— *Temperature range is –67° to +250°F.*												
DP-8005	1.18 oz. (35 ml)	2 1/2-3 min.	8-24 hrs.	Black	10:1	7467A33♣	32.92	7467A43	65.30	12	7467A45	32.81
DP-8005	1.18 oz. (35 ml)	2 1/2-3 min.	8-24 hrs.	Translucent	10:1	7467A32♣	31.35	7467A43	65.30	12	7467A45	32.81
DP-8010	1.18 oz. (35 ml)	10-12 min.	8-24 hrs.	Yellow	10:1	7467A35♣	31.97	7467A43	65.30	12	7467A45	32.81
DP-8010NS	1.18 oz. (35 ml)	10-12 min.	8-24 hrs.	Yellow	10:1	7467A37♣	31.04	7467A43	65.30	12	7467A45	32.81

Air-Powered Applicator Gun

Air-Powered EPX Applicator Gun (accepts 1.6- [47 ml] and 1.7-oz. [50 ml] cartridges only)	7467A15	Each	$536.27

Plungers for Manual Guns

Replacement 1:1 Plunger for Manual EPX Applicator Gun 7467A43	7467A46	Each	$9.06
Replacement 1:1 and 2:1 Plunger for Manual EPX Applicator Gun 7467A91	7467A92	Each	$69.71
Replacement 2:1 Plunger for Manual EPX Applicator Gun 7467A43	7467A48	Each	$9.06
10:1 Plunger for Manual EPX Applicator Gun 7467A43 (required for 7467A33, A32, A35, and A37)	7467A49	Each	$11.03

♣ Requires 10:1 plunger 7467A49 (sold separately).

For information about adhesives, see page 3400.

Lord High-Performance Adhesive Cartridges

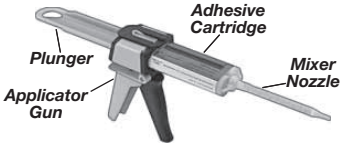

Make strong bonds on a variety of materials. These two-part adhesives are weather and chemical resistant. Use the ***applicator gun*** (sold separately) with a mixer nozzle (included with adhesive) to mix and dispense. Gun includes 1:1 and 2:1 mix ratio plungers. These products are compliant under all state VOC rules in effect on October 1, 2008.

Epoxy Adhesives

Bond brass, bronze, copper, galvanized steel, stainless steel, steel, ABS, polycarbonate, sheet moulding compound, and fiberglass (FRP).

305-½ Slow-Hardening— Resists grease. Bonds rubber and wood.

310A/B Odorless— Also bonds glass, rubber, stone, urethane, and wood. Nonflammable.

363A/B Fast Hardening— Hardens quickly and self levels. Also bonds ceramic, glass, stone, and wood.

Acrylic Adhesives

Bond aluminum, brass, bronze, copper, galvanized steel, stainless steel, ABS, acrylic, polycarbonate, sheet moulding compound, and fiberglass (FRP).

204/19 Extra-Thick— Thick for use on vertical surfaces.

206/19 Slow Hardening— Hardens slowly.

403/19 Extra-Thick Fast Hardening— Same as the 204/19 but resists impact and peeling and begins to harden faster.

406/19 Extra-Thick Impact Resistant— Same as the 204/19 but with a higher resistance to impact and peeling.

506/19 Shock Resistant— Good shock resistance and hardens quickly.

Urethane Adhesives

Provide a flexible, durable bond on ABS, acrylic, polycarbonate, PET, sheet moulding compound, vinyl laminates, fiberglass (FRP), glass, painted metal, rubber, and wood.

7150A/B High Strength— Solvent free. Nonflammable.

7542A/B General Purpose— Nonflammable.

7550A/C Clear— Creates an invisible bond. Nonflammable.

Lord No.	Cartridge Size	Begins to Harden	Reaches Full Strength	Temperature Range	Color	Approx. Coverage With 1/8″ Dia. Bead	Mix Ratio		Each
Epoxy Adhesives									
305-½	1.7 oz. (50 ml)	1-2 hrs.	24-48 hrs.	–30° to +250° F	Blue	1.5 sq. ft.★	1:1	66195A31	$15.11
310A/B	1.7 oz. (50 ml)	30-60 min.	24 hrs.	–40° to +400° F	Gray	1.5 sq. ft.★	1:1	66195A13	15.11
363A/B	1.7 oz. (50 ml)	3-5 min.	4-6 hrs.	–30° to +300° F	Amber	20 linear ft.	1:1	66195A23	15.11
Acrylic Adhesives									
204/19	1.7 oz. (50 ml)	6-8 min.	24 hrs.	–40° to +300° F	Off-White	20 linear ft.	2:1	66195A15	17.20
206/19	1.7 oz. (50 ml)	12-14 min.	24 hrs.	–40° to +300° F	Off-White	20 linear ft.	2:1	66195A16	17.20
403/19	1.35 oz. (39.7 ml)	2-4 min.	24 hrs.	–40° to +300° F	Tan	20 linear ft.	4:1	66195A21♠	16.98
406/19	1.42 oz. (41.7 ml)	6-10 min.	24 hrs.	–40° to +300° F	Tan	20 linear ft.	4:1	66195A22♠	16.98
506/19	1.7 oz. (50 ml)	4-6 min.	24 hrs.	–40° to +300° F	Off-White	20 linear ft.	2:1	66195A14	19.58
Urethane Adhesives									
7150A/B	1.7 oz. (50 ml)	5-10 min.	18-24 hrs.	–30° to +240° F	Gray	20 linear ft.	2:1	66195A17	16.54
7542A/B	1.7 oz. (50 ml)	4-7 min.	12 hrs.	–30° to +240° F	Brown	20 linear ft.	1:1	66195A24	15.77
7550A/C	1.7 oz. (50 ml)	3-5 min.	72 hrs.	–30° to +240° F	Clear	20 linear ft.	1:1	66195A25	21.49

Accessories and Replacement Parts

Applicator Gun	74695A71	Each	$27.74
4 : 1 Plunger (required for 66195A21 and A22)	74695A44	Each	$3.46
Replacement Mixer Nozzles (Full pkg. is 12)	74695A12	Each	Partial Pkg. $1.21 Full Pkg. $0.91

★ @ 0.025″ thick. ♠ Requires 4:1 plunger 74695A44 (sold separately).

Devcon Dev-Pak Adhesive Cartridges

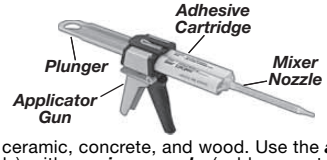

Bond brick, ceramic, concrete, and wood. Use the ***applicator gun*** (sold separately) with a ***mixer nozzle*** (sold separately) to mix and dispense these two-part adhesives. Gun includes 1:1 and 2:1 mix ratio plungers. These products are compliant under all state VOC rules in effect on October 1, 2008.

Epoxy Adhesives

Also bond aluminum, brass, cast iron, cold-rolled steel, copper, stainless steel, and PVC.

14200 5-Minute— Also bonds fiberglass (FRP).

14260 2-Ton Clear— Extra strong and water resistant. Also bonds fiberglass (FRP).

14265 5-Minute Gel— Fills gaps up to 0.25″ and bonds rough and vertical surfaces. Also bonds fiberglass (FRP).

14270 5-Minute— Also bonds fiberglass (FRP).

14277 1-Minute Gel— Great for filling spaces between surfaces. Also bonds polycarbonate.

14278 Epoxy Plus— Superior impact resistance. Also bonds galvanized steel, sheet metal, ABS, acrylic, nylon, polyester, polycarbonate, fiberglass (FRP), and Garolite (phenolic laminates).

14315 High Performance— Superior impact and chemical resistance. Also bonds galvanized steel, sheet metal, acrylic, nylon, polyester, polycarbonate, sheet moulding compound, polystyrene, fiberglass (FRP), and Garolite (phenolic laminates).

Structural Adhesives

Also known as methacrylates, these adhesives also bond hard-to-bond composites, plastics, and dissimilar surfaces.

14320 Plastic Welder— Tough adhesive with high impact strength. Resists peeling, humidity, temperature extremes, and weather. Also bonds cold-rolled steel, ferrite, sheet metal, ABS, acrylic, polycarbonate, polyester, PVC, fiberglass (FRP), and Garolite (phenolic laminates).

14340 Plastic Welder II— Chemical, shock, and impact resistant with high shear strength and resistance to peeling. Bonds same metal and plastics as 14320, plus nylon, polyacrylates, and polyphenylene oxide.

14345 Flex Welder— Fills spaces up to 3/8″. Can be sanded and painted. Also bonds cast iron, cold-rolled steel, painted metals, ABS, acrylic, polycarbonate, polyester, polystyrene, PVC, and fiberglass (FRP).

14366 Metal Welder— Thick for use on vertical surfaces. Bonds aluminum, cast iron, sheet metal, stainless steel, steel, ABS, acrylic, polycarbonate, PVC, Garolite (phenolic laminates), and fiberglass (FRP).

Devcon No.	Cartridge Size	Begins to Harden	Reaches Full Strength	Temperature Range	Color	Approx. Coverage @ 0.010″ Thick.	Mix Ratio		Each
Epoxy Adhesives									
14200	15 oz. (444 ml)▲	3-6 min.	12 hrs.	–40° to +200° F	Amber	18.75 sq. ft.	1:1	7524A4	$43.41
14260	1.7 oz. (50 ml)	8-12 min.	16 hrs.	–40° to +200° F	Clear	2.12 sq. ft.	1:1	66215A24	12.43
14265	1.7 oz. (50 ml)	4-7 min.	12 hrs.	–40° to +200° F	Amber	2.12 sq. ft.	1:1	66215A23	12.83
14270	1.7 oz. (50 ml)	3-6 min.	12 hrs.	–40° to +200° F	Amber	2.12 sq. ft.	1:1	66215A21	11.49
14277	1.7 oz. (50 ml)	45 sec.	2 hrs.	–40° to +200° F	Amber	2.12 sq. ft.	1:1	66215A32	15.04
14278	1.7 oz. (50 ml)	25 min.	30 hrs.	–40° to +200° F	Gray	2.12 sq. ft.	1:1	66215A25	14.67
14315	1.7 oz. (50 ml)	65 min.	36 hrs.	–67° to +250° F	Lt. Yellow	2.12 sq. ft.	2:1	66215A33	14.74
Structural Adhesives									
14320	1.6 oz. (47 ml)	4-6 min.	24 hrs.	–67° to +250° F	Lt. Yellow	2.12 sq. ft.	1:1	66215A26	13.72
14340	1.6 oz. (47 ml)	15-20 min.	24 hrs.	–67° to +250° F	Lt. Yellow	2.12 sq. ft.	1:1	66215A27	13.72
14345	1.6 oz. (47 ml)	9-12 min.	24 hrs.	–67° to +250° F	Off-White	2.12 sq. ft.	1:1	66215A34	13.72
14366	1.18 oz. (35 ml)	4-6 min.	24 hrs.	–67° to +200° F	Gray	1.56 sq. ft.	10:1	66215A52♦	14.27

Accessories

Applicator Gun	74695A71	Each	$27.74
Mixer Nozzles (Full pkg. is 12)	74695A12	Each	Partial Pkg. $1.21 Full Pkg. $0.91
10:1 Plunger (66215A52)	74695A45	Each	$3.46

▲ Comes in two 7.5-oz. bottles; cannot be used with applicator gun. ♦ Requires 10:1 plunger 74695A45 (sold separately).

For information about adhesives, see page 3400.

Loctite® Adhesive Cartridges

Ideal for structural bonding, these Hysol® and Speedbonder™ adhesives bond aluminum, stainless steel, steel, ABS, nylon, polycarbonate, and PVC. They come in 1.69-oz. (50 ml) dual-cylinder cartridges (unless otherwise stated) and reach full strength in 24 hours. Applied at 0.005″ thick, adhesives cover approximately 4.1 sq. ft. Use an ***applicator gun*** (sold separately) and a ***mixer nozzle*** (sold separately) to simultaneously mix and dispense. Gun for 1:1, 2:1, and 1:2 ratios includes 1:1 and 2:1 mix ratio plungers. Gun for 10:1 ratio includes a 10:1 mix ratio plunger.

These products are compliant under all state VOC rules in effect on October 1, 2008.

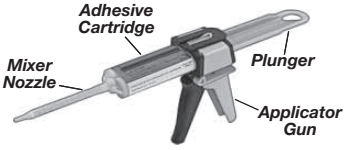

Epoxy Adhesives

Good resistance to solvents and impact.

E-00CL™ Electrical Insulating— Fast-setting and it acts as an electrical insulator. Also bonds ceramic, glass, and wood.

E-00NS™ High Viscosity— Thick for use on vertical surfaces. Also bonds ceramic, glass, and wood.

E-05CL™ Shock Resistant— Ultra clear with low odor and high peel and shock resistance. Also bonds ceramic, glass, and masonry materials.

E-05MR™ Moisture Resistant— Tough and doesn't form a skin, so it's ideal for bulk dispensing.

E-20HP™ High Strength— High shear strength and peel resistance. Good electrical insulator.

E-20NS™ Metal Bonder— Thick for use on vertical surfaces and has high shear strength. Also bonds ceramic and glass.

E-30CL™ Glass Bonder— Optically clear with good insulating properties and thin for more fluidity. Also bonds optical fibers and ceramic.

E-40FL™ Flexible— Flexible and resists impact and shock. Also bonds ceramic, glass, fiberglass (FRP), masonry materials, and wood.

E-60HP™ Metal/Plastic Bonder— High shear strength and peel resistance.

E-90FL™ Impact Resistant— Also acts as an electrical insulator. It also bonds ceramic, glass, rubber, and wood.

E-120HP™ Ultra Strength— Aerospace grade with superior resistance to rapid temperature changes and electricity. Thick for use on vertical surfaces. Has high shear strength and peel resistance. Also bonds ceramic.

1C-LV™ Shock Resistant— Also good thermal, electrical, and high-temp. resistance. It also bonds wood and ceramic.

608™ Fast Setting— Use where optical clarity and quick hardening rates are needed.

9462™ Impact Resistant— Thick for use on vertical surfaces. Has good shear and peel strength and resists high temperatures and shock. Also bonds wood.

Acrylic Adhesives

Tolerate moisture and oily, dirty, and unprepared surfaces.

H3000™ Low Viscosity— Good for general purposes.

H3151™ Metal Bonder— Excellent for aluminum and steel.

H8000™ Aluminum Bonder— Excellent peel strength.

H8600™ Harsh Environment— Bonds aluminum, galvanized steel, and steel.

Urethane Adhesives

Provide more flexible bonds than epoxy or acrylic.

U-05FL™ Metal Bonder— Highly flexible with excellent shear strength and resistance to peeling. Also bonds glass and wood.

U-09FL™ Plastic Bonder— Highly flexible. Also bonds glass.

Loctite No.	Begins to Harden	Temperature Range	Color	Mix Ratio		Each
Epoxy Adhesives						
E-00CL	3-5 min.	–65° to +180°F	Clear	1:1	6430A16	$12.75
E-00NS	3-5 min.	–65° to +180°F	Translucent	1:1	6430A17	12.75
E-05CL	3-5 min.	–65° to +180°F	Ultra Clear	1:1	6430A25	13.45
E-05MR	5 min.	–65° to +250°F	Clear	1:1	6430A38	15.90
E-20HP	20 min.	–65° to +180°F	Off-White	2:1	6430A19	12.75
E-20NS	20 min.	–65° to +180°F	Light Tan	2:1	6430A29	12.75
E-30CL	30 min.	–65° to +180°F	Ultra Clear	2:1	6430A23	12.75
E-40FL	40 min.	–65° to +180°F	Gray	1:1	6430A26	12.75
E-60HP	60 min.	–65° to +180°F	Off-White	2:1	6430A28	12.75
E-90FL	90 min.	–65° to +180°F	Gray	1:1	6430A18	12.75
E-120HP	120 min.	–65° to +180°F	Amber	2:1	6430A24	12.75
1C-LV	20 min.	–65° to +300°F	Tan	2:1	6430A35	13.31
608	5 min.	–65° to +130°F	Clear	1:1	6430A44	11.87
9462	55 min.	–65° to +225°F	Beige	1:1	6430A33	14.65
Acrylic Adhesives						
H3000	5 min.	–65° to +250°F	Off-White	1:1	6430A57	16.11
H3151	40 min.	–65° to +250°F	Light Yellow	1:1	6430A58	16.63
H8000	15 min.	–65° to +250°F	Green	10:1	6430A46	13.51
H8600	25 min.	–65° to +250°F	Blue	2:1	6430A45	12.86
Urethane Adhesives						
U-05FL	5 min.	–65° to +180°F	Off-White	1:2	6430A21	14.22
U-09FL	10 min.	–65° to +180°F	Ultra Clear	1:1	6430A32	16.67

Accessories

Applicator Gun for 1:1; 1:2; and 2:1 Ratios	74695A71	Each	$27.74			
Applicator Gun for 10:1 Ratio	74695A86	Each	$54.71			
Mixer Nozzles for 1:1, 2:1, and 1:2 Ratios	74695A12■	Each	Partial Pkg. $1.21	Full Pkg. $0.91		
Mixer Nozzles for 10:1 Ratio	74695A87★	Each	Partial Pkg. $1.64	Full Pkg. $1.39		

■ Full pkg. is 12. ★ Full pkg. is 10.

Job-Size Epoxy and Urethane Adhesives

Easily handle small repair jobs with little packets, or double bubbles, of two-part adhesives. Each package includes ten 0.12-oz. (3.5 gram) dual-pouch packets of resin and hardener (unless otherwise stated) and ten mixing sticks. These products are compliant under all state VOC rules in effect on October 1, 2008.

Epoxy Adhesives

General Purpose— Bonds aluminum, stainless steel, steel, polystyrene, PVC, glass, rubber, stone, and wood.

Quick Setting— For jobs requiring quick hardening. Bonds aluminum, stainless steel, steel, concrete, glass, and wood.

Extra-Thick Quick Setting— Thicker version of quick setting for use on vertical and overhead surfaces. Comes in 0.14-oz. (4 gram) packets.

Extra Thin— More fluid, so it's ideal if a narrow glue line is required. Bonds aluminum, concrete, Garolite (phenolic laminates), and wood.

Machinable— Can be machined, drilled, tapped, and sanded. Bonds aluminum, stainless steel, fiberglass (FRP), Garolite (phenolic laminates), glass, PET (polyester), stone, and wood.

Transparent— Has high impact resistance. Use on printed circuit boards and optical fibers, lenses, and equipment. Bonds aluminum, stainless steel, Garolite (phenolic laminates), glass, and wood.

Vibration Resistant— Semirigid, it resists pulling away from surfaces in high-vibration situations. Also has high shear strength and resists peeling. Bonds aluminum, brass, bronze, copper, stainless steel, steel, polystyrene, PVC, masonry, nylon, rubber, and wood.

Wet-Surface Patching— For wet surfaces and underwater use. Bonds aluminum, stainless steel, concrete, Garolite (phenolic laminates), glass, fiberglass (FRP), and stone.

Urethane Adhesives

General Purpose— Tough, flexible and resists peeling. Bonds aluminum, brass, copper, steel, zinc, Garolite (phenolic laminates), glass, fiberglass (FRP), leather, PET (polyester), rubber, and urethane.

High Pull-Away Resistance— Semiflexible with high shear strength. Bonds aluminum, steel, china, leather, Garolite (phenolic laminates), rubber, and urethane. Ideal for replacing auto mirrors.

High Shear Strength— Semirigid with very high shear strength and good resistance to peeling. Bonds aluminum, stainless steel, steel, tin, flexible electrical connections, Garolite (phenolic laminates), PET (polyester), rubber hose, and urethane.

	Begins to Harden	Reaches Full Strength	Temperature Range	Color	Approx. Coverage @ 0.005″ Thick.		Per Pkg.
General Purpose Epoxy	2 hrs.	24 hrs.	–29° to +200°F	Amber	40 sq. in.	7538A12	$14.06
Quick-Setting Epoxy	3 min.	24 hrs.	+14° to +180°F	Amber	35 sq. in.	7538A11	13.48
Extra-Thick Quick-Setting Epoxy	3 min.	24 hrs.	+14° to +180°F	Opaque White	35 sq. in.	7538A15	15.72
Extra-Thin Epoxy	45 min.	24 hrs.	–4° to +125°F	Light Amber	40 sq. in.	7538A14	16.06
Machinable Epoxy	25 min.	72 hrs.	–4° to +300°F	Aluminum	30 sq. in.	7538A32	14.06
Transparent Epoxy	1 hr.	7 days	–4° to +180°F	Clear	40 sq. in.	7538A13	13.78
Vibration-Resistant Epoxy	3 hrs.	7 days	–67° to +250°F	Gray	30 sq. in.	7538A31	14.06
Wet-Surface Patching Epoxy	25 min.	7 days	–4° to +225°F	Gray	30 sq. in.	7538A33	16.62
Epoxy Assortment (Includes 1 packet of each epoxy listed)						7538A16	14.94
General Purpose Urethane	5-8 min.	7 days	–40° to +150°F	Black	35 sq. in.	7493A35	14.48
High Pull-Away Resistance Urethane	3-5 min.	24 hrs.	–40° to +175°F	Beige	35 sq. in.	7493A21	14.06
High Shear Strength Urethane	5 min.	24 hrs.	–40° to +200°F	Beige	35 sq. in.	7493A34	13.78

For information about adhesives, see page 3400.

Epoxy and Urethane Adhesives in Easy-Dispensing Syringes

Ideal for small jobs, these two-part adhesives come in a dual-cylinder syringe with built-in plunger for easy dispensing. These products are compliant under all state VOC rules in effect on October 1, 2008.

Loctite® Epoxy Adhesives

Bond metal, plastic, ceramic, glass, and wood.

1 Minute— Ultra-fast hardening and resists high temperatures. Can also be used to fill and seal cracks and rebuild worn surfaces.

30 Minute— Fiberglass-reinforced for high strength and shock resistance.

Epoxy Adhesives

60-90 Second— Fast hardening. Bonds aluminum, copper, mild steel, stainless steel, ceramic, fiberglass (FRP), rigid plastic, rubber, and stone.

3-6 Minute and 4-7 Minute Gel— Rapid hardening. Bonds aluminum, brass, cast iron, copper, stainless steel, PVC, ceramic, concrete, fiberglass (FRP), glass, and wood. *4-7 minute gel* is thicker for vertical surfaces.

4 Minute— Bonds aluminum, copper, stainless steel, ABS, acrylic, polystyrene, PVC, and wood.

4-6 Minute (Acrylic)— Bonds ABS, acrylic, fiberglass (FRP), Garolite (phenolic laminates), polycarbonate, polyester, and PVC.

4-6 Minute (Epoxy)— Has high shear and peel strength. Bonds aluminum, copper, galvanized steel, mild steel, stainless steel, ceramic, rubber, and wood.

8-12 Minute— Resists water and makes extra-strong bonds on aluminum, brass, cast iron, copper, stainless steel, ceramic, concrete, fiberglass (FRP), glass, PVC, and wood.

100-120 Minute— Slower version of the 90 second adhesive.

Underwater Epoxy Adhesive

For surfaces that are dry, wet, and even under water. Bonds aluminum, brass, stainless steel, steel, ABS, acrylic, nylon, polycarbonate, PVC, ceramic, fiberglass (FRP), masonry, and wood.

Urethane Adhesives in Cartridges

Bond stainless steel, steel, ABS, acrylic, polycarbonate, polystyrene, PVC, and fiberglass (FRP). Include mixer nozzle.

90-120 Second— Also bonds etched or treated polyethylene, polypropylene, and glass.

4-6 Minute— Also bonds glass and quartz.

Begins to Harden	Loctite No.	Reaches Full Strength	Size	Temperature Range	Color	Approx. Coverage @ 0.005″ Thick.	Mix Ratio		Each
Loctite Epoxy									
1 min.	1324007	1 hr.	1 oz.	–65° to +300° F	Clear	360 sq. in.	1:1	7556A33	$6.43
30 min.	99393	24 hrs.	1 oz.	–20° to +180° F	Tan	505 sq. in.	1:1	7556A35	8.45
Epoxy									
60-90 sec.	—	3 hrs.	1.65 oz.	–40° to +250° F	Clear/Amber	345 sq. in.	1:1	7541A82	9.80
3-6 min.	—	12 hrs.	0.85 oz.	–40° to +200° F	Light Amber	305 sq. in.	1:1	7541A76	4.93
4 min.	—	24 hrs.	0.5 oz.	–40° to +200° F	Light Amber	180 sq. in.	1:1	7670A22	5.73
4-6 min.	—	24 hrs.	0.85 oz.	–67° to +250° F	Light Yellow	305 sq. in.	1:1	75395A65★	8.91
4-6 min.	—	24 hrs.	1.65 oz.	–40° to +250° F	Light Yellow	357 sq. in.	1:1	7541A84	8.80
4-7 min.	—	12 hrs.	0.85 oz.	–40° to +200° F	Off-White	305 sq. in.	1:1	7592A31	6.57
8-12 min.	—	12 hrs.	0.85 oz.	–40° to +200° F	Clear	305 sq. in.	1:1	7541A77	6.48
100-120 min.	—	24 hrs.	1.65 oz.	–40° to +250° F	Amber	329 sq. in.	1:1	7541A83	8.80
Underwater Epoxy									
60 min.	—	7 days	1 oz.	–40° to +200° F	Aqua	370 sq. in.	1:1	7456A53	6.74
Urethane									
90-120 sec.	—	24 hrs.	1.65 oz.	–40° to +250° F	Gray	496 sq. in.	1:1	7448A21	9.18
4-6 min.	—	24 hrs.	1.65 oz.	–40° to +250° F	Black	496 sq. in.	1:1	7448A22	9.18

★ Acrylic adhesive.

Epoxy in Caulk Gun Cartridge

Don't buy a new tool just to apply your epoxy. All you need is a caulk gun that holds a 10-11 oz. cartridge to dispense this two-part adhesive. Bonds aluminum, brass, copper, stainless steel, steel, ABS, acrylic, PVC, rigid plastic, ceramic, fiberglass (FRP), rubber, and wood. Includes two mixer nozzles to mix adhesive as it is dispensed. Temperature range is –40° to +200° F. Color is light amber. This product is compliant under all state VOC rules in effect on October 1, 2008.

See page 3428 for caulk guns.

Size	Begins to Harden	Reaches Full Strength	Mix Ratio		Each
8½ oz.	3½ min.	24 hrs.	1:1	7646A12	$32.73

J-B Weld Epoxies

Create bonds as strong as welding or soldering. These two-part adhesives bond aluminum, brass, bronze, copper, stainless steel, steel, ABS, acrylic, polycarbonate, PVC, ceramic, concrete, fiberglass (FRP), and wood. At full strength they're waterproof, resistant to chemicals and acids, and can be drilled, tapped, sanded, and painted. Mix ratio is 1:1. Color is dark gray. Maximum temperature is 500° F for 8265-S and 8280 epoxies; 300° F for 8276 epoxy.

These products are compliant under all state VOC rules in effect on October 1, 2008.

J-B Weld No.	Tube Size ♦	Begins to Harden	Reaches Full Strength	Approx. Coverage @ 0.125″ Thick.		Each
8265-S	1 oz.	60 min.	15-24 hrs.	16 sq. in.	7605A11	$5.91
8276	1 oz.	4 min.	4 hrs.	16 sq. in.	7605A13	5.91
8280	5 oz.	60 min.	15-24 hrs.	80 sq. in.	7605A12	16.62

♦ Refers to the size of each part of the adhesive.

3M Scotch-Weld Epoxy and Urethane Adhesives

Get secure bonds with these two-part adhesives. Bond aluminum, brass, copper, galvanized steel, stainless steel, steel, ABS, acrylic, nylon, polycarbonate, PVC, rigid vinyl, glass, rubber, and wood. At 0.005″ thick, 1 gal. covers approx. 320 sq. ft. Temperature range is –60° to +350° F for epoxies; –60° to +250° F for urethanes.

These products are compliant under all state VOC rules in effect on October 1, 2008.

1751 Epoxy— Rigid aluminum-filled structural epoxy that has excellent adhesion and fills spaces between surfaces without losing bonding strength. Ideal for holes, dents, and cracks.

1838 and 1838L Epoxies— Rigid with high strength, these epoxies also bond reinforced plastics such as fiberglass (FRP) and PET. *1838* meets MIL-A-52194A. *1838L* is thinner so it flows quickly and easily.

2158 Epoxy— Also bonds damp concrete.

2216 Epoxy— Highly flexible and resistant to peeling. Also bonds masonry. Gray version meets DOD-A-82720.

3501 Epoxy— Hardens quickly and has good weather resistance.

3532 and 3535 Urethanes— Create tough, impact-resistant bonds. Become thicker after 30 seconds of mixing; for vertical use. *3535* hardens faster.

3M No.	Begins to Harden	Reaches Full Strength	Color	Mix Ratio	2-oz. Tube ♦	Each	1-pt. Can ♦	Each	1-qt. Can ♦	Each	1-gal. Can ♦	Each
1751 Epoxy	45 min.	7 days	Gray	3:2	75065A66	$48.99	75065A67	$161.71	75065A68	$216.48	75065A85	$675.09
1838 Epoxy	60 min.	7 days	Green	4:5	75065A69	49.74	75065A7	150.47	75065A71	199.74	75065A86	628.91
1838L Epoxy	60 min.	7 days	Translucent	1:1	75065A73	52.34	—	—	75065A74	283.76	—	—
2158 Epoxy	120 min.	7 days	Gray	1:1	—	—	75065A76	157.83	75065A77	213.49	—	—
2216 Epoxy	90 min.	7 days	Gray	2:3	75045A65	47.45	75045A66	162.51	75045A67	216.73	75045A68	678.50
2216 Epoxy	120 min.	30 days	Translucent	1:1	75045A78	48.29	75045A79	194.63	75045A8	259.48	75045A81	811.58
3501 Epoxy	6-10 min.	24 hrs.	Gray	1:1	75065A81	50.73	75065A82	196.72	—	—	75065A84	863.10
3532 Urethane	5-15 min.	24 hrs.	Brown	1:1	75025A772	35.52	—	—	75025A774	162.38	—	—
3535 Urethane	45-240 sec.	8 hrs.	Off-White	1:1	75065A92	35.52	—	—	—	—	—	—

♦ Refers to the size and container of each part of the adhesive.

For information about adhesives, see page 3400.

Epoxies in Plastic Dispenser Bottles

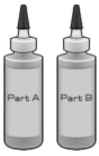

Plastic squeeze bottles let you easily dispense these two-part epoxies. *8-oz.* includes 4-oz. bottle of resin and 4-oz. bottle of hardener; *32-oz.* includes 16-oz. bottle of resin and 16-oz. bottle of hardener. Bond aluminum, stainless steel, steel, glass, and wood. Mix ratio is 1:1. These products are compliant under all state VOC rules in effect on October 1, 2008.

General Purpose— Also bonds polystyrene, PVC, rubber, and stone. Begins to harden in 2 hrs.; reaches full strength in 24 hrs. Temperature range is –29° to +200° F.

Quick Setting— Also bonds concrete. Begins to harden in 3 min.; reaches full strength in 24 hrs. Temperature range is 14° to 180° F.

Vibration Resistant— Resists pulling away from surfaces in high-vibration situations. It's flexible and tough with high shear strength. Also bonds brass, bronze, copper, polystyrene, PVC, Garolite (phenolic laminates), and stone. Begins to harden in 3 hrs.; reaches full strength in 7 days. Temperature range is –67° to +250° F.

	Color	*8 oz.* Each		*32 oz.* Each
General Purpose	Dk. Amber	7508A42	$13.19	7508A52 $38.79
Quick Setting	Amber	7508A41	20.00	7508A51 65.98
Vibration Resistant	Gray	7508A43	14.55	7508A53 44.21

Loctite® Hysol® Epoxy and Urethane Adhesives for Medical Devices

These two-part adhesives are ISO compliant for bonding medical device assemblies. Bond glass, metal, and plastic. Reach full strength in 24 hours. Temperature range is –65° to +300° F (unless noted). Come in a 1.7-oz. (50 ml) cartridge. These products are compliant under all state VOC rules in effect on October 1, 2008.

Use ***applicator gun*** with a ***mixer nozzle*** (both sold separately) to mix and dispense. Gun includes 1:1 and 2:1 mix ratio plungers.

M-21HP™ Epoxy resists most chemicals and solvents and acts as an electrical insulator. High peel resistance and shear strength. ***M-31CL™ Epoxy*** is thin for easy flow and ultra clear for transparent bonds. Resists most chemicals and solvents. Use for bonding, encasing (potting), and laminating applications that require optical clarity. ***M-121HP™ Epoxy*** is thick for use on vertical surfaces. Resists impact. Also bonds dissimilar materials. ***M-11FL™ Urethane*** is thin for easy flow and ultra clear for nonyellowing, transparent bonds. Also bonds elastomers.

Loctite No.	Begins to Harden	Color	Mix Ratio		Each
M-21HP Epoxy	20 min.	Off-White	2:1	7370A39	$16.55
M-31CL Epoxy	30 min.	Ultra Clear	2:1	7370A38	15.57
M-121HP Epoxy	120 min.	Amber	2:1	7370A37	15.77
M-11FL Urethane	10 min.	Ultra Clear	1:1	7370A22♠	18.52

Applicator Gun ..... 74695A71 **Each** $27.74
Mixer Nozzles ..74695A12■ **Each** Partial Pkg. $1.21 Full Pkg. $0.91
♠ Temperature range is –65° to +250° F. ■ Full pkg. is 12.

Epoxies for Difficult-to-Bond Plastics

Difficult-to-bond plastics become easy to bond. Use on:

- Polyethylene (UHMW, HDPE)
- Nylon (all blends, glass filled), Acetal
- Polyphenylene sulfide (PPS, Ryton, Konduit)
- Polypropylene, PEEK, ABS, PVC
- PET (Ertalyte, Petlon, Mylar, Dacron polyester)
- ETFE, PVCF, PVDF (Kynar), ECTFE (Halar)
- Polyimide (Ultem, Torlon, Imidex, Pyropel)
- Rubber (neoprene, EPDM, butyl rubber), urethane
- Concrete • Fiberglass (FRP) • Glass • Metal

These two-part epoxies begin to harden in 30-40 minutes; reach full strength in 24 hours. Temperature range is –40° to +350° F. Color is amber. 1.7 oz. covers approximately 3 sq. ft; 1.5 qt. covers approximately 75 sq. ft. These products are compliant under all state VOC rules in effect on October 1, 2008. Use an ***applicator gun*** (sold separately) and a ***mixer nozzle*** (sold separately) to simultaneously mix and dispense the 1.7-oz. cartridges. Gun includes 1:1 and 2:1 mix ratio plungers.

Standard— Also known as Bondit B45TH, it requires minimal surface preparation, is flexible, and resists extreme temperatures, chemicals, and impact. Will cure under water.

Thin— Also known as Bondit B45, it's a thinner version of the standard epoxy. Use as an adhesive, a clear protective coating, or as an alternative to castable polyurethanes when encasing (potting) electrical cables, connectors, and transducer terminations. Resists moisture and seawater.

Size	Mix Ratio	*Standard*	Each	*Thin*	Each
1.7-oz. Cartridge	2:1	7513A1	$78.18	7513A3	$78.18
1.5-qt. Can ♦	2:1	7513A2	260.00	———	———

Applicator Gun ..... 74695A71 **Each** $27.74
Mixer Nozzles ..74695A12■ **Each** Partial Pkg. $1.21 Full Pkg. $0.91
♦ Combined amount of resin and hardener. ■ Full pkg. is 12.

Epoxies in Squeeze Tubes

These two-part epoxies come in two tubes for easy dispensing. Include two mixing sticks. These products are compliant under all state VOC rules in effect on October 1, 2008.

General Purpose Epoxy— Bond aluminum, brass, copper, stainless steel, steel, ABS, polystyrene, PVC, sheet moulding compound, ceramic, fiberglass (FRP), rubber, and wood (unless noted). Temp. range is –67° to +266° F except for 66135A22, which has a –40° to +140° F range.

Loctite® Hysol® No. 1C™ General Purpose Epoxy— Bonds metal, plastic, and wood. Temperature range is –65° to +300° F.

Loctite® Hysol® No. 608™ Fast-Setting Epoxy— Provides optical clarity. Bonds metal and plastic. Temp. range is –65° to +130° F.

Size ♦	Begins to Harden	Reaches Full Strength	Color	Mix Ratio		Each
General Purpose Epoxy						
4.5 oz.	60 min.	36 hrs.	Clear	2:1	7524A14	$18.03
5 oz.	20 min.	24 hrs.	Black	2:1	7524A12♥	17.68
5 oz.	20 min.	24 hrs.	Clear	2:1	7524A13♥	16.92
6.5 oz.	4-6 min.	24 hrs.	Lt. Amber	1:1	7524A15●	19.67
9 oz.	3-5 min.	24-48 hrs.	Gray	1:1	66135A22	25.34
Loctite® No. 1C™ General Purpose Epoxy						
4 oz.	20 min.	72 hrs.	Off-White	2½:1	1813A221	8.22
Loctite® No. 608™ Fast-Setting Epoxy						
2.8 oz.	5 min.	24 hrs.	Clear	1:1	1813A351	10.78

♦ Combined amount of resin and hardener.
♥ Not for brass, stainless steel, polystyrene, PVC, and ceramic.
● Not for ABS, sheet moulding compound, ceramic, and rubber.

Epoxy for Food-Processing Applications

Designed for use with food-processing and packaging equipment and biomedical instruments. This two-part adhesive resists water, weather, petroleum solvents, lubricants, mild acids and alkalies, and other organic and inorganic compounds. Bonds aluminum, stainless steel, steel, polycarbonate, vinyl, ceramic, fiberglass (FRP), and glass. Begins to harden in 2 hours; reaches full strength in 18 hours. Temp. range is –103° to +293° F. Mix ratio is 2:1. Color is amber. Developed in accordance with Title 21 U.S. Code of Fed. Reg., FDA Chapter 1, Sub B Sec. 175.105 and 175.300. This product is compliant under all state VOC rules in effect on October 1, 2008.

Size refers to combined amount of resin and hardener.

1.4-oz. Dual-Pouch Packet ..... 66525A21 **Each** $21.53
1-lb. Container ..... 66525A22 **Each** $68.50

Epoxies for Bonding PTFE

Epoxies

Use on etched/treated fluoropolymers such as FEP, PFA, PTFE, and TFE as well as ETFE (Tefzel) and ECTFE (Halar). Also bond aluminum, brass, copper, stainless steel, steel, ceramic, glass, and wood. This product is compliant under all state VOC rules in effect on October 1, 2009.

Treating Agent— Must use with the regular and the high-temperature epoxies to make fluoropolymer surfaces bondable. Comes in a 1-pint can. Covers approximately 50 sq. ft.

7607A14 ..... **Each** $66.64

Regular Epoxy— Includes a 17½-oz. can of resin and 15-oz. can of hardener. Begins to harden in 45 minutes; reaches full strength in 7 days. Color is purple when hardened. Mix ratio is 1:1. Applied at 4 to 6 mil thick, it covers approximately 80 sq. ft. Temperature range is –40° to +250° F.

7607A12 ..... **Each** $112.33

High-Temperature Epoxy— Resists temperatures up to 500° F and chemicals. Includes a 12½ oz. can of resin and 3½ oz. can of hardener. Mix ratio is 3½:1. Begins to harden in 16 hours at room temperature; reaches full strength in 8 hours at 250° F (less time at higher temperatures). Color is light brown when fully hardened. Applied at 4 to 6 mil thick, it covers approximately 80 sq. ft. Temperature range is –65° to +500° F.

7607A13 ..... **Each** $311.08

Bonding Kits

Kits contain both etching solution and epoxy to make bonding simple. Epoxy begins to harden in 30-40 minutes; reaches full strength in 24 hours. Temperature range is –40° to +350° F. Color is amber. This product is compliant under all state VOC rules in effect on May 1, 2010.

Standard Bonding Kit— Includes one 2-oz. bottle of etching solution, one 1.7-oz. cartridge of epoxy (7513A1 on this page), and a matching plunger for the cartridge. Kit covers approximately 1.5 sq. ft.

7607A15 ..... **Each** $128.33

Deluxe Bonding Kit— Includes two 4-oz. bottles of etching solution and one 1.7-oz. cartridge of epoxy (7513A1 on this page). Covers approximately 3 sq. ft. Mix ratio is 2:1.

Use ***applicator gun*** and ***mixer nozzle*** (both sold separately) to mix and dispense. Gun includes 1:1 and 2:1 mix ratio plungers.

Kit ..... 7807A11 **Each** $242.00
Applicator Gun ..... 74695A71 **Each** $27.74
Mixer Nozzles ..74695A12■ **Each** Partial Pkg. $1.21 Full Pkg. $0.91
■ Full pkg. is 12.

For information about adhesives, see page 3400.

Loctite® Hysol® Adhesives for Encasing (Potting) Electronics

Use these two-part adhesives for encasing (potting) electronic components in adhesive, to create small castings, or to bond heat sinks to heat-dissipating electronic components. Come in a 1.69-oz. (50 ml) cartridge. These products are compliant under all state VOC rules in effect on October 1, 2008.

Use an ***applicator gun*** and a ***mixer nozzle*** (both sold separately) to mix and dispense. Gun includes 1:1 and 2:1 mix ratio plungers.

Epoxies

E-60NC™—Acts as an electrical insulator.

ES1001™—Thin for easy flow. Good for impregnating applications with small tolerances.

ES1004™—Meets flame-out or self-extinguishing needs according to ASTM D635; meets UL 94V0.

ES1901™—Sets fast and forms ultra-clear bond lines. Ideal for ceramic, metal, plastic, rubber, wood, and flexible circuits.

ES1902™—Transparent for potting and laminating applications where clarity and excellent electrical and mechanical properties are required. Bonds plastic and metal.

ES2500™—Resilient and fast gelling, it's great for potting and encapsulating high-volume parts. Meets UL 94HB flame retardant properties.

Urethanes

US1150™—For electronics, telecommunications, and automotive components. Provides environmental hazard protection.

US1152™—For electronic assemblies. Provides environmental hazard protection.

US1750™—Clear, fast-hardening, medical-grade adhesive. Use for medical devices.

US2650™—Flame retardant. Good for electrical assemblies.

US2651™—Ideal for automotive applications in severe environments such as under the hood.

Loctite No.	Begins to Harden	Reaches Full Strength	Temperature Range	Thermal Conductivity	Dielectric Strength★	Color	Mix Ratio		Each
Epoxies									
E-60NC	60 min.	24 hrs.	–65° to +180° F	———	550 volts/mil	Black	1:1	6430A27	$11.96
ES1001	60 min.	24 hrs.	–40° to +257° F	0.293 W/m°K	1,100 volts/mil	Black	1:1	7369A12	18.46
ES1004	8 hrs.	♣	–40° to +302° F	———	1,100 volts/mil	Black	4:1	7369A13	23.08
ES1901	3-5 min.	24 hrs.	–40° to +221° F	———	400 volts/mil	Clear	1:1	7369A14	28.64
ES1902	60-90 min.	24 hrs.	–40° to +257° F	———	1,390 volts/mil	Clear	2:1	7369A15	19.21
ES2500	10 min.	16 hrs.	–40° to +221° F	0.288 W/m°K	410 volts/mil	Black	2:1	7369A16	18.70
Urethanes									
US1150	40-60 min.	48 hrs.	–85° to +257° F	0.486 W/m°K	950 volts/mil	Black	4:1	7369A32	19.17
US1152	10-12 hrs.	24 hrs.	–85° to +257° F	0.18 W/m°K	1,001 volts/mil	Black	2:1	7369A34	26.94
US1750	5-7 min.	16 hrs.	–40° to +257° F	0.19 W/m°K	1,292 volts/mil	Clear	1:1	7369A33	19.40
US2650	5-10 min.	16 hrs.	–85° to +257° F	0.47 W/m°K	941 volts/mil	Tan	4:1	7369A35	31.67
US2651	10 min.	16 hrs.	–85° to +257° F	———	1,050 volts/mil	Amber	1:1	7369A36	17.52

Gun and Nozzles

Applicator Gun ..... 74695A71 **Each** $27.74

Mixer Nozzles (Full pkg. is 12) ..... 74695A12 **Each** Partial Pkg. $1.21 Full Pkg. $0.91

4:1 Plunger (required for 7369A13, A32, and A35) ..... 74695A44 **Each** $3.46

★ The ability to withstand voltage without rupture. ♣ Reaches full strength with heat; 2 hours at 176° F plus 2 hours at 302° F.

Loctite® Tak Pak® Wire Tacking Kits

Great for electronic repair and assembly. These instant adhesives are nonconductive and ideal for insulating, securing hardware to printed circuit boards, and encasing an item in adhesive (potting), unless noted. Begin to harden in 30 seconds; reach full strength in 24 hours. Thermal conductivity is 0.1 W/m°K. These products are compliant under all state VOC rules in effect on October 1, 2008.

Use ***Loctite® 382™*** when temperature fluctuation is a concern. A thick, slow-flowing formula, it fills spaces up to 0.008″. Temperature range is –65° to +180° F. Dielectric strength (the ability to withstand voltage without rupture) is 634 volts/mil.

Loctite® 444™ is a thinner formula; it fills spaces up to 0.007″. Temperature range is –65° to +180° F. Dielectric strength is 929 volts/mil. Meets Commercial Item Standard A-A-3097.

Loctite® 7452™ accelerator decreases adhesive's hardening time. ***Kits*** include adhesive and accelerator.

Loctite No.	Size	Color		Each
Adhesives				
382	0.7-oz. Bottle	Clear	74755A86♠	$20.93
444	0.7-oz. Bottle	Clear	7586A32	16.39
Accelerator				
7452	0.7-oz. Spray	Clear	7502A71	14.59
7452	1.75-oz. Bottle	Clear	7502A72	7.84
Kits				
382 with 0.7-oz. Spray Accelerator			74755A85♠	33.35
444 with 1.75-oz. Bottle of Accelerator			7586A31	21.02

♠ Cannot be used for potting.

3M Scotch-Weld Electrical Insulating Adhesive for Encasing (Potting)

Ideal for bonding electrical components, this two-part adhesive is also thick for encasing items in adhesive (potting). Resists heat and retains insulation properties under high humidity. Bonds aluminum, brass, copper, stainless steel, steel, ABS, acrylic, polycarbonate, ceramic, fiberglass (FRP), glass, and rubber. Begins to harden in 60-70 minutes; reaches full strength in 48 hours. Mix ratio is 1:1. Dielectric strength (the ability to withstand electrical voltage without rupture) is 850 volts/mil. Meets UL 94HB. These products are compliant under all state VOC rules in effect on October 1, 2008.

Comes in a dual-cylinder cartridge. Use an ***applicator gun*** and a ***mixer nozzle*** (both sold separately) to simultaneously mix and dispense. Guns include 1:1 and 2:1 mix ratio plungers.

3M No.	Size	***Black***	Each	***Clear***	Each
DP-270	1.7 oz. (50 ml)	7467A18	$19.25	7467A17	$19.25
DP-270	6.7 oz. (200 ml)	7467A98	59.59	7467A123	59.59

Applicator Gun for 1.7-oz. Cartridge ..... 7467A43 **Each** $65.30

Applicator Gun for 6.7-oz. Cartridge ..... 7467A91 **Each** $488.71

Nozzles for 1.7-oz. Cartridge (12/Pkg.) ..... 7467A12 **Per Pkg.** $21.87

Nozzles for 6.7-oz. Cartridge (12/Pkg.) ..... 7467A93 **Per Pkg.** $40.49

Heat-Transfer Epoxy for Encasing (Potting)

Epoxy draws heat away from parts and won't crack during thermal expansion, making it ideal for small electronic castings and for encasing items in adhesive (potting). This two-part epoxy resists weather, water, vapors, petroleum lubricants, and mild acids and alkalies. Thin for easy flow. Temp. range is –40° to +212° F. Mix ratio is 2:1. Color is black.

Thermal conductivity is 7-8 Btu-in./ft.^{2}-hr.-° F. Dielectric strength (the ability to withstand electrical voltage without rupture) is 520 volts/mil.

This product is compliant under all state VOC rules in effect on October 1, 2008.

Use an ***applicator gun*** and a ***mixer nozzle*** (both sold separately) to mix and dispense simultaneously. Gun includes 1:1 and 2:1 mix ratio plungers.

Size	Begins to Harden	Reaches Full Strength		Each
Epoxy				
1.7-oz. Cartridge	15 min.	6-8 hrs.	7548A11	$29.93
Gun and Nozzles				
Applicator Gun			74695A71	27.74

Mixer Nozzles .. 74695A12■ **Each** Partial Pkg. $1.21 Full Pkg. $0.91

■ Full pkg. is 12.

Electrical Insulating Epoxy

Ideal for attaching transistors, diodes, resistors, and other heat-sensitive components to printed circuit boards. This smooth two-part paste draws heat away from parts; maintains electrical insulation; and resists salt solutions, mild acids, and alkalies. Bonds aluminum, stainless steel, steel, polycarbonate, ceramic, glass, sapphire, and silica. Begins to harden in 90 minutes; reaches full strength in 24 hours.

Comes in a dual-pouch packet with resin and hardener already measured. To use, remove the clip separating resin and hardener, mix contents inside, and dispense. Temp. range is –94° to +239° F.

Thermal conductivity is 6-7 Btu-in./ft.^{2}-hr.-° F. Dielectric strength (the ability to withstand electrical voltage without rupture) is 410 volts/mil.

This product is compliant under all state VOC rules in effect on October 1, 2008.

1.4 oz. ..... 66395A11 **Each** $18.92

Protective Coatings for Circuit Boards

Both come in a 12-oz. aerosol can and reach full strength in 24 hours. These products are compliant under all state VOC rules in effect on October 1, 2008.

Silicone—This durable coating is perfect for harsh environments. It has excellent resistance to vibration, moisture, chemicals, and rapid temperature changes. Temp. range is –85° to +392° F. Dielectric strength (the ability to withstand electrical voltage without rupture) is 1,100 volts/mil. UL recognized.

Acrylic—Reaches full strength quickly and resists moisture and vibration. Temp. range is –85° to +257° F. Dielectric strength is 1,000 volts/mil.

Silicone ..... 6801A37 **Each** $28.09

Acrylic ..... 6801A39 **Each** $27.59

For information about adhesives, see page 3400.

Silver-Filled Conductive Epoxies

Use these two-part epoxies for chip and substrate bonding, interference shielding, and electrical circuit repairs. Bond aluminum, copper, brass, stainless steel, and steel. Begin to harden in 2 to 3 hours; reach full strength in 5 days. Maximum temperature is 266° F. Each part comes in a jar; mix ratio is 1:1. These products are compliant under all state VOC rules in effect on October 1, 2008.

Semiflexible— Thick for use on vertical surfaces. Thermal conductivity is 40 Btu-in./ft.^{2}-hr.-°F. Electrical resistivity is <0.0002 ohms-cm.

Flexible— Flexes without delamination or loss of conductivity. Bonds dissimilar materials, such as alumina to aluminum and silicon to copper. Thermal conductivity is 55 Btu-in./ft.^{2}-hr.-°F. Electrical resistivity is <0.0004 ohms-cm.

Size ♦	Approx. Coverage @ 0.010″ Thick.	Color	Semiflexible	Semiflexible Each	Flexible	Flexible Each
½ oz.	90 sq. in.	Silver	7595A31	$80.58	7595A33	$80.58
1 oz.	180 sq. in.	Silver	7595A32	161.15	7595A34	161.15

♦ Combined amount of resin and hardener.

Silver-Filled Conductive Adhesive Pen

Bond surface-mount components and repair electronic connections on circuit boards quickly and easily with a pen that dispenses a silver-filled conductive epoxy. Also, make quick, highly conductive silver connections (traces) and link components. Begins to harden immediately; reaches full strength in 24 hours. Temp. range is –67° to +302° F. Color is silver. This product is compliant under all state VOC rules in effect on October 1, 2008.

0.165 oz. ..... 7365A44 **Each** $30.07

Silver-Filled Conductive Epoxies in Easy-Mix Packs

Resin and hardener come measured in a dual-pouch packet; just open and dispense. Epoxies make electrically and thermally conductive bonds between aluminum, stainless steel, steel, laminates, polycarbonate, and ceramic. Bond electronic components; seal and repair electrical modules, printed circuits, flat cable, and high-frequency shields; and "cold" solder heat-sensitive materials. At 1-mil thick, 0.09 oz. will cover approximately 61 sq. in. These products are compliant under all state VOC rules in effect on October 1, 2008.

Rigid— Temperature range is –76° to +257° F. Thermal conductivity is 42 Btu-in./ft.^{2}-hr.-° F. Electrical resistivity is 0.009 ohms-cm.

Flexible— Temperature range is –76° to +230° F. Thermal conductivity is 10 Btu-in./ft.^{2}-hr.-° F. Electrical resistivity is 0.001 ohms-cm.

Loctite® 3888™— Temperature range is –13° to +176° F. Thermal conductivity is 10 Btu-in./ft.^{2} -hr.-° F. Electrical resistivity is 0.001 ohms-cm.

Size ♦	Begins to Harden	Reaches Full Strength	Color		Each
Rigid					
0.09 oz. (2.5 g)	90 min.	24 hrs.	Silver	7661A11	$29.93
0.35 oz. (10 g)	90 min.	24 hrs.	Silver	7661A12	63.60
Flexible					
0.09 oz. (2.5 g)	3 hrs.	12-24 hrs.	Silver	7661A13	25.73
0.35 oz. (10 g)	3 hrs.	12-24 hrs.	Silver	7661A14	63.64
Loctite® 3888™					
0.09 oz. (2.5 g)	90 min.	48 hrs.	Silver	7366A55	23.00

♦ Combined amount of resin and hardener.

High-Temperature Adhesives and Repair Putties

Epoxy— This two-part electrically insulating epoxy resists high temperatures and acids. *1-pt. epoxy* has 1-pt. jar of resin and 3-oz. jar of hardener; *1-gal. epoxy* has 1-gal. jar of resin and 1-pt. jar of hardener. Mix ratio for both is 100:8. These products are compliant under all state VOC rules in effect on October 1, 2008.

Repair Epoxy— Permanently repair leaks in valves, fittings, and shafts. This aluminum-filled two-part epoxy resists corrosion and at full strength can easily be machined, tapped, and drilled. Bonds bronze, copper, stainless steel, ABS, acrylic, polycarbonate, PVC, ceramic, fiberglass (FRP), and glass. *1-lb. epoxy* includes a 0.9-lb. jar of resin and a 0.1-lb. bottle of hardener. Mix ratio is 100:11. *Kit* includes 1-oz. syringe of aluminum-filled epoxy resin, ½-oz. syringe of epoxy hardener, sandpaper, reinforcement screen, and mixing sticks. Mix ratio is 2:1.

Adhesive for Insulating Materials— Bond porous insulating materials such as calcium-silicate insulation with this silicate-based adhesive.

Repair Putty for Cast Aluminum— Also known as Pyro-Putty, this two-part adhesive seals cracks, holes, and pits in metals exposed to extremely high temperatures. Machinable at full strength. Includes a powder and a liquid that forms a ceramic- and aluminum-filled thick putty. Apply up to ½″ thick. Mix ratio is 2:1.

Repair Putty for Cast Iron, Stainless Steel, and Steel— Also known as Pyro-Putty, this ceramic- and stainless steel-filled one-part putty seals cracks, holes, and pits in metals exposed to extremely high temperatures. Machinable at full strength. Apply up to ⅜″ thick. *8-oz.* size includes 4 oz. of thinner so you can change the viscosity.

Gasket-Sealing Silicate Adhesive— A thick adhesive for sealing fiberglass (FRP) gaskets into stove doors, sealing cracks in metal, and for filling gaps.

Gasket Cement Silicate Adhesive— Easy-flow adhesive for bonding fiberglass (FRP) gaskets to steel and cast iron stoves.

Ceramic Adhesives— Get excellent electrical insulation and bond strength. Bond ceramic, iron, lead, and steel. Use on diesel engines, exhaust systems, and gas turbines. Can also be used with silica gasketing and to coat furnace linings. Resist oil, gasoline, acids, and alkalies.

Ceramic Putty— Adheres to all porous surfaces and can be used as thermal insulation on brick, mortar, burner blocks, furnace holders, and thermocouples.

Zirconia Adhesive— This paste forms a hard surface and resists rapid temperature changes, molten metals, and most chemicals. Bonds ceramic, glass, metals, and graphite. It also serves as a corrosion-resistant coating for graphite, ceramic, and thermocouples.

Size♣	Withstands Temp. Up To	Begins to Harden	Reaches Full Strength	Color		Each
Epoxy						
1-pt. Jar	500° F	25 min.	16-24 hrs.	Black	7563A24	$97.92
1-gal. Jar	500° F	25 min.	16-24 hrs.	Black	7563A26	336.42
Repair Epoxy						
1 lb.	500° F	20-30 min.	12-24 hrs.	Gray/Black	75325A2	54.28
Kit	500° F	20-30 min.	12-24 hrs.	Gray/Black	75325A1	34.74
Adhesive for Insulating Materials						
1-gal. Bucket	1000° F	15 sec.	90 min.	Off-White	93630A220	34.42
Repair Putty for Cast Aluminum						
12-oz. Can	1400° F	2-4 hrs.	24 hrs.	Lt. Gray	7356A32	43.70
1½-pt. Can	1400° F	2-4 hrs.	24 hrs.	Lt. Gray	7356A34	79.81
Repair Putty for Cast Iron, Stainless Steel, and Steel						
8-oz. Bottle	2000° F	5-7 hrs.	24 hrs.	Dk. Gray	7356A33	43.70
1-pt. Bottle	2000° F	5-7 hrs.	24 hrs.	Dk. Gray	7356A35	79.81
Gasket-Sealing Silicate Adhesive						
2.3-oz. Tube	2000° F	1-12 hrs.	2-3 hrs.●	Black	7573A63	6.79
10.3-oz. Cartridge	2000° F	1-12 hrs.	2-3 hrs.●	Black	7573A65	7.49
Gasket Cement Silicate Adhesive						
2.3-oz. Tube	2000° F	1-12 hrs.	2-3 hrs.●	Black	7573A29	6.64
10.3-oz. Cartridge	2000° F	1-12 hrs.	2-3 hrs.●	Black	7573A31	7.49
Low-Viscosity Ceramic Adhesive— *Apply with a brush.*						
0.5-pt. Can	2300° F	30 min.	24-48 hrs.★	Gray	7482A11	42.52
Standard-Viscosity Ceramic Adhesive— *Apply with a brush.*						
0.5-pt. Can	2300° F	30 min.	24-48 hrs.★	Gray	7482A21	42.52
0.5-gal. Can	2300° F	30 min.	24-48 hrs.★	Gray	7482A22	111.92
High-Viscosity Ceramic Adhesive— *Apply with a trowel.*						
0.5-pt. Can	2300° F	30 min.	24-48 hrs.★	Gray	7482A31	42.52
0.5-gal. Can	2300° F	30 min.	24-48 hrs.★	Gray	7482A32	111.92
Ceramic Putty						
4-oz. Tube	2300° F	30 min.	24 hrs.▲	Off-White	7551A23	14.38
11-oz. Cartridge	2300° F	30 min.	24 hrs.▲	Off-White	7551A24	23.65
1-gal. Bucket	2300° F	30 min.	24 hrs.▲	Off-White	7551A26	111.92
Zirconia Adhesive						
1-pt. Jar	4000° F	30 min.	5-6 hrs.◤	Lt. Tan	7564A11	82.38
1-qt. Jar	4000° F	30 min.	5-6 hrs.◤	Lt. Tan	7564A12	136.15

♣ Cartridges fit a standard caulk gun; see page 3428 for guns. ● At 550° F.
★ 2 hours at 250° F. ▲ 1-2 hours at 250° F. ◤ 1-2 hours at 200° F.

Devcon Zip Repair Patch

Make waterproof repairs to pipes, tanks, drums, and containers. This 4″×9″ patch bonds aluminum, iron, stainless steel, steel, titanium, ABS, acrylic, PVC, ceramic, composites, fiberglass (FRP), and wood. Paint, sand, machine, tap, or drill at full strength. Begins to harden in 10 to 15 minutes; reaches full strength in 4 hours. Temperature range is –40° to +200° F. Includes activator spray and gloves. Color is brown. This product is compliant under all state VOC rules in effect on October 1, 2008.

Devcon No. 11500 ..... 7790A21 **Each** $49.94

Loctite® Quick-Metal® 660™

Restore correct fit on worn shafts, spun bearings, damaged keyways, and cylindrical parts. This paste resists oils, cutting fluids, and chlorinated solvents. Begins to harden in 20 minutes; reaches full strength in 24 hours. Fills spaces up to 0.020″. Temp. range is –65° to +300° F. Color is silver. This product is compliant under all state VOC rules in effect on October 1, 2008.

0.20-oz. (6 ml) Tube ..... 7570A27 **Each** $8.22
1.69-oz. (50 ml) Tube ..... 7570A26 **Each** $38.75

For information about adhesives, see page 3400.

Devcon Metal-Filled Epoxies

Get metal bonds that resist corrosion and most chemicals. Plus, these two-part epoxies can be machined and tapped at full strength (unless otherwise stated). These products are compliant under all state VOC rules in effect on October 1, 2008. *Putty* and *paste* are for vertical and overhead work and for filling gaps up to 1/4″. *Liquid* can be used as a filler or leveling compound and for making reproductions of fixtures, dies, and molds.

(A) Alumina— Repairs cracks and leaks on ferrous and nonferrous metal pipes, chutes, tanks, and bearing housings.

(B) Aluminum— Bond aluminum, copper, iron, stainless steel, steel, ceramic, concrete, fiberglass (FRP), and wood (unless noted).

(C) Bronze— Repairs and rebuilds brass, bronze alloys, copper, and ferrous metal shafts and castings.

(D) Metal Patch— This one-part waterproof epoxy is ideal for sealing and filling. Bonds aluminum, brass, copper, iron, stainless steel, and steel. Patch is not metal-filled and cannot be machined or tapped.

(E) Plastic Steel— Patch, repair, and rebuild jigs, fixtures, castings, and machinery. Bond aluminum, brass, cast iron, copper, stainless steel, ceramic, concrete, and wood (unless noted).

(F) Stainless Steel— Repairs stainless steel pipes, tanks, valves, chutes, ductwork, and conveyors. It resists chemicals and water and is NSF 61 certified for use on drinking water systems and components.

(G) Titanium— Repair pumps and hydraulic rams and rebuild scored shafts, rings, and pump impellers.

	Devcon No.	Form	Size ♦	Begins to Harden	Reaches Full Strength	Temperature Range	Color	Approx. Coverage @ 1/4″ Thick	Mix Ratio		Each
A	10780	Putty	3/4-lb. Can	4 min.	16 hrs.	–40° to +250° F	Gray	69 sq. in.	1:1	74575A76	$71.03
B	10610	Putty	1-lb. Can	1 hr.	16 hrs.	–40° to +250° F	Aluminum	70 sq. in.	4:1	74575A72	61.64
B	10620	Putty	3-lb. Can	1 hr.	16 hrs.	–40° to +250° F	Aluminum	210 sq. in.	4:1	74575A73	166.80
B	10710	Liquid	1-lb. Can	75 min.	16 hrs.	–40° to +250° F	Aluminum	70 sq. in.	5:1	74575A74●	61.64
B	10720	Liquid	3-lb. Can	75 min.	16 hrs.	–40° to +250° F	Aluminum	210 sq. in.	5:1	74575A75●	166.80
B	19770	Paste	6 1/2-oz. Tube	1 hr.	16 hrs.	–40° to +250° F	Aluminum	30 sq. in.	1:1	74575A77	29.40
C	10260	Putty	1-lb. Can	35 min.	16 hrs.	–40° to +250° F	Bronze	50 sq. in.	3:1	74575A64	80.39
D	S-50	Paste	3-oz. Tube	20 min.	6 hrs.	+40° to +400° F	Gray	5.5 sq. in.	—	74575A98	3.35
E	10110	Putty	1-lb. Can	45 min.	16 hrs.	–40° to +250° F	Gray	48 sq. in.	2.5:1	74575A81	43.04
E	10120	Putty	4-lb. Can	45 min.	16 hrs.	–40° to +250° F	Gray	192 sq. in.	2.5:1	74575A82	161.61
E	10130	Putty	25-lb. Bucket	45 min.	16 hrs.	–40° to +250° F	Gray	1,200 sq. in.	2.5:1	74575A61	598.22
E	10210	Liquid	1-lb. Can	45 min.	16 hrs.	–40° to +250° F	Dark Gray	52 sq. in.	3:1	74575A83●	43.04
E	10220	Liquid	4-lb. Can	45 min.	16 hrs.	–40° to +250° F	Dark Gray	208 sq. in.	3:1	74575A84●	153.04
E	10230	Liquid	25-lb. Bucket	90 min.	16 hrs.	–40° to +250° F	Dark Gray	1,300 sq. in.	3:1	74575A94●	508.48
E	10240	Putty	1-lb. Can	5 min.	16 hrs.	–40° to +200° F	Dark Gray	49 sq. in.	1:1	74575A63	53.06
E	S-5	Liquid	2-oz. Tube	2 hrs.	16 hrs.	–50° to +250° F	Black	3.5 sq. in.	1:1	74575A85★	3.52
E	S-6	Liquid	0.85-oz. Syringe	2 hrs.	16 hrs.	–50° to +250° F	Black	3.5 sq. in.	1:1	74575A86★	4.12
F	10270	Putty	1-lb. Can	58 min.	16 hrs.	–40° to +250° F	Dark Gray	50 sq. in.	3.75:1	74575A69	72.46
G	10760	Putty	1-lb. Can	21 min.	16 hrs.	–40° to +350° F	Gray	47 sq. in.	3.1:1	74575A7	105.48
G	10770	Putty	2-lb. Can	21 min.	16 hrs.	–40° to +350° F	Gray	94 sq. in.	3.1:1	74575A71	195.11

♦ Combined amount of resin and hardener. ● Not for concrete. ★ Not for ceramic or wood.

Loctite® Fixmaster® Metal- and Ceramic-Filled Epoxies

At full strength, these two-part epoxies (unless noted) can be machined, drilled, and tapped. These products are compliant under all state VOC rules in effect on October 1, 2008.

(H) Aluminum— Bond aluminum parts and form a nonrusting finish.

(J) Steel— Bond cast iron, stainless steel, steel, concrete, and clean aluminum, bronze, and copper. *97483* and *97484* are pourable for making castings and filling voids. *98853* is for stopping leaks in pipes and tanks and repairing defects in castings. Hardens on wet and underwater surfaces. NSF 61 certified for use in drinking water systems and components. *99913* and *99914* rebuild worn parts and dies. Have extremely strong adhesion.

(K) Stainless Steel— Bonds cast iron, stainless steel, steel, concrete, and clean aluminum, bronze, and copper.

(L) Ceramic— Excellent wear and abrasion resistance on ceramic parts. *97473* is also silicon/iron filled for abrasion resistance. Also resists corrosion and chemicals.

	Loctite No.	Form	Can Size ♦	Begins to Harden	Reaches Full Strength	Temperature Range	Color	Approx. Coverage @ 1/4″ Thick	Mix Ratio		Each
H	97453	Liquid	1-lb.	20 min.	6 hrs.	–20° to +200° F	Gray	68 sq. in.	5:1	7489A31	$61.54
H	97463	Paste	1-lb.	20 min.	6 hrs.	–20° to +200° F	Gray	72 sq. in.	4:1	7489A32	56.12
J	39917	Paste	1-lb.	3 min.	10 min.	–20° to +199° F	Gray	58 sq. in.	1:1	7489A25	45.20
J	97483	Liquid	1-lb.	25 min.	6 hrs.	–20° to +225° F	Gray	52 sq. in.	4:1	7489A21	43.80
J	97484	Liquid	4-lb.	25 min.	6 hrs.	–20° to +225° F	Gray	208 sq. in.	4:1	7489A22	128.29
J	98853	Putty	4-oz.♣	3 min.	10 min.	–22° to +250° F	Gray	16 sq. in.	—	7489A26	12.90
J	99913	Paste	1-lb.	30 min.	6 hrs.	–20° to +225° F	Gray	43 sq. in.	2.5:1	7489A23	39.68
J	99914	Paste	4-lb.	30 min.	6 hrs.	–20° to +225° F	Gray	172 sq. in.	2.5:1	7489A24	124.54
K	97443	Paste	1-lb.	20 min.	6 hrs.	–20° to +225° F	Gray	36 sq. in.	4:1	7489A29	60.71
L	97473	Paste	1-lb.	20 min.	6 hrs.	–20° to +250° F	Gray	36 sq. in.	4:1	7489A28	81.39
L	98742	Paste	1-lb.	30 min.	1 hr.	–20° to +225° F	Gray	53 sq. in.	2:1	7489A33	47.92

♦ Combined amount of resin and hardener. ♣ One-part stick epoxy.

Metal-Filled Epoxies

Make strong metal bonds that resist corrosion and most chemicals. Plus, these two-part epoxies can be machined and tapped at full strength. Filled with aluminum, these epoxies bond aluminum, copper, iron, stainless steel, steel, and fiberglass (FRP) (unless noted). Thick for vertical and overhead use; fill gaps up to 1/4″. These products are compliant under all state VOC rules in effect on October 1, 2008.

Form	Size ♦	Begins to Harden	Reaches Full Strength	Temp. Range	Color	Mix Ratio		Each
Paste	11-oz. Tube	23 min.	7 days	–40° to +140° F	Gray	1:1	74575A95	$20.48
Paste	11-oz. Tube	22 min.	7 days	–58° to +180° F	Metallic	1:1	7500A11▲	13.74
Paste	6.5-oz. Tube	4 min.	1 hr.	–40° to +205° F	Gray	1:1	7500A4	16.67

♦ Combined amount of resin and hardener. ▲ Not for copper or stainless steel.

Aluminum and Stainless Steel Repair Kit

Repair castings, fill dents, and patch holes in aluminum and stainless steel with this two-part epoxy. Includes one 0.88-oz. (25 g) tube of resin, one 0.88-oz. (25 g) tube of hardener, sandpaper, two mixing sticks, an applicator brush, and a 2″×4″ reinforcement screen. Begins to harden in 6-8 minutes; reaches full strength in 24 hours. Can be sanded and painted at full strength. Mix ratio is 1:1. Temp. range is –60° to +175° F. Color is silver. This product is compliant under all state VOC rules in effect on October 1, 2008.

65975A11 ..... Each $14.48

Bondo Body and Repair Filler

Easily and quickly repair aluminum, steel, concrete, fiberglass (FRP), and wood. This two-part filler is easy to spread, hardens quickly, doesn't shrink, and can be sanded and shaped. Begins to harden in 5 minutes; reaches full strength in 1 hour. Color is gray. This product is compliant under all state VOC rules in effect on October 1, 2008.

Size ♦	Approx. Coverage	Temp. Range		Each
1 Pint	64 sq. in. @ 1/8″ Thick	–40° to +180° F	92930A410	$12.07
1 Quart	128 sq. in. @ 1/8″ Thick	–40° to +180° F	92930A420	17.80
1/2 Gallon	256 sq. in. @ 1/8″ Thick	–40° to +180° F	92930A430	26.09
1 Gallon	512 sq. in. @ 1/8″ Thick	–40° to +180° F	92930A440	30.80

♦ Combined amount of resin and hardener.

For information about adhesives, see page 3400.

Leak and Crack Sealing Sticks

These products are compliant under all state VOC rules in effect on October 1, 2008.

Heat-Activated Stick— Permanently seal leaks and cracks in aluminum, copper, steel, glass, and ceramics. Just heat the area to be repaired with a heat gun or torch (at 250° F) to melt stick. It melts, seals, and reaches full strength in 90 seconds. At full strength the seal withstands 600 psi and temperatures up to 350° F. Color is green. NSF 61 certified.

3/8-oz. Stick ..... **7703A1** **Each** $16.97

Stop-a-Leak Stick— Temporarily stop leaks immediately in oil and gas tanks, transmissions, and oil-filled transformers until a permanent repair can be made. Sealer is applied externally, so there is no need to drain contents. Withstands up to 15 psi and is weather resistant. Temperature range is –50° to +150° F. Color is gray.

1 1/4-oz. Stick ..... **7703A2** **Each** $12.60

Epoxy Repair Putties

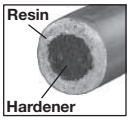

Fill holes on damp and underwater surfaces with these easy-mix, two-part epoxy sticks. Just cut the desired amount and knead to a uniform color; all have both parts in one stick except standard. Putties can be drilled, tapped, and sanded at full strength. At 1/8″ thick, 4 oz. covers approximately 32 sq. in. These products are compliant under all state VOC rules in effect on October 1, 2008.

Standard— Includes a 1/2-lb. stick each of resin and hardener; cut and knead together. Mix ratio is 1:1. Bonds aluminum, copper, steel, ceramic, concrete, glass, plaster, and wood. Maximum temperature is 250° F.

Loctite® 82093— Can be applied under water. Bonds aluminum, brass, copper, steel, ABS, acrylic, polycarbonate, rigid vinyl, fiberglass (FRP), ceramic, concrete, and wood. Maximum temperature is 300° F.

High Temperature— Withstands temperatures up to 450° F and repairs iron pipe, tanks, castings, and ductwork. Bonds aluminum, iron, ABS, acrylic, rigid PVC, ceramic, fiberglass (FRP), stone, and wood.

Steel— Use on aluminum, copper, magnesium, nickel, stainless steel, steel, and titanium. NSF 61 certified for use in drinking water systems and components. Maximum temperature is 250° F.

Plastic— Use to seal leaks and repair any rigid or semiflexible plastic such as ABS, CPVC, and PVC. Does not bond polyethylene and polypropylene. NSF 61 certified for use in drinking water systems and components. Maximum temperature is 250° F.

Copper— Repairs cracks in pipes, tanks, vessels, elbows, joints, sleeves, sink traps, and water heaters made of bronze, brass, copper, and other nonferrous metals. NSF 61 certified for use in drinking water systems and components. Maximum temperature is 250° F.

	Stick Size	Begins to Harden	Reaches Full Strength	Color		Each
Standard	1 lb.	45-60 min.	24 hrs.	Off-White	**7531A11**	$16.11
Loctite 82093	4 oz.	15 min.	1 hr.	White	**7531A13**	11.89
High Temp.	4 oz.	90-120 min.	72 hrs.	Gold	**7803A21**	8.75
Steel	4 oz.	3 min.	24 hrs.	Dk. Gray	**6615A11**	8.19
Plastic	4 oz.	20 min.	24 hrs.	Off-White	**6617A21**	8.19
Copper	4 oz.	3 min.	24 hrs.	Copper	**66145A3**	8.19

Underwater Repair Epoxy

Your surface can be dry, wet, or even under water—this two-part epoxy paste will still bond brass, bronze, copper, stainless steel, steel, ABS, acrylic, polycarbonate, cement, concrete, fiberglass (FRP), and wood. Ideal for repairing pipe fittings, valves, pumps, and tanks. Resists alkalies, solvents, gasoline, and oil. At full strength it can be machined, sanded, drilled, tapped, and painted. Temp. range is 50° to 210° F. The *24-oz. size* covers approximately 1.65 sq. ft. at 1/8″ thick.

This product is compliant under all state VOC rules in effect on October 1, 2008.

Size	Begins to Harden	Reaches Full Strength	Mix Ratio	Color		Each
12 oz.	30 min.	24 hrs.	1:1	White	**7521A14**	$17.92
24 oz.	30 min.	24 hrs.	1:1	White	**7521A12**	26.88
48 oz.	30 min.	24 hrs.	1:1	White	**7521A13**	44.81

Epoxy Fiberglass Repair Patches

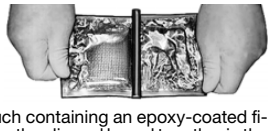

Here's everything you need to repair fiberglass (FRP) pipes, hose, conduit, tanks, industrial containers, and vehicle bodies. Patches also bond aluminum, steel, ABS, acrylic, polystyrene, rigid PVC, concrete, rubber, and wood. Come in a dual-pouch containing an epoxy-coated fiberglass patch and resin—simply remove the clip and knead together in the pouch. At full strength, patches can be sanded and painted. Temp. range is –85° to +325° F. Include a pair of disposable gloves. These products are compliant under all state VOC rules in effect on October 1, 2008.

Patch Size	Begins to Harden	Reaches Full Strength	Color		Each
2″×12″	1-3 min.	24 hrs.	Red	**74645A75**	$7.50
2″×20″	1-3 min.	24 hrs.	Amber	**74645A76**	9.18
4″× 6″	1-3 min.	24 hrs.	Blue	**74645A77**	7.50
4″×12″	1-3 min.	24 hrs.	Green	**74645A78**	9.18

Leak Repair Kit

Stop leaks in tanks and equipment without draining the contents. Rub the included 1 1/4-oz. paste stick into the leak until it stops. Then use the included 1-oz. jar of two-part epoxy to permanently seal it. Ideal for metal tanks and drums and concrete floors. Seal withstands up to 15 psi and temperatures up to 250° F. Resists acids, alkalies, degreasers, and solvents. Epoxy begins to harden in 30 minutes; reaches full strength in 24 hours. Color is black. This product is compliant under all state VOC rules in effect on October 1, 2008.

7582A44 ..... **Each** $66.16

West Systems Fiberglass Repair Epoxy

Durable and water resistant, this two-part epoxy is the ideal choice for repairing fiberglass (FRP), even in marine environments. Also bonds aluminum, lead, stainless steel, steel, ABS, PVC, and wood. Begins to harden in 9-12 minutes; reaches full strength in 1-4 days. Temperature range is 40° to 90° F. Mix ratio is 5:1. Color is amber. This product is compliant under all state VOC rules in effect on October 1, 2008.

Kit contains six 0.63-oz. (18 g) packets of 105-A resin, six 0.17-oz. (4.7 g) packets of 205-A hardener, one 0.2-oz. (6 g) cup of 406-2 filler, one 0.4-oz. (12 g) cup of 407-5 filler, two brushes, four mixing sticks, four mixing cups, four cleaning pads, two pipe cleaners, a 4″×12″ fiberglass cloth, a syringe dispenser, and gloves.

	Size		Each
101-6 Repair Kit	———	**7480A31**	$37.71
Replacement and Additional West Systems Items			**Per Set**
101-T Resin and Hardener	♠	**7480A32**	$24.18
			Each
406-2 High-Density Filler	1.7-oz. Cup	**7480A33**	$11.83
407-5 Low-Density Filler	4-oz. Cup	**7480A34**	17.39
105-A Resin	1-qt. Can	**7480A41**	42.48
205-A Fast Hardener	0.44-pt. Can	**7480A42**	21.97
206-A Slow Hardener	0.44-pt. Can	**7480A43**	21.97
406-7 High-Density Filler	5.5-oz. Cup	**7480A44**	28.36

300 Mini Pump Dispensing Set (set of 3) .... **7480A45** **Per Set** $17.81

732-10 Fiberglass Cloth (4″ Wd.×10′ Lg.) **7480A46** **Per Roll** $16.22

♠ Six packets of 105-A resin and six packets of 205-A hardener.

Fiberglass and Metal Repair Kit

Make strong, water-resistant repairs to fiberglass (FRP), aluminum, brass, bronze, stainless steel, steel, and wood with this two-part epoxy. Repairs 3″ to 4″ long cracks and fills gaps up to 1 1/4″. Kit contains 1 oz. of resin, 1 oz. of hardener, 1 sq. ft. of woven fiberglass cloth, a spreader, a mixing stick, and instructions. Begins to harden in 20 minutes; reaches full strength in 12 hours. Temperature range is –60° to +180° F. Mix ratio is 1:1. Color is clear with a slight yellow tint. This product is compliant under all state VOC rules in effect on October 1, 2008.

7597A34 ..... **Each** $12.40

Light-Activated Fiberglass Repair Putties and Patch

Permanently repair fiberglass (FRP) with help from the sun or a UV lamp. These products are compliant under all state VOC rules in effect on October 1, 2008.

Putties— Use on fiberglass (FRP), metal, wood, and all plastics except polystyrene. Drill, tap, sand, and paint at full strength. Apply at –20° to +120° F. 3.5 oz. covers approximately 49 sq. in. at 1/8″ thick.

Polyester resin filler fills gaps up to 3/4″. Begins to harden in 30 seconds; reaches full strength in 3 min. Operating temperature is –20° to +200° F.

Vinyl ester epoxy resin filler has higher strength, better adhesion, and more corrosion resistance than the polyester resin filler. Fills gaps up to 1/2″. Begins to harden in 30 seconds; reaches full strength in 5 minutes. Operating temperature is –20° to +250° F.

Patch— Made of fiberglass-reinforced polyester and is waterproof. Repairs fiberglass (FRP), metal, plastic, concrete, rubber, and wood. Cut to desired size, peel off backing, and press onto surface. Drill, sand, and paint at full strength. Reaches full strength in 5-15 minutes in the sun; 15-30 minutes under a UV lamp. Operating temp. is –40° to +350° F.

	Size	Color		Each
Polyester Putty	3.5-oz. Tube	Translucent	**73475A12**	$10.42
Vinyl Ester Epoxy Putty	3.5-oz. Tube	Lt. Yellow	**73475A14**	12.50
Patch	6″×3″	Yellow	**7737A21**	8.90

Windshield/Glass Repair Kit

Prevent "bull's-eye" breaks, minor chips, and scratches from getting bigger. Not for long cracks. Includes a 0.17-oz. syringe of acrylic adhesive and accessories to complete the repair. Reaches full strength in 30 minutes when exposed to natural light. Temperature range is –60° to +150° F. This product is compliant under all state VOC rules in effect on October 1, 2008.

7557A33 ..... **Each** $17.58

Super Glues

For information about adhesives, see page 3400.

About Super Glue Viscosity

Viscosity measures fluid thickness in *centipoise* (cp). Some examples of approximate viscosity are: water (1-5 cp); antifreeze (15 cp); corn oil (50-100 cp); maple syrup (150-200 cp); honey (2,000-3,000 cp); molasses (5,000-10,000 cp). A viscosity of "gel" has a consistency similar to ketchup (50,000-75,000 cp).

Loctite® Black Max® and Prism® Super Glues

Tube *Bottle*

Instant adhesion on difficult-to-bond surfaces with impact and vibration resistance. Excellent on a variety of porous and nonporous surfaces, these glues bond aluminum, brass, copper, stainless steel, steel, ABS, polycarbonate, polystyrene, PVC, Garolite (phenolic laminates), and rubber. Reach full strength in 24 hours. These products are compliant under all state VOC rules in effect on October 1, 2008.

Black Max®— Excellent resistance to peeling, impact, and temperature changes.

Surface Insensitive— Surfaces require less surface preparation with these adhesives. They provide quick bonding for rough, porous surfaces; also bond wood, leather, paper, foam, and freshly plated parts. *No. 406*™ meets Commercial Standard A-A-3097.

Impact Resistant— Provide strong bonds with higher impact and peeling resistance than other instant adhesives. *No. 480*™ is NSF 61 certified for use with drinking water.

Flexible— Provide a flexible bond line. Good on porous and absorbent materials like paper, leather, and fabric.

Low-Odor Nonwhitening— Form a neat clean bond. Perfect for assemblies where appearance is important. Do not have the strong odor commonly associated with super glues.

Thermal Resistant— Strong bonds even when exposed to elevated temperatures. Good impact and heat resistance.

Loctite No.	Viscosity, cp	Begins to Harden	Fills Spaces	Temperature Range	Color	0.10-oz. (3 g) Tube	Each	0.7-oz. (20 g) Bottle	Each	1-lb. Bottle	Each
Black Max											
380	300	90 sec.	0.006″	–65° to +225° F	Black	74555A44	$5.29	74555A65●	$27.30	74555A46	$247.87
Surface Insensitive											
401	110	15 sec.	0.005″	–65° to +180° F	Clear	74765A63	5.40	74765A33	21.83	74765A85	222.26
406	20	15 sec.	0.004″	–65° to +180° F	Clear	74765A36	5.56	74765A32	21.83	74765A37	221.18
454	Gel	15 sec.	0.010″	–65° to +180° F	Clear	74765A65	5.40	74765A35▲	23.40	—	—
4471	600	15 sec.	0.007″	–65° to +180° F	Clear	—	—	74765A34	21.98	74765A75	222.26
Impact Resistant											
410	3,500	90 sec.	0.008″	–65° to +225° F	Black	74765A72	5.56	74765A42	24.19	74765A39	247.87
411	5,000	30 sec.	0.008″	–65° to +180° F	Clear	74765A73	5.40	74765A43	24.02	74765A86	247.87
426	Gel	20 sec.	0.010″	–65° to +210° F	Black	—	—	74765A84▲	25.94	—	—
480	200	90 sec.	0.006″	–65° to +180° F	Black	—	—	74765A49	24.19	74765A74	247.87
Flexible											
4851	400	20 sec.	0.006″	–65° to +125° F	Clear	—	—	74795A73	28.44	—	—
4861	4,000	20 sec.	0.008″	–65° to +125° F	Clear	—	—	74795A74	28.44	—	—
Low-Odor Nonwhitening											
403	1,000	50 sec.	0.008″	–65° to +160° F	Clear	—	—	74765A53	24.75	74765A55	275.94
408	5	50 sec.	0.002″	–65° to +160° F	Clear	—	—	74765A51	24.75	74765A38	275.94
460	45	50 sec.	0.004″	–65° to +160° F	Clear	—	—	74765A52	24.75	74765A48	275.94
Thermal Resistant											
4203	375	30 sec.	0.005″	–65° to +250° F	Clear	—	—	74795A57▲	27.48	—	—
4204	4,000	30 sec.	0.008″	–65° to +250° F	Clear	—	—	74795A59▲	27.48	74795A61	280.26
4205	Gel	30 sec.	0.010″	–65° to +250° F	Clear	—	—	74795A62▲	28.29	—	—
4210	160	90 sec.	0.006″	–65° to +250° F	Black	—	—	74795A24	27.48	—	—
4211	2,500	210 sec.	0.008″	–65° to +250° F	Black	—	—	74795A25	28.29	74795A42	280.26

● 1-oz. (28.3 g) bottle. ▲ 0.7-oz. (20 g) tube.

Additional Sizes

Syringes are compatible with the dispensing plunger below and with other dispensing equipment (see pages 3429 and 3430).

Loctite No.	Size		Each
426	0.35-oz. (10 g) Syringe	74765A92	$20.02
426	10.5-oz. (300 g) Cartridge	74765A45	156.00
454	0.35-oz. (10 g) Syringe	74765A87	19.46
454	7-oz. (200 g) Tube	74765A88	$126.63
Dispensing Plunger for 10-g Loctite Syringes		66045A13	26.42

Loctite® Quick-Service Kit

For routine maintenance work or quick repairs, this kit has what you need. Includes 0.10-oz. (3 g) tube of No. 454™ Prism® surface-insensitive instant adhesive; 0.33-oz. (10 ml) bottle of No. 242® general purpose threadlocker; 0.33-oz. (10 ml) bottle of No. 262™ high-strength threadlocker; 0.20-oz. (6 ml) tube of No. 660™ Quick-Metal® retaining compound; 2.4-oz. (70 ml) tube of No. 587™ blue silicone gasketing compound; 1.69-oz. (50 ml) tube of No. 565™ PST® thread sealant; 1.69-oz. (50 ml) tube of No. 518™ Gasket Eliminator®; 4.5-oz. aerosol of 7649™ Primer N™; and plastic case. This product is compliant under all state VOC rules in effect on October 1, 2008.

Loctite No. 00101 ..... 7458A65 **Each** $94.93

3M Scotch-Weld Super Glues

Tube *Bottle*

Use for quick, strong bonds on aluminum, brass, cold-rolled steel, copper, stainless steel, steel, ABS, acrylic, flexible vinyls, Garolite (phenolic laminates), polycarbonate, polyester, fiberglass (FRP), and rubber. All reach full strength in 24 hours. Temperature range is –65° to +180° F (unless noted). Color is clear. These products are compliant under all state VOC rules in effect on October 1, 2008.

CA4 Rubber— Fast hardening with excellent adhesion to cured rubber. Viscosity is 150 cp.

CA5 Slow-Hardening Rubber— The slower working version of CA4. Better for filling spaces and bonding rough or uneven surfaces. Viscosity is 2,000 cp.

CA7 Shock Resistant— Fast hardening with good shock and impact resistance. Viscosity is 15-40 cp.

CA8 Shock Resistant— Fast hardening. Viscosity is 70-130 cp.

CA9 Slow-Hardening Shock Resistant— Slower working version of CA8. Suitable for wire tacking and coil terminating when used with 021200-87937-1 Surface Activator (sold separately). Viscosity is 1,000-1,700 cp.

CA40 Difficult-to-Bond Materials— Viscosity is 20 cp.

CA40H High-Viscosity Difficult-to-Bond Materials— Thicker version of CA40. Good resistance to soap solutions and isopropyl alcohol. Viscosity is 400-600 cp.

CA50 Gel— Very high-viscosity (45,000-85,000 cp) gel; great for vertical applications and for filling spaces of up to 0.02″ between surfaces.

CA100 High-Viscosity High Strength— Strong adhesion with high impact strength and resistance to peeling, heat, and rapid temperature changes. Viscosity is 2,500-4,500 cp.

021200-87937-1 Surface Activator— Primes the surface and increases hardening speed.

3M No.	Size	Begins to Harden		Each
CA4	0.07-oz. Tube	5-40 sec.	75445A71	$5.58
CA4	1-oz. Bottle	5-40 sec.	75445A72	30.70
CA4	1-lb. Bottle	5-40 sec.	75445A81	302.70
CA5	1-oz. Bottle	12-60 sec.	75445A73♣	30.70
CA7	1-oz. Bottle	1-30 sec.	75445A74	30.70
CA8	0.07-oz. Tube	5-40 sec.	75445A76♣	5.58
CA8	1-oz. Bottle	5-40 sec.	75445A69♣	30.70
CA9	1-oz. Bottle	20-70 sec.	75445A75♣	30.70
CA40	1-oz. Bottle	3-20 sec.	75445A67	30.70
CA40H	1-oz. Bottle	5-40 sec.	75445A68	30.70
CA40H	1-lb. Bottle	5-40 sec.	75445A82	302.70
CA50 Gel	0.7-oz. Tube	60-120 sec.	75445A66♣	36.72
CA100	1-oz. Bottle	20-70 sec.	75445A65♣★	35.86
021200-87937-1 Surface Activator (2-oz. Bottle)			75445A83	15.78

♣ Meets Commercial Standard A-A-3097. ★ Temp. is –65° to +250° F.

For information about adhesives, see page 3400. For information about viscosity, see page 3410.

Loctite® Super Bonder® Super Glues

Don't just bond...super bond. In less than two minutes you can have strong bonds on nonporous, closely mated parts. Bond aluminum, stainless steel, steel, zinc, ABS, polycarbonate, PVC, Garolite (phenolic laminates), and rubber. Reach full strength in 24 hours. Temperature range is –65° to +180° F (unless otherwise stated). Color is clear. These products are compliant under all state VOC rules in effect on October 1, 2008. All except 409™, 498™, and 499™ meet Commercial Standard A-A-3097.

Quick Set™ 404™—All-purpose adhesive; ideal for bonding rubber and O-rings.

Super Bonder® 409™—Excellent for filling space between surfaces without losing bonding strength. Plus, it won't run, even on vertical and overhead surfaces. Also bonds porous surfaces such as ceramic, cork, and leather.

Super Bonder® 414™—Creates strong bonds on plastic and vinyl and resists weather.

Super Bonder® 415™—General purpose adhesive; good for bonding metal.

Super Bonder® 416™—High-viscosity for semiporous and irregular surfaces.

Super Bonder® 420™—Low viscosity, so it easily penetrates assembled parts. Also bonds elastomers.

Super Bonder® 422™—High viscosity; good for bonding plastics.

Super Bonder® 430™—Highly effective on metallic surfaces.

Super Bonder® 493™—Very low viscosity; good for bonding metal.

Super Bonder® 495™—General purpose for a wide variety of applications. Replaces two-part epoxies, hot-melt double-face adhesives, and adhesives that require heat to strengthen.

Super Bonder® 496™—General purpose adhesive; ideal for bonding rubber.

Super Bonder® 498™—Resists humidity and temperature changes.

Super Bonder® 499™—A much thicker version of 498™ for use on vertical surfaces. Temp. range is –65° to +200° F.

Tube *Bottle* *Syringe*

Loctite No.	Viscosity, cp	Begins to Harden	Fills Spaces	Tube Size		Tube Each	Bottle Size		Bottle Each	Bottle Size		Bottle Each
404	80	30 sec.	0.005″				0.33 oz.	7569A22	$23.64	1 lb.	7569A24	$279.85
409	Gel	75 sec.	0.010″	0.10 oz. (3 g)	7608A56	$4.43						
409	Gel	75 sec.	0.010″	0.7 oz. (20 g)	7608A55	16.09						
414	110	20 sec.	0.006″	0.10 oz. (3 g)	7625A16	4.43	1 oz.	7625A15	21.25	1 lb.	7625A17	210.23
415	1,500	30 sec.	0.008″				1 oz.	74985A65	22.23			
416	1,500	30 sec.	0.008″				1 oz.	7567A21	19.58	1 lb.	7567A22	187.00
420	2	20 sec.	0.002″				1 oz.	66745A21	21.52	1 lb.	66745A22	187.00
422	2,500	30 sec.	0.008″				1 oz.	74985A67	21.85			
430	80	30 sec.	0.005″	0.10 oz. (3 g)	66635A31	4.21	1 oz.	66635A32	22.00	1 lb.	66635A33	190.65
493	2	30 sec.	0.002″				1 oz.	74985A69	23.81			
495	45	20 sec.	0.004″	0.10 oz. (3 g)	7520A13	3.85	1 oz.	7520A12	21.98	1 lb.	7520A14	187.00
496	125	30 sec.	0.006″				1 oz.	74985A7	22.23			
498	500	50 sec.	0.007″				1 oz.	74985A71	23.92			
499	Gel	75 sec.	0.010″	0.7-oz. (20 g)	74985A72	20.38						

Additional Sizes

Syringes are compatible with the dispensing plunger below and with other manual, semiautomatic, and automatic dispensing equipment (see pages 3429 and 3430).

Loctite No.	Size		Each
404	4-oz. Bottle	7569A23	$137.35
409	7-oz. (200 g) Tube	7608A58	113.98
409	10.5-oz. (300 g) Cartridge	7608A59	162.93
416	4.4-lb. (2 kg) Bottle	7567A23	$765.38
499	0.35-oz. (10 g) Syringe	74985A57	16.74
Dispensing Plunger for 10-g Loctite Syringes		66045A13	26.42

Permabond Super Glues

Bond aluminum, brass, stainless steel, steel, ABS, acrylic, acetal, nylon, polystyrene, Garolite (phenolic laminates), and rubber. Reach full strength in 24 hours. Minimum temperature is –65° F. Color is clear. These products are compliant under all state VOC rules in effect on October 1, 2008.

Standard Adhesives

101 and *105 General Purpose* meet MIL-A-46050C, Type II, Class I.

102 General Purpose meets MIL-A-46050C, Type II, Class II.

200, 240, and *268 Space Filling* have a high viscosity for flow control and filling spaces. 268 meets MIL-A-46050C, Type II, Class III.

910 General Purpose meets MIL-A-46050C, Type I, Class II.

910 FS Fast is a low-viscosity version that begins to harden faster. Meets MIL-A-46050C, Type I, Class I.

High-Temperature Adhesives

All except 820 must be heated to 302° F for two hours to withstand max. temp.; max. temp. is 180° F when cured at room temperature.

820 General Purpose makes strong bonds at high temperatures.

919 General Purpose has a low viscosity to penetrate assembled parts. Meets MIL-A-46050C, Type V, Class I.

920 General Purpose meets MIL-A-46050C, Type V, Class II.

922 Space Filling has a high viscosity for flow control and filling spaces. Perfect for encasing an item in adhesive (potting) and bonding heat sinks. Meets MIL-A-46050C, Type V, Class III.

Perma-bond No.	Viscosity, cp	Begins to Harden	Fills Spaces	Max. Temp.		Each
Standard Adhesives—*1-oz. Bottle (unless noted)*						
101	2	5 sec.	0.002″	180° F	7580A81	$18.83
102	80	10 sec.	0.006″	180° F	7580A82	17.77
105	40	10 sec.	0.004″	180° F	7580A83	18.38
200	1,500	15 sec.	0.015″	180° F	7580A84	17.58
240	2,000	15 sec.	0.017″	180° F	7580A85	18.79
268	1,800	10 sec.	0.017″	180° F	7580A53	24.83
910	80	10 sec.	0.006″	195° F	7580A52	17.77
910	80	10 sec.	0.006″	195° F	7580A74 ♦	195.87
910 FS	3	5 sec.	0.002″	195° F	7580A65	17.75
High-Temperature Adhesives—*1-oz. Bottle*						
820	100	10 sec.	0.006″	390° F	7585A41	33.45
919	4	10 sec.	0.002″	482° F	7585A43	51.52
920	80	10 sec.	0.006″	482° F	7585A42	49.14
922	1,600	10 sec.	0.017″	482° F	7585A44	49.76
QFS16 Adhesive Accelerator Spray (4-oz. Bottle)					7580A66	17.87

♦ Comes in a 1-lb. bottle.

Skin Guard Super Glues

Stop gluing your fingers together—these adhesives bond metal, plastic, ceramic, glass, and rubber but not you. They fill gaps up to 0.031″. Begin to harden in 10 seconds; reach full strength in 2 minutes. Temp. range is –20° to +150° F. Come in 0.07-oz. (2 g) tube. Color is clear. These products are compliant under all state VOC rules in effect on October 1, 2008.

Liquid provides one-drop application. ***Gel*** is for porous surfaces.

Liquid (40 cp viscosity)	66185A11	Each	$2.47
Gel (7,000 cp viscosity)	66185A12	Each	$2.89

Medical Device Super Glues

For assembling medical devices, these glues meet USP Class 6 criteria for use on medical devices. Comparable to Loctite® series 4000 instant adhesive. Bond brass, chrome, copper, stainless steel, steel, ABS, acrylic, nylon, polycarbonate, polyester, fiberglass (FRP), rubber, and wood. Begin to harden in 15 seconds; reach full strength in 8 hours. Temperature range is –65° to +200° F. Come in 1-oz. squeeze bottles. These products are compliant under all state VOC rules in effect on October 1, 2008.

Note: Should not be used for implantation in the human body.

Viscosity, cp	Fills Spaces	Color		Each
30	0.003″	Clear	7733A21	$24.51
45	0.004″	Clear	7733A22	24.51
100	0.006″	Clear	7733A23	24.51
500	0.007″	Clear	7733A24	24.51
1,500	0.008″	Clear	7733A25	24.51

Loctite® Depend® 330™ Adhesive Kits

For bonds you can depend on, stick with this two-step, no-mix acrylic adhesive. Resists shock, impact, and water. Bonds aluminum, stainless steel, ceramic, glass, and wood. Requires *Activator 7387* to create bond. Begins to harden in 5 minutes; reaches full strength in 24 hours. Temperature range is –65° to +250° F. Viscosity is 67,500 cp. Color is amber. These products are compliant under all state VOC rules in effect on October 1, 2008.

		Each
Small Kit (0.85-oz. adhesive; 0.88-oz. aerosol activator)	7560A54	$33.73
Large Kit (8.45-oz. adhesive; 4.5-oz. aerosol activator)	7560A55	88.33
Repl. 8.45-oz. Tube of Adhesive 330	7560A58	72.83
Repl. 1.75-oz. Bottle of Activator 7387	7560A56	14.34
Repl. 4.5-oz. Aerosol Activator 7387	7560A57	38.35

For information about adhesives, see page 3400. For information about viscosity, see page 3410.

Loctite® Medical Device Super Glues

Designed for rapid bonding of difficult-to-bond materials (metal, plastic, and rubber) often found in medical devices that require toxicity testing and sterilization. Adhesives are ISO 10993 compliant. These products are compliant under all state VOC rules in effect on October 1, 2008.

4011™ has low viscosity and is ideal for acidic surfaces and dry environments. ***4013™*** is for general purpose gap filling. ***4014™*** is for general purpose metal and plastic bonding. ***4206™*** is impact resistant and withstands continuous temperatures up to 250° F. Comes in a tube. ***4541™*** is a gel for use on acidic and porous surfaces. Comes in a tube.

Loctite No.	Viscosity, cp	Begins to Harden	Reaches Full Strength	Fills Spaces	Temperature Range	Color	0.7-oz. (20 g) Bottle	Each	1-lb. Bottle	Each
4011	100	15 sec.	24 hrs.	0.005″	–65° to +180° F	Clear	1818A4	$25.09	1818A41	$266.02
4013	500	15 sec.	24 hrs.	0.007″	–65° to +180° F	Clear	1818A42	17.35	1818A421	257.07
4014	3	20 sec.	24 hrs.	0.002″	–65° to +220° F	Clear	1818A43	17.35	1818A431	257.07
4206	375	30 sec.	24 hrs.	0.005″	–65° to +250° F	Clear	1818A48	30.83	———	———
4541	Gel	15 sec.	24 hrs.	0.010″	–65° to +180° F	Clear	1818A491	26.91	———	———

Super Glues with Brush-On Applicator

A brush makes application clean and easy. Bond aluminum, brass, copper, stainless steel, steel, ABS, acrylic, nylon, polycarbonate, polyester, fiberglass (FRP), Garolite (phenolic laminates), rubber, and wood. Contain no solvents and are nonflammable. Come in 1-oz. bottles. Reach full strength in 8 hours and meet MIL-A-46050C (unless noted). These products are compliant under all state VOC rules in effect on October 1, 2008.

General Purpose— Offers good thermal and impact resistance. Temperature range is –65° to +200° F. Color is clear.

Surface Insensitive— Surfaces require less preparation with this glue. Great for acidic and porous surfaces as well as where humidity is very low. Temp. range is –65° to +200° F. Color is clear.

High Performance— Use in applications where higher temperatures, humidity, vibration, or impact may be present. Temperature range is –65° to +250° F. Color is black.

Nonirritating— Low odor for low-ventilation areas and no white residue for a better looking finish. Temp. range is –65° to +180° F. Color is clear.

Viscosity, cp	Begins to Harden	Fills Spaces		Each
General Purpose				
60	8 sec.	0.004″	7729A21	$25.23
100	8 sec.	0.005″	7729A22	25.23
2,400	15 sec.	0.008″	7729A23	25.23
Gel	25 sec.	0.010″	7729A24	26.17
Surface Insensitive				
5	5 sec.	0.002″	7729A25	26.17
High Performance				
300	10 sec.	0.006″	7729A26	26.17
Nonirritating				
100	10 sec.	0.005″	7729A27♣	27.87

♣ Reaches full strength in 24 hours and does not meet MIL-A-46050C.

Loctite® UV-Strengthening Adhesives

When exposed to ultraviolet (UV) light, these adhesives harden in seconds. These products are compliant under all state VOC rules in effect on October 1, 2008.

349™ Impruv® Optically Clear UV Adhesive— Use in moisture and humidity. This acrylic adhesive bonds and seals glass and metal. Color is light yellow.

352™ UV Structural Adhesive— Resists vibration and impact. This acrylic adhesive bonds and seals glass to glass, glass to metal, and metal-filled adhesive-coated materials. It can also be used to encase items in adhesive (potting). Color is amber. Bonding time can be accelerated with Activator 7075™ (sold separately).

3106™— This acrylic adhesive bonds rigid and flexible PVC to polycarbonate where gap filling and a flexible joint are needed. Color is transparent.

4305™— This cyanoacrylate adhesive is ideal for applications needing a quick hardening time. Bonds metal, plastic, and rubber. Color is transparent green.

Loctite No.	Size	Temperature Range		Each
UV-Strengthening Adhesives				
349	1.69-oz. (50 ml) Bottle	–65° to +266° F	74545A77	$28.80
352	1.69-oz. (50 ml) Bottle	–65° to +275° F	74545A66	19.07
3106	0.85-oz. (25 ml) Syringe	–65° to +300° F	74545A22	34.07
4305	1-oz. (28.3 g) Bottle	–65° to +180° F	74545A52	57.74
Activator				
7075	4.5-oz. Aerosol	———	7614A131	29.20
Additional UV-Strengthening Adhesives				
363	1.69-oz. (50 ml) Bottle	–65° to +356° F	74545A71	28.98
366	1.69-oz. (50 ml) Bottle	–65° to +230° F	74545A75	29.00
3103	0.85-oz. (25 ml) Syringe	–65° to +300° F	74545A26	34.07
3104	0.85-oz. (25 ml) Syringe	–65° to +300° F	74545A27	34.07
3105	0.85-oz. (25 ml) Syringe	–65° to +300° F	74545A21	34.07
3494	0.85-oz. (25 ml) Syringe	–65° to +300° F	74545A23	34.07
3525	0.85-oz. (25 ml) Syringe	–65° to +300° F	74545A24	34.07
3751	0.85-oz. (25 ml) Syringe	–65° to +275° F	74545A55	31.56
3761	0.85-oz. (25 ml) Syringe	–65° to +275° F	74545A82	31.56
4304	1-oz. (28.3 g) Bottle	–65° to +180° F	74545A51	58.30

Super Glue Remover

It may be super, but it doesn't have to be permanent. Apply this remover to clean and debond parts. *Note:* Not for use on acrylic plastics. This product is compliant under all state VOC rules in effect on October 1, 2008.

5-g Bottle ..... 7503A21 **Each** $2.40

Loctite® Speedbonder™ Adhesives

Good for smooth, nonporous surfaces and fitted parts that require a high-strength, impact- and shock-resistant adhesive. These two-step acrylic adhesives require a primer or activator to create adhesion. Bond glass, metal, and plastic. Reach full strength in 24 hours (unless otherwise stated). These products are compliant under all state VOC rules in effect on February 1, 2011.

Kits have Speedbonder™ 312™ adhesive and 736™ Primer NF™.

Speedbonder™ 312™— Good for rigid plastic. Bonds dissimilar materials such as metal, glass, or ceramic. Begins to harden in 30 seconds. Fills spaces up to 0.003″. Temperature range is –65° to +300° F. Color is amber. *Note:* Must be used with 736™ Primer NF™.

Speedbonder™ 324™— Good for rigid plastic. Also bonds magnets and mirrors to steel housings. Begins to harden in 5 minutes. Fills spaces up to 0.040″. Temperature range is –65° to +300° F. Color is amber. *Note:* Must be used with Activator 7075™.

Speedbonder™ 325™— For jobs that require superior resistance to temperature variations, weathering, and exposure to solvents. Begins to harden in 5 minutes. Fills spaces up to 0.040″. Temperature range is –65° to +300° F. Color is brown. *Note:* Must be used with Activator 7075™.

Speedbonder™ 326™— General purpose adhesive. Begins to harden in 1 minute. Fills spaces up to 0.020″. Temperature range is –65° to +250° F. Color is brown. *Note:* Must be used with 7649™ Primer N™.

Structural Adhesive 331™— Also bonds magnets. Begins to harden in 20 seconds; reaches full strength in 30 minutes. Fills gaps up to 0.040″. Temperature range is –40° to +350° F. Color is light yellow. *Note:* Must be used with Activator 7387™.

Structural Adhesive 392™— Also bonds magnets. Begins to harden in 1 minute. Fills spaces up to 0.025″. Temperature range is –65° to +250° F. Color is amber. *Note:* Must be used with Activator 7387™.

Loctite No.	Size		Each
Kits			
312	0.34-oz. (10 ml) Bottle Adhesive 1.41-oz. Aerosol Primer	7523A31	$26.79
312	1.69-oz. (50 ml) Bottle Adhesive 6-oz. Aerosol Primer	7523A21	63.04
Adhesives Only			
324	1.69-oz. (50 ml) Bottle	7614A11	19.08
324	33.8-oz. (1 liter) Bottle	7614A12	241.78
325	1.69-oz. (50 ml) Bottle	7614A111	18.98
325	33.8-oz. (1 liter) Bottle	7614A13	241.78
326	1.69-oz. (50 ml) Bottle	7614A14	20.02
326	33.8-oz. (1 liter) Bottle	7614A15	253.80
331	0.85-oz. (25 ml) Syringe	7614A36	28.87
392	1.69-oz. (50 ml) Tube	1700A102	37.75
Primers Only			
736 Primer NF	6-oz. Aerosol	7523A33	32.51
7649 Primer N	4.5-oz. Aerosol	7614A17●	26.10
Activator Only			
Activator 7075	4.5-oz. Aerosol	7614A131	29.20
Activator 7387	1.75-oz. (52 ml) Bottle	7560A56	14.34
Activator 7387	4.5-oz. Aerosol	7560A57	38.35

● Meets MIL-S-22473E. NSF 61 certified for use with drinking water.

Quick-Grip Temporary Adhesive Stick

Position washers and nuts easily—dab a small amount of adhesive on your fingertip or socket to temporarily hold small parts in place. Adhesive is noncorrosive, nonconductive, and won't harm sensitive electronics. Wipes cleanly off skin and tools with a soft cloth or washes off with mineral spirits. Slowly degrades after six months to one year. This product is compliant under all state VOC rules in effect on October 1, 2008.

2-oz. Stick ..... 6441A41 **Each** $12.50

For information about adhesives, see page 3400.

Loctite® Primers and Accelerators

These products are compliant under all state VOC rules in effect on February 1, 2011 (unless noted).

Primers and Accelerators for Super Glues— Increase hardening speed and ensure strong bonds.

736™ NF™ improves gap-filling capabilities.

770™ Prism® improves hold. Use for difficult-to-bond surfaces such as polyolefins, polypropylene, polyethylene, and thermoplastic rubber. Heptane based.

7701™ Prism® is for medical devices. Heptane based.

712™ Tak Pak® rapidly bonds wires and coils on circuit boards.

7113™ creates a smooth bond line for a better appearance.

7452™ Tak Pak® rapidly bonds electronic components.

Primers for Threadlockers and Retaining Compounds— Increase hardening speed and ensure strong bonds.

7088™ Quickstix™ is a solvent-free semisolid stick.

7090™ is solvent-free. It improves gap-filling capabilities.

7471™ T™ promotes bonds on stainless steel, titanium, and pure and anodized aluminum; speeds bonding on steel. Acetone/isopropanol based.

7649™ N™ is for large gaps and temperatures below 59° F. NSF 61 certified for use with drinking water. Replaces Loctite N 764.

Activators— Help structural adhesives (two-step acrylics) to bond.

7075™ is for large gaps. Replaces Loctite 707.

7109™ Tak Pak® II is nonflammable.

ODC-Free Cleaner— Cleans and degreases surfaces prior to applying adhesives. Contains no ODCs (ozone-depleting chemicals). Replaces Loctite 7070.

Loctite No.	Size		Each
Primers and Accelerators for Super Glues			
736 Primer NF	6-oz. Aerosol	7523A33	$32.51
770 Prism Primer	1.75-oz. Bottle	66205A24★	14.78
770 Prism Primer	16-oz. Can	66205A36★	76.57
7701 Prism Primer	1.75-oz. Bottle	7614A34★	25.94
712 Tak Pak Accelerator	0.7-oz. Aerosol	7502A66	14.59
712 Tak Pak Accelerator	1.75-oz. Bottle	7502A67	9.69
712 Tak Pak Accelerator	1-gal. Can	7502A74	88.25
7113 Accelerator	1.75-oz. Bottle	7614A22★	10.00
7452 Tak Pak Accelerator	0.7-oz. Aerosol	7502A71	14.59
7452 Tak Pak Accelerator	1.75-oz. Bottle	7502A72	7.84
7452 Tak Pak Accelerator	1.75-oz. Spray	7502A51	8.75
Primers for Threadlockers and Retaining Compounds			
7088 Quickstix Primer	17-g Stick	66205A27	14.24
7090 Primer	1-oz. Bottle	7614A39★	30.14
7471 Primer T	1.75-oz. Bottle	66205A39	18.06
7471 Primer T	4.5-oz. Aerosol	66205A21	33.80
7471 Primer T	1-gal. Can	66205A41	254.66
7649 Primer N	1.75-oz. Bottle	7614A16	16.80
7649 Primer N	4.5-oz. Aerosol	7614A17	26.10
7649 Primer N	25-g Aerosol	7614A27	11.53
7649 Primer N	1-gal. Can	7614A24	220.68
Activators for Structural Adhesives			
7075 Activator	4.5-oz. Aerosol	7614A131	29.20
7075 Activator	1-qt. Can	7614A21	81.71
7109 Tak Pak II Activator	1.75-oz. Bottle	66205A37	46.16
Cleaners			
ODC-Free Cleaner	15-oz. Aerosol	66415A21	11.32
ODC-Free Cleaner	16-oz. Spray	66415A11	10.99

★ This product is compliant under all state VOC rules in effect on June 1, 2011, except in California.

Threadlocking Adhesive Washers

Why bother applying a messy threadlocker? Let your washer be your adhesive. Washers are made of an epoxy adhesive that is activated when a fastener is tightened onto it. Washers bond the underside of the screw head to the surface to prevent loosening and fill gaps and spaces that other washers fail to seal. Temperature range is –65° to +300° F. Color is blue.

Screw Size	ID	OD	Thick.	Pkg. Qty.		Per Pkg.
#10 SAE	0.219″	0.500″	0.032″	100	92937A330	$13.33
¼″ SAE	0.281″	0.625″	0.032″	100	92937A350	13.33
⅜″ SAE	0.406″	0.812″	0.032″	100	92937A370	13.33

Loctite® Pro Lock Tight® Threadlocker

Don't let your threadlocker run away—the gel consistency of this threadlocker means it'll stay where you want it. It's ideal for vertical and overhead surfaces and keeps metal fasteners secure despite shock and vibration. It's medium strength and can be removed with hand tools. Begins to harden in 30 minutes; reaches full strength in the absence of air in 24 hours. Temperature range is –65° to +300° F. Color is blue. This product is compliant under all state VOC rules in effect on September 1, 2010.

Loctite No.	Size		Each
51604	1.7-oz. (50 ml) Tube	1810A3	$24.46

Permatex Gel Twist Threadlockers

A simple twist dispenses these gels right where you want them without dripping and with pinpoint accuracy. Begin to harden in 15 min.; reach full strength in 24 hrs. Temperature range is –65° to +300° F. Come in a 0.35-oz. (10 g) stick. These products are compliant under all state VOC rules in effect on October 1, 2008.

24010 can be removed with hand tools.

27010 needs heat and hand tools for removal.

Permatex No.	Strength	For Fasteners	Color		Each
24010	Medium	¼″ to 1″ Dia.	Blue	7445A12	$13.87
27010	High	⅜″ to 1″ Dia.	Red	7445A13	13.87

Mil. Spec. Threadlockers, Retaining Compound, and Primer

A few good threadlockers is all it takes to meet your Mil. Spec. needs on metal parts. Reach full strength in the absence of air in 24 hours. Meet ASTM 5363. These products are compliant under all state VOC rules in effect on October 1, 2008.

To Order: For threadlockers and retaining compound, please specify type and/or grade.

MIL-S-46163 Threadlocker— Comes in Type I Grades J (Blue) and K and L (Red); Type II Grades M (Purple), N (Blue), and O (Red); or Type III Grade R (Green).

MIL-S-22473 Threadlocker— Comes in Grades A, AV, and AVV (Red); AA (Green); B (Yellow); C, CV, and CVV (Blue); D (Orange); E and EV (Purple); H, HV, and HVV (Brown); or JV (Yellow).

Retaining Compound— Meets MIL-R-46082 and comes in Type I, Type II, or Type III Grades. Color is green.

Primer— Cleans the surface and speeds strengthening time. Meets MIL-S-22473.

Mil Spec. No.	10-ml (0.34 oz.) Bottle	Each	50-ml (1.69 oz.) Bottle	Each
Threadlockers				
MIL-S-46163	74835A12	$13.62	74835A81	$31.39
MIL-S-22473	74835A13	17.32	74835A82	36.55
Retaining Compound				
MIL-R-46082	74835A14	16.35	74835A83	31.39
Primer				
MIL-S-22473 (4¼-oz. aerosol)	74835A84	Each	$17.22	

Vibra-Tite Reusable Threadlocker

Make your fasteners self-locking and self-sealing, yet still be able to adjust, remove, or even reuse them. Use on nylon, wood, and ferrous and nonferrous screws of all sizes. Resists water and can be applied on uncleaned parts—simply wipe off visible oil. You can even coat your fasteners ahead of time and store them indefinitely. Allow to dry 10-30 minutes before assembly. Temp. range is –65° to +165° F. Color is orange. This product is compliant under all state VOC rules in effect on October 1, 2008.

1-oz. Brush-Top Bottle	75145A69	Each	$21.70

Applicators for Threadlockers and Retaining Compounds

Control the amount of adhesive dispensed and eliminate waste. Applicators mount to bottles of threadlocker or retaining compound and dispense 0.01-0.04 ml of material with viscosities up to 30,000 cp (for information on viscosity, see page 3410).

For Bottle Size		Each
50 ml (50 cc)	66025A21	$106.76
250 ml (250 cc)	66025A11	106.78

3M Rite-Lok Threadlockers

Begin to harden in 20 minutes; reach full strength in 24 hours. Temperature range is –65° to +300° F. These products are compliant under all state VOC rules in effect on October 1, 2008.

TL22 is for small-diameter, fine-threaded screws. Remove with hand tools. ***TL42*** is for machine tool bolts and studs and countersunk screws. Remove with hand tools. ***TL62*** creates strong bonds even on oily parts. Requires heat and hand tools for removal. ***TL71*** creates permanent bonds on bolts and studs. Seals against leakage and corrosion.

3M No.	For Bolt Size	Fills Spaces	Color	0.34-oz. (10 ml) Bottle	Each	1.69-oz. (50 ml) Bottle	Each
TL22	Less than 5/16″	0.005″	Purple	92934A410	$9.20	92934A810	$29.50
TL42	Up to ¾″	0.005″	Blue	92934A420	10.31	92934A820	29.50
TL62	Up to 1″	0.005″	Red	92934A430	10.62	92934A830	29.50
TL71	Up to 1″	0.007″	Red	92934A440	10.62	—	—

For information about adhesives, see page 3400.

Loctite® Threadlockers and Retaining Compounds

Make your fasteners more secure. These adhesives prevent corrosion, seal against fluid leakage, and resist most chemicals. Reach full strength in 24 hours with the absence of air. Come in bottles (unless noted). These products are compliant under all state VOC rules in effect on October 1, 2008.

Note: Primers are recommended when working with aluminum, black-oxide finishes, cadmium, stainless steel, titanium, and zinc. See Loctite® 7649™ Primer N™ on page 3413.

Also Available: Additional Loctite® threadlockers and retaining compounds. Please ask for 91458A9 and specify the Loctite® number.

Threadlockers

Prevent threaded metal fasteners from loosening due to shock and vibration and protect them from most solvents and harsh environments. *Low* and *medium strength* can be removed with a hand tool. *High strength* require heat and a hand tool.

220™—For ¼″ dia. and smaller fasteners.

222™—For ¼″ dia. and smaller fasteners.

222MS™—For ¼″ dia. and smaller fasteners. NSF-P1 certified for food-processing areas.

242®—For ¼″ to ¾″ dia. fasteners. *8.45 oz. (250 ml)* size is NSF 61 certified for use with drinking water systems.

243™—For fasteners ¼″ to ¾″ dia. Resists oil. *8.45 oz. (250 ml)* size is NSF 61 certified for use with drinking water systems.

246™—For fasteners ¼″ to ¾″ dia.

262™—For fasteners up to ¾″ dia. subject to high vibration and shock. Resists oils. Great for Grade 5 and 8 fasteners.

263™—For permanent locking of fasteners up to ¾″ dia. Prevents loosening and leakage due to vibration and shock.

266™—For fasteners up to ¾″ dia. Resists oils and contaminants.

271™—For up to 1″ dia. fasteners. Ideal for harsh applications and tamperproofing. UL listed.

272™—For bolts up to 1½″ dia.

277™—For use with fasteners up to 1½″ dia.

290™—For locking assembled fasteners up to ½″ dia. *8.45 oz. (250 ml)* size is NSF 61 certified for use with drinking water systems.

294™—Strong bonds even on oily fasteners.

425™—Super glue (cyanoacrylate) for metal and plastic fasteners.

2432™—Has low sulfur content for sensitive metals such as titanium.

2760™—Strong bonds even on oily unprimed fasteners. Use for heavy duty applications, such as construction and railroad equipment.

Retaining Compounds

For nonthreaded metal cylindrical parts such as shafts, hubs, bearings, bushings, splines, pulleys, and press-fit assemblies.

603™—For close-fitting parts. Fills spaces up to 0.005″.

609™—Fills spaces up to 0.005″.

620™—For high-temperature applications. Fills spaces up to 0.015″.

635™—High strength for slip fits. Fills spaces up to 0.010″.

638™—High strength for loose-fitting parts. Fills spaces up to 0.015″.

640™—For high-temperature applications. Fills spaces up to 0.007″.

641™—Med. strength for easy disassembly. Fills spaces up to 0.008″.

648™—High strength for stainless steel and close-fitting parts. Fills spaces up to 0.006″.

680™—High strength for loose-fitting parts. Fills spaces up to 0.015″. *8.45 oz. (250 ml)* size is NSF 61 certified for use with drinking water systems.

Loctite No.	Begins to Harden	Strength	Temperature Range	Color	0.02 oz. (0.5 ml)●	Each	0.34 oz. (10 ml)	Each	1.69 oz. (50 ml)	Each	8.45 oz. (250 ml)	Each
Threadlockers												
220	6 min.	Medium	–65° to +300° F	Blue	—	—	1810A315	$12.18	—	—	1810A31	$108.74
222	10 min.	Low	–65° to +300° F	Purple	—	—	1810A27	12.18	1810A28	$32.90	—	—
222MS	10 min.	Low	–65° to +300° F	Purple	91458A130★	$1.71	91458A110★	12.46	91458A120★	32.90	91458A700★	108.74
242	10 min.	Medium	–65° to +300° F	Blue	91458A111★	1.73	91458A112★	12.71	91458A113★	33.53	91458A710★	110.82
243	5 min.	Medium	–65° to +300° F	Blue	91458A114	1.71	91458A115	12.46	91458A116	32.90	91458A460	108.74
246	20 min.	Medium	–65° to +450° F	Blue	—	—	91458A480	14.50	91458A490	36.58	91458A550	136.58
262	5 min.	High	–65° to +300° F	Red	91458A560★	1.73	91458A170★	12.71	91458A180★	33.53	91458A720★	110.82
263	20 min.	High	–65° to +300° F	Red	—	—	91458A610	12.46	91458A620	32.90	91458A630	108.74
266	10 min.	High	–65° to +450° F	Rust	—	—	91458A570	14.50	91458A580	35.90	91458A590	133.98
271	10 min.	High	–65° to +300° F	Red	91458A880★	1.73	91458A160★	12.71	91458A190★	33.53	91458A730★	110.82
272	30 min.	High	–65° to +450° F	Red	—	—	—	—	91458A650	32.90	91458A890	108.74
277	60 min.	High	–65° to +300° F	Red	—	—	91458A910★	13.75	91458A660★	30.69	91458A780★	93.00
290	6 min.	Medium	–65° to +300° F	Green	91458A117★	1.71	91458A118★	12.46	91458A119★	32.90	91458A830★	108.74
294	6 min.	High	–65° to +450° F	Green	—	—	—	—	91458A950	46.97	—	—
425	2 min.	Low	–65° to +180° F	Blue	—	—	91458A370♦	19.04	—	—	—	—
2432	30 min.	Medium	–65° to +300° F	Blue	—	—	—	—	91458A760	83.19	—	—
2760	4 min.	High	–65° to +300° F	Red	—	—	91458A300	14.86	91458A200	35.97	91458A400	125.89
Retaining Compounds												
603	10 min.	—	–65° to +300° F	Green	—	—	91458A340	13.32	—	—	—	—
609	10 min.	—	–65° to +300° F	Green	91458A230	1.68	91458A210	12.46	91458A220	32.90	91458A740	108.74
620	30 min.	—	–65° to +450° F	Green	91458A850	1.71	91458A750	14.82	91458A450	38.19	91458A510	125.48
635	60 min.	—	–65° to +300° F	Green	—	—	—	—	91458A640	38.56	91458A670	133.98
638	5 min.	—	–65° to +300° F	Green	—	—	91458A430	15.86	91458A350	42.64	91458A440	139.29
640	60 min.	—	–65° to +400° F	Green	—	—	—	—	91458A690	35.12	91458A680	132.69
641	20 min.	—	–65° to +300° F	Yellow	—	—	91458A520	17.27	91458A530	40.27	—	—
648	5 min.	—	–65° to +350° F	Green	—	—	91458A790	14.95	91458A770	40.27	91458A840	132.10
680	10 min.	—	–65° to +300° F	Green	91458A121	1.61	91458A122	14.61	91458A123	38.19	91458A330	125.48

● Come in capsules. ★ Meets MIL-S-46163A. ♦ 0.7-oz. (20 g) bottle.

Loctite® Threadlocker and Retaining Compound Sticks

These no-drip sticks prevent corrosion, seal against fluid leakage, and resist most chemicals. Reach full strength in 24 hours. These products are compliant under all state VOC rules in effect on October 1, 2008.

Threadlockers prevent metal fasteners from loosening due to shock and vibration. They resist solvents and harsh environments. *248™* is for ¼″ to ¾″ dia. fasteners. Removes with a hand tool. *268™* is for heavy duty applications on fasteners up to ¾″ dia. Requires heat and a hand tool for removal.

Retaining compound is for nonthreaded metal cylindrical parts such as shafts, hubs, bearings, and bushings.

Loctite No.	Temperature Range	Begins to Harden	Color	0.32 oz. (9 g)	Each	0.67 oz. (19 g)	Each
Threadlocker 248	–65° to +300° F	10 min.	Blue	1004A12	$13.65	1004A11	$28.79
Threadlocker 268	–65° to +300° F	20 min.	Red	1004A22	13.65	1004A21	28.79
Retaining Compound 668	–65° to +400° F	30 min.	Green	—	—	8075A12	34.19

Extreme-Temperature Pipe Sealants and Threadlockers

Make strong, secure bonds even in extreme temperatures. These no-drip liquid adhesives withstand temperatures from –300° to +2100° F and resist oil, fuel, acids, and alkalies. They form an electrically resistant bond on metal and ceramic threads. Seals can be broken using hand tools. Begin to harden in 24 hours; reach full strength in 2-3 days. Come in 4-oz. bottles. These products are compliant under all state VOC rules in effect on October 1, 2008.

Green penetrates fine openings, such as for set, adjustment, and instrumentation screws. Fills spaces up to 0.003″.

Blue prevents loosening from vibration for medium-sized fasteners, pipe threads, and bearings. Fills spaces up to 0.005″.

Red provides high-strength bonds for studs and large fasteners, bolts, and pipe threads. Fills spaces up to 0.01″.

Green	7604A54	Each	$31.18
Blue	7604A55	Each	$31.18
Red	7604A56	Each	$31.18

For information about adhesives, see page 3400.

Pipe Thread Sealant Tape

Ideal for oxygen systems, this top-quality, made-in-the-U.S. tape maintains a seal on threaded connections and withstands harsh temperatures. Temperature range is –450° to +550°F. All stretch 50% without breaking. These products are compliant under all state VOC rules in effect on October 1, 2008.

Commercial, standard military, and premium military grades are made with 100% virgin PTFE for strong chemical resistance; colored premium military grade and military grade for stainless steel are made with 99% virgin PTFE.

Commercial Grade— Also known as dope tape. Specific gravity is 0.5 g/cc. Thickness is 0.0028″. Color is white. UL listed and USDA and FDA compliant.

Standard Military Grade— Greater density and thicker than commercial grade. Specific gravity is 0.9 g/cc. Thickness is 0.0032″. Color is white. Meets MIL-T-27730A. UL listed. USDA and FDA compliant.

Premium Military Grade— Greater density than standard military grade and even seals coarse threads. Specific gravity is 1.2 g/cc. Thickness is 0.0032″. Color is white. Meets MIL-T-27730A and MIL-A-A-58092. UL listed. USDA and FDA compliant.

Colored Premium Military Grade— Color-code hot water, gas, and chemical connections. Specific gravity is 1.35 g/cc. Thickness is 0.0032″. Meets MIL-T-27730A and MIL-A-A-58092. UL listed. **To Order:** Please specify color: light green, light orange, light red, or light yellow.

Military Grade for Stainless Steel— Use on stainless steel and coarse threads. Specific gravity is 1.2 g/cc. Thickness is 0.0032″. Color is gray. Meets MIL-A-A-58092.

	COMMERCIAL GRADE			MILITARY GRADE: Standard			MILITARY GRADE: Premium			MILITARY GRADE: Colored Premium			MILITARY GRADE: For Stainless Steel		
		Per 50-Ft. Roll			Per 43-Ft. Roll			Per 43-Ft. Roll			Per 43-Ft. Roll			Per 43-Ft. Roll	
Wd.		1-11	12-Up		1-11	12-Up		1-11	12-Up		1-11	12-Up		1-11	12-Up
¼″	4591K11	$1.86	$1.67	6802K11	$2.24	$2.02	6802K22	$3.11	$2.80	44945K11	$5.19	$4.50	7346A11	$6.08	$5.45
½″	4591K12	2.31	2.08	6802K12	2.62	2.36	6802K33	4.55	4.08	44945K12	6.12	5.30	7346A12	7.81	7.00
¾″	4591K13	3.40	3.05	6802K13	3.87	3.48	6802K44	6.74	6.04	44945K13	7.87	7.04	7346A13	11.62	10.41
1″	4591K14	4.40	3.95	6802K14	4.98	4.48	6802K55	8.72	7.82	44945K14	11.73	10.17	7346A14	15.00	13.45
1½″	4591K16	6.49	5.82	6802K15	7.40	6.66	6802K66	13.06	11.73	44945K15	17.58	15.23	7346A15	22.27	19.97
2″	4591K17	8.54	7.67	6802K16	9.76	8.78	6802K77	17.11	15.36	44945K16	23.04	19.97	—	—	—

Pipe Thread Sealants

These products are compliant under all state VOC rules in effect on October 1, 2008.

Standard— General purpose sealant for metal threads.

Slic-Tite® PTFE— Premium sealant for metal as well as ABS, PVC, and CPVC pipe threads (unless noted).

Loctite® and Loctite® PTFE— Ideal for high-vibration areas. Use on metal threads; not for use with thermoplastic or oxygen systems. *Loctite® PTFE* are PTFE combined with adhesive.

Nos. 542™, *545*™, and *569*™ are for use on air-powered and hydraulic fittings. *No. 554*™ is for refrigerant thread sealing. *No. 580*™ is a low-sulfur, low-halogen formula good for power plants. *16-oz. brush-top can (*8149K15*)* is for threaded plastic pipe, pipe fittings, and flanges. Good in irrigation, pump, and well applications.

No. 561™ enables easy disassembly and is certified to CSA International requirement No. 4-90 for natural and LP gases (vapor state) up to 300 psig. *No. 565*™ is the liquid formulation of 561. *No. 567*™ has excellent solvent resistance. *No. 577*™ is for coarse threads. *No. 592*™ allows you to reposition parts for up to one hour after application. *16-oz. brush-top can (*8149K22*)* is for metal pipe.

Loctite® Pipe Joint Compound— Use this chemical resistant sealant for general purposes.

Mfr. No.	Size	Classification/ Approval	Max. Temp.	Max. Pressure: Liquid	Max. Pressure: Gas	Color		Each
Standard								
—	1¼-oz. Stick	—	250°F	500 psi	300 psi	White	4592K16▲	$3.63
—	1¼-oz. Stick	UL, NSF 61♠	350°F	2,000 psi	350 psi	White	4592K34	1.63
—	4-oz. Stick	UL, NSF 61♠	350°F	2,000 psi	350 psi	White	4592K11	4.24
Slic-Tite PTFE								
—	1¼-oz. Stick	NSF 61♠	350°F	5,000 psi	500 psi	White	5477K11	8.72
—	1½-oz. Tube	UL, USDA, NSF 61♠	500°F	10,000 psi	3,000 psi	White	5477K12	4.53
—	4-oz. Brush-Top Can	UL, USDA, NSF 61♠	500°F	10,000 psi	3,000 psi	White	5477K13	8.32
—	8-oz. Brush-Top Can	UL, USDA, NSF 61♠	500°F	10,000 psi	3,000 psi	White	5477K14	15.47
—	16-oz. Brush-Top Can	UL, USDA, NSF 61♠	500°F	10,000 psi	3,000 psi	White	5477K16	24.47
—	1-qt. Brush-Top Can	UL, USDA, NSF 61♠	500°F	10,000 psi	3,000 psi	White	5477K17	48.38
Loctite								
542	1.69-oz. (50 ml) Bottle	—	300°F	10,000 psi	10,000 psi	Brown	45855K71	42.18
545	1.69-oz. (50 ml) Bottle	—	300°F	10,000 psi	10,000 psi	Purple	45855K63	38.26
545	8.45-oz. (250 ml) Bottle	—	300°F	10,000 psi	10,000 psi	Purple	45855K11	116.24
554	0.34-oz. (10 ml) Bottle	—	300°F	10,000 psi	10,000 psi	Red	45855K72	15.43
554	8.45-oz. (250 ml) Bottle	—	300°F	10,000 psi	10,000 psi	Red	45855K73	137.19
569	1.69-oz. (50 ml) Bottle	—	300°F	10,000 psi	10,000 psi	Brown	45855K64	39.66
569	8.45-oz. (250 ml) Bottle	—	300°F	10,000 psi	10,000 psi	Brown	45855K74	130.31
580	1.69-oz. (50 ml) Tube	—	300°F	10,000 psi	10,000 psi	White	45855K16	45.90
—	16-oz. Brush-Top Can	—	400°F	5,000 psi	5,000 psi	White	8149K15	26.49
Loctite PTFE								
561	0.67-oz. (19 g) Stick	UL, NSF 61♠	300°F	10,000 psi	10,000 psi	White	1011A11	13.25
565	0.2-oz. (6 ml) Tube	UL, NSF 61♠	300°F	10,000 psi	10,000 psi	White	45855K12	5.54
565	1.69-oz. (50 ml) Tube	UL, NSF 61♠	300°F	10,000 psi	10,000 psi	White	45855K5	17.21
565	8.45-oz. (250 ml) Tube	UL, NSF 61♠	300°F	10,000 psi	10,000 psi	White	45855K13	48.47
567	0.2-oz. (6 ml) Tube	UL, NSF 61♠	400°F	10,000 psi	10,000 psi	White	45855K14	5.54
567	1.69-oz. (50 ml) Tube	UL, NSF 61♠	400°F	10,000 psi	10,000 psi	White	45855K27	20.00
567	8.45-oz. (250 ml) Tube	UL, NSF 61♠	400°F	10,000 psi	10,000 psi	White	45855K37	68.06
577	1.69-oz. (50 ml) Tube	—	300°F	10,000 psi	10,000 psi	Yellow	45855K15	38.04
592	0.2-oz. (6 ml) Tube	—	400°F	10,000 psi	10,000 psi	White	45855K81	5.54
592	1.69-oz. (50 ml) Tube	—	400°F	10,000 psi	10,000 psi	White	45855K82	17.21
592	8.45-oz. (250 ml) Tube	—	400°F	10,000 psi	10,000 psi	White	45855K83	48.47
—	16-oz. Brush-Top Can	—	300°F	5,000 psi	5,000 psi	White	8149K22	16.99
Loctite Pipe Joint Compound								
—	16-oz. Brush-Top Can	—	400°F	5,000 psi	5,000 psi	Black	8149K17	9.58

▲ Also for plastic threads. ♠ NSF 61 certified for use with drinking water systems.

For information about adhesives, see page 3400.

PTFE Oxygen-Safe Joint Sealants

Safely make tight seals between pipe threads and joints where oxygen is present. These PTFE pastes are nontoxic and odorless. Pipes can be used right after application. These products are compliant under all state VOC rules in effect on October 1, 2008.

For Dry Environments— Seals threaded joints on any pipe material. Ideal for diesel fuel, liquid propane gas, oxygen below 257° F, and hydraulic systems. Temperature range is –400° to +500° F (–40° to +300° F for natural gas; up to 140° F for liquid oxygen). Maximum pressure is 3,500 psi (300 psi for natural gas). Maximum pipe size for natural gas is ¾″ NPT. USDA approved for food-processing applications.

For Wet Environments— Use for gas, liquid, and low-vacuum service, as well as for oxygen and liquid-oxygen systems. For most pipe materials; not for use with aluminum-to-aluminum surfaces or in alkali, fluorine, or hydrofluoric environments. Withstands temperatures up to 450° F (140° F for liquid oxygen). Maximum pressure is 10,000 psi.

	Size	Color		Each
For Dry Environments	3.5-oz. Tube	White	4538K1	$17.40
For Wet Environments	3.5-oz. Jar	Green	4538K6	79.82

Joint Sealants

These products are compliant under all state VOC rules in effect on October 1, 2008.

X-Pando— Nontoxic, odorless compounds expand as they harden, forcing their way into every fiber, pore, and crack. Color is dark gray. UL listed. NSF 61 certified for use with drinking water systems.

Regular is for all pipes (discolors unanodized aluminum) and is liquid-oxygen compatible. Temperature range is –300° to +1000° F. FDA and USDA compliant.

Special is for sealing cement-lined pipe joints prior to welding. The heat from the welding torch helps the sealant begin to harden. Not rated for temperature.

Key-Tite Joint Compound— A waterproof, nonhardening sealant for air, gas, water, and steam joints. Not for use with gasoline. Temperature range is –50° to +450° F. Color is green.

Key Graphite Paste— Nonhardening for use with petroleum products, acids, and high-pressure steam joints. Not for water service. Temperature range is –30° to +750° F. Color is black.

Size		Each
Regular X-Pando		
14-oz. Can	6818K11	$13.34
70-oz. Can	6818K12	54.09
Special X-Pando		
14-oz. Can	6818K24	14.79
70-oz. Can	6818K26	62.42
Key-Tite Joint Compound		
1-qt. Can	4586K2	16.76
1-gal. Can	4586K3	58.76

Size		Each
Key Graphite Paste		
⅝-lb. Can▲	4586K8	$7.67
1-lb. Can	4586K5	8.54
2¾-lb. Can	4586K6	13.22
10-lb. Can	4586K7	34.99

▲ Brush-top can.

Extreme-Temperature Sealant

Seal threads, flanges, and other fittings at extreme temperatures. This sealant resists heat, steam, ammonia, hydrocarbons, refrigerants, hydraulic fluids, propane, brine, acids, and mild alkalies. Also withstands severe vibration and stress. Use on metal, ceramic, rubber, and most plastics except PTFE, polypropylene, and polyethylene. Can be used on steam joints up to 2,000 psi; flanges without gaskets up to 6,500 psi; and threaded joints up to 10,000 psi.

External heat (from a heat gun, infrared heat, oven, etc.) must be applied to reach full strength quickly. Above 300° F, the sealant begins to harden in 15 minutes and reaches full strength in 4 hours. Below 300° F, it begins to harden in 4 hours and will take up to 1 year to reach full strength if not heated. Temperature range is –315° to +1500° F. Color is black.

Meets MIL-S-15204D Navy test requirements for use on marine turbines at 1,200 psi and 950° F. This product is compliant under all state VOC rules in effect on October 1, 2008.

1-qt. Can ..... **1959A31** **Each** $178.33

Extreme-Temperature Gasket Maker

Withstanding temperatures from –300° to +2350° F, this mica-based paste forms tight joints and gaskets for flanges, valves, cylinder heads, furnace doors, exhaust systems, and stoves. Use on iron, lead, stainless steel, steel, and ceramic. It's fireproof and resists most acids, solvents, and corrosives. Color is gray. This product is compliant under all state VOC rules in effect on October 1, 2008.

Cartridge fits a standard caulk gun; see page 3428 for guns.

Size	Begins to Harden	Reaches Full Strength		Each
11-oz. Cartridge	30 min.	24-48 hrs.	7549A11	$25.69
3½-lb. Can	30 min.	24-48 hrs.	7549A12	85.94
7-lb. Can	30 min.	24-48 hrs.	7549A14	121.25

Loctite® Threadlocker Tape

Tape threads to keep nuts and bolts from vibrating loose. Also seals against corrosion and leaks. Use on ¼″ or larger nuts and bolts. It reaches full strength in 24 hours and can be applied up to 30 days before assembly. Tape is ½″ Wd. ×0.003″ Thick. Temperature range is –65° to +300° F. This product is compliant under all state VOC rules in effect on September 1, 2011.

Loctite No.	Color		21-ft. roll
249	Blue	2399A1	$17.65

High-Temperature/Pressure Pipe Thread Sealant

Use in high-temperature and high-pressure applications for close-fitting threaded joints on 2″ diameter and smaller steel and stainless steel pipe. Sealant is made of graphite with a petroleum-based carrier. It's heat resistant and can also be used as a bolt lubricant. Not for use on oxygen lines. Maximum temperature is 1175° F. Maximum pressure is 7,500 psi (air). Meets General Electric D50YP12 (Rev. 2) specifications. Color is dark gray. This product is compliant under all state VOC rules in effect on October 1, 2008.

4-oz. (125 g) Tube ..... **1965K1** **Each** $44.92

Loctite® Gasket Eliminator Sealants

Replace gaskets with tough, resilient seals. Perfect for fuel and water pumps, thermostats, split crankcases, gear boxes, transmission housings, axle covers, and most metal surfaces. Reach full strength in the absence of air. Temp. range is –65° to +300° F (unless noted). These products are compliant under all state VOC rules in effect on October 1, 2008.

Cartridges fit a standard caulk gun; see page 3428 for guns.

504™— Creates rigid seals; fills spaces up to 0.03″. Begins to harden in 4 hours; reaches full strength in 24 hours. Comes in a gel.

510™— Provides rigid seals; fills spaces up to 0.01″. Begins to harden in 4 hours; reaches full strength in 24 hours. Comes in a gel. UL listed.

515™— Makes flexible gaskets and fills spaces up to 0.01″. Begins to harden in 1 hour; reaches full strength in 12 hours. Comes in a gel. UL listed.

518™— For difficult-to-seal aluminum flanges. Fills spaces up to 0.01″. Begins to harden in 4 hours; reaches full strength in 24 hours. Comes in a gel. NSF 61 certified for use with drinking water systems.

573™— Seals close-fitting joints between metal faces and flanges. Use to make form-in-place gaskets. Fills spaces up to 0.01″. Begins to harden in 6 hours; reaches full strength in 48 hours. Comes in a paste.

574™— Fast-strengthening version of 573. Begins to harden in 1 hour; reaches full strength in 12 hours. Comes in a paste.

518™ Master Gasket Kit— Includes a 0.85-oz. (25 ml) syringe of No. 518™ and a 0.88-oz. aerosol can of primer.

Loctite No.	Size	Color		Each
504	10.15-oz. (300 ml) Cartridge	Orange	7700A22	$71.72
510	1.69-oz. (50 ml) Tube	Red	66335A11♠	28.44
510	8.45-oz. (250 ml) Tube	Red	66335A21♠	61.82
515	0.2-oz. (6 ml) Tube	Purple	7568A41	6.02
515	1.69-oz. (50 ml) Tube	Purple	7568A31	18.59
515	10.15-oz. (300 ml) Cartridge	Purple	7568A34	70.17
518	1.69-oz. (50 ml) Tube	Red	75125A66	17.19
518	10.15-oz. (300 ml) Cartridge	Red	75125A67	82.01
573	8.45-oz. (250 ml) Tube	Green	7568A42	79.55
574	1.69-oz. (50 ml) Tube	Orange	7568A43	21.69
574	8.45-oz. (250 ml) Tube	Orange	7568A44	72.24
518 Master Gasket Kit			75125A72	$32.64

♠ Temperature range is –65° to +400° F.

Loctite® Gasketing Sticks

Easy, no-mess sticks make sealing gaskets a snap. Withstand temperatures up to 300° F. These products are compliant under all state VOC rules in effect on October 1, 2008.

534™ holds gaskets in place for assembly and is repositionable at full strength. Begins to harden in 10 minutes; reaches full strength in 24 hours.

548™ is an oil-resistant gasket/flange sealant; fills gaps up to 0.010″. Begins to harden in 10 minutes; reaches full strength in 24 hours.

Loctite No.	Size	Color		Each
534	19 g (0.67 oz.)	Purple	8091A37	$10.79
548	18 g (0.63 oz.)	Orange	8091A24	20.11

For information about adhesives, see page 3400.

Loctite® RTV Silicone Gasket Makers and Sealants

Begin to harden in 30 minutes (unless noted); reach full strength in 24 hours. Cartridges fit a standard caulk gun; see page 3428 for guns. These products are compliant under all state VOC rules in effect on October 1, 2008.

Note: Not for use on parts that come in contact with gasoline.

High-Performance RTV Silicone Gasket Makers— Form flexible, low-odor gaskets that replace traditional cork, paper, and rubber gaskets. Resist oil. Fill spaces up to 0.25″. Temperature range is –60° to +400° F. *40462, 58730,* and *58775* are UL listed and NSF P1 certified.

Superflex® RTV Silicone Sealants— General purpose silicone forms a tough rubbery seal. Thick for use on vertical surfaces. Fill spaces up to 0.25″. Temperature range is –60° to +400° F. UL listed.

Superflex® Blue RTV Silicone Sealants— Similar to Superflex RTV Sealant but oil and fluid resistant. Fill spaces up to 0.25″. Temperature range is –65° to +400° F.

Superflex® High-Temperature RTV Silicone Sealants— Resist aging and weather without shrinkage, cracking, or hardening. Fill spaces up to 0.25″. Begin to harden in 1 hour. Temperature range is –60° to +400° F.

Gasket Sealant #1— Creates rigid seals on threaded connections, air ducts, and plumbing connections. Fills spaces up to 0.25″. Begins to harden immediately. Temperature range is –65° to +400° F.

Gasket Sealant #2— Create flexible seals that never fully harden. Fill spaces up to 0.25″. Temperature range is –65° to +400° F.

Aviation Gasket Sealant— Creates flexible seals on aviation and marine engines and threaded connections. Begins to harden in 4 hours. Temperature range is –65° to +400° F.

Copper Gasket Maker— Adheres to most materials and withstands high temperatures. Fill spaces up to 0.240″. Begins to harden in 60 minutes. Temperature range is –65° to +600° F.

Instant Gasket— Get quick, low-odor seals. Fill spaces up to 0.25″. Temperature range is –65° to +400° F.

Also Available: Additional Loctite® gasket makers and sealants. Please ask for 7479A51 and specify the Loctite® number.

Loctite No.	Size	Color		Each
High-Performance RTV Silicone Gasket Makers				
18581	10.15-oz. Cartridge	Gray	**75115A66**	$36.91
18718	2.36-oz. Tube	Gray	**75115A65**	11.02
40462	6.4-oz. Aerosol Can	Blue	**7660A32**	22.63
40463	6.4-oz. Aerosol Can	Black	**6641A51**	22.63
40505	6.4-oz. Aerosol Can	Gray	**75115A68**	19.12
58730	2.36-oz. Tube	Blue	**7660A21**	11.95
58775	10.15-oz. Cartridge	Blue	**7660A22**	27.39
59830	2.36-oz. Tube	Black	**6641A41**	12.27
59875	10.15-oz. Cartridge	Black	**6641A42**	27.47
Superflex RTV Silicone Sealants				
40464	6.4-oz. Aerosol Can	Black	**74945A81**	17.36
40466	6.4-oz. Aerosol Can	White	**74945A83**	29.88
40481	6.4-oz. Aerosol Can	Clear	**74945A82**	17.36
59330	2.7-oz. Tube	Black	**74945A65**	5.17
59375	10.15-oz. Cartridge	Black	**74945A66**	16.55
59430	2.7-oz. Tube	White	**74945A67**	5.17
59475	10.15-oz. Cartridge	White	**74945A68**	16.55
59530	2.7-oz. Tube	Clear	**74945A69**	5.17
59575	10.15-oz. Cartridge	Clear	**74945A7**	16.55
Superflex Blue RTV Silicone Sealants				
30518	12-oz. Tube	Blue	**7474A12**	21.04
30533	10.15-oz. Cartridge	Blue	**7474A15**	17.02
Superflex Blue RTV Silicone Sealants (Cont.)				
30560	2.7-oz. Tube	Blue	**7474A14**	$5.32
40482	6.4-oz. Aerosol Can	Blue	**7474A24**	18.55
Superflex High-Temperature RTV Silicone Sealants				
40465	6.4-oz. Aerosol Can	Red	**7644A33**	18.46
59630	2.7-oz. Tube	Red	**7644A11**	6.84
59675	10.15-oz. Cartridge	Red	**7644A12**	22.40
Gasket Sealant #1				
30512	7-oz. Tube	Red-Brown	**7479A12**	9.46
Gasket Sealant #2				
30514	3-oz. Tube	Black	**7462A21**	4.06
30515	7-oz. Tube	Black	**7462A22**	9.27
Aviation Gasket Sealant				
———	1-pt. Brush-Top Can	Red-Brown	**7463A24**	11.80
Copper Gasket Maker				
5920	2.36-oz. Tube	Copper	**7490A11**	6.78
5920	10.15-oz. Cartridge	Copper	**7490A21**	20.51
Instant Gasket				
40478	3-oz. Aerosol Can	Black	**6818A21**	20.66
40479	6.4-oz. Aerosol Can	Black	**6818A22**	25.77

Permatex Silicone Gasket Makers

These products are compliant under all state VOC rules in effect on October 1, 2008.

RTV Silicone Gasket Makers— Replace traditional cork, paper, and rubber gaskets and get high-temperature resistance and leakage control with these pastes. Plus, they create seals that retain torque. Apply directly to metal, plastic, glass, rubber, and wood to form a gasket right in place. Resist most chemicals, solvents, and oils. Fill spaces up to 0.25″. Cartridges fit a standard caulk gun; see page 3428 for guns.

Blue is a general purpose paste that forms tough yet flexible gaskets. Begins to harden in one hour; reaches full strength in 24 hours. Temperature range is –65° to +400° F. Color is blue.

Ultra-Blue offer excellent adhesion to oily surfaces; contact with oil actually increases flexibility and seal. They're noncorrosive and nonflammable. Begin to harden in two hours; reach full strength in 24 hours. Temperature range is –65° to +400° F. Color is blue.

Hi-Temp Red resist cracking and shrinking from temperature fluctuations. Begin to harden in one hour; reach full strength in 24 hours. Temperature range is –65° to +600° F. Color is red. Meets MIL-A-46106B.

Ultra-Copper Hi-Temp offers excellent oil and temperature resistance and forms highly flexible gaskets. Temperature range is –65° to +600° F. Color is copper.

Right Stuff Aerosol Instant Seal Gasket Maker— In place of rubber, cork, paper, and felt gaskets, these gasket makers create seals that protect against leaks caused by vibration, thermal expansion, and irregular surfaces. Excellent resistance to oils and coolants. Fill spaces up to 0.25″. Begin to harden in 5 minutes; reach full strength in 24 hours. Temperature range is –75° to +450° F. Color is black.

Permatex No.	Size		Each
Blue RTV Silicone Gasket Maker			
80022	3-oz. Tube	**7535A12**	$4.43
80628	12.9-oz. Cartridge	**7535A15**	15.06
85860	7.25-oz. Aerosol Can	**7535A13●**	16.71
Ultra-Blue RTV Silicone Gasket Maker			
81724	3.35-oz. Tube	**7600A21**	6.42
81725	13-oz. Cartridge	**7600A22**	19.19
Hi-Temp Red RTV Silicone Gasket Maker			
81160	3-oz. Tube	**7583A12**	6.41
81409	11-oz. Cartridge	**7583A15**	17.36
85915	7.25-oz. Aerosol Can	**7583A13●**	18.47
Ultra-Copper Hi-Temp RTV Silicone Gasket Maker			
81878	3-oz. Tube	**76715A71**	6.29
Right Stuff Aerosol Instant Seal Gasket Maker			
25224	7-oz. Aerosol Can	**66175A62**	23.61
85224	7.5-oz. Aerosol Can	**66175A41●**	24.60

● Has a lever-style dispenser.

3M Scotch-Weld Rubber and Gasket Adhesives

Reach full strength in 24 hours. These products are compliant under all state VOC rules in effect on January 1, 2012, except in California, Connecticut, Delaware, Maine, Maryland, New Jersey, New York, Pennsylvania, Rhode Island, and Northern Virginia (unless noted).

847/847L bond leather, nitrile rubber, and gasketing materials to many surfaces. Temp. range is –40° to +150° F. Color is brown. *847* is a medium-thick brush-on adhesive. Begins to harden in 15 minutes. *847L* is a spray adhesive; not for use on EPDM rubber. Begins to harden in 20 minutes.

1300/1300L are strong, heat-resistant adhesives. Bond metal, butyl rubber, neoprene, SBR, and wood. Not for use on EPDM rubber. Temperature range is –30° to +300° F. Color is yellow. *1300* is a medium-thickness brush-on adhesive. Begins to harden in 12 minutes. *1300L* is a sprayable adhesive, begins to harden in 8 minutes, and meets MMM-A-121.

2141 is a water-resistant brush-on adhesive that bonds neoprene, nitrile, and SBR to themselves and other substrates. Begins to harden in 15 minutes. Temperature range is –40° to +180° F. Color is yellow.

Also Available: Additional 3M Scotch-Weld rubber and gasket adhesives. Please ask for 7509A91 and specify the 3M number and size.

3M No.	Size		Each
847	5-oz. Tube	**7509A65★**	$15.62
847	1-qt. Can	**7509A66★**	47.37
847	1-gal. Can	**7509A67★**	154.99
847L	1-qt. Can	**7509A69**	46.52
1300	1-qt. Can	**7509A73**	49.49
1300	1-gal. Can	**7509A76**	163.26
1300L	1-qt. Can	**7509A82**	43.78
1300L	1-gal. Can	**7509A78**	144.49
2141	1-qt. Can	**7509A74**	46.17
2141	1-gal. Can	**7509A77**	140.07

★ This product is compliant under all state VOC rules in effect on January 1, 2011.

Loctite® 5900® Silicone Flange Sealant

Create noncorrosive, low-odor flange seals with good resistance to oil. Begins to harden in 20 minutes; reaches full strength in 24 hours. Temperature range is –60° to +400° F. Color is black. This product is compliant under all state VOC rules in effect on October 1, 2008.

Fits a standard caulk gun; see page 3428 for guns.

10.15-oz. Cartridge	**6708A22**	**Each**	$43.83

For information about adhesives, see page 3400.

Dow Corning Silicone Adhesives/Sealants

Form a tough, rubbery solid in 24 hours at room temperature (unless otherwise stated). Not for concrete, mortar, or under water (unless otherwise stated). These products are compliant under all state VOC rules in effect on October 1, 2008.

Cartridges fit a standard caulk gun; see page 3428 for guns.

732 Multipurpose— For sealing, bonding, and gasketing. Bonds metal, plastic, ceramic, glass, natural and synthetic fiber, silicone resin, vulcanized silicone rubber, and wood. Can be used on overhead and vertical surfaces. Begins to harden in 20 minutes. Temperature range is –76° to +356°F for aluminum, clear, and white; –76° to +400°F for black. All meet MIL-A-46106B. FDA and USDA compliant. NSF 51 certified and NSF 61 certified for use with food equipment and drinking water systems. UL recognized.

795 Building Sealant— For high-performance weatherproofing and glazing of windows. Bonds to aluminum, steel, painted metal, brick, concrete, glass, granite, masonry, and stone. Begins to harden in 3 hours; reaches full strength in 7-14 days. Temperature range is –40° to +300°F. Meets Fed. Spec. TT-S-001543A, Class A; ASTM C920 Type S, Grade NS, Class 50; CAN 2-19.13-M82.

832 Multisurface— Bonds to most surfaces with superior adhesion to metal, plastic, concrete, glass, masonry, and rubber. Begins to harden in 50-90 minutes. Temperature range is –67° to +300°F. UL 94HB listed.

9-1363 Assembly— Begins to harden in 10 minutes for quick handling of parts. Won't corrode copper and other sensitive metals. Plus, it does not have the harsh vinegar smell of other silicones. Forms a flexible seal upon reaching full strength. Temperature range is –40° to +300°F. UL 94HB listed.

Dow Corning No.	Size	Color		Each
732	3.0-oz. Tube	Aluminum	7587A38	$5.07
732	3.0-oz. Tube	Black	7587A36	5.07
732	3.0-oz. Tube	Clear	7587A37	5.07
732	3.0-oz. Tube	White	7587A35	5.07
732	10.1-oz. Cartridge	Aluminum	7587A34	7.83
732	10.1-oz. Cartridge	Black	7587A32	7.83
732	10.1-oz. Cartridge	Clear	7587A33	7.83
732	10.1-oz. Cartridge	White	7587A31	7.83
732	10.3-oz. Tube	Clear	7587A51	$22.62
732	10.3-oz. Tube	White	7587A52	22.62
795	10.3-oz. Cartridge	♣	7452A21	8.82
832	10.1-oz. Cartridge	▲	66235A1	11.61
9-1363	10.1-oz. Cartridge	Black	7770A23	16.42
9-1363	10.1-oz. Cartridge	Gray	7770A24	16.42
9-1363	10.1-oz. Cartridge	White	7770A22	16.42

♣ **To Order:** Please specify color: black, bronze, charcoal, gray, limestone, natural stone, or white.
▲ **To Order:** Please specify color: black, gray, or off-white.

Additional Dow Corning Silicones and Primer

Size	Temp. Range	Color		Each
700 General Industrial Sealant				
3.0-oz. Tube	–76° to +350°F	Clear	7425A51	$4.33
10.1-oz. Cartridge	–76° to +350°F	Aluminum	7425A55	6.05
10.1-oz. Cartridge	–76° to +350°F	Black	7425A52	6.05
10.1-oz. Cartridge	–76° to +350°F	Clear	7425A53	6.05
10.1-oz. Cartridge	–76° to +350°F	White	7425A54	6.05
733 Glass and Metal Sealant				
10.1-oz. Cartridge	–70° to +350°F	Aluminum	7681A25	6.66
10.1-oz. Cartridge	–70° to +350°F	Black	7681A24	6.66
10.1-oz. Cartridge	–70° to +350°F	Clear	7681A22	6.66
10.1-oz. Cartridge	–70° to +350°F	White	7681A23	6.66
739 Plastic Adhesive				
10.1-oz. Cartridge	–65° to +300°F	Black	76045A65	10.48
10.1-oz. Cartridge	–65° to +300°F	White	76045A35	10.48
786 Mildew-Resistant Sealant				
10.1-oz. Cartridge	–75° to +350°F	Trans. White	74885A66	$11.25
10.1-oz. Cartridge	–75° to +350°F	White	74885A65	11.25
790 Masonry Sealant				
10.3-oz. Cartridge	–40° to +300°F	Black	7439A31	9.43
10.3-oz. Cartridge	–40° to +300°F	Bronze	7439A32	9.43
791 Flexible Sealant				
10.3-oz. Cartridge	–58° to +302°F	Gray	7311A61	7.65
995 Glazing Sealant				
10.3-oz. Cartridge	–40° to +300°F	Black	7436A41	9.77
999-A Glazing Sealant				
10.3-oz. Cartridge	–76° to +350°F	Clear	7436A37	6.52
P5200 Primer				
12.0-oz. Can	—	Clear	7442A13	49.07

Silicone Adhesives/Sealants

These silicones (formerly GE silicones) form a tough, rubbery solid in 24 hours at room temperature. Not for underwater, concrete, or mortar applications. These products are compliant under all state VOC rules in effect on October 1, 2008.

Cartridges fit a standard caulk gun; see page 3428 for guns.

(102, 103, 108, and ***109) Multipurpose—*** For sealing, bonding, and gasketing. Thick for use on vertical and overhead surfaces. Bond metal, plastic, ceramic, glass, silicone resin, vulcanized silicone rubber, and wood. Begin to harden in 20 minutes. Temperature range is –75° to +400°F. Meet MIL-A-46106B, Group I, Type I. FDA compliant and USDA approved. NSF 51 certified for use with food equipment. UL recognized.

(106) High Temperature— Use for sealing heating elements, for aerospace gasketing, as insulation, and as a protective coating. Also for oven conveyor belts, industrial ovens, and bag filters on smoke stacks. Temperature range is –75° to +500°F. FDA compliant and USDA approved. NSF 51 certified for use with food equipment. UL recognized. Begins to harden in 20 minutes and meets MIL-A-46106B, Group III, Type I.

(118) Flowable— Self-leveling for filling cracks and crevices. Use for making gaskets and coating mechanical devices. Bonds metal, plastic, ceramic, and glass. Begins to harden in 20 minutes. Temperature range is –75° to +400°F. FDA compliant. USDA approved. NSF 51 certified for use with food equipment. UL recognized.

(157 and ***159) High Strength—*** High tensile strength for sealing, bonding, and gasketing and thick for use on vertical and overhead surfaces. Begin to harden in 45 minutes. Temperature range is –75° to +400°F for 157; –75° to +500°F for 159.

(6708) Multipurpose Low Odor— Doesn't have the harsh vinegar smell of other silicones. Bonds aluminum, steel, plastic, and glass. Resists moisture and weather. Noncorrosive to most metals (may discolor copper and brass). Begins to harden in 25 minutes. Temperature range is –75° to +400°F.

GE No.	Size	Color		Each
102	2.8-oz. Tube	White	7545A451	$5.37
102	10.1-oz. Cartridge	White	7545A452	8.82
103	2.8-oz. Tube	Black	7545A461	5.37
103	10.1-oz. Cartridge	Black	7545A462	8.82
106	2.8-oz. Tube	Red	74975A53	23.72
106	10.1-oz. Cartridge	Red	74975A56	48.41
108	2.8-oz. Tube	Translucent	7545A471	5.37
108	10.1-oz. Cartridge	Translucent	7545A472	8.82
108	10.3-oz. Tube	Translucent	7545A473	$31.07
109	10.1-oz. Cartridge	Aluminum	7545A482	8.82
118	2.8-oz. Tube	Translucent	6604A36	17.54
118	10.3-oz. Tube	Translucent	6604A38	43.61
157	2.8-oz. Tube	Gray	7589A21	33.03
159	2.8-oz. Tube	Red	7589A23	33.03
6708	10.1-oz. Cartridge	Translucent	7547A583	11.81

Silicone Adhesives/Sealants in Easy-Dispensing Cans

Sealing, bonding, and waterproofing made easy—just press the nozzle to dispense a uniform bead of silicone. Begin to harden in 1 hour; reach full strength in 24 hours. Come in a 7.25-oz. can. Meet MIL-A-46106B, Group I, Type I. FDA compliant. These products are compliant under all state VOC rules in effect on October 1, 2008.

General Purpose— For sealing windows and other general applications. Temperature range is –60° to +450°F. Color is clear.
75075A676 ..... **Each** $23.02

High Moisture— For high-moisture indoor and outdoor applications. Temperature range is –60° to +450°F. Color is white.
75075A677 ..... **Each** $23.27

For information about adhesives, see page 3400.

Silicone Adhesives/Sealants for Electronics

Perfect for electronic and electrical applications, these silicones form a tough, rubbery solid in 24 hours at room temperature (unless otherwise stated). These products are compliant under all state VOC rules in effect on October 1, 2008. Cartridges fit a standard caulk gun; see page 3428 for guns.

Standard Silicones— *Formerly GE silicones.*

11 Two-Part Encasing— Pourable silicone rubber for encasing (potting) electronic components to dampen shock and vibration. Includes a combined 1 lb. of base compound and curing agent. Begins to harden in 1½ hrs. Meets GSA A-A-56023A. FDA compliant.

60 Two-Part High Temperature— Similar to 11 except it withstands higher temperatures and begins to harden in 2 hours. Does not meet GSA A-A-56023A and is not FDA compliant.

162 Noncorrosive— Noncorrosive to copper and brass. Bonds capacitors, resistors, and integrated circuits to printed circuit boards. Also insulates exposed copper wires and terminals. Begins to harden in 4 hours; reaches full strength in 48 hours. Meets MIL-A-46146B. UL recognized.

Dow Corning Silicones

182 Sylgard Encasing— Two-part pourable silicone for encasing items in adhesive (potting). Provides long-term protection in demanding electronic applications by acting as a dielectric insulator, a barrier against environmental contamination, and a stress-relieving shock and vibration absorber. Includes a combined 17.6 oz. of base compound and curing agent; mix ratio is 10:1. Begins to harden in 8 hours. UL 94V1 listed.

734 Flowable— Free flowing and self-leveling for filling cracks and crevices. Good for electrical insulation. Use on metal, plastic, ceramic, and glass. Begins to harden in 13 minutes. FDA compliant. NSF 51 certified for use with food equipment. UL listed.

736 Heat Resistant— Use to seal and encase heating elements in adhesive (potting), as a protective coating, and for aerospace gasketing and electrical insulating. Begins to harden in 17 minutes. Complies with USDA and FDA CFR21 177.2600 covering indirect food contact. NSF 51 certified for use with food equipment. Meets MIL-A-46016, Group I, Type I. UL listed.

748 Noncorrosive Nonflowable Low Odor— Use with corrosion-sensitive electrical and electronic equipment. Plus, it doesn't have the harsh vinegar smell of other silicones. Bonds metal, plastic, glass, and rigid PVC. Resists moisture and weather. Begins to harden in 30 minutes. Complies with FDA CFR21 177.2600 covering indirect food contact. UL 94HB listed.

3165 Noncorrosive Fast Tack— This paste-like silicone begins to harden in 4 minutes. Use for sealing wires, electrical leads, and yokes. UL 94V0 listed.

	Size	Temperature Range	Color		Each
Standard Silicones					
11	1-lb. Kit	–65° to +400° F	White	74965A21	$70.04
60	1-lb. Kit	–65° to +500° F	Red	74965A23	74.64
162	2.8-oz. Tube	–75° to +400° F	White	74935A45	17.57
162	10.1-oz. Cartridge	–75° to +400° F	White	74935A47	36.84
Dow Corning Silicones					
182	17.6-oz. Kit	–49° to +392° F	Clear	8152A26	93.52
734	3.0-oz. Tube	–85° to +356° F	Clear	75825A1	14.56
734	3.0-oz. Tube	–85° to +356° F	White	75825A3	14.56
734	10.1-oz. Cartridge	–85° to +356° F	Clear	75825A2	31.11
734	10.1-oz. Cartridge	–85° to +356° F	White	75825A4	31.11
736	3.0-oz. Tube	–85° to +500° F	Red	74515A32	12.93
736	10.1-oz. Cartridge	–85° to +500° F	Red	74515A33	23.50
736	10.3-oz. Tube	–85° to +500° F	Red	74515A34	30.92
748	3.0-oz. Tube	–67° to +350° F	Off-White	74915A654	10.15
748	10.1-oz. Cartridge	–67° to +350° F	Off-White	74915A655	19.10
3165	10.3-oz. Cartridge	–49° to +392° F	Gray	8156A17	22.23

Dow Corning Hot-Melt Silicone Sealant

Get an ultra clear, long-lasting seal with this hot-melt silicone adhesive. Once applied to a surface, you have 15 minutes before parts must be joined; begins to harden immediately upon joining. Reaches full strength in 48 hours.

Temperature range is –25° to +200° F. Comes in a 50-g (1.8 oz.) cartridge; fits applicator gun (sold separately). Sealant is FDA CFR21 177.2600 compliant. This product is compliant under all state VOC rules in effect on October 1, 2008.

Applicator gun holds a 50-g cartridge, heats in 10-12 minutes, and provides 20 minutes of cord-free use when heated. Operates on 120 volts. Includes a 6½-ft. cord with two-prong plug.

Dow Corning No.	Color			Each
HM-2500	Clear	8148A22		$27.14
Applicator Gun		7354A66	Each	$136.30

Underwater Silicone Sealant

Create waterproof bonds on metal, plastic, glass, and rubber. Sealant forms a tough, rubbery solid that stays flexible and won't crack or shrink. It can be used on aquariums—once hardened, it will not harm fresh- or saltwater fish.

Begins to harden in 10-20 minutes and reaches full strength in 48 hours. Temperature range is –40° to +400° F. Color is clear.

Sealant is FDA CFR21 177.2600 compliant when it reaches full strength and is washed. Meets ASTM C920, Class 25. This product is compliant under all state VOC rules in effect on October 1, 2008.

2.8-oz. Tube ..... 7327A21 Each $7.58

Pliobond Universal Cements

Make flexible, waterproof, chemically resistant bonds that strengthen with age. Begin to harden in 3-5 min. Color is tan. Cover approximately 130-330 sq. ft./gal.

20 and 25— For metal, plastic, ceramic, glass, and rubber. Temperature range is –40° to +375° F. These products are compliant under all state VOC rules in effect on January 1, 2011, unless noted.

35— For porous surfaces like cork and fabric. Temperature range is –40° to +375° F. These products are compliant under all state VOC rules in effect on January 1, 2011, unless noted.

HT-30— For high-temperature applications to create a bond on porous and nonporous surfaces. Heat to 300° F to reach full strength. Temperature range is –40° to +500° F. These products are compliant under all state VOC rules in effect on January 1, 2012, except in California, Connecticut, the D.C. area, Delaware, Maine, Maryland, New Jersey, New York, Pennsylvania, Rhode Island, and Northern Virginia.

Pliobond No.	Size	Reaches Full Strength		Each
20	1-oz. Tube	3-14 days	7468A22	$3.81
25	3-oz. Brush-Top Can	3-14 days	7468A61	6.67
25	½-pt. Brush-Top Can	3-14 days	7468A62	10.05
25	1-pt. Can	3-14 days	7468A63	19.19
25	1-qt. Can	3-14 days	7468A8★	32.07
25	1-gal. Can	3-14 days	7468A9★	104.36
35	½-pt. Brush-Top Can	3-14 days	7468A53	10.78
35	1-pt. Can	3-14 days	7468A54	21.63
35	1-qt. Can	3-14 days	7468A51★	34.21
35	1-gal. Can	3-14 days	7468A52★	117.82
HT-30	1-qt. Can	25-30 min.	7468A3	33.81
HT-30	1-gal. Can	25-30 min.	7468A4	104.87

★ These products are compliant under all state VOC rules in effect on June 1, 2011, except in California.

3M Super Silicone Adhesives/Sealants

Bond to metal, plastic, ceramic, glass, rubber, and wood. Resist vibration and moisture. Temperature range is –76° to +400° F. These products are compliant under all state VOC rules in effect on October 1, 2008.

Cartridges fit a standard caulk gun; see page 3428 for guns.

3M No.	Size	Color		Each
8661	3.0-oz. Tube	Clear	74955A66	$10.29
8662	3.0-oz. Tube	Black	74955A65	10.29
8663	10.3-oz. Cartridge	Clear	74955A68	15.20
8664	10.3-oz. Cartridge	Black	74955A67	15.20

For information about adhesives, see page 3400.

Liquid Nails Construction Adhesives

Cartridge

Tube

Can

Liquid nails provide a quick initial bond and are waterproof, unless otherwise stated. These products are compliant under all state VOC rules in effect on October 1, 2008.

10-oz. cartridges fit standard caulk guns; 28-oz. cartridges fit large-size caulk guns. See page 3428 for guns.

Latex-Base Interior Grade— Cleans up with water. Bonds already finished panels, concrete, drywall, foam board, hardboard, plywood, and wood. Adhesive is water resistant. Begins to harden in 30 minutes. Because it is water based, the time it takes to reach full strength varies depending on substrate, humidity, moisture, etc. Application temperature range is +40° to +100° F; operating temperature range is +40° to +120° F.

Vertical Hold Interior/Exterior Grade— Adheres items vertically to wood, concrete, plaster, and metal. Ideal for mirrors (will not desilver backing). Begins to harden in 60 minutes. Application temperature range is +40° to +100° F; operating temperature range is –40° to +300° F.

Interior/Exterior Deck and Subfloor Grade— Weatherproof and bond lumber, treated lumber, plywood, particleboard, and other building materials. Begins to harden in 15-20 minutes. Fills gaps up to ⅜″. Application temperature range is +40° to +100° F; operating temperature range is –20° to +140° F. Meet American Plywood Association AFG-01, ASTM D3498, and ASTM C557.

Heavy Duty Interior/Exterior Grade— Water resistant, this multipurpose high-strength adhesive bonds the heaviest materials with exceptional hold. For fiberboard, drywall, polystyrene foam, particleboard, plywood, and wood trim. Begin to harden in 20 minutes. Application temperature range is +40° to +100° F; operating temperature range is 0° to +140° F (unless noted).

Liquid Nails No.	Size	Reaches Full Strength		Each
Latex-Base Interior Grade— *Color is off-white.*				
LN-604	10-oz. Cartridge	Varies	7534A18	$3.74
Vertical Hold Interior/Exterior Grade— *Color is tan.*				
LN-950	10-oz. Cartridge	48 hrs.	7534A64	5.09
Interior/Exterior Deck and Subfloor Grade— *Color is white.*				
LN-902	10-oz. Cartridge	7 days	7534A53	4.02
LN-902	28-oz. Cartridge	7 days	7534A52	5.06
Heavy Duty Interior/Exterior Grade— *Color is tan (unless noted).*				
LN-207	2.5-oz. Tube	24 hrs.	7534A63★	4.43
LN-903	10-oz. Cartridge	7 days	7534A61	3.65
LNP-903	28-oz. Cartridge	7 days	7534A62	7.62
LNP-903	1-qt. Can	7 days	7534A27	9.21
LNP-903	1-gal. Can	7 days	7534A28	24.18
LNP-903	5-gal. Can	7 days	7534A38	118.12

★ Application temperature range is –35° to +140° F; operating temperature range is –80° to +350° F. Color is clear.

Weldwood Contact Cements

All reach full strength in 72 hours. Application temperature range is +65° to +110° F; operating temperature range is –40° to +180° F. These products are compliant under all state VOC rules in effect on October 1, 2008.

Original— Hardens to form a strong water-, weather-, and chemical-resistant bond in 15 minutes to 2 hours. Bonds metal, plastic, leather, paper, rubber, and wood. Meets MMM-A-130B.

Nonflammable— Neoprene rubber formulation for superior adhesion and low odor. Bonds paper and wood. Hardens to form a water-resistant bond in 30-40 min. Works on porous surfaces and is water based.

Size	Approximate Coverage	Color		Each
Original				
3-oz. Bottle	216 sq. ft./gal.	Tan	7488A64	$4.71
1-pt. Can	216 sq. ft./gal.	Tan	7488A65	9.25
Nonflammable				
1-pt. Can	760 sq. ft./gal.	White	7514A23	12.80
1-qt. Can	760 sq. ft./gal.	White	7514A24	16.33
1-gal. Can	760 sq. ft./gal.	White	7514A25	44.25

3M Scotch-Weld Contact Adhesives

Get quick, secure bonds. Application temperature is above 65° F. All reach full strength in 24 hours.

10— Multipurpose for bonding aluminum, steel, plastic laminate, canvas, masonry, rubber, wallboard, and wood veneer. Begins to harden in 5-10 minutes. Operating temperature range is –20° to +160° F. Covers approximately 288 sq. ft./gal. Meets MMM-A-121. This product is compliant under all VOC rules in effect on June 1, 2011, except in California.

1357— High performance for bonding metal, plastic laminate, rubber, and wood. Begins to harden in 10 min. Operating temperature range is –20° to +220° F. Covers approximately 308 sq. ft./gal. Meets MIL-A-21366A and MMM-A-121. This product is compliant under all state VOC rules in effect on June 1, 2011, except in California (unless noted).

30-NF— A favorite in cabinet shops, these adhesives are high-strength and water based with good heat resistance and low odor. They bond canvas, foamed plastic, leather, plastic laminate, wood, and wood veneer. Not recommended for metal. Begin to harden in 30 minutes. Operating temperature range is –20° to +220° F. Cover approximately 680 sq. ft./gal. Meet MIL-A-24179A, Type I. This product is compliant under all state VOC rules in effect on October 1, 2009.

3M No.	Size	Color		Each
10	1-qt. Can	Lt. Yellow	75425A67	$29.29
10	1-gal. Can	Lt. Yellow	75425A73	89.52
1357	1-pt. Can	Gray-Green	75425A71 ♦	29.53
1357	1-qt. Can	Gray-Green	75425A66	39.17
1357	1-gal. Can	Gray-Green	75425A72	119.61
30-NF	1-qt. Jug	Green	75425A68	37.10
30-NF	1-qt. Jug	Clear	75425A81	37.10
30-NF	1-gal. Jug	Green	75425A74	113.24
30-NF	1-gal. Jug	Clear	75425A82	113.24

♦ This product is compliant under all state VOC rules in effect on October 1, 2009.

3M Scotch-Weld Plastic Adhesives

Make secure bonds on plastic. Reach full strength in 24 hours (unless otherwise stated). Temperature range is –20° to +160° F. These products are compliant under all state VOC rules in effect on January 1, 2012, except in California, Connecticut, the D.C. area, Delaware, Maine, Maryland, New Jersey, New York, Pennsylvania, Rhode Island, and Northern Virginia (unless noted).

826— Bonds cellulose acetate, PET, and PVC. Excellent resistance to fuels, water, and oil.

1099— Bonds vinyl extrusions and sheeting. Also good for fabric, foam, ABS, PVC, and acrylic. It resists weather, water, and oil. Color is tan. Meets MIL-A-13883B, Type I and MMM-A-189C, Class 2.

2262— Bonds flexible, rigid, and extruded vinyls to metals and other materials without staining.

4475— Bonds ceramic, cloth, glass, leather, and vinyl to themselves, as well as other materials. Adhesive dries to a firm bond and resists water, soap solutions, oil, and grease.

4693— Bonds ABS, glass-filled PET, polypropylene, polyethylene, styrene polymers, and metal. Has good water resistance. Reaches full strength in 7 days.

3M No.	Size	Begins to Harden	Color		Each
826	1-qt. Can	45 min.	Lt. Amber	75285A67	$64.24
1099	5-oz. Tube	40 min.	Tan	75285A72 ♦	15.81
1099	1-qt. Can	40 min.	Tan	75285A68 ♦	45.28
1099	1-gal. Can	40 min.	Tan	75285A73 ♦	156.79
2262	1-qt. Can	5-10 min.	Clear	75285A66 ♦	73.70
4475	1-qt. Can	5-10 min.	Clear	75285A65	68.56
4693	1-qt. Can	60 min.	Clear	75285A69	42.28
4693	1-gal. Can	60 min.	Clear	75285A74	130.38

♦ This product is compliant under all state VOC rules in effect on January 1, 2011.

Contact Cement for Vinyl Fabrics

Excellent for bonding vinyl-coated fabric, this fast-drying adhesive also bonds metal, leather, rigid plastic, urethane, vinyl foam, and wood. Strong yet flexible, it stands up to weather, oil, fuel, grease, and chemicals. Begins to harden in 2-5 minutes; reaches full strength in 24-48 hours. Covers approximately 100 sq. ft./gal.

These products are compliant under all state VOC rules in effect on October 1, 2009 (unless noted).

Size	Color		Each
4-oz. Brush-Top Can	Amber	7507A1	$5.93
½-pt. Brush-Top Can	Amber	7507A2	8.71
1-pt. Brush-Top Can	Amber	7507A3	13.73
1-qt. Brush-Top Can	Amber	7507A4 ♣	17.00
1-gal. Can	Amber	7507A5 ♣	37.93

♣ This product is compliant under all state VOC rules in effect on June 1, 2011, except in California.

For information about adhesives, see page 3400.

Weld-On Cements for Plastics

Fusing two plastic surfaces together, these adhesives make extra-strong bonds. Application temperature range is 70° to 80° F. Operating temperature range varies with materials being joined. These products are compliant under all state VOC rules in effect on June 1, 2011, except in California (unless noted).

Weld-On 3 bonds acrylic, butyrate, PETG, polycarbonate, and polystyrene to themselves. Dries clear. ***Weld-On 4052*** bonds ABS, acrylic, PVC, CPVC, polystyrene, and vinyl to themselves and each other. Dries clear. ***Weld-On 4707*** bonds ABS to itself. Dries white. ***Weld-On 4807*** is high strength for joining various types of polystyrene. Dries white.

Also Available: ***Weld-On 16*** in 1½-oz. tubes. Please ask for 7515A11♣.

No.	Begins to Harden	Reaches Full Strength	1-pt. Can	Each	1-gal. Can	Each
3	30-45 sec.	24-48 hrs.	7528A13	$14.76	—	—
4052	15 min.	7 days	7352A11	21.80	7352A12	$109.81
4707	10 min.	24-72 hrs.	7352A17♣	16.73	7352A19♣	76.91
4807	10-15 min.	24-72 hrs.	7352A24	14.65	7352A26	76.91

			1-pt. Can		4-oz. Can	
4	1-2 min.	7 days	7517A2	$15.87	7517A1	$8.13

♣ This product is compliant under all state VOC rules in effect on April 1, 2011.

Copper Pipe Adhesives

Don't bother soldering—these adhesives form leakproof joints on copper and brass and resist water and heat. Ideal for air conditioning and refrigeration work and drinking water service. Reach full strength in 24 hours. Color is copper. NSF 61 certified for drinking water systems. These products are compliant under all state VOC rules in effect on October 1, 2008.

Standard is resin and hardener in 1-oz. dual-cartridge syringe; mix ratio is 1:1. Begins to harden in 20 min. Pressure rating is 1,139 psi for ½″ pipe. UL listed for sprinkler systems. ***No mix*** is a one-part adhesive in a bottle. Begins to harden in 7 min. Pressure rating is 500 psi for 2½″ pipe.

	Size	Temperature Range		Each
Standard	1-oz.	+36° to +180° F	74675A11	$10.29
No Mix	0.35-oz.	–40° to +230° F	6913A11	19.49
No Mix	1.76-oz.	–40° to +230° F	6913A12	31.68

Superbond Polyurethane Glues

Extra-strong adhesion in an easy-to-use squeeze bottle. Bond metal, plastic, ceramic, glass, stone, and wood. Glues are waterproof, paintable, stainable, and sandable at full strength. For indoor and outdoor use. Begin to harden in 10-20 minutes; reach full strength in 24 hours. These products are compliant under all state VOC rules in effect on October 1, 2008.

Economy's application temperature range is +40° to +90° F; withstands temperatures up to +150° F. ***Gorilla's*** application temperature range is +68° to +130° F; withstands temperatures up to +212° F.

	Economy			Gorilla		
Size	Color		Each	Color		Each
2-oz.	Brown	7483A22	$5.49	Lt. Tan	7454A21	$5.57
4-oz.	Brown	7483A24	7.69	Lt. Tan	7454A22	8.28
8-oz.	Brown	7483A26	10.98	Lt. Tan	7454A23	13.84
18-oz.	—	—	—	Lt. Tan	7454A24	21.37
36-oz.	—	—	—	Lt. Tan	7454A25	33.09

Plastic Resin Wood Glue

Ideal for laminating and edge gluing, this powder adhesive mixes with water to form bonds stronger than the wood itself. Mix ratio is 10:4. Begins to harden in 2 hours; reaches full strength in 10 hours. Application temp. range is 70° to 100° F; operating temp. range is 20° to 140° F. Color is tan. This product is compliant under all state VOC rules in effect on October 1, 2008.

1-lb. Can	7469A1	Each	$9.86
4.5-lb. Can	7469A2	Each	$35.48

Extreme Environment Wood Glue

Also known as resorcinol, this glue provides strong, durable bonds in severe environments. Withstands freshwater, salt water, outdoor exposure, and tropical to subzero temperatures. Bonds textiles, fiber boards, cork, leather, and wood. Includes 16-oz. can of liquid resin and 4-oz. can of powdered catalyst. Mix ratio is 5:1. Begins to harden in 3-4 hours; reaches full strength in 10 hours at 70° F. Color is purple. Meets MMM-A-181D, Grade B, ANSI/AITC A 190.1-1983, and MIL-A-22397, Grade A.

This product is compliant under all state VOC rules in effect on September 1, 2010, except in California.

16-oz. Can	7459A2	Each	$51.67

Floor Covering Adhesive

Bond carpeting, vinyl tile, and vinyl composite tile to subfloors with this water-resistant adhesive. For indoor use. Apply above 65° F; operating temperature range is 40° to 120° F. One gallon covers approximately 45 sq. ft. at ⅛″ thick and 120 sq. ft. at 1/16″ thick. Color is beige. This product is compliant under all state VOC rules in effect on October 1, 2008.

Size	Begins to Harden	Reaches Full Strength		Each
1-qt. Can	15-60 min.	24-36 hrs.	66515A12	$7.09
1-gal. Can	15-60 min.	24-36 hrs.	66515A13	17.82

Plastic-Pipe Cements

Begin to harden immediately; reach full strength in 1-48 hrs. depending on pipe diameter. Temperature range varies with application materials. These products are compliant under all state VOC rules in effect on October 1, 2009, except where noted.

(A) Medium Duty for PVC—Use on drinking water, drain, waste, and vent pipes and fittings up to 6″ dia. Meet ASTM D2564.

(B) Heavy Duty for PVC—Same as medium duty for PVC, except is suitable for use on pipes up to 12″ diameter.

(C) For CPVC—Join CPVC plastic pipe and fittings. Use on hot- and cold-water plumbing and industrial piping. *Yellow* is for use on pipes up to 2″ dia. *Orange* is for use on pipes up to 6″ dia. Meet ASTM F493.

(D) For ABS—Specially designed to handle rigid ABS pipe. Use for drain, waste, and vent pipes and fittings. Meet ASTM D2235.

(E) All Purpose—Use on PVC, ABS, styrene, and CPVC pipes and fittings. Use for solvent welding most plastic pipe, conduit, water lines, and drain, waste, and vent systems. These products are compliant under all state VOC rules in effect on June 1, 2011, except in California.

(F) Primer—Removes gloss and prepares PVC and CPVC pipe for solvent welding. Meets ASTM F656.

(G) Cleaner—Removes dirt, grease, and moisture from all types of pipe and fittings. Specifically recommended for PVC, CPVC, and ABS plastic.

	Size	Color		Each
A	8-oz. Brush-Top Can	Clear	74605A81	$4.37
A	1-pt. Brush-Top Can	Clear	74605A12	8.43
A	1-qt. Brush-Top Can	Clear	74605A13	13.55
B	8-oz. Brush-Top Can	Clear	74605A82	4.55
B	8-oz. Brush-Top Can	Gray	74605A83	5.83
B	1-pt. Brush-Top Can	Clear	74605A22	7.57
B	1-pt. Brush-Top Can	Gray	74605A65	10.81
B	1-qt. Brush-Top Can	Clear	74605A23	17.28
B	1-qt. Brush-Top Can	Gray	74605A66	17.38
C	8-oz. Brush-Top Can	Yellow	74605A87	6.42
C	8-oz. Brush-Top Can	Orange	74605A31	4.40
C	1-pt. Brush-Top Can	Orange	74605A32	8.57
C	1-qt. Brush-Top Can	Yellow	74605A33	19.56
D	8-oz. Brush-Top Can	Black	74605A85	4.73
D	1-pt. Brush-Top Can	Black	74605A51	6.71
D	1-qt. Brush-Top Can	Black	74605A52	10.73
E	8-oz. Brush-Top Can	Clear	74605A67	4.92
E	1-pt. Brush-Top Can	Clear	74605A68	9.54
E	1-qt. Brush-Top Can	Clear	74605A69	15.80
F	8-oz. Brush-Top Can	Clear	18815K31	4.59
F	8-oz. Brush-Top Can	Purple	74605A86	4.67
F	1-pt. Brush-Top Can	Clear	18815K32	8.32
F	1-pt. Brush-Top Can	Purple	74605A42	9.08
F	1-qt. Brush-Top Can	Purple	74605A43	15.06
G	8-oz. Brush-Top Can	Clear	74605A44	3.82
G	1-pt. Brush-Top Can	Clear	74605A53	5.68
G	1-qt. Brush-Top Can	Clear	74605A64	10.37

Carpenters' Wood Glues

Bond soft and hard woods. Sand and paint at full strength. Come in a bottle, except the 5-gal. size which is in a pail. These products are compliant under all state VOC rules in effect on October 1, 2008.

Standard begin to harden in 5-10 min.; reach full strength in 24 hrs. Withstand temperatures up to 150° F (unless noted). Use indoors. Color is yellow (unless noted). ***Water resistant*** begins to harden in 10-25 min.; reaches full strength in 24 hrs. Withstands temperatures up to 150° F. Use indoors and out. Color is tan. ***Waterproof*** is FDA approved for indirect food contact. Begins to harden in 10 min.; reaches full strength in 24 hrs. Withstands temperatures up to 120° F. Use indoors and out. Color is tan.

	Standard		Water Resistant		Waterproof	
Size		Each		Each		Each
4-oz.	7476A19	$2.01	7476A39	$2.82	7476A51	$3.97
8-oz.	7476A11	2.90	7476A31	3.91	7476A52	6.04
1-pt.	7476A12	4.86	7476A32	5.88	7476A53	9.79
1-pt.	7476A22♠♦	7.08	—	—	—	—
1-qt.	7476A16♦	8.60	—	—	7476A54	14.97
1-gal.	7476A14	20.52	7476A34	28.55	7476A55	40.17
5-gal.	7476A15	99.74	—	—	—	—

♠ Color is brown. ♦ Withstands temperatures up to 120° F.

Stair Tread Adhesives

Made especially for use with rubber and vinyl stair treads and nosing. Use indoors on wooden and concrete stairs. These products are compliant under all state VOC rules in effect on October 1, 2008.

(H) Stair tread adhesive provides a strong, water-resistant bond. Begins to harden in 45 min.; reaches full strength in 24 hours. Temperature range is 55° to 85° F.

(J) Nosing epoxy prevents cracks by filling in gaps between the nose and front edge of the stair. Begins to harden in 30 min.; reaches full strength in 24 hours. Temperature range is 70° to 80° F.

	Size	Approx. Coverage	Color		Each
H	1-gal. Can	125-150 sq. ft.	White	62695T82	$47.67
J	1-qt. Can	75 ft.	Cream	62695T86	36.86

For information about adhesives, see page 3400. For caulk guns, see page 3428.

Cove Wall Base Adhesives

Use indoors to bond rubber and vinyl cove wall base to concrete, drywall, painted surfaces, and wood. Begin to harden in 20-25 minutes; reach full strength in 24-48 hours. Apply at 65° to 85° F (unless noted). These products are compliant under all state VOC rules in effect on October 1, 2008. ***10.3-oz. cartridge*** fits a standard caulk gun. ***30-oz. cartridge*** fits a large-size caulk gun.

Size	Operating Temp. Range	Color		Each
10.3-oz. Cartridge	0° to 120° F	Off-White	7539A21■	$4.84
30-oz. Cartridge	40° to 90° F	White	7539A17	6.13
1-gal. Pail	40° to 90° F	White	7539A12	28.95

■ Application temperature range is 65° to 100° F.

Masonry Bonding Adhesive

Get the strength of mortar without the hassle; bond concrete, brick, stone, rock, wood, and many other materials. Meets structural requirements of block construction and landscaping industries. Begins to harden in 15 minutes; reaches full strength in 72 hours. Apply at +40° to +100° F; operating temperature range is -20° to +160° F. Color is brown. Comes in a 10.3-oz. cartridge that fits a standard caulk gun. This product is compliant under all state VOC rules in effect on October 1, 2008.

8149A23 ..... **Each** $9.58

Multipurpose Acrylic Sealant

Bonds to foam, metal, plywood, wallboard, and wood. Unlike most silicone sealants, this sealant can be painted at full strength, dries quickly, and cleans up easily with just water. It's ideal for joint sealing and is thick for vertical and overhead use. Resists water and UV light. Begins to harden in 15-30 minutes; reaches full strength in 12-24 hours. Apply above 40° F. Operating temperature range is 0° to 200° F. Color is gray. Fits a standard caulk gun. Meets USDA requirements for use in meat and poultry processing. This product is compliant under all state VOC rules in effect on October 1, 2008.

10.3-oz. Cartridge ..... 9130T91 **Each** $8.60

Elastomeric Adhesives/Sealants

Similar to polyurethane, these low-odor adhesives/sealants are ideal for sealing joints between materials with different textures and expansion/contraction rates. Bond metal, ceramic, concrete, glass, masonry, and wood. Resist mild chemicals and solvents. Begin to harden in 30 minutes; reach full strength in 24 hours. Application temperature range is +40° to +120° F; operating temperature range is –40° to +195° F. Come in a 10.3-oz. cartridge that fits a standard caulk gun. Meet Fed. Spec. TT-S-00230C, Type 2, Class A. These products are compliant under all state VOC rules in effect on October 1, 2008.

Black	7606A33	**Each**	$5.35
Gray	7606A34	**Each**	$5.35
Limestone	7606A36	**Each**	$5.35
White	7606A32	**Each**	$5.35

Polyurethane Adhesives/Sealants for Underwater Use

Whether you have a damp or completely submerged surface, these sealants provide tough seals. They bond to aluminum, fiberglass (FRP), and wood and have excellent tear and abrasion resistance. Application temperature range is +45° to +90° F; operating temperature range is –40° to +180° F. Come in a 10.1-oz. cartridge that fits a standard caulk gun. These products are compliant under all state VOC rules in effect on October 1, 2008.

Begins to Harden	Reaches Full Strength	*White*	Each	*Black*	Each
70 min.	1½-3 days	75005A594	$9.80	75005A595	$9.80
70 min.	3-6 days	75005A591	8.72	75005A593	8.72

3M Marine Adhesives/Sealants

Form a strong seal with these nonshrinking, high-performance adhesives/sealants that retain their strength in and out of water. Resist weather and salt water. Temperature range is –40° to +190° F. Cartridges fit a standard caulk gun. These products are compliant under all state VOC rules in effect on October 1, 2008.

5200 Standard and ***Fast—*** These polyurethanes can be used to bond fiberglass (FRP) and wood.

4000 Fast— This polyether has superior UV resistance and is non-corrosive and fast hardening. Use on fiberglass (FRP) and wood.

Color	Begins to Harden	Reaches Full Strength	*3-oz. Tube*	Each	*10-oz. Cartridge*	Each
5200 Standard						
White	48 hrs.	7 days	67015A21	$15.27	67015A31	$25.30
Black	48 hrs.	7 days	67015A41	15.27	67015A51	25.30
5200 Fast						
White	1 hr.	24 hrs.	67015A42	17.57	67015A44	28.94
4000 Fast						
White	22 min.	24 hrs.	67015A63	14.14	67015A65	21.57

3M 2084 Aluminum Adhesive/Sealant

Bond and seal aluminum to glass. Sealant resists water, oil, and fuel. Begins to harden in 5 minutes; reaches full strength in 24 hours. Temperature range is –30° to +250° F. Color is aluminum. This product is compliant under all state VOC rules in effect on October 1, 2008.

5-oz. Tube ..... 7432A21 **Each** $14.80

Crystal-Clear Sealant for Plastics

Bonds ABS, acrylic, CPVC, PVC, fiberglass (FRP), Lexan, polyamide, polycarbonate, polyester (PET), polystyrene, and polyurethane. Begins to harden in 20-40 minutes; reaches full strength in 24 hours. Apply above 0° F; operating temperature range is –75° to +350° F. Fits standard caulk gun. This product is compliant under all state VOC rules in effect on October 1, 2008.

10.1-oz. Cartridge ..... 7322A31 **Each** $11.58

High-Strength Adhesives/Sealants

Bond and seal metal, ABS, acrylic, PVC, cement, glass, leather, rubber, some composites, tile, vinyl, and wood. These adhesives can be used on dissimilar materials and can be painted at full strength. Begin to harden in 4-5 minutes; reach full strength in 24-72 hours. Apply at +50° to +90° F; operating temperature range is –40° to +150° F. Come in a 10.2-oz. cartridge (unless noted) that fits a standard caulk gun. These products are compliant under all state VOC rules in effect on November 1, 2010, except in California.

Standard— Resist diluted acids and caustics. For indoor use.

Marine— An underwater sealant, it resists saltwater spray, most chemicals, and yellowing from sunlight exposure. For indoor and outdoor use.

Extra Thick— For indoor overhead and vertical use.

Color	*Standard*	Each	*Marine*	Each	*Extra Thick*	Each
Black	7475A51	$7.80	____	____	7475A42	$8.26
Clear	7475A66	7.31	7475A68	$9.16	7475A69	7.78
Clear	7475A65★	5.12	7475A67★	7.61	____	____
Gray	____	____	____	____	7475A44	8.26
White	____	____	____	____	7475A46	8.26

★ Comes in a 3.7-oz. tube.

Metal-Duct Sealants

Adhere to metal to seal low-, medium-, and high-pressure duct systems. Use indoors and out. Cartridges fit a standard caulk gun. These products are compliant under all state VOC rules in effect on October 1, 2008.

Standard— Begins to harden in 1 hour; reaches full strength in 48 hours. Temperature range is -25° to +200° F. Color is gray. Meets SMACNA (Sheet Metal and Air Conditioning National Assoc.) leakage requirements and UL Classification UL 723, Class 1.

10.5-oz. Cartridge	73335A65	**Each**	$5.12
1-gal. Can	73335A66	**Each**	$35.89

Extreme Temperature— Withstands temperatures from –60° to +500° F. Begins to harden in 20 minutes; reaches full strength in 24 hours. Color is gray. Meets Fed. Spec. TT-S-00230C Class A, TT-S-001543A Class A, and ASTM C920 Class 25.

10.1-oz. Cartridge ..... 73335A42 **Each** $5.68

High-Temperature Chemical-Resistant Adhesive

This high-performance fluoroelastomer adhesive bonds despite high temperatures, vapors, and extreme environments. Use for bonding rubber to metal, splicing fluoroelastomer cord stock into O-rings, and adhering oven door gaskets. Includes a bottle of accelerator. Begins to harden within minutes; reaches full strength in 24 hrs. Apply at +60° to +90° F; operating temperature range is –20° to +450° F. Color is black. This product is compliant under all state VOC rules in effect on October 1, 2008.

1-pt. Can	7716A11	**Each**	$67.31
1-qt. Can	7716A12	**Each**	$96.15

High-Temperature Chemical-Resistant Sealants

A wide temperature range and excellent chemical resistance make these sealants perfect for harsh environments. Adhere to aluminum, brass, copper, stainless steel, concrete, and fabric. Resist acids, hydrocarbons, and chlorinated solvents. Begin to harden in 5 minutes; reach full strength in 72 hours. Apply at +50° to +100° F; operating temp. range is –40° to +400° F. Color is black. *Note:* Not for use with ketones and esters (acetone and ethyl acetate). 11-oz. cartridges fit a standard caulk gun.

Standard— This product is compliant under all state VOC rules in effect on October 1, 2009.

2.5-oz. Tube	77495A15	**Each**	$33.33
11-oz. Cartridge	77495A16	**Each**	$119.05

Extra Thick— For vertical use; has minimal shrinkage. This product is compliant under all state VOC rules in effect on March 1, 2011.

2.5-oz. Tube	77495A31	**Each**	$38.00
11-oz. Cartridge	77495A32	**Each**	$132.00

For information about adhesives, see page 3400.

Caulk

Seal and fill cracks and voids. All except *(A)* are paintable; all except *(J)* are waterproof. These products except *(C)* are compliant under all state VOC rules in effect on October 1, 2008.

Cartridges fit a standard caulk gun; see page 3428 for guns.

(A) 100% RTV Silicone— High-performance sealing. Remains permanently elastic. Weatherproof, mildew resistant, and FDA compliant. **To Order:** Please specify color: almond, aluminum, black, bronze, clear, or white (unless noted).

(B) Paintable 100% RTV Silicone— It's low odor and remains flexible. Color is white.

(C) Elastomeric Polymer Rubber Based— For all-weather exterior applications. Remains flexible. **To Order:** Please specify color: almond, black, bronze, brown, clear, gray, or white. Clear caulk is compliant under all state VOC rules in effect on March 1, 2011. Other colors are compliant under all state VOC rules in effect on March 1, 2011, except in California.

(D) Polyurethane— Remains flexible. **To Order:** Please specify color: black, bronze, gray, or white.

(E) Siliconized Acrylic— A combination of acrylic and silicone that's low odor and thick for overhead and vertical use. **To Order:** Please specify color: almond, black, dark brown, clear, gray, or white.

(F) Tub, Tile, and Sink— Mildew-resistant, odorless siliconized acrylic. Color is white.

(G) Vinyl— Resists mildew and water. Can be painted two hours after applying. **To Order:** Please specify color: almond, black, brown, clear, gray, or white (unless noted).

(H) Concrete and Mortar Repair— Patch cracks in concrete and repair mortar between bricks and stone. Color is gray.

(J) High Temperature— Silicate with a high operating temp. Works well for stoves, chimneys, and flues. Indoor use only. Color is black.

(K) Removable Weatherstripping— Makes a weatherproof, watertight temporary seal that peels off when no longer needed. Remove any time after 7 days and before 6 months. Caulk is a rubber blend. Color is clear.

Adheres To:	A	B	C	D	E	F	G	H	J	K
Metal	●	●	●	●	●	●	●		●	●
Plastic		●	●	●	●	●	●			●
Brick/Stone			●	●	●		●	●	●	
Ceramic Tile	●	●		●	●	●	●			●
Concrete			●	●	●		●	●	●	
Fiberglass (FRP)		●	●			●	●			●
Glass	●	●	●	●	●	●	●			●
Masonry		●	●	●	●		●	●	●	
Wood	●	●	●	●	●	●	●	●		

	Size	Begins to Harden	Reaches Full Strength	Application Temp. Range	Operating Temp. Range	Case Qty.		Each Partial Case	Each Full Case
A	2.8-oz. Tube	1 hr.	24 hrs.	+10° to +100°F	–60° to +400°F	12	76435T21♣	$4.15	$3.55
A	10.1-oz. Cartridge	1 hr.	24 hrs.	+10° to +100°F	–60° to +400°F	12	76435T11	5.17	4.42
B	10.1-oz. Cartridge	2 hrs.	5-7 days	+10° to +100°F	–60° to +400°F	12	7723A14	8.52	7.34
C	10.0-oz. Cartridge	8 hrs.	7 days	+20° to +100°F	–20° to +200°F	12	7647T2	8.01	7.09
D	10.1-oz. Cartridge	4 hrs.	2-4 days	–20° to +150°F	–20° to +150°F	12	75705T1	6.60	5.60
E	10.1-oz. Cartridge	30 min.▲	72 hrs.	+40° to +90°F	0° to +200°F	12	7640T2	3.87	3.35
F	5.5-oz. Tube	30 min.	72 hrs.	+40° to +90°F	0° to +200°F	12	7582T15	2.71	2.29
F	10.1-oz. Cartridge	30 min.	72 hrs.	+40° to +90°F	0° to +200°F	12	7582T17	3.27	2.68
G	5.5-oz. Tube	1 hr.	48 hrs.	+45°F and above	–20° to +180°F	12	7649T1♣	4.72	4.06
G	10.0-oz. Cartridge	1 hr.	48 hrs.	+45°F and above	–20° to +180°F	12	7649T2	6.37	5.47
H	10.1-oz. Cartridge	30 min.	72 hrs.	+40° to +90°F	0° to +200°F	12	7650T11	3.45	2.88
J	10.1-oz. Cartridge	2 hrs.	4 hrs.	+40° to +90°F	0° to +1000°F	12	7648T11	3.73	2.98
K	10.1-oz. Cartridge	30 min.	72 hrs.	+10° to +100°F	–25° to +125°F	12	8151A46	6.18	5.47

♣ Available in clear and white only. ▲ Clear begins to harden in 2 hours.

Caulk Bead-Smoothing Spray and Tool

Get a perfect bead every time.

Smoothing Tool

Smoothing Spray— Used after laying a bead of caulk, it lets you smooth the caulk with a finger or tool for a perfect finish. Spray is nonflammable, odorless, won't stain, and can be painted when dry. Works with all caulks on any nonporous surface. Covers approximately eight 10-oz. cartridges of caulk or 400 linear ft. This product is compliant under all state VOC rules in effect on October 1, 2008.

Smoothing Tool— Use to smooth your caulk into a perfect bead. Made of plastic with a flexible rubber tip. It clips onto a caulk gun for easy access and comes with two caps for sealing your open caulk cartridges.

Smoothing Spray	7326A14	$7.67
Smoothing Tool	7146A23	2.40

All-Seal Sealant for Wet and Oily Surfaces

Instantly seal leaks despite oil, moisture, and water with this polycarbonate-based adhesive. Bonds to aluminum, galvanized metal, stainless steel, ceramic, concrete, glass, rubber, masonry, wood, and itself. It's UV resistant, immediately paintable, and stays flexible to allow for vibration. Ideal for sealing flashing, joints, and vents. Begins to harden on contact; reaches full strength in 72 hours. Application temp. range is +38° to +98°F; operating temp. range is –70° to +220°F. Comes in a 10.2-oz. cartridge that fits a standard caulk gun; see page 3428 for guns. This product is compliant under all state VOC rules in effect on January 1, 2011, except in California, unless noted.

To Order: Please specify color: black, brown, clear, gray, or white. Clear sealant is compliant under all state VOC rules in effect on January 1, 2011.

74565A1 ..... $18.27

Backer Rod

Reduce stress on caulk—insert backer rod into wide gaps and fill in with caulk to form a proper seal. Backer rod is made of polyethylene foam with a nonabsorbing skin that conforms to irregular widths. It's chemically inert and resists moisture. Temp. range is –45° to +160°F. Color is gray. This product is compliant under all state VOC rules in effect on October 1, 2008.

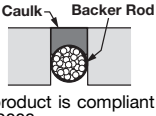

Dia.	Approx. Gap Wd.	100-ft. Coil		Full Coil Lg.	Full Coil
3/8″	1/4″	77605T422	$7.35	1,800 ft.	77605T423 $78.93
5/8″	1/2″	77605T442	11.43	1,550 ft.	77605T443 103.71
7/8″	11/16″	77605T462	19.39	850 ft.	77605T463 99.64

Caulk Cord and Tape

These products are compliant under all state VOC rules in effect on October 1, 2008.

Weatherstrip Caulk Cord— Keep out moisture and drafts with this permanently pliable titanium-dioxide-based cord. Cord is easily applied and removed by hand. It can be painted and adheres to metal, plastic, concrete, glass, masonry, wood, and other porous and nonporous surfaces. Cord does not harden. Apply at +60° to +90°F; operating temperature range is –30° to +150°F. Use indoors and out. Rolls have eight 3/16″ dia. cords.

Seal and Caulk Tape— This mildew-resistant, odorless low-density polyethylene easily seals and fills cracks around tubs and sinks. Just unroll, cut, peel off liner, and apply. Bonds to metal, plastic, fiberglass (FRP), glass, and wood. Reaches full strength in 10 hours. Application and operating temperature ranges are +50° to +110°F. Use indoors. Tape is 7/8″ wide.

Length	Color	Case Qty.		Each Partial Case	Each Full Case
Weatherstrip Caulk Cord					
45 ft.	Gray	24	9408T17	$5.08	$3.96
90 ft.	Gray	12	9408T14	7.95	6.18
Seal and Caulk Tape					Each
11 ft.	White	—	7582T25		$5.70

Silicone Sealing Strips

Use these extruded silicone strips with a 100% silicone sealant to create durable seals that allow for expansion and contraction. Place a bead of silicone sealant (see 7452A21 on page 3418) on each side of the strip for adhesion. Edges are ribbed for better grip. An alternative to a backer rod (though with more applications), it's ideal as a patch to seal and repair holes and wide gaps when standard caulks and sealants won't work. Good for skylights and HVAC seals. These products are compliant under all state VOC rules in effect on October 1, 2008.

To Order: Please specify length (1, 5, 10, 25, or maximum continuous length of 100 ft.) and color (black or gray).

Wd.	Thick.	Temp. Range		Per Ft. 1-99	Per Ft. 100-Up
1″	0.080″	–60° to +300°F	7159A1	$1.60	$1.33
2″	0.080″	–60° to +300°F	7159A2	3.20	2.67
3″	0.080″	–60° to +300°F	7159A3	4.80	4.00
4″	0.080″	–60° to +300°F	7159A4	6.40	5.33

For information about adhesives, see page 3400.

Glazing Compounds

Install glass in metal and wood sashes with these compounds. They form a tough protective coating yet allow normal expansion and contraction with changing temperatures. Compounds are oil based (unless noted) and can be painted. Color is white.

Reach full strength in 3-14 days. Application temperature range is +40° to +90° F. Cartridge fits a standard caulk gun; see page 3428 for guns. These products are compliant under all state VOC rules in effect on October 1, 2008.

Size	Begins to Harden	Operating Temperature		
10.1-oz. Cartridge	48-72 hrs.	0° to +200° F	1029A22 ♦	$3.90
1-pt. Bucket	—	−20° to +160° F	1029A41	7.55
1-qt. Bucket	48-72 hrs.	0° to +200° F	1029A23	6.78
1-gal. Bucket	—	−20° to +160° F	1029A24	34.28
5-gal. Bucket	48-96 hrs.	−10° to +120° F	1029A28	107.08

♦ Water based.

Stay-Soft Glazing Rope

Easy to apply, this butyl rope seals leaks in ridges, eaves, gutters, and headers. Also holds glass in frames for a weather-tight seal. To use, uncurl rope and press in place. It stays soft and pliable for years. Application temperature range is −40° to +95° F; operating temperature range is −40° to +212° F. Diameter is 1/4″. Comes in 20-ft. roll. Color is gray. This product is compliant under all state VOC rules in effect on October 1, 2008.

1049A31 ..... Roll $7.99

Fire-Rated Glazing Tape

Seal glass windows into metal frames in fire-rated hollow metal and wood doors; this high-performance glazing tape is fire rated up to 1800° F. Application temperature range is 65° to 80° F. Tape has hot-melt rubber adhesive backing with a peel-off liner. UL 10C listed. This product is compliant under all state VOC rules in effect on October 1, 2008.

Fire Rated Up to	Size, Lg. × Wd. × Thick.	Roll	
45 min.	8 ft. × 7/16″ × 3/64″	7147A35	$14.16
45 min.	14 ft. × 7/16″ × 3/64″	7147A32	24.07
90 min.	16 ft. × 7/16″ × 5/64″	14435A991	49.88

Hot-Melt Guns and Glue Sticks

Hot-Melt Guns

Mini Gun

Standard Duty Gun

Heavy Duty Gun

Whatever your needs, we have a glue gun for you. All guns reach operating temperature in just 2-5 minutes, have a power cord, and operate on 120 VAC, 60 Hz. To choose the right gun, keep in mind that the higher the watts, the faster the glue melts and can be dispensed. Glue sticks sold separately.

Mini—For working in tight areas. Has a 5′2″ long cord with two-prong plug. UL listed.

Standard Duty—Ideal for small jobs and light assembly work. Has a 5′9″ long cord with two-prong plug.

Low Temperature—Good for mid-volume jobs and temperature-sensitive applications. Has a 5′6″ long cord with three-prong plug. UL listed.

Heavy Duty—Continuous duty with three heating elements and a plastic stand. Has a 9-ft. long cord with three-prong plug. UL listed.

High Performance—Continuous duty with an ergonomic handle, a ceramic heating element, a lighted on/off switch, a magnetic metal base, and a wire nose stand. Has a 7′9″ long cord with three-prong plug.

	For Glue Stick Dia.	Watts	Operating Temperature	Adhesive Output, lbs./hr.		
Mini	1/4″ and 5/16″	10	350° F	0.5	75215A65	$6.48
Standard Duty	7/16″ and 1/2″	80	380° F	2-3	7518A22	23.36
Low Temperature	7/16″ and 1/2″	100	250° F	4	7518A81	64.67
Heavy Duty	7/16″ and 1/2″	100	410° F	3-5	7518A18	139.03
High Performance	7/16″ and 1/2″	200	380° F	7	66085A17	126.02
Replacement Tip for Heavy Duty Gun					7518A69	28.00

Hot-Melt Glue Sticks

These glue sticks comply with FDA CFR21 175.105 for food packaging. These products are compliant under all state VOC rules in effect on October 1, 2008. *Note:* 1/4″ glue sticks work with any glue gun that accepts 1/4″ or 5/16″ diameter glue sticks. 1/2″ glue sticks are approximately 0.452″ in diameter and work with any glue gun that accepts 7/16″ or 1/2″ diameter glue sticks.

General Purpose—Use in low-, high-, and dual-temperature glue guns to bond plastic and wood.

Packaging—Bonds porous materials such as paper, cardboard, canvas, and fabric.

Quick-Hardening Packaging—Similar to the *packaging glue sticks* above, but this takes less time before it begins to harden. Bonds porous materials such as paper and cardboard.

High Performance—For difficult-to-bond materials including metal, plastic, ceramic, glass, and other nonporous items.

Length	Begins to Harden	Reaches Full Strength	Melting Point	Color	Approx. Sticks/lb.	1-lb. Pkg.		5-lb. Pkg.		25-lb. Pkg.	
						Pkg.		Pkg.		Pkg.	
1/4″ Dia. Glue Sticks—*Work with the Mini Hot-Melt Gun above.*											
General Purpose											
4″	65 sec.	24 hrs.	176° F	Translucent	113	75215A511	$9.30	75215A512	$42.38	75215A513	$147.66
1/2″ Dia. Glue Sticks—*Work with all the hot-melt guns above except the Mini Hot-Melt Gun.*											
General Purpose											
4″	65 sec.	24 hrs.	176° F	Translucent	45	7518A711	11.98	7518A712	54.63	7518A45	210.11
15″	65 sec.	24 hrs.	176° F	Translucent	12	7518A714	12.18	7518A715	54.72	7518A716	206.48
Packaging											
4″	15 sec.	24 hrs.	208° F	Tan	45	7518A724	11.49	7518A725	52.36	7518A726	212.85
15″	15 sec.	24 hrs.	208° F	Tan	12	7518A727	11.45	7518A728	55.00	7518A729	224.48
Quick-Hardening Packaging											
15″	5 sec.	24 hrs.	190° F	Tan	12	7518A761	11.24	7518A762	49.83	7518A763	212.05
High Performance											
4″	30 sec.	24 hrs.	178° F	Translucent	45	7518A731	15.74	7518A732	77.33	7518A733	342.18
10″	25 sec.	24 hrs.	180° F	Amber	18	7518A771	11.28	7518A772	50.00	7518A773	212.78
15″	30 sec.	24 hrs.	178° F	Translucent	12	7518A751	14.84	7518A752	71.71	7518A753	309.10

Cordless Hot-Melt Gun

Don't be tethered by a cord. This cordless gun quickly charges and heats in 5 minutes and runs for 3 minutes per charge. Delivers 1 lb. of glue per hour. Or use with the included power cord for continuous gluing; cord is 9-ft. long with a two-prong plug. Operates on 120 VAC, 60 Hz when used with the power cord. Operating temperature is 380° F. Uses 7/16″ and 1/2″ dia. glue sticks (not included, see glue sticks on this page). UL listed.

7578A11 ..... $22.72

Butane-Powered Cordless Hot-Melt Gun

Powered by butane gas (sold separately), this glue gun can run continuously for up to 140 minutes. Delivers 1.9 lbs. of adhesive per hour. Gun has a push-button start and reaches operating temperature in 3-4 minutes. Also has a safety lock on the fuel control to prevent unintentional gas flow, a fuel level window, and a built-in folding stand. Operating temperature is 392° F. Uses 1/2″ dia. glue sticks (four 6″ long sticks included).

Cordless Glue Gun 7812A21 $48.48
Butane Gas (5 1/8-oz. Can) 7694A5 4.88

For information about adhesives, see page 3400.

3M Scotch-Weld Hot-Melt Guns and Glue Sticks

Hot-Melt Guns

Get fast, even adhesive flow. Guns include a 0.090″ dia. tip; other tips are sold separately, unless noted. Operate on 120 VAC, 60 Hz. To choose the right gun, keep in mind that the higher the watts, the faster the glue melts and can be dispensed. *Note:* Use only with the 3M glue sticks below.

***Scotch-Weld LT*—**Use with low-melt glue sticks only. Has a 6-ft. long cord with three-prong plug.

***Scotch-Weld TC*—**Has a 6-ft. long cord with three-prong plug.

***Scotch-Weld EC*—**With five temperature settings, this gun works with most 3M hot-melt adhesives. It also includes a stroke adjuster that allows for repeatable output quantities. Has a 6-ft. long cord with three-prong plug.

***Scotch-Weld II*—**This air-powered gun has a fast-loading cartridge system and a wire bench stand. Requires 40-80 psi of air; has a 1/8″ NPT male air inlet and an 8-ft. long air hose. Has an 8-ft. long cord with three-prong plug.

***Scotch-Weld AE II*—**Get high output at an economical price. Has an 8-ft. long cord with three-prong plug.

***Scotch-Weld AE II LT*—**Similar to the AE II model above but operates at a lower temperature. Has an 8-ft. long cord with three-prong plug.

Scotch-Weld LT and TC

Scotch-Weld EC

3M No.	Watts	Operating Temp.	Adhesive Output, lbs./hr.	Warm-Up Time	For Glue Stick Dia.		
LT	150	265° F	2.6	5-10 min.	5/8″	7477A41	$143.37
TC	150	385° F	3.5	5-10 min.	5/8″	7333A11	154.68
EC	350	260° to 450° F	5.5	5-10 min.	5/8″	7464A67	403.84
II	500	385° F	7.5	15 min.	1″	74785A65	1,295.08
AE II	250	400° F	4	3-5 min.	1/2″	7144A41▲	89.00
AE II LT	250	270° F	4	3-5 min.	1/2″	7144A42▲	102.57

▲ Not compatible with the extra tips sold below.

Accessories for Scotch-Weld LT and TC

Quadrack converter allows you to use 8″ long glue sticks.

Palm trigger is perfect for small hands and comfortable long-term operation. Requires quadrack converter (sold separately).

Quadrack Converter for LT and TC	7333A12	$66.44
Palm Trigger for LT and TC	7333A13	68.58

Quadrack Converter

Palm Trigger

Scotch-Weld II

Extra Tips for Guns

Shape	Dia.	Overall Length		
Cone	0.090″	3/4″	7333A21	$7.60
Cone for Precision Gluing	0.063″	3/4″	7333A25	13.36
Cone with Extended Tip	0.072″	1″	7333A22	8.79
Cone for High-Viscosity Glue Sticks	0.125″	3/4″	7333A26	17.76
T Tip for Slotted Carton Closure	—	—	7333A23	60.72
L Tip for Full-Overlap Carton Closure	—	—	7333A24	59.72

Scotch-Weld AE II and AE II LT

3M 1/2″, 5/8″, and 1″ Diameter Hot-Melt Glue Sticks

All except 3750, 3750LM, 3762LM, and 3796 are UL listed; all except 3750, 3750LM, and 3796 are FDA compliant. Reach full strength in 12 hours. These products are compliant under all state VOC rules in effect on October 1, 2008.

Note: These glue sticks work only with 3M Hot-Melt Guns.

***3738*—**Multipurpose for chipboard, corrugated materials, and wood.

***3748*—**Designed to add rigidity to printed circuit board components and other electronic applications. Noncorrosive to copper.

***3750*—**High flow rate. For packaging and wood assembly.

***3750LM Low Melt*—**Fast setting for packaging; use only with Scotch-Weld AE II LT.

***3762*—**Rapid setting and medium viscosity for hot-tacking (bonding while still warm). Bonds cardboard and carton-sealing paper.

***3762LM Low Melt*—**Similar to 3762 but for Scotch-Weld LT and EC only. Has excellent hot-tacking (bonding while still warm) at a low application temperature for heat-sensitive materials such as polystyrene foam.

***3764*—**Designed for use with plastic.

***3779*—**Heat resistant to 300° F, so it's particularly useful for encasing electrical parts in adhesive (potting) and attaching parts to PC boards.

***3789*—**Use to bond flexible and rigid plastic. Impact resistant and heat resistant up to 220° F.

***3792*—**Versatile, all-around adhesive for wood and fabric.

***3792LM Low Melt*—**Same as 3792 but for plastic. Use with Scotch-Weld LT and EC only. Can be applied at a lower temperature.

***3796*—**Specially designed for bonding metal. Also good for plastic, leather, and other nonporous materials.

3M No.	For Use with 3M Gun	Dia. × Lg.	Begins to Harden	Melting Point	Color	Approx. Sticks/lb.	1-lb. Pkg.	Pkg.	11-lb. Box	Box
3738	TC	5/8″ × 2″	50 sec.	186° F	Tan	55	7333A831	$22.69	7333A83	$195.24
3738	TC★, EC	5/8″ × 8″	50 sec.	186° F	Tan	15	7333A851	23.26	7333A85	198.11
3738	II	1″ × 3″	50 sec.	186° F	Tan	12	74785A91	15.90	74785A92●	364.99
3748	TC	5/8″ × 2″	45 sec.	292° F	Off-White	55	7333A57	29.27	7333A69	294.35
3748	TC★, EC	5/8″ × 8″	45 sec.	292° F	Off-White	15	7333A711	33.10	7333A71	281.59
3750	AE II	1/2″ × 10″	35-45 sec.	178° F	Clear	14	7333A75	8.75	7333A73	76.91
3750	AE II	1/2″ × 10″	30-40 sec.	200° F	Tan	14	7333A74	8.75	7333A72	76.91
3750LM	AE II LT	1/2″ × 12″	25 sec.	200° F	Tan	14	7333A62	10.87	7333A64	108.78
3762	TC	5/8″ × 2″	35 sec.	201° F	Tan	55	7333A51	18.56	7333A65	150.72
3762	TC★, EC	5/8″ × 8″	35 sec.	201° F	Tan	15	7333A52	19.19	7333A32	155.92
3762	II	1″ × 3″	35 sec.	201° F	Tan	12	74785A341	14.77	74785A34●	287.70
3762LM	LT	5/8″ × 2″	25 sec.	205° F	Lt. Amber	55	7464A41	18.13	7464A62	178.08
3762LM	LT★, EC	5/8″ × 8″	25 sec.	205° F	Lt. Amber	15	7464A42	18.42	7464A63	180.94
3764	TC	5/8″ × 2″	40 sec.	190° F	Clear	55	7333A55	29.32	7333A67	252.46
3764	TC★, EC	5/8″ × 8″	40 sec.	190° F	Clear	15	7333A56	29.79	7333A42	241.78
3779	TC	5/8″ × 2″	25 sec.	325° F	Amber	55	—	—	7333A87	493.90
3779	TC★, EC	5/8″ × 8″	25 sec.	325° F	Amber	15	—	—	7333A89	484.42
3789	TC★, EC	5/8″ × 8″	50 sec.	270° F	Brown	15	—	—	7333A76	416.29
3792	TC	5/8″ × 2″	50 sec.	179° F	Clear	55	7333A53	23.91	7333A77	194.48
3792	TC★, EC	5/8″ × 8″	50 sec.	179° F	Clear	15	7333A54	24.85	7333A78	201.55
3792LM	LT	5/8″ × 2″	40 sec.	178° F	Clear	55	7464A43	22.88	7464A64	224.84
3792LM	LT★, EC	5/8″ × 8″	40 sec.	178° F	Clear	15	7464A44	23.28	7464A65	228.89
3796	TC	5/8″ × 2″	40 sec.	240° F	Light Tan	55	7333A58	55.21	7333A79	497.98

★ Requires quadrack converter (sold separately above) for use with gun. ● 22-lb. box.

For information about adhesives, see page 3400.

High-Strength Hot-Melt Adhesive Kit

Adhesives are polyurethane for higher strength bonds and shorter bonding times than with other hot melts. Kit includes a cordless applicator gun with charger/heating base, one 50-g multipurpose glue cartridge (7354A23), two 50-g wood-to-wood glue cartridges (7354A21 and A22), and a carrying case. Gun operates at 200 watts, heats up in 10-13 minutes, and runs for 20 minutes per charge. Operating temperature range is 212° to 284° F. Charger has a 6½-ft. power cord with two-prong plug. UL listed. Kit bonds metal, plastic, brick, ceramic, fiberglass (FRP), glass, and wood. Glue cartridges reach full strength in 24-48 hours. They're waterproof and for use indoors and out. Melting point is 275° F. Color is opaque white. Glue cartridges are compliant under all state VOC rules in effect on October 1, 2008.

	Begins to Harden		
Complete Kit	———	7354A11	$166.08
Applicator Gun	———	7354A66	136.30
Replacement 50-g Glue Cartridges			
Multipurpose	75 sec.	7354A23	11.07
Wood-to-Wood	30 sec.	7354A21	11.07
Wood-to-Wood	60 sec.	7354A22	11.07

3M Aerosol Adhesives

Spray a neat, thin, uniform coating. Reach full strength in 24 hours (unless noted). These products are compliant under all state VOC rules in effect on October 1, 2008.

Note: Application time is the time the adhesive can be on one or both surfaces before the surfaces must be bonded.

72 Pressure Sensitive— A tacky adhesive that makes wide-area bonds and can be repositioned hours after spraying. Bonds carpet backing, foam padding, plastic, polyethylene, and other materials to fiberglass (FRP), hardwood, steel, particleboard, and plastic.

74 Foam— Fast tacking, it bonds flexible urethane and latex foam to themselves and to metal, plastic, and wood. Not for vinyl plastics.

75 Repositionable— Ideal for production-line work involving lightweight material (such as paper masking) where parts are temporarily held in place prior to assembly.

76 High Tacking— For strong bonds of lightweight materials like cardboard, and wood to themselves and to metal, glass, and wood.

77 Multipurpose— A tacky, high-coverage, fast-drying adhesive for permanently attaching cardboard, cloth, foils, and paper to metal, hardboard, flexible and rigid foams (except polystyrene and polyethylene foams), wood, and other base materials.

78 Insulation— Fast drying for bonding most kinds of insulation, including expanded and extruded polystyrene.

80 Rubber and Vinyl— High strength with excellent resistance to plasticizing oils. Bonds leather, rubber (except EPDM), and vinyl.

90 High Strength— Fast tacking, it begins to dry in 2 minutes. Bonds metal, particleboard, polyethylene, polypropylene, SBR, and wood.

Shipping-Mate Case Sealing— Heat resistant. Bonds in 10 seconds to permanently seal flaps on corrugated containers.

Shipping-Mate Palletizing— Immediate tacking for holding paper and plastic bags securely in place during storage and shipment. The bags won't tear when unstacked from a pallet.

3M Item	Max. Temp.	Application Time: With Adhesive on One Surface Only	Application Time: With Adhesive on Both Surfaces	fl. oz. (Net Wt.)	Color		1-11	12-Up
72 Pressure Sensitive	120° F	8 hrs.	7 days	24 (17.3)	Blue	7610A12	$19.28	$17.53
74 Foam	120° F	Not Recommended	15 min.	24 (16.9)	Orange	7610A15	19.43	17.64
75 Repositionable	120° F	1 hr.	3 hrs.	16 (10.3)	Clear	7610A14★	21.38	18.87
76 High Tacking	160° F	10 min.	1 hr.	24 (18.1)	Translucent	7610A17	26.23	22.77
77 Multipurpose	110° F	15 min.	30 min.	24 (16.8)	Semiclear	7610A11	20.60	18.70
78 Insulation	140° F	5 min.	15 min.	24 (17.9)	Translucent	7610A25	20.29	18.33
80 Rubber and Vinyl	200° F	Not Recommended	1 hr.	24 (19)	Yellow	7610A16	28.79	25.90
90 High Strength	160° F	Not Recommended	15 min.	24 (17.6)	Translucent	7610A13	20.68	19.20
Shipping-Mate Case Sealing	160° F	Not Recommended	10 min.	24 (17.3)	Translucent	7536A65	28.70	25.88
Shipping-Mate Palletizing	110° F	10 min.	Not Recommended	24 (16.8)	Clear	7536A67	24.92	22.47

★ Forms a temporary bond (does not harden).

Economy Aerosol Adhesives

These products are compliant under all state VOC rules in effect on October 1, 2008.

General purpose is all purpose with good adhesion to cardboard, cloth, felt, foam rubber, glass, paper, and plastic. Begins to harden immediately.

Heavy duty is a high-strength, fast-tacking adhesive that is especially good for brick, concrete, and drywall. Also works with fabric, foam, paper, and plastic. Begins to harden immediately.

Contact forms strong bonds on most materials in 5 minutes. Permanently bonds flexible materials, such as laminates and plastics, to metal, vinyl, wood, and other rigid surfaces.

	fl. oz. (Net Wt.)	Color		
General Purpose	16.8 (11)	Light Tan	7494A1	$10.35
Heavy Duty	15.9 (11.5)	Light Tan	7494A2	10.70
Contact	18.3 (14)	Light Tan	7494A3	9.37

Devcon Duco Cement

The perfect multipurpose glue for bonding aluminum, bronze, cast iron, stainless steel, steel, ceramic, Garolite (phenolic laminates), glass, leather, and wood. Begins to harden in 10 minutes; reaches full strength in 16 hours. Temperature range is –40° to +140° F. Color is clear. This product is compliant under all state VOC rules in effect on October 1, 2008.

1-oz. Tube 7447A16 $3.58

Rubber Cement

Quickly bonds paper and allows repositioning until fully dried. Cement spreads evenly; dries without shrinking. Color is translucent. These products are compliant under all state VOC rules in effect on January 1, 2011.

8-oz. Jar	74725A12	$4.38
1-qt. Can	74725A14	12.51
1-gal. Container	74725A15	31.94

Reusable Adhesive Putty

No need for tape or tacks—a small piece of this putty holds up paper, cardboard, even keys. It won't dry out, so you can use it again and again. It's nontoxic and sticks to most dry surfaces, including concrete, glass, metal, tile, and wood. Removes easily from most surfaces without leaving stains or residue. Temperature range is 70° to 100° F. Color is blue. This product is compliant under all state VOC rules in effect on October 1, 2008.

Comes in a 1-oz. package; full case quantity is 12 packages.

	Pkg. Partial Case	Pkg. Full Case
7576A2	$3.36	$2.76

Glue Sticks

Bond cardboard, fabric, paper, photos, and more with these easy-to-apply sticks. Begin to harden in 10-60 seconds; reach full strength in 5 minutes. Color is white (dries clear). These products are compliant under all state VOC rules in effect on October 1, 2008.

Size	Dia.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
0.21 oz.	¾"	6	66285A73	$1.11	$0.89
0.77 oz.	1"	6	66285A74	2.18	1.78

Elmer's Glue

This fast-setting white glue dries clear. Use on paper, wood, and other porous/semiporous materials. Begins to harden in 10-60 seconds; reaches full strength in 35 minutes. This product is compliant under all state VOC rules in effect on October 1, 2010.

Size		
8-oz. Bottle	7516A1	$3.12
1-pt. Bottle	7516A6	5.30
1-gal. Jug	7516A4	17.86
5-gal. Pail	7516A5	92.48

General Purpose Adhesive with Roll-On Applicator

Press down on bottle's tip to quickly and easily apply glue. Bonds paper to paper, paper to wood, and wood to wood. *1 qt.* does not include a nozzle; use to refill applicators. These products are compliant under all state VOC rules in effect on October 1, 2008.

Size (Nozzle Dia.)		
10-oz. (⅛")	7553A65	$45.89
10-oz. (½")	7553A64	45.89
1-qt.	7553A74	15.33

For information about adhesives, see page 3400.

Neoprene Rubber Repair Adhesive

Repair rips and fill holes in neoprene rubber materials. Adhesive is waterproof and flexible (up to 500% elongation). Use only on dry surfaces. Begins to harden in 20 minutes; reaches full strength in 18 hours. Temperature range is –20° to +200° F. Color is clear. This product is compliant under all state VOC rules in effect on October 1, 2008.

2-oz. Tube	73325A21	$8.93

Vinyl Repair Adhesive

Easily mend rips, tears, and holes on flexible vinyl surfaces. Great for awnings and upholstery. Begins to harden in 30 minutes; reaches full strength in 4 hours. Temperature range is –10° to +200° F. Color is clear. This product is compliant under all state VOC rules in effect on October 1, 2008.

1-oz. Tube	7504A11	$5.73

Fabric Adhesive

Make flexible, permanent, nonflammable repairs on most fabric. Especially good for mending acrylic fabrics, canvas, and leather. Adhesive is waterproof. Begins to harden in 20 seconds; reaches full strength in 15 minutes. Temperature range is 30° to 212° F. Color is translucent. This product is compliant under all state VOC rules in effect on October 1, 2008.

6-oz. Bottle	7540A11	$10.69
16-oz. Bottle	7540A12	18.48

High-Tack Glue

Formerly known as LePage's Original Glue, this adhesive makes high-strength bonds on cloth, glass, leather, metal, paper, rubber, and wood. You can also apply it to a surface, allow to dry, and reactivate when desired by moistening with water. Begins to harden in 2 hours; reaches full strength in 12 hours. Temperature range is –30° to +500° F. Color is tan. This product is compliant under all state VOC rules in effect on October 1, 2008.

1-qt. Bottle	7466A7	$18.30
1-gal. Can	7466A8	43.30

Glue Discs

Like small circles of hot-melt glue, these pressure-sensitive discs make quick and easy bonds. They're 0.012″ to 0.015″ thick, clear, and supplied between two liners. Operating temperature range is 40° to 160° F; apply at 60° to 100° F. These products are compliant under all state VOC rules in effect on October 1, 2008. *Sheets* have 80 discs. *Rolls* have 1,000 discs.

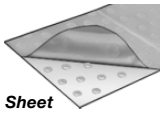

Sheet

Medium tacking is for temporary bonding and removes easily from surfaces. ***High tacking*** is high strength, but still removable from some surfaces. ***Super-high tacking*** is for permanent bonding.

	Approx. Disc Dia.	Sheets Each		Rolls Roll	
Medium Tacking	½″	7187A21	$3.22	7187A31	$28.64
High Tacking	½″	7187A22	3.22	7187A32	28.64
Super-High Tacking	½″	7187A23	3.22	7187A33	28.64

Extra-Thick Adhesive Strips

Get a permanent bond on rough and uneven surfaces. Strips are a rubber adhesive and provide instant grip without mess—simply peel off the liner on one side and stick adhesive to surface, then peel off the liner on the other side and adhere your object. Adhesive is nontoxic, acid free, and moisture resistant. Strips hold up to 2 lbs., can be cut to any size, and remove cleanly. Holding capacity decreases when strip is cut. Adheres to metal, plastic, carpet, cement, fabric, foamboard, tile, wallboard, and wood. Apply above 50° F; operating temperature range is 0° to 180° F. Each adhesive strip is 3″ Lg. × 1″ Wd. × 0.020″ Thick. These products are compliant under all state VOC rules in effect on October 1, 2008.

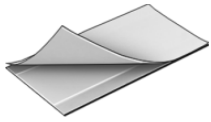

8 Strips	3524A21	Pkg.	$4.47
250 Strips	3524A36	Pkg.	$50.64

Glue-on-a-Roll

Also known as adhesive transfer tape, these thin strips of pressure-sensitive adhesive let you apply a neat, precise strip of adhesive exactly where you need it. Come on peel-away liners. Glue-on-a-roll is a good alternative to liquid adhesives, hot melts, and staples and is thinner and more conformable than tape with adhesive on both sides. These products are compliant under all state VOC rules in effect on October 1, 2008.

For tape with adhesive on both sides, see pages 3451-3454.

Glue-on-a-Roll with Applicator Gun (7628A14)

Hand-Dispensed Glue-on-a-Roll

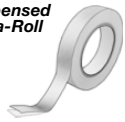

3M Scotch Glue-on-a-Roll and Applicator Guns

Adhesives are acrylic. Use with the applicator gun (sold separately).

Scotch 924 All-Purpose— Good for bonding paper. Also use on metal, plastic, glass, and wood. Maximum operating temperature is 180° F.

Scotch 926 High Performance— Has high bond strength and UV and high-temperature resistance. Perfect for foam insulation, folders, and boxes. Maximum operating temperature is 300° F.

Scotch 928 High Tacking/Low Tacking— Has a permanent high-tacking adhesive on one side, and a low-tacking adhesive on the other that is removable from most surfaces. A great choice for temporary protective packaging, such as foam and cardboard. Maximum operating temperature is 120° F.

Scotch 969 High Tacking— Has quick, strong adhesion right after application. Good for plastic and materials that have a glossy coating. Maximum operating temperature is 180° F.

Applicator Guns— Easily apply glue-on-a-roll while removing the liner with no mess and no waste.

Scotch No.	Wd.	Lg., yds.	Thick. Adhesive	Thick. Liner		Roll
924	½″	36	2 mils	4 mils	7628A115	$7.50
924	½″	60	2 mils	4 mils	7628A23	10.74
924	¾″	36	2 mils	4 mils	7628A116	9.01
924	¾″	60	2 mils	4 mils	7628A24	14.31
924	2″	60	2 mils	4 mils	7628A25	55.31
926	½″	18	5 mils	4 mils	7628A119	11.36
926	¾″	18	5 mils	4 mils	7628A12	13.74
926	2″	36	5 mils	4 mils	7628A26	68.62
928	½″	18	2 mils	6 mils	7628A131	7.41
928	¾″	18	2 mils	6 mils	7628A132	9.92
969	½″	18	5 mils	5 mils	7628A117	10.52
969	¾″	18	5 mils	5 mils	7628A118	12.64

ATG700 Applicator Gun for ½″ and ¾″ Glue	7628A14	Each	$68.53
ATG3662 Applicator Gun for 2″ Glue	7628A31	Each	$716.47

Hand-Dispensed Glue-on-a-Roll

Similar to the adhesive above, but this is applied by hand—no applicator gun needed. All come in 60-yard rolls with a 3″ dia. core.

Acrylic— Use to splice paper, films, and foils. Operating temperature range is 0° to +180° F; apply at room temperature.

Scotch 465— An acrylic adhesive, it bonds similar and dissimilar materials. Good on metal, plastic, glass, and wood. Maximum operating temperature is 180° F.

Silicone— Withstands much higher and lower temperatures than acrylic. Use on flexible circuits, gaskets, and heaters. Operating temperature range is –100° to +500° F; apply at +50° or higher.

3M Very High Bond (VHB)— Use instead of rivets, spot welds, and other permanent fasteners. Bonds metal, plastic, and ceramic. Has excellent UV resistance and can be used indoors and out. Maximum operating temperature is 300° F.

Wd.	Thick. Adhesive	Thick. Liner		Roll
Acrylic				
½″	2 mils	3 mils	76085A47	$9.65
¾″	2 mils	3 mils	76085A48	10.88
1″	2 mils	3 mils	76085A49	16.07
Scotch 465				
½″	2 mils	4 mils	7628A41	12.18
¾″	2 mils	4 mils	7628A42	16.24
1″	2 mils	4 mils	7628A43	20.30
Silicone				
½″	2.5 mils	4 mils	7615A21	59.98
¾″	2.5 mils	4 mils	7615A51	82.82
1″	2.5 mils	4 mils	7615A41	101.80

Wd.	Thick. Adhesive	Thick. Liner		Roll 1-11	Roll 12-Up
3M VHB					
½″	2 mils	4 mils	7628A52	$26.71	$24.48
½″	5 mils	4 mils	7628A54	35.00	32.08
½″	10 mils	4 mils	7628A56	65.26	59.80

For information about adhesives, see page 3400.

Caulk Guns

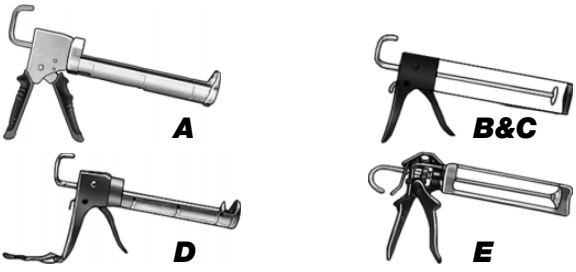

Dispense caulk with ease and control. Guns are steel, unless otherwise stated. Rods are either serrated for ratchet action or smooth for quiet, seamless operation. Include a ladder hook, seal puncture tool, and cartridge tip cutter (unless noted). A higher thrust ratio means easier dispensing action.

(A) 7622T23 has a rubber handle and trigger. 7622T25 comes with a wrist strap.

(B) Guns are lightweight. 7636T31 comes with a bead finishing tool and two nozzle caps. 7636T34 is plastic with a rubber handle and trigger; includes a bead finishing tool.

(C) Guns are drip-free. 9263T11 comes with a bead finishing tool and two nozzle caps. 9263T12 has a revolving frame with rotation lock for proper bead application, a dual stroke for faster and easier application, and a rubber handle and trigger.

(D) Includes a wrist strap.

(E) Guns have a rotating frame that pivots around the rod for easy bead application and a zinc-alloy handle and trigger. 76015T16 has extra thrust for high-viscosity materials and support straps for cartridges.

	For Cartridge Size	Thrust Ratio	Pressure Rod	Frame		Each
A	10- to 13-oz.	5:1	Ratchet	Half-Barrel	**7622T22▲**	$3.00
A	10- to 13-oz.	6:1	Ratchet	Half-Barrel	**7622T23**	14.82
A	29- to 32-oz.	6:1	Ratchet	Half-Barrel	**7622T25**	18.58
B	10- to 13-oz.	10:1	Smooth	Skeleton	**7636T31**	6.79
B	10- to 13-oz.	12:1	Smooth	Half-Barrel	**7636T34**	11.83
B	29- to 32-oz.	10:1	Smooth	Skeleton	**7636T32**	13.28
C	10- to 13-oz.	10:1	Smooth	Skeleton	**9263T11**	7.59
C	10- to 13-oz.	12:1	Smooth	Skeleton	**9263T12**	24.14
D	10- to 13-oz.	12:1	Smooth	Half-Barrel	**74605T73**	12.53
E	10- to 13-oz.	18:1	Smooth	Skeleton	**76015T13**	25.60
E	10- to 13-oz.	26:1	Smooth	Skeleton	**76015T16★**	44.67
E	29- to 32-oz.	18:1	Smooth	Skeleton	**76015T12**	27.00

▲ Doesn't include ladder hook, seal puncture tool, or cartridge tip cutter. ★ Doesn't include seal puncture tool or cartridge tip cutter.

Air-Powered Caulk Guns

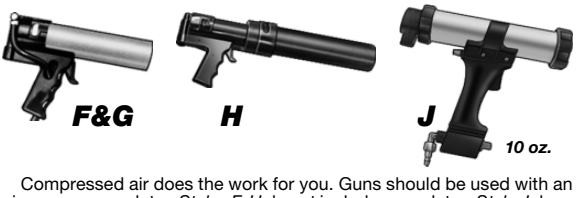

Compressed air does the work for you. Guns should be used with an air pressure regulator. *Styles F-H* do not include a regulator; *Style J* does include a regulator. See pages 972-974 for air pressure regulators.

(F-H) Standard Caulk Guns— Have a pistol-grip. *Styles F* and *G* have a 10-ft. air hose with 1/4″ NPT male air connection. *Style F* has a molded plastic handle and barrel. *Style G* has a cast-aluminum handle with seamless aluminum barrel. *Style H* has a 3-ft. air hose with a 1/4″ NPT male air connection. Handle and barrel are molded plastic.

(J) Adjustable-Flow Caulk Guns— No external air regulator needed; a built-in regulator lets you adjust the air pressure up to 100 psi. Guns are equipped with a 1/4″ NPT male air connection in the handle and include a quick-disconnect fitting. Air hose is not included. Guns have a seamless aluminum barrel and a plastic handle.

	For Cartridge Size	Max. psi		Each
F	10- to 13-oz.	70	**7679T11**	$50.57
G	10- to 13-oz.	100	**7679T13**	104.97
H	10- to 13-oz. and 29- to 32-oz.	70	**7679T21**	89.58
J	10-oz.	100	**76025T61**	133.84
J	20-oz.	100	**76025T47**	165.12
J	29-oz.	100	**76025T62**	158.62

Cap for Caulk Tubes and Glue Bottles

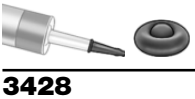

Form an airtight seal with this flexible cap. Also prevents spillage and hardening.

7526A11 (35/Pkg.) ..... **Per Pkg.** $5.83

Bulk-Load Caulk Guns

1-qt. Gun

Round Nozzle ***Triangle Nozzle*** ***Flat Nozzle***

Handle larger quantities of caulk. Guns have zinc-plated steel barrel construction with a smooth pressure rod for quiet, seamless operation and a round nozzle. *1-pint* gun also holds 10- to 13-oz. caulk cartridges.

Sausage-Style Pack Conversion Kit— Allows 1-pt. and 1-qt. guns to accept 10-oz. and 20-oz. sausage-style packs.

Capacity	Thrust Ratio	Nozzle Opening		Each
1 pt.	12:1	1/2″ Dia.	**72355T5**	$65.55
1 qt.	12:1	1/2″ Dia.	**7565T4**	82.68
2 1/2 qt.	12:1	3/4″ Dia.	**7565T1**	194.20
Sausage-Style Pack Conversion Kit			**7565T7**	9.02

Gun Nozzles— These interchangeable nozzles are 3″ long and have 3/8″ NPSM (straight) pipe threads. Made of zinc-plated steel.

Nozzle Opening		Each
Round Nozzles		
3/16″ Dia.	**7566T12**	$2.60
1/4″ Dia.	**7566T11**	5.55
3/8″ Dia.	**7566T19**	4.35
1/2″ Dia.	**7566T16**	2.55

Nozzle Opening		Each
Triangle Nozzle		
3/8″	**7566T14**	$5.39
Flat Nozzles		
1/8″×3/8″	**7566T22**	7.52
1/8″×3/4″	**7566T21**	3.85

Battery-Operated Caulk Guns

Power without a cord. Guns have variable speed and an anti-drip feature. ***Gun for 10-oz. cartridges*** dispenses 200 caulk cartridges per charge; charge in 30 minutes. Includes one 18 volt battery and a charger. ***Gun for 29-oz. cartridges*** dispenses 185 caulk cartridges per charge; charge in 1 hour. Includes one 14.4 volt battery, a charger, and a case.

		Each
Gun for 10-oz. Cartridges	**7631T61**	$276.00
Gun for 29-oz. Cartridges	**7631T57**	295.03
Repl. Battery Pack for 7631T61	**29735A123**	86.15
Repl. Battery Pack for 7631T57	**7631T58**	66.67
Repl. Charger for 7631T57	**7631T59**	67.80

Caulk Gun Holster

Carry your caulk gun on your belt. Holster is canvas with an outside pocket, a rag holder, a belt loop, and a clip for attaching to your pants.

7774T33 ..... **Each** $14.57

Extensions for Caulk Cartridges and Bulk-Load Caulk Guns

Flexible Extension for Cartridges— Bends up to 180° to get caulk into hard-to-reach areas. Press the extension onto the caulk tube to extend up to 12 1/2″.

7809A11 ..... **Each** $2.44

Extension Kit for Cartridges and Bulk-Load Guns— With an adapter, two angle joints, and four nozzles, this kit lets you put a bead of caulk anywhere. Fits threaded cartridges and bulk-load caulk guns. Also for Albion, Cox, and Newborn barrel-style guns.

7809A17 ..... **Each** $8.38

Caulk Gun Conversion Kit

This reusable kit lets you use a 50-ml cartridge with a standard caulk gun. Includes a polypropylene sleeve to hold the cartridge in the gun and a plunger to dispense contents. Recommended for use with mixer nozzles for 50-ml cartridges (sold separately on page 3430). Package quantity is 10.

To Order: Please specify 1:1 or 2:1 mix ratio.

74695A77 .... **Each** Partial Pkg. $3.36 Full Pkg. $2.68

Caulk Cartridge Sealer

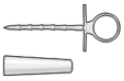

Stop caulk from drying out—this unique sealer includes a cone to place over the cartridge tip for the first seal and a barbed T-handle pin for inserting into the cone to complete the seal. Twist and pull out the pin to loosen the caulk and resume an easy flow. Made of white plastic.

7554A14 ..... **Each** $1.43

Notched Trowels

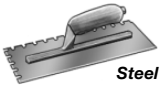

Steel

Steel Trowel with Handle—Has 1/4″ U-shaped notches on two sides and a wood handle. Size is 11″×4 1/2″.

7612T24 ..... **Each** $14.81

Plastic with Handle

Plastic Disposable Trowels with Handle—Have V-notches on all four sides and a molded handle. Size is 8 1/2″×4 1/4″. Full package quantity is 12.

Notch Size		Each Partial Pkg.	Each Full Pkg.
3/32″	**7683T15**	$1.33	$1.16
1/8″	**7683T16**	1.33	1.16
3/16″	**7683T17**	1.33	1.16

Plastic without Handle

Plastic Disposable Trowels without Handle—Have different size notches on each side. Overall size is 4 1/4″×4 1/4″.

Notch Style	Notch Sizes	Pkg. Qty.		Per Pkg.
V-Notch	1/8″, 3/16″, 1/4″, Straight	36	**9405T63**	$15.07
Square Notch	1/16″, 1/8″, 1/4″, 1/8″×1/4″	36	**9405T64**	15.07

Laminating Rollers

Smooth Rollers

Also known as brayers, these acrylic rollers press down surfaces to be laminated or bonded. Won't pick up rubber cement, wax, or clay during use. Great for burnishing. Handle is plated steel.

Roller Dia.×Wd.		Each
1″×4″	**7533A12**	$10.07
1″×6″	**7533A13**	11.63
1″×8″	**7533A14**	13.96

Grooved Rollers

Roll through wet fiberglass laminates with little hand pressure; thin ridges on these aluminum rollers allow air to escape easily. Handle is wood and has a 3/4″ Acme threaded hole for handle extensions.

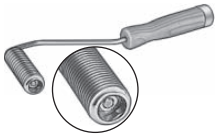

Roller Dia.×Wd.		Each
3/4″ ×3″	**7722T11**	$14.47
3/4″ ×6″	**7722T12**	19.00
1″ ×3″	**7722T13**	14.84
1″ ×6″	**7722T14**	19.44
2″ ×3″	**7722T15**	15.49
2″ ×6″	**7722T16**	24.62
2″ ×8″	**7722T18**	29.33

Nonstick Glue Pot

Keep adhesives, cements, and lacquers from hardening. Pot has a nonstick-coated lid and holds 25 oz. Includes a brush with a cone-shaped seal on the stem. Pot is 5″ Lg.×5″ Wd.×4″ Ht.

Glue Pot and Brush ... **7465A11** **Each** $41.05
Extra Brush ..... **7465A12** **Each** 4.44

Glue Brushes

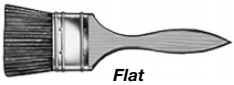

Flat

Round

Apply hot and cold adhesives evenly. All brushes have 100% hog bristles and wood handles.

Shape	Overall Length	Bristle		Each
Flat	9″	2 1/4″ Lg.×1″ Wd.	**7185T9**	$5.68
Flat	9 3/4″	3″ Lg. ×2″ Wd.	**7185T8**	8.01
Round	7 1/4″	1 3/8″ Lg.× 1/4″ Dia.	**7185T1**	4.92
Round	8″	1 5/8″ Lg.× 1/2″ Dia.	**7185T3**	6.31
Round	8 7/8″	1 7/8″ Lg.× 3/4″ Dia.	**7185T5**	10.04
Round	9 1/2″	2 1/8″ Lg.× 7/8″ Dia.	**7185T7**	14.98

Trigger-Action Adhesive Gun

With a heavy duty spring- and trigger-action, this die cast zinc gun is ideal for applying thick solvent-based adhesives. Tip is 0.055″ dia. Capacity is 16 oz. *Optional nylon brush tip* (sold separately) allows you to spread the adhesive after it is applied.

		Each
Adhesive Gun	**66245A31**	$23.44
Optional Nylon Brush Tip	**66245A32**	4.78

Plastic Dispensing Bottles

Quickly and effortlessly dispense adhesives and other liquids with these polyethylene squeeze bottles. Accept needles with a Luer Lock hub for precise, single-drop dispensing. Use with disposable and reusable needles; needles sold separately on pages 3401-3402.

Size	Pkg. Qty.		Per Pkg.
1 oz.	5	**7544A66**	$9.26
2 oz.	5	**7544A67**	9.79
4 oz.	5	**7544A68**	10.54
8 oz.	5	**7544A69**	11.91

Controlled-Flow Dispensing Pens and Bottles

Pen

Dispense controlled amounts of adhesives, no-clean flux, solvents, lubricants, and water-based liquids. Pens and bottles have a unique valve to release a precise amount without flooding and spattering. All are plastic.

Dispensing Pens and Bottles				Repl. Tips		
Size	Color		Each	Pkg. Qty.		Per Pkg.
Pens						
0.34 oz.	Clear	**6931A31**	$4.72	10	**6931A48**	$6.01
0.34 oz.	Aluminum	**6931A32★**	5.69	10	**6931A48**	6.01
1.5 oz.	Black	**6931A36**	20.95	10	**6931A49**	14.53
Bottles						
2 oz.	Clear	**6931A33**	4.05	10	**6931A48**	6.01
2 oz.	Aluminum	**6931A34★**	8.10	10	**6931A48**	6.01
4 oz.	Clear	**6931A35**	4.40	10	**6931A48**	6.01

★ ESD safe.

Mixing Cups and Sticks

Keep these cups and sticks on hand for mixing your two-part adhesives. Cups are polypropylene and nest together; sticks are wood.

Size	Pkg. Qty.		Per Pkg.
Mixing Cups			
3″ Dia.×1 7/8″ Ht. (Holds 4 oz.)	6	**7632A21**	$4.67
4 1/2″ Dia.×1 3/4″ Ht. (Holds 8 oz.)	6	**7632A22**	6.44
Mixing Sticks			
6″ Lg.×11/16″ Wd.×1/16″ Thick.	12	**7632A11**	2.43

Flexible Tube Dispenser

No more messy, half-used tubes—this dispenser neatly rolls and squeezes tubes to easily extract contents with one-hand operation. Made of high-impact plastic. It holds plastic and metal tubes up to 3″ wide. The handle stores tube caps and nozzles.

73345A26 ..... **Each** $5.20

Single-Component Dispensing Gun

Easily dispense single-component adhesives, fluids, and pastes. Gun uses the 30 cc syringes listed below and includes a ratchet-action plunger. Gun and plunger are plastic. For needles that attach to *syringe with Luer Lock tip* see page 3432.

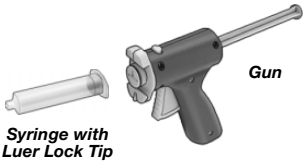

Syringe with Luer Lock Tip

Gun

		Each
Dispensing Gun	**7422A41**	$23.66
30 cc Syringes		**Per Pkg.**
With Luer Lock Tip (5/Pkg.)	**66305A54**	$7.82
With Taper Tip (10/Pkg.)	**66305A56** ♦	27.41

♦ Available in less than full-package quantities. Prices are approximately 20% higher.

For information about adhesives, see page 3400. For caulk guns, see page 3428.

Duo-Pak Dispensing Guns, Cartridges, and Mixer Nozzles

Dispense two-part materials such as epoxies, urethanes, and silicones.

Dispensing Guns

Gun for 50-ml Cartridges

For 50-ml (1.7 oz.) Cartridges— Gun has a ratchet action plunger for thick materials. Includes 1:1 and 2:1 mix ratio plungers. *Note:* Use with Devcon, Loctite, and Lord cartridges. Not for use with 3M cartridges.

74695A71 ..... **Each** $27.74

Also Available: Replacement plungers. Order 74695A41 and specify 1:1, 2:1, 4:1, or 10:1 mix ratio.

For 200- and 400-ml (6.76 and 13.5 oz.) Cartridges— These heavy duty guns are specially designed to prevent user fatigue.

For 200-ml (6.76 oz.) Cartridges ..... **7451A41** **Each** $95.40
For 400-ml (13.5 oz.) Cartridges ..... **7451A42** **Each** $146.67

Polypropylene Hand Plunger for 50-ml (1.7 oz.) Cartridges

Don't bother with a gun; this plunger dispenses materials without a gun. Mix ratio is 1:1. Package quantity is 10.

74695A27 .. **Each** Partial Pkg. $1.34 Full Pkg. $0.97

Empty Polypropylene Cartridges

50-ml Cartridge

Cartridges have two barrels to keep components separate before mixing. Include a cap and two pistons. Use with the dispensing guns and the hand plunger (sold separately above).

Size	End Style	Mix Ratio	Pkg. Qty.		Per Pkg.
50 ml (1.7 oz.)	Twist Lock	1:1	5	**74695A11**	$13.17
50 ml (1.7 oz.)	Bayonet	1:1	5	**74695A34**	13.17
50 ml (1.7 oz.)	Bayonet	2:1	5	**74695A35**	13.17
50 ml (1.7 oz.)	Bayonet	4:1	1	**74695A31**	2.96
50 ml (1.7 oz.)	Bayonet	10:1	5	**74695A37**	13.17
200 ml (6.76 oz.)	Bell Mount	1:1	5	**7451A22**	19.09
400 ml (13.5 oz.)	Bell Mount	1:1	5	**7451A32**	24.18

Polypropylene Mixer Nozzles

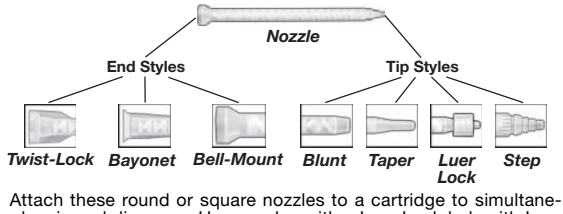

Attach these round or square nozzles to a cartridge to simultaneously mix and dispense. Use nozzles with a Luer Lock hub with Luer Lock needles (see page 3432).

Nozzle Length (Tip Style)	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Round for 50-ml (1.7 oz.) Twist-Lock Cartridges				
3.7″ (3/16″ Taper Tip)	10	**74695A63**	$1.42	$1.06
6.1″ (1/4″ Taper Tip)	10	**74695A25**	1.42	1.06
Round for 50-ml (1.7 oz.) Bayonet Cartridges				
2.9″ (3/16″ Blunt Tip)	12	**74695A56**	1.20	.90
3.3″ (1/4″ Blunt Tip)	12	**74695A51**	1.17	.87
3.4″ (3/16″ Taper Tip)	12	**74695A57**	1.18	.89
3.9″ (1/4″ Taper Tip)	12	**74695A55**	1.17	.88
5.3″ (1/4″ Blunt Tip)	12	**74695A58**	1.38	1.03
5.3″ (0.056″-0.166″ 4-Step Tip)	12	**74695A61**	1.20	.90
5.9″ (1/4″ Taper Tip)	12	**74695A12**	1.21	.91
5.9″ (0.056″-0.205″ 5-Step Tip)	12	**74695A59**	1.20	.90
5.9″ (Luer Lock Hub)	12	**74695A53**	2.82	2.12
Square for 50-ml (1.7 oz.) Bayonet Cartridges				
3.5″ (3/16″ Blunt Tip)	10	**74695A82**	1.46	1.09
4.1″ (5/64″ Taper Tip)	10	**74695A81**	1.32	.98
4.1″ (5/64″ Luer Lock Hub)	10	**74695A83**	2.89	2.17
Round for 200- and 400-ml (6.76 and 13.5 oz.) Bell-Mount Cartridges				
7.3″ (0.012″-0.336″ 3-Step Tip)	5	**7451A61**	1.97	1.58
9.2″ (0.012″-0.336″ 3-Step Tip)	5	**7451A62**	2.14	1.71
8.4″ (0.018″-0.497″ 4-Step Tip)	5	**7451A63**	3.60	3.14
11.5″ (0.018″-0.497″ 4-Step Tip)	5	**7451A64**	6.18	5.55
Square for 200- and 400-ml (6.76 and 13.5 oz.) Bell-Mount Cartridges				
5.1″ (0.012″-0.25″ 3-Step Tip)	5	**74695A84**	2.23	1.78
6.3″ (0.012″-0.25″ 3-Step Tip)	5	**74695A85**	2.46	1.97

Adhesive Dispensing Guns, Cartridges, and Nozzles

Air-Powered Dispensing Gun

Empty Cartridge

Cartridge Holder for Air-Powered Gun

Standard Nozzle

Ribbon Nozzle

Roller Nozzle

Ideal for use with one-part adhesives, silicones, caulks, grease, and other thick materials.

Dispensing Guns

Use with empty cartridges and cartridge holders (sold separately).

Manual guns are similar to a caulk gun and are for smaller dispensing jobs. ***Air-powered gun*** provides controlled, smooth, even dispensing—great for small or large jobs. Gun requires air hose (sold below). Hose has a 1/4″-28 female fitting on one end that connects directly to the gun while the other end has a 1/4″ male industrial-shape quick-disconnect attachment that connects to the air supply. Operating range is 0-100 psi.

		Each
Manual		
For 2.5-oz. and 6-oz. Cartridges	**7579A61**	$122.60
For 12-oz. and 12.8-oz. Cartridges	**7579A62**	127.67
Air-Powered		
For 2.5-oz., 6-oz., and 12-oz. Cartridges	**7579A18**	314.62
10-ft. Air Hose with Quick-Disconnect Fitting	**7579A14**	76.67

Empty Polyethylene Cartridges

Come with a piston and cap. The tip has 1/4″ NPT female threads. The *12.8-oz. cartridge* can also be used with a standard caulk gun. A nozzle (sold separately) is required.

Size	Pkg. Qty.		Per Pkg. ♦
2.5 oz.	10	**7579A41**	$24.59
6 oz.	10	**7579A42**	27.51
12 oz.	10	**7579A43**	44.04
12.8 oz.	10	**7579A44**	36.85

♦ Available in less than full-package quantities; prices are approximately 25% higher.

Steel Cartridge Holders

Holders thread onto manual guns or attach to air-powered guns with a quick-disconnect bayonet lock fixture.

Size	*For Manual Guns*	Each	*For Air-Powered Guns*	Each
2.5 oz.	**7579A63**	$45.27	**7579A15**	$75.20
6 oz.	**7579A64**	50.66	**7579A17**	79.91
12 oz.	**7579A65**	64.40	**7579A16**	98.76
12.8 oz.	**7579A66**	104.49	—	—

Nozzles

All nozzles have 1/4″ NPT male threads.

Polyethylene Standard Nozzles— Package quantity is 10.

Polyethylene Ribbon Nozzles— Spread material as they dispense.

Nylon Roller Nozzle— Provides even coating of less viscous materials.

Lg.	Opening		Per Pkg.
Polyethylene Standard Nozzles			
2 1/2″	1/16″	**7579A31**	$15.47
2 1/2″	1/8″	**7579A32**	15.47
4″	1/32″	**7579A33**	15.47
4″	1/16″	**7579A34**	15.47
4″	1/8″	**7579A53**	16.56
6″	1/16″	**7579A51** ♦	24.73
6″	1/8″	**7579A52** ♦	23.81

Lg.	Opening		Each
Polyethylene Ribbon Nozzles			
4″	1/16″ × 1/2″	**7579A75**	$6.89
4″	1/8″ × 1 3/4″	**7579A76**	9.33
4 1/8″	1/8″ × 1″	**7579A77**	9.33
4 1/2″	3/64″ × 3/8″	**7579A74**	12.21

♦ Available in less than full-package quantities; prices are approximately 25% higher.

Width	*Nozzle*	Each	*Repl. Roller*	Each
Nylon Roller Nozzle				
1″	**7579A46**	$43.36	**7579A48**	$19.21

Accessories

12.8-oz. Adapter— Permits any standard 12.8-oz. disposable cartridge to be used with the nozzles above. Package quantity is 10.

7579A36 ..... **Per Pkg.** $19.51

Luer Lock Adapter— Allows use of Luer Lock needles with cartridges for more precise dispensing (see page 3432). Package quantity is 10.

7579A37 ..... **Per Pkg.** $9.38

Nozzle Extension— Allows you to get into hard-to-reach areas. Extension is 6 3/8″ long.

7579A35 ..... **Each** $6.43

For information about adhesives, see page 3400.

Plastic Syringes

Regular Luer Lock Tip

Regular Taper Tip

Air-Operated Luer Lock Tip

All syringes are polypropylene and sold in packages of 10, unless noted. *Luer Lock syringes* do not come with needles. Needles are sold separately on this page and page 3432. *Taper-tip syringes* allow you to cut the tip to widen the opening to the diameter you need.

Regular—Use to apply adhesives, pastes, sealants, grease, and other materials. Syringes include a barrel, piston, and plunger rod. 7510A651, *A652, A653, A654, A656,* and *A665* have milliliter graduations on the barrel.

Air Operated—Designed for repetitive gluing operations, these syringes are for air-operated dispensing systems (sold separately on this page). They include a barrel and a piston.

Luer Lock tip caps cover Luer Lock syringes when not using a needle. Package quantity is 10.

Capacity	Luer Lock Tip	Per Pkg.	Taper Tip Opening♣		Per Pkg.
Regular Syringes					
0.034 oz. (1 cc)	7510A603♥	$7.97	—	—	—
0.10 oz. (3 cc)	7510A651	10.18	—	—	—
0.17 oz. (5 cc)	7510A652	10.36	—	—	—
0.20 oz. (6 cc)	—	—	0.024″	7510A661■	$8.22
0.34 oz. (10 cc)	7510A653	10.71	0.028″	7510A662♦	21.51
0.68 oz. (20 cc)	7510A654■	8.21	—	—	—
1.01 oz. (30 cc)	7510A655■	8.40	0.042″	7510A663♦	24.86
1.01 oz. (30 cc)	—	—	0.17″	7510A604♦★	24.54
1.69 oz. (50 cc)	7510A656♦	30.01	0.149″	7510A665♦★	38.81
Air-Operated Syringes					
0.10 oz. (3 cc)	66305A51	8.97	—	—	—
0.17 oz. (5 cc)	66305A52	10.41	—	—	—
0.20 oz. (6 cc)	—	—	0.024″	66305A55■	7.94
0.34 oz. (10 cc)	66305A53	12.18	—	—	—
1.01 oz. (30 cc)	66305A54■	7.82	0.042″	66305A56♦	27.41

Accessories

Luer Lock Tip Caps ..... 7510A24 **Per Pkg.** $11.28

♣ Original size. ♥ Tip does not lock.

■ Sold in packages of 5.

♦ Available in less than full-package quantities. Prices are approximately 20% higher.

★ Extra-large tip for thicker (more viscous) materials.

Micro-Dispensing Cartridge

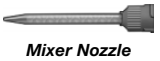

Mixer Nozzle

Cartridge

Only need a smidge? This two-part cartridge is perfect for applying tiny amounts of adhesive. Each part holds 5 ml (0.17 oz.). Includes a plunger and two pistons. Mix ratio is 1:1. For other dispensing cartridges, see page 3430.

Optional mixer nozzle lets you mix and dispense simultaneously. Has a push-on bayonet-mount style with an H-taper tip nozzle.

Size	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
Cartridge				
10 ml (0.34 oz.)	5	7816A51	$2.20	$1.62
Optional Mixer Nozzle				
0.126″ ID×2.9″ Lg.	10	7816A32	1.84	1.39

Plastic Dispensing Tapered Tips

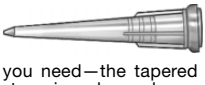

Create the tip size you need—the tapered tip can be cut to the desired diameter. The tapering also reduces dripping. Needles are polypropylene so they won't scratch surfaces. Plus, when you're done with them there's no messy clean-up, just throw them away. They have a Luer Lock hub that fits bottles and syringes with Luer Lock connections. Length is 1¼″.

Gauge	Opening♣	Pkg. Qty.		Each●
14	0.063″	50	6699A1	$0.56
16	0.048″	50	6699A2	.55
18	0.035″	50	6699A3	.55
20	0.024″	50	6699A4	.55
22	0.017″	50	6699A5	.54
24	0.013″	50	6699A6	.54

♣ Original size.

● Prices are 20% less when you order in full-package quantities.

Air-Operated Dispensing Systems

For consistent dispensing of adhesives, these systems have a foot pedal to control the amount released. All have a ¼″ male quick-disconnect air inlet and operate at 0-100 psi.

Note: Systems do not include syringes, syringe holder, or syringe adapter; they can be used with the starter syringe kit and the universal syringe adapters shown below, and the 66305A Air-Operated Plastic Syringes on this page.

Systems

Foot Valve System

Shot Meter System

Foot Valve Systems—A more economical choice than the shot meter systems, these systems require no electrical hook-up or table space. Choose with or without drip-free vacuum control. 66505A11 is 3.75″ Ht.×3.75″ Wd.×7.25″ Dp.; 66505A33 is 3.75″ Ht.×3.75″ Wd.×8.5″ Dp.

Shot Meter System—Includes a tabletop control unit with foot pedal, drip-free vacuum control, adjustable dials to control air pressure and vacuum, and an easy-to-read pressure gauge. Runs on 115 or 230 VAC, 50/60 Hz. Internal voltage is 24 VAC. Unit is 5″ Ht.×5″ Wd.×7.75″ Dp.

Shot Meter System with Timer Control—Similar to shot meter above but with a four-position digital timer switch to set dispensing time in hundredths/second, tenths/second, and seconds for exact repeatability of dispensing time. Dispensing time duration is 0.01 to 99.99 seconds. Size is 5″ Ht.×6.25″ Wd.×7.75″ Dp.

Accessories

Universal Syringe Adapter

Syringe Holder Stand with Syringe

Starter Syringe Kit—Has four syringe adapters (3, 5, 10, and 30 cc), a needle and syringe assortment, a syringe holder stand, an inline material filter, a 2-oz. squeeze bottle, and disposable gloves.

Universal Syringe Adapter—Convert any standard plastic syringe with flanges into an air-operated dispensing syringe. Adapters have a gasket seal and a 360° swivel for easy operation. Include a 6-ft. long hose with male fitting. Compatible with taper-tip and Luer Lock syringes. Replacement gaskets are sold in packages of 5.

Syringe Holder Stand—This metal stand holds syringes vertically with the tip pointing down.

		Each
Systems		
Foot Valve System	66505A11	$283.68
Foot Valve System with Drip-Free Vacuum Control	66505A33	379.50
Shot Meter System	66505A34	611.21
Shot Meter System with Timer Control	66505A37	782.80
Accessories		
Starter Syringe Kit	66505A13	188.93
Syringe Holder Stand	66505A36	24.84
Syringe Adapter for 5 and 6 cc syringes	66275A12	26.22
Syringe Adapter for 10 and 12 cc syringes	66275A13	28.08
Syringe Adapter for 30 and 35 cc syringes	66275A14	28.12
		Per Pkg.
Replacement Gasket for 66275A12 (5/Pkg.)	66275A16	$6.71
Replacement Gasket for 66275A13 (5/Pkg.)	66275A17	7.26
Replacement Gasket for 66275A14 (5/Pkg.)	66275A18	7.26

Polypropylene Dispensing Needles

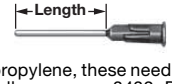

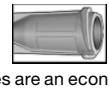

Made of polypropylene, these needles are an economical alternative to the PTFE needles on page 3432. Dispense most fluids, adhesives, solvents, fluxes, oils, and pastes then throw them away when you're done. Needles have a flexible blunt tip that can be cut to any length and gets into hard-to-reach areas and a plastic Luer Lock hub that fits syringes and bottles with Luer Lock connections. Plus, since they're polypropylene they won't scratch delicate surfaces. Length is 1½″.

Gauge	ID	OD	Pkg. Qty.		Each ●
15	0.054″	0.072″	10	6934A41	$2.36
18	0.032″	0.053″	10	6934A43	2.34
20	0.024″	0.039″	10	6934A45	2.34
25	0.013″	0.029″	10	6934A49	2.30

● Prices are 20% less when you order in full-package quantities.

For information about adhesives, see page 3400.

Type 304 Stainless Steel and PTFE Dispensing Needles

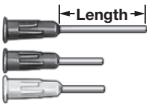

Dispense all kinds of fluids, adhesives, solvents, fluxes, oils, and pastes. These needles have a blunt tip and a polypropylene Luer Lock hub designed to fit syringes and bottles with Luer Lock connections.

Type 304 Stainless Steel Needles— Package quantity is 50 except 75165A31, which is a package of 10.

PTFE Needles— Needles have PTFE tubing that can be cut to length. They're flexible for hard-to-reach areas and won't scratch delicate surfaces. Plus, their nonstick surface makes them perfect for instant adhesives. Package quantity is 10. Available in less than full-package quantities. Prices are 25% higher.

12-Piece Type 304 Stainless Steel Needle Assortment— Consists of one of each gauge of the 1″ long stainless steel needles.

Push-On Needle Covers— Made of translucent polypropylene.

	TYPE 304 STAINLESS STEEL NEEDLES								PTFE NEEDLES			
			1/2″ Long		1″ Long		1 1/2″ Long				2″ Long	
Gauge	ID	OD		Per Pkg.		Per Pkg.		Per Pkg.	ID	OD		Per Pkg.
14	0.067″	0.083″	75165A671	$14.93	75165A672	$14.77	75165A751	$15.15	0.066″	0.082″	75175A691	$21.00
15	0.060″	0.072″	75165A673	14.93	75165A674	14.77	75165A752	15.15				
16	0.053″	0.065″	75165A551	14.78	75165A552	14.77	75165A753	15.15	0.053″	0.065″	75175A692	20.86
18	0.038″	0.050″	75165A675	13.83	75165A676	14.27	75165A754	14.41	0.042″	0.054″	75175A693	20.71
19	0.032″	0.042″	75165A553	13.97	75165A554	14.27	75165A755	14.41				
20	0.0255″	0.0355″	75165A677	13.97	75165A678	14.27	75165A756	14.41	0.034″	0.046″	75175A694	20.57
21	0.023″	0.032″	75165A679	13.97	75165A681	14.27	75165A757	15.14				
22	0.019″	0.028″	75165A682	13.97	75165A683	14.27	75165A758	14.41	0.028″	0.040″	75175A695	20.43
23	0.017″	0.025″	75165A684	13.97	75165A685	14.27	75165A759	14.41				
25	0.012″	0.020″	75165A686	13.97	75165A687	14.27	75165A761	14.41				
26	0.010″	0.018″	75165A555	13.97	75165A556	14.27	75165A762	14.41				
27	0.008″	0.016″	75165A688	13.97	75165A689	14.27	75165A763	14.86				
30	0.006″	0.012″	75165A31	14.41								

12-Piece Type 304 Stainless Steel Needle Assortment	75165A791	Per Pkg.	$26.96
1″ Lg. Push-On Needle Covers (50/Pkg.)	75165A17	Per Pkg.	$8.37
1 1/2″ Lg. Push-On Needle Covers (50/Pkg.)	75165A18	Per Pkg.	$8.54

Reusable Type 304 Stainless Steel Dispensing Needles

With Luer Lock Hub

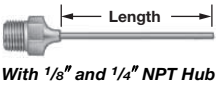

With 1/8″ and 1/4″ NPT Hub

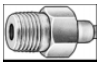

The nickel-plated brass hub on these needles allows them to be cleaned, washed, boiled, or sterilized and reused. Thicker walls make needles extra durable for dispensing adhesives, solvents, and other fluids and pastes. Needles have a blunt tip. Use 2″ and 4″ long needles for general purpose jobs and 1/4″ long needles in space-restricted areas.

Needles with Luer Lock hub can be used with syringes and bottles with Luer Lock connections.

Needles with 1/8″ or ***1/4″ NPT hub*** can be directly connected to an adhesive cartridge or a grease gun.

10-Piece Set with 1/4″ NPT hub includes two 1/4″ NPT hub needles in each of the following gauges: 10, 13, 16, 19, 22.

Gauge	ID	OD	Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
With Luer Lock Hub							
5	0.189″	0.219″	2″	12	6710A11	$4.85	$3.88
6	0.173″	0.203″	2″	12	6710A12	4.63	3.71
7	0.150″	0.180″	2″	12	6710A13	4.53	3.62
8	0.135″	0.165″	2″	12	6710A14	4.42	3.54
9	0.118″	0.148″	2″	12	6710A15	4.37	3.50
10	0.106″	0.134″	2″	12	6710A16	4.32	3.45
11	0.094″	0.120″	2″	12	6710A17	4.26	3.40
12	0.085″	0.109″	1/4″	12	6710A61	3.41	2.73
12	0.085″	0.109″	2″	12	6710A18	4.20	3.36
12	0.085″	0.109″	4″	12	6710A41	4.47	3.59
13	0.071″	0.095″	2″	12	6710A19	4.13	3.31
14	0.063″	0.083″	1/4″	12	6710A63	3.41	2.73
14	0.063″	0.083″	2″	12	6710A21	4.08	3.27
14	0.063″	0.083″	4″	12	6710A42	4.27	3.43
15	0.054″	0.072″	2″	12	6710A22	4.03	3.23
16	0.047″	0.065″	1/4″	12	6710A65	2.84	2.32
16	0.047″	0.065″	2″	12	6710A23	3.95	3.16
16	0.047″	0.065″	4″	12	6710A43	4.07	3.27
17	0.042″	0.058″	2″	12	6710A24	3.92	3.14
18	0.033″	0.050″	1/4″	12	6710A67	2.84	2.32
18	0.033″	0.050″	2″	12	6710A25	3.87	3.10
18	0.033″	0.050″	4″	12	6710A44	3.96	3.19
19	0.027″	0.042″	2″	12	6710A26	3.82	3.05
20	0.0235″	0.0355″	1/4″	12	6710A69	2.84	2.32
20	0.0235″	0.0355″	2″	12	6710A27	3.73	2.99
20	0.0235″	0.0355″	4″	12	6710A45	3.91	3.15
21	0.020″	0.032″	2″	12	6710A28	3.69	2.96

Gauge	ID	OD	Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
With Luer Lock Hub (Cont.)							
22	0.016″	0.028″	1/4″	12	6710A72	$2.64	$2.16
22	0.016″	0.028″	2″	12	6710A29	3.64	2.92
22	0.016″	0.028″	4″	12	6710A46	3.86	3.10
23	0.013″	0.025″	2″	12	6710A31	3.59	2.88
24	0.012″	0.022″	1/4″	12	6710A74	2.64	2.16
24	0.012″	0.022″	2″	12	6710A32	3.53	2.83
24	0.012″	0.022″	4″	12	6710A47	3.81	3.06
25	0.010″	0.020″	2″	12	6710A33	3.59	2.87
26	0.010″	0.018″	1/4″	12	6710A76	2.64	2.16
26	0.010″	0.018″	2″	12	6710A34	3.79	3.04
26	0.010″	0.018″	4″	12	6710A48	3.76	3.02
27	0.008″	0.016″	2″	12	6710A35	3.99	3.20
28	0.007″	0.014″	2″	12	6710A36	4.15	3.32
29	0.007″	0.013″	2″	12	6710A37	4.37	3.50
30	0.006″	0.012″	2″	12	6710A38	4.58	3.67
With 1/8″ NPT Hub							
10	0.106″	0.134″	2″	5	7590A41	7.63	6.10
13	0.071″	0.095″	2″	5	7590A42	7.08	5.66
16	0.047″	0.065″	2″	5	7590A43	6.83	5.46
19	0.027″	0.042″	2″	5	7590A44	6.75	5.40
22	0.016″	0.028″	2″	5	7590A45	6.97	5.58
With 1/4″ NPT Hub							
10	0.106″	0.134″	2″	5	7590A53	7.50	6.00
13	0.071″	0.095″	2″	5	7590A54	7.00	5.60
16	0.047″	0.065″	2″	5	7590A55	6.75	5.40
19	0.027″	0.042″	2″	5	7590A56	6.63	5.30
22	0.016″	0.028″	2″	5	7590A57	6.88	5.50

10-Piece Set with 1/4″ NPT Hub	7590A58	Per Set	$47.27

Reusable Stainless Steel Precision Dispensing Needles

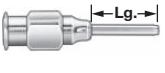

Get precise, consistent dispensing of epoxies, oils, and other fluids without drips. Needles have a 90° razor-sharp tip that provides accurate dispensing and allows you to punch holes in soft solids. Plus, the stainless steel construction means they're durable and corrosion resistant. They have a nickel-plated brass Luer Lock hub and fit syringes and bottles with Luer Lock connections. Use manually and in automated dispensing systems.

Gauge	ID	OD	Lg.	Pkg. Qty.		Each Partial Pkg.	Each Full Pkg.
12	0.085″	0.109″	1/2″	5	6937A21	$8.97	$8.23
16	0.047″	0.065″	1/2″	5	6937A23	8.24	7.55
20	0.0235″	0.0355″	1/2″	5	6937A26	8.05	7.38
22	0.016″	0.028″	1/2″	5	6937A27	7.95	7.28
25	0.010″	0.020″	1/2″	5	6937A28	7.76	7.12

Hand-Held Tape Dispensers

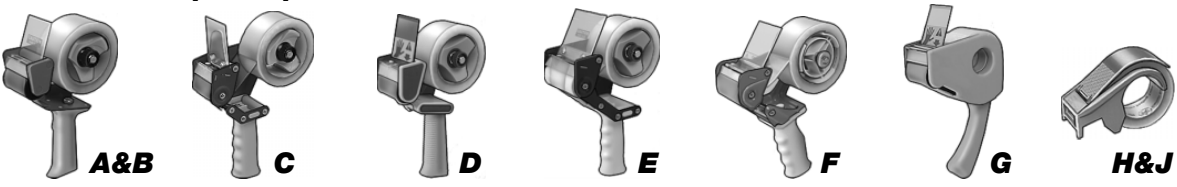

All have a metal blade and an adjustable brake (unless noted) to control tension. Use with carton sealing tape on pages 3435 and 3436. Tape is not included except for Style H. ***Styles A-G*** have molded plastic handles for operator comfort and a wipe-down flap to smooth tape to the surface.

(A&B) Economy—Frames are lightweight and made of metal and plastic. *Style A* has a plain handle; *Style B* has a foam-covered cushion-grip handle for added comfort.

(C) Economy Retractable Blade—To prevent accidental cuts, the blade stays retracted until pressure is applied to the wipe-down flap. Dispenser has steel and plastic construction.

(D) Standard—Has a durable, heavy steel frame and a nonslip handle.

(E) Wide—Designed for wide tape, these dispensers have steel and plastic construction.

(F) Heavy Duty—Have a rugged painted steel frame to withstand heavy abuse. A rubber roller keeps tape in ready position.

(G) Ergonomic—Lightweight plastic construction is designed for user comfort.

(H) 3M Hold-A-Roll—Dispenser fits in your hand for greater control and precision. Made of lightweight plastic. Comes with two rolls of 3M Scotch #375 polypropylene carton sealing tape.

(J) Economy Hold-A-Roll—Imported version of Style H.

	Max. Tape Width	For Spool ID	Max. Tape Roll Dia.	Wt., lbs.	Dispensers		Repl. Blade		Repl. Wipe-Down Flap	
A	2″	3″	5¼″	1.0	75865A61	$11.80	75865A71	$4.36	75865A72	$4.36
B	2″	3″	5¼″	1.0	76845A11	13.51	75865A71	4.36	75865A72	4.36
C	2″	3″	6¼″	1.4	74715A21	14.04	74715A22	4.12	74715A23	4.12
D	2″	3″	5¼″	1.1	76305A11	18.04	76305A16	2.44	76305A19	5.40
E	3″	3″	6¼″	1.6	75835A51	22.22	75835A53	3.05	75835A55	3.05
E	4″	3″	6¼″	2.6	75835A52●	39.74	75835A54	5.76	75835A56	5.05
F	2″	3″	6″	1.6	7584A12	19.44	7584A17	6.00	7584A16	4.72
F	3″	3″	6″	2.3	7584A41	33.64	7584A47	6.50	7584A49	6.50
G	2″	3″	4¾″	1.3	7640A11●	12.53	76305A15	10.85	7640A15	5.01
H	2″	3″	5″	0.5	7786A11	42.39	75805A16	11.47	—	—
J	2″	3″	5″	0.3	3386A11●	10.18	3386A12	4.47	—	—

● Does not have a brake.

Table-Top Tape Dispensers

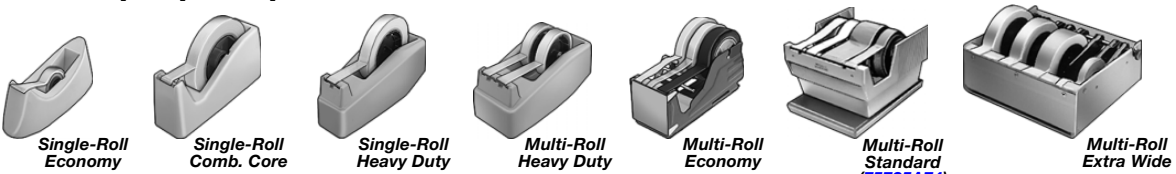

Single-Roll Economy | ***Single-Roll Comb. Core*** | ***Single-Roll Heavy Duty*** | ***Multi-Roll Heavy Duty*** | ***Multi-Roll Economy*** | ***Multi-Roll Standard (75725A74)*** | ***Multi-Roll Extra Wide***

Single-Roll Dispensers—Durable, high-impact plastic body (unless noted) with a nonskid base pad for stability. For use with masking, paper, film, and Scotch tape. Tape not included.

Economy has a metal and plastic body. **To Order:** Please specify beige, black, or brown.

Combination core comes with two spools so you can use 1″ or 3″ ID tape. **To Order:** Please specify beige, black, or brown.

Heavy duty has a weighted base. Can also be used with filament tape. Color is beige.

Multiple-Roll Dispensers—Keep all of your tape in one dispenser. For use with masking, paper, film, Scotch, and filament tape. Tape not included.

Heavy duty accommodates one 2″ wide tape roll or two 1″ wide rolls. Made of high-impact plastic with a nonskid base. Color is tan.

Economy holds three 1″ wide tape rolls or any combination up to 3″ wide. Made of plastic with a weighted base. Color is blue.

Standard are constructed of plastic with a weighted base. Color is beige. 75725A72 holds two 1″ wide tape rolls or one 2″ wide roll. 75725A74 holds six 1″ wide tape rolls or any combination up to 6″ wide.

Extra wide is constructed of metal with suction cups on the base. Color is beige. 76765A1 has a tape holder that adjusts from 1″ to 10″ wide; it holds up to three tape rolls. 76765A2 has a tape holder that adjusts from 1″ to 18″ wide; it holds up to six tape rolls.

	Max. Total Tape Wd.	For Spool ID	Max. Tape Roll Dia.	Lg. × Wd. × Ht.	Dispensers		Repl. Blade		Repl. Spool Holder	
Single-Roll Dispensers										
Economy	1″	1″	2⅝″	7½″ × 2⅝″ × 3¼″	7636A22	$5.74	7636A23	$1.61	7636A24	$2.77
Comb. Core	1″	1″ and 3″	4½″	8⅛″ × 3⅛″ × 4⅜″	76355A21	12.41	76355A51	2.43	76355A52	2.43
Heavy Duty	1″	3″	5¾″	10″ × 3¾″ × 5″	7635A2	47.56	7635A66	12.23	7635A65	12.23
Multiple-Roll Dispensers										
Heavy Duty	2″	3″	5¾″	10″ × 5″ × 5″	75795A14	93.95	75795A65	13.29	75795A66	13.29
Economy	3″	3″	6″	9″ × 3½″ × 5″	7603A11	27.38	7603A21	5.90	—	—
Standard	2″	3″	6⅞″	10⅞″ × 5 5/16″ × 6 11/16″	75725A72	99.03	75725A22	12.32	—	—
Standard	6″	3″	6⅞″	11″ × 6⅞″ × 8 3/16″	75725A74	104.64	75725A42	14.14	—	—
Extra Wide	6″	1″ to 3″	6″	8½″ × 10⅛″ × 4½″	76765A1	133.13	76765A3	11.38	—	—
Extra Wide	12″	1″ to 3″	6″	8½″ × 18⅛″ × 4½″	76765A2	150.24	76765A4	14.20	—	—

Clamp-On Dual-Roll Tape Dispenser

Clamps to any work table for maximum stability, yet it's easily moved since it's not permanently mounted. Has two spindles—each holds up to a 1″ wide roll of tape on a 3″ ID spool. Or use both spindles to hold one roll of tape up to 2″ wide on a 3″ ID spool. Maximum roll diameter is 5½″. Dispenser is steel with plastic spools. Measures 6¾″ Lg. × 2¼″ Wd. × 5″ Ht. with a 2½″ clamp capacity. Color is blue. Use with masking, filament, drafting/art, and Scotch tape. Tape not included.

Dispenser	12725A11	$27.08
Replacement Blade	12725A36	7.00

Measured-Length Table-Top Tape Dispensers

A

B

C

D

Quickly dispense the exact length of tape you need, saving tape and time. Use Styles A-C with Scotch and masking tape. Use Style D with Scotch, masking, and filament tape. Do not use any with duct tape. Tape not included.

(A) Economy Manual Lever— This economical dispenser has a lever to adjust tape length and ensure repeatable lengths. Lengths are cut off manually. Can also dispense two 1/2″ wide rolls of tape at the same time. Maximum roll diameter is 4 3/4″. Size is 6 1/4″ Lg.×3 1/2″ Wd.×4 7/8″ Ht. Plastic construction. Color is black.

(B) Standard Manual Lever— Set the sliding gauge to desired length; then pull the lever to dispense. Lengths are cut off manually. Maximum roll diameter is 5 3/4″. Size is 10 3/4″ Lg.×4 1/2″ Wd.×7″ Ht. Constructed of steel and plastic. Color is tan.

(C) Electric or Battery Operated— Plug into an outlet (operates on 115 VAC, 60 Hz) or use with batteries (operates on three D-cell batteries, not included). This dispenser automatically feeds tape to one of the three selectable lengths listed in the table. Lengths are cut off manually. Includes a 6-ft. cord with two-prong plug. Maximum roll diameter is 5 1/4″. Size is 7″ Lg.×3 3/4″ Wd.×4 1/2″ Ht. Plastic construction. Color is black.

(D) Electric— This versatile dispenser has an auto-repeat function to continuously dispense and cut tape to set lengths. Also includes a manual override feature. Has a three-digit LED display and touch pad for easy use. Maximum roll diameter is 7″. Operates on 110 VAC, 60 Hz and includes a 5-ft. cord with three-prong plug. Size is 8 1/2″ Lg.×5 1/2″ Wd.×6″ Ht. Constructed of steel and plastic. Color is gray.

	Length Dispensed	Accepts Tape Width	For Spool ID	Dispensers		Repl. Blade		Repl. Spool Holder	
A	1/2″ to 4″	1/4″ to 1″	3″	7757A1	$49.53	7757A21	$6.40	—	—
B	1/2″ to 4″	1/4″ to 1″	3″	76335A14	289.76	76335A15	17.93	7635A65	$12.23
C	13/16″, 1 3/4″, 39/16″	Up to 1″	1″ or 3″	76365A31	96.42	76365A13	7.50	76365A65	7.50
D	3/4″ to 39 1/4″	1/4″ to 2″	1″ or 3″	76655A76	564.83	76655A81	84.28	76655A82	19.12
D-Cell Battery for Style C								65605T74	$1.59

Dispensers for Water-Activated Kraft Paper Tape

E

F&G

H&J

K-M

(E) Pull-and-Tear Dispenser— Tape becomes moistened as you pull it. Then simply tear it off using the built-in heavy duty serrated-edge blade. Use with water-activated nonreinforced paper tape. Tape not included. Holds 7 oz. of water and has a 3 3/16″ Wd.×1/2″ Thick. moistening brush, a corrosion-resistant steel frame, and nonskid rubber feet.

	Accepts Tape Width	Max. Tape Roll Dia.		
E	1″ to 3″	7″	76215A15	$112.08
Replacement Brush			76215A16	32.07
Replacement Blade			76215A17	32.07

(F-J) Self-Cutting Manual-Lever Dispensers— Just pull the lever for quick tape dispensing. Fewer moving parts and an enclosed housing mean minimal maintenance. Dispensers have guillotine-action blade and graduated cutting scale with an adjustable stop. For use with water-activated nonreinforced and reinforced paper tape. Tape not included.

Styles F and *G* have a left-side handle and adjust tape length in 2″ increments. Include a 44-oz. capacity water tank and two-brush moistening system (brushes are 3 3/4″ Wd.×1/2″ Thick.). Both have a steel and plastic housing with nonskid rubber feet. *Style G* can also be used with pull-tab water-activated tape (see 6161A33 on page 3436).

Optional heater (sold separately) quickly activates glue to ensure good adhesion. Operates on 115 VAC, 60 Hz and has an 8-ft. cord with three-prong plug.

Styles H and *J* have a right-side handle and adjust tape length in 4″ increments. Include an extra-large 70-oz. capacity water tank, adjustable pressure pad, and a one-brush moistening system (3 1/2″ Wd.×1″ Thick.). Housing is lightweight, corrosion-resistant plastic. *Style J* is furnished with a heater that quickly activates glue to ensure good adhesion. Heater operates on 115 VAC, 60 Hz and has a 7-ft. cord with three-prong plug.

	Length Dispensed	Accepts Tape Width	Max. Tape Roll Dia.	Dispensers	Each	Optional Heater	Each	Replacement Brushes	Set	Replacement Water Tanks	Each
F	4″ to 30″	1 1/2″ to 3″	7 3/4″	76205A3	$394.44	76205A6	$143.94	76205A4♣	$52.42	76185A65	$19.87
G	4″ to 30″	1 1/2″ to 3″	7 3/4″	76205A7	418.79	76205A6	143.94	76205A4♣	52.42	76185A65	19.87
									Each		
H	5″ to 36″	1″ to 3″	9″	76225A23	356.00	—	—	76225A32	$28.50	76225A34	22.56
J	5″ to 36″	1″ to 3″	9″	76225A25	403.85	—	—	76225A32	28.50	76225A34	22.56

♣ Set of two brushes.

(K-M) Electric Dispensers with Heater— Carton sealing is effortless with these electric dispensers. Tape lengths are selected, cut, and dispensed with the press of a button. Choose one of 14 set tape lengths or push the override button for other lengths. Dispensers have a top heater for full glue activation, guillotine-action blade, 34-oz. water tank, three-brush moistening system (brushes are 3 21/32″ Wd.×1 5/16″ Thick.) for glue activation, and an easy-to-use color-coded keypad. For use with water-activated nonreinforced and reinforced paper tape (unless noted). Tape not included. Housing is made of steel and plastic with a stainless steel tape path. Operate on 110/120 VAC, 60 Hz and have a 6-ft. cord with a three-prong plug.

Style L has auto-repeat function to continuously dispense and cut tape. *Style M* can also be used with pull-tab water-activated tape (see 6161A33 on page 3436).

	Length Dispensed	No. of Set Lengths	Length Increments	Accepts Tape Width	Max. Tape Roll Dia.	Dispensers	Each	Replacement Brushes✓	Set	Replacement Water Tanks	Each
K	6″ to 45″	14	3″	1 1/2″ to 3″	10″	76185A21	$1,218.75	76185A71	$75.00	76185A33	$48.52
L	6″ to 45″	14	3″	1 1/2″ to 3″	10″	76185A23	1,269.53	76185A71	75.00	76185A33	48.52
M	6″ to 45″	14	3″	1 1/2″ to 3″	10″	76185A28	1,269.53	76185A71	75.00	76185A33	48.52

✓ Set of three brushes.

For tape dispensers, see pages 3433 and 3434.

Hand-Held Dispensers for Filament Tape

Dispensers are lightweight for easy, hand-held use. All have a serrated-edge blade and accept filament tape. Tape not included.

(A) Economy Plastic Dispenser— A great all-purpose choice. Color is black. ***(B) Plastic Dispenser—*** Has a brake to control tension for tighter box closure. Color is beige. ***(C) Steel Dispenser—*** More durable than plastic. Color is gray. ***(D) Wide-Width Steel Dispenser—*** Excellent for use with filament tape up to 2″ wide.

	Max. Tape Wd.	For Spool ID	Max. Roll Dia.	Dispensers		Repl. Blade	
A	1″	3″	6¼″	76325A15	$10.86		
B	1″	3″	5½″	76325A11	31.42	76325A14	$9.73
C	1″	3″	5½″	76325A19	60.70	76325A18	7.56
D	2″	3″	5⅞″	76325A16	65.52	76325A17	11.25

Workbench-Mount Tape Dispensers

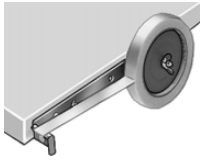

Always have tape where you need it; these dispensers easily attach to workbenches, cabinets, and tables. Use the included steel bracket and screws to mount to any vertical surface.

Both hold a roll of tape with a 3″ ID spool. Tape not included.

Use with filament, masking, and Scotch tape.

Max. Tape Width	Max. Roll Dia.	Lg. × Wd. × Ht.	Dispensers		Repl. Blade	
1″	11″	9⅛″ × 1⅞″ × 3⅛″	76435A75	$20.14	76435A85	$5.36
2″	11″	9⅛″ × 3⅞″ × 3⅛″	76435A76	70.74	76435A86	11.11

About Carton Sealing and Kraft Paper Tape

When choosing carton sealing and kraft paper tape, keep in mind the different types of adhesives. The chart below will help you select the tape with the best adhesive for your application.

Applications	Synthetic Rubber Adhesive	Rubber Adhesive	Acrylic Adhesive	Water-Activated Adhesive
On Rough and Corrugated Paper	Fair	Excellent	Good	Excellent
On Printed Cartons	Good	Excellent	Good	Excellent
On Overstuffed Cartons	Excellent	Very Good	Good	Excellent
On Films	Very Good	Excellent	Poor	Poor
Resistance to Moisture (Dampness)	Fair	Excellent	Poor	Excellent
Resistance to Aging (Yellowing)	Good	Fair	Excellent	Excellent
Clarity	Good	Good	Excellent	Not Applicable
Resistance to UV Light	Good	Poor	Excellent	Excellent

Carton Sealing Tape

Ideal for everyday sealing and bundling jobs. Tape is 0.002″ thick (unless noted) and supplied on a cardboard spool.

Economy Polypropylene with Synthetic Rubber Adhesive— An economical tape that seals instantly. Temperature range is 20° to 140° F; apply at 40° to 140° F.

Heavy Duty Polypropylene with Rubber Adhesive— A strong sealing tape that's ideal for larger packages. Temperature range is 20° to 140° F; apply at 32° to 120° F.

Polypropylene with Acrylic Adhesive— A crystal clear tape that resists yellowing and won't break down from exposure to sunlight. Good for sealing packages for long lengths of time. Temperature range is –10° to +200° F; apply at 32° to 140° F.

Conformable PVC (Polyvinyl Chloride) with Rubber Adhesive— Stronger than polypropylene with more stretchability and good conformability. Offers greater abrasion and puncture resistance. Temp. range is –4° to +158° F; apply at room temperature.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Color	Case Qty.		Roll Partial Case	Roll Full Case
Economy Polypropylene with Synthetic Rubber Adhesive								
2″	55	3″	3¾″	Tan	36	76255A12	$2.72	$2.18
2″	55	3″	3¾″	Clear	36	76255A16	2.72	2.18
2″	60	3″	4⁵⁄₃₂″	Clear	36	76255A41 ♠	8.32	6.55
2″	110	3″	4⁷⁄₁₆″	White	36	76255A14 ♦	4.95	3.93
2″	110	3″	4½″	Tan	36	76255A18	4.95	3.93
2″	110	3″	4½″	Clear	36	76255A17	4.95	3.93
2″	1,000	3″	12⅛″	Clear	6	76255A43 ♠	62.10	46.37
3″	55	3″	3¾″	Clear	24	76255A21	4.15	3.32
3″	60	3″	4⁵⁄₃₂″	Clear	24	76255A42 ♠	9.25	8.33
3″	110	3″	4¼″	Tan	24	76255A24	7.36	5.85
3″	110	3″	4½″	Clear	24	76255A23	7.36	5.85
3″	1,000	3″	12⅛″	Clear	4	76255A44 ♠	99.61	74.38
Heavy Duty Polypropylene with Rubber Adhesive								
2″	55	3″	3¹³⁄₁₆″	Clear	36	76255A54	3.34	3.00
2″	55	3″	3¹³⁄₁₆″	Clear	36	76255A51	3.34	3.00
Heavy Duty Polypropylene with Rubber Adhesive (Cont.)								
2″	110	3″	3¹³⁄₁₆″	Clear	36	76255A52	$5.71	$5.00
2″	110	3″	4⅜″	Tan	24	76255A55	5.71	5.00
3″	110	3″	4½″	Clear	24	76255A53	8.66	7.57
3″	110	3″	4½″	Tan	36	76255A56	8.66	7.57
Polypropylene with Acrylic Adhesive								
2″	55	3″	3⅞″	Clear	36	75495A21	1.64	1.10
2″	60	3″	4″	Clear	36	75495A34 ♠	3.92	2.63
2″	110	3″	4½″	Clear	36	75495A23	3.13	2.10
3″	55	3″	3⅞″	Clear	24	75495A25	2.47	1.65
3″	60	3″	4″	Clear	24	75495A36 ♠	5.88	3.94
3″	110	3″	4½″	Clear	24	75495A27	4.71	3.16
Conformable PVC with Rubber Adhesive								
2″	55	3″	4″	Tan	36	76015A69	6.44	5.29
2″	55	3″	4″	Clear	36	76015A68	6.44	5.29
2″	55	3″	4″	White	36	76015A67	6.44	5.29

♠ Tape is 0.003″ thick. ♦ Temperature range is –32° to +130° F; apply at +55° to +130° F.

3M Scotch #375 Carton Sealing Tape

This polypropylene tape has a high-performance synthetic rubber adhesive for the most demanding tasks. Temperature range is –30° to +150° F; apply at +55° to +120° F. Tape is 0.003″ thick and is supplied on a cardboard spool.

Tape with disposable dispenser includes a roll of clear #375 tape on a red plastic dispenser with a metal blade.

Tape with reusable dispenser includes two rolls of clear #375 tape and a beige plastic dispenser with a metal blade.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Color	Case Qty.		Roll Partial Case	Roll Full Case
Tape								
2″	55	3″	4⁷⁄₃₂″	Tan	36	76865A22	$8.12	$7.67
2″	55	3″	4⁷⁄₃₂″	Clear	36	76865A32	8.12	7.67
2″	1,000	3″	11¾″	Clear	6	76865A47	131.70	117.93
3″	55	3″	4⁷⁄₃₂″	Tan	24	76865A23	12.79	11.52
3″	55	3″	4⁷⁄₃₂″	Clear	24	76865A33	12.79	11.52
							Each Partial Case	**Each** Full Case
Tape with Disposable Dispenser								
2″	55	3″	4⁷⁄₃₂″	Clear	4	75635A68	$10.98	$9.90
Tape with Reusable Dispenser								
2″	55	3″	4⁷⁄₃₂″	Clear	—	7786A11	—	42.39

Tape with Disposable Dispenser

Tape with Reusable Dispenser

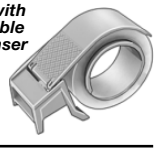

For information about carton sealing tape, see page 3435. For tape dispensers, see pages 3433 and 3434.

Tamper-Evident Carton Sealing Tape

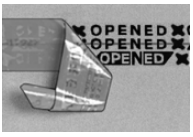

Peel Back

Know if high-value and confidential items have been tampered with. Tape has a 3″ ID cardboard spool.

Diagonal Stripe Tape—Diagonal stripes are printed on tape. If the tape is cut the diagonal lines cannot be realigned, revealing the package has been tampered with. Tape is white polypropylene with rubber adhesive. Choose from two messages. Stripes and lettering are blue. Temperature range is 10° to 140° F; apply at 45° to 120° F.

Peel-Back Tape—When tape is peeled back, an "OPENED" message is revealed. Tape cannot be resealed. Tape is red polystyrene with acrylic adhesive. Lettering is black. Temperature range is 0° to 158° F.

Wd.	Lg., yds.	Roll Dia.	Thick.	Case Qty.		Roll Partial Case	Roll Full Case
Diagonal Stripe							
With "Security Tape" Message							
2″	55	3⅞″	0.002″	36	**2073T63**	$4.50	$3.91
With "If Seal Has Been Broken, Check Contents" Message							
2″	55	3⅞″	0.002″	36	**2073T64**	4.50	3.91
Peel Back							
With "Opened" Message							
2″	60	4¼″	0.002″	1	**2073T11**	___	36.07
3″	60	4¼″	0.002″	1	**2073T12**	___	59.73

Water-Activated Kraft Paper Tape

Pull-Tab Tape

Message Tape

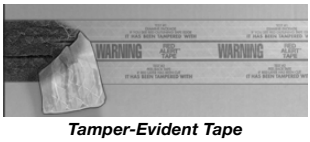

Tamper-Evident Tape

Excellent for carton sealing, this tape has a water-activated adhesive and fits water-activated tape dispensers on page 3434. Temperature range is 0° to 120° F (unless noted); apply at 33° to 120° F (unless noted). Supplied on a cardboard spool (unless noted). Color is brown (unless noted).

Nonreinforced Tape—For general purpose sealing jobs. Temperature range is 40° to 140° F; apply at same range.

Heavy Duty Reinforced Tape—This durable paper tape is reinforced with tri-directional fiberglass strands for extra strength when sealing cartons. Tape does not include a spool.

Pull-Tab Tape—A center strip, or pull-tab, allows you to easily open the seal with a simple pull. No need for box cutters or knives.

Message Tape—A printed "WARNING" message on the tape quickly and conveniently labels your shipment. Lettering is red.

Tamper-Evident Tape—Know if someone is tampering with your shipments. Tape has a red bottom sheet that leaves a red mark when tape is removed or if someone tries to remove it.

Wd.	Spool ID	Roll Dia.	O'all Thick.	Tensile Strength, lbs./in. wd.	Case Qty.		Roll Partial Case	Roll Full Case
Nonreinforced Tape—*500 ft.*								
1″	1⅝″	5¾″	0.004″	38	30	**7624A5**	$2.03	$1.83
1½″	1¼″	5¼″	0.0034″	24	20	**7624A7**●	3.66	3.29
1½″	1¼″	5¾″	0.004″	38	20	**7624A4**	3.05	2.75
Nonreinforced Tape—*600 ft.*								
2″	1¼″	7¼″	0.006″	48	15	**7624A1**	4.55	4.10
2½″	1¼″	7¼″	0.006″	48	12	**7624A2**	5.71	5.12
3″	1⅝″	7½″	0.006″	48	10	**7624A3**	6.85	6.15
Heavy Duty Reinforced Tape—*450 ft.*								
2″	1½″	6½″	0.006″	75	14	**76235A69**	6.49	5.92
2⅜″	1½″	6¼″	0.006″	75	12	**76235A76**	7.07	6.45
2½″	1½″	6¾″	0.007″	64	12	**76235A64**	8.79	7.88
2¾″	1½″	6⅛″	0.006″	75	10	**76235A81**	8.26	7.40
3″	1½″	6¼″	0.006″	75	10	**76235A66**●	10.75	9.81
3″	1⅝″	6″	0.006″	75	10	**76235A77**	8.96	8.18
3″	1⅝″	6⅜″	0.007″	64	10	**76235A82**	10.56	9.47
Pull-Tab Tape—*500 ft.*								
2¾″	11/16″	6¾″	0.006″	45	10	**6161A33**	12.50	11.24
Message Tape—*450 ft.*								
2 13/16″	1⅛″	6⅜″	0.006″	74	10	**6144A55**	10.40	9.87
Tamper-Evident Tape—*450 ft.*								
3 3/16″	1⅜″	7½″	0.008″	76	10	**6090A35**	15.55	14.76

● Color is white.

Carton Sealing Message Tape

A

B

C

D

E

Seal and communicate—this message tape labels packages while sealing them. Made of polypropylene with a synthetic rubber adhesive. Temperature range is –10° to +140° F; apply at +45° to +120° F. Tape is 0.002″ thick and is supplied on a cardboard spool.

Styles A and ***C*** are white with red and blue lettering.

Styles B, D, and ***E*** are white with red lettering.

	Wd.	Lg., yds.	Spool ID	Roll Dia.	Case Qty.		Roll Partial Case	Roll Full Case
A	2″	55	3″	3⅞″	36	**19545T11**	$3.67	$3.15
B	2″	55	3″	3⅞″	36	**19545T12**	3.67	3.15
C	2″	55	3″	3⅞″	36	**19545T13**	3.67	3.15
D	2″	55	3″	3⅞″	36	**19545T14**	3.63	3.11
E	2″	55	3″	3⅞″	36	**19545T15**	3.63	3.11

Kraft Paper Tape

No need for water to activate the glue, this tape has a pressure-sensitive rubber adhesive for a secure seal. It has a strong backing that resists moisture and weathering; yet it can still be torn by hand.

Temperature range is 32° to 180° F; apply at 50° to 120° F. Tape is 0.007″ thick and is supplied on a cardboard spool. Tensile strength is 39 lbs./in. wd. Color is tan.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Case Qty.		Roll Partial Case	Roll Full Case
1″	60	3″	5½″	36	**77225A9**	$3.95	$3.61
1½″	60	3″	5½″	24	**77225A7**	5.91	5.40
2″	60	3″	5½″	24	**77225A6**	7.12	6.31
3″	60	3″	5½″	16	**77225A4**	11.26	9.96

3M Scotch Tape

Ideal for mending, holding, and splicing, this easy to use tape should be applied at room temperature. It is transparent and 0.002″ thick. 1″ ID spools are plastic; 3″ ID spools are cardboard.

#600 Scotch tape has an acrylic adhesive for sealing as well as light duty packaging applications. Treated for easy release, which also ensures smooth unwinding. It's stain, sunlight, and moisture resistant.

#610 Scotch cellophane tape resists high temperatures and has a rubber adhesive. It also has excellent holding properties.

#810 Scotch Magic tape has acrylic adhesive that becomes clear as glass upon application. Excellent for label protection, mending, and splicing. The ink-receptive surface allows you to write on it.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Case Qty.		Roll Partial Case	Roll Full Case
#600 Scotch Tape							
½″	36	1″	2½″	144	**7772A14**	$2.02	$1.80
½″	72	3″	4¼″	72	**7772A23**	3.55	3.17
¾″	36	1″	2½″	144	**7772A16**	2.73	2.44
¾″	72	3″	4¼″	48	**7772A24**	5.18	4.63
1″	72	3″	4¼″	36	**7772A25**	6.90	6.17
#610 Scotch Cellophane Tape							
½″	72	3″	4¼″	72	**7588A11**	8.19	7.32
¾″	72	3″	4¼″	48	**7588A13**	11.95	10.68
1″	72	3″	4¼″	36	**7588A15**	15.64	13.99
#810 Scotch Magic Tape							
½″	36	1″	2½″	144	**75995A11**	2.42	2.16
½″	72	3″	4¼″	72	**75995A13**	4.34	3.88
¾″	36	1″	2½″	144	**75995A15**	3.15	2.82
¾″	72	3″	4¼″	48	**75995A17**	5.93	5.30

Filament Tape

Reinforced for strength, this tape is great for packaging, bundling, and strapping. It has high tensile strength and excellent abrasion and moisture resistance. Tape is polypropylene with fiberglass filaments (unless noted) and has a rubber adhesive. Temperature range is –30° to +120° F; apply at +40° to +95° F (unless noted). Supplied on a cardboard spool.

Economy

Has filaments along the length. Good for light duty applications. Tape is 0.004″ thick and transparent.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Tensile Strength, lbs./in. wd.	Case Qty.		Roll Partial Case	Roll Full Case
3/8″	60	3″	4 5/32″	100	96	7742A9★	$1.57	$1.40
1/2″	60	3″	4 13/16″	100	72	7742A11	2.71	2.44
3/4″	60	3″	4 13/16″	100	48	7742A12	4.41	3.57
1″	60	3″	4 13/16″	100	36	7742A13	5.30	4.65
1 1/2″	60	3″	4 13/16″	100	24	7742A14	7.93	7.13
2″	60	3″	4 5/32″	100	24	7742A15★	6.92	5.57
3″	60	3″	4 5/32″	100	16	7742A16★	9.69	7.93

★ Temperature range is 20° to 140° F; apply at 45° to 120° F.

Standard

***Unidirectional*—**Has filaments along the length. Tape is 0.006″ thick and translucent.

***Bidirectional*—**Has filaments along the length and width for added reinforcement. Ideal for extra-heavy, overseas, and valuable shipments. Tape is 0.006″ thick and translucent.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Tensile Strength, lbs./in. wd.	Case Qty.		Roll Partial Case	Roll Full Case
Unidirectional								
3/8″	60	3″	5 1/4″	170	96	7623A61	$3.27	$2.96
1/2″	60	3″	5 1/4″	170	72	7623A62	4.92	4.44
3/4″	60	3″	5 1/4″	170	48	7623A63	6.62	5.97
1″	60	3″	5 1/4″	170	36	7623A64	8.84	7.98
2″	60	3″	5 1/4″	170	24	7623A66	19.50	17.60
Bidirectional								
3/4″	55	3″	4 13/16″	150	48	7623A71	11.79	10.60
1″	55	3″	4 13/16″	150	36	7623A72	17.12	15.40
2″	55	3″	4 13/16″	150	18	7623A73	34.03	30.61
3″	55	3″	4 13/16″	150	12	7623A74	43.68	38.87

Clear

Has filaments along the length. You can see through this tape and read messages on cartons.

***General Purpose*—**Filaments are polypropylene. Tape is 0.006″ thick.

***3M #898 Scotch High Performance*—**A high-performance, all-purpose tape that is ideal for closing and reinforcing packages and bundling two packages for shipment as one. Tape is 0.007″ thick. Meets ASTM D5330 Type II requirements.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Tensile Strength, lbs./in. wd.	Case Qty.		Roll Partial Case	Roll Full Case
General Purpose								
1/2″	60	3″	5 1/16″	190	72	77245A62	$3.19	$2.76
3/4″	60	3″	5 1/16″	190	48	77245A63	4.81	4.16
1″	60	3″	5 1/16″	190	36	77245A64	6.26	5.42
1 1/2″	60	3″	5 1/16″	190	24	77245A65	9.37	8.12
3M #898 Scotch High Performance								
1/2″	60	3″	5 1/4″	380	72	7686A11	11.27	10.04
3/4″	60	3″	5 1/4″	380	48	7686A12	15.86	14.13
1″	60	3″	5 1/4″	380	36	7686A13	19.30	17.30
1 1/2″	60	3″	5 1/4″	380	24	7686A14	29.08	26.06
2″	60	3″	5 1/4″	380	24	7686A15	38.73	34.73
3″	60	3″	5 1/4″	380	12	7686A16	49.56	44.10

Polypropylene Strapping Tape

Made from tensilized polypropylene film (without fiberglass filaments), this tape has high impact strength that allows "give and take" without breaking. It will stretch before splitting, making it ideal for banding, bundling, and palleting. Temperature range is 32° to 150° F; apply at 40° to 120° F. Supplied on a cardboard spool. Color is ivory.

***Standard Duty*—**Has an acrylic adhesive. Tape thickness is 0.004″.

***Heavy Duty*—**High-tack rubber adhesive makes it good for holding and securing appliances, furniture, and office equipment for transport. It snaps back to hold shifting loads. Tape thickness is 0.005″.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Tensile Strength, lbs./in. wd.	Case Qty.		Roll Partial Case	Roll Full Case
Standard Duty								
1/2″	60	3″	4″	105	144	7637A11	$1.58	$1.43
3/4″	60	3″	4″	105	96	7637A12	2.73	2.30
2″	60	3″	4″	105	36	7637A14	7.28	6.14
Heavy Duty								
1/2″	60	3″	4 13/16″	163	144	7637A31	3.93	3.35
1″	60	3″	4 13/16″	163	72	7637A33	8.19	7.44
2″	60	3″	4 13/16″	163	36	7637A34	17.26	14.70

Label Protection Tape and Dispensers

Protect labels from moisture, and chemicals with this clear tape. Made of UPVC (unplasticized polyvinyl chloride) with a rubber adhesive. Temperature range is 14° to 212° F; apply at 41° to 104° F. Tape is 0.002″ thick and is supplied on a cardboard spool. ***Tape dispenser*** can also be used with carton sealing tape. Do not use with duct tape. Tape is not included.

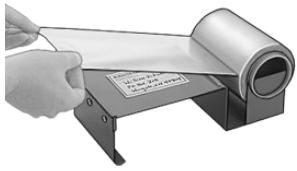

Dispenser with Tape (Each Sold Separately)

Tape

Wd.	Lg., yds.	Spool ID	Roll Dia.		Roll
2″	110	3″	4″	76295A22	$5.41
3″	110	3″	4″	76295A24	10.41
4″	110	3″	4″	76295A26	13.18
5″	110	3″	4″	76295A28	19.75
6″	110	3″	4″	76295A29	23.76

Tape Dispensers

Max. Tape Wd.	For Spool ID	Max. Tape Roll Dia.	*Dispensers*		*Repl. Blade*	
4″	3″	6 1/2″	75765A18	$24.10	75765A24	$7.37
6″	3″	5 7/8″	75765A22	31.30	75765A25	9.88

Super-Bond Tape for Plastics

This transparent polyester tape grips super-slick surfaces such as plastics and nylon. Great for holding polyethylene barrel liners in place as well as splicing polyester conveyor belts and acetate transparencies. It has a high-adhesion rubber adhesive and a total tape thickness of 0.004″. Temperature range is 40° to 200° F; apply at 50° to 70° F. Tape is supplied on a cardboard spool.

Wd.	Lg., yds.	Spool ID	Roll Dia.		Roll
3/4″	36	3″	4 1/4″	76065A65	$11.26
1″	36	3″	4 1/4″	76065A67	14.08
2″	36	3″	4 1/4″	76065A69	28.16

Poly-Bag Sealing Tape and Dispenser

This UPVC (unplasticized polyvinyl chloride) tape with rubber adhesive is perfect for sealing, bundling, and produce packaging. Tape is 0.002″ thick and supplied on a cardboard spool. Maximum temperature is 176° F; apply at 60° to 80° F.

Sealing plastic bags is quick and easy with this tape and dispenser. Simply twist end of plastic bag and insert into dispenser for a tight seal. Has a bag-end trimmer to give you consistent results.

Dispenser with Tape (Each Sold Separately)

Tape

To Order: For tape, please specify blue, green, red, white, or yellow.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Case Qty.		Roll Partial Case	Roll Full Case
3/8″	180	3″	5 1/4″	24	2203T2	$5.15	$3.55

Tape Dispenser and Replacement Parts

	Max. Tape Wd.	For Spool ID	Max. Tape Roll Dia.		
Dispenser	1/2″	3″	6″	2203T7	$22.35
Replacement Inside Blade				2203T11	4.00
Replacement Trimmer Blade				2203T12	4.00

Polyester Electrical Insulation Tape

Great for shielding and insulating electrical connections. Thin yet durable, this tape is made of an electrical-grade polyester film and is conformable as well as chemical, abrasion, and wear resistant. It is 0.0025″ thick (film is 0.001″ and adhesive is 0.0015″) and has a 266° F insulation class rating. Dielectric strength (the ability to withstand electrical voltage without rupture) is 5,000 volts and tensile strength is 25 lbs./in. width. Tape is supplied on a plastic spool. UL listed.

***Standard*—**Tape has better adhesion than the flame-retardant tape and is noncorrosive. It's yellow with a rubber adhesive. Temperature range is 0° to 325° F.

***Flame Retardant*—**Tape is white, has an acrylic adhesive, and is solvent and oil resistant. Temperature range is –20° to +325° F.

Wd.	Lg., yds.	Spool ID	Roll Dia.	*Standard*	Roll	*Flame Retardant*	Roll
1/4″	72	3″	4″	77075A21	$6.66	77075A31	$3.64
1/2″	72	3″	4″	77075A22	13.51	77075A32	6.86
3/4″	72	3″	4″	77075A23	20.23	77075A33	10.34
1″	72	3″	4″	77075A24	26.97	77075A34	14.42
2″	72	3″	4″	77075A25	49.89	77075A35	25.18

3M Scotch Brand Electrical Tape

Vinyl Electrical Tape

Ideal for:
- Holding and insulating electrical connections
- Insulating wire and cable splices up to 600 volts
- Jacketing and identifying in high-voltage cable splices and terminations
- Splicing fixture wire up to 600 volts
- Harnessing wires and cables

Features:
- UL Listed
- CSA certified
- Flame retardant
- Moisture resistant
- Weather resistant
- UV resistant
- Acid and alkali resistant
- Abrasion resistant
- Corrosion resistant
- Cardboard spool

Scotch Super 33+ **—** An excellent super-stretchy, all-weather tape. Can be applied at temperatures as low as 0° F and easily conforms to irregular surfaces. Meets ASTM D3005 Type I requirements.

Scotch Super 88 **—** This heavy duty tape provides fast buildup and a strong, moisture-tight seal. Ideal for cold-weather applications. Meets ASTM D3005 Type II and MIL-I-24391C requirements.

Scotch 22 Heavy Duty **—** This extra-thick tape has high dielectric and mechanical strength. It also provides quick buildup during application. Meets ASTM D2301 Type II requirements.

Scotch 35 Colored **—** Use indoors and out for identification as well as to keep track of circuits, piping systems, motor leads, and splices.

Scotch No.	Wd.	Lg.	Spool ID	Roll Dia.	Thick.	Dielectric Strength, volts ♦	Tensile Strength, lbs./in. wd.	Temperature Range	Application Temperature Range	Color	Pkg. Qty.★		Roll
Super 33+	¾″	20 ft.	1″	1 5/16″	0.007″	8,050	15	–40° to +220° F	0° to +100° F	Black	10	76455A21	$2.00
Super 33+	¾″	66 ft.	1″	2 15/16″	0.007″	8,050	15	–40° to +220° F	0° to +100° F	Black	10	76455A22	5.15
Super 88	¾″	44 ft.	1″	2⅝″	0.0085″	10,000	20	–40° to +220° F	0° to +100° F	Black	10	76455A14	4.02
Super 88	¾″	66 ft.	1″	3¼″	0.0085″	10,000	20	–40° to +220° F	0° to +100° F	Black	10	76455A26	5.78
Super 88	1½″	44 ft.	1″	2⅝″	0.0085″	10,000	20	–40° to +220° F	0° to +100° F	Black	10	76455A28	7.53
22	¾″	108 ft.	1″	4 5/16″	0.010″	12,000	20	–40° to +176° F	+32° to +100° F	Black	12	76455A16	13.20
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	Red	10	76455A91	4.78
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	Yellow	10	76455A62	4.78
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	Blue	10	76455A63	4.78
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	White	10	76455A64	4.78
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	Green	10	76455A75	4.78
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	Brown	10	76455A66	4.78
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	Gray	10	76455A67	4.78
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	Orange	10	76455A68	4.78
35	¾″	66 ft.	1″	2 15/16″	0.007″	8,750	17	–40° to +220° F	+32° to +100° F	Violet	10	76455A69	4.78

♦ Meets ASTM D1000. *Note:* Dielectric strength is the ability to withstand electrical voltage without rupture.
★ You may buy any quantity you need; full-package quantities are listed for your convenience.

Splicing and Insulating Tape

All tape is supplied on a cardboard spool.

Scotch 23 and 130C Rubber Splicing Tape **—** Highly conformable, self-fusing, EPR-based (ethylene propylene rubber) tape can be used as insulation for low-voltage applications, as well as for splices up to 69,000 volts. Meet ASTM D4388 Type I, II, and III requirements.

Scotch 23 has a peel-off liner; *Scotch 130C* has no liner.

Scotch 27 (Class B) and 69 (Class H) Glass-Cloth Electrical Tape **—** Tape is corrosion and puncture resistant and won't shrink, rot, or burn. Made of a woven glass base. Adhesive is thermosetting so it becomes stronger at high temperatures. Tape has no liner. Use indoors only.

Scotch 27 (Class B) provides heat-stable insulation for "hot spot" applications such as furnace and oven controls, motor leads, and switches.

Scotch 69 (Class H) reinforces insulation in heavy load and high heat applications. Meets MIL-I-19166C requirements.

Scotch 70 Self-Fusing Silicone Rubber Electrical Tape **—** This silicone rubber tape has no adhesive—it fuses instantly to surfaces to protect high-voltage cables and insulate Class H high-temperature applications. Tape is arc resistant and has a peel-off liner.

Scotch 77 Fire Retardant Electric-Arc Proofing Tape **—** This tape expands in a fire to protect cables from flames and heat. Tape easily conforms to irregular surfaces. Tape does not have an adhesive—use as cable wrap with Scotch 69 glass-cloth electrical tape (described above and sold separately below).

Scotch 2200, 2210, 2228, and 2229 Mastic Tape and Pads **—** Use to pad, insulate, and seal out moisture and environmental contaminants in electrical connections. All have a peel-off liner.

Scotch 2210 Vinyl Mastic Tape and *2200 Pads* are for general purpose sealing and insulating. Consist of an all-weather grade PVC film with a rubber-based mastic. Have excellent resistance to abrasion, alkalies, acids, corrosion, and UV rays. Scotch 2200 pads come 10 per box.

Scotch 2228 Rubber Mastic Tape is suitable for use with cable, wire, and motor lead connections up to 1,000 volts and with bus bar connections up to 35,000 volts. Consists of a conformable rubber backing with a rubber-based mastic.

Scotch 2229 Seal Mastic Tape and Pads consist of a rubber-based mastic. They can be molded easily around irregular shapes and are UV and chemical resistant. Pads come 10 per box

Scotch 2520 Varnished Cambric Tape **—** Use this cotton tape as insulation for bus bars, service drop connectors, and temporary splices. Has excellent moisture and puncture resistance, is coated with a high-grade electrical insulating varnish, and has an acrylic adhesive with no liner.

Scotchfil Electrical Insulating Putty Tape **—** Noncorrosive electrical-grade putty in tape form. Use for applications up to 600 volts. Also suitable for rounding out high-voltage (up to 2,300 volts) connections, smoothing bus bar irregularities, and as a moisture seal for ground-wire exits in high-voltage splices. Has a peel-off liner.

Scotch No.	Wd.	Lg.	Spool ID	Roll Dia.	Thick.	Dielectric Strength, volts ♦	Tensile Strength, lbs./in. wd.	Temperature Range	Application Temperature Range	Color		Roll
23	¾″	30 ft.	1″	4″	0.030″	24,000✓	8	–40° to +194° F	0° to +100° F	Black	76455A72	$15.58
23	1″	30 ft.	1″	4″	0.030″	24,000✓	8	–40° to +194° F	0° to +100° F	Black	76455A71	19.23
23	1½″	30 ft.	1″	4″	0.030″	24,000✓	8	–40° to +194° F	0° to +100° F	Black	76455A73	29.35
23	2″	30 ft.	1″	4″	0.030″	24,000✓	8	–40° to +194° F	0° to +100° F	Black	76455A74	38.60
130C	¾″	30 ft.	1″	4″	0.030″	22,500✓	7.5	–40° to +194° F	0° to +100° F	Black	76455A18	14.75
130C	1″	30 ft.	1″	4″	0.030″	22,500✓	7.5	–40° to +194° F	0° to +100° F	Black	76455A65	18.40
27	½″	66 ft.	1″	2⅞″	0.007″	3,000	150	–40° to +266° F	+32° to +100° F	White	76455A17	10.58
27	¾″	66 ft.	1″	2⅞″	0.007″	3,000	150	–40° to +266° F	+32° to +100° F	White	76455A19	15.72
69	½″	66 ft.	1″	2⅞″	0.007″	3,500	150	–40° to +356° F	+32° to +100° F	White	76455A27	13.38
69	¾″	66 ft.	1″	2⅞″	0.007″	3,500	150	–40° to +356° F	+32° to +100° F	White	76455A29	20.07
70	1″	30 ft.	1″	2¾″	0.012″	10,500	12	–40° to +356° F	0° to +100° F	Blue-Gray	76455A35	44.60
77	1½″	20 ft.	1″	3 9/16″	0.030″	21,000	45	–40° F ■	0° to +100° F	Black	77255A3	14.93
77	3″	20 ft.	1″	3 9/16″	0.030″	21,000	45	–40° F ■	0° to +100° F	Black	77255A4	27.73
2210	4″	10 ft.	3″	5″	0.090″	27,000	20	–40° to +176° F	0° to +100° F	Black	75735A66	57.38
2228	1″	10 ft.	1″	3½″	0.065″	32,500♣	9.75	–40° to +194° F	+32° to +100° F	Black	75735A71	15.20
2228	2″	10 ft.	1″	3½″	0.065″	32,500♣	9.75	–40° to +194° F	+32° to +100° F	Black	75735A65	29.00
2229	1″	10 ft.	1″	4″	0.125″	47,375	—	–40° to +194° F	+32° to +100° F	Black	75735A72	11.17
2520	¾″	60 ft.	1″	3″	0.008″	6,400♠	50	–40° to +220° F	+32° to +100° F	Yellow	76455A23	28.00
2520	1″	108 ft.	1″	3″	0.008″	6,400♠	50	–40° to +220° F	+32° to +100° F	Yellow	76455A24	51.40
Scotchfil	1½″	5 ft.	1″	3¼″	0.125″	71,875	—	–40° to +176° F	+32° to +100° F	Black	75695A67	12.53
	Pad Size											Box▲
2200 Pads	3¼″	4½″	—	—	0.125″	37,500	20	–40° to +176° F	0° to +100° F	Black	75735A67	$34.84
2200 Pads	4½″	6½″	—	—	0.125″	37,500	20	–40° to +176° F	0° to +100° F	Black	75735A68	54.68
2229 Pads	2½″	3¾″	—	—	0.125″	47,375	—	–40° to +194° F	+32° to +100° F	Black	75735A73	19.03
2229 Pads	6½″	3¾″	—	—	0.125″	47,375	—	–40° to +194° F	+32° to +100° F	Black	75735A74	40.65

♦ Meets ASTM D1000. *Note:* Dielectric strength is the ability to withstand electrical voltage without rupture. ✓ Meets ASTM D1000 requirements.
■ Maximum temperature is not rated. ♣ Meets ASTM D4325 requirements, not D1000. ♠ Meets ASTM D295 requirements, not D1000.
▲ 10 pads per box. Also available in less than full-box quantities; prices 25% higher.

Economy Electrical Tape

Insulate wire and cable splices up to 600 volts with this economical electrical tape. It's also great for harnessing wire and cable and as jacketing for high-voltage cable splices and repairs. Tape is PVC (polyvinyl chloride) with a rubber adhesive and has excellent resistance to moisture, weather, abrasion, acids, alkalies, and copper corrosion.

Tape thickness is 0.007″. Dielectric strength (the ability to withstand electrical voltage without rupture) is 8,750 volts and tensile strength is 18 lbs./in. width. Temperature range is 32° to 176° F. Supplied on a cardboard spool. UL listed.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Color	Case Qty.		Roll Partial Case	Roll Full Case
¾″	20	1½″	2⅞″	Black	10	7619A11	$0.98	$0.88
¾″	22	1½″	2⅞″	Red	10	7619A21	1.28	1.16
¾″	22	1½″	2⅞″	White	10	7619A23	1.28	1.16
¾″	22	1½″	2⅞″	Blue	10	7619A25	1.28	1.16
¾″	22	1½″	2⅞″	Green	10	7619A27	1.28	1.16
¾″	22	1½″	2⅞″	Yellow	10	7619A29	1.28	1.16
¾″	22	1½″	2⅞″	Orange	10	7619A31	1.28	1.16

Self-Fusing Tape

No need for adhesive, this tape fuses to itself for a permanent seal. Simply apply tape to object—it stretches to fit virtually any form.

All-Weather EPR Tape—Insulates and seals above and below ground, in hot and cold weather, and in wet and dry environments. Made of EPR (ethylene propylene rubber), tape is self-adhering—it has no adhesive, but fuses to itself within minutes of application and can't be unwrapped. Perfect for sealing wires, joints, pipes, and hose as well as for insulating battery terminals. Temperature range is –40° to +212° F; apply at +32° to +105° F. Tape is supplied on a plastic spool and has a peel-off liner.

7682A65 has 800% elongation (percent of stretch) and the color is black. 7682A66 has 600% elongation and the color is white.

High-Temperature Silicone Rubber Tape—Ideal for high-temperature applications such as electrical coil insulation, splices, cable harnesses, powder coating, masking applications, and bus bar insulation. Also useful as a substitute for heat-shrink tube coverings. Tensile strength is 700 psi and elongation (percent of stretch) is 300%. Temperature range is –76° to +392° F; apply at +70° to +100° F (unless noted). Tape has a peel-off liner and is supplied on a cardboard spool. **To Order:** Please specify color: black, clear, gray, or red.

Rectangular is a flat tape with uniform thickness. Commonly used as an electrical insulator. Meet MIL-A-A-59163 Type I requirements (unless noted). *Triangular* is thicker in the middle and tapers at each edge. Middle also has a ridge that acts as a guide to ensure a smooth wrap. Meet MIL-A-A-59163 Type II requirements.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Thick.	Dielectric Strength, volts●	Tensile Strength, lbs./in. wd.		Roll
All-Weather EPR Tape								
1″	10	1½″	3½″	0.020″	22,000	450	7682A65	$17.81
1″	10	1½″	3½″	0.020″	22,000	450	7682A66	18.64
High-Temperature Silicone Rubber Tape—*Rectangular*								
¼″	12	1″	2½″	0.010″	4,000	7	7643A61♥	9.42
½″	18	1″	4½″	0.010″	4,000	7	7643A74	11.75
1″	10	1″	4½″	0.012″	4,800	8.4	7643A79	10.52
1″	12	1″	4½″	0.020″	8,000	14	7643A75	13.71
High-Temperature Silicone Rubber Tape—*Triangular*								
1″	12	1″	4½″	0.020″✓	8,000✓	14	7643A71	13.61
1½″	12	1″	4½″	0.030″✓	12,000✓	21	7643A72	24.68
2″	12	1″	4½″	0.020″✓	8,000✓	14	7643A76	25.00
2″	12	1″	4½″	0.030″✓	12,000✓	21	7643A73	28.65

● The ability to withstand electrical voltage without rupture.
♥ Temperature range is –65° to +500° F; apply at 0° to +250° F. Does not meet MIL-A-A-59163 Type I requirements.
✓ At thickest point.

Clean-Release Paper Tape

Also known as drafting tape, this tape is great for temporary holding jobs where easy release without marring or staining is required. Use to mount drawings, tracings, and blueprints.

Tape consists of a cream-colored crepe paper film with a rubber adhesive that removes without leaving residue. Total tape thickness is 0.007″. Temperature range is 32° to 200° F. Supplied on a cardboard spool.

Wd.	Lg., yds.	Spool ID	Roll Dia.		Roll
½″	60	3″	5″	76905A815	$4.45
¾″	60	3″	5″	76905A817	5.95
1″	60	3″	5″	76905A819	7.53

Black-Cloth Electrical Tape

Also known as friction tape, this traditional black cotton electrician's tape provides an abrasion-resistant shield for overwrapping low-voltage splices. The rubber adhesive applied to both sides of this tape works as a nonslip surface when applied to tool handles.

Tape thickness is 0.015″. Dielectric strength (the ability to withstand electrical voltage without rupture) is 1,200 volts and tensile strength is 40 lbs./in. width. Temperature range is –40° to +266° F; apply at +32° to +104° F. Supplied on a cardboard spool. Meets ASTM D69 and D4514 requirements.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Case Qty.		Roll Partial Case	Roll Full Case
¾″	20	1¼″	3¾″	20	76465A1	$3.17	$2.85
1½″	20	1¼″	3¾″	20	76465A5	6.23	5.51

Liquid Electrical "Tape"

Vinyl Liquid Electrical Tape

Apply this liquid for a skin-tight protective coating that insulates and resists moisture, acids, and corrosion. Adheres to metal, plastic, vinyl, rubber, and composite surfaces. For indoor or outdoor use.

Vinyl liquid is for use on electrical connections and terminals. Dries to the touch in approximately five minutes and reaches full strength in 24 hours. Temperature range is –50° to +250° F; apply at +40° to +100° F. Dielectric strength (the ability to withstand electrical voltage without rupture) is 1,778 volts at 0.001″ thickness. Top has a convenient applicator brush. **To Order:** Please specify color: black, clear, green, red, or white.

Spray-on liquid is rubber based. Use on electrical connections and terminals. Allow 30 minutes between coats and 4 hours to dry completely. Temperature range is –30° to +200° F; apply at +68° to +72° F. Dielectric strength (the ability to withstand electrical voltage without rupture) is 1,400 volts at 0.001″ thickness. Color is black.

Size		
Vinyl Liquid		
4-oz. Brush-Top Can	76425A22	$10.26
32-oz. Brush-Top Can	76425A23	46.24
Spray-On Liquid		
6-oz. Aerosol	1992A14	8.36

3M Scotchrap #51 Corrosion-Protection Tape

Perfect for use in electrical applications, this black tape provides all-weather corrosion protection for your pipes, conduit, and fittings. Tape is resistant to abrasion, salt water, salt, acids, alkalies, common chemicals and vapors, weathering, and sunlight. Plus, it will not puncture or tear.

Made of PVC (polyvinyl chloride) with a high-tack adhesive. Has a dielectric strength (the ability to withstand electrical voltage without rupture) of 20,000 volts and excellent insulating properties.

Also for use with Scotchfil electrical insulating putty tape (75695A67 on page 3438). Tape is 0.020″ thick. Temperature range is –55° to +175° F; apply at +10° to +150° F. Meets Fed. Spec. L-T-1512A, Type 2 for corrosion protection. Supplied on a cardboard spool.

Wd.	Lg., yds.	Spool ID	Roll Dia.		
2″	33	1½″	4½″	7621A11	$28.33

Colored Masking Tape

Seven colors to choose from. Tape is good for light bundling and packing; use on smooth surfaces. Made of crepe paper with a rubber and resin adhesive. Tape is 0.006″ thick and is supplied on a cardboard spool. Temperature range is 40° to 150° F; apply at 50° to 90° F.

To Order: Please specify color: black, light blue, light green, orange, red, white, or yellow.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Case Qty.		Roll Partial Case	Roll Full Case
½″	60	3″	4¾″	72	76265A41	$3.03	$2.63
¾″	60	3″	4¾″	48	76265A42	4.12	3.58
1″	60	3″	4¾″	36	76265A43	5.43	4.73
2″	60	3″	4¾″	24	76265A44	10.95	9.53

About Masking Tape

When choosing a masking tape, you should consider whether the tape can be used outdoors, how long you need to leave it on, what surface you're masking, and the application. The chart below will help you choose the tape that best meets your needs.

				General Painting			Specialty Applications				
Product	Page	Use Outdoors	Time Tape Can Be Left On	Wallboard	Brick and Concrete	Wood	Powder-Coat Painting	Abrasive Blasting	Plasma Flame Spray	Soldering	Plating
General Purpose	3440	No	3 Days	Test	Test	Test	No	No	No	No	No
3M #234 Scotch General Purpose	3440	No	3 Days	Test	Test	Test	Yes	No	No	No	No
3M #232 Scotch High Performance	3440	No	3 Days	Test	Test	Test	Yes	No	No	No	No
Fine Line Polypropylene	3440	No	1 Day	No	No	Test	Yes	No	No	No	Yes
Long-Life Blue	3440	Yes	7-60 Days	Yes	No	Yes	No	No	No	No	No
Performance Plus Green	3440	No	1 Day	Yes	Yes	Yes	Yes	No	No	No	No
Super-Sharp Paint Line	3440	Yes	14-21 Days	Yes	Test	Yes	No	No	No	No	No
High-Temperature Paper	3440	No	N/A	No	No	Yes	Yes	No	No	No	No
Easy-Paint	3441	No	N/A	Yes	No	Yes	No	No	No	No	No
High-Temperature Polyester Film	3441	Yes	1 Hour	No	No	No	Yes	No	No	No	No
Abrasion-Resistant Silicone/Glass-Cloth	3441	Yes	N/A	No	No	No	Yes	Yes	Yes	No	No
Chemical-Resistant Vinyl	3441	Yes	N/A	No	No	No	Yes	Yes	No	No	Yes
Masking Tape Discs	3441	No	1 Hour	Yes	No	Yes	Yes	No	No	No	No
3M Vinyl #471	3441	No	N/A	No	Test	Yes	No	No	No	No	No
Heat-Resistant Kapton® Polyimide	3442	Yes	3 Days	No	No	No	Yes	No	No	Yes	Yes

Masking Tape

All tape is crepe paper with a rubber adhesive (unless noted). Supplied on a cardboard spool (unless noted).

General purpose is for masking as well as bundling and holding. Withstands temperatures up to 150° F; apply at 50° to 150° F.

3M #234 Scotch General Purpose withstands temperatures up to 250° F; apply at 50° to 90° F.

3M #232 Scotch High Performance is for masking, bundling, and holding. Withstands temperatures up to 250° F; apply at 50° to 90° F.

Fine-line polypropylene stretches easily for smooth curves and provides excellent control for painting precise lines. Ideal for use during pinstriping, this polypropylene tape resists solvents, moisture, and paint flaking and bleeding. Withstands temperatures up to 250° F; apply at 50° to 90° F. Supplied on a plastic spool.

Long-life blue removes cleanly with no adhesive residue, even after exposure to direct sunlight over several days. *7-day exposure* tape has a synthetic rubber adhesive and withstands temperatures up to 200° F; apply at 50° to 150° F. *60-day exposure* tape has an acrylic adhesive and withstands temperatures up to 120° F; apply at 50° to 100° F.

Performance plus green provides clean edges in most paint masking. Provides instant adhesion and clean removal from difficult surfaces such as EPDM rubber moldings and painted steel. Withstands temperatures up to 250° F; apply at 60° to 90° F.

Super-sharp paint line has a paint-blocking treatment that forms a barrier along the edges of the tape to prevent latex paint from leaking under the tape. Exposure time is 14 days outside and 21 days inside. Withstands temperatures up to 200° F; apply above 50° F.

High-temperature withstands higher temperatures than other masking tapes and offers excellent resistance to bleeding of paints and thinners. Withstands temperatures up to 310° F; apply at 40° to 120° F.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Thick.	Case Qty.		Roll Partial Case	Roll Full Case
General Purpose— *Color is cream.*								
1/8″	60	3″	5″	0.0055″	288	76275A67	$1.01	$0.90
1/4″	60	3″	5″	0.0055″	144	76275A65	1.08	.98
1/2″	60	3″	5″	0.0055″	72	76275A11	1.12	1.02
3/4″	60	3″	5″	0.0055″	48	76275A12	2.10	1.79
1″	60	3″	5″	0.0055″	36	76275A13	2.14	1.95
1 1/2″	60	3″	5″	0.0055″	24	76275A14	4.17	3.68
2″	60	3″	5″	0.0055″	24	76275A15	4.33	3.83
3″	60	3″	5″	0.0055″	16	76275A16	7.71	6.57
3M #234 Scotch General Purpose— *Color is cream.*								
1/2″	60	3″	5 13/64″	0.006″	72	7783A11	5.03	4.52
3/4″	60	3″	5 13/64″	0.006″	48	7783A12	6.70	6.03
1″	60	3″	5 13/64″	0.006″	36	7783A13	8.37	7.54
1 1/2″	60	3″	5 13/64″	0.006″	24	7783A14	12.56	11.31
2″	60	3″	5 13/64″	0.006″	24	7783A15	16.76	15.08
3″	60	3″	5 13/64″	0.006″	12	7783A16	25.13	22.62
4″	60	3″	5 13/64″	0.006″	8	7783A17	33.52	30.17
3M #232 Scotch High Performance— *Color is cream.*								
1/4″	60	3″	5 1/4″	0.006″	144	76995A16	5.34	4.78
3/8″	60	3″	5 1/4″	0.006″	96	76995A18	6.16	5.51
1/2″	60	3″	5 1/4″	0.006″	72	76995A21	6.41	5.73
3/4″	60	3″	5 1/4″	0.006″	48	76995A22	9.00	8.05
1″	60	3″	5 1/4″	0.006″	36	76995A23	10.69	9.56
1 1/2″	60	3″	5 1/4″	0.006″	24	76995A24	16.03	14.34
2″	60	3″	5 1/4″	0.006″	24	76995A25	21.38	19.12
3″	60	3″	5 1/4″	0.006″	12	76995A26	32.06	28.69
3 3/4″	60	3″	5 1/4″	0.006″	8	76995A27	42.75	38.25
Fine-Line Polypropylene— *Color is green.*								
1/16″	60	3″	4 7/8″	0.0048″	144	76345A7	17.42	15.10
1/8″	60	3″	4 7/8″	0.0048″	144	76345A8	17.42	15.10
1/4″	60	3″	4 7/8″	0.0048″	144	76345A1	17.42	15.10
3/8″	60	3″	4 7/8″	0.0048″	96	76345A2	16.89	15.20
1/2″	60	3″	4 7/8″	0.0048″	72	76345A3	20.90	18.11
3/4″	60	3″	4 7/8″	0.0048″	48	76345A4	24.21	21.78
1″	60	3″	4 7/8″	0.0048″	36	76345A5	24.53	22.06
2″	60	3″	4 7/8″	0.0048″	24	76345A16	42.98	38.25
4″	60	3″	4 7/8″	0.0048″	8	76345A19	80.59	76.43
7-Day Exposure Long-Life Blue— *Color is blue.*								
1/8″	60	3″	4 5/8″	0.0057″	144	7776A13	$1.83	$1.59
1/4″	60	3″	4 5/8″	0.0057″	96	7776A14	2.74	2.37
1/2″	60	3″	4 5/8″	0.0057″	48	7776A15	3.73	3.22
3/4″	60	3″	4 5/8″	0.0057″	48	7776A21	4.46	3.86
1″	60	3″	4 5/8″	0.0057″	36	7776A23	5.91	5.11
1 1/2″	60	3″	4 5/8″	0.0057″	24	7776A25	8.82	7.64
2″	60	3″	4 5/8″	0.0057″	24	7776A27	12.05	10.44
3″	60	3″	4 5/8″	0.0057″	8	7776A29	17.73	15.37
4″	60	3″	4 5/8″	0.0057″	8	7776A33	29.75	25.78
6″	60	3″	4 5/8″	0.0057″	8	7776A36	44.63	38.68
60-Day Exposure Long-Life Blue— *Color is blue.*								
3/4″	60	3″	4 5/8″	0.0038″	48	7776A61	6.01	5.39
1″	60	3″	4 5/8″	0.0038″	36	7776A62	7.99	7.16
1 1/2″	60	3″	4 5/8″	0.0038″	24	7776A64	11.97	10.73
2″	60	3″	4 5/8″	0.0038″	24	7776A66	15.96	14.31
Performance Plus Green— *Color is green.*								
1/8″	60	3″	4 7/8″	0.0067″	144	7771A11	2.50	2.26
1/4″	60	3″	4 7/8″	0.0067″	96	7771A12	3.58	3.23
1/2″	60	3″	4 7/8″	0.0067″	48	7771A13	3.63	3.27
3/4″	60	3″	4 7/8″	0.0067″	48	7771A14	4.79	4.31
1″	60	3″	4 7/8″	0.0067″	24	7771A15	6.62	5.96
1 1/2″	60	3″	4 7/8″	0.0067″	16	7771A16	9.62	8.65
2″	60	3″	4 7/8″	0.0067″	12	7771A17	13.07	11.32
3″	60	3″	4 7/8″	0.0067″	8	7771A18	19.99	18.02
4″	60	3″	4 7/8″	0.0067″	8	7771A19	25.84	23.29
6″	60	3″	4 7/8″	0.0067″	8	7771A21	36.41	32.81
Super-Sharp Paint Line— *Color is green.*								
1″	60	3″	4 7/8″	0.005″	36	7825A14	7.98	7.18
1 1/2″	60	3″	4 7/8″	0.005″	24	7825A16	11.96	10.76
2″	60	3″	4 7/8″	0.005″	18	7825A18	15.96	14.35
High-Temperature— *Color is tan.*								
1/2″	60	3″	4 7/8″	0.0067″	72	7627A21	3.00	2.72
3/4″	60	3″	4 7/8″	0.0067″	48	7627A22	4.34	3.91
1″	60	3″	4 7/8″	0.0067″	36	7627A23	5.72	5.16
1 1/2″	60	3″	4 7/8″	0.0067″	24	7627A24	8.56	7.74
2″	60	3″	4 7/8″	0.0067″	24	7627A25	11.47	10.35
3″	60	3″	4 7/8″	0.0067″	16	7627A27	17.12	15.48

For information about masking tape, see page 3440.

Easy-Paint Masking Tape

Prevent bleed-through of most paints, stains, and varnishes with this tape, which leaves a straight, clean line when removed after painting. Made of paper with an acrylic adhesive. Not rated for temperature.

Wall and trim tape has a ¾″ wide strip of adhesive along the top edge for masking interior primed wall and trim surfaces. Tape is 0.004″ thick. Color is tan. ***Smooth surface*** tape releases easily, so it's ideal for smooth, delicate surfaces such as wallpaper. Tape is 0.005″ thick. Color is white. ***Rough surface*** tape has extra holding power to stick to rough or dusty surfaces. Tape is 0.0049″ thick. Color is blue.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Case Qty.		Roll Partial Case	Roll Full Case
Wall and Trim							
2″	60	1½″	3½″	12	7641A19	$5.41	$4.66
3″	60	1″	3¼″	12	7641A31	6.79	5.84
6″	60	1″	3¼″	12	7641A32	12.44	10.70
12″	60	1″	3¼″	6	7641A34	27.39	23.57
Smooth Surface							
1″	54	3″	4 9/16″	24	7641A43	5.67	5.05
2″	54	3″	4 9/16″	12	7641A47	9.91	8.66
Rough Surface							
1″	54	3″	4½″	24	7641A54	8.51	7.65
2″	54	3″	4½″	12	7641A58	11.99	9.52

All-in-One Paint Masking System

System consists of a clear polyethylene film with an acrylic adhesive and a hand-held dispenser with cutting blade. Unroll, apply to surface being masked, cut to desired length, and unfold the masking film. Film acts like a plastic drop cloth, clinging to surface to completely seal off the covered area. It's antistatic and lint-free, so there's no paper-fiber contamination. Film withstands temperatures up to 230° F and is 0.0065″ thick.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Masking System		Film Refill	
21″	38	1″	3¼″	76705A65	$17.48	76705A66	$13.06
43″	38	1″	3¼″	76705A67	30.94	76705A68	25.26
72″	38	1″	3¼″	76705A71	36.64	76705A72	30.48

Masking Tape Discs

Ideal for masking during spray painting, as well as for dust protection and temporary hole covering. These crepe-paper discs have a rubber adhesive. Withstand temperatures up to 325° F; apply above 32° F. Discs are 0.0075″ thick. Color is tan. ***Rolls*** have a 4″ diameter and are supplied on a cardboard spool with a 3″ ID.

Disc Dia.	Discs per Roll		Roll	Disc Dia.	Discs per Sheet		Each
Rolls				***Sheets***			
⅛″	2,500	77235A41	$8.55	⅛″	100	77235A61	$3.58
¼″	2,500	77235A42	9.99	¼″	100	77235A62	3.58
⅜″	2,500	77235A43	10.34	⅜″	100	77235A63	3.58
½″	2,500	77235A44	10.70	½″	100	77235A64	3.58
¾″	2,000	77235A46	14.74	¾″	100	77235A65	5.00
1″	1,000	77235A48	12.74	1″	100	77235A66	5.00
1½″	1,000	77235A51	21.26	1½″	75	77235A67	5.37
2″	250	77235A52	14.24	2″	75	77235A68	5.00
3″	250	77235A53	24.15	3″	50	77235A69	7.16
4″	125	77235A54	25.94	4″	50	77235A71	8.05
5″	125	77235A55	29.95	5″	25	77235A72	8.95

3M Vinyl Masking Tape #471

Meeting OSHA requirements for identifying hazardous areas, fire lanes, and safety equipment, this conformable tape creates a tight seal and an even bond on irregular shapes and surfaces. Great for fine-line paint masking, surface protection, and aisle marking.

Tape is 0.005″ thick. Temperature range is 40° to 170° F; apply at 60° to 85° F. Tape is supplied on a plastic spool except 3″ wide tape, which is supplied on a cardboard spool.

To Order: Please specify color (unless noted): black, blue, green, orange, red, white, or yellow.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Case Qty.		Roll Partial Case	Roll Full Case
¼″	36	3″	4 7/16″	144	7779A11★	$9.50	$7.16
½″	36	3″	4 7/16″	72	7779A22	13.55	10.21
¾″	36	3″	4 7/16″	48	7779A24	16.69	12.57
1″	36	3″	4 7/16″	36	7779A14	20.86	15.71
1½″	36	3″	4 7/16″	24	7779A15★	28.51	21.48
2″	36	3″	4 7/16″	24	7779A16	41.71	31.42
3″	36	3″	4 7/16″	12	7779A26	62.57	47.15

★ Available only in blue.

High-Temperature Polyester Masking Tape and Discs

An economical alternative to polyimide tape, polyester tape and discs handle high-temperature masking. They remove easily without residue and resist corrosive chemicals, tearing, and breaking. Tape and discs are 0.0033″ thick and have a silicone adhesive. Temperature range is –22° to +266° F; withstand temperatures up to 400° F for 20 minutes. Apply at room temperature. Supplied on a plastic spool with a 3″ ID. Tape roll diameter is 4 1/16″; disc roll diameter is 3¼″. Color is green.

Tape Wd.	TAPE 18-yd. Rolls	Roll	TAPE 72-yd. Rolls	Roll	Disc Dia.	DISCS Discs per Roll		Roll
⅜″	7630A45	$2.65	7630A25	$4.57	⅜″	250	7787A23	$9.45
½″	7630A41	3.03	7630A21	5.22	½″	250	7787A24	10.12
					⅝″	250	7787A25	11.48
¾″	7630A44	4.54	7630A24	7.83	¾″	250	7787A26	12.15
					⅞″	250	7787A27	12.83
1″	7630A42	6.06	7630A22	10.44	1″	100	7787A28	8.76
1½″	7630A46	9.08	7630A26	15.66	1½″	100	7787A29	12.15
2″	7630A43	12.11	7630A23	20.88	2″	100	7787A31	14.52
4″	7630A47	24.21	7630A27	41.75	4″	50	7787A33	23.25

Abrasion-Resistant Silicone/Glass-Cloth Masking Tape

The combination of a silicone rubber/glass-cloth film and a silicone adhesive gives this tape high abrasion resistance with a wide temperature range. It's tough enough to use during grit blasting and plasma flame spraying. Tape is 0.011″ thick and includes an easy-to-remove yellow, dimpled liner. Temp. range is –100° to +500° F; apply within same range. Tape is supplied on a cardboard spool with a 3″ ID. Color is white.

Wd.	5-yard Rolls Roll Dia.		Roll	36-yard Rolls Roll Dia.		Roll
½″	4″	7591A61	$4.90	6″	7591A41	$18.84
1″	4″	7591A63	9.79	6″	7591A43	37.67
2″	4″	7591A65	18.29	6″	7591A45	70.33

Chemical-Resistant Vinyl Masking Tape

Also known as plating tape, this yellow vinyl tape is chemical resistant, so it won't contaminate plating baths. Supplied on a cardboard spool.

Nonadhesive tape adheres to itself for a leakproof bond. Great for plating. Temp. range is 15° to 200° F; apply at 60° to 80° F. Tape is 0.004″ thick. Spool has 3″ ID. ***Rubber-adhesive tape*** is an excellent straight-edge mask for anodizing and plating. Temp. range is 32° to 176° F; apply at 60° to 80° F. Tape is 0.007″ thick. Spool has 1½″ ID.

Wd.	Nonadhesive Tape Lg., yds.	Roll Dia.		Roll	Rubber-Adhesive Tape Lg., yds.	Roll Dia.		Roll
1″	153	6 5/16″	76095A125	$13.59	22	3″	76095A137	$6.98
2″	153	6 5/16″	76095A126	27.04	22	3″	76095A138	13.60

Light-Blocking Black Masking Tape

For optimal light-blocking this black crepe-paper tape is pinhole free. Often used in photo-processing labs, it's perfect for masking out unwanted portions of transparencies, repairing camera bellows, patching holes, and sealing out light. Tape is 0.006″ thick with a rubber adhesive. Temp. range is 45° to 100° F; apply at 65° to 90° F.

Wd.	Lg., yds.	Spool ID/Material	Roll Dia.		Roll
1″	60	3″/Cardboard	5 3/16″	6998A14	$17.20
2″	60	3″/Cardboard	5 3/16″	6998A16	32.92

Masking Tape Applicator

Tired of masking areas by hand? Let this applicator guide the tape for a straighter line; dispenses masking tape up to 2″ wide. Ideal for use on trim, painted walls and woodwork, and glass. For tape with a 3″ spool ID. Tape not included.

2470A32 ..... $15.91

Easy-Tear Polyethylene Surface-Protection Tape

Tape has a serrated edge for easy tearing—even when you're wearing gloves. Made of a polyethylene film, tape is waterproof and conformable. Ideal for surface-protection applications.

Tape is 0.0075″ thick and has a rubber adhesive. Temperature range is 32° to 160° F; apply at 65° to 160° F. Supplied on a cardboard spool.

Wd.	Lg., yds.	Spool ID	Roll Dia.	Color		Roll
2″	60	3″	5¾″	Silver	7566A31	$8.70
2″	60	3″	5¾″	White	7566A32	8.70
2″	60	3″	5¾″	Black	7566A33	8.70
2″	60	3″	5¾″	Red	7566A34	8.70

For information about masking tape, see page 3440.

Super-Thin Polyester Surface-Protection Tape

Only 0.0019″ thick, yet this tape has excellent strength and high chemical resistance. Adhesive is acrylic. Temp. range is –60° to +300°F; apply at +50° to +100°F. Tensile strength is 28 lbs./in. width. *5-yard rolls* are supplied on a cardboard spool.

Metalized tape is for decorative edging, striping, and die cutting. ***Solid red*** tape is used for splicing movie film, reinforcing film edges, building up low areas on cylinders and rubber plates, and marking defects.

	5-yard Rolls			72-yard Rolls		
Wd.	Spool ID		Roll	Spool ID		Roll
Silver Metalized						
1/4″	1 1/2″	75895A21	$4.17	3″	75895A681	$19.83
1/2″	1 1/2″	75895A22	5.57	3″	75895A661	32.21
1″	1 1/2″	75895A23	11.14	3″	75895A663	46.11
3″	1 1/2″	75895A24	33.40	3″	75895A683	138.31
Gold Metalized						
1″	1 1/2″	75895A25	12.52	3″	75895A653	67.94
Solid Red						
1/2″	1 1/2″	75895A26	6.26	3″	75895A671	25.70
1″	1 1/2″	75895A27	11.25	3″	75895A673	47.30
3″	1 1/2″	75895A28	33.40	3″	75895A685	157.94

Heat-Resistant Kapton® Polyimide Tape

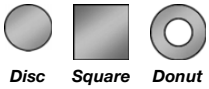

Disc *Square* *Donut*

Great for wrapping and splicing wires and cables as well as masking gold parts during wave soldering of printed circuit boards. Tape has high heat resistance and tensile strength, good solvent resistance, and excellent dielectric strength (the ability to withstand electrical voltage without rupture). Adhesive is 0.0015″ thick. Apply at room temperature. Color is amber. Tensile strength is 30 lbs./in. width (unless noted). Meets MIL-P-46112B (unless noted). *5-yard rolls* are supplied on a plastic spool with a 1 1/2″ ID; *36-yard rolls* are supplied on a plastic spool with a 3″ ID.

Tape with Silicone Adhesive— Complies with UL 510 for flame retardance. Ideal for high-temperature applications. Temperature range is –100° to +500°F. *0.0025″ thick* tape has a 0.001″ thick film and a dielectric strength of 6,500 volts. *0.0035″ thick* tape has a 0.002″ thick film and a dielectric strength of 10,000 volts.

Tape with Acrylic Adhesive— The choice when silicone adhesive can't be used and high temperature resistance is not an issue. Has a 0.001″ thick film. Temp. range is –20° to +350°F. Dielectric strength is 7,000 volts.

Discs, Squares, and ***Donuts—*** Easily mask small areas and cover openings with these discs, squares, and donuts. Total tape thickness is 0.0025″ (0.001″ thick film with 0.0015″ of silicone adhesive). Temp. range is –100° to +500°F. Dielectric strength is 6,500 volts. *Discs on rolls* are supplied on a cardboard spool with a 3″ ID. *Discs on sheets, squares* and *donuts* do not include spool.

Tape

	W/Silicone Adhesive 0.0025″ Thick		W/Silicone Adhesive 0.0035″ Thick		W/Acrylic Adhesive 0.0025″ Thick	
Wd.		Roll		Roll		Roll
5-Yard Rolls						
1/4″	7648A711	$4.21	7648A721♣	$8.49	7648A731	$4.21
3/8″	7648A712	4.72	7648A722♣	9.50	7648A732	4.87
1/2″	7648A713	5.08	7648A723♣	10.58	7648A733	5.24
3/4″	7648A714	7.88	7648A724♣	15.87	7648A734	8.15
1″	7648A715	10.51	7648A725♣	21.16	7648A735	10.86
2″	7648A716	21.13	7648A726♣	42.26	7648A736	21.83
4″	7648A717	38.44	7648A727♣	84.55	7648A48	39.72
6″	7648A718	56.23	7648A728♣	126.81	7648A49	58.10
36-Yard Rolls						
1/4″	7648A36	10.23	7648A46♣	18.74	7648A61	13.17
3/8″	7648A37	15.66	7648A47♣	24.14	7648A62	19.74
1/2″	7648A32	17.40	7648A42♣	31.26	7648A63	21.94
3/4″	7648A33	26.14	7648A43♣	46.89	7648A64	32.89
1″	7648A34	34.83	7648A44♣	62.54	7648A65	43.86
2″	7648A35	69.66	7648A45♣	125.06	7648A66	87.71
4″	7648A81	139.31	7648A91♣	250.14	7648A68	175.40
6″	7648A82	208.97	7648A92♣	375.20	7648A69	263.14

Discs

Disc Dia.	Discs/ Roll		Roll	Discs/ Sheet		Sheet
1/4″	1,000	77595A13	$21.83	100	77595A31	$6.25
3/8″	1,000	77595A15	22.68	100	77595A32	6.28
1/2″	1,000	77595A17	28.74	100	77595A33	9.39
3/4″	500	77595A22	29.95	50	77595A34	10.16
1″	250	77595A26	31.23	50	77595A35	7.83

Squares

Square Size	Squares/ Roll		Roll
1/2″	64	77595A41●	$7.34
3/4″	42	77595A42●	7.76
1″	28	77595A43●	8.21
2″	15	77595A44●	10.51

Donuts

OD	ID	Donuts/ Roll		Roll
1/2″	5/32″	49	77595A51●	$6.82
1″	13/32″	28	77595A52●	7.84
1 3/4″	7/8″	17	77595A53●	10.42

♣ Tensile strength is 50 lbs./in. width.
● Tensile strength is 25 lbs./in. width. Do not meet MIL-P-46112B.

Chemical-Resistant Surlyn Surface-Protection Tape

Resists breaking down in even the harshest chemical environments. Made of Surlyn film, this tape performs well at low temperatures. It's conformable, abrasion resistant, and has high clarity, making it excellent for use as an invisible protective barrier. It's also heat sealable, making lamination easy. Tape is 0.012″ thick and has an acrylic adhesive and a peel-off liner. Temp. range is –40° to +180°F; apply at +50° to +120°F. Supplied on a cardboard spool. Color is clear.

Wd.	Lg., yds.	Spool ID	Roll Dia.		Roll
1″	36	3″	6″	7622A41	$26.91
3″	36	3″	6″	7622A42	77.71

Abrasion-Resistant Polyurethane Surface-Protection Tape

This exceptionally tough, conformable tape protects surfaces from chipping, scratching, and abrasion. Designed primarily for indoor use, it will adhere to most metal and plastic surfaces. It has an acrylic adhesive and a peel-off liner. Tape is 0.0095″ thick. Temperature range is –40° to +250°F; apply at +50° to +120°F. Tape is supplied on a cardboard spool. Color is black.

Wd.	Lg., yds.	Spool ID	Roll Dia.		Roll
1″	18	3″	5″	7571A1	$26.91
3″	18	3″	5″	7571A2	79.37

UV-Resistant Polyethylene Surface-Protection Tape

Temporarily protect surfaces exposed to sunlight during installation, manufacturing, storage, and transit with this low-tack tape. Use on glass and smooth metals such as polished aluminum, annealed stainless steel, painted metals, and laminates. Ideal for outdoor applications. Can remain on for up to six months.

Tape is 0.003″ thick and has an acrylic adhesive. Apply at 55° to 90°F; not rated for minimum or maximum temperatures. Color is clear.

Wd.	Lg., ft.	Spool ID/Material	Roll Dia.		Roll
1″	600	3″/Cardboard	6 1/4″	6317A13	$9.55
2″	600	3″/Cardboard	6 1/4″	6317A15	19.10
4″	600	3″/Cardboard	6 1/4″	6317A18	35.12
6″	600	3″/Cardboard	6 1/4″	6317A22	57.28
12″	600	3″/Cardboard	6 1/4″	6317A28	109.45

Clean-Release Polyethylene Surface-Protection Tape

This clean-release film tape leaves no residue, so it's perfect for temporarily protecting highly polished surfaces from scratching and marring. Use on metals, wood, plastics, and LCD screens. Tape is 0.003″ thick and has an acrylic adhesive. Apply at 55° to 90°F; not rated for other temperatures. Supplied on a cardboard spool with a 3″ ID. Color is clear.

Tape— Roll diameter is 7″.

Wd.	Lg., ft.		Roll
1″	1,000	6092A14	$14.60
2″	1,000	6092A16	25.92
6″	1,000	6092A24	77.75
12″	1,000	6092A34	139.37

Discs

Disc Dia.	Roll Dia.	Discs/ Roll		Roll
1/4″	5 1/4″	2,000	6092A41	$29.28
1/2″	5 1/4″	2,000	6092A45	32.63
3/4″	5 1/4″	1,000	6092A49	30.13
1″	4 7/8″	500	6092A54	29.57
1 1/2″	5 1/4″	500	6092A56	32.86
2″	4 7/8″	100	6092A58	32.35

Rectangles— Roll dia. is 4 7/8″.

Size, Wd. × Lg.	Rect-angles/ Roll		Roll
1/4″ × 7/8″	200	6092A81	$28.33
1/2″ × 1″	200	6092A84	30.43
3/4″ × 4 3/4″	100	6092A87	29.82
1″ × 2″	100	6092A88	31.99

Squares

Sq. Size	Roll Dia.	Squares/ Roll		Roll
1/2″	5 1/4″	1,000	6092A61	$29.05
1″	5 1/4″	500	6092A63	30.30
1 1/2″	5 1/2″	500	6092A65	32.38
2″	5 1/2″	250	6092A67	29.80

Low-Static Polyimide Tape

Minimize electrostatic discharge (ESD) that can cause circuit board degradation. A unique coating on this film allows it to generate low ESD when unwinding from the roll (150 volts) as well as upon removal from printed circuit boards (50 volts). Excellent for use as a masking tape in clean rooms where high ESD is a concern. *Note:* ESD values are based on an ESD-controlled environment at 68°F and 50% relative humidity.

Tape is 0.0026″ thick (0.001″ thick film with 0.0016″ silicone adhesive). Temperature range is –40° to +356°F; apply at room temperature. Dielectric strength (the ability to withstand electrical voltage without rupture) is 6,000 volts. Supplied on a plastic spool. Color is amber.

	5-yard Rolls			36-yard Rolls		
Wd.	Spool ID		Roll	Spool ID		Roll
1/4″	1 1/2″	7639A61	$6.12	3″	7639A71	$13.86
1/2″	1 1/2″	7639A62	7.52	3″	7639A72	26.41
3/4″	1 1/2″	7639A63	8.35	3″	7639A73	39.60
1″	1 1/2″	7639A64	14.62	3″	7639A74	50.65
2″	1 1/2″	7639A65	24.67	3″	7639A75	97.41

About Slick Surface Tape

When choosing a slick surface tape, consider your application, how well the tape allows items to slide on it (low coefficient of friction), what the tape must withstand, and the adhesive. Silicone adhesives withstand extreme temperatures and release cleanly. Acrylic adhesives withstand moderate temperatures and leave some residue when removed, but are more chemical resistant and have a higher tack. The chart below will help you choose the tape that best meets your needs. See specific tapes for exact specifications.

Product	Page	Slickness	Abrasion Resistance	Tensile Strength	Chemical Resistance
Tape Made with Teflon® PTFE	3443	Excellent	Fair	Good	Excellent
Super-Slick Tape Made with Teflon® PTFE (Acrylic Adhesive)	3443	Excellent	Fair	Fair	Excellent
Super-Slick Tape Made with Teflon® PTFE (Silicone Adhesive)	3443	Excellent	Fair	Fair	Excellent
Conformable Tape Made with Teflon® PTFE	3444	Excellent	Fair	Fair	Excellent
Strong and Slippery UHMW Polyethylene Tape	3444	Good	Excellent	Good	Very Good
Strong and Slippery UHMW Polyethylene Tape with Super-Bond Adhesive	3444	Good	Excellent	Excellent	Very Good
Antistatic UHMW Polyethylene Tape	3445	Good	Excellent	Very Good	Very Good
Wear-Resistant Antifriction Rulon Film Tape	3445	Very Good	Excellent	Fair	Excellent
Abrasion-Resistant Fiberglass Tape Coated with Teflon® PTFE	3445	Excellent	Very Good	Very Good	Excellent
Super Wear-Resistant Antifriction PEEK Tape (Acrylic Adhesive)	3445	Good	Excellent	Very Good	Excellent
Super Wear-Resistant Antifriction PEEK Tape (Silicone Adhesive)	3445	Good	Excellent	Very Good	Excellent
Fiberglass Cloth Tape—Adhesive on Both Sides	3445	Fair	Very Good	Excellent	Excellent
Fiberglass Cloth Insulating Tape (Acrylic Adhesive)	3445	Fair	Very Good	Very Good	Excellent
Fiberglass Cloth Insulating Tape (Silicone Adhesive)	3445	Fair	Very Good	Excellent	Excellent
Long-Life Fiberglass Tape Laminated with Teflon® PTFE	3445	Excellent	Very Good	Excellent	Very Good
Optically Clear Tape Made with Teflon® FEP	3446	Fair	Fair	Fair	Excellent

Tape Made with Teflon® PTFE

This PTFE (polytetrafluoroethylene) tape has good dielectric strength (the ability to withstand electrical voltage without rupture) and tensile strength combined with stretchability. The result is a tougher, more conformable tape than polyimide tape. Great as a high-performance electrical tape and as an insulation tape. It's also ideal for masking and wrapping laminating rollers to prevent polyethylene build-up. *Note:* This is not a pipe thread tape. For PTFE pipe thread tape, see page 3415.

Tape—Supplied on a cardboard spool with a 3″ ID (unless noted). Tape ***with silicone adhesive*** has a temperature range of –100° to +500° F. Color is brownish gray. Tape ***with acrylic adhesive*** has a temperature range of 0° to +120° F. Color is gray.

0.0035″ thick tape has 0.002″ thick film. Dielectric strength is 9,000 volts. *0.0045″ thick* tape has 0.003″ thick film. Dielectric strength is 11,000 volts. *0.0115″ thick* tape has 0.01″ thick film. Dielectric strength is 18,000 volts. *0.022″ thick* tape has 0.02″ thick film. Dielectric strength is 16,000 volts. *0.032″ thick* tape has 0.03″ thick film. Dielectric strength is 19,500 volts. *0.062″ thick* tape has 0.06″ thick film. Dielectric strength is 33,000 volts.

Discs, Squares, and ***Donuts***—They're 0.0035″ thick and consist of 0.002″ thick film with 0.0015″ of silicone adhesive. Temperature range is –100° to +500° F. Dielectric strength is 9,000 volts. Do not include a spool. Color is brownish gray.

Tape

Wd.	Lg., yds.	0.0035″ Thick	Roll	0.0045″ Thick	Roll	0.0115″ Thick	Roll
With 0.0015″ of Silicone Adhesive							
1/4″	5	76475A31	$4.11	76475A41	$4.56	76475A51	$9.79
1/4″	18	76475A11	10.01	76475A16	11.12	76475A17	27.80
1/2″	5	76475A32	7.48	76475A42	8.29	76475A52	17.79
1/2″	18	76475A12	18.20	76475A1	20.22	76475A5	50.55
3/4″	5	76475A33	11.21	76475A43	12.42	76475A53	26.66
3/4″	18	76475A13	27.26	76475A2	30.29	76475A6	75.72
1″	5	76475A34	14.94	76475A44	16.56	76475A54	35.53
1″	18	76475A14	36.34	76475A3	40.38	76475A7	100.95
2″	5	76475A35	29.88	76475A45	33.11	76475A55	71.07
2″	18	76475A15	72.68	76475A4	80.76	76475A8	201.90
3″	5	76475A36	44.80	76475A46	49.64	76475A56	106.54

Wd.	Lg., yds.	0.0035″ Thick	Roll	0.0045″ Thick	Roll	0.0115″ Thick	Roll
With 0.0015″ of Silicone Adhesive (Cont.)							
3″	18	76475A21	$108.96	76475A23	$121.07	76475A25	$302.67
4″	5	76475A37	59.74	76475A47	66.20	76475A57	142.09
4″	18	76475A22	145.32	76475A24	161.47	76475A26	403.68
6″	5	76475A38	84.35	76475A48	93.47	76475A58	200.61
6″	18	76475A27	205.17	76475A28	227.97	76475A29	569.92
		0.022″ Thick		**0.032″ Thick**		**0.062″ Thick**	
With 0.002″ of Acrylic Adhesive							
1″	5	76475A61	$96.15	76475A62	$106.83	76475A63	$245.71
2″	5	76475A65	192.24	76475A66	213.60	76475A67	427.20
6″	5	76475A81★	357.06	76475A82★	396.73	76475A83★	793.46

★ Does not include a spool.

Discs

Disc Dia.	Discs/ Roll		Roll
1/4″	444	7801A31	$6.75
1/2″	139	7801A32	6.75
3/4″	139	7801A33	8.71
1″	75	7801A34	9.26

Squares

Square Size	Squares/ Roll		Roll
1/2″	64	7801A11	$6.49
3/4″	42	7801A12	7.79
1″	28	7801A13	8.31
2″	15	7801A14	19.74

Donuts

OD	ID	Donuts/ Roll		Roll
1/2″	5/32″	49	7801A23	$6.34
1″	13/32″	28	7801A21	8.17
1 3/4″	7/8″	17	7801A22	10.33

Tape Made with PTFE—Adhesive on Both Sides

Get the performance of PTFE tape combined with the convenience of adhesive on both sides. Tape is 0.013″ thick, consisting of 0.01″ of film with 0.0015″ of acrylic adhesive on each side. Temperature range is –40° to +350° F. Dielectric strength is 20,000 volts. Supplied on a cardboard spool with a 3″ ID. Color is gray.

Wd.	Lg., yds.		Roll
1/2″	5	7748A41	$33.86
1″	5	7748A42	63.51
2″	5	7748A43	121.90

Super-Slick Tape Made with Teflon® PTFE

A smooth, slippery surface allows items to move smoothly over this tape. Tape is 0.005″ thick, consisting of 0.003″ of film with 0.002″ of adhesive. Supplied on a plastic spool. Color is gray.

Acrylic adhesive tape has a temperature range of –40° to +350° F and a dielectric strength (the ability to withstand electrical voltage without rupture) of 9,500 volts.

Silicone adhesive tape has a temperature range of –40° to +500° F and a dielectric strength of 11,000 volts.

Wd.	Lg., yds.	Spool ID	w/Acrylic Adhesive	Roll	w/Silicone Adhesive	Roll
1/2″	5	3″	6305A11	$6.56	6305A21	$9.78
1/2″	18	3″	6305A16	13.34	6305A26	20.07
1″	5	3″	6305A12	11.67	6305A22	18.06
1″	18	3″	6305A17	26.68	6305A27	38.50
2″	5	3″	6305A13	23.34	6305A23	34.58
2″	18	3″	6305A18	51.28	6305A28	77.03

For information about slick surface tape, see page 3443.

Conformable Tape Made with Teflon® PTFE

This PTFE (polytetrafluoroethylene) tape, also known as skived tape, has a low-friction surface with high chemical resistance. It is more stretchable and conforms better to uneven surfaces than the PTFE tape on page 3443. Use as a lining on molds, guide rails, and chutes, as well as for wrapping airframe wire harnesses and covering the heat-sealing surface on impulse sealers and bag sealers. Tape has a silicone adhesive and a white or yellow peel-off liner. Temperature range is –100° to +500° F. Supplied on a cardboard spool with a 3″ ID.

Note: This is not a pipe thread tape. For PTFE pipe thread tape, see page 3415.

Tan—*0.0045″ thick* tape consists of 0.003″ PTFE film with 0.0015″ adhesive. Dielectric strength (the ability to withstand electrical voltage without rupture) is 9,500 volts. *0.0065″ thick* tape consists of 0.005″ of PTFE film with 0.0015″ of adhesive. Dielectric strength is 13,000 volts. *0.0115″ thick* tape consists of 0.01″ of PTFE film with 0.0015″ of adhesive. Dielectric strength is 19,500 volts.

White—Tape is UV resistant and FDA approved for indirect food contact. *0.006″ thick* tape consists of 0.003″ of PTFE film with 0.003″ of adhesive. Dielectric strength is 10,000 volts. *0.0065″ thick* tape consists of 0.005″ of PTFE film with 0.0015″ of adhesive. Dielectric strength is 13,000 volts. *0.0125″ thick* tape consists of 0.01″ of PTFE film with 0.0025″ of adhesive. Dielectric strength is 18,000 volts.

Wd.	0.0045″ Thick Roll	0.0065″ Thick Roll	0.0115″ Thick Roll
Tan—*5-Yard Rolls*			
1/2″	76025A711 $5.66	76025A721 $7.15	76025A731 $10.88
3/4″	76025A712 8.50	76025A722 10.74	76025A732 16.11
1″	76025A713 11.32	76025A723 14.30	76025A733 21.45
1 1/2″	76025A714 16.97	76025A724 21.44	76025A734 32.16
2″	76025A715 22.65	76025A725 28.61	76025A735 42.92
3 1/2″	76025A716 39.64	76025A726 50.07	76025A736 75.10
4″	76025A717 45.29	76025A727 57.21	76025A737 85.81
6″	76025A718 67.98	76025A728 85.87	76025A738 128.80
10″	76025A719 113.21	76025A729 143.00	76025A739 214.50
Tan—*18-Yard Rolls*			
1/2″	76025A671 14.90	76025A691 19.07	76025A681 29.05
3/4″	76025A672 22.37	76025A692 29.08	76025A682 43.62
1″	76025A673 29.79	76025A693 38.73	76025A683 58.09
1 1/2″	76025A811 44.67	76025A812 58.07	76025A813 87.11
2″	76025A675 59.61	76025A694 77.49	76025A685 116.24
3 1/2″	76025A676 104.31	76025A695 135.60	76025A686 203.40
4″	76025A677 119.18	76025A696 154.93	76025A687 232.40
6″	76025A678 178.89	76025A697 232.56	76025A688 348.84
10″	76025A679 297.91	76025A698 387.28	76025A689 580.92
	0.006″ Thick	**0.0065″ Thick**	**0.0125″ Thick**
White—*5-Yard Rolls*			
1/2″	76025A421 $12.82	76025A426 $16.41	76025A432 $25.00
1″	76025A422 22.64	76025A427 28.98	76025A433 44.15
2″	76025A423 45.26	76025A428 57.93	76025A434 88.26

Strong and Slippery UHMW Polyethylene Tape with Super-Bond Adhesive

All the benefits of strong and slippery UHMW (ultra-high molecular weight) polyethylene tape on this page, plus a super-high bond adhesive make this tape perfect for difficult-to-bond surfaces such as powder-coated, plastic, foam, and metal surfaces. Adhesive is a high-strength, chemical-resistant acrylic. Temperature range is 0° to 200° F; apply at 70° to 100° F. Supplied on a cardboard spool. Color is translucent.

0.012″ thick tape has a 0.01″ thick film with 0.002″ adhesive.
0.022″ thick tape has a 0.02″ thick film with 0.002″ adhesive.

Wd.	Lg., yds.	Spool ID	0.012″ Thick Roll	0.022″ Thick Roll
1″	5	3″	7344A31 $11.70	7344A41 $12.86
2″	5	3″	7344A32 23.41	7344A42 25.72
6″	5	3″	7344A33 61.45	7344A43 67.53

Shock-Absorbing UHMW Polyethylene Tape

Get the high abrasion resistance and nonstick properties of UHMW (ultra-high molecular weight) polyethylene combined with the cushioning of polyurethane foam in this easily applied tape. Excellent for shock absorbing and noise dampening in chutes, bins, and similar delivery systems. It's also great for reducing friction in low-speed conveyors. The nonstick surface cleans easily and resists tearing, gouging, and most chemicals.

Tape is 0.067″ thick (0.005″ thick UHMW polyethylene film laminated to 0.0605″ thick polyurethane foam and coated with 0.0015″ of acrylic adhesive). Includes peel-off polyethylene liner. Temperature range is –40° to +200° F.

Wd.	Lg., ft.	Spool ID/Material	Color	Roll
1″	10	6″/Cardboard	Off-White	76635A8 $23.26
1″	100	6″/Cardboard	Off-White	76635A651 129.96

Strong and Slippery UHMW Polyethylene Tape

Provides a nonstick, low-friction surface similar to PTFE (polytetrafluoroethylene) tape but with higher abrasion and impact resistance. Ideal for chutes, packaging lines, slides, and anywhere high-pressure sliding contact occurs. Also eliminates squeaks and rattles caused by adjacent parts movement. Tape has a UHMW (ultra-high molecular weight) polyethylene film and 0.0015″ of acrylic adhesive. Color is translucent. 0.0045″ thick, 0.0065″ thick, and 0.0115″ thick tape has a temperature range of –40° to +225° F and includes a peel-off polyethylene liner. Temperature range for 0.0215″ thick, 0.0325″ thick, and 0.0615″ thick tape is 0° to 120° F.

Tape—*0.0045″ thick* tape has a 0.003″ thick film. *0.0065″ thick* tape has a 0.005″ thick film. *0.0115″ thick* tape has a 0.010″ thick film. *0.0215″ thick* tape has a 0.02″ thick film. *0.0325″ thick* tape has a 0.03″ thick film. *0.0615″ thick* tape has a 0.06″ thick film.

Discs, Squares, and ***Donuts—***Tape is 0.012″ thick (0.01″ thick film with 0.002″ of acrylic adhesive). Include a white peel-off kraft-paper liner. Do not include a spool.

Tape

Wd.	0.0045″ Thick Roll	0.0065″ Thick Roll	0.0115″ Thick Roll
5-Yard Rolls—*Supplied on a cardboard spool with a 1 1/2″ ID*			
1/2″	76445A721 $2.44	76445A741 $3.08	76445A761 $4.68
3/4″	76445A722 3.64	76445A742 4.59	76445A762 6.99
1″	76445A723 4.86	76445A743 6.13	76445A763 9.33
2″	76445A724 9.71	76445A744 12.27	76445A764 18.66
3″	76445A725 14.57	76445A745 18.41	76445A765 28.00
6″	76445A726 27.23	76445A746 34.40	76445A766 52.31
12″	76445A727 63.74	76445A747 78.74	76445A767 91.24
18-Yard Rolls—*Supplied on a cardboard spool with a 3″ ID*			
1/2″	76445A711 6.41	76445A21 8.20	76445A31 12.50
3/4″	76445A712 9.57	76445A22 12.25	76445A32 18.66
1″	76445A713 12.78	76445A12 16.36	76445A14 24.92
2″	76445A714 25.56	76445A23 32.72	76445A33 49.84
3″	76445A715 38.35	76445A24 49.09	76445A34 74.78
6″	76445A716 71.66	76445A41 91.72	76445A42 139.74
12″	76445A717 124.98	76445A44 159.97	76445A48 243.71
	0.0215″ Thick	**0.0325″ Thick**	**0.0615″ Thick**
5-Yard Rolls—*Supplied on a cardboard spool with a 3″ ID*			
1″	76445A771 $17.20	76445A772 $15.48	76445A773 $32.68
2″	76445A774 34.34	76445A775 30.91	76445A776 65.25
6″	76445A781 103.15	76445A782 92.84	76445A783 195.99

Discs

Disc Dia.	Discs/Roll	Roll
1/4″	444 7802A21	$11.70
1/2″	139 7802A22	9.95
3/4″	139 7802A23	14.53
1″	75 7802A24	16.48

Squares

Sq. Size	Squares/Roll	Roll
1/2″	64 7802A11	$8.63
3/4″	42 7802A12	9.45
1″	28 7802A13	10.14
2″	15 7802A14	14.23

Donuts

OD	ID	Donuts/Roll	Roll
1/2″	5/32″	49 7802A31	$7.12
1″	13/32″	28 7802A32	8.67
1 3/4″	7/8″	17 7802A33	11.25

Nonstick Surface-Gripping Tape

Also known as roller wrap, this tape has a silicone coating to provide a surface that grabs but doesn't stick. Perfect for pulling flexible materials over rollers during coating, laminating, printing, and paper converting.

Rayon Cloth—Has a rubber adhesive and a peel-off liner. Withstands temperatures up to 212° F; apply at room temperature to 150° F. *Smooth* tape provides high surface contact and friction. Total tape thickness is 0.016″. *Embossed* tape has a total tape thickness of 0.025″.

Fiberglass Cloth—Conforms to surfaces better than rayon cloth tape and is thinner to minimize changes in roller diameter and web speed. It has a woven surface that resists adhesives and inks. Tape has a rubber adhesive to provide a strong bond to rollers, yet allows repositioning and removal without leaving residue. Total tape thickness is 0.0076″ and consists of 0.0046″ cloth and 0.003″ of adhesive. Withstands temperatures up to 265° F; apply at temperatures above 40° F.

Wd.	Lg., yds.	Spool ID/Material	Color	Roll
Rayon Cloth—*Smooth*				
3/4″	3	3″/Cardboard	Gray	76005A21 $45.05
3/4″	9	3″/Cardboard	Gray	76005A11 90.10
1″	3	3″/Cardboard	Gray	76005A22 56.49
1″	9	3″/Cardboard	Gray	76005A12 112.98
2″	3	3″/Cardboard	Gray	76005A23 108.55
2″	9	3″/Cardboard	Gray	76005A13 241.22
Rayon Cloth—*Embossed*				
2″	3	3″/Cardboard	Gray	76005A24 124.94
2″	9	3″/Cardboard	Gray	76005A14 249.87
Fiberglass Cloth				
3/4″	9	3″/Plastic	Off-White	7565A21 19.90
1″	9	3″/Plastic	Off-White	7565A22 25.02
2″	9	3″/Plastic	Off-White	7565A23 49.74

For information about slick surface tape, see page 3443.

Antistatic UHMW Polyethylene Tape

Similar to the Strong and Slippery UHMW (ultra-high molecular weight) Polyethylene Tape on page 3444, but with antistatic properties. Use when a sliding, nonstick surface is needed and when static discharge is a concern. Great as a liner on chutes and as a wear strip in material handling systems for eliminating rattles and squeaks. Has 0.005″ thick rubber adhesive. Temperature range is –40° to +175° F; apply at +50° to +120° F. Color is black.

Wd.	Lg., yds.	Spool ID/Material	Thick., Total/Film		Roll
1″	5	3″/Cardboard	0.010″/0.005″	7746A31	$11.38
1″	5	3″/Cardboard	0.015″/0.010″	7746A32	11.91
1″	5	3″/Cardboard	0.025″/0.020″	7746A33	17.05

Wear-Resistant Antifriction Rulon Tape

Often referred to as bearing tape, this PTFE (polytetrafluoroethylene) tape has a self-lubricating surface, resulting in a low-friction tape with higher abrasion and wear resistance than regular PTFE tape. Great for applications requiring high temperature and chemical resistance. Ideal for use on bearing liners, chutes, and guide rail coverings.

Tape is 0.010″ thick and consists of 0.008″ thick film with 0.002″ of silicone adhesive. Temperature range is –100° to +500° F. Tape is supplied on a cardboard spool. Color is dull red.

Wd.	Spool ID	*5-yard Rolls*	Roll	*18-yard Rolls*	Roll
½″	3″	7800A11	$21.35	7800A21	$56.18
1″	3″	7800A12	42.70	7800A22	112.37
2″	3″	7800A14	85.42	7800A24	224.79

Super Wear-Resistant Antifriction PEEK Tape

Excellent friction, wear, and insulating properties combined with good chemical resistance make this tape the ideal choice for use on sliding bearing surfaces, abrasion-resistant wire wraps, and in high-heat applications. Use on steel, ceramic, and glass. Color is tan.

Acrylic adhesive tape resists high humidity and chemicals. Total tape thickness includes 0.002″ of adhesive. Temp. range is –40° to +275° F.

Silicone adhesive tape provides high-heat protection. Total tape thickness includes 0.004″ of adhesive. Temp. range is –20° to +400° F.

Wd.	Lg., ft.	*0.004″ Thick*	Roll	*0.007″ Thick*	Roll	*0.012″ Thick*	Roll
With Acrylic Adhesive							
1″	9	7263A21	$13.84	7263A22	$23.07	7263A23	$35.76
2″	1	7263A61	4.14	7263A62	6.90	7263A63	10.70
		0.006″ Thick		*0.009″ Thick*		*0.014″ Thick*	
With Silicone Adhesive							
1″	9	7263A81	$14.78	7263A82	$24.64	7263A83	$38.19
2″	1	7263A91	4.34	7263A92	7.24	7263A93	11.22

Fiberglass Cloth Tape—Adhesive on Both Sides

Use as a masking tape and as an underwrap when used with Abrasion-Resistant Silicone/Glass-Cloth Masking Tape (page 3441) and High-Temperature High-Strength Reinforced Aluminum Foil Tape (page 3448). Tape has excellent thermal and abrasion resistance, so it's ideal for thermal spray applications such as grit blasting and plasma spraying. Tape is 0.007″ thick (0.0045″ thick fiberglass cloth with 0.00125″ of silicone adhesive on each side). Includes a peel-off paper liner. Temperature range is –100° to +500° F.

Wd.	Lg., yds.	Spool ID/Material	Color		Roll
½″	18	3″/Cardboard	Off-White	7577A1	$20.50
1″	18	3″/Cardboard	Off-White	7577A2	41.06
2″	18	3″/Cardboard	Off-White	7577A3	82.06

Fiberglass Cloth Insulating Tape

With the ability to absorb insulating varnish, this durable woven fiberglass tape is an excellent choice for electrical insulating. It has high tensile strength and very good temperature and abrasion resistance. It's also conformable and flexible. Use as an overwrap on motor rewinds, a protective wrap for wire and cables, and as a high-temperature masking tape for welding stainless steel. Tape is 0.007″ thick and consists of a 0.0045″ fiberglass cloth with 0.0025″ of adhesive. Tensile strength is 150 lbs./in. width. Tape is supplied on a cardboard spool. Color is white.

Acrylic adhesive tape has strong resistance to oil. Dielectric strength (the ability to withstand electrical voltage without rupture) is 3,000 volts. Temperature range is –20° to +350° F.

Silicone adhesive tape's dielectric strength is 4,500 volts. Temperature range is –100° to +500° F.

Wd.	Lg., yds.	Spool ID	*W/Acrylic Adhesive*	Roll	*W/Silicone Adhesive*	Roll
½″	18	3″	7574A24	$12.00	7574A11	$10.16
1″	18	3″	7574A25	23.96	7574A12	20.28
2″	18	3″	7574A26	47.96	7574A13	40.60

Abrasion-Resistant Fiberglass Tape Coated with Teflon® PTFE

This tape has better abrasion resistance than Fiberglass Cloth Insulating Tape on this page. Tape is nonstick PTFE (polytetrafluoroethylene) combined with fiberglass for resistance to high temperatures and chemicals. Ideal for use as a release surface on heat sealers and on blister-formation and form-fill seal equipment, as well as a low-friction release surface liner for conveyors. Also great as a mold protection tape.

Temperature range is –100° to +500° F. Tape has a silicone adhesive and is supplied on a cardboard spool.

Nonconductive— Does not conduct electrical current. Color is tan.

Semiconductive— Tape is designed to resist static buildup and is helpful in discharging minor amounts of surface static electricity. Color is black with a yellow or white liner.

Wd.	Spool ID	*5-yard Rolls*	Roll	*18-yard Rolls*	Roll
Nonconductive					
0.005″ Total Thickness— *0.003″ thick film with 0.002″ of adhesive*					
¼″	3″	76495A51	$3.00	76495A12	$7.89
½″	3″	76495A52	5.46	76495A14	14.38
¾″	3″	76495A53	8.20	76495A16	21.58
1″	3″	76495A54	10.91	76495A18	28.70
1½″	3″	76495A55	16.38	76495A17	43.11
2″	3″	76495A56	22.01	76495A19	57.93
3″	3″	76495A57	30.97	76495A31	81.49
4″	3″	76495A58	41.32	76495A32	108.73
6″	3″	76495A59	61.96	76495A39	163.04
12″	3″	76495A81	131.09	76495A82	344.97
0.007″ Total Thickness— *0.005″ thick film with 0.002″ of adhesive*					
¼″	3″	76495A61	4.39	76495A22	11.55
½″	3″	76495A62	7.97	76495A24	20.97
¾″	3″	76495A63	11.96	76495A26	31.47
1″	3″	76495A64	15.95	76495A28	41.97
1½″	3″	76495A65	23.27	76495A27	61.23
2″	3″	76495A66	30.19	76495A29	79.45
3″	3″	76495A67	45.30	76495A33	119.21
4″	3″	76495A68	58.78	76495A34	154.69
6″	3″	76495A69	88.17	76495A41	232.03
12″	3″	76495A84	193.05	76495A85	508.03
0.0115″ Total Thickness— *0.009″ thick film with 0.0025″ of adhesive*					
½″	3″	76495A71♣	12.85	76495A35	33.81
1″	3″	76495A72♣	25.26	76495A36	66.48
1½″	3″	76495A73♣	36.89	76495A37	97.07
2″	3″	76495A74♣	44.61	76495A38	117.39
4″	3″	76495A91♣	89.10	76495A92	254.57
Semiconductive					
0.005″ Total Thickness— *0.003″ thick film with 0.002″ of adhesive*					
1″	3″	7649A61	15.71	7649A33	41.33
2″	3″	7649A62	24.23	7649A42	63.77
3″	3″	7649A63	36.35	7649A43	95.66
4″	3″	7649A64	45.86	7649A51	120.68
0.007″ Total Thickness— *0.005″ thick film with 0.002″ of adhesive*					
1″	3″	7649A71	23.45	7649A35	61.71
2″	3″	7649A72	36.30	7649A44	95.52
3″	3″	7649A73	52.75	7649A45	138.81
0.008″ Total Thickness— *0.006″ thick film with 0.002″ of adhesive*					
1″	3″	7649A81	25.11	7649A36	66.08
2″	3″	7649A82	38.40	7649A46	101.06
3″	3″	7649A83	57.60	7649A47	151.59
0.012″ Total Thickness— *0.010″ thick film with 0.002″ of adhesive*					
1″	3″	7649A91	38.89	7649A41	102.35
2″	3″	7649A92	60.49	7649A48	159.19
3″	3″	7649A93	90.74	7649A49	238.80

♣ Tape is 0.012″ thick (0.01″ thick film with 0.002″ of adhesive).

Long-Life Fiberglass Tape Laminated with Teflon® PTFE

Fiberglass is laminated with PTFE (polytetrafluoroethylene) so it has a longer performance life as well as more conformability and flexibility than Abrasion-Resistant Fiberglass Tape Coated with Teflon® PTFE on this page. The lamination also eliminates thin spots that can lead to premature tape failure.

Temperature range is –100° to +550° F. Tape has a silicone adhesive and is supplied on a cardboard spool. Color is reddish brown.

Wd.	Lg., yds.	Spool ID		Roll
0.006″ Total Thickness— *0.004″ thick film with 0.002″ of adhesive*				
1″	5	3″	7601A31	$29.44
2″	5	3″	7601A41	58.28
0.009″ Total Thickness— *0.006″ thick film with 0.003″ of adhesive*				
1″	5	3″	7601A32	32.71
2″	5	3″	7601A42	64.76
0.013″ Total Thickness— *0.01″ thick film with 0.003″ of adhesive*				
1″	5	3″	7601A33	37.62
2″	5	3″	7601A43	73.83

For information about slick surface tape, see page 3443.

Optically Clear Tape Made with Teflon® FEP

This FEP (fluorinated ethylene propylene) tape has optical clarity coupled with good chemical and temperature resistance. Use as a clear, protective covering for bar code sensors and other delicate printed surfaces. It also can be used as a cable wrap and as primary insulation on motors, coils, and transformers.

Tape is 0.0035″ thick and consists of a 0.002″ thick film with 0.0015″ of silicone adhesive. Temperature range is –100° to +400° F. Dielectric strength (the ability to withstand electrical voltage without rupture) is 9,000 volts. Tape is supplied on a cardboard spool with a 3″ ID.

Wd.	Lg., yds.		Roll	Wd.	Lg., yds.		Roll
1/2″	36	7562A11	$41.69	2″	5	7562A21	$41.35
3/4″	36	7562A12	62.49	2″	36	7562A15	159.03
1″	5	7562A17	21.67	8″	5	7562A18	134.48
1″	36	7562A13	83.35	8″	36	7562A19	517.24
1 1/2″	36	7562A14	116.23				

Protective-Overlay FEP Tape

Put a protective, nonstick covering that's easy to clean on virtually any surface. This FEP (fluorinated ethylene propylene) tape resists corrosive chemicals, moisture, and weather. Just cut to size with a knife or scissors, peel off the liner, and apply.

This all-purpose overlay is composed of a 0.001″ thick fluoropolymer film laminated to 0.008″ thick vinyl film; fluoropolymer film is FDA compliant for food contact. Also has 0.0003″ of acrylic adhesive, for a total thickness of 0.0093″.

Temperature range is –50° to +230° F; apply at +45° to +230° F. Supplied on a cardboard spool. Color is white.

Wd.	Spool ID	5-yd. Rolls	Roll	36-yd. Rolls	Roll
1″	3″	76485A81	$27.92	76485A21	$107.39
2″	3″	76485A82	55.22	76485A22	212.38
4″	3″	76485A83	101.22	76485A23	389.30
25″	2″	76485A84	355.24	—	—

Moisture-Resistant Acetal Copolymer Tape

Resisting moisture, chemicals, fuels (even oxygenated fuels and gasoline/ethanol blends), wear, and creep, this tape easily handles tough jobs. Total tape thickness includes 0.002″ of acrylic adhesive combined with either a 0.003″, 0.005″, 0.01″, or 0.02″ thick backing. Maximum temperature is 300° F. Tape has a peel-off liner and a cardboard spool. Color is clear.

Thick.	Lg., yds.	Spool ID	1″ Wd. Tape	Roll	2″ Wd. Tape	Roll
0.005″	5	3″	3402A14	$13.24	3402A15	$26.46
0.007″	5	3″	3402A24	17.41	3402A25	34.81
0.012″	5	3″	3402A34	29.01	3402A35	58.04
0.022″	5	3″	3402A44	54.06	3402A45	108.11

Metalized-Fabric EMI-Shielding Tape

This puncture-resistant tape has a highly conductive acrylic adhesive making it ideal for EMI (electromagnetic interference) shielding of cables for satellites, electronic vehicles, and robotics. Also great for disc drives, modems, and automotive electronics. Tape is a polyester fabric woven with nickel/copper and is more conformable than copper foil tape. Shielding effectiveness is 1 MHz/102 dB or 500 MHz/90 dB. Surface resistivity is 25 milli-ohms/sq. in.

Tape is 0.004″ thick and consists of a 0.003″ thick backing with 0.001″ adhesive and also has a 0.006″ thick peel-off liner. Temperature range is –40° to +250° F; apply at temperatures above +50° F. Supplied on a plastic spool. Color is sand.

Wd.	Spool ID	12-ft. Rolls	Roll	25-ft. Rolls	Roll	50-ft. Rolls	Roll
1″	3″	3413A31	$38.15	3413A21	$60.55	3413A11	$108.99
2″	3″	3413A32	73.07	3413A22	115.98	3413A12	208.76
4″	3″	3413A33	142.87	3413A23	226.77	3413A13	408.19

Cut-Resistant Antistatic High-Temperature Tape

Extra-strength para-aramid (comparable to Kevlar) cloth is fused with antistatic PTFE (polytetrafluoroethylene) for a cut-resistant tape that works great in high-temperature wrapping applications where static could be a problem. This tape is also flexible, chemical resistant, and UV stable so it can withstand harsh environments that normally wear out standard fiberglass cloth tape. Surface resistivity is less than 10^6 ohms/sq. in. Tape is 0.007″ thick and consists of a 0.005″ thick backing with 0.002″ of silicone adhesive. Temperature range is –100° to +500° F. Supplied on a cardboard spool. Color is black.

Wd.	Spool ID	5-yd. Rolls	Roll	18-yd. Rolls	Roll
1/2″	3″	3468A11	$15.47	3468A31	$32.92
1″	3″	3468A12	30.96	3468A32	65.88
2″	3″	3468A13	61.92	3468A33	131.74

Conformable Thermally Conductive Graphite Tape

Made of graphite with a thermally conductive acrylic adhesive, this tape conforms readily to surface imperfections to improve thermal transfer allowing maximum heat sink potential. Thermal conductivity is 2 W/mK. Thermal impedance is 0.12° C in.^{2}/W.

Tape is 0.006″ thick and consists of a 0.005″ thick backing with 0.001″ adhesive. Temperature range is –20° to +300° F. *1-ft. rolls* and *3-ft. rolls* are wound without a spool; *50-ft. rolls* have a cardboard spool with a 3″ ID. Color is metallic black.

Wd.	1-ft. Rolls	Roll	3-ft. Rolls	Roll	50-ft. Rolls	Roll
1″	—	—	—	—	7157A12	$58.38
2″	—	—	—	—	7157A13	116.73
4″	7157A21	$9.13	7157A31	$19.02	—	—
6″	7157A22	12.84	7157A32	26.75	—	—
12″	7157A23	23.88	7157A33	49.74	—	—

Thermally Conductive Tape—Adhesive on Both Sides

With high thermal conductivity, exceptional bonding properties, and adhesive on both sides, this tape eliminates the need for thermal grease and mechanical fasteners. Tape has a high-bond acrylic adhesive with titanium diboride on both sides of an aluminum film for an effective thermal interface between electronic components and heat sinks. Use to attach components to vertical heat sinks and to metal chassis walls in place of clips, screws, and other mechanical fasteners without the need for additional thermal compounds. Thermal conductivity is 1.4 W/mK. Thermal impedance is 0.25° C in.^{2}/W.

Tape is 0.009″ thick. Temperature range is –40° to +302° F. Supplied on a cardboard spool. Color is gray.

Wd.	Spool ID	12-ft. Rolls	Roll	100-ft. Rolls	Roll
1″	3″	6838A11	$85.36	6838A21	$502.12
2″	3″	6838A12	156.82	6838A22	1,066.77

Thermally Conductive Silicone-Coated Kapton® Polyimide Tape

Ideal for use as a thermally conductive dielectric barrier and to fill voids where thermal transfer and electrical isolation is important. This Kapton® polyimide tape is coated in silicone rubber for excellent electrical isolation and high dielectric performance. The silicone layer also provides a nonstick surface for heat transfer and easy disassembly. Thermal conductivity is 0.6 W/mK. Thermal impedance is 0.4° C in.^{2}/W. Dielectric strength (the ability to withstand electrical voltage without rupture) is 7,000 volts.

Tape is 0.0045″ thick and consists of 0.001″ of Kapton® polyimide film, 0.002″ of silicone rubber, and 0.0015″ of adhesive. Temperature range is –20° to +300° F. *3-ft. rolls* are wound without a spool; *54-ft. rolls* have a cardboard spool. Color is pale green.

Wd.	3-ft. Rolls	Roll	54-ft. Rolls Spool ID	Roll
1″	7171A22	$10.14	3″ 7171A12	$78.00
2″	7171A23	20.28	3″ 7171A13	156.00

Compression-Force Heat-Shrinkable Tape

Wrap this tough, flexible tape around an object and heat it, tape will shrink and apply pressure to the object. Use tape for compressing, shaping, forming, and banding various materials. When wrapping objects, tape should overlap half of its width. It starts to shrink at 160° F; reaches maximum (20%) shrinkage at 300° F. Shrinks lengthwise only.

Tape is 0.002″ thick. Temperature range is 200° to 400° F. Supplied on a cardboard spool. Color is translucent green.

Wd.	Lg., yds.	Spool ID		Roll
3/4″	100	1 1/2″	6820A12	$13.40
1″	100	1 1/2″	6820A13	17.86
1 1/4″	100	1 1/2″	6820A14	22.34
1 1/2″	100	1 1/2″	6820A15	26.82
2″	100	1 1/2″	6820A16	35.74
2 1/2″	100	1 1/2″	6820A17	44.68

Reflective Tape

A high-contrast reflective surface makes this tape perfect for high-lighting aisles and stairs, for use with hand-held tachometers, and for other applications needing a reflective surface.

Tape is 0.005″ thick and consists of a vinyl backing with aluminum coating and an acrylic adhesive. Tape also has a silicone release liner. Temperature range is 0° to 175° F. Color is silver.

Wd.	Lg., ft.	Spool ID/Material		Roll
½″	5	Not Supplied on a Spool	7178A12	$10.59
½″	50	1½″/Cardboard	7178A14	96.30
½″	150	3″/Cardboard	7178A16	250.38

Sterilization Indicator Tape

Also known as autoclave tape, this tape is designed for use in a steam autoclave. To indicate sterilization the word "Autoclaved" appears on the tape after 15 minutes at 250° F. Use to secure packs for sterilization.

Tape has a paper backing and a rubber adhesive. Will stick to glass, cloth, and metal without leaving a residue. Tape is 0.006″ thick. Temperature range is 20° to 250° F; apply at 40° to 120° F. Color is white.

Wd.	Lg., yds.	Spool ID/ Material		Roll
½″	14	1″/Cardboard	6827A11	$3.76
¾″	14	1″/Cardboard	6827A12	5.86
1″	14	1″/Cardboard	6827A13	7.16

Multipurpose Aluminum Foil Tape

The highly reflective surface of this indoor/outdoor tape dissipates heat and light. Tape is also conformable, so it can be applied to irregular and curved surfaces. Great for masking, general sealing, metal patching, and as a moisture and dust barrier. Color is shiny silver.

Temperature range is –40° to +325° F; apply at +30° to +120° F. Supplied on a cardboard spool with a 3″ ID.

0.003″ thick tape has 0.002″ thick aluminum foil with 0.001″ of acrylic adhesive.

0.005″ thick tape has 0.003″ thick aluminum foil with 0.002″ of acrylic adhesive. Meets Fed. Specs. L-T-80B and SAE-AMS-T-23397.

0.006″ thick tape has 0.005″ thick aluminum foil with 0.0013″ of acrylic adhesive.

Wd.	Lg., yds.	*0.003″ Thick*	Roll	*0.005″ Thick*	Roll	*0.006″ Thick*	Roll
1″	5	7631A71	$1.55	7631A81	$2.13	7631A91	$3.29
1″	60	7631A31	9.49	7631A19	12.58	7631A41	19.36
2″	5	7631A72	3.10	7631A82	4.26	7631A92	6.58
2″	60	7631A32	18.96	7631A21	25.16	7631A42	38.70
3″	5	7631A73	4.64	7631A83	6.38	7631A93	9.87
3″	60	7631A33	28.43	7631A23	37.72	7631A43	58.03
4″	5	7631A34	6.11	7631A84	8.40	7631A44	12.98
4″	60	7631A94	37.43	7631A24	49.65	7631A95	76.38
6″	5	7631A61	9.04	7631A62	12.43	7631A63	19.20
6″	60	7631A66	55.35	7631A67	73.42	7631A68	112.96

High-Strength Fiberglass-Reinforced Aluminum Foil Tape

Aluminum foil is laminated to a tough fiberglass fabric for a high-strength, reflective tape that can wrap around complex shapes and tolerate cable flex. Ideal for flame-spray masking, sound and vibration dampening, and wire harness heat-shielding. Temperature range is –100° to +500° F. Tape is supplied on a cardboard spool with a 3″ ID, unless noted. Color is shiny silver.

Standard thickness consists of 0.0025″ thick aluminum foil with 0.0045″ of silicone adhesive.

Extra thickness consists of 0.0075″ thick aluminum foil with 0.0035″ of silicone adhesive.

Wd.	Thick.	*5-yd. Rolls*	Roll	*18-yd. Rolls*	Roll
Standard Thickness					
½″	0.007″	76035A71	$6.92	76035A63	$18.20
¾″	0.007″	76035A72	10.40	76035A64	27.37
1″	0.007″	76035A73	12.98	76035A65	34.17
2″	0.007″	76035A74	25.93	76035A66	68.25
3″	0.007″	76035A75	38.92	76035A67	102.41
Extra Thickness					
½″	0.011″	76035A41	7.63	76035A51★	20.07
¾″	0.011″	76035A42	11.44	76035A52★	30.10
1″	0.011″	76035A43	15.24	76035A53★	40.10
2″	0.011″	76035A44	30.49	76035A54★	80.23
3″	0.011″	76035A45	45.73	76035A55★	120.33

★ Spool is plastic.

Clean Room Tape

Great for sealing and masking in clean room environments. Tape comes individually sealed in a clear polybag.

Vinyl— This particle-free vinyl tape is very conformable, and you can write on it. When removed, it leaves minimal adhesive residue. Tape has excellent abrasion resistance and is unaffected by moisture and most chemicals. Outgassing (the release of gaseous contamination) is less than 2.5 g/100 sq. in. per 24 hours.

Tape is 0.006″ thick, consisting of a 0.0045″ thick vinyl film with 0.0015″ of rubber adhesive. Temperature range is –20° to +200° F. Meets Fed. Spec. PPP-T-66E, Type 1, Class II: CID A-A-1689A.

Polyethylene— This low-density polyethylene tape with synthetic adhesive adheres better than the vinyl tape above. It leaves no residue upon removal and can be written on. Outgassing is less than 0.4 g/100 sq. in. per 24 hours.

Tape is 0.007″ thick. Temperature range is –20° to +200° F.

Wd.	Lg., yds.	Spool ID/ Material	Color		Roll
Vinyl					
½″	36	3″/Plastic	Blue	76505A433	$9.37
½″	36	3″/Plastic	White	76505A427	9.37
¾″	36	3″/Plastic	White	76505A429	13.07
1″	36	3″/Plastic	Blue	76505A437	15.01
1″	36	3″/Plastic	Clear	76505A425	15.01
1″	36	3″/Plastic	White	76505A431	15.01
2″	36	3″/Plastic	Blue	76505A441	24.01
2″	36	3″/Plastic	Clear	76505A443	24.01
2″	36	3″/Plastic	White	76505A439	24.01
Polyethylene					
2″	36	3″/Plastic	Blue	7735A27	26.38
2″	36	3″/Plastic	Clear	7735A28	26.38
2″	36	3″/Plastic	Red	7735A26	26.38
2″	36	3″/Plastic	White	7735A25	26.38

Aluminum Foil Discs

Conveniently cut into handy discs so you can easily cover small areas and holes during paint stripping and electroplating. Also great as a moisture and dust barrier.

Discs are 0.0045″ thick and consist of 0.003″ thick aluminum foil with 0.0015″ of acrylic adhesive. Temperature range is –30° to +325° F. Discs sold per roll are supplied on a cardboard spool with a 3″ ID. Color is shiny silver.

	Sheets			*Rolls*		
Disc Dia.	No. of Discs		Sheet	No. of Discs		Roll
¼″	100	77715A51	$7.17	1,000	77715A33	$20.36
½″	100	77715A52	10.22	1,000	77715A37	30.77
¾″	50	77715A53	10.22	500	77715A42	32.05
1″	50	77715A54	8.96	250	77715A46	28.41
2″	50	77715A55	14.22	250	77715A47	61.12
3″	50	77715A56	15.93	250	77715A48	76.13

High-Temperature Aluminum Foil Tape

Get the reflective capabilities of aluminum foil plus the higher temperature resistance of a special silicone adhesive. This tape protects parts from moisture, dust, and chemicals (not resistant to acids), and its reflective surface dissipates heat and flames. Ideal for wrapping over insulation and engine support structures.

Tape is 0.0036″ thick and consists of a 0.002″ thick aluminum foil with 0.0016″ of silicone adhesive. Temperature range is –65° to +600° F; apply at 0° to +200° F. Color is shiny silver. Meets FAR (Federal Aviation Regulation) 25.853(a).

Wd.	Lg., yds.	Spool ID/Material		Roll
1″	5	1½″/Plastic	7594A8	$15.46
1″	60	3″/Cardboard	7594A4	103.04

Aluminum Foil Tape with Conductive Adhesive

The adhesive on this tape supplies electrical conductivity on surfaces that can't be soldered. It's especially useful in EMI/RFI (electromagnetic interference/radio-frequency interference) shielding and cable-wrap applications. It has a surface resistivity of 0.04 ohms/sq. in. Tape has a peel-off liner.

Tape is 0.004″ thick and consists of a 0.002″ thick aluminum foil with 0.002″ thick acrylic adhesive. Temperature range is –40° to +325° F; apply at +30° to +120° F. Color is shiny silver. Meets flame spread requirements of UL 510.

Wd.	Lg., yds.	Spool ID/Material		Roll
2″	5	3″/Cardboard	76925A5	$19.13
2″	36	3″/Cardboard	76925A1	66.88

Noise-Damping Aluminum Foil Tape

Reduce noise with this aluminum foil tape. It has a unique viscoelastic polymer adhesive that converts vibration to negligible heat to reduce noise. Designed for use on panels and support structures to control resonant vibration.

Tape is 0.015″ thick and consists of a 0.01″ thick foil backing with 0.005″ of adhesive. Temperature range is 40° to 140° F; apply at same range. Supplied on a plastic spool. Color is silver.

Wd.	Lg., yds.	Spool ID		Roll
1″	5	1½″	6307A21	$16.13
2″	5	1½″	6307A22	39.11
2″	36	3″	6307A11	139.69

Copper Foil Tape

Designed to shield integrated circuit chips, cables, and motors, this solderable electrically conductive foil tape is also suitable for EMI/RFI (electromagnetic interference/radio-frequency interference) shielding. Tape has a peel-off liner.

Temperature range is –20° to +310° F; apply at +30° to +120° F. Supplied on a cardboard spool. Components are UL recognized.

With Conductive Adhesive— Ideal for printed circuit board modification, security-alarm circuit repairs, and prototype wiring-board layout and design. Tape is 0.0035″ thick and consists of a 0.0014″ thick foil with 0.0021″ of adhesive. Surface resistivity is 0.01 ohms/sq. in.

With Nonconductive Adhesive— Protects electronic components from electrostatic discharge. Great for holding pieces together during soldering because solder flows freely across surface of tape. Tape is 0.0029″ thick and consists of a 0.0014″ thick foil with 0.0015″ of adhesive.

With Conductive Adhesive

Wd.	Spool ID	*6-yd. Rolls*	Roll	*18-yd. Rolls*	Roll
¼″	3″	76555A711	$8.90	76555A641	$13.21
½″	3″	76555A712	14.51	76555A642	24.43
¾″	3″	76555A713	16.02	76555A643	36.65
1″	3″	76555A714	20.35	76555A644	45.41
2″	3″	76555A715	36.21	76555A646	90.27
3″	3″	76555A716	52.73	76555A647	139.50

With Nonconductive Adhesive

Wd.	Spool ID	*6-yd. Rolls*	Roll	*36-yd. Rolls*	Roll
¼″	3″	76555A721	$7.20	76555A651	$12.02
½″	3″	76555A722	9.67	76555A648	23.74
¾″	3″	76555A723	11.97	76555A649	34.54
1″	3″	76555A724	14.24	76555A652	43.41
2″	3″	76555A725	19.69	76555A654	83.56
3″	3″	76555A726	28.50	76555A655	125.36

Copper Mesh EMI-Shielding Tape

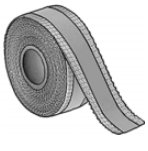

Wrap this highly flexible, adhesive-backed tape around cable to suppress electromagnetic and radio frequency interference. A strip of metalized polyester is edged by a two-ply woven tinned copper mesh. Choose tape with a center strip made of either copper or aluminum metalized polyester. Tape has acrylic adhesive and a kraft paper release liner.

Tape is 0.040″ thick. When wrapping, overlap half of tape's width to achieve a highly effective 4-ply shielding. Temperature range is –40° to +347° F; apply at +40° to +80° F. Supplied on a plastic spool.

	Wd.	Lg., ft.	Spool ID		Roll
Aluminum w/Copper Mesh	1″	16	1″	9270K11	$45.24
Copper w/Copper Mesh	1″	16	1″	9270K21	51.95

Stainless Steel Foil Tape

This durable Type 304 stainless steel tape is noncorrosive, nonstaining, and nonmagnetic. It bonds aggressively to metal, making it ideal for patching and splicing stainless steel. Use in marine, food processing, and nuclear applications. Tape has a peel-off liner.

Tape is 0.004″ thick and consists of a 0.002″ thick foil with 0.002″ of acrylic adhesive. Temperature range is –30° to +350° F; apply at +30° to +120° F. Supplied on a cardboard spool. Color is metallic silver.

Wd.	Spool ID	*3-yd. Rolls*	Roll	*18-yd. Rolls*	Roll
1″	3″	76055A21	$7.77	76055A694	$25.91
2″	3″	76055A22	15.64	76055A695	52.13
3″	3″	76055A23	23.33	76055A673	77.76
8″	3″	76055A24	47.60	76055A697	158.66
12″	3″	76055A25	63.67	76055A698	212.23

High-Temperature High-Strength Reinforced Aluminum Foil Tape

A special high-temperature silicone adhesive combined with the strength of aluminum foil laminated to fiberglass cloth makes this tape great for use as a heat-reflective wrap over insulation cables and other components. Tape easily conforms to irregular shapes.

Tape is 0.0073″ thick and consists of a 0.0034″ thick aluminum/glass cloth backing with 0.0039″ of silicone adhesive. Temperature range is –65° to +600° F; apply at +60° F and above. Color is shiny silver.

Wd.	Lg., yds.	Spool ID/Material		Roll
1″	5	1½″/Plastic	7613A41	$41.32
1″	36	3″/Cardboard	7613A21	158.94
2″	5	1½″/Plastic	7613A42	79.68
2″	36	3″/Cardboard	7613A22	306.48

Lead Foil Tape

Protect parts from radiation, x-rays, moisture, dust, and chemicals during electroplating and similar processes. This electrically conductive tape is durable and conforms well to curved surfaces. Apply tape at +60° F and above. Color is shiny silver.

With Peel-Off Liner— *5-yd. rolls* have a tape thickness of 0.0068″ and consist of 0.0047″ thick lead foil with 0.0021″ rubber adhesive. Temperature range is –60° to +225° F. *36-yd. rolls* have a tape thickness of 0.0065″ and consist of a 0.005″ thick lead foil with 0.0015″ acrylic adhesive. Temperature range is –30° to +275° F.

Without Liner— Tape is 0.0063″ thick and consists of a 0.004″ thick lead foil with 0.0023″ rubber adhesive. Temp. range is –60° to +225° F.

Wd.	Lg., yds.	Spool ID/ Material	*With Peel-Off Liner*	Roll	*Without Liner*	Roll
½″	5	1½″/Plastic	76315A61	$12.72	76315A51	$11.58
½″	36	3″/Cardboard	76315A12	36.17	76315A42	44.73
¾″	5	1½″/Plastic	76315A62	16.41	76315A52	15.44
¾″	36	3″/Cardboard	76315A13	48.35	76315A43	57.92
1″	5	1½″/Plastic	76315A63	21.46	76315A53	19.31
1″	36	3″/Cardboard	76315A14	60.51	76315A44	70.84
2″	5	1½″/Plastic	76315A64	40.50	76315A54	38.64
2″	36	3″/Cardboard	76315A16	120.53	76315A46	141.67

All-Service Jacket (ASJ) Insulation Tape

For use on ASJ-faced fiberglass duct and pipe insulation, this tape has fiber-reinforced foil/scrim (fiber)/kraft (FSK) lamination and easily conforms to fibrous ductboard and blankets. Also ideal for use as a vapor seal.

Tape has an acrylic adhesive with a peel-off liner and is 0.0115″ thick. Temperature range is –25° to +175° F; apply at +10° to +100° F. Supplied on a cardboard spool. Color is white. UL listed.

Wd.	Lg., yds.	Spool ID	Tensile Strength, lbs./in. wd.	Adhesion to Steel, oz./in. wd.		Roll
3″	50	3″	40	92	76755A65	$25.56
5″	50	3″	40	92	76755A66	42.58

Polypropylene Thermal Insulation Tape

This metalized polypropylene/scrim (fiber)/kraft-laminated (FSK) tape is reinforced for extra strength. Use to join and vapor-seal seams on polypropylene-faced metal building insulation. Tape sticks quickly at room temperature and also performs well at low temperatures.

Tape is 0.007″ thick and has an acrylic adhesive. Temperature range is –35° to +175° F; apply at +10° to +100° F. Supplied on a cardboard spool. Color is white.

Wd.	Lg., yds.	Spool ID	Tensile Strength, lbs./in. wd.	Adhesion to Steel, oz./in. wd.		Roll
3″	50	3″	40	68	7620A11	$27.79

Embossed Vinyl Insulation Tape

Highly conformable, this tape also has a pebbly, embossed surface that matches the surface of insulation. Thin yet strong, it's shrink-resistant, making it ideal for repairing insulation and water heater blankets.

Tape is 0.005″ thick and has an acrylic adhesive. Temperature range is –25° to +260° F; apply at +10° to +100° F. Supplied on a cardboard spool.

Wd.	Lg., yds.	Spool ID	Tensile Strength, lbs./in. wd.	Adhesion to Steel, oz./in. wd.	Color		Roll
3″	50	3″	10	57	Black	77375A83	$18.00
3″	50	3″	10	57	White	77375A82	18.00

Duct Tape

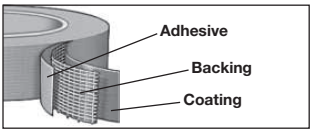

A

High Thread Count Fine Weave

B-F

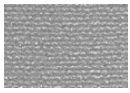

Med./Low Thread Count Standard Weave

G&H

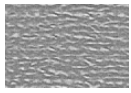

Low Thread Count Standard Weave

J&K

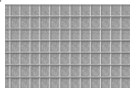

Low Thread Count Coarse Weave

The quality of a duct tape involves a number of factors including adhesive, coating, backing, thickness, and tensile strength. With the cloth-backed duct tape (Styles A-E and G-K), a higher thread count means it tears straighter, looks smoother, and has higher strength.

Strong and water resistant, this tape has excellent adhesion and flexibility. Will not twist or curl during application. Tape has rubber adhesive and is polyethylene coated, except for *clean-removal conformable* and *easy-tear vinyl*, which are vinyl coated. Supplied on a cardboard spool with a 3″ ID (unless noted).

(A) Clean-Removal Conformable— Also known as gaffer's tape, this extremely flexible tape makes strong bonds even on odd-shaped objects and then removes cleanly without leaving a sticky residue. It has a waterproof vinyl-coated backing for extra durability and a nonreflective matte finish. Ideal for sealing equipment such as cases and canisters. Temperature range is 40° to 200° F; apply at 40° to 90° F (unless noted).

(B) Duct and Insulation Sealing— Use for the most demanding HVAC applications such as sealing flexible duct connections and seams in insulation. Also great as a covering over pipe insulation. Temperature range is 40° to 200° F; apply at 40° to 90° F (unless noted). 7612A6, A7, and A8 meet UL 723. 7612A95 is ideal for military packaging and conforms to Fed. Spec. PPP-T-60E, Type IV, Class I.

(C) Flame Retardant— Has flame-retardant adhesive. Designed for repairing cargo compartment liners. Temp. range is 40° to 200° F; apply at 40° to 90° F. Complies with FAR (Federal Aviation Regulation) 25.853(a).

(D) Nuclear Grade— Use in nuclear power plants to seal end caps on stainless steel pipes, hold labels and signs on stainless steel pipes, and seal HVAC metal ductwork. Temperature range is 50° to 200° F; apply at 50° to 90° F. Meets ANSI No. 45.2.2, ASME NQA-1, NRC (Nuclear Regulatory Commission) Guide 1.38.

(E) Super Bond— An extra-thick adhesive allows this tape to create an extra-strong bond. Ideal for filling gaps and bonding to rough surfaces like wood, plaster, stucco, brick, metal, and cement even in high temperatures. Withstands temperatures up to 200° F; apply at 40° to 150° F.

(F) Easy-Tear Vinyl— An embossed vinyl backing instead of a cloth backing makes this tape easy to unwind and tear by hand. It leaves less residue on surfaces than cloth-backed tape and won't stick to itself during application. Temperature range is 40° to 250° F; apply at 50° to 85° F.

(G) Long-Life Clean Removal— Removes cleanly even after six months and can remain on for up to a year without deterioration. Use for bundling, masking, sealing, joining, and patching. Withstands temperatures up to 200° F; apply at 40° to 120° F.

(H) General Duty— This multipurpose tape is good for packaging, securing fiberglass insulation, as a condensation barrier in refrigeration assemblies, and in short-term ductwork sealing. Temperature range is 40° to 200° F; apply at 40° to 90° F (unless noted).

(J) Economy Grade— When cost is a concern, choose this economical tape for your bundling, packaging, and holding needs. Temperature range is 40° to 200° F; apply at 40° to 80° F.

(K) Transparent— Our transparent tape lasts six times longer than traditional duct tape and makes repairs less obvious. Tape is UV resistant, easy to tear, and very conformable. Use it indoors and out to secure lightweight loads and for reinforcing, patching, splicing, and sealing. Tape is polyethylene-coated cloth with an acrylic adhesive. Temperature range is –20° to +173° F; apply at 0° to +120° F.

Wd.	Lg., yds.	Tensile Strength, lbs./in. wd.	Adhesion to Steel, oz./in. wd.	Color	Case Qty.		Roll Partial Case	Roll Full Case
(A) Clean-Removal Conformable— *Has matte finish and is 0.012″ thick (unless noted).*								
1″	60	42	50	Black	48	**7612A92**	$11.22	$9.31
1″	60	42	50	Red	48	**7612A36**	11.22	9.31
1″	60	42	50	White	48	**7612A91**	11.22	9.31
2″	49	42	50	Green●	24	**7612A954**★	23.66	19.27
2″	49	42	50	Orange●	24	**7612A951**★	23.66	19.27
2″	49	42	50	Yellow●	24	**7612A953**★	23.66	19.27
2″	50	48	60	Pink●	24	**7612A952**■	34.02	27.72
2″	60	42	50	Black	24	**7612A94**	21.10	17.53
2″	60	42	50	Brown	24	**7612A964**	21.10	17.53
2″	60	42	50	Dk. Green	24	**7612A963**	21.10	17.53
2″	60	42	50	Gray	24	**7612A1**	21.10	17.53
2″	60	42	50	Red	24	**7612A961**	21.10	17.53
2″	60	42	50	White	24	**7612A93**	21.10	17.53
2″	60	42	50	Yellow	24	**7612A962**	21.10	17.53
3″	60	42	50	Dk. Green	16	**7612A35**	30.17	26.20
3″	60	42	50	Gray	16	**7612A22**	30.17	26.20
4″	60	42	50	Gray	12	**7612A3**	42.94	35.66
(B) Duct and Insulation Sealing— *Has shiny finish and is 0.013″ thick.*								
2″	60	40	55	Black	24	**7612A6**■	16.39	12.97
2″	60	45	55	Silver	24	**7612A7**	14.94	12.41
2″	60	50	80	Olive	24	**7612A95**	16.92	14.05
3″	60	45	55	Silver	16	**7612A8**	22.24	18.47
(C) Flame Retardant— *Has shiny finish and is 0.012″ thick.*								
2″	60	29	66	Silver	24	**76115A11**	27.81	23.66
2″	60	29	66	White	24	**76115A22**	27.81	23.66
(D) Nuclear Grade— *Has shiny finish and is 0.013″ thick.*								
2″	60	29	60	Silver	24	**76155A29**	18.37	15.56
(E) Super Bond— *Has shiny finish and is 0.017″ thick.*								
1⅞″	35	58	112	Black	1	**7211A11**	—	10.94
(F) Easy-Tear Vinyl— *Has matte finish and is 0.0063″ thick.*								
2″	50	14	20	Black	24	**7769A11**	8.83	7.36
2″	50	14	20	Blue	24	**7769A12**	8.83	7.36
2″	50	14	20	Gray	24	**7769A13**	8.83	7.36
(F) Easy-Tear Vinyl— *Has matte finish and is 0.0063″ thick. (Cont.)*								
2″	50	14	20	Green	24	**7769A14**	$8.83	$7.36
2″	50	14	20	Red	24	**7769A15**	8.83	7.36
2″	50	14	20	White	24	**7769A16**	8.83	7.36
2″	50	14	20	Yellow	24	**7769A17**	8.83	7.36
(G) Long-Life Clean Removal— *Has shiny finish and is 0.0126″ thick.*								
2″	25	36	52	Blue	1	**7204A11**	—	11.13
2″	60	36	52	Black	1	**7204A31**	—	20.24
2″	60	36	52	Blue	1	**7204A14**	—	20.24
2″	60	36	52	Olive	1	**7204A21**	—	20.24
(H) General Duty— *Has shiny finish and is 0.01″ thick.*								
½″	19	23	50	Black	96	**76135A53**	2.13	1.59
½″	19	23	50	Silver	96	**76135A54**	2.13	1.59
½″	19	23	50	White	96	**76135A52**	2.13	1.59
1½″	60	24	50	Silver	32	**76135A44**	8.08	6.04
2″	20	24	50	Silver	54	**76135A48**♣	5.17	3.85
2″	60	24	50	Black	24	**76135A34**	10.58	7.89
2″	60	24	50	Blue▲	24	**76135A33**	10.58	7.89
2″	60	24	50	Brown	24	**76135A38**	10.58	7.89
2″	60	24	50	Green♠	24	**76135A36**	10.58	7.89
2″	60	24	50	Olive	24	**76135A41**	10.58	7.89
2″	60	24	50	Red	24	**76135A31**	10.58	7.89
2″	60	24	50	Silver	24	**76135A37**	10.58	7.88
2″	60	24	50	White	24	**76135A32**	10.58	7.89
2″	60	24	50	Yellow	24	**76135A35**	10.58	7.89
3″	60	24	50	Black	16	**76135A45**	15.00	11.18
3″	60	24	50	Olive	16	**76135A46**	15.00	11.18
3″	60	24	50	Silver	16	**76135A42**	15.00	11.18
4″	60	24	50	Silver	12	**76135A43**	20.14	15.01
6″	60	20	54	Silver	8	**76135A51**♦	32.12	23.94
(J) Economy Grade— *Has shiny finish and is 0.008″ thick.*								
2″	60	22	55	Silver	24	**7788A2**	4.22	3.51
(K) Transparent— *Has shiny finish and is 0.009″ thick.*								
1⅞″	20	24	34	Clear	12	**8532A21**	9.65	7.90

● Neon colored. ★ 0.0115″ thick. ■ Temperature range is 50° to 200° F; apply at 50° to 90° F. ♣ 1½″ ID spool. ▲ Royal blue. ♠ Kelly green. ♦ Temperature range is 32° to 160° F; apply at 40° to 100° F.

High-Temperature Mica Tape

Withstanding temperatures up to 2100° F, this tape has heat-resistant mica paper bonded to glass cloth and infused with a silicone elastomer to provide a fire barrier. It is an ideal protective wrap for wire and cable. When wrapping objects, tape should overlap half of its width.

Tape is 0.0047″ thick. Dielectric strength (the ability to withstand electrical voltage without rupture) is 1,198 volts. Thermal conductivity is 0.173 BTU. Apply at 0° to 300° F. Color is greenish brown.

Wd.	Spool ID/ Material	*15-ft. Rolls*	Roll	*108-ft. Rolls*	Roll
½″	1½″/Cardboard	**6811A21**	$2.65	**6811A11**	$10.18
1″	1½″/Cardboard	**6811A22**	5.16	**6811A12**	19.86
2″	1½″/Cardboard	**6811A23**	10.32	**6811A13**	39.68
3″	1½″/Cardboard	**6811A24**	15.43	**6811A14**	59.36

Aluminum Foil Duct Tape

A&B

C

D

This flexible, aluminum foil tape has a peel-off liner and is supplied on a cardboard spool.

(A) General Purpose— Good for smooth and scrim (fiberglass-reinforced) surfaces. Use to seal air conditioning and refrigeration systems and for taping joints and seams against moisture and vapor on foil-jacketed insulation. Tape has a high-tack rubber adhesive and a total thickness of 0.004″. Temperature range is 32° to 150° F; apply at same range (unless noted). Meets UL 723 (unless noted).

(B) Low Temperature— Tape has a cold-weather acrylic adhesive that performs well in temperatures below freezing and has quick-stick ability when applied at normal temperatures. Tape is smooth and conforms to fibrous ducts, sheet metal ducts, and irregular surfaces. Great for vapor sealing fiberglass and duct board and for foil/scrim/kraft (FSK) systems. Tape is 0.003″ thick. Temperature range is –40° to +250° F; apply at –10° to +135° F.

(C) Foil/Scrim/Kraft (FSK)— Use for demanding, tear-resistant sealing jobs such as corner-board sealing. Good for patching and matching FSK duct boards and blankets. Diamond-patterned aluminum foil/fiberglass scrim backing comes with either a rubber adhesive or an acrylic adhesive (for lower temperatures). Tape with *rubber adhesive* is 0.007″ thick. Temperature range is +32° to +150° F; apply at same range. Tape with *acrylic adhesive* is 0.0065″ thick. Temperature range is –25° to +175° F; apply at –10° to +175° F.

(D) Printed— Engineered to meet UL 181A-P, this tape has UL 181B-FX flexible duct standard imprinted on it for easy identification. Use for airtight bonds on fiberglass duct-board systems. Tape is 0.004″ thick and has an acrylic adhesive. Temperature range is –30° to +300° F; apply at –10° to +100° F.

Wd.	Lg., yds.	Spool ID	Tensile Strength, lbs./in. wd.	Adhesion to Steel, oz./in. wd.		Roll
(A) General Purpose						
2″	50	3″	14	100	**76145A61**♣	$13.42
2″	50	3″	16	85	**76145A21**	14.72
2½″	50	3″	16	85	**76145A35**	17.22
3″	50	3″	14	100	**76145A62**♣	20.14
3″	50	3″	16	85	**76145A23**	18.77
4″	50	3″	17	90	**76145A24**♠	32.92
(B) Low Temperature						
2″	50	3″	21	98	**7616A21**	9.32
2½″	50	3″	21	98	**7616A25**	11.66
3″	50	3″	21	98	**7616A31**	14.00
4″	50	3″	21	98	**7616A26**	18.63
(C) Foil/Scrim/Kraft (FSK)— *Rubber Adhesive*						
2″	50	3″	35	60	**76145A22**	14.54
3″	50	3″	35	60	**76145A34**	22.28
(C) Foil/Scrim/Kraft (FSK)— *Acrylic Adhesive*						
2″	50	3″	40	96	**76145A41**	12.03
3″	50	3″	40	96	**76145A42**	18.05
(D) Printed						
2½″	60	3″	25	85	**76145A33**	23.51
3″	60	3″	25	85	**76145A36**	28.33

♣ Temperature range is 0° to 180° F; apply at 50° to 120° F. Does not meet UL 723.

♠ Temperature range is –10° to +180° F; apply at +10° to +180° F. Meets UL 25/50.

Polypropylene Tape for Flexible Ducts

This tape satisfies UL 181B-FX as a closure for flexible air ducts and air connectors. UL 181B-FX is printed on the tape. Tape is a polypropylene film with an acrylic adhesive. Temperature range is –35° to +260° F; apply at –10° to +260° F. Tape is 0.003″ thick and supplied on a cardboard spool. Black tape has silver print and silver tape has red print.

Wd.	Color	Lg., yds.	Spool ID	Tensile Strength, lbs./in. wd.	Adhesion to Stainless Steel, oz./in. wd.		Roll
2″	Black	120	3″	22	41	**7575A31**	$11.02
2″	Silver	120	3″	22	41	**7575A33**	11.02
3″	Black	120	3″	22	41	**7575A32**	16.60
3″	Silver	120	3″	22	41	**7575A34**	16.60

Fiberglass Pipe Repair Tape

Repair broken and leaking pipes in minutes; exposure to air or moisture activates this resin-coated fiberglass tape. To speed setting, activate with water (salt or fresh). Becomes rock hard in about 30 minutes (even when completely submerged in water), dries to an opaque beige color, and can be sanded and painted. Ideal for use on metal, PVC (polyvinyl chloride), rubber, fiberglass, copper, and plastic pipes. Tape retains fluid pressure on supply lines up to 150 psi. Maximum temperature is 600° F; apply at 50° to 120° F. Supplied without a spool. NSF 61 certified for use on drinking-water system components.

Tape includes a pair of disposable rubber gloves.

Wd.	Lg., ft.	Thick.		Roll
2″	5	0.014″	**74635A65**	$15.00
3″	9	0.014″	**74635A66**	30.15
4″	15	0.014″	**74635A67**	50.76

Cotton Cloth Tape

Great for light duty tying, bundling, and holding on surfaces that require stain protection. Also use for aluminum edges, screws, rivet heads, and finger protection. Tape is 0.0105″ thick, has a rubber adhesive, and can be printed upon. Temperature range is 32° to 200° F; apply at 65° to 120° F. Supplied on a cardboard spool. Color is white.

Wd.	Lg., yds.	Spool ID	Tensile Strength, lbs./in. wd.	Adhesion to Stainless Steel, oz./in. wd.		Roll
¾″	60	3″	36	28	**76525A752**	$7.84
1″	60	3″	36	28	**76525A754**	9.75
2″	60	3″	36	28	**76525A756**	19.54

Conformable Metalized Cloth Duct Tape

For the appearance of a foil tape with better conformability, this tape is excellent for sealing flexible ducts, insulation, and aluminum-colored surfaces. Plus, it will not twist or curl during application. Tape is 0.011″ thick and consists of a metalized polyethylene-coated cloth with a rubber adhesive. Temperature range is 40° to 200° F; apply at 40° to 90° F. Tensile strength is 23 lbs./in. width; adhesion to steel is 55 oz./in. width. Tape is 2″ wide, 60 yards long, and supplied on a cardboard spool with 3″ ID. Color is silver.

7709A21 ..... **Roll** $15.14

Waterproof Aluminum Foil Repair Tape

Ideal for emergency leak repair and waterproofing, this tape provides a permanent seal for protection against water penetration and humidity. Provides resistance to flame spread and smoke. Tape is flexible, conformable, and can endure long-term UV exposure. Perfect for mending holes and leaks on gutters and downspouts, damaged shingles, roofing membranes, chimney flashings, and other roof penetrations.

Tape is 0.011″ thick and consists of a 0.002″ thick aluminum backing with 0.009″ of butyl rubber adhesive. Temperature range is 20° to 200° F; apply at same range. Tensile strength is 20 lbs./in. width; adhesion to steel is 75 oz./in. width. Tape is 2″ wide, 11 yards long, and supplied on a cardboard spool with 3″ ID; includes a peel-off liner. Meets UL 723.

7450A2 ..... **Roll** $23.10

Aluminum Flashing Tape

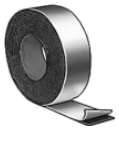

Form a watertight bond with almost any building material including metal, wood, plastic, concrete, brick, asphalt, and glass; this tape has an asphalt-based adhesive to conform to contours and stick firmly on contact. Ideal for edge flashing, repairing gutter joints, and many other flashing, sealing, and repairing jobs. Tape comes with either a bright aluminum or nonreflective smoky-gray finish and can be painted. Temperature range is –40° to +200° F; apply at +40° to +100° F. Supplied on a cardboard spool; includes a peel-off liner.

Bright aluminum tape is 0.052″ thick (0.002″ thick aluminum foil with 0.05″ of adhesive). ***Smoky gray*** tape is 0.055″ thick (0.005″ thick aluminum foil with 0.05″ of adhesive).

Wd.	Lg., yds.	Spool ID	***Bright Aluminum***	Roll	***Smoky Gray***	Roll
2″	11	3″	**76395A11**	$17.04	**76395A51**	$17.04
3″	11	3″	**76395A12**	25.14	**76395A52**	25.14
4″	11	3″	**76395A13**	33.22	**76395A53**	33.22
6″	11	3″	**76395A14**	49.42	**76395A54**	49.42
9″	11	3″	**76395A16**	72.84	_____	_____
12″	11	3″	**76395A18**	97.12	_____	_____
18″	11	3″	**76395A21**	145.70	_____	_____

Solvent-Resistant Cotton Cloth Tape

Excellent for silkscreen processing, waterproof packaging, and seaming sidewall building materials. It's also good for sealing cans, barrels, and formed duct joints. Tape is polyethylene-coated cloth with a rubber adhesive that leaves no residue upon removal. Temperature range is 40° to 200° F; apply at 40° to 90° F. Supplied on a cardboard spool. Color is white.

Wd.	Lg., yds.	Thick.	Spool ID	Tensile Strength, lbs./in. wd.	Adhesion to Steel, oz./in. wd.		Roll
2″	60	0.012″	3″	33	75	**76985A1**	$17.88
3″	60	0.012″	3″	33	75	**76985A2**	26.77

Butyl-Rubber Sealing Tape

An economical alternative to aluminum flashing tape, use this butyl tape to patch and seal metal ducts, gutters, and flashing; metal buildings and roofs; plus glass and nonporous surfaces. Tape is nonstaining, odorless, and paintable. It has permanent resilience and elongation properties, and won't crack, sag, or harden even under severe weather conditions.

Tape is 0.125″ thick. Temperature range is –20° to +180° F; apply at +40° to +140° F. Tape is supplied on a cardboard spool. Color is black.

Wd.	Lg., yds.	Spool ID		Roll
1½″	16	2″	76385A15	$35.56
2½″	8	2″	76385A16	34.38
8″	8	2″	76385A17	83.33

Butyl-Coated PVC Foam Sealing Tape

Get a secure seal and protect against water and dust penetration. A butyl adhesive sealant completely surrounds a layer of PVC (polyvinyl chloride) foam tape, resulting in a sticky, flexible tape that readily conforms to corners and irregular shapes. Use it to seal metal to metal, to fill gaps on freezers and windows, and for marine applications. Comes with an easy-release liner.

Temperature range is –15° to +160° F; apply at +50° to +125° F. Tape is supplied on a cardboard spool. Color is black.

Wd.	Thick.	Lg., yds.	Spool ID		Roll
⅜″	⅛″	26	3″	75875A661	$20.07
½″	⅛″	26	3″	75875A662	26.89
½″	3/16″	17	3″	75875A663	19.04

Outdoor Weatherproofing Tape

Ideal for weatherstripping, holding plastic sheeting to outside windows, and sealing unused windows and hatches; this tough polyethylene tape seals gaps to keep out cold, heat, dirt, and moisture.

Tape is 0.006″ thick and consists of a 0.005″ thick polyethylene film with 0.001″ thick acrylic adhesive. Temperature range is –45° to +176° F; apply at temperatures above +50° F. Tape is supplied on a plastic spool. Color is clear.

Wd.	Lg., yds.	Spool ID		Roll
2″	16	1½″	1228A56	$5.94

Solvent-Resistant Polyester Tape—
Adhesive on Both Sides

Hold and mount metal, glass, wood, and most plastics even where solvents are a concern. Tape includes a paper liner. Temperature range is –40° to +150° F; apply at +70° to +100° F. Supplied on a cardboard spool.

Not recommended for use in direct sunlight and other UV-light sources.

Standard—0.004″ thick and consists of a 0.0005″ thick polyester film with 0.00175″ of acrylic adhesive on each side. Color is clear.

High Shear Strength—Ideal for applications where tape must withstand high shear force, or stress, without ripping. Tape is 0.004″ thick and consists of a 0.001″ thick polyester film with 0.0015″ of rubber adhesive on each side. Color is off-white.

Wd.	Lg., yds.	Spool ID		Roll
Standard				
½″	36	3″	7602A52	$20.44
¾″	36	3″	7602A56	27.27
1″	36	3″	7602A53	34.07
1½″	36	3″	7602A58	51.12
2″	36	3″	7602A54	68.15
High Shear Strength				
½″	36	3″	75955A671	21.54
¾″	36	3″	75955A672	28.70
1″	36	3″	75955A673	35.87

3M Light-Blocking Litho Tape #616

This tape blocks out light that can affect photo-sensitive film and plates; yet it's translucent, so you can see work underneath. Also known as Ruby Red lithographers' tape, it is 0.0024″ thick and consists of 0.0016″ thick UPVC (unplasticized polyvinyl chloride) film with a 0.0008″ thick transfer-resistant rubber adhesive. Handles temperatures up to 120° F; apply at 40° to 120° F. Supplied on a plastic spool with a 3″ ID; roll diameter is 4¼″.

Wd.	Lg., yds.		Roll
¼″	72	7691A72	$9.31
½″	72	7691A74	15.51
1″	72	7691A76	26.79
2″	72	7691A78	53.54

Gap-Filling Expandable Foam Sealant Tape

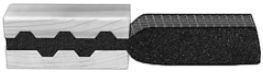

Tape comes compressed and gradually expands to follow contours and fill voids. Ideal for joints in metal buildings and roofs as well as for expansion/compression joints affected by movement due to thermal expansion and contraction. Use as a gasket in nonmoving applications where material is held at a high degree of compression. Also use as an alternative to caulk, liquids, and butyl-tape sealants.

Tape is made of polyurethane foam impregnated with an acrylic-modified asphalt emulsion. It's UV stable, has excellent mildew resistance, and will not dry out and become hard or brittle. Adhesive is on one side. Temperature range is –40° to +185° F; apply at same range if installed as a gasket and apply at +40° to +185° F if installed as an expanded sealant. Does not include a spool. Color is black.

Wd.	Lg., ft.	Thickness: Compressed	Thickness: Expanded		Each
1″	13	5/16″	1¼″	7650A12	$17.76
1″	13	⅜″	1½″	7650A13	23.88
1″	13	½″	2″	7650A14	26.34
1″	19½	¼″	1″	7650A11	20.67
2″	13	½″	2″	7650A15	52.36
3″	6½	¾″	3″	7650A16	56.93

Cloth Tape—
Adhesive on Both Sides

Excellent for mounting, holding, and splicing. Also good for installing carpeting, padding, and vinyl on stairways and floors. Tape is cotton cloth with a rubber adhesive on each side and an easily removable polyethylene film liner.

Temperature range is 40° to 200° F; apply at 40° to 90° F. Supplied on a cardboard spool with a 3″ ID. Color is natural.

Not recommended for use in direct sunlight or other UV-light sources.

Standard tape is 0.013″ thick.

Flame-retardant tape is 0.014″ thick and meets FAR (Federal Aviation Regulation) 25.853(a).

Also Available: Black polypropylene tape for outdoor use between 0° and 120° F. Fungus resistant. Length is 36 yards. Please ask for 77195A9 and specify width: 1″, 1½″, 2″, 3″, 4″, or 6″.

Wd.	Lg., yds.	Case Qty.		Roll: Partial Case	Roll: Full Case
Standard					
1″	25	24	76125A17	$9.74	$8.25
2″	25	12	76125A18	19.43	16.45
3″	25	8	76125A21	28.74	24.63
Flame Retardant					
1″	25	24	76125A29	15.00	12.68
2″	25	24	76125A19	30.44	26.92
3″	25	8	76125A24	42.17	36.15

Masking Tape—
Adhesive on Both Sides

This tape has a paper liner and is supplied on a cardboard spool.

General Purpose—Made of strong, white, flat-back paper that's coated with a rubber adhesive to bond to most surfaces. Ideal for general purpose bonding and laminating, including picture hanging and golf club grip repair. Tape is 0.007″ thick and consists of 0.0045″ thick paper with 0.00125″ of adhesive on each side. Temperature range is 20° to 180° F; apply at 40° to 120° F. Color is tan. Meets Fed. Spec. CID A-A-180C, Type II.

Not recommended for use in direct sunlight or other UV-light sources.

For Smooth Surfaces—Sticks well to clean, smooth surfaces. Ideal for splicing and bonding paper, foil, and fabric. Tape is 0.006″ thick and consists of 0.003″ thick paper coated with 0.001″ of high-shear (able to withstand high stress without ripping) rubber adhesive on both sides. Temperature range is –30° to +150° F; apply at +70° to +100° F. Color is off-white.

Wd.	Lg., yds.	Spool ID		Roll
General Purpose				
⅜″	36	3″	76405A23	$5.12
½″	36	3″	76405A11	5.58
¾″	36	3″	76405A12	7.64
1″	36	3″	76405A13	9.49
1½″	36	3″	76405A14	13.90
1¾″	36	3″	76405A24	17.86
2″	36	3″	76405A15	21.97
3″	36	3″	76405A17	31.14
4″	36	3″	76405A25	42.90
For Smooth Surfaces				
¼″	36	3″	75985A665	11.56
½″	36	3″	75985A666	17.36
¾″	36	3″	75985A667	23.14
1″	36	3″	75985A668	28.92
2″	36	3″	75985A671	54.29
3″	36	3″	75985A672	78.25

General Purpose Polyethylene Tape—
Adhesive on Both Sides

With excellent adhesion to irregular and porous surfaces, this tape is perfect for general holding and splicing. It's also good for quick, easy tacking of carpet edges.

Tape is 0.009″ thick and consists of a 0.003″ thick polyethylene film with 0.003″ of aggressive rubber adhesive on each side. Also has a paper liner. Temperature range is –40° to +120° F; apply at +70° to +100° F. Supplied on a cardboard spool. Color is white.

Not recommended for use in direct sunlight or other UV-light sources.

Wd.	Lg., yds.	Spool ID		Roll
½″	36	3″	77185A21	$15.44
¾″	36	3″	77185A22	20.58
1″	36	3″	77185A23	25.73
2″	36	3″	77185A24	52.84
3″	36	3″	77185A25	79.27

Removable Vinyl Tape—
Adhesive on Both Sides

The inner side is a permanent adhesive, the outer side is a tacky, reusable adhesive; ideal for temporary holding and applications requiring the repositioning of items such as removable stickers and labels. Tape is UV and solvent resistant.

Tape is 0.0034″ thick and consists of a 0.0014″ thick polyvinyl chloride film with 0.001″ of adhesive on each side. There is no liner. Temperature range is –60° to +125° F; apply at +70° to +100° F. Supplied on a cardboard spool. Color is clear.

Wd.	Lg., yds.	Spool ID		Roll
¼″	72	3″	75975A655	$14.56
½″	72	3″	75975A656	21.85
¾″	72	3″	75975A657	27.85
1″	72	3″	75975A658	37.36

Light Duty Polyethylene Foam Tape—Adhesive on Both Sides

An economical way to bond, seal, and absorb sound and vibration. This polyethylene foam stretches more easily than polyurethane and conforms to irregular surfaces. Closed-cell construction. Choose tape with rubber or acrylic adhesive on both sides. Tape has peel-off paper liner. Supplied on a cardboard spool with a 3″ ID. **To Order:** Please specify color: black or white.

Note: For polyethylene foam tape with adhesive on one side, see page 3562.

With Rubber Adhesive—Has a high initial tack, adheres to a wide variety of surfaces, and is moisture resistant. Temperature range is –20° to +120° F; apply at +70° to +100° F (unless noted). Can be used indoors and outdoors, but is not recommended for long-term outdoor use or direct exposure to UV light.

With Acrylic Adhesive—This UV-resistant tape is ideal for indoor/outdoor adhesion to plastics, wood, and metals. Its adhesive bond increases over time. Temperature range is –20° to +158° F; apply at +70° to +100° F.

Wd.	Total Thick.	5-yd. Rolls	Roll	72-yd. Rolls	Roll
With Rubber Adhesive					
1/2″	0.031″	7598A911	$3.93	7598A66	$13.04
3/4″	0.031″	7598A912	5.20	7598A67	22.02
1″	0.031″	7598A913	6.59	7598A68	29.34
				36-yd. Rolls	
1/2″	0.063″	7598A914	3.81	7598A27	$9.82
3/4″	0.063″	7598A915	5.09	7598A28	14.74
1″	0.063″	7598A916	6.41	7598A29	19.64
				18-yd. Rolls	
1/2″	0.125″	—	—	7598A71 ♦	$8.76
1″	0.125″	—	—	7598A72 ♦	14.70
With Acrylic Adhesive				**72-yd. Rolls**	
1/2″	0.031″	7598A921	4.22	7598A22	$14.60
3/4″	0.031″	7598A922	5.66	7598A23	21.92
1″	0.031″	7598A923	7.22	7598A24	29.19
2″	0.031″	7598A924	13.00	7598A25	58.44
				36-yd. Rolls	
1/2″	0.063″	7598A925	4.33	7598A55	$11.60
3/4″	0.063″	7598A926	5.90	7598A56	17.39
1″	0.063″	7598A927	7.45	7598A57	23.19
2″	0.063″	7598A928	13.46	7598A58	45.46

♦ Temperature range is –20° to +160° F; apply at +60° to +85° F. Offered only in white.

Foam Tape Shapes—Adhesive on Both Sides

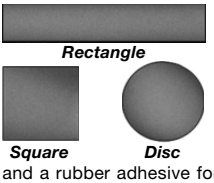

The same as the polyethylene and polyurethane foam tapes on this page, but cut into time-saving shapes. Shapes have adhesive on both sides and an easy-release kraft paper liner. Tape is 0.063″ thick. Color is white. Not recommended for use in direct sunlight or other UV-light sources.

Polyethylene—General-purpose mounting tape with closed-cell polyethylene foam and a rubber adhesive for an instant hold. It's more economical and conforms to irregular surfaces better than polyurethane. Temperature range is –20° to +158° F; apply at +60° to +85° F. For indoor use only.

Polyurethane—Offers greater durability and higher internal strength than polyethylene foam tape. Has high-performance closed-cell polyurethane foam with acrylic adhesive. Temperature range is –40° to +220° F; apply at +65° to +85° F. For indoor and outdoor use.

Size, Wd.×Lg.	Polyethylene Pkg. Qty.	Polyethylene Pkg.	Polyurethane Pkg. Qty.	Polyurethane Pkg.
Rectangles				
3/4″×1 1/2″	256	75785T87	$8.82	256	76535A31	$17.72
3/4″×4 1/2″	40	75785T83	5.84	40	76535A33	11.62
Squares						
1/2″ sq.	256	75785T11	4.16	256	76535A21	6.13
3/4″ sq.	256	75785T12	5.15	256	76535A22	9.40
1″ sq.	252	75785T13	7.38	252	76535A23	14.78
Discs						
3/4″ dia.	100	75785T26	5.47	27	76535A76	1.56
1″ dia.	100	75785T27	10.17	25	76535A77	2.97

Multipurpose Polyurethane Foam Tape—Adhesive on Both Sides

With excellent temperature resistance plus high internal strength and holding power, this tape is ideal for many mounting and holding applications. Foam has an acrylic adhesive on both sides. It absorbs shock, accommodates thermal expansion, and attaches well to rigid surfaces. Supplied on a cardboard spool (unless noted).

Note: For polyurethane foam tape with adhesive on one side, see pages 3560-3561.

Indoor Tape

Open-cell foam construction. Temperature range is –20° to +220° F; apply at +70° to +100° F. Tape has a paper liner. 5-yd. rolls are supplied on a plastic spool.

Wd.	Color	Spool ID	5-yd. Rolls	Roll	72-yd. Rolls	Spool ID	Roll
0.031″ Thick							
1/4″	Off-White	1 1/2″	7626A211	$9.67	3″	7626A44	$35.83
1/2″	Black	1 1/2″	7626A213	11.15	3″	7626A81	65.56
1/2″	Off-White	1 1/2″	7626A212	10.43	3″	7626A116	52.16
3/4″	Black	1 1/2″	7626A215	13.11	3″	7626A82	87.43
3/4″	Off-White	1 1/2″	7626A214	13.24	3″	7626A111	82.74
1″	Black	1 1/2″	7626A217	16.39	3″	7626A83	109.29
1″	Off-White	1 1/2″	7626A216	15.51	3″	7626A112	103.42
1 1/2″	Off-White	1 1/2″	7626A218	20.17	3″	7626A126	155.14
2″	Off-White	1 1/2″	7626A219	23.28	3″	7626A117	179.07
3″	Off-White	1 1/2″	7626A221	29.54	3″	7626A45	268.59
4″	Off-White	1 1/2″	7626A222	36.23	3″	7626A47	329.35
0.063″ Thick						**36-yd. Rolls**	
1/4″	Off-White	1 1/2″	7626A231	9.72	3″	7626A52	$26.28
1/2″	Black	1 1/2″	7626A233	11.37	3″	7626A91	39.20
1/2″	Off-White	1 1/2″	7626A232	10.53	3″	7626A113	35.11
3/4″	Black	1 1/2″	7626A235	15.15	3″	7626A92	52.24
3/4″	Off-White	1 1/2″	7626A234	14.23	3″	7626A114	41.86
1″	Black	1 1/2″	7626A237	18.29	3″	7626A93	65.32
1″	Off-White	1 1/2″	7626A238	15.18	3″	7626A115	52.34
1 1/2″	Off-White	1 1/2″	7626A239	20.41	3″	7626A118	78.51
2″	Off-White	1 1/2″	7626A241	27.22	3″	7626A119	104.70
3″	Off-White	1 1/2″	7626A242	37.68	3″	7626A55	157.00
0.125″ Thick							
1/4″	Off-White	1 1/2″	7626A251	10.57	3″	7626A63	31.10
1/2″	Off-White	1 1/2″	7626A252	13.06	3″	7626A121	46.65
3/4″	Off-White	1 1/2″	7626A253	18.68	3″	7626A122	71.86
1″	Off-White	1 1/2″	7626A255	23.36	3″	7626A123	89.83
1 1/2″	Off-White	1 1/2″	7626A256	35.03	3″	7626A124	134.72
2″	Off-White	1 1/2″	7626A257	43.11	3″	7626A125	179.62
3″	Off-White	1 1/2″	7626A258	51.33	3″	7626A67	233.31
4″	Off-White	1 1/2″	7626A259	64.29	3″	7626A68	292.22
0.250″ Thick						**18-yd. Rolls**	
1/4″	Off-White	1 1/2″	7626A271	15.67	3″	7626A71	$29.57
1/2″	Off-White	1 1/2″	7626A272	19.07	3″	7626A131	44.35
3/4″	Off-White	1 1/2″	7626A273	27.20	3″	7626A74	59.12
1″	Off-White	1 1/2″	7626A274	33.26	3″	7626A132	73.90
2″	Off-White	1 1/2″	7626A275	60.60	3″	7626A133	147.80

Indoor/Outdoor Tape

Foam provides excellent weather resistance. Closed-cell construction. Great for mounting signs and exterior trim on doors and buildings and for attaching marine emblems. Temperature range is –40° to +200° F; apply at +60° to +125° F. Tape is black with a polyethylene liner.

Wd.	Color	Spool ID	33-yd. Rolls	Roll	66-yd. Rolls	Roll
0.030″ Thick						
1/4″	Black	3″	75845A711	$23.74	75845A669	$41.15
1/2″	Black	3″	75845A712	41.47	75845A671	66.15
3/4″	Black	3″	75845A713	62.33	75845A672	87.31
1″	Black	3″	75845A714	83.11	75845A673	109.23
0.062″ Thick						
1/4″	Black	3″	75845A721	31.92	75845A679	50.39
1/2″	Black	3″	75845A722	59.29	75845A681	87.31
3/4″	Black	3″	75845A723	88.92	75845A682	125.77
1″	Black	3″	75845A724	118.48	75845A683	163.08

Conformable Neoprene EPDM/SBR Foam Tape—Adhesive on Both Sides

Conforms better than other foam tapes and is highly compressible—great for gasketing, mounting, and sound/vibration dampening. Tape can be used indoors and out, but it is not recommended for direct exposure to UV light.

Tape has an acrylic adhesive on both sides and a peel-off paper liner. Temperature range is 0° to 158° F; apply at 50° to 80° F. Tape is supplied on a cardboard spool. Color is black. *Note:* For neoprene foam tape with adhesive on one side, see page 3552.

Wd.	Lg., yds.	Thick.	Spool ID	Roll	Wd.	Lg., yds.	Thick.	Spool ID	Roll
1/2″	16	0.188″	3″	75315A53	3/4″	25	0.125″	3″	75315A34	$15.90
1/2″	16	0.250″	3″	75315A71	1″	16	0.188″	3″	75315A57	17.13
1/2″	25	0.125″	3″	75315A32	1″	16	0.250″	3″	75315A75	20.21
3/4″	16	0.188″	3″	75315A55	1″	25	0.125″	3″	75315A36	20.38
3/4″	16	0.250″	3″	75315A73						

3M VHB (Very High Bond) Foam Tape—Adhesive on Both Sides

Looking for a tape that can take the place of rivets, spot welds, liquid adhesives, and other permanent fasteners? That's exactly what this acrylic foam tape does. It has an acrylic adhesive on both sides that is "built into the tape," giving it super-strong, long-lasting holding power that is significantly higher than other tapes. Tape has closed-cell construction, conforms to irregular surfaces, and can be used indoors and outdoors. The 1- and 5-yard rolls are supplied on a 1½″ ID plastic spool, and the 36- and 72-yard rolls are supplied on a 3″ ID cardboard spool.

Standard Tape

Ideal for bonding aluminum, glass, stainless steel, and sealed wood. Temperature range is –40° to +200° F (unless noted); apply at +50° to +100° F (unless noted).

Wd.	Thick.	5-yd. Rolls	Roll	72-yd. Rolls	Roll
3M #4905 *(clear with polyethylene liner)*					
½″	0.020″	76665A81	$17.90	76665A67	$110.02
¾″	0.020″	76665A82	19.70	76665A68	146.69
1″	0.020″	76665A83	26.28	76665A69	171.76
2″	0.020″	76665A88	37.47	—	—
6″	0.020″	76665A61■	26.83	—	—
12″	0.020″	76665A62■	53.65	—	—
3M #4929 *(black with polyester liner)*					
½″	0.025″	75935A11	19.11	75935A41	166.09
¾″	0.025″	75935A12	21.74	75935A42	221.45
1″	0.025″	75935A13	29.01	75935A43	237.70
3M #4930 *(white with paper liner)*					
½″	0.025″	75935A14	21.34	75935A651	157.91
¾″	0.025″	75935A15	23.92	75935A652	210.55
1″	0.025″	75935A16	31.94	75935A653	225.99
3M #4910 *(clear with polyethylene liner)*				36-yd. Rolls	
½″	0.040″	76665A84	18.17	76665A73	$58.03
¾″	0.040″	76665A85	20.15	76665A74	77.38
1″	0.040″	76665A86	26.87	76665A75	96.72
2″	0.040″	76665A89	39.56	76665A76	181.19
6″	0.040″	76665A63■	29.74	—	—
12″	0.040″	76665A64■	59.47	—	—
3M #4949 *(black with polyester liner)*					
½″	0.045″	75935A17	22.94	75935A52	95.41
¾″	0.045″	75935A18	26.10	75935A53	127.23
1″	0.045″	75935A19	34.82	75935A54	136.56
3M #4950 *(white with paper liner)*					
½″	0.045″	75935A21	21.64	75935A655	82.35
¾″	0.045″	75935A22	24.37	75935A656	109.81
1″	0.045″	75935A23	32.56	75935A657	137.26
2″	0.045″	75935A24	65.12	75935A658	235.72
6″	0.045″	75935A32■	38.70	—	—
12″	0.045″	75935A33■	77.40	—	—
3M #4951 *(white with polyester liner)*●					
½″	0.045″	75935A25	23.30	75935A694	99.05
¾″	0.045″	75935A26	26.57	75935A699	132.06
1″	0.045″	75935A27	35.42	75935A71	141.75
3M #4959 *(white with polyester liner)*♠					
½″	0.120″	75935A28	24.70	75935A661	113.09
¾″	0.120″	75935A29	28.41	75935A662	150.80
1″	0.120″	75935A31	37.87	75935A663	161.86

■ One-yard roll. ● Apply at temperatures above +32°F.
♠ Temperature range is –40° to +300° F.

Tape for Hard-to-Bond Surfaces

Use for bonding to powder-coated surfaces, polypropylene, polystyrene, steel, aluminum, and glass. Also great for bonding to ABS, rigid vinyl, nylon, and enamel and epoxy paint surfaces. Temperature range is –40° to +160° F; apply at +50° to +100° F.

Wd.	Thick.	5-yd. Rolls	Roll	36-yd. Rolls	Roll
3M #4952 *(white with paper liner)*					
½″	0.045″	76675A21	$19.76	76675A68	$111.12
¾″	0.045″	76675A22	25.43	76675A71	148.15
1″	0.045″	76675A23	33.93	76675A73	185.19

Multipurpose Tape

This multipurpose tape is highly conformable and ideal for bonding most plastics. It bonds to plasticized vinyl as well as to steel, aluminum, glass, and other hard-to-bond materials such as ABS, rigid vinyl, nylon, and enamel and epoxy paint surfaces. Temperature range is –31° to +200° F (unless noted); apply at +60° to +100° F. UL 746C listed.

Wd.	Thick.	5-yd. Rolls	Roll	72-yd. Rolls	Roll
3M #4926 *(gray with paper liner)*					
½″	0.015″	8127A81	$19.81	8127A71	$135.41
¾″	0.015″	8127A82	23.43	8127A72	180.53
1″	0.015″	8127A83	27.08	8127A73	225.65
3M #4936 *(gray with paper liner)*					
½″	0.025″	8127A84	17.23	8127A74	143.86
¾″	0.025″	8127A85	19.79	8127A75	185.64
1″	0.025″	8127A86	26.26	8127A76	239.78
3M #4941 *(dark gray with paper liner)*♣				36-yd. Rolls	
½″	0.045″	8127A51	19.24	8127A55	$81.68
¾″	0.045″	8127A52	23.16	8127A56	109.08
1″	0.045″	8127A53	27.10	8127A57	136.12
2″	0.045″	8127A61	46.14	8127A62	234.64
6″	0.045″	8127A54■	39.16	—	—
12″	0.045″	8127A58■	78.32	—	—
3M #4991 *(gray with polyethylene liner)*					
½″	0.090″	8127A87	20.54	8127A77	82.47
¾″	0.090″	8127A88	23.69	—	—
1″	0.090″	8127A89	31.43	8127A79	142.04

♣ Temperature range is –40° to +200° F. ■ One-yard roll.

High-Temperature Tape

Withstands higher temperatures. Great for bonding metal parts before painting. Temperature range is –31° to +300° F; apply at +50° to +100° F. UL 746C listed.

Wd.	Thick.	5-yd. Rolls	Roll	36-yd. Rolls	Roll
3M #4646 *(dark gray with polyethylene liner)*					
½″	0.025″	7201A41	$16.79	7201A51	$50.89
¾″	0.025″	7201A42	23.33	7201A52	60.43
1″	0.025″	7201A43	27.44	7201A53	84.82
3M #4611 *(dark gray with polyethylene liner)*					
½″	0.045″	7201A21	17.67	7201A11	49.80
¾″	0.045″	7201A22	24.35	7201A12	66.39
1″	0.045″	7201A23	28.52	7201A13	82.99

Low-Application-Temperature Tape

Perfect when you need to apply in low temperatures. Temperature range is –31° to +200° F; apply at +32° to +100° F.

Wd.	Thick.	5-yd. Rolls	Roll	36-yd. Rolls	Roll
3M #4943F *(gray with polyester liner)*					
½″	0.045″	3744A11	$23.60	3744A16	$109.57
¾″	0.045″	3744A12	30.87	3744A17	146.08
1″	0.045″	3744A13	38.14	3744A18	182.61
2″	0.045″	3744A14	62.26	—	—
3M #4957F *(gray with polyester liner)*					
½″	0.062″	3744A21	25.57	3744A26	117.23
¾″	0.062″	3744A22	29.28	3744A27	156.31
1″	0.062″	3744A23	38.78	3744A28	195.39
2″	0.062″	3744A24	65.59	—	—

3M #4941 VHB (Very High Bond) Foam Tape Shapes—Adhesive on Both Sides

Same as the multipurpose 3M VHB acrylic foam tape on this page, but cut into shapes for your convenience. These strong-bonding, versatile rectangles, squares, and discs are highly conformable and can be used on metal, plastic, and glass. Shapes have an acrylic adhesive on both sides. Tape is 0.045″ thick. Temperature range is –40° to +200° F; apply at +60° to +100° F. Color is gray.

Size, Wd.×Lg.	Pkg. Qty.		Pkg.
Rectangles			
½″×2″	5	7170A31	$10.51
½″×3″	5	7170A32	11.84
½″×4″	5	7170A33	13.15
¾″×2″	5	7170A34	12.17
¾″×3″	5	7170A35	13.48
¾″×4″	5	7170A36	14.80
1″ ×2″	5	7170A37	13.49
1″ ×3″	5	7170A38	14.02
1″ ×4″	5	7170A39	14.68

Size	Pkg. Qty.		Pkg.
Squares			
½″ sq.	5	7170A21	$7.37
¾″ sq.	5	7170A22	8.02
1″ sq.	5	7170A23	9.41
1½″ sq.	5	7170A24	11.70
2″ sq.	5	7170A25	14.73
Discs			
½″ dia.	5	7170A11	7.37
¾″ dia.	5	7170A12	8.02
1″ dia.	5	7170A13	9.41
1½″ dia.	5	7170A14	11.70
2″ dia.	5	7170A15	14.73

Rectangle

Square

Disc

Removable Acrylic Foam Tape—Adhesive on Both Sides

Foam and adhesive are both acrylic, so they won't separate when removed from a surface. Plus, tape has excellent resistance to direct-sunlight exposure. Adhesive is blended into the foam on both sides. Tape has a clear polyester-film liner. Tape is 0.031″ thick. Temperature range is 30° to 175° F; apply at 50° to 70° F. Color is clear. The 4-yard rolls are supplied on a 1½″ ID plastic spool, and the 27-yard rolls are supplied on a 3″ ID cardboard spool.

Wd.	4-yd. Rolls	Roll	27-yd. Rolls	Roll
½″	8117A81	$14.70	8117A63	$57.93
¾″	8117A82	17.07	8117A65	77.25
1″	8117A83	19.47	8117A67	96.55

Weather-Resistant Vinyl Foam Tape—Adhesive on Both Sides

Because of its high strength and ability to conform well to irregular surfaces, this vinyl foam tape is excellent for mounting identification signs and nameplates outdoors. UV and solvent resistant, it's made of closed-cell PVC (polyvinyl chloride) foam with an acrylic adhesive blended into the foam surface on both sides. Tape has a paper liner. Temp. range is –20° to +150° F; apply at +70° to +100° F. The 5-yard rolls are supplied on a 1½″ ID cardboard spool, and the 36- and 72-yard rolls are supplied on a 3″ ID cardboard spool (unless noted). 0.125″ thick tape is black. **To Order:** Please specify color for 0.031″ thick tape and 0.063″ thick tape: black or white.

Note: For vinyl foam tape with adhesive on one side, see page 3553.

Wd.	5-yd. Roll	Roll	72-yd. Roll	Roll
0.031″ Thick				
½″	76545A85	$19.37	76545A11	$127.17
¾″	76545A86	21.55	76545A12	169.56
1″	76545A87	23.55	76545A13	211.95

Wd.	5-yd. Roll	Roll	36-yd. Roll	Roll
0.063″ Thick				
¼″	76545A88	$18.06	76545A21	$48.14
½″	76545A89	20.33	76545A14	72.20
¾″	76545A91	22.62	76545A15	96.26
1″	76545A92	24.89	76545A16	120.30
1½″	76545A93	30.56	76545A24	180.12

Wd.	5-yd. Roll	Roll	36-yd. Roll	Roll
0.125″ Thick				
¼″	76545A94	$19.46	76545A31★	$62.63
½″	76545A95	22.41	76545A17	93.95
¾″	76545A96	25.38	76545A18	125.26
1″	76545A97	28.35	76545A19	156.58
2″	76545A98	47.68	76545A32	313.16

★ Spool is plastic.

About Hook and Loop

Just like burrs grab onto your clothing, these synthetic hooks aggressively grab fabric loops. When mated, the hook and loop gripping elements make a sturdy and reliable fastener. You can even use the hook alone—it will grab onto existing fabric, such as carpeting and upholstery. Use for bundling cable, holding matting in place, putting up signs, holding down tarps, creating display boards, holding tools, and temporary fixturing.

Cycle life is the number of openings and closings a mated hook and loop will endure. This is determined by opening and closing the fastener until the performance reaches 50% of its initial value.

Shear strength is the amount of force required to make the hook slide over the loop.

Pull-apart strength is the amount of force required to pull apart the hook from the loop.

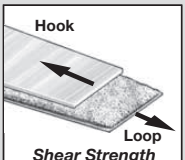

Shear Strength

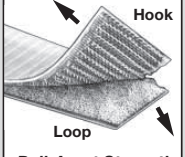

Pull-Apart Strength

	Page	Cycle Life	Shear Strength, psi	Pull-Apart Strength, piw●
Super-Adhesive All-Purpose Nylon Hook and Loop	3454	200	13	1
All-Purpose Nylon Hook and Loop	3455	200	14	1.2
Elastic All-Purpose Nylon Loop	3455	200	4.5	0.7
Nylon Hook and Loop Shapes—Dots	3455	10,000	12	0.75
Nylon Hook and Loop Shapes—Tabs	3455	5,000	24.5	1.7
Nylon Hook and Loop Shapes—Strips and Washers	3455	200	13	1
Vinyl-Bonding Nylon Hook and Loop	3456	5,000	30.7	4
One-Piece Self-Gripping Hook and Loop Straps	3456	50	23	0.5
Flame-Retardant Nylon Hook and Loop	3456	5,000	5.93	0.8
Flame-Resistant Hook and Loop	3456	100	8.1	0.8
Heat-Resistant Stainless Steel Hook and Loop	3456	10	15	0.4
Super-Wide Hook and Loop	3456	100	6	0.6
Weather-Resistant Polyester Hook and Loop	3457	3,500	14	0.8
Marine Grade Adhesive-Back Polyester Hook and Loop	3457	3,500	14	0.8
Self-Lock Mushroom-Head Fasteners	3457	500	18	0.7
Mil. Spec. Nylon Hook and Loop	3457	5,000	12	1.2
Super-Grip Nylon Double-Headed Hook	3457	100	23.4	3.1

●Pounds of force required to pull apart a 1″ wide strip.

Super-Adhesive All-Purpose Nylon Hook and Loop

An extra-strong rubber adhesive backing sticks where others fail, especially to polypropylene and polyethylene. It also adheres to most metals, plastics, and painted surfaces. Hook and loop is 0.188″ thick when mated. Hook is 0.125″ thick and loop is 0.125″ thick.

Material temperature range is –70° to +200° F. Adhesive temperature range is –20° to +120° F; adhesive application range is +68° to +75° F. Choose combination packs that include both hook and loop material in the lengths indicated, or order hook and loop separately.

Hook and Loop Combination Packs

Wd.	5-ft. Length	Pkg.	10-ft. Length	Pkg.	15-ft. Length	Pkg.	30-ft. Length	Pkg.	50-ft. Length	Pkg.	75-ft. Length	Pkg.
Black												
1″	94985K811	$8.41	94985K812	$13.82	94985K813	$20.64	94985K814	$37.52	94985K815	$55.18	94985K816	$73.57
2″	94985K911	14.94	94985K912	26.77	94985K913	39.96	94985K914	72.65	94985K915	106.84	94985K916	142.45
White												
1″	94985K831	8.41	94985K832	13.82	94985K833	20.64	94985K834	37.52	94985K835	55.18	94985K836	73.57
2″	94985K931	14.94	94985K932	26.77	94985K933	39.96	94985K934	72.65	94985K935	106.84	94985K936	142.45

Hook

Wd.	5-ft. Length	Per Lg.	10-ft. Length	Per Lg.	15-ft. Length	Per Lg.	30-ft. Length	Per Lg.	50-ft. Length	Per Lg.	75-ft. Length	Per Lg.
Black												
1″	94985K667	$4.37	94985K614	$7.69	94985K612	$11.48	94985K613	$20.88	94985K668	$30.70	94985K961	$40.94
2″	94985K639	7.54	94985K665	14.90	94985K632	22.24	94985K634	40.43	94985K603	59.46	94985K636	79.28
White												
1″	94985K112	4.37	94985K113	7.69	94985K712	11.48	94985K711	20.88	94985K114	30.70	94985K713	40.94
2″	94985K115	7.54	94985K116	14.90	94985K731	22.24	94985K732	40.43	94985K117	59.46	94985K963	79.28

Loop

Wd.	5-ft. Length	Per Lg.	10-ft. Length	Per Lg.	15-ft. Length	Per Lg.	30-ft. Length	Per Lg.	50-ft. Length	Per Lg.	75-ft. Length	Per Lg.
Black												
1″	94985K658	$4.37	94985K655	$7.69	94985K652	$11.48	94985K654	$20.88	94985K664	$30.70	94985K964	$40.94
2″	94985K675	7.54	94985K674	14.90	94985K672	22.24	94985K673	40.43	94985K118	59.46	94985K965	79.28
White												
1″	94985K119	4.37	94985K121	7.69	94985K752	11.48	94985K751	20.88	94985K122	30.70	94985K966	40.94
2″	94985K123	7.54	94985K124	14.90	94985K771	22.24	94985K772	40.43	94985K125	59.46	94985K967	79.28

For information about hook and loop, see page 3454.

All-Purpose Nylon Hook and Loop

A combination of moisture and chemical resistance makes this woven nylon hook and loop ideal for most holding applications. Hook and loop is 0.125″ thick when mated. Hook is 0.08″ thick and loop is 0.09″ thick. Material temperature range is –70° to +200° F. Adhesive temperature range is –20° to +225° F; adhesive application range is +40° to +90° F. Adhesive is acrylic. Choose combination packs that include both hook and loop material in the lengths indicated, or order hook and loop separately.

To Order: Please specify color: black, white, or beige (unless noted).

Also Available: Elastic all-purpose nylon loop with plain back. Material temperature range is 34° to 210° F. Please ask for 9652K888 and specify length, width, and color.

Wd.	5-ft. Length Pkg.	10-ft. Length Pkg.	15-ft. Length Pkg.	30-ft. Length Pkg.	50-ft. Length Pkg.	75-ft. Length Pkg.
Hook and Loop Combination Packs— *Adhesive Back*						
1/2″	9273K11 $5.67	9273K17 $10.89	9273K24 $14.82	9273K31 $28.33	9273K37 $43.58	——— ———
5/8″	9273K12 6.73	9273K18 11.15	9273K25 14.97	9273K32 29.21	9273K38 47.33	9273K44 $58.43
3/4″	9273K13 7.30	9273K19 11.90	9273K26 17.20	9273K33 31.93	9273K39 49.49	9273K45 63.45
1″	9273K14 7.55	9273K21 12.82	9273K27 18.92	9273K34 34.30	9273K41 51.46	9273K46 68.61
1 1/2″	9273K15 10.84	9273K22 19.63	9273K28 29.80	9273K35 53.13	9273K42 85.84	9273K47 105.98
2″	9273K16 13.62	9273K23 25.41	9273K29 36.28	9273K36 66.26	9273K43 99.16	9273K48 133.05
Hook and Loop Combination Packs— *Plain Back*						
5/8″	9273K49 4.35	9273K55 6.52	9273K61 9.63	9273K66 18.94	9273K72 27.95	9273K77 31.05
3/4″	9273K51 3.79	9273K56 5.68	9273K62 8.39	9273K67 16.50	9273K73 24.35	9273K78♣ 27.05
1″	9273K52 4.46	9273K57 6.70	9273K63 9.89	9273K68 19.45	9273K74 28.70	9273K79 31.89
1 1/2″	9273K53 5.70	9273K58 10.12	9273K64 13.43	9273K69 23.80	9273K75 37.79	9273K81 46.66
2″	9273K54 7.06	9273K59 12.52	9273K65 16.62	9273K71 29.46	9273K76 46.79	9273K82 57.76

Wd.	5-ft. Length Per Lg.	10-ft. Length Per Lg.	15-ft. Length Per Lg.	30-ft. Length Per Lg.	50-ft. Length Per Lg.	75-ft. Length Per Lg.
Hook— *Adhesive Back*						
1/2″	9489K53 $2.97	9489K79 $5.71	9489K629 $7.77	9489K41 $14.85	9489K742 $22.84	——— ———
5/8″	9489K59 3.64	9489K81 6.22	9489K31 9.28	9489K738 16.88	9489K743 24.83	9489K749 $33.10
3/4″	9489K61 3.75	9489K82 6.41	9489K49 9.56	9489K739 17.39	9489K744 25.57	9489K21 34.09
1″	9489K62 4.07	9489K83 6.95	9489K267 10.38	9489K268 18.88	9489K746 27.76	9489K269 37.01
1 1/2″	9489K71 6.23	9489K89 10.64	9489K52 15.89	9489K741 28.89	9489K747 42.48	9489K689 56.64
2″	9489K72 7.27	9489K29 13.66	9489K271 20.39	9489K278 37.07	9489K748 54.51	9489K279 72.68
Hook— *Plain Back*						
5/8″	9489K304 1.67	9489K311 3.69	9489K697 4.78	9489K711 8.33	9489K319 11.60	9489K716 13.65
3/4″	9489K305 1.84	9489K312 4.06	9489K698 5.26	9489K712 9.17	9489K401 12.78	9489K718 15.03
1″	9489K306 2.41	9489K313 5.29	9489K246 6.85	9489K247 11.94	9489K402 16.64	9489K248 19.58
1 1/2″	9489K307 3.35	9489K314 5.91	9489K699 7.83	9489K713 13.88	9489K404 22.04	9489K719 27.21
2″	9489K308 3.94	9489K315 6.96	9489K261 13.44	9489K277 16.37	9489K405 25.99	9489K281 32.09

Wd.	5-ft. Length Per Lg.	10-ft. Length Per Lg.	15-ft. Length Per Lg.	30-ft. Length Per Lg.	50-ft. Length Per Lg.	75-ft. Length Per Lg.
Loop— *Adhesive Back*						
1/2″	9489K147 $2.97	9489K165 $5.71	9489K179 $7.77	9489K187 $14.85	9489K189 $22.84	——— ———
5/8″	9489K148 3.64	9489K166 6.22	9489K101 9.28	9489K104 16.88	9489K191 24.83	9489K108 $33.10
3/4″	9489K149 3.75	9489K167 6.41	9489K102 9.56	9489K105 17.39	9489K197 25.57	9489K109 34.09
1″	9489K691 4.07	9489K168 6.95	9489K213 10.38	9489K214 18.88	9489K198 27.76	9489K215 37.01
1 1/2″	9489K156 6.23	9489K169 10.64	9489K103 15.89	9489K107 28.89	9489K199 42.48	9489K201 56.64
2″	9489K157 7.85	9489K171 14.74	9489K216 22.01	9489K217 40.02	9489K219 58.85	9489K218 78.47
Loop— *Plain Back*						
5/8″	9489K408 1.67	9489K505 3.69	9489K202 4.78	9489K208 8.33	9489K604 11.60	9489K695 13.65
3/4″	9489K409 1.84	9489K506 4.06	9489K206 5.26	9489K209 9.17	9489K605 12.78	9489K696 15.03
1″	9489K501 2.41	9489K507 5.29	9489K287 6.85	9489K288 11.94	9489K606 16.64	9489K289 19.58
1 1/2″	9489K502 3.35	9489K508 5.91	9489K207 7.83	9489K301 13.88	9489K607 22.04	9489K932 27.21
2″	9489K503 3.94	9489K509 6.96	9489K297 9.25	9489K298 16.37	9489K608 25.99	9489K299 32.09

♣ Not available in beige.

Nylon Hook and Loop Shapes

Why waste time measuring and cutting? This nylon hook and loop is already cut. Hook and loop shapes are sold separately.

Strips

These semirigid vinyl strips have a plain back. Easily attach them to rigid surfaces (metal, plastic, wood) by gluing, stapling, screwing, or nailing. Hook and loop is 0.245″ thick when mated; hook is 0.125″ thick and loop is 0.145″ thick. Temperature range is –20° to +200° F; apply above +68° F. Color is black.

Size, Wd. × Lg.	Hook Each	Loop Each
1″ × 48″	9737K11 $6.46	9737K21 $6.17
1 3/4″ × 48″	9737K51 9.17	9737K61 9.17

Tabs

Here's the perfect choice when you need only a small piece of hook and loop. This flexible nylon hook and loop has a rubber adhesive back. Hook and loop is 0.187″ thick when mated; hook is 0.0937″ thick and loop is 0.125″ thick. Material and adhesive temperature range is –20° to +100° F; apply at +68° to +100° F. Color is black.

Size	Pkg. Qty.	Hook Pkg.	Loop Pkg.
3/4″ sq.	10	9737K71 $1.95	9737K81 $1.95

Washers

These rigid vinyl discs have a plain back. Washers can be glued down, or use the 1/8″ diameter center hole for attaching to surfaces with a screw, nail, or rivet. Hook and loop is 0.125″ thick when mated; hook is 0.0625″ thick and loop is 0.0625″ thick. Temperature range is –20° to +190° F; apply at same range. Color is black.

Dia.	Pkg. Qty.	Hook Pkg.	Loop Pkg.
5/8″	50	9735K35 $11.91	9735K45 $11.91
3/4″	50	9735K36 13.41	9735K46 13.41
1 1/8″	25	9735K38 13.14	9735K48 13.13

Dots

These flexible discs have an acrylic adhesive backing. Hook and loop is 0.12″ thick when mated; hook is 0.075″ thick and loop is 0.075″ thick. Material temperature range is –70° to +200° F. Adhesive temperature range is –20° to +225° F; adhesive application range is +50° to +100° F. **To Order:** Please specify color: black or white.

Dia.	Hook Pack of 100 Pkg.	Hook Pack of 250 Pkg.	Hook Pack of 500 Pkg.	Loop Pack of 100 Pkg.	Loop Pack of 250 Pkg.	Loop Pack of 500 Pkg.
1/2″	9736K43 $6.57	9736K11 $14.93	9736K16 $27.14	9736K42 $6.57	9736K22 $14.93	9736K27 $27.14
5/8″	9736K53 8.19	9736K12 18.62	9736K17 33.85	9736K52 8.19	9736K23 18.62	9736K28 33.85
3/4″	9736K63 10.47	9736K13 23.79	9736K18 43.26	9736K62 10.47	9736K24 23.79	9736K29 43.26
7/8″	9736K73 11.72	9736K14 26.64	9736K19 48.44	9736K72 11.72	9736K25 26.64	9736K31 48.44
1 3/8″	9736K33 23.82	9736K15 54.14	9736K21 98.44	9736K34 23.82	9736K26 54.14	9736K32 98.44

For information about hook and loop, see page 3454.

Vinyl-Bonding Nylon Hook and Loop

Adhere this hook and loop to flexible vinyl with the specially formulated acrylic adhesive backing. Hook and loop is 0.13″ thick when mated; hook is 0.0937″ thick and loop is 0.125″ thick. Material and adhesive temperature range is –20° to +120° F; apply at +68° to +100° F. Color is black. Hook and loop are sold separately.

To Order: Please specify length: 15 ft., 30 ft., or 75 ft.

Wd.	Hook	Per Ft.	Loop	Per Ft.
1″	96035K21	$2.09	96035K41	$2.09
2″	96035K62	4.17	96035K82	4.17

One-Piece Self-Gripping Hook and Loop Straps

Polyethylene hooks on one side and nylon loops on the other allow each strap to fasten to itself. Secure bundles by simply wrapping strap around and overlapping the ends. Hook and loop is 0.12″ thick when mated; unmated strap is 0.07″ thick. Temperature range is 0° to 220° F.

Wd.	5-ft. Length	Per Lg.	10-ft. Length	Per Lg.	15-ft. Length	Per Lg.	30-ft. Length	Per Lg.	50-ft. Length	Per Lg.	75-ft. Length	Per Lg.
Black												
1/2″	94905K629	$2.68	94905K115	$4.41	94905K31	$5.20	94905K32	$8.66	94905K121	$12.60	94905K33	$15.75
5/8″	94905K111	3.90	94905K116	6.07	94905K51	7.16	94905K52	11.71	94905K122	17.35	94905K53	21.69
3/4″	94905K112	4.33	94905K117	7.13	94905K41	8.41	94905K42	13.76	94905K123	20.38	94905K43	25.48
1″	94905K113	5.27	94905K118	8.20	94905K61	9.66	94905K62	15.81	94905K124	23.42	94905K63	29.28
1 1/2″	94905K159	6.33	94905K161	10.55	94905K162	11.39	94905K163	19.41	94905K164	31.23	94905K165	42.20
2″	94905K114	8.03	94905K119	13.92	94905K71	15.52	94905K72	28.91	94905K125	43.89	94905K73	53.53
Orange												
1/2″	94905K143	2.68	94905K148	4.41	94905K34	5.20	94905K35	8.66	94905K154	12.60	94905K36	15.75
5/8″	94905K144	3.90	94905K149	6.07	94905K14	7.16	94905K15	11.71	94905K155	17.35	94905K16	21.69
3/4″	94905K145	4.33	94905K151	7.13	94905K44	8.41	94905K45	13.76	94905K156	20.38	94905K46	25.48
1″	94905K146	5.27	94905K152	8.20	94905K24	9.66	94905K25	15.81	94905K157	23.42	94905K26	29.28
2″	94905K147	8.03	94905K153	13.92	94905K87	15.52	94905K88	28.91	94905K158	43.89	94905K89	53.53
White												
1/2″	94905K126	2.68	94905K132	4.41	94905K84	5.20	94905K85	8.66	94905K137	12.60	94905K86	15.75
3/4″	94905K128	4.33	94905K134	7.13	94905K94	8.41	94905K95	13.76	94905K139	20.38	94905K96	25.48
1″	94905K129	5.27	94905K135	8.20	94905K64	9.66	94905K65	15.81	94905K141	23.42	94905K66	29.28
2″	94905K131	8.03	94905K136	13.92	94905K74	15.52	94905K75	28.91	94905K142	43.89	94905K76	53.53

Flame-Retardant Nylon Hook and Loop

This woven nylon hook and loop meets specifications for FAR (Federal Aviation Regulation) 25.853 (a). Hook and loop is 0.125″ thick when mated; hook is 0.0625″ thick and loop is 0.0625″ thick. Material temperature range is –20° to +200° F. Adhesive temperature range is –10° to +130° F; adhesive application range is +65° to +75° F. Color is beige. Choose combination packs that include both hook and loop material in the lengths indicated, or order hook and loop separately.

Hook and Loop Combination Packs

Wd.	5-ft. Length	Pkg.	10-ft. Length	Pkg.	15-ft. Length	Pkg.	30-ft. Length	Pkg.	50-ft. Length	Pkg.	75-ft. Length	Pkg.
Adhesive Back												
5/8″	9776K629	$8.53	9776K74	$17.06	9776K1	$19.78	9776K82	$41.80	9776K86	$59.47	9776K91	$85.30
3/4″	9776K71	7.88	9776K75	15.36	9776K78	22.21	9776K83	40.12	9776K87	63.99	9776K92	89.96
1″	9776K72	8.20	9776K76	18.38	9776K79	26.57	9776K84	47.98	9776K88	76.52	9776K93	107.57
2″	9776K73	19.47	9776K77	38.94	9776K81	50.62	9776K85	95.40	9776K89	135.50	9776K94	194.70
Plain Back												
5/8″	9776K133	4.23	9776K137	8.46	9776K142	9.56	9776K146	18.75	9776K151	29.32	9776K155	42.29
3/4″	9776K134	4.73	9776K138	9.46	9776K143	10.92	9776K147	21.18	9776K152	32.96	9776K156	47.29
1″	9776K135	6.04	9776K139	12.08	9776K144	13.88	9776K148	27.35	9776K153	42.38	9776K157	60.41
2″	9776K136	10.32	9776K141	20.65	9776K145	23.91	9776K149	44.59	9776K154	71.58	9776K158	103.22

Hook

Wd.	5-ft. Length	Per Lg.	10-ft. Length	Per Lg.	15-ft. Length	Per Lg.	30-ft. Length	Per Lg.	50-ft. Length	Per Lg.	75-ft. Length	Per Lg.
Adhesive Back												
5/8″	9776K95	$5.28	9776K111	$9.67	9776K11	$12.31	9776K21	$19.99	9776K115	$30.77	9776K31	$43.97
3/4″	9776K96	7.27	9776K112	13.32	9776K12	16.96	9776K22	30.89	9776K116	45.42	9776K32	60.57
1″	9776K97	8.68	9776K113	15.91	9776K13	20.25	9776K23	36.88	9776K117	54.24	9776K33	72.32
2″	9776K98	15.27	9776K114	28.00	9776K14	35.64	9776K24	64.91	9776K118	95.45	9776K34	127.28

Loop

Wd.	5-ft. Length	Per Lg.	10-ft. Length	Per Lg.	15-ft. Length	Per Lg.	30-ft. Length	Per Lg.	50-ft. Length	Per Lg.	75-ft. Length	Per Lg.
Adhesive Back												
5/8″	9776K119	$5.28	9776K124	$9.67	9776K16	$12.31	9776K26	$19.99	9776K128	$30.77	9776K36	$43.97
3/4″	9776K121	7.27	9776K125	13.32	9776K17	16.96	9776K27	30.89	9776K129	45.42	9776K37	60.57
1″	9776K122	8.68	9776K126	15.91	9776K18	20.25	9776K28	36.88	9776K131	54.24	9776K38	72.32
2″	9776K123	15.27	9776K127	28.00	9776K19	35.64	9776K29	64.91	9776K132	95.46	9776K39	127.28

Flame-Resistant Hook and Loop

Withstanding temperatures up to +380° F, this hook and loop is made of flame-resistant polyphenylene and has a plain backing. Hook and loop is 0.125″ thick when mated; hook is 0.079″ thick and loop is 0.09″ thick. Temp. range is –30° to +380° F. Color is natural. Meets Federal Motor Vehicle Safety Standard 302 and FAR (Federal Aviation Regulation) 25.853(12) and (60).

Hook and loop are sold separately. Maximum continuous length is 150 feet.

Wd.	Hook	Per Ft.	Loop	Per Ft.
1″	96125K41	$2.52	96125K42	$2.51
2″	96125K61	4.94	96125K63	4.62

Heat-Resistant Stainless Steel Hook and Loop

Get the flexibility and advantages of hook and loop combined with the corrosion and heat resistance of Type 308 stainless steel. Made of woven stainless steel yarn with stainless steel hooks and loops and a plain backing. With repeated use hooks and loops will break and fastening strength will diminish.

Hook and loop is 0.120″ thick when mated; hook is 0.084″ thick and loop is 0.078″ thick. Temp. range is –40° to +800° F. Color is brown.

Hook and loop are sold separately. Maximum continuous length is 75 feet.

1″-wide Hook	96225K41	Per Ft.	$28.09
1″-wide Loop	96225K61	Per Ft.	$28.50

Super-Wide Hook and Loop

Need a strong grip over a large surface area? This super-wide hook and loop fabric handles the job. Hook has a woven polyester base with polypropylene mushroom-shaped heads; loop is made of knit nylon. Both have a plain backing.

Hook and loop is 0.074″ thick when mated; hook is 0.051″ thick and loop is 0.055″ thick. Temperature range is 0° to 212° F for hook and 0° to 220° F for loop. Color is black.

Hook and loop are sold separately. Maximum continuous length is 75 feet.

Wd.	Hook	Per Ft.	Wd.	Loop	Per Ft.
57″	94975K42	$16.26	50″	94975K52	$8.36

For information about hook and loop, see page 3454.

Weather-Resistant Polyester Hook and Loop

Get resistance to water, UV light, and chemicals. Hook and loop is 0.12″ thick when mated; hook is 0.075″ thick and loop is 0.075″ thick. Material temperature range is –70° to +200° F. Adhesive temperature range is –20° to +225° F; adhesive application range is +50° to +100° F. Adhesive is acrylic. Color is black. Choose combination packs with both hook and loop or order hook and loop separately.

Wd.	5-ft. Length	Pkg.	10-ft. Length	Pkg.	15-ft. Length	Pkg.	30-ft. Length	Pkg.	50-ft. Length	Pkg.	75-ft. Length	Pkg.
Hook and Loop Combination Packs—*Adhesive Back*												
1″	95005K351	$14.37	95005K353	$24.45	95005K355	$29.45	95005K357	$49.82	95005K359	$74.72	95005K352	$147.39
2″	95005K371	26.21	95005K373	40.47	95005K375	54.18	95005K377	90.88	95005K379	136.31	95005K372	282.38
Hook and Loop Combination Packs—*Plain Back*												
1″	95005K811	9.34	95005K813	16.18	95005K815	19.29	95005K817	31.02	95005K819	48.55	95005K812	75.59
2″	95005K831	14.82	95005K833	25.69	95005K835	22.80	95005K837	49.25	95005K839	77.06	95005K832	120.00

Wd.	5-ft. Length	Per Lg.	10-ft. Length	Per Lg.	15-ft. Length	Per Lg.	30-ft. Length	Per Lg.	50-ft. Length	Per Lg.	75-ft. Length	Per Lg.
Hook—*Adhesive Back*												
1″	95005K628	$8.55	95005K627	$14.08	95005K626	$15.28	95005K625	$27.15	95005K624	$40.22	95005K623	$76.73
2″	95005K211	14.95	95005K213	22.84	95005K215	28.80	95005K217	47.50	95005K219	70.38	95005K212	145.93
Loop—*Adhesive Back*												
1″	95005K271	8.55	95005K273	14.08	95005K275	15.28	95005K277	27.15	95005K279	40.22	95005K272	75.39
2″	95005K291	14.95	95005K293	22.84	95005K295	28.80	95005K297	47.50	95005K299	70.38	95005K292	145.93

Marine-Grade Adhesive-Back Polyester Hook and Loop

Hook and loop has a high-tack rubber adhesive that's quick-setting in moist conditions; good for use outdoors. Hook and loop is 0.12″ thick when mated; hook is 0.075″ thick and loop is 0.075″ thick. Material temp. range is –70° to +200° F. Adhesive temp. range is –20° to +180° F; adhesive application range is +50° to +100° F. Color is black. Hook and loop are sold separately. **To Order:** Please specify hook or loop.

Wd.	1-ft. Length	Per Lg.	3-ft. Length	Per Lg.	5-ft. Length	Per Lg.	10-ft. Length	Per Lg.	15-ft. Length	Per Lg.	30-ft. Length	Per Lg.
5/8″	8200K11	$5.12	8200K21	$7.11	8200K31	$8.81	8200K41	$13.65	8200K51	$18.48	8200K61	$39.80
3/4″	8200K12	5.69	8200K22	7.90	8200K32	9.80	8200K42	15.17	8200K52	20.55	8200K62	44.26
1″	8200K13	4.29	8200K23	9.08	8200K33	11.26	8200K43	17.43	8200K53	23.60	8200K63	50.85
1 1/2″	8200K14	9.83	8200K24	13.66	8200K34	15.18	8200K44	26.22	8200K54	35.51	8200K64	76.48
2″	8200K15	13.29	8200K25	18.46	8200K35	19.60	8200K45	35.44	8200K55	47.76	8200K65	103.36

Self-Lock Mushroom-Head Fasteners

With 250 mushroom-shaped heads per square inch, there's no need for separate hook and loop pieces. This UV-resistant polyolefin material attaches to itself for a secure hold. Apply above +68° F.

Adhesive back bonds to most surfaces. Temperature range is –20° to +120° F.

Super-duty adhesive back has a high-performance adhesive that withstands moisture and higher temperatures than the adhesive above. Also bonds to vinyl. Temperature range is –20° to +200° F.

Plain back can be sewn, stapled, or used with mechanical fasteners. Temp. range is –20° to +200° F.

Strips *Dot* *Washer* *Tab*

Strips—*Sold in single strips.*

To Order: Please specify length: 5 ft., 15 ft., or 30 ft.

Wd.	Thick.	Mated Thick.	Black	Per Ft.	Clear	Per Ft.
Adhesive Back						
1/2″	0.14″	0.23″	96055K21	$1.70	—	—
1″	0.14″	0.23″	96055K23	2.83	—	—
2″	0.14″	0.23″	96055K25	5.67	—	—
3″	0.14″	0.23″	96055K28	7.85	—	—
Super-Duty Adhesive Back						
1/2″	0.14″	0.23″	96055K41	2.43	94935K41	$2.43
1″	0.14″	0.23″	96055K43	3.99	94935K43	3.99
2″	0.14″	0.23″	96055K45	8.06	94935K45	8.06
3″	0.14″	0.23″	96055K48	11.50	94935K48	11.50
Plain Back						
1/2″	0.101″	0.16″	96055K31	1.61	94935K31	1.61
1″	0.101″	0.16″	96055K33	2.68	94935K33	2.68
2″	0.101″	0.16″	96055K35	5.36	94935K35	5.36

Dots, Washers, and Tabs

Washers have a 0.16″ dia. hole counterbored to 0.31″ for easy screw fastening. ***Tabs with plain back*** have two 0.142″ dia. holes counterbored to 0.295″ for easy screw fastening.

Size, Wd. × Lg.	Thick.	Mated Thick.	Pkg. Qty.		Pkg.
Dots—*Clear with Super-Duty Adhesive Back*					
3/4″ Dia.	0.14″	0.23″	10	87535K31	$8.90
Washers—*Black with Plain Back*					
1 1/8″ Dia.	0.24″	0.42″	10	87535K41	9.18
Tabs—*Clear with Super-Duty Adhesive Back*					
1″ × 1″	0.14″	0.23″	10	87535K51	7.75
2″ × 1″	0.14″	0.23″	10	87535K53	15.29
Tabs—*Black with Super-Duty Adhesive Back*					
1″ × 1″	0.138″	0.23″	10	87535K61	7.15
2″ × 1″	0.138″	0.23″	10	87535K63	13.74
Tabs—*Black with Plain Back*					
1 1/2″ × 1 1/2″	0.186″	0.32″	10	87535K71 ■	11.66

■ 400 heads per square inch offer a super-strong grip.

Mil. Spec. Nylon Hook and Loop

Hook meets MIL-A-A-55126A, Type 2, Class 1; and loop meets MIL-A-A-55126A, Class 1. Both have plain backing. Hook and loop is 0.141″ thick when mated; hook is 0.078″ thick and loop is 0.1″ thick. Hook temperature range is –30° to +280° F; loop temperature range is –30° to +200° F. Apply at same ranges. Hook and loop are sold separately.

To Order: Please specify length from the available lengths listed.

Wd.	Color	Available Lg., ft.	Hook	Per Ft.	Loop	Per Ft.
3/4″	Black	15, 30, 75	88045K211	$0.32	88045K231	$0.32
1″	Black	15, 30, 75	88045K711	.37	88045K731	.37
1″	White	15, 30, 75	88045K712	.37	88045K732	.37
1 1/2″	Black	15, 30, 75	88045K811	.52	88045K831	.50
2″	Black	15, 30, 75	88045K911	.63	88045K931	.63
2″	White	15, 30, 75	88045K912	.63	88045K932	.63

Super-Grip Nylon Double-Headed Hook

Get up to twice the gripping power of other hook materials. These double-headed hooks have a high-strength acrylic adhesive backing that bonds to a wide range of smooth surfaces.

Hook is 0.116″ thick. Material temperature range is –30° to +200° F. Adhesive temperature range is +20° to +225° F; adhesive application temperature range is +50° to +100° F. Color is black.

Use with loop 9489K on page 3455.

Wd.	15-ft. Length	Per Lg.	30-ft. Length	Per Lg.	75-ft. Length	Per Lg.
1 1/2″	94915K631	$24.21	94915K632	$42.17	94915K635	$78.10
2″	94915K751	26.60	94915K752	46.34	94915K755	85.81

Industrial Zippers

For indoor and outdoor use, these zippers have a metal tab and a molded plastic chain attached to polyester fabric. Open and close from one end. When zipper is closed overall width is 1 5/8″ for 5 mm wide teeth and 1 1/2″ for 10 mm wide teeth. Zipper length is measured from end stop to end stop.

Teeth Wd.	Color	1-ft. Length	Per Lg.	3-ft. Length	Per Lg.	6-ft. Length	Per Lg.
5 mm	Black	9418K211	$1.99	9418K213	$4.51	9418K216	$7.28
5 mm	White	9418K221	1.99	9418K223	4.51	9418K226	7.28
10 mm	Black	9418K231	3.37	9418K233	6.37	9418K236	8.65
10 mm	White	9418K241	3.37	9418K243	6.37	9418K246	8.65

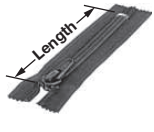

About Magnets

Magnet Materials

Type	Material	Temperature	Magnetic Pull	Resistance to Demagnetization	Corrosion Resistance	Page
Flexible	Ferrite bonded with synthetic rubber	0° to 150° F	Very Low	High	High	3458-3460
Stretchable	Neodymium-iron-boron bonded with synthetic rubber	–40° to +212° F	Low	Very High	Low	3460
Ceramic	Ferrite	572° F Max.	Low to Medium	High	High	3460-3461
Alnico	Aluminum-nickel-cobalt grade 5	975° F Max.	Medium	Low	High	3462-3463
	Aluminum-nickel-cobalt grade 8	975° F Max.	Medium	Medium	High	3462-3463
Rare Earth	Neodymium-iron-boron bonded with epoxy resin	–40° to +300° F	High	Very High	Low	3464
	Neodymium-iron-boron	300° F Max.	Highest	Very High	Low	3464-3465
	Samarium-cobalt grade 1-5	–40° to +482° F	High	Very High	High	3466
	Samarium-cobalt grade 2-17	–40° to +572° F	Very High	Very High	High	3466

Magnetic Poles

The holding power of magnets is concentrated into areas called poles. All magnets have at least one set of poles (single-pole magnets only have one set), consisting of one north (N) and one south (S). Similar poles repel each other, whereas opposite poles attract. Even when cut, a magnet always retains two poles, forming new poles on the cut or broken faces. Pole orientations are shown below.

Holding Power on One Face— Magnets with this orientation concentrate their holding power on one face. *Single-pole magnets* have greater holding power on thicker material and *multi-pole magnets* have greater holding power on thinner material.

Holding Power on Both Faces— The most common pole orientation, these magnets have good pull on both faces.

Single-Pole Magnet, Holding Power on One Face

Multi-Pole Magnet, Holding Power on One Face

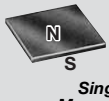

Single-Pole Magnet, Holding Power on Both Faces

Multi-Pole Magnet, Holding Power on Both Faces

Flexible Magnets

- Material: Ferrite bonded with synthetic rubber
- Color: Dark brown to black
- Temp. Range: 0° to 150° F
- Magnetic Pull: Very low
- Cut with scissors

Easy to cut into custom shapes, flexible magnets are ideal for use as latches, tool holders, display materials, and shelf labeling. They offer high resistance to demagnetization and corrosion. For flexible magnetic-backed dry-erase boards, see page 1886.

Strips

Increased-pull magnets have at least 40% more pull than *standard-pull* magnets. Thickness tolerance is ±0.008″. Width tolerance is ±0.050″.

To Order: Please specify 5-, 10-, 20-, 50-, or 100-ft. length, unless noted.

		STANDARD PULL					INCREASED PULL				
Thick.	Wd.	Max. Pull, lbs. per lin. ft.	Plain Back	Per Ft.	Adhesive Backed	Per Ft.	Max. Pull, lbs. per lin. ft.	Plain Back	Per Ft.	Adhesive Backed	Per Ft.
Holding Power on One Face											
1/32″	1/2″	4	5699K14	$0.21	5759K26	$0.31	—	—	—	—	—
1/32″	3/4″	6	5699K24	.29	5759K36	.43	—	—	—	—	—
1/32″	1″	8	5699K16	.33	5759K28	.53	—	—	—	—	—
1/32″	1 1/2″	12	5699K26	.51	5759K38	.78	—	—	—	—	—
1/32″	2″	16	5699K55	.64	5759K75	1.05	—	—	—	—	—
1/32″	3″	24	5699K29	.95	5759K39	1.42	—	—	—	—	—
1/16″	1/2″	6	5699K15	.32	5759K27	.48	9	5769K21	$0.76	5769K61	$1.00
1/16″	3/4″	9	5699K25	.40	5759K47	.61	13.5	5769K31	1.04	5769K71	1.34
1/16″	1″	12	5699K17	.49	5759K29	.76	18	5769K41	1.30	5769K81	1.66
1/16″	1 1/2″	19	5699K27	.73	5759K49	1.13	—	—	—	—	—
1/16″	2″	24	5699K62	.96	5759K82	1.51	—	—	—	—	—
1/16″	3″	38	5699K28	1.46	5759K59	1.94	54	5769K51	3.57	5769K91	4.60
1/8″	1/2″	6	5699K11	.54	5759K23	.77	12	5769K22	1.21	5769K62	2.47
1/8″	3/4″	9	5699K41	.73	5759K63	1.05	18	5769K32	1.85	5769K72	2.56
1/8″	1″	12	5699K12	.93	5759K24	1.31	24	5769K42	2.26	5769K82	3.17
1/8″	1 1/2″	19	5699K42	1.33	5759K64	1.89	—	—	—	—	—
1/8″	2″	32	5699K68	1.79	5759K88	2.60	—	—	—	—	—
1/8″	3″	38	5699K49	2.56	5759K69	2.97	72	5769K52	6.65	5769K92	8.98
3/16″	0.95″	12	5699K13	1.63	5759K25	1.94	—	—	—	—	—
3/16″	1 1/2″	24	5699K72	2.74	5759K92	2.91	—	—	—	—	—
1/4″	5/8″	11	5699K73	1.22	5759K93	1.56	—	—	—	—	—
1/4″	2″	38	5699K74■	3.38	5759K94■	3.98	—	—	—	—	—
Holding Power on Both Faces											
1/16″	3″	26	4774K24	1.82	—	—	—	—	—	—	—
3/16″	3″	40	4774K26■	3.98	—	—	—	—	—	—	—

■ Maximum length is 50 feet.

(Material continued on following page)

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For information about magnet materials, see page 3458.

Flexible Magnets *(Material continued from previous page)*

Sheets

Thickness tolerance is ±0.002″. Width tolerance is +½″, –⅛″. Length tolerance is ±1%. *Adhesive-backed magnets* have a rubber-based adhesive.

Holding Power on One Face, Adhesive Backed

Thick.	Wd. × Lg.	Max. Pull, lbs.	Plain Back	Each	Adhesive Backed	Each
Holding Power on One Face						
0.015″	2″ × 3½″	2.5	—	—	5775K2★	$4.26
0.02″	2″ × 4″	4	—	—	5775K11	.31
0.02″	3″ × 5″	8	—	—	5775K21	.50
0.02″	5″ × 8″	21	—	—	5775K4	1.39
0.02″	7″ × 10″	38	—	—	5775K6	2.68
1/32″	12″ × 12″	112	—	—	5775K8	4.84
1/32″	12″ × 18″	168	—	—	5775K15	6.09
1/32″	12″ × 24″	224	—	—	5775K17	8.03
1/16″	12″ × 24″	438	1834K1	$16.93	1834K2	18.13
Holding Power on Both Faces						
0.03″	12″ × 24″	160	3327K5	6.62	—	—
1/16″	12″ × 24″	200	3327K3	13.00	—	—

★ Comes as one sheet that consists of ten 2″ × 3½″ pieces.

Squares and Discs

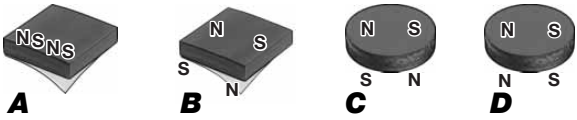

Get your magnets in convenient shapes and sizes without cutting them yourself. Thickness tolerance is ±0.025″. *Square magnets* have width and length tolerances of ±0.030″. *Disc magnets* have a diameter tolerance of ±0.025″. Squares with holding power on one face have a rubber-based adhesive; square with holding power on both faces has a foam-based adhesive.

Thick.	Size	Max. Pull, lbs.	Pkg. Qty		Per Pkg.
Holding Power on One Face					
Square—Adhesive Backed					
A 3/16″	3/4″ Wd. × 3/4″ Lg.	1	6	58145K73	$3.41
A 3/16″	1″ Wd. × 1″ Lg.	1.7	4	58145K75	4.06
Holding Power on Both Faces					
Square—Adhesive Backed					
B 1/8″	1/2″ Wd. × 1/2″ Lg.	0.438	8	58145K71	4.18
Disc—Plain Back					
C 3/16″	1/2″ Dia.	0.6	10	58145K81	3.78
C 3/16″	3/4″ Dia.	0.3	8	58145K83	3.91
D 3/16″	1″ Dia.	0.6	6	58145K85	5.43

Sheeting

Thickness tolerance is ±0.002″. Width tolerance is ±⅛″. *Adhesive-backed magnets* have a rubber-based adhesive. **To Order:** Please specify length up to 50 ft.

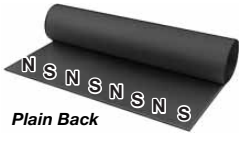

Plain Back

Thick.	Wd.	Max. Pull, lbs. per lin. ft.	Plain Back	Per Ft.	Adhesive Backed	Per Ft.
Holding Power on One Face						
0.01″	24 3/8″	3	5756K12	$1.41	5756K11	$2.32
1/64″	24 3/8″	106	5756K31	2.10	5756K51	3.69
0.02″	24 3/8″	157	5756K32	2.85	5756K52	4.37
0.025″	24 3/8″	202	5756K33	3.40	5756K53	4.88
1/32″	24 3/8″	224	5756K35	3.98	5756K55	5.86
1/16″	24 3/8″	297	5756K36	7.93	5756K56	9.30

Printable Flexible Magnet Paper

- Material: Ferrite bonded with synthetic rubber, with one paper face
- Color: Dark brown to black magnet; paper face is white
- Temp. Range: –15° to +160° F
- Magnetic Pull: Very low
- Cut with scissors

Insert this paper-faced flexible magnet into your inkjet printer (not for use in laser printers or photocopiers) for quick sign making. Thickness tolerance is ±0.002″. Width and length tolerances are ±0.020″. Not rated for maximum pull. Sold in packages of 5.

Thick.	Wd. × Lg.		Per Pkg.
Holding Power on One Face			
0.012″	8½″ × 11″	3922K4	$8.37

Flexible Magnets with Vinyl Face

- Material: Ferrite bonded with synthetic rubber
- Color: Dark brown to black; vinyl face is white or colored
- Temp. Range: 0° to 150° F
- Magnetic Pull: Very low
- Cut with scissors

You can imprint messages and designs on the vinyl face. For flexible magnetic-backed dry-erase boards, see page 1900.

Sheets

Thickness tolerance is +0.002″, –0.006″. Width tolerance is +½″, –⅛″. Length tolerance is ±1%.

Holding Power on Both Faces

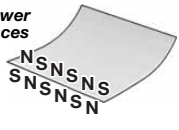

Thick.	Wd. × Lg.	Max. Pull, lbs.	Pkg. Qty.		Per Pkg.
Holding Power on One Face					
White Vinyl on One Face					
0.026″	2″ × 4″	4	25	5775K12	$5.00
0.026″	3″ × 5″	8	25	5775K22	9.50
0.026″	5″ × 8″	21	10	5775K3	12.10
0.026″	7″ × 10″	38	10	5775K5	13.58
					Each
0.036″	12″ × 12″	112	—	5775K7	$3.65
0.036″	12″ × 18″	168	—	5775K16	6.54
0.036″	12″ × 24″	224	—	5775K18	7.97
0.066″	12″ × 24″	438	—	1834K3	23.53
Holding Power on Both Faces					
White Vinyl on Both Faces					**Each**
0.036″	12″ × 24″	80	—	3327K6	$7.52
0.066″	12″ × 24″	140	—	3327K4	14.66

Sheeting

Thickness tolerance is +0.002″, –0.006″. Width tolerance is ±⅛″. **To Order:** Please specify length. For *colored*, also specify black, blue, green, silver, white, or yellow.

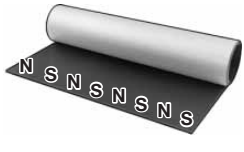

Thick.	Wd.	Max. Pull, lbs.	Max. Lg., ft.		Per Ft.
Holding Power on One Face					
White Vinyl on One Face					
0.021″	24 3/8″	106	50	5756K41	$3.74
0.026″	24 3/8″	157	50	5756K42	4.44
0.031″	24 3/8″	202	50	5756K43	4.83
0.036″	24 3/8″	224	50	5756K45	5.79
0.066″	24 3/8″	297	50	5756K46	9.58
Colored Vinyl on One Face					
0.036″	24 3/8″	224	10	5761K11	5.79

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For information about magnet materials, see page 3458.

High-Temperature Flexible Magnets

- Material: Ferrite bonded with synthetic rubber
- Color: Brown
- Temp. Range: –40° to +300° F
- Magnetic Pull: Very low
- Cut with carbide cutters

When you're working with high temperatures, these sheets provide the highest temperature resistance of the flexible magnets we offer. They're also pliable and resistant to demagnetization and corrosion. Thickness tolerance is ±0.007″. Width and length tolerances are ±1%. *Adhesive-backed magnets* have an acrylic adhesive with a temperature range of –40° to +250° F.

Thick.	Wd. × Lg.	Max. Pull, lbs.	Plain Back	Each	Adhesive Backed	Each
Holding Power on Both Faces						
0.06″	9″ × 12″	162	7301T11	$12.43	7301T21	$14.85
0.06″	9″ × 24″	324	7301T15	23.40	7301T25	27.94
1/8″	9″ × 12″	162	7301T12	23.66	7301T22	25.86
1/8″	9″ × 24″	324	7301T16	44.76	7301T26	48.92
3/16″	9″ × 12″	Not Rated	7301T13	32.59	7301T23	34.64
3/16″	9″ × 24″	Not Rated	7301T17	61.92	7301T27	65.78
1/4″	9″ × 12″	Not Rated	7301T14	41.40	7301T24	43.33
1/4″	9″ × 24″	Not Rated	7301T18	78.83	7301T28	82.50

Ultra-High-Strength Stretchable Magnets

Holding Power on One Face — *Holding Power on Both Faces*

- Material: Neodymium-iron-boron bonded with synthetic rubber
- Color: Brownish gray
- Temp. Range: –40° to +212° F
- Magnetic Pull: Low
- Cut with scissors

You can easily stretch these magnetic strips to cover corners and irregular surfaces because they're stronger, more flexible, and softer than other flexible magnets. Thickness tolerance is ±0.0075″. Width tolerance is ±0.020″. Length tolerance is ±0.012″.

Thick.	Wd.	Lg.	Max. Pull, lbs.		Each
Holding Power on One Face					
1/16″	1″	12″	6	3651K8	$25.40
1/16″	2″	12″	52	3651K3	51.20
Holding Power on Both Faces					
1/8″	1/2″	12″	6.5	3651K4	29.67
1/8″	1″	12″	12	3651K7	50.32

High-Temperature Ceramic Magnets

- Material: Ferrite
- Color: Gray
- Max. Temp.: 480° F, unless noted; low end not rated
- Magnetic Pull: Low to medium
- Machine with diamond tooling

An economical choice, ceramic magnets offer good temperature and corrosion resistance.

Rectangular Bar Magnets

Length and width tolerances are ±2%, unless noted. Thickness tolerance is ±0.050″.

Lg.	Wd.	Thick.	Max. Pull, lbs.		Each
1 1/2″	3/8″	1/4″	1.2	5738K61♥✓	$0.84
1 7/8″	7/8″	3/8″	4	5738K31	.94
2″	1/2″	1″	5.8	5738K55✓	6.50
2″	1″	1/8″	1	5738K52	.92
2″	1″	3/16″	1.5	5738K53	.93
2″	1″	1/4″	3	5738K32	1.10
2″	1″	1/2″	6	5738K33	1.93
2″	1″	3/4″	9	5738K34	2.82
2″	1″	1″	9.5	5738K35	3.70
2″	1 1/4″	1″	9.2	5738K56	6.62
2″	1 1/2″	1″	10	5738K57	11.03
2″	2″	1″	10	5738K36	4.04
3″	1/4″	1/4″	1.4	5738K62♥	1.44
3″	2″	1/4″	3.9	5738K63♥	4.48
3″	2″	1/2″	9.1	5738K68	3.01
3″	2″	1″	19.8	5738K66	5.03
4″	4″	1/4″	3.8	5738K67	6.75
6″	1″	1/2″	7.7	5738K64♥	6.07
6″	2″	1″	21.9	5738K65♥	16.69
6″	3″	1″	33.2	5738K71	13.75
6″	4″	1/2″	13.2	5738K69	9.69
6″	4″	1″	28.5	5738K51	18.57
10 1/2″	1″	3/4″	14.1	5738K54	32.08
10 1/2″	2″	1″	26.7	5738K58	69.64

♥ Max. temp. is 400° F. ✓ Width and length tolerances are ±0.015″.

Ring and Disc Magnets

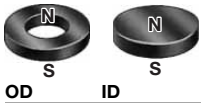

OD, ID, and thickness tolerances are ±2%.

OD	ID	Thick.	Max. Pull, lbs.		Each
Ring Magnets					
0.5″	0.187″	0.125″	0.18	5856K1	$0.60
0.689″	0.296″	0.118″	0.4	5856K11♥	.50
0.75″	0.265″	0.25″	0.31	5856K2	.40
1.079″	0.597″	0.25″	0.75	5856K4	.40
1.125″	0.375″	0.236″	0.68	5856K3	.65
1.23″	0.885″	0.431″	0.62	5856K5	2.51
1.25″	0.375″	0.187″	1	5856K12♥	1.06
1.625″	0.705″	0.187″	0.81	5856K6	2.83
1.723″	0.705″	0.25″	0.7	5856K8	2.51
1.77″	0.866″	0.314″	2.5	5856K13♥	1.54
2.032″	0.705″	0.3″	1.75	5856K7	1.17
2.38″	1″	0.28″	3.4	5856K14♥	1.93
2.8″	1.203″	0.33″	4.8	5856K15♥	2.54
3.376″	1.28″	0.425″	7.5	5856K16♥	2.52
4.54″	1.75″	0.4″	9.8	5856K17♥	4.54
5.27″	2.2″	0.55″	17.8	5856K18♥	7.81
Disc Magnets					
0.25″	____	0.281″	0.4	5857K16♥	.57
0.312″	____	0.125″	0.2	5857K17♥	.36
0.5″	____	0.25″	0.37	5857K11	.43
0.625″	____	0.375″	1.3	5857K18♥	.76
0.875″	____	1″	4	5857K15	2.00
1.079″	____	0.25″	0.56	5857K12	.83
2″	____	0.75″	8.4	5857K19♥	2.65
2.4″	____	0.25″	0.5	5857K14	4.60
3″	____	0.5″	8.4	5857K21♥	6.16
3″	____	0.75″	12.6	5857K22♥	7.24

♥ Max. temp. is 400° F.

Build-Your-Own Encased Magnets

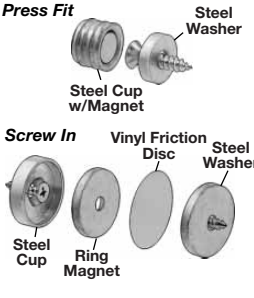

Get all the pieces of an encased magnet, but unassembled so you can mount the washer wherever you want to create a magnetic hold. Once assembled, you can screw the magnet directly into a surface or flush mount into a hole. Maximum temperature is 200° F. Color is gray. ***Press-fit*** kit includes a steel cup, a neodymium magnet, a steel washer, and one screw. ***Screw-in*** kits include a steel cup, a neodymium magnet, a vinyl friction disc, a steel washer, and two screws.

Cup OD	Cup Thick.	Magnet OD	Magnet ID	Magnet Thick.	Max. Pull, lbs.		Each
Press Fit							
0.38″	0.25″	0.25″	____	0.08″	2	3506K21	$2.76
Screw In							
0.5″	0.25″	0.36″	____	0.075″	6	3506K23	3.29
0.625″	0.25″	0.49″	____	0.105″	16	3506K25	3.86
0.875″	0.281″	0.74″	0.375″	0.105″	23	3506K27	5.80
1.13″	0.27″	1″	0.5″	0.11″	30	3506K29	6.90

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For information about magnet materials, see page 3458.

Encased Ceramic Magnets

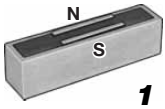

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- Material: Ferrite, unless noted
- Color: Gray to black, unless noted
- Max. Temp.: 300° F, unless noted; low end not rated
- Magnetic Pull: Low
- Not recommended for machining

All have a casing that protects the magnet material and concentrates the magnetic field. Magnets with more poles typically have a higher pull.

Magnets without mounting holes are designed for press-fit installation. All other magnets have one mounting hole, except magnets with a center-to-center dimension have two holes (screws not included, except Style 13 includes two nuts and a screw).

7

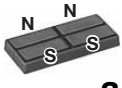

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Rectangular Magnets

Length, width, and thickness tolerances are ±0.063″.

Lg.	Wd.	Thick.	No. of Poles	Max. Pull, lbs.	Mount. Hole Size	Mount. Hole Ctr.-to-Ctr.		Each
Style 1—Aluminum Encased								
4½″	1″	1¼″	2	45	—	—	5740K11	$18.76
4½″	1″	1¼″	2	55	—	—	5740K13	19.38
4½″	1″	1¼″	2	65	—	—	5740K12	20.64
4½″	1¼″	1¼″	2	75	—	—	5740K14	19.17
Style 2—Aluminum Encased								
4½″	1″	1¼″	3	90	—	—	5740K22	28.73
4½″	1¼″	1¼″	3	110	—	—	5740K21	32.16
4½″	1⅞″	1¼″	3	130	—	—	5740K23	31.35
4½″	1⅞″	1¼″	3	150	—	—	5740K24	32.68
4½″	1⅞″	1¼″	4	125	—	—	5740K32	47.51
4½″	2″	1¼″	4	185	—	—	5740K31	47.64
4½″	2½″	1¼″	4	195	—	—	5740K34	48.04
4½″	2½″	1¼″	4	230	—	—	5740K33	48.28
Style 3—Steel Encased								
2⅝″	15/16″	5/16″	2	6	0.160″	2.30″	57005K24	3.53
Style 3—Stainless Steel Encased								
3¼″	⅞″	1⅜″	2	40	9/32″	2¾″	57005K31	20.87
3¼″	1¼″	1⅜″	2	55	9/32″	2¾″	57005K57	25.20
5¼″	⅞″	1⅜″	2	65	9/32″	4½″	57005K33	25.20
5¼″	1¼″	1⅜″	2	120	9/32″	4½″	57005K34	36.51
5¼″	1⅞″	2⅛″	2	250	9/32″	4½″	57005K38	50.88
Style 4—Steel Encased								
2″	1⅝″	1″	2	35	7/32″	1½″	57005K27	10.23
Style 5—Steel Encased								
1″	⅞″	¼″	2	7	⅛″	—	57005K21	2.80
2¾″	1 3/16″	½″	2	35	3/16″	2.35″	57005K25	7.15
Style 6—Steel Encased								
2.7″	1.045″	0.460″	2	25	0.187″	2.34″	57005K51♠	2.25
4½″	1″	9/16″	3	42	9/32″	4″	57005K41♣	5.71
6″	1½″	0.441″	2	100	¼″	5″	57005K52♠	8.19
6½″	1″	9/16″	3	58	9/32″	6″	57005K42♣	8.47
8″	1.05″	0.455″	2	60	0.435″	6.87″	57005K53♠	8.69
12″	1.65″	0.570″	2	160	¼″	11.17″	57005K54♠	14.40
12½″	1″	9/16″	3	120	9/32″	12″	57005K43♣	14.49
Style 7—Steel Encased								
1″	13/16″	5/16″	2	8	3/16″	—	57005K22	1.44
1¼″	1″	0.460″	2	10	0.145″	—	57005K37	6.05
2″	1″	⅝″	2	45	3/16″	1″	57005K23	8.76
Style 8—Plastic Encased								
1.772″	0.787″	0.236″	2	5.7	—	—	57005K95★	5.85
2.362″	0.787″	0.236″	2	7.6	—	—	57005K96★	7.68
Style 9—Steel Encased								
0.984″	0.524″	0.118″	2	2.1	—	—	57005K91★	3.38
0.984″	0.524″	0.189″	2	2.4	—	—	57005K92★	2.32
1.654″	0.472″	0.189″	2	3.2	—	—	57005K93★	3.75

Round Magnets

Diameter tolerance is ±0.030″. Thickness tolerance is ±0.015″.

Dia.	Thick.	No. of Poles	Max. Pull, lbs.	Mount. Hole Size	Mount. Hole Ctr.-to-Ctr.		Each
Style 10—Aluminum Encased							
¼″	½″	2	0.4	—	—	5703K47♦	$3.05
½″	½″	2	2.2	—	—	5703K32	12.17
½″	1″	2	3.7	—	—	5703K18	12.95
⅝″	1″	2	5	—	—	5703K41	14.25
⅝″	1″	2	8	8-32	—	5703K48♦	11.48
¾″	1″	2	17	10-32	—	5703K51♦	10.90
¾″	1¼″	2	10.5	—	—	5703K42	16.44
1″	1″	2	23	¼″-20	—	5703K52♦	14.85
1¼″	1¼″	2	40	¼″-20	—	5703K53♦	18.83
Style 11—Aluminum Encased							
⅝″	1″	3	7	—	—	5735K12	20.20
⅝″	1″	3	14	8-32	—	5735K71♦	16.19
¾″	1″	3	15.5	—	—	5735K62	21.16
¾″	1″	3	23	10-32	—	5735K72♦	17.58
⅞″	1″	3	27	—	—	5735K63	22.87
1″	1″	3	30	—	—	5735K68	23.10
1″	1″	3	42	¼″-20	—	5735K73♦	19.52
1¼″	1¼″	3	53.5	—	—	5735K65	28.11
3″	½″	5	24	¼″	1⅞″	5782K71♦	58.75
Style 12—Steel Encased							
1 15/64″	3/16″	2	14	5/32″	—	5685K31	1.28
1 13/32″	9/32″	2	20	3/16″	—	5685K26	2.28
2 1/32″	5/16″	2	38	3/16″	—	5685K32	2.59
2⅝″	3/8″	2	82	9/32″	—	5685K28	4.48
2⅞″	3/8″	2	90	9/32″	—	5685K33	5.30
3 3/16″	7/16″	2	95	9/32″	—	5685K39	6.12
4 29/32″	½″	2	190	½″	—	5685K35	19.09
Style 13—Steel Encased							
1 15/64″	3/16″	2	14	6-32	—	5819K31	5.05
2 1/32″	5/16″	2	38	10-24	—	5819K33	7.31
2¼″	3/16″	2	10	5/16″-18	—	5819K41■	8.70
2⅝″	3/8″	2	82	¼″-20	—	5819K35	16.45
3 3/16″	7/16″	2	95	¼″-20	—	5819K37	20.87
Style 14—Plastic Encased							
0.984″	0.236″	2	1.9	—	—	57005K84★	2.30
1.496″	0.453″	2	4.5	—	—	57005K85★	3.42
Style 15—Steel Encased							
0.79″	0.51″	2	6.7	M3	—	5819K51♦	1.95
1.26″	0.59″	2	18	M4	—	5819K52♦	2.90
1.57″	0.65″	2	28.1	M4	—	5819K53♦	4.14
2.24″	0.73″	2	62.9	M4	—	5819K54♦	6.64

♠ Maximum temperature is 248° F. ♣ Color is red. Maximum temperature is 212° F. ★ Maximum temperature is 125° F.
♦ Maximum temperature is 180° F. ■ Material is ferrite bonded with synthetic rubber. Color is brown. Maximum temperature is 140° F.

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For information about magnet materials, see page 3458.

Ultra-High-Temperature Alnico Magnets

- Material: Aluminum-nickel-cobalt Grades 5 and 8
- Color: See below
- Max. Temp.: 975° F; low end not rated
- Magnetic Pull: Medium
- Machine with an abrasive grinding wheel

An early commercial magnet material, Alnico offers high temperature and corrosion resistance. It also has greater magnetic pull than ceramic magnets. Grade 8 magnets resist demagnetization better than Grade 5.

Horseshoe, U-Shaped, and Bridge Magnets—Grade 5

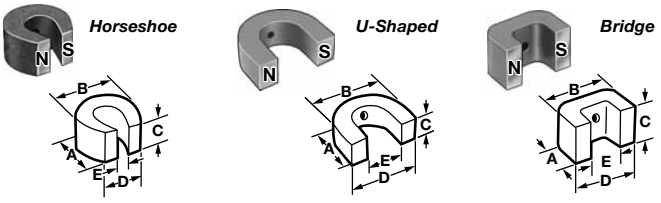

- Color: Red, unless noted

All come with a keeper (metal plate) to reduce damage, unless noted. Magnets with a mounting hole size have one mounting hole (screws not included).

Horseshoe Magnets—Length, width, and thickness tolerances are ±0.045″.

U-Shaped and ***Bridge Magnets***—Length, width, and thickness tolerances are ±0.016″.

Lg. (A)	Wd. (B)	Thick. (C)	Wd. Across Poles (D)	Gap Between Poles (E)	Max. Pull, lbs.	Mount. Hole Size		Each
Horseshoe								
1″	1 1/8″	5/16″	7/8″	1/4″	2.2	—	5841K11	$5.09
1″	1 1/8″	5/16″	7/8″	1/4″	5.2	—	5841K22	6.67
1 1/8″	1 1/16″	1/4″	47/64″	13/32″	6.5	—	5842K11	12.67
1 1/4″	1 1/2″	7/16″	1 1/4″	3/8″	9	—	5842K12■	22.24
1 9/16″	1 13/16″	5/8″	1 5/8″	3/8″	22	—	5842K13■	34.14
1 19/32″	1 5/8″	1″	1 1/32″	9/32″	45	—	5842K15	75.04
1 11/16″	3″	1″	3″	1 3/4″	55	3/16″	5842K18	97.89
2 1/2″	3″	3/4″	2 1/2″	1″	60	—	5842K19	107.41
3 5/16″	4″	1″	3 1/4″	1 1/4″	82	—	5842K21	173.38
3 7/16″	4″	3″	2 3/4″	3/4″	220	—	5842K23	397.32
4 1/8″	5″	1 1/4″	4″	1 1/2″	210	—	5842K22	288.66
U-Shaped								
1 13/16″	2 3/16″	15/16″	2 3/16″	1 3/16″	32	3/16″	5841K15	36.89
2″	2 7/16″	15/16″	2 7/16″	1 3/16″	37	1/4″	5841K16	50.98
2 1/4″	2 5/8″	15/16″	2 5/8″	1 3/8″	42	1/4″	5841K17	53.09
2 1/2″	3″	15/16″	3″	1 1/2″	50	1/4″	5841K18	72.27
Bridge								
3/4″	1 1/8″	3/4″	1 1/16″	9/16″	13	3/16″	5841K12	10.65
3/4″	1.181″	3/4″	1 3/16″	0.59″	9.9	0.197″	5841K33	10.65
1″	1 1/2″	1″	1 3/8″	3/4″	22	3/16″	5841K13	15.92
1″	1.575″	1″	1 37/64″	0.787″	19	0.197″	5841K44	15.95
1 1/8″	1 3/4″	1 1/8″	1 1/2″	7/8″	30	3/16″	5841K14	22.70
1.181″	1.772″	1.181″	1 49/64″	29/32″	26	0.197″	5841K55	22.73
1 13/16″	2 5/8″	1 7/8″	2 1/2″	1 3/8″	70	1/4″	5841K19	103.39

■ Color is gray. Magnets do not come with a keeper.

Disc Magnets—Grade 5 and Grade 8

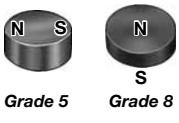

Grade 5 *Grade 8*

- Color: Grade 5, gray; Grade 8, bluish-gray to silver

Grade 5 has a diameter tolerance of ±0.016″ and a thickness tolerance of ±0.005″. Grade 8 has diameter and thickness tolerances of ±0.020″.

Dia.	Thick.	Max. Pull, lbs.		Each
Grade 5				
0.689″	0.430″	3	5853K11	$5.63
0.759″	0.522″	3.5	5853K12	7.86
0.840″	0.626″	5	5853K13	9.22
0.908″	0.535″	6	5853K14	10.86
0.998″	0.648″	10.5	5853K15	12.50
1.114″	0.765″	12	5853K16	14.61
1.240″	0.633″	13	5853K17	15.53
1.451″	0.970″	15	5853K19	28.95
1.523″	0.880″	14	5853K18	35.37
Grade 8				
1/8″	1/8″	0.06	57295K71	.77
1/8″	1/4″	0.26	57295K82	.87
1/4″	1/4″	0.31	57295K73	1.40
1/4″	1/2″	1.06	57295K74	3.90
3/8″	1/4″	0.34	57295K75	2.13
1/2″	1/4″	0.4	57295K77	3.76

Channel Bar Magnets—Grade 5

- Color: Gray

Length tolerance is ±0.045″. Width and channel width tolerances are ±0.016″. Thickness tolerance is ±0.005″.

Lg.	Wd.	Thick.	Channel Wd.	Max. Pull, lbs.		Each
5″	1/2″	5/16″	3/16″	11	5695K14	$34.70
5″	5/8″	3/8″	1/4″	16	5695K16	44.78
6″	3/4″	1/2″	1/4″	34	5695K18	55.97
6″	1″	5/8″	3/8″	41	5695K22	77.74
6″	1 1/4″	3/4″	7/16″	64	5695K24	109.72
6″	1 1/2″	7/8″	1/2″	60	5695K26	118.03

Rectangular Bar Magnets—Grade 5 and Grade 8

- Color: Grade 5, gray; Grade 8, bluish-gray to silver

Grade 5 has a length tolerance of ±1/8″ and width and thickness tolerances of ±0.016″. Grade 8 has a length tolerance of ±3/64″ and width and thickness tolerances of ±0.032″, unless noted.

Lg.	Wd.	Thick.	Max. Pull, lbs.		Each
Grade 5					
4″	3/8″	1/8″	1.7	5851K11	$4.23
4″	3/8″	3/16″	1.7	5851K13	6.44
4″	1/2″	1/8″	1.7	5851K12	6.34
6″	1/4″	1/4″	1.2	5851K14	12.40
6″	3/8″	3/8″	2.8	5851K15	18.21
6″	1/2″	1/4″	1.9	5851K16	15.32
6″	1/2″	1/2″	5.9	5851K19	24.74
6″	3/4″	1/4″	5.7	5851K17	25.13
6″	3/4″	1/2″	11.6	5851K18	41.89
6″	3/4″	3/4″	15.8	5851K22	61.33
6″	1″	1/2″	13.8	5851K21	56.42
6″	1″	1″	19.6	5851K23	80.81
Grade 8					
3/8″	1/8″	1/8″	0.37	57315K41♣	1.13
1/2″	1/4″	1/8″	0.62	57315K45♣	2.71
4″	1/4″	1/4″	1.62	57315K47	13.42
4″	5/8″	5/8″	9	57315K49	41.61
4″	1″	1″	20	57315K51	86.33

♣ Length, width, and thickness tolerances are ±0.015″.

Button Magnets—Grade 5

- Color: Red, unless noted

All come with a keeper (metal plate) to reduce damage. Magnets have one mounting hole (screws not included). Diameter tolerance is ±0.031″. Thickness tolerance is ±0.005″.

Dia.	Thick.	Max. Pull, lbs.	Mount. Hole Size		Each
1/2″	3/8″	1.5	5/32″	5688K51	$3.02
3/4″	1/2″	4	7/32″	5850K1★	4.35
3/4″	1/2″	4.1	3/16″	5688K52	4.35
7/8″	1″	9	1/4″	5850K3★	12.63
1″	5/8″	7.4	3/16″	5688K53	6.76
1 1/4″	3/4″	14	7/32″	5688K34	17.12
1 1/4″	1″	10.5	9/32″	5688K54	17.79
1 1/2″	7/8″	18.5	1/4″	5688K35	25.56
1 1/2″	1 3/4″	39	3/8″	5850K7★	61.18

★ Color is gray.

(Material continued on following page)

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For information about magnet materials, see page 3458.

Ultra-High-Temperature Alnico Magnets *(Material continued from previous page)*

Multi-Pole Magnets—Grade 5

- Color: Gray

All come with a keeper (metal plate) to reduce damage. Center hole is for mounting (screws not included). Diameter tolerance is ±0.031″. Thickness tolerance is ±0.005″.

6 Poles

Dia.	Thick.	No. of Poles	Max. Pull, lbs.	Mount. Hole Size		Each
1″	3/4″	4	16	1/4″	5850K2	$15.21
1 1/4″	3/4″	6	25	1/4″	5850K4	20.31
1 1/2″	7/8″	6	30	3/8″	5850K5	34.09
2″	1 1/4″	8	75	1/2″	5850K29	51.56

Ring Magnets—Grade 5 and Grade 8

- Color: Grade 5, gray; Grade 8, bluish-gray to silver

Grade 5 has OD and ID tolerances of ±0.016″ and a thickness tolerance of ±0.005″. Grade 8 has an OD tolerance of ±0.033″ and ID and thickness tolerances of ±0.016″, unless noted.

OD	ID	Thick.	Max. Pull, lbs.		Each
Grade 5					
1″	3/4″	1/2″	1.3	5704K14	$8.54
1 1/2″	1 1/8″	3/4″	3	5704K16	18.54
2″	1 1/2″	1″	6	5704K18	28.44
2 1/2″	1 7/8″	1 1/4″	8	5704K19	43.51
3″	2 1/4″	1 1/2″	14.1	5704K21	78.23
Grade 8					
3/8″	0.093″	1/8″	0.47	57335K62▲	8.85
0.525″	0.250″	0.14″	0.19	57335K64▲	4.71
0.91″	0.475″	0.27″	0.88	57335K66	13.44
1 1/4″	0.516″	0.22″	0.37	57335K68	28.83
1.94″	0.950″	0.27″	0.84	57335K72	55.68

▲ OD, ID, and thickness tolerances are ±0.010″.

Round Bar Magnets—Grade 5 and Grade 8

- Color: Grade 5, gray; Grade 8, bluish-gray to silver

Grade 5 has a diameter tolerance of ±0.032″ and a length tolerance of ±0.045″. Grade 8 has a diameter tolerance of ±0.016″ and a length tolerance of +0.150″, –0.047″.

Dia.	Lg.	Max. Pull, lbs.		Each
Grade 5				
1/8″	4″	0.35	5852K11	$2.52
3/16″	5″	0.75	5852K12	3.76
1/4″	6″	1.4	5852K13	7.83
0.300″	1″	1.1	5852K31♥	2.31
0.300″	2″	1.5	5852K32♥	3.46
0.300″	3″	1.5	5852K33♥	4.67
0.300″	4″	1.9	5852K34♥	6.21
0.300″	6″	2.2	5852K35♥	8.82
0.300″	8″	2.2	5852K14	11.34
3/8″	8″	3	5852K15	19.48
1/2″	8″	4.9	5852K16	36.14
0.689″	8″	8.1	5852K18	54.02
0.759″	8″	10.1	5852K19	64.93
0.998″	8″	20.2	5852K23	106.28
Grade 8				
1/8″	4″	0.4	57305K64	7.82
1/4″	4″	1.5	57305K68	12.82
3/8″	4″	1.4	57305K72	17.06
5/8″	4″	7	57305K74	38.04
1″	4″	18	57305K76	75.11

♥ Notched to indicate north pole.

Encased Alnico 5 Magnets

- Material: Aluminum-nickel-cobalt Grade 5
- Color: Gray, unless noted
- Max. Temp.: See below
- Magnetic Pull: Medium
- Not recommended for machining

An aluminum, steel, or urethane rubber housing protects the magnet material and helps concentrate the magnetic field. Alnico Grade 5 offers high temperature and corrosion resistance. It has greater magnetic pull than ceramic magnets. Screws not included (for magnets with a mounting hole).

Pot Magnets

- Max. Temp.: 428° F, unless noted

Encased in a steel housing. All come with a keeper (metal plate) to reduce damage, unless noted. Diameter tolerance is ±0.012″. Thickness tolerance is ±0.010″.

Dia.	Thick.	Max. Pull, lbs.	Mount. Hole/ Thread Size		Each
1/4″	1/2″	0.2	6-32	5736K15	$7.88
1/4″	3/4″	0.3	6-32	5736K17	8.93
1/4″	1″	0.4	6-32	5736K16	8.55
3/8″	1/2″	1.4	6-32	5736K2	8.23
3/8″	3/4″	1.5	6-32	5736K21	8.63
3/8″	1″	1.7	6-32	5736K24	8.70
1/2″	1/2″	2.5	6-32	5736K41	8.21
1/2″	3/4″	3	6-32	5736K39	8.83
1/2″	1″	3.5	6-32	5736K4	9.01
5/8″	1/2″	2.3	10-24	5736K42	9.13
5/8″	3/4″	4.1	10-24	5736K43	9.26
5/8″	1″	4.8	10-24	5736K44	9.38
11/16″	0.630″	5.8	10-32	56905K81♦	6.16
3/4″	0.295″	6.6	0.180″	56905K96✓♦	5.54
3/4″	1/2″	5.4	10-24	5736K51	9.21
3/4″	3/4″	9.1	10-24	5736K52	9.48
3/4″	1″	9.4	10-24	5736K5	9.78
13/16″	0.748″	8.8	10-32	56905K82♦	7.35
7/8″	1″	16.5	10-32	5736K35♠	16.36
1″	1/2″	7.4	1/4″-20	5736K61	11.95
1″	3/4″	14	1/4″-20	5736K62	12.41
1″	1″	16	1/4″-20	5736K66	13.68
1 1/16″	0.984″	13.4	10-32	56905K83♦	10.08
1 1/8″	0.334″	11	0.210″	56905K97♦	7.79
1 1/4″	1/2″	6	1/4″-20	5736K7	13.16
1 1/4″	3/4″	15	1/4″-20	5736K71	13.40
1 1/4″	1″	22	1/4″-20	5736K74	13.66
1 1/4″	1 1/4″	25	1/4″-20	5736K75	14.47
1 3/8″	1.181″	32.5	10-32	56905K84♦	14.99
1 1/2″	0.408″	28.6	0.218″	56905K98♦	10.34

♦ Color is red. ✓ Maximum temperature is 212° F.
♠ Maximum temperature is 800° F. Does not come with a keeper.

Multi-Pole Magnets

- Max. Temp.: 300° F; low end not rated

More poles equal more pull. Encased in an aluminum housing. Diameter tolerance is ±0.006″. Thickness tolerance is ±0.015″.

6 Poles

Dia.	Thick.	No. of Poles	Max. Pull, lbs.	Mount. Hole Thread Size		Each
1 1/8″	0.782″	4	16	1/4″-20	5686K11	$46.49
1 3/8″	0.782″	6	24	1/4″-20	5686K13	49.82
2 1/2″	1.282″	8	70	1/2″-13	5686K15	94.52

Horseshoe Magnets

- Color: Black
- Max. Temp.: 266° F; low end not rated

Encased in a nonmarking urethane rubber housing. All come with a keeper (metal plate) to reduce damage. Width tolerance is ±0.016″. Length and thickness tolerances are ±0.031″.

Lg.	Wd.	Thick.	Max. Pull, lbs.	Mount. Hole/Stud Size		Each
With Mounting Hole						
2 1/8″	2 3/8″	1 1/8″	30	1/4″	83565A39	$55.88
2 3/16″	2 1/2″	1 15/16″	45	1/4″	83565A41	94.62
With Mounting Stud						
3″	2 1/2″	1 15/16″	45	1/2″ NPT	83565A43	96.40
3 3/16″	2 1/2″	1 15/16″	45	7/16″-14	83565A45	97.67

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For information about magnet materials, see page 3458.

Machinable High-Pull Neodymium-Iron-Boron Magnets

- Material: Neodymium-iron-boron bonded with epoxy resin
- Color: Gray
- Temp. Range: –40° to +300° F
- Magnetic Pull: High
- Machine with carbide tooling

Bonded with epoxy resin to become machinable, these magnets still keep the high pull of neodymium-iron-boron. Magnets have high strength and high resistance to demagnetization.

Rectangular Bar Magnets

Length and width tolerances are ±0.008″. Thickness tolerance is ±0.005″.

Lg.	Wd.	Thick.	Max. Pull, lbs.		Each★
0.394″	0.197″	0.197″	1.1	5903K61	$3.22
0.807″	0.303″	0.150″	1.5	5903K62	7.99
0.807″	0.303″	0.276″	2.8	5903K63	14.17
1.181″	1.181″	0.079″	2	5903K64	15.13
1.181″	1.181″	0.197″	4.8	5903K65	28.46
1.181″	1.181″	0.394″	9.7	5903K66	50.72
1.968″	0.394″	0.079″	1.5	5903K67	9.46
1.968″	0.394″	0.197″	3.6	5903K68	21.86
1.968″	0.394″	0.394″	7.2	5903K69	31.80
1.968″	0.394″	0.472″	8.7	5903K71	33.70
1.968″	1.968″	1/4″	10.2	5903K72	59.86
1.968″	1.968″	1/2″	20.5	5903K73	90.85
1.968″	1.968″	3/4″	30.7	5903K74	136.27
1.968″	1.968″	1″	40.4	5903K75	181.68

Disc Magnets

Diameter and thickness tolerances are ±0.005″.

Dia.	Thick.	Max. Pull, lbs.		Each★
0.078″	0.197″	0.3	5902K41	$1.68
0.078″	0.394″	0.6	5902K42	1.85
0.118″	0.138″	0.3	5902K43	2.11
0.118″	0.276″	0.6	5902K44	2.12
0.157″	0.276″	0.8	5902K45	2.67
0.157″	0.394″	1.1	5902K46	2.76
0.197″	0.079″	0.3	5902K47	1.60
0.197″	0.157″	0.6	5902K48	1.83
0.197″	0.276″	1	5902K49	2.39
0.197″	0.394″	1.4	5902K51	2.68
0.236″	0.079″	0.3	5902K52	1.58
0.236″	0.157″	0.7	5902K53	2.20
0.236″	0.394″	1.7	5902K54	4.22
0.335″	0.118″	0.7	5902K55	2.49
0.394″	0.197″	1.4	5902K56	$6.64
0.394″	0.394″	2.9	5902K57	8.83
0.492″	0.197″	1.8	5902K58	8.34
0.492″	0.394″	3.6	5902K59	14.57
0.591″	0.118″	1.3	5902K61	5.78
0.591″	0.197″	2.1	5902K62	10.16
0.591″	0.303″	3.3	5902K63	14.78
0.591″	0.394″	4.3	5902K64	15.06
0.787″	0.197″	2.9	5902K65	14.85
0.787″	0.303″	4.4	5902K66	21.86
0.787″	0.394″	5.7	5902K67	22.68
0.984″	0.197″	3.6	5902K68	21.86
0.984″	0.394″	7.2	5902K69	31.79

Ring Magnets

OD, ID, and thickness tolerances are ±0.005″.

OD	ID	Thick.	Max. Pull, lbs.		Each★
1.023″	0.866″	0.197″	0.6	5901K71	$12.04
1.023″	0.866″	0.394″	1.1	5901K72	14.78
1.181″	0.630″	0.197″	2	5901K73	22.21
1.181″	0.630″	0.394″	4	5901K74	$33.39
1.370″	0.812″	0.197″	2	5901K75	22.55
1.370″	0.812″	0.394″	4	5901K76	43.74

Ultra-High-Pull Neodymium-Iron-Boron Magnets

- Material: Neodymium-iron-boron
- Color: Gray, except nickel-plated magnets are silver
- Max. Temp.: 300° F, unless noted; low end not rated
- Magnetic Pull: Highest
- Not recommended for machining

With up to 10 times the pull of Alnico magnets, these magnets have high strength and high resistance to demagnetization. *Nickel-plated magnets* offer greater corrosion resistance.

Rectangular Bar Magnets

Plain

Nickel Plated

Length, width, and thickness tolerances are ±0.005″.

Lg.	Wd.	Thick.	Max. Pull, lbs.	*Plain* Each★	*Nickel Plated* Each★
1/8″	1/8″	1/8″	1.5	—	5848K41 $8.81
1/4″	1/4″	0.1″	1.7	5848K31 $6.74	5848K51 6.85
1/4″	1/4″	1/8″	2.7	5848K11 8.22	5848K12 8.48
3/8″	3/8″	0.1″	3.2	5848K13 7.75	5848K14 8.76
3/8″	3/8″	1/8″	4	5848K15 8.26	5848K16 8.83
1/2″	1/2″	0.1″	4.3	5848K17 9.30	5848K18 11.85
1/2″	1/2″	0.21″	7.3	5848K32 24.63	5848K52 27.68
1/2″	1/2″	1/4″	10.7	5848K21 27.22	5848K22 30.56
5/8″	1/4″	0.1″	3.4	5848K77 9.18	5848K78 9.57
5/8″	5/8″	0.1″	5.4	5848K23 24.91	5848K24 26.83
5/8″	5/8″	1/8″	6.7	5848K25 26.74	5848K26 28.09
3/4″	1/4″	0.1″	3.7	5848K81 10.67	5848K82 10.95
3/4″	1/4″	1/4″	9.3	5848K83 23.73	5848K84 26.41
3/4″	3/4″	0.1″	6.5	5848K27 30.88	5848K28 31.88
3/4″	3/4″	1/8″	8.1	5848K61 $26.53	5848K62 $27.52
3/4″	3/4″	0.32″	16.6	5848K33 54.11	5848K53 60.01
1″	1/4″	0.1″	4.3	5848K67 18.56	5848K68 20.91
1″	1/4″	1/4″	10.7	5848K71 27.05	5848K72 30.35
1″	1″	0.1″	8.6	5848K65 46.59	5848K66 52.02
1″	1″	3/8″	23	58585K61 85.58	58585K31 91.51
1″	1″	1/2″	27	58585K63 116.76	58585K33 117.60
1″	1″	1″	85.6	5848K63 209.98	5848K64 209.98
2″	1/4″	0.1″	6.1	5848K73 42.70	5848K74 44.44
2″	1/4″	1/4″	15.2	5848K75 61.16	5848K76 66.98
2″	2″	1/4″	37	58585K67 217.00	58585K37 216.92
2″	2″	3/8″	46	58585K69 251.71	58585K39 251.71
2″	2″	1/2″	69	5848K34 324.54	5848K54 325.92
2″	2″	1″	75	58585K71 587.02	58585K41 589.51

Ring Magnets

Plain

Nickel Plated

OD, ID, and thickness tolerances are ±0.005″.

OD	ID	Thick.	Max. Pull, lbs.	*Plain* Each★	*Nickel Plated* Each★
1/4″	1/8″	0.1″	1.3	3360K1 $2.56	3360K11 $2.89
1/4″	1/8″	1/4″	2.3	3360K2 3.43	3360K21 3.77
3/8″	1/8″	0.06″	1.5	—	3360K81 1.80
3/8″	1/8″	0.1″	2.2	—	3360K7 9.42
3/8″	1/8″	1/4″	5.4	—	3360K71 18.84
1/2″	1/8″	0.1″	3.2	—	3360K72 10.31
1/2″	1/8″	1/4″	8.2	—	3360K73 20.54
1/2″	1/8″	1/2″	16.3	—	3360K74 32.02
1/2″	0.2″	0.1″	3.7	3360K3 5.94	3360K31 6.57
1/2″	0.2″	1/4″	8.6	3360K4 $7.87	3360K41 $12.97
1″	1/8″	0.1″	7.6	—	3360K75 30.00
1″	1/8″	1/4″	19.0	—	3360K76 61.68
1″	1/4″	0.1″	6.5	—	3360K77 30.00
1″	1/4″	1/4″	16.5	—	3360K78 61.62
1″	1/2″	0.1″	7.5	3360K5 18.45	3360K51 20.72
1″	1/2″	1/4″	20.4	3360K6 34.93	3360K61 96.33
1″	1/2″	1/2″	21.4	—	3360K79 106.72
1″	1/2″	3/4″	32.6	—	3360K8 161.07

Ball Magnets

All are nickel plated and have a diameter tolerance of ±0.005″. Maximum temperature is 176° F.

Dia.	Max. Pull, lbs.		Each★
1/4″	1	3945K2	$9.43
1/2″	2	3945K3	14.74
3/4″	4	3945K4	$40.69

(Material continued on following page)

★ ***Prices are 25% lower when you buy in quantities of 50 or more.***

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For information about magnet materials, see page 3458.

Ultra-High-Pull Neodymium-Iron-Boron Magnets *(Material continued from previous page)*

Disc Magnets

Diameter and thickness tolerances are ±0.005″.

Dia.	Thick.	Max. Pull, lbs.	Plain	Each★	Nickel Plated	Each★
0.06″	1/8″	0.6	—	—	5862K11	$0.62
0.08″	0.06″	0.4	—	—	5862K72	4.19
0.1″	0.04″	0.3	—	—	5862K74	4.19
0.1″	0.06″	0.5	—	—	5862K75	4.49
0.118″	0.06″	0.4	—	—	5862K21♠	3.09
1/8″	0.04″	0.4	—	—	5862K77	4.77
1/8″	0.06″	0.6	—	—	5862K13	.53
1/8″	0.1″	0.6	5862K24	$1.57	5862K25	1.81
1/8″	1/8″	0.7	5862K51	1.92	5862K61	2.27
0.157″	0.04″	0.3	—	—	5862K23♠	3.38
1/4″	0.06″	1.3	—	—	5862K79	5.66
1/4″	0.1″	1.4	5862K52	2.10	58605K31	2.76
1/4″	1/8″	2.3	—	—	58605K33	2.95
1/4″	1/4″	3.2	58605K35	3.26	58605K75	3.59
0.32″	0.08″	2.2	—	—	5862K83	6.08
0.32″	1/4″	3.1	5862K44	5.15	5862K45♣♥	5.27
3/8″	0.06″	1	5862K46	3.44	5862K47♣♦	3.61
3/8″	0.1″	2.9	5862K26	3.81	5862K27	4.64
3/8″	1/8″	3.6	5862K95	3.94	5862K96	4.51
3/8″	1/4″	4.7	5862K55	5.63	5862K65	6.43
1/2″	0.06″	1.2	5862K48	3.67	5862K59♣♦	3.76
1/2″	0.19″	5.7	5862K53	7.31	5862K63	8.77
1/2″	1/4″	7	58605K37	12.84	58605K77	13.24
1/2″	3/8″	14.3	5862K93	$21.02	5862K94	$23.20
1/2″	1/2″	19	5862K28	18.75	5862K29	18.86
1/2″	3/4″	32.6	—	—	5862K84	46.20
5/8″	1/8″	10.8	—	—	5862K86	17.54
5/8″	1/4″	13.6	—	—	5862K87	28.52
5/8″	1/2″	27.2	—	—	5862K88	49.67
3/4″	0.06″	3.9	—	—	5862K892	14.49
3/4″	0.1″	5.7	5862K3	9.28	5862K31	10.71
3/4″	1/8″	8.1	—	—	5862K893	24.20
3/4″	1/4″	14.3	5862K91	27.01	5862K92	33.22
3/4″	1/2″	28.6	5862K32	50.77	5862K33	55.14
7/8″	1/8″	9.5	—	—	5862K896	27.80
7/8″	1/4″	19	—	—	5862K897	47.63
7/8″	3/8″	15	58605K41	49.99	—	—
1″	1/8″	9.7	58605K43	20.56	58605K83	21.48
1″	1/4″	14	58605K45	28.41	58605K85	34.80
1″	1/2″	38	5862K38	91.44	5862K39	94.94
1 1/2″	1/4″	29.2	—	—	5862K15	63.84
1 1/2″	3/8″	43.8	—	—	5862K17	79.16
1 1/2″	1/2″	58.3	—	—	5862K19	118.04
2″	1/8″	19	5862K4	75.35	5862K41	79.00
2″	1/4″	38	5862K42	136.67	5862K43	138.89
3″	1/4″	50	58605K47	234.51	58605K87	241.27

Plain

Nickel Plated

♠ Max. temp. is 248° F. ♣ Max. temp. is 180° F. ♥ Max. pull is 4.7 lbs. ♦ Max. pull is 1.7 lbs.

Adhesive-Backed Ultra-High-Pull Neodymium-Iron-Boron Magnets

- Material: Neodymium-iron-boron
- Color: Silver
- Max. Temp.: 175° F; low end not rated
- Magnetic Pull: Superior
- Not recommended for machining

They have the same high pull, strength-to-weight ratio, and resistance to demagnetization as plain-back neodymium-iron-boron magnets, but with an acrylic adhesive for easy fastening. All are nickel plated for increased corrosion resistance. Length, width, diameter, and thickness tolerances are ±0.005″.

Size	Thick.	Max. Pull, lbs.	Adhesive on North Pole Side	Each★	Adhesive on South Pole Side	Each★
Rectangular						
1″ × 1/2″	0.055″	3.5	7048T12	$7.41	7048T11	$7.41
Round						
3/8″ Dia.	0.060″	1.8	7048T13	3.73	7048T14	3.73
1/2″ Dia.	0.060″	2.3	7048T15	3.96	7048T16	3.96
3/4″ Dia.	0.060″	3.5	7048T17	5.75	7048T18	5.75
1″ Dia.	0.080″	6.2	7048T19	8.12	7048T21	8.12

Adhesive on South Pole Side

Adhesive on North Pole Side

Ultra-High-Pull Encased Neodymium-Iron-Boron Magnets

- Material: Neodymium-iron-boron
- Color: Grayish silver, unless noted
- Temp. Range: –20° to +176° F
- Magnetic Pull: Superior
- Not recommended for machining

All have a casing that protects the magnet material and concentrates the magnetic field. All have a hole for mounting (screws not included), unless noted. Diameter and thickness tolerances are ±0.03″, except magnets with a rubber housing are ±0.05″.

Steel housing with stainless steel cover adds a layer of stainless steel to the exposed magnet face for greater corrosion resistance. *Rubber housing* is ideal when you need scratch resistance.

Steel Housing

Steel Housing with Stainless Steel Cover

6-Pole Rubber Housing

2-Pole Aluminum Housing

Dia.	Thick.	No. of Poles	Max. Pull, lbs.	Mount. Hole/ Thread Size		Each★
Steel Housing						
3/8″	1/2″	2	6	8-32	5679K11	$28.52
1/2″	1/2″	2	16	10-32	5679K13	29.38
3/4″	1/2″	2	44	10-32	5679K15	42.80
1″	1/2″	2	92	1/4″-20	5679K17	49.75
1 1/4″	1/2″	2	136	5/16″-18	5679K21	69.70
2 1/32″	5/16″	2	95	3/16″	5752K21	26.38
2 5/8″	3/8″	2	200	1/4″	5752K25	36.93
Steel Housing with Stainless Steel Cover						
1.205″	3/16″	2	40	1/8″	7061T11	11.04
1.4″	9/32″	2	65	3/16″	7061T12	13.68
2.03″	5/16″	2	90	3/16″	7061T13	18.16
2 3/8″	0.35″	2	110	0.27″	7061T14	25.40
2 5/8″	3/8″	2	140	0.28″	7061T15	26.16
4.9″	1/2″	2	300	1/2″	7061T17	69.11
Rubber Housing						
1.677″	0.24″	6	20	M4	7132T21	23.16
2.574″	0.315″	6	32	M5	7132T22	39.20
3.471″	0.335″	12	105	M6	7132T23	52.96
Rubber Housing with Threaded Stud						
1.677″	0.24″	6	20	1/4″-20	7132T24	$23.16
2.574″	0.315″	6	32	1/4″-20	7132T25	39.20
3.471″	0.335″	12	105	1/4″-20	7132T26	52.96
Aluminum Housing						
1/2″	29/64″	2	4.4	M5	5867K31▲	19.51
5/8″	39/64″	2	11	M6	5867K32▲	21.35
3/4″	1 3/16″	2	36	1/4″-20	5867K82	72.99
0.866″	25/32″	2	19.8	M6	5867K33▲	28.81
63/64″	63/64″	2	33	M6	5867K34▲	39.41
1″	1 5/16″	2	86	1/4″-20	5867K83	75.34
1 1/2″	2 1/16″	2	204	5/16″-18	5867K87	119.30
2″	1/2″	4	90	1/4″	5867K91	50.52
2″	1″	4	120	1/4″	5867K92	52.12
2″	2 7/16″	2	344	3/8″-16	5867K89	129.90
2 1/2″	1″	4	180	1/4″	5867K93	54.29
3″	1″	3	290	1/4″	5867K94■	56.40

▲ Comes with a keeper (metal plate) to reduce damage. Color is blue. ■ Has two mounting holes with a ctr.-to-ctr. distance of 1 7/8″.

★ Prices are 25% lower when you order in quantities of 50 or more.

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For information about magnet materials, see page 3458.

High-Pull Encased Samarium-Cobalt Magnets

Smooth

Knurled

- Material: Samarium-cobalt Grade 2-17
- Color: Silver
- Temp. Range: 14° to 302° F
- Magnetic Pull: Very high
- Not recommended for machining

Encased in a steel housing that protects the magnet material and concentrates the magnetic field, yet retains the high pull of samarium-cobalt. *Knurled magnets* allow for better gripping. Diameter and thickness tolerances are ±0.008″.

Dia.	Thick.	Max. Pull, lbs.	*Smooth*	Each	*Knurled*	Each
0.39″	0.31″	0.6	57325K81	$16.29	57325K22	$16.05
0.70″	0.31″	11.2	57325K86	30.77	57325K24	30.00
0.98″	0.39″	20.2	57325K93	49.03	57325K26	44.21

Easy On/Off Encased Magnets

You're only a half turn away from securing, positioning, and picking up metal. Turn the handle on for full magnetic hold; turn off and nothing will stick. Magnet is neodymium-iron-boron and nickel plated for increased corrosion resistance. Encased in a zinc-plated steel housing. Maximum temperature is 170° F.

Lg.	Wd.	Ht.	Max. Pull, lbs.		Each
3/4″	1.2″	1.8″	95	9649T11	$35.20
1 1/4″	1.6″	2″	155	9649T12	54.28

Demagnetizers

Loop

Surface

Designed for production settings, these units demagnetize parts and tools. They have an on/off switch and four mounting holes (screws not included). *120 VAC* units have 6-ft. cords with three-prong plugs; *240 VAC* units have three 6-ft. wire leads for hardwiring.

Demag. Area	Watts	Lg.	Wd.	Ht.	Mtg. Hole/ Thread Size		Each
120 VAC Loop Style							
3 1/2″ Dia.	165	8″	4 1/4″	8″	#10	5843K22	$720.00
6″ Dia.	528	11 1/2″	4″	11 1/2″	1/4″	5843K32	945.14
120 VAC Surface Style							
4 1/2″×3″	252	7 1/4″	4 3/4″	3 13/16″	1/4″	5820K4	470.82
6″ ×4″	1,080	11 1/4″	6 1/4″	4 15/16″	5/16″	5820K6	729.17
240 VAC Surface Style							
4 1/2″×3″	252	7 1/4″	4 3/4″	3 13/16″	1/4″	5820K5	484.78
6″ ×4″	1,200	11 1/4″	6 1/4″	4 15/16″	5/16″	5820K7	750.12

Portable Demagnetizers

5946K12
Loop

Pin Point

Palm Held

Portable intermittent-duty units go wherever you need to demagnetize parts and tools. All units have an on/off switch and operate on 110/120 VAC, unless noted. *Pin-point* and *palm-held* styles demagnetize hard-to-reach areas while *loop* style is designed for tabletop use. *Loop* style has a minimum 8-ft. cord with three-prong plug. *Pin-point* style has a 6-ft. cord with two-prong plug. *Palm-held* style has a 5-ft. cord with three-prong plug.

Style	Demag. Area	Watts	Lg.	Wd.	Ht.		Each
5 Seconds On/3 Minutes Off							
Loop	1 1/2″ ×3″	300	5″	3″	2″	5731K77	$84.55
Loop	3″ Dia.	625	4″	4″	4″	5946K12	159.68
5 Minutes On/15 Minutes Off							
Pin Point	13/32″ × 13/32″	186	5 3/4″	3″	1 1/2″	5743K65★	65.33
Palm Held	1 5/8″ ×3 1/2″	132	3 1/2″	1 3/4″	1 3/4″	5922K11	128.58
20 Minutes On/10 Minutes Off							
Loop	5 1/4″ Dia.	633	9″	3 3/4″	9″	5946K15	674.80

★ Does not have an on/off switch.

High-Temperature High-Pull Samarium-Cobalt Magnets

- Material: Samarium-cobalt Grades 1-5 and 2-17
- Color: Gray
- Temp. Range: Grade 1-5, –40° to +482° F; Grade 2-17, –40° to +572° F
- Magnetic Pull: Grade 1-5, high; Grade 2-17, very high
- Machine with diamond tooling

The original rare earth magnet, samarium-cobalt has greater pull than other high-temperature magnet materials such as ceramic and Alnico. Length, width, diameter, and thickness tolerances are ±0.005″.

Size	Thick.	Grade 1-5 Max. Pull, lbs.		Each	Grade 2-17 Max. Pull, lbs.		Each
Rectangular Bar Magnets							
1/4″ × 1/4″	0.1″	1	5715K32	$4.18	1.5	5767K51	$4.48
1/2″ × 1/2″	0.21″	5	5715K34	11.03	6.5	5767K52	11.25
3/4″ × 3/4″	0.32″	9	5715K36	28.33	10.5	5767K53	28.85
1″ ×1″	0.425″	16	5715K37	53.73	17.5	5767K54	48.98
1″ ×1 1/2″	0.188″	—	—	—	13.25	5767K61	34.05
1″ ×2″	0.5″	—	—	—	47.69	5767K62	90.57
2″ ×2″	0.5″	65	5715K38	108.81	71	5767K56	110.83
Disc Magnets							
1/8″ Dia.	0.125″	0.3	5716K61	2.88	—	—	—
3/16″ Dia.	0.06″	0.46	5716K69	1.00	—	—	—
1/4″ Dia.	0.1″	1.0	5716K63	3.96	2.8	5768K26	4.36
5/16″ Dia.	0.2″	2.24	5716K72	3.75	—	—	—
3/8″ Dia.	0.2″	2.89	5716K73	4.55	—	—	—
1/2″ Dia.	0.19″	4	5716K66	9.43	5	5768K22	10.80
5/8″ Dia.	0.18″	4.61	5716K71	11.00	—	—	—
3/4″ Dia.	0.285″	8	5716K67	22.86	10	5768K23	30.00
1″ Dia.	0.375″	14	5716K68	38.86	16	5768K24	44.33

Pocket-Size Magnetizer/Demagnetizer

Compact 2″ Lg.×1″ Wd.×2″ Ht. unit works without electrical power to quickly magnetize or demagnetize small tools. Simply pass tools through one of the openings. Openings are approximately 1/2″ Wd.×1″ Ht.

5863K49 ..... **Each** $5.97

Magnetic Pole Detectors

Viewing Paper— Press a sheet of this green magnetic viewing paper onto any magnet to quickly identify the pole locations. Each sheet can be used multiple times. You'll get three 0.005″ thick 3″×3″ sheets per package.

5702K21 ..... **Per Pkg.** $8.89

Electronic Detector— Point this palm-sized detector at your magnet and press the button—the red light indicates north, the green light indicates south. Operation is completely electronic, eliminating demagnetization. Unit has a sensitivity of ±150 gauss, is 5 1/2″ Lg.×1″ Wd., and is powered by four 1.5-volt batteries (included).

57255K71 ..... **Each** $44.21

Ferrite Cores

Ferrite magnet core materials generate magnetism when a magnet wire is wrapped over them and energized (wire not included; see page 785). They lose their magnetism once the electric current is turned off. Great for use as inductors and as transformers in electrical circuits.

OD	ID	Ht.		Each
Ring Cores				
0.23″	0.12″	0.06″	8495K28	$2.33
3/8″	3/16″	1/8″	8495K38	2.61
1/2″	5/16″	1/4″	8495K48	3.14
0.87″	0.54″	1/4″	8495K57	4.18
Rod Cores				
1/4″	—	7 1/2″	8495K82	15.89
3/8″	—	7 1/2″	8495K83	23.75

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and surface finish and condition will all reduce these ratings. Do not use for lifting over people.***

For more electromagnets designed for lifting, see pages 1477-1478.

Surface-Contact DC-Powered Electromagnets

Rectangular *Round*

Create magnetic holding power anytime. Just position the magnet face to make direct contact with an object's flat surface and turn the power on. Turn off to demagnetize. Max. temp. is 100° F. *Note*: Holding power is not adjustable.

All include 2-ft. long wire leads (unless noted) for connecting to a DC electromagnet power supply (required; sold separately below). They have one threaded hole on the bottom for mounting (screws not included), except those with a center-to-center dimension, which have two holes.

Magnets with ***spring-loaded release*** have a pin that quickly releases the held object when power is turned off.

Watts	Size, Wd. × Lg.	Ht.	Max. Pull, lbs.	Mount. Hole Thread Size	Mount. Hole Ctr.-to-Ctr.		Each
Rectangular							
12 VDC							
8	1½″ × 1½″	1¼″	100	10-32	—	5698K311	$56.25
10	1½″ × 2½″	1¼″	160	10-32	1″	5698K312	78.57
14	2½″ × 2½″	1½″	300	¼″-20	—	5698K313■	78.26
29	2½″ × 4½″	1⅞″	600	¼″-20	2″	5698K315■	125.00
24 VDC							
8	1½″ × 1½″	1¼″	100	10-32	—	5698K411	56.25
10	1½″ × 2½″	1¼″	160	10-32	1″	5698K412	78.57
14	2½″ × 2½″	1½″	300	¼″-20	—	5698K413■	78.26
28	3½″ × 3½″	2″	700	⅜″-16	—	5698K414■	112.13
29	2½″ × 4½″	1⅞″	600	¼″-20	2″	5698K415■	125.00
110 VDC							
12	2½″ × 4½″	2″	750	¼″-20	2″	5698K72	155.70
37	3″ × 6″	2″	1000	⅜″-16	3″	5698K71	198.74
58	4″ × 8″	2½″	1700	⅜″-16	4″	5698K511■	251.49
65	6″ × 12″	3½″	5000	½″-13	3″	5698K74▲	658.82
Round							
12 VDC							
1.4	½″ Dia.	1½″	4	6-32	—	5698K7	56.14
1.4	¾″ Dia.	1¼″	9	10-32	—	5698K111	31.40
1.4	1″ Dia.	¾″	26	10-32	—	5698K112	35.53
3.6	1″ Dia.	1¼″	32	10-32	—	5698K113	39.08
4.4	1¼″ Dia.	1¼″	50	¼″-20	—	5698K114	42.20
4.6	1½″ Dia.	1½″	80	¼″-20	—	5698K115	48.57
5.6	2″ Dia.	1⅝″	180	¼″-20	—	5698K116	55.28
24 VDC with Spring-Loaded Release							
0.9	0.78″ Dia.	0.98″	1	M5	—	5893K92♣	99.90
2	1.18″ Dia.	0.98″	6	M6	—	5893K94♣	110.55
3.1	1.57″ Dia.	0.98″	24	M6	—	5893K96♣	153.25
24 VDC							
1.4	½″ Dia.	1½″	4	6-32	—	5698K97	56.14
1.4	¾″ Dia.	1¼″	9	10-32	—	5698K211	31.40
1.4	1″ Dia.	¾″	26	10-32	—	5698K212	35.53
3.6	1″ Dia.	1¼″	32	10-32	—	5698K213	39.08
4.4	1¼″ Dia.	1¼″	50	¼″-20	—	5698K214	42.20
4.6	1½″ Dia.	1½″	80	¼″-20	—	5698K215	48.57
5.6	2″ Dia.	1⅝″	180	¼″-20	—	5698K216	55.28
110 VDC							
8	3½″ Dia.	1½″	650	¼″-20	1″	5698K76	214.04
33	4″ Dia.	3″	900	⅜″-16	1″	5698K77	228.07
60.5	10″ Dia.	2½″	4700	⅝″-11	3″	5698K75▲	658.82

■ Wire leads are 3-ft. long. ▲ Wire leads are 6-ft. long.
♣ Wire leads are 1-ft. long.

DC-Powered Electromagnets with Parallel Poles

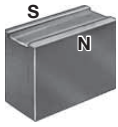

Parallel poles create better magnetic pull through flat surfaces that are thinly painted, plated, or coated. Turn the power on to create a magnetic field and turn off to demagnetize. Maximum temperature is 192° F. All require a DC electromagnet power supply (sold separately on this page) attached via a terminal strip (leads not included). All have two mounting holes (screws not included). *Note:* Holding power is not adjustable.

Watts	Wd.	Lg.	Ht.	Max. Pull, lbs.	Mount. Hole Thread Size	Mount. Hole Ctr.-to-Ctr.		Each
12 VDC								
4	1″	1″	1⅜″	20	10-32	½″	5684K32	$157.09
6	1″	2″	1⅜″	80	¼″-20	1″	5684K33	168.51
11	1″	3″	1⅜″	170	¼″-20	2″	5684K34	185.18
13	1″	4″	1⅜″	210	¼″-20	3″	5684K35	187.24
38	2″	6″	2¾″	620	5/16″-18	4½″	5684K38	265.27
52	2″	8″	2¾″	930	5/16″-18	6½″	5684K39	290.24
24 VDC								
4	1″	1″	1⅜″	20	10-32	½″	5684K15	157.09
5	15/16″	15/8″	1¼″	50	10-32	⅞″	5684K14	153.33
6	1″	2″	1⅜″	80	¼″-20	1″	5684K16	168.51
11	1″	3″	1⅜″	170	¼″-20	2″	5684K17	185.18
13	1″	4″	1⅜″	210	¼″-20	3″	5684K18	187.24
22	2″	4″	2¾″	470	5/16″-18	3″	5684K21	214.31
22	1″	6″	1⅜″	260	¼″-20	4½″	5684K19	218.44
38	2″	6″	2¾″	620	5/16″-18	4½″	5684K22	265.27
52	2″	8″	2¾″	930	5/16″-18	6½″	5684K23	290.24

Plug-In Surface-Contact Electromagnets

Round

No additional power source needed—simply position the magnet face to make direct contact with an object's flat surface and plug the magnet in. Simply unplug to demagnetize. The plug contains a power supply, also known as a rectifier, which lets you convert power from AC to DC. Maximum temperature is 100° F. *Note:* Holding power is not adjustable.

Rectangular magnets have two threaded holes on the bottom for mounting, while ***round*** magnets have only one (screws not included). All have a 3-ft. long power cord with three-prong plug, unless noted.

Watts	Size, Wd. × Lg.	Ht.	Max. Pull, lbs.	Mount. Hole Thread Size	Mount. Hole Ctr.-to-Ctr.		Each
Rectangular							
8.2	2½″ × 2½″	1½″	280	¼″-20	¾″	5692K39♦	$157.14
9.7	1½″ × 2½″	1¼″	200	10-32	1″	5692K36	163.79
30	2½″ × 4½″	1⅞″	800	¼″-20	2″	5692K37	296.61
Round							
2.8	1¼″ Dia.	1¼″	40	¼″-20	—	5692K32♦	148.77
3.6	1¾″ Dia.	1⅝″	110	¼″-20	—	5692K33♦	169.92
6	2″ Dia.	1⅝″	150	¼″-20	—	5692K34	170.78
16.8	2″ Dia.	2½″	180	¼″-20	—	5692K35	174.65
26.3	3″ Dia.	3″	370	5/16″-18	—	5692K38	212.28

♦ Has a 6-ft. long power cord.

DC Electromagnet Power Supplies

A *B*

Also known as rectifiers, these units convert AC power to DC, so you can provide power to all of the DC-powered electromagnets on this page. Choose a power supply with watts equal to or greater than your magnet's watts. Max. temperature is 140° F. All have four mounting holes. All except Style C have a NEMA 12 steel enclosure.

Automatic Release—Once turned off, the magnetic current reverses automatically for easy release. Ideal for high-speed automated magnetic equipment. The enclosure has input and output connections via a terminal strip. A SPST switch, limit switch, or 120 VAC PLC output is required.

Manual Release—An on-off-release switch must be flipped to reverse the magnetic current for release. The 48-watt unit has 5-ft. input and output power cords with three-prong plugs; 800 watt has 5-ft. wire leads and a 5-ft. power cord with three-prong plug; and the 100-watt unit has a 6-ft. input power cord with three-prong plug and 3-ft. output power cord with three-prong plug.

	Watts	Wd.	Lg.	Ht.	Mount. Hole Size	12 VDC Output	Each	24 VDC Output	Each	110 VDC Output	Each
Automatic Release—*Uses 120/240 VAC input, unless noted*											
A	100	5″	10″	12″	9/32″	5888K28	$704.55	5888K38	$704.55	5888K47★	$794.03
A	300	7″	16″	20″	9/32″	—	—	—	—	5888K49★	1,209.57
Manual Release—*Uses 120 VAC input*											
B	48	5″	7½″	3⅜″	5/16″	57245K75	342.65	57245K85	342.65	—	—
B	800	5″	7½″	3⅜″	5/16″	—	—	—	—	57245K96	342.65
C	100	5″	5″	8″	9/32″	57245K73	445.45	57245K83	445.45	—	—

★ Uses 240/480 VAC input.

C

Warning! ***"Max. Pull, lbs." ratings are based on ideal conditions. Variations in iron content, thickness, and finish will reduce ratings. In lifting applications, do not use magnets more than 1/4 of their rated capacity. Do not lift over people.***

For information about rubber, see page 3526.

Edge-Grip Seals

Simply push these seals onto an edge to stop wind, dust, and water from entering doors. They fit a specific edge thickness, but also can conform to curved and irregular surfaces. Cut to length with shears or tin snips. Sides without gripping fingers will be flush against your surface. Sealing portion is not rated for hardness.

To Order: Please specify 10-, 25-, 50-, or 100-ft. continuous length.

EPDM Seals with Vinyl Grip—These seals have good weather resistance. Gripping portion is made of PVC with individual aluminum clips (unless noted) inside to ensure a permanent, secure grip. Bulbs are EPDM closed-cell foam rubber. Temperature range is –20° to +150° F. Color is black.

Silicone Seals—Turn to these seals when you need resistance to high temperatures. Made of dense silicone rubber. Secure with staples or nails (not included). Temperature range is –60° to +350° F. Color is orange-red for Style 5; gray for Style 6.

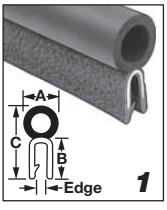

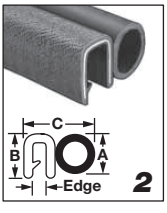

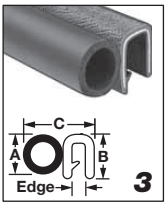

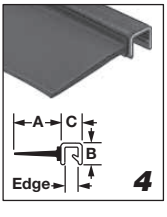

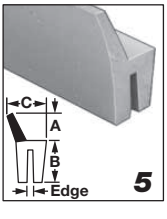

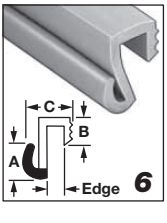

Fits Edge	(A)	(B)	(C)		Per Ft. 1-99	Per Ft. 100-Up
Style 1—*EPDM Seals with Vinyl Grip*						
1/16″	13/64″	3/8″	37/64″	1120A181	$1.37	$1.02
		9/16″	25/32″	1120A341★	$1.50	$1.20
	3/8″	9/16″	61/64″	1120A112	$1.54	$1.15
	7/16″	9/16″	1 1/64″	1120A122	$1.51	$1.13
	5/8″	9/16″	1 3/16″	1120A132	$1.86	$1.39
	3/4″	9/16″	1 5/16″	1120A562	$2.64	$1.97
	1″	3/8″	1 3/8″	1120A191	$2.37	$1.77
		9/16″	1 37/64″	1120A361★	$2.82	$2.11
1/8″	3/8″	9/16″	15/16″	1120A212	$1.54	$1.13
	7/16″	9/16″	1″	1120A222	$1.51	$1.13
	5/8″	9/16″	1 3/16″	1120A232	$1.86	$1.39
	3/4″	9/16″	1 5/16″	1120A572	$2.37	$1.77
3/16″	3/8″	17/32″	29/32″	1120A312	$1.51	$1.13
	7/16″	17/32″	31/32″	1120A322	$1.59	$1.28
	5/8″	17/32″	1 5/32″	1120A332	$1.86	$1.40
	3/4″	17/32″	1 9/32″	1120A582	$2.64	$1.97
1/4″	3/8″	1/2″	7/8″	1120A412	$1.51	$1.13
	7/16″	1/2″	15/16″	1120A422	$1.70	$1.27
	5/8″	1/2″	1 1/8″	1120A432	$1.86	$1.39
	3/4″	1/2″	1 1/4″	1120A592	$2.64	$1.97
1/2″	7/16″	1″	1 7/16″	1120A45	$3.91	$2.91
5/8″	5/8″	15/16″	1 9/16″	1120A48	$3.68	$2.75
3/4″	3/4″	7/8″	1 5/8″	1120A36	$3.91	$2.92
Style 2—*EPDM Seals with Vinyl Grip*						
1/64″	3/8″	3/8″	9/16″	1120A141	$1.24	$0.92
	7/16″	3/8″	5/8″	1120A151	$1.33	$0.99
	5/8″	3/8″	13/16″	1120A161	$1.51	$1.13
	3/4″	3/8″	15/16″	1120A171	$1.99	$1.49
1/32″	3/8″	3/8″	37/64″	1120A711	$1.12	$0.92
	7/16″	3/8″	41/64″	1120A721	$1.22	$1.00
	5/8″	3/8″	49/64″	1120A731	$1.39	$1.13
	3/4″	3/8″	61/64″	1120A741	$1.84	$1.49
1/16″	13/64″	3/8″	7/16″	1120A371	$1.64	$1.23
		9/16″	15/32″	1120A391★	$1.50	$1.12
	3/8″	3/8″	19/32″	1120A811	$1.54	$1.15
		9/16″	5/8″	1120A111	$1.54	$1.15
	7/16″	3/8″	43/64″	1120A821	$1.33	$1.08
		9/16″	11/16″	1120A121	$1.51	$1.13
	5/8″	3/8″	51/64″	1120A831	$1.39	$1.13
		9/16″	59/64″	1120A131	$1.86	$1.39
	3/4″	3/8″	63/64″	1120A841	$1.84	$1.49
		9/16″	63/64″	1120A561	$2.64	$1.97
	1″	3/8″	1 15/64″	1120A381	$1.89	$1.40
		9/16″	1 17/64″	1120A451★	$2.66	$1.98
1/8″	3/8″	9/16″	43/64″	1120A211	$1.54	$1.13
	7/16″	9/16″	47/64″	1120A221	$1.51	$1.13
	5/8″	9/16″	59/64″	1120A231	$1.86	$1.39
	3/4″	9/16″	1 1/16″	1120A571	$2.37	$1.77
3/16″	3/8″	17/32″	47/64″	1120A311	$1.51	$1.13
	7/16″	17/32″	51/64″	1120A321	$1.59	$1.28
	5/8″	17/32″	63/64″	1120A331	$1.86	$1.40
	3/4″	17/32″	1 7/64″	1120A581	$2.64	$1.97
1/4″	3/8″	1/2″	51/64″	1120A411	$1.51	$1.13
	7/16″	1/2″	55/64″	1120A421	$1.70	$1.27

Fits Edge	(A)	(B)	(C)		Per Ft. 1-99	Per Ft. 100-Up
Style 2 (Cont.)						
1/4″	5/8″	1/2″	1 3/64″	1120A431	$1.86	$1.39
	3/4″	1/2″	1 11/64″	1120A591	$2.64	$1.97
1/2″	1″	1″	1 3/4″	1120A44	$4.27	$3.19
5/8″	3/4″	15/16″	1 5/8″	1120A47	$3.91	$2.92
3/4″	3/4″	7/8″	1 3/4″	1120A35	$3.91	$2.92
Style 3—*EPDM Seals with Vinyl Grip*						
1/64″	3/8″	3/8″	9/16″	1120A142	$1.24	$0.92
	7/16″	3/8″	5/8″	1120A152	$1.33	$0.99
	5/8″	3/8″	13/16″	1120A162	$1.51	$1.13
	3/4″	3/8″	15/16″	1120A172	$1.99	$1.49
1/32″	3/8″	3/8″	37/64″	1120A712	$1.12	$0.92
	7/16″	3/8″	41/64″	1120A722	$1.22	$1.00
	5/8″	3/8″	53/64″	1120A732	$1.39	$1.13
	3/4″	3/8″	61/64″	1120A742	$1.84	$1.49
1/16″	3/8″	3/8″	19/32″	1120A812	$1.54	$1.15
		9/16″	5/8″	1120A113	$1.54	$1.15
	7/16″	3/8″	43/64″	1120A822	$1.33	$1.08
		9/16″	11/16″	1120A123	$1.51	$1.13
	5/8″	3/8″	51/64″	1120A832	$1.39	$1.13
		9/16″	59/64″	1120A133	$1.86	$1.39
	3/4″	3/8″	63/64″	1120A842	$1.84	$1.49
		9/16″	63/64″	1120A563	$2.64	$1.97
1/8″	3/8″	9/16″	43/64″	1120A213	$1.54	$1.13
	7/16″	9/16″	47/64″	1120A223	$1.51	$1.13
	5/8″	9/16″	59/64″	1120A233	$1.86	$1.39
	3/4″	9/16″	1 1/16″	1120A573	$2.37	$1.77
3/16″	3/8″	17/32″	47/64″	1120A313	$1.51	$1.13
	7/16″	17/32″	51/64″	1120A323	$1.59	$1.28
	5/8″	17/32″	63/64″	1120A333	$1.86	$1.40
	3/4″	17/32″	1 7/64″	1120A583	$2.64	$1.97
1/4″	3/8″	1/2″	51/64″	1120A413	$1.51	$1.13
	7/16″	1/2″	55/64″	1120A423	$1.70	$1.27
	5/8″	1/2″	1 3/64″	1120A433	$1.86	$1.39
	3/4″	1/2″	1 11/64″	1120A593	$2.64	$1.97
1/2″	1″	1″	1 3/4″	1120A46■	$4.27	$3.19
5/8″	3/4″	15/16″	1 5/8″	1120A49■	$3.91	$2.92
3/4″	3/4″	7/8″	1 3/4″	1120A37■	$3.91	$2.92
Style 4—*EPDM Seals with Vinyl Grip*						
1/16″	1″	9/16″	15/64″	1120A866	$2.33	$1.77
	1 3/4″	9/16″	15/64″	1120A873	$3.23	$2.44
3/32″	1″	9/16″	17/64″	1120A872	$2.33	$1.77
1/8″	1″	9/16″	19/64″	1120A868	$2.33	$1.77
	1 3/4″	9/16″	19/64″	1120A875	$3.23	$2.44
3/16″	1″	17/32″	23/64″	1120A871	$2.33	$1.77
	1 3/4″	17/32″	23/64″	1120A876	$3.23	$2.44
1/4″	1″	1/2″	27/64″	1120A867	$2.33	$1.77
	1 3/4″	1/2″	27/64″	1120A874	$3.23	$2.44
		11/16″	27/64″	1120A863	$2.90	$2.16
1/2″	1 3/4″	19/32″	43/64″	1120A861	$2.90	$2.16
	3″	19/32″	43/64″	1120A865	$3.29	$2.50
Style 5—*Silicone Seals*						
1/16″	3/16″	1/4″	3/8″	12335A62	$2.05	$1.53
	1/2″	1/2″	5/8″	12335A63	$2.71	$2.02
Style 6—*Silicone Seals*						
3/64″	27/64″	3/8″	51/64″	12335A65	$2.44	$1.82

★ Has gripping fingers on both sides. ■ Clips are steel.

For information about rubber, see page 3526.

Adjustable Edge-Grip Seals

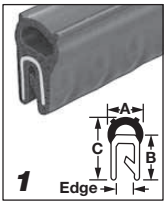

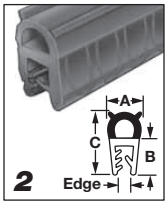

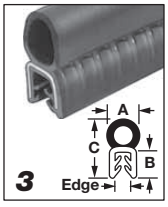

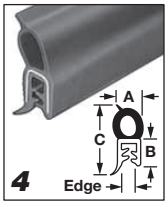

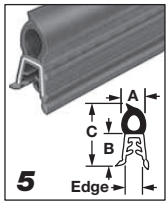

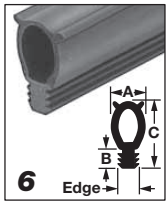

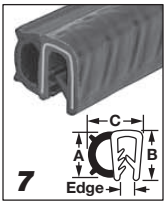

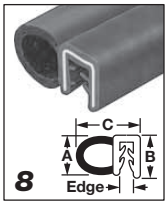

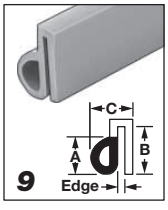

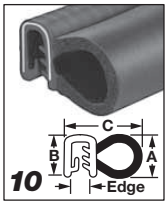

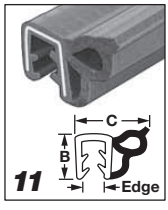

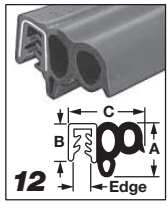

These edge-grip seals can fit a range of edge thicknesses to stop wind, dust, and water from entering doors. Seals also conform to curved and irregular surfaces. To install, cut to length with shears or tin snips and press onto edge. The greater the number of gripping fingers, the greater the seal's holding power. Sides without gripping fingers will be flush against your surface. Sealing portion is not rated for hardness.

EPDM Seals— Pick these for their good weather resistance. Gripping portion is EPDM rubber and bulb is EPDM closed-cell foam rubber. All have a steel core. Temperature range is –40° to +248° F. Color is black. Style 18 meets UL 94HB.

Buna-N Seals— All resist oil and grease. Gripping portion is Buna-N rubber; bulb is Buna-N closed-cell foam rubber. Seals have a steel core. Temperature range is –22° to +212° F. Color is black.

Silicone Seal— Good for higher temperature applications, this silicone rubber seal withstands temperatures of –60° to +350° F. Secure with staples or nails (not included). Color is orange-red.

To Order: Please specify length from those listed below. The last length listed is the maximum continuous length.

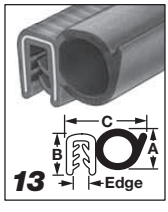

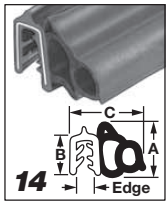

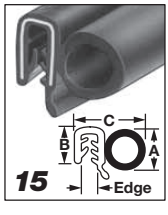

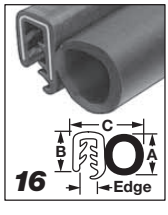

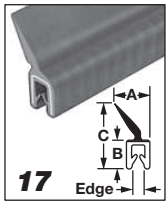

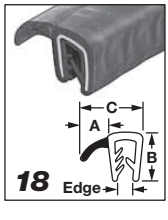

Style	Fits Edge	(A)	(B)	(C)	Seal Material	Available Lengths, ft.		Per Ft. 1-99	Per Ft. 100-Up
1	1/32"-3/32"	5/16"	31/64"	21/32"	EPDM	10, 25, 50, 100	12335A41	$2.74	$2.05
		21/64"	33/64"	5/8"	Buna-N	10, 25, 50, 100, 164	12335A54	$3.48	$2.60
2	1/32"-1/8"	15/16"	41/64"	1 35/64"	EPDM	10, 25	12335A25♦	$2.61	$1.95
	1/32"-9/64"	29/64"	15/32"	49/64"	EPDM	10, 25, 50, 100	12335A42	$2.53	$1.89
	3/64"-9/64"	7/16"	33/64"	53/64"	Buna-N	10, 25, 50, 100, 164	12335A51	$4.04	$3.01
	1/8"-13/64"	7/16"	33/64"	53/64"	EPDM	10, 25, 50, 100, 164	12335A52	$2.83	$2.11
					Buna-N	10, 25, 50, 100, 164	12335A53	$4.00	$2.99
3	3/64"-1/16"	21/32"	9/16"	1 5/32"	EPDM	10, 25	12335A13	$1.95	$1.51
	1/16"-3/32"	21/32"	9/16"	1 5/32"	EPDM	10, 25	12335A14	$1.95	$1.51
	3/32"-1/8"	21/32"	9/16"	1 5/32"	EPDM	10, 25	12335A15	$2.12	$1.58
4	3/64"-1/8"	5/8"	41/64"	1 3/8"	EPDM	10, 25	12335A26♣	$2.19	$1.64
	1/16"-5/64"	17/32"	33/64"	1 3/8"	EPDM	10, 25, 82	12335A22	$1.96	$1.47
			33/64"	1 11/32"	EPDM	10, 25, 82	12335A11	$2.04	$1.56
5	5/64"-13/64"	5/8"	19/32"	1 23/64"	EPDM	10, 25	12335A24	$3.23	$2.42
6	5/32"-13/64"	23/64"	13/64"	11/16"	EPDM	10, 25, 100, 150	12335A46■	$1.74	$1.29
7	1/32"-3/32"	23/64"	1/2"	9/16"	EPDM	10, 25, 50, 100	12335A43▲	$2.85	$2.13
	1/32"-9/64"	29/64"	17/32"	23/32"	EPDM	10, 25, 50, 100, 150	12335A44	$2.65	$1.98
	3/64"-9/64"	7/16"	33/64"	41/64"	Buna-N	10, 25, 50, 100, 164	12335A55	$5.44	$4.06
8	1/32"-3/32"	9/16"	17/32"	15/16"	EPDM	10, 25, 50, 100	12335A45	$3.76	$2.81
9	1/16"-5/32"	1/2"	5/8"	5/8"	Silicone	10, 25, 50, 100	12335A61	$5.10	$3.81
10	3/64"-1/16"	5/8"	9/16"	1 5/64"	EPDM	10, 25	12335A16	$2.19	$1.63
	1/16"-3/32"	5/8"	9/16"	1 5/64"	EPDM	10, 25	12335A17	$2.19	$1.63
	3/32"-1/8"	5/8"	9/16"	1 5/64"	EPDM	10, 25	12335A18	$2.19	$1.63
11	1/8"-1/4"	———	21/32"	1 1/4"	EPDM	10, 25, 50, 100, 250	12335A21	$3.14	$2.34
12	5/64"-7/64"	53/64"	5/8"	1 7/32"	EPDM	10, 25, 82	12335A12	$2.18	$1.69
13	5/64"-1/8"	11/16"	41/64"	1 1/16"	EPDM	10, 25	12335A73	$3.48	$2.60
14	1/16"-1/8"	61/64"	51/64"	1 3/32"	EPDM	10, 25	12335A74	$2.78	$2.08
15	1/32"-3/32"	39/64"	59/64"	1 5/64"	EPDM	10, 25	12335A75	$2.79	$2.09
16	7/64"-1/8"	3/4"	41/64"	1 13/64"	EPDM	10, 25	12335A71	$3.63	$2.71
17	5/64"-3/32"	37/64"	27/64"	1 1/4"	EPDM	10, 25, 82	12335A23	$2.03	$1.51
18	3/64"-9/64"	29/64"	33/64"	47/64"	EPDM	10, 25, 50, 100, 164	12335A56	$2.28	$1.71

♦ Has no ridges on the top of the bulb. ♣ Has three gripping fingers on longest side.
■ Push-in style. Seal fits in the gap between two metal sheets.
▲ Has no gripping fingers on side closest to bulb.

For information about rubber and durometer scales, see page 3526.

Glass-Locking Edge-Grip Seals

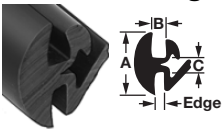

Locking Gasket Tool Set

By pushing the bottom end onto an edge and inserting glass into the top portion, this EPDM seal locks into place to secure gaps between glass and metal. Temperature range is –20° to +158° F. Durometer hardness is A70.

To install, lubricate with soap and water. Tape in place as glass is inserted. For easier installation, work into position with the set of locking gasket tools (sold separately).

To Order: Please specify 5-, 10-, 25-, 50-, or 100-ft. continuous length.

Fits Edge	O'all Ht. (A)	Fits Glass (B)	Clearance Between Glass and Edge (C)		Per Ft. 1-99	100-Up
3/64"-1/16"	15/64"	3/16"-1/4"	5/16"	3275T15	$1.78	$1.32
3/32"-9/64"	57/64"	3/16"-1/4"	1/4"	3275T22	1.44	1.07
3/16"-1/4"	13/32"	3/16"-1/4"	13/32"	3275T16	1.89	1.41
Optional 2-Pc. Locking Gasket Tool Set				3275T44	Each	$57.28

Fire-Rated Adhesive-Backed Rubber Bulb Seals

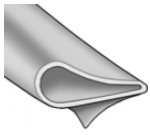

Tested in accordance with NFPA (National Fire Protection Association) standards 105 and 252, these silicone seals also meet ASTM E283, E90, and E413. UL classified for use on hollow metal and steel-covered composite-style fire doors rated up to and including three hours, as well as wood-covered composite and wood core-style fire doors rated up to and including 1½ hours. Meet UL 10B, UL 10C, and UL 1784.

Cut to length with scissors or a knife. Temperature range of silicone is –100° to +550° F; acrylic adhesive has a temperature range of –40° to +250° F. For best adhesion results, install above 50° F. Durometer hardness is A70-A80.

To Order: Please specify 10-, 25-, 100-, or 300-ft. continuous length and color: brown, charcoal, or white.

O'all Wd. (A)	O'all Ht. (B)		Per Ft. 1-299	300-Up
1/2"	1/4"	1067A3	$1.28	$0.95

Rubber Bulb Seals

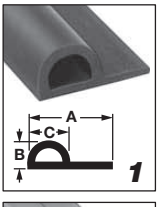

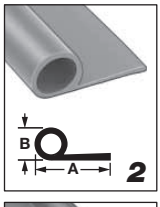

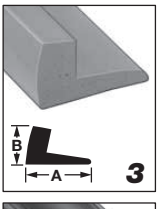

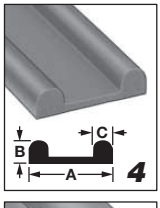

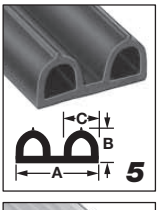

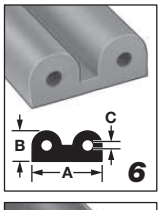

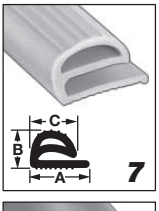

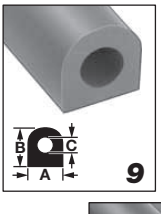

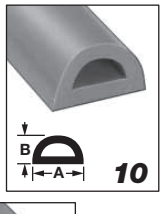

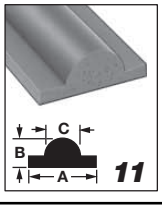

Use where a tight seal is needed. Cut to length with scissors or a knife. Install plain back with staples, tacks, or screws (not included); silicone-based adhesive can also be used for plain-back silicone.

EPDM Seals—Good resistance to weathering. Durometer hardness is A70, unless noted. Temperature range is –30° to +200° F. Color is black.

Silicone Seals—Good resistance to high temperatures. Color is orange/red. *Plain back* has a durometer hardness of A50 and a temperature range of –60° to +350° F. *Adhesive backed* has a durometer hardness of A60 and a temperature range of –100° to +500° F; acrylic adhesive has a max. temperature of 250° F.

Viton® Fluoroelastomer Seals—Resist acids. Durometer hardness is A75. Temperature range is –20° to +450° F. Color is black. Meets MIL-R-83248.

Vinyl Seals—Resist water. Durometer hardness is A73. Temperature range is –30° to +150° F. Color is gray. Meets UL 94HB for flammability.

To Order: Please specify length from those listed below. The last length listed is the maximum continuous length.

	O'all Wd. (A)	O'all Ht. (B)	(C)	Material	Available Lengths, ft.		Per Ft. 1-99	100-Up
Plain Back								
1	3/4"	1/4"	1/4"	EPDM	6, 12	1142A11	$1.45	—
1	3/4"	1/4"	1/4"	Silicone	1, 5, 10, 20, 50, 100	1129A4	3.18	$2.55
1	3/4"	1/4"	1/4"	Viton®	1, 5, 10, 20, 50	2072T11	5.60	4.48
1	3/4"	11/32"	3/8"	EPDM	10, 20, 50	1142A81	.90	.67
1	7/8"	5/16"	1/2"	EPDM	6, 12	1142A14	1.83	—
1	1 1/4"	5/8"	3/4"	EPDM	10, 20, 50	1142A82	1.46	1.09
1	1 11/32"	3/8"	9/16"	EPDM	6, 12	1142A15	2.15	—
1	1 3/8"	1/2"	5/8"	Vinyl	5, 10, 20, 50, 100	1142A63	2.29	1.71
2	1/2"	1/4"	—	EPDM	10, 20, 50	1142A75	.77	.58
2	3/4"	3/8"	—	EPDM	10, 20, 50	1142A77	1.03	.75
2	7/8"	3/8"	—	Silicone	5, 10, 20, 50, 100	1129A3	1.92	1.47
2	7/8"	3/8"	—	Viton®	1, 5, 10, 20, 50	2072T12	7.23	5.77
2	1"	1/4"	—	EPDM	10, 20, 50	1142A76	.90	.67
2	1"	1/4"	—	EPDM	10, 20, 50, 100	1142A83▲	1.10	.83
2	1 1/8"	3/8"	—	EPDM	10, 20, 50, 100	1142A84★	1.34	1.02
2	2"	1/2"	—	EPDM	10, 20, 50	1142A78	1.22	.91
2	2"	1"	—	EPDM	5, 10, 20, 25	1142A79	2.33	1.72
3	3/4"	0.40"	—	Silicone	5, 10, 20, 50, 100	1129A1	2.68	2.00
4	0.85"	0.23"	0.20"	Silicone	5, 10, 20, 50, 100	1129A2	2.37	1.77
5	3/4"	5/16"	5/16"	EPDM	6, 12	1142A48	1.90	—
6	1 1/4"	1/2"	5/32"	Silicone	1, 5, 10, 20, 50, 100	1129A9	4.80	3.58
7	9/16"	3/8"	3/8"	Silicone	1, 5, 10, 20, 50, 100	1129A5	4.93	3.68
7	9/16"	3/8"	9/16"	Vinyl	6, 12	1142A18	1.72	—
7	11/16"	1/2"	5/8"	Vinyl	10, 20, 50, 100	1142A39	.90	.67
7	13/16"	5/8"	3/4"	Vinyl	5, 10, 20, 50, 100	1142A61	1.61	1.21
7	7/8"	7/16"	11/16"	Vinyl	10, 20, 50, 100	1142A41	1.00	.74
7	15/16"	9/16"	13/16"	Vinyl	10, 20, 50, 100	1142A62	.86	.65
7	61/64"	1/2"	13/16"	Vinyl	10, 20, 50, 100	1142A42	.96	.72
8	13/16"	5/8"	3/4"	EPDM	1, 6, 12	1142A54	4.76	—
9	1/2"	1/2"	1/4"	Silicone	5, 10, 20, 50, 100	1129A6	2.23	1.66
9	1/2"	1/2"	1/4"	Viton®	1, 5, 10, 20, 50	2072T13	9.76	7.81
10	3/8"	3/8"	—	EPDM	10, 20, 50	1142A71	.90	.67
10	1/2"	1/2"	—	EPDM	10, 20, 50	1142A72	1.03	.77
10	5/8"	3/8"	—	Silicone	5, 10, 20, 50, 100	1129A7	2.27	1.68
10	5/8"	3/8"	—	Viton®	1, 5, 10, 20, 50	2072T14	11.29	10.01
10	3/4"	9/16"	—	Silicone	5, 10, 20, 50, 100	1129A8	2.37	1.77
10	1"	1/2"	—	EPDM	10, 20, 50	1142A73	1.28	.96
11	1"	3/8"	1/2"	Silicone	1, 5, 10, 20, 50, 100	1129A11	4.95	3.70
Adhesive Backed								
2	3/8"	1/8"	—	Silicone	10, 20, 50, 100	1129A962	1.53	1.14
2	3/8"	3/16"	—	Silicone	5, 10, 20, 50, 100	1129A963	1.70	1.27
2	1/2"	1/4"	—	Silicone	5, 10, 20, 50, 100	1129A964	1.80	1.34
10	7/64"	9/64"	—	Silicone	5, 10, 20, 50, 100	1129A93	1.66	1.24
10	11/64"	7/32"	—	Silicone	5, 10, 20, 50, 100	1129A94	1.82	1.36
10	3/8"	9/32"	—	Silicone	5, 10, 20, 50, 100	1129A95	2.01	1.50

▲ Durometer hardness is A65. ★ Durometer hardness is A60.

For information about rubber and durometer scales, see page 3526.

Foam Rubber Bulb Seals

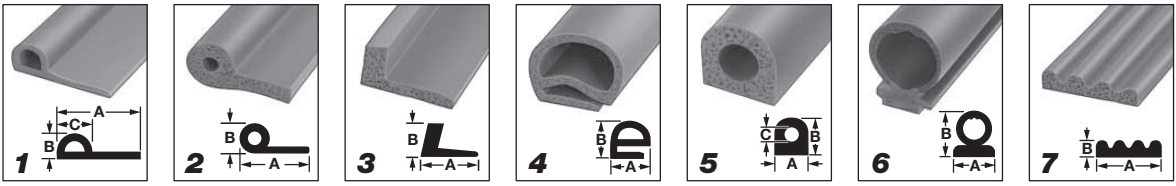

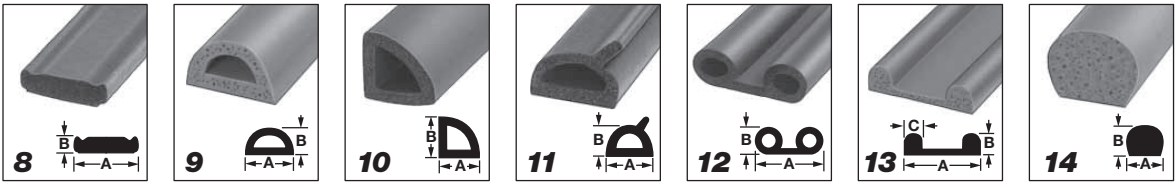

Foam rubber makes these seals softer than rubber bulb seals (shown on previous page) to create an easier-to-close seal against dust, noise, and vibration. All seals are water resistant. Cut to length with scissors or a knife.

Silicone Seals—Have good resistance to high temperatures, with a temp. range of –60° to +400° F. *Plain back* is installed with fasteners, or a silicone- or acrylic-based adhesive (not included). Color is orange/red. *Adhesive backed* has an acrylic adhesive with a max. temp. of 250° F. Color is light gray.

EPDM Seals—Have good weather resistance. Adhesive is acrylic for 93085K seals and silicone for all others. Temperature range for rubber and adhesive is –4° to +140° F. Color is black, unless noted.

To Order: Please specify length from those listed below. The last length listed is the maximum continuous length.

	O'all Wd. (A)	O'all Ht. (B)	(C)	Available Lengths, ft.		Per Ft. 1-99	Per Ft. 100-Up
Plain Back—*Silicone*							
1	3/4"	1/4"	1/4"	5, 10, 36	**9141K1**	$2.63	$1.97
1	1 1/4"	1/2"	1/2"	5, 10, 36	**9141K921**	2.00	1.60
2	7/8"	3/8"	—	5, 10, 36	**9141K5**	2.48	1.86
3	3/4"	0.40"	—	5, 10, 36	**9141K3**	2.55	1.91
4	9/16"	13/16"	—	1, 5, 10, 36	**9141K2**	3.04	2.27
5	3/8"	7/16"	3/16"	10, 36	**9141K922**	1.61	1.28
5	1/2"	1/2"	1/4"	10, 36	**9141K6**	1.61	1.20
5	3/4"	3/4"	3/8"	5, 10, 36	**9141K923**	2.30	1.84
5	1"	1"	1/2"	1, 5, 10, 36	**9141K924**	3.46	2.77
7	3/8"	3/16"	—	10, 36	**9141K925**	1.58	1.26
7	5/8"	3/8"	—	5, 10, 36	**9141K926**	2.29	1.83
7	3/4"	3/16"	—	10, 36	**9141K9**	1.83	1.36
8	1/2"	1/4"	—	10, 36	**9141K927**	1.95	1.56
9	5/8"	3/8"	—	10, 36	**9141K7**	1.47	1.10
9	3/4"	9/16"	—	10, 36	**9141K8**	1.90	1.42
10	5/8"	5/8"	—	5, 10, 36	**9141K928**	2.42	1.93
13	0.85"	0.23"	0.20"	5, 10, 36	**9141K4**	2.51	1.87
Adhesive Backed—*EPDM*							
1	1 1/4"	1/2"	1/2"	10, 20, 50, 100	**93085K91**	.91	.68
5	3/8"	7/16"	3/16"	10, 20, 50, 100	**93085K11**	.54	.40
5	1/2"	1/2"	3/16"	10, 20, 50, 100	**93085K12**	.61	.46
5	1/2"	1/2"	1/4"	10, 20, 50, 100	**93085K13**	.64	.49
5	5/8"	5/8"	1/4"	10, 20, 50, 100	**93085K81**	.83	.62
5	3/4"	3/4"	3/8"	10, 20, 50, 100	**93085K82**	1.04	.83
Adhesive Backed—*EPDM (Cont.)*							
5	1"	1"	1/2"	5, 10, 20, 50, 100	**93085K83**	$2.04	$1.63
6	0.35"	0.49"	—	5, 10, 20, 50, 100	**93085K93**■	2.34	1.75
7	3/8"	1/8"	—	17 (two 8 1/2-ft. lgs.)	**93685K11**♣	.28	—
7	3/8"	3/16"	—	10, 20, 50, 100	**93085K18**	.59	.44
7	3/8"	3/16"	—	17 (two 8 1/2-ft. lgs.)	**93685K16**♦	.31	—
7	3/8"	3/16"	—	17 (two 8 1/2-ft. lgs.)	**93685K14**♣	.31	—
7	5/8"	3/8"	—	10, 20, 50, 100	**93085K19**	.77	.58
8	1/2"	1/8"	—	10, 20, 50, 100	**93085K86**	.62	.46
8	1/2"	1/4"	—	10, 20, 50, 100	**93085K87**	.77	.57
9	3/8"	7/32"	—	10, 20, 50, 100	**93085K67**	.62	.46
9	3/8"	7/32"	—	17 (two 8 1/2-ft. lgs.)	**93705K34**♦	.35	—
9	3/8"	7/32"	—	17 (two 8 1/2-ft. lgs.)	**93705K32**♣	.35	—
9	5/8"	3/8"	—	10, 20, 50, 100	**93085K14**	.76	.57
9	3/4"	3/8"	—	10, 20, 50, 100	**93085K15**	.83	.62
9	3/4"	1/2"	—	10, 20, 50, 100	**93085K68**	.96	.72
9	3/4"	9/16"	—	10, 20, 50, 100	**93085K16**	.97	.73
9	13/16"	3/4"	—	10, 20, 50, 100	**93085K85**	1.14	.85
9	1"	1"	—	5, 10, 20, 50, 100	**93085K84**	1.73	1.30
10	5/8"	5/8"	—	10, 20, 50, 100	**93085K88**	.78	.58
11	11/16"	1/2"	—	10, 20, 50, 100	**93085K89**	.76	.57
12	1 1/2"	0.55"	—	10, 20, 50, 100	**93085K92**	.86	.64
Adhesive Backed—*Silicone*							
14	1/8"	1/8"	—	5, 10, 20, 50, 100	**9141K911**	2.25	1.80
14	3/16"	3/16"	—	5, 10, 20, 50, 100	**9141K912**	2.52	2.01
14	1/4"	1/4"	—	5, 10, 20, 50, 100	**9141K913**	2.61	2.09

■ Mounting base is dense EPDM. ♣ Color is white. ♦ Color is brown.

Magnet-Grip Vinyl Seals

The magnets in these replacement seals hold freezer, refrigerator, and other metal doors closed. Each kit contains four L-shaped vinyl seal sections with welded corners, plus a coil of flexible magnet. Use scissors or a knife to cut seal and magnet to your door dimensions; then insert magnet in seal. Replacement seals do not need to look the same as your existing seal to fit your application. Seals resist water and detergents. Durometer hardness is A73. Temperature range is –30° to +150° F. Color is gray.

Screw-in seals install with screws (not included). ***Push-in*** seals have a point that inserts into a retainer strip—no screws necessary.

Adhesive (sold separately) can be used to adhere cut ends. Supplied in a 4-oz. brush-top can.

Door Clearance

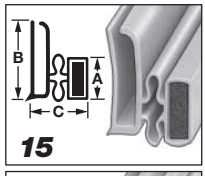

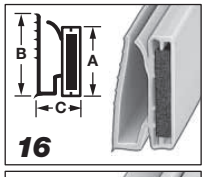

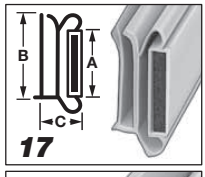

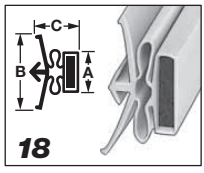

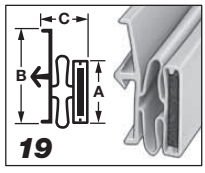

	(A)	(B)	(C)	Door Clearance	FOR FRAME SIZE Up to 32"×56"	Per Kit	FOR FRAME SIZE Up to 37"×87"	Per Kit
Screw In								
15	3/8"	3/4"	3/4"	11/16"-7/8"	**1118A74**	$41.73	**1118A75**	$54.31
16	3/4"	7/8"	1/2"	1/2"-9/16"	**1118A81**	71.98	**1118A82**	101.38
17	3/4"	1"	5/8"	9/16"-3/4"	**1118A83**	75.08	**1118A84**	103.64
Push In								
18	7/16"	7/8"	3/8"	5/16"-1/2"	**1118A85**	48.25	**1118A86**	54.93
19	11/16"	1 1/16"	1/2"	7/16"-5/8"	**1118A87**	48.98	**1118A88**	55.88

Adhesive ..... **7507A1** **Each** $5.93

High-Temperature Rope Seals

Use these seals on oven, furnace, and boiler doors. Also for use on kettles and tanks. They resist grease, oil, alcohol, and solvents. Cut to length with scissors or a knife. Install seals with adhesive, staples, tacks, or screws (not included). Not rated for pressure.

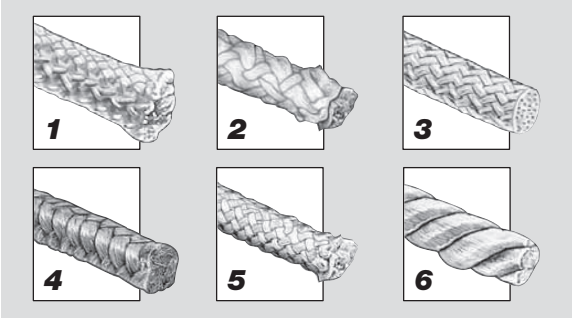

Fiberglass Seals

Flexible and compressible enough to conform to uneven surfaces. They also resist alkalies, water, steam, detergents, and bleaches. Color is white.

(1) Tightly Braided— Maximum temperature is 1000° F. Not rated for minimum temperature.

(2) Loosely Knitted— Even more flexible than tightly braided seals. Temperature range is –70° to +1400° F.

To Order: Please specify length from those listed below. The last length listed is the maximum continuous length.

Dia.	Available Lengths, ft.		Per Ft. 1-49	50-Up
(1) Tightly Braided				
1/16″	10, 25, 50, 100	8818K41	$0.34	$0.26
1/8″	10, 25, 50, 100	8818K42	.35	.27
3/16″	10, 25, 50, 100	8818K43	.35	.27
1/4″	10, 25, 50, 100	8818K44	.39	.31
5/16″	10, 25, 50, 100	8818K45	.49	.38
3/8″	10, 25, 50, 100	8818K46	.79	.61
7/16″	10, 25, 50, 100	8818K47	.97	.76
1/2″	10, 25, 50	8818K48	1.16	.91
5/8″	5, 10, 25, 50	8818K49	1.97	1.45
3/4″	5, 10, 25, 50	8818K51	1.97	1.55
1″	1, 5, 10, 25	8818K52	3.86	3.02
1 1/4″	1, 5, 10, 25	8818K53	5.35	4.28
1 1/2″	1, 5, 10, 25	8818K54	7.08	5.66
(2) Loosely Knitted ♦				
1/4″	10, 25, 50, 100	8850K11	.97	.78
1/2″	5, 10, 25, 50, 100	8850K12	3.27	2.61
3/4″	1, 5, 10, 25, 50	8850K13	5.32	4.25
1″	1, 5, 10, 25, 50	8850K14	11.07	8.85
1 1/4″	1, 5, 10, 25	8850K15	15.52	12.42

♦ Lengths are spliced to make continuous lengths.

Silica Seals

Silica has the flexibility of fiberglass, plus a higher temperature rating. Color is white.

(3) Round Braided— Made of 99% silica. Temperature range is –100° to +2300° F.

(4) Square Braided— Made of 98.8% silica. The square design fits many oven and furnace door grooves and provides more sealing surface than round braided. Temperature range is –40° to +2300° F.

To Order: Please specify length from those listed below. The last length listed is the maximum continuous length.

Size	Available Lengths, ft.		Per Ft. 1-24	25-Up
(3) Round Braided				
1/4″ Dia.	5, 10, 25, 50, 100	8828K71	$2.95	$2.21
3/8″ Dia.	1, 5, 10, 25, 50, 100	8828K72	3.91	2.92
1/2″ Dia.	1, 5, 10, 25, 50, 100	8828K73	6.05	4.52
3/4″ Dia.	1, 5, 10, 25, 50, 100	8828K74	9.44	7.04
1″ Dia.	1, 5, 10, 25, 50, 75	8828K75	12.94	9.65
(4) Square Braided				
3/8″ Sq.	1, 5, 10, 25, 50, 100, 300	88185K81	3.74	2.80
1/2″ Sq.	1, 5, 10, 25, 50, 100, 200	88185K82	6.27	4.68
5/8″ Sq.	1, 5, 10, 25, 50, 100	88185K83	11.11	8.29
3/4″ Sq.	1, 5, 10, 25, 50, 75	88185K84	12.78	9.54
7/8″ Sq.	1, 5, 10, 25, 60	88185K85	16.40	12.24
1″ Sq.	1, 5, 10, 25, 50	88185K86	20.03	14.95
1 1/4″ Sq.	1, 5, 10, 25, 30	88185K87	31.84	27.50
1 1/2″ Sq.	1, 5, 15, 20	88185K88	40.30	36.30

Ceramic Seals

These seals resist cold better than any rope seal we offer, while still withstanding high temperatures. Lighter and more flexible than fiberglass, these seals won't burn and they resist molten metal splashing. Seals resist alkalies, water, steam, detergents, ammonia, bleaches, hydraulic fluid, and most acids (not hydrofluoric and phosphoric). Meet MIL-I-24244B. Color is white.

(5) Tightly Braided— Made from woven calcium alumina silicate. Temperature range is –300° to +1100° F.

(6) Loosely Twisted— Made from woven alumina silicate. A high alumina content adds strength, flexibility, and temperature resistance. Often used to tie products together for high-temperature processing. Temperature range is –300° to +2300° F.

To Order: Please specify 5-, 10-, or 25-ft. length.

Dia.		Each 5 ft.	10 ft.	25 ft.
(5) Tightly Braided				
3/8″	88265K1	$10.05	$14.93	$29.48
1/2″	88265K2	13.81	21.61	45.54
1″	88265K3	29.21	49.74	106.27
(6) Loosely Twisted				
3/8″	88285K4	14.86	25.20	55.50
1/2″	88285K5	23.04	39.35	98.37
1″	88285K6	61.73	104.73	204.98

Slotted Fiberglass Seals

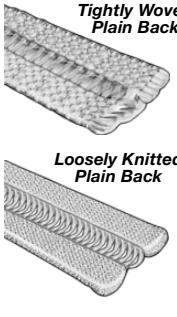

Also known as drop warp and bolt hole tape. The center of these seals has an opening between the weave to accommodate bolts and rivets. They resist grease, oil, hydraulic fluid, and solvents. Use on metal flanges as well as oven, furnace, and boiler doors. Cut to length with scissors or a knife. Maximum temperature is 1000° F, except *adhesive backed* has an acrylic adhesive with a maximum temperature of 150° F. Not rated for minimum temperature. Not rated for pressure. Color is white. *Plain back* is flame resistant and will not rot or mildew.

Tightly Woven— Are stronger than loosely knitted seals and will fray less over time.

Loosely Knitted— Are more flexible and conformable than tightly woven seals.

Wd.	Lg.	Tightly Woven 1/16″ Thick	Each	Tightly Woven 1/8″ Thick	Each	Loosely Knitted 1/16″ Thick	Each
Plain Back							
1″	25 ft.	8813K1	$4.12	8813K11	$6.36	5552T11	$18.69
1 1/2″	25 ft.	8813K2	5.38	8813K12	8.68	5552T12	19.79
2″	25 ft.	8813K3	5.83	8813K13	11.06	5552T13	20.89
2 1/2″	25 ft.	8813K4	7.78	8813K14	13.16	5552T14	23.63
3″	25 ft.	8813K5	8.93	8813K15	15.47	5552T15	26.37
Adhesive Backed							
1″	25 ft.	8813K21	9.09	8813K31	10.46	5552T16	32.97
1 1/2″	25 ft.	8813K22	11.97	8813K32	13.83	5552T17	35.17
2″	25 ft.	8813K23	13.50	8813K33	17.23	5552T18	36.81
2 1/2″	25 ft.	8813K24	13.61	8813K34	20.38	5552T19	39.56
3″	25 ft.	8813K25	20.72	8813K35	25.80	5552T21	42.31

Foam Flange-Mount Seals

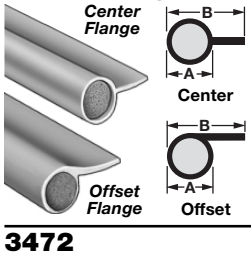

A tough yet flexible vinyl cover over a foam rubber core lets these seals bend easily around corners and fit into tight recesses. All resist water, detergents, and salt. Cut to length with scissors or a knife. Install with staples, tacks, or screws (not included). Temp. range is –30° to +150° F. Durometer hardness is A73.

Sold in continuous lengths of 1, 5, 10, 25, 50, and 100 feet.

To Order: Please specify length.

Flange Position	Bulb Dia. (A)	O'all Wd. (B)	Flange Thick.		Per Ft. 1-99	100-Up
EPDM Foam Core— *Color is gray.*						
Center	1/2″	1″	0.065″	1141A1	$2.24	$1.68
Center	5/8″	1 1/4″	0.065″	1141A3	3.61	2.69
Offset	1/2″	1 3/16″	0.065″	1141A4	2.60	1.94
Polyurethane Foam Core— *Color is black.*						
Center	3/8″	3/4″	0.025″	1146A1	1.25	.93
Center	3/4″	1 1/2″	0.025″	1146A4	2.53	1.89

EMI/RFI Shielding Flange-Mount Seals

Protect equipment from electromagnetic (EMI) and radio frequency (RFI) interference. Seals consist of wire mesh knitted from tin-plated, copper-clad steel. Flange is closed-cell black neoprene foam. Cut to length with scissors. Flange allows for easy installation with adhesive or screws (not included). Not rated for chemical resistance, temperature, or pressure. Wire mesh meets ASTM B520.

Wd. x Thick.	12½-ft. Length	Each	25-ft. Length	Each
½″ x ⅛″	93205K16	$53.12	93205K15	$93.89

High-Temperature Flange-Mount Seals

Press-fit these seals into place—they're flexible, compressible, and conformable so you can position the flange to fit your application. Use on oven, furnace, and boiler doors. Cut to length with scissors or a knife. The flange allows easy installation with adhesive (except PTFE-coated seals), staples, tacks, or screws (not included).

Fiberglass Cover with Fiberglass Core—Withstands higher temperatures than expanded-PTFE and rubber seals. Seals are flame retardant and resist alkalies, salts, grease, oil, detergents, and some acids. Also excellent for caulking and filling expansion joints. Temperature range is –40° to +1000° F. Color is white.

Silicone-Coated Fiberglass Cover with Stainless Steel Spring Core—Coating sheds sparks and molten metal splash to provide extra protection. Seals have a hollow Type 304 stainless steel spring core that recovers well when pressure is relieved. All resist water, steam, grease, oil, detergents, ammonia, and bleaches. Temperature range is –60° to +450° F. Color is red.

PTFE-Coated Fiberglass Cover with Fiberglass Core—Coating is slippery and provides added chemical resistance. Seals resist alkalies, salts, water, steam, grease, oil, detergents, ammonia, bleaches, hydraulic fluid, alcohol, solvents, and some acids. Temperature range is –40° to +500° F. Color is white.

Silica Cover with Inconel Mesh Core—Cover is 98% silica and woven from special yarns treated to withstand extremely high heat. Seals resist alkalies, water, steam, grease, detergents, ammonia, bleaches, and hydraulic fluid. Temperature range is –40° to +2300° F. Color is tan.

Expanded-PTFE Cover with Fiberglass Core—Seals resist alkalies, water, steam, grease, oil, detergents, ammonia, and some acids. Temperature range is –40° to +500° F. Color is white.

Ceramic Cover with Inconel Core—Offers higher temperature resistance than fiberglass seals. Seals have an Inconel insert for added strength. Seals resist alkalies, water, steam, grease, oil, detergents, ammonia, bleaches, hydraulic fluid, alcohol, solvents, and most acids. Maximum temperature is 1700° F. Not rated for minimum temperature. Color is white.

To Order: Please specify length from those listed below. The last length listed is the maximum continuous length.

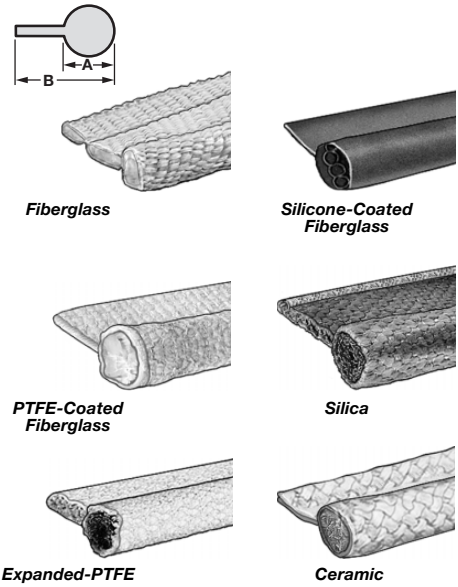

Bulb Dia. (A)	O'all Wd. (B)	Flange Thick.	Available Lengths, ft.		Per Ft. 1-99	Per Ft. 100-Up
Fiberglass Cover with Fiberglass Core						
3/8″	7/8″	1/8″	5, 10, 25, 50, 100	8815K12	$1.80	$1.40
3/8″	1 1/8″	1/8″	5, 10, 25, 50, 100	8815K14	1.86	1.44
3/8″	1 1/2″	1/8″	5, 10, 25, 50, 100	8815K13	2.23	1.79
3/8″	2″	1/8″	5, 10, 25, 50, 100	8815K15	2.35	1.88
3/8″	3″	1/8″	5, 10, 25, 50, 100	8815K17	2.85	2.28
1/2″	1 1/4″	1/8″	5, 10, 25, 50, 100	8815K18	2.11	1.69
1/2″	1 3/8″	1/8″	5, 10, 25, 50, 100	8815K19	2.15	1.72
1/2″	1 1/2″	1/8″	5, 10, 25, 50, 100	8815K21	2.19	1.70
1/2″	1 3/4″	1/8″	5, 10, 25, 50, 100	8815K22	2.28	1.78
1/2″	2″	1/8″	5, 10, 25, 50, 100	8815K23	2.45	1.91
1/2″	2 1/4″	1/8″	5, 10, 25, 50, 100	8815K24	2.51	1.96
1/2″	3″	1/8″	1, 5, 10, 25, 50, 100	8815K28	3.03	2.43
5/8″	1 1/8″	1/8″	5, 10, 25, 50, 100	8815K26	2.22	1.73
5/8″	1 3/8″	1/8″	5, 10, 25, 50, 100	8815K41	2.36	1.83
5/8″	1 1/2″	1/8″	5, 10, 25, 50, 100	8815K27	2.45	1.91
5/8″	1 5/8″	1/8″	5, 10, 25, 50, 100	8815K42	2.48	1.93
5/8″	2 1/8″	1/8″	5, 10, 25, 50, 100	8815K29	2.71	2.17
3/4″	1 1/4″	1/8″	5, 10, 25, 50, 100	8815K32	2.67	2.14
3/4″	1 1/2″	1/8″	5, 10, 25, 50, 100	8815K33	2.77	2.22
3/4″	1 3/4″	1/8″	5, 10, 25, 50, 100	8815K34	2.87	2.24
3/4″	2″	1/8″	5, 10, 25, 50, 100	8815K36	2.96	2.37
3/4″	2 1/4″	1/8″	1, 5, 10, 25, 50, 100	8815K38	3.04	2.37
3/4″	2 3/4″	1/8″	1, 5, 10, 25, 50, 100	8815K39	3.33	2.59
3/4″	3″	1/8″	1, 5, 10, 25, 50, 100	8815K51	3.71	2.98
1″	2″	1/8″	1, 5, 10, 25, 50, 100	8815K52	4.66	3.74
1″	2 1/2″	1/8″	1, 5, 10, 25, 50, 100	8815K53	4.84	3.88
1″	3″	1/8″	1, 5, 10, 25, 50, 100	8815K54	4.99	3.99
Silicone-Coated Fiberglass Cover with Stainless Steel Spring Core						
3/8″	7/8″	0.040″	1, 5, 10, 25, 50	8858K11	3.90	3.12
3/8″	1 3/8″	0.040″	1, 5, 10, 25, 50	8858K12	4.10	3.28
1/2″	1″	0.040″	1, 5, 10, 25, 50	8858K15	4.10	3.28
1/2″	1 1/2″	0.040″	1, 5, 10, 25, 50	8858K16	4.26	3.41
1/2″	2″	0.040″	1, 5, 10, 25, 50	8858K17	4.48	3.58
1/2″	2 1/2″	0.040″	1, 5, 10, 25, 50	8858K18	4.69	3.75
3/4″	1 1/4″	0.040″	1, 5, 10, 25, 50	8858K19	5.47	4.38
3/4″	1 3/4″	0.040″	1, 5, 10, 25, 50	8858K21	5.60	4.48
3/4″	2 1/4″	0.040″	1, 5, 10, 25, 50	8858K22	6.00	4.80
3/4″	2 3/4″	0.040″	1, 5, 10, 25, 50	8858K23	6.22	4.98
1″	2 1/2″	0.040″	1, 5, 10, 25, 50	8858K26	7.24	5.79
1″	3″	0.040″	1, 5, 10, 25, 50	8858K27	7.48	5.98

Bulb Dia. (A)	O'all Wd. (B)	Flange Thick.	Available Lengths, ft.		Per Ft. 1-24	Per Ft. 25-Up
PTFE-Coated Fiberglass Cover with Fiberglass Core						
3/8″	1″	1/8″	1, 5, 10, 25	88255K11	$2.96	$2.36
1/2″	1″	1/8″	1, 5, 10, 25	88255K16	3.20	2.56
3/4″	1″	1/8″	1, 5, 10, 25	88255K22	3.84	3.07
3/4″	1 1/2″	1/8″	1, 5, 10, 25	88255K24	4.09	3.27
Silica Cover with Inconel Mesh Core						
3/8″	1″	1/8″	1, 5, 10, 25	8853K11	5.10	4.08
3/8″	1 1/2″	1/8″	1, 5, 10, 25	8853K13	6.32	5.05
1/2″	1″	1/8″	1, 5, 10, 25	8853K18	5.45	4.36
1/2″	1 1/4″	1/8″	1, 5, 10, 25	8853K19	5.83	4.66
1/2″	1 1/2″	1/8″	1, 5, 10, 25	8853K21	6.54	5.23
1/2″	2″	1/8″	1, 5, 10, 25	8853K22	7.92	6.34
1/2″	2 1/2″	1/8″	1, 5, 10, 25	8853K24	8.50	6.80
1/2″	3″	1/8″	1, 5, 10, 25	8853K25	8.98	7.19
3/4″	1 1/2″	1/8″	1, 5, 10, 25	8853K26	10.19	8.15
3/4″	2″	1/8″	1, 5, 10, 25	8853K27	11.40	9.12
3/4″	2 1/2″	1/8″	1, 5, 10, 25	8853K29	12.13	9.70
3/4″	3″	1/8″	1, 5, 10, 25	8853K31	12.61	10.09
Expanded-PTFE Cover with Fiberglass Core					Per Ft. 1-49	Per Ft. 50-Up
3/8″	1″	1/8″	1, 5, 10, 25, 50	8824K11	$12.47	$9.98
1/2″	1″	1/8″	1, 5, 10, 25, 50	8824K12	13.24	10.59
1/2″	1 1/2″	1/8″	1, 5, 10, 25, 50	8824K14	17.25	13.80
3/4″	1 1/2″	1/8″	1, 5, 10, 25, 50	8824K15	22.29	17.84

Bulb Dia. (A)	O'all Wd. (B)	Flange Thick.		Each 1 ft.	Each 10 ft.	Each 25 ft.
Ceramic Cover with Inconel Core						
3/8″	7/8″	3/8″	8833K51	$18.44	$151.69	$338.36
3/8″	1 7/8″	3/8″	8833K52	23.16	207.82	476.25
1/2″	1″	3/8″	8833K53	21.35	178.69	399.29
1/2″	1 1/2″	3/8″	8833K54	23.33	206.98	461.58
1/2″	2″	3/8″	8833K55	24.75	222.00	505.97
3/4″	1 1/4″	3/8″	8833K56	26.36	239.27	533.39
3/4″	1 3/4″	3/8″	8833K57	27.80	255.77	559.86
3/4″	2 1/4″	3/8″	8833K58	29.28	282.26	626.05
3/4″	2 3/4″	3/8″	8833K59	31.90	293.50	680.10
1″	2″	3/8″	8833K61	33.93	321.21	777.95
1″	3″	3/8″	8833K62	41.05	433.15	992.52

Gaskets, Joint Sealant & Gasket Tape

For gasket cutters, see pages 2340-2341.

Looking for a different shape of gasket? Just tell us what you need and we'll get it for you.

All-Purpose Gaskets

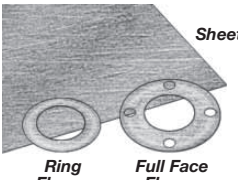

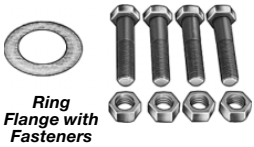

Made of aramid fibers with a Buna-N binder, these gaskets resist water, oil, gasoline, and grease. Temperature range is –40° to +400° F. All meet ASTM F104.

Sheet Gaskets— Die cut or cut with a gasket cutter. Maximum pressure is 1,000 psi for *blue gaskets* and 1,400 psi for *green gaskets*.

Flange Gaskets— Maximum pressure is 1,000 psi. Color is blue. *Ring gaskets* cover the section of the flange just inside the bolt holes.

Ring Flange Gaskets with Fasteners— Everything you need to seal steel flanges, packed in a convenient kit. Each kit contains one green gasket, plus Grade 2 hex head bolts and nuts (ASTM A307) in the quantity listed below. Gasket is ring style without holes, so it covers the section of the flange just inside the bolt holes. Maximum pressure is 725 psi.

Sheet Gaskets

Size	1/64" Thick	Each	1/32" Thick	Each	1/16" Thick	Each	3/32" Thick	Each	1/8" Thick	Each
Blue										
6" × 6"	9470K25	$2.23	9470K26	$3.01	9470K27	$3.75	9470K28	$5.19	9470K35	$6.96
15" × 15"	9470K36	10.56	9470K37	14.24	9470K38	17.73	9470K39	24.50	9470K41	32.89
30" × 30"	9470K42	31.93	9470K43	43.06	9470K44	53.65	9470K45	74.12	9470K46	74.63
30" × 60"	9470K47	55.54	9470K48	74.89	9470K49	93.31	9470K65	128.91	9470K66	173.04
Green										
15" × 15"	9402K21	10.00	9402K22	13.42	9402K23	17.63	9402K24	24.65	9402K25	30.60
22½" × 30"	9402K71	22.18	9402K72	29.78	9402K73	47.25	9402K74	66.09	9402K75	89.81
30" × 45"	9402K61	35.48	9402K62	47.65	9402K63	75.60	9402K68	105.73	9402K64	143.68
45" × 60"	9402K81	56.78	9402K82	76.24	9402K83	120.97	9402K88	169.29	9402K84	229.90

Flange Gaskets—1/16" Thick

For Pipe Size	Ring without Holes ID	OD	Each	Full Face with Holes No. of Bolt Holes	OD	Each
Blue—ANSI gaskets sized to fit Class 150 flanges						
½"	27/32"	1⅞"	9472K21 $0.46	4	3½"	9472K56 $1.85
¾"	1 1/16"	2¼"	9472K22 0.58	4	3⅞"	9472K41 1.85
1"	1 5/16"	2⅝"	9472K23 0.97	4	4¼"	9472K42 1.95
1¼"	1 21/32"	3"	9472K24 1.19	4	4⅝"	9472K43 2.46
1½"	1 29/32"	3⅜"	9472K25 1.46	4	5"	9472K44 2.82
2"	2⅜"	4⅛"	9472K26 1.95	4	6"	9472K45 3.82
2½"	2⅞"	4⅞"	9472K27 2.82	4	7"	9472K46 5.17
3"	3½"	5⅜"	9472K28 3.07	4	7½"	9472K47 5.58
3½"	4"	6⅜"	9472K29 4.39	8	8½"	9472K48 6.75
4"	4½"	6⅞"	9472K31 4.39	8	9"	9472K49 6.75
5"	5 9/16"	7¾"	9472K32 6.05	8	10"	9472K51 9.97
6"	6⅝"	8¾"	9472K33 6.86	8	11"	9472K52 10.54
8"	8⅝"	11"	9472K34 9.79	8	13½"	9472K53 13.37
10"	10¾"	13⅜"	9472K35 12.52	12	16"	9472K54 18.27
12"	12¾"	16⅛"	9472K36 20.15	12	19"	9472K55 35.80

Ring Flange Gaskets with Fasteners—1/16" Thick

For Pipe Size	Gasket ID	OD	Bolt/Nut Qty.	Bolt Size	Each
Green—ANSI gaskets sized to fit Class 150 flanges					
½"	27/32"	1⅞"	4	½" × 2¼"	9166K61 $4.57
¾"	1 1/16"	2¼"	4	½" × 2¼"	9166K62 4.90
1"	1 5/16"	2⅝"	4	½" × 2¼"	9166K63 5.05
1¼"	1 21/32"	3"	4	½" × 2½"	9166K64 5.43
1½"	1 29/32"	3⅜"	4	½" × 2½"	9166K65 5.91
2"	2⅜"	4⅛"	4	⅝" × 2½"	9166K66 8.43
2½"	2⅞"	4⅞"	4	⅝" × 2¾"	9166K67 9.26
3"	3½"	5⅜"	4	⅝" × 2¾"	9166K68 9.53
4"	4½"	6⅞"	8	⅝" × 3"	9166K69 16.28
6"	6⅝"	8¾"	8	¾" × 3¼"	9166K71 22.21
8"	8⅝"	11"	8	¾" × 3½"	9166K72 25.77
10"	10¾"	13⅜"	12	⅞" × 3¾"	9166K73 41.04
12"	12¾"	16⅛"	12	⅞" × 4"	9166K74 49.50

Expanded-PTFE Joint Sealant

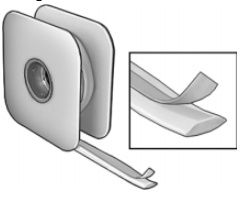

This adhesive-backed joint sealant can be used on most types of flanges, especially large, damaged, and complex ones. Chemically inert except for molten alkali metals and elemental fluorine. Color is white. Cut with a utility knife.

Gore— The original expanded-PTFE joint sealant. Temperature range is –450° to +600° F. Maximum pressure is 3,000 psi.

Value Seal— The economical choice. Temperature range is –450° to +500° F. Maximum pressure is 2,900 psi. FDA compliant.

For Pipe Size	Wd. × Thick.	Roll Lg., ft.	Each
Gore			
½"	⅛" × 3/64"	25	4502K32 $54.36
¾"- 1½"	3/16" × 5/64"	30	4502K33 88.74
2" - 4"	¼" × 3/32"	20	4502K34 87.45
5" - 8"	⅜" × ⅛"	12	4502K35 91.36
10" -16"	½" × 7/32"	5	4502K36 63.79
18" -24"	⅝" × ¼"	7	4502K37 142.31
24" -36"	¾" × 19/64"	7	4502K38 203.91
36" -Up	1" × ⅜"	7	4502K39 442.79
Value Seal			
½"	⅛" × 1/16"	25	45925K71 19.31
¾"- 1½"	3/16" × 5/64"	30	45925K72 31.35
2" - 4"	¼" × 5/32"	20	45925K73 28.45
5" - 8"	⅜" × 13/64"	12	45925K74 27.19
10" -16"	½" × 13/64"	5	45925K75 20.38
18" -24"	⅝" × 15/64"	7	45925K76 46.02
24" -36"	¾" × 9/32"	7	45925K77 57.65
36" -Up	1" × 13/64"	7	45925K78 64.98

Expanded-PTFE Gasket Tape

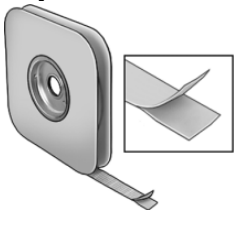

You can shape this super-thin adhesive-backed expanded-PTFE tape for use as a flange gasket. Works well on flat and narrow surfaces. It's noncontaminating and resists alkalies (excluding molten alkali metals and elemental fluorine), acids, salts, water, steam, grease, oil, and detergents. Temperature range is –450° to +600° F. Color is white. Cut with a utility knife.

Gore— This industry favorite maintains a high level of tightness over time. It seals surface irregularities with a depth of up to ⅓ the tape's thickness. Maximum pressure is 3,000 psi.

Value Seal— An economical alternative. Max. pressure is 2,900 psi. FDA compliant.

Thick.	1/2" Wide	Each	3/4" Wide	Each	1" Wide	Each
Gore						
5-ft. Rolls						
0.010"	95705K121	$41.00	95705K122	$62.06	95705K123	$73.41
0.020"	95705K131	45.24	95705K132	65.91	95705K133	78.91
0.040"	95705K141	53.18	95705K142	80.00	95705K143	95.21
0.065"	95705K151	68.26	95705K152	105.83	95705K153	131.88
50-ft. Rolls						
0.010"	95705K171	151.72	95705K175	221.67	95705K181	264.52
0.020"	95705K172	161.67	95705K176	241.94	95705K182	292.19
0.040"	95705K173	191.94	95705K177	296.88	95705K183	357.58
0.065"	95705K174	249.30	95705K178	396.97	95705K184	476.47
Value Seal						
50-ft. Rolls						
0.020"	9477K21	41.08	9477K31	58.55	9477K41	74.36
0.040"	9477K22	80.84	9477K32	111.52	9477K42	137.80
0.060"	9477K23	140.00	9477K33	201.90	9477K43	255.65
0.120"	9477K24	266.41	9477K34	382.15	9477K44	490.42

For gasket cutters, see pages 2340-2341. For information about rubber, see page 3526.

Corrosion-Resistant PTFE Gaskets

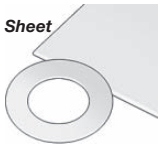

Made of 100% pure virgin PTFE, these gaskets are tough and chemically inert. They resist acids, alkalies (except molten alkali metals and elemental fluorine), salts, water, steam, grease, oil, and detergents. Color is white. FDA compliant. All except *ring flange gaskets with stainless steel insert* meet MIL-P-22241 and ASTM D3308.

Sheet Gaskets— Cut with a utility knife. Temperature range is –350° to +500° F. Maximum pressure is 3,000 psi.

Ring Flange Gaskets— These gaskets are ring style without holes, so they cover the section of the flange just inside the bolt holes. Temperature range is –350° to +500° F. Maximum pressure is 3,000 psi.

Ring Flange Gaskets with Type 304 Stainless Steel Insert— A perforated insert adds strength and makes these reusable. Style is without holes, so rings cover the section of the flange just inside the bolt holes. Temperature range is –300° to +400° F. Maximum pressure is 500 psi.

Sheet Gaskets

Size	1/32" Thick	Each	1/16" Thick	Each	1/8" Thick	Each
6"× 6"	1063T11	$5.97	1063T13	$14.37	1063T15	$18.48
12"×12"	1063T21	19.24	1063T22	39.40	1063T24	60.94

Ring Flange Gaskets

For Pipe Size	ID	OD	1/16" Thick	Each	1/8" Thick	Each
ANSI gaskets sized to fit Class 150 flanges						
1/2"	7/8"	1 7/8"	9483K21	$1.03	9483K61	$1.68
3/4"	1 1/16"	2 1/4"	9483K22	1.30	9483K62	2.48
1"	1 5/16"	2 5/8"	9483K23	1.60	9483K63	3.06
1 1/4"	1 5/8"	3"	9483K24	1.84	9483K64	4.23
1 1/2"	1 7/8"	3 3/8"	9483K25	2.79	9483K65	4.20
2"	2 3/8"	4 1/8"	9483K26	3.25	9483K66	6.66
2 1/2"	2 7/8"	4 7/8"	9483K27	4.53	9483K67	9.79
3"	3 1/2"	5 3/8"	9483K28	5.20	9483K68	10.79
3 1/2"	4"	6 3/8"	9483K29	6.77	9483K69	16.55
4"	4 1/2"	6 7/8"	9483K31	9.21	9483K71	17.27
5"	5 9/16"	7 3/4"	9483K32	11.28	9483K72	20.16
6"	6 5/8"	8 3/4"	9483K33	13.84	9483K73	25.70
8"	8 5/8"	11"	9483K34	20.65	9483K74	38.43

Ring Flange Gaskets with Stainless Steel Insert

For Pipe Size	ID	ANSI Gaskets Sized to Fit Class 150 Flanges OD		Each	ANSI Gaskets Sized to Fit Class 300 Flanges OD		Each
1/8" Thick							
1/2"	1/2"	1 7/8"	5480K32	$8.22	2 1/8"	5480K61	$11.50
3/4"	3/4"	2 1/4"	5480K33	8.77	2 5/8"	5480K62	12.40
1"	1"	2 5/8"	5480K11	9.35	2 7/8"	5480K63	13.42
1 1/4"	1 3/8"	3"	5480K34	11.39	3 1/4"	5480K64★	15.59
1 1/2"	1 1/2"	3 3/8"	5480K13	11.71	3 3/4"	5480K65	16.60
2"	2"	4 1/8"	5480K15	12.65	4 3/8"	5480K66	18.84
2 1/2"	2 1/2"	4 7/8"	5480K16	14.48	5 1/8"	5480K67	21.21
3"	3"	5 3/8"	5480K19	18.31	5 7/8"	5480K68	24.89
4"	4"	6 7/8"	5480K23	21.81	7 1/8"	5480K69	29.18
5"	5"	7 3/4"	5480K24	27.21	8 1/2"	5480K71	34.05
6"	6"	8 3/4"	5480K27	29.96	9 7/8"	5480K72	38.02
5/32" Thick							
8"	8"	11"	5480K28	41.58	12 1/8"	5480K73	51.79
10"	10"	13 3/8"	5480K29	51.55	14 1/4"	5480K74	69.42
12"	12"	16 1/8"	5480K31	77.34	16 5/8"	5480K75	102.84

★ ID is 1 1/4".

Gasket Assortments

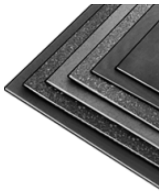

You'll get 14 sheets of various gasketing materials (SBR rubber, cork and rubber blend, vegetable fiber, and reinforced SBR rubber with a cloth insert) in one handy assortment. Temperature range for all materials is –16° to +175° F, except vegetable fiber, which has a maximum temperature of 249° F and is not rated for low end temperature use. Maximum pressure is not rated. Cut with scissors.

Material	Thick.	Color	Sheets/Assortment
SBR Rubber	1/16"	Red	3
SBR Rubber	1/8"	Red	2
Cork and Rubber Blend	1/16"	Tan	2
Cork and Rubber Blend	1/8"	Tan	2
Vegetable Fiber	1/16"	Brown/Tan	3
Reinforced SBR Rubber	1/8"	Black	2

Size		Per Pkg.
6"× 6"	9476K12	$24.26
12"×12"	9476K14	57.44

High-Strength Glass-Filled PTFE Gaskets

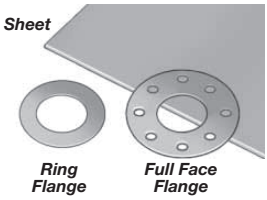

This material requires less pressure to create a seal and is glass-filled for improved performance over PTFE. Gaskets resist salts, water, grease, oil, some acids, and some detergents. Temp. range is –450° to +500° F. Maximum pressure is 800 psi. Color is blue.

Sheet Gaskets— Die cut or cut with a utility knife.

Flange Gaskets— *Ring gaskets* cover the section of the flange just inside the bolt holes.

Sheet Gaskets

Size	1/16" Thick	Each	1/8" Thick	Each
6"× 6"	8602K31	$35.59	8602K35	$65.33
15"×15"	8602K32	128.37	8602K37	235.69
30"×30"	8602K33	409.94	8602K39	752.58

Flange Gaskets—1/16" Thick

For Pipe Size	ID	Ring without Holes OD		Each	Full Face with Holes No. of Bolt Holes	OD		Each
ANSI gaskets sized to fit Class 150 flanges								
1"	1 5/16"	2 5/8"	3369T61	$4.15	4	4 1/4"	3369T71	$9.81
1 1/2"	1 29/32"	3 3/8"	3369T62	6.65	4	5"	3369T72	12.81
2"	2 3/8"	4 1/8"	3369T63	9.22	4	6"	3369T73	17.85
3"	3 1/2"	5 3/8"	3369T65	15.29	4	7 1/2"	3369T75	27.96
4"	4 1/2"	6 7/8"	3369T66	23.57	8	9"	3369T76	35.75

Gaskets for Steam Applications

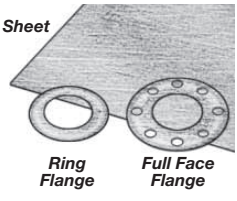

Made of aramid fibers for strength, with an SBR rubber binder so it can be used with saturated steam. Resist water, as well as some detergents, acids, alkalies, and oils. Temperature range is –40° to +400° F. Maximum pressure is 1,200 psi. Color is off-white. Meet MIL-G-24696B.

Sheet Gaskets— Cut with a utility knife.

Flange Gaskets— *Ring gaskets* cover the section of the flange just inside the bolt holes.

Sheet Gaskets

Size	1/64" Thick	Each	1/32" Thick	Each	1/16" Thick	Each
6"× 6"	95695K66	$3.06	95695K67	$3.85	95695K68	$4.51
15"×15"	95695K26	14.47	95695K27	18.21	95695K28	21.33
30"×30"	95695K36	43.59	95695K37	54.45	95695K38	64.60
30"×60"	95695K46	76.11	95695K47	95.76	95695K48	112.21

Size	3/32" Thick	Each	1/8" Thick	Each
6"× 6"	95695K69	$6.36	95695K11	$8.53
15"×15"	95695K29	30.01	95695K13	40.29
30"×30"	95695K39	90.78	95695K12	121.86
30"×60"	95695K49	157.89	95695K14	211.95

Flange Gaskets—1/16" Thick

For Pipe Size	ID	Ring without Holes OD		Each	Full Face with Holes No. of Bolt Holes	OD		Each
ANSI gaskets sized to fit Class 150 flanges								
1/2"	27/32"	1 7/8"	4459K51	$0.78	—	—	—	—
3/4"	1 1/16"	2 1/4"	4459K52	0.87	4	3 7/8"	4459K71	$2.79
1"	1 5/16"	2 5/8"	4459K53	1.26	4	4 1/4"	4459K72	3.14
1 1/4"	1 21/32"	3"	4459K55	1.70	4	4 5/8"	4459K73	3.75
1 1/2"	1 29/32"	3 3/8"	4459K57	2.07	4	5"	4459K74	4.17
2"	2 3/8"	4 1/8"	4459K54	2.90	4	6"	4459K75	5.62
2 1/2"	2 7/8"	4 7/8"	4459K56	4.13	4	7"	4459K76	7.16
3"	3 1/2"	5 3/8"	4459K58	4.58	4	7 1/2"	4459K77	7.85
3 1/2"	4"	6 3/8"	4459K59	5.35	8	8 1/2"	4459K78	8.62
4"	4 1/2"	6 7/8"	4459K61	6.50	8	9"	4459K79	9.45
5"	5 9/16"	7 3/4"	4459K62	8.77	8	10"	4459K81	13.73
6"	6 5/8"	8 3/4"	4459K63	9.80	8	11"	4459K82	15.32
8"	8 5/8"	11"	4459K64	13.09	8	13 1/2"	4459K83	19.37
10"	10 3/4"	13 3/8"	4459K65	17.22	12	16"	4459K84	25.29
12"	12 3/4"	16 1/8"	4459K66	27.85	12	19"	4459K85	43.70

For gasket cutters, see pages 2340-2341.

Looking for a different shape of gasket? Just tell us what you need and we'll get it for you.

Corrosion-Resistant Compressible Expanded-PTFE Gaskets

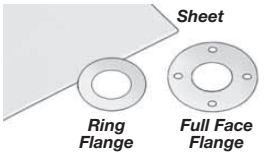

Made of 100% expanded-PTFE for greater compressibility than PTFE, these gaskets resist acids and alkalies (except molten alkali metals and elemental fluorine), salts, water, steam, grease, oil, and detergents. Temperature range is –450° to +600° F. Maximum pressure is 3,000 psi, except for low-pressure gaskets, which have a maximum pressure of 1,000 psi. Color is white. *Value Seal gaskets* are FDA compliant. *Bend-resistant gaskets* hold their shape better with larger flange sizes. Use *low-pressure gaskets* to seal fragile pipe flanges with low bolt loads.

Flange Gaskets—*Ring gaskets* cover the section of the flange just inside the bolt holes.

Sheet Gaskets—Cut with a gasket cutter or utility knife. Use the 1/16″ thick gaskets on smooth surfaces and 1/8″ thick on moderate to rough surfaces.

Gore-GR Flange Gaskets

For Pipe Size	Ring without Holes ID	Ring without Holes OD	Ring without Holes Each	Full Face with Holes No. of Bolt Holes	Full Face with Holes OD	Full Face with Holes Each
1/16″ Thick—*ANSI gaskets sized to fit Class 150 flanges*						
1/2″	27/32″	1 7/8″	95665K239	$2.08	4	3 1/2″	95665K465	$7.34
3/4″	1 1/16″	2 1/4″	95665K241	2.75	4	3 7/8″	95665K466	8.10
1″	1 5/16″	2 5/8″	95665K242	3.72	4	4 1/4″	95665K467	9.73
1 1/4″	1 21/32″	3″	95665K243	5.33	4	4 5/8″	95665K468	12.69
1 1/2″	1 29/32″	3 3/8″	95665K244	6.16	4	5″	95665K469	13.57
2″	2 3/8″	4 1/8″	95665K245	9.19	4	6″	95665K471	19.43
2 1/2″	2 7/8″	4 7/8″	95665K246	12.85	4	7″	95665K472	26.42
3″	3 1/2″	5 3/8″	95665K247	15.53	4	7 1/2″	95665K473	33.40
3 1/2″	4″	6 3/8″	95665K248	24.15	8	8 1/2″	95665K474	39.02
4″	4 1/2″	6 7/8″	95665K249	25.54	8	9″	95665K475	43.73
1/8″ Thick—*ANSI gaskets sized to fit Class 150 flanges*						
1/2″	27/32″	1 7/8″	95665K611	3.88	4	3 1/2″	95665K212	12.71
3/4″	1 1/16″	2 1/4″	95665K612	5.24	4	3 7/8″	95665K213	15.65
1″	1 5/16″	2 5/8″	95665K613	7.17	4	4 1/4″	95665K214	18.85
1 1/4″	1 21/32″	3″	95665K614	10.31	4	4 5/8″	95665K215	22.34
1 1/2″	1 29/32″	3 3/8″	95665K615	11.89	4	5″	95665K216	26.07
2″	2 3/8″	4 1/8″	95665K616	17.73	4	6″	95665K217	39.38
2 1/2″	2 7/8″	4 7/8″	95665K617	27.24	4	7″	95665K218	53.61
3″	3 1/2″	5 3/8″	95665K618	30.10	4	7 1/2″	95665K219	64.53
3 1/2″	4″	6 3/8″	95665K619	42.42	8	8 1/2″	95665K321	75.33
4″	4 1/2″	6 7/8″	95665K631	51.73	8	9″	95665K322	92.90
5″	5 9/16″	7 3/4″	95665K632	62.00	8	10″	95665K323	114.71
6″	6 5/8″	8 3/4″	95665K633	79.83	8	11″	95665K324	138.77
8″	8 5/8″	11″	95665K634	126.17	8	13 1/2″	95665K325	209.08
1/8″ Thick—*ANSI gaskets sized to fit Class 300 flanges*						
1/2″	27/32″	2 1/8″	95665K221	5.17	4	3 3/4″	95665K431	16.12
3/4″	1 1/16″	2 5/8″	95665K222	7.85	4	4 5/8″	95665K432	24.53
1″	1 5/16″	2 7/8″	95665K223	9.51	4	4 7/8″	95665K433	27.24
1 1/4″	1 21/32″	3 1/4″	95665K224	12.10	4	5 1/4″	95665K434	31.62
1 1/2″	1 29/32″	3 3/4″	95665K225	14.65	4	6 1/8″	95665K435	42.99
2″	2 3/8″	4 3/8″	95665K226	19.97	8	6 1/2″	95665K436	48.43
2 1/2″	2 7/8″	5 1/8″	95665K227	30.10	8	7 1/2″	95665K437	58.68
3″	3 1/2″	5 7/8″	95665K228	36.04	8	8 1/4″	95665K438	78.08
3 1/2″	4″	6 1/2″	95665K229	48.47	8	9″	95665K439	92.90
4″	4 1/2″	7 1/8″	95665K235	52.92	8	10″	95665K441	114.80
5″	5 9/16″	8 1/2″	95665K236	75.33	8	11″	95665K442	138.77
6″	6 5/8″	9 7/8″	95665K237	111.85	12	12 1/2″	95665K443	179.23
8″	8 5/8″	12 1/8″	95665K238	168.62	12	15″	95665K444	258.08

Value Seal Flange Gaskets

For Pipe Size	Ring without Holes ID	Ring without Holes OD	Ring without Holes Each	Full Face with Holes No. of Bolt Holes	Full Face with Holes OD	Full Face with Holes Each
1/16″ Thick—*ANSI gaskets sized to fit Class 150 flanges*						
1/2″	27/32″	1 7/8″	8903K11	$0.99	4	3 1/2″	8903K39	$3.15
3/4″	1 1/16″	2 1/4″	8903K12	1.36	4	3 7/8″	8903K41	3.67
1″	1 5/16″	2 5/8″	8903K13	1.84	4	4 1/4″	8903K42	4.65
1 1/4″	1 21/32″	3″	8903K14	2.70	4	4 5/8″	8903K43	5.42
1 1/2″	1 29/32″	3 3/8″	8903K15	3.13	4	5″	8903K44	6.35
2″	2 3/8″	4 1/8″	8903K16	4.55	4	6″	8903K49	9.15
2 1/2″	2 7/8″	4 7/8″	8903K17	6.65	4	7″	8903K51	12.60
3″	3 1/2″	5 3/8″	8903K18	8.25	4	7 1/2″	8903K52	16.19
3 1/2″	4″	6 3/8″	8903K19	11.81	8	8 1/2″	8903K53	21.68
4″	4 1/2″	6 7/8″	8903K2	13.66	8	9″	8903K54	24.05
1/8″ Thick—*ANSI gaskets sized to fit Class 150 flanges*						
1/2″	27/32″	1 7/8″	8903K25	1.77	4	3 1/2″	8903K55	5.14
3/4″	1 1/16″	2 1/4″	8903K26	2.33	4	3 7/8″	8903K56	6.74
1″	1 5/16″	2 5/8″	8903K27	3.17	4	4 1/4″	8903K57	8.54
1 1/4″	1 21/32″	3″	8903K28	4.51	4	4 5/8″	8903K58	9.89
1 1/2″	1 29/32″	3 3/8″	8903K29	5.29	4	5″	8903K59	11.61
2″	2 3/8″	4 1/8″	8903K31	7.68	4	6″	8903K61	16.78
2 1/2″	2 7/8″	4 7/8″	8903K32	11.07	4	7″	8903K62	23.08
3″	3 1/2″	5 3/8″	8903K33	13.86	4	7 1/2″	8903K63	28.39
3 1/2″	4″	6 3/8″	8903K34	19.56	8	8 1/2″	8903K64	38.02
4″	4 1/2″	6 7/8″	8903K35	22.79	8	9″	8903K65	40.60
5″	5 9/16″	7 3/4″	8903K36	28.39	8	10″	8903K66	53.01
6″	6 5/8″	8 3/4″	8903K37	37.85	8	11″	8903K67	58.89
8″	8 5/8″	11″	8903K38	58.89	8	13 1/2″	8903K68	99.36
1/8″ Thick—*ANSI gaskets sized to fit Class 300 flanges*						
1/2″	27/32″	2 1/8″	8903K69	1.97	4	3 3/4″	8903K84	6.52
3/4″	1 1/16″	2 5/8″	8903K71	2.96	4	4 5/8″	8903K85	9.89
1″	1 5/16″	2 7/8″	8903K72	3.56	4	4 7/8″	8903K86	11.07
1 1/4″	1 21/32″	3 1/4″	8903K73	4.77	4	5 1/4″	8903K87	13.86
1 1/2″	1 29/32″	3 3/4″	8903K74	6.05	4	6 1/8″	8903K88	18.48
2″	2 3/8″	4 3/8″	8903K75	8.20	8	6 1/2″	8903K89	19.56
2 1/2″	2 7/8″	5 1/8″	8903K76	11.25	8	7 1/2″	8903K91	28.39
3″	3 1/2″	5 7/8″	8903K77	14.70	8	8 1/4″	8903K92	30.56
3 1/2″	4″	6 1/2″	8903K78	18.14	8	9″	8903K93	39.90
4″	4 1/2″	7 1/8″	8903K79	22.67	8	10″	8903K94	53.01
5″	5 9/16″	8 1/2″	8903K81	30.09	8	11″	8903K95	58.89
6″	6 5/8″	9 7/8″	8903K82	40.96	12	12 1/2″	8903K96	79.50
8″	8 5/8″	12 1/8″	8903K83	73.70	12	15″	8903K97	122.29

Gore-GR Bend-Resistant Flange Gaskets

For Pipe Size	Ring without Holes ID	Ring without Holes OD	Ring without Holes Each	Full Face with Holes No. of Bolt Holes	Full Face with Holes OD	Full Face with Holes Each
1/16″ Thick—*ANSI gaskets sized to fit Class 150 flanges*						
1/2″	27/32″	1 7/8″	3152K121	$2.50	4	3 1/2″	3152K146	$8.80
3/4″	1 1/16″	2 1/4″	3152K122	3.30	4	3 7/8″	3152K147	9.76
1″	1 5/16″	2 5/8″	3152K123	4.43	4	4 1/4″	3152K148	11.68
1 1/4″	1 21/32″	3″	3152K124	6.42	4	4 5/8″	3152K149	15.33
1 1/2″	1 29/32″	3 3/8″	3152K125	7.39	4	5″	3152K151	16.29
2″	2 3/8″	4 1/8″	3152K126	11.07	4	6″	3152K152	23.38
2 1/2″	2 7/8″	4 7/8″	3152K127	15.44	4	7″	3152K153	31.75
3″	3 1/2″	5 3/8″	3152K128	18.68	4	7 1/2″	3152K154	40.12
3 1/2″	4″	6 3/8″	3152K129	29.03	8	8 1/2″	3152K155	46.87
4″	4 1/2″	6 7/8″	3152K131	30.74	8	9″	3152K156	52.54
1/8″ Thick—*ANSI gaskets sized to fit Class 150 flanges*						
1/2″	27/32″	1 7/8″	3152K132	4.65	4	3 1/2″	3152K157	15.34
3/4″	1 1/16″	2 1/4″	3152K133	6.36	4	3 7/8″	3152K158	18.84
1″	1 5/16″	2 5/8″	3152K134	8.66	4	4 1/4″	3152K159	22.67
1 1/4″	1 21/32″	3″	3152K135	12.40	4	4 5/8″	3152K161	26.87
1 1/2″	1 29/32″	3 3/8″	3152K136	14.25	4	5″	3152K162	31.34
2″	2 3/8″	4 1/8″	3152K137	21.34	4	6″	3152K163	47.37
2 1/2″	2 7/8″	4 7/8″	3152K138	32.69	4	7″	3152K164	64.42
3″	3 1/2″	5 3/8″	3152K139	36.13	4	7 1/2″	3152K165	77.50
4″	4 1/2″	6 7/8″	3152K142	62.10	8	9″	3152K167	111.62
5″	5 9/16″	7 3/4″	3152K143	75.23	8	10″	3152K168	137.83
6″	6 5/8″	8 3/4″	3152K144	95.90	8	11″	3152K169	166.67
8″	8 5/8″	11″	3152K145	151.54	8	13 1/2″	3152K171	249.00

Gore-GR Low-Pressure Flange Gaskets

For Pipe Size	Ring without Holes ID	Ring without Holes OD	Ring without Holes Each	Full Face with Holes No. of Bolt Holes	Full Face with Holes OD	Full Face with Holes Each
1/16″ Thick—*ANSI gaskets sized to fit Class 150 flanges*						
1/2″	27/32″	1 7/8″	5209K121	$2.78	4	3 1/2″	5209K171	$9.56
3/4″	1 1/16″	2 1/4″	5209K122	3.94	4	3 7/8″	5209K172	11.72
1″	1 5/16″	2 5/8″	5209K123	5.42	4	4 1/4″	5209K173	14.14
1 1/4″	1 21/32″	3″	5209K124	7.04	4	4 5/8″	5209K174	16.74
1 1/2″	1 29/32″	3 3/8″	5209K125	8.90	4	5″	5209K175	19.56
2″	2 3/8″	4 1/8″	5209K126	13.32	4	6″	5209K176	28.16
2 1/2″	2 7/8″	4 7/8″	5209K127	18.60	4	7″	5209K177	38.32
3″	3 1/2″	5 3/8″	5209K128	22.60	4	7 1/2″	5209K178	44.00
3 1/2″	4″	6 3/8″	5209K129	31.74	8	8 1/2″	5209K179	56.48
4″	4 1/2″	6 7/8″	5209K137	36.94	8	9″	5209K139	63.32
1/8″ Thick—*ANSI gaskets sized to fit Class 150 flanges*						
1/2″	27/32″	1 7/8″	5209K141	5.30	4	3 1/2″	5209K181	18.48
3/4″	1 1/16″	2 1/4″	5209K142	7.60	4	3 7/8″	5209K182	22.64
1″	1 5/16″	2 5/8″	5209K143	10.38	4	4 1/4″	5209K183	27.22
1 1/4″	1 21/32″	3″	5209K144	13.60	4	4 5/8″	5209K184	32.26
1 1/2″	1 29/32″	3 3/8″	5209K145	17.20	4	5″	5209K185	40.14
2″	2 3/8″	4 1/8″	5209K146	25.64	4	6″	5209K186	54.32
2 1/2″	2 7/8″	4 7/8″	5209K147	35.82	4	7″	5209K187	73.92
3″	3 1/2″	5 3/8″	5209K148	43.54	4	7 1/2″	5209K188	84.86
4″	4 1/2″	6 7/8″	5209K161	71.28	8	9″	5209K191	122.16
5″	5 9/16″	7 3/4″	5209K162	90.52	8	10″	5209K192	150.82
6″	6 5/8″	8 3/4″	5209K163	115.48	8	11″	5209K193	182.48
8″	8 5/8″	11″	5209K164	182.48	8	13 1/2″	5209K194	274.76

(Continued on following page)

For gasket cutters, see pages 2340-2341. For information about rubber, see page 3526.

Corrosion-Resistant Compressible Expanded-PTFE Gaskets

(Continued from previous page)

Sheet Gaskets

Size	GORE-GR 1/16" Thick	Each	GORE-GR 1/8" Thick	Each	VALUE SEAL 1/16" Thick	Each	VALUE SEAL 1/8" Thick	Each	GORE-GR BEND RESISTANT 1/16" Thick	Each	GORE-GR BEND RESISTANT 1/8" Thick	Each
6"× 6"	95665K92	$38.86	95665K96	$70.71	9499K19	$20.67	9499K44	$32.93	8392K21	$47.51	8392K26	$85.77
15"×15"	95665K93	183.73	95665K97	335.65	9499K21	93.39	9499K45	170.50	8392K22	208.67	8392K27	409.05
30"×30"	95665K94	555.64	95665K98	1,230.73	9499K22	273.24	9499K46	455.40	8392K23	679.38	8392K28	1,237.19
30"×60"	—	—	—	—	9499K23	475.22	9499K47	791.96	—	—	—	—
60"×60"	95665K95	1,680.66	95665K99	3,057.11	9499K24	826.45	9499K48	1,377.23	8392K25	2,054.83	8392K31	3,737.17

High-Temperature Carbon and Graphite Gaskets

All gaskets have a Buna-N binder and resist water, steam, grease, detergents, gasoline, some oils, and most refrigerants. Temperature range is –40° to +650° F. Maximum pressure is 2,000 psi.

Carbon/Buna-N gaskets are black.

Graphite/Buna-N gaskets are American Bureau of Shipping fire safe approved. Color is mahogany (reddish-brown).

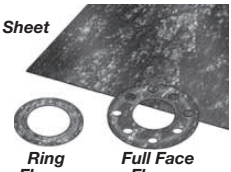

Sheet Gaskets— Cut with a utility knife.

Flange Gaskets— *Ring gaskets* cover the section of the flange just inside the bolt holes.

Sheet Gaskets

Size	1/32" Thick	Each	1/16" Thick	Each	1/8" Thick	Each
Carbon/Buna-N						
6"× 6"	13015K11	$15.58	13015K12	$25.24	13015K13	$49.01
15"×15"	13015K51	30.07	13015K54	49.74	13015K57	99.74
30"×30"	13015K52	115.33	13015K55	184.51	13015K58	353.23
30"×60"	13015K53	201.81	13015K56	322.34	13015K59	643.40
Graphite/Buna-N						
6"× 6"	12925K31	18.48	12925K32	30.76	12925K33	61.61
15"×15"	12925K21	42.53	12925K24	68.85	12925K27	143.39
30"×30"	12925K22	148.03	12925K25	238.82	12925K28	494.09
30"×60"	12925K23	255.53	12925K26	399.40	12925K29	818.17

Flange Gaskets—1/16" Thick

For Pipe Size	ID	Ring without Holes OD	Each	No. of Bolt Holes	Full Face with Holes OD	Each
Carbon/Buna-N—ANSI gaskets sized to fit Class 150 flanges						
1/2"	27/32"	1 7/8"	9772K41	$1.20	4 3 1/2"	9772K31 $4.22
3/4"	1 1/16"	2 1/4"	9772K42	1.57	4 3 7/8"	9772K32 4.77
1"	1 5/16"	2 5/8"	9772K43	2.60	4 4 1/4"	9772K33 5.30
1 1/4"	1 21/32"	3"	9772K44	3.14	4 4 5/8"	9772K34 6.27
1 1/2"	1 29/32"	3 3/8"	9772K45	3.84	4 5"	9772K35 7.29
2"	2 3/8"	4 1/8"	9772K46	5.19	4 6"	9772K36 9.51
2 1/2"	2 7/8"	4 7/8"	9772K47	7.14	4 7"	9772K37 13.26
3"	3 1/2"	5 3/8"	9772K48	7.82	4 7 1/2"	9772K38 13.90
3 1/2"	4"	6 3/8"	9772K49	9.26	8 8 1/2"	9772K39 15.18
4"	4 1/2"	6 7/8"	9772K61	10.89	8 9"	9772K51 16.22
5"	5 9/16"	7 3/4"	9772K62	14.49	8 10"	9772K52 21.31
6"	6 5/8"	8 3/4"	9772K63	16.32	8 11"	9772K53 23.76
8"	8 5/8"	11"	9772K64	21.29	8 13 1/2"	9772K54 30.36
10"	10 3/4"	13 3/8"	9772K65	26.96	12 16"	9772K55 40.11
12"	12 3/4"	16 1/8"	9772K66	44.22	12 19"	9772K56 74.75
Graphite/Buna-N—ANSI gaskets sized to fit Class 150 flanges						
1/2"	27/32"	1 7/8"	93245K41	1.70	—	—
3/4"	1 1/16"	2 1/4"	93245K42	1.94	4 3 7/8"	93245K72 5.93
1"	1 5/16"	2 5/8"	93245K43	3.31	4 4 1/4"	93245K73 6.42
1 1/4"	1 21/32"	3"	93245K44	3.88	4 4 5/8"	93245K74 7.81
1 1/2"	1 29/32"	3 3/8"	93245K45	4.77	4 5"	93245K75 9.12
2"	2 3/8"	4 1/8"	93245K46	6.42	4 6"	93245K76 11.85
2 1/2"	2 7/8"	4 7/8"	93245K47	9.45	4 7"	93245K77 15.73
3"	3 1/2"	5 3/8"	93245K48	9.88	4 7 1/2"	93245K78 16.21
4"	4 1/2"	6 7/8"	93245K51	14.19	8 9"	93245K81 20.09
5"	5 9/16"	7 3/4"	93245K52	17.98	8 10"	93245K82 27.82
6"	6 5/8"	8 3/4"	93245K53	20.18	8 11"	93245K83 37.61
8"	8 5/8"	11"	93245K54	27.81	8 13 1/2"	93245K84 39.58
10"	10 3/4"	13 3/8"	93245K55	36.75	12 16"	93245K85 52.31

Extreme-Temperature Compressible Graphite Gaskets

The absence of a binder enables these gaskets to withstand temperatures of –400° to +850° F. Use in high-temperature, high-pressure applications. Gaskets resist acids (except nitric and sulfuric), alkalies, salts, water, steam, grease, oil, and detergents. Color is dark gray. *Sheet gaskets* can be die cut or cut with scissors or a utility knife, except *sheets with Type 316 stainless steel* insert are die cut only.

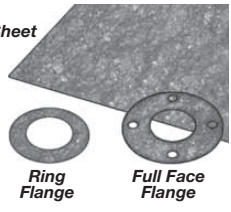

Sheets with No Insert— Maximum pressure is 2,000 psi. Meet ASTM F104.

Sheets with Type 316 Stainless Steel Wire Insert— Insert provides rigidity, additional strength, and resistance to damage during handling and installation. Maximum pressure is 10,000 psi. Meet ASTM F104.

Sheets and Flange Gaskets with Type 316 Stainless Steel Insert— A 0.004" thick perforated insert for sheets and a 0.002" thick wire insert for flange gaskets provides added strength. Maximum pressure is not rated for sheets and is 5,000 psi for flange gaskets. *Sheets* meet ASTM F104. *Ring gaskets* cover the section of the flange just inside the bolt holes.

Sheet Gaskets

Size	1/32" Thick	Each	1/16" Thick	Each	1/8" Thick	Each
With No Insert						
12"×12"	95715K61	$16.94	95715K62	$22.76	95715K63	$42.10
24"×24"	95715K71	56.45	95715K72	75.87	95715K73	140.31
39"×39"	95715K81	132.35	95715K82	177.79	95715K83	328.80
60"×60"	95715K91	291.58	95715K92	389.33	95715K93	724.37
With Type 316 Stainless Steel Wire Insert						
12"×12"	95675K65	22.20	95675K66	30.81	95675K67	55.14
24"×24"	95675K75	70.39	95675K76	99.16	95675K77	180.25
39"×39"	95675K85	164.97	95675K86	232.38	95675K87	422.36
60"×60"	95675K95	340.28	95675K96	474.38	95675K97	865.23
With Type 316 Stainless Steel Insert						
12"×12"	—	—	9847T68	36.25	9847T69	70.75
24"×24"	—	—	9847T78	110.35	9847T79	202.00
39"×39"	—	—	9847T81	214.45	9847T82	417.48

Flange Gaskets w/ Type 316 Stainless Steel Insert—1/16" Thick

For Pipe Size	ID	Ring without Holes OD	Each	No. of Bolt Holes	Full Face with Holes OD	Each
ANSI gaskets sized to fit Class 150 flanges						
1/2"	27/32"	1 7/8"	94095K41	$0.73	—	—
3/4"	1 1/16"	2 1/4"	94095K42	1.10	4 3 7/8"	94095K82 $2.93
1"	1 5/16"	2 5/8"	94095K43	1.30	4 4 1/4"	94095K83 3.20
1 1/4"	1 21/32"	3"	94095K44	1.90	4 4 5/8"	94095K84 3.41
1 1/2"	1 29/32"	3 3/8"	94095K45	2.00	4 5"	94095K85 3.88
2"	2 3/8"	4 1/8"	94095K46	2.57	4 6"	94095K86 5.15
2 1/2"	2 7/8"	4 7/8"	94095K47	3.25	4 7"	94095K87 6.42
3"	3 1/2"	5 3/8"	94095K48	3.41	4 7 1/2"	94095K88 7.06
3 1/2"	4"	6 3/8"	94095K49	4.68	8 8 1/2"	94095K89 8.68
4"	4 1/2"	6 7/8"	94095K61	5.15	8 9"	94095K91 9.16
5"	5 9/16"	7 3/4"	94095K62	5.97	8 10"	94095K92 11.61
6"	6 5/8"	8 3/4"	94095K63	6.42	8 11"	94095K93 13.12
8"	8 5/8"	11"	94095K64	10.21	8 13 1/2"	94095K94 17.64
10"	10 3/4"	13 3/8"	94095K65	14.05	12 16"	94095K95 24.65
12"	12 3/4"	16 1/8"	94095K66	16.52	12 19"	94095K96 30.98

Looking for a different shape of gasket? Just tell us what you need and we'll get it for you.

Copper Ring Flange Gaskets

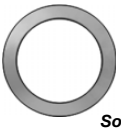

Solid

Corrugated

Simple, one-piece construction makes these gaskets more durable than the metal-reinforced gaskets on this page. Made of electrically conductive alloy 110 copper, they resist water, grease, oil, and detergents. Maximum temperature is 600° F; low end not rated. For copper sheets, see pages 3715-3717.

Solid copper gaskets are good for higher pressure applications. Thickness is 1/16″. Maximum pressure is 1,500 psi.

Corrugated copper gaskets compensate for flange movement. Thickness is 1/32″. Maximum pressure is 500 psi.

For Pipe Size	ID	OD	Solid	Solid Each	Corrugated	Corrugated Each
ANSI gaskets sized to fit Class 150 flanges						
1″	1 1/4″	2 5/8″	3604T21	$9.97	3604T11	$8.42
2″	2 3/4″	4 1/8″	3604T22	13.71	3604T12	9.94
2 1/2″	3 1/4″	4 7/8″	3604T23	15.39	3604T13	10.72
3″	4″	5 3/8″	3604T24	17.00	3604T14	11.53
4″	5″	6 7/8″	3604T25	18.65	3604T15	13.64
6″	7 3/16″	8 3/4″	3604T26	22.57	3604T16	14.84

Metal-Faced Gaskets

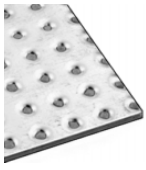

Formed by laminating a vermiculite core with carbon steel, these metal-faced gaskets are used for very high temperature applications such as engine exhaust gaskets and heat shields. Die cut or cut with shears. Maximum temperature is 1800° F; low end not rated. Maximum pressure is not rated. Color is silver.

Size	0.042″ Thick	0.042″ Thick Each	0.064″ Thick	0.064″ Thick Each
7 3/4″ × 45″	3572T11	$19.94	3572T13	$26.62
24″ × 45″	3572T12	46.19	3572T14	61.49

Ultra-Temperature Gaskets

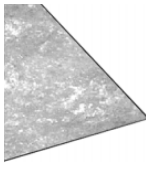

Made from high-alumina ceramic fibers, use these for their outstanding heat resistance—up to 2600° F. Maintain flexibility at high temperatures. Both resist acids, alkalies, salts, water, steam, grease, oil, and detergents. Cut with scissors. Not rated for pressure. Color is off-white. Meet MIL-I-24244B.

Size	Thick.		Each
12″ × 12″	0.060″	1687T21	$183.59
12″ × 36″	0.060″	1687T22	522.20

Metal-Reinforced Ring Flange Gaskets

Also known as spiral-wound gaskets. The primarily metal construction of these ring flange gaskets allows them to compensate for flange movement resulting from vibration, pressure, and chemical variations. Gaskets resist salt, water, grease, oil, detergents, some acids, and most alkalies. The sealing element consists of a 0.175″ wide Type 304 stainless steel strip spiral wound with a filler. The outer ring is 1/8″ thick carbon steel. Gaskets are not rated for pressure.

Standard Gaskets

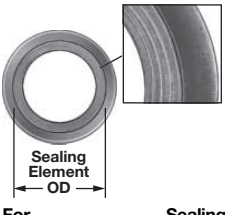

Mica graphite is an economical filler good for less severe applications. Temperature range is –40° to +450° F.

Pure graphite is a filler with a wide temperature range of –400° to +850° F.

When acids and corrosives won't work with graphite, ***PTFE*** filler is perfect. Temp. range is –450° to +450° F.

For Pipe Size	ID	OD	Sealing Element OD	Mica Graphite Filler	Mica Graphite Filler Each	Pure Graphite Filler	Pure Graphite Filler Each	PTFE Filler	PTFE Filler Each
ANSI gaskets sized to fit Class 150 flanges									
1/2″	3/4″	1 7/8″	1 1/4″	44955K311	$2.47	44955K151	$3.57	44955K461	$3.57
3/4″	1″	2 1/4″	1 9/16″	44955K312	2.50	44955K152	3.67	44955K462	3.74
1″	1 1/4″	2 5/8″	1 7/8″	44955K313	2.60	44955K153	3.87	44955K463	3.90
1 1/4″	1 7/8″	3″	2 3/8″	44955K314	2.82	44955K154	4.25	44955K464	4.11
1 1/2″	2 1/8″	3 3/8″	2 3/4″	44955K315	2.98	44955K155	4.45	44955K465	4.63
2″	2 3/4″	4 1/8″	3 3/8″	44955K316	3.17	44955K156	4.85	44955K466	4.98
2 1/2″	3 1/4″	4 7/8″	3 7/8″	44955K317	3.35	44955K157	5.38	44955K467	5.85
3″	4″	5 3/8″	4 3/4″	44955K318	3.73	44955K158	6.35	44955K468	6.68
4″	5″	6 7/8″	5 7/8″	44955K319	4.75	44955K159	8.90	44955K469	9.22
5″	6 1/8″	7 3/4″	7″	44955K321	5.68	44955K161	11.37	44955K471	11.13
6″	7 3/16″	8 3/4″	8 1/4″	44955K322	6.50	44955K162	12.90	44955K472	13.65
8″	9 3/16″	11″	10 3/8″	44955K323	8.40	44955K163	17.38	44955K473	17.95
10″	11 5/16″	13 3/8″	12 1/2″	44955K324	10.62	44955K164	22.69	44955K474	22.57
ANSI gaskets sized to fit Class 300 flanges									
1/2″	3/4″	2 1/8″	1 1/4″	44955K331	2.50	44955K171	3.80	44955K476	3.70
3/4″	1″	2 5/8″	1 9/16″	44955K332	2.56	44955K172	3.82	44955K477	3.80
1″	1 1/4″	2 7/8″	1 7/8″	44955K333	2.65	44955K173	3.95	44955K478	3.92
1 1/4″	1 7/8″	3 1/4″	2 3/8″	44955K334	2.92	44955K174	4.37	44955K479	4.22
1 1/2″	2 1/8″	3 3/4″	2 3/4″	44955K335	3.05	44955K175	4.70	44955K481	4.69
2″	2 3/4″	4 3/8″	3 3/8″	44955K336	3.30	44955K176	5.16	44955K482	5.06
2 1/2″	3 1/4″	5 1/8″	3 7/8″	44955K337	3.68	44955K177	5.47	44955K483	5.95
3″	4″	5 7/8″	4 3/4″	44955K338	4.28	44955K178	6.88	44955K484	7.08
4″	5″	7 1/8″	5 7/8″	44955K339	5.10	44955K179	9.12	44955K485	9.40
5″	6 1/8″	8 1/2″	7″	44955K341	6.55	44955K181	11.68	44955K486	11.84
6″	7 3/16″	9 7/8″	8 1/4″	44955K342	7.46	44955K182	13.47	44955K487	14.47

Premium Gaskets

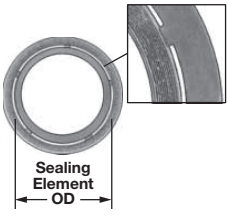

This ring has an inner wrap construction—the sealing element isn't directly connected to the outer ring. This prevents the flexible graphite filler from being squeezed inward and contaminating the process stream. Temperature range is –400° to +950° F.

For Pipe Size	ID	OD	Sealing Element OD	Each
ANSI gaskets sized to fit Class 150 flanges				
1/2″	3/4″	1 7/8″	1 21/64″	3815T11 $28.02
3/4″	1″	2 1/4″	1 19/32″	3815T12 30.47
1″	1 1/4″	2 5/8″	1 55/64″	3815T13 33.21
1 1/2″	1 3/4″	3 3/8″	2 15/32″	3815T14 32.33
2″	2 3/8″	4 1/8″	3 1/16″	3815T15 38.63
2 1/2″	2 7/8″	4 7/8″	3 9/16″	3815T16 41.60
3″	3 5/8″	5 3/8″	4 7/16″	3815T17 42.09
4″	4 5/8″	6 7/8″	5 9/16″	3815T18 42.51
6″	6 13/16″	8 3/4″	7 15/16″	3815T19 44.93
ANSI gaskets sized to fit Class 300 flanges				
1/2″	3/4″	2 1/8″	1 21/64″	3815T21 30.17
3/4″	1″	2 5/8″	1 19/32″	3815T22 32.96
1″	1 1/4″	2 7/8″	1 55/64″	3815T23 32.68
1 1/2″	1 3/4″	3 3/4″	2 15/32″	3815T24 33.51
2″	2 3/8″	4 3/8″	3 1/16″	3815T25 39.06
2 1/2″	2 7/8″	5 1/8″	3 9/16″	3815T26 40.60
3″	3 5/8″	5 7/8″	4 7/16″	3815T27 42.09
4″	4 5/8″	7 1/8″	5 9/16″	3815T28 42.51
6″	6 13/16″	9 7/8″	7 15/16″	3815T29 44.78

Water-Resistant Vegetable Fiber Gaskets

Fibers are impregnated with a compound that seals them against water and oil. Temperature range is –20° to +250° F. Maximum pressure is 300 psi. Color is tan. Cut with scissors or a utility knife. Meet MIL-G-12803 and ASTM D1170-62.

Size	1/64″ Thick	1/64″ Thick Each	1/32″ Thick	1/32″ Thick Each	1/16″ Thick	1/16″ Thick Each
36″ × 5 ft.	9453K103	$12.74	9453K203	$19.72	9453K504	$38.90
36″ × 10 ft.	9453K105	23.00	9453K205	35.38	9453K506	69.96
36″ × 20 ft.	9453K106	41.06	9453K206	63.86	9453K507	125.84

For gasket cutters, see pages 2340-2341. For information about rubber, see page 3526.

Resilient Rubber Gaskets

All gaskets resist salts, water, and deformation after compression. Meet ASTM D2000. Cut *sheet gaskets* with scissors or a utility knife. *Ring flange gaskets* cover the section of flange just inside the bolt holes.

***SBR*—**Use this rubber when dealing with low-pressure applications. Temperature range is –20° to +170°F. Maximum pressure is 800 psi. Durometer hardness is A75. Color is red.

***Buna-N*—**Ideal for oil applications. Also resists alkalies and detergents. Temperature range is –20° to +170°F. Maximum pressure is 1,000 psi. Durometer hardness is A60. Color is black, except *FDA Buna-N* is off-white.

***Neoprene*—**Resists detergents. Temp. range is –20° to +170°F. Maximum pressure is 1,000 psi. Color is black. Durometer hardness is A70 for *neoprene* and not rated for *reinforced neoprene*. *Neoprene* meets MIL-R-3065; *reinforced neoprene* has a nylon insert.

***Gum*—**When the pressure is on, this material can withstand up to 2,500 psi. Also resists detergents and steam. Temperature range is –20° to +160°F. Durometer hardness is A40. Color is tan.

***Viton® Fluoroelastomer*—**Has better chemical resistance than other rubbers. Resists grease, oil, detergents, and some acids. Durometer hardness is A75. Temperature range is –20° to +400°F for *Viton®* and *FDA Viton®*, –40° to +400°F for *low-temperature Viton®*, and 0° to 400°F for *chemical-resistant Viton®* (also known as Viton® ETP). Maximum pressure is 1,000 psi for *Viton®*; not rated for all other types of Viton®. Color is black, except *FDA Viton®* is white.

***Silicone*—**A broad temperature range of –70° to +500°F makes silicone great for use in high-temperature applications. Also resists alkalies, acids, detergents, and steam. Maximum pressure is 1,000 psi. Durometer hardness is A60. Color is red.

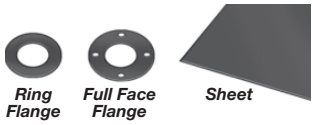

Sheet Gaskets

Thick.	Size	SBR	Each	Buna-N	Each	FDA Buna-N	Each	Neoprene	Each	Reinforced Neoprene	Each	Gum	Each
1/16"	12"×12"	8525T11	$4.31	8525T21	$4.05	8525T61	$5.09	8525T31	$3.78	8525T55	$7.17	8525T51	$10.47
1/16"	24"×24"	8525T12	8.64	8525T22	9.96	8525T62	19.30	8525T32	9.14	8525T56	27.08	8525T52	21.91
1/8"	12"×12"	8525T13	8.19	8525T23	7.44	8525T63	9.91	8525T33	5.84	8525T57	13.92	8525T53	15.30
1/8"	24"×24"	8525T14	17.13	8525T24	19.63	8525T64	35.70	8525T34	14.49	8525T58	49.00	8525T54	31.54

Thick.	Size	Viton® Fluoroelastomer	Each	FDA Viton® Fluoroelastomer	Each	Low-Temperature Viton® Fluoroelastomer	Each	Chemical-Resistant Viton® Fluoroelastomer	Each	Silicone	Each
1/16"	12"×12"	9473K61	$31.89	9473K94	$57.44	9473K96	$101.02	9473K92	$385.89	8525T41	$16.90
1/16"	24"×24"	9473K62	115.33	—	—	—	—	—	—	8525T42	48.04
1/8"	12"×12"	9473K63	54.50	9473K95	102.57	9473K97	184.17	9473K93	708.73	8525T43	24.91
1/8"	24"×24"	9473K64	195.32	—	—	—	—	—	—	8525T44	77.54

Flange Gaskets—1/8" Thick

RING WITHOUT HOLES

For Pipe Size	ID	OD	Pkg. Qty.	SBR	Per Pkg.	Buna-N	Per Pkg.	Neoprene	Per Pkg.	Viton® Fluoroelastomer	Each	Silicone	Each
ANSI gaskets sized to fit Class 150 flanges													
1/2"	27/32"	1 7/8"	10	9774K41	$1.51	8516T11	$6.76	97725K31	$3.05	9473K65	$3.38	8521T21	$1.45
3/4"	1 1/16"	2 1/4"	10	9774K42	1.51	8516T12	7.35	97725K32	3.05	9473K66	3.38	8521T22	1.62
1"	1 5/16"	2 5/8"	10	9774K43	2.25	8516T13	7.94	97725K33	4.96	9473K67	3.78	8521T23	1.85
1 1/4"	1 21/32"	3"	10	9774K44	3.05	8516T14	8.57	97725K34	5.23	9473K68	4.46	8521T24	2.25
1 1/2"	1 29/32"	3 3/8"	10	9774K45	3.05	8516T15	8.89	97725K35	5.79	9473K69	5.27	8521T25	2.73
2"	2 3/8"	4 1/8"	10	9774K46	4.56	8516T16	9.74	97725K36	7.14	9473K71	6.13	8521T26	3.30
2 1/2"	2 7/8"	4 7/8"	6	9774K47	3.28	8516T17	8.83	97725K37	4.86	9473K72	7.25	8521T27	3.88
3"	3 1/2"	5 3/8"	6	9774K48	3.15	8516T18	9.17	97725K38	5.28	9473K73	9.13	8521T28	4.97
4"	4 1/2"	6 7/8"	6	9774K49	4.83	8516T19	12.90	97725K39	8.00	9473K74	14.38	8521T29	8.03
5"	5 9/16"	7 3/4"	6	9774K51	5.74	8516T21	14.43	97725K41	10.72	9473K75	17.38	8521T31	9.25
6"	6 5/8"	8 3/4"	2	9774K52	2.22	8516T22	7.06	97725K42	5.00	9473K76	19.38	8521T32	11.07
8"	8 5/8"	11"	2	9774K53	3.02	8516T23	8.72	97725K43	5.19	9473K77	26.75	8521T33	15.03

FULL FACE WITH HOLES

For Pipe Size	ID	OD	No. of Bolt Holes	Viton® Fluoroelastomer	Each
ANSI gaskets sized to fit Class 150 flanges					
1/2"	27/32"	3 1/2"	4	9473K78	$6.25
3/4"	1 1/16"	3 7/8"	4	9473K79	6.25
1"	1 5/16"	4 1/4"	4	9473K81	7.00
1 1/4"	1 21/32"	4 5/8"	4	9473K82	8.25
1 1/2"	1 29/32"	5"	4	9473K83	$9.75
2"	2 3/8"	6"	4	9473K84	12.25
2 1/2"	2 7/8"	7"	4	9473K85	14.50
3"	3 1/2"	7 1/2"	4	9473K86	18.25
4"	4 1/2"	9"	8	9473K87	$28.75
5"	5 9/16"	10"	8	9473K88	34.75
6"	6 5/8"	11"	8	9473K89	38.75
8"	8 5/8"	13 1/2"	8	9473K91	53.50

Compressible Cork Gaskets

Multipurpose cork is great for gaskets and bulletin boards. Material is highly compressible in low-pressure applications. It is also flexible, allowing it to conform to curved shapes.

All resist alkalies, acids, salts, water, grease, oil, and detergents. Temperature range is –20° to +180°F. Maximum pressure is 55 psi. Color is tan/light brown. Cut with a utility knife.

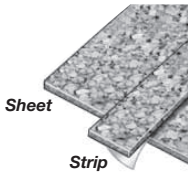

Adhesive-Backed Strips

Thick.	Size	Each	Thick.	Size	Each	Thick.	Size	Each
1/8"	1/2"×50 ft.	93305K61 $5.73	1/8"	1"×50 ft.	93305K63 $10.73	1/8"	2"×50 ft.	93305K64 $21.46

Sheets

Thick.	Size	Plain Back	Each	Adhesive Backed	Each
1/16"	12"×36"	9487K1	$2.87	9487K51	$6.12
3/32"	12"×36"	9487K2	4.38	9487K52	7.47
1/8"	12"×36"	9487K3	4.76	9487K53	8.55
3/16"	12"×36"	9487K6	8.62	9487K62	12.51
1/4"	12"×36"	9487K4	9.40	9487K54	13.27
3/8"	12"×36"	9487K8	14.77	9487K58	16.01
1/2"	12"×36"	9487K5	20.51	9487K55	22.45

Sheeting

Thick.	Size	Plain Back	Each	Adhesive Backed	Each
1/16"	48"×25 ft.	9487K71	$89.26	9487K81	$165.01
3/32"	48"×25 ft.	9487K72	127.56	9487K82	194.48
1/8"	48"×25 ft.	9487K73	116.89	9487K83	208.84
3/16"	48"×20 ft.	9487K74	153.02	—	—
1/4"	48"× 8 ft.	9487K36	78.91	—	—
3/8"	48"× 8 ft.	9487K37	111.05	—	—
1/2"	48"× 8 ft.	9487K38	144.89	—	—

Sheet & Flange Gaskets

For gasket cutters, see pages 2340-2341.

Looking for a different shape of gasket? Just tell us what you need and we'll get it for you.

Blended Rubber Gaskets

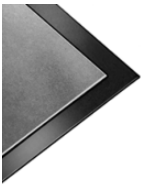

Gaskets have a maximum pressure of 1,000 psi. Not rated for durometer hardness. Meet ASTM F104. Cut with scissors.

High Temperature— This blend of fillers (with some organic fiber) has an acrylic-nitrile-latex binder. Resists water, grease, and oils. Maximum temperature is 450° F; low end not rated. Color is gray.

Paper Fiber— Made of recycled material with an SBR binder, it resists water and grease. Has some resistance to oils. Maximum temperature is 350° F; low end not rated. Color is gray.

	HIGH TEMPERATURE						PAPER FIBER					
	1/64″ Thick		1/32″ Thick		1/16″ Thick		1/64″ Thick		1/32″ Thick		1/16″ Thick	
Size		Each		Each		Each		Each		Each		Each
12″×36″	9556K81	$5.39	9556K82	$9.33	9556K83	$18.50	9556K84	$2.83	9556K85	$4.33	9556K86	$5.83
18″×36″	—	—	—	—	—	—	9556K87	3.71	9556K88	5.17	9556K89	8.87

Sheet Gasket Assortment— Includes four 12″×36″ sheets: one 1/32″ thick high-temperature gasket, one each of the 1/64″ and 1/32″ thick paper fiber gaskets, and one 1/16″ thick cork gasket blended with Buna-N to resist fuels and most solvents (similar to those shown on this page). Cork/Buna-N has a temperature range of 0° to 250° F, is not rated for pressure, meets ASTM F104, and is brown in color. Cut with scissors.

9304K42 ..... **Per Pkg.** $17.90

Compressible Oil-Resistant Cork/Rubber Gaskets

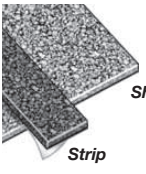

Cork granules blended with neoprene or Buna-N rubber give these gaskets compressibility similar to that of natural cork. Not rated for pressure. Cut with scissors. *Strips* are tan/black; *sheets* are light brown/black and meet SAE-AMS-C-6183.

Neoprene blend has greater oil resistance than cork. Temperature range of cork is –22° to +248° F; temperature range of acrylic adhesive is 0° to 200° F.

Buna-N blend resists oil and aromatic fuel. Temperature range is –22° to +248° F.

Adhesive-Backed Strips— Neoprene Blend

	100–FT. LONG				50–FT. LONG	
	1/32″ Thick		1/16″ Thick		1/8″ Thick	
Wd.		Each		Each		Each
1/2″	94545K13	$7.40	94545K33	$9.60	94545K53	$8.31
3/4″	94545K17	10.43	94545K37	13.17	94545K57	11.42
1″	94545K19	12.53	94545K39	16.75	94545K59	14.40
2″	94545K21	23.76	94545K41	31.28	94545K61	24.05

Plain Back Sheets

		Neoprene Blend		Buna-N Blend	
Thick.	Size		Each		Each
1/32″	12″×36″	9607K61	$12.45	96165K31	$11.38
1/32″	36″×36″	9607K81	25.02	96165K51	22.36
1/16″	12″×36″	9607K62	14.12	96165K32	15.29
1/16″	36″×36″	9607K82	28.55	96165K53	30.92
3/32″	12″×36″	9607K68	18.83	96165K38	18.36
3/32″	36″×36″	9607K88	41.19	96165K64	40.17
1/8″	12″×36″	9607K63	23.14	96165K33	24.64
1/8″	36″×36″	9607K83	52.14	96165K55	54.17
3/16″	12″×36″	9607K64	$31.62	96165K34	$31.61
3/16″	36″×36″	9607K84	72.51	96165K57	77.63
1/4″	12″×36″	9607K65	37.15	96165K35	36.85
1/4″	36″×36″	9607K85	86.64	96165K59	91.09
3/8″	12″×36″	9607K66	52.22	96165K36	45.15
3/8″	36″×36″	9607K86	128.45	96165K61	107.55
1/2″	12″×36″	9607K67	63.92	96165K37	56.95
1/2″	36″×36″	9607K87	151.31	96165K63	144.11

Sticky Silicone Gel Gaskets

Made of inherently sticky silicone, gaskets conform to irregular shapes for an effective barrier against corrosion and moisture. They compress approximately 20% of their total thickness and are good in low-pressure applications. They resist alkalies, acids, salts, water, compression set, grease, oil, detergents, and steam. Temperature range is –40° to +257° F. Color is blue. Cut with scissors.

Gel— Material is self-repairing and sticky on both sides.

Gel with Foam Back— The open-celled polyurethane foam allows the gel to squeeze through, making it sticky on only one side and creating a seal when pressure is applied. When pressure is removed, the gel retracts for a clean release.

Sheets

		Gel		Gel w/Foam Back	
Thick.	Size		Each		Each
0.030″	9″×9″	2750K61	$51.60	2750K81	$44.91
0.060″	9″×9″	2750K63	61.39	2750K83	55.12

Rolls

		Gel		Gel w/Foam Back	
Thick.	Size		Each		Each
0.030″	1″×25 ft.	2750K11	$104.64	2750K41	$101.45
0.030″	3″×25 ft.	2750K12	239.42	2750K43	230.95
0.060″	1″×20 ft.	2750K21	117.44	2750K45	102.62
0.060″	3″×20 ft.	2750K22	285.37	2750K47	237.15

Leather Gaskets

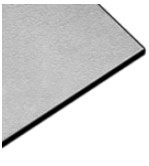

Our pliable, vegetable-tanned leather gaskets hold up against wear and abrasion. They resist salts, water, compression set, grease, oil, detergents, and some alkalies. Temperature range is 0° to 150° F. Maximum pressure is 500 psi. Color is natural tan. Cut with scissors. Size of 36″×84″ sheets is approximate.

	5/64″ Thick		1/8″ Thick		3/16″ Thick	
Size		Each		Each		Each
12″×12″	9447K21	$21.75	9447K22	$27.24	9447K23	$33.08
24″×24″	9447K31	81.04	9447K32	108.68	9447K33	135.98
36″×84″	9447K11	217.06	9447K12	235.73	9447K13	240.87

Full Face Flange Gasket Kits for Dissimilar Metals

Prevent corrosion when joining flanges of dissimilar dielectric metals by isolating components, eliminating metal-to-metal contact. Good for water and oil lines. Kits include a 1/8″ thick full face Buna-N coated phenolic gasket that's sized to fit Class 150 ANSI flanges. Color of gasket is black. They also contain one full-length polyethylene sleeve per bolt hole, plus two phenolic and two zinc-plated metal washers per bolt hole. Max. temp. is 175° F. Max. pressure is 455 psi. Bolts not included.

For Pipe Size	ID	OD	No. of Bolt Holes		Each
1″	1″	4 1/4″	4	9165K61	$10.03
2″	2″	6″	4	9165K62	11.80
2 1/2″	2 1/2″	7″	4	9165K63	13.22
3″	3″	7 1/2″	4	9165K64	13.83
4″	4″	9″	8	9165K65	23.00
5″	5″	10″	8	9165K66	$25.62
6″	6″	11″	8	9165K67	27.65
8″	8″	13 1/2″	8	9165K68	32.07
10″	10″	16″	12	9165K69	49.03
12″	12″	19″	12	9165K71	56.95

Gaskets for Sanitary Tube Fittings

Place between stainless steel sanitary tube fittings for a leak-free seal. Gasket ID is the same as the tube ID for unobstructed flow. Not rated for pressure. Meet 3-A sanitary standards and are USDA compliant.

For Quick-Clamp (Tri-Clamp) Fittings— Gaskets have a compressible ridge on both faces. When tightened, ridges compact to help form a seal. For fittings, see pages 208-211.

For Threaded Bevel-Seat Fittings— Each face has a bevel that fits into the beveled edge of the fittings. For fittings, see 44575K on page 210.

Buna-N is primarily used with some oils and fats in food processing. Temperature range is –30° to +200° F. Color is black. ***PTFE*** offers the broadest temperature range at –100° to +500° F. Good for nonstick and high-temperature applications. Color is white. ***Silicone*** is great for use with food, pharmaceutical applications, and high-purity water systems. Temperature range is –40° to +450° F. Color is clear. ***Fluoroelastomer*** is good for steam applications. Temperature range is –20° to +400° F. Color is black.

Buna-N Quick-Clamp Style

PTFE Bevel-Seat Style

For Tube OD	Gasket ID	Gasket OD	Gasket Thick.	Buna-N	Buna-N Each 1-9	Buna-N Each 10-Up	PTFE	PTFE Each 1-9	PTFE Each 10-Up	Silicone	Silicone Each 1-9	Silicone Each 10-Up	Fluoroelastomer	Fluoroelastomer Each 1-9	Fluoroelastomer Each 10-Up
For Quick-Clamp (Tri-Clamp) Fittings															
½″	0.430″	0.865″	0.178″	**4509K11**	$1.03	$0.88	**43315K21**	$2.10	$1.72	**4520K41**	$2.08	$1.68	**5044K11**	$3.33	$2.70
¾″	0.636″	0.865″	0.178″	**4509K12**	1.17	.99	**43315K22**	2.07	1.69	**4520K42**	2.24	1.80	**5044K12**	3.52	2.89
1″	0.900″	1.984″	0.203″	**4509K13**	.38	.32	**43315K23**	2.46	1.93	**4520K43**	2.40	1.93	**5044K13**	4.25	3.48
1½″	1.400″	1.984″	0.203″	**4509K14**	.50	.42	**43315K24**	2.18	1.71	**4520K44**	2.38	1.92	**5044K14**	3.49	2.86
2″	1.900″	2.515″	0.203″	**4509K15**	.55	.46	**43315K25**	2.36	1.85	**4520K45**	2.40	1.93	**5044K15**	3.55	2.91
2½″	2.400″	3.050″	0.203″	**4509K16**	.60	.51	**43315K26**	3.09	2.43	**4520K46**	3.28	2.65	**5044K16**	6.11	5.01
3″	2.900″	3.579″	0.203″	**4509K17**	.84	.72	**43315K27**	3.27	2.57	**4520K47**	3.68	2.96	**5044K17**	7.78	6.38
4″	3.869″	4.682″	0.203″	**4509K18**	1.19	1.01	**43315K28**	5.01	3.93	**4520K48**	4.46	3.60	**5044K18**	11.56	9.47
6″	5.817″	6.507″	0.210″	**4509K19**	10.18	8.65	**43315K29**	17.77	15.09	**4520K49**	13.93	11.82	**5044K19**	53.70	44.05
For Threaded Bevel-Seat Fittings															
1″	0.900″	1.325″	0.300″	**4524K47**	1.08	.86	**4522K31**	1.47	1.18						
1½″	1.375″	1.875″	0.330″	**4524K48**	.85	.67	**4522K32**	1.47	1.18						
2″	1.850″	2.375″	0.350″	**4524K49**	1.05	.83	**4522K33**	1.98	1.60						
2½″	2.340″	2.950″	0.350″	**4524K51**	1.92	1.53	**4522K34**	2.48	2.00						
3″	2.875″	3.475″	0.350″	**4524K52**	2.38	1.90	**4522K35**	3.45	2.78						
4″	3.700″	4.500″	0.330″	**4524K53**	3.16	2.53	**4522K36**	4.97	4.01						

Gaskets for Boilers and Access Covers

Bust a gasket? Here are some excellent replacement gaskets for handhole and manhole covers as well as industrial boilers and access covers.

EPDM Rubber— Flexible enough to form a tight seal. Resists salts, water, steam, and detergents, as well as some acids, alkalies, and oils. Thickness is ¼″. Temperature range is –55° to +380° F. Maximum pressure is 180 psi. Color is black.

Wire-Inserted Fiberglass/Rubber— This woven fiberglass is reinforced with brass wire and coated with natural rubber to provide conformability and strength. Resists diluted alkalies and diluted acids. Thickness is ¼″. Temperature range is –20° to +400° F. Maximum pressure is 180 psi. Color is off-white.

EPDM Rubber Oblong

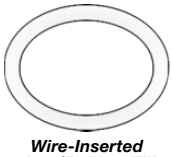

Wire-Inserted Fiberglass/Rubber Elliptical

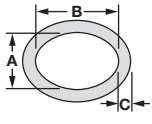

EPDM Rubber

(A)	(B)	(C)		Each
Elliptical				
3″	4″	½″	**1923K61**	$5.33
4″	6″	¾″	**1923K62**	7.32
10½″	14½″	1⅜″	**1923K63**	24.81
11″	15″	1¼″	**1923K64**	24.95
12″	16″	1¼″	**1923K65**	26.11
Oblong				
2¼″	3¼″	½″	**1923K71**	$4.45
3″	4½″	9⁄16″	**1923K72**	5.59
4″	6″	⅝″	**1923K73**	6.95
11″	15″	1¼″	**1923K74**	25.14
12″	16″	1½″	**1923K75**	26.45

Wire-Inserted Fiberglass/Rubber

(A)	(B)	(C)		Each
Elliptical				
3″	4″	½″	**1899K111**	$4.08
3″	4″	⅝″	**1899K112**	4.74
3″	4″	¾″	**1899K113**	5.44
3″	4½″	⅝″	**1899K115**	4.92
3½″	4½″	½″	**1899K117**	4.46
3½″	4½″	⅝″	**1899K118**	5.12
3½″	4½″	¾″	**1899K119**	5.88
4″	6″	⅝″	**1899K122**	6.08
4″	6″	¾″	**1899K123**	7.00
Elliptical (Cont.)				
10″	14″	1¼″	**1881K112**	$25.60
10″	15″	1¼″	**1881K114**	26.20
11″	14″	1¼″	**1881K116**	26.20
11″	15″	1″	**1881K117**	21.62
11″	15″	1¼″	**1881K118**	27.64
12″	15″	1″	**1881K119**	23.50
12″	15″	1¼″	**1881K121**	29.04
12″	16″	1″	**1881K122**	23.68
12″	16″	1¼″	**1881K123**	29.38

Loaded Bidirectional Seals

Excellent for light- and medium-duty applications that require positive sealing in both directions. These seals are made of rigid PTFE or urethane to prevent rolling or twisting, and they include a black Buna-N O-ring for support. Resist grease, oil, and hydraulic fluids. Maximum pressure is 5,000 psi. Temperature range is –22° to +212° F.

PTFE seals are wear resistant for longer life. Color is charcoal.

Urethane seals have a ridge that traps lubricant to reduce friction and wear. Color is yellow.

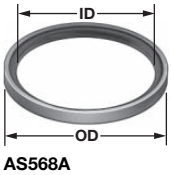

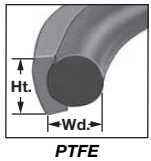

PTFE

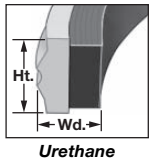

Urethane

AS568A Dash No.	ID	OD	Wd.	Ht.		Each
PTFE						
006	0.140″	0.250″	0.0705″	0.083″	**9656K11**	$5.60
010	0.265″	0.375″	0.0710″	0.083″	**9656K13**	5.91
012	0.390″	0.500″	0.0715″	0.083″	**9656K15**	6.23
014	0.515″	0.625″	0.0725″	0.083″	**9656K17**	6.58
016	0.640″	0.750″	0.0725″	0.083″	**9656K19**	6.84
018	0.765″	0.875″	0.0725″	0.083″	**9656K21**	7.39

AS568A Dash No.	ID	OD	Wd.	Ht.		Each
Urethane						
218	1.258″	1.500″	0.125″	0.187″	**9659K41**	$4.97
326	1.630″	2.000″	0.1875″	0.281″	**9659K43**	5.33
330	2.130″	2.500″	0.1875″	0.281″	**9659K45**	5.79
334	2.630″	3.000″	0.1875″	0.281″	**9659K47**	6.51
342	3.630″	4.000″	0.1875″	0.281″	**9659K51**	8.07
433	5.528″	6.002″	0.25″	0.375″	**9659K57**	12.26

Cartridge-Mounted Shaft Seals

Replace two-part rotary/stationary seals on centrifugal pumps with these cartridge-mounted seals. They consist of a Type 316 stainless steel body, carbon-graphite and silicon carbide seal faces, and Aflas O-rings. Internal springs maintain evenly-distributed pressure on both seal faces to prevent leaks, keep out debris, and reduce friction and wear. Aflas has a durometer hardness of A75. Temp. range is –20° to +400° F. For pressures up to 350 psi and speeds up to 5,000 fpm. Furnished with an installation kit that includes a wrench, hex keys, and lubricant.

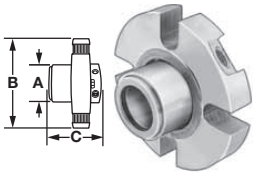

Shaft Size (A)	OD (B)	Lg. (C)		Each
1⅛″	4.000″	2.18″	**9603K11**	$443.80
1⅜″	4.000″	2.18″	**9603K13**	476.95
1¾″	5.500″	2.34″	**9603K15**	512.53
1⅞″	5.500″	2.34″	**9603K17**	$533.35
2⅛″	6.000″	2.34″	**9603K19**	561.21
2½″	6.500″	2.34″	**9603K21**	598.19

General Properties of O-Ring Materials

Temperature ratings and chemical compatibilities shown below are for general comparisons. See specific O-ring presentations for exact specifications. NR=Not recommended. For information about durometer hardness, see page 3526.

	Buna-N	Viton® Fluoro-elastomer	Silicone	EPDM	Neoprene	Poly-urethane	PTFE	Kalrez	FEP	Aflas	Fluoro-silicone
Approx. Low Temp.	–20° F	0° F	–60° F	–40° F	–40° F	–20° F	–80° F	+32° F	–15° F	+25° F	–75° F
Approx. High Temp.	+212° F	+392° F	+400° F	+212° F	+212° F	+180° F	+500° F	+600° F	+400° F	+400° F	+400° F
Compression Set★	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Good	Good
Resistance to:											
Abrasion	Good	Fair	Poor	Good	Good	Excel.	Excel.	Good	Fair	Good	Poor
Acids	Fair	Good	Fair	Poor	Fair	Poor	Excel.	Excel.	Excel.	Excel.	Excel.
Alcohol	NR	Poor	Fair	Fair	Good	Good	Excel.	Excel.	Excel.	Excel.	Excel.
Alkalies	Poor	Fair	Fair	Poor	Good	Poor	Excel.	Excel.	Excel.	Excel.	Excel.
Anilines	Good	Good	Poor	NR	Fair	Poor	Excel.	Excel.	Excel.	Good	Poor
Animal/Vegetable Oils	Good	Excel.	Fair	Fair	Good	Good	Excel.	Excel.	Excel.	NR	Excel.
Detergents	Good	NR	Excel.	Excel.	Poor	Poor	Excel.	Excel.	Excel.	Good	NR
Gasoline	Good	Excel.	Poor	Poor	Fair	Good	Excel.	Excel.	Excel.	Poor	Excel.
Hydraulic Fluid	Good	Good	Poor	NR	Fair	Poor	Excel.	Excel.	Excel.	Excel.	Poor
Hydrocarbons	Fair	Good	NR	NR	Poor	Fair	Excel.	Excel.	Excel.	Excel.	Excel.
Ketones	NR	Poor	NR	Fair	Poor	Poor	Excel.	Excel.	Excel.	Fair	Excel.
Ozone	NR	Excel.	Excel.	Excel.	Fair	Excel.	Excel.	Excel.	Excel.	Excel.	Excel.
Refrigerants	NR	Poor	NR	NR	Good	Fair	Excel.	NR	Excel.	NR	Poor
Salt Water	Good	Good	Excel.	Excel.	Good	Poor	Excel.	Excel.	Excel.	Good	Good
Steam	Poor	NR	Poor	Good	Fair	Poor	Excel.	Poor	Excel.	Good	Poor
Synthetic Lubricants	Good	Excel.	NR	NR	Poor	Poor	Excel.	Excel.	Excel.	Excel.	NR
Tearing	Fair	Fair	Poor	Good	Fair	Excel.	Excel.	Excel.	Good	Excel.	Poor
Water	Good	Fair	Fair	Excel.	Good	Poor	Excel.	Excel.	Excel.	Good	Excel.
Weather	NR	Excel.	Excel.	Excel.	Excel.	Good	Excel.	Excel.	Excel.	Excel.	Excel.

★Refers to a material's ability to return to its original size and shape after it's been compressed.

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

O-Ring Sizing Tools

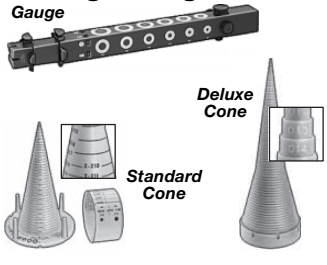

Quickly identify AS568A dash number O-ring sizes. All tools are plastic.

Gauge— Instantly identifies dash numbers 001 to 050, 102 to 178, 201 to 279, 309 to 382, and 425 to 455. Slip O-ring over the indicator knob and pull gauge out until tight; the appropriate number appears in the window. Length is 24″ when fully extended.

Cones— The base has five slots that fit standard widths (cross sections): 0.070″, 0.103″, 0.139″, 0.210″, and 0.275″. Slip the O-ring into the proper slot to determine the width and which side of the cone to read; then drop the O-ring onto the cone and read the corresponding dash number. *Standard cone* can determine 122 dash numbers for O-rings with 1/4″ to 8″ ID and includes pi tape for measuring larger O-rings. Dash numbers are on a printed label adhered to cone. *Deluxe cone* measures 182 O-ring dash numbers with 5/16″ to 5 5/8″ ID. Dash numbers are permanently molded into steps around the cone for precise identification.

	Size		Each
Gauge	13 1/2″ Lg.	9699K51	$22.22

	Size		Each
Standard Cone	8″ Ht.	9440K41	$35.30
Deluxe Cone	18″ Ht.	9440K42	48.78

Buna-N, Viton® Fluoroelastomer, Silicone, and EPDM O-Rings

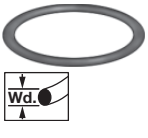

Buna-N is used in oil applications. Temperature range is –35° to +250° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black. **Also Available:** Buna-N that meets AS3578. Please ask for 5018T11 and specify AS568A dash number.

Viton® fluoroelastomer resists chemicals and oil. Temperature range is –15° to +400° F. Durometer hardness is A75. Meets ASTM D2000/SAE J200. Color is black. **Also Available:** Viton® ETP fluoroelastomer for greater chemical resistance. Please ask for 2857T11 and specify AS568A dash number.

Silicone has good resistance to low and high temperatures. Temperature range is –65° to +450° F. Durometer hardness is A70. FDA compliant. Color is red-orange.

EPDM is water and steam resistant. Temperature range is –65° to +212° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black.

AS568A Dash No.	Fractional Size, ID×OD	Actual Inch Size, ID×OD	Buna-N Pkg. Qty.	Buna-N	Buna-N Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.	Viton® Fluoroelastomer	Viton® Fluoroelastomer Per Pkg.	Silicone Pkg. Qty.	Silicone	Silicone Per Pkg.	EPDM Pkg. Qty.	EPDM	EPDM Per Pkg.
Width: 1/32″ Fractional (0.040″ Actual)														
001	1/32″×3/32″	0.029″×0.109″	100	9452K111	$2.01	100	9464K101	$4.92	50	9396K101	$3.67	70	9557K111	$3.38
001-1/2	1/16″×1/8″	0.070″×0.150″	100	9452K311	2.95	100	9464K181	9.05	100	9396K491	10.49	25	9557K199	6.05
Width: 3/64″ Fractional (0.050″ Actual)														
002	3/64″×9/64″	0.042″×0.142″	100	9452K112	1.94	100	9464K102	4.16	100	9396K102	3.94	75	9557K112	2.89
Width: 1/16″ Fractional (0.060″ Actual)														
003	1/16″×3/16″	0.056″×0.176″	100	9452K11	2.01	100	9464K103	4.11	100	9396K61	4.10	100	9557K113	3.29
Width: 1/16″ Fractional (0.070″ Actual)														
004	5/64″×13/64″	0.070″×0.210″	100	9452K12	2.01	100	9464K104	4.22	100	9396K62	4.34	100	9557K61	3.56
005	7/64″×15/64″	0.101″×0.241″	100	9452K13	2.01	100	9464K105	4.36	100	9396K63	4.52	100	9557K62	3.76
006	1/8″ ×1/4″	0.114″×0.254″	100	9452K14	2.03	100	9464K11	4.48	100	9396K11	4.58	100	9557K457	3.78
007	5/32″×9/32″	0.145″×0.285″	100	9452K15	2.06	100	9464K12	4.62	100	9396K12	4.31	100	9557K458	3.83
008	3/16″×5/16″	0.176″×0.316″	100	9452K16	2.08	100	9464K13	4.95	100	9396K13	4.90	100	9557K459	4.05
009	7/32″×11/32″	0.208″×0.348″	100	9452K17	2.08	100	9464K14	5.21	100	9396K14	4.79	100	9557K461	4.66
010	1/4″ ×3/8″	0.239″×0.379″	100	9452K18	2.11	100	9464K15	5.31	100	9396K15	5.18	100	9557K462	4.71
011	5/16″×7/16″	0.301″×0.441″	100	9452K19	2.11	100	9464K16	6.32	100	9396K16	5.67	100	9557K463	4.88

(Continued on following page)

For information about O-ring materials, see page 3482.

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

Buna-N, Viton® Fluoroelastomer, Silicone, and EPDM O-Rings *(Cont. from previous page)*

AS568A Dash No.	Fractional Size, ID×OD	Actual Inch Size, ID×OD	Buna-N Pkg. Qty.	Buna-N	Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.	Viton® Fluoroelastomer	Per Pkg.	Silicone Pkg. Qty.	Silicone	Per Pkg.	EPDM Pkg. Qty.	EPDM	Per Pkg.
Width: 1/16″ Fractional (0.070″ Actual) (Cont.)														
012	3/8″ × 1/2″	0.364″ ×0.504″	100	9452K21	$2.51	100	9464K17	$6.82	100	9396K17	$5.93	100	9557K464	$5.04
013	7/16″ × 9/16″	0.426″ ×0.566″	100	9452K57	2.76	100	9464K18	7.72	100	9396K18	6.41	100	9557K465	5.38
014	1/2″ × 5/8″	0.489″ ×0.629″	100	9452K58	2.86	100	9464K19	8.52	100	9396K19	6.56	100	9557K466	5.71
015	9/16″ × 11/16″	0.551″ ×0.691″	100	9452K59	3.02	100	9464K21	10.49	100	9396K21	6.68	100	9557K467	8.92
016	5/8″ × 3/4″	0.614″ ×0.754″	100	9452K6	3.12	100	9464K22	10.96	100	9396K22	7.70	100	9557K468	9.07
017	11/16″ × 13/16″	0.676″ ×0.816″	100	9452K71	3.29	50	9464K71	5.71	100	9396K103	9.99	100	9557K114	9.20
018	3/4″ × 7/8″	0.739″ ×0.879″	100	9452K72	3.53	50	9464K72	6.27	100	9396K65	10.51	100	9557K115	9.24
019	13/16″ × 15/16″	0.801″ ×0.941″	100	9452K73	3.71	50	9464K73	7.36	100	9396K66	10.90	100	9557K116	9.24
020	7/8″ ×1″	0.864″ ×1.004″	100	9452K74	3.97	50	9464K74	7.34	50	9396K104	7.37	100	9557K117	9.29
021	15/16″ ×1 1/16″	0.926″ ×1.066″	100	9452K75	4.00	50	9464K75	7.51	50	9396K67	7.45	100	9557K63	9.50
022	1″ ×1 1/8″	0.989″ ×1.129″	100	9452K76	4.37	50	9464K76	7.51	50	9396K105	7.44	100	9557K118	9.51
023	1 1/16″ ×1 3/16″	1.051″ ×1.191″	100	9452K77	4.51	50	9464K77	8.06	50	9396K106	8.21	100	9557K119	9.46
024	1 1/8″ ×1 1/4″	1.114″ ×1.254″	100	9452K78	4.74	50	9464K78	9.09	50	9396K68	9.13	100	9557K129	9.72
025	1 3/16″ ×1 5/16″	1.176″ ×1.316″	100	9452K79	5.41	50	9464K79	10.11	50	9396K69	9.43	100	9557K121	9.95
026	1 1/4″ ×1 3/8″	1.239″ ×1.379″	100	9452K113	6.14	50	9464K261	10.51	50	9396K107	10.56	100	9557K64	10.07
027	1 5/16″ ×1 7/16″	1.301″ ×1.441″	100	9452K114	6.74	50	9464K271	10.76	50	9396K71	10.37	100	9557K122	10.19
028	1 3/8″ ×1 1/2″	1.364″ ×1.504″	100	9452K115	6.86	50	9464K281	10.49	50	9396K72	10.79	100	9557K65	10.48
029	1 1/2″ ×1 5/8″	1.489″ ×1.629″	100	9452K116	7.07	25	9464K291	6.22	25	9396K108	5.72	100	9557K66	11.66
030	1 5/8″ ×1 3/4″	1.614″ ×1.754″	100	9452K117	7.58	25	9464K301	7.27	25	9396K109	5.88	100	9557K67	11.99
031	1 3/4″ ×1 7/8″	1.739″ ×1.879″	100	9452K118	8.07	25	9464K311	8.09	25	9396K111	6.40	100	9557K123	12.68
032	1 7/8″ ×2″	1.864″ ×2.004″	100	9452K119	7.77	25	9464K321	8.49	25	9396K112	6.27	100	9557K469	12.74
033	2″ ×2 1/8″	1.989″ ×2.129″	100	9452K121	9.15	25	9464K331	9.02	25	9396K113	6.87	50	9557K124	7.22
034	2 1/8″ ×2 1/4″	2.114″ ×2.254″	100	9452K122	9.73	25	9464K341	10.07	25	9396K114	6.88	40	9557K125	6.84
035	2 1/4″ ×2 3/8″	2.239″ ×2.379″	100	9452K123	10.36	10	9464K351	4.41	25	9396K115	6.86	50	9557K126	9.56
036	2 3/8″ ×2 1/2″	2.364″ ×2.504″	100	9452K124	10.55	10	9464K361	4.75	10	9396K116	5.23	50	9557K69	10.33
037	2 1/2″ ×2 5/8″	2.489″ ×2.629″	100	9452K125	10.91	10	9464K371	5.34	10	9396K117	5.26	50	9557K127	10.86
038	2 5/8″ ×2 3/4″	2.614″ ×2.754″	100	9452K126	11.31	10	9464K381	5.61	10	9396K118	5.42	50	9557K71	10.87
039	2 3/4″ ×2 7/8″	2.739″ ×2.879″	100	9452K127	11.35	10	9464K391	5.58	10	9396K119	5.40	50	9557K128	11.20
040	2 7/8″ ×3″	2.864″ ×3.004″	100	9452K128	11.40	10	9464K401	6.01	10	9396K121	5.51	25	9557K131	7.83
041	3″ ×3 1/8″	2.989″ ×3.129″	100	9452K129	12.53	10	9464K411	6.42	10	9396K122	5.77	20	9557K132	8.11
042	3 1/4″ ×3 3/8″	3.239″ ×3.379″	100	9452K131	13.97	10	9464K421	6.73	10	9396K123	5.99	25	9557K133	8.64
043	3 1/2″ ×3 5/8″	3.489″ ×3.629″	50	9452K132	8.17	10	9464K431	7.22	10	9396K124	6.77	15	9557K134	5.13
044	3 3/4″ ×3 7/8″	3.739″ ×3.879″	50	9452K133	8.68	10	9464K441	7.32	10	9396K125	6.58	12	9557K135	5.41
045	4″ ×4 1/8″	3.989″ ×4.129″	50	9452K134	8.95	10	9464K451	8.07	10	9396K126	6.75	10	9557K136	5.69
046	4 1/4″ ×4 3/8″	4.239″ ×4.379″	50	9452K135	10.14	10	9464K461	8.28	10	9396K127	7.67	10	9557K137	5.73
047	4 1/2″ ×4 5/8″	4.489″ ×4.629″	10	9452K312	3.50	10	9464K106	8.82	10	9396K128	7.45	8	9557K138	5.85
048	4 3/4″ ×4 7/8″	4.739″ ×4.879″	10	9452K313	3.81	2	9464K511	2.23	10	9396K129	8.00	8	9557K139	6.47
049	5″ ×5 1/8″	4.989″ ×5.129″	10	9452K314	4.63	2	9464K512	2.62	10	9396K131	8.89	7	9557K141	6.47
050	5 1/4″ ×5 3/8″	5.239″ ×5.379″	10	9452K315	4.81	2	9464K513	3.01	10	9396K132	10.03	6	9557K142	6.64
051	5 1/2″ ×5 5/8″	5.489″ ×5.629″	2	9452K301	9.71	1	9464K721	9.64	1	9396K941	8.65	—	—	—
052	5 3/4″ ×5 7/8″	5.739″ ×5.879″	2	9452K302	9.80	1	9464K722	10.04	1	9396K942	8.63	—	—	—
053	6″ ×6 1/8″	5.989″ ×6.129″	2	9452K303	9.88	1	9464K723	10.39	1	9396K943	8.68	—	—	—
054	6 1/4″ ×6 3/8″	6.239″ ×6.379″	2	9452K304	10.59	1	9464K724	10.79	1	9396K944	8.68	—	—	—
055	6 1/2″ ×6 5/8″	6.489″ ×6.629″	2	9452K305	11.08	1	9464K725	10.88	1	9396K945	8.70	—	—	—
Width: 3/32″ Fractional (0.103″ Actual)														
102	1/16″ × 1/4″	0.049″ ×0.255″	100	9452K316	1.88	50	9464K107	4.51	25	9396K133	2.68	75	9557K143	4.81
103	3/32″ × 9/32″	0.081″ ×0.287″	100	9452K317	1.88	50	9464K514	4.57	50	9396K134	4.22	80	9557K144	5.10
104	1/8″ × 5/16″	0.112″ ×0.318″	100	9452K318	1.92	50	9464K108	4.59	50	9396K135	4.83	100	9557K145	5.29
105	5/32″ × 11/32″	0.143″ ×0.349″	100	9452K167	1.88	50	9464K515	4.62	100	9396K136	8.84	100	9557K146	5.43
106	3/16″ × 3/8″	0.174″ ×0.380″	100	9452K168	1.97	50	9464K109	4.65	100	9396K73	10.13	100	9557K147	5.54
107	7/32″ × 13/32″	0.206″ ×0.412″	100	9452K169	1.97	50	9464K112	4.66	50	9396K137	5.12	100	9557K72	5.63
108	1/4″ × 7/16″	0.237″ ×0.443″	100	9452K171	2.12	50	9464K113	4.86	100	9396K138	9.36	100	9557K148	5.75
109	5/16″ × 1/2″	0.299″ ×0.505″	100	9452K172	2.21	50	9464K44	5.04	100	9396K74	9.91	100	9557K149	5.87
110	3/8″ × 9/16″	0.362″ ×0.568″	100	9452K22	2.35	50	9464K23	5.78	100	9396K23	9.88	100	9557K471	8.06
111	7/16″ × 5/8″	0.424″ ×0.630″	100	9452K23	2.48	50	9464K24	6.11	100	9396K24	11.48	100	9557K472	9.29
112	1/2″ × 11/16″	0.487″ ×0.693″	100	9452K24	2.46	50	9464K25	6.41	100	9396K25	12.15	100	9557K473	10.01
113	9/16″ × 3/4″	0.549″ ×0.755″	100	9452K25	2.55	50	9464K26	6.73	100	9396K26	12.31	100	9557K474	10.44
114	5/8″ × 13/16″	0.612″ ×0.818″	100	9452K26	3.13	50	9464K27	6.84	100	9396K27	12.39	100	9557K475	10.03
115	11/16″ × 7/8″	0.674″ ×0.880″	100	9452K27	3.23	50	9464K28	7.56	50	9396K28	7.65	50	9557K476	5.57
116	3/4″ × 15/16″	0.737″ ×0.943″	100	9452K28	3.74	50	9464K29	8.27	50	9396K29	8.13	50	9557K477	6.10
117	13/16″ ×1″	0.799″ ×1.005″	100	9452K81	3.69	50	9464K81	9.26	50	9396K139	7.96	50	9557K73	6.27
118	7/8″ ×1 1/16″	0.862″ ×1.068″	100	9452K82	4.23	50	9464K82	10.08	50	9396K75	8.58	50	9557K151	7.26
119	15/16″ ×1 1/8″	0.924″ ×1.130″	100	9452K83	3.99	50	9464K83	10.85	50	9396K141	9.60	50	9557K152	7.28
120	1″ ×1 3/16″	0.987″ ×1.193″	100	9452K84	4.52	50	9464K84	11.35	50	9396K142	9.70	50	9557K153	7.35
121	1 1/16″ ×1 1/4″	1.049″ ×1.255″	100	9452K85	4.81	50	9464K85	11.86	50	9396K76	10.48	50	9557K154	7.52
122	1 1/8″ ×1 5/16″	1.112″ ×1.318″	100	9452K86	5.11	50	9464K86	11.63	25	9396K143	5.38	50	9557K155	8.63
123	1 3/16″ ×1 3/8″	1.174″ ×1.380″	100	9452K87	5.42	25	9464K87	6.60	25	9396K144	6.15	50	9557K156	8.66
124	1 1/4″ ×1 7/16″	1.237″ ×1.443″	100	9452K88	5.63	25	9464K88	6.72	25	9396K77	6.42	50	9557K157	8.59
125	1 5/16″ ×1 1/2″	1.299″ ×1.505″	100	9452K89	5.96	25	9464K89	6.86	25	9396K145	6.54	50	9557K158	9.94
126	1 3/8″ ×1 9/16″	1.362″ ×1.568″	100	9452K91	6.36	25	9464K91	7.77	25	9396K146	6.85	50	9557K159	10.00
127	1 7/16″ ×1 5/8″	1.424″ ×1.630″	100	9452K92	6.60	25	9464K92	7.77	25	9396K147	6.99	50	9557K161	10.05
128	1 1/2″ ×1 11/16″	1.487″ ×1.693″	100	9452K93	6.92	25	9464K93	8.48	25	9396K148	7.15	50	9557K162	10.05
129	1 9/16″ ×1 3/4″	1.549″ ×1.755″	100	9452K94	7.38	25	9464K94	9.24	25	9396K149	7.65	50	9557K163	10.46
130	1 5/8″ ×1 13/16″	1.612″ ×1.818″	100	9452K95	7.73	25	9464K95	9.93	25	9396K151	8.49	50	9557K164	10.60
131	1 11/16″ ×1 7/8″	1.674″ ×1.880″	100	9452K136	8.63	10	9464K131	5.13	25	9396K152	8.93	50	9557K165	10.52
132	1 3/4″ ×1 15/16″	1.737″ ×1.943″	100	9452K137	8.99	10	9464K132	5.73	25	9396K153	8.76	50	9557K166	10.70
133	1 13/16″ ×2″	1.799″ ×2.005″	100	9452K138	9.03	10	9464K133	5.64	25	9396K154	8.86	50	9557K167	10.72

(Continued on following page)

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

Buna-N, Viton® Fluoroelastomer, Silicone, and EPDM O-Rings *(Cont. from previous page)*

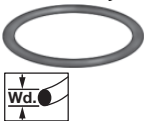

Buna-N is used in oil applications. Temperature range is –35° to +250° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black. **Also Available:** Buna-N that meets AS3578. Please ask for 5018T11 and specify AS568A dash number.

Viton® fluoroelastomer resists chemicals and oil. Temperature range is –15° to +400° F. Durometer hardness is A75. Meets ASTM D2000/SAE J200. Color is black. **Also Available:** Viton® ETP fluoroelastomer for greater chemical resistance. Please ask for 2857T11 and specify AS568A dash number.

Silicone has good resistance to low and high temperatures. Temperature range is –65° to +450° F. Durometer hardness is A70. FDA compliant. Color is red-orange.

EPDM is water and steam resistant. Temperature range is –65° to +212° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black.

AS568A Dash No.	Fractional Size, ID×OD	Actual Inch Size, ID×OD	Buna-N Pkg. Qty.	Buna-N	Buna-N Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.	Viton® Fluoroelastomer	Viton® Fluoroelastomer Per Pkg.	Silicone Pkg. Qty.	Silicone	Silicone Per Pkg.	EPDM Pkg. Qty.	EPDM	EPDM Per Pkg.
Width: 3/32″ Fractional (0.103″ Actual) (Cont.)														
134	1 7/8″	×2 1/16″	1.862″×2.068″	100	9452K139	10	9464K134	$5.64	10	9396K155	$5.14	50	9557K168	$10.88
135	1 15/16″	×2 1/8″	1.925″×2.131″	100	9452K141	10	9464K135	5.93	10	9396K156	5.17	50	9557K169	10.70
136	2″	×2 3/16″	1.987″×2.193″	100	9452K142	10	9464K136	6.08	10	9396K157	5.21	40	9557K3	6.04
137	2 1/16″	×2 1/4″	2.050″×2.256″	100	9452K143	10	9464K137	6.10	10	9396K158	5.26	25	9557K171	5.78
138	2 1/8″	×2 5/16″	2.112″×2.318″	50	9452K144	10	9464K138	6.23	10	9396K159	5.25	25	9557K172	5.84
139	2 3/16″	×2 3/8″	2.175″×2.381″	50	9452K145	10	9464K139	6.35	10	9396K78	5.37	25	9557K173	5.79
140	2 1/4″	×2 7/16″	2.237″×2.443″	50	9452K146	10	9464K151	6.40	10	9396K161	5.47	40	9557K174	6.27
141	2 5/16″	×2 1/2″	2.300″×2.506″	50	9452K147	10	9464K141	6.64	10	9396K79	5.54	25	9557K175	7.65
142	2 3/8″	×2 9/16″	2.362″×2.568″	50	9452K148	10	9464K142	6.63	10	9396K162	5.47	25	9557K74	7.75
143	2 7/16″	×2 5/8″	2.425″×2.631″	50	9452K149	10	9464K143	6.67	10	9396K163	6.57	25	9557K177	8.47
144	2 1/2″	×2 11/16″	2.487″×2.693″	50	9452K151	10	9464K144	7.09	10	9396K164	6.67	35	9557K178	8.32
145	2 9/16″	×2 3/4″	2.550″×2.756″	50	9452K152	10	9464K145	7.44	10	9396K165	6.56	35	9557K179	8.48
146	2 5/8″	×2 13/16″	2.612″×2.818″	50	9452K153	10	9464K146	7.66	10	9396K166	6.67	35	9557K181	8.54
147	2 11/16″	×2 7/8″	2.675″×2.881″	50	9452K154	10	9464K147	8.36	10	9396K167	6.81	35	9557K182	8.54
148	2 3/4″	×2 15/16″	2.737″×2.943″	50	9452K155	10	9464K148	8.42	10	9396K168	6.69	30	9557K183	8.94
149	2 13/16″	×3″	2.800″×3.006″	50	9452K156	10	9464K149	8.73	10	9396K169	7.09	25	9557K184	8.71
150	2 7/8″	×3 1/16″	2.862″×3.068″	50	9452K157	10	9464K159	8.79	10	9396K171	7.20	30	9557K185	8.54
151	3″	×3 3/16″	2.987″×3.193″	50	9452K158	10	9464K152	9.13	10	9396K172	8.09	25	9557K186	9.18
152	3 1/4″	×3 7/16″	3.237″×3.443″	50	9452K173	2	9464K516	2.83	10	9396K173	8.48	20	9557K187	9.22
153	3 1/2″	×3 11/16″	3.487″×3.693″	50	9452K174	2	9464K114	2.86	10	9396K174	9.01	20	9557K188	9.29
154	3 3/4″	×3 15/16″	3.737″×3.943″	50	9452K175	2	9464K517	3.11	10	9396K175	9.00	15	9557K189	5.15
155	4″	×4 3/16″	3.987″×4.193″	50	9452K176	2	9464K518	3.24	10	9396K176	10.70	12	9557K191	5.00
156	4 1/4″	×4 7/16″	4.237″×4.443″	25	9452K319	2	9464K519	3.66	10	9396K177	11.57	10	9557K192	4.94
157	4 1/2″	×4 11/16″	4.487″×4.693″	25	9452K177	2	9464K115	3.68	10	9396K178	11.60	10	9557K193	6.37
158	4 3/4″	×4 15/16″	4.737″×4.943″	25	9452K178	2	9464K116	3.79	10	9396K179	12.13	10	9557K194	6.48
159	5″	×5 3/16″	4.987″×5.193″	25	9452K224	2	9464K521	4.12	5	9396K181	7.13	8	9557K195	6.50
160	5 1/4″	×5 7/16″	5.237″×5.443″	25	9452K321	2	9464K522	4.23	5	9396K182	7.85	7	9557K196	6.73
161	5 1/2″	×5 11/16″	5.487″×5.693″	25	9452K179	2	9464K117	4.63	5	9396K183	8.22	7	9557K197	6.63
162	5 3/4″	×5 15/16″	5.737″×5.943″	25	9452K181	2	9464K523	4.69	5	9396K184	7.88	7	9557K198	6.70
163	6″	×6 3/16″	5.987″×6.193″	25	9452K322	2	9464K524	4.75	5	9396K185	9.01	5	9557K201	5.21
164	6 1/4″	×6 7/16″	6.237″×6.443″	25	9452K323	2	9464K525	4.75	5	9396K186	9.07	5	9557K202	5.51
165	6 1/2″	×6 11/16″	6.487″×6.693″	25	9452K324	2	9464K526	4.98	5	9396K187	9.08	5	9557K203	5.70
166	6 3/4″	×6 15/16″	6.737″×6.943″	25	9452K325	2	9464K527	4.87	5	9396K188	9.11	5	9557K204	5.80
167	7″	×7 3/16″	6.987″×7.193″	25	9452K326	2	9464K528	5.06	5	9396K189	9.64	4	9557K205	5.99
168	7 1/4″	×7 7/16″	7.237″×7.443″	25	9452K182	2	9464K529	5.17	5	9396K191	9.66	4	9557K206	6.23
169	7 1/2″	×7 11/16″	7.487″×7.693″	25	9452K327	2	9464K531	5.20	5	9396K192	9.90	4	9557K207	6.28
170	7 3/4″	×7 15/16″	7.737″×7.943″	25	9452K328	11.97	2	9464K532	5.47	5	9396K193	10.02	4	9557K208	6.40
171	8″	×8 3/16″	7.987″×8.193″	2	9452K329	2.72	2	9464K533	5.54	5	9396K194	12.08	4	9557K209	6.48
172	8 1/4″	×8 7/16″	8.237″×8.443″	25	9452K225	11.98	2	9464K534	5.70	5	9396K195	12.11	4	9557K211	6.59
173	8 1/2″	×8 11/16″	8.487″×8.693″	25	9452K331	12.22	2	9464K535	5.60	1	9396K196	1.62	4	9557K212	6.76
174	8 3/4″	×8 15/16″	8.737″×8.943″	25	9452K332	12.58	2	9464K536	5.60	1	9396K197	1.66	3	9557K213	5.74
175	9″	×9 3/16″	8.987″×9.193″	2	9452K333	3.56	2	9464K537	5.58	1	9396K198	2.74	3	9557K214	5.97
176	9 1/4″	×9 7/16″	9.237″×9.443″	25	9452K334	12.59	2	9464K538	5.64	1	9396K199	2.80	3	9557K215	6.06
177	9 1/2″	×9 11/16″	9.487″×9.693″	2	9452K335	3.78	2	9464K539	5.86	1	9396K201	2.95	3	9557K216	6.19
178	9 3/4″	×9 15/16″	9.737″×9.943″	25	9452K336	13.56	2	9464K541	5.99	1	9396K202	3.00	3	9557K217	6.29
Width: 1/8″ Fractional (0.139″ Actual)														
201	3/16″	× 7/16″	0.171″×0.449″	100	9452K337	25	9464K542	5.00	50	9396K203	7.05	85	9557K218	6.04
202	1/4″	× 1/2″	0.234″×0.512″	100	9452K183	25	9464K118	5.28	50	9396K204	7.08	100	9557K219	8.81
203	5/16″	× 9/16″	0.296″×0.574″	100	9452K184	25	9464K543	5.66	50	9396K205	7.12	100	9557K221	9.07
204	3/8″	× 5/8″	0.359″×0.637″	100	9452K338	25	9464K65	5.85	50	9396K206	7.18	100	9557K222	9.11
205	7/16″	× 11/16″	0.421″×0.699″	100	9452K339	25	9464K544	6.22	50	9396K207	7.45	100	9557K223	9.55
206	1/2″	× 3/4″	0.484″×0.762″	100	9452K185	25	9464K66	6.19	50	9396K208	7.86	100	9557K224	9.71
207	9/16″	× 13/16″	0.546″×0.824″	100	9452K186	25	9464K119	6.14	50	9396K209	7.80	100	9557K225	10.03
208	5/8″	× 7/8″	0.609″×0.887″	100	9452K187	25	9464K67	6.22	50	9396K81	7.94	100	9557K226	10.22
209	11/16″	× 15/16″	0.671″×0.949″	100	9452K188	25	9464K121	6.27	25	9396K211	3.99	80	9557K227	7.85
210	3/4″	×1″	0.734″×1.012″	100	9452K29	25	9464K31	6.38	50	9396K31	7.82	50	9557K478	5.89
211	13/16″	×1 1/16″	0.796″×1.074″	100	9452K31	25	9464K32	7.17	50	9396K32	8.01	50	9557K479	5.28
212	7/8″	×1 1/8″	0.859″×1.137″	100	9452K32	25	9464K33	8.20	25	9396K33	4.29	50	9557K481	5.45
213	15/16″	×1 3/16″	0.921″×1.199″	100	9452K33	25	9464K34	8.20	25	9396K34	5.13	50	9557K482	5.60
214	1″	×1 1/4″	0.984″×1.262″	100	9452K34	25	9464K35	8.43	25	9396K35	8.90	50	9557K483	5.75
215	1 1/16″	×1 5/16″	1.046″×1.324″	100	9452K35	25	9464K36	8.12	25	9396K36	8.93	50	9557K484	6.06
216	1 1/8″	×1 3/8″	1.109″×1.387″	100	9452K36	25	9464K37	9.43	25	9396K37	9.37	50	9557K485	6.14
217	1 3/16″	×1 7/16″	1.171″×1.449″	100	9452K37	25	9464K38	10.11	25	9396K38	10.12	50	9557K486	5.74
218	1 1/4″	×1 1/2″	1.234″×1.512″	100	9452K38	25	9464K39	10.71	25	9396K39	10.46	50	9557K487	6.35
219	1 5/16″	×1 9/16″	1.296″×1.574″	100	9452K39	25	9464K41	11.25	25	9396K212	10.68	50	9557K488	7.08
220	1 3/8″	×1 5/8″	1.359″×1.637″	100	9452K41	25	9464K42	11.83	25	9396K213	10.85	50	9557K489	7.29
221	1 7/16″	×1 11/16″	1.421″×1.699″	100	9452K42	25	9464K43	11.45	25	9396K214	11.00	50	9557K491	8.00
222	1 1/2″	×1 3/4″	1.484″×1.762″	100	9452K63	25	9464K64	11.46	10	9396K82	4.63	50	9557K492	8.58

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For information about O-ring materials, see page 3482.

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

Buna-N, Viton® Fluoroelastomer, Silicone, and EPDM O-Rings *(Cont. from previous page)*

AS568A Dash No.	Fractional Size, ID×OD	Actual Inch Size, ID×OD	Buna-N Pkg. Qty.	Buna-N	Buna-N Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.	Viton® Fluoroelastomer	Viton® Fluoroelastomer Per Pkg.	Silicone Pkg. Qty.	Silicone	Silicone Per Pkg.	EPDM Pkg. Qty.	EPDM	EPDM Per Pkg.
Width: 1/8″ Fractional (0.139″ Actual) (Cont.)														
223	1 5/8″ × 1 7/8″	1.609″ × 1.887″	100	9452K61	$10.11	25	9464K45	$11.48	10	9396K215	$4.82	50	9557K493	$8.98
224	1 3/4″ × 2″	1.734″ × 2.012″	100	9452K62	11.18	25	9464K46	11.93	10	9396K83	5.12	25	9557K494	6.20
225	1 7/8″ × 2 1/8″	1.859″ × 2.137″	100	9452K96	11.73	10	9464K96	6.06	10	9396K216	5.00	25	9557K228	6.32
226	2″ × 2 1/4″	1.984″ × 2.262″	100	9452K64	11.97	10	9464K97	6.57	10	9396K217	5.46	25	9557K76	6.89
227	2 1/8″ × 2 3/8″	2.109″ × 2.387″	100	9452K65	12.27	10	9464K98	6.93	10	9396K84	5.79	25	9557K229	8.16
228	2 1/4″ × 2 1/2″	2.234″ × 2.512″	100	9452K66	12.48	10	9464K99	7.39	10	9396K85	6.14	25	9557K231	8.70
229	2 3/8″ × 2 5/8″	2.359″ × 2.637″	100	9452K67	12.85	10	9464K111	8.18	10	9396K218	6.22	25	9557K232	9.22
230	2 1/2″ × 2 3/4″	2.484″ × 2.762″	100	9452K69	13.09	10	9464K239	10.42	10	9396K86	6.49	25	9557K233	9.26
231	2 5/8″ × 2 7/8″	2.609″ × 2.887″	50	9452K159	8.22	10	9464K231	10.51	10	9396K219	7.58	25	9557K234	10.10
232	2 3/4″ × 3″	2.734″ × 3.012″	50	9452K161	8.36	10	9464K232	11.02	10	9396K221	7.46	25	9557K77	10.66
233	2 7/8″ × 3 1/8″	2.859″ × 3.137″	50	9452K162	8.40	10	9464K233	11.31	10	9396K222	7.55	25	9557K235	11.05
234	3″ × 3 1/4″	2.984″ × 3.262″	50	9452K163	9.18	10	9464K234	11.45	10	9396K223	7.62	25	9557K78	11.20
235	3 1/8″ × 3 3/8″	3.109″ × 3.387″	50	9452K164	9.63	10	9464K235	11.53	10	9396K224	8.11	25	9557K236	11.42
236	3 1/4″ × 3 1/2″	3.234″ × 3.512″	50	9452K165	10.53	10	9464K236	11.66	5	9396K225	6.10	25	9557K79	11.44
237	3 3/8″ × 3 5/8″	3.359″ × 3.637″	50	9452K166	10.80	10	9464K237	11.75	5	9396K226	6.09	10	9557K81	5.20
238	3 1/2″ × 3 3/4″	3.484″ × 3.762″	50	9452K226	11.07	5	9464K68	6.89	5	9396K227	6.98	25	9557K237	12.15
239	3 5/8″ × 3 7/8″	3.609″ × 3.887″	50	9452K189	11.10	5	9464K122	7.33	5	9396K228	7.43	25	9557K238	13.07
240	3 3/4″ × 4″	3.734″ × 4.012″	50	9452K191	11.15	5	9464K69	7.46	5	9396K229	7.74	10	9557K82	6.06
241	3 7/8″ × 4 1/8″	3.859″ × 4.137″	50	9452K351	11.21	5	9464K123	7.97	5	9396K231	7.95	10	9557K83	6.09
242	4″ × 4 1/4″	3.984″ × 4.262″	50	9452K192	11.29	5	9464K545	7.90	5	9396K232	7.72	10	9557K241	6.29
243	4 1/8″ × 4 3/8″	4.109″ × 4.387″	50	9452K193	11.11	5	9464K124	8.52	5	9396K233	7.93	10	9557K242	6.32
244	4 1/4″ × 4 1/2″	4.234″ × 4.512″	50	9452K194	11.82	5	9464K125	8.60	5	9396K234	7.66	18	9557K243	10.32
245	4 3/8″ × 4 5/8″	4.359″ × 4.637″	25	9452K195	7.69	5	9464K546	8.86	5	9396K235	7.95	16	9557K244	11.15
246	4 1/2″ × 4 3/4″	4.484″ × 4.762″	25	9452K196	7.67	5	9464K547	9.33	5	9396K236	8.32	10	9557K245	7.23
247	4 5/8″ × 4 7/8″	4.609″ × 4.887″	25	9452K197	8.34	5	9464K548	9.66	5	9396K237	8.40	15	9557K246	8.65
248	4 3/4″ × 5″	4.734″ × 5.012″	25	9452K198	8.40	5	9464K126	10.09	5	9396K238	8.54	15	9557K247	8.85
249	4 7/8″ × 5 1/8″	4.859″ × 5.137″	10	9452K352	5.46	5	9464K549	9.82	5	9396K239	8.59	14	9557K248	8.81
250	5″ × 5 1/4″	4.984″ × 5.262″	10	9452K353	5.89	5	9464K01	10.71	5	9396K241	8.81	10	9557K249	9.27
251	5 1/8″ × 5 3/8″	5.109″ × 5.387″	10	9452K199	6.17	5	9464K551	10.50	5	9396K242	8.98	12	9557K251	9.80
252	5 1/4″ × 5 1/2″	5.234″ × 5.512″	10	9452K201	6.37	5	9464K127	11.68	5	9396K243	9.42	10	9557K84	10.10
253	5 3/8″ × 5 5/8″	5.359″ × 5.637″	10	9452K354	6.55	2	9464K552	6.21	5	9396K244	8.98	10	9557K85	10.29
254	5 1/2″ × 5 3/4″	5.484″ × 5.762″	10	9452K355	7.85	2	9464K553	6.25	5	9396K245	9.19	10	9557K86	10.37
255	5 5/8″ × 5 7/8″	5.609″ × 5.887″	10	9452K356	7.94	2	9464K554	6.44	5	9396K246	9.47	9	9557K252	10.25
256	5 3/4″ × 6″	5.734″ × 6.012″	10	9452K357	8.07	2	9464K128	6.64	5	9396K247	9.48	9	9557K253	10.25
257	5 7/8″ × 6 1/8″	5.859″ × 6.137″	10	9452K202	7.98	2	9464K555	6.68	5	9396K248	9.33	9	9557K254	10.23
258	6″ × 6 1/4″	5.984″ × 6.262″	10	9452K358	8.01	2	9464K556	6.77	5	9396K249	10.07	8	9557K255	10.11
259	6 1/4″ × 6 1/2″	6.234″ × 6.512″	10	9452K359	8.36	2	9464K557	7.14	5	9396K251	10.11	8	9557K256	10.33
260	6 1/2″ × 6 3/4″	6.484″ × 6.762″	10	9452K109	8.38	2	9464K558	7.57	5	9396K252	10.16	8	9557K257	10.66
261	6 3/4″ × 7″	6.734″ × 7.012″	10	9452K361	8.40	2	9464K559	7.65	5	9396K253	10.76	8	9557K258	11.17
262	7″ × 7 1/4″	6.984″ × 7.262″	10	9452K362	8.46	2	9464K561	7.66	5	9396K254	11.26	7	9557K259	11.42
263	7 1/4″ × 7 1/2″	7.234″ × 7.512″	10	9452K363	8.54	2	9464K562	7.74	5	9396K255	10.95	6	9557K261	9.90
264	7 1/2″ × 7 3/4″	7.484″ × 7.762″	10	9452K203	8.66	2	9464K563	7.79	5	9396K256	11.34	6	9557K262	9.81
265	7 3/4″ × 8″	7.734″ × 8.012″	5	9452K364	6.34	2	9464K564	8.02	1	9396K257	3.64	6	9557K263	9.81
266	8″ × 8 1/4″	7.984″ × 8.262″	5	9452K365	6.39	2	9464K565	8.10	1	9396K258	3.80	5	9557K264	8.68
267	8 1/4″ × 8 1/2″	8.234″ × 8.512″	5	9452K366	6.46	2	9464K129	7.79	1	9396K259	3.46	5	9557K265	9.18
268	8 1/2″ × 8 3/4″	8.484″ × 8.762″	5	9452K367	6.48	2	9464K153	7.90	1	9396K261	3.89	5	9557K266	9.46
269	8 3/4″ × 9″	8.734″ × 9.012″	5	9452K368	6.69	2	9464K566	7.99	1	9396K262	3.90	5	9557K267	9.69
270	9″ × 9 1/4″	8.984″ × 9.262″	5	9452K369	7.54	2	9464K567	8.07	1	9396K263	4.01	5	9557K268	9.69
271	9 1/4″ × 9 1/2″	9.234″ × 9.512″	5	9452K101	7.61	2	9464K568	8.14	1	9396K264	4.04	5	9557K269	9.67
272	9 1/2″ × 9 3/4″	9.484″ × 9.762″	5	9452K371	7.68	2	9464K569	8.24	1	9396K265	4.05	4	9557K271	8.06
273	9 3/4″ × 10″	9.734″ × 10.012″	5	9452K372	7.73	2	9464K571	8.51	1	9396K266	4.17	4	9557K272	7.86
274	10″ × 10 1/4″	9.984″ × 10.262″	5	9452K373	7.76	2	9464K572	8.65	1	9396K267	4.31	4	9557K273	8.66
275	10 1/2″ × 10 3/4″	10.484″ × 10.762″	5	9452K374	8.79	2	9464K573	9.24	1	9396K268	4.62	4	9557K274	8.91
276	11″ × 11 1/4″	10.984″ × 11.262″	5	9452K375	8.97	2	9464K574	9.19	1	9396K269	4.77	3	9557K275	9.43
277	11 1/2″ × 11 3/4″	11.484″ × 11.762″	5	9452K376	9.07	2	9464K575	9.48	1	9396K271	5.13	3	9557K276	9.50
278	12″ × 12 1/4″	11.984″ × 12.262″	5	9452K204	9.15	2	9464K154	9.07	1	9396K272	5.43	2	9557K277	5.71
279	13″ × 13 1/4″	12.984″ × 13.262″	5	9452K377	9.32	2	9464K576	9.55	1	9396K273	6.40	2	9557K278	6.08
280	14″ × 14 1/4″	13.984″ × 14.262″	5	9452K378	9.35	2	9464K577	9.61	1	9396K274	6.55	2	9557K279	6.23
281	15″ × 15 1/4″	14.984″ × 15.262″	2	9452K379	5.26	2	9464K578	10.83	1	9396K275	6.59	2	9557K281	6.28
282	16″ × 16 1/4″	15.955″ × 16.233″	2	9452K102	5.37	2	9464K579	10.84	1	9396K276	8.36	2	9557K282	6.65
283	17″ × 17 1/4″	16.955″ × 17.233″	2	9452K381	6.33	1	9464K581	5.87	1	9396K277	8.65	2	9557K283	7.41
284	18″ × 18 1/4″	17.955″ × 18.233″	2	9452K382	5.88	1	9464K582	6.16	1	9396K278	8.85	2	9557K284	7.25
Width: 3/16″ Fractional (0.210″ Actual)														
309	7/16″ × 13/16″	0.412″ × 0.832″	50	9452K383	3.85	15	9464K583	5.17	25	9396K279	8.31	80	9557K285	9.68
310	1/2″ × 7/8″	0.475″ × 0.895″	50	9452K205	3.96	10	9464K584	6.39	25	9396K281	8.61	75	9557K286	10.99
311	9/16″ × 15/16″	0.537″ × 0.957″	50	9452K384	4.10	15	9464K585	7.84	25	9396K282	9.29	75	9557K287	10.91
312	5/8″ × 1″	0.600″ × 1.020″	50	9452K385	4.38	10	9464K171	6.80	10	9396K283	4.69	70	9557K288	11.53
313	11/16″ × 1 1/16″	0.662″ × 1.082″	50	9452K386	4.62	15	9464K586	9.41	25	9396K284	9.15	70	9557K289	11.66
314	3/4″ × 1 1/8″	0.725″ × 1.145″	50	9452K387	4.76	10	9464K587	7.36	25	9396K285	9.61	70	9557K291	11.97
315	13/16″ × 1 3/16″	0.787″ × 1.207″	50	9452K388	4.98	10	9464K588	6.76	25	9396K286	9.70	65	9557K292	12.18
316	7/8″ × 1 1/4″	0.850″ × 1.270″	50	9452K389	5.14	10	9464K589	7.40	25	9396K287	10.48	65	9557K293	12.45
317	15/16″ × 1 5/16″	0.912″ × 1.332″	50	9452K4	5.48	10	9464K591	7.35	10	9396K288	5.13	60	9557K294	12.49
318	1″ × 1 3/8″	0.975″ × 1.395″	50	9452K206	5.96	10	9464K592	7.87	10	9396K289	5.33	60	9557K295	12.61
319	1 1/16″ × 1 7/16″	1.037″ × 1.457″	25	9452K401	4.17	10	9464K593	7.85	10	9396K291	5.52	50	9557K296	12.37
320	1 1/8″ × 1 1/2″	1.100″ × 1.520″	50	9452K207	5.97	10	9464K155	8.23	10	9396K292	5.48	50	9557K297	12.58
321	1 3/16″ × 1 9/16″	1.162″ × 1.582″	50	9452K402	6.06	10	9464K594	8.95	10	9396K293	5.67	50	9557K298	12.58

(Continued on following page)

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

Buna-N, Viton® Fluoroelastomer, Silicone, and EPDM O-Rings *(Cont. from previous page)*

Buna-N is used in oil applications. Temperature range is –35° to +250° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black. **Also Available:** Buna-N that meets AS3578. Please ask for 5018T11 and specify AS568A dash number.

Viton® fluoroelastomer resists chemicals and oil. Temperature range is –15° to +400° F. Durometer hardness is A75. Meets ASTM D2000/SAE J200. Color is black. **Also Available:** Viton® ETP fluoroelastomer for greater chemical resistance. Please ask for 2857T11 and specify AS568A dash number.

Silicone has good resistance to low and high temperatures. Temperature range is –65° to +450° F. Durometer hardness is A70. FDA compliant. Color is red-orange.

EPDM is water and steam resistant. Temperature range is –65° to +212° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black.

AS568A Dash No.	Fractional Size, ID × OD	Actual Inch Size, ID × OD	Buna-N Pkg. Qty.	Buna-N	Buna-N Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.	Viton® Fluoroelastomer	Viton® Fluoroelastomer Per Pkg.	Silicone Pkg. Qty.	Silicone	Silicone Per Pkg.	EPDM Pkg. Qty.	EPDM	EPDM Per Pkg.
Width: 3/16″ Fractional (0.210″ Actual) (Cont.)														
322	1 1/4″ × 1 5/8″	1.225″ × 1.645″	50	9452K208	$6.24	10	9464K595	$9.47	10	9396K294	$5.80	50	9557K299	$12.81
323	1 5/16″ × 1 11/16″	1.287″ × 1.707″	25	9452K403	5.88	10	9464K596	9.43	10	9396K295	5.83	50	9557K301	13.26
324	1 3/8″ × 1 3/4″	1.350″ × 1.770″	50	9452K404	6.86	10	9464K172	9.91	10	9396K296	6.05	40	9557K302	11.62
325	1 1/2″ × 1 7/8″	1.475″ × 1.895″	50	9452K44	7.14	10	9464K47	11.37	10	9396K47	6.43	10	9557K303	3.80
326	1 5/8″ × 2″	1.600″ × 2.020″	50	9452K45	7.26	10	9464K48	11.37	10	9396K87	6.52	10	9557K304	3.81
327	1 3/4″ × 2 1/8″	1.725″ × 2.145″	50	9452K46	7.68	10	9464K49	11.49	10	9396K49	6.82	10	9557K305	4.28
328	1 7/8″ × 2 1/4″	1.850″ × 2.270″	50	9452K47	7.80	10	9464K51	12.27	10	9396K297	6.88	10	9557K87	4.64
329	2″ × 2 3/8″	1.975″ × 2.395″	50	9452K48	8.61	10	9464K52	12.65	10	9396K88	7.64	10	9557K88	4.94
330	2 1/8″ × 2 1/2″	2.100″ × 2.520″	50	9452K49	10.29	10	9464K53	12.38	10	9396K298	8.99	10	9557K306	5.18
331	2 1/4″ × 2 5/8″	2.225″ × 2.645″	50	9452K51	10.50	10	9464K54	12.65	10	9396K89	9.23	10	9557K307	5.47
332	2 3/8″ × 2 3/4″	2.350″ × 2.770″	50	9452K52	10.68	10	9464K55	12.80	10	9396K55	9.47	10	9557K308	5.76
333	2 1/2″ × 2 7/8″	2.475″ × 2.895″	50	9452K53	11.78	5	9464K56	8.30	10	9396K56	9.83	10	9557K89	5.99
334	2 5/8″ × 3″	2.600″ × 3.020″	50	9452K54	12.56	5	9464K57	8.27	10	9396K57	10.77	10	9557K309	6.35
335	2 3/4″ × 3 1/8″	2.725″ × 3.145″	50	9452K55	13.33	5	9464K58	8.46	5	9396K299	5.15	25	9557K311	12.34
336	2 7/8″ × 3 1/4″	2.850″ × 3.270″	50	9452K56	13.92	5	9464K59	8.77	5	9396K91	5.40	20	9557K312	11.23
337	3″ × 3 3/8″	2.975″ × 3.395″	50	9452K97	14.10	5	9464K61	9.38	5	9396K301	6.01	20	9557K313	11.47
338	3 1/8″ × 3 1/2″	3.100″ × 3.520″	50	9452K98	14.39	5	9464K62	10.06	5	9396K92	6.97	10	9557K91	7.92
339	3 1/4″ × 3 5/8″	3.225″ × 3.645″	50	9452K99	14.56	5	9464K63	10.85	5	9396K302	7.49	20	9557K314	12.04
340	3 3/8″ × 3 3/4″	3.350″ × 3.770″	25	9452K209	7.25	5	9464K597	11.22	5	9396K303	7.79	18	9557K315	11.52
341	3 1/2″ × 3 7/8″	3.475″ × 3.895″	25	9452K211	7.57	5	9464K156	11.82	5	9396K93	8.23	15	9557K316	11.37
342	3 5/8″ × 4″	3.600″ × 4.020″	25	9452K212	7.62	2	9464K157	5.59	5	9396K304	9.09	10	9557K317	8.48
343	3 3/4″ × 4 1/8″	3.725″ × 4.145″	25	9452K213	7.70	2	9464K173	5.72	5	9396K305	9.05	10	9557K318	8.60
344	3 7/8″ × 4 1/4″	3.850″ × 4.270″	25	9452K214	7.78	2	9464K598	5.77	5	9396K306	9.19	15	9557K319	9.47
345	4″ × 4 3/8″	3.975″ × 4.395″	25	9452K215	8.11	2	9464K174	5.74	5	9396K307	9.67	10	9557K321	10.47
346	4 1/8″ × 4 1/2″	4.100″ × 4.520″	25	9452K216	8.39	2	9464K175	5.69	5	9396K308	9.67	10	9557K322	10.41
347	4 1/4″ × 4 5/8″	4.225″ × 4.645″	5	9452K405	3.70	2	9464K158	6.12	5	9396K309	9.74	13	9557K323	11.12
348	4 3/8″ × 4 3/4″	4.350″ × 4.770″	5	9452K406	3.71	2	9464K611	6.30	5	9396K94	9.68	13	9557K324	11.43
349	4 1/2″ × 4 7/8″	4.475″ × 4.895″	5	9452K407	3.88	2	9464K612	6.57	5	9396K311	9.82	12	9557K325	11.68
350	4 5/8″ × 5″	4.600″ × 5.020″	5	9452K408	3.91	2	9464K613	6.37	5	9396K312	9.81	12	9557K326	11.79
351	4 3/4″ × 5 1/8″	4.725″ × 5.145″	5	9452K409	3.97	2	9464K614	7.19	5	9396K313	10.08	12	9557K327	11.82
352	4 7/8″ × 5 1/4″	4.850″ × 5.270″	5	9452K103	4.05	2	9464K615	7.22	5	9396K314	10.26	12	9557K328	11.18
353	5″ × 5 3/8″	4.975″ × 5.395″	5	9452K411	4.06	1	9464K161	3.97	5	9396K315	10.55	10	9557K329	11.50
354	5 1/8″ × 5 1/2″	5.100″ × 5.520″	5	9452K412	4.17	2	9464K616	7.28	5	9396K316	10.43	10	9557K331	11.58
355	5 1/4″ × 5 5/8″	5.225″ × 5.645″	5	9452K511	4.31	2	9464K162	7.52	5	9396K317	10.85	10	9557K332	11.26
356	5 3/8″ × 5 3/4″	5.350″ × 5.770″	5	9452K512	4.30	2	9464K617	7.36	5	9396K318	11.72	10	9557K333	11.27
357	5 1/2″ × 5 7/8″	5.475″ × 5.895″	5	9452K513	4.36	2	9464K618	7.78	5	9396K319	11.23	9	9557K334	11.59
358	5 5/8″ × 6″	5.600″ × 6.020″	5	9452K514	4.37	2	9464K619	7.78	5	9396K321	11.56	9	9557K335	11.24
359	5 3/4″ × 6 1/8″	5.725″ × 6.145″	5	9452K515	4.51	2	9464K621	8.08	5	9396K322	11.83	9	9557K336	11.91
360	5 7/8″ × 6 1/4″	5.850″ × 6.270″	5	9452K516	4.52	2	9464K622	8.12	5	9396K323	12.07	8	9557K337	11.71
361	6″ × 6 3/8″	5.975″ × 6.395″	5	9452K517	4.54	2	9464K623	8.20	5	9396K324	13.30	8	9557K338	11.79
362	6 1/4″ × 6 5/8″	6.225″ × 6.645″	5	9452K518	4.56	2	9464K624	8.43	5	9396K325	13.03	7	9557K339	12.18
363	6 1/2″ × 6 7/8″	6.475″ × 6.895″	5	9452K519	4.56	2	9464K625	8.54	5	9396K326	13.44	7	9557K341	11.73
364	6 3/4″ × 7 1/8″	6.725″ × 7.145″	5	9452K521	4.59	2	9464K626	8.41	1	9396K327	3.03	7	9557K342	11.69
365	7″ × 7 3/8″	6.975″ × 7.395″	5	9452K523	4.62	2	9464K627	8.95	1	9396K328	3.09	6	9557K343	11.97
366	7 1/4″ × 7 5/8″	7.225″ × 7.645″	5	9452K391	4.62	2	9464K628	8.85	1	9396K329	3.14	6	9557K344	11.56
367	7 1/2″ × 7 7/8″	7.475″ × 7.895″	10	9452K217	9.35	1	9464K629	8.36	1	9396K331	3.18	6	9557K345	11.57
368	7 3/4″ × 8 1/8″	7.725″ × 8.145″	5	9452K392	4.46	1	9464K631	8.20	1	9396K332	3.28	5	9557K346	11.93
369	8″ × 8 3/8″	7.975″ × 8.395″	5	9452K393	4.51	2	9464K632	8.98	1	9396K333	3.27	5	9557K347	12.01
370	8 1/4″ × 8 5/8″	8.225″ × 8.645″	5	9452K394	4.55	1	9464K633	8.05	1	9396K334	4.23	5	9557K348	12.10
371	8 1/2″ × 8 7/8″	8.475″ × 8.895″	5	9452K395	4.62	2	9464K634	9.19	1	9396K335	4.29	5	9557K349	12.18
372	8 3/4″ × 9 1/8″	8.725″ × 9.145″	5	9452K396	4.94	2	9464K635	9.31	1	9396K336	4.62	5	9557K351	12.00
373	9″ × 9 3/8″	8.975″ × 9.395″	5	9452K397	5.05	2	9464K636	9.36	1	9396K337	4.71	5	9557K352	11.84
374	9 1/4″ × 9 5/8″	9.225″ × 9.645″	5	9452K398	5.16	1	9464K637	4.97	1	9396K338	4.81	5	9557K353	12.52
375	9 1/2″ × 9 7/8″	9.475″ × 9.895″	5	9452K399	5.39	1	9464K638	5.21	1	9396K339	4.84	5	9557K354	11.99
376	9 3/4″ × 10 1/8″	9.725″ × 10.145″	5	9452K432	5.51	2	9464K639	10.45	1	9396K341	4.94	4	9557K355	10.31
377	10″ × 10 3/8″	9.975″ × 10.395″	5	9452K433	5.79	2	9464K641	11.37	1	9396K342	5.07	4	9557K356	10.74
378	10 1/2″ × 10 7/8″	10.475″ × 10.895″	5	9452K434	5.95	2	9464K642	12.62	1	9396K343	5.84	3	9557K357	11.11
379	11″ × 11 3/8″	10.975″ × 11.395″	5	9452K435	6.04	1	9464K643	5.57	1	9396K344	5.81	3	9557K358	11.30
380	11 1/2″ × 11 7/8″	11.475″ × 11.895″	5	9452K436	6.46	2	9464K644	11.23	1	9396K345	6.15	3	9557K359	11.50
381	12″ × 12 3/8″	11.975″ × 12.395″	5	9452K437	6.59	2	9464K645	11.61	1	9396K346	6.61	3	9557K361	12.17
382	13″ × 13 3/8″	12.975″ × 13.395″	5	9452K438	6.79	1	9464K846	7.48	1	9396K347	6.60	3	9557K362	12.60
383	14″ × 14 3/8″	13.975″ × 14.395″	5	9452K439	7.62	1	9464K647	10.12	1	9396K348	6.57	2	9557K363	9.83
384	15″ × 15 3/8″	14.975″ × 15.395″	5	9452K441	10.93	1	9464K848	10.21	1	9396K349	8.68	2	9557K364	11.50
385	16″ × 16 3/8″	15.955″ × 16.375″	5	9452K487	11.26	1	9464K649	12.24	1	9396K351	8.79	2	9557K365	11.56
386	17″ × 17 3/8″	16.955″ × 17.375″	5	9452K488	11.74	1	9464K651	12.25	1	9396K352	9.00	2	9557K366	11.85
387	18″ × 18 3/8″	17.955″ × 18.375″	5	9452K489	12.10	1	9464K652	12.38	1	9396K353	9.12	2	9557K367	11.86
388	19″ × 19 3/8″	18.955″ × 19.375″	5	9452K491	13.99	1	9464K653	12.84	1	9396K354	9.55	2	9557K368	11.65
389	20″ × 20 3/8″	19.955″ × 20.375″	5	9452K492	15.45	1	9464K654	12.03	1	9396K355	10.13	2	9557K369	11.36

(Continued on following page)

For information about O-ring materials, see page 3482.

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

Buna-N, Viton® Fluoroelastomer, Silicone, and EPDM O-Rings *(Cont. from previous page)*

AS568A Dash No.	Fractional Size, ID×OD	Actual Inch Size, ID×OD	Buna-N Pkg. Qty.	Buna-N Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.	Viton® Fluoroelastomer Per Pkg.	Silicone Pkg. Qty.	Silicone Per Pkg.	EPDM Pkg. Qty.	EPDM Per Pkg.
Width: 3/16″ Fractional (0.210″ Actual) (Cont.)										
390	21″ ×21 3/8″	20.955″×21.375″	1	9452K493	1	9464K655	5	9396K356	2	9557K371
391	22″ ×22 3/8″	21.955″×22.375″	1	9452K494	1	9464K656	5	9396K357	1	9557K372
392	23″ ×23 3/8″	22.940″×23.360″	1	9452K495	1	9464K657	5	9396K358	1	9557K373
393	24″ ×24 3/8″	23.940″×24.360″	1	9452K496	1	9464K658	5	9396K359	1	9557K374
394	25″ ×25 3/8″	24.940″×25.360″	1	9452K497	1	9464K659	5	9396K361	1	9557K375
395	26″ ×26 3/8″	25.940″×26.360″	1	9452K498	1	9464K661	5	9396K362	1	9557K376
Width: 1/4″ Fractional (0.275″ Actual)										
404	1 7/8″ × 2 3/8″	1.850″ × 2.400″	5	9452K499	2	9464K726	5	9396K911	1	9557K911
405	2″ × 2 1/2″	1.975″ × 2.525″	5	9452K501	2	9464K727	5	9396K912	1	9557K912
406	2 1/8″ × 2 5/8″	2.100″ × 2.650″	5	9452K502	2	9464K728	5	9396K913	1	9557K913
407	2 1/4″ × 2 3/4″	2.225″ × 2.775″	5	9452K231	2	9464K729	5	9396K914	1	9557K914
408	2 3/8″ × 2 7/8″	2.350″ × 2.900″	5	9452K232	2	9464K731	5	9396K915	1	9557K915
409	2 1/2″ × 3″	2.475″ × 3.025″	5	9452K233	2	9464K732	5	9396K916	1	9557K916
410	2 5/8″ × 3 1/8″	2.600″ × 3.150″	5	9452K234	2	9464K733	5	9396K917	1	9557K917
411	2 3/4″ × 3 1/4″	2.725″ × 3.275″	5	9452K235	2	9464K734	5	9396K918	1	9557K918
412	2 7/8″ × 3 3/8″	2.850″ × 3.400″	5	9452K236	2	9464K735	5	9396K921	1	9557K919
413	3″ × 3 1/2″	2.975″ × 3.525″	5	9452K237	2	9464K736	5	9396K922	1	9557K921
414	3 1/8″ × 3 5/8″	3.100″ × 3.650″	5	9452K238	2	9464K737	5	9396K923	1	9557K922
415	3 1/4″ × 3 3/4″	3.225″ × 3.775″	5	9452K239	2	9464K738	5	9396K924	1	9557K923
416	3 3/8″ × 3 7/8″	3.350″ × 3.900″	5	9452K241	2	9464K739	5	9396K925	1	9557K924
417	3 1/2″ × 4″	3.475″ × 4.025″	10	9452K218	2	9464K741	5	9396K926	1	9557K925
418	3 5/8″ × 4 1/8″	3.600″ × 4.150″	5	9452K242	2	9464K742	5	9396K927	1	9557K926
419	3 3/4″ × 4 1/4″	3.725″ × 4.275″	5	9452K243	2	9464K743	5	9396K928	1	9557K927
420	3 7/8″ × 4 3/8″	3.850″ × 4.400″	5	9452K244	2	9464K744	5	9396K931	1	9557K928
421	4″ × 4 1/2″	3.975″ × 4.525″	5	9452K245	2	9464K745	5	9396K932	1	9557K929
422	4 1/8″ × 4 5/8″	4.100″ × 4.650″	5	9452K246	2	9464K746	5	9396K933	1	9557K931
423	4 1/4″ × 4 3/4″	4.225″ × 4.775″	5	9452K247	2	9464K747	5	9396K934	1	9557K932
424	4 3/8″ × 4 7/8″	4.350″ × 4.900″	5	9452K248	2	9464K748	5	9396K935	1	9557K933
425	4 1/2″ × 5″	4.475″ × 5.025″	5	9452K219	2	9464K662	5	9396K363	9	9557K377
426	4 5/8″ × 5 1/8″	4.600″ × 5.150″	5	9452K413	2	9464K163	5	9396K364	9	9557K378
427	4 3/4″ × 5 1/4″	4.725″ × 5.275″	5	9452K414	2	9464K663	5	9396K365	9	9557K379
428	4 7/8″ × 5 3/8″	4.850″ × 5.400″	5	9452K415	2	9464K664	5	9396K366	9	9557K381
429	5″ × 5 1/2″	4.975″ × 5.525″	5	9452K416	2	9464K665	5	9396K367	8	9557K382
430	5 1/8″ × 5 5/8″	5.100″ × 5.650″	5	9452K417	2	9464K666	5	9396K368	8	9557K383
431	5 1/4″ × 5 3/4″	5.225″ × 5.775″	5	9452K418	2	9464K667	5	9396K369	7	9557K384
432	5 3/8″ × 5 7/8″	5.350″ × 5.900″	5	9452K419	2	9464K668	5	9396K371	7	9557K385
433	5 1/2″ × 6″	5.475″ × 6.025″	5	9452K221	2	9464K669	5	9396K372	7	9557K386
434	5 5/8″ × 6 1/8″	5.600″ × 6.150″	5	9452K104	2	9464K671	5	9396K373	7	9557K387
435	5 3/4″ × 6 1/4″	5.725″ × 6.275″	5	9452K421	2	9464K672	1	9396K374	7	9557K388
436	5 7/8″ × 6 3/8″	5.850″ × 6.400″	5	9452K422	2	9464K673	1	9396K375	7	9557K389
437	6″ × 6 1/2″	5.975″ × 6.525″	5	9452K423	2	9464K674	1	9396K376	6	9557K391
438	6 1/4″ × 6 3/4″	6.225″ × 6.775″	2	9452K424	2	9464K675	1	9396K377	6	9557K392
439	6 1/2″ × 7″	6.475″ × 7.025″	2	9452K425	2	9464K676	1	9396K378	6	9557K393
440	6 3/4″ × 7 1/4″	6.725″ × 7.275″	2	9452K222	1	9464K677	1	9396K379	5	9557K394
441	7″ × 7 1/2″	6.975″ × 7.525″	2	9452K426	1	9464K678	1	9396K381	5	9557K395
442	7 1/4″ × 7 3/4″	7.225″ × 7.775″	2	9452K427	2	9464K679	1	9396K382	5	9557K396
443	7 1/2″ × 8″	7.475″ × 8.025″	2	9452K428	2	9464K681	1	9396K383	5	9557K397
444	7 3/4″ × 8 1/4″	7.725″ × 8.275″	2	9452K429	1	9464K682	1	9396K384	5	9557K398
445	8″ × 8 1/2″	7.975″ × 8.525″	2	9452K43	1	9464K683	1	9396K385	4	9557K401
446	8 1/2″ × 9″	8.475″ × 9.025″	2	9452K431	2	9464K684	1	9396K386	4	9557K402
447	9″ × 9 1/2″	8.975″ × 9.525″	2	9452K442	2	9464K685	1	9396K387	4	9557K403
448	9 1/2″ ×10″	9.475″ ×10.025″	2	9452K223	1	9464K686	1	9396K388	4	9557K404
449	10″ ×10 1/2″	9.975″ ×10.525″	2	9452K443	1	9464K887	1	9396K389	4	9557K405
450	10 1/2″ ×11″	10.475″ ×11.025″	2	9452K444	1	9464K688	1	9396K391	3	9557K406
451	11″ ×11 1/2″	10.975″ ×11.525″	2	9452K445	1	9464K689	1	9396K392	3	9557K407
452	11 1/2″ ×12″	11.475″ ×12.025″	2	9452K446	1	9464K691	1	9396K393	3	9557K408
453	12″ ×12 1/2″	11.975″ ×12.525″	2	9452K447	1	9464K692	1	9396K394	2	9557K409
454	12 1/2″ ×13″	12.475″ ×13.025″	2	9452K448	1	9464K693	1	9396K395	2	9557K411
455	13″ ×13 1/2″	12.975″ ×13.525″	2	9452K449	1	9464K694	1	9396K396	2	9557K412
456	13 1/2″ ×14″	13.475″ ×14.025″	2	9452K105	1	9464K695	1	9396K397	2	9557K413
457	14″ ×14 1/2″	13.975″ ×14.525″	2	9452K451	1	9464K696	1	9396K398	2	9557K414
458	14 1/2″ ×15″	14.475″ ×15.025″	2	9452K452	1	9464K697	1	9396K399	2	9557K415
459	15″ ×15 1/2″	14.975″ ×15.525″	2	9452K453	1	9464K698	1	9396K401	2	9557K416
460	15 1/2″ ×16″	15.475″ ×16.025″	2	9452K454	1	9464K711	1	9396K402	2	9557K417
461	16″ ×16 1/2″	15.955″ ×16.505″	2	9452K455	1	9464K712	1	9396K403	2	9557K418
462	16 1/2″ ×17″	16.455″ ×17.005″	2	9452K456	1	9464K713	1	9396K404	2	9557K419
463	17″ ×17 1/2″	16.955″ ×17.505″	2	9452K457	1	9464K714	1	9396K405	2	9557K421
464	17 1/2″ ×18″	17.455″ ×18.005″	2	9452K458	1	9464K715	1	9396K406	2	9557K422
465	18″ ×18 1/2″	17.955″ ×18.505″	2	9452K459	1	9464K432	1	9396K407	2	9557K423
466	18 1/2″ ×19″	18.455″ ×19.005″	2	9452K106	1	9464K433	1	9396K408	2	9557K424
467	19″ ×19 1/2″	18.955″ ×19.505″	2	9452K461	1	9464K434	1	9396K409	2	9557K425
468	19 1/2″ ×20″	19.455″ ×20.005″	2	9452K462	1	9464K435	1	9396K411	1	9557K426
469	20″ ×20 1/2″	19.955″ ×20.505″	2	9452K463	1	9464K436	1	9396K412	1	9557K427
470	21″ ×21 1/2″	20.955″ ×21.505″	2	9452K464	1	9464K437	1	9396K413	1	9557K428
471	22″ ×22 1/2″	21.955″ ×22.505″	2	9452K465	1	9464K438	1	9396K414	1	9557K429
472	23″ ×23 1/2″	22.940″ ×23.490″	2	9452K466	1	9464K439	1	9396K415	1	9557K431
473	24″ ×24 1/2″	23.940″ ×24.490″	2	9452K467	1	9464K442	1	9396K416	1	9557K432
474	25″ ×25 1/2″	24.940″ ×25.490″	2	9452K468	1	9464K443	1	9396K417	1	9557K433
475	26″ ×26 1/2″	25.940″ ×26.490″	2	9452K469	1	9464K444	1	9396K418	1	9557K434

For information about O-ring materials, see page 3482. For O-ring dimensions, see pages 3482-3487.

For an AS568A dash number O-ring sizing chart, go to mcmaster.com and search for **9452KAC**.

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

O-Ring Assortments

382-Pc. Assortment

Furnished in a plastic case, unless otherwise noted.

Viton® fluoroelastomer is used in applications requiring chemical and oil resistance. Temperature range is –15° to +400° F. Durometer hardness is A75. Meets ASTM D2000/SAE J200. Color is black, unless noted.

Buna-N is used in oil applications. Temperature range is –30° to +250° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black.

Silicone has good temperature resistance, with a range of –65° to +400° F. Durometer hardness is A70. FDA compliant. Color is red-orange.

EPDM is water and steam resistant. Temperature range is –65° to +212° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black.

180-Pc. Viton® Fluoroelastomer—30 Sizes

AS568A Dash No.	Qty.	AS568A Dash No.	Qty.
006-012	10	210-215	5
110-114	10	216-222	2
115-116	5	325-327	2

9511K31 ..... **Each** $94.92

382-Pc. Buna-N—30 Sizes

AS568A Dash No.	Qty.	AS568A Dash No.	Qty.
006-012	20	210-222	10
110-116	13	325-327	7

9408K41 ..... **Each** $24.19

1,110-Pc. Buna-N and Viton® Fluoroelastomer—150 Sizes

Furnished in a plastic cabinet.

AS568A Dash No.	Qty.	AS568A Dash No.	Qty.
001-016	20	210-216	10
017-024	10	217-229	5
025-031	7	230-232	3
032-043	5	233-237	2
044-046	2	325-328	5
110-116	15	329-330	4
117-124	10	331-338	2
125-142	5	901-914	5
143-146	3	916, 918, 920, 924, 928, 932	5
147-151	2		

Buna-N ..... **9000K14** **Each** $174.73
Viton® Fluoroelastomer.... **9465K11** **Each** $490.68

200-Pc. Buna-N, Silicone, and EPDM—12 Sizes

AS568A Dash No.	Qty.	AS568A Dash No.	Qty.
010-011	35	112-116	10
012, 110	25	211	8
111	15	212	7

Buna-N ..... **9486K63** **Each** $8.36
Silicone ..... **93135K31** **Each** $15.75
EPDM ..... **93045K11** **Each** $9.68

611-Pc. Buna-N and Viton® Fluoroelastomer—37 Sizes

AS568A Dash No.	Qty.	AS568A Dash No.	Qty.
006-012	50	210-222	9
110-116	12	325-334	6

Buna-N ..... **9399K11** **Each** $138.32
Viton® Fluoroelastomer.. **93145K11** **Each** $256.52

1,168-Pc. Combinations—19 Sizes

AS568A Dash No.	Qty.
006-012	65
110-116	12
210-214	9

Buna-N and Viton®★ **9726K25** **Each** $172.79
EPDM and Silicone... **9726K27** **Each** $152.70
★ Color of Viton® fluoroelastomer is brown.

O-Rings for Straight Thread Tube Fittings

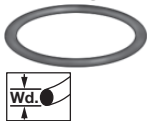

Also known as boss O-rings, use these as replacement O-rings for SAE high-pressure straight thread tube fittings.

Buna-N is used in oil applications. Temperature range is –30° to +250° F. Durometer hardness is A90. Meets ASTM D2000/SAE J200. Color is black.

Viton® fluoroelastomer is used in applications requiring chemical and oil resistance. Temperature range is –15° to +400° F. Durometer hardness is A90. Meets ASTM D2000/SAE J200. Color is black.

Silicone has good temperature resistance, with a range of –65° to +450° F. Durometer hardness is A70. FDA compliant. Color is red-orange.

EPDM is water and steam resistant. Temperature range is –65° to +212° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black.

O-Rings for Straight Thread Tube Fittings

AS568A Dash No.	Fits Tube Size, OD	Actual Inch Size, ID×OD	Buna-N Pkg. Qty.		Buna-N Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.		Viton® Fluoroelastomer Per Pkg.	Silicone Pkg. Qty.		Silicone Per Pkg.	EPDM Pkg. Qty.		EPDM Per Pkg.
0.056″ Wide														
901	3/32″	0.185″×0.297″	100	**9751K111**	$2.40	25	**9752K111**	$2.44	50	**9396K419**	$3.27	100	**9557K435**	$5.41
0.064″ Wide														
902	1/8″	0.239″×0.367″	100	**9751K112**	2.41	25	**9752K112**	2.58	50	**9396K421**	3.17	100	**9557K436**	5.42
903	3/16″	0.301″×0.429″	100	**9751K113**	3.03	25	**9752K113**	2.68	50	**9396K422**	3.22	90	**9557K437**	5.51
0.072″ Wide														
904	1/4″	0.351″×0.495″	100	**9751K114**	3.35	25	**9752K114**	2.92	50	**9396K423**	3.28	90	**9557K438**	5.54
905	5/16″	0.414″×0.558″	100	**9751K115**	3.98	25	**9752K115**	3.08	50	**9396K424**	5.21	90	**9557K439**	5.63
0.078″ Wide														
906	3/8″	0.468″×0.624″	100	**9751K116**	4.35	25	**9752K116**	3.17	50	**9396K425**	5.52	80	**9557K441**	6.10
0.082″ Wide														
907	7/16″	0.530″×0.694″	100	**9751K117**	4.75	25	**9752K117**	3.44	50	**9396K426**	5.68	80	**9557K442**	6.21
0.087″ Wide														
908	1/2″	0.644″×0.818″	100	**9751K118**	5.38	25	**9752K118**	4.66	50	**9396K427**	5.89	80	**9557K443**	6.27
0.097″ Wide														
909	9/16″	0.706″×0.900″	100	**9751K119**	6.68	25	**9752K119**	4.96	50	**9396K428**	6.96	80	**9557K444**	6.76
910	5/8″	0.755″×0.949″	100	**9751K121**	7.43	25	**9752K121**	5.51	50	**9396K429**	7.36	80	**9557K445**	7.15
0.116″ Wide														
911	11/16″	0.863″×1.095″	100	**9751K122**	8.26	25	**9752K122**	7.32	25	**9396K431**	6.87	70	**9557K446**	7.79
912	3/4″	0.924″×1.156″	100	**9751K123**	9.53	25	**9752K123**	8.45	25	**9396K432**	7.17	70	**9557K447**	7.80
913	13/16″	0.986″×1.218″	100	**9751K124**	10.53	25	**9752K124**	8.91	25	**9396K433**	7.67	70	**9557K448**	8.00
914	7/8″	1.047″×1.279″	100	**9751K125**	12.20	25	**9752K125**	9.83	25	**9396K434**	7.97	70	**9557K449**	8.43
916	1″	1.171″×1.403″	100	**9751K126**	13.23	25	**9752K126**	10.48	25	**9396K435**	8.86	70	**9557K451**	8.60
918	1 1/8″	1.355″×1.587″	100	**9751K127**	13.77	25	**9752K127**	11.11	25	**9396K436**	10.15	60	**9557K452**	8.86
0.118″ Wide														
920	1 1/4″	1.475″×1.711″	100	**9751K128**	14.81	25	**9752K128**	13.09	25	**9396K437**	11.05	60	**9557K453**	8.88
924	1 1/2″	1.720″×1.956″	100	**9751K129**	14.01	12	**9752K829**	10.16	10	**9396K438**	3.96	50	**9557K454**	8.97
928	1 3/4″	2.090″×2.326″	100	**9751K131**	14.98	12	**9752K831**	13.79	10	**9396K511**	4.48	40	**9557K455**	9.06
932	2″	2.337″×2.573″	100	**9751K132**	14.96	12	**9752K832**	14.92	10	**9396K512**	5.53	40	**9557K456**	9.45

212-Pc. Buna-N and Viton® Fluoroelastomer Assortments for Straight Thread Tube Fittings—20 Sizes

Furnished in a plastic case.

AS568A Dash No.	Qty.	AS568A Dash No.	Qty.
901-904	10	911-914	10
905-910	12	916, 918, 920, 924, 928, 932	10

Buna-N ..... **9749K29** **Each** $25.30
Viton® Fluoroelastomer..... **9749K39** **Each** $99.59

For information about O-ring materials, see page 3482. For O-ring dimensions, see pages 3482-3487.

For an AS568A dash number O-ring sizing chart, go to mcmaster.com and search for **9452KAC**.

Hard O-Rings

Increased hardness provides enhanced abrasion resistance and makes these O-rings better suited for higher pressure applications. Durometer hardness is A90. Meet ASTM D2000/SAE J200. Color is black.

Buna-N—Use in oil applications. Temperature range is –25° to +250° F.

Viton® Fluoroelastomer—Offers excellent chemical and oil resistance. Temperature range is 5° to 390° F.

Also Available: Additional sizes. For Buna-N, ask for 5308T3; for Viton® fluoroelastomer, ask for 8297T101. Please specify AS568A dash number.

AS568A Dash No.	Buna-N Pkg. Qty.		Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.		Per Pkg.
001	100	5308T11	$2.21	50	8297T111	$10.71
006	100	5308T115	2.27	100	8297T116	7.50
007	100	5308T116	2.27	100	8297T117	7.20
008	100	5308T117	2.17	100	8297T118	7.20
009	100	5308T118	2.27	100	8297T119	10.37
010	100	5308T119	2.27	100	8297T12	9.65
013	100	5308T122	3.37	100	8297T123	15.32
014	100	5308T123	3.62	100	8297T124	15.60
015	100	5308T124	3.78	50	8297T125	8.75
016	100	5308T125	4.04	50	8297T126	8.75
017	100	5308T126	4.08	50	8297T127	8.75
111	100	5308T169	2.84	10	8297T17	2.25
112	100	5308T17	3.09	10	8297T171	2.25
113	100	5308T171	3.12	10	8297T172	2.25
114	100	5308T172	3.74	10	8297T173	2.50
115	50	5308T173	2.01	10	8297T174	2.75
209	50	5308T254	3.04	10	8297T246	4.75
210	50	5308T255	3.17	10	8297T247	5.25
211	50	5308T256	3.22	10	8297T248	5.50
212	50	5308T257	3.57	10	8297T249	6.50
213	50	5308T258	3.68	10	8297T25	6.75
438	10	5308T446	17.90	2	8297T435	18.19

Military Specification O-Rings

Viton® Fluoroelastomer—Meets MIL-R-83248C and ASTM D2000/SAE J200. Offers excellent chemical and oil resistance. Temperature range is –15° to +400° F. Durometer hardness is A75. Color is black.

Fluorosilicone—Meets MIL-R-25988 and ASTM D2000/SAE J200. Resists petroleum fluids. Temperature range is –75° to +400° F. Durometer hardness is A70. Color is blue.

Also Available: Additional sizes. For Viton® fluoroelastomer, ask for 1201T111; for fluorosilicone, ask for 8333T11. Please specify AS568A dash number.

AS568A Dash No.	Viton® Fluoroelastomer Pkg. Qty.		Per Pkg.	Fluorosilicone Pkg. Qty.		Per Pkg.
006	50	1201T16	$4.82	5	8333T116	$1.50
007	50	1201T17	5.12	5	8333T117	1.62
008	50	1201T18	5.12	5	8333T118	1.75
009	50	1201T19	5.73	5	8333T119	1.88
010	50	1201T21	5.73	5	8333T12	1.88
011	50	1201T22	6.35	5	8333T121	2.12
012	50	1201T23	6.97	5	8333T122	2.37
013	50	1201T24	8.20	5	8333T123	2.62
014	50	1201T25	10.05	5	8333T124	3.12
015	50	1201T26	11.28	5	8333T125	3.38
016	50	1201T27	10.37	5	8333T126	3.62
017	25	1201T28	5.43	5	8333T127	4.00
018	25	1201T29	6.05	5	8333T128	4.25
110	25	1201T46	6.82	5	8333T169	5.12
111	25	1201T47	6.97	5	8333T17	5.37
112	25	1201T48	7.12	5	8333T171	5.62
113	25	1201T49	7.90	5	8333T172	5.88
114	25	1201T51	8.52	5	8333T173	6.12
115	25	1201T52	8.05	5	8333T174	6.50
116	25	1201T53	9.43	5	8333T175	6.75
208	10	1201T55	5.69	5	8333T245	6.12
209	10	1201T56	6.15	5	8333T246	6.75
210	10	1201T57	6.01	5	8333T247	7.25
211	10	1201T58	6.93	5	8333T248	7.87
212	10	1201T59	7.63	5	8333T249	8.87
213	10	1201T61	7.99	5	8333T25	9.50
214	10	1201T62	8.29	5	8333T251	10.00

Also Available: Three types of Buna-N (shown below). Please specify AS568A dash number.

Mil Spec.	Temp. Range	Durometer	Color	Buna-N
MIL-P-25732	–65° to +275° F	A75	Black	4198T11
MIL-P-5315	–65° to +150° F	A65	Black	4464T11
MIL-P-83461	–65° to +275° F	A70	Black	4679T11

Soft Buna-N O-Rings

You'll soften up to these O-rings—they have a durometer hardness of A50, giving them better sealability. Temperature range is –40° to +250° F. Meet ASTM D2000/SAE J200. Color is black.

Also Available: Additional sizes. Please ask for 2418T55 and specify AS568A dash number.

AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.
004	100	2418T11	$9.00	111	90	2418T136	$9.60
006	150	2418T112	10.00	112	80	2418T137	9.07
007	125	2418T113	8.77	113	80	2418T138	9.60
008	125	2418T114	9.17	114	80	2418T139	9.87
009	125	2418T115	9.40	115	75	2418T14	9.50
010	120	2418T116	10.00	210	50	2418T165	10.00
013	90	2418T119	9.60	211	40	2418T166	8.67
014	80	2418T12	9.07	212	40	2418T167	9.33
015	80	2418T121	9.60	213	35	2418T168	8.80
016	75	2418T122	9.50	214	40	2418T169	9.47
017	70	2418T123	9.80	337	8	2418T229	9.87

High-Temperature Buna-N O-Rings

Also known as HNBR (Hydrogenated Nitrile Butadiene Rubber), this material is saturated with hydrogen to improve resistance to heat and ozone. They resist oil like Buna-N, but have an expanded temperature range of –40° to +300° F. Durometer hardness is A70. Meet ASTM D2000/SAE J200. Color is green for easy identification.

Also Available: Additional sizes. Please ask for 1884T88 and specify AS568A dash number.

AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.
006	100	1884T12	$3.63	111	50	1884T27	$5.10
007	100	1884T13	3.25	112	50	1884T28	6.05
008	100	1884T14	3.25	113	50	1884T29	6.41
009	100	1884T15	3.58	114	50	1884T31	6.77
010	100	1884T16	4.47	115	50	1884T32	7.56
013	100	1884T19	5.95	210	25	1884T39	8.46
014	100	1884T21	6.62	211	25	1884T41	7.16
015	100	1884T22	7.46	212	25	1884T42	7.75
016	100	1884T23	7.46	213	25	1884T43	8.05
017	50	1884T24	4.57	214	25	1884T44	8.85

Brown Viton® Fluoroelastomer O-Rings

With the same excellent chemical and oil resistance as Viton® fluoroelastomer O-rings, these O-rings are also brown for easier material identification. Temperature range is –15° to +400° F. Durometer hardness is A75. Meet ASTM D2000/SAE J200.

Also Available: Additional sizes. Please ask for 5267T2 and specify AS568A dash number.

AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.
001	100	5267T11	$6.74	111	50	5267T76	$8.14
006	100	5267T16	7.17	112	50	5267T77	8.26
007	100	5267T17	7.43	113	50	5267T78	9.01
008	100	5267T18	7.76	114	50	5267T79	10.63
009	100	5267T19	8.28	115	50	5267T81	11.32
010	100	5267T21	7.46	209	25	5267T173	8.66
013	100	5267T24	11.95	210	25	5267T174	9.80
014	100	5267T25	12.97	211	25	5267T175	9.95
015	100	5267T26	13.99	212	25	5267T176	10.67
016	100	5267T27	14.62	213	25	5267T177	11.70
017	50	5267T28	7.63	932	12	5267T515	16.54

Aflas O-Rings

Aflas O-rings offer excellent chemical, heat, electrical, and oil resistance. Temperature range is 25° to 450° F. Durometer hardness is A80. Color is black.

Also Available: Additional sizes. Please ask for 5240T111 and specify AS568A dash number.

AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.
006	25	5240T11	$7.97	111	15	5240T49	$7.84
007	25	5240T12	7.97	112	15	5240T51	8.38
008	25	5240T13	7.84	113	15	5240T52	8.78
009	25	5240T14	7.16	114	15	5240T53	9.46
010	25	5240T15	7.16	115	15	5240T54	10.00
013	25	5240T18	8.65	210	10	5240T124	10.81
014	25	5240T19	8.92	211	10	5240T125	11.62
015	25	5240T21	9.46	212	10	5240T126	12.57
016	25	5240T22	10.00	213	6	5240T127	13.78
017	10	5240T23	4.32	214	6	5240T128	9.05
110	15	5240T48	7.84	350	1	5240T207	12.57

For information about O-ring materials, see page 3482.

For an AS568A dash number O-ring sizing chart, go to mcmaster.com and search for **9452KAC**.

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

Metric O-Rings

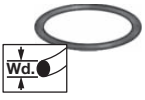

Buna-N is used in oil applications. Temperature range is –35° to +250° F. Durometer hardness is A70. Meets ASTM D2000/SAE J200. Color is black.

Viton® fluoroelastomer is used in applications requiring chemical and oil resistance. Temperature range is –40° to +400° F. Durometer hardness is A75. Meets ASTM D2000/SAE J200. Color is black.

Also Available: Additional sizes. For Buna-N, ask for 9262K41 and for Viton® fluoroelastomer, ask for 9263K11. Please specify ID and width.

ID, mm	Buna-N Pkg. Qty.	Buna-N	Buna-N Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.	Viton® Fluoroelastomer	Viton® Fluoroelastomer Per Pkg.
1 mm Wide						
2	100	9262K101	$4.38	25	9263K283	$2.47
2.5	100	9262K511	4.63	25	9263K546	3.38
3	100	9262K441	12.40	25	9263K511	6.08
4	100	9262K102	4.82	25	9263K284	3.04
5	100	9262K421	4.93	25	9263K285	3.26
6	100	9262K103	4.95	50	9263K111	12.57
7	100	9262K513	5.23	25	9263K547	5.44
8	100	9262K442	14.10	25	9263K548	5.74
10	100	9262K104	5.83	25	9263K286	4.59
12	100	9262K105	6.15	25	9263K287	5.89
1.5 mm Wide						
3	100	9262K119	4.37	25	9263K288	3.11
4	100	9262K422	4.39	25	9263K289	3.33
5	100	9262K121	4.55	25	9263K121	3.36
6	100	9262K122	5.18	25	9263K292	3.60
7	100	9262K124	5.49	25	9263K293	4.78
9	100	9262K126	5.72	25	9263K294	5.22
10	100	9262K127	5.82	25	9263K295	5.67
12	100	9262K128	6.15	25	9263K296	6.56
13	100	9262K123	6.29	25	9263K123	9.78
16	100	9262K125	7.59	25	9263K125	11.35
1.6 mm Wide						
2.2	100	9262K131	4.22	25	9263K131	3.45
3.1	100	9262K133	4.43	25	9263K133	4.31
4.1	100	9262K135	4.56	25	9263K135	4.58
7.1	100	9262K137	5.38	25	9263K137	6.47
9.1	100	9262K139	5.84	25	9263K139	7.12
10.1	100	9262K143	5.93	25	9263K143	7.64
13.1	100	9262K145	6.54	25	9263K145	9.85
1.9 mm Wide						
2.8	100	93125K13	5.95	25	9263K636	12.79
3.8	100	93125K15	5.98	25	9263K637	12.79
4.8	100	93125K17	6.01	25	9263K638	12.79
5.8	100	93125K19	5.95	25	9263K639	13.09
6.8	100	93125K21	6.88	25	9263K641	14.82
7.8	100	93125K23	6.93	25	9263K642	14.82
8.8	100	93125K25	6.92	25	9263K643	14.82
9.8	100	93125K27	8.82	25	9263K644	14.82
2 mm Wide						
3	100	9262K161	4.27	25	9263K161	6.22
4	100	9262K163	4.30	25	9263K163	6.44
5	100	9262K165	4.43	25	9263K165	6.90
6	100	9262K166	4.66	25	9263K166	7.89
7	100	9262K167	5.38	25	9263K167	8.04
8	100	9262K169	5.49	25	9263K169	8.53
9	100	9262K173	6.18	25	9263K173	8.78
10	100	9262K174	6.66	25	9263K174	9.10
12	100	9262K176	7.19	25	9263K176	11.56
13	100	9262K177	7.84	25	9263K297	12.66
14	100	9262K178	8.07	25	9263K178	12.87
15	100	9262K179	8.11	25	9263K299	13.98
16	100	9262K181	8.34	25	9263K181	14.05
19	100	9262K185	8.86	25	9263K185	14.12
20	100	9262K186	9.42	25	9263K186	14.25
22	100	9262K187	12.98	20	9263K501	12.25
23	50	9262K188	7.05	20	9263K502	13.25
24	50	9262K189	7.23	20	9263K503	13.50
28	50	9262K405	9.54	10	9263K118	11.00
40	50	9262K203	12.75	10	9263K662	11.32
50	25	9262K208	9.31	20	9263K504	14.81
2.4 mm Wide						
4.3	100	9262K211	4.76	25	9263K212	7.45
5.3	100	9262K213	4.88	25	9263K214	9.82
5.6	100	9262K215	4.92	25	9263K215	9.95
7.6	100	9262K217	5.62	25	9263K217	10.15
8.3	100	9262K219	6.19	25	9263K219	10.46
8.6	100	9262K221	6.25	25	9263K221	11.26
9.8	100	93125K29	9.36	25	9263K673	11.76
10.8	100	93125K31	9.40	10	9263K675	11.76
2.4 mm Wide (Cont.)						
11	100	93125K33	$9.52	—	—	—
11.8	100	93125K35	11.17	10	9263K677	$11.76
12.8	100	93125K37	11.22	—	—	—
13.8	100	93125K39	11.28	10	9263K681	11.76
14.8	100	93125K41	11.72	20	9263K683	11.76
15.8	100	93125K43	11.80	20	9263K685	11.91
17.8	100	93125K47	11.89	10	9263K688	13.24
19.8	25	93125K49	3.55	10	9263K691	14.82
20.8	25	93125K51	3.35	10	9263K693	14.82
21.8	25	93125K53	3.37	—	—	—
2.5 mm Wide						
9	100	9262K425	6.83	10	9263K334	3.44
10	100	9262K232	7.12	10	9263K232	5.04
11	100	9262K234	7.46	10	9263K234	5.31
12	100	9262K236	7.59	10	9263K236	5.78
13	100	9262K238	8.17	10	9263K238	5.94
14	100	9262K241	8.50	10	9263K241	6.15
15	100	9262K243	8.58	10	9263K243	6.33
16	100	9262K245	8.80	10	9263K245	6.74
17	100	9262K247	9.02	10	9263K247	6.89
18	100	9262K251	9.16	10	9263K251	7.06
19	100	9262K253	9.41	10	9263K253	7.09
20	100	9262K254	12.07	10	9263K305	8.03
22	50	9262K255	7.63	10	9263K306	8.75
27	50	9262K257	9.18	10	9263K307	10.00
32	50	9262K258	11.13	10	9263K308	13.13
3 mm Wide						
9	—	—	—	10	9263K261	6.19
10	—	—	—	10	9263K263	6.68
11	100	9262K265	7.60	10	9263K265	6.95
18	100	9262K278	7.70	10	9263K309	8.59
19	100	9262K428	14.08	10	9263K311	8.75
20	50	9262K267	6.18	10	9263K267	8.25
22	50	9262K269	6.51	10	9263K269	8.54
24	50	9262K273	7.01	10	9263K273	9.12
25	50	9262K275	7.27	10	9263K275	9.36
27	50	9262K277	8.30	10	9263K277	10.02
28	50	9262K279	8.03	10	9263K279	10.23
30	50	9262K282	8.56	10	9263K282	10.42
32	50	9262K284	9.18	10	9263K312	10.56
33	25	9262K286	4.92	10	9263K313	10.73
35	25	9262K293	5.54	10	9263K314	10.89
38	25	9262K297	5.74	10	9263K316	11.78
40	25	9262K289	6.50	10	9263K317	12.33
45	25	9262K303	9.63	10	9263K318	14.00
50	25	9262K305	10.81	10	9263K319	14.56
56	25	9262K431	11.58	8	9263K521	12.60
59	25	9262K432	11.84	8	9263K522	13.20
3.1 mm Wide						
24.4	100	93125K59	13.62	5	9263K755	14.12
29.4	25	93125K73	4.55	—	—	—
3.5 mm Wide						
21.7	25	93125K55	4.24	—	—	—
23.7	25	93125K61	4.21	—	—	—
24.7	25	93125K65	4.21	—	—	—
25.7	25	93125K69	2.43	—	—	—
27.7	25	93125K71	4.89	—	—	—
28.7	25	93125K75	5.20	—	—	—
29.7	25	93125K79	5.53	—	—	—
30.7	25	93125K81	6.25	—	—	—
4 mm Wide						
14.5	25	93125K45	6.33	—	—	—
23.5	25	93125K63	6.86	—	—	—
38	25	9262K357	10.78	8	9263K533	13.70
5 mm Wide						
15	50	9262K381	12.56	5	9263K789	7.21
42	25	9262K384	13.28	—	—	—
170	5	9262K399	13.74	—	—	—

Also Available: Silicone metric O-rings (shown below). Please specify ID and width.

Temp. Range	Durometer	Color	
–60° to +450° F	A70	Red-Orange	5233T111

For information about O-ring materials, see page 3482. For O-ring dimensions, see pages 3482-3487.

For an AS568A dash number O-ring sizing chart, go to mcmaster.com and search for **9452KAC**.

Metric O-Ring Assortments

Furnished in a plastic case. All meet ASTM D2000/SAE J200. ***Buna-N*** is used in oil applications. Temperature range is –35° to +250° F. Durometer hardness is A70, unless noted. Color is black. ***Viton® fluoroelastomer*** is used in applications requiring chemical and oil resistance. Temperature range is –15° to +400° F. Durometer hardness is A75. Color is black.

385-Pc. Buna-N—30 Sizes

Durometer hardness is A70 or A90.

Wd., mm	ID, mm	Qty.	Wd., mm	ID, mm	Qty.	Wd., mm	ID, mm	Qty.	Wd., mm	ID, mm	Qty.
2	3	16	2.5	10	13	3	19	11	3	32	12
2	4	16	2.5	11	13	3	20	12	3	33	12
2	5	16	2.5	12	13	3	22	12	3	35	12
2	6	16	2.5	14	13	3	24	12	3	36	12
2	7	16	2.5	16	13	3	25	12	3	38	12
2	8	16	2.5	17	13	3	27	12	4	38	9
2	10	16	2.5	19	13	3	28	12	4	41	9
						3	30	12	4	44	9

Durometer: A70	**9690K21**	**Each**	$27.77
Durometer: A90	**9690K24**	**Each**	$35.62

500-Pc. Buna-N and Viton® Fluoroelastomer—36 Sizes

Wd., mm	ID, mm	Qty.	Wd., mm	ID, mm	Qty.	Wd., mm	ID, mm	Qty.	Wd., mm	ID, mm	Qty.
1.5	5	20	1.6	13.1	15	2	19	10	2.5	13	10
1.5	13	15	2	4	20	2	20	10	2.5	14	10
1.5	16	10	2	6	20	2.4	4.3	15	2.5	15	10
1.6	2.2	20	2	8	15	2.4	5.3	15	2.5	17	10
1.6	3.1	20	2	9	15	2.4	5.6	15	2.5	18	10
1.6	4.1	20	2	10	15	2.4	7.6	15	2.5	19	10
1.6	7.1	20	2	12	15	2.4	8.3	15	3	9	10
1.6	9.1	15	2	14	10	2.4	8.6	15	3	10	10
1.6	10.1	15	2	16	10	2.5	10	10	3	11	10

Buna-N	**9443K36**	**Each**	$23.39
Viton® Fluoroelastomer	**9443K39**	**Each**	$106.14

380-Pc. JIS/JASO Buna-N—36 Sizes

These O-rings comply with JIS (Japanese Industrial Standard) and JASO (Japan Automobile Standard).

Wd., mm	ID, mm	Qty.	Wd., mm	ID, mm	Qty.
1.9	2.8	25	2.4	20.8	8
1.9	3.8	20	2.4	21.8	8
1.9	4.8	20	3.1	24.4	6
1.9	5.8	20	3.1	29.4	7
1.9	6.8	15	3.5	21.7	5
1.9	7.8	15	3.5	22.1	5
1.9	8.8	15	3.5	23.7	7
1.9	9.8	15	3.5	24.7	7
2.4	9.8	15	3.5	25.2	7
2.4	10.8	15	3.5	25.7	7
2.4	11	15	3.5	27.7	7
2.4	11.8	12	3.5	28.7	6
2.4	12.8	12	3.5	29.2	6
2.4	13.8	12	3.5	29.7	6
2.4	14.8	12	3.5	30.7	6
2.4	15.8	12	3.5	31.2	6
2.4	17.8	8	4	14.5	4
2.4	19.8	8	4	23.5	6

93025K41 ..... **Each** $30.91

FDA-Compliant, NSF-Certified, and UL-Recognized O-Rings

Working with food, water, or gas? We have the O-rings for you. All material meets ASTM D2000/SAE J200.

Buna-N—Temp. range is –35° to +250° F. Durometer hardness is A70. Color is black. *FDA compliant and NSF-certified* O-rings meet ANSI/NSF Standard 61 for water transmission systems. *UL-recognized* O-rings meet JMLU2 and are suitable for use in natural gas, diesel fuel, fuel oil, lubricating oil, and LP gas applications.

Viton® Fluoroelastomer—Good for high-temperature applications. Temp. range is –15° to +400° F. Durometer hardness is A60. Color is white.

Also Available: Additional sizes. For FDA-compliant and NSF-certified Buna-N, ask for 9555K101. For UL-recognized Buna-N, ask for 1879T77. For FDA-compliant Viton® fluoroelastomer, ask for 5577K7. Specify AS568A dash number.

AS568A Dash No.	FDA-Compliant and NSF-Certified Buna-N Pkg. Qty.		Per Pkg.	UL-Recognized Buna-N Pkg. Qty.		Per Pkg.	FDA-Compliant Viton® Fluoroelastomer Pkg. Qty.		Per Pkg.
010	25	**9555K11**	$2.50	100	**1879T16**	$2.76	100	**5577K31**	$10.30
011	25	**9555K12**	2.79	100	**1879T17**	2.76	80	**5577K32**	12.38
012	25	**9555K13**	3.00	100	**1879T18**	2.76	75	**5577K33**	11.43
013	25	**9555K14**	3.54	100	**1879T19**	2.92	60	**5577K34**	10.08
014	25	**9555K15**	3.86	100	**1879T21**	3.08	50	**5577K35**	11.41
016	25	**9555K17**	4.29	100	**1879T23**	3.56	50	**5577K37**	11.03
110	25	**9555K18**	4.29	100	**1879T26**	3.12	40	**5577K41**	11.62
114	25	**9555K23**	4.64	100	**1879T31**	4.40	25	**5577K44**	11.14
115	25	**9555K24**	4.82	100	**1879T32**	4.76	20	**5577K45**	12.05
116	25	**9555K25**	4.82	100	**1879T33**	5.32	20	**5577K46**	13.19
210	25	**9555K31**	5.36	100	**1879T39**	7.32	15	**5577K51**	10.65
216	10	**9555K34**	3.11	100	**1879T46**	9.64	10	**5577K56**	13.27
218	10	**9555K35**	3.60	100	**1879T48**	11.52	10	**5577K58**	11.59

Also Available: FDA-compliant and NSF-certified EPDM (shown below). Specify AS568A dash number.

Temp. Range	Durometer	Color	
–65° to +300° F	A70	Black	**9561K99**

Neoprene O-Rings

When you need ozone resistance and Freon-12 compatibility, choose these neoprene O-rings. Temp. range is –65° to +275° F. Durometer hardness is A70. Meet ASTM D2000/SAE J200. Color is black. **Also Available:** Additional sizes. Please ask for 94115K515 and specify AS568A dash number.

AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.
001	70	**94115K001**	$9.26	022	100	**94115K022**	$8.83	120	100	**94115K12**	$7.12	223	50	**94115K223**	$7.23
004	100	**94115K004**	1.84	023	100	**94115K023**	8.91	121	100	**94115K121**	7.72	224	50	**94115K224**	7.76
005	100	**94115K005**	2.07	024	100	**94115K024**	11.31	124	100	**94115K124**	8.45	225	50	**94115K225**	10.12
006	100	**94115K006**	2.08	025	100	**94115K025**	11.54	128	100	**94115K128**	11.57	226	50	**94115K226**	10.77
007	100	**94115K007**	2.08	028	50	**94115K028**	13.34	151	25	**94115K151**	12.31	227	50	**94115K227**	11.96
008	100	**94115K008**	2.28	031	50	**94115K031**	13.74	204	100	**94115K204**	6.66	228	50	**94115K228**	12.09
009	100	**94115K009**	2.28	046	10	**94115K046**	12.26	210	100	**94115K21**	6.68	229	50	**94115K229**	12.61
010	100	**94115K01**	2.28	106	100	**94115K106**	7.36	211	100	**94115K211**	6.97	230	25	**94115K23**	6.71
011	100	**94115K011**	2.64	108	100	**94115K108**	7.48	212	100	**94115K212**	7.09	236	25	**94115K236**	13.73
012	100	**94115K012**	2.64	109	100	**94115K109**	7.59	213	100	**94115K213**	8.01	238	20	**94115K238**	12.50
013	100	**94115K013**	2.85	110	100	**94115K11**	2.97	214	100	**94115K214**	8.45	246	10	**94115K246**	9.00
014	100	**94115K014**	2.85	111	100	**94115K111**	4.01	215	100	**94115K215**	8.76	250	10	**94115K25**	11.50
015	100	**94115K015**	2.97	112	100	**94115K112**	4.03	216	100	**94115K216**	9.20	325	25	**94115K325**	5.46
016	100	**94115K016**	3.15	113	100	**94115K113**	4.06	217	100	**94115K217**	11.28	326	25	**94115K326**	6.13
017	100	**94115K017**	3.80	114	100	**94115K114**	4.09	218	100	**94115K218**	11.48	329	25	**94115K329**	7.86
018	100	**94115K018**	3.97	115	100	**94115K115**	4.12	219	100	**94115K219**	11.68	333	25	**94115K333**	11.57
019	100	**94115K019**	5.11	116	100	**94115K116**	4.51	220	50	**94115K22**	5.93	337	10	**94115K337**	6.27
020	100	**94115K02**	5.93	117	100	**94115K117**	5.93	221	50	**94115K221**	6.44	340	10	**94115K34**	7.45
021	100	**94115K021**	8.71	118	100	**94115K118**	6.23	222	50	**94115K222**	6.84	932	40	**94115K495**	14.29

For information about O-ring materials, see page 3482. For O-ring dimensions, see pages 3482-3487.

For an AS568A dash number O-ring sizing chart, go to mcmaster.com and search for **9452KAC**.

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

Hard PTFE O-Rings

In addition to superior lubricity, these O-rings have a durometer hardness of D55 and excellent temperature and chemical resistance. Temperature range is –100° to +500° F. Color is white. **Also Available:** Additional sizes. Please ask for 9559K1 and specify AS568A dash number.

AS568A Dash No.	Pkg. Qty.		Per Pkg.
003	25	9559K111	$11.80
004	25	9559K112	10.50
005	25	9559K113	7.62
006	25	9559K11	6.65
007	25	9559K12	6.97
008	25	9559K13	7.10
009	25	9559K14	7.13
010	25	9559K15	7.16
011	25	9559K16	7.18
012	25	9559K17	7.20
013	25	9559K18	7.28
014	25	9559K19	7.34
015	25	9559K21	7.37
016	25	9559K22	7.39
017	25	9559K61	11.54
018	25	9559K62	11.27
019	25	9559K114	11.75
020	10	9559K63	5.22
021	10	9559K115	5.59
022	10	9559K116	5.78
023	10	9559K117	6.02
024	10	9559K118	7.05
026	10	9559K121	10.59
028	10	9559K123	10.85
029	10	9559K124	11.65
030	10	9559K125	11.58
031	5	9559K126	7.77
032	5	9559K127	7.46
033	5	9559K128	11.67
034	5	9559K129	8.29
035	5	9559K131	9.92
036	5	9559K132	12.75
040	1	9559K136	3.21
043	5	9559K139	10.94
106	50	9559K148	12.13
108	50	9559K151	13.56
109	50	9559K152	14.20

AS568A Dash No.	Pkg. Qty.		Per Pkg.
110	25	9559K23	$7.89
111	25	9559K24	8.00
112	25	9559K25	8.93
113	25	9559K26	9.97
114	25	9559K27	11.55
115	25	9559K28	12.93
116	25	9559K29	13.47
117	10	9559K64	6.56
118	10	9559K153	7.55
119	10	9559K154	9.11
120	10	9559K155	8.62
121	10	9559K156	9.22
122	10	9559K157	10.19
123	5	9559K158	8.05
124	5	9559K159	8.25
125	5	9559K161	8.27
126	5	9559K162	8.54
127	5	9559K163	8.67
128	5	9559K164	9.00
129	5	9559K165	8.94
130	5	9559K166	9.31
131	5	9559K167	9.26
133	5	9559K169	9.08
135	5	9559K172	9.38
136	5	9559K173	9.69
137	5	9559K174	9.49
139	5	9559K176	11.05
142	5	9559K179	10.75
145	5	9559K183	11.71
148	5	9559K186	13.46
152	1	9559K191	2.94
156	1	9559K195	3.14
202	10	9559K202	6.38
204	10	9559K204	10.48
206	10	9559K206	6.24
208	10	9559K208	6.44
210	10	9559K31	6.41

AS568A Dash No.	Pkg. Qty.		Per Pkg.
211	10	9559K32	$7.32
212	10	9559K33	8.58
213	10	9559K34	8.83
214	10	9559K35	9.56
215	10	9559K36	9.78
216	10	9559K37	9.96
217	10	9559K211	10.17
218	10	9559K39	11.14
219	10	9559K41	11.54
220	10	9559K42	12.44
221	10	9559K43	13.62
222	5	9559K44	7.17
223	5	9559K45	7.29
224	5	9559K46	7.33
225	5	9559K212	9.26
226	5	9559K213	9.35
227	5	9559K214	10.32
228	5	9559K215	10.06
229	5	9559K216	11.69
230	5	9559K65	12.28
231	5	9559K66	14.03
232	1	9559K217	2.81
233	1	9559K218	2.89
234	1	9559K219	2.92
235	1	9559K67	2.94
236	1	9559K68	2.95
237	2	9559K221	7.95

AS568A Dash No.	Pkg. Qty.		Per Pkg.
238	2	9559K222	$8.62
239	2	9559K223	13.41
240	1	9559K224	5.30
242	2	9559K226	9.80
243	2	9559K227	13.32
246	2	9559K231	14.46
250	2	9559K235	12.19
255	1	9559K241	8.30
259	1	9559K245	8.62
320	2	9559K73	6.63
325	2	9559K269	4.11
326	2	9559K271	4.11
327	2	9559K272	5.66
328	2	9559K273	5.51
329	2	9559K274	5.41
330	2	9559K69	5.38
333	2	9559K277	8.56
334	1	9559K278	5.24
335	2	9559K71	8.65
336	2	9559K279	11.15
338	2	9559K282	8.99
340	2	9559K284	12.38
342	1	9559K286	7.77
343	2	9559K287	13.59
348	2	9559K293	14.65
902	50	9559K308	13.57
904	50	9559K311	12.40
906	50	9559K313	13.00

325-Pc. PTFE O-Ring Assortment—36 Sizes

Furnished in a plastic compartmented case.

AS568A Dash No.	Qty. Each
005-012	15
013-018	10
110-116	10
117-121	5
210-219	5

94895K31 ..... **Each** $107.14

Compressible FEP-Encapsulated O-Rings

A pliable FEP exterior combined with a resilient rubber core gives these O-rings excellent compressibility. Perfect for sealing corrosive fluids, the FEP encapsulation also makes them virtually invulnerable to most solvents and chemicals while maintaining the corrosion resistance and slippery surface of PTFE. FEP encapsulation meets ASTM D2116 and LP389A and is FDA compliant.

Silicone—Temperature range is –75° to +400° F. Durometer hardness is A70. O-rings are clear with a red-orange inner ring.

Viton® Fluoroelastomer—Offers even greater chemical resistance than silicone. Temperature range is –15° to +400° F. Durometer hardness is A75. O-rings are clear with a black inner ring.

Also Available: Additional sizes. For silicone, ask for 9319K99; for Viton® fluoroelastomer, ask for 93445K811. Please specify AS568A dash number.

AS568A Dash No.	*Silicone*	Each	*Viton® Fluoroelastomer*	Each
010	9319K912	$9.56	93445K412	$9.89
011	9319K45	6.16	93445K338	6.83
012	9319K46	6.18	93445K339	6.86
013	9319K47	3.67	93445K341	4.31
014	9319K14	3.68	93445K014	4.33
015	9319K15	3.69	93445K015	4.34
016	9319K16	3.70	93445K016	4.35
017	9319K141	3.71	93445K342	4.36
018	9319K21	3.72	93445K018	4.37
019	9319K142	3.73	93445K343	4.39
020	9319K143	3.75	93445K344	4.40
021	9319K144	3.82	93445K413	5.09
022	9319K145	3.92	93445K414	5.09
024	9319K147	4.63	93445K416	5.56
110	9319K11	6.27	93445K345	7.20
111	9319K48	6.29	93445K346	7.24
112	9319K23	6.31	93445K112	7.32
113	9319K49	6.32	93445K347	7.34
114	9319K24	3.97	93445K114	4.55
115	9319K25	3.98	93445K115	4.57
116	9319K26	3.99	93445K116	4.59
117	9319K91	4.00	93445K117	4.61
118	9319K92	4.01	93445K118	4.62
119	9319K93	4.02	93445K119	4.63
120	9319K94	4.03	93445K12	4.64
121	9319K95	4.23	93445K121	4.97

AS568A Dash No.	*Silicone*	Each	*Viton® Fluoroelastomer*	Each
125	9319K442	$4.69	93445K451	$5.56
133	9319K185	4.98	93445K459	6.18
155	9319K218	5.89	93445K484	8.37
175	9319K239	8.78	93445K516	15.80
206	9319K59	9.36	93445K348	7.50
207	9319K61	6.78	93445K349	7.53
208	9319K62	6.79	93445K351	7.54
209	9319K63	6.81	93445K352	7.56
210	9319K64	6.82	93445K353	7.57
211	9319K75	6.85	93445K354	7.57
212	9319K32	4.67	93445K212	5.05
213	9319K33	4.68	93445K213	5.06
214	9319K34	4.69	93445K214	5.07
215	9319K35	4.70	93445K215	5.08
216	9319K36	4.73	93445K216	5.07
217	9319K37	4.74	93445K217	5.08
218	9319K38	4.75	93445K218	5.09
219	9319K39	4.74	93445K219	5.12
220	9319K41	4.75	93445K22	5.13
221	9319K51	4.76	93445K221	5.14
222	9319K52	4.77	93445K222	5.16
223	9319K53	5.09	93445K223	6.31
224	9319K54	5.10	93445K224	5.70
226	9319K12	5.12	93445K355	6.09
228	9319K56	5.29	93445K228	6.27
229	9319K246	5.32	93445K356	6.69

AS568A Dash No.	*Silicone*	Each	*Viton® Fluoroelastomer*	Each
230	9319K247	$5.35	93445K357	$6.71
231	9319K248	5.60	93445K358	7.29
232	9319K249	5.64	93445K359	7.36
234	9319K252	5.70	93445K738	8.11
236	9319K57	5.77	93445K236	7.86
242	9319K258	6.59	93445K531	10.09
256	9319K272	7.82	93445K546	13.25
325	9319K65	5.80	93445K325	7.67
326	9319K66	5.92	93445K326	7.72
327	9319K67	5.93	93445K327	7.74
328	9319K68	5.94	93445K328	7.76
329	9319K69	5.95	93445K329	7.82
330	9319K71	6.22	93445K33	8.05
331	9319K81	6.23	93445K331	8.06
332	9319K82	6.24	93445K332	8.09
333	9319K83	6.33	93445K333	8.15
334	9319K84	6.38	93445K334	8.77
335	9319K85	6.42	93445K335	8.84
336	9319K86	6.47	93445K336	8.88
337	9319K87	6.50	93445K337	8.95
342	9319K319	7.70	93445K594	12.18
369	9319K357	11.27	93445K639	20.38
372	9319K361	12.31	93445K643	22.61
442	9319K406	14.11	93445K361	20.08
445	9319K409	15.29	93445K362	21.26

For information about O-ring materials, see page 3482. For O-ring dimensions, see pages 3482-3487.

For an AS568A dash number O-ring sizing chart, go to mcmaster.com and search for **9452KAC**.

Polyurethane O-Rings

O-rings stand up to abrasion and tearing. Temperature range is –20° to +180° F. Durometer hardness is A70. Color is black.

Also Available: Additional sizes. For polyurethane, please ask for 9558K51 and specify AS568A dash number.

AS568A Dash Number	Pkg. Qty.		Per Pkg.	AS568A Dash Number	Pkg. Qty.		Per Pkg.
006	10	9558K11	$7.03	115	10	9558K28	$10.72
007	10	9558K12	7.11	116	10	9558K29	11.05
008	10	9558K13	7.19	206	5	9558K116	13.18
009	10	9558K14	7.24	210	10	9558K31	11.38
010	10	9558K15	7.31	211	10	9558K32	11.54
011	10	9558K16	7.42	212	10	9558K33	11.85
012	10	9558K17	7.69	213	10	9558K34	11.98
013	10	9558K18	7.77	214	10	9558K35	12.35
014	10	9558K19	7.85	215	5	9558K36	7.54
015	10	9558K21	8.29	216	5	9558K37	8.83
016	10	9558K22	9.10	217	5	9558K118	15.28
017	5	9558K54	10.15	218	5	9558K39	8.67
018	5	9558K55	12.32	219	5	9558K41	9.92
019	5	9558K56	12.45	220	5	9558K42	9.95
020	5	9558K57	12.73	221	5	9558K43	12.06
110	10	9558K23	9.28	222	5	9558K44	12.77
111	10	9558K24	9.33	223	5	9558K45	12.99
112	10	9558K25	9.76	224	5	9558K46	13.24
113	10	9558K26	9.85	230	1	9558K125	7.27
114	10	9558K27	9.97	328	1	9558K146	7.03

Also Available: Hard polyurethane (shown below). Please specify AS568A dash number.

Temp. Range	Durometer	Color	
–60° to +212° F	A90	Translucent to Amber	9558K811

Kalrez Perfluoroelastomer O-Rings

Kalrez compound 4079 resists nearly all classes of chemicals except some fluorinated solvents. It combines the resilience and sealing force of an elastomer with excellent chemical and temperature resistance similar to that of PTFE. Temperature range is 32° to 600° F. Durometer hardness is A75. Color is black. Each O-ring is individually packaged in a factory-sealed bag.

Also Available: Additional sizes. For compound 4079, please ask for 9568K888 and specify AS568A dash number.

AS568A Dash No.		Each	AS568A Dash No.		Each
004	9568K61	$24.84	116	9568K29	$49.48
005	9568K33	25.28	117	9568K65	52.26
006	9568K11	24.99	118	9568K66	54.72
007	9568K12	24.99	119	9568K422	58.94
008	9568K13	26.37	120	9568K39	59.03
009	9568K14	26.83	122	9568K41	62.88
010	9568K15	27.45	123	9568K42	66.14
011	9568K16	28.37	124	9568K423	72.71
012	9568K17	29.45	127	9568K43	88.03
013	9568K18	29.61	130	9568K428	105.98
014	9568K19	30.05	140	9568K439	140.00
015	9568K21	30.82	150	9568K521	156.18
016	9568K22	32.52	201	9568K633	48.71
017	9568K62	33.61	202	9568K634	51.69
018	9568K34	34.68	204	9568K67	55.35
019	9568K113	38.31	206	9568K44	61.97
020	9568K114	40.73	208	9568K45	68.29
021	9568K35	42.24	210	9568K68	74.47
022	9568K115	46.86	211	9568K47	77.70
026	9568K63	58.29	212	9568K69	81.09
030	9568K37	83.11	214	9568K48	86.34
031	9568K212	93.52	216	9568K71	92.96
102	9568K414	33.82	217	9568K49	97.27
106	9568K418	36.63	218	9568K72	101.29
107	9568K419	37.56	220	9568K73	115.18
108	9568K38	35.85	222	9568K74	126.57
109	9568K421	38.67	224	9568K75	148.45
110	9568K23	37.60	228	9568K647	153.10
111	9568K24	38.07	309	9568K751	107.48
112	9568K25	40.39	901	9568K937	28.45
113	9568K26	42.85	906	9568K943	32.54
114	9568K27	43.79	908	9568K945	41.27
115	9568K28	46.40	932	9568K958	145.63

Also Available: Kalrez compound 6375 (shown below). Please specify AS568A dash number.

Temp. Range	Durometer	Color	
27° to 527° F	A75	Black	1108T11

Split Backup Rings

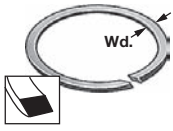

Backup rings improve performance and extend the life of O-rings by supporting them in higher pressure applications. They also help keep the O-ring in place when pressure is high and when there are loose-fitting parts. Use with AS568A O-rings.

PTFE has superior lubricity plus excellent chemical and temperature resistance. Temperature range is –100° to +500° F. Durometer hardness is D55. Color is white.

Also Available: Additional sizes. Please ask for 9560K411 and specify AS568A dash number.

Backup Rings

PTFE

Use with AS568A Dash No.	ID × OD	Pkg. Qty.		Per Pkg.
0.053″ Wide				
005	0.124″ × 0.230″	50	9560K31	$8.38
006	0.140″ × 0.246″	50	9560K32	8.27
007	0.171″ × 0.277″	50	9560K33	8.99
008	0.202″ × 0.308″	50	9560K34	8.40
009	0.234″ × 0.340″	50	9560K35	9.82
010	0.265″ × 0.371″	50	9560K36	8.90
011	0.327″ × 0.433″	50	9560K37	8.71
012	0.390″ × 0.496″	50	9560K38	8.51
013	0.455″ × 0.561″	50	9560K39	8.93
014	0.518″ × 0.624″	50	9560K41	9.12
015	0.580″ × 0.686″	50	9560K42	9.30
016	0.643″ × 0.749″	50	9560K43	10.44
017	0.705″ × 0.811″	50	9560K44	11.63
018	0.768″ × 0.874″	50	9560K45	11.93
0.086″ Wide				
110	0.390″ × 0.562″	50	9560K51	8.85
111	0.452″ × 0.624″	50	9560K52	9.24
112	0.515″ × 0.687″	50	9560K53	9.31
113	0.577″ × 0.749″	50	9560K54	10.11
114	0.640″ × 0.812″	50	9560K55	10.10
115	0.702″ × 0.874″	50	9560K56	11.22
116	0.765″ × 0.937″	50	9560K57	11.20
117	0.832″ × 1.004″	25	9560K49	7.15
118	0.895″ × 1.067″	50	9560K58	12.40
119	0.957″ × 1.129″	25	9560K21	8.58
120	1.020″ × 1.192″	25	9560K22	9.53
121	1.082″ × 1.254″	25	9560K23	8.69
0.119″ Wide				
210	0.766″ × 1.004″	50	9560K61	12.16
211	0.828″ × 1.066″	50	9560K62	10.92
212	0.891″ × 1.129″	50	9560K63	12.06
213	0.953″ × 1.191″	50	9560K64	13.24
214	1.016″ × 1.254″	50	9560K65	13.27
215	1.078″ × 1.316″	25	9560K66	7.77
216	1.141″ × 1.379″	25	9560K67	9.34
217	1.203″ × 1.441″	25	9560K68	11.19
218	1.266″ × 1.504″	25	9560K69	10.14
219	1.334″ × 1.572″	25	9560K71	10.14
222	1.522″ × 1.760″	25	9560K74	13.01
0.183″ Wide				
328	1.888″ × 2.254″	10	9560K84	9.79
329	2.013″ × 2.379″	10	9560K85	12.05
330	2.138″ × 2.504″	10	9560K86	11.44
334	2.643″ × 3.009″	10	9560K91	13.90

Also Available: Glass-filled PTFE, Buna-N, and Hytrel backup rings (shown below). Please specify AS568A dash number.

Material	Temp. Range	Durometer	Color	
Glass-Filled PTFE	–80° to +500° F	D55	White	3328T101
Buna-N	–25° to +250° F	A90	Black	5288T2
Hytrel	–60° to +275° F	D55	Black	6807T101

325-Pc. PTFE Backup Ring Assortment—36 Sizes

Furnished in a plastic compartmented case.

AS568A Dash No.	Qty.	AS568A Dash No.	Qty.
005-012	15	117-121	5
013-018	10	210-219	5
110-116	10		

9560K15 ..... **Each** $85.00

For an AS568A dash number O-ring sizing chart, go to mcmaster.com and search for **9452KAC**.

Don't see the O-ring you need? Just tell us what you're looking for and we'll get it for you.

Square Buna-N O-Rings

The square cross section on these rings retains a seal longer than standard O-rings, especially at higher temperatures and pressures. Interchangeable with AS568A O-rings size for size. Buna-N is for use in oil applications. Temperature range is –20° to +225° F. Durometer hardness is A70. Color is black. ***Also Available:*** Additional sizes. Please ask for 4061T11 and specify AS568A dash number.

AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.	AS568A Dash No.	Pkg. Qty.		Per Pkg.
006	100	4061T111	$10.48	014	100	4061T119	$10.10	111	100	4061T157	$10.34	209	100	4061T231	$7.57
008	100	4061T113	10.48	015	100	4061T12	9.30	112	100	4061T158	10.44	210	100	4061T232	7.63
010	100	4061T115	10.48	016	100	4061T121	9.96	114	100	4061T16	10.68	211	100	4061T233	7.71
013	100	4061T118	10.68	017	100	4061T122	8.76	115	100	4061T161	10.94	213	100	4061T235	7.90

Double-Seal O-Rings

With four sealing surfaces, you'll get twice the sealing protection as standard O-rings. Also known as Quattro Seals and X-rings, double-seal O-rings are symmetrically designed for sealing on the ID, OD, top, and bottom. This reduces the amount of force needed to create a positive seal, increasing seal life and reducing maintenance. All meet ASTM D2000/SAE J200.

Buna-N is used in oil applications. Temperature range is –40° to +250° F. Durometer hardness is A70. Color is black.

Viton® fluoroelastomer works well in higher temperatures, with a range of –15° to +400° F. Durometer hardness is A75. Color is black.

Also Available: Additional sizes. For Buna-N, ask for 90025K12; for Viton® fluoroelastomer, 6540K101. Please specify AS568A dash number.

AS568A Dash No.	Buna-N Pkg. Qty.		Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.		Per Pkg.
004	100	90025K119	$7.09	50	6540K171	$4.13
005	100	90025K121	6.92	50	6540K115	9.18
006	100	90025K123	7.10	50	6540K116	10.27
007	100	90025K126	7.60	50	6540K117	10.98
008	100	90025K127	8.12	50	6540K118	11.54
009	100	90025K129	8.30	50	6540K119	12.04
010	100	90025K133	8.51	50	6540K165	12.08
011	100	90025K135	8.93	50	6540K121	12.75
012	100	90025K137	9.64	50	6540K122	13.56
013	100	90025K139	9.91	25	6540K123	11.62
014	100	90025K143	10.19	25	6540K124	12.60
015	100	90025K145	10.57	25	6540K125	12.95
016	100	90025K147	11.03	25	6540K126	13.44
017	100	90025K149	11.49	25	6540K127	13.83
018	100	90025K154	12.50	25	6540K128	13.48
019	100	90025K361	13.14	25	6540K129	14.00
020	100	90025K362	12.62	25	6540K166	13.98
021	100	90025K363	13.51	25	6540K131	14.02
022	50	90025K364	9.98	—	—	—
029	50	90025K365	13.18	—	—	—
031	50	90025K366	13.56	—	—	—
034	50	90025K367	14.51	—	—	—
108	—	—	—	25	6540K132	11.87
109	100	90025K368	7.61	25	6540K133	13.27
110	100	90025K222	11.61	25	6540K134	14.19
111	100	90025K224	11.54	25	6540K135	14.32
112	100	90025K226	12.59	25	6540K136	14.55
113	100	90025K228	12.87	25	6540K137	14.51
114	100	90025K234	12.78	10	6540K138	9.02
115	100	90025K236	13.60	10	6540K139	10.08
116	100	90025K238	13.49	10	6540K167	10.42
117	100	90025K244	14.13	10	6540K141	11.88
118	100	90025K246	14.37	10	6540K142	12.37
119	100	90025K248	14.62	10	6540K143	13.30
120	100	90025K254	14.59	10	6540K144	13.72
121	100	90025K256	14.62	10	6540K145	13.80
123	—	—	—	10	6540K147	13.93
124	—	—	—	10	6540K148	13.97
125	100	90025K258	14.06	10	6540K149	14.08
143	25	90025K374	9.78	—	—	—
204	100	90025K375	13.09	25	6540K175	12.66
206	100	90025K376	12.66	25	6540K176	17.08
207	100	90025K377	13.47	—	—	—
208	100	90025K378	13.74	10	6540K177	6.11
210	100	90025K331	14.25	10	6540K168	14.04

AS568A Dash No.	Buna-N Pkg. Qty.		Per Pkg.	Viton® Fluoroelastomer Pkg. Qty.		Per Pkg.
211	100	90025K335	$14.08	10	6540K151	$14.16
212	100	90025K339	14.35	10	6540K152	14.34
213	100	90025K342	15.03	5	6540K153	12.18
214	50	90025K346	7.27	5	6540K154	12.71
215	50	90025K348	7.31	5	6540K155	13.53
216	50	90025K353	7.42	5	6540K156	14.43
217	50	90025K355	7.46	5	6540K157	14.65
218	50	90025K357	7.83	5	6540K158	13.87
219	50	90025K359	7.83	5	6540K159	13.95
220	25	90025K381	6.18	5	6540K169	14.75
221	25	90025K382	6.63	5	6540K161	14.06
222	25	90025K383	7.03	5	6540K162	14.22
223	25	90025K384	7.62	5	6540K163	14.24
224	25	90025K385	8.35	5	6540K164	14.33
225	25	90025K386	8.60	—	—	—
226	25	90025K387	8.55	—	—	—
227	25	90025K388	8.84	—	—	—
228	25	90025K389	8.76	—	—	—
230	25	90025K391	8.86	—	—	—
232	10	90025K393	6.02	—	—	—
236	10	90025K394	6.72	—	—	—
238	10	90025K396	7.14	—	—	—
264	5	90025K399	12.84	—	—	—
312	25	90025K401	4.94	—	—	—
320	25	90025K402	6.54	—	—	—
322	25	90025K403	6.89	—	—	—
324	25	90025K404	8.53	—	—	—
325	25	90025K405	9.51	—	—	—
326	25	90025K268	12.96	—	—	—
327	25	90025K406	10.80	—	—	—
329	25	90025K407	10.90	—	—	—
330	25	90025K269	14.39	—	—	—
332	10	90025K408	7.02	—	—	—
333	10	90025K409	7.90	—	—	—
334	10	90025K411	8.12	—	—	—
338	10	90025K412	8.32	—	—	—
346	5	90025K414	7.64	—	—	—

226-Pc. Double-Seal Buna-N Assortment—36 Sizes

Furnished in a plastic compartmented case.

AS568A Dash No.	Qty.	AS568A Dash No.	Qty.	AS568A Dash No.	Qty.
005-012	10	017-018	5	117-121	4
013-016	6	110-116	6	210-219	5

93065K62 ..... **Each** $26.29

Viton® Fluoroelastomer and Silicone O-Ring Cord Joining Kits

Create O-rings on the job. Also known as O-ring vulcanizing kits, these kits join inch and metric Viton® fluoroelastomer and silicone cord stock (see page 3495) while maintaining elasticity and strength. They come with a precision mold made of aluminum and stainless steel that produces an accurate bond in approximately 20 minutes. Kits also include a heater that operates on 120 VAC, five-position die, cutting knife, spatula, glove, marking pen, case, and three sets of a two-part Viton® fluoroelastomer adhesive (mix before use). Silicone adhesive sold separately. ***Inch kit*** includes standard die diameters of 0.070″, 0.103″, 0.139″, 0.210″, and 0.275″. ***Metric kit*** includes standard die diameters of 1.6, 2.4, 3, 4, and 5.7 mm.

		Each
Inch Kit	9450K12	$1,070.27
Metric Kit	9450K16	1,084.93

		Each
Repl. Two-Part Viton® Adhesive (One Set)	9450K32	$25.00
4″×4″ Solid Silicone Adhesive	9450K34	40.32

For information about O-ring materials, see page 3482. For O-ring dimensions, see pages 3482-3487.

For an AS568A dash number O-ring sizing chart, go to mcmaster.com and search for **9452KAC**.

Don't see the cord stock you need? Just tell us what you're looking for and we'll get it for you.

O-Ring and Square Ring Cord Stock

Round Cross Section

Make your own O-rings and O-ring belts from our selection of inch and metric O-ring cord stock. Cord stock can be cut easily with a razor or knife. Maximum continuous length is 100 ft., unless noted.

All materials, except silicone, can be joined with super glues—we recommend 7569A22 on page 3411. To join silicone cord stock, we recommend 74945A69 silicone adhesive on page 3417. For best results, silicone and Viton® fluoroelastomer cord stock should be vulcanized after joining (see joining kits sold separately on previous page). All meet ASTM D2000/SAE J200. Durometer hardness is A70, except Viton® fluoroelastomer is A75.

Buna-N—Use in oil applications. Temperature range is –20° to +212° F. Color is black, except *FDA-compliant Buna-N* is white.

Viton® Fluoroelastomer—Withstands high temperatures and corrosive chemicals. Meets AMS 3216G, unless noted. Temperature range is 0° to 392° F. Color is black.

Silicone—Highly resistant to ozone and weather. Temperature range is –67° to +400° F. Color is red-orange.

EPDM—Has excellent resistance to water and steam. Temperature range is –40° to +212° F. Color is black.

Neoprene—Resists Freon, oils, sunlight, and weather. Temperature range is –40° to +212° F. Color is black.

To Order: For all materials, please specify continuous length: 3, 10, 20, 50, or 100 ft., unless noted. Prices are 15-20% lower if you buy 100 ft. or more of the same size.

Round Cross Section—Inch Sizes

Fractional Wd.	Actual Wd.	Buna-N	Per Ft.	FDA Buna-N	Per Ft.	Viton® Fluoroelastomer	Per Ft.	Silicone	Per Ft.	EPDM	Per Ft.	Neoprene	Per Ft.
1/16″	0.070″	9407K21	$0.20	3286T11	$0.70	96515K41	$1.31	96505K21	$0.27	9616K11	$0.23	—	—
3/32″	0.103″	9407K11	.25	3286T13	.83	96515K42	1.74	96505K22	.35	9616K12	.39	12975K32	$0.26
1/8″	0.139″	9407K12	.38	3286T15	.97	96515K43	2.31	96505K23	.52	9616K13	.48	12975K33	.40
3/16″	0.210″	9407K13	.45	3286T17	1.40	96515K44	3.45	96505K24	.73	9616K14	.55	12975K34	.49
1/4″	0.275″	9407K14	.50	3286T18	1.83	96515K45	5.12	96505K25	.85	9616K15	.64	12975K35	.53
5/16″	0.313″	9407K15	.59	3286T19	2.37	96515K46	7.37	96505K26	1.16	9616K16	.70	12975K36	.63
3/8″	0.375″	9407K16	.74	3286T21	3.37	96515K47	9.39	96505K27	1.59	9616K17	.75	12975K37	.80
7/16″	0.437″	9407K17	1.23	3286T23	4.33	96515K49	12.63	96505K47	2.39	9616K37	.94	12975K38	1.29
1/2″	0.500″	9407K22	1.53	3286T25	5.47	96515K48	15.65	96505K28	2.64	9616K18	1.19	12975K39	1.55
5/8″	0.625″	9407K29	2.33	—	—	—	—	96505K48	4.80	9616K38	2.04	12975K41	2.33
3/4″	0.750″	9407K23	3.13	—	—	—	—	96505K29	6.82	9616K19	2.97	12975K42	2.85
1″	1.000″	9407K24	4.79	—	—	—	—	—	—	9616K21	4.52	12975K43	4.41

Also Available: Softer versions of the Buna-N, Viton® fluoroelastomer, silicone, and neoprene cord stock in all the widths shown above. Please specify fractional width.

Also Available: FDA-compliant Viton® fluoroelastomer and Viton® ETP fluoroelastomer for greater chemical resistance. Please specify fractional width: 1/16″, 3/32″, 1/8″, or 3/16″.

Material	Durometer	Temp. Range	Color	
Buna-N	A50	Not rated	Black	9864K15
Viton® Fluoroelastomer	A55	5° to 392° F	Black	7643K47
Silicone	A50	392° F max.; min. not rated	Black	5229T23
Neoprene	A50	Not rated	Black	1430K31
FDA-Compliant Viton® Fluoroelastomer	A75	5° to 392° F	White	1092T11
Chemical-Resistant Viton® ETP	A75	20° to 392° F	Black	1102T11

Round Cross Section—Metric Sizes

Wd., mm	Buna-N Actual Wd.	Buna-N	Per Ft.	Viton® Fluoroelastomer Actual Wd.	Viton® Fluoroelastomer	Per Ft.	Wd., mm	Buna-N Actual Wd.	Buna-N	Per Ft.	Viton® Fluoroelastomer Actual Wd.	Viton® Fluoroelastomer	Per Ft.
1.6	0.063″	9679K11	$0.25	0.063″	94245K51	$1.14	6.0	0.236″	9679K21	$0.66	—	—	—
2.0	0.079″	9679K12	.29	—	—	—	6.5	0.256″	9679K22	.68	—	—	—
2.4	0.094″	9679K13	.31	0.093″	94245K52	1.36	7.0	0.276″	9679K23	.73	—	—	—
3.0	0.118″	9679K14	.43	0.118″	94245K53	1.84	7.5	0.295″	9679K24	.92	—	—	—
3.5	0.138″	9679K15	.43	—	—	—	8.0	0.315″	9679K25	.99	—	—	—
4.0	0.157″	9679K16	.49	0.157″	94245K54	2.34	8.5	0.334″	9679K26	1.21	0.335″	94245K57	$7.89
4.5	0.177″	9679K17	.53	—	—	—	9.0	0.354″	9679K27	1.34	—	—	—
5.0	0.196″	9679K18	.61	0.197″	94245K56	2.90	10.0	0.394″	9679K28	1.70	—	—	—
5.7	0.224″	9679K19	.65	0.224″	94245K55	3.78	11.0	0.433″	9679K31	2.21	—	—	—

Square Cross Section—Inch Sizes

Fractional Sq. Size	Buna-N Actual Sq. Size	Buna-N	Per Ft.	Viton® Fluoroelastomer Actual Sq. Size	Viton® Fluoroelastomer	Per Ft.	Fractional Sq. Size	Buna-N Actual Sq. Size	Buna-N	Per Ft.	Viton® Fluoroelastomer Actual Sq. Size	Viton® Fluoroelastomer	Per Ft.
3/32″	0.103″	9700K11	$0.57	0.093″	2542T21	$1.33	3/8″	0.375″	9700K15	$1.78	0.375″	2542T26	$9.45
1/8″	0.139″	9700K12	.69	0.125″	2542T22	1.50	1/2″	0.500″	9700K16	2.61	0.500″	2542T27	16.05
3/16″	0.210″	9700K13	.79	0.187″	2542T23	3.10	5/8″	0.625″	9700K17	2.91	0.625″	2542T28★	22.88
1/4″	0.275″	9700K14	1.05	0.250″	2542T24	4.60	3/4″	0.750″	9700K18	4.27	0.750″	2542T29★	31.62
5/16″	0.313″	9700K19	1.19	0.312″	2542T25	6.86							

★ Maximum continuous length is 50 ft. Does not meet AMS-3216G.

Quad Cross Section—Inch Sizes

Fractional Wd.	Actual Wd.	Buna-N	Per Ft.	Fractional Wd.	Actual Wd.	Buna-N	Per Ft.
3/32″	0.103″	1034T11	$0.50	3/16″	0.210″	1034T13	$0.84
1/8″	0.139″	1034T12	.59	1/4″	0.275″	1034T14	1.09

O-Ring Cord Splicing Kits

Everything you need to make custom O-rings—cord stock, a splicing jig, a tube of adhesive, and a razor blade. Kits are furnished in a plastic case. Cord lengths are 7 ft. for *inch* and 3 ft. for *metric* and *inch/metric kits*. Durometer is A70, except Viton® fluoroelastomer is A75.

Kit	Cord Material	Included Inch Diameters	Included Metric Diameters, mm		Each
Inch	Buna-N	0.103″, 0.139″, 0.210″, 0.275″	—	9694K21	$34.22
Inch	Viton®	0.103″, 0.139″, 0.210″, 0.275″	—	9696K31	114.24
Inch	Silicone	0.070″, 0.103″, 0.139″, 0.210″, 0.275″	—	9695K11	46.13
Inch	EPDM	0.070″, 0.103″, 0.139″, 0.210″, 0.275″	—	13105K41	31.50
Metric	Buna-N	—	1.5, 2, 2.5, 3, 3.5, 4, 5, 5.7, 8.4	9693K1	28.80
Inch/Metric	Buna-N	0.070″, 0.103″, 0.139″, 0.210″, 0.275″	1.5, 2, 2.5, 3, 3.5, 4, 5, 5.7, 8.4	9410K11	41.85
7 1/4″ Lg. × 3/4″ Wd. Splicing Jig for Cord Stock Diameters 0.070″-0.331″				9462K2	10.73

O-Ring Loaded Lip Seals

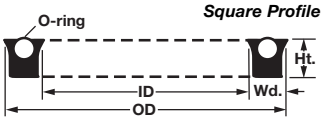

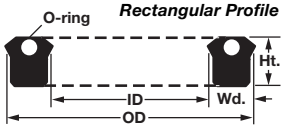

Also known as polypacks, conventional urethane lip-type seals are supported by a Buna-N O-ring for hydraulic-cylinder sealing at various pressures. Seal lip won't compress on the ID and OD of the seal interface—this prevents leakage at low pressures. Resist grease, oil, and hydraulic fluids. Temperature range is –40° to +200° F. Durometer hardness is A92. Maximum pressure is 5,000 psi. Color is black.

Square profile loaded lip seals are perfect for use as rod and piston seals in light duty hydraulic applications.

Rectangular profile loaded lip seals are also known as Type B seals and are used for rod seal applications. They have beveled lips for increased "squeeze" and sealability, allowing the driest rod possible. Excellent for heavy duty hydraulic applications such as mobile and heavy industrial equipment.

Also Available: Additional sizes. For square profile, ask for 9505K21; for rectangular profile, ask for 9514K14. Please specify ID, OD, width, and height.

Square Profile Loaded Lip Seals

ID	OD		Each
1/8" Width x 1/8" Height			
1/4"	1/2"	9505K13	$2.64
3/8"	5/8"	9505K15	2.64
1/2"	3/4"	9505K17	2.64
5/8"	7/8"	9505K18	2.71
3/4"	1"	9505K19	2.89
7/8"	1 1/8"	9505K22	3.27
1"	1 1/4"	9505K23	3.33
5/32" Width x 5/32" Height			
3/4"	1 1/16"	9505K27	3.53
1"	1 5/16"	9505K28	3.50
1 3/16"	1 1/2"	9505K31	3.76
1 3/8"	1 11/16"	9505K32	4.53
3/16" Width x 3/16" Height			
3/8"	3/4"	9505K37	3.23
1/2"	7/8"	9505K39	3.23
5/8"	1"	9505K42	3.44
3/4"	1 1/8"	9505K44	3.66
7/8"	1 1/4"	9505K46	3.53
1"	1 3/8"	9505K48	3.65
1 1/8"	1 1/2"	9505K51	3.77
3/16" Width x 3/16" Height (Cont.)			
1 1/4"	1 5/8"	9505K53	$3.83
1 3/8"	1 3/4"	9505K55	4.10
1 1/2"	1 7/8"	9505K56	4.20
1 5/8"	2"	9505K57	4.90
1 3/4"	2 1/8"	9505K58	4.50
2"	2 3/8"	9505K61	4.71
2 1/8"	2 1/2"	9505K62	4.88
2 3/8"	2 3/4"	9505K63	5.22
2 1/2"	2 7/8"	9505K64	5.40
2 3/4"	3 1/8"	9505K66	5.78
1/4" Width x 1/4" Height			
1/2"	1"	9505K79	4.12
5/8"	1 1/8"	9505K81	4.12
3/4"	1 1/4"	9505K82	4.12
7/8"	1 3/8"	9505K83	4.19
1"	1 1/2"	9505K85	4.29
1 1/8"	1 5/8"	9505K87	4.35
1 3/16"	1 11/16"	9505K88	4.35
1 1/4"	1 3/4"	9505K89	4.45
1 3/8"	1 7/8"	9505K91	4.67
1/4" Width x 1/4" Height (Cont.)			
1 1/2"	2"	9505K92	$4.68
1 3/4"	2 1/4"	9505K94	5.15
2"	2 1/2"	9505K96	5.71
2 1/4"	2 3/4"	9505K98	6.32
2 1/2"	3"	9505K112	6.87
2 3/4"	3 1/4"	9505K114	7.45
3"	3 1/2"	9505K116	8.05
3 1/2"	4"	9505K121	9.23
3 3/4"	4 1/4"	9505K123	9.80
4"	4 1/2"	9505K124	10.39
4 1/2"	5"	9505K126	11.57
5/16" Width x 5/16" Height			
3/4"	1 3/8"	9505K141	4.23
7/8"	1 1/2"	9505K142	4.50
1"	1 5/8"	9505K143	4.34
1 1/8"	1 3/4"	9505K144	4.42
1 3/8"	2"	9505K146	5.20
1 7/8"	2 1/2"	9505K151	6.72
2"	2 5/8"	9505K152	7.07
5/16" Width x 5/16" Height (Cont.)			
2 1/8"	2 3/4"	9505K153	$7.56
2 3/8"	3"	9505K155	8.07
3"	3 5/8"	9505K159	9.72
3 3/8"	4"	9505K161	10.96
4 3/8"	5"	9505K164	13.20
5 3/8"	6"	9505K166	16.59
3/8" Width x 3/8" Height			
1 1/4"	2"	9505K172	6.31
1 1/2"	2 1/4"	9505K174	7.04
1 3/4"	2 1/2"	9505K176	8.20
2"	2 3/4"	9505K178	8.83
2 1/4"	3"	9505K181	9.90
2 1/2"	3 1/4"	9505K182	10.67
2 3/4"	3 1/2"	9505K183	11.73
3"	3 3/4"	9505K184	12.84
3 1/4"	4"	9505K186	13.58
3 1/2"	4 1/4"	9505K187	14.60
3 3/4"	4 1/2"	9505K188	15.38
4"	4 3/4"	9505K189	16.44

Rectangular Profile Loaded Lip Seals

ID	OD		Each
1/8" Width x 3/16" Height			
3/4"	1"	9514K127	$3.40
1"	1 1/4"	9514K136	3.63
1 1/4"	1 1/2"	9514K144	3.92
1/8" Width x 1/4" Height			
1/4"	1/2"	9514K113	2.77
3/8"	5/8"	9514K116	2.94
1/2"	3/4"	9514K119	3.13
5/8"	7/8"	9514K124	3.26
3/4"	1"	9514K128	3.38
7/8"	1 1/8"	9514K133	3.52
1"	1 1/4"	9514K137	3.63
1 1/8"	1 3/8"	9514K141	3.77
1 1/4"	1 1/2"	9514K145	3.92
1 3/8"	1 5/8"	9514K151	4.11
1 1/2"	1 3/4"	9514K154	4.28
2"	2 1/4"	9514K159	5.05
3/16" Width x 0.230" Height			
1 3/4"	2 1/8"	9514K192	$5.06
2"	2 3/8"	9514K196	5.64
3/16" Width x 1/4" Height			
1 1/4"	1 5/8"	9514K176	4.34
3/16" Width x 5/16" Height			
7/8"	1 1/4"	9514K168	4.23
1"	1 3/8"	9514K171	4.15
1 1/4"	1 5/8"	9514K177	4.34
1 1/2"	1 7/8"	9514K186	4.75
1 5/8"	2"	9514K189	4.76
1 3/4"	2 1/8"	9514K193	5.06
2"	2 3/8"	9514K197	5.64
3/16" Width x 3/8" Height			
3/4"	1 1/8"	9514K166	3.77
1 3/8"	1 3/4"	9514K183	4.68
1 1/2"	1 7/8"	9514K187	4.75
3/16" Width x 3/8" Height (Cont.)			
1 5/8"	2"	9514K191	$4.76
1 3/4"	2 1/8"	9514K194	5.06
2 1/2"	2 7/8"	9514K207	6.82
1/4" Width x 3/8" Height			
1"	1 1/2"	9514K236	4.34
1 1/8"	1 5/8"	9514K237	4.34
1 1/4"	1 3/4"	9514K238	4.36
1 3/8"	1 7/8"	9514K239	4.89
1 1/2"	2"	9514K241	5.11
1 3/4"	2 1/4"	9514K243	5.20
2"	2 1/2"	9514K246	6.17
2 1/2"	3"	9514K251	7.64
3"	3 1/2"	9514K255	9.02
3 1/2"	4"	9514K261	10.39
4"	4 1/2"	9514K265	11.68
4 1/2"	5"	9514K272	13.90
3/8" Width x 1/2" Height			
1 1/2"	2 1/4"	9514K343	$8.55
1 3/4"	2 1/2"	9514K346	9.34
2"	2 3/4"	9514K348	10.14
2 1/4"	3"	9514K351	11.24
1/2" Width x 3/4" Height			
3"	4"	9514K402	20.02
3 1/2"	4 1/2"	9514K404	22.97
4"	5"	9514K406	25.60
4 1/2"	5 1/2"	9514K408	28.54
5"	6"	9514K411	31.28
5 1/2"	6 1/2"	9514K413	32.79
6"	7"	9514K415	34.39
6 1/2"	7 1/2"	9514K417	35.33
7"	8"	9514K419	37.77
8"	9"	9514K424	41.32
9"	10"	9514K427	47.80

U-Cup Seals

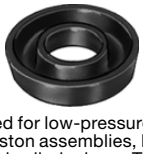

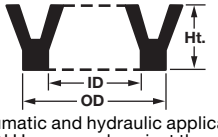

Designed for low-pressure pneumatic and hydraulic applications on rod and piston assemblies, Buna-N U-cups seal against the rod gland, piston, and cylinder bore. They resist water, compression set, grease, oil, salt water, hydraulic fluids, and ammonia. Temperature range is –20° to +212° F. Durometer hardness is A70. Maximum pressure is 300 psi. Meet ASTM D2000 and AN6226. Color is black. Package quantity is 5.

ID	OD		Per Pkg.
1/4" Height			
1/4"	3/4"	9691K51	$4.15
3/8"	7/8"	9691K52	4.15
1/2"	1"	9691K53	4.15
5/8"	1 1/8"	9691K54	4.78
3/4"	1 1/4"	9691K55	4.78
7/8"	1 3/8"	9691K56	4.78
1"	1 1/2"	9691K57	4.78
1 1/8"	1 5/8"	9691K58	4.78
1 1/4"	1 3/4"	9691K59	4.78
5/16" Height			
1 1/4"	1 7/8"	9691K61	$5.99
1 3/8"	2"	9691K62	5.99
1 1/2"	2 1/8"	9691K63	6.82
1 5/8"	2 1/4"	9691K64	7.44
1 3/4"	2 3/8"	9691K65	7.44
1 7/8"	2 1/2"	9691K66	4.66
2"	2 5/8"	9691K67	8.48
2 1/4"	2 7/8"	9691K68	8.46
2 3/8"	3"	9691K69	8.48
3/8" Height			
2 1/2"	3 1/4"	9691K71	9.48

Piston Cup Seals

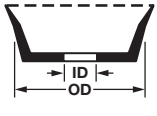

Piston cups seal pistons in hydraulic cylinders and pumps. They're molded from Buna-N and reinforced with cotton duck fabric. Cups seal well under low and high pressures. Resist water, grease, oil, salt water, and hydraulic fluids. Temperature range is –40° to +250° F. Not rated for hardness. Maximum pressure is 3,000 psi. Color is black.

ID	OD		Each
1/2" Height			
3/8"	1 1/2"	9411K11	$3.95
3/8"	2"	9411K13	4.92
3/8"	2 1/2"	9411K17	5.86
1/2"	2"	9411K14	4.92
5/8"	2"	9411K15	4.92
3/4"	1 1/2"	9411K12	3.95
3/4"	2"	9411K16	4.92
3/4"	2 1/2"	9411K18	5.86
5/8" Height			
1/2"	3 1/2"	9411K27	7.98
1/2"	4"	9411K28	9.24
5/8"	3"	9411K19	7.00
5/8"	4"	9411K29	9.24
5/8" Height (Cont.)			
3/4"	3 1/2"	9411K26	$7.98
3/4"	4 1/2"	9411K32	11.00
7/8"	3 1/4"	9411K25	7.56
1"	3"	9411K21	7.00
1 3/8"	3"	9411K22	7.00
1 1/2"	3"	9411K23	7.00
1 1/2"	4"	9411K31	9.24
1 5/8"	3"	9411K24	7.00
2 1/2"	4 1/2"	9411K33	11.00
3/4" Height			
1/2"	6"	9411K45	15.06
1"	5"	9411K44	12.43
2 3/4"	6"	9411K46	15.06

Shaft Wipers

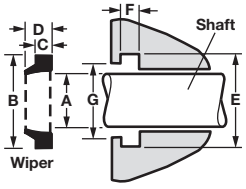

Double Lip

Solid Profile

Prevent contaminants from entering your fluid-power system with these one-piece, snap-in wipers. They scrape moisture, dust, and grit from shafts. They also have great resistance to petroleum-based hydraulic fluids. Color is black.

Double-Lip Buna-N Shaft Wipers

Also known as 8600 type. While the outer lip scrapes foreign matter from the shaft, the inner lip acts as a pressure seal. Commonly used with JIC (Joint Industry Conference) cylinders. Wipers are made of Buna-N, which is recommended when using a rubber rod seal. Buna-N has excellent oil resistance. It also resists water, grease, and detergents, as well as some ammonias, alcohols, and refrigerants. Temperature range is –40° to +250° F. Durometer hardness is A90. Maximum pressure is 500 psi.

Also Available: Additional sizes. Please ask for 9422K12 and specify ID and OD.

Wiper				Shaft Groove				
ID (A)	OD (B)	Base Ht. (C)	O'all Ht. (D)	(E)	(F)	(G)		Each
1/2″	13/16″	0.203″	0.245″	0.802″	0.203″	0.62″	9422K19	$3.37
5/8″	15/16″	0.203″	0.245″	0.927″	0.203″	0.745″	9422K21	3.60
1″	1 3/8″	0.203″	0.239″	1.365″	0.218″	1.135″	9422K24	3.65
1 3/8″	1 3/4″	0.218″	0.275″	1.74″	0.218″	1.51″	9422K27	3.86
1 1/2″	1 7/8″	0.218″	0.275″	1.865″	0.218″	1.635″	9422K28	4.14
1 3/4″	2 1/8″	0.218″	0.275″	2.115″	0.218″	1.885″	9422K29	4.61
2″	2 3/8″	0.275″	0.351″	2.365″	0.275″	2.135″	9422K31	4.78
2 1/2″	3″	0.281″	0.351″	2.995″	0.281″	2.635″	9422K33	4.87
3″	3 1/2″	0.281″	0.351″	3.495″	0.281″	3.135″	9422K35	5.29
3 1/2″	4″	0.281″	0.351″	3.995″	0.281″	3.635″	9422K36	5.80
4″	4 1/2″	0.281″	0.351″	4.495″	0.281″	4.135″	9422K37	7.18

Solid-Profile Polyurethane Shaft Wipers

Also known as U-type wipers, these are used for medium to heavy duty applications indoors and out. They resist tears, abrasion, ozone, and grease, as well as some compression set, oils, alcohols, and refrigerants. Temperature range is –65° to +200° F. Durometer hardness is A90. Maximum pressure is not rated.

Also Available: Additional sizes. Please ask for 9403K97 and specify ID and OD.

Wiper				Shaft Groove				
ID (A)	OD (B)	Base Ht. (C)	O'all Ht. (D)	(E)	(F)	(G)		Each
1/2″	3/4″	1/8″	0.21″	0.747″	0.124″	0.66″	9403K55	$1.45
3/4″	1 1/8″	3/16″	0.305″	1.122″	0.187″	0.995″	9403K58	1.50
7/8″	1 1/4″	3/16″	0.305″	1.247″	0.187″	1.12″	9403K59	1.55
1″	1 3/8″	3/16″	0.305″	1.372″	0.187″	1.245″	9403K61	1.59
1 1/8″	1 1/2″	3/16″	0.305″	1.497″	0.187″	1.37″	9403K62	1.73
1 1/4″	1 5/8″	3/16″	0.305″	1.622″	0.187″	1.495″	9403K63	1.86
1 3/8″	1 3/4″	3/16″	0.305″	1.747″	0.187″	1.62″	9403K64	2.05
1 1/2″	1 7/8″	3/16″	0.305″	1.872″	0.187″	1.745″	9403K65	2.23
1 3/4″	2 1/8″	3/16″	0.305″	2.122″	0.187″	1.995″	9403K67	2.41
2″	2 1/2″	1/4″	0.395″	2.497″	0.249″	2.327″	9403K69	2.77
2 1/4″	2 3/4″	1/4″	0.395″	2.747″	0.249″	2.577″	9403K72	2.93
2 1/2″	3″	1/4″	0.395″	2.997″	0.249″	2.827″	9403K74	3.04
2 3/4″	3 1/4″	1/4″	0.395″	3.247″	0.249″	3.077″	9403K76	3.39
3″	3 1/2″	1/4″	0.395″	3.497″	0.249″	3.327″	9403K77	3.92
3 1/2″	4″	1/4″	0.395″	3.997″	0.249″	3.827″	9403K79	4.25
4″	4 1/2″	1/4″	0.395″	4.497″	0.249″	4.327″	9403K82	5.03
4 1/2″	5 1/4″	3/8″	0.585″	5.247″	0.374″	4.993″	9403K84	8.00
5″	5 3/4″	3/8″	0.585″	5.747″	0.374″	5.493″	9403K86	9.42
6″	6 3/4″	3/8″	0.585″	6.747″	0.374″	6.493″	9403K88	11.77
8″	8 3/4″	3/8″	0.585″	8.747″	0.374″	8.493″	9403K93	15.70

V-Ring Seals

An angular shape keeps V-ring seals intact under pressure. Utilize in hydraulic and pneumatic cylinders, motors, pumps, and valves to reduce equipment wear, fluid loss, and frequency of packing changes. Made of molded PTFE, they're suitable for reciprocating, oscillating, and rotary motion applications. Chemically inert except for molten alkali metals and fluorines. Temperature range is –110° to +500° F. Color is white.

A complete V-ring seal requires at least one V-ring, one male adapter, and one female adapter. The female adapter provides an extra sealing edge. V-rings are sold in packages of 10; adapters are sold in packages of two males and two females.

		V-Rings			Adapters			
ID	OD	Ht.		Per Pkg.	Male Ht.	Female O'all Ht.		Per Pkg.
1/4″	5/8″	0.083″	9572K31	$12.53	0.083″	0.190″	9572K61	$5.62
5/16″	11/16″	0.083″	9572K32	12.81	0.083″	0.190″	9572K62	5.67
3/8″	3/4″	0.083″	9572K33	13.06	0.083″	0.190″	9572K63	5.78
3/8″	7/8″	0.083″	9572K37	14.22	0.083″	0.250″	9572K67	6.50
1/2″	7/8″	0.083″	9572K35	13.70	0.083″	0.190″	9572K65	5.97
1/2″	1″	0.083″	9572K39	14.90	0.083″	0.250″	9572K69	6.78
9/16″	1 1/16″	0.083″	9572K41	14.07	0.083″	0.250″	9572K71	6.88
5/8″	1 1/8″	0.083″	9572K42	14.34	0.083″	0.250″	9572K72	7.08
3/4″	1 1/4″	0.083″	9572K43	14.15	0.083″	0.250″	9572K73	7.36
7/8″	1 3/8″	0.083″	9572K45	14.57	0.083″	0.250″	9572K75	7.66
1″	1 1/2″	0.083″	9572K47	14.10	0.083″	0.250″	9572K77	7.93
1 1/8″	1 5/8″	0.083″	9572K48	13.99	0.083″	0.250″	9572K78	8.20
1 1/4″	1 3/4″	0.083″	9572K49	14.52	0.083″	0.250″	9572K79	8.50
1 3/8″	2″	0.140″	9572K51 ♦	22.32	0.140″	0.310″	9572K81	11.81
1 1/2″	2 1/8″	0.140″	9572K52 ♦	23.26	0.140″	0.310″	9572K82	12.31
1 3/4″	2 3/8″	0.140″	9572K54 ♦	25.20	0.140″	0.310″	9572K84	13.31

♦ Available in less than full package quantities. Prices are 25% higher.

Single V-Ring

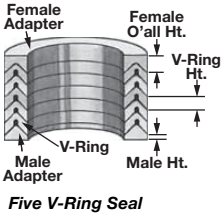

Five V-Ring Seal

Seal Repair Kits

When components from your rod and piston seals need repair, select one of these kits. All use a black Buna-N rod seal with a temperature range of –40° to +250° F. Kit components resist compression set, tearing, abrasion, and weather. Maximum pressure is 3,000 psi (reduces with use and wear).

5-Pc. Rod Seal Kits with Bronze Housing

Contains a bronze housing, rod wiper, rod seal, backup ring, and O-ring.

For Rod Size		Each	For Rod Size		Each
1/2″	1620T41	$64.00	1 3/4″	1620T45	$66.89
5/8″	1620T42	38.65	2″	1620T46	83.47
1″	1620T43	47.38	2 1/2″	1620T47	107.16
1 3/8″	1620T44	57.76	3″	1620T48	146.13

4-Pc. Rod Seal Kits

Contains a rod wiper, rod seal, backup ring, and O-ring.

For Rod Size		Each
1/2″	1620T61	$5.68
5/8″	1620T62	7.42
1″	1620T63	7.58

6-Pc. Piston Seal Kits

Also known as bore kits, these contain two end seals, two U-cups, and two backup rings.

For Bore Size		Each	For Bore Size		Each
1″	1620T11	$6.76	4″	1620T16	$17.70
1 1/2″	1620T12	8.24	5″	1620T17	21.43
2″	1620T13	8.49	6″	1620T18	23.81
2 1/2″	1620T14	9.57	7″	1620T19	57.75
3 1/4″	1620T15	12.49	8″	1620T21	70.81

Stretch-Fit Rotary-Shaft Ring Seals

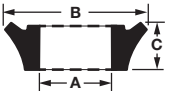

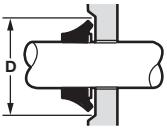

You can stretch these to fit over a shaft, while the flexible hinged lip still presses firmly against the shaft's face to deflect dust, dirt, and water. Seals also self-adjust, stretching to maintain fit when the shaft begins turning. They prevent the loss of lubricants such as grease and are made of carboxylated Buna-N for better abrasion resistance. Use on motors, pumps, and bearings in water, water-glycol, and water-soluble oil service. Seals resist weather, UV rays, ozone, water, compression set, grease, oil, detergents, salt water, hydraulic fluids, alcohol, and some refrigerants. Durometer hardness is A85. Temperature range is –20° to +225°F. Maximum pressure is 6 psi in the opening direction and 100 psi in the closing direction. Color is black.

For Shaft Dia.	For Shaft Dia. Range	Seal ID (A)	Seal OD▲ (B)	Seal Ht.▲ (C)	Min. Face Plate OD (D)		Each
1/4″	0.21″-0.26″	0.193″	35/64″	0.19″	0.5″	9562K41	$3.52
3/8″	0.37″-0.45″	0.340″	57/64″	0.25″	0.89″	9562K42	4.15
1/2″	0.45″-0.53″	0.414″	1″	0.25″	0.97″	9562K43	4.20
5/8″	0.61″-0.69″	0.561″	115/64″	0.375″	1.21″	9562K44	4.34
3/4″	0.69″-0.77″	0.635″	123/64″	0.375″	1.29″	9562K45	4.39
1″	0.95″-1.07″	0.874″	139/64″	0.375″	1.55″	9562K46	4.38
1 1/4″	1.22″-1.30″	1.122″	155/64″	0.375″	1.82″	9562K47	5.00
1 1/2″	1.50″-1.70″	1.380″	27/64″	0.375″	2.1″	9562K48	5.73
1 3/4″	1.70″-1.89″	1.564″	223/64″	0.375″	2.3″	9562K49	5.45
2″	1.89″-2.09″	1.739″	239/64″	0.375″	2.49″	9562K51	5.98
2 1/4″	2.09″-2.29″	1.923″	255/64″	0.375″	2.69″	9562K52	6.28
2 1/2″	2.48″-2.68″	2.282″	37/64″	0.5″	3.28″	9562K53	6.73
2 3/4″	2.68″-2.88″	2.466″	323/64″	0.5″	3.48″	9562K54	7.06
3″	2.88″-3.07″	2.650″	339/64″	0.5″	4.88″	9562K55	7.09
3 1/4″	3.07″-3.27″	2.824″	355/64″	0.5″	3.87″	9562K56	7.02
3 1/2″	3.47″-3.66″	3.192″	47/64″	0.5″	4.27″	9562K57	9.16
4″	3.86″-4.14″	3.551″	439/64″	0.5″	4.66″	9562K59	10.69

▲ Installed.

Metal-Rubber Shaft Seals

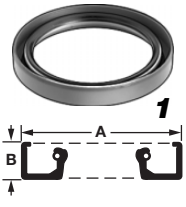

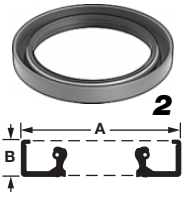

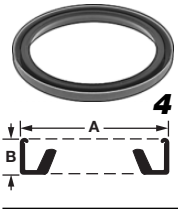

Retain grease while eliminating contaminants on a rotating shaft. *Spring-loaded seals*, commonly called oil seals, also retain oil because a spring holds the lip in position. All seals are steel with Buna-N lips. Lips have a temperature range of –40° to +250° F. Color is black.

(1) Spring-loaded single lip seals are economical general purpose seals that retain lubricant. Maximum pressure is 10 psi at 0-1,000 fpm; 5 psi at 1,000-2,000 fpm; and 0 psi at 2,000-3,600 fpm.

(2) Spring-loaded double lip seals have a second lip to block dirt, enhancing the service life of the lubricant-retaining main lip. Maximum pressure is 10 psi at 0-1,000 fpm; 5 psi at 1,000-2,000 fpm; and 0 psi at 2,000-3,000 fpm.

(3) Heavy duty spring-loaded double lip seals are ideal when there's a significant difference in pressure across the seal. The main lip retains lubricant while the second lip protects from dust and contamination. Maximum pressure is 90 psi at 0 fpm and 50 psi at 1,000 fpm. *Note:* If pressure differential exists, seal should be secured in the housing bore.

(4) Non-spring-loaded seals retain grease and block dirt in slower speed applications. Install with lip facing outward to block dirt more effectively. Not for use with oil. Maximum pressure is 3 psi at 0-2,000 fpm.

For Shaft Dia.	Seal OD (A)	Ht. (B)		Each
(1) Spring-Loaded Single Lip—*Inch Sizes*				
1/2″	7/8″	1/4″	5154T11	$5.61
5/8″	1″	1/4″	5154T12	6.27
5/8″	1 1/8″	1/4″	5154T13	6.21
0.667″	1″	3/16″	5154T14	8.64
3/4″	1 1/8″	3/16″	5154T15	8.88
3/4″	1 3/8″	1/4″	5154T16	6.24
13/16″	1 1/4″	3/16″	5154T17	5.76
7/8″	1 1/4″	3/16″	5154T18	4.65
7/8″	1 3/8″	0.256″	5154T19	6.27
7/8″	1 1/2″	1/4″	5154T21	6.66
7/8″	1 5/8″	1/4″	5154T22	8.01
1″	1 1/2″	1/4″	5154T23	5.13
1″	1 5/8″	1/4″	5154T24	7.08
1 1/16″	1 1/2″	1/4″	5154T25	5.73
1 1/8″	1 3/4″	1/4″	5154T26	6.81
1 3/16″	1 11/16″	1/4″	5154T27	5.82
1 1/4″	2″	1/4″	5154T28	7.77
1 3/4″	2 1/4″	5/16″	5154T29	10.56
(1) Spring-Loaded Single Lip—*Metric Sizes*				
12 mm	22 mm	7 mm	5154T63	5.55
12 mm	25 mm	7 mm	5154T64	5.70
17 mm	30 mm	7 mm	5154T65	6.06
25 mm	35 mm	7 mm	5154T66	6.12
25 mm	38 mm	7 mm	5154T67	6.87
25 mm	40 mm	7 mm	5154T68	6.81
25 mm	52 mm	8 mm	5154T69	8.52
30 mm	40 mm	7 mm	5154T71	5.82
30 mm	45 mm	8 mm	5154T72	7.05
30 mm	47 mm	7 mm	5154T73	7.65
32 mm	47 mm	8 mm	5154T74	9.06
40 mm	55 mm	8 mm	5154T75	4.02
45 mm	75 mm	8 mm	5154T76	13.11
50 mm	68 mm	8 mm	5154T77	7.05

For Shaft Dia.	Seal OD (A)	Ht. (B)		Each
(1) Spring-Loaded Single Lip—*Metric Sizes (Cont.)*				
50 mm	72 mm	8 mm	5154T78	$12.09
100 mm	120 mm	12 mm	5154T79	26.67
(2) Spring-Loaded Double Lip—*Inch Sizes*				
3/8″	3/4″	1/4″	5154T31	8.07
1/2″	1″	1/4″	5154T32	4.74
5/8″	1 1/8″	1/4″	5154T33	5.70
5/8″	1 3/8″	1/4″	5154T34	7.47
3/4″	1 1/4″	1/4″	5154T35	4.47
1″	1 1/2″	1/4″	5154T36	4.47
1″	1 5/8″	1/4″	5154T37	7.53
1 1/8″	1 5/8″	0.256″	5154T38	5.49
1 1/8″	1 7/8″	1/4″	5154T39	8.13
1 1/4″	1 3/4″	1/4″	5154T41	7.35
1 1/4″	2″	1/4″	5154T42	7.53
1 3/8″	2″	5/16″	5154T43	9.21
1 3/4″	2 1/2″	5/16″	5154T44	12.60
2″	2.623″	5/16″	5154T45	9.27
2 1/2″	3 1/4″	3/8″	5154T46	6.54
(3) Heavy Duty Spring-Loaded Double Lip—*Inch Sizes*				
5/16″	3/4″	1/4″	5154T47	7.20
1/2″	7/8″	5/16″	5154T48	7.35
7/8″	1 3/8″	1/4″	5154T49	5.37
1 1/4″	1 3/4″	1/4″	5154T51	9.84
(4) Non-Spring-Loaded—*Inch Sizes*				
1/4″	1/2″	3/16″	5154T52	3.99
5/16″	5/8″	5/32″	5154T53	4.44
1/2″	3/4″	1/8″	5154T54	4.47
1/2″	0.82″	5/32″	5154T55	5.76
3/4″	1″	1/8″	5154T56	5.10
7/8″	1 1/8″	1/8″	5154T57	3.81
1″	1 1/4″	1/8″	5154T58	4.17
1″	1 5/16″	1/8″	5154T59	5.61
1 1/8″	1 3/8″	1/8″	5154T61	5.55
1 1/4″	1 1/2″	1/8″	5154T62	4.50

Shaft Repair Sleeves

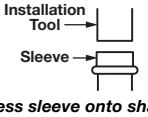

Press sleeve onto shaft

There's no need to run out and buy a new seal when your shaft gets worn. Also known as Speedi-Sleeves, these sleeves repair worn shafts without resizing them, so you can reuse your original seal. They're made of ultra-thin Type 304 stainless steel and press fit over shafts for a snug, leak-resistant fit. Each sleeve has a removable flange and a tool for simple push-on installation. Sleeves add just 0.022″ to the shaft diameter.

For Shaft Dia. Range		Each
0.623″-0.627″	5187T11	$45.87
0.873″-0.877″	5187T12	45.87
0.998″-1.002″	5187T13	47.04
1.123″-1.127″	5187T14	45.87
1.247″-1.253″	5187T15	46.17
1.371″-1.377″	5187T16	47.07
1.497″-1.503″	5187T17	50.86
1.622″-1.628″	5187T18	52.10
1.747″-1.753″	5187T19	49.74
1.872″-1.878″	5187T21	53.62

For Shaft Dia. Range		Each
1.997″-2.003″	5187T22	$58.48
2.249″-2.255″	5187T23	61.15
2.374″-2.380″	5187T24	62.32
2.500″-2.506″	5187T25	62.14
2.625″-2.631″	5187T26	56.83
2.745″-2.751″	5187T27	57.34
2.937″-2.943″	5187T28	58.00
3.000″-3.006″	5187T29	58.54
3.500″-3.506″	5187T31	63.97
3.750″-3.756″	5187T32	70.51

Pump Shaft Seals

Designed for use on self-priming and straight centrifugal pumps, seals are made of components locked together by an outer shell to keep the seal ring in place during installation. This prevents foreign material from collecting between the seal ring and the bellows. This mechanical lock eliminates the need for bonding adhesives and prevents leakage between the seal ring and diaphragm. Buna-N diaphragms have a temp. range of –40° to +200° F and a durometer hardness of A65. Fluoroelastomer diaphragms have a temp. range of –20° to +400° F and a durometer hardness of A70.

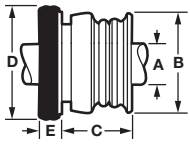

Shaft Size (A)	Seal OD (B)	Working Length (C)	Seat Bore (D)	Seat Thick. (E)	Industry Std. No.	Material: Diaphragm	Material: Washer	Material: Seat		Each
Style 1—Type 304 Stainless Steel										
0.375″	0.917″	0.625″	0.875″	0.218″	511	Buna-N	Phenolic	Ni-Resist♣	9281K121	$20.14
0.500″	0.917″	0.656″	1.00″	0.312″	162	Buna-N	Phenolic	Ceramic	9281K144	9.64
0.625″	1.185″	0.718″	1.187″	0.281″	680	Buna-N	Carbon	Ceramic	9281K125	13.00
0.625″	1.185″	0.718″	1.187″	0.343″	100	Buna-N	Phenolic	Ceramic	9281K174	6.58
0.625″	1.185″	0.718″	1.25″	0.406″	200	Fluoroelastomer	Phenolic	Ceramic	9281K62	18.43
0.625″	1.185″	0.812″	1.25″	0.406″	501	Buna-N	Phenolic	Ceramic	9281K178	10.79
0.750″	1.300″	0.812″	1.437″	0.406″	101	Buna-N	Phenolic	Ceramic	9281K222	8.65
0.750″	1.300″	0.718″	1.375″	0.406″	201	Fluoroelastomer	Phenolic	Ceramic	9281K63	19.31
1.00″	1.552″	0.812″	1.625″	0.437″	360	Buna-N	Phenolic	Ceramic	9281K273	14.69
Style 2—Type 304 Stainless Steel										
0.500″	0.917″	0.718″	———	———	400	Buna-N	Carbon	———	9281K147	11.00
0.500″	0.917″	0.812″	1.00″	0.312″	631	Buna-N	Phenolic	Ceramic	9281K67	12.93
0.500″	0.917″	0.831″	1.00″	0.312″	168	Fluoroelastomer	Carbon	Ceramic	9281K66	17.83
0.625″	1.10″	1.312″	1.148″	0.312″	800	Buna-N	Carbon	Ceramic	9281K191	11.71
0.625″	1.185″	0.875″	1.25″	0.406″	359	Fluoroelastomer	Carbon	Ceramic	9281K69	18.17
0.625″	1.185″	0.875″	1.25″	0.406″	508	Buna-N	Carbon	Ceramic	9281K195★	10.11
0.625″	1.185″	1.312″	1.25″	0.406″	274	Buna-N	Carbon	Ceramic	9281K196	13.82
0.750″	1.300″	0.687″	1.287″	0.25″	107165	Buna-N	Carbon	Ceramic	9281K242	23.47
0.750″	1.300″	0.812″	1.375″	0.406″	877	Fluoroelastomer	Carbon	Ceramic	9281K71	23.08
0.875″	1.429″	0.937″	1.50″	0.406″	309, 703	Buna-N	Carbon	Ceramic	9281K252	15.21
0.875″	1.429″	0.937″	1.50″	0.406″	309, 703	Fluoroelastomer	Carbon	Ceramic	9281K72	26.94
1.00″	1.552″	1.00″	1.625″	0.437″	235	Buna-N	Carbon	Ceramic	9281K275	16.77
1.00″	1.552″	1.00″	1.625″	0.437″	235	Fluoroelastomer	Carbon	Ceramic	9281K73	27.92
1.00″	1.552″	1.00″	1.625″	0.437″	245	Fluoroelastomer	Carbon	Ceramic	9281K127★	36.29
1.125″	1.75″	1.062″	1.75″	0.437″	356	Fluoroelastomer	Carbon	Ceramic	9281K74	31.45
1.25″	1.875″	1.062″	1.875″	0.437″	185	Buna-N	Carbon	Ceramic	9281K352	18.14
1.25″	1.875″	1.062″	1.875″	0.437″	381	Buna-N	Carbon	Ceramic	9281K361★	21.19
1.25″	1.875″	1.062″	1.768″	0.367″	976, 978	Buna-N	Carbon	Ceramic	9281K358★	29.86
1.25″	1.875″	1.062″	2.00″	0.437″	466	Buna-N	Carbon	Ceramic	9281K354	14.76
1.375″	2.00″	1.125″	2.00″	0.437″	177	Fluoroelastomer	Carbon	Ceramic	9281K76	46.95
1.50″	2.125″■	1.093″	2.125″	0.437″	11558	Fluoroelastomer	Carbon	Ceramic	9281K78★	54.45
1.50″	2.125″	1.125″	2.156″	0.437″	758	Fluoroelastomer	Carbon	Ceramic	9281K77	47.86
1.625″	2.375″	1.375″	2.375″	0.500″	238	Fluoroelastomer	Carbon	Ceramic	9281K79	66.38
1.75″	2.375″	1.375″	2.5″	0.500″	237	Fluoroelastomer	Carbon	Ceramic	9281K8	68.33
1.875″	2.515″	1.50″	2.625″	0.500″	340	Fluoroelastomer	Carbon	Ceramic	9281K81	85.11
2.00″	2.724″	1.50″	2.75″	0.500″	267	Buna-N	Carbon	Ceramic	9281K521	49.74
2.00″	2.724″	1.50″	2.75″	0.500″	267	Fluoroelastomer	Carbon	Ceramic	9281K83	89.92
Style 2—Type 316 Stainless Steel										
0.750″	1.300″	1.312″	1.375″	0.406″	275	Buna-N	Carbon	Ceramic	9281K237	41.42
0.875″	1.324″	1.375″	1.50″	0.406″	188	Buna-N	Carbon	Ceramic	9281K256	47.62
1.00″	1.449″	1.562″	1.625″	0.437″	754	Buna-N	Carbon	Ceramic	9281K279	28.47
1.125″	1.562″	1.625″	1.75″	0.437″	204	Buna-N	Carbon	Ceramic	9281K336	30.39
1.250″	1.687″	1.625″	1.875″	0.437″	361	Buna-N	Carbon	Ceramic	9281K365	32.19
1.375″	1.820″	1.687″	2.00″	0.437″	354	Buna-N	Carbon	Ceramic	9281K379	46.95
1.50″	1.949″	1.687″	2.125″	0.437″	305	Buna-N	Carbon	Ceramic	9281K429	55.95
1.625″	2.125″	2.00″	2.375″	0.500″	745	Buna-N	Carbon	Ceramic	9281K452	81.19
1.750″	2.30″	2.00″	2.50″	0.500″	205	Buna-N	Carbon	Ceramic	9281K467	84.24
1.875″	2.437″	2.125″	2.625″	0.500″	523	Buna-N	Carbon	Ceramic	9281K488	89.33
Style 3—Type 304 Stainless Steel										
0.500″	1.125″	0.187″	1.00″	0.312″	80509	Fluoroelastomer	Carbon	Ceramic	9281K84	22.77
0.625″	1.437″	0.615″	♥	0.187″	409	Buna-N	Phenolic	Ni-Resist♣	9281K87	25.50
0.625″	1.437″	0.615″	1.187″	0.343″	600	Buna-N	Phenolic	Ceramic	9281K88	13.38
0.625″	1.437″	0.615″	1.25″	0.406″	1000	Buna-N	Phenolic	Ceramic	9281K183	8.69
0.750″	1.575″	0.615″	1.375″	0.406″	601	Buna-N	Phenolic	Ceramic	9281K226	12.50

♣ Ni-Resist is cast iron with 13%-17% nickel for corrosion resistance.
★ Spring OD is slightly larger at one end to fit over pump hub. ■ Spring OD. ♥ Shaft mounted.

Style 1

- Max. Pressure: 150 psi
- Speed: 5,000 fpm
- Applications: Well, sump, and other small shaft diameter pumps
- Comparable to Pac-Seal Type 16, John Crane Type 6, and Sealol Type 60L

Style 2

- Max. Pressure: 250 psi
- Speed: 5,000 fpm
- Applications: Pumps used for well water, diesel engine coolant, waste water
- Type 304 stainless steel is comparable to Pac-Seal Type 21, John Crane Type 21, and Sealol Type 43 CE and 43 CU Short
- Type 316 stainless steel is comparable to Pac-Seal Type 51, John Crane Type 1, and Sealol Type 43 BE and 43 CE Short

Style 3

- Max. Pressure: 75 psi
- Speed: 15,000 fpm
- Applications: Small diameter rotary shaft applications
- Comparable to Pac-Seal Type 68, John Crane Type 6A, and Sealol Type 6

Spring-Loaded PTFE Shaft Seals

Chemical-resistant PTFE is combined with a stainless steel spring for a seal that adjusts to wear, plus dimensional and temp. changes. This enhances sealing efficiency by compensating for seal wear and mating part tolerance. Temp. range is –320° to +450° F. Max. pressure for slow rotary motion is 250 psi; for reciprocating motion, 3,000 psi.

PTFE— For light duty service. Has extremely low friction and excellent chemical resistance. PV limit (pressure × velocity) is 9,000 psi-fpm for air; 75,000 psi-fpm for water; and 130,000 psi-fpm for oil. Color is white.

Graphite-Reinforced PTFE— Excellent wear and extrusion resistance in liquids, steam, and other severe conditions. PV limit (pressure × velocity) is 15,000 psi-fpm for air; 300,000 psi-fpm for water; and 520,000 psi-fpm for oil. Color is black.

For Shaft Size	Seal OD	Nominal Wd. × Ht.	PTFE	Each	Graphite-Reinforced PTFE	Each
1/8″	3/16″	1/32″ × 3/64″	13125K61	$23.76	13125K71	$51.25
1/8″	1/4″	1/16″ × 3/32″	13125K63	14.77	13125K73	30.94
3/16″	5/16″	1/16″ × 3/32″	13125K64	10.12	13125K74	18.26
3/16″	3/8″	3/32″ × 9/64″	13125K67	14.55	13125K77	29.27
1/4″	3/8″	1/16″ × 3/32″	13125K65	9.85	13125K75	18.30
1/4″	7/16″	3/32″ × 9/64″	13125K68	13.73	13125K78	29.27
3/8″	1/2″	1/16″ × 3/32″	13125K66	9.83	13125K76	20.14
3/8″	9/16″	3/32″ × 9/64″	13125K69	13.52	13125K79	26.88
1/2″	11/16″	3/32″ × 9/64″	13125K81	14.17	13125K91	25.83
1/2″	3/4″	1/8″ × 11/64″	13125K83	$17.39	13125K93	$34.20
3/4″	15/16″	3/32″ × 9/64″	13125K82	14.66	13125K92	32.80
3/4″	1″	1/8″ × 11/64″	13125K84	17.93	13125K94	34.50
1″	1 1/4″	1/8″ × 11/64″	13125K85	21.30	13125K95	42.80
1 1/4″	1 1/2″	1/8″ × 11/64″	13125K86	18.96	13125K96	42.80
1 1/2″	1 3/4″	1/8″ × 11/64″	13125K11	22.07	13125K13	44.00
1 1/2″	1 7/8″	3/16″ × 1/4″	13125K87	35.70	13125K97	61.30
2″	2 1/4″	1/8″ × 11/64″	13125K12	25.83	13125K14	50.29
2 1/2″	2 7/8″	3/16″ × 1/4″	13125K88	42.80	13125K98	73.70

Compression Packing Seals

All material can be cut and formed into individual rings and then stuffed into place to act as seals. Styles 1-9 are used in both pumps and valves, Styles 10-14 are ideal in pumps, and Style 15 is for valves. Cut with a knife. **To Order:** Please specify 5-, 10-, or 25-ft. length.

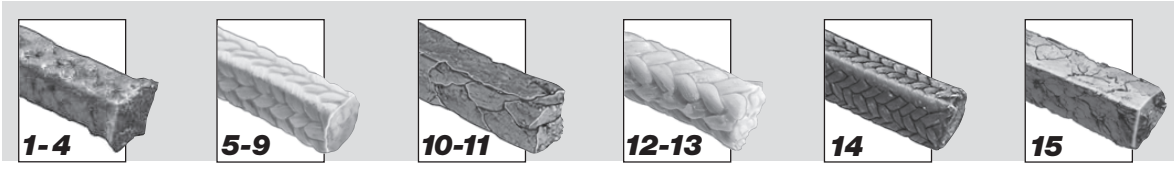

	Style	Color	Temp. Range in Air, °F	Max. Temp. in Steam, °F ♦	Max. Pressure, psi ♦ Pumps	Valves	Steam	Max. Shaft Speed, ft. per min.	pH Resistance Range
1	General Purpose	Dull Gray	–400° to +600°	+300°	200	1,800	55	2,000	3 to 11
2	Severe Service	Dull Gray	–450° to +800°	+1200°	3,500	3,500	3,500	4,000	3 to 14
3	High Speed	Dull Gray	–450° to +650°	+1200°	3,500	3,500	3,500	4,400	3 to 14
4	Ultra-Corrosion-Resistant	Dull Black	–400° to +550°	NR	1,900	1,900	NR	4,300	3 to 14
5	Value Seal General Purpose	White	–10° to +450°	NR	1,500	1,500	NR	2,300	2 to 12
6	FDA Compliant	White	–400° to +500°	NR	1,000	1,000	NR	1,200	0 to 14★
7	Ultra-Compressible	White	–450° to +500°	+500°	300	4,000	680	2,000	0 to 14★
8	Hard	White	–400° to +500°	+300°	4,000	4,000	55	1,200	0 to 14★
9	Ultra-Sealable	White	–10° to +500°	NR	2,500	2,500	NR	2,200	2 to 12
10	For Centrifugal Pumps	Shiny Gray	–400° to +850°	+1200°	125	2,500	2,500	4,400	3 to 14
11	For Centrifugal Pumps (Reinforced)	Shiny Gray	–400° to +650°	+1200°	1,200	3,500	3,500	6,000	0 to 14★
12	For Abrasive Pump Applications	Yellow	–10° to +500°	NR	5,000	5,000	NR	2,500	3 to 11
13	For Abrasive Pump Applications	White	–10° to +550°	NR	500	2,500	NR	3,150	1 to 14
14	High Pressure for Pumps	Dull Black	–400° to +550°	NR	6,000	6,000	NR	3,000	1 to 13
15	High Strength for Valves	Shiny Gray	–100° to +800°	+1200°	3,500	3,500	3,500	Not Rated	3 to 14

♦ NR=Not Recommended ★ Chemically inert and offers the best chemical resistance.

(1) General Purpose— Made of graphite-impregnated aramid, this style seals very well without needing to pack the rings tightly, reducing wear on the shaft and packing. For general service in water, steam, oil, brines, solvents, mild acids, and mild alkalies.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	9518K81	$10.64	$16.12	$32.24
3/16"	9518K82	17.68	26.79	53.58
1/4"	9518K83	25.42	38.51	77.02
5/16"	9518K84	35.67	54.05	108.09
3/8"	9518K85	36.22	54.88	109.76
7/16"	9518K86	38.41	58.19	116.38
1/2"	9518K87	46.34	70.22	140.43
5/8"	9518K88	69.83	105.80	211.60
3/4"	9518K89	84.68	128.30	256.60

(2) Severe Service— Graphite is impregnated with graphite for high-temperature, pressure, and chemical resistance in severe service applications. It dissipates heat, reducing wear on the shaft and packing. Meets MIL-P-24583.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	9457K5	$27.18	$41.17	$82.35
3/16"	9457K6	42.09	63.77	127.55
1/4"	9457K16	59.86	90.70	181.40
5/16"	9457K21	85.27	129.19	258.38
3/8"	9457K22	89.09	134.99	269.98
7/16"	9457K34	98.74	149.60	299.21
1/2"	9457K35	133.64	202.48	404.96
5/8"	9457K36	169.04	256.12	512.24
3/4"	9457K37	254.98	386.33	772.66

(3) High Speed— For high-speed applications, this graphite-impregnated carbon packing is an economical alternative to our Severe-Service packing seals, but with lower temperature resistance.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	9437K4	$19.28	$29.20	$58.41
3/16"	9437K5	27.37	41.48	82.95
1/4"	9437K6	41.84	63.39	126.78
5/16"	9437K24	54.91	83.19	166.38
3/8"	9437K25	66.63	100.95	201.90
7/16"	9437K26	80.85	122.50	245.00
1/2"	9437K34	95.80	145.15	290.29
5/8"	9437K35	130.05	197.05	394.10
3/4"	9437K36	205.26	311.00	622.00

(4) Ultra-Corrosion-Resistant— This 100% GFO expanded-PTFE has graphite powder embedded in PTFE fiber to dissipate heat, reducing wear on the shaft and packing.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	9466K4	$21.26	$32.20	$64.41
3/16"	9466K5	28.00	42.42	84.84
1/4"	9466K6	43.36	65.70	131.40
5/16"	9466K24	68.29	103.47	206.94
3/8"	9466K25	71.87	108.90	217.80
7/16"	9466K26	98.58	149.37	298.74
1/2"	9466K64	112.74	170.82	341.65
5/8"	9466K65	168.68	255.57	511.14
3/4"	9466K66	210.12	318.37	636.74

(5) Value Seal General Purpose— Made of PTFE-impregnated synthetic fiber for an economical alternative to other PTFE and graphite-based products. A lubricant is added to maintain formability and reduce wear. Resists water, oil, mild acids, and mild alkalies.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	9316K4	$5.88	$8.91	$17.82
3/16"	9316K5	10.66	16.14	32.29
1/4"	9316K6	12.50	18.93	37.87
5/16"	9316K84	19.31	29.27	58.53
3/8"	9316K85	23.76	36.00	72.00
7/16"	9316K16	27.46	41.61	83.22
1/2"	9316K24	38.29	58.02	116.04
5/8"	9316K87	49.08	74.37	148.74
3/4"	9316K26	65.75	99.62	199.24

(6) FDA Compliant— This oil-impregnated PTFE is safe for use with food products. FDA and USDA compliant.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	94695K85	$21.46	$32.51	$65.02
3/16"	94695K86	29.92	45.34	90.67
1/4"	94695K87	38.65	58.55	117.11
5/16"	94695K88	56.60	85.77	171.53
3/8"	94695K89	60.95	92.36	184.71
7/16"	94695K91	85.61	129.71	259.41
1/2"	94695K92	91.78	139.06	278.13
5/8"	94695K93	150.22	227.61	455.22
3/4"	94695K94	210.31	318.64	637.29
1"	94695K95	356.50	540.14	1,080.29

(Continued on following page)

(7) Ultra-Compressible— Often used as the middle ring where hard PTFE packing is used as the end ring. This soft, noncontaminating PTFE packing has a softener/lubricant added to maintain formability and reduce wear.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	9469K101	$13.92	$21.09	$42.18
3/16"	9469K102	23.96	36.30	72.61
1/4"	9469K103	36.91	55.93	111.86
5/16"	9469K104	48.94	74.14	148.29
3/8"	9469K105	62.01	93.96	187.92
7/16"	9469K106	80.50	121.97	243.93
1/2"	9469K107	95.07	144.04	288.09
5/8"	9469K108	126.55	191.74	383.48
3/4"	9469K109	161.22	244.28	488.55

(8) Hard— Made of dense, firm, noncontaminating expanded PTFE. Great as an end ring to prevent softer middle rings from extruding out of the packing box. Meets MIL-P-24396.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	9467K84	$12.27	$18.59	$37.17
3/16"	9467K85	18.29	27.71	55.43
1/4"	9467K86	37.36	56.60	113.20
5/16"	9467K87	46.17	69.96	139.92
3/8"	9467K88	50.00	75.75	151.51
7/16"	9467K89	64.09	97.11	194.21
1/2"	9467K94	93.01	140.93	281.86
5/8"	9467K95	106.57	161.47	322.93
3/4"	9467K96	122.27	185.26	370.53

(9) Ultra-Sealable— This double lubricated aramid provides the best sealability we offer and is impregnated with PTFE to protect the extra-strong fiber from damaging shafts, sleeves, and rods. Ideal for sewage treatment applications. Resists water, oil, brines, mild acids, and mild alkalies.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8"	9552K4	$11.75	$17.80	$35.60
3/16"	9552K5	21.71	32.89	65.78
1/4"	9552K6	29.94	45.37	90.74
5/16"	9552K14	39.30	59.54	119.08
3/8"	9552K15	40.34	61.12	122.25
7/16"	9552K16	56.80	86.06	172.12
1/2"	9552K24	67.25	101.90	203.80
5/8"	9552K25	104.78	158.76	317.53
3/4"	9552K26	150.73	228.38	456.76

Compression Packing Seals *(Continued from previous page)*

To Order: Please specify 5-, 10-, or 25-ft. length.

(10) For Centrifugal Pumps— This flexible graphite offers outstanding sealability and chemical resistance. An anticorrosion additive prevents pitting. When pump pressures exceed 125 psi (1,000 psi for valves), use High-Speed packing seals (Style 3) for end rings.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8″	97675K4	$6.17	$9.35	$18.69
3/16″	97675K5	12.25	18.55	37.11
1/4″	97675K6	21.60	32.73	65.46
5/16″	97675K14	30.74	46.58	93.16
3/8″	97675K15	31.34	47.49	94.98
7/16″	97675K16	43.75	66.29	132.58
1/2″	97675K24	47.61	72.14	144.28
5/8″	97675K25	71.19	107.86	215.72
3/4″	97675K26	91.36	138.42	276.84

(11) For Centrifugal Pumps (Reinforced)— Carbon corners give this flexible graphite increased strength.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/4″	8322K56	$40.61	$61.52	$123.05
5/16″	8322K34	51.21	77.58	155.17
3/8″	8322K35	62.93	95.36	190.71
7/16″	8322K36	71.25	107.95	215.90
1/2″	8322K44	87.14	132.03	264.06
5/8″	8322K45	112.76	170.84	341.69
3/4″	8322K46	176.21	266.99	533.98

(12) For Abrasive Pump Applications— This PTFE-impregnated aramid resists oil, brines, abrasive slurries, and many solvents.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8″	9468K16	$17.23	$26.11	$52.21
3/16″	9468K18	21.48	32.54	65.08
1/4″	9468K19	27.60	41.83	83.65
5/16″	9468K21	37.67	57.08	114.16
3/8″	9468K23	45.66	69.18	138.36
7/16″	9468K35	60.13	91.11	182.21
1/2″	9468K36	71.16	107.82	215.64
5/8″	9468K48	93.93	142.32	284.64
3/4″	9468K49	144.31	218.65	437.30

(13) For Abrasive Pump Applications (White)— With better sealing in high speeds than Style 12, this noncontaminating PTFE-impregnated aramid resists oil, brines, abrasive slurries, and many solvents.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8″	8550K54	$20.96	$31.75	$63.51
3/16″	8550K65	26.70	40.46	80.92
1/4″	8550K76	41.81	63.35	126.70
5/16″	8550K34	65.02	98.52	197.03
3/8″	8550K35	84.38	127.86	255.71
7/16″	8550K36	92.54	140.21	280.41
1/2″	8550K44	107.89	163.47	326.93
5/8″	8550K45	153.70	232.88	465.75
3/4″	8550K46	223.76	339.04	678.07

(14) High Pressure for Pumps— Graphite-impregnated aramid is saturated with an inert lubricant to reduce wear. Resists water, oil, brines, mild acids, and mild alkalies.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8″	12945K4	$23.73	$35.96	$71.92
3/16″	12945K5	29.48	44.66	89.33
1/4″	12945K14	37.88	57.40	114.80
5/16″	12945K15	63.82	96.69	193.38
3/8″	12945K25	73.52	111.39	222.78
7/16″	12945K54	89.47	135.56	271.12
1/2″	12945K55	108.30	164.09	328.19
5/8″	12945K56	159.63	241.87	483.74
3/4″	12945K57	187.76	284.49	568.97

(15) High Strength for Valves— The Inconel wire in this flexible graphite adds strength, while an additive prevents corrosion.

Size, square		Each 5 ft.	10 ft.	25 ft.
1/8″	13005K74	$16.08	$24.36	$48.72
3/16″	13005K75	28.51	43.20	86.39
1/4″	13005K76	43.47	65.86	131.73
5/16″	13005K34	64.03	97.02	194.04
3/8″	13005K35	76.03	115.19	230.38
7/16″	13005K36	62.49	120.31	254.53
1/2″	13005K44	88.20	133.63	267.27
5/8″	13005K45	131.26	198.88	397.77
3/4″	13005K46	210.70	319.24	638.47

White Oakum Packing Seals

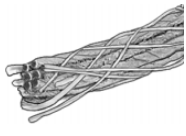

Consisting of jute fiber with additives to ensure pliability and expansion when wet, oakum packing will not dry out or rot. It withstands varying conditions of heat, cold, and moisture, plus resists diluted grease and detergents. It's used as a filler for sealing cast iron drain pipes and driveway joints. Oakum has eight-strand twisted construction. Not rated for temperature and pressure. Color is white. Cut with shears.

Nine 3/8″ Dia. 27″ Lengths	9475K12	Per Pkg.	$10.57
One 3/8″ Dia. 200-ft. Roll	9475K13	Each	$48.85

Lubricating Ring Seals for Compression Packing

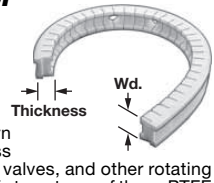

- Temp. Range: –400° to +500° F
- Max. Temp. in Steam: 500° F
- Max. Pressure: 1,000 psi
- pH Resistance Range: 0 to 14

Also known as lantern rings and lantern glands, lubricating rings provide easy access for outside lubrication of packing in pumps, valves, and other rotating and reciprocating equipment. Just use a knife to cut one of these PTFE strips to any length to fit around a shaft, and place between layers of packing (install the same way as the packing). The side channels allow lubricant to evenly circulate to packing. Maximum continuous length is 4 ft. Color is white.

Thick.	Width		Per Ft. 1-3	4-Up
5/16″	7/16″	1302K41	$91.55	$79.35
3/8″	1/2″	1302K42	92.78	80.41
7/16″	9/16″	1302K43	94.38	81.80
1/2″	5/8″	1302K44	95.12	82.43
5/8″	3/4″	1302K45	97.60	84.59
3/4″	1″	1302K46	102.74	89.04

Candle Wicking

- Max. Temp.: 212° F; low end not rated
- Max. Temp. in Steam: 250° F
- Max. Pressure: 160 psi
- pH Resistance Range: Not rated

Cotton candle wicking absorbs water and seals itself, making an excellent packing material. It's spun into single-strand yarn and resists alkalies and salt water. Color is off-white. Furnished in approximately 2-oz. balls.

0.036″ Dia.	9484K1	Each	$3.15

Corrosion-Resistant Compressible Packing Seals for Valve Stems

Gore

Value Seal

- Temp. Range: Gore, –450° to +550° F; Value Seal, –450° to +500° F
- Max. Temp. in Steam: Gore, 550° F; Value Seal, 500° F
- Max. Pressure: Gore, 725 psi; Value Seal, not rated
- pH Resistance Range: 0 to 14

Soft, nonwoven expanded-PTFE packing conforms to fill irregularities in valve stems caused by wear. It's self lubricating and resists chemicals. Great for food and beverage applications. Color is white. Cut with a knife.

Value Seal— FDA compliant.

Dia.	Lg.		Each
Gore			
3/32″	16 ft.	97765K11	$41.91
3/32″	82 ft.	97765K12	182.28
5/32″	16 ft.	97765K13	90.11
5/32″	82 ft.	97765K14	319.59
1/4″	16 ft.	97765K15	99.74
5/16″	16 ft.	97765K16	127.81
3/8″	16 ft.	97765K17	184.38
1/2″	16 ft.	97765K18	238.85
5/8″	16 ft.	97765K19	255.62
3/4″	16 ft.	97765K36	421.75

Dia.	Lg.		Each
Value Seal			
3/32″	25 ft.	9441K1	$19.43
3/32″	50 ft.	9441K8	36.28
5/32″	20 ft.	9441K2	32.24
7/32″	10 ft.	9441K3	24.51
9/32″	9 ft.	9441K4	32.65

Self-Lubricating Packing Seal Tape for Pumps and Valves

- Temp. Range: –320° F to +840° F
- Max. Temp. in Steam: 1200° F
- Max. Pressure: Not rated
- pH Resistance Range: 0 to 14

While thicker packing seals contain binders and additives that can leach out, this thin graphite packing tape contains none. It's self lubricating and flexible, plus it provides outstanding performance over a broad temperature range and where chemicals are a problem. Simply form in place to fit any size pump or valve. Color is dark gray.

Adhesive-backed tape allows for quick installation.

Wd.	Thick.	Roll Lg.	Plain Back	Each	Adhesive Backed	Each
1/4″	0.015″	50 ft.	9481K11	$11.71	9481K21	$14.08
1/2″	0.015″	50 ft.	9481K12	13.90	9481K22	17.42
3/4″	0.015″	50 ft.	9481K13	12.28	9481K23	20.78
1″	0.015″	50 ft.	9481K14	17.03	9481K24	24.12

Packing Seal Tools with Interchangeable Tips

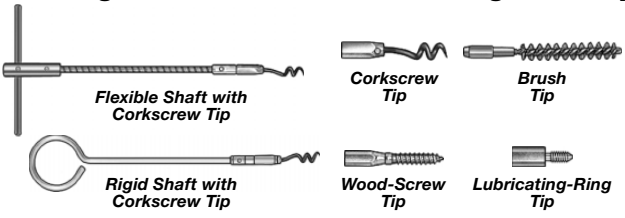

Use these extractors with interchangeable tips to create an efficient system for removing packing and lantern rings and cleaning stuffing boxes. Suitable for use in packing that's wider than the tip diameter. Extractors and tips are made of steel.

Flexible-shaft extractors have a cable in the stem that allows a slight bend for better access to packing. ***Rigid-shaft extractors*** are for dense packing that doesn't break up easily. ***Corkscrew tips*** screw into standard packing for easy removal.

The interchangeable tips thread onto the extractors. ***Wood-screw tips*** are designed for removing hardened packing. Use ***brush tips*** to clean the stuffing box. ***Lubricating-ring tips*** permit easy removal of threaded lubricating rings.

Extractors—Include One Corkscrew Tip

Flexible Shaft O'all Lg.		Each	Rigid Shaft O'all Lg.		Each	Repl. Corkscrew Tip Dia.		Each
7½″	9756K12	$8.72	6″	9756K22	$8.93	¼″	9756K42	$3.42
11″	9756K14	10.79	10″	9756K24	11.38	5/16″	9756K44	4.35
14½″	9756K16	14.36	14″	9756K26	15.30	3/8″	9756K46	5.65

◆ For thread sizes 8-32, 10-24, and 10-32. ■ For thread sizes ¼-20, ¼-28, and 5/16-18.

Interchangeable Tips—Fit Any Extractor on Same Line

Wood Screw Tip Dia.		Each	Brush (Set of 2) Tip Dia.		Per Set	Lubricating Ring (Set of 3)	Per Set
3/16″	9756K52	$5.28	¼″, 5/16″	9756K62	$7.85	9756K72◆	$5.55
¼″	9756K54	6.05	11/16″, ¾″	9756K64	9.07	9756K74■	6.33
5/16″	9756K56	6.70	11/16″, ¾″	9756K64	9.07	9756K74■	6.33

Packing Seal Tool Sets

Sets are furnished in a plastic tool box.

13-Pc. Set—Contains two each of the 7½″ and 11″ flexible-shaft extractors and six corkscrew tips (three for each extractor size). Also includes three 10″ rigid-shaft extractor picks and a wrench.

9498K11 ..... **Per Set** $66.63

21-Pc. Set—Includes two of each flexible-shaft extractor, nine corkscrew tips (three for each extractor size), three wood-screw tips (one for each extractor size), three 10″ rigid-shaft extractor picks, and a wrench.

9498K12 ..... **Per Set** $107.83

45-Pc. Set—Contains two of each flexible-shaft extractor and rigid-shaft extractor listed above, plus 15 corkscrew tips (five for each extractor size), three wood-screw tips (one for each extractor size), four brush tips (one set each of 9756K62 and K64), and six lubricating-ring tips (one set each of 9756K72 and K74). Also includes three 10″ rigid-shaft extractor picks, two O-ring extractor picks, a wrench, and a packing cutting knife in a leather sheath.

9498K13 ..... **Per Set** $199.92

Rigid-Shaft Packing Seal Tools

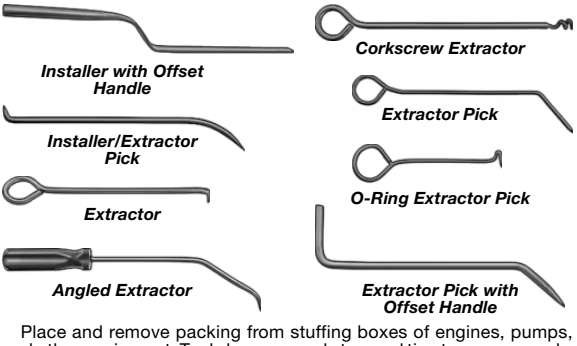

Place and remove packing from stuffing boxes of engines, pumps, and other equipment. Tools have severely tapered tips to remove packing that is brittle or breaks up easily. Made of steel. All tools, except angled extractors, meet Fed. Spec. GGG-E-950A.

	Tip Dia. ▲	O'all Lg.		Each
Installer with Offset Handle	½″	14″	9494K18	$20.70
Installer/Extractor Pick	¼″	10″	9494K21	16.70
Installer/Extractor Pick	5/16″	12″	9494K17	22.75
Extractor	3/16″	8″	9494K15	15.59
Extractor	¼″	10″	9494K22	16.80
Angled Extractor	3/16″	8″	94765K61	15.47
Angled Extractor	3/16″	11″	94765K63	18.56
Angled Extractor	¼″	13″	94765K65	22.52
Angled Extractor	5/16″	13″	94765K67	26.28
Corkscrew Extractor	3/8″	6″	9494K16	15.58
Corkscrew Extractor	½″	10″	9494K14	16.35
Corkscrew Extractor	½″	14″	9494K13	19.10
Corkscrew Extractor	5/8″	18″	9494K12	26.03
Corkscrew Extractor	5/8″	20″	9494K11	31.17
Extractor Pick	1/8″	9″	9494K64	10.87
Extractor Pick	3/16″	10″	9494K65	14.52
O-Ring Extractor Pick	3/16″	6″	9494K63	13.01
Extractor Pick w/Offset Handle	5/16″	10″	9494K66	21.80

▲ Measured at widest point of tip.

4-Pc. Set—Includes a 12″ long installer/extractor pick and 6″, 10″, and 14″ long corkscrew extractors.

9494K23 ..... **Per Set** $62.70

6-Pc. Set—Includes a 12″ long installer/extractor pick; 8″ extractor; and 6″, 10″, 14″, and 18″ long corkscrew extractors.

9494K52 ..... **Per Set** $99.74

10-Pc. Set—Includes the installer with offset handle, both installer/extractor picks, both extractors, and all five corkscrew extractors listed above.

9494K19 ..... **Per Set** $164.40

Rigid-Shaft Packing Extractor Set

Nonsparking brass extractor set includes one 5 11/16″ long straight and one 5 13/16″ long hooked pry bar in a plastic pouch.

12995K21 ..... **Per Set** $13.11

Flexible-Shaft Packing Seal Extractors

The shank on these tools bends, allowing easy access to stuffing boxes for packing removal. All tools are steel with a T-handle. The corkscrew tip screws into the packing for easy removal. Tip is not interchangeable. Tools meet Fed. Spec. GGG-E-950A.

Corkscrew Dia.	O'all Lg.		Each
5/32″	7″	9569K67	$10.97
¼″	7¼″	9492K11	9.09
5/16″	10¾″	9492K12	12.24
3/8″	15¼″	9492K13	21.87
3/8″	22″	9492K14	30.94
3/8″	30″	9492K15	38.72
½″	18½″	9492K16	32.25
5/8″	22¼″	9492K17	34.84

3-Pc. Set—Includes one each of 7¼″, 10¾″, and 15¼″ length tools.

9492K19 ..... **Per Set** $35.44

8-Pc. Set—Includes one of each tool listed above, except 7″ long tool has a 11/64″ diameter instead of 5/32″.

9492K21 ..... **Per Set** $150.03

Ring-Seal Installers

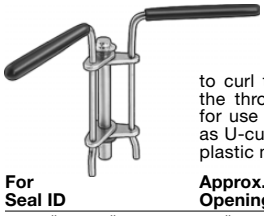

Prevent damage to rod seals when installing them into small, closed-diameter gland openings or deep-set rod grooves. Rotate the handles to curl the seal, enabling it to pass through the throat of the rod gland. Recommended for use with rubber and urethane seals such as U-cups and O-rings. Not for use with rigid plastic materials such as PTFE and nylon.

For Seal ID	Approx. Minimum Opening Required		Each
1.000″-1.437″	0.9″	45015K21	$37.03
1.500″-1.937″	1.2″	45015K22	37.03
2.000″-3.000″	1.4″	45015K23	37.03

Raw Materials

Felt	3504
Fabric	3507
Brake & Clutch Lining	3511
Thermal Insulation	3512
Sound Insulation	3524
Rubber & Polyurethane	3526
Foam	3550
Plastics	3564
Carbon Fiber, Graphite & Mica	3619
Glass	3621
Ceramic	3624
Clay, Wax & Casting Materials	3628
Zinc, Lead & Tin	3630
Aluminum	3632
Steel & Iron	3652
Stainless Steel	3685
Tungsten, Nickel & Titanium	3710
Copper, Brass & Bronze	3714
Wire	3731
Expanded Metal	3736
Shim Stock	3738
Foil	3744
Grips, Caps & Plugs	3747
Bumpers & Guards	3758
Edge Trim	3769
Grommets	3774
Bellows	3778

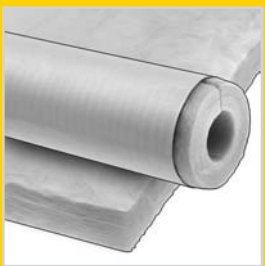
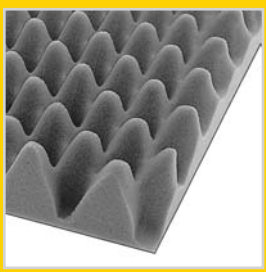

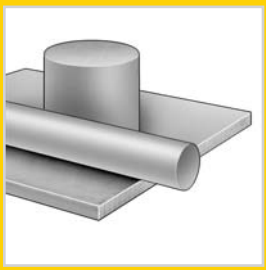

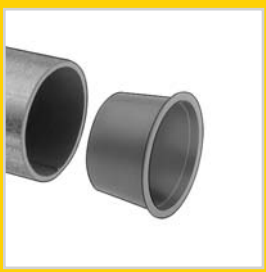
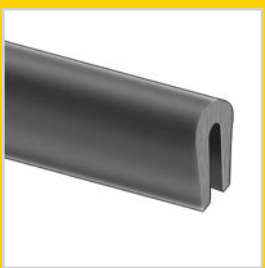

About Selecting Wool Felt

	Hard			Extra Firm	Firm	Soft		Very Soft		Ultra Soft
Felt Grade	**S2-32**	**S2-24**	**S2-20**	**F1**	**F3**	**F5**	**F7**	**F10**	**F13**	**F26**
Firmness (10% Deflection), psi	121	86	58	21	13	6	6	4	3	1
Density, lbs./sq. yd. @ 1″ thick	32	24	20	16	15.6	12.2	12.2	8.4	8.4	7.2
Minimum Wool Fiber Content	100%	100%	100%	95%	85%	95%	80%	95%	75%	45%
Durometer Hardness (Shore A) ±5	80	55	50	35	35	25	25	20	20	10
Tensile Strength, psi	500	600	500	500	400	400	250	225	75	Not Rated

Wool Felt Selector Pack— Includes seven samples; one 1¾″ × 1⅜″ piece of each of the following felts: F1, F3, F5, F7, F10, F13, and F26. Information about each felt is listed on the back side of the sample sheet.
9248K222 ..... $5.53

Hard Off-White S2 Felt

- Temperature Range: −80° to +200° F
- Vibration Absorption: Excellent
- Abrasion Resistance: Excellent

Made of 100% wool, this is the hardest felt we offer, yet it can still be used for polishing.

Grade S2-32— The hardest of these S2 grades, this material can be used as shock-absorbing bumpers, gaskets, and washers.

Grade S2-24— Slightly less firm than S2-32, this felt is commonly used for buffing, padding, in ink rollers, and in marking devices.

Grade S2-20— Use on polishing wheels for buffing lenses, mirrors, glass, marble, granite, metals, and wood.

	GRADE S2-32				GRADE S2-24				GRADE S2-20			
Thick.	**12″×12″**		**36″×36″**		**12″×12″**		**36″×36″**		**12″×12″**		**36″×36″**	
1/8″	**8759K81**	$15.94	**8759K85**	$107.63	**8759K31**	$11.01	**8759K1**	$74.36	**8759K71**	$10.00	**8759K51**	$67.60
1/4″	**8759K82**	30.54	**8759K86**	206.24	**8759K33**	21.05	**8759K3**	142.11	**8759K73**	19.14	**8759K53**	121.50
3/8″	**8759K83**	42.12	**8759K87**	284.38	**8759K34**	28.64	**8759K4**	186.45	**8759K74**	24.37	**8759K54**	156.10
1/2″	**8759K84**	54.45	**8759K88**	367.68	**8759K35**	33.54	**8759K5**	232.74	**8759K75**	29.10	**8759K55**	194.79

Extra Firm White F1 Felt

Sheets and Sheeting

- Temperature Range:
  Plain back: −80° to +200° F
  Adhesive back: 0° to +180° F
- Vibration Absorption: Excellent
- Abrasion Resistance: Excellent

Composed almost entirely of pure wool, F1 is one of the most versatile graded felts. Its high density provides wear and abrasion resistance when used for polishing, wicking, cushioning, wiping, and gasketing. ***Adhesive-back*** sheets, strips, and discs have a rubber-based adhesive.

Sheets, Sheeting, and Strips

To Order: For sheeting, please specify length: 1, 2, 3, 4, 5, or 10 ft.
To Order: For strips, please specify length: 10, 25, or 50 ft.

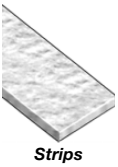

Strips

	SHEETS		SHEETING		STRIPS							
Thick.	**12″×12″**	**Each**	**60″ Wide**	**Per Ft.**	**1/2″ Wide**	**Per Ft.**	**1″ Wide**	**Per Ft.**	**1 1/2″ Wide**	**Per Ft.**	**2″ Wide**	**Per Ft.**
Plain Back												
1/16″	**8334K35**	$7.44	**8755K11**	$22.65	**5051K151**	$0.48	**5051K161**	$0.97	**5051K221**	$1.11	**5051K231**	$1.74
1/8″	**8334K31**	12.08	**8755K12**	32.86	**5051K51**	.64	**5051K57**	1.29	**5051K64**	1.73	**5051K71**	2.15
3/16″	**8334K36**	19.01	**8755K13**	46.90	**5051K281**	.98	**5051K291**	1.84	**5051K351**	2.73	**5051K361**	3.12
1/4″	**8334K32**	22.22	**8755K14**	62.40	**5051K52**	1.29	**5051K58**	2.29	**5051K65**	3.47	**5051K72**	3.77
3/8″	**8334K33**	30.44	**8755K15**	83.25	**5051K53**	1.94	**5051K59**	3.32	**5051K66**	4.53	**5051K73**	5.50
1/2″	**8334K34**	40.59	**8755K16**	107.02	**5051K54**	2.39	**5051K61**	4.27	**5051K67**	5.82	**5051K74**	7.38
Adhesive Back												
1/16″	**8334K15**	10.04	_____	_____	**5051K421**	.63	**5051K431**	1.00	**5051K481**	1.59	**5051K491**	1.86
1/8″	**8334K11**	14.25	_____	_____	**5051K11**	.79	**5051K17**	1.50	**5051K24**	2.03	**5051K31**	2.55
3/16″	**8334K16**	20.46	_____	_____	**5051K551**	1.15	**5051K561**	2.04	**5051K621**	2.87	**5051K631**	3.70
1/4″	**8334K12**	24.16	_____	_____	**5051K12**	1.48	**5051K18**	2.74	**5051K25**	3.71	**5051K32**	4.72
3/8″	**8334K13**	35.37	_____	_____	**5051K13**	2.10	**5051K19**	3.49	**5051K26**	4.79	**5051K33**	6.16
1/2″	**8334K14**	44.52	_____	_____	**5051K14**	2.69	**5051K21**	4.65	**5051K27**	6.38	**5051K34**	7.70

	SHEETS				STRIPS					
Thick.	**12″×12″**	**Each**	**12″×60″**	**Each**	**1/2″×30″**	**Each**	**1″×30″**	**Each**	**2″×30″**	**Each**
Plain Back										
3/4″	**8334K38**	$58.61	**8755K801**	$164.92	**5051K91**	$8.40	**5051K93**	$14.61	**5051K95**	$25.40
1″	**8334K39**	72.75	**8755K901**	206.43	**5051K92**	10.61	**5051K94**	19.07	**5051K96**	32.30

Cord

To Order: Please specify length in 5-ft. increments up to the maximum length listed.

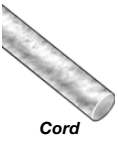

Cord

Dia.	Max. Length		Per Ft.	Dia.	Max. Length		Per Ft.	Dia.	Max. Length		Per Ft.
1/8″	25 ft.	**8767K21**	$0.98	1/4″	25 ft.	**8767K23**	$1.26	1/2″	15 ft.	**8767K25**	$3.23
3/16″	25 ft.	**8767K22**	1.07	3/8″	15 ft.	**8767K24**	1.92				

Discs

Discs

	PLAIN BACK						ADHESIVE BACK					
Thick.	**4″ Dia.**		**6″ Dia.**		**8″ Dia.**		**4″ Dia.**		**6″ Dia.**		**8″ Dia.**	
1/8″	**8307K21**	$2.32	**8307K41**	$4.66	**8307K61**	$7.47	**8307K11**	$3.07	**8307K31**	$6.14	**8307K51**	$9.30
1/4″	**8307K22**	4.45	**8307K42**	8.90	**8307K62**	14.30	**8307K12**	5.18	**8307K32**	10.40	**8307K52**	15.80
3/8″	**8307K23**	6.42	**8307K43**	12.83	**8307K63**	20.63	**8307K13**	7.20	**8307K33**	14.41	**8307K53**	21.82
1/2″	**8307K24**	8.28	**8307K44**	16.53	**8307K64**	25.04	**8307K14**	9.06	**8307K34**	18.13	**8307K54**	27.46

For information about graded wool felt, see page 3504.

Firm Gray F3 Felt

- Temperature Range: Plain back: –80° to +200° F
  Adhesive back: 0° to +180° F
- Vibration Absorption: Excellent
- Abrasion Resistance: Excellent

Fabricated from coarse wool, this material is a common choice for vibration mountings.

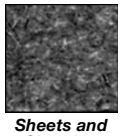

Sheets and Sheeting

Sheets, Sheeting, and Strips

Adhesive-back sheets and strips have a rubber-based adhesive.

To Order: For sheeting, please specify length: 1, 2, 3, 4, 5, or 10 ft. **To Order:** For strips, please specify length: ½″ wide strips are available in 10- and 25-ft. lengths. 1″, 1½″, and 2″ wide strips are available in 10-, 25-, and 50-ft. lengths.

	SHEETS 12″×12″		SHEETING 60″ Wide		STRIPS ½″ Wide		STRIPS 1″ Wide		STRIPS 1½″ Wide		STRIPS 2″ Wide	
Thick.		Each		Per Ft.		Per Ft.		Per Ft.		Per Ft.		Per Ft.
Plain Back												
1/8″	87255K11	$7.59	8756K11	$21.05	87395K138	$0.51	87395K24	$0.93	87395K54	$1.15	87395K84	$1.40
3/16″	87255K12	10.41	8756K12	31.60	87395K111	.65	87395K121	1.29	87395K141	1.74	87395K171	2.10
1/4″	87255K13	13.22	8756K13	40.04	87395K238	.85	87395K26	1.70	87395K56	2.44	87395K86	2.67
3/8″	87255K15	17.96	8756K14	59.37	87395K338	1.04	87395K28	2.08	87395K58	2.90	87395K88	3.71
1/2″	87255K17	23.94	8756K15	78.04	87395K438	1.63	87395K32	2.89	87395K62	4.40	87395K92	5.05
Adhesive Back												
1/8″	87255K51	11.00	—	—	87395K538	.65	87395K98	1.16	87395K38	1.70	87395K68	2.02
1/4″	87255K53	16.73	—	—	87395K638	.95	87395K12	1.89	87395K42	2.55	87395K72	3.40
3/8″	87255K55	21.44	—	—	87395K738	1.33	87395K14	2.59	87395K44	3.54	87395K74	4.41
1/2″	87255K57	27.16	—	—	87395K838	1.82	87395K16	3.19	87395K46	4.27	87395K76	5.32

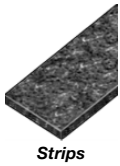

Strips

	SHEETS 12″×12″		SHEETS 12″×60″		STRIPS 1″×30″		STRIPS 2″×30″	
Thick.		Each		Each		Each		Each
Plain Back								
3/4″	87255K93	$40.06	8756K811	$123.68	87395K91	$10.76	87395K95	$17.69
1″	87255K95	51.45	8756K911	158.94	87395K93	13.83	87395K97	22.72

Cord

To Order: Please specify length in 5-ft. increments up to the maximum length listed.

Dia.	Max. Length		Per Ft.	Dia.	Max. Length		Per Ft.	Dia.	Max. Length		Per Ft.
1/8″	25 ft.	8767K3	$0.85	1/4″	25 ft.	8767K1	$1.10	1/2″	15 ft.	8767K2	$2.81
3/16″	25 ft.	8767K4	.94	3/8″	15 ft.	8767K5	1.68				

Cord

Soft White F5 Felt

- Temperature Range: Plain back: –80° to +200° F
  Adhesive back: +40° to +100° F
- Vibration Absorption: Good
- Abrasion Resistance: Good

This highly resilient felt is often used for grease seals and wipers. ***Adhesive-back*** sheets and strips have a rubber-based adhesive.

To Order: For sheeting, please specify length: 1, 2, 3, 4, 5, or 10 ft. **To Order:** For strips, please specify length: 10, 25, or 50 ft.

Sheets and Sheeting

	SHEETS 12″×12″		SHEETING 66″ Wide		STRIPS ½″ Wide		STRIPS 1″ Wide		STRIPS 1½″ Wide		STRIPS 2″ Wide	
Thick.		Each		Per Ft.		Per Ft.		Per Ft.		Per Ft.		Per Ft.
Plain Back												
1/8″	8341K31	$9.27	8757K11	$28.64	8344K51	$0.57	8344K57	$0.92	8344K64	$1.48	8344K71	$1.87
3/16″	8341K36	17.32	8757K12	44.65	8344K151	.94	8344K161	1.60	8344K231	2.32	8344K281	2.88
1/4″	8341K32	18.63	8757K13	51.26	8344K52	1.74	8344K58	1.97	8344K65	2.13	8344K72	3.28
3/8″	8341K33	27.80	8757K14	70.72	8344K53	1.52	8344K59	2.74	8344K66	3.73	8344K73	4.52
1/2″	8341K34	33.45	8757K15	87.36	8344K54	1.75	8344K61	3.40	8344K67	4.59	8344K74	5.60
Adhesive Back												
1/8″	8341K11	10.86	—	—	8344K11	.64	8344K17	1.49	8344K24	1.76	8344K31	2.29
1/4″	8341K12	20.18	—	—	8344K12	1.23	8344K18	2.44	8344K25	3.27	8344K32	4.19

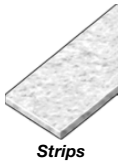

Strips

	SHEETS 12″×12″		SHEETS 12″×66″		STRIPS 1″×33″		STRIPS 2″×33″	
Thick.		Each		Each		Each		Each
Plain Back								
3/4″	8341K38	$46.68	8757K801	$128.41	8344K91	$13.46	8344K95	$21.84
1″	8341K39	58.19	8757K901	160.00	8344K93	14.88	8344K97	27.21

Soft Gray F7 Felt

- Temperature Range: Plain back: –80° to +200° F
  Adhesive back: 0° to +180° F
- Vibration Absorption: Good
- Abrasion Resistance: Good

When fabricating grease seals and wipers, this material's lower wool content makes it an economical alternative to F5 felt. ***Adhesive-back*** sheets and strips have a rubber-based adhesive.

To Order: For sheeting, please specify length: 1, 2, 3, 4, 5, or 10 ft. **To Order:** For strips, please specify length: ¼″ wide strips are only available in 10-ft. lengths. 1″, 1½″, and 2″ wide strips are available in 10-, 25-, and 50-ft. lengths.

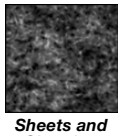

Sheets and Sheeting

	SHEETS 12″×12″		SHEETING 72″ Wide		STRIPS ¼″ Wide		STRIPS 1″ Wide		STRIPS 1½″ Wide		STRIPS 2″ Wide	
Thick.		Each		Per Ft.		Per Ft.		Per Ft.		Per Ft.		Per Ft.
Plain Back												
1/8″	87385K12	$3.49	8766K11	$21.22	8762K118	$0.32	8762K36	$0.64	8762K66	$0.78	8762K96	$1.11
3/16″	87385K13	5.59	8766K12	26.39	—	—	8762K141	.73	8762K161	1.04	8762K181	1.32
1/4″	87385K14	6.28	8766K13	29.93	8762K218	.44	8762K38	.87	8762K68	1.28	8762K98	1.55
3/8″	87385K16	8.93	8766K14	43.57	8762K318	.68	8762K57	1.29	8762K72	1.88	8762K12	2.43
1/2″	87385K18	11.30	8766K15	56.89	8762K618	1.23	8762K59	1.69	8762K74	2.39	8762K14	2.83
Adhesive Back												
1/8″	87385K52	7.15	—	—	8762K718	.43	8762K22	.91	8762K55	1.26	8762K82	1.47
1/4″	87385K54	11.62	—	—	8762K818	.56	8762K24	1.12	8762K54	1.69	8762K84	1.83
3/8″	87385K56	14.84	—	—	8762K918	.86	8762K26	1.54	8762K56	2.25	8762K86	2.73
1/2″	87385K58	18.02	—	—	8762K448	1.36	8762K28	1.97	8762K58	2.80	8762K88	3.15

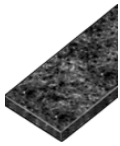

Strips

For information about graded wool felt, see page 3504.

Very Soft White F10 Felt

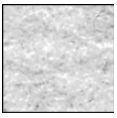

- Temperature Range: –80° to +200°F
- Vibration Absorption: Fair
- Abrasion Resistance: Fair

This material absorbs grease and oil even when compressed. **To Order:** For sheeting please specify length: 1, 2, 3, 4, 5, or 10 ft.

Thick.	12″×12″ Sheets	Each	72″ Wide Sheeting	Per Ft.
1/8″	2842T21	$8.96	8241K11	$25.35
3/16″	2842T23	10.00	8241K12	30.91
1/4″	2842T25	12.57	8241K13	35.54
3/8″	2842T27	16.61	8241K14	49.34
1/2″	2842T29	20.62	8241K15	61.05

Very Soft Gray F13 Felt

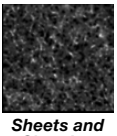

Sheets and Sheeting

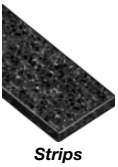

Strips

- Temperature Range: Plain back: –80° to +200°F
  Adhesive back: 0° to +180°F
- Vibration Absorption: Fair
- Abrasion Resistance: Fair

A gray, lower wool content version of F10 felt, this material is often used for grease and oil retention. ***Adhesive-back*** sheets and strips have a rubber-based adhesive.

To Order: For sheeting, please specify length: 1, 2, 3, 4, 5, or 10 ft.

To Order: For strips, please specify length: 10, 25, or 50 ft.

Thick.	Sheets 12″×12″	Each	Sheeting 72″ Wide	Per Ft.	Strips 1″ Wide	Per Ft.	1½″ Wide	Per Ft.	2″ Wide	Per Ft.
Plain Back										
1/8″	87415K11	$3.65	8758K11	$10.62	87555K29	$0.36	87555K65	$0.47	87555K91	$0.53
1/4″	87415K13	6.31	8758K13	18.87	87555K35	.49	87555K67	.83	87555K92	.95
3/8″	87415K15	7.64	8758K14	27.21	87555K15	.89	87555K18	1.32	87555K31	1.65
1/2″	87415K17	9.70	8758K15	34.88	87555K44	1.18	87555K47	2.08	87555K54	2.08
Adhesive Back										
1/8″	87415K51	5.03	———	———	87555K17	.67	87555K48	.91	87555K78	1.10
1/4″	87415K53	7.72	———	———	87555K223	.92	87555K51	1.23	87555K79	1.58

Ultra Soft Gray F26 Felt

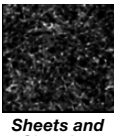

Sheets and Sheeting

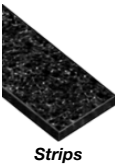

Strips

- Temperature Range: Plain back: –80° to +200°F
  Adhesive back: 0° to +180°F
- Vibration Absorption: Poor
- Abrasion Resistance: Poor

Use for packing and padding applications where the felt will be held between other materials. ***Adhesive-back*** sheets and strips have a rubber-based adhesive.

To Order: For sheeting, please specify length: 1, 2, 3, 4, 5, or 10 ft.

To Order: For strips, please specify length: 10, 25, or 50 ft.

Thick.	Sheets 12″×12″	Each	Sheeting 72″ Wide	Per Ft.	Strips 1″ Wide	Per Ft.	1½″ Wide	Per Ft.	2″ Wide	Per Ft.
Plain Back										
1/8″	8353K21	$1.79	8845K11	$5.73	8348K51	$0.20	8348K57	$0.29	8348K64	$0.32
3/16″	8353K25	2.66	8845K12	7.07	8348K32	.27	8348K34	.34	8348K36	.45
1/4″	8353K22	2.81	8845K13	8.74	8348K52	.32	8348K58	.42	8348K65	.51
1/2″	8353K24	5.39	8845K15	15.20	8348K38	.61	8348K39	.85	8348K41	1.14
Adhesive Back										
1/8″	8353K11	5.13	———	———	8348K11	.51	8348K17	.72	8348K24	.93
1/4″	8353K12	6.18	———	———	8348K12	.64	8348K18	.96	8348K25	1.31

Thick.	Sheets 12″×12″	Each	Sheets 12″×72″	Each	Strips 1″×36″	Each	2″×36″	Each
Plain Back								
1″	8353K33	$9.71	8845K181	$27.14	8348K33	$2.89	8348K37	$4.78

Firm White Synthetic Felt

Sheeting

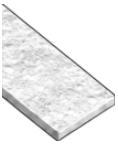

Strips

- Polyester Temp. Range:
  Plain back: –40° to +300°F
  Adhesive back: 0° to +180°F
- Polypropylene Temp. Range:
  Plain back: –40° to +180°F
- Vibration Absorption:
  Polyester: Good;
  Polypropylene: Fair
- Abrasion Resistance: Good

An economical alternative to wool felt when vibration absorption and abrasion resistance are needed. Density is 15 lbs./sq. yd. @ 1″ thick for polyester; 12 lbs./sq. yd. @ 1″ thick for polypropylene. ***Adhesive-back*** sheeting and strips have a rubber-based adhesive.

Sheeting

To Order: For polyester, please specify length: 1, 2, or 5 ft.

To Order: For polypropylene, please specify length: 1, 5, 10, or 20 ft.

Thick.	Wd.	Polyester Plain Back	Per Ft.	Polyester Adhesive Back	Per Ft.	Polypropylene Plain Back	Per Ft.
1/16″	72″	8877K62	$11.35	8877K11	$15.16	88125K11	$9.44
1/8″	72″	8877K63	17.76	8877K12	21.67	88125K51	8.52
3/16″	72″	8877K64	26.67	8877K13	29.09	———	———
1/4″	72″	8877K65	33.56	8877K14	38.03	88125K61	16.30
3/8″	72″	8877K66	48.03	8877K15	52.54	88125K71	20.83
1/2″	72″	8877K67	61.75	8877K16	66.20	88125K81	43.27

Strips

To Order: Please specify length: 10, 25, or 50 ft.

Thick.	Polyester 1″ Wide	Per Ft.	2″ Wide	Per Ft.
Plain Back				
1/8″	88085K71	$0.40	88085K75	$0.78
1/4″	88085K311	.42	88085K313	.83
Adhesive Back				
1/8″	88085K91	.52	88085K95	1.03
1/4″	88085K515	.51	88085K512	1.05

Adhesive-Backed Lining Felt

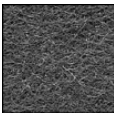

- Temperature Range:
  Cotton Flannel: Not rated
  Wool/Rayon: –20° to +200°F

Line toolboxes and drawers to cushion and protect small parts.

Cotton flannel felt is green and has a rubber-based adhesive. Density is not rated.

Wool/rayon has an acrylic adhesive. Density is 0.75 lbs./sq. yd. **To Order:** Please specify color: black, brown, or green. For sheeting, also specify length.

Thick.	Wd.	Lg.	Sheets Each	32″ Wide Sheeting Max. Lg.	Per Ft.
Cotton Flannel					
1/64″	11 1/4″	13″	8764K2 $6.36	———	———
1/64″	11″	79″	8764K3 26.12	———	———
1/64″	11″	164″	8764K7 49.82	———	———
Wool/Rayon					
3/64″	24″	32″	8770K8 20.32	48 ft.	8770K9 $10.06

Cotton Fabric

Sheeting

Standard cotton sheets, also known as canvas and cotton duck, are often used as dust covers and drop cloths. Material is unbleached; color is off-white.

Flame- and water-resistant sheets are also mildew resistant and can be used as tarps. Color is olive green.

Water-repellent sheets have been saturated in wax and have a polyester coating on one side that resists corrosion and moisture. The fabric is extremely flexible and is excellent for protecting piping and wrapping irregularly shaped material. It adheres to itself but can be separated easily. Color is tan.

To Order: Please specify length.

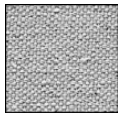
Standard

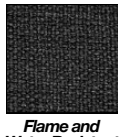
Flame and Water Resistant

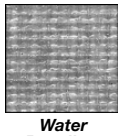
Water Repellent

Thick.	Trade No.	Density, oz./sq. yd.	Available Lengths, ft.	36″ Wide	Per Ft.	48″ Wide	Per Ft.	60″ Wide	Per Ft.
Standard									
0.026″	—	8	2, 5, 10, 20, 50, 100	8778K1	$1.22	—	—	—	—
0.026″	12	12	2, 5, 10, 20, 50, 100	8777K11	1.85	8777K12	$2.40	8777K13	$2.84
0.028″	—	10	2, 5, 10, 20, 50, 100	8778K2	1.51	—	—	—	—
0.030″	—	12	2, 5, 10, 20, 50, 100	8778K3	1.68	—	—	—	—
0.031″	10	15	2, 5, 10, 20, 50, 100	8777K14	2.30	8777K15	3.02	8777K16	3.13
0.042″	8	18	2, 5, 10, 20, 50, 100	8777K17	2.58	8777K18	3.13	—	—
0.046″	6	22	2, 5, 10, 20, 50, 100	8777K19	2.88	8777K21	3.50	—	—
0.050″	4	24	2, 5, 10, 20, 50, 100	8777K26	3.47	8777K24	4.20	—	—
Flame and Water Resistant									
0.028″	—	10	2, 5, 10, 20, 50, 100	8776K4	2.34	—	—	—	—
0.030″	—	12	2, 5, 10, 20, 50, 100	8776K5	2.56	—	—	—	—
0.036″	—	15	2, 5, 10, 20, 50, 100	8776K6	2.90	—	—	—	—
Water Repellent									
0.013″	—	8	10, 25, 50	2079T3	1.63	—	—	—	—

Strips

Able to endure tugs and pulls, these strips are ideal for use as ties and straps. Choose from off-white (unbleached) or white (bleached).

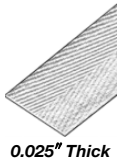
0.025″ Thick

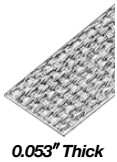
0.053″ Thick

Thick.	Wd.	Approx. Breaking Strength, lbs.	Roll Length, ft.	Off-White	Roll	White	Roll
0.025″	1/2″	140	216	88495K41	$14.63	88495K31	$17.38
0.025″	5/8″	155	216	88495K42	16.22	88495K32	19.25
0.025″	3/4″	175	216	88495K43	17.77	88495K33	21.36
0.025″	1″	210	216	88495K45	21.97	88495K35	26.32
0.053″	3/4″	100	75	88445K44	14.07	—	—
0.053″	1″	170	75	88445K45	15.07	—	—
0.053″	1 1/2″	230	37	88445K46	11.44	—	—

Muslin Cheesecloth Fabric

Use for lining, cleaning, straining, and polishing. Density is 1.3 oz./sq. yd. ***Off-white*** material is unbleached; ***white*** has been bleached.

To Order: Please specify length: 10, 25, 50, 100, 150, or 300 ft.

Thick.	Wd.	Off-White	Per Ft.	White	Per Ft.
0.011″	36″	8808K11	$0.49	8808K31	$0.60

Silk Fabric

This mildew-resistant sheeting is ideal for covering walls in audio/visual rooms. It is washable but will shrink approximately 3%. Color is black.

To Order: Please specify length: 1, 3, 10, 25, or 50 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.008″	54″	2	8973T4	$47.42

Burlap Fabric

Commonly used for wrapping, cushioning, and packaging. Color is brown.

To Order: Please specify length: 10, 25, 50, 100, 150, or 300 ft.

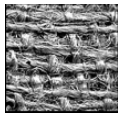

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.028″	12″	8	8814K61	$0.39
0.028″	20″	8	8814K31	.58
0.028″	30″	8	8814K41	.83
0.028″	40″	8	8814K51	$1.07
0.028″	40″	9	8814K71	1.57

Leather

Vegetable-tanned cow leather is often used in belting applications for its stiffness. Max. temperature is 150°F. Color is tan.

Mineral-tanned cow leather is tougher yet more supple than vegetable-tanned leather and is often used as hydraulic seals. Maximum temperature is 200°F. Also known as chrome-tanned leather, color is blue gray.

Sheets and *strips* have a smooth side and a rough side. *Cord* has one smooth side and three rough sides.

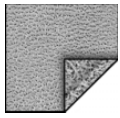
Sheets

Sheets

Thick.	12″×12″		24″×24″		24″×36″		24″×48″		30″×36″	
Vegetable Tanned										
5/64″	8706K11	$18.51	8706K12	$71.20	8706K13	$102.84	8706K14	$132.22	8706K67	$143.62
1/8″	8706K16	22.03	8706K17	84.14	8706K18	120.73	8706K19	154.26	8706K68	166.60
3/16″	8706K22	27.63	8706K23	93.37	8706K24	137.76	8706K25	178.25	8706K69	194.20

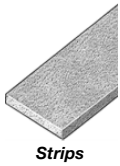
Strips

Strips

Thick.	1″×36″		2″×36″		3″×36″		4″×36″		5″×36″	
Vegetable Tanned										
5/64″	8706K51	$7.02	8706K52	$12.73	8706K53	$17.38	8706K54	$21.06	8706K55	$23.93
1/8″	8706K56	8.13	8706K57	14.78	8706K58	20.16	8706K59	24.43	8706K61	27.78
3/16″	8706K62	10.43	8706K63	18.97	8706K64	25.86	8706K65	31.36	8706K66	35.63
Mineral Tanned										
5/64″	8706K71	10.40	8706K72	19.51	8706K73	28.94	8706K74	31.54	8706K75	42.33
1/8″	8706K76	13.78	8706K77	26.74	8706K78	38.20	8706K79	49.66	8706K81	53.54
3/16″	8706K82	17.96	8706K83	32.44	8706K84	44.24	8706K85	53.63	8706K86	60.95

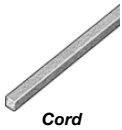
Cord

Cord

Thick.	Wd.	Lg.	Pkg. Qty.		Pkg.
Vegetable Tanned					
3/32″	1/8″	48″	10	8825T11	$13.41
Mineral Tanned					
3/32″	1/8″	48″	10	8825T12	$15.47

Rawhide

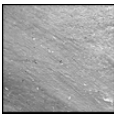

A durable stretch-resistant material, these cow rawhide sheets are a good choice for lacing applications and can be shaped easily when wet. Max. temp. is 140° F. Color is tan. Sizes are approximate.

Thick.	12″×28″	
0.063″-0.094″	8718T4	$40.55

Pigskin

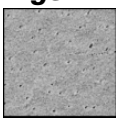

The dense fiber structure makes this material stronger than leather. Maximum temperature is not rated. Color is tan. Sheet size varies; equals approximately 13 to 15 sq. ft.

Thick.		
0.024″-0.030″	8724T11	$60.52

Nylon Fabric

Sheeting

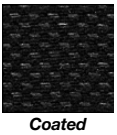

Coated

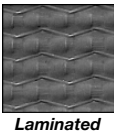

Laminated

Often used as tarps. Maximum temperature is 180° F.
Neoprene-coated sheeting resists solvents, oils, and UV rays. *Polyurethane-coated sheeting* resists tears, abrasion, and rot. *Vinyl-laminated sheeting* is water and flame resistant.
To Order: Please specify length and color.

Thick.	Wd.	Density, oz./sq. yd.	Available Lengths, ft.	Available Color		Per Ft.
Neoprene Coated						
0.022″	60″	16	1, 5, 10, 20, 50	Black	8811K55	$11.56
0.040″	60″	40	1, 5, 10, 20, 50	Black	8811K56	21.30
Polyurethane Coated						
0.022″	61″	14	1, 5, 10, 30, 150	Black, Blue, Gray, White	8809K31	4.35
Vinyl Laminated						
0.015″	61″	13	1, 10, 20, 100	Black, Blue, Gray, White	8810K41	3.05

Strips

0.019″ Thick

0.075″ Thick

An excellent choice for strapping applications. Strips can be used outdoors. Maximum temperature is not rated.

Approx. Thick.	Wd.	Approx. Breaking Strength, lbs.	Roll Length, ft.	Black	Roll	White	Roll
0.019″	3/8″	120	75	87975K51	$10.02	87975K61	$10.02
0.019″	1/2″	170	75	87975K52	10.51	87975K62	10.51
0.019″	3/4″	250	75	87975K54	12.72	87975K64	12.72
0.019″	1″	290	75	87975K55	17.20	87975K65	17.20
0.075″	3/4″	2,800	37.5	87425K75	10.66	87425K45	10.66
0.075″	1″	3,800	37.5	87425K76	13.68	87425K46	13.68
0.075″	1 1/2″	5,700	37.5	87425K77	17.41	87425K47	17.41

Wind- and Light-Blocking Mesh Fabric

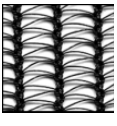

Shade your site. Material is polypropylene mesh and can be used outdoors. Color is black.
To Order: Please specify length: 1, 5, 20, or 50 ft.

Thick.	Wd.	Density, oz./sq. yd.	Light Blocked		Per Ft.
0.040″	121″	6	40%	88275K39	$2.54
0.057″	121″	8	60%	88275K43	3.38

Velvet Fabric

Add cushioning and dampen vibration. Fabric is made of acrylic and nylon and has a low pile. Max. temperature is 180° F. Color is black. ***Adhesive-back*** fabric has an acrylic-base adhesive.
To Order: Please specify length: 3, 10, 20, 30, 50, or 100 ft.

Thick.	Wd.	Plain Back	Per Ft.	Adhesive Back	Per Ft.
0.030″	45″	88015K1	$3.61	88015K2	$8.23

Elastic Fabric

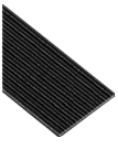

Even after stretching up to twice their length, these elastic strips will bounce back to their original shape. Maximum temperature is not rated. Color is black.

Thick.	Wd.	Lg., ft.		Roll
0.035″	1/4″	36	88225K61	$5.42
0.045″	3/4″	36	88225K67	7.75
0.055″	1″	36	88225K68	9.11

Lightweight Tyvek Fabric

Composed of high-density polyethylene fibers, this durable material is tear and water resistant and keeps its high strength in both wet and dry environments. Max. temperature is 240° F. Color is white. *0.007″ thick sheeting* is a good choice for lining and packaging applications; *0.010″ thick sheeting* can be used for printing applications.
To Order: Please specify length: 15, 30, 50, or 100 ft.

Thick.	Density, oz./sq. yd.	24″ Wide	Per Ft.	48″ Wide	Per Ft.	60″ Wide	Per Ft.
0.007″	2	1650T11	$1.13	1650T21	$2.16	1650T31	$2.58
0.010″	3	—	—	1650T41	4.32	1650T51	5.14

Vinyl-Coated Polyester Fabric

Often used as outdoor equipment covers and pit liners, this material combines sun-, water-, and mildew-resistance with tear-resistance. Maximum temperature is 200° F.

Thick.	Wd.	Density, oz./sq. yd.	Color	Available Lengths, ft.		Per Ft.
0.022″	61″	18	Black	1, 5, 10, 50	8843K33	$4.82
0.022″	61″	18	Gray	1, 5, 10, 50	8843K34	4.82
0.022″	61″	18	White	1, 5, 10, 50	8843K31	4.82
0.027″	61″	22	Black	1, 5, 10, 50	88505K57	4.95
0.027″	61″	22	Gray	1, 5, 10, 50	88505K58	4.95
0.027″	61″	22	White	1, 5, 10, 50	88505K55	4.95

Aramid Fabric

Use when temperature and chemical resistance are required, such as in insulation applications.

Nomex Aramid Sheets

Maximum temperature is 425° F. Color is off-white.

Thick.	Density, oz./sq. yd.	12″×12″		24″×24″	
0.010″	7	2587T11	$29.17	2587T21	$62.50

Kevlar Aramid Sheeting

Material is cut resistant. Max. temp. is 300° F. Color is yellow.
To Order: Please specify length: 1, 2, 3, 6, 15, or 30 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.024″	60″	8	1206T1	$25.03

Nomex Aramid Strips

Maximum temperature is 600° F. Color is off-white.

Thick.	Available Lengths, ft.	1″ Wide	Per Ft.	2″ Wide	Per Ft.	3″ Wide	Per Ft.	4″ Wide	Per Ft.	6″ Wide	Per Ft.
0.050″	10, 150	8796K42	$0.27	8796K43	$0.54	8796K44	$0.77	8796K45	$1.03	8796K46	$1.49
0.125″	10, 50	8796K52	0.47	8796K53	0.95	8796K54	1.37	8796K55	1.83	8796K56	2.62

Aramid-and-Fiberglass Fabric

The choice for excellent abrasion and mildew resistance. The fabric's self-extinguishing and nonmelting properties make it ideal for insulation applications. Maximum temperature is 600° F. Color is yellow.

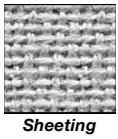
Sheeting

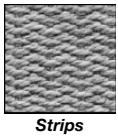
Strips

Sheeting

To Order: Please specify length: 1, 2, 3, 6, 15, or 30 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.030″	40″	8	8821K4	$15.54
0.057″	40″	17	8821K5	23.45
0.110″	40″	30	8821K6	35.80

Strips

To Order: Please specify length: 5, 10, 15, 25, 50, or 100 ft., except 8822K61 is not available in 100-ft. lengths.

Wd.	1/16″ Thick	Per Ft.	1/8″ Thick	Per Ft.
½″	8822K51	$0.39	8822K61	$0.80
1″	8822K53	.66	8822K63	1.55
2″	8822K55	1.18	8822K65	2.66
3″	8822K56	1.69	8822K66	3.81

PTFE-Coated Fiberglass Fabric

The PTFE coating is chemical resistant and nonstick. Maximum temperature is 500° F.

Sheets

Adhesive-back sheets have a silicone adhesive. Color is tan.

Silicone-back sheets have a good gripping surface without adhesive. The PTFE is copper colored; silicone backing is black.

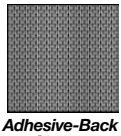
Adhesive-Back Sheets

Thick.	Density, oz./sq. yd.	12″×12″	
Adhesive Back			
0.003″	6	5739T11	$8.25
0.006″	11	5739T31	9.97
0.010″	17	5739T51	11.53
Silicone Back			
0.009″	12	5737T21	33.15

Silicone-Back Sheets

Sheeting

Standard sheeting is tan.

Porous sheeting is good for curing, drying, and dipping applications. Color is tan.

Conductive sheeting can be grounded to reduce static electricity in your application. Color is black.

Tear-resistant sheeting is 50% more tear resistant than standard sheeting. Color is tan.

To Order: Please specify length: 1, 3, 5, 10, 20, or 25 ft.

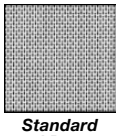
Standard and Porous Sheeting

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
Standard				
0.003″	37½″	4	8577K81	$7.11
0.005″	37½″	8	8577K82	10.20
0.006″	37½″	9	8577K83	11.16
0.010″	37½″	14	8577K84	15.70
0.014″	43¾″	17	8577K85	20.59
0.020″	37½″	27	8577K86	25.63
Porous				
0.003″	38″	2	87865K41	6.82
0.005″	40″	4	87865K42	10.53
0.010″	40″	8	87865K43	18.77
0.030″	40″	14	87865K44▲	23.11
Conductive				
0.005″	37½″	8	8665K82	18.16
0.014″	43¾″	21	8665K84	38.07
Tear Resistant				
0.003″	37½″	4	8876K81	7.69
0.005″	37½″	8	8876K82	10.11
0.006″	37½″	9	8876K83	11.66
0.010″	40¼″	14	8876K84	17.67

▲Has an open weave; openings are 3/16″×3/16″.

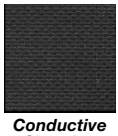
Conductive Sheeting

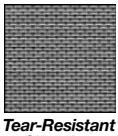
Tear-Resistant Sheeting

Lava Rock Fabric

Combining superior strength with temperature resistance, this material, commonly known as basalt fabric, is a good choice for insulation and pipe wrapping. Max. temperature is 1200° F. Color is brown.

To Order: Please specify length: 15, 25, 50, or 100 ft.

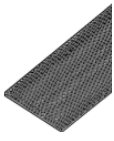

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
1/16″	1″	28	1727T12	$1.05
1/16″	2″	28	1727T14	1.79

Fiberglass Fabric

Resistant to rot and mildew, this woven fiberglass fabric also provides good chemical resistance. Color is white. Maximum temperature is 1000° F, except 0.005″ thick strips have a maximum temperature of 300° F. ***Adhesive-back*** strips have an acrylic adhesive, which has a maximum temperature of 300° F.

Sheeting

Commonly used as curtains and welding blankets.

To Order: Please specify length: 1, 3, 5, 10, 15, 20, or 25 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.070″	40″	30	8816K1	$7.50
0.125″	40″	64	8816K2	14.89

Strips

Often used in sealing applications.

To Order: Please specify length: 0.005″ thick strips are only available in 108-ft. rolls. 0.063″ and 0.125″ thick strips are available in 10, 25, 50, or 100-ft. lengths, unless noted.

Thick.	Wd.		Roll
Plain Back			
0.005″	½″	9345K1	$6.19
0.005″	¾″	9345K2	7.31
0.005″	1″	9345K3	8.26
0.005″	1½″	9345K4	10.63
			Per Ft.
0.063″	½″	8817K61	$0.14
0.063″	¾″	8817K62	.21
0.063″	1″	8817K63	.26
0.063″	1¼″	8817K64	.29
0.063″	1½″	8817K65	.32
0.063″	2″	8817K66	.39
0.063″	2½″	8817K67	.45
0.063″	3″	8817K68	.53
0.063″	4″	8817K69	.70
0.063″	6″	8817K71	1.00
0.125″	½″	8817K81♣	.26
0.125″	¾″	8817K82	.32
0.125″	1″	8817K83	.38
0.125″	1¼″	8817K84	.54
0.125″	1½″	8817K85	.52

Thick.	Wd.		Per Ft.
Plain Back (Cont.)			
0.125″	2″	8817K86	$0.67
0.125″	2½″	8817K87	.80
0.125″	3″	8817K88	.95
0.125″	4″	8817K89	1.26
0.125″	6″	8817K91	2.04
Adhesive Back			
0.063″	½″	87965K11	.58
0.063″	¾″	87965K13	.61
0.063″	1″	87965K14	.65
0.063″	1½″	87965K15	.76
0.063″	2″	87965K16	.81
0.063″	3″	87965K17	1.02
0.063″	4″	87965K18	1.34
0.125″	½″	87965K81♣	.75
0.125″	¾″	87965K84	.90
0.125″	1″	87965K85	.93
0.125″	1½″	87965K86	1.02
0.125″	2″	87965K87	1.14
0.125″	3″	87965K88	1.47
0.125″	4″	87965K89	1.88

♣Not available in 100-ft. length.

Vermiculite-Coated Fiberglass Fabric

Resistant to sparks and molten metal splatter, this fabric also has excellent temperature resistance and is a good choice for curtains, blankets, and gaskets. Maximum temperature is 1500° F. Color is tan.

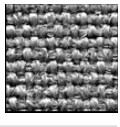

Sheeting

To Order: Please specify length: 1, 3, 5, 10, 20, or 25 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.020″	60″	10	87825K21	$10.56
0.035″	60″	20	87825K31	14.26
0.080″	60″	40	87825K41	19.54

Strips

To Order: Please specify length: 10, 25, 50, or 100 ft.

Thick.	Wd.		Per Ft.
1/16″	¾″	87835K21	$0.29
1/16″	1″	87835K22	.34
1/16″	1½″	87835K23	.44
1/16″	2″	87835K24	.57
1/16″	3″	87835K25	.79
1/16″	4″	87835K26	1.06
1/16″	6″	87835K27	1.52

Thick.	Wd.		Per Ft.
1/8″	1″	87835K72	$0.52
1/8″	1½″	87835K73	.72
1/8″	2″	87835K74	.92
1/8″	3″	87835K75	1.25
1/8″	4″	87835K76	1.75
1/8″	6″	87835K77	2.57

Aluminum Foil Backed Fiberglass Fabric

Protect your equipment from radiant heat. Often used to create curtains and screens, this sheeting has an aluminum foil backing that reflects heat and withstands temperatures up to 300° F. The fiberglass fabric base is off-white and has a maximum temperature of 1000° F. Foil backing is silver.

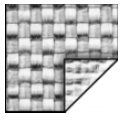

To Order: Please specify length: 1, 3, 5, 10, 15, 20, or 25 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.030″	48″	19	88475K2	$12.35
0.056″	40″	28	87715K49	12.41

Silicone-Coated Fiberglass Fabric

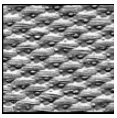

Not only water-, oil-, and puncture-resistant, this fabric even protects against molten metal splatter when used in the vertical position. It's often used as welding curtains and heat shields. Maximum temperature is 500° F. Color is gray, except 0.060″ thick sheeting is red.

To Order: Please specify length: 1, 3, 5, 10, 15, 20, or 25 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.017″	60″	17	87815K1	$13.99
0.035″	60″	32	87815K2	20.95
0.060″	60″	53	87815K3	32.92

Wet-and-Stick Fiberglass Fabric

Sheeting

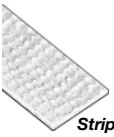

Strips

Similar to plaster, this adhesive-impregnated material becomes moldable when water is added and hardens as it dries to meet your sealing, insulating, and covering needs. Maximum temperature is 1100° F. Color is off-white.

Sheeting

To Order: Please specify length: 1, 3, 5, 10, 20, or 25 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.035″	60″	22	87945K1	$9.19

Strips

To Order: Please specify length: 10, 25, 50 or 100 ft.

Thick.	Wd.		Per Ft.	Thick.	Wd.		Per Ft.
0.035″	1″	87905K1	$0.56	0.035″	4″	87905K4	$1.02
0.035″	2″	87905K2	.73	0.035″	6″	87905K6	1.14
0.035″	3″	87905K3	.88				

Carbon Fiber Fabric

Sheeting

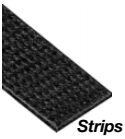

Strips

The heat-stabilized carbon fiber composition makes this material resistant to very high temperatures. Color is black.

Sheeting

Resistant to flames and molten metal splatter, sheeting will not ignite or melt when exposed for as long as 2 minutes to temperatures up to 2600° F. Maximum temperature is 800° F.

Thick.	Wd.	Density, oz./sq. yd.	Max. Length		Per Ft.
0.020″	60″	11	150 ft.	8711T31	$25.89

Strips

Use for high-temperature seals and heat insulation. Maximum temperature is 700° F when oxygen is present and 5000° F when oxygen is not present.

To Order: Please specify length: 1, 3, 5, 10, 25, 50, or 75 ft.

Thick.	Wd.		Per Ft.	Thick.	Wd.		Per Ft.
1/16″	1″	87365K11	$2.12	1/8″	1″	87365K21	$3.44
1/16″	2″	87365K12	3.14	1/8″	2″	87365K22	5.00
1/16″	3″	87365K13	3.89	1/8″	3″	87365K23	7.50
1/16″	4″	87365K14	4.90	1/8″	4″	87365K24	8.85

Sewing Awl Kit

Faster than hand sewing, this handy tool is the perfect choice for repetitive stitching of leather, canvas, and similar materials. Sewing awl kit is furnished with one spool of 12½ yards of black polyester thread; one 2⅛″ long straight sewing needle; one 1¾″ long curved sewing needle; and one wrench for changing the needles. One needle and wrench can be stored in the awl's hollow handle.

		Each
Sewing Awl Kit	6356K55	$23.70
Repl. Spool of Thread—Black Polyester (12½ yds.)	6356K91	6.08
Repl. Spool of Thread—White Polyester (12½ yds.)	6356K92	6.08
Repl. Straight Sewing Needle	6356K44	4.79
Repl. Curved Sewing Needle	6356K46	4.79

Acrylic-Coated Fiberglass Fabric

This abrasion-resistant fabric sheds molten splatter when placed at an incline of 15° or greater. Maximum continuous temperature is 1000° F. Color is black.

To Order: Please specify length: 1, 3, 5, 10, 20, or 25 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
0.040″	40″	21	8838K2	$11.40
0.040″	60″	21	8838K4	16.99

Silica Fabric

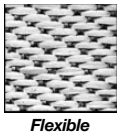

Flexible

High Temperature

Containing 96% silica, the material resists the highest temperatures of any fabric we offer.

Flexible—Max. temp. is 1800° F. Color is tan. ***Adhesive-back*** strips have a rubber adhesive, which has a max. temperature of 275° F.

High Temperature—The fabric's thickness makes it resistant to higher temperatures than flexible sheeting and strips. Max. temp. is 2300° F. Color is off-white.

Sheeting

Commonly used as curtains, covers, insulation, and splash shields, this sheeting can be used to protect against welding splatter.

To Order: Please specify length: 1, 3, 5, 10, 20, or 50 ft.

Thick.	Wd.	Density, oz./sq. yd.		Per Ft.
Flexible				
0.026″	36″	18	8799K3	$9.54
0.054″	36″	36	8799K4	16.11
High Temperature				
0.090″	39″	40	8851K33	26.56

Flexible Strips

A good choice for gaskets and as insulation wrapping for pipes, wires, and hose.

To Order: Please specify length: 2, 5, 10, 20, or 50 ft. 0.030″ and 0.062″ thick strips are also available in 100-ft. lengths.

Thick.	Wd.		Per Ft.	Thick.	Wd.		Per Ft.
Plain Back				***Plain Back (Cont.)***			
0.062″	1″	8827K11	$2.82	0.250″	1″	8827K41	$5.93
0.062″	1½″	8827K12	3.31	0.250″	2″	8827K42	11.33
0.062″	2″	8827K13	3.72	0.250″	3″	8827K43	16.48
0.062″	4″	8827K14	5.31	***Adhesive Back***			
0.062″	6″	8827K15	7.23	0.030″	1″	7761T11	1.23
0.125″	1″	8827K21	3.92	0.030″	1½″	7761T13	1.37
0.125″	1½″	8827K22	4.83	0.030″	2″	7761T15	1.54
0.125″	2″	8827K23	5.72	0.030″	4″	7761T17	2.92
0.125″	4″	8827K24	7.74				
0.125″	6″	8827K25	10.74				

Industrial Steel Needles

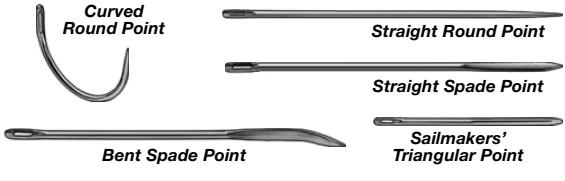

Needles

Dia.	Lg.		Pkg. of 12	Dia.	Lg.		Pkg. of 12
Curved Round Point				***Straight Round Point (Cont.)***			
0.056″	2″	8847K25	$15.15	0.080″	8″	8847K64	$30.56
0.036″	2½″	8847K26	15.96	0.092″	8″	8847K67	35.49
0.064″	3″	8847K29	17.30	0.092″	10″	8847K65	47.84
0.064″	3½″	8847K31	18.65	***Straight Spade Point***			
0.072″	4″	8847K32	18.32	0.144″	6″	8847K21	26.01
0.080″	6″	8847K34	31.55	***Bent Spade Point***			
0.092″	8″	8847K35	35.17	0.144″	6″	8847K14	28.39
Straight Round Point				***Sailmakers' Triangular Point***			
0.072″	4″	8847K61	20.91	0.092″	3″	8847K96★	41.34
0.080″	6″	8847K63	27.01				

★Pkg. qty. is 25.

Leather Palm Protectors

		Each
Left Hand Protector	8847K98	$16.72
Right Hand Protector	8847K97	16.72

Thread

Nylon Thread— Meets Fed. Spec. VT-295. Maximum temperature is 350° F. Color is white.
Polyester Thread— Meets Fed. Spec. VT-285. Maximum temperature is 400° F. Color is white.
Kevlar Thread— Five times stronger than steel wire and flame resistant. Meets MIL-T-87128. Maximum temperature is 600° F. Color is yellow.
PTFE-Coated Fiberglass Thread— The PTFE coating lets this thread slide easily. This thread has excellent chemical, ultraviolet, heat, and flame resistance and has a maximum temperature of 1000° F; coating has a maximum temperature of 500° F. Color is tan.
PTFE-Coated Quartz Thread— The coating provides a slippery surface. Quartz thread resists acids, alkalies, and the build up of contaminants. Thread is nonburning and has a maximum temperature of 2000° F; coating has a maximum temperature of 500° F. Color is tan.

Thread Diameter	Trade Size	Tensile Strength, lbs.	Yds./ Spool		
Nylon Thread					
0.016″	69	10.5	360	87695K31	$5.01
0.025″	207	31.5	138	87695K32	6.38
0.032″	346	53	82	87695K33	6.63
Polyester Thread					
0.023″	138	21	206	87635K61	9.41
0.030″	346	50	82	87635K62	9.41
0.045″	693	118	120	87635K63	10.24
Kevlar Thread					
0.014″	69	28	300	8800K41	25.39
0.025″	207	64	100	8800K44	22.91
Kevlar Thread (Cont.)					
0.038″	346	130	66	8800K43	$21.78
PTFE-Coated Fiberglass Thread					
0.014″	—	12	100	8839K21	17.14
0.017″	—	16	100	8839K22	18.67
0.021″	—	20	100	8839K23	20.71
PTFE-Coated Quartz Thread					
0.014″	—	12	100	6373K88	57.42
0.017″	—	20	100	6373K89	74.74

Brake and Clutch Lining

Also known as friction materials, these sheets and strips can be riveted or bonded.

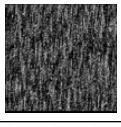
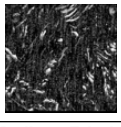
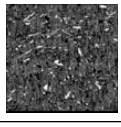
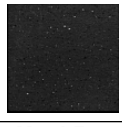
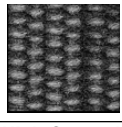

	Low-Friction Sheets	Medium-Friction Sheets	High-Friction Sheets	Metal-Free Strips	High-Strength Strips
Max. Rubbing Speed	4,500 ft./min. @ 600 psi	5,000 ft./min. @ 500 psi	5,000 ft./min. @ 500 psi	4,000 ft./min. @ 250 psi	5,000 ft./min. @ 200 psi
Max. Operating Temp.	600° F	550° F	550° F	500° F	500° F
Max. Operating Pressure	600 psi	500 psi	500 psi	250 psi	200 psi
Max. Coefficient of Friction	0.14	0.35	0.55	0.47	0.51

Molded Sheets

Use ***low-friction*** sheets for a smooth stop. ***High-friction*** sheets provide immediate engagement. **Also Available:** 30″ × 30″ molded sheets. Please ask for 3976K888 and specify thickness and low, medium, or high friction.

Thick.	Low Friction 7½″×7½″		Low Friction 15″×15″		Medium Friction 7½″×7½″		Medium Friction 15″×15″		High Friction 7½″×7½″		High Friction 15″×15″	
1/8″	3976K31	$24.86	3976K11	$52.70	6090K21	$22.89	6090K11	$48.53	60895K11	$29.20	60895K21	$61.90
3/16″	3976K32	20.73	3976K12	43.94	6090K22	23.29	6090K12	49.36	60895K12	30.92	60895K22	65.55
1/4″	3976K33	27.50	3976K13	58.29	6090K23	24.97	6090K13	52.93	60895K13	32.29	60895K23	68.45
5/16″	3976K34	28.73	3976K14	60.90	6090K24	25.72	6090K14	54.53	60895K14	33.91	60895K24	71.88
3/8″	3976K35	30.61	3976K15	64.88	6090K25	27.68	6090K15	58.67	60895K15	35.94	60895K25	76.19
1/2″	3976K36	33.49	3976K16	70.98	6090K26	30.88	6090K16	65.47	60895K16	42.15	60895K26	89.35
5/8″	3976K37	43.06	3976K17	91.28	6090K27	36.16	6090K17	76.64	60895K17	48.85	60895K27	103.54
3/4″	3976K38	45.33	3976K18	96.08	6090K28	39.00	6090K18	82.68	60895K18	51.24	60895K28	108.62
1″	—	—	—	—	6090K29	59.07	6090K19	125.22	—	—	—	—

Strips

Metal-free strips are also known as nonmetallic molded strips. ***High-strength*** strips, also known as semimetallic woven strips, have a brass wire woven into the material to increase strength and improve heat dissipation.

To Order: Please specify length: 1, 2, 3, 4, 5, 6, 10, or 15 ft. *High-strength* strips are also available in 25-ft. lengths.

Thick.	Wd.	Metal-Free	Per Ft.	High Strength	Per Ft.
3/16″	1″	6175K111	$3.20	6224K115	$3.90
3/16″	1 1/4″	6175K112	3.91	6224K116	4.19
3/16″	1 1/2″	6175K113	4.70	6224K117	5.39
3/16″	1 3/4″	6175K114	5.37	6224K118	5.68
3/16″	2″	6175K115	5.21	6224K119	6.51
3/16″	2 1/4″	6175K116	6.20	—	—
3/16″	2 1/2″	6175K117	6.20	6224K121	7.64
3/16″	2 3/4″	6175K118	7.37	—	—
3/16″	3″	6175K119	7.89	6224K122	9.36
3/16″	4″	6175K121	10.14	—	—
3/16″	5″	6175K122	12.46	—	—
3/16″	6″	6175K123	14.71	—	—
1/4″	1″	6175K132	3.97	6224K131	4.06
1/4″	1 1/4″	6175K133	4.66	6224K132	5.09
1/4″	1 1/2″	6175K134	5.37	6224K133	6.18
1/4″	1 3/4″	6175K135	6.17	6224K134	6.80
1/4″	2″	6175K136	6.89	6224K135	7.66
1/4″	2 1/4″	6175K137	7.54	6224K136	8.66
1/4″	2 1/2″	6175K138	8.29	6224K137	9.88
1/4″	2 3/4″	—	—	6224K138	10.32
1/4″	3″	6175K141	9.74	6224K139	11.08
1/4″	3 1/2″	6175K143	11.17	6224K141	12.76
1/4″	4″	6175K144	12.57	6224K142	14.87
1/4″	5″	6175K146	$15.54	6224K143	$18.52
1/4″	6″	6175K147	18.37	—	—
5/16″	2″	6175K161	8.86	6224K154	9.36
5/16″	2 1/2″	6175K163	10.57	—	—
5/16″	3″	6175K165	12.29	6224K155	13.34
5/16″	4″	6175K167	15.80	—	—
3/8″	2″	6175K173	9.70	6224K164	11.22
3/8″	2 1/2″	6175K175	11.68	—	—
3/8″	3″	6175K177	13.61	6224K165	16.29
3/8″	3 1/2″	6175K178	15.53	6224K166	19.01
3/8″	4″	6175K179	17.42	6224K167	20.57
3/8″	4 1/2″	6175K181	19.39	—	—
3/8″	5″	6175K182	21.34	—	—
3/8″	5 1/2″	—	—	6224K168	29.37
3/8″	6″	6175K184	24.67	—	—
3/8″	7″	6175K185	29.00	—	—
3/8″	8″	6175K186	32.89	—	—
1/2″	2 1/2″	—	—	6224K169	19.76
1/2″	3″	—	—	6224K171	23.74
1/2″	4″	—	—	6224K172	28.16
1/2″	5″	—	—	6224K174	34.94
1/2″	6″	—	—	6224K173	40.25
1/2″	8″	—	—	6224K176	55.95

About Selecting Thermal Insulation

A material's resistance to temperature and its ability to block heat are important factors to consider when choosing thermal insulation. *R-value* measures the material's capacity to slow heat flow; the higher the R-value, the better the material insulates. The chart below shows R-value for 1″ thick insulation. To calculate the R-value of additional thicknesses, divide the material's thickness by its K-factor. *K-factor* measures the heat flow rate from one side of the insulation to the other; the lower the K-factor, the better the material insulates.

Use the chart to find the insulation material that best suits your application. If insulating below 0° F, use polyethylene, foam rubber, aerogel, or polyimide insulation.

Insulation Material	Max Temp., ° F	R-Value @ 1″ thick	Pages
PVC Foam	160°	4.5	3519
Polystyrene Foam	165°	3.9-5.0	3519
Polyethylene Foam	180°	4.0	3514, 3520
Spray Foam	200°	5.0	3519
Polyurethane	200°	5.3-6.2	3516, 3519
Foam Rubber	220°	3.7	3512-13, 3520
Cork	265°	3.6	3520
Melamine	350°	4.0	3516, 3520
Fiberglass	350°-1000°	1.7-4.8	3513, 3515, 3521

Insulation Material	Max Temp., ° F	R-Value @ 1″ thick	Pages
Silicone Foam	390°	2.6	3513, 3520
Aerogel	390°	9.5	3520
Polyimide	550°	4.2	3520
Cellular Glass	900°	3.4	3516
Mineral Wool	1200°	3.7-4.4	3515, 3519-20
Calcium Silicate	1200°-1700°	1.0	3523
Millboard	1400°-2000°	1.0	3523
Ceramic	1500°-2730°	0.8-3.6	3522
Silica	2000°	1.3	3523

Selecting Insulation for Pipe and Fittings

Pipe and Tubing Application	Good	Better	Best
Hot and Cold Water (up to 200° F)	Polyethylene (pg. 3514)	Low-Temp. Polyethylene (pg. 3514)	Foam Rubber (pgs. 3512-3513)
Steam (up to 400° F)	Polyurethane (pg. 3516)	Melamine (pg. 3516)	Silicone (pg. 3513)
High Temperatures (up to 1200° F)	Fiberglass (pg. 3515)	Cellular Glass (pg. 3516)	Mineral Wool (pg. 3515)

To select the proper pipe insulation, measure the outside diameter (OD) of your pipe with a ruler to find the corresponding insulation ID. Pipe size is the accepted industry designation, not the actual size.

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	2	2 1/2	3	3 1/2	4	6
Pipe OD	3/8″	1/2″	5/8″	27/32″	1 1/16″	1 5/16″	1 5/8″	2 3/8″	2 7/8″	3 1/2″	4″	4 1/2″	6 5/8″
Insulation ID	3/8″	1/2″	5/8″	7/8″	1 1/8″	1 3/8″	1 5/8″	2 3/8″	2 7/8″	3 5/8″	4 1/8″	4 1/2″	6 5/8″

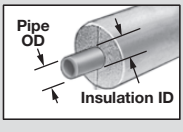

Ultra-Flexible Foam Rubber Pipe Insulation

- Temperature Range: –295° to 220° F, except Slit with Adhesive Strip is –295° to 180° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.25
- Density: 3-6 lbs./cu. ft.
- Color: Black

The most flexible pipe insulation we offer, this soft Buna-N/PVC rubber flexes for easy installation over curved or irregular surfaces and recovers its shape well after compression. Use on chilled water and refrigeration lines and with hot water plumbing. Material has a closed-cell construction for moisture resistance. Insulation can be used outdoors when coated with latex paint; seal seams and joints with contact adhesive (both sold separately). Meets ASTM E84 25/50 for flame and smoke and ASTM C534.

Unslit and Slit with Adhesive Strip Insulation for Pipe and Tubing

Insulation ID	Lg., ft.	UNSLIT 3/8″ Thick		UNSLIT 1/2″ Thick		UNSLIT 3/4″ Thick		SLIT WITH ADHESIVE STRIP 1/2″ Thick		SLIT WITH ADHESIVE STRIP 3/4″ Thick		SLIT WITH ADHESIVE STRIP 1″ Thick	
1/4″	6	4463K23	$2.19	4463K114	$3.25	—	—	—	—	—	—	—	—
3/8″	6	4463K121	2.28	4463K131	3.43	4463K161	$5.13	—	—	—	—	—	—
1/2″	6	4463K122	2.44	4463K132	3.63	4463K162	5.68	—	—	—	—	—	—
5/8″	6	4463K123	2.66	4463K133	3.92	4463K163	6.04	44745K21	$7.08	44745K47	$12.24	44745K73	$15.32
3/4″	6	4463K124	2.84	4463K134	4.05	4463K164	6.58	44745K23	7.94	44745K49	13.24	44745K75	19.92
7/8″	6	4463K125	2.97	4463K135	4.38	4463K165	7.24	44745K25	8.66	44745K51	13.71	44745K77	21.56
1 1/8″	6	4463K126	3.39	4463K136	4.93	4463K166	8.85	44745K27	9.85	44745K53	14.74	44745K79	22.18
1 3/8″	6	4463K127	3.78	4463K137	5.27	4463K167	9.86	44745K29	11.22	44745K55	16.86	44745K81	25.80
1 5/8″	6	4463K128	4.68	4463K138	6.12	4463K168	13.30	44745K31	12.28	44745K57	17.62	44745K83	26.49
1 7/8″	6	4463K129	5.23	4463K139	7.42	4463K169	15.03	44745K33	13.70	44745K59	18.28	44745K85	28.88
2 1/8″	6	4463K151	5.32	4463K141	7.65	4463K171	15.76	44745K35	14.89	44745K61	18.92	44745K87	30.23
2 3/8″	6	—	—	4463K142	9.10	4463K172	16.95	44745K37	19.79	44745K63	20.79	44745K89	31.75
2 5/8″	6	—	—	4463K143	10.16	4463K173	19.82	44745K39	21.34	44745K65	21.59	44745K91	37.38
2 7/8″	6	—	—	4463K144	11.49	4463K174	22.63	44745K41	23.61	44745K67	24.64	44745K93	44.47
3 1/8″	6	—	—	4463K145	11.98	4463K175	23.13	44745K43	25.17	44745K69	26.78	44745K95	46.10
3 5/8″	6	—	—	4463K146	15.42	4463K176	27.13	44745K45	27.26	44745K71	30.99	44745K97	48.36
4 1/8″	6	—	—	4463K147	17.95	4463K177	31.09	44745K46	32.90	44745K72	35.85	44745K96	67.01
4 1/2″	6	—	—	4463K148	19.24	4463K178	33.06	44745K48	34.01	44745K74	44.92	44745K98	72.76
5 1/2″	6	—	—	4463K149	26.39	4463K179	39.89	—	—	—	—	—	—
6 5/8″	6	—	—	4463K191	31.96	4463K192	48.29	—	—	—	—	—	—

Long-Length Unslit Insulation for Pipe and Tubing

Insulation ID	3/8″ Thick Lg., ft.			1/2″ Thick Lg., ft.		
5/8″	125	4463K411	$59.58	95	4463K511	$63.52
3/4″	110	4463K412	56.00	85	4463K512	58.73
7/8″	95	4463K413	50.33	75	4463K513	56.05
1 1/8″	75	4463K414	45.46	55	4463K514	46.21

(Continued on following page)

For information about thermal insulation, see page 3512.

Measuring and Selecting Insulation ID for Pipe and Fittings

Measure the outside diameter (OD) of your pipe with a ruler to find the nearest corresponding insulation ID. Pipe size is the accepted industry designation, not the actual size.

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	2	2 1/2	3 1/2
Pipe OD	3/8″	1/2″	5/8″	27/32″	1 1/16″	1 5/16″	1 5/8″	2 3/8″	2 7/8″	4″
Insulation ID	3/8″	1/2″	5/8″	7/8″	1 1/8″	1 3/8″	1 5/8″	2 3/8″	2 7/8″	4 1/8″

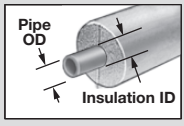

Ultra-Flexible Foam Rubber Pipe Insulation *(Continued from previous page)*

Slit Insulation for Fittings

Also Available: 3/8″ thick slit insulation for fittings. Please ask for 93715K112 and specify fitting type (90° elbow or tee) and insulation ID.

Insulation ID	FOR 90° ELBOWS 1/2″ Thick		3/4″ Thick		1″ Thick		FOR TEES 1/2″ Thick		3/4″ Thick		1″ Thick	
5/8″	93715K71	$2.45	93715K23	$4.58	93715K62	$5.39	93715K81	$2.88	93715K132	$5.49	93715K152	$6.47
7/8″	93715K73	2.74	93715K25	4.96	93715K64	6.27	93715K83	3.15	93715K134	5.95	93715K154	7.53
1 1/8″	93715K75	3.91	93715K26	5.48	93715K65	7.24	93715K85	5.33	93715K135	4.93	93715K155	8.69
1 3/8″	93715K77	4.34	93715K27	5.88	93715K66	8.13	93715K87	5.59	93715K136	7.05	93715K156	9.76
1 5/8″	93715K79	4.66	93715K28	6.99	93715K67	8.96	93715K89	5.93	93715K137	8.39	93715K157	10.76
1 7/8″	93715K72	5.59	93715K29	6.99	93715K68	9.62	93715K82	6.64	93715K138	9.08	93715K158	12.16
2 1/8″	93715K74	6.17	93715K51	8.05	93715K69	10.10	93715K84	7.30	93715K139	9.67	93715K159	12.12
2 3/8″	93715K13	6.70	93715K52	8.43	93715K91	12.30	93715K121	7.23	93715K141	10.12	93715K161	14.76
2 5/8″	93715K14	8.64	93715K53	8.93	93715K92	13.69	93715K122	7.66	93715K142	11.25	93715K162	16.42
2 7/8″	93715K15	8.03	93715K54	9.79	93715K93	14.79	93715K123	7.81	93715K143	11.75	93715K163	17.75
3 1/8″	93715K16	9.72	93715K55	9.94	93715K94	15.85	93715K124	9.72	93715K144	11.93	93715K164	19.02
3 3/8″	93715K17	9.56	93715K56	10.78	93715K95	16.65	93715K125	10.36	93715K145	12.93	93715K165	19.98
4 1/8″	93715K19	11.87	93715K58	12.13	93715K97	19.34	93715K127	11.86	93715K147	14.55	93715K167	23.21
4 3/8″	93715K21	12.51	93715K59	13.17	93715K98	20.67	93715K128	12.50	93715K148	15.80	93715K168	24.80

Accessories

White Latex Paint—This product is compliant under all state VOC rules in effect on November 1, 2011.

One Quart ..... 4530K183 .. $20.30

Contact Adhesive—This product is compliant under all state VOC rules in effect on November 1, 2011.

One Pint ..... 4463K211 .. $13.79

Flexible Tear-Resistant Silicone Foam Pipe Insulation

- Temperature Range: –100° to 500° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.39
- Density: 40-50 lbs./cu. ft.
- Color: Black

Resistant to tearing, silicone stretches over pipe and tubing even when the temperature rises. Use on heating and cooling pipes and electrical components. Material has a closed-cell construction that provides moisture resistance. Can be used outdoors. Lengths are unslit. Seal and join lengths with a silicone adhesive/sealant (see page 3418).

Insulation ID	Thick.	Lg., ft.		
1/4″	3/8″	6	45295K51	$38.49
3/8″	7/16″	6	45295K52	54.80
1/2″	1/2″	6	45295K53	74.96
3/4″	1/4″	6	45295K54	40.76
3/4″	1/2″	6	45295K55	$87.90
1″	1/2″	6	45295K56	104.80
1 1/2″	1/4″	6	45295K57	64.60

Flexible Quick-Install Fiberglass Pipe Insulation

- Temperature Range: 1/8″ thick: 40° to 250° F; 1/4″ thick: 40° to 350° F
- Heat Flow Rate (K-Factor) @ 75° F: 1/8″ thick: 0.60; 1/4″ thick: 0.49
- Density: 30-40 lbs./cu. ft.
- Color: Gray

Hook-and-loop fasteners make it easy to install, remove, and reuse this insulation time and again. Use on steam and hot water pipes and fittings. Meets ASTM E84 5/55 for flame and smoke.

Insulation for Pipe and Tubing

Insulation ID	Lg., ft.	1/8″ Thick		1/4″ Thick	
7/8″	25	45985K11	$196.98	45985K21	$330.00
1 1/8″	25	45985K12	211.64	45985K22	335.16
1 3/8″	25	45985K13	240.95	45985K23	372.27
1 5/8″	25	45985K14	262.93	45985K24	422.66
1 7/8″	25	45985K15	292.24	45985K25	472.66
2 3/8″	25	45985K17	299.61	45985K27	557.42

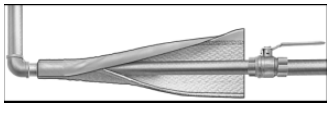

Insulation for Fittings

Insulation ID	FOR 90° ELBOWS 1/8″ Thick		1/4″ Thick		FOR TEES 1/8″ Thick		1/4″ Thick	
7/8″	46015K31	$16.64	46015K81	$23.92	46015K11	$15.13	46015K61	$20.15
1 1/8″	46015K32	18.93	46015K82	27.08	46015K12	17.28	46015K62	22.74
1 3/8″	46015K33	21.45	46015K83	30.75	46015K13	19.47	46015K63	25.62
1 5/8″	46015K34	27.21	46015K84	36.04	46015K14	22.47	46015K64	29.66
1 7/8″	46015K35	29.87	46015K85	39.74	46015K15	24.77	46015K65	32.74
2 3/8″	46015K37	34.00	46015K87	46.83	46015K17	28.87	46015K67	38.64

For 90° Elbows

For Tees

Insulation ID	FOR UNIONS 1/8″ Thick		1/4″ Thick		FOR GATE VALVES 1/8″ Thick		1/4″ Thick	
7/8″	46015K21	$18.70	46015K71	$24.75	46015K1	$16.66	46015K51	$23.50
1 1/8″	46015K22	21.60	46015K72	28.89	46015K2	19.02	46015K52	26.52
1 3/8″	46015K23	23.79	46015K73	31.75	46015K3	21.47	46015K53	29.88
1 5/8″	46015K24	26.23	46015K74	35.06	46015K4	23.75	46015K54	33.58
1 7/8″	46015K25	29.38	46015K75	39.60	46015K5	25.95	46015K55	38.18
2 3/8″	46015K27	35.06	46015K77	48.21	46015K7	32.37	46015K57	48.97

For Unions

For Gate Valves

For information about thermal insulation, see page 3512.

Measuring and Selecting Insulation ID for Pipe and Fittings

Measure the outside diameter (OD) of your pipe with a ruler to find the nearest corresponding insulation ID. Pipe size is the accepted industry designation, not the actual size.

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	2	2 1/2	3	3 1/2
Pipe OD	3/8″	1/2″	5/8″	27/32″	1 1/16″	1 5/16″	1 5/8″	2 3/8″	2 7/8″	3 1/2″	4″
Insulation ID	3/8″	1/2″	5/8″	7/8″	1 1/8″	1 3/8″	1 5/8″	2 3/8″	2 7/8″	3 5/8″	4 1/8″

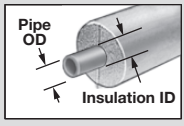

Semi-Flexible Polyethylene Foam Rubber Pipe Insulation

- Temperature Range: Standard: 0 to 180° F
  Low Temperature: –330° to 210° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.25
- Density: 1-2 lbs./cu. ft.
- Color: Dark gray to black, unless otherwise stated

An economical choice for insulating pipe, this foam rubber has a water-resistant closed-cell construction. Use for hot and cold plumbing applications. Can be used outdoors if coated with latex paint; seal seams and joints with contact adhesive (both sold separately). Meets ASTM E84 25/50 for flame and smoke.

Standard Unslit and Slit with Adhesive Strip Insulation for Pipe and Tubing

Insulation ID	Lg., ft.	UNSLIT 3/8″ Thick		UNSLIT 1/2″ Thick		UNSLIT 3/4″ Thick		SLIT WITH ADHESIVE STRIP 3/8″ Thick		SLIT WITH ADHESIVE STRIP 1/2″ Thick		SLIT WITH ADHESIVE STRIP 3/4″ Thick	
3/8″	6	4530K121	$1.51	4530K141	$2.32	4530K161	$3.68	4734K111	$2.43	4734K131	$3.72	4734K151	$5.54
1/2″	6	4530K122	1.66	4530K142	2.48	4530K162	3.87	4734K112	2.52	4734K132	3.79	4734K152	5.74
5/8″	6	4530K123	1.83	4530K143	2.67	4530K163	4.52	4734K113	2.85	4734K133	4.02	4734K153	6.20
3/4″	6	4530K124	1.97	4530K144	2.82	4530K164	4.97	4734K114	3.14	4734K134	4.43	4734K154	7.05
7/8″	6	4530K125	2.10	4530K145	3.04	4530K165	5.40	4734K115	3.32	4734K135	4.69	4734K155	7.25
1 1/8″	6	4530K126	2.59	4530K146	3.71	4530K166	6.16	4734K116	3.76	4734K136	5.27	4734K156	9.82
1 3/8″	6	4530K127	2.90	4530K147	4.13	4530K167	7.25	4734K117	4.08	4734K137	5.99	4734K157	11.47
1 5/8″	6	4530K128	3.77	4530K148	4.95	4530K168	9.34	4734K118	5.05	4734K138	6.99	4734K158	14.51
1 7/8″	6	4530K129	4.13	4530K149	5.72	4530K169	10.41	4734K119	5.89	4734K139	8.40	4734K159	16.27
2 1/8″	6	4530K131	4.72	4530K151	5.99	4530K171	11.71	4734K121	6.57	4734K141	9.15	4734K161	17.47
2 3/8″	6	4530K132	4.88	4530K152	6.46	4530K172	13.16	4734K122	6.83	4734K142	9.30	4734K162	18.84
2 5/8″	6	4530K133	5.40	4530K153	6.93	4530K173	13.90	4734K123	8.46	4734K143	10.26	4734K163	21.22
2 7/8″	6	—	—	—	—	—	—	4734K124	9.33	4734K144	12.18	4734K164	23.51
3 1/8″	6	4530K134	6.21	4530K154	8.23	4530K174	16.34	4734K125	10.02	4734K145	13.19	4734K165	26.08
3 5/8″	6	—	—	—	—	—	—	4734K126	14.50	4734K146	17.39	4734K166	30.09
4 1/8″	6	—	—	—	—	—	—	—	—	4734K147	19.15	4734K171	34.27

Low-Temperature Slit with Adhesive Strip Insulation for Pipe and Tubing

Insulation ID	Lg., ft.	BLACK SLIT WITH ADHESIVE STRIP 3/8″ Thick		BLACK SLIT WITH ADHESIVE STRIP 1/2″ Thick		BLACK SLIT WITH ADHESIVE STRIP 3/4″ Thick		WHITE SLIT WITH ADHESIVE STRIP 1/2″ Thick	
3/8″	6	54325K111	$3.39	54325K131	$4.90	—	—	54325K331	$4.90
1/2″	6	54325K112	3.56	54325K132	5.24	54325K152	$7.64	54325K332	5.24
5/8″	6	54325K113	3.92	54325K133	5.64	54325K153	8.81	54325K333	5.64
3/4″	6	54325K114	4.36	54325K134	6.09	54325K154	10.56	54325K334	6.09
7/8″	6	54325K115	4.66	54325K135	6.37	54325K155	10.56	54325K335	6.37
1 1/8″	6	54325K116	5.19	54325K136	7.27	54325K156	12.80	54325K336	7.27
1 3/8″	6	54325K117	5.89	54325K137	8.16	54325K157	14.81	54325K337	8.16
1 5/8″	6	54325K118	7.01	54325K138	9.36	54325K158	19.27	54325K338	9.36
2″	6	54325K119	8.63	54325K139	11.25	54325K159	22.59	54325K339	11.25
2 1/8″	6	54325K121	9.00	54325K141	12.27	54325K161	24.59	54325K341	12.27
2 3/8″	6	54325K122	9.62	54325K142	13.21	54325K162	26.39	54325K342	13.21

Low-Temperature Slit Insulation for Fittings

Insulation ID	FOR 90° ELBOWS 3/8″ Thick		FOR 90° ELBOWS 1/2″ Thick		FOR TEES 3/8″ Thick		FOR TEES 1/2″ Thick	
5/8″	9619K11	$2.34	9619K31	$2.53	9619K51	$2.53	9619K71	$3.05
7/8″	9619K13	2.56	9619K33	2.66	9619K53	2.71	9619K73	3.15
1 1/8″	9619K15	3.75	9619K35	4.47	9619K55	4.52	9619K75	5.33
1 3/8″	9619K17	4.00	9619K37	4.71	9619K57	4.72	9619K77	5.59
1 5/8″	9619K19	4.34	9619K39	5.06	9619K59	5.22	9619K79	5.93
1 7/8″	9619K12	4.77	9619K32	5.59	9619K52	5.73	9619K72	6.64
2 1/8″	9619K14	5.26	9619K34	6.17	9619K54	6.32	9619K74	7.30

Accessories

White Latex Paint— This product is compliant under all state VOC rules in effect on November 1, 2011.

One Quart ..... 4530K183 ... $20.30

Contact Adhesive— This product is compliant under all state VOC rules in effect on November 1, 2011.

One Pint ..... 4463K211 ... $13.79

For information about thermal insulation, see page 3512.

Measuring and Selecting Insulation ID for Pipe and Fittings

Measure the outside diameter (OD) of your pipe with a ruler to find the nearest corresponding insulation ID. Pipe size is the accepted industry designation, not the actual size.

Pipe Size	3/8	1/2	1	1 1/4	2	2 1/2	4	5	6	8	10
Pipe OD	5/8″	27/32″	1 5/16″	1 5/8″	2 3/8″	2 7/8″	4 1/2″	5 1/2″	6 5/8″	8 5/8″	10 3/4″
Insulation ID	5/8″	7/8″	1 3/8″	1 5/8″	2 3/8″	2 7/8″	4 1/2″	5 1/2″	6 5/8″	8 5/8″	10 3/4″

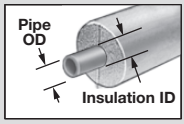

Rigid High-Temperature Fiberglass Pipe Insulation

- Temperature Range:
  Slit Insulation for Pipe and Tubing:
  Insulation: 0° to 850° F
  Jacketing: –20° to 150° F
  Slit Insulation for Fittings: –20° to 650° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.23
- Density: 3-6 lbs./cu. ft.
- Color: Yellow, except insulation for pipe and tubing has white jacketing

Our most popular choice for rigid pipe insulation, fiberglass resists high temperatures as well as corrosion. Use in steam applications as well as hot and cold piping systems. Can be used outdoors with metal jacketing (see page 3518). All meet ASTM E84 25/50 for flame and smoke and ASTM C585. Insulation for pipe and tubing also meets ASTM C547.

Slit insulation for pipe and tubing has a vapor-retardant all-service jacket (ASJ) constructed from kraft paper, reinforced fiberglass mesh, and aluminum foil. The jacket has an adhesive strip for sealing. Seal joints with ASJ tape (sold separately).

Slit insulation for fittings installs with the included ties.

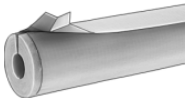

Slit Insulation for Pipe and Tubing

Insulation ID	Lg., ft.	1/2″ Thick		1″ Thick		1 1/2″ Thick		2″ Thick		3″ Thick	
5/8″	3	5556K26	$6.61	5556K56	$7.99	5556K66	$15.14	—	—	—	—
7/8″	3	5556K11	6.61	5556K31	7.99	5556K41	14.31	5556K71	$22.89	5556K412	$29.93
1″	3	5556K12	7.45	5556K32	8.72	5556K42	14.46	5556K72	22.89	5556K413	33.03
1 3/8″	3	5556K13	7.72	5556K33	9.32	5556K43	16.28	5556K73	24.38	5556K414	33.78
1 5/8″	3	5556K14	8.19	5556K34	10.17	5556K44	16.73	5556K74	25.74	5556K415	35.65
1 7/8″	3	5556K15	9.49	5556K35	10.92	5556K45	17.50	5556K75	26.87	5556K416	35.70
2 1/8″	3	5556K27	10.17	5556K57	11.84	5556K67	19.28	5556K87	28.29	—	—
2 3/8″	3	5556K16	10.17	5556K36	11.84	5556K46	19.28	5556K76	28.29	5556K417	36.56
2 5/8″	3	5556K28	10.56	5556K58	13.42	5556K68	20.70	5556K88	30.49	5556K431	38.13
2 7/8″	3	5556K17	10.57	5556K37	13.39	5556K47	20.70	5556K77	30.49	5556K418	38.06
3 1/2″	3	—	—	5556K38	14.37	5556K48	21.65	5556K78	32.33	5556K419	40.46
4 1/2″	3	—	—	5556K39	19.06	5556K49	24.61	5556K79	35.50	5556K422	45.60
5 1/2″	3	—	—	5556K51	20.29	5556K61	27.55	5556K81	40.64	5556K424	51.63
6 5/8″	3	—	—	5556K52	21.53	5556K62	27.41	5556K82	41.87	5556K425	55.19
8 5/8″	3	—	—	5556K53	31.26	5556K63	34.36	5556K83	48.08	5556K427	68.76
10 3/4″	3	—	—	5556K54	33.16	5556K64	37.06	5556K84	54.54	—	—
12 3/4″	3	—	—	5556K55	36.12	5556K65	42.06	5556K85	61.14	—	—

All-Service Jacket (ASJ) Tape—3″ Wd. × 10 yds. Lg. ..... 76755A67 ..... $8.49

Slit Insulation for Fittings

FOR 90° ELBOWS

Insulation ID	1″ Thick		1 1/2″ Thick		2″ Thick	
5/8″	5556K111	$6.50	5556K112	$10.00	5556K113	$15.78
7/8″	5556K115	6.66	5556K116	10.75	5556K117	17.06
1″	5556K121	7.22	5556K122	11.41	5556K123	16.53
1 3/8″	5556K125	7.16	5556K126	11.81	5556K127	19.72
1 5/8″	5556K131	7.44	5556K132	12.41	5556K133	20.91
1 7/8″	5556K135	7.97	5556K136	13.59	5556K137	22.38
2 1/8″	5556K141	7.63	5556K142	13.19	5556K143	21.38
2 3/8″	5556K145	8.63	5556K146	15.06	5556K147	23.22
2 5/8″	5556K151	8.25	5556K152	14.41	5556K153	22.19
2 7/8″	5556K155	11.09	5556K156	17.72	5556K157	23.63
3 1/2″	5556K161	12.47	5556K162	20.50	5556K163	29.81
4 1/2″	5556K165	15.85	5556K166	26.15	5556K167	36.53
5 1/2″	5556K171	22.28	5556K172	31.72	5556K173	43.56
6 5/8″	5556K175	25.61	5556K176	40.34	5556K177	58.89
8 5/8″	5556K181	33.63	5556K182	59.58	5556K183	76.53
10 3/4″	5556K185	48.98	5556K186	62.47	5556K187	84.82
12 3/4″	5556K191	59.60	5556K192	78.17	5556K193	102.69

FOR TEES

Insulation ID	1″ Thick		1 1/2″ Thick		2″ Thick	
5/8″	5556K221	$7.97	5556K222	$12.19	—	—
7/8″	5556K224	8.19	5556K225	12.81	—	—
1″	5556K227	8.38	5556K228	12.97	5556K229	$18.56
1 3/8″	5556K231	8.59	5556K232	13.94	5556K233	21.76
1 5/8″	5556K235	8.97	5556K236	14.16	5556K237	23.00
1 7/8″	5556K241	9.25	5556K242	15.41	5556K243	23.59
2 1/8″	5556K245	9.25	5556K246	14.44	5556K247	23.59
2 3/8″	5556K251	9.91	5556K252	18.97	5556K253	24.47
2 7/8″	—	—	5556K256	18.71	—	—
3 1/2″	—	—	5556K262	22.65	5556K263	32.65
4 1/2″	—	—	5556K272	30.44	5556K273	42.38
6 5/8″	—	—	5556K282	52.50	5556K283	75.94

Rigid Very-High-Temperature Mineral Wool Pipe Insulation

- Temperature Range: 0° to 1200° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.23
- Density: 8 lbs./cu. ft.
- Color: Green-yellow

Insulate against the highest temperatures with the most temperature resistant pipe insulation we offer. The material is often used in mechanical and process piping systems for its low shrinkage. Can be used outdoors with metal jacketing (see page 3518). Insulation lengths are slit and install with metal bands (see page 3518). Meets ASTM E84 5/0 for flame and smoke and ASTM C547.

Insulation ID	Lg., ft.	1″ Thick		1 1/2″ Thick		2″ Thick	
7/8″	3	9364K11	$9.65	9364K31	$15.92	9364K51	$20.44
1″	3	9364K12	9.94	9364K32	16.21	9364K52	21.08
1 3/8″	3	9364K13	10.53	9364K33	16.76	9364K53	22.56
1 5/8″	3	9364K14	10.89	9364K34	17.16	9364K54	23.96
1 7/8″	3	9364K15	11.32	9364K35	17.87	9364K55	25.21
2 3/8″	3	9364K16	14.17	9364K36	19.64	9364K56	26.16
2 7/8″	3	9364K17	$14.58	9364K37	$20.93	9364K57	$29.81
3 1/2″	3	9364K18	15.34	9364K38	21.64	9364K58	31.55
4 1/2″	3	9364K19	18.50	9364K39	26.42	9364K59	36.70
5 1/2″	3	9364K21	21.05	9364K41	27.96	9364K61	40.65
6 5/8″	3	9364K22	22.70	9364K42	29.02	9364K62	42.60
8 5/8″	3	—	—	9364K43	37.69	9364K63	51.48

For information about thermal insulation, see page 3512.

Measuring and Selecting Insulation ID for Pipe and Fittings

Measure the outside diameter (OD) of your pipe with a ruler to find the nearest corresponding insulation ID. Pipe size is the accepted industry designation, not the actual size.

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	2	2 1/2	3	3 1/2
Pipe OD	3/8″	1/2″	5/8″	27/32″	1 1/16″	1 5/16″	1 5/8″	2 3/8″	2 7/8″	3 1/2″	4″
Insulation ID	3/8″	1/2″	5/8″	7/8″	1 1/8″	1 3/8″	1 5/8″	2 3/8″	2 7/8″	3 5/8″	4 1/8″

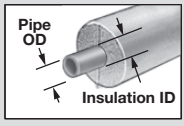

Rigid High-Strength Polyurethane Pipe Insulation

- Temperature Range: –295° to 300° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.17
- Density: 2 lbs./cu. ft.
- Color: Beige, except insulation for pipe and tubing has white jacketing

Stronger and more durable than other insulation, polyurethane is often used in chiller plants and low-pressure steam applications as well as with chilled water and refrigeration lines. Material has a closed-cell construction for moisture resistance. Can be used outdoors with additional jacketing. Meets ASTM E84 25/50 for flame and smoke.

Insulation for pipe and tubing has a kraft paper all-service jacket (ASJ) that resists mold and mildew by allowing moisture to evaporate. The jacket has a self-sealing adhesive strip.

Insulation for 90° elbows and ***for tees*** fits over threaded connections.

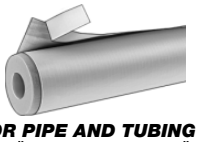

Insulation ID	Lg., ft.	FOR PIPE AND TUBING 1″ Thick		FOR PIPE AND TUBING 2″ Thick		FOR 90° ELBOWS 1″ Thick		FOR 90° ELBOWS 2″ Thick		FOR TEES 1″ Thick		FOR TEES 2″ Thick	
7/8″	3	5431K14	$11.38	5431K341	$25.02	9097T11	$7.47	9097T311	$14.10	9097T51	$7.47	9097T711	$14.10
1″	3	5431K15	12.16	5431K351	25.88	9097T12	7.81	9097T321	14.85	9097T52	7.81	9097T721	14.85
1 3/8″	3	5431K16	13.45	5431K361	27.43	9097T13	8.77	9097T331	18.16	9097T53	8.77	9097T731	16.36
1 5/8″	3	5431K17	14.49	5431K371	28.36	9097T14	9.37	9097T341	17.64	9097T54	9.37	9097T741	17.64
1 7/8″	3	5431K18	15.70	5431K381	29.78	9097T15	9.72	9097T351	19.12	9097T55	9.78	9097T751	19.12
2 3/8″	3	5431K21	17.68	5431K411	31.67	9097T16	10.69	9097T361	20.33	9097T56	10.69	9097T761	20.33
2 7/8″	3	5431K23	19.60	5431K431	36.90	9097T17	11.69	9097T371	24.27	9097T57	11.69	9097T771	24.27
3 1/2″	3	5431K25	22.09	5431K451	40.08	9097T18	12.73	9097T381	25.33	9097T58	12.73	9097T781	25.33
4″	3	5431K26	23.43	5431K461	42.93	9097T19	14.62	9097T391	28.41	9097T59	14.62	9097T791	28.41
4 1/2″	3	5431K27	26.04	5431K671	46.15	9097T21	15.27	9097T411	29.62	9097T61	15.27	9097T811	29.62

Rigid Lightweight Melamine Pipe Insulation

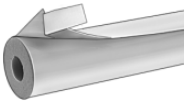

- Temperature Range:
  Insulation: –40° to 350° F
  Reinforced Jacketing: –40° to 240° F
  Clean Room Jacketing: 0° to 140° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.25
- Density: 0.5 lbs./cu. ft.
- Color: Insulation: Light gray
  Jacketing: White

Melamine's lightweight construction allows for quick and easy installation. Use on cold and hot water piping and with refrigeration systems. Jackets have an easy-seal adhesive strip. Seal seams with a silicone sealant and join lengths with PVC tape (both sold separately). Meets ASTM E84 25/50 for flame and smoke. *Silicone sealant* is VOC compliant in all 50 states as of October 1, 2008.

Insulation with reinforced jacket has an all-service jacket (ASJ) made of kraft paper, fiberglass mesh, and aluminum foil and resists dents.

Insulation with class 100 clean room jacket has PVC jacketing suitable for sanitary and washdown applications.

WITH REINFORCED JACKET Insulation ID	Lg., ft.	1″ Thick		Insulation ID	Lg., ft.	1″ Thick	
1/2″	4	93495K11	$21.69	1 5/8″	4	93495K19	$31.04
5/8″	4	93495K12	24.19	1 7/8″	4	93495K21	34.08
3/4″	4	93495K13	24.43	2″	4	93495K22	35.98
7/8″	4	93495K14	24.60	2 3/8″	4	93495K24	39.58
1″	4	93495K15	24.66	2 1/2″	4	93495K25	42.71
1 1/8″	4	93495K16	24.66	3″	4	93495K28	46.53
1 3/8″	4	93495K17	29.16	4″	4	93495K93	75.72
1 1/2″	4	93495K18	30.41	4 1/2″	4	93495K95	94.66

WITH CLASS 100 CLEAN ROOM JACKET Insulation ID	Lg., ft.	1″ Thick		Insulation ID	Lg., ft.	1″ Thick	
1/2″	4	93335K11	$25.44	1 5/8″	4	93335K19	$35.33
5/8″	4	93335K12	27.88	1 7/8″	4	93335K21	41.17
3/4″	4	93335K13	27.88	2″	4	93335K22	41.34
7/8″	4	93335K14	28.18	2 3/8″	4	93335K24	48.67
1″	4	93335K15	29.25	2 1/2″	4	93335K25	49.09
1 1/8″	4	93335K16	30.38	3″	4	93335K28	53.08
1 3/8″	4	93335K17	35.21	4″	4	93335K93	86.38
1 1/2″	4	93335K18	35.33	4 1/2″	4	93335K95	108.07

Silicone Sealant—10.1 oz. cartridge ..... 7587A33 ..... $7.83
PVC Insulation Tape—2″ Wd. × 108 ft. Lg. ..... 45325K66 ..... 9.76

Ultra-Rigid Chemical-Resistant Cellular Glass Pipe Insulation

- Temperature Range:
  Insulation: –450° to 900° F
  Jacketing: –40° to 240° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.29
- Density: 7.5 lbs./cu. ft.
- Color: Black, except insulation for pipe has white jacketing

Unaffected by corrosive environments, organic solvents, and nearly all acids, cellular glass is a good choice for underground-steam, chilled-water, and chemical-processing systems. Material is pure glass with a lightweight, brittle construction. Its closed-cell structure provides moisture resistance. Seal joints with tape (sold separately). Use insulation outdoors and underground with additional jacketing (sold separately). Meets ASTM E84 5/0 for flame and smoke.

Insulation for pipe lengths has a self-sealing jacket made of kraft paper. ***Insulation for 90° elbows*** and ***for tees*** is shaped to fit threaded or socket-weld fittings.

To Order: For 90° elbows and tees, please specify fitting style: threaded or socket-weld.

Insulation ID	Lg., ft.	FOR PIPE 1″ Thick		FOR PIPE 2″ Thick		FOR 90° ELBOWS 1″ Thick		FOR 90° ELBOWS 2″ Thick		FOR TEES 1″ Thick		FOR TEES 2″ Thick	
1″	2	6140K12	$11.50	6140K32	$27.68	6140K72	$10.10	6140K112	$21.55	6140K152	$10.10	6140K172	$21.55
1 3/8″	2	6140K13	13.06	6140K33	30.00	6140K73	11.16	6140K113	24.03	6140K153	11.16	6140K173	24.03
1 5/8″	2	6140K14	14.61	6140K34	32.32	6140K74	12.84	6140K114	25.98	6140K154	12.84	6140K174	25.98
1 7/8″	2	6140K15	15.54	6140K35	34.56	6140K75	13.70	6140K115	28.40	6140K155	13.70	6140K175	28.40
2 3/8″	2	6140K16	17.91	6140K36	38.17	6140K76	20.75	6140K116	31.15	6140K156	20.75	6140K176	31.15

Joint Sealing Tape—4″ Wd. × 10 ft. Lg. ..... 45565K315 ..... $31.42
Underground Jacketing—24″ Wd. × 5 ft. Lg. ..... 45565K314 ..... $65.00

Condensation-Reducing Pipe Wrap

Prevent moisture from building up on pipe, tubing, and fittings made from copper, iron, and steel.
Butyl Rubber— Wrap adheres only to itself, not to the pipe or fitting. For indoor use only.
Cork/Synthetic Rubber with Adhesive-Backing— For indoor use only.
Aluminum-Faced Vinyl Foam with Adhesive-Backing— The foam's closed-cell structure is nonabsorbent. Can be used outdoors.
Synthetic Rubber with Adhesive-Backing— Protect pipe from corrosion above and below ground. Material is bacteria and UV resistant and can be used outdoors.

Material	Thick.	Wd.	Lg., ft.	Temp. Range (°F)	Color		
Butyl Rubber	1/8″	2″	30	–30° to 175°	Off White	4476K2	$14.16
Cork/Synthetic Rubber	1/8″	2″	30	20° to 190°	Black	93855K11	13.77
Aluminum-Faced Vinyl Foam	1/8″	2″	30	–40° to 180°	Gray	6801K21	10.65
Synthetic Rubber	1/32″	2″	75	–20° to 140°	Gray	5459K72	41.16
Synthetic Rubber	1/32″	4″	75	–20° to 140°	Gray	5459K75	82.34
Synthetic Rubber	1/32″	6″	75	–20° to 140°	Gray	5459K77	123.50

Insulation Repair Wrap

- Max. Temperature: 900°F
- Color: White

Protect and repair insulation with this cotton fiber and resin mesh. For small sections, dip the wrap in warm water for five seconds then install. For large sections, apply dry to piping and spray with water. The wrap hardens in 10 minutes and achieves full strength in 24 hours. Once dry, wrap can be painted. Can be used outdoors. Meets ASTM E84-89A for flame and smoke.

Thick.	4″×9 ft.		6″×9 ft.		8″×9 ft.	
0.025″	45545K41	$8.28	45545K43	$12.43	45545K45	$16.55

Sweat-Stop Pipe Coating

- Temperature Range: Spray: 0° to 120°F
  Mastic: 0° to 150°F
- Color: Spray: White
  Mastic: Black

Condensation won't form on metal, PVC, and CPVC pipe used in cold water piping and refrigeration and air conditioning lines once this coating is applied.
Spray is for use indoors. ***Mastic*** can be used outdoors; apply with a brush or a trowel.

	Size	Coverage		
Spray	18 oz.	8 sq. ft. (2 coats)	6780K12	$17.20
Mastic	5 gal.	32 sq. ft. (1/4″ thick)	4588K2	146.28

Plastic Jacketing for Pipe Insulation

- Temperature Range: 0° to 140°F, except fiberglass insulation included with jacketing for fittings is 0° to 450°F
- Color: White

Durable PVC jacketing protects insulation from impact. Seal joints with tape or adhesive (sold separately). Meets ASTM E84 25/50 for flame and smoke. *Silicone adhesive* is compliant under all state VOC rules in effect on October 1, 2008.
Jacketing for pipe comes cut and curled for easy installation over your insulation. *0.030″ thick* jacketing can be used outdoors.
Jacketing for fittings comes with a removable 1 1/2″ thick piece of fiberglass insulation with a heat flow rate (K-factor) of 0.28 @ 75°F. Jacketing and fiberglass insulation can be used outdoors.

Jacketing for Pipe

Fits Max. OD	Lg., ft.	0.020″ Thick		0.030″ Thick		Fits Max. OD	Lg., ft.	0.020″ Thick		0.030″ Thick	
3″	4	45325K111	$7.11	45325K151	$8.86	6″	4	45325K117	$10.48	45325K157	$16.97
3 1/2″	4	45325K112	7.49	45325K152	10.11	6 1/2″	4	45325K118	10.86	45325K158	17.47
4″	4	45325K113	7.99	45325K153	10.86	7″	4	45325K119	11.11	45325K159	18.97
4 1/2″	4	45325K114	8.86	45325K154	12.23	8 1/2″	4	45325K122	13.98	45325K162	22.34
5″	4	45325K115	9.49	45325K155	14.10	10″	4	45325K132	15.98	45325K172	25.46
5 1/2″	4	45325K116	9.86	45325K156	15.35	12 1/2″	4	45325K135	18.97	45325K175	31.58

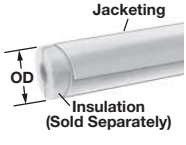

Jacketing Rolls

Thick.	Wd.	Lg., ft.		
0.010″	35 1/2″	203	45325K191	$229.23
0.020″	35 1/2″	102	45325K192	229.23
0.030″	35 1/2″	68	45325K193	229.23

Jacketing for Fittings

Fits Max. OD	45° Elbows		90° Elbows		Tees		End Caps	
2″	45315K151	$1.52	45315K123	$1.65	45315K161	$2.69	45315K181	$0.57
2 1/4″	45315K56	1.17	45315K18	1.74	45315K1	3.04	45315K35	.66
2 1/2″	45315K152	1.94	45315K125	1.94	45315K162	3.31	45315K182	.82
2 3/4″	45315K57	1.98	45315K19	2.05	45315K2	3.78	45315K36	1.01
3″	45315K153	2.13	45315K127	2.20	45315K163	3.91	45315K183	1.15
3 3/8″	45315K58	2.51	45315K21	2.36	45315K3	3.92	45315K37	1.50
3 3/4″	45315K154	2.67	45315K129	2.86	45315K164	4.48	45315K184	1.58
4 1/8″	45315K175	3.31	45315K133	3.41	45315K165	5.29	45315K185	1.85
4 3/4″	45315K176	3.56	45315K141	3.67	45315K166	6.14	45315K186	2.12
5 1/4″	45315K177	4.27	45315K142	4.27	45315K167	6.92	45315K187	2.22
5 3/4″	45315K178	5.74	45315K143	5.74	45315K168	8.69	45315K188	3.03
6 1/4″	45315K11	8.55	45315K22	8.55	45315K4	12.14	45315K38	3.75
6 3/4″	45315K179	9.05	45315K145	9.05	45315K169	13.43	45315K189	4.89
7 3/4″	45315K195	11.05	45315K147	11.67	45315K171	23.79	45315K191	6.10
8 3/4″	45315K196	17.17	45315K148	14.47	45315K172	28.96	45315K192	7.05
10 7/8″	45315K198	22.41	45315K155	22.41	45315K174	45.15	45315K194	8.71
11 7/8″	45315K13	24.68	45315K26	24.68	45315K6	38.55	45315K44	9.70
12 7/8″	45315K14	27.58	45315K28	33.34	45315K7	42.40	45315K46	10.28

Accessories

PVC Tape—2″ Wd. × 108 ft. Lg. 45325K66 $9.76
Silicone Adhesive—10.1 oz. cartridge 7587A33 $7.83

Metal Jacketing for Pipe Insulation

Weatherize your insulation with metal jacketing. Jacketing with a moisture barrier provides an extra layer of corrosion protection.

Aluminum Jacketing for Pipe and Tubing

Smooth

Stucco Embossed

Corrugated

- Maximum Temperature:
  Without moisture barrier: 300° F
  With moisture barrier: 200° F

Smooth jacketing is easy to clean; ***stucco-embossed jacketing*** conceals dents and scratches; and ***corrugated jacketing*** is extra strong. Jacketing is corrosion resistant and installs with banding (sold separately). **To Order:** Please specify length.

Thick.	Wd.	Without Moisture Barrier 5-ft. Lg.	25-ft. Lg.	100-ft. Lg.	With Moisture Barrier 5-ft. Lg.	25-ft. Lg.	100-ft. Lg.
Smooth							
0.016″	36″	4556K5	$31.50	$126.05	$365.06	4556K51	$31.93	$127.71	$369.80
0.016″	48″	4556K6	39.56	160.07	488.33	4556K61	40.05	162.15	493.08
Stucco Embossed							
0.016″	36″	9669K5	41.50	156.04	432.78	9669K51	46.09	173.19	480.35
0.016″	48″	9669K6	55.30	208.04	576.96	9669K61	61.38	230.91	701.92
Corrugated							
0.016″	36″	4479K33	27.22	114.89	405.48	4479K22	27.55	102.67	394.21
0.016″	48″	4479K171	30.64	150.33	497.74	4479K24	34.91	151.77	486.68

Aluminum Adhesive-Backed Jacketing for Pipe and Tubing

Smooth

Stucco Embossed

- Temperature Range: –10° F to 245° F

Adhesive backing provides a quick and easy way to install jacketing. Its reinforcing film blocks vapor from passing through. Meets UL 723 10/20 for flame and smoke.

Smooth jacketing is easy to clean; ***stucco-embossed jacketing*** conceals dents and scratches.

Thick.	Wd.	Lg., ft.		
Smooth White				
0.006″	35½″	10	7102K41	$86.45
Stucco-Embossed Silver				
0.006″	35½″	10	7102K71	89.15

Aluminum Jacketing for Elbows

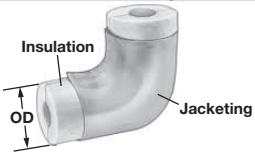

- Temperature Range: Not rated

Jacketing is impact and corrosion resistant and clamps together with two bands (sold separately). Select the Fits Max. OD that is equal to or larger than the outside diameter of your insulation.

Fits Max. OD			Fits Max. OD			Fits Max. OD		
3″	4569K11	$10.78	5″	4569K15	$14.88	7⅝″	4569K18	$28.22
3⅝″	4569K12	10.78	5⅝″	4569K16	17.06	8⅝″	4569K19	40.86
4″	4569K13	12.53	6⅝″	4569K17	20.96	9⅝″	4569K21	47.42
4⅜″	4569K14	14.47						

Stainless Steel (Type 304) Jacketing for Pipe and Tubing

- Maximum Temperature:
  Without moisture barrier: 1200° F
  With moisture barrier: 170° F

Corrosion resistant and suitable for washdown applications. Install with banding (sold separately). ***Jacketing without moisture barrier*** protects high-temperature insulation.

Thick.	Wd.	Max. Lg., ft.	Without Moisture Barrier	Per Ft.	With Moisture Barrier	Per Ft.
0.010″	36″	50	45755K21	$12.16	45755K32	$20.81
0.016″	36″	50	45755K23	15.88	45755K33	27.17
0.020″	36″	50	45755K25	18.52	45755K34	32.42
0.024″	36″	50	45755K27	19.18	45755K35	45.65

Galvanized Steel Pipe Cradles

- Temperature Range: –120° to 500° F

Don't let pipe hangers damage your insulation. These rounded-edge cradles slide between the two to distribute the pressure.

OD	Lg.			OD	Lg.			OD	Lg.		
2″	12″	9164T11	$1.96	3½″	12″	9164T17	$2.81	5″	12″	9164T25	$4.23
2½″	12″	9164T13	2.23	4″	12″	9164T21	3.37	5½″	12″	9164T27	4.35
3″	12″	9164T15	2.77	4½″	12″	9164T23	3.96	6″	12″	9164T29	4.64

Stainless Steel (Type 304) Banding

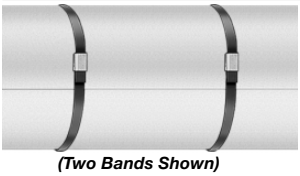

(Two Bands Shown)

- Temperature Range: Not rated

Save time with ready-to-use banding. These durable bands come with an easy-to-close fastener on one end. Bands are 0.020″ thick and ½″ wide. Use blue banding to identify asbestos-free insulation.

To Order: Please specify color: blue or silver.

Fits Max. OD	Thick.	Wd.			Fits Max. OD	Thick.	Wd.		
3½″	0.020″	½″	7760K1	$3.03	8½″	0.020″	½″	7760K8	$3.69
4″	0.020″	½″	7760K2	3.17	9½″	0.020″	½″	7760K9	3.83
4½″	0.020″	½″	7760K3	3.17	10½″	0.020″	½″	7760K15	4.03
5″	0.020″	½″	7760K4	3.24	11½″	0.020″	½″	7760K11	4.24
5½″	0.020″	½″	7760K5	3.31	12½″	0.020″	½″	7760K12	4.46
6½″	0.020″	½″	7760K6	3.42	16″	0.020″	½″	7760K13	5.10
7½″	0.020″	½″	7760K7	3.62	18″	0.020″	½″	7760K14	5.38

Heat-Reflecting Air Bubble Insulation

- Temperature Range: –60° to 180° F
- Color: Silver

Reflect 96% of radiant heat away from pipe and ducting. This lightweight metallized sheeting meets ASTM E84 20/30 for flame and smoke.

Thick.	Lg., ft.	24″ Wide		36″ Wide		48″ Wide	
5/16″	25	9367K33	$33.85	9367K65	$53.59	9367K21	$62.74
5/16″	50	9367K34	61.25	9367K66	91.06	9367K22	113.08
5/16″	75	9367K44	77.18	9367K76	133.22	9367K23	154.35
5/16″	100	9367K54	102.90	9367K86	151.77	9367K24	187.09

For information about thermal insulation, see page 3512.

Very-High-Temperature Mineral Wool Insulation Fill

- Maximum Temperature: 800° F
- Heat Flow Rate (K-factor): 0.27 @ 75° F
- Color: White to gray

Small puffs of loose-fill insulation let you decide how densely to pack it. Pour or blow it into walls and ceilings, or mix it into insulating cements as a filler. Fibers are treated to minimize dust. Meets ASTM E84 0/5 for flame and smoke.

2.8 cu. ft., 30-lb. Bag ..... 9332K65 ..... $26.96

Gap-Sealing Spray Foam Insulation

- Temperature Range: –200° to 240° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.20
- Density: 1-1.4 lbs./cu. ft.

Fill cracks with this single-use can of expanding insulation. Foam expands two to three times its original size, can be cut after one hour, and reaches full strength in 24 hours. Includes one dispensing tube. Insulation can be used outdoors if painted or covered for UV resistance.

Standard meets ASTM E84 25/50 for flame and smoke.

Low pressure expands with less force. Meets ASTM E84 5/10 for flame and smoke.

Size, oz.	Coverage (1/2" Bead), sq. ft.	Color		1-11	12-Up
Standard					
12	16	Beige	8551K11	$8.66	$6.92
24	32	Beige	8551K31	13.17	11.06
29	39	Beige	8551K61	20.57	18.45
Low Pressure					
24	18	Gray	8551K65	18.56	16.13

Quick-Cure Spray Foam Insulation

- Temperature Range: –40° to 175° F
- Heat Flow Rate (K-Factor): Not rated
- Density: 1.9 lbs./cu. ft.
- Color: Light blue

Expanding quickly to fill large voids, this foam insulation cures in four minutes and is hard enough to be cut within ten minutes. Spray can is for single use and includes two dispensing tubes. Can be used outdoors. Meets ASTM E84 25/210 for flame and smoke.

Size, oz.	Coverage, cu. ft.		
12.5	0.3	54315K51	$38.46

Lightweight Moisture-Resistant Polystyrene Foam Insulation

A good choice for packaging applications, this durable and lightweight foam has a closed-cell construction that keeps moisture at bay.

Low Density

- Temperature Range: –150° to 165° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.26
- Density: 1 lb./cu. ft.
- Color: Uncoated: White
  Coated: White with gold facing

Meets ASTM E84 15/125 for flame and smoke.

Uncoated material meets UL 94HF1 for flame retardance.

Coated material has a polypropylene coating that blocks moisture from passing through. Can be used outdoors

Thick.	Pkg. Qty.	12"×12"	Pkg.	24"×48"	Pkg.
Uncoated					
1"	6	9335K11	$17.18	9335K1	$45.56
1 1/2"	4	9335K21	19.30	9335K2	45.56
2"	3	9335K31	19.35	9335K3	45.56
Coated					
3/4"	8	93475K61	29.24	93475K62	55.81
1"	6	93475K63	29.88	93475K64	54.08
1 1/2"	4	93475K65	29.88	93475K66	54.08

High Density

- Temperature Range: –150° to 165° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.20
- Density: 1.6 lbs./cu. ft.
- Color: Yellow

More rigid and compression resistant than low-density polystyrene. Sheets are scored for easy trimming. Can be used outdoors and below ground.

Thick.	48"×48"	
1"	9255K1	$24.44
1 1/2"	9255K2	35.40
2"	9255K3	46.69

Void-Filling Spray Foam Insulation

- Temperature Range: –200° to 200° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.16
- Color: Off-white to beige

Take care of large cavities immediately when this insulation's two parts combine to expand up to at least three times their original size. Foam can be cut after five minutes and reaches full strength in one hour.

The 1.8-lb. size is single-use and includes two cans of foam and two fan spray nozzles. For all other sizes, foam is contained in two multi-use cylinders and comes with a trigger-style gun, five cone spray nozzles, and three fan spray nozzles. Insulation can be used outdoors if painted or covered for UV resistance.

Fire-rated foam meets ASTM E84 20/400 for flame and smoke.

Size, lbs.	Density, lbs./cu. ft.	Coverage, cu. feet		
Standard				
1.8	1.8	1	9325K47	$39.78
4.5	1.8	1.8	9325K51	64.00
15	1.8	8.7	9325K56	308.40
15	2.5	6	9325K58	341.85
30	1.8	17	9325K48	435.10
30	2.5	12	9325K59	507.98
88	1.8	50	9325K49	934.14
Fire Rated				
26	1.8	8.7	9325K52	307.05
30	1.8	17	9325K71	450.17
88	1.8	50	9325K73	831.05

Repl. Cone-Spray Nozzle for 15-, 30-, and 88-lb. Sizes 9325K44 $4.66
Repl. Fan-Spray Nozzle for 15-, 26-, 30-, and 88-lb. Sizes .. 9325K45 4.66

Water-Resistant PVC Foam Insulation

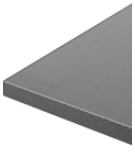

- Temperature Range: –325° to 160° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.22
- Density: Low Density: 3 lbs./cu. ft.
  High Density: 5 lbs./cu. ft.
- Color: Low Density: Blue
  High Density: Gray

These lightweight PVC sheets have a closed-cell construction, which resists moisture absorption. They also have good impact resistance. Can be used outdoors but may discolor in sunlight.

Thick.	32"×48"		Thick.	32"×48"	
Low Density			***High Density***		
3/8"	9318K74	$31.77	3/8"	9318K64	$43.44
1/2"	9318K75	39.54	1/2"	9318K65	54.58
3/4"	9318K76	53.50	3/4"	9318K66	72.28
1"	9318K77	67.10	1"	9318K67	93.08
1 1/2"	9318K78	98.08	1 1/2"	9318K68	131.13

Moisture-Venting Polyurethane Foam Insulation

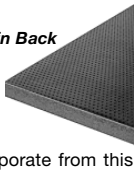

- Temperature Range: Plain Back: –20° to 200° F
  Adhesive Back: 200° F max. temp.; low end not rated
- Heat Flow Rate (K-factor) @ 75° F: 0.25-0.30
- Density: 2 lbs./cu. ft.
- Color: Black

An open-cell construction allows moisture to evaporate from this foam insulation. Material resists cracking and fading and has an easy-to-clean vinyl facing for added strength and abrasion resistance. Meets FMVSS-302 flammability requirements.

Thick.	54"×48" Sheets	Each	54" Wide Rolls Max. Lg., ft.		Per Ft.
Plain Back					
1/2"	9385K51	$49.55	144	9385K21	$12.24
1"	9385K53	61.18	144	9385K23	15.10
Adhesive Back					
1/2"	9385K71	71.33	144	9385K61	18.94
1"	9385K73	81.45	144	9385K63	20.11

For information about thermal insulation, see page 3512.

Low-Temperature Polyethylene Foam Rubber Insulation

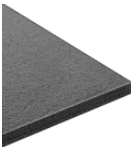

- Temperature Range: –330° to 210° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.25
- Density: 1-2 lbs./cu. ft.
- Color: Black

The closed-cell construction of these flexible foam sheets controls condensation even at low temperatures. Can be used outdoors if coated with latex paint (sold separately). Install with contact adhesive (sold separately). Meets ASTM E84 25/50 for flame and smoke.

White latex paint is compliant under all state VOC rules in effect on November 1, 2011. *Contact adhesive* is compliant under all state VOC rules in effect on November 1, 2011.

Thick.	36″×48″		Thick.	36″×48″	
1/4″	93265K44	$12.33	3/4″	93265K47	$27.85
3/8″	93265K45	15.98	1″	93265K48	36.88
1/2″	93265K46	19.91			

White Latex Paint—One quart	4530K183	$20.30
Contact Adhesive—One pint	4463K211	13.79

Cork Insulation

- Temperature Range: –328° to 266° F
- Heat Flow Rate (K-Factor) @ 68° F: 0.28
- Density: 7-8 lbs./cu. ft.
- Color: Brown

Resistant to moisture and low temperatures, this semi-rigid insulation is a good choice for use in cold storage applications. It also controls noise and vibration.

Thick.	12″×36″		Thick.	12″×36″	
1/2″	9354K21	$5.54	3″	9354K33	$22.60
1″	9354K11	8.76	4″	9354K44	30.13
2″	9354K12	16.14			

Abrasion-Resistant Silicone Foam Insulation

- Temperature Range: –65° to 390° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.39
- Density: 13 lbs./cu. ft.
- Color: White

Flexible even in high temperatures, these sheets have an aramid facing that protects against the most abrasive conditions and reduces tearing. Insulation can be used outdoors. Install with adhesive (sold separately). Foam, but not adhesive, meets UL 94HF1 and UL 94V0 for flame retardance.

Contact adhesive is compliant under all state VOC rules in effect on November 1, 2011.

Thick.	36″×36″		Thick.	36″×36″	
1/8″	9158T22	$140.34	3/8″	9158T24	$445.37
1/4″	9158T23	286.63	1/2″	9158T25	565.74

Contact Adhesive—One pint	4463K211	$13.79

Very-High-Temperature Mineral Wool Insulation

With Wire Mesh

- Temp. Range: 0° to 1200° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.23
- Density: 8 lbs./cu. ft.
- Color: Green

When insulating in high temperatures such as in oven and power generating applications, durable mineral wool provides compression and moisture resistance. Sheets are semi-rigid and can be used outdoors with metal jacketing (see page 3518).

Plain sheets meet ASTM E84 25/50 for flame and smoke. ***Wire mesh*** reinforced sheets withstand extreme shock and vibration. Can be cut with wire-cutting pliers.

Thick.	Wd.	Lg.	Plain		Wire Mesh on One Side		Wire Mesh on Both Sides	
1″	24″	48″	9328K41	$6.44	9328K21	$18.79	9328K11	$22.75
1 1/2″	24″	48″	9328K42	9.65	9328K22	20.38	9328K12	24.30
2″	24″	48″	9328K43	11.10	9328K23	21.20	9328K13	24.06

Ultra-Flexible Foam Rubber Insulation

Plain Back

- Temperature Range:
  Plain back: –295° to 220° F
  Adhesive Back: 20° to 180° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.25
- Density: 3-6 lbs./cu. ft.
- Color: Black

Soft Buna-N/PVC foam creates an extremely flexible insulation sheet. The material is elastomeric and has a closed-cell construction for moisture resistance. Can be used outdoors if coated with latex paint (sold separately). Meets ASTM E84 25/50 for flame and smoke. Install plain-back insulation with contact adhesive (sold separately).

White latex paint is compliant under all state VOC rules in effect on November 1, 2011. *Contact adhesive* is compliant under all state VOC rules in effect on November 1, 2011.

Thick.	Wd.	Lg., ft.	Plain Back		Adhesive Back	
1/8″	2″	30	———	———	5541K11	$9.94
1/4″	36″	4	9349K9	$16.80	9349K26	44.17
3/8″	36″	4	9349K1	22.22	9349K28	48.90
1/2″	36″	4	9349K2	23.34	9349K22	53.94
3/4″	36″	4	9349K3	31.34	9349K33	63.15
1″	36″	4	9349K4	44.55	9349K24	70.68
1 1/2″	36″	4	9349K5	87.12	9349K35	113.75

White Latex Paint—One quart	4530K183	$20.30
Contact Adhesive—One pint	4463K211	13.79

Lightweight Melamine Insulation

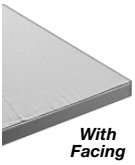

With Facing

- Temperature Range:
  Insulation: –40° to 350° F
  Facing: 30° to 150° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.26
- Density: 0.6 lbs./cu. ft.
- Color: Light gray

The lowest-density insulation sheets we offer, melamine's open-cell construction creates a lightweight and easy-to-install insulation. Can be used outdoors with jacketing or coating. Meets ASTM E84 25/50 for flame and smoke.

Sheets with facing have a white paper jacket reinforced with a fibrous layer of aluminum foil for impact resistance. Facing can be painted.

Thick.	24″×48″		24″×96″		48″×96″	
Uncoated						
1/2″	86145K21	$26.85	86145K22	$49.80	86145K23	$95.64
1″	86145K24	39.17	86145K25	74.49	86145K26	145.09
2″	86145K27	67.47	86145K28	127.37	86145K29	242.48
With Facing						
1/2″	9249K21	42.09	9249K22	77.37	9249K23	145.01
1″	9249K24	57.72	9249K25	107.13	9249K26	201.84
2″	9249K27	86.73	9249K28	164.45	9249K29	299.06

All-Service Jacket (ASJ) Tape—3″×10 yd.	76755A67	$8.49

Super-Insulating Thin Aerogel

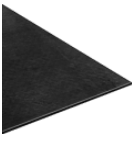

- Temperature Range: –320° to 390° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.105
- Density: 10.7 lbs./cu. ft.
- Color: Black

Flexible, lightweight, and thin, aerogel maneuvers into the tight spaces that other insulation can't. Material is silica aerogel with reinforcing fibers and is often used for its temperature resistance in power generating applications. For increased insulation, it can be layered, laminated, or wrapped with foil.

Thick.	12″×26″	
0.079″	9590K8	$42.41

Compression-Resistant Polyimide Insulation

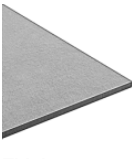

- Temperature Range: –300° to 550° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.24
- Density: 12 lbs./cu. ft.
- Color: Gold

This semi-rigid polyimide is durable and won't crack when subjected to extreme compression. Can be used outdoors with jacketing. Meets UL 94V0 for flame retardance.

Thick.	24″×24″		Thick.	24″×24″	
1/8″	93015K62	$68.13	1/4″	93015K66	$129.05
3/16″	93015K64	102.13	3/8″	93015K68	186.33

For information about thermal insulation, see page 3512.

Flexible Fiberglass Insulation

A popular choice when flexibility is a must, fiberglass insulation can be layered for increased thermal efficiency, unless otherwise stated. For improved durability and extra moisture resistance, choose insulation with a vapor seal, wrapping, or facing.

Narrow Strips

- Temperature Range: –50° to 250° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.30
- Density: 0.6 lbs./cu. ft.
- Color: Insulation: Gold
  Vapor Seal: ½″ thick is clear
  1″ thick is gray

The wrap's vapor seal prevents heat loss from hot water pipes and condensation from forming on cold water pipes. Use electrical tape to secure ends of wrap to pipe. For indoor use only. Meets ASTM E84 25/50 for flame and smoke.

½″ thick insulation includes a separate 2″×40 ft. vapor seal; *1″ thick* has a vapor-seal backing.

Thick.	Wd.	Lg., ft.		
½″	3″	35	4478K1	$6.28
1″	3″	25	4478K4	6.45

Strips

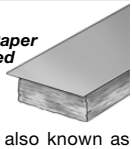

- Temperature Range: Not rated
- Heat Flow Rate (K-Factor) @ 75° F: 0.34
- Density: 0.5 lbs./cu. ft.
- Color: Insulation: White
  Kraft Paper Facing: Tan
  Polyethylene Wrapping: White

In addition to good heat insulation, these strips, also known as batts, reduce the transmission of sound through walls, ceilings, and floors when installed inside standard framework. Strips provide corrosion resistance. For indoor use only.

Uncoated— Meets ASTM E84 25/50 for flame and smoke.

Kraft Paper Faced— Edges are extended to aid installation. Seal joints with ASJ tape (sold separately).

Polyethylene Wrapped— More moisture-resistant than kraft paper, polyethylene increases strength and reduces fiber dust. It's solid on the front, perforated on the back, and has extended edges for easy installation. Seal joints with FSK tape (sold separately). Meets ASTM E84 25/50 for flame and smoke.

Thick.	Wd.	Lg.	Pkg. Qty.		Pkg.
Uncoated					
3⅝″	16″	96″	16	95195K52	$69.30
6½″	24″	48″	18	95195K58	99.74
Kraft Paper Faced					
3⅝″	16″	96″	16	95195K72	74.53
6½″	24″	48″	18	95195K78	94.66
Polyethylene Wrapped					
3½″	15″	93″	16	95195K63	84.87
6½″	15″	93″	9	95195K66	74.85
All-Service Jacket (ASJ) Tape—3″×10 yd.				76755A67	$8.49
Aluminum Foil (FSK) Tape—3″×10 yd.				76145A19	9.02

Sheeting

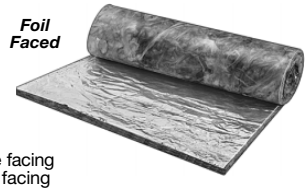

- Temperature Range:
  Uncoated: 0° to 350° F
  Vinyl faced: Not rated
  Foil faced: 0° to 250° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.28-0.30
- Density: 0.75-0.8 lbs./cu. ft.
- Color: Uncoated: Yellow
  Vinyl Faced: Yellow with white facing
  Foil Faced: Brown with silver facing

This double-duty sheeting insulates in high temperatures while reducing sound transmission. Sheeting provides corrosion resistance. For indoor use only. Meets ASTM E84 25/50 for flame and smoke.

Vinyl-faced sheeting has a tear-resistant facing with corners that extend to aid installation. ***Foil-faced*** sheeting has a facing constructed of a foil layer bonded to kraft paper. One edge is extended to aid installation. Cannot be layered.

	Thick.	48″×10 ft.		48″×100 ft.	
Uncoated	2″	9346K38	$33.03	9346K28	$171.71
Vinyl Faced	2″	9330K82	39.99	9330K62	224.54
Foil Faced	1½″	9160K4	28.89	9160K2	181.42

Very-High-Temperature Sheeting

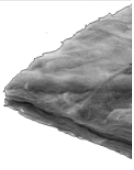

- Temperature Range: 0° to 1000° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.26
- Density: 2.4 lbs./cu. ft.
- Color: Gray to brown

Whether it's for industrial furnaces or other extreme-heat applications, lightweight fiberglass sheeting can handle the heat. Can be used outdoors with metal jacketing (see page 3518). Meets ASTM E84 25/50 for flame and smoke.

Thick.	24″×8 ft.	
1″	9356K11	$15.54
1½″	9356K12	23.03
2″	9356K13	30.02

Paper

- Temperature Range: –425° to 1200° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.21
- Density: 8.0 lbs./cu. ft.
- Color: White

Fiberglass paper won't shrink or lose shape in high-temperature applications, such as in air furnaces and hot water tanks. For indoor use only. Meets UL 94V0 for flame retardance.

Thick.	16″×10 ft.	
⅛″	9323K21	$26.10

High-Temperature Rigid Fiberglass Insulation

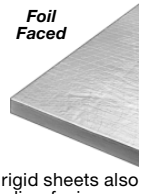

- Temperature Range:
  Insulation: 0° to 450° F
  Facings: 0° to 150° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.23
- Density: Medium: 3 lbs./cu. ft.
  High: 6 lbs./cu. ft.
- Color: Insulation: Yellow
  Foil Facing: Silver
  Kraft Paper Facing: White

Able to insulate in high-heat environments, these rigid sheets also reduce noise transmission. Sheets have vapor-retarding facings on one side. Seal foil-faced joints with FSK tape; seal kraft-paper-faced joints with ASJ tape (both sold separately). Can be used outdoors with metal jacketing (see page 3518). Meets ASTM E84 25/50 for flame and smoke. *High-density* sheets can withstand heavy use.

Foil facing is constructed from foil kraft paper.

Thick.	Wd.	Lg.	Medium Density		High Density	
Foil Faced						
1″	24″	48″	9350K1	$13.19	9351K1	$18.59
1½″	24″	48″	9350K2	17.06	9351K2	25.10
2″	24″	48″	9350K3	20.19	9351K3	30.62
Kraft Paper Faced						
1″	24″	48″	9350K4	16.20	9351K4	22.06
1½″	24″	48″	9350K5	19.29	9351K5	27.46
2″	24″	48″	9350K6	22.82	9351K6	33.51
Aluminum Foil (FSK) Tape—3″×10 yd.					76145A19	$9.02
All-Service Jacket (ASJ) Tape—3″×10 yd.					76755A67	8.49

High-Temperature Fiberglass Wrap Insulation

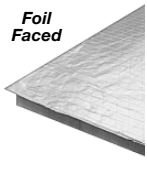

- Temperature Range:
  Insulation: –60° to 450° F
  Facing: –40° to 150° F
- Heat Flow Rate (K-Factor) @ 75° F: 0.27
- Density: 3 lbs./cu. ft.
- Color: Insulation: Yellow
  Foil Facing: Silver
  Kraft Paper Facing: White

Also known as pipe and tank wrap, these strips are made of dense, thick fiberglass that provides excellent strength and flexibility. Seal foil-faced joints with FSK tape; seal kraft-paper-faced joints with ASJ tape (both sold separately). Strips have a facing on one side and can be used outdoors with metal jacketing (see page 3518).

Foil facing is constructed from foil kraft paper.

Thick.	36″×20 ft.	
Foil Faced		
1″	9333K71	$105.00
1½″	9333K73	141.60
2″	9333K75	183.60
Kraft Paper Faced		
1″	9333K91	114.23
1½″	9333K93	148.80
2″	9333K95	175.56
Aluminum Foil (FSK) Tape—3″×10 yd.	76145A19	$9.02
All-Service Jacket (ASJ) Tape—3″×10 yd.	76755A67	8.49

For information about thermal insulation, see page 3512.

Ultra-Thin Flexible Paper Insulation

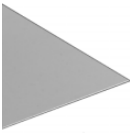

- Temperature Range: –40° to 480° F
- Heat Flow Rate (K-Factor): 0.76 @ 75° F
- Density: 63 lbs./cu. ft.
- Color: Off-white

Often used in high-humidity applications for its low-moisture absorption, this glass-fiber-based paper meets UL 94V0 5VA for flame retardance and can be used as a flame barrier.

Thick.	Wd.	Lg.		
0.03″	19″	18″	9583T12	$9.03

Flexible Ceramic Insulation

The flexible option when insulating against extreme heat, this ceramic insulation can be used as a wrap and protects against molten metal sparks and splashes. It can also be used as a heat shield or to fabricate gaskets, line ovens and furnaces, and insulate hose and cables.

Extra High Temperature Strips

- Temperature Range: Insulation: –40° to 1500° F; Adhesive: Max. temp. is 300° F; low end not rated
- Heat Flow Rate (K-Factor): 0.82 @ 800° F
- Density: 35 lbs./cu. ft.
- Color: White

Strips are calcium aluminum silicate fiber and have an adhesive backing for easy installation.

Thick.	1″×25 ft.		2″×25 ft.		3″×25 ft.	
1/32″	4057K1	$23.13	4057K4	$38.33	4057K7	$57.57
1/16″	4057K2	25.93	4057K5	36.40	4057K8	57.42
1/8″	4057K3	34.48	4057K6	50.60	4057K9	75.27

Ultra High Temperature Rolls

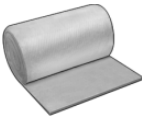

- Maximum Temperature: 2000° F
- Heat Flow Rate (K-Factor): 4 lbs. cu./ft.: 1.0 @ 800° F; 6 lbs. cu./ft.: 0.75 @ 800° F; 8 lbs. cu./ft.: 0.65 @ 800° F
- Color: White to off-white

An economical choice for ultra heat resistant insulation. Material is alumina silica. Meets ASTM E84 0/0 for flame and smoke.

Thick.	Wd.	Lg., ft.	4 lbs./cu. ft. Density		6 lbs./cu. ft. Density		8 lbs./cu. ft. Density	
1/4″	24″	20	—	—	93315K51	$22.08	93315K71	$26.67
1/2″	24″	50	—	—	93315K82	71.58	93315K92	89.66
1″	24″	25	93315K34	$49.09	93315K54	59.82	93315K74	77.19
1 1/2″	24″	15	93315K16	42.78	93315K86	54.64	93315K96	68.95
2″	24″	12 1/2	93315K18	46.08	93315K88	59.37	93315K98	75.44

Ultra High Temperature Foil-Faced Strips

- Maximum Temperature: 2100° F
- Heat Flow Rate (K-Factor): 0.73 @ 800° F
- Density: 8 lbs./cu. ft.
- Color: Insulation: White; Facing: Silver

The foil facing on one side of these strips reflects radiant heat. Insulation is AES (alkaline earth silicate).

Thick.	1″×12 ft.		2″×12 ft.		3″×12 ft.	
1/2″	9379K91	$9.06	9379K92	$11.39	9379K93	$13.10

Extreme Temperature Strips

- Temperature Range: –50° to 2300° F
- Heat Flow Rate (K-Factor): 0.48 @ 800° F
- Density: 12 lbs./cu. ft.
- Color: White

Material is alumina oxide fiber.

Thick.	1″×25 ft.		2″×25 ft.		3″×25 ft.	
1/8″	87575K87	$23.59	87575K88	$37.24	87575K89	$51.69
	1″×50 ft.		**2″×50 ft.**		**3″×50 ft.**	
1/32″	87575K81	$14.69	87575K82	$23.45	87575K83	$31.03
1/16″	87575K84	20.83	87575K85	33.52	87575K86	50.34

Extreme Temperature Rolls

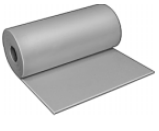

- Temperature Range: –425° to 2300° F
- Heat Flow Rate (K-Factor): 1/16″ and 1/8″ Thick: 0.71 @ 800° F; 1/4″ Thick: 0.57 @ 800° F
- Density: 6-9 lbs./cu. ft.
- Color: White

With a –425° F minimum temperature, these rolls resist the largest temperature range of the flexible ceramic insulation we offer.

Thick.	6″×20 ft.		12″×10 ft.		24″×5 ft.	
1/8″	93285K12	$32.60	93285K15	$32.60	93285K18	$32.60
	6″×100 ft.		**12″×50 ft.**		**24″×25 ft.**	
1/16″	93285K22	$68.39	93285K24	$68.39	93285K26	$68.39
1/8″	93285K42	119.31	93285K44	119.31	93285K46	119.31
1/4″	93285K62	247.16	93285K64	247.16	93285K66	247.16

Extra High Temperature Rigid Ceramic Insulation

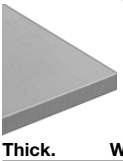

Moisture-resistant sheets are silica ceramic insulation wrapped in polyethylene.

Thermal-shock-resistant sheets have excellent resistance to fluctuating temperatures. *Sheet with binder* is easier to handle at room temperature than sheet without binder, but contains a small amount of organic material that burns off and releases smoke at around 400° F. *Sheet without binder* won't produce smoke when heated.

Moldable sheets are rigid alumina silica that is formable when wet. Can be molded multiple times until exposed to heat.

Thick.	Wd.	Lg.	Temp. Range	Heat Flow Rate (K-Factor)	Density, lbs./cu. ft.	Color		
Moisture Resistant								
3/16″	19 1/2″	23 1/2″	0° to 1925° F	0.28 @ 1470° F	19	White	6841K1	$43.98
1/4″	19 1/2″	23 1/2″	0° to 1925° F	0.28 @ 1470° F	19	White	6841K2	55.39
3/8″	23 1/2″	39″	0° to 1925° F	0.28 @ 1470° F	19	White	6841K3	119.81
3/4″	23 1/2″	39″	0° to 1925° F	0.28 @ 1470° F	19	White	6841K4	166.16
1″	23 1/2″	39″	0° to 1925° F	0.28 @ 1470° F	19	White	6841K5	199.05
1 1/2″	23 1/2″	39″	0° to 1925° F	0.28 @ 1470° F	19	White	6841K6	285.42
Thermal Shock-Resistant— *With Binder*								
1″	24″	36″	0° to 2300° F	0.85 @ 1000° F	18	Off-White	93595K73	66.24
Thermal Shock-Resistant— *Without Binder*								
1″	24″	36″	0° to 2300° F	0.85 @ 1000° F	18	White	93595K75	77.78
Moldable								
1/16″	23″	24″	–120° to 2732° F	1.2 @ 1200° F	75	White	93615K14	131.25
1/8″	23″	24″	–120° to 2732° F	1.2 @ 1200° F	75	White	93615K16	193.08
1/4″	23″	24″	–120° to 2732° F	1.2 @ 1200° F	75	White	93615K18	196.08

For information about thermal insulation, see page 3512.

Harsh-Environment Silica Insulation

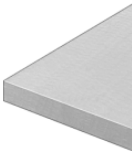

- Temperature Range: 0° to 2000° F
- Heat Flow Rate (K-Factor): 0.78 @ 800° F
- Density: 10 lbs./cu. ft.
- Color: White

Commonly used in furnaces and engine compartments, these 100% silica sheets withstand the high temperatures and corrosive acids that others can't. Insulation can be used outdoors with PVC or metal jacketing (sold separately; see pages 3517-3518).

Thick.	Wd.	Max. Length, ft.		Per Ft.
1/4"	36"	116	93435K16	$18.16
1/2"	36"	58	93435K26	31.30
1"	36"	33	93435K36	51.37

Rigid Calcium Silicate Insulation

These high-strength, durable sheets withstand the high heat conditions of ovens and furnaces.

High Temperature Sheets

- Maximum Temperature: 1200° F
- Heat Flow Rate (K-Factor): 0.73 @ 800° F
- Density: 14.5 lbs./cu. ft.
- Color: Gold

Meet ASTM E84 0/0 for flame and smoke.

Thick.	6"×36" Pkg. of 2		12"×36" Pkg. of 2		18"×36" Pkg. of 2	
1 1/2"	9391K51	$22.73	9391K52	$43.77	—	—
2"	9391K61	30.14	9391K62	59.67	9391K63	$136.72

Extra High Temperature Sheets

- Maximum Temperature: 1700° F
- Heat Flow Rate (K-Factor): 0.80 @ 800° F
- Density: 40 lbs./cu. ft.
- Color: White

Can be machined. Meet ASTM E84 0/0 for flame and smoke.

Thick.	12"×12"		24"×48"		48"×48"	
1/2"	9353K31	$12.00	9353K41	$84.76	9353K61	$147.43
3/4"	9353K32	15.31	9353K42	108.45	9353K62	180.35
1"	9353K33	17.97	9353K43	120.88	9353K63	203.09

Extra High Temperature High-Strength Sheets

- Maximum Temperature: 1700° F
- Heat Flow Rate (K-Factor): 1.05 @ 800° F
- Density: 55 lbs./cu. ft.
- Color: White

These sheets have exceptional strength when compressed. Can be machined.

Thick.	12"×12"		24"×48"		48"×48"	
1/2"	93505K12	$28.94	93505K22	$194.88	93505K32	$328.27
1"	93505K14	38.70	93505K24	263.14	93505K34	463.94
1 1/2"	93505K16	63.14	93505K26	422.48	93505K36	748.11

Firebricks and Accessories

Firebricks

- Maximum Temperature: See below
- Heat Flow Rate (K-Factor): 1.7-2.2 @ 1500° F
- Density: 42-48 lbs./cu. ft.
- Color: Off-white

Often used in furnaces, these bricks have been machined and fit together snuggly to minimize heat loss. Cut with a brick saw and install with fire brick bonding mortar (both sold separately). For indoor use only.

Max. Temp., °F	Thick.	Wd.	Lg.		
2300	2 1/2"	4 1/2"	9"	9355K2	$8.95
2600	2 1/2"	4 1/2"	9"	9355K1	10.90
Brick Saw				6914A61	18.40

Firebrick Bonding Mortar

- Maximum Temperature: 3000° F
- Density: 129 lbs./cu. ft.
- Color: Gray

Apply with a trowel to lay, coat, and bond firebricks. One pail contains enough ready-to-use mortar to set approximately 40 bricks. For indoor use only.

15-lb. Pail ..... 9368K6 ..... $30.11

Refractory Sealing Compound

- Temperature Range: –50° F to 2350° F
- Density: 100 lbs./cu. ft.
- Color: Tan

Worn firebrick can be revitalized. Coat bricks with this high-strength compound for renewed heat resistance and performance. Apply with a brush or spray for a crack-free seal.

1-gal. Container—93 sq. ft. ..... 9366K5 ..... $121.00

Extreme Temperature Cement

- Temperature Range: –300° to 5000° F
- Density: 55 lbs./cu. ft.
- Color: Off-white

After adding water, the cement mixture can be sprayed, troweled, or poured onto walls, structural beams, ducting, and copper plumbing in high-temperature environments. Use on wood, sheetrock, glass, metal, and paper. A slow air cure will prevent cracking. Trim with a utility knife. Meets ASTM E84 0/0 for flame and smoke.

50-lb. Bag—22 sq. ft.@ 1/2" thick ..... 9876K1 ..... $69.23

Extreme Temperature Ready-Mixed Cement

- Maximum Temperature: 3000° F
- Density: 126-130 lbs./cu. ft.
- Color: Gray or black

Install, set, and repair furnaces, heaters, stoves, and boilers with this ready-to-use cement. It experiences minimal shrinkage creating a permanent smokeproof and gasproof joint. Use on cast iron, steel, and glass. A minimum temp. of 400° F is needed to harden cement. Apply with a trowel or spatula. Can be used outdoors. Cut with a carbide-tipped saw.

	Coverage (approx. sq. ft. @ 1/4" thick)	Gray		Black	
1-qt. Tub	1.5	9372K52	$11.01	9372K22	$11.01
2-qt. Tub	3	9372K62	19.10	9372K32	19.10
25-lb. Pail	9	9372K71	45.53	9372K41	45.53
50-lb. Pail	18	9372K72	76.10	9372K42	76.10

Millboard Insulation

When insulating kilns, ovens, furnaces, and boilers, this millboard insulation acts as a high-temperature heat shield.

High temperature and ***extra high temperature*** sheets are made of rock wool mineral fibers, clay, and filler.
Ultra high temperature sheets are made of ceramic fibers, clay, and filler.

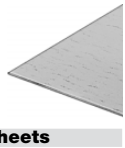

High Temperature Sheets

- Maximum Temperature: 1380° F
- Heat Flow Rate (K-Factor): 0.81 @ 750°F
- Density: 59 lbs./cu. ft.
- Color: Off-white

Thick.	39"×39"	
1/16"	9362K16	$21.50
1/8"	9362K11	34.55
3/16"	9362K12	43.50
1/4"	9362K13	63.95
3/8"	9362K14	85.37
1/2"	9362K15	101.20

Extra High Temperature Sheets

- Maximum Temperature: 1800° F
- Heat Flow Rate (K-Factor): 1.05 @ 750°F
- Density: 55 lbs./cu. ft.
- Color: Yellow to brown

Thick.	40"×40"	
1/8"	9360K1	$81.86
3/16"	9360K2	131.28
1/4"	9360K3	157.58
3/8"	9360K4	241.91
1/2"	9360K5	247.92

Ultra High Temperature Sheets

- Maximum Temperature: 2000° F
- Heat Flow Rate (K-Factor): 0.73 @ 800° F
- Density: 35-40 lbs./cu. ft.
- Color: White

Thick.	55"×55"	
1/16"	9390K11	$50.89
1/8"	9390K12	91.79
3/16"	9390K13	143.66
1/4"	9390K14	184.28

Sound Absorbers

Quiet noisy environments by reducing sound reflection off hard surfaces, such as walls and ceilings. Sound absorbers are also often used to line the inside of enclosures that have been built around loud machinery. For indoor use only, unless otherwise stated.

For information about hearing protection, please see page 1823.

Sheeting

Heat Reflecting

Standard

Water Resistant

Made of humidity-resistant polyurethane foam, this flexible sheeting resists dirt and dust. Color is gray, except water-resistant sheeting is black. All sheeting meets FMVSS-302.

Plain-back sheeting has a temperature range of –40° to 225° F. Meets UL 94HBF for flame retardance. ***Adhesive-back*** sheeting has a temperature range of –40° to 175° F.

Easy-to-clean sheeting has a skin on both sides. *Water-resistant* sheeting has a urethane coating that also protects against oil. *Heat-reflecting* sheeting has a foil facing. *Heavy-duty heat-reflecting* sheeting has a tear-resistant foil facing.

To Order: Please specify length up to 50 ft., except standard sheeting is available in lengths up to 25 ft.

	Sound Absorbed	Thick.	Wd.	Plain Back	Per Ft.	Adhesive Back	Per Ft.
Standard	45%	1″	54″	5692T15	$11.99	5692T48	$15.04
Easy-to-Clean	30%	½″	54″	—	—	5692T61	9.49
Easy-to-Clean	75%	1″	54″	5692T13	11.75	5692T49	13.87
Water Resistant	65%	1″	54″	5692T14	12.64	5692T51	14.43
Heat Reflecting	25%	½″	54″	—	—	5692T62	9.37
Heat Reflecting	60%	1″	54″	5692T35	13.32	5692T52	15.44
Heavy-Duty Heat Reflecting	25%	½″	54″	—	—	5692T63	10.56
Heavy-Duty Heat Reflecting	60%	1″	54″	5692T36	14.45	5692T53	15.98

Sheets

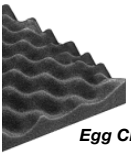

Egg Crate

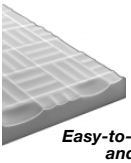

Easy-to-Clean and Fire Retardant

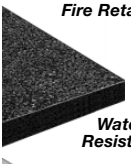

Water Resistant

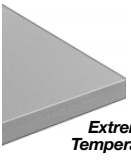

Extreme Temperature

Egg crate sheets are made of humidity-resistant, flexible polyurethane foam that has peaks and valleys to absorb more sound at high frequencies than flat-surface sheets. Color is gray. *Plain back* have a temperature range of –40° to 225° F and meet UL 94HF1 for flame retardance. 97″ long sheets meet California Flammability Requirements (CAL 117). *Adhesive-back* foam resists temperatures of –40° to 225° F; the adhesive has a maximum temperature of 175° F and is not rated for minimum temperature.

Easy-to-clean sheets are semi-rigid melamine foam with a gray coating that resists dust and dirt and can be wiped down. Sheets have one smooth and one peaked side for increased sound absorption. Temperature range is 0° to 300° F. Meet UL 94V0 for flame retardance and ASTM E84 15/150 for flame and smoke.

Fire-retardant sheets are made of semi-rigid melamine foam that has one smooth and one peaked side for increased sound absorption. Color is white. Temperature range is 0° to 300° F. Meet UL 94V0 for flame retardance and ASTM E84 5/50 for flame and smoke.

Water-resistant sheets will not degrade if used in areas occasionally splashed with salt water. Made of rigid polypropylene foam with a temperature range of –40° to 185° F. Color is gray. Can be used outdoors.

Extreme-temperature sheets are made of flexible polyimide foam, which has a temperature range of –235° to 400° F; adhesive backing has a temperature range of –60° to 250° F. Color is yellow. Meet UL 94HF1 for flame retardance.

Sound Absorbed	Thick.	Wd.	Lg.		
Egg Crate—*Plain Back*					
45%	1″	54″	54″	9710T64	$34.84
60%	1″	50″	97″	9710T94	63.38
60%	2″	50″	97″	9710T95	108.84
60%	3″	50″	97″	9710T96	161.90
75%	2″	54″	54″	9710T65	63.14
95%	3″	54″	54″	9710T66	93.39
Egg Crate—*Adhesive Back*					
45%	1″	26″	26″	9710T11	25.58
75%	2″	26″	26″	9710T21	35.82
95%	3″	26″	26″	9710T31	50.40
Easy-to-Clean—*Plain Back*					
95%	2″	24″	48″	9162T132	68.98
100%	3″	24″	48″	9162T142	94.34

Sound Absorbed	Thick.	Wd.	Lg.		
Fire Retardant—*Plain Back*					
50%	1″	24″	48″	9162T319	$39.35
85%	2″	24″	48″	9162T329	56.49
100%	3″	24″	48″	9162T271	77.00
Water Resistant—*Plain Back*					
35%	1″	24″	48″	9107T11	42.02
50%	2″	24″	48″	9107T12	60.53
Extreme Temperature—*Adhesive Back*					
15%	¼″	12″	12″	6564T3	9.49
35%	½″	12″	12″	6564T4	14.45
35%	½″	24″	48″	6564T11	97.03
50%	¾″	12″	12″	6564T5	18.65
70%	1″	12″	12″	6564T6	23.63
70%	1″	24″	48″	6564T12	158.15
85%	2″	12″	12″	6564T7	40.17

Panels

Fire Retardant (Three Shown)

Fire-retardant panels are ideal for use in large open areas because they have two peaked sides for increased sound absorption. Made of semi-rigid melamine foam, these ceiling-mount panels install with the two included hangers. Temperature range is 0° to 300° F. Color is white. Meet UL 94V0 for flame retardance and ASTM E84 5/50 for flame and smoke.

Heavy-duty panels are made of quilted, flexible double-faced fiberglass with a vinyl coating that resists abrasion, oil, dirt, moisture, and most solvents. Panels have five ⅝″ grommets on one 48″ side for wall mounting. Temperature range is –20° to 180° F. Color is gray.

Sound Absorbed	Thick.	Wd.	Lg.	Wt., lbs.		
Fire Retardant—*Ceiling Mount*						
70%	2″	24″	48″	2	9190T5	$55.64
Heavy Duty—*Wall Mount*						
65%	1″	48″	48″	3¾	9781T61	76.22
65%	1″	48″	96″	7½	9781T15	138.58
85%	2″	24″	48″	3¾	53485T43	50.16
85%	2″	48″	48″	7¼	9781T63	93.29
85%	2″	48″	96″	14½	9781T12	169.62

Ready-to-Hang Cylinder

Great for use in noisy indoor areas with high ceilings, this cylinder absorbs sound from all directions. Constructed of molded fiberglass with a gray nylon cover, it's equivalent to 10 to 15 sq. ft. of acoustical ceiling tile. Install horizontally using the two ½″ ID eyelets. Temperature range is –30° to 500° F. Meets ASTM E84 25/320 for flame and smoke.

Sound Absorbed	Dia.	Lg.	Wt., lbs.		
93%	12″	24″	6	53905T313	$130.91

Sound Barriers

Block noise from traveling to other parts of your facility. When sound hits these barriers, it's reflected back toward the source. *Curtains* have five 5/8″ grommets on their top edge for hanging and hook-and-loop fasteners on their sides for joining multiple curtains.

Tear-resistant barriers are gray. Temperature range is –20° to 180° F. Can be used outdoors.

See-through barriers are ideal for use as an enclosure window and wherever visibility is required. Temperature range is 0° to 150° F. For indoor use only.

See-Through Curtain (Four Shown)

	Barrier Rating	Thick.	Wd.	Curtains Lg., ft.		Each	Sheeting Max. Lg., ft.		Per Ft.
Tear Resistant	Better (26 dB)	0.090″	54″	8	6745T35	$192.10	60	6745T83	$23.46
See Through	Better (26 dB)	0.160″	48″	8	9639T82	210.96	60	9639T22	24.86
Curtain Hooks					54895T44	Pkg. of 10			$8.32

Sound Absorber-Barriers

Often used to line the inside of enclosures that have been built around loud machinery, this double-duty insulation reduces noise within an area and prevents the noise from escaping into other parts of your facility. For indoor use only, unless otherwise stated.

Sheeting

Foam sheeting has a vinyl barrier bonded to gray polyurethane foam sheets. It resists breaking down in humid environments. Temperature range is –20° to 180° F. *Foil-faced* sheeting resists dirt, grease, and water.

Fiberglass sheeting consists of a yellow fiberglass absorber, a vinyl barrier, and a corrosion- and tear-resistant reinforced aluminum foil facing. It's also known as lagging. Temp. range is –20° to 180° F. Can be used outdoors. Meets ASTM E84 15/20 for flame and smoke.

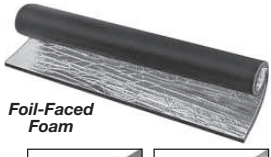

Foil-Faced Foam

Uncoated Foam

Foil-Faced Fiberglass

Barrier Rating	Total Thick.	Wd.	Uncoated Sound Absorbed	Max. Lg., ft.		Per Ft.	Foil Faced Sound Absorbed	Max. Lg., ft.		Per Ft.
Foam										
Good (22 dB)	½″	54″	35%	60	54495T44	$19.43	55%	30	54495T55	$30.74
Better (26 dB)	½″	54″	70%	60	54495T46	30.45	70%	30	54495T57	43.66
Better (26 dB)	1″	54″	70%	30	54495T48	36.67	70%	30	54495T59	47.65
Fiberglass										
Best (29 dB)	1″	54″	—	—	—	—	70%	30	9345T11	20.70
Tape for Fiberglass Sheeting—4″ Wd. × 50-ft. Lg. roll									9345T4	$39.91

Sheets

Made of gray melamine foam with a vinyl barrier, these sheets are fire-resistant. Install with the thicker foam side facing the noise source. Temperature range is 0° to 250° F.

Flat-surface sheets are FDA compliant and meet ASTM E84 5/20 for flame and smoke.

Peaked-surface sheets have more surface area for sound absorption than flat-surface sheets. They also have an easy-to-clean vinyl-based coating. Meet ASTM E84 15/150 for flame and smoke.

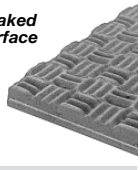

Peaked Surface

	Sound Absorbed	Barrier Rating	Thick.	24″×48″	
Flat Surface	65%	Best (30 dB)	1¼″	54995T21	$66.31
Peaked Surface	85%	Best (28 dB)	1⅜″	54995T22	83.33

Quilted Panels and Screens

Connect multiple panels or screens with the included hook-and-loop fasteners. The insulation is flexible and made of a vinyl barrier sandwiched between quilted vinyl-coated fiberglass absorbers. Color is gray. Temperature range is –20° to 180° F.

Panels have five 5/8″ grommets across the top for hanging and a 1.5 lbs./sq. ft. hanging weight. Meet ASTM E84 25/35 for flame and smoke.

Screens act as a partition from loud machinery and noisy areas. Frame assembles without tools.

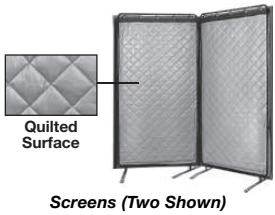

Quilted Surface

Screens (Two Shown)

Sound Absorbed	Barrier Rating	Thick.	Wd.	Lg.		
Panels						
85%	Best (29 dB)	2⅛″	48″	48″	53645T33	$204.14
85%	Best (29 dB)	2⅛″	48″	96″	53645T58	326.46
Screens						
65%	Best (27 dB)	2″	48″	100″	53495T34	397.82

Sound and Vibration Dampers

Stop sound at its source. Dampers reduce the amount of noise emitted from a vibrating surface. For damping pads, see page 1384; for damping mounts, see page 1374.

Tape

Often used on panels and support structures, this damping tape is made of adhesive-backed aluminum foil. Thickness is 0.015″. Temperature range is 35° to 140° F.

Vibration Reduced	Wd.	Lg., yds.		
5%	1″	5	6307A21	$16.13
5%	2″	5	6307A22	39.11

Coating

Control vibration of irregular shapes and large areas. Multiple coats can be applied to achieve desired noise reduction. Maximum temperature is 250° F.

18-oz. Aerosol—This product is compliant under all state VOC rules in effect on November 1, 2011.

	Approx. Coverage	Color		
18-oz. Aerosol	20 sq. ft.	Black	9545T5	$10.95
1-qt. Bottle	10 sq. ft.	Gray	9545T2	33.33

Adhesive-Back Sheets

Plastic resists oil and grease. Maximum temperature is 125° F. *Black* and *blue* sheets meet UL 94HB for flame retardance. *Gray* sheet meets UL 94HF1 and UL 94V0 for flame retardance.

Aluminum resists water and corrosion. Temperature range is –40° to 175° F.

Vibration Reduced	Thick.	Wd.	Lg.	Color		
Plastic						
10%	1/16″	32″	54″	Black	9709T39	$18.14
13%	3/64″	24″	54″	Gray	9709T26	26.54
32%	1/8″	48″	54″	Blue	9709T57	212.67
Aluminum						
22%	1/64″	24″	48″	Silver	9709T45	25.49

About Rubber and Polyurethane

Rubber is good for shock absorption, insulation, and sealing because it is strong, stretches, and bounces back.
Polyurethane bridges the gap between rubber and plastics by combining rubber's characteristics with the cut, tear, and abrasion resistance of plastics.

Material Selector Pack— Includes one individually marked piece of each of the materials marked with a ★ below. Sizes range from 4″×4″ to 6″×6″. Thicknesses range from 1/16″ to 1/8″.

8450K2 ..... **Per Pkg.** $52.27

Material	Page(s)	Material	Page(s)	Material	Page(s)
Aflas Rubber	3540	Fluorosilicone Rubber	3545	Santoprene Rubber★	3540
Buna-N Rubber★	3531-3535	Gum Rubber★	3536	SBR Rubber★	3537-3538
Buna-N/Vinyl Rubber	3535	Polyethylene Rubber★	3531	Silicone Rubber★	3540-3544
Butyl Rubber★	3539	Latex Rubber★	3536-3537	Vinyl Rubber★	3535
ECH Rubber★	3535	Neoprene Rubber★	3527-3531	Viton® Fluoroelastomer Rubber ★	3545
EPDM Rubber★	3538-3539	Polyurethane★	3546-3550		

***Note:** The charts below will help you make general comparisons.*

Maximum Temperature

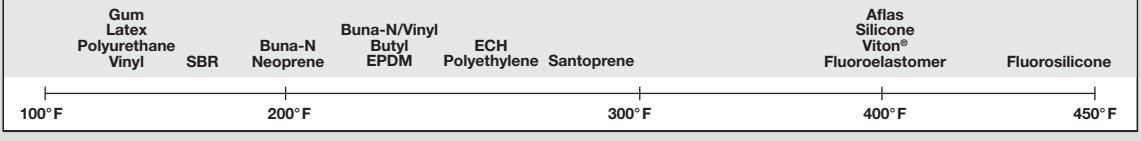

Oil Resistance

A material's ability to maintain its physical properties when it comes in contact with petroleum-based fluids and to resist absorption/swelling.

Excellent	Good
Aflas, ECH, Fluorosilicone, Polyethylene, Viton® Fluoroelastomer	Buna-N, Buna-N/Vinyl, Neoprene, Polyurethane, Santoprene, Vinyl

Abrasion Resistance

The extent to which a material resists wear ordinarily caused by rubbing/scraping other surfaces.

Excellent	Good	Fair
Gum, Polyurethane	Aflas, Fluorosilicone, Polyethylene, Latex, Neoprene, Santoprene, SBR, Viton® Fluoroelastomer	Buna-N, Buna-N/Vinyl, ECH, EPDM, Vinyl

Weather Resistance

How well a material withstands exposure to sunlight, oxygen, and ozone without breaking down.

Excellent	Good	Fair
Aflas, EPDM, Fluorosilicone, Polyethylene, Silicone, Viton® Fluoroelastomer	Butyl, ECH, Polyurethane, Santoprene, Vinyl	Buna-N/Vinyl, Gum, Neoprene, SBR

Chemical Resistance

Indicates that a material can be used in a wide range of chemical environments while still retaining its physical properties.

Excellent	Good	Fair
Aflas, Butyl, Fluorosilicone, Polyethylene	Buna-N/Vinyl, ECH, Polyurethane, Santoprene, Viton® Fluoroelastomer	Buna-N, EPDM, Latex, Neoprene, Silicone, Vinyl

Durometer Hardness Scales

Durometer is the international standard for measuring the hardness of rubber, plastic, and most nonmetallic materials. The hardness of a material is its resistance to surface penetration. Harder materials have more wear resistance but they are also less flexible. An object may fall within more than one scale—for example, a typical shoe heel is 95 Shore OO, 70 Shore A, and 22 Shore D.

Durometer Hardness Selector Pack— Includes 14 samples, one each of the following durometer hardnesses: 30 OO, 40 OO, 50 OO, 60 OO, 70 OO, 30A, 40A, 50A, 60A, 70A, 80A, 90A, 95A, and 75D. Material is oval or ring shaped. Sizes vary from 1¾″ to 3″ dia. Thicknesses range from 1/8″ to 3/16″.

8450K3 ..... **Per Pkg.** $23.41

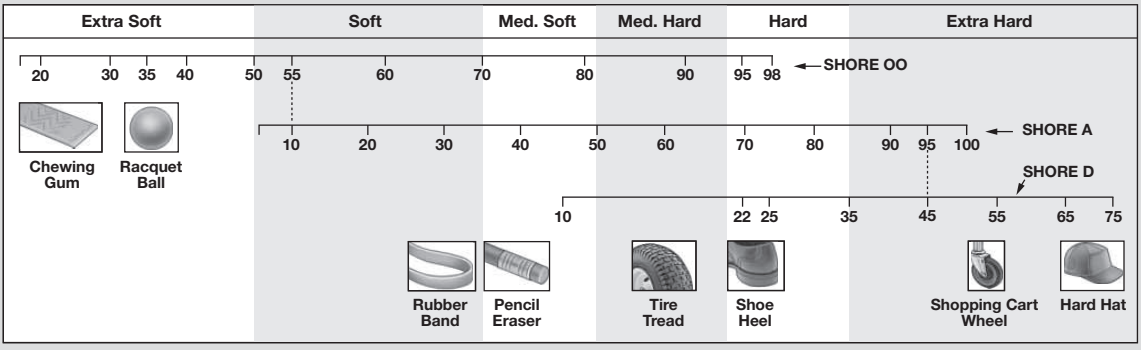

For information about rubber and durometer hardness scales, see page 3526.

High-Strength Multipurpose Neoprene Rubber

- Color: Black, unless noted
- Temperature Range: –40° to +212° F, unless noted
- Tensile Strength: 1500 psi, except for 30A sheets, sheeting, and strips, which are 1200 psi
- Use indoors and outdoors

This extremely versatile rubber offers an ideal balance of strength, oil resistance, flame resistance, and weatherability. Also known as chloroprene, it has excellent resilience, making it a popular choice for shock-absorbing applications.

Sheets, Sheeting, and Strips—Smooth Finish

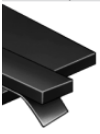

Rubber only (not adhesive) meets ASTM D2000 BC and MIL-R-3065. Adhesive is acrylic and has a temperature range of –20° to +212° F. Sheets and strips have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +2″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 30A (soft), 40A (medium soft), 50A (medium), 60A (medium hard), 70A (hard), or 80A (hard).

Durometer Hardness Selector Pack—Includes six plain-back 6″×6″×1/8″ thick sheets, one of each durometer hardness: 30A, 40A, 50A, 60A, 70A, and 80A.

8568K666 ..... Per Pkg. $17.14

		SHEETS				SHEETING 36″ Wide		STRIPS					
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	Max. Lg.	Per Ft.	2″×36″	Each	4″×36″	Each	6″×36″	Each
Plain Back													
1/16″	±0.016″	8568K1	$9.40	8568K18	$16.38	100 ft.	8568K381	$19.63	8448K11	$6.58	8448K21	$11.14	8448K31	$14.72
3/32″	±0.016″	8568K2	13.12	8568K181	21.00	75 ft.	8568K382	26.19	8448K12	8.78	8448K22	14.67	8448K32	18.86
1/8″	±0.020″	8568K3	16.30	8568K182	27.16	50 ft.	8568K383	32.59	8448K13	10.91	8448K23	18.25	8448K33	24.12
3/16″	±0.031″	8568K4	23.14	8568K183	39.72	25 ft.	8568K384	46.27	8448K14	15.98	8448K24	25.91	8448K34	36.30
1/4″	±0.031″	8568K5	29.10	8568K184	49.13	25 ft.	8568K385	58.94	8448K15	20.35	8448K25	33.01	8448K35	44.87
3/8″	±0.047″	8568K6	39.59	8568K185	68.85	25 ft.	8568K386	82.63	8448K16	28.56	8448K26	46.16	8448K36	62.93
1/2″	±0.047″	8568K7	53.31	8568K186	92.58	25 ft.	8568K387	111.10	8448K17	37.66	8448K27	62.22	8448K37	84.54
3/4″	±0.093″	8568K8	60.12	8568K187	103.95	25 ft.	8568K388	125.24	8448K18	41.99	8448K28	69.97	8448K38	95.36
1″	±0.100″	8568K9	77.27	8568K188	136.84	25 ft.	8568K389	161.96	8448K19	54.03	8448K29	90.07	8448K39	122.75
Adhesive Back													
1/16″	±0.016″	8456K11	15.52	8456K21	24.86	100 ft.	8456K31	32.41	8456K61	10.35	8456K71	17.23	8456K81	22.37
3/32″	±0.016″	8456K12	18.25	8456K22	29.32	75 ft.	8456K32	38.08	8456K62	12.17	8456K72	20.51	8456K82	25.32
1/8″	±0.020″	8456K13	21.11	8456K23	34.98	50 ft.	8456K33	43.19	8456K63	14.06	8456K73	24.08	8456K83	29.30
3/16″	±0.031″	8456K14	28.48	8456K24	43.97	25 ft.	8456K34	58.26	8456K64	18.96	8456K74	31.76	8456K84	38.73
1/4″	±0.031″	8456K15	35.29	8456K25	57.84	25 ft.	8456K35	72.19	8456K65	23.51	8456K75	38.41	8456K85	48.01
3/8″	±0.047″	8456K16	45.80	8456K26	76.75	25 ft.	8456K36	96.16	8456K66	31.31	8456K76	51.16	8456K86	67.31
1/2″	±0.047″	8456K17	58.01	8456K27	102.92	25 ft.	8456K37	124.81	8456K67	39.85	8456K77	66.60	8456K87	87.37

Metric Sheets and Sheeting—Smooth Finish

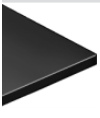

Meet ASTM D2000 BC. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +2″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 50A (medium), 60A (medium hard), or 70A (hard).

		SHEETS				SHEETING 36″ Wide	
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	Max. Lg.	Per Ft.
0.5 mm	±0.13 mm	85785K21	$4.41	85785K41	$7.75	200 ft.	85785K61	$9.81
1.0 mm	±0.30 mm	85785K22	6.08	85785K42	10.67	200 ft.	85785K62	13.50
1.5 mm	±0.41 mm	85785K23	6.73	85785K43	11.81	100 ft.	85785K63	14.95
5.0 mm	±0.79 mm	85785K29	21.42	85785K49	37.60	25 ft.	85785K69	47.60

Tight-Tolerance Sheets and Sheeting—One side is buffed to accept adhesive, one side has a smooth finish, unless noted.

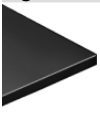

Meet ASTM D2000 BC. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of ±1″. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

		SHEETS				SHEETING 36″ Wide	
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	Max. Lg.	Per Ft.
1/64″	±0.004″	2618T87 ♦	$6.62	2618T88 ♦	$11.76	25 ft.	2618T89 ♦	$14.70
1/32″	±0.004″	2618T112 ♦	12.50	2618T113 ♦	22.22	50 ft.	2618T118 ♦	27.77
1/16″	±0.005″	2618T221	16.25	2618T321	28.89	50 ft.	2618T821	36.11
3/32″	±0.005″	2618T231	19.41	2618T331	34.50	35 ft.	2618T831	43.13
1/8″	±0.010″	2618T241	22.86	2618T341	40.63	25 ft.	2618T841	50.79
1/4″	±0.020″	2618T261	39.92	2618T361	70.98	20 ft.	2618T861	88.72

♦ Both sides have a smooth finish.

Certified Mil. Spec. Sheets—Smooth Finish

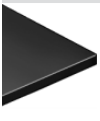

Meet MIL-R-6855E. Certificate of conformance allows for traceability back to the date of manufacture and lot number. Width and length tolerances are ±5/8″, except for 36″×36″ sheets, which are ±1″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 40A (medium soft) or 60A (medium hard).

Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	36″×36″	Each
1/16″	±0.011″	5122K21	$17.16	5122K24	$32.63	5122K31	$93.24
1/8″	±0.019″	5122K22	29.60	5122K25	56.30	5122K32	160.87
1/4″	±0.035″	5122K23	55.20	5122K26	104.99	5122K33	299.98

Balls—Smooth Finish

- Color: Black or white
- Temperature Range: 0° to 212° F
- Use indoors

These molded balls are a good choice for screen cleaning in applications involving vibrating machinery. Diameter tolerance is ±1/8″. Durometer hardness is 55A (medium hard). Durometer tolerance is ±5. ***White*** balls are made of FDA-compliant materials.

Dia.	Pkg. Qty.	Black Per Pkg.	White Per Pkg.	Dia.	Pkg. Qty.	Black Per Pkg.	White Per Pkg.
5/8″	10	9957K11	$9.67	96405K71	$6.67	1 3/8″	5	9957K14	$8.66	96405K74	$9.42
1″	10	9957K12	13.00	96405K72	13.00	2″	2	9957K15	7.00	96405K78	8.02
1 1/8″	5	9957K13	8.48	96405K73	9.16						

Tight-Tolerance Balls—Smooth Finish

Durometer hardness is 70A (hard). Durometer tolerance is ±5.

Dia.	Dia. Tolerance	Each	Dia.	Dia. Tolerance	Each	Dia.	Dia. Tolerance	Each
3/16″	±0.003″	1241T1	$1.74	5/16″	±0.003″	1241T3	$2.10	1/2″	±0.004″	1241T6	$2.43
1/4″	±0.003″	1241T2	1.88	3/8″	±0.003″	1241T4	2.17	3/4″	±0.004″	1241T8	7.60

For information about rubber and durometer hardness scales, see page 3526.

Ultra-Strength Neoprene Rubber

- Color: Black
- Temperature Range: –40° to +220° F
- Tensile Strength: 2500 psi
- Use indoors and outdoors

A virtually pure neoprene, this resilient material combines increased strength with good flame resistance and oil resistance. Also known as chloroprene, it's frequently used in shock-absorbing applications due to its excellent recovery from compression.

Sheets, Sheeting, and Strips—Smooth Finish

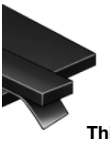

Rubber only (not adhesive) meets ASTM D2000 BC. Adhesive is acrylic and has a temperature range of –20° to +220° F. Sheets and strips have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +2″. Durometer tolerance is ±5.

To Order: Please specify durometer hardness: 50A (medium), 60A (medium hard), or 70A (hard).

		SHEETS						SHEETING		STRIPS			
	Thick.	6″×6″		12″×12″		12″×24″		36″ Wide		2″×36″		4″×36″	
Thick.	Tolerance		Each		Each		Each	Max. Lg.	Per Ft.		Each		Each
Plain Back													
1/64″	±0.008″	—	—	9013K43	$8.00	9013K45	$15.81	100 ft.	9013K41	$25.28	9013K47	$4.94	9013K49	$9.70
1/32″	±0.012″	—	—	9013K44	8.32	9013K46	16.65	50 ft.	9013K42	25.88	9013K48	5.11	9013K58	10.40
1/16″	±0.016″	9013K81	$4.95	9013K11	9.15	9013K21	18.28	100 ft.	9013K31	27.43	9013K51	5.49	9013K61	11.00
1/8″	±0.020″	9013K82	6.22	9013K12	15.79	9013K22	31.58	50 ft.	9013K32	47.37	9013K52	9.48	9013K62	19.00
1/4″	±0.031″	9013K83	10.58	9013K13	31.34	9013K23	62.66	25 ft.	9013K33	94.00	9013K53	18.81	9013K63	37.69
3/8″	±0.047″	9013K84	13.58	9013K14	42.66	9013K24	85.29	25 ft.	9013K34	127.95	9013K54	25.60	9013K64	51.31
1/2″	±0.047″	9013K85	18.45	9013K15	55.86	9013K25	111.68	25 ft.	9013K35	167.54	9013K55	33.52	9013K65	67.18
3/4″	±0.093″	9013K86	24.30	9013K16	75.58	9013K26	151.11	25 ft.	9013K36	226.69	9013K56	45.36	9013K66	90.90
1″	±0.100″	9013K87	37.49	9013K17	94.11	9013K27	188.17	25 ft.	9013K37	282.28	9013K57	56.48	9013K67	113.19
Adhesive Back													
1/16″	±0.016″	8463K41	7.58	8463K11	14.66	8463K21	29.28	100 ft.	8463K31	44.03	8463K61	8.98	8463K71	17.96
1/8″	±0.020″	8463K42	8.66	8463K12	22.64	8463K22	45.22	50 ft.	8463K32	68.00	8463K62	13.87	8463K72	27.74
1/4″	±0.031″	8463K43	12.76	8463K13	38.24	8463K23	76.40	25 ft.	8463K33	114.88	8463K63	23.44	8463K73	46.87
3/8″	±0.047″	8463K44	18.18	8463K14	50.78	8463K24	101.44	25 ft.	8463K34	152.54	8463K64	31.12	8463K74	62.24
1/2″	±0.047″	8463K45	19.89	8463K15	64.85	8463K25	129.54	25 ft.	8463K35	194.80	8463K65	39.74	8463K75	79.48

Medium-Strength Neoprene Rubber

- Color: Black
- Temperature Range: –20° to +200° F
- Tensile Strength: 1000 psi, unless noted
- Use indoors

Also known as chloroprene, this economical general-purpose rubber maintains its resiliency even after extended compression.

Sheets, Sheeting, and Strips—Smooth Finish

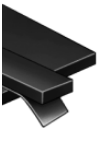

Rubber only (not adhesive) meets ASTM D2000 BC. Adhesive is acrylic and has a temperature range of –20° to +200° F. Sheets and strips have a width tolerance of ±1/4″ and a length tolerance of +1″, –1/4″. Sheeting has a width tolerance of ±1/4″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 30A (soft), 40A (medium soft), 50A (medium), 60A (medium hard), 70A (hard), or 80A (hard).

Durometer Hardness Selector Pack—Includes six plain-back 6″×6″×1/8″ thick sheets, one of each durometer hardness: 30A, 40A, 50A, 60A, 70A, and 80A.

9455K666 ..... **Per Pkg.** $17.76

		SHEETS				SHEETING			STRIPS					
	Thick.	12″ Wd.×12″ Lg.		12″ Wd.×24″ Lg.		36″ Wide			2″ Wd.×36″ Lg.		4″ Wd.×36″ Lg.		6″ Wd.×36″ Lg.	
Thick.	Tol.		Each		Each	Max. Lg.		Per Ft.		Each		Each		Each
Plain Back														
1/32″	±0.012″	9455K75	$5.24	9455K52	$7.80	200 ft.	9455K91	$10.18	8981K11	$2.89	8981K41	$5.67	8981K61	$8.60
1/16″	±0.016″	9455K76	6.25	9455K53	9.38	100 ft.	9455K92	12.24	8981K12	3.66	8981K42	7.41	8981K62	9.79
3/32″	±0.016″	9455K12	7.59	9455K54	12.50	75 ft.	9455K93	15.62	8981K13	5.87	8981K43	10.79	8981K63	12.52
1/8″	±0.020″	9455K13	9.93	9455K55	16.32	50 ft.	9455K94	21.30	8981K14	7.53	8981K44	14.32	8981K64	17.72
3/16″	±0.031″	9455K14	13.16	9455K56	22.17	25 ft.	9455K95	27.88	8981K15	10.27	8981K45	18.45	8981K65	22.23
1/4″	±0.031″	9455K15	18.16	9455K57	29.25	25 ft.	9455K96	38.38	8981K16	13.52	8981K46	24.06	8981K66	32.14
3/8″	±0.047″	9455K16	23.55	9455K58	41.92	25 ft.	9455K97	52.75	8981K17	18.32	8981K47	31.60	8981K67	42.94
1/2″	±0.047″	9455K17	30.36	9455K59	53.78	25 ft.	9455K98	70.14	8981K18	25.15	8981K48	44.43	8981K68	57.64
3/4″	±0.094″	9455K18	47.27	9455K72	82.28	25 ft.	9455K99	105.86	8981K19	35.40	8981K49	61.95	8981K69	88.92
1″	±0.100″	9455K19	63.56	9455K73	110.60	25 ft.	9455K78	138.23	8981K21	49.69	8981K51	80.17	8981K71	114.88
Adhesive Back														
1/32″	±0.012″	8583K41	12.41	8583K51	20.43	200 ft.	8583K61	24.63	8461K11	8.28	8461K41	13.27	8461K61	16.87
1/16″	±0.016″	8583K42	13.40	8583K52	22.31	100 ft.	8583K62	26.74	8461K12	8.77	8461K42	14.42	8461K62	17.91
3/32″	±0.016″	8583K43	14.05	8583K53	23.93	75 ft.	8583K63	30.20	8461K13	8.85	8461K43	15.23	8461K63	19.32
1/8″	±0.020″	8583K44	16.98	8583K54	29.12	50 ft.	8583K64	36.60	8461K14	11.98	8461K44	18.02	8461K64	23.32
3/16″	±0.031″	8583K45	17.40	8583K55	29.97	25 ft.	8583K65	41.79	8461K15	12.38	8461K45	18.67	8461K65	24.75
1/4″	±0.031″	8583K46	27.46	8583K56	52.06	25 ft.	8583K66	61.56	8461K16	20.41	8461K46	30.69	8461K66	38.00
3/8″	±0.047″	8583K47	32.24	8583K57	62.78	25 ft.	8583K67	73.31	8461K17	23.50	8461K47	36.11	8461K67	44.95
1/2″	±0.047″	8583K48	45.89	8583K58	83.22	25 ft.	8583K68	86.46	8461K18	32.33	8461K48	50.98	8461K68	63.73

Grip-All Sheets and Sheeting—Textured Finish

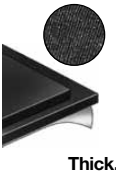

Both sides of this rubber have a very fine weave textured finish that provides a superior nonslip gripping surface. Adhesive is acrylic and has a temperature range of –20° to +180° F. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer tolerance is ±5.

To Order: Please specify durometer hardness: 40A (medium soft), 50A (medium), 60A (medium hard), or 70A (hard).

		PLAIN BACK						ADHESIVE BACK					
		SHEETS				SHEETING		SHEETS				SHEETING	
	Thick.	12″×12″		12″×24″		36″ Wide		12″×12″		12″×24″		36″ Wide	
Thick.	Tol.		Each		Each	Max. Lg.	Per Ft.		Each		Each	Max. Lg.	Per Ft.
1/32″	±0.010″	8445K11	$6.32	8445K21	$10.54	50 ft.	8445K31	$12.66	8445K61	$9.39	8445K71	$15.65	50 ft.	8445K81	$18.79
1/16″	±0.016″	8445K12	8.29	8445K22	13.82	50 ft.	8445K32	16.29	8445K62	11.30	8445K72	18.58	50 ft.	8445K82	22.27
3/32″	±0.016″	8445K13	12.59	8445K23	20.88	50 ft.	8445K33	25.09	8445K63	16.65	8445K73	27.27	50 ft.	8445K83	32.60
1/8″	±0.020″	8445K14	15.95	8445K24	26.55	50 ft.	8445K34	31.89	8445K64	20.52	8445K74	33.98	50 ft.	8445K84	40.77
3/16″	±0.031″	8445K15	24.57	8445K25	40.86	30 ft.	8445K35	49.12	8445K65	29.15	8445K75	47.17	30 ft.	8445K85	58.27
1/4″	±0.031″	8445K16	29.95	8445K26	50.02	25 ft.	8445K36	59.97	8445K66	35.97	8445K76	59.83	25 ft.	8445K86	71.95

(Material continued on following page)

For information about rubber and durometer hardness scales, see page 3526.

Medium-Strength Neoprene Rubber *(Material continued from previous page)*

Extra-Long Strips—Smooth Finish

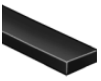

Meet ASTM D2000 BC. Width tolerance is ±0.031″ for 3/8″ and 1/2″ widths and ±0.051″ for 1″ width. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5. **To Order:** Please specify length: 10, 20, 50, or 100 ft. Maximum continuous length is 100 ft.

Thick.	Thick. Tolerance	Width		Per Ft.
1/8″	±0.016″	1/2″	90125K56	$0.96
1/8″	±0.016″	1″	90125K57	1.17
1/4″	±0.027″	3/8″	90125K51	.76
1/4″	±0.027″	1/2″	90125K53	1.07
1/4″	±0.027″	1″	90125K58	1.79
3/8″	±0.031″	1/2″	90125K55	$2.10
3/8″	±0.031″	1″	90125K59	3.74
1/2″	±0.031″	1/2″	90125K61	2.68
1/2″	±0.031″	1″	90125K62	4.39

Square Bars—Smooth Finish

Solid

Hollow

Square size tolerance is ±0.083″. Durometer hardness is 75A (hard). Durometer tolerance is ±5. Length tolerance is ±1/4″ for 6″ lengths and ±1/2″ for 12″ and 36″ lengths. **To Order:** Please specify 6″, 12″, or 36″ length.

Solid: Square Size		Each 6″ Lg.	Each 12″ Lg.	Each 36″ Lg.
3/4″	1457T11	$3.58	$6.70	$15.57
1″	1457T12	5.59	10.44	24.29
1 1/4″	1457T13	8.76	16.38	38.09
1 1/2″	1457T15	11.72	21.90	50.94

Hollow: Square Size	ID	ID Tol.		Each 6″ Lg.	Each 12″ Lg.	Each 36″ Lg.
3/4″	1/4″	±0.031″	1520T61	$3.72	$6.19	$15.48
1″	3/8″	±0.040″	1520T62	5.67	9.46	23.64
1 1/4″	5/8″	±0.050″	1520T63	7.99	13.32	33.30
1 1/2″	7/8″	±0.063″	1520T65	9.85	16.41	41.03

Cord—Smooth Finish

- Tensile Strength: 700 psi, except 50A cord is 1000 psi

Length tolerance is +1″, −1/2″. Sold in 36″ lengths. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 30A (soft), 40A (medium soft), or 50A (medium).

Dia.	Dia. Tolerance		Each
1/8″	±0.025″	8466K11	$11.58
1/4″	±0.040″	8466K12	13.08
3/8″	±0.040″	8466K13	$16.87
1/2″	±0.050″	8466K14	22.77
3/4″	±0.063″	8466K15	$36.75
1″	±0.079″	8466K16	52.09

Super-Soft Neoprene Rubber

- Color: Black
- Temperature Range: −30° to +225° F
- Tensile Strength: 450 psi
- Use indoors and outdoors

One of the softest rubbers we offer, this material is more conformable than our other neoprene rubbers but does not have the same strength.

Sheets, Sheeting, and Strips—Smooth Finish

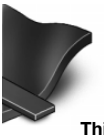

Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Strips have width and length tolerances of +1″. Durometer tolerance is +10 for 10A material and ±5 for 20A material.
To Order: Please specify durometer hardness: 10A (soft) or 20A (soft). Strips are only available in 10A.

Thick.	Thick. Tolerance	Sheets 6″×6″	Each	Sheets 12″×12″	Each	Sheets 12″×24″	Each	Sheeting 36″ Wide Max. Lg.		Per Ft.	Strips 2″×36″	Each	Strips 4″×36″	Each
1/16″	±0.016″	9109K61	$5.17	9109K36	$16.92	9109K42	$28.84	100 ft.	9109K47	$35.56	3207K11	$10.74	3207K16	$19.11
1/8″	±0.020″	9109K62	8.85	9109K37	29.01	9109K43	54.35	50 ft.	9109K48	59.41	3207K12	17.67	3207K17	32.03
1/4″	±0.031″	9109K63	10.60	9109K38	35.18	9109K44	69.30	25 ft.	9109K49	82.54	3207K13	24.22	3207K18	43.85
3/8″	±0.047″	9109K64	16.73	9109K39	52.55	9109K45	91.34	16 ft.	9109K51	117.67	3207K14	34.58	3207K19	62.58
1/2″	±0.047″	9109K65	20.70	9109K41	64.98	9109K46	108.29	12 ft.	9109K52	141.08	3207K15	41.44	3207K26	75.08

Nonmarking, Adhesive-Ready, Fire-Retardant, and Static Control Neoprene Rubber

- Color: Black
- Temperature Range: −30° to +220° F, except adhesive-ready is −20° to +170° F
- Tensile Strength: 1200 psi, except adhesive-ready is 900 psi
- Use indoors and outdoors, except adhesive-ready is for indoor use only

Choose from four specialized versions of neoprene. ***Nonmarking*** neoprene won't leave a mark behind. ***Adhesive-ready*** neoprene is buffed on one side to accept adhesive. ***Fire-retardant*** neoprene is treated, so it will extinguish itself once the flame source is removed. ***Static control*** neoprene conducts static electricity and protects from damaging static charges and shock.

Sheets and Sheeting

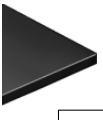

All meet ASTM D2000 BC, except fire-retardant neoprene, which meets ASTM C1166. Sheets have width and length tolerances of ±1/2″. Sheeting has a width tolerance of ±1″. Durometer hardness is 50A (medium), except for adhesive-ready neoprene, which has a durometer hardness of 60A (medium hard). Durometer tolerance is ±5.

Thick.	Tolerance
1/32″	±0.010″
1/16″-1/8″	±0.020″
3/16″-1/4″	±0.031″

Thick.	Sheets 12″×12″ Each	Sheets 12″×24″ Each	Sheeting 36″ Wide Max. Lg.		Per Ft.
***Nonmarking—**Smooth Finish*					
1/32″	8837K111 $5.26	8837K211 $8.69	50 ft.	8837K311	$10.47
1/16″	8837K112 9.46	8837K212 15.70	50 ft.	8837K312	18.91
1/8″	8837K114 18.04	8837K214 29.94	50 ft.	8837K314	36.07
1/4″	8837K116 35.05	8837K216 59.17	25 ft.	8837K316	70.11
***Adhesive Ready—**One Side Buffed, One Side Smooth Finish*					
1/16″	86015K11 7.36	86015K21 9.50	100 ft.	86015K31	10.84
1/8″	86015K13 11.51	86015K23 17.89	50 ft.	86015K33	21.02
3/16″	86015K15 15.87	86015K25 24.60	40 ft.	86015K35	30.55
1/4″	86015K17 20.71	86015K27 31.56	40 ft.	86015K37	39.74

Thick.	Sheets 12″×12″ Each	Sheets 12″×24″ Each	Sheeting 36″ Wide Max. Lg.		Per Ft.
***Fire Retardant—**Smooth Finish*					
1/32″	8998K111 $7.79	8998K211 $12.93	50 ft.	8998K311	$15.49
1/16″	8998K112 13.78	8998K212 22.99	50 ft.	8998K312	27.58
1/8″	8998K114 28.32	8998K214 46.31	50 ft.	8998K314	55.92
1/4″	8998K116 53.40	8998K216 89.05	25 ft.	8998K316	106.84
***Static Control—**Smooth Finish*					
1/16″	9022K121 12.24	9022K221 21.95	50 ft.	9022K321	26.77
1/8″	9022K122 27.87	9022K222 46.40	50 ft.	9022K322	55.63
1/4″	9022K123 51.88	9022K223 85.73	25 ft.	9022K323	103.83

Neoprene Rubber

For information about rubber and durometer hardness scales, see page 3526.

FDA-Compliant Neoprene Rubber

- Color: Off-White
- Temperature Range: –30° to +220° F
- Tensile Strength: 1200 psi
- Use indoors and outdoors

This nonmarking neoprene is made of FDA-compliant materials so it's safe for food contact.

Sheets and Sheeting—Smooth Finish

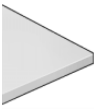

Meet ASTM D2000 BC. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer hardness is 55A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	SHEETS 12″×12″	Each	SHEETS 12″×24″	Each	SHEETING 36″ Wide Max. Lg.	Per Ft.
1/16″	±0.016″	8616K62	$11.06	8616K42	$18.45	50 ft.	8616K22 $21.70
3/32″	±0.016″	8616K63	15.95	8616K43	26.53	50 ft.	8616K23 31.88
1/8″	±0.020″	8616K64	19.39	8616K44	32.32	50 ft.	8616K24 38.23
3/16″	±0.031″	8616K65	28.89	8616K45	48.71	30 ft.	8616K25 56.64
1/4″	±0.031″	8616K66	39.69	8616K46	66.15	25 ft.	8616K26 77.05
3/8″	±0.047″	8616K67	55.86	8616K47	96.69	30 ft.	8616K27 111.77
1/2″	±0.047″	8616K68	67.40	8616K48	112.35	30 ft.	8616K28 134.78
3/4″	±0.094″	8616K69	80.21	8616K49	133.74	30 ft.	8616K29 168.54
1″	±0.100″	8616K71	107.41	8616K51	179.03	25 ft.	8616K31 214.82

Laminated Neoprene Rubber

- Color (Rubber): Black
- Temperature Range: –30° to +200° F
- Tensile Strength (Rubber): 1000 psi
- Use indoors and outdoors

Providing both shock absorption and stability, these versatile sheets consist of multipurpose neoprene rubber that's bonded onto a plastic or metal backing plate.

Sheets—Smooth Finish

Rubber only (not adhesive) meets ASTM D2000 BC and has a durometer hardness of 70A (hard). Durometer tolerance is ±5. Laminate is 1/8″ thick. Width and length tolerances are ±1/8″, except 24″×24″ sheets are ±1/4″.

UHMW Polyethylene Laminate—Yield strength is 3,050 psi.
Polypropylene Laminate—Yield strength is 5,200 psi.
Aluminum Alloy 6061 Laminate—Yield strength is 40,000 psi.
To Order: Please specify laminate: UHMW polyethylene, polypropylene, or aluminum Alloy 6061.

O'all Thick.	Rubber Thick.	O'all Thick. Tolerance	6″×6″	Each	12″×12″	Each	24″×24″	Each
3/8″	1/4″	±0.067″	9515K81	$38.16	9515K91	$79.89	9515K41	$235.94
5/8″	1/2″	±0.082″	9515K82	41.13	9515K92	87.51	9515K42	317.51
7/8″	3/4″	±0.114″	9515K83	55.53	9515K93	119.96	9515K43	425.47

Neoprene Spring Rubber

- Color: Black
- Temperature Range: –30° to +200° F
- Tensile Strength: 1700 psi, unless noted
- Use indoors and outdoors

Neoprene blended with elastomeric fillers produces this hard, resilient material that bends yet resists breaking.

Sheets—Smooth Finish

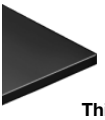

Meet ASTM D2000 BC. Width tolerance is ±3/8″ for sheets up to 24″ wide and +1″ for 36″ wide sheets. Length tolerance is ±1/8″ for 6″ and 12″ lengths and +1″ for 36″ lengths. Durometer hardness is 70A (hard). Durometer tolerance is ±5.

Thick.	Thick. Tol.	6″ Wd.×6″ Lg.	Each	12″ Wd.×12″ Lg.	Each	4″ Wd.×36″ Lg.	Each	12″ Wd.×36″ Lg.	Each	24″ Wd.×36″ Lg.	Each	36″ Wd.×36″ Lg.	Each
1/16″	±0.016″	8630K11	$1.63	8630K168	$3.60	8630K42	$4.31	8630K135	$9.95	8630K158	$18.49	8630K122	$25.68
3/32″	±0.016″	8630K311	2.46	8630K169	5.71	8630K33	5.59	8630K136	15.37	8630K159	28.11	8630K123	37.72
1/8″	±0.020″	8630K112	3.00	8630K174	7.75	8630K34	9.31	8630K137	21.74	8630K153	37.55	8630K124	52.44
3/16″	±0.031″	8630K113	5.04	8630K175	11.77	8630K44	14.14	8630K138	33.11	8630K154	58.42	8630K125	81.76
1/4″	±0.031″	8630K114	6.71	8630K176	14.81	8630K45	17.78	8630K139	41.86	8630K155	75.67	8630K126	105.51
3/8″	±0.047″	8630K115	10.91	8630K178	22.89	8630K46	27.44	8630K142	64.85	8630K156	122.82	8630K128	167.44
1/2″	±0.047″	8630K116	13.65	8630K179	24.79	8630K47	29.72	8630K143	66.13	8630K157	126.23	8630K129	180.53
3/4″	±0.094″	8630K117	16.70	8630K82	34.12	8630K48	40.93	8630K431	97.25	8630K58	185.11	8630K22	265.28
1″	±0.100″	8630K118	20.46	8630K83	44.37	8630K21	53.30	8630K441	126.82	8630K59	242.13	8630K23	347.44
1 1/4″	±0.125″	8630K119	22.70	8630K84	56.16	8630K26	67.44	8630K451	160.91	8630K61	307.88	8630K24	442.54
1 1/2″	±0.150″	8630K211	27.80	8630K85	65.62	8630K28	78.72	8630K461	188.25	8630K621	360.80	8630K25	519.59
2″	±0.250″	8630K212	40.03	8630K87	94.89	8630K29	113.56	8630K481	272.82	8630K63	523.81	8630K27	755.53
3″	±0.300″	8630K214	67.78	8630K92	136.25	8630K31	163.76	8630K491	420.51	8630K64	829.01	8630K32	1,201.47

Rods and Tubes—Smooth Finish

- Tensile Strength: 1100 psi

Meet ASTM D2000. Length tolerance is ±1/4″. Durometer hardness is 75A (hard). Durometer tolerance is ±5. ***Rods*** have a diameter tolerance of ±1/8″. ***Tubes*** have an OD tolerance of ±1/8″ and an ID tolerance of ±1/32″. **To Order:** Please specify 6″ or 36″ length.

RODS

Dia.		Each 6″ Lg.	Each 36″ Lg.
3/4″	8629K31	$2.00	$8.93
1″	8629K32	2.73	12.50
1 1/4″	8629K33	3.70	17.14
1 1/2″	8629K35	6.40	29.83
1 3/4″	8629K36	6.80	31.09
2″	8629K37	7.69	35.00
2 1/4″	8629K38	10.00	45.83
2 1/2″	8629K39	11.79	54.17
3″	8629K41	15.00	69.74
3 1/2″	8629K42	23.21	107.76
4″	8629K43	28.56	131.45

TUBES

OD	ID	Wall Thick.		Each 6″ Lg.	Each 36″ Lg.	OD	ID	Wall Thick.		Each 6″ Lg.	Each 36″ Lg.
3/4″	1/4″	1/4″	8637K51	$2.16	$8.60	1 3/4″	1/4″	3/4″	8637K63	$8.17	$33.00
1″	1/4″	3/8″	8637K52	2.66	10.76	1 3/4″	3/8″	11/16″	8637K64	7.78	31.29
1″	3/8″	5/16″	8637K53	3.46	13.84	1 7/8″	1/2″	11/16″	8637K65	7.78	31.29
1″	5/8″	3/16″	8637K54	2.31	9.24	2″	3/8″	13/16″	8637K67	10.59	42.17
1 1/4″	1/4″	1/2″	8637K55	5.09	20.24	2 1/2″	3/8″	1 1/16″	8637K69	13.42	53.28
1 1/4″	1/2″	3/8″	8637K56	4.47	18.04	2 1/2″	3/4″	7/8″	8637K71	12.19	49.16
1 1/4″	5/8″	5/16″	8637K57	3.92	15.65	3″	1/2″	1 1/4″	8637K72	17.41	69.00
1 3/8″	3/8″	1/2″	8637K58	4.72	19.06	3″	1″	1″	8637K73	15.45	61.29
1 3/8″	1/2″	7/16″	8637K59	4.98	20.03	3 1/2″	3/4″	1 3/8″	8637K74	26.18	105.71
1 1/2″	3/8″	9/16″	8637K61	6.25	24.93	4″	7/8″	1 9/16″	8637K75	31.48	125.71
1 1/2″	7/8″	5/16″	8637K62	5.09	20.43	5″	7/8″	2 1/16″	8637K76	42.85	171.05

For information about rubber and durometer hardness scales, see page 3526.

Fabric-Reinforced Neoprene Rubber

- Color: Black
- Temperature Range: –30° to +200° F
- Tensile Strength (Rubber): See below
- Use indoors and outdoors

Fabric reinforcement provides additional strength and makes this rubber ideal for stress applications such as gasketing and diaphragm packing.

Medium-Strength and High-Strength Sheets and Sheeting—Smooth Finish

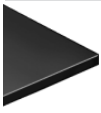

- Tensile Strength (Rubber): 1000 psi for *medium strength*; 1500 psi for *high strength*

Rubber only (not fabric insert) meets ASTM D2000 BC and has a durometer hardness of 70A (hard). Durometer tolerance is ±5. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″.

Medium Strength—A 4-oz. cotton one-ply fabric is inserted for each 1/16″ of thickness.

High Strength—A 14-oz. nylon one-ply fabric is inserted for each 1/16″ of thickness and offers greater tensile strength and durability.

		MEDIUM STRENGTH						HIGH STRENGTH					
		SHEETS				SHEETING		SHEETS				SHEETING	
Thick.	Thick. Tol.	12″×12″	Each	12″×24″	Each	36″ Wide Max. Lg.	Per Ft.	12″×12″	Each	12″×24″	Each	48″ Wide Max. Lg.	Per Ft.
1/16″	±0.016″	8698K71	$7.03	8698K51	$11.67	50 ft.	8698K31	$14.91	8599K31	$15.86	8599K51	$26.45	50 ft.	8599K11	$41.06
3/32″	±0.016″	8698K72	9.54	8698K52	15.89	50 ft.	8698K32	20.25	8599K32	18.71	8599K52	31.17	50 ft.	8599K12	47.74
1/8″	±0.020″	8698K73	12.37	8698K53	20.57	50 ft.	8698K33	27.40	8599K33	24.82	8599K53	39.77	50 ft.	8599K13	63.63
3/16″	±0.031″	8698K74	22.23	8698K54	33.10	30 ft.	8698K34	41.47	8599K34	34.87	8599K54	54.49	30 ft.	8599K14	87.18
1/4″	±0.031″	8698K75	24.93	8698K55	41.44	25 ft.	8698K35	53.43	8599K35	40.82	8599K55	68.03	25 ft.	8599K15	108.83

Ultra-Strength Sheets—Smooth Finish

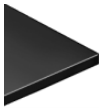

- Tensile Strength (Rubber): 2250 psi

Rubber only (not fabric insert) meets ASTM D2000 BC and has a durometer hardness of 55A (medium). Durometer tolerance is ±5. A 14-oz. fiberglass cloth is inserted for each 1/4″ of thickness. Width and length tolerances are +1″, –1/2″.

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	12″×24″	Each	12″×36″	Each	12″×48″	Each
1/2″	±0.047″	8455K11	$32.17	8455K21	$92.34	8455K31	$167.88	8455K41	$242.67	8455K51	$305.24
1″	±0.100″	8455K12	60.13	8455K22	172.58	8455K32	313.78	8455K42	453.55	8455K52	570.50
1 1/2″	±0.150″	8455K13	80.99	8455K23	243.04	8455K33	441.91	8455K43	622.68	8455K53	783.25
2″	±0.200″	8455K14	101.79	8455K24	305.46	8455K34	555.30	8455K44	782.60	8455K54	984.40

Chemical-Resistant Polyethylene Rubber

- Color: Black
- Temperature Range: –20° to +250° F
- Tensile Strength: 1500 psi
- Use indoors and outdoors

Also known as chlorosulfonated polyethylene and comparable to Hypalon, polyethylene rubber (CSM, CSPE) is engineered for increased resistance to acids, alkalies, oils, greases, and ozone. It also resists flex cracking and abrasion from weather and heat. Because of these properties, and the fact that it has low water absorption, it is often used in roofing systems, hose, timing belts, and insulation.

Sheets, Sheeting, and Strips—Smooth Finish

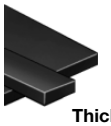

Meet ASTM D2000 CE. Sheets have width and length tolerances of ±3/32″. Sheeting has a width tolerance of ±1″. Strips have a width tolerance of +3/16″ and a length tolerance of +1″. Durometer hardness is 65A (medium hard). Durometer tolerance is ±5.

		SHEETS				SHEETING		STRIPS					
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	36″ Wide Max. Lg.	Per Ft.	2″ Wd.×36″ Lg.	Each	4″ Wd.×36″ Lg.	Each	6″ Wd.×36″ Lg.	Each
1/16″	±0.016″	8618K11	$14.57	8618K21	$21.97	50 ft.	8618K32	$28.65	8618K61	$8.39	8618K71	$13.61	8618K81	$17.56
1/8″	±0.020″	8618K15	25.58	8618K25	42.81	50 ft.	8618K34	55.60	8618K65	16.29	8618K75	28.36	8618K85	36.97
1/4″	±0.031″	8618K19	50.04	8618K29	83.77	25 ft.	8618K36	108.79	8618K69	31.88	8618K79	55.48	8618K89	71.15

Ultra-Strength Oil-Resistant Buna-N Rubber

- Color: Black
- Temperature Range: –40° to +212° F
- Tensile Strength: 2500 psi
- Use indoors

Get the highest tensile strength available for Buna-N, a material that offers outstanding resistance to vegetable- and petroleum-based oils, solvents, and lubricants. Also known as nitrile, acrylonitrile butadiene, and NBR.

Sheets, Sheeting, and Strips—Smooth Finish

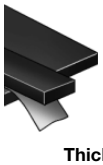

Rubber only (not adhesive) meets ASTM D2000 BG and MIL-R-3065 Grade SB. Adhesive is acrylic and has a temperature range of –20° to +180° F. Sheets and strips have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 50A (medium), 60A (medium hard), or 70A (hard).

Durometer Hardness Selector Pack—Includes three plain-back 6″×6″×1/8″ thick sheets, one of each durometer hardness: 50A, 60A, and 70A.

8969K98 ..... **Per Pkg.** $12.64

		SHEETS				SHEETING		STRIPS					
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	36″ Wide Max. Lg.	Per Ft.	2″×36″	Each	4″×36″	Each	6″×36″	Each
Plain Back													
1/32″	±0.012″	8969K54	$9.01	8969K72	$16.09	150 ft.	8969K89	$21.46	8969K1	$4.94	8969K18	$9.23	8969K36	$12.66
1/16″	±0.016″	8969K55	9.48	8969K73	16.92	100 ft.	8969K91	22.56	8969K2	5.19	8969K19	9.70	8969K37	13.00
3/32″	±0.016″	8969K56	13.07	8969K74	22.74	75 ft.	8969K92	31.13	8969K3	7.16	8969K21	13.67	8969K38	17.93
1/8″	±0.020″	8969K57	16.47	8969K75	27.48	50 ft.	8969K93	39.22	8969K4	9.02	8969K22	17.22	8969K39	22.59
3/16″	±0.031″	8969K58	23.59	8969K76	42.13	25 ft.	8969K94	56.17	8969K5	13.85	8969K23	25.15	8969K41	32.36
1/4″	±0.031″	8969K59	29.78	8969K77	53.18	25 ft.	8969K95	70.90	8969K6	16.31	8969K24	31.20	8969K42	40.85
3/8″	±0.047″	8969K61	44.67	8969K78	79.77	25 ft.	8969K96	106.36	8969K7	24.46	8969K25	45.73	8969K43	61.27
1/2″	±0.047″	8969K62	59.21	8969K79	105.73	25 ft.	8969K97	140.97	8969K8	32.42	8969K26	60.62	8969K44	81.21
Adhesive Back													
1/32″	±0.012″	8969K63	16.33	8969K81	29.16	150 ft.	8969K895	38.88	8969K9	8.94	8969K27	16.78	8969K45	22.90
1/16″	±0.016″	8969K64	17.44	8969K82	31.14	100 ft.	8969K915	41.52	8969K11	9.55	8969K28	17.85	8969K46	24.46
3/32″	±0.016″	8969K65	18.67	8969K83	33.34	75 ft.	8969K925	44.45	8969K12	10.22	8969K29	19.54	8969K47	25.63
1/8″	±0.020″	8969K66	22.42	8969K84	40.04	50 ft.	8969K935	53.39	8969K13	12.28	8969K31	23.02	8969K48	31.37
3/16″	±0.031″	8969K67	31.66	8969K85	55.34	25 ft.	8969K945	75.43	8969K14	17.35	8969K32	32.65	8969K49	44.90
1/4″	±0.031″	8969K68	36.36	8969K86	66.40	25 ft.	8969K955	86.61	8969K15	21.69	8969K33	37.03	8969K51	51.01

For information about rubber and durometer hardness scales, see page 3526.

High-Strength Oil-Resistant Buna-N Rubber

- Color: Black
- Temp. Range: –20° to +212° F, except balls, which have a temp. range of –20° to +200° F
- Tensile Strength: 1500 psi
- Use indoors

Also known as nitrile, acrylonitrile butadiene, and NBR, this rubber has a good balance of oil and solvent resistance when compared to other rubbers, but is not as weather resistant.

Sheets, Sheeting, and Strips—Smooth Finish

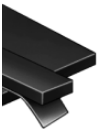

Rubber only (not adhesive) meets ASTM D2000 BG and MIL-R-3065. Adhesive is acrylic and has a temperature range of –20° to +200° F. Sheets and strips have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 40A (medium soft), 50A (medium), 60A (medium hard), or 70A (hard). Adhesive back is not available in 40A.

Durometer Hardness Selector Pack—Includes four plain-back 6″×6″×1/8″ thick sheets, one of each durometer hardness: 40A (medium soft), 50A (medium), 60A (medium hard), and 70A (hard).

86715K93 ..... **Per Pkg.** $15.27

Thick.	Thick. Tol.	SHEETS 12″×12″	Each	SHEETS 12″×24″	Each	SHEETING 36″ Wide Max. Lg.		Per Ft.	STRIPS 2″×36″	Each	STRIPS 4″×36″	Each	STRIPS 6″×36″	Each
Plain Back														
1/32″	±0.012″	86715K269	$6.11	86715K639	$10.38	100 ft.	86715K839	$13.31	9028K11	$4.63	9028K22	$6.39	9028K33	$9.66
1/16″	±0.016″	86715K279	9.77	86715K649	17.35	100 ft.	86715K849	21.23	9028K12	7.36	9028K23	10.58	9028K34	15.29
3/32″	±0.016″	86715K289	13.17	86715K659	21.82	75 ft.	86715K859	28.64	9028K13	9.45	9028K24	14.49	9028K35	19.78
1/8″	±0.020″	86715K299	18.31	86715K669	31.83	50 ft.	86715K869	40.17	9028K14	12.72	9028K25	20.09	9028K36	28.94
3/16″	±0.031″	86715K469	26.01	86715K679	43.91	25 ft.	86715K879	57.10	9028K15	18.07	9028K26	28.55	9028K37	39.80
1/4″	±0.031″	86715K479	32.69	86715K689	55.19	25 ft.	86715K889	72.43	9028K16	22.71	9028K27	36.58	9028K38	50.00
3/8″	±0.047″	86715K489	52.44	86715K699	89.28	25 ft.	86715K899	113.94	9028K17	36.81	9028K28	56.79	9028K39	82.66
1/2″	±0.047″	86715K499	58.57	86715K829	101.71	25 ft.	86715K929	135.54	9028K18	41.20	9028K29	65.32	9028K41	93.56
3/4″	±0.093″	86715K939	88.45	86715K959	153.81	25 ft.	86715K979	193.79	9028K19	56.22	9028K31	92.32	9028K42	133.79
1″	±0.100″	86715K949	107.94	86715K969	187.69	25 ft.	86715K989	235.79	9028K21	65.64	9028K32	114.33	9028K43	156.75
Adhesive Back														
1/32″	±0.012″	86715K26	13.00	86715K63	23.56	100 ft.	86715K83	28.26	9028K51	8.76	9028K62	14.55	9028K73	20.43
1/16″	±0.016″	86715K27	15.29	86715K64	27.05	100 ft.	86715K84	34.68	9028K52	10.67	9028K63	18.25	9028K74	24.97
3/32″	±0.016″	86715K28	19.84	86715K65	32.07	75 ft.	86715K85	40.59	9028K53	12.13	9028K64	21.11	9028K75	27.54
1/8″	±0.020″	86715K29	23.54	86715K66	40.84	50 ft.	86715K86	52.36	9028K54	15.66	9028K65	27.23	9028K76	34.86
3/16″	±0.031″	86715K46	30.43	86715K67	51.39	25 ft.	86715K87	67.62	9028K55	20.29	9028K66	31.14	9028K77	41.63
1/4″	±0.031″	86715K47	37.82	86715K68	64.72	25 ft.	86715K88	84.05	9028K56	25.21	9028K67	39.03	9028K78	51.82
3/8″	±0.047″	86715K48	56.36	86715K69	97.70	25 ft.	86715K89	125.25	9028K57	40.08	9028K68	58.17	9028K79	79.33
1/2″	±0.047″	86715K49	61.82	86715K82	107.53	25 ft.	86715K92	147.02	9028K58	44.11	9028K69	67.82	9028K81	93.25

Metric Sheets and Sheeting—Smooth Finish

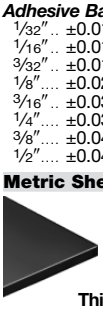

Meet ASTM D2000 BG and MIL-R-3065. Sheets have a width and length tolerance of ±1/4″. Sheeting has a width tolerance of +1″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 50A (medium), 60A (medium hard), or 70A (hard).

Thick.	Thick. Tolerance	SHEETS 12″×24″	Each	SHEETING 36″ Wide Max. Lg.		Per Ft.	Thick.	Thick. Tolerance	SHEETS 12″×24″	Each	SHEETING 36″ Wide Max. Lg.		Per Ft.
0.5 mm	±0.20 mm	86495K31	$8.20	300 ft.	86495K41	$10.93	2.5 mm	±0.41 mm	86495K35	$20.26	100 ft.	86495K45	$27.01
1.0 mm	±0.30 mm	86495K32	11.23	200 ft.	86495K42	14.98	3.0 mm	±0.51 mm	86495K36	23.39	75 ft.	86495K46	31.19
2.0 mm	±0.41 mm	86495K34	16.82	125 ft.	86495K44	22.43	5.0 mm	±0.79 mm	86495K38	39.98	25 ft.	86495K48	53.31

Tight-Tolerance Sheets and Sheeting—One side is buffed to accept adhesive, one side has a smooth finish.

Meet MIL-R-3065. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	SHEETS 12″×12″	Each	SHEETS 12″×24″	Each	SHEETING 36″ Wide Max. Lg.		Per Ft.
1/16″	±0.005″	1860T22	$14.30	1860T32	$21.83	50 ft.	1860T42	$24.45
1/8″	±0.010″	1860T24	22.01	1860T34	35.37	25 ft.	1860T44	42.47
1/4″	±0.020″	1860T26	33.94	1860T36	57.99	20 ft.	1860T46	74.61

Grip-All Sheets and Sheeting—Textured Finish

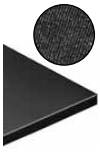

The criss-cross textured finish provides a nonslip surface on both sides. Meet MIL-R-3065. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	SHEETS 12″×12″	Each	SHEETS 12″×24″	Each	SHEETING 36″ Wide Max. Lg.		Per Ft.
1/16″	±0.016″	1845T22	$12.43	1845T32	$21.67	50 ft.	1845T42	$27.07
1/8″	±0.020″	1845T24	21.39	1845T34	37.19	25 ft.	1845T44	46.48
1/4″	±0.031″	1845T26	38.07	1845T36	66.16	20 ft.	1845T46	82.72

Certified Mil. Spec. Sheets—Smooth Finish

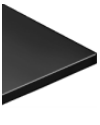

Rubber meets MIL-R-6855 Class 1 and ASTM D2000 BG. Comes with a certificate of conformity which allows for traceability. Width and length tolerances are ±1/4″ for 12″×12″ and 12″×24″ sheets and +1″ for 36″×36″ sheets. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 40A (medium soft) or 60A (medium hard).

Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	36″×36″	Each
1/16″	±0.016″	5337K21	$17.18	5337K24	$28.88	5337K31	$93.24
1/8″	±0.020″	5337K22	29.65	5337K25	49.82	5337K32	160.87
1/4″	±0.031″	5337K23	55.29	5337K26	92.90	5337K33	299.98

Tight-Tolerance Balls—Precision Ground Finish

Durometer hardness is 70A (hard). Durometer tolerance is ±5.

Dia.	Dia. Tol.		Each	Dia.	Dia. Tol.		Each	Dia.	Dia. Tol.		Each
3/16″	±0.003″	1854T42	$1.28	3/8″	±0.003″	1854T48	$1.77	5/8″	±0.004″	1854T56	$2.68
1/4″	±0.003″	1854T44	1.53	7/16″	±0.004″	1854T52	1.88	3/4″	±0.004″	1854T58	3.18
5/16″	±0.003″	1854T46	1.54	1/2″	±0.004″	1854T54	2.28				

For information about rubber and durometer hardness scales, see page 3526.

Medium-Strength Oil-Resistant Buna-N Rubber

- Color: Black
- Temperature Range: –20° to +220° F, unless noted
- Tensile Strength: 1200 psi, unless noted
- Use indoors

This economical grade of Buna-N offers good resistance to oils and solvents but is not as weather resistant as other rubbers. Also known as nitrile, acrylonitrile butadiene, and NBR.

Sheets, Sheeting, and Strips—Smooth Finish

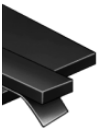

- Temperature Range: –20° to +170° F
- Tensile Strength: 800 psi, except 70A material is 1000 psi

Rubber, but not adhesive, meets ASTM D2000 BF. Adhesive is acrylic and has a temperature range of –20° to +170° F. Sheets and strips have width and length tolerances of ±1/2″. Sheeting has a width tolerance of ±1/2″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 40A (medium soft), 50A (medium), 60A (medium hard), or 70A (hard). 1/32″ thick material is not available in 40A durometer hardness.

Durometer Hardness Selector Pack—Includes four 6″×6″×1/8″ thick sheets, one of each durometer hardness: 40A, 50A, 60A, and 70A.

8635K66 ..... **Per Pkg.** $15.16

		SHEETS				SHEETING			STRIPS					
		12″×12″		12″×24″		36″ Wide			2″×36″		4″×36″		6″×36″	
Thick.	Thick. Tolerance		Each		Each	Max. Lg.		Per Ft.		Each		Each		Each
Plain Back														
1/32″	±0.010″	**8635K161**	$4.00	**8635K823**	$6.88	150 ft.	**8635K361**	$8.49						
1/16″	±0.016″	**8635K162**	4.82	**8635K812**	8.40	100 ft.	**8635K362**	11.50	**9023K12**	$3.75	**9023K22**	$5.70	**9023K32**	$7.12
3/32″	±0.016″	**8635K163**	8.15	**8635K813**	14.14	75 ft.	**8635K363**	17.08						
1/8″	±0.020″	**8635K164**	8.27	**8635K814**	14.48	50 ft.	**8635K364**	21.55	**9023K14**	6.15	**9023K24**	10.29	**9023K34**	12.21
3/16″	±0.031″	**8635K165**	11.39	**8635K815**	20.84	40 ft.	**8635K365**	28.95	**9023K15**	9.80	**9023K25**	16.10	**9023K35**	21.49
1/4″	±0.031″	**8635K166**	14.43	**8635K816**	25.67	40 ft.	**8635K366**	37.79	**9023K16**	13.33	**9023K26**	19.68	**9023K36**	23.89
3/8″	±0.047″	**8635K167**	22.91	**8635K817**	39.85	30 ft.	**8635K367**	53.51						
1/2″	±0.047″	**8635K168**	27.74	**8635K818**	49.65	30 ft.	**8635K368**	69.68	**9023K18**	23.68	**9023K28**	39.70	**9023K38**	45.79
3/4″	±0.094″	**8635K169**	41.83	**8635K819**	70.87	30 ft.	**8635K369**	97.33						
1″	±0.100″	**8635K171**	56.45	**8635K822**	96.39	30 ft.	**8635K371**	124.62						
Adhesive Back														
1/16″	±0.016″	**8635K26**	10.94	**8635K78**	20.02	110 ft.	**8635K2**	29.99	**9023K52**	8.46	**9023K62**	14.14	**9023K72**	18.42
1/8″	±0.020″	**8635K46**	16.40	**8635K83**	28.22	55 ft.	**8635K4**	40.14	**9023K54**	11.32	**9023K64**	19.72	**9023K74**	27.70
3/16″	±0.031″	**8635K73**	21.65	**8635K84**	40.66	44 ft.	**8635K5**	50.36	**9023K55**	15.26	**9023K65**	26.34	**9023K75**	33.47
1/4″	±0.031″	**8635K74**	23.54	**8635K85**	38.35	44 ft.	**8635K6**	53.64	**9023K56**	16.92	**9023K66**	28.83	**9023K76**	37.49
1/2″	±0.047″	**8635K76**	39.16	**8635K97**	73.21	33 ft.	**8635K8**	83.79	**9023K58**	28.27	**9023K68**	48.41	**9023K78**	58.54

Square Bars—Smooth Finish

Solid

Hollow

Meet ASTM D2000 BG. Square size tolerance is ±0.098″. Length tolerance is ±1/4″ for 6″ lengths and ±1/2″ for 12″ and 36″ lengths. Durometer hardness is 75A (hard). Durometer tolerance is ±5.

To Order: Please specify 6″, 12″, or 36″ length where prices are shown.

SOLID					HOLLOW								
Square Size		Each 6″ Lg.	Each 12″ Lg.	Each 36″ Lg.	Square Size	ID	ID Tolerance	Wall Thickness		Each 6″ Lg.	Each 12″ Lg.	Each 36″ Lg.
3/4″	**1847T213**			$13.31	3/4″	1/4″	±0.031″	1/4″	**1427T113**			$15.52
1″	**1847T22**		$9.92	26.10	1″	3/8″	±0.039″	5/16″	**1427T123**			23.76
1 1/4″	**1847T23**		15.87	41.76	1 1/4″	5/8″	±0.063″	5/16″	**1427T13**		$11.41	30.03
1 1/2″	**1847T25**	$13.34	22.03	57.98	1 1/2″	7/8″	±0.063″	5/16″	**1427T15**		18.45	48.56
2″	**1847T27**	20.06	33.14	87.21	2″	3/8″	±0.039″	13/16″	**1427T16**	$19.48	32.18	84.68

Tubes—Smooth Finish

Meet ASTM D2000 BG. OD tolerance is ±3/32″. ID tolerance is ±1/32″. Length tolerance is ±1/4″ for 6″ long tubes and ±1/2″ for 36″ long tubes. Durometer hardness is 75A (hard). Durometer tolerance is ±5.

OD	ID	Wall Thickness	6″ Long	Each	36″ Long	Each	OD	ID	Wall Thickness	6″ Long	Each	36″ Long	Each
3/4″	1/4″	1/4″	**86805K51**	$3.42	**86805K21**	$14.79	1 3/8″	1/2″	7/16″	**86805K58**	$9.93	**86805K28**	$38.97
1″	1/4″	3/8″	**86805K52**	6.25	**86805K22**	28.33	1 1/2″	3/8″	9/16″	**86805K59**	12.95	**86805K29**	50.29
1″	3/8″	5/16″	**86805K53**	5.35	**86805K23**	21.59	1 1/2″	7/8″	5/16″	**86805K61**	9.57	**86805K31**	35.54
1″	5/8″	3/16″	**86805K54**	4.37	**86805K24**	19.00	2″	3/8″	13/16″	**86805K62**	22.35	**86805K32**	87.87
1 1/4″	1/2″	3/8″	**86805K56**	8.66	**86805K26**	34.41	2 1/2″	3/4″	7/8″	**86805K63**	24.16	**86805K33**	96.66
1 1/4″	5/8″	5/16″	**86805K57**	7.05	**86805K27**	28.28	3″	1″	1″	**86805K64**	28.09	**86805K34**	112.36

Rods—Smooth Finish

Meet ASTM D2000 BG. Diameter tolerance is ±0.094″. Length tolerance is ±1/4″ for 6″ long rods and ±1/2″ for 36″ long rods. Durometer hardness is 75A (hard). Durometer tolerance is ±5.

Dia.	6″ Long	Each	36″ Long	Each	Dia.	6″ Long	Each	36″ Long	Each
3/4″	**86975K11**	$4.76	**86975K61**	$14.50	2″	**86975K17**	$31.96	**86975K67**	$89.89
1″	**86975K12**	7.98	**86975K62**	23.90	2 1/4″	**86975K18**	37.42	**86975K68**	112.21
1 1/4″	**86975K13**	12.72	**86975K63**	37.29	2 1/2″	**86975K19**	48.50	**86975K69**	144.82
1 3/8″	**86975K14**	13.92	**86975K64**	40.28	3″	**86975K21**	59.30	**86975K71**	173.91
1 1/2″	**86975K15**	17.47	**86975K65**	54.06	3 1/2″	**86975K22**	74.33	**86975K72**	220.42
1 3/4″	**86975K16**	24.63	**86975K66**	73.40	4″	**86975K23**	85.04	**86975K73**	251.16

Cord—Smooth Finish

Length tolerance is +1″. Durometer tolerance is ±5.

To Order: Please specify durometer hardness: 50A (medium), 60A (medium hard), or 70A (hard).

Dia.	Dia. Tol.	Length		Each	Dia.	Dia. Tol.	Length		Each	Dia.	Dia. Tol.	Length		Each
1/8″	±0.027″	36″	**9027K11**	$7.89	1/2″	±0.051″	36″	**9027K14**	$14.58	1 1/2″	±0.079″	6″	**9027K23**	$15.84
1/4″	±0.039″	36″	**9027K12**	8.85	3/4″	±0.063″	36″	**9027K15**	25.28	2″	±0.098″	6″	**9027K24**	22.55
3/8″	±0.039″	36″	**9027K13**	11.86	1″	±0.079″	6″	**9027K22**	10.40	3″	±0.126″	6″	**9027K26**	48.00

For information about rubber and durometer hardness scales, see page 3526.

FDA-Compliant Oil-Resistant Buna-N Rubber

- Color: See below
- Temperature Range: –20° to +200° F
- Tensile Strength: See below
- Use indoors

Typically used in food-processing applications, this Buna-N rubber is made from FDA-compliant materials. Also known as nitrile, acrylonitrile butadiene, and NBR, it has superior resistance to oils and solvents and good resistance to abrasion, alkalies, and permeability of gases.

Medium-Strength Sheets, Sheeting, and Strips—Smooth Finish

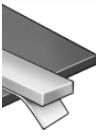

- Color: White or red
- Tensile Strength: *White*: 1000 psi; *red*: 1200 psi

White—Adhesive is acrylic and has a temperature range of –20° to +200° F. Sheets and strips have width and length tolerances of ±1/2″. Sheeting has a width tolerance of ±1″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

Red—Rubber, but not adhesive, meets ASTM D2000 BG. Adhesive is acrylic and has a temperature range of 50° to 200° F. Sheets have width and length tolerances of ±1/8″. Sheeting has a width tolerance of ±1″. Durometer hardness is 55A (medium). Durometer tolerance is ±5.

		SHEETS				SHEETING		STRIPS					
	Thick.	12″×12″		12″×24″		36″ Wide		2″×36″		4″×36″		6″×36″	
Thick.	Tol.		Each		Each	Max. Lg.	Per Ft.		Each		Each		Each
White Plain Back													
1/16″	±0.016″	86795K21	$10.64	86795K31	$16.57	88 ft.	86795K41	$19.45	86795K61	$7.57	86795K71	$10.84	86795K81	$14.18
1/8″	±0.020″	86795K23	20.48	86795K33	31.95	66 ft.	86795K43	37.69	86795K63	12.99	86795K73	20.70	86795K83	27.80
3/16″	±0.031″	86795K25	29.85	86795K35	46.41	44 ft.	86795K45	56.71	86795K65	18.36	86795K75	30.62	86795K85	40.47
1/4″	±0.031″	86795K27	40.64	86795K37	62.65	44 ft.	86795K47	77.05	86795K67	24.22	86795K77	39.92	86795K87	55.31
White Adhesive Back													
1/16″	±0.016″	86795K2	18.57	86795K6	30.81	88 ft.	86795K11	40.51	86795K62	9.48	86795K72	16.67	86795K82	20.82
1/8″	±0.020″	86795K3	24.83	86795K7	44.23	66 ft.	86795K12	59.15	86795K64	13.16	86795K74	23.13	86795K84	32.18
3/16″	±0.031″	86795K4	32.84	86795K8	58.97	44 ft.	86795K13	78.07	86795K66	19.90	86795K76	33.58	86795K86	45.44
1/4″	±0.031″	86795K5	43.81	86795K9	75.54	44 ft.	86795K14	98.78	86795K68	25.17	86795K78	41.87	86795K88	58.15
Red Plain Back													
1/16″	±0.016″	8649K61	7.24	8649K41	13.09	100 ft.	8649K21	16.82						
3/32″	±0.016″	8649K62	10.43	8649K42	18.48	65 ft.	8649K22	25.60						
1/8″	±0.020″	8649K63	13.92	8649K43	24.87	50 ft.	8649K23	32.30						
3/16″	±0.031″	8649K64	22.77	8649K44	40.35	30 ft.	8649K24	47.93						
1/4″	±0.031″	8649K65	32.76	8649K45	53.28	25 ft.	8649K25	63.62						
Red Adhesive Back													
1/16″	±0.016″	5727T71	12.52	5727T51	22.02	50 ft.	5727T31	27.73						
3/32″	±0.016″	5727T72	15.30	5727T52	26.90	50 ft.	5727T32	33.92						
1/8″	±0.020″	5727T73	18.37	5727T53	34.08	50 ft.	5727T33	42.92						
3/16″	±0.031″	5727T74	26.68	5727T54	46.95	30 ft.	5727T34	59.16						
1/4″	±0.031″	5727T75	34.57	5727T55	60.92	25 ft.	5727T35	76.74						

High-Strength Sheets, Sheeting, and Strips—Smooth Finish

- Color: White
- Tensile Strength: 1500 psi

Meet ASTM D2000 BF and 3-A sanitary standards. USDA-compliant for meat and poultry processing. Sheets have width and length tolerances of ±1/2″. Strips have a width tolerance of ±1/2″ and a length tolerance of ±1″. Sheeting has a width tolerance of ±1″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

		SHEETS				SHEETING		STRIPS					
	Thick.	12″×12″		12″×24″		36″ Wide		2″ Wd.×36″ Lg.		4″ Wd.×36″ Lg.		6″ Wd.×36″ Lg.	
Thick.	Tol.		Each		Each	Max. Lg.	Per Ft.		Each		Each		Each
1/16″	±0.016″	86305K12	$12.11	86305K22	$19.01	100 ft.	86305K42	$23.82	86305K62	$6.78	86305K72	$12.81	86305K82	$15.84
1/8″	±0.020″	86305K14	22.74	86305K24	36.16	50 ft.	86305K44	43.21	86305K64	12.34	86305K74	24.43	86305K84	33.52
3/16″	±0.031″	86305K16	28.53	86305K26	50.88	40 ft.	86305K46	60.84	86305K66	19.40	86305K76	36.18	86305K86	44.97
1/4″	±0.031″	86305K18	36.99	86305K28	65.43	40 ft.	86305K48	78.19	86305K68	24.07	86305K78	44.20	86305K88	60.66

High-Temperature Oil-Resistant Buna-N Rubber

- Color: Black
- Temperature Range: –30° to +300° F
- Tensile Strength: 1500 psi
- Use indoors

Peroxide-cured for improved temperature resistance, this material also offers excellent oil resistance as well as good resistance to abrasion, acids, alkalies, and permeability of gases. Commonly referred to as nitrile, acrylonitrile butadiene, and NBR.

Sheets and Sheeting—Smooth Finish

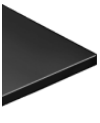

Meet ASTM D2000 BG and MIL-R-3065. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

		SHEETS				SHEETING	
		12″×12″		12″×24″		36″ Wide	
Thick.	Thick. Tolerance		Each		Each	Max. Lg.	Per Ft.
1/32″	±0.012″	1861T21	$9.35	1861T31	$16.27	100 ft.	1861T41 $20.35
1/16″	±0.016″	1861T22	11.95	1861T32	20.78	50 ft.	1861T42 25.97
1/8″	±0.020″	1861T24	23.69	1861T34	41.16	25 ft.	1861T44 47.85
1/4″	±0.031″	1861T26	42.40	1861T36	79.33	20 ft.	1861T46 92.22

Fabric-Reinforced Oil-Resistant Buna-N Rubber

- Color: Black
- Temperature Range: –20° to +220° F
- Tensile Strength: 1500 psi
- Use indoors

Ideal for use in applications such as diaphragm packing, this rubber is internally reinforced with layers of fabric to increase its strength while maintaining its oil and solvent resistance.

Sheets and Sheeting—Smooth Finish

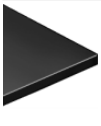

Rubber, but not fabric insert, meets ASTM D2000 BG and has a durometer hardness of 70A (hard). Durometer tolerance is ±5. A lightweight one-ply piece of nylon fabric is inserted for each 1/16″ of thickness. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″.

		SHEETS				SHEETING	
		12″×12″		12″×24″		48″ Wide	
Thick.	Thick. Tolerance		Each		Each	Max. Lg.	Per Ft.
1/16″	±0.016″	1890T12	$23.28	1890T22	$36.90	50 ft.	1890T42 $43.74
1/8″	±0.020″	1890T14	31.62	1890T24	54.82	25 ft.	1890T44 71.20
1/4″	±0.031″	1890T16	52.40	1890T26	91.75	20 ft.	1890T46 123.65

For information about rubber and durometer hardness scales, see page 3526.

Laminated Oil-Resistant Buna-N Rubber

● Color (Rubber): Black ● Temperature Range: –30° to +200° F ● Tensile Strength (Rubber): 1000 psi ● Use indoors

This oil-resistant Buna-N rubber is bonded to a plastic or metal backing plate, offering stability as well as shock absorption.

Sheets

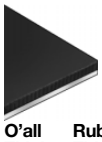

Rubber only (not laminate) has a durometer hardness of 50A (medium). Durometer tolerance is ±5. Laminate is 1/8″ thick. Width and length tolerances are ±3/8″.

UHMW Polyethylene Laminate—Yield strength is 3,050 psi.

Polypropylene Laminate—Yield strength is 5,200 psi.

Aluminum Alloy 6061 Laminate—Yield strength is 40,000 psi.

To Order Please specify laminate: UHMW polyethylene, polypropylene, or aluminum Alloy 6061.

O'all Thick.	Rubber Thick.	O'all Thick. Tolerance	6″×6″	Each	12″×12″	Each	O'all Thick.	Rubber Thick.	O'all Thick. Tolerance	6″×6″	Each	12″×12″	Each
3/8″	1/4″	±1/16″	9525K41	$27.17	9525K81	$49.71	1 1/8″	1″	±1/8″	9525K44	$36.75	9525K84	$92.75
5/8″	1/2″	±3/32″	9525K42	29.86	9525K82	52.52	1 3/8″	1 1/4″	±5/32″	9525K45	37.61	9525K85	112.13
7/8″	3/4″	±1/8″	9525K43	36.73	9525K83	69.46	2 1/8″	2″	±5/32″	9525K47	50.81	9525K87	132.04

Abrasion- and Oil-Resistant Buna-N Rubber

● Color: Orange ● Temperature Range: –4° to +230° F ● Tensile Strength: 1000 psi ● Use indoors

Silica fillers increase the abrasion resistance and strength of this Buna-N rubber. Also known as nitrile, acrylonitrile butadiene, and NBR. It has superior resistance to oil and solvents and good resistance to abrasion, acids, alkalies, and permeability of gases.

Sheets and Sheeting—One side is buffed to accept adhesive, one side has a smooth finish.

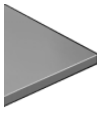

Sheets have width and length tolerances of ±1/2″. Sheeting has a width tolerance of +1″. Durometer hardness is 52A (medium). Durometer tolerance is ±5.

		SHEETS				SHEETING 48″ Wide		
Thick.	Thick. Tolerance	12″×12″	Each	24″×24″	Each	Max. Lg.		Per Ft.
1/8″	+0.040″, –0.054″	86425K12	$53.16	86425K32	$162.42	30 ft.	86425K52	$134.00
3/16″	+0.057″, –0.038″	86425K13	60.89	86425K33	186.60	30 ft.	86425K53	160.96
1/4″	+0.033″, –0.061″	86425K14	76.56	86425K34	235.04	30 ft.	86425K54	203.36
3/8″	+0.082″, –0.044″	86425K15	107.24	86425K35	329.18	30 ft.	86425K55	284.00

FDA-Compliant Oil- and Water-Resistant Buna-N/Vinyl Rubber

● Color: White ● Temperature Range: –20° to +220° F ● Tensile Strength: 2000 psi ● Use indoors and outdoors

Get the best qualities of Buna-N and vinyl in this high-strength, oil- and water-resistant blend. Also known as nitrile-vinyl, it's made of FDA-compliant materials and is nonmarking.

Sheets and Sheeting—Smooth Finish

Meet ASTM D2000 BK. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer hardness is 70A (hard). Durometer tolerance is ±5.

		SHEETS				SHEETING 36″ Wide		
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	Max. Lg.		Per Ft.
1/32″	±0.012″	8615K81	$6.42	8615K91	$10.84	225 ft.	8615K61	$13.38
1/16″	±0.016″	8615K82	9.73	8615K92	16.43	150 ft.	8615K62	20.28
3/32″	±0.016″	8615K83	13.43	8615K93	22.66	100 ft.	8615K63	27.97
1/8″	±0.020″	8615K84	16.52	8615K94	27.88	75 ft.	8615K64	34.42
3/16″	±0.031″	8615K85	23.93	8615K95	40.39	25 ft.	8615K65	49.86
1/4″	±0.031″	8615K86	31.11	8615K96	52.50	25 ft.	8615K66	64.81

Oil-Resistant Vinyl Rubber

● Color: Black ● Temperature Range: 20° to 160° F ● Tensile Strength: 700 psi ● Use indoors and outdoors

Also known as polyvinyl chloride (PVC), this rubber offers good oil resistance in addition to water resistance. Used in gasketing applications.

Sheets and Sheeting—Smooth Finish

Adhesive is acrylic and has a temperature range of 20° to 160° F. Sheets have width and length tolerances of ±1/2″. Sheeting has a width tolerance of ±1/2″. Durometer hardness is 80A (hard). Durometer tolerance is ±5.

		PLAIN BACK						ADHESIVE BACK					
		SHEETS				SHEETING 36″ Wide		SHEETS					
Thick.	Thick. Tol.	12″×12″	Each	12″×24″	Each	Max. Lg.	Per Ft.	12″×12″	Each	12″×24″	Each	36″×36″	Each
1/16″	±0.016″	8513K43	$3.16	8513K63	$5.00	150 ft.	8513K25	$5.30	8513K33	$8.94	8513K53	$14.03	8513K73	$57.51
1/8″	±0.020″	8513K45	6.08	8513K65	9.70	75 ft.	8513K27	10.02	8513K35	11.06	8513K55	18.76	8513K75	72.14
3/16″	±0.031″	8513K47	7.55	8513K67	13.66	60 ft.	8513K29	14.10	8513K37	12.20	8513K57	22.56	8513K77	86.73
1/4″	±0.031″	8513K49	9.64	8513K69	16.17	50 ft.	8513K31	18.06	8513K39	14.65	8513K59	26.51	8513K79	101.99

Oil-Resistant High-Temperature ECH Rubber

● Color: Black ● Temperature Range: –40° to +250° F ● Tensile Strength: 1200 psi ● Use indoors and outdoors

ECH (epichlorohydrin) rubber provides even better resistance to fuel, oil, and ozone than Buna-N.

Sheets, Sheeting, and Strips—Smooth Finish

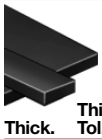

Meet ASTM D2000 CH. Sheets and strips have width and length tolerances of ±1/4″. Sheeting has a width tolerance of ±1″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

		SHEETS				SHEETING 36″ Wide		STRIPS					
Thick.	Thick. Tol.	12″×12″	Each	12″×24″	Each	Max. Lg.	Per Ft.	2″×36″	Each	4″×36″	Each	6″×36″	Each
1/32″	±0.012″	85765K31	$10.64	85765K51	$17.66	200 ft.	85765K71	$21.28	85765K81	$6.17	85765K91	$10.85	85765K61	$14.15
1/16″	±0.016″	85765K32	12.91	85765K52	21.44	100 ft.	85765K72	25.83	85765K82	7.49	85765K92	13.17	85765K62	17.18
3/32″	±0.016″	85765K33	21.00	85765K53	34.85	75 ft.	85765K73	41.99	85765K83	12.18	85765K93	21.41	85765K63	27.92
1/8″	±0.020″	85765K34	34.77	85765K54	57.72	50 ft.	85765K74	69.54	85765K84	20.17	85765K94	35.47	85765K65	46.24
3/16″	±0.031″	85765K35	50.99	85765K55	84.65	25 ft.	85765K75	101.99	85765K85	29.58	85765K95	52.01	85765K66	67.82
1/4″	±0.031″	85765K36	65.10	85765K56	108.07	25 ft.	85765K76	130.20	85765K86	37.76	85765K96	66.40	85765K67	86.58

For information about rubber and durometer hardness scales, see page 3526.

Abrasion-Resistant Natural Gum Rubber

- Color: See below
- Temperature Range: –20° to +180° F, unless noted
- Tensile Strength: See below
- Use indoors

Also known as floating stock, natural rubber (NR) offers excellent resilience and abrasion resistance.

Sheets, Sheeting, and Strips—Smooth Finish

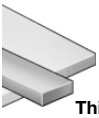

- Color: Tan or off-white
- Temperature Range: –20° to +140° F
- Tensile Strength: *Tan*: 3000 psi; *off-white*: 2800 psi

Meet ASTM D2000 AA. Made of FDA-compliant materials. Sheets and strips have width and length tolerances of ±½″. Sheeting has a width tolerance of ±1″. Durometer hardness is 40A (medium soft). Durometer tolerance is ±5.

		SHEETS				SHEETING 36″ Wide		STRIPS					
Thick.	Thick. Tol.	12″×12″	Each	12″×24″	Each	Max. Lg.	Per Ft.	2″×36″	Each	4″×36″	Each	6″×36″	Each
Tan													
1/16″	±0.016″	8633K52	$6.40	8633K32	$11.15	105 ft.	8633K12	$16.12	6856K11	$4.84	6856K12	$8.35	6856K13	$11.51
1/8″	±0.020″	8633K54	11.24	8633K34	19.43	50 ft.	8633K14	28.16	6856K14	7.13	6856K15	12.88	6856K16	19.79
3/16″	±0.031″	8633K55	16.38	8633K35	29.51	40 ft.	8633K15	41.84	6856K17	11.38	6856K18	20.67	6856K19	29.39
1/4″	±0.031″	8633K56	21.15	8633K36	38.02	40 ft.	8633K16	53.43	6856K21	13.71	6856K22	25.65	6856K23	37.40
3/8″	±0.047″	8633K57	31.68	8633K37	55.12	30 ft.	8633K17	74.59	6856K24	20.15	6856K25	38.99	6856K26	54.36
1/2″	±0.047″	8633K58	40.34	8633K38	71.49	30 ft.	8633K18	94.94	6856K27	25.85	6856K28	49.73	6856K29	70.16
3/4″	±0.094″	8633K61	60.24	8633K41	104.75	30 ft.	8633K21	139.35	6856K31	37.90	6856K32	74.33	6856K33	105.17
1″	±0.100″	8633K63	77.24	8633K43	139.22	30 ft.	8633K23	181.87	6856K34	50.41	6856K35	97.81	6856K36	136.11
Off-White													
1/16″	±0.016″	87145K71	6.20	87145K81	10.36	100 ft.	87145K91	13.11						
1/8″	±0.020″	87145K73	9.75	87145K83	17.39	50 ft.	87145K93	21.75						
3/16″	±0.031″	87145K74	11.78	87145K84	20.31	30 ft.	87145K94	29.44						
1/4″	±0.031″	87145K75	18.98	87145K85	33.72	25 ft.	87145K95	42.97						

Adhesive-Ready Sheets and Sheeting—One side is buffed to accept adhesive, one side has a smooth finish.

- Color: Red or white
- Tensile Strength: 3300 psi

Sheets have width and length tolerances of ±1/16″. Sheeting has a width tolerance of ±1″. Durometer hardness is 40A (medium soft). Durometer tolerance is ±5.

		SHEETS				SHEETING 48″ Wide		
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	Max. Lg.		Per Ft.
Red								
1/8″	±0.020″	1789T11	$20.61	1789T12	$33.57	35 ft.	1789T13	$65.04
1/4″	±0.031″	1789T21	30.05	1789T22	53.52	35 ft.	1789T23	102.93
3/8″	±0.047″	1789T31	43.88	1789T32	74.49	35 ft.	1789T33	140.34
White								
1/4″	±0.031″	1789T51	30.73	1789T52	54.27	35 ft.	1789T53	104.37

Ultra-Strength Sheets and Sheeting—Smooth Finish

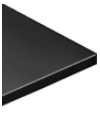

- Color: Black
- Tensile Strength: 3800 psi

AASHTO certified for use as bridge bearing pad material. Sheets have width and length tolerances of ±1/16″. Sheeting has a width tolerance of +½″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

		SHEETS				SHEETING 48″ Wide		
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	Max. Lg.		
1/2″	+0.125″	1796T61	$55.19	1796T62	$101.22	30 ft.	1796T63	$183.30
5/8″	+0.125″	1796T71	85.55	1796T72	168.16	30 ft.	1796T73	210.20
3/4″	+0.125″	1796T81	75.98	1796T82	139.76	30 ft.	1796T83	251.50
1″	+0.125″	1796T91	96.70	1796T92	177.89	25 ft.	1796T93	317.66

Balls—Smooth Finish

- Color: Off-white
- Tensile Strength: 2700 psi

Made of FDA-compliant materials. Diameter tolerance is ±1/32″. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

Dia.	Pkg. Qty.		Per Pkg.	Dia.	Pkg. Qty.		Per Pkg.
5/8″	10	96385K61	$5.92	1 3/8″	5	96385K64	$6.53
1″	10	96385K62	12.58	2″	5	96385K68	14.87
1 1/8″	10	96385K63	13.43				

Abrasion-Resistant Natural Latex Rubber

- Color: See below
- Temperature Range: –30° to +158° F
- Tensile Strength: 3850 psi, unless noted
- Use indoors

This natural rubber (NR) provides exceptional tear resistance.

Sheets, Sheeting, and Strips—One side is buffed to accept adhesive, one side has a smooth finish.

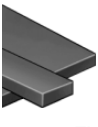

- Color: Red

Commonly used in slurry handling applications including pipelines, chutes, valve and pump linings, and screen cloths. Made of 95% natural latex rubber. Width tolerance is ±13/32″. Sheets have a length tolerance of ±¼″, except 24″×24″ sheets are ±½″. Strips have a length tolerance of ±¾″. Durometer hardness is 34A (soft). Durometer tolerance is ±3. Maximum continuous length for sheeting is 30 ft.

		SHEETS						SHEETING 48″ Wide		STRIPS			
Thick.	Thick. Tolerance	6″ Wd.×6″ Lg.	Each	12″ Wd.×12″ Lg.	Each	24″ Wd.×24″ Lg.	Each		Per Ft.	2″ Wd.×36″ Lg.	Each	4″ Wd.×36″ Lg.	Each
1/16″	±0.056″	86085K11	$12.31	86085K101	$24.54	86085K111	$76.02	86085K21	$59.56				
1/8″	±0.064″	86085K12	26.54	86085K102	46.57	86085K112	145.29	86085K31	103.04	2969K11	$29.63	2969K16	$54.34
3/16″	±0.081″	86085K13	27.80	86085K103	50.27	86085K113	156.40	86085K41	142.69				
1/4″	±0.057″	86085K14	39.53	86085K104	71.04	86085K114	221.41	86085K51	172.98	2969K12	48.14	2969K17	82.89
3/8″	±0.121″	86085K15	41.05	86085K105	76.86	86085K115	238.83	86085K61	233.62	2969K13	51.82	2969K18	89.66
1/2″	±0.075″	86085K16	66.28	86085K106	119.66	86085K116	342.55	86085K71	299.22	2969K14	80.55	2969K19	139.62
3/4″	±0.156″	86085K17	96.60	86085K107	174.38	86085K117	479.00	86085K81	415.29				
1″	±0.079″	86085K18	120.00	86085K108	216.99	86085K118	573.45	86085K91	504.62	2969K15	138.11	2969K21	227.74

(Material continued on following page)

For information about rubber and durometer hardness scales, see page 3526.

Abrasion-Resistant Natural Latex Rubber *(Material continued from previous page)*

Film—Smooth Finish

- Color: Amber

Made of 97% natural latex rubber. Width tolerance is ±1/8″ for 6″ wide film and ±2″ for 42″ wide film. Durometer hardness is 40A (medium soft). Durometer tolerance is ±5.

Thickness Selector Pack—Includes nine 6″×6″ film sheets, one of each thickness from 0.006″ to 0.050″, except 0.025″.
8611K222 ..... **Per Pkg.** $22.16

Thick.	Thick. Tolerance	Max. Lg.	6″ Wide Per Yd.	42″ Wide Per Ft.	Thick.	Thick. Tolerance	Max. Lg.	6″ Wide Per Yd.	42″ Wide Per Ft.
0.006″	±0.002″	50 yds.	85995K12 $2.46	8611K11 $4.80	0.020″	±0.003″	23 yds.	85995K27 $4.76	8611K16 $9.71
0.008″	±0.002″	50 yds.	85995K13 2.56	8611K12 5.14	0.025″	±0.003″	23 yds.	85995K28 5.29	8611K17 10.80
0.010″	±0.002″	50 yds.	85995K14 2.85	8611K13 6.00	0.030″	±0.005″	23 yds.	85995K19 6.75	8611K18 13.78
0.012″	±0.002″	50 yds.	85995K15 3.21	8611K14 6.97	0.040″	±0.005″	20 yds.	85995K21 10.72	8611K19 21.87
0.014″	±0.002″	50 yds.	85995K16 3.52	8611K15 7.26	0.050″	±0.008″	20 yds.	85995K32 14.42	8611K21 28.98

Cord—Smooth Finish

- Color: Black
- Tensile Strength: 3200 psi

Made of 97% natural latex rubber. Diameter tolerance is ±0.015″. Durometer hardness is 40A (medium soft). Durometer tolerance is ±5. Max. continuous length is 10 ft.

Dia.	Per Ft.	Dia.	Per Ft.	Dia.	Per Ft.	Dia.	Per Ft.
1/16″	1775T21 $0.50	1/8″	1775T23 $0.80	1/4″	1775T25 $1.20	3/8″	1775T27 $1.78

FDA-Compliant Abrasion-Resistant Natural Latex Rubber

- Color: Off-White
- Temperature Range: –40° to +158° F
- Tensile Strength: 2600 psi
- Use indoors and outdoors

Made from FDA-compliant materials, this natural rubber (NR) is ideal for long-term contact with food.

Sheets and Sheeting—One side is buffed to accept adhesive, one side has a smooth finish.

Width tolerance is ±3/8″. Sheets have a length tolerance of ±1/2″, except 24″ long sheets are ±1″. Durometer hardness is 35A (soft). Durometer tolerance is ±5. Maximum continuous length for sheeting is 30 ft.

Thick.	Thick. Tolerance	SHEETS 12″ Wd.×12″ Lg. Each	SHEETS 12″ Wd.×48″ Lg. Each	SHEETS 24″ Wd.×24″ Lg. Each	SHEETING 48″ Wide Per Ft.
1/16″	+0.044″, -0.051″	86395K21 $24.13	86395K51 $71.44	86395K31 $80.39	86395K41 $68.64
1/8″	+0.040″, -0.054″	86395K22 45.12	86395K52 129.83	86395K32 140.28	86395K42 119.11
3/16″	+0.057″, -0.038″	86395K23 55.48	86395K53 164.03	86395K33 184.54	86395K43 151.96
1/4″	+0.033″, -0.061″	86395K24 70.10	86395K54 198.16	86395K34 217.94	86395K44 181.80
3/8″	+0.082″, -0.044″	86395K25 102.22	86395K55 276.06	86395K35 304.91	86395K45 253.27

Weather- and Abrasion-Resistant Natural Latex Rubber

- Color: Black
- Temperature Range: –40° to +167° F
- Tensile Strength: 2600 psi
- Use indoors and outdoors

Additives make this natural latex rubber resistant to prolonged exposure to sunlight and high ozone concentrations.

Sheets and Strips—One side is buffed to accept adhesive, one side has a smooth finish.

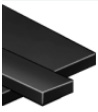

Width tolerance is ±1/2″. Length tolerance is ±3/4″. Durometer hardness is 35A (soft). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	SHEETS 12″ Wd.×12″ Lg. Each	SHEETS 12″ Wd.×36″ Lg. Each	SHEETS 24″ Wd.×24″ Lg. Each	STRIPS 2″ Wd.×36″ Lg. Each
1/8″	+0.064″, -0.039″	2983K11 $37.22	2983K22 $91.37	2983K16 $120.97	2983K27 $32.78
1/4″	+0.057″, -0.045″	2983K13 61.32	2983K24 151.96	2983K18 197.50	2983K29 51.69
1/2″	+0.074″, -0.067″	2983K15 104.96	2983K26 270.52	2983K21 351.51	2983K32 85.80

Abrasion-Resistant SBR Rubber

- Color: See below
- Temperature Range: –20° to +170° F
- Tensile Strength: See below
- Use indoors

Also known as styrene butadiene, this basic rubber has properties similar to natural rubber, including good abrasion resistance.

Sheets, Sheeting, and Strips—Smooth Finish

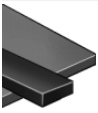

- Color: Black or red
- Tensile Strength: *Black*: 700 psi; *red*: 400 psi

Sheets and strips have width and length tolerances of ±1/2″. Sheeting has a width tolerance of ±1/2″. Durometer hardness is 75A (hard). Durometer tolerance is ±5. ***Red*** rubber meets ASTM D2000 AA.

Thick.	Thick. Tol.	SHEETS 12″×12″ Each	SHEETS 12″×24″ Each	SHEETING 36″ Wide Max. Lg.	SHEETING 36″ Wide Per Ft.	STRIPS 2″×36″ Each	STRIPS 4″×36″ Each	STRIPS 6″×36″ Each
Black								
1/16″	±0.016″	8634K41 $2.95	8634K61 $5.25	100 ft.	8634K11 $6.43	8634K17 $3.12	8634K31 $4.72	8634K47 $6.17
3/32″	±0.016″	8634K57 4.44	8634K77 7.75	75 ft.	8634K27 8.07	____ ____	____ ____	____ ____
1/8″	±0.020″	8634K42 5.38	8634K62 10.39	50 ft.	8634K12 11.31	8634K22 4.73	8634K33 7.79	8634K52 9.04
3/16″	±0.031″	8634K43 8.05	8634K63 14.54	40 ft.	8634K13 16.97	8634K23 6.27	8634K34 10.88	8634K53 12.64
1/4″	±0.031″	8634K44 10.83	8634K64 19.08	40 ft.	8634K14 22.67	8634K24 7.79	8634K35 13.92	8634K54 17.22
3/8″	±0.047″	8634K45 16.27	8634K65 29.14	30 ft.	8634K15 33.98	____ ____	____ ____	____ ____
1/2″	±0.047″	8634K46 21.66	8634K66 39.01	30 ft.	8634K16 42.63	8634K26 14.43	8634K37 24.73	8634K56 33.43
3/4″	±0.094″	8634K48 32.26	8634K68 58.01	30 ft.	8634K18 62.84	____ ____	____ ____	____ ____
1″	±0.100″	8634K49 47.23	8634K69 82.04	30 ft.	8634K19 88.21	____ ____	____ ____	____ ____
Red								
1/16″	±0.016″	9454K42 3.31	9454K62 5.87	120 ft.	9454K2 6.90	____ ____	____ ____	____ ____
3/32″	±0.016″	9454K43 4.77	9454K63 8.62	80 ft.	9454K3 9.93	____ ____	____ ____	____ ____
1/8″	±0.020″	9454K44 6.39	9454K64 11.52	60 ft.	9454K4 13.40	____ ____	____ ____	____ ____
3/16″	±0.031″	9454K45 9.06	9454K65 16.22	40 ft.	9454K5 18.64	____ ____	____ ____	____ ____
1/4″	±0.031″	9454K46 12.07	9454K66 21.23	30 ft.	9454K6 24.70	____ ____	____ ____	____ ____

(Material continued on following page)

For information about rubber and durometer hardness scales, see page 3526.

Abrasion-Resistant SBR Rubber *(Material continued from previous page)*

- Color: Black
- Temperature Range: See below
- Tensile Strength: See below
- Use indoors

Also known as styrene butadiene, this basic rubber has properties similar to natural rubber, including good abrasion resistance.

High-Strength and Ultra-Strength Sheeting—Smooth Finish

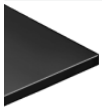

- Temperature Range: *High Strength*: –20° to +170° F; *Ultra Strength*: –20° to +200° F
- Tensile Strength: *High Strength*: 1000 psi; *Ultra Strength*: 2500 psi

Also known as skirtboard rubber, this higher-strength SBR offers good wear resistance and is designed to keep materials moving smoothly along conveyors, chutes, and belts. Width tolerance is ±1″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5. Maximum continuous length is 50 ft.

High-strength rubber meets ASTM D2000 AA.
Ultra-strength rubber meets ASTM D2000 BA.

		HIGH STRENGTH				ULTRA STRENGTH			
		6″ Wide		12″ Wide		6″ Wide		12″ Wide	
Thick.	Thick. Tolerance		Per Ft.		Per Ft.		Per Ft.		Per Ft.
1/4″	±0.031″	86335K17	$4.30	86335K13	$7.13	3173K11	$11.99	3173K21	$20.70
3/8″	±0.047″	86335K23	5.10	86335K21	9.31	3173K12	16.02	3173K22	28.50
1/2″	±0.047″	86335K35	5.67	86335K31	11.30	3173K13	21.53	3173K23	36.03
3/4″	±0.094″	86335K45	11.36	86335K41	20.65	3173K14	28.69	3173K24	55.56
1″	±0.100″	86335K55	15.50	86335K51	29.33	3173K15	40.67	3173K25	73.05

Fabric-Reinforced Abrasion-Resistant SBR Rubber

- Color: Black
- Temperature Range: –20° to +170° F
- Tensile Strength (Rubber): 400 psi
- Use indoors

Our abrasion-resistant SBR rubber is reinforced with layers of fabric, giving it stability and making it ideal for use in flange gaskets.

Sheets and Sheeting—Smooth Finish

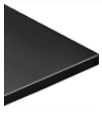

Rubber only (not fabric insert) has a durometer hardness of 65A (medium hard). Durometer tolerance is ±5. A lightweight one-ply piece of polyester fabric is inserted for each 1/16″ of thickness. Sheets have width and length tolerances of ±1/2″. Sheeting has a width tolerance of +2″.

		SHEETS				SHEETING 36″ Wide			
		12″×12″		12″×24″					
Thick.	Thick. Tolerance		Each		Each	Max. Lg.			Per Ft.
1/16″	±0.016″	8617K41	$6.42	8617K61	$11.64	100 ft.		8617K51	$17.45
1/8″	±0.020″	8617K43	11.46	8617K63	20.84	50 ft.		8617K53	30.79
1/4″	±0.031″	8617K45	22.70	8617K65	41.28	25 ft.		8617K55	56.84

Weather-Resistant EPDM Rubber

- Color: Black
- Temperature Range: –40° to +225° F, unless noted
- Tensile Strength: See below
- Use indoors and outdoors

A perfect choice for outdoor use, EPDM (ethylene-propylene-diene monomer) has good weatherability as well as ozone, aging, steam, and water resistance.

Medium-Strength Sheets, Sheeting, and Strips—Smooth Finish

- Tensile Strength: 1000 psi

Rubber only (not adhesive) meets ASTM D2000 BA. Adhesive is acrylic and has a temperature range of 50° to 200° F. Sheets have width and length tolerances of ±1/8″. Sheeting has a width tolerance of +1″. Strips have a width tolerance of ±1/4″ and a length tolerance of +1″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

		SHEETS				SHEETING 36″ Wide				STRIPS					
		12″×12″		12″×24″						2″ Wd.×36″ Lg.		4″ Wd.×36″ Lg.		6″ Wd.×36″ Lg.	
Thick.	Thick. Tol.		Each		Each	Max. Lg.			Per Ft.		Each		Each		Each
Plain Back															
1/32″	±0.010″	8610K81	$3.51	8610K71	$5.83	50 ft.		8610K22	$6.97	8990K11	$2.00	8990K31	$3.64	8990K51	$4.70
1/16″	±0.016″	8610K82	5.00	8610K72	8.33	50 ft.		8610K11	10.00	8990K12	2.59	8990K32	4.96	8990K52	6.89
3/32″	±0.016″	8610K83	7.17	8610K73	11.94	50 ft.		8610K33	14.67	8990K13	3.56	8990K33	6.94	8990K53	9.32
1/8″	±0.020″	8610K84	9.37	8610K74	15.29	50 ft.		8610K12	18.73	8990K14	5.03	8990K34	9.85	8990K54	12.83
3/16″	±0.031″	8610K85	14.21	8610K75	23.54	30 ft.		8610K34	28.43	8990K15	7.95	8990K35	15.41	8990K55	19.58
1/4″	±0.031″	8610K86	18.09	8610K76	30.17	25 ft.		8610K35	36.20	8990K16	10.06	8990K36	19.73	8990K56	24.21
3/8″	±0.047″	8610K87	27.28	8610K77	45.48	30 ft.		8610K44	54.57	8990K17	15.78	8990K37	31.40	8990K57	38.54
1/2″	±0.047″	8610K88	37.27	8610K78	61.86	30 ft.		8610K55	74.24	8990K18	22.91	8990K38	40.83	8990K58	54.88
Adhesive Back															
1/32″	±0.010″	8610K89	7.16	8610K1	14.87	50 ft.		8610K13	17.91	8990K19	5.10	8990K39	7.88	8990K59	10.75
1/16″	±0.016″	8610K91	8.60	8610K2	13.40	50 ft.		8610K14	16.14	8990K21	5.13	8990K41	7.14	8990K61	10.35
3/32″	±0.016″	8610K92	12.60	8610K3	21.70	50 ft.		8610K15	26.05	8990K22	7.60	8990K42	11.63	8990K62	15.27
1/8″	±0.020″	8610K93	12.86	8610K4	23.83	50 ft.		8610K16	31.36	8990K23	7.21	8990K43	12.86	8990K63	16.62
1/4″	±0.031″	8610K95	23.84	8610K6	40.33	25 ft.		8610K18	48.40	8990K25	11.13	8990K45	21.62	8990K65	32.49
3/8″	±0.047″	8610K96	32.59	8610K7	55.41	30 ft.		8610K19	66.50	8990K26	18.23	8990K46	29.22	8990K66	44.68
1/2″	±0.047″	8610K97	43.35	8610K8	72.25	25 ft.		8610K21	85.24	8990K27	27.77	8990K47	38.72	8990K67	58.23

Medium-Strength Grip-All Sheets and Sheeting—Textured Finish

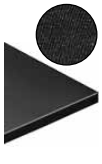

- Tensile Strength: 1500 psi

Both sides of this rubber have a criss-cross textured finish that provides a superior nonslip gripping surface, ideal for holding an adhesive. Meet ASTM D2000 BA and MIL-R-3065 Grade RS. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer tolerance is ±5.

To Order: Please specify durometer hardness: 40A (medium soft), 60A (medium hard), or 80A (hard).

		SHEETS				SHEETING 36″ Wide			
		12″×12″		12″×24″					
Thick.	Thick. Tolerance		Each		Each	Max. Lg.			Per Ft.
1/16″	±0.016″	3727T22	$12.36	3727T32	$19.10	50 ft.		3727T42	$25.76
1/8″	±0.020″	3727T24	16.43	3727T34	26.37	25 ft.		3727T44	35.54
1/4″	±0.031″	3727T26	33.44	3727T36	60.14	20 ft.		3727T46	83.06

(Material continued on following page)

For information about rubber and durometer hardness scales, see page 3526.

Weather-Resistant EPDM Rubber *(Material continued from previous page)*

High-Strength Sheets, Sheeting, and Strips—Smooth Finish

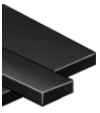

- Temperature Range: –55° to +300° F
- Tensile Strength: 1700 psi, except 40A material is 1200 psi, and 50A material is 1500 psi

Meet ASTM D2000 CA. Sheets have width and length tolerances of ±1/8″. Sheeting has a width tolerance of +1″. Strips have a width tolerance of ±1/4″ and a length tolerance of +1″. Durometer tolerance is ±5.

To Order: Please specify durometer hardness: 40A (medium soft), 50A (medium), 60A (medium hard), 70A (hard), or 80A (hard).

		SHEETS				SHEETING		STRIPS					
	Thick.	12″×12″		12″×24″		36″ Wide		2″ Wd.×36″ Lg.		4″ Wd.×36″ Lg.		6″ Wd.×36″ Lg.	
Thick.	Tol.		Each		Each	Max. Lg.	Per Ft.		Each		Each		Each
1/32″	±0.010″	8985K41	$7.30	8985K51	$11.96	50 ft.	8985K61	$14.36	8985K11	$3.17	8985K21	$6.38	8985K31	$9.32
1/16″	±0.016″	8985K42	10.99	8985K52	18.32	50 ft.	8985K62	22.00	8985K12	5.07	8985K22	10.09	8985K32	15.49
3/32″	±0.016″	8985K43	15.82	8985K53	26.37	50 ft.	8985K63	31.66	8985K13	7.03	8985K23	14.72	8985K33	21.75
1/8″	±0.020″	8985K44	20.20	8985K54	33.67	50 ft.	8985K64	40.42	8985K14	9.24	8985K24	18.45	8985K34	27.70
3/16″	±0.031″	8985K45	29.84	8985K55	49.74	30 ft.	8985K65	60.10	8985K15	13.73	8985K25	27.52	8985K35	40.25
1/4″	±0.031″	8985K46	39.04	8985K56	65.10	25 ft.	8985K66	78.12	8985K16	17.85	8985K26	35.71	8985K36	53.57

FDA-Compliant Weather-Resistant EPDM Rubber

- Color: White
- Temperature Range: –40° to +220° F
- Tensile Strength: 1000 psi, except 40A material is 800 psi
- Use indoors and outdoors

This FDA-compliant version of our water- and weather-resistant EPDM (ethylene-propylene-diene monomer) rubber is safe for food contact and is nonmarking.

Sheets and Sheeting—Smooth Finish

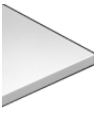

Sheets have width and length tolerances of ±1/8″. Sheeting has a width tolerance of +1″. Durometer tolerance is ±5.

To Order: Please specify durometer hardness: 40A (medium soft), 50A (medium), 60A (medium hard), 70A (hard), or 80A (hard).

		SHEETS				SHEETING	
	Thick.	12″×12″		12″×24″		36″ Wide	
Thick.	Tolerance		Each		Each	Max. Lg.	Per Ft.
1/32″	±0.010″	8143K11	$8.10	8143K21	$13.20	50 ft.	8143K51	$16.18
1/16″	±0.016″	8143K12	13.33	8143K22	22.17	50 ft.	8143K52	26.62
3/32″	±0.016″	8143K13	18.70	8143K23	31.17	50 ft.	8143K53	37.40
1/8″	±0.020″	8143K14	25.16	8143K24	41.93	50 ft.	8143K54	50.25
3/16″	±0.031″	8143K15	36.80	8143K25	61.33	30 ft.	8143K55	73.63
1/4″	±0.031″	8143K16	46.98	8143K26	78.31	25 ft.	8143K56	93.96

Fabric-Reinforced Weather-Resistant EPDM Rubber

- Color: Black
- Temperature Range: –40° to +240° F
- Tensile Strength: 1500 psi
- Use indoors and outdoors

Fiberglass fabric reinforcement increases this rubber's strength and durability. Material also has excellent resistance to water and weather.

Sheets and Sheeting—Smooth Finish

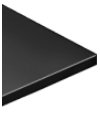

Rubber, but not fabric insert, meets ASTM D2000 BA and has a durometer hardness of 50A (medium). Durometer tolerance is ±5. Sheets have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″.

			SHEETS				SHEETING	
	Thick.	Fabric	12″x12″		12″x24″		36″ Wide	
Thick.	Tolerance	Insert		Each		Each	Max. Lg.	Per Ft.
1/16″	±0.016″	1 ply	2658T21	$29.67	2658T31	$53.29	25 ft.	2658T41	$60.56
3/32″	±0.016″	1 ply	2658T22	31.60	2658T32	56.75	25 ft.	2658T42	64.49
1/8″	±0.020″	2 ply	2658T23	35.13	2658T33	63.17	25 ft.	2658T43	71.47
3/16″	±0.031″	3 ply	2658T24	50.26	2658T34	95.62	20 ft.	2658T44	107.11
1/4″	±0.031″	4 ply	2658T25	53.46	2658T35	102.15	20 ft.	2658T45	125.00

Weather-Resistant Butyl Rubber

- Color: Black
- Temperature Range: –40° to +225° F
- Tensile Strength: 1500 psi
- Use indoors and outdoors

Commonly used for inner tubes, this rubber has very low permeability to air—it's nearly airtight and gas impermeable. Also known as isobutylene isoprene, it combines good weatherability and oxidation resistance. It also has excellent resistance to alkalies and acids.

Sheets, Sheeting, and Strips—Smooth Finish

Rubber, but not adhesive, meets ASTM D2000 AA. Adhesive is acrylic and has a temperature range of 50° to 180° F. Sheets have width and length tolerances of ±3/32″. Sheeting has a width tolerance of ±1″. Strips have a width tolerance of ±3/16″ and a length tolerance of +1″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

		SHEETS				SHEETING		STRIPS					
	Thick.	12″×12″		12″×24″		36″ Wide		2″ Wd.×36″ Lg.		4″ Wd.×36″ Lg.		6″ Wd.×36″ Lg.	
Thick.	Tol.		Each		Each	Max. Lg.	Per Ft.		Each		Each		Each
Plain Back													
1/16″	±0.016″	8609K1	$8.36	8609K18	$14.01	50 ft.	8609K29	$18.09	8609K45	$7.09	8609K53	$11.32	8609K63	$14.16
1/8″	±0.020″	8609K2	12.39	8609K19	21.51	50 ft.	8609K38	28.07	8609K46	10.41	8609K54	17.36	8609K64	21.76
1/4″	±0.031″	8609K3	23.42	8609K21	42.59	25 ft.	8609K41	56.05	8609K47	20.87	8609K56	34.77	8609K66	43.46
Adhesive Back													
1/16″	±0.016″	8609K11	11.61	8609K25	18.36	50 ft.	8609K42	22.39	8609K48	9.30	8609K58	14.02	8609K9	17.48
1/8″	±0.020″	8609K15	16.43	8609K27	27.96	50 ft.	8609K43	34.95	8609K49	13.21	8609K61	19.85	8609K97	27.27
1/4″	±0.031″	8609K17	32.86	8609K28	50.94	50 ft.	8609K44	62.11	8609K52	26.44	8609K62	39.63	8609K99	49.54

For information about rubber and durometer hardness scales, see page 3526.

Weather- and Chemical-Resistant Santoprene Rubber

- Color: Black, unless noted
- Temperature Range: –50° to +275° F
- Tensile Strength: 640 psi
- Use indoors and outdoors

This thermoplastic rubber combines characteristics of plastic and rubber to produce a material that offers good weather and chemical resistance while retaining its stretchability.

Sheets, Sheeting, and Strips—Smooth Finish

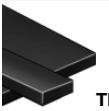

Sheets have width and length tolerances of ±3/32″. Sheeting has a width tolerance of ±1″. Strips have a width tolerance of ±3/16″ and a length tolerance of +1″. Durometer hardness is 55A (medium). Durometer tolerance is ±5. Maximum continuous length for sheeting is 50 ft.

		SHEETS				SHEETING		STRIPS					
Thick.	Thick. Tol.	12″×12″	Each	12″×24″	Each	36″ Wide	Per Ft.	3″ Wd.×36″ Lg.	Each	6″ Wd.×36″ Lg.	Each	9″ Wd.×36″ Lg.	Each
1/32″	±0.012″	86215K11	$5.48	86215K21	$9.68	86215K41	$11.66	86215K51	$4.78	86215K61	$8.16	86215K71	$11.19
1/16″	±0.016″	86215K12	10.18	86215K22	16.92	86215K42	22.08	86215K52	9.07	86215K62	15.46	86215K72	21.20
3/32″	±0.016″	86215K13	15.28	86215K23	25.45	86215K43	31.85	86215K53	13.38	86215K63	22.29	86215K73	30.58
1/8″	±0.020″	86215K14	18.00	86215K24	30.77	86215K44	40.12	86215K54	15.52	86215K64	26.08	86215K74	38.52
1/4″	±0.050″	86215K16	29.90	86215K26	54.34	86215K46	71.52	86215K56	28.57	86215K66	47.92	86215K76	68.66

FDA-Compliant Sheets and Sheeting—Smooth Finish

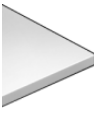

- Color: Off-white

Made from FDA-compliant materials. Sheets have width and length tolerances of ±3/32″. Sheeting has a width tolerance of ±1″. Durometer hardness is 55A (medium). Durometer tolerance is ±5.

		SHEETS				SHEETING	
Thick.	Thick. Tolerance	12″×12″	Each	12″×24″	Each	Max. Lg.	Per Ft.
1/32″	±0.012″	7848K31	$6.11	7848K41	$10.16	50 ft.	7848K51	$13.09
1/16″	±0.016″	7848K32	11.70	7848K42	19.52	50 ft.	7848K52	23.01
1/8″	±0.020″	7848K34	20.89	7848K44	34.77	50 ft.	7848K54	41.73

Cord—Smooth Finish

Durometer hardness is 55A (medium). Durometer tolerance is ±5. **To Order:** Please specify length: 5, 10, 25, 50, or 100 ft. Maximum continuous length is 100 ft.

Dia.	Dia. Tolerance		Per Ft.	Dia.	Dia. Tolerance		Per Ft.
1/8″	±0.016″	6289K11	$0.34	3/8″	±0.027″	6289K13	$1.63
1/4″	±0.020″	6289K12	.81	1/2″	±0.031″	6289K14	2.26

Ultra-Chemical-Resistant Aflas Rubber

- Color: Black
- Temperature Range: –20° to +400° F
- Tensile Strength: 2550 psi, unless noted
- Use indoors and outdoors

In addition to being our most chemical-resistant rubber, Aflas withstands high temperatures so it's suitable for use in extreme conditions.

Sheets—Smooth Finish

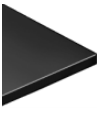

Width and length tolerances are ±1/4″ for 6″×6″ sheets and ±1/2″ for 12″×12″ sheets. Durometer hardness is 75A (hard). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each
1/32″	±0.010″	5499T31★	$9.85	5499T29★	$32.84	3/16″	±0.031″	5499T15	$44.21	5499T24	$147.38
1/16″	±0.016″	5499T12	18.95	5499T21	63.17	1/4″	±0.031″	5499T16	56.22	5499T25	187.40
1/8″	±0.020″	5499T14	33.12	5499T23	110.41	3/8″	±0.031″	5499T17	78.92	5499T26	263.07

★ Tensile strength is 1650 psi.

Extreme-Temperature Silicone Rubber

- Color: Orange to red, unless noted
- Temperature Range: –60° to +400° F, unless noted
- Tensile Strength: 650 psi
- Use indoors and outdoors

If you're looking for good flexibility across a wide temperature range, silicone rubber is the choice for you. Also known as polysiloxane, this material offers good resistance to ozone, sunlight, and oxidation and is a very good electrical insulator.

Sheets and Strips—Smooth Finish

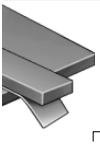

- Temperature Range: *Sheets*: –60° to +500° F; *strips*: –60° to +400° F

Rubber, but not adhesive, meets ASTM D2000 GE and MIL-ZZR-765, Class 2A and 2B. Adhesive is acrylic and has a temperature range of 0° to 180° F. Thickness tolerance is ±0.015″ for 1/32″ thickness, ±0.032″ for 1/16″ to 3/16″ thicknesses, and ±0.046″ for 1/4″ to 1/2″ thicknesses. Sheets have width and length tolerances of ±1 1/8″. Strips have a width tolerance of ±1/32″ and a length tolerance of ±3/4″. Durometer tolerance is ±5. **To Order:** For sheets, please specify durometer hardness: 40A (medium soft), 50A (medium), 60A (medium hard), or 70A (hard). Strips are only available in 50A durometer hardness.

	SHEETS					STRIPS							
Thick.	12″×12″	Each	24″×24″	Each	36″×36″	Each	1/2″ Wd.×36″ Lg.	Each	3/4″ Wd.×36″ Lg.	Each	1″ Wd.×36″ Lg.	Each	2″ Wd.×36″ Lg.	Each
Plain Back														
1/32″	8632K41	$6.01	8632K51	$20.86	8632K91	$40.91	7665K28	$2.16	7665K29	$2.73	7665K31	$3.48	7665K32	$4.39
1/16″	8632K42	9.93	8632K52	34.46	8632K92	67.57	7665K11	2.30	7665K15	2.91	7665K19	3.70	7665K24	4.97
3/32″	8632K43	12.90	8632K53	44.75	8632K93	87.74	7665K12	3.46	7665K16	4.35	7665K21	5.22	7665K25	6.76
1/8″	8632K44	15.95	8632K54	55.35	8632K94	108.53	7665K13	4.32	7665K17	4.86	7665K22	5.74	7665K26	7.91
3/16″	8632K45	20.52	8632K55	67.04	8632K95	139.61	7665K33	5.03	7665K34	6.54	7665K35	7.97	7665K36	11.41
1/4″	8632K46	26.55	8632K56	92.13	8632K96	180.64	7665K14	7.22	7665K18	7.24	7665K23	10.28	7665K27	14.72
3/8″	8632K47	33.96	8632K57	117.84	8632K97	231.05	7665K37	10.13	7665K38	11.90	7665K41	14.25	7665K42	20.41
1/2″	8632K48	41.38	8632K58	143.55	8632K98	281.48	7665K43	12.19	7665K44	15.03	7665K45	17.35	7665K46	24.42
Adhesive Back														
1/32″	8977K31	10.19	8977K71	54.24	8977K81	62.11	93755K21	3.23	93755K23	4.49	93755K25	5.77	93755K27	7.88
1/16″	8977K32	13.95	8977K72	47.40	8977K82	82.05	93755K31	3.51	93755K33	4.69	93755K35	6.10	93755K37	8.47
3/32″	8977K33	17.94	8977K73	61.65	8977K83	105.54	93755K41	4.56	93755K43	6.13	93755K45	7.62	93755K47	10.94
1/8″	8977K34	21.07	8977K74	72.06	8977K84	123.97	93755K51	5.38	93755K53	6.63	93755K55	8.27	93755K57	11.36
3/16″	8977K35	27.76	8977K75	83.44	8977K85	156.49	93755K71	6.44	93755K73	8.34	93755K75	10.32	93755K77	14.59
1/4″	8977K36	34.56	8977K76	103.91	8977K86	194.81	93755K61	8.58	93755K63	10.78	93755K65	13.05	93755K67	18.37
3/8″	8977K37	46.64	8977K77	140.19	8977K87	262.93	93755K81	12.56	93755K83	14.85	93755K85	18.27	93755K87	26.06
1/2″	8977K38	54.24	8977K78	177.28	8977K88	319.07	93755K91	15.76	93755K93	20.05	93755K95	23.29	93755K97	32.61

(Material continued on following page)

For information about rubber and durometer hardness scales, see page 3526.

Extreme-Temperature Silicone Rubber *(Material continued from previous page)*

Sheeting—Smooth Finish

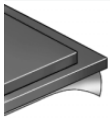

Rubber, but not adhesive, meets ASTM D2000 GE and MIL-ZZR-765, Class 2A and 2B. Adhesive is acrylic and has a temperature range of –20° to +250° F. Width tolerance is ±1/16″, except for 36″ wide sheeting, which is +2″. Durometer hardness is 50A (medium). Durometer tolerance is ±5. Maximum continuous length is 30 ft.

Thick.	Thick. Tol.	1/2″ Wide	Per Ft.	1″ Wide	Per Ft.	2″ Wide	Per Ft.	4″ Wide	Per Ft.	6″ Wide	Per Ft.	36″ Wide	Per Ft.
Plain Back													
1/16″	±0.012″	2614T36	$0.87	2614T37	$1.45	2614T38	$2.61	2614T44	$3.48	2614T46	$5.80	2614T48	$29.01
3/32″	±0.017″	2614T39	1.21	2614T41	2.02	2614T42	3.64	2614T16	4.85	2614T17	8.09	2614T49	40.44
1/8″	±0.017″	2614T18	1.50	2614T19	2.49	2614T24	4.49	2614T45	7.98	2614T47	9.98	2614T54	49.88
3/16″	±0.022″	2614T25	1.97	2614T51	3.29	2614T52	5.92	2614T545	7.90	2614T555	13.16	2614T55	65.81
1/4″	±0.022″	2614T565	2.56	2614T26	4.28	2614T27	7.69	2614T28	10.26	2614T29	17.10	2614T56	85.50
Adhesive Back													
1/16″	±0.012″	2614T62	1.21	2614T63	2.02	2614T64	3.64	2614T57	4.85	2614T59	8.08	2614T65	40.39
3/32″	±0.017″	2614T66	1.58	2614T67	2.64	2614T68	4.75	2614T69	6.33	2614T71	10.55	2614T72	52.76
1/8″	±0.017″	2614T73	1.87	2614T74	3.11	2614T75	5.60	2614T58	7.47	2614T61	12.45	2614T76	62.25
3/16″	±0.022″	2614T77	2.26	2614T78	3.77	2614T79	6.78	2614T81	9.04	2614T82	15.07	2614T83	75.33
1/4″	±0.022″	2614T84	2.93	2614T85	4.88	2614T86	8.79	2614T87	11.72	2614T88	19.53	2614T89	97.65

Rectangular Bars—Smooth Finish

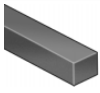

Rubber meets ASTM D2000 GE and MIL-ZZR-765, Class 2A and 2B. Thickness and width tolerances are ±0.04″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5. **To Order:** Please specify length: 3, 5, 10, 25, or 100 ft. Maximum continuous length is 100 ft.

Thick.	Width		Per Ft.	Thick.	Width		Per Ft.	Thick.	Width		Per Ft.
1/8″	1/4″	5508T41	$1.22	3/8″	3/8″	5508T43	$2.46	5/8″	5/8″	5508T45	$5.16
1/4″	1/4″	5508T42	1.50	1/2″	1/2″	5508T44	3.63	3/4″	3/4″	5508T46	6.47

Thick Sheets—Smooth Finish

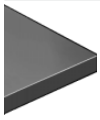

Rubber meets ASTM D2000 GE and MIL-ZZR-765, Class 2A and 2B. Width and length tolerances are ±1/4″. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	12″×36″	Each	36″×36″	Each
5/8″	±0.063″	2617T67	$37.80	2617T21	$75.60	2617T61	$184.28	2617T41	$472.50
3/4″	±0.093″	2617T68	43.10	2617T22	86.19	2617T62	210.09	2617T42	538.70
1″	±0.100″	2617T71	49.11	2617T24	98.22	2617T64	239.40	2617T44	613.85
1 1/2″	±0.150″	2617T73	53.80	2617T26	107.59	2617T66	262.25	2617T46	672.44

Metric Sheets—Smooth Finish

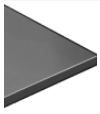

Rubber meets MIL-ZZR-765, Class 2A and 2B, and A-A-59588. Width and length tolerances are ±1/8″ for 12″×12″ sheets and ±3/8″ for 24″×24″ and 36″×36″ sheets. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	12″×12″	Each	24″×24″	Each	36″×36″	Each
0.5 mm	±0.25 mm	3788T21	$9.02	3788T31	$28.85	3788T41	$48.27
1.0 mm	±0.3 mm	3788T22	11.07	3788T32	36.02	3788T42	62.10
2.0 mm	±0.4 mm	3788T24	16.77	3788T34	52.30	3788T44	94.40
2.5 mm	±0.4 mm	3788T25	18.87	3788T35	59.32	3788T45	105.82
3.0 mm	±0.5 mm	3788T26	21.82	3788T36	68.67	3788T46	122.72
5.0 mm	±0.8 mm	3788T27	33.73	3788T37	108.17	3788T47	192.20

Translucent Sheets—Smooth Finish

- Color: Translucent

Adhesive is acrylic and has a temperature range of –20° to +225° F. Width and length tolerances are +1″, –1/4″. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tol.	Plain Back 12″×12″	Each	Plain Back 24″×36″	Each	Plain Back 36″×36″	Each	Adhesive Back 12″×12″	Each	Adhesive Back 24″×36″	Each	Adhesive Back 36″×36″	Each
1/32″	±0.007″	86465K21	$10.69	86465K91	$51.66	86465K71	$65.40	86465K34	$14.55	86465K41	$69.90	86465K51	$86.94
1/16″	±0.012″	86465K23	13.76	86465K93	53.77	86465K73	82.23	86465K32	18.98	86465K42	85.07	86465K52	105.38
1/8″	±0.017″	86465K25	25.42	86465K95	122.33	86465K75	153.31	86465K36	30.39	86465K43	150.24	86465K53	174.68
1/4″	±0.022″	86465K11	38.85	86465K12	193.52	86465K13	242.81	86465K14	44.69	86465K15	222.60	86465K16	279.30

Colored Sheets—Smooth Finish

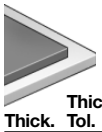

- Color: Black, blue, brown, gray, or white

Rubber meets ASTM D2000 GE. Width and length tolerances are ±1/4″. Durometer hardness is 50A (medium). Durometer tolerance is ±5. **To Order:** Please specify color: black, blue, brown, gray, or white.

Thick.	Thick. Tol.	12″×12″	Each	24″×24″	Each	36″×36″	Each	Thick.	Thick. Tol.	12″×12″	Each	24″×24″	Each	36″×36″	Each
1/32″	±0.012″	5812T12	$12.06	5812T22	$33.62	5812T32	$61.22	1/8″	±0.020″	5812T14	$24.04	5812T24	$87.53	5812T34	$141.33
1/16″	±0.016″	5812T13	16.02	5812T23	50.79	5812T33	92.80	1/4″	±0.031″	5812T15	36.39	5812T25	126.33	5812T35	234.20

Grip-All Sheets—Textured Finish

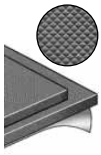

Rubber, but not adhesive, meets AMS 3302. The criss-cross textured finish on both sides of this rubber provides a nonslip gripping surface. Adhesive is acrylic and has a temperature range of –20° to +180° F. Width and length tolerances are ±1/8″ for 12″×12″ sheets and ±3/8″ for 24″×24″ and 36″×36″ sheets. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	Plain Back 12″×12″	Each	Plain Back 24″×24″	Each	Plain Back 36″×36″	Each	Adhesive Back 12″×12″	Each	Adhesive Back 24″×24″	Each
1/32″	±0.012″	5777T11	$10.37	5777T21	$30.80	5777T31	$58.66	5777T41	$16.34	5777T51	$40.07
1/16″	±0.016″	5777T12	17.05	5777T22	53.74	5777T32	96.78	5777T42	22.91	5777T52	63.11
1/8″	±0.020″	5777T14	27.55	5777T24	86.80	5777T34	157.33	5777T44	33.37	5777T54	93.86
3/16″	±0.031″	5777T15	39.46	5777T25	105.54	5777T35	208.66	5777T45	46.21	5777T55	118.28
1/4″	±0.031″	5777T16	44.01	5777T26	122.76	5777T36	231.63	5777T46	56.63	5777T56	133.36

(Material continued on following page)

Extreme-Temperature Silicone Rubber *(Material continued from previous page)*

- Color: Orange to red
- Temperature Range: See below
- Tensile Strength: See below
- Use indoors and outdoors

If you're looking for good flexibility across a wide temperature range, silicone rubber is the choice for you. Also known as polysiloxane, this material offers good resistance to ozone, sunlight, and oxidation and is a very good electrical insulator.

Tubes—Smooth Finish

- Temperature Range: –60° to +500° F
- Tensile Strength: 700 psi

Rubber meets ASTM D2000 GE and MIL-ZZR-765, Class 2A and 2B. Length tolerance is ±3/16″ for 6″ lengths and ±1 1/8″ for 36″ lengths. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5. **To Order:** Please specify 6″ or 36″ length.

OD	OD Tol.	ID	ID Tol.	Wall Thickness		Each 6″ Lg.	Each 36″ Lg.
3/4″	±0.117″	1/4″	±0.039″	1/4″	5546T51	$3.50	$17.00
1″	±0.117″	1/4″	±0.039″	3/8″	5546T52	4.43	22.18
1″	±0.117″	3/8″	±0.039″	5/16″	5546T53	4.65	21.10
1″	±0.117″	5/8″	±0.051″	3/16″	5546T54	3.76	16.92
1 1/4″	±0.129″	1/4″	±0.039″	1/2″	5546T55	5.89	32.39
1 1/4″	±0.129″	1/2″	±0.051″	3/8″	5546T56	$5.37	$25.12
1 1/4″	±0.129″	5/8″	±0.051″	5/16″	5546T57	4.91	22.18
1 3/8″	±0.129″	1/2″	±0.051″	7/16″	5546T58	5.68	29.97
1 1/2″	±0.141″	3/8″	±0.039″	9/16″	5546T59	6.92	37.47
1 1/2″	±0.141″	7/8″	±0.063″	5/16″	5546T61	5.45	23.74

90° Angles and U-Channels—Smooth Finish

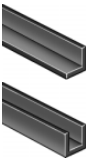

- Temperature Range: –60° to +400° F
- Tensile Strength: 600 psi

Rubber meets AMS 3302AG. Durometer hardness is 50A (medium). Durometer tolerance is ±5. **To Order:** Please specify length: 5, 10, 25, or 50 ft. Maximum continuous length is 50 ft.

90° Angles

Outside Leg Lgs.	Outside Leg Lg. Tolerance		Per Ft.
1/8″ Thick. *(±0.031″)*			
1/2″ × 1/2″	±0.015″	3482K4	$2.44
3/4″ × 3/4″	±0.023″	3482K5	3.15
1″ × 1″	±0.030″	3482K6	4.02

U-Channels

Outside Base × Legs	Outside Base/Leg Tolerance		Per Ft.
1/8″ Thick *(±0.031″)*			
1/2″ × 1/2″	±0.051″	3510K4	$3.12
1″ × 1″	±0.079″	3510K5	3.86
2″ × 2″	±0.098″	3510K6	4.83

Ultra-Strength Silicone Rubber

- Color: See below
- Temperature Range: See below
- Tensile Strength: See below
- Use indoors and outdoors

A special formulation makes this material much more tear resistant while still maintaining its flexibility across a wide temperature range.

Sheets—Smooth Finish

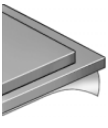

- Color: Orange-red or gray
- Temperature Range: –80° to +400° F
- Tensile Strength: 1200 psi

Rubber, but not adhesive, meets MIL-ZZR-765, Class 2A and 2B. Adhesive is acrylic and has a temperature range of –20° to +180° F. Width and length tolerances are ±1/8″ for 6″×6″ and 12″×12″ sheets and ±3/8″ for 24″×24″ sheets. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tol.	Plain Back 6″×6″	Each	Plain Back 12″×12″	Each	Plain Back 24″×24″	Each	Adhesive Back 6″×6″	Each	Adhesive Back 12″×12″	Each	Adhesive Back 24″×24″	Each
Orange-Red													
1/16″	±0.015″	5787T31	$3.49	5787T11	$13.46	5787T17	$49.87	5787T61	$4.77	5787T41	$19.09	5787T47	$68.17
1/8″	±0.015″	5787T33	8.49	5787T13	22.92	5787T19	84.88	5787T63	9.87	5787T43	27.64	5787T49	98.70
1/4″	±0.020″	5787T35	10.02	5787T15	38.67	5787T21	143.21	5787T65	15.97	5787T45	44.72	5787T51	159.72
Gray													
1/16″	±0.015″	5781T58	6.17	5781T11	19.56	5781T17	66.43	5781T48	6.94	5781T31	23.02	5781T37	74.40
1/8″	±0.015″	5781T59	10.54	5781T13	35.47	5781T19	117.69	5781T49	11.28	5781T33	37.81	5781T39	123.45
1/4″	±0.020″	5781T61	18.30	5781T15	62.06	5781T21	198.82	5781T51	19.02	5781T35	65.52	5781T41	206.82

Balls—Smooth Finish

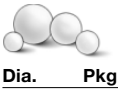

- Color: Translucent white
- Temperature Range: –60° to +500° F
- Tensile Strength: 2000 psi

Made of FDA-compliant materials. Diameter tolerance is ±0.016″. Durometer hardness is 55A (medium hard). Durometer tolerance is ±5.

Dia.	Pkg. Qty.		Per Pkg.	Dia.	Pkg. Qty.		Per Pkg.	Dia.	Pkg. Qty.		Per Pkg.
5/8″	10	8945K51	$9.00	1″	5	8945K55	$11.09	1 3/8″	2	8945K59	$7.25
7/8″	5	8945K53	8.46	1 1/8″	1	8945K57	3.15	2″	1	8945K61	8.27

Super-Soft Silicone Rubber

- Color: See below
- Temperature Range: See below
- Tensile Strength: See below
- Use indoors and outdoors

Like other silicone, this rubber stays flexible over a wide temperature range, but its softness gives it better conformability than other rubber.

Sheets and Strips—Smooth Finish

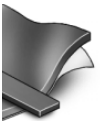

- Color: Orange-red
- Temperature Range: –40° to +300° F
- Tensile Strength: 10A sheets and strips: 200 psi; 20A sheets: 300 psi; 30A sheets: 600 psi

Adhesive is acrylic and has a temperature range of –20° to +180° F. Width and length tolerances are ±1/8″ for 6″×6″ and 12″×12″ sheets and ±1/2″ for 24″×24″ and 36″×36″ sheets. Strips have a width tolerance of ±1/16″ and a length tolerance of ±3/8″. Durometer tolerance is ±5. **To Order:** For sheets, please specify durometer hardness: 10A, 20A, or 30A. 3/16″ thick sheets and 6″×6″ sheets are not available in 30A durometer hardness. Strips are available only in 10A durometer hardness.

Thick.	Thick. Tol.	Plain-Back Sheets 6″×6″	Each	Plain-Back Sheets 12″×12″	Each	Plain-Back Sheets 24″×24″	Each	Plain-Back Sheets 36″×36″	Each	Adhesive-Back Sheets 12″×12″	Each	Adhesive-Back Sheets 24″×24″	Each
1/32″	±0.012″	9010K81	$5.09	9010K11	$16.46	9010K21	$52.06	9010K31	$93.71	9010K41	$21.25	9010K51	$70.83
1/16″	±0.016″	9010K82	7.06	9010K12	23.31	9010K22	74.54	9010K32	134.18	9010K42	27.36	9010K52	91.19
1/8″	±0.020″	9010K83	12.60	9010K13	38.88	9010K23	120.17	9010K33	220.65	9010K43	40.87	9010K53	136.22
3/16″	±0.020″	9010K84	19.64	9010K14	57.16	9010K24	186.81	9010K34	336.23	9010K44	60.97	9010K54	203.24
1/4″	±0.020″	9010K85	24.44	9010K15	69.84	9010K25	232.81	9010K35	410.81	9010K45	73.38	9010K55	244.60

Plain-Back Strips

Thick.	Thick. Tol.	2″ Wd. × 36″ Lg.	Each	4″ Wd. × 36″ Lg.	Each	6″ Wd. × 36″ Lg.	Each	Thick.	Thick. Tol.	2″ Wd. × 36″ Lg.	Each	4″ Wd. × 36″ Lg.	Each	6″ Wd. × 36″ Lg.	Each
1/16″	±0.016″	5963K11	$16.39	5963K12	$27.32	5963K13	$34.15	3/16″	±0.031″	5963K17	$40.32	5963K18	$67.20	5963K19	$84.00
1/8″	±0.020″	5963K14	26.49	5963K15	44.14	5963K16	55.18	1/4″	±0.031″	5963K21	49.31	5963K22	82.18	5963K23	102.73

(Material continued on following page)

For information about rubber and durometer hardness scales, see page 3526.

Super-Soft Silicone Rubber *(Material continued from previous page)*

Film—Smooth Finish

- Color: 10A film is gray; 20A film is black; 35A film is cream
- Temperature Range: –80° to +425° F
- Tensile Strength: 800 psi, except 10A film is 250 psi

A peel-off protective masking keeps this rubber free from dust and debris. Width and length tolerances are ±¼″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 10A (soft), 20A (soft), or 35A (soft).

Thick.	Thick. Tolerance	12″×12″	Each	24″×36″	Each	36″×36″	Each
0.010″	±0.002″	86435K41	$19.07	86435K61	$91.42	86435K81	$118.68
0.015″	±0.003″	86435K43	21.07	86435K63	100.78	86435K83	134.38
0.020″	±0.003″	86435K45	24.09	86435K65	115.80	86435K85	154.40

Adhesive-Back Film—Textured Finish

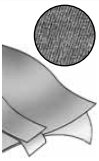

- Color: Gray
- Temperature Range: –100° to +500° F
- Tensile Strength: 700 psi

Rubber has a criss-cross textured finish. Adhesive is silicone and has a temperature range of –100° to +500° F. Sheets have width and length tolerances of +1″, –¼″. Sheeting has a width tolerance of ±¼″. Strips have a width tolerance of ±1/16″ and a length tolerance of +6″. Durometer hardness is 30A (soft). Durometer tolerance is ±5.

		SHEETS						SHEETING	
Thick.	Thick. Tolerance	18″×12″	Each	18″×24″	Each	18″×36″	Each	Max. Lg.	12″ Wide Per Ft.
1/32″	±0.010″	8622K41	$36.01	8622K42	$67.09	8622K43	$102.03	60 ft.	8622K31 $20.64

			STRIPS						
Thick.	Thick. Tolerance	Lg.	½″ Wide	Each	¾″ Wide	Each	1″ Wide	Each	2″ Wide Each
1/32″	±0.010″	10 ft.	8622K51	$10.90	8622K52	$15.53	8622K53	$18.40	8622K54 $31.25
1/32″	±0.010″	60 ft.	8622K21	49.61	8622K22	68.54	8622K23	86.31	8622K24 150.57

FDA-Compliant Silicone Rubber

- Color: Orange-red, unless noted
- Temperature Range: –65° to +400° F, unless noted
- Tensile Strength: See below
- Use indoors and outdoors

Made from FDA-compliant materials, this silicone rubber is safe for food contact and maintains its flexibility over a wide temperature range.

Sheets and Strips—Smooth Finish

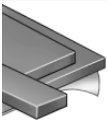

- Temperature Range: –50° to +500° F
- Tensile Strength: 650 psi

Rubber, but not adhesive, meets ASTM D2000 GE and MIL-ZZR-765, Class 2A and 2B. Adhesive is acrylic and has a temperature range of –20° to +225° F. Width and length tolerances are ±⅜″ for 6″×6″ and 12″×12″ sheets, ±¾″ for 24″×24″ sheets, and ±1⅛″ for 36″×36″ sheets. Strips have a width tolerance of ±1/16″ and a length tolerance of ±1⅛″, except 4″ and 6″ wide strips, which have a width tolerance of ±3/16″. Durometer tolerance is ±5.

To Order: For sheets, please specify durometer hardness: 40A (medium soft), 50A (medium), or 60A (medium hard). Strips are available only in 50A durometer hardness.

		PLAIN-BACK SHEETS								ADHESIVE-BACK SHEETS			
Thick.	Thick. Tol.	6″×6″	Each	12″×12″	Each	24″×24″	Each	36″×36″	Each	12″×12″	Each	24″×24″	Each
1/32″	±0.015″	86045K41	$2.69	86045K11	$7.75	86045K21	$24.65	86045K31	$44.82	8991K51	$11.76	8991K71	$35.64
1/16″	±0.032″	86045K42	4.21	86045K12	13.06	86045K22	41.22	86045K32	75.19	8991K52	17.58	8991K72	53.28
3/32″	±0.020″	86045K43	6.71	86045K13	16.57	86045K23	52.68	86045K33	95.79	8991K53	22.21	8991K73	67.29
⅛″	±0.032″	86045K44	6.84	86045K14	21.04	86045K24	65.77	86045K34	118.29	8991K54	26.60	8991K74	80.62
3/16″	±0.032″	86045K45	8.80	86045K15	27.05	86045K25	84.59	86045K35	152.25	8991K55	33.49	8991K75	101.48
¼″	±0.046″	86045K46	11.12	86045K16	34.19	86045K26	106.90	86045K36	192.41	8991K56	40.50	8991K76	122.73
⅜″	±0.046″	86045K47	16.45	86045K17	50.60	86045K27	158.10	86045K37	284.60	8991K57	55.33	8991K77	167.68
½″	±0.046″	86045K48	19.41	86045K18	59.69	86045K28	186.53	86045K38	335.73	8991K58	67.96	8991K78	205.93

		PLAIN-BACK STRIPS							
Thick.	Thick. Tol.	½″ Wd.×36″ Lg.	Each	1″ Wd.×36″ Lg.	Each	2″ Wd.×36″ Lg.	Each	4″ Wd.×36″ Lg.	Each	6″ Wd.×36″ Lg.	Each
1/16″	±0.032″	8417K11	$3.76	8417K16	$6.02	8417K22	$9.77	8417K27	$17.29	8417K33	$22.56
⅛″	±0.032″	8417K12	5.91	8417K17	9.46	8417K23	15.38	8417K28	27.21	8417K34	35.49
¼″	±0.046″	8417K13	9.62	8417K18	15.39	8417K24	25.01	8417K29	44.25	8417K35	57.72
⅜″	±0.046″	8417K14	14.23	8417K19	22.77	8417K25	37.00	8417K31	65.46	8417K36	85.38
½″	±0.046″	8417K15	16.79	8417K21	26.86	8417K26	43.64	8417K32	77.22	8417K37	110.79

Extra-Hard Sheets—Smooth Finish

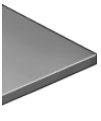

- Tensile Strength: 700 psi

Width and length tolerances are ±⅛″ for 12″×12″ sheets and ±⅜″ for 24″×24″ and 36″×36″ sheets. Durometer hardness is 90A (extra hard). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	12″×12″	Each	24″×24″	Each	36″×36″	Each
1/32″	±0.012″	5773T21	$11.29	5773T31	$35.54	5773T41	$63.99
1/16″	±0.016″	5773T22	17.46	5773T32	54.94	5773T42	98.91
3/32″	±0.016″	5773T23	23.87	5773T33	75.16	5773T43	135.31
⅛″	±0.020″	5773T24	27.31	5773T34	87.34	5773T44	157.22

Transparent Sheets—Smooth Finish

- Color: Transparent
- Tensile Strength: 800 psi

Rubber has a peel-off protective masking to keep it free from dust and debris. Adhesive is acrylic and has a temperature range of –20° to +180° F. Width and length tolerances are ±⅛″ for 12″×12″ sheets and ±⅜″ for 24″×36″ and 36″×36″ sheets. Durometer hardness is 40A (medium soft). Durometer tolerance is ±5.

		PLAIN BACK						ADHESIVE BACK					
Thick.	Thick. Tol.	12″×12″	Each	24″×36″	Each	36″×36″	Each	12″×12″	Each	24″×36″	Each	36″×36″	Each
0.020″	±0.010″	86915K12	$18.70	86915K32	$89.73	86915K52	$107.74	86915K22	$22.55	86915K42	$95.96	86915K62	$118.10
1/32″	±0.012″	86915K14	20.91	86915K34	99.74	86915K54	120.30	86915K24	24.77	86915K44	106.74	86915K64	130.70
1/16″	±0.016″	86915K16	30.77	86915K36	147.86	86915K56	177.37	86915K26	34.06	86915K46	155.13	86915K66	188.01

(Material continued on following page)

For information about rubber and durometer hardness scales, see page 3526.

FDA-Compliant Silicone Rubber *(Material continued from previous page)*

- Color: Orange-red
- Temperature Range: –65° to +400° F
- Tensile Strength: 650 psi
- Use indoors and outdoors

Made from FDA-compliant materials, this silicone rubber is safe for food contact and maintains its flexibility over a wide temperature range.

Cord—Smooth Finish

Length tolerance is ±1/4″. Sold in 36″ lengths. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 40A (medium soft), 50A (medium), 60A (medium hard), or 70A (hard).

Dia.	Dia. Tolerance		Each	Dia.	Dia. Tolerance		Each
1/8″	±0.016″	9808K21	$6.24	1/2″	±0.031″	9808K24	$9.05
1/4″	±0.027″	9808K22	6.65	3/4″	±0.039″	9808K25	12.92
3/8″	±0.027″	9808K23	8.15	1″	±0.051″	9808K26	17.59

High-Purity Silicone Rubber

- Color: Transparent
- Temperature Range: –65° to +400° F
- Tensile Strength: 1000 psi
- Use indoors and outdoors

Platinum cured for higher purity, this silicone is made of FDA-compliant materials and meets USP Class VI. *Note:* Should not be used for implantation in the human body.

Film—Smooth Finish

Width and length tolerances are ±1/16″. Durometer hardness is 55A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	6″×8″	Each	12″×12″	Each	Thick.	Thick. Tolerance	6″×8″	Each	12″×12″	Each
0.005″	±0.003″	87315K61	$29.36	87315K71	$83.20	0.04″	±0.004″	87315K64	$38.06	87315K74	$110.60
0.01″	±0.003″	87315K62	31.91	87315K72	91.21	0.06″	±0.004″	87315K65	44.73	87315K75	129.76
0.02″	±0.003″	87315K63	34.96	87315K73	98.92						

NSF-Certified Silicone Rubber

- Color: Translucent
- Temperature Range: –75° to +400° F
- Tensile Strength: 1000 psi
- Use indoors and outdoors

This rubber is made of FDA-compliant materials and is NSF 51 certified for use with food-handling equipment.

Sheets—Smooth Finish

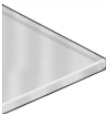

Meet ASTM D2000 GE. Width and length tolerances are ±1/4″. Durometer hardness is 50A (medium). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	12″×12″	Each	24″×24″	Each	36″×36″	Each
1/32″	±0.012″	5827T21	$14.77	5827T31	$48.50	5827T41	$89.69
1/16″	±0.016″	5827T22	21.57	5827T32	69.43	5827T42	129.26
1/8″	±0.020″	5827T23	33.60	5827T33	106.66	5827T43	203.40
1/4″	±0.031″	5827T24	56.13	5827T34	194.56	5827T44	291.61

Fabric-Reinforced Silicone Rubber

- Color: Red
- Temperature Range: –100° to +500° F
- Tensile Strength (Rubber): 1100 psi
- Use indoors and outdoors

Fiberglass fabric reinforcement makes this rubber stronger and more durable, ideal for stress applications such as gasketing and diaphragm packing.

Sheets, Sheeting, and Strips—Smooth Finish

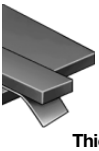

Rubber, but not fabric insert or adhesive, meets AMS 3320G, except 1/32″ thick rubber. Rubber has a lightweight fiberglass fabric insert in the center of the material. Adhesive is acrylic and has a temperature range of –25° to +250° F. Sheets have a width tolerance of +1″, –1/4″ and a length tolerance of +1″. Sheeting has a width tolerance of +2″. Strips have a width tolerance of ±0.062″ and a length tolerance of +1″. Durometer is 70A (hard). Durometer tolerance is ±10.

		PLAIN BACK											
		SHEETS				SHEETING 36″ Wide			STRIPS				
Thick.	Thick. Tol.	12″ Wd.×12″ Lg.	Each	24″ Wd.×36″ Lg.	Each	Max. Lg.		Per Ft.	2″ Wd.×36″ Lg.	Each	4″ Wd.×36″ Lg.	Each	6″ Wd.×36″ Lg.	Each
1/32″	±0.007″	8612K56	$13.48	8612K66	$49.74	90 ft.	8612K46	$26.13	3635K42	$6.39	3635K53	$12.29	3635K64	$16.78
1/16″	±0.012″	8612K51	18.35	8612K61	71.55	90 ft.	8612K21	37.66	3635K11	6.55	3635K12	17.17	3635K13	23.52
3/32″	±0.017″	8612K53	26.58	8612K62	91.65	60 ft.	8612K32	47.06	3635K14	13.37	3635K15	22.19	3635K16	31.83
1/8″	±0.017″	8612K55	29.08	8612K63	121.46	60 ft.	8612K43	63.58	3635K17	16.35	3635K18	27.16	3635K19	37.20

		ADHESIVE BACK											
		SHEETS						STRIPS					
Thick.	Thick. Tol.	12″ Wd.×12″ Lg.	Each	24″ Wd.×36″ Lg.	Each	36″ Wd.×36″ Lg.	Each	2″ Wd.×36″ Lg.	Each	4″ Wd.×36″ Lg.	Each	6″ Wd.×36″ Lg.	Each
1/32″	±0.007″	8612K16	$21.95	8612K76	$87.71	8612K86	$125.69	3635K72	$10.89	3635K83	$20.81	3635K94	$32.10
1/16″	±0.012″	8612K11	23.96	8612K71	104.98	8612K81	152.03	3635K21	16.29	3635K22	29.30	3635K23	39.73
3/32″	±0.017″	8612K12	27.08	8612K72	116.65	8612K82	170.34	3635K24	19.70	3635K25	33.87	3635K26	44.73
1/8″	±0.017″	8612K13	32.89	8612K73	135.24	8612K83	198.74	3635K27	21.82	3635K28	38.14	3635K29	49.74

Electrically Conductive Silicone Rubber

- Color: Gray
- Temperature Range: –85° to +392° F
- Tensile Strength (Rubber): 800 psi
- Use indoors and outdoors

This silicone rubber contains internal Monel wires and acts as an environmental seal to offer electrical conductivity across a wide temperature range.

Strips—One Side Smooth, One Side Rough Finish

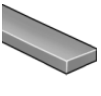

Rubber, but not wire, meets MIL-ZZR-765, Class 2A and 2B and has a durometer of 40A (medium soft). Durometer tolerance is ±7. Width and length have plus tolerances.

Thick.	Thick. Tolerance	3″ Wd.×36″ Lg.	Each	6″ Wd.×36″ Lg.	Each	9″ Wd.×36″ Lg.	Each
1/32″	±0.010″	5831T21	$38.15	5831T31	$69.47	5831T41	$90.97
1/16″	±0.010″	5831T22	46.07	5831T32	83.87	5831T42	112.43
1/8″	±0.010″	5831T24	80.74	5831T34	146.90	5831T44	189.91
3/16″	±0.010″	5831T25	122.70	5831T35	223.20	5831T45	289.19
1/4″	±0.010″	5831T26	157.18	5831T36	239.27		

For information about rubber and durometer hardness scales, see page 3526.

Corrosion-Resistant Extreme-Temperature Fluorosilicone Rubber

- Color: Blue
- Temperature Range: –65° to +450° F
- Tensile Strength: 900 psi
- Use indoors and outdoors

Better chemical and oil resistance make this material a good alternative to silicone rubber in corrosive conditions.

Sheets—Smooth Finish

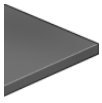

Width and length tolerances are +1″, –1/4″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	12″×36″	Each
1/64″	±0.004″	2183T1	$29.81	2183T11	$36.14	2183T21	$90.34
1/32″	±0.004″	2183T2	44.89	2183T12	56.11	2183T22	140.28
1/16″	±0.005″	2183T3	58.53	2183T13	75.52	2183T23	188.80
1/8″	±0.007″	2183T5	84.88	2183T15	125.75	2183T25	314.38
1/4″	±0.012″	2183T6	117.11	2183T16	187.37	2183T26	468.42

Corrosion-Resistant Viton® Fluoroelastomer Rubber

- Color: Black
- Temperature Range: –20° to +400° F
- Tensile Strength: 1000 psi
- Use indoors and outdoors

Often designated as FKM, Viton® fluoroelastomer rubber is ideal for use in harsh and corrosive environments. It has exceptional resistance to heat, aging, weather, ozone, oxygen, and sunlight, as well as a broad range of fuels, solvents, and chemicals.

Sheets, Sheeting, and Strips—Smooth Finish

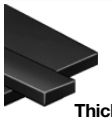

Sheets have width and length tolerances of ±3/16″. Sheeting has a width tolerance of ±1″. Strips have a width tolerance of ±1/4″ and a length tolerance of +1″. Durometer hardness is 75A (hard). Durometer tolerance is ±5.

Thick.	Thick. Tol.	SHEETS 6″×6″	Each	SHEETS 12″×12″	Each	SHEETS 12″×24″	Each	SHEETING 36″ Wide Max. Lg.		Per Ft.	STRIPS 2″ Wd.×36″ Lg.	Each	STRIPS 4″ Wd.×36″ Lg.	Each
1/32″	±0.012″	86075K21	$6.67	86075K31	$23.18	86075K51	$39.58	100 ft.	86075K71	$49.78	8297K11	$14.12	8297K12	$25.66
1/16″	±0.016″	86075K22	11.77	86075K32	42.41	86075K52	74.06	100 ft.	86075K72	91.09	8297K14	24.96	8297K15	45.36
3/32″	±0.016″	86075K23	15.09	86075K33	52.74	86075K53	91.72	65 ft.	86075K73	117.64	8297K17	32.14	8297K18	58.42
1/8″	±0.020″	86075K24	20.64	86075K34	71.84	86075K54	126.03	50 ft.	86075K74	159.11	8297K21	43.77	8297K22	79.59
3/16″	±0.031″	86075K25	29.89	86075K35	103.92	86075K55	182.02	30 ft.	86075K75	231.20	8297K24	63.37	8297K25	115.21
1/4″	±0.031″	86075K26	38.66	86075K36	134.57	86075K56	235.46	25 ft.	86075K76	298.51	8297K27	82.03	8297K28	149.17
5/16″	±0.047″	86075K27	47.66	86075K37	165.70	86075K57	288.39	3 ft.	86075K77	360.53				
3/8″	±0.047″	86075K28	54.91	86075K38	191.01	86075K58	332.18	3 ft.	86075K78	415.69				
1/2″	±0.047″	86075K29	70.09	86075K39	243.71	86075K59	423.87	3 ft.	86075K79	530.96				

Ultra-Strength Corrosion-Resistant Viton® Fluoroelastomer Rubber

- Color: Black
- Temperature Range: 0° to 400° F
- Tensile Strength: 1500 psi
- Use indoors and outdoors

Get the high performance of Viton® fluoroelastomer rubber with even greater strength. Ideal for use in harsh and corrosive environments, Viton® fluoroelastomer rubber has exceptional resistance to heat, aging, weather, ozone, oxygen, and sunlight, as well as to a broad range of fuels, solvents, and chemicals.

Sheets, Sheeting, and Strips—Smooth Finish

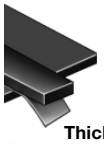

Rubber, but not adhesive, meets ASTM D2000 HK and MIL-R-83248A, Type 2, Class 1. Adhesive is acrylic and has a temperature range of 0° to 220° F. Sheets and strips have width and length tolerances of ±1/4″. Sheeting has a width tolerance of +1″. Durometer is 75A (hard). Durometer tolerance is ±5.

Thick.	Thick. Tol.	PLAIN BACK SHEETS 6″×6″	Each	PLAIN BACK SHEETS 12″×12″	Each	PLAIN BACK SHEETS 12″×24″	Each	PLAIN BACK SHEETING 36″ Wide Max. Lg.		Per Ft.	ADHESIVE BACK SHEETS 12″×12″	Each	ADHESIVE BACK SHEETS 12″×24″	Each
1/32″	±0.012″	8625K11	$16.13	8625K21	$48.94	8625K41	$82.86	50 ft.	8625K61	$111.31	8625K31	$58.67	8625K51	$105.62
1/16″	±0.016″	8625K12	32.37	8625K22	107.41	8625K42	175.73	50 ft.	8625K62	207.87	8625K32	111.01	8625K52	191.96
3/32″	±0.016″	8625K13	39.66	8625K23	133.15	8625K43	230.30	50 ft.	8625K63	302.07	8625K33	141.04	8625K53	243.84
1/8″	±0.020″	8625K14	56.42	8625K24	179.62	8625K44	312.33	50 ft.	8625K64	360.04	8625K34	186.92	8625K54	326.67
3/16″	±0.031″	8625K15	78.66	8625K29	256.60	8625K45	422.41	25 ft.	8625K69	550.87	8625K35	240.01	8625K55	389.75
1/4″	±0.031″	8625K16	100.12	8625K25	315.72	8625K46	516.83	25 ft.	8625K65	674.18	8625K36	330.49	8625K56	533.74

Thick.	Thick. Tol.	PLAIN BACK STRIPS 2″×36″	Each	PLAIN BACK STRIPS 4″×36″	Each	PLAIN BACK STRIPS 6″×36″	Each	ADHESIVE BACK STRIPS 2″×36″	Each	ADHESIVE BACK STRIPS 4″×36″	Each	ADHESIVE BACK STRIPS 6″×36″	Each
1/32″	±0.012″	8999K11	$29.66	8999K31	$55.61	8999K51	$74.14	8999K21	$32.37	8999K41	$60.70	8999K61	$80.93
1/16″	±0.016″	8999K12	55.36	8999K32	103.80	8999K52	138.40	8999K22	58.28	8999K42	109.27	8999K62	145.70
3/32″	±0.016″	8999K13	79.90	8999K33	149.81	8999K53	199.74	8999K23	84.02	8999K43	157.55	8999K63	210.06
1/8″	±0.020″	8999K14	95.88	8999K34	179.78	8999K54	239.71	8999K24	100.27	8999K44	188.00	8999K64	250.67
3/16″	±0.031″	8999K15	146.64	8999K35	274.95	8999K55	366.60	8999K25	149.05	8999K45	279.47	8999K65	372.63
1/4″	±0.031″	8999K16	179.25	8999K36	336.10	8999K56	448.13	8999K26	180.97	8999K46	339.31	8999K66	452.42

Cord—Smooth Finish

Meets ASTM D2000 HK and MIL-R-83248C, Type 2, Class 1. Length tolerance is +1″. Durometer hardness is 75A (hard). Durometer tolerance is ±5.

Dia.	Dia. Tol.	36″ Long	Each	Dia.	Dia. Tol.	36″ Long	Each
1/8″	±0.007″	9029K11	$9.68	3/8″	±0.013″	9029K13	$48.73
1/4″	±0.010″	9029K12	17.31	1/2″	±0.018″	9029K14	84.85

Tight-Tolerance Balls—Smooth Finish

Meet ASTM D2000 HK. Balls are seamless. Durometer hardness is 70A (hard). Durometer tolerance is ±5.

Dia.	Dia. Tol.		Each	Dia.	Dia. Tol.		Each	Dia.	Dia. Tol.		Each
3/16″	±0.003″	3645K1	$2.03	7/16″	±0.004″	3645K4	$3.15	5/8″	±0.004″	3645K6	$7.38
1/4″	±0.003″	3645K2	2.79	1/2″	±0.004″	3645K5	5.26	3/4″	±0.004″	3645K7	8.36
5/16″	±0.003″	3645K3	3.10								

For information about polyurethane and durometer hardness scales, see page 3526.

Polyurethane

- Color: See below
- Temperature Range: -20° to +185° F, unless noted
- Tensile Strength: See below
- Use indoors, unless noted

Polyurethane bridges the gap between rubber and plastics. It can be softer than a rubber band or as hard as a table top, giving it the characteristics of good vibration damping and shock absorption. Compared to rubber, polyurethane has better abrasion, cut, and tear resistance. Compared to plastics, it has better impact resistance and is not as brittle. Because of its elasticity, it can bounce back to its original shape. It is commonly used for cutting surfaces, cushions, bumpers, covers, wear pads, and liners.

Strips—Smooth Finish

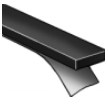

- Color: Black
- Temperature Range: –20° to +160° F
- Tensile Strength: 40A strips are 850 psi; 60A strips are 3000 psi; 90A strips are 5500 psi

Length tolerance is ±1″. Durometer tolerance is ±5.

Plain Back—Width tolerance is ±¼″.

Adhesive Back—Adhesive is acrylic, has a temperature range of –20° to +160° F, and requires 72 hours to reach full strength. Width tolerance is ±⅛″.

To Order: For 36″ wide plain-back strips, please specify durometer hardness: 60A (medium hard) or 90A (extra hard); 6″ and 12″ wide plain-back strips are only available in 90A durometer hardness. For adhesive-back strips, please specify durometer hardness: 40A (medium soft), 60A (medium hard), or 90A (extra hard).

			PLAIN BACK						ADHESIVE BACK				
	Thick.		6″ Wide		12″ Wide		36″ Wide			Thick.	1″×48″		2″×48″
Thick.	Tol.	Max. Lg.		Per Ft.		Per Ft.		Per Ft.	Thick.	Tol.		Each		Each
0.020″	±0.005″	20 ft.	2178T21	$3.43	2178T31	$6.58	2178T41	$18.28	⅛″	±0.015″	8997K51	$20.27	8997K61	$40.44
1/32″	±0.005″	20 ft.	2178T22	4.90	2178T32	9.48	2178T42	26.32	3/16″	±0.015″	8997K52	24.47	8997K62	42.97
1/16″	±0.008″	20 ft.	2178T23	8.57	2178T33	15.15	2178T43	43.29	¼″	±0.015″	8997K53	29.48	8997K63	52.63
3/32″	±0.008″	20 ft.	2178T24	10.37	2178T34	19.80	2178T44	56.56	⅜″	±0.015″	8997K54	36.89	8997K64	69.77
⅛″	±0.008″	20 ft.	2178T25	11.73	2178T35	23.46	2178T45	65.16	½″	±0.020″	8997K55	40.34	8997K65	78.12

Square Bars—Smooth Finish

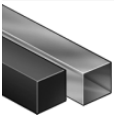

- Color: Black or amber (varies from translucent to opaque)
- Tensile Strength: 40A bars are 850 psi; 60A bars are 4000 psi; 80A and 95A bars are 6500 psi; 90A bars are 5500 psi; 75D bars are 7500 psi

Length tolerance is ±¼″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 40A (medium soft), 60A (medium hard), 80A (hard), 90A (extra hard), 95A (extra hard), or 75D (extra hard).

Square Size	Square Size Tolerance	6″ Long	Each	12″ Long	Each	24″ Long	Each	36″ Long	Each	48″ Long	Each
Black											
¾″	–0.015″	8631K81	$12.37	8631K231	$21.27	8631K211	$34.62	8631K251	$42.54	8631K261	$49.46
1″	–0.020″	8631K82	13.63	8631K232	23.44	8631K212	38.16	8631K252	45.79	8631K262	54.51
1½″	–0.030″	8631K83	29.72	8631K234	51.35	8631K214	73.70	8631K254	94.44	8631K264	118.87
2″	–0.040″	8631K84	53.61	8631K235	78.48	8631K215	132.52	8631K255	170.47	8631K265	214.43
3″	–0.060″	8631K85	83.36	8631K236	131.12	8631K216	220.32	8631K256	283.05	8631K266	353.81
Amber											
¾″	±0.015″	8792K16	11.80	8792K12	19.35	8792K13	33.04	8792K14	40.59	8792K15	47.20
1″	±0.020″	8792K21	17.97	8792K23	29.47	8792K24	50.32	8792K25	61.83	8792K26	71.89
1½″	±0.030″	8792K27	28.52	8792K32	45.64	8792K33	69.59	8792K34	92.57	8792K35	114.09
2″	±0.040″	8792K31	35.94	8792K43	56.78	8792K44	90.26	8792K45	116.46	8792K46	145.58

Sheets—Smooth Finish

- Color: Black or amber (varies from translucent to opaque)
- Tensile Strength: 40A sheets are 850 psi; 60A sheets are 4000 psi; 80A and 95A sheets are 6500 psi; 90A sheets are 5500 psi; 75D sheets are 7500 psi

Width and length tolerances are ±¼″. Adhesive is acrylic, has a temperature range of –20° to +160° F, and requires 72 hours to reach full strength. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 40A (medium soft), 60A (medium hard), 80A (hard), 90A (extra hard), 95A (extra hard), or 75D (extra hard). Adhesive-back sheets are not available in 95A or 75D durometer hardness.

Durometer Hardness Selector Pack—Includes six 4″×4″×⅛″ thick sheets of the following durometer hardnesses: 40A, 60A, 80A, 90A, 95A, and 75D.

8716K557 ..... Per Pkg. $25.11

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	12″×24″	Each	12″×48″	Each	24″×24″	Each	24″×48″	Each
Plain Back—*Amber*													
1/16″	±0.015″	8789K12	$12.14	8789K11	$26.61	8789K13	$43.45	8789K15	$73.91	8789K17	$73.92	8789K19	$123.20
⅛″	±0.015″	8789K22	11.86	8789K21	37.14	8789K23	67.31	8789K25	101.25	8789K27	101.24	8789K29	168.73
3/16″	±0.015″	8789K32	14.56	8789K31	44.81	8789K33	74.69	8789K35	124.48	8789K37	124.48	8789K39	207.47
¼″	±0.015″	8789K42	17.02	8789K41	53.68	8789K43	87.28	8789K45	145.47	8789K47	145.47	8789K49	242.45
⅜″	±0.015″	8789K52	21.86	8789K51	65.78	8789K53	109.63	8789K55	182.72	8789K57	182.69	8789K59	309.70
½″	±0.015″	8789K62	31.96	8789K61	80.62	8789K63	134.37	8789K65	223.96	8789K67	223.96	8789K69	379.59
¾″	±0.015″	8789K72	35.52	8789K71	106.91	8789K73	178.15	8789K75	296.83	8789K77	296.83	8789K79	503.11
1″	±0.020″	8789K82	41.58	8789K81	125.09	8789K83	208.48	8789K85	347.47	8789K87	347.47	8789K88	588.94
Plain Back—*Black*													
1/16″	±0.010″	8716K23	12.91	8716K61	28.03	8716K711	46.46	8716K511	77.45	8716K811	77.45	8716K911	129.09
⅛″	±0.010″	8716K24	13.59	8716K62	39.84	8716K721	64.64	8716K521	110.80	8716K821	110.82	8716K921	184.70
3/16″	±0.010″	8716K25	15.14	8716K63	46.53	8716K731	69.94	8716K531	127.48	8716K831	120.82	8716K931	205.72
¼″	±0.015″	8716K27	18.48	8716K64	56.69	8716K741	86.61	8716K541	153.98	8716K841	154.01	8716K941	262.45
⅜″	±0.015″	8716K29	24.24	8716K65	69.83	8716K751	106.25	8716K551	184.03	8716K861	193.18	8716K961	321.96
½″	±0.025″	8716K58	29.73	8716K66	85.33	8716K761	133.60	8716K561	235.59	8716K851	235.59	8716K951	417.49
¾″	±0.025″	8716K59	41.26	8716K67	124.14	8716K771	183.90	8716K571	338.96	8716K871	338.96	8716K971	574.70
1″	±0.025″	8716K69	43.60	8716K68	131.23	8716K781	194.32	8716K581	358.28	8716K881	358.71	8716K981	607.26
1½″	±0.035″	8716K83	71.34	8716K76	178.36	8716K77	317.08	8716K78	544.98	8716K79	544.98	8716K81	990.87
Adhesive Back—*Black*													
⅛″	±0.015″	8997K11	17.14	8997K21	58.49	____	____	____	____	8997K31	152.88	____	____
3/16″	±0.015″	8997K12	22.17	8997K22	62.68	____	____	____	____	8997K32	168.99	____	____
¼″	±0.015″	8997K13	26.52	8997K23	74.90	____	____	____	____	8997K33	202.10	____	____
⅜″	±0.015″	8997K14	32.70	8997K24	96.75	____	____	____	____	8997K34	247.18	____	____

(Material continued on following page)

For information about polyurethane and durometer hardness scales, see page 3526.

Polyurethane *(Material continued from previous page)*

Adhesive-Ready Sheets—Smooth Finish

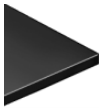

- Color: Black
- Tensile Strength: 4000 psi

One side is shiny and is processed to accept adhesive. Thickness tolerance is ±0.010″ for 1/16″ and 1/8″ thicknesses and ±0.025″ for 1/4″ to 1/2″ thicknesses. Width and length tolerances are ±1/4″. Durometer hardness is 60A (medium hard). Durometer tolerance is ±5.

Thick.	6″×6″ Each	12″×12″ Each	24″×24″ Each	Thick.	6″×6″ Each	12″×12″ Each	24″×24″ Each
1/16″	2185T21 $10.95	2185T31 $32.08	2185T41 $85.12	3/8″	2185T24 $25.14	2185T34 $72.58	2185T44 $213.02
1/8″	2185T22 16.19	2185T32 46.63	2185T42 130.28	1/2″	2185T25 34.10	2185T35 100.02	2185T45 260.94
1/4″	2185T23 22.57	2185T33 66.78	2185T43 176.43				

Film—Smooth Finish

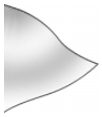

- Color: Translucent white
- Temperature Range: –40° to +225° F
- Tensile Strength: 7000 psi

Also known as die film or brake film, material has a matte (dull) finish on top and bottom. Width tolerance is ±1/4″. Durometer hardness is 85A (hard). Durometer tolerance is ±5.

Thick.	Thick. Tolerance	4″ Wide Max. Lg.	4″ Wide Per Ft.	12″ Wide Max. Lg.	12″ Wide Per Ft.
0.015″	±0.003″	100 ft.	1446T11 $2.10	50 ft.	1446T31 $6.14
0.030″	±0.003″	100 ft.	1446T21 3.29	50 ft.	1446T41 9.72

Adhesive-Back Film—Smooth Finish

- Color: Transparent
- Temp. Range: –40° to +175° F
- Tensile Strength: Not rated
- Use indoors and outdoors

This adhesive-back film protects surface finishes. Adhesive is acrylic and has a temperature range of –40° to +175°F. Width tolerance is ±1/32″. Durometer hardness is 80A (hard). Durometer tolerance is not rated. Maximum continuous length is 108 feet.

Thick.	Thick. Tolerance	1″ Wide Per Ft.	2″ Wide Per Ft.	3″ Wide Per Ft.	4″ Wide Per Ft.	6″ Wide Per Ft.	12″ Wide Per Ft.
0.014″	±0.0015″	1867T21 $1.90	1867T22 $3.64	1867T23 $5.36	1867T24 $7.14	1867T25 $11.11	1867T26 $22.12

Rods—Smooth Finish

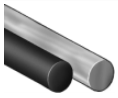

- Color: Black or amber (varies from translucent to opaque)
- Tensile Strength: 40A rods are 850 psi; 60A rods are 4000 psi; 80A and 95A rods are 6500 psi; 90A rods are 5500 psi; 75D rods are 7500 psi

Length tolerance is ±1/4″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 40A (medium soft), 60A (medium hard), 80A (hard), 90A (extra hard), 95A (extra hard), or 75D (extra hard).

Dia.	Dia. Tolerance	6″ Long Each	12″ Long Each	24″ Long Each	36″ Long Each	48″ Long Each
Black						
1/4″	+0.025″	8695K171 $8.70	8695K371 $14.49	8695K151 $24.27	8695K431 $30.91	8695K711 $36.23
3/8″	+0.025″	8695K172 9.18	8695K372 15.29	8695K152 25.92	8695K432 34.39	8695K712 38.23
1/2″	+0.025″	8695K173 9.76	8695K373 16.27	8695K153 27.25	8695K433 36.60	8695K713 40.67
5/8″	+0.025″	8695K174 11.74	8695K374 19.57	8695K154 31.57	8695K434 44.03	8695K714 48.92
3/4″	+0.025″	8695K175 12.74	8695K375 21.24	8695K155 35.14	8695K435 47.78	8695K715 53.09
7/8″	+0.025″	8695K176 15.70	8695K376 26.16	8695K141 38.32	8695K421 56.90	8695K761 65.40
1″	+0.025″	8695K177 16.49	8695K377 27.49	8695K156 46.04	8695K436 61.85	8695K716 68.72
1 1/8″	+0.050″	8695K178 18.85	8695K378 31.42	8695K142 52.63	8695K422 68.34	8695K764 78.55
1 1/4″	+0.050″	8695K179 20.84	8695K379 34.74	8695K157 58.18	8695K437 78.15	8695K717 86.84
1 1/2″	+0.050″	8695K181 25.92	8695K381 43.20	8695K158 72.37	8695K438 97.21	8695K718 108.01
1 3/4″	+0.050″	8695K182 33.15	8695K121 55.26	8695K122 95.11	8695K123 124.31	8695K124 138.14
2″	+0.050″	8695K183 44.16	8695K382 73.60	8695K159 123.29	8695K439 165.55	8695K719 184.01
2 1/4″	+0.050″	8695K184 51.60	8695K111 86.00	8695K112 138.97	8695K113 193.49	8695K114 214.99
2 1/2″	+0.050″	8695K185 60.82	8695K115 101.36	8695K116 171.03	8695K117 217.15	8695K118 253.41
3″	+0.050″	8695K187 67.00	8695K383 115.36	8695K161 183.71	8695K441 236.49	8695K767 288.40
4″	+0.060″	8695K442 83.51	8695K443 139.45	8695K444 232.67	8695K445 349.20	8695K446 388.43
Amber						
1/4″	+0.020″, –0.010″	8784K82 7.64	8784K11 12.95	8784K12 21.92	8784K13 28.56	8784K14 33.21
3/8″	+0.020″, –0.010″	8784K83 8.06	8784K15 13.67	8784K16 23.14	8784K17 30.15	8784K18 35.06
1/2″	+0.020″, –0.010″	8784K84 8.56	8784K19 14.51	8784K21 24.56	8784K22 32.00	8784K23 37.21
5/8″	+0.020″, –0.010″	8784K85 10.31	8784K24 17.48	8784K25 29.59	8784K26 38.55	8784K27 44.83
3/4″	+0.020″, –0.010″	8784K86 11.48	8784K28 19.47	8784K29 32.95	8784K31 42.94	8784K32 49.93
7/8″	+0.020″, –0.010″	8784K87 13.78	8784K33 23.36	8784K34 39.54	8784K35 51.52	8784K36 59.91
1″	+0.020″, –0.010″	8784K88 14.48	8784K37 24.55	8784K38 41.55	8784K39 54.15	8784K41 62.96
1 1/8″	+0.020″, –0.010″	8784K89 16.55	8784K42 28.06	8784K43 47.49	8784K44 61.89	8784K45 71.96
1 1/4″	+0.020″, –0.010″	8784K91 18.30	8784K46 31.02	8784K47 52.50	8784K48 68.41	8784K49 79.55
1 1/2″	+0.020″, –0.010″	8784K92 22.41	8784K51 38.00	8784K52 64.30	8784K53 83.79	8784K54 97.43
1 3/4″	+0.020″, –0.010″	8784K93 29.10	8784K55 49.34	8784K56 80.13	8784K57 108.80	8784K58 126.51
2″	+0.020″, –0.010″	8784K94 38.80	8784K59 65.80	8784K61 111.35	8784K62 145.09	8784K63 168.71
2 1/4″	+0.023″, –0.011″	8784K95 44.87	8784K64 76.09	8784K65 126.09	8784K66 166.86	8784K67 195.09
2 1/2″	+0.025″, –0.013″	8784K96 53.39	8784K68 90.70	8784K69 149.22	8784K71 201.61	8784K72 232.14
3″	+0.030″, –0.015″	8784K98 58.62	8784K77 92.52	8784K78 154.18	8784K79 210.25	8784K81 254.88
4″	+0.040″, –0.020″	8784K167 90.70	8784K168 151.20	8784K169 250.23	8784K177 314.62	8784K988 357.52

Metric Sheets and Rods—Smooth Finish

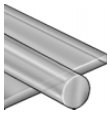

- Color: Amber (varies from translucent to opaque)
- Temp. Range: –20° to +200° F
- Tensile Strength: 5500 psi

Width tolerance is ±1/8″ for 12″ wide sheets and ±3/8″ for 24 1/2″ wide sheets. Length tolerance is ±1/8″ for 12″ long sheets and +1″ for 39″ long sheets. Rods have a diameter tolerance of ±0.5 mm and a length tolerance of ±1/8″. Durometer hardness is 82A (hard). Durometer tolerance is ±5.

Thick.	Thick. Tol.	SHEETS 12″ Wd.×12″ Lg. Each	SHEETS 24 1/2″ Wd.×39″ Lg. Each	RODS Dia.	RODS 12″ Long Each	RODS Dia.	RODS 12″ Long Each
3 mm	±0.4 mm	2656T64 $59.26	2656T11 $294.02	5 mm	2656T57 $17.92	25 mm	2656T61 $27.20
6 mm	±0.4 mm	2656T65 113.51	2656T13 544.65	10 mm	2656T58 19.00	40 mm	2656T62 49.83
8 mm	±0.4 mm	2656T66 147.64	2656T14 686.76	20 mm	2656T59 24.76	50 mm	2656T63 71.52

(Material continued on following page)

For information about polyurethane and durometer hardness scales, see page 3526.

Polyurethane *(Material continued from previous page)*

Polyurethane bridges the gap between rubber and plastics. It can be softer than a rubber band or as hard as a table top, giving it the characteristics of good vibration damping and shock absorption. Compared to rubber, polyurethane has better abrasion, cut, and tear resistance. Compared to plastics, it has better impact resistance and is not as brittle. Because of its elasticity, it can bounce back to its original shape. It is commonly used for cutting surfaces, cushions, bumpers, covers, wear pads, and liners.

Tubes—Smooth Finish

- Color: Black or amber (varies from translucent to opaque)
- Temperature Range: –20° to +185° F
- Tensile Strength: 40A tubes are 850 psi; 60A tubes are 4000 psi; 80A and 95A tubes are 6500 psi; 90A tubes are 5500 psi; 75D tubes are 7500 psi
- Use indoors

OD tolerance is +0.020″, –0.010″ for 7/8″ to 2″ ODs and ±0.040″ for 2 1/2″ to 4″ ODs. ID tolerance is ±0.020″ for 1/4″ to 2″ IDs and ±0.030″ for 2 1/4″ to 3″ IDs. Length tolerance is +1/4″. Durometer tolerance is ±5. **To Order:** For 1″, 2″, 4″, and 12 1/2″ long tubes, please specify durometer hardness: 80A (hard) or 95A (extra hard). For 6″ and 36″ long tubes, please specify durometer hardness: 40A (medium soft), 60A (medium hard), 80A (hard), 90A (extra hard), 95A (extra hard), or 75D (extra hard), unless noted.

			BLACK						AMBER					
			1″ Long		2″ Long		4″ Long		1″ Long		2″ Long		4″ Long	
OD	ID	Wall Thick.		Each		Each		Each		Each		Each		Each
7/8″	1/4″	5/16″	9697K111	$3.44	9697K115	$4.86	9697K117	$8.91	8795K21	$3.08	8795K25	$4.93	8795K27	$9.04
1″	3/8″	5/16″	9697K121	4.10	9697K125	6.48	9697K127	12.92	8795K31	3.71	8795K35	6.19	8795K37	11.14
1 1/8″	1/2″	5/16″	9697K131	4.22	9697K135	6.92	9697K137	12.47	8795K41	4.11	8795K45	6.73	8795K47	12.16
1 1/4″	5/8″	5/16″	9697K141	4.51	9697K145	7.58	9697K147	14.58	8795K51	4.81	8795K55	7.09	8795K57	12.04
1 1/2″	3/4″	3/8″	9697K151	5.72	9697K155	9.74	9697K157	17.90	8795K61	5.20	8795K65	8.79	8795K67	16.21
2″	1″	1/2″	9697K161	6.46	9697K165	10.35	9697K167	18.15	8795K71	6.50	8795K75	10.41	8795K77	18.24

			BLACK						AMBER					
			6″ Long		12 1/2″ Long		36″ Long		6″ Long		12 1/2″ Long		36″ Long	
OD	ID	Wall Thick.		Each		Each		Each		Each		Each		Each
7/8″	1/4″	5/16″	9697K118♣	$12.14	9697K119	$20.24			8795K28♣	$12.33	8795K29	$20.55		
1″	3/8″	5/16″	87235K11	12.83	9697K129	24.73	87235K81	$66.84	8795K38♣	15.18	8795K39	24.75		
1 1/8″	1/2″	5/16″	9697K138♣	16.89	9697K139	28.15			8795K48♣	16.46	8795K49	27.43		
1 1/4″	1/2″	3/8″	87235K12	15.32			87235K82	75.13						
1 1/4″	5/8″	5/16″	9697K148♣	19.33	9697K149	32.21			8795K58♣	17.46	8795K59	30.10		
1 1/2″	3/4″	3/8″	9697K158♣	17.90	9697K159	45.00			8795K68♣	23.16	8795K69	40.76		
1 3/4″	1″	3/8″	87235K56	19.61			87235K29	90.49	8835K51	19.08			8835K19	$88.05
2″	1/2″	3/4″	87235K57	26.77			87235K31	109.52	8835K52	27.58			8835K21	111.80
2″	1″	1/2″	87235K58	22.81	9697K169	44.42	87235K32	92.54	8835K53	23.19	8795K79	39.09	8835K22	93.08
2″	1 1/4″	3/8″	87235K59	19.34			87235K33	77.36	8835K54	19.62			8835K23	81.74
2″	1 1/2″	1/4″	87235K61	17.32			87235K34	69.27	8835K55	17.63			8835K24	73.46
2 1/2″	3/4″	7/8″	87235K13	43.44			87235K83	171.49						
2 1/2″	1″	3/4″	87235K63	37.19			87235K36	148.76	8835K57	36.95			8835K26	153.97
2 1/2″	1 1/2″	1/2″	87235K65	30.87			87235K38	123.49	8835K59	29.71			8835K28	123.80
2 3/4″	1 1/2″	5/8″	87235K67	39.88			87235K42	159.52	8835K62	35.47			8835K31	154.23
2 3/4″	1 3/4″	1/2″	87235K68	31.94			87235K43	127.76	8835K63	32.89			8835K32	131.55
3″	1″	1″	87235K71	54.66			87235K45	218.66	8835K65	54.22			8835K34	216.87
3″	1 1/2″	3/4″	87235K72	49.15			87235K46	196.61	8835K66	45.00			8835K35	187.48
3″	2″	1/2″	87235K73	35.16			87235K47	140.63	8835K67	35.10			8835K36	146.23
3″	2 1/4″	3/8″	87235K74	29.29			87235K48	117.17	8835K68	30.48			8835K37	121.90
3 1/2″	2″	3/4″	87235K76	39.28			87235K52	157.13	8835K72	53.11			8835K39	212.43
3 1/2″	2 1/2″	1/2″	87235K77	33.99			87235K53	135.98	8835K73	42.21			8835K41	175.87
4″	3″	1/2″	87235K79	46.28			87235K55	185.12	8835K75	45.46			8835K43	189.40

♣ Available only in 80A and 95A durometer hardnesses.

Balls—Smooth Finish

- Color: Black, unless noted
- Temperature Range: –20° to +185° F
- Tensile Strength: 6500 psi
- Use indoors and outdoors

Diameter tolerance is ±0.020″. Durometer hardness is 95A (extra hard). Durometer tolerance is ±5.

Dia.		Each	Dia.		Each	Dia.		Each	Dia.		Each	Dia.		Each
3/4″	6490K12★	$4.11	1 1/2″	6490K16	$8.81	2 1/2″	6490K21	$19.81	3 1/2″	6490K24	$32.42	4 1/2″	6490K43	$49.79
1″	6490K14★	5.97	2″	6490K18	12.89	3″	6490K23	25.88	4″	6490K27	38.80	5″	6490K44	62.21

★ Color is amber (varies from translucent to opaque).

Soft Polyurethane

- Color: Black
- Temperature Range: –40° to +185° F
- Tensile Strength: 20A sheets are 280 psi; 30A sheets are 380 psi
- Use indoors and outdoors

A softer version of our standard polyurethane, this material offers better conformability but does not offer the same strength.

Sheets—Smooth Finish

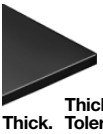

Length tolerance is ±1/4″. Durometer tolerance is ±5. **To Order:** Please specify durometer hardness: 20A (soft) or 30A (soft).

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	12″×24″	Each	12″×48″	Each	24″×24″	Each	24″×48″	Each
1/16″	±0.010″	8781K173	$12.91	8781K185	$28.03	8781K198	$46.46	8781K233	$77.45	8781K245	$77.45	8781K257	$129.09
1/8″	±0.010″	8781K174	13.59	8781K186	39.84	8781K199	64.64	8781K234	110.80	8781K246	110.82	8781K258	184.70
3/16″	±0.010″	8781K175	15.14	8781K187	46.53	8781K213	69.94	8781K235	127.48	8781K247	120.82	8781K259	205.72
1/4″	±0.015″	8781K176	18.48	8781K188	56.69	8781K214	86.61	8781K236	153.98	8781K248	154.01	8781K263	262.45
3/8″	±0.015″	8781K177	24.24	8781K193	69.83	8781K215	106.25	8781K237	184.03	8781K249	193.18	8781K264	321.96
1/2″	±0.025″	8781K178	29.73	8781K194	85.33	8781K216	133.60	8781K238	235.59	8781K253	235.59	8781K265	417.49
3/4″	±0.025″	8781K179	41.26	8781K195	124.14	8781K217	183.90	8781K239	338.96	8781K254	338.96	8781K266	574.70
1″	±0.025″	8781K183	43.60	8781K196	131.23	8781K218	194.32	8781K243	358.28	8781K255	358.71	8781K267	607.26
1 1/2″	±0.035″	8781K184	71.34	8781K197	178.36	8781K219	317.08	8781K244	544.98	8781K256	544.98	8781K268	990.87

For information about polyurethane and durometer hardness scales, see page 3526.

Ultra-Soft Polyurethane

- Color: Black
- Temperature Range: –20° to +160° F
- Tensile Strength: 30 OO material is 83 psi; 40 OO material is 102 psi; 50 OO material is 122 psi; 60 OO material is 166 psi; 70 OO material is 206 psi
- Use indoors and outdoors

Also known as Sorbothane, this nonporous material has a fluid-like consistency and is durable and resilient enough to return to its original shape after repetitive compression. Dampen vibration, absorb shock, and reduce noise with the softest solid polyurethane we offer.

Sheets and Strips—Smooth Finish

Adhesive is acrylic and has a temperature range of 0° to 160° F. Sheets have width and length tolerances of ±0.03″. Strips have a width tolerance of ±0.03″ and a length tolerance of +5″. Durometer tolerance is ±5.

To Order: For sheets, please specify durometer hardness: 30 OO (extra soft), 40 OO (extra soft), 50 OO (soft), 60 OO (soft), or 70 OO (medium soft), unless noted. 4″×4″ and 5″×5″ sheets are not available in 30 OO or 60 OO durometer hardness. Strips are only available in 50 OO durometer hardness.

Durometer Hardness Selector Pack—Includes five plain-back 1½″×3″×3/16″ thick oval pieces, one of each durometer hardness: 30 OO, 40 OO, 50 OO, 60 OO, and 70 OO.

8514K2 ..... **Per Pkg.** $8.11

		PLAIN-BACK SHEETS						PLAIN-BACK STRIPS					
Thick.	Thick. Tolerance	4″×4″	Each	12″×12″	Each	24″×24″	Each	2″ Wd.×36″ Lg.	Each	4″ Wd.×36″ Lg.	Each	6″ Wd.×36″ Lg.	Each
1/8″	±0.020″	8514K51	$5.25	8514K61★	$20.19	8514K71★	$69.63	3462K11	$15.63	3462K15	$28.58	3462K19	$40.69
3/16″	±0.020″	8514K52	5.87	8514K62	27.08	8514K72★	96.13	—	—	—	—	—	—
1/4″	±0.025″	8514K53	6.97	8514K63	34.16	8514K73	124.27	3462K12	25.58	3462K16	49.49	3462K21	70.15
3/8″	±0.025″	8514K54	7.82	8514K64	50.20	8514K74	172.14	3462K13	37.06	3462K17	73.83	3462K22	96.91
1/2″	±0.035″	8514K55	9.53	8514K65	66.89	8514K75	244.23	3462K14	44.72	3462K18	86.81	3462K23	120.84
5/8″	±0.035″	—	—	8514K66	78.94	8514K76	296.42	—	—	—	—	—	—
3/4″	±0.040″	—	—	8514K67	96.49	8514K77	342.52	—	—	—	—	—	—
1″	±0.060″	—	—	8514K68	132.62	8514K78	478.26	—	—	—	—	—	—

★ Not available in 30 OO durometer hardness.

		ADHESIVE-BACK SHEETS			
Thick.	Thick. Tolerance	4″×4″	Each	5″×5″	Each
1/2″	±0.035″	8794K11	$11.64	8794K21	$17.04

Film—Smooth Finish

A peel-off protective masking keeps this polyurethane free from dust and debris. Width and length tolerances are ±0.030″. Durometer tolerance is ±5.

To Order: Please specify durometer hardness: 40 OO (extra soft), 50 OO (soft), 60 OO (soft), or 70 OO (medium soft).

Thick.	Thick. Tolerance	4″×6″	Each	6″×12″	Each
0.04″	±0.007″	8824T11	$11.51	—	—
0.06″	±0.007″	8824T12	12.98	—	—
0.10″	±0.015″	—	—	8824T13	$14.75

FDA-Compliant Polyurethane

- Color: Varies from translucent to opaque
- Temperature Range: –40° to +185° F
- Tensile Strength: 60A material is 3000 psi; 70A and 90A material is 4500 psi; 80A material is 6000 psi
- Use indoors

This nonmarking polyurethane is made of FDA-compliant materials, making it safe for contact with food.

Sheets and Strips—Smooth Finish

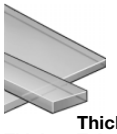

Meets FDA CFR21 177.2600. Width and length tolerances are ±1/4″. Durometer tolerance is ±5.

To Order: Please specify durometer hardness: 60A (medium hard), 70A (hard), 80A (hard), or 90A (extra hard).

		SHEETS						STRIPS					
Thick.	Thick. Tolerance	6″ Wd.×6″ Lg.	Each	12″ Wd.×24″ Lg.	Each	24″ Wd.×24″ Lg.	Each	1″ Wd.×48″ Lg.	Each	2″ Wd.×48″ Lg.	Each	3″ Wd.×48″ Lg.	Each
3/16″	±0.010″	8787K11	$28.45	8787K31	$103.14	8787K41	$177.82	8787K51	$35.76	8787K61	$49.79	8787K71	$62.24
1/4″	±0.015″	8787K12	32.48	8787K32	125.58	8787K42	216.52	8787K52	38.61	8787K62	57.85	8787K72	71.45
3/8″	±0.015″	8787K14	43.66	8787K34	167.02	8787K44	291.08	8787K54	46.54	8787K64	75.83	8787K74	94.75
1/2″	±0.025″	8787K15	53.93	8787K35	208.53	8787K45	359.53	8787K55	57.52	8787K65	93.48	8787K75	116.96
1″	±0.030″	8787K17	76.96	8787K37	371.99	8787K47	641.36	8787K57	104.86	8787K67	166.75	8787K77	211.65

Static Control Polyurethane

- Color: Black
- Temperature Range: –40° to +250° F
- Tensile Strength: 4500 psi
- Use indoors

Protect sensitive electrical equipment from damage caused by static electricity buildup. This material conducts electricity without sacrificing any of its abrasion, cut, and tear resistance. It is nonmarking and does not contain carbon black fillers.

Sheets and Strips—Smooth Finish

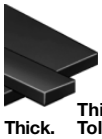

Width and length tolerances are ±1/4″. Durometer hardness is 55A (medium). Durometer tolerance is ±5.

		SHEETS						STRIPS					
Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	24″×24″	Each	1″×48″	Each	2″×48″	Each	3″×48″	Each
1/4″	±0.015″	8881K113	$20.52	8881K213	$65.10	8881K313	$159.71	8881K413	$51.34	8881K513	$56.16	8881K613	$61.97
3/8″	±0.015″	8881K133	24.18	8881K233	76.94	8881K333	228.73	—	—	—	—	—	—
1/2″	±0.025″	8881K153	29.76	8881K253	99.18	8881K353	298.20	8881K433	57.97	8881K533	69.39	8881K633	98.02
1″	±0.030″	8881K193	56.07	8881K293	186.93	8881K393	570.95	8881K473	87.12	8881K573	129.40	8881K673	191.92

For information about polyurethane and durometer hardness scales, see page 3526.

Fabric-Backed and Aluminum-Backed Polyurethane

- Color (Polyurethane): Black
- Temperature Range: –40° to +185° F
- Tensile Strength: 4000 psi
- Use indoors and outdoors

The abrasion, cut, and tear resistance of polyurethane gets a boost from the addition of a fabric or metal backing, which adds stability to an elastic material.

Fabric-Backed Sheets and Strips—Smooth Finish

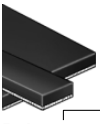

Polyurethane has a durometer of 60A (medium hard). Durometer tolerance is ±5. Fabric backing is 0.040″ thick off-white cotton duck (canvas). Thickness tolerance is ±0.06″. Width and length tolerances are +1/8″, except strips have a length tolerance of +1/4″.

Poly. Thick.	SHEETS 6″×6″	Each	SHEETS 12″×12″	Each	STRIPS 1″ Wd.×48″ Lg.	Each
3/16″	8834K111	$16.59	8834K211	$52.78	8834K511	$21.43
1/4″	8834K121	20.47	8834K221	68.24	8834K521	22.74
1/2″	8834K141	37.52	8834K241	113.32	8834K541	37.91
1″	8834K161	58.95	8834K261	168.42	8834K561	66.77

Aluminum-Backed Sheets—Smooth Finish

Polyurethane has a durometer of 60A (medium hard). Durometer tolerance is ±5. Aluminum backing is 1/4″ thick Alloy 6061 with a yield strength of 40,000 psi and hardness of Brinell 95. Overall thickness tolerance is ±1/8″. Width and length tolerances are ±1/8″.

O'all Thick.	6″×6″	Each	12″×12″	Each	24″×24″	Each
3/4″	8957K112	$44.19	8957K492	$123.70	8957K632	$368.58
1″	8957K122	53.53	8957K512	170.34	8957K642	464.64
1 1/4″	8957K132	64.28	8957K522	220.34	8957K652	584.93
2 1/4″	8957K162	108.74	8957K552	396.07	8957K682	862.34

About Foam

Foam is a rubber or plastic that is not completely solid—it contains cells of air. This makes it very lightweight and good for gasketing, sealing, and cushioning applications. Open-cell foams have cells that connect to one another, allowing gas, water, and air to be absorbed and pass through. Closed-cell foams have cells that are completely closed, restricting water, air, and gas from absorbing or passing through. Adhesive-backed foam strips are commonly used as weatherstripping to seal around doors.

Material Selector Pack—Includes one individually marked piece of each of the materials marked with a ★ below. Each piece is approximately 4″×4″. Thicknesses range from 1/8″ to 1/2″.

2172T21 ..... **Pkg.** $43.04

Material	Page(s)	Material	Page(s)	Material	Page(s)
Buna-N★	3559	Neoprene★	3552, 3557	Polyurethane★	3552, 3554, 3560-3562
ECH★	3558	Neoprene/EPDM/SBR	3551	Santoprene	3552
EPDM★	3551-3552	Neoprene/Vinyl/Buna-N	3558	Silicone★	3555-3557
EVA★	3563	Nylon	3563	Vinyl★	3553
Gum★	3553-3554, 3557	Polyethylene★	3562-3563	Vinyl/Buna-N	3559
Ionomer★	3562	Polyimide★	3558	Viton® Fluoroelastomer★	3558

Maximum Temperature

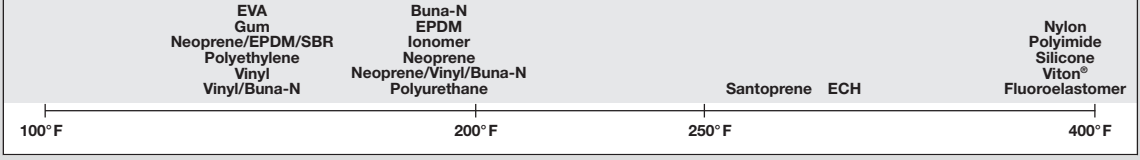

Oil Resistance

A material's ability to maintain its physical properties when it comes in contact with petroleum-based fluids and resist absorption/swelling.

Excellent	Good	Fair
Buna-N, Ionomer, Neoprene/Vinyl/Buna-N, Nylon, Vinyl/Buna-N	ECH, EVA, Neoprene, Polyethylene, Polyimide, Polyurethane, Viton® Fluoroelastomer	Neoprene/EPDM/SBR, Santoprene, Vinyl

Weather Resistance

How well a material withstands exposure to sunlight, oxygen, and ozone without breaking down.

Excellent	Good	Fair
EPDM, Ionomer, Nylon Silicone	Buna-N, ECH, EVA, Neoprene/EPDM/SBR, Neoprene/Vinyl/Buna-N, Polyethylene, Polyurethane, Santoprene, Vinyl, Vinyl/Buna-N, Viton® Fluoroelastomer	Gum, Neoprene

Recovery from Compression

The resilience of a material and its ability to return to its original shape after long-term compression.

Excellent	Good	Fair
ECH, Gum, Ionomer, Santoprene	EPDM, EVA, Neoprene, Polyethylene, Polyimide, Polyurethane, Silicone, Viton® Fluoroelastomer	Buna-N, Neoprene/EPDM/SBR, Neoprene/Vinyl/Buna-N, Nylon, Vinyl/Buna-N

Firmness

Firmness is the amount of pressure required to compress foam to a given percentage (% deflection) of its thickness. It's measured in pounds per square inch (psi). The higher the psi value, the firmer the foam. Firmness is not a measure of how quickly foam will recover after compression.

Firmness Rating Selector Pack—Includes nine samples, one each of the following firmness ratings: 0.3 psi, 0.6 psi, 0.7 psi, 1.4 psi, 2-5 psi, 5-9 psi, 9-14 psi, 15-20 psi, and 30-60 psi. Sizes are 6″×6″. Thicknesses range from 1/32″ to 1/2″.

2172T11 ..... **Pkg.** $34.39

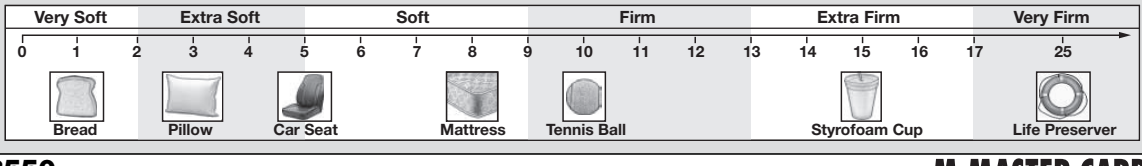

For information about foam and foam firmness ratings, see page 3550.

Weather-Resistant Neoprene/EPDM/SBR Foam

- Color: Black
- Temperature Range: See below
- Restricts absorption (closed cell)
- Use indoors and outdoors

A combination of the best qualities of these materials creates a resilient, weather- and abrasion-resistant foam rubber. It will also extinguish itself once a flame source is removed—making it good for many electrical applications.

Adhesive-Back Strips—Textured Finish

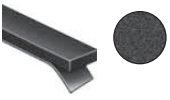

- Temperature Range: –40° to +158° F
- Firmness (25% Deflection): 5-9 psi (soft)
- Density: 5-7 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056 2A2, UL 94HF1, and UL 94HBF. Material has a fine cell textured finish and does not have a skin. Adhesive is rubber based and has a temperature range of –10° to +150° F. Width tolerance is ±0.031″ for ¼″ to 1″ widths, ±0.063″ for 1¼″ to 4″ widths, and ±0.094″ for 6″ width. Length tolerance is ±3″.

Thick.	Thick. Tol.	Length	¼″ Wide		⅜″ Wide		½″ Wide		⅝″ Wide		¾″ Wide		1″ Wide	
1/16″	±0.031″	50 ft.	8694K111	$3.65	8694K112	$4.07	8694K11	$4.50	8694K113	$5.20	8694K62	$6.00	8694K63	$7.65
1/8″	±0.031″	50 ft.	8694K117	4.37	8694K118	4.86	8694K16	5.39	8694K119	6.22	8694K67	7.01	8694K68	8.95
3/16″	±0.031″	50 ft.	8694K124	6.51	8694K125	7.02	8694K17	6.53	8694K126	7.61	8694K72	9.06	8694K73	12.14
1/4″	±0.031″	50 ft.	8694K131	6.81	8694K132	7.35	8694K12	8.39	8694K133	8.74	8694K77	11.70	8694K78	14.22
3/8″	±0.045″	25 ft.	8694K137	5.42	8694K138	5.66	8694K13	5.95	8694K139	6.86	8694K82	9.18	8694K83	10.44
1/2″	±0.045″	25 ft.	—	—	8694K144	7.19	8694K14	8.15	8694K145	9.26	8694K87	11.07	8694K88	14.66
3/4″	±0.063″	25 ft.	—	—	—	—	—	—	—	—	8694K51	16.32	8694K53	19.19
1″	±0.094″	25 ft.	—	—	—	—	—	—	—	—	8694K52	19.52	8694K54	23.49

Thick.	Thick. Tol.	Length	1¼″ Wide		1½″ Wide		2″ Wide		3″ Wide		4″ Wide		6″ Wide	
1/16″	±0.031″	50 ft.	8694K114	$9.33	8694K91	$10.83	8694K64	$13.22	8694K115	$20.34	8694K65	$24.70	8694K116	$35.80
1/8″	±0.031″	50 ft.	8694K121	10.91	8694K92	12.78	8694K69	15.61	8694K122	22.91	8694K41	28.09	8694K123	42.31
3/16″	±0.031″	50 ft.	8694K127	13.87	8694K93	15.65	8694K74	19.41	8694K128	28.91	8694K42	36.33	8694K129	51.16
1/4″	±0.031″	50 ft.	8694K134	16.00	8694K94	19.26	8694K79	24.16	8694K135	31.98	8694K85	44.01	8694K136	56.85
3/8″	±0.045″	25 ft.	8694K141	12.39	8694K95	15.21	8694K84	20.55	8694K142	26.87	8694K43	40.48	8694K143	51.29
1/2″	±0.045″	25 ft.	8694K146	17.31	8694K96	18.95	8694K89	23.48	8694K147	34.28	8694K57	43.39	8694K148	62.32
3/4″	±0.063″	25 ft.	8694K149	26.82	8694K97	27.32	8694K55	35.73	8694K151	54.68	8694K58	69.41	8694K152	87.49
1″	±0.094″	25 ft.	8694K153	28.45	8694K98	35.02	8694K56	44.62	8694K154	59.36	8694K44	85.49	8694K155	101.13

Sheets and Sheeting—Textured Finish

- Temp. Range: –40° to +200° F
- Firmness (25% Deflection): 2-5 psi (extra soft), 5-9 psi (soft), or 9-13 psi (firm)
- Density: Extra soft and soft are 4-8 lbs./cu. ft. and firm is 7-11 lbs./cu. ft.

Foam meets ASTM D1056, UL 94HF1, MIL-C-3133C, and MIL-STD-670B. Material has a fine cell textured finish and does not have a skin. Sheets have a width tolerance of ±1¼″ and a length tolerance of ±2½″. Sheeting has a width tolerance of ±1¼″.

		42″ WD. × 72″ LG. SHEETS						42″ WIDE SHEETING					
Thick.	Thick. Tol.	Extra Soft	Each	Soft	Each	Firm	Each	Max. Lg.	Extra Soft	Per Ft.	Soft	Per Ft.	Firm	Per Ft.
1/16″	±0.015″	8647K1	$19.38	8647K106	$21.36	8647K109	$16.06	50 ft.	8647K102	$3.80	8647K108	$4.03	8647K12	$2.92
1/8″	±0.020″	8647K51	28.63	8647K71	29.62	8647K81	38.96	50 ft.	8647K21	5.49	8647K31	5.57	8647K41	7.77
3/16″	±0.026″	8647K52	35.21	8647K72	37.09	8647K82	48.35	50 ft.	8647K22	7.44	8647K32	7.62	8647K42	9.61
1/4″	±0.025″	8647K53	41.79	8647K73	44.38	8647K83	56.92	50 ft.	8647K23	8.32	8647K33	8.80	8647K43	11.25
3/8″	±0.035″	8647K55	66.90	8647K75	71.03	8647K85	90.66	50 ft.	8647K25	13.26	8647K35	14.69	8647K45	17.99
1/2″	±0.040″	8647K56	85.29	8647K76	92.08	8647K86	114.04	50 ft.	8647K26	16.95	8647K36	18.90	8647K46	22.45
3/4″	±0.065″	8647K58	99.61	8647K78	104.80	8647K88	127.63	50 ft.	8647K28	19.93	8647K38	21.89	8647K48	25.76
1″	±0.082″	8647K59	133.01	8647K79	137.66	8647K89	174.34	50 ft.	8647K29	26.38	8647K39	28.14	8647K49	33.30
1¼″	±0.095″	8647K61	146.10	8647K64	154.45	8647K67	197.14	6 ft.	8647K501	29.21	8647K601	32.23	8647K701	37.79
1½″	±0.150″	8647K101	164.46	8647K107	175.74	8647K11	260.61	25 ft.	8647K103	42.17	8647K104	42.45	8647K105	51.10
2″	±0.175″	8647K621	212.18	8647K651	231.62	8647K681	281.67	6 ft.	8647K201	40.96	8647K301	45.43	8647K401	55.23

Weather-Resistant EPDM Foam

- Color: Black
- Temperature Range: See below
- Restricts absorption (closed cell), unless noted
- Use indoors and outdoors

This expanded EPDM (ethylene-propylene-diene monomer) offers the best weather resistance of the foam materials.

Adhesive-Back Strips—Textured Finish

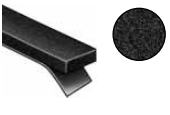

- Temp. Range: –40° to +220° F
- Firmness (25% Deflection): 2-5 psi (extra soft)
- Density: 9-14 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056 2A1. Material has a fine cell textured finish and does not have a skin. Adhesive is acrylic and has a temp. range of –20° to +200° F. Width tolerance is ±1/32″. Length tolerance is ±1 ft.

Thick.	Thick. Tolerance	Length	⅜″ Wide		½″ Wide		¾″ Wide		1″ Wide	
1/8″	±0.032″	50 ft.	93725K52	$12.31	93725K54	$14.97	93725K56	$21.38	93725K58	$27.98
3/16″	±0.032″	50 ft.	93725K62	13.60	93725K64	17.35	93725K66	25.02	93725K68	32.20
1/4″	±0.032″	50 ft.	93725K72	15.30	93725K74	19.27	93725K76	27.98	93725K78	36.50

Sheeting—Textured Finish

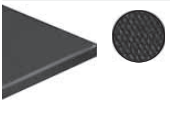

- Temperature Range: –20° to +200° F
- Absorbent (open cell)
- Firmness (25% Deflection): 4-9 psi (soft) or 9-17 psi (firm)
- Density: Soft is 30 lbs./cu. ft. and firm is 35 lbs./cu. ft.

Material has a criss-cross textured finish and a skin on the top and bottom. Sheeting is 36″ wide. Width tolerance is +1″ for ⅛″ to ¼″ thick foam and +3″ for ⅜″ and ½″ thick foam.

Thick.	Thick. Tolerance	Max. Lg.	Soft	Per Ft.	Firm	Per Ft.
1/8″	±0.015″	120 ft.	86005K11	$17.52	86005K51	$20.47
3/16″	±0.030″	90 ft.	86005K12	24.83	86005K52	28.32
1/4″	±0.030″	60 ft.	86005K13	30.48	86005K53	37.22
3/8″	±0.040″	45 ft.	86005K14	47.11	86005K54	52.29
1/2″	±0.040″	36 ft.	86005K15	59.57	86005K55	66.66

(Material continued on following page)

For information about foam and foam firmness ratings, see page 3550.

Weather-Resistant EPDM Foam *(Material continued from previous page)*

- Color: Black
- Temperature Range: See below
- Restricts absorption (closed cell)
- Use indoors and outdoors

This expanded EPDM (ethylene-propylene-diene monomer) offers the best weather resistance of the foam materials.

Cord—Smooth Finish

- Temperature Range: –4° to +167° F
- Firmness (25% Deflection): 9-13 psi (firm)
- Density: 18-24 lbs./cu. ft.

Foam meets ASTM D1056 2A3 and has a skin. Sold in 100-ft. lengths. Length tolerance is ±2 ft.

Dia.	Dia. Tol.			Dia.	Dia. Tol.		
1/8″	±0.020″	8605K41	$16.48	3/8″	±0.032″	8605K43	$31.79
1/4″	±0.032″	8605K42	22.39	1/2″	±0.032″	8605K44	45.33

Tubes—Smooth Finish

- Temperature Range: –40° to +225° F
- Firmness (25% Deflection): 5-9 psi (soft)
- Density: 14 lbs./cu. ft.

Foam meets ASTM D1056 2A2 and has a skin. OD tolerance is ±1/16″. Sold in 6-ft. lengths. Length tolerance is ±1 1/2″.

OD	ID	ID Tol.	Wall Thick.			OD	ID	ID Tol.	Wall Thick.			OD	ID	ID Tol.	Wall Thick.		
7/16″	1/4″	±0.039″	3/32″	4339T1	$7.60	5/8″	7/16″	±0.051″	3/32″	4339T4	$8.52	3/4″	7/16″	±0.051″	5/32″	4339T7	$9.99
1/2″	1/4″	±0.039″	1/8″	4339T2	8.40	5/8″	1/2″	±0.051″	1/16″	4339T5	7.77	3/4″	1/2″	±0.051″	1/8″	4339T8	9.53
5/8″	1/4″	±0.039″	3/16″	4339T3	9.88	3/4″	1/4″	±0.039″	1/4″	4339T6	11.61						

Weather-Resistant Neoprene Foam

- Color: Black
- Temperature Range: See below
- Restricts absorption (closed cell), unless noted
- Use indoors and outdoors

Choose this neoprene foam for its good weather resistance and conformability. It also has fair abrasion resistance, even with rough handling.

Strips—Smooth Finish

- Temperature Range: –40° to +212° F
- Firmness (25% Deflection): 5-9 psi (soft)
- Density: 17 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056 2C2. Material has a skin on the top and bottom.
Plain-back strips have a width tolerance of ±0.080″. Length tolerance is ±6″.
Adhesive-back strips have an acrylic adhesive that has a temperature range of –40° to +212° F. Width tolerance is ±0.050″. Length tolerance is ±12″.

PLAIN BACK					ADHESIVE BACK				
Thick.	Thick. Tolerance	Length	1″ Wide	2″ Wide	Thick.	Thick. Tolerance	Length	1/2″ Wide	5/8″ Wide
3/8″	±0.032″	25 ft.	93635K11 $38.46	93635K12 $71.00	3/16″	±0.032″	50 ft.	93375K31 $35.54	93375K33 $44.32
1/2″	±0.032″	25 ft.	93635K15 46.76	93635K16 85.29	5/16″	±0.032″	50 ft.	93375K35 54.09	93375K37 59.97

Sheeting and Sheets—Textured Finish

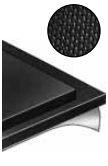

- Temperature Range: –20° to +160° F
- Firmness (25% Deflection): 2-5 psi (extra soft) or 5-9 psi (soft)
- Absorbent (open cell)
- Density: Extra soft is 27 lbs./cu. ft. and soft is 33 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056 1C1 and 1C2. Material has a waffle texture and has a skin on the top and bottom. Adhesive is acrylic and has a temperature range of 0° to +160° F. Sheeting has a width tolerance of +3″. Sheets have width and length tolerances of +3″.

		36″ WIDE PLAIN-BACK SHEETING					36″×48″ ADHESIVE-BACK SHEETS			
			Extra Soft		Soft		Extra Soft		Soft	
Thick.	Thick. Tolerance	Max. Lg.		Per Ft.		Per Ft.		Each		Each
1/8″	±0.015″	90 ft.	8570K11	$18.64	8570K19	$19.20	8613K11	$81.51	8613K31	$75.00
3/16″	±0.030″	75 ft.	8570K12	23.43	8570K21	25.77	8613K12	125.47	8613K32	115.35
1/4″	±0.030″	75 ft.	8570K13	30.40	8570K22	32.74	8613K13	156.47	8613K33	143.90
3/8″	±0.040″	45 ft.	8570K15	37.90	8570K24	39.11	8613K15	205.58	8613K35	182.86
1/2″	±0.040″	36 ft.	8570K16	51.31	8570K25	49.88	8613K16	201.87	8613K36	206.94
3/4″	±0.060″	30 ft.	8570K18	73.41	8570K28	76.14	8613K18	408.32	8613K38	332.52
1″	±0.060″	24 ft.	8570K39	96.28	8570K31	89.17	8613K19	424.51	8613K39	391.71

Weather-Resistant High-Temperature Santoprene Foam

- Color: Black
- Temperature Range: –50° to +275° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

This expanded version of Santoprene rubber gives you superior compressibility while still maintaining excellent weatherability.

Cord—Smooth Finish

- Firmness (25% Deflection): 3-5 psi (extra soft)
- Density: 28 lbs./cu. ft.

Foam meets ASTM D1056 and has a skin.
To Order: Please specify length: 5, 10, 25, 50, or 100 ft. Maximum continuous length is 100 ft.

Dia.	Dia. Tolerance		Per Ft.	Dia.	Dia. Tolerance		Per Ft.
1/8″	±0.016″	6322K11	$0.19	3/8″	±0.020″	6322K13	$0.71
1/4″	±0.020″	6322K12	.38	1/2″	±0.020″	6322K14	1.17

Weather-Resistant Reinforced Polyurethane Foam

- Color: Gray
- Temperature Range: Not rated
- Restricts absorption (closed cell)
- Use indoors and outdoors

Reinforced with strands of fiberglass throughout the material, this polyurethane foam provides the toughness required for marine applications.

Sheets—Smooth Finish

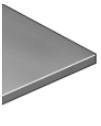

- Firmness: Not rated
- Density: 3/8″ and 1/2″ thick sheets are 20 lbs./cu. ft. and 3/4″ and 1″ thick sheets are 26 lbs./cu. ft.

Material does not have a skin. 3/4″ and 1″ thick sheets contain layers of heavy duty fiberglass fabric for added reinforcement. Width and length tolerances are ±1/4″.

Thick.	Thick. Tolerance	48″×48″		Thick.	Thick. Tolerance	48″×48″	
3/8″	±0.031″	5521T11	$82.41	3/4″	±0.031″	5521T13	$142.67
1/2″	±0.031″	5521T12	91.07	1″	±0.031″	5521T14	156.25

For information about foam and foam firmness ratings, see page 3550.

Ultra-Conformable Weather-Resistant Vinyl Foam

- Color: See below
- Temperature Range: See below
- Restricts absorption (closed cell)
- Use indoors and outdoors

The softest foam we offer, this foamed version of weather-resistant vinyl (polyvinyl chloride) is so conformable that once it's compressed it won't fully spring back. It provides a tight seal in inactive applications, such as a window that is rarely opened or an emergency exit.

Adhesive-Back Strips—Smooth Finish

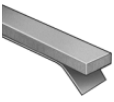

- Color: Gray, black, or yellow
- Temperature Range: –30° to +140° F, except yellow is 40° to 180° F
- Firmness (25% Deflection): Very soft gray is 1.6 psi, extra soft gray and yellow are 2.5 psi, and extra soft black is 4 psi
- Density: Very soft gray is 6 lbs./cu. ft., extra soft gray and yellow are 8 lbs./cu. ft., and extra soft black is 12 lbs./cu. ft.

Thickness tolerance is ±20%. Width tolerance is ±1/32″ for 1/4″ to 1 1/4″ widths and ±3/32″ for 2″ to 6″ widths. Length tolerance is ±6″, except 3-ft. length has a tolerance of ±1/4″, and 60-ft. lengths have a tolerance of ±15″. Adhesive is acrylic and has a temperature range of 50° to 110° F.

Very soft foam has a skin on the face and sides. ***Extra soft*** foam has a skin on the face, except yellow foam, which does not have a skin.

Thick.	Width	Length		
Very Soft Gray				
1/8″	1/4″	17 ft.	93675K11	$1.59
3/16″	3/8″	17 ft.	93675K12	1.94
3/16″	3/8″	60 ft.	93675K16	4.74
3/16″	1 1/4″	30 ft.	93675K15	7.65
1/4″	3/8″	17 ft.	93675K13	2.15
3/8″	1/2″	10 ft.	93675K14	2.31
3/8″	3/4″	10 ft.	93675K17	3.29
Extra Soft Gray				
1/8″	1/2″	100 ft.	8512K14	9.03
1/8″	3/4″	100 ft.	8512K16	13.30
1/8″	1″	100 ft.	8512K18	17.10
1/8″	2″	100 ft.	8512K12	20.60
1/8″	3″	100 ft.	8512K13	30.11
1/8″	6″	100 ft.	8512K15	62.08
3/16″	1/2″	50 ft.	8512K24	5.60
3/16″	3/4″	50 ft.	8512K26	8.22
3/16″	1″	50 ft.	8512K28	9.41
3/16″	2″	50 ft.	8512K17	14.31
3/16″	3″	50 ft.	8512K19	19.17
3/16″	6″	50 ft.	8512K21	43.96
1/4″	1/2″	50 ft.	8512K34	6.43
1/4″	3/4″	50 ft.	8512K36	9.11
1/4″	1″	50 ft.	8512K38	12.78
1/4″	2″	50 ft.	8512K22	18.60
Extra Soft Gray (Cont.)				
1/4″	3″	50 ft.	8512K23	$26.56
1/4″	6″	50 ft.	8512K25	49.67
3/8″	1/2″	25 ft.	8512K44	4.44
3/8″	3/4″	25 ft.	8512K46	6.24
3/8″	1″	25 ft.	8512K48	8.18
3/8″	2″	25 ft.	8512K27	12.97
3/8″	3″	25 ft.	8512K29	17.40
3/8″	6″	25 ft.	8512K31	32.22
1/2″	1/2″	25 ft.	8512K54	5.40
1/2″	3/4″	25 ft.	8512K56	7.37
1/2″	1″	25 ft.	8512K58	9.85
1/2″	2″	25 ft.	8512K32	12.59
1/2″	3″	25 ft.	8512K33	18.56
1/2″	6″	25 ft.	8512K35	33.75
Extra Soft Black				
1/8″	1/2″	100 ft.	8512K63	9.88
1/8″	3/4″	100 ft.	8512K64	15.75
1/8″	1″	100 ft.	8512K65	17.58
1/8″	2″	100 ft.	8512K67	30.51
1/8″	3″	100 ft.	8512K39	40.43
1/8″	6″	100 ft.	8512K41	67.39
3/16″	1/2″	50 ft.	8512K73	6.46
3/16″	3/4″	50 ft.	8512K74	9.32
3/16″	1″	50 ft.	8512K75	12.10
Extra Soft Black (Cont.)				
3/16″	2″	50 ft.	8512K77	$19.72
3/16″	3″	50 ft.	8512K43	29.68
3/16″	6″	50 ft.	8512K45	49.46
1/4″	1/2″	50 ft.	8512K83	7.65
1/4″	3/4″	50 ft.	8512K84	11.35
1/4″	1″	50 ft.	8512K85	14.55
1/4″	2″	50 ft.	8512K87	23.56
1/4″	3″	50 ft.	8512K49	32.83
1/4″	6″	50 ft.	8512K51	54.71
3/8″	1/2″	25 ft.	8512K91	7.00
3/8″	3/4″	25 ft.	8512K92	9.74
3/8″	1″	25 ft.	8512K93	12.92
3/8″	2″	25 ft.	8512K94	20.86
3/8″	3″	25 ft.	8512K53	28.46
3/8″	6″	25 ft.	8512K55	41.25
1/2″	1/2″	25 ft.	8512K95	6.39
1/2″	3/4″	25 ft.	8512K96	9.24
1/2″	1″	25 ft.	8512K97	11.06
1/2″	2″	25 ft.	8512K98	19.48
1/2″	3″	25 ft.	8512K59	25.91
1/2″	6″	25 ft.	8512K61	43.19
Extra Soft Yellow				
3/8″	2″	3 ft.	8512K11	8.97

NSF-Certified Adhesive-Back Strip—Textured Finish

- Color: White
- Temperature Range: –15° to +160° F
- Firmness (25% Deflection): 0.1-0.8 psi (very soft)
- Density: 6.5-8.5 lbs./cu. ft.

Foam, but not adhesive, is NSF 51 certified for food equipment. Material has a skin on all sides and has a slightly wrinkled texture. Adhesive is acrylic and has a temperature range of –15° to +160° F. Length tolerance is ±2″. Strip is 25 ft. long.

Thick.	Thick. Tolerance	Width	Width Tolerance		
1/8″	±0.013″	3/8″	±0.038″	1812T21	$20.40

Sheets and Sheeting—Smooth Finish

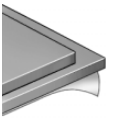

- Color: Gray
- Temperature Range: –30° to +160° F
- Firmness (30% Deflection): 5 psi (soft)
- Density: 7-10 lbs./cu. ft.

Material has a skin on the top. Width tolerance is ±2″. Length tolerance is ±1″. Adhesive is acrylic and has a temperature range of –20° to +160° F.

		PLAIN BACK				ADHESIVE BACK			
		54″ Wd. × 36″ Lg.	54″ Wide Sheeting			54″ Wd. × 36″ Lg.	54″ Wide Sheeting		
Thick.	Thick. Tolerance	Each	Max. Lg.	Per Ft.		Each	Max. Lg.	Per Ft.	
1/8″	±0.013″	86025K52	$13.37	75 ft.	86025K42	$5.20	86025K72	$19.11	75 ft.	86025K62	$7.28
3/16″	±0.019″	86025K54	16.14	45 ft.	86025K44	6.63	86025K74	24.60	45 ft.	86025K64	8.57
1/4″	±0.025″	86025K56	22.18	45 ft.	86025K46	7.74	86025K76	28.92	45 ft.	86025K66	10.11
3/8″	±0.038″	86025K58	25.22	30 ft.	86025K48	10.17	86025K78	32.71	30 ft.	86025K68	13.69

Quick-Recovery Natural Gum Foam

- Color: Black
- Temperature Range: –20° to +160° F
- Absorbent (open cell)
- Use indoors and outdoors

This material recovers quickly after being compressed, making it good for sealing applications where quick response is necessary to keep out dust and particles.

Sheeting—Textured Finish

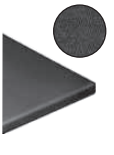

- Firmness (25% Deflection): 2-5 psi (extra soft), 5-10 psi (soft), or 10-16 psi (firm)
- Density: Extra soft is 22 lbs./cu. ft., soft is 26 lbs./cu. ft., and firm is 30 lbs./cu. ft.

Foam meets ASTM D1056 and MIL-C-3133 and MIL-STD-670. Material has a criss-cross texture and has a skin on the top and bottom. Width tolerance is +3″. **To Order:** Please specify firmness: extra soft, soft, or firm.

		36″ Wide					36″ Wide		
Thick.	Thick. Tolerance	Max. Lg.		Per Ft.	Thick.	Thick. Tolerance	Max. Lg.		Per Ft.
1/8″	±0.015″	150 ft.	8601K41	$4.67	3/8″	±0.040″	60 ft.	8601K45	$12.34
3/16″	±0.030″	105 ft.	8601K42	6.87	1/2″	±0.040″	45 ft.	8601K46	16.80
1/4″	±0.030″	90 ft.	8601K43	9.07	3/4″	±0.060″	30 ft.	8601K48	23.28
5/16″	±0.030″	75 ft.	8601K44	11.65	1″	±0.060″	24 ft.	8601K49	29.68

(Material continued on following page)

Quick-Recovery Natural Gum Foam *(Material continued from previous page)*

- Color: Black
- Temperature Range: –20° to +160° F
- Absorbent (open cell)
- Use indoors and outdoors

This material recovers quickly after being compressed, making it good for sealing applications where quick response is necessary to keep out dust and particles.

Adhesive-Back Strips—Textured Finish

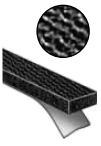

- Firmness (25% Deflection): 5-9 psi (soft)
- Density: 23-29 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056. Material has a waffle finish and does not have a skin. Adhesive is acrylic and has a temperature range of –20° to +160° F. Width tolerance is ±0.03″ for ¼″ to 1½″ widths and ±0.09″ for 2″ to 6″ widths. Length tolerance is ±3″. **To Order:** Please specify 10-ft. or 50-ft. length where prices are shown.

Width		10 ft.	50 ft.
1/16″ Thick. *(±0.015″)*			
1/4″	93625K112	____	$6.82
3/8″	93625K43	____	7.38
1/2″	93625K44	____	9.32
5/8″	93625K45	____	10.71
3/4″	93625K46	____	13.80
1″	93625K47	____	17.16
1 1/2″	93625K148	$6.55	23.33
2″	93625K149	8.49	29.56
2 1/2″	93625K161	9.11	37.95
3″	93625K129	12.30	48.97
4″	93625K182	16.14	65.23
6″	93625K192	23.82	97.86
1/8″ Thick. *(±0.015″)*			
1/4″	93625K115	____	7.07
3/8″	93625K53	____	8.23
1/2″	93625K54	____	9.96
5/8″	93625K55	____	12.07
3/4″	93625K56	____	14.43
1″	93625K57	____	17.97
1 1/2″	93625K158	6.72	23.05
2″	93625K159	8.72	31.00
2 1/2″	93625K162	9.52	39.65
3″	93625K133	13.31	65.52
4″	93625K183	16.68	81.66
6″	93625K193	24.65	116.23
5/32″ Thick. *(±0.015″)*			
3/8″	93625K21	____	9.31
1/2″	93625K11	____	11.38
5/8″	93625K22	____	13.76
3/4″	93625K12	____	15.47

Width		10 ft.	50 ft.
5/32″ Thick. (Cont.)			
1″	93625K13	____	$19.09
1 1/2″	93625K131	$6.88	25.09
2″	93625K132	9.09	33.34
2 1/2″	93625K163	10.13	42.22
3″	93625K134	14.21	65.93
4″	93625K184	17.61	72.45
6″	93625K194	25.12	108.70
1/4″ Thick. *(±0.03″)*			
1/4″	93625K123	____	10.74
3/8″	93625K61	____	12.58
1/2″	93625K62	____	15.28
5/8″	93625K63	____	18.32
3/4″	93625K64	____	20.86
1″	93625K65	____	26.42
1 1/2″	93625K166	8.75	35.79
2″	93625K167	11.41	47.83
2 1/2″	93625K164	13.99	58.31
3″	93625K135	16.75	75.18
4″	93625K185	22.08	99.74
6″	93625K195	32.70	150.41
5/16″ Thick. *(±0.03″)*			
3/8″	93625K23	____	14.62
1/2″	93625K14	____	17.88
5/8″	93625K24	____	21.00
3/4″	93625K15	____	23.93
1″	93625K16	____	30.22
1 1/2″	93625K141	9.77	41.38
2″	93625K142	13.04	55.10
2 1/2″	93625K165	16.02	66.76
3″	93625K136	19.53	86.18

Width		10 ft.	50 ft.
3/8″ Thick. *(±0.04″)*			
3/8″	93625K71	____	$16.25
1/2″	93625K72	____	20.31
5/8″	93625K73	____	24.53
3/4″	93625K74	____	28.24
1″	93625K75	____	36.23
1 1/2″	93625K176	$11.30	49.81
2″	93625K177	15.05	67.15
2 1/2″	93625K171	19.24	80.17
3″	93625K137	22.57	103.29
4″	93625K187	30.07	137.73
6″	93625K197	45.10	206.59
7/16″ Thick. *(±0.04″)*			
3/8″	93625K25	____	18.92
1/2″	93625K17	____	22.82
5/8″	93625K26	____	28.05
3/4″	93625K18	____	32.61
1″	93625K19	____	41.81
1 1/2″	93625K151	12.44	56.62
2″	93625K152	16.59	75.97
3″	93625K138	24.90	119.15
1/2″ Thick. *(±0.04″)*			
3/8″	93625K27	____	22.46
1/2″	93625K28	____	27.88
5/8″	93625K39	____	32.71
3/4″	93625K68	____	39.86
1″	93625K69	____	52.22
1 1/2″	93625K178	14.09	64.10
2″	93625K179	18.99	86.10
3″	93625K181	28.49	138.73
4″	93625K189	37.97	188.29
6″	93625K191	51.25	235.76

Quick-Recovery Super-Resilient Polyurethane Foam

- Color: Black
- Temperature Range: –40° to +194° F
- Absorbent (open cell)
- Use indoors and outdoors

Also known as Poron urethane, this high-performance foam has the quickest recovery from compression even after extended use. It is ideal for sealing applications when compressed.

Sheets and Strips—Smooth Finish

- Firmness (25% Deflection): 1 to 5 psi (very soft), 4 to 8 psi (soft), 8 to 14 psi (firm), 13 to 23 psi (extra firm), 30 to 60 psi (very firm)
- Density: Very soft, soft, and firm are 15 lbs./cu. ft., extra firm is 20 lbs./cu. ft., and very firm is 30 lbs./cu. ft.

Foam, but not adhesive, meets UL 94HBF (except very firm sheets). Material has a skin on the top and bottom. Adhesive is acrylic based and has a temperature range of –40° to +194° F. Sheets have width and length tolerances of ±1/4″. Strips have a width tolerance of ±1/16″ and a length tolerance of ±12″.

Thick.	Thick. Tolerance	PLAIN-BACK SHEETS 12″×12″		PLAIN-BACK SHEETS 24″×24″		PLAIN-BACK SHEETS 36″×54″		ADHESIVE-BACK SHEETS 12″×12″		ADHESIVE-BACK SHEETS 24″×24″		ADHESIVE-BACK SHEETS 36″×54″	
Very Soft													
3/16″	±0.019″	86375K111	$7.90	86375K211	$27.01	86375K31	$71.95	86375K141	$10.53	86375K241	$31.82	86375K35	$83.07
1/4″	±0.025″	86375K112	10.96	86375K212	33.81	86375K32	96.77	86375K142	13.86	86375K242	41.78	86375K36	107.51
3/8″	±0.038″	86375K113	15.60	86375K213	48.15	86375K33	129.03	86375K143	17.55	86375K243	56.03	86375K37	143.59
1/2″	±0.050″	86375K114	16.70	86375K214	53.13	86375K34	143.08	86375K144	24.88	86375K244	58.44	86375K38	155.50
Soft													
3/16″	±0.019″	86375K121	7.85	86375K221	26.08	86375K11	71.09	86375K151	8.64	86375K251	27.92	86375K21	77.77
1/4″	±0.025″	86375K122	8.94	86375K222	30.77	86375K13	80.28	86375K152	9.17	86375K252	31.01	86375K23	90.18
3/8″	±0.038″	86375K123	12.08	86375K223	38.46	86375K15	97.27	86375K153	13.73	86375K253	38.76	86375K25	111.03
1/2″	±0.050″	86375K124	13.63	86375K224	42.30	86375K17	112.35	86375K154	17.12	86375K254	46.47	86375K27	124.23
Firm													
1/4″	±0.025″	86375K134	9.52	86375K234	32.77	86375K64	86.56	86375K164	11.06	86375K264	34.57	86375K68	98.31
Extra Firm													
1/16″	±0.006″	86375K132	6.02	86375K232	19.65	86375K62	53.62	86375K162	6.83	86375K262	25.55	86375K66	67.85
1/8″	±0.013″	86375K133	7.37	86375K233	25.61	86375K63	69.74	86375K163	8.71	86375K263	31.13	86375K67	82.37
Very Firm													
1/32″	±0.006″	86375K131	5.02	86375K231	16.71	86375K61	44.86	86375K161	7.82	86375K261	22.07	86375K65	56.38

Thick.	Thick. Tolerance	Length	ADHESIVE-BACK STRIPS 1/2″ Wide		ADHESIVE-BACK STRIPS 3/4″ Wide		ADHESIVE-BACK STRIPS 1″ Wide		ADHESIVE-BACK STRIPS 2″ Wide	
Soft										
1/8″	±0.013″	39 ft.	93275K12	$15.38	93275K14	$21.18	93275K16	$26.95	93275K18	$46.17
3/16″	±0.019″	48 ft.	93275K22	21.72	93275K24	30.44	93275K26	39.27	93275K28	67.74
1/4″	±0.025″	39 ft.	93275K32	18.82	93275K34	26.22	93275K36	33.68	93275K38	59.30
3/8″	±0.038″	29 ft.	93275K42	15.41	93275K44	25.04	93275K46	30.92	93275K48	55.05
1/2″	±0.050″	19 ft.	93275K52	15.18	93275K54	20.35	93275K56	25.72	93275K58	45.62

For information about foam and foam firmness ratings, see page 3550.

Super-Resilient Extreme-Temperature Silicone Foam

- Color: See below
- Temperature Range: –60° to +392° F, unless noted
- Use indoors and outdoors

Like solid silicone, this foam maintains its flexibility in temperature extremes. It also provides the best recovery from compression, even after extended use.

Adhesive-Back Strips—Textured Finish

- Color: Gray
- Firmness (25% Deflection): 1-6 psi (extra soft)
- Absorbent (combination of open cell and closed cell)
- Density: 12 lbs./cu. ft.

Foam, but not adhesive, meets UL 94V0, except 1/16″ thick foam. Material has a criss-cross textured finish and has a skin on the top and bottom. Adhesive is acrylic and has a temperature range of –20° to +325° F. Width tolerance is ±1/16″. Length tolerance is +18″ for 15-ft. lengths and +36″ for 30-ft. lengths.

Thick.	Thick. Tolerance	Length	1/2″ Wide		3/4″ Wide		1″ Wide		2″ Wide	
1/16″	±0.016″	30 ft.	93415K21	$38.19	93415K23	$52.72	93415K25	$70.66	93415K27	$120.43
1/8″	±0.031″	30 ft.	93415K41	44.97	93415K43	68.70	93415K45	87.79	93415K47	157.13
3/16″	±0.031″	15 ft.	93415K51	32.96	93415K53	47.29	93415K55	60.19	93415K57	106.94
1/4″	±0.047″	15 ft.	93415K61	36.19	93415K63	52.90	93415K65	67.54	93415K67	117.15

Sheets and Strips—Textured Finish

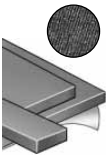

- Color: Orange-red
- Temperature Range: –103° to +450° F
- Restricts absorption (closed cell)
- Firmness (25% Deflection): 4-10 psi (soft), 6-14 psi (firm), or 12-20 psi (extra firm)
- Density: Soft is 31 lbs./cu. ft., firm is 35 lbs./cu. ft., and extra firm is 52 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056 2D. Material has a criss-cross textured finish and a skin on the top and bottom. Adhesive is acrylic and has a temperature range of –30° to +220° F. Width and length tolerances are ±3%.

To Order: For sheets, please specify soft (unless noted), firm, or extra firm. Strips are available only in soft.

Firmness Selector Pack— Includes three 6″×6″ sheets, one of each firmness rating. Thicknesses range from 1/16″ to 1/2″. One sheet includes a sample of the adhesive backing.

8623K845 ..... Per Pkg. $24.20

Thick.	Thick. Tol.	PLAIN-BACK SHEETS 12″×12″		24″×24″		36″×36″		ADHESIVE-BACK SHEETS 12″×12″		24″×24″		36″×36″	
1/16″	±0.032″	8623K357 ♦	$14.71	8623K347 ♦	$46.19	8623K337 ♦	$83.79	8623K367 ♦	$17.89	8623K377 ♦	$57.19	8623K387 ♦	$96.23
1/8″	±0.032″	8623K358	18.45	8623K348	62.64	8623K338	107.78	8623K368	22.76	8623K378	72.81	8623K388	121.27
3/16″	±0.032″	8623K359	22.86	8623K349	78.90	8623K339	144.24	8623K369	26.40	8623K379	92.34	8623K389	157.53
1/4″	±0.046″	8623K361	27.56	8623K351	93.44	8623K341	174.78	8623K371	31.58	8623K381	103.28	8623K391	188.09
3/8″	±0.046″	8623K362	35.80	8623K352	117.37	8623K342	210.83	8623K372	41.19	8623K382	127.34	8623K392	230.35
1/2″	±0.046″	8623K363	54.99	8623K353	174.63	8623K343	298.21	8623K374	59.13	8623K383	186.10	8623K393	310.58

♦ Not available in soft.

Thick.	Thick. Tol.	PLAIN-BACK STRIPS 1/2″×36″		1″×36″		2″×36″		4″×36″		6″×36″	
1/8″	±0.032″	1158K41	$5.82	1158K45	$10.58	1158K49	$18.42	1158K54	$32.02	1158K58	$42.07
1/4″	±0.046″	1158K42	8.67	1158K46	15.84	1158K51	28.04	1158K55	48.78	1158K59	63.59
3/8″	±0.046″	1158K43	10.42	1158K47	18.49	1158K52	32.14	1158K56	55.94	1158K61	70.97
1/2″	±0.046″	1158K44	13.85	1158K48	23.09	1158K53	39.04	1158K57	69.80	1158K62	91.07

Sheets and Sheeting—Smooth Finish

- Color: White
- Absorbent (open cell)
- Firmness (25% Deflection): 1-5 psi (extra soft)
- Density: 12 lbs./cu. ft.

Foam, but not adhesive, meets UL 94HF1 and UL 94V0, except 1/16″ and 3/32″ thick foam, which only meet UL 94HF1. Material has a skin on the top and bottom. Adhesive is acrylic and has a temperature range of –25° to +300° F. Width and length tolerances are ±1/8″ for 6″×6″ and 12″×12″ sheets and +1″, –1/4″ for 24″×24″ and 36″×36″ sheets. Sheeting has a width tolerance of ±1/4″.

Thick.	Thick. Tolerance	PLAIN-BACK SHEETS 6″×6″		12″×12″		24″×24″		ADHESIVE-BACK SHEETS 12″×12″		24″×24″		36″×36″	
1/16″	±0.016″	86235K62	$7.34	86235K312	$14.69	86235K342	$52.26	86235K311	$23.18	86235K341	$72.73	86235K361	$173.24
3/32″	±0.020″	86235K63	7.11	86235K323	18.51	86235K352	64.67	86235K322	26.68	86235K351	83.66	86235K381	192.11
1/8″	±0.025″	86235K65	7.19	86235K42	19.81	86235K531	67.88	86235K132	29.31	86235K532	90.96	86235K932	211.18
3/16″	±0.030″	86235K66	9.08	86235K43	27.14	86235K541	82.52	86235K142	35.22	86235K542	106.37	86235K942	253.56
1/4″	±0.040″	86235K67	12.12	86235K44	28.96	86235K551	97.13	86235K152	38.02	86235K552	144.43	86235K952	273.69
3/8″	±0.060″	86235K68	12.38	86235K45	38.59	86235K561	134.03	86235K162	45.07	86235K562	163.94	86235K962	340.68
1/2″	±0.050″	86235K69	13.93	86235K46	46.45	86235K571	157.90	86235K172	53.70	86235K572	172.48	86235K212	398.70
3/4″	±0.090″	86235K71	29.22	86235K47	97.58	86235K581	335.91	86235K182	109.93	86235K582	357.90	86235K982	706.05
1″	±0.090″	86235K72	40.89	86235K48	135.97	86235K591	425.97	86235K192	143.85	86235K592	451.24	86235K992	941.45

PLAIN-BACK SHEETING

Thick.	Thick. Tolerance	Max. Lg.	36″ Wide	Per Ft.	Thick.	Thick. Tolerance	Max. Lg.	36″ Wide	Per Ft.
1/16″	±0.016″	60 ft.	86235K39	$25.87	1/4″	±0.040″	40 ft.	86235K26	$60.59
1/8″	±0.025″	60 ft.	86235K24	36.89	3/8″	±0.060″	20 ft.	86235K33	73.24
3/16″	±0.030″	40 ft.	86235K25	48.54	1/2″	±0.050″	20 ft.	86235K37	109.65

Sheets and Sheeting with Aluminized Face—Smooth Finish

- Color: White
- Absorbent (open cell)
- Firmness (25% Deflection): 1-5 psi (extra soft)
- Density: 12 lbs./cu. ft.

Foam, but not adhesive or fiberglass, meets UL 94HF1 and UL 94V0, except 0.1″ thick foam, which only meets UL 94HF1. Foam has a 0.004″ thick piece of aluminized fiberglass on one face that reflects radiant heat. Material has a skin on the top and bottom. Adhesive is acrylic and has a temperature range of –25° to +300° F. Thickness tolerance is ±0.020″ for 0.1″ thick foam and ±0.040″ for 0.2″ thick foam. Width and length tolerances are ±1/8″ for 12″×12″ sheets and +1″, –1/4″ for 24″×24″ and 36″×36″ sheets. Sheeting has a width tolerance of ±1/4″.

Thick.	PLAIN-BACK SHEETS 12″×12″	Each	24″×24″	Each	SHEETING 36″ Wide Max. Lg.		Per Ft.	ADHESIVE-BACK SHEETS 12″×12″	Each	24″×24″	Each	36″×36″	Each
0.1″	86105K72	$28.67	86105K82	$105.73	—	—	—	86105K71	$35.40	86105K81	$112.56	86105K91	$253.01
0.2″	86105K12	43.93	86105K14	152.62	40 ft.	86105K46	$77.08	86105K13	47.20	86105K15	168.81	86105K17	332.90

For information about foam and foam firmness ratings, see page 3550.

Extreme-Temperature Silicone Foam

- Color: See below
- Temperature Range: See below
- Restricts absorption (closed cell)
- Use indoors and outdoors

Also known as polysiloxane, this material maintains its flexibility across a very wide temperature range and is a good electrical insulator.

Adhesive-Back Strips—Smooth Finish

- Color: Orange-tan
- Temperature Range: –100° to +400° F
- Firmness (25% Deflection): 6-14 psi (soft to firm)
- Density: 29-48 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056 2A3. Material has a skin on all sides. Adhesive is acrylic and has a temperature range of –20° to +180° F. Width tolerance is ±0.15″. Length tolerance is ±3″ for 3-ft. lengths and ±6″ for 15-ft. lengths.

Thick.	Thick. Tolerance	Length	1/4″ Wide		3/8″ Wide		1/2″ Wide		3/4″ Wide		1″ Wide		2″ Wide	
1/16″	±0.024″	15 ft.	5109K11	$9.81	5109K12	$13.50	5109K13	$17.03	5109K14	$21.92	5109K15	$25.80	5109K16	$43.72
3/32″	±0.024″	15 ft.	5109K21	11.17	5109K22	15.22	5109K23	19.42	5109K24	25.34	5109K25	28.84	5109K26	49.88
1/8″	±0.032″	15 ft.	5109K31	12.55	5109K32	17.21	5109K33	21.88	5109K34	28.54	5109K35	32.26	5109K36	56.07
3/16″	±0.032″	15 ft.	5109K41	14.62	5109K42	20.02	5109K43	25.45	5109K44	32.33	5109K45	37.48	5109K46	65.22
1/4″	±0.035″	3 ft.	5109K51	4.14	5109K52	5.68	5109K53	7.21	5109K54	9.40	5109K55	10.94	5109K56	18.96

Adhesive-Back Strips—Textured Finish

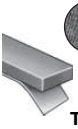

- Color: Orange-tan
- Temperature Range: –100° to +500° F
- Firmness (25% Deflection): 6-14 psi (soft to firm)
- Density: 29 lbs./cu. ft.

Material has a criss-cross textured finish and has a skin on the top and bottom. Adhesive is silicone and has a temperature range of –100° to +500° F. Width tolerance is ±0.15″. Length has a plus tolerance.

Thick.	Thick. Tolerance	Length	1/4″ Wide		3/8″ Wide		1/2″ Wide		3/4″ Wide		1″ Wide		2″ Wide	
1/16″	±0.016″	30 ft.	8645K15	$18.70	8645K16	$24.60	8645K11	$32.47	8645K12	$48.74	8645K13	$56.78	8645K14	$98.40
3/32″	±0.016″	30 ft.	8645K25	25.35	8645K26	35.20	8645K21	42.89	8645K22	55.68	8645K23	66.46	8645K24	112.28
1/8″	±0.031″	30 ft.	8645K35	28.56	8645K36	37.80	8645K31	47.12	8645K32	62.64	8645K33	72.91	8645K34	130.06
3/16″	±0.031″	15 ft.	8645K45	20.28	8645K46	26.93	8645K41	33.49	8645K42	43.22	8645K43	53.22	8645K44	83.70
1/4″	±0.047″	15 ft.	8645K57	14.46	8645K58	21.03	8645K59	26.29	8645K61	39.43	8645K62	48.20	8645K63	87.63

Sheets—Textured Finish

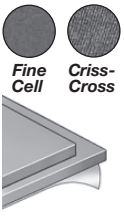

- Color: Orange-red
- Temperature Range: –100° to +450° F
- Firmness (25% Deflection): Foam with fine cell finish is 0.5-5 psi (extra soft) or 5-9 psi (soft); foam with criss-cross finish is 5-9 psi (soft), 9-14 psi (firm), or 15-20 psi (extra firm)
- Density: Foam with fine cell finish is 8 lbs./cu. ft. for extra soft and 12 lbs./cu. ft. for soft; foam with criss-cross finish is 32 lbs./cu. ft. for soft, 35 lbs./cu. ft. for firm, and 45 lbs./cu. ft. for extra firm

Foam, but not adhesive, meets ASTM D1056 2D0, 2D1, and 2D2 for fine cell finish and ASTM D1056 2D2, 2D3, and 2D4 for criss-cross finish. Adhesive is acrylic and has a temperature range of 50° to 187° F. Width and length tolerances are ±3% for sheets with a fine cell finish and ±1″ for sheets with criss-cross finish. Sheets with criss-cross finish have a skin on the top and bottom.

To Order: For fine cell textured sheets, please specify extra soft or soft. For criss-cross textured sheets, please specify soft (except 1/16″ thick), firm, or extra firm.

Thick.	Thick. Tolerance	PLAIN-BACK SHEETS 12″×12″		24″×24″		36″×36″		ADHESIVE-BACK SHEETS 12″×12″		24″×24″		36″×36″	
Fine Cell Finish—Without Skin													
1/8″	±0.046″	8785K82	$21.19	8785K88	$44.15	8785K95	$114.09	8785K16	$22.30	8785K23	$70.02	8785K29	$117.80
3/16″	±0.046″	8785K83	28.53	8785K89	59.68	8785K96	150.63	8785K17	27.13	8785K24	85.33	8785K31	147.19
1/4″	±0.046″	8785K84	31.85	8785K91	107.45	8785K97	187.92	8785K18	33.50	8785K25	107.26	8785K32	184.14
3/8″	±0.046″	8785K85	40.98	8785K92	135.07	8785K98	244.82	8785K19	41.86	8785K26	137.06	8785K33	243.79
1/2″	±0.046″	8785K86	59.31	8785K93	182.84	8785K99	320.78	8785K21	59.83	8785K27	190.91	8785K34	326.07
Criss-Cross Finish—With Skin													
1/16″	±0.032″	8608K51	10.27	8608K61	34.24	8608K71	57.06	8608K521	14.62	8608K531	47.10	8608K541	81.21
1/8″	±0.032″	8608K52	13.83	8608K62	45.82	8608K72	76.83	8608K522	17.95	8608K532	56.83	8608K542	99.74
3/16″	±0.032″	8608K53	19.23	8608K63	60.81	8608K73	101.35	8608K523	23.70	8608K533	71.48	8608K543	128.68
1/4″	±0.046″	8608K54	23.05	8608K64	75.63	8608K74	126.05	8608K524	28.30	8608K534	84.54	8608K544	152.22
3/8″	±0.046″	8608K56	28.47	8608K66	94.97	8608K76	164.20	8608K525	33.64	8608K535	103.32	8608K545	187.85
1/2″	±0.046″	8608K57	39.94	8608K67	126.54	8608K77	226.82	8608K526	45.53	8608K536	142.50	8608K546	248.78

Cord—Smooth Finish

- Color: Orange-red or off-white
- Temperature Range: –103° to +450° F
- Firmness (25% Deflection): 9-14 psi (firm)
- Density: 31 lbs./cu. ft.

Material has a skin. Use an RTV silicone (see 7587A and 7545A on page 3418) to bond to most surfaces. Length tolerance is ±4″ for 10-ft. lengths and ±36″ for 100-ft. lengths. **To Order:** Please specify color: orange-red or off-white.

Dia.	Dia. Tolerance	10-ft. Length		100-ft. Length		Dia.	Dia. Tolerance	10-ft. Length		100-ft. Length	
1/8″	±0.032″	93345K32	$7.96	93345K41	$66.14	5/8″	±0.062″	93345K51	$18.19	93345K81	$158.00
1/4″	±0.046″	93345K34	7.89	93345K43	65.29	3/4″	±0.062″	93345K53	27.99	93345K83	184.62
3/8″	±0.046″	93345K36	11.36	93345K45	95.51	1″	±0.093″	93345K55	35.35	93345K85	289.02
1/2″	±0.062″	93345K38	13.54	93345K47	108.52	2″	±0.188″	93345K11	110.48	93345K21	919.94

Fabric-Reinforced Silicone Foam

- Color: Blue-gray
- Temperature Range: –100° to +500° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

Internal reinforcement adds strength to this foam and makes it perfect for high-stress applications such as gasketing and diaphragm packing.

Adhesive-Back Strips—Textured Finish

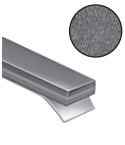

- Firmness (25% Deflection): 8-16 psi (firm)
- Density: 35 lbs./cu. ft.

Foam is reinforced in the center with fiberglass fabric. Material has a criss-cross textured finish and a skin on the top and bottom. Adhesive is acrylic and has a temperature range of –20° to +325° F. Width tolerance is ±1/16″. Length has a plus tolerance.

Thick.	Thick. Tolerance	Length	1/2″ Wide		3/4″ Wide		1″ Wide		2″ Wide	
1/16″	±0.016″	30 ft.	93325K31	$41.86	93325K32	$60.91	93325K33	$75.11	93325K34	$129.65
1/8″	±0.031″	30 ft.	93325K41	54.01	93325K42	76.40	93325K43	94.05	93325K44	170.96
3/16″	±0.031″	15 ft.	93325K51	37.23	93325K52	57.72	93325K53	70.21	93325K54	127.21

For information about foam and foam firmness scales, see page 3550.

FDA-Compliant Silicone Foam

- Color: Orange-red
- Temperature Range: –103° to +450° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

Made of FDA-compliant materials, this silicone foam is safe for contact with food. It maintains flexibility across a wide temperature range.

Sheets—Textured Finish

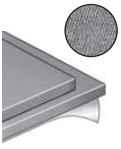

- Firmness (25% Deflection): 9-14 psi (firm)
- Density: 35 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056 2D3. Material has a criss-cross textured finish and a skin on the top and bottom. Adhesive is acrylic and has a temperature range of –30° to +220° F. Thickness tolerance is ±0.046″. Width and length tolerances are ±3/8″ for 6″×6″, 12″×12″, and 24″×24″ and ±1 1/8″ for 36″×36″ sheets.

	PLAIN BACK				ADHESIVE BACK		
Thick.	6″×6″	12″×12″	24″×24″	36″×36″	12″×12″	24″×24″	36″×36″
1/16″	87485K21 $4.54	87485K41 $14.78	87485K61 $45.70	87485K71 $80.05	5025T111 $18.20	5025T121 $52.89	5025T131 $98.95
1/8″	87485K22 5.98	87485K42 17.55	87485K62 58.66	87485K72 105.24	5025T112 20.88	5025T122 67.39	5025T132 123.90
3/16″	87485K23 7.82	87485K43 23.28	87485K63 76.00	87485K73 136.96	5025T113 26.56	5025T123 84.52	5025T133 155.68
1/4″	87485K24 10.12	87485K44 27.94	87485K64 88.84	87485K74 166.11	5025T114 30.84	5025T124 96.24	5025T134 183.69
3/8″	87485K25 12.49	87485K45 34.38	87485K65 111.41	87485K75 206.12	5025T115 38.08	5025T125 120.27	5025T135 228.17
1/2″	87485K26 16.32	87485K46 46.11	87485K66 159.59	87485K76 286.77	5025T116 49.07	5025T126 166.97	5025T136 310.59

Fire-Retardant Silicone Foam

- Color: Gray
- Temperature Range: –103° to +450° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

A special formulation makes this silicone foam fire retardant. It stays flexible across a wide range of temperatures.

Sheets—Smooth Finish

- Firmness (25% Deflection): 1.5-5 psi (extra soft)
- Density: 10 lbs./cu. ft.

Foam, but not adhesive, is fire retardant and meets UL 94V1 and UL 945VA. Adhesive is acrylic and has a temperature range of –103° to +275° F. Width and length tolerances are ±3%.

		PLAIN BACK				ADHESIVE BACK	
Thick.	Thick. Tol.	6″×6″	12″×12″	24″×24″	36″×36″	12″×12″	24″×24″
1/4″	±0.046″	85925K303 $12.48	85925K113 $27.74	85925K321 $99.06	85925K343 $198.12	85925K403 $30.20	85925K423 $92.48
3/8″	±0.046″	85925K305 20.37	85925K115 36.93	85925K322 131.91	85925K345 263.82	85925K405 39.72	85925K425 124.62
1/2″	±0.046″	85925K306 24.85	85925K116 53.35	85925K323 165.91	85925K346 331.81	85925K407 47.61	85925K427 152.75
5/8″	±0.062″	85925K307 30.37	85925K117 54.65	85925K324 195.18	85925K347 390.35	85925K408 53.53	85925K428 172.80
3/4″	±0.062″	85925K308 33.94	85925K118 61.00	85925K325 217.85	85925K348 435.71	85925K409 61.90	85925K429 202.02
1″	±0.125″	85925K311 42.96	85925K211 79.66	85925K331 284.50	85925K351 568.99	85925K411 77.61	85925K431 253.20
1 1/4″	±0.156″	85925K312 44.11	85925K212 81.90	85925K332 292.51	85925K352 585.02	85925K412 90.31	85925K432 292.73
1 1/2″	±0.188″	85925K313 50.97	85925K213 92.20	85925K334 329.27	85925K353 658.55	85925K413 102.28	85925K433 334.57
2″	±0.188″	85925K314 65.79	85925K214 117.94	85925K335 421.21	85925K354 842.43	85925K414 130.10	85925K434 423.92

Abrasion-Resistant Fabric-Faced Neoprene Foam

- Color (Foam): Black
- Temperature Range: 15° to 150° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

The same material found in wet suits, this neoprene foam is covered with nylon fabric, which makes it stretchy and gives it extra abrasion resistance.

Sheets—Smooth Finish

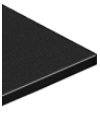

- Firmness (25% Deflection): Not rated
- Density: 11 lbs./cu. ft.

A layer of black nylon fabric covers each side of the foam. Width tolerance is ±2 1/2″. Length tolerance is ±4 1/4″ for 83″ long sheets and ±6 1/2″ for 130″ long sheets.

O'all Thick.	Rubber Thick.	O'all Thick. Tol.	51″ Wd.×83″ Lg.	51″ Wd.×130″ Lg.
0.06″	0.04″	±0.01″	1580T2 $82.15	1580T5 $92.37
0.12″	0.10″	±0.01″	1580T3 83.73	1580T6 97.00
0.26″	0.24″	±0.02″	1580T4 136.08	1580T7 160.62

Abrasion-Resistant Fabric-Backed Natural Gum Foam

- Color (Foam): Black
- Temperature Range: –20° to +160° F
- Absorbent (open cell)
- Use indoors and outdoors

The original mouse pad material. This soft, conformable foam has a fabric backing that provides better abrasion resistance and allows for easier application of adhesives.

Sheeting—Textured Finish

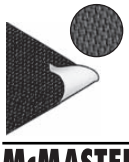

- Firmness (25% Deflection): 5-10 psi (soft)
- Density: 26 lbs./cu. ft.

Foam, but not fabric, meets ASTM D1056. One side of this foam has a waffle finish and a skin; the other side is covered with a layer of white polyester fabric. Width has a plus tolerance.

Thick.	Thick. Tolerance	Max. Lg.	54″ Wide	Per Ft.
1/8″	±0.015″	150 ft.	1805T32	$13.33

Polyimide & Viton® Fluoroelastomer Foam

For information about foam and foam firmness ratings, see page 3550.

Extreme-Temperature Polyimide Foam

- Color: Yellow/gold
- Temperature Range: –300° to +400° F
- Absorbent (open cell)
- Use indoors

This very lightweight foam is soft and conformable even at extreme temperatures.

Sheets—Textured Finish

- Firmness (50% Deflection): 1.3 psi (very soft)
- Density: 0.4 lbs./cu. ft.

Foam meets ASTM E84 0/5 for flame and smoke. Material has a coarse-cell textured finish and does not have a skin. Width and length tolerances are ±5/32″.

Thick.	Thick. Tolerance	24″ Wd. × 48″ Lg.		Thick.	Thick. Tolerance	24″ Wd. × 48″ Lg.	
1/4″	±0.09″	8723K41	$44.67	1″	±0.25″	8723K45	$123.71
1/2″	±0.12″	8723K43	78.17	2″	±0.25″	8723K47	209.97

Corrosion-Resistant Viton® Fluoroelastomer Foam

- Color: Black
- Temperature Range: –10° to +400° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

Ideal for use in harsh and corrosive environments, this foam version of Viton® fluoroelastomer rubber has exceptional resistance to heat, aging, weather, ozone, oxygen, and sunlight.

Sheets—Smooth Finish

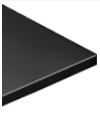

- Firmness (25% Deflection): 4-7 psi (extra soft to soft)
- Density: 10-19 lbs./cu. ft.

Material has a skin on all sides. Width and length tolerances are ±5/32″ for 6″×6″ sheets and ±1/4″ for 12″×12″ and 12″×24″ sheets.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″	
1/8″	±0.050″	3156T33	$38.62	3156T13	$128.74	3156T23	$214.57
1/4″	±0.060″	3156T34	60.27	3156T14	200.90	3156T24	334.83
3/8″	±0.080″	3156T35	83.86	3156T15	279.55	3156T25	465.91
1/2″	±0.125″	3156T36	111.30	3156T16	371.01	3156T26	618.35

Oil-Resistant Neoprene/Vinyl/Buna-N Foam

- Color: Black
- Temperature Range: –40° to +200° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

Blending neoprene, vinyl, and Buna-N produces this foam with excellent oil resistance and fire retardancy.

Adhesive-Back Strips—Textured Finish

- Firmness (25% Deflection): 2-5 psi (extra soft)
- Density: 4-6 lbs./cu. ft.

Foam, but not adhesive, meets ASTM D1056 2C1 and 2C2 and UL 94HF1. Material has a coarse-cell textured finish and does not have a skin. Adhesive is acrylic and has a temperature range of –40° to +200° F. Width tolerance is ±1/16″. Length tolerance is ±1 1/2 ft.

Thick.	Thick. Tolerance	Length	3/8″ Wide		1/2″ Wide		3/4″ Wide		1″ Wide		2″ Wide	
1/8″	±0.032″	50 ft.	93695K22	$5.29	93695K24	$6.97	93695K26	$9.08	93695K28	$12.20	93695K29	$22.94
3/16″	±0.032″	50 ft.	93695K42	5.98	93695K44	7.80	93695K46	9.83	93695K48	13.50	93695K49	26.60
1/4″	±0.032″	50 ft.	93695K52	6.36	93695K54	8.53	93695K56	10.94	93695K58	14.72	93695K59	30.92

Sheeting—Textured Finish

- Firmness (25% Deflection): 2-5 psi (extra soft), 5-9 psi (soft), 9-13 psi (firm)
- Density: Extra soft foam is 4-6 lbs./cu. ft., soft foam is 5.5-7.5 lbs./cu. ft., and firm foam is 7-9 lbs./cu. ft.

Foam meets UL 94HF1. Material has a fine-cell textured finish and does not have a skin. Width tolerance is ±2″. Maximum length is 50 ft. ***Extra soft*** sheeting meets ASTM D1056 2C1. ***Soft*** sheeting meets ASTM D1056 2C2. ***Firm*** sheeting meets ASTM D1056 2C3.

Thick.	Thick. Tolerance	57″ Wide Sheeting: Extra Soft	Per Ft.	Soft	Per Ft.	Firm	Per Ft.
1/8″	±0.032″	85175K17	$6.49	85175K47	$6.66	85175K77	$7.91
3/16″	±0.032″	85175K23	8.45	85175K53	8.76	85175K83	11.48
1/4″	±0.032″	85175K24	10.83	85175K54	11.06	85175K84	13.38
3/8″	±0.040″	85175K27	13.68	85175K57	14.47	85175K87	19.56
1/2″	±0.040″	85175K29	17.40	85175K59	18.53	85175K89	22.28
3/4″	±0.063″	85175K35	24.82	85175K65	29.04	85175K95	34.00
1″	±0.063″	85175K39	31.71	85175K69	33.66	85175K99	41.90

Oil-Resistant High-Temperature ECH Foam

- Color: Black
- Temperature Range: –20° to +300° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

This expanded version of ECH offers better compressibility while still providing the same qualities of solid ECH rubber, including resistance to fuels and oils, as well as high temperatures.

Sheets—Textured Finish

- Firmness (25% Deflection): 2-5 psi (extra soft), 5-9 psi (soft), 9-13 psi (firm)
- Density: Extra soft and soft foam are 12-18 lbs./cu. ft., and firm foam is 15-21 lbs./cu. ft.

Foam meets ASTM D1056 2B. Material has a fine-cell textured finish and does not have a skin. Width and length tolerances are ±1 1/2″.

Thick.	Thick. Tolerance	37″×47″ Sheets: Extra Soft		Soft		35″×45″ Sheets: Firm	
1/16″	±0.032″	86125K311	$70.62	86125K611	$70.91	86125K811	$71.95
1/8″	±0.032″	86125K331	91.44	86125K631	97.10	86125K831	96.12
1/4″	±0.032″	86125K351	152.81	86125K651	164.48	86125K851	165.47
3/8″	±0.040″	86125K371	222.67	86125K671	238.27	86125K871	242.70
1/2″	±0.040″	86125K391	283.78	86125K691	283.60	86125K891	269.58

For information about foam and foam firmness ratings, see page 3550.

Oil- and Water-Resistant Vinyl/Buna-N Foam

- Color: *Very soft* and *extra soft* are black; *firm* is gray
- Temperature Range: See below
- Restricts absorption (closed cell)
- Use indoors and outdoors

This soft and conformable material combines the best qualities of vinyl and Buna-N rubber into a high-strength, oil- and water-resistant foam. It is impact resistant and is ideal for weatherstripping applications.

Adhesive-Backed Strips—Textured Finish

Extra Soft

- Temperature Range: –20° to +175° F
- Firmness (25% Deflection): 2-4 psi (extra soft) or 9-15 psi (firm)
- Density: *Extra soft* is 4-5.5 lbs./cu. ft.; *firm* is 10-15 lbs./cu. ft.

Material meets ASTM D1056 and does not have a skin. Adhesive is acrylic and has a temperature range of –20° to +175° F. Width tolerance is ±1/16″. Length tolerance is ±2½ ft. Strips are 50 feet long. ***Extra soft*** strips have coarse cells and are compressible. ***Firm*** strips have fine cells and are compression resistant.

Thick.	Thick. Tolerance	EXTRA SOFT ½″ Wide		EXTRA SOFT ¾″ Wide		EXTRA SOFT 1″ Wide		EXTRA SOFT 2″ Wide	
1/8″	±0.032″	93745K21	$7.09	93745K23	$9.73	93745K25	$11.17	93745K27	$20.34
3/16″	±0.032″	93745K31	7.57	93745K33	10.94	93745K35	12.48	93745K37	23.69
1/4″	±0.032″	93745K41	8.87	93745K43	12.06	93745K45	14.85	93745K47	28.54

Thick.	Thick. Tolerance	FIRM ½″ Wide		FIRM ¾″ Wide		FIRM 1″ Wide		FIRM 2″ Wide	
1/8″	±0.032″	93745K51	$9.31	93745K53	$13.14	93745K55	$16.89	93745K57	$31.26
3/16″	±0.032″	93745K61	11.06	93745K63	15.98	93745K65	20.87	93745K67	38.61
1/4″	±0.032″	93745K71	13.20	93745K73	18.92	93745K75	24.60	93745K77	45.53

Sheets—Smooth Finish

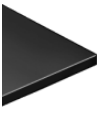

- Temperature Range: –70° to +158° F
- Firmness (25% Deflection): 1-3 psi (very soft)
- Density: 4-7 lbs./cu. ft.

Material meets ASTM D1056 2B0/1, UL 94HBF, and UL 94HF1. Width and length tolerances are ±2″.

Thick.	Thick. Tolerance	54″×72″	
1/8″	±0.030″	1833T41	$43.83
1/4″	±0.030″	1833T43	63.19
3/8″	±0.045″	1833T45	87.04
1/2″	±0.045″	1833T47	$104.43
3/4″	±0.060″	1833T49	155.93
1″	±0.090″	1833T51	203.48

Oil-Resistant Buna-N Foam

- Color: Black
- Temperature Range: –40° to +200° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

Get the properties of Buna-N rubber in a soft and conformable foam. Buna-N rubber is also known as nitrile, acrylonitrile butadiene, and NBR. It has superior resistance to oils and solvents, plus good resistance to abrasion, acids, alkalies, and permeability of gases. Not very weather resistant.

Sheets—Smooth Finish

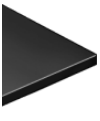

- Firmness (25% Deflection): 2-5 psi (extra soft)
- Density: 10-17 lbs./cu. ft.

Material meets ASTM D1056 2B1 and does not have a skin. Width tolerance is ±1¼″. Length tolerance is ±2¹⁄₁₆″.

Thick.	Thick. Tolerance	40″ Wd.×68″ Lg.	
1/16″	±0.030″	1887T32	$51.10
1/8″	±0.030″	1887T34	83.05
1/4″	±0.030″	1887T36	144.83
3/8″	±0.045″	1887T38	191.74
1/2″	±0.045″	1887T42	$237.46
5/8″	±0.060″	1887T44	272.31
3/4″	±0.060″	1887T46	308.20
1″	±0.090″	1887T48	415.50

Neoprene Rubber Mesh

A diamond-pattern mesh of neoprene forms a non-skid matting that allows fluid to flow through. This soft, pliable mesh conforms to irregular surfaces. Each diamond shape is approximately 23/64″×23/64″. Mesh has a minimum thickness of 1/8″ and a maximum thickness of 1/8″-5/32″. Maximum temperature is 230° F.

To Order: Please specify color: black, green, or red.

Width	Roll Length		Per Ft. 1-49	Per Ft. 50-Up
26″	50 ft.	9310T11	$8.97	$6.73
36″	50 ft.	9310T12	10.58	8.39

Polyester/Vinyl Foam Mesh

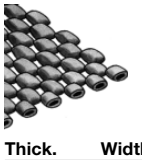

This washable, moisture- and bacteria-resistant, and fire-retardant foam consists of hundreds of small pillows per foot to keep items firmly in place. Made from a polyester scrim coated with vinyl. Temperature range is –20° to +140° F.

To Order: Please specify length in 5-ft. increments.

Thick.	Width	Color	Max. Lg.		Per Ft.
1/8″	24″	Black	60 ft.	85695K1	$2.09
1/8″	36″	Black	60 ft.	85695K2	3.15
1/8″	24″	White	65 ft.	85695K3	2.09
1/8″	36″	White	65 ft.	85695K4	3.15
1/8″	24″	Almond	75 ft.	85695K5	2.09
1/8″	36″	Almond	75 ft.	85695K6	3.15

Ultra-Elastic Clear Gel Rubber

- Color: Clear
- Temperature Range: Not rated
- Tensile Strength: Not rated
- Use indoors and outdoors

Material has a gel-like consistency to absorb vibration and conform to irregular surfaces. It is also super stretchy.

Sheets—Smooth Finish

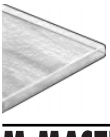

Made from latex-free TPE (thermoplastic elastomer). It is nonallergenic. Thickness has a plus tolerance.

Thick.	12″×12″		24″×24″	
1/4″	1782T54	$47.66	1782T56	$97.83
1/2″	1782T64	59.41	1782T66	107.14

For information about foam and foam firmness ratings, see page 3550.

Super-Cushioning Polyurethane Foam

- Color: Charcoal, unless otherwise stated
- Temperature Range: –20° to +180° F, unless otherwise stated
- Absorbent (open cell)
- Use indoors

Flexible and resilient, this foam cushions, dampens, and isolates. Use for packaging, insulating, and similar applications.

Sheets and Sheeting—Textured Finish

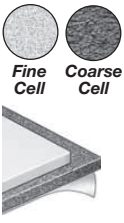

- Color and Density: See chart
- Firmness (25% Deflection): Very soft (see chart)

	Plain Back					Adhesive Back
Firmness Rating	1	2	3	4	5	2
Firmness (25% Deflection), psi	0.3	0.6	0.7	1.1	1.4-1.6	0.6
Density, lbs./cu. ft.	2.8	2.8	2.8	2	3	2
Color	White	White	White	Charcoal	Charcoal	Charcoal

Material does not have a skin. Width and length tolerances are ±1/2″. ***Plain-back*** sheets have a fine-cell textured finish. ***Adhesive-back*** sheets and sheeting have a coarse-cell textured finish. Adhesive is acrylic. Foam, but not adhesive, meets UL 94HF1.

To Order: For plain-back material, please specify firmness rating from the chart.

		PLAIN-BACK SHEETS								ADHESIVE BACK			
		12″×12″		24″×24″		24″×72″		36″×36″		48″×54″ Sheets		54″ Wide Sheeting	
Thick.	Thick. Toler.		Each		Each		Each		Each		Each	Max. Lg.	Per Ft.
1/8″	±0.031″									8614K71	$26.42	100 ft.	8614K81 $7.95
1/4″	±0.031″									8614K72	30.88	100 ft.	8614K82 9.01
1/2″	±0.063″	8643K511	$5.20	8643K518	$12.87	8643K526	$33.88	8643K534	$27.34	8614K73	39.58	100 ft.	8614K83 12.69
3/4″	±0.063″	8643K512	7.13	8643K519	18.93	8643K527	50.65	8643K535	36.78				
1″	±0.063″	8643K513	8.57	8643K521	24.18	8643K528	60.72	8643K536	48.13	8614K74	67.49	100 ft.	8614K84 18.83
1 1/2″	±0.063″	8643K514	10.54	8643K522	33.88	8643K529	88.57	8643K537	68.13				
2″	±0.063″	8643K515	12.69	8643K523	46.55	8643K531	114.13	8643K538	87.79				
3″	±0.063″	8643K516	17.62	8643K524	64.50	8643K532	154.55	8643K539	131.42				
4″	±0.063″	8643K517	23.00	8643K525	85.86	8643K533	205.94	8643K541	172.51				

Egg-Crate Sheets—Textured Finish

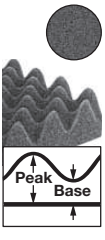

- Firmness (25% Deflection): 0.6 psi (very soft)
- Density: 1.5 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Height tolerance is ±1/8″. Width and length tolerances are ±1/4″. Sheets nest together in a set of two.

Peak Height	Base Height	18″×24″	Set	24″×36″	Set
2″	1/2″	85365K43	$22.38	85365K47	$34.79
3″	1/2″	85365K51	27.40	85365K55	47.53

Cubes on a Scored Sheet—Textured Finish

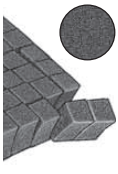

- Temperature Range: Not rated
- Firmness (25% Deflection): Not rated
- Density: 1.5-1.6 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Square tolerance is ±1/8″.

Thick.	Thick. Toler.	Cube Size	No. of Cubes	12″×12″	
1″	±0.125″	5/8″ sq.	361	3157T21	$6.77
				24″×24″	
1″	±0.125″	1″ sq.	576	3157T22	$22.97

Square Bars and Strips—Textured Finish

- Color: *Square bars* are charcoal; *strips* are white
- Temperature Range: –20° to +180° F for *square bars*; 180° F max. (low end not rated) for *strips*
- Firmness (25% Deflection): *Square bars* are 0.3 psi (very soft); *strips* are not rated
- Density: *Square bars* are 1 lb./cu. ft.; *strips* are not rated

Material has a fine-cell textured finish and does not have a skin. ***Square bars*** have a length tolerance of ±1/4″. ***Adhesive-back strips*** have a plus tolerance for thickness, width, and length. Adhesive is acrylic and has a maximum temperature of 110° F.

SQUARE BARS

Square Size	Square Tolerance	Length		
1 1/4″	±0.063″	3 1/2 ft.	93665K41	$2.84
2 1/4″	±0.063″	3 1/2 ft.	93665K42	5.73

ADHESIVE-BACK STRIPS

Thick.	Width	Length		
1/4″	3/8″	17 ft.	93655K31	$2.54
1/4″	3/4″	17 ft.	93655K33	3.89
1/4″	1″	17 ft.	93655K35	4.79
1/4″	1 1/2″	17 ft.	93655K36	6.58

Rods—Textured Finish

- Firmness (25% Deflection): 0.3 psi (very soft)
- Density: 1 lb./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Length tolerance is ±1/16″, except 36″ length has a tolerance of ±1/4″.

Dia.	Dia. Tolerance	Pkg. Qty.	1/2″ Long	Pkg.	1″ Long	Pkg.	1 1/2″ Long	Pkg.	2″ Long	Pkg.	36″ Long	Each
2″	±0.125″										8875K12	$5.32
3″	±0.125″	10	8883K32	$3.28	8883K34	$5.30	8883K36	$7.37	8883K38	$9.16	8875K13	8.81
4″	±0.125″	10	8883K42	4.39	8883K44	7.41	8883K46	10.76	8883K48	13.69	8875K14	12.88
5″	±0.125″	5	8883K52	2.66	8883K54	5.09	8883K56	6.81	8883K58	8.65	8875K15	17.38
6″	±0.125″	5	8883K62	4.01	8883K64	6.65	8883K66	8.73	8883K68	8.74	8875K16	22.36
8″	±0.125″	5	8883K82	5.73	8883K84	7.54	8883K86	9.27	8883K88	10.69	8875K18	29.93

Balls and Cubes—Textured Finish

- Firmness (25% Deflection): 0.4-0.5 psi (very soft)
- Density: 1.5 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. ***Balls*** have a diameter tolerance of ±3/16″. ***Cubes*** have a square tolerance of ±1/8″.

BALLS

Dia.			Dia.		
2 3/4″	8874K11	$4.86	6″	8874K16	$16.10
3 1/2″	8874K13	5.81	7″	8874K17	21.44
4″	8874K15	6.33	8″	8874K18	25.90

CUBES

Square Size			Square Size		
2 3/4″	8882K11	$3.21	6″	8882K14	$11.46
3 1/2″	8882K12	3.45	7″	8882K15	14.60
4″	8882K13	4.23	8″	8882K16	21.36

For information about foam and foam firmness ratings, see page 3550.

Water-Resistant Super-Cushioning Polyurethane Foam

- Color: Charcoal
- Temperature Range: –20° to +200° F
- Restricts absorption when compressed
- Use indoors and outdoors

Ideal for weatherstripping, this conformable material has an open-cell construction, yet it seals like closed-cell foam by restricting water absorption when fully compressed.

Sheets and Strips—Textured Finish

- Firmness (25% Deflection): 0.6-0.9 psi (very soft)
- Density: 2 lbs./cu. ft.

Foam meets UL 94HF1. Material has a fine-cell textured finish and does not have a skin. ***Sheets*** have width and length tolerances of ±¼″, except for 120″ long sheets, which have a length tolerance of ±5″. ***Strips*** have a width tolerance of ±1/32″ and a length tolerance of ±5″. ***Adhesive-back*** sheets and strips have a rubber-based adhesive with a temperature range of –20° to +160° F. Adhesive does not meet UL 94HF1.

Thick.	Thick. Toler.	PLAIN-BACK SHEETS 24″×24″		PLAIN-BACK SHEETS 36″×36″		PLAIN-BACK SHEETS 54″×120″		ADHESIVE-BACK SHEETS 24″×24″		ADHESIVE-BACK SHEETS 36″×36″		ADHESIVE-BACK SHEETS 54″×120″	
⅛″	±0.018″	86225K11	$4.32	86225K41	$8.10	86225K21	$33.82	86225K51	$8.51	86225K61	$15.97	86225K31	$66.67
¼″	±0.037″	86225K13	6.98	86225K43	13.12	86225K23	54.74	86225K53	12.36	86225K63	23.21	86225K33	96.86
⅜″	±0.056″	86225K14	9.05	86225K44	16.99	86225K24	70.92	86225K54	12.73	86225K64	23.90	86225K34	99.74
½″	±0.075″	86225K15	12.24	86225K45	22.98	86225K25	95.92	86225K55	16.30	86225K65	30.61	86225K35	127.75
1″	±0.150″	86225K17	21.28	86225K47	39.95	86225K27	166.75	86225K57	24.21	86225K67	45.46	86225K37	189.74

Thick.	Thick. Toler.	Length	ADHESIVE-BACK STRIPS ½″ Wide		¾″ Wide		1″ Wide		2″ Wide	
⅛″	±0.018″	100 ft.	8709K22	$8.31	8709K24	$10.41	8709K26	$13.04	8709K28	$19.96
3/16″	±0.028″	100 ft.	8709K32	9.10	8709K34	11.48	8709K36	14.36	8709K38	21.38
¼″	±0.037″	50 ft.	8709K42	6.40	8709K44	8.11	8709K46	9.67	8709K48	16.21
⅜″	±0.056″	50 ft.	8709K52	7.46	8709K54	9.22	8709K56	11.47	8709K58	19.50
½″	±0.075″	50 ft.	8709K62	8.20	8709K64	10.48	8709K66	12.90	8709K68	20.71
1″	±0.150″	25 ft.	8709K72	8.65	8709K74	10.56	8709K76	12.97	8709K78	21.65

Fire-Retardant Super-Cushioning Polyurethane Foam

- Color: Charcoal
- Temperature Range: –40° to +225° F
- Absorbent (open cell)
- Use indoors

Diminish the possibility of spreading fire. When this material (also known as Pyrell) is exposed to flame, its surface chars, creating a protective barrier that prevents melting and dripping.

Sheeting—Textured Finish

- Firmness (25% Deflection): 0.7 psi (very soft)
- Density: 2 lbs./cu. ft.

Foam meets UL 94HF1. Material has a fine-cell textured finish and does not have a skin. Width tolerance is ±2″. Length tolerance is ±1″. Lengths are spliced for ¼″ and ½″ thick sheeting. ***Adhesive-back*** sheeting has a rubber-based adhesive with a temperature range of –20° to +180° F. Adhesive does not meet UL 94HF1.

Thick.	Thick. Tolerance	Width	Max. Length	Plain Back	Per Ft.	Adhesive Back	Per Ft.
¼″	±0.06″	54″	60 ft.	86115K21	$10.33	86115K61	$14.64
½″	±0.06″	54″	60 ft.	86115K31	15.35	86115K71	20.38
1″	±0.06″	54″	6 ft.	86115K51	33.14	86115K91	38.95

Slow-Recovery Super-Cushioning Polyurethane Foam

- Color: Blue, green, pink, or yellow
- Temperature Range: 50° to 120° F
- Absorbent (open cell)
- Use indoors

Also known as Confor, this very soft material takes several seconds to return to its original shape after compression but maintains its resilience even after extended use.

Sheets—Textured Finish

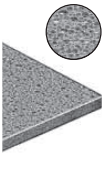

- Firmness (25% Deflection): Very Soft
- Density: 5.8 lbs./cu. ft.

Softness Rating	1	2	3	4
Color	Yellow	Pink	Blue	Green

Softness ratings 1-4 are all considered very soft. Rating 1 is the softest; as the rating increases, the material's firmness increases slightly. Foam meets UL 94HBF. Material has a coarse-cell textured finish and does not have a skin. Width and length tolerances are ±¼″. **To Order:** Please specify color.

Selector Block—Includes 1″ strips of each firmness. Block is 5″×5″×1″.

86195K1 ..... **Pkg.** $6.81

Thick.	Thick. Tolerance	12″×12″		18″×20″		20″×36″	
¼″	±0.062″	86195K31	$6.33	86195K51	$14.43	86195K11	$24.64
½″	±0.062″	86195K33	10.19	86195K53	23.18	86195K12	41.74
¾″	±0.062″	86195K35	15.99	86195K55	33.82	86195K15	58.31
1″	±0.062″	86195K37	18.09	86195K57	41.12	86195K13	72.35
2″	±0.062″	86195K39	31.99	86195K59	72.72	86195K14	134.71

Super-Absorbent Super-Cushioning Polyurethane Foam

- Color: White
- Temperature Range: –20° to +180° F
- Absorbent (open cell)
- Use indoors

Quickly absorb, hold, and release liquids. Also known as Aquazone, this spongelike material can retain up to 30 times its weight in liquid.

Sheets—Textured Finish

- Firmness (25% Deflection): 0.6 psi (very soft)
- Density: 1.8 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Width and length tolerances are ±⅛″.

Thick.	Thick. Tolerance	12″×12″		24″×24″		48″×48″	
¼″	±0.063″	8884K41	$3.14	8884K51	$8.56	8884K61	$28.52
½″	±0.063″	8884K42	6.72	8884K52	18.34	8884K62	61.12
1″	±0.063″	8884K44	13.11	8884K54	35.77	8884K64	119.22
1½″	±0.063″	8884K45	18.90	8884K55	51.55	8884K65	171.85
2″	±0.063″	8884K46	24.74	8884K56	67.47	8884K66	224.90

For information about foam and foam firmness ratings, see page 3550.

Antistatic Super-Cushioning Polyurethane Foam

- Color: Pink
- Temperature Range: –20° to +180° F
- Absorbent (open cell)
- Use indoors

Protect sensitive electrical equipment from damage. This foam prevents static electricity buildup by conducting it away. Surface resistivity is 10^{11} ohms/sq.

Sheets—Textured Finish

- Firmness (25% Deflection): 0.3 psi (very soft)
- Density: 1.4 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Thickness tolerance is ±0.031″ for 1/8″ and 1/4″ thicknesses, ±0.063″ for 3/8″-3/4″, and ±0.125″ for 1″ and 1 1/2″. Width and length tolerances are ±1/4″.

Thick.	24″×24″		36″×36″		54″×82″	
1/8″	87035K41	$2.33	87035K51	$4.40	87035K61	$13.07
1/4″	87035K42	4.35	87035K52	8.23	87035K62	24.42
3/8″	87035K43	5.56	87035K53	10.52	87035K63	31.21
1/2″	87035K44	6.64	87035K54	12.58	87035K64	37.33
3/4″	87035K45	9.01	87035K55	17.07	87035K65	50.64
1″	87035K46	11.06	87035K56	20.94	87035K66	62.14
1 1/2″	87035K47	15.17	87035K57	28.73	87035K67	85.25

Firm-Backed Super-Cushioning Polyurethane/Polyethylene Foam

- Color: Black
- Temperature Range: –20° to +160° F
- Polyurethane face is absorbent (open cell); polyethylene backing restricts absorption (closed cell)
- Use indoors

An extra-soft polyurethane face provides excellent cushioning. A firm polyethylene backing provides support and shock absorption and resists moisture, mildew, and chemicals.

Sheets—Textured Finish

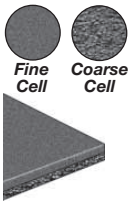

- Firmness (25% Deflection): polyurethane side is 1 psi (extra soft); polyethylene side is 9 psi (firm)
- Density: Approx. 2 lbs./cu. ft.

Polyurethane side has a fine-cell texture; polyethylene side has a coarse-cell texture. Material does not have a skin. Thickness tolerance is ±0.063″. Width and length tolerances are ±1/8″.

Thick.	12″×12″		24″×24″		24″×48″	
1″	85105K15	$9.83	85105K35	$32.77	85105K55	$54.61
2″	85105K16	15.88	85105K36	52.93	85105K56	88.22
4″	85105K17	24.12	85105K37	80.40	85105K57	134.00

Chemical-Resistant Polyethylene Foam

- Color: See below
- Temperature Range: –20° to +160° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

Chemical and moisture resistance make this material, also known as Ethafoam, a good choice for insulating and packaging.

Sheets—See table for finish

- Color: Blue, charcoal, or white
- Firmness (25% Deflection): *Blue* is 7 psi (soft); *charcoal* and *white* are 9 psi (firm)
- Density: *Blue* is 1.8 lbs./cu. ft.; *charcoal* and *white* are 2.2 lbs./cu. ft.

Material has a coarse-cell construction. Sheets with a textured finish do not have a skin; sheets with a smooth finish have a skin on top and bottom. Thickness tolerance is ±0.063″ for textured finish and ±0.375″ for smooth finish. Width and length tolerances are ±1″. ***Laminated sheets*** have a charcoal side and a blue side.

Thick.	Color	24″×18″		24″×54″	
Textured Finish					
1/4″	Charcoal	9334K32	$5.10	9334K21	$12.79
3/8″	Charcoal	9334K33	7.33	9334K22	18.22
1/2″	Charcoal	9334K34	9.04	9334K23	22.60
3/4″	Charcoal	9334K35	13.19	9334K24	32.93
1″	Charcoal	9334K36	16.69	9334K25	41.76
2″	Charcoal	9334K37	28.75	9334K29	64.09
2″	Blue	9334K39	26.56	9334K27	71.81
		48″×54″			
Smooth Finish					
2″	Charcoal	86155K44	$150.57	—	—
2″	White	86155K33	136.68	—	—
		12″×12″		**24″×27″**	
Laminated Sheets with Textured Finish					
1″★	Charcoal/Blue	85145K43	$15.22	85145K63	$50.70
1 1/2″★	Charcoal/Blue	85145K45	22.79	85145K65	71.20
2″★	Charcoal/Blue	85145K49	30.45	85145K69	101.52

★ Overall thickness; charcoal side is 1/4″ thick.

Adhesive-Backed Strips—Smooth Finish

- Color: White
- Firmness (25% Deflection): 5 psi (soft)
- Density: 2 lbs./cu. ft.

Material has a fine-cell smooth-textured finish and has a skin on top. Adhesive is rubber based and has a temperature range of 0° to +150° F. Thickness tolerance is ±0.019″, except 1/4″ thick has a ±0.025″ tolerance. Width tolerance is ±5/16″. Length tolerance is +12″.

Thick.	Lg., ft.	3/8″ Wide		1/2″ Wide		5/8″ Wide	
1/8″	75	93565K52	$6.53	93565K53	$7.67	93565K54	$8.86
3/16″	50	93565K62	5.39	93565K63	6.30	93565K64	7.28
1/4″	50	93565K72	5.66	93565K73	6.70	93565K74	7.77
		3/4″ Wide		**1″ Wide**		**2″ Wide**	
1/8″	75	93565K55	$10.32	93565K56	$11.37	93565K58	$20.08
3/16″	50	93565K65	8.26	93565K66	9.50	93565K68	16.35
1/4″	50	93565K75	8.92	93565K76	10.43	93565K78	18.94

Cord—Textured Finish

- Color: Gray
- Firmness (25% Deflection): 4 psi (extra soft)
- Density: 2 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Diameter tolerance is ±0.040″. Length has a plus tolerance.

Dia.	20-ft. Length		250-ft. Length	
3/8″	93295K31	$4.08	93295K41	$31.50
1/2″	93295K33	4.68	93295K43	34.12
5/8″	93295K35	6.79	93295K45	44.29

Antistatic Chemical-Resistant Polyethylene Foam

- Color: Pink
- Temperature Range: –20° to +160° F
- Restricts absorption (closed cell)
- Use indoors

This material is great for protecting sensitive electrical equipment because it is designed to eliminate electrostatic potential from the foam itself and to dissipate electrostatic discharges from other sources. Surface resistivity is 10^{12} ohms/sq.

Sheets—Textured Finish

- Firmness (25% Deflection): 9 psi (firm)
- Density: 2.2 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Width and length tolerances are ±1/8″.

Thick.	Thick. Tolerance	12″×12″		24″×36″		Thick.	Thick. Tolerance	12″×12″		24″×36″	
1/8″	±0.013″	8726K13	$1.75	8726K12	$9.33	3/4″	±0.063″	8726K53	$10.15	8726K52	$31.20
1/4″	±0.025″	8726K23	2.70	8726K22	12.89	1″	±0.063″	8726K63	10.71	8726K62	38.83
3/8″	±0.038″	8726K33	5.07	8726K32	19.12	2″	±0.063″	8726K73	16.76	8726K72	59.40
1/2″	±0.063″	8726K43	6.49	8726K42	22.49						

(Material continued on following page)

For information about foam and foam firmness ratings, see page 3550.

Antistatic Chemical-Resistant Polyethylene Foam *(Material continued from previous page)*

Sheeting—Textured Finish

- Firmness (25% Deflection): 9 psi (firm)
- Density: 1.8 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Width tolerance is ±1″.

Thick.	Thick. Tolerance	Max. Length	48″ Wide	Per Ft.
1/8″	±0.013″	500 ft.	8726K91	$3.24
1/4″	±0.025″	250 ft.	8726K92	4.84
1/2″	±0.063″	125 ft.	8726K93	$8.89

Tear- and Chemical-Resistant Polyethylene Foam

- Color: See below
- Temperature Range: See below
- Restricts absorption (closed cell)
- Use indoors and outdoors

Cross-linked at the molecular level, this chemical- and moisture-resistant material offers superior tear resistance when compared to our other polyethylene foams. Its flexibility and conformability make it a common choice for packaging and insulating applications.

Sheets and Sheeting—Smooth Finish

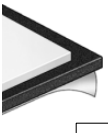

- Color: Black or white
- Temperature Range: –110° to +158° F
- Firmness (25% Deflection): *Soft* is 5 psi; *firm* is 9 psi
- Density: *Soft* is 2 lbs./cu. ft.; *firm* is 4 lbs./cu. ft.

Made of FDA-compliant material, foam has a skin on the top and bottom. Thickness tolerance is ±15% and width tolerance is ±1″. Sheets have a length tolerance of ±1″. ***Adhesive-back*** sheets and sheeting have a rubber-based adhesive with a temperature range of 0° to 140° F.

To Order: Please specify color: black or white.

Thick.	Sheets 24″×24″ Each	Sheets 36″×54″ Each	Max. Lg., ft.	Sheeting 54″ Wide	Per Ft.
Plain Back—Soft					
1/8″	8722K7 $3.67	8722K2 $9.06	75	8722K18	$3.02
3/16″	8722K8 4.98	8722K3 12.45	50	8722K19	4.15
1/4″	8722K9 6.52	8722K4 16.95	50	8722K21	5.65
3/8″	8722K11 10.24	8722K5 26.58	25	8722K28	8.86
Plain Back—Firm					
1/16″	8722K6 3.37	8722K1 8.76	100	8722K91	2.92

Thick.	Sheets 24″×24″ Each	Sheets 36″×54″ Each	Max. Lg., ft.	Sheeting 54″ Wide	Per Ft.
Adhesive Back—Soft					
1/8″	8722K24 $6.72	8722K13 $16.80	75	8722K36	$5.60
3/16″	8722K25 7.45	8722K14 18.63	50	8722K38	6.21
1/4″	8722K26 9.12	8722K15 22.80	50	8722K44	7.60
3/8″	8722K27 11.66	8722K16 29.16	25	8722K46	9.72
Adhesive Back—Firm					
1/16″	8722K23 5.98	8722K17 16.08	100	8722K34	5.36

Sheets—Textured Finish

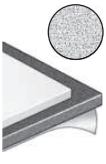

- Color: Charcoal or white
- Temperature Range: –20° to +160° F
- Firmness (25% Deflection): 7 psi (soft)
- Density: 2 lbs./cu. ft.

These sheets continue to provide impact resistance even after prolonged use. Material has a fine-cell textured finish. Thickness tolerance is ±0.063″. Width and length tolerances are ±1/8″. ***Adhesive-back*** sheets have an acrylic adhesive with a temperature range of –20° to +160° F.

To Order: Please specify color: charcoal or white.

Thick.	12″×12″	24″×24″	48″×48″
Plain Back—Soft			
1/2″	8865K11 $6.99	8865K21 $25.23	8865K31 $80.37
3/4″	8865K12 10.23	8865K22 34.06	8865K32 111.79
1″	8865K13 12.77	8865K23 41.97	8865K33 139.90
1 2/3″	8865K14 22.70	8865K24 74.51	8865K34 248.37

Thick.	12″×12″	24″×24″	48″×48″
Adhesive Back—Soft			
1/2″	8865K51 $10.04	8865K61 $34.53	8865K71 $93.56
3/4″	8865K52 12.56	8865K62 39.35	8865K72 121.54
1″	8865K53 15.25	8865K63 48.09	8865K73 150.24
1 2/3″	8865K54 25.64	8865K64 86.68	8865K74 264.10

Super-Tough Ionomer Foam

- Color: See below
- Temperature Range: –85° to +175° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

This strong foam offers excellent resistance to impact, UV, weather, and water absorption, while maintaining flexibility and conformability.

Sheets and Sheeting—Textured Finish

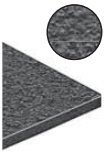

- Firmness (25% Deflection): *Firm* is 10.9 psi; *extra firm* is not rated
- Density: *Firm* is 3 lbs./cu. ft.; *extra firm* is 4 lbs./cu. ft.

Material has a medium-cell textured finish and has a skin on the top and bottom. Thickness tolerance is ±0.05″. Width and length tolerances are ±1/2″.

Foam Type	Thick.	Color	24″×24″		48″×50″	
Firm	3/16″	Gray	86205K12	$5.71	86205K14	$22.86
			24″×36″		**48″×76″**	
Firm	5/16″	Black	86205K53	$12.67	86205K55	$50.67
Extra Firm	1/4″	Black	86205K62	13.38	86205K63	53.54

Water- and Tear-Resistant EVA Foam

- Color: Black
- Temperature Range: –70° to +160° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

Moisture resistance and high tear resistance make EVA (ethylene vinyl acetate) good for sealing applications.

Sheets—Textured Finish

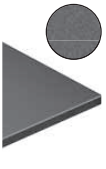

- Firmness (25% Deflection): 4 psi (soft)
- Density: 2 lbs./cu. ft.

Material has a fine-cell textured finish and does not have a skin. Thickness tolerance is ±0.063″, except 1/8″, which has a ±0.031″ thickness tolerance. Width and length tolerances are ±1/8″.

Thick.	12″×12″		29″×47″	
1/8″	86095K41	$2.80	86095K21	$12.09
1/4″	86095K42	5.64	86095K22	24.32
3/8″	86095K43	7.67	86095K23	33.06
1/2″	86095K44	10.01	86095K24	43.15
3/4″	86095K45	13.71	86095K25	59.11
1″	86095K46	16.29	86095K26	70.22

High-Temperature Chemical-Resistant Nylon Foam

- Color: Charcoal
- Temperature Range: –40° to +400° F
- Restricts absorption (closed cell)
- Use indoors and outdoors

This cross-linked nylon 6 foam is ideal for use where resistance to oils, fuels, and high temperatures is required.

Sheets—Smooth Finish

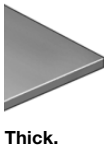

- Firmness (25% Deflection): 28 psi (very firm)
- Density: 3.2 lbs./cu. ft.

Material does not have a skin. Thickness tolerance is ±0.033″. Length and width tolerances are ±1/8″.

Thick.	6″×6″		12″×12″		12″×24″	
1/8″	3623K61	$1.43	3623K71	$4.58	3623K81	$7.96
1/4″	3623K62	2.76	3623K72	8.80	3623K82	15.31
3/8″	3623K63	3.61	3623K73	11.52	3623K83	20.04
1/2″	3623K64	5.16	3623K74	16.49	3623K84	28.67

About Plastics

For a quick guide to identifying plastics, go to mcmaster.com and search for **5331KAC**.

Material	Pages
ABS	3579-3580
Acetal Copolymer	3590
Acetate	3573
Acrylic (Extruded, Cast)	3568-3572
Butyrate	3573
Cirlex Polyimide	3609
CTFE	3605
Delrin® Acetal Resin	3586-3589
FEP	3606
HDPE Polyethylene	3593-3595
Hydex	3591
Kapton® Polyimide	3609
LDPE Polyethylene	3592-3593
Noryl (Polyphenyl Oxide)	3607
Nylon (6, 6/6, 6/12)	3580-3585
PEEK	3608
PETG	3568
PFA	3606
Polycarbonate	3565-3568
Polyester (PET)	3591
Polypropylene	3577-3579
Polystyrene	3577
Polysulfone	3607
PPS	3608
PTFE	3603-3605
PVC (Type I, Type II, CPVC)	3573-3577
PVDF (Kynar)	3606
Radel	3606
Rulon	3605
Teflon® PTFE	3600-3602
Torlon (Polyamide-imide)	3609
Turcite	3588
UHMW, VHMW Polyethylene	3595-3599
Ultem (Polyetherimide)	3607
Vespel® Polyimide	3609

***Material Identification Kit*—**Identify plastics in just minutes. Kit contains 50 resin sample chips with technical data and tools for conducting burn tests. It uses opacity vs. transparency, rigidity vs. flexibility, and surface feel to identify plastics. Burn tests confirm results.

5331K4 ..... **Each** $273.33

***Thermoplastics Material Selector Pack*—**You'll get one individually marked piece of ABS, cast acrylic, acetate, Delrin® acetal resin, PTFE, nylon 6/6, polycarbonate, polyester (PET), UHMW polyethylene, polypropylene, polystyrene, and PVC Type I. Each piece is approximately 4″×4″ to 6″×6″ and ¼″ to ½″ thick, except for acetate, which is 0.020″ thick.

5331K1 ..... **Pack** $143.70

Temperature

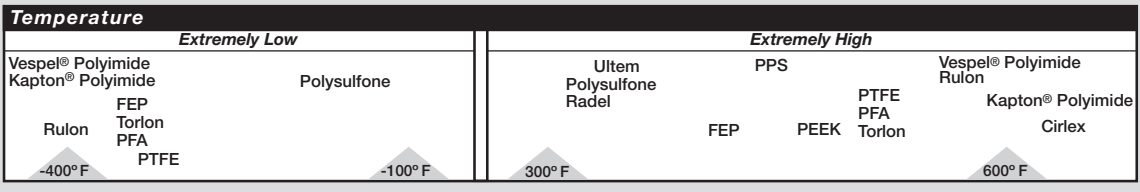

***Temperature Selector Pack*—**Contains one individually marked piece of PTFE, polysulfone, PEEK, Torlon, and Ultem. Pieces are approximately 1″×1″ to 6″×6″ and ¼″ to ⅜″ thick. ..... **5331K25** **Pack** $170.98

High Tensile Strength Plastics

The amount of stretching a material can withstand before breaking.

***Tensile Strength Selector Pack*—**Contains one individually marked piece of Delrin® acetal resin, nylon 6/6, and polyester. Pieces are 6″×6″ and ¼″ to ½″ thick. ..... **5331K11** **Pack** $48.77

High Impact Strength Plastics

The ability to withstand shock loading. Determined by the notched Izod test, which measures the effect on a material when it is struck by a swinging pendulum. "No Break" means the material was not broken during testing.

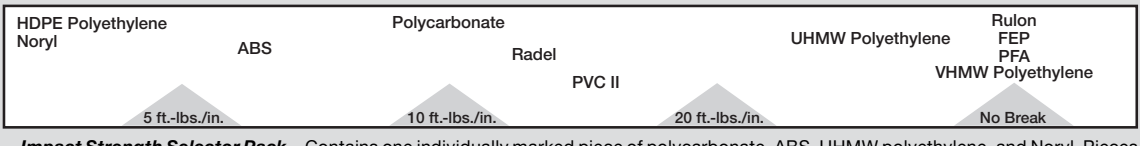

***Impact Strength Selector Pack*—**Contains one individually marked piece of polycarbonate, ABS, UHMW polyethylene, and Noryl. Pieces are approximately 6″×6″ and ¼″ to ½″ thick. ..... **5331K21** **Pack** $36.76

Slippery Plastics

A lower coefficient of friction indicates a material that moves more easily, or with less friction.

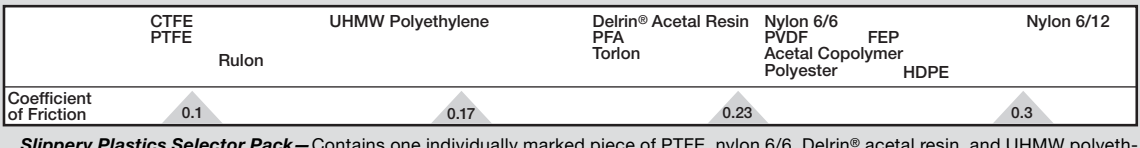

***Slippery Plastics Selector Pack*—**Contains one individually marked piece of PTFE, nylon 6/6, Delrin® acetal resin, and UHMW polyethylene. Pieces are approximately 6″×6″ and ¼″ to ½″ thick. ..... **5331K41** **Pack** $72.75

Machinability

Not Rated	Fair	Good	Excellent
Cast Acrylic, CTFE, FEP, Polystyrene, Vespel® Polyimide	PEEK, PETG, Torlon	Extruded Acrylic, LDPE, Noryl, Polycarbonate, Polypropylene, Polysulfone, PPS, PVDF, Radel, Rulon, Ultem	ABS, Acetal Copolymer, CPVC, Delrin® Acetal Resin, HDPE, Hydex, Nylon 6, Nylon 6/6, Nylon 6/12, Polyester, PTFE, PVC I, PVC II, Turcite, UHMW

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

Impact-Resistant Clear and Colored Polycarbonate

- Color: Clear, unless noted
- Temp. Range: –40° to +200° F, unless noted
- Softening Temp.: 290° to 315° F
- Tensile Strength: Good, unless noted
- Impact Strength: Excellent, unless noted
- Poor electrical insulator
- Use indoors and outdoors, unless noted
- Machine with carbide tooling; cut *film* with scissors
- Hardness: Rockwell R118-R126

Comparable to Lexan, Hyzod, Tuffak, and Makrolon. At only half the weight of glass, this material maintains excellent clarity and impact strength over a wide temperature range. Often used as windows, instrument gauge covers, machine guards, and signs.

Clear Sheets—Smooth Finish, unless otherwise indicated

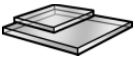

- Use *FDA Compliant* indoors

Sheets 0.06″ to 0.177″ thick meet UL 94V2 and sheets 0.236″ to 2″ thick meet UL 94V0 for flammability. All sheets are UL 972 rated as burglar resistant. Width and length tolerances are ±¼″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
Standard													
1/16″	+0.001″, –0.006″	8574K24	$4.45	8574K38	$7.60	8574K51	$13.59	8574K63	$22.90	8574K81	$40.55	8574K71	$72.89
3/32″	+0.004″, –0.006″	8574K25	7.75	8574K39	12.77	8574K52	22.57	8574K64	36.82	8574K82	62.15	8574K72	109.04
1/8″	–0.013″	8574K26	7.60	8574K41	12.52	8574K53	22.39	8574K21	36.09	8574K83	66.30	8574K73	120.30
3/16″	–0.020″	8574K27	11.14	8574K42	18.37	8574K54	31.38	8574K22	52.98	8574K84	97.32	8574K74	176.59
1/4″	–0.026″	8574K28	14.01	8574K43	23.07	8574K55	39.36	8574K23	66.49	8574K85	122.41	8574K75	221.63
3/8″	±0.019″	8574K31	27.00	8574K44	42.40	8574K56	72.10	8574K65	126.81	8574K86	223.75	8574K76	385.78
1/2″	±0.025″	8574K32	30.50	8574K45	52.61	8574K57	94.69	8574K66	164.69	8574K87	298.21	8574K77	524.00
3/4″	±0.075″	8574K33	176.18	8574K1	411.82	8574K2	622.08	8574K3	1,167.76	8574K88	2,092.70	8574K78	3,897.74
1″	±0.100″	8574K4	218.97	8574K5	396.76	8574K6	729.23	8574K7	1,431.33	8574K89	2,696.93	8574K79	5,022.22
1 1/4″	±0.125″	8574K8	299.38	8574K9	534.74	8574K111	985.03	8574K69	1,864.84	8574K121	3,461.09	—	—
1 1/2″	±0.150″	8574K131	338.84	8574K141	621.75	8574K151	1,145.30	8574K161	2,168.26	8574K171	4,024.24	—	—
2″	±0.200″	8574K15	428.13	8574K16	772.76	8574K17	1,451.63	8574K18	2,737.38	—	—	—	—
FDA Compliant													
0.236″	±0.012″	8574K172	14.81	—	—	8574K173	47.06	—	—	8574K174	161.40	8574K175	286.93
UV-Resistant													
0.118″	±0.006″	8574K122	6.09	—	—	8574K123	20.51	—	—	8574K124	66.15	8574K125	122.86
0.236″	±0.012″	8574K132	12.42	—	—	8574K133	38.82	—	—	8574K134	131.39	8574K135	244.00
Textured Matte Finish on One Side; Smooth on the Other													
0.118″	±0.006″	—	—	—	—	8574K162	26.33	—	—	8574K163	85.64	8574K164	159.45
Pebble Finish on One Side; Textured on the Other													
0.118″	±0.006″	—	—	—	—	8574K142	26.33	—	—	8574K143	85.64	8574K144	159.45
0.236″	±0.012″	—	—	—	—	8574K152	42.52	—	—	8574K153	144.88	8574K154	269.79

Colored Sheets—Rough Finish, unless otherwise indicated

- Impact Strength: *Gray* and *black*, good
- Use indoors

3″×3″ gray sheets meet UL 94V0 for flammability; opaque black and 12″×12″ and larger gray sheets meet UL 94HB for flammability. Width and length tolerances are ±½″, except 3″×3″ sheets, which are ±1/16″. White sheets are UV resistant and UL 972 rated as burglar resistant.

Thick.	Thick. Tolerance	3″×3″		12″×12″		12″×24″		24″×24″		24″×48″		48″×96″	
Translucent Gray													
3/4″	+0.025″	8358T11★	$20.72	8574K34	$102.51	8574K46	$181.37	8574K58	$336.84	8574K67	$628.78	—	—
1″	+0.025″	8358T12★	26.84	8574K35	135.59	8574K47	239.90	8574K59	445.61	8574K68	831.79	—	—
1 1/2″	+0.025″	8358T13★	39.03	8574K36	199.74	8574K48	353.94	8574K61	657.30	8574K91	1,226.96	—	—
2″	+0.025″	8358T14★	50.99	8574K37	253.10	8574K49	449.95	8574K62	899.89	8574K92	1,567.53	—	—
Opaque Black													
1/4″	+0.025″	—	—	85625K23	42.74	85625K24	79.15	85625K26	147.36	85625K27	275.96	—	—
3/8″	+0.025″	—	—	85625K33	58.31	85625K34	107.93	85625K15	199.74	85625K19	379.30	—	—
1/2″	+0.025″	—	—	85625K43	72.33	85625K44	134.34	85625K46	244.85	85625K47	489.71	—	—
3/4″	+0.025″	—	—	85625K53	120.52	85625K54	225.94	85625K16	417.10	85625K21	774.68	—	—
1″	+0.025″	—	—	85625K63	149.45	85625K64	275.95	85625K66	521.82	85625K67	989.60	—	—
1 1/2″	+0.025″	—	—	85625K73	220.48	85625K74	407.05	85625K17	769.69	85625K22	1,365.61	—	—
2″	+0.025″	—	—	85625K83	291.05	85625K84	537.37	85625K18	1,016.09	85625K29	1,719.54	—	—
Translucent White with Smooth Finish on Both Sides										48″×48″			
0.118″	±0.006″	—	—	8574K192	6.25	—	—	8574K193	20.45	8574K194	$69.23	8574K195	$128.57
0.236″	±0.012″	—	—	8574K211	12.42	—	—	8574K212	40.63	8574K213	137.54	8574K214	255.43

★ Thickness tolerance is ±10%.

Tinted Sheets—Smooth Finish

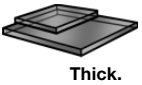

- Color: Translucent bronze or gray

Tint reduces light transmittance to 50% and decreases heat transmittance. UL 972 rated as burglar resistant. Width and length tolerances are ±¼″. Sheets 1/8″ and 3/16″ thick meet UL 94V2; sheets 1/4″ thick meet UL 94V0 for flammability. **To Order:** Please specify tint: bronze or gray.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
1/8″	–0.013″	87225K21	$8.69	87225K22	$15.12	87225K23	$26.53	87225K24	$46.95	87225K26	$83.84	87225K27	$152.45
3/16″	–0.02″	87225K41	12.80	87225K42	22.27	87225K43	39.06	87225K44	69.14	87225K46	123.48	87225K47	224.51
1/4″	–0.026″	87225K61	15.56	87225K62	27.06	87225K63	47.48	87225K64	84.03	87225K66	150.05	87225K67	272.83

Mirrored Sheets—Smooth Finish

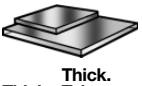

- Color: Clear with mirrored finish
- Temp. Range: –22° F to +240° F

Aluminum coated for a mirror finish on one side; painted gray on the other. Width and length tolerances are ±1/16″.

Thick.	Thick. Tolerance	3″×24″		6″×6″		6″×24″		12″×12″		24″×24″		36″×36″		48″×48″	
0.118″	±0.012″	2518T12	$10.79	2518T11	$9.46	2518T13	$20.10	2518T14	$19.50	2518T15	$74.47	2518T16	$136.45	2518T17	$192.96
0.236″	±0.024″	2518T19	17.87	2518T18	12.77	2518T21	34.15	2518T22	32.35	2518T23	120.44	2518T24	222.83	2518T25	310.06

(Material continued on following page)

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

Impact-Resistant Clear and Colored Polycarbonate *(Material continued from previous page)*

- Color: Clear, unless noted
- Temp. Range: –40° to +200° F, unless noted
- Softening Temp.: 290° to 315° F
- Tensile Strength: Good, unless noted
- Impact Strength: Excellent, unless noted
- Poor electrical insulator
- Use indoors and outdoors, unless noted
- Machine with carbide tooling; cut *film* with scissors
- Hardness: Rockwell R118-R126

Comparable to Lexan, Hyzod, Tuffak, and Makrolon. At only half the weight of glass, this material maintains excellent clarity and impact strength over a wide temperature range. Often used as windows, instrument gauge covers, machine guards, and signs.

Rectangular Bars—Smooth Finish

Width tolerance is ±1/32″. Length tolerance is +1/2″. Sold in 4-ft. lengths.

Thick.	Thick. Tolerance	1″ Wide	1 1/2″ Wide	2″ Wide	2 1/2″ Wide	3″ Wide	4″ Wide
0.118″	±0.006″	1749K11 $3.18	1749K21 $4.20	1749K31 $5.22	1749K41 $6.16	1749K51 $7.40	1749K61 $9.66
0.220″	±0.011″	1749K12 5.43	1749K22 7.30	1749K32 9.03	1749K42 10.70	1749K52 12.85	1749K62 16.73
3/8″	±0.019″	1749K13 9.96	1749K23 13.40	1749K33 16.47	1749K43 19.55	1749K53 23.43	1749K63 30.55
1/2″	±0.025″	1749K14 14.07	1749K24 18.80	1749K34 23.28	1749K44 27.58	1749K54 33.06	1749K64 43.18

Tight-Tolerance Blanks—Smooth Finish

- Color: Translucent gray
- Max. Temp.: 250° F; low end not rated
- Impact Strength: Good

These are consistently flat, square, and parallel on all six sides. Meet UL 94HB. Width and length tolerances are ±0.010″.

Thick.	Thick. Tolerance	2″×12″	4″×12″	12″×12″
1/2″	±0.005″	9115K41 $30.38	9115K42 $58.85	9115K46 $176.61
3/4″	±0.005″	9115K71 43.09	——— ———	9115K76 298.37
1″	±0.005″	9115K81 57.03	——— ———	9115K86 359.17

Film—Finish Based on Type

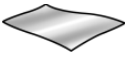

- Color: *Gloss*, clear; *velvet* and *matte*, translucent
- Temp. Range: Not rated

Easily print and hot stamp this film. *Gloss* sides have a smooth finish. *Velvet* and *matte* sides are textured with a dull appearance; *matte* has a slightly heavier texture. Textured sides diffuse light and mask abrasions and fingerprints. Width and length tolerances are ±1/4″.

Thick.	Thick. Tolerance	Both Sides Gloss 24 1/2″×24 1/4″	Both Sides Gloss 24 1/2″×48 1/2″	One Side Velvet, One Matte 24 1/2″×24 1/4″	One Side Velvet, One Matte 24 1/2″×48 1/2″	One Side Velvet, One Gloss 24 1/2″×24 1/4″	One Side Velvet, One Gloss 24 1/2″×48 1/2″
0.005″	±0.0005″	85585K102 $2.33	85585K72 $4.46	85585K82 $2.09	85585K92 $4.23	——— ———	——— ———
0.010″	±0.0010″	85585K103 3.92	85585K73 7.60	85585K83 3.25	85585K93 6.70	85585K33 $2.81	85585K43 $5.80
0.015″	±0.0015″	85585K14 5.53	85585K24 10.24	85585K54 5.18	85585K64 10.35	85585K34 4.20	85585K44 8.95
0.020″	±0.0020″	85585K15 7.15	85585K25 13.07	85585K55 6.51	85585K65 13.19	85585K35 5.38	85585K45 11.42
0.030″	±0.0030″	85585K17 10.50	85585K27 18.91	——— ———	——— ———	——— ———	——— ———
0.040″	±0.0040″	8574K19★ 12.60	85585K28▲ 23.60	——— ———	——— ———	——— ———	——— ———

★ Size is 24″×24″. ▲ Size is 24″×48″.

Square Tubes—Smooth Finish

- Tensile Strength: Not rated
- Use indoors

Meet UL 94HB for flammability and are FDA compliant.

Outside Ht.×Wd.	Ht./Wd. Tolerance	Wall Thick.	Thick. Tolerance		Per Ft.
Sold in 6-ft. lengths.					
1/2″×1/2″	±0.010″	1/16″	±0.007″	3161T11	$2.47
3/4″×3/4″	±0.020″	1/16″	±0.007″	3161T21	3.87
Sold in 1-ft. increments; maximum length is 6 feet.					
To Order: *Please specify length.*					
1″×1″	±0.020″	0.080″	±0.008″	3161T31	5.58
2″×2″	±0.030″	0.080″	±0.008″	3161T41	11.37

Round Tubes—Smooth Finish

- Use indoors

Meet UL 94HB for flammability. FDA compliant. OD and ID tolerances are ±0.040″.

OD	ID	Wall Thick.		Per Ft.
Sold in 8-ft. lengths.				
3/8″	1/8″	1/8″	8585K51	$1.36
3/8″	1/4″	1/16″	8585K11	1.10
1/2″	1/4″	1/8″	8585K52	1.92
1/2″	3/8″	1/16″	8585K12	1.40
5/8″	3/8″	1/8″	8585K53	2.56
5/8″	1/2″	1/16″	8585K41	1.43
Sold in 1-ft. increments; max. length is 8 feet. **To Order:** *Please specify length.*				
3/4″	1/4″	1/4″	8585K54	5.32
3/4″	5/8″	1/16″	8585K13	1.82
7/8″	3/4″	1/16″	8585K61	2.62
1″	3/4″	1/8″	8585K35	4.80
1″	7/8″	1/16″	8585K14	2.42
1 1/8″	1″	1/16″	8585K62	3.33
1 1/4″	1″	1/8″	8585K15	5.81
1 1/4″	1 1/8″	1/16″	8585K63	3.76
1 1/2″	1 1/4″	1/8″	8585K16	6.86
1 1/2″	1 3/8″	1/16″	8585K43	4.05
Sold in 1-ft. increments; max. length is 8 feet. **To Order:** *Please specify length.*				
1 3/4″	1 1/2″	1/8″	8585K17	$8.36
2″	1 3/4″	1/8″	8585K18	9.03
2″	1 7/8″	1/16″	8585K64	5.44
2 1/4″	2″	1/8″	8585K46	10.34
2 1/4″	2 1/8″	1/16″	8585K65	6.04
2 1/2″	2 1/4″	1/8″	8585K19	11.07
2 1/2″	2 3/8″	1/16″	8585K66	6.54
2 3/4″	2 1/2″	1/8″	8585K34	13.00
3″	2 5/8″	3/16″	8585K67	21.26
3″	2 3/4″	1/8″	8585K21	13.69
3″	2 7/8″	1/16″	8585K68	7.79
3 1/8″	3″	1/16″	8585K69	8.16
3 1/2″	3 1/4″	1/8″	8585K33	16.48
4″	3 3/4″	1/8″	8585K22	21.14
5″	4 3/4″	1/8″	8585K45	30.12
6″	5 3/4″	1/8″	8585K23	36.43
8″	7 3/4″	1/8″	8585K48	39.43

90° Angles—Smooth Finish

- Use indoors

Leg length tolerances are ±0.030″. Thickness tolerance is ±0.005″. Length tolerance is +1/2″. Edges are straight.

Outside Leg Lgs.	Wall Thick.	2-ft. Lengths	4-ft. Lengths
1/2″×1/2″	0.050″	1755K11 $1.64	1755K61 $3.03
1″×1″	0.050″	1755K12 3.07	1755K62 5.78
1 1/2″×1 1/2″	0.050″	1755K13 4.63	1755K63 8.84

U-Channels—Smooth Finish

Base tolerance is ±0.015″. Leg length tolerance is ±0.020″. Thickness tolerance is ±0.005″. Edges are straight.

Outside Base×Legs	Wall Thick.	2-ft. Lengths	4-ft. Lengths
0.235″×0.300″	0.050″	1753K11 $1.33	1753K61 $2.50
0.365″×0.345″	0.050″	1753K12 1.77	1753K62 3.28
0.490″×0.400″	0.050″	1753K13 2.03	1753K63 3.78

Black Rods—Rough Finish

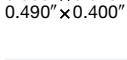

- Color: Opaque black
- Impact Strength: Good
- Use indoors

Made of FDA compliant materials. Sold in 1-ft. increments; maximum length is 5 feet.
To Order: Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/4″	+0.002″	85485K41	$1.79
1/2″	+0.002″	85485K43	3.92
3/4″	+0.002″	85485K45	7.35
1″	+0.002″	85485K47	11.02
1 1/2″	+0.005″	85485K49	22.54
2″	+0.005″	85485K53	38.51
3″	+0.250″	85485K55	86.76

(Material continued on following page)

For information about plastics, see page 3564.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

Impact-Resistant Clear and Colored Polycarbonate *(Material continued from previous page)*

Rods—Rough Finish

- Color: Diameters up to 2″, translucent clear; all others, translucent gray
- Max. Temp.: 240° F; low end not rated
- Impact Strength: Good
- Use Indoors

Meet UL 94HB for flammability and made of FDA compliant materials. Rods greater than 1″ in diameter are stress relieved. Rods 1″ to 6″ long are extruded on the perimeter and saw cut on the flat side.

Dia.	Dia. Tolerance		Per Ft.
Sold in 8-ft. lengths.			
1/8″	+0.002″	8571K11	$0.77
3/16″	+0.002″	8571K42	.91
1/4″	+0.002″	8571K12	1.22
5/16″	+0.002″	8571K44	1.52
3/8″	+0.002″	8571K13	1.92
7/16″	+0.002″	8571K45	2.39
1/2″	+0.002″	8571K14	2.80

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; maximum length is 8 feet. To Order: Please specify length.			
5/8″	+0.002″	8571K31	$4.15
3/4″	+0.002″	8571K15	5.17
1″	+0.002″	8571K16	8.69
1 1/8″	+0.005″	8571K33	11.76
1 1/4″	+0.005″	8571K17	13.93
1 3/8″	+0.005″	8571K35	16.17
1 1/2″	+0.005″	8571K18	17.80
2″	+0.005″	8571K22	35.64

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; maximum length is 4 feet. To Order: Please specify length.			
2 1/4″	+0.030″	8571K37	$42.65
2 1/2″	+0.030″	8571K39	48.81
3″	+0.250″	8571K23	61.29
4″	+0.250″	8571K41	106.70
5″	+0.250″	8571K46	164.88
6″	+0.250″	8571K43	232.45

Dia.	Dia. Tolerance	1″ Long (+1/16″)	Each	2″ Long (+1/16″)	Each	3″ Long (+1/16″)	Each	4″ Long (+1/16″)	Each	6″ Long (+1/16″)	Each
3″	+0.25″	8508K32	$24.95	8508K33	$32.16	8508K34	$39.60	8508K35	$48.03	8508K37	$56.83
4″	+0.25″	8508K42	31.57	8508K43	44.70	8508K44	59.57	8508K45	74.90	8508K47	102.50
6″	+0.25″	8508K52	49.74	8508K53	79.53	8508K54	112.61	8508K55	147.18	8508K51	209.37
8″	+0.25″	—	—	—	—	8508K64	232.72	—	—	8508K67	456.70

Scratch-Resistant Clear and Tinted Polycarbonate

- Color: See below
- Temp. Range: –40° to +200° F
- Softening Temp.: 295° F
- Tensile Strength: Good
- Impact Strength: Excellent
- Poor electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Not rated

Resists abrasion to maintain clarity better than other polycarbonates. Has a clear hard-coat finish on both sides that fights UV degradation and withstands harsh cleaners and solvents.

Clear Sheets—Smooth Finish

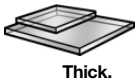

- Color: Clear

Width and length tolerances are ±1/4″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
1/8″	±0.006″	8707K111	$19.24	8707K112	$33.49	8707K114	$58.28	8707K115	$101.33	8707K61	$181.23	8707K71	$317.44
3/16″	±0.009″	8707K121	21.91	8707K122	38.10	8707K124	66.26	8707K125	115.24	8707K62	202.18	8707K72	361.49
1/4″	±0.013″	8707K131	24.69	8707K132	42.93	8707K134	74.68	8707K135	129.89	8707K63	227.91	8707K73	408.07
3/8″	±0.019″	8707K141	37.64	8707K142	67.90	8707K144	118.67	8707K145	206.43	8707K64	362.09	8707K74	646.71
1/2″	±0.025″	8707K151	44.03	8707K152	78.31	8707K154	136.72	8707K155	237.83	8707K65	417.24	8707K75	745.07

Tinted Sheets—Smooth Finish

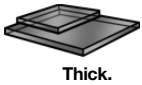

- Color: Translucent bronze or gray

Tint reduces light transmittance to 50% and decreases heat transmittance. Width and length tolerances are ±1/4″. To Order: Please specify tint: bronze or gray.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
1/8″	±0.006″	87005K21	$20.85	87005K22	$36.27	87005K23	$63.05	87005K24	$109.67	87005K25	$192.42	87005K26	$343.60
3/16″	±0.009″	87005K31	25.11	87005K32	43.68	87005K33	75.96	87005K34	132.09	87005K35	231.73	87005K36	413.84
1/4″	±0.013″	87005K41	28.59	87005K42	49.71	87005K43	86.46	87005K44	150.36	87005K45	263.80	87005K46	471.04

Static-Dissipative Clear Polycarbonate

- Color: Clear
- Max. Temp.: 180° F; low end not rated
- Softening Temp.: 310° F
- Tensile Strength: Good
- Impact Strength: Excellent
- Poor electrical insulator
- Use Indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R118

Sheets have high impact strength plus a surface that reduces static electricity. Material does not attract dust and other contaminants.

Sheets—Smooth Finish

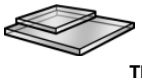

Width and length tolerances are ±1/4″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″	
1/8″	±0.007″	8184K11	$38.34	8184K31	$66.67	8184K51	$115.96	8184K71	$201.69	8184K91	$350.80
3/16″	±0.010″	8184K13	46.08	8184K33	80.17	8184K53	139.39	8184K73	242.47	8184K93	421.68
1/4″	±0.014″	8184K15	53.53	8184K35	93.05	8184K55	161.84	8184K75	281.51	8184K95	489.57
3/8″	±0.019″	8184K17	67.38	8184K37	117.19	8184K57	203.83	8184K77	354.46	8184K97	616.50
1/2″	±0.025″	8184K19	83.45	8184K39	145.15	8184K59	252.46	8184K79	439.04	8184K99	763.58

Bullet-Resistant Clear Polycarbonate

- Color: Clear
- Temp. Range: –40° to +200° F
- Softening Temp.: 295° F
- Tensile Strength: Good
- Impact Strength: Excellent
- Poor electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Not rated

Use this material as security glazing—it helps protect against forced entry. Also good for machine guards, it resists abrasion and UV degradation.

Sheets—Smooth Finish

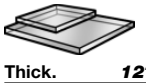

Width and length tolerances are ±1/8″ for sheets up to 24″×24″, and +5/8″ for sheets 24″×48″ and larger. Thickness tolerance is ±0.065″. The ***0.78″ thick sheets*** have an acrylic inner layer and polycarbonate exterior layers, and meet UL 752 Level 1, MPSA 9 mm rating. The ***1.30″ thick sheets*** are four-ply polycarbonate laminates with UL 752 Level 3, SPSA .44 Magnum rating.

Thick.	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
0.78″	84805K31	$128.83	84805K32	$246.40	84805K33	$483.96	84805K34	$565.47	84805K36	$1,094.52	84805K37	$2,088.04
1.30″	84805K51	207.52	84805K52	396.55	84805K53	682.65	84805K54	808.95	84805K56	1,546.53	84805K57	2,997.74

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

High-Strength Glass-Filled Polycarbonate

- Color: Opaque black
- Temp. Range: –40° to +266° F
- Softening Temp.: 329° F
- Tensile Strength: Excellent
- Impact Strength: Good
- Good electrical insulator
- Use indoors
- Machine with carbide tooling
- Hardness: Rockwell M91

Material is 20% glass-filled to provide superior tensile strength for use in structural applications. Meets UL 94HB for flammability.

Sheets—Rough Finish

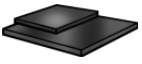

Width and length tolerances are ±1/8″ for 6″ and 12″ sides, +1/2″ for the 24″ side, and +1″ for the 48″ side.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		24″×48″	
3/8″	+0.125″	85645K11	$30.72	85645K22	$111.75	85645K23	$205.97	85645K24	$750.33
1/2″	+0.125″	85645K12	36.93	85645K52	135.31	85645K53	249.81	85645K54	870.64
1″	+0.125″	85645K13	66.72	85645K72	236.11	85645K73	427.52	85645K74	1,574.06
2″	+0.125″	85645K14	126.71	85645K92	463.81	85645K93	837.86	85645K94	3,055.71

Rods—Rough Finish

Sold in 1-ft. increments; maximum length is 5 feet for diameters up to 1″ and 4 feet for diameters 1 1/2″ and larger. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/2″	+0.002″	85665K83	$8.12
3/4″	+0.002″	85665K84	16.42
1″	+0.002″	85665K85	25.49
1 1/2″	+0.005″	85665K92	$53.81
2″	+0.005″	85665K93	85.06
3″	+0.250″	85665K94	186.52

Machinable and Bendable Clear PETG

- Color: Clear
- Temp. Range: –30° to +150° F
- Softening Temp.: 180° F
- Tensile Strength: Good
- Impact Strength: Good
- Not rated as an electrical insulator, unless noted
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R108-R115

You can form this material into complex shapes without sacrificing durability, but it lacks the clarity and impact resistance of polycarbonate. FDA compliant.

Sheets—Smooth Finish

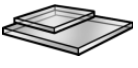

- Good electrical insulator

Meet UL 94HB for flammability. Width and length tolerances are +1/4″ for sheets up to 24″×48″, and +5/8″ for sheets 48″×48″ and larger.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
1/16″	±0.006″	85815K11	$2.70	85815K21	$5.07	85815K32	$8.63	85815K42	$16.18	85815K62	$30.84	85815K82	$53.93
5/64″	±0.008″	85815K12	3.09	85815K22	6.46	85815K33	10.88	85815K43	20.40	85815K63	38.08	85815K83	68.00
3/32″	±0.009″	85815K13	4.24	85815K23	7.63	85815K34	13.07	85815K44	25.95	85815K64	45.16	85815K84	81.66
1/8″	±0.012″	85815K14	5.02	85815K24	9.02	85815K35	15.90	85815K45	30.73	85815K65	53.40	85815K85	96.55
3/16″	±0.018″	85815K15	7.14	85815K25	13.19	85815K36	23.07	85815K46	42.40	85815K66	77.93	85815K86	140.27
1/4″	±0.025″	85815K16	9.53	85815K26	17.26	85815K37	30.81	85815K47	56.42	85815K67	104.01	85815K87	187.20

Rods—Smooth Finish

Dia.	Dia. Tolerance		Per Ft.
Sold in 6-ft. lengths.			
1/8″	±0.005″	8325K13	$0.16
3/16″	±0.007″	8325K15	.32
1/4″	±0.010″	8325K17	.59
5/16″	±0.010″	8325K19	.94
Sold in 6-ft. lengths.			
3/8″	±0.010″	8325K21	$1.36
1/2″	±0.012″	8325K23	2.24
5/8″	±0.015″	8325K25	3.05
Sold in 1-ft. increments; max. length is 6 feet. To Order: Please specify length.			
3/4″	±0.025″	8325K27	$4.06
1″	±0.030″	8325K29	6.85
1 1/4″	±0.035″	8325K31	10.15
1 1/2″	±0.040″	8325K33	13.88

Tubes—Smooth Finish

OD and ID tolerances are ±0.010″ for ODs 1″ and smaller, and ±0.020″ for ODs 1 1/4″ and larger.

OD	ID	Wall Thick.		Per Ft.
Sold in 6-ft. lengths.				
5/16″	3/16″	1/16″	9245K15	$0.63
3/8″	1/4″	1/16″	9245K17	.83
1/2″	1/4″	1/8″	9245K19	1.54
1/2″	3/8″	1/16″	9245K21	1.04
5/8″	3/8″	1/8″	9245K23	1.94
5/8″	1/2″	1/16″	9245K25	1.36
3/4″	1/2″	1/8″	9245K27	2.42
3/4″	5/8″	1/16″	9245K29	1.58
7/8″	5/8″	1/8″	9245K31	2.88
Sold in 6-ft. lengths.				
7/8″	3/4″	1/16″	9245K33	$1.86
1″	3/4″	1/8″	9245K35	3.29
1″	7/8″	1/16″	9245K37	2.12
1 1/4″	1″	1/8″	9245K39	3.94
1 1/4″	1 1/8″	1/16″	9245K41	2.67
1 3/8″	1 1/8″	1/8″	9245K43	4.42
Sold in 1-ft. increments; max. length is 6 feet. To Order: Please specify length.				
1 1/2″	1 1/4″	1/8″	9245K45	6.70
Sold in 1-ft. increments; max. length is 6 feet. To Order: Please specify length.				
1 5/8″	1 3/8″	1/8″	9245K47	$5.29
1 3/4″	1 1/2″	1/8″	9245K49	5.69
2″	1 3/4″	1/8″	9245K51	6.26
2 1/4″	2″	1/8″	9245K53	6.84
2 1/2″	2 1/4″	1/8″	9245K55	7.31
2 3/4″	2 1/2″	1/8″	9245K57	8.10
3″	2 3/4″	1/8″	9245K59	8.87
3 1/4″	3″	1/8″	9245K61	10.17

Optically Clear and Colored Cast Acrylic

- Color: Clear, unless noted
- Temp. Range: *Sheets* and *Cubes*, –20° to +170° F; *Anti-Fog Sheets, Rods* and *Tubes*, 0° to 150° F; *Rectangular Bars* and *Circles*, 176° F, low end not rated
- Softening Temp.: 196° to 239° F, unless noted
- Tensile Strength: Good
- Impact Strength: Poor
- Good electrical insulator, unless noted
- Use indoors and outdoors
- Machine with carbide tooling
- Hardness: Rockwell M90-M103

Offers better optical clarity than molded and extruded acrylic.

Rectangular Bars—Smooth Finish

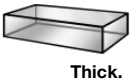

- Not rated as an electrical insulator

Width and length tolerances are ±1/16″. Sold in 4-ft. lengths.

Thick.	Thick. Tolerance	1″ Wide		1 1/2″ Wide		2″ Wide		2 1/2″ Wide		3″ Wide		4″ Wide	
1/8″	+0.013″, –0.037″	1227T11	$3.12	1227T12	$4.39	1227T13	$5.57	1227T14	$6.41	1227T15	$7.53	1227T16	$9.19
1/4″	+0.011″, –0.059″	1227T21	5.48	1227T22	7.58	1227T23	9.23	1227T24	10.89	1227T25	12.67	1227T26	14.68
3/8″	+0.009″, –0.081″	1227T31	7.73	1227T32	10.74	1227T33	13.14	1227T34	15.08	1227T35	17.58	1227T36	20.82
1/2″	+0.002″, –0.098″	1227T41	8.78	1227T42	14.60	1227T43	16.34	1227T44	18.98	1227T45	22.07	1227T46	26.28

(Material continued on following page)

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

Optically Clear and Colored Cast Acrylic *(Material continued from previous page)*

Sheets—Smooth Finish

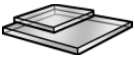

When heated, sheets will uniformly shrink ½-2% in width and 1-2% in length. Width and length tolerances are ±¼″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×36″		24″×24″	
0.060″	+0.015″, −0.019″	8560K171	$4.85	8560K172	$8.72	8560K173	$11.97	8560K174	$14.59
0.080″	+0.014″, −0.020″	8560K181	4.80	8560K182	8.70	8560K183	11.83	8560K184	14.45
0.118″	+0.015″, −0.025″	8560K191	7.04	8560K192	12.64	8560K193	17.25	8560K194	21.13
0.125″	+0.015″, −0.025″	8560K239	9.27	8560K257	16.12	8560K258	23.07	8560K259	29.30
0.177″	+0.017″, −0.033″	8560K211	9.83	8560K219	19.55	8560K213	24.46	8560K214	30.00
0.236″	+0.020″, −0.040″	8560K221	12.64	8560K222	23.06	8560K223	28.70	8560K224	37.51
0.250″	+0.020″, −0.040″	8560K354	15.88	8560K355	27.62	8560K356	39.54	8560K357	49.74
0.354″	+0.025″, −0.055″	8560K591	17.92	8560K593	25.35	8560K594	44.86	8560K603	55.14
0.472″	+0.025″, −0.065″	8560K242	25.35	8560K243	46.07	8560K244	63.31	8560K245	69.23
0.500″	+0.025″, −0.065″	8560K265	29.36	8560K266	51.05	8560K267	73.07	8560K268	92.79
0.708″	+0.030″, −0.080″	8560K361	36.13	8560K362	66.09	8560K363	82.87	8560K364	107.78
0.985″	+0.023″, −0.087″	8560K371	41.94	8560K372	69.92	8560K373	104.88	8560K374	136.32
1.00″	+0.023″, −0.087″	8560K321	52.46	8560K322	91.21	8560K323	130.55	8560K324	165.78
1.25″	+0.052″, −0.094″	8560K381	71.84	8560K382	118.22	8560K383	175.05	8560K384	227.34
1.50″	+0.077″, −0.159″	8560K912	69.33	—	—	—	—	8560K913	247.59
2.00″	+0.108″, −0.202″	8560K914	85.72	—	—	—	—	8560K915	306.16
2.50″	+0.197″, −0.069″	8560K916	138.96	—	—	—	—	8560K917	496.30
3.00″	+0.236″, −0.069″	8560K921	161.36	—	—	—	—	8560K922	576.29
3.50″	+0.354″, −0.118″	8560K923	195.47	—	—	—	—	8560K924	698.11
4.00″	+0.354″, −0.118″	8560K925	263.45	—	—	—	—	8560K926	940.91
		24″×36″		24″×48″		48″×48″		48″×96″	
0.060″	+0.015″, −0.019″	8560K175	$19.72	8560K176	$23.31	8560K177	$42.03	—	—
0.080″	+0.014″, −0.020″	8560K185	19.49	8560K186	23.13	8560K187	41.56	—	—
0.118″	+0.015″, −0.025″	8560K195	28.49	8560K196	33.79	8560K197	60.75	8560K198	$101.29
0.125″	+0.015″, −0.025″	8560K261	41.96	8560K262	53.27	8560K263	96.85	8560K264	172.94
0.177″	+0.017″, −0.033″	8560K215	40.69	8560K216	48.49	8560K217	87.68	8560K218	146.11
0.236″	+0.020″, −0.040″	8560K225	53.02	8560K226	63.86	8560K227	114.70	8560K228	191.20
0.250″	+0.020″, −0.040″	8560K434	71.89	8560K435	91.26	8560K436	165.96	8560K437	286.27
0.354″	+0.025″, −0.055″	8560K604	74.99	8560K605	89.63	8560K611	162.34	8560K614	288.10
0.472″	+0.025″, −0.065″	8560K246	106.01	8560K247	128.53	8560K248	229.38	8560K249	382.30
0.500″	+0.025″, −0.065″	8560K269	132.88	8560K271	168.70	8560K272	306.73	8560K273	547.73
0.708″	+0.030″, −0.080″	8560K365	154.29	8560K366	185.21	8560K367	339.16	8560K368	561.06
0.985″	+0.023″, −0.087″	8560K375	187.30	8560K376	228.07	8560K377	418.17	—	—
1.00″	+0.023″, −0.087″	8560K325	237.42	8560K326	301.42	8560K327	548.04	8560K328	978.64

Fluorescent and Colored Sheets—Smooth Finish

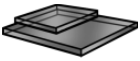

- Color: See below

Width and length tolerances are ±¼″. ***Fluorescent sheets*** are transparent and their edges glow when they capture light.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×48″		24″×24″		24″×36″		36″×48″	
Fluorescent Sheets **To Order:** ***Please specify color: transparent amber, blue, green, or red.***													
0.100″	+0.013″, −0.021″	85635K411	$6.35	85635K441	$11.61	—	—	85635K461	$20.32	85635K471	$27.12	85635K651	$48.76
0.118″	+0.015″, −0.025″	85635K421	7.61	85635K451	13.96	—	—	85635K481	24.35	85635K491	32.53	85635K511	58.50
0.236″	+0.020″, −0.040″	85635K431	12.97	85635K531	19.16	—	—	85635K541	42.62	85635K551	57.49	85635K561	104.56
Colored Sheets **To Order:** ***Please specify color: transparent bronze or gray; opaque black, blue, green, red, white, or yellow.***													
0.118″	+0.015″, −0.025″	8505K11	6.54	8505K12	13.07	8505K13	$25.62	8505K14	25.62	8505K15	31.50	8505K16	70.03
0.177″	+0.017″, −0.033″	8505K81	7.59	8505K82	15.16	8505K83	30.35	8505K84	30.34	8505K85	45.51	8505K86	91.05
0.236″	+0.020″, −0.040″	8505K91	9.14	8505K92	18.25	8505K93	36.51	8505K94	36.51	8505K95	57.38	8505K96	109.51
										48″×48″		48″×96″	
0.118″	+0.015″, −0.025″	—	—	—	—	—	—	—	—	8505K17	$84.00	8505K18	$134.41
0.177″	+0.017″, −0.033″	—	—	—	—	—	—	—	—	8505K87	116.88	8505K88	193.88
0.236″	+0.020″, −0.040″	—	—	—	—	—	—	—	—	8505K97	139.91	8505K98	249.27

Anti-Fog Sheets—Smooth Finish

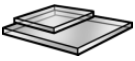

Coating prevents fog from forming on surface. Width and length tolerances are ±1/32″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″	
0.118″	+0.019″, −0.031″	4521T11	$32.19	4521T12	$53.79	4521T13	$93.17	4521T14	$165.35	4521T15	$298.74
0.177″	+0.025″, −0.035″	4521T21	36.97	4521T22	62.66	4521T23	108.67	4521T24	193.67	4521T25	352.84
0.236″	+0.029″, −0.041″	4521T31	42.39	4521T32	72.40	4521T33	125.14	4521T34	222.10	4521T35	437.10
0.354″	+0.031″, −0.059″	4521T41	46.25	4521T42	79.45	4521T43	138.45	4521T44	245.56	4521T45	446.60
0.472″	+0.031″, −0.064″	4521T51	50.34	4521T52	87.19	4521T53	153.48	4521T54	309.68	4521T55	501.78

Circles—Smooth Finish

- Not rated as an electrical insulator

Cut from sheet for a clear, smooth face. Thickness tolerance is −0.026″ for ⅛″ thicknesses, −0.052″ for ¼″ thicknesses, and +0.0192″, −0.0752″ for ½″ thicknesses.

Dia.	Dia. Tolerance	⅛″ Thick		¼″ Thick		½″ Thick	
2″	±0.060″	1221T13	$5.37	1221T23	$6.48	1221T33	$8.37
3″	±0.060″	1221T15	6.05	1221T25	7.38	1221T35	10.00
4″	±0.060″	1221T17	6.86	1221T27	7.74	1221T37	11.31
6″	±0.060″	1221T19	9.31	1221T29	10.03	1221T39	16.85

Cubes—Smooth Finish

Size, sq.	Square Tolerance		
¼″	+0.006″, −0.054″	8680K22	$0.24
½″	−0.093″	8680K24	.33
1″	−0.142″	8680K26	1.26
1½″	+0.039″, −0.121″	8680K27	3.97
2″	+0.058″, −0.152″	8680K28	8.66
3″	±0.300″	8680K29	37.74

(Material continued on following page)

For information about plastics, see page 3564.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

Optically Clear and Colored Cast Acrylic *(Material continued from previous page)*

- Color: Clear, unless noted
- Temp. Range: *Sheets* and *Cubes*, –20° to +170°F; *Anti-Fog Sheets*, *Rods* and *Tubes*, 0° to 150°F; *Rectangular Bars* and *Circles*, 176°F, low end not rated
- Softening Temp.: 196° to 239°F, unless noted
- Tensile Strength: Good
- Impact Strength: Poor
- Good electrical insulator, unless noted
- Use indoors and outdoors
- Machine with carbide tooling
- Hardness: Rockwell M90-M103

Offers better optical clarity than molded and extruded acrylic.

Mil-Spec Sheets—Smooth Finish

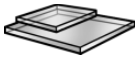

- Softening Temp.: Not rated

Sheets are thermally shrunk and meet MIL-P-5425 and AMS-LP-391. Width and length tolerances are +¼″.

Thick.	Thick. Tolerance	12″×12″	12″×18″	12″×24″	18″×18″	18″×24″
⅛″	±0.030″	8473K276 $52.22	8473K277 $72.53	8473K278 $88.19	8473K317 $100.83	8473K318 $120.81
¼″	±0.035″	8473K285 70.76	8473K341 98.22	8473K342 121.77	8473K347 136.63	8473K348 163.63

Thick.	Thick. Tolerance	18″×36″	24″×24″	24″×36″	24″×48″	36″×48″
⅛″	±0.030″	8473K319 $178.44	8473K333 $148.73	8473K334 $210.89	8473K335 $266.67	8473K284 $396.80
¼″	±0.035″	8473K349 241.71	8473K286 201.38	8473K353 285.60	8473K299 361.16	8473K292 528.03

Round Tubes—Smooth Finish

- Softening Temp.: Not rated

Meet UL 94HB for flammability. Tubes up to 8″ OD are FDA compliant. Length tolerance is ±1″. Wall thickness tolerance is ±15%. **To Order:** Please specify 1-, 3-, or 5-ft. lengths, unless otherwise indicated.

OD	OD Toler.	ID	Wall Thick.		Per Ft.
1½″	±0.020″	1¼″	⅛″	8486K331	$16.86
1½″	±0.020″	1⅛″	3/16″	8486K431	24.18
1½″	±0.020″	1″	¼″	8486K531	27.77
1¾″	±0.020″	1½″	⅛″	8486K335	20.23
1¾″	±0.020″	1⅜″	3/16″	8486K435	27.50
1¾″	±0.020″	1¼″	¼″	8486K931	25.41
2″	±0.020″	1¾″	⅛″	8486K341	20.41
2″	±0.020″	1⅝″	3/16″	8486K441	27.91
2″	±0.020″	1½″	¼″	8486K535	33.31
2¼″	±0.020″	2″	⅛″	8486K345	20.21
2¼″	±0.020″	1⅞″	3/16″	8486K445	28.42
2¼″	±0.020″	1¾″	¼″	8486K541	33.26
2½″	±0.020″	2¼″	⅛″	8486K351	21.84
2½″	±0.020″	2⅛″	3/16″	8486K451	27.93
2½″	±0.020″	2″	¼″	8486K545	34.45
2¾″	±0.020″	2½″	⅛″	8486K355	21.99
2¾″	±0.020″	2⅜″	3/16″	8486K455	29.49
2¾″	±0.020″	2¼″	¼″	8486K551	34.63
3″	±0.020″	2¾″	⅛″	8486K361	21.07
3″	±0.020″	2⅝″	3/16″	8486K461	27.33
3″	±0.020″	2½″	¼″	8486K555	33.55
3¼″	±0.025″	3″	⅛″	8486K365	23.35
3¼″	±0.025″	2⅞″	3/16″	8486K465	27.89
3¼″	±0.025″	2¾″	¼″	8486K561	33.68
3½″	±0.025″	3¼″	⅛″	8486K371	$22.22
3½″	±0.025″	3⅛″	3/16″	8486K471	28.03
3½″	±0.025″	3″	¼″	8486K565	33.68
3¾″	±0.030″	3½″	⅛″	8486K94	21.07
3¾″	±0.030″	3⅜″	3/16″	8486K941	26.80
3¾″	±0.030″	3¼″	¼″	8486K942	31.72
4″	±0.030″	3¾″	⅛″	8486K375	21.19
4″	±0.030″	3⅝″	3/16″	8486K475	28.30
4″	±0.030″	3½″	¼″	8486K571	31.90
4″	±0.030″	3¼″	⅜″	8486K631	86.21
4¼″	±0.030″	4″	⅛″	8486K943	21.58
4¼″	±0.030″	3⅞″	3/16″	8486K944	29.24
4¼″	±0.030″	3¾″	¼″	8486K945	33.01
4¼″	±0.030″	3½″	⅜″	8486K946	89.90
4½″	±0.030″	4¼″	⅛″	8486K381	22.68
4½″	±0.030″	4⅛″	3/16″	8486K481	29.45
4½″	±0.030″	4″	¼″	8486K575	33.27
4½″	±0.030″	3¾″	⅜″	8486K635	97.80
4¾″	±0.030″	4½″	⅛″	8486K947	23.29
4¾″	±0.030″	4⅜″	3/16″	8486K948	30.87
4¾″	±0.030″	4¼″	¼″	8486K949	35.83
4¾″	±0.030″	4″	⅜″	8486K951	91.36
5″	±0.030″	4¾″	⅛″	8486K385	23.35
5″	±0.030″	4⅝″	3/16″	8486K485	29.60
5″	±0.030″	4½″	¼″	8486K581	$36.02
5″	±0.030″	4¼″	⅜″	8486K641	109.51
5¼″	±0.030″	5″	⅛″	8486K952	24.00
5¼″	±0.030″	4⅞″	3/16″	8486K953	31.72
5¼″	±0.030″	4¾″	¼″	8486K954	36.52
5¼″	±0.030″	4½″	⅜″	8486K955	97.51
5½″	±0.030″	5¼″	⅛″	8486K391	27.80
5½″	±0.030″	5″	¼″	8486K585	48.99
5½″	±0.030″	4¾″	⅜″	8486K645	99.74
5¾″	±0.030″	5½″	⅛″	8486K956	34.89
5¾″	±0.030″	5⅜″	3/16″	8486K957	42.53
5¾″	±0.030″	5¼″	¼″	8486K958	48.04
5¾″	±0.030″	5″	⅜″	8486K959	117.05
6″	±0.030″	5¾″	⅛″	8486K395	29.38
6″	±0.030″	5⅝″	3/16″	8486K495	45.16
6″	±0.030″	5½″	¼″	8486K935	51.07
6″	±0.030″	5¼″	⅜″	8486K651	112.60
7″	±0.045″	6¾″	⅛″	8486K731	55.57
7″	±0.045″	6⅝″	3/16″	8486K831	54.77
7″	±0.045″	6½″	¼″	8486K591	62.09
7″	±0.045″	6¼″	⅜″	8486K655	181.08
8″	±0.045″	7¾″	⅛″	8486K735	57.43
8″	±0.045″	7⅝″	3/16″	8486K835	59.16
8″	±0.045″	7½″	¼″	8486K595	74.83
8″	±0.045″	7¼″	⅜″	8486K661	195.52

OD	OD Toler.	ID	Wall Thick.	2-ft. Lengths Each	4-ft. Lengths Each
10″	±0.065″	9¾″	⅛″	84865K311 $131.68	84865K331 $242.93
10″	±0.065″	9½″	¼″	84865K411 257.20	84865K431 479.52
10″	±0.065″	9″	½″	84865K511 597.74	84865K531 1,108.06
10½″	±0.065″	10¼″	⅛″	84865K312 132.71	84865K332 250.14
10½″	±0.065″	10″	¼″	84865K412 $297.52	84865K432 $554.70
12″	±0.065″	11¾″	⅛″	84865K315 191.40	84865K335 338.14
12″	±0.065″	11½″	¼″	84865K415 337.68	84865K435 630.34
14″	±0.080″	13″	½″	84865K516 1,049.88	84865K536 2,099.75

Rods—Smooth Finish

- Softening Temp.: Not rated

Meet UL 94HB for flammability. All except 2″, 4″, and 6″ lengths are FDA compliant. Sold in 1-ft. increments, unless noted. **To Order:** Please specify length where necessary.

Dia.	Dia. Toler.	Max. Lg.		Per Ft.
½″	±0.005″	8 ft.	8528K32	$4.25
⅝″	±0.010″	8 ft.	8528K51	4.36
¾″	±0.010″	8 ft.	8528K33	4.80
⅞″	±0.010″	8 ft.	8528K52	6.65
1″	±0.010″	8 ft.	8528K34	7.84
1¼″	±0.015″	6 ft.	8528K53	9.94
1½″	±0.010″	6 ft.	8528K36	$11.15
1¾″	±0.015″	6 ft.	8528K54	16.29
2″	±0.015″	6 ft.	8528K38	19.29
2½″	±0.030″	6 ft.	8528K41	40.91
3″	±0.030″	6 ft.	8528K43	54.59
3½″	±0.045″	5 ft.	8528K45	135.95
4″	±0.045″	5 ft.	8528K47	$174.41
4½″	±0.045″	5 ft.	8528K55	244.58
5″	±0.045″	5 ft.	8528K49	307.06
5½″	±0.045″	5 ft.	8528K56	341.38
6″	±0.045″	5 ft.	8528K57	414.48

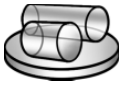

Dia.	Dia. Tolerance	Lg. Tolerance	2″ Long Each	4″ Long Each	6″ Long Each
2″	±0.015″	±0.125″	8581K44 $3.80	8581K62 $6.45	8581K81 $8.96
3″	±0.030″	±0.125″	8581K45 11.14	8581K63 18.54	8581K82 25.93
4″	±0.045″	±0.125″	8581K46 36.66	8581K64 61.10	8581K83 85.55
6″	±0.045″	±0.25″	8581K48 88.57	8581K66 147.54	8581K85 187.88
8″	±0.050″	±0.25″	— —	8581K67 188.10	8581K86 254.53

Fluorescent Rods—Smooth Finish

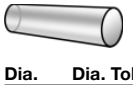

- Color: Translucent amber, blue, green, or red
- Softening Temp.: Not rated

Sold in 1-ft. increments; maximum length is 4 feet. Length tolerance is ±1/16″. **To Order:** Please specify length and color: amber, blue, green, or red.

Dia.	Dia. Tolerance		Per Ft.
½″	±0.02″	84925K11	$12.85
¾″	±0.02″	84925K21	14.63
1″	±0.02″	84925K31	16.08
1½″	±0.03″	84925K41	$24.11
2″	±0.025″	84925K51	47.74
2½″	±0.025″	84925K61	$96.82
3″	±0.025″	84925K71	116.71

For information about plastics, see page 3564.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

Scratch-Resistant Clear Cast Acrylic

- Color: Clear
- Temp. Range: –26° to +176° F
- Softening Temp.: 200° F
- Tensile Strength: Good
- Impact Strength: Poor
- Good electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Rockwell M100

Coated to be 45 times more abrasion resistant than uncoated acrylic. Meets UL 94HB for flammability.

Sheets—Smooth Polished Finish

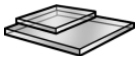

Width and length tolerances are ±1/32″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×96″	
1/8″	+0.02″, –0.03″	8536K131	$16.66	8536K132	$28.96	8536K133	$50.35	8536K32	$87.58	8536K23	$291.89
3/16″	+0.03″, –0.06″	8536K141	20.51	8536K142	35.66	8536K143	61.99	8536K33	107.81	8536K24	359.34
1/4″	+0.025″, –0.045″	8536K161	23.03	8536K162	40.04	8536K163	69.62	8536K35	121.08	8536K26	403.60

Static-Dissipative Clear Cast Acrylic

- Color: Clear
- Max. Temp.: 180° F; low end not rated
- Softening Temp.: 239° F
- Tensile Strength: Good
- Impact Strength: Poor
- Good electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Rockwell M94

A static-dissipative surface provides excellent control of electrostatic discharge and does not attract dust and other contaminants. Meets UL 94HB for flammability.

Sheets—Smooth Polished Finish

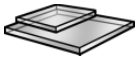

Width and length tolerances are ±1/32″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
1/8″	+0.019″, –0.031″	8774K11	$38.57	8774K12	$67.03	8774K13	$116.61	8774K14	$202.78	8774K15	$352.63	8774K16	$624.12
3/16″	+0.025″, –0.035″	8774K23	45.17	8774K24	78.55	8774K25	136.60	8774K26	237.51	8774K27	413.14	8774K28	731.16
1/4″	+0.029″, –0.041″	8774K32	53.38	8774K33	92.80	8774K34	161.41	8774K35	280.66	8774K36	488.09	8774K37	863.89
3/8″	+0.031″, –0.059″	8774K41	59.27	8774K42	103.12	8774K43	179.34	8774K44	311.86	8774K45	542.34	8774K46	959.89
1/2″	+0.031″, –0.064″	8774K53	73.66	8774K54	128.10	8774K55	222.82	8774K56	387.49	—	—	—	—

UV-Resistant Clear Extruded Acrylic

- Color: Clear
- Temp. Range: 32° to 160° F, unless noted
- Softening Temp.: 191° to 239° F
- Tensile Strength: Good
- Impact Strength: Poor
- Good electrical insulator, unless noted
- Use indoors and outdoors
- Machine with carbide tooling
- Hardness: Rockwell M89-M96, unless noted

Less optically clear than cast acrylic, but has good clarity over time, even when exposed to weather. Material provides a smooth surface for windows and signs.

Rectangular Bars—Smooth Finish

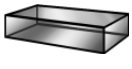

- Temp. Range: 40° to 150° F
- Not rated as an electrical insulator
- Hardness: Not rated

Length tolerance is +1″. Sold in 6-ft. lengths.

Thick.	Wd.	Thick. Tolerance	Wd. Tolerance		
1/8″	1/8″	±0.005″	±0.005″	8728K11	$0.86
1/8″	3/8″	±0.005″	±0.010″	8725K11	1.82
1/8″	1/2″	±0.005″	±0.015″	8725K12	2.52
1/8″	5/8″	±0.005″	±0.015″	8725K13	3.12
3/16″	3/16″	±0.010″	±0.010″	8728K12	1.24
3/16″	1/2″	±0.015″	±0.020″	8725K14	3.57
3/16″	3/4″	±0.015″	±0.025″	8725K15	5.36
3/16″	1″	±0.019″	±0.030″	8725K16	7.02
1/4″	1/4″	±0.010″	±0.010″	8728K13	2.73
1/4″	1/2″	±0.015″	±0.015″	8725K17	4.50
3/8″	3/8″	±0.010″	±0.010″	8728K14	5.88
1/2″	1/2″	±0.015″	±0.015″	8728K15	9.97
3/4″	3/4″	±0.020″	±0.020″	8728K17	21.83
1″	1″	±0.025″	±0.025″	8728K18	36.75

Sheets—Smooth Finish

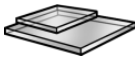

- Not rated as an electrical insulator

Width and length tolerances are ±1/8″. Meets UL 94HB for flammability.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″	
0.060″	±0.006″	8589K11	$4.17	8589K12	$7.87	8589K13	$15.04
0.080″	±0.008″	8589K21	4.31	8589K22	8.15	8589K23	15.51
0.100″	±0.010″	8589K31	4.31	8589K32	8.14	8589K33	15.02
0.118″	±0.006″	8589K41	5.06	8589K42	9.19	8589K43	17.02
0.177″	±0.009″	8589K61	7.19	8589K62	12.62	8589K63	23.35
0.236″	±0.012″	8589K81	9.03	8589K82	16.33	8589K83	30.23
				24″×48″		48″×96″	
0.060″	±0.006″	—	—	8589K14	$28.23	8589K15	$92.57
0.080″	±0.008″	—	—	8589K24	28.17	8589K25	95.83
0.100″	±0.010″	—	—	8589K34	27.24	8589K35	95.69
0.118″	±0.006″	—	—	8589K44	30.99	8589K45	105.68
0.177″	±0.009″	—	—	8589K64	42.50	8589K65	145.05
0.236″	±0.012″	—	—	8589K84	55.76	8589K85	187.74

Mirrored Sheets and Circles—Smooth Finish

- Color: Clear with mirror finish
- Sheets, not rated as an electrical insulator

One face is aluminum coated for a mirror finish. *Sheets* have a width and length tolerance of ±1/16″. *Circles* have a thickness tolerance of ±0.012″ for 0.118″ thicknesses and ±0.024″ for 0.236″ thicknesses. *Plain-back sheets* meet UL 94HB for flammability. *Adhesive-backed sheets* and *circles* have a rubber-based adhesive that has a temperature range of 32° to 150° F.

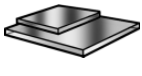

Thick.	Thick. Tolerance	3″×24″		6″×6″		6″×24″		12″×12″		24″×24″		36″×36″	
***Sheets—**Plain Back*													
0.118″	±0.012″	1518T12	$6.65	1518T11	$3.68	1518T13	$11.78	1518T14	$11.78	1518T15	$43.06	1518T16	$84.72
0.236″	±0.024″	1518T19	13.76	1518T18	5.90	1518T21	19.42	1518T22	19.36	1518T23	65.41	1518T24	127.56
***Sheets—**Adhesive Backed*													
0.118″	±0.012″	—	—	1518T51	4.63	—	—	1518T52	14.91	—	—	—	—
0.236″	±0.024″	—	—	1518T53	8.58	—	—	1518T54	21.18	—	—	—	—

Dia.	Dia. Tolerance	PLAIN-BACK CIRCLES 0.118″ Thick		PLAIN-BACK CIRCLES 0.236″ Thick		ADHESIVE-BACKED CIRCLES 0.118″ Thick		ADHESIVE-BACKED CIRCLES 0.236″ Thick	
3″	±0.063″	1516T11	$3.96	1516T15	$4.81	1516T31	$4.25	1516T35	$5.00
6″	±0.063″	1516T12	4.88	1516T16	7.68	1516T32	6.04	1516T36	7.86
9″	±0.063″	1516T13	9.50	1516T17	13.67	1516T33	11.75	1516T37	18.00
12″	±0.063″	1516T14	13.03	1516T18	18.88	1516T34	16.27	1516T38	24.84

(Material continued on following page)

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

UV-Resistant Clear Extruded Acrylic *(Material continued from previous page)*

- Color: Clear
- Temp. Range: 32° to 160° F, unless noted
- Softening Temp.: 191° to 239° F
- Tensile Strength: Good
- Impact Strength: Poor
- Good electrical insulator, unless noted
- Use indoors and outdoors
- Machine with carbide tooling
- Hardness: Rockwell M89-M96, unless noted

Less optically clear than cast acrylic, but has good clarity over time, even when exposed to weather. Material provides a smooth surface for windows and signs.

Textured Sheets—One Side Textured; Other Side Has a Smooth Finish

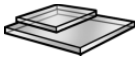

- Not rated as an electrical insulator

Width and length tolerances are ±1/8″. Meet UL 94HB for flammability. *Nonglare-finish sheets* have a matte texture on one side and a smooth finish on the other. *Pebble-finish sheets* are textured on one side with a smooth finish on the other.

Thick.	Thick. Tolerance	NONGLARE FINISH 12″×12″		NONGLARE FINISH 24″×24″		NONGLARE FINISH 48″×96″		PEBBLE FINISH 12″×12″		PEBBLE FINISH 24″×24″		PEBBLE FINISH 48″×96″	
0.118″	±0.012″	1178T11	$7.90	1178T12	$28.14	1178T13	$186.48	1178T14	$8.70	1178T15	$30.86	1178T16	$201.71

Circles—Smooth Finish

Cut from sheet for a clear, smooth face. Thickness tolerance is ±0.006″ for 0.118″ thicknesses and ±0.012″ for 0.236″ thicknesses. Meet UL 94HB for flammability.

Dia.	Dia. Tolerance	0.118″ Thick		0.236″ Thick	
2″	±0.031″	8581K22	$3.11	8581K33	$3.35
3″	±0.031″	8581K23	3.71	8581K34	3.93
4″	±0.031″	8581K24	4.69	8581K35	9.31
6″	±0.031″	8581K26	6.12	8581K37	13.72
7″	±0.031″	—	—	8581K38	19.36
8″	±0.031″	—	—	8581K39	24.20

Rods—Smooth Finish

Length tolerance is +1/2″. Meet UL 94HB for flammability. Sold in 6-ft. lengths.

Dia.	Dia. Tolerance		
1/8″	±0.005″	8531K11	$0.41
3/16″	±0.007″	8531K12	1.20
1/4″	±0.010″	8531K13	1.99
5/16″	±0.010″	8531K14	3.19
3/8″	±0.010″	8531K15	4.03
1/2″	±0.012″	8531K17	6.49
5/8″	±0.015″	8531K19	10.14
3/4″	±0.025″	8531K21	14.50
1″	±0.030″	8531K23	25.16
1 1/4″	±0.035″	8531K25	37.97
1 1/2″	±0.040″	8531K37	52.44
2″	±0.050″	8531K41	111.01

Metric Rods—Smooth Finish

- Hardness: Shore D90

Length tolerance is +20 mm. Meet UL 94HB for flammability. Sold in 2-meter lengths.

Dia.	Dia. Tolerance		
60 mm	+1.80 mm	2182T51	$187.59
70 mm	+2.11 mm	2182T52	254.46
75 mm	+2.26 mm	2182T44	294.78
90 mm	+2.69 mm	2182T54	437.13

Round Tubes—Smooth Finish

Length tolerance is +1/2″. Meet UL 94HB for flammability. Sold in 6-ft. lengths.

OD	ID	OD and ID Tolerance	Wall Thick.		
3/8″	1/4″	±0.010″	1/16″	8532K11	$2.44
1/2″	1/4″	±0.010″	1/8″	8532K12	5.98
1/2″	3/8″	±0.010″	1/16″	8532K13	3.54
5/8″	3/8″	±0.010″	1/8″	8532K14	7.56
3/4″	1/2″	±0.010″	1/8″	8532K15	9.65
3/4″	5/8″	±0.010″	1/16″	8532K16	5.24
7/8″	5/8″	±0.010″	1/8″	8532K17	10.96
1″	3/4″	±0.010″	1/8″	8532K18	12.75
1″	7/8″	±0.010″	1/16″	8532K21	6.45
1 1/4″	1″	±0.015″	1/8″	8532K19	15.57
2″	1 3/4″	±0.015″	1/8″	8532K22	25.00
3″	2 3/4″	±0.020″	1/8″	8532K23	35.76

Square Tubes—Smooth Finish

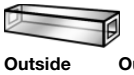

Length tolerance is +1/2″. Meet UL 94HB for flammability. Sold in 6-ft. lengths.

Outside Ht. × Wd.	Outside and Inside Tolerance	Wall Thick.		
1/2″	±0.010″	1/16″	8516K33	$4.72
3/4″	±0.010″	1/16″	8516K35	7.10
1″	±0.015″	1/16″	8516K37	8.58
2″	±0.015″	1/8″	8516K39	36.35

Hex Bar and Half Rounds—Smooth Finish

Length tolerance is +1″. Meet UL 94HB for flammability. Sold in 6-ft. lengths.

Hex Bar

Hex Size	Hex Toler.		
1″	±0.025″	3135T14	$13.82

Half Rounds

OD	OD Toler.		
1/2″	±0.015″	3135T11	$4.73
3/4″	±0.015″	3135T12	8.87
1″	±0.025″	3135T13	14.29

Balls—Smooth Finish

- Maximum Temp.: 180° F; low end not rated
- Grade: 2
- Sphericity: 0.001″

Injection molded for shape. Meet UL 94HB for flammability.

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
1/16″	±0.002″	500	1383K41	$12.28
1/8″	±0.002″	500	1383K42	19.31
5/32″	±0.002″	500	1383K43	21.32
3/16″	±0.002″	250	1383K44	16.91
7/32″	±0.002″	250	1383K51	$27.19
1/4″	±0.002″	250	1383K52	17.85
5/16″	±0.002″	100	1383K53	14.56
3/8″	±0.002″	100	1383K54	17.88
1/2″	±0.002″	50	1383K55	$16.88
5/8″	±0.002″	50	1383K56	19.66
3/4″	±0.002″	25	1383K57	19.34
1″	±0.002″	10	1383K58	19.19

Impact-Resistant UV-Resistant Extruded Acrylic

- Color: Clear
- Temp. Range: −22° to +180° F
- Softening Temp.: 210° to 220° F
- Tensile Strength: Good
- Impact Strength: Poor
- Not rated as an electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Rockwell M68

Modified to be 5 to 6 times stronger than standard extruded acrylic (see page 3571 and above). Meets UL 94HB for flammability.

Sheets—Smooth Finish

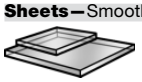

Width and length tolerances are ±1/8″.

Thick.	Thick. Tolerance	12″×12″		24″×24″		48″×96″	
0.118″	±0.012″	4615T11	$5.88	4615T12	$21.43	4615T13	$135.03
0.177″	±0.018″	4615T21	8.62	4615T22	31.56	4615T23	194.76
0.220″	±0.022″	4615T31	10.55	4615T32	38.82	4615T33	241.60
0.354″	±0.035″	4615T41	16.23	4615T42	59.80	4615T43	375.29
0.500″	±0.050″	4615T51	22.70	4615T52	83.92	4615T53	531.83

For information about plastics, see page 3564.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8574KAC**.

Clear Cellulose (Acetate and Butyrate)

- Color: Clear
- Max. Temp.: *Film*, 227°F; *tubes*,170°F; low end temperatures not rated
- Softening Temp.: *Film*, 257°F; *tubes*, 219°F
- Tensile Strength: Good
- Impact Strength: Good
- Poor electrical insulator
- Use indoors
- Cut *film* with utility knife; machine *tubes* with high-speed steel tooling
- Hardness: Rockwell R78-R120

A general purpose plastic with good clarity. *Film* is often used in printing applications and as overlays. *Tubes* are used as packaging.

Film (Acetate)—Smooth Finish

Also known as triacetate. Width and length tolerances are ±1/32″.

Thick.	Thick. Tolerance	42″×50″	Roll	42″×25′	Roll	42″×50′	Roll
0.005″	±0.0005″	8564K44	$12.82	8564K55	$66.82	8564K15	$116.14
0.010″	±0.0010″	8564K46	24.63	8564K57	128.42	8564K28	223.35
0.020″	±0.0020″	8564K48	33.05	8564K59	161.10	8564K42	280.18

Tubes (Butyrate)—Smooth Finish

Length tolerance is +1″. Sold in 6-ft. lengths.

OD	ID	OD/ID Tolerance	Wall Thick.		
1/4″	1/8″	±0.015″	1/16″	8565K31	$2.12
5/16″	3/16″	±0.015″	1/16″	8565K32	2.61
3/8″	1/4″	±0.015″	1/16″	8565K33	3.05
1/2″	1/4″	±0.015″	1/8″	8565K34	6.10
5/8″	3/8″	±0.015″	1/8″	8565K35	$8.14
5/8″	1/2″	±0.015″	1/16″	8565K36	6.60
3/4″	1/2″	±0.015″	1/8″	8565K37	8.42
1″	3/4″	±0.015″	1/8″	8565K38	12.07
1 1/4″	1″	±0.020″	1/8″	8565K39	$14.95
1 1/2″	1 3/8″	±0.020″	1/16″	8565K41	13.20
2″	1 3/4″	±0.025″	1/8″	8565K42	35.93
3 1/2″	3 1/4″	±0.040″	1/8″	8565K5	63.68

About Performance Plastics

Tensile Strength

The amount of stretching a material can withstand before breaking.

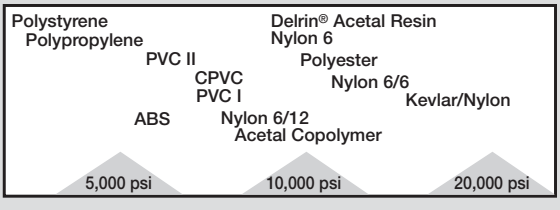

Hardness

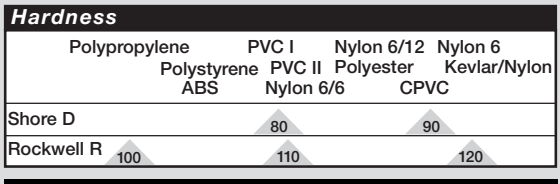

Moisture Resistance

Refers to the material's tendency to resist the absorption of water.

Poor	Good	Excellent
Nylon 6/6, Kevlar-Filled Nylon	Polystyrene, Polypropylene, ABS, Nylon 6, Acetal Copolymer, Polyester	PVC I, PVC II, Nylon 6/12, Delrin® Acetal Resin, CPVC

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8747KAC**.

Chemical-Resistant PVC (Type I)

- Color: Opaque dark gray, unless noted
- Temp. Range: 32° to 140°F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Good, except *film* is poor
- Impact Strength: Poor
- Excellent electrical insulator; *film* not rated
- Use indoors and outdoor, except use *clear* indoors
- Machine with carbide tooling; cut *film* with utility knife
- Hardness: Shore D80-D89; *film* not rated

Good chemical resistance (unless noted) makes PVC (polyvinyl chloride) the most widely used vinyl. All except *film* are used in corrosion-resistant tanks, ducts, and fittings and meet UL 94V0 for flammability.

Rectangular Bars—Smooth Finish

Width tolerance is +0.023″ for 1/8″ to 3/4″ thicknesses and ±0.125″ for 1″ thicknesses and larger. Thickness tolerance is ±10%.

Sold in 1-ft. increments, maximum length is 4 feet, unless noted.
To Order: Please specify length.

Thick.	Wd.		Per Ft.
Sold in 4-ft. lengths.			
1/8″	1″	8740K11	$0.94
1/8″	1 1/2″	8740K19	1.13
1/8″	2″	8740K31	1.50
1/8″	2 1/2″	8740K44	1.88
1/8″	3″	8740K56	2.25
1/8″	4″	8740K68	2.93
1/4″	1″	8740K12	1.68
1/4″	1 1/2″	8740K21	2.31
1/4″	2″	8740K33	3.01
1/4″	2 1/2″	8740K45	3.81
1/4″	3″	8740K57	4.38
1/4″	4″	8740K69	4.50
Sold in 5-ft. lengths.			
3/8″	3/8″	8660K31	1.11
1/2″	1/2″	8660K33	1.33
5/8″	5/8″	8660K44	3.78
3/4″	3/4″	8660K35	2.87
3/8″	1″	8740K13	$2.38
3/8″	1 1/2″	8740K23	3.32
3/8″	2″	8740K34	4.50
3/8″	2 1/2″	8740K46	5.18
3/8″	3″	8740K58	6.29
3/8″	4″	8740K71	8.00
1/2″	1″	8740K14	3.19
1/2″	1 1/2″	8740K24	4.50
1/2″	2″	8740K35	5.53
1/2″	2 1/2″	8740K47	6.88
1/2″	3″	8740K59	8.29
1/2″	4″	8740K73	10.71
3/4″	1″	8740K15	4.00
3/4″	1 1/2″	8740K25	5.85
3/4″	2″	8740K36	7.57
3/4″	2 1/2″	8740K48	$9.34
3/4″	3″	8740K61	11.10
3/4″	4″	8740K74	14.52
1″	1″	8740K16	4.91
1″	1 1/2″	8740K26	7.00
1″	2″	8740K37	9.30
1″	2 1/2″	8740K49	10.92
1″	3″	8740K63	13.57
1″	4″	8740K75	17.64
1 1/4″	1″	8740K17	8.54
1 1/4″	1 1/4″	8660K39■	8.27
1 1/4″	1 1/2″	8740K27	12.25
1 1/4″	2″	8740K38	16.08
1 1/4″	2 1/2″	8740K51	17.04
1 1/4″	3″	8740K64	23.46
1 1/4″	4″	8740K76	30.82
1 1/2″	1 1/2″	8740K28	$18.95
1 1/2″	2″	8740K39	25.25
1 1/2″	2 1/2″	8740K53	24.59
1 1/2″	3″	8740K65	28.20
1 1/2″	4″	8740K77	36.89
1 3/4″	1″	8740K18	12.10
1 3/4″	1 1/2″	8740K29	16.28
1 3/4″	1 3/4″	8660K42■	18.38
1 3/4″	2″	8740K41	25.80
1 3/4″	2 1/2″	8740K54	30.00
1 3/4″	3″	8740K66	35.96
1 3/4″	4″	8740K78	47.00
2″	2″	8740K43	26.07
2″	2 1/2″	8740K55	31.73
2″	3″	8740K67	38.17
2″	4″	8740K79	49.60

■ Maximum length is 5 feet.

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8747KAC**.

Chemical-Resistant PVC (Type I) *(Material continued from previous page)*

- Color: Opaque dark gray, unless noted
- Temp. Range: 40° to 140° F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Good, except *film* is poor
- Impact Strength: Poor
- Excellent electrical insulator; *film* not rated
- Use indoors and outdoors, except use *clear* indoors
- Machine with carbide tooling; cut *film* with utility knife
- Hardness: Shore D80-D89; *film* not rated

Good chemical resistance (unless noted) makes PVC (polyvinyl chloride) the most widely used vinyl. All except *film* are used in corrosion-resistant tanks, ducts, and fittings and meet UL 94V0 for flammability.

Gray Sheets—Smooth Finish

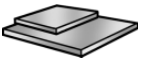

Width and length tolerances are ±1/8″ for 1/16″ to 1″ thick sheets and +1/4″ for 1 1/2″ to 4″ thick sheets.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×36″		24″×24″		24″×36″	
1/16″	±0.006″	8747K111	$2.48	8747K123	$4.25	8747K134	$6.02	8747K145	$7.46	8747K156	$10.69
1/8″	±0.013″	8747K112	4.66	8747K124	7.94	8747K135	11.33	8747K146	13.67	8747K157	19.81
3/16″	±0.019″	8747K113	7.03	8747K125	12.05	8747K136	17.14	8747K147	20.79	8747K158	28.79
1/4″	±0.025″	8747K114	8.97	8747K126	15.38	8747K137	21.19	8747K148	26.49	8747K159	36.02
3/8″	±0.038″	8747K115	13.52	8747K127	23.10	8747K138	32.88	8747K149	39.83	8747K161	57.19
1/2″	±0.050″	8747K116	16.78	8747K128	27.80	8747K139	39.83	8747K151	49.01	8747K162	71.20
3/4″	±0.075″	8747K117	28.93	8747K129	49.46	8747K141	74.19	8747K152	86.83	8747K163	125.09
1″	±0.100″	8747K118	34.09	8747K131	55.71	8747K142	79.54	8747K153	96.05	8747K164	144.82
1 1/2″	+0.300″	8747K119	80.12	8747K132	136.96	8747K143	189.43	8747K154	230.84	8747K165	329.61
2″	+0.400″	8747K121	112.07	8747K133	191.80	8747K144	270.80	8747K155	328.12	8747K166	470.87
3″	+0.600″	8747K401	177.57	8747K402	283.55	8747K403	419.01	8747K404	526.40	8747K405	736.96
4″	+0.800″	8747K409	381.34	8747K411	607.06	8747K412	910.59	8747K413	1,126.30	8747K414	1,798.85

Thick.	Thick. Tolerance	24″×48″		36″×36″		48″×48″		48″×96″	
1/16″	±0.006″	8747K167	$12.93	8747K179	$14.29	8747K191	$23.13	8747K212	$40.57
1/8″	±0.013″	8747K168	24.01	8747K181	25.75	8747K192	41.72	8747K213	73.10
3/16″	±0.019″	8747K169	35.64	8747K182	39.00	8747K193	61.60	8747K214	110.07
1/4″	±0.025″	8747K171	45.34	8747K183	51.39	8747K194	80.98	8747K215	143.35
3/8″	±0.038″	8747K172	67.89	8747K184	77.28	8747K195	121.66	8747K216	215.32
1/2″	±0.050″	8747K173	85.93	8747K185	95.82	8747K196	150.82	8747K217	274.71
3/4″	±0.075″	8747K174	151.64	8747K186	169.93	8747K197	262.32	8747K218	466.59
1″	±0.100″	8747K175	175.58	8747K187	190.59	8747K198	298.46	8747K219	537.77
1 1/2″	+0.300″	8747K176	399.57	8747K188	449.47	8747K199	707.32	8747K221	1,286.03
2″	+0.400″	8747K177	570.81	8747K189	642.10	8747K211	1,010.45	8747K222	1,837.19
3″	+0.600″	8747K406	1,000.16			8747K407	1,789.76		
4″	+0.800″	8747K415	2,124.72						

Clear Sheets—Smooth Finish

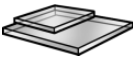

- Color: Clear with a blue tint
- Temp. Range: 32° to 122° F

Width and length tolerances are +1/4″.

Thick.	Thick. Tolerance	12″×24″		24″×24″		24″×36″		24″×48″		48″×48″		48″×96″	
1/16″	±0.006″	87545K121	$8.36	87545K131	$15.20	87545K141	$20.73	87545K151	$25.13	87545K161	$45.69	87545K171	$83.08
1/8″	±0.013″	87545K321	13.15	87545K331	23.90	87545K341	32.60	87545K351	39.52	87545K361	71.86	87545K371	130.67
3/16″	±0.019″	87545K421	21.91	87545K431	39.85	87545K441	54.34	87545K451	65.87	87545K461	119.77	87545K471	217.78
1/4″	±0.025″	87545K521	26.25	87545K531	47.72	87545K541	65.08	87545K551	78.89	87545K561	143.44	87545K571	260.80
3/8″	±0.038″	87545K621	37.77	87545K631	68.68	87545K641	93.65	87545K651	113.51	87545K661	206.39	87545K671	375.27
1/2″	±0.050″	87545K721	41.32	87545K731	75.13	87545K741	102.45	87545K751	124.19				

Clear Film—Smooth Finish

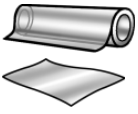

- Color: Clear

Width tolerance is ±1/4″. Length tolerance for rolls is +3%. **To Order:** For sheeting, please specify length.

Rolls

Thick.	Thick. Tol.	Wd.	Roll Lg.	Roll	
0.004″	±0.0002″	36″	25 ft.	8562K11	$17.48
0.004″	±0.0002″	48″	25 ft.	8562K15	24.37
0.004″	±0.0002″	36″	150 ft.	8562K12	90.61
0.004″	±0.0002″	48″	150 ft.	8562K16	120.81
0.005″	±0.0003″	20″	25 ft.	87875K91	11.75
0.008″	±0.0004″	36″	25 ft.	8562K13	29.14
0.008″	±0.0004″	48″	25 ft.	8562K17	38.38
0.008″	±0.0004″	36″	75 ft.	8562K14	79.18
0.008″	±0.0004″	48″	75 ft.	8562K18	105.58

Sheeting

Thick.	Thick. Tol.	Wd.	Max. Lg.		Per Ft.
0.016″	±0.0016″	54″	210 ft.	87875K72	$1.85
0.020″	±0.002″	54″	180 ft.	87875K17	2.35
0.040″	–0.002″	48″	150 ft.	87875K61	4.42
0.060″	–0.003″	48″	150 ft.	87875K62	6.38
0.080″	–0.004″	48″	30 ft.	87875K37★	11.49
0.120″	–0.006″	48″	60 ft.	87875K63	11.41
0.160″	–0.008″	48″	30 ft.	87875K57★	18.42
0.200″	–0.010″	48″	30 ft.	87875K64	18.40

★ Film has blue tint.

Peel-and-stick zipper attaches to film, making an entrance. Zipper is 7-ft. lg. with an adhesive back for easy installation. Temp. range is 45° to 120° F.

84645A58 ..... **Each** $10.41

Antistatic Film—Smooth Finish

- Color: Clear
- Max. Temp.: 110° F; low end not rated

Embedded with a diamond-shaped carbon print to ground static charges. Chemical resistance is not rated. Width tolerance is ±1/2″. Sold in 1-ft. increments; max. length is 300 feet. **To Order:** Please specify length.

Thick.	Thick. Tolerance	Wd.		Per Ft.
0.012″	±0.0005″	54″	8714K57	$7.14

Adhesive-Backed Film—Smooth Finish

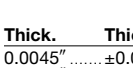

- Color: Opaque white

A popular choice for signs, one side can be marked with a message and the other side has a permanent pressure-sensitive acrylic adhesive. Width and length tolerances are ±1/32″.

Thick.	Thick. Tolerance	Wd.×Lg.		
0.0045″	±0.00045″	27″×20″	8590K21	$1.70
0.0045″	±0.00045″	27″×38″	8590K22	3.17

Static Cling Film—Smooth Finish

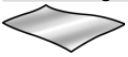

- Color: Clear
- Temp. Range: –10° to +100° F

No adhesive needed; static allows this film to stick and cling to surfaces. Width and length tolerances are ±1/16″.

Thick.	Thick. Tolerance	Sheet Size	Pkg. Qty.		Pkg.
0.007″	±0.0005″	9″×12″	6	7524T15	$5.41
0.007″	±0.0005″	9″×12″	50	7524T16	27.91

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8747KAC**.

Chemical-Resistant PVC (Type I) *(Material continued from previous page)*

Clear and Translucent Low Tack Film—Smooth Finish

- Temp. Range: –10° to +100° F

Film has an acrylic adhesive, yet can be removed without leaving a residue. Width tolerance is ±1/8″. Length tolerance is +6″. *Translucent film* has a dull appearance.

Thick.	Thick. Tolerance	12″×12′		24″×30′	
Clear					
0.002″	±0.0001″	7524T11	$13.30	7524T12	$45.00
Translucent					
0.002″	±0.0001″	7524T13	13.30	7524T14	45.00

Tinted Rods—Smooth Finish

- Clear with a gray-blue tint

Dia.	Dia. Tolerance		Per Ft.
Sold in 5-ft. lengths.			
1/4″	+0.008″	8646K31	$1.06
3/8″	+0.015″	8646K33	1.39
1/2″	+0.015″	8646K35	1.62
5/8″	+0.020″	8646K37	2.37
3/4″	+0.022″	8646K39	3.22
Sold in 1-ft. increments; maximum length is 5 ft.			
To Order: *Please specify length.*			
7/8″	+0.025″	8646K41	4.18
1″	+0.030″	8646K43	5.29

Gray Rods—Smooth Finish

Sold in 1-ft. increments, maximum length is 5 feet, unless noted.
To Order: ***Please specify length.***

Dia.	Dia. Tol.		Per Ft.
Sold in 5-ft. lengths.			
1/4″	+0.008″	8745K41	$0.69
5/16″	+0.009″	8745K32	.78
3/8″	+0.011″	8745K42	.80
1/2″	+0.015″	8745K43	.89
5/8″	+0.019″	8745K44	1.06
3/4″	+0.022″	8745K45	1.36
7/8″	+0.026″	8745K46	1.71
1″	+0.030″	8745K47	2.34
1 1/8″	+0.034″	8745K18	2.82
1 1/4″	+0.038″	8745K19	3.51
1 3/8″	+0.041″	8745K21	4.29
1 1/2″	+0.045″	8745K22	$5.08
1 5/8″	+0.049″	8745K23	6.11
1 3/4″	+0.052″	8745K24	6.79
1 7/8″	+0.056″	8745K25	7.61
2″	+0.060″	8745K26	8.71
2 1/8″	+0.064″	8745K73	9.43
2 1/4″	+0.068″	8745K27	10.55
2 3/8″	+0.071″	8745K29	12.14
2 1/2″	+0.075″	8745K61	13.26
2 5/8″	+0.078″	8745K53	$16.68
2 3/4″	+0.082″	8745K62	15.06
2 7/8″	+0.086″	8745K54	19.18
3″	+0.090″	8745K63	19.20
3 1/4″	+0.097″	8745K64	21.46
3 1/2″	+0.105″	8745K65	24.72
4″	+0.120″	8745K28	29.71
4 1/2″	+0.135″	8745K66	51.86
5″	+0.150″	8745K67	58.51
5 1/4″	+0.157″	8745K38	$69.40
5 1/2″	+0.165″	8745K39	79.14
6″	+0.180″	8745K48	91.44
6 1/2″	+0.195″	8745K72	103.36
7″	+0.210″	8745K55	126.65
8″	+0.320″	8745K49	194.96
10″	+0.345″	8745K71▲	409.36
12″	+0.393″	8745K74▲	662.07

▲Sold in 1-ft. lengths only.

Gray 90° Angles—Smooth Finish

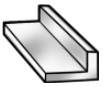

Length tolerance is +1″, –2″. Edges are straight. Sold in 5-ft. lengths.

Outside Leg Lgs.	Leg Lg. Tolerance	Wall Thick.	Wall Thick. Tolerance		
1/2″ × 1/2″	+0.125″	0.080″	±0.008″	8659K37	$5.28
3/4″ × 3/4″	+0.125″	0.080″	±0.008″	8659K58	6.62
1″ × 1″	±0.125″	1/8″	±0.063″	8659K39	7.54
1 1/4″ × 1 1/4″	+0.040″	1/8″	±0.013″	8659K53	9.00
1 1/4″ × 1 1/4″	±0.125″	3/16″	±0.063″	8659K41	11.48
1 1/4″ × 1 1/4″	+0.040″	1/4″	±0.025″	8659K64	15.95
1 1/2″ × 3/4″	±0.125″	0.080″	±0.008″	8659K43	9.72
1 1/2″ × 3/4″	±0.125″	0.157″	±0.016″	8659K63	11.39
1 1/2″ × 1 1/2″	+0.050″	1/8″	±0.013″	8659K54	11.57
1 1/2″ × 1 1/2″	+0.050″	3/16″	±0.019″	8659K48	$12.73
1 1/2″ × 1 1/2″	+0.050″	1/4″	±0.063″	8659K47	18.08
2″ × 2″	±0.125″	0.080″	±0.008″	8659K61	14.85
2″ × 2″	+0.060″	1/8″	±0.013″	8659K55	15.32
2″ × 2″	+0.060″	3/16″	±0.019″	8659K49	17.52
2″ × 2″	+0.060″	1/4″	±0.063″	8659K51	22.83
2 3/8″ × 2 3/8″	±0.125″	0.275″	±0.028″	8659K56	54.34
3″ × 3/4″	±0.125″	1/8″	±0.013″	8659K62	19.35
3 1/2″ × 3 1/2″	±0.125″	0.275″	±0.027″	8659K52	73.01

Clear 90° Angles—Smooth Finish

Length tolerance is ±1″. Edges are straight. Sold in 5-ft. lengths.

Outside Leg Lgs.	Leg Lg. Tolerance	Wall Thick.	Wall Thick. Tolerance		
1″ × 1″	±0.125″	1/8″	±0.063″	2579T53	$12.12
1 1/4″ × 1 1/4″	±0.125″	3/16″	±0.063″	2579T54	15.02
1 1/2″ × 1 1/2″	±0.125″	3/16″	±0.063″	2579T55	17.73
1 1/2″ × 1 1/2″	±0.125″	1/4″	±0.063″	2579T56	22.77
2″ × 2″	±0.125″	1/4″	±0.063″	2579T57	29.61

Gray U-Channels—Smooth Finish

Base and leg tolerances are ±10%. Length tolerance is –2″. Edges are straight. Sold in 5-ft. lengths.

Outside Base × Legs	Wall Thick.	Wall Thick. Tolerance		
0.510″ × 0.590″	0.060″	±0.0060″	85065K33	$6.48
0.944″ × 0.787″	0.066″	±0.0066″	85065K36	9.51
0.944″ × 1.570″	0.080″	±0.0080″	85065K37	15.59
1.140″ × 1.650″	0.080″	±0.0080″	85065K46	18.53
1.870″ × 0.787″	0.137″	±0.0137″	85065K49	22.80
2.510″ × 1.456″	0.080″	±0.0080″	85065K55	21.36
3.540″ × 0.787″	0.100″	±0.0100″	85065K56	24.18

Gray Round Tubes—Smooth Finish

OD is oversized and ID is undersized for finishing to sizes listed. Sold in 1-ft. increments; maximum length is 5 feet. ***To Order:*** Please specify length.

OD	ID	Wall Thick.		Per Ft.
1 5/8″	9/16″	17/32″	8749K11	$10.16
2″	1 1/4″	3/8″	8749K44	10.74
2 1/8″	3/4″	11/16″	8749K42	16.61
2 1/4″	1 1/8″	9/16″	8749K17	16.48
2 1/4″	1 1/2″	3/8″	8749K45	12.12
2 3/8″	1″	11/16″	8749K14	19.72
2 1/2″	1″	3/4″	8749K46	22.50
2 1/2″	1 1/2″	1/2″	8749K22	17.96
2 5/8″	1 1/2″	9/16″	8749K23	20.18
2 3/4″	1″	7/8″	8749K47	27.12
3″	1″	1″	8749K48	30.51
3″	1 1/4″	7/8″	8749K18	30.17
3″	1 1/2″	3/4″	8749K52	$27.09
3″	2″	1/2″	8749K28	22.37
3 1/4″	1 1/4″	1″	8749K59	34.58
3 9/16″	1 1/2″	1 13/32″	8749K26	40.69
4″	2 1/2″	3/4″	8749K54	39.65
4″	3″	1/2″	8749K25	29.59
4 1/2″	2″	1 1/4″	8749K29	62.18
5″	3″	1″	8749K33	68.09
5 9/16″	4″	25/32″	8749K55	65.95
6″	4″	1″	8749K56	92.23
6 5/8″	4″	1 5/16″	8749K57	119.39
8 5/8″	5 3/4″	1 7/16″	8749K58	176.27

Gray Rectangular Tubes—Smooth Finish

Inside and outside tolerances are ±10%. Length tolerance is ±1″. Corners are slightly rounded. Sold in 5-ft. lengths.

Outside Ht. × Wd.	Wall Thick.		
3/4″ × 3/4″	0.060″	85095K67	$9.35
7/8″ × 7/8″	0.118″	85095K71	18.08
1″ × 1″	0.078″	85095K74	13.20
1″ × 2″	0.078″	85095K91	20.02
1 3/8″ × 1 3/8″	0.078″	85095K76	21.71
1 3/8″ × 2 3/4″	0.098″	85095K92	31.61
1 3/8″ × 3.346″	0.098″	85095K93	34.24
2″ × 2″	0.078″	85095K82	24.19
2″ × 4″	0.098″	85095K95	51.08
2.283″ × 3 3/8″	0.098″	85095K94	43.52
3″ × 3″	0.078″	85095K84	44.93

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8747KAC**.

Impact-Resistant PVC (Type II)

- Color: Opaque light gray
- Temp. Range: –40° to +140° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Excellent
- Excellent electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R111

Boasting the same chemical resistance of PVC (Type I), but with increased impact strength for parts subject to harder use. Meets UL 94V0 for flammability.

Rods—Smooth Finish

Sold in 1-ft. increments, maximum length is 5 feet.
To Order: ***Please specify length.***

Dia.	Dia. Tolerance		Per Ft.
Sold in 5-ft. lengths.			
1/4″	+0.008″	87025K27	$3.23
3/8″	+0.011″	87025K29	1.35
1/2″	+0.015″	87025K31	1.68
5/8″	+0.019″	87025K33	4.95
3/4″	+0.022″	87025K35	3.12
7/8″	+0.026″	87025K37	4.11
1″	+0.030″	87025K39	$5.25
1 1/8″	+0.034″	87025K41	9.25
1 1/4″	+0.038″	87025K43	6.88
1 3/8″	+0.041″	87025K45	8.43
1 1/2″	+0.045″	87025K47	9.34
1 5/8″	+0.049″	87025K49	10.94
1 3/4″	+0.052″	87025K51	12.10
1 7/8″	+0.056″	87025K56	18.02
2″	+0.060″	87025K55	14.28
2 1/4″	+0.068″	87025K57	17.23
2 3/8″	+0.071″	87025K59	$25.73
2 1/2″	+0.075″	87025K61	21.10
2 3/4″	+0.082″	87025K62	27.32
3″	+0.090″	87025K63	29.88
3 1/4″	+0.097″	87025K74	35.29
3 1/2″	+0.105″	87025K65	39.16
4″	+0.120″	87025K67	48.02
4 1/2″	+0.135″	87025K69	76.65
5″	+0.150″	87025K71	88.02
6″	+0.180″	87025K73	132.68

High-Temperature CPVC

- Color: Opaque gray, unless noted
- Temp. Range: 32° to 200° F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Good
- Excellent electrical insulator
- Use indoors and outdoors, unless noted
- Machine with carbide tooling
- Hardness: Rockwell R116-R119

This chlorinated version of PVC has better heat resistance than PVC (Type I). It is commonly used in chemical processing and metal finishing applications.

Rectangular Bars—Smooth Finish

- Temp. Range: 0° to 180° F

Meet UL 94V0, 5VA, and 5VB for flammability. Width tolerance is ±1/8″. Sold in 1-ft. increments; maximum length is 4 feet. ***To Order:*** Please specify length.

Thick.	Thick. Tolerance	*1″ Wide*	Per Ft.	*1 1/2″ Wide*	Per Ft.	*2″ Wide*	Per Ft.	*2 1/2″ Wide*	Per Ft.	*3″ Wide*	Per Ft.	*4″ Wide*	Per Ft.
1/8″	±0.012″	8788K11	$1.65	8788K18	$2.26	8788K28	$2.92	8788K39	$3.33	8788K51	$4.00	8788K63	$5.30
1/4″	±0.025″	8788K12	2.96	8788K19	4.14	8788K29	5.43	8788K41	6.00	8788K53	7.21	8788K64	9.63
3/8″	±0.037″	8788K13	4.36	8788K21	6.07	8788K31	7.93	8788K43	9.05	8788K54	10.83	8788K65	14.22
1/2″	±0.050″	8788K14	5.83	8788K23	8.09	8788K33	10.30	8788K44	11.39	8788K55	13.66	8788K66	17.99
3/4″	±0.075″	8788K15	8.41	8788K24	12.32	8788K34	15.88	8788K45	17.70	8788K56	21.26	8788K67	28.04
1″	±0.100″	8788K16	11.22	8788K25	16.44	8788K35	20.05	8788K46	23.37	8788K57	28.07	8788K68	37.03
1 1/4″	±0.125″	8788K17	14.73	8788K26	21.37	8788K36	28.21	8788K47	29.78	8788K58	36.42	8788K69	48.09
1 1/2″	±0.150″	———	———	8788K27	25.67	8788K37	32.32	8788K48	36.04	8788K59	43.14	8788K71	57.41
2″	±0.200″	———	———	———	———	8788K38	43.03	8788K49	47.87	8788K61	57.54	8788K73	76.54

Sheets—Smooth Finish

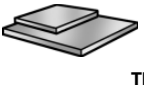

- Color: Opaque gray
- Use indoors

Meet UL 94V0 for flammability. Width and length tolerances are +1/4″.

Thick.	Thick. Tolerance	*12″×12″*		*12″×24″*		*12″×36″*		*24″×24″*		*24″×48″*	
1/32″	±0.003″	8748K21	$6.16	8748K23	$11.25	8748K25	$15.97	8748K27	$20.21	8748K31	$37.52
1/16″	±0.006″	8748K22	8.84	8748K24	16.17	8748K26	22.95	8748K28	29.03	8748K32	53.93
1/8″	±0.013″	8748K111	16.98	8748K112	29.59	8748K113	41.66	8748K114	51.42	8748K116	89.47
1/4″	±0.025″	8748K131	30.21	8748K132	52.60	8748K133	74.74	8748K134	92.24	8748K136	161.83
1/2″	±0.050″	8748K151	54.77	8748K152	95.20	8748K153	136.54	8748K154	168.54	8748K156	298.35
1″	±0.100″	8748K171	100.74	8748K172	176.74	8748K173	255.68	8748K174	315.70	8748K176	563.70

Tubes—Smooth Finish

OD is oversized and ID is undersized for finishing to sizes listed. Meet UL 94V0 for flammability. Sold in 1-ft. increments; maximum length is 5 feet. ***To Order:*** Please specify length.

OD	ID	Wall Thick.		Per Ft.
1 5/8″	9/16″	17/32″	2441T11	$21.90
2 1/8″	3/4″	11/16″	2441T12	36.54
2 1/4″	1 1/8″	9/16″	2441T13	36.83
2 3/8″	1″	11/16″	2441T14	41.79
2 5/8″	1 1/2″	9/16″	2441T15	43.85
2 3/4″	1″	7/8″	2441T16	55.39
2 7/8″	1 1/2″	11/16″	2441T17	53.02
3″	1 1/4″	7/8″	2441T18	63.25
3 9/16″	1 1/2″	11/32″	2441T21	84.74
4″	2 1/2″	3/4″	2441T22	83.30
4 1/4″	1 3/4″	1 1/4″	2441T23	116.13
4 3/4″	3″	7/8″	2441T24	110.16
5″	3″	1″	2441T25	128.05
6 5/8″	2 7/8″	1 7/8″	2441T26	262.52
6 5/8″	4″	1 5/16″	2441T27	217.09

Rods—Smooth Finish

- Use indoors

Meet UL 94V0 for flammability. Sold in 1-ft. increments; maximum length is 5 feet, unless noted. ***To Order:*** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/4″	+0.008″	87135K87	$1.14
3/8″	+0.011″	87135K88	1.76
1/2″	+0.015″	87135K32	1.97
5/8″	+0.019″	87135K34	2.67
3/4″	+0.022″	87135K36	3.60
7/8″	+0.026″	87135K38	4.61
1″	+0.030″	87135K42	5.83
1 1/8″	+0.034″	87135K44	7.35
1 1/4″	+0.038″	87135K46	8.25
1 3/8″	+0.041″	87135K48	10.33
1 1/2″	+0.045″	87135K52	12.85
1 5/8″	+0.049″	87135K54	17.85
1 3/4″	+0.052″	87135K56	16.70
1 7/8″	+0.056″	87135K58	19.26
2″	+0.060″	87135K62	$21.91
2 1/4″	+0.068″	87135K64	28.27
2 3/8″	+0.071″	87135K66	44.10
2 1/2″	+0.075″	87135K68	51.66
2 3/4″	+0.082″	87135K72	59.54
3″	+0.090″	87135K74	71.21
3 1/4″	+0.097″	87135K76	82.00
3 1/2″	+0.105″	87135K78	112.61
4″	+0.120″	87135K82	143.30
4 1/2″	+0.135″	87135K84	181.72
5″	+0.150″	87135K86★	227.50
5 1/2″	+0.165″	87135K89★	354.55
6″	+0.180″	87135K91★	359.29

★ Max. length is 4 feet.

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8747KAC**.

Lightweight Rigid PVC Foam

- Color: Opaque black or white
- Temp. Range: 14° to 131° F
- Softening Temp.: 167° F
- Tensile Strength: Poor
- Impact Strength: Poor
- Poor electrical insulator
- *Black*, use indoors; *white*, use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Shore D79-D85

Ideal for signs, this weather-resistant material readily accepts paint, screen printing, and photo mounting. *White sheets* meet UL 94V0 for flammability.

Sheets—Smooth Finish

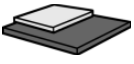

Width and length tolerances are +1/4″. **To Order:** Please specify color: black or white.

Thick.	Thick. Tolerance	24″×24″		24″×36″		24″×48″		48″×48″		48″×96″	
0.118″	±0.006″	84775K12	$14.53	84775K72	$20.09	84775K82	$25.26	84775K92	$45.59	84775K101	$75.52
0.236″	±0.012″	84775K14	25.97	84775K74	35.92	84775K84	45.17	84775K94	78.53	84775K102	142.14
0.394″	±0.020″	84775K22	38.58	84775K76	52.87	84775K86	66.50	84775K96	115.67	84775K103	205.54
0.512″	±0.026″	84775K24	52.33	84775K77	72.33	84775K87	89.40	84775K97	155.51	84775K104	248.14
0.748″	±0.037″	84775K68	69.22	84775K78	95.70	84775K88	120.37	84775K98	214.16	84775K105	323.64
0.984″	±0.049″	84775K69	87.05	84775K79	125.14	84775K89	151.39	84775K99	252.55	84775K106	451.89

Easy-to-Form Chemical-Resistant Acrylic/PVC

- Color: Opaque black, gray, or white
- Temp. Range: –40° to +150° F
- Softening Temp.: 250° to 300° F
- Tensile Strength: Good
- Impact Strength: Excellent
- Not rated as an electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R94

Also known as Kydex T, this material is perfect for thermoforming. It provides a high-quality surface finish, sharp edges, and excellent mold reproduction. It's also very resistant to chemicals.

Sheets—One Side Textured; Other Side has a Smooth Finish

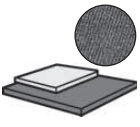

Meet UL 94V0 for flammability. Width and length tolerances are ±1/8″. **To Order:** Please specify color: black, gray, or white.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×48″		48″×48″		48″×96″	
1/8″	±0.009″	8650K11	$9.40	8650K12	$17.17	8650K13	$63.16	8650K14	$115.54	8650K15	$211.73
3/16″	±0.013″	8650K21	13.95	8650K22	25.53	8650K23	94.16	8650K24	171.06	8650K25	312.22
1/4″	±0.018″	8650K31	17.50	8650K32	32.18	8650K33	119.24	8650K34	216.56	8650K35	401.11

Impact-Resistant Polystyrene

- Color: Translucent to opaque white
- Temp. Range: *Sheets*, 40° to 148° F; *rods*, –10° to +172° F
- Softening Temp.: 210° to 221° F
- Tensile Strength: Poor
- Impact Strength: Good
- *Sheets*, not rated as an electrical insulator; *rods*, excellent
- Use indoors
- Machine with high-speed steel tooling
- Hardness: *Sheets*, not rated; *rods*, Rockwell R100-R110

This easy-to-machine, low cost plastic has a good balance between stiffness and strength. Used in dairy containers, lids, and refrigerator interiors. All except 1/32″ thick sheet meet UL 94HB.

Sheets—Smooth Finish

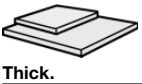

Width and length tolerances are +3/32″. Sold in 40″×72″ sheets.

Thick.	Thick. Tolerance		
1/32″	±0.002″	8734K29	$18.07
1/16″	±0.003″	8734K22	31.93
0.080″	±0.003″	8734K23	36.51
3/32″	±0.009″	8734K24	40.74
1/8″	±0.013″	8734K25	56.20
5/32″	±0.016″	8734K26	63.64
3/16″	±0.019″	8734K27	90.83
1/4″	±0.025″	8734K28	107.66

Rods—Smooth Finish

Dia.	Dia. Tolerance		Per Ft.
Sold in 8-ft. lengths.			
1/4″	+0.015″	8720K32	$0.73
3/8″	+0.015″	8720K33	1.57
1/2″	+0.015″	8720K34	2.39
Sold in 1-ft. increments; max. length is 8 feet. To Order: Please specify length.			
5/8″	+0.015″	8720K35	3.04
3/4″	+0.015″	8720K36	4.37
1″	+0.015″	8720K37	7.71
1 1/2″	+0.015″	8720K38	17.53
2″	+0.015″	8720K39	30.08

Easy-to-Machine Chemical-Resistant Polypropylene

- Color: Translucent white, unless noted
- Temp. Range: 0° to 180° F, unless noted
- Softening Temp.: 300° to 350° F, unless noted
- Tensile Strength: Poor
- Impact Strength: Good, unless noted
- Excellent electrical insulator, unless noted
- Use indoors, unless noted
- Machine with high-speed steel tooling, unless noted
- Hardness: Rockwell R79-R115, unless noted

This material has a hard, smooth surface that resists many chemicals. It is one of the most commonly used plastics due to its low cost. Translucent white is also known as natural polypropylene.

Rectangular Bars—Smooth Finish

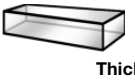

- Max. Temp.: 225° F; low end not rated
- Softening Temp.: Not rated

Meet UL 94HB for flammability. FDA compliant. Width tolerance is +1/8″.

Thick.	Thick. Tolerance	1″ Wide	Per Ft.	1 1/2″ Wide	Per Ft.	2″ Wide	Per Ft.	2 1/2″ Wide	Per Ft.	3″ Wide	Per Ft.	4″ Wide	Per Ft.
Sold in 4-ft. lengths.													
1/8″	±0.013″	8782K11	0.37	8782K19	0.50	8782K31	0.66	8782K44	0.75	8782K56	0.80	8782K68	0.89
1/4″	±0.025″	8782K12	.71	8782K21	.94	8782K33	1.21	8782K45	1.45	8782K57	1.53	8782K69	1.92
3/8″	±0.038″	8782K13	.97	8782K23	1.34	8782K34	1.75	8782K46	2.07	8782K58	2.15	8782K71	2.82
1/2″	±0.050″	8782K14	1.24	8782K24	1.76	8782K35	2.30	8782K47	2.69	8782K59	2.89	8782K73	3.62
3/4″	±0.075″	8782K15	1.82	8782K25	2.59	8782K36	3.32	8782K48	3.95	8782K61	4.25	8782K74	5.20
Sold in 1-ft. increments; maximum length is 4 feet. To Order: Please specify length.													
1″	±0.100″	8782K16	1.60	8782K26	3.32	8782K37	4.30	8782K49	5.09	8782K63	5.38	8782K75	6.85
1 1/4″	±0.125″	8782K17	4.02	8782K27	4.48	8782K38	7.48	8782K51	7.63	8782K64	7.33	8782K76	11.91
1 1/2″	±0.150″	____	____	8782K28	6.24	8782K39	8.80	8782K53	9.87	8782K65	10.25	8782K77	14.07
1 3/4″	±0.175″	8782K18	5.11	8782K29	7.93	8782K41	9.45	8782K54	11.61	8782K66	12.35	8782K78	15.41
2″	±0.200″	____	____	____	____	8782K43	11.02	8782K55	13.61	8782K67	14.37	8782K79	17.98

(Material continued on following page)

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8747KAC**.

Easy-to-Machine Chemical-Resistant Polypropylene *(Material continued from previous page)*

- Color: Translucent white, unless noted
- Temp. Range: 0° to 180° F, unless noted
- Softening Temp.: 300° to 350° F, unless noted
- Tensile Strength: Poor
- Impact Strength: Good, unless noted
- Excellent electrical insulator, unless noted
- Use indoors, unless noted
- Machine with high-speed steel tooling, unless noted
- Hardness: Rockwell R79-R115, unless noted

This material has a hard, smooth surface that resists many chemicals. It is one of the most commonly used plastics due to its low cost. Translucent white is also known as natural polypropylene.

Sheets—Smooth Finish

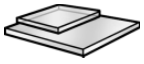

- Color: Translucent or opaque white
- Not rated as an electrical insulator

These stress-relieved sheets are FDA and USDA compliant and meet UL 94HB for flammability. Width and length tolerances are +1″ for *translucent* and ±1/8″ for *opaque*.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		12″×36″		24″×24″	
Translucent White											
1/16″	±0.006″			8742K131	$2.69	8742K231	$4.37	8742K331	$5.96	8742K431	$7.15
3/32″	±0.009″			8742K132	3.79	8742K232	6.42	8742K332	9.33	8742K432	11.67
1/8″	±0.013″			8742K133	4.26	8742K233	7.21	8742K333	10.49	8742K433	13.11
3/16″	±0.019″			8742K134	6.40	8742K234	10.83	8742K334	15.76	8742K434	19.70
1/4″	±0.025″			8742K135	8.53	8742K235	13.77	8742K335	20.99	8742K435	26.23
3/8″	±0.038″			8742K136	11.81	8742K236	20.68	8742K336	31.51	8742K436	39.38
1/2″	±0.050″			8742K137	15.40	8742K237	28.23	8742K337	41.07	8742K437	44.92
3/4″	±0.075″			8742K139	21.50	8742K239	39.41	8742K339	51.95	8742K439	62.70
1″	±0.100″			8742K141	31.09	8742K241	47.83	8742K341	64.57	8742K441	83.70
1 1/2″	±0.150″	8742K96	$14.62	8742K142	58.50	8742K242	97.50	8742K342	126.75	8742K442	160.88
2″	±0.200″	8742K97	21.30	8742K143	81.65	8742K243	134.90	8742K343	191.69	8742K443	234.29
3″	±0.300″	8742K98	42.04	8742K145	151.83	8742K245	257.34	8742K345	353.76	8742K445	411.35
				24″×36″		***24″×48″***		***48″×48″***		***48″×96″***	
1/16″	±0.006″			8742K531	$10.33	8742K631	$11.92	8742K831	$21.45	8742K931	$39.73
3/32″	±0.009″			8742K532	16.04	8742K632	20.42	8742K832	33.25	8742K932	58.33
1/8″	±0.013″			8742K533	18.03	8742K633	20.98	8742K833	37.37	8742K933	65.56
3/16″	±0.019″			8742K534	25.61	8742K634	31.52	8742K834	53.18	8742K934	98.49
1/4″	±0.025″			8742K535	34.10	8742K635	41.97	8742K835	70.83	8742K935	131.16
3/8″	±0.038″			8742K536	51.20	8742K636	59.07	8742K836	106.33	8742K936	196.91
1/2″	±0.050″			8742K537	61.60	8742K637	77.00	8742K837	138.60	8742K937	256.67
3/4″	±0.075″			8742K539	85.98	8742K639	107.48	8742K839	193.46	8742K939	358.26
1″	±0.100″			8742K541	112.40	8742K641	143.49	8742K841	258.29	8742K941	478.31
1 1/2″	±0.150″			8742K542	234.00	8742K642	263.25	8742K842	487.50		
2″	±0.200″			8742K543	326.59	8742K643	383.39	8742K843	709.98		
Opaque White				***12″×12″***		***12″×24″***		***24″×24″***		***24″×48″***	
1/8″	±0.006″			2898K11	$4.19	2898K14	$8.18	2898K17	$15.51	2898K21	$19.89
3/16″	±0.009″			2898K12	6.16	2898K15	11.94	2898K18	22.71	2898K22	27.60
1/4″	±0.013″			2898K13	7.19	2898K16	14.11	2898K19	26.62	2898K23	36.42

Black Tubes—Smooth Finish

- Color: Opaque black
- Temp. Range: Not rated
- Softening Temp.: Not rated
- Not rated as an electrical insulator

OD tolerance is +0.040″; ID tolerance is –0.040″.

OD	ID	Wall Thick.		Per Ft.
Sold in 5-ft. lengths.				
1/4″	1/8″	1/16″	1859T11	$0.83
1/2″	1/4″	1/8″	1859T12	2.33
Sold in 1-ft. increments; maximum length is 5 feet. To Order: Please specify length.				
3/4″	1/4″	1/4″	1859T16	4.63
1″	1/2″	1/4″	1859T17	6.93
1 1/4″	3/4″	1/4″	1859T18	8.53
1 1/2″	1″	1/4″	1859T22	9.57
2″	1 1/2″	1/4″	1859T23	13.06

Rods—Smooth Finish

- Color: Opaque white
- Temp. Range: 41° to 210° F
- Softening Temp.: Not rated
- Machine with carbide tooling

Meet UL 94HB for flammability. Rods 2 1/4″ in diameter and larger are stress relieved.

Dia.	Dia. Tolerance		Per Ft.
Sold in 8-ft. lengths.			
1/4″	+0.010″	8658K51	$0.84
3/8″	+0.015″	8658K52	0.99
1/2″	+0.020″	8658K53	1.26
3/4″	+0.030″	8658K54	2.32
Sold in 1-ft. increments; max. length is 8 feet. To Order: Please specify lg.			
1″	+0.040″	8658K55	3.54
1 1/4″	+0.050″	8658K56	5.42
1 1/2″	+0.060″	8658K57	7.76
1 3/4″	+0.070″	8658K58	10.71
2″	+0.080″	8658K59	12.12

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; max. length is 4 feet. To Order: Please specify lg.			
2 1/4″	+0.090″	8658K61	$15.02
2 1/2″	+0.100″	8658K62	17.43
3″	+0.120″	8658K63	22.96
3 1/2″	+0.140″	8658K64	29.40
4″	+0.160″	8658K65	38.77
5″	+0.200″	8658K66	57.02
6″	+0.240″	8658K67	83.21

Solid Balls—Smooth Finish

- Temp. Range: 32° to 205° F
- Grade: 2
- Sphericity: 0.001″
- Not rated as an electrical insulator
- Not rated for machinability

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
1/8″	±0.002″	500	1974K2	$6.90
5/32″	±0.002″	500	1974K4	7.83
3/16″	±0.002″	500	1974K5	10.15
7/32″	±0.002″	250	1974K8	8.11
1/4″	±0.002″	250	1974K13	8.39
9/32″	±0.002″	100	1974K7	9.54
5/16″	±0.002″	250	1974K16	10.01
3/8″	±0.002″	100	1974K17	7.15
7/16″	±0.002″	100	1974K6	18.10
1/2″	±0.002″	100	1974K19	10.24
5/8″	±0.002″	50	1974K21	10.46
3/4″	±0.002″	25	1974K22	7.60
7/8″	±0.002″	1	1974K23	1.27
1″	±0.002″	10	1974K24	5.75

Hollow Balls—Smooth Finish

- Max. Temp: 220° F; low end not rated
- Softening Temp.: Not rated
- Grade: Not rated
- Sphericity: Not rated
- Impact Strength: Poor
- Not rated as an electrical insulator
- Hardness: Not rated
- Use indoors and outdoors

Create a floating blanket on the surface of chemical and processing tanks to slow evaporation, cut heat loss, and reduce pollution by containing fumes. Ball diameter should be larger than the inlet, outlet, and overflow pipe diameters of your tank.

Dia.	Dia. Tol.	Pkg. Qty.		Pkg.	Pkg. Qty.		Pkg.
0.787″	±0.01″	150	3748K31	$24.27	2,000	3748K21	$223.20
0.984″	±0.005″	100	3748K32	47.54	1,000	3748K22	336.88
1.000″	±0.015″	50	9338K11	14.26			
1.400″	±0.015″	50	9338K13	14.65			
1.496″	±0.01″	50	3748K33	39.26	1,000	3748K23	434.00
1.969″	±0.02″	40	3748K34	38.16	1,000	3748K24	831.43
2.953″	±0.03″	10	3748K35	15.84	500	3748K27	780.39
3.937″	±0.05″	1	3748K18	4.67	100	3748K25	414.87

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8747KAC**.

Easy-to-Machine Chemical-Resistant Polypropylene *(Material continued from previous page)*

90° Angles—Smooth Finish

- Softening Temp.: 200°F

Edges are straight. Leg length tolerance is ±0.025″. Wall thickness tolerance is ±0.010″. Length tolerance is ±¼″. Sold in 5-ft. lengths.

Outside Leg Lgs.	Wall Thick.		
1½″×1½″	¼″	87215K35	$27.23
2″ ×2″	¼″	87215K37	31.22

U-Shaped Channels—Smooth Finish

- Color: Opaque white
- Temp. Range: 41° to 210°F
- Softening Temp.: Not rated
- Machine with carbide tooling

Edges are straight. Meet UL 94HB for flammability. Sold in 1-ft. increments; maximum length is 5 ft. **To Order:** Please specify length.

Outside Base×Legs	Wall Thick.	Base, Leg, and Thick. Tolerance		Per Ft.
2½″×2¼″	3/16″	±0.018″	87495K41	$10.90
2½″×3¼″	3/16″	±0.020″	87495K51	13.22

Flame-Retardant Polypropylene

- Color: *Sheets*, opaque white; *film*, opaque black
- Temp. Range: 0° to 190°F
- Softening Temp.: 210° to 299°F
- Tensile Strength: Poor
- Impact Strength: *Sheets*, excellent; *film*, good
- *Sheets*, not rated as an electrical insulator; *film*, excellent
- *Sheets*, use indoors; *film*, use indoors and outdoors
- *Sheets*, machine with high-speed steel tooling; cut *film* with utility knife
- Hardness: *Sheets*, Shore D67; *film*, not rated

Sheets—Smooth Finish

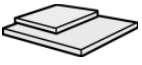

Meet UL 94V0 and UL 94-5VA for flammability, and are in accordance with FMRC (Factory Mutual Research Corporation) 4910 testing standards. Width and length tolerances are ±¼″, except for 48″×96″ sheets, which have tolerances of +½″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		48″×48″		48″×96″	
¼″	–0.015″	86325K23	$31.36	86325K33	$52.26	86325K53	$90.89	86325K63	$316.13	86325K73	$574.78
½″	–0.038″	86325K25	58.99	86325K35	98.32	86325K55	171.00	86325K65	594.78	86325K75	1,081.42
1″	–0.06″	86325K28	109.79	86325K38	182.99	86325K58	318.25	86325K68	1,106.94	86325K78	2,012.63
2″	–0.25″	86325K82	215.10	86325K84	358.49	86325K88	623.47				

Film—Smooth Finish

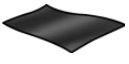

Use for electrical insulation as an alternative to polycarbonate, polyester, PVC, and aramid paper. It is easily die cut, has a printable surface, and can be laminated. Sheets meet UL 94V0 and rolls meet UL 94VTM0 for flammability. Width tolerance is ±⅛″ for all film. Length tolerance is +¼″ for sheets and +10 ft. for rolls.

12″×12″ Sheets						24″ Wd.×100′ Lg. Rolls			
Thick.	Thick. Tol.		Each	Thick.	Thick. Tol.		Each	Thick.	Thick. Tol.		Roll
0.017″	±0.004″	1451T11	$4.00	0.040″	±0.004″	1451T31	$7.00	0.005″	±0.001″	1451T51	$166.67
0.030″	±0.004″	1451T21	5.67	0.062″	±0.004″	1451T41	10.43	0.010″	+0.003″, –0.0015″	1451T61	255.81

Easy-to-Form Impact-Resistant ABS

- Color: Opaque beige or black, unless noted
- Max. Temp.: 140°F; low end not rated
- Softening Temp.: 199° to 220°F, except *film* is not rated
- Tensile Strength: Good
- Impact Strength: Excellent, unless noted
- Good electrical insulator, except *film* and *tubes* are not rated
- Use indoors
- Machine with high-speed steel tooling; cut *film* with scissors
- Hardness: Rockwell R100-R109

Tough, rigid, impact-resistant ABS (acrylonitrile-butadiene-styrene) is easily machined and formed. Use for protective applications and housings. All except *film* meet UL 94HB for flammability.

Rectangular Bars—Smooth Finish

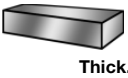

- Color: Opaque beige
- Impact Strength: Good

Width and length tolerances are +1/16″. Sold in 2-ft. lengths.

Thick.	Thick. Tolerance	1″ Wide		1½″ Wide		2″ Wide		2½″ Wide		3″ Wide		4″ Wide	
¼″	±0.025″	8712K11	$3.00	8712K21	$4.24	8712K33	$5.13	8712K45	$6.17	8712K57	$7.08	8712K69	$8.74
3/8″	±0.038″	8712K12	4.45	8712K23	7.05	8712K34	7.70	8712K46	9.83	8712K58	11.80	8712K71	13.15
½″	±0.050″	8712K13	5.90	8712K24	8.43	8712K35	10.26	8712K47	12.29	8712K59	14.20	8712K73	17.56
¾″	±0.075″	8712K15	8.85	8712K25	12.71	8712K36	15.43	8712K48	18.50	8712K61	21.24	8712K74	26.26
1″	±0.100″	8712K16	11.80	8712K26	16.90	8712K37	20.61	8712K49	24.62	8712K63	28.36	8712K75	35.04
1½″	±0.150″			8712K28	33.76	8712K39	41.13	8712K53	49.25	8712K65	56.76	8712K77	70.04
2″	±0.200″					8712K43	54.58	8712K55	63.32	8712K67	73.38	8712K79	98.50

Sheets—Smooth Finish

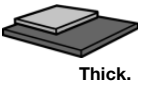

- Impact Strength: Good

FDA compliant. Width and length tolerances are +1″. **To Order:** Please specify color: beige or black.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		24″×24″		24″×48″		36″×36″	
1/16″	±0.006″			8586K151	$3.89	8586K351	$7.02	8586K451	$12.68	8586K251	$23.00	8586K551	$29.56
1/8″	±0.013″			8586K161	7.76	8586K361	14.07	8586K461	25.09	8586K261	44.44	8586K561	59.11
¼″	±0.025″			8586K171	13.29	8586K371	23.95	8586K471	49.74	8586K271	89.02	8586K571	101.16
3/8″	±0.038″	8586K65	$8.44	8586K181	19.89	8586K381	36.00	8586K481	74.91	8586K281	133.24	8586K581	151.16
½″	±0.050″	8586K66	9.20	8586K191	27.39	8586K391	49.52	8586K491	94.66	8586K291	176.07	8586K591	208.00
¾″	±0.075″	8586K67	16.20	8586K211	38.29	8586K411	69.29	8586K511	118.66	8586K311	220.64	8586K611	290.98
1″	±0.100″	8586K81	15.50	8586K221	44.93	8586K421	82.21	8586K521	157.73	8586K321	278.92	8586K621	347.80
1½″	+0.150″	8586K91	23.20	8586K231	68.07	8586K431	124.55					8586K631	526.82
2″	+0.200″	8586K82	54.95	8586K83	156.33	8586K84	257.14						
3″	+0.300″	8586K88	95.75	8586K881	286.18	8586K882	477.27						
4″	+0.400″	8586K89	125.62	8586K891	375.00	8586K892	640.68						

Film—Smooth Finish

- Color: Translucent light beige

This glossy film is sold in 12″×12″ sheets. Width and length tolerances are ±1/16″.

Thick.	Thick. Tolerance			Thick.	Thick. Tolerance		
0.003″	±0.0003″	5751T11	$8.74	0.010″	±0.0010″	5751T51	$17.07
0.005″	±0.0005″	5751T31	11.03	0.020″	±0.0020″	5751T71	28.77

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about ABS plastics, including mechanical and physical properties, go to mcmaster.com and search for **8747KAC**. For more information about nylon, search for **8539KAC**.

Easy-to-Form Impact-Resistant ABS *(Material continued from previous page)*

- Color: Opaque beige or black, unless noted
- Max. Temp.: 140° F; low end not rated
- Softening Temp.: 199° to 220° F, except *film* is not rated
- Tensile Strength: Good
- Impact Strength: Excellent, unless noted
- Good electrical insulator, except *film* and *tubes* are not rated
- Use indoors
- Machine with high-speed steel tooling; cut *film* with scissors
- Hardness: Rockwell R100-R109

Tough, rigid, impact-resistant ABS (acrylonitrile-butadiene-styrene) is easily machined and formed. Use for protective applications and housings. All except *film* meet UL 94HB for flammability.

Tubes—Smooth Finish

- Color: Opaque black

OD tolerance is +0.040″; ID tolerance is –0.040″. Length tolerance is +1″. Sold in 5-ft. lengths.

OD	ID	Wall Thick.		
1/4″	1/8″	1/16″	1839T11	$3.28
1/2″	1/4″	1/8″	1839T12	7.76
5/8″	1/4″	3/16″	1839T13	15.06
5/8″	1/2″	1/16″	1839T14	8.98
3/4″	1/4″	1/4″	1839T16	20.45
3/4″	1/2″	1/8″	1839T15	15.91
1″	1/2″	1/4″	1839T17	30.27
1 1/4″	3/4″	1/4″	1839T18	36.17
1 1/4″	1″	1/8″	1839T21	25.37
1 1/2″	1″	1/4″	1839T22	46.41
2″	1 1/2″	1/4″	1839T23	59.72

Rods—Smooth Finish

Meet ASTM D4673.
To Order: Please specify color: beige or black.

Dia.	Dia. Tolerance		Per Ft.
Sold in 5-ft. lengths.			
1/4″	+0.002″	8587K1	$0.74
3/8″	+0.002″	8587K2	1.62
1/2″	+0.002″	8587K3	2.26
Sold in 1-ft. increments; max. length is 5 ft. To Order: Please specify lg.			
5/8″	+0.002″	8587K4	3.50
3/4″	+0.002″	8587K5	4.07
7/8″	+0.002″	8587K91	6.34
1″	+0.002″	8587K6	7.00
1 1/4″	+0.005″	8587K92	11.92

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; max. length is 5 ft. To Order: Please specify lg.			
1 1/2″	+0.005″	8587K7	$15.22
1 3/4″	+0.005″	8587K8	20.24
2″	+0.005″	8587K9	23.66
2 1/2″	+0.030″	8587K11	38.85
3″	+0.250″	8587K12	60.45
3 1/2″	+0.250″	8587K13	80.19
4″	+0.250″	8587K14	100.96
5″	+0.250″	8587K15	148.93
6″	+0.250″	8587K93	221.42

Static-Dissipative ABS/PVC

- Color: Opaque black
- Temp. Range: Not rated
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Good
- Not rated as an electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R87

Great for use in applications where dust and static electricity are problems. Material combines the best features of PVC and ABS for corrosion resistance with high impact strength. It's electrically conductive and meets ASTM D4673 and UL 94V1 for flammability.

Sheets—One Side Textured; Other Side Has a Smooth Finish

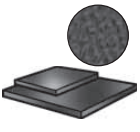

Width and length tolerances are ±1/8″ for sizes 12″×12″ to 24″×48″; ±1/2″ for sizes 54″×48″ and 54″×96″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×48″		54″×48″		54″×96″	
1/16″	±0.005″	87265K13	$13.57	87265K23	$23.52	87265K33	$79.72	87265K43	$138.62	87265K53	$243.19
1/8″	±0.006″	87265K11	24.89	87265K21	37.30	87265K31	151.50	87265K41	229.13	87265K51	421.90
3/16″	±0.009″	87265K14	34.19	87265K27	57.86	87265K37	201.26	87265K47	350.40	87265K57	597.74
1/4″	±0.013″	87265K12	40.76	87265K22	70.86	87265K32	246.78	87265K42	429.10	87265K52	745.10

Wear-Resistant Slippery Extruded Nylon 6/6

- Color: Opaque off-white, unless noted
- Temp. Range: –22° to +210° F, unless noted; *balls* not rated
- Softening Temp.: Not rated
- Tensile Strength: Excellent; *balls* not rated
- Impact Strength: Good, unless noted; *balls* not rated
- Low friction; *balls* not rated
- Poor electrical insulator
- Use indoors
- Machine with high-speed steel tooling, unless noted; *balls* not rated
- Hardness: Rockwell R108-R121

The most widely used nylon, this material retains its shape better than nylon 6 and is a better choice for contact with gasoline, mineral oil, and refrigerants. It has good strength, wear resistance, and lubrication properties. All except *balls* meet ASTM D4066. All except *black nylon* and *balls* are FDA compliant.

Rectangular Bars—Smooth Finish

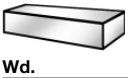

- Max. Temp.: 210° F; low end not rated

Meet UL 94V2 for flammability and are NSF certified. Meet ASTM D5989 and 3-A sanitary standard requirements. Width tolerance is +0.250″, –0.005″. Sold in 1-ft. increments; maximum length is 4 feet. **To Order:** Please specify length.

Wd.		Per Ft.
1/8″ Thick *(±0.010″)*		
1″	8733K11	$2.11
1 1/2″	8733K12	2.87
2″	8733K13	3.65
3″	8733K14	4.97
4″	8733K15	6.02
6″	8733K17	8.20
3/16″ Thick *(±0.025″)*		
1″	8733K86	3.31
1 1/2″	8733K87	4.52
2″	8733K88	5.73
3″	8733K89	7.83
4″	8733K91	9.46
6″	8733K92	12.91
1/4″ Thick *(+0.025″, –0.005″)*		
1/4″	8732K11	2.41
1″	8733K18	3.61
1 1/2″	8733K19	4.92
2″	8733K21	6.25
3″	8733K22	8.51
4″	8733K23	10.32
6″	8733K25	14.09

Wd.		Per Ft.
5/16″ Thick *(–0.005″)*		
5/16″	8732K12	$4.10
3/8″ Thick *(+0.025″, –0.005″)*		
3/8″	8732K13	5.56
1″	8733K26	5.49
1 1/2″	8733K27	7.48
2″	8733K28	9.51
3″	8733K73	12.96
4″	8733K74	15.69
6″	8733K75	21.41
7/16″ Thick *(–0.005″)*		
7/16″	8732K14	5.83
1/2″ Thick *(+0.025″, –0.005″)*		
1/2″	8732K15	6.83
1″	8733K34	6.34
1 1/2″	8733K35	8.63
2″	8733K36	10.95
3″	8733K37	14.95
4″	8733K38	18.12
6″	8733K41	24.69

Wd.		Per Ft.
5/8″ Thick *(+0.025″, –0.005″)*		
5/8″	8732K16	$10.48
1″	8733K42	8.12
1 1/2″	8733K43	11.10
2″	8733K44	14.10
3″	8733K45	19.21
4″	8733K46	23.26
6″	8733K48	31.75
3/4″ Thick *(+0.025″, –0.005″)*		
3/4″	8732K17	13.05
1″	8733K49	9.31
1 1/2″	8733K51	12.64
2″	8733K52	16.08
3″	8733K53	21.95
4″	8733K54	26.60
6″	8733K56	36.26
7/8″ Thick *(–0.005″)*		
7/8″	8732K18	17.28
1″ Thick *(+0.025″)*		
1″	8733K64	11.92
1 1/2″	8733K65	16.29

Wd.		Per Ft.
1″ Thick (Cont.)		
2″	8733K66	$20.67
3″	8733K67	28.18
4″	8733K68	34.15
6″	8733K71	46.59
1 1/4″ Thick *(+0.060″)*		
1 1/2″	8733K93	18.31
2″	8733K94	23.26
3″	8733K95	31.70
4″	8733K96	38.44
6″	8733K97	52.88
1 1/2″ Thick *(+0.060″)*		
2″	8733K81	30.73
3″	8733K82	41.90
4″	8733K83	50.79
6″	8733K85	69.25
2″ Thick *(+0.060″)*		
2″	8733K161	39.73
3″	8733K163	54.17
4″	8733K165	65.66
6″	8733K167	89.53

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Wear-Resistant Slippery Extruded Nylon 6/6 *(Material continued from previous page)*

Black Rectangular Bars—Smooth Finish

- Color: Opaque black

Meet UL 94V2 for flammability. Width and length tolerances are +1/8″. Sold in 1-ft. increments; maximum length is 4 feet.

Thick.	Thick. Tolerance	1″ Wide	Per Ft.	1 1/2″ Wide	Per Ft.	2″ Wide	Per Ft.	2 1/2″ Wide	Per Ft.	3″ Wide	Per Ft.	4″ Wide	Per Ft.
1/8″	+0.025″	8674K113	$2.23	8674K193	$3.20	8674K313	$3.91	8674K443	$4.80	8674K563	$5.58	8674K683	$6.78
1/4″	+0.025″	8674K123	3.90	8674K213	5.56	8674K333	7.00	8674K453	8.70	8674K573	9.48	8674K693	11.45
3/8″	+0.025″	8674K133	5.07	8674K233	7.43	8674K343	9.71	8674K463	12.01	8674K583	13.41	8674K713	16.55
1/2″	+0.025″	8674K143	5.97	8674K243	8.78	8674K353	11.52	8674K473	14.47	8674K593	16.26	8674K733	20.72
3/4″	+0.025″	8674K153	8.34	8674K253	12.26	8674K363	15.78	8674K483	18.76	8674K613	22.13	8674K743	28.93
1″	+0.025″	8674K163	10.71	8674K263	15.55	8674K373	19.66	8674K493	24.12	8674K633	28.44	8674K753	37.29
1 1/4″	+0.025″	8674K173	12.31	8674K273	17.33	8674K383	22.39	8674K513	27.95	8674K643	33.08	8674K763	40.18
1 1/2″	+0.025″	—	—	8674K283	20.91	8674K393	27.63	8674K533	33.16	8674K653	37.52	8674K773	48.23
1 3/4″	+0.025″	8674K183	15.55	8674K293	22.33	8674K413	29.77	8674K543	37.21	8674K663	40.71	8674K783	54.28
2″	+0.025″	—	—	—	—	8674K433	35.77	8674K553	44.31	8674K673	50.65	8674K793	64.62

Sheets—Smooth Finish

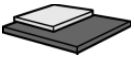

- Color: Opaque off-white or black

Off-white sheets meet 3-A sanitary standard requirements, are NSF certified, and meet UL 94V2 for flammability, except 1/16″ and 3/32″ thicknesses, which meet UL 94HB. *Black sheets* meet UL 94HB for flammability. All sheets meet ASTM D5989. Width and length tolerances are ±1/8″ for 6″ and 12″ sides, +1/2″ for 24″ sides, and +1″ for 48″ sides.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		12″×48″		24″×24″		24″×48″	
Off-White													
1/16″	±0.005″	—	—	8539K11	$6.17	8539K31	$11.41	8539K71	$21.43	8539K91	$21.43	8539K51	$36.28
3/32″	±0.007″	—	—	8539K12	9.94	8539K32	18.35	8539K72	33.10	8539K92	33.10	8539K52	58.92
1/8″	±0.010″	—	—	8539K13	12.78	8539K33	24.01	8539K73	43.12	8539K93	43.12	8539K53	77.32
3/16″	+0.025″	—	—	8539K14	20.50	8539K34	36.66	8539K74	66.80	8539K94	66.80	8539K54	121.46
1/4″	+0.025″	8539K111	$7.41	8539K15	22.95	8539K35	39.75	8539K75	72.86	8539K95	72.29	8539K55	132.49
3/8″	+0.025″	8539K121	11.16	8539K17	33.68	8539K37	61.68	8539K77	110.78	8539K96	112.14	8539K57	205.61
1/2″	+0.025″	8539K101	11.32	8539K18	39.63	8539K38	74.38	8539K78	133.55	8539K97	135.20	8539K58	242.82
5/8″	+0.025″	8539K141	16.27	8539K19	52.01	8539K39	96.22	8539K79	177.13	8539K98	174.96	8539K59	305.76
3/4″	+0.025″	8539K151	18.33	8539K21	60.01	8539K41	110.15	8539K81	201.27	8539K99	201.27	8539K61	363.05
1″	+0.025″	8539K161	24.64	8539K22	79.18	8539K42	145.43	8539K82	265.83	8539K28	265.83	8539K62	479.32
1 1/2″	+0.025″	8539K171	33.26	8539K24	111.48	8539K44	202.72	8539K84	361.51	8539K68	361.51	8539K64	688.59
2″	+0.025″	8539K181	43.71	8539K25	145.10	8539K45	266.52	8539K85	467.34	8539K69	467.34	8539K65	890.18
2 1/2″	+0.025″	8539K211	55.97	8539K26	183.24	8539K46	330.11	8539K86	599.22	—	—	—	—
3″	+0.025″	8539K221	63.90	8539K27	203.20	8539K47	367.38	8539K87	672.61	—	—	—	—
Black													
1/16″	±0.005″	—	—	8540K111	6.88	8540K211	13.31	8540K711	23.40	8540K411	23.56	8540K611	41.26
3/32″	±0.007″	—	—	8540K112	11.83	8540K212	21.59	8540K712	36.82	8540K412	36.82	8540K612	66.94
1/8″	±0.010″	—	—	8540K113	15.23	8540K213	28.35	8540K713	48.31	8540K413	48.31	8540K613	87.86
3/16″	+0.025″	—	—	8540K114	24.92	8540K214	44.90	8540K714	81.35	8540K414	81.35	8540K614	147.90
1/4″	+0.025″	—	—	8540K115	26.77	8540K215	46.36	8540K715	85.82	8540K415	85.82	8540K615	154.54
3/8″	+0.025″	—	—	8540K117	38.52	8540K217	68.97	8540K716	123.96	8540K417	125.36	8540K617	225.39
1/2″	+0.025″	—	—	8540K118	44.87	8540K218	83.22	8540K717	148.31	8540K418	148.31	8540K618	277.31
1″	+0.025″	—	—	8540K119	89.16	8540K219	157.28	8540K719	287.78	8540K419	287.78	8540K619	523.23

Strips—Smooth Finish

The 0.031″ to 0.062″ thick strips meet UL 94HB and 0.125″ thick strips meet UL 94V2 for flammability. NSF certified. Width tolerance is +0.015″, –0.002″. Thickness tolerance is ±0.003″ for 0.010″ to 0.040″ thick strips and ±0.005″ for 0.050″ to 0.125″. Available in 5-, 10-, 20-, 25-, and 50-ft. lengths, and in the maximum length shown below. **To Order:** Please specify length.

Thick.	Max. Length	1/2″ Wide	Per Ft.	1″ Wide	Per Ft.	2″ Wide	Per Ft.	4″ Wide	Per Ft.	6″ Wide	Per Ft.	12″ Wide	Per Ft.
0.010″	500 ft.	—	—	8730K62	$0.17	8730K65	$0.34	8730K68	$0.67	8730K82	$1.01	—	—
0.015″	500 ft.	—	—	8730K63	.20	8730K66	.32	8730K69	.75	8730K83	1.12	—	—
0.020″	500 ft.	8730K85	$0.12	8730K64	.22	8730K67	.45	8730K81	.88	8730K84	1.33	8730K86	$2.59
0.031″	500 ft.	8730K55	.17	8730K15	.34	8730K26	.67	8730K37	1.34	8730K48	2.01	8730K834	3.80
0.040″	400 ft.	8730K56	.22	8730K16	.45	8730K27	.89	8730K38	1.76	8730K49	2.65	8730K835	4.86
0.050″	300 ft.	8730K57	.26	8730K17	.49	8730K28	.96	8730K39	1.91	8730K51	2.87	8730K836	5.45
0.062″	250 ft.	8730K58	.30	8730K18	.61	8730K29	1.20	8730K41	2.40	8730K52	3.59	8730K837	6.36
0.125″	150 ft.	8730K61	.71	8730K71	1.34	8730K72	2.36	8730K73	4.29	8730K74	6.30	8730K77	12.12

Tubes—Smooth Finish

- Temp. Range: –40° to +167° F

Meet UL 94HB for flammability. *Tight-tolerance tubes* have an OD and ID tolerance of ±0.005″ for tubes 1/4″ OD to 1/2″ OD, ±0.010″ for tubes 5/8″ OD to 1″ OD, and ±0.015″ for tubes 1 1/4″ OD and 1 1/2″ OD. *Oversized tubes* have an oversized OD and an undersized ID for finishing to sizes listed. Length tolerance is +1″. Sold in 5-ft. lengths.

Tight Tolerance

OD	ID	Wall Thick.		OD	ID	Wall Thick.		OD	ID	Wall Thick.		OD	ID	Wall Thick.	
1/4″	1/8″	1/16″	8628K48	$3.75	1/2″	7/16″	1/32″	8628K55	$3.52	3/4″	11/16″	1/32″	8628K61	$5.45	1 1/4″	1″	1/8″	8628K73	$25.44
3/8″	1/8″	1/8″	8628K94	7.97	5/8″	3/8″	1/8″	8628K32	12.20	7/8″	3/4″	1/16″	8628K63	11.23	1 1/4″	1 1/8″	1/16″	8628K74	15.99
3/8″	1/4″	1/16″	8628K51	4.57	5/8″	1/2″	1/16″	8628K56	8.63	7/8″	13/16″	1/32″	8628K64	6.35	1 1/4″	13/16″	1/32″	8628K95	9.22
3/8″	5/16″	1/32″	8628K52	2.87	5/8″	9/16″	1/32″	8628K57	4.90	1″	3/4″	1/8″	8628K66	21.33	1 1/2″	1 1/4″	1/8″	8628K78	42.02
1/2″	1/4″	1/8″	8628K27	12.06	3/4″	1/2″	1/8″	8628K58	15.25	1″	7/8″	1/16″	8628K67	13.54	1 1/2″	1 3/8″	1/16″	8628K79	19.47
1/2″	3/8″	1/16″	8628K28	6.06	3/4″	5/8″	1/16″	8628K59	9.90	1″	15/16″	1/32″	8628K68	7.07	1 1/2″	1 7/16″	1/32″	8628K96	10.46

Oversized

OD	ID	Wall Thick.		OD	ID	Wall Thick.		OD	ID	Wall Thick.		OD	ID	Wall Thick.	
1/2″	1/4″	1/8″	8628K53	$9.68	7/8″	5/8″	1/8″	8628K62	$15.08	1 1/2″	1″	1/4″	8628K77	$40.99	2 1/4″	2″	1/8″	8628K971	$57.42
5/8″	1/4″	3/16″	8628K31	15.18	1″	1/2″	1/4″	8628K65	26.00	1 3/4″	1 1/4″	1/4″	8628K84	50.71	2 1/2″	2″	1/4″	8628K972	124.79
3/4″	1/4″	1/4″	8628K35	20.11	1 1/8″	5/8″	1/4″	8628K69	29.12	2″	1 1/2″	1/4″	8628K85	70.85	2 1/2″	2 1/4″	1/8″	8628K86	73.51
7/8″	3/8″	1/4″	8628K49	23.00	1 1/4″	3/4″	1/4″	8628K92	30.13	2″	1 3/4″	1/8″	8628K97	52.75					

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Wear-Resistant Slippery Extruded Nylon 6/6 *(Material continued from previous page)*

- Color: Opaque off-white, unless noted
- Temp. Range: −22° to +210° F, unless noted; *balls* not rated
- Softening Temp.: Not rated
- Tensile Strength: Excellent; *balls* not rated
- Impact Strength: Good, unless noted; *balls* not rated
- Low friction; *balls* not rated
- Poor electrical insulator
- Use indoors
- Machine with high-speed steel tooling, unless noted; *balls* not rated
- Hardness: Rockwell R108-R121

The most widely used nylon, this material retains its shape better than nylon 6 and is a better choice for contact with gasoline, mineral oil, and refrigerants. It has good strength, wear resistance, and lubrication properties. All except *balls* meet ASTM D4066. All except *black nylon* and *balls* are FDA compliant.

Hex Bars—Smooth Finish

- Max. Temp.: 210° F; low end not rated

Meet ASTM D5989, 3-A sanitary standard requirements, and UL 94V2 for flammability. NSF certified. Hex size is measured across the flats. Hex tolerance is −0.005″.

Hex Size		Per Ft.
Sold in 4-ft. lengths.		
3/8″	8731K13	$3.22
7/16″	8731K14	4.54
1/2″	8731K15	5.51

Hex Size		Per Ft.
Sold in 1-ft. increments; maximum length is 4 ft. To Order: Please specify length.		
5/8″	8731K16	$8.95
3/4″	8731K17	10.76

Hex Size		Per Ft.
Sold in 1-ft. increments; maximum length is 4 ft. To Order: Please specify length.		
7/8″	8731K18	$16.02
1″	8731K19	17.62

Rods—Smooth Finish

- Color: Opaque off-white or black

Meet ASTM D5989. Meet UL 94V2 for flammability, except 1/16″ diameter meets UL 94HB. Off-white rods are also NSF certified and meet 3-A sanitary standard requirements. Dia. tolerance is +0.005″ for diameters 2″ and smaller, +0.030″ for diameters 2 1/8″ to 2 3/4″, and +0.250″ for diameters 3″ and larger.

Dia.	Off-White	Per Ft.	Black	Per Ft.
Sold in 4-ft. lengths.				
1/16″	8538K11■	$0.41	—	—
1/8″	8538K12■	.43	8541K12♣	$0.49
Sold in 5-ft. lengths.				
3/16″	8538K13	.37	8541K43♣	.52
1/4″	8538K14	.45	8541K14	.49
5/16″	8538K15	.50	8541K15	.66
3/8″	8538K16	.67	8541K16	.81
7/16″	8538K17	.84	8541K17	1.09
1/2″	8538K18	.95	8541K18	1.17
9/16″	8538K42	1.66	—	—
5/8″	8538K19	1.61	8541K19	1.91
3/4″	8538K21	2.23	8541K21	2.51

■ Impact strength is poor. Machine with carbide tooling.
♣ Not rated for low-end temperature use.

Dia.	Off-White	Per Ft.	Black	Per Ft.
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.				
7/8″	8538K22	$3.26	8541K22	$3.62
1″	8538K23	3.73	8541K23	3.95
1 1/8″	8538K24	5.19	—	—
1 1/4″	8538K25	5.83	8541K25	6.54
1 3/8″	8538K26	8.82	8541K56	8.54
1 1/2″	8538K27	8.61	8541K27	9.57
1 5/8″	8538K28	9.53	—	—
1 3/4″	8538K29	11.54	8541K29	12.50
1 7/8″	8538K31	13.55	—	—
2″	8538K32	14.56	8541K32	15.99
2 1/8″	8538K63	19.67	—	—
2 1/4″	8538K33	21.18	—	—
2 3/8″	8538K64	23.52	—	—
2 1/2″	8538K34	27.99	8541K34	27.99
2 5/8″	8538K65	30.82	—	—

Dia.	Off-White	Per Ft.	Black	Per Ft.
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.				
2 3/4″	8538K66	$30.66	—	—
3″	8538K35	39.75	8541K35	$42.75
3 1/2″	8538K36	57.84	—	—
3 3/4″	8538K68	65.38	—	—
4″	—	—	8541K37	68.31
6″	—	—	8541K39	147.16
Sold in 1-ft. increments; max. length is 4 feet. To Order: Please specify length.				
4″	8538K37	69.16	—	—
4 1/2″	8538K71	95.13	—	—
4 3/4″	8538K72	96.98	—	—
5″	8538K38	99.74	—	—
5 1/2″	8538K74	106.69	—	—
5 3/4″	8538K75	133.41	—	—
6″	8538K39	146.73	—	—
8″	8538K41	272.54	—	—

Balls—Smooth Finish

- Grade: 1, unless noted
- Sphericity: 0.0005″, unless noted

Injection molded for shape. Meet UL 94V2 for flammability.

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
1/16″	±0.002″	100	9613K11♦	$12.78
3/32″	±0.002″	100	9613K12♦	2.90
1/8″	±0.001″	100	9613K13	3.20
5/32″	±0.001″	100	9613K14	7.98

♦ Grade 2; 0.001″ sphericity.

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
3/16″	±0.001″	100	9613K15	$5.43
7/32″	±0.001″	100	9613K16	7.28
1/4″	±0.001″	100	9613K17	8.13
5/16″	±0.001″	100	9613K19	10.46
3/8″	±0.001″	100	9613K21	22.06

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
1/2″	±0.001″	50	9613K24	$12.12
5/8″	±0.002″	25	9613K26♦	15.35
3/4″	±0.001″	25	9613K28	13.23
1″	±0.001″	10	9613K37	9.28

Ultra-Wear-Resistant MDS-Filled Nylon 6/6

- Color: Opaque black/charcoal
- Temp. Range: −20° to +210° F
- Softening Temp.: Not rated
- Tensile Strength: Excellent
- Impact Strength: Good; *strips* poor
- Low friction
- Poor electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R115-R120

Comparable to Nylatron, this material has molybdenum disulfide (MDS) to make it more wear and friction resistant than regular nylon 6/6. Meets ASTM D4066. Also meets UL 94HB for flammability, except 0.125″ strips meet UL 94V2.

Sheets—Smooth Finish

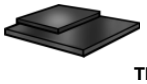

Meet ASTM D5989. Width and length tolerances are ±1/8″ for 12″ sides, +1/2″ for 24″ sides, and +1″ for 48″ sides.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×48″		24″×24″		24″×48″	
1/32″	±0.005″	8555K31	$4.14	8555K51	$7.44	8555K11	$13.31	8555K71	$13.31	8555K84	$24.14
1/16″	±0.007″	8555K32	7.99	8555K52	14.33	8555K12	25.65	8555K72	25.65	8555K85	45.64
3/32″	±0.010″	8555K33	12.63	8555K53	22.63	8555K13	39.74	8555K73	39.74	8555K86	72.13
1/8″	+0.025″	8555K34	15.94	8555K54	28.35	8555K14	49.58	8555K74	49.66	8555K87	90.19
3/16″	+0.025″	8555K35	25.20	8555K55	44.51	8555K15	79.21	8555K97	79.21	8555K88	145.31
1/4″	+0.025″	8555K36	27.49	8555K56	48.51	8555K16	95.75	8555K76	95.75	8555K89	158.37
3/8″	+0.025″	8555K37	41.31	8555K57	74.03	8555K17	131.89	8555K77	131.89	8555K91	241.60
1/2″	+0.025″	8555K38	50.57	8555K58	85.09	8555K18	162.84	8555K98	162.84	8555K92	298.35
3/4″	+0.025″	8555K39	71.22	8555K59	126.02	8555K19	229.14	8555K79	229.14	8555K93	425.44
1″	+0.025″	8555K41	88.36	8555K61	158.40	8555K21	283.86	8555K81	283.86	8555K94	526.26
1 1/2″	+0.025″	8555K42	131.16	8555K62	232.93	8555K22	415.36	8555K82	415.36	8555K95	781.64
2″	+0.025″	8555K43	165.14	8555K63	291.11	8555K23	519.13	8555K83	519.13	8555K96	979.50

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these materials, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Ultra-Wear-Resistant MDS-Filled Nylon 6/6 *(Material continued from previous page)*

Strips—Smooth Finish

Available in 5-, 10-, 20-, 25-, and 50-ft. lengths, and in the maximum length shown below. **To Order:** Please specify length.

Thick.	Thick. Tolerance	Max. Lg.	1″ Wide (±0.012″)	Per Ft.	2″ Wide (±0.012″)	Per Ft.	4″ Wide (±0.016″)	Per Ft.	6″ Wide (±0.024″)	Per Ft.
0.015″	±0.002″	500 ft.	8751K12	$0.23	8751K23	$0.43	8751K34	$0.83	8751K45	$1.23
0.020″	±0.002″	500 ft.	8751K13	.29	8751K24	.56	8751K35	1.05	8751K46	1.53
0.031″	±0.002″	500 ft.	8751K15	.39	8751K26	.77	8751K37	1.52	8751K48	2.28
0.040″	±0.002″	400 ft.	8751K16	.49	8751K27	.95	8751K38	1.84	8751K49	2.76
0.050″	±0.002″	300 ft.	8751K17	.59	8751K28	1.16	8751K39	2.20	8751K51	3.29
0.062″	±0.002″	250 ft.	8751K18	.74	8751K29	1.45	8751K41	2.64	8751K52	3.97
0.093″	±0.003″	150 ft.	8751K19	1.11	8751K31	2.16	8751K42	3.84	8751K53	5.77
0.125″	±0.004″	150 ft.	8751K21	1.49	8751K32	2.58	8751K43	4.56	8751K54	7.55

Rods—Smooth Finish

Meet ASTM D5989.

Dia.	Dia. Tolerance		Per Ft.
Sold in 5-ft. lengths.			
3/16″	+0.002″	8554K38	$0.48
1/4″	+0.002″	8554K9	.62
5/16″	+0.002″	8554K26	.72
3/8″	+0.002″	8554K27	.95
7/16″	+0.002″	8554K31	1.25
1/2″	+0.002″	8554K1	1.30
9/16″	+0.002″	8554K32	1.93

Dia.	Dia. Tolerance		Per Ft.
Sold in 5-ft. lengths.			
5/8″	+0.002″	8554K2	$1.97
3/4″	+0.002″	8554K3	2.67
Sold in 1-ft. increments; maximum length is 5 feet. To Order: Please specify length.			
7/8″	+0.002″	8554K28	3.86
1″	+0.002″	8554K4	4.32
1 1/8″	+0.005″	8554K29	6.33

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; maximum length is 5 feet. To Order: Please specify length.			
1 1/4″	+0.005″	8554K8	$8.69
1 3/8″	+0.005″	8554K33	9.01
1 1/2″	+0.005″	8554K5	10.11
1 5/8″	+0.005″	8554K36	11.78
1 3/4″	+0.005″	8554K7	12.92
2″	+0.005″	8554K6	16.21

Slippery Chemical-Resistant Extruded Nylon 6/12

- Color: Opaque off-white
- Temp. Range: –40° to +200° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Poor
- Low friction
- Not rated as an electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R114

This slippery material holds its shape better than nylon 6/6 and has improved chemical resistance. Meets ASTM D4066 and D5989.

Sheets—Smooth Finish

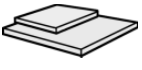

Width and length tolerances are ±1/8″ for 12″ sides and +1/2″ for 24″ sides.

Thick.	Thick. Tolerance	12″×12″		12″×24″	
1/8″	±0.010″	8681K711	$32.67	8681K712	$50.69
1/4″	+0.025″	8681K731	65.06	8681K732	118.92
3/8″	+0.025″	8681K751	87.69	8681K752	159.47
1/2″	+0.025″	8681K771	$103.09	8681K772	$185.95
1″	+0.025″	8681K791	191.03	8681K792	344.62

Rods—Smooth Finish

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; maximum lg. is 5 feet. To Order: Please specify lg.			
1/4″	+0.002″	8682K81	$1.80
3/8″	+0.002″	8682K82	3.56
1/2″	+0.002″	8682K83	3.98
5/8″	+0.002″	8682K84	6.01
3/4″	+0.002″	8682K85	8.01
1″	+0.002″	8682K86	12.92

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; maximum lg. is 4 feet. To Order: Please specify lg.			
1 1/4″	+0.005″	8682K87	$22.12
1 1/2″	+0.005″	8682K88	28.03
1 3/4″	+0.005″	8682K89	34.60
2″	+0.005″	8682K91	43.04
2 1/4″	+0.030″	8682K92	61.89
2 1/2″	+0.030″	8682K93	71.52

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; maximum lg. is 4 feet. To Order: Please specify lg.			
3″	+0.030″	8682K94	$115.70
3 1/2″	+0.250″	8682K98	152.60
4″	+0.250″	8682K95	155.88
5″	+0.250″	8682K96	259.52
6″	+0.250″	8682K97	367.58

Ultra-Strength Kevlar-Filled Nylon

- Color: Opaque mustard, unless noted
- Temp. Range: –40° to +300° F
- Softening Temp.: Not rated
- Tensile Strength: Excellent
- Impact Strength: Good
- Low friction
- Poor electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R121

Also known as Hydlar Z, this material is stronger than unfilled nylon and can last up to 20 times longer.

Sheets—Smooth Finish

Width and length tolerances are ±1/8″ for 6″ and 12″ sides, +1/2″ for 24″ sides, and +1″ for 48″ sides.

Thick.	Thick. Tolerance	6″×6″		12″×12″	
1/4″	+0.025″	8501K92	$49.24	8501K22	$152.91
3/8″	+0.025″	8501K93	62.11	8501K23	186.35
1/2″	+0.025″	8501K94	67.71	8501K24	203.16
5/8″	+0.025″	8501K95	98.03	8501K25	294.09
3/4″	+0.025″	8501K96	109.65	8501K26	328.91
1″	+0.025″	8501K97	134.66	8501K27	404.01
		12″×24″		**12″×48″**	
1/4″	+0.025″	8501K42	$271.08	8501K62	$501.93
3/8″	+0.025″	8501K43	341.95	8501K63	633.16
1/2″	+0.025″	8501K44	372.75	8501K64	690.31
5/8″	+0.025″	8501K45	539.64	8501K65	999.38
3/4″	+0.025″	8501K46	603.45	8501K66	1,117.56
1″	+0.025″	8501K47	741.28	8501K67	1,372.79

Rods—Smooth Finish

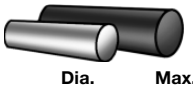

- Color: 4″ to 6″ dia., opaque black

Sold in 1-ft. increments; maximum length listed below. **To Order:** Please specify length where necessary.

Dia.	Dia. Tolerance	Max. Lg.		Per Ft.
1/4″	+0.002″	5 ft.	8502K42	$7.42
1/2″	+0.002″	5 ft.	8502K43	10.23
5/8″	+0.002″	5 ft.	8502K44	17.61
3/4″	+0.002″	5 ft.	8502K45	20.95
1″	+0.002″	5 ft.	8502K46	30.09
1 1/4″	+0.005″	5 ft.	8502K47	42.65
1 1/2″	+0.005″	4 ft.	8502K48	$54.84
2″	+0.005″	4 ft.	8502K49	94.07
2 1/2″	+0.030″	2 ft.	8502K51	146.14
3″	+0.250″	2 ft.	8502K52	211.38
4″	+0.250″	2 ft.	8502K33	353.37
5″	+0.250″	2 ft.	8502K34	583.35

Dia.	Dia. Tol.	1″ Long (+1/16″)	Each	3″ Long (+1/16″)	Each	6″ Long (+1/16″)	Each
3″	+0.250″	7556T11	$43.84	7556T15	$87.60	7556T13	$133.65
4″	+0.250″	7556T21	61.27	7556T25	136.96	7556T23	221.56
5″	+0.250″	7556T31	88.78	7556T35	215.77	7556T33	367.79
6″	+0.250″	7556T41	117.10	7556T45	292.08	7556T43	502.03

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Wear-Resistant Slippery Cast Nylon 6

- Color: Opaque white to off-white
- Temp. Range: 32° to 200° F
- Softening Temp.: Not rated
- Tensile Strength: Excellent
- Impact Strength: Poor
- Low friction
- Excellent electrical insulator, unless noted
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R115-R125

Has improved wear resistance and machinability over extruded nylon with less impact strength. Casting ensures uniformity, even across the thickest pieces. Meets ASTM D5989. Also meets UL 94HB for flammability, is FDA compliant, and meets 3-A sanitary standard requirements.

Rectangular Bars—Smooth Finish

- 3″ thick., good electrical insulator

Width tolerance is +1/8″. Sold in 1-ft. increments; maximum length is 4 feet. **To Order:** Please specify length.

Thick.	Thick. Tolerance	1″ Wide	Per Ft.	1 1/2″ Wide	Per Ft.	2″ Wide	Per Ft.	2 1/2″ Wide	Per Ft.	3″ Wide	Per Ft.	4″ Wide	Per Ft.	6″ Wide	Per Ft.
1/4″	+0.025″	8687K11	$6.88	8687K19	$7.72	8687K29	$10.28	8687K41	$12.22	8687K53	$12.86	8687K64	$18.00	—	—
3/8″	+0.025″	8687K12	7.37	8687K21	8.98	8687K31	12.17	8687K43	14.57	8687K54	15.36	8687K65	21.76	—	—
1/2″	+0.025″	8687K13	8.47	8687K23	10.47	8687K33	14.39	8687K44	17.58	8687K55	18.36	8687K66	26.25	—	—
3/4″	+0.025″	8687K15	10.85	8687K24	13.63	8687K34	19.14	8687K45	23.69	8687K56	24.66	8687K67	34.33	—	—
1″	+0.025″	8687K16	13.45	8687K25	17.08	8687K35	24.32	8687K46	27.85	8687K57	30.36	8687K68	44.30	—	—
1 1/4″	+0.025″	8687K17	16.25	8687K26	20.80	8687K36	28.75	8687K47	34.34	8687K58	37.53	8687K69	55.04	—	—
1 1/2″	+0.025″	8687K75	18.65	8687K27	23.98	8687K37	33.36	8687K48	40.02	8687K59	43.66	8687K71	64.25	—	—
1 3/4″	+0.025″	8687K18	20.39	8687K28	26.34	8687K38	36.76	8687K49	44.05	8687K61	48.17	8687K73	71.01	—	—
2″	+0.025″	8687K77	23.21	8687K79	28.79	8687K39	41.93	8687K51	50.47	8687K63	55.09	8687K74	81.39	—	—
3″	★	—	—	—	—	—	—	—	—	8733K241	77.55	8733K243	94.00	8733K245	$128.16

★ Tolerance is oversized for finishing to sizes listed.

Sheets—Smooth Finish

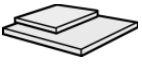

Width and length tolerances for 6″×6″ sheets are +1/8″; all others are +1″.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		12″×48″		24″×24″		24″×48″	
1/4″	+0.025″	—	—	85055K1	$35.24	85055K2	$62.79	85055K3	$114.72	85055K4	$118.39	85055K5	$198.21
3/8″	+0.025″	—	—	85055K6	43.43	85055K62	77.87	85055K7	146.70	85055K64	146.70	85055K8	246.19
1/2″	+0.025″	85055K111	$15.68	85055K11	51.38	85055K12	94.01	85055K13	164.34	85055K9	164.34	85055K14	295.26
3/4″	+0.025″	85055K112	20.90	85055K15	70.80	85055K16	128.71	85055K17	222.30	85055K72	222.30	85055K18	370.50
1″	+0.025″	85055K113	27.44	85055K19	89.03	85055K28	160.82	85055K29	291.77	85055K78	291.77	85055K31	476.36
1 1/2″	+0.025″	85055K114	32.93	85055K33	108.60	85055K34	196.84	85055K35	357.89	85055K74	357.89	85055K37	650.70
2″	+0.025″	85055K115	45.20	85055K41	148.33	85055K43	277.64	85055K44	504.86	85055K79	504.86	85055K45	815.87
3″	+0.025″	85055K116	65.01	85055K51	217.27	85055K53	363.06	85055K54	624.01	85055K76	624.01	85055K55	1,134.56
4″	+0.025″	85055K117	65.41	85055K56	234.10	85055K57	397.34	85055K58	738.67	85055K77	738.67	85055K59	1,362.61

Tubes—Smooth Finish

OD is oversized and ID is undersized for finishing to sizes listed. Length tolerance is +1″. Sold in 26″ lengths.

OD	ID	Wall Thick.		
2″	1″	1/2″	85005K11	$49.53
2″	1 1/2″	1/4″	85005K12	34.94
2 1/4″	1″	5/8″	85005K13	63.50
2 1/4″	1 1/4″	1/2″	85005K14	60.91
2 1/2″	1″	3/4″	85005K15	78.91
2 1/2″	1 1/2″	1/2″	85005K16	61.62
2 3/4″	1 1/2″	5/8″	85005K17	81.54
2 3/4″	1 3/4″	1/2″	85005K18	80.33
3″	1″	1″	85005K22	98.86
3″	1 1/2″	3/4″	85005K23	85.46
3″	2″	1/2″	85005K21	83.38
3 1/4″	1 1/4″	1″	85005K24	111.16
3 1/4″	2″	5/8″	85005K25	$97.56
3 1/4″	2 1/4″	1/2″	85005K26	91.84
3 1/2″	1 1/2″	1″	85005K27	123.52
3 1/2″	2″	3/4″	85005K28	104.50
3 1/2″	2 1/2″	1/2″	85005K31	95.45
4″	2″	1″	85005K32	134.10
4″	3″	1/2″	85005K33	106.79
4 1/2″	2 1/2″	1″	85005K34	164.32
4 1/2″	3″	3/4″	85005K35	139.01
4 1/2″	3 1/2″	1/2″	85005K36	99.74
5″	3″	1″	85005K37	170.76
5″	3 1/2″	3/4″	85005K81	143.17
5″	4″	1/2″	85005K82	$106.79
5 1/2″	3 1/2″	1″	85005K83	201.20
5 1/2″	4″	3/4″	85005K84	153.07
5 1/2″	4 1/2″	1/2″	85005K85	115.62
6″	3″	1 1/2″	85005K86	253.87
6″	4″	1″	85005K87	191.62
6 1/2″	3″	1 3/4″	85005K88	305.49
6 1/2″	4″	1 1/4″	85005K89	273.92
7″	4″	1 1/2″	85005K91	302.16
7″	5″	1″	85005K92	253.42
7 1/2″	4″	1 3/4″	85005K93	310.64
7 1/2″	5 1/2″	1″	85005K94	273.42

Rods—Smooth Finish

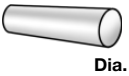

Length tolerance is +1″.

Dia.	Dia. Tolerance		
Sold in 2-ft. lengths.			
2″	+0.015″	85035K21	$42.35
2 1/4″	+0.015″	85035K24	52.62
2 1/2″	+0.015″	85035K23	61.09
2 3/4″	+0.015″	85035K25	68.67
3″	+0.25″	85035K31	78.33
Sold in 2-ft. lengths.			
3 1/2″	+0.25″	85035K32	$101.46
4″	+0.25″	85035K41	120.16
Sold in 1-ft. lengths.			
4 1/2″	+0.25″	85035K34	83.39
5″	+0.25″	85035K51	91.98
Sold in 1-ft. lengths.			
5 1/2″	+0.25″	85035K52	$104.64
6″	+0.25″	85035K61	118.83
7″	+0.25″	85035K71	155.34
7 1/2″	+0.25″	85035K62	175.62
8″	+0.25″	85035K81	206.74

Dia.	Dia. Tolerance	2″ Long		4″ Long		6″ Long	
6″	+0.50″	8482K83	$44.74	8482K81	$81.54	8482K82	$89.08
8″	+0.50″	8482K73	67.46	8482K71	123.42	8482K72	169.73
10″	+0.50″	8482K13	116.79	8482K11	169.32	8482K12	226.04
12″	+0.50″	8482K23	138.66	8482K21	243.41	8482K22	324.51
14″	+0.50″	8482K33	206.25	8482K31	322.72	8482K32	410.30
16″	+0.50″	8482K43	248.08	8482K41	391.66	8482K42	522.97
18″	+0.75″	8482K53	272.93	8482K51	470.09	8482K52	652.95

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these materials, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Ultra-Slippery Oil-Filled Cast Nylon 6

- Color: Opaque green
- Temp. Range: 32° to 230° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Good
- Low friction
- Excellent electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R100-R115

Oil is present throughout the material, making the surface self-lubricating. Offers enhanced wear resistance and dimensional stability. Meets ASTM D5989.

Rectangular Bars—Smooth Finish

Width tolerance is +1/8″. Sold in 1-ft. increments; maximum length is 4 feet. **To Order:** Please specify length.

Thick.	Thick. Tolerance	1″ Wide	Per Ft.	1 1/2″ Wide	Per Ft.	2″ Wide	Per Ft.
1/4″	+0.025″	2858K51	$6.71	2858K52	$8.43	2858K53	$10.30
1/2″	+0.025″	2858K61	9.12	2858K62	11.78	2858K63	14.65
3/4″	+0.025″	2858K71	$11.87	2858K72	$15.61	2858K73	$19.65
1″	+0.025″	2858K81	14.91	2858K82	19.80	2858K83	25.08

Sheets—Smooth Finish

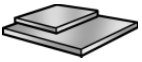

Width and length tolerances for 6″×6″ sheets are +1/8″. Width and length tolerances are +1″ for all others. Thickness tolerance is +0.025″.

Thick.	6″×6″		12″×12″		12″×24″	
1/4″	—	—	84845K66	$48.64	84845K67	$84.02
3/8″	—	—	84845K76	60.81	84845K77	104.14
1/2″	84845K121	$21.40	84845K17	65.34	84845K39	119.70
3/4″	84845K122	27.60	84845K18	98.35	84845K48	142.75
1″	84845K123	$35.37	84845K19	$112.89	84845K49	$183.44
1 1/2″	84845K124	50.48	84845K28	147.06	84845K58	260.27
2″	84845K125	60.35	84845K29	175.81	84845K59	310.84
3″	84845K126	85.10	84845K38	248.53	84845K81	439.41

Rods—Smooth Finish

Length tolerance is +1″. Diameter tolerance is oversized for finishing to sizes listed.

Dia.	12″ Long		24″ Long	
1″	8664K11	$25.80	8664K51	$45.11
1 1/4″	8664K12	27.43	8664K52	47.95
1 1/2″	8664K13	27.92	8664K53	50.77
1 3/4″	8664K14	29.44	8664K54	53.55
2″	8664K15	38.18	8664K55	69.42
3″	8664K71	$59.42	8664K81	$107.99
4″	8664K72	90.88	8664K82	165.25
5″	8664K73	132.98	8664K83	241.78
6″	8664K74	184.26	8664K84	325.79
8″	8664K75	289.58	8664K85	526.47

Tubes—Smooth Finish

OD tolerance is +1/4″ and ID tolerance is –1/4″ for finishing to sizes listed. Length has a plus tolerance. Sold in 26″ lengths.

OD	ID	Wall Thick.			
2″	1″	1/2″	84755K11	$40.06
2″	1 1/2″	1/4″	84755K12	29.19
2 1/4″	1″	5/8″	84755K13	52.97
2 1/4″	1 1/4″	1/2″	84755K14	49.74
2 1/2″	1″	3/4″	84755K15	68.94
2 1/2″	1 1/2″	1/2″	84755K16	55.79
2 3/4″	1 1/2″	5/8″	84755K17	72.47
2 3/4″	1 3/4″	1/2″	84755K18	64.06
3″	1″	1″	84755K19	102.94
3″	1 1/2″	3/4″	84755K21	89.22
3″	2″	1/2″	84755K22	$73.60
3 1/4″	1 1/4″	1″	84755K23	111.55
3 1/4″	2″	5/8″	84755K24	88.98
3 1/4″	2 1/4″	1/2″	84755K25	77.96
3 1/2″	1 1/2″	1″	84755K26	116.59
3 1/2″	2″	3/4″	84755K27	99.74
3 1/2″	2 1/2″	1/2″	84755K28	80.18
4″	2″	1″	84755K29	127.67
4″	3″	1/2″	84755K31	89.94
4 1/2″	2 1/2″	1″	84755K32	150.67
4 1/2″	3″	3/4″	84755K33	$128.85
4 1/2″	3 1/2″	1/2″	84755K34	97.32
5″	3″	1″	84755K35	160.44
5″	3 1/2″	3/4″	84755K36	138.14
5″	4″	1/2″	84755K37	104.80
5 1/2″	3 1/2″	1″	84755K38	173.46
5 1/2″	4″	3/4″	84755K39	149.15
5 1/2″	4 1/2″	1/2″	84755K81	115.06
6″	3″	1 1/2″	84755K82	236.95
6″	4″	1″	84755K83	186.38

Ultra-Wear-Resistant MDS-Filled Cast Nylon 6

- Color: Opaque black
- Max. Temp.: 230°F; low end not rated
- Softening Temp.: Not rated
- Tensile Strength: Excellent
- Impact Strength: Poor
- Low friction
- Excellent electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R115-R125

Compared to unfilled white cast nylon 6, this material has improved resistance to UV degradation. Material also contains MDS (molybdenum disulfide) for increased wear resistance. Excellent for use in wear strip and bearing applications. Meets ASTM D5989.

Rectangular Bars—Smooth Finish

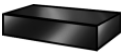

Width tolerance is +1/8″. Sold in 1-ft. increments; maximum length is 4 feet. **To Order:** Please specify length.

Thick.	Thick. Tolerance	1″ Wide	Per Ft.	1 1/2″ Wide	Per Ft.	2″ Wide	Per Ft.	2 1/2″ Wide	Per Ft.	3″ Wide	Per Ft.	4″ Wide	Per Ft.
1/4″	+0.025″	2882K11	$6.10	2882K12	$7.36	2882K13	$9.36	2882K14	$11.15	2882K15	$12.76	2882K16	$16.19
1/2″	+0.025″	2882K21	7.92	2882K22	11.32	2882K23	14.39	2882K24	17.12	2882K25	19.57	2882K26	24.85
3/4″	+0.025″	2882K31	10.91	2882K32	15.59	2882K33	19.79	2882K34	23.56	2882K35	26.93	2882K36	32.88
1″	+0.025″	2882K41	14.95	2882K42	23.12	2882K43	25.34	2882K44	29.03	2882K45	33.19	2882K46	42.13

Sheets—Smooth Finish

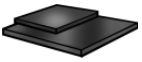

Width and length tolerances are +1″. Thickness tolerance is +0.025″.

Thick.	12″×12″		12″×24″		12″×48″	
1/4″	2449T11	$46.49	2449T25	$81.16	2449T39	$131.20
3/8″	2449T13	58.04	2449T27	99.74	2449T41	180.41
1/2″	2449T15	71.56	2449T29	124.43	2449T43	183.29
3/4″	2449T17	98.45	2449T31	156.89	2449T45	253.85
1″	2449T19	125.99	2449T33	186.51	2449T47	316.51
1 1/2″	2449T21	149.03	2449T35	252.68	2449T49	446.83
2″	2449T23	169.98	2449T37	298.74	2449T51	546.48

Rods—Smooth Finish

Diameter tolerance is oversized for finishing to sizes listed.

Dia.		
Sold in 2-ft. lengths.		
2″	2889K112	$55.01
2 1/2″	2889K122	81.60
3″	2889K132	109.86
3 1/2″	2889K142	142.46
4″	2889K152	158.02
Sold in 1-ft. lengths.		
4 1/2″	2889K161	$91.39
5″	2889K171	111.71
5 1/2″	2889K181	126.96
6″	2889K191	186.10

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Wear- and Water-Resistant Delrin® Acetal Resin

- Color: Opaque white or black
- Temp. Range: –20° to +180° F, unless noted
- Softening Temp.: 250° F
- Tensile Strength: Good
- Impact Strength: Good
- Low friction
- Good electrical insulator, unless noted
- Use indoors and outdoors
- Machine with high-speed steel tooling; cut *adhesive-backed strips* with scissors
- Hardness: Rockwell M89

Also known as acetal homopolymer and polyoxymethylene (POM), Delrin® acetal resin combines strength and wear resistance with good chemical resistance. It also absorbs less moisture than nylon. *White Delrin® acetal resin* is NSF, FDA, and USDA compliant, except *tubes* are not USDA compliant. All meet ASTM D6100, except *black strips*, *white* and *black tubes*, and *balls*.

Rectangular Bars—Smooth Finish

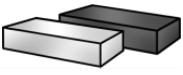

Width tolerance is +0.125″. Thickness tolerance is +0.025″ for 1/8″ to 1 3/4″ thicknesses, +0.050″ for 2″ to 3″ thicknesses, and +0.125″ for 4″ thickness. Sold in 1-ft. increments; maximum length is 4 feet. **To Order:** Please specify length.

WHITE

Wd.		Per Ft.
1/8″ Thick		
1″	8739K11	$1.94
1 1/2″	8739K12	2.77
2″	8739K13	3.67
2 1/2″	8739K95	5.03
3″	8739K14	5.03
4″	8739K15	6.69
5″	8739K96	8.94
6″	8739K17	10.73
1/4″ Thick		
1/4″	8741K32	1.22
1″	8739K18	3.53
1 1/2″	8739K19	5.03
2″	8739K21	6.65
2 1/2″	8739K86	7.26
3″	8739K22	8.94
4″	8739K23	11.63
5″	8739K24	13.83
6″	8739K25	15.41
5/16″ Thick		
5/16″	8741K33	1.96
3/8″ Thick		
3/8″	8741K34	2.62
1″	8739K26	4.64
1 1/2″	8739K27	7.44
2″	8739K28	8.94
2 1/2″	8739K87	10.93
3/8″ Thick (Cont.)		
3″	8739K29	$12.17
4″	8739K31	14.97
5″	8739K32	18.01
6″	8739K33	21.38
1/2″ Thick		
1/2″	8741K36	3.29
1″	8739K34	6.26
1 1/2″	8739K35	8.59
2″	8739K36	11.01
2 1/2″	8739K88	13.51
3″	8739K37	15.11
4″	8739K38	18.58
5″	8739K39	22.35
6″	8739K41	26.64
5/8″ Thick		
5/8″	8741K38	4.81
3/4″ Thick		
3/4″	8741K39	6.83
1″	8739K42	8.94
1 1/2″	8739K43	11.98
2″	8739K44	15.28
2 1/2″	8739K89	17.56
3″	8739K45	21.06
4″	8739K46	26.07
5″	8739K47	31.59
6″	8739K48	37.46
1″ Thick		
1″	8739K92	$10.93
1 1/2″	8739K49	14.80
2″	8739K51	19.03
2 1/2″	8739K91	22.08
3″	8739K52	26.37
4″	8739K53	32.78
5″	8739K54	41.77
6″	8739K55	49.83
1 1/4″ Thick		
1″	8739K56	12.67
1 1/4″	8741K44	14.80
1 1/2″	8739K57	17.56
2″	8739K58	22.50
2 1/2″	8739K59	27.75
3″	8739K61	31.33
4″	8739K62	40.98
5″	8739K63	52.07
6″	8739K64	57.36
1 1/2″ Thick		
1 1/2″	8739K93	14.80
2″	8739K65	26.64
2 1/2″	8739K66	31.19
3″	8739K67	37.20
4″	8739K68	49.09
5″	8739K69	57.72
6″	8739K71	68.70
1 3/4″ Thick		
1″	8739K72	$16.53
1 1/2″	8739K73	26.07
1 3/4″	8741K48	27.45
2″	8739K74	33.54
2 1/2″	8739K75	41.52
3″	8739K76	43.33
4″	8739K77	52.89
5″	8739K78	67.25
6″	8739K79	74.48
2″ Thick		
2″	8739K94	33.54
2 1/2″	8739K81	36.44
3″	8739K82	49.46
4″	8739K83	60.38
5″	8739K84	76.81
6″	8739K85	85.03
2 1/2″ Thick		
2 1/2″	8741K52	52.07
3″ Thick		
3″	8741K53	68.70
4″ Thick		
4″	8741K55	137.19

BLACK

Wd.		Per Ft.
1/8″ Thick		
1″	8662K11	$2.00
1 1/2″	8662K12	3.01
2″	8662K13	4.01
2 1/2″	8662K14	5.38
3″	8662K15	5.56
4″	8662K16	7.39
1/4″ Thick		
1/4″	8663K11	1.02
1″	8662K21	3.82
1 1/2″	8662K22	5.47
2″	8662K23	7.22
2 1/2″	8662K24	7.97
3″	8662K25	9.72
4″	8662K26	11.73
5/16″ Thick		
5/16″	8663K13	2.15
3/8″ Thick		
3/8″	8663K15	2.15
1″	8662K31	5.03
1 1/2″	8662K32	4.19
2″	8662K33	9.72
2 1/2″	8662K34	11.01
3/8″ Thick (Cont.)		
3″	8662K35	$13.18
4″	8662K36	16.22
1/2″ Thick		
1/2″	8663K17	2.86
1″	8662K41	6.78
1 1/2″	8662K42	9.33
2″	8662K43	11.91
2 1/2″	8662K44	13.68
3″	8662K45	16.39
4″	8662K46	20.17
5/8″ Thick		
5/8″	8663K19	5.25
1″	8662K87	8.09
1 1/2″	8662K88	11.63
2″	8662K89	13.85
2 1/2″	8662K97	22.12
3″	8662K98	27.55
4″	8662K99	35.40
3/4″ Thick		
3/4″	8663K21	7.44
1″	8662K51	9.72
1 1/2″	8662K52	13.00
3/4″ Thick (Cont.)		
2″	8662K53	$16.56
2 1/2″	8662K54	19.22
3″	8662K55	21.54
4″	8662K56	28.29
1″ Thick		
1″	8662K61	11.01
1 1/2″	8662K62	16.05
2″	8662K63	20.65
2 1/2″	8662K64	23.94
3″	8662K65	28.59
4″	8662K66	35.53
1 1/4″ Thick		
1″	8662K71	13.72
1 1/4″	8663K23	16.05
1 1/2″	8662K72	19.06
2″	8662K73	24.39
2 1/2″	8662K74	28.46
3″	8662K75	34.00
4″	8662K76	44.89
1 1/2″ Thick		
1 1/2″	8662K82	21.27
2″	8662K83	28.89
1 1/2″ Thick (Cont.)		
2 1/2″	8662K84	$33.86
3″	8662K85	40.35
4″	8662K86	31.08
1 3/4″ Thick		
1″	8662K91	16.83
1 1/2″	8662K92	28.29
1 3/4″	8663K25	30.05
2″	8662K93	36.38
2 1/2″	8662K94	45.04
3″	8662K95	47.02
4″	8662K96	57.38
2″ Thick		
2″	8662K19	36.38
2 1/2″	8662K29	45.04
3″	8662K39	53.66
4″	8662K49	65.49
3″ Thick		
3″	8662K37	74.26
4″	8662K38	91.40
4″ Thick		
4″	8663K29	145.78

Tight-Tolerance Blanks—Smooth Finish

- Color: Opaque white

These blanks are consistently flat, square, and parallel on all six sides. Width and length tolerances are ±0.010″.

Thick.	Thick. Tolerance	2″×12″		12″×12″	
3/8″	±0.005″	9123K21	$8.81	9123K26	$39.86
1/2″	±0.005″	9123K31	10.47	9123K36	49.41
3/4″	±0.005″	9123K51	14.79	9123K56	72.76

Adhesive-Backed Strips—Smooth Finish

- Color: Opaque white

Strips have an acrylic adhesive. Width tolerance is ±1/32″. Length tolerance is ±1″.

Thick.	Thick. Tolerance	4″ Wd.×36″ Lg.	
0.020″	±0.002″	2556T12	$49.74
0.030″	±0.003″	2556T14	58.69
0.040″	±0.004″	2556T16	61.19

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Wear- and Water-Resistant Delrin® Acetal Resin *(Material continued from previous page)*

Strips—Smooth Finish

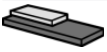

Width tolerance is ±0.020″. Available in 5-, 10-, 25-, 50-, and 100-ft. lengths. **To Order:** Please specify length.

Thick.	Thick. Tolerance	1″ Wide	Per Ft.	2″ Wide	Per Ft.	4″ Wide	Per Ft.	6″ Wide	Per Ft.	12″ Wide	Per Ft.
White											
0.010″	±0.003″	8738K11	$0.26	8738K21	$0.50	8738K31	$0.91	8738K41	$1.29	—	—
0.015″	±0.002″	8738K12	.36	8738K22	.64	8738K32	1.16	8738K42	1.68	8738K52	$2.91
0.020″	±0.002″	8738K13	.40	8738K23	.73	8738K33	1.32	8738K43	1.88	8738K53	3.28
0.025″	±0.003″	8738K14	.45	8738K24	.81	8738K34	1.46	8738K44	2.09	8738K54	3.63
0.031″	±0.003″	8738K15	.60	8738K25	1.10	8738K35	2.01	8738K45	2.87	8738K55	4.98
0.040″	±0.003″	8738K16	.78	8738K26	1.41	8738K36	2.57	8738K46	3.67	8738K56	6.39
0.062″	+0.005″, –0.002″	8738K18	1.05	8738K28	1.91	8738K38	3.47	8738K48	4.95	8738K58	8.63
Black											
0.020″	±0.002″	2638T11	.43	2638T12	.81	2638T13	1.62	2638T14	2.29	2638T15	4.08
0.031″	±0.003″	2638T21	.64	2638T22	1.20	2638T23	2.41	2638T24	3.41	2638T25	6.08
0.062″	+0.005″, –0.002″	2638T31	1.25	2638T32	2.21	2638T33	4.42	2638T34	6.28	2638T35	11.38
0.093″	+0.006″, –0.004″	2638T41	1.81	2638T42	3.21	2638T43	6.42	2638T44	9.14	2638T45	16.97

Sheets—Smooth Finish

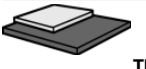

- Black is not rated as an electrical insulator

Width and length tolerances are ±1/8″ for 12″ sides, +1/2″ for 24″ sides, and +1″ for 48″ sides.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×48″		24″×24″		24″×48″	
White											
1/16″	±0.005″	8573K11	$8.91	8573K31	$15.47	8573K27	$27.38	8573K71	$27.38	8573K51	$46.89
3/32″	±0.007″	8573K12	12.21	8573K32	21.20	8573K28	37.58	8573K72	37.58	8573K52	67.10
1/8″	±0.010″	8573K13	15.14	8573K33	26.28	8573K29	46.58	8573K73	46.58	8573K53	83.18
3/16″	+0.025″	8573K14	22.96	8573K34	39.87	8573K87	70.66	8573K74	70.66	8573K54	126.17
1/4″	+0.025″	8573K15	24.50	8573K35	48.09	8573K88	85.22	8573K75	85.22	8573K55	152.17
3/8″	+0.025″	8573K17	37.60	8573K37	66.67	8573K89	118.03	8573K77	118.03	8573K57	218.58
1/2″	+0.025″	8573K18	44.48	8573K38	78.64	8573K91	142.99	8573K78	142.99	8573K58	264.79
5/8″	+0.025″	8573K19	59.97	8573K39	107.08	8573K92	192.75	8573K79	192.75	8573K59	356.95
3/4″	+0.025″	8573K21	67.67	8573K41	119.63	8573K93	217.50	8573K81	217.50	8573K61	402.78
1″	+0.025″	8573K22	83.98	8573K42	153.02	8573K94	278.22	8573K82	278.22	8573K62	515.23
1 1/4″	+0.025″	8573K23	107.63	8573K43	196.11	8573K95	356.56	8573K83	356.56	8573K63	660.29
1 1/2″	+0.025″	8573K24	118.78	8573K44	216.44	8573K96	393.52	8573K84	393.52	8573K64	728.74
1 3/4″	+0.025″	8573K25	139.20	8573K45	253.40	8573K97	460.95	8573K85	460.88	—	—
2″	+0.025″	8573K26	147.85	8573K46	269.56	8573K98	489.54	8573K86	490.13	—	—
2 1/2″	+0.025″	8573K67	186.96	8573K68	339.21	8573K69	616.84	—	—	—	—
3″	+0.025″	8573K111	219.32	8573K221	397.29	8573K321	711.86	—	—	—	—
3 1/4″	+0.025″	8573K112	256.30	8573K222	443.60	8573K322	797.06	—	—	—	—
3 1/2″	+0.025″	8573K113	248.92	8573K232	466.19	8573K323	834.54	—	—	—	—
4″	+0.025″	8573K115	279.11	8573K252	503.37	8573K325	909.94	—	—	—	—
Black											
1/32″	±0.003″	8575K131	6.49	8575K132	11.35	8575K134	20.06	8575K133	20.06	8575K135	36.48
1/16″	±0.005″	8575K111	8.80	8575K211	15.29	8575K461	27.03	8575K411	27.03	8575K651	49.15
3/32″	±0.007″	8575K112	12.65	8575K212	26.22	8575K462	38.87	8575K412	38.87	8575K652	70.67
1/8″	±0.010″	8575K113	15.13	8575K213	26.28	8575K463	46.48	8575K413	46.48	8575K653	84.50
3/16″	+0.025″	8575K114	23.13	8575K214	40.19	8575K464	71.07	8575K414	71.07	8575K654	129.22
1/4″	+0.025″	8575K115	27.87	8575K215	48.43	8575K465	85.64	8575K415	85.64	8575K655	155.71
3/8″	+0.025″	8575K116	40.95	8575K216	71.15	8575K466	125.83	8575K416	125.83	8575K656	228.78
1/2″	+0.025″	8575K117	50.29	8575K217	87.37	8575K467	154.51	8575K417	154.51	8575K657	280.93
5/8″	+0.025″	8575K121	65.65	8575K221	114.06	8575K468	201.71	8575K421	201.71	8575K658	366.75
3/4″	+0.025″	8575K118	74.32	8575K218	129.12	8575K469	228.35	8575K418	228.35	8575K659	415.18
1″	+0.025″	8575K119	96.18	8575K219	167.11	8575K471	295.53	8575K419	295.53	8575K661	537.33
1 1/4″	+0.025″	8575K231	123.88	8575K232	214.87	—	—	8575K233	380.74	—	—
1 1/2″	+0.025″	8575K431	133.62	8575K432	232.07	—	—	8575K433	411.79	—	—
2″	+0.025″	8575K631	165.79	8575K632	288.45	—	—	8575K633	511.74	—	—
2 1/2″	+0.025″	8575K711	205.59	8575K721	356.58	—	—	8575K741	619.08	—	—
3″	+0.025″	8575K712	248.33	8575K722	430.16	—	—	8575K742	746.33	—	—
3 1/4″	+0.025″	8575K713	287.53	8575K723	524.59	—	—	8575K743	865.65	—	—
3 1/2″	+0.025″	8575K714	303.33	8575K724	525.35	—	—	8575K744	911.54	—	—
4″	+0.025″	8575K716	325.94	8575K726	567.70	—	—	8575K746	990.35	—	—

Tubes—Smooth Finish

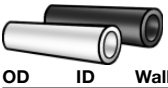

- Temp. Range: –4° to +180° F

OD is oversized +0.040″ and ID is undersized –0.040″ for finishing to sizes listed. Length tolerance is +1″. Sold in 5-ft. lengths.

OD	ID	Wall Thick.	White		Black	
1/4″	1/8″	1/16″	8627K51	$5.50	1830T11	$5.90
1/2″	1/4″	1/8″	8627K53	15.20	1830T12	16.15
5/8″	1/4″	3/16″	8627K55	23.10	1830T13	24.90
5/8″	1/2″	1/16″	8627K57	17.15	1830T14	18.50
3/4″	1/4″	1/4″	8627K61	33.65	1830T16	36.30
3/4″	1/2″	1/8″	8627K59	28.95	1830T15	46.90
7/8″	5/8″	1/8″	8627K63	26.90	1830T19	29.05
1″	1/2″	1/4″	8627K62	42.90	1830T17	45.90
1 1/4″	3/4″	1/4″	8627K65	46.85	1830T18	50.15
1 1/4″	1″	1/8″	8627K69	$36.10	1830T21	$38.60
1 1/2″	1″	1/4″	8627K73	50.60	1830T22	54.10
1 1/2″	1 1/4″	1/8″	8627K75	48.60	1830T24	52.00
1 3/4″	1 1/4″	1/4″	8627K78	76.00	1830T25	63.15
1 3/4″	1 1/2″	1/8″	8627K82	59.00	1830T26	81.30
2″	1 1/2″	1/4″	8627K88	85.80	1830T23	91.80
2″	1 3/4″	1/8″	8627K89	54.50	1830T27	58.30
2 1/4″	2″	1/8″	8627K91	68.20	1830T28	72.95
2 1/2″	2″	1/4″	8627K92	110.25	1830T29	117.95

(Material continued on following page)

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Wear- and Water-Resistant Delrin® Acetal Resin *(Material continued from previous page)*

- Color: Opaque white or black
- Temp. Range: –20° to +180° F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Good
- Low friction
- Good electrical insulator, unless noted
- Use indoors
- Machine with high-speed steel tooling; cut *adhesive-backed strips* with scissors
- Hardness: Rockwell M89-M94

Also known as acetal homopolymer and polyoxymethylene (POM), Delrin® acetal resin combines strength and wear resistance with good chemical resistance. It also absorbs less moisture than nylon. *White Delrin® acetal resin* is NSF, FDA, and USDA compliant, except *tubes* are not USDA compliant. All meet ASTM D6100, except *black strips*, *white* and *black tubes*, and *balls*.

Rods—Smooth Finish

- Black is not rated as an electrical insulator

Dia. tolerance is +0.005″ for diameters 1⅞″ and smaller, +0.030″ for diameters 2″ to 2¾″, and +0.250″ for diameters 3″ and larger.

Dia.	White Per Ft.	Black Per Ft.
Sold in 5-ft. lengths.		
3/16″	8572K49 $0.50	8576K49 $0.51
1/4″	8572K51 .55	8576K11 .55
5/16″	8572K52 .71	8576K12 .78
3/8″	8572K53 .91	8576K13 .93
7/16″	8572K54 1.33	8576K14 1.41
1/2″	8572K55 1.46	8576K15 1.51
9/16″	8572K56 2.02	8576K16 1.99
5/8″	8572K57 2.18	8576K17 2.31
3/4″	8572K58 2.70	8576K18 2.95

Dia.	White Per Ft.	Black Per Ft.
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.		
7/8″	8572K59 $3.88	8576K19 $4.25
1″	8572K61 4.67	8576K21 5.06
1 1/8″	8572K22 6.32	8576K22 7.06
1 1/4″	8572K23 7.02	8576K23 7.89
1 3/8″	8572K24 9.57	8576K24 9.65
1 1/2″	8572K25 9.88	8576K25 9.65
1 5/8″	8572K26 12.09	8576K26 12.64
1 3/4″	8572K27 13.11	8576K27 13.75
1 7/8″	——— ———	8576K51 16.11
2″	8572K29 16.69	8576K29 17.28
2 1/4″	8572K31 21.92	8576K31 22.64

Dia.	White Per Ft.	Black Per Ft.
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.		
2 1/2″	8572K32 $26.30	8576K32 $27.10
2 3/4″	——— ———	8576K52 31.43
3″	8572K34 39.60	8576K34 41.13
3 1/4″	——— ———	8576K53 52.13
3 1/2″	8572K35 59.33	8576K35 61.39
4″	8572K36 69.16	8576K36 69.69
4 1/2″	8572K37 107.64	——— ———
5″	8572K38 125.65	8576K38 131.19
5 1/2″	8572K39 146.65	——— ———
6″	8572K41 163.23	8576K41 173.12
6 1/2″	8572K42 186.04	——— ———

Dia.	1/2″ LONG (+1/16″) White Each	1/2″ LONG (+1/16″) Black Each	1″ LONG (+1/16″) White Each	1″ LONG (+1/16″) Black Each	2″ LONG (+1/16″) White Each	2″ LONG (+1/16″) Black Each
3″	8582K11 $5.47	9986K11 $5.69	8582K12 $9.12	9986K12 $9.48	8582K14 $15.20	9986K13 $15.79
4″	8582K21 9.56	9986K21 9.64	8582K22 15.94	9986K22 16.06	8582K24 26.56	9986K23 26.76
5″	8582K31 17.37	9986K51 18.14	8582K32 28.95	9986K52 30.23	8582K34 48.25	9986K53 50.38
6″	8582K41 22.57	9986K31 23.86	8582K42 37.61	9986K32 39.89	8582K44 62.68	9986K33 66.48
7″	8582K51 25.86	9986K71 28.80	8582K52 45.42	9986K72 50.58	8582K54 79.04	9986K74 88.02
8″	8582K61 33.16	9986K41 35.33	8582K62 58.23	9986K42 62.06	8582K64 101.34	9986K43 107.99
10″	8582K71 64.05	9986K81 70.41	8582K72 98.11	9986K82 107.92	8582K74 170.53	9986K84 187.58

Dia.	3″ LONG (+1/16″) White Each	3″ LONG (+1/16″) Black Each	6″ LONG (+1/16″) White Each	6″ LONG (+1/16″) Black Each
3″	8582K15 $19.01	9986K14 $19.74	8582K18 $26.40	9986K16 $27.42
4″	8582K25 33.20	9986K24 33.46	8582K28 46.11	9986K26 46.47
5″	8582K36 60.31	9986K54 62.97	8582K39 83.77	9986K55 87.47
6″	8582K45 78.35	9986K34 83.10	8582K48 108.82	9986K36 115.42
7″	8582K56 103.13	9986K76 114.85	8582K59 161.64	9986K79 180.01
8″	8582K65 132.22	9986K44 140.90	8582K68 207.24	9986K46 220.84
10″	8582K76 233.60	9986K86 256.96	——— ———	——— ———

Balls—Smooth Finish

- Color: Opaque white
- Max. Temp.: 185° F; low end not rated
- Grade: 1, unless noted
- Sphericity: Metric, 0.0127 mm; Inch, 0.0005″, unless noted

Metric

Dia.	Dia. Toler.	Pkg. Qty.		Pkg.
2 mm	±0.0254 mm	100	9614K71	$1.73
3 mm	±0.0254 mm	100	9614K72	2.06
4 mm	±0.0254 mm	100	9614K73	3.34
5 mm	±0.0254 mm	100	9614K74	5.07

Inch

Dia.	Dia. Toler.	Pkg. Qty.		Pkg.
1/16″	±0.002″	100	9614K5♦	$4.21
3/32″	±0.001″	100	9614K51	1.57
1/8″	±0.001″	100	9614K52	1.85
5/32″	±0.001″	100	9614K53	2.76
3/16″	±0.001″	100	9614K54	3.05
7/32″	±0.001″	100	9614K22	6.62
1/4″	±0.001″	100	9614K24	6.81
5/16″	±0.001″	100	9614K57	$6.51
3/8″	±0.001″	100	9614K58	13.51
1/2″	±0.001″	50	9614K59	10.30
5/8″	±0.002″	25	9614K6♦	8.49
3/4″	±0.001″	25	9614K25	12.08
1″	±0.001″	10	9614K27	9.78
1 1/2″	±0.002″	5	9614K39♦	14.79

♦Grade 2, 0.001″ sphericity.

Ultra-Slippery Lubricated Acetal (Turcite)

- Color: Opaque blue or red
- Temp. Range: –40° to +180° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Poor
- Low friction
- Not rated as an electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: *Blue*, Rockwell M81; *red*, Rockwell M63

This acetal-based, self-lubricating material is chemical resistant, easy-to-machine, and very slippery. Ideal for bearing applications. Meets UL 94HB for flammability.

Rods—Smooth Finish

Diameter tolerance for 1/4″ to 2″ diameters is +0.005″; 2 1/2″ diameters and greater are oversized for finishing to sizes listed. *Blue* is more wear resistant than red, making it suitable for moderate to heavy loads at moderate speeds. *Red* is more slippery than blue, making it suitable for low-load applications at high speeds.

Dia.	Blue Per Ft.	Red Per Ft.
Sold in 1-ft. increments; max. length is 8 feet. To Order: Please specify length.		
1/4″	7521T11 $5.71	7521T31 $6.55
3/8″	7521T12 9.23	7521T32 11.20
1/2″	7521T13 10.84	7521T33 11.57
5/8″	7521T14 15.17	7521T34 16.88
3/4″	7521T15 15.54	7521T35 17.98

Dia.	Blue Per Ft.	Red Per Ft.
Sold in 1-ft. increments; max. length is 8 feet. To Order: Please specify length.		
1″	7521T16 $20.82	7521T36 $23.18
1 1/4″	7521T17 38.37	7521T37 46.96
1 1/2″	7521T18 48.04	7521T38 51.28
1 3/4″	7521T21 54.41	7521T41 63.57
2″	7521T22 85.67	7521T42 116.52

Dia.	Blue Per Ft.	Red Per Ft.
Sold in 1-ft. increments; max. length is 4 feet. To Order: Please specify length.		
2 1/2″	7521T23 $119.37	7521T43 $170.47
3″	7521T24 186.98	7521T44 269.55
3 1/2″	7521T25 257.13	7521T45 357.27

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

High-Strength Glass-Filled Delrin® Acetal Resin

- Color: Opaque white to off-white
- Temp. Range: –40° to +185° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Poor
- Low friction
- Good electrical insulator
- Use indoors
- Machine with carbide tooling
- Hardness: Rockwell M90

Material is 20% glass-filled for improved heat resistance and greater dimensional stability. It has low moisture absorption. Made from Delrin® acetal resin 570. Meets ASTM D4181 and D6100. Meets UL 94HB for flammability.

Sheets—Smooth Finish

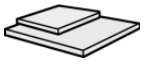

Width and length tolerances are ±1/8″ for 12″ sides, +1/2″ for 24″ sides, and +1″ for 48″ sides. Thickness has a plus tolerance.

Thick.	12″×12″		12″×24″		12″×48″		24″×24″	
3/8″	8684K11	$82.69	8684K12	$148.21	8684K14	$291.17	8684K13	$291.17
1/2″	8684K16	107.73	8684K17	196.35	8684K19	367.69	8684K18	367.69
3/4″	8684K21	158.60	8684K22	288.12	8684K24	548.80	8684K23	548.80
1″	8684K26	210.09	8684K27	367.84	8684K29	717.04	8684K28	717.04
1 1/2″	8684K81	307.51	8684K82	531.43	8684K84	1,031.91	8684K83	1,031.91

Rods—Smooth Finish

Sold in 1-ft. increments; max. length is 5 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
3/8″	+0.002″	8719K11	$3.45
1/2″	+0.002″	8719K12	5.28
3/4″	+0.002″	8719K13	8.84
1″	+0.002″	8719K14	15.16
1 1/4″	+0.005″	8719K15	19.73
1 1/2″	+0.005″	8719K16	31.26
2″	+0.005″	8719K17	49.31

Ultra-Wear-Resistant PTFE-Filled Delrin® Acetal Resin

- Color: Opaque brown, unless noted
- Temp. Range: –40° to +185° F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Poor
- Low friction
- Not rated as an electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R118-R121

Material is filled with 13% PTFE to provide better wear and friction resistance than unfilled Delrin® acetal resin. It has low moisture absorption and good dimensional stability. *Sheets* and *rods* meet ASTM D6100. All except *strips* meet UL 94HB for flammability.

Strips—Smooth Finish

- Max. Temp.: 185° F; low end not rated

Width tolerance is ±0.020″. Available in 5-, 10-, 25-, 50-, and 100-ft. lengths. **To Order:** Please specify length.

Thick.	Thick. Tolerance	1″ Wide		2″ Wide		4″ Wide		6″ Wide		12″ Wide	
			Per Ft.		Per Ft.		Per Ft.		Per Ft.		Per Ft.
0.020″	±0.002″	2636T11	$1.56	2636T12	$2.93	2636T13	$5.55	2636T14	$7.84	2636T15	$14.95
0.031″	±0.003″	2636T21	2.25	2636T22	4.27	2636T23	8.09	2636T24	11.51	2636T25	21.90
0.062″	+0.005″, –0.002″	2636T31	3.77	2636T32	7.13	2636T33	13.57	2636T34	19.38	2636T35	37.00
0.093″	+0.006″, –0.004″	2636T41	5.06	2636T42	9.60	2636T43	18.29	2636T44	26.15	2636T45	49.74

Sheets—Smooth Finish

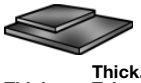

Width and length tolerances are ±1/8″ for 6″ and 12″ sides, +1/2″ for 24″ sides, and +1″ for 48″ sides.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		12″×48″		24″×24″	
1/8″	±0.010″	8578K411	$19.27	8578K311	$57.62	8578K511	$104.93	8578K811	$190.78	8578K611	$190.78
1/4″	+0.025″	8578K412	35.80	8578K312	113.80	8578K512	207.26	8578K812	376.83	8578K612	376.83
3/8″	+0.025″	8578K413	52.38	8578K313	166.50	8578K513	303.23	8578K813	551.33	8578K613	551.33
1/2″	+0.025″	8578K414	70.91	8578K314	225.41	8578K514	410.51	8578K814	746.38	8578K614	746.38
5/8″	+0.025″	8578K415	77.36	8578K315	253.94	8578K515	462.48	8578K815	840.87	8578K615	840.87
3/4″	+0.025″	8578K416	90.20	8578K316	299.35	8578K516	545.18	8578K816	991.24	8578K616	991.24
1″	+0.025″	8578K417	114.31	8578K317	390.24	8578K517	722.67	8578K817	1,313.95	8578K617	1,313.95

Tubes—Smooth Finish

- Temp. Range: –4° to +180° F

OD tolerance is +0.040″; ID tolerance is –0.040″. Sold in 1-ft. increments; maximum length is 5 feet. **To Order:** Please specify length.

OD	ID	Wall Thick.		Per Ft.
1/4″	1/8″	1/16″	1817T11	$3.51
1/2″	1/4″	1/8″	1817T12	10.67
5/8″	1/4″	3/16″	1817T13	16.17
5/8″	1/2″	1/16″	1817T14	9.82
3/4″	1/4″	1/4″	1817T16	$22.49
3/4″	1/2″	1/8″	1817T15	16.73
1″	1/2″	1/4″	1817T17	29.39
1 1/4″	3/4″	1/4″	1817T21	38.52
1 1/4″	1″	1/8″	1817T22	$26.50
1 1/2″	1″	1/4″	1817T23	45.31
2″	1 1/2″	1/4″	1817T24	61.83

Rods—Smooth Finish

- Color: Dark brown

Sold in 1-ft. increments; max. length is 5 feet. **To Order:** *Please specify length.*

Dia.	Dia. Tolerance		Per Ft.
1/4″	+0.002″	8579K12	$1.56
3/8″	+0.002″	8579K14	3.53
1/2″	+0.002″	8579K16	5.63
5/8″	+0.002″	8579K24	8.15
3/4″	+0.002″	8579K26	11.68
1″	+0.002″	8579K28	17.10
1 1/8″	+0.005″	8579K32	$21.52
1 1/4″	+0.005″	8579K34	24.51
1 1/2″	+0.005″	8579K36	32.08
1 3/4″	+0.005″	8579K38	42.35
2″	+0.005″	8579K42	57.05
2 1/4″	+0.030″	8579K46	$69.24
2 1/2″	+0.030″	8579K48	80.64
3″	+0.250″	8579K52	114.54
3 1/2″	+0.250″	8579K54	199.74
4″	+0.250″	8579K56	256.38
5″	+0.250″	8579K58	380.97

Dia.	Dia. Tolerance	Lg. Tolerance	1/2″ Long		1″ Long		3″ Long		6″ Long	
3″	+0.025″	+0.125″	9969K11	$9.16	9969K12	$17.18	9969K14	$40.09	9969K16	$74.45
4″	+0.250″	+0.125″	9969K21	20.51	9969K22	38.46	9969K24	89.73	9969K26	166.65
6″	+0.250″	+0.125″	9969K31	42.07	9969K32	71.19	9969K34	171.50	9969K36	323.58

Acetal Copolymer

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Chemical- and Wear-Resistant Acetal Copolymer

- Color: Opaque white or black, unless noted
- Temp. Range: –40° to +180° F; *tubes*, –4° to +180° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Good
- Low friction; *tubes* not rated
- Good electrical insulator
- Use indoors
- Machine with high-speed steel tooling; cut *film* with scissors
- Hardness: Rockwell M78-M88

Acetal copolymer is wear resistant and offers good chemical resistance. *Sheets* and *rods* meet ASTM D6100. *Translucent* and *opaque white acetal copolymer* is FDA compliant and NSF certified.

Sheets—Smooth Finish

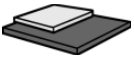

Width and length tolerances are +1″. **To Order:** Please specify color where available: white or black.

Thick.	Thick. Tolerance	12″×12″	White	Black	12″×24″	White	Black	24″×24″	White	Black	24″×48″	White	Black
1/16″	±0.005″	8492K11	$6.89	$7.01	8492K21	$12.75	$13.06	8492K41	$23.11	$24.38	8492K51	$44.44	$45.82
1/8″	+0.025″	8492K12	13.23	13.79	8492K22	24.16	25.16	8492K42	43.85	45.68	8492K52	79.72	83.05
1/4″	+0.025″	8492K13	24.04	24.98	8492K23	43.87	45.60	8492K43	79.63	82.78	8492K53	144.79	150.51
3/8″	+0.025″	8492K14	35.03	36.13	8492K24	63.94	65.95	8492K44	116.07	119.72	8492K54	211.03	217.67
1/2″	+0.025″	8492K15	40.90	44.00	8492K25	74.66	80.31	8492K45	135.52	145.78	8492K55	246.40	265.05
3/4″	+0.025″	8492K16	62.70	67.78	8492K26	111.42	123.32	8492K46	207.73	224.58	8492K56	377.69	408.33
1″	+0.025″	8492K17	85.14	88.50	8492K27	155.41	161.00	8492K47	282.10	293.22	8492K57	512.91	533.12
1 1/4″	+0.025″	8492K18	101.47	106.98	8492K28	204.24	202.81	8492K48	357.42	365.58	8492K58	646.33	656.34
1 1/2″	+0.025″	8492K19	118.89	123.25	8492K29	215.71	224.23	8492K49	392.27	410.59	8492K59	711.92	742.48
2″	+0.050″	8492K61	153.72	158.03	8492K71	279.65	288.46	8492K81	509.30	523.60	8492K91	926.00	952.00
2 1/4″	+0.050″	8492K62	166.57	—	8492K72	303.35	—	8492K82	551.55	—	—	—	—
2 1/2″	+0.050″	8492K63	197.70	—	8492K73	358.87	—	8492K83	652.49	—	—	—	—
3″	+0.125″	8492K64	211.58	—	8492K74	384.06	—	8492K84	698.30	—	—	—	—
4″	+0.125″	8492K66	272.65	—	8492K76	499.86	—	8492K86	908.84	—	—	—	—

Film—One Side Matte; Other Side Has a Smooth Finish

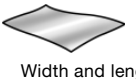

- Color: Translucent white

Width and length tolerances are ±1/16″.

Thick.	Thick. Tolerance	12″×12″	
0.003″	±0.0003″	5742T11	$9.50
0.005″	±0.0005″	5742T31	12.92
0.010″	±0.0010″	5742T51	22.96
0.020″	±0.0020″	5742T71	38.45

Tubes—Smooth Finish

- Color: Opaque white

OD tolerance is +0.040″; ID tolerance is –0.040″.

OD	ID	Wall Thick.		Per Ft.
Sold in 5-ft. lengths.				
1/4″	1/8″	1/16″	1808T11	$1.16
1/2″	1/4″	1/8″	1808T12	3.98
5/8″	1/4″	3/16″	1808T13	6.02
5/8″	1/2″	1/16″	1808T14	4.29
Sold in 1-ft. increments; maximum length is 5 feet. To Order: Please specify length.				
3/4″	1/4″	1/4″	1808T16	$8.71
3/4″	1/2″	1/8″	1808T15	7.35
1″	1/2″	1/4″	1808T17	10.55
1 1/4″	3/4″	1/4″	1808T18	11.81
1 1/4″	1″	1/8″	1808T21	9.33
1 1/2″	1″	1/4″	1808T22	13.70
2″	1 1/2″	1/4″	1808T23	18.76

Rods—Smooth Finish

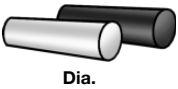

To Order: Please specify color where available: white or black.

Dia.	Dia. Tolerance	Per Ft. White	Per Ft. Black
Sold in 4-ft. lengths.			
1/8″	+0.003″	8497K11	$0.43	—
3/16″	+0.003″	8497K12	.44	$0.52
1/4″	+0.003″	8497K13	.59	.62
5/16″	+0.003″	8497K15	.74	.83
3/8″	+0.003″	8497K17	.93	.96
7/16″	+0.003″	8497K19	1.39	1.61
1/2″	+0.003″	8497K21	1.51	1.64
9/16″	+0.003″	8497K23	2.16	2.25
5/8″	+0.003″	8497K25	2.32	2.47
3/4″	+0.003″	8497K27	2.80	3.09
7/8″	+0.003″	8497K29	4.26	4.72
Sold in 1-ft. increments; max. length is 4 feet. To Order: Please specify length.				
1″	+0.005″	8497K31	$4.81	$5.31
1 1/4″	+0.005″	8497K35	7.22	7.90
1 1/2″	+0.005″	8497K37	10.15	10.65
1 3/4″	+0.005″	8497K41	12.23	13.35
2″	+0.015″	8497K43	15.91	17.76
2 1/4″	+0.015″	8497K45	20.06	22.44
2 1/2″	+0.015″	8497K47	24.94	27.46
Sold in 1-ft. increments; max. length is 2 feet. To Order: Please specify length.				
3″	+0.250″	8497K49	37.22	40.01
3 1/2″	+0.250″	8497K51	55.91	59.68
Sold in 1-ft. lengths.				
4″	+0.250″	8497K53	$65.14	$71.74
4 1/2″	+0.250″	8497K55	101.09	111.07
5″	+0.250″	8497K57	119.38	133.92
5 1/2″	+0.250″	8497K59	130.71	146.51
6″	+0.250″	8497K61	150.73	163.62
6 1/2″	+0.250″	8497K62	185.48	202.30
7″	+0.250″	8497K63	218.94	245.27
7 1/2″	+0.250″	8497K64	252.02	259.18
8″	+0.300″	8497K65	281.45	298.74
9″	+0.300″	8497K67	335.98	377.44
10″	+0.300″	8497K69	384.92	408.03

Static-Dissipative Acetal Copolymer

- Color: Opaque off-white
- Temp. Range: –20° to +180° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Good
- Low friction
- Not rated as an electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: *Sheets*, Rockwell M51; *rods*, not rated

This chemical- and wear-resistant material is used in applications where dust and static electricity are a problem. Meets ASTM D6100 and UL 94HB for flammability.

Sheets—Rough Finish

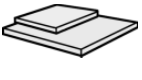

Width and length tolerances are +1/16″.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		24″×48″	
1/4″	+0.025″	8513T11	$25.87	8513T31	$90.83	8513T51	$160.39	8513T71	$574.86
3/8″	+0.025″	8513T13	41.11	8513T33	142.50	8513T53	253.94	8513T73	913.46
1/2″	+0.025″	8513T15	45.68	8513T35	160.91	8513T55	287.56	8513T75	1,038.11

Rods—Rough Finish

Sold in 1-ft. increments; maximum length is 5 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance	Per Ft.	Dia.	Dia. Tolerance	Per Ft.
1/4″	+0.002″	8753K22	$1.93	3/4″	+0.002″	8753K26	$8.28
1/2″	+0.002″	8753K24	4.71	1″	+0.002″	8753K28	13.37

For information about plastics, see page 3564. For performance plastics, see page 3573.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8539KAC**.

Moisture-Resistant Polyester (PET)

- Color: Opaque white to off-white, unless noted
- Temp. Range: –40° to +230° F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Excellent
- Impact Strength: Poor
- Low friction; *film* not rated
- Good electrical insulator, unless noted
- Use indoors and outdoors, except use *film* indoors
- Machine with high-speed steel tooling; cut *film* with scissors
- Hardness: Rockwell R114; *film* not rated

PET has good dimensional stability and low moisture absorption. Comparable to acetal (pages 3586-3589). *Sheets* and *rods* meet ASTM D5927 and D6261 and are FDA compliant.

Sheets—Smooth Finish

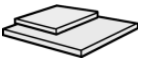

Width tolerance is ±1/8″ for 6″ and 12″ widths, +1/2″ for 24″ widths. Length tolerance is ±1/8″ for 6″ and 12″ lengths, +1″ for 24″ and 48″ lengths.

Thick.	Thick. Tolerance	6″ Wd. × 6″ Lg.		12″ Wd. × 12″ Lg.		12″ Wd. × 24″ Lg.		24″ Wd. × 24″ Lg.		24″ Wd. × 48″ Lg.	
1/4″	+0.025″	8597K92	$12.15	8597K52	$42.39	8597K72	$78.83	8597K12	$145.78	8597K32	$269.97
1/2″	+0.025″	8597K93	17.79	8597K53	62.06	8597K73	115.42	8597K13	213.45	8597K33	395.28
3/4″	+0.025″	8597K95	25.29	8597K55	84.46	8597K75	157.09	8597K15	290.51	8597K35	537.98
1″	+0.025″	8597K96	34.51	8597K56	115.29	8597K76	214.42	8597K16	396.52	8597K36	734.30
1 1/4″	+0.025″	8597K97	43.21	8597K57	144.33	8597K77	268.43	8597K17	496.42	8597K37	919.29
1 1/2″	+0.025″	8597K98	48.57	8597K58	162.25	8597K78	301.77	8597K18	558.07	8597K39	1,033.47

Film—Smooth Finish

- Color: Clear or translucent white
- Temp. Range: –20° to +300° F

Width tolerance is ±1/8″. Length tolerance is +12″ for clear, +6″ for translucent white. *Clear* meets UL 94VTM2 for flammability. *Translucent white* has a dull matte finish.

Thick.	Thick. Tolerance	Wd.	10-ft. Length		25-ft. Length	
Clear						
0.0005″	±0.00005″	27″	8567K102	$6.12	8567K104	$12.25
0.001″	±0.0001″	40″	8567K12	12.72	8567K14	25.44
0.002″	±0.0002″	40″	8567K22	13.56	8567K24	27.13
0.003″	±0.0003″	40″	8567K32	15.53	8567K34	31.06
0.004″	±0.0004″	40″	8567K42	18.73	8567K44	37.45
0.005″	±0.0005″	40″	8567K52	22.34	8567K54	44.67
0.007″	±0.0007″	40″	8567K62	39.02	8567K64	78.03
0.010″	±0.001″	40″	8567K92	45.71	8567K94	91.42
Translucent White						
0.005″	±0.00025″	20″	—	—	8567K95	55.92
0.005″	±0.00025″	40″	—	—	8567K96	109.58

High-Temperature Film—Smooth Finish

- Color: Translucent
- Max. Temp.: 400° F; low end not rated
- Not rated as an electrical insulator

This film releases cleanly from adhesives, synthetic resins, and paint. Commonly used in flat surface molds and carrier plates. *Note:* Film should be at least 1″ larger in width and length than the piece it is releasing from. Width tolerance is ±1/8″. Length tolerance is +1/8″.

Thick.	Wd.	50-ft. Length	
0.0010″	20″	7594T11	$72.38
0.0015″	20″	7594T21	84.42

Adhesive-Backed Film—Smooth Finish

- Color: Clear
- Temp. Range: –50° to +275° F

Has a permanent, pressure-sensitive acrylic adhesive on one side that increases thickness by up to 0.001″. Width and length tolerances are ±1/32″. Film only (not adhesive) meets UL 94VTM2 for flammability.

Thick.	Thick. Tolerance	27″ × 20″		27″ × 38″	
0.002″	±0.0002″	8689K42	$3.23	8689K44	$6.03

Static-Dissipative Adhesive-Backed Film—Smooth Finish

- Color: Clear
- Temp. Range: 40° to 150° F
- Not rated as an electrical insulator

Width and length tolerances are ±1/4″. Thickness tolerance is ±0.0004″.

Thick.	24″ × 48″		48″ × 48″		48″ × 96″	
0.004″	8187K12	$117.02	8187K13	$199.74	8187K14	$353.14

Metallized Film—Smooth Finish

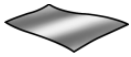

- Color: Silver
- Temp. Range: –40° to +300° F

A thin coating of aluminum on one side creates a shiny finish. Film only (not aluminum coating) meets UL 94VTM2 for flammability.

Thick.	Thick. Tolerance	27″ × 12′	
0.002″	±0.0001″	7538T11	$9.94
0.005″	±0.00025″	7538T12	18.05

Rods—Smooth Finish

Dia.	Dia. Tolerance		Per Ft.
Sold in 5-ft. lengths.			
1/2″	+0.002″	8598K12	$1.49
5/8″	+0.002″	8598K11	2.24
3/4″	+0.002″	8598K13	2.82

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.			
1″	+0.002″	8598K14	$5.08
1 1/4″	+0.005″	8598K15	7.95
1 1/2″	+0.005″	8598K16	11.43
1 3/4″	+0.005″	8598K17	15.30
2″	+0.005″	8598K18	18.90

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.			
2 1/2″	+0.030″	8598K21	$30.29
3″	+0.250″	8598K22	44.66
3 1/2″	+0.250″	8598K23	65.21
4″	+0.250″	8598K24	76.01

Wear-Resistant Lubricated Polyester (Hydex)

- Color: Opaque white to off-white
- Temp. Range: –40° to +221° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Poor
- Low friction
- Not rated as an electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Not rated

This easy-to-machine, polyester-based material is tougher and more wear resistant than PET. Meets ASTM D6261 and 3-A sanitary requirements. FDA compliant.

Rods—Smooth Finish

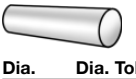

Sold in 1-ft. increments; maximum length is 5 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/4″	+0.002″	7593T11	$4.21
3/8″	+0.002″	7593T12	7.44
1/2″	+0.002″	7593T13	12.50
5/8″	+0.002″	7593T14	17.12

Dia.	Dia. Tolerance		Per Ft.
3/4″	+0.002″	7593T15	$21.04
1″	+0.002″	7593T16	35.60
1 1/4″	+0.005″	7593T17	49.02
1 3/8″	+0.005″	7593T18	60.31

Dia.	Dia. Tolerance		Per Ft.
1 1/2″	+0.005″	7593T19	$64.28
1 3/4″	+0.005″	7593T21	80.98
2″	+0.005″	7593T22	106.57
2 1/2″	+0.030″	7593T23	184.85
3″	+0.030″	7593T24	231.77

For information on the mechanical and physical properties of polyethylene, go to mcmaster.com and search for **8657KAC**.

Moisture-Resistant Polyethylene (LDPE)

- Color: Translucent natural, unless noted
- Temperature Range: –40° to +125° F, unless noted
- Softening Temp.: 192° F, unless noted
- Tensile Strength: Poor, unless noted
- Impact Strength: Excellent, unless noted
- Not rated for friction, unless noted
- Not rated as an electrical insulator, unless noted
- Use indoors, unless noted
- Machine with high-speed steel tooling, unless noted
- Hardness: Shore D42-D66, unless noted

LDPE has good to excellent moisture resistance, which makes it ideal for high humidity and direct water contact applications. Often used in shrink-wrap film, garment bags, and tote boxes, except aluminum-faced sheets.

Rectangular Bars—Smooth Finish

FDA compliant for food contact. Width tolerance is ±1/16″.

Thick.	Thick. Tolerance	1″ Wide	Per Ft.	1 1/2″ Wide	Per Ft.	2″ Wide	Per Ft.	2 1/2″ Wide	Per Ft.	3″ Wide	Per Ft.	4″ Wide	Per Ft.
Sold in 4-ft. lengths.													
1/8″	±0.006″	8588K111	$0.46	8588K118	$0.60	8588K128	$0.89	8588K139	$0.99	8588K151	$1.18	8588K163	$1.56
1/4″	±0.013″	8588K112	.86	8588K119	1.18	8588K129	1.55	8588K141	1.84	8588K153	2.11	8588K164	2.84
3/8″	±0.019″	8588K113	1.22	8588K121	1.66	8588K131	2.13	8588K143	2.68	8588K154	3.11	8588K165	4.00
1/2″	±0.025″	8588K114	1.52	8588K123	2.12	8588K133	2.78	8588K144	3.49	8588K155	4.11	8588K166	4.91
3/4″	±0.038″	8588K115	2.11	8588K124	3.11	8588K134	4.07	8588K145	5.03	8588K156	5.88	8588K167	6.82
Sold in 1-ft. increments; maximum length is 4 feet. To Order: Please specify length.													
1″	±0.05″	8588K116	2.84	8588K125	4.02	8588K135	5.06	8588K146	5.99	8588K157	6.77	8588K168	8.71
1 1/4″	±0.0625″	8588K117	3.86	8588K126	5.53	8588K136	7.83	8588K147	8.98	8588K158	9.59	8588K169	13.58
1 1/2″	±0.075″	____	____	8588K127	7.35	8588K137	9.95	8588K148	11.17	8588K159	12.87	8588K171	16.90
2″	±0.100″	____	____	____	____	8588K138	13.16	8588K149	15.16	8588K161	17.72	8588K173	22.25

Sheets—Smooth Finish

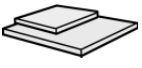

FDA compliant for food contact. Sheets 1/2″ to 2″ thick are stress relieved. Width and length tolerances are +1/16″ for all sizes except 48″×96″, which are ±3/8″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×36″		24″×24″	
1/16″	±0.003″	8657K111	$2.39	8657K211	$4.12	8657K311	$5.93	8657K411	$7.18
3/32″	±0.005″	8657K19	5.31	8657K12	9.34	8657K13	13.00	8657K14	15.46
1/8″	±0.006″	8657K112	3.90	8657K212	6.93	8657K312	9.82	8657K412	11.91
3/16″	±0.009″	8657K113	5.68	8657K213	9.80	8657K313	14.47	8657K413	17.09
1/4″	±0.013″	8657K114	7.62	8657K214	13.10	8657K314	19.01	8657K414	22.74
3/8″	±0.019″	8657K115	9.84	8657K215	16.59	8657K315	25.11	8657K415	29.81
1/2″	±0.025″	8657K116	12.61	8657K216	22.58	8657K316	33.41	8657K416	39.75
5/8″	±0.031″	8657K21	20.14	8657K22	26.59	8657K23	49.22	8657K24	59.36
3/4″	±0.038″	8657K118	18.33	8657K218	31.87	8657K318	44.23	8657K418	55.49
1″	±0.050″	8657K119	22.63	8657K219	39.58	8657K319	56.34	8657K419	68.50
1 1/2″	±0.075″	8657K121	44.14	8657K221	76.43	8657K321	110.21	8657K421	133.62
2″	±0.100″	8657K41	84.85	8657K42	136.25	8657K43	210.54	8657K44	238.78
		24″×36″		**24″×48″**		**48″×48″**		**48″×96″**	
1/16″	±0.003″	8657K511	$10.30	8657K611	$11.80	8657K811	$20.57	8657K911	$35.77
3/32″	±0.005″	8657K15	23.26	8657K16	25.92	8657K17	44.17	8657K18	60.97
1/8″	±0.006″	8657K512	17.09	8657K612	19.27	8657K812	34.00	8657K912	59.15
3/16″	±0.009″	8657K513	24.51	8657K613	28.46	8657K813	48.81	8657K913	84.85
1/4″	±0.013″	8657K514	32.63	8657K614	38.33	8657K814	64.99	8657K914	113.04
3/8″	±0.019″	8657K515	42.44	8657K615	51.89	8657K815	88.75	8657K915	159.50
1/2″	±0.025″	8657K516	56.46	8657K616	69.20	8657K816	118.35	8657K916	212.66
5/8″	±0.031″	8657K25	89.04	8657K26	107.89	8657K27	194.92	8657K28	329.03
3/4″	±0.038″	8657K518	80.65	8657K618	96.51	8657K818	164.33	8657K918	297.06
1″	±0.050″	8657K519	102.85	8657K619	119.12	8657K819	207.13	8657K919	376.60
1 1/2″	±0.075″	8657K521	191.72	8657K621	221.33	8657K821	387.81	8657K921	705.10
2″	±0.100″	8657K45	339.92	8657K46	407.98	8657K47	693.71	8657K48	1,272.16

Aluminum-Faced Sheets—Smooth Finish

- Color: Opaque black
- Temp. Range: –20° to +180° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Not rated
- Use indoors and outdoors
- Hardness: Not rated

These LDPE sheets have two aluminum faces, one on each side. One face has a black painted finish and the other face is unpainted silver gray.

Meet UL 94V0 for flammability and ASTM E84 5/15 for flame and smoke. Width and length tolerances are ±1/16″. Thickness tolerance is ±0.008″.

Thick.	Size		
0.118″	12″×24″	2888K11	$29.43
0.118″	24″×24″	2888K12	49.46
0.118″	24″×48″	2888K13	73.70
0.118″	48″×48″	2888K14	156.39

Radiation-Resistant Sheets—Smooth Finish

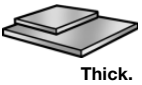

- Color: Opaque purple
- Temperature Range: –31° to +149° F

Contains 5% boron by weight. Width and length tolerances are +1/16″.

Thick.	Thick. Tolerance	12″×12″		24″×24″		24″×48″		48″×48″		48″×96″	
1″	±0.10″	96150A210	$61.81	96150A310	$182.90	96150A410	$315.00	96150A610	$515.62	96150A710	$846.77

Rods—Smooth Finish

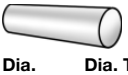

- Max. Temp.: 155° F; low end not rated
- Softening Temp.: 201° F
- Impact Strength: Not rated

FDA compliant for food contact.

Dia.	Dia. Tolerance		Per Ft.
Sold in 8-ft. lengths.			
1/4″	+0.035″	8754K42	$0.87
3/8″	+0.035″	8754K43	1.08
1/2″	+0.050″	8754K44	1.30
5/8″	+0.050″	8754K45	1.77
3/4″	+0.050″	8754K46	2.01

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; maximum length is 8 feet. To Order: Please specify length.			
1″	+0.050″	8754K47	$3.72
1 1/4″	+0.050″	8754K48	5.52
1 1/2″	+0.060″	8754K49	7.08
2″	+0.080″	8754K71	13.57
2 1/4″	+0.100″	8754K72	16.21
2 1/2″	+0.100″	8754K73	20.20

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; maximum length is 8 feet. To Order: Please specify length.			
3″	+0.200″	8754K74	$27.80
3 1/2″	+0.200″	8754K75	34.60
4″	+0.250″	8754K76	40.48
5″	+0.300″	8754K77	54.60
6″	+0.500″	8754K78	79.16

Dia.	Dia. Tolerance	1″ Long		3″ Long	
7″	+0.600″	8754K91	$47.09	8754K92	$76.05
8″	+0.600″	8754K95	53.09	8754K96	91.16

Dia.	Dia. Tolerance	1″ Long		3″ Long	
9″	+0.600″	8754K81	$58.66	8754K82	$105.23
10″	+0.600″	8754K85	65.52	8754K86	121.35

(Material continued on following page)

For information about plastics, see page 3564.

For information on the mechanical and physical properties of polyethylene, go to mcmaster.com and search for **8657KAC**.

Moisture-Resistant Polyethylene (LDPE) *(Material continued from previous page)*

Multipurpose Film—Smooth Finish

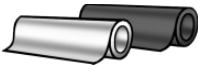

- Color: Clear or opaque black
- Temperature Range: –60° to +150° F
- Impact Strength: Not rated
- Cut with scissors, unless noted

Width tolerance is ±1/8″ per foot of width. Length tolerance is –3″ to +9″ for 25-ft. rolls, –6″ to +18″ for 50-ft. rolls, and –1 ft. to +3 ft. for 100-ft. rolls.

25-FT. ROLLS

Width	Clear	Black	Roll	Width	Clear	Black	Roll
0.004″ Thick *(±0.0004″)*				***0.006″ Thick*** *(±0.0006″)*			
10 ft.	8553K813	8553K814	$16.11	10 ft.	8553K817	8553K818	$23.33
20 ft.	8553K815	8553K816	34.78	20 ft.	8553K819	8553K912	58.00

50-FT. ROLLS

Width	Clear	Black	Roll	Width	Clear	Black	Roll
0.004″ Thick *(±0.0004″)*				***0.006″ Thick*** *(±0.0006″)*			
6 ft.	8593K19	8593K29	$27.82	10 ft.	8593K42	8593K52	$39.89
8 ft.	8593K49	8593K59	23.13	12 ft.	8593K44	8593K54	46.21
10 ft.	8593K12	8593K22	26.23	16 ft.	8593K46	8593K56	61.22
12 ft.	8593K14	———	35.34	20 ft.	8593K48	8593K58	78.03
16 ft.	8593K16	8593K26	42.56				
20 ft.	8593K18	8593K28	51.35				

100-FT. ROLLS

Width	Clear	Black	Roll	Width	Clear	Black	Roll	Width	Clear	Black	Roll
0.002″ Thick *(±0.0004″)*				***0.004″ Thick (Cont.)***				***0.006″ Thick (Cont.)***			
10 ft.	8651K92♣	8651K95♣	$32.03	24 ft.	8553K117	8553K317	$97.83	16 ft.	8553K513	8553K713	$97.83
0.004″ Thick *(±0.0004″)*				32 ft.	8553K119	8553K319	190.73	20 ft.	8553K515	8553K715	112.43
3 ft.	8553K101	8553K301	15.84	40 ft.	8553K121	8553K321	228.90	24 ft.	8553K517	8553K717	119.05
4 ft.	8553K103	8553K303	21.10	***0.006″ Thick*** *(±0.0006″)*				32 ft.	8553K519	8553K719	264.12
6 ft.	8553K105	8553K305	47.24	3 ft.	8553K501	———	33.28	40 ft.	8553K521	8553K721	218.25
8 ft.	8553K107	8553K307	32.12	4 ft.	8553K503	———	52.50	***0.008″ Thick*** *(±0.0008″)*			
10 ft.	8553K109	8553K309	45.05	6 ft.	8553K505	8553K705	49.25	20 ft.	———	8593K61	147.73
12 ft.	8553K111	8553K311	54.11	8 ft.	8553K507	8553K707	57.11	***0.010″ Thick*** *(±0.001″)*			
16 ft.	8553K113	8553K313	68.50	10 ft.	8553K509	8553K709	67.61	20 ft.	8593K63	8593K62	162.39
20 ft.	8553K115	8553K315	71.78	12 ft.	8553K511	8553K711	77.05				

♣ Includes a cutting tool.

Reinforced Film—Smooth Finish

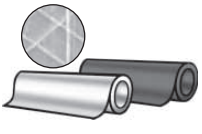

- Color: Translucent white or opaque black
- Temperature Range: –75° to +160° F
- Softening Temp.: Not rated
- Impact Strength: Not rated
- Low friction
- Use indoors, unless noted
- Cut with scissors
- Hardness: Not rated

Has a cross-patterned polyester tie cord between layers for strength and tear resistance. Often used as window coverings, construction film, and vapor barriers. Width tolerance is ±4″ for 6-ft. rolls, ±7″ for 10-ft. rolls, and ±14″ for 20-ft. rolls. Length tolerance is ±1 ft.

Width	Thick.	Thick. Tolerance	25-FT. ROLLS White	25-FT. ROLLS Black	25-FT. ROLLS Roll	100-FT. ROLLS White	100-FT. ROLLS Black	100-FT. ROLLS Roll
6 ft.	0.006″	±0.0005″	85505K31	85505K41★	$23.11	85505K11	85505K21★	$73.77
10 ft.	0.006″	±0.0005″	85505K33	85505K43★	38.51	85505K13	85505K23★	122.94
20 ft.	0.006″	±0.0005″	85505K36	85505K46★	77.04	85505K16	85505K26★	225.70

★ Use indoors and outdoors.

Peel-and-stick zipper attaches to plastic film, allowing you to create an entrance. Zipper is 7-ft. long and has an adhesive back for easy installation. Temperature range is 45° to 120° F.

84645A58 ..... **Each** $10.41

Rigid Polyethylene (HDPE)

- Color: Opaque white, unless noted
- Temp. Range: –40° to +149° F, unless noted
- Softening Temp.: 250° to 281° F, unless noted
- Tensile Strength: Poor, unless noted
- Impact Strength: Good, unless noted
- Low friction, unless noted
- Good electrical insulator, unless noted
- Use indoors, unless noted
- Machine with high-speed steel tooling, unless noted
- Hardness: Shore D62-D69, unless noted

HDPE shares the moisture resistance of LDPE yet offers more rigidity and better heat resistance. Often used for pipe, shipping pallets, and truck bed liners. All except film and balls meet UL 94HB for flammability and are FDA compliant for food contact.

Rectangular Bars—Smooth Finish

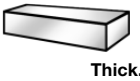

- Not rated as an electrical insulator

Width tolerance is +1/16″.

Thick.	Thick. Tolerance	1″ Wide	1″ Wide Per Ft.	1 1/2″ Wide	1 1/2″ Wide Per Ft.	2″ Wide	2″ Wide Per Ft.	2 1/2″ Wide	2 1/2″ Wide Per Ft.	3″ Wide	3″ Wide Per Ft.	4″ Wide	4″ Wide Per Ft.
Sold in 4-ft. lengths.													
1/8″	±0.006″	8671K11	$0.44	8671K19	$0.73	8671K31	$0.82	8671K44	$0.92	8671K56	$1.08	8671K68	$1.42
1/4″	±0.013″	8671K12	.88	8671K21	1.18	8671K33	1.48	8671K45	1.75	8671K57	1.99	8671K69	2.61
3/8″	±0.019″	8671K13	1.18	8671K23	1.63	8671K34	2.08	8671K46	2.47	8671K58	2.81	8671K71	3.73
1/2″	±0.025″	8671K14	1.60	8671K24	2.13	8671K35	2.69	8671K47	3.19	8671K59	3.64	8671K73	4.83
Sold in 1-ft. increments; maximum length is 4 feet. **To Order:** ***Please specify length.***													
3/4″	±0.038″	8671K15	2.24	8671K25	3.15	8671K36	3.97	8671K48	4.67	8671K61	5.35	8671K74	6.88
1″	±0.050″	8671K16	2.83	8671K26	3.96	8671K37	4.98	8671K49	5.87	8671K63	6.78	8671K75	9.02
1 1/4″	±0.125″	8671K17	4.39	8671K27	6.19	8671K38	7.80	8671K51	9.21	8671K64	10.95	8671K76	13.86
1 1/2″	±0.150″	———	——	8671K28	7.85	8671K39	9.89	8671K53	11.65	8671K65	13.79	8671K77	17.58
1 3/4″	±0.175″	8671K18	6.59	8671K29	9.32	8671K41	11.73	8671K54	13.81	8671K66	16.43	8671K78	21.10
2″	±0.200″	———	——	———	——	8671K43	13.01	8671K55	15.83	8671K67	18.28	8671K79	23.15

(Material continued on following page)

For information on the mechanical and physical properties of polyethylene, go to mcmaster.com and search for **8657KAC**.

Rigid Polyethylene (HDPE) *(Material continued from previous page)*

- Color: Opaque white, unless noted
- Temp. Range: –40° to +149° F, unless noted
- Softening Temp.: 250° to 281° F, unless noted
- Tensile Strength: Poor, unless noted
- Impact Strength: Good, unless noted
- Low friction, unless noted
- Good electrical insulator, unless noted
- Use indoors, unless noted
- Machine with high-speed steel tooling, unless noted
- Hardness: Shore D62-D69, unless noted

HDPE shares the moisture resistance of LDPE yet offers more rigidity and better heat resistance. Often used for pipe, shipping pallets, and truck bed liners. All except balls and film meet UL 94HB for flammability and are FDA compliant for food contact.

Colored Sheets—Textured Finish

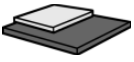

- Color: Opaque black, white, or yellow
- Temp. Range: –80° to +160° F
- Use indoors and outdoors

Width and length tolerances are +1/16″ for 12″×12″ to 48″×48″ sheets and ±1/2″ for 48″×96″ sheets. **To Order:** Please specify color: black, white, or yellow.

Thick.	Thick. Tolerance	12″×12″		24″×24″		24″×48″		36″×36″		48″×48″		48″×96″	
1/4″	±0.013″	9785T11	$9.14	9785T12	$26.76	9785T13	$43.76	9785T14	$49.89	9785T15	$70.89	9785T16	$119.94
1/2″	±0.025″	9785T21	16.61	9785T22	50.85	9785T23	83.16	9785T24	93.98	9785T25	135.59	9785T26	226.80
3/4″	±0.038″	9785T31	23.32	9785T32	71.44	9785T33	119.26	9785T34	134.88	9785T35	194.92	9785T36	322.60

Sheets—Smooth Finish

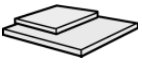

- Color: Translucent white to opaque white
- Not rated as an electrical insulator
- Use indoors and outdoors

Width and length tolerances are +1/16″ for 12″×12″ to 48″×48″ sheets and ±1/2″ for 48″×96″ sheets.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×48″		24″×24″	
1/32″	±0.002″	8619K61	$2.99	8619K62	$5.40	8619K63	$8.90	8619K64	$8.90
1/16″	±0.003″	8619K421	2.38	8619K422	4.19	8619K423	7.29	8619K424	7.29
3/32″	±0.005″	8619K71	3.90	8619K72	6.90	8619K73	11.72	8619K74	11.72
1/8″	±0.006″	8619K441	3.91	8619K442	6.83	8619K443	11.72	8619K444	11.72
3/16″	±0.009″	8619K451	5.49	8619K452	9.58	8619K453	16.13	8619K454	16.13
1/4″	±0.013″	8619K461	7.17	8619K462	12.45	8619K463	21.42	8619K464	21.42
3/8″	±0.019″	8619K431	10.10	8619K432	17.61	8619K433	30.45	8619K434	30.45
1/2″	±0.025″	8619K471	13.05	8619K472	22.14	8619K473	40.76	8619K474	40.76
5/8″	±0.031″	8619K81	20.42	8619K82	34.21	8619K83	60.21	8619K84	60.21
3/4″	±0.038″	8619K481	19.23	8619K482	32.99	8619K483	58.20	8619K484	58.20
1″	±0.050″	8619K491	24.50	8619K492	41.92	8619K493	72.90	8619K494	72.90
1 1/4″	±0.125″	8619K91	46.67	8619K92	71.35	8619K93	125.75	8619K94	125.75
1 1/2″	±0.150″	8619K521	53.76	8619K522	83.15	8619K523	144.65	8619K524	144.65
2″	±0.200″	8619K531	74.98	8619K532	110.67	8619K533	192.56	8619K534	192.56
3″	±0.300″	8619K541	122.82	8619K542	213.79	8619K543	365.97	8619K544	365.97
4″	±0.400″	8619K551	195.28	8619K552	300.45	8619K553	522.78	8619K554	522.78

Thick.	Thick. Tolerance	24″×36″		24″×48″		48″×48″		48″×96″	
1/32″	±0.002″	8619K65	$8.90	8619K66	$13.63	8619K67	$22.86	8619K68	$37.81
1/16″	±0.003″	8619K426	10.45	8619K425	12.01	8619K427	20.89	8619K112	36.34
3/32″	±0.005″	8619K75	16.62	8619K76	18.43	8619K77	33.07	8619K78	57.80
1/8″	±0.006″	8619K446	16.98	8619K445	19.41	8619K447	33.80	8619K114	58.74
3/16″	±0.009″	8619K456	23.87	8619K455	27.33	8619K457	47.51	8619K115	82.64
1/4″	±0.013″	8619K466	31.06	8619K465	35.54	8619K467	61.80	8619K116	107.47
3/8″	±0.019″	8619K436	43.88	8619K435	50.24	8619K437	87.47	8619K438	154.63
1/2″	±0.025″	8619K476	56.68	8619K475	64.92	8619K477	115.48	8619K117	198.04
5/8″	±0.031″	8619K85	83.41	8619K86	105.41	8619K87	180.73	8619K88	322.16
3/4″	±0.038″	8619K486	81.33	8619K485	94.20	8619K487	166.25	8619K118	289.13
1″	±0.050″	8619K496	104.60	8619K495	119.72	8619K497	208.25	8619K119	363.57
1 1/4″	±0.125″	8619K95	183.11	8619K96	219.90	8619K97	398.51	8619K98	672.47
1 1/2″	±0.150″	8619K526	207.52	8619K525	254.16	8619K527	424.14	8619K528	798.75
2″	±0.200″	8619K536	276.25	8619K535	320.65	8619K537	571.83	8619K538	1,062.10
3″	±0.300″	8619K546	524.87	8619K545	629.27	8619K547	1,055.49	8619K548	1,919.08
4″	±0.400″	8619K556	750.14	8619K555	890.46	8619K557	1,445.33	8619K558	2,789.67

Grip-All Sheets—Textured Finish

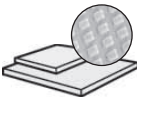

- Temp. Range: –31° to +149° F
- Use indoors and outdoors
- Machine with carbide tooling

Meet ASTM D4976. One side has a raised diamond antislip pattern, and the other side has a textured matte finish. Width and length tolerances are +1/16″, except for 48″×96″ sheets, which are ±1/2″. Thickness tolerance is ±5%.

Thick.	12″×12″		24″×24″		24″×48″		48″×96″	
1/2″	98170A210	$18.70	98170A220	$57.20	98170A230	$92.95	98170A260	$275.00
3/4″	98170A310	27.05	98170A320	81.94	98170A330	134.05	98170A360	397.77
1″	98170A410	34.31	98170A420	100.37	98170A430	171.54	98170A460	512.07

Rods—Smooth Finish

- Temp. Range: –40° to +200° F
- Not rated for friction
- Not rated as an electrical insulator

Meet ASTM D4976. Diameters have a plus tolerance.

Dia.		Per Ft.
Sold in 8-ft. lengths.		
1/4″	8624K11	$0.67
3/8″	8624K12	.80
1/2″	8624K13	.87
5/8″	8624K14	1.53
3/4″	8624K15	1.86
Sold in 1-ft. increments; max. length is 8 ft. To Order: Please specify length		
1″	8624K16	2.82
1 1/4″	8624K29	4.22
1 1/2″	8624K17	5.96
1 3/4″	8624K19	7.92
2″	8624K18	9.08
2 1/4″	8624K42	11.70
2 1/2″	8624K44	14.41
3″	8624K46	20.37
3 1/2″	8624K48	26.37
4″	8624K54	32.66
5″	8624K56	50.69
6″	8624K58	70.39

Dia.		Each
Sold in 1″ lengths.		
4″	8624K611	$14.38
5″	8624K621	16.45
6″	8624K631	18.54
Sold in 3″ lengths.		
4″	8624K641	21.10
5″	8624K651	26.23
6″	8624K661	31.09
Sold in 6″ lengths.		
4″	8624K671	31.99
5″	8624K681	44.49
6″	8624K691	57.87

Balls—Smooth Finish

- Max. Temp.: 122° F; low end not rated
- Grade: 2
- Sphericity: 0.001″
- Tensile and Impact Strength: Poor
- Not rated for friction
- Not rated as an electrical insulator
- Not rated for machining
- Hardness: Shore 62D

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.	Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.	Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
1/8″	±0.002″	250	9587K11	$2.76	3/8″	±0.002″	100	9587K17	$8.62	1/2″	±0.002″	100	9587K23	$14.62
1/4″	±0.002″	250	9587K13	9.65	7/16″	±0.002″	100	9587K21	9.45	9/16″	±0.002″	50	9587K25	11.96
5/16″	±0.002″	100	9587K15	6.80										

(Material continued on following page)

For information about plastics, see page 3564.

For information on the mechanical and physical properties of polyethylene, go to mcmaster.com and search for **8657KAC**.

Rigid Polyethylene (HDPE) *(Material continued from previous page)*

Film—Smooth Finish

Reinforced Film

- Color: Reinforced, translucent white or opaque black Flame Retardant, opaque white
- Temp. Range: –20° to +160° F
- Softening Temp.: 180° F
- Tensile and Impact Strength: Not rated
- Not rated for friction
- Not rated as an electrical insulator
- Opaque black, use indoors and outdoors
- Cut with scissors
- Hardness: Not rated

Reinforced film has woven fibers running through it for tear and puncture resistance. Great for applications such as tarps, machinery covers, and water-resistant covers. Length tolerance is ±1 ft.

Flame-retardant film meets Canvas Products Association International Specification 84, Sections 6 & 7; ASTM E84; and Cal. No. 294-40. Use as dividing curtains, machine tarps, and dust covers. Length tolerance is ±1 ft.

		REINFORCED						FLAME RETARDANT			
	Width	25-FT. ROLLS			100-FT. ROLLS			100-FT. ROLLS			
Width	Tol.	White	Black	Roll	White	Black	Roll	Width	Width Tol.	White	Roll
0.004″ Thick *(±0.0005″)*								***0.0065″ Thick*** *(±0.0015″)*			
8 ft.	±4″	8552K71	8552K81	$24.51	8552K41	8552K61	$81.71	6 ft.	±2″	85045K58	$91.80
16 ft.	±9″	8552K74	8552K84	44.93	8552K44	8552K64	149.80	8 ft.	±2″	85045K62	122.40
24 ft.	±14″	8552K76	8552K86	67.42	8552K46	8552K66	224.70	12 ft.	±4″	85045K66	176.54
40 ft.	±23″	8552K78	8552K88	112.35	8552K48	8552K68	345.69	20 ft.	±6″	85045K76	273.21

High-Strength Film—Smooth Finish

Film with Peel-and-Stick Zipper

- Color: Opaque black
- Temp. Range: –120° to +165° F
- Impact Strength: Not rated
- Not rated for friction
- Not rated as an electrical insulator
- Use indoors and outdoors
- Cut with scissors
- Hardness: Rockwell R40 to R80

Film is extra thick for superior strength. Sold in 1-ft. increments; maximum length is 100 feet. **To Order:** Please specify length.

Thick.	Thick. Tol.	Width	Width Tol.		Per Ft.
0.015″	±0.005″	47″	+1/4″	86255K61	$3.09
0.03″	±0.005″	47″	+1/4″	86255K71	5.38

Peel-and-Stick Zipper attaches to plastic film, allowing you to create an entrance. Zipper has an adhesive back for easy installation. Length is 7 ft. Temperature range is 45° to 120° F.

84645A58 ..... **Each** $10.41

UV-Resistant VHMW Polyethylene

- Color: Opaque white
- Temp. Range: –80° to +150° F
- Softening Temp.: 255° F
- Tensile Strength: Poor
- Impact Strength: Excellent
- Low friction
- Not rated as an electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Shore D65-D68

In addition to offering the impact resistance of UHMW, VHMW polyethylene won't discolor outdoors and resists UV degradation.

Sheets—Smooth Finish

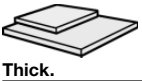

FDA compliant for food contact. Width and length tolerances are +1/2″, –1/4″.

Thick.	Thick. Tolerance	12″×12″		24″×48″		48″×48″		48″×96″	
1/4″	±0.013″	8769K51	$7.47	8769K52	$46.94	8769K54	$86.95	8769K53	$177.81
3/8″	±0.019″	8769K61	10.52	8769K62	70.41	8769K64	126.65	8769K63	228.61
1/2″	±0.025″	8769K71	11.78	8769K72	75.54	8769K74	140.74	8769K73	287.23

Impact-Resistant Slippery UHMW Polyethylene

- Color: Opaque white, unless noted
- Temp. Range: –40° to +180° F, unless noted
- Softening Temp.: 262° to 275° F, unless noted
- Tensile Strength: Poor, unless noted
- Impact Strength: Excellent, unless noted
- Low friction, unless noted
- Excellent electrical insulator, unless noted
- Use indoors, unless noted
- Machine with high-speed steel tooling
- Hardness: Shore D62-D68, unless noted

In addition to having a slippery surface, UHMW has excellent impact and wear resistance. Good for lining conveyor belts, guide rails, and work tables and for making bearings and bushings. FDA compliant for food contact.

Rectangular Bars—Smooth Finish

- Temp. Range: –40° to +200° F
- Softening Temp.: 165° F
- Good electrical insulator

Meet ASTM D4020, MIL-P-21922, 3-A sanitary standard requirements, and are USDA compliant. Width tolerance is ±3/32″.

Thick.	Thick. Tolerance	1/2″ Wide Per Ft.		3/4″ Wide Per Ft.		1″ Wide Per Ft.		1 1/2″ Wide Per Ft.		1 3/4″ Wide Per Ft.		2″ Wide Per Ft.	
Sold in 5-ft. lengths.													
1/8″	+0.020″, –0.030″	8702K18	$1.20	8702K22	$1.47	8702K19	$1.48	8702K24	$2.15	—	—	8702K25	$2.66
1/4″	±0.020″	8702K61	1.23	8702K62	1.67	8702K63	2.00	8702K64	2.51	—	—	8702K65	3.51
3/8″	±0.020″	8702K71	1.82	8702K72	2.26	8702K73	2.77	8702K74	4.01	—	—	8702K75	4.94
1/2″	±0.050″	8702K81	2.29	8702K82	2.92	8702K83	3.71	8702K84	5.33	—	—	8702K85	6.83
Sold in 1-ft. increments; maximum length is 5 feet. To Order: Please specify length.													
3/4″	±0.060″	—	—	8702K111	4.13	8702K112	5.19	8702K113	7.33	—	—	8702K114	9.49
1″	±0.060″	—	—	—	—	8702K122	6.43	8702K123	9.68	—	—	8702K124	11.99
1 1/2″	±0.085″	—	—	—	—	—	—	8702K133	13.55	—	—	8702K134	16.71
1 3/4″	±0.085″	—	—	—	—	—	—	—	—	6509A13	$13.92	—	—
2″	±0.085″	—	—	—	—	—	—	—	—	—	—	8702K144	22.28

Thick.	Thick. Tolerance	2 1/4″ Wide Per Ft.		2 1/2″ Wide Per Ft.		3″ Wide Per Ft.		4″ Wide Per Ft.		5″ Wide Per Ft.		6″ Wide Per Ft.	
1/8″	+0.020″, –0.030″	—	—	8702K26	$2.87	8702K27	$3.17	8702K28	$4.19	8702K91	$5.04	8702K29	$6.07
1/4″	±0.020″	—	—	8702K66	4.03	8702K67	4.64	8702K68	6.04	8702K92	7.60	8702K69	8.98
3/8″	±0.020″	—	—	8702K76	6.02	8702K77	7.05	8702K78	9.35	8702K93	10.90	8702K79	12.80
1/2″	±0.050″	—	—	8702K86	7.58	8702K87	10.82	8702K88	11.61	8702K94	14.13	8702K89	16.56
3/4″	±0.060″	—	—	8702K115	12.51	8702K116	13.10	8702K117	17.10	8702K95	21.20	8702K119	24.95
1″	±0.060″	—	—	8702K125	14.41	8702K126	17.20	8702K127	21.50	8702K96	26.39	8702K129	30.55
1 1/2″	±0.085″	—	—	8702K135	20.70	8702K136	24.42	8702K137	30.55	8702K97	38.82	8702K139	46.86
2″	±0.085″	—	—	8702K145	27.44	8702K146	31.22	8702K147	40.89	8702K98	51.76	8702K149	61.11
2 1/4″	±0.085″	6509A14	$21.93	—	—	—	—	—	—	—	—	—	—
2 1/2″	±0.085″	—	—	—	—	—	—	8702K51	51.91	8702K52	64.87	8702K53	77.86
3″	±0.085″	—	—	—	—	—	—	8702K54	62.30	8702K55	77.86	8702K56	93.38

(Material continued on following page)

For information on the mechanical and physical properties of polyethylene, go to mcmaster.com and search for **8657KAC**.

Impact-Resistant Slippery UHMW Polyethylene *(Material continued from previous page)*

- Color: Opaque white, unless noted
- Temp. Range: –40° to +180° F, unless noted
- Softening Temp.: 262° to 289° F, unless noted
- Tensile Strength: Poor, unless noted
- Impact Strength: Excellent, unless noted
- Low friction, unless noted
- Excellent electrical insulator, unless noted
- Use indoors, unless noted
- Machine with high-speed steel tooling, unless noted
- Hardness: Shore D62-D68, unless noted

UHMW has a slippery surface and excellent impact and wear resistance. Good for lining conveyor belts, guide rails, and work tables and for making bearings and bushings. FDA compliant for food contact, unless noted.

Strips—Smooth Finish

Plain Back

Adhesive Backed

- Color: Translucent cream
- Softening Temp.: 176° F
- Poor electrical insulator

Meet ASTM D4020 and MIL-P-23536. Adhesive-backed strips have a rubber-based adhesive with a temperature range of 20° to 120° F. Width tolerance is ±1/32″. Sold in 1-ft. increments; max. length is 50 feet. **To Order:** Please specify length.

Thick.	Thick. Tolerance	1″ Wide	Per Ft.	2″ Wide	Per Ft.	4″ Wide	Per Ft.	6″ Wide	Per Ft.
Plain Back									
0.032″	±0.0032″	7701T61	$0.50	7701T62	$0.86	7701T63	$1.61	7701T64	$2.38
0.040″	±0.004″	7701T11	.72	7701T13	1.15	7701T15	2.18	7701T17	3.14
0.050″	±0.005″	7701T19	.84	7701T21	1.58	7701T23	2.81	7701T25	3.92
0.062″	±0.0062″	7701T71	.94	7701T72	1.76	7701T73	3.39	7701T74	4.89
0.080″	±0.008″	7701T27	1.15	7701T29	2.34	7701T31	4.40	7701T33	6.07
0.093″	±0.0093″	7701T81	1.21	7701T82	2.40	7701T83	4.27	7701T84	6.06
0.125″	±0.0125″	7701T91	1.49	7701T92	2.83	7701T93	5.11	7701T94	7.07
Adhesive Backed									
0.032″	±0.0032″	7701T111	.85	7701T112	1.58	7701T113	2.63	7701T114	4.01
0.040″	±0.004″	7701T35	.99	7701T37	1.85	7701T39	3.52	7701T41	5.03
0.050″	±0.005″	7701T43	1.16	7701T45	2.27	7701T47	4.11	7701T49	5.83
0.062″	±0.0062″	7701T211	1.18	7701T212	2.26	7701T213	4.23	7701T214	5.91
0.080″	±0.008″	7701T51	1.60	7701T53	3.12	7701T55	5.85	7701T57	8.18
0.093″	±0.0093″	7701T311	1.73	7701T312	3.31	7701T313	6.03	7701T314	8.61
0.125″	±0.0125″	7701T411	2.01	7701T412	3.68	7701T413	6.49	7701T414	9.17

Film—Smooth Finish

Plain Back

Adhesive Backed

- Color: Opaque cream
- Temp. Range: –40° to +225° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Plain Back, not rated
- Not rated for friction
- Not rated as an electrical insulator
- Cut with scissors
- Hardness: Plain Back, not rated

Plain-back film has a width tolerance of ±1/32″. Sold in 1-, 2-, 3-, 6-, 10-, or 20-ft. lengths.

Adhesive-backed film has an acrylic adhesive with a temperature range of –40° to +180° F. Width tolerance is ±1/8″. Length tolerance is ±1/16″.

PLAIN BACK

Thick.	Thick. Tolerance	24″ Wide	Per Ft.
To Order: *Please specify length: 1, 2, 3, 6, 10, or 20 ft.*			
0.005″	+0.002″	85655K12	$1.98
0.010″	+0.003″	85655K13	3.70
0.020″	+0.003″	85655K15	6.32

ADHESIVE BACKED

Thick.	Thick. Tolerance	12″×12″	Each
0.005″	±0.0005″	1441T11	$7.80
0.007″	±0.0007″	1441T31	8.23
0.012″	±0.0012″	1441T51	8.99
0.022″	±0.0022″	1441T71	11.57
0.032″	±0.0032″	1441T91	14.21
0.042″	±0.0042″	1441T21	15.63

Adhesive-Ready Strips—One Side Etched for Adhesive; Other Side Smooth Finish

- Color: Translucent cream
- Poor electrical insulator
- Softening Temp.: 176° F

Meet ASTM D4020, MIL-B-17901, and MIL-P-23536. Width tolerance is ±1/32″. Sold in 1-ft. increments; max. length is 50 feet. **To Order:** Please specify length.

Thick.	Thick. Tolerance	6″ Wide	Per Ft.	12″ Wide	Per Ft.	24″ Wide	Per Ft.
1/32″	±0.0032″	4196A11	$2.91	4196A21	$5.11	4196A31	$8.96
1/16″	±0.0062″	4196A12	5.39	4196A22	9.69	4196A32	17.90
3/32″	±0.0093″	4196A13	6.71	4196A23	11.92	4196A33	21.06
1/8″	±0.0125″	4196A14	7.74	4196A24	13.79	4196A34	24.29

Sheets—Smooth Finish

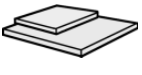

- Softening Temp.: 275° F
- Tensile Strength: Good
- Hardness: Shore D66

All are USDA compliant and meet ASTM D4020, D6712, D4976, and 3-A sanitary standard requirements. Sheets have width and length tolerances of +1/8″.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		12″×36″		24″×24″		24″×36″	
1/16″	+0.035″			8752K121	$6.19	8752K221	$10.48	8752K321	$12.13	8752K421	$19.66	8752K521	$23.82
1/8″	±0.020″			8752K111	6.81	8752K211	12.80	8752K311	14.14	8752K411	21.50	8752K511	25.78
3/16″	±0.020″			8752K112	12.20	8752K212	22.33	8752K312	23.54	8752K412	36.84	8752K512	49.51
1/4″	±0.020″			8752K113	12.27	8752K213	18.44	8752K313	23.85	8752K413	36.34	8752K513	45.43
3/8″	±0.020″			8752K114	15.33	8752K214	25.06	8752K314	30.81	8752K414	48.58	8752K514	57.42
1/2″	+0.070″, –0.030″			8752K115	16.41	8752K215	33.97	8752K315	39.37	8752K415	62.22	8752K515	76.16
3/4″	+0.070″, –0.030″			8752K116	24.67	8752K216	45.01	8752K316	58.94	8752K416	91.56	8752K516	114.23
1″	+0.070″, –0.030″			8752K117	31.83	8752K217	58.33	8752K317	76.46	8752K417	121.01	8752K517	152.31
1 1/2″	±0.120″			8752K118	59.12	8752K218	86.62	8752K318	118.59	8752K418	164.65	8752K518	229.15
2″	±0.120″	8752K931	$20.27	8752K122	70.92	8752K222	147.38	8752K322	224.06	8752K422	280.74	8752K522	394.55
2 1/4″	±0.113″	8752K932	23.65	8752K933	79.72								
2 1/2″	±0.125″	8752K942	26.31	8752K943	88.58								
3″	±0.150″	8752K952	30.25	8752K953	102.30								
3 1/2″	±0.175″	8752K962	36.77	8752K963	125.10								
4″	±0.200″	8752K972	42.87	8752K973	146.32								
4 1/2″	±0.225″	8752K982	46.02	8752K983	157.76								
5″	±0.250″	8752K986	51.86	8752K987	178.47								

Thick.	Thick. Tolerance	24″×48″		24″×96″		36″×36″		48″×48″		48″×96″	
1/16″	+0.035″	8752K621	$35.73	8752K161	$65.83	8752K141	$36.45	8752K821	$62.69	8752K921	$118.14
1/8″	±0.020″	8752K611	39.03	8752K151	70.90	8752K131	42.40	8752K811	70.96	8752K911	128.90
3/16″	±0.020″	8752K612	65.49	8752K152	124.85	8752K132	76.98	8752K812	134.28	8752K912	204.67
1/4″	±0.020″	8752K613	63.60	8752K153	122.65	8752K133	68.14	8752K813	120.38	8752K913	227.13
3/8″	±0.020″	8752K614	86.85	8752K154	160.43	8752K134	94.74	8752K814	160.46	8752K914	287.10
1/2″	+0.070″, –0.030″	8752K615	115.19	8752K155	205.62	8752K135	114.23	8752K815	209.43	8752K915	380.78
3/4″	+0.070″, –0.030″	8752K616	166.49	8752K156	308.42	8752K136	171.34	8752K816	302.71	8752K916	571.15
1″	+0.070″, –0.030″	8752K617	219.17	8752K157	411.23	8752K137	228.46	8752K817	399.12	8752K917	761.54
1 1/2″	±0.120″	8752K618	335.71	8752K158	618.72	8752K138	343.73	8752K818	612.30	8752K918	1,145.77
2″	±0.120″	8752K622	467.90	8752K162	716.73	8752K142	405.46				

(Material continued on following page)

For information on the mechanical and physical properties of polyethylene, go to mcmaster.com and search for **8657KAC**.

Impact-Resistant Slippery UHMW Polyethylene *(Material continued from previous page)*

Black Sheets—Smooth Finish

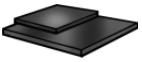

- Color: Opaque black
- Softening Temp.: 150° F
- Tensile Strength: Excellent
- Not rated as an electrical insulator

Meet ASTM D4020, D6712, and D4976. Not FDA compliant. Width and length tolerances are ±1/8″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		36″×36″		48″×48″	
1/8″	±0.02″	4296A26	$7.94	4296A37	$13.32	4296A48	$24.80	4296A59	$43.31	4296A76	$45.88	4296A82	$77.00
1/4″	±0.02″	4296A27	13.32	4296A38	23.10	4296A49	40.76	4296A66	72.95	4296A77	77.36	4296A83	132.05
3/8″	±0.02″	4296A28	18.62	4296A39	31.50	4296A56	57.78	4296A67	103.98	4296A78	111.41	4296A84	180.85
1/2″	±0.07″	4296A29	21.66	4296A46	36.48	4296A57	66.00	4296A68	120.57	4296A79	130.01	4296A85	213.31
1″	±0.07″	4296A36	39.60	4296A47	69.30	4296A58	126.05	4296A69	231.09	4296A81	249.59	4296A86	392.15

Blanks—Smooth Finish

- Temp. Range: –22° to +180° F
- Tensile Strength: Good
- Not rated as an electrical insulator

Width and length tolerances are ±0.020″.

Thick.	Thick. Tolerance	2″×12″		2″×24″		6″×24″		12″×12″	
1/4″	+0.080″, -0.005″	9721K11	$6.30	9721K71	$16.17	9721K81	$38.04	9721K16	$24.87
3/8″	+0.080″, -0.005″	9721K21	7.75	9721K72	19.02	9721K82	44.82	9721K26	27.54
1/2″	+0.050″, -0.005″	9721K31	10.20	9721K73	22.00	9721K83	51.85	9721K36	38.67
3/4″	+0.050″	———	———	9721K74	27.93	9721K84	75.37	9721K94	71.39
1″	+0.050″	———	———	9721K75	34.72	9721K85	93.20	9721K95	87.93
1 1/2″	+0.050″	———	———	9721K76	46.83	9721K86	128.89	9721K96	120.96
2″	+0.050″	———	———	9721K77	58.98	9721K87	163.83	9721K97	153.78

Tubes—Smooth Finish

Meet ASTM D4020, D6712, and D4976 and 3-A sanitary standard requirements. USDA compliant. OD and ID tolerances are ±0.17″ for 0.875″ to 1.875″ OD sizes; ±0.28″ for 2.000″ to 4.500″ OD sizes; and ±0.3″ for 5.000″ to 8.625″ OD sizes. Sold in 1-ft. increments; max. length is 5 feet. **To Order:** Please specify length.

OD	ID	Wall Thick.		Per Ft.
0.875″	0.250″	0.31″	8705K31	$6.94
1.000″	0.500″	0.25″	8705K33	6.50
1.250″	0.625″	0.31″	8705K91	10.49
1.375″	0.625″	0.375″	8705K35	8.31
1.375″	0.750″	0.31″	8705K37	7.87
1.375″	1.000″	0.1875″	8705K72	7.87
1.500″	0.500″	0.50″	8705K49	8.80
1.500″	1.000″	0.25″	8705K14	7.87
1.625″	1.250″	0.1875″	8705K59	8.87
1.875″	1.250″	0.31″	8705K63	13.57
2.000″	1.000″	0.50″	8705K73	22.34
2.000″	1.500″	0.25″	8705K18	$9.19
2.000″	1.750″	0.125″	8705K71	11.02
2.250″	1.750″	0.25″	8705K74	17.06
2.250″	1.875″	0.1875″	8705K93	13.20
2.375″	1.750″	0.31″	8705K75	20.95
2.500″	1.500″	0.50″	8705K76	25.13
2.500″	2.000″	0.25″	8705K23	10.91
2.625″	2.250″	0.1875″	8705K94	10.88
2.750″	2.000″	0.375″	8705K77	27.55
3.000″	2.000″	0.50″	8705K78	31.48
3.000″	2.500″	0.25″	8705K82	$16.57
3.125″	2.750″	0.1875″	8705K88	16.01
3.500″	2.500″	0.50″	8705K83	35.27
3.500″	3.000″	0.25″	8705K84	24.40
4.000″	3.000″	0.50″	8705K85	37.09
4.000″	3.500″	0.25″	8705K86	28.78
4.500″	4.000″	0.25″	8705K87	30.34
5.000″	4.500″	0.25″	8705K89	32.23
6.250″	5.750″	0.250″	8705K95	34.32
8.625″	7.875″	0.375″	8705K96	48.97

Rods—Smooth Finish

- Temp. Range: –40° to +180° F
- Softening Temp. for 3″, 6″, and 9″ long rods: 262° F; all others, 176° F

Meet ASTM D4020 and 3-A sanitary standard requirements. USDA compliant. Rods sold per foot have a plus size diameter tolerance. Length tolerance is +3/8″ for 3″, 6″, and 9″ long rods.

Dia.		Per Ft.
Sold in 1-ft. increments; max. length is 5 feet.		
To Order: *Please specify length.*		
1/4″	8701K37	$0.97
3/8″	8701K39	1.02
1/2″	8701K41	1.07
5/8″	8701K42	1.56
3/4″	8701K43	1.65
7/8″	8701K851	2.79
1″	8701K45	2.94
1 1/8″	8701K861	3.32
1 1/4″	8701K46	3.24
1 3/8″	8701K73	4.02
1 1/2″	8701K47	4.31
1 3/4″	8701K48	5.68
2″	8701K49	8.35
2 1/4″	8701K51	9.29
2 1/2″	8701K53	12.59
2 3/4″	8701K54	$15.85
3″	8701K55	17.31
3 1/4″	8701K56	23.11
3 1/2″	8701K57	22.87
3 3/4″	8701K58	27.21
4″	8701K59	31.65
4 1/2″	8701K61	39.63
5″	8701K63	44.10
5 1/2″	8701K65	60.88
6″	8701K67	59.84
6 1/2″	8701K82	96.21
7″	8701K68	147.54
8″	8701K69	188.84
9″	8701K71	261.40
10″	8701K72	307.96

Dia.	Dia. Tolerance	3″ Long	Each	6″ Long	Each	9″ Long	Each
4″	+0.500″	9352K11	$11.64	9352K12	$20.16	9352K13	$28.28
5″	+0.500″	9352K21	16.92	9352K22	28.60	9352K23	41.79
6″	+0.500″	9352K31	21.53	9352K32	38.91	9352K33	56.56
7″	+0.500″	9352K41	36.59	9352K42	71.01	9352K43	105.04
8″	+0.500″	9352K51	45.42	9352K52	89.39	9352K53	132.17
9″	+0.750″	9352K61	66.21	9352K62	130.45	9352K63	192.87

U-Channels—Smooth Finish

- Tensile Strength: Good

Meet ASTM D4020, D6712, and D4976 and 3-A sanitary standard requirements. USDA compliant. Base and leg length tolerances are ±0.080″; wall thickness tolerance is not rated. Inside and outside corners are square. Sold in 2-, 5-, and 8-ft. lengths. **To Order:** Please specify length.

Outside Base × Legs	Wall Thick.		Per Ft.
1″ × 3/4″	1/4″	9928K53	$2.64
1 1/4″ × 3/4″	1/8″	8672K31	3.04
1 1/2″ × 7/8″	1/4″	9928K55	3.14
2″ × 1″	1/4″	9928K57	3.51
2 1/2″ × 1″	1/4″	9928K58	4.04
3″ × 1″	1/4″	8672K32	4.82
3″ × 1″	3/8″	9928K59	5.37
4 1/4″ × 1 1/4″	3/8″	8672K33	6.81

90° Angles—Smooth Finish

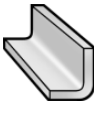

Meet ASTM D4020, D6712, and D4976 and 3-A sanitary standard requirements. USDA compliant. Leg length and wall thickness tolerances are ±0.060″. Angles can vary from 80° to 100° due to flexibility and temperature changes. Inside and outside corners are rounded and leg edges are straight, unless noted. Sold in 2-, 5-, and 8-ft. lengths. **To Order:** Please specify length.

Outside Leg Lgs.	Wall Thick.		Per Ft.
1 1/2″ × 5/8″	1/4″	9852K61▲	$5.39
1 1/2″ × 1 1/2″	1/4″	8672K36	2.92
2″ × 2″	1/4″	8672K37	3.74
3″ × 3″	1/2″	8672K38	8.12
3 1/2″ × 3 1/2″	1/2″	9852K62▲	12.43

▲ Inside and outside corners are square.

UHMW Polyethylene

For information about plastics, see page 3564.

For information on the mechanical and physical properties of polyethylene, go to mcmaster.com and search for **8657KAC**.

Ultra-Abrasion-Resistant UHMW Polyethylene

- Color: Opaque blue
- Temp. Range: –40° to +180° F
- Softening Temp.: 275° F
- Tensile Strength: Good
- Impact Strength: Excellent
- Low friction
- Excellent electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Shore D69

Also known as Tivar 88, this modified UHMW has a slick surface that helps material flow. It is ideal for applications requiring high abrasion resistance.

Rectangular Bars—Smooth Finish

Meet ASTM D4020, D6712, and D4976. Width and length tolerances are ±1/8″. Bars are sold in 5-ft. lengths.

Thick.	Thick. Tolerance	1/2″ Wide		3/4″ Wide		1″ Wide		2″ Wide		3″ Wide	
1/4″	±0.025″	9329K11	$10.28	9329K12	$13.84	9329K13	$16.43	9329K14	$29.76	9329K15	$41.85
3/8″	±0.038″	9329K21	13.54	9329K22	18.81	9329K23	22.21	9329K24	40.29	9329K25	56.65
1/2″	±0.050″	9329K31	17.16	9329K32	24.44	9329K33	28.36	9329K34	52.37	9329K35	73.67
3/4″	±0.075″	9329K41	22.56	9329K42	32.16	9329K43	37.95	9329K44	70.05	9329K45	98.45
1″	±0.100″	9329K51	26.12	9329K52	37.60	9329K53	44.36	9329K54	81.98	9329K55	115.34
1 1/2″	±0.150″	9329K61	29.60	9329K62	48.60	9329K63	57.39	9329K64	105.92	9329K65	148.92

Sheets—Smooth Finish

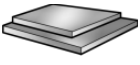

Meet ASTM D4020, D6712, and D4976. Width and length tolerances are ±1/8″.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		12″×36″		24″×24″	
1/8″	±0.020″	84765K122	$6.27	84765K112	$21.32	84765K212	$40.89	84765K312	$55.38	84765K412	$71.12
1/4″	±0.025″	84765K123	4.56	84765K113	15.55	84765K213	29.47	84765K313	39.39	84765K413	50.00
3/8″	±0.037″	84765K124	6.80	84765K114	23.08	84765K214	42.32	84765K314	61.48	84765K414	75.72
1/2″	±0.050″	84765K125	8.96	84765K115	33.92	84765K215	62.03	84765K315	84.37	84765K415	101.87
3/4″	±0.075″	84765K126	13.12	84765K116	49.55	84765K216	90.61	84765K316	121.25	84765K416	151.04
1″	±0.100″	84765K127	17.46	84765K117	66.10	84765K217	120.76	84765K317	157.26	84765K417	201.26
1 1/2″	±0.150″	84765K128	25.80	84765K118	69.09	84765K218	135.57	84765K318	219.24	84765K418	290.52

Thick.	Thick. Tolerance	24″×36″		24″×48″		36″×36″		48″×48″		48″×96″	
1/8″	±0.020″	84765K512	$99.09	84765K612	$116.50	—	—	—	—	—	—
1/4″	±0.025″	84765K513	69.94	84765K613	84.53	84765K653	$96.72	84765K713	$143.68	84765K843	$266.66
3/8″	±0.037″	84765K514	107.11	84765K614	120.43	84765K654	142.07	84765K714	230.43	84765K844	399.98
1/2″	±0.050″	84765K515	141.60	84765K615	166.93	84765K655	180.75	84765K715	304.58	84765K845	533.33
3/4″	±0.075″	84765K516	206.84	84765K616	244.04	84765K656	263.49	84765K716	425.25	84765K846	771.78
1″	±0.100″	84765K517	269.83	84765K617	325.18	84765K657	345.60	84765K717	526.15	84765K847	986.59
1 1/2″	±0.150″	84765K518	380.02	84765K618	467.48	84765K658	501.74	84765K718	769.37	84765K848	1,457.69

Oil-Filled UHMW Polyethylene

- Color: Opaque gray
- Temp. Range: –450° to +180° F
- Softening Temp.: Not rated, unless noted
- Tensile Strength: Good
- Impact Strength: Excellent
- Low friction
- Excellent electrical insulator, unless noted
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Shore D60-D68

Material is self-lubricating so it's more slippery, which improves performance in applications such as chain guides and rollers. It offers great impact resistance and good wear resistance. FDA compliant and USDA approved.

Sheets—Smooth Finish

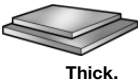

Width and length tolerances are +1/2″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×36″		24″×24″		24″×48″		48″×60″	
1/4″	±0.030″	84945K113	$13.17	84945K213	$24.81	84945K313	$35.54	84945K413	$43.55	84945K613	$78.91	84945K813	$192.59
3/8″	±0.030″	84945K114	19.62	84945K214	36.90	84945K314	53.30	84945K414	65.36	84945K614	118.36	84945K814	287.13
1/2″	±0.030″	84945K115	24.81	84945K215	47.26	84945K315	67.66	84945K415	83.34	84945K615	151.24	84945K815	366.39
3/4″	±0.030″	84945K116	35.54	84945K216	66.88	84945K316	97.17	84945K416	119.79	84945K616	217.80	84945K816	526.80
1″	±0.030″	84945K117	43.15	84945K217	82.70	84945K317	119.09	84945K417	147.43	84945K617	268.89	84945K817	651.23
1 1/2″	±0.030″	84945K118	62.02	84945K218	117.72	84945K318	171.74	84945K418	212.97	84945K618	389.24	84945K818	941.70

Rods—Smooth Finish

- Softening Temp.: 200° F
- Not rated as an electrical insulator

Meet MIL-P-21922. Diameters are oversized +0.060″ to +0.187″ to allow for finishing. Sold in 1-ft. increments; maximum length is 5 feet. **to Order:** Please specify length.

Dia.		Per Ft.	Dia.		Per Ft.	Dia.		Per Ft.	Dia.		Per Ft.
1″	5243T11	$5.39	1 1/2″	5243T19	$9.93	2 1/2″	5243T27	$24.90	3 1/2″	5243T35	$45.35
1 1/8″	5243T13	8.12	1 3/4″	5243T21	12.71	2 3/4″	5243T29	28.19	3 3/4″	5243T37	52.23
1 1/4″	5243T15	8.29	2″	5243T23	17.12	3″	5243T31	31.39	4″	5243T39	57.08
1 3/8″	5243T17	10.31	2 1/4″	5243T25	19.68	3 1/4″	5243T33	37.51	5″	5243T41	73.20

Conductive UHMW Polyethylene

- Color: Opaque black
- Temp. Range: –260° to +160° F
- Softening Temp.: 178° F
- Tensile Strength: Poor
- Impact Strength: Excellent
- Low friction
- Not rated as an electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Shore D63

Impact and wear-resistant, this plastic conducts electricity, is carbon powder-filled and self-lubricating, and has excellent abrasion resistance and high impact strength. Meets UL 94HB for flammability.

Sheets—Smooth Finish

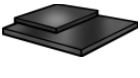

Width and length tolerances are –1/4″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″	
1/4″	+0.080″	8826K12	$21.95	8826K22	$38.17	8826K32	$70.24	8826K42	$132.53	8826K52	$242.21
3/8″	+0.080″	8826K13	32.20	8826K23	56.00	8826K33	103.04	8826K43	194.42	8826K53	355.31
1/2″	+0.050″	8826K14	43.12	8826K24	75.00	8826K34	138.00	8826K44	260.38	8826K54	475.86
3/4″	+0.050″	8826K15	66.00	8826K25	114.78	8826K35	211.20	8826K45	398.49	8826K55	728.28
1″	+0.050″	8826K16	81.67	8826K26	155.91	8826K36	263.85	8826K46	498.91	8826K56	914.67

For information about plastics, see page 3564.

For information on the mechanical and physical properties of polyethylene, go to mcmaster.com and search for **8657KAC**.

Static-Dissipative UHMW Polyethylene

- Color: Opaque black
- Temp. Range: –40° to +185° F, unless noted
- Softening Temp.: 275° F, unless noted
- Tensile Strength: Good, unless noted
- Impact Strength: Excellent, unless noted
- Low friction
- Not rated as an electrical insulator, unless noted
- Use indoors and outdoors
- Machine with high-speed steel tooling, unless noted
- Hardness: Shore D65-D69

Material has good wear and impact resistance plus a surface that reduces static electricity. Use in applications where dust and static electricity are a concern.

Rectangular Bars—Smooth Finish

Meet ASTM D4020, D6712, and D4976. Width and length tolerances are ±1/8″. Sold in 5-ft. lengths.

Thick.	Thick. Tolerance	1/2″ Wide		3/4″ Wide		1″ Wide		2″ Wide		3″ Wide	
1/4″	±0.020″	9542K11	$6.51	9542K12	$9.84	9542K13	$12.04	9542K14	$22.27	9542K15	$29.31
3/8″	±0.020″	9542K21	9.90	9542K22	13.35	9542K23	16.30	9542K24	30.17	9542K25	39.65
1/2″	+0.070″, –0.030″	9542K31	11.40	9542K32	15.40	9542K33	19.20	9542K34	32.40	9542K35	45.85
3/4″	+0.070″, –0.030″	9542K41	14.20	9542K42	20.55	9542K43	24.75	9542K44	41.40	9542K45	56.50
1″	+0.070″, –0.030″	9542K51	16.45	9542K52	22.90	9542K53	28.65	9542K54	47.00	9542K55	64.25
1 1/2″	±0.120″	9542K61	25.65	9542K62	28.35	9542K63	33.65	9542K64	55.50	9542K65	76.15

Sheets—Smooth Finish

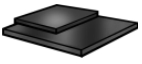

Meet ASTM D4020, D6712, and D4976. Width and length tolerances are ±1/8″ for all sheets except 48″×96″, which are +1/2″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
1/8″	±0.020″	85705K22	$6.88	85705K23	$11.61	85705K28	$21.22	85705K27	$40.85	85705K25	$71.67	85705K24	$143.35
1/4″	±0.020″	85705K32	10.87	85705K33	18.67	85705K38	35.44	85705K37	68.76	85705K35	125.47	85705K34	236.29
1/2″	+0.070″, –0.030″	85705K42	16.19	85705K43	30.40	85705K48	60.40	85705K47	114.09	85705K45	208.44	85705K44	394.78
3/4″	+0.070″, –0.030″	85705K82	22.50	85705K83	43.82	85705K88	87.06	85705K87	171.15	85705K85	310.32	85705K84	592.22
1″	+0.070″, –0.030″	85705K52	32.06	85705K53	60.30	85705K58	120.60	85705K57	228.23	85705K55	416.77	85705K54	763.32
1 1/2″	±0.120″	85705K62	47.10	85705K63	90.84	85705K68	173.83	85705K67	321.87	85705K65	600.00	85705K64	1,121.50
2″	±0.120″	85705K72	62.59	85705K73	120.71	85705K78	232.48	85705K77	429.20	85705K75	798.79	85705K74	1,490.28

Film—Smooth Finish

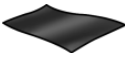

- Temp. Range: –20° to +180° F
- Softening Temp.: 176° F
- Impact Strength: Not rated
- Excellent electrical insulator

Film has good chemical resistance. The static-dissipative area is 24″ wide. Overall width is 25″ with a width tolerance of ±1″. Sold in 1-, 2-, 3-, 6-, 10-, and 15-ft. lengths. **To Order:** Please specify length.

Thick.	Thick. Tolerance		Per Ft.
0.005″	±0.0005″	8327K11	$4.56
0.010″	±0.001″	8327K12	7.08
0.020″	±0.002″	8327K13	13.81

Rods—Smooth Finish

- Softening Temp.: 200° F
- Tensile Strength: Poor
- Impact Strength: Good
- Good electrical insulator
- Machine with carbide tooling

Meet ASTM D4020.

Dia.	Dia. Tolerance		Per Ft.
Sold in 5-ft. lengths.			
1/4″	+0.005″; –0.010″	9900K11	$2.32
3/8″	+0.005″; –0.010″	9900K13	2.46
1/2″	+0.010″; –0.005″	9900K15	2.50
5/8″	+0.010″; –0.005″	9900K17	3.39
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.			
3/4″	+0.010″; –0.005″	9900K19	4.40
7/8″	+0.010″; –0.005″	9900K21	4.72

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.			
1″	+0.060″	9900K23	$6.40
1 1/4″	+0.060″	9900K25	8.82
1 1/2″	+0.060″	9900K27	11.83
1 3/4″	+0.060″	9900K29	14.73
2″	+0.125″	9900K31	17.13
2 1/4″	+0.125″	9900K33	20.52
2 1/2″	+0.125″	9900K35	25.36

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.			
2 3/4″	+0.125″	9900K37	$30.02
3″	+0.187″	9900K39	33.38
3 1/4″	+0.187″	9900K41	39.67
3 1/2″	+0.187″	9900K43	41.72
4″	+0.187″	9900K45	54.80
5″	+0.187″	9900K47	89.46

High-Temperature UHMW Polyethylene

- Color: Opaque white
- Temp. Range: –40° to +275° F
- Softening Temp.: 275° F
- Tensile Strength: Good
- Impact Strength: Excellent
- Low friction
- Excellent electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Shore D68

Also known as Tivar H.O.T., this material has excellent impact and wear resistance and lasts up to 10 times longer in high-temperature applications than standard UHMW.

Sheets—Smooth Finish

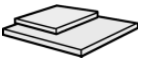

FDA and USDA compliant. Meet ASTM D4020, D6712, and D4976. Width and length tolerances are ±1/16″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″	
1/8″	±0.020″	8270K21	$8.31	8270K22	$13.85	8270K23	$25.10	8270K24	$46.82	8270K25	$86.54
1/4″	±0.025″	8270K31	12.80	8270K32	22.36	8270K33	42.61	8270K34	79.46	8270K35	140.63
1/2″	±0.050″	8270K51	20.22	8270K52	37.29	8270K53	61.45	8270K54	148.38	8270K55	262.62
1″	±0.100″	8270K71	36.73	8270K72	73.45	8270K73	144.45	8270K74	266.87	8270K75	489.67
1 1/2″	±0.150″	8270K81	51.03	8270K82	98.09	8270K83	195.52	8270K84	375.14	8270K85	662.79

Antimicrobial UHMW Polyethylene

- Color: Translucent off-white
- Temp. Range: Max. Temp. is 176° F; Not rated for min. temp.
- Softening Temp.: 176° F
- Tensile Strength: Poor
- Impact Strength: Excellent
- Low friction
- Not rated as an electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Shore D62

A silver compound is blended into this material to suppress the growth of bacteria, algae, fungus, mold, and mildew.

Sheets—Smooth Finish

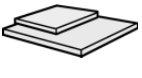

FDA compliant. Width and length tolerances are –1/4″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″	
1/2″	+0.050″	8724K13	$46.05	8724K23	$80.09	8724K33	$128.94	8724K43	$252.40	8724K53	$430.42
3/4″	+0.050″	8724K14	64.23	8724K24	110.48	8724K34	186.12	8724K44	351.02	8724K54	619.71
1″	+0.050″	8724K15	73.72	8724K25	127.07	8724K35	248.44	8724K45	467.01	8724K55	839.75

About High-Performance Plastics

Known for performing at higher temperatures than traditional thermoplastics, these plastics have good chemical resistance and a low coefficient of friction that makes them very slippery.

Temperature

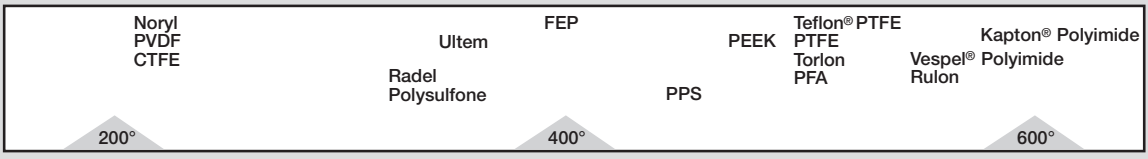

Tensile Strength

Refers to the amount of stretching a material can withstand before breaking.

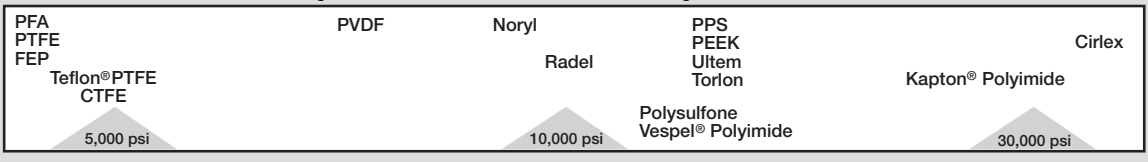

Electrical Insulating

Materials are rated according to their relative dielectric strength, which is the maximum voltage the material can withstand without failing.

Not Rated	Poor	Good	Excellent
Torlon	Rulon, PVDF, Radel	Teflon® PTFE, PTFE, Polysulfone, PEEK	CTFE, FEP, PFA, Noryl, Ultem, PPS, Kapton® Polyimide, Cirlex, Vespel® Polyimide

PTFE

For information about plastics, see page 3564.

ⓘ For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Bars, Sheets, and Rods Made with Teflon® PTFE

- Color: Varies from translucent white to opaque white, unless noted
- Temp. Range: –350° to +500° F
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Good
- Very low friction
- Good electrical insulator, unless noted
- Use indoors and outdoors
- Machine with high-speed steel tooling, unless noted
- Hardness: Rockwell R58, unless noted

Made with virgin Teflon® PTFE resins, this material surpasses most plastics when it comes to electrical insulation properties, low friction, chemical resistance, and performance in extreme temperatures. FDA compliant for food contact. Meets UL 94V0 for flammability, 3-A sanitary standard requirements, and AMS 3651.

***Sample Sheet Made with Teflon® PTFE*—**Size is 6″×6″×¼″.

8545K1 ..... $37.95

Rectangular Bars—Smooth Finish

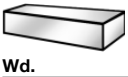

Width tolerance is +1/16″. Sold in 1-ft. increments; maximum length is 4 feet, unless noted. Also meet ASTM D3294 except widths less than ½″, which meet ASTM D3308. **To Order:** Please specify length.

Wd.		Per Ft.
⅛″ Thick *(+0.035″, –0.007″)*		
⅛″	**8737K11★**	$11.07
½″	**8735K11**	7.29
1″	**8735K12**	12.07
1½″	**8735K13**	15.91
2″	**8735K14**	21.21
3″	**8735K63**	28.38
4″	**8735K15**	37.84
3/16″ Thick *(+0.035″, –0.012″)*		
3/16″	**8737K12★**	14.10
½″	**8735K17**	9.74
1″	**8735K18**	15.91
1½″	**8735K19**	22.51
2″	**8735K21**	28.38
3″	**8735K75**	42.57
4″	**8735K22**	52.50
¼″ Thick *(+0.035″, –0.015″)*		
¼″	**8737K13★**	13.66
½″	**8735K24**	12.07
1″	**8735K25**	21.21

★ Maximum length is 6 feet.

Wd.		Per Ft.
¼″ Thick (Cont.)		
1½″	**8735K26**	$28.38
2″	**8735K27**	37.84
3″	**8735K76**	52.50
4″	**8735K28**	70.00
5/16″ Thick *(+0.035″)*		
5/16″	**8737K14★**	7.95
⅜″ Thick *(+0.038″, –0.019″)*		
⅜″	**8737K15★**	22.77
½″	**8735K31**	15.91
1″	**8735K32**	28.38
1½″	**8735K33**	42.57
2″	**8735K34**	52.50
3″	**8735K66**	73.26
4″	**8735K35**	91.30
½″ Thick *(+0.046″, –0.022″)*		
½″	**8735K36**	21.60
1″	**8735K37**	37.84
1½″	**8735K38**	52.50
2″	**8735K39**	70.00

Wd.		Per Ft.
½″ Thick (Cont.)		
3″	**8735K67**	$91.30
4″	**8735K41**	116.67
5/8″ Thick *(+0.062″, –0.027″)*		
½″	**8735K42**	25.00
5/8″	**8737K19★**	44.03
1″	**8735K43**	47.30
1½″	**8735K44**	65.62
2″	**8735K45**	81.40
3″	**8735K68**	109.38
4″	**8735K46**	140.00
¾″ Thick *(+0.070″, –0.035″)*		
½″	**8735K47**	28.38
¾″	**8737K22★**	56.70
1″	**8735K48**	52.50
1½″	**8735K49**	73.26
2″	**8735K51**	91.30
3″	**8735K71**	126.00
4″	**8735K52**	161.54

Wd.		Per Ft.
⅞″ Thick *(+0.062″)*		
⅞″	**8737K25★**	$71.47
1″ Thick *(+0.087″, –0.043″)*		
1″	**8735K64**	70.33
1½″	**8735K59**	91.30
2″	**8735K61**	116.67
3″	**8735K72**	161.50
4″	**8735K62**	203.64
1¼″ Thick *(+0.062″)*		
1¼″	**8737K31★**	118.50
1½″ Thick *(+0.135″, –0.068″)*		
1½″	**8735K65**	136.08
2″	**8735K77**	161.54
3″	**8735K78**	229.09
4″	**8735K79**	294.74
2″ Thick *(+0.180″, –0.090″)*		
2″	**8735K81**	219.93
3″	**8735K73**	294.74
4″	**8735K74**	379.66

Adhesive-Ready Rectangular Bars—One Face Etched for Adhesive, Other Face and Sides Smooth Finish

Etched Side Facing Up

- Color: Opaque white; opaque dark brown (etched face)

Etched on one face so bars can be bonded with epoxy cements and other high-strength adhesives. Width tolerance is +1/16″. Sold in 1-ft. increments; maximum length is 4 feet. Bars that are ¼″ thick or less also meet ASTM D3308; ⅜″ and ½″ thick bars meet ASTM D3294. **To Order:** Please specify length.

Thick.	Thick. Tolerance	½″ Wide	Per Ft.	1″ Wide	Per Ft.	1½″ Wide	Per Ft.	2″ Wide	Per Ft.	3″ Wide	Per Ft.	4″ Wide	Per Ft.
⅛″	±0.007″	**7998K11**	$7.24	**7998K21**	$12.91	**7998K31**	$18.26	**7998K41**	$22.00	**7998K51**	$31.92	**7998K61**	$42.60
3/16″	+0.012″	**7998K12**	23.35	**7998K22**	17.83	**7998K32**	25.27	**7998K42**	40.82	**7998K52**	42.10	**7998K62**	55.42
¼″	+0.031″, –0.015″	**7998K13**	13.21	**7998K23**	24.41	**7998K33**	32.67	**7998K43**	39.27	**7998K53**	54.79	**7998K63**	68.28
⅜″	+0.038″, –0.019″	**7998K14**	17.43	**7998K24**	30.50	**7998K34**	45.72	**7998K44**	56.72	**7998K54**	79.54	**7998K64**	101.50
½″	+0.046″, –0.022″	**7998K16**	22.00	**7998K25**	40.67	**7998K35**	56.77	**7998K45**	70.74	**7998K55**	101.71	**7998K65**	127.63

(Material continued on following page)

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Bars, Sheets, and Rods Made with Teflon® PTFE *(Material continued from previous page)*

Sheets—Smooth Finish

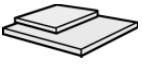

Width tolerance is +1/16″ and length tolerance is +1/2″ for sheets 4″×6″ and smaller. Width and length tolerances are ±1/4″ for sheets 6″×6″ and larger. Sheets through 1/4″ thick are skived and may curl. Skived sheets also meet ASTM D3308. Sheets greater than 1/4″ thick are molded for better flatness. Molded sheets also meet ASTM D3294.

Thick.	Thick. Tolerance	2″×3″		2″×6″		3″×3″		3″×6″		4″×6″	
3/4″	+0.070″, −0.035″	8743K11	$27.24	8743K12	$50.40	8743K13	$42.57	—	—	8743K17	$93.77
1″	+0.087″, −0.043″	8743K21	37.84	8743K22	70.00	8743K23	50.85	8743K24	$87.65	8743K27	112.00
1 1/2″	+0.035″, −0.068″	8743K31	51.50	8743K32	87.65	—	—	8743K34	120.96	—	—
2″	+0.180″, −0.090″	8743K41	67.20	8743K42	112.00	8743K43	87.65	8743K44	112.00	8743K47	202.87

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		12″×36″		12″×48″	
1/32″	±0.003″	8545K11	$7.31	8545K21	$20.89	8545K31	$39.54	8545K151	$54.84	8545K171	$73.12
0.039″ (1 mm)	±0.004″	8545K12	8.11	8545K201	26.06	8545K202	49.30	8545K203	68.40	8545K133	84.84
1/16″	±0.005″	8545K13	15.24	8545K22	49.74	8545K32	87.85	8545K152	120.94	8545K134	154.88
3/32″	±0.006″	8545K14	15.95	8545K23	54.84	8545K33	95.38	8545K153	131.62	8545K135	168.75
1/8″	±0.007″	8545K15	20.06	8545K24	73.12	8545K34	121.88	8545K154	168.75	8545K136	212.73
3/16″	±0.012″	8545K16	28.46	8545K25	95.38	8545K35	168.75	8545K155	239.32	8545K137	307.89
1/4″	+0.030″, −0.015″	8545K1	37.95	8545K26	121.88	8545K36	212.73	8545K156	307.89	8545K138	396.61
3/8″	+0.038″, −0.019″	8545K18	51.30	8545K27	186.79	8545K37	347.37	8545K157	503.39	8545K173	649.18
1/2″	+0.046″, −0.022″	8545K19	75.24	8545K28	256.36	8545K38	386.44	8545K158	560.66	8545K139	723.81
5/8″	+0.054″, −0.027″	8545K211	86.09	8545K71	259.09	8545K81	483.05	8545K161	678.57	8545K141	876.92
3/4″	+0.070″, −0.035″	8545K212	98.44	8545K72	298.74	8545K82	560.66	8545K162	789.23	8545K142	1,052.31
1″	+0.087″, −0.043″	8545K213	125.40	8545K74	447.46	8545K84	812.31	8545K163	1,182.09	8545K143	1,530.43
1 1/2″	+0.135″, −0.068″	8545K214	157.85	8545K144	560.66	8545K145	1,052.31	8545K146	1,486.96	8545K174	1,954.29
2″	+0.180″, −0.090″	8545K215	193.98	8545K165	812.31	8545K166	1,530.43	8545K164	2,230.99	8545K175	2,893.15

Thick.	Thick. Tolerance	24″×24″		24″×48″		36″×36″		48″×48″		48″×96″	
1/32″	±0.003″	8545K41	$73.12	8545K247	$117.00	8545K51	$126.98	8545K61	$212.73	8545K125	$396.61
0.039″ (1 mm)	±0.004″	8545K204	84.84	8545K148	143.06	8545K205	157.85	8545K206	265.31	8545K126	494.64
1/16″	±0.005″	8545K42	154.88	8545K149	286.60	8545K52	318.30	8545K62	529.05	8545K127	993.88
3/32″	±0.006″	8545K43	168.75	8545K251	307.89	8545K53	346.38	8545K63	541.84	8545K128	1,017.30
1/8″	±0.007″	8545K44	212.73	8545K252	396.61	8545K54	446.19	8545K64	742.86	8545K129	1,397.01
3/16″	±0.012″	8545K45	307.89	8545K253	575.41	8545K55	647.34	8545K65	1,080.00	8545K131	1,999.74
1/4″	+0.030″, −0.015″	8545K46	396.61	8545K254	742.86	8545K56	810.00	8545K66	1,397.01	8545K132	2,597.74
3/8″	+0.038″, −0.019″	8545K47	649.18	8545K255	1,052.31	8545K57	1,148.51	8545K67	1,954.29	—	—
1/2″	+0.046″, −0.022″	8545K48	723.81	8545K256	1,361.19	8545K58	1,486.96	8545K68	2,533.33	—	—
5/8″	+0.054″, −0.027″	8545K91	876.92	8545K257	1,652.17	8545K111	1,832.14	8545K121	3,081.08	—	—
3/4″	+0.070″, −0.035″	8545K92	1,052.31	8545K258	1,954.29	8545K112	2,167.61	8545K122	3,648.00	—	—
1″	+0.087″, −0.043″	8545K94	1,530.43	8545K159	2,533.33	8545K114	2,810.96	8545K124	4,864.00	—	—
1 1/2″	+0.135″, −0.068″	8545K147	1,954.29	8545K261	3,648.00	—	—	—	—	—	—
2″	+0.180″, −0.090″	8545K167	2,893.15	8545K262	5,632.00	—	—	—	—	—	—

Film—Smooth Finish

- Cut with utility knife

Also known as skived sheet. Width tolerance is ±1/16″. Sold in 1-, 2-, 3-, 6-, 10-, and 20-ft. lengths. Also meet ASTM D3308. **To Order:** Please specify length.

Thick.	Thick. Tolerance	6″ Wide	Per Ft.	12″ Wide	Per Ft.	24″ Wide	Per Ft.	36″ Wide	Per Ft.	48″ Wide	Per Ft.
0.002″	±0.0005″	8569K12	$1.55	8569K34	$3.08	8569K96	$5.02	8569K74	$7.54	8569K84	$10.05
0.003″	±0.0005″	8569K14	2.22	8569K36	4.24	8569K58	7.54	8569K75	10.52	8569K85	13.13
0.005″	±0.0005″	8569K16	3.70	8569K38	7.07	8569K61	11.69	8569K76	15.41	8569K86	20.55
0.010″	±0.001″	8569K18	6.79	8569K41	11.69	8569K63	20.55	8569K77	27.49	8569K87	36.65
0.015″	±0.002″	8569K21	9.04	8569K43	15.41	8569K65	27.49	8569K78	41.51	8569K88	55.00
0.020″	±0.002″	8569K23	11.24	8569K45	20.55	8569K67	36.65	8569K79	55.00	8569K89	67.82
1/32″	±0.003″	8569K25	15.94	8569K47	28.41	8569K69	52.56	8569K81	73.35	8569K91	71.27
0.040″	±0.004″	8569K26	19.73	8569K48	36.65	8569K71	67.82	8569K95	88.46	8569K98	113.02
1/16″	±0.005″	8569K27	27.65	8569K49	53.40	8569K72	92.89	8569K82	128.18	8569K92	177.81
1/8″	±0.007″	8569K28	54.99	8569K51	73.12	8569K73	163.04	8569K83	231.22	8569K94	256.36

Adhesive-Ready Sheets and Film—One Side Etched for Adhesive; Other Side Smooth Finish

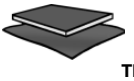

Etched Side Facing Up

- Color: Opaque white; opaque dark brown (etched side)

Etched on one side so they can be bonded with epoxy cements and other high-strength adhesives. Width and length tolerances are ±1/4″. Also meet ASTM D3308.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		12″×36″		12″×48″	
0.015″	±0.002″	8711K91	$7.81	8711K72	$25.41	8711K73	$45.34	8711K74	$67.78	8711K75	$82.19
0.020″	±0.002″	8711K92	8.59	8711K82	27.77	8711K83	49.67	8711K84	73.12	8711K85	88.68
1/32″	±0.003″	8711K93	9.87	8711K12	32.52	8711K22	58.03	8711K52	85.49	8711K18	103.63
1/16″	±0.005″	8711K94	17.25	8711K13	53.26	8711K23	95.13	8711K53	134.48	8711K28	169.84
3/32″	±0.006″	8711K95	23.04	8711K14	73.86	8711K24	131.92	8711K54	186.01	8711K38	235.54
1/8″	±0.007″	8711K96	37.21	8711K15	90.40	8711K25	161.37	8711K55	237.76	8711K48	288.19
3/16″	+0.012″	8711K97	56.91	8711K16	133.88	8711K26	239.00	8711K56	364.17	8711K58	426.78
1/4″	+0.030″, −0.015″	8711K98	54.14	8711K17	166.97	8711K27	298.18	8711K57	439.26	8711K68	532.41

Thick.	Thick. Tolerance	24″×24″		24″×48″		36″×36″		48″×48″	
0.015″	±0.002″	8711K76	$82.19	8711K77	$146.70	8711K78	$162.14	8711K79	$262.04
0.020″	±0.002″	8711K86	88.68	8711K87	158.35	8711K88	174.95	8711K89	282.78
1/32″	±0.003″	8711K32	103.63	8711K21	185.07	8711K42	204.40	8711K62	330.36
1/16″	±0.005″	8711K33	163.33	8711K29	304.75	8711K43	321.92	8711K63	520.26
3/32″	±0.006″	8711K34	235.44	8711K39	420.64	8711K44	448.41	8711K64	724.61
1/8″	±0.007″	8711K35	298.98	8711K49	533.88	8711K45	589.93	8711K65	953.33
3/16″	+0.012″	8711K36	426.69	8711K59	762.17	8711K46	810.40	8711K66	1,360.66
1/4″	+0.030″, −0.015″	8711K37	532.41	8711K69	950.87	8711K47	1,050.45	8711K67	1,688.26

(Material continued on following page)

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Bars, Sheets, and Rods Made with Teflon® PTFE *(Material continued from previous page)*

- Color: Varies from translucent white to opaque white, unless noted
- Temp. Range: –350° to +500° F
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Good
- Very low friction
- Good electrical insulator, unless noted
- Use indoors and outdoors
- Machine with high-speed steel tooling, unless noted
- Hardness: Rockwell R58, unless noted

Made with virgin Teflon® PTFE resins, this material surpasses most plastics when it comes to electrical insulation properties, low friction, chemical resistance, and performance in extreme temperatures. FDA compliant for food contact. Meets UL 94V0 for flammability, 3-A sanitary standard requirements, and AMS 3651, unless noted.

***Sample Sheet Made with Teflon® PTFE*—**Size is 6″×6″×¼″.

8545K1 ..... $37.95

Tubes—Smooth Finish

OD is oversized and ID is undersized for finishing to stated size. Tubes also meet ASTM D1710.

OD	ID	Wall Thick.		Per Ft.
Sold in 1-ft. increments; max. length is 6 feet.				
To Order: *Please specify length.*				
¼″	1/16″	3/32″	**8547K22**	$4.76
¼″	⅛″	1/16″	**8547K23**	3.26
5/16″	3/16″	1/16″	**8547K24**	4.47
⅜″	¼″	1/16″	**8547K11**	4.89
7/16″	5/16″	1/16″	**8547K25**	6.68
½″	¼″	⅛″	**8547K31**	8.66
½″	5/16″	3/32″	**8547K62**	7.89
½″	⅜″	1/16″	**8547K12**	6.90
9/16″	7/16″	1/16″	**8547K27**	7.36
⅝″	¼″	3/16″	**8547K32**	14.62
⅝″	⅜″	⅛″	**8547K26**	12.00
⅝″	½″	1/16″	**8547K61**	7.60
¾″	¼″	¼″	**8547K42**	24.19
¾″	⅜″	3/16″	**8547K63**	19.15
¾″	½″	⅛″	**8547K13**	14.49
¾″	⅝″	1/16″	**8547K28**	8.86
⅞″	⅜″	¼″	**8547K44**	38.54
⅞″	⅝″	⅛″	**8547K14**	17.41

OD	ID	Wall Thick.		Per Ft.
Sold in 1-ft. increments; max. length is 6 feet.				
To Order: *Please specify length.*				
1″	½″	¼″	**8547K45**	$34.25
1″	⅝″	3/16″	**8547K46**	30.67
1″	¾″	⅛″	**8547K15**	20.15
1″	⅞″	1/16″	**8547K29**	13.82
1¼″	⅞″	3/16″	**8547K16**	32.13
1¼″	1″	⅛″	**8547K47**	25.63
1⅜″	⅞″	¼″	**8547K39**	41.30
1⅜″	1″	3/16″	**8547K17**	34.67
1½″	1″	¼″	**8547K35**	45.95
1½″	1¼″	⅛″	**8547K18**	26.57
1¾″	1⅜″	3/16″	**8547K19**	43.25
1¾″	1½″	⅛″	**8547K38**	31.02
1⅞″	1½″	3/16″	**8547K36**	46.27
2″	1½″	¼″	**8547K21**	59.58
2″	1¾″	⅛″	**8547K41**	35.87
2¼″	1½″	⅜″	**8547K33**	96.83
2½″	2″	¼″	**8547K37**	78.10
3″	2″	½″	**8547K34**	148.71

OD	ID	Wall Thick.		Each
Sold in 3″ lengths.				
3½″	3″	¼″	**8556K12**	$59.35
4″	2″	1″	**8556K14**	87.52
4″	2½″	¾″	**8556K11**	76.20
4″	3″	½″	**8556K16**	57.59
4″	3½″	¼″	**8556K22**	66.19
4½″	4″	¼″	**8556K26**	70.70
5″	2½″	1¼″	**8556K13**	129.78
5″	4″	½″	**8556K27**	74.72
6″	3″	1½″	**8556K21**	183.25
6″	4″	1″	**8556K23**	148.62
6″	5″	½″	**8556K33**	92.41
7″	3″	2″	**8556K36**	271.18
7″	5″	1″	**8556K37**	174.98
7″	5½″	¾″	**8556K38**	135.08
Sold in 6″ lengths.				
3½″	3″	¼″	**8556K15**	98.75
4″	2″	1″	**8556K17**	168.62
4″	2½″	¾″	**8556K41**	134.16
4″	3″	½″	**8556K46**	101.40
4″	3½″	¼″	**8556K24**	105.68
4½″	4″	¼″	**8556K28**	118.20
5″	2½″	1¼″	**8556K43**	254.23

OD	ID	Wall Thick.		Each
Sold in 6″ lengths.				
5″	4″	½″	**8556K57**	$131.52
6″	3″	1½″	**8556K51**	316.81
6″	4″	1″	**8556K53**	271.18
6″	5″	½″	**8556K63**	148.91
7″	3″	2″	**8556K66**	506.77
7″	5″	1″	**8556K67**	325.40
7″	5½″	¾″	**8556K68**	232.73
Sold in 12″ lengths.				
3½″	3″	¼″	**8556K18**	165.40
4″	2″	1″	**8556K19**	314.37
4″	2½″	¾″	**8556K71**	255.42
4″	3″	½″	**8556K76**	176.82
4″	3½″	¼″	**8556K25**	177.49
4½″	4″	¼″	**8556K29**	195.30
5″	2½″	1¼″	**8556K73**	475.10
5″	4″	½″	**8556K87**	244.05
6″	3″	1½″	**8556K81**	547.74
6″	4″	1″	**8556K83**	498.60
6″	5″	½″	**8556K93**	288.17
7″	3″	2″	**8556K96**	811.46
7″	5″	1″	**8556K97**	486.89
7″	5½″	¾″	**8556K98**	467.44

Rods—Smooth Finish

- Excellent electrical insulator
- Hardness: Shore D55

Rods also meet ASTM D1710.

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft increments; max. length is 6 feet. ***To Order:*** *Please specify length.*			
⅛″	+0.002″	**8546K31**	$1.23
3/16″	+0.005″	**8546K32**	1.68
¼″	+0.005″	**8546K11**	2.33
5/16″	+0.005″	**8546K35**	3.75
⅜″	+0.005″	**8546K12**	5.30
7/16″	+0.005″	**8546K42**	5.81
½″	+0.005″	**8546K13**	7.34
9/16″	+0.005″	**8546K43**	9.28
⅝″	+0.005″	**8546K14**	11.21
11/16″	+0.005″	**8546K44**	13.22
¾″	+0.005″	**8546K15**	15.46

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft increments; max. length is 6 feet. ***To Order:*** *Please specify length.*			
13/16″	+0.005″	**8546K45**	$18.51
⅞″	+0.005″	**8546K25**	21.53
15/16″	+0.005″	**8546K46**	24.54
1″	+0.005″	**8546K16**	27.69
1⅛″	+0.005″	**8546K26**	35.50
1¼″	+0.005″	**8546K17**	41.65
1⅜″	+0.083″	**8546K27**	46.97
1½″	+0.090″	**8546K18**	54.22
1⅝″	+0.098″	**8546K28**	65.70
1¾″	+0.105″	**8546K29**	79.47
1⅞″	+0.113″	**8546K41**	87.60

Dia.	Dia. Tolerance		Per Ft.
Sold in 1-ft increments; max. length is 6 feet, unless noted. ***To Order:*** *Please specify lg.*			
2″	+0.120″	**8546K19**	$99.74
2¼″	+0.135″	**8546K47**	117.46
2½″	+0.150″	**8546K21**	180.57
2¾″	+0.165″	**8546K48**	180.37
3″	+0.180″	**8546K22**	226.24
3¼″	+0.195″	**8546K49**	251.85
3½″	+0.210″	**8546K23**	292.00
4″	+0.240″	**8546K24**	366.17
4½″	+0.270″	**8546K51**♦	413.75
5″	+0.300″	**8546K34**♦	511.26
6″	+0.360″	**8546K52**♦	686.69

♦Max. length is 3 feet.

Dia.	Dia. Tolerance	*1″ Long* Each		*3″ Long* Each		*6″ Long* Each
2″	+0.120″	**1396T11**	$12.65	**1396T21**	$32.53	**1396T31** $54.58
3″	+0.180″	**1396T12**	28.62	**1396T22**	73.63	**1396T32** 122.71
4″	+0.240″	**1396T13**	50.86	**1396T23**	130.77	**1396T33** 217.96

Dia.	Dia. Tolerance	*1″ Long* Each		*3″ Long* Each		*6″ Long* Each
5″	+0.300″	**1396T14**	$70.08	**1396T24**	$183.97	**1396T34** $306.61
6″	+0.360″	**1396T15**	98.10	**1396T25**	257.51	**1396T35** 429.18
8″	+0.157″	**1396T16**	194.84	**1396T26**	640.19	**1396T36** 1,075.52

Hexagonal Bars—Smooth Finish

Hex size is measured across the flats. Sold in 1-ft. increments; maximum length is 6 feet. Meet AMS 3656. Do not meet AMS 3651. ***To Order:*** Please specify length.

Hex Size	Hex Tolerance		Per Ft.
¼″	+0.01″	**8544K11**	$8.85
⅜″	+0.01″	**8544K13**	14.10
½″	+0.01″	**8544K15**	21.83
⅝″	+0.01″	**8544K17**	$37.52
¾″	+0.01″	**8544K19**	51.33
1″	+0.01″	**8544K24**	91.30

90° Angles—Smooth Finish

Edges are straight. Leg length tolerance is ±0.050″. Sold in 1-ft. increments; maximum length is 5 feet. Meet AMS 3656. Do not meet AMS 3651. ***To Order:*** Please specify length.

Outside Leg Lgs.	Wall Thick.	Thick. Tolerance		Per Ft.
½″ × ½″	1/16″	+0.015″	**8604K11**	$9.71
1″ × 1″	⅛″	+0.015″	**8604K12**	35.33
1½″ × 1½″	¼″	+0.015″	**8604K13**	97.20
2″ × 2″	¼″	+0.015″	**8604K14**	119.78

U-Channels—Smooth Finish

Edges are straight. Base and leg tolerances are ±0.050″. Sold in 1-ft. increments; maximum length is 5 feet. Meet AMS 3656. Do not meet AMS 3651. ***To Order:*** Please specify length.

Outside Base × Legs	Wall Thick.	Thick. Tolerance		Per Ft.
½″ × 9/16″	1/16″	+0.015″	**8592K11**	$12.71
1⅞″ × 25/32″	9/64″	+0.015″	**8592K12**	62.96
2½″ × 2¼″	3/16″	+0.015″	**8592K13**	148.94

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Extreme-Temperature Slippery PTFE

- Color: Opaque white, unless noted
- Temp. Range: –328° to +500° F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Poor, unless noted
- Impact Strength: Good, unless noted
- Very low friction, unless noted
- Excellent electrical insulator, unless noted
- Use indoors and outdoors
- Machine with high-speed steel tooling, unless noted
- Hardness: Shore D50-D65

A good choice for electrical applications, polytetrafluoroethylene (PTFE) does not conduct electricity, offers good chemical resistance at high temperatures, and has a very slick surface. All except miniature cord are FDA compliant for food contact. All except balls meet UL 94V0 for flammability.

Sheets—Smooth Finish

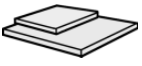

- Color: Varies from translucent white to opaque white depending on thickness

The dependable performance of virgin PTFE resins at prices comparable to the reprocessed resins of mechanical grade sheets. Sheets up to 1/8″ thick meet ASTM D3308, and 3/16″ and 1/4″ thick sheets meet ASTM D3294. All meet 3-A sanitary standard requirements. Width and length tolerances are ±1/4″.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×36″		24″×24″		36″×36″		48″×48″	
1/32″	+0.004″	9266K11	$18.15	9266K21	$33.59	9266K31	$50.09	9266K41	$66.79	9266K51	$130.71	9266K61	$207.45
1/16″	+0.007″	9266K12	33.88	9266K22	61.61	9266K32	97.80	9266K42	130.41	9266K52	255.12	9266K62	404.94
3/32″	+0.010″	9266K13	42.93	9266K23	78.05	9266K33	123.90	9266K43	152.42	9266K53	323.17	9266K63	513.00
1/8″	+0.013″	9266K14	53.71	9266K24	105.80	9266K34	146.98	9266K44	186.02	9266K54	383.35	9266K64	608.54
3/16″	+0.019″	9266K15	87.59	9266K25	170.21	9266K35	236.40	9266K45	315.21	9266K55	616.78	9266K65	978.84
1/4″	+0.025″	9266K16	113.21	9266K26	235.26	9266K36	326.69	9266K46	435.59	9266K56	852.35	9266K66	1,352.81

High-Purity Sheets—Smooth Finish

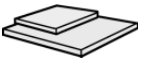

- Max. Temp.: 500° F; low end not rated

Meet AMS 3652, 3660, and 3667. Molded in a clean room environment, bagged, and labeled with lot and batch numbers for traceability. Width and length have a plus tolerance.

Thick.	Thick. Tolerance	6″×6″		12″×12″	
1/16″	±0.005″	1345T11	$26.47	1345T21	$85.96
1/8″	±0.010″	1345T12	53.93	1345T22	128.35
1/4″	±0.020″	1345T13	85.96	1345T23	189.56
3/8″	±0.030″	1345T14	117.97	1345T24	273.81
1/2″	±0.040″	1345T15	150.87	1345T25	352.04
1″	±0.080″	1345T16	273.81	1345T26	657.14

Precision-Ground Sheets—Smooth Finish

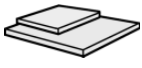

Meet ASTM D3294, MIL-P-22241, and AMS 3667. These sheets are consistently flat, square, and parallel on all six sides. Width and length tolerances are ±0.010″.

Thick.	Thick. Tolerance	2″×12″		12″×12″	
1/4″	±0.005″	9711K11	$24.09	9711K16	$142.00
3/8″	±0.005″	9711K21	40.07	9711K26	183.27
1/2″	±0.005″	9711K31	46.10	9711K36	252.66

Tear-Resistant Film—Textured Finish

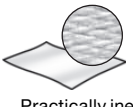

- Temp. Range: –200° to +500° F
- Good electrical insulator

Practically inert to all chemicals and tear resistant from all directions, this film remains slippery and flexible, making it an excellent choice when you need longevity and serviceability.

Width and length tolerances are +1/4″.

Thick.	Thick. Tolerance	12″×12″		36″×36″	
0.009″	±0.004″	1761T21	$21.29	1761T41	$161.47
0.012″	±0.004″	1761T22	24.09	1761T42	182.68
0.016″	±0.004″	1761T23	35.14	1761T43	236.90
0.020″	±0.004″	1761T24	40.54	1761T44	270.00
0.030″	±0.004″	1761T25	63.51	1761T45	368.22
0.060″	±0.004″	1761T26	87.62	1761T46	571.03

Adhesive-Backed Film—Smooth Finish

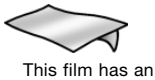

- Max. Temp.: 250° F; low end not rated
- Impact Strength: Good, unless noted
- Excellent electrical insulator, unless noted

This film has an acrylic adhesive on one side, so it can be bonded to nearly any surface. Width and length tolerances are ±1/4″. Film is FDA compliant.

Sold in 1-ft. lengths. Thicknesses up to 0.010″ have a maximum continuous length of 100 feet. Thicknesses 0.020″ and larger have a maximum length of 15 feet. **To Order:** Please specify length.

Thick.	Thick. Tolerance	12″ Wide	Per Ft.	36″ Wide	Per Ft.
0.005″	±0.0005″	2208T11♦	$14.29	2208T12♦	$37.95
0.010″	±0.0005″	2208T21♦	16.49	2208T22♦	44.92
0.020″	±0.002″	2208T31	60.47	—	—
0.030″	±0.003″	2208T41	77.38	—	—
0.060″	±0.006″	2208T51	123.42	—	—

♦ Not rated for impact strength and electrical insulation.

Rods—Smooth Finish

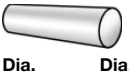

Meet ASTM D1710 and MIL-P-19468A. Rods with a length of 1 ft. to 5 ft. have a length tolerance of –1/4″; all others have no length tolerance.

Dia.	Dia. Tolerance	Per Ft.
Sold in 1-ft. increments; max. length is 6 feet. To Order: Please specify length.		
1/4″	+0.002″	2905K11 $1.48
1/2″	+0.002″	2905K12 4.36
3/4″	+0.004″	2905K13 9.42
1″	+0.004″	2905K14 17.23
Sold in 1-ft. increments; max. length is 6 feet. To Order: Please specify length.		
1 1/4″	+0.010″	2905K15 $24.31
1 1/2″	+0.010″	2905K16 37.11
1 3/4″	+0.010″	2905K17 51.95
2″	+0.010″	2905K18 66.80
Sold in 1-ft. increments; max. length is 6 feet. To Order: Please specify length.		
2 1/2″	+0.110″	2905K19 $119.76
3″	+0.126″	2905K25 150.01
3 1/2″	+0.142″	2905K27 193.80
4″	+0.157″	2905K23 244.26

Dia.	Dia. Tolerance	1/2″ Long		1″ Long		1 1/2″ Long		2″ Long		6″ Long	
2″	+0.120″	8596K113	$8.08	8596K133	$14.43	8596K153	$19.46	8596K173	$25.63	8596K333	$53.91
4″	+0.240″	8596K117	28.69	8596K137	47.78	8596K157	65.35	8596K177	84.04	8596K337	192.73
6″	+0.310″	8596K122	62.08	8596K142	105.96	8596K162	144.78	8596K182	190.70	8596K342	390.73

High-Purity Rods—Smooth Finish

- Max. Temp.: 500° F; low end not rated

Meet AMS 3652, 3660, and 3667. Molded in a clean room environment, bagged, and labeled with lot and batch numbers for traceability. Length has a plus tolerance. Diameter tolerance is +0.250″. Sold in 1-ft. lengths.

Dia.		
1″	1407T11	$76.41
1 1/4″	1407T12	118.84
1 1/2″	1407T13	141.70
1 3/4″	1407T14	$147.40
2″	1407T15	181.53
2 1/4″	1407T16	201.52
2 1/2″	1407T17	$221.78
3″	1407T18	323.41
4″	1407T19	532.72

(Material continued on following page)

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Extreme-Temperature Slippery PTFE *(Material continued from previous page)*

- Color: Opaque white, unless noted
- Temp. Range: –328° to +500°F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Poor, unless noted
- Impact Strength: Good, unless noted
- Very low friction, unless noted
- Excellent electrical insulator, unless noted
- Use indoors and outdoors
- Machine with high-speed steel tooling, unless noted
- Hardness: Shore D50-D65

A good choice for electrical applications, polytetrafluoroethylene (PTFE) does not conduct electricity, offers good chemical resistance at high temperatures, and has a very slick surface. All except miniature cord are FDA compliant for food contact. All except balls meet UL 94V0 for flammability.

Miniature Cord—Smooth Finish

- Cut with scissors

Meets AMS 2651 and 3656.

Dia.	Dia. Tolerance	Spool Lg.		
0.028″	±0.002″	100 ft.	84935K32	$16.01
0.031″	±0.002″	100 ft.	84935K34	17.22
0.035″	±0.002″	100 ft.	84935K36	22.14
0.039″	±0.002″	100 ft.	84935K38	25.17
0.047″	±0.002″	100 ft.	84935K42	35.01
0.050″	±0.002″	100 ft.	84935K44	39.33
0.055″	±0.002″	100 ft.	84935K46	45.05
0.062″	±0.002″	100 ft.	84935K48	57.46
0.070″	±0.002″	100 ft.	84935K52	72.45
0.078″	±0.003″	100 ft.	84935K54	92.22
0.094″	±0.003″	100 ft.	84935K56	130.46
0.100″	±0.003″	25 ft.	84935K58	36.75
0.109″	±0.003″	25 ft.	84935K62	44.59
0.125″	±0.003″	25 ft.	84935K64	58.52
0.150″	±0.003″	25 ft.	84935K66	82.87
0.188″	±0.003″	10 ft.	84935K71	60.58

Balls—Smooth Finish

- Grade: 2, unless noted
- Sphericity: 0.001″, unless noted
- Tensile strength, impact strength, and friction not rated
- Not rated as an electrical insulator
- Not rated for machinability

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
1/16″	±0.002″	100	9660K11	$10.76
3/32″	±0.002″	100	9660K12	11.57
1/8″	±0.002″	100	9660K13	12.29
5/32″	±0.002″	100	9660K14	12.55
3/16″	±0.002″	50	9660K15	9.35
1/4″	±0.002″	50	9660K37	10.60
5/16″	±0.002″	25	9660K19	7.63
3/8″	±0.002″	20	9660K41	7.14
1/2″	±0.002″	20	9660K24	13.83
5/8″	±0.002″	10	9660K26	15.64
3/4″	±0.002″	1	9660K28	2.31
1″	±0.002″	1	9660K33	3.83

Dia.	Dia. Tolerance		Each
1 1/4″	±0.005″	9660K51★	$36.03
1 1/2″	±0.005″	9660K61★	39.29

★ Grade: 3; Sphericity: 0.005″.

Reprocessed PTFE

- Color: Opaque white
- Temp. Range: –328° to +500°F
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Not rated
- Very low friction
- Not rated as an electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Shore D50-D70

Reprocessed polytetrafluoroethylene (PTFE), often called mechanical-grade PTFE, provides low friction at a lower cost than Extreme-Temperature Slippery PTFE (above and on page 3603). *Note:* Not recommended for electrical applications.

Rods—Smooth Finish

Meet ASTM D1710. Rods with a length of 1 ft. to 5 ft. have a length tolerance of –1/4″; 6-ft. rods have no length tolerance. Sold in 1-ft. increments, unless noted. Maximum length is 6 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/8″	+0.002″	8803K91 ♦	$0.94
3/16″	+0.002″	8803K92 ♦	1.12
1/4″	+0.002″	8803K11 ♦	1.26
5/16″	+0.002″	8803K12 ♦	2.02
3/8″	+0.002″	8803K13	2.74
1/2″	+0.002″	8803K14	3.42
5/8″	+0.004″	8803K15	$6.95
3/4″	+0.004″	8803K16	8.07
7/8″	+0.004″	8803K72	11.13
1″	+0.004″	8803K17	14.32
1 1/8″	+0.010″	8803K74	19.49
1 1/4″	+0.010″	8803K76	$20.96
1 1/2″	+0.010″	8803K18	28.56
1 3/4″	+0.010″	8803K79	39.59
2″	+0.010″	8803K19	48.43
2 1/4″	+0.102″	8803K82	74.26
2 1/2″	+0.102″	8803K21	$88.68
2 3/4″	+0.110″	8803K42	99.97
3″	+0.126″	8803K22	110.08
3 1/2″	+0.142″	8803K26	134.81
4″	+0.157″	8803K32	179.71

♦ Sold in 6-ft. lengths only.

Weldable PTFE

- Color: Opaque white
- Max. Temp.: 500°F; low end not rated
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Good
- Very low friction
- Excellent electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Shore D52

Also known as NXT, this chemically modified polytetrafluoroethylene (PTFE) is weldable and offers exceptional chemical and permeation resistance. Meets AMS 3652, 3660, and 3667. Material is FDA compliant and meets UL 94V0 for flammability.

Sheets—Smooth Finish

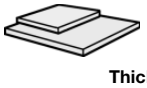

Width and length tolerances are +3/32″ for 6″×6″ sheets and +1/4″ for 12″×12″.

Thick.	Thick. Tolerance	6″×6″		12″×12″	
1/16″	±0.003″	1019T11	$22.06	1019T21	$71.64
1/8″	±0.006″	1019T12	47.56	1019T22	98.57
1/4″	±0.020″	1019T13	61.61	1019T23	177.43
3/8″	±0.030″	1019T14	85.96	1019T24	246.43
1/2″	±0.040″	1019T15	109.52	1019T25	316.84

Rods—Smooth Finish

Diameter and length tolerances are +1/4″. Sold in 1-ft. lengths.

Dia.			Dia.			Dia.		
1″	1022T11	$68.77	2 1/4″	1022T16	$195.23			
1 1/4″	1022T12	111.71	2 1/2″	1022T17	229.17			
1 1/2″	1022T13	124.61	2 3/4″	1022T18	264.90			
1 3/4″	1022T14	150.71	3″	1022T19	332.19			
2″	1022T15	165.52	4″	1022T21	550.47			

Static-Dissipative PTFE

- Color: Opaque black
- Temp. Range: –320° to +500°F
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Good
- Very low friction
- Not rated as an electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Shore D61

Use in applications where dust and static electricity are a concern. Meets ASTM D4745 and UL 94V0 for flammability.

Sheets—Smooth Finish

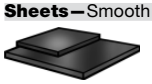

Width and length tolerances are +1/4″, –1/16″.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		24″×24″		24″×48″	
1/4″	±0.020″	8775K56	$40.79	8775K61	$133.26	8775K65	$231.76	8775K69	$410.00	8775K74	$710.70
1/2″	±0.050″	8775K57	84.29	8775K62	275.33	8775K66	468.78	8775K71	816.03	8775K75	1,421.40
3/4″	±0.075″	8775K58	123.88	8775K63	406.17	8775K67	710.63	8775K72	1,218.28	8775K76	2,132.10
1″	±0.100″	8775K59	144.98	8775K64	469.06	8775K68	868.76	8775K73	1,535.11	8775K77	2,842.80

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Wear-Resistant Glass-Filled PTFE

- Color: Opaque off-white to gray
- Temp. Range: –350° to +500° F
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Not rated, unless noted
- Low friction
- Poor electrical insulator, unless noted
- Use indoors and outdoors
- Machine with high-speed steel tooling, unless noted
- Hardness: Shore D56-D68

Glass is added for higher pressure, wear resistance, and thermal conductivity. Maintains good dielectric properties with some negative impact on chemical resistance.

Sheets—Smooth Finish

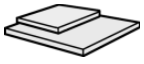

- Impact Strength: Good
- Excellent electrical insulator

Meet UL 94V0 for flammability. Width and length tolerances are +1/4″, –1/16″. Thickness tolerance is ±10%.

Thick.	6″×6″	12″×12″	12″×24″
1/32″	8636K11 $7.81	8636K21 $30.21	8636K31 $56.40
1/16″	8636K12 13.53	8636K22 52.88	8636K32 99.53
1/8″	8636K14 22.56	8636K24 89.05	8636K34 169.20
1/4″	8636K16 40.60	8636K26 161.14	8636K36 307.64

Thick.	6″×6″	12″×12″	12″×24″
3/8″	8636K17 $57.14	8636K27 $289.02	8636K37 $662.09
1/2″	8636K18 73.84	8636K28 294.26	8636K38 563.00
3/4″	8636K61 97.46	8636K72 423.00	8636K82 812.16
1″	8636K62 141.00	8636K74 541.44	8636K84 1,041.23

Tubes—Rough Finish

- Not rated as an electrical insulator

Length tolerance is +1/2″. OD tolerance is +0.025″ and ID tolerance is –0.025″ for OD sizes 1″ and smaller; OD tolerance is +0.188″ and ID tolerance is –0.188″ for OD sizes 2″ and larger. Wall thickness tolerance is not rated. Sold in 1-ft. lengths.

OD	ID	Wall Thick.		
1/2″	1/4″	1/8″	1370T21	$17.56
5/8″	3/8″	1/8″	1370T22	25.85
3/4″	1/2″	1/8″	1370T23	32.62
1″	3/4″	1/8″	1370T24	$44.82
2″	1″	1/2″	1370T11	146.45
2 1/2″	1″	3/4″	1370T12	214.04
2 1/2″	1 1/2″	1/2″	1370T13	$168.98
3″	1″	1″	1370T14	305.57
3″	1 1/4″	7/8″	1370T15	285.86
3″	1 3/4″	5/8″	1370T16	$258.08
3 1/2″	1 1/2″	1″	1370T17	342.79
3 1/2″	2″	3/4″	1370T18	320.36

Rods—Smooth Finish

- Machine with carbide tooling

Meet UL 94V0 for flammability. Sold in 1-ft. increments; maximum length is 6 feet, except 3″ diameter and larger, which are sold in 1-ft. lengths only. **To Order:** Please specify length.

Dia.	Dia. Toler.		Per Ft.
1/4″	+0.005″	85275K24	$3.60
3/8″	+0.005″	85275K28	7.13
1/2″	+0.005″	85275K34	12.32
5/8″	+0.005″	85275K38	18.23
3/4″	+0.005″	85275K44	$26.14
1″	+0.005″	85275K48	44.05
1 1/8″	+0.005″	85275K54	55.49
1 1/4″	+0.075″	85275K58	64.83
1 1/2″	+0.090″	85275K68	$84.10
1 3/4″	+0.105″	85275K74	108.87
2″	+0.120″	85275K78	135.46
2 1/2″	+0.150″	85275K84	189.05
3″	+0.180″	85275K88	$268.16
3 1/4″	+0.195″	85275K94	365.47
3 1/2″	+0.210″	85275K98	288.57
4″	+0.240″	85275K104	487.20

Wear-Resistant Slippery Rulon

- Color: Opaque gold, maroon, and blue-green
- Temp. Range: –400° to +550° F
- Softening Temp.: 630° F, except *blue-green* not rated
- Tensile Strength: Poor
- Impact Strength: Excellent
- Low friction, except *blue-green* not rated
- *Gold*, poor electrical insulator; *maroon*, good electrical insulator; *blue-green*, not rated as an electrical insulator
- Use indoors and outdoors
- *Gold* and *blue-green*, machine with high-speed steel tooling; *maroon*, machine with carbide tooling
- Hardness: Shore D60-D65

Manufactured from modified PTFE, this self-lubricating plastic offers high wear resistance. Ideal for bearing, gasket, and sealing applications.

Gold (Grade J)—Has the lowest coefficient of friction, making it more slippery than any modified PTFE material. Works with soft and hard metals. Not recommended for steam or highly acidic environments.

Maroon (Grade LR)—Has better chemical resistance than Grade J. Use with hard metals.

Blue-Green (Grade 142)—This thermally conductive, bronze-filled film is ideal for expansion pads and linear slides for machine tools.

Sheets and Film—Rough Finish, except Gold has a Smooth Finish

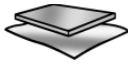

Sheets have width and length tolerances of ±1/4″. Thickness is oversized to allow for finishing, except 1/8″ and 1/4″ thick sheets, which have a tolerance of –1/64″.

Film has a width tolerance of ±1/16″ and a length tolerance of +1/4″. It's etched on one side to accept an adhesive.

6″×6″ SHEETS

Thick.	Gold		Maroon	
1/8″	5824T61	$135.69	5824T71	$123.90
1/4″	5824T62	166.91	5824T72	134.80
1/2″	5824T63	329.16	5824T73	271.58
3/4″	5824T64	479.88	5824T74	372.94
1″	5824T65	548.43	5824T75	456.64

12″×12″ FILM

Thick.	Thick. Tolerance	Gold		Maroon		Blue-Green	
0.031″	±0.004″	5762T27 ▲	$93.82	5762T35	$79.19	5762T13	$89.61
0.047″	±0.006″					5762T15	107.24
0.062″	±0.006″	5762T29	158.77	5762T37	131.80	5762T17	124.74

▲ 0.030″ thick.

Rods—Maroon, Rough Finish; Gold, Smooth Finish

Length tolerance is +1/4″. Sold in 1-ft. lengths.

Dia.	Dia. Tolerance	Gold		Maroon	
1/4″	+0.100″	5814T19	$21.80	5814T41	$20.67
3/8″	+0.100″	5814T21	32.35	5814T43	28.31
1/2″	+0.100″	5814T23	54.90	5814T45	36.94
3/4″	+0.075″	5814T27	$119.12	5814T49	$80.35
1″	+0.075″	5814T29	186.73	5814T53	123.15

Ultra-Moisture-Resistant CTFE

- Color: Opaque white, except 1/16″ thick sheet is clear
- Max. Temp.: 248° F; low end not rated
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Good
- Very low friction, unless noted
- Excellent electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Shore D75-D85

Also known as PCTFE, CTFE is comparable to Kel-F and has the lowest vapor transmission rate of any plastic in a wide temperature range. Good for cryogenic seals. FDA compliant.

Sheets—Smooth Finish

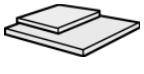

- Not rated for friction

Width and length tolerances are ±1/4″. Meet UL 94V0 for flammability. Sold in 6″×6″ sheets.

Thick.	Thick. Tolerance		
1/16″	+0.013″	85425K51	$69.50
1/4″	+0.050″	85425K53	216.74
5/8″	+0.125″	85425K54	496.29

Rods—Smooth Finish

Sold in 1-ft. increments; maximum length is 6 feet. **To Order:** Please specify length.

Dia.	Dia. Toler.		Per Ft.
1/8″	+0.002″	85415K16	$5.90
3/16″	+0.002″	85415K26	10.64
1/4″	+0.002″	85415K36	16.09
3/8″	+0.002″	85415K46	31.08
1/2″	+0.002″	85415K56	$53.82
3/4″	+0.002″	85415K58	135.98
1″	+0.002″	85415K66	232.37
1 1/2″	+0.005″	85415K86	634.89

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Dimensionally Stable PVDF

- Color: Translucent white to off-white
- Temp. Range: –40° to +265° F
- Softening Temp.: Not rated
- Tensile Strength: Good
- Impact Strength: Good
- Low friction
- Poor electrical insulator, unless noted
- Use indoors and outdoors
- Machine with high-speed steel tooling; cut *film* with scissors
- Hardness: Rockwell R100, unless noted

Also known as Kynar and Solef, PVDF is stronger and can hold its shape better than PTFE and FEP, within a narrower temperature range. Meets UL 94V0 for flammability. Resin is FDA compliant.

Sheets—Smooth Finish

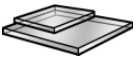

Width tolerance is ±1/4″. Length tolerance is ±1/2″. Thickness tolerance is +0.025″.

Thick.	6″×6″		12″×12″	
1/4″	8688K711	$27.83	8688K621	$92.43
3/8″	8688K721	41.68	8688K631	140.47
1/2″	8688K731	43.32	8688K641	171.06
3/4″	8688K751	73.54	8688K651	247.10
1″	8688K761	84.04	8688K661	280.20
1 1/2″	8688K771	124.61	8688K671	423.72

Film—Smooth Finish

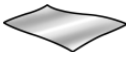

- Excellent electrical insulator
- Hardness: Shore D78

Width tolerance is +1″. Sold in 1-ft. increments; maximum length is 50 ft. **To Order:** Please specify length.

Thick.	Thick. Tolerance	Wd.		Per Ft.
0.003″	±0.0003″	24″	8675K21	$7.69
0.005″	±0.0005″	24″	8675K22	12.22
0.01″	±0.0010″	24″	8675K23	22.18
0.015″	±0.0015″	24″	8675K24	32.01
0.02″	±0.0020″	24″	8675K25	43.65

Rods—Smooth Finish

Sold in 1-ft. increments; maximum length is 5 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/4″	+0.002″	8683K51	$2.75
3/8″	+0.002″	8683K52	5.48
1/2″	+0.002″	8683K53	8.99
3/4″	+0.002″	8683K54	18.13
1″	+0.002″	8683K55	34.30
1 1/2″	+0.005″	8683K56	78.62
2″	+0.005″	8683K57	124.36

Impact-Resistant Slippery FEP

- Color: Translucent white, except *film* is clear
- Temp. Range: –320° to +400° F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: Excellent, unless noted
- Low friction, unless noted
- Excellent electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling; cut *film* with scissors
- Hardness: Rockwell R25, unless noted

FEP provides greater impact strength than PTFE, without sacrificing low friction. All except adhesive-backed film meet UL 94V0 for flammability and are FDA compliant.

Sheets—Smooth Finish

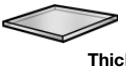

Width and length tolerances are ±1/4″.

Thick.	Thick. Tolerance		6″×6″
3/32″	+0.019″	85375K213	$34.40
1/8″	+0.025″	85375K214	42.05
1/4″	+0.050″	85375K215	78.73
3/8″	+0.075″	85375K216	104.20
1/2″	+0.100″	85375K217	134.70

Film—Smooth Finish

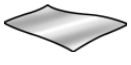

- Temp. Range: *Adhesive backed*, –100° to + 400° F
- Impact Strength: Not rated
- Not rated for friction
- Hardness: Not rated

Width tolerance is ±1/16″. *Plain back* is sold in 1-ft. increments; maximum length is 50 feet. **To Order:** Please specify length.

Thick.	Thick. Tol.	Wd.		Per Ft.
Plain Back				
0.001″	±0.0001″	24″	85905K62	$4.54
0.002″	±0.0002″	24″	85905K64	6.91
0.005″	±0.0004″	24″	85905K66	12.06

Thick.	Thick. Tol.	Size		Each
Adhesive Backed				
0.0035″	±0.0004″	12″×12″	5805T11	$13.94

Rods—Smooth Finish

Sold in 1-ft. increments; maximum length is 6 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/8″	+0.002″	85325K14	$4.47
3/16″	+0.002″	85325K18	4.26
1/4″	+0.002″	85325K24	6.82
3/8″	+0.002″	85325K28	12.72
1/2″	+0.002″	85325K34	22.67
3/4″	+0.002″	85325K38	53.94
1″	+0.002″	85325K44	72.37
2″	+0.005″	85325K52	256.32

Extreme-Temperature Dimensionally Stable PFA

- Color: *Film*, clear; *rods*, translucent white
- Temp. Range: –320° to +500° F
- Softening Temp.: Not rated
- Tensile Strength: Poor
- Impact Strength: *Film*, not rated; *rods*, excellent
- Low friction
- Excellent electrical insulator
- Use indoors and outdoors
- *Film*, cut with scissors; *rods*, machine with high-speed steel tooling
- Hardness: *Film*, not rated; *rods*, Shore D60

PFA has excellent chemical resistance. Resists deforming under stress and high temperatures. Meets UL 94V0 for flammability.

Film—Smooth Finish

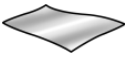

Width tolerance is ±1/16″.
Sold in 1-ft. increments; maximum length is 50 feet. **To Order:** Please specify length.

Thick.	Thick. Tolerance	Wd.		Per Ft.
0.001″	±0.00025″	24″	84955K12	$5.78
0.002″	±0.0005″	24″	84955K14	10.02
0.005″	±0.001″	24″	84955K16	22.73

Rods—Smooth Finish

Diameter tolerance is +0.005″.
Sold in 1-ft. increments; maximum length is 6 feet, unless noted. **To Order:** Please specify length.

Dia.		Per Ft.	Dia.		Per Ft.
1/8″	85555K21	$11.89	1/2″	85555K25	$70.88
3/16″	85555K22	16.68	3/4″	85555K26	115.06
1/4″	85555K23	19.84	1″	85555K27★	153.18
3/8″	85555K24	30.50	1 1/2″	85555K29★	307.30

★ Max. length is 4 feet.

Ultra-Machinable Medical-Grade Radel

- Color: Translucent amber
- Max. Temp.: 320° F; low end not rated
- Softening Temp.: 440° F
- Tensile Strength: Excellent
- Impact Strength: Excellent
- Low friction
- Poor electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R122

Withstands prolonged exposure to chemicals better than polysulfone and maintains its strength and creep resistance. Ideal for medical applications such as sterilization trays and surgical instrument handles. Meets ASTM D6394, UL 94V0 for flammability, and USP Class VI. *Note:* Should not be used for implantation in the human body. FDA compliant.

Sheets—Rough Finish

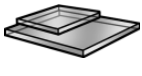

Width tolerance is +1/4″ and length tolerance is +1/2″.

Thick.	Thick. Tolerance	6″×6″		12″×12″	
3/8″	+0.025″	9703T21	$46.89	9703T23	$166.73
1/2″	+0.025″	9703T31	55.64	9703T33	197.84
3/4″	+0.025″	9703T41	80.21	9703T43	279.88
1″	+0.025″	9703T51	106.83	9703T53	372.93

Rods—Rough Finish

Sold in 1-ft. increments; maximum length is 5 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/2″	+0.002″	1397T11	$9.12
5/8″	+0.002″	1397T12	13.58
3/4″	+0.002″	1397T13	18.69
1″	+0.005″	1397T14	32.52
1 1/4″	+0.005″	1397T15	45.66
1 1/2″	+0.005″	1397T16	63.08
2″	+0.030″	1397T17	104.02

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Ultra-Moisture-Resistant Polysulfone

- Color: Translucent amber
- Temp. Range: –150° to +320° F
- Softening Temp.: 371° F
- Tensile Strength: Excellent
- Impact Strength: Good
- Low friction
- Good electrical insulator
- Use indoors and outdoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R120

Also known as Udel. With its excellent resistance to chemicals, hot water, and steam, this material is a great choice for pharmaceutical, medical, and food-service applications. Meets UL 94V0 for flammability. FDA compliant and NSF certified.

Sheets—Smooth Finish

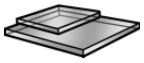

Width and length tolerances are ±1/8″ for 6″×6″ sheets. Width tolerance is +1/4″ and length tolerance is +1/2″ for 12″×12″ and 12″×24″ sheets.

Thick.	Thick. Tolerance	6″ Wd.×6″ Lg.		12″ Wd.×12″ Lg.		12″ Wd.×24″ Lg.	
3/8″	+0.025″	86735K71	$33.84	86735K11	$117.58	86735K31	$205.77
1/2″	+0.025″	86735K72	45.55	86735K13	160.73	86735K33	274.59
5/8″	+0.025″	86735K73	52.95	86735K15	186.87	86735K35	328.90
3/4″	+0.025″	86735K74	64.02	86735K17	224.41	86735K37	394.98
1″	+0.025″	86735K75	83.58	86735K19	299.13	86735K39	506.15
1 1/2″	+0.025″	86735K76	117.22	86735K21	411.44	86735K41	759.58
2″	+0.025″	86735K77	147.83	86735K23	526.40	86735K43	940.00

Rods—Smooth Finish

Sold in 1-ft. increments; maximum length is 5 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/4″	+0.002″	8676K39	$1.42
3/8″	+0.002″	8676K44	3.01
1/2″	+0.002″	8676K45	5.12
3/4″	+0.002″	8676K47	10.50
1″	+0.002″	8676K48	14.61
1 1/2″	+0.005″	8676K49	30.66
2″	+0.005″	8676K53	50.47

Electrical Insulating Noryl

- Color: Opaque black
- Temp. Range: –40° to +220° F
- Softening Temp.: 310° F
- Tensile Strength: Good
- Impact Strength: Good
- Low friction
- Excellent electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R119

Made from Noryl EN265 resin, this modified polyphenylene oxide (PPO) offers excellent electrical insulating properties with good impact strength and low moisture absorption. Meets UL 94V0 for flammability, except for rod 8580K71, which meets UL 94V1.

Sheets—Smooth Finish

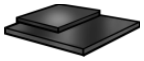

Thickness tolerance is +0.025″. All sheets except 6″×6″ have a width tolerance of +1/4″ and a length tolerance of +1/2″; 6″×6″ sheets have width and length tolerances of ±1/8″.

Thick.	6″ Wd.×6″ Lg.		12″ Wd.×12″ Lg.		12″ Wd.×24″ Lg.		24″ Wd.×24″ Lg.	
1/4″	8561K411	$12.52	8561K331	$25.07	8561K332	$47.55	8561K333	$87.56
3/8″	8561K412	17.67	8561K341	35.52	8561K342	65.08	8561K343	123.98
1/2″	8561K413	21.79	8561K351	44.34	8561K352	81.32	8561K353	154.88
3/4″	8561K414	30.10	8561K361	65.12	8561K362	121.42	8561K363	223.86
1″	8561K415	38.67	8561K371	85.37	8561K372	156.51	8561K373	293.45
1 1/4″	8561K416	47.11	8561K381	108.85	8561K382	206.24	8561K383	391.86
1 1/2″	8561K417	56.28	8561K391	129.77	8561K392	245.89	8561K393	467.22
2″	8561K418	77.63	8561K321	178.33	8561K322	337.95	8561K323	641.98

Rods—Smooth Finish

Dia.	Dia. Tolerance		Per Ft.
Sold in 5-ft. lengths.			
3/16″	+0.002″	8580K71	$0.77
1/4″	+0.002″	8580K12	1.18
3/8″	+0.002″	8580K13	2.08
1/2″	+0.002″	8580K14	3.61
Sold in 1-ft. increments; max. length is 5 feet. To Order: Please specify length.			
3/4″	+0.002″	8580K15	6.95
1″	+0.002″	8580K16	9.44
1 1/4″	+0.005″	8580K17	14.10
1 1/2″	+0.005″	8580K18	18.49
1 3/4″	+0.005″	8580K19	23.51
2″	+0.005″	8580K21	30.67

High-Strength Electrical Insulating Ultem

- Color: Translucent amber
- Temp. Range: –20° to +338° F
- Softening Temp.: 410° to 426° F
- Tensile Strength: Excellent
- Impact Strength: Poor
- Low friction, unless noted
- Excellent electrical insulator
- Use indoors and outdoors
- Machine with carbide tooling; cut *film* with scissors
- Hardness: Rockwell M109-M112

Made from Ultem 1000 resin, this material offers high strength and excellent electrical insulating properties. Use it for high-voltage circuit-breaker housings. Meets UL 94V0 for flammability, except film, which meets UL 94VTM0. All are FDA compliant. All except film thicknesses 0.003″ to 0.020″ are NSF certified.

Rectangular Bars—Smooth Finish

Width and length tolerances are +1/2″. Thickness tolerance is +0.025″.

Thick.	2″×12″		2″×24″		4″×12″	
1/4″	7612K11	$25.01	7612K21	$47.78	7612K31	$43.90
3/8″	7612K12	31.98	7612K22	62.57	7612K32	57.56
1/2″	7612K13	38.63	7612K23	75.38	7612K33	69.67
3/4″	7612K14	52.47	7612K24	102.77	7612K34	94.87
1″	7612K15	67.04	7612K25	131.42	7612K35	123.98

Sheets and Film—Smooth Finish

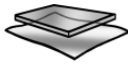

- *0.003″* to *0.020″ film*, high friction

Width and length tolerances are +1/2″ for 6″×6″ sheets; all others are ±1″.

Thick.	Thick. Tol.	6″×6″		12″×12″		12″×24″	
0.003″	±0.0003″	—	—	—	—	7576K11	$13.70
0.005″	±0.0005″	—	—	—	—	7576K12	16.30
0.010″	±0.001″	—	—	—	—	7576K13	27.83
0.020″	±0.002″	—	—	—	—	7576K14	48.15
0.040″	±0.003″	—	—	8685K41	$19.89	8685K42	35.01
1/16″	±0.005″	—	—	8685K43	28.42	8685K44	51.89
3/32″	±0.007″	—	—	8685K45	45.42	8685K46	79.49
1/8″	±0.01″	—	—	8685K47	60.32	8685K48	105.56
1/4″	±0.025″	7612K51	$32.28	8685K511	88.31	8685K512	154.54
3/8″	±0.025″	7612K52	42.33	8685K491	113.99	8685K492	206.75
1/2″	±0.025″	7612K53	51.24	8685K521	152.37	8685K522	274.96
3/4″	±0.025″	7612K54	69.81	—	—	—	—
1″	±0.025″	7612K55	89.60	8685K531	287.35	8685K532	508.38

Rods—Smooth Finish

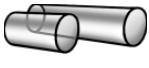

Sold in 1-ft. increments; maximum length is 5 feet for diameters 1″ and smaller and 4 feet for diameters 1 1/4″ and larger. **To Order:** Please specify length where necessary.

Dia.	Dia. Tolerance		Per Ft.
1/4″	+0.003″	8686K71	$1.51
3/8″	+0.003″	8686K72	3.15
1/2″	+0.003″	8686K73	5.28
5/8″	+0.003″	8686K74	8.10
3/4″	+0.003″	8686K75	11.40
1″	+0.003″	8686K76	19.95
1 1/4″	+0.005″	8686K77	30.31
1 1/2″	+0.005″	8686K78	38.74
2″	+0.005″	8686K81	69.72
2 1/2″	+0.015″	8686K82	105.28
3″	+0.250″	8686K83	146.32
3 1/2″	+0.250″	8686K84	194.86

Dia.	Dia. Tolerance	3″ Long	Each	6″ Long	Each
1 1/4″	+0.005″	7662K11	$10.73	7662K21	$18.60
1 1/2″	+0.005″	7662K12	12.41	7662K22	24.81
2″	+0.005″	7662K13	26.82	7662K23	46.48
2 1/2″	+0.015″	7662K14	38.30	7662K24	67.84
3″	+0.250″	7662K15	52.85	7662K25	91.63

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Ultra-Machinable Electrical Insulating PPS

- Color: Opaque white
- Max. Temp.: 425°F; low end not rated
- Softening Temp.: Not rated
- Tensile Strength: Excellent
- Impact Strength: Poor
- Low friction
- Excellent electrical insulator
- Use indoors
- Machine with high-speed steel tooling
- Hardness: Rockwell R125

Also known as Techtron, Fortron, and Ryton, this material is easier to machine and absorbs less moisture than Ultem. It bridges the gap between Ultem and PEEK and is good for electronic equipment, chemical production, and automotive applications. Meets ASTM D6358. FDA compliant.

Sheets—Smooth Finish

Width and length tolerances are ±1/4″.

Thick.	Thick. Tolerance	6″×6″	
1/4″	+0.025″	1906T21	$112.48
3/8″	+0.025″	1906T22	165.96
1/2″	+0.025″	1906T23	216.50
3/4″	+0.025″	1906T24	319.14
1″	+0.025″	1906T25	424.67
1 1/2″	+0.025″	1906T26	683.52
2″	+0.025″	1906T27	762.24

Rods—Smooth Finish

Sold in 1-ft. increments; maximum length is 8 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
3/8″	+0.003″	1913T11	$14.23
1/2″	+0.003″	1913T12	25.41
5/8″	+0.003″	1913T13	38.63
3/4″	+0.003″	1913T14	57.11
1″	+0.003″	1913T15	101.57

Dia.	Dia. Tolerance		Per Ft.
1 1/4″	+0.005″	1913T16	$148.58
1 1/2″	+0.005″	1913T17	179.34
1 3/4″	+0.005″	1913T18	262.54
2″	+0.005″	1913T19	308.94

High-Strength High-Temperature PEEK

- Color: Opaque tan, unless noted
- Temp. Range: –20° to +480°F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Excellent, unless noted
- Impact Strength: Good, unless noted
- Low friction, unless noted
- Good electrical insulator, unless noted
- Use indoors
- Machine with carbide tooling; cut *film* with scissors
- Hardness: Rockwell R126, unless noted

Comparable to Victrex, PEEK (polyetheretherketone) maintains its shape and offers greater tensile strength in a wider temperature range than PTFE. Meets UL 94V0, except *film*, which meets UL 94VTM0 for flammability. *Rectangular bars*, *sheets*, and *tan rods* are FDA compliant.

Rectangular Bars—Smooth Finish

Length and width tolerances are +1/2″. Sold in 2-ft. lengths.

Thick.	Thick. Tolerance	1″ Wide		1 1/2″ Wide		2″ Wide		2 1/2″ Wide		3″ Wide		4″ Wide	
1/4″	+0.025″	9089K17	$73.00	9089K27	$105.12	9089K37	$131.40	9089K47	$151.84	9089K57	$160.60	9089K67	$219.00
1/2″	+0.025″	9089K18	124.44	9089K28	171.20	9089K38	223.98	9089K48	258.82	9089K58	273.76	9089K68	373.32
3/4″	+0.025″	9089K19	184.20	9089K29	265.26	9089K39	331.56	9089K49	383.14	9089K59	405.24	9089K69	552.60
1″	+0.025″	9089K71	227.56	9089K74	327.70	9089K77	409.62	9089K81	473.34	9089K83	500.64	9089K85	682.70
1 1/4″	+0.025″	9089K72	269.32	9089K75	336.64	9089K78	426.40	9089K46	508.70	9089K56	617.16	9089K66	748.08
1 1/2″	+0.025″	9089K73	310.60	9089K76	388.26	9089K79	491.78	9089K82	586.68	9089K84	711.80	9089K86	862.78

Sheets—Smooth Finish

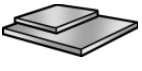

Width and length tolerances are +1/2″.

Thick.	Thick. Tolerance	6″×6″		12″×12″	
1/4″	+0.025″	8504K34	$96.36	8504K65	$291.99
3/8″	+0.025″	8504K39	134.94	8504K69	408.90
1/2″	+0.025″	8504K35	164.25	8504K66	497.74
3/4″	+0.025″	8504K36	$243.14	8504K67	$736.80
1″	+0.025″	8504K37	300.38	8504K68	910.25

Film—Smooth Finish

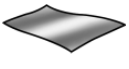

- Color: Translucent tan
- Temp. Range: *Plain back*, –60° to +464°F; *adhesive backed*, –40° to +350°F
- Tensile Strength: *Adhesive backed*, not rated
- Impact Strength: *Adhesive backed*, not rated
- Not rated for friction
- Excellent electrical insulator
- Hardness: Adhesive backed, Rockwell M99

Width and length tolerances are ±1/8″, except 24″×24″ sizes are ±1″. *Adhesive-backed film* has an acrylic adhesive.

Material Thick.	Thick. Tolerance	PLAIN BACK 6″×6″		PLAIN BACK 12″×12″		PLAIN BACK 24″×24″		ADHESIVE BACKED 6″×6″		ADHESIVE BACKED 12″×12″		ADHESIVE BACKED 12″×18″	
0.002″	±0.0002″	—	—	—	—	—	—	4671T11	$6.54	4671T12	$22.25	4671T13	$34.51
0.003″	±0.0003″	8504K31	$5.09	8504K41	$17.58	8504K51	$61.97	—	—	—	—	—	—
0.005″	±0.0005″	8504K32	8.72	8504K42	29.30	8504K52	95.32	4671T21	10.90	4671T22	34.96	4671T23	52.48
0.010″	±0.0010″	8504K33	16.61	8504K43	58.62	8504K53	175.06	4671T31	19.03	4671T32	61.56	4671T33	86.55

Rods—Smooth Finish

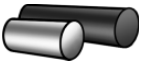

- Color: Opaque tan or black

Sold in 1-ft. increments. Maximum length is 4 feet for tan, and 8 feet for black. **To Order:** Please specify length where necessary.

Dia.	Dia. Tolerance	Tan	Per Ft.	Black	Per Ft.
1/4″	+0.003″	8503K244	$5.78	7707T11	$6.08
3/8″	+0.003″	8503K111	11.58	7707T13	12.39
1/2″	+0.003″	8503K222	19.30	7707T15	21.02
5/8″	+0.003″	8503K232	28.26	7707T17	30.30
3/4″	+0.003″	8503K333	37.93	7707T19	42.52
1″	+0.003″	8503K444	59.10	7707T21	63.32

Dia.	Dia. Tolerance	Tan	Per Ft.	Black	Per Ft.
1 1/4″	+0.005″	8503K451	$96.68	7707T23	$101.25
1 1/2″	+0.005″	8503K555	128.31	7707T25	137.56
2″	+0.005″	8503K666	216.54	7707T27	232.11
2 1/2″	+0.015″	8503K777	340.59	—	—
3″	+0.25″	8503K88	456.13	—	—
4″	+0.25″	8503K99	1,036.20	—	—

TAN

Dia.	3″ Long	Each	6″ Long	Each	9″ Long	Each
1″	7269K11	$23.98	7269K21	$37.77	7269K31	$50.61
1 1/2″	7269K12	46.70	7269K22	84.93	7269K32	113.80
2″	7269K13	82.38	7269K26	142.80	7269K33	186.32

Dia.	3″ Long	Each	6″ Long	Each	9″ Long	Each
2 1/2″	7269K14	$137.15	7269K24	$236.22	7269K34	$302.43
3″	7269K15	178.13	7269K25	314.67	7269K35	418.31

Glass-Filled Rods—Smooth Finish

- Color: Opaque gray
- Impact Strength: Poor
- Not rated for friction
- Excellent electrical insulator

With 30% glass content, glass-filled PEEK offers strength and stability at high temperatures. Sold in 1-ft. increments; maximum length is 4 feet. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Ft.
1/2″	+0.003″	8678K11	$30.87
1″	+0.003″	8678K12	103.33
1 1/4″	+0.005″	8678K13	155.77
1 1/2″	+0.005″	8678K14	216.53

For information about plastics, see page 3564. For high-performance plastics, see page 3600.

For additional information about these products, including mechanical and physical properties, go to mcmaster.com and search for **8545KAC**.

Ultra-Strength High-Temperature Torlon

- Color: Opaque black, unless noted
- Temp. Range: –321° to +500° F, except *balls* are –58° to +450° F
- Softening Temp.: 527° to 532° F, except *balls* are not rated
- Tensile Strength: Excellent
- Impact Strength: Poor, unless noted
- Low friction, except *balls* are not rated
- Not rated as an electrical insulator, unless noted
- Use indoors and outdoors, unless noted
- Machine with carbide tooling
- Hardness: Rockwell E70-E86

Also known as PAI or polyamide-imide. Torlon maintains its tensile strength, shape, and stiffness better than PEEK (shown on previous page), even at the high end of its temperature range. It also handles a wider temperature range than Ultem (shown on page 3579). Meets UL 94V0 for flammability.

Sheets—Smooth Finish

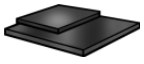

Made from Torlon 4301 resin. Great for severe-wear applications such as nonlubricated bearings and seals. Width and length tolerances are +1/2″.

Thick.	Thick. Tolerance	6″×6″		12″×12″	
1/4″	+0.025″	8563K421	$293.29	8563K521	$760.04
3/8″	+0.025″	8563K441	411.46	8563K541	1,030.70
1/2″	+0.025″	8563K451	436.83	8563K551	1,094.26
3/4″	+0.025″	8563K471	632.98	8563K571	1,534.51

Electrical-Insulating Sheets—Smooth Finish

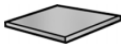

- Color: Opaque mustard yellow
- Impact Strength: Good
- Excellent electrical insulator
- Use indoors

Made from Torlon 4203 resin. Ideal for electrical connectors and insulators due to its high dielectric strength. Width and length tolerances are +1/2″.

Thick.	Thick. Tolerance	6″×6″	
1/4″	+0.025″	2461T11	$298.74
3/8″	+0.025″	2461T12	428.27
1/2″	+0.025″	2461T13	454.69
5/8″	+0.025″	2461T14	523.32
3/4″	+0.025″	2461T15	606.90
1″	+0.025″	2461T16	784.11

Rods—Smooth Finish

Made from Torlon 4301 resin. Great for severe-wear applications such as nonlubricated bearings and seals. Sold in 1-ft. increments; maximum length is 4 feet. **To Order:** Please specify length.

Dia.	Dia. Toler.		Per Ft.	Dia.	Dia. Toler.		Per Ft.	Dia.	Dia. Toler.		Per Ft.	Dia.	Dia. Toler.		Per Ft.
1/4″	+0.010″	8566K81	$15.24	1/2″	+0.010″	8566K84	$35.39	3/4″	+0.010″	8566K85	$94.51	1 1/4″	+0.010″	8566K87	$208.24
3/8″	+0.010″	8566K83	28.92	5/8″	+0.010″	8566K91	57.64	1″	+0.010″	8566K86	127.69	1 1/2″	+0.010″	8566K89	299.33

Balls—Smooth Finish

- Color: Opaque olive green
- Grade: 1
- Sphericity: 0.0005″
- Impact Strength: Good

Made from Torlon 4203 L resin, which boasts the best impact strength of the Torlon resins. Use for bearings and rollers.

Dia.	Dia. Toler.	Pkg. Qty.		Pkg.	Dia.	Dia. Toler.	Pkg. Qty.		Pkg.	Dia.	Dia. Toler.	Pkg. Qty.		Pkg.
1/8″	±0.001″	50	9593K11	$8.35	3/16″	±0.001″	50	9593K15	$15.34	3/8″	±0.001″	15	9593K21	$10.14
5/32″	±0.001″	50	9593K13	14.86	1/4″	±0.001″	25	9593K17	8.17	1/2″	±0.001″	10	9593K23	10.84

Ultra-High-Temperature Polyimide (Kapton®, Cirlex, and Vespel®)

- Color: Opaque amber, unless noted
- Temp. Range: –423° to +550° F, unless noted
- Softening Temp.: Not rated
- Tensile Strength: Excellent
- Impact Strength: Poor
- Low friction, unless noted
- Excellent electrical insulator, unless noted
- Use indoors and outdoors, unless noted
- Machine with high-speed steel tooling
- Hardness: Not rated, unless noted

Material maintains its tensile strength and insulation properties in a wide range of temperatures. Meets UL 94V0 for flammability.

Film, when etched, can be coated with adhesive to bond it to itself and other materials.

Film (Kapton® Polyimide)—Smooth Finish

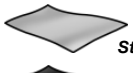

Standard

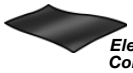

Electrically Conductive

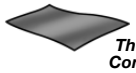

Thermally Conductive

- Color: *Standard* and *adhesive backed*, translucent amber; *electrically conductive*, opaque black; *thermally conductive*, opaque amber
- Temp. Range: –425° to +752° F, except *electrically conductive* is –454° to +464° F
- Friction not rated for *electrically conductive* and *thermally conductive*
- Use indoors

Standard film, also known as Kapton® polyimide Type HN film, has a width and length tolerance of ±1/16″ for 12″×12″ sheets. Width tolerance for 24″ wide sheeting is ±1″.

Electrically conductive film is ideal for antistatic applications. Length and width tolerances are ±0.125″.

Thermally conductive film has three times the thermal conductivity of standard polyimide as well as improved strength. Length and width tolerances are ±0.125″.

Adhesive-backed film has a silicone adhesive on one side. Adhesive has a temperature range of –100° to +500° F. Width and length tolerances are ±1/16″.

To Order: For sheeting, please specify length; maximum length is 20 feet.

		12″×12″ SHEETS								24″ WIDE SHEETING	
		Standard		Electrically Conductive		Thermally Conductive		Adhesive Backed		Standard	
Thick.	Thick. Tolerance		Each		Each		Each		Each		Per Ft.
0.001″	±0.0001″	2271K1	$9.76	2271K69★	$27.41	—	—	2271K71	$13.13	2271K4	$16.98
0.002″	±0.0002″	2271K2	12.79	—	—	2271K24	$23.11	2271K72	17.21	2271K5	23.36
0.005″	±0.0005″	2271K3	24.42	—	—	—	—	2271K73	30.07	2271K6	47.43

★ Not an electrical insulator.

Film (Cirlex)—Smooth Finish

- Color: Opaque dark brown/black
- Temp. Range: –452° to +663° F

This thicker polyimide film is ideal for mechanical seals, electronic interconnects, and stencils. Length and width tolerances are ±1/16″.

Thick.	Thick. Tolerance	13 1/2″×23 1/2″		Thick.	Thick. Tolerance	13 1/2″×23 1/2″	
0.010″	±0.0005″	7161T11	$118.36	0.020″	±0.001″	7161T21	$228.19

Rods (Vespel® Polyimide)—Smooth Finish

- Hardness: Rockwell E45-E60

Made of Vespel® polyimide SP-1 resin, these rods meet MIL-R-46198, AMS 3644C, ASTM D6456, and UL 945V for flammability. Sold in 1″, 2″, 4″, 6″, 10″, 20″, and 38″ lengths. **To Order:** Please specify length.

Dia.	Dia. Tolerance		Per Inch	Dia.	Dia. Tolerance		Per Inch
1/4″	+0.01″	87405K21	$27.80	3/4″	+0.01″	87405K25	$41.38
3/8″	+0.01″	87405K22	33.40	1″	+0.01″	87405K26	71.33
7/16″	+0.01″	87405K31	35.34	1 1/4″	+0.01″	87405K27	110.23
1/2″	+0.01″	87405K23	38.09	1 1/2″	+0.01″	87405K28	158.83
5/8″	+0.01″	87405K32	39.77	2″	+0.01″	87405K29	281.41

About Plastic Laminates

Hard fiber, fiberglass, Garolite, and carbon fiber (also referred to as plastic laminates and composites) are usually created by combining fiber, paper, or fabric with epoxy or resin. Commonly called thermosets because they are created by setting under heat, they have very different properties than more common plastics such as polyethylene and nylon. They are not designed to be heated, so you cannot bend and form them.

Fiberglass and Garolite Material Selector Pack— Includes one individually marked piece of electrical-grade fiberglass (GPO3) and the following grades of Garolite: XX, CE, LE, G-9, G-10, G-11, and G-7. Each piece is 2″×2″×1/16″.
5331K3 ..... $21.68

Tensile Strength— Refers to the amount of stretching a material can withstand before breaking. E-glass and glass carbon are not rated for tensile strength.

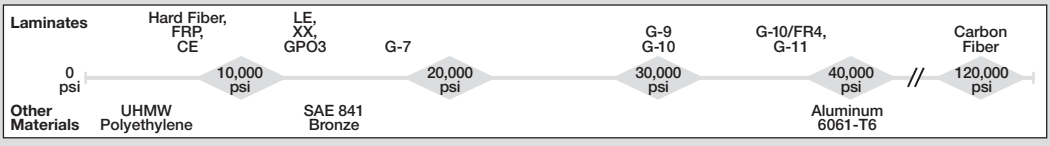

Electrical Insulation— All plastic laminates have some electrical insulating capabilities. Ratings are based on their relative insulating (dielectric) strength, which is the maximum voltage the material can withstand. E-glass, glass carbon, and carbon fiber do not have an electrical insulation rating.

Excellent	Good	Poor
G-11	G-10, G-10/FR4, G-9, XX, G-7, GPO3	Hard Fiber, FRP, CE, LE

Machinability— Plastic laminates are difficult to machine; carbide or diamond-tipped tools are generally required when machining to achieve the best results. The machinability ratings below are based on speed, life of the tooling, and the level of ease to attain a satisfactory finish.

Good	Fair	Difficult
Hard Fiber, XX, CE, LE, Glass Carbon	GPO3, E-glass, Carbon Fiber	FRP, G-9, G-10, G-10/FR4, G-11, G-7

Moisture Resistance— The base material affects the amount of moisture absorbed into the laminates. Cloth-based laminates have a higher absorption rate than laminates with other base materials. E-glass, glass carbon, and carbon fiber are not rated for moisture resistance.

Excellent	Good	Fair	Poor
G-10, G-10/FR4, Carbon Fiber, G-11, GPO3	G-7, G-9	FRP	Hard Fiber, CE, LE, XX

Hard Fiber

ⓘ For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Hard Fiber

- Color: Opaque gray
- Max. Temperature: 235° F
- Tensile Strength: Good
- Impact Strength: Good
- Electrical Insulator: Poor, except electrical-grade sheets are good
- Machine: Use high-speed steel tooling
- Hardness: Rockwell R70-R80

Also known as vulcanized fiber, this material has a cotton-fabric base that has been chemically treated to produce a hard, dense substance that is also lightweight. Meets UL 94HB for flame retardance, MIL-F-1148A, and MIL-F-10336A, except *electrical-grade sheets* meet UL 94HB and MIL-I-695A.

Sheets— Smooth Finish

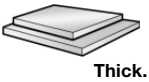

Width and length tolerances are ±1/8″ for 12″×12″ sheets, ±1″ for 24″×39″ sheets, and ±2″ for 39″×48″ sheets. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		24″×39″		39″×48″	
1/64″	±0.002″	8652K71	$6.53	8652K81	$22.89	8652K91	$32.98
1/32″	±0.003″	8652K72	9.10	8652K82	40.60	8652K92	62.91
1/16″	±0.005″	8652K73	17.35	8652K83	74.11	8652K93	119.00
3/32″	±0.007″	8652K74	28.09	8652K84	105.40	8652K94	171.36
1/8″	±0.015″	8652K75	38.18	8652K85	132.51	8652K95	201.69
3/16″	±0.015″	8652K76	50.96	8652K86	185.93	8652K96	252.52
1/4″	±0.015″	8652K77	65.65	8652K87	234.32	8652K97	332.42
3/8″	±0.020″	8652K78	101.49	8652K88	359.75	8652K98	480.56
1/2″	±0.025″	8652K79	120.33	8652K89	455.52	8652K99	718.82

Rods— Smooth Finish

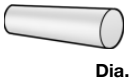

Length tolerance is ±3″. Straightness tolerance is not rated.

Dia.	Dia. Tolerance	45″ Length	
3/16″	±0.005″	8653K43	$19.07
1/4″	±0.005″	8653K44	23.34
5/16″	±0.006″	8653K45	24.11
3/8″	±0.006″	8653K46	29.40
1/2″	±0.006″	8653K51	34.80
9/16″	±0.006″	8653K52	45.16
5/8″	±0.006″	8653K54	55.45
3/4″	±0.006″	8653K55	70.23

Electrical-Grade Sheets— Smooth Finish

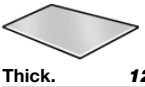

Also known as fishpaper, these sheets offer good electrical-insulation properties and flexibility. Thickness tolerance is ±10%. Width and length tolerances are ±1/8″ for 12″×12″ sheets, ±1″ for 24″×39″ sheets, and ±2″ for 39″×48″ sheets. Flatness tolerance is not rated.

Thick.	12″×12″		24″×39″		39″×48″	
0.005″	8490K15	$6.68	8490K25	$22.03	8490K35	$33.38
0.010″	8490K11	5.17	8490K21	16.75	8490K31	25.30
0.015″	8490K12	6.77	8490K22	23.76	8490K32	34.28
0.020″	8490K13	$8.13	8490K23	$29.38	8490K33	$44.83
0.025″	8490K16	13.68	8490K26	45.14	8490K36	68.40
0.030″	8490K14	9.74	8490K24	43.77	8490K34	67.95

Tubes— Smooth Finish

Length tolerance is ±3″. Wall thickness and straightness tolerances are not rated.

OD	ID	Wall Thick.	40″ Length	
9/16″	7/16″	1/16″	8654K29	$22.42
5/8″	1/2″	1/16″	8654K33	22.48
11/16″	7/16″	1/8″	8654K35	31.34
3/4″	1/2″	1/8″	8654K37	30.43
7/8″	3/4″	1/16″	8654K43	$27.68
1″	7/8″	1/16″	8654K49	29.99
1 1/4″	1″	1/8″	8654K55	44.91
1 1/2″	1 1/4″	1/8″	8654K57	47.07
1 3/4″	1 1/2″	1/8″	8654K61	$54.51
2″	1 1/2″	1/4″	8654K63	90.59
2 1/4″	2″	1/8″	8654K65	69.00

For information about fiberglass, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Structural Fiberglass (FRP)

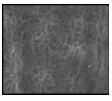

- Color: See below
- Max. Temperature: 140° F, unless noted
- Tensile Strength: Good
- Impact Strength: Good
- Electrical Insulator: Poor
- Machine: Use carbide tooling
- Hardness: Barcol 40-45, except high-temperature sheets are Barcol 10

Nonconductive, lightweight, and stronger than wood, fiberglass-reinforced polyester (FRP) is ideal for structural applications.

Strips and Sheets—Smooth Finish

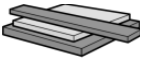

- Color: *Standard:* Opaque green; *Fire-Retardant:* Opaque dark gray

Standard sheets have a ±3/16″ width tolerance and +1/2″ length tolerance. Flatness tolerance is 0.008″ per inch. UV resistant. FDA compliant.

Fire-retardant sheets have a ±1/4″ width and length tolerance. Flatness tolerance is 0.008″ per inch. UV resistant. Made with a flame-retardant resin.

Thick.	Thick. Tolerance	2″×96″		4″×96″		12″×12″		24″×24″		48″×48″		48″×96″	
Standard													
1/8″	±0.025″	7251K11	$25.77	7251K21	$44.65	8537K23	$10.17	8537K43	$42.49	8537K33	$110.12	8537K13	$202.24
3/16″	±0.028″	7251K12	36.49	7251K22	56.19	8537K24	12.59	8537K44	45.82	8537K34	164.71	8537K14	288.00
1/4″	±0.037″	7251K13	41.36	7251K23	66.55	8537K25	16.20	8537K45	68.71	8537K35	200.39	8537K15	348.44
3/8″	±0.056″	7251K14	58.55	7251K24	99.71	8537K27	28.79	8537K47	107.72	8537K37	326.51	8537K17	567.85
1/2″	±0.075″	7251K15	66.84	7251K25	108.71	8537K26	32.49	8537K46	125.15	8537K36	382.72	8537K16	665.71
Fire Retardant													
1/8″	±0.025″	8494K111	29.11	8494K112	48.52	8494K122	12.13	8494K127	47.31	8494K133	160.12	8494K138	242.60
3/16″	±0.028″	8494K113	46.48	8494K114	67.92	8494K123	17.88	8494K128	64.35	8494K134	235.95	8494K139	357.50
1/4″	±0.037″	8494K115	45.02	8494K116	75.64	8494K124	22.51	8494K129	81.04	8494K135	297.16	8494K141	450.24
3/8″	±0.056″	8494K117	74.32	8494K118	115.20	8494K125	37.16	8494K131	133.78	8494K136	490.54	8494K142	743.24
1/2″	±0.075″	8494K119	88.70	8494K121	124.19	8494K126	44.35	8494K132	159.67	8494K137	585.45	8494K143	887.04

High-Temperature Sheets—Smooth Finish

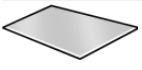

- Color: Opaque cream
- Max. Temperature: 370° F

Width and length tolerances are ±1/8″. Thickness tolerance is ±0.008″. Flatness tolerance is not rated.

Thick.	12″×24″		24″×24″		24″×36″	
0.032″	2217K33	$9.49	2217K37	$15.39	2217K39	$21.08
0.060″	2217K43	13.94	2217K47	22.61	2217K49	30.97

Square Bars—Smooth Finish

- Color: 1″ Square: Opaque white; 1 1/4″ and 1 1/2″ Square: Opaque yellow

Length tolerance is +1/2″. Straightness tolerance is 0.040″ per foot. UV resistant. FDA compliant.

Square Size	Square Size Tolerance	5-ft. Length		10-ft. Length	
1″	±0.01″	9947T21	$34.81	9947T31	$65.68
1 1/4″	±0.01″	9947T41	51.31	9947T51	96.82
1 1/2″	±0.01″	9947T61	71.78	9947T71	135.43

Round Tubes—Smooth Finish

- Color: Opaque green

Length tolerance is +1/2″. Straightness tolerance is 0.03″ per foot. UV resistant. FDA compliant.

OD	ID	Wall Thick.	Thick. Toler.	5-ft. Length		10-ft. Length	
1″	3/4″	1/8″	±0.040″	8535K71	$14.61	8535K21	$25.34
1 1/4″	1″	1/8″	±0.040″	8535K26	18.15	8535K76	31.56
1 1/2″	1 1/4″	1/8″	±0.040″	8535K72	21.26	8535K22	36.96
1 3/4″	1 1/2″	1/8″	±0.040″	8535K27	22.50	8535K77	39.13
2″	1 1/2″	1/4″	±0.040″	8535K73	42.82	8535K23	76.81
3″	2″	1/2″	±0.075″	8535K74	93.13	8535K24	167.71

Rods—Smooth Finish

- Color: Opaque white

Length tolerance is +1/2″. Straightness tolerance is not rated. FDA compliant.

Dia.	Dia. Tolerance	5-ft. Length		10-ft. Length	
1/8″	±0.010″	8543K27	$2.56	8543K31	$4.64
3/16″	±0.010″	8543K28	2.63	8543K33	4.78
1/4″	±0.010″	8543K59	2.69	8543K21	4.89
5/16″	±0.010″	8543K47	3.76	8543K35	6.83
3/8″	±0.010″	8543K49	4.65	8543K22	8.45
1/2″	±0.010″	8543K51	7.03	8543K23	12.76
5/8″	±0.010″	8543K53	10.92	8543K37	19.84
3/4″	±0.010″	8543K55	15.11	8543K25	27.58
1″	±0.010″	8543K57	28.09	8543K26	51.31
1 1/4″	±0.010″	8543K11	42.92	8543K17	78.37
1 1/2″	±0.010″	8543K12	58.07	8543K18	106.65

Chemical-Resistant Sheets—Smooth Finish

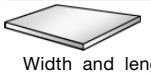

- Color: Opaque white
- Max. Temperature: 265° F

Width and length tolerances are ±1/8″. Thickness tolerance is ±0.015″. Flatness tolerance is not rated.

Thick.	12″×24″		24″×24″		24″×36″	
3/16″	2194K13	$20.58	2194K17	$33.39	2194K19	$45.74
1/4″	2194K23	27.52	2194K27	44.65	2194K29	61.16

Square Tubes—Smooth Finish

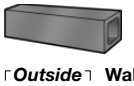

- Color: Opaque green

Length tolerance is +1/2″. Straightness tolerance is 0.03″ per foot. UV resistant. FDA compliant.

Outside Ht.	Outside Wd.	Wall Thick.	Thick. Toler.	5-ft. Length		10-ft. Length	
1″	1″	1/8″	±0.019″	8548K21	$17.11	8548K31	$30.95
1 1/4″	1 1/4″	1/8″	±0.019″	8548K42	10.50	8548K52	17.50
1 1/2″	1 1/2″	1/8″	±0.019″	8548K22	25.13	8548K32	45.48
1 3/4″	1 3/4″	1/8″	±0.019″	8548K43	15.43	8548K53	25.71
2″	2″	1/8″	±0.019″	8548K23	30.79	8548K33	55.71
2″	2″	1/4″	±0.038″	8548K24	51.83	8548K34	97.27
3″	3″	1/4″	±0.038″	8548K25	77.46	8548K35	145.43
4″	4″	1/4″	±0.038″	8548K26	102.06	8548K36	191.74
4″	4″	3/8″	±0.056″	8548K27	135.30	8548K37	255.00
6″	6″	3/8″	±0.056″	8548K29	182.87	8548K39	324.34

90° Angles—Smooth Finish

- Color: *Standard:* Opaque green; *Fire-Retardant:* Opaque dark gray

Leg length tolerance is ±3/32″. Length tolerance is ±1/2″. Straightness tolerance is ±0.05″ per foot. UV resistant.

Standard angles are FDA compliant.

Fire-retardant angles are made with a flame-retardant resin.

Outside Leg Lgs.	Wall Thick.	Thick. Toler.	5-ft. Length		10-ft. Length	
Standard						
1″ × 3/4″	3/16″	±0.019″	8542K66	$12.90	8542K76	$22.44
1″ × 1″	1/8″	±0.013″	8542K51	9.65	8542K21	18.44
1 1/4″ × 1 1/4″	1/8″	±0.013″	8542K67	12.90	8542K77	22.44
1 1/2″ × 1 1/2″	3/16″	±0.019″	8542K11	16.75	8542K16	32.00
1 1/2″ × 1 1/2″	1/4″	±0.025″	8542K62	20.70	8542K52	39.56
2″ × 2″	1/4″	±0.025″	8542K55	26.86	8542K25	51.33
3″ × 3″	1/4″	±0.025″	8542K56	36.25	8542K26	69.35
3″ × 3″	3/8″	±0.038″	8542K12	53.93	8542K22	105.62
4″ × 4″	1/4″	±0.025″	8542K57	46.11	8542K27	88.30
4″ × 4″	3/8″	±0.038″	8542K13	68.19	8542K23	133.54
4″ × 4″	1/2″	±0.050″	8542K14	98.44	8542K24	172.31
6″ × 4″	1/2″	±0.050″	8542K65	103.94	8542K75	196.11
6″ × 6″	3/8″	±0.038″	8542K15	95.72	8542K29	167.78
Fire Retardant						
1″ × 1″	1/8″	±0.013″	9944T44	13.93	9944T45	26.29
1 1/2″ × 1 1/2″	1/4″	±0.025″	9944T46	34.61	9944T47	65.31
2″ × 2″	1/4″	±0.025″	9944T48	47.00	9944T49	88.67
3″ × 3″	1/4″	±0.025″	9944T51	84.99	9944T52	160.35

(Material continued on following page)

Fiberglass

For information about fiberglass, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Structural Fiberglass (FRP) *(Material continued from previous page)*

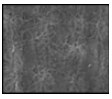

- Color: Opaque green
- Max. Temperature: 140° F
- Tensile Strength: Good
- Impact Strength: Good
- Electrical Insulator: Poor
- Machine: Use carbide tooling
- Hardness: Barcol 40-45

Nonconductive, lightweight, and stronger than wood, fiberglass-reinforced polyester (FRP) is ideal for structural applications.

U-Channels—Smooth Finish

Base and leg tolerances are ±3/32″. Length tolerance is +1/2″. Straightness tolerance is 0.050″ per foot. FDA compliant.

Outside Base	Outside Leg Lgs.	Wall Thick.	Thick. Toler.	5-ft. Length		10-ft. Length	
2″	9/16″	1/8″	±0.013″	8529K61	$11.74	8529K21	$22.44
3″	7/8″	1/4″	±0.025″	8529K62	26.98	8529K22	51.56
3″	1″	1/4″	±0.025″	8529K11	29.30	8529K31	56.00
3 1/2″	1 1/2″	3/16″	±0.019″	8529K41	30.58	8529K51	58.44
4″	1 1/8″	1/4″	±0.025″	8529K63	35.46	8529K23	67.78
6″	1 5/8″	1/4″	±0.025″	8529K65	51.20	8529K25	98.12
8″	2 3/16″	1/4″	±0.025″	8529K45	69.78	8529K55	133.75

I-Beams—Smooth Finish

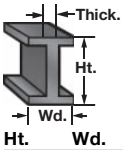

Length tolerance is +1/2″. Thickness tolerance is ±10%. Straightness tolerance is 0.050″ per foot. FDA compliant.

Ht.	Wd.	Thick.	5-ft. Length		10-ft. Length	
3″	1 1/2″	1/4″	9468T41	$44.92	9468T42	$84.76
3 1/2″	1 1/2″	3/16″	9468T51	44.04	9468T52	83.10
4″	2″	1/4″	9468T11	53.96	9468T12	101.82
6″	3″	1/4″	9468T21	103.69	9468T22	195.65
8″	4″	3/8″	9468T31	145.22	9468T32	274.00

Electrical-Grade Fiberglass (GPO3)

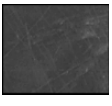

- Color: Opaque red, except tubes are black
- Max. Temperature: 265° F
- Tensile Strength: Excellent
- Impact Strength: Excellent
- Electrical Insulator: Good
- Machine: Use carbide tooling
- Hardness: Barcol 50-55

Combining good electrical insulation with arc resistance and high strength, GPO3 fiberglass is a good choice for use in electrical applications. Made of fiberglass-reinforced polyester, this material is also known as polyester-grade industrial laminate. Meets UL 94V0 for flame retardance, except tubes, rods, and 1/32″ thick sheets do not.

Sheets—Smooth Finish

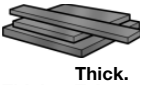

Width and length tolerances are ±1/32″, except 36″ and 72″ sides are ±9/16″ and 96″ sides are ±1″. Flatness tolerance is 0.6″ for 12″ and 24″ lengths, 1.8″ for 36″ and 72″ lengths, and 2.4″ for 96″ lengths.

Thick.	Thick. Toler.	3″×36″		3″×72″		6″×36″		6″×72″		12″×36″		12″×72″	
1/8″	±0.010″	3345K11	$6.16	3345K21	$10.23	3345K31	$10.23	3345K41	$17.62	3345K51	$17.62	3345K61	$34.10
1/4″	±0.015″	3345K12	12.30	3345K22	20.43	3345K32	20.43	3345K42	35.18	3345K52	35.18	3345K62	56.75
3/8″	±0.020″	3345K13	14.98	3345K23	24.90	3345K33	24.90	3345K43	42.88	3345K53	42.88	3345K63	82.99
1/2″	±0.024″	3345K14	18.84	3345K24	31.30	3345K34	31.30	3345K44	54.02	3345K54	54.02	3345K64	104.32
1″	±0.033″	3345K16	36.59	3345K26	60.80	3345K36	60.80	3345K46	104.71	3345K56	104.71	3345K66	202.67
		12″×12″		12″×24″		24″×24″		24″×36″		36″×72″		48″×96″	
1/32″	±0.008″	8549K79	$4.33	8549K89	$7.89	8549K97	$13.74	8549K98	$18.32	8549K99	$50.89	—	—
1/16″	±0.008″	8549K42	5.09	8549K52	9.28	8549K62	16.17	8549K72	21.56	8549K82	59.89	8549K311	$93.32
3/32″	±0.009″	8549K43	6.18	8549K53	11.26	8549K63	19.62	8549K73	26.16	8549K83	72.67	8549K321	112.23
1/8″	±0.010″	8549K44	9.47	8549K54	14.68	8549K64	25.58	8549K74	34.10	8549K84	94.73	8549K331	144.16
3/16″	±0.013″	8549K45	14.15	8549K55	21.93	8549K65	38.20	8549K75	50.94	8549K85	141.49	8549K341	215.35
1/4″	±0.015″	8549K46	16.08	8549K56	29.32	8549K66	51.07	8549K76	68.10	8549K86	189.16	8549K351	295.76
3/8″	±0.020″	8549K47	19.60	8549K57	35.73	8549K67	62.24	8549K77	82.99	8549K87	230.53	8549K361	359.47
1/2″	±0.024″	8549K48	24.63	8549K58	44.92	8549K68	78.24	8549K78	104.32	8549K88	289.79	8549K371	458.85
3/4″	±0.029″	8549K59	36.45	8549K92	66.46	8549K95	115.77	8549K222	154.36	8549K225	428.77	8549K381	680.75
1″	±0.033″	8549K69	47.85	8549K93	87.26	8549K96	152.00	8549K223	202.67	8549K226	562.98	8549K391	893.74

Tubes—Smooth Finish

Length tolerance is ±1″. Straightness tolerance is 0.050″ per foot.

OD	ID	Wall Thick.	Thick. Toler.	3-ft. Length		6-ft. Length	
1/2″	13/32″	1/16″	±0.019″	2197K13	$3.45	2197K23	$5.75
3/4″	5/8″	1/16″	±0.010″	2197K11	6.52	2197K21	10.87
1″	13/16″	3/32″	±0.026″	2197K15	8.47	2197K25	14.12
1 1/2″	1 1/4″	1/8″	±0.018″	2197K17	17.51	2197K27	29.19
2″	1 3/4″	1/8″	±0.018″	2197K19	23.10	2197K29	38.50

90° Angles—Smooth Finish

Leg length tolerance is ±3/32″. Thickness tolerance is ±0.020″. Length tolerance is ±1″. Straightness tolerance is 0.050″ per foot.

Outside Leg Lgs.	Wall Thick.	3-ft. Length		6-ft. Length	
1 1/4″ × 1 1/4″	1/8″	8522K31	$6.13	8522K51	$10.21
1 1/2″ × 1 1/2″	1/8″	8522K32	7.36	8522K52	12.26
1 5/8″ × 2 9/16″	3/16″	8522K13	25.62	8522K23	42.70
1 5/8″ × 4″	3/16″	8522K14	40.52	8522K24	69.69
2″ × 2″	1/8″	8522K11	22.55	8522K21	37.58
2″ × 2″	1/4″	8522K15	29.21	8522K25	48.69
2″ × 4 3/16″	1/8″	8522K12	24.69	8522K22	41.14
2 3/4″ × 3″	1/4″	8522K16	39.36	8522K26	67.97
3″ × 3″	1/4″	8522K33	21.96	8522K53	36.60

Rods—Smooth Finish

Length tolerance is ±1″. Straightness tolerance is not rated.

Dia.	Dia. Toler.	3-ft. Length		6-ft. Length	
1/8″	0.001″	2591K11	$2.27	2591K16	$3.54
3/16″	0.002″	2591K21	3.41	2591K26	5.68
1/4″	0.005″	2591K31	4.55	2591K36	7.58
3/8″	0.005″	2591K41	5.20	2591K46	8.66
1/2″	0.010″	2591K51	7.10	2591K56	11.84
3/4″	0.015″	2591K61	10.66	2591K66	17.76
1″	0.020″	2591K71	18.83	2591K76	31.39
1 1/2″	0.030″	2591K91	41.50	2591K96	69.16

U-Channels—Smooth Finish

Base tolerance is ±0.040″. Leg tolerance is ±0.020″. Thickness tolerance is ±0.025″. Length tolerance is ±1/8″. Straightness tolerance is 0.050″ per foot.

Outside Base	Outside Leg Lgs.	Wall Thick.	3-ft. Length		6-ft. Length	
2″	1″	1/4″	8523K62	$14.03	8523K72	$23.38
2 9/16″	1 1/4″	5/32″	8523K11	14.18	8523K21	23.62
3 21/32″	2 9/16″	3/16″	8523K12	31.84	8523K22	53.08
4 1/4″	2″	3/16″	8523K13	36.01	8523K23	60.04
4 3/4″	1 5/8″	3/16″	8523K14	31.61	8523K24	52.76
6 1/2″	2 3/4″	1/4″	8523K16	52.24	8523K26	85.44
8 1/2″	2 11/16″	3/16″	8523K63	36.97	8523K73	61.62
11 9/32″	1 5/8″	3/8″	8523K64	63.88	8523K74	106.47

For information about Garolite, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Hard and Strong Garolite (XX)

- Color: Opaque tan to brown, except sheets are also offered in opaque black
- Max. Temperature: 265° F
- Tensile Strength: Excellent
- Impact Strength: Poor
- Electrical Insulator: Good
- Machine: Use carbide tooling
- Hardness: Rockwell M100-M105

Lighter than metal but dense and strong, this paper-based material absorbs less moisture than Impact-Resistant CE Garolite. Sometimes called paper-grade industrial laminate, phenolic, or Bakelite, it is often used for gasketing and gears. All meet MIL-I-24768/11. *Sheets, strips,* and *rods* also meet UL 94HB for flame retardance.

Sheets—Smooth Finish

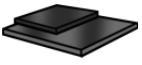

Width and length tolerances are ±1″, except 6″×6″ sheets are ±½″. Flatness tolerance is not rated.

Thick.	Thick. Toler.	6″×6″		12″×12″		12″×24″		24″×24″		24″×36″		36″×48″	
Opaque Tan/Brown													
1/32″	±0.004″	—	—	8525K411	$3.53	8525K412	$6.10	8525K413	$10.62	8525K414	$15.11	8525K415	$26.29
1/16″	±0.005″	—	—	8525K111	4.32	8525K131	7.50	8525K161	13.10	8525K201	18.74	8525K291	32.54
1/8″	±0.008″	—	—	8525K112	7.30	8525K132	12.77	8525K162	22.20	8525K202	31.73	8525K292	55.12
3/16″	±0.010″	—	—	8525K113	10.14	8525K133	17.58	8525K163	30.57	8525K203	43.67	8525K293	76.00
1/4″	±0.012″	—	—	8525K114	12.86	8525K134	22.35	8525K164	38.84	8525K204	55.49	8525K294	96.53
3/8″	±0.017″	8525K31	$8.21	8525K116	18.82	8525K136	32.80	8525K166	57.00	8525K206	81.40	8525K296	141.63
1/2″	±0.021″	8525K32	10.72	8525K118	24.61	8525K138	42.76	8525K168	74.38	8525K208	106.29	8525K298	184.85
5/8″	±0.024″	8525K33	13.12	8525K119	30.10	8525K139	52.37	8525K169	91.05	8525K209	130.09	8525K299	226.23
3/4″	±0.027″	8525K34	15.43	8525K121	35.41	8525K141	61.55	8525K171	107.01	8525K211	152.93	8525K301	265.98
1″	±0.033″	8525K35	20.16	8525K123	46.20	8525K143	80.45	8525K173	139.86	8525K213	199.79	8525K303	347.50
1 1/4″	±0.037″	8525K36	23.77	8525K451	54.52	8525K452	94.83	8525K453	164.94	8525K454	235.60	8525K455	409.77
1 1/2″	±0.041″	8525K37	26.99	8525K461	61.93	8525K462	107.72	8525K463	187.33	8525K464	267.62	8525K465	465.39
Opaque Black													
1/32″	±0.004″	—	—	85315K411	3.57	85315K412	7.10	85315K413	12.34	85315K414	17.64	85315K415	30.69
1/16″	±0.005″	—	—	85315K111	4.82	85315K131	8.62	85315K161	14.97	85315K201	20.59	85315K291	38.71
1/8″	±0.008″	—	—	85315K112	7.84	85315K132	15.80	85315K162	24.93	85315K202	36.95	85315K292	64.88
3/16″	±0.010″	—	—	85315K113	11.75	85315K133	21.71	85315K163	37.64	85315K203	54.07	85315K293	93.25
1/4″	±0.012″	—	—	85315K114	14.34	85315K134	28.41	85315K164	43.38	85315K204	64.66	85315K294	118.62
3/8″	±0.017″	7031K26	6.67	85315K116	23.27	85315K136	40.18	85315K166	70.03	85315K206	94.89	85315K296	165.03
1/2″	±0.021″	7031K36	8.65	85315K118	30.14	85315K138	51.60	85315K168	87.57	85315K208	130.55	85315K298	227.03
3/4″	±0.027″	7031K22	13.66	85315K121	40.48	85315K141	68.73	85315K171	121.23	85315K211	158.55	85315K301	296.19
1″	±0.033″	7031K32	19.20	85315K123	53.59	85315K143	89.64	85315K173	162.49	85315K213	182.23	85315K303	404.53

Strips—Smooth Finish

Width tolerance is ±0.016″, and length tolerance is ±1″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	2″ Wd.×48″ Lg.		3″ Wd.×48″ Lg.	
1/32″	±0.004″	9322K11	$2.65	9322K21	$3.94
1/16″	±0.005″	9322K12	3.25	9322K22	4.06
1/8″	±0.008″	9322K13	4.76	9322K23	6.38
3/16″	±0.010″	9322K14	6.97	9322K29	9.45
1/4″	±0.012″	9322K15	$8.66	9322K25	$11.31
5/16″	±0.014″	9322K16	10.43	9322K26	15.28
3/8″	±0.017″	9322K17	12.01	9322K27	16.60
1/2″	±0.021″	9322K18	15.55	9322K28	21.57

Tubes—Smooth Finish

Wall thickness tolerance is ±0.008″, and length tolerance is ±1″. Straightness tolerance is not rated.

OD	ID	Wall Thick.	40″ Length	
1/4″	3/16″	1/32″	8527K322	$9.30
5/16″	3/16″	1/16″	8527K335	6.21
5/16″	1/4″	1/32″	8527K113	9.49
3/8″	3/16″	3/32″	8527K351	7.08
3/8″	1/4″	1/16″	8527K132	6.76
3/8″	5/16″	1/32″	8527K114	10.06
7/16″	3/16″	1/8″	8527K371	8.16
7/16″	1/4″	3/32″	8527K152	8.10
7/16″	5/16″	1/16″	8527K133	7.47
7/16″	3/8″	1/32″	8527K115	10.14
1/2″	1/4″	1/8″	8527K172	9.54
1/2″	5/16″	3/32″	8527K153	8.61
1/2″	3/8″	1/16″	8527K134	7.80
9/16″	3/16″	3/16″	8527K381	11.16
9/16″	5/16″	1/8″	8527K173	9.75
9/16″	3/8″	3/32″	8527K154	10.98
9/16″	1/2″	1/32″	8527K117	10.74
5/8″	1/4″	3/16″	8527K212	12.36
5/8″	3/8″	1/8″	8527K174	11.49
5/8″	1/2″	1/16″	8527K136	$8.49
11/16″	5/16″	3/16″	8527K213	13.43
11/16″	1/2″	3/32″	8527K156	10.44
11/16″	5/8″	1/32″	8527K119	11.13
3/4″	1/4″	1/4″	8527K252	14.58
3/4″	3/8″	3/16″	8527K214	15.18
3/4″	1/2″	1/8″	8527K176	12.51
3/4″	5/8″	1/16″	8527K138	9.21
13/16″	3/4″	1/32″	8527K122	11.90
7/8″	3/8″	1/4″	8527K254	20.11
7/8″	1/2″	3/16″	8527K216	16.93
7/8″	5/8″	1/8″	8527K178	14.04
7/8″	3/4″	1/16″	8527K141	10.14
15/16″	3/4″	3/32″	8527K161	12.60
1″	1/2″	1/4″	8527K256	21.65
1″	5/8″	3/16″	8527K218	19.00
1″	3/4″	1/8″	8527K181	15.57
1 1/16″	1″	1/32″	8527K125	16.94
1 1/8″	3/4″	3/16″	8527K221	21.22
1 1/8″	1″	1/16″	8527K144	$12.41
1 3/16″	1″	3/32″	8527K164	15.52
1 1/4″	3/4″	1/4″	8527K261	27.48
1 1/4″	1″	1/8″	8527K184	19.55
1 5/16″	1 1/4″	1/32″	8527K231	18.20
1 3/8″	1″	3/16″	8527K224	26.96
1 3/8″	1 1/4″	1/16″	8527K232	15.48
1 1/2″	1″	1/4″	8527K264	33.15
1 1/2″	1 1/4″	1/8″	8527K234	23.70
1 1/2″	1 3/8″	1/16″	8527K265	18.27
1 5/8″	1 1/2″	1/16″	8527K242	17.68
1 3/4″	1 1/4″	1/4″	8527K236	39.32
1 3/4″	1 1/2″	1/8″	8527K244	25.35
1 7/8″	1 1/2″	3/16″	8527K245	36.50
2″	1 1/2″	1/4″	8527K246	45.77
2″	1 7/8″	1/16″	8527K247	22.99
2 1/4″	2″	1/8″	8527K248	35.51
3″	2 1/2″	1/4″	8527K249	73.55

Rods—Smooth Finish

Diameter tolerance is ±0.001″ for rods up to 1 1/4″ dia.; ±0.003″ for rods 1 3/8″ dia. and larger. Length tolerance is ±3/8″ for 1-ft. lengths and ±1″ for 4-ft. lengths. Straightness tolerance is not rated. **To Order:** Please specify length.

Dia.		1-ft.	4-ft.
1/16″	8526K88	—	$5.50
1/8″	8526K89	—	5.67
1/4″	8526K11	—	7.66
5/16″	8526K12	—	9.57
3/8″	8526K13	—	10.64
7/16″	8526K81	$3.95	13.72
1/2″	8526K82	$4.99	$17.34
9/16″	8526K83	5.45	18.94
5/8″	8526K84	6.24	21.67
3/4″	8526K85	8.33	28.92
7/8″	8526K86	10.62	36.87
1″	8526K111	14.33	49.74
1 1/8″	8526K112	$17.05	$59.19
1 1/4″	8526K113	19.33	67.13
1 3/8″	8526K114	22.12	76.82
1 1/2″	8526K115	26.16	90.84
2″	8526K116	45.65	158.50

For information about Garolite, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Impact-Resistant Garolite (CE)

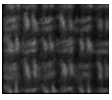

- Color: Opaque tan to brown, except graphite-filled sheets are black
- Max. Temperature: 235° F
- Tensile Strength: Good
- Impact Strength: Good
- Electrical Insulator: Poor
- Machine: Use carbide tooling
- Hardness: Rockwell M90-M105

This general-purpose laminate is used primarily for mechanical applications, such as bushings, gears, and rollers. Material has a cotton-cloth base and is sometimes called canvas-grade industrial laminate, phenolic, and Bakelite. *Sheets* and *rods* meet UL 94HB for flame retardance. *Sheets*, *tubes*, and *rods* meet MIL-I-24768/14. *Graphite-filled sheets* do not meet a UL or MIL specification.

Sheets—Smooth Finish

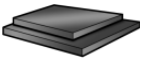

Width and length tolerances are ±1″. Flatness tolerance is not rated. Hardness for 4″×6″ sheets is Barcol 50-60.

Thick.	Thick. Toler.	4″×6″		12″×12″		12″×24″		24″×24″		24″×36″		36″×48″	
1/32″	±0.007″	—	—	8491K1	$5.63	8491K2	$9.40	8491K3	$18.11	8491K4	$23.28	8491K5	$42.69
1/16″	±0.008″	—	—	8491K6	5.98	8491K7	11.43	8491K8	20.59	8491K9	24.98	8491K11	49.74
1/8″	±0.010″	—	—	8491K12	11.91	8491K13	23.12	8491K14	42.71	8491K15	52.60	8491K16	96.41
3/16″	±0.013″	—	—	8491K17	17.00	8491K18	33.04	8491K19	63.24	8491K21	76.20	8491K22	137.96
1/4″	±0.015″	—	—	8491K23	21.66	8491K24	40.50	8491K25	77.71	8491K26	97.71	8491K27	176.85
3/8″	±0.020″	—	—	8491K28	32.51	8491K29	60.32	8491K31	104.89	8491K32	132.99	8491K33	242.24
1/2″	±0.024″	—	—	8491K34	35.20	8491K35	65.64	8491K36	120.94	8491K37	164.93	8491K38	295.83
5/8″	±0.027″	—	—	8491K39	42.73	8491K41	83.75	8491K42	145.66	8491K43	198.64	8491K44	361.16
3/4″	±0.029″	5528K21	$13.13	8491K45	49.32	8491K46	95.48	8491K47	166.05	8491K48	226.45	8491K49	411.72
1″	±0.033″	5528K31	16.36	8491K51	65.82	8491K52	123.20	8491K53	214.26	8491K54	292.20	8491K55	531.27
1 1/4″	±0.037″	—	—	8491K56	82.27	8491K57	153.99	8491K58	267.80	8491K59	367.01	8491K61	664.03
1 1/2″	±0.041″	5528K51	24.94	8491K62	96.82	8491K63	184.80	8491K64	321.39	8491K65	438.29	8491K66	796.89
2″	±0.049″	—	—	8491K67	129.09	8491K68	246.39	8491K69	428.49	8491K71	584.36	8491K72	1,062.47

Wear-Resistant Slippery Sheets—Smooth Finish

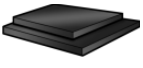

The addition of graphite to CE Garolite acts like a lubricant to reduce surface friction. Often used for bearings and wear pads, this material is a good choice for high-friction applications. Thickness tolerance is ±15% for thicknesses up to 1/4″; +10% for 1/2″ to 1″ thick. Length and width tolerances are ±1″, except 12″×12″ sheets are ±1/4″. Flatness tolerance is not rated.

Thick.	12″×12″		18″×39″		39″×39″	
1/16″	2547K11	$6.60	2547K12	$25.94	2547K13	$47.17
1/8″	2547K21	11.15	2547K22	43.79	2547K23	79.62
1/4″	2547K31	25.63	2547K32	100.67	2547K33	183.04

Thick.	12″×12″		18″×39″		39″×39″	
1/2″	2547K41	$40.39	2547K42	$158.66	2547K43	$288.47
3/4″	2547K51	53.39	2547K52	209.74	2547K53	381.35
1″	2547K61	66.83	2547K62	262.54	2547K63	477.34

Tubes—Smooth Finish

Wall thickness tolerance is ±0.008″, and length tolerance is ±1″. Straightness tolerance is not rated.

OD	ID	Wall Thick.	40″ Length	
1/4″	3/16″	1/32″	86555K221	$9.39
5/16″	3/16″	1/16″	86555K231	8.99
5/16″	1/4″	1/32″	86555K222	11.08
3/8″	3/16″	3/32″	86555K241	9.80
3/8″	1/4″	1/16″	86555K232	9.77
3/8″	5/16″	1/32″	86555K223	11.46
7/16″	5/16″	1/16″	86555K233	9.65
7/16″	3/8″	1/32″	86555K224	11.76
1/2″	1/4″	1/8″	86555K252	11.62
1/2″	5/16″	3/32″	86555K243	10.96
1/2″	3/8″	1/16″	86555K234	10.46
9/16″	1/2″	1/32″	86555K225	12.40

OD	ID	Wall Thick.	40″ Length	
5/8″	1/4″	3/16″	86555K262	$13.36
5/8″	3/8″	1/8″	86555K254	13.12
5/8″	1/2″	1/16″	86555K235	11.26
11/16″	1/2″	3/32″	86555K245	12.38
3/4″	1/4″	1/4″	86555K272	17.66
3/4″	3/8″	3/16″	86555K264	15.57
3/4″	1/2″	1/8″	86555K255	14.15
3/4″	5/8″	1/16″	86555K431	12.15
7/8″	5/8″	1/8″	86555K451	14.49
7/8″	3/4″	1/16″	86555K432	13.82
1″	1/2″	1/4″	86555K275	22.38
1″	5/8″	3/16″	86555K461	20.23

OD	ID	Wall Thick.	40″ Length	
1″	3/4″	1/8″	86555K452	$16.38
1 1/8″	5/8″	1/4″	86555K471	26.44
1 1/8″	1″	1/16″	86555K433	15.47
1 1/4″	3/4″	1/4″	86555K472	29.03
1 1/4″	1″	1/8″	86555K453	21.86
1 3/8″	1″	3/16″	86555K463	30.39
1 1/2″	1″	1/4″	86555K473	38.77
1 1/2″	1 1/4″	1/8″	86555K454	25.82
1 5/8″	1 1/4″	3/16″	86555K464	36.02
1 3/4″	1 1/4″	1/4″	86555K474	45.73
2″	1 1/2″	1/4″	86555K475	52.43
3″	2 1/2″	1/4″	86555K476	107.98

Rods—Smooth Finish

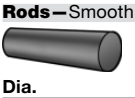

Diameter tolerance is ±0.005″. Length tolerance is ±3/8″ for 1-ft. lengths and ±1″ for 4-ft. lengths. Straightness tolerance is not rated. **To Order:** Please specify length.

Dia.	1 ft.	4 ft.
1/4″	8467K11	—	$8.42
5/16″	8467K12	—	10.30
3/8″	8467K13	—	11.55
7/16″	8467K14	—	14.78
1/2″	8467K81	$5.05	17.55
9/16″	8467K82	5.66	19.67

Dia.	1 ft.	4 ft.
5/8″	8467K83	$6.30	$21.89
3/4″	8467K84	8.26	28.67
7/8″	8467K85	10.28	35.71
1″	8467K61	12.38	42.99
1 1/8″	8467K62	15.09	52.40
1 1/4″	8467K63	17.49	60.72

Dia.	1 ft.	4 ft.
1 3/8″	8467K64	$20.65	$71.71
1 1/2″	8467K65	24.30	84.39
2″	8467K66	41.37	143.64
2 1/2″	8467K67	61.13	212.24
3″	8467K68	83.95	291.50

Dia.	1 ft.	4 ft.
3 1/2″	8467K69	$101.15	$351.22
4″	8467K71	129.96	451.26
4 1/2″	8467K72	149.73	519.88
5″	8467K73	196.13	681.01
6″	8467K74	245.27	851.63

Ultra-Impact-Resistant Garolite (E-Glass)

- Color: Opaque reddish brown
- Max. Temperature: 160° F
- Tensile Strength: Not rated
- Impact Strength: Excellent
- Electrical Insulator: Not rated
- Machine: Use carbide tooling
- Hardness: Not rated

An economical alternative to our bullet-resistant polycarbonate, E-glass Garolite provides outstanding protection from impact and punctures, making it ideal for use as machine guards. Length and width tolerances are ±1/4″. Flatness tolerance is 0.010″ per inch. Finish is smooth.

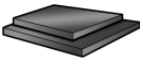

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×36″	
1/8″	±0.010″	3819K11	$14.78	3819K12	$26.88	3819K13	$48.38	3819K14	$67.20
1/4″	±0.010″	3819K21	21.80	3819K22	39.64	3819K23	71.36	3819K24	99.11
3/8″	±0.020″	3819K31	29.90	3819K32	54.36	3819K33	97.85	3819K34	135.90
1/2″	±0.020″	3819K41	36.20	3819K42	65.82	3819K43	118.48	3819K44	164.55
1″	±0.025″	3819K51	67.96	3819K52	123.56	3819K53	222.41	3819K54	308.90

For information about Garolite, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Machinable Garolite (LE)

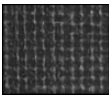

- Color: Opaque tan to brown
- Max. Temperature: 235° F
- Tensile Strength: Excellent, except tubes are good
- Impact Strength: Poor
- Electrical Insulator: Poor
- Machine: Use carbide tooling
- Hardness: Rockwell M100-M105

A fine-weave cotton-cloth base gives LE Garolite good machinability and wear resistance. It is sometimes referred to as industrial laminate, phenolic, or Bakelite. Meets UL 94HB for flame retardance and MIL-I-24768/13, except tubes and 1/32″ thick sheets do not meet UL 94HB.

Sheets—Smooth Finish

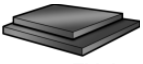

Width and length tolerances are ±1″. Flatness tolerance is not rated.

Thick.	Thick. Toler.	6″×6″		12″×12″		12″×24″		24″×24″		24″×36″		36″×48″	
1/32″	±0.005″	—	—	8474K101	$5.53	8474K102	$8.06	8474K103	$14.98	8474K104	$21.20	8474K105	$32.62
1/16″	±0.006″	—	—	8474K111	8.79	8474K112	14.04	8474K113	22.46	8474K114	31.30	8474K115	54.14
1/8″	±0.007″	6842K61	$5.31	8474K121	15.77	8474K122	27.13	8474K123	46.51	8474K124	62.59	8474K125	106.14
3/16″	±0.009″	6842K62	7.92	8474K131	23.65	8474K132	39.22	8474K133	66.07	8474K134	88.76	8474K135	158.33
1/4″	±0.012″	6842K63	10.17	8474K141	26.93	8474K142	47.90	8474K143	84.20	8474K144	109.76	8474K145	203.38
5/16″	±0.015″	6842K64	12.21	8474K151	33.46	8474K152	59.50	8474K153	104.61	8474K154	138.93	8474K155	244.25
3/8″	±0.017″	6842K65	14.95	8474K161	40.12	8474K162	73.61	8474K163	125.36	8474K164	177.41	8474K165	298.98
1/2″	±0.021″	6842K66	18.48	8474K171	47.23	8474K172	83.23	8474K173	145.10	8474K174	204.76	8474K175	369.60
3/4″	±0.027″	6842K22	22.57	8474K191	70.75	8474K192	124.33	8474K193	228.94	8474K194	312.58	8474K195	550.60
1″	±0.065″	6842K32	29.98	8474K201	89.13	8474K202	173.57	8474K203	302.70	8474K204	428.82	8474K205	731.15
1 1/4″	±0.069″	6842K42	39.05	8474K211	115.64	8474K212	203.56	8474K213	369.02	8474K214	518.00	8474K215	952.55
1 1/2″	±0.082″	6842K52	44.98	8474K221	143.04	8474K222	251.75	8474K223	500.21	8474K224	623.73	8474K225	1,096.95

Strips—Smooth Finish

Width tolerance is ±0.016″, and length tolerance is ±1″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	2″ Wd.×48″ Lg.		3″ Wd.×48″ Lg.	
1/16″	±0.006″	9322K52	$6.32	9322K62	$10.73
1/8″	±0.007″	9322K53	11.82	9322K63	14.69
3/16″	±0.009″	9322K54	17.05	9322K64	23.87
1/4″	±0.012″	9322K55	$19.41	9322K65	$28.25
3/8″	±0.017″	9322K57	30.47	9322K67	44.34
1/2″	±0.021″	9322K58	38.66	9322K68	56.25

Tubes—Smooth Finish

Wall thickness tolerance is ±0.012″, and length tolerance is ±1″. Straightness tolerance is not rated.

OD	ID	Wall Thick.	40″ Length	
1/4″	3/16″	1/32″	8640K322	$11.73
5/16″	3/16″	1/16″	8640K335	9.57
5/16″	1/4″	1/32″	8640K453	10.29
3/8″	3/16″	3/32″	8640K351	10.37
3/8″	1/4″	1/16″	8640K132	12.00
3/8″	5/16″	1/32″	8640K454	10.62
7/16″	1/4″	3/32″	8640K152	11.15
7/16″	5/16″	1/16″	8640K133	11.73
7/16″	3/8″	1/32″	8640K455	11.64
1/2″	1/4″	1/8″	8640K172	12.70
1/2″	5/16″	3/32″	8640K153	11.53
1/2″	3/8″	1/16″	8640K134	11.38
9/16″	3/8″	3/32″	8640K154	12.19
9/16″	1/2″	1/32″	8640K457	11.70
5/8″	1/4″	3/16″	8640K212	15.80
5/8″	3/8″	1/8″	8640K174	$14.60
5/8″	1/2″	1/16″	8640K136	12.48
11/16″	5/8″	1/32″	8640K119	13.42
3/4″	1/4″	1/4″	8640K252	20.89
3/4″	3/8″	3/16″	8640K214	18.02
3/4″	1/2″	1/8″	8640K176	16.76
3/4″	5/8″	1/16″	8640K138	13.47
13/16″	3/4″	1/32″	8640K122	12.78
7/8″	3/8″	1/4″	8640K254	24.87
7/8″	1/2″	3/16″	8640K216	20.53
7/8″	5/8″	1/8″	8640K178	18.68
7/8″	3/4″	1/16″	8640K141	13.92
15/16″	3/4″	3/32″	8640K161	16.00
1″	1/2″	1/4″	8640K256	28.33
1″	5/8″	3/16″	8640K218	24.91
1″	3/4″	1/8″	8640K181	$19.42
1 1/16″	1″	1/32″	8640K125	14.80
1 1/8″	5/8″	1/4″	8640K258	32.98
1 1/8″	3/4″	3/16″	8640K221	23.80
1 1/8″	1″	1/16″	8640K144	17.68
1 1/4″	3/4″	1/4″	8640K261	33.91
1 1/4″	1″	1/8″	8640K184	25.86
1 5/16″	1 1/4″	1/32″	8640K231	15.50
1 1/2″	1″	1/4″	8640K264	45.30
1 1/2″	1 1/4″	1/8″	8640K234	30.41
1 3/4″	1 1/2″	1/8″	8640K244	34.35
2″	1 1/2″	1/4″	8640K246	58.83
2 1/2″	1 1/2″	1/2″	8640K247	135.39
3″	2″	1/2″	8640K248	173.57

Rods—Smooth Finish

Diameter tolerance is ±0.001″ for diameters up to 1 1/4″ and ±0.005″ for diameters 1 1/2″ and larger. Length tolerance is ±3/8″ for 1-ft. lengths and ±1″ for 4-ft. lengths. Straightness tolerance is not rated. **To Order:** Please specify length.

Dia.		1 ft.	4 ft.
1/16″	8470K71	—	$7.70
1/8″	8470K72	—	7.96
1/4″	8470K73	—	10.47
5/16″	8470K74	—	12.66
3/8″	8470K75	—	14.02
7/16″	8470K78	$4.85	16.83
1/2″	8470K79	5.80	20.14
9/16″	8470K81	$6.83	$23.70
5/8″	8470K82	7.81	27.13
3/4″	8470K83	10.44	36.24
7/8″	8470K84	13.32	46.24
1″	8470K43	16.40	56.93
1 1/8″	8470K44	19.93	69.21
1 1/4″	8470K45	23.15	80.37
1 1/2″	8470K47	$32.76	$113.74
2″	8470K48	62.60	217.35
2 1/2″	8470K49	98.14	340.78
3″	8470K51	142.27	493.98
4″	8470K53	256.06	889.11
5″	8470K55	348.29	1,209.34
6″	8470K56	445.07	1,545.38

Electrically Conductive Garolite (Glass Carbon)

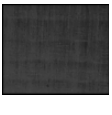

- Color: Opaque black
- Max. Temperature: 290° F
- Tensile Strength: Not rated
- Impact Strength: Not rated
- Not an electrical insulator
- Machine: Use diamond-tipped tooling
- Hardness: Rockwell M110

The graphite-carbon portion of this glass-based material conducts electricity, removing static charges. Material is sometimes called industrial laminate or phenolic. Width and length tolerances are ±1″, except 12″×12″ sheets are ±1/4″. Flatness tolerance is not rated. Finish is smooth.

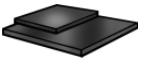

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×42″	
1/32″	±0.011″	2235K11	$10.58	2235K13	$17.98	2235K15	$52.88
1/16″	±0.009″	2235K21	15.16	2235K23	25.77	2235K25	75.79
3/32″	±0.010″	2235K31	20.89	2235K33	35.52	2235K35	104.46
1/8″	±0.015″	2235K41	24.62	2235K43	41.85	2235K45	123.08

For information about Garolite, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Electrical-Grade Garolite (G-9)

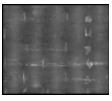

- Color: Opaque brown to gray
- Max. Temperature: 280° F
- Tensile Strength: Excellent
- Impact Strength: Excellent
- Electrical Insulator: Good
- Machine: Use carbide tooling
- Hardness: Rockwell M90-M115

Often used as arc barriers and switchboard panels, this high-strength material has excellent arc resistance. Sometimes called melamine-grade industrial laminate, phenolic, and Bakelite, G-9 Garolite has a woven fiberglass fabric base. Meets UL 94V0 for flame retardance, except 1/32″ thick sheets do not.

Sheets—Smooth Finish

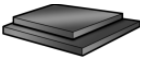

Width and length tolerances are ±1″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		24″×24″	
1/32″	±0.005″	8661K118	$8.02	8661K119	$24.12
1/16″	±0.008″	8661K121	13.71	8661K161	41.37
1/8″	±0.012″	8661K122	24.85	8661K162	75.23
1/4″	±0.022″	8661K124	48.13	8661K164	146.44

Rods—Smooth Finish

Diameter tolerance is ±0.001″, and length tolerance is ±1″. Straightness tolerance is not rated.
To Order: Please specify length.

Dia.	1 ft.	4 ft.	Dia.	1 ft.	4 ft.
1/16″ 8534K12	____	$11.30	1/2″ 8534K32	$9.78	$33.96
1/8″ 8534K14	____	11.66	5/8″ 8534K36	14.14	49.09
1/4″ 8534K17	____	12.95	3/4″ 8534K37	16.69	57.96
5/16″ 8534K41	$4.57	15.87	1″ 8534K38	26.97	93.65
3/8″ 8534K42	5.16	17.90			

Multipurpose Garolite (G-10)

- Color: Opaque yellow to green
- Max. Temperature: 265° F
- Tensile Strength: Excellent
- Impact Strength: Excellent
- Electrical Insulator: Good
- Machine: Use carbide tooling
- Hardness: Rockwell M100-M110

Combining good electrical insulating properties with high strength and low moisture absorption, this fiberglass-cloth based material is sometimes called epoxy-grade industrial laminate and phenolic. *Sheets* and *tubes* meet MIL-I-24768/2. *90° angles* meet MIL-I-247681/27.

Sheets—Smooth Finish

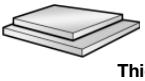

Width and length tolerances are ±1″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″		12″×12″		24″×24″		24″×36″		36″×48″	
1/32″	±0.007″	9910T59	$3.21	9910T11	$6.47	9910T12	$20.24	9910T13	$26.09	9910T14	$45.26
1/16″	±0.008″	9910T61	5.57	9910T15	9.98	9910T16	33.08	9910T17	44.04	9910T18	78.48
3/32″	±0.009″	9910T62	8.02	9910T81	15.22	9910T82	47.86	9910T83	63.59	9910T84	113.02
1/8″	±0.012″	9910T63	10.81	9910T21	19.36	9910T22	63.99	9910T23	85.42	9910T24	152.32
3/16″	±0.019″	9910T64	15.30	9910T25	28.27	9910T26	93.63	9910T27	122.70	9910T28	215.49
1/4″	±0.022″	9910T65	19.26	9910T31	36.75	9910T32	119.22	9910T33	156.73	9910T34	271.21
3/8″	±0.030″	9910T66	27.89	9910T35	52.75	9910T36	168.11	9910T37	222.00	9910T38	392.78
1/2″	±0.036″	9910T67	35.95	9910T41	67.44	9910T42	215.57	9910T43	285.49	9910T44	506.27
5/8″	±0.040″	9910T68	43.48	9910T45	82.49	9910T46	259.36	9910T47	344.55	9910T48	612.42
3/4″	±0.043″	9910T69	52.18	9910T51	97.01	9910T52	311.37	9910T53	413.45	9910T54	734.89
1″	±0.049″	9910T71	67.40	9910T55	126.82	9910T56	400.30	9910T57	532.91	9910T58	949.25
1 1/4″	±0.055″	9910T85	82.95	9910T86	157.37	9910T87	494.78	9910T88	657.29	9910T89	1,168.31
1 1/2″	±0.061″	9910T91	95.15	9910T92	180.51	9910T93	567.53	9910T94	753.94	9910T95	1,340.10
2″	±0.073″	9910T111	123.24	9910T112	233.81	9910T113	735.09	9910T114	976.54	9910T115	1,735.76

Tubes—Smooth Finish

Wall thickness tolerance is ±0.031″, and length tolerance is +9″. Straightness tolerance is not rated. Meet UL 94HB for flame retardance.

OD	ID	Wall Thick.	39″ Length	
3/16″	1/8″	1/32″	8668K82	$41.14
1/4″	1/8″	1/16″	8668K83	42.09
1/4″	3/16″	1/32″	8668K91	41.14
5/16″	3/16″	1/16″	8668K92	42.09
3/8″	3/16″	3/32″	8668K93	42.00
3/8″	1/4″	1/16″	8668K12	39.98
7/16″	3/16″	1/8″	8668K94	43.77
7/16″	1/4″	3/32″	8668K22	40.66
7/16″	5/16″	1/16″	8668K13	42.28
1/2″	1/4″	1/8″	8668K32	43.08
1/2″	5/16″	3/32″	8668K23	43.88
1/2″	3/8″	1/16″	8668K14	43.88
9/16″	3/16″	3/16″	8668K95	53.16
9/16″	5/16″	1/8″	8668K33	46.21
9/16″	3/8″	3/32″	8668K24	46.21
5/8″	1/4″	3/16″	8668K42	$50.96
5/8″	3/8″	1/8″	8668K34	47.92
5/8″	1/2″	1/16″	8668K15	46.49
11/16″	5/16″	3/16″	8668K43	55.37
11/16″	1/2″	3/32″	8668K25	49.41
3/4″	1/4″	1/4″	8668K139	63.84
3/4″	3/8″	3/16″	8668K44	59.93
3/4″	1/2″	1/8″	8668K35	55.37
3/4″	5/8″	1/16″	8668K16	49.74
13/16″	5/8″	3/32″	8668K26	55.37
7/8″	3/8″	1/4″	8668K138	76.02
7/8″	1/2″	3/16″	8668K45	68.95
7/8″	5/8″	1/8″	8668K36	62.11
7/8″	3/4″	1/16″	8668K17	55.96
15/16″	3/4″	3/32″	8668K27	60.70
1″	1/2″	1/4″	8668K137	$86.70
1″	5/8″	3/16″	8668K46	77.84
1″	3/4″	1/8″	8668K37	68.18
1 1/8″	3/4″	3/16″	8668K47	86.87
1 1/8″	1″	1/16″	8668K19	65.15
1 1/4″	3/4″	1/4″	8668K141	102.31
1 1/4″	7/8″	3/16″	8668K18	95.88
1 1/4″	1″	1/8″	8668K39	82.40
1 3/8″	1″	3/16″	8668K49	104.86
1 1/2″	1 1/4″	1/8″	8668K71	98.04
2″	1 3/4″	1/8″	8668K147	113.85
2 1/4″	2″	1/8″	8668K149	123.77
2 1/2″	2 1/4″	1/8″	8668K151	132.89
2 3/4″	2 1/2″	1/8″	8668K153	144.81
3″	2 3/4″	1/8″	8668K154	154.49
3 1/4″	3″	1/8″	8668K155	165.67

90° Angles—Smooth Finish

Leg length tolerance is ±0.062″. Wall thickness tolerance is ±0.028″. Length tolerance is +6″.

Outside Leg Lgs.	Wall Thick.	30″ Length	
1″×1″	1/8″	7300T11	$133.52
1″×1″	3/16″	7300T12	145.94
1″×1″	1/4″	7300T13	160.36
1 1/2″×1 1/2″	1/8″	7300T14	$135.54
1 1/2″×1 1/2″	3/16″	7300T15	152.91
1 1/2″×1 1/2″	1/4″	7300T16	167.18
2″×2″	1/8″	7300T17	$142.48
2″×2″	3/16″	7300T18	156.95
2″×2″	1/4″	7300T19	174.00

For information about Garolite, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Flame-Retardant Multipurpose Garolite (G-10/FR4)

- Color: Opaque yellow-brown to green, unless noted
- Max. Temperature: 265°F
- Tensile Strength: Excellent
- Impact Strength: Excellent
- Electrical Insulator: Good
- Machine: Use carbide tooling
- Hardness: Rockwell M110-M115

This flame-retardant version of G-10 Garolite offers excellent strength, low water absorption, and good electrical insulating qualities in dry and humid conditions. Material is fiberglass-cloth with a flame-retardant resin. Meets MIL-I-24768/27. Meets UL 94V0 for flame retardance, except tubes do not.

Rectangular Bars—Smooth Finish

Width and length tolerances are ±0.031″. Flatness tolerance is not rated. **To Order:** Please specify length.

Width	2 ft.	4 ft.
1/8″ Thick *(±0.012″)*		
1″ 8557K11	$2.96	$5.69
1½″ 8557K12	4.22	8.12
2″ 8557K13	5.44	10.47
2½″ 8557K14	7.04	13.53
3″ 8557K15	7.92	15.23
4″ 8557K16	11.76	22.61
6″ 8557K18	15.43	29.68
1/4″ Thick *(±0.022″)*		
1″ 8557K21	5.56	10.70
1½″ 8557K22	8.16	15.70
2″ 8557K23	10.76	20.70
3″ 8557K25	14.96	28.77
4″ 8557K26	20.13	38.72
3/8″ Thick *(±0.038″)*		
1″ 8557K31	$8.63	$16.59
1½″ 8557K32	12.15	23.37
2″ 8557K33	15.96	30.70
3″ 8557K35	22.28	42.84
1/2″ Thick *(±0.036″)*		
1″ 8557K41	11.21	21.56
1½″ 8557K42	16.34	31.42
2″ 8557K43	20.68	39.77
3″ 8557K45	29.25	56.25
4″ 8557K46	40.03	76.98
3/4″ Thick *(±0.043″)*		
1″ 8557K51	17.30	33.26
1½″ 8557K52	24.13	46.40
3/4″ Thick *(±0.043″) (Cont.)*		
2″ 8557K53	$30.44	$58.53
3″ 8557K55	43.41	83.49
1″ Thick *(±0.049″)*		
1″ 8557K61	22.13	42.56
1½″ 8557K62	32.05	61.63
2″ 8557K63	40.35	77.60
3″ 8557K65	58.53	112.56
4″ 8557K66	77.53	149.09
1¼″ Thick *(±0.055″)*		
1″ 8557K71	27.65	53.18
1½″ 8557K72	38.53	74.09
2″ 8557K73	49.19	94.59
3″ 8557K75	71.03	136.59
1½″ Thick *(±0.061″)*		
1½″ 8557K82	$44.97	$86.49
2″ 8557K83	54.07	103.98
3″ 8557K85	78.43	150.83
1¾″ Thick *(±0.062″)*		
1½″ 8557K92	48.50	93.27
2″ 8557K93	61.87	118.98
3″ 8557K95	88.71	170.60
2″ Thick *(±0.073″)*		
1″ 8557K19	38.27	73.60
1½″ 8557K29	56.14	107.96
2″ 8557K39	69.94	134.50
3″ 8557K59	101.09	194.40
4″ 8557K69	124.99	240.37

Sheets—Smooth Finish

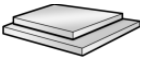

Width and length tolerances are –½″ for 6″×6″ sheets; ±1″ for all other sheet sizes. Flatness tolerance is not rated.

Thick.	Thick. Toler.	6″×6″		12″×12″		12″×24″		24″×24″		24″×36″		36″×48″	
1/32″	±0.007″	8667K111	$2.65	8667K51	$5.74	8667K52	$9.97	8667K53	$16.21	8667K54	$22.11	8667K55	$36.49
1/16″	±0.008″	8667K112	4.00	8667K211	7.91	8667K241	14.13	8667K271	26.99	8667K11	36.81	8667K31	61.99
3/32″	±0.009″	8667K113	5.92	8667K212	12.84	8667K242	22.32	8667K272	38.83	8667K12	52.95	8667K32	91.04
1/8″	±0.012″	8667K1	7.58	8667K213	15.43	8667K243	26.46	8667K273	46.68	8667K13	63.66	8667K33	115.74
3/16″	±0.019″	8667K115	11.50	8667K214	23.96	8667K244	41.69	8667K274	72.48	8667K14	98.83	8667K34	176.86
1/4″	±0.022″	8667K116	15.04	8667K215	30.28	8667K245	52.68	8667K275	93.01	8667K15	126.85	8667K35	230.63
5/16″	±0.026″	8667K131	19.76	8667K132	38.92	8667K133	69.46	8667K134	120.65	8667K135	158.37	8667K136	299.38
3/8″	±0.030″	8667K117	22.61	8667K217	44.57	8667K247	79.05	8667K277	136.89	8667K17	179.56	8667K37	339.43
1/2″	±0.036″	8667K118	30.07	8667K218	55.52	8667K248	99.19	8667K278	179.15	8667K18	239.47	8667K38	444.20
5/8″	±0.040″	8667K119	37.62	8667K219	69.34	8667K249	123.97	8667K279	219.86	8667K19	299.84	8667K39	545.16
3/4″	±0.043″	8667K121	45.17	8667K221	78.19	8667K251	148.74	8667K281	259.12	8667K21	332.37	8667K41	642.50
1″	±0.049″	8667K122	60.18	8667K223	111.01	8667K253	198.38	8667K283	339.44	8667K23	462.91	8667K43	841.65
1¼″	±0.055″	8667K123	75.17	8667K61	138.75	8667K62	247.93	8667K63	416.98	8667K64	568.65	8667K65	1,033.91
1½″	±0.061″	8667K124	85.89	8667K71	151.93	8667K72	272.41	8667K73	468.10	8667K74	638.37	8667K75	1,160.68
2″	±0.073″	8667K125	121.64	8667K81	198.61	8667K82	346.05	8667K83	620.30	8667K84	824.66	8667K85	1,474.45
2½″	±0.091″	8667K151	158.32	8667K152	311.83	8667K153	556.50	8667K154	966.68	8667K155	1,268.92	8667K156	2,398.72

Choose-a-Color Sheets—Smooth Finish

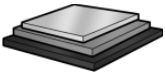

Width and length tolerances are ±¼″ for 6″ and 12″ sides; ±½″ for 24″ sides; and ±1″ for 36″ and 48″ sides. Flatness tolerance is not rated. **To Order:** Please specify color: black, blue, or tan.

Thick.	Thick. Toler.	6″×6″		12″×12″		12″×24″		24″×24″		24″×36″		36″×48″	
1/16″	±0.008″	85345K71	$3.34	85345K11	$10.75	85345K21	$19.19	85345K31	$33.70	85345K41	$45.74	85345K51	$78.88
1/8″	±0.012″	85345K72	6.65	85345K12	17.87	85345K22	34.03	85345K32	56.69	85345K42	74.05	85345K52	129.67
1/4″	±0.022″	85345K74	12.51	85345K14	31.44	85345K24	59.09	85345K34	98.65	85345K44	135.70	85345K54	239.38
3/8″	±0.038″	85345K75	18.39	85345K15	48.96	85345K25	89.01	85345K35	157.06	85345K45	202.28	85345K55	360.72

Precision-Ground Sheets—Smooth Finish

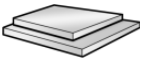

Both faces are ground. Thickness tolerance is ±0.005″. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	12″×12″		18″×24″		24″×36″	
1/8″	2911T11	$31.03	2911T12	$83.69	2911T13	$153.33
1/4″	2911T21	42.88	2911T22	115.21	2911T23	211.00
1/2″	2911T31	$74.88	2911T32	$202.20	2911T33	$372.17
1″	2911T61	116.49	2911T62	303.00	2911T63	541.30

Film—Smooth Finish

- Color: Translucent yellow to light green

Width and length tolerances are ±¼″. Flatness tolerance is not rated. ***Wear-resistant*** film has a coating that extends life.

Thick.	Thick. Tolerance	12″×12″		24″×36″	
Precision					
0.005″	±0.0005″	1331T23	$11.03	1331T57	$41.69
0.010″	±0.0010″	1331T25	11.79	1331T59	44.62
0.015″	±0.0015″	1331T27	12.69	1331T61	46.64
0.020″	±0.0020″	1331T29	13.66	1331T63	50.27
0.025″	±0.0023″	1331T31	14.61	1331T65	53.70
0.031″	±0.0033″	1331T33	14.86	1331T67	57.27
Wear Resistant					
0.010″	±0.0020″	1331T35	$16.05	1331T69	$62.76
0.015″	±0.0030″	1331T37	16.95	1331T71	66.15
0.020″	±0.0040″	1331T39	17.89	1331T73	69.79
0.025″	±0.0045″	1331T41	18.77	1331T75	71.10
0.031″	±0.0065″	1331T43	19.66	1331T77	72.40

(Material continued on following page)

For information about Garolite, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Flame-Retardant Multipurpose Garolite (G-10/FR4) *(Material continued from previous page)*

- Color: Opaque yellow-brown to green
- Max. Temperature: 265°F
- Tensile Strength: Excellent
- Impact Strength: Excellent
- Electrical Insulator: Good
- Machine: Use carbide tooling
- Hardness: Rockwell M110-M115

This flame-retardant version of G-10 Garolite offers excellent strength, low water absorption, and good electrical insulating qualities in dry and humid conditions. Material is fiberglass-cloth with a flame-retardant resin. Meets MIL-I-24768/27. Meets UL 94V0 for flame retardance, except tubes do not.

Copper-Clad Sheets—Smooth Finish

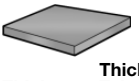

Sheets are 24″×36″. Copper is 0.0014″ thick. Width and length tolerances are ±1″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	Copper Clad on One Side		Copper Clad on Both Sides	
1/32″	±0.007″	8521K33	$32.08	8521K44	$37.30
1/16″	±0.008″	8521K35	$42.16	8521K46	$48.22

Tubes—Smooth Finish

Length tolerance is +6″. Wall thickness and straightness tolerances are not rated.

OD	ID	Wall Thick.		
Sold in 18″ lengths.				
1/4″	3/16″	1/32″	6394A44	$26.50
5/16″	3/16″	1/16″	6394A11	29.08
3/8″	3/16″	3/32″	6394A46	31.87
7/16″	3/16″	1/8″	6394A12	37.96
9/16″	3/16″	3/16″	6394A13	50.54
Sold in 42″ lengths.				
3/8″	1/4″	1/16″	6394A14	55.33
1/2″	1/4″	1/8″	6394A15	48.89
1/2″	5/16″	3/32″	6394A48	44.32
1/2″	3/8″	1/16″	6394A17	56.70
5/8″	1/4″	3/16″	6394A16	65.16
5/8″	3/8″	1/8″	6394A18	55.57
5/8″	1/2″	1/16″	6394A21	43.48
3/4″	3/8″	3/16″	6394A19	75.70
Sold in 42″ lengths. (Cont.)				
3/4″	1/2″	1/8″	6394A22	$63.48
3/4″	5/8″	1/16″	6394A24	47.00
7/8″	1/2″	3/16″	6394A23	85.02
7/8″	5/8″	1/8″	6394A25	70.41
7/8″	3/4″	1/16″	6394A52	49.04
1″	1/2″	1/4″	6394A54	103.65
1″	5/8″	3/16″	6394A26	95.22
1″	3/4″	1/8″	6394A27	76.58
1″	7/8″	1/16″	6394A31	53.15
1 1/8″	3/4″	3/16″	6394A28	103.91
1 1/8″	7/8″	1/8″	6394A32	81.63
1 1/8″	1″	1/16″	6394A33	57.98
1 1/4″	3/4″	1/4″	6394A29	135.52
1 1/4″	1″	1/8″	6394A34	90.98
Sold in 42″ lengths. (Cont.)				
1 3/8″	1″	3/16″	6394A35	$122.09
1 3/8″	1 1/4″	1/16″	6394A36	66.40
1 1/2″	1 1/4″	1/8″	6394A37	99.74
1 5/8″	1 1/4″	3/16″	6394A38	155.90
1 5/8″	1 1/2″	1/16″	6394A39	105.38
1 3/4″	1 1/2″	1/8″	6394A41	112.33
1 7/8″	1 1/2″	3/16″	6394A42	152.08
2″	1 3/4″	1/8″	6394A56	125.92
2 1/4″	2″	1/8″	6394A58	140.64
2 1/2″	2 1/4″	1/8″	6394A62	155.06
2 3/4″	2 1/2″	1/8″	6394A64	162.17
3″	2 3/4″	1/8″	6394A66	172.13
3 1/4″	3″	1/8″	6394A68	184.87

Rods—Smooth Finish

Diameter tolerance is ±0.005″. Length tolerance is ±1″. Straightness tolerance is not rated. **To Order:** Please specify length.

Dia.		1 ft.	4 ft.
1/16″	8669K86	$3.59	$12.48
1/8″	8669K87	3.80	13.20
3/16″	8669K88	3.92	13.61
1/4″	8669K89	4.42	15.36
5/16″	8669K91	4.81	16.70
3/8″	8669K92	5.38	18.69
1/2″	8669K65	$8.20	$28.47
9/16″	8669K66	9.98	34.65
5/8″	8669K67	12.39	43.01
3/4″	8669K68	15.90	55.21
7/8″	8669K69	19.00	65.96
1″	8669K71	$22.97	$79.74
1 1/8″	8669K72	27.23	94.54
1 1/4″	8669K73	29.74	103.28
1 3/8″	8669K74	34.66	120.33
1 1/2″	8669K75	39.70	137.84
2″	8669K76	$76.16	$264.44
2 1/2″	8669K77	125.77	436.70
3″	8669K79	159.43	553.57
3 1/2″	8669K82	208.98	725.64
4″	8669K84	269.99	937.45

High Temperature Garolite (G-11)

- Color: Opaque green to greenish brown
- Max. Temperature: 335°F
- Tensile Strength: Excellent
- Impact Strength: Excellent
- Electrical Insulator: Excellent
- Machine: Use diamond-tipped tooling
- Hardness: Rockwell M110-M115

Suitable for continuous use in elevated temperatures, this fiberglass-based material retains at least 50% of its structural strength at temperatures above 300°F. It is sometimes called epoxy-grade industrial laminate and phenolic. Meets UL 94HB for flame retardance and MIL-I-24768/3.

Sheets—Smooth Finish

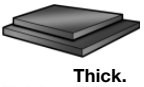

Width and length tolerances are ±1/2″ for 6″×6″ sheets and ±1″ for all other sizes. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		24″×24″		24″×36″		36″×48″	
1/32″	±0.005″	—	—	8710K113	$7.90	8710K114	$14.24	8710K115	$25.89	8710K116	$36.88	8710K117	$61.40
1/16″	±0.008″	—	—	8710K121	14.09	8710K141	25.64	8710K161	42.60	8710K181	58.86	8710K211	103.54
1/8″	±0.012″	8710K537	$14.24	8710K122	27.15	8710K142	45.09	8710K162	82.11	8710K182	117.50	8710K212	197.75
3/16″	±0.019″	8710K331	16.15	8710K123	34.67	8710K143	64.54	8710K163	112.25	8710K183	154.17	8710K213	269.58
1/4″	±0.022″	8710K332	20.52	8710K124	48.49	8710K144	84.35	8710K164	146.70	8710K184	200.68	8710K214	351.89
5/16″	±0.026″	8710K538	27.54	8710K125	60.95	8710K145	106.02	8710K165	184.37	8710K185	251.40	8710K215	437.21
3/8″	±0.030″	8710K333	29.14	8710K126	69.17	8710K146	130.00	8710K166	223.84	8710K186	292.96	8710K216	544.63
1/2″	±0.033″	8710K334	42.52	8710K127	92.32	8710K147	170.73	8710K167	300.51	8710K187	410.95	8710K217	713.45
3/4″	±0.043″	8710K335	57.19	8710K133	127.58	8710K134	228.05	8710K135	406.44	8710K136	593.99	8710K137	1,030.52
1″	±0.049″	8710K336	69.50	8710K153	162.20	8710K154	297.47	8710K155	524.92	—	—	—	—

Rods—Smooth Finish

Diameter tolerance is ±0.001″ for rods up to 1 1/4″ dia. and ±0.003″ for rods 1 3/8″ dia. and larger. Length tolerance is ±1″. Straightness tolerance is not rated. **To Order:** Please specify length.

Dia.		1 ft.	4 ft.
1/16″	8638K61	$4.82	$16.75
1/8″	8638K62	4.54	15.78
3/16″	8638K63	4.88	16.94
1/4″	8638K64	5.64	19.60
5/16″	8638K65	$6.93	$24.06
3/8″	8638K66	8.49	29.48
7/16″	8638K67	11.74	40.77
1/2″	8638K44	13.37	46.42
5/8″	8638K46	$20.12	$69.87
3/4″	8638K47	26.17	90.88
7/8″	8638K48	30.88	107.21
1″	8638K49	36.16	125.57
1 1/4″	8638K53	$53.38	$185.36
1 3/8″	8638K54	69.29	240.59
1 1/2″	8638K55	70.72	245.54
2″	8638K59	143.65	498.78

For information about Garolite and carbon fiber, see page 3610.

For additional information about the products on this page, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

Ultra High Temperature Garolite (G-7)

- Color: Opaque off-white to light green
- Max. Temperature: 425° F
- Tensile Strength: Excellent
- Impact Strength: Excellent
- Electrical Insulator: Good
- Machine: Use diamond-tipped tooling
- Hardness: Rockwell M67-M105

Not only heat- and arc-resistant, this material also has good electrical insulating properties. It has a fiberglass-fabric base and is sometimes called silicone-grade industrial laminate, phenolic, and Bakelite. Meets MIL-I-24768/17 and UL 94V0 for flame retardance.

Sheets—Smooth Finish

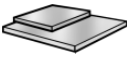

Width and length tolerances are ±1″, except 4″×6″ sheets are ±½″. Flatness tolerance is not rated.

Thick.	Thick. Toler.	4″×6″		12″×12″		12″×24″		24″×24″		24″×36″		36″×48″	
1/32″	±0.005″	—	—	8641K113	$19.57	8641K114	$35.90	8641K115	$70.52	8641K116	$93.27	8641K117	$172.12
1/16″	±0.008″	—	—	8641K121	36.17	8641K141	65.61	8641K161	106.88	8641K181	156.62	8641K211	295.00
1/8″	±0.012″	—	—	8641K122	66.25	8641K142	117.98	8641K162	196.07	8641K182	288.11	8641K212	522.03
3/16″	±0.019″	—	—	8641K123	92.89	8641K143	168.74	8641K163	286.13	8641K183	406.97	8641K213	747.28
1/4″	±0.022″	7017K41	$31.80	8641K124	118.59	8641K144	196.21	8641K164	354.04	8641K184	518.27	8641K214	954.81
3/8″	±0.030″	—	—	8641K126	146.26	8641K146	283.68	8641K166	457.15	8641K186	697.29	8641K216	1,360.56
1/2″	±0.033″	7017K61	56.42	8641K127	203.31	8641K147	346.14	8641K167	621.62	8641K187	873.90	8641K217	1,694.26
3/4″	±0.043″	7017K71	85.35	8641K133	290.92	8641K134	544.17	8641K135	1,008.10	8641K136	1,341.06	8641K137	2,563.19
1″	±0.049″	7017K81	107.00	8641K153	356.46	8641K154	669.09	8641K155	1,248.26	8641K156	1,694.65	8641K157	3,222.99

Rods—Smooth Finish

Diameter tolerance is ±0.003″, and length tolerance is ±1″. Straightness tolerance is not rated. **To Order:** Please specify length.

Dia.	1 ft.	4 ft.	Dia.	1 ft.	4 ft.	Dia.	1 ft.	4 ft.
1/4″	8524K51	$10.02	$34.78	1/2″	8524K54	$23.50	$81.61	1″	8524K57	$55.37	$192.26
5/16″	8524K52	13.39	46.48	5/8″	8524K55	32.35	112.32	1 1/2″	8524K58	127.93	444.21
3/8″	8524K53	15.59	54.13	3/4″	8524K56	40.60	140.96				

High-Strength Lightweight Carbon Fiber

- Color: Opaque black
- Max. Temperature: 180° F
- Tensile Strength: Excellent
- Impact Strength: Not rated
- Electrical Insulator: Not rated
- Machine: Use carbide tooling
- Hardness: Not rated

The carbon-fiber base of this material creates a strong, lightweight laminate with a sleek, attractive finish.

Also Available: Adhesive for use with carbon fiber. Please ask for 1813A243.

Rigid Rectangular Bars—Smooth Finish

Thickness tolerance is ±0.006″. Width tolerance is ±1/8″. Length tolerance is ±1/2″. Flatness tolerance is not rated.

Thick.	Wd.	Lg.		
0.019″	0.118″	48″	2153T21	$10.53
0.034″	0.121″	48″	2153T22	11.18
0.040″	0.166″	48″	2153T23	13.46
0.057″	0.177″	48″	2153T24	17.90
0.070″	0.437″	48″	2153T25	24.99
0.092″	0.220″	48″	2153T26	19.77
0.125″	0.325″	12″	2153T27	15.68
0.125″	0.500″	12″	2153T28	13.34

Rigid Rectangular Bars—Patterned Smooth Finish

Thickness tolerance is ±0.006″. Width and length tolerances are ±1/8″. Flatness tolerance is not rated.

Thick.	Wd.	Lg.		
1/32″	1″	12″	8194K12	$4.43
1/32″	3″	12″	8194K52	10.72
1/32″	3″	24″	8194K92	19.47
1/16″	1″	12″	8194K14	6.71
1/16″	3″	12″	8194K54	15.81
1/16″	3″	24″	8194K94	29.38
1/8″	1″	12″	8194K16	11.64
1/8″	3″	12″	8194K56	28.15
1/8″	3″	24″	8194K96	50.95

Flexible Sheets—Smooth Finish

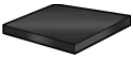

Width and length tolerances are −1/2″. Flatness tolerance is not rated.

Thick.	Thick. Toler.	12″×12″		12″×24″	
1/16″	±0.008″	86585K52	$57.43	86585K62	$79.24
3/32″	±0.009″	86585K53	77.40	86585K63	114.29
1/8″	±0.012″	86585K54	99.06	86585K64	146.76
3/16″	±0.019″	86585K55	142.87	86585K65	208.42

Rigid Sheets—Patterned Smooth Finish

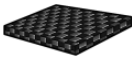

Width and length tolerances are ±1/8″. Flatness tolerance is not rated.

Thick.	Thick. Toler.	12″×12″		12″×24″	
1/32″	±0.003″	8181K12	$36.58	8181K32	$68.75
1/16″	±0.004″	8181K14	57.37	8181K34	105.95
1/8″	±0.006″	8181K16	95.00	8181K36	175.00

Rigid Tubes—Smooth Finish

Wall thickness tolerance is ±0.006″. Length tolerance is ±1/2″. Straightness tolerance is not rated.

OD	ID	Wall Thick.		4 ft.	
0.125″	0.074″	0.026″		2153T31	$12.18
0.156″	0.100″	0.028″		2153T32	15.38
0.188″	0.118″	0.035″		2153T33	19.75
0.254″	0.158″	0.048″		2153T35	24.99
0.315″	0.237″	0.039″		2153T37	29.54
0.375″	0.290″	0.043″		2153T39	31.25
0.500″	0.414″	0.043″		2153T41	45.11
0.625″	0.500″	0.063″		2153T43	64.58

Rigid Tubes—Patterned Smooth Finish

Wall thickness tolerance is ±0.005″. Length tolerance is ±1/8″. Straightness tolerance is not rated. **To Order:** Please specify length.

OD	ID	Wall Thick.		1 ft.	3 ft.	6 ft.
0.570″	0.500″	0.035″	5287T32	$24.96	$68.00	—
0.840″	0.750″	0.045″	5287T33	26.22	71.74	$130.43
1.000″	0.938″	0.031″	5287T21	30.55	84.00	152.73
1.100″	1.000″	0.050″	5287T34	27.12	80.21	145.83
1.313″	1.188″	0.063″	5287T23	46.12	126.82	230.59
1.350″	1.250″	0.050″	5287T35	30.33	91.67	166.67
1.600″	1.500″	0.050″	5287T36	34.44	108.86	197.92
1.625″	1.500″	0.063″	5287T24	55.60	152.91	278.02
1.875″	1.750″	0.063″	5287T25	64.14	176.37	320.68

Rigid Rods—Smooth Finish

Diameter tolerance is ±0.006″, and length tolerance is ±1/2″. Straightness tolerance is not rated.

Dia.	Lg.			Dia.	Lg.			Dia.	Lg.			Dia.	Lg.		
1/16″	48″	2153T66	$11.54	1/4″	24″	2153T52	$22.00	3/8″	12″	2153T56	$24.99	5/8″	12″	2153T62	$43.75
3/32″	48″	2153T68	13.33	5/16″	24″	2153T54	39.13	1/2″	12″	2153T58	31.52	3/4″	12″	2153T64	64.00
1/8″	48″	2153T71	17.95												

Carbon Fiber, Carbon Foam & Graphite

For additional information about carbon fiber, including mechanical and physical properties, go to mcmaster.com and search for **8549KAC**.

High Temperature Carbon Fiber

- Color: Opaque black
- Max. Temperature: 420° F
- Tensile Strength: Excellent
- Impact Strength: Not rated
- Electrical Insulator: Not rated
- Machine: Use carbide tooling
- Hardness: Rockwell M120

This composite of carbon fiber and high-strength plastic is resistant to chemicals as well as high temperatures. When heated to approximately 575° F, material can be formed.

Rectangular Bars—Smooth Finish

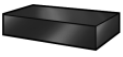

Thick. tolerance is ±0.017″ for 0.17″ thick bars and ±0.026″ for 0.26″ thick bars. Wd. and lg. tolerances are ±1/16″. Straightness tolerance is not rated.

Thick.	1/2″×18″		1/2″×36″	
0.17″	3875K51	$22.50	3875K52	$34.09
0.26″	3875K53	29.55	3875K54	45.83

Sheets—Smooth Finish

Thick. tolerance is ±0.008″ for 0.04″ thick sheets and ±0.016″ for 0.09″ thick sheets. Wd. and lg. tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	12″×12″		24″×24″		36″×36″	
0.04″	3875K11	$68.73	3875K12	$250.31	3875K13	$512.93
0.09″	3875K15	102.39	3875K16	372.89	3875K17	764.11

U-Channels—Smooth Finish

Wall thickness tolerance is ±0.004″ for 0.04″ thick walls and ±0.009″ for 0.09″ thick walls. Base, leg, and length tolerances are ±1/16″. Straightness tolerance is not rated.

Outside Base Lg.	Outside Leg Lg.	Wall Thick.	6″ Length		12″ Length	
2″	1″	0.04″	3875K31	$20.33	3875K32	$36.96
2″	1″	0.09″	3875K33	36.67	3875K34	66.67

Outside Base Lg.	Outside Leg Lg.	Wall Thick.	6″ Length		12″ Length	
4″	2″	0.04″	3875K35	$29.22	3875K36	$53.13
4″	2″	0.09″	3875K37	52.80	3875K38	96.00

Extreme High Temperature Carbon Fiber

- Color: Opaque black
- Max. Temperature: 750° F
- Tensile Strength: Excellent
- Impact Strength: Not rated
- Electrical Insulator: Not rated
- Machine: Use carbide tooling
- Hardness: Not rated

Also known as Carbon/Carbon, this material consists of carbon fiber reinforced with carbon to provide extra strength and durability. It won't deform or warp in extreme temperatures, making it well suited for fabricating furnace elements, studs, nuts, and jigs. Diameter tolerance is ±0.01″, and length tolerance is ±1/2″. Straightness tolerance is not rated. Finish is smooth. Maximum temperature in oxygen-free environments is 3630° F.

Dia.	12″ Length		39″ Length	
1/4″	3827K11	$52.82	3827K12	$155.36
3/8″	3827K13	88.52	3827K14	260.34
1/2″	3827K15	118.45	3827K16	348.39

Dia.	12″ Length		39″ Length	
5/8″	3827K17	$156.29	3827K18	$459.68
3/4″	3827K21	217.71	3827K22	640.32
1″	3827K23	313.85	3827K24	923.08

Carbon Foam

- Color: Opaque charcoal gray
- Max. Temperature: 600° F
- Tensile Strength: Poor
- Impact Strength: Not rated
- Electrical Insulator: Not rated
- Machine: Use carbide tooling
- Hardness: Not rated

Often used in insulating, filtering, and electrical applications, this brittle foam resists high temperatures and chemicals. Sheets have an open-pore construction that allows fluid and air to flow through—the fewer pores per square inch (PPI), the greater the flow. Finish is textured. In oxygen-free environments, max. temperature is 6300° F.

To Order: Please specify flow rate: low flow (100 PPI), medium flow (60 PPI), or high flow (20 PPI).

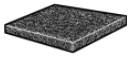

Thick.	3″×3″		6″×6″		12″×12″	
1/4″	3947K11	$30.00	3947K14	$47.62	3947K17	$102.00
1/2″	3947K12	37.50	3947K15	65.22	3947K18	225.93
1″	3947K13	49.74	3947K16	99.74	3947K19	298.74

High Temperature Conductive Graphite

- Color: Opaque black
- Max. Temperature: 800° F
- Tensile Strength: Good
- Impact Strength: Not rated
- Electrical Insulator: Not rated
- Machine: Use carbide tooling
- Hardness: Not rated

The very fine grain of this graphite adds strength and density to this conductive, heat-resistant material. It is often used in applications that require resistance to high temperatures, such as fabricating furnace parts, and to manufacture crucibles or ingot molds because it does not adhere to metal. When oxygen is not present, the maximum temperature of this material is 5000° F.

Rectangular Bars—Smooth Finish

Grain size is 0.0004″. Thickness tolerance is ±0.005″. Width and length tolerances are +1/8″.

Thick.	Wd.	3″ Length		6″ Length		12″ Length	
1/4″	1/4″	1763T11	$7.31	1763T21	$8.02	1763T31	$15.03
1/4″	1/2″	1763T12	8.05	1763T22	9.44	1763T32	15.74
1/4″	1″	1763T13	9.25	1763T23	15.35	1763T33	16.46

Thick.	Wd.	3″ Length		6″ Length		12″ Length	
1/2″	1/2″	1763T14	$8.72	1763T24	$14.30	1763T34	$17.04
1/2″	1″	1763T15	10.92	1763T25	18.13	1763T35	19.52
1″	1″	1763T16	13.86	1763T26	17.72	1763T36	30.57

Sheets—Smooth Finish

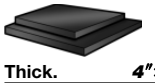

Standard sheets have 0.0004″ grain. Thickness tolerance is ±0.005″. Width and length tolerances are +0.031″.
Premium sheets have an 0.000005″ ultrafine grain that provides decreased porosity and increased life span as compared to standard sheets. Thickness tolerance is ±0.005″. Width and length tolerances are ±1/8″.

Thick.	4″×6″		6″×6″		12″×12″	
Standard						
1/4″	9121K61	$23.71	9121K64	$32.27	9121K67	$109.01
1/2″	9121K62	32.32	9121K65	43.62	9121K68	153.10
1″	9121K63	47.30	9121K66	71.58	9121K69	255.66

Thick.	4″×6″		6″×6″		12″×12″	
Premium						
1/4″	9015K81	$70.98	9015K83	$102.57		
1/2″	9015K82	117.81	9015K84	161.19		

Rods—Smooth Finish

Grain size is 0.0004″. Diameter tolerance is +0.02″, and length tolerance is +1/8″.

Dia.	Lg.		
1/4″	6″	9121K71	$7.47
1/2″	6″	9121K72	14.88
3/4″	12″	9121K73	37.68

Dia.	Lg.		
1″	12″	9121K74	$43.31
1 1/2″	12″	9121K75	78.47

Dia.	Lg.		
2″	12″	9121K76	$119.99
3″	12″	9121K77	201.46

Very High Temperature Mica

- Color: Opaque silver with brown spots, except clear film
- Max. Temperature: 930° F
- Electrical Insulator: Excellent
- Machine: Use carbide tooling
- Hardness: Not rated

Often used in thermal and electrical insulation, this material is also known as muscovite mica and is composed of laminated aluminum silicate and potassium, except clear film is not laminated. *Sheets* and *opaque film* meet UL 94V0 for flame retardance.

Sheets

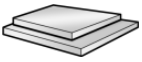

Width and length tolerances are +0.635″, –0.015″.

Thick.	Thick. Toler.	10″×12″		20″×24″	
1/8″	±0.013″	8779K51	$59.89	8779K31	$151.47
1/4″	±0.025″	8779K52	77.76	8779K32	203.62
1/2″	±0.050″	8779K53	131.40	8779K33	317.90
3/4″	±0.075″	8779K54	$168.87	8779K34	$383.71
1″	±0.100″	8779K55	237.93	8779K35	557.17

Opaque Film

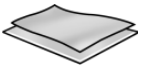

Width and length tolerances are +0.635″, –0.015″.

Thick.	Thick. Tolerance	23″×39″	
Flexible Film			
0.004″	±0.0004″	85825K41	$12.86
0.008″	±0.0008″	85825K42	16.32
0.012″	±0.0012″	85825K43	19.44
0.016″	±0.0016″	85825K44	23.70
0.020″	±0.0020″	85825K45	28.84
0.024″	±0.0024″	85825K46	34.29
Rigid Film			
0.004″	±0.0004″	8779K11	$12.71
0.008″	±0.0008″	8779K12	17.43
0.012″	±0.0012″	8779K13	21.70
0.016″	±0.0016″	8779K14	26.93
0.020″	±0.0020″	8779K15	33.23
0.024″	±0.0024″	8779K16	48.15

Clear Film

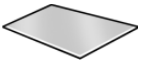

Clear mica is commonly used as see-through insulation. Width and length tolerances are ±0.01″.

Thick.	Thick. Toler.	3″×5″		4″×8″		5″×8″		6″×7″	
Rigid Film									
0.004″	±0.001″	8802K16	$2.17	8802K18	$5.73	8802K19	$8.64	8802K21	$10.24

Tubes

Wall thickness tolerance is ±0.015″, and length tolerance is ±5/32″.

OD	ID	Wall Thick.	24″ Length		OD	ID	Wall Thick.	24″ Length		OD	ID	Wall Thick.	24″ Length	
3/8″	1/4″	1/16″	5067K11	$54.40	5/8″	5/16″	5/32″	5067K46	$53.71	3/4″	1/2″	1/8″	5067K48	$64.22
1/2″	3/8″	1/16″	5067K14	50.48	5/8″	1/2″	1/16″	5067K17	51.55	3/4″	5/8″	1/16″	5067K21	57.60

Ultra High Temperature Mica

- Color: Opaque green with brown spots
- Max. Temperature: 1290° F
- Electrical Insulator: Excellent
- Machine: Use carbide tooling
- Hardness: Not rated

Use this material in circuit breakers, heating elements, and other applications that require resistance to extremely high temperatures. Also known as phlogopite and amber mica, material is made of aluminum silicate with magnesium and a high-temperature silicone-based binder. Meets UL 94V0 for flame retardance.

Sheets

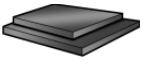

Thickness tolerance is ±10%. Width and length tolerances are +0.065″, –0.015″.

Thick.	10″×12″		20″×24″	
1/8″	85165K81	$62.87	85165K61	$166.87
1/4″	85165K82	82.04	85165K62	222.98
1/2″	85165K83	138.71	85165K63	338.32
3/4″	85165K84	178.11	85165K64	407.73
1″	85165K85	252.07	85165K65	601.42

Film

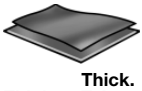

Width and length tolerances are +0.635″, –0.015″.

Thick.	Thick. Tolerance	23″×39″	
Flexible Film			
0.004″	±0.0004″	85955K21	$13.24
0.008″	±0.0008″	85955K22	16.88
0.012″	±0.0012″	85955K23	20.66
0.016″	±0.0016″	85955K24	24.64
0.020″	±0.0020″	85955K25	30.06
0.024″	±0.0024″	85955K26	35.78
Rigid Film			
0.008″	±0.0008″	85165K19	$13.58
0.012″	±0.0012″	85165K21	22.08
0.016″	±0.0016″	85165K22	27.48
0.020″	±0.0020″	85165K23	34.00
0.024″	±0.0024″	85165K24	49.42

Wire-Reinforced Glass

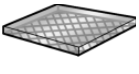

- Color: Clear
- Temperature Range: Not rated
- Machine: Use glass-cutting tools
- Annealed

Standard glass has ±1/16″ width and length tolerances and a +0.047″ thickness tolerance. Edges are cut.

Fire- and safety-rated glass is coated with a safety film that increases the glass's impact resistance, allowing it to meet Consumer Product Safety Commission Cat. I and II. Also meets UL 9, 10B, and 10C, as well as NFPA 80, 252, and 257. Thickness, width, and length tolerances are ±1/16″. Edges are cut.

Thick.	Wd.	Lg.		
Standard				
1/4″	4″	6″	8481K68	$37.66
1/4″	5″	26″	8481K79	36.75
1/4″	7″	7″	8481K87	38.19
1/4″	10″	10″	8481K71	39.56
1/4″	10 3/4″	10 3/4″	8481K72	39.56
1/4″	11″	11″	8481K73	39.56
1/4″	12″	12″	8481K74	39.56
1/4″	12″	24″	8481K69	62.33
1/4″	17″	17″	8481K88	92.25
1/4″	22 3/4″	33 3/4″	8481K83	128.08
1/4″	23″	23″	8481K89	109.82
1/4″	23 3/8″	34 3/8″	8481K84	169.95
Fire- and Safety-Rated				
5/16″	4″	6″	8481K11	$43.10
5/16″	5″	26″	8481K12	48.36
5/16″	7″	7″	8481K13	44.64
5/16″	10″	10″	8481K14	45.45
5/16″	10 3/4″	10 3/4″	8481K15	45.45
5/16″	11″	11″	8481K16	46.30
5/16″	12″	12″	8481K17	47.17
5/16″	12″	24″	8481K18	90.91
5/16″	17″	17″	8481K22	98.68
5/16″	22 3/4″	33 3/4″	8481K27	217.95
5/16″	23″	23″	8481K28	153.85
5/16″	23 3/8″	34 3/8″	8481K31	230.77

For information about the chemical composition and physical and mechanical properties of glass, go to mcmaster.com and search for **8477KAC**.

Heat-Resistant Borosilicate Glass

- Color: Clear
- Max. Temperature: 445° F, except tempered circular sight glasses are 500° F
- Machine: Use glass-cutting tools
- Annealed, unless noted

Also known as Pyrex and Schott glass, this glass resists clouding and pitting and is highly chemical and heat resistant. With a low rate of thermal expansion, it also stays dimensionally stable during changes in temperature. Meets MIL-G-47033, except balls do not.

Sheets

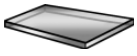

1/8″ to 1/4″ thick sheets have cut edges; 3/8″ to 3/4″ thick sheets have ground edges. Width and length tolerances are ±0.062″. Thickness tolerance is ±0.008″ for 1/8″ to 1/4″ thick sheets, ±0.011″ for 3/8″ thick sheets, and ±0.019″ for 5/8″ and 3/4″ thick sheets. **To Order:** Please specify thickness.

Also Available: Other sheet sizes. Please ask for 8476K81 and specify thickness, width, and length.

Wd.	Lg.		1/8″, 3/16″, or 1/4″ Thick	3/8″ Thick	5/8″ Thick	3/4″ Thick
2″	1″	8476K32	$3.96	$6.79	$13.23	$7.94
2″	2″	8476K12	3.89	11.48	14.00	8.08
3″	1″	8476K33	3.74	12.41	11.24	10.93
3″	2″	8476K36	5.04	8.26	13.26	11.48
3″	3″	8476K13	7.96	15.70	19.18	18.08
4″	1″	8476K35	4.89	7.29	13.71	13.94
4″	3″	8476K41	9.93	13.43	26.71	20.86
4″	4″	8476K14	9.90	20.76	33.14	28.62
5″	3″	8476K43	7.52	20.49	20.71	28.38
5″	4″	8476K45	12.42	18.15	22.57	33.81
5″	5″	8476K15	12.63	20.71	25.89	41.68
6″	4″	8476K47	14.76	20.86	25.40	40.76
6″	5″	8476K62	13.27	25.11	33.89	48.65
6″	6″	8476K16	13.58	25.71	40.16	51.40
7″	4″	8476K49	$13.90	$26.14	$34.11	$48.93
7″	7″	8476K17	16.91	41.23	78.79	92.54
8″	4″	8476K64	14.69	35.78	32.54	54.30
8″	6″	8476K72	18.22	38.57	55.00	90.87
8″	8″	8476K18	24.62	41.51	73.75	91.65
9″	5″	8476K68	18.51	49.14	53.90	52.85
9″	6″	8476K74	19.02	39.70	83.72	76.37
9″	9″	8476K19	28.46	66.13	85.35	105.54
10″	6″	8476K76	26.10	44.14	67.08	82.93
10″	10″	8476K21	33.63	67.20	96.72	124.06
12″	3″	8476K66	16.14	27.32	55.10	78.33
12″	6″	8476K78	26.38	50.95	96.86	106.71
12″	8″	8476K84	32.15	64.65	93.48	118.46
12″	12″	8476K23	48.40	117.50	191.38	164.81

Tubes

Ends are ground. Length tolerance is ±0.031″. Wall thickness tolerance is ±0.004″ for 0.047″ thick., ±0.008″ for 0.063″ to 0.079″ thick., and ±0.016″ for 0.094″ to 0.812″ thick. Metric tubes are not rated for wall thickness tolerance.

OD	ID	Wall Thick.		12″ Length
Inch				
0.25″	0.16″	0.047″	8729K31	$3.27
0.38″	0.22″	0.079″	8729K33	4.76
0.50″	0.31″	0.094″	8729K35	6.52
0.50″	0.38″	0.063″	8729K37	5.05
0.63″	0.44″	0.094″	8729K39	8.13
0.63″	0.50″	0.063″	8729K41	5.68
0.75″	0.50″	0.126″	8729K43	11.85
0.75″	0.62″	0.063″	8729K45	8.89
0.88″	0.62″	0.126″	8729K47	13.93
Inch (Cont.)				
1″	0.69″	0.157″	8729K49	$19.43
1″	0.82″	0.094″	8729K51	12.07
Metric				
5 mm	0.6 mm	2.2 mm	8729K57	3.33
6 mm	1.2 mm	2.4 mm	8729K65	4.73
6 mm	2.7 mm	1.65 mm	8729K66	4.46
7 mm	3 mm	2 mm	8729K76	4.22
8 mm	3 mm	2.5 mm	8729K86	5.16
9 mm	3 mm	3 mm	8729K96	7.51

Oil Cup Cylinders

Ends are ground. Wall thickness tolerance is ±1/64″ for 1 1/4″ to 2 1/4″ OD, ±1/32″ for 2 1/2″ to 3 1/2″ OD, and ±1/16″ for 4 1/4″ OD. Height tolerance is ±1/32″, except 4 1/4″ OD is ±1/16″.

OD	ID	Wall Thick.	Ht.	Max. Temp., °F	Max. psi		
1 1/4″	1″	1/8″	1 1/8″	212°	150	1176K21	$8.11
1 1/2″	1 1/4″	1/8″	1 3/8″	212°	130	1176K22	8.97
1 3/4″	1 15/32″	9/64″	1 5/8″	212°	130	1176K23	10.35
2″	1 11/16″	5/32″	1 7/8″	185°	110	1176K24	11.14
2 1/4″	1 29/32″	11/64″	2 1/8″	185°	105	1176K25	20.46
2 1/2″	2 1/8″	3/16″	2 3/8″	185°	100	1176K26	$22.30
3″	2 19/32″	13/64″	3″	150°	85	1176K27	24.65
3 1/2″	3 1/16″	7/32″	4″	150°	60	1176K28	33.01
4 1/4″	3 3/4″	1/4″	5″	125°	50	1176K29	52.50

Rods

Ends are ground. Length tolerance is ±0.031″.

Dia.	Dia. Tolerance		12″ Length		24″ Length	
Inch						
1/2″	±0.020″	8496K51	$5.67	8496K61	$10.31
5/8″	±0.024″	8496K52	7.54	8496K62	13.71
3/4″	±0.031″	8496K53	8.39	8496K63	15.25
1″	±0.039″	8496K54	19.45	8496K64	35.36
1 1/4″	±0.051″	8496K55	26.22	8496K65	47.67
1 1/2″	±0.067″	8496K56	36.76	8496K66	66.83
Metric						
2 mm	±0.4 mm	8496K1	$1.58	8496K2	$2.87
3 mm	±0.4 mm	8496K11	1.70	8496K21	3.09
4 mm	±0.4 mm	8496K12	1.77	8496K22	3.22
5 mm	±0.4 mm	8496K13	1.83	8496K23	3.33
6 mm	±0.4 mm	8496K14	2.38	8496K24	4.03
7 mm	±0.4 mm	8496K15	2.90	8496K25	4.76
8 mm	±0.4 mm	8496K16	3.09	8496K26	4.98

Discs

Ends are ground. Length tolerance is ±0.031″. **To Order:** Please specify thickness.

Also Available: Other disc sizes. Please ask for 8477K98 and specify the diameter and thickness.

Dia.	Dia. Toler.		1/8″, 3/16″, or 1/4″ Thick	3/8″ Thick	1/2″ or 5/8″ Thick	3/4″ Thick
1″	±0.015″	8477K18	$7.42	$14.74	$16.54	$17.81
1 1/4″	±0.015″	8477K28	7.62	11.11	16.47	20.97
1 1/2″	±0.015″	8477K38	7.77	11.24	16.47	22.25
1 3/4″	±0.015″	8477K24	7.58	14.02	16.75	23.03
2″	±0.015″	8477K48	8.18	14.87	17.33	28.08
2 1/4″	±0.015″	8477K68	9.93	16.72	22.23	32.46
2 1/2″	±0.015″	8477K78	10.74	20.12	22.15	32.78
2 3/4″	±0.015″	8477K92	10.33	16.43	22.04	34.49
3″	±0.015″	8477K88	12.12	24.35	36.19	41.72
3 1/2″	±0.015″	8477K19	$11.85	$21.52	$31.63	$47.73
3 3/4″	±0.015″	8477K95	13.91	31.91	45.44	62.80
4″	±0.015″	8477K29	16.27	34.89	45.14	49.52
4 1/4″	±0.015″	8477K37	15.74	33.91	42.82	47.92
4 1/2″	±0.015″	8477K39	15.96	37.42	46.61	48.75
5″	±0.015″	8477K49	23.76	47.59	58.27	60.99
5 1/2″	±0.015″	8477K69	23.84	52.33	58.78	66.85
6″	±0.015″	8477K79	29.80	69.87	84.95	90.59
6 1/2″	±0.015″	8477K94	36.95	96.26	106.17	111.35

(Material continued on following page)

For information about the chemical composition and physical and mechanical properties of glass, go to mcmaster.com and search for **8477KAC**.

Heat-Resistant Borosilicate Glass *(Material continued from previous page)*

Pressure-Rated Discs

Commonly used as sight glass. Tempered glass offers higher strength than annealed glass. Edges are ground. Thickness tolerance is ±0.008″, and diameter tolerance is ±0.015″.

Dia.	Thick.	Max. psi		
Annealed Glass				
3½″	¾″	175	8475K71	$35.24
4″	¾″	150	8475K72	38.10
4½″	⅜″	35	8475K39	41.87
5″	¾″	100	8475K42	51.59
6″	¾″	75	8475K43	67.31
6¾″	¾″	60	8475K44	72.08
8⅜″	¾″	40	8475K45	104.80

Dia.	Thick.	Max. psi		
Tempered Glass				
3½″	¾″	525	8475K81	$44.83
4″	¾″	450	8475K82	53.41
4½″	⅜″	105	8475K83	62.25
5″	¾″	300	8475K84	71.03
6″	¾″	225	8475K63	91.92
6¾″	¾″	180	8475K64	108.32
8⅜″	¾″	120	8475K65	148.34
9″	¾″	105	8475K66	199.74
10″	¾″	85	8475K67	210.96

Balls

3/32″ and ⅛″ diameter balls have a 0.000048″ sphericity; 5/32″ to ¼″ diameters have a 0.0001″ sphericity. Machining is not recommended.

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
3/32″	±0.0001″	50	8996K21	$8.75
⅛″	±0.0001″	100	8996K22	10.32
5/32″	±0.0002″	100	8996K23	11.48

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
3/16″	±0.0002″	100	8996K24	$11.48
¼″	±0.0002″	100	8996K25	14.95

Very High Temperature Heat-Resistant Silica Glass

- Color: See below
- Max. Temperature: 1650° F
- Machine: Use carbide tooling
- Annealed

Consisting of 96% silica, this glass resists rapid and extreme temperature changes better than borosilicate glass. Sometimes called Vycor, these discs are commonly used as sight glasses in furnace applications.

Clear Discs

Edges are ground. Diameter tolerance is ±0.010″, and thickness tolerance is ±0.005″.

Dia.	⅛″ Thick		3/16″ Thick		¼″ Thick	
1″	8483K51	$11.00	8483K71	$11.92	8483K14	$15.48
2″	8483K53	30.29	8483K73	34.81	8483K18	40.08
3″	8483K55	65.67	8483K75	71.15	8483K23	76.59

Dia.	⅛″ Thick		3/16″ Thick		¼″ Thick	
4″	8483K57	$97.04	8483K79	$117.93	8483K27	$124.54
5″	8483K59	112.83	8483K81	258.07	8483K38	245.06
6″	8483K61	149.67	8483K83	246.79	8483K39	250.12

Transparent Cobalt-Blue Discs

The addition of cobalt to silica glass reduces light scatter and absorbs yellow wavelengths. Edges are ground. Diameter tolerance is ±0.020″, and thickness tolerance is ±0.015″.

Dia.	3/16″ Thick	
1½″	6093T19	$37.00
2″	6093T21	53.17

Dia.	3/16″ Thick	
3″	6093T22	$492.57
4″	6093T23	148.82

Dia.	3/16″ Thick	
5″	6093T24	$181.25
6″	6093T25	239.58

Very High Temperature Heat-Resistant Glass Ceramic

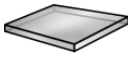

- Color: Transparent light rose
- Max. Temperature: 1255° F
- Machine: Use diamond tooling
- Annealed

Combining the transparency of glass with the high heat resistance of ceramics, this material offers good resistance to rapid temperature changes. Edges are cut. Thickness tolerance is ±0.016″, and width and length tolerances are ±0.062″.

Thick.	Wd.	Lg.		
0.188″	3″	3″	84815K43	$4.51
0.197″	2″	2″	84815K41	2.30
0.197″	4″	4″	84815K45	9.08
0.197″	5″	5″	84815K47	12.86
0.197″	6″	6″	84815K49	19.40

Thick.	Wd.	Lg.		
0.197″	7″	7″	84815K51	$25.67
0.197″	8″	8″	84815K53	32.26
0.197″	9″	9″	84815K55	40.84
0.197″	10″	10″	84815K57	50.38
0.197″	12″	12″	84815K59	72.60

Extreme Temperature Quartz Pure Glass

- Color: Clear
- Max. Temperature: 2100° F
- Machine: Use diamond tooling
- Annealed

Containing 99.995% silicon dioxide, this glass provides excellent UV transmission, as well as high transmission in the visible and infrared ranges. Use in high-intensity lighting, fiber-optic production, and optical lens systems. All sides are ground and polished. Diameter tolerance is ±0.010″; thickness tolerance is +0.005″.

Dia.	1/16″ Thick		⅛″ Thick		¼″ Thick		½″ Thick		¾″ Thick	
½″	1357T41	$8.82	1357T42	$11.80	1357T43	$15.29	1357T61	$45.94	1357T62	$54.70
¾″	1357T44	9.15	1357T45	12.10	1357T46	15.42	1357T63	46.48	1357T64	55.78
1″	1357T11	9.38	1357T21	12.40	1357T31	15.79	1357T65	45.88	1357T66	56.50
1½″	1357T47	12.67	1357T51	16.62	1357T54	22.09	1357T67	52.83	1357T68	65.81
2″	1357T12	18.62	1357T22	22.65	1357T32	31.73	1357T71	62.90	1357T72	90.44
2½″	1357T48	25.39	1357T52	28.25	1357T55	40.70	1357T73	82.91	1357T74	125.49
3″	1357T13	30.31	1357T23	36.82	1357T33	55.22	1357T75	103.87	1357T76	140.25
3½″	1357T49	55.39	1357T53	66.45	1357T56	76.16	1357T77	134.12	1357T78	158.12
4″	1357T14	64.68	1357T24	78.35	1357T34	96.70	1357T81	151.02	1357T82	176.09
5″	1357T15	90.67	1357T25	99.74	1357T35	125.52	1357T83	193.38	1357T84	234.67
6″	1357T16	148.18	1357T26	195.50	1357T36	245.65	1357T85	243.22	1357T86	294.84

For information about the chemical composition and physical and mechanical properties of ceramic, go to mcmaster.com and search for **8477KAC**.

Easy-to-Machine Glass-Mica Ceramic

- Color: See below
- Max. Temperature: See below
- Machine: Use carbide tooling
- Electrical Insulator: Excellent, except very high temperature sheets are good
- Porosity: Nonporous
- Compressive Strength: 32,000 to 50,000 psi

Machine complicated shapes and precision parts from this material, which doesn't require firing before use, in a fraction of the time it would take using fired ceramics. Use standard metalworking tools to machine. Its good electrical and thermal resistance make it a common choice for heating and soldering fixtures.

High Temperature Sheets

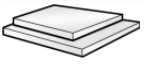

- Color: Opaque light gray
- Max. Temperature: 930° F

Also known as Mykroy/Mycalex. Thickness tolerance is ±0.015″, and width and length tolerances are ±1/8″.

Thick.	2″×5″		10″×14″	
1/16″	8499K715	$86.67	8499K115	$363.54
1/8″	8499K716	68.41	8499K116	318.50
1/4″	8499K719	83.41	8499K117	295.87
3/8″	8499K725	95.24	8499K119	319.91
1/2″	8499K727	103.94	8499K123	354.86
3/4″	8499K729	139.19	8499K127	507.05
1″	8499K735	165.80	8499K129	696.62

High Temperature Rods

- Color: Opaque light gray
- Max. Temperature: 930° F

Also known as Mykroy/Mycalex. Diameter tolerance is ±0.005″, and length tolerance is ±0.100″.

Dia.	3″ Length		6″ Length		12″ Length	
1/4″	8499K614	$30.76	8499K514	$30.04	8499K331	$57.74
3/8″	8499K616	32.18	8499K515	33.28	8499K332	61.95
1/2″	8499K618	33.68	8499K518	40.82	8499K333	77.54
5/8″	8499K619	40.31	8499K519	49.38	8499K334	97.14
3/4″	8499K623	54.18	8499K521	68.57	8499K335	130.77
1″	8499K625	78.54	8499K525	85.17	8499K336	166.96
1 1/4″	8499K627	88.77	8499K527	98.13	8499K337	199.22

Very High Temperature Sheets

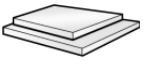

- Color: Opaque off-white
- Max. Temperature: 1100° F

Also known as Mykroy/Mycalex. Thickness, width, and length tolerances are ±0.015″.

Thick.	3″×3″		4″×6″		6″×6″	
1/8″	8478K95	$48.25	8478K65	$105.55	8478K85	$150.78
1/4″	8478K96	63.24	8478K66	138.33	8478K86	197.62
1/2″	8478K97	71.57	8478K67	156.56	8478K87	223.66
3/4″	8478K98	$98.32	8478K68	$215.07	8478K88	$307.24
1″	8478K99	127.68	8478K69	276.67	8478K89	399.00

Ultra High Temperature Rectangular Bars

- Color: Opaque white
- Max. Temperature: 1470° F

Also known as Macor. Width tolerance is +0.060″, and length tolerance is +1/4″.

Wd.	Lg.		
1/16″ Thick *(+0.015″)*			
1″	6″	2145T11	$80.02
2″	6″	2145T21	124.56
1/8″ Thick *(+0.015″)*			
1″	6″	2145T12	87.65
2″	6″	2145T22	139.90
3/16″ Thick *(+0.015″)*			
1″	6″	2145T13	86.73
2″	6″	2145T23	146.24
1/4″ Thick *(+0.015″)*			
1/4″	3″	8489K84	18.53
1/4″	6″	8489K85	34.50
1/4″	12″	8489K86	61.76
1″	6″	2145T14	96.96
2″	6″	2145T24	168.07
5/16″ Thick *(+0.015″)*			
1″	6″	2145T15	$111.63
2″	6″	2145T25	186.05
3/8″ Thick *(+0.030″)*			
3/8″	3″	8489K87	27.57
3/8″	6″	8489K88	51.77
3/8″	12″	8489K89	91.91
1″	6″	2145T16	116.15
2″	6″	2145T26	193.59
1/2″ Thick *(+0.030″)*			
1/2″	3″	8489K41	41.17
1/2″	6″	8489K42	77.65
1/2″	12″	8489K43	137.24
1″	6″	2145T17	121.34
2″	6″	2145T27	202.24
3/4″ Thick *(+0.060″)*			
3/4″	3″	8489K91	$53.77
3/4″	6″	8489K92	107.40
3/4″	12″	8489K93	194.82
1″	6″	2145T19	137.75
2″	6″	2145T29	242.86
1″ Thick *(+0.060″)*			
1″	3″	8489K44	99.10
1″	6″	8489K45	184.99
1″	12″	8489K46	330.34
2″	6″	2145T31	286.04
2″ Thick *(+0.060″)*			
2″	3″	8489K47	256.69
2″	6″	8489K48	470.01
2″	12″	8489K49	881.48

Ultra High Temperature Sheets

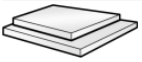

- Color: Opaque white
- Max. Temperature: 1470° F

Also known as Macor. Width and length tolerances are +1/4″.

Thick.	Thick. Tolerance	2″×2″		3″×3″		4″×4″		6″×6″		6″×12″	
1/16″	+0.015″	8489K231	$37.32	8489K51	$56.80	8489K241	$85.43	8489K52	$167.16	8489K111	$303.92
1/8″	+0.015″	8489K232	41.62	8489K54	67.63	8489K242	101.83	8489K55	199.24	8489K112	362.26
3/16″	+0.015″	8489K233	45.37	8489K57	78.49	8489K243	117.55	8489K58	230.17	8489K113	418.18
1/4″	+0.015″	8489K234	47.93	8489K61	84.52	8489K244	130.69	8489K62	255.70	8489K114	464.91
5/16″	+0.015″	8489K235	49.30	8489K94	93.37	8489K245	144.36	8489K95	282.46	8489K115	513.56
3/8″	+0.030″	8489K236	51.91	8489K64	101.14	8489K246	156.22	8489K65	305.66	8489K116	555.74
1/2″	+0.030″	8489K237	67.15	8489K67	112.36	8489K247	178.93	8489K68	364.00	8489K117	646.88
5/8″	+0.060″	8489K238	73.80	8489K97	142.41	8489K248	211.47	8489K98	413.77	8489K118	752.31
3/4″	+0.060″	8489K239	85.35	8489K121	163.16	8489K249	244.58	8489K122	470.83	8489K123	856.06
1″	+0.060″	8489K151	96.88	8489K71	186.70	8489K153	300.61	8489K72	592.76	8489K119	1,084.85

Ultra High Temperature Rods

- Color: Opaque white
- Max. Temperature: 1470° F

Also known as Macor. Diameter tolerance is +0.015″ for 1/16″ to 3/4″ diameters; +0.060″ for 7/8″ and 1″ diameters; and +0.125″ for 1 1/2″ and 2″ diameters. Length tolerance is +1/4″.

Dia.	3″ Length		6″ Length		12″ Length	
1/16″	8489K11	$92.92	8489K12	$44.12	8489K13	$78.17
1/8″	8489K14	20.47	8489K15	39.28	8489K16	68.15
3/16″	8489K17	21.04	8489K18	40.71	8489K19	70.11
1/4″	8489K21	18.96	8489K22	37.50	8489K23	72.74
5/16″	8489K74	19.84	8489K75	38.10	8489K76	73.33
3/8″	8489K24	29.43	8489K25	49.36	8489K26	84.38
1/2″	8489K27	42.06	8489K28	67.46	8489K29	115.32
5/8″	8489K77	$41.86	8489K78	$79.58	8489K79	$138.89
3/4″	8489K131	71.34	8489K132	122.32	8489K133	209.10
7/8″	8489K81	72.95	8489K82	141.57	8489K83	249.16
1″	8489K31	99.19	8489K32	168.88	8489K33	288.69
1 1/2″	8489K34	163.08	8489K35	310.40	8489K36	545.42
2″	8489K37	253.73	8489K38	438.16	8489K39	796.65

For information about the chemical composition and physical and mechanical properties of ceramic, as well as firing instructions, go to mcmaster.com and search for **8477KAC**.

Electrical-Insulating Boron-Nitride Ceramic

- Color: Opaque white
- Max. Temperature: 1020° F
- Machine: Use carbide tooling
- Electrical Insulator: Excellent
- Porosity: 7%
- Compressive Strength: 16,000 to 18,000 psi

Used primarily in high-power electrical applications for its excellent electrical insulating properties, this material also resists changes in temperature and is often used in arc welding and semiconductor equipment. Also known as white graphite, this ceramic has a slippery feel due to its low coefficient of friction.

Sheets

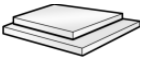

Thickness tolerance is ±0.010″. Width and length tolerances are ±1/16″.

Thick.	Wd.	Lg.		
1/16″	3″	5″	84995K11	$116.71
1/8″	5″	6″	84995K12	268.57
1/4″	5″	12″	84995K13	$539.33
3/8″	5″	6″	84995K14	431.15
3/8″	5″	12″	84995K15	$686.32
1/2″	5″	12″	84995K16	837.23

Square Bars

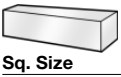

Square size tolerance is ±0.010″, and length tolerance is ±1/16″.

Sq. Size	6″ Length		12″ Length	
1/8″	84995K41	$29.52	84995K51	$52.71
1/4″	84995K42	31.79	84995K52	60.79
3/8″	84995K43	46.78	84995K53	88.26
1/2″	84995K44	71.22	84995K54	133.19
3/4″	84995K45	$123.29	84995K55	$232.62
1″	84995K61	161.04	84995K71	302.08
1 1/2″	84995K62	330.64	84995K72	586.97
2″	84995K63	520.61	84995K73	945.71

Rods

Diameter tolerance is +0.020″, and length tolerance is ±1/16″.

Dia.	6″ Length		12″ Length	
1/8″	84995K21	$50.04	84995K31	$95.56
1/4″	84995K22	56.11	84995K32	104.49
3/8″	84995K23	65.76	84995K33	123.57
1/2″	84995K24	83.40	84995K34	153.20
3/4″	84995K25	$150.94	84995K35	$270.70
1″	84995K26	199.59	84995K36	368.12
1 1/4″	84995K28	267.08	84995K38	479.92
1 1/2″	84995K27	373.66	84995K37	718.57

High Temperature Machinable Alumina Bisque Ceramic

- Color: Opaque white
- Max. Temperature: 2475° F
- Machine: Use carbide tooling
- Electrical Insulator: Poor
- Porosity: 36%
- Compressive Strength: 9,000 psi

Often used to create prototype components, this ceramic is chemical and temperature resistant and comes semifired so it can be machined using conventional metalworking tools. Material can be fully fired to create a denser, harder material with increased electrical and mechanical properties. Shrinks 15% to 18% when fired.

Sheets

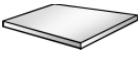

Thickness tolerance is +0.031″. Width and length tolerances are +1″.

Thick.	6″×6″	
1/4″	8484K61	$184.19
1/2″	8484K62	215.00
3/4″	8484K63	261.09

Rods

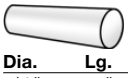

Diameter tolerance is +0.063″ for 1/4″ to 1″ diameters and +0.125″ for 1 1/2″ to 3″ diameters. Length tolerance is +1/4″.

Dia.	Lg.		
1/4″	12″	8484K69	$41.92
1/2″	6″	8484K71	48.60
1/2″	12″	8484K72	80.95
3/4″	12″	8484K73	99.74
1″	12″	8484K74	124.57
1 1/2″	12″	8484K75	$155.04
2″	12″	8484K76	197.70
2 1/2″	12″	8484K77	222.67
3″	12″	8484K78	262.90

Alumina Silicate Ceramic

- Color: Opaque light gray
- Max. Temperature: 2010° F
- Machine: Use carbide tooling
- Electrical Insulator: Poor
- Porosity: 2% to 3%
- Compressive Strength: 25,000 psi

Also known as lava and wonderstone, this material is often used in applications that require corrosion resistance and low thermal expansion, such as in standoffs and welding jigs. Material is unfired but can be fully fired to increase strength and hardness if the sheets have been machined to 1/4″×6 1/2″×6 1/2″ or smaller and if rods or square bars have been machined to 1/2″×12″ or smaller.

Sheets

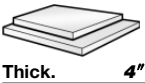

Thickness tolerance is ±0.01″. Width and length tolerances are +1/8″.

Thick.	4″×4″		6″×6″		9 1/2″×9 1/2″	
1/8″	8479K11	$11.78	8479K12	$25.91	8479K115	$58.88
1/4″	8479K41	16.66	8479K42	36.64	8479K116	83.28
3/8″	8479K22	18.09	8479K98	39.81	8479K117	90.47
1/2″	8479K14	23.41	8479K99	51.50	8479K58	117.05
3/4″	8479K16	$29.73	8479K111	$65.41	8479K59	$148.65
1″	8479K18	35.32	8479K112	77.70	8479K62	176.60
1 1/2″	8479K96	33.81	8479K113	74.38	8479K64	211.24
2″	8479K97	45.36	8479K114	99.81	8479K66	260.17

Square Bars

Square size tolerance is +0.020″, and length tolerance is +1/8″.

Sq. Size	6″ Length	
1/2″	8479K61	$6.37
3/4″	8479K86	10.72
1″	8479K88	$21.27
2″	8479K95	55.30

Rods

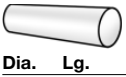

Diameter tolerance is +0.015″, length tolerance is +1/8″.

Dia.	Lg.		
1/8″	3″	8479K91	$9.29
1/4″	3″	8479K21	7.60
3/8″	6″	8479K92	20.44
1/2″	6″	8479K72	24.24
5/8″	6″	8479K68	$29.63
3/4″	9 1/2″	8479K69	34.80
7/8″	9 1/2″	8479K71	38.10
1″	9 1/2″	8479K73	44.17
1 1/4″	9 1/2″	8479K74	$52.73
1 1/2″	9 1/2″	8479K75	66.96
2″	9 1/2″	8479K76	104.28
2 1/2″	9 1/2″	8479K77	139.01
3″	9 1/2″	8479K78	$169.80
3 1/2″	9 1/2″	8479K79	240.85
4″	9 1/2″	8479K118	291.02
5″	9 1/2″	8479K84	420.82

For information about the chemical composition and physical and mechanical properties of ceramic, go to mcmaster.com and search for **8477KAC**.

Very High Temperature Nonporous High-Alumina Ceramic

- Color: Opaque white
- Max. Temperature: 3075° F, except balls are 2000° F
- Machine: Use diamond grinding wheel
- Electrical Insulator: Poor
- Porosity: Nonporous
- Compressive Strength: 300,000 psi

Seal out air and gas in high-temperature and high-wear applications. This ultrahard ceramic can also be used in applications that require superior strength and corrosion resistance. Even after machining, no additional firing is required.

Rectangular Bars and Sheets

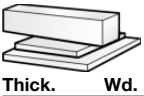

Width tolerance is ±0.008″ for rectangular bars and ±10% for sheets. Length tolerance is ±1/4″, except 6 1/4″ and 8 1/2″ lengths are ±7/16″.

Thick.	Wd.	Lg.	Thick. Tol.		
Rectangular Bars					
0.125″	1/8″	12″	±0.004″	**87125K62**	$25.78
0.250″	1/4″	12″	±0.008″	**87125K64**	40.09
Sheets					
0.025″	4 1/2″	4 1/2″	±0.003″	**8462K21**	10.75
0.040″	4 1/2″	4 1/2″	±0.004″	**8462K23**	12.08

Thick.	Wd.	Lg.	Thick. Tol.		
Sheets (Cont.)					
0.060″	4 1/2″	4 1/2″	±0.006″	**8462K25**	$27.25
0.157″	2″	4 1/4″	±0.050″	**8459K22**	122.80
0.177″	3″	6 1/4″	±0.050″	**8459K24**	210.03
0.197″	4″	8 1/2″	±0.050″	**8459K26**	267.69

Rods

Length tolerance is ±0.020″.

Dia.	Dia. Toler.		*12″ Length*
1/16″	±0.003″	**87065K41**	$18.00
1/8″	±0.004″	**87065K42**	19.63
3/16″	±0.006″	**87065K44**	26.23
13/64″	−0.006″	**87065K45**	25.35
1/4″	±0.008″	**87065K46**	25.43
5/16″	±0.009″	**87065K48**	30.53
3/8″	±0.011″	**87065K49**	31.35
1/2″	±0.015″	**87065K51**	45.77
5/8″	±0.019″	**87065K53**	73.25
3/4″	±0.023″	**87065K55**	92.09

Dia.	Length	Dia. Toler.		
1″	1/16″	±0.050″	**8464K21**	$46.03
2 1/2″	1/8″	±0.125″	**8464K29**	71.15
6″	3/16″	±0.180″	**8464K39**	128.04

Precision-Ground Rods

Length tolerance is ±0.015″.

Dia.	Dia. Toler.		*12″ Length*
1/8″	±0.001″	**8446K11**	$40.66
3/16″	±0.001″	**8446K13**	48.50
1/4″	±0.001″	**8446K15**	51.43
3/8″	±0.001″	**8446K17**	69.69
1/2″	±0.001″	**8446K19**	77.63

Insulating Beads

Fit over wires for insulation. OD tolerance is ±2%, and ID tolerance is ±0.003″. Length tolerance is ±0.010″.

OD	ID	Lg.	Pkg. Qty.		Pkg.
0.090″	0.040″	0.125″	5	**87085K61**	$6.07
0.170″	0.065″	0.188″	5	**87085K63**	9.03
0.330″	0.133″	0.313″	5	**87085K65**	10.30

Tubes

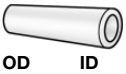

Length tolerance is ±0.015″. Wall thickness tolerance is not rated.

OD	ID	Wall Thick.	*12″ Length*		*24″ Length*	
0.063″	0.031″	0.016″	**8746K451**	$23.04	**8746K452**	$41.89
0.094″	0.063″	0.016″	**8746K461**	14.78	**8746K462**	26.87
0.125″	0.063″	0.031″	**8746K11**	13.87	**8746K312**	25.21
0.156″	0.094″	0.031″	**8746K12**	13.91	**8746K322**	25.29
0.187″	0.094″	0.047″	**8746K13**	14.00	**8746K332**	25.45
0.187″	1/8″	0.032″	**8746K14**	14.00	**8746K342**	25.45
0.250″	1/8″	0.063″	**8746K15**	14.12	**8746K352**	25.68
0.250″	0.156″	0.047″	**8746K16**	14.49	**8746K362**	26.34

OD	ID	Wall Thick.	*12″ Length*		*24″ Length*	
0.250″	0.188″	0.031″	**8746K17**	$14.65	**8746K372**	$26.63
0.375″	1/4″	0.063″	**8746K18**	27.14	**8746K382**	49.34
0.500″	1/4″	0.125″	**8746K19**	32.91	**8746K392**	59.84
0.500″	3/8″	0.063″	**8746K21**	33.73	**8746K412**	61.32
0.625″	1/2″	0.063″	**8746K22**	36.30	**8746K422**	66.00
0.750″	1/2″	0.125″	**8746K24**	50.00	**8746K442**	90.90
0.875″	5/8″	0.125″	**8746K541**	65.62	**8746K542**	119.31
1.000″	3/4″	0.125″	**8746K551**	122.74	**8746K552**	223.17

Multiple-Bore Tubes

Two Bore

OD tolerance is ±3%, and ID tolerance is ±0.003″. Length tolerance is ±0.015″.

OD	ID	*18″ Length*		*24″ Length*	
Two Bore					
0.094″	0.025″	**87175K71**	$22.62	**87175K73**	$30.19
0.125″	0.040″	**87175K77**	20.09	**87175K79**	26.75
0.188″	0.063″	**87175K83**	20.38	**87175K84**	27.17

OD	ID	*18″ Length*		*24″ Length*	
Four Bore					
0.188″	0.031″	**87175K91**	$20.44	**87175K93**	$27.25

Balls

1/8″ to 1/2″ diameters have a 0.000025″ sphericity. 5/8″ to 1″ diameters have a 0.0001″ sphericity.

Dia.	Dia. Tolerance		
1/8″	±0.0001″	**9599K11**	$1.72
3/16″	±0.0001″	**9599K12**	1.66
1/4″	±0.0001″	**9599K13**	1.69

Dia.	Dia. Tolerance		
5/16″	±0.0001″	**9599K14**	$2.06
3/8″	±0.0001″	**9599K15**	2.06
1/2″	±0.0001″	**9599K16**	3.94

Dia.	Dia. Tolerance		
5/8″	±0.001″	**9599K17**	$13.74
3/4″	±0.001″	**9599K23**	22.95
1″	±0.001″	**9599K25**	41.42

Very High Temperature Machinable High-Alumina Ceramic

- Color: Opaque white
- Max. Temperature: 3000° F
- Machine: Use carbide tooling
- Electrical Insulator: Excellent
- Porosity: 48%
- Compressive Strength: 4,350 psi

Commonly used in induction furnace components and hot glass handling, this high-alumina ceramic combines excellent machinability with high temperature resistance and strength. The 99% alumina content makes it ideal for use in high-vacuum applications. Material comes fired and is unaffected by water.

Sheets

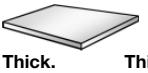

Width and length tolerances are ±0.100″.

Thick.	Thick. Tol.		*6″×6″*
1/16″	±0.015″	**8978T61**	$102.78
1/8″	±0.035″	**8978T63**	123.37
1/4″	±0.050″	**8978T65**	183.85
1/2″	±0.065″	**8978T67**	308.82

Rods

Diameter and length tolerances are ±0.063″.

Dia.		*12″ Length*
1/2″	**8978T71**	$275.00
3/4″	**8978T73**	319.05
1″	**8978T75**	362.31
1 1/2″	**8978T77**	497.06

For information about the chemical composition and physical and mechanical properties of ceramic, go to mcmaster.com and search for **8477KAC**.

Wear-Resistant Zirconia Ceramic

- Color: Opaque ivory
- Max. Temperature: 1000° F
- Machine: Use diamond grinding wheel
- Electrical Insulator: Poor
- Porosity: Nonporous
- Compressive Strength: 254,000 psi

As fracture-resistant and durable as many metals, this ceramic has been fired to obtain a high hardness and can be used in high-wear applications. Length tolerance is ±0.015″.

Dia.	Dia. Tolerance	12″ Length	
1/16″	±0.003″	8750K31	$47.82
1/8″	±0.004″	8750K33	51.64
3/16″	±0.006″	8750K35	58.86
1/4″	±0.008″	8750K37	$65.95
3/8″	±0.011″	8750K39	105.18
1/2″	±0.015″	8750K41	108.19

Fracture-Resistant Silicon Nitride Ceramic

- Color: Translucent black
- Max. Temperature: 1470° F
- Machine: Use diamond tooling
- Electrical Insulator: Poor
- Porosity: Nonporous
- Compressive Strength: 580,000 psi

Often used to create bearings, silicon nitride ceramic is harder than many common bearing steels but is lightweight and can be easily polished. Balls have a 0.000005″ sphericity.

Dia.	Dia. Tolerance	Pkg. Qty.		Pkg.
1/16″	+0.00005″, −0.00004″	5	9576K22	$7.24
3/32″	+0.00005″, −0.00004″	5	9576K24	8.14
1/8″	+0.00005″, −0.00004″	5	9576K26	8.48
5/32″	+0.00005″, −0.00004″	5	9576K28	10.61
3/16″	+0.00005″, −0.00004″	2	9576K32	7.52
1/4″	+0.00005″, −0.00004″	2	9576K34	$8.10
9/32″	+0.00005″, −0.00004″	2	9576K36	9.24
3/8″	+0.00005″, −0.00004″	1	9576K38	5.63
1/2″	+0.00005″, −0.00004″	1	9576K46	13.33
9/16″	+0.00005″, −0.00004″	1	9576K48	19.51

Recycled Plastic Lumber

- Color: Opaque brownish gray
- Max. Temperature: 120° F
- Machine: Use carbide tooling

Get the look of wood without having to worry about splintering or rotting. This UV-resistant high-density polyethylene (HDPE) material can be used in direct sunlight and high traffic applications, such as marine decking. Width and thickness tolerances are ±0.100″. Length tolerance is +0.25″, −0.10″.

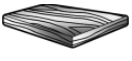

Thick.	Wd.	Lg.		
1/2″	2 1/2″	6 ft.	8506K31	$8.76
1/2″	8″	6 ft.	8506K38	25.23
3/4″	5 1/2″	6 ft.	8506K34	24.49
7/8″	2 1/8″	6 ft.	8506K41	12.77
1″	5 1/2″	6 ft.	8506K42	$32.34
1 1/2″	3 1/2″	6 ft.	8506K36	31.31
1 1/2″	5 1/2″	6 ft.	8506K37	55.18
1 1/2″	7 1/2″	6 ft.	8506K43	70.17

Wood

- Color: *Balsa* is light yellow; *Birch* is white to light brown; *Oak* is white to red; *Maple* is white to brown

Balsa is the lightest and softest of all woods but is still very strong. The surface is sanded and has either a straight or wavy grain.

Birch is softer than maple and oak. The surface is smooth and has a straight grain.

Oak is a heavy wood with high wear resistance and is much harder than birch. The surface is less smooth than birch and typically has a straight grain.

Maple is a heavy wood with high wear resistance and is much harder than birch. The surface is smooth and has a straight grain.

Strips

Material is balsa. Thickness, width, and length tolerances are not rated.

Thick.	Wd.	Lg.		
1/8″	4″	36″	5068K43	$4.85
1/8″	6″	36″	5068K51	7.30
3/16″	6″	36″	5068K52	8.22
1/4″	4″	36″	5068K44	$7.98
1/4″	6″	36″	5068K53	10.00
1/2″	4″	36″	5068K45	14.55
1″	4″	36″	5068K46	$21.93
2″	3″	36″	5068K41	22.85
3″	3″	6″	5068K42	5.50

Dowel Rods

Birch rods have a ±0.007″ diameter tolerance and ±1/32″ length tolerance. Oak and maple rods have a ±0.015″ diameter tolerance and ±1/16″ length tolerance.

		BIRCH				OAK				MAPLE			
Dia.	Pkg. Qty.	36″ Length	Pkg.	48″ Length	Pkg.	36″ Length	Each	48″ Length	Each	36″ Length	Each	48″ Length	Each
1/8″	50	9683K11	$11.00	9683K51	$13.73								
3/16″	25	9683K12	8.70	9683K52	10.66								
1/4″	25	9683K13	10.54	9683K53	13.05	96825K73	$0.80	96825K13	$1.06	97015K73	$0.90	97015K13	$1.11
5/16″	10	9683K14	6.98	9683K54	8.51								
3/8″	10	9683K15	8.14	9683K55	9.85	96825K75	1.09	96825K15	1.44	97015K75	1.22	97015K15	1.60
7/16″	10	9683K16	9.98	9683K56	12.26								
1/2″	5	9683K17	7.45	9683K57	9.13	96825K77	1.78	96825K17	2.33	97015K77	2.67	97015K17	3.51
5/8″	5	9683K18	9.27	9683K58	11.30	96825K78	2.68	96825K18	3.53	97015K78	2.36	97015K18	2.98
3/4″	5	9683K19	11.79	9683K59	14.80	96825K79	3.70	96825K19	4.87	97015K79	4.08	97015K19	5.02
7/8″	2	9683K24	8.38	9683K64	10.47	96825K81	4.01	96825K21	5.28	97015K81	4.36	97015K21	5.40
1″	2	9683K21	9.71	9683K61	11.95	96825K82	4.60	96825K22	5.30	97015K82	5.06	97015K22	6.19
1 1/8″	1	9683K25	5.84	9683K65	7.30	96825K83	6.61	96825K23	7.96	97015K83	7.20	97015K23	8.87
1 1/4″	1	9683K23	6.26	9683K63	7.83	96825K84	8.06	96825K24	9.57	97015K84	8.91	97015K24	10.31
1 1/2″	1	9683K26	18.00	9683K66	22.50	96825K85	20.75	96825K25	26.44	97015K85	29.91	97015K25	36.26
2″	1	9683K27	26.57	9683K67	33.21	96825K86	36.42	96825K26	43.86	97015K86	40.80	97015K26	49.05

Balls

Material is either birch or maple. Diameter tolerance is ±0.031″.

Dia.	Pkg. Qty.		Pkg.	Dia.	Pkg. Qty.		Pkg.	Dia.	Pkg. Qty.		Pkg.
3/8″	50	9941K11	$9.50	1″	25	9941K19	$9.30	2″	2	9941K27	$7.00
1/2″	50	9941K13	10.00	1 1/4″	25	9941K21	13.00	2 1/4″	2	9941K29	9.50
5/8″	50	9941K15	12.00	1 1/2″	10	9941K23	8.90	2 1/2″	2	9941K31	10.60
3/4″	50	9941K17	13.00	1 3/4″	10	9941K25	11.50	3″	1	9941K33	7.85

Marine Grade Plywood

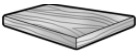

When exposed to weather, water, steam, or dry heat, this premium plywood won't bubble, buckle, or delaminate. It is sanded equally on both sides and is free of surface and core defects. Width and length tolerances are ±3/8″. Meets BS1088 marine standards.

Thick.	Thick. Toler.	12″×12″		12″×24″		24″×24″		24″×36″		36″×48″	
3/8″	–0.041″	1125T21	$5.94	1125T22	$10.89	1125T23	$19.80	1125T24	$27.22	1125T25	$49.49
1/2″	–0.048″	1125T31	7.68	1125T32	14.08	1125T33	25.60	1125T34	35.20	1125T35	64.00
3/4″	–0.061″	1125T41	11.29	1125T42	20.71	1125T43	37.65	1125T44	51.77	1125T45	94.12

Modeling Clay

Clay stays workable when stored in a plastic bag. Sizes are approximate.

General Purpose Clay—Sold in packages of four 1/4-lb. sticks of the same color; each stick is 3/4″ Thick.×1″ Wd.×5″ Lg.

To Order: Please specify color: blue, brown, gray, green, red, or yellow.

1334T2 ..... **Pkg.** $4.62

Shrink-Resistant Clay—Smooth and nonhardening, clay will not shrink or crack. Sold in a 2-lb. block; 2 1/2″ Thick.×2 3/4″ Wd.×5 1/4″ Lg. Color is green-gray.

6102T11 ..... **Each** $21.37

Soft Sculpting Clay—The formula is sulfur-free, which reduces its potential to corrode metals. Often used when working with silicone rubber, the clay is smooth and can be melted and poured at 185° F. Sold in a 2-lb. block; 2 3/4″ Thick.×2 3/4″ Wd.×5″ Lg. Color is green-gray.

6102T21 ..... **Each** $17.46

Hard Styling Clay—Carve or extrude this crack-resistant clay or heat it to approximately 120° F for easier sculpting. Sold in a 2-lb. block; 2 3/4″ Thick.×2 3/4″ Wd.×5″ Lg. Color is brown.

6102T31 ..... **Each** $16.38

Extra-Hard Styling Clay—30% to 40% lighter than similar clays, this clay is crack and shrink resistant. It's also sulfur-free, which reduces its potential to corrode metals. Excellent for milling, it can be heated to 135° F for easier sculpting. Sold in a 1 3/4-lb. rod; 2 1/2″ Dia.×10″ Lg. Color is dark brown.

6102T41 ..... **Each** $15.47

Hard Natural Wax

Hard but brittle, this carnauba wax is the hardest natural wax available. It is wear resistant and often used as a polish because of its lustrous appearance. This wax is also used as a mold-release agent for wax blends. Softening temperature is 177° F. Hardness is not rated. Color is yellow. Sold in 1-lb. packages of wax flakes.

7259T22 ..... **Pkg.** $25.05

Sheet Lining Wax

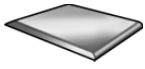

Flexible enough to conform to angles, bends, and detailed surfaces, lining wax is even bendable at room temperature. Use it as lining in stamping prototypes and to produce castings of die patterns. Hardness is not rated. Thickness tolerance is ±0.002″. Sheets are approximately 12″×24″.

Standard Sheets—Softening temperature is 180° F. Color is brown.

High Temperature Sheets—The 220° F softening temperature is suitable for use with casting and laminate resins. Color is tan. *Adhesive-back sheets* have adhesive on one side and adhere to most oil-free surfaces.

	STANDARD SHEETS		HIGH TEMPERATURE SHEETS			
Thick.	Plain Back		Plain Back		Adhesive Back	
1/32″	86925K41	$11.80	8691K62	$12.44	8691K31	$14.08
1/16″	86925K43	14.14	—	—	8691K11	17.56
5/64″	86925K44	17.29	—	—	8691K32	19.91
3/32″	86925K45	18.26	8691K66	19.43	8691K33	21.98
1/8″	86925K47	22.28	8691K68	23.65	8691K12	26.55
3/16″	86925K49	30.56	8691K73	32.59	8691K13	35.10
1/4″	86925K51	38.76	8691K75	40.46	8691K14	43.51
1/2″	—	—	—	—	8691K16	60.61

Bonding Wax

Protect small or fragile items from vibration. This wax has good surface adhesion that holds temporarily. Remove wax with hot water. ***1-lb. tray*** is 1″ Thick.×5″ Wd.×8″ Lg.

	Melting Temp., °F	Color		
6-oz. Jar	165° to 175°	White	1129K14	$4.25
1-lb. Tray	140° to 150°	Yellow	1129K11	14.71

Sealing and Lubricating Wax

Seal your containers against water seepage or lubricate your tools. Hardness is not rated. Sizes are approximate.

Beeswax

Melting temperature is 160° F. Color varies from cream to yellow.

1-lb. block is 1 1/4″ Thick.×3 1/2″ Wd.×6 3/4″ Lg.

Candle is 1 1/4″ Dia.×6″ Lg.

Plugs are sold in packages of 16. Each plug weighs 1 oz. and is 1 3/8″ Dia.×1 1/4″ Lg.

Beads come in a 1-lb. package containing 14,700 beads.

		Each			Pkg.
1-lb. Block	1100K92	$13.46	Plugs	1100K97	$15.92
Candle	1100K95	7.61	Beads	1100K89	8.93

Paraffin Wax

Melting temperature is 140° F. Color is white.

Blocks are FDA compliant. *1-lb. block* is 1″ Thick.× 3 1/2″ Wd.× 5 1/2″ Lg. *10-lb. block* is 1/2″ Thick.×12″ Wd.×19″ Lg.

Candles are also known as plumbers' candles. Sold in packages of 3; each candle is 1 1/8″ Dia.×4 1/2″ Lg.

Beads are FDA compliant. Sold in a 1-lb. package of 17,000 beads.

		Each			Pkg.
1-lb. Block	1085K94	$5.82	Candles	1085K96	$4.76
10-lb. Block	1085K92	53.44	Beads	1085K91	4.42

Machinable Wax

Although this wax is hard and tough, it can be turned, milled, drilled, tapped, carved, and sawed easily without tool wear.

Nonabrasive Wax

Check CNC setups with this nonabrasive wax. Softening temperature is 214° F. Hardness is Shore 50D-52D. All dimensions have a ±1/8″ tolerance. **To Order:** Please specify color: blue, green, or purple.

BARS

Thick.	Wd.	Lg.			Thick.	Wd.	Lg.		
1 1/4″	3 1/2″	12″	9389K11	$28.90	2 1/2″	10″	18″	9389K41	$172.35
1 1/2″	3 5/8″	12″	9389K21	39.89	3 1/2″	3 1/2″	12″	9389K51	73.28
2″	16″	24″	9389K31	294.14	5 1/2″	5 1/2″	12″	9389K59	138.50

RODS

Dia.	Lg.		
2 1/4″	24″	9389K69	$57.09

Casting Wax

Its low rate of thermal expansion makes this wax virtually crack resistant. Softening temperature is 144° to 156° F. Hardness is Shore 40D. All dimensions have a ±1/8″ tolerance. Color is red.

BARS

Thick.	Wd.	Lg.			Thick.	Wd.	Lg.		
2″	3 1/2″	12″	93955K73	$51.80	5 1/2″	5 1/2″	12″	93955K62	$152.48
2″	4″	12″	93955K74	59.23	7 3/8″	7 3/8″	6″	93955K78	156.30
3″	10″	18″	93955K75	229.38	9″	9″	6″	93955K79	216.67

RODS

Dia.	Lg.		
2 3/8″	6″	93955K77	$18.10
3 7/8″	6″	93955K81	35.18
4 7/8″	6″	93955K82	50.98
6 7/8″	6″	93955K83	99.14

Ultra-Machinable Prototyping Foam

Flame-Resistant Urethane Foam Sheets

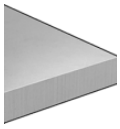

Meets FAR 25.853 for fire safety. Foam is fine celled and can be bonded with epoxy, super glue, contact cement, or polyurethane and acrylic adhesives. Softening temperature is 245°F. Color is off-white.

Wd.	Lg.	Density, lbs./cu. ft.	Hardness, Shore D	1″ Thick		2″ Thick		3″ Thick		4″ Thick	
24″	48″	6	8	3152T41	$53.39	3152T42	$96.26	3152T43	$141.16	3152T44	$186.08
24″	48″	10	16	3152T51	74.44	3152T52	136.76	3152T53	199.08	3152T54	261.40
24″	48″	20	36	3152T61	136.98	3152T62	246.32	3152T63	351.65	3152T64	449.20

Urethane Foam (Butterboard) Sheets and Rods

Material can be carved, milled, and sanded for use in demanding prototyping applications and is virtually nonabrasive. All dimensions have a plus tolerance. Density is 48 lbs./cu. ft., hardness is Shore D63, and softening temperature is 245°F. Color is pale yellow.

Thick.	SHEETS 6″×12″		SHEETS 12″×12″		SHEETS 12″×24″		SHEETS 24″×24″		RODS Dia.	RODS 12″ Length	
2″	86595K1	$76.27	86595K11	$147.27	86595K12	$284.36	86595K13	$458.06	2″	86595K51	$58.62
3″	86595K2	96.64	86595K21	178.64	86595K22	337.53	86595K23	631.25	3″	86595K52	85.00
4″	86595K3	118.16	86595K31	233.08	86595K32	433.51	86595K33	812.12	4″	86595K53	96.77
6″	86595K4	181.01	86595K41	326.44	86595K42	602.82	86595K43	1,158.82	5″	86595K55	132.15

Resin Fillers

Add these hollow spheres to epoxy, urethane, or polyester resins to reduce weight and shrinkage. Sold in 2-qt. containers.

Glass microspheres are a good choice when water resistance or sanding is required. Sphere diameter is 0.00236″. Color is clear.
1414T36 ..... $20.55

Ceramic spheres act as a thickening agent. Sphere diameter is 0.0055″. Color is gray.
1414T48 ..... $21.76

Casting Compounds

Capture intricate details when creating prototypes, molds, and linings with these easy-to-mix two-part compounds. For release agents, see page 2167. For hardness information, see page 3526.

Compounds cure at room temperature, except FDA-compliant urethane cures at 120°F. They shrink 1.5% or less during cure, except see-through urethane, FDA-compliant urethane, and foam urethane shrink 5%.

Hard (Shore 80A) General Purpose Black Urethane Sample— Contains 4 ounces 8644K57 $17.50

Hardness (Shore)	Time to Harden, minutes	Cure Time, hrs.	Max. Temp., °F	Small Size Volume, cu. in.	Small Size Wt., lbs.			Large Size Volume, cu. in.	Large Size Wt., lbs.		
General Purpose Urethane— *Our most popular choice, this urethane is water and abrasion resistant. Color is black, except 85D is blue-green.*											
Soft (20A)	15	168	180°	25	1	8644K51	$34.88	250	10	8644K52	$225.58
Med. Soft (40A)	15	168	180°	25	1	8644K53	34.88	250	10	8644K54	225.58
Med. Hard (60A)	15	168	180°	25	1	8644K24	33.33	250	10	8644K26	217.22
Hard (80A)	15	168	180°	25	1	8644K11	31.91	250	10	8644K12	217.22
Extra Hard (94A)	15	168	180°	25	1	8644K18	33.33	250	10	8644K19	202.24
Extra Hard (60D)	15	168	180°	25	1	8644K55	34.88	250	10	8644K56	225.58
Extra Hard (85D)	5	2	180°	80	5	8690K1	69.76	320	20	8690K2	181.74
See-Through Urethane— *Color is clear.*											
Hard (80A)	6	144	180°	25	1	8644K59	35.71	—	—	—	—
Extra Hard (75D)	6	144	180°	25	1	8644K58	35.71	—	—	—	—
Easy-to-Work Urethane— *Combine the liquid components to form a putty that can be molded into or around any shape. Color is black.*											
Med. Hard (60A)	15	168	180°	25	1	8644K28	31.91	100	4	8644K29	93.45
Extra Hard (85A)	15	168	180°	25	1	8644K13	33.33	100	4	8644K15	93.45
Fine-Detail Urethane— *Flows smoothly into crevices to replicate complex detail. Color is white. Ready to demold in 2 hours.*											
Extra Hard (83D)	8	168	135°	94	3.6	87075K57	69.87	374	14.4	87075K59	186.60
FDA-Compliant Urethane— *Complies to FDA 21 CFR. Color is white.*											
Med. Hard (60A)	8	12	180°	25	1	8644K34	35.33	250	10	8644K33	230.22
Hard (78A)	4	12	180°	25	1	8644K37	35.33	250	10	8644K39	230.22
Extra Hard (88A)	4	12	180°	25	1	8644K41	35.33	250	10	8644K43	230.22
Extra Hard (75D)	5	12	180°	25	1	8644K47	35.33	250	10	8644K49	230.22
Machinable Urethane— *Material is aluminum-filled and cures to a gray color.*											
Extra Hard (83D)	6	18	225°	83	5	87155K44	72.78	334	20	87155K46	178.65
Foam Urethane— *Cast large parts with this lightweight foam. It starts as a liquid that expands 7 times its original size. Color is off-white.*											
Extra Hard (30D)	1	2	250°	216	1	8690K72	57.50	648	3	8690K71	156.82
Machinable Epoxy— *Cures into a tough surface that can be machined. Color is gray.*											
Extra Hard (86D)	50	18	225°	40	2.7	87045K51	61.92	—	—	—	—
Fast-Setting Acrylic— *Adjust the consistency from thin to thick to fit your application. Color is light blue.*											
Extra Hard (85D)	2	0.17	350°	20	1	1355T33	83.39	62	3	1355T34	191.15
Fast-Setting Silicone— *Mold this putty into or around any shape. Components are putty and can be mixed with your hands. Color is green.*											
Med. Soft (40A)	2	0.25	600°	4	0.2	8595K12	11.84	46	2.2	8595K13	71.20
Chemical-Resistant Silicone— *This durable, tear-resistant compound easily demolds. Color is blue.*											
Med. Hard (65A)	120	24	400°	22	1	8595K77	41.43	242	11	8595K11	266.19

High Temperature Ceramic Casting Compounds

These two-part compounds harden in 20 minutes and cure in 16-24 hours at room temperature. Shrinkage rate is 1.5%.

Corrosion-resistant silicon carbide has a high heat transfer rate, making it ideal for use in metal casting molds. It has the added benefit of excellent erosion and oxidation resistance.

Shock-resistant silica withstands rapid changes in temperature without cracking and has a low rate of thermal expansion.

Ultra high temperature zirconium oxide is often used in metal handling applications. In addition to its high temperature resistance, it's also chemical resistant.

	Color	Max. Temp., °F	Small Size Volume, cu. in.	Small Size Wt., lbs.			Large Size Volume, cu. in.	Large Size Wt., lbs.		
Corrosion-Resistant Silicon Carbide	Black	2700°	47	4	8498K43	$53.32	119	10	8498K13	$95.21
Shock-Resistant Silica	White	2700°	62	4	8498K41	53.32	155	10	8498K11	95.21
High-Strength Alumina	White	3000°	38	4	8498K44	53.32	96	10	8498K35	95.21
Ultra High Temperature Zirconium Oxide	Tan	4000°	27	4	8498K42	71.34	69	10	8498K17	127.39

Low Melting Temperature Casting Alloys

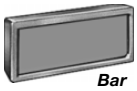
Bar

Bismuth Alloys—When melted, bismuth alloys expand as they solidify, pushing into the crevices of your mold to produce a fine-detailed replica. They are also commonly used to repair dies and patterns and create fusible links.

Indium Alloys—The indium content lowers the melting temperature, so these alloys are especially easy to mold. They produce unblemished molds from glass, quartz, mica, and ceramic patterns.

Melting Temp., °F	Trade No.	Composition (%) Bismuth	Indium	Lead	Tin	Cadmium	Approx. Size Thick.	Wd.	Lg.	Shape	Approx. Wt., lbs.		
Bismuth Alloys													
158°	—	50.0	—	26.7	13.3	10.0	½″	3″ Hex	—	Hex	1½	8921K12	$48.78
190°	—	42.5	—	37.7	11.3	8.5	⅝″	1½″	4½″	Bar	1½	8921K22	45.78
203°	—	52.5	—	32.0	15.5	—	1″	1″	3″	Bar	1½	8921K23	49.89
255°	—	55.5	—	44.5	—	—	½″	3″	3″	Square	1½	8921K14	45.09
281°	—	58.0	—	—	42.0	—	⅝″	1½″	5½″	Bar	1½	8921K16	63.84
338°	—	40.0	—	—	60.0	—	½″	1½″	4½″	Bar	1½	8921K18	64.80
Indium Alloys													
117°	#117	44.7	19.1	22.6	8.3	5.3	¼″	2″	4½″	Bar	½	88635K2	101.84
136°	#136	49.0	21.0	18.0	12.0	—	¼″	1⅞″	4¼″	Bar	½	88635K4	111.04
149°	#140	47.5	5.0	25.4	12.6	9.5	½″	3½″ Dia.	—	Disc	1½	88635K26	133.56
149°	#147	48.0	4.0	25.6	12.8	9.6	½″	3½″ Dia.	—	Disc	1½	88635K28	117.72

Casting Alloys

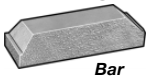
Bar

Lead-Free Pewter Alloy—An alternative to lead, the low copper content of this alloy pours more easily at the casting temperature than standard pewter. Sold in a bag that contains two ingots, totaling approximately 1½ lbs. Each ingot is approximately 1¾″ Dia.×2″ Lg.

Zinc Alloy—Nonshrinking and corrosion resistant, zinc alloy can be used in casting applications that require easy machinability. Sold as a bar; approximately 6¼″ Thick.×2¾″ Wd.×11¼″ Lg.

Silicon-Bronze Alloy—This extremely high-temperature casting alloy provides an excellent surface finish. Sold in a bag that contains 1 lb. of ingots. Ingot size and number per bag varies.

	Melting Temp., °F	Composition (%) Copper	Zinc	Tin	Antimony	Aluminum	Silicon	Other	Approx. Wt., lbs.		
Lead-Free Pewter	625°	0.3	—	92	7.8	—	—	—	1½	5387K24	$37.22
Zinc	792°	0.1	95	—	—	4.3	—	0.6	4½	9069K2	36.43
Silicon-Bronze	1780°	92	4	—	—	—	4	—	1	5389K12	15.51

Babbitt

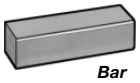
Bar

Lead-Base Babbitt—Easy to cast, this soft metal offers superior antifriction properties for lighter-load applications.

Lead-Base Coppered Babbitt—For use in low-speed, heavy-load applications, coppered Babbitt withstands shock and vibration and requires less lubrication than other Babbitts.

Tin-Base Babbitt—The top choice for high-speed and high-wear applications, this Babbitt outperforms lead-base Babbitt and withstands heavy, sustained loads.

	Pouring Temp., °F	Composition (%) Lead	Tin	Antimony	Copper	Other	Approx. Size Thick.	Wd.	Lg.	Approx. Wt., lbs.		
Lead-Base	650°	80.3	5	14.8	—	—	1⅛″	1⅝″	7½″	5	8899K11	$49.17
Lead-Base Coppered	700°	74.5	10	14.8	0.3	0.5	½″	3½″ Dia.	—	4½	8901K71	42.78
Tin-Base	725°	—	89	7.5	3.5	—	1½″	2″	5½″	4½	8900K11	209.68

Babbitt Paste

Apply a thin coating of this paste to bronze, cast iron, or steel bearing housings before bonding with the Babbitt metal lining to prevent separation. Maximum temperature is not rated.

	Composition (%) Solder	Zinc Chloride	Zinc Oxide and Water		
1-lb. Can	75	10	15	9006K42	$70.98

Babbitt Putty

Commonly used for sealing, positioning, and molding, this putty is dense, tacky, and moisture free. It easily packs into place and is reusable. Color is greenish-brown.

Approx. Wt., lbs.	Max. Temp., °F	Approx. Size Ht.	Wd.	Lg.		
5	975°	5″	5″	5″	8902K1	$26.42
13	975°	6″	6″	8″	8902K2	56.67
27	975°	9″	9″	9″	8902K3	101.67

Zinc

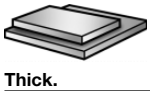

A direct replacement for lead, zinc provides nonsparking and nonabrasive properties with only 0.003% lead content. Over time, a corrosion- and weather-resistant film develops on its surface. Material is often used in stamping, sound deadening, and EMI/RFI shielding applications. Melting temperature is 785°F. Thickness tolerance is ±0.003″.

Thick.	12″×12″		12″×24″		12″×48″		28″×36″		28″×48″	
0.010″	1007T16	$6.03	1007T17	$11.35	1007T18	$22.15	—	—	—	—
0.016″	1007T81	9.37	1007T82	17.81	1007T83	34.84	—	—	—	—
0.025″	1007T91	13.74	1007T92	26.15	1007T93	51.11	—	—	—	—
0.032″	1007T11	16.65	1007T12	31.65	1007T13	61.89	—	—	—	—
	14″×12″		**14″×24″**		**14″×48″**					
0.048″	1007T21	$19.38	1007T22	$35.00	1007T23	$65.00	1007T24	$102.50	1007T25	$125.00
0.064″	1007T31	24.80	1007T32	44.80	1007T33	83.20	1007T34	131.20	1007T35	160.00
0.093″	1007T41	34.28	1007T42	61.92	1007T43	115.00	1007T44	181.34	1007T45	221.15
0.125″	1007T51	43.06	1007T52	77.78	1007T53	144.45	1007T54	227.78	1007T55	277.78
0.187″	1007T61	61.47	1007T62	111.03	1007T63	206.21	1007T64	325.17	1007T65	396.55
0.250″	1007T71	73.38	1007T72	132.57	1007T73	246.19	1007T74	388.23	1007T75	473.45

Lead

Composed of at least 98% lead. Machine using carbide tooling. Melting temperature is 620° F, except shot and balls have a melting temperature range of 570° to 620° F. Color is gray to blue gray.

Sheets

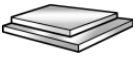

Sheets are easy to form and can be used to line tanks and containers to prevent corrosion. They shield against small amounts of radiation and absorb sound and vibration. Sheets are cold rolled and have ±1/8″ width and length tolerances. Meet QQL-201F.

Thick.	Thick. Tolerance	4″×36″		6″×6″		12″×12″		12″×24″		12″×36″		12″×48″	
3/64″	−0.011″	9032K281	$17.74	9032K271	$8.14	9032K111	$18.85	9032K119	$32.58	9032K128	$44.64	9032K137	$70.81
1/16″	±0.006″	9032K282	28.27	9032K272	10.55	9032K112	26.60	9032K121	45.29	9032K129	65.33	9032K138	97.36
3/32″	±0.008″	9032K283	37.32	9032K273	15.63	9032K113	40.12	9032K122	72.60	9032K131	93.08	9032K139	149.53
1/8″	±0.010″	9032K284	59.89	9032K274	22.44	9032K114	47.91	9032K123	86.61	9032K132	137.14	9032K141	169.90
3/16″	±0.012″	9032K285	79.18	9032K275	29.88	9032K115	80.34	9032K124	142.00	9032K133	202.44	9032K142	258.93
1/4″	±0.012″	9032K286	95.37	9032K276	33.76	9032K116	95.31	9032K125	181.01	9032K134	246.44	9032K143	311.54
1/2″	±0.020″			9032K277	86.91	9032K117	150.35	9032K126	286.34	9032K135	414.86		
1″	±0.020″			9032K278	198.62	9032K261	326.27	9032K262	610.77				

Thick.	Thick. Tolerance	24″×24″		24″×36″		24″×48″		36″×36″		36″×48″		48″×48″	
3/64″	−0.011″	9032K146	$62.10	9032K155	$88.49	9032K164	$117.56	9032K182	$135.04	9032K191	$168.55	9032K227	$221.77
1/16″	±0.006″	9032K147	87.94	9032K156	124.75	9032K165	166.46	9032K183	188.45	9032K192	238.70	9032K228	314.08
3/32″	±0.008″	9032K148	130.64	9032K157	186.62	9032K166	247.28	9032K184	279.94	9032K193	354.59	9032K229	466.56
1/8″	±0.01″	9032K149	162.30	9032K158	238.08	9032K167	318.65	9032K185	345.51	9032K194	460.68		
3/16″	±0.012″	9032K151	263.94	9032K159	365.08	9032K168	486.71	9032K186	527.88				
1/4″	±0.012″	9032K152	318.73	9032K161	434.06			9032K187	635.80				

Bricks

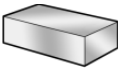

Help shield your facility from small amounts of radiation by placing bricks around tanks and equipment. Meet QQL-201F.

Thick.	Wd.	Lg.		
2″	3″	6″	9033K22	$67.52
2″	4″	8″	9033K11	122.35

Discs

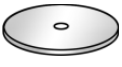

Commonly used for counterbalancing, vibration damping, and shielding, these cast-lead discs also mount as spacers and washers. Thickness and OD tolerances are ±0.012″. ID tolerance is ±0.008″. Meet ASTM B29 and QQL-171e Grade C.

Thick.	OD	ID	Approx. Wt., lbs.		
1/2″	2 3/4″	13/32″	1 1/4	90385K22	$16.16
1/2″	4 1/2″	25/64″	3 1/4	90385K32	34.53
1/2″	6″	25/64″	5 3/4	90385K42	54.33
1/2″	8 1/2″	41/64″	11 1/2	90385K52	86.94
1″	4 1/2″	25/64″	6 1/2	90385K34	65.25
1″	6″	25/64″	11 1/2	90385K44	94.50
1″	8 1/2″	41/64″	23	90385K54	161.00
1″	10 3/4″	41/64″	37	90385K64	241.21
1″	13″	41/64″	54	90385K74	323.74
2″	4 1/2″	25/64″	13	90385K36	109.22
2″	6″	25/64″	23	90385K46	161.00
2″	8 1/2″	41/64″	46	90385K56	289.80

Ingots

5-lb. Ingot

Melt ingots down to use for caulking, casting, and hot-dip coatings. Meet ASTM B29.

Wt., lbs.	Ht.	Wd.	Lg.		
5	1 3/4″	3 1/4″	3 1/4″	9031K1	$30.55
25	1 3/4″	3 1/4″	16 1/4″	9031K6	137.45
60	2 11/16″	3 7/8″	21 1/4″	9031K5	305.45

Shot and Balls

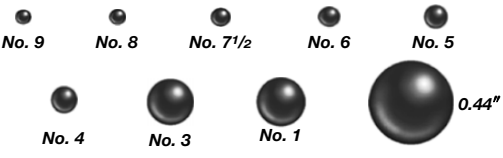

Shot and balls are precision manufactured to ensure size and a smooth finish. They melt down quickly and are often used as weights.

No. 9 through ***No. 1*** are classified as shot and have a ±0.010″ diameter tolerance. ***0.44″ diameter*** is classified as a ball with a ±0.007″ diameter tolerance.

No.	Dia.	Approx. Pkg. Qty.		Pkg.
9	0.08″	45,600	9030K21	$32.12
8	0.09″	32,000	9030K22	32.12
7 1/2	0.095″	27,200	9030K23	32.12
6	0.11″	17,600	9030K24	32.12
5	0.12″	13,440	9030K25	32.12
4	0.13″	10,560	9030K26	32.12
3	0.25″	1,500	9030K27	70.90
1	0.30″	750	9030K28	70.90
—	0.44″	250	9030K29	70.90

Wool

This easy-to-use wool packs into joints to create a watertight seal in pipe and plumbing connections. Cut with scissors.

5-lb. Bag 9021K11 $32.27

Vinyl-Coated Lead

Bend and twist into the shape you need. Often used as weights, these sheets contain 98% lead and have a red vinyl coating. Length, width, and thickness tolerances are ±0.020″. Maximum temperature is 250° F.

Thick.	2″×12″	
0.085″	2310K3	$46.32

Lead Hammer Metal

Chipping isn't a concern for this hard, ductile lead alloy. Used to fabricate nonmarring hammers, the material is composed of 94.25% lead and 5.75% antimony. Approximate size is 1 1/8″ Thick. × 1 5/8″ Wd. × 6 5/8″ Lg. and 5 lbs. Pouring temperature is 650° to 700° F (melting temperature is slightly lower).

9045K11 ..... $28.77

Tin

It's easy to cast and form this soft, malleable material. Composed of 99.85% to 100% tin, it is nontoxic and readily alloyed with lead, antimony, silver, copper, and other metals to form solder and Babbitt materials. Machine with standard steel tools. Color is silver.

Sheets

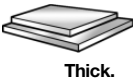

Commonly used to create gaskets and filters. Width and length tolerances are ±0.093″. Melting temperature is 425° F.

Thick.	Thick. Toler.	6″×6″		12″×12″		12″×24″		24″×24″	
1/32″	±0.007″	8906K131	$26.48	8906K121	$80.43	8906K141	$157.95	8906K161	$278.77
1/16″	±0.008″	8906K231	51.67	8906K221	145.44	8906K241	281.63	8906K261	537.66
1/8″	±0.012″	8906K431	108.70	8906K421	312.80	8906K441	605.77	8906K461	1,090.29

Triangular Bar

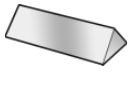

Approx. size is 1/2″ Ht. × 1″ Wd. (at base) × 11 1/2″ Lg. and 1 lb. Length, width, and thickness tolerances are not rated. Melting temperature is 450° F.

8886K11 ..... $54.55

About Aluminum Alloys

Aluminum is lightweight and offers moderate strength, as well as good corrosion resistance, formability, and machinability, especially when compared to steel. Aluminum typically melts at a lower temperature than steel; its capacity for conducting heat and electricity is about two-thirds that of copper.

About Temper

The temper shown indicates the processing done to achieve stabilized strength and hardness properties. A "T" temper means the material has been heat treated. An "H" temper indicates that the material is not heat treatable and may be hardened only by shaping without heat (often called strain hardening or cold working). "F" and "O" tempers are not hardened. Materials that share the same first letter and number are treated similarly.

Tempers shouldn't be used to compare alloys because the tempers only indicate the processes used to achieve properties. Comparisons among alloys can be made using the hardness and yield strength figures themselves.

Alloy	Page(s)	Alloy	Page(s)	Alloy	Page(s)
1100	3648	5052	3647	6063	3640-3641
2007	3650	5083	3648	7050	3646
2011	3650	5086	3647	7068	3646
2017	3651	5205	3648	7075	3645-3646
2024	3642-3645	6013	3639	MIC 6	3639
3003	3649-3650	6020	3651	Porous	3651
4032	3651	6060	3639	QC-10	3651
5005	3648	6061	3633-3639		

Hardness

The hardness of a material is its resistance to another material penetrating its surface. Harder metals offer more wear resistance, but they are more brittle. *Note:* Alloys 5005, 5083, 5205, 6060, 7050, and porous aluminum are not rated.

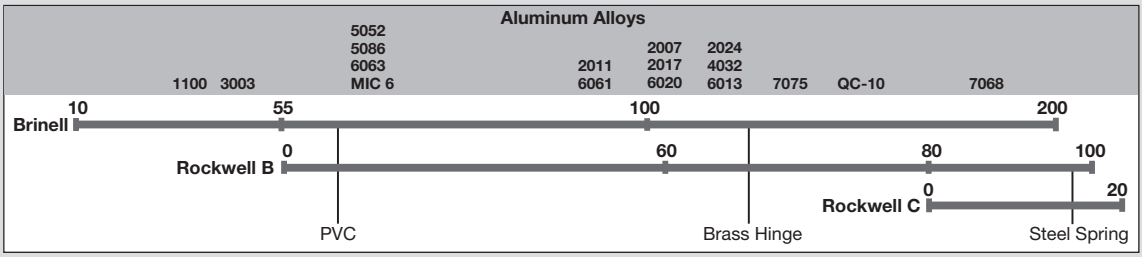

Yield Strength

Yield strength is the point at which material stretches and will not return to its original shape. At this point, the metal has changed shape permanently but does not break. *Note:* Alloys 2007 and 6060 and porous aluminum are not rated.

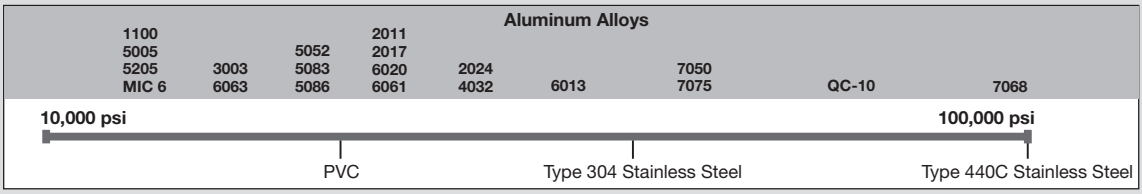

Weldability

Good— Weldable by all commercial procedures and methods.
Fair— May require special techniques and testing to develop procedures for welding.
Note: Alloy 2007 is not rated.

Welding Type	Good	Fair	Not Recommended
TIG/MIG	1100, 3003, 5052, 6013, 6061, 6063, MIC 6	5086, 6060	2011, 2017, 2024, 4032, 5005, 5083, 5205, 6020, 7050, 7068, 7075, Porous, QC-10
Arc	1100, 3003, 5052, 5083, 5086, 6013, 6061, 6063	2017, 2024, 4032, 6020, 6060	2011, 5005, 5205, 7050, 7068, 7075, MIC 6, Porous, QC-10
Spot	1100, 3003, 5052, 5083, 5086, 6013, 6061, 6063, 7050	2017, 2024, 6060, 7068, 7075	2011, 4032, 5005, 5205, 6020, MIC 6, Porous, QC-10

Corrosion Resistance

Indicates an alloy's suitability for outdoor use and high-salt spray applications. *Note:* Alloys 2007 and 6060 are not rated.

Excellent	Good	Fair	Poor
1100, 3003, 5052, 5083, 5086, QC-10	6013, 6020, 6061, 6063, Porous	4032, 5005, 5205, 7050, 7068, 7075	2011, 2017, 2024, MIC 6

Forming and Working

Also known as workability or bendability. It's the extent to which a material won't crack when bent without applying heat.

Excellent	Good	Fair	Poor
1100, 5052	3003, 5005, 5086, 5205	2011, 2024, 5083, 6060, 6061, 6063	2007, 2017, 4032, 6013, 6020, 7050, 7068, 7075, MIC 6, Porous, QC-10

Machinability

Machinable alloys can be cut, drilled, shaved, turned, reamed, tapped, threaded, or otherwise machined.

Excellent— These alloys are ideal for machining. When cut, they will not require extensive post-machining cleaning and will produce very small broken chips.

Good— These alloys will have a good to excellent finish after machining and will produce curled or easily broken chips.

Fair— Alloys have a satisfactory post-machining finish and will produce continuous chips.

Poor— Difficult to get clean part after machining.

Excellent	Good	Fair	Poor
2007, 2011, 6020, Porous, QC-10	2017, 2024, 4032, 6013, 7050, 7075, MIC 6	6060, 6061, 6063, 7068	1100, 3003, 5005, 5052, 5083, 5086, 5205

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Multipurpose Aluminum (Alloy 6061)

A combination of good strength, corrosion resistance, and machinability makes this the most widely used aluminum. It has less strength than Alloys 2024 and 7075, but better corrosion resistance and weldability. It's heat treatable and resists cracking due to stress. Commonly used for vehicle parts and pipe fittings. Nonmagnetic. Temperature range is –320° to +300° F.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 60-95 Brinell
- Yield Strength: 35,000 psi
- Temper: T6511, unless noted

Meet ASTM B221. Flatness tolerance is not rated. Length tolerance is +1/8″ for lengths up to 6″ and ±1″ for 1-, 3-, and 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width	Tolerance
1/4″-5/8″	±0.009″
3/4″-7/8″	±0.010″
1″-1 1/4″	±0.012″
1 1/2″-1 3/4″	±0.014″
2″-3 1/2″	±0.024″

Width	Tolerance
4″-5″	±0.034″
6″	±0.044″
8″	±0.054″
10″	±0.074″
12″	±0.0625″

Wd.		1 ft.	3 ft.	6 ft.
1/16″ Thick *(±0.006″)*				
1/2″	8975K821★	—	—	$2.04
3/4″	8975K822★	—	—	3.02
1″	8975K823★	—	—	3.79
1 1/4″	8975K824★	—	—	5.27
1 1/2″	8975K825★	—	—	6.08
2 1/2″	8975K359★	—	—	9.70
1/8″ Thick *(±0.007″)*				
1/2″	8975K527	—	—	5.15
1″	8975K17	—	—	9.97
1 1/4″	8975K517	—	—	10.98
1 1/2″	8975K34	—	—	12.62
2″	8975K19	—	—	16.02
2 1/2″	8975K532★	—	$9.94	17.44
3″	8975K83	—	14.57	25.56
4″	8975K418	—	17.57	30.83
6″	8975K921	—	26.78	48.69
3/16″ Thick *(±0.007″)*				
1/2″	8975K181	—	—	7.53
3/4″	8975K21	—	—	10.12
1″	8975K22	—	—	12.56
1 1/4″	8975K498	—	—	15.00
1 1/2″	8975K55	—	—	18.06
2″	8975K53	—	13.32	23.37
3″	8975K85	—	19.41	34.06
4″	8975K421	—	24.32	42.66
1/4″ Thick *(±0.008″)*				
1/4″	9008K17★	—	—	4.84
1/2″	8975K13	—	—	9.79
3/4″	8975K27	—	—	12.69
1″	8975K24	—	—	16.02
1 1/4″	8975K458	—	—	18.88
1 1/2″	8975K518	—	13.32	23.37
2″	8975K71	—	17.23	30.22
2 1/2″	8975K68	—	20.26	35.54
3″	8975K87	—	23.00	40.35
4″	8975K514	$11.77	30.49	53.50
5″	8975K432	14.05	36.41	63.87
6″	8975K437	16.02	41.51	72.83
8″	8975K443	16.63	43.10	75.61
10″	8975K561	18.19	47.12	82.66
12″	8975K142	20.11	48.26	77.21
5/16″ Thick *(±0.008″)*				
1″	8975K36	—	—	20.38
1 1/2″	8975K18★	—	13.81	24.23
2″	8975K58	—	19.03	33.39
3″	8975K89	7.89	20.45	35.88
3/8″ Thick *(±0.008″)*				
3/8″	9008K21	—	—	12.24
1/2″	8975K35	—	—	13.62
3/4″	8975K463	—	—	17.00
1″	8975K54	—	13.32	23.37
1 1/4″	8975K464	—	15.34	26.91
1 1/2″	8975K41	—	19.43	34.08
2″	8975K59	—	23.00	40.35
2 1/2″	8975K468	10.82	28.03	49.18
3″	8975K91	12.64	32.74	57.44
4″	8975K426	16.04	41.55	72.90

★ Temper is T6.

Wd.		1 ft.	3 ft.	6 ft.
3/8″ Thick (Cont.)				
5″	8975K211	$17.89	$46.34	$81.30
6″	8975K213	20.17	52.26	91.68
8″	8975K372	24.25	62.83	110.22
10″	8975K129	26.59	68.89	120.86
12″	8975K154	30.17	72.41	115.86
1/2″ Thick *(±0.009″)*				
1/2″	9008K23	—	—	17.30
3/4″	8975K37	—	—	24.53
1″	8975K11	—	17.23	30.22
1 1/4″	8975K473	—	20.26	35.54
1 1/2″	8975K42	—	23.00	40.35
2″	8975K74	11.53	29.86	52.39
2 1/2″	8975K477	13.04	33.78	59.26
3″	8975K513	16.02	41.51	72.83
4″	8975K215	19.05	49.34	86.57
5″	8975K217	21.94	56.83	99.71
6″	8975K219	26.37	68.31	119.85
8″	8975K222	33.09	85.73	150.40
10″	8975K106	36.69	95.05	166.75
12″	8975K135	40.21	96.51	154.42
5/8″ Thick *(±0.009″)*				
5/8″	9008K11	—	14.60	25.61
1″	8975K12	—	20.87	36.62
1 1/4″	8975K482	9.31	24.12	42.32
1 1/2″	8975K43	10.94	28.35	49.74
2″	8975K77	14.34	37.15	65.18
3″	8975K224	17.99	46.61	81.78
4″	8975K226	21.97	56.93	99.88
5″	8975K228	27.46	71.15	124.83
8″	8975K186	43.05	111.53	195.67
12″	8975K158	50.05	120.12	192.20
3/4″ Thick *(±0.010″)*				
3/4″	9008K12	—	20.47	35.91
1″	8975K14	—	25.03	43.91
1 1/4″	8975K486	11.35	29.39	51.57
1 1/2″	8975K45	12.90	33.42	58.64
2″	8975K78	16.02	41.51	72.83
3″	8975K231	20.15	52.21	91.60
4″	8975K233	26.77	69.35	121.66
5″	8975K49	32.88	85.19	149.46
6″	8975K235	39.34	101.92	178.81
8″	8975K446	43.31	112.22	196.87
10″	8975K121	54.55	141.33	247.95
12″	8975K149	59.15	141.94	233.96
7/8″ Thick *(±0.010″)*				
7/8″	9008K13	—	18.71	32.82
1″ Thick *(±0.012″)*				
1″	9008K14	11.99	31.06	54.49
1 1/4″	8975K526	14.42	37.36	65.55
1 1/2″	8975K52	16.04	41.55	72.90
2″	8975K237	19.05	49.34	86.57
2 1/2″	8975K39	20.20	52.34	91.82
3″	8975K239	26.37	68.31	119.85
4″	8975K242	34.94	90.54	158.84
5″	8975K352	43.87	113.66	199.40

Wd.		1 ft.	3 ft.	6 ft.
1″ Thick (Cont.)				
6″	8975K244	$51.61	$133.72	$234.59
8″	8975K179	67.50	174.88	306.80
10″	8975K102	86.09	223.06	391.33
1 1/4″ Thick *(±0.012″)*				
1 1/4″	9008K15	17.95	46.50	81.58
1 1/2″	8975K67	19.32	50.05	87.81
2″	8975K246	21.68	56.18	98.56
3″	8975K248	32.96	85.39	149.81
4″	8975K251	43.38	112.38	197.16
1 1/2″ Thick *(±0.014″)*				
1 1/2″	9008K46	23.43	60.71	106.51
2″	8975K253	30.07	77.90	136.67
2 1/2″	8975K166	31.61	81.90	143.68
3″	8975K255	39.29	101.80	178.60
3 1/2″	8975K171	44.41	115.06	201.86
4″	8975K257	52.69	136.50	239.48
6″	8975K259	74.37	192.68	338.04
1 5/8″ Thick *(±0.014″)*				
1 5/8″	9008K48	26.41	68.42	120.03
1 3/4″ Thick *(±0.014″)*				
1 3/4″	9008K51	29.15	75.52	132.49
2″ Thick *(±0.024″)*				
2″	9008K53	36.55	94.71	166.15
2 1/2″	8975K262	46.82	121.32	212.84
3″	8975K264	52.40	135.77	238.19
4″	8975K266	65.72	170.28	298.74
6″	8975K268	95.42	247.22	433.72
2 1/4″ Thick *(±0.024″)*				
2 1/4″	9008K55	44.46	115.18	202.07
2 1/2″ Thick *(±0.024″)*				
2 1/2″	9008K57	52.71	136.57	239.60
3″	8975K271	69.02	178.82	313.72
3 1/2″	8975K273	76.90	199.24	349.54
4″	8975K275	87.80	227.48	399.08
5″	8975K277	97.65	253.01	443.87
2 3/4″ Thick *(±0.024″)*				
2 3/4″	9008K59	60.82	157.58	276.45
3″ Thick *(±0.024″)*				
3″	9008K62	68.02	176.23	309.17
3 1/2″	8975K279	85.18	220.70	387.19
4″	8975K282	93.65	242.64	425.69
4 1/2″	8975K284	104.90	271.79	476.83
5″	8975K286	116.44	301.70	529.29
6″	8975K288	124.99	323.85	568.15
3 1/4″ Thick *(±0.024″)*				
3 1/4″	9008K64	75.96	196.82	345.29
3 1/2″ Thick *(±0.024″)*				
3 1/2″	9008K66	89.32	231.42	406.00
4″ Thick *(±0.034″)*				
4″	9008K68	115.02	298.01	522.83
5″	8975K291	147.90	383.19	672.27
6″	8975K293	161.59	418.65	734.48
5″ Thick *(±0.034″)*				
5″	9008K74	177.72	460.47	807.84

Wd. × Lg.		
2″ Thick *(±0.024″)*		
3″×6″	8975K562	$29.41
4″×6″	8975K565	38.11
3″ Thick *(±0.024″)*		
3″×6″	8975K564	44.12

Wd. × Lg.		
3″ Thick (Cont.)		
4″ × 6″	8975K566	$55.53
6″ × 6″	8975K568	76.95
3 1/2″ Thick *(±0.024″)*		
3 1/2″×3 1/2″	8975K571	35.20

Wd. × Lg.		
4″ Thick *(±0.034″)*		
4″×4″	8975K572	$50.50
4″×6″	8975K573	74.30
5″×6″	8975K567	88.10

Wd. × Lg.		
5″ Thick *(±0.034″)*		
5″×5″	8975K574	$92.63
5″×6″	8975K575	110.05
6″ Thick *(±0.044″)*		
6″×6″	8975K576	150.20

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Multipurpose Aluminum (Alloy 6061) *(Material continued from previous page)*

A combination of good strength, corrosion resistance, and machinability makes this the most widely used aluminum. It has less strength than Alloys 2024 and 7075, but better corrosion resistance and weldability. It's heat treatable and resists cracking due to stress. Commonly used for vehicle parts and pipe fittings. Nonmagnetic. Temperature range is –320° to +300° F.

Rectangular Bars with Material Certification—Unpolished (Mill) Finish

• Hardness: 95 Brinell • Yield Strength: 40,000 psi • Temper: T6511

Meet ASTM B221. Each comes with a traceable lot number and physical test report. Flatness tolerance is 0.004″ per foot. Length tolerance is ±1″. Sold in 6-ft. lengths.

Also Available: Additional sizes in 6-ft. lengths. Offered in the same thicknesses and widths as 8975K series rectangular bars on page 3633. Please ask for 1614T995 and specify thickness and width.

Width	Tolerance
1/2″-3/4″	±0.010″
1″-1 1/2″	±0.014″
2″-3″	±0.024″

Wd.		
1/8″ Thick *(±0.007″)*		
1/2″	**1614T123**	$15.15
1″	**1614T11**	19.97
2″	**1614T13**	26.02
3/16″ Thick *(±0.007″)*		
1/2″	**1614T283**	17.53
1″	**1614T15**	22.56
1 1/2″	**1614T17**	28.06

Wd.		
1/4″ Thick *(±0.008″)*		
1/2″	**1614T19**	$19.79
3/4″	**1614T21**	22.69
1″	**1614T23**	26.02
1 1/2″	**1614T25**	33.37
2″	**1614T27**	40.22
2 1/2″	**1614T443**	45.54
3″	**1614T29**	50.35

Wd.		
3/8″ Thick *(±0.008″)*		
1/2″	**1614T613**	$23.62
1″	**1614T633**	33.37
1/2″ Thick *(±0.009″)*		
1″	**1614T31**	40.22
1 1/2″	**1614T33**	50.35
2″	**1614T35**	62.39
3″	**1614T773**	82.83

Wd.		
3/4″ Thick *(±0.010″)*		
3/4″	**1614T993**	$45.91
1″	**1614T128**	53.91
2″	**1614T188**	82.83
1″ Thick *(±0.012″)*		
1″	**1614T438**	64.49
2″	**1614T468**	96.57
3″	**1614T488**	129.85

Metric Rectangular Bars—Unpolished (Mill) Finish

• Hardness: 60-95 Brinell • Yield Strength: 35,000 psi • Temper: T6

Meet ASTM B221. Flatness tolerance is 0.006″ per inch of width. Length tolerance is ±1/4″. Sold in 6-ft. lengths.

Width	Tolerance
6-25 mm	±0.010″
40-50 mm	±0.014″

Wd.		
2 mm Thick *(±0.006″)*		
10 mm	**8975K722**	$2.04
15 mm	**8975K723**	2.92
20 mm	**8975K724**	3.78
25 mm	**8975K725**	4.59
3 mm Thick *(±0.006″)*		
10 mm	**8975K732**	3.02
15 mm	**8975K733**	4.41
20 mm	**8975K734**	5.69
25 mm	**8975K735**	6.90

Wd.		
4 mm Thick *(±0.007″)*		
10 mm	**8975K742**	$5.15
15 mm	**8975K746**	7.13
20 mm	**8975K744**	7.54
25 mm	**8975K745**	9.19
5 mm Thick *(±0.007″)*		
10 mm	**8975K752**	5.05
15 mm	**8975K753**	7.34
20 mm	**8975K754**	9.48
25 mm	**8975K755**	11.49

Wd.		
6 mm Thick *(±0.007″)*		
6 mm	**8975K354**	$3.43
10 mm	**8975K762**	6.08
15 mm	**8975K763**	8.79
20 mm	**8975K764**	11.35
25 mm	**8975K765**	13.78
8 mm Thick *(±0.008″)*		
8 mm	**8975K355**	6.08
10 mm	**8975K782**	7.98
15 mm	**8975K786**	10.45

Wd.		
8 mm Thick (Cont.)		
20 mm	**8975K784**	$14.14
25 mm	**8975K785**	18.38
10 mm Thick *(±0.008″)*		
10 mm	**8975K792**	10.11
15 mm	**8975K793**	14.68
20 mm	**8975K794**	18.95
25 mm	**8975K795**	22.97
40 mm	**8975K357**	35.05
50 mm	**8975K358**	43.82

Rectangular Bars—Hard Anodized Coating (Dark Brown)

• Hardness: Rockwell C70 • Yield Strength: 40,000 psi (before coating) • Temper: T6511 (before coating)

About half of the coating penetrates the material, while the other half covers the surface. The coating resists wear and corrosion, is 0.001″ to 0.002″ thick, and meets MIL-A-8625. Width tolerance is ±0.014″. Flatness tolerance is not rated. Length tolerance is ±1/16″. **To Order:** Please specify 1- or 3-ft. length.

Wd.	1 ft.	3 ft.
1/8″ Thick *(±0.007″)*		
1″	**6023K15** $7.69	$15.69
2″	**6023K27** 16.18	33.02
3/16″ Thick *(±0.007″)*		
1/2″	**6023K11** 6.13	12.52
3/4″	**6023K13** 7.59	15.50
1″	**6023K16** 8.10	16.53
1 1/2″	**6023K22** 14.61	29.82

Wd.	1 ft.	3 ft.
1/4″ Thick *(±0.008″)*		
1/2″	**6023K12** $7.13	$14.55
3/4″	**6023K14** 8.12	16.57
1″	**6023K17** 9.03	18.43
1 1/2″	**6023K23** 12.78	26.09
2″	**6023K28** 22.80	46.53

Wd.	1 ft.	3 ft.
3/8″ Thick *(±0.008″)*		
1″	**6023K18** $10.89	$22.23
1 1/2″	**6023K24** 14.06	28.70
2″	**6023K29** 17.94	36.62
1/2″ Thick *(±0.009″)*		
1″	**6023K19** 12.59	25.70
1 1/2″	**6023K25** 16.79	34.26
2″	**6023K31** 21.91	44.72

Wd.	1 ft.	3 ft.
3/4″ Thick *(±0.010″)*		
1″	**6023K21** $16.43	$33.53
1″ Thick *(±0.012″)*		
1 1/2″	**6023K26** 27.20	55.52
2″	**6023K32** 40.44	82.54

Sheets—Unpolished (Mill) Finish

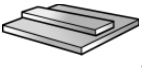

• Hardness: 95 Brinell • Yield Strength: 35,000 to 40,000 psi • Temper: T6

Meet ASTM B209. Width tolerance is ±1/16″. Flatness tolerance is not rated. Length tolerance is ±1/8″.

Thick.	Thick. Tolerance	2″ Wd. × 48″ Lg.	4″ Wd. × 48″ Lg.	6″ Wd. × 48″ Lg.	12″ Wd. × 12″ Lg.	12″ Wd. × 24″ Lg.
0.016″	±0.002″	**89015K13** $5.76	**89015K15** $11.50	**89015K17** $17.24	—	—
0.025″	±0.002″	**89015K19** 8.64	**89015K23** 17.27	**89015K25** 25.90	—	—
0.032″	±0.003″	**89015K27** 7.44	**89015K29** 13.28	**89015K43** 17.44	**89015K11** $9.48	**89015K21** $18.73
0.040″	±0.004″	**89015K45** 9.28	**89015K47** 16.61	**89015K49** 21.82	**89015K12** 14.27	**89015K22** 24.54
0.050″	±0.004″	**89015K63** 11.64	**89015K65** 20.75	**89015K67** 27.25	**89015K14** 15.89	**89015K24** 27.76
0.063″	±0.004″	**89015K69** 11.22	**89015K76** 20.56	**89015K77** 27.75	**89015K37** 18.76	**89015K38** 33.07
0.080″	±0.005″	**89015K78** 13.06	**89015K79** 23.48	**89015K83** 30.64	**89015K16** 17.40	**89015K26** 34.75
0.090″	±0.005″	**89015K85** 14.66	**89015K87** 26.43	**89015K89** 39.62	**89015K54** 21.50	**89015K55** 41.78
0.125″	±0.006″	—	—	—	**89015K18** 29.05	**89015K28** 51.00
0.160″	±0.009″	—	—	—	**89015K94** 34.75	**89015K91** 52.26
0.190″	±0.009″	—	—	—	**89015K31** 38.97	**89015K32** 58.60

Thick.	Thick. Tolerance	24″ Wd. × 24″ Lg.	24″ Wd. × 48″ Lg.	36″ Wd. × 36″ Lg.	48″ Wd. × 48″ Lg.
0.032″	±0.003″	**89015K41** $36.72	**89015K61** $65.77	**89015K71** $58.15	**89015K81** $128.94
0.040″	±0.004″	**89015K42** 45.29	**89015K62** 88.21	**89015K72** 69.89	**89015K82** 142.74
0.050″	±0.004″	**89015K44** 54.70	**89015K64** 99.95	**89015K73** 80.06	**89015K84** 161.78
0.063″	±0.004″	**89015K39** 60.07	**89015K51** 106.95	**89015K52** 98.95	**89015K53** 175.53
0.080″	±0.005″	**89015K46** 59.39	**89015K66** 105.52	**89015K74** 96.43	**89015K86** 199.36
0.090″	±0.005″	**89015K56** 63.46	**89015K57** 114.87	**89015K58** 112.77	**89015K59** 226.80
0.125″	±0.006″	**89015K48** 79.08	**89015K68** 150.44	**89015K75** 152.23	**89015K88** 293.77
0.160″	±0.009″	**89015K92** 95.73	**89015K93** 189.80	—	**89015K95** 338.02
0.190″	±0.009″	**89015K33** 107.34	**89015K34** 212.83	**89015K35** 240.12	**89015K36** 379.04

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Multipurpose Aluminum (Alloy 6061) *(Material continued from previous page)*

Thick Sheets—Unpolished (Mill) Finish

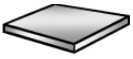

- Hardness: 95 Brinell
- Yield Strength: 35,000 psi
- Temper: T6511

Meet ASTM B221. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	8″×8″		12″×12″		Thick.	Thick. Tolerance	8″×8″		12″×12″	
1/4″	±0.008″	9246K11	$17.38	9246K13	$20.11	1″	±0.012″	9246K61	$49.92	9246K63	$76.62
3/8″	±0.008″	9246K21	22.63	9246K23	30.17	1 1/4″	±0.012″	9246K71	60.47	9246K73	93.56
1/2″	±0.009″	9246K31	27.89	9246K33	40.21	1 1/2″	±0.014″	9246K81	71.00	9246K83	109.70
5/8″	±0.009″	9246K41	35.02	9246K43	50.05	1 3/4″	±0.014″	9246K91	74.51	9246K93	125.05
3/4″	±0.010″	9246K51	38.94	9246K53	59.15	2″	±0.024″	9246K15	89.26	9246K19	153.23

Oversize Thick Sheets—Unpolished (Mill) Finish

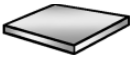

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T651, unless noted

Meet ASTM B209, unless noted. Width and length tolerances are ±1/4″, except 6″×6″ sheets are ±1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″		8″×8″		12″×12″		18″×18″		24″×24″	
1/4″	+0.016″	—	—	89155K22■	$19.76	89155K24■	$38.46	89155K27	$85.51	89155K26	$152.02
3/8″	+0.016″	—	—	89155K32■	26.01	89155K34■	53.90	89155K28	118.56	89155K36	213.04
1/2″	+0.022″	—	—	89155K42■	32.89	89155K44■	66.73	89155K29	151.57	89155K46	263.74
5/8″	+0.022″	—	—	89155K43■	40.45	89155K45■	83.88	89155K37	186.49	89155K47	331.54
3/4″	+0.030″	—	—	89155K62■	46.22	89155K64■	95.86	89155K38	213.13	89155K66	378.89
1″	+0.038″	89155K971	$37.17	89155K72■	55.03	89155K74■	114.11	89155K39	253.71	89155K86	451.04
1 1/4″	+0.038″	89155K972	44.38	89155K73■	64.19	89155K76■	133.11	89155K97	295.94	89155K88	526.11
1 1/2″	+0.038″	89155K973	55.44	89155K75■	76.89	89155K78■	159.45	89155K48	354.51	89155K92	630.24
1 3/4″	+0.048″	89155K974	64.77	89155K77■	90.27	89155K82■	187.21	89155K49	466.17	89155K94	739.95
2″	+0.054″	89155K975	72.27	89155K79■	102.52	89155K84■	212.60	89155K57	472.68	89155K96	840.32
2 1/4″	+0.060″	89155K976	81.44	—	—	—	—	—	—	—	—
2 1/2″	+0.085″	89155K977	78.85	9246K22	152.55	9246K24	212.40	—	—	—	—
2 3/4″	+0.085″	89155K978	86.62	—	—	—	—	—	—	—	—
3″	+0.085″	89155K979	94.38	9246K25	182.91	9246K27	340.02	—	—	—	—
3 1/2″	+0.115″	89155K985	110.33	9246K29	197.34	9246K32	382.29	—	—	—	—
4″	+0.145″	89155K981	120.98	9246K34	226.47	9246K35	421.41	—	—	—	—

■ Temper is T6511. Meet ASTM B221.

Sheets—Polished Finish

Brushed (#4 Satin) Finish

Mirror-Like (#8) Finish

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T6

Meet ASTM B209. Width and length tolerances are +1/32″. Flatness tolerance is 0.125″ across the width. All have a protective peel-off masking. ***Brushed (#4 satin) finish sheets*** are polished on one side, with grain lines running in one direction. ***Mirror-like (#8) finish sheets*** are also polished on one side, but are free of grain lines.

Thick.	Thick. Tolerance	BRUSHED (#4 SATIN) FINISH 12″×12″		12″×24″		24″×24″		MIRROR-LIKE (#8) FINISH 12″×12″		12″×24″		24″×24″	
0.032″	±0.005″	1651T11	$13.08	1651T12	$24.51	1651T13	$46.13	1655T11	$16.57	1655T12	$30.92	1655T13	$58.03
0.062″	±0.007″	1651T21	23.24	1651T22	41.01	1651T23	77.40	1655T21	30.23	1655T22	53.11	1655T23	99.74
0.080″	±0.009″	1651T51	29.59	1651T52	52.21	1651T53	91.15	1655T51	36.74	1655T52	64.83	1655T53	122.46
0.125″	±0.009″	1651T31	37.73	1651T32	71.23	1651T33	128.28	1655T31	54.12	1655T32	101.34	1655T33	181.36
0.190″	±0.012″	1651T61	56.75	1651T62	104.49	1651T63	184.74	1655T61	74.79	1655T62	137.84	1655T63	243.62
0.250″	±0.009″	1651T41	71.27	1651T42	128.28	1651T43	228.06	1655T41	85.09	1655T42	152.29	1655T43	257.16

Tight-Tolerance Blanks with Material Certification—Precision Ground Finish

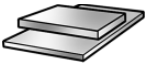

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T651

Meet ASTM B209. Consistently flat, square, and parallel on all six sides, you can simply place these blanks in your CNC machine and start machining. Each comes with a traceable lot number and physical test report. Tolerance on all dimensions is ±0.002″.

Thick.	2″×12″		4″×12″		6″×6″		6″×12″		8″×8″	
1/4″	9057K11	$48.06	9057K12	$59.72	9057K13	$53.78	9057K14	$70.93	9057K15	$66.68
3/8″	9057K22	61.98	9057K23	85.60	9057K24	74.75	9057K25	108.60	9057K26	99.74
1/2″	9057K33	65.05	9057K34	91.29	9057K35	78.56	9057K36	116.84	9057K37	108.00
5/8″	9057K44	70.10	9057K45	99.74	9057K46	84.70	9057K47	129.59	9057K48	118.41
3/4″	9057K55	75.20	9057K56	109.32	9057K57	91.17	9057K58	142.66	9057K59	129.26
1″	9057K66	85.31	9057K67	120.71	9057K68	119.93	9057K69	199.74	9057K71	178.74
	8″×12″		**12″×12″**		**12″×18″**		**12″×24″**		**24″×24″**	
1/4″	9057K16	$82.10	9057K17	$104.20	9057K18	$121.98	9057K19	$151.24	9057K21	$227.19
3/8″	9057K27	131.60	9057K28	176.77	9057K29	217.15	9057K31	281.09	9057K32	446.09
1/2″	9057K38	142.20	9057K39	192.74	9057K41	242.45	9057K42	308.39	9057K43	491.13
5/8″	9057K49	158.76	9057K51	221.38	9057K52	272.25	9057K53	362.33	9057K54	544.93
3/4″	9057K61	175.98	9057K62	246.67	9057K63	307.64	9057K64	396.75	9057K65	602.57
1″	9057K72	256.84	9057K73	330.65	9057K74	446.75	9057K75	538.15	9057K76	848.04

Size			Size			Size		
1″ ×1″×1″	9057K86	$54.33	2″ ×4″ × 6″	9057K81	$125.33	4″ ×4″ ×4″	9057K84	$137.20
1″ ×2″×3″	9057K77	54.58	2 1/2″×2 1/2″× 2 1/2″	9057K87	70.02	5″ ×5″ ×5″	9057K88	226.58
1 1/2″×3″×6″	9057K78	87.66	3″ ×3″ × 3″	9057K82	92.33	6″ ×6″ ×6″	9057K85	369.87
2″ ×2″×2″	9057K79	63.86	3″ ×6″ ×12″	9057K83	340.32	7 1/2″×7 1/2″×7 1/2″	9057K89	479.52

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Multipurpose Aluminum (Alloy 6061) *(Material continued from previous page)*

A combination of good strength, corrosion resistance, and machinability makes this the most widely used aluminum. It has less strength than Alloys 2024 and 7075, but better corrosion resistance and weldability. It's heat treatable and resists cracking due to stress. Commonly used for vehicle parts and pipe fittings. Nonmagnetic. Temperature range is –320° to +300° F.

Sheets—Hard Anodized Coating

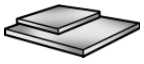

- Hardness: Rockwell C70
- Yield Strength: 40,000 psi (before coating)
- Temper: T6 for sheets up to 0.190″ thick; T651 for 0.250″ thick sheets and thicker (before coating)

About half of the coating penetrates the material, while the other half covers the surface. The coating is 0.001″ to 0.002″ thick, resists wear and corrosion, and meets MIL-A-8625. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		24″×24″	
0.063″	±0.003″	7255K11	$77.58	7255K31	$193.02
0.125″	±0.005″	7255K12	63.65	7255K32	223.10
0.190″	±0.007″	7255K13	92.07	7255K33	243.11
0.250″	±0.012″	7255K14	99.32	7255K34	288.84

Thick.	Thick. Tolerance	12″×12″		24″×24″	
0.375″	±0.015″	7255K15	$113.80	7255K35	$332.70
0.500″	±0.023″	7255K16	128.28	7255K36	376.24
0.750″	±0.031″	7255K17	157.27	7255K37	485.89
1.000″	±0.039″	7255K18	186.25	7255K38	556.93

Tight-Tolerance Flat Stock with Material Certification—Precision Ground Finish

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T651

Each comes with a traceable lot number and physical test report. Meets ASTM B209. Width and length tolerances are +0.060″. Thickness tolerance is ±0.002″. Flat and parallel to 0.002″.

Thick.	6″×6″		6″×12″		12″×12″		12″×18″	
¼″	3511T11	$49.88	3511T12	$62.95	3511T13	$110.84	3511T14	$151.84
⅜″	3511T21	55.22	3511T22	80.70	3511T23	145.16	3511T24	197.78
½″	3511T31	65.34	3511T32	90.00	3511T33	166.71	3511T34	229.55
⅝″	3511T41	75.48	3511T42	103.73	3511T43	196.98	3511T44	265.60
¾″	3511T51	81.84	3511T52	113.86	3511T53	217.53	3511T54	310.00
1″	3511T61	104.56	3511T62	138.33	3511T63	252.71	3511T64	361.40

Rectangular Tubes—Unpolished (Mill) Finish

- Hardness: 90 Brinell
- Yield Strength: 35,000 psi
- Temper: T6

Meet ASTM B221. Height and width tolerances are ±0.044″. Straightness tolerance is 0.0125″ per foot. Length tolerance is +¼″ for 1-ft. and 3-ft. lengths, and +1½″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Outside Ht.×Wd.		1 ft.	3 ft.	6 ft.
⅛″ Wall Thickness *(±0.019″)*				
1″ ×1″	6546K21	$6.54	$15.80	$27.25
1″ ×1½″	6546K38	8.34	20.15	34.74
1″ ×2″	6546K39	10.09	24.39	42.06
1½″×1½″	6546K22	10.48	25.32	43.65
2″ ×2″	6546K23	12.72	30.75	53.02
2″ ×3″	6546K41	16.11	38.92	67.11
2″ ×4″	6546K42	18.15	43.86	75.62
2½″×2½″	6546K43	15.67	37.87	65.30
3/16″ Wall Thickness *(±0.028″)*				
1″ ×1″	6546K34	7.75	18.73	32.29
2″ ×2″	6546K24	18.39	44.45	76.64
2″ ×4″	6546K44	26.48	63.99	110.32
3″ ×3″	6546K25	27.76	67.08	115.66

Outside Ht.×Wd.		1 ft.	3 ft.	6 ft.
3/16″ Wall Thickness (Cont.)				
3″ ×6″	6546K45	$36.75	$88.81	$153.12
4″ ×4″	6546K26	33.42	80.78	139.27
¼″ Wall Thickness *(±0.037″)*				
2″ ×2″	6546K27	22.77	55.02	94.87
2″ ×3″	6546K28	27.68	66.90	115.35
2″ ×4″	6546K29	33.97	82.10	141.56
2½″×2½″	6546K31	29.09	70.31	121.22
3″ ×3″	6546K32	31.85	76.98	132.72
3″ ×4″	6546K35	37.03	89.49	154.29
4″ ×4″	6546K33	41.26	99.71	171.91
4″ ×6″	6546K36	47.82	115.57	199.26
6″ ×6″	6546K37	52.76	127.50	219.83

Round Tubes—Unpolished (Mill) Finish

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T6, unless noted

Meet ASTM B241, unless noted. Straightness tolerance is 0.010″ per foot, except ¼″ ODs are 0.500″ per foot. Length tolerance is ±1″.
To Order: Please specify 1-, 3-, or 6-ft. length.

OD	Tolerance
¼″-⅞″	±0.004″
1″-3½″	±0.015″
4″-5″	±0.025″

OD	ID		1 ft.	3 ft.	6 ft.
0.035″ Wall Thickness *(±0.002″)*					
¼″	0.180″	9056K61	$5.06	$11.95	$20.25
⅜″	0.305″	9056K63	6.25	14.74	24.98
⅞″	0.805″	9056K72	7.84	18.50	31.35
0.049″ Wall Thickness *(±0.003″)*					
¼″	0.152″	9056K62	6.04	14.25	24.15
⅜″	0.277″	9056K64	5.85	13.81	23.41
½″	0.402″	9056K65	6.87	16.22	27.49
¾″	0.652″	9056K69	7.39	17.45	29.58
1″	0.902″	9056K74	9.39	22.16	37.56
1½″	1.402″	9056K78	13.25	31.27	53.00
2″	1.902″	9056K82	22.89	54.01	91.55
0.058″ Wall Thickness *(±0.004″)*					
⅝″	0.509″	9056K67	9.43	22.24	37.70
0.065″ Wall Thickness *(±0.004″)*					
½″	0.370″	9056K66	8.11	19.14	32.44
⅝″	0.495″	9056K68	10.44	24.64	41.76
¾″	0.620″	9056K71	8.85	20.89	35.41
⅞″	0.745″	9056K73	10.46	24.69	41.85

OD	ID		1 ft.	3 ft.	6 ft.
0.065″ Wall Thickness (Cont.)					
1″	0.870″	9056K75	$10.40	$24.56	$41.62
1¼″	1.120″	9056K76	12.21	28.82	48.84
1½″	1.370″	9056K79	14.77	34.86	59.08
1¾″	1.620″	9056K81	17.34	40.93	69.38
2″	1.870″	9056K83	18.79	44.34	75.15
2½″	2.370″	9056K84	24.23	57.18	96.92
3″	2.870″	9056K85	45.65	107.74	182.61
0.083″ Wall Thickness *(±0.006″)*					
1¼″	1.084″	9056K77	15.17	35.80	60.67
0.250″ Wall Thickness *(±0.025″)*					
1″	½″	9056K28 ♦	8.79	20.74	35.16
1¼″	¾″	9056K29 ♦	11.78	27.79	47.11
1½″	1″	9056K27 ■	18.38	43.38	73.52
2″	1½″	9056K13 ■	24.93	58.85	99.74
2¼″	1¾″	9056K16 ■	30.57	72.14	122.27
2½″	2″	9056K18 ■	32.34	76.32	129.36
2¾″	2¼″	9056K31 ■	34.05	80.36	136.20
3″	2½″	9056K21 ■	36.09	85.18	144.38

OD	ID		1 ft.	3 ft.	6 ft.
0.250″ Wall Thickness (Cont.)					
3½″	3″	9056K24 ■	$46.72	$110.25	$186.87
4″	3½″	9056K51 ■	51.65	121.89	206.59
4½″	4″	9056K32 ■	62.79	148.18	251.15
5″	4½″	9056K55 ■	57.28	135.19	229.14
0.375″ Wall Thickness *(±0.029″)*					
2″	1¼″	9056K14 ■	34.93	82.44	139.73
3″	2¼″	9056K22 ■ ♦	52.15	123.07	208.60
3½″	2¾″	9056K25 ■ ♦	48.95	115.51	195.78
0.500″ Wall Thickness *(±0.045″)*					
2″	1″	9056K15 ■	39.29	92.73	157.17
2¼″	1¼″	9056K17 ■	45.93	108.39	183.71
2½″	1½″	9056K19 ■	52.50	123.89	209.99
2¾″	1¾″	9056K34 ■	57.15	134.87	228.60
3″	2″	9056K23 ■	62.28	146.97	249.11
3½″	2½″	9056K26 ■	67.26	158.74	269.05
4″	3″	9056K53 ■	71.86	169.60	287.45
4½″	3½″	9056K35 ■	81.38	192.06	325.53
5″	4″	9056K57 ■	81.92	193.32	327.66

♦ Meets ASTM B429. ■ Temper is T6511.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Multipurpose Aluminum (Alloy 6061) *(Material continued from previous page)*

Rods—Unpolished (Mill) Finish

- Hardness: 95 Brinell
- Yield Strength: 35,000 psi
- Temper: T6511, unless noted

Meet ASTM B221. Straightness tolerance is not rated. Length tolerance is ±1″, except 1″, 3″, and 6″ lengths have a length tolerance of ±0.015″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Diameter	Tolerance
1/8″-5/16″, 7/16″	±0.0015″
3/8″, 1/2″-1″	±0.005″
1 1/8″-1 3/4″	±0.006″
2″-3 3/4″	±0.024″

Diameter	Tolerance
4″-5″	±0.034″
6″-7 1/2″	±0.044″
8″	±0.054″

Dia.		1 ft.	3 ft.	6 ft.
1/8″	8974K14★	—	—	$2.11
3/16″	8974K29★	—	—	4.13
1/4″	8974K31★	—	—	6.08
5/16″	8974K27★	—	—	9.08
3/8″	8974K32	—	—	11.85
7/16″	8974K25★	—	—	12.37
1/2″	8974K33	—	—	15.04
5/8″	8974K34	—	—	16.71
3/4″	8974K11	—	$12.82	23.30
7/8″	8974K12	—	$15.54	$28.25
1″	8974K13	—	19.34	35.17
1 1/8″	8974K15	—	23.38	42.50
1 1/4″	8974K16	$9.95	27.36	49.74
1 3/8″	8974K17	11.63	31.98	58.15
1 1/2″	8974K18	12.78	35.13	63.88
1 5/8″	8974K66	15.00	41.24	74.98
1 3/4″	8974K68	16.70	45.91	83.48
2″	8974K71	21.81	59.97	109.04
2 1/8″	8974K73	24.62	67.70	123.10
2 1/4″	8974K75	$27.60	$75.90	$138.00
2 1/2″	8974K77	32.81	90.23	164.06
2 3/4″	8974K79	39.70	109.18	198.50
3″	8974K82	47.25	129.93	236.24
3 1/8″	8974K84	51.21	140.83	256.06
3 1/4″	8974K86	55.45	152.49	277.26
3 1/2″	8974K88	62.01	170.53	310.05
3 3/4″	8974K96	71.09	195.49	355.43
4″	8974K97	78.20	215.06	391.02
5″	8974K98	118.11	324.81	590.57

★ Temper is T6.

Dia.	1″ Long	3″ Long	6″ Long
2 1/2″	1610T51 $7.35	1610T61 $14.42	1610T71 $26.25
3″	1610T21 8.74	1610T31 16.23	1610T41 28.70
3 1/2″	1610T22 10.51	1610T32 20.56	1610T42 37.40
4″	1610T23 12.92	1610T33 25.34	1610T43 46.14
4 1/2″	1610T24 15.54	1610T34 30.40	1610T44 55.34
5″	1610T25 18.19	1610T35 35.64	1610T45 64.88
6″	1610T26 $26.19	1610T36 $51.30	1610T46 $93.35
6 1/2″	1610T52 37.21	1610T62 72.98	1610T72 132.86
7″	1610T53 42.83	1610T63 83.99	1610T73 152.90
7 1/2″	1610T54 46.80	1610T64 91.78	1610T74 167.08
8″	1610T55 55.26	1610T65 108.36	1610T75 197.27

Metric Rods—Unpolished (Mill) Finish

- Hardness: 90 Brinell
- Yield Strength: 35,000 psi
- Temper: T6

Meet ASTM B211. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1/4″. Sold in 6-ft. lengths.

Dia.	Dia. Tolerance		
5 mm	±0.007″	4634T11	$1.90
6 mm	±0.007″	4634T12	2.79
7 mm	±0.008″	4634T13	3.58
8 mm	±0.008″	4634T14	4.68
9 mm	±0.008″	4634T15	$5.56
10 mm	±0.008″	4634T16	6.89
12 mm	±0.008″	4634T17	9.89
14 mm	±0.009″	4634T18	13.47
15 mm	±0.009″	4634T19	$15.45
16 mm	±0.009″	4634T21	17.62
20 mm	±0.010″	4634T22	29.10
25 mm	±0.010″	4634T23	43.01

Rods with Material Certification—Unpolished (Mill) Finish

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T6511, unless noted

Meet ASTM B221. Each comes with a traceable lot number and physical test report. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1″. Sold in 6-ft. lengths.

Dia.	Dia. Tolerance		
1/8″	±0.002″	1615T11★	$12.11
3/16″	±0.008″	1615T13★	14.13
1/4″	±0.008″	1615T15	16.08
5/16″	±0.008″	1615T17	19.08
3/8″	±0.005″	1615T19	$21.85
1/2″	±0.005″	1615T21	25.04
5/8″	±0.005″	1615T23	26.71
3/4″	±0.005″	1615T25	33.30
7/8″	±0.005″	1615T27	$38.25
1″	±0.005″	1615T29	45.17
1 1/4″	±0.006″	1615T31	59.74
1 1/2″	±0.006″	1615T33	73.88

★ Temper is T6.

Rods—Hard Anodized Coating

- Hardness: Rockwell C70
- Yield Strength: 40,000 psi (before coating)
- Temper: T6 or T6511 (before coating)

About half of the coating penetrates the material, while the other half covers the surface. The coating is 0.001″ to 0.002″ thick, resists wear and corrosion, and meets MIL-A-8625. Straightness tolerance is not rated. Length tolerance is ±1/16″.

To Order: Please specify 1- or 3-ft. length.

Dia.	Dia. Tolerance		1 ft.	3 ft.
1/8″	±0.007″	6750K11	$1.85	$4.63
3/16″	±0.007″	6750K12	2.78	6.17
1/4″	±0.008″	6750K13	3.60	8.00
5/16″	±0.008″	6750K14	$5.35	$11.88
3/8″	±0.008″	6750K15	5.94	13.19
1/2″	±0.009″	6750K16	6.29	13.97
5/8″	±0.009″	6750K17	$9.29	$20.65
3/4″	±0.010″	6750K18	13.93	30.96
1″	±0.012″	6750K19	23.22	51.61

Also Available: Chrome-coated rods with a slippery surface. Hardness is Rockwell C60-C65, yield strength is 40,000 psi (before coating), and temper is T6 (before coating). The coating is 0.0003″ to 0.0007″ thick. Meet AMS QQ-C-320 and AMS 2406. Offered in the same diameters and lengths listed above. Please ask for 7830K21 and specify diameter and length.

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Not rated
- Yield Strength: 35,000 psi
- Temper: T6511, unless noted

The 1/8″ to 1/4″ diameter rods meet ASTM B211; 5/16″ diameter and larger rods meet ASTM B221. Diameter tolerance is –0.0005″. Straightness tolerance is 0.001″ per foot. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/8″	9062K24★	—	$10.77	$17.09
3/16″	9062K25★	—	12.19	19.35
1/4″	9062K26★	—	13.70	21.75
5/16″	9062K27	$7.01	15.76	25.02
3/8″	9062K28	$7.44	$16.75	$26.58
1/2″	9062K31	9.07	20.42	32.41
5/8″	9062K32	9.69	21.79	34.59
3/4″	9062K33	12.10	27.23	43.23
7/8″	9062K34	$13.93	$31.34	$49.74
1″	9062K21	15.84	35.65	56.58
1 1/4″	9062K22	20.74	46.67	74.08
1 1/2″	9062K23	25.88	58.24	92.44

★ Temper is T6.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Multipurpose Aluminum (Alloy 6061) *(Material continued from previous page)*

A combination of good strength, corrosion resistance, and machinability makes this the most widely used aluminum. It has less strength than Alloys 2024 and 7075, but better corrosion resistance and weldability. It's heat treatable and resists cracking due to stress. Commonly used for vehicle parts and pipe fittings. Nonmagnetic. Temperature range is –320° to +300° F.

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: 95 Brinell
- Yield Strength: 35,000 psi
- Temper: T651, unless noted

Meet ASTM B211, unless noted. Hex size is measured across the flats. Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size	Tolerance
1/4″-3/8″	±0.002″
1/2″	±0.009″
5/8″, 7/8″, 1 1/8″-1 1/2″	±0.003″

Hex Size	Tolerance
3/4″	±0.010″
1″	±0.012″
1 3/4″-2″	±0.005″

Hex Size		1 ft.	3 ft.	6 ft.
1/4″	89845K31★	—	—	$11.68
3/8″	89845K33★	—	—	20.94
1/2″	89845K11■	—	$15.12	27.05
5/8″	89845K12	—	19.80	35.36
3/4″	89845K13■	$11.73	$28.57	$51.01
7/8″	89845K14	13.16	32.03	57.20
1″	89845K15■	17.95	43.70	78.04
1 1/8″	89845K52	21.95	53.45	95.45
1 1/4″	89845K54	$27.06	$65.88	$117.65
1 1/2″	89845K56	37.96	92.42	165.04
1 3/4″	89845K58	51.96	126.50	225.90
2″	89845K61	64.58	157.24	280.78

★ Temper is T6. ■ Temper is T6511. Meets ASTM B221.

90° Angles—Unpolished (Mill) Finish

- Hardness: 95 Brinell
- Yield Strength: 35,000 psi
- Temper: T6

Meet ASTM B221. Inside corner and leg edges are rounded; outside corner is squared. Straightness tolerance is not rated. Length tolerance is ±1/4″ for 4-ft. lengths and ±1/2″ for 8-ft. lengths.

To Order: Please specify 4- or 8-ft. length where prices are shown.

Leg Lg.	Tolerance
1/2″-3/4″	±0.010″
1″-1 1/4″	±0.012″
1 1/2″-1 3/4″	±0.014″

Leg Lg.	Tolerance
2″-3″	±0.024″
4″-5″	±0.034″
6″	±0.044″

Outside Leg Lgs.		4 ft.	8 ft.
1/16″ Thick *(±0.006″)*			
1/2″ × 1/2″	8982K54	$2.35	$4.05
3/4″ × 3/4″	8982K56	3.45	5.94
1″ × 1″	8982K39	4.63	7.99
1/8″ Thick *(±0.007″)*			
1/2″ × 1″	8982K91	5.88	10.14
3/4″ × 3/4″	8982K12	—	14.36
1″ × 1″	8982K21	—	18.97
1″ × 1 1/2″	8982K87	9.87	17.01
1″ × 2″	8982K88	11.86	20.44
1 1/4″ × 1 1/4″	8982K11	13.31	22.95
1 1/2″ × 1 1/2″	8982K13	16.50	28.45
2″ × 2″	8982K14	21.04	36.27
3/16″ Thick *(±0.007″)*			
1″ × 1″	8982K15	15.98	27.56
1″ × 2″	8982K92	16.08	27.72
3/16″ Thick (Cont.)			
1 1/4″ × 1 1/4″	8982K16	$20.28	$34.97
1 1/2″ × 1 1/2″	8982K17	22.88	39.44
2″ × 2″	8982K18	32.27	55.64
1/4″ Thick *(±0.008″)*			
1″ × 1″	8982K19	19.18	33.07
1 1/4″ × 1 1/4″	8982K31	23.79	41.01
1 1/2″ × 1 1/2″	8982K32	30.32	52.27
1 3/4″ × 1 3/4″	8982K34	35.64	61.45
2″ × 2″	8982K36	38.65	66.64
2″ × 3″	8982K57	43.40	74.82
2″ × 4″	8982K58	52.42	90.38
2 1/2″ × 2 1/2″	8982K37	46.15	79.57
3″ × 3″	8982K61	52.99	91.37
3″ × 6″	8982K81	75.23	129.71
4″ × 4″	8982K63	70.17	120.99
1/4″ Thick (Cont.)			
5″ × 5″	8982K44	$85.16	$146.83
6″ × 6″	8982K46	102.61	176.92
3/8″ Thick *(±0.008″)*			
2″ × 2″	8982K38	53.09	91.53
2″ × 3″	8982K93	59.90	103.27
2 1/2″ × 2 1/2″	8982K65	65.88	113.59
3″ × 3″	8982K67	78.76	135.79
3″ × 4″	8982K94	85.36	147.18
4″ × 4″	8982K69	106.85	184.23
4″ × 6″	8982K95	107.65	185.61
6″ × 6″	8982K72	159.48	274.96
1/2″ Thick *(±0.009″)*			
3″ × 3″	8982K74	106.87	184.26
4″ × 4″	8982K76	141.95	244.75
5″ × 5″	8982K78	167.68	289.10

90° Angles with Material Certification—Unpolished (Mill) Finish

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T6

Meet ASTM B308. Each comes with a traceable lot number and physical test report. Inside corner and leg edges are rounded; outside corner is squared. Straightness tolerance is 0.0125″ per foot. Length tolerance is +5″. Sold in 8-ft. lengths.

Leg Lg.	Tolerance
3/4″	±0.010″
1″-1 1/4″	±0.012″

Leg Lg.	Tolerance
1 1/2″	±0.014″

Outside Leg Lgs.		
1/8″ Thick *(±0.007″)*		
3/4″ × 3/4″	1618T22	$24.36
1″ × 1″	1618T24	28.97
1/8″ Thick (Cont.)		
1 1/4″ × 1 1/4″	1618T26	$32.95
1 1/2″ × 1 1/2″	1618T28	38.45
3/16″ Thick *(±0.007″)*		
1″ × 1″	1618T32	$37.56
1 1/2″ × 1 1/2″	1618T34	49.44
1/4″ Thick *(±0.008″)*		
1″ × 1″	1618T42	$43.07
1 1/2″ × 1 1/2″	1618T44	62.27

T-Bars—Unpolished (Mill) Finish

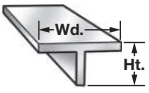

- Hardness: 80 Brinell
- Yield Strength: 35,000 psi
- Temper: T6

Meet ASTM B221. Edges are squared, unless noted. Flatness tolerance is 0.006″ per inch of width. Straightness tolerance is 0.050″ per foot for 0.050″ and 0.063″ thick bars; 0.0125″ per foot for 0.125″ and 0.188″ thick bars. Length tolerance is ±1/8″. Sold in 8-ft. lengths.

Ht. × Wd.		
0.050″ Thick *(±0.006″)*		
1/2″ × 5/8″	1668T16	$5.84
1″ × 1 1/2″	1668T17	10.96
0.063″ Thick *(±0.006″)*		
3/4″ × 1 1/4″	1668T11 ♦	$9.76
1″ × 1 1/4″	1668T12 ♦	10.41
0.125″ Thick *(±0.007″)*		
3/4″ × 1 1/2″	1668T13	$19.14
7/8″ × 1 1/2″	1668T14 ♦	19.67
1″ × 2″	1668T19	32.27
0.125″ Thick (Cont.)		
1 1/4″ × 2″	1668T21	$35.89
0.188″ Thick *(±0.007″)*		
1 1/2″ × 1 1/2″	1668T15	31.98

♦ Edges are rounded.

I-Beams—Unpolished (Mill) Finish

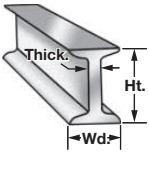

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T6

Meet ASTM B221 and B308. Also known as American Standard I-Beams. Edges are rounded. Width tolerance is ±0.024″. Thickness tolerance is ±0.008″. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1/4″. **To Order:** Please specify 3- or 6-ft. length.

Ht.	Tolerance
3″	±0.024″
4″	±0.034″

Ht.	Tolerance
6″	±0.044″

Ht. × Wd. × Thick.		3 ft.	6 ft.
3″ × 2.509″ × 0.349″	8003K11	$56.16	$96.83
4″ × 2.796″ × 0.326″	8003K13	69.65	120.08
6″ × 3.330″ × 0.230″	8003K15	$91.27	$157.36
6″ × 3.443″ × 0.343″	8003K17	103.76	178.89

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Multipurpose Aluminum (Alloy 6061) *(Material continued from previous page)*

U-Channels—Unpolished (Mill) Finish

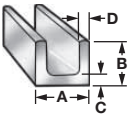

- Hardness: 95 Brinell
- Yield Strength: 40,000 psi
- Temper: T6

Meet ASTM B308. Inside corners and leg edges are rounded; outside corners are squared. Base and leg thickness tolerances are not rated. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1/2″.

Base Wd. (A)	Tolerance
2″-5″	±0.034″
6″-9″	±0.054″
10″-12″	±0.084″

Leg Lg. (B)	Tolerance
1″-1 3/4″	±0.012″
2″-3 3/4″	±0.024″
4″-5″	±0.044″

To Order: Please specify 1-, 3-, or 5-ft. length.

Base Wd. (A)	Leg Lg. (B)	Base Thick. (C)	Leg Thick. (D)		1 ft.	3 ft.	5 ft.
2″	1″	0.13″	0.13″	1630T29	$5.53	$12.91	$18.44
2″	1 1/4″	0.17″	0.26″	1630T47	9.77	22.81	32.58
3″	1 1/2″	0.13″	0.20″	1630T31	10.65	24.85	35.50
3″	1 3/4″	0.17″	0.26″	1630T32	14.19	33.10	47.29
4″	2″	0.15″	0.23″	1630T33	15.44	36.02	51.45
4″	2 1/4″	0.19″	0.29″	1630T34	20.17	47.06	67.23
5″	2 1/4″	0.15″	0.26″	1630T35	19.65	45.85	65.50
5″	2 3/4″	0.19″	0.32″	1630T36	26.06	60.82	86.88
6″	2 1/2″	0.17″	0.29″	1630T37	23.91	55.79	79.70
6″	3 1/4″	0.21″	0.35″	1630T38	32.38	75.56	107.95
7″	2 3/4″	0.17″	0.29″	1630T39	$27.05	$63.10	$90.15
7″	3 1/2″	0.21″	0.38″	1630T41	37.89	88.40	126.29
8″	3″	0.19″	0.35″	1630T42	33.32	77.75	111.07
8″	3 3/4″	0.25″	0.41″	1630T43	43.42	101.31	144.73
9″	4″	0.29″	0.44″	1630T44	50.05	116.78	166.83
10″	3 1/2″	0.25″	0.41″	1630T45	46.02	107.38	153.40
10″	4 1/4″	0.31″	0.50″	1630T48	55.43	129.33	184.76
12″	4″	0.29″	0.47″	1630T51	53.70	125.30	179.00
12″	5″	0.35″	0.62″	1630T52	72.57	169.34	241.91

Metric Multipurpose Aluminum (Alloy 6060)

The European equivalent of Alloy 6061, this alloy combines good machinability, high strength, and corrosion resistance. It's heat treatable and its surface finish is good for anodizing. Use for light structural and architectural applications. Nonmagnetic. Temperature range is not rated.

Metric Rods—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: Not rated

Diameter, straightness, and length tolerances are not rated. Sold in 1-meter lengths.

Dia.		
3 mm	1681T21	$8.17
4 mm	1681T22	8.17
6 mm	1681T23	10.72
7 mm	1681T24	11.39
8 mm	1681T25	$14.06
10 mm	1681T26	16.14
12 mm	1681T27	19.08
15 mm	1681T28	28.36
20 mm	1681T29	$46.60
25 mm	1681T31	74.09
30 mm	1681T33	96.08

Precision-Cast Multipurpose Aluminum (MIC 6 Alloy)

For outstanding machinability and stability, turn to this stress-relieved cast alloy. Not heat treatable. Nonmagnetic. Temperature range is not rated.

Sheets—Precision Ground Finish

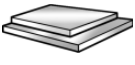

- Hardness: 65 Brinell
- Yield Strength: 18,000 psi
- Temper: As cast

Width and length tolerances are ±1/16″. Thickness tolerance is ±0.005″. Flatness tolerance is 0.015″ for all sheets 1/4″ to 5/8″ thick; 0.005″ for all sheets 3/4″ thick and thicker.

Thick.	6″×6″		12″×12″		24″×24″		24″×72″	
1/4″			86825K11	$43.03	86825K21	$157.15	86825K31	$429.49
3/8″			86825K13	48.59	86825K23	178.18	86825K33	485.91
1/2″			86825K15	62.01	86825K25	227.27	86825K35	621.30
5/8″			86825K45	79.97	86825K47	293.19	86825K49	796.49
3/4″			86825K17	78.70	86825K27	289.46	86825K39	789.36
7/8″			86825K85	99.43	86825K87	367.10	86825K65	987.36
1″	86825K61	$31.07	86825K19	103.66	86825K29	382.64	86825K43	1,035.55
1 1/4″	86825K41	41.30	86825K67	138.63	86825K69	511.85	86825K88	1,376.67
1 1/2″	86825K42	47.00	86825K12	163.25	86825K22	606.16	86825K32	1,566.72
2″	86825K46	56.05	86825K34	190.55	86825K36	680.20	86825K38	1,868.18
2 1/4″	86825K48	73.63	86825K14	207.26	86825K16	760.01	86825K18	2,072.56
2 1/2″	86825K52	81.81	86825K24	231.07	86825K26	847.32	86825K28	2,310.65
3″	86825K56	98.16						

High-Strength Multipurpose Aluminum (Alloy 6013)

Get the corrosion resistance and thermal conductivity of Alloy 6061 with improved strength, hardness, and machinability. Heat treatable and nonmagnetic. Temperature range is not rated.

Sheets—Unpolished (Mill) Finish

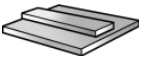

- Hardness: 125-130 Brinell
- Yield Strength: 50,000 to 52,000 psi
- Temper: T651

Sheets 8″ wide and larger meet ASTM B209. Flatness tolerance is 0.004″ per inch of width. Length tolerance is ±1″.

Width	Tolerance
2″	±0.003″
3″	±0.008″
4″-24″	±0.063″

Thick.	Thick. Tolerance	2″ Wd.×12″ Lg.		2″ Wd.×36″ Lg.		3″ Wd.×12″ Lg.		3″ Wd.×36″ Lg.		4″ Wd.×12″ Lg.		4″ Wd.×36″ Lg.	
1/2″	±0.027″									9050K41	$32.93		
3/4″	±0.037″									9050K43	46.17		
1″	±0.003″	9048K111	$56.38	9048K113	$136.24	9048K121	$83.43	9048K123	$201.62	9048K131	99.10	9048K133	$239.50
2″	±0.005″					9048K141	130.19	9048K143	314.63	9048K151	160.03	9048K153	386.74
3″	±0.008″									9048K171	220.07	9048K173	531.83
		6″ Wd.×12″ Lg.		6″ Wd.×36″ Lg.		8″ Wd.×8″ Lg.		12″ Wd.×12″ Lg.		18″ Wd.×18″ Lg.		24″ Wd.×24″ Lg.	
1/2″	+0.027″	9050K42	$48.27			9050K21	$46.90	9050K22	$95.88	9050K23	$197.80	9050K24	$359.11
3/4″	+0.037″	9050K44	67.79			9050K31	66.00	9050K32	137.60	9050K33	284.84	9050K34	444.16
1″	+0.098″	9050K45	91.42			9050K11	89.97	9050K12	166.11	9050K13	323.16	9050K14	562.31
2″	±0.005″	9048K161	223.30	9048K163	$539.65	9050K53	170.81	9050K54	316.55	9050K55	615.66	9050K56	1,076.28
3″	±0.008″	9048K181	320.91	9048K183	775.52	9050K57	256.17	9050K58	472.68	9050K59	932.93	9050K61	1,549.77

Also Available: Alloy 6013 rods with an unpolished (mill) finish. Hardness is 125 Brinell; yield strength is 55,000 to 56,000 psi; and temper is T8. Please ask for 9049K49 and specify 1″ to 2 1/2″ diameter and 1-, 3-, or 6-ft. length.

Warning! Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Ultra-Corrosion-Resistant Architectural Aluminum (Alloy 6063)

With superb corrosion resistance, this heat-treatable alloy is perfect for outdoor applications such as architectural trim, railings, and piping. It also has great weldability. Nonmagnetic. Temperature range is –320° to +212°F.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 55-60 Brinell
- Yield Strength: 16,000 to 21,000 psi
- Temper: T5, unless noted

Meet ASTM B221. Flatness tolerance is 0.006″ per inch of width. Length tolerance is ±1″. Sold in 8-ft. lengths.

Wd.	Wd. Tolerance		
1/8″ Thick *(±0.007″)*			
1/2″	±0.009″	**89755K21**	$4.79
5/8″	±0.009″	**89755K23**	5.83
3/4″	±0.010″	**89755K25**	8.35
1″	±0.012″	**89755K27**	8.00
1 1/4″	±0.012″	**89755K29**	10.12
3/16″ Thick *(±0.007″)*			
3/4″	±0.010″	**89755K33**	9.85
1″	±0.012″	**89755K35**	13.18
3/16″ Thick (Cont.)			
1 1/2″	±0.014″	**89755K37**	$19.10
1/4″ Thick *(±0.008″)*			
1/4″	±0.008″	**1642T71** ♦	4.39
1/2″	±0.009″	**89755K41**	8.63
3/4″	±0.010″	**89755K42**	12.88
1″	±0.012″	**89755K43**	15.93
1 1/2″	±0.014″	**89755K44**	23.04
2″	±0.024″	**89755K47**	30.75
3/8″ Thick *(±0.008″)*			
3/8″	±0.008″	**1642T73** ♦	$8.94
5/8″	±0.009″	**89755K53**	15.84
1/2″ Thick *(±0.009″)*			
1/2″	±0.009″	**1642T75** ♦	15.25
2″	±0.024″	**89755K62**	53.56
3/4″ Thick *(±0.009″)*			
3/4″	±0.009″	**1642T77** ♦	34.50

♦ Temper is T52.

Rectangular Bars with Rounded Edges—Unpolished (Mill) Finish

- Hardness: 60 Brinell
- Yield Strength: 25,000 psi
- Temper: T6

Meet ASTM B221. Flatness tolerance is not rated. Length tolerance is ±1/4″. Sold in 6-ft. lengths.

Wd.	Wd. Tolerance		
1/16″ Thick *(±0.006″)*			
1/2″	±0.009″	**4490T11**	$2.44
1″	±0.012″	**4490T25**	4.73
1 1/2″	±0.014″	**4490T26**	6.63
2″	±0.024″	**4490T27**	8.33
3/32″ Thick *(±0.006″)*			
1/2″	±0.009″	**4490T12**	3.53
3/4″	±0.010″	**4490T13**	5.01
1/8″ Thick *(±0.007″)*			
1/4″	±0.008″	**4490T14**	3.31
5/8″	±0.009″	**4490T15**	7.72
1″	±0.012″	**4490T28**	8.63
1/8″ Thick (Cont.)			
1 1/2″	±0.014″	**4490T16**	$11.04
2″	±0.024″	**4490T31**	15.35
2 1/2″	±0.024″	**4490T17**	18.61
3/16″ Thick *(±0.007″)*			
1/2″	±0.009″	**4490T18**	5.73
1/4″ Thick *(±0.008″)*			
1/2″	±0.009″	**4490T32**	10.23
1″	±0.012″	**4490T33**	19.08
1 1/2″	±0.014″	**4490T34**	27.82
2″	±0.024″	**4490T35**	37.41
3/8″ Thick *(±0.008″)*			
5/8″	±0.009″	**4490T19**	$19.36
7/16″ Thick *(±0.008″)*			
3/4″	±0.010″	**4490T21**	18.74
1/2″ Thick *(±0.009″)*			
1″	±0.012″	**4490T22**	36.87
5/8″ Thick *(±0.009″)*			
2″	±0.024″	**4490T23**	54.36
3/4″ Thick *(±0.010″)*			
1 3/4″	±0.014″	**4490T24**	60.00

Rectangular Tubes—Unpolished (Mill) Finish

- Hardness: 60 Brinell
- Yield Strength: 16,000 to 25,000 psi
- Temper: T52, unless noted

Meet ASTM B221. Height, width, and straightness tolerances are not rated. Length tolerance is ±1/2″ for 1-ft. and 3-ft. lengths; and +1 1/2″, –1/4″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Outside Ht.×Wd.		1 ft.	3 ft.	6 ft.
1/16″ Wall Thickness *(±0.007″)*				
1″ ×1″	**88875K51**	$3.19	$7.12	$12.27
1/8″ Wall Thickness *(±0.013″)*				
3/4″× 3/4″	**88875K52**	3.42	8.32	13.15
3/4″×1 1/2″	**88935K53**	5.43	13.59	23.65
1″ ×1″	**88875K54**	6.89	16.27	25.41
1″ ×1 1/2″	**88935K55**	6.34	15.22	26.71
1″ ×2″	**88935K56**	7.63	19.07	34.77
1″ ×3″	**88935K57**	8.97	21.71	38.33
1 1/4″×1 1/4″	**88875K58**	7.75	17.48	28.84
1 1/4″×2 1/2″	**88935K59**	8.77	21.03	36.90
1 1/2″×1 1/2″	**88875K61**	7.58	18.02	30.94
1/8″ Wall Thickness (Cont.)				
1 1/2″×2″	**88935K62**	$8.06	$19.47	$33.72
1 1/2″×3″	**88935K629**	9.04	21.88	38.93
1 3/4″×1 3/4″	**88875K64**	9.55	20.89	39.42
1 3/4″×3″	**88935K65**	9.94	23.38	41.82
1 3/4″×4″	**88935K988**	12.10	29.40	51.12
2″ ×2″	**88875K67**	11.11	25.50	46.21
2″ ×3″	**88935K101**	10.90	25.33	44.23
2″ ×4″	**88935K69**	12.96	31.47	54.63
2″ ×5″	**88935K71**	14.07	34.11	59.28
2″ ×6″	**88935K72**	16.15	39.06	67.96
2 1/2″×2 1/2″	**88875K79**	13.64	32.62	53.00
1/8″ Wall Thickness (Cont.)				
3″ ×3″	**88875K73**	$13.96	$34.64	$57.36
4″ ×4″	**88875K74**	18.36	47.45	77.34
1/4″ Wall Thickness *(±0.025″)*				
1 1/2″×3″	**88935K11** ♠	13.76	36.04	65.53
2″ ×2″	**88875K75**	17.82	44.57	74.08
2″ ×3″	**88935K12** ♠	14.77	38.67	70.31
2″ ×4″	**88935K13** ♠	18.03	47.22	85.85
3″ ×3″	**88875K76**	25.20	65.41	110.74
4″ ×4″	**88875K77**	31.77	80.14	138.20
4″ ×6″	**88935K14** ♠	27.33	71.57	130.13
6″ ×6″	**88875K78**	44.06	109.06	188.04

♠ Temper is T5.

Round Tubes—Unpolished (Mill) Finish

- Hardness: 55-60 Brinell
- Yield Strength: 15,000 psi
- Temper: T5

Meet ASTM B221. Straightness tolerance is 0.010″ per foot. Length tolerance is ±1/4″. OD and ID tolerances are ±0.025″. Sold in 8-ft. lengths.

OD	ID		
0.049″ Wall Thickness *(±0.006″)*			
5/8″	0.527″	**1658T49**	$8.49
0.065″ Wall Thickness *(±0.006″)*			
1/4″	0.120″	**1658T61**	7.39
1/2″	0.370″	**1658T45**	7.11
3/4″	0.620″	**1658T51**	11.16
0.065″ Wall Thickness (Cont.)			
1″	0.870″	**1658T55**	$14.55
1 1/2″	1.370″	**1658T57**	23.38
0.070″ Wall Thickness *(±0.006″)*			
3/8″	0.235″	**1658T41**	5.38
0.109″ Wall Thickness *(±0.006″)*			
1 5/8″	1.407″	**1658T59**	$39.59
0.115″ Wall Thickness *(±0.006″)*			
3/8″	0.145″	**1658T43**	7.13
1/2″	0.270″	**1658T63**	17.57
0.118″ Wall Thickness *(±0.006″)*			
9/16″	0.328″	**1658T47**	$12.27
0.219″ Wall Thickness *(±0.007″)*			
7/8″	0.438″	**1658T53**	34.53

Round Tubes—Anodized Coating

- Hardness: Rockwell E60-E80
- Yield Strength: 15,000 psi (before coating)
- Temper: T5 (before coating)

Meet ASTM B211 and MIL-A-8625F. The coating is 0.0002″ thick and 0.0001″ to 0.0002″ of it penetrates the material. Straightness tolerance is 0.010″ per foot. Length tolerance is ±1/4″. Sold in 6-ft. lengths.

OD	ID		
0.065″ Wall Thickness *(±0.008″)*			
1/4″	0.120″	**4568T11**	$8.22
1/2″	0.370″	**4568T13**	7.79
5/8″	0.495″	**4568T14**	8.75
0.065″ Wall Thickness (Cont.)			
3/4″	0.620″	**4568T15**	$12.39
7/8″	0.745″	**4568T16**	10.98
1″	0.870″	**4568T17**	16.66
0.065″ Wall Thickness (Cont.)			
1 1/2″	1.370″	**4568T18**	$25.82
0.115″ Wall Thickness *(±0.009″)*			
3/8″	0.145″	**4568T12**	8.12
0.154″ Wall Thickness *(±0.009″)*			
2 3/8″	2.067″	**4568T21**	$47.15
0.205″ Wall Thickness *(±0.009″)*			
1 5/8″	1.215″	**4568T19**	40.23

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Ultra-Corrosion-Resistant Architectural Aluminum (Alloy 6063)

(Material continued from previous page)

Rods—Unpolished (Mill) Finish

- Hardness: 60 Brinell
- Yield Strength: 21,000 psi
- Temper: T52

Meet ASTM B221. Diameter tolerance is ±0.006″. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1″. Sold in 8-ft. lengths.

Dia.		
3/8″	1640T31	$7.34
1/2″	1640T33	12.51
3/4″	1640T35	25.66
1″	1640T37	43.18

Double-Wall Round Tube—Unpolished (Mill) Finish

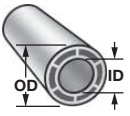

- Hardness: 73-84 Brinell
- Yield Strength: 31,000 psi
- Temper: T6

OD tolerance is ±0.034″. Outer wall is 0.11″ thick and inner wall is 0.14″ thick. Wall thickness tolerance is ±0.020″. Straightness tolerance is 0.015″ per foot. Length tolerance is ±1/2″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

OD	ID		1 ft.	3 ft.	6 ft.
3.062″	1.922″	8891K11	$39.00	$93.60	$156.00

90° Angles—Unpolished (Mill) Finish

- Hardness: 55-60 Brinell
- Yield Strength: 15,000 to 21,000 psi
- Temper: T5, unless noted

Meet ASTM B221. Edges are squared. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1″. Sold in 8-ft. lengths.

Leg Lg.	Tolerance
1/2″-3/4″	±0.010″
1″-1 1/4″	±0.012″
1 1/2″-1 3/4″	±0.014″
2″-3″	±0.024″
4″	±0.034″

Outside Leg Lgs.		
1/16″ Thick *(±0.006″)*		
1/2″ × 3/8″	88805K46 ♦	$5.04
1/2″ × 1/2″	88805K41	5.84
3/4″ × 3/4″	88805K43	7.66
1″ × 1″	88805K47	12.76
1 1/2″ × 1 1/2″	88805K66 ♦	12.42
1/8″ Thick *(±0.007″)*		
1/2″ × 1/2″	88805K42	9.91
3/4″ × 3/4″	88805K44	14.34
1″ × 1/2″	88805K54 ♦	15.01
1″ × 1″	88805K48	21.07
1 1/4″ × 1 1/4″	88805K52	24.72
1 1/2″ × 1″	88805K51	22.31
1 1/2″ × 1 1/2″	88805K57	28.38

Outside Leg Lgs.		
1/8″ Thick (Cont.)		
1 3/4″ × 1 3/4″	88805K71	$34.02
2″ × 1/2″	88805K55 ♦	21.56
2″ × 1 1/2″	88805K56 ♦	26.10
2″ × 2″	88805K63	31.26
4″ × 4″	88805K67 ♦	65.10
3/16″ Thick *(±0.007″)*		
1″ × 1″	88805K49	28.63
1 1/4″ × 1 1/4″	88805K53	34.56
1 1/2″ × 1 1/2″	88805K58	43.95
2″ × 2″	88805K64	50.75
3″ × 3″	88805K65 ♦	52.41
4″ × 4″	88805K59	80.00

♦ Temper is T52.

U-Channels—Unpolished (Mill) Finish

- Hardness: 55-60 Brinell
- Yield Strength: 16,000 to 24,000 psi
- Temper: T5

Meet ASTM B221. Edges are squared. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1/4″. Sold in 8-ft. lengths.

Base	Tolerance
3/8″-1 3/4″	±0.014″
2″-3″	±0.024″
4″-5″	±0.034″

Leg	Tolerance
3/8″-3/4″	±0.010″
1″-1 1/2″	±0.014″
2″-3″	±0.024″

Outside Base × Legs		
1/16″ Thick *(±0.006″)*		
3/8″ × 3/8″	9001K18	$6.68
1/2″ × 1/2″	9001K15	8.05
1/2″ × 3/4″	9001K16	10.57
1/2″ × 1″	9001K14	13.07
3/4″ × 3/4″	9001K17	11.97
3/32″ Thick *(±0.006″)*		
1/2″ × 1/2″	9001K31	11.60
1/8″ Thick *(±0.007″)*		
1/2″ × 3/4″	9001K32	18.75
3/4″ × 3/8″	9001K43	13.70
3/4″ × 1/2″	9001K61	15.50
3/4″ × 3/4″	9001K34	19.96
1″ × 1/2″	9001K19	17.22
1″ × 3/4″	9001K21	21.93
1″ × 1″	9001K35	26.53

Outside Base × Legs		
1/8″ Thick (Cont.)		
1 1/4″ × 1 1/4″	9001K36	$31.79
1 1/2″ × 1/2″	9001K63	22.48
1 1/2″ × 1 1/2″	9001K67	39.59
1 3/4″ × 3/4″	9001K37	28.89
1 3/4″ × 1″	9001K38	34.73
2″ × 1/2″	9001K39	26.58
2″ × 1″	9001K72	33.01
3″ × 1″	9001K41	43.01
3″ × 3″	9001K11	60.89
4″ × 1″	9001K13	49.20
3/16″ Thick *(±0.007″)*		
5″ × 2″	9001K88	91.91
1/4″ Thick *(±0.008″)*		
2″ × 2″	9001K84	71.33

90° Angles—Anodized Coating

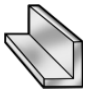

- Hardness: Rockwell E60-E80
- Yield Strength: 16,000 psi (before coating)
- Temper: T5 (before coating)

Meet ASTM B221 and MIL-A-8625F. The coating is 0.0002″ thick and 0.0001″ to 0.0002″ of it penetrates the material. Edges are squared, unless noted. Leg tolerance is ±0.024″. Straightness tolerance is not rated. Length tolerance is ±1/4″. Sold in 6-ft. lengths.

Outside Leg Lgs.		
1/16″ Thick *(±0.006″)*		
3/8″ × 3/8″	4630T11	$7.50
1/2″ × 1/2″	4630T12	10.02
5/8″ × 5/8″	4630T13	11.38
3/4″ × 3/4″	4630T14★	12.99
1″ × 1″	4630T15★	14.11
1 1/4″ × 1 1/4″	4630T16	16.60
1 1/2″ × 1 1/2″	4630T17	19.11
1 3/4″ × 1 3/4″	4630T18	20.16
2″ × 2″	4630T19	22.33

★ Edges are rounded.

Outside Leg Lgs.		
1/8″ Thick *(±0.007″)*		
1/2″ × 1/2″	4630T21	$13.29
3/4″ × 3/4″	4630T22	18.25
1″ × 1″	4630T23	25.08
1 1/4″ × 1 1/4″	4630T24	27.76
1 1/2″ × 1 1/2″	4630T25	30.05
1 3/4″ × 1 3/4″	4630T26	37.69
2″ × 2″	4630T27	44.66

U-Channels—Anodized Coating

- Hardness: Rockwell E60-E80
- Yield Strength: 16,000 psi (before coating)
- Temper: T5 (before coating)

Meet ASTM B221 and MIL-A-8625F. The coating is 0.0002″ thick and 0.0001″ to 0.0002″ of it penetrates the material. Edges are squared, unless noted. Base tolerance is ±0.014″ for 3/8″ to 1 3/4″ sizes and ±0.024″ for 2″ size. Leg tolerance is ±0.012″ for 3/8″ to 1″ sizes and ±0.024″ for 2″ size. Straightness tolerance is 0.050″ per foot. Length tolerance is ±1/4″. Sold in 6-ft. lengths.

Outside Base × Legs		
1/16″ Thick *(±0.006″)*		
3/8″ × 3/8″	4592T23★	$10.16
3/8″ × 1/2″	4592T24	14.53
1/2″ × 1/2″	4592T11	12.97
5/8″ × 7/8″	4592T29★	16.23
11/16″ × 1/2″	4592T26	13.31
3/4″ × 1/2″	4592T13	13.67

Outside Base × Legs		
1/16″ Thick (Cont.)		
1″ × 1/2″	4592T16	$18.41
1″ × 1″	4592T31	18.99
1 1/8″ × 1/2″	4592T17	19.22
1 1/2″ × 3/4″	4592T18	19.58
1 3/4″ × 13/16″	4592T19	21.24
2″ × 3/4″	4592T32	29.32

Outside Base × Legs		
3/32″ Thick *(±0.006″)*		
3/4″ × 1/2″	4592T27	$15.88
2″ × 3/4″	4592T22★	27.49
1/8″ Thick *(±0.007″)*		
1/2″ × 1″	4592T12	25.01
17/32″ × 1″	4592T25	25.33

★ Edges are rounded.

Outside Base × Legs		
1/8″ Thick (Cont.)		
3/4″ × 3/4″	4592T28★	$27.10
3/4″ × 1″	4592T14	28.03
2″ × 2″	4592T21★	41.70
3/16″ Thick *(±0.007″)*		
3/4″ × 1″	4592T15	32.55

H-Bars—Unpolished (Mill) Finish

- Hardness: 90 Brinell
- Yield Strength: 35,000 psi
- Temper: T5

Meet ASTM B211. Edges are squared. Height tolerance is ±0.014″, except 2.375″ high bar is ±0.024″. Straightness tolerance is 0.0125″ per foot, except 1.060″ high bar is 0.050″ per foot. Length tolerance is ±1/4″. Sold in 6-ft. lengths.

Ht. (A)	Inside Wd. (B)	Inside Wd. Tolerance		
0.050″ Thick *(±0.006″)*				
1.060″	0.60″	±0.010″	4558T11	$8.85
1.724″	1.02″	±0.012″	4558T16	12.41
0.055″ Thick *(±0.006″)*				
1.500″	2.00″	±0.024″	4558T15	15.25
0.062″ Thick *(±0.006″)*				
1.500″	0.91″	±0.010″	4558T13	13.44

Ht. (A)	Inside Wd. (B)	Inside Wd. Tolerance		
0.094″ Thick *(±0.006″)*				
1.500″	0.50″	±0.010″	4558T12	$19.70
0.188″ Thick *(±0.007″)*				
1.500″	0.50″	±0.010″	4558T14	34.32
0.250″ Thick *(±0.008″)*				
2.375″	0.50″	±0.010″	4558T17	59.71

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

High-Strength Aluminum (Alloy 2024)

You trust it 30,000 feet in the air: Alloy 2024 combines superior strength and good machinability to make it the most widely used aircraft alloy. The addition of copper improves strength, but decreases corrosion resistance. Use for aircraft parts, screw machine parts, and wheels. Heat treatable. Nonmagnetic. Temperature range is –320° to +300° F.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 120 Brinell
- Yield Strength: 42,000 to 45,000 psi
- Temper: T351, except 1/8″ to 3/8″ thicknesses are T4

Meet ASTM B211. Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Wd.	Tolerance
1/4″-1/2″	±0.002″
5/8″-1 1/2″	±0.003″
1 3/4″-2″	±0.005″

Wd.	Tolerance
2 1/4″-3″	±0.008″
3 1/2″-4″	±0.015″
5″-6″	±0.030″

Width		1 ft.	3 ft.	6 ft.
1/8″ Thick *(±0.002″)*				
1″	89215K417	—	$17.91	$30.88
2″	89215K465	$18.50	42.92	74.00
3/16″ Thick *(±0.002″)*				
1/2″	89215K411	—	14.19	24.47
1 1/4″	89215K433	—	30.93	53.33
1 1/2″	89215K447	—	35.08	60.48
1/4″ Thick *(±0.002″)*				
1/4″	86895K42	—	—	16.93
1/2″	89215K413	—	18.11	31.23
3/4″	89215K479	—	26.01	44.84
1″	89215K419	—	30.71	52.95
1 1/4″	89215K435	14.18	32.90	56.73
1 1/2″	89215K449	16.77	38.91	67.08
1 3/4″	89215K462	18.77	43.55	75.09
2″	89215K468	21.59	50.08	86.34
2 1/2″	89215K107	24.87	57.70	99.48
3″	89215K109	28.20	65.42	112.80
4″	89215K112	36.35	84.33	145.39
5/16″ Thick *(±0.002″)*				
1 1/2″	89215K453	20.36	47.24	81.45
3/8″ Thick *(±0.002″)*				
3/8″	86895K44	—	—	27.88
1/2″	89215K415	—	27.35	47.16
3/4″	89215K482	—	37.73	65.05
1″	89215K422	19.07	44.25	76.30
1 1/4″	89215K438	21.07	48.87	84.26
1 1/2″	89215K456	24.57	57.01	98.30
2″	89215K114	30.45	70.63	121.78
2 1/2″	89215K116	36.14	83.84	144.55
3″	89215K118	42.08	97.61	168.30
4″	89215K121	54.72	126.94	218.86
6″	89215K247	79.24	183.84	316.96
1/2″ Thick *(±0.002″)*				
1/2″	86895K11	—	28.06	48.38
3/4″	89215K484	14.80	34.35	59.22
1″	89215K425	18.96	43.99	75.85
1 1/4″	89215K442	20.85	48.38	83.41
1 1/2″	89215K123	24.08	55.87	96.32
1 3/4″	89215K125	26.68	61.89	106.71
2″	89215K127	29.70	68.90	118.79
2 1/2″	89215K129	36.25	84.10	145.00

Width		1 ft.	3 ft.	6 ft.
1/2″ Thick (Cont.)				
3″	89215K132	$42.44	$98.47	$169.77
4″	89215K134	54.67	126.83	218.68
6″	89215K136	74.99	173.98	299.96
5/8″ Thick *(±0.0025″)*				
5/8″	86895K12	14.41	33.43	57.63
3/4″	89215K487	18.50	42.92	74.00
1″	89215K428	22.76	52.80	91.03
1 1/4″	89215K138	26.86	62.32	107.45
1 1/2″	89215K141	29.32	68.03	117.30
2″	89215K143	35.83	83.13	143.32
3/4″ Thick *(±0.0025″)*				
3/4″	86895K13	18.63	43.23	74.53
1″	89215K145	22.59	52.40	90.34
1 1/4″	89215K147	28.21	65.45	112.84
1 1/2″	89215K149	32.17	74.64	128.69
1 3/4″	89215K152	36.62	84.95	146.46
2″	89215K154	46.37	107.58	185.48
2 1/2″	89215K156	51.07	118.48	204.28
3″	89215K158	58.72	136.23	234.88
3 1/2″	89215K161	61.80	143.36	247.18
4″	89215K163	70.19	162.83	280.74
5″	89215K165	89.28	207.12	357.10
6″	89215K167	103.61	240.36	414.42
1″ Thick *(±0.0025″)*				
1″	86895K21	29.28	67.94	117.13
1 1/4″	89215K169	34.35	79.70	137.41
1 1/2″	89215K172	39.17	90.89	156.70
1 3/4″	89215K174	47.77	110.82	191.07
2″	89215K176	50.38	116.88	201.51
2 1/2″	89215K178	62.27	144.46	249.07
3″	89215K181	70.62	163.85	282.50
3 1/2″	89215K183	86.00	199.52	344.00
4″	89215K185	90.15	209.15	360.60
5″	89215K187	103.98	241.23	415.91
6″	89215K189	119.38	276.97	477.53
1 1/8″ Thick *(±0.003″)*				
1 1/8″	86895K23	36.34	84.30	145.35
1 1/4″ Thick *(±0.003″)*				
1 1/4″	86895K45	45.13	104.70	180.51
1 1/2″	89215K192	54.63	126.75	218.54

Width		1 ft.	3 ft.	6 ft.
1 1/4″ Thick (Cont.)				
2″	89215K194	$63.70	$147.77	$254.78
2 1/2″	89215K196	73.40	170.28	293.59
3″	89215K198	89.27	207.11	357.08
4″	89215K201	113.76	263.92	455.03
1 1/2″ Thick *(±0.003″)*				
1 1/2″	86895K25	58.79	136.39	235.15
2″	89215K203	63.91	148.27	255.63
2 1/2″	89215K205	84.53	196.12	338.14
3″	89215K207	102.61	238.05	410.43
4″	89215K209	123.95	287.57	495.81
6″	89215K212	163.68	379.74	654.72
1 3/4″ Thick *(±0.005″)*				
1 3/4″	86895K27	76.22	176.82	304.86
2″	89215K214	92.76	215.20	371.04
3″	89215K216	101.08	234.51	404.32
4″	89215K218	134.78	312.69	539.12
6″	89215K221	193.10	448.00	772.41
2″ Thick *(±0.005″)*				
2″	86895K29	91.02	211.15	364.06
2 1/4″	89215K223	105.04	243.69	420.15
2 1/2″	89215K225	110.15	255.55	440.61
3″	89215K227	117.79	273.27	471.16
4″	89215K229	150.39	348.90	601.56
6″	89215K232	199.44	462.69	797.74
2 1/4″ Thick *(±0.008″)*				
2 1/4″	86895K32	127.22	295.14	508.87
2 1/2″ Thick *(±0.008″)*				
2 1/2″	86895K34	135.78	315.00	543.11
3″	89215K234	158.54	367.82	634.18
4″	89215K236	178.34	413.75	713.37
6″	89215K238	230.59	534.96	922.34
3″ Thick *(±0.008″)*				
3″	86895K36	183.16	424.93	732.63
4″	89215K241	205.80	477.45	823.19
5″	89215K243	213.96	496.38	855.82
6″	89215K245	268.09	621.96	1,072.35
3 1/2″ Thick *(±0.01″)*				
3 1/2″	86895K38	230.49	534.73	921.95
4″ Thick *(±0.01″)*				
4″	86895K41	265.04	614.88	1,060.14

Rectangular Bars with Material Certification—Unpolished (Mill) Finish

- Hardness: 120 Brinell
- Yield Strength: 47,000 psi
- Temper: T4, except 1/2″ thickness is T351

Meet ASTM B211. Each comes with a traceable lot number and physical test report. Width tolerance is ±0.003″, except 2″ widths are ±0.005″. Flatness tolerance is 0.004″ per inch of width. Length tolerance is ±1″. Sold in 6-ft. lengths.

Wd.		
1/8″ Thick *(±0.002″)*		
1″	2109T17	$40.88
3/16″ Thick *(±0.002″)*		
1/2″	2109T11	34.47
1/4″ Thick *(±0.002″)*		
1/2″	2109T12	41.23

Wd.		
1/4″ Thick (Cont.)		
3/4″	2109T14	$54.84
1″	2109T18	62.95
1 1/4″	2109T22	66.73
1 1/2″	2109T25	77.08
2″	2109T28	96.34

Wd.		
3/8″ Thick *(±0.002″)*		
1/2″	2109T13	$57.16
3/4″	2109T15	75.05
1″	2109T19	86.30
1 1/2″	2109T26	108.30

Wd.		
1/2″ Thick *(±0.002″)*		
3/4″	2109T16	$69.22
1″	2109T21	85.85
1 1/4″	2109T24	93.41
1 1/2″	2109T27	106.32
2″	2109T29	128.79

Sheets with Corrosion-Resistant Coating (Clad)—Unpolished (Mill) Finish

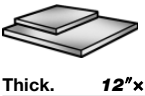

- Hardness: Not rated
- Yield Strength: 45,000 psi
- Temper: T3

Meet ASTM B209. Width and length tolerances are ±1/16″. Thickness tolerance is ±0.004″. Flatness tolerance is not rated.

Thick.	12″×12″		24″×24″	
0.016″	1924T64	$12.62	1924T65	$39.50
0.020″	1924T66	15.47	1924T67	48.52
0.025″	1924T11	16.28	1924T13	50.91

Thick.	12″×12″		24″×24″	
0.032″	1924T21	$19.00	1924T23	$59.44
0.040″	1924T31	22.68	1924T33	70.78
0.050″	1924T68	28.37	1924T69	88.66

Thick.	12″×12″		24″×24″	
0.063″	1924T41	$32.85	1924T43	$103.48
0.090″	1924T51	46.12	1924T53	140.88
0.125″	1924T61	61.67	1924T63	190.09

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

High-Strength Aluminum (Alloy 2024) *(Material continued from previous page)*

Sheets—Unpolished (Mill) Finish

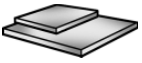

- Hardness: 120 Brinell
- Yield Strength: 42,000 to 50,000 psi
- Temper: T3, except 0.250″ to 1.500″ thicknesses are T351

Meet ASTM B209. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×72″	
0.020″	±0.0025″	88835K11	$8.73	88835K18	$15.71	88835K26	$29.51	88835K34	$52.65	88835K42	$90.61	88835K211	$116.88
0.025″	±0.0025″	88835K61	9.35	88835K62	17.39	88835K63	31.52	88835K64	59.34	88835K65	100.84	88835K212	134.49
0.032″	±0.002″	88835K12	11.28	88835K19	21.42	88835K27	40.35	88835K35	68.61	88835K43	119.30	88835K213	164.64
0.040″	±0.002″	88835K13	13.62	88835K21	25.98	88835K28	49.00	88835K36	85.75	88835K44	149.14	88835K214	197.90
0.050″	±0.003″	88835K14	16.75	88835K22	32.49	88835K29	57.93	88835K37	104.55	88835K45	178.65	88835K215	238.20
0.063″	±0.003″	88835K15	20.76	88835K23	37.96	88835K31	66.44	88835K38	120.84	88835K46	212.66	88835K216	284.80
0.080″	±0.0035″	88835K71	28.85	88835K72	48.01	88835K73	86.62	88835K74	154.40	88835K75	271.69	88835K217	357.49
0.090″	±0.0035″	88835K16	30.14	88835K24	55.13	88835K32	96.45	88835K39	175.45	88835K47	308.71	88835K218	399.21
0.100″	±0.0035″	88835K81	33.02	88835K82	59.95	88835K83	108.17	88835K84	206.58	88835K85	352.03	88835K219	439.16
0.125″	±0.0035″	88835K17	40.57	88835K25	70.53	88835K33	127.61	88835K41	238.18	88835K48	420.35	88835K221	535.95
0.160″	±0.007″	88835K91	44.83	88835K92	75.53	88835K93	137.27	88835K94	249.61	88835K95	475.45	88835K222	679.22
0.190″	±0.007″	88835K67	48.32	88835K68	84.08	88835K77	152.82	88835K78	277.89	88835K87	529.31	88835K223	756.16

Thick.	Thick. Tolerance	8″×8″		12″×12″		18″×18″		24″×24″	
0.250″	±0.014″	9040K51	$39.61	9040K71	$77.69	9040K61	$154.19	9040K81	$247.90
0.375″	±0.015″	9040K52	54.11	9040K72	107.68	9040K62	208.51	9040K82	344.02
0.500″	±0.023″	9040K53	64.24	9040K73	126.24	9040K63	252.80	9040K83	398.74
0.750″	±0.031″	9040K54	97.30	9040K74	176.88	9040K64	352.03	9040K84	559.22
1.000″	±0.039″	9040K55	111.44	9040K75	207.09	9040K65	405.15	9040K85	654.73
1.250″	±0.039″	9040K56	141.28	9040K76	264.81	9040K66	518.15	9040K86	837.48
1.500″	±0.039″	9040K57	153.35	9040K77	287.43	9040K67	562.41	9040K87	909.02

Military Specification Sheets—Unpolished (Mill) Finish

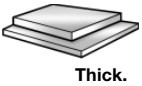

- Hardness: 120 Brinell
- Yield Strength: 47,000 to 48,000 psi
- Temper: T351

Meet ASTM B209. Sheets also meet MIL-S-2154 and are ultrasonically inspected (USI) for defects below the surface of the material. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	8″×8″		12″×12″		18″×18″		24″×24″	
3/4″	±0.037″	1276T15	$109.29	1276T16	$234.19	1276T17	$499.60	1276T18	$780.62
1″	±0.047″	1276T19	127.46	1276T21	273.13	1276T22	582.69	1276T23	910.45
1 1/4″	±0.047″	1276T24	152.88	1276T25	327.59	1276T26	698.86	1276T27	1,091.97
1 1/2″	±0.047″	1276T28	175.62	1276T29	376.33	1276T31	802.83	1276T32	1,254.42
1 3/4″	±0.060″	1276T33	198.68	1276T34	425.74	1276T35	908.25	1276T36	1,419.14
2″	±0.060″	1276T37	209.68	1276T38	449.32	1276T39	958.55	1276T41	1,497.74

Tight-Tolerance Blanks with Material Certification—Precision Ground Finish

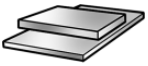

- Hardness: 120 Brinell
- Yield Strength: 47,000 psi
- Temper: T351

Meet ASTM B209. You won't need to prepare this material for machining. Precision ground blanks are consistently flat, square, and parallel on all sides. Each comes with a traceable lot number and physical test report. Tolerance for all dimensions is ±0.002″.

Thick.	2″×12″		6″×12″		8″×8″		12″×12″		12″×24″		24″×24″	
1/4″	8509K11	$97.03	8509K14	$118.28	8509K15	$101.34	8509K17	$180.18	8509K19	$308.89	8509K21	$508.80
3/8″	8509K22	111.40	8509K25	129.86	8509K26	122.36	8509K28	189.95	8509K31	327.05	8509K32	546.85
1/2″	8509K33	113.61	8509K36	151.55	8509K37	143.46	8509K39	225.52	8509K42	408.52	8509K43	641.93
5/8″	8509K44	118.24	8509K47	167.20	8509K48	159.15	8509K51	255.03	8509K53	446.90	8509K54	674.62
3/4″	8509K55	128.93	8509K58	214.69	8509K59	199.22	8509K62	333.63	8509K64	610.87	8509K65	984.24
1″	8509K66	118.56	8509K69	246.11	8509K71	223.55	8509K73	403.48	8509K75	674.68	8509K76	1,117.76

Tubes—Unpolished (Mill) Finish

- Hardness: 120 Brinell
- Yield Strength: 42,000 psi
- Temper: T3

Meet ASTM B210. Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 3- or 6-ft. length.

OD	Tolerance
1/4″-1/2″	±0.006″
3/8″-1″	±0.008″

OD	Tolerance
1 1/2″-2″	±0.010″
2 1/2″-3″	±0.012″

OD	ID		3 ft.	6 ft.
0.035″ Wall Thickness *(±0.004″)*				
1/4″	0.180″	1968T12	$20.47	$35.29
3/8″	0.305″	1968T66	27.86	48.03
1/2″	0.430″	1968T15	20.88	36.00
5/8″	0.555″	1968T77	37.78	65.14
1″	0.930″	1968T17	23.30	40.17
1 1/2″	1.430″	1968T47	34.30	59.14
0.049″ Wall Thickness *(±0.005″)*				
3/8″	0.277″	1968T67	25.63	44.19
1/2″	0.402″	1968T73	28.88	49.80
5/8″	0.527″	1968T78	33.01	56.91
7/8″	0.777″	1968T86	32.63	56.26
1″	0.902″	1968T92	33.31	57.43
0.058″ Wall Thickness *(±0.006″)*				
3/8″	0.259″	1968T68	22.95	39.57
1/2″	0.384″	1968T74	37.30	64.31
0.058″ Wall Thickness (Cont.)				
5/8″	0.509″	1968T79	$44.00	$75.86
3/4″	0.634″	1968T83	34.32	59.17
7/8″	0.759″	1968T87	37.60	64.83
0.065″ Wall Thickness *(±0.007″)*				
1/4″	0.120″	1968T22	18.12	31.25
3/8″	0.245″	1968T69	31.82	54.86
1/2″	0.370″	1968T24	20.69	35.68
5/8″	0.495″	1968T81	29.18	50.31
3/4″	0.620″	1968T26	22.77	39.26
7/8″	0.745″	1968T88	36.67	63.23
1″	0.870″	1968T37	32.11	55.37
1 1/2″	1.370″	1968T49	51.48	88.76
2″	1.870″	1968T57	88.08	151.87
2 1/2″	2.370″	1968T61	109.74	189.21
3″	2.870″	1968T65	138.52	238.82
0.083″ Wall Thickness *(±0.008″)*				
1/2″	0.334″	1968T75	$29.56	$50.97
5/8″	0.459″	1968T82	28.98	49.97
3/4″	0.584″	1968T84	35.15	60.60
1″	0.834″	1968T93	45.19	77.91
0.095″ Wall Thickness *(±0.010″)*				
1/2″	0.310″	1968T76	28.82	49.69
3/4″	0.560″	1968T85	47.44	81.80
7/8″	0.685″	1968T89	47.01	81.05
1″	0.810″	1968T94	47.06	81.14
0.120″ Wall Thickness *(±0.012″)*				
1/2″	0.260″	1968T23	32.73	56.43
3/4″	0.510″	1968T33	45.61	78.63
7/8″	0.635″	1968T91	49.43	85.22
1″	0.760″	1968T39	51.42	88.66
1 1/2″	1.260″	1968T51	57.08	98.42

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

High-Strength Aluminum (Alloy 2024) *(Material continued from previous page)*

You trust it 30,000 feet in the air: Alloy 2024 combines superior strength and good machinability to make it the most widely used aircraft alloy. The addition of copper improves strength but decreases corrosion resistance. Use for aircraft parts, screw machine parts, and wheels. Heat treatable. Nonmagnetic. Temperature range is –320° to +300° F.

Rods—Unpolished (Mill) Finish

- Hardness: 120 Brinell
- Yield Strength: 45,000 psi
- Temper: T351, except 1/4″ and 3/8″ diameters are T4

Meet ASTM B211. Straightness tolerance is not rated. Length tolerance is ±1″, except 6″ and smaller lengths have a length tolerance of +1/8″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
1/4″-1/2″	±0.0015″
5/8″-1 3/8″	±0.003″
1 1/2″-2″	±0.004″

Dia.	Tolerance
2 1/8″-3″	±0.006″
3 1/8″-3 3/8″	±0.008″
3 1/2″-5″	±0.012″

Dia.		1 ft.	3 ft.	6 ft.
1/4″	86985K31	—	—	$10.02
3/8″	86985K33	—	—	19.97
1/2″	86985K35	—	—	31.29
5/8″	86985K52	—	$23.79	41.02
3/4″	86985K54	—	26.63	45.91
7/8″	86985K56	$13.20	34.79	59.98
1″	86985K58	17.25	45.47	78.39
1 1/8″	86985K11	21.06	55.52	95.72
1 1/4″	86985K12	24.10	63.54	109.56
1 3/8″	86985K13	28.60	75.41	130.02
1 1/2″	86985K14	$34.83	$91.83	$158.32
1 5/8″	86985K15	39.81	104.95	180.95
1 3/4″	86985K16	44.84	118.20	203.80
1 7/8″	86985K91	50.54	133.24	229.73
2″	86985K17	57.41	151.36	260.96
2 1/8″	86985K92	61.31	161.64	278.69
2 1/4″	86985K18	68.72	181.16	312.35
2 3/8″	86985K21	80.94	213.38	367.89
2 1/2″	86985K19	80.49	212.21	365.88
2 5/8″	86985K22	88.84	234.22	403.83
2 3/4″	86985K23	$97.47	$256.96	$443.03
2 7/8″	86985K24	115.93	305.63	526.95
3″	86985K25	112.08	295.49	509.47
3 1/8″	86985K26	133.67	352.40	607.58
3 1/4″	86985K27	127.42	335.93	579.19
3 3/8″	86985K28	147.06	387.70	668.44
3 1/2″	86985K29	143.04	377.11	650.19
3 3/4″	86985K42	164.13	432.71	746.05
4″	86985K44	186.34	491.26	847.00
4 1/2″	86985K46	229.65	605.45	1,043.88

Dia.	1/2″ Long		3/4″ Long		1″ Long		3″ Long		6″ Long	
3″	9034K11	$10.86	9034K12	$13.60	9034K13	$15.12	9034K51	$37.79	9034K61	$62.98
3 1/4″	9034K14	11.82	9034K15	14.79	9034K16	16.44	9034K53	41.10	9034K63	68.50
3 1/2″	9034K17	13.55	9034K18	16.97	9034K19	18.86	9034K55	47.15	9034K65	78.58
4″	9034K21	17.45	9034K22	21.84	9034K23	24.28	9034K57	60.69	9034K67	101.15
5″	9034K24	25.71	9034K25	32.18	9034K26	35.77	9034K59	89.42	9034K69	149.04

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 120 Brinell
- Yield Strength: 42,000 psi
- Temper: T3511 or T4 for 1/8″ to 1/2″ diameters; T351, T3511, or T4 for 5/8″ to 1 1/2″ diameters

Meet ASTM B211 and AMS QQ-A-225. Diameter tolerance is –0.0005″. Straightness tolerance is 0.005″ per foot. Length tolerance is ±1/8″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/8″	9061K31	—	$8.37	$14.43
3/16″	9061K32	$4.14	9.61	16.57
1/4″	9061K33	6.70	15.54	26.79
5/16″	9061K34	7.67	17.79	30.68
3/8″	9061K35	8.52	19.77	34.08
1/2″	9061K36	9.99	23.17	39.95
5/8″	9061K17	12.13	28.15	48.53
3/4″	9061K18	14.45	33.52	57.80
7/8″	9061K19	17.89	41.50	71.56
1″	9061K21	20.02	46.43	80.06
1 1/4″	9061K22	31.14	72.24	124.55
1 1/2″	9061K23	37.22	86.34	148.87

T-Bars—Unpolished (Mill) Finish

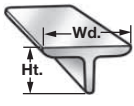

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: T3511

Meet ASTM B221 and AMS QQ-A-200/3. Edges are rounded. Height tolerance is ±0.024″. Width tolerance is ±0.024″, except 1 3/8″ to 1 1/2″ widths are ±0.014″. Flatness tolerance is 0.012″. Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 3- or 6-ft. length.

Ht. × Wd.		3 ft.	6 ft.
1/16″ Thick (±0.006″)			
3/4″ × 1 1/2″	9751T14	$50.06	$87.83
1″ × 1 3/8″	9751T12	44.06	77.29
1/8″ Thick (±0.007″)			
1″ × 2″	9751T16	69.26	121.51
1 1/2″ × 3″	9751T24	95.07	166.79
2″ × 2 1/2″	9751T18	95.44	167.44
2 1/2″ × 3″	9751T28	110.49	193.85
3/16″ Thick (±0.007″)			
2″ × 2 1/2″	9751T22	127.94	224.45
2″ × 3″	9751T26	138.70	243.33
2 1/2″ × 3″	9751T32	150.56	264.14

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: 120 Brinell
- Yield Strength: 42,000 to 45,000 psi
- Temper: T351, except 1/4″ and 1/2″ hex sizes are T4

Meet ASTM B211. Hex size is measured across the flats. Hex size tolerance is ±0.005″. Straightness tolerance is not rated. Length tolerance is ±1″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size		1 ft.	3 ft.	6 ft.
1/4″	89765K22	—	—	$17.04
1/2″	89765K11	—	$26.05	44.91
3/4″	89765K12	$15.39	40.57	69.95
7/8″	89765K13	$17.96	$47.34	$81.62
1″	89765K65	22.35	58.93	101.61
1 1/8″	89765K67	28.05	73.96	127.52
1 1/4″	89765K69	$33.20	$87.53	$150.92
1 1/2″	89765K74	44.24	116.64	201.10
2″	89765K81	71.21	187.72	323.66

90° Angles—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: T3511

Meet ASTM B221 and AMS QQ-A-200/3. Inside corner and leg edges are rounded; outside corner is squared. Leg length tolerance is ±0.024″. Straightness tolerance is not rated. Length tolerance is ±1″. **To Order:** Please specify 3- or 6-ft. length.

Outside Leg Lgs.		3 ft.	6 ft.
1/16″ Thick (±0.006″)			
1/2″ × 1/2″	9681T13	$28.97	$50.82
5/8″ × 5/8″	9681T14	33.84	59.37
3/4″ × 3/4″	9681T15	35.59	62.44
7/8″ × 7/8″	9681T16	39.77	69.78
1″ × 1″	9681T17	37.00	64.92
1 1/2″ × 1 1/2″	9681T19	49.66	87.12
1/8″ Thick (±0.007″)			
3/4″ × 3/4″	9681T33	$40.89	$71.74
1″ × 1″	9681T34	52.17	91.52
1 1/4″ × 1 1/4″	9681T35	62.95	109.04
1 1/2″ × 1 1/2″	9681T36	70.99	122.36
2″ × 2″	9681T38	89.62	155.15
2 1/2″ × 2 1/2″	9681T39	103.15	178.18
3/16″ Thick (±0.007″)			
1 1/4″ × 1 1/4″	9681T53	$80.13	$139.10
1 1/2″ × 1 1/2″	9681T54	90.15	156.06
2″ × 2″	9681T55	114.79	198.95
2 1/2″ × 2 1/2″	9681T56	140.29	244.02
1/4″ Thick (±0.008″)			
2″ × 2″	9681T73	140.54	244.46
3″ × 3″	9681T74	199.74	349.13

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

High-Strength Aluminum (Alloy 2024) *(Material continued from previous page)*

U-Channels—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 46,000 psi
- Temper: T3511

Meet AMS QQ-A-200/3. Inside corners are rounded and outside corners are squared. Base tolerance is ±0.014″ for 3/4″ to 1 1/4″ sizes and ±0.024″ for 2 1/4″ and 2 1/2″ sizes. Leg tolerance is ±0.014″. Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 3- or 6-ft. length.

Outside Base × Legs		3 ft.	6 ft.
1/16″ Thick *(±0.006″)*			
3/4″ × 5/8″	**9806T41**	$41.95	$73.60
7/8″ × 3/4″	**9806T42**	43.08	75.58
1″ × 1/2″	**9806T44**	42.81	75.11
1/8″ Thick *(±0.007″)*			
1″ × 1 1/4″	**9806T46**	$77.22	$135.47
1 1/4″ × 1 1/2″	**9806T47**	87.95	154.30
2 1/4″ × 1″	**9806T54**	87.56	153.62
1/8″ Thick (Cont.)			
2 1/2″ × 1″	**9806T55**	$91.20	$160.00
3/16″ Thick *(±0.007″)*			
2 1/2″ × 1 3/4″	**9806T56**	159.88	280.50

Z-Bars—Unpolished (Mill) Finish

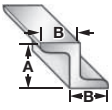

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: T3511

Meet AMS QQ-A-200/3. Height and leg tolerances are ±0.012″. Thickness tolerance is ±0.006″. Straightness tolerance is not rated. Length tolerance is ±1″. Sold in 6-ft. lengths.

Thick.	Ht. (A)	Leg (B)		
1/16″	1/2″	3/4″	**9931T11**	$57.47
1/16″	5/8″	3/4″	**9931T12**	62.29
1/16″	3/4″	1″	**9931T13**	$70.71
1/16″	1″	3/4″	**9931T14**	66.73
1/16″	1″	1″	**9931T15**	$76.27
1/16″	1 1/8″	1 1/8″	**9931T16**	87.36

Corrosion-Resistant High-Strength Aluminum (Alloy 7075)

Exceptionally strong but still lightweight, this aircraft alloy has better corrosion resistance than Alloy 2024 due to the addition of zinc. Originally developed for aircraft frames, it is also used for keys, gears, and other high-stress parts. Heat treatable. Nonmagnetic. Temperature range is –320° to +212° F.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 130 Brinell, unless noted
- Yield Strength: 56,000 psi, unless noted
- Temper: T7351, unless noted

Meet ASTM B211. Flatness tolerance is 0.004″ per inch of width. Length tolerance is ±1″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Width	Tolerance
1″-2″	±0.003″
2 1/2″-3″	±0.008″

Width	Tolerance
4″	±0.010″

Width		1 ft.	3 ft.	6 ft.
1/4″ Thick *(±0.002″)*				
1″	**9055K36**★	$15.59	$37.68	$64.97
1 1/2″	**9055K37**★	21.92	52.98	91.34
2″	**9055K38**★	27.27	65.91	113.64
2 1/2″	**9055K39**★	34.70	83.86	144.58
3″	**9055K41**★	39.68	95.89	165.33
4″	**9055K42**★	42.60	102.94	177.48
1/2″ Thick *(±0.002″)*				
1″	**9055K11**	21.82	52.74	90.93
1 1/2″	**9055K43**★	44.06	106.48	183.59
2″	**9055K12**	49.86	120.50	207.76
2 1/2″	**9055K44**★	62.13	150.15	258.88
3″	**9055K45**★	60.62	146.49	252.57
4″	**9055K46**★	74.14	179.18	308.93
3/4″ Thick *(±0.0025″)*				
1″	**9055K13**	$23.34	$56.39	$97.23
2″	**9055K14**	41.29	99.78	172.04
3″	**9055K15**	52.34	126.50	218.10
1″ Thick *(±0.0025″)*				
1 1/2″	**9055K16**	44.44	107.39	185.15
2″	**9055K17**	47.94	115.84	199.73
2 1/2″	**9055K18**	59.25	143.20	246.89
3″	**9055K19**	68.50	165.53	285.40
4″	**9055K21**	86.99	210.22	362.44
1 1/4″ Thick *(±0.003″)*				
1 1/2″	**9055K22**	45.34	109.58	188.93
2″	**9055K23**	55.38	133.83	230.74
2 1/2″	**9055K24**	74.18	179.26	309.07
3″	**9055K25**	98.71	238.54	411.28
1 1/2″ Thick *(±0.003″)*				
2″	**9055K26**	$72.73	$175.76	$303.04
2 1/2″	**9055K27**	99.54	240.55	414.75
3″	**9055K28**	113.40	274.06	472.51
4″	**9055K29**	119.58	288.97	498.23
2″ Thick *(±0.005″)*				
2 1/2″	**9055K31**	97.78	236.30	407.42
3″	**9055K32**	119.06	287.72	496.07
4″	**9055K33**	152.28	368.02	634.51
2 1/2″ Thick *(±0.008″)*				
3″	**9055K34**	149.45	361.17	622.71
3″ Thick *(±0.008″)*				
4″	**9055K35**	231.75	560.06	965.62

★ Hardness is 150 Brinell, yield strength is 66,000 psi, and temper is T651.

Sheets—Unpolished (Mill) Finish

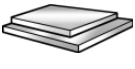

- Hardness: 150 Brinell
- Yield Strength: 61,000 to 68,000 psi
- Temper: T6 for sheets up to 0.190″ thick; T651 for sheets 0.250″ thick and thicker

Meet ASTM B209. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×72″	
0.032″	±0.002″	**8885K11**	$14.65	**8885K17**	$26.75	**8885K24**	$46.85	**8885K31**	$74.89	**8885K37**	$142.18	**8885K71**	$194.58
0.040″	±0.002″	**8885K57**	17.96	**8885K58**	32.80	**8885K59**	57.44	**8885K61**	91.81	**8885K62**	174.27	**8885K72**	238.53
0.050″	±0.003″	**8885K12**	23.06	**8885K18**	41.83	**8885K25**	65.09	**8885K32**	117.20	**8885K38**	205.26	**8885K73**	280.91
0.063″	±0.003″	**8885K13**	25.11	**8885K19**	45.28	**8885K26**	72.42	**8885K33**	131.44	**8885K39**	234.66	**8885K74**	323.18
0.090″	±0.0035″	**8885K14**	35.22	**8885K21**	56.21	**8885K27**	101.14	**8885K34**	186.70	**8885K41**	333.26	**8885K75**	451.51
0.125″	±0.0035″	**8885K15**	43.87	**8885K22**	70.20	**8885K28**	135.44	**8885K35**	235.85	**8885K42**	424.54	**8885K76**	596.93
0.160″	±0.007″	**8885K51**	52.70	**8885K52**	95.13	**8885K53**	171.98	**8885K54**	304.28	**8885K55**	548.02	**8885K77**	784.23
0.190″	±0.007″	**8885K16**	57.54	**8885K23**	106.21	**8885K29**	192.96	**8885K36**	338.46	**8885K43**	612.46	**8885K78**	877.07

Thick.	Thick. Tolerance	6″×6″		8″×8″		12″×12″		18″×18″		24″×24″	
0.250″	±0.015″			**9037K11**	$43.76	**9037K12**	$76.06	**9037K13**	$148.84	**9037K14**	$230.08
0.375″	±0.018″			**9037K15**	58.22	**9037K16**	103.20	**9037K17**	201.93	**9037K18**	312.15
0.500″	±0.023″			**9037K19**	80.29	**9037K21**	145.36	**9037K22**	284.44	**9037K23**	439.70
0.750″	±0.031″			**9037K24**	97.83	**9037K25**	196.95	**9037K26**	376.72	**9037K27**	582.35
1.00″	±0.124″	**9037K51**	$72.92	**9037K28**	118.05	**9037K29**	217.60	**9037K31**	390.82	**9037K32**	687.94
1.50″	±0.124″	**9037K53**	90.76	**9037K33**	146.98	**9037K35**	287.58				
2.00″	±0.150″	**9037K55**	97.79	**9037K37**	158.36	**9037K39**	309.84				
2.50″	±0.200″	**9037K57**	149.99	**9037K41**	242.91	**9037K43**	475.26				
3.00″	±0.200″	**9037K59**	160.11	**9037K45**	305.92	**9037K47**	552.11				

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Corrosion-Resistant High-Strength Aluminum (Alloy 7075)

(Material continued from previous page)

Exceptionally strong but still lightweight, this aircraft alloy has better corrosion resistance than Alloy 2024 due to the addition of zinc. Originally developed for aircraft frames, it is also used for keys, gears, and other high-stress parts. Heat treatable. Nonmagnetic. Temp. range is –320° to +212° F.

Tight-Tolerance Blanks with Material Certification—Precision Ground Finish

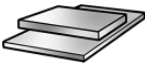

- Hardness: 150 Brinell
- Yield Strength: 73,000 psi
- Temper: T651

Meet ASTM B209. There's no need to prepare these precision ground blanks for machining in a CNC machine. They're flat, square, and parallel on all six sides. Each comes with a traceable lot number and physical test report. Tolerance for all dimensions is ±0.002″.

Thick.	2″×12″		6″×12″		8″×8″		8″×12″		12″×12″		12″×24″	
1/4″	1190T11	$79.73	1190T12	$116.45	1190T13	$111.14	1190T14	$154.77	1190T15	$189.74	1190T16	$312.28
3/8″	1190T21	85.61	1190T22	137.61	1190T23	142.60	1190T24	168.80	1190T25	220.17	1190T26	366.95
1/2″	1190T31	96.34	1190T32	153.64	1190T33	147.39	1190T34	186.77	1190T35	259.39	1190T36	427.97
5/8″	1190T41	103.67	1190T42	157.39	1190T43	149.49	1190T44	188.19	1190T45	266.58	1190T46	441.35
3/4″	1190T51	106.79	1190T52	170.07	1190T53	163.30	1190T54	199.63	1190T55	281.21	1190T56	524.25
1″	1190T61	113.65	1190T62	193.35	1190T63	168.86	1190T64	217.06	1190T65	306.11	1190T66	556.56

Rods—Unpolished (Mill) Finish

- Hardness: 150 Brinell
- Yield Strength: 66,000 psi
- Temper: T651

Meet ASTM B211. Straightness tolerance is not rated. Length tolerance is ±1″, except 1/4″, 1/2″, and 1″ lengths have a length tolerance of +1/8″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
5/8″-1 1/2″	±0.0025″
1 5/8″-2″	±0.004″

Dia.	Tolerance
2 1/8″-3 1/4″	±0.008″
3 1/2″-5″	±0.012″

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
5/8″	90465K66	____	$29.67	$51.15	1 5/8″	90465K16	$46.05	$121.40	$209.31	2 5/8″	90465K32	$97.22	$256.31	$441.92
3/4″	90465K67	$13.20	34.81	60.02	1 3/4″	90465K17	51.25	135.12	232.96	2 3/4″	90465K34	105.49	278.10	479.48
7/8″	90465K68	17.34	45.72	78.83	1 7/8″	90465K18	56.73	149.57	257.88	3″	90465K36	125.54	330.96	570.62
1″	90465K11	21.71	57.22	98.66	2″	90465K19	61.97	163.38	281.69	3 1/4″	90465K38	135.97	358.47	618.05
1 1/8″	90465K12	26.84	70.75	121.98	2 1/8″	90465K22	68.36	180.23	310.75	3 1/2″	90465K42	157.42	415.01	715.53
1 1/4″	90465K13	31.17	82.16	141.66	2 1/4″	90465K24	73.05	192.58	332.03	3 3/4″	90465K44	175.40	462.43	797.29
1 3/8″	90465K14	37.35	98.46	169.76	2 3/8″	90465K26	89.19	235.14	405.41	4″	90465K46	205.70	542.29	934.98
1 1/2″	90465K15	41.62	109.74	189.20	2 1/2″	90465K28	87.40	230.42	397.28	5″	90465K48	306.50	808.04	1,393.17

Dia.		1/4″ Long		1/2″ Long		1″ Long	Dia.		1/4″ Long		1/2″ Long		1″ Long
3″	9035K31	$11.08	9035K11	$14.90	9035K13	$19.47	4″	9035K37	$16.73	9035K21	$20.27	9035K23	$29.81
3 1/4″	9035K33	12.58	9035K14	14.02	9035K16	19.71	5″	9035K39	21.20	9035K24	25.51	9035K26	37.51
3 1/2″	9035K35	13.69	9035K17	15.68	9035K19	22.08							

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 150 Brinell
- Yield Strength: Not rated
- Temper: T6, T651, or T6511

Meet ASTM B211 or B221. Diameter tolerance is –0.0005″. Straightness tolerance is 0.005″ per foot. Length tolerance is ±1/8″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
1/8″	9063K24	____	$16.22	$27.03	3/8″	9063K28	$14.01	$28.02	$46.70	7/8″	9063K19	$21.66	$43.33	$72.21
3/16″	9063K25	$9.76	19.52	32.54	1/2″	9063K16	14.92	29.84	49.74	1″	9063K21	25.66	51.32	85.54
1/4″	9063K26	11.58	23.17	38.61	5/8″	9063K17	15.90	31.80	53.00	1 1/4″	9063K22	37.08	74.17	123.61
5/16″	9063K27	12.67	25.35	42.25	3/4″	9063K18	18.04	36.09	60.15	1 1/2″	9063K23	45.09	90.18	150.30

Ultra-Strength Aluminum (Alloy 7068)

Due in part to a high zinc content, this heat-treatable alloy is significantly stronger and harder than Alloy 7075 with comparable corrosion resistance. Originally developed for military hardware applications, it is now being used for vehicle parts as well as other applications requiring extremely high strength. Nonmagnetic. Maximum temperature is 300° F; minimum temperature is not rated.

Rods—Unpolished (Mill) Finish

- Hardness: 190 Brinell
- Yield Strength: 95,000 psi
- Temper: T6511

Straightness tolerance is not rated. Length tolerance is ±1″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.	Dia. Tolerance		1 ft.	3 ft.	6 ft.	Dia.	Dia. Tolerance		1 ft.	3 ft.	6 ft.
3/4″	±0.010″	9047K21	$18.32	$48.29	$83.26	1 3/4″	±0.014″	9047K16	$73.34	$193.36	$333.38
1″	±0.012″	9047K13	28.97	76.04	131.10	2″	±0.024″	9047K17	84.53	222.86	384.25
1 1/4″	±0.012″	9047K14	41.12	108.42	186.93	2 1/4″	±0.024″	9047K18	110.38	291.00	501.73
1 1/2″	±0.014″	9047K15	56.82	149.80	258.27	2 1/2″	±0.024″	9047K19	125.42	330.65	570.09

Ultra-Corrosion-Resistant High-Strength Aluminum (Alloy 7050)

This high-strength alloy offers better corrosion resistance than Alloy 7075 when under stress. It's heat treatable and commonly used in aircraft applications. Nonmagnetic. Temperature range is not rated.

Military Specification Sheets—Unpolished (Mill) Finish

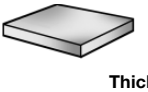

- Hardness: Not rated
- Yield Strength: 68,000 psi
- Temper: T7451

Sheets meet MIL-S-2154 and are ultrasonically inspected (USI) for defects below the surface of the material. Also meet AMS 4050. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance		6″×6″	Thick.	Thick. Tolerance		6″×6″	Thick.	Thick. Tolerance		6″×6″
1″	±0.039″	1281T11	$78.05	1 3/4″	±0.055″	1281T14	$125.89	2 1/2″	±0.075″	1281T17	$160.81
1 1/4″	±0.039″	1281T12	94.09	2″	±0.055″	1281T15	134.31	2 3/4″	±0.075″	1281T18	173.15
1 1/2″	±0.039″	1281T13	107.91	2 1/4″	±0.055″	1281T16	147.83	3″	±0.075″	1281T19	188.88

Warning! Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Super-Corrosion-Resistant Aluminum (Alloy 5086)

Choose this marine-grade aluminum alloy for its excellent corrosion resistance and good formability. Ideal for saltwater applications, it's commonly used in ships, oil rigs, tanks, and pressure vessels. Not heat treatable. Nonmagnetic. Temperature range is not rated.

Sheets—Unpolished (Mill) Finish

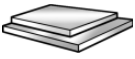

- Hardness: Not rated
- Yield Strength: 28,000 psi
- Temper: H32 (1/4 hard)

Meet ASTM B209. Width and length tolerances are ±1/16″, except 0.249″ thick sheets have ±1/4″ width and length tolerances. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″	
0.063″	±0.004″	5865T11	$7.02	5865T12	$13.29	5865T13	$23.86	5865T14	$45.36	5865T15	$86.50
0.090″	±0.005″	5865T21	9.50	5865T22	18.01	5865T23	32.38	5865T24	61.74	5865T25	118.00
0.125″	±0.006″	5865T31	12.47	5865T32	22.45	5865T33	42.74	5865T34	81.71	5865T35	156.44
0.190″	±0.009″	5865T41	18.13	5865T42	32.59	5865T43	62.30	5865T44	119.27	5865T45	228.89
0.249″	±0.014″	5865T51	21.26	5865T52	40.62	5865T53	77.80	5865T54	149.25	5865T55	286.86

90° Angles—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 21,000 psi
- Temper: H111 (1/8 hard)

Inside corner and leg edges are rounded; outside corner is squared. Leg length tolerance is ±0.033″. Thickness tolerance is ±0.012″. Straightness tolerance is not rated. Length tolerance is ±1/4″. **To Order:** Please specify 3- or 6-ft. length.

Thick.	Outside Leg Lgs.		3 ft.	6 ft.	Thick.	Outside Leg Lgs.		3 ft.	6 ft.	Thick.	Outside Leg Lgs.		3 ft.	6 ft.
1/4″	2″×2″	4039T11	$51.07	$88.82	1/4″	3″×3″	4039T12	$72.22	$125.60	1/4″	4″×4″	4039T13	$83.96	$146.02

Tubes—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 28,000 psi
- Temper: H32 (1/4 hard)

Straightness tolerance is not rated. Length tolerance is ±1/4″. **To Order:** Please specify 3- or 6-ft. length.

OD	ID		3 ft.	6 ft.	OD	ID		3 ft.	6 ft.	OD	ID		3 ft.	6 ft.
0.133″ Wall Thickness *(±0.017″)*					***0.145″ Wall Thickness*** *(±0.018″)*					***0.203″ Wall Thickness*** *(±0.025″)*				
1.315″	1.049″	4481T11	$81.19	$146.15	1.900″	1.61″	4481T13	$101.43	$182.59	2.875″	2.469″	4481T15	$173.59	$312.50
0.140″ Wall Thickness *(±0.018″)*					***0.154″ Wall Thickness*** *(±0.019″)*					***0.216″ Wall Thickness*** *(±0.027″)*				
1.660″	1.38″	4481T12	97.47	175.46	2.375″	2.067″	4481T14	119.04	214.29	3.500″	3.068″	4481T16	216.41	389.58

Super-Corrosion-Resistant Easy-to-Weld Aluminum (Alloy 5052)

With excellent corrosion resistance and good formability, this alloy is similar to Alloy 5086 but also has good weldability for a wider range of applications. Not heat treatable. Nonmagnetic. Temperature range is –320° to +300° F.

Rectangular Bars with Material Certification—Unpolished (Mill) Finish

- Hardness: 60 Brinell
- Yield Strength: 28,000 psi
- Temper: H32 (1/4 hard)

Meet ASTM B209. Each comes with a traceable lot number and physical test report. Width and length tolerances are +1/16″. Bars are saw cut; flatness tolerance is not rated. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Width		1 ft.	3 ft.	6 ft.	Width		1 ft.	3 ft.	6 ft.	Width		1 ft.	3 ft.	6 ft.
1/8″ Thick *(±0.007″)*					***3/16″ Thick*** *(±0.010″)*					***1/4″ Thick*** *(±0.015″)*				
1″	9135K11	$9.99	$22.37	$39.95	1″	9135K21	$15.86	$30.63	$54.70	1″	9135K31	$17.99	$43.79	$78.20
1 1/2″	9135K12	12.56	28.14	50.25	1 1/2″	9135K22	17.25	38.65	69.02	1 1/2″	9135K32	23.29	56.70	101.25
2″	9135K13	14.72	32.98	58.90	2″	9135K23	20.22	45.29	80.88	2″	9135K33	28.03	68.26	121.89
2 1/2″	9135K14	16.02	35.88	64.07	2 1/2″	9135K24	22.67	50.79	90.69	2 1/2″	9135K34	29.32	71.38	127.46
3″	9135K15	17.52	39.25	70.09	3″	9135K25	26.49	59.34	105.97	3″	9135K35	30.32	73.82	131.83
4″	9135K16	17.64	39.52	70.57	4″	9135K26	31.51	70.59	126.05	4″	9135K36	32.35	78.77	140.66

Sheets

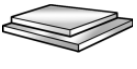

Unpolished (Mill) Finish

Brushed (#4 Satin) Finish

Mirror-Like (#8) Finish

- Hardness: 60 Brinell
- Yield Strength: 28,000 psi
- Temper: H32 (1/4 hard)

Meet ASTM B209. Flatness tolerance is not rated.

Unpolished (Mill) Finish—Width and length tolerances are ±1/8″.

Brushed (#4 Satin) Finish—Polished on one side, with grain lines running in one direction. Polished side has a peel-off protective masking. Width and length tolerances are +1/32″.

Mirror-Like (#8) Finish—Polished on one side and free of grain lines. Polished side has a peel-off protective masking. Width and length tolerances are +1/32″.

Finish Selector Pack—Includes one individually marked piece each of unpolished (mill), brushed (#4 satin), and mirror-like (#8) finishes. Each piece is approximately 1 1/2″×3″×1/32″ thick.

1115T11 ..... **Pkg.** $18.94

Thick.	Thick. Tolerance	UNPOLISHED (MILL) FINISH 12″×12″		12″×24″		24″×24″		24″×48″		48″×48″	
0.032″	±0.0025″	88895K32	$5.30	88895K42	$9.41	88895K52	$18.26	88895K62	$33.17	88895K72	$63.30
0.040″	±0.0035″	88895K33	6.38	88895K43	11.47	88895K53	21.11	88895K63	42.79	88895K73	80.83
0.050″	±0.0035″	88895K34	7.78	88895K44	14.21	88895K54	27.17	88895K64	51.27	88895K74	91.74
0.080″	±0.0045″	88895K35	10.82	88895K45	20.99	88895K55	35.05	88895K65	69.71	88895K75	123.42
0.125″	±0.0055″	88895K36	14.30	88895K46	27.83	88895K56	46.68	88895K66	78.70	88895K76	147.62

Thick.	Thick. Tolerance	BRUSHED (#4 SATIN) FINISH 12″×12″		12″×24″		24″×24″		MIRROR-LIKE (#8) FINISH 12″×12″		12″×24″		24″×24″	
0.032″	±0.005″	8199K11	$8.18	8199K31	$16.17	8199K51	$31.03	8202K11	$11.17	8202K31	$21.03	8202K51	$40.11
0.040″	±0.007″	8199K12	10.78	8199K32	21.49	8199K52	41.05	8202K12	14.32	8202K32	27.06	8202K52	49.75
0.062″	±0.007″	8199K13	16.18	8199K33	30.68	8199K53	58.14	8202K13	19.92	8202K33	38.74	8202K53	67.67
0.080″	±0.009″	8199K14	18.79	8199K34	36.04	8199K54	69.10	8202K14	22.91	8202K34	44.85	8202K54	78.03
0.100″	±0.009″	8199K15	19.66	8199K35	38.05	8199K55	72.27	8202K15	24.61	8202K35	48.02	8202K55	83.13
0.125″	±0.009″	8199K16	23.82	8199K36	45.38	8199K56	86.60	8202K16	27.89	8202K36	54.77	8202K56	104.34
0.187″	±0.009″	8199K17	35.18	8199K37	63.72	8199K57	121.62	8202K17	41.78	8202K37	81.46	8202K57	153.79
0.250″	±0.009″	8199K18	42.39	8199K38	79.28	8199K58	151.93	8202K18	50.99	8202K38	99.62	8202K58	190.34

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

High-Strength Super-Corrosion-Resistant Aluminum (Alloy 5083)

The strongest of the marine-grade alloys, this aluminum alloy offers high strength in addition to excellent corrosion resistance and good weldability. Typically used in saltwater applications. Not heat treatable. Nonmagnetic. Temperature range is not rated.

Sheets—Unpolished (Mill) Finish

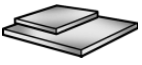

- Hardness: Not rated
- Yield Strength: 31,000 psi
- Temper: H116 (⅛ hard)

Meet ASTM B209 or B928. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″	
⅛″	±0.007″	4058T11	$32.84	4058T12	$58.85	4058T13	$110.33
3/16″	±0.009″	4058T21	48.37	4058T22	84.78	4058T23	153.65
¼″	±0.014″	4058T31	56.70	4058T32	101.50	4058T33	179.00
⅜″	±0.017″	4058T41	$68.75	4058T42	$121.55	4058T43	$218.52
½″	±0.023″	4058T51	71.71	4058T52	135.38	4058T53	244.64
¾″	±0.031″	4058T61	99.74	4058T62	182.20	4058T63	333.33

Basic Aluminum (Alloy 1100)

Considered commercially pure, Alloy 1100 is 99% aluminum and is an excellent conductor of heat and electricity. It offers excellent corrosion resistance and is easily welded and brazed. Ideal for chemical equipment, heat exchanger fins, and sheet metal work. Not heat treatable. Nonmagnetic. Temperature range is –200° to +300° F.

Alloy 1100 Sample—Size is 6″×6″×⅛″ **88685K1** $5.92

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 32 Brinell
- Yield Strength: 17,000 psi
- Temper: H14 (½ hard)

Meet ASTM B209. Width and length tolerances are ±¼″. Straightness tolerance is not rated.
To Order: Please specify 1-, 3-, or 6-ft. length.

Width		1 ft.	3 ft.	6 ft.
⅜″ Thick *(±0.015″)*				
1″	2474T51	$35.79	$94.35	$162.67
2″	2474T52	46.60	122.84	211.80
3″	2474T53	57.92	152.70	263.27
⅜″ Thick (Cont.)				
4″	2474T54	$65.72	$173.27	$298.74
5″	2474T55	74.81	170.03	340.06
6″	2474T56	74.66	196.82	339.35

Soft (Annealed) Sheets—Unpolished (Mill) Finish

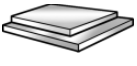

- Hardness: 23 Brinell
- Yield Strength: 5,000 psi
- Temper: O (annealed)

Meet ASTM B209. Also known as "dead soft," annealed sheets are pliable. Width and length tolerances are ±1/16″. Not rated for flatness.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×144″	
0.020″	±0.002″	2471T13	$6.53	2471T16	$11.88	2471T17	$18.61	2471T18	$31.59				
0.032″	±0.002″	2471T11	5.38	2471T12	9.62	2471T26	18.48	2471T27	34.10				
0.040″	±0.004″	2471T21	7.53	2471T22	13.62	2471T23	22.50	2471T24	40.98				
0.050″	±0.004″	2471T31	9.43	2471T32	17.09	2471T33	28.21	2471T34	51.29				
0.063″	±0.003″	2471T41	10.05	2471T42	18.64	2471T43	34.88	2471T44	65.54	2471T45	$123.62	2471T46	$258.94
0.080″	±0.005″	2471T51	15.12	2471T52	27.39	2471T53	45.21	2471T54	82.33	2471T55	149.69		
0.090″	±0.005″	2471T61	17.01	2471T62	30.82	2471T63	50.86	2471T64	92.63	2471T65	168.42		
0.125″	±0.006″	2471T71	20.53	2471T72	38.17	2471T73	71.45	2471T74	134.24	2471T75	219.85		

Sheets—Unpolished (Mill) Finish

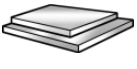

- Hardness: 32 Brinell
- Yield Strength: 17,000 psi
- Temper: H14 (½ hard)

Meet ASTM B209. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×36″		36″×48″		36″×96″	
0.032″	±0.003″	88685K11	$5.16	88685K14	$9.08	88685K17	$17.61	88685K21	$28.47	88685K24	$51.35	88685K27	$84.25
0.063″	±0.003″	88685K12	7.82	88685K15	14.71	88685K18	27.74	88685K32	38.34	88685K35	69.35	88685K38	132.39

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×48″		48″×48″		48″×96″	
0.050″	±0.004″	88685K51	$6.28	88685K52	$11.76	88685K53	$22.18	88685K54	$39.81	88685K55	$72.21	88685K56	$132.13
0.090″	±0.005″	88685K77	10.50	88685K78	19.33	88685K79	35.07	88685K81	63.71	88685K82	115.96	88685K83	238.60
0.125″	±0.006″	88685K13	15.61	88685K16	30.25	88685K19	53.98	88685K23	99.84	88685K26	181.51	88685K29	332.81
0.190″	±0.009″	88685K41	23.81	88685K42	43.42	88685K43	72.00	88685K44	131.25	88685K45	251.30	88685K46	472.46
0.249″	±0.014″	88685K61	27.92	88685K62	50.09	88685K63	97.09	88685K64	169.86	88685K65	294.85		
0.375″	±0.023″	88685K71	98.20	88685K72	174.56	88685K73	294.61	88685K74	571.04	88685K75	1,047.17	88685K76	1,933.12

Basic Aluminum (Alloy 5005/5205) with Colored Finishes

Get the performance of basic aluminum in your choice of colors. It's made from either Alloy 5005 or 5205 and anodized for good corrosion resistance and an attractive appearance. Not heat treatable. Nonmagnetic. Temperature range is not rated.

Sheets—Anodized Coating

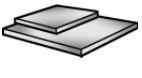

- Hardness: Not rated
- Yield Strength: 15,000 psi
- Temper: H34 (½ hard)

Black sheets have a matte finish and are colored on one side; ***gold*** and ***silver*** sheets have a brushed finish and are colored on both sides. Width and length tolerances are ±1/32″. Flatness tolerance is not rated.

Color	12″×12″		12″×24″		24″×24″	
0.032″ Thick *(±0.002″)*						
Gold	6062K31	$9.96	6062K32	$17.79	6062K33	$32.53
Silver	6062K11	9.76	6062K12	17.43	6062K13	32.53
0.040″ Thick *(±0.002″)*						
Black	6062K51	$9.61	6062K52	$16.99	6062K53	$31.73
Gold	6062K41	11.72	6062K42	20.93	6062K43	39.07
Silver	6062K21	11.72	6062K22	20.93	6062K23	39.07

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Improved-Strength Basic Aluminum (Alloy 3003)

Good weldability, formability, and corrosion resistance make Alloy 3003 similar to Alloy 1100 but with slightly higher strength due to the addition of manganese. Use in chemical and food processing equipment, tanks, heat exchangers, and sheet metal work. Not heat treatable. Nonmagnetic. Temperature range is –320° to +300° F, unless noted.

Rectangular Bars with Material Certification—Unpolished (Mill) Finish

- Hardness: 40 Brinell
- Yield Strength: 21,000 psi
- Temper: H14 (½ hard)

Meet ASTM B209. Each comes with a traceable lot number and physical test report. Width tolerance is ±1/16″, except 1/4″ thick bars are +1/16″. All bars are saw cut; flatness tolerance is not rated. Length tolerance is ±1/2″.

To Order: Please specify 1-, 3-, or 6-ft. length.

Width		1 ft.	3 ft.	6 ft.
1/8″ Thick *(±0.006″)*				
1″	9134K11	$8.03	$17.99	$32.12
1½″	9134K12	12.25	24.08	43.00
2″	9134K13	11.32	25.36	45.29
3″	9134K15	15.48	30.41	54.30
4″	9134K16	17.18	38.49	68.73
3/16″ Thick *(±0.009″)*				
1″	9134K21	$12.79	$28.64	$51.14
1½″	9134K22	16.80	37.63	67.20
2″	9134K23	19.98	44.77	79.94
3″	9134K25	25.31	56.70	101.25
4″	9134K26	30.63	68.61	122.51
1/4″ Thick *(±0.014″)*				
1″	9134K31	$21.26	$47.62	$85.04
2″	9134K33	37.12	83.14	148.47
3″	9134K35	51.30	114.90	205.18
4″	9134K36	62.81	140.70	251.25

Sheets—Unpolished (Mill) Finish

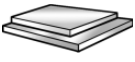

- Hardness: 40 Brinell
- Yield Strength: 21,000 psi
- Temper: H14 (½ hard)

Meet ASTM B209. Width and length tolerances are ±1/16″, except 0.250″ thick sheets are ±1/4″. Flatness tolerance is 3/16″ for sheets up to 0.063″ thick and 5/16″ for sheets 0.080″ thick and thicker.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×36″		36″×48″		36″×96″		48″×144″	
0.016″	±0.001″	8973K81	$3.15	8973K71	$5.86	8973K61	$15.42	8973K51	$26.75	8973K16	$47.31		
0.020″	±0.0015″	8973K82	3.52	8973K72	6.56	8973K62	17.25	8973K52	29.94	8973K11	52.89		
0.025″	±0.0015″	8973K83	3.79	8973K73	6.83	8973K63	18.60	8973K53	32.31	8973K12	57.11		
0.032″	±0.002″	8973K84	4.84	8973K74	9.00	8973K64	23.03	8973K54	40.16	8973K13	71.16		
0.040″	±0.0025″	8973K85	5.79	8973K75	10.80	8973K65	26.84	8973K55	46.95	8973K15	83.47		
0.050″	±0.003″	8973K86	6.14	8973K76	11.45	8973K66	28.64	8973K56	50.28	8973K18	89.63		
0.063″	±0.003″	8973K87	7.31	8973K77	13.67	8973K67	34.36	8973K57	60.55	8973K22	108.23		
0.080″	±0.0035″	8973K23	7.06	8973K24	13.52	8973K25	37.83	8973K26	68.57	8973K27	129.04		
0.090″	±0.0035″	8973K88	8.26	8973K78	15.51	8973K68	43.76	8973K58	84.32			8973K34	$295.97
0.100″	±0.004″	8973K31	9.26	8973K32	17.89	8973K33	49.97	8973K35	90.54				
0.125″	±0.0045″	8973K89	13.42	8973K79	25.23	8973K69	64.03	8973K59	113.53			8973K36	383.42
0.190″	±0.009″	8973K39	18.50	8973K42	33.92	8973K44	94.02	8973K46	170.54			8973K48	533.28
0.250″	±0.014″	8973K41	30.45	8973K43	56.34	8973K45	154.60	8973K47	264.36			8973K49	972.97

Textured Sheets—Unpolished (Mill) Finish

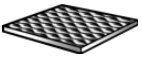

Weave

Diamond

Tread

- Hardness: 40 Brinell
- Yield Strength: 17,000 psi
- Temper: H14 (½ hard)

Meet ASTM B209. The textured surface on these sheets minimizes surface contact area to reduce friction and static cling, increase rigidity, and hide fingerprints and dents. Width and length tolerances are +1/16″. Flatness tolerance is not rated. **To Order:** Please specify pattern: weave, diamond, or tread.

Texture Selector Pack—Includes one piece each of weave, diamond, and tread textures. Each piece is 1½″×3″×1/16″ thick. ..... **9058K1** **Pkg.** $2.05

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×36″		24″×48″		48″×48″	
0.032″	±0.002″	9058K11	$13.46	9058K12	$19.75	9058K13	$26.93	9058K14	$37.78	9058K15	$48.47	9058K16	$89.75
0.063″	±0.003″	9058K17	19.08	9058K18	34.45	9058K19	59.74	9058K21	83.51	9058K22	107.52	9058K23	199.12
0.080″	±0.0035″	9058K24	23.10	9058K25	46.17	9058K26	81.52	9058K27	121.71	9058K28	146.75	9058K29	267.02

Painted Sheets—Glossy Finish

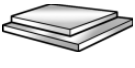

- Hardness: Not rated
- Yield Strength: 17,000 psi
- Temper: H14 or H24 (½ hard)

Meet ASTM B209. May be either Alloy 3003 or 3105. Width and length tolerances are ±0.025″. Flatness tolerance is 7/8″. **To Order:** One side is white; please specify color for other side: black, orange, red, white, or yellow.

Thick.	Thick. Tolerance	12″×12″		12″×24″		24″×24″		24″×36″	
0.040″	±0.0025″	4279T11	$17.76	4279T12	$27.59	4279T13	$47.62	4279T14	$64.43

Tubes—Unpolished (Mill) Finish

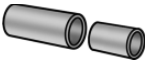

- Hardness: 40 Brinell
- Yield Strength: 21,000 psi
- Temper: H14 (½ hard)

Create telescoping tubes by fitting a tube inside one that is the next larger size. Straightness tolerance is not rated. Length tolerance is ±1/32″.

OD	ID	1-ft. Lengths Pkg. Qty.	Pkg.	6-ft. Lengths	Each
0.014″ Wall Thickness *(±0.001″)*					
1/16″	0.0345″	15	7237K12	$9.15	7237K22	$4.11
3/32″	0.0658″	15	7237K13	9.60	7237K23	4.35
1/8″	0.097″	15	7237K14	10.36	7237K24	4.71
5/32″	0.1283″	12	7237K15	11.94	7237K25	6.67
0.014″ Wall Thickness (Cont.)					
3/16″	0.1595″	12	7237K16	$11.94	7237K26	$6.67
7/32″	0.1908″	10	7237K17	11.42	7237K27	7.00
1/4″	0.222″	10	7237K18	11.42	7237K28	7.00
9/32″	0.2533″	8	7237K19	10.19	7237K29	7.64

Hollow Balls—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: Not rated

Not rated for grade, sphericity, or diameter tolerance.

Dia.	Pkg. Qty.		Pkg.	Dia.	Pkg. Qty.		Pkg.
1/4″	10	1089T21	$7.15	1/2″	10	1089T25	$8.43
3/8″	10	1089T23	7.78	3/4″	10	1089T27	9.20

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Improved-Strength Basic Aluminum (Alloy 3003) *(Material continued from previous page)*

Good weldability, formability, and corrosion resistance make Alloy 3003 similar to Alloy 1100 but with slightly higher strength due to the addition of manganese. Use in chemical and food processing equipment, tanks, heat exchangers, and sheet metal work. Not heat treatable. Nonmagnetic.

Honeycomb Cores—Unpolished (Mill) Finish

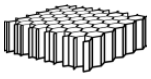

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: Not rated

Made of 3000 series aluminum. Temperature range is –30° to +300° F. Width and length tolerances are ±1/4″. Thickness tolerance is ±0.008″. Flatness tolerance is not rated.

O'all Thick.	Cell Dia.	Density, lbs./cu. ft.	Max. Load	12″×12″		24″×24″		24″×48″	
1/4″	1/2″	2.5	170 psi	9635K13	$25.05	9635K15	$56.81	9635K17	$96.87
1/2″	1/2″	2.5	170 psi	9635K33	25.56	9635K35	59.99	9635K37	105.03
1″	1″	1.4	80 psi	9635K72	29.03	9635K74	68.13	9635K76	119.27

Honeycomb Panels

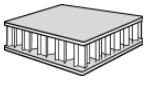

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: Not rated

Made of 3000 series aluminum. Temperature range is 0° to 180° F. Panels consist of an aluminum honeycomb core bonded between two aluminum covers. Honeycomb core has an unpolished (mill) finish; covers have a painted (glossy) white finish and a peel-off protective masking. Width and length tolerances are ±1/2″. Thickness tolerance is ±0.015″. Flatness tolerance is not rated.

O'all Thick.	Cell Dia.	Cover Thick.	12″×12″ Max. Load	12″×12″ Deflection @ 100-lb. Load		24″×24″ Max. Load	24″×24″ Deflection @ 100-lb. Load		24″×48″ Max. Load	24″×48″ Deflection @ 100-lb. Load	
1/8″	3/8″	0.020″	150 psi	0.25″	8458K12 $29.58	150 psi	0.99″	8458K14 $92.52	75 psi	____	8458K16 $151.13
1/4″	3/8″	0.020″	300 psi	0.06″	8458K22 30.41	300 psi	0.24″	8458K24 91.57	155 psi	1.85″	8458K26 153.92
3/8″	1/2″	0.040″	560 psi	0.02″	8458K32 31.10	962 psi	0.05″	8458K34 95.45	478 psi	0.40″	8458K36 161.45
1/2″	1/2″	0.040″	770 psi	0.01″	8458K42 30.49	1,321 psi	0.03″	8458K44 94.13	659 psi	0.21″	8458K46 164.02

Easy-to-Machine Aluminum (Alloy 2011)

Featuring the best machinability of all aluminum alloys, Alloy 2011 is the most widely selected for screw machine products, tube fittings, hose parts, and other items that require extensive machining. The addition of copper improves strength but decreases corrosion resistance. Heat treatable. Nonmagnetic. Maximum temperature is 212° F; minimum temperature not rated.

Rods—Unpolished (Mill) Finish

- Hardness: 95 Brinell, except 4 1/2″ and 5″ diameters are not rated
- Yield Strength: 18,000 to 38,000 psi
- Temper: T3, except 4 1/2″ and 5″ diameters are T4

Meet ASTM B211. Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Diameter	Tolerance
1/4″-1/2″	±0.0015″
5/8″-1 1/2″	±0.0025″
1 5/8″-2″	±0.004″

Diameter	Tolerance
2 1/4″-3″	±0.006″
3 1/2″-5″	±0.012″

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
1/4″	88615K21	____	____	$12.80	1 1/4″	88615K47	$28.50	$75.14	$129.55	2 1/2″	88615K62	$98.66	$260.11	$448.46
3/8″	88615K25	____	____	23.90	1 3/8″	88615K51	32.31	85.18	146.87	2 3/4″	88615K63	104.19	274.68	473.58
1/2″	88615K27	____	____	35.94	1 1/2″	88615K52	37.72	99.45	171.46	3″	88615K64	123.99	326.89	563.60
5/8″	88615K31	____	$31.20	53.79	1 5/8″	88615K54	42.49	112.02	193.13	3 1/2″	88615K68	172.16	453.87	782.53
3/4″	88615K33	____	36.68	63.24	1 3/4″	88615K56	49.54	130.61	225.19	4″	88615K81	220.87	582.29	1,003.94
7/8″	88615K42	$16.14	42.55	73.37	1 7/8″	88615K23	56.60	149.21	257.26	4 1/2″	88615K28	277.86	732.54	1,263.00
1″	88615K43	19.28	50.84	87.65	2″	88615K58	64.49	170.02	293.13	5″	88615K29	398.87	1,051.57	1,813.06
1 1/8″	88615K45	23.91	63.02	108.66	2 1/4″	88615K61	79.92	210.68	363.25					

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 95 Brinell
- Yield Strength: 43,000 psi
- Temper: T3

Meet ASTM B211. Diameter tolerance is –0.0005″. Straightness tolerance is 0.005″ per foot. Length tolerance is ±1/8″.

To Order: Please specify 3- or 6-ft. length.

Dia.		3 ft.	6 ft.	Dia.		3 ft.	6 ft.	Dia.		3 ft.	6 ft.	Dia.		3 ft.	6 ft.
1/8″	1915T11	$12.19	$22.16	3/8″	1915T13	$20.18	$36.69	5/8″	1915T15	$30.54	$55.53	1″	1915T17	$57.82	$105.12
1/4″	1915T12	16.76	30.47	1/2″	1915T14	24.25	44.09	3/4″	1915T16	37.12	67.50	1 1/2″	1915T19	105.69	192.17

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: 95 Brinell
- Yield Strength: 34,000 to 38,000 psi
- Temper: T3

Meet ASTM B211. Hex size is measured across the flats. Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size	Tolerance
1/4″-1″	±0.0025″
1 1/8″-1 1/4″	±0.003″

Hex Size		1 ft.	3 ft.	6 ft.	Hex Size		1 ft.	3 ft.	6 ft.	Hex Size		1 ft.	3 ft.	6 ft.
1/4″	88705K21	____	____	$11.56	9/16″	88705K11	____	$25.97	$44.78	7/8″	88705K15	$22.21	$51.52	$88.83
5/16″	88705K22	____	____	17.35	5/8″	88705K12	____	32.10	55.35	1″	88705K16	24.43	56.67	97.71
3/8″	88705K23	____	____	22.27	3/4″	88705K13	____	37.26	64.24	1 1/8″	88705K17	27.84	64.58	111.34
1/2″	88705K25	____	____	36.18	13/16″	88705K14	$18.63	43.23	74.53	1 1/4″	88705K51	34.35	79.69	137.40

Metric Easy-to-Machine Aluminum (Alloy 2007)

This heat-treatable alloy has excellent machinability for use in screw machine products, tube fittings, hose parts, and any component that requires extensive machining. Its high copper content increases strength but reduces resistance to corrosion. Nonmagnetic. Temperature range is not rated.

Rods (Metric Sizes)—Unpolished (Mill) Finish

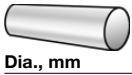

- Hardness: 100-140 Brinell
- Yield Strength: Not rated
- Temper: T3 or T4

Diameter, straightness, and length tolerances are not rated. Sold in 1-meter lengths.

Dia., mm			Dia., mm			Dia., mm			Dia., mm		
8	4572T11	$22.69	12	4572T13	$27.11	20	4572T15	$40.11	30	4572T17	$68.67
10	4572T12	24.27	15	4572T14	32.00	25	4572T16	66.02			

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about aluminum alloys, see page 3632.

For information on the chemical composition of aluminum alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8975KAC**.

Weldable Easy-to-Machine Aluminum (Alloy 2017)

With machinability approaching that of Alloy 2011, Alloy 2017 is great for use in items that require extensive machining such as fasteners and fittings. Unlike Alloy 2011, it can also be welded. The addition of copper increases strength but reduces corrosion resistance. Heat treatable. Nonmagnetic.

Rods—Unpolished (Mill) Finish

- Hardness: 105 Brinell
- Yield Strength: 32,000 psi
- Temper: T451

Meet ASTM B211. Temperature range is –320° to +300° F. Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Diameter	Tolerance
1/2″-1″	±0.002″
1 1/4″-1 1/2″	±0.0025″

Diameter	Tolerance
1 3/4″-2″	±0.004″
2 1/2″-3″	±0.006″

Dia.		1 ft.	3 ft.	6 ft.
1/2″	9002K39	—	$21.35	$36.81
3/4″	9002K42	$18.12	42.03	72.47
1″	9002K44	29.80	69.13	119.19
1 1/4″	9002K64	$42.53	$98.68	$170.13
1 1/2″	9002K66	56.90	132.01	227.60
1 3/4″	9002K71	72.82	168.95	291.29
2″	9002K73	$90.50	$209.96	$362.00
2 1/2″	9002K77	131.47	305.00	525.86
3″	9002K82	179.83	417.21	719.33

Balls—Reflective Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: T4

Temperature range is not rated. Grade 200. Sphericity is 0.0002″. Diameter tolerance is ±0.001″.

Dia.	Pkg. Qty.		Pkg.
1/32″	100	34665K21	$11.20
5/64″	100	34665K25	11.20
3/32″	100	34665K27	$12.00
1/8″	100	34665K29	13.19

Corrosion-Resistant Easy-to-Machine Aluminum (Alloy 6020)

Good corrosion resistance and excellent machinability give this heat-treatable alloy an excellent surface finish. Applications include master cylinder pistons, valves, and hydraulic parts used in the automotive and fluid power industries. Nonmagnetic. Temperature range is not rated.

Rods—Unpolished (Mill) Finish

- Hardness: 100-129 Brinell
- Yield Strength: 39,000 to 46,000 psi
- Temper: T8 (except 7/8″, 1 1/4″, 1 3/8″, and 1 1/2″ diameters are T9)

Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Diameter	Tolerance
3/8″	±0.0015″
3/4″-1″	±0.002″

Diameter	Tolerance
1 1/4″-1 1/2″	±0.0025″
1 3/4″-2″	±0.004″

Dia.		1 ft.	3 ft.	6 ft.
3/8″	9038K11	—	—	$19.31
3/4″	9038K32	$13.49	$35.57	61.32
7/8″	9038K33	16.81	44.31	76.40
1″	9038K34	$20.53	$54.13	$93.33
1 1/4″	9038K18	31.33	82.61	142.43
1 3/8″	9038K19	36.22	95.49	164.63
1 1/2″	9038K21	$43.30	$114.14	$196.80
1 3/4″	9038K22	55.62	146.64	252.83
2″	9038K23	69.75	183.89	317.06

Wear-Resistant Easy-to-Machine Aluminum (Alloy 4032)

A high silicon content adds superior wear resistance to this easy-to-machine alloy. Ideal for automotive, aerospace, electronic, appliance, and hydraulic fluid applications. Heat treatable. Nonmagnetic. Maximum temperature is 300° F; minimum temperature is not rated.

Rods—Unpolished (Mill) Finish

- Hardness: 120 Brinell
- Yield Strength: 48,000 psi
- Temper: T651

Straightness tolerance is not rated. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length.

Diameter	Tolerance
1″	±0.002″
1 1/4″-1 1/2″	±0.0025″

Diameter	Tolerance
1 3/4″-2″	±0.004″
2 1/4″-2 1/2″	±0.006″

Dia.		1 ft.	3 ft.	6 ft.
1″	9059K13	$27.51	$69.36	$119.59
1 1/4″	9059K14	41.17	103.81	178.98
1 1/2″	9059K15	57.09	143.97	248.22
1 3/4″	9059K16	$76.50	$192.92	$332.62
2″	9059K17	96.34	242.94	418.87
2 1/4″	9059K18	$117.52	$296.35	$510.94
2 1/2″	9059K19	141.94	357.92	617.11

Mold-Quality Aluminum (QC-10 Alloy)

Outstanding thermal conductivity, when compared to steel, along with high strength and surface hardness make this heat-treatable alloy suitable for use in production injection molds and blow molds. Nonmagnetic. Temperature range is not rated.

Sheets—Unpolished (Mill) Finish

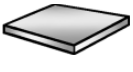

- Hardness: 140-175 Brinell
- Yield Strength: 82,000 psi
- Temper: Not rated

Width and length tolerances are ±1/16″. Flatness tolerance is 3/16″.

Thick.	Thick. Tolerance	6″×6″		12″×12″	
1″	+0.098″	1643T31	$73.22	1643T32	$266.27
1 1/4″	+0.114″	1643T33	89.94	1643T34	327.09
1 1/2″	+0.114″	1643T35	108.18	1643T36	393.40
1 3/4″	+0.130″	1643T37	$118.81	1643T38	$434.28
2″	+0.130″	1643T41	130.42	1643T42	478.18
2 1/4″	+0.130″	1643T43	145.15	1643T44	532.22

Porous Mold-Quality Aluminum

Perfect for creating molds used in vacuum forming and thermoforming, this aluminum alloy is porous to let air and moisture through, preventing bubbles and blemishes in your material when forming. It can also be used to filter air, gases, and even thin liquids. Not heat treatable. Nonmagnetic. Maximum temperature is 230° F; minimum temperature is not rated.

Metric Sheets—Unpolished (Mill) Finish

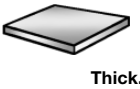

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: Not rated

Sheets must be ground to expose the pores; average pore diameter is 0.0006″ with a total porosity of 15%. Width and length tolerances are ±2 mm. Sheets are saw cut; flatness tolerance is not rated.

Thick.	Thick. Tol.	250 mm×250 mm		500 mm×500 mm	
10 mm	+2 mm	—	—	8189K51	$474.00
15 mm	+2 mm	8189K529	$155.00	8189K53	570.37
30 mm	+2 mm	8189K31	$333.33	8189K57	$886.67
50 mm	+2 mm	—	—	8189K63	1,333.33

Warning! *Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.*

About Steel

Steel is composed mainly of iron, carbon, and other alloying elements that offer a wide range of characteristics including high strength, shock resistance, and machinability. Metals in which there is more than 10.5% chromium as an alloying element are considered to be stainless steel (pages 3685-3709).

Carbon steel, designated by 1XXX (example: 1018), is a simple alloy of iron with carbon, manganese, and silicon. Note that as a material's carbon content increases, its strength improves but its formability and weldability lessen.

Alloy steel, designated by 2XXX-9XXX (example: 4140) or 52XXX (example: E52100), contains additional elements such as chromium and molybdenum to enhance properties such as machinability, weldability, hardness, abrasion resistance, and corrosion resistance.

Tool steel, designated by <letter>,<number> (example: D2), is highly alloyed, resulting in increased hardness, wear resistance, and temperature resistance. Tool steel is ideal for the creation of tools used for cutting, shaping, and forming materials—applications in which metals can withstand shock without breaking or deforming. Tool steel is generally categorized by method of hardening, mechanical features, or major alloying element.

Hardness

The hardness of a material is its resistance to another material penetrating its surface. Harder metals have more wear resistance. Tool steels are rated after hardening; all other materials are rated in their annealed conditions.

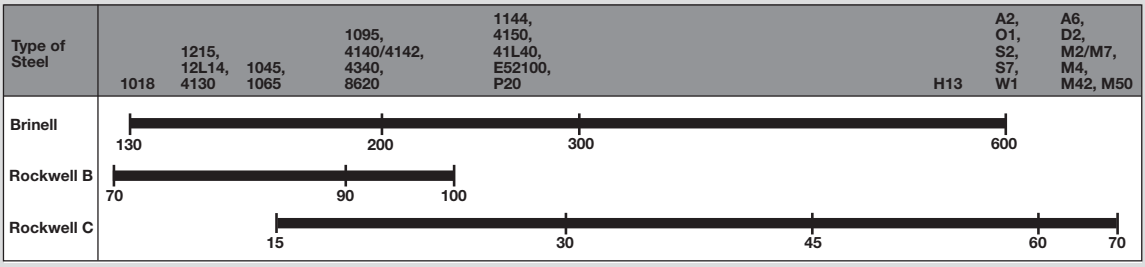

Yield Strength

Yield strength is the point at which a metal bends and will not return to its original shape. At this point, the metal has changed shape permanently but does not break. All are rated in their annealed conditions. *Note*: Yield strength is not rated in the annealed condition for 1074/1075, 1095, 1144, 4340, M42, and M50.

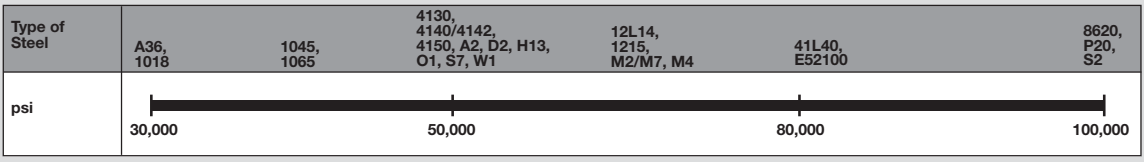

Machinability

Machinability refers to a material's ability to be cut, drilled, reamed, tapped, threaded, etc. All are rated in their annealed conditions. Carbon and alloy steel ratings use AISI 1112/1212 as a basis, while tool steels use W1.

Note: Machinability is not rated for 1074/1075 and 1095.

	Excellent	Very Good	Good	Fair
Carbon and alloy steels	12L14, 1215	1144, 41L40	A36, 1018, 1045, 1065, 4130, 4140/4142, 8620	4150, 4340, E52100
Tool steels	W1	_____	O1, P20	A2, A6, D2, H13, M2/M7, M4, S7

Weldability

Refers to a material's ability to be welded. All are rated in their annealed conditions.

Note: Weldability is not rated for 1074/1075, 1095, 41L40, M4, P20, and S2.

Good	Fair	Difficult
A36, 1018, 4130, 4150, 4340, 8620, O1	1045, 4140/4142, A2, A6, H13, S7	1065, 1144, 12L14, 1215, E52100, D2, M2/M7, W1

Toughness

Toughness refers to a material's ability to absorb energy before fracturing. Tool steels are rated after hardening; all others are rated in their annealed conditions.

Note: Toughness is not rated for A36, 1018, 1045, 1065, 1074/1075, 1095, 1215, 4130, and 4150.

Excellent	Good	Fair	Poor
41L40, H13, S7, S2	4140/4142, 4340, 8620, E52100, O1, P20, W1	A2, A6	1144, 12L14, D2, M2/M7, M4

Wear Resistance

Wear resistance measures a material's ability to resist surface loss due to motion between that surface and a contacting substance. Tool steels are rated after hardening; all other materials are rated in their annealed conditions.

Note: Wear resistance is not rated for A36, 1018, 1045, 1065, 1074/1075, 1095, 1215, 4130, and 4150.

Excellent	Good	Fair	Poor
8620, E52100 D2, M2/M7, M4	41L40, A2, A6, H13	1144, 4140/4142, 4340, W1, O1, S7, S2, P20	12L14

Formability

Formability is also known as bendability. It is the ease with which a material can be shaped. All are rated in their annealed conditions.

Note: Formability is not rated for A36, 1018, 1065, 1074/1075, 4150, 4340, M4, P20, and S2.

Good	Fair	Difficult	Not Recommended
41L40, 4130, 8620, O1, W1	12L14, 4140/4142, A6, S7	1045, 1144, E52100, A2, D2, H13, M2/M7	1215

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

General Purpose Low-Carbon Steel

Often used for structural and automotive applications, this low-carbon steel also has good weldability.

Rectangular Bars—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell B72-B86
- Yield Strength: 45,000-55,000 psi
- Furnished as drawn

Meet ASTM A108. This 1018 carbon steel material can be surface hardened to a maximum attainable hardness of Rockwell C60-C62. Thickness and width tolerances are –0.005″ for 1/8″-3″ sizes and –0.008″ for 3 1/4″-6″ sizes. Flatness tolerance is not rated. Length tolerance is ±1/8″ for 6″ lengths, ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Wd.		1 ft.	3 ft.	6 ft.
1/8″ Thick				
1/8″	9143K11	—	—	$6.71
1/4″	8910K111	—	—	3.90
3/8″	8910K112	—	—	5.73
1/2″	8910K113	—	—	7.07
5/8″	8910K114	—	—	8.77
3/4″	8910K115	—	—	10.57
1″	8910K116	—	—	13.90
1 1/8″	8910K117	—	—	14.62
1 1/4″	8910K118	—	—	14.22
1 1/2″	8910K119	—	—	15.52
2″	8910K121	—	—	20.13
2 1/2″	8910K122	—	—	24.38
3/16″ Thick				
3/16″	9143K12	—	$4.06	7.00
1/2″	8910K123	—	—	10.03
5/8″	8910K124	—	—	12.06
3/4″	8910K125	—	—	15.06
1″	8910K126	—	—	19.13
1 1/4″	8910K127	—	—	22.73
1 1/2″	8910K128	—	—	23.09
1 3/4″	8910K531	—	15.37	26.50
2″	8910K533	—	17.06	29.42
2 1/4″	8910K535	$8.05	18.68	32.21
2 1/2″	8910K538	8.96	20.78	35.82
3″	8910K542	10.69	24.81	42.77
4″	8910K545	13.89	32.22	55.56
1/4″ Thick				
1/4″	9143K13	—	4.11	7.09
3/8″	8910K136	—	—	10.47
1/2″	8910K137	—	—	13.32
5/8″	8910K138	—	—	16.13
3/4″	8910K139	—	—	19.38
7/8″	8910K141	—	—	22.63
1″	8910K142	—	—	25.48
1 1/4″	8910K548	—	17.59	30.32
1 3/8″	8910K551	—	20.90	36.03
1 1/2″	8910K553	—	22.32	38.48
1 3/4″	8910K555	—	23.25	40.08
2″	8910K557	11.04	25.61	44.16
2 1/4″	8910K561	11.78	27.33	47.12
2 1/2″	8910K564	13.40	31.09	53.61
2 3/4″	8910K567	15.00	34.80	60.00
3″	8910K571	15.60	36.18	62.38
3 1/4″	8910K574	16.55	38.39	66.19
3 1/2″	8910K577	20.37	47.26	81.49
3 3/4″	8910K581	20.18	46.83	80.74
4″	8910K584	23.85	55.34	95.41
4 1/2″	8910K587	23.59	54.74	94.38
5″	8910K591	25.66	59.52	102.62
5 1/2″	8910K11	30.71	71.25	122.84
6″	8910K12	30.07	69.76	120.28
5/16″ Thick				
5/16″	9143K14	—	6.43	11.09
1/2″	8910K162	—	—	16.07
3/4″	8910K163	—	—	22.59
1″	8910K611	—	17.78	30.66
1 1/4″	8910K613	—	22.22	38.31
1 1/2″	8910K615	11.11	25.76	44.42
1 3/4″	8910K618	12.60	29.24	50.41
2″	8910K622	14.03	32.54	56.11
2 1/2″	8910K625	16.68	38.69	66.71
2 3/4″	8910K628	15.70	36.41	62.78
3″	8910K632	21.43	49.71	85.71
3 1/2″	8910K635	23.32	54.10	93.28
4″	8910K638	25.99	60.29	103.95
6″	8910K13	38.90	90.25	155.60
3/8″ Thick				
3/8″	9143K15	—	6.20	10.69
1/2″	8910K176	—	—	17.68
3/8″ Thick (Cont.)				
5/8″	8910K177	—	—	$21.43
3/4″	8910K178	—	—	24.49
1″	8910K645	—	$18.62	32.10
1 1/4″	8910K647	—	22.91	39.50
1 3/8″	8910K649	$10.59	24.57	42.36
1 1/2″	8910K653	11.04	25.61	44.15
1 3/4″	8910K656	12.40	28.78	49.62
2″	8910K659	14.77	34.25	59.06
2 1/4″	8910K663	17.18	39.85	68.70
2 1/2″	8910K666	19.68	45.65	78.70
2 3/4″	8910K669	18.25	42.34	73.00
3″	8910K673	21.16	49.10	84.65
3 1/2″	8910K676	24.96	57.91	99.84
3 3/4″	8910K679	26.72	62.00	106.89
4″	8910K683	29.48	68.39	117.92
4 1/2″	8910K14	35.33	81.97	141.32
5″	8910K15	37.73	87.52	150.90
5 1/2″	8910K16	37.61	87.26	150.44
6″	8910K17	46.38	107.60	185.52
7/16″ Thick				
7/16″	9143K16	2.50	5.79	9.98
1/2″ Thick				
1/2″	9143K17	3.71	8.61	14.85
5/8″	8910K691	—	17.05	29.39
3/4″	8910K693	—	20.07	34.60
7/8″	8910K695	8.99	20.86	35.96
1″	8910K698	9.92	23.01	39.67
1 1/4″	8910K933	12.20	28.29	48.78
1 3/8″	8910K936	15.61	36.22	62.44
1 1/2″	8910K939	14.24	33.04	56.97
1 5/8″	8910K943	15.84	36.74	63.35
1 3/4″	8910K946	17.47	40.53	69.88
2″	8910K949	20.09	46.61	80.36
2 1/4″	8910K953	20.68	47.98	82.72
2 1/2″	8910K956	21.76	50.48	87.03
2 3/4″	8910K959	23.39	54.26	93.56
3″	8910K702	26.26	60.93	105.05
3 1/4″	8910K18	27.52	63.85	110.08
3 1/2″	8910K19	30.79	71.43	123.16
4″	8910K21	33.88	78.60	135.51
4 1/2″	8910K22	35.27	81.84	141.10
5″	8910K23	39.05	90.59	156.19
5 1/2″	8910K4	42.91	99.56	171.66
6″	8910K5	44.78	103.88	179.11
5/8″ Thick				
5/8″	9143K18	5.28	12.24	21.11
3/4″	8910K715	10.97	25.46	43.89
1″	8910K718	11.99	27.81	47.95
1 1/8″	8910K722	13.07	30.33	52.30
1 1/4″	8910K725	14.38	33.37	57.53
1 1/2″	8910K728	16.32	37.85	65.26
1 3/4″	8910K732	18.84	43.71	75.36
2″	8910K735	20.80	48.27	83.22
2 1/4″	8910K738	26.58	61.67	106.32
2 1/2″	8910K742	31.82	73.81	127.26
2 3/4″	8910K6	30.42	70.57	121.68
3″	8910K27	36.26	84.12	145.03
3 1/4″	8910K8	39.09	90.68	156.35
3 1/2″	8910K9	36.30	84.22	145.20
4″	8910K31	39.98	92.74	159.90
4 1/2″	8910K32	49.80	115.54	199.20
5″	8910K33	55.07	127.77	220.29
5 1/2″	8910K34	58.37	135.41	233.46
6″	8910K35	66.85	155.09	267.40
3/4″ Thick				
3/4″	9143K19	10.43	24.19	41.71
7/8″	8910K755	11.93	27.67	47.71
1″	8910K758	13.03	30.23	52.12
1 1/8″	8910K762	13.99	32.47	55.98
3/4″ Thick (Cont.)				
1 1/4″	8910K765	$17.49	$40.58	$69.97
1 3/8″	8910K768	17.91	41.56	71.66
1 1/2″	8910K772	20.03	46.46	80.11
1 5/8″	8910K775	26.68	61.91	106.74
1 3/4″	8910K778	26.99	62.61	107.95
2″	8910K782	28.23	65.51	112.94
2 1/4″	8910K785	28.69	66.57	114.77
2 1/2″	8910K788	31.27	72.55	125.08
2 3/4″	8910K36	33.60	77.95	134.39
3″	8910K37	36.70	85.13	146.78
3 1/2″	8910K38	41.34	95.91	165.36
4″	8910K39	44.28	102.72	177.11
4 1/2″	8910K308	48.62	112.79	194.47
5″	8910K41	54.90	127.37	219.61
5 1/2″	8910K42	59.94	139.05	239.74
6″	8910K43	63.67	147.71	254.67
7/8″ Thick				
1″	8910K811	20.79	48.22	83.14
1 1/4″	8910K814	22.16	51.42	88.65
1 1/2″	8910K817	23.59	54.72	94.35
1 3/4″	8910K821	27.82	64.55	111.30
2″	8910K44	29.64	68.76	118.56
2 1/2″	8910K45	40.07	92.97	160.29
3″	8910K46	42.41	98.38	169.62
3 1/2″	8910K47	48.99	113.66	195.96
4″	8910K48	52.08	120.83	208.33
5″	8910K49	53.78	124.77	215.12
6″	8910K51	76.66	177.85	306.64
1″ Thick				
1″	9143K21	14.45	33.52	57.80
1 1/4″	8910K832	23.35	54.17	93.40
1 3/8″	8910K835	21.42	49.70	85.69
1 1/2″	8910K838	28.44	65.99	113.77
1 3/4″	8910K842	27.41	63.58	109.62
2″	8910K52	29.88	69.31	119.50
2 1/4″	8910K53	43.57	101.09	174.29
2 1/2″	8910K54	45.80	106.25	183.19
2 3/4″	8910K55	47.86	111.04	191.45
3″	8910K56	47.41	109.99	189.64
3 1/2″	8910K57	54.14	125.61	216.57
4″	8910K58	58.45	135.60	233.80
4 1/2″	8910K59	63.34	146.94	253.35
5″	8910K61	68.38	158.65	273.53
5 1/2″	8910K62	74.69	173.27	298.74
6″	8910K63	86.54	200.78	346.17
1 1/8″ Thick				
1 1/2″	8910K64	26.05	60.42	104.18
2″	8910K65	33.55	77.83	134.19
3″	8910K66	49.94	115.85	199.74
4″	8910K67	73.50	170.51	293.99
1 1/4″ Thick				
1 1/4″	9143K22	24.96	57.90	99.83
1 1/2″	8910K68	30.40	70.53	121.61
1 3/4″	8910K69	34.63	80.34	138.52
2″	8910K71	39.98	92.75	159.91
2 1/4″	8910K72	43.94	101.95	175.77
2 1/2″	8910K73	41.60	96.51	166.40
3″	8910K74	48.81	113.24	195.24
3 1/4″	8910K75	61.29	142.19	245.16
3 1/2″	8910K76	81.91	190.02	327.62
4″	8910K77	89.38	207.36	357.52
4 1/2″	8910K78	88.69	205.77	354.78
5″	8910K79	94.31	218.80	377.25
6″	8910K81	107.00	248.25	428.02
1 1/2″ Thick				
1 1/2″	9143K23	32.44	75.25	129.74
1 3/4″	8910K82	47.86	111.04	191.44
2″	8910K83	51.18	118.74	204.73
2 1/4″	8910K84	58.92	136.69	235.68

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

General Purpose Low-Carbon Steel *(Material continued from previous page)*

Often used for structural and automotive applications, this low-carbon steel also has good weldability.

Rectangular Bars—Unpolished Mill Finish (Cold Finished) (Cont.)

- Hardness: Rockwell B72-B86
- Yield Strength: 45,000-55,000 psi
- Furnished as drawn

Meet ASTM A108. This 1018 carbon steel material can be surface hardened to a maximum attainable hardness of Rockwell C60-C62. Thickness and width tolerances are –0.005″ for 1/8″-3″ sizes and –0.008″ for 3 1/4″-6″ sizes. Flatness tolerance is not rated. Length tolerance is ±1/8″ for 6″ lengths, ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length.

Wd.		1 ft.	3 ft.	6 ft.
1 1/2″ Thick (Cont.)				
2 1/2″	8910K85	$60.05	$139.32	$240.20
2 3/4″	8910K86	63.86	148.16	255.45
3″	8910K87	69.86	162.06	279.42
3 1/2″	8910K88	75.80	175.85	303.19
4″	8910K89	83.21	193.04	332.83
4 1/2″	8910K91	100.70	233.62	402.80
5″	8910K92	108.63	252.02	434.52
5 1/2″	8910K93	118.76	275.53	475.05
6″	8910K94	127.49	295.78	509.96
1 3/4″ Thick				
1 3/4″	9143K24	38.85	90.13	155.40
2″	8910K95	53.42	123.95	213.70
2 1/4″	8910K96	61.17	141.92	244.69
2 1/2″	8910K97	66.02	153.16	264.07
3″	8910K98	77.63	180.10	310.52
3 1/2″	8910K99	91.69	212.73	366.77

Wd.		1 ft.	3 ft.	6 ft.
1 3/4″ Thick (Cont.)				
4″	8910K101	$99.03	$229.75	$396.12
6″	8910K102	145.78	338.20	583.11
2″ Thick				
2″	9143K25	47.47	110.13	189.88
2 1/4″	8910K103	69.91	162.19	279.64
2 1/2″	8910K104	74.10	171.92	296.41
3″	8910K105	82.46	191.31	329.84
3 1/2″	8910K106	97.89	227.11	391.57
4″	8910K107	105.89	245.67	423.57
4 1/2″	8910K108	124.21	288.17	496.85
5″	8910K109	135.13	313.50	540.52
6″	8910K201	157.35	365.05	629.40
2 1/4″ Thick				
3″	8910K202	99.69	231.27	398.74
3 1/2″	8910K203	114.05	264.59	456.19
4″	8910K204	124.12	287.96	496.49

Wd.		1 ft.	3 ft.	6 ft.
2 1/2″ Thick				
3″	8910K205	$111.44	$258.53	$445.75
3 1/2″	8910K206	128.34	297.74	513.34
4″	8910K207	139.27	323.11	557.08
5″	8910K208	178.74	414.67	714.94
6″	8910K209	208.83	484.49	835.32
3″ Thick				
3 1/2″	8910K301	148.15	343.71	592.61
4″	8910K302	156.65	363.43	626.60
5″	8910K303	202.92	470.77	811.67
6″	8910K304	241.38	560.00	965.52
3 1/2″ Thick				
5″	8910K305	251.92	584.46	1,007.69
6″	8910K306	295.21	684.90	1,180.86
4″ Thick				
6″	8910K307	333.20	773.04	1,332.82

Thick. × Wd. × Lg.		
3/4″ × 6″ × 6″	8910K971	$30.08
1″ × 6″ × 6″	8910K972	42.41
1 1/2″ × 6″ × 6″	8910K973	$58.92
2″ × 6″ × 6″	8910K974	69.79

Rectangular Bars with Rounded Edges—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell B80
- Yield Strength: 35,000 psi
- Cold rolled

Material is 1008-1010 carbon steel. Thickness and width tolerances are ±0.005″. Flatness tolerance is not rated. Length tolerance is ±0.015″.

Wd.	Lg.		
1/16″ Thick			
1/4″	6 ft.	6511K21	$10.97
3/8″	6 ft.	6511K22	11.66
1/2″	6 ft.	6511K23	12.09
3/4″	6 ft.	6511K25	13.03
1″	6 ft.	6511K27	14.07
1 1/4″	6 ft.	6511K28	14.78
1 1/2″	6 ft.	6511K29	15.53
3/32″ Thick			
3/8″	6 ft.	6511K32	13.23
1/2″	6 ft.	6511K33	13.78

Wd.	Lg.		
3/32″ Thick (Cont.)			
3/4″	6 ft.	6511K35	$14.96
1″	6 ft.	6511K37	16.30
1 1/2″	6 ft.	6511K39	17.65
1/8″ Thick			
3/8″	6 ft.	6511K42	12.40
1/2″	6 ft.	6511K43	13.27
5/8″	6 ft.	6511K44	13.86
3/4″	6 ft.	6511K45	14.48
7/8″	6 ft.	6511K46	18.94
1″	6 ft.	6511K47	19.18

Wd.	Lg.		
1/8″ Thick (Cont.)			
1 1/2″	6 ft.	6511K49	$21.90
2″	6 ft.	6511K51	23.34
3/16″ Thick			
1/2″	6 ft.	6511K53	12.03
5/8″	6 ft.	6511K54	15.65
3/4″	6 ft.	6511K55	17.82
1″	6 ft.	6511K57	17.94
1 1/4″	6 ft.	6511K58	18.63
1 1/2″	6 ft.	6511K59	19.32

Rectangular Bars—Nickel Coated

- Hardness: Rockwell C45-C50 (with coating)
- Yield Strength: 45,000 psi
- Cold rolled (before coating)

Material is 1018 carbon steel and has a 0.0003″-0.0007″ thick nickel coating (also called electroless nickel) that improves wear and corrosion resistance. Coating meets AMS 2404, ASTM B733, and MIL-C-26074. Thickness tolerance is ±0.002″. Width tolerance is ±0.004″. Flatness tolerance is not rated. Length tolerance is +1/16″.

To Order: Please specify 1- or 3-ft. length.

Wd.		1 ft.	3 ft.
1/8″ Thick			
1/4″	8131K31	$5.47	$12.71
3/8″	8131K32	6.84	15.90
1/2″	8131K33	7.52	17.48
3/4″	8131K34	9.69	22.54
1″	8131K35	13.14	30.55
2″	8131K36	22.25	51.75

Wd.		1 ft.	3 ft.
3/16″ Thick			
1/2″	8131K37	$9.62	$22.38
1″	8131K38	15.33	35.64
1/4″ Thick			
1/2″	8131K39	11.30	26.28
3/4″	8131K41	15.26	35.48
1″	8131K42	18.21	42.35

Wd.		1 ft.	3 ft.
3/8″ Thick			
1/2″	8131K43	$11.89	$27.66
1″	8131K44	19.73	45.89
1/2″ Thick			
1″	8131K45	23.47	54.59
2″	8131K46	45.43	105.66

Rectangular Bars—Zinc Galvanized

- Hardness: Rockwell B66-B68 (with coating)
- Yield Strength: 30,000-44,000 psi
- Cold rolled (before coating)

Meet ASTM A108. Material is 1010 carbon steel and has a 0.0002″ thick zinc coating to make it more corrosion resistant. Thickness tolerance is ±0.008″. Width tolerance is ±0.010″. Flatness tolerance is not rated. Length tolerance is ±1/8″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Wd.		1 ft.	3 ft.	6 ft.
1/8″ Thick				
1/8″	8962K31	—	$4.79	$8.26
3/4″	8962K11	—	5.85	10.09
1″	8962K12	—	7.27	12.53
1 1/4″	8962K13	—	8.85	15.26
3/16″ Thick				
3/16″	8962K32	—	4.90	8.45

Wd.		1 ft.	3 ft.	6 ft.
1/4″ Thick				
1/4″	8962K33	—	$6.26	$10.79
5/16″ Thick				
5/16″	8962K34	—	8.74	15.07
3/8″ Thick				
3/8″	8962K35	—	10.30	17.76

Wd.		1 ft.	3 ft.	6 ft.
1/2″ Thick				
1/2″	8962K36	$6.91	$16.02	$27.62
5/8″ Thick				
5/8″	8962K37	10.90	25.29	43.61
3/4″ Thick				
3/4″	8962K38	13.85	32.13	55.39
1″ Thick				
1″	8962K39	23.67	54.91	94.68

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

General Purpose Low-Carbon Steel *(Material continued from previous page)*

Perforated Rectangular Bars—Zinc Galvanized

8962K28 & K26

- Hardness: Not rated
- Yield Strength: Not rated
- Cold rolled (before coating)

Material is 1006-1020 carbon steel with a G60 coating that offers improved corrosion resistance. All holes are 3/8″ diameter on 3/4″ centers. The 1 3/8″-wd. bars have one row of holes and the 2 1/4″- and 2 3/4″-wd. bars have two rows of holes. Width tolerance is ±0.010″. Flatness tolerance is not rated. Length tolerance is ±1/8″. **To Order:** Please specify 3- or 6-ft. length.

Wd.	Thickness Tolerance		3 ft.	6 ft.
3/64″ Thick				
2 1/4″	±0.006″	**8962K28**	$4.00	$6.89
5/64″ Thick				
1 3/8″	±0.013″	**8962K14**	$3.09	$5.33
5/64″ Thick (Cont.)				
2 3/4″	±0.013″	**8962K26**	$5.07	$8.75

Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: Rockwell B85
- Yield Strength: 30,000-36,000 psi
- Furnished as rolled

Material is either 1018 carbon steel or meets ASTM A36. Can be surface hardened; maximum attainable hardness is Rockwell C65. Thickness tolerance is ±0.001″. Width tolerance is ±0.005″. Flatness tolerance is not rated. Length tolerance is +1/4″.

INCH SIZES—2-FT. LENGTHS

Wd.		
1/16″ Thick		
1/2″	**9517K111**	$8.81
3/4″	**9517K112**	10.67
1″	**9517K113**	13.09
1 1/4″	**9517K114**	16.12
1 1/2″	**9517K115**	17.13
2″	**9517K116**	20.20
2 1/2″	**9517K117**	25.26
3″	**9517K118**	28.93
3 1/2″	**9517K11**	31.35
4″	**9517K119**	34.87
5″	**9517K12**	42.11
6″	**9517K101**	46.13
3/32″ Thick		
1/2″	**9517K131**	11.27
3/4″	**9517K132**	13.82
1″	**9517K133**	16.04
1 1/4″	**9517K13**	17.81
1 1/2″	**9517K134**	19.65
2″	**9517K135**	21.61
3″	**9517K137**	26.68
4″	**9517K138**	32.76
1/8″ Thick		
1/2″	**9517K151**	11.86
3/4″	**9517K152**	14.11
1″	**9517K153**	16.48
1 1/4″	**9517K154**	18.56
1 1/2″	**9517K155**	19.79
2″	**9517K156**	22.08
2 1/2″	**9517K157**	26.15
3″	**9517K158**	27.97
3 1/2″	**9517K159**	32.30
4″	**9517K161**	35.82
5″	**9517K14**	42.30
6″	**9517K102**	49.21
8″	**9517K103**	64.18
5/32″ Thick		
1/2″	**9517K15**	12.30
3/4″	**9517K171**	14.54
1″	**9517K16**	16.94

Wd.		
5/32″ Thick (Cont.)		
1 1/2″	**9517K173**	$20.26
2″	**9517K17**	24.54
3″	**9517K18**	30.93
4″	**9517K176**	39.89
3/16″ Thick		
3/16″	**9517K55**	14.87
1/2″	**9517K181**	17.83
3/4″	**9517K182**	20.21
1″	**9517K183**	23.99
1 1/4″	**9517K19**	25.21
1 1/2″	**9517K185**	27.56
2″	**9517K186**	33.94
2 1/2″	**9517K21**	40.96
3″	**9517K188**	44.67
3 1/2″	**9517K189**	51.37
4″	**9517K191**	54.64
5″	**9517K22**	67.86
6″	**9517K56**	76.10
1/4″ Thick		
1/4″	**9517K104**	14.52
1/2″	**9517K211**	18.28
3/4″	**9517K212**	20.64
1″	**9517K213**	25.00
1 1/4″	**9517K23**	25.88
1 1/2″	**9517K214**	27.99
2″	**9517K215**	34.70
2 1/2″	**9517K24**	41.63
3″	**9517K217**	45.66
3 1/2″	**9517K25**	53.26
4″	**9517K219**	57.08
5″	**9517K26**	68.74
6″	**9517K105**	77.71
8″	**9517K106**	92.11
5/16″ Thick		
5/16″	**9517K107**	16.76
1/2″	**9517K27**	18.72
3/4″	**9517K108**	21.43
1″	**9517K232**	25.78

Wd.		
5/16″ Thick (Cont.)		
1 1/2″	**9517K59**	$30.54
2″	**9517K28**	35.54
3″	**9517K29**	45.68
4″	**9517K237**	60.66
3/8″ Thick		
3/8″	**9517K109**	21.31
1/2″	**9517K241**	23.12
3/4″	**9517K242**	25.54
1″	**9517K243**	28.56
1 1/4″	**9517K31**	28.84
1 1/2″	**9517K244**	34.66
2″	**9517K245**	41.15
2 1/2″	**9517K32**	43.81
3″	**9517K247**	49.74
4″	**9517K248**	62.00
5″	**9517K33**	72.44
6″	**9517K121**	84.64
7/16″ Thick		
7/16″	**9517K66**	24.49
1/2″ Thick		
1/2″	**9517K122**	25.19
3/4″	**9517K251**	29.05
1″	**9517K252**	34.57
1 1/2″	**9517K34**	37.47
2″	**9517K253**	45.01
2 1/2″	**9517K35**	49.93
3″	**9517K254**	59.56
4″	**9517K255**	73.89
5″	**9517K36**	81.41
6″	**9517K123**	92.98
9/16″ Thick		
9/16″	**9517K69**	27.98
5/8″ Thick		
5/8″	**9517K261**	30.84
3/4″	**9517K262**	33.09
1″	**9517K263**	36.89
1 1/2″	**9517K265**	45.88
2″	**9517K266**	53.85
2 1/2″	**9517K37**	55.67

Wd.		
5/8″ Thick (Cont.)		
3″	**9517K267**	$69.05
3 1/2″	**9517K38**	69.60
4″	**9517K268**	83.77
5″	**9517K72**	98.89
3/4″ Thick		
3/4″	**9517K269**	32.78
1″	**9517K272**	40.61
1 1/4″	**9517K124**	44.09
1 1/2″	**9517K273**	48.58
2″	**9517K274**	56.63
2 1/2″	**9517K39**	63.58
3″	**9517K275**	72.93
4″	**9517K276**	88.32
5″	**9517K41**	103.04
6″	**9517K125**	117.85
7/8″ Thick		
7/8″	**9517K74**	48.68
1″	**9517K75**	49.74
2″	**9517K78**	67.92
3″	**9517K81**	82.35
4″	**9517K82**	98.42
1″ Thick		
1″	**9517K281**	52.76
1 1/2″	**9517K282**	60.02
2″	**9517K283**	69.51
2 1/2″	**9517K42**	77.28
3″	**9517K284**	86.90
4″	**9517K285**	101.71
5″	**9517K43**	121.89
6″	**9517K126**	134.24
1 1/4″ Thick		
1 1/4″	**9517K86**	69.43
1 1/2″	**9517K87**	75.68
2″	**9517K88**	84.35
3″	**9517K91**	101.39
4″	**9517K93**	119.22
5″	**9517K94**	139.00
6″	**9517K95**	154.14

METRIC SIZES—2-FT. LENGTHS

Wd.		
3 mm Thick		
10 mm	**7974T25**	$21.81
15 mm	**7974T26**	31.34
20 mm	**7974T27**	40.10
25 mm	**7974T28**	48.22

Wd.		
4 mm Thick		
10 mm	**7974T31**	$25.74
15 mm	**7974T32**	37.07
20 mm	**7974T33**	47.53
25 mm	**7974T34**	57.22

Wd.		
5 mm Thick		
10 mm	**7974T35**	$33.71
15 mm	**7974T36**	48.59
20 mm	**7974T37**	62.40
25 mm	**7974T38**	75.23

Wd.		
10 mm Thick		
10 mm	**7974T39**	$66.20
15 mm	**7974T4**	73.89
20 mm	**7974T41**	95.01
25 mm	**7974T42**	114.66

Sheets—Unpolished Mill Finish (Cold Finished)

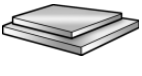

- Hardness: Not rated for 0.0299″ and 0.0598″ sizes; all others are Rockwell B85
- Yield Strength: 54,000 psi
- Cold rolled

Material is 1006-1020 carbon steel. Can be surface hardened; maximum attainable hardness is not rated. Width and length tolerances are ±1/8″. Flatness tolerance is not rated.

Thick.	Thickness Tolerance	6″×24″		12″×24″		24″×24″		36″×24″		48″×24″	
0.0299″	±0.003″	**6544K11**	$4.45	**6544K13**	$7.00	**6544K15**	$12.31	**6544K17**	$18.33	**6544K19**	$21.76
0.0598″	±0.006″	**6544K12**	8.75	**6544K14**	14.34	**6544K16**	25.30	**6544K18**	37.91	**6544K21**	43.92
		6″×6″		**8″×8″**		**10″×10″**		**12″×12″**			
1/4″	–0.013″	**6544K22**	$19.67	**6544K23**	$31.80	**6544K24**	$41.40	**6544K25**	$49.68		
3/8″	–0.013″	**6544K28**	24.44	**6544K29**	39.65	**6544K31**	58.64	**6544K32**	76.81		
1/2″	–0.013″	**6544K34**	31.15	**6544K35**	50.36	**6544K36**	71.37	**6544K37**	85.26		
3/4″	–0.013″	**6544K39**	37.79	**6544K41**	61.09	**6544K42**	83.58	**6544K43**	106.85		

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC.**

General Purpose Low-Carbon Steel *(Material continued from previous page)*

Often used for structural and automotive applications, this low-carbon steel also has good weldability.

Sheets—Ground Finish (Decarb Free)

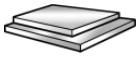

- Hardness: 1/16″-3/16″ thick sheets Rockwell B85; 1/4″-2″ thick sheets not rated
- Yield Strength: 30,000-36,000 psi
- Furnished as rolled

Material is either 1018 carbon steel or meets ASTM A36. The *1/16″-3/16″ thick sheets* can be surface hardened to attain a maximum attainable hardness of Rockwell C65; width tolerance is +0.005″; flatness tolerance is not rated; length tolerance is –1/16″, +1/2″. The *1/4″-2″ thick sheets* can be surface hardened; maximum attainable hardness is not rated; width and length tolerances are ±1/8″; flatness tolerance is not rated.

Thick.	Thick. Tol.	6″×6″		8″×8″		10″×10″		12″×12″		16″×16″		24″×24″	
1/16″	±0.001″	1388K15	$22.77	1388K17	$36.79	—	—	1388K19	$57.49	—	—	—	—
3/32″	±0.001″	1388K27	24.40	1388K29	39.42	—	—	1388K35	61.61	—	—	—	—
1/8″	±0.001″	1388K39	26.33	1388K45	42.56	—	—	1388K47	66.50	—	—	—	—
5/32″	±0.001″	1388K55	28.75	1388K57	46.48	—	—	1388K59	72.63	—	—	—	—
3/16″	±0.001″	1388K67	32.44	1388K69	52.43	—	—	1388K75	81.92	—	—	—	—
1/4″	±0.003″	1388K111	33.68	1388K121	54.46	1388K131	$70.90	1388K141	85.04	1388K161	$126.04	1388K181	$219.58
3/8″	±0.003″	1388K211	39.18	1388K221	63.33	1388K231	82.44	1388K241	98.94	1388K261	146.56	1388K281	258.26
1/2″	±0.003″	1388K311	43.04	1388K321	69.57	1388K331	90.57	1388K341	108.70	1388K361	161.02	1388K381	291.80
3/4″	±0.003″	1388K411	57.19	1388K421	92.45	1388K431	120.36	1388K441	144.43	1388K461	213.98	1388K481	376.72
1″	±0.003″	1388K511	62.46	1388K521	95.77	1388K531	129.08	1388K541	158.23	1388K561	241.72	1388K581	416.40
1 1/4″	±0.003″	1388K611	84.90	1388K621	116.93	1388K631	157.59	1388K641	193.18	1388K661	294.85	1388K681	508.37
1 1/2″	±0.003″	1388K711	95.83	1388K721	125.80	1388K731	169.56	1388K741	207.84	1388K761	317.24	1388K781	546.96
2″	±0.003″	1388K811	105.66	1388K821	170.77	1388K831	222.35	1388K841	266.84	1388K861	395.27	1388K881	580.85

Sheets—Antimicrobial Coated

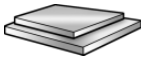

- Hardness: Rockwell B55-B72
- Yield Strength: 39,000-55,000 psi
- Cold rolled, base-galvanized G-90 (before coating)

An antimicrobial coating on one side inhibits the growth of bacteria, mold, and fungi, making these sheets ideal for medical and food processing applications. Antimicrobial coating is blue. Sheets meet ASTM A653. Material is CS Type B carbon steel. Width and length tolerances are ±0.031″. Flatness tolerance is 0.625″.

Thick.	Thickness Tolerance	30″×24″		30″×48″	
0.022″	±0.005″	2102T14	$31.36	2102T15	$58.50
0.040″	±0.005″	2102T24	55.36	2102T25	104.21
0.052″	±0.005″	2102T34	72.29	2102T35	135.57

Sheets—Zinc Galvanized

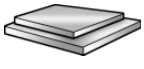

- Hardness: Rockwell B50-B60 (with coating)
- Yield Strength: 36,000 psi
- Cold rolled (before coating), unless noted

Meet ASTM A653. Material is CS Type B carbon steel and has a G60 zinc coating to make it more corrosion resistant. Thickness tolerance is ±0.006″. Width and length tolerance is ±1/16″. Flatness tolerance is not rated.

Thick.	24″×48″		48″×48″	
0.012″	8943K12	$16.56	—	—
0.015″	8943K13	18.03	8943K23	$32.37
0.019″	8943K14	19.17	8943K24	36.03
0.024″	8943K15	22.56	8943K25	39.96
0.036″	8943K16	34.14	8943K26	54.20
0.046″	8943K17	$44.32	8943K27	$69.00
0.076″	8943K18■	57.18	8943K28■	96.96
0.096″	8943K19■	77.00	8943K29■	128.33
0.112″	8943K31■	83.58	8943K41■	140.30
0.130″	8943K32■	93.57	—	—

■ Hot rolled.

Square Tubes—Unpolished Mill Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Hot rolled

Material is 1008-1026 carbon steel. Can be surface hardened; maximum attainable hardness is not rated. Straightness tolerance is not rated. Length tolerance is ±6″.

Ht.×Wd.	Lg.		
0.060″ Wall Thickness *(±0.0062″)*			
1/2″×1/2″	6 ft.	6527K11	$8.72
3/4″×3/4″	6 ft.	6527K12	13.28
1″×1″	6 ft.	6527K13	17.76
1 1/4″×1 1/4″	6 ft.	6527K14	23.92
0.083″ Wall Thickness *(±0.008″)*			
3/4″×3/4″	6 ft.	6527K21	14.88
0.083″ Wall Thickness (Cont.)			
1″×1″	6 ft.	6527K22	$21.72
1 1/2″×1 1/2″	6 ft.	6527K23	33.64
2″×2″	6 ft.	6527K24	42.07
0.120″ Wall Thickness *(±0.012″)*			
1″×1″	6 ft.	6527K31	24.14
1 1/2″×1 1/2″	6 ft.	6527K32	35.36
0.120″ Wall Thickness (Cont.)			
2″×2″	6 ft.	6527K33	$47.10
0.125″ Wall Thickness *(±0.013″)*			
2 1/2″×2 1/2″	6 ft.	6527K41	53.03
3″×3″	6 ft.	6527K42	61.00
3 1/2″×3 1/2″	6 ft.	6527K43	69.19
4″×4″	6 ft.	6527K44	74.34

Perforated Square Tubes—Zinc Galvanized (unless noted)

- Hardness: Not rated
- Yield Strength: 1 3/4″ and 2″ tubes 60,000 psi; all others not rated
- 1″, 1 1/4″, and 1 1/2″ tubes cold rolled (before coating); 1 3/4″ and 2″ tubes hot rolled (before coating)

The 1″-1 1/2″ tubes have a G60 coating and meet either ASTM A569 or A570. The 1 3/4″ and 2″ tubes have a heavier G90 coating for improved corrosion resistance and meet ASTM A653. Material is grade 50 carbon steel. Each size tube fits inside the next largest size, allowing you to create custom lengths. Tubes are perforated so multiple pieces can be joined and attached to objects such as signs. The 1″ and 1 1/4″ tubes have 11/32″ diameter holes on 1″ centers. The 1 1/2″-2″ tubes have 7/16″ diameter holes on 1″ centers. Straightness tolerance is not rated. Length tolerance is ±1/8″.

Ht.×Wd.	Lg.		
0.083″ Wall Thickness *(±0.008″)*			
1″×1″	6 ft.	6535K21	$20.15
1 1/4″×1 1/4″	6 ft.	6535K23	22.41
1 1/2″×1 1/2″	6 ft.	6535K25	26.64
2″×2″	6 ft.	6535K29	37.74
0.105″ Wall Thickness *(±0.011″)*			
1 3/4″×1 3/4″	6 ft.	6535K37♣	$39.52
2″×2″	6 ft.	6535K39♣	43.97
0.109″ Wall Thickness *(±0.0109″)*			
1″×1″	6 ft.	6535K31	$23.72
1 1/4″×1 1/4″	6 ft.	6535K33	26.31
1 1/2″×1 1/2″	6 ft.	6535K35	31.28

♣ Tubes are galvanized.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

General Purpose Low-Carbon Steel *(Material continued from previous page)*

Round Tubes—Unpolished Mill Finish (Cold Finished, unless noted)

- Hardness: Not rated
- Yield Strength: Not rated
- Cold drawn (unless noted)

Meet ASTM A513. Wall thickness and straightness tolerances are not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

OD	OD Tolerance	ID		1 ft.	3 ft.	6 ft.
0.049″ Wall Thickness						
1.000″	±0.0035″	0.902″	7767T15★	___	___	$10.18
1.500″	±0.006″	1.402″	7767T17★	___	___	15.25
2.000″	±0.006″	1.902″	7767T19★	___	___	18.16
0.065″ Wall Thickness						
1.000″	±0.0035″	0.870″	7767T23★	___	___	11.78
1.500″	±0.005″	1.370″	7767T27★	___	___	18.13
2.000″	±0.005″	1.870″	7767T29♣	___	___	22.37
3.000″	±0.008″	2.870″	7767T33♣	___	___	36.62
4.000″	±0.010″	3.870″	7767T35♣	___	___	43.47
0.120″ Wall Thickness						
1.000″	±0.0035″	0.760″	7767T37♣	___	___	20.26
1.500″	±0.005″	1.260″	7767T43♣	___	___	29.98
3.500″	±0.009″	3.260″	7767T47♣	___	___	67.92
4.000″	±0.010″	3.760″	7767T49♣	___	___	64.33
4.500″	±0.020″	4.260″	7767T16♣	___	___	81.00
0.188″ Wall Thickness						
1.500″	+0.005″	1.125″	7767T53	$18.25	$41.61	73.00
1.625″	+0.005″	1.250″	7767T55	20.91	47.68	83.65
0.188″ Wall Thickness (Cont.)						
2.000″	+0.006″	1.625″	7767T57	$23.69	$54.01	$94.75
3.125″	+0.009″	2.750″	7767T59	39.08	89.09	156.30
0.250″ Wall Thickness						
1.250″	+0.005″	0.750″	7767T69	20.41	46.52	81.62
2.000″	+0.006″	1.500″	7767T71	29.59	67.47	118.37
3.000″	+0.009″	2.500″	7767T73	40.69	92.76	162.74
3.500″	+0.010″	3.000″	7767T75	45.98	104.85	183.94
4.000″	+0.011″	3.500″	7767T77	49.86	113.69	199.45
0.375″ Wall Thickness						
1.750″	+0.006″	1.000″	7767T79	33.77	77.00	135.09
2.000″	+0.006″	1.250″	7767T81	37.77	86.12	151.09
2.250″	+0.007″	1.500″	7767T83	41.66	94.97	166.62
0.500″ Wall Thickness						
2.750″	+0.008″	1.750″	7767T89	39.62	90.33	158.47
3.000″	+0.009″	2.000″	7767T91	64.88	147.93	259.53
3.500″	+0.010″	2.500″	7767T93	76.31	174.00	305.26
4.000″	+0.011″	3.000″	7767T95	80.25	182.96	320.98
5.500″	+0.015″	4.500″	7767T97	109.10	248.75	436.41

★ Cold rolled. ♣ Hot rolled.

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 126-167 Brinell
- Yield Strength: 54,000-70,000 psi
- Furnished as drawn

Meet ASTM A108. Material is 1018 carbon steel and can be surface hardened to a maximum attainable hardness of Rockwell C60-C62. Diameter tolerance for rods with 1/4″-2 1/2″ diameter is –0.003″; 2 5/8″-6″ diameter is –0.005″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths; ±3″ for 3-ft. lengths; ±6″ for 6-ft. lengths; all other lengths have a +1/4″, –1/8″ tolerance. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/4″	8920K11	___	___	$4.47
3/8″	8920K13	___	___	7.78
1/2″	8920K15	___	___	13.89
5/8″	8920K17	___	___	21.56
3/4″	8920K19	___	___	31.12
7/8″	8920K21	___	___	37.01
1″	8920K231	___	$27.68	48.57
1 1/8″	8920K251	$14.26	32.52	57.05
1 1/4″	8920K271	17.15	39.10	68.59
1 3/8″	8920K291	20.25	46.17	81.00
1 1/2″	8920K311	22.32	50.88	89.26
1 5/8″	8920K331	$24.89	$56.75	$99.57
1 3/4″	8920K72	27.73	63.23	110.93
1 7/8″	8920K74	31.15	71.02	124.60
2″	8920K75	34.70	79.11	138.79
2 1/8″	8920K76	38.38	87.50	153.51
2 1/4″	8920K77	42.17	96.15	168.68
2 3/8″	8920K78	46.05	104.99	184.20
2 1/2″	8920K79	49.94	113.85	199.74
2 5/8″	8920K81	54.14	123.43	216.55
2 3/4″	8920K82	58.30	132.94	233.22
2 7/8″	8920K83	63.73	145.32	254.94
3″	8920K84	$68.13	$155.34	$272.53
3 1/8″	8920K85	78.30	178.51	313.18
3 1/4″	8920K86	83.20	189.71	332.82
3 3/8″	8920K87	88.18	201.04	352.71
3 1/2″	8920K88	94.81	216.17	379.24
3 5/8″	8920K89	107.08	244.14	428.31
3 3/4″	8920K91	114.58	261.25	458.34
3 7/8″	8920K92	118.29	269.70	473.15
4″	8920K93	126.05	287.38	504.18
4 1/2″	8920K94	164.78	375.69	659.10
5″	8920K95	202.51	461.73	810.06

Dia.	1/2″ Long		1″ Long		3″ Long		6″ Long	
2″	7786T12	$2.90	7786T14	$4.35	7786T16	$10.27	7786T18	$18.63
3″	7786T32	5.24	7786T34	8.36	7786T36	22.47	7786T38	44.37
4″	7786T52	9.12	7786T54	13.56	7786T56	35.45	7786T58	69.44
5″	7786T62	13.50	7786T64	21.20	7786T66	60.86	7786T68	119.69
6″	7786T72	16.52	7786T74	30.03	7786T86	82.58	7786T78	150.15

Rods—Chrome Coated

- Hardness: Rockwell C60-C65 (with coating)
- Yield Strength: 45,000 psi
- Cold rolled (before coating)

Material is 1018 carbon steel. All have a 0.0003″-0.0007″ thick chrome coating that meets AMS QQ-C-320 and AMS 2406. Coating provides good wear and corrosion resistance as well as extended life. Coating is not intended for aesthetic purposes. Diameter tolerance is +0.001″, –0.002″. Straightness tolerance is not rated. Length tolerance is ±1/16″.

To Order: Please specify 1- or 3-ft. length.

Dia.		1 ft.	3 ft.
1/4″	7936K31	$5.07	$11.80
3/8″	7936K32	7.07	16.44
1/2″	7936K33	$13.94	$32.41
5/8″	7936K34	17.92	41.67
3/4″	7936K35	$22.09	$51.38
1″	7936K36	34.87	81.10

Rods—Zinc Galvanized

- Hardness: Rockwell B68 (with coating)
- Yield Strength: 30,000-44,000 psi
- Cold drawn (unless noted)

Meet ASTM A108. Material is 1006-1018 carbon steel except for 7/8″ and 1″ dia. rods, which are 1035 carbon steel. A 0.0002″ thick zinc coating makes steel more corrosion resistant. Diameter tolerance is ±0.003″. Straightness tolerance is not rated. Length tolerance is ±1/8″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
3/16″	9120K31	___	$2.60	$4.49
1/4″	9120K32	___	3.49	6.01
5/16″	9120K33	___	4.68	8.07
3/8″	9120K34	___	6.09	10.50
7/16″	9120K35	___	$7.96	$13.72
1/2″	9120K36	___	9.67	16.67
5/8″	9120K37	___	14.42	24.87
3/4″	9120K38	$8.63	$20.02	$34.51
7/8″	9120K39♣	9.35	21.68	37.38
1″	9120K41♣	12.79	29.66	51.14

♣ Hot rolled.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

General Purpose Low-Carbon Steel *(Material continued from previous page)*

Often used for structural and automotive applications, this low-carbon steel also has good weldability.

Hexagonal Bars—Unpolished Mill Finish (Cold Finished)

- Hardness: 126 Brinell
- Yield Strength: 54,000 psi
- Furnished as drawn

Meet ASTM A108. Material is 1018 carbon steel and can be surface hardened to a maximum attainable hardness of Rockwell C62. Hex size is measured across the flats. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size	Hex Tolerance
1/4″–3/4″	–0.002″
7/8″–1 1/2″	–0.003″
2″–2 1/2″	–0.004″

Hex Size		1 ft.	3 ft.	6 ft.
1/4″	6512K12	—	—	$8.03
5/16″	6512K14	—	—	10.54
3/8″	6512K16	—	—	14.28
1/2″	6512K18	—	—	16.03
5/8″	6512K22	—	—	$23.03
3/4″	6512K41	—	$17.23	28.72
7/8″	6512K43	—	22.85	38.09
1″	6512K45	$11.91	28.60	47.66
1 1/4″	6512K48	$17.52	$42.05	$70.08
1 1/2″	6512K34	25.25	60.60	101.00
2″	6512K35	39.32	94.37	157.28
2 1/2″	6512K36	82.48	197.95	329.91

90° Angles—Unpolished Mill Finish

- Hardness: Not rated
- Yield Strength: 36,000 psi
- Hot rolled

Meet ASTM A36. Can be surface hardened; maximum attainable hardness is not rated. All corners are rounded. Thickness tolerance is ±0.015″. Straightness tolerance is not rated. Length tolerance is ±6″.

Leg Lg.	Leg Lg. Tolerance	Lg.		
1/8″ Thick				
1/2″	±1/32″	6 ft.	9017K12	$11.32
3/4″	±1/32″	6 ft.	9017K42	12.28
1″	±1/32″	6 ft.	9017K44	14.80
1 1/4″	±3/64″	6 ft.	9017K47	15.16
1 1/2″	±3/64″	6 ft.	9017K48	16.74
2″	±3/64″	6 ft.	9017K49	21.54
3/16″ Thick				
1″	±1/32″	6 ft.	9017K14	$15.00
1 1/2″	±3/64″	6 ft.	9017K59	23.94
1 3/4″	±3/64″	6 ft.	9017K16	20.50
2″	±3/64″	6 ft.	9017K18	22.60
2 1/2″	±1/16″	6 ft.	9017K22	28.73
3″	+1/8″, –3/32″	6 ft.	9017K24	33.61
1/4″ Thick				
1″	±1/16″	6 ft.	9017K65	$23.44
1 1/2″	±3/64″	6 ft.	9017K67	32.02
2″	±3/64″	6 ft.	9017K69	38.81
2 1/2″	±1/16″	6 ft.	9017K71	44.06
3″	+1/8″, –3/32″	6 ft.	9017K73	45.79
4″	±1/16″	6 ft.	9017K75	81.49

90° Angles—Zinc Galvanized

- Hardness: Rockwell B66-B88
- Yield Strength: 36,000 psi
- Hot rolled (before coating)

Meet ASTM A36. Zinc coating makes steel more corrosion resistant. All corners are rounded. Zinc coating is 0.0002″ thick. Thickness tolerance is ±0.008″. Straightness tolerance is not rated. Length tolerance is +1/2″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Leg Lg.	Leg Lg. Tolerance		1 ft.	3 ft.	6 ft.
1/8″ Thick					
3/4″	±0.032″	8968K11	—	$9.16	$15.80
1″	±0.032″	8968K12	—	11.92	20.56
1 1/4″	±0.050″	8968K13	—	13.84	23.87
1 1/2″	±0.125″	8968K56	—	16.13	27.81
2″	±0.125″	8968K58	$9.34	21.66	37.34
3/16″ Thick					
2″	±0.050″	8968K14	$12.07	$28.00	$48.28
1/4″ Thick					
1 1/2″	±0.125″	8968K61	13.22	30.66	52.87
2″	±0.125″	8968K63	17.20	39.90	68.79
3″	±0.125″	8968K64	25.27	58.61	101.06

Perforated 90° Angles—Zinc Galvanized

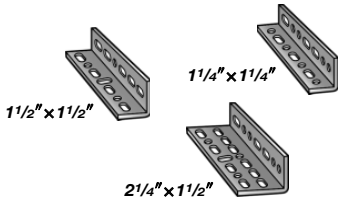

- Hardness: Not rated
- Yield Strength: Not rated
- Cold rolled (before coating)

Material is 1006-1020 carbon steel with a G60 coating. Zinc coating makes steel more corrosion resistant. All holes are 3/8″ diameter on 3/4″ centers. Angles have rounded outside corners and squared inside corners. Straightness tolerance is not rated. Length tolerance is ±1/8″. Leg length tolerance is ±0.010″.

To Order: Please specify 3- or 6-ft. length.

Leg Lg. × Leg Lg.		3 ft.	6 ft.
3/64″ Thick *(±0.006″)*			
1 1/4″ × 1 1/4″	8968K21	$3.85	$6.76
5/64″ Thick *(±0.013″)*			
1 1/2″ × 1 1/2″	8968K24	$4.94	$8.66
2 1/4″ × 1 1/2″	8968K27	11.65	20.43

U-Channels—Unpolished Mill Finish

- Hardness: Not rated
- Yield Strength: 36,000 psi
- Hot rolled

Meet ASTM A36. Can be surface hardened; maximum attainable hardness is not rated. Edges are squared and legs are tapered. Straightness tolerance is not rated. Base and leg length tolerance is ±1/16″. Length tolerance is ±6″.

Base × Leg Lg.	Lg.		
1/8″ Thick *(±0.010″)*			
1″ × 1/2″	6 ft.	7779T12	$19.34
3/16″ Thick *(±0.015″)*			
2″ × 1″	6 ft.	7779T22	$39.37
1/4″ Thick *(±0.015″)*			
2″ × 5/8″	6 ft.	7779T16	$43.97

Hardened Precision Balls—Reflective Finish

- Hardness: Rockwell C60
- Yield Strength: 44,000 psi
- Case hardened

Meet ASTM A29. Material is 1010-1020 carbon steel. Grade is 1000. Diameter tolerance is ±0.005″. Sphericity is 0.001″.

Dia.	Pkg. Qty.		Pkg.
1/16″	500	96455K71	$4.47
3/32″	500	96455K72	3.63
1/8″	500	96455K49	2.04
5/32″	500	96455K73	3.25
3/16″	250	96455K51	2.17
7/32″	250	96455K74	$2.79
1/4″	250	96455K52	3.20
9/32″	250	96455K75	7.41
5/16″	250	96455K53	5.58
11/32″	250	96455K76	$16.37
3/8″	250	96455K54	5.87
7/16″	100	96455K55	6.46
1/2″	100	96455K56	8.18
9/16″	100	96455K57	$12.96
5/8″	100	96455K58	14.88
3/4″	50	96455K59	14.86
7/8″	20	96455K77	9.82
1″	25	96455K62	14.93

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Machinable 1117 Low-Carbon Steel

Material has a high manganese and sulfur content to increase hardness and strength while maintaining better machinability than other low-carbon steels.

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 137 Brinell
- Yield Strength: 58,000 psi
- Cold drawn

Meet ASTM A108. Can be surface hardened to a maximum attainable hardness of 183 Brinell. Diameter tolerance is –0.003″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
3/8″	8290T116	—	—	$9.94
5/8″	8290T14	—	$11.98	20.66
3/4″	8290T15	$6.50	15.07	25.98
1″	8290T18	10.35	24.02	41.41
1 1/4″	8290T22	$14.62	$33.93	$58.50
1 1/2″	8290T26	17.72	41.12	70.89
1 5/8″	8290T27	19.95	46.28	79.79
1 3/4″	8290T28	24.93	57.85	99.74
2″	8290T31	$29.32	$68.03	$117.30
2 1/8″	8290T32	31.61	73.32	126.42
2 1/4″	8290T33	34.79	80.71	139.16
2 1/2″	8290T35	41.12	95.40	164.49

High Strength 1045 Medium-Carbon Steel

This material is the highest strength carbon steel we offer. It has fair machinability and is often used for bolts, studs, and shaft parts.

Square Bars—Unpolished Mill Finish (Cold Finished)

- Hardness: 245 Brinell
- Yield Strength: 55,000 psi
- Annealed

Meet ASTM A108. Material can be surface hardened to a maximum attainable hardness of Rockwell C60. Flatness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length.

Square Size	Square Size Tolerance		1 ft.	3 ft.	6 ft.
1/2″	–0.004″	6545K1	$7.11	$16.49	$28.43
3/4″	–0.004″	6545K2	12.04	28.41	48.15
1″	–0.005″	6545K7	22.15	51.39	88.60
1 1/4″	–0.005″	6545K37	32.95	76.44	131.79
1 1/2″	–0.005″	6545K39	$42.26	$98.03	$169.02
1 3/4″	–0.006″	6545K41	58.34	135.34	233.34
2″	–0.006″	6545K43	68.67	159.33	274.70

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell B97
- Yield Strength: 77,000 psi
- Cold drawn

Meet ASTM A108. Material can be surface hardened; maximum attainable hardness is not rated. Diameter tolerance is –0.005″. Straightness tolerance is 1/8″ per 10-ft. length. Length tolerance is ±10%.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/4″	8924K31	—	—	$4.40
3/8″	8924K33	—	—	6.97
1/2″	8924K35	—	—	10.97
5/8″	8924K372	—	$9.86	17.00
3/4″	8924K392	—	13.74	23.69
7/8″	8924K92	$7.71	17.88	30.83
1″	8924K1	9.48	21.99	37.92
1 1/8″	8924K2	11.99	27.81	47.95
1 1/4″	8924K3	14.38	33.36	57.52
1 3/8″	8924K4	17.18	39.86	68.72
1 1/2″	8924K5	$20.44	$47.42	$81.76
1 5/8″	8924K6	21.68	50.30	86.72
1 3/4″	8924K54	26.36	61.14	105.42
1 7/8″	8924K56	28.44	65.97	113.75
2″	8924K58	32.70	75.87	130.81
2 1/8″	8924K62	36.18	83.93	144.71
2 1/4″	8924K64	39.43	91.48	157.72
2 3/8″	8924K66	45.20	104.85	180.78
2 1/2″	8924K68	49.44	114.69	197.74
2 5/8″	8924K72	53.99	125.26	215.96
2 3/4″	8924K74	$58.05	$134.68	$232.20
2 7/8″	8924K76	63.13	146.47	252.54
3″	8924K78	66.23	153.65	264.91
3 1/8″	8924K82	67.46	156.51	269.84
3 1/4″	8924K84	66.64	154.59	266.54
3 1/2″	8924K86	88.17	204.54	352.66
3 5/8″	8924K88	99.25	230.27	397.01
3 3/4″	8924K89	106.92	248.05	427.67
4″	8924K91	109.86	254.87	439.43

Tight-Tolerance Rods—Ground Finish (Decarb Free)

- Hardness: 179 Brinell
- Yield Strength: 77,000 psi
- Cold drawn

Meet ASTM A108. Material can be surface hardened to a maximum attainable hardness of Rockwell C62. Diameter tolerance is –0.002″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1″	8279T11	$14.11	$32.74	$56.45
1 1/4″	8279T12	20.57	47.73	82.30
1 1/2″	8279T14	27.80	64.50	111.20
1 3/4″	8279T15	$37.84	$87.79	$151.37
2″	8279T17	49.40	114.61	197.61
2 3/16″	8279T18	56.32	130.67	225.29
2 1/2″	8279T21	$70.61	$163.83	$282.46
2 3/4″	8279T22	87.41	202.79	349.64
3″	8279T24	96.33	223.48	385.31

General Purpose 1074/1075 Spring Steel

An excellent general purpose spring steel, this material can be easily formed and heat treated. Often used for less exacting requirements, it is more formable than 1095 Spring Steel but does not have the same degree of bounce-back in the heat-treated condition.

Sheets—Unpolished Mill Finish (Cold Finished)

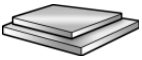

- Hardness: Rockwell B86
- Yield Strength: 81,000 psi
- Annealed

Meet ASTM A684. Material can be heat treated to a maximum attainable hardness of Rockwell C64. Thickness tolerance is ±0.003″. Width tolerance is ±1/64″ for 8″ widths and ±2 1/2″ for 17 1/2″ widths. Length tolerance is ±1/16″ for 12″ and 24″ lengths and ±1/2″ for 48″ lengths. Flatness tolerance is 3/8″.

Thick.	8″ Wd. × 12″ Lg.		8″ Wd. × 24″ Lg.		17 1/2″ Wd. × 48″ Lg.	
0.025″	9071K71	$16.26	9071K41	$25.00	9071K11	$47.33
0.032″	9071K72	16.83	9071K42	25.42	9071K12	48.40
0.035″	9071K73	17.48	9071K43	25.93	9071K13	59.73
0.042″	9071K74	18.12	9071K44	26.39	9071K14	61.12
0.050″	9071K55	22.45	9071K45	35.68	9071K15	78.37
0.062″	9071K56	23.19	9071K46	36.27	9071K16	81.92
0.072″	9071K57	$26.91	9071K47	$42.68	9071K17	$87.02
0.083″	9071K58	32.13	9071K48	50.97	9071K18	89.92
0.094″	9071K59	33.19	9071K49	51.81	9071K19	107.62
0.109″	9071K61	33.98	9071K51	55.77	9071K21	118.00
0.125″	9071K62	35.07	9071K52	57.68	9071K22	139.29
0.187″	9071K63	48.21	9071K53	92.78	9071K23	203.60

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

General Purpose 1074/1075 Spring Steel *(Material continued from previous page)*

An excellent general purpose spring steel, this material can be easily formed and heat treated. Often used for less exacting requirements, it is more formable than 1095 spring steel but does not have the same degree of bounce-back in the heat-treated condition.

Spring-Tempered Strips—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell C44-C50
- Yield Strength: Not rated
- Spring tempered (hardened)

Also known as scaleless blue steel. Width tolerance is ±0.005″. Flatness tolerance is not rated. Length tolerance is ±1/4″ for lengths up to 5 feet and +10% for all other lengths. Depending on thickness, color varies from silver to blue-gray to straw.

Wd.	Lg., ft.		
0.010″ Thick *(±0.0006″)*			
1/2″	10	9074K11	$11.79
1″	10	9074K12	19.14
1″	75	9074K112	54.13
2″	5	9074K13	23.08
4″	10	9074K214	41.87
6″	5	9074K15	35.09
6″	10	9074K215	46.79
0.015″ Thick *(±0.0006″)*			
1/2″	10	9074K16	12.83
1″	5	9074K17	11.97
1″	50	9074K217	47.90
2″	5	9074K18	23.12
2″	25	9074K218	46.25
4″	10	9074K219	48.05
6″	10	9074K221	53.21
0.018″ Thick *(±0.0007″)*			
1/2″	10	9074K22	13.77
1″	5	9074K23	13.31
2″	5	9074K24	26.22
6″	10	9074K126	54.13
0.020″ Thick *(±0.0008″)*			
1/2″	10	9074K27	14.35
1/2″	100	9074K127	54.13
1″	5	9074K28	14.35
1″	50	9074K128	54.13
2″	5	9074K29	26.22

Wd.	Lg., ft.		
0.020″ Thick (Cont.)			
2″	25	9074K229	$52.45
4″	10	9074K231	46.79
6″	10	9074K232	63.76
0.025″ Thick *(±0.001″)*			
1/2″	10	9074K33	18.16
1/2″	75	9074K233	54.51
1″	5	9074K34	16.67
1″	50	9074K234	66.73
2″	5	9074K35	32.62
2″	25	9074K235	65.19
6″	5	9074K237	45.10
0.032″ Thick *(±0.0011″)*			
1/2″	5	9074K38	11.70
1/2″	50	9074K238	46.79
1″	5	9074K39	24.00
1″	25	9074K239	48.05
2″	10	9074K241	42.79
4″	10	9074K242	63.76
6″	5	9074K243	49.73
0.035″ Thick *(±0.0011″)*			
1/2″	5	9074K44	12.43
1/2″	50	9074K244	49.73
1″	5	9074K45	23.12
1″	25	9074K245	46.25
2″	10	9074K246	45.10

Wd.	Lg., ft.		
0.035″ Thick (Cont.)			
4″	10	9074K247	$71.73
6″	5	9074K248	49.73
0.042″ Thick *(±0.0013″)*			
1/2″	5	9074K63	14.54
1″	25	9074K632	54.32
2″	10	9074K633	47.41
3″	10	9074K634	70.52
4″	5	9074K635	63.20
6″	4	9074K636	53.59
0.050″ Thick *(±0.0014″)*			
1/2″	5	9074K49	16.67
1″	5	9074K51	31.16
1″	25	9074K251	62.38
2″	10	9074K252	49.73
3″	5	9074K52	43.32
4″	5	9074K253	49.73
6″	4	9074K154	54.13
0.062″ Thick *(±0.0016″)*			
1/2″	5	9074K55	24.00
1/2″	25	9074K255	48.05
1″	10	9074K256	42.79
2″	10	9074K157	54.13
3″	5	9074K56	53.19
4″	4	9074K158	54.13
6″	3	9074K159	54.13

Wd.	Lg., ft.		
0.094″ Thick *(±0.002″)*			
1/2″	5	9074K61	$26.18
1/2″	100	9074K261	246.34
5/8″	5	9074K62	26.18
3/4″	5	9074K183	32.73
1″	4	9074K184	32.73
1 1/4″	3	9074K185	32.73
1 1/2″	3	9074K186	32.73
1 1/2″	50	9074K266	264.00
2″	2	9074K187	32.73
2″	25	9074K267	239.34
2 1/2″	2	9074K188	32.73
2 1/2″	25	9074K268	248.67
3″	1	9074K189	32.73
3″	25	9074K269	258.11
4″	1	9074K191	32.73
4″	10	9074K271	227.61
5″	1	9074K192	32.73
5″	10	9074K272	238.11
0.125″ Thick *(±0.002″)*			
1/2″	5	9074K193	32.73
3/4″	4	9074K194	32.73
7/8″	3	9074K195	32.73
1″	3	9074K196	32.73
1 1/4″	2	9074K197	32.73
1 1/2″	2	9074K198	32.73

Tough Wear-Resistant 1095 Spring Steel

This spring steel is engineered to meet your most demanding requirements. It has good wear resistance due to its high carbon content and is commonly used to make spring clips, washers, and parts that are repeatedly stressed. The ***annealed*** material is easy to form and can be heat treated for springlike properties. The ***spring-tempered*** material, also known as blue-tempered, is the most common spring steel.

Annealed Sheets—Unpolished Mill Finish (Cold Finished)

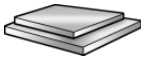

- Hardness: Rockwell B90
- Yield Strength: 60,000-75,000 psi
- Annealed

Meet ASTM A684. Material can be heat treated to a maximum attainable hardness of Rockwell C66. Thickness tolerance is ±0.002″ for sheets up to 0.050″ thick and ±0.003″ for sheets 0.062″-0.187″ thick. Width tolerance is ±0.016″ for 8″ widths and +5″ for 15″ widths. Flatness tolerance is 3/8″. Length tolerance is ±1/2″.

Thick.	8″ Wd.×12″ Lg.		8″ Wd.×24″ Lg.		15″ Wd.×48″ Lg.	
0.025″	9043K42	$18.11	9043K24	$25.44	9043K12	$42.29
0.032″	9043K43	18.80	9043K25	26.37	9043K13	52.69
0.035″	9043K44	19.36	9043K26	26.66	9043K14	58.99
0.042″	9043K45	20.12	9043K27	27.11	9043K15	71.43
0.050″	9043K46	24.04	9043K28	33.83	9043K16	74.02
0.062″	9043K47	24.94	9043K29	35.01	9043K17	92.76
0.072″	9043K48	$28.74	9043K31	$40.48	9043K18	$105.97
0.083″	9043K49	33.99	9043K32	47.91	9043K19	115.23
0.094″	9043K51	35.28	9043K33	50.44	9043K21	137.54
0.109″	9043K52	39.04	9043K34	56.78	9043K22	147.55
0.125″	9043K53	39.80	9043K35	58.40	9043K23	151.80
0.187″	9043K57	49.45	9043K36	85.15	9043K37	207.69

Spring-Tempered Strips and Sheets—Polished (Blue Finish)

- Hardness: Rockwell C53-C59
- Yield Strength: Not rated
- Spring tempered (hardened)

Width tolerance is ±0.005″ for strips and sheets up to 4″ wide; ±0.0236″ for strips and sheets 6″ to 12 3/8″ wide. Flatness tolerance is not rated. Length tolerance for 1- to 9-ft. lengths is +3″, −1/8″ and for 10- to 100-ft. lengths is +12″, −1″.

Wd.	Mini Coils Lg., ft.			Coils Lg., ft.		
0.002″ Thick *(±0.0005″)*						
3/4″	10	9075K1	$29.08	50	9036K1	$82.52
1″	10	9075K427	29.44	50	9036K2	88.10
2″	5	9075K113	29.53	25	9036K3	88.10
3″	4	9075K383	30.38	25	9036K4	93.40
0.003″ Thick *(±0.0005″)*						
1/2″	25	9075K428	29.67	100	9036K57	78.50
1″	10	9075K2	30.09	50	9036K5	89.20
2″	5	9075K3	27.11	50	9036K117	91.39
3″	5	9075K115	29.68	25	9036K6	102.76
0.004″ Thick *(±0.0005″)*						
1/2″	25	9075K4	30.16	100	9036K7	81.45
1″	10	9075K5	30.64	100	9036K8	91.88
2″	5	9075K6	31.63	50	9036K9	92.80
4″	4	9075K119	31.74	25	9036K101	99.90
6″	2	9075K121	32.42	10	9036K72	74.04
0.005″ Thick *(±0.00075″)*						
1/4″	25	9075K7	$29.31	100	9036K73	$69.70
3/8″	25	9075K8	30.16	100	9036K74	74.04
1/2″	25	9075K9	30.64	100	9036K75	81.89
3/4″	10	9075K21	31.17	100	9036K76	82.63
1″	10	9075K11	31.20	100	9036K77	93.24
1 1/2″	10	9075K12	32.06	100	9036K78	93.07
2″	5	9075K13	32.14	50	9036K79	94.33
3″	5	9075K387	33.74	25	9036K81	77.31
6″	2	9075K128	32.80	10	9036K82	75.55
0.006″ Thick *(±0.00075″)*						
3/8″	25	9075K14	30.75	100	9036K83	75.71
1/2″	25	9075K15	31.16	100	9036K84	82.58
5/8″	25	9075K429	31.73	100	9036K85	83.24
3/4″	10	9075K16	30.98	100	9036K86	84.93
1″	10	9075K17	31.73	100	9036K87	94.66
2″	5	9075K18	31.80	50	9036K88	96.77
6″	3	9075K136	33.35	10	9036K89	77.03

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Tough Wear-Resistant 1095 Spring Steel *(Material continued from previous page)*

Spring-Tempered Strips and Sheets—Polished (Blue Finish) (Cont.)

- Hardness: Rockwell C53-C59
- Yield Strength: Not rated
- Spring tempered (hardened)

Width tolerance is ±0.005″ for strips and sheets up to 4″ wide; ±0.0236″ for strips and sheets 6″ to 12⅜″ wide. Flatness tolerance is not rated. Length tolerance for 1- to 9-ft. lengths is +3″, −⅛″ and for 10- to 100-ft. lengths is +12″, −1″.

Wd.	Mini Coils Lg., ft.			Coils Lg., ft.		
0.007″ Thick *(±0.00075″)*						
¼″	25	**9075K19**	$25.96	100	**9036K91**	$73.46
⅜″	25	**9075K22**	31.25	100	**9036K92**	76.06
½″	25	**9075K23**	31.83	100	**9036K93**	83.78
¾″	10	**9075K24**	29.61	100	**9036K94**	86.91
1″	10	**9075K25**	32.32	100	**9036K143**	96.64
1½″	10	**9075K457**	32.69	50	**9036K95**	97.83
2″	5	**9075K26**	26.05	50	**9036K666**	97.73
3″	5	**9075K144**	29.60	25	**9036K96**	77.50
6″	3	**9075K145**	33.83	10	**9036K97**	80.56
0.008″ Thick *(±0.00075″)*						
¼″	25	**9075K27**	26.44	100	**9036K98**	77.33
⅜″	25	**9075K28**	31.82	100	**9036K99**	79.33
½″	25	**9075K458**	32.27	100	**9036K741**	86.39
¾″	10	**9075K29**	30.87	100	**9036K742**	88.44
1″	10	**9075K31**	32.78	100	**9036K743**	98.00
2″	5	**9075K32**	32.51	50	**9036K491**	99.74
3″	4	**9075K153**	36.10	25	**9036K744**	79.61
6″	2	**9075K154**	37.52	10	**9036K758**	81.45
0.010″ Thick *(±0.0015″)*						
¼″	25	**9075K33**	27.06	100	**9036K745**	78.70
⅜″	25	**9075K34**	27.92	100	**9036K746**	80.11
½″	25	**9075K35**	33.91	100	**9036K747**	87.73
⅝″	25	**9075K36**	34.42	100	**9036K748**	88.97
¾″	25	**9075K37**	35.11	100	**9036K749**	89.59
⅞″	10	**9075K38**	32.05	100	**9036K751**	92.79
1″	10	**9075K39**	33.48	100	**9036K752**	99.30
1¼″	10	**9075K41**	34.06	100	**9036K753**	99.74
1½″	10	**9075K396**	34.74	75	**9036K667**	108.98
2″	10	**9075K164**	35.54	75	**9036K165**	119.29
2½″	5	**9075K42**	31.20	50	**9036K754**	114.98
3″	5	**9075K43**	31.61	50	**9036K167**	106.32
4″	5	**9075K167**	32.40	25	**9036K755**	93.08
6″	4	**9075K168**	30.12	25	**9036K169**	99.74
8″	3	**9075K169**	29.44	25	**9036K492**	105.40
10″	3	**9075K171**	30.21	20	**9036K756**	99.74
12⅜″	2	**9072K11**♣	27.04	20	**9036K759**	105.28
0.012″ Thick *(±0.001″)*						
3/16″	25	**9075K44**	26.17	100	**9036K761**	77.21
¼″	25	**9075K45**	28.06	100	**9036K762**	79.01
⅜″	25	**9075K46**	28.50	100	**9036K763**	80.80
½″	25	**9075K47**	34.38	100	**9036K764**	88.56
¾″	25	**9075K432**	35.72	100	**9036K765**	90.48
1″	10	**9075K48**	34.10	100	**9036K766**	99.74
2″	10	**9075K179**	36.19	50	**9036K767**	79.80
3″	5	**9075K49**	32.09	50	**9036K768**	121.27
4″	5	**9075K181**	32.79	25	**9036K769**	93.27
6″	3	**9075K182**	28.09	25	**9036K493**	101.66
8″	3	**9075K183**	29.98	20	**9036K771**	101.25
10″	3	**9075K184**	30.73	20	**9036K494**	102.82
12⅜″	3	**9075K185**	31.85	20	**9036K495**	105.83
0.015″ Thick *(±0.001″)*						
⅛″	25	**9075K51**	27.75	100	**9036K772**	68.58
¼″	25	**9075K52**	28.36	100	**9036K773**	79.92
5/16″	25	**9075K53**	28.70	100	**9036K774**	80.05
⅜″	25	**9075K54**	29.04	100	**9036K775**	81.77
½″	25	**9075K55**	34.90	100	**9036K776**	88.37
⅝″	25	**9075K192**	35.45	100	**9036K777**	89.67
¾″	10	**9075K56**	24.28	100	**9036K778**	92.52
1″	10	**9075K57**	30.98	100	**9036K779**	99.74
1¼″	10	**9075K58**	31.60	100	**9036K496**	103.04
1½″	10	**9075K59**	32.85	75	**9036K781**	84.90
2″	10	**9075K433**	33.40	50	**9036K782**	81.56
3″	5	**9075K61**	29.05	50	**9036K783**	121.40
4″	4	**9075K199**	29.54	25	**9036K784**	93.85
6″	3	**9075K201**	28.60	20	**9036K785**	82.52
8″	2	**9075K202**♣	30.99	10	**9036K786**	73.23
10″	2	**9075K203**♣	31.71	10	**9036K787**	78.40
12⅜″	2	**9072K12**♣	33.47	10	**9036K497**	98.30
0.016″ Thick *(±0.001″)*						
¼″	25	**9075K62**	28.83	100	**9036K788**	80.68
½″	25	**9075K63**	35.34	100	**9036K789**	90.22
0.016″ Thick (Cont.)						
⅝″	25	**9075K434**	$35.97	100	**9036K791**	$91.41
¾″	10	**9075K64**	25.80	100	**9036K792**	92.54
1″	10	**9075K65**	31.20	100	**9036K793**	102.54
1½″	10	**9075K211**	31.74	75	**9036K794**	87.88
3″	6	**9075K212**	30.11	25	**9036K795**	75.27
6″	3	**9075K213**	29.41	20	**9036K202**	88.05
8″	—	—	—	10	**9036K796**	73.87
12⅜″	—	—	—	10	**9036K798**	81.45
0.018″ Thick *(±0.002″)*						
⅛″	25	**9075K66**	30.07	100	**9036K799**	66.90
½″	25	**9075K67**	36.06	100	**9036K801**	91.12
¾″	10	**9075K68**	27.38	100	**9036K802**	94.35
1″	10	**9075K69**	31.77	100	**9036K803**	102.14
2″	5	**9075K71**	29.80	50	**9036K804**	76.47
3″	5	**9075K223**	30.95	25	**9036K805**	75.52
4″	4	**9075K224**	31.22	25	**9036K806**	80.84
6″	3	**9075K225**	30.34	20	**9036K498**	89.62
8″	2	**9075K226**♣	35.53	10	**9036K508**	76.40
10″	2	**9075K227**♣	37.52	10	**9036K807**	79.17
12⅜″	1	**9075K389**♣	31.76	10	**9036K808**	84.96
0.020″ Thick *(±0.0015″)*						
⅛″	25	**9075K73**	30.50	100	**9036K809**	69.59
¼″	25	**9075K74**	32.41	100	**9036K873**	71.01
5/16″	25	**9075K75**	31.78	100	**9036K812**	73.45
⅜″	25	**9075K76**	34.26	100	**9036K813**	76.93
½″	25	**9075K77**	36.61	100	**9036K814**	90.59
⅝″	10	**9075K78**	25.86	100	**9036K815**	92.40
¾″	10	**9075K79**	27.38	100	**9036K816**	96.11
1″	10	**9075K81**	32.38	100	**9036K217**	104.11
1½″	10	**9075K237**	32.82	50	**9036K817**	80.60
2″	10	**9075K82**	35.23	50	**9036K818**	78.14
3″	5	**9075K239**	31.09	25	**9036K819**	76.38
4″	4	**9075K241**	31.85	25	**9036K874**	81.59
6″	3	**9075K242**	30.98	20	**9036K499**	89.48
8″	2	**9075K243**♣	32.55	10	**9036K822**	77.44
10″	2	**9075K244**♣	34.80	10	**9036K25**	80.87
12⅜″	2	**9072K13**♣	37.14	6	**9036K528**♣	84.87
0.022″ Thick *(±0.002″)*						
¼″	25	**9075K84**	31.32	100	**9036K922**	71.86
⅜″	25	**9075K85**	34.84	100	**9036K823**	78.48
½″	25	**9075K435**	34.42	100	**9036K824**	92.27
¾″	10	**9075K86**	28.74	100	**9036K825**	95.80
⅞″	10	**9075K87**	32.24	100	**9036K536**	95.71
1″	10	**9075K88**	33.11	100	**9036K501**	103.87
1½″	10	**9075K436**	33.51	50	**9036K826**	82.45
2″	10	**9075K89**	36.16	50	**9036K231**	78.76
3″	5	**9075K255**	31.75	25	**9036K827**	78.10
4″	4	**9075K256**	31.14	25	**9036K502**	82.94
6″	3	**9075K257**♣	31.61	10	**9036K828**	65.23
8″	2	**9075K258**♣	36.53	10	**9036K829**	78.62
10″	2	**9075K259**♣	37.18	10	**9036K27**	80.85
12⅜″	1	**9075K391**♣	36.35	8	**9036K669**	90.49
0.025″ Thick *(±0.0015″)*						
¼″	25	**9075K93**	31.71	100	**9036K831**	72.82
5/16″	25	**9075K94**	33.98	100	**9036K832**	75.23
⅜″	25	**9075K437**	35.30	100	**9036K833**	79.31
½″	10	**9075K95**	25.89	100	**9036K834**	91.88
⅝″	10	**9075K96**	25.27	100	**9036K835**	94.35
¾″	10	**9075K97**	28.10	100	**9036K836**	96.24
⅞″	10	**9075K98**	29.53	100	**9036K837**	96.92
1″	10	**9075K99**	33.78	75	**9036K838**	79.76
1¼″	5	**9075K101**	28.90	50	**9036K839**	71.96
1½″	5	**9075K102**	33.99	50	**9036K841**	78.14
2″	5	**9075K103**	32.51	50	**9036K842**	79.47
3″	4	**9075K272**	32.36	25	**9036K843**	79.03
4″	3	**9075K273**♣	30.26	10	**9036K844**	66.11
6″	2	**9075K274**♣	32.26	10	**9036K931**	66.27
8″	2	**9075K275**♣	37.01	10	**9036K845**♣	80.00
10″	2	**9075K276**♣	37.72	10	**9036K503**	82.91
12⅜″	2	**9072K14**♣	58.69	5	**9036K546**♣	95.71

♣ Sheets will ship flat.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Tough Wear-Resistant 1095 Spring Steel *(Material continued from previous page)*

This spring steel is engineered to meet your most demanding requirements. It has good wear resistance due to its high carbon content and is commonly used to make spring clips, washers, and parts that are repeatedly stressed. The ***spring-tempered*** material, also known as blue-tempered, is the most common spring steel.

Spring-Tempered Strips and Sheets—Polished (Blue Finish) (Cont.)

- Hardness: Rockwell C53-C59
- Yield Strength: Not rated
- Spring tempered (hardened)

Width tolerance is ±0.005″ for strips and sheets up to 4″ wide; ±0.0236″ for strips and sheets 6″ to 12⅜″ wide. Flatness tolerance is not rated. Length tolerance for 1- to 9-ft. lengths is +3″, −⅛″ and for 10- to 100-ft. lengths is +12″, −1″.

Wd.	Mini Coils Lg., ft.			Coils Lg., ft.		
0.028″ Thick *(±0.0025″)*						
1/8″	25	9075K104	$30.50	100	9036K846	$70.70
1/4″	25	9075K105	32.20	100	9036K847	73.44
3/8″	25	9075K106	35.96	100	9036K848	80.40
1/2″	10	9075K107	26.82	100	9036K849	93.53
5/8″	10	9075K108	27.67	100	9036K851	95.39
3/4″	10	9075K109	28.72	100	9036K852	97.18
1″	10	9075K284	34.47	75	9036K252	80.59
2″	5	9075K401	25.91	25	9036K853	80.42
3″	4	9075K286	33.06	25	9036K854	80.32
6″	2	9075K287♣	32.90	10	9036K855	67.26
8″	2	9075K288♣	37.61	10	9036K856	81.65
10″	1	9075K289♣	27.76	9	9036K33	79.92
0.030″ Thick *(±0.002″)*						
6″	2	9075K291♣	33.41	10	9036K857	68.50
8″	2	9075K292♣	38.07	10	9036K858	82.16
10″	1	9075K293♣	28.16	10	9036K504	85.94
12⅜″	1	9075K294♣	38.24	5	9036K561♣	75.95
0.032″ Thick *(±0.002″)*						
3/16″	25	9075K402	32.12	100	9036K859	72.60
1/4″	25	9075K403	32.81	100	9036K861	73.93
5/16″	25	9075K438	35.50	100	9036K862	78.28
3/8″	25	9075K439	36.34	100	9036K863	80.47
1/2″	20	9075K451	30.85	100	9036K864	94.30
5/8″	10	9075K404	26.85	100	9036K573	95.63
3/4″	10	9075K405	29.29	100	9036K865	99.01
1″	10	9075K302	36.09	50	9036K866	67.00
1 1/4″	10	9075K452	39.26	50	9036K867	68.82
1 1/2″	5	9075K406	23.23	50	9036K868	73.49
2″	5	9075K305	26.67	25	9036K869	79.94
2 1/2″	3	9075K394	30.87	20	9036K673	78.61
3″	4	9075K306	33.50	20	9036K871	80.30
4″	3	9075K307	31.96	20	9036K505	80.36
6″	2	9075K308♣	33.91	10	9036K507	68.86
8″	2	9075K309♣	38.70	10	9036K872	83.52
10″	2	9075K311♣	41.58	10	9036K506	86.57
12⅜″	2	9072K15♣	58.69	5	9036K577♣	77.65
0.035″ Thick *(±0.002″)*						
1/4″	25	9075K407	33.27	100	9036K875	76.16
3/8″	10	9075K408	25.86	100	9036K876	81.75
1/2″	10	9075K409	29.51	100	9036K877	95.41
3/4″	10	9075K411	29.89	75	9036K878	74.79
1″	10	9075K453	33.36	50	9036K879	68.29
1 1/2″	5	9075K412	23.90	50	9036K881	74.77
2″	5	9075K319	27.38	25	9036K882	81.79
3″	3	9075K321♣	27.76	20	9036K883	81.26
6″	2	9075K322♣	34.47	10	9036K884	71.10
8″	2	9075K323♣	38.99	10	9036K512	85.17
10″	1	9075K324♣	28.87	7	9036K41♣	81.22
12⅜″	2	9072K16♣	57.26	7	9036K53♣	82.08
0.042″ Thick *(±0.002″)*						
1/4″	25	9075K413	$35.30	100	9036K885	$77.05
3/8″	10	9075K414	25.24	100	9036K886	82.95
1/2″	10	9075K415	26.55	100	9036K887	95.73
5/8″	10	9075K416	26.94	75	9036K888	84.90
3/4″	10	9075K331	30.53	50	9036K889	67.98
1″	10	9075K417	29.20	50	9036K891	68.61
1 1/4″	5	9075K418	24.92	50	9036K892	71.14
1 1/2″	5	9075K334	25.53	25	9036K893	67.17
2″	4	9075K335♣	27.75	25	9036K894	82.44
3″	3	9075K336♣	28.63	20	9036K895	82.59
4″	2	9075K337♣	29.44	10	9036K896	70.04
6″	2	9075K338♣	35.00	9	9036K292♣	71.73
8″	1	9075K339♣	24.06	7	9036K42♣	84.47
10″	1	9075K341♣	29.65	5	9036K43♣	85.68
12⅜″	2	9072K17♣	58.34	5	9036K54♣	79.92
0.050″ Thick *(±0.003″)*						
3/16″	25	9075K343	36.09	100	9036K897	76.35
1/4″	25	9075K454	33.36	100	9036K898	77.80
3/8″	10	9075K419	26.52	100	9036K899	84.07
1/2″	10	9075K421	27.43	100	9036K901	97.01
5/8″	10	9075K347	28.05	50	9036K902	78.36
3/4″	10	9075K455	25.21	50	9036K903	79.29
1″	5	9075K422	25.00	50	9036K904	87.45
1 1/4″	5	9075K351	26.24	25	9036K905	77.25
1 1/2″	4	9075K352♣	27.24	25	9036K906	79.87
2″	4	9075K353♣	28.36	25	9036K301	84.65
3″	2	9075K354♣	24.06	10	9036K907	69.83
4″	2	9075K355♣	30.50	10	9036K908	70.76
6″	1	9075K356♣	24.06	7 1/2	9036K304♣	79.92
8″	1	9075K357♣	25.36	6	9036K44♣	87.37
10″	1	9075K358♣	30.73	4	9036K45♣	84.46
12⅜″	2	9072K18♣	59.27	3	9036K611♣	79.92
0.062″ Thick *(±0.003″)*						
3/16″	25	9075K456	34.69	100	9036K909	78.78
1/4″	10	9075K423	27.38	100	9036K911	80.18
3/8″	10	9075K424	27.69	100	9036K912	86.30
1/2″	10	9075K364	28.92	50	9036K913	67.00
5/8″	5	9075K425	23.21	50	9036K914	79.76
3/4″	5	9075K426	24.03	50	9036K915	82.41
1″	5	9075K367♣	26.68	25	9036K916	65.41
1 1/4″	4	9075K368♣	21.79	25	9036K917	79.73
1 1/2″	4	9075K369♣	22.78	25	9036K309	82.38
1 3/4″	3	9075K395♣	23.90	20	9036K674	81.94
2″	3	9075K371♣	24.47	20	9036K311	83.88
2 1/2″	2	9075K372♣	25.30	10	9036K918	73.30
3″	2	9075K373♣	25.58	10	9036K919	73.86
4″	1	9075K374♣	24.89	7	9036K628♣	79.92
6″	1	9075K375♣	25.79	6 1/2	9036K313♣	78.65
8″	1	9075K376♣	26.69	5	9036K473♣	82.81
10″	1	9075K377♣	32.14	3 1/2	9036K475♣	90.12
12⅜″	1	9075K378♣	29.84	2	9072K19♣	54.06

♣ Sheets will ship flat.

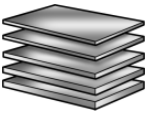

Light-Gauge Assortment—Contains one 6″ Wd.×24″ Lg. sheet of each thickness: 0.010″, 0.015″, 0.020″, 0.025″, and 0.028″. Width tolerance is ±0.005″. Length tolerance is ±⅛″.

9073K11 ..... $139.04

Heavy-Gauge Assortment—Contains one 6″ Wd.×24″ Lg. sheet of each thickness: 0.032″, 0.035″, 0.042″, 0.050″, and 0.062″. Width tolerance is ±0.005″. Length tolerance is ±⅛″.

9073K12 ..... $148.60

Fatigue-Resistant 5160 Spring Steel

Due to its high carbon content this material is often used for a variety of spring applications where fatigue resistance is required, such as the manufacturing of flat springs. It is sometimes called chrome-silicon because these are its main alloying elements.

Rectangular Bars—Unpolished Mill Finish

- Hardness: Rockwell C28-C32
- Yield Strength: 97,000 psi
- Hot rolled

Meet ASTM A689. Can be heat treated to a maximum attainable hardness of Rockwell C63. Thickness tolerance is ±0.012″. Width tolerance is ±0.090″. Straightness tolerance is ⅛″ per 5 feet.

Wd.	Lg., ft.		
0.250″ Thick			
1 1/4″	6	8644T11	$34.34
3″	6	8644T13	53.60
0.323″ Thick			
2″	6	8644T21	$48.88
3″	6	8644T23	64.62
0.360″ Thick			
2″	6	8644T32	$53.30
0.375″ Thick			
4″	6	8644T34	90.75
0.500″ Thick			
2″	6	8644T41	$68.00
3″	6	8644T43	89.57

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Ultra-Machinable 12L14 Carbon Steel

The addition of lead, which acts as an internal lubricant, provides superior machining characteristics, including improved surface appearance. Material is commonly used for high-speed screw machine products.

Square Bars—Unpolished Mill Finish (Cold Finished)

- Hardness: 163 Brinell
- Yield Strength: 60,000 psi
- Cold drawn

Meet ASTM A108. Can be heat treated to a maximum attainable hardness of Rockwell C55-C60. Square tolerance is –0.004″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.
To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Square Size		1 ft.	3 ft.	6 ft.
1/4″	6547K11	—	—	$8.59
5/16″	6547K13	—	—	10.53
3/8″	6547K15	—	—	16.61
7/16″	6547K17	—	—	19.78
1/2″	6547K19	—	—	23.80
9/16″	6547K51	—	$17.00	29.31
5/8″	6547K52	—	$19.38	$33.41
3/4″	6547K53	$11.43	26.52	45.72
7/8″	6547K54	15.22	35.30	60.87
1″	6547K55	18.76	43.52	75.03
1 1/8″	6547K31	23.41	54.30	93.62
1 1/4″	6547K33	29.89	69.36	119.58
1 3/8″	6547K35	$35.43	$82.20	$141.72
1 1/2″	6547K37	42.15	97.78	168.58
1 3/4″	6547K39	59.88	138.93	239.53
2″	6547K41	73.39	170.27	293.57
2 1/2″	6547K43	132.36	307.07	529.43

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 163 Brinell
- Yield Strength: 60,000 psi
- Cold drawn

Meet ASTM A108. Can be heat treated to a maximum attainable hardness of Rockwell C55-C60. Diameter tolerance is –0.004″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.
To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/4″	90075K11	—	—	$4.31
3/8″	90075K13	—	—	8.19
7/16″	90075K14	—	—	31.22
1/2″	90075K15	—	—	13.51
5/8″	90075K17	—	—	19.98
3/4″	90075K192	—	$16.37	28.23
7/8″	90075K212	—	21.78	37.56
1″	90075K232	$11.79	27.36	47.17
1 1/8″	90075K252	14.92	34.62	59.69
1 1/4″	90075K272	18.41	42.71	73.63
1 3/8″	90075K292	$21.84	$50.67	$87.36
1 1/2″	90075K312	26.52	61.52	106.07
1 5/8″	90075K32	30.48	70.71	121.91
1 3/4″	90075K36	34.65	80.39	138.61
1 7/8″	90075K42	39.00	90.49	156.01
2″	90075K46	42.68	99.01	170.71
2 1/8″	90075K52	48.20	111.84	192.82
2 1/4″	90075K56	54.05	125.38	216.18
2 3/8″	90075K62	58.01	134.58	232.04
2 1/2″	90075K66	63.14	146.48	252.55
2 5/8″	90075K72	$68.38	$158.64	$273.52
2 3/4″	90075K74	73.73	171.07	294.94
2 7/8″	90075K76	79.13	183.58	316.51
3″	90075K78	84.86	196.86	339.42
3 1/8″	90075K82	105.30	244.28	421.18
3 1/4″	90075K84	113.92	264.29	455.68
3 1/2″	90075K88	129.91	301.39	519.64
3 5/8″	90075K92	158.61	367.97	634.43
3 3/4″	90075K94	169.72	393.76	678.90
4″	90075K98	190.00	440.81	760.01

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell B84
- Yield Strength: 60,000 psi
- Annealed

Meet ASTM A108. Can be heat treated to a maximum attainable hardness of Rockwell C60-C62. Diameter tolerance is –0.0005″. Straightness tolerance is 1/16″ per 3 feet. Length tolerance is ±6″. Sold in 6-ft. lengths.

INCH SIZES

Dia.		
3/32″	5227T11	$4.65
1/8″	5227T21	4.71
5/32″	5227T13	6.46
3/16″	5227T22	6.61
1/4″	5227T23	7.64
5/16″	5227T24	11.84
3/8″	5227T25	13.50
1/2″	5227T26	$18.05
5/8″	5227T27	26.02
3/4″	5227T28	32.84
7/8″	5227T31	47.89
1″	5227T32	64.89
1 1/4″	5227T15	89.60
1 1/2″	5227T17	119.62

METRIC SIZES

Dia.		
2 mm	5544T21	$6.88
3 mm	5544T22	7.38
4 mm	5544T23	7.86
5 mm	5544T24	8.51
6 mm	5544T25	9.09
7 mm	5544T26	10.61
8 mm	5544T27	11.72
9 mm	5544T28	$13.19
10 mm	5544T31	14.38
12 mm	5544T33	19.79
13 mm	5544T34	21.66
14 mm	5544T35	22.97
15 mm	5544T36	26.92
20 mm	5544T38	38.25

Hexagonal Bars—Unpolished Mill Finish (Cold Finished)

- Hardness: 163 Brinell
- Yield Strength: 60,000 psi
- Cold drawn

Meet ASTM A108. Can be heat treated to a maximum attainable hardness of Rockwell C55-C60. Hex size is measured across the flats. Hex tolerance is –0.005″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size		1 ft.	3 ft.	6 ft.
1/4″	6606K11	—	—	$4.84
5/16″	6606K13	—	—	7.23
3/8″	6606K15	—	—	9.00
7/16″	6606K17	—	—	11.13
1/2″	6606K19	—	—	13.02
5/8″	6606K21	—	—	$18.78
3/4″	6606K23	—	—	25.23
7/8″	6606K85	—	$19.42	33.49
1″	6606K87	—	24.72	42.62
1 1/4″	6606K89	—	37.16	64.07
1 3/8″	6606K31	$19.02	$44.14	$76.10
1 1/2″	6606K33	23.04	53.46	92.17
1 3/4″	6606K35	30.24	70.15	120.95
2″	6606K37	37.12	86.12	148.49
3″	6606K38	92.52	214.65	370.09

High-Strength Easy-to-Machine 1144 Carbon Steel

Also known as stressproof. This medium-carbon steel offers good strength, while added sulfur gives it good machinability.

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell C24-C27
- Yield Strength: 100,000 psi
- Cold drawn and stress relieved

Meet ASTM A311. Can be heat treated to a maximum attainable hardness of Rockwell C57-C60. Diameter tolerance is –0.006″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.
To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/4″	6628K22	—	—	$5.63
5/16″	6628K24	—	—	7.76
3/8″	6628K26	—	—	7.33
1/2″	6628K28	—	—	13.05
5/8″	6628K32	—	—	18.72
3/4″	6628K34	—	—	$25.10
7/8″	6628K52	—	$18.47	31.84
1″	6628K53	—	23.15	39.91
1 1/4″	6628K54	$15.26	35.40	61.04
1 1/2″	6628K44	21.55	49.98	86.18
1 3/4″	6628K46	$28.18	$65.37	$112.71
2″	6628K48	35.40	82.12	141.58
2 1/2″	6628K55	53.30	123.67	213.22
3″	6628K56	109.64	254.36	438.55
4″	6628K58	194.67	451.63	778.68

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Easy-to-Machine 1215 Carbon Steel

Similar to 12L14 steel without the lead.

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 167-187 Brinell
- Yield Strength: 60,000 psi
- Cold drawn

Meet ASTM A108. Can be heat treated; maximum attainable hardness is not rated. Straightness tolerance is 1/8″ per 5 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Diameter	Tolerance
3/16″-1 1/2″	–0.002″
1 3/4″-2 1/2″	–0.003″
3″-4″	–0.004″

Dia.		1 ft.	3 ft.	6 ft.
3/16″	4416T11	—	—	$5.71
1/4″	4416T12	—	—	6.03
5/16″	4416T13	—	—	8.12
3/8″	4416T14	—	—	8.64
7/16″	4416T15	—	—	12.00
1/2″	4416T16	—	—	12.95
5/8″	4416T17	—	—	17.21
3/4″	4416T18	—	$13.86	$23.89
7/8″	4416T19	$7.09	16.45	28.36
1″	4416T21	9.26	21.48	37.04
1 1/8″	4416T22	10.80	25.06	43.20
1 1/4″	4416T23	13.02	30.21	52.09
1 3/8″	4416T24	14.79	34.31	59.15
1 1/2″	4416T25	17.86	41.42	71.42
1 3/4″	4416T26	$22.58	$52.39	$90.33
2″	4416T27	30.07	69.76	120.27
2 1/2″	4416T28	45.95	106.60	183.80
3″	4416T29	62.08	144.03	248.32
3 1/2″	4416T31	87.81	203.72	351.25
4″	4416T32	141.96	329.34	567.82

Multipurpose 4140/4142 Alloy Steel

Also called "chrome-moly" steel because of its main alloying elements (chromium and molybdenum), which give it good fatigue, abrasion, and impact resistance. It is readily formed and machined in its annealed state and can be heat treated to increase toughness and wear resistance. Material is a good choice for crankshafts, gears, axles, and shafts.

Rectangular Bars—Unpolished Mill Finish (Cold Finished)

- Hardness: 241-245 Brinell
- Yield Strength: 60,000 psi
- Annealed

Meet ASTM A29 and A108. Can be induction hardened to a maximum surface hardness of Rockwell C58-C60 with a maximum through hardness of Rockwell C30-C40. Thickness and width tolerances are –0.012″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width		1 ft.	3 ft.	6 ft.
1/4″ Thick				
1″	6554K12	$7.36	$17.08	$29.45
2″	6554K14	12.66	29.37	50.64
3″	6554K15	18.19	42.20	72.75
3/8″ Thick				
3/8″	6552K61	—	16.19	27.91
1″	6554K16	9.38	21.77	37.53
1 1/2″	6554K17	12.49	28.99	49.98
2″	6554K21	16.04	37.21	64.15
3″	6554K23	22.24	51.60	88.96
7/16″ Thick				
7/16″	6552K63	—	16.21	27.94
1/2″ Thick				
1/2″	6552K65	—	14.38	24.80
1″	6554K22	11.95	27.72	47.79
1 1/2″	6554K27	14.84	34.42	59.35
2″	6554K28	19.59	45.46	78.38
2 1/2″	6554K87	24.25	56.25	96.98
3″	6554K31	28.25	65.54	113.00
4″	6554K32	36.59	84.88	146.35
9/16″ Thick				
9/16″	6552K67	—	34.94	60.24
5/8″ Thick				
5/8″	6552K69	8.94	20.74	35.76
1″	6554K24	13.77	31.93	55.06
3/4″ Thick				
3/4″	6552K73	$11.35	$26.32	$45.38
1″	6554K45	15.18	35.21	60.71
1 1/2″	6554K47	22.60	52.43	90.40
2″	6554K48	29.11	67.53	116.43
2 1/2″	6554K88	35.66	82.74	142.66
3″	6554K51	41.98	97.38	167.90
4″	6554K52	53.70	124.58	214.79
7/8″ Thick				
7/8″	6552K75	14.44	33.50	57.76
1″ Thick				
1″	6552K77	17.73	41.13	70.92
1 1/2″	6554K56	32.13	74.55	128.53
2″	6554K58	38.05	88.28	152.20
2 1/2″	6554K79	44.44	103.11	177.77
3″	6554K61	53.81	124.85	215.26
4″	6554K62	68.48	158.87	273.91
1 1/8″ Thick				
1 1/8″	6552K33	21.99	51.02	87.96
1 1/4″ Thick				
1 1/4″	6552K35	26.62	61.75	106.47
2″	6554K66	47.62	110.47	190.47
3″	6554K68	64.99	150.78	259.96
4″	6554K69	87.67	203.39	350.67
1 3/8″ Thick				
1 3/8″	6552K37	$31.59	$73.28	$126.35
1 1/2″ Thick				
1 1/2″	6552K39	36.91	85.62	147.62
2″	6554K73	57.21	132.72	228.83
2 1/2″	6554K81	67.70	157.08	270.82
3″	6554K75	79.79	185.11	319.16
4″	6554K76	101.78	236.14	407.14
1 3/4″ Thick				
1 3/4″	6552K41	49.26	114.27	197.02
2″ Thick				
2″	6552K43	62.05	143.96	248.21
2 1/4″ Thick				
2 1/4″	6552K45	99.52	230.89	398.09
2 1/2″ Thick				
2 1/2″	6552K47	120.78	280.21	483.12
2 3/4″ Thick				
2 3/4″	6552K49	158.17	366.95	632.67
3″ Thick				
3″	6552K51	162.88	377.89	651.54
3 1/2″ Thick				
3 1/2″	6552K55	240.41	557.74	961.62

Hardened Rectangular Bars—Ground Finish (Decarb Free)

- Hardness: 258-321 Brinell
- Yield Strength: 95,000 psi
- Normalized

Meet ASTM A304 and A322. Thickness tolerance is +0.035″. Straightness tolerance is not rated. Width tolerance is +1/8″. Length tolerance is +1/8″ for 1- and 3-ft. lengths and +1/4″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length.

Width		1 ft.	3 ft.	6 ft.
1/2″ Thick				
1″	9116K11	$14.65	$33.77	$63.71
1 1/2″	9116K12	22.24	51.24	96.68
2″	9116K13	28.35	65.34	123.28
2 1/2″	9116K14	34.70	79.95	150.85
3″	9116K15	39.57	91.18	172.04
3/4″ Thick				
1″	9116K21	19.87	45.80	86.41
1 1/2″	9116K22	26.93	62.05	117.07
2″	9116K23	37.21	85.74	161.77
3/4″ Thick (Cont.)				
2 1/2″	9116K24	$46.42	$106.97	$201.83
3″	9116K25	55.82	128.63	242.70
1″ Thick				
1″	9116K31	22.45	51.74	97.62
1 1/2″	9116K32	34.13	78.65	148.39
2″	9116K33	47.16	108.67	205.04
2 1/2″	9116K34	54.53	125.65	237.08
3″	9116K35	74.34	171.31	323.23
1 1/2″ Thick				
1 1/2″	9116K41	$44.62	$102.83	$194.02
2″	9116K42	45.94	105.86	199.74
2 1/2″	9116K43	65.11	150.03	283.08
3″	9116K44	80.77	186.13	351.18
2″ Thick				
2″	9116K51	73.10	168.44	317.81
2 1/2″	9116K52	86.11	203.05	383.12
3″	9116K53	102.11	235.29	443.95

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose 4140/4142 Alloy Steel *(Material continued from previous page)*

Hardened Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: Rockwell C28-C32
- Yield Strength: 85,000-130,000 psi
- Quenched and tempered

Thickness tolerance is ±0.001″ for 1½- and 3-ft. lengths and ±0.002″ for 6-ft. lengths. Flatness tolerance is 0.015″ for lengths up to 3 ft. and 0.03″ for 6-ft. lengths. Width tolerance is +0.005″. Length tolerance is +½″ for 1½-ft. lengths, +¾″ for 3-ft. lengths, and +1″ for 6-ft. lengths. **To Order:** Please specify 1½-, 3-, or 6-ft. length.

Multipurpose 4140/4142 Alloy Steel Sample—Size is 6″ Lg. × 1″ Wd. × ½″ Thick. **8892K1** $11.81

Width		1½ ft.	3 ft.	6 ft.
3/32″ Thick				
½″	**8892K962**	$18.38	$31.86	$61.27
¾″	**8892K963**	22.77	39.47	75.90
1″	**8892K964**	27.24	47.22	90.81
1½″	**8892K965**	36.00	62.40	120.00
2″	**8892K966**	44.86	77.76	149.54
3″	**8892K967**	61.56	106.70	205.19
4″	**8892K968**	78.88	136.72	262.92
1/8″ Thick				
⅛″	**8892K516**	37.32	64.68	124.39
¼″	**8892K526**	31.28	54.22	104.26
⅜″	**8892K536**	23.60	40.91	78.68
½″	**8892K11**	21.06	36.50	70.19
¾″	**8892K12**	25.30	43.85	84.32
1″	**8892K13**	19.80	34.33	66.01
1¼″	**8892K14**	22.16	38.42	73.88
1½″	**8892K15**	24.97	43.27	83.22
2″	**8892K16**	30.95	53.64	103.16
2½″	**8892K17**	36.94	64.03	123.14
3″	**8892K18**	42.47	73.62	141.57
4″	**8892K19**	51.70	89.61	172.32
5″	**8892K21**	66.03	114.45	220.10
6″	**8892K22**	77.57	134.46	258.58
3/16″ Thick				
3/16″	**8892K94**	35.43	61.41	118.10
⅜″	**8892K546**	30.80	53.38	102.66
½″	**8892K23**	18.45	31.99	61.51
¾″	**8892K24**	19.08	33.07	63.59
1″	**8892K25**	22.98	39.83	76.59
1¼″	**8892K26**	24.39	42.28	81.31
1½″	**8892K27**	27.58	47.81	91.94
2″	**8892K28**	33.59	58.22	111.97
2½″	**8892K29**	39.97	69.27	133.22
3″	**8892K31**	46.30	80.25	154.33
4″	**8892K32**	58.71	101.76	195.69
5″	**8892K33**	71.08	123.21	236.95
6″	**8892K34**	83.47	144.67	278.22
1/4″ Thick				
¼″	**8892K95**	21.38	37.07	71.28
⅜″	**8892K556**	22.74	39.42	75.80
½″	**8892K35**	18.42	31.93	61.41
1/4″ Thick (Cont.)				
¾″	**8892K36**	$19.72	$34.17	$65.72
1″	**8892K37**	22.48	38.97	74.95
1¼″	**8892K38**	25.33	43.90	84.43
1½″	**8892K39**	28.49	49.39	94.98
2″	**8892K41**	34.52	59.84	115.07
2½″	**8892K42**	40.85	70.81	136.17
3″	**8892K43**	46.88	81.26	156.26
4″	**8892K44**	59.23	102.66	197.43
5″	**8892K45**	71.90	124.63	239.68
6″	**8892K46**	86.09	149.22	286.97
5/16″ Thick				
5/16″	**8892K2**	23.95	41.51	79.82
½″	**8892K6**	20.65	35.80	68.85
¾″	**8892K7**	22.32	38.69	74.41
1″	**8892K8**	26.54	46.01	88.48
1¼″	**8892K3**	29.45	51.05	98.17
1½″	**8892K4**	33.01	57.22	110.03
2″	**8892K5**	40.12	69.55	133.75
2½″	**8892K87**	46.90	81.30	156.35
3″	**8892K89**	54.05	93.68	180.16
4″	**8892K91**	67.96	117.80	226.53
5″	**8892K92**	81.89	141.95	272.98
6″	**8892K93**	95.78	166.03	319.28
3/8″ Thick				
⅜″	**8892K96**	24.75	42.91	82.51
½″	**8892K47**	22.72	39.37	75.72
¾″	**8892K48**	25.21	43.71	84.05
1″	**8892K49**	29.76	51.58	99.19
1¼″	**8892K51**	32.69	56.67	108.98
1½″	**8892K52**	36.56	63.38	121.88
2″	**8892K53**	44.02	76.30	146.73
2½″	**8892K54**	51.46	89.19	171.52
3″	**8892K55**	58.88	102.07	196.28
4″	**8892K56**	73.78	127.88	245.93
5″	**8892K57**	88.69	153.73	295.63
6″	**8892K58**	103.54	179.48	345.15
1/2″ Thick				
½″	**8892K59**	27.32	47.36	91.07
¾″	**8892K61**	30.79	53.37	102.63
1″	**8892K62**	34.65	60.07	115.51
1¼″	**8892K63**	38.07	65.99	126.90
1/2″ Thick (Cont.)				
1½″	**8892K64**	$42.15	$73.07	$140.51
2″	**8892K65**	50.24	87.08	167.46
2½″	**8892K66**	58.37	101.18	194.58
3″	**8892K67**	66.48	115.23	221.60
4″	**8892K68**	82.20	142.49	274.01
5″	**8892K69**	98.93	171.48	329.76
6″	**8892K71**	102.92	178.40	343.07
5/8″ Thick				
⅝″	**8892K111**	32.95	57.12	109.84
¾″	**8892K566**	47.93	83.08	159.77
1″	**8892K112**	41.04	71.14	136.81
1½″	**8892K113**	54.73	94.87	182.45
2″	**8892K114**	59.04	102.33	196.79
3″	**8892K115**	75.13	130.22	250.43
4″	**8892K116**	96.27	166.86	320.89
6″	**8892K117**	127.51	221.01	425.02
3/4″ Thick				
¾″	**8892K72**	41.70	72.29	139.01
1″	**8892K74**	48.51	84.08	161.69
1½″	**8892K76**	60.34	104.59	201.14
2″	**8892K78**	71.23	123.47	237.45
3″	**8892K81**	93.19	161.53	310.63
4″	**8892K83**	115.09	199.48	383.62
6″	**8892K85**	158.88	275.39	529.60
1″ Thick				
1″	**8892K118**	67.97	117.81	226.56
1¼″	**8892K576**	87.97	152.49	293.25
1½″	**8892K119**	75.53	130.92	251.77
2″	**8892K121**	88.72	153.77	295.72
2½″	**8892K586**	138.49	240.05	461.63
3″	**8892K122**	115.17	199.63	383.90
4″	**8892K123**	158.69	275.07	528.98
6″	**8892K124**	194.29	336.76	647.62
1 1/2″ Thick				
1½″	**8892K596**	135.90	235.55	452.99
2″	**8892K969**	150.90	261.57	503.01
4″	**8892K971**	238.91	414.12	796.38
6″	**8892K972**	317.82	582.68	1,059.41
2″ Thick				
2″	**8892K973**	187.11	324.32	623.70
4″	**8892K974**	286.38	496.40	954.61

Size		
½″ × 3″ × 6″	**8892K88**	$41.21
¾″ × 3″ × 6″	**8892K881**	57.02
1″ × 3″ × 3″	**8892K882**	39.33
1½″ × 2″ × 3″	**8892K883**	$81.29
1½″ × 3″ × 6″	**8892K884**	155.46
2″ × 2″ × 6″	**8892K885**	$138.15
3″ × 3″ × 6″	**8892K886**	266.73

Hardened Oversize Flat Stock—Ground Finish (Decarb Free)

- Hardness: Rockwell C30
- Yield Strength: 93,000 psi
- Normalized

Meets ASTM A322. Thickness and width tolerances are +0.015″. Flatness tolerance is not rated. All lengths have a plus tolerance. **To Order:** Please specify 1½- or 3-ft. length.

Width		1½ ft.	3 ft.
1/8″ Thick			
½″	**7939T11**	$21.71	$38.76
¾″	**7939T41**	26.29	46.94
1″	**7939T12**	31.06	55.46
1¼″	**7939T42**	34.11	60.91
1½″	**7939T43**	36.52	65.22
2″	**7939T13**	43.28	77.29
3/16″ Thick			
½″	**7939T44**	27.31	48.77
¾″	**7939T45**	30.23	53.98
1″	**7939T46**	35.41	63.23
1¼″	**7939T47**	39.20	70.00
1½″	**7939T48**	43.13	77.02
2″	**7939T49**	50.28	89.78
1/4″ Thick			
½″	**7939T14**	$30.33	$54.16
¾″	**7939T15**	30.76	54.92
1″	**7939T16**	36.98	66.03
1¼″	**7939T17**	39.74	70.97
1½″	**7939T18**	44.73	79.88
2″	**7939T21**	54.15	96.70
3″	**7939T51**	71.26	127.25
4″	**7939T22**	90.75	162.05
6″	**7939T53**	121.95	217.77
3/8″ Thick			
½″	**7939T54**	35.66	63.68
¾″	**7939T23**	41.52	74.15
1″	**7939T24**	45.61	81.45
1/2″ Thick			
½″	**7939T55**	$44.30	$79.10
¾″	**7939T25**	49.87	89.05
1″	**7939T26**	57.71	103.05
1¼″	**7939T56**	63.06	112.60
1½″	**7939T27**	70.18	125.32
2″	**7939T28**	79.83	142.56
3″	**7939T57**	102.56	183.15
4″	**7939T31**	123.06	219.75
6″	**7939T58**	152.06	271.54
1″ Thick			
1″	**7939T32**	111.60	199.29
1½″	**7939T61**	119.51	213.41
2″	**7939T62**	127.62	227.90

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose 4140/4142 Alloy Steel *(Material continued from previous page)*

Also called "chrome-moly" steel because of its main alloying elements (chromium and molybdenum), which give it good fatigue, abrasion, and impact resistance. It is readily formed and machined in its annealed state and can be heat treated to increase toughness and wear resistance. Material is a good choice for crankshafts, gears, axles, and shafts.

Sheets—Ground Finish (Decarb Free)

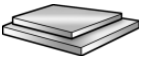

- Hardness: Rockwell C22
- Yield Strength: 115,000 psi
- Annealed

Can be hardened through heat treating; maximum attainable hardness is not rated. Thickness tolerance is +0.040″. Flatness tolerance is not rated. Width and length tolerances are +1/8″.

Thick.	6″×12″		6″×24″		10″×12″	
1/2″	4473T11	$44.32	4473T12	$83.62	4473T13	$69.70
5/8″	4473T14	62.79	4473T15	125.56	4473T16	116.25
3/4″	4473T17	69.81	4473T18	131.71	4473T19	109.77
1″	4473T21	$88.75	4473T22	$167.44	4473T23	$139.53
1 1/4″	4473T24	106.62	4473T25	201.17	4473T26	167.64
1 1/2″	4473T27	120.75	4473T28	227.85	4473T29	189.89

Hardened Tight-Tolerance Sheets—Precision Ground Finish

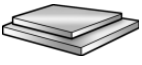

- Hardness: Rockwell C30
- Yield Strength: 95,000 psi
- Normalized

Meet ASTM A322. Thickness tolerance is ±0.001″ for 1/8″ to 1 1/4″ thicknesses and ±0.002″ for 1 1/2″ thickness. Flatness tolerance is not rated. Width tolerance is +0.005″. All lengths have a plus tolerance.

Thick.	6″×6″		12″×12″		12″×36″	
1/8″	4468T11	$35.46	4468T12	$126.71	4468T13	$304.09
3/16″	4468T16	38.20	4468T17	148.32	4468T18	356.02
1/4″	4468T21	41.27	4468T22	149.16	4468T23	357.95
3/8″	4468T26	47.13	4468T27	167.16	4468T28	404.17
1/2″	4468T31	52.95	4468T32	172.81	4468T33	419.24
5/8″	4468T36	$57.74	4468T37	$212.21	4468T38	$516.46
3/4″	4468T41	70.28	4468T42	252.75	4468T43	617.06
1″	4468T46	83.90	4468T47	305.58	4468T48	748.43
1 1/4″	4468T51	109.82	4468T52	403.31	4468T53	1,034.12
1 1/2″	4468T56	114.28	4468T57	479.74	4468T58	1,230.11

Hardened Tight-Tolerance Blanks—Precision Ground Finish

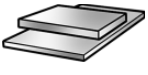

- Hardness: Rockwell C26-C32
- Yield Strength: 127,000-150,000 psi
- Heat treated

Meet ASTM A332. Thickness tolerance is ±0.001″. Flatness tolerance is not rated. Width tolerance is +0.005″. Length tolerance is ±0.005″.

Size	1/4″ Thick		3/8″ Thick		1/2″ Thick		5/8″ Thick		3/4″ Thick		1″ Thick	
2″×11 3/4″	6794T11	$96.80	6794T21	$94.23	6794T31	$105.58	6794T41	$128.56	6794T51	$114.55	6794T61	$89.26
4″×11 3/4″	6794T12	152.63	6794T22	147.25	6794T32	152.01	6794T42	156.66	6794T52	171.57	6794T62	142.61
6″× 5 3/4″	6794T13	175.82	6794T23	179.19	6794T33	176.96	6794T43	191.21	6794T53	199.74	6794T63	270.31
6″×11 3/4″	6794T14	274.72	6794T24	271.23	6794T34	262.28	6794T44	280.19	6794T54	289.09	6794T64	405.57
12″×11 3/4″	6794T15	385.02	6794T25	430.60	6794T35	437.38	6794T45	422.57	6794T55	447.60	6794T65	604.25

Tubes—Unpolished Mill Finish (Hot Rolled)

- Hardness: 195 Brinell
- Yield Strength: 64,000 psi
- Annealed

Meet ASTM A519. Can be induction hardened to a maximum surface hardness of Rockwell C58-C60 with a maximum through hardness of Rockwell C30-C40. OD tolerance is ±0.025″. Straightness tolerance is not rated. Wall thickness tolerance is ±10%. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

OD	ID	Wall Thick.		1 ft.	3 ft.	6 ft.
2 1/2″	1 1/2″	1/2″	6920T11	$61.69	$143.11	$246.74
3 1/4″	2″	5/8″	6920T22	95.28	221.04	381.11
3 1/4″	2 1/4″	1/2″	6920T21	90.02	208.85	360.09
4″	2 3/4″	5/8″	6920T32	$120.56	$279.70	$482.25
4″	3″	1/2″	6920T31	110.55	256.47	442.19

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 200-241 Brinell
- Yield Strength: 60,000 psi
- Annealed

Meet ASTM A29 and A108. Can be heat treated to a maximum attainable hardness of Rockwell C28-C40. Diameter tolerance is –0.007″ for 1/4″-2 1/2″ diameters and –0.009″ for 2 5/8″-6″ diameters. Straightness tolerance is not rated. Length tolerance is +1/8″ for 1/2″-6″ lengths and ±1″ for 1-ft. and up lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/4″	8927K21	____	____	$6.16
3/8″	8927K23	____	____	12.69
1/2″	8927K25	____	____	20.69
5/8″	8927K27	____	____	27.91
3/4″	8927K11	____	$19.43	33.50
7/8″	8927K12	____	24.99	43.08
1″	8927K13	____	31.44	54.20
1 1/8″	8927K14	$16.09	37.33	64.36
1 1/4″	8927K15	14.23	33.01	56.91
1 3/8″	8927K16	22.77	52.84	91.10
1 1/2″	8927K17	$26.71	$61.96	$106.83
1 5/8″	8927K42	30.64	71.07	122.54
1 3/4″	8927K44	34.80	80.72	139.18
1 7/8″	8927K46	37.95	88.06	151.82
2″	8927K48	43.34	100.55	173.37
2 1/8″	8927K52	48.93	113.51	195.71
2 1/4″	8927K54	51.98	120.61	207.94
2 3/8″	8927K56	57.91	134.36	231.66
2 1/2″	8927K58	62.96	146.07	251.85
2 5/8″	8927K62	68.14	158.08	272.55
2 3/4″	8927K64	$73.40	$170.28	$293.59
2 7/8″	8927K66	78.40	181.89	313.60
3″	8927K68	84.29	195.55	337.16
3 1/8″	8927K72	100.83	233.93	403.33
3 1/4″	8927K74	104.17	241.67	416.68
3 3/8″	8927K76	114.89	266.54	459.55
3 1/2″	8927K78	120.20	278.88	480.82
3 5/8″	8927K82	144.13	334.39	576.53
3 3/4″	8927K84	155.23	360.14	620.93
4″	8927K86	177.02	410.69	708.09

Dia.	1/2″ Long		1″ Long		1 1/2″ Long		2″ Long		3″ Long		6″ Long	
3″	8960K51	$11.22	8960K52	$14.47	8960K53	$17.94	8960K54	$21.60	8960K55	$28.67	8960K56	$49.50
4″	8960K11	21.48	8960K12	28.23	8960K13	34.97	8960K14	38.79	8960K16	51.80	8960K23	86.46
5″	8960K61	23.96	8960K62	34.56	8960K63	45.92	8960K64	57.93	8960K65	83.61	8960K66	151.25
6″	8960K31	38.27	8960K32	54.88	8960K33	71.88	8960K34	81.90	8960K36	112.87	8960K43	195.85

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose 4140/4142 Alloy Steel *(Material continued from previous page)*

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell B92
- Yield Strength: 60,000 psi
- Annealed

Meet ASTM A331. Can be induction hardened to a maximum surface hardness of Rockwell C55 with a maximum through hardness of Rockwell C50-C55. Diameter tolerance is –0.0005″. Straightness tolerance is 1/16″ per 3 feet. Length tolerance is ±6″. Sold in 6-ft. lengths.

INCH SIZES

Dia.			Dia.		
1/4″	5252T11	$22.14	5/8″	5252T51	$66.91
5/16″	5252T21	24.47	3/4″	5252T61	84.66
3/8″	5252T31	27.59	1″	5252T71	115.73
1/2″	5252T41	52.89			

METRIC SIZES

Dia.			Dia.		
6 mm	5836T21	$13.85	14 mm	5836T25	$54.03
8 mm	5836T22	23.27	18 mm	5836T27	72.50
10 mm	5836T23	27.93	20 mm	5836T28	79.53
12 mm	5836T24	35.66	25 mm	5836T29	104.94

Hardened Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell C28-C35
- Yield Strength: 95,000-110,000 psi
- Quenched and tempered

Meet ASTM A29, A108, and A193. Diameter tolerance is –0.007″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
3/8″	8935K33	____	____	$9.20	1 1/2″	8935K11	$23.51	$54.54	$94.04	2 5/8″	8935K21	$59.42	$137.87	$237.70
1/2″	8935K35	____	____	21.03	1 5/8″	8935K12	26.95	62.52	107.79	2 3/4″	8935K22	62.89	145.90	251.56
5/8″	8935K29	____	$17.62	30.38	1 3/4″	8935K13	30.10	69.84	120.41	2 7/8″	8935K23	68.67	159.30	274.66
3/4″	8935K32	____	18.57	32.02	1 7/8″	8935K14	33.77	78.35	135.08	3″	8935K24	74.61	173.09	298.43
7/8″	8935K34	$10.64	24.70	42.58	2″	8935K15	38.27	88.80	153.10	3 1/8″	8935K25	80.51	186.78	322.03
1″	8935K36	11.91	27.29	47.46	2 1/8″	8935K16	42.28	98.10	169.13	3 1/4″	8935K26	86.89	201.57	347.54
1 1/8″	8935K38	14.19	32.91	56.74	2 1/4″	8935K17	48.18	111.77	192.71	3 1/2″	8935K28	100.28	232.64	401.11
1 1/4″	8935K42	16.98	39.41	67.94	2 3/8″	8935K18	50.62	117.43	202.47	3 3/4″	8935K91	111.08	257.71	444.32
1 3/8″	8935K44	19.87	46.10	79.49	2 1/2″	8935K19	55.96	129.83	223.85	4″	8935K92	123.99	287.66	495.97

Hardened Tight-Tolerance Rods—Chrome-Plated Finish

- Hardness: Rockwell C30-C32
- Yield Strength: 100,000 psi
- Quenched and tempered

Use in applications such as hydraulic cylinders. Chrome plating is 0.005″ thick. Diameter tolerance is –0.0015″. Straightness tolerance is not rated. Length tolerance is +1/16″. **To Order:** Please specify 3- or 6-ft. length.

INCH SIZES

Dia.		3 ft.	6 ft.	Dia.		3 ft.	6 ft.
1″	6689T12	$64.93	$108.21	1 1/2″	6689T16	$112.93	$188.21
1 1/4″	6689T14	90.63	151.05	2″	6689T18	181.90	303.16

METRIC SIZES

Dia.		3 ft.	6 ft.	Dia.		3 ft.	6 ft.
32 mm	6689T32	$78.70	$131.16	36 mm	6689T36	$108.95	$181.58
35 mm	6689T34	105.60	176.00	40 mm	6689T38	159.53	265.89

Hardened High-Strength Rods—Unpolished Mill Finish

- Hardness: Rockwell C32
- Yield Strength: 130,000 psi
- As drawn

Also known as ETD-150, this specially modified version of 4140 alloy steel has been drawn at high temperatures to achieve greater strength; further heat treating is unnecessary. Diameter tolerance is –0.005″ for 5/8″-1 1/2″ diameters and –0.006″ for 1 3/4″ and 2″ diameters. Straightness tolerance is 3/16″ per 10 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
5/8″	6818T21	____	$18.64	$32.14	7/8″	6818T24	____	$35.76	$61.66	1 1/2″	6818T27	$41.85	$83.69	$144.30
3/4″	6818T22	____	26.07	44.94	1″	6818T25	$21.64	43.28	74.62	1 3/4″	6818T28	56.83	113.67	195.98
13/16″	6818T23	____	30.25	52.16	1 1/4″	6818T26	28.92	57.85	99.74	2″	6818T31	71.79	143.58	247.56

Hardened Hexagonal Bars—Unpolished Mill Finish (Cold Finished)

- Hardness: 321 Brinell
- Yield Strength: 95,000-105,000 psi
- Quenched, tempered, and stress relieved

Meet ASTM A29, A108, and A193. Hex size is measured across the flats. Hex tolerance is –0.008″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size		1 ft.	3 ft.	6 ft.	Hex Size		1 ft.	3 ft.	6 ft.	Hex Size		1 ft.	3 ft.	6 ft.
7/16″	6607K41	____	____	$26.15	7/8″	6607K39	$20.58	$50.11	$89.48	1 3/8″	6607K57	$46.54	$113.32	$202.36
1/2″	6607K43	____	____	32.88	1″	6607K51	26.32	64.08	114.43	1 1/2″	6607K59	53.27	129.70	231.60
5/8″	6607K35	____	$27.55	49.19	1 1/8″	6607K53	33.39	81.30	145.17	1 3/4″	6607K61	69.79	169.92	303.43
3/4″	6607K37	$15.60	37.98	67.83	1 1/4″	6607K55	39.22	95.50	170.53	2″	6607K63	92.34	224.83	401.49

Easy-to-Machine 41L40 Alloy Steel

Similar to 4140 alloy steel. The addition of lead, which acts as an internal lubricant, provides increased machinability.

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell B96-B100
- Yield Strength: 85,000 psi
- Annealed

Meet ASTM A331. Can be heat treated to a maximum attainable hardness of Rockwell C52. Diameter tolerance is –0.004″. Straightness tolerance is 3/16″ per 10 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
5/16″	6776T11	____	____	$12.52	5/8″	6776T15	____	$13.85	$24.30	1 1/8″	6776T22	____	$35.90	$62.98
3/8″	6776T12	____	____	16.12	11/16″	6776T16	____	16.38	28.73	1 3/8″	6776T25	____	43.91	77.04
1/2″	6776T13	____	$9.94	17.43	3/4″	6776T17	____	19.04	33.41	1 1/2″	6776T26	____	61.01	107.04
9/16″	6776T14	____	12.00	21.05	1″	6776T21	____	29.37	51.52	2″	6776T31	$43.24	98.59	172.96

Warning! Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Easy-to-Weld Aircraft-Grade 4130 Alloy Steel

This steel is very similar to 4140, but has a lower carbon content, giving it better weldability and formability while retaining good fatigue, abrasion, and impact resistance. Use it when military specifications must be met and for your most demanding structural applications.

Sheets—Unpolished Mill Finish

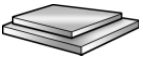

- Hardness: Rockwell B85
- Yield Strength: 50,000 psi
- Annealed

Meet AMS 6350-6351. Can be heat treated to a maximum attainable hardness of Rockwell C56. Sheets 0.040″-0.125″ thick are furnished cold rolled; 0.190″-0.250″ thicknesses are hot rolled. Thickness tolerance is ±0.009″. Flatness tolerance is not rated. Width and length tolerances are ±1/16″.

Thick.	6″×36″		12″×12″		24″×24″	
0.040″	4459T42	$18.69	4459T41	$14.68	4459T43	$57.17
0.050″	4459T72	24.69	4459T71	16.48	4459T73	63.31
0.063″	4459T32	28.51	4459T31	19.00	4459T35	73.09
0.080″	4459T52	31.56	4459T51	21.16	4459T53	80.92
0.125″	4459T12	$35.93	4459T11	$24.23	4459T13	$92.14
0.190″	4459T22	44.26	4459T21	30.84	4459T23	113.48
0.250″	4459T62	50.53	4459T61	35.27	4459T63	129.56

Rectangular Tubes—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell C19-C26
- Yield Strength: 75,000 psi
- Annealed and stress-relieved or normalized

Meet AMS-T-6736A and MIL-T-6736B. Also known as hollow bar. Can be heat treated to a maximum attainable hardness of Rockwell C49. Width and height tolerances are ±0.020″. Straightness tolerance is 0.075″ per 3 feet. Length tolerance is ±1″.
To Order: Please specify 1-, 3-, or 6-ft. length.

Ht. × Wd.	Wall Thick.	Wall Thick. Tolerance		1 ft.	3 ft.	6 ft.
3/8″ × 3/8″	0.035″	±0.0035″	6582K21	$12.64	$29.32	$50.56
1/2″ × 1/2″	0.035″	±0.0035″	6582K22	13.47	31.26	53.89
1/2″ × 1″	0.035″	±0.0035″	6566K25	13.30	30.86	53.20
1/2″ × 1″	0.049″	±0.0049″	6566K52	12.37	28.69	49.46
1/2″ × 1″	0.065″	±0.0065″	6566K33	17.55	40.73	70.22
5/8″ × 5/8″	0.035″	±0.0035″	6582K23	15.58	36.15	62.32
5/8″ × 5/8″	0.049″	±0.0049″	6582K27	14.02	32.52	56.07
5/8″ × 5/8″	0.065″	±0.0065″	6582K32	16.32	37.86	65.27
3/4″ × 3/4″	0.035″	±0.0035″	6582K24	16.32	37.86	65.27
3/4″ × 3/4″	0.049″	±0.0049″	6582K28	15.77	36.57	63.06
3/4″ × 3/4″	0.065″	±0.0065″	6582K41	$19.96	$46.31	$79.84
3/4″ × 1 1/2″	0.049″	±0.0049″	6566K31	21.65	50.23	86.60
1″ × 1″	0.035″	±0.0035″	6582K26	11.88	27.56	47.52
1″ × 1″	0.049″	±0.0049″	6582K29	20.68	47.98	82.73
1″ × 1″	0.065″	±0.0065″	6582K43	19.50	45.25	78.02
1″ × 1 1/2″	0.049″	±0.0049″	6566K54	20.81	48.27	83.23
1″ × 1 1/2″	0.065″	±0.0065″	6566K34	22.89	53.10	91.56
1″ × 1 3/4″	0.065″	±0.0065″	6566K35	27.27	63.26	109.07
1″ × 2″	0.065″	±0.0065″	6566K56	28.86	66.94	115.42

Round Tubes—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell C19-C26
- Yield Strength: 75,000 psi
- Annealed and stress-relieved or normalized

Meet AMS-T-6736A and MIL-T-6736B. Can be heat treated to a maximum attainable hardness of Rockwell C49. Wall thickness tolerance is ±15%. Straightness tolerance is 0.030″ per 3 feet. Length tolerance is ±1″. Sold in 6-ft. lengths.

OD	Tolerance
0.188″-0.438″	±0.004″
0.500″-1.375″	±0.005″
1.500″-3.000″	±0.020″

OD	ID		
0.028″ Wall Thickness			
0.250″	0.194″	89955K43	$21.54
0.375″	0.319″	89955K46	21.76
0.500″	0.444″	89955K47	22.64
0.625″	0.569″	89955K48	24.59
1.000″	0.944″	89955K49	31.58
0.035″ Wall Thickness			
0.188″	0.118″	89955K11	21.20
0.250″	0.180″	89955K21	21.36
0.313″	0.243″	89955K23	23.25
0.375″	0.305″	89955K14	24.56
0.500″	0.430″	89955K25	24.69
0.625″	0.555″	89955K27	24.92
0.750″	0.680″	89955K29	25.73
0.875″	0.805″	89955K84	29.92
1.000″	0.930″	89955K33	31.02
1.125″	1.055″	89955K91	36.86
1.250″	1.180″	89955K36	37.93
1.375″	1.305″	89955K97	41.77
1.500″	1.430″	89955K38	48.47
0.049″ Wall Thickness			
0.250″	0.152″	89955K22	23.40
0.313″	0.215″	89955K24	23.46
0.375″	0.277″	89955K15	23.39
0.438″	0.340″	89955K73	24.80
0.049″ Wall Thickness (Cont.)			
0.500″	0.402″	89955K26	$23.73
0.625″	0.527″	89955K28	25.43
0.750″	0.652″	89955K32	23.67
0.875″	0.777″	89955K85	27.16
1.000″	0.902″	89955K35	29.34
1.125″	1.027″	89955K92	39.75
1.250″	1.152″	89955K37	43.90
1.375″	1.277″	89955K98	45.23
1.500″	1.402″	89955K39	52.55
1.750″	1.652″	89955K18	67.98
2.000″	1.902″	89955K42	70.42
0.065″ Wall Thickness			
0.250″	0.120″	89955K51	22.47
0.313″	0.183″	89955K53	23.94
0.375″	0.245″	89955K44	24.64
0.438″	0.308″	89955K74	25.87
0.500″	0.370″	89955K55	27.96
0.563″	0.433″	89955K78	29.23
0.625″	0.495″	89955K57	29.87
0.750″	0.620″	89955K59	26.16
0.875″	0.745″	89955K86	30.71
1.000″	0.870″	89955K63	32.60
1.125″	0.995″	89955K93	43.90
1.250″	1.120″	89955K65	49.00
0.065″ Wall Thickness (Cont.)			
1.375″	1.245″	89955K12	$52.78
1.500″	1.370″	89955K67	57.05
1.750″	1.620″	89955K19	65.31
2.000″	1.870″	89955K69	75.84
0.083″ Wall Thickness			
0.375″	0.209″	89955K45	29.98
0.438″	0.272″	89955K75	31.95
0.500″	0.334″	89955K56	33.27
0.563″	0.397″	89955K79	35.38
0.625″	0.459″	89955K58	35.42
0.750″	0.584″	89955K62	35.46
0.875″	0.709″	89955K87	38.06
1.000″	0.834″	89955K64	39.28
1.125″	0.959″	89955K94	45.36
1.250″	1.084″	89955K66	54.41
1.375″	1.209″	89955K13	56.75
1.500″	1.334″	89955K68	63.62
1.750″	1.584″	89955K31	74.53
2.000″	1.834″	89955K71	74.78
0.120″ Wall Thickness			
0.375″	0.135″	89955K72	40.64
0.438″	0.198″	89955K76	41.71
0.500″	0.260″	89955K77	44.18
0.563″	0.323″	89955K81	45.38
0.120″ Wall Thickness (Cont.)			
0.625″	0.385″	89955K82	$48.57
0.750″	0.510″	89955K83	46.80
0.875″	0.635″	89955K88	54.38
1.000″	0.760″	89955K89	55.78
1.125″	0.885″	89955K95	67.58
1.250″	1.010″	89955K96	73.89
1.375″	1.135″	89955K16	78.78
1.500″	1.260″	89955K17	81.27
1.750″	1.510″	89955K34	82.66
2.000″	1.760″	89955K41	89.38
2.250″	2.010″	89955K52	98.16
2.500″	2.260″	89955K54	130.64
3.000″	2.760″	89955K61	297.89
0.188″ Wall Thickness			
0.625″	0.249″	89955K99	59.73
0.750″	0.374″	89955K2	64.31
1.000″	0.624″	89955K3	79.04
1.125″	0.749″	89955K4	88.11
1.500″	1.124″	89955K5	105.00
2.000″	1.624″	89955K6	114.84
2.500″	2.124″	89955K7	140.13
0.250″ Wall Thickness			
1.000″	0.500″	89955K8	81.60
3.000″	2.500″	89955K9	240.40

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 241 Brinell
- Yield Strength: 63,000 psi
- Normalized

Meet ASTM A108, AMS-2301-J, and AMS-6348-C. Can be heat treated to a maximum attainable hardness of Rockwell C49. Diameter tolerance is –0.006″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1/2″	6673T21	$4.49	$10.41	$17.95
5/8″	6673T22	6.66	15.46	26.66
3/4″	6673T25	9.40	21.81	37.60
1″	6673T27	$16.37	$37.98	$65.48
1 1/4″	6673T29	24.93	57.85	99.74
1 1/2″	6673T32	35.31	81.91	141.23
2″	6673T34	$52.07	$120.81	$208.29
2 1/2″	6673T36	76.09	176.54	304.38
3″	6673T38	103.34	239.75	413.37

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, go to mcmaster.com and search for **88645KAC**.

Wear-Resistant 4150 Alloy Steel

Though this material is similar to 4140 alloy steel, it has a higher carbon content, which makes it harder and more wear resistant.

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 235 Brinell
- Yield Strength: 48,000 psi
- Annealed

Meet ASTM A29 and ASTM A108. Can be heat treated to a maximum attainable hardness of Rockwell C59-C65. Diameter tolerance is –0.006″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
1/2″	4455T11	$6.31	$14.63	$25.23	1″	4455T16	$20.76	$48.17	$83.05	1 3/4″	4455T23	$50.33	$116.77	$201.33
9/16″	4455T12	7.72	17.90	30.87	1 1/8″	4455T17	23.92	55.49	95.67	2″	4455T25	63.09	146.36	252.35
5/8″	4455T13	9.20	21.33	36.78	1 1/4″	4455T18	28.10	65.19	112.40	2 1/4″	4455T26	76.47	177.40	305.86
3/4″	4455T14	12.86	29.84	51.45	1 3/8″	4455T19	32.49	75.37	129.95	2 1/2″	4455T28	90.84	210.75	363.37
7/8″	4455T15	16.49	38.26	65.97	1 1/2″	4455T21	37.80	87.70	151.20	3″	4455T32	125.95	292.20	503.80

Easy-to-Weld Wear-Resistant 8620 Alloy Steel

Added nickel, chromium, and molybdenum give this lower-carbon steel improved weldability and wear resistance compared to 4140 alloy steel.

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 223 Brinell
- Yield Strength: 100,000 psi
- As produced (rolled)

Meet ASTM A29 and ASTM A108. Can be heat treated to a maximum attainable hardness of Rockwell C41-C64. Diameter tolerance is –0.005″. Straightness tolerance is not rated. Length tolerance is +1/8″ for lengths less than 1 ft., ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
3/16″	8930K1	—	—	$3.76	3/4″	8930K11	—	$17.38	$29.97	2″	8930K58	$42.28	$98.08	$169.11
1/4″	8930K31	—	—	6.56	7/8″	8930K12	—	22.57	38.91	2 1/8″	8930K62	46.86	108.71	187.43
5/16″	8930K3	—	—	8.34	1″	8930K13	—	28.26	48.73	2 1/4″	8930K64	51.58	119.66	206.31
3/8″	8930K33	—	—	10.20	1 1/8″	8930K14	—	35.78	61.69	2 3/8″	8930K66	56.42	130.91	225.70
7/16″	8930K5	—	—	13.36	1 1/4″	8930K15	$18.61	43.18	74.45	2 1/2″	8930K68	61.43	142.52	245.72
1/2″	8930K35	—	—	15.91	1 3/8″	8930K16	22.54	52.30	90.17	2 3/4″	8930K74	71.80	166.57	287.19
9/16″	8930K7	—	—	19.19	1 1/2″	8930K17	25.66	59.52	102.62	3″	8930K78	84.03	194.94	336.10
5/8″	8930K37	—	—	22.95	1 5/8″	8930K18	30.09	69.81	120.37	3 1/2″	8930K88	113.97	271.69	472.44
11/16″	8930K9	—	—	26.43	1 3/4″	8930K54	33.65	78.07	134.61	4″	8930K98	164.63	381.94	658.52

Dia.	1/2″ Long		1″ Long		1 1/2″ Long		2″ Long		3″ Long		6″ Long	
3″	4470T11	$12.02	4470T12	$15.52	4470T13	$19.01	4470T14	$22.48	4470T15	$27.92	4470T16	$46.55
4″	4470T21	20.05	4470T22	26.23	4470T23	33.46	4470T24	40.69	4470T25	53.75	4470T26	91.43
5″	4470T31	27.05	4470T32	38.79	4470T33	48.00	4470T34	59.15	4470T35	77.60	4470T36	134.89

High-Strength Shock-Resistant 4340 Alloy Steel

Specially designed for applications involving severe impact, wear, heat, and stress, this highly alloyed steel (nickel, chromium, and molybdenum) is stronger and more shock resistant than 4140.

Rods—Unpolished Mill Finish

- Hardness: Rockwell C22
- Yield Strength: 68,500 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C40-C53. Rods with diameters of 1/2″ and 3/4″ are cold finished; all others are hot rolled. Straightness tolerance is 0.025″ per foot. Length tolerance is ±1/8″.
To Order: Please specify 1-, 3-, or 6-ft. length.

Dia.	Tolerance
1/2″-1″	±0.009″
1 1/8″-2″	±0.016″
2 1/4″-3″	+0.047″

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
1/2″	4437T11	$6.28	$14.58	$25.13	1 1/8″	4437T15	$26.82	$62.22	$107.28	2″	4437T21	$67.66	$156.97	$270.63
3/4″	4437T12	10.83	25.13	43.32	1 1/4″	4437T16	32.94	76.41	131.75	2 1/4″	4437T22	102.20	237.12	408.82
7/8″	4437T13	22.81	52.92	91.25	1 1/2″	4437T17	46.33	107.49	185.33	2 1/2″	4437T23	105.79	245.43	423.15
1″	4437T14	26.17	60.71	104.67	1 3/4″	4437T18	55.68	129.18	222.72	3″	4437T25	113.31	262.89	453.26

Bearing-Quality Aircraft-Grade E52100 Alloy Steel

E52100 is considered bearing quality because of its high carbon content, which gives it high hardness. It is often called chrome steel as chromium is the primary alloying element, which makes it very wear resistant.

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 248 Brinell
- Yield Strength: 62,000-87,500 psi
- Annealed

Meet ASTM A108 and ASTM A295. Can be heat treated to a maximum attainable hardness of Rockwell C39-C65. Diameter tolerance is –0.008″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
3/16″	8938K1	—	—	$5.97	5/8″	8938K24	—	$17.86	$30.80	1 3/8″	8938K67	$29.22	$67.80	$116.89
1/4″	8938K11	—	—	7.39	11/16″	8938K9	—	21.93	37.81	1 1/2″	8938K68	35.81	83.08	143.25
5/16″	8938K3	—	—	10.42	3/4″	8938K26	—	24.27	41.85	1 5/8″	8938K69	41.35	95.94	165.41
3/8″	8938K13	—	—	12.81	7/8″	8938K28	—	30.76	53.03	1 3/4″	8938K71	47.02	109.10	188.10
7/16″	8938K5	—	—	17.11	1″	8938K32	$16.97	39.38	67.89	2″	8938K73	57.91	134.36	231.66
1/2″	8938K15	—	—	21.26	1 1/8″	8938K34	20.57	47.72	82.28	2 1/2″	8938K77	84.16	195.25	336.63
9/16″	8938K7	—	—	25.39	1 1/4″	8938K36	24.85	57.65	99.40	3″	8938K81	115.11	267.05	460.43

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Bearing-Quality Aircraft-Grade E52100 Alloy Steel *(Material continued from previous page)*

E52100 is considered bearing quality because of its high carbon content, which gives it high hardness. This steel is often called chrome steel as chromium is the primary alloying element, which makes it very wear resistant.

Hardened Precision Balls—Reflective Finish

- Hardness: Rockwell C60-C67
- Yield Strength: 295,000 psi
- Quenched and tempered

Meet ASTM A295.
Metric balls are Grade 25.

	Dia. Tolerance	Sphericity
Grade 24	±0.0001″	0.000024″
Grade 25	±0.0001″	0.000025″

	Dia. Tolerance	Sphericity
Grade 50	±0.0002″	0.000050″
Grade 100	±0.0005″	0.000100″
Grade 200	±0.001″	0.0002″

INCH SIZES

Dia.	Pkg. Qty.		Pkg.
Grade 24			
1/12″	100	9528K52	$5.70
Grade 25			
3/64″	100	9528K122	7.92
1/16″	100	9528K51	5.85
5/64″	100	9528K123	8.62
3/32″	100	9528K34	4.36
7/64″	100	9528K124	10.20
1/8″	100	9528K11	2.90
9/64″	100	9528K93	4.60
5/32″	100	9528K12	3.18
11/64″	100	9528K94	5.53
3/16″	100	9528K13	3.22
7/32″	100	9528K14	3.75
1/4″	100	9528K15	4.37
17/64″	100	9528K95	8.19
9/32″	100	9528K16	5.60
5/16″	100	9528K17	5.74
11/32″	100	9528K18	8.55
3/8″	100	9528K19	9.86
13/32″	100	9528K21	11.75
7/16″	100	9528K22	12.55
15/32″	100	9528K23	14.87

Dia.	Pkg. Qty.		Pkg.
Grade 25 (Cont.)			
1/2″	100	9528K24	$14.43
17/32″	50	9528K35	11.45
9/16″	50	9528K25	12.14
19/32″	50	9528K36	13.96
5/8″	50	9528K26	14.79
21/32″	50	9528K27	14.99
11/16″	25	9528K28	9.56
23/32″	25	9528K37	10.79
3/4″	25	9528K29	12.17
25/32″	25	9528K31	14.68
13/16″	20	9528K38	12.69
7/8″	20	9528K32	14.88
15/16″	15	9528K39	15.14
1″	10	9528K33	13.44
1 1/16″	5	9528K41	11.12
1 1/8″	5	9528K42	12.51
1 3/16″	5	9528K43	15.05
1 1/4″	5	9528K44	15.02
1 5/16″	4	9528K61	14.98
1 3/8″	3	9528K62	15.05
1 7/16″	2	9528K63	14.05

Dia.		Each
Grade 50		
1 1/2″	9528K64	$5.50
1 9/16″	9528K125	10.85
1 5/8″	9528K65	11.12
1 11/16″	9528K126	13.07
1 3/4″	9528K66	13.87
1 7/8″	9528K67	19.09
2″	9528K71	19.96
2 1/8″	9528K87	41.15
2 1/4″	9528K73	58.40
2 3/8″	9528K74	71.91
2 1/2″	9528K72	92.48
2 5/8″	9528K88	99.74
2 3/4″	9528K92	109.80
Grade 100		
3″	9528K75	115.85
3 1/4″	9528K127	122.48
3 1/2″	9528K128	165.34
4″	9528K131	229.84
Grade 200		
4 1/2″	9528K132	314.93

METRIC SIZES

Dia., mm	Pkg. Qty.		Pkg.
1	100	9292K29	$6.11
1.5	100	9292K42	6.13
2	100	9292K31	6.17
2.5	100	9292K32	6.72
3	100	9292K33	6.23
3.5	100	9292K35	6.58
4	100	9292K37	6.69
4.5	50	9292K38	5.12
5	100	9292K39	7.89
5.5	50	9292K74	5.28
6	50	9292K41	5.86
6.5	50	9292K76	6.22
7	50	9292K43	6.62
8	25	9292K45	3.37
9	20	9292K44	3.67
10	20	9292K47	4.51
12	10	9292K49	4.16
13	5	9292K46	2.34
14	5	9292K51	2.78
15	5	9292K52	3.15
16	5	9292K53	3.85
18	3	9292K55	3.67
24	3	9292K56	6.64

Bearing-Quality High-Temperature M50 Tool Steel

Alloyed with chromium, molybdenum, and vanadium, this bearing-quality steel is suitable for applications requiring high wear resistance and strength at elevated temperatures.

Hardened Precision Balls—Reflective Finish

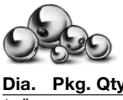

- Hardness: Rockwell C60-C65
- Yield Strength: 320,000 psi
- Quenched and tempered

Balls are Grade 10. Diameter tolerance is +0.00005″, –0.00004″. Sphericity is 0.00001″.

Dia.	Pkg. Qty.		Pkg.
1/8″	10	9670K11	$7.25
5/32″	10	9670K15	12.50
3/16″	5	9670K17	7.76
7/32″	10	9670K19	14.67
1/4″	10	9670K23	14.88

Dia.	Pkg. Qty.		Pkg.
9/32″	2	9670K27	$5.59
5/16″	2	9670K29	5.97
11/32″	2	9670K31	6.47
3/8″	2	9670K33	7.31
13/32″	2	9670K35	7.75

Dia.	Pkg. Qty.		Pkg.
7/16″	2	9670K37	$8.76
15/32″	2	9670K39	10.53
1/2″	2	9670K41	11.35
17/32″	2	9670K43	12.91
9/16″	1	9670K45	7.44

Dia.	Pkg. Qty.		Pkg.
5/8″	1	9670K49	$7.59
11/16″	1	9670K51	7.88
3/4″	1	9670K53	14.42
7/8″	1	9670K57	27.51
1″	1	9670K59	33.46

General Purpose Water-Hardened W1 Tool Steel

Because W1 is not heavily alloyed, it is one of the easiest tool steels to machine. Its high carbon content makes it suitable for many applications even without heat treating. Heat treatment results in a tough core and a hard, wear-resistant surface. Can be used for hammers and files.

Rectangular Bars—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell B82-B93
- Yield Strength: 55,000-100,000 psi
- Annealed

Meet ASTM A686. Can be heat treated to a maximum attainable hardness of Rockwell C57-C60. Thickness and width tolerances are ±0.0005″ for 1/16″ to 3/16″ sizes and ±0.0015″ for 1/4″ to 1″ sizes. Flatness tolerance is not rated. Length tolerance is +1/8″. **To Order:** Please specify 3- or 6-ft. length.

Wd.		3 ft.	6 ft.
1/16″ Thick			
1/16″	8894K112	$1.55	$3.04
1/8″	8895K252	2.92	5.73
3/16″	8895K362	4.57	8.97
1/4″	8895K352	5.29	10.37
3/32″ Thick			
3/32″	8894K122	2.60	5.09
1/8″	8895K357	3.37	6.61
3/16″	8895K361	5.29	10.38
1/4″	8895K314	6.51	12.77
5/16″	8895K363	8.64	16.94
3/8″	8895K364	10.16	19.93
1/8″ Thick			
1/8″	8894K142	3.31	6.50
3/16″	8895K365	5.66	11.09

Wd.		3 ft.	6 ft.
1/8″ Thick (Cont.)			
1/4″	8895K319	$6.25	$12.26
5/16″	8895K366	8.83	17.31
3/8″	8895K321	9.12	17.88
1/2″	8895K322	15.10	29.61
3/4″	8895K324	21.42	42.00
5/32″ Thick			
1/4″	8895K371	6.17	12.10
3/8″	8895K372	9.52	18.67
1/2″	8895K373	12.50	24.51
3/16″ Thick			
3/16″	8894K462	4.99	9.78
1/4″	8895K374	5.95	11.67
5/16″	8895K367	7.40	14.50
3/8″	8895K329	8.47	16.61

Wd.		3 ft.	6 ft.
3/16″ Thick (Cont.)			
1/2″	8895K331	$13.11	$25.70
5/8″	8895K332	14.44	28.31
3/4″	8895K333	20.41	40.02
1/4″ Thick			
1/4″	8894K182	6.51	12.77
5/16″	8895K368	9.14	17.93
3/8″	8895K336	9.78	19.18
1/2″	8895K337	15.13	29.66
3/4″	8895K338	22.93	44.97
5/16″ Thick			
5/16″	8894K212	9.71	19.04
3/8″ Thick			
3/8″	8894K232	12.62	24.75

Wd.		3 ft.	6 ft.
7/16″ Thick			
7/16″	8894K252	$17.10	$33.53
1/2″ Thick			
1/2″	8894K211	25.05	49.11
5/8″	8895K381	32.67	64.06
3/4″	8895K382	39.20	76.86
1″	8895K383	52.22	102.40
5/8″ Thick			
5/8″	8894K282	40.82	80.03
3/4″ Thick			
3/4″	8894K312	58.91	115.51
7/8″ Thick			
7/8″	8894K332	80.00	156.86
1″ Thick			
1″	8894K342	104.36	204.62

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

General Purpose Water-Hardened W1 Tool Steel *(Material continued from previous page)*

Rods—Ground Finish (Decarb Free)

- Hardness: 241 Brinell
- Yield Strength: 50,000-100,000 psi
- Annealed

Meet ASTM A686. Also known as drill rod. Can be heat treated to a maximum attainable hardness of Rockwell C60. Straightness tolerance is 0.005″ per foot. Length tolerance is ±1/4″ for 1-ft. lengths, ±1/8″ for 3-ft. lengths, and ±1/2″ for 6-ft. lengths. Rods with diameters less than 0.5000″ are sold in 3-ft. lengths. Rods with diameters of 0.5000″ and larger are sold in 1-, 3-, and 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where necessary.

Diameter	Tolerance
0.0625″-0.1200″	±0.0003″
0.1250″-0.4844″	±0.0005″
0.5000″-2.0000″	±0.0010″

Dia.	Trade Size		
0.0625″	1/16″	8890K11	$1.70
0.0630″	52	88725K77	1.68
0.0660″	51	88725K76	1.70
0.0690″	50	88725K75	1.72
0.0720″	49	88725K74	1.72
0.0750″	48	88725K73	1.71
0.0770″	47	88725K72	1.66
0.0782″	5/64″	8890K13	1.67
0.0790″	46	88725K71	1.69
0.0810″	45	88725K69	1.81
0.0850″	44	88725K68	1.86
0.0880″	43	88725K67	1.88
0.0920″	42	88725K66	1.90
0.0938″	3/32″	8890K15	1.90
0.0950″	41	88725K65	1.92
0.0970″	40	88725K64	1.92
0.0990″	39	88725K63	1.92
0.1010″	38	88725K62	1.93
0.1030″	37	88725K61	1.95
0.1060″	36	88725K59	1.95
0.1080″	35	88725K58	1.96
0.1094″	7/64″	8890K16	2.01
0.1100″	34	88725K57	2.05
0.1120″	33	88725K56	2.11
0.1150″	32	88725K55	2.16
0.1200″	31	88725K54	2.16
0.1250″	1/8″	8890K18	2.25
0.1270″	30	88725K53	$2.23
0.1340″	29	88725K52	2.24
0.1390″	28	88725K51	2.24
0.1406″	9/64″	8890K22	2.30
0.1430″	27	88725K49	2.37
0.1460″	26	88725K48	2.36
0.1480″	25	88725K47	2.37
0.1510″	24	88725K46	2.37
0.1530″	23	88725K45	2.39
0.1550″	22	88725K44	2.39
0.1563″	5/32″	8890K23	2.40
0.1570″	21	88725K43	2.41
0.1610″	20	88725K42	2.41
0.1640″	19	88725K41	2.44
0.1680″	18	88725K39	2.43
0.1719″	11/64″	8890K26	2.47
0.1720″	17	88725K38	2.46
0.1750″	16	88725K37	2.46
0.1780″	15	88725K36	2.47
0.1800″	14	88725K35	2.47
0.1820″	13	88725K34	2.50
0.1850″	12	88725K33	2.49
0.1875″	3/16″	8890K27	2.48
0.1880″	11	88725K32	2.56
0.1910″	10	88725K31	2.59
0.1940″	9	88725K29	2.61
0.1970″	8	88725K28	$2.68
0.1990″	7	88725K27	2.70
0.2010″	6	88725K26	2.73
0.2031″	13/64″	8890K28	2.83
0.2040″	5	88725K25	2.92
0.2070″	4	88725K24	2.96
0.2120″	3	88725K23	3.03
0.2188″	7/32″	8890K31	3.11
0.2190″	2	88725K22	3.10
0.2270″	1	88725K21	3.10
0.2340″	A	88755K41	3.16
0.2344″	15/64″	8890K35	3.14
0.2380″	B	88755K42	3.18
0.2420″	C	88755K43	3.19
0.2460″	D	88755K44	3.21
0.2500″	E, 1/4″	8890K36	3.20
0.2570″	F	88755K46	3.37
0.2610″	G	88755K47	3.15
0.2656″	17/64″	8890K37	3.37
0.2660″	H	88755K48	3.54
0.2720″	I	88755K49	3.66
0.2770″	J	88755K51	3.74
0.2810″	K	88755K52	3.89
0.2813″	9/32″	8890K38	3.62
0.2900″	L	88755K53	4.07
0.2950″	M	88755K54	4.12
0.2969″	19/64″	8890K39	$3.99
0.3020″	N	88755K55	4.69
0.3125″	5/16″	8890K41	4.24
0.3160″	O	88755K56	4.92
0.3230″	P	88755K57	5.07
0.3281″	21/64″	8890K81	4.78
0.3320″	Q	88755K58	5.36
0.3390″	R	88755K59	5.41
0.3438″	11/32″	8890K82	5.49
0.3480″	S	88755K61	5.84
0.3580″	T	88755K62	6.03
0.3594″	23/64″	8890K83	6.12
0.3680″	U	88755K63	6.48
0.3750″	3/8″	8890K42	6.55
0.3770″	V	88755K64	6.67
0.3860″	W	88755K65	6.71
0.3906″	25/64″	8890K84	6.78
0.3970″	X	88755K66	6.95
0.4040″	Y	88755K67	7.15
0.4063″	13/32″	8890K43	7.10
0.4130″	Z	88755K68	7.10
0.4219″	27/64″	8890K85	7.15
0.4375″	7/16″	8890K44	7.18
0.4531″	29/64″	8890K86	7.15
0.4688″	15/32″	8890K87	7.62
0.4844″	31/64″	8890K88	7.79

Dia.		1 ft.	3 ft.	6 ft.
0.5000″	8890K1	$4.17	$8.67	$16.68
0.5156″	8890K2	4.69	9.76	18.77
0.5313″	8890K3	5.00	10.41	20.02
0.5625″	8890K5	5.12	10.65	20.48
0.5938″	8890K7	6.21	12.91	24.82
0.6250″	8890K9	6.61	13.75	26.45
0.6563″	8890K12	6.92	14.40	27.69
0.6875″	8890K14	7.20	14.97	28.78
0.7188″	8890K17	8.20	17.06	32.81
0.7500″	8890K19	9.32	19.39	37.29
0.7813″	8890K21	9.61	19.98	38.42
0.8125″	8890K24	$10.36	$21.55	$41.44
0.8438″	8890K25	10.70	22.26	42.80
0.8750″	8890K29	11.18	23.25	44.72
0.9063″	8890K34	12.08	25.12	48.31
0.9375″	8890K32	13.19	27.44	52.77
0.9688″	8890K52	13.38	27.83	53.51
1.0000″	8890K76	15.35	31.93	61.41
1.0625″	8890K79	15.80	32.86	63.20
1.1250″	8890K98	16.31	33.92	65.23
1.1875″	8890K99	19.29	40.13	77.17
1.2500″	8890K101	20.10	41.81	80.40
1.3125″	8890K102	$23.23	$48.31	$92.91
1.3750″	8890K103	24.34	50.63	97.36
1.4375″	8890K104	27.86	57.96	111.46
1.5000″	8890K105	26.60	55.32	106.39
1.5625″	8890K201	31.50	65.53	126.01
1.6250″	8890K106	34.46	71.67	137.83
1.6875″	8890K204	36.67	76.28	146.69
1.7500″	8890K107	38.34	79.74	153.34
1.8750″	8890K108	43.20	89.87	172.82
1.9375″	8890K112	44.40	92.36	177.61
2.0000″	8890K109	46.17	96.03	184.67

Multipurpose Oil-Hardened O1 Tool Steel

One of the original tool steels, O1 has a good combination of machinability and resistance to wear and abrasion. It is used extensively in dies and punches for blanking, forming, and trimming, as well as in cams, bushings, guides, and gauges.

Oversize Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: Rockwell B95
- Yield Strength: 80,000 psi
- Annealed

Meet ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C63-C65. Thickness and width tolerances are +0.015″. Flatness tolerance is not rated. Length tolerance is +17/64″ for 1½-ft. length and +½″ for 3-ft. length. **To Order:** Please specify 1½- or 3-ft. length.

Wd.		1½ ft.	3 ft.
1/8″ Thick			
1/2″	9018K91	$12.85	$22.16
3/4″	9018K92	16.66	28.72
1″	9018K93	19.75	34.06
1 1/4″	9018K94	22.83	39.37
1 1/2″	9018K95	26.08	44.96
2″	9018K96	32.38	55.83
3″	9018K98	44.97	77.53
4″	9018K99	57.52	99.18
3/16″ Thick			
3/16″	9018K64	18.08	31.18
1/2″	9018K11	18.83	32.46
3/4″	9018K12	22.71	39.16
1″	9018K13	26.34	45.78
1 1/4″	9018K14	30.31	52.26
2″	9018K16	39.82	68.65
3/16″ Thick (Cont.)			
3″	9018K17	$52.04	$89.73
4″	9018K18	63.17	108.91
1/4″ Thick			
1/4″	9018K19	19.51	33.64
1/2″	9018K21	21.75	37.50
3/4″	9018K22	24.66	42.52
1″	9018K23	27.30	47.07
1 1/4″	9018K66	30.84	53.18
1 1/2″	9018K24	34.70	59.83
2″	9018K25	41.31	71.23
2 1/2″	9018K26	48.00	82.76
3″	9018K27	53.66	92.51
4″	9018K28	66.42	114.52
3/8″ Thick			
3/4″	9018K29	33.53	57.81
3/8″ Thick (Cont.)			
1″	9018K31	$38.03	$65.57
2″	9018K34	56.11	96.74
1/2″ Thick			
1/2″	9018K36	34.29	59.12
3/4″	9018K37	40.69	70.16
1″	9018K38	46.12	79.52
1 1/4″	9018K39	53.35	91.99
1 1/2″	9018K41	57.36	98.89
2″	9018K42	68.19	117.57
2 1/2″	9018K8	78.56	135.45
3″	9018K43	88.58	152.73
4″	9018K44	107.29	184.98
6″	9018K451	153.60	264.83
5/8″ Thick			
5/8″	9018K73	44.29	76.36
5/8″ Thick (Cont.)			
3/4″	9018K45	$47.94	$82.66
1″	9018K46	54.86	94.58
1 1/2″	9018K47	66.47	114.61
4″	9018K52	115.27	198.74
3/4″ Thick			
3/4″	9018K53	53.92	92.96
1″	9018K54	61.87	106.67
1 1/2″	9018K55	74.09	127.74
2″	9018K56	87.49	150.85
2 1/2″	9018K7	94.56	163.04
3″	9018K75	108.31	186.75
4″	9018K57	133.29	229.81
1″ Thick			
1″	9018K58	75.01	129.32
1 1/4″	9018K59	83.30	143.62

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose Oil-Hardened O1 Tool Steel *(Material continued from previous page)*

One of the original tool steels, O1 has a good combination of machinability and resistance to wear and abrasion. It is used extensively in dies and punches for blanking, forming, and trimming, as well as in cams, bushings, guides, and gauges.

Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: Rockwell B85-B96
- Yield Strength: 50,000-60,000 psi
- Annealed

Meets ASTM A681 (unless noted). Can be heat treated to a maximum attainable hardness of Rockwell C60-C65. Flatness tolerance is not rated. ***Inch sizes*** have a thickness tolerance of ±0.001″. Width tolerance is +0.005″. Length tolerance is +1/4″ for 1 1/2-ft. lengths and +5/8″ for 3-ft. lengths (unless noted). **To Order:** Please specify 1 1/2- or 3-ft. length. ***Metric sizes*** have a thickness tolerance of +0.05 mm. Width tolerance is +0.2 mm. Length tolerance is +8 mm. Sold in 1-meter lengths.

INCH SIZES

Wd.		1 1/2 ft.	3 ft.
1/64″ Thick			
1/2″	9516K2	$56.15	$96.81
1″	9516K75★	55.56	95.80
2″	9516K3	102.47	176.67
1/32″ Thick			
1/2″	9516K11	10.95	18.88
3/4″	9516K12	14.44	24.90
1″	9516K13	17.30	29.83
1 1/2″	9516K14	23.70	40.87
2″	9516K15	29.97	51.67
3″	9516K16	42.83	73.85
4″	9516K17	55.47	95.64
6″	9516K78★	61.09	105.33
3/64″ Thick			
1/2″	9516K222	9.68	16.69
3/4″	9516K223	12.53	21.60
1″	9516K224	15.20	26.20
2″	9516K225	26.15	45.08
4″	9516K235	47.86	82.52
1/16″ Thick			
1/4″	9516K7	22.85	39.40
1/2″	9516K22	6.82	11.76
5/8″	9516K8	7.84	13.52
3/4″	9516K23	8.65	14.91
1″	9516K24	10.40	17.93
1 1/4″	9516K25	12.15	20.94
1 1/2″	9516K26	13.97	24.09
1 3/4″	9516K9	15.71	27.09
2″	9516K27	17.50	30.17
2 1/2″	9516K28	21.05	36.30
3″	9516K29	24.58	42.38
3 1/2″	9516K152	28.20	48.62
4″	9516K31	31.66	54.58
3/32″ Thick			
1/2″	9516K32	8.91	15.36
3/4″	9516K33	11.03	19.02
1″	9516K34	13.24	22.82
1 1/2″	9516K35	17.46	30.10
2″	9516K36	21.76	37.52
2 1/2″	9516K37	26.08	44.96
3″	9516K38	30.39	52.39
4″	9516K39	39.02	67.27

Wd.		1 1/2 ft.	3 ft.
1/8″ Thick			
1/8″	9516K41	$18.85	$32.50
1/4″	9516K154	6.79	11.71
5/16″	9516K42	7.34	12.66
1/2″	9516K45	8.59	14.81
5/8″	9516K606	9.58	16.51
3/4″	9516K46	10.58	18.25
1″	9516K47	12.51	21.57
1 1/4″	9516K48	14.35	24.74
1 1/2″	9516K49	16.28	28.07
2″	9516K51	20.15	34.75
2 1/2″	9516K52	24.00	41.38
3″	9516K53	27.88	48.07
3 1/2″	9516K54	31.75	54.74
4″	9516K55	35.63	61.43
6″	9516K516	51.09	88.09
8″	9516K517	74.83	129.01
5/32″ Thick			
3/4″	9516K56	13.00	22.42
1″	9516K57	15.37	26.50
1 1/2″	9516K58	19.93	34.36
2″	9516K59	24.64	42.48
4″	9516K61	42.34	73.00
3/16″ Thick			
3/16″	9516K62	16.81	28.98
1/2″	9516K63	11.76	20.27
3/4″	9516K64	13.88	23.93
1″	9516K65	16.25	28.01
1 1/4″	9516K66	18.46	31.82
1 1/2″	9516K67	20.85	35.94
2″	9516K68	25.61	44.16
3″	9516K69	35.03	60.39
4″	9516K71	44.48	76.69
6″	9516K613	63.41	109.33
1/4″ Thick			
1/4″	9516K72	15.06	25.97
3/8″	9516K615	11.80	20.34
1/2″	9516K83	12.85	22.15
5/8″	9516K73	14.13	24.37
3/4″	9516K84	15.35	26.47
1″	9516K85	17.89	30.84
1 1/4″	9516K617	20.78	35.83

Wd.		1 1/2 ft.	3 ft.
1/4″ Thick (Cont.)			
1 1/2″	9516K86	$22.70	$39.14
2″	9516K87	27.72	47.80
2 1/2″	9516K88	32.74	56.45
3″	9516K89	37.73	65.05
4″	9516K91	47.79	82.40
4 1/2″	9516K76	52.76	90.96
5″	9516K79	57.77	99.60
6″	9516K541	70.57	121.67
8″	9516K542	98.71	170.19
10″	9516K518	121.28	209.10
5/16″ Thick			
5/16″	9516K92	16.29	28.08
1/2″	9516K93	15.38	26.52
3/4″	9516K156	17.83	30.74
1″	9516K94	21.31	36.74
1 1/4″	9516K622	24.24	41.80
1 1/2″	9516K95	26.99	46.54
2″	9516K96	32.86	56.66
3″	9516K97	44.67	77.02
4″	9516K98	56.45	97.33
3/8″ Thick			
3/8″	9516K99	20.05	34.57
1/2″	9516K101	18.35	31.63
5/8″	9516K624	20.11	34.68
3/4″	9516K102	21.87	37.70
1″	9516K103	25.33	43.67
1 1/4″	9516K158	28.53	49.19
1 1/2″	9516K104	32.05	55.26
2″	9516K105	39.05	67.33
2 1/2″	9516K106	45.96	79.25
3″	9516K107	52.95	91.30
4″	9516K108	66.92	115.38
6″	9516K519	94.79	163.43
8″	9516K521	137.37	236.85
1/2″ Thick			
1/2″	9516K203	22.56	38.90
5/8″	9516K109	24.68	42.56
3/4″	9516K204	26.79	46.19
1″	9516K206	31.00	53.45
1 1/4″	9516K626	35.07	60.47
1 1/2″	9516K171	39.27	67.71
2″	9516K207	47.66	82.18

Wd.		1 1/2 ft.	3 ft.
1/2″ Thick (Cont.)			
3″	9516K208	$64.55	$111.29
4″	9516K209	81.37	140.29
6″	9516K524	121.12	208.82
8″	9516K525	164.48	283.59
10″	9516K526	198.04	341.45
12″	9516K527	231.17	398.57
5/8″ Thick			
5/8″	9516K112	29.59	51.02
3/4″	9516K113	32.03	55.23
1″	9516K114	36.86	63.55
1 1/2″	9516K115	46.38	79.97
2″	9516K116	56.36	97.17
3″	9516K117	75.39	129.99
4″	9516K118	92.49	159.47
6″	9516K528	134.10	231.21
3/4″ Thick			
3/4″	9516K131	38.07	65.63
1″	9516K132	43.74	75.41
1 1/4″	9516K628	49.09	84.63
1 1/2″	9516K133	54.71	94.33
2″	9516K134	65.98	113.76
3″	9516K135	88.34	152.31
4″	9516K136	111.07	191.50
6″	9516K533	152.45	262.85
8″	9516K534	218.18	376.18
1″ Thick			
1″	9516K137	54.76	94.42
1 1/4″	9516K138	61.04	105.25
1 1/2″	9516K226	67.77	116.85
2″	9516K227	81.23	140.06
3″	9516K228	108.12	186.42
4″	9516K229	134.94	232.66
6″	9516K536	184.11	317.43
8″	9516K537	262.65	452.84
1 1/2″ Thick			
2″	9516K632	113.70	196.03
4″	9516K634	185.47	319.78
6″	9516K636	261.71	451.22
2″ Thick			
2″	9516K638	145.67	251.16
4″	9516K641	217.37	374.78

★ Does not meet ASTM A681. Length tolerance is +1/2″ for 3-ft. lengths.

METRIC SIZES

Wd.		
3 mm Thick		
15 mm	9497K11	$37.88
20 mm	9497K12	41.52
25 mm	9497K13	44.35
30 mm	9497K14	47.06
50 mm	9497K16	54.98
100 mm	9497K19	90.16
150 mm	9497K21	125.11

Wd.		
4 mm Thick		
15 mm	9497K22	$39.16
20 mm	9497K23	43.86
25 mm	9497K24	46.85
30 mm	9497K25	47.06
40 mm	9497K26	54.12
50 mm	9497K27	60.49
60 mm	9497K28	63.88

Wd.		
5 mm Thick		
15 mm	9497K33	$44.16
20 mm	9497K34	49.79
25 mm	9497K35	49.98
30 mm	9497K36	53.04
6 mm Thick		
15 mm	9497K44	52.84
20 mm	9497K45	56.75

Wd.		
6 mm Thick (Cont.)		
25 mm	9497K46	$65.89
150 mm	9497K54	171.92
10 mm Thick		
15 mm	9497K55	80.97
20 mm	9497K56	92.10
25 mm	9497K57	94.10
40 mm	9497K59	124.36

Flat Stock—Ground Finish (Decarb Free)

- Hardness: 190-210 Brinell
- Yield Strength: Not rated
- Annealed

Meets ASTM A681. Can be heat treated to a max. attainable hardness of Rockwell C64. Thickness tolerance is +0.040″. Flatness tolerance is not rated. Width tolerance is +0.090″. Length tolerance is +1/2″. **To Order:** Please specify 1 1/2-, 3-, or 6-ft. length.

Wd.		1 1/2 ft.	3 ft.	6 ft.
1/4″ Thick				
1/2″	8151K57	$11.56	$22.35	$38.54
2″	8151K58	33.16	64.11	110.53
1/2″ Thick				
1/2″	8151K11	14.02	27.10	46.72
3/4″	8151K12	21.45	41.47	71.50
1″	8151K13	25.15	48.62	83.83
2″	8151K14	42.70	82.56	142.34

Wd.		1 1/2 ft.	3 ft.	6 ft.
5/8″ Thick				
5/8″	8151K17	$21.47	$41.51	$71.57
1″	8151K19	27.80	53.74	92.65
2″	8151K21	48.07	92.94	160.25
3/4″ Thick				
3/4″	8151K23	26.77	51.75	89.23
1″	8151K24	31.17	60.26	103.90
2″	8151K25	52.55	101.60	175.17

Wd.		1 1/2 ft.	3 ft.	6 ft.
1″ Thick				
1″	8151K27	$36.55	$70.67	$121.85
1 1/2″	8151K28	53.23	102.90	177.42
2″	8151K29	60.86	117.66	202.87
2 1/2″	8151K31	74.48	143.99	248.26
1 1/2″ Thick				
2″	8151K61	88.25	170.62	294.17
6″	8151K63	248.36	480.16	827.87

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose Oil-Hardened O1 Tool Steel *(Material continued from previous page)*

Tight-Tolerance Flat Stock with Material Certification—Precision Ground Finish

- Hardness: 190 Brinell
- Yield Strength: Not rated
- Annealed

Meets ASTM A681. Material type (O1) is stamped the length of the material for easy identification. Can be heat treated to a maximum attainable hardness of Rockwell C62-C64. Thickness tolerance is ±0.001″. Flatness tolerance is 0.010″. Width tolerance is –0.005″. Length tolerance is +1/4″. Sold in 1 1/2-ft. lengths. Each comes with a traceable lot number and physical test report.

Width		
1/16″ Thick		
1/2″	**6678T21**	$13.54
1″	**6678T22**	16.86
1/8″ Thick		
1/2″	**6678T23**	14.91
3/4″	**6678T24**	19.33
1″	**6678T25**	21.54
1 1/2″	**6678T26**	27.73
2″	**6678T27**	33.11
1/4″ Thick		
1/4″	**6678T32**	$20.96
1/2″	**6678T33**	24.16
3/4″	**6678T34**	28.62
1″	**6678T35**	30.06
1 1/2″	**6678T36**	36.99
2″	**6678T37**	49.01
3″	**6678T38**	53.65
4″	**6678T41**	69.73
3/8″ Thick		
3/8″	**6678T42**	$25.51
1/2″	**6678T43**	30.14
3/4″	**6678T44**	35.58
1″	**6678T45**	42.44
2″	**6678T47**	59.78
1/2″ Thick		
1/2″	**6678T48**	39.40
3/4″	**6678T51**	43.60
1/2″ Thick (Cont.)		
1″	**6678T52**	$49.22
1 1/2″	**6678T53**	60.47
2″	**6678T54**	71.99
3″	**6678T55**	97.22
1″ Thick		
1″	**6678T62**	84.46
1 1/2″	**6678T63**	105.81
2″	**6678T64**	127.87

Tight-Tolerance Sheets—Precision Ground Finish

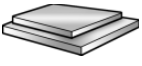

- Hardness: 185 Brinell
- Yield Strength: 70,000 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C60. Thickness tolerance is ±0.001″. Flatness tolerance is not rated. Width tolerance is +0.005″. Length has a plus tolerance.

Thick.	6″×6″		12″×12″		12″×36″	
1/8″	**4476T31**	$17.58	**4476T32**	$56.05	**4476T34**	$157.49
1/4″	**4476T51**	21.71	**4476T52**	83.09	**4476T54**	245.82
3/8″	**4476T61**	28.43	**4476T62**	107.04	**4476T64**	299.25
1/2″	**4476T71**	$47.45	**4476T72**	$168.91		
3/4″	**4476T81**	63.04	**4476T82**	238.78		
1″	**4476T91**	75.99	**4476T92**	270.90		

Tight-Tolerance Rods—Inch Sizes—Precision Ground Finish

- Hardness: Rockwell B89-B110
- Yield Strength: 50,000-99,000 psi
- Annealed

Meet ASTM A681. Also known as drill rod. Can be heat treated to a maximum attainable hardness of Rockwell C57-C62. Straightness tolerance is 0.005″ per foot. Length tolerance is ±1/4″. Rods with diameters less than 0.5000″ are sold in 3-ft. lengths. Rods with diameters 0.5000″ and larger are sold in 1-, 3-, and 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where necessary.

Diameter	Tolerance
0.0625″-0.1200″	±0.0003″
0.1250″-0.4844″	±0.0005″
0.5000″-3.0000″	±0.001″

Dia.	Trade Size		
0.0625″	1/16″	**8893K11**	$1.20
0.0630″	52	**88645K87**	1.43
0.0660″	51	**88645K86**	1.54
0.0690″	50	**88645K85**	1.69
0.0720″	49	**88645K84**	1.89
0.0750″	48	**88645K83**	2.05
0.0770″	47	**88645K82**	2.20
0.0782″	5/64″	**8893K13**	1.96
0.0790″	46	**88645K81**	2.27
0.0810″	45	**88645K79**	2.37
0.0850″	44	**88645K78**	2.57
0.0880″	43	**88645K77**	2.84
0.0920″	42	**88645K76**	3.09
0.0938″	3/32″	**8893K15**	1.45
0.0950″	41	**88645K75**	1.67
0.0970″	40	**88645K74**	1.71
0.0990″	39	**88645K73**	1.86
0.1010″	38	**88645K72**	1.91
0.1030″	37	**88645K71**	1.98
0.1060″	36	**88645K69**	2.07
0.1080″	35	**88645K68**	2.20
0.1094″	7/64″	**8893K16**	1.96
0.1100″	34	**88645K67**	2.24
0.1120″	33	**88645K66**	2.35
0.1150″	32	**88645K65**	2.44
0.1200″	31	**88645K64**	2.71
0.1250″	1/8″	**8893K18**	2.40
0.1270″	30	**88645K63**	$2.24
0.1340″	29	**88645K62**	2.44
0.1390″	28	**88645K61**	2.71
0.1406″	9/64″	**8893K22**	2.45
0.1430″	27	**88645K59**	2.84
0.1460″	26	**88645K58**	2.91
0.1480″	25	**88645K57**	3.07
0.1510″	24	**88645K56**	3.11
0.1530″	23	**88645K55**	3.24
0.1550″	22	**88645K54**	3.29
0.1563″	5/32″	**8893K23**	2.45
0.1570″	21	**88645K53**	2.76
0.1610″	20	**88645K52**	2.91
0.1640″	19	**88645K51**	3.07
0.1680″	18	**88645K49**	3.18
0.1719″	11/64″	**8893K26**	2.84
0.1720″	17	**88645K48**	3.36
0.1750″	16	**88645K47**	3.43
0.1780″	15	**88645K46**	3.62
0.1800″	14	**88645K45**	3.71
0.1820″	13	**88645K44**	3.73
0.1850″	12	**88645K43**	3.87
0.1875″	3/16″	**8893K27**	2.88
0.1880″	11	**88645K42**	3.18
0.1910″	10	**88645K41**	3.24
0.1940″	9	**88645K39**	3.39
0.1970″	8	**88645K38**	$3.54
0.1990″	7	**88645K37**	3.54
0.2010″	6	**88645K36**	3.71
0.2031″	13/64″	**8893K28**	3.33
0.2040″	5	**88645K35**	3.81
0.2070″	4	**88645K34**	3.87
0.2120″	3	**88645K33**	4.07
0.2188″	7/32″	**8893K31**	3.32
0.2190″	2	**88645K32**	3.81
0.2270″	1	**88645K31**	4.07
0.2340″	A	**88695K11**	4.32
0.2344″	15/64″	**8893K35**	3.85
0.2380″	B	**88695K12**	4.58
0.2420″	C	**88695K13**	4.64
0.2460″	D	**88695K14**	4.77
0.2500″	E, 1/4″	**8893K36**	2.90
0.2570″	F	**88695K16**	3.81
0.2610″	G	**88695K17**	3.89
0.2656″	17/64″	**8893K37**	2.96
0.2660″	H	**88695K18**	4.07
0.2720″	I	**88695K19**	4.26
0.2770″	J	**88695K21**	4.44
0.2810″	K	**88695K22**	4.58
0.2813″	9/32″	**8893K38**	4.11
0.2900″	L	**88695K23**	4.80
0.2950″	M	**88695K24**	5.02
0.2969″	19/64″	**8893K39**	$4.48
0.3020″	N	**88695K25**	5.24
0.3125″	5/16″	**8893K41**	4.52
0.3160″	O	**88695K26**	5.15
0.3230″	P	**88695K27**	5.39
0.3281″	21/64″	**8893K74**	4.76
0.3320″	Q	**88695K28**	5.67
0.3390″	R	**88695K29**	5.87
0.3438″	11/32″	**8893K75**	5.26
0.3480″	S	**88695K31**	6.16
0.3580″	T	**88695K32**	6.63
0.3594″	23/64″	**8893K76**	5.97
0.3680″	U	**88695K33**	6.95
0.3750″	3/8″	**8893K42**	6.17
0.3770″	V	**88695K34**	7.08
0.3860″	W	**88695K35**	7.47
0.3906″	25/64″	**8893K77**	6.73
0.3970″	X	**88695K36**	7.92
0.4040″	Y	**88695K37**	8.22
0.4063″	13/32″	**8893K43**	7.34
0.4130″	Z	**88695K38**	8.54
0.4219″	27/64″	**8893K78**	7.36
0.4375″	7/16″	**8893K44**	7.38
0.4531″	29/64″	**8893K81**	7.24
0.4688″	15/32″	**8893K82**	7.38
0.4844″	31/64″	**8893K83**	8.25

Dia.		1 ft.	3 ft.	6 ft.
0.5000″	**8893K1**	$4.89	$8.96	$16.29
0.5156″	**8893K2**	5.17	9.47	17.22
0.5313″	**8893K3**	5.24	9.61	17.48
0.5469″	**8893K4**	5.82	10.68	19.41
0.5625″	**8893K5**	5.88	10.77	19.59
0.5781″	**8893K6**	6.50	11.92	21.68
0.5938″	**8893K7**	6.56	12.02	21.85
0.6094″	**8893K8**	7.22	13.23	24.06
0.6250″	**8893K9**	7.38	13.53	24.60
0.6563″	**8893K12**	7.93	14.55	26.45
0.6875″	**8893K14**	8.69	15.94	28.98
0.7188″	**8893K17**	9.54	17.49	31.80
0.7500″	**8893K19**	10.38	19.02	34.59
0.7813″	**8893K21**	$11.06	$20.28	$36.87
0.8125″	**8893K24**	12.29	22.54	40.98
0.8438″	**8893K25**	13.05	23.93	43.50
0.8750″	**8893K29**	13.88	25.45	46.28
0.9063″	**8893K34**	15.26	27.98	50.87
0.9375″	**8893K47**	16.08	29.48	53.60
0.9688″	**8893K52**	17.23	31.60	57.45
1.0000″	**8893K72**	18.25	33.46	60.83
1.0625″	**8893K79**	19.82	36.33	66.06
1.1250″	**8893K98**	22.80	41.81	76.01
1.1875″	**8893K99**	24.63	45.15	82.09
1.2500″	**8893K101**	27.36	50.17	91.21
1.3125″	**8893K102**	$28.81	$52.83	$96.05
1.3750″	**8893K103**	31.65	58.02	105.49
1.4375″	**8893K104**	34.52	63.29	115.08
1.5000″	**8893K105**	37.71	69.13	125.69
1.6250″	**8893K106**	41.23	75.59	137.44
1.7500″	**8893K107**	47.85	87.72	159.49
1.8750″	**8893K108**	55.10	101.01	183.66
2.0000″	**8893K109**	59.62	109.30	198.73
2.2500″	**8893K111**	88.48	162.21	294.92
2.5000″	**8893K112**	113.34	207.78	377.79
2.7500″	**8893K113**	142.98	262.14	476.61
3.0000″	**8893K114**	177.38	325.20	591.27

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose Oil-Hardened O1 Tool Steel *(Material continued from previous page)*

One of the original tool steels, O1 has a good combination of machinability and resistance to wear and abrasion. It is used extensively in dies and punches for blanking, forming, and trimming, as well as in cams, bushings, guides, and gauges.

Tight-Tolerance Rods—Metric Sizes—Precision Ground Finish

- Hardness: Rockwell B89-B96
- Yield Strength: 50,000-99,000 psi
- Annealed

Meet ASTM A681 and MIL-STD-163. Also known as drill rod. Can be heat treated to a maximum attainable hardness of Rockwell C60-C62. Diameter tolerance is ±0.013 mm for 2-12 mm diameters and ±0.025 mm for 13-30 mm diameters. Straightness tolerance is not rated. Length tolerance is +1/4″. Sold in 3-ft. lengths.

Dia.		
2 mm	88625K61	$1.98
3 mm	88625K62	2.25
4 mm	88625K63	2.53
5 mm	88625K64	3.09
6 mm	88625K65	3.92
7 mm	88625K66	4.24
8 mm	88625K67	$5.13
9 mm	88625K68	6.22
10 mm	88625K69	7.18
11 mm	88625K71	8.84
12 mm	88625K72	10.15
13 mm	88625K73	11.59
14 mm	88625K74	$12.33
15 mm	88625K75	14.13
16 mm	88625K76	15.54
17 mm	88625K77	17.84
18 mm	88625K78	20.01
19 mm	88625K79	21.70
20 mm	88625K81	$22.87
21 mm	88625K82	25.92
22 mm	88625K83	29.80
24 mm	88625K85	33.69
25 mm	88625K86	36.63
30 mm	88625K89	43.06

Hardened Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell C60-C62
- Yield Strength: Not rated
- Quenched and double-tempered

Also known as drill rod. Diameter tolerance is –0.0003″. Straightness tolerance is not rated. Length tolerance is +0.062″. Sold in 1-ft. lengths.

Dia.		
1/16″	4347T31	$19.93
5/64″	4347T32	20.05
3/32″	4347T33	13.14
7/64″	4347T34	14.62
1/8″	4347T35	14.74
5/32″	4347T36	$15.26
3/16″	4347T37	15.83
7/32″	4347T38	16.15
1/4″	4347T41	16.72
9/32″	4347T42	18.34
5/16″	4347T43	$21.05
11/32″	4347T44	23.09
3/8″	4347T45	24.53
7/16″	4347T46	33.95
1/2″	4347T47	41.15
9/16″	4347T48	$48.92
5/8″	4347T51	60.12
3/4″	4347T52	73.27
7/8″	4347T53	93.18
1″	4347T54	113.95

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 221 Brinell
- Yield Strength: 50,000 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C63-C65. Straightness tolerance is 1/8″ per 5 feet. Length tolerance is +1/4″.

To Order: Please specify 1-, 3-, or 6-ft. length where necessary.

Diameter	Tolerance
1/2″-1 3/4″	+0.045″
2″-2 3/4″	+0.051″
3″-4″	+0.083″

Diameter	Tolerance
6″	+0.125″
8″	+0.160″

Dia.		1 ft.	3 ft.	6 ft.
1/2″	89905K11	$2.48	$5.46	$9.93
5/8″	89905K12	4.62	10.16	18.48
3/4″	89905K13	6.63	14.59	26.52
7/8″	89905K14	8.71	19.16	34.83
1″	89905K15	10.92	24.03	43.69
1 1/8″	89905K16	13.72	30.20	54.90
1 1/4″	89905K17	$16.94	$37.26	$67.75
1 1/2″	89905K18	23.11	50.84	92.43
1 3/4″	89905K19	30.30	66.67	121.22
2″	89905K21	39.45	86.78	157.79
2 1/4″	89905K22	51.60	113.51	206.39
2 1/2″	89905K25	62.41	137.29	249.62
2 3/4″	89905K28	$73.78	$162.31	$295.10
3″	89905K29	89.34	196.55	357.36
3 1/4″	89905K43	102.51	225.53	410.05
3 1/2″	89905K44	116.28	255.82	465.12
3 3/4″	89905K45	124.93	274.84	499.71
4″	89905K46	145.78	320.71	583.11

Dia.	1/2″ Long		1″ Long		1 1/2″ Long		2 1/2″ Long		3 1/2″ Long		4″ Long	
4″	8441K11	$10.58	8441K12	$17.00	8441K13	$23.50	8441K14	$36.38	8441K15	$50.08	8441K16	$55.73
6″	8441K21	17.88	8441K22	33.62	8441K23	46.39	8441K24	67.23	8441K25	94.13	8441K26	107.57
8″	8441K31	29.79	8441K32	56.02	8441K33	77.31	8441K34	112.04	8441K35	156.85	8441K36	179.26

Multipurpose Air-Hardened A2 Tool Steel

A very fine grain structure results in a superior-quality steel. Compared to O1 tool steel, this material has better wear resistance, which means it can hold a sharper cutting edge. Compared to D2 tool steel and other high-carbon/high-chromium steels, this material offers better machinability. Ideal for making thin parts that are usually prone to cracking during heat treating.

Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: Rockwell B89-B99
- Yield Strength: 51,000-108,000 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C58-C65. Flatness tolerance is not rated.

Inch Sizes— Meet ASTM A681 and MIL-QQT-570A, except 1/32″ and 3/64″ thicknesses which only meet ASTM A681. Thickness tolerance is ±0.001″. Width tolerance is +0.005″. Length tolerance is +3/16″ for 3″ and 6″ lengths, +1/4″ for 1 1/2-ft. lengths, +1/2″ for 3-ft. lengths, and +1″ for 6-ft. lengths. **To Order:** Please specify 1 1/2-, 3-, or 6-ft. length where prices are shown.

Metric Sizes— Thickness tolerance is ±0.25 mm. Width tolerance is +0.15 mm. Length tolerance is +12.7 mm. Sold in 1-meter lengths.

INCH SIZES

Wd.		1 1/2 ft.	3 ft.	6 ft.
1/32″ Thick				
1/2″	9019K315	$15.40	$28.00	____
3/4″	9019K325	20.76	37.75	____
1″	9019K335	24.16	43.93	____
2″	9019K345	41.64	75.71	____
3/64″ Thick				
1/2″	9019K355	15.57	28.31	____
3/4″	9019K365	20.16	36.66	____
1″	9019K375	24.57	44.67	____
2″	9019K385	42.35	77.00	____
1/16″ Thick				
1/2″	9019K11	15.71	25.24	$47.62
3/4″	9019K12	19.31	31.02	58.53
1″	9019K13	21.70	34.85	65.76
1 1/4″	9019K14	22.12	35.52	67.02
1/16″ Thick (Cont.)				
1 1/2″	9019K15	$26.73	$42.93	$81.00
2″	9019K16	28.77	46.21	87.18
2 1/2″	9019K17	31.75	50.99	96.20
3″	9019K18	39.93	64.13	121.00
4″	9019K19	43.72	70.21	132.48
3/32″ Thick				
1/2″	9019K21	16.88	27.10	51.14
3/4″	9019K22	20.35	32.68	61.66
1″	9019K23	26.63	42.77	80.69
1 1/4″	9019K24	28.16	45.23	85.34
1 1/2″	9019K25	30.52	49.01	92.48
2″	9019K85	34.15	54.84	103.48
3″	9019K86	41.48	66.63	125.71
4″	9019K87	50.81	81.60	153.96
1/8″ Thick				
1/2″	9019K26	$15.19	$24.40	$46.04
5/8″	9019K107	17.95	28.82	54.38
3/4″	9019K27	19.12	30.71	57.95
1″	9019K28	23.91	38.40	72.46
1 1/4″	9019K29	25.56	41.05	77.46
1 1/2″	9019K31	29.67	47.65	89.90
2″	9019K32	36.41	58.48	110.34
2 1/2″	9019K33	38.24	61.42	115.89
3″	9019K88	41.65	66.89	126.21
4″	9019K34	51.68	83.00	156.61
5/32″ Thick				
1/2″	9019K35	22.28	35.79	67.53
3/4″	9019K36	27.05	43.45	81.98
1″	9019K37	31.49	50.58	95.43

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose Air-Hardened A2 Tool Steel *(Material continued from previous page)*

Tight-Tolerance Flat Stock—Precision Ground Finish (Cont.)

INCH SIZES (CONT.)

Wd.		1½ ft.	3 ft.	6 ft.
5/32″ Thick (Cont.)				
1¼″	9019K38	$34.80	$55.89	$105.46
1½″	9019K39	34.82	55.92	105.50
2″	9019K41	42.01	67.47	127.30
3″	9019K89	51.95	83.44	157.43
4″	9019K91	66.52	106.83	201.57
3/16″ Thick				
½″	9019K42	22.71	36.47	68.82
¾″	9019K92	25.67	41.23	77.79
1″	9019K43	31.00	49.79	93.94
1¼″	9019K93	34.50	55.42	104.56
1½″	9019K44	35.07	56.32	106.26
2″	9019K45	41.34	66.39	125.26
3″	9019K94	54.10	86.89	163.95
4″	9019K46	64.12	102.98	194.31
1/4″ Thick				
¼″	9019K95	29.57	47.50	89.62
½″	9019K47	22.28	35.79	67.52
¾″	9019K48	25.40	40.80	76.98
1″	9019K49	26.73	47.13	88.92
1¼″	9019K51	33.64	54.03	101.94
1½″	9019K52	38.30	61.52	116.07
2″	9019K53	45.63	73.28	138.27
2½″	9019K54	53.80	86.40	163.02
3″	9019K96	61.64	99.00	186.79
4″	9019K55	76.30	122.54	231.21
6″	9019K511	102.21	164.16	309.74
12″	9019K513	204.29	328.10	619.05
5/16″ Thick				
5/16″	9019K138	34.05	54.69	103.18

Wd.		1½ ft.	3 ft.	6 ft.
5/16″ Thick (Cont.)				
½″	9019K56	$24.72	$39.71	$74.92
¾″	9019K97	30.36	48.76	92.00
1″	9019K57	35.73	57.39	108.28
1½″	9019K98	45.20	72.59	136.97
2″	9019K58	55.41	88.99	167.91
3″	9019K59	71.65	115.07	217.12
4″	9019K61	94.13	151.17	285.23
6″	9019K611	121.28	194.79	367.52
8″	9019K612	187.94	301.85	569.53
3/8″ Thick				
⅜″	9019K99	39.23	63.01	118.88
½″	9019K101	39.82	63.96	120.67
¾″	9019K62	38.51	61.85	116.69
1″	9019K63	42.20	67.78	127.88
1½″	9019K64	49.90	80.15	151.22
1¾″	9019K149	56.94	91.46	172.56
2″	9019K65	64.44	103.49	195.27
2½″	9019K151	77.14	123.90	233.77
3″	9019K66	85.43	137.21	258.89
4″	9019K67	106.26	170.67	322.01
6″	9019K711	140.99	226.44	427.24
8″	9019K712	210.65	338.31	638.32
1/2″ Thick				
½″	9019K68	34.38	55.22	104.19
¾″	9019K102	42.73	68.62	129.48
1″	9019K69	46.81	75.18	141.84
1½″	9019K71	60.42	97.04	183.09
2″	9019K72	77.08	123.80	233.58
2½″	9019K103	92.36	148.33	279.87
3″	9019K104	105.02	168.67	318.25

Wd.		1½ ft.	3 ft.	6 ft.
1/2″ Thick (Cont.)				
3½″	9019K73	$121.04	$194.40	$366.79
4″	9019K74	126.41	203.03	383.07
6″	9019K811	174.43	280.15	528.58
8″	9019K812	262.51	421.60	795.47
12″	9019K813	329.58	529.32	998.72
5/8″ Thick				
⅝″	9019K152	68.24	109.60	206.80
¾″	9019K913	56.32	90.45	170.66
1″	9019K914	62.47	100.33	189.31
1½″	9019K915	79.21	127.22	240.04
2″	9019K916	98.58	158.33	298.74
3″	9019K917	125.98	202.34	381.77
4″	9019K918	164.92	264.88	499.77
6″	9019K919	208.94	335.57	633.15
3/4″ Thick				
¾″	9019K75	57.96	93.09	175.65
1″	9019K76	65.81	105.69	199.41
1¼″	9019K154	72.70	116.75	220.29
1½″	9019K105	85.36	137.10	258.67
2″	9019K77	104.09	167.18	315.43
3″	9019K106	132.51	212.82	401.54
4″	9019K78	171.71	275.77	520.32
6″	9019K814	234.35	376.37	710.14
1″ Thick				
1″	9019K79	85.35	137.07	258.63
1½″	9019K81	108.25	173.86	328.03
2″	9019K82	127.22	204.33	385.53
3″	9019K83	160.39	257.60	486.03
4″	9019K84	201.31	323.32	610.03
6″	9019K945	286.90	460.77	869.38

Size		
½″×3″×6″	9019K962	$58.95
¾″×3″×6″	9019K963	73.90
1″×3″×3″	9019K964	$50.73
1½″×3″×3″	9019K965	117.43
2″×3″×3″	9019K966	$127.60

METRIC SIZES—1-METER LENGTHS

Wd.		
3 mm Thick		
15 mm	4547T11	$44.90
20 mm	4547T12	49.25
25 mm	4547T13	50.67
50 mm	4547T14	65.15
4 mm Thick		
15 mm	4547T15	$48.69
20 mm	4547T16	54.50
25 mm	4547T17	55.83
50 mm	4547T18	80.40
6 mm Thick		
15 mm	4547T21	$71.22
20 mm	4547T22	77.58
25 mm	4547T23	89.45
50 mm	4547T24	99.74
10 mm Thick		
15 mm	4547T25	$139.37
20 mm	4547T26	144.95
25 mm	4547T27	156.22
50 mm	4547T28	172.39

Oversize Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: Rockwell B89-B99
- Yield Strength: 55,000-108,000 psi
- Annealed

Meets ASTM A681 and MIL-QQT-570A. Can be heat treated to a maximum attainable hardness of Rockwell C58-C62. Thickness and width tolerances are +0.015″. Flatness tolerance is 0.010″ per foot. Length tolerance is +¼″ for 1½-ft. lengths and +½″ for 3-ft. lengths. **To Order:** Please specify 1½- or 3-ft. length.

Wd.		1½ ft.	3 ft.
1/8″ Thick			
½″	89885K11	$11.15	$19.23
¾″	89885K12	14.08	24.27
1″	89885K13	15.41	26.57
1¼″	89885K14	17.45	32.93
1½″	89885K15	21.75	37.50
2″	89885K16	27.97	48.23
3″	89885K17	36.49	62.91
4″	89885K18	45.58	78.59
3/16″ Thick			
½″	89885K71	16.14	27.82
1″	89885K73	23.07	39.78
1½″	89885K75	29.80	51.38
2″	89885K77	36.86	63.56
3″	89885K79	50.80	87.59
4″	89885K95	64.77	111.67
6″	89885K96	92.68	159.79
1/4″ Thick			
¼″	89885K19	23.02	39.69
½″	89885K21	22.77	39.26
¾″	89885K22	25.25	43.53
1″	89885K23	28.08	48.42
1¼″	89885K82	31.04	53.51
1½″	89885K24	33.69	58.09
1¾″	89885K117	41.25	71.12
2″	89885K25	44.79	77.23

Wd.		1½ ft.	3 ft.
1/4″ Thick (Cont.)			
2½″	89885K118	$49.78	$85.82
3″	89885K26	52.50	90.51
4″	89885K27	75.29	129.81
6″	89885K97	100.26	172.86
8″	89885K98	135.53	233.67
12″	89885K231	189.79	327.23
5/16″ Thick			
½″	89885K84	22.61	38.99
¾″	89885K119	31.28	53.93
1″	89885K86	34.01	58.64
1½″	89885K88	40.65	70.08
2″	89885K91	49.85	85.95
3/8″ Thick			
⅜″	89885K28	32.40	55.86
½″	89885K29	27.63	47.63
¾″	89885K31	33.16	57.18
1″	89885K32	38.75	66.81
1¼″	89885K33	43.91	75.71
1½″	89885K34	49.40	85.18
2″	89885K35	52.49	90.50
3″	89885K36	80.84	139.38
4″	89885K37	102.63	176.95
6″	89885K232	131.94	227.48
8″	89885K233	182.74	315.07
12″	89885K234	251.95	434.40

Wd.		1½ ft.	3 ft.
1/2″ Thick			
½″	89885K38	$32.79	$56.53
¾″	89885K39	37.78	65.13
1″	89885K41	49.43	85.22
1¼″	89885K42	54.68	94.28
1½″	89885K43	63.35	109.22
2″	89885K44	69.95	120.61
2½″	89885K93	86.67	149.43
3″	89885K45	95.46	164.59
4″	89885K46	115.67	199.43
6″	89885K235	161.04	277.65
8″	89885K236	214.74	370.24
12″	89885K237	305.99	527.57
5/8″ Thick			
⅝″	89885K47	49.49	85.33
¾″	89885K48	52.30	90.17
1″	89885K49	60.92	105.03
1¼″	89885K51	69.94	120.59
1½″	89885K52	76.90	132.59
2″	89885K53	91.07	157.02
2½″	89885K54	109.20	188.28
3″	89885K55	122.94	211.97
4″	89885K56	155.13	267.46
6″	89885K238	202.88	349.80
3/4″ Thick			
¾″	89885K57	61.66	106.31

Wd.		1½ ft.	3 ft.
3/4″ Thick (Cont.)			
1″	89885K58	$71.18	$122.73
1½″	89885K59	87.14	150.25
2″	89885K61	105.62	182.11
3″	89885K62	137.58	237.21
4″	89885K63	175.42	302.44
6″	89885K239	239.64	413.17
8″	89885K241	295.74	509.90
12″	89885K242	393.62	678.65
1″ Thick			
1″	89885K64	86.93	149.88
1¼″	89885K65	101.42	174.87
1½″	89885K66	110.43	190.39
2″	89885K67	120.76	208.20
3″	89885K68	158.09	272.57
4″	89885K69	195.64	337.31
6″	89885K243	257.80	444.48
8″	89885K244	356.78	615.13
12″	89885K245	523.24	902.14
1½″ Thick			
2″	89885K246	186.84	322.14
4″	89885K247	289.74	499.55
6″	89885K248	458.28	790.13
2″ Thick			
2″	89885K249	249.57	430.29
4″	89885K251	415.83	716.95

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose Air-Hardened A2 Tool Steel *(Material continued from previous page)*

A very fine grain structure results in a superior-quality steel. Compared to O1 tool steel, this material has deeper hardening and better wear resistance, which means it can hold a sharper cutting edge. Compared to D2 tool steel and other high-carbon/high-chromium steels, it offers better machinability. Ideal for making thin parts that are usually prone to cracking during heat treating.

Tight-Tolerance Flat Stock with Material Certification—Precision Ground Finish

- Hardness: 215 Brinell
- Yield Strength: Not rated
- Annealed

Meets ASTM A681. Material type (A2) is stamped the length of the material for easy identification. Can be heat treated to a maximum attainable hardness of Rockwell C60-C62. Thickness tolerance is ±0.001″. Flatness tolerance is 0.010″. Width tolerance is +0.005″. Length tolerance is +1/4″. Sold in 1 1/2-ft. lengths. Each comes with a traceable lot number and physical test report.

Wd.		
1/16″ Thick		
1/2″	5852T12	$17.29
1″	5852T13	26.93
1/8″ Thick		
1/2″	5852T14	20.49
3/4″	5852T15	25.51
1″	5852T16	30.40
1 1/2″	5852T17	39.92
2″	5852T18	49.70
3/16″ Thick		
1/2″	5852T19	28.80
3/16″ Thick (Cont.)		
1″	5852T22	$41.85
1/4″ Thick		
1/4″	5852T23	30.04
1/2″	5852T24	34.55
3/4″	5852T25	42.23
1″	5852T26	47.12
1 1/2″	5852T27	64.65
2″	5852T28	80.05
3″	5852T32	96.98
4″	5852T33	115.99
3/8″ Thick		
3/8″	5852T34	$48.39
1/2″	5852T35	49.50
3/4″	5852T36	60.30
1″	5852T37	66.95
1 1/2″	5852T38	91.45
2″	5852T42	112.88
1/2″ Thick		
1/2″	5852T43	61.38
3/4″	5852T44	74.25
1″	5852T45	78.15
1 1/2″	5852T46	90.08
1/2″ Thick (Cont.)		
2″	5852T47	$110.06
3″	5852T48	152.36
4″	5852T52	193.94
6″	5852T53	252.84
3/4″ Thick		
3/4″	5852T54	84.96
1″	5852T55	98.86
1″ Thick		
1″	5852T56	114.95
1 1/2″	5852T57	145.33
2″	5852T58	177.04

Oversize Flat Stock—Ground Finish (Decarb Free)

- Hardness: Rockwell B93-B100
- Yield Strength: 51,000 psi
- Annealed

Meets ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C63-C65. Thickness tolerance is +0.050″. Flatness tolerance is 0.125″. Width tolerance is +0.090″. Length tolerance is +1/2″ for 1 1/2-ft. lengths, +3/4″ for 3-ft. lengths, and +1″ for 6-ft. lengths. **To Order:** Please specify 1 1/2-, 3-, or 6-ft. length.

Wd.		1 1/2 ft.	3 ft.	6 ft.
1/4″ Thick				
1/2″	8224K41	$20.40	$35.85	$61.81
2″	8224K42	39.35	69.15	119.23
3″	8224K76	43.73	76.86	132.52
4″	8224K43	66.61	117.07	201.85
1/2″ Thick				
1/2″	8224K11	29.67	52.14	89.90
3/4″	8224K12	33.86	59.51	102.60
1″	8224K13	46.87	82.38	142.03
2″	8224K14	66.42	116.74	201.27
2 1/2″	8224K15	81.03	142.42	245.55
3″	8224K16	93.48	164.29	283.26
4″	8224K77	122.37	215.08	370.83
5/8″ Thick				
5/8″	8224K17	$46.07	$80.97	$139.60
3/4″	8224K18	46.51	81.75	140.95
1″	8224K19	51.76	90.97	156.84
2″	8224K21	80.56	141.59	244.12
3″	8224K22	100.67	176.93	305.06
4″	8224K78	133.16	234.04	403.52
3/4″ Thick				
3/4″	8224K23	47.95	84.28	145.31
1″	8224K24	54.62	96.01	165.53
2″	8224K25	85.92	151.01	260.36
3″	8224K26	109.26	192.04	331.10
4″	8224K79	141.42	248.56	428.55
1″ Thick				
1″	8224K27	$65.17	$114.53	$197.47
1 1/2″	8224K28	87.83	154.36	266.14
2″	8224K29	104.46	183.59	316.54
2 1/2″	8224K31	124.96	219.62	378.66
3″	8224K32	132.97	233.70	402.93
1 1/2″ Thick				
2″	8224K44	169.90	298.61	514.85
4″	8224K45	311.47	547.43	943.85
6″	8224K46	422.45	742.49	1,280.15
2″ Thick				
2″	8224K47	235.97	414.73	715.06
4″	8224K48	386.65	679.57	1,171.67

Tight-Tolerance Sheets—Precision Ground Finish

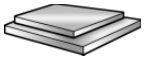

- Hardness: Rockwell C18-C20
- Yield Strength: Not rated
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C60-C62. Thickness tolerance is ±0.001″. Flatness tolerance is not rated. Width tolerance is +1/8″. Length tolerance is +3/16″.

Thick.	6″ Wd. × 6″ Lg.		12″ Wd. × 12″ Lg.		12″ Wd. × 36″ Lg.	
1/16″	4471T11	$37.28	4471T12	$83.25	4471T13	$235.81
1/8″	4471T21	42.11	4471T22	104.21	4471T23	288.79
3/16″	4471T31	45.70	4471T32	124.06	4471T33	327.75
1/4″	4471T41	50.95	4471T42	137.73	4471T43	346.38
3/8″	4471T51	$60.85	4471T52	$177.14	4471T53	$415.33
1/2″	4471T61	70.51	4471T62	185.26	4471T63	498.07
3/4″	4471T71	86.39	4471T72	264.06	4471T73	679.00
1″	4471T81	120.21	4471T82	387.16	4471T83	1,005.16

Oversize Rods—Ground Finish (Decarb Free)

- Hardness: 215 Brinell
- Yield Strength: 55,000 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C62-C65. Straightness tolerance is 1/8″ per 5 feet for 1-, 3-, and 6-ft. lengths; all others are not rated. Length tolerance is +1/4″.
To Order: Please specify 1-, 3-, or 6-ft. length where necessary.

Diameter	Tolerance
1/2″-1″	+0.039″
1 1/8″-1 3/4″	+0.043″
2″-3″	+0.051″
3 1/4″-4″	+0.083″
6″	+0.098″
8″	+0.157″

Dia.	1 ft.	3 ft.	6 ft.
1/2″	89925K11	$9.57	$21.05	$38.27
5/8″	89925K12	12.91	28.41	51.66
3/4″	89925K13	17.35	38.16	69.39
7/8″	89925K14	21.29	46.83	85.15
1″	89925K15	24.93	54.86	99.74
1 1/8″	89925K16	29.74	65.42	118.95
1 1/4″	89925K17	$34.27	$75.39	$137.08
1 1/2″	89925K18	46.02	101.25	184.09
1 3/4″	89925K19	57.93	127.45	231.72
2″	89925K21	72.88	160.33	291.50
2 1/4″	89925K22	94.67	208.27	378.67
2 1/2″	89925K25	110.47	243.03	441.88
2 3/4″	89925K28	$124.85	$274.67	$499.40
3″	89925K29	135.81	298.77	543.22
3 1/4″	89925K31	166.50	366.31	666.01
3 1/2″	89925K32	186.08	409.38	744.32
3 3/4″	89925K33	206.19	453.61	824.75
4″	89925K34	219.29	482.44	877.17

Dia.	1/2″ Long		1″ Long		1 1/2″ Long		2 1/2″ Long		3 1/2″ Long		6″ Long	
2″	—	—	8443K41	$15.86	—	—	—	—	8443K42	$36.97	8443K43	$57.64
3″	—	—	8443K51	20.01	—	—	—	—	8443K52	63.72	8443K53	99.34
4″	8443K11	$21.02	8443K12	38.38	8443K13	$52.32	8443K14	$79.16	8443K15	100.75	8443K18	132.30
6″	8443K21	31.57	8443K22	52.07	8443K23	73.33	8443K24	116.43	8443K25	153.54	8443K28	260.10
8″	8443K31	57.26	8443K32	88.54	8443K33	124.44	8443K34	191.88	8443K35	253.19	8443K38	447.83

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Multipurpose Air-Hardened A2 Tool Steel *(Material continued from previous page)*

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell B85-B103
- Yield Strength: 55,000 psi
- Annealed

Meet ASTM A681. Also known as drill rods. Can be heat treated to a maximum attainable hardness of Rockwell C62-C65. Straightness tolerance is 0.005″ per foot. Length tolerance is ±3/16″ for 1-ft. lengths, +1/8″ for 3-ft. lengths, and ±1 1/2″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. lengths. Rods with 1/16″ to 31/64″ diameters are available only in 3- and 6-ft. lengths.

INCH SIZES	
Diameter	Tolerance
1/16″-7/64″	±0.0003″
1/8″-31/64″	±0.0005″
1/2″-3″	±0.001″

METRIC SIZES	
Diameter	Tolerance
2-3 mm	±0.008 mm
4-12 mm	±0.013 mm
13-25 mm	±0.025 mm

INCH SIZES

Dia.		3 ft.	6 ft.
1/16″	8888K171	$1.77	$3.41
5/64″	8888K191	2.83	5.45
3/32″	8888K211	2.86	5.50
7/64″	8888K161	3.18	6.11
1/8″	8888K181	3.14	6.03
9/64″	8888K221	4.39	8.44
5/32″	8888K231	4.45	8.55
11/64″	8888K261	$4.60	$8.85
3/16″	8888K271	4.74	9.12
13/64″	8888K281	6.15	11.83
7/32″	8888K311	6.60	12.70
15/64″	8888K351	7.08	13.61
1/4″	8888K361	7.08	13.62
17/64″	8888K371	7.33	14.09
9/32″	8888K381	$7.61	$14.63
19/64″	8888K391	8.51	16.36
5/16″	8888K411	8.96	17.24
21/64″	8888K711	10.53	20.25
11/32″	8888K721	11.54	22.20
23/64″	8888K731	11.85	22.79
3/8″	8888K421	12.29	23.64
25/64″	8888K741	$14.70	$28.27
13/32″	8888K431	16.55	31.82
27/64″	8888K751	16.89	32.48
7/16″	8888K441	17.17	33.01
29/64″	8888K761	19.47	37.44
15/32″	8888K771	20.83	40.05
31/64″	8888K781	21.13	40.64

Dia.		1 ft.	3 ft.	6 ft.
1/2″	8888K65	$9.39	$21.40	$37.55
17/32″	8888K12	11.30	25.77	45.21
9/16″	8888K14	11.70	26.69	46.82
19/32″	8888K17	13.46	30.70	53.86
5/8″	8888K19	13.68	31.18	54.71
21/32″	8888K21	16.27	37.11	65.10
11/16″	8888K24	16.59	37.82	66.35
23/32″	8888K25	18.55	42.28	74.18
3/4″	8888K29	$19.53	$44.53	$78.12
13/16″	8888K32	23.09	52.64	92.35
7/8″	8888K34	25.23	57.54	100.94
1″	8888K47	28.68	65.38	114.70
1 1/16″	8888K48	32.36	73.78	129.44
1 1/8″	8888K49	36.29	82.74	145.16
1 1/4″	8888K51	41.94	95.62	167.75
1 3/8″	8888K52	50.76	115.73	203.04
1 1/2″	8888K53	$59.90	$136.56	$239.58
1 3/4″	8888K54	81.50	185.83	326.02
2″	8888K55	100.67	229.52	402.67
2 1/4″	8888K56	121.38	276.73	485.50
2 1/2″	8888K62	149.75	341.42	598.99
2 3/4″	8888K63	145.78	332.39	583.14
3″	8888K64	170.79	389.40	683.16

METRIC SIZES

Dia.		1 ft.	3 ft.	6 ft.
2 mm	8116K31	$2.03	$4.22	$8.12
3 mm	8116K32	2.60	5.41	10.41
4 mm	8116K33	2.78	5.78	11.12
5 mm	8116K34	3.44	7.14	13.74
6 mm	8116K35	4.58	9.54	18.34
7 mm	8116K36	4.63	9.63	18.52
8 mm	8116K37	5.71	13.02	22.84
9 mm	8116K38	6.94	14.44	27.76
10 mm	8116K39	$8.53	$17.73	$34.10
11 mm	8116K41	10.60	22.04	42.38
12 mm	8116K42	12.24	25.45	48.95
13 mm	8116K43	14.18	29.50	56.73
14 mm	8116K44	16.44	34.20	65.77
15 mm	8116K45	18.72	38.93	74.87
16 mm	8116K46	20.72	43.09	82.87
17 mm	8116K47	23.64	49.17	94.55
18 mm	8116K48	$26.62	$55.37	$106.49
19 mm	8116K49	29.22	60.78	116.89
20 mm	8116K51	33.81	70.32	135.23
21 mm	8116K52	35.81	74.48	143.23
22 mm	8116K53	39.30	81.74	157.20
23 mm	8116K54	42.13	87.64	168.53
24 mm	8116K55	46.52	96.77	186.09
25 mm	8116K56	50.48	105.00	201.93

Tight-Tolerance Rods with Material Certification—Precision Ground Finish

- Hardness: Rockwell B85-B103
- Yield Strength: 55,000 psi
- Annealed

Meet ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C62-C65. Straightness tolerance is 0.005″ per foot. Length tolerance is +1/8″. Sold in 3-ft. lengths. Each comes with a heat number and test report.

Diameter	Tolerance
1/16″	±0.0003″
1/8″-3/8″	±0.0005″
1/2″	±0.0010″

Dia.		
1/16″	6676T21	$4.86
1/8″	6676T31	8.14
3/16″	6676T41	$9.16
1/4″	6676T51	11.51
5/16″	6676T61	$13.95
3/8″	6676T71	19.20
1/2″	6676T81	$30.01

Hardened Undersize Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell C58-C60
- Yield Strength: Not rated
- Quenched and double-tempered

Diameter tolerance is –0.0003″. Straightness tolerance is not rated. Length tolerance is +0.062″. Sold in 1-ft. lengths.

Dia.		
1/16″	4345T31	$21.01
5/64″	4345T32	21.32
3/32″	4345T33	14.55
7/64″	4345T34	16.20
1/8″	4345T35	16.50
5/32″	4345T36	$17.43
3/16″	4345T37	17.82
7/32″	4345T38	17.84
1/4″	4345T41	17.87
9/32″	4345T42	19.54
5/16″	4345T43	$21.94
11/32″	4345T44	23.78
3/8″	4345T45	24.65
7/16″	4345T46	33.74
1/2″	4345T47	42.19
9/16″	4345T48	$60.60
5/8″	4345T51	63.55
3/4″	4345T52	83.42
7/8″	4345T53	117.36
1″	4345T54	138.44

High-Temperature Air-Hardened H13 Tool Steel

Because it is alloyed with chromium, molybdenum, tungsten, and vanadium, this steel is able to withstand the heat, pressure, and abrasion associated with high-temperature (up to 1000° F) applications.

Oversize Flat Stock—Ground Finish (Decarb Free)

- Hardness: Rockwell B92-B99
- Yield Strength: 50,000 psi
- Annealed

Meets ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C54. Thickness and width tolerances are +0.015″. Flatness tolerance is 0.015″. Length tolerance is +1/2″. Sold in 2-ft. lengths.

Wd.		
1/4″ Thick		
1″	1409T11	$88.45
2″	1409T12	128.30
3″	1409T13	166.12
4″	1409T14	203.58
1/2″ Thick		
1″	1409T21	$149.27
2″	1409T22	223.73
3″	1409T23	293.16
4″	1409T24	362.99
3/4″ Thick		
1″	1409T31	$194.17
2″	1409T32	276.06
3″	1409T33	362.69
4″	1409T34	427.87
1″ Thick		
1″	1409T41	$223.55
2″	1409T42	313.88
3″	1409T43	393.41
4″	1409T44	472.80

Warning! Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Wear-Resistant Air-Hardened D2 Tool Steel

If you're looking for a versatile high-carbon/high-chromium tool steel that has great wear and abrasion resistance, D2 is the choice for you. It also offers high hardness and is commonly used for long-run dies and blanking, as well as shear blades, burnishing tools, and gauges.

Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: Rockwell B89-B102
- Yield Strength: 50,000 psi
- Annealed

Meets ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C62-C65. Thickness tolerance is ±0.001″. Flatness tolerance is 0.015″ per 3 feet. Width tolerance is +0.005″. Length tolerance is +¼″ for 1½-ft. lengths and +½″ for 3-ft. lengths. **To Order:** Please specify 1½- or 3-ft. length.

Wd.		1½ ft.	3 ft.
1/16″ Thick			
¼″	88905K241	$14.16	$24.42
½″	88905K31	16.52	28.48
¾″	88905K32	21.63	37.29
1″	88905K33	24.77	42.71
1¼″	88905K34	28.05	48.37
1½″	88905K35	31.45	54.23
2″	88905K36	38.52	66.41
2½″	88905K37	45.48	78.42
3″	88905K38	46.99	81.01
4″	88905K39	65.56	113.03
5″	88905K41	90.17	155.47
6″	88905K42	126.19	217.57
3/32″ Thick			
¼″	88905K251	18.70	32.24
½″	88905K43	21.77	37.53
¾″	88905K44	26.51	45.71
1″	88905K45	31.94	55.07
1¼″	88905K46	36.13	62.30
1½″	88905K47	40.33	69.54
2″	88905K48	49.20	84.83
2½″	88905K49	57.74	99.55
4″	88905K52	82.70	142.58
5″	88905K53	107.87	185.98
6″	88905K54	118.56	204.41
1/8″ Thick			
¼″	88905K261	19.45	33.53
½″	88905K55	21.38	36.86

Wd.		1½ ft.	3 ft.
1/8″ Thick (Cont.)			
¾″	88905K56	$25.75	$44.39
1″	88905K57	29.77	51.33
1¼″	88905K58	33.08	57.04
1½″	88905K59	36.70	63.27
2″	88905K61	44.58	76.86
2½″	88905K62	51.30	88.44
3″	88905K63	56.57	97.54
4″	88905K64	70.89	122.22
5″	88905K65	86.51	149.16
6″	88905K66	102.14	176.11
5/32″ Thick			
½″	88905K67	27.50	47.42
1″	88905K68	39.53	68.15
1½″	88905K69	50.25	86.64
2″	88905K71	61.03	105.22
3″	88905K72	82.84	142.82
4″	88905K73	103.59	178.61
6″	88905K75	139.93	241.26
3/16″ Thick			
3/16″	88905K271	26.16	45.11
½″	88905K76	29.49	50.85
¾″	88905K77	35.07	60.47
1″	88905K78	40.34	69.55
1¼″	88905K79	40.94	70.58
1½″	88905K81	49.47	85.30
2″	88905K82	59.77	103.06
2½″	88905K83	69.50	119.82

Wd.		1½ ft.	3 ft.
3/16″ Thick (Cont.)			
3″	88905K84	$77.57	$133.75
4″	88905K85	92.82	160.04
6″	88905K87	134.82	232.45
1/4″ Thick			
¼″	88905K281	27.04	46.62
½″	88905K88	31.30	53.96
¾″	88905K89	35.69	61.54
1″	88905K91	39.24	67.65
1½″	88905K92	49.21	84.85
2″	88905K93	59.28	102.21
3″	88905K94	79.84	137.66
4″	88905K95	99.50	171.55
5″	88905K96	118.19	203.77
6″	88905K97	133.74	230.58
5/16″ Thick			
½″	88905K98	36.10	62.24
¾″	88905K321	42.26	72.86
1″	88905K322	49.76	85.80
1¼″	88905K323	53.92	92.96
1½″	88905K324	59.50	102.59
2″	88905K325	69.87	120.46
2½″	88905K327	79.23	136.61
3″	88905K329	90.00	155.18
4″	88905K331	111.89	192.92
3/8″ Thick			
⅜″	88905K311	38.06	65.62
½″	88905K334	43.98	75.83

Wd.		1½ ft.	3 ft.
3/8″ Thick (Cont.)			
¾″	88905K335	$52.11	$89.85
1″	88905K337	60.41	104.16
1¼″	88905K339	64.01	110.36
1½″	88905K341	68.90	118.80
2″	88905K342	82.93	142.99
2½″	88905K343	94.06	162.17
3″	88905K344	106.63	183.84
4″	88905K345	132.87	229.09
5″	88905K347	157.98	272.38
6″	88905K349	178.51	307.77
1/2″ Thick			
½″	88905K381	52.45	90.43
¾″	88905K351	63.89	110.16
1″	88905K352	70.82	122.10
1¼″	88905K353	76.70	132.25
1½″	88905K354	82.39	142.05
2″	88905K355	96.37	166.15
2½″	88905K357	109.46	188.73
3″	88905K359	123.90	213.62
4″	88905K361	154.09	265.67
6″	88905K363	211.67	364.95
5/8″ Thick			
⅝″	88905K391	64.15	110.60
3/4″ Thick			
¾″	88905K471	72.76	125.44
1″ Thick			
1″	88905K481	87.47	150.81

Oversize Tight-Tolerance Flat Stock—Precision Ground Finish

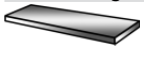

- Hardness: Rockwell B89-B102
- Yield Strength: 50,000 psi
- Annealed

Meets ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C62-C65. Thickness and width tolerances are +0.015″. Flatness tolerance is 0.015″ per 3 feet. Length tolerance is +¼″ for 1½-ft. lengths and +½″ for 3-ft. lengths. **To Order:** Please specify 1½- or 3-ft. length.

Wd.		1½ ft.	3 ft.
1/8″ Thick			
½″	8898K11	$22.14	$38.17
¾″	8898K12	25.98	44.80
1″	8898K13	30.05	51.81
1¼″	8898K78	33.96	58.56
1½″	8898K14	38.02	65.56
2″	8898K15	46.18	79.62
3″	8898K16	62.86	108.38
4″	8898K17	76.71	132.26
5/32″ Thick			
½″	8898K18	27.61	47.60
¾″	8898K19	32.45	55.95
1″	8898K21	37.74	65.07
2″	8898K23	58.46	100.79
4″	8898K25	97.15	167.50
3/16″ Thick			
½″	8898K26	29.67	51.15
¾″	8898K27	34.45	59.40
1″	8898K28	39.67	68.39
1¼″	8898K81	39.89	68.77
1½″	8898K29	49.93	86.08

Wd.		1½ ft.	3 ft.
3/16″ Thick (Cont.)			
2″	8898K31	$60.37	$104.09
3″	8898K32	81.57	140.64
4″	8898K33	99.33	171.26
6″	8898K419	136.13	234.71
1/4″ Thick			
½″	8898K34	30.39	52.40
¾″	8898K35	35.98	62.03
1″	8898K36	41.26	71.13
1¼″	8898K83	45.63	78.67
1½″	8898K37	51.68	89.10
2″	8898K38	62.16	107.18
3″	8898K39	81.69	140.84
4″	8898K41	94.38	162.72
5/16″ Thick			
½″	8898K42	36.09	62.22
¾″	8898K43	42.55	73.37
1″	8898K44	48.81	84.16
1¼″	8898K85	52.58	90.66
1½″	8898K45	61.03	105.23

Wd.		1½ ft.	3 ft.
5/16″ Thick (Cont.)			
2″	8898K46	$73.38	$126.51
3″	8898K47	96.45	166.29
4″	8898K48	117.00	201.72
3/8″ Thick			
½″	8898K49	42.75	73.71
¾″	8898K51	50.47	87.01
1″	8898K52	57.72	99.51
1¼″	8898K87	60.91	105.01
1½″	8898K53	72.27	124.61
2″	8898K54	86.90	149.83
3″	8898K55	114.01	196.57
4″	8898K56	138.65	239.05
6″	8898K433	189.73	327.12
1/2″ Thick			
¾″	8898K57	59.88	103.24
1″	8898K58	68.35	117.85
1¼″	8898K89	70.84	122.14
1½″	8898K59	85.76	147.86
2″	8898K61	102.54	176.80

Wd.		1½ ft.	3 ft.
1/2″ Thick (Cont.)			
3″	8898K62	$137.52	$237.11
4″	8898K63	163.34	281.62
6″	8898K437	223.97	386.15
3/4″ Thick			
¾″	8898K64	73.93	127.46
1″	8898K65	99.50	171.56
1½″	8898K66	104.09	179.47
2″	8898K67	108.41	186.91
3″	8898K68	155.20	267.58
4″	8898K69	198.70	342.58
6″	8898K442	275.58	475.13
8″	8898K443	327.34	564.38
1″ Thick			
1″	8898K71	84.55	145.78
1½″	8898K72	115.08	198.41
2″	8898K73	142.93	246.43
3″	8898K74	201.41	347.26
4″	8898K75	251.11	432.95
6″	8898K76	335.92	579.17

Oversize Flat Stock—Ground Finish (Decarb Free)

- Hardness: Rockwell C17-C21
- Yield Strength: 50,000 psi
- Annealed

Meets ASTM A681. Can be heat treated to a max. attainable hardness of Rockwell C62-C64. Thickness tolerance is +0.042″. Flatness tolerance is not rated. Width tolerance is +⅛″. Length tolerance is +¼″. **To Order:** Please specify 1½-, 3-, or 6-ft. length.

Wd.		1½ ft.	3 ft.	6 ft.
1/2″ Thick				
½″	1079T41	$32.10	$55.44	$97.27
¾″	1079T42	40.92	70.69	124.01
1″	1079T43	44.94	77.62	136.18
1½″	1079T44	46.41	80.16	140.63
2″	1079T45	54.63	94.36	165.54
3″	1079T46	72.85	125.83	220.76

Wd.		1½ ft.	3 ft.	6 ft.
5/8″ Thick				
¾″	1079T17	$44.91	$77.57	$136.09
1″	1079T18	48.88	84.42	148.11
2″	1079T19	88.94	153.63	269.52
3/4″ Thick				
1″	1079T23	55.77	96.32	168.99
2″	1079T24	100.52	173.63	304.61

Wd.		1½ ft.	3 ft.	6 ft.
3/4″ Thick (Cont.)				
3″	1079T25	$135.63	$234.26	$410.99
1″ Thick				
1″	1079T26	65.91	113.85	199.74
1½″	1079T27	90.36	156.08	273.82
2″	1079T28	114.70	198.11	347.57
2½″	1079T29	140.18	242.14	424.80

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Wear-Resistant Air-Hardened D2 Tool Steel *(Material continued from previous page)*

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell B89-B102
- Yield Strength: 50,000 psi
- Annealed

Meet ASTM A681. Also known as drill rod. Can be heat treated to a maximum attainable hardness of Rockwell C62-C65. Diameter tolerance is ±0.0005″ for 1/8″ to 7/16″ diameters and ±0.001″ for 1/2″ to 2″ diameters. Straightness tolerance is 0.005″ per foot. Length tolerance is ±3/16″ for 1-ft. lengths, +1/8″ for 3-ft. lengths, and ±1 1/2″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1/8″	88565K1	$8.08	$18.10	$32.33
3/16″	88565K2	8.39	18.80	33.57
1/4″	88565K3	10.36	23.21	41.44
5/16″	88565K4	12.44	27.87	49.76
3/8″	88565K5	17.59	39.40	70.36
7/16″	88565K6	$23.98	$53.70	$95.90
1/2″	88565K7	30.05	67.32	120.22
5/8″	88565K8	41.22	92.34	164.89
3/4″	88565K9	63.32	141.84	253.29
7/8″	88565K31	73.79	165.29	295.16
1″	88565K32	$91.19	$204.28	$364.78
1 1/4″	88565K33	144.72	324.17	578.88
1 1/2″	88565K34	195.91	438.83	783.62
1 3/4″	88565K85	244.37	547.39	977.49
2″	88565K86	302.56	677.72	1,210.22

Oversize Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 217-255 Brinell
- Yield Strength: 50,000 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C62-C64. Straightness tolerance is 1/8″ per 5 feet. Length tolerance is +1/4″.

To Order: Please specify 1-, 3-, or 6-ft. length where necessary.

Diameter	Tolerance
1/2″-1 3/4″	+0.045″
2″-2 3/4″	+0.051″
3″-4″	+0.083″

Diameter	Tolerance
6″	+0.125″
8″	+0.160″

Dia.		1 ft.	3 ft.	6 ft.
1/2″	89945K11	$7.28	$15.14	$29.12
5/8″	89945K12	9.94	20.68	39.77
3/4″	89945K13	14.53	30.23	58.13
7/8″	89945K14	19.84	41.28	79.38
1″	89945K15	23.15	48.15	92.59
1 1/8″	89945K16	27.34	56.88	109.38
1 1/4″	89945K17	$34.19	$71.10	$136.74
1 1/2″	89945K18	48.49	100.86	193.97
1 3/4″	89945K19	64.63	134.44	258.53
2″	89945K21	81.84	170.23	327.37
2 1/4″	89945K22	102.54	213.28	410.15
2 1/2″	89945K25	122.78	255.37	491.10
2 3/4″	89945K28	$128.16	$266.58	$512.65
3″	89945K29	152.29	316.76	609.15
3 1/4″	89945K31	171.53	356.79	686.13
3 1/2″	89945K33	191.20	397.69	764.79
3 3/4″	89945K34	211.40	439.71	845.59
4″	89945K35	232.13	482.83	928.52

Dia.	1/2″ Long		1″ Long		1 1/2″ Long		2 1/2″ Long		3 1/2″ Long		6″ Long	
4″	8846K11	$22.11	8846K12	$33.77	8846K13	$45.02	8846K14	$68.79	8846K15	$91.92	8846K18	$150.07
6″	8846K21	36.29	8846K22	58.07	8846K23	77.43	8846K24	118.28	8846K25	158.29	8846K28	258.08
8″	8846K31	57.05	8846K32	91.27	8846K33	123.46	8846K34	186.94	8846K35	243.99	8846K38	416.62

Shock-Resistant Water-Hardened S2 Tool Steel

An extremely rugged tool steel, S2 is used in applications requiring hardness, toughness, and resistance to shock and wear.

Hardened Balls—Reflective Finish

- Hardness: Rockwell C55-C58
- Yield Strength: 290,000 psi
- Quenched and tempered

Meet ASTM A681. Grade is 200. Diameter tolerance is ±0.002″. Sphericity is 0.0002″.

Dia.	Pkg. Qty.		Pkg.
3/16″	100	1995T11	$2.21
1/4″	100	1995T12	4.07
5/16″	100	1995T13	6.29
7/16″	50	1995T14	$6.67
1/2″	50	1995T15	8.42
9/16″	50	1995T16	10.67
11/16″	25	1995T17	$9.76
3/4″	25	1995T18	11.33
13/16″	25	1995T19	14.84
7/8″	10	1995T21	$7.73
15/16″	10	1995T22	8.94
1″	10	1995T23	10.46

Shock-Resistant Air-Hardened S7 Tool Steel

Even under repeated shock loads, this tool steel will retain its high strength and toughness, which makes it an ideal choice for tools such as chisels, rivet sets, punches, and driver bits.

Oversize Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: Rockwell C22-C23
- Yield Strength: 55,000-105,000 psi
- Annealed

Meets ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C56. Width and thickness tolerances are +0.015″. Flatness tolerance is 0.015″ per 3 feet. Length tolerance is +1/2″ for 1 1/2-ft. lengths and +3/4″ for 3-ft. lengths. **To Order:** Please specify 1 1/2- or 3-ft. length.

Wd.		1 1/2 ft.	3 ft.
1/8″ Thick			
1/2″	88815K11	$20.52	$35.38
3/4″	88815K12	24.90	42.93
1″	88815K13	29.27	50.46
1 1/4″	88815K64	32.77	56.50
1 1/2″	88815K14	37.18	64.10
2″	88815K15	45.85	79.05
3″	88815K16	63.31	109.15
4″	88815K17	80.64	139.03
5/32″ Thick			
1/2″	88815K18	24.59	42.40
3/4″	88815K19	29.81	51.40
1″	88815K21	35.21	60.70
1 1/4″	88815K66	39.70	68.45
1 1/2″	88815K22	44.88	77.38
2″	88815K23	55.49	95.67
5/32″ Thick (Cont.)			
3″	88815K24	$76.52	$131.93
4″	88815K25	97.60	168.27
3/16″ Thick			
1/2″	88815K26	26.40	45.51
3/4″	88815K27	31.83	54.88
1″	88815K28	38.09	65.68
1 1/4″	88815K68	41.90	72.24
1 1/2″	88815K29	48.15	83.02
2″	88815K31	59.24	102.14
3″	88815K32	81.34	140.25
4″	88815K33	103.44	178.35
1/4″ Thick			
1/2″	88815K34	28.82	49.69
3/4″	88815K35	34.64	59.72
1/4″ Thick (Cont.)			
1″	88815K36	$24.57	$42.36
1 1/4″	88815K71	45.23	77.99
1 1/2″	88815K37	51.01	87.95
2″	88815K38	62.51	107.77
3″	88815K39	85.52	147.45
4″	88815K41	108.89	187.74
5/16″ Thick			
1/2″	88815K73	32.34	55.75
3/4″	88815K42	38.51	66.40
1″	88815K43	44.73	77.12
1 1/4″	88815K75	49.94	86.10
1 1/2″	88815K44	56.18	96.87
2″	88815K45	68.57	118.23
3″	88815K46	93.30	160.87
4″	88815K47	121.54	209.55
3/8″ Thick			
1/2″	88815K48	$38.51	$66.40
3/4″	88815K49	45.71	78.81
1″	88815K51	52.92	91.25
1 1/4″	88815K77	59.00	101.72
1 1/2″	88815K79	66.10	113.97
2″	88815K52	80.54	138.87
4″	88815K53	138.90	239.48
1/2″ Thick			
3/4″	88815K58	57.84	99.73
1″	88815K59	67.26	115.96
1 1/4″	88815K82	75.92	130.89
1 1/2″	88815K84	85.17	146.85
2″	88815K61	103.99	179.29
3″	88815K62	141.48	243.93
4″	88815K63	179.02	308.66

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Shock-Resistant Air-Hardened S7 Tool Steel *(Material continued from previous page)*

Even under repeated shock loads, this tool steel will retain its high strength and toughness, which makes it an ideal choice for tools such as chisels, rivet sets, punches, and driver bits.

Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: 187-223 Brinell
- Yield Strength: Not rated
- Annealed

Meets ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C60. Thickness tolerance is ±0.001″. Flatness tolerance is not rated. Width tolerance is +0.005″. Lengths have a plus tolerance.

To Order: Please specify 1½- or 3-ft. length.

Wd.		1½ ft.	3 ft.
⅛″ Thick			
½″	7077T11	$17.92	$33.18
1″	7077T13	25.81	47.80
2″	7077T15	41.87	77.53
¼″ Thick			
½″	7077T21	28.67	53.10
¼″ Thick (Cont.)			
¾″	7077T23	$34.79	$64.42
1″	7077T25	40.63	75.24
1¼″	7077T27	46.10	85.37
1½″	7077T29	51.20	94.81
2″	7077T31	64.52	119.49
⅜″ Thick			
¾″	7077T41	$48.36	$89.55
1″	7077T43	56.38	104.40
½″ Thick			
¾″	7077T51	59.01	109.28
1″	7077T53	68.84	127.48
½″ Thick (Cont.)			
1½″	7077T55	$87.74	$162.48
2″	7077T57	107.29	198.68
4″	7077T59	176.19	326.28
1″ Thick			
1″	7077T61	104.31	193.16

Oversize Flat Stock—Ground Finish (Decarb Free)

- Hardness: Rockwell B90-B97
- Yield Strength: 55,000-105,000 psi
- Annealed

Meets ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C60-C62. Thickness tolerance is +0.080″. Flatness tolerance is not rated. Width tolerance is +0.040″. Length tolerance is +¼″.

To Order: Please specify 1½-, 3-, or 6-ft. length.

Wd.		1½ ft.	3 ft.	6 ft.
½″ Thick				
½″	8692K41	$20.60	$35.41	$64.38
¾″	8692K42	28.42	48.85	88.81
1″	8692K43	33.05	56.80	103.27
1½″	8692K44	46.25	79.50	144.54
2″	8692K45	65.09	111.87	203.40
3″	8692K46	78.95	135.70	246.72
⅝″ Thick				
¾″	8692K17	$33.47	$57.52	$104.59
1″	8692K18	40.48	69.57	126.49
2″	8692K19	70.78	121.66	221.20
3″	8692K21	106.22	182.57	331.95
¾″ Thick				
¾″	8692K22	37.44	64.35	117.00
1″	8692K23	44.68	76.79	139.62
¾″ Thick (Cont.)				
2″	8692K24	$79.76	$137.08	$249.24
3″	8692K25	117.03	201.15	365.72
1″ Thick				
1″	8692K26	54.63	93.89	170.71
1½″	8692K27	71.95	123.66	224.83
2″	8692K28	85.67	147.24	267.71
3″	8692K31	127.39	218.96	398.10

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell B90-B97
- Yield Strength: 105,000 psi
- Annealed

Meet ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C59-C61. Diameter tolerance is ±0.0005″ for 1/16″ to 7/16″ diameters and ±0.001″ for ½″ to 1¾″ diameters. Straightness tolerance is 0.005″ per foot. Length tolerance is ±3/16″ for 1-ft. lengths, +⅛″ for 3-ft. lengths, and ±1½″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/16″	88595K51	____	$3.69	____
3/32″	88595K52	____	4.99	____
⅛″	88595K53	____	6.56	____
5/32″	88595K54	____	8.57	____
3/16″	88595K55	____	9.82	____
7/32″	88595K56	____	12.17	____
¼″	88595K57	____	$13.23	____
5/16″	88595K58	____	15.56	____
⅜″	88595K59	____	21.26	____
7/16″	88595K61	____	28.99	____
½″	88595K75	$16.46	31.82	$54.87
⅝″	88595K76	23.41	45.26	78.03
¾″	88595K77	$36.07	$69.74	$120.25
⅞″	88595K78	49.84	96.35	166.12
1″	88595K79	64.21	124.14	214.03
1¼″	88595K81	86.77	167.75	289.23
1½″	88595K82	128.38	248.21	427.94
1¾″	88595K83	172.72	333.92	575.73

Oversize Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 187-229 Brinell
- Yield Strength: 50,000 psi
- Annealed

Meet ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C62-C64. Diameter tolerance is +0.045″ for ½″ to 1¾″ diameters, +0.051″ for 2″ to 2¾″ diameters, +0.083″ for 3″ to 4″ diameters, +0.125″ for 6″ diameters, and +0.160″ for 8″ diameters. Straightness tolerance is ⅛″ per 5 feet. Length tolerance is +¼″.

To Order: Please specify 1-, 3-, or 6-ft. length where necessary.

Dia.		1 ft.	3 ft.	6 ft.
½″	90015K61	$6.76	$15.69	$27.06
⅝″	90015K62	7.91	18.34	31.62
¾″	90015K63	10.49	24.34	41.96
⅞″	90015K64	12.44	28.85	49.74
1″	90015K65	19.43	45.07	77.70
1⅛″	90015K66	22.63	52.51	90.53
1¼″	90015K67	$26.60	$61.71	$106.40
1½″	90015K68	39.08	90.66	156.31
1¾″	90015K69	52.27	121.27	209.09
2″	90015K71	64.35	149.29	257.39
2¼″	90015K72	79.88	185.32	319.51
2½″	90015K75	96.96	224.95	387.85
2¾″	90015K78	$115.37	$267.66	$461.48
3″	90015K79	135.09	313.41	540.37
3¼″	90015K81	156.08	362.10	624.31
3½″	90015K82	180.31	418.31	721.22
3¾″	90015K83	214.22	496.99	856.88
4″	90015K84	225.67	523.55	902.67

Dia.	½″ Long		1″ Long		1½″ Long		2½″ Long		3½″ Long		4″ Long	
4″	8453K11	$14.94	8453K12	$26.87	8453K13	$34.18	8453K14	$54.13	8453K15	$74.07	8453K16	$85.45
6″	8453K21	31.34	8453K22	52.87	8453K23	74.16	8453K24	122.24	8453K25	168.82	8453K26	187.41
8″	8453K31	55.55	8453K32	92.56	8453K33	129.50	8453K34	204.29	8453K35	265.74	8453K36	302.41

Mold-Quality A6 Tool Steel

Often used for making plastic molds as it won't lose its shape and is easily heat treated, A6 also has good strength, wear resistance, and toughness.

Oversize Flat Stock—Ground Finish (Decarb Free)

- Hardness: 217-248 Brinell
- Yield Strength: 110,000 psi
- Annealed

Meets ASTM A681. Can be heat treated to a maximum attainable hardness of Rockwell C61-C62. Width and thickness tolerances are +0.015″. Flatness tolerance is not rated. Length tolerance is +⅜″ for 1½-ft. lengths and +⅝″ for 3-ft. lengths.

To Order: Please specify 1½- or 3-ft. length.

Wd.		1½ ft.	3 ft.
¼″ Thick			
½″	88785K34	$37.48	$72.08
1½″	88785K38	59.65	114.72
¼″ Thick (Cont.)			
2″	88785K39	$71.73	$137.95
3″	88785K41	103.14	198.35
5/16″ Thick			
1″	88785K45	$60.65	$116.64
1½″	88785K46	71.73	137.95
½″ Thick			
1″	88785K59	$117.47	$225.90

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Easy-to-Machine Mold-Quality P20 Tool Steel

Furnished in a hardened condition, this material is readily machinable. It is often used to make molds for plastics and die-casting dies for low-temperature alloys such as zinc.

Hardened Rods—Unpolished Mill Finish (Decarb Free)

- Hardness: 285-340 Brinell
- Yield Strength: 110,000 psi
- Quenched and tempered

Diameter tolerance is +0.043″ for 1/2″ to 1 3/4″ diameters, +0.051″ for 2″ to 2 1/2″ diameters, +0.135″ for 3″ to 6″ diameters, +0.157″ for 8″ diameter, and +0.250″ for 10″ diameter. Straightness tolerance is 3/16″ per foot. Length tolerance is +1/4″.

To Order: Please specify 1-, 3-, or 6-ft. length where necessary.

Dia.		1 ft.	3 ft.	6 ft.
1/2″	9098K11	$9.28	$21.16	$37.12
3/4″	9098K13	16.89	38.50	67.55
1″	9098K15	26.05	59.41	104.22
1 1/4″	9098K17	37.27	84.97	149.07
1 1/2″	9098K18	$49.92	$113.83	$199.70
1 3/4″	9098K19	62.63	142.81	250.54
2″	9098K21	77.47	176.63	309.88
2 1/2″	9098K23	$114.00	$259.91	$455.98
3″	9098K25	155.99	355.65	623.94
3 1/2″	9098K27	202.90	462.61	811.59

Dia.	1/2″ Long		1″ Long		1 1/2″ Long		2 1/2″ Long		4″ Long		6″ Long	
4″	9086K11	$16.68	9086K12	$32.09	9086K13	$46.21	9086K14	$70.60	9086K16	$112.96	9086K18	$154.04
6″	9086K21	28.31	9086K22	54.46	9086K23	78.43	9086K24	109.80	9086K26	191.71	9086K28	261.44
8″	9086K31	44.92	9086K32	86.53	9086K33	119.79	9086K34	182.99	9086K36	292.80	9086K38	399.29
10″	9086K41	81.86	9086K42	152.13	9086K43	218.30	9086K44	306.98	9086K46	470.70	9086K48	682.18

Very Hard M2/M7 High-Speed Tool Steel

A high molybdenum content increases this material's hardness, which means it will resist softening and maintain sharp cutting edges even at elevated temperatures. It is a great choice for high-speed cutting operations such as drilling, reaming, tapping, milling, and piercing.

Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: 255 Brinell
- Yield Strength: Not rated
- Annealed

Meets ASTM A600. Can be heat treated to a maximum attainable hardness of Rockwell C64. Thickness tolerance is ±0.001″. Flatness tolerance is not rated. Width tolerance is +0.005″. Length tolerance is +1/4″ for 1 1/2-ft. lengths and +1/2″ for 3-ft. lengths. **To Order:** Please specify 1 1/2- or 3-ft. length.

Wd.		1 1/2 ft.	3 ft.
1/16″ Thick			
1/2″	7319K11	$34.85	$61.14
3/4″	7319K12	45.74	80.25
1″	7319K13	53.84	94.46
1/8″ Thick			
1/2″	7319K32	$48.57	$85.21
3/4″	7319K33	60.06	105.37
1 1/2″	7319K36	93.42	163.89
1/8″ Thick (Cont.)			
2″	7319K37	$115.36	$202.39
3/16″ Thick			
1/2″	7319K51	63.49	111.38
1/4″ Thick			
1/2″	7319K62	$74.42	$130.56
3/4″	7319K63	90.21	158.27
1 1/2″	7319K66	142.19	249.45

Hardened Sheets—Unpolished Mill Finish

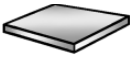

- Hardness: Rockwell C62-C66
- Yield Strength: Not rated
- As produced (rolled)

Sheets 0.029″-0.039″ thick are furnished cold rolled and have a thickness tolerance of ±0.003″; 0.055″ thicknesses are hot rolled and have a thickness tolerance of ±0.01″. Flatness, width, and length tolerances are not rated.

Thick.		6″×12″
0.029″	2634T13	$102.55
0.039″	2634T14	$109.09
0.055″	2634T15	$119.55

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell B99-B101
- Yield Strength: 105,000 psi
- Annealed

Meet ASTM A600. Also known as drill rod. Can be heat treated to a maximum attainable hardness of Rockwell C65. Diameter tolerance is ±0.0005″ for 1/16″ to 7/16″ diameters and ±0.001″ for 1/2″ to 1 1/4″ diameters. Straightness tolerance is 0.005″ per foot. Length tolerance is +1/8″. Sold in 3-ft. lengths.

Dia.		
1/16″	88995K11	$7.46
5/64″	88995K12	11.10
3/32″	88995K13	14.01
7/64″	88995K14	14.31
1/8″	88995K15	$16.38
5/32″	88995K16	19.89
3/16″	88995K17	22.00
1/4″	88995K18	29.62
5/16″	88995K19	$38.84
3/8″	88995K21	54.46
7/16″	88995K22	74.19
1/2″	88995K23	93.58
5/8″	88995K24	$132.21
3/4″	88995K25	190.10
1″	88995K26	298.74
1 1/4″	88995K27	405.00

Oversize Rods—Polished Finish (Decarb Free)

- Hardness: 217-255 Brinell
- Yield Strength: 60,000 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C66. Diameter tolerance is +0.045″. Straightness tolerance is 3/16″ per foot. Length tolerance is +1/4″.

To Order: Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1/2″	8518K11	$29.11	$65.20	$116.43
5/8″	8518K12	40.66	91.07	162.62
3/4″	8518K13	53.82	120.56	215.29
1″	8518K15	$68.44	$153.31	$273.77
1 1/4″	8518K17	95.19	213.23	380.76
1 1/2″	8518K18	128.52	287.88	514.08
1 3/4″	8518K19	$165.59	$370.92	$662.35
2″	8518K21	206.04	461.54	824.17
3″	8518K25	424.44	950.73	1,697.74

Hardened Oversize Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell C62-C64
- Yield Strength: Not rated
- Triple tempered

Also known as reamer blanks. Diameter tolerance is +0.0002″. Straightness tolerance is 0.001″. Length tolerance is ±1/32″.

Also Available: Other fractional sizes through 1″, letter sizes A to Z, and wire gauge size Nos. 1 to 80. Please ask for 3023A71 and specify size.

Dia.	Lg.		
1/64″	3/4″	3023A211	$1.80
1/32″	1 3/8″	3023A212	1.80
3/64″	1 3/4″	3023A213	1.82
1/16″	1 7/8″	3023A214	1.82
5/64″	2″	3023A215	1.80
3/32″	2 1/4″	3023A216	$1.80
7/64″	2 5/8″	3023A217	1.80
1/8″	2 3/4″	3023A218	1.80
9/64″	2 7/8″	3023A219	1.80
5/32″	3 1/8″	3023A221	2.27
3/16″	3 1/2″	3023A223	$2.27
7/32″	3 3/4″	3023A225	3.16
1/4″	4″	3023A227	3.61
9/32″	4 1/4″	3023A229	4.07
5/16″	4 1/2″	3023A232	4.76
21/64″	4 5/8″	3023A233	$5.21
11/32″	4 3/4″	3023A234	5.67
3/8″	5″	3023A236	6.78
7/16″	5 1/2″	3023A241	9.73
1/2″	6″	3023A245	12.21

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Very Hard M2/M7 High-Speed Tool Steel *(Material continued from previous page)*

A high molybdenum content increases this material's hardness, which means it will resist softening and maintain sharp cutting edges even at elevated temperatures. It is a great choice for high-speed cutting operations such as drilling, reaming, tapping, milling, and piercing.

Hardened Undersize Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell C62-C64
- Yield Strength: Not rated
- Triple tempered

Also known as drill rods. Diameter tolerance is –0.0002″. Straightness tolerance is 0.001″. Length tolerance is ±1/32″.
Rod sets are furnished in metal indexed cases with fold-out panels for easy size selection.

INCH SIZES

Dia.	Trade Size	Lg.		
0.0135″	80	3/4″	3009A298	$1.94
0.0145″	79	3/4″	3009A297	1.94
0.0156″	1/64″	3/4″	3009A111	1.84
0.0160″	78	7/8″	3009A296	1.93
0.0180″	77	7/8″	3009A295	1.93
0.0200″	76	7/8″	3009A294	1.91
0.0210″	75	1″	3009A293	1.91
0.0225″	74	1″	3009A292	1.90
0.0240″	73	1 1/8″	3009A291	1.90
0.0250″	72	1 1/8″	3009A289	1.89
0.0260″	71	1 1/4″	3009A288	1.89
0.0280″	70	1 1/4″	3009A287	1.88
0.0292″	69	1 3/8″	3009A286	1.88
0.0310″	68	1 3/8″	3009A285	1.87
0.0312″	1/32″	1 3/8″	3009A112	1.95
0.0320″	67	1 3/8″	3009A284	1.87
0.0330″	66	1 3/8″	3009A283	1.86
0.0350″	65	1 1/2″	3009A282	1.86
0.0360″	64	1 1/2″	3009A281	1.85
0.0370″	63	1 1/2″	3009A279	1.85
0.0380″	62	1 1/2″	3009A278	1.84
0.0390″	61	1 5/8″	3009A277	1.83
0.0400″	60	1 5/8″	3009A276	2.16
0.0410″	59	1 5/8″	3009A275	2.16
0.0420″	58	1 5/8″	3009A274	2.14
0.0430″	57	1 3/4″	3009A273	2.14
0.0465″	56	1 3/4″	3009A272	2.13
0.0469″	3/64″	1 3/4″	3009A113	1.96
0.0520″	55	1 7/8″	3009A271	2.13
0.0550″	54	1 7/8″	3009A269	2.12
0.0595″	53	1 7/8″	3009A268	2.12
0.0625″	1/16″	1 7/8″	3009A114	1.96
0.0635″	52	1 7/8″	3009A267	2.11
0.0670″	51	2″	3009A266	2.11
0.0700″	50	2″	3009A265	2.20
0.0730″	49	2″	3009A264	2.19
0.0760″	48	2″	3009A263	2.19
0.0781″	5/64″	2″	3009A115	1.97
0.0785″	47	2″	3009A262	2.18
0.0810″	46	2 1/8″	3009A261	2.10
0.0820″	45	2 1/8″	3009A259	2.10
0.0860″	44	2 1/8″	3009A258	2.09
0.0890″	43	2 1/4″	3009A257	2.09
0.0935″	42	2 1/4″	3009A256	2.08
0.0937″	3/32″	2 1/4″	3009A116	1.97
0.0960″	41	2 3/8″	3009A255	2.08
0.0980″	40	2 3/8″	3009A254	2.07
0.0995″	39	2 3/8″	3009A253	$2.07
0.1015″	38	2 1/2″	3009A252	2.06
0.1040″	37	2 1/2″	3009A251	2.06
0.1065″	36	2 1/2″	3009A249	2.05
0.1094″	7/64″	2 5/8″	3009A117	1.98
0.1100″	35	2 5/8″	3009A248	2.05
0.1110″	34	2 5/8″	3009A247	2.04
0.1130″	33	2 5/8″	3009A246	2.04
0.1160″	32	2 3/4″	3009A245	2.02
0.1200″	31	2 3/4″	3009A244	2.02
0.1250″	1/8″	2 3/4″	3009A118	1.98
0.1285″	30	2 3/4″	3009A243	2.01
0.1360″	29	2 7/8″	3009A242	2.01
0.1405″	28	2 7/8″	3009A241	2.00
0.1406″	9/64″	2 7/8″	3009A119	1.99
0.1440″	27	3″	3009A239	2.00
0.1470″	26	3″	3009A238	1.99
0.1495″	25	3″	3009A237	2.51
0.1520″	24	3 1/8″	3009A236	2.96
0.1540″	23	3 1/8″	3009A235	2.94
0.1562″	5/32″	3 1/8″	3009A121	2.30
0.1570″	22	3 1/8″	3009A234	2.91
0.1590″	21	3 1/4″	3009A233	2.89
0.1610″	20	3 1/4″	3009A232	2.87
0.1660″	19	3 1/4″	3009A231	2.85
0.1695″	18	3 1/4″	3009A229	2.83
0.1719″	11/64″	3 1/4″	3009A122	2.61
0.1730″	17	3 3/8″	3009A228	2.78
0.1770″	16	3 3/8″	3009A227	2.76
0.1800″	15	3 3/8″	3009A226	2.74
0.1820″	14	3 3/8″	3009A225	2.72
0.1850″	13	3 1/2″	3009A224	2.69
0.1875″	3/16″	3 1/2″	3009A123	2.41
0.1890″	12	3 1/2″	3009A223	2.67
0.1910″	11	3 1/2″	3009A222	2.65
0.1935″	10	3 5/8″	3009A221	3.25
0.1960″	9	3 5/8″	3009A219	3.20
0.1990″	8	3 5/8″	3009A218	3.16
0.2010″	7	3 5/8″	3009A217	3.11
0.2031″	13/64″	3 5/8″	3009A124	3.02
0.2040″	6	3 3/4″	3009A216	3.07
0.2055″	5	3 3/4″	3009A215	3.57
0.2090″	4	3 3/4″	3009A214	3.53
0.2130″	3	3 3/4″	3009A213	3.49
0.2187″	7/32″	3 3/4″	3009A125	3.31
0.2210″	2	3 7/8″	3009A212	3.44
0.2280″	1	3 7/8″	3009A211	3.40
0.2340″	A	3 7/8″	3009A182	$3.82
0.2344″	15/64″	3 7/8″	3009A126	3.83
0.2380″	B	4″	3009A183	3.92
0.2420″	C	4″	3009A184	4.01
0.2460″	D	4″	3009A185	4.11
0.2500″	E, 1/4″	4″	3009A127	4.16
0.2570″	F	4 1/8″	3009A187	4.53
0.2610″	G	4 1/8″	3009A188	4.63
0.2656″	17/64″	4 1/8″	3009A128	4.69
0.2660″	H	4 1/8″	3009A189	4.73
0.2720″	I	4 1/8″	3009A191	4.95
0.2770″	J	4 1/8″	3009A192	5.07
0.2810″	K	4 1/4″	3009A193	5.19
0.2812″	9/32″	4 1/4″	3009A129	5.26
0.2900″	L	4 1/4″	3009A194	5.31
0.2950″	M	4 3/8″	3009A195	5.56
0.2969″	19/64″	4 3/8″	3009A131	5.67
0.3020″	N	4 3/8″	3009A196	5.68
0.3125″	5/16″	4 1/2″	3009A132	5.75
0.3160″	O	4 1/2″	3009A197	5.94
0.3230″	P	4 5/8″	3009A198	6.18
0.3281″	21/64″	4 5/8″	3009A133	6.24
0.3320″	Q	4 3/4″	3009A199	6.30
0.3390″	R	4 3/4″	3009A201	6.42
0.3438″	11/32″	4 3/4″	3009A134	6.49
0.3480″	S	4 7/8″	3009A202	7.19
0.3580″	T	4 7/8″	3009A203	7.46
0.3594″	23/64″	4 7/8″	3009A135	7.50
0.3680″	U	5″	3009A204	8.01
0.3750″	3/8″	5″	3009A136	8.04
0.3770″	V	5″	3009A205	8.27
0.3860″	W	5 1/8″	3009A206	8.78
0.3906″	25/64″	5 1/8″	3009A137	8.82
0.3970″	X	5 1/8″	3009A207	9.04
0.4040″	Y	5 1/4″	3009A208	9.57
0.4062″	13/32″	5 1/4″	3009A138	9.77
0.4130″	Z	5 1/4″	3009A209	9.83
0.4219″	27/64″	5 3/8″	3009A139	9.97
0.4375″	7/16″	5 1/2″	3009A141	10.36
0.4531″	29/64″	5 5/8″	3009A142	10.58
0.4688″	15/32″	5 3/4″	3009A143	10.83
0.4844″	31/64″	5 7/8″	3009A144	12.29
0.5000″	1/2″	6″	3009A145	12.97
0.5625″	9/16″	6″	3009A149	19.02
0.6250″	5/8″	6″	3009A154	21.63
0.6875″	11/16″	6″	3009A158	23.41
0.7500″	3/4″	6″	3009A163	25.07
1.0000″	1″	6″	3009A181	43.15

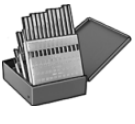

Size Range	Rods/Set		
1/16″-1/2″ × 64ths	29	2952A5	$139.37
A-Z	26	2952A8	139.37

Size Range	Rods/Set		
1-60	60	2952A6	$121.03
61-80	20	2952A7	40.34

METRIC SIZES

Dia., mm	Lg.		
1.00	1 5/8″	2900A211	$2.27
1.05	1 5/8″	2900A212	2.28
1.10	1 3/4″	2900A213	2.29
1.15	1 3/4″	2900A214	2.30
1.20	1 7/8″	2900A215	2.31
1.25	1 7/8″	2900A216	2.32
1.30	1 7/8″	2900A217	2.33
1.35	1 7/8″	2900A218	2.34
1.40	1 7/8″	2900A219	2.35
1.45	1 7/8″	2900A221	2.37
1.50	1 7/8″	2900A222	2.38
1.55	1 7/8″	2900A223	2.39
1.60	1 7/8″	2900A224	2.40
1.65	2″	2900A225	$2.41
1.70	2″	2900A226	2.42
1.75	2″	2900A227	2.43
1.80	2″	2900A228	2.44
1.85	2″	2900A229	2.45
1.90	2″	2900A231	2.46
1.95	2″	2900A232	2.48
2.00	2 1/8″	2900A234	2.49
2.05	2 1/8″	2900A235	2.50
2.10	2 1/8″	2900A236	2.51
2.15	2 1/8″	2900A237	2.52
2.20	2 1/4″	2900A238	2.53
2.25	2 1/4″	2900A239	2.54
2.30	2 1/4″	2900A241	$2.55
2.35	2 1/4″	2900A242	2.56
2.40	2 3/8″	2900A243	2.57
2.45	2 3/8″	2900A244	2.57
2.50	2 3/8″	2900A245	2.60
2.55	2 1/2″	2900A246	2.61
2.60	2 1/2″	2900A247	2.62
2.65	2 1/2″	2900A248	2.63
2.70	2 1/2″	2900A249	2.64
2.75	2 5/8″	2900A251	2.65
2.80	2 5/8″	2900A252	2.66
2.85	2 5/8″	2900A253	2.67
2.90	2 3/4″	2900A254	2.68
2.95	2 3/4″	2900A255	$2.69
3.00	2 3/4″	2900A256	2.71
3.05	2 3/4″	2900A257	2.72
3.10	2 3/4″	2900A258	2.73
3.15	2 3/4″	2900A259	2.74
3.20	2 3/4″	2900A261	2.75
3.25	2 3/4″	2900A262	2.76
3.30	2 7/8″	2900A263	2.77
3.35	2 7/8″	2900A264	2.78
3.40	2 7/8″	2900A265	2.79
3.45	2 7/8″	2900A266	2.80
3.50	2 7/8″	2900A267	2.82
3.55	2 7/8″	2900A268	2.83

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about steel, see page 3652.

For information on the physical, chemical, and mechanical properties of steel, as well as heat-treating data for tool steel, go to mcmaster.com and search for **88645KAC**.

Very Hard M2/M7 High-Speed Tool Steel *(Material continued from previous page)*

Hardened Undersize Tight-Tolerance Rods—Precision Ground Finish (Cont.)

METRIC SIZES (CONT.)

Dia., mm	Lg.		
3.60	3″	2900A269	$2.86
3.65	3″	2900A271	2.87
3.70	3″	2900A272	2.88
3.75	3″	2900A273	2.89
3.80	3 1/8″	2900A274	2.91
3.85	3 1/8″	2900A275	2.92
3.90	3 1/8″	2900A276	2.93
3.95	3 1/8″	2900A277	2.94
4.00	3 1/4″	2900A278	2.95
4.05	3 1/4″	2900A279	2.96
4.10	3 1/4″	2900A281	2.97
4.15	3 1/4″	2900A282	2.98
4.20	3 1/4″	2900A283	2.99
4.25	3 1/4″	2900A284	3.01
4.30	3 1/4″	2900A285	3.02
4.35	3 3/8″	2900A286	3.02
4.40	3 3/8″	2900A287	3.03
4.45	3 3/8″	2900A288	3.05
4.50	3 3/8″	2900A289	3.06
4.55	3 3/8″	2900A291	3.07
4.60	3 3/8″	2900A292	3.08
4.65	3 1/2″	2900A293	3.09
4.70	3 1/2″	2900A294	3.10
4.75	3 1/2″	2900A295	3.11
4.80	3 1/2″	2900A296	3.12
4.85	3 1/2″	2900A297	3.13
4.90	3 5/8″	2900A298	4.08
4.95	3 5/8″	2900A299	3.38
5.00	3 5/8″	2900A311	3.44
5.05	3 5/8″	2900A312	3.51
5.10	3 5/8″	2900A313	$3.58
5.15	3 3/4″	2900A314	3.64
5.20	3 3/4″	2900A315	3.71
5.25	3 3/4″	2900A316	3.77
5.30	3 3/4″	2900A317	3.84
5.35	3 3/4″	2900A318	3.90
5.40	3 3/4″	2900A319	3.97
5.45	3 7/8″	2900A321	4.08
5.50	3 7/8″	2900A322	4.14
5.55	3 7/8″	2900A323	4.21
5.60	3 7/8″	2900A324	4.28
5.65	3 7/8″	2900A325	4.34
5.70	3 7/8″	2900A326	4.41
5.75	3 7/8″	2900A327	4.48
5.80	3 7/8″	2900A328	4.54
5.85	3 7/8″	2900A329	4.61
5.90	3 7/8″	2900A331	4.68
5.95	3 7/8″	2900A332	4.75
6.00	4″	2900A333	4.79
6.05	4″	2900A334	4.85
6.10	4″	2900A335	4.92
6.15	4″	2900A336	4.98
6.20	4″	2900A337	5.05
6.25	4″	2900A338	5.12
6.30	4″	2900A339	5.18
6.40	4 1/8″	2900A341	5.22
6.50	4 1/8″	2900A342	5.29
6.60	4 1/8″	2900A343	5.36
6.70	4 1/8″	2900A344	5.42
6.80	4 1/8″	2900A345	5.49
6.90	4 1/8″	2900A346	$5.56
7.00	4 1/8″	2900A347	5.62
7.10	4 1/4″	2900A348	5.71
7.20	4 1/4″	2900A349	5.78
7.30	4 1/4″	2900A351	5.84
7.40	4 3/8″	2900A352	5.17
7.50	4 3/8″	2900A353	5.95
7.60	4 3/8″	2900A354	6.07
7.70	4 1/2″	2900A355	6.19
7.80	4 1/2″	2900A356	6.31
7.90	4 1/2″	2900A357	6.43
8.00	4 1/2″	2900A358	6.56
8.10	4 5/8″	2900A359	6.68
8.20	4 5/8″	2900A361	6.80
8.30	4 5/8″	2900A362	6.92
8.40	4 3/4″	2900A363	7.06
8.50	4 3/4″	2900A364	7.18
8.60	4 3/4″	2900A365	7.30
8.70	4 3/4″	2900A366	7.43
8.80	4 7/8″	2900A367	7.52
8.90	4 7/8″	2900A368	7.65
9.00	4 7/8″	2900A369	7.77
9.10	4 7/8″	2900A371	7.89
9.20	5″	2900A372	8.03
9.30	5″	2900A373	8.15
9.40	5″	2900A374	8.27
9.50	5″	2900A375	8.39
9.60	5 1/8″	2900A376	8.51
9.70	5 1/8″	2900A377	8.77
9.80	5 1/8″	2900A378	9.02
9.90	5 1/8″	2900A379	$9.27
10.00	5 1/8″	2900A381	9.53
10.10	5 1/4″	2900A382	9.76
10.20	5 1/4″	2900A383	10.01
10.30	5 1/4″	2900A384	10.26
10.40	5 1/4″	2900A385	10.52
10.50	5 3/8″	2900A386	10.77
10.60	5 3/8″	2900A387	11.02
10.70	5 3/8″	2900A388	11.27
10.80	5 1/2″	2900A389	11.53
10.90	5 1/2″	2900A391	11.78
11.00	5 1/2″	2900A392	12.04
11.10	5 1/2″	2900A393	12.29
11.20	5 5/8″	2900A394	12.54
11.30	5 5/8″	2900A395	12.79
11.40	5 5/8″	2900A396	13.05
11.50	5 5/8″	2900A397	13.30
11.60	5 3/4″	2900A398	13.58
11.70	5 3/4″	2900A399	13.83
11.80	5 3/4″	2900A411	14.08
11.90	5 3/4″	2900A412	14.33
12.00	5 7/8″	2900A413	14.56
12.10	5 7/8″	2900A414	14.82
12.20	5 7/8″	2900A415	15.07
12.30	5 7/8″	2900A416	15.32
12.40	5 7/8″	2900A417	15.58
12.50	6″	2900A418	15.83
12.60	6″	2900A419	16.08
12.70	6″	2900A421	16.33

Ultra-Hard M42 High-Speed Tool Steel

This material is often called cobalt steel. It also contains molybdenum, making it suitable for working the hardest metals.

Hardened Undersize Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell C66-C68
- Yield Strength: Not rated
- Triple tempered

Also known as drill rod. Diameter tolerance is –0.0002″. Straightness tolerance is not rated. Length tolerance is +0.060″.

Dia.	Lg.		
1/64″	1 1/2″	8813A12	$6.18
1/32″	1 1/2″	8813A14	3.79
3/64″	1 3/4″	8813A16	3.33
1/16″	1 7/8″	8813A18	3.38
5/64″	2″	8813A22	3.49
3/32″	2 1/4″	8813A24	3.68
7/64″	2 3/4″	8813A26	3.83
1/8″	2 3/4″	8813A28	3.93
9/64″	3″	8813A32	$4.04
5/32″	3 1/4″	8813A34	4.57
11/64″	3 1/4″	8813A36	4.67
3/16″	3 1/2″	8813A38	5.26
13/64″	3 5/8″	8813A42	6.21
7/32″	3 3/4″	8813A44	6.89
15/64″	3 7/8″	8813A46	7.53
1/4″	4″	8813A48	8.18
17/64″	4 1/8″	8813A52	$9.26
9/32″	4 1/4″	8813A54	9.60
19/64″	4 3/8″	8813A56	10.53
5/16″	4 1/2″	8813A58	11.43
21/64″	4 5/8″	8813A62	12.33
11/32″	4 3/4″	8813A64	13.57
23/64″	4 7/8″	8813A66	14.79
3/8″	5″	8813A68	16.64
25/64″	5 1/8″	8813A81	$17.82
13/32″	5 1/4″	8813A82	19.61
27/64″	5 3/8″	8813A83	21.68
7/16″	5 1/2″	8813A84	23.18
29/64″	5 5/8″	8813A85	24.55
15/32″	5 3/4″	8813A86	25.70
31/64″	5 7/8″	8813A87	27.71
1/2″	6″	8813A88	29.49

Ultra-Wear-Resistant M4 High-Speed Tool Steel

Comparable to CPM Rex M4, this material has a high vanadium content and is made from powdered metal, leading to excellent wear resistance. Ideal for cold work punches, die inserts, and cutting applications involving high speed and fine cuts.

Oversize Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: 223-255 Brinell
- Yield Strength: 60,000 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C66. Thickness and width tolerances are +0.015″. Flatness tolerance is not rated. Length tolerance is +1/4″. Sold in 1 1/2-ft. lengths.

Wd.		
1/8″ Thick		
1/2″	9211K34	$80.56
3/4″	9211K52	91.73
1″	9211K53	98.34
1 1/4″	9211K54	106.32
1 1/2″	9211K55	121.05
2″	9211K56	139.89
1/8″ Thick (Cont.)		
3″	9211K57	$188.95
1/4″ Thick		
1/2″	9211K65	111.55
3/4″	9211K66	117.96
1″	9211K67	139.66
1 1/4″	9211K68	153.55
1/4″ Thick (Cont.)		
1 1/2″	9211K69	$203.06
2″	9211K71	221.37
3″	9211K72	284.79
3/8″ Thick		
1/2″	9211K81	142.26
3/4″	9211K82	163.95
3/8″ Thick (Cont.)		
1″	9211K83	$190.20
1 1/4″	9211K84	217.43
1 1/2″	9211K85	249.84
2″	9211K86	304.42
3″	9211K87	398.74

Oversize Rods—Polished (Decarb Free)

- Hardness: 215-280 Brinell
- Yield Strength: 60,000 psi
- Annealed

Can be heat treated to a maximum attainable hardness of Rockwell C66. Diameter tolerance is +0.017″ for 1/2″ to 1 3/4″ diameters and +0.034″ for 2″ diameter. Straightness tolerance is ±3/16″ per foot. Length tolerance is +1/4″.

To Order: Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1/2″	9097K12	$39.82	$94.57	$165.92
5/8″	9097K14	57.57	136.72	239.86
3/4″	9097K16	75.28	178.78	313.65
7/8″	9097K18	$94.69	$224.90	$394.56
1″	9097K22	100.29	238.18	417.86
1 1/4″	9097K24	145.05	344.50	604.39
1 1/2″	9097K26	$199.43	$473.65	$830.96
1 3/4″	9097K28	261.43	620.90	1,089.29
2″	9097K32	340.42	808.50	1,418.42

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information on the physical, chemical, and mechanical properties of iron, as well as heat-treating data for iron, go to mcmaster.com and search for **88645KAC**.

Machinable Cast Gray Iron

- Hardness: 241 Brinell
- Yield Strength: Not rated
- Furnished as continuous cast

Because it contains graphite flakes, gray iron has greater machinability than ductile iron. It is strong, wear resistant, and known for its vibration-damping qualities. Often used in dies, molds, and automotive applications. Material can be heat treated to a maximum attainable hardness of Rockwell C50. Material is oversized to finish to dimensions ordered.

Flat Stock—Unpolished Mill Finish

To Order: Please specify 1- or 2-ft. length where prices are shown.

Width		1 ft.	2 ft.
1/4" Thick			
2"	8928K69	$31.80	$54.82
3"	8928K72	40.31	69.50
4"	8928K73	48.85	84.22
5"	8928K74	58.92	101.58
6"	8928K75	68.46	118.03
8"	8928K42	88.25	152.15
10"	8928K49	101.48	174.97
3/8" Thick			
2"	8928K76	34.88	60.13
3"	8928K77	50.65	76.74
4"	8928K52	57.95	99.92
5"	8928K78	68.14	117.49
1/2" Thick			
3"	8928K48	65.71	113.30
4"	8928K56	69.20	119.31
1/2" Thick (Cont.)			
5"	8928K79	$67.25	$115.94
6"	8928K82	80.63	139.01
8"	8928K86	109.08	188.07
10"	8928K58	121.21	208.99
5/8" Thick			
5"	8928K89	74.26	128.03
6"	8928K91	94.33	162.64
3/4" Thick			
5"	8928K92	77.77	134.09
6"	8928K93	97.33	167.81
1" Thick			
1"	8923K52	35.36	60.96
1 1/2"	8923K61	36.81	63.46
2"	8923K62	37.58	64.79
2 1/2"	8923K63	45.58	69.06
1" Thick (Cont.)			
3"	8923K64	$46.03	$79.36
3 1/2"	8923K65	50.00	86.20
4"	8923K66	53.89	92.91
5"	8928K94	67.60	102.42
6"	8923K67	60.70	104.65
8"	8928K96	118.59	204.46
10"	8928K97	151.64	261.45
12"	8925K12	195.05	336.29
1 1/2" Thick			
1 1/2"	8923K53	48.98	84.45
2"	8923K68	52.35	90.26
2 1/2"	8923K69	61.40	105.86
3"	8923K71	69.72	120.20
4"	8923K72	80.83	139.36
12"	8925K18	204.84	353.18
2" Thick			
2"	8923K54	$53.95	$93.01
2 1/2"	8923K73	63.88	110.14
3"	8923K74	71.53	123.32
4"	8923K75	81.48	140.49
5"	8923K76	86.72	149.51
6"	8923K22	109.00	187.93
8"	8923K23	165.16	284.76
12"	8925K41	228.15	393.36
2 1/2" Thick			
2 1/2"	8923K32	65.84	113.52
3"	8923K33	75.46	130.11
4"	8923K34	85.17	146.85
6"	8923K35	141.02	243.13
8"	8923K36	180.95	311.99
12"	8925K37	251.10	____

Round Tubes—Unpolished Mill Finish

OD	ID	Lg.		
1" Wall Thickness				
3 1/2"	1 1/2"	16"	8929K12	$132.30
4"	2"	16"	8929K14	146.60
4 1/2"	2 1/2"	16"	8929K16	166.02
1" Wall Thickness (Cont.)				
5"	3"	16"	8929K18	$180.15
5 1/2"	3 1/2"	16"	8929K21	186.23
6"	4"	16"	8929K23	205.04
1 1/2" Wall Thickness				
6"	3"	16"	8929K22	$215.06
7"	4"	16"	8929K27	259.42

Rods—Unpolished Mill Finish

To Order: Please specify 1- or 3-ft. length where prices are shown.

Dia.	1/2" Long		1" Long		1 1/2" Long		2" Long		3" Long	
8"	8926K44	$21.49	8926K32	$32.25	8926K36	$43.98	8926K38	$53.31	8926K84	$72.68
9"	8926K45	26.94	8926K33	39.65	8926K14	50.97	8926K26	61.78	8926K85	84.23
10"	8926K46	33.15	8926K34	55.89	8926K15	76.22	8926K27	92.39	8926K86	125.99
12"	8926K47	47.66	8926K35	72.79	8926K17	99.23	8926K28	121.00	8926K87	164.06

Dia.		1 ft.	3 ft.
5/8"	8909K76	$6.62	$15.76
3/4"	8909K77	8.45	20.11
1"	8909K17	11.78	28.04
1 1/4"	8909K78	15.01	35.75
1 1/2"	8909K18	15.15	36.07
1 3/4"	8909K79	17.01	40.49
2"	8909K19	24.46	58.25
2 1/4"	8909K51	$30.89	$73.55
2 1/2"	8909K53	35.92	85.53
2 3/4"	8909K88	41.89	99.74
3"	8909K54	45.88	109.25
3 1/4"	8909K82	56.14	133.67
3 1/2"	8909K56	61.49	146.41
3 3/4"	8909K87	74.02	176.23
4"	8909K84	$76.18	$181.38
4 1/2"	8909K57	93.91	223.59
5"	8909K58	112.62	268.14
5 1/2"	8909K85	139.70	332.63
6"	8909K61	149.54	356.04
6 1/2"	8909K86	175.35	417.50
7"	8909K45	178.03	____
7 1/2"	8909K46	$203.01	____
8"	8909K47	223.66	____
8 1/2"	8909K48	250.14	____
9"	8909K91	259.19	____
9 1/2"	8909K92	276.69	____
10"	8909K73	387.64	____
12"	8909K75	504.93	____

High-Strength Cast Ductile Iron

- Hardness: 229 Brinell
- Yield Strength: 55,000 psi
- Furnished as continuous cast

Also known as nodular iron, this high-strength iron contains rounded graphite spheres that make it stronger and more shock resistant than gray iron. It is commonly used for crankshafts, gears, and hinges. Material meets ASTM A536 and can be heat treated to a maximum attainable hardness of Rockwell C50. Material is oversized to finish to dimensions ordered.

Rectangular Bars—Unpolished Mill Finish

To Order: Please specify 1- or 3-ft. length.

Width		1 ft.	3 ft.
1" Thick			
1 1/2"	89175K51	$35.19	$83.79
2 1/2"	89175K52	49.94	118.90
3 1/2"	89175K53	66.35	157.98
4 1/2"	89175K54	81.01	192.88
1 1/2" Thick			
2"	89175K55	$54.13	$128.87
3"	89175K56	74.13	176.50
7"	89175K57	139.18	331.38
2" Thick			
2 1/2"	89175K58	$77.01	$183.35
3 1/2"	89175K59	96.07	228.74

Rods—Unpolished Mill Finish

Dia.	1/2" Long		1" Long		1 1/2" Long		2" Long		3" Long	
6"	8588T13	$14.40	8588T23	$26.19	8588T33	$35.72	8588T43	$43.29	8588T53	$59.00
7"	8588T14	16.19	8588T24	29.43	8588T34	40.15	8588T44	48.67	8588T54	66.34
8"	8588T15	21.25	8588T25	38.66	8588T35	52.69	8588T45	63.87	8588T55	87.10

Dia.	Lg., ft.		
1"	1	89105K23	$13.99
1 1/4"	1	89105K24	17.76
1 1/2"	1	89105K25	20.39
1 3/4"	1	89105K26	25.25
2"	1	89105K27	30.65
2 1/4"	1	89105K28	35.55
2 1/2"	1	89105K29	$42.52
2 3/4"	1	89105K31	49.09
3"	1	89105K32	57.66
3 1/4"	1	89105K33	61.91
3 1/2"	1	89105K34	70.97
3 3/4"	1	89105K35	79.00
4"	1	89105K36	$87.65
4 1/2"	1	89105K38	111.17
4 3/4"	1	89105K39	120.02
5"	1	89105K41	131.70
5 1/2"	1	89105K42	147.40
6"	1	89105K43	181.60
6 1/2"	1	89105K45	$204.14
7"	1	89105K47	226.82
7 1/2"	1	89105K49	242.58
8"	1	89105K51	268.00
10"	1	89105K53	394.76
12"	1	89105K55	567.88

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

About Stainless Steel

Stainless steel is an alloy of iron that has had at least 10% chromium added to improve corrosion resistance. The designation 18-8 refers to stainless steel that has approximately 18% chromium and 8% nickel—it generally applies to types 301, 302, 303, and 304.

Most types of stainless steel harden while being worked and cannot be hardened by heat treating. They usually are provided in an annealed (not hardened) condition although some of these alloys, such as Type 301, may be work-hardened to a greater hardness (½ hard, full hard, or spring temper) for applications such as springs.

Other types of stainless steel, such as Type 410 and Type 440C, can be heat treated to improve strength and toughness. Usually these are provided in an annealed (not hardened) condition to make them easier to work. They also may be heat treated after the final product is formed to achieve better strength and toughness. For applications requiring limited machining and cutting prior to use, some alloys are provided already heat treated.

Type	Page(s)	Type	Page(s)	Type	Page(s)
13-8 PH	3707	303	3698-3700	420	3706-3707
15-5 PH	3707	304	3686-3692	420V	3707
17-4 PH	3708-3709	309	3701-3702	430	3693
20	3697	316	3694-3697	440A	3707
2205	3702-3703	321	3702	440C	3704-3706
301	3692-3693	410	3703-3704	A286	3697
302	3692	416	3700-3701	Nitronic 60	3697

Hardness

The hardness of a material is its resistance to another material penetrating its surface. Harder metals have more wear resistance, but they are also more brittle. *Note:* The types listed below are annealed (unless noted).

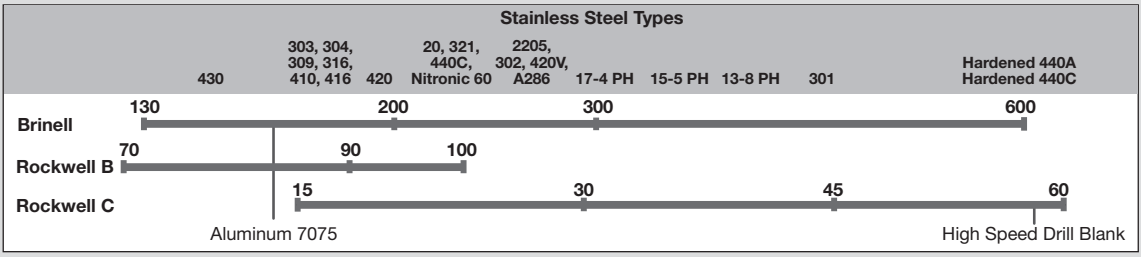

Yield Strength

Yield strength is the point at which metal bends and will not return to its original shape. At this point the metal has changed shape permanently but does not break. *Note:* The types listed below are annealed (unless noted). 13-8 PH and 420V are not rated.

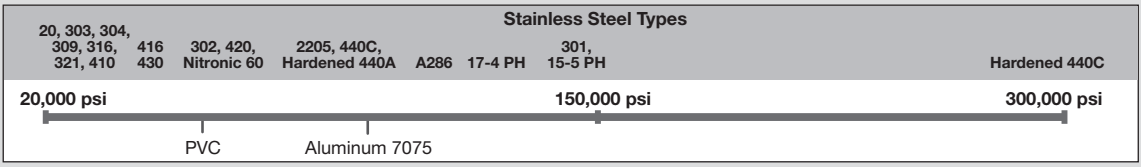

Forming and Working

Stainless steel offers excellent forming and working (also known as bendability) due to its mechanical properties.
Note: 302, 20, and 15-5 PH are not rated.

	Excellent	Good	Fair	Difficult
Blanking	301, 410	303, 304, 309, 316, 321, 430, Hardened 440A	13-8 PH, 17-4 PH, 2205, 416, 420, Hardened 440C	420V, 440C, A286, Nitronic 60
Brake Forming	321, 410	304, 316, 430	13-8 PH, 2205, 301, 309, 420, 440C, Hardened 440C, A286	17-4 PH, 303, 416, 420V, Hardened 440A, Nitronic 60
Punching	410	301, 303, 304, 316, 321, 416, 430	13-8 PH, 17-4 PH, 2205, 309, 420, 420V, Hardened 440C, A286	440C, Hardened 440A, Nitronic 60
Sawing	301	17-4 PH, 2205, 303, 410, 416, 420V, 430, Hardened 440C	13-8 PH, 304, 309, 316, 321, 420, 440C, A286, Nitronic 60	Hardened 440A

Machinability

Stainless steel is more difficult to cut, drill, ream, tap, thread, etc. than steel because of its higher strength and hardness. It tends to become gummy when machined, however, high-speed steel tooling generally can be used. The ratings given are in relation to speed, life of the tooling, and the ease of attaining a satisfactory post-machining finish.

Good	Fair	Poor
303, 410, 430	13-8 PH, 17-4 PH, 2205, 301, 304, 316, 321, 416, 420, 420V, 440C, Hardened 440C, A286	15-5 PH, 20, 302, 309, Hardened 440A, Nitronic 60

Weldability

Stainless steel is more difficult to weld than steel due to the additional cleaning and machining required to create a weldable surface that won't corrode.

Note: 302 and 15-5 PH are not rated.

Good	Fair	Difficult
17-4 PH, 20, 301, 304, 309, 316, 321, Nitronic 60	13-8 PH, 2205, 410, 420, 430, A286	303, 416, 420V, 440C, Hardened 440A, Hardened 440C

Corrosion Resistance

Excellent—Resists outdoor, industrial, marine, and most chemical environments.

Good—Resists outdoor, industrial, marine, and mild chemical environments.

Fair—Resists outdoor, industrial, and mild chemical environments.

Poor—Resists outdoor environments.

Excellent	Good	Fair	Poor
20, 2205, 302, 316, Hardened 440A, A286, Nitronic 60	17-4 PH, 321	13-8 PH, 301, 303, 304, 309, 420V, Hardened 440C	15-5 PH, 410, 416, 420, 430, 440C

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Multipurpose Stainless Steel (Type 304)

The most widely used stainless steel, Type 304 has good weldability and formability and maintains corrosion resistance up to 1500° F. Commonly used in chemical and food processing equipment. It may become slightly magnetic when worked and is not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 140-255 Brinell
- Yield Strength: 30,000 psi
- Annealed

The 6″×6″ bars meet ASTM A240 and A480. The 1-, 3-, and 6-ft. length bars in 1/8″ to 1/2″ thicknesses are hot rolled (unless noted); in 5/8″ to 2″ thicknesses are cold finished. The 6″×6″ bars are hot rolled. Width tolerance is ±1/8″. Straightness tolerance is not rated. Length tolerance is ±1/8″ for 6″ lengths, ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width		1 ft.	3 ft.	6 ft.
1/8″ Thick *(±0.010″)*				
1/2″	**8992K11**	—	—	$10.25
5/8″	**8992K13**	—	—	12.03
3/4″	**8992K14**	—	—	13.92
1″	**8992K21**	—	—	16.53
1 1/4″	**8992K872**	—	$12.02	20.37
1 1/2″	**8992K342**	—	14.31	24.26
2″	**8992K362**	—	17.95	30.43
3″	**8992K382**	—	25.37	43.00
4″	**8992K16**	$14.83	33.64	57.02
6″	**8992K31**	21.11	47.91	81.20
3/16″ Thick *(+0.050″, –0.010″)*				
1/2″	**8992K17**	—	—	14.78
1″	**8992K222**	—	14.33	24.29
1 1/4″	**8992K882**	—	17.75	30.08
1 1/2″	**8992K232**	—	20.12	34.10
2″	**8992K242**	11.18	25.37	43.00
2 1/2″	**8992K892**	13.91	31.56	53.50
3″	**8992K952**	16.65	37.79	64.05
4″	**8992K41**	21.11	47.91	81.20
6″	**8992K33**	30.85	70.00	118.64
1/4″ Thick *(+0.050″, –0.010″)*				
1/4″	**89415K11**★	—	9.65	16.36
1/2″	**8992K422**	—	10.85	18.39
3/4″	**8992K432**	—	15.00	25.42
1″	**8992K252**	—	19.59	33.20
1 1/8″	**8992K442**	—	20.13	34.12
1 1/4″	**8992K452**	—	21.76	36.88
1 1/2″	**8992K262**	11.74	26.64	45.15
1 3/4″	**8992K462**	12.93	29.35	49.74
2″	**8992K272**	16.20	36.75	62.29
2 1/2″	**8992K472**	18.47	41.92	71.05
3″	**8992K292**	21.11	47.91	81.20
3 1/2″	**8992K48**	24.53	55.66	94.34

Width		1 ft.	3 ft.	6 ft.
1/4″ Thick (Cont.)				
4″	**8992K49**	$28.07	$63.69	$107.95
5″	**8992K61**	34.25	77.72	131.73
6″	**8992K196**	40.16	91.14	154.48
5/16″ Thick *(+0.050″, –0.010″)*				
1″	**8992K632**	9.82	22.28	37.77
2″	**8992K65**	16.65	37.79	64.05
3/8″ Thick *(+0.060″, –0.010″)*				
3/8″	**89415K13**★	7.40	16.80	28.48
1/2″	**8992K672**	9.78	22.18	37.60
3/4″	**8992K682**	10.43	23.66	40.11
1″	**8992K522**	12.01	27.26	46.20
1 1/4″	**8992K692**	16.62	37.71	63.92
1 1/2″	**8992K72**	17.04	38.67	65.55
1 3/4″	**8992K74**	19.85	45.05	76.36
2″	**8992K77**	21.61	49.03	83.11
2 1/2″	**8992K193**	26.96	61.18	103.70
3″	**8992K79**	31.59	71.68	121.49
4″	**8992K81**	41.13	93.34	158.20
6″	**8992K82**	56.65	128.56	217.90
1/2″ Thick *(+0.060″, –0.010″)*				
1/2″	**89415K15**★	10.91	24.76	41.97
3/4″	**8992K84**	11.75	26.67	45.21
1″	**8992K86**	15.18	34.44	58.38
1 1/4″	**8992K87**	18.92	42.93	72.76
1 1/2″	**8992K88**	21.61	49.03	83.11
1 3/4″	**8992K89**	25.18	57.14	96.84
2″	**8992K91**	28.75	65.24	110.57
2 1/2″	**8992K92**	35.07	79.59	134.89
3″	**8992K93**	41.13	93.34	158.20
3 1/2″	**8992K94**	47.94	108.79	184.39
4″	**8992K96**	51.41	116.66	197.73
5″	**8992K97**	61.69	139.99	237.27
6″	**8992K98**	72.57	164.68	279.12

Width		1 ft.	3 ft.	6 ft.
5/8″ Thick *(+0.060″, –0.010″)*				
5/8″	**89415K27**	$19.05	$43.22	$73.26
1″	**8992K111**	—	54.47	92.32
1 1/2″	**8992K115**	34.86	79.10	134.07
2″	**8992K119**	45.39	103.01	174.59
2 1/2″	**8992K124**	51.93	117.85	199.74
3″	**8992K128**	61.37	139.25	236.02
5″	**8992K37**	94.66	214.81	364.09
3/4″ Thick *(+0.065″, –0.010″)*				
3/4″	**89415K29**	22.68	51.46	87.22
1″	**8992K132**	—	65.30	110.68
1 1/2″	**8992K137**	40.93	92.87	157.41
2″	**8992K141**	50.09	113.66	192.64
2 1/2″	**8992K145**	61.37	139.25	236.02
3″	**8992K149**	72.14	163.70	277.46
4″	**8992K154**	90.88	206.22	349.53
5″	**8992K158**	109.34	248.11	420.52
6″	**8992K162**	127.10	288.41	488.83
7/8″ Thick *(–0.004″)*				
7/8″	**89415K31**	39.61	89.89	152.36
1″ Thick *(±0.031″)*				
1″	**89415K33**	34.64	78.61	133.23
1 1/4″	**8992K167**	45.39	103.01	174.59
1 1/2″	**8992K171**	50.09	113.66	192.64
2″	**8992K175**	65.40	138.34	251.53
2 1/2″	**8992K179**	82.15	186.43	315.98
3″	**8992K184**	90.88	206.22	349.53
4″	**8992K189**	114.85	260.61	441.72
5″	**8992K53**	141.33	320.71	543.58
1 1/4″ Thick *(–0.006″)*				
1 1/4″	**89415K35**	60.45	137.17	232.50
1 1/2″ Thick *(–0.006″)*				
1 1/2″	**89415K37**	82.80	187.90	318.48
2″ Thick *(–0.006″)*				
2″	**89415K39**	130.39	295.88	501.50

★ Bars are cold finished.

Thick.	Thick. Tolerance		6″×6″
1 1/2″	+0.070″, –0.010″	**1251T74**	$128.98
2″	+0.010″, –0.010″	**1251T41**	162.44
2 1/2″	+0.125″, –0.010″	**1251T43**	$216.17
3″	+0.175″, –0.010″	**1251T45**	280.93
4″	+0.250″, –0.010″	**1251T47**	$360.30
5″	+0.250″, –0.010″	**1251T49**	422.50

Rectangular Bars with Material Certification—Unpolished (Mill) Finish

- Hardness: 150-241 Brinell
- Yield Strength: 35,000 psi
- Annealed

Meet ASTM A276 and A479. Each comes with a traceable lot number and physical test report. Bars are hot rolled. Straightness tolerance is 0.0375″ per 3 feet. Length tolerance is ±3″ for 3-ft. lengths and ±6″ for 6-ft. lengths.

To Order: Please specify 3- or 6-ft. length.

Wd.	Wd. Tolerance
1/2″-1″	±0.015″
1 1/4″-2″	±0.031″
4″	+0.062″, –0.031″

Wd.		3 ft.	6 ft.
1/4″ Thick *(±0.008″)*			
3/4″	**1250T22**	$23.98	$35.42
1″	**1250T24**	28.26	43.20
1 1/4″	**1250T26**	30.28	46.88
1 1/2″	**1250T28**	33.75	56.25
2″	**1250T32**	44.83	74.71

Wd.		3 ft.	6 ft.
1/4″ Thick (Cont.)			
4″	**1250T34**	$76.75	$127.92
3/8″ Thick *(±0.008″)*			
1/2″	**1250T36**	30.68	47.60
3/4″	**1250T38**	29.27	48.78
1″	**1250T42**	35.41	56.20

Wd.		3 ft.	6 ft.
1/2″ Thick *(±0.012″)*			
3/4″	**1250T44**	$34.87	$55.21
1″	**1250T46**	42.11	68.38
1 1/2″	**1250T48**	55.71	93.11
2″	**1250T52**	70.81	120.57
4″	**1250T54**	118.75	207.73

Wd.		3 ft.	6 ft.
3/4″ Thick *(±0.010″)*			
1″	**1250T56**	$70.87	$120.68
1″ Thick *(±0.015″)*			
2″	**1250T58**	148.34	261.53

Rectangular Bars—Brushed (#4 Satin) Finish

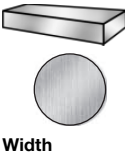

- Hardness: 195 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A240 and AMS5513. All sides are polished, with grain lines running in one direction, and have a peel-off protective masking. Bars are hot rolled. Width tolerance is ±3/32″. Straightness tolerance is not rated. Length tolerance is ±1/8″.

To Order: Please specify 1-, 3-, or 6-ft. length.

Width		1 ft.	3 ft.	6 ft.
1/4″ Thick *(+0.046″, –0.010″)*				
1″	**4539T11**	$14.39	$32.64	$55.33
2″	**4539T12**	23.27	52.80	89.50
3″	**4539T13**	33.21	75.36	127.73

Width		1 ft.	3 ft.	6 ft.
1/2″ Thick *(+0.054″, –0.010″)*				
1″	**4539T17**	$24.59	$55.79	$94.56
2″	**4539T18**	43.86	99.53	168.69
3″	**4539T19**	61.96	140.60	238.30

Width		1 ft.	3 ft.	6 ft.
1″ Thick *(+0.070″, –0.010″)*				
1″	**4539T24**	$56.14	$127.39	$215.91
2″	**4539T25**	82.08	186.27	315.71
3″	**4539T26**	104.76	237.73	402.93

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Multipurpose Stainless Steel (Type 304) *(Material continued from previous page)*

Strips

Unpolished (#2B Mill)

Brushed (#3 Satin)

- Hardness: *Unpolished*, 163 Brinell; *Brushed*, 202 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A240. Strips are cold finished. Length tolerance is ±1/8″.

Unpolished (#2B Mill) Finish— Width tolerance is ±0.005″. Flatness tolerance is 0.040″.

Brushed (#3 Satin) Finish— Strips are polished to a brushed finish on one side with grain lines in one direction. The polished side has a peel-off protective masking. Meet MIL-S-5059 and AMS5513. Width tolerance is ±1/16″. Flatness tolerance is 1/2″.

Thick.	Thick. Tolerance	UNPOLISHED (#2B MILL) FINISH 1″×36″		2″×36″		4″×36″		6″×36″	
0.015″	±0.002″	1421T41	$3.77	1421T42	$6.36	1421T43	$10.96	1421T44	$13.98
0.024″	±0.002″	1421T51	5.46	1421T52	9.20	1421T53	15.86	1421T54	20.23
0.030″	±0.002″	1421T61	6.81	1421T62	11.48	1421T63	19.78	1421T64	25.23
0.048″	±0.004″	1421T71	10.39	1421T72	17.70	1421T73	30.17	1421T74	38.48
0.060″	±0.004″	1421T11	12.04	1421T12	21.96	1421T13	38.52	1421T14	49.74
0.075″	±0.004″	1421T21	15.38	1421T22	27.97	1421T23	47.13	1421T24	62.63
0.090″	±0.008″	1421T81	18.49	1421T82	31.15	1421T83	51.59	1421T84	64.89
0.120″	±0.008″	1421T31	24.29	1421T32	42.20	1421T33	77.68	1421T34	98.92

Thick.	Thick. Tolerance	BRUSHED (#3 SATIN) FINISH 2″×12″		4″×12″		3″×24″		6″×24″	
0.0625″	±0.006″	9085K11	$10.54	9085K21	$16.48	9085K31	$25.28	9085K41	$43.75
0.125″	±0.010″	9085K12	18.93	9085K22	29.93	9085K32	46.09	9085K42	83.80

Sheets

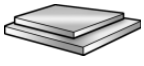

Unpolished (#2B Mill)

Brushed (#3 Satin)

Brushed (#4 Satin)

Mirror-Like (#8)

- Hardness: 150-241 Brinell
- Yield Strength: 30,000 to 40,000 psi
- Annealed

Meet ASTM A240. All are cold finished, except sheets 0.375″ thick and thicker, which are hot rolled. Sheets have a peel-off protective masking on one side.

Unpolished (#2B Mill) Finish— The most widely used finish, it has a semireflective appearance on one side. Width and length tolerances are ±1/16″. Flatness tolerance is not rated. **Also Available:** 0.036″ thick sheets in larger sizes. For 30″×96″ size, please ask for 8983K18; for 48″×48″ size, please ask for 8983K12.

Brushed (#3 Satin) Finish— Polished to a brushed finish on one side with grain lines in one direction. Sheets also meet ASTM A167. Width and length tolerances are ±1/16″. Flatness tolerance is ±1/8″.

Brushed (#4 Satin) Finish— Polished to a fine brushed finish on one side with grain lines in one direction. Width and length tolerances are ±1/8″. Flatness tolerance is not rated.

Mirror-Like (#8) Finish— Polished to a mirror-like finish on one side with no grain lines. Sheets also meet ASTM A167. Width and length tolerances are ±1/32″. Flatness tolerance is not rated.

Finish Selector Pack— Includes one individually marked piece each of the four finishes listed above. Each piece is approximately 1 3/4″×3″×1/32″ thick.

1113T11 ..... **Pkg.** $25.33

Thick.	Thick. Tolerance	UNPOLISHED (#2B MILL) FINISH 12″×12″		12″×24″		24″×24″		24″×36″		36″×48″		36″×96″	
0.024″	±0.002″	8983K32	$7.64	8983K52	$14.75	8983K72	$28.73	8983K23	$34.71	8983K41	$63.27	8983K22	$119.25
0.030″	±0.002″	8983K34	8.62	8983K54	16.80	8983K84	32.89	8983K27	40.18	8983K43	74.05	8983K24	139.53
0.036″	±0.003″	8983K36	8.96	8983K56	17.94	8983K86	34.61	8983K28	44.18	8983K45	81.17	8983K19	152.94
0.048″	±0.003″	8983K38	11.58	8983K58	21.92	8983K88	39.43	8983K29	58.10	8983K47	106.44	8983K14	196.56
0.060″	±0.004″	8983K42	14.86	8983K62	28.05	8983K92	50.28	8983K33	75.37	8983K48	127.53	8983K11	241.17
0.075″	±0.004″	8983K13	20.14	8983K15	35.79	8983K31	67.71	8983K16	100.16	8983K17	169.47	8983K21	295.81
0.090″	±0.004″	8983K44	24.42	8983K64	43.40	8983K94	82.09	8983K35	121.44	8983K49	205.46	8983K25	358.64
0.120″	±0.007″	8983K46	30.49	8983K66	53.68	8983K96	98.06	8983K37	149.12	8983K51	241.90	8983K26	451.06

Thick.	Thick. Tolerance	BRUSHED (#3 SATIN) FINISH 12″×12″		12″×24″		24″×24″		24″×36″		36″×48″		36″×96″	
0.024″	±0.002″	89815K31	$11.55	89815K41	$22.36	89815K51	$38.23	89815K71	$48.66	89815K81	$70.67	89815K61	$115.85
0.030″	±0.003″	89815K32	13.71	89815K42	26.03	89815K52	44.33	89815K72	56.41	89815K82	81.94	89815K62	134.32
0.036″	±0.003″	89815K33	15.55	89815K43	30.44	89815K53	48.45	89815K73	61.66	89815K83	89.56	89815K63	146.82
0.048″	±0.004″	89815K34	21.04	89815K44	40.97	89815K54	56.00	89815K74	74.67	89815K84	113.87	89815K64	186.67
0.060″	±0.005″	89815K35	23.40	89815K45	42.97	89815K55	61.71	89815K75	91.42	89815K85	139.41	89815K65	228.54
0.075″	±0.006″	89815K36	22.59	89815K46	41.29	89815K56	71.29	89815K76	95.73	89815K86	151.43	89815K66	275.47
0.120″	±0.007″	89815K37	42.50	89815K47	73.06	89815K57	120.98	89815K77	178.40	89815K87	248.66	89815K67	452.10

Thick.	Thick. Tolerance	BRUSHED (#4 SATIN) FINISH 12″×12″		12″×24″		24″×24″		MIRROR-LIKE (#8) FINISH 12″×12″		12″×24″		24″×24″	
0.030″	±0.007″	9748K11	$17.96	9748K31	$34.72	9748K51	$67.14	9785K11	$21.15	9785K31	$39.08	9785K51	$73.94
0.036″	±0.007″	9748K12	23.43	9748K32	45.12	9748K52	86.77	9785K12	24.21	9785K32	44.69	9785K52	84.57
0.048″	±0.007″	9748K13	21.74	9748K33	41.93	9748K53	78.81	9785K13	28.97	9785K33	53.40	9785K53	101.05
0.060″	±0.010″	9748K14	27.20	9748K34	52.48	9748K54	98.63	9785K14	34.72	9785K34	63.96	9785K54	120.97
0.078″	±0.010″	9748K15	30.98	9748K35	59.78	9748K55	111.89	9785K15	31.11	9785K35	57.08	9785K55	109.77
0.105″	±0.010″	9748K16	46.17	9748K36	85.30	9748K56	164.83	9785K16	58.28	9785K36	102.08	9785K56	193.74
0.120″	±0.010″	9748K17	53.45	9748K37	100.00	9748K57	187.89	9785K17	67.33	9785K37	116.97	9785K57	222.20
0.180″	±0.010″	9748K18	83.30	9748K38	157.98	9748K58	287.23	9785K18	102.70	9785K38	177.44	9785K58	320.93
0.250″	±0.010″	9748K19	117.71	9748K39	223.24	9748K59	405.89	9785K19	159.91	9785K39	274.85	9785K59	499.73

Thick.	Thick. Tolerance	6″×6″		12″×12″		24″×24″							
0.375″	±0.054″	4529T11	$40.26	4529T12	$134.21	4529T13	$447.37						
0.500″	±0.054″	4529T21	48.68	4529T22	162.25	4529T23	540.84						
0.625″	±0.054″	4529T31	60.43	4529T32	201.44	4529T33	671.45						
0.750″	±0.060″	4529T41	67.65	4529T42	225.52	4529T43	751.72						
1.000″	±0.070″	4529T51	85.10	4529T52	283.66	4529T53	945.53						
1.250″	±0.070″	4529T61	111.26	4529T62	370.87	4529T63	1,236.23						
1.500″	±0.070″	4529T71	121.24	4529T72	404.14	4529T73	1,347.13						
2.000″	±0.070″	4529T81	132.60	4529T82	442.40	4529T83	1,385.54						

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Multipurpose Stainless Steel (Type 304) *(Material continued from previous page)*

The most widely used stainless steel, Type 304 has good weldability and formability and maintains corrosion resistance up to 1500° F. Commonly used in chemical and food processing equipment. It may become slightly magnetic when worked and is not heat treatable.

Textured Sheets—Unpolished (#2B Mill) Finish

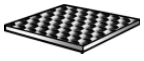

Weave

Diamond

Honeycomb

Tread

- Hardness: Rockwell B92
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A480. Textured sheets have less surface contact area, which reduces friction and static cling, increases rigidity, and hides fingerprints and dents. Sheets are cold finished. Width and length tolerances are +⅛″. Flatness tolerance is not rated.

To Order: Please specify pattern: weave, diamond, honeycomb, or tread.

Texture Selector Pack—Includes one 1⅝″×3⅛″×0.018″ thick piece each of the four texture styles listed above.

9077K1 ..... **Pkg.** $4.38

Thick.	Thick. Tolerance	12″×12″	12″×24″	24″×24″	24″×36″	36″×48″	48″×48″
0.024″	±0.002″	9077K11 $29.65	9077K12 $48.55	9077K13 $95.72	9077K14 $146.47	9077K15 $161.66	9077K16 $192.94
0.036″	±0.003″	9077K17 43.11	9077K18 70.60	9077K19 139.60	9077K21 198.16	9077K22 210.28	9077K23 256.22
0.060″	±0.004″	9077K24 65.58	9077K25 103.55	9077K26 178.42	9077K27 214.46	9077K28 278.80	9077K29 359.74
0.075″	±0.004″	9077K31 87.28	9077K32 131.19	9077K33 203.87	9077K34 263.53	9077K35 337.90	9077K36 436.47

Machinable Sheets—Unpolished (Mill) Finish

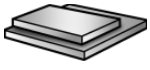

- Hardness: 153-201 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A240 and A480 and AMS5513. Also known as Prodec, this stainless steel offers faster machining and longer tool life than standard Type 304 stainless steel. Sheets are hot rolled. Width and length tolerances are ±⅛″. Flatness tolerance is not rated.

Wd.×Lg.		
3/16″ Thick *(+0.046″, –0.010″)*		
6″× 6″	6620K61	$19.91
6″×12″	6620K112	40.06
12″×12″	6620K11	66.92
12″×24″	6620K13	122.78
24″×24″	6620K15	225.42
24″×30″	6620K17	263.00
24″×48″	6620K19	406.30
1/4″ Thick *(+0.046″, –0.010″)*		
6″× 6″	6620K62	25.51
6″×12″	6620K113	51.54
12″×12″	6620K21	86.69
12″×24″	6620K23	163.12
24″×24″	6620K25	305.15
24″×30″	6620K27	343.21
24″×48″	6620K29	520.65
3/8″ Thick *(+0.054″, –0.010″)*		
6″× 6″	6620K63	28.69
6″×12″	6620K114	57.38
12″×12″	6620K31	95.64
12″×24″	6620K33	179.32
24″×24″	6620K35	334.73
24″×30″	6620K37	394.51
24″×48″	6620K39	597.74

Wd.×Lg.		
1/2″ Thick *(+0.054″, –0.010″)*		
2″× 6″	6620K115	$30.90
3″× 6″	6620K116	36.94
6″× 6″	6620K64	45.28
6″×12″	6620K117	76.26
12″×12″	6620K41	127.09
12″×24″	6620K43	238.30
24″×24″	6620K45	444.83
24″×30″	6620K47	524.26
24″×48″	6620K49	794.34
5/8″ Thick *(+0.058″, –0.010″)*		
2″× 6″	6620K118	32.97
3″× 6″	6620K119	39.37
6″× 6″	6620K65	54.35
6″×12″	6620K121	101.59
12″×12″	6620K51	182.35
12″×24″	6620K52	304.26
24″×24″	6620K53	507.94
3/4″ Thick *(+0.064″, –0.010″)*		
2″× 6″	6620K122	40.89
3″× 6″	6620K123	48.83
6″× 6″	6620K66	67.42
6″×12″	6620K124	126.02
12″×12″	6620K54	226.21
12″×24″	6620K55	377.44
24″×24″	6620K56	630.12

Wd.×Lg.		
7/8″ Thick *(+0.065″, –0.010″)*		
2″× 6″	6620K125	$47.29
3″× 6″	6620K126	54.56
6″× 6″	6620K127	82.04
6″×12″	6620K128	136.74
12″×12″	6620K129	227.90
1″ Thick *(+0.074″, –0.010″)*		
2″× 6″	6620K72	45.28
3″× 4″	6620K71	63.13
3″× 6″	6620K73	57.18
4″× 6″	6620K74	68.20
6″× 6″	6620K67	88.03
6″×12″	6620K131	158.61
12″×12″	6620K57	284.70
12″×24″	6620K58	475.03
24″×24″	6620K59	793.04
1 1/4″ Thick *(+0.074″, –0.010″)*		
2″× 6″	6620K77	46.36
3″× 4″	6620K76	58.44
3″× 6″	6620K78	57.01
4″× 6″	6620K79	66.89
6″× 6″	6620K132	114.40
6″×12″	6620K133	190.66
12″×12″	6620K134	317.77

Wd.×Lg.		
1 1/2″ Thick *(+0.074″, –0.010″)*		
2″× 6″	6620K83	$69.34
3″× 4″	6620K82	63.12
3″× 6″	6620K84	85.34
4″× 6″	6620K85	82.24
6″× 6″	6620K135	135.82
6″×12″	6620K136	226.36
12″×12″	6620K137	377.27
2″ Thick *(+0.074″, –0.010″)*		
2″× 6″	6620K88	62.88
3″× 4″	6620K87	62.88
3″× 6″	6620K89	100.60
4″× 6″	6620K91	128.55
6″× 6″	6620K149	167.67
2 1/4″ Thick *(+0.150″, –0.010″)*		
2″× 6″	6620K138	71.22
3″× 4″	6620K139	71.22
3″× 6″	6620K141	113.95
4″× 6″	6620K142	145.60
6″× 6″	6620K143	189.91
2 1/2″ Thick *(+0.150″, –0.010″)*		
2″× 6″	6620K144	76.32
3″× 4″	6620K145	76.32
3″× 6″	6620K146	122.12
4″× 6″	6620K147	156.05
6″× 6″	6620K148	203.53

Tight-Tolerance Blanks with Material Certification—Precision Ground Finish

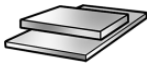

- Hardness: 163 Brinell
- Yield Strength: 40,000 psi
- Annealed

Meet ASTM A167 and A240 and AMS5513. These precision ground blanks are consistently flat, square, and parallel on all six sides, so you can immediately put them in your CNC machine and start machining. Each comes with a traceable lot number and physical test report. Blanks are hot rolled. Tolerance on all dimensions is ±0.002″.

Thick.	2″×12″	4″×12″	6″×6″	6″×12″	8″×12″
1/4″	9064K11 $115.38	9064K12 $146.15	9064K81 $107.69	9064K13 $169.23	9064K14 $230.77
3/8″	9064K21 157.62	9064K22 202.65	9064K82 135.10	9064K23 236.43	9064K24 315.24
1/2″	9064K31 173.70	9064K32 228.21	9064K83 152.14	9064K33 266.25	9064K34 355.00
5/8″	9064K41 184.99	9064K42 220.88	9064K84 165.66	9064K43 276.10	9064K44 370.39
3/4″	9064K51 194.33	9064K52 239.18	9064K85 179.38	9064K53 298.97	9064K54 401.07
1″	9064K61 206.28	9064K62 257.85	9064K86 206.28	9064K63 343.81	9064K64 434.91

Thick.	12″×12″	12″×18″	12″×24″	18″×18″	24″×24″
1/4″	9064K15 $288.46	9064K16 $346.15	9064K17 $461.53	9064K18 $497.61	9064K19 $769.22
3/8″	9064K25 422.20	9064K26 506.64	9064K27 675.52	9064K28 728.43	9064K29 1,125.86
1/2″	9064K35 475.45	9064K36 570.54	9064K37 729.02	9064K38 855.81	9064K39 1,267.86
5/8″	9064K45 483.17	9064K46 595.41	9064K47 793.79	9064K48 931.84	9064K49 1,380.50
3/4″	9064K55 523.20	9064K56 644.74	9064K57 859.55	9064K58 1,009.04	9064K59 1,494.87
1″	9064K65 601.66	9064K66 741.42	9064K67 988.44	9064K68 1,112.04	9064K69 1,719.03

Size		
2″×4″×6″	9064K73	$305.99
2″×4″×8″	9064K74	385.54
3″×3″×3″	9064K75	220.09

Size		
3″×6″× 9″	9064K72	$686.40
3″×6″×12″	9064K71	795.16

Size		
4″×4″×4″	9064K76	$385.52
5″×5″×5″	9064K77	655.62

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Multipurpose Stainless Steel (Type 304) *(Material continued from previous page)*

Rectangular Tubes

- Hardness: 192 Brinell, unless noted
- Yield Strength: 30,000 psi, unless noted
- Annealed, unless noted

Meet ASTM A554. Tubes are cold finished. Also known as hollow bar. Outside and inside corners are rounded. Straightness tolerance is 0.075″ per 3 feet. Length tolerance is ±1/8″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Brushed (#4 Satin) Finish—Polished to a fine brushed finish with grain lines in one direction.

Outside Ht.×Wd.	Ht./Wd. Tolerance		1 ft.	3 ft.	6 ft.
Unpolished (Mill) Finish					
0.065″ Wall Thickness *(±0.0065″)*					
1/2″×1/2″	±0.015″	**89825K31**	$8.48	$21.20	$38.54
3/4″×3/4″	±0.015″	**89825K32**	9.17	22.93	41.69
3/4″×1 1/2″	±0.020″	**89825K56**★	12.80	32.00	53.33
1″×1″	±0.015″	**89825K33**	10.08	25.20	45.81
1 1/4″×1 1/4″	±0.015″	**89825K34**	13.31	33.26	60.48
1 1/2″×1 1/2″	±0.020″	**89825K35**	14.65	36.64	66.61
2″×2″	±0.020″	**89825K36**	17.33	43.33	78.79
0.083″ Wall Thickness *(±0.0083″)*					
1 1/2″×1 1/2″	±0.020″	**89825K37**	16.12	40.30	73.28
2″×2″	±0.020″	**89825K38**	21.95	54.87	99.76
0.120″ Wall Thickness *(±0.012″)*					
1″×1″	±0.015″	**89825K39**	13.77	34.44	62.61
1″×1 1/2″	±0.020″	**89825K57**★	20.57	51.43	85.71
1″×2″	±0.020″	**89825K58**★	23.59	58.97	98.28
1″×3″	±0.030″	**89825K59**★	36.40	91.00	151.67
1 1/4″×1 1/4″	±0.015″	**89825K41**	15.43	38.58	70.14
1 1/2″×1 1/2″	±0.020″	**89825K42**	19.27	48.19	87.61
1 1/2″×3″	±0.030″	**89825K61**★	39.00	97.50	162.50
2″×2″	±0.020″	**89825K43**	25.17	62.93	114.42
2″×3″	±0.030″	**89825K63**★	39.00	97.50	162.50
2″×4″	±0.030″	**89825K66**★	47.40	118.50	197.50
2 1/2″×2 1/2″	±0.020″	**89825K44**	37.90	94.75	172.28
3″×3″	±0.030″	**89825K45**	41.39	103.47	188.12
4″×4″	±0.030″	**89825K46**	52.41	131.03	238.23

★ Hardness and yield strength are not rated. Tube is work hardened.

Outside Ht.×Wd.	Ht./Wd. Tolerance		1 ft.	3 ft.	6 ft.
Unpolished (Mill) Finish (Cont.)					
0.180″ Wall Thickness *(±0.018″)*					
1 1/2″×3″	±0.030″	**89825K62**★	$57.92	$144.80	$241.33
2″×3″	±0.030″	**89825K64**★	59.17	147.93	246.55
2″×4″	±0.030″	**89825K67**★	71.20	178.00	296.67
2″×6″	±0.060″	**89825K72**★	94.13	235.31	392.19
3″×4″	±0.030″	**89825K69**★	89.42	223.55	372.58
3″×6″	±0.060″	**89825K73**★	110.69	276.73	461.22
4″×6″	±0.060″	**89825K74**★	111.75	279.38	465.63
0.187″ Wall Thickness *(±0.0187″)*					
1 1/2″×1 1/2″	±0.020″	**89825K86**	50.94	127.36	212.27
2″×2″	±0.020″	**89825K87**	52.87	132.17	220.28
2 1/2″×2 1/2″	±0.020″	**89825K88**	61.34	153.35	255.59
4″×4″	±0.030″	**89825K89**	88.71	221.78	369.63
0.250″ Wall Thickness *(±0.025″)*					
2″×3″	±0.030″	**89825K65**★	86.40	216.00	360.00
3″×3″	±0.030″	**89825K47**	104.94	262.36	477.01
3″×4″	±0.030″	**89825K71**★	105.92	264.80	441.33
4″×4″	±0.030″	**89825K48**	126.02	315.05	572.81
Brushed (#4 Satin) Finish					
0.065″ Wall Thickness *(±0.0065″)*					
1″×1″	±0.015″	**89825K49**	12.93	32.32	58.76
1 1/2″×1 1/2″	±0.020″	**89825K51**	17.94	44.85	81.55
0.120″ Wall Thickness *(±0.012″)*					
1 1/2″×1 1/2″	±0.020″	**89825K53**	20.06	50.16	91.20
2″×2″	±0.020″	**89825K55**	30.51	76.28	138.70

Small-Diameter Round Tubes—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 35,000 psi
- Annealed

Meet ASTM A269. This dual-certified Type 304/304L stainless steel is a reduced carbon version of Type 304. OD tolerance is ±0.005″. Straightness tolerance is not rated. Length tolerance is ±1/32″. **To Order:** Please specify 1- or 6-ft. length where prices are shown.

OD	ID		1 ft.	6 ft.
0.028″ Wall Thickness *(±0.005″)*				
1/8″	0.069″	**8457K51**	$3.93	$23.27
3/16″	0.1315″	**8457K52**	4.49	26.60
1/4″	0.194″	**8457K53**	4.94	29.27
5/16″	0.2565″	**8457K54**	5.50	32.60
3/8″	0.319″	**8457K55**	6.07	35.93
7/16″	0.3815″	**8457K26**	6.74	——
1/2″	0.444″	**8457K57**	7.53	44.60

Textured Round Tubes—Unpolished (#2B Mill) Finish

- Hardness: 192 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A554. Tubes are cold finished. They have a diamond-pattern textured surface that hides fingerprints and dents and makes these tubes ideal for use as handrails and safety grips. OD tolerance is +1/16″. Straightness tolerance is not rated. Length tolerance is +1/8″. **To Order:** Please specify 3- or 6-ft. length.

OD	ID		3 ft.	6 ft.
0.048″ Wall Thickness *(±0.002″)*				
1 1/4″	1.154″	**7427K11**	$37.81	$75.62
1 1/2″	1.404″	**7427K14**	38.66	77.32
0.060″ Wall Thickness *(±0.002″)*				
1 1/4″	1.13″	**7427K17**	42.02	84.03
1 1/2″	1.38″	**7427K21**	41.60	83.21

Round Tubes—Unpolished (Mill) Finish

- Hardness: 159-229 Brinell
- Yield Strength: 42,000 psi
- Annealed

Meet ASTM A511. Tubes are hot rolled. Straightness tolerance is 0.045″ per foot. Length tolerance is ±1″. **To Order:** Please specify 1-, 2-, or 4-ft. length.

OD	Tolerance
1 1/4″-2 3/4″	±0.023″
3″-5″	±0.031″

OD	Tolerance
5 1/2″-6″	±0.047″

OD	ID		1 ft.	2 ft.	4 ft.
0.188″ Wall Thickness *(±0.026″)*					
1 1/4″	0.874″	**89495K65**	$50.26	$83.76	$139.60
1 1/2″	1.124″	**89495K68**	53.08	88.47	147.45
1 3/4″	1.374″	**89495K85**	86.57	144.29	240.48
4″	3.624″	**89495K88**	139.81	233.02	388.36
5″	4.624″	**89495K98**	189.52	315.87	526.45
0.250″ Wall Thickness *(±0.031″)*					
1 1/4″	3/4″	**89495K66**	54.37	90.62	151.03
1 1/2″	1″	**89495K69**	68.13	113.56	189.26
1 5/8″	1 1/8″	**89495K78**	62.79	104.65	174.42
1 3/4″	1 1/4″	**89495K86**	64.12	106.87	178.11
2″	1 1/2″	**89495K11**	54.58	100.06	181.93
2 1/4″	1 3/4″	**89495K12**	62.04	113.75	206.81
2 1/2″	2″	**89495K13**	71.48	131.05	238.28
2 3/4″	2 1/4″	**89495K14**	82.02	150.37	273.40
3″	2 1/2″	**89495K15**	79.27	145.34	264.25
3 1/2″	3″	**89495K16**	95.39	174.88	317.97
3 3/4″	3 1/4″	**89495K17**	120.48	220.87	401.59
4″	3 1/2″	**89495K89**	150.24	250.40	417.33
0.250″ Wall Thickness (Cont.)					
4 1/2″	4″	**89495K95**	$181.59	$302.66	$504.43
5″	4 1/2″	**89495K99**	192.72	321.20	535.33
5 1/2″	5″	**89495K27**	194.52	324.20	540.33
6″	5 1/2″	**89495K29**	211.55	352.59	587.65
0.375″ Wall Thickness *(±0.047″)*					
1 1/4″	1/2″	**89495K67**	77.74	129.56	215.94
1 1/2″	3/4″	**89495K75**	83.12	138.53	230.88
1 3/4″	1″	**89495K87**	90.12	150.20	250.34
2″	1 1/4″	**89495K31**	79.60	145.93	265.33
2 1/4″	1 1/2″	**89495K32**	84.63	155.16	282.10
2 1/2″	1 3/4″	**89495K33**	98.75	181.04	329.16
2 3/4″	2″	**89495K34**	129.25	236.97	430.85
3″	2 1/4″	**89495K35**	136.19	249.68	453.96
3 1/4″	2 1/2″	**89495K36**	139.14	255.10	463.81
4″	3 1/4″	**89495K37**	149.40	273.89	497.99
4 1/2″	3 3/4″	**89495K96**	243.90	406.50	677.50
5″	4 1/4″	**89495K25**	276.60	461.00	768.33
6″	5 1/4″	**89495K38**	313.32	522.20	870.33
0.500″ Wall Thickness *(±0.0625″)*					
1 1/2″	1/2″	**89495K76**	$132.21	$220.36	$367.26
2 1/2″	1 1/2″	**89495K41**	119.83	219.68	399.42
2 3/4″	1 3/4″	**89495K42**	149.24	273.61	497.47
3″	2″	**89495K43**	148.58	272.39	495.26
3 1/4″	2 1/4″	**89495K44**	151.09	276.99	503.62
3 1/2″	2 1/2″	**89495K45**	159.83	293.02	532.77
3 3/4″	2 3/4″	**89495K46**	215.13	394.41	717.11
4″	3″	**89495K47**	223.61	409.96	745.38
5″	4″	**89495K26**	286.84	478.07	796.78
5 1/2″	4 1/2″	**89495K28**	293.64	489.40	815.66
0.625″ Wall Thickness *(±0.078″)*					
3 3/4″	2 1/2″	**89495K51**	192.17	352.31	640.57
4″	2 3/4″	**89495K52**	224.62	411.81	748.75
0.750″ Wall Thickness *(±0.094″)*					
3 1/4″	1 3/4″	**89495K61**	224.92	412.35	749.73
3 1/2″	2″	**89495K62**	219.71	402.80	732.37
4″	2 1/2″	**89495K63**	259.54	475.82	865.13

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Multipurpose Stainless Steel (Type 304) *(Material continued from previous page)*

The most widely used stainless steel, Type 304 has good weldability and formability and maintains corrosion resistance up to 1500° F. Commonly used in chemical and food processing equipment. It may become slightly magnetic when worked and is not heat treatable.

Round Tubes—Mirror-Like (#7) Finish

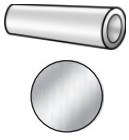

- Hardness: Not rated
- Yield Strength: Not rated
- Work hardened

Meet ASTM A554. Tubes are cold finished. All are polished to a highly reflective finish with minimal grain lines. OD tolerance is ±0.005″ for ¾″ to 1″ sizes and ±0.008″ for 1¼″ and 1½″ sizes. Straightness tolerance is 0.030″ per 3 feet. Length tolerance is +⅛″. **To Order:** Please specify 3- or 6-ft. length.

OD	ID		3 ft.	6 ft.
0.049″ Wall Thickness *(±0.0049″)*				
¾″	0.652″	**1750T11**	$34.70	$57.83
⅞″	0.777″	**1750T13**	36.66	61.10
1″	0.902″	**1750T15**	40.44	67.40
1¼″	1.152″	**1750T17**	46.53	77.55
1½″	1.402″	**1750T19**	51.29	85.48
0.065″ Wall Thickness *(±0.0065″)*				
¾″	0.620″	**1750T12**	$37.73	$62.88
⅞″	0.745″	**1750T14**	42.11	70.19
1″	0.870″	**1750T16**	44.52	74.20
1¼″	1.120″	**1750T18**	51.16	85.26
1½″	1.370″	**1750T21**	58.00	96.67

Rods—Unpolished (Mill) Finish

- Hardness: 140-223 Brinell
- Yield Strength: 30,000 to 35,000 psi
- Annealed

Meet ASTM A276 and A479. 1-, 3-, and 6-ft. lengths are cold finished (except 4″ diameter, which is hot rolled) and made of dual-certified Type 304/304L stainless steel, a reduced carbon version of Type 304. ½″ to 3″ lengths may be cold finished or hot rolled. Straightness tolerance is not rated. Length tolerance is ±1/16″ for ½″ to 3″ lengths (unless noted), ±½″ for 1-ft. lengths, ±1½″ for 3-ft. lengths, and ±3″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Also Available: Rods with material certification. Each comes with a traceable lot number and physical test report. Offered in the same diameters and lengths listed below. Please ask for 1301T16 and specify diameter and length.

Dia.	Tolerance
⅛″-15/16″	±0.002″
1″-1 7/16″	±0.025″
1½″-3¾″	±0.063″
4″-5″	±0.078″
6″-8″	±0.188″

Dia.		1 ft.	3 ft.	6 ft.
⅛″	**89535K22**	____	____	$8.55
3/16″	**89535K24**	____	____	9.36
¼″	**89535K21**	____	____	9.43
5/16″	**89535K26**	____	____	11.44
⅜″	**89535K23**	____	____	17.02
7/16″	**89535K17**	____	$14.04	23.79
½″	**89535K15**	____	14.75	25.00
9/16″	**89535K18**	____	17.85	30.25
⅝″	**89535K11**	____	21.14	35.83
11/16″	**89535K19**	$9.12	21.53	36.49
¾″	**89535K12**	10.47	24.70	41.87
13/16″	**89535K33**	12.22	28.83	48.87
⅞″	**89535K34**	15.22	35.93	60.89
15/16″	**89535K35**	17.47	41.24	69.89
1″	**89535K37**	19.88	46.90	79.50
1 1/16″	**89535K39**	$21.46	$50.65	$85.85
1⅛″	**89535K41**	24.07	56.79	96.26
1 3/16″	**89535K43**	25.69	60.62	102.75
1¼″	**89535K45**	28.47	67.19	113.88
1 5/16″	**89535K47**	30.14	71.12	120.54
1⅜″	**89535K49**	33.66	79.43	134.63
1 7/16″	**89535K51**	32.95	77.76	131.80
1½″	**89535K53**	39.35	92.88	157.42
1 9/16″	**89535K55**	42.67	100.70	170.68
1⅝″	**89535K57**	47.13	111.22	188.51
1 11/16″	**89535K59**	49.80	117.54	199.22
1¾″	**89535K61**	51.50	121.54	206.00
1⅞″	**89535K63**	58.01	136.89	232.02
1 15/16″	**89535K64**	52.25	136.83	248.79
2″	**89535K65**	56.50	147.98	269.06
2⅛″	**89535K66**	$61.42	$160.88	$292.50
2¼″	**89535K67**	68.87	180.36	327.93
2⅜″	**89535K68**	75.72	198.31	360.57
2½″	**89535K69**	78.26	204.98	372.69
2⅝″	**89535K71**	87.44	229.00	416.37
2¾″	**89535K73**	92.58	242.47	440.85
2⅞″	**89535K74**	100.91	264.28	480.50
3″	**89535K75**	102.90	269.51	490.02
3⅛″	**89535K76**	111.48	291.98	530.88
3¼″	**89535K77**	116.81	305.94	556.26
3½″	**89535K79**	143.86	376.79	685.07
3⅝″	**89535K81**	154.13	403.67	733.94
3¾″	**89535K82**	164.75	431.49	784.53
4″	**89535K83**	187.07	489.95	890.82

Dia.	½″ Long		¾″ Long		1″ Long		1½″ Long		2″ Long		3″ Long	
3″	**9208K51**★	$12.99	**9208K52**★	$16.11	**9208K53**★	$19.51	**9208K54**★	$25.99	**9208K55**★	$32.95	**9208K56**★	$48.01
3½″	**9208K57**★	17.46	**9208K58**★	21.48	**9208K59**★	25.86	**9208K61**★	34.36	**9208K62**★	43.59	**9208K63**★	62.25
4″	**9208K64**	25.94	**9208K65**	33.01	**9208K66**	42.84	**9208K67**	55.02	**9208K68**	70.17	**9208K69**	102.00
5″	**9208K71**	39.68	**9208K72**	50.96	**9208K73**	64.12	**9208K74**	83.96	**9208K75**	106.68	**9208K76**	152.66
6″	**9208K77**	59.22	**9208K78**	74.16	**9208K79**	90.53	**9208K81**	122.55	**9208K82**	150.33	**9208K83**	215.34
8″	**9208K84**	91.83	**9208K85**	116.67	**9208K86**	142.48	**9208K87**	193.20	**9208K88**	236.54	**9208K89**	337.00

★ Length tolerance is ±1/32″.

Metric Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B80-B90
- Yield Strength: 30,000 psi
- Annealed

Rods are cold finished. Diameter tolerance is –0.025 mm for 2 mm size, –0.036 mm for 3 mm to 9 mm sizes, and –0.052 mm for 10 mm to 25 mm sizes. Straightness tolerance is not rated. Length tolerance is +66 mm, –6 mm. Sold in 1-meter lengths.

Dia.			Dia.			Dia.			Dia.		
2 mm	**1272T11**	$3.24	6 mm	**1272T15**	$9.86	10 mm	**1272T19**	$23.12	16 mm	**1272T26**	$50.89
3 mm	**1272T12**	4.85	7 mm	**1272T16**	13.33	12 mm	**1272T22**	31.17	18 mm	**1272T28**	63.24
4 mm	**1272T13**	6.45	8 mm	**1272T17**	15.72	14 mm	**1272T24**	40.11	20 mm	**1272T29**	78.92
5 mm	**1272T14**	7.20	9 mm	**1272T18**	20.03	15 mm	**1272T25**	45.34	25 mm	**1272T31**	98.15

Machinable Rods—Unpolished (Mill) Finish

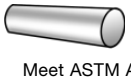

- Hardness: 154 Brinell, except ⅜″ to ¾″ diameters are 201 Brinell
- Yield Strength: 30,000 to 44,000 psi, except ⅜″ to ¾″ diameters are 45,000 to 97,000 psi
- Annealed

Meet ASTM A276 and A479 as well as AMS5639 and AMS5647. Also known as Project 70+, this stainless steel offers better machinability for an improved finish and longer tool life. It's dual-certified Type 304/304L stainless steel, which is a reduced carbon version of Type 304. Rods are cold finished. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
⅜″	±0.0015″
½″-⅞″	±0.002″
1″-1⅜″	±0.0025″
1½″-2″	±0.003″

Dia.		1 ft.	3 ft.	6 ft.
⅜″	**9210K11**	____	____	$25.70
½″	**9210K12**	____	$24.25	43.31
⅝″	**9210K13**	____	34.36	61.35
¾″	**9210K14**	$16.08	40.94	73.10
⅞″	**9210K15**	21.89	55.73	99.52
1″	**9210K16**	$28.72	$73.11	$130.56
1 1/16″	**9210K17**	30.26	77.02	137.54
1⅛″	**9210K18**	35.73	90.94	162.40
1¼″	**9210K19**	42.73	108.76	194.22
1 5/16″	**9210K21**	50.69	129.04	230.42
1⅜″	**9210K22**	$51.92	$132.17	$236.02
1½″	**9210K23**	57.93	147.46	263.33
1⅝″	**9210K24**	67.99	173.07	309.05
1¾″	**9210K25**	77.64	197.63	352.91
2″	**9210K28**	94.16	239.69	428.01

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Multipurpose Stainless Steel (Type 304) *(Material continued from previous page)*

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 150-185 Brinell
- Yield Strength: 30,000 to 40,000 psi
- Annealed

Meet ASM A276 and A479. Rods are cold finished. Diameter tolerance is ±0.0005″. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/8″	8934K11	—	—	$23.23
3/16″	8934K12	—	—	26.73
1/4″	8934K13	—	—	33.41
5/16″	8934K14	—	—	39.75
3/8″	8934K15	—	—	$50.60
1/2″	8934K16	—	—	65.29
5/8″	8934K17	—	—	97.23
3/4″	8934K18	—	$77.99	129.99
7/8″	8934K19	—	$93.85	$156.42
1″	8934K21	$48.98	104.96	174.94
1 1/4″	8934K22	68.91	147.65	246.09
1 1/2″	8934K23	92.27	197.73	329.55

Super-Tight Tolerance Rods with Material Certification—Precision Ground Finish

- Hardness: 167-233 Brinell
- Yield Strength: 36,000 to 74,000 psi
- Annealed

Meet ASM A276 and A479, and AMS5639 and AMS5947. Each comes with a traceable lot number and physical test report. Rods are cold finished. Diameter tolerance is –0.0002”. Straightness tolerance is 0.006” per foot. Length tolerance is ±1”. Sold in 6-ft. lengths.

Dia.		
1/8″	1255T22	$38.23
3/16″	1255T24	41.73
1/4″	1255T26	$48.41
5/16″	1255T28	54.75
3/8″	1255T32	$65.60
1/2″	1255T34	80.29

Rods—Mirror-Like (#8) Finish

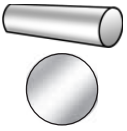

- Hardness: 180 Brinell
- Yield Strength: 40,000 psi
- Annealed

Meet ASM A276 and A479, AMS5639, and MIL-S-7720. Rods are cold finished. All are polished to a mirror-like finish with no grain lines and have a peel-off protective masking. Diameter tolerance is ±0.010″. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1/32″. Sold in 6-ft. lengths.

Dia.		
1/8″	1256T12	$31.25
1/4″	1256T14	48.55
3/8″	1256T16	$54.10
1/2″	1256T18	62.28

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: 160 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASM A276 and AMS5639. This dual certified Type 304/304L stainless steel is a reduced carbon version of Type 304. Bars are cold finished. Hex size is measured across the flats. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size	Tolerance
3/8″-1/2″	±0.003″
9/16″-1″	±0.004″
1 1/8″-2″	±0.006″
2 1/4″-3″	±0.008″

Hex Size		1 ft.	3 ft.	6 ft.
3/8″	89455K55	—	$17.70	$29.50
7/16″	89455K52	$8.86	22.14	36.90
1/2″	89455K53	11.31	28.28	47.14
9/16″	89455K54	13.68	34.19	56.98
5/8″	89455K13	15.47	38.68	64.46
11/16″	89455K14	17.95	44.88	74.80
3/4″	89455K15	20.59	51.47	85.79
13/16″	89455K16	$23.94	$59.84	$99.74
7/8″	89455K17	27.94	69.84	116.40
15/16″	89455K18	31.40	78.50	130.83
1″	89455K19	35.64	89.10	148.50
1 1/8″	89455K21	45.86	114.64	191.07
1 1/4″	89455K22	56.55	141.38	235.63
1 3/8″	89455K23	63.76	159.40	265.66
1 1/2″	89455K24	$75.89	$189.73	$316.21
1 5/8″	89455K25	86.08	215.21	358.68
1 3/4″	89455K26	99.80	249.51	415.85
2″	89455K27	122.09	305.23	508.72
2 1/4″	89455K28	159.87	399.68	666.14
2 1/2″	89455K29	191.34	478.36	797.27
3″	89455K31	317.70	794.26	1,323.76

U-Channels—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 42,000 psi
- Annealed

Meet ASM A276 and A479 and AMS5639. U-channels are hot rolled. Inside corners and leg edges are rounded; outside corners are squared. Base tolerance is ±0.062″. Straightness tolerance is 1/8″ per 5 feet. Leg tolerance is ±3/32″. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 7-ft. lengths. **To Order:** Please specify 1-, 3-, or 7-ft. length.

Outside Base x Legs		1 ft.	3 ft.	7 ft.
1/8″ Thick *(±0.023″)*				
1 1/2″ × 3/4″	1262T38	$23.28	$58.09	$113.02
2″ ×1″	1262T39	26.85	67.00	130.36
3/16″ Thick *(±0.030″)*				
3″ ×1 1/2″	1262T41	53.50	133.48	259.69
1/4″ Thick *(±0.030″)*				
2″×1″	1262T43	$42.94	$107.15	$208.47
3″×1 1/2″	1262T45	64.46	160.83	312.90
4″×1 3/4″	1262T47	74.90	186.88	363.58
4″×2″	1262T49	78.49	195.84	381.02
1/4″ Thick (Cont.)				
5″×2 1/2″	1262T51	$92.40	$230.54	$448.52
6″×3″	1262T53	133.56	333.25	648.34
3/8″ Thick *(±0.030″)*				
5″×1 7/8″	1262T55	111.34	277.82	540.50
6″×3″	1262T57	181.05	451.73	878.86

90° Angles—Unpolished (Mill) Finish

- Hardness: 160-235 Brinell, unless noted
- Yield Strength: 30,000 to 42,000 psi
- Annealed

Meet ASM A276 and A479. Angles are hot rolled. Inside corner and leg edges are rounded; outside corner is square. Thickness and straightness tolerances are not rated. Leg length tolerance is ±1/8″. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±7″ for 7-ft. lengths. **To Order:** Please specify 1-, 3-, or 7-ft. length where prices are shown.

Outside Leg Lgs.		1 ft.	3 ft.	7 ft.
1/8″ Thick				
1″ ×1″	8993K13	—	$20.99	$43.72
1 1/4″×1 1/4″	8993K14	$9.18	23.18	48.30
1 1/2″×1 1/2″	8993K15	11.07	27.97	58.27
2″ ×2″	8993K61	15.14	38.26	79.71
3/16″ Thick				
1″ ×1″	8993K81	11.93	30.14	62.79
1 1/4″×1 1/4″	8993K62	13.47	34.02	70.87
1 1/2″×1 1/2″	8993K63	15.77	39.84	83.00
2″ ×2″	8993K64	19.66	49.68	103.49
2″ ×3″	1260T52★	26.65	66.62	148.05
2 1/2″×2 1/2″	8993K65	24.07	60.82	126.70
1/4″ Thick				
1″ ×1″	8993K66	$13.53	$34.18	$71.21
1″ ×2″	1260T39★	24.86	62.04	120.70
1 1/4″×1 1/4″	8993K67	17.42	44.00	91.67
1 1/2″×1 1/2″	8993K68	18.86	47.65	99.28
1 1/2″×3″	1260T41★	36.63	91.40	177.83
2″ ×2″	8993K69	25.65	64.80	135.00
2″ ×3″	1260T54★	41.01	102.33	199.09
2 1/2″×2 1/2″	8993K71	31.30	79.08	164.76
3″ ×3″	8993K72	34.83	87.99	183.32
3″ ×4″	1260T56★	56.42	140.78	273.90
3″ ×5″	1260T42★	71.76	179.06	348.36
1/4″ Thick (Cont.)				
4″ ×4″	8993K83	$47.57	$120.18	$250.38
4″ ×6″	1260T43★	111.99	279.44	543.66
3/8″ Thick				
2″ ×2″	8993K73	33.41	84.40	175.84
2″ ×3″	1260T44★	56.02	139.77	271.92
2 1/2″×2 1/2″	8993K74	40.08	101.25	210.93
3″ ×3″	8993K75	46.84	118.34	246.54
3″ ×4″	1260T58★	73.25	182.76	355.57
3 1/2″×3 1/2″	8993K87	55.66	140.62	292.96
4″ ×4″	8993K85	61.06	154.25	321.35

★ Hardness is not rated.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Multipurpose Stainless Steel (Type 304) *(Material continued from previous page)*

The most widely used stainless steel, Type 304 has good weldability and formability and maintains corrosion resistance up to 1500° F (except for balls, which are not rated for temperature). Commonly used in chemical and food processing equipment. It may become slightly magnetic when worked and is not heat treatable.

T-Bars—Unpolished (Mill) Finish

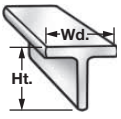

- Hardness: 156 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A276 and A479. T-bars are hot rolled. Edges are rounded. Height and width tolerances are ±0.141″, except 1″×1″ and 1½″×1½″ sizes are ±0.078″. Flatness tolerance is not rated. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Ht.×Wd.		1 ft.	3 ft.	6 ft.
1/8″ Thick *(±0.015″)*				
1″ ×1″	**1352T11**	$17.52	$43.91	$73.30
3/16″ Thick *(±0.015″)*				
1½″ ×1½″	**1352T12**	31.48	78.90	131.72
1/4″ Thick *(±0.023″)*				
2″ ×2″	**1352T13**	$50.30	$126.08	$210.48
2½″ ×2½″	**1352T14**	61.51	154.17	257.38
3″ ×3″	**1352T15**	72.42	181.50	303.00
3/8″ Thick *(±0.023″)*				
4″×4″	**1352T16**	$127.80	$320.30	$534.72

Half Rounds—Unpolished (Mill) Finish

- Hardness: Rockwell B80
- Yield Strength: 45,000 psi
- Annealed

Meet ASTM A276 and A479 and AMS5639. Half rounds are cold finished. Diameter tolerance is ±0.002″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.
To Order: Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1/2″	**1267T56**	$10.35	$18.87	$31.45
5/8″	**1267T57**	$12.95	$26.62	$44.36
3/4″	**1267T58**	$16.63	$36.56	$60.93

Precision Balls—Reflective Finish

- Hardness: 253-362 Brinell
- Yield Strength: 32,000 psi
- Work hardened

Meet ASTM A493. Made of Type 302 stainless steel. Grade is 100. Sphericity is 0.0001″. Diameter tolerance is ±0.0005″.

Dia.	Pkg. Qty.		Pkg.
1/16″	100	**9291K12**	$5.00
3/32″	100	**9291K13**	5.25
1/8″	100	**9291K14**	5.36
5/32″	100	**9291K16**	5.52
3/16″	100	**9291K18**	7.05
7/32″	100	**9291K21**	$8.21
1/4″	100	**9291K23**	8.38
9/32″	100	**9291K24**	13.25
5/16″	50	**9291K27**	9.24
11/32″	25	**9291K28**	$8.66
3/8″	25	**9291K31**	10.60
7/16″	25	**9291K33**	11.62
1/2″	15	**9291K35**	10.83
5/8″	5	**9291K36**	$7.65
3/4″	5	**9291K38**	10.28
			Each
1″	—	**9291K39**	$10.99

Wear-Resistant Multipurpose Stainless Steel (Type 301)

Commonly used for fasteners and springs, this chromium-nickel (austenitic) stainless steel offers better wear resistance and fatigue strength than Type 304. It also has good weldability and maintains corrosion resistance up to 1550° F. May be slightly magnetic. Not heat treatable.

Sheets—Unpolished (Mill) Finish

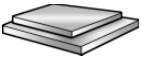

- Hardness: *1/4 Hard*, Rockwell C25; *1/2 Hard*, Rockwell C32; *Full Hard*, Rockwell C41
- Yield Strength: *1/4 Hard,* 75,000 psi; *1/2 Hard*, 110,000 psi; *Full Hard*, 140,000 psi

Meet ASTM A240 and MIL-S-5059. Sheets are cold finished. Width and length tolerances are ±1/32″. Flatness tolerance is not rated.

Use ***1/4 hard*** sheets for light drawing, stretching, and forming operations where heat and corrosion resistance are needed. Sheets also meet AMS5517. Use ***1/2 hard*** when forming applications require greater hardness and yield strength. Sheets also meet AMS5518. ***Full hard*** sheets are cold worked to the ideal mechanical properties desired for springs. Sheets also meet AMS5519.

Thick.	Thick. Tolerance	*1/4 HARD* 12″×12″		*1/4 HARD* 12″×36″		*1/2 HARD* 12″×12″		*1/2 HARD* 12″×36″		*FULL HARD* 12″×12″		*FULL HARD* 12″×36″	
0.015″	±0.002″	**1217T11**	$20.24	**1217T21**	$49.40	**1217T31**	$20.24	**1217T41**	$49.40	**1217T51**	$25.16	**1217T61**	$52.04
0.024″	±0.003″	**1217T12**	23.95	**1217T22**	53.69	**1217T32**	23.95	**1217T42**	53.69	**1217T52**	27.66	**1217T62**	57.12
0.029″	±0.004″	**1217T13**	29.56	**1217T23**	60.37	**1217T33**	29.56	**1217T43**	60.37	**1217T53**	27.36	**1217T63**	65.84
0.042″	±0.004″	**1217T14**	29.18	**1217T24**	68.12	**1217T34**	29.18	**1217T44**	68.12	**1217T54**	30.45	**1217T64**	72.37
0.048″	±0.004″	**1217T17**	32.13	**1217T27**	77.94	**1217T37**	32.13	**1217T47**	77.94	**1217T57**	34.83	**1217T67**	82.94
0.059″	±0.005″	**1217T15**	31.51	**1217T25**	94.18	**1217T35**	31.51	**1217T45**	94.18	**1217T55**	49.66	**1217T65**	102.35
0.075″	±0.005″	**1217T16**	36.91	**1217T26**	109.97	**1217T36**	36.91	**1217T46**	109.97	—	—	—	—

Spring-Tempered Strips—Unpolished (#2B Mill) Finish

- Hardness: Rockwell C42
- Yield Strength: 147,000 psi
- Spring tempered

Meet ASTM A666. Strips are cold finished. Width tolerance is ±0.005″ for 1/8″ to 4″ widths; ±0.010″ for 6″ to 12″ widths. Flatness tolerance is not rated. Length tolerance is ±1″.

Wd.	*Mini Coils* Lg., ft.			*Coils* Lg., ft.		
0.002″ Thick *(±0.0002″)*						
3/4″	10	**2416K3**	$42.04	75	**90415K101**	$134.86
1″	5	**2416K12**	42.04	25	**90415K801**	118.54
2″	5	**2416K13**	42.04	25	**90415K103**	134.86
0.003″ Thick *(±0.0003″)*						
1/2″	10	**2416K15**	43.46	100	**90415K803**	121.74
2″	5	**2416K16**	43.46	50	**90415K804**	142.57
0.004″ Thick *(±0.0003″)*						
1/2″	10	**2416K18**	42.12	100	**90415K806**	128.89
1″	5	**2416K19**	42.12	50	**90415K122**	134.86
2″	5	**2416K21**	42.12	50	**90415K807**	142.11
4″	5	**2416K22**	42.12	25	**90415K124**	134.86
0.005″ Thick *(±0.0003″)*						
1/8″	10	**2416K23**	$48.18	100	**90415K808**	$123.37
1/4″	10	**2416K24**	46.82	100	**90415K809**	124.31
1/2″	10	**2416K25**	41.40	100	**90415K811**	121.00
1″	5	**2416K26**	39.06	50	**90415K134**	134.86
2″	5	**2416K27**	39.06	50	**90415K812**	142.74
0.006″ Thick *(±0.0004″)*						
1/2″	10	**2416K29**	39.04	100	**90415K814**	114.43
3/4″	5	**2416K32**	39.04	75	**90415K816**	125.69
1″	5	**2416K33**	39.04	75	**90415K145**	134.86
2″	5	**2416K34**	39.04	50	**90415K817**	146.74
6″	—	—	—	10	**90415K818**	113.37
12″	—	—	—	10	**90415K822**	135.00

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Wear-Resistant Multipurpose Stainless Steel (Type 301)

(Material continued from previous page)

Spring-Tempered Strips—Unpolished (#2B Mill) Finish (Cont.)

Wd.	Mini Coils Lg., ft.			Coils Lg., ft.		
0.008″ Thick *(±0.0005″)*						
1/4″	10	2416K42	$46.78	100	90415K834	$113.89
3/8″	10	2416K43	39.54	100	90415K835	114.91
1/2″	5	2416K44	39.54	100	90415K836	136.11
3/4″	5	2416K45	39.54	50	90415K837	116.37
1″	5	2416K46	39.54	50	90415K838	119.11
2″	5	2416K47	38.02	50	90415K857	135.09
3″	5	2416K48	38.02	50	90415K839	137.49
6″	—	—	—	10	90415K841	111.77
8″	—	—	—	10	90415K842	121.29
0.010″ Thick *(±0.0007″)*						
1/8″	10	2416K49	48.12	100	90415K844	128.97
1/4″	10	2416K51	47.08	100	90415K845	128.26
1/2″	10	2416K52	39.22	100	90415K846	110.71
5/8″	10	2416K53	39.22	100	90415K847	124.34
3/4″	10	2416K54	39.22	100	90415K848	117.66
1″	10	2416K55	39.22	100	90415K849	111.66
2″	5	2416K56	39.22	75	90415K851	132.54
3″	5	2416K57	39.22	75	90415K858	134.91
4″	5	2416K58	39.22	50	90415K852	139.09
6″	—	—	—	20	90415K853	135.46
12″	—	—	—	10	90415K856	125.43
0.012″ Thick *(±0.001″)*						
1/4″	10	2416K59	47.40	100	90415K611	125.80
3/8″	10	2416K61	39.20	100	90415K612	114.23
1/2″	10	2416K62	39.20	100	90415K613	122.11
3/4″	10	2416K63	39.20	100	90415K614	123.00
1″	10	2416K64	39.20	100	90415K615	122.11
2″	5	2416K65	39.20	75	90415K206	134.86
4″	5	2416K66	39.20	25	90415K616	122.74
6″	—	—	—	20	90415K617	135.89
8″	—	—	—	10	90415K618	117.69
12″	—	—	—	10	90415K46	134.86
0.015″ Thick *(±0.001″)*						
1/8″	10	2416K67	49.36	100	90415K621	115.00
1/4″	10	2416K68	48.04	100	90415K622	115.26
1/2″	10	2416K69	40.18	100	90415K623	112.63
3/4″	10	2416K71	40.18	100	90415K624	112.71
1″	10	2416K72	40.18	100	90415K625	113.03
2″	5	2416K73	36.53	75	90415K626	136.03

Wd.	Mini Coils Lg., ft.			Coils Lg., ft.		
0.015″ Thick (Cont.)						
3″	5	2416K74	$36.53	25	90415K627	$113.49
6″	—	—	—	20	90415K628	136.09
8″	—	—	—	10	90415K629	129.43
10″	—	—	—	10	90415K631	133.34
12″	—	—	—	10	90415K632	138.26
0.020″ Thick *(±0.001″)*						
1/4″	10	2416K75	48.70	100	90415K633	115.40
3/8″	10	2416K76	38.32	100	90415K634	108.91
1/2″	10	2416K77	38.32	100	90415K635	109.40
3/4″	10	2416K78	38.32	100	90415K636	110.14
1″	10	2416K79	38.32	100	90415K637	119.26
2″	10	2416K81	38.32	50	90415K638	116.06
3″	5	2416K82	36.85	25	90415K639	116.31
4″	5	2416K83	36.85	25	90415K641	115.09
6″	5	2416K84	38.32	20	90415K642	142.54
12″	—	—	—	10	90415K645	143.14
0.025″ Thick *(±0.001″)*						
1/4″	10	2416K85	49.14	100	90415K646	115.66
1/2″	10	2416K86	38.52	100	90415K647	112.26
5/8″	10	2416K87	38.52	100	90415K648	112.51
3/4″	10	2416K88	38.52	100	90415K649	113.20
1″	10	2416K89	38.52	100	90415K255	134.86
2″	5	2416K91	37.04	25	90415K651	123.40
3″	5	2416K92	37.04	25	90415K652	131.06
4″	5	2416K93	37.04	25	90415K653	131.06
6″	—	—	—	10	90415K654	105.69
12″	—	—	—	5	90415K657	121.94
0.031″ Thick *(±0.0015″)*						
1/4″	10	2416K94	49.38	100	90415K658	115.91
3/8″	10	2416K95	38.26	100	90415K659	111.60
1/2″	10	2416K96	38.26	100	90415K661	112.03
3/4″	10	2416K97	38.26	100	90415K274	134.86
1″	5	2416K98	38.26	25	90415K662	117.09
2″	5	2416K99	36.79	25	90415K663	118.23
3″	5	2416K1	36.79	25	90415K664	121.46
4″	5	2416K2	38.26	25	90415K859	135.09
6″	—	—	—	10	90415K665	115.00
12″	—	—	—	5	90415K59	134.86

Economy-Grade Stainless Steel (Type 430)

Chosen more for aesthetic purposes, this chromium-based (ferritic) alloy has good formability and is magnetic. Considered a room temperature alloy, Type 430 is not recommended for temperature extremes or outdoor use. Not heat treatable.

Strips—Unpolished (#2B Mill) Finish

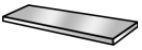

- Hardness: Rockwell B88
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A240. All have a peel-off protective film on one side. Width tolerance is ±0.005″. Flatness tolerance is not rated. Length tolerance is ±1/32″.

Wd.	Lg.	Pkg. Qty.		Pkg.	Wd.	Lg.	Pkg. Qty.		Pkg.	Wd.	Lg.	Pkg. Qty.		Pkg.
0.012″ Thick *(±0.002″)*					***0.018″ Thick*** *(±0.002″)*					***0.025″ Thick*** *(±0.002″)*				
1/2″	12″	16	8457K41	$11.82	1/2″	12″	10	8457K44	$10.73	1/2″	12″	8	8457K47	$7.76
3/4″	12″	12	8457K42	10.19	3/4″	12″	8	8457K45	8.74	3/4″	12″	6	8457K48	8.03
1″	12″	8	8457K43	8.74	1″	12″	6	8457K46	8.03	1″	12″	4	8457K49	6.83

Sheets

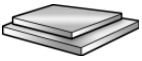

- Hardness: Rockwell B75-B88
- Yield Strength: 30,000 to 50,000 psi
- Annealed

Meet ASTM A240. All except 6″×12″ sheets also meet AMS5504. Width and length tolerances are ±1/32″. Flatness tolerance is 1/8″ for all sheets, except 6″×12″ sheets are not rated.

Unpolished (#2B Mill) Finish—6″×12″ sheets have a peel-off protective film on one side.

Brushed (#3 Satin) Finish—Polished to a brushed finish on one side with grain lines in one direction. The polished side has a peel-off protective film.

Unpolished (#2B Mill) Finish

Brushed (#3 Satin) Finish

Thick.	Thick. Tolerance	6″×12″		12″×12″		12″×24″		24″×24″		48″×48″	
Unpolished (#2B Mill) Finish											
0.012″	±0.002″	8457K11	$6.62	—	—	—	—	—	—	—	—
0.018″	±0.002″	8457K12	7.42	—	—	—	—	—	—	—	—
0.025″	±0.002″	8457K13	8.57	—	—	—	—	—	—	—	—
0.035″	±0.002″	—	—	1294T11	$16.65	1294T12	$29.96	1294T13	$49.94	1294T14	$166.46
0.046″	±0.003″	—	—	1294T15	21.95	1294T16	39.51	1294T17	65.84	1294T18	219.48
0.060″	±0.003″	—	—	1294T19	25.14	1294T21	45.26	1294T22	75.43	1294T23	251.44
Brushed (#3 Satin) Finish											
0.035″	±0.002″	—	—	1292T11	18.19	1292T12	32.74	1292T13	54.56	1292T14	181.87
0.046″	±0.003″	—	—	1292T15	24.00	1292T16	43.20	1292T17	72.01	1292T18	240.02
0.060″	±0.003″	—	—	1292T19	28.65	1292T21	51.58	1292T22	85.96	1292T23	286.54
0.075″	±0.004″	—	—	1292T24	33.01	1292T25	59.41	1292T26	99.02	1292T27	330.08

Warning! Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Super-Corrosion-Resistant Stainless Steel (Type 316)

With its higher molybdenum content, Type 316 stainless steel has better corrosion resistance than Type 304 so it is often used in applications such as chemical processing. Type 316 is a low carbon chromium-nickel (austenitic) stainless steel with good weldability and temperature resistance. It maintains corrosion resistance up to 800° F and may become slightly magnetic when worked. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

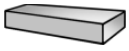

- Hardness: Rockwell B82-B95
- Yield Strength: 25,000 to 42,000 psi
- Annealed

Meet ASTM A276 and A479. All are dual-certified 316/316L (unless noted), which is a lower carbon version of Type 316 stainless steel. Bars are hot rolled, unless noted. Straightness tolerance is not rated. Length tolerance is ±1″ per foot. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width	Tolerance
3/16″-7/16″	–0.003″
1/2″-1″	±0.015″
1 1/8″-1 1/4″	–0.006″
1 1/2″	±0.031″

Width	Tolerance
1 3/4″	–0.006″
2″	±0.031″
2 1/2″	–0.008″
3″-4″	+0.062″, –0.031″

Width		1 ft.	3 ft.	6 ft.
3/16″ Thick *(±0.008″)*				
3/16″	89075K51★	____	$11.09	$19.12
1″	9083K35	$13.53	33.82	56.37
1/4″ Thick *(±0.015″)*				
1/4″	89075K52★	____	17.06	29.42
1/2″	9083K36	10.06	25.14	41.90
1″	9083K22	20.52	42.50	73.28
1 1/2″	9083K37	20.61	51.53	85.89
2″	9083K12	38.96	80.71	139.15
3″	9083K17	48.26	99.96	172.35
4″	9083K38	49.92	124.80	208.00
5/16″ Thick *(–0.003″)*				
5/16″	89075K53★	11.64	24.10	41.56
3/8″ Thick *(±0.012″)*				
3/8″	89075K54★	16.27	33.69	58.09
3/4″	9083K39	17.60	44.00	73.34
1″	9083K41	22.38	55.96	93.26
1 1/2″	9083K42	31.12	77.79	129.65
2″	9083K13	48.27	99.98	172.38

Width		1 ft.	3 ft.	6 ft.
7/16″ Thick *(–0.003″)*				
7/16″	89075K55★	$17.63	$36.53	$62.98
1/2″ Thick *(±0.015″)*				
1/2″	89075K14★	23.25	48.16	83.04
1″	9083K44	25.63	64.07	106.78
1 1/2″	9083K45	36.34	90.86	151.43
2″	9083K14	57.40	118.90	205.00
3″	9083K18	81.37	168.55	290.60
4″	9083K46	84.82	212.06	353.43
9/16″ Thick *(–0.004″)*				
9/16″	89075K43★	26.48	54.85	94.57
5/8″ Thick *(–0.004″)*				
5/8″	89075K44★	32.41	67.13	115.75
3/4″ Thick *(±0.020″)*				
3/4″	89075K17★	47.91	99.25	171.12
1″	9083K47	36.18	90.44	150.74
1 1/2″	9083K21	39.39	81.60	140.69
2″	9083K15	76.06	157.56	271.65

Width		1 ft.	3 ft.	6 ft.
3/4″ Thick (Cont.)				
3″	9083K19	$108.68	$225.13	$388.15
4″	9083K49	114.42	286.05	476.75
7/8″ Thick *(–0.004″)*				
7/8″	89075K21★	53.78	111.40	192.07
1″ Thick *(±0.015″)*				
1″	89075K24★	83.66	173.29	298.77
2″	9083K16	101.11	209.44	361.11
1 1/8″ Thick *(–0.006″)*				
1 1/8″	89075K45★	86.23	178.62	307.97
1 1/4″ Thick *(–0.006″)*				
1 1/4″	89075K27★	105.54	218.63	376.94
1 1/2″ Thick *(–0.006″)*				
1 1/2″	89075K31★	140.69	291.43	502.47
1 3/4″ Thick *(–0.006″)*				
1 3/4″	89075K46★	164.62	341.00	587.93
2″ Thick *(–0.008″)*				
2″	89075K47★	203.11	420.73	725.39
2 1/2″ Thick *(–0.008″)*				
2 1/2″	89075K48★	275.72	571.14	984.73

★ Not dual certified. Cold finished.

Strips—Unpolished (#2B Mill) Finish

- Hardness: 217 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A240. Strips are cold finished. All have a peel-off protective masking on one side. Width tolerance is ±1/16″. Flatness tolerance is 1/2″. Length tolerance is ±1/8″.

Thick.	Thick. Tolerance	2″ Wd. × 12″ Lg.	4″ Wd. × 12″ Lg.	3″ Wd. × 24″ Lg.	6″ Wd. × 24″ Lg.
1/16″	±0.006″	9090K11 $12.14	9090K21 $18.88	9090K31 $27.98	9090K41 $48.55
1/8″	±0.010″	9090K12 20.90	9090K22 32.69	9090K32 48.55	9090K42 92.38

Sheets

Unpolished (#2B Mill) Finish

Brushed (#4 Satin) Finish

Mirror-Like (#8) Finish

- Hardness: 200-217 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A240 and MIL-S-5059. Sheets are cold finished. All have a peel-off protective masking on one side. Flatness tolerance is 1/2″.

Unpolished (#2B Mill) Finish—Has a semireflective appearance on both sides. Also meets AMS5507. Width and length tolerances are ±1/8″.

Brushed (#4 Satin) Finish—Polished to a fine brushed finish on one side with grain lines in one direction. Also meets ASTM A167. Width and length tolerances are ±1/32″.

Mirror-Like (#8) Finish—Polished to a mirror-like finish on one side with no grain lines. Also meets ASTM A167. Width and length tolerances are ±1/32.″

Finish Selector Pack—Includes one individually marked 1 3/4″ × 3″ × 1/32″ thick piece of each finish above.

1121T11 ..... **Pkg.** $32.00

Thick.	Thick. Tolerance	UNPOLISHED (#2B MILL) FINISH 12″×12″	12″×24″	24″×24″	24″×36″	36″×48″	36″×96″
0.024″	±0.003″	88885K11 $13.41	88885K21 $26.19	88885K31 $45.84	88885K41 $59.54	88885K61 $112.80	88885K51 $219.54
0.030″	±0.004″	88885K12 13.78	88885K22 26.30	88885K32 49.39	88885K42 66.36	88885K62 123.91	88885K52 239.31
0.036″	±0.004″	88885K13 16.04	88885K23 32.05	88885K33 55.82	88885K43 73.58	88885K63 146.51	88885K53 267.74
0.048″	±0.005″	88885K17 22.62	88885K27 41.96	88885K37 73.59	88885K47 98.06	88885K64 194.27	88885K57 349.09
0.060″	±0.006″	88885K14 26.73	88885K24 50.79	88885K34 83.83	88885K44 114.63	88885K65 222.00	88885K54 399.00
0.075″	±0.007″	88885K15 33.36	88885K25 58.33	88885K35 114.79	88885K45 134.63	88885K66 255.08	88885K55 479.29
0.105″	±0.009″	88885K18 46.19	88885K28 74.87	88885K38 128.79	88885K48 193.25	88885K67 364.50	88885K58 623.40
0.120″	±0.010″	88885K16 51.82	88885K26 80.68	88885K36 143.24	88885K46 214.72	88885K68 423.62	88885K56 702.17

Thick.	Thick. Tolerance	BRUSHED (#4 SATIN) FINISH 12″×12″	12″×24″	24″×24″	MIRROR-LIKE (#8) FINISH 12″×12″	12″×24″	24″×24″
0.030″	±0.007″	9745K11 $20.95	9745K31 $40.64	9745K51 $72.20	9759K11 $25.56	9759K31 $47.31	9759K51 $89.51
0.036″	±0.007″	9745K12 25.47	9745K32 49.32	9745K52 87.71	9759K12 29.81	9759K32 54.93	9759K52 103.90
0.048″	±0.007″	9745K13 31.53	9745K33 61.12	9745K53 108.65	9759K13 37.29	9759K33 66.84	9759K53 126.42
0.060″	±0.010″	9745K14 38.51	9745K34 74.61	9745K54 132.62	9759K14 45.05	9759K34 83.32	9759K54 149.51
0.078″	±0.010″	9745K15 48.45	9745K35 88.09	9745K55 160.17	9759K15 54.98	9759K35 98.92	9759K55 178.04
0.105″	±0.010″	9745K16 70.34	9745K36 127.91	9745K56 211.42	9759K16 70.37	9759K36 125.51	9759K56 226.55
0.120″	±0.010″	9745K17 73.10	9745K37 132.91	9745K57 241.65	9759K17 78.99	9759K37 143.62	9759K57 261.12
0.180″	±0.010″	9745K18 110.22	9745K38 200.42	9745K58 361.38	9759K18 124.49	9759K38 225.36	9759K58 411.54
0.250″	±0.010″	9745K19 186.56	9745K39 334.88	9745K59 606.89	____ ____	____ ____	____ ____

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Super-Corrosion-Resistant Stainless Steel (Type 316) *(Material continued from previous page)*

Thick Sheets—Unpolished (Mill) Finish

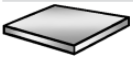

- Hardness: 215 Brinell
- Yield Strength: 30,000 to 42,000 psi
- Annealed

Meet ASTM A240. All are dual-certified 316/316L, which is a reduced carbon version of Type 316. Sheets are hot rolled. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		24″×24″		24″×48″	
3/16″	+0.050″, −0.010″	9195K45	$25.86	9195K11	$86.61	9195K12	$163.63	9195K13	$306.79	9195K14	$574.73
1/4″	+0.050″, −0.010″	9195K46	34.27	9195K21	101.94	9195K22	195.24	9195K23	375.35	9195K24	713.87
3/8″	+0.060″, −0.010″	9195K47	39.88	9195K31	134.25	9195K32	257.77	9195K33	511.27	9195K34	949.44
1/2″	+0.060″, −0.010″	9195K48	48.73	9195K41	167.50	9195K42	315.51	9195K43	613.78	9195K44	1,133.28

Tight-Tolerance Blanks with Material Certification—Precision Ground Finish

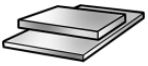

- Hardness: 211 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A167 and A240. These blanks are consistently flat, square, and parallel on all six sides, so you can immediately put them in your CNC machine and start machining. Each comes with a traceable lot number and physical test report. Blanks are hot rolled. Tolerance on all dimensions is ±0.002″.

Thick.	2″×12″		4″×12″		6″×12″		8″×12″		12″×12″	
1/4″	8896K11	$108.59	8896K12	$145.07	8896K13	$191.11	8896K14	$260.61	8896K15	$321.42
3/8″	8896K21	147.11	8896K22	234.76	8896K23	313.01	8896K24	414.74	8896K25	563.42
1/2″	8896K31	166.48	8896K32	265.66	8896K33	354.21	8896K34	456.93	8896K35	637.57
5/8″	8896K41	178.84	8896K42	275.83	8896K43	381.81	8896K44	501.57	8896K45	693.57
3/4″	8896K51	204.43	8896K52	326.22	8896K53	434.96	8896K54	598.07	8896K55	782.92
1″	8896K61	234.64	8896K62	374.43	8896K63	499.23	8896K64	706.42	8896K65	898.62

Thick.	12″×18″		12″×24″		18″×18″		24″×24″	
1/4″	8896K16	$443.03	8896K17	$608.08	8896K18	$542.93	8896K19	$868.69
3/8″	8896K26	795.98	8896K27	1,012.43	8896K28	939.03	8896K29	1,565.05
1/2″	8896K36	900.75	8896K37	1,145.69	8896K38	1,062.62	8896K39	1,771.04
5/8″	8896K46	984.85	8896K47	1,221.64	8896K48	1,180.52	8896K49	2,002.80
3/4″	8896K56	1,106.10	8896K57	1,406.87	8896K58	1,304.87	8896K59	2,174.79
1″	8896K66	1,269.55	8896K67	1,614.77	8896K68	1,497.70	8896K69	2,496.17

Rectangular Tubes—Unpolished (Mill) Finish

- Hardness: 192-217 Brinell
- Yield Strength: 25,000 to 40,000 psi
- As welded condition

Meet ASTM A554. This dual-certified Type 316/316L stainless steel is a reduced carbon version of Type 316. Tubes are cold finished. Also known as hollow bar. Outside and inside corners are rounded. Straightness tolerance is 0.075″ per 3 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Ht.×Wd.	Ht./Wd. Tolerance		1 ft.	3 ft.	6 ft.
0.062″ Wall Thickness *(±0.006″)*					
1 1/2″×1 1/2″	±0.015″	2937K31	$16.24	$40.61	$67.68
0.065″ Wall Thickness *(±0.007″)*					
1″ ×1″	±0.015″	2937K11	17.32	45.35	82.46
0.120″ Wall Thickness *(±0.012″)*					
1″ ×1″	±0.015″	2937K13	33.69	56.15	93.58
1″ ×1 1/2″	±0.020″	2937K32	28.23	70.57	117.62
1″ ×2″	±0.020″	2937K33	25.98	64.96	108.27
1 1/2″×1 1/2″	±0.020″	2937K15	38.64	101.20	184.00
0.120″ Wall Thickness (Cont.)					
2″×2″	±0.020″	2937K17	$46.45	$121.67	$221.21
3″×3″	±0.030″	2937K19	74.43	194.93	354.41
0.180″ Wall Thickness *(±0.018″)*					
2″×4″	±0.030″	2937K21	87.90	230.20	418.55
3″×3″	±0.030″	2937K23	97.77	256.05	465.55
0.250″ Wall Thickness *(±0.025″)*					
2″×4″	±0.030″	2937K25	153.08	300.69	546.70
3″×3″	±0.030″	2937K27	129.37	338.84	616.07
4″×4″	±0.030″	2937K29	159.15	416.83	757.88

Round Tubes—Unpolished (Mill) Finish

- Hardness: 159-229 Brinell
- Yield Strength: 42,000 psi
- Annealed

Meet ASTM A511. Tubes are hot rolled. Also known as hollow bar. OD tolerance is ±0.023″ for 1 1/4″ to 2 1/2″ ODs, and ±0.031″ for 3″ to 5″ ODs. Straightness tolerance is 0.030″ per foot. Length tolerance is +1″. **To Order:** Please specify 1-, 2-, or 4-ft. length.

OD	ID		1 ft.	2 ft.	4 ft.
0.188″ Wall Thickness *(±0.026″)*					
1 1/4″	7/8″	89495K18	$72.40	$120.67	$201.12
1 1/2″	1 1/8″	89495K48	83.96	139.94	233.23
2″	1 5/8″	89495K54	102.72	171.20	285.33
2 1/2″	2 1/8″	89495K56	120.08	200.13	333.55
3″	2 5/8″	89495K58	141.32	235.54	392.56
3 1/2″	3 1/8″	89495K59	145.88	243.13	405.22
0.250″ Wall Thickness *(±0.031″)*					
1 1/4″	3/4″	89495K19	85.12	141.87	236.45
1 1/2″	1″	89495K49	89.48	149.14	248.56
2″	1 1/2″	89495K71	79.76	140.92	265.88
2 1/2″	2″	89495K72	86.56	152.93	288.54
0.250″ Wall Thickness (Cont.)					
3″	2 1/2″	89495K73	$92.86	$164.06	$309.54
3 1/2″	3″	89495K1	148.80	248.00	413.33
3 3/4″	3 1/4″	89495K5	136.03	226.71	377.85
4″	3 1/2″	89495K74	124.05	219.16	413.50
5″	4 1/2″	89495K6	212.04	353.39	588.99
0.375″ Wall Thickness *(±0.047″)*					
1 1/4″	1/2″	89495K39	76.05	126.75	211.25
1 1/2″	3/4″	89495K53	109.84	183.07	305.12
2″	1 1/4″	89495K81	94.54	167.01	315.12
2 1/2″	1 3/4″	89495K82	102.40	180.90	341.33
3″	2 1/4″	89495K83	121.12	213.97	403.72
0.375″ Wall Thickness (Cont.)					
3 1/2″	2 3/4″	89495K4	$222.18	$370.30	$617.16
4″	3 1/4″	89495K84	190.70	336.90	635.66
5″	4 1/4″	89495K7	317.48	529.13	881.89
0.500″ Wall Thickness *(±0.0625″)*					
2″	1″	89495K55	208.71	347.86	579.76
2 1/2″	1 1/2″	89495K57	224.04	373.40	622.33
3″	2″	89495K91	187.62	331.46	625.40
3 1/2″	2 1/2″	89495K92	195.46	345.32	651.55
3 3/4″	2 3/4″	89495K93	199.07	351.70	663.58
4″	3″	89495K94	224.71	396.99	749.03
5″	4″	89495K8	451.29	933.70	1,556.16

Metric Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B80-B90, unless noted
- Yield Strength: 29,000 to 31,000 psi
- Annealed

Rods are cold finished. Diameter tolerance is −0.036 mm. Straightness tolerance is not rated. Length tolerance is +66 mm, −6 mm. Sold in 1-meter lengths.

Dia.			Dia.			Dia.			Dia.		
2 mm	1335T21 ♦	$9.76	6 mm	1335T25	$22.17	10 mm	1335T29	$69.64	14 mm	1335T33	$103.80
4 mm	1335T23	15.87	8 mm	1335T27	33.95	12 mm	1335T31	83.76	16 mm	1335T35	137.26

♦ Hardness is Rockwell B95-B97.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Super-Corrosion-Resistant Stainless Steel (Type 316) *(Material continued from previous page)*

With its higher molybdenum content, Type 316 stainless steel has better corrosion resistance than Type 304 so it is often used in applications such as chemical processing. Type 316 is a low carbon chromium-nickel (austenitic) stainless steel with good weldability and temperature resistance. It maintains corrosion resistance up to 800° F and may become slightly magnetic when worked. Not heat treatable.

Rods—Unpolished (Mill) Finish

- Hardness: 135-215 Brinell
- Yield Strength: 30,000 to 60,000 psi
- Annealed

Meet ASTM A276 and A479. The 1/2″ to 3″ long rods also meet ASTM A182, A193, and A484. All are cold finished, except 3 5/8″ to 8″ diameters, which are hot rolled. The 1-, 3-, and 6-ft. length rods are dual-certified Type 316/316L stainless steel, which is a reduced carbon version of Type 316 stainless steel. Straightness tolerance is not rated. Length tolerance is +1/8″ for 1/2″ to 3″ lengths, ±1/2″ for 1-ft. lengths, ±1 1/2″ for 3-ft. lengths, and ±3″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Also Available: 1-, 3-, and 6-ft. lengths shown below, with material certification. Each comes with a traceable lot number and physical test report. Please ask for 1305T778 and specify diameter and length.

Diameter	Tolerance
1/8″-15/16″	±0.002″
1″-2 7/8″	±0.003″
3″-3 1/2″	±0.031″
3 5/8″-6″	±0.063″
8″	+0.188″

Dia.		1 ft.	3 ft.	6 ft.
1/8″	89325K11	—	—	$12.62
3/16″	89325K12	—	—	12.95
1/4″	89325K21	—	—	13.48
5/16″	89325K13	—	—	11.93
3/8″	89325K23	—	—	19.70
7/16″	89325K86	—	$12.58	21.33
1/2″	89325K85	—	15.28	25.90
9/16″	89325K84	$8.02	18.92	32.07
5/8″	89325K83	9.68	22.84	38.72
11/16″	89325K82	11.46	26.59	45.84
3/4″	89325K17	13.64	32.20	54.57
13/16″	89325K18	15.36	36.26	61.45
7/8″	89325K19	17.45	41.19	69.82
15/16″	89325K22	19.65	46.37	78.59
1″	89325K24	21.93	51.75	87.71
1 1/16″	89325K26	24.28	57.31	97.13
1 1/8″	89325K28	$26.72	$63.07	$106.89
1 3/16″	89325K32	29.23	68.99	116.93
1 1/4″	89325K34	31.81	75.07	127.23
1 5/16″	89325K36	34.45	81.31	137.81
1 3/8″	89325K38	37.16	87.71	148.66
1 7/16″	89325K41	37.99	89.67	151.98
1 1/2″	89325K43	44.23	104.38	176.91
1 9/16″	89325K45	45.63	107.68	182.51
1 5/8″	89325K51	48.56	114.60	194.23
1 11/16″	89325K52	51.53	121.62	206.13
1 3/4″	89325K54	54.53	128.68	218.11
1 7/8″	89325K56	51.79	135.65	246.63
1 15/16″	89325K58	54.47	142.65	259.36
2″	89325K63	58.04	152.00	276.36
2 1/8″	89325K64	65.52	171.60	312.00
2 1/4″	89325K65	$73.46	$192.38	$349.79
2 3/8″	89325K66	84.64	221.68	403.06
2 1/2″	89325K67	93.49	244.84	445.17
2 5/8″	89325K68	102.78	269.19	489.44
2 3/4″	89325K69	112.53	294.72	535.85
2 7/8″	89325K81	124.62	326.39	593.43
3″	89325K71	133.35	349.25	635.00
3 1/8″	89325K72	142.34	372.78	677.79
3 1/4″	89325K73	158.46	415.01	754.57
3 3/8″	89325K74	176.66	462.69	841.25
3 1/2″	89325K75	187.00	489.75	890.46
3 5/8″	89325K76	200.39	524.84	954.26
3 3/4″	89325K77	214.26	561.15	1,020.28
3 7/8″	89325K78	228.35	598.06	1,087.38
4″	89325K79	239.88	628.25	1,142.28

Dia.	1/2″ Long		3/4″ Long		1″ Long		1 1/2″ Long		2″ Long		3″ Long	
3″	9260K51	$18.33	9260K52	$22.98	9260K53	$29.12	9260K54	$37.84	9260K55	$47.22	9260K56	$69.22
3 1/2″	9260K57	24.41	9260K58	30.59	9260K59	37.23	9260K61	49.93	9260K62	62.47	9260K63	88.89
4″	9260K64	33.30	9260K65	43.08	9260K66	53.09	9260K67	72.44	9260K68	91.74	9260K69	133.70
5″	9260K71	47.78	9260K72	61.34	9260K73	75.59	9260K74	103.75	9260K75	128.95	9260K76	186.50
6″	9260K77	67.07	9260K78	85.19	9260K79	104.17	9260K81	142.04	9260K82	175.29	9260K83	247.20
8″	9260K84	107.75	9260K85	137.76	9260K86	169.12	9260K87	230.95	9260K88	285.48	9260K89	410.00

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 150-180 Brinell
- Yield Strength: 30,000 to 40,000 psi
- Annealed

Meet AMS5648 and MIL-S-7720. The 1/8″ to 1/2″ diameter rods also meet ASTM A580; 5/8″ diameter and larger rods also meet ASTM A276. Rods are cold finished. Diameter tolerance is ±0.0005″. Straightness tolerance is 1/8″ per 5 feet, except 1/8″ to 3/8″ diameters are not rated. Length tolerance for 1-ft. lengths is ±1″, 3-ft. lengths is ±3″, and 6-ft. lengths is ±6″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/8″	8936K11	—	—	$20.65
3/16″	8936K12	—	—	23.34
1/4″	8936K13	—	—	26.19
5/16″	8936K14	—	—	31.31
3/8″	8936K15	—	—	$40.77
1/2″	8936K16	—	—	62.18
5/8″	8936K17	—	—	92.08
3/4″	8936K18	—	$74.38	123.97
7/8″	8936K19	$40.02	$92.35	$153.91
1″	8936K21	44.69	103.13	171.88
1 1/4″	8936K22	68.55	158.20	263.66
1 1/2″	8936K23	98.83	228.08	380.13

Machinable Rods—Unpolished (Mill) Finish

- Hardness: 150 Brinell, except 3/8″ to 3/4″ diameters are 203 Brinell
- Yield Strength: 33,000 to 42,000 psi, except 3/8″ to 3/4″ diameters are 80,000 to 88,000 psi
- Annealed

Meet ASTM A276 and A479 as well as AMS5648 and AMS5653. Also known as Project 70+, this stainless steel offers better machinability for an improved finish and longer tool life. It's dual-certified Type 316/316L stainless steel, which is a reduced carbon version of Type 316. Rods are cold finished. Diameter tolerance is ±0.002″ for 3/8″ to 7/8″ diameters and ±0.003″ for 1″ to 2″ diameters. Straightness tolerance is 1/16″ per five feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
3/8″	9298K11	—	—	$38.98
1/2″	9298K12	—	$35.38	58.96
5/8″	9298K13	$23.43	54.07	90.12
3/4″	9298K14	33.07	76.32	127.20
7/8″	9298K15	41.68	96.18	160.30
1″	9298K16	$50.10	$115.61	$192.69
1 1/8″	9298K17	61.30	141.45	235.75
1 1/4″	9298K18	73.23	169.00	281.66
1 3/8″	9298K19	85.84	198.10	330.16
1 1/2″	9298K21	100.59	232.13	386.88
1 5/8″	9298K22	$114.53	$264.29	$440.49
1 3/4″	9298K23	130.87	302.00	503.34
1 7/8″	9298K24	145.94	336.79	561.31
2″	9298K25	161.43	372.54	620.90

Passivated Rods—Unpolished (Mill) Finish

- Hardness: 235 Brinell
- Yield Strength: 30,000 to 45,000 psi
- Annealed

Meet ASTM A276, A479, and A484, AMS5648 and AMS-S-7720, and MIL-S-7720. Rods are passivated for improved corrosion resistance. All are cold finished. Diameter tolerance is ±0.004″. Straightness tolerance is not rated. Length tolerance is ±1/16″. Sold in 6-ft. lengths.

Dia.		
1/8″	1325T11	$27.00
1/4″	1325T12	35.00
3/8″	1325T13	$67.00
1/2″	1325T14	125.20
5/8″	1325T15	$142.80
3/4″	1325T16	196.36
7/8″	1325T17	$250.00
1″	1325T18	346.67

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Super-Corrosion-Resistant Stainless Steel (Type 316) *(Material continued from previous page)*

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: 160 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A182, A193, A276, A479, and A484, and AMS5648 and 5653. This dual-certified Type 316/316L stainless steel is a reduced carbon version of Type 316. Hex bars are cold finished. Hex size is measured across the flats. Hex size tolerance is –0.008″. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Hex Size		1 ft.	3 ft.	6 ft.
7/16″	89205K85	$12.94	$28.86	$49.76
1/2″	89205K86	15.69	35.00	60.35
9/16″	89205K32	19.23	42.90	73.97
5/8″	89205K33	22.29	49.72	85.73
11/16″	89205K35	24.87	55.47	95.64
3/4″	89205K38	27.62	61.62	106.24
13/16″	89205K41	$31.83	$71.00	$122.41
7/8″	89205K44	35.54	79.28	136.69
15/16″	89205K46	39.38	87.85	151.47
1″	89205K49	43.97	98.08	169.11
1 1/16″	89205K52	51.03	113.83	196.26
1 1/8″	89205K55	56.23	125.44	216.28
1 1/4″	89205K57	$68.23	$152.20	$262.41
1 3/8″	89205K63	81.24	181.22	312.45
1 1/2″	89205K65	95.37	212.76	366.82
1 3/4″	89205K69	127.66	284.78	491.00
2″	89205K72	164.08	366.01	631.06
2 1/2″	89205K81	253.61	565.74	975.41

90° Angles—Unpolished (Mill) Finish

- Hardness: 160-235 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A276 and A479. Angles are hot rolled. Inside corner and leg edges are rounded; outside corner is squared. Leg length tolerance is ±1/8″. Thickness and straightness tolerances are not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±7″ for 7-ft. lengths. **To Order:** Please specify 1-, 3-, or 7-ft. length.

Leg Lg.		1 ft.	3 ft.	7 ft.
1/8″ Thick				
1″	1321T21	$8.70	$22.72	$48.33
1 1/4″	1321T22	10.52	27.48	58.47
1 1/2″	1321T23	12.55	32.76	69.71
2″	1321T24	16.24	42.40	90.22
3/16″ Thick				
1″	1321T31	12.08	31.55	67.13
1 1/4″	1321T32	14.87	38.82	82.60
1 1/2″	1321T33	17.55	45.83	97.51
3/16″ Thick (Cont.)				
2″	1321T34	$23.31	$60.87	$129.52
2 1/2″	1321T35	28.76	75.10	159.78
1/4″ Thick				
1″	1321T41	15.06	39.32	83.67
1 1/4″	1321T42	18.90	49.34	104.98
1 1/2″	1321T43	22.36	58.38	124.22
2″	1321T44	29.88	78.03	166.02
2 1/2″	1321T45	36.96	96.50	205.32
1/4″ Thick (Cont.)				
3″	1321T46	$40.36	$105.39	$224.24
4″	1321T54	129.51	356.18	639.29
3/8″ Thick				
2″	1321T51	38.72	101.09	215.09
2 1/2″	1321T52	46.98	122.68	261.02
3″	1321T53	55.48	144.87	308.23
4″	1321T55	192.31	528.82	921.25

Precision Balls—Reflective Finish

- Hardness: 253-362 Brinell
- Yield Strength: 75,000 psi
- Annealed

Meet ASTM A493. Grade is 100. Sphericity is 0.0001″. Diameter tolerance is ±0.0005″.

Dia.	Pkg. Qty.		Pkg.
1/8″	100	96415K71	$7.45
5/32″	100	96415K72	8.76
3/16″	100	96415K73	11.39
7/32″	100	96415K74	13.70
1/4″	50	96415K75	8.13
5/16″	50	96415K76	$14.88
3/8″	25	96415K77	14.32
7/16″	25	96415K78	14.51
1/2″	10	96415K79	10.51
9/16″	10	96415K83	$14.05
3/4″	5	96415K81	14.69
			Each
1″		96415K82	$15.77

Super-Corrosion-Resistant Stainless Steel (A286)

This heat-treatable alloy has corrosion resistance similar to Type 316 and contains titanium for increased strength. It retains its strength in high and low temperatures and maintains corrosion resistance up to 1500° F. Nonmagnetic. Heat treatable.

Sheets—Unpolished (Mill) Finish

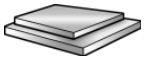

- Hardness: Rockwell B90
- Yield Strength: 50,000 psi
- Annealed

Meet AMS5525. Can be heat treated to a maximum attainable hardness of Rockwell C30-C35. Sheets are cold finished. Width and length tolerances are ±1/16″. Flatness tolerance is 1/4″ per 3 feet.

Thick.	Thick. Tolerance	*6″×6″*		*12″×12″*		*12″×24″*		*24″×24″*		*24″×48″*	
0.032″	±0.002″		—	9193K11	$54.84	9193K12	$93.07	9193K13	$176.16	9193K14	$332.38
0.040″	±0.002″	9193K55	$26.26	9193K21	62.84	9193K22	102.12	9193K23	203.65	9193K24	364.71
0.050″	±0.003″	9193K56	29.94	9193K31	73.22	9193K32	128.40	9193K33	247.30	9193K34	443.51
0.063″	±0.003″	9193K57	30.50	9193K41	90.67	9193K42	145.44	9193K43	291.77	9193K44	550.51

Super-Corrosion-Resistant Stainless Steel (Nitronic 60)

The addition of nitrogen gives Nitronic 60 better corrosion resistance than Type 304 plus more strength in temperature extremes. Commonly used in the chemical industry. Nonmagnetic. Not heat treatable. Maximum temperature for corrosion resistance is not rated.

Rods—Unpolished (Mill) Finish

- Hardness: 229 Brinell
- Yield Strength: 50,000 psi
- Annealed

Meet ASTM A276 and A479 as well as AMS5848. Rods are hot rolled. Diameter tolerance is ±0.003″. Straightness tolerance is 0.0125″ per foot. Length tolerance is +1/8″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1/2″	9583K11	$19.83	$48.76	$82.64
3/4″	9583K12	32.58	80.10	135.77
1″	9583K13	54.84	134.80	228.48
1 1/4″	9583K14	$70.90	$174.29	$295.40
1 1/2″	9583K15	103.65	254.81	431.88
1 3/4″	9583K16	140.81	346.16	586.72
2″	9583K17	$167.88	$412.71	$699.51
2 1/2″	9583K18	231.11	568.15	962.96
3″	9583K19	334.57	822.48	1,394.03

Also Available: Ultra-corrosion-resistant Alloy 20 stainless steel (equivalent to Carpenter 20) rods. Alloy 20 is commonly used in the chemical industry due to its resistance to aggressive environments. Hardness is Rockwell B95, yield strength is 30,000 psi, and material is annealed. Meet ASTM B473. Rods are cold finished. Nonmagnetic. Not heat treatable. Please ask for 9091K26 and specify 1/4″ to 2″ diameter and 1-, 3-, or 6-ft. length.

***Warning!* Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.**

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Easy-to-Machine Stainless Steel (Type 303)

Commonly used for screw machine products, Type 303 stainless steel has good machinability due to the addition of sulfur and phosphorus. It's a low-carbon chromium-nickel (austenitic) stainless steel with good corrosion resistance and temperature resistance, and it maintains corrosion resistance up to 1500°F. It may become slightly magnetic when worked and is not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

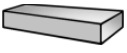

- Hardness: 262 Brinell
- Yield Strength: 30,000 to 50,000 psi
- Annealed

Meet ASTM A582. Bars are hot rolled. Straightness tolerance is not rated. Length tolerance is +1/8", –5/32" for 3" to 6" lengths, ±1/2" for 1-ft. lengths, ±1 1/2" for 3-ft. lengths, and ±3" for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width	Width Tolerance	Thick. Tolerance
1/2"-1"	±0.015"	±0.010"
1 1/4"-2"	±0.031"	±0.031"
2 1/2"-4"	+0.062", –0.031"	+0.062", –0.031"
5"-6"	+0.125", –0.156"	±0.020"

Width		1 ft.	3 ft.	6 ft.
1/8" Thick				
1/2"	9084K11	—	—	$30.43
5/8"	9084K12	—	—	35.06
3/4"	9084K13	—	—	40.23
1"	9084K14	—	$23.54	40.59
1 1/4"	9084K15	—	31.74	54.72
1 1/2"	9084K16	—	41.13	70.91
2"	9084K17	$18.51	46.67	80.46
3/16" Thick				
1/2"	9084K21	—	—	29.69
5/8"	9084K112	7.07	17.83	30.75
3/4"	9084K122	9.34	23.55	40.60
1"	9084K22	—	—	49.74
1 1/4"	9084K23	—	36.74	63.34
1 1/2"	9084K24	—	42.29	72.92
2"	9084K25	21.48	54.17	93.39
2 1/2"	9084K132	26.85	67.71	116.75
3"	9084K26	28.97	73.05	125.94
4"	9084K27	38.76	97.74	168.51
1/4" Thick				
1/2"	9084K28	—	—	35.48
5/8"	9084K142	11.61	29.27	50.47
3/4"	9084K29	—	40.76	70.27
1"	9084K31	—	52.51	90.53
1 1/4"	9084K32	22.94	57.85	99.75
1 1/2"	9084K33	27.69	69.81	120.37
1 3/4"	9084K34	29.12	73.43	126.60
2"	9084K35	31.55	79.55	137.16
2 1/2"	9084K36	37.28	94.02	162.10
3"	9084K37	39.43	99.42	171.42
3 1/2"	9084K152	42.85	108.07	186.32
4"	9084K38	52.57	132.58	228.58
5"	9084K39	67.67	170.65	294.22
6"	9084K41	83.50	210.57	363.05
5/16" Thick				
3/4"	9084K162	21.33	53.79	92.74
1"	9084K172	22.71	57.26	98.73
5/16" Thick (Cont.)				
1 1/2"	9084K212	$28.63	$72.20	$124.48
2"	9084K222	35.52	89.58	154.45
2 1/2"	9084K232	41.82	105.47	181.84
3/8" Thick				
1/2"	9084K42	—	—	73.00
3/4"	9084K43	—	52.88	91.18
1"	9084K44	—	62.32	107.44
1 1/4"	9084K45	26.24	66.16	114.07
1 1/2"	9084K46	27.60	69.61	120.02
1 3/4"	9084K47	30.01	75.68	130.48
2"	9084K48	34.63	87.32	150.56
2 1/2"	9084K49	39.88	100.56	173.38
3"	9084K51	46.58	117.46	202.51
3 1/2"	9084K242	52.83	133.21	229.68
4"	9084K52	56.77	143.17	246.84
6"	9084K92	91.54	230.84	398.00
1/2" Thick				
3/4"	9084K53	—	63.80	110.00
1"	9084K54	—	83.74	144.38
1 1/4"	9084K55	39.08	98.54	169.90
1 1/2"	9084K56	39.21	98.87	170.47
1 3/4"	9084K57	45.94	115.85	199.74
2"	9084K58	50.10	126.35	217.84
2 1/2"	9084K59	63.86	161.03	277.64
3"	9084K61	68.71	173.27	298.74
4"	9084K62	87.64	221.01	381.06
5"	9084K63	114.08	287.67	495.98
6"	9084K64	134.00	337.92	582.62
5/8" Thick				
3/4"	9084K65	30.36	76.56	132.00
1"	9084K66	35.74	90.13	155.40
1 1/4"	9084K67	39.03	98.41	169.68
1 1/2"	9084K68	45.38	114.44	197.31
1 3/4"	9084K69	52.54	132.50	228.45
5/8" Thick (Cont.)				
2"	9084K71	$58.45	$147.38	$254.11
2 1/2"	9084K72	68.71	173.27	298.74
3"	9084K73	80.42	202.81	349.67
3/4" Thick				
1"	9084K74	37.95	95.70	165.00
1 1/4"	9084K75	41.10	103.64	178.69
1 1/2"	9084K76	53.86	135.82	234.17
1 3/4"	9084K77	60.69	153.06	263.89
2"	9084K78	65.61	165.46	285.27
2 1/2"	9084K79	76.04	191.75	330.60
3"	9084K81	91.71	231.27	398.74
4"	9084K82	113.79	286.94	494.73
1" Thick				
1 1/2"	9084K83	66.90	168.70	290.86
1 3/4"	9084K282	74.75	188.51	325.02
2"	9084K84	85.14	214.70	370.17
2 1/2"	9084K85	100.23	252.75	435.78
3"	9084K86	111.88	282.13	486.43
4"	9084K87	143.25	361.23	622.81
1 1/4" Thick				
1 1/2"	9084K88	78.91	198.99	343.08
1 3/4"	9084K292	88.44	223.02	384.52
2"	9084K89	96.77	244.04	420.76
3"	9084K91	132.41	333.91	575.70
1 1/2" Thick				
2"	9084K312	114.61	289.03	498.32
2 1/2"	9084K412	136.64	344.57	594.08
3"	9084K432	163.79	413.04	712.14
4"	9084K442	213.38	538.08	927.72
2" Thick				
2 1/2"	9084K532	183.81	463.52	799.18
3"	9084K542	216.30	545.44	940.42
4"	9084K552	280.38	707.04	1,219.03
2 1/2" Thick				
2 1/2"	9084K562	204.06	514.59	887.23

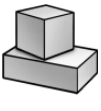

Thick. × Wd. × Lg.		
1" × 2" × 6"	9084K111	$53.30
1" × 3" × 6"	9084K113	70.05
1 1/2" × 4" × 6"	9084K116	119.77
2" × 2" × 6"	9084K118	$93.63
2" × 3" × 4"	9084K119	99.59
2" × 3" × 6"	9084K121	135.42
2" × 4" × 6"	9084K123	$175.54
3" × 3" × 3"	9084K126	109.43
4" × 4" × 4"	9084K128	260.80

Tight-Tolerance Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 160-241 Brinell
- Yield Strength: 35,000 psi
- Annealed

Meet ASTM A484 and A582 as well as AMS5640. Bars are cold finished. Straightness tolerance is not rated. Length tolerance is ±1" for 1-ft. lengths, ±3" for 3-ft. lengths, and ±6" for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width	Tolerance
3/16"-1/4"	±0.002"
5/16"-7/16"	±0.003"

Width	Tolerance
1/2"-1"	±0.004"
1 1/8"-3"	±0.006"

Width		1 ft.	3 ft.	6 ft.
3/16" Thick *(±0.002")*				
3/16"	8986K11	—	$8.74	$15.07
3/4"	1279T15	$9.59	25.02	41.70
1/4" Thick *(±0.002")*				
1/4"	8986K12	—	12.12	20.89
1 1/2"	1279T25	37.89	98.85	164.75
2"	1279T27	42.70	111.38	185.64
5/16" Thick *(±0.003")*				
5/16"	8986K13	—	18.39	31.71
3/8" Thick *(±0.003")*				
3/8"	8986K14	8.87	22.36	38.55
1 1/2"	1279T39	32.83	85.66	142.76
2"	1279T42	39.50	103.03	171.72
7/16" Thick *(±0.003")*				
7/16"	8986K15	12.40	31.27	53.92
1/2" Thick *(±0.004")*				
1/2"	8986K16	$14.20	$35.80	$61.73
3"	1279T57	70.29	183.37	305.62
9/16" Thick *(±0.004")*				
9/16"	8986K44	18.04	45.48	78.42
5/8" Thick *(±0.004")*				
5/8"	8986K47	20.19	50.92	87.80
1"	1279T62	37.65	98.23	163.71
3/4" Thick *(±0.004")*				
3/4"	8986K49	26.58	67.04	115.58
2 1/2"	1279T74	72.72	189.70	316.17
7/8" Thick *(±0.004")*				
7/8"	8986K52	33.98	85.68	147.72
1" Thick *(±0.004")*				
1"	8986K54	43.99	110.92	191.24
3"	1279T83	118.98	310.39	517.31
1 1/8" Thick *(±0.006")*				
1 1/8"	8986K56	$54.56	$137.58	$237.21
1 1/4" Thick *(±0.006")*				
1 1/4"	8986K59	67.38	169.91	292.94
2 1/2"	1279T87	104.96	273.80	456.33
1 3/8" Thick *(±0.006")*				
1 3/8"	8986K62	44.83	113.05	194.92
1 1/2" Thick *(±0.006")*				
1 1/2"	8986K64	91.77	231.42	399.00
2"	1279T92	105.45	275.08	458.46
3"	1279T94	142.26	371.94	621.15
1 3/4" Thick *(±0.006")*				
1 3/4"	8986K68	118.42	298.63	514.88
2" Thick *(±0.006")*				
2"	8986K71	149.55	377.13	650.23

Also Available: Additional sizes in 1-, 3-, and 6-ft. lengths. Please ask for 1279T988 and specify thickness, width, and length.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Easy-to-Machine Stainless Steel (Type 303) *(Material continued from previous page)*

Tight-Tolerance Rectangular Bars with Material Certification—Unpolished (Mill) Finish

- Hardness: 160-241 Brinell
- Yield Strength: 35,000 psi
- Annealed

Meet ASTM A320, A484, and A582, and AMS5640. Each comes with a traceable lot number and physical test report. Bars are cold finished. Width tolerance is ±0.006″. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width	1 ft.	3 ft.	6 ft.
1/4″ Thick *(±0.002″)*			
1″ 1237T61	____	$87.89	$144.30
2″ 1237T23	$52.70	117.67	195.64
1/2″ Thick *(±0.002″)*			
1″ 1237T71	____	$103.36	$170.97
1 1/2″ 1237T31	$53.32	119.24	198.35
3/4″ Thick *(±0.002″)*			
1″ 1237T41	$49.67	$110.04	$182.48
1 3/4″ 1237T98	65.30	149.46	250.44

Also Available: Additional sizes in 1-, 3-, and 6-ft. lengths. Please ask for 1237T97 and specify thickness, width, and length.

Sheets—Unpolished (Mill) Finish

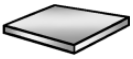

- Hardness: 202 Brinell
- Yield Strength: 35,000 psi
- Annealed

Meet ASTM A895. Sheets are hot rolled. Width and length tolerances are ±1/8″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″		12″×12″	
1/2″	+0.055″, –0.010″	1243T11	$73.73	1243T12	$256.81
5/8″	+0.055″, –0.010″	1243T21	98.44	1243T22	314.49
3/4″	+0.060″, –0.010″	1243T31	120.11	1243T32	359.28
1″	+0.070″, –0.010″	1243T41	168.21	1243T42	469.08
1 1/4″	+0.070″, –0.010″	1243T51	$199.63	1243T52	$572.01
1 1/2″	+0.070″, –0.010″	1243T61	210.44	1243T62	651.10
1 3/4″	+0.070″, –0.010″	1243T63	220.47	1243T64	734.91
2″	+0.125″, –0.010″	1243T65	244.56	1243T66	815.21

Tight-Tolerance Sheets—Precision Ground Finish

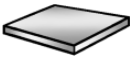

- Hardness: 202 Brinell
- Yield Strength: Not rated
- Annealed

Meet ASTM A895. Sheets are hot rolled. Thickness tolerance is ±0.002″. Width and length tolerances are +1/8″. Flat and parallel to 0.002″.

Thick.	6″×6″		6″×12″		12″×12″	
1/4″	1246T21	$131.35	1246T22	$291.54	1246T23	$497.34
3/8″	1246T31	138.95	1246T32	272.36	1246T33	498.73
1/2″	1246T41	166.47	1246T42	328.76	1246T43	597.74
5/8″	1246T51	$193.78	1246T52	$380.64	1246T53	$692.08
3/4″	1246T61	208.20	1246T62	421.20	1246T63	761.52
1″	1246T71	242.89	1246T72	488.07	1246T73	881.94

Rods—Unpolished (Mill) Finish

- Hardness: 140-255 Brinell
- Yield Strength: 25,000 to 35,000 psi
- Annealed

Meet ASTM A582. 1-, 3-, and 6-ft. long rods also meet ASTM A484 and AMS5640. All are cold finished, except 3 1/8″ diameter and larger rods, which are hot rolled, unless noted. Straightness tolerance is not rated. Length tolerance is ±1/16″ for 1/2″ to 3″ lengths (unless noted), ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
3/32″-1/4″	±0.001″
5/16″-7/16″	±0.0015″
1/2″-15/16″	±0.002″
1″-1 7/16″	±0.003″
1 1/2″-3″	±0.005″
3 1/8″-4 1/2″	±0.063″
5″	±0.078″
6″-8″	±0.188″

Dia.	1 ft.	3 ft.	6 ft.
3/32″ 8984K92	____	____	$2.90
1/8″ 8984K21	____	____	3.85
5/32″ 8984K95	____	____	6.44
3/16″ 8984K93	____	____	7.77
7/32″ 8984K11	____	____	10.44
1/4″ 8984K22	____	____	12.56
5/16″ 8984K94	____	____	16.73
3/8″ 8984K23	____	____	20.59
7/16″ 8984K82	____	$15.56	26.38
1/2″ 8984K83	____	19.95	33.82
9/16″ 8984K85	____	22.77	38.59
5/8″ 8984K87	$11.47	27.07	45.88
11/16″ 8984K88	13.55	31.99	54.22
3/4″ 8984K91	15.75	37.17	63.00
13/16″ 8984K15	18.05	42.60	72.21
7/8″ 8984K16	20.45	48.26	81.80
15/16″ 8984K17	23.56	55.60	94.23
1″ 8984K18	$25.80	$60.88	$103.18
1 1/16″ 8984K19	28.43	67.10	113.73
1 1/8″ 8984K31	31.23	73.71	124.93
1 3/16″ 8984K32	34.09	80.46	136.38
1 1/4″ 8984K33	36.93	87.15	147.71
1 5/16″ 8984K36	39.90	94.17	159.61
1 3/8″ 8984K41	40.88	96.48	163.53
1 7/16″ 8984K37	45.12	106.49	180.50
1 1/2″ 8984K39	49.13	115.95	196.52
1 9/16″ 8984K43	48.60	114.69	194.39
1 5/8″ 8984K45	55.77	131.61	223.06
1 11/16″ 8984K47	59.23	139.79	236.93
1 3/4″ 8984K49	63.02	148.72	252.07
1 13/16″ 8984K51	68.34	161.28	273.36
1 7/8″ 8984K52	70.17	165.61	280.70
1 15/16″ 8984K53	73.44	173.31	293.74
2″ 8984K57	79.64	187.96	318.58
2 1/8″ 8984K59	$89.94	$212.25	$359.75
2 1/4″ 8984K61	99.08	233.84	396.34
2 3/8″ 8984K63	108.50	256.07	434.02
2 1/2″ 8984K64	118.24	279.05	472.97
2 5/8″ 8984K65	130.36	307.64	521.43
2 3/4″ 8984K67	140.76	332.20	563.05
2 7/8″ 8984K69	153.79	362.96	615.18
3″ 8984K71	167.45	395.18	669.80
3 1/8″ 8984K73	193.46	456.55	773.82
3 1/4″ 8984K74	209.12	493.52	836.47
3 3/8″ 8984K75	194.31	458.58	777.26
3 1/2″ 8984K76	253.34	597.89	1,013.38
3 5/8″ 8984K77	256.63	605.66	1,026.54
3 3/4″ 8984K81	257.59	607.92	1,030.37
3 7/8″ 8984K78	232.30	548.22	929.19
4″ 8984K79	292.78	690.96	1,171.12
4 1/2″ 8984K86	352.81	832.63	1,411.23

Dia.	1/2″ Long		3/4″ Long		1″ Long		1 1/2″ Long		2″ Long		3″ Long	
3″	9198K51 ◆	$15.04	9198K52 ◆	$18.79	9198K53 ◆	$22.68	9198K54 ◆	$30.42	9198K55 ◆	$37.99	9198K56 ◆	$55.83
3 1/2″	9198K57 ◆★	18.37	9198K58 ◆★	22.83	9198K59 ◆★	27.69	9198K61 ◆★	36.96	9198K62 ◆★	45.68	9198K63 ◆★	66.35
4″	9198K64	28.84	9198K65	36.05	9198K66	43.26	9198K67	57.68	9198K68	71.07	9198K69	103.00
5″	9198K71	40.83	9198K72	52.33	9198K73	64.43	9198K74	88.15	9198K75	111.06	9198K76	159.00
6″	9198K77	59.91	9198K78	75.53	9198K79	91.89	9198K81	124.21	9198K82	152.72	9198K83	220.00
8″	9198K84	92.07	9198K85	116.90	9198K86	142.87	9198K87	193.57	9198K88	236.90	9198K89	337.76

◆ Length tolerance is ±1/32″. ★ Rod is cold finished.

Metric Rods—Unpolished (Mill) Finish

- Hardness: 160-210 Brinell
- Yield Strength: 30,000 psi
- Annealed

Rods are cold finished. Diameter tolerance is –0.052 mm. Straightness tolerance is not rated. Length tolerance is +66 mm, –6 mm. Sold in 1-meter lengths.

Dia.		
2 mm	1274T11	$3.09
3 mm	1274T12	4.01
4 mm	1274T13	5.14
5 mm	1274T14	6.38
6 mm	1274T15	11.03
7 mm	1274T16	$14.05
8 mm	1274T17	16.10
9 mm	1274T18	18.36
10 mm	1274T19	25.87
11 mm	1274T21	31.80
12 mm	1274T22	$38.42
13 mm	1274T23	42.36
14 mm	1274T24	48.90
15 mm	1274T25	54.64
16 mm	1274T26	62.85
17 mm	1274T27	$65.80
18 mm	1274T28	75.56
20 mm	1274T29	84.92
25 mm	1274T31	118.31

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Easy-to-Machine Stainless Steel (Type 303) *(Material continued from previous page)*

Commonly used for screw machine products, Type 303 stainless steel has good machinability due to the addition of sulfur and phosphorus. It's a low-carbon chromium-nickel (austenitic) stainless steel with good corrosion resistance and temperature resistance, and it maintains corrosion resistance up to 1500° F. It may become slightly magnetic when worked and is not heat treatable.

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 190-220 Brinell
- Yield Strength: Not rated
- Annealed

Meet ASTM A314, A581, and A582, MIL-S-52283, MIL-S-862, and AMS5640. Rods are cold finished. Diameter tolerance is –0.0005″. Straightness tolerance is 1/16″ per foot. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/16″	88915K37	—	—	$10.88
3/32″	88915K39	—	—	11.86
1/8″	88915K41	—	—	14.99
5/32″	88915K42	—	—	17.15
3/16″	88915K43	—	—	18.04
7/32″	88915K44	—	—	22.17
1/4″	88915K45	—	—	23.16
9/32″	88915K46	—	—	27.28
5/16″	88915K47	—	—	28.04
11/32″	88915K48	—	—	31.68
3/8″	88915K21	—	$20.11	$34.68
7/16″	88915K85	—	25.43	43.85
1/2″	88915K22	$12.64	29.34	50.58
9/16″	88915K82	15.14	35.14	60.58
5/8″	88915K23	18.32	42.50	73.28
11/16″	88915K54	20.89	48.46	83.56
3/4″	88915K71	23.28	54.02	93.13
13/16″	88915K72	25.82	59.91	103.30
7/8″	88915K73	31.91	74.04	127.66
15/16″	88915K74	34.16	79.26	136.65
1″	88915K75	$36.13	$83.83	$144.54
1 1/16″	88915K81	39.41	91.44	157.66
1 1/8″	88915K76	42.94	99.61	171.75
1 3/16″	88915K78	46.07	106.88	184.27
1 1/4″	88915K77	48.56	112.66	194.24
1 5/16″	88915K83	52.20	121.10	208.79
1 3/8″	88915K84	56.09	130.13	224.37
1 7/16″	88915K86	58.75	136.30	235.00
1 1/2″	88915K79	61.49	142.66	245.96

Super-Tight-Tolerance Rods with Material Certification—Precision Ground Finish

- Hardness: 160 Brinell
- Yield Strength: 35,000 psi
- Annealed

Meet ASTM A314, A581, and A582, and AMS5640. Each comes with a traceable lot number and physical test report. Rods are cold finished. Diameter tolerance is –0.0002″. Straightness tolerance is 0.006″ per foot. Length tolerance is ±1″. Sold in 6-ft. lengths.

Dia.		
1/8″	1247T32	$24.99
3/16″	1247T34	28.04
1/4″	1247T36	$33.16
5/16″	1247T38	38.04
3/8″	1247T42	$44.68
1/2″	1247T44	60.58

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: 262 Brinell
- Yield Strength: 35,000 psi
- Annealed

Meet ASTM A484 and A582 as well as AMS5640. Bars are cold finished. Hex size is measured across the flats. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size	Tolerance
3/16″-1/4″	–0.002″
5/16″-7/16″	–0.003″
1/2″-15/16″	–0.004″
1″-2″	–0.006″
2 1/4″-3″	–0.008″

Hex Size		1 ft.	3 ft.	6 ft.
3/16″	89665K11	—	—	$11.77
1/4″	89665K72	—	—	15.88
5/16″	89665K82	—	$10.53	18.15
3/8″	89665K84	—	13.97	24.09
7/16″	89665K86	$7.39	17.86	30.80
1/2″	89665K88	9.19	22.20	38.28
9/16″	89665K69	11.14	26.93	46.43
5/8″	89665K14	12.58	30.39	52.40
11/16″	89665K16	14.72	35.58	61.34
3/4″	89665K19	17.30	41.82	72.10
13/16″	89665K24	$19.26	$46.54	$80.25
7/8″	89665K22	22.68	54.82	94.51
15/16″	89665K27	24.75	59.82	103.13
1″	89665K71	27.70	66.95	115.43
1 1/16″	89665K31	34.15	82.53	142.30
1 1/8″	89665K34	37.37	90.31	155.71
1 1/4″	89665K37	44.96	108.66	187.35
1 5/16″	89665K39	48.48	117.16	202.00
1 3/8″	89665K43	53.11	128.35	221.30
1 1/2″	89665K46	$58.36	$141.03	$243.15
1 5/8″	89665K73	67.32	162.68	280.49
1 3/4″	89665K48	76.50	184.89	318.77
2″	89665K51	96.66	233.59	402.75
2 1/4″	89665K53	122.23	295.39	509.30
2 3/8″	89665K56	131.63	318.11	548.47
2 1/2″	89665K59	141.40	341.71	589.16
2 3/4″	89665K63	201.64	487.30	840.17
3″	89665K66	232.77	562.53	969.88

Wear-Resistant Easy-to-Machine Stainless Steel (Type 416)

A chromium alloy (martensitic) stainless steel, Type 416 can be heat treated for increased hardness and wear resistance. It offers better machinability than Type 410 due to the addition of sulfur and is commonly used for rivets and screws. Type 416 is magnetic and maintains corrosion resistance up to 400° F.

Sheets—Unpolished (Mill) Finish

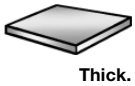

- Hardness: 143 Brinell
- Yield Strength: 37,000 psi
- Annealed

Meet ASTM A895. Sheets are hot rolled. Can be heat treated to a maximum attainable hardness of Rockwell C42. Width and length tolerances are ±1/8″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance		12″×12″		12″×24″
1/2″	+0.055″, –0.010″	1323T22	$352.00	1323T24	$640.00
3/4″	+0.060″, –0.010″	1323T42	401.34	1323T44	712.10
1″	+0.070″, –0.010″	1323T52	$498.88	1323T54	$934.41
1 1/4″	+0.070″, –0.010″	1323T62	593.39	1323T64	1,149.75

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: 155 Brinell
- Yield Strength: 40,000 psi
- Annealed

Meet ASTM A484 and A582. Bars are cold finished. Not rated for maximum attainable Rockwell hardness. Hex size is measured across the flats. Straightness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size	Tolerance
3/8″-1/2″	–0.003″
9/16″-1″	–0.004″
1 1/8″-2″	–0.006″

Hex Size		1 ft.	3 ft.	6 ft.
3/8″	86755K91	—	$14.38	$24.80
1/2″	86755K87	$9.20	22.23	38.33
9/16″	86755K88	11.37	27.47	47.36
5/8″	86755K89	16.26	39.30	67.76
11/16″	86755K55	18.97	45.85	79.06
3/4″	86755K58	19.34	46.74	80.59
13/16″	86755K61	$28.41	$68.65	$118.37
7/8″	86755K64	23.74	57.36	98.90
15/16″	86755K66	37.23	89.96	155.11
1″	86755K69	31.97	77.26	133.21
1 1/8″	86755K72	40.73	98.42	169.69
1 1/4″	86755K74	$47.01	$113.61	$195.88
1 3/8″	86755K77	53.53	129.36	223.03
1 1/2″	86755K81	64.00	154.66	266.65
1 3/4″	86755K83	81.06	195.89	337.74
2″	86755K85	141.51	341.97	589.61

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Wear-Resistant Easy-to-Machine Stainless Steel (Type 416)

(Material continued from previous page)

Rods—Unpolished (Mill) Finish

- Hardness: 155 Brinell
- Yield Strength: 40,000 psi
- Annealed

Meet ASTM A484 and A582. All are cold finished, except 3⅛″ to 4″ diameters, which are hot rolled. Not rated for maximum attainable Rockwell hardness. Straightness tolerance is ⅛″ per 5 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
⅛″-5/16″	±0.001″
⅜″-7/16″	±0.0015″
½″-15/16″	±0.002″
1″-1 7/16″	±0.0025″

Dia.	Tolerance
1½″-3″	±0.003″
3⅛″-3½″	+0.047″
3¾″-4″	+0.063″

Dia.		1 ft.	3 ft.	6 ft.
⅛″	89095K11	—	—	$5.58
5/32″	89095K12	—	—	11.72
3/16″	89095K13	—	—	8.61
7/32″	89095K14	—	—	11.55
¼″	89095K41	—	—	11.17
5/16″	89095K15	—	—	16.24
⅜″	89095K43	—	—	14.60
7/16″	89095K93	—	$12.16	20.97
½″	89095K94	—	14.99	25.84
9/16″	89095K954	$7.29	16.90	29.14
⅝″	89095K96	8.93	20.72	35.73
11/16″	89095K97	10.46	24.26	41.83
¾″	89095K98	11.58	26.87	46.32
13/16″	89095K99	12.71	29.50	50.86
⅞″	89095K21	14.81	34.35	59.23
15/16″	89095K22	17.06	39.57	68.23
1″	89095K23	$19.29	$44.74	$77.14
1 1/16″	89095K24	21.27	49.35	85.09
1⅛″	89095K25	22.79	52.87	91.16
1 3/16″	89095K26	24.86	57.69	99.46
1¼″	89095K27	26.92	62.45	107.68
1 5/16″	89095K28	29.08	67.46	116.31
1⅜″	89095K29	30.05	69.70	120.18
1 7/16″	89095K31	34.18	79.29	136.71
1½″	89095K32	35.76	82.95	143.02
1 9/16″	89095K33	37.33	86.59	149.30
1⅝″	89095K34	39.61	91.90	158.44
1 11/16″	89095K35	56.00	129.93	224.01
1¾″	89095K36	45.13	104.70	180.51
1 13/16″	89095K37	60.16	139.58	240.65
1⅞″	89095K38	49.12	113.96	196.48
1 15/16″	89095K39	$70.70	$164.02	$282.80
2″	89095K72	61.14	141.85	244.57
2⅛″	89095K73	63.09	146.37	252.36
2¼″	89095K74	70.71	164.05	282.84
2⅜″	89095K75	76.16	176.69	304.63
2½″	89095K76	84.40	195.81	337.60
2⅝″	89095K77	90.05	208.90	360.18
2¾″	89095K78	98.86	229.34	395.42
2⅞″	89095K79	108.00	250.57	432.02
3″	89095K81	117.60	272.83	470.39
3⅛″	89095K82	171.06	396.85	684.22
3¼″	89095K83	139.86	324.48	559.44
3½″	89095K84	147.74	342.76	590.96
3¾″	89095K85	170.16	394.78	680.66
4″	89095K86	189.37	439.34	757.49

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 190-220 Brinell
- Yield Strength: 55,000 to 65,000 psi
- Annealed

Meet ASTM A582 and AMS5610. Rods are cold finished and can be heat treated to a maximum attainable hardness of Rockwell C41. Diameter tolerance is ±0.0005″. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1″.

To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
⅛″	88955K22	—	$14.26	$24.58
5/32″	88955K23	—	15.33	26.43
3/16″	88955K24	—	15.60	26.89
¼″	88955K25	—	18.32	31.59
5/16″	88955K26	$12.25	20.31	35.01
⅜″	88955K27	$14.97	$24.81	$42.78
7/16″	88955K28	16.06	26.61	45.88
½″	88955K29	19.73	32.69	56.36
⅝″	88955K71	23.38	38.74	66.80
¾″	88955K72	31.10	51.53	88.85
⅞″	88955K73	$37.84	$62.70	$108.11
1″	88955K63	43.08	71.39	123.08
1¼″	88955K74	55.37	91.76	158.20
1½″	88955K75	67.12	111.22	191.76

Hardened Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell C26-C32
- Yield Strength: Not rated
- Hardened (Condition T)

Meet ASTM A582 and A582M. Rods are cold finished. Diameter tolerance is ±0.0005″. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1″. Sold in 6-ft. lengths.

Dia.		
⅛″	7014T31	$29.00
3/16″	7014T32	31.94
⅜″	7014T33	$51.75
½″	7014T34	74.55
⅝″	7014T35	$84.83
¾″	7014T36	131.21
⅞″	7014T37	$143.84
1″	7014T38	170.20

Hardened Tight-Tolerance Metric Rods—Precision Ground Finish

- Hardness: Rockwell C32-C38
- Yield Strength: 138,000 psi
- Hardened (Condition H)

Meet ASTM A582. Rods are cold finished. Diameter tolerance is ±0.0005″. Straightness tolerance is 1/16″ per foot. Length tolerance is ±6″. Sold in 6-ft. lengths.

Dia.		
5 mm	3821T11	$32.68
6 mm	3821T12	38.08
7 mm	3821T13	41.57
8 mm	3821T14	$45.36
10 mm	3821T15	48.56
12 mm	3821T16	64.70
14 mm	3821T17	$73.56
16 mm	3821T18	79.60
18 mm	3821T19	104.87
20 mm	3821T21	$111.97
25 mm	3821T22	134.88

High-Temperature Stainless Steel (Type 309)

Excellent temperature resistance makes Type 309 a good alternative to Type 304 with similar composition. Commonly used in heat exchangers and furnace parts, Type 309 is a low carbon chromium-nickel (austenitic) stainless steel with good corrosion resistance. It maintains corrosion resistance up to 1470° F. When worked, it may become slightly magnetic. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

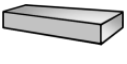

- Hardness: 167-217 Brinell
- Yield Strength: 35,000 psi
- Annealed

Meet ASTM A240. Bars are hot rolled. Width and length tolerances are ±1/16″ for ¼″ to ½″ thick bars and +⅛″ for ⅝″ to 1″ thick bars unless noted. Flatness tolerance is ¼″ per 3 feet.

To Order: Please specify 1-, 3-, or 6-ft. length.

Width		1 ft.	3 ft.	6 ft.
¼″ Thick *(+0.050″, –0.010″)*				
½″	9205K11★	$7.73	$20.23	$36.79
¾″	9205K12	9.32	24.41	44.38
1″	9205K13	11.12	29.11	52.93
1½″	9205K14	17.39	45.54	82.80
2″	9205K15	22.42	58.71	106.75
3″	9205K17	30.69	80.39	146.16
⅜″ Thick *(+0.060″, –0.010″)*				
½″	9205K18★	9.99	26.15	47.55
1″	9205K21	18.97	49.68	90.33
⅜″ Thick (Cont.)				
1½″	9205K22	$24.45	$64.05	$116.45
2″	9205K23	28.11	73.63	133.88
2½″	9205K24	36.26	94.96	172.65
3″	9205K25	42.42	111.09	201.99
½″ Thick *(+0.060″, –0.010″)*				
½″	9205K26★	17.29	45.28	82.33
⅝″	9205K34★	21.36	55.95	101.73
1″	9205K28	34.24	89.67	163.04
1½″	9205K29	46.11	120.77	219.59
⅝″ Thick *(+0.060″, –0.010″)*				
2½″	9205K39	$88.81	$232.60	$422.91
3″	9205K41	113.19	296.45	539.00
1″ Thick *(+0.075″, –0.010″)*				
1″	9205K52	62.55	163.83	297.88
3″	9205K56	167.17	437.83	796.06

★ Width and length tolerance is +⅛″.

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

High-Temperature Stainless Steel (Type 309) *(Material continued from previous page)*

Excellent temperature resistance makes Type 309 a good alternative to Type 304 with similar composition. Commonly used in heat exchangers and furnace parts, Type 309 is a low carbon chromium-nickel (austenitic) stainless steel with good corrosion resistance. It maintains corrosion resistance up to 1470° F. When worked, it may become slightly magnetic. Not heat treatable.

Rods—Unpolished (Mill) Finish

• Hardness: 160 Brinell • Yield Strength: 30,000 psi • Annealed

Meet ASTM A276 and A479 as well as AMS5650. Rods are cold finished. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.	Tolerance
1/4″	±0.001″
3/8″-7/8″	±0.002″

Dia.	Tolerance
1″-1 1/4″	±0.0025″
1 1/2″-2″	±0.003″

Dia.		1 ft.	3 ft.	6 ft.
1/4″	9200K11	$5.66	$13.90	$25.74
3/8″	9200K12	10.85	26.62	49.30
1/2″	9200K13	12.13	29.78	55.14
5/8″	9200K14	17.42	42.77	79.20
3/4″	9200K15	$21.67	$53.18	$98.48
7/8″	9200K16	33.22	83.84	158.19
1″	9200K17	36.53	89.66	166.04
1 1/4″	9200K19	$51.93	$127.47	$236.05
1 1/2″	9200K21	66.38	162.94	301.74
2″	9200K22	111.34	273.30	506.11

Easy-to-Weld Stainless Steel (Type 321)

Commonly used for welded items that are subject to severe corrosive conditions, Type 321 has superior weldability due to the addition of titanium. It maintains corrosion resistance up to 800° F. It may become slightly magnetic when worked. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

• Hardness: 217 Brinell • Yield Strength: 30,000 psi • Annealed

Meet ASTM A240 and A480. Bars are hot rolled. Width tolerance is ±1/8″. Flatness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Wd.		1 ft.	3 ft.	6 ft.
1/4″ Thick *(+0.050″)*				
1″	9125K11	$42.55	$82.27	$141.85
1 1/2″	9125K12	70.79	128.90	241.33
2″	9125K13	77.43	126.40	249.44
2 1/2″	9125K14	84.61	152.70	294.56
3″	9125K15	91.85	185.42	342.37
4″	9125K16	99.64	221.13	418.49
3/8″ Thick *(+0.060″)*				
1″	9125K21	51.49	99.54	171.62
1 1/2″	9125K22	63.67	122.03	218.26
2″	9125K23	81.21	150.53	272.91
3/8″ Thick (Cont.)				
3″	9125K25	$99.42	$189.37	$364.94
4″	9125K26	136.85	264.58	456.17
1/2″ Thick *(+0.060″)*				
1″	9125K31	75.50	129.57	224.82
1 1/2″	9125K32	87.33	174.57	302.08
2″	9125K33	125.83	243.26	419.42
2 1/2″	9125K34	143.52	277.47	478.39
3/4″ Thick *(+0.065″)*				
1″	9125K41	94.61	182.92	315.38
1 1/2″	9125K42	124.43	240.57	414.77
3/4″ Thick (Cont.)				
2″	9125K43	$161.56	$312.36	$538.55
2 1/2″	9125K44	181.67	351.22	605.56
1″ Thick *(+0.070″)*				
1″	9125K51	108.90	210.53	362.99
1 1/2″	9125K52	167.86	324.53	559.53
2″	9125K53	211.18	408.29	703.94
2 1/2″	9125K54	249.46	482.29	831.53
1 1/4″ Thick *(+0.070″)*				
1 1/2″	9125K62	223.57	432.24	745.24
2″	9125K63	283.27	547.65	944.23
2 1/2″	9125K64	337.05	651.63	1,123.50

Sheets—Unpolished (Mill) Finish

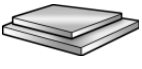

• Hardness: 217 Brinell • Yield Strength: 30,000 psi • Annealed

Meet ASTM A240 and AMS5510. Sheets are cold finished, except for 0.1875″ and 0.250″ thick sheets, which are hot rolled. Width and length tolerances are ±1/8″. Flatness tolerance is 0.40″, except for 0.1875″ and 0.250″ thick sheets, which have a tolerance of 0.90″.

Thick.	Thick. Tolerance	*12″×12″*		*12″×36″*	
0.016″	±0.002″	1754T11	$14.29	1754T12	$35.72
0.020″	±0.002″	1754T13	20.09	1754T14	50.76
0.025″	±0.002″	1754T15	20.09	1754T16	52.14
0.032″	±0.002″	1754T17	23.78	1754T18	60.16
0.035″	±0.002″	1754T19	24.09	1754T21	63.92
0.040″	±0.003″	1754T22	27.50	1754T23	68.75
0.050″	±0.003″	1754T24	28.23	1754T25	71.43
0.062″	±0.003″	1754T26	$38.03	1754T27	$94.80
0.080″	±0.004″	1754T28	44.47	1754T29	115.25
0.090″	±0.004″	1754T31	49.05	1754T32	126.80
0.105″	±0.005″	1754T33	53.39	1754T34	143.33
0.125″	±0.005″	1754T35	66.74	1754T36	162.28
0.1875″	±0.007″	1754T39	109.28	1754T41	272.17
0.250″	+0.045″, –0.010″	1754T42	128.44	1754T43	333.93

Rods—Unpolished (Mill) Finish

• Hardness: 156 Brinell • Yield Strength: 30,000 psi • Annealed

Meet ASTM A276 and A479 as well as AMS5645. Rods are cold finished. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Dia. Tolerance		1 ft.	3 ft.	6 ft.
5/8″	±0.002″	86615K27	———	———	$59.75
1″	±0.0025″	86615K66	$34.35	$76.63	132.12
1 1/2″	±0.003″	86615K72	63.54	141.73	244.37
2″	±0.003″	86615K76	$106.94	$238.57	$411.32
3″	±0.003″	86615K83	217.07	484.22	834.87

High-Strength Corrosion-Resistant Stainless Steel (Type 2205)

This duplex (austenitic-ferritic) stainless steel has high strength and good resistance to corrosion caused by stress. Type 2205 maintains corrosion resistance up to 600° F and is commonly used for heat exchangers and oil and gas industry equipment. Magnetic. Not heat treatable.

Sheets—Unpolished (Mill) Finish

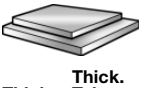

• Hardness: Rockwell C31 • Yield Strength: 65,000 psi • Annealed

Meet ASTM A240 and A923. Sheets up to 0.135″ thick are cold finished; sheets 0.1875″ thick and thicker are hot rolled. Width and length tolerances are +1/8″, –1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tol.	*6″×6″*		*12″×12″*		*24″×24″*	
0.060″	±0.003″	3623T11	$22.26	3623T12	$66.78	3623T14	$185.50
0.075″	±0.004″	3623T15	25.20	3623T16	75.60	3623T18	210.00
0.105″	±0.003″	3623T19	34.15	3623T21	102.44	3623T23	284.56
0.120″	±0.003″	3623T24	38.34	3623T25	115.03	3623T27	319.54
0.135″	±0.006″	3623T28	42.18	3623T29	126.54	3623T32	351.50
0.1875″	+0.050″	3623T33	54.80	3623T34	164.39	3623T36	456.64
0.250″	+0.050″	3623T37	$66.66	3623T38	$199.98	3623T41	$555.50
0.375″	+0.060″	3623T42	92.38	3623T43	277.13	3623T45	769.81
0.500″	+0.060″	3623T46	117.71	3623T47	353.13	3623T49	980.93
0.750″	+0.065″	3623T51	168.91	3623T52	506.72	3623T54	1,407.56
1.000″	+0.075″	3623T55	204.15	3623T56	561.40	3623T58	1,701.21

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

High-Strength Corrosion-Resistant Stainless Steel (Type 2205)

(Material continued from previous page)

Rods—Unpolished (Mill) Finish

- Hardness: 290 Brinell
- Yield Strength: 65,000 psi
- Annealed

Meet ASTM A182 and A276. Rods are cold finished. Straightness tolerance is 1/16″. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
1/2″-3/4″	±0.002″
1″-1 1/2″	±0.0025″
1 3/4″-3″	±0.003″

Dia.		1 ft.	3 ft.	6 ft.
1/2″	9079K116	____	____	$63.83
3/4″	9079K12	____	$72.99	124.08
1″	9079K13	$51.00	130.77	222.31
1 1/4″	9079K14	$73.74	$189.08	$321.44
1 1/2″	9079K15	99.59	255.37	434.13
1 3/4″	9079K16	135.78	348.15	591.85
2″	9079K17	$160.47	$411.46	$699.48
2 1/2″	9079K18	238.83	612.39	1,041.06
3″	9079K19	299.70	768.47	1,306.40

Wear-Resistant Stainless Steel (Type 410)

Heat treatable for extra hardness and improved wear resistance, Type 410 stainless steel is commonly used for fasteners, machine parts, and shafts. It's a chromium alloy (martensitic) stainless steel and maintains corrosion resistance up to 1200° F. Magnetic.

Tight-Tolerance Flat Stock—Precision Ground Finish

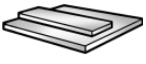

- Hardness: 217 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A240. Flat stock is hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C41-C43. Width tolerance is +0.005″. Flatness tolerance is 0.001″ per inch. Length tolerance is +1/2″. Sold in 2-ft. lengths.

Width		
1/16″ Thick *(±0.001″)*		
1/2″	9524K12	$53.24
3/4″	9524K22	59.16
1″	9524K32	68.03
1 1/4″	9524K42	73.94
1 1/2″	9524K52	79.86
2″	9524K62	88.73
2 1/2″	9524K72	103.52
3″	9524K82	118.31
3 1/2″	9524K92	130.14
4″	9524K112	141.97
5″	9524K122	156.76
1/8″ Thick *(±0.001″)*		
1/2″	9524K172	57.60
3/4″	9524K182	64.00
1″	9524K192	73.60
1 1/4″	9524K212	80.00
1 1/2″	9524K222	86.40
2″	9524K232	96.00
2 1/2″	9524K242	112.00
3″	9524K252	128.00
3 1/2″	9524K262	140.80
4″	9524K272	153.60
5″	9524K282	169.60
3/16″ Thick *(±0.001″)*		
3/16″	9524K342	60.06
1/2″	9524K352	77.22
3/4″	9524K362	85.80
1″	9524K372	98.67
1 1/4″	9524K382	107.25
1 1/2″	9524K392	115.84
2″	9524K412	128.71
2 1/2″	9524K422	150.16
3″	9524K432	171.61
3 1/2″	9524K442	188.77
4″	9524K452	205.93
5″	9524K462	227.38

Width		
1/4″ Thick *(±0.001″)*		
1/4″	9524K522	$61.82
1/2″	9524K532	85.59
3/4″	9524K542	95.10
1″	9524K552	109.37
1 1/4″	9524K562	118.88
1 1/2″	9524K572	128.39
2″	9524K582	142.65
2 1/2″	9524K592	166.43
3″	9524K612	190.20
3 1/2″	9524K622	209.22
4″	9524K632	228.24
5″	9524K642	252.02
5/16″ Thick *(±0.001″)*		
5/16″	9524K692	71.29
1/2″	9524K712	91.66
3/4″	9524K722	101.84
1″	9524K732	117.12
1 1/4″	9524K742	127.31
1 1/2″	9524K752	137.49
2″	9524K762	152.77
2 1/2″	9524K772	178.23
3″	9524K782	203.69
3 1/2″	9524K792	224.06
4″	9524K812	244.43
5″	9524K822	269.89
3/8″ Thick *(±0.001″)*		
3/8″	9524K872	79.45
1/2″	9524K882	95.34
3/4″	9524K892	105.94
1″	9524K912	121.83
1 1/4″	9524K922	132.42
1 1/2″	9524K932	143.01
2″	9524K942	158.90
2 1/2″	9524K952	185.39
3″	9524K962	211.87

Width		
3/8″ Thick (Cont.)		
3 1/2″	9524K972	$233.06
4″	9524K982	254.25
5″	9524K992	280.73
1/2″ Thick *(±0.001″)*		
1/2″	9524K147	99.81
3/4″	9524K157	110.90
1″	9524K167	127.53
1 1/4″	9524K177	138.62
1 1/2″	9524K187	149.71
2″	9524K197	166.35
2 1/2″	9524K217	194.07
3″	9524K227	221.80
3 1/2″	9524K237	243.98
4″	9524K247	266.16
5″	9524K257	293.88
5/8″ Thick *(±0.001″)*		
5/8″	9524K317	125.45
3/4″	9524K327	139.39
1″	9524K337	160.30
1 1/4″	9524K347	174.24
1 1/2″	9524K357	188.18
2″	9524K367	209.09
2 1/2″	9524K377	243.94
3″	9524K387	278.78
3 1/2″	9524K397	306.66
4″	9524K417	334.54
5″	9524K427	369.39
3/4″ Thick *(±0.001″)*		
3/4″	9524K477	150.54
1″	9524K487	173.12
1 1/4″	9524K497	188.17
1 1/2″	9524K517	203.23
2″	9524K527	225.81
2 1/2″	9524K537	263.44
3″	9524K547	301.08
3 1/2″	9524K557	331.18

Width		
3/4″ Thick (Cont.)		
4″	9524K567	$361.29
5″	9524K577	398.93
7/8″ Thick *(±0.001″)*		
7/8″	9524K637	171.92
1″	9524K647	187.92
1 1/4″	9524K657	211.90
1 1/2″	9524K667	231.90
2″	9524K677	251.89
2 1/2″	9524K687	295.87
3″	9524K697	335.85
3 1/2″	9524K717	363.84
4″	9524K727	399.82
1″ Thick *(±0.001″)*		
1″	9524K747	199.90
1 1/4″	9524K757	217.28
1 1/2″	9524K767	234.66
2″	9524K777	260.74
2 1/2″	9524K787	304.19
3″	9524K797	347.65
3 1/2″	9524K817	382.41
4″	9524K827	417.18
1 1/4″ Thick *(±0.001″)*		
1 1/4″	9524K877	231.45
1 1/2″	9524K887	249.97
2″	9524K897	277.74
2 1/2″	9524K917	324.03
3″	9524K927	370.32
3 1/2″	9524K937	407.36
4″	9524K947	444.39
1 1/2″ Thick *(±0.001″)*		
1 1/2″	9524K997	267.75
2″	9524K118	297.50
2 1/2″	9524K128	347.08
3″	9524K138	396.66
3 1/2″	9524K148	436.33
4″	9524K158	475.99

Tight-Tolerance Sheets—Precision Ground Finish

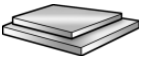

- Hardness: 217 Brinell
- Yield Strength: 30,000 psi
- Annealed

Meet ASTM A240. Sheets are hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C41-C43. Width tolerance is +0.005″. Flatness tolerance is 0.001″ per inch. Length tolerance is +1/2″.

Thick.	Thick. Tolerance	6″ Wd. × 24″ Lg.		8″ Wd. × 24″ Lg.		10″ Wd. × 24″ Lg.		12″ Wd. × 24″ Lg.	
1/16″	±0.001″	9524K132	$170.07	9524K142	$217.40	9524K152	$258.81	9524K162	$295.78
1/8″	±0.001″	9524K292	184.00	9524K312	235.20	9524K322	280.00	9524K332	320.00
3/16″	±0.001″	9524K472	246.69	9524K482	315.33	9524K492	375.39	9524K512	429.02
1/4″	±0.001″	9524K652	273.42	9524K662	349.50	9524K672	416.07	9524K682	475.51
5/16″	±0.001″	9524K832	292.80	9524K842	374.28	9524K852	445.57	9524K862	509.22
3/8″	±0.001″	9524K117	304.57	9524K127	389.31	9524K137	463.47	9524K228	529.68
1/2″	±0.001″	9524K267	318.83	9524K277	407.55	9524K287	485.18	9524K297	554.49
5/8″	±0.001″	9524K437	400.75	9524K447	512.27	9524K457	609.84	9524K467	696.96
3/4″	±0.001″	9524K587	432.80	9524K597	553.23	9524K617	658.60	9524K627	752.69
1″	±0.001″	9524K837	499.74	9524K847	638.80	9524K857	760.48	9524K867	869.12
1 1/4″	±0.001″	9524K957	532.34	9524K967	680.47	9524K977	810.08	9524K987	925.81
1 1/2″	±0.001″	9524K168	570.20	9524K178	728.86	9524K188	867.69	9524K198	991.65

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Wear-Resistant Stainless Steel (Type 410) *(Material continued from previous page)*

Heat treatable for extra hardness and improved wear resistance, Type 410 stainless steel is commonly used for fasteners, machine parts, and shafts. It's a chromium alloy (martensitic) stainless steel and maintains corrosion resistance up to 1200° F. Magnetic.

Sheets—Unpolished (Mill) Finish

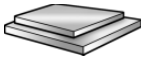

• Hardness: 183 Brinell • Yield Strength: 30,000 psi • Annealed

Meet ASTM A240 and AMS5504. Sheets up to 0.090″ thick are cold finished; 0.1875″ to 1.000″ thick sheets are hot rolled. Can be heat treated to a maximum attainable hardness of Rockwell C35-C45. Width and length tolerances are +⅛″, –1/16″. Flatness tolerance is not rated.

Thick.	Tolerance
0.029″-0.090″	±0.003″
0.1875″-1.000″	+0.075″, –0.010″

Thick.	6″×6″		12″×12″		12″×24″	
0.029″	—	—	1316T11	$8.68	1316T12	$16.38
0.040″	—	—	1316T15	10.11	1316T16	18.39
0.048″	—	—	1316T21	14.17	1316T22	26.73
0.060″	—	—	1316T25	14.79	1316T26	28.88
0.090″	—	—	1316T31	26.69	1316T32	48.52

Thick.	6″×6″		12″×12″		12″×24″	
0.1875″	1316T67	$32.85	1316T41	$86.96	1316T42	$164.27
0.250″	1316T68	31.64	1316T45	83.84	1316T46	158.19
0.375″	1316T69	52.41	1316T51	138.89	1316T52	262.05
0.500″	1316T71	65.94	1316T55	174.74	1316T56	329.69
1.000″	1316T73	127.22	1316T65	337.12	1316T66	636.08

Rods—Unpolished (Mill) Finish

• Hardness: 155 Brinell • Yield Strength: 40,000 psi • Annealed

Meet ASTM A276 and A479. Diameters up to 2¼″ are cold finished; 2⅜″ to 6″ diameters are hot rolled. Not rated for maximum attainable Rockwell hardness. Straightness tolerance is not rated. Length tolerance is +⅛″ for 1″ and 3″ lengths, ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.	Tolerance
½″-1⅜″	±0.002″
1½″-2¼″	±0.003″
2⅜″-2½″	+0.031″
3″-3½″	+0.047″

Dia.	Tolerance
3¾″-4″	+0.063″
5″	+0.078″
6″	+0.125″

Dia.		1 ft.	3 ft.	6 ft.
½″	86705K61	$6.57	$15.87	$27.36
⅝″	86705K42	9.47	22.88	39.45
¾″	86705K63	12.08	29.19	50.33
⅞″	86705K11	16.02	38.73	66.77
1″	86705K12	19.58	47.32	81.58
1⅛″	86705K13	24.66	59.61	102.77
1¼″	86705K14	29.74	71.87	123.91

Dia.		1 ft.	3 ft.	6 ft.
1⅜″	86705K15	$35.41	$85.57	$147.53
1½″	86705K16	41.26	99.70	171.90
1⅝″	86705K17	47.51	114.81	197.94
1¾″	86705K18	54.83	132.51	228.46
2″	86705K19	69.08	166.95	287.85
2¼″	86705K21	81.45	196.84	339.38
2⅜″	86705K22	93.04	224.85	387.68

Dia.		1 ft.	3 ft.	6 ft.
2½″	86705K23	$99.68	$240.90	$415.34
3″	86705K24	135.70	327.93	565.40
3¼″	86705K25	158.80	383.76	661.65
3½″	86705K26	169.94	410.69	708.08
3¾″	86705K27	200.16	483.72	834.00
4″	86705K28	213.24	515.34	888.51

Dia.		1″ Long		3″ Long	
2″	86705K291	$10.07	86705K293	$24.76
2½″	86705K321	14.54	86705K323	35.72
3″	86705K341	19.79	86705K343	48.62
3½″	86705K361	24.78	86705K363	60.89

Dia.		1″ Long		3″ Long	
4″	86705K381	$31.10	86705K383	$76.41
5″	86705K441	45.24	86705K443	113.11
6″	86705K461	61.39	86705K463	153.47

Ultra-Hard Wear-Resistant Stainless Steel (Type 440C)

Ideal for use in bearings, valve parts, and knife blades, this high-carbon stainless steel offers good wear resistance and is one of the hardest stainless steels when heat treated. It maintains corrosion resistance up to 800° F. Magnetic.

Rectangular Bars—Unpolished (Mill) Finish

• Hardness: 225 Brinell • Yield Strength: 65,000 psi • Annealed

Meet ASTM A276 and AMS5630. Bars are hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C58. Flatness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Wd.	Wd. Tolerance	Thick. Tolerance
1″	±0.015″	±0.012″
1½″-2″	±0.031″	±0.015″
3″-4″	+0.062″, –0.031″	±0.020″

Width		1 ft.	3 ft.	6 ft.
3/16″ Thick				
1″	88585K206	$34.17	$79.73	$142.38
1½″	88585K211	46.98	109.63	195.77
2″	88585K215	47.99	111.98	199.96
3″	88585K219	69.29	161.67	288.70
¼″ Thick				
1″	88585K224	30.55	71.28	127.28
1½″	88585K228	42.54	99.25	177.23
2″	88585K233	58.02	135.37	241.74
3″	88585K237	76.19	177.77	317.44
4″	88585K243	100.98	235.61	420.73

Width		1 ft.	3 ft.	6 ft.
⅜″ Thick				
1″	88585K247	$39.63	$92.47	$165.13
1½″	88585K252	54.15	126.35	225.62
2″	88585K256	61.20	142.80	255.00
3″	88585K261	90.94	212.20	378.93
4″	88585K265	137.16	320.04	571.50
½″ Thick				
1″	88585K269	46.35	108.16	193.14
1½″	88585K274	61.35	143.15	255.62
2″	88585K278	78.90	184.11	328.76
3″	88585K284	105.76	246.76	440.65
4″	88585K288	135.04	316.93	—

Width		1 ft.	3 ft.	6 ft.
¾″ Thick				
1″	88585K293	$59.58	$139.02	$248.25
1½″	88585K297	77.65	181.19	323.55
2″	88585K302	118.28	276.00	492.85
3″	88585K306	135.39	315.91	564.13
4″	88585K311	178.43	416.34	743.47
1″ Thick				
1½″	88585K315	94.35	220.14	393.11
2″	88585K319	114.01	266.03	475.05
3″	88585K324	154.39	360.24	643.29
4″	88585K202	211.36	493.18	880.68

Tight-Tolerance Flat Stock—Precision Ground Finish

• Hardness: 229-269 Brinell • Yield Strength: 65,000 psi • Annealed

Flat stock is hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C60. Width and thickness tolerances are +0.015″. Flatness tolerance is 0.001″ per inch. Length tolerance is +⅜″. Sold in 2-ft. lengths.

Width		
1/16″ Thick		
½″	9575K12	$74.93
¾″	9575K22	83.26
1″	9575K32	95.74
1¼″	9575K42	104.07
1½″	9575K52	112.40
2″	9575K62	124.88
2½″	9575K72	145.70
3″	9575K82	166.51
3½″	9575K92	183.16

Width		
1/16″ Thick (Cont.)		
4″	9575K112	$199.81
5″	9575K122	220.63
⅛″ Thick		
½″	9575K172	83.78
¾″	9575K182	93.09
1″	9575K192	107.05
1¼″	9575K212	116.36
1½″	9575K222	125.67
2″	9575K232	139.63

Width		
⅛″ Thick (Cont.)		
2½″	9575K242	$162.91
3″	9575K252	186.18
3½″	9575K262	204.80
4″	9575K272	223.42
5″	9575K282	246.69
3/16″ Thick		
3/16″	9575K342	81.27
½″	9575K352	97.53
¾″	9575K362	108.36

Width		
3/16″ Thick (Cont.)		
1″	9575K372	$124.62
1¼″	9575K382	135.45
1½″	9575K392	146.29
2″	9575K412	162.54
2½″	9575K422	189.63
3″	9575K432	216.72
3½″	9575K442	238.40
4″	9575K452	260.07
5″	9575K462	287.16

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Ultra-Hard Wear-Resistant Stainless Steel (Type 440C) *(Material continued from previous pg.)*

Tight-Tolerance Flat Stock—Precision Ground Finish (Cont.)

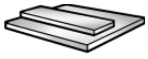

- Hardness: 229-269 Brinell
- Yield Strength: 65,000 psi
- Annealed

Flat stock is hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C60. Width and thickness tolerances are +0.015″. Flatness tolerance is 0.001″ per inch. Length tolerance is +3/8″. Sold in 2-ft. lengths.

Width		
1/4″ Thick		
1/4″	9575K522	$79.91
1/2″	9575K532	104.50
3/4″	9575K542	116.79
1″	9575K552	129.09
1 1/4″	9575K562	141.38
1 1/2″	9575K572	153.68
2″	9575K582	178.26
2 1/2″	9575K592	215.15
3″	9575K612	239.73
3 1/2″	9575K622	270.47
4″	9575K632	295.06
5″	9575K642	325.79
5/16″ Thick		
5/16″	9575K692	94.66
1/2″	9575K712	108.18
3/4″	9575K722	114.94
1″	9575K732	135.22
1 1/4″	9575K742	148.75
1 1/2″	9575K752	169.03
2″	9575K762	202.84
2 1/2″	9575K772	236.64
3″	9575K782	270.45
3 1/2″	9575K792	297.49
4″	9575K812	324.54
5″	9575K822	358.34
3/8″ Thick		
3/8″	9575K872	101.21
1/2″	9575K882	130.12

Width		
3/8″ Thick (Cont.)		
3/4″	9575K892	$144.58
1″	9575K912	159.04
1 1/4″	9575K922	159.04
1 1/2″	9575K932	180.72
2″	9575K942	216.87
2 1/2″	9575K952	253.01
3″	9575K962	289.16
3 1/2″	9575K972	318.08
4″	9575K982	346.99
5″	9575K992	383.14
1/2″ Thick		
1/2″	9575K147	135.67
3/4″	9575K157	150.74
1″	9575K167	173.36
1 1/4″	9575K177	188.43
1 1/2″	9575K187	203.50
2″	9575K197	226.12
2 1/2″	9575K217	263.80
3″	9575K227	301.49
3 1/2″	9575K237	331.64
4″	9575K247	361.79
5″	9575K257	399.47
5/8″ Thick		
5/8″	9575K317	146.92
3/4″	9575K327	163.24
1″	9575K337	187.73
1 1/4″	9575K347	204.06

Width		
5/8″ Thick (Cont.)		
1 1/2″	9575K357	$220.38
2″	9575K367	244.87
2 1/2″	9575K377	285.68
3″	9575K387	326.49
3 1/2″	9575K397	359.14
4″	9575K417	391.79
5″	9575K427	432.60
3/4″ Thick		
3/4″	9575K477	182.83
1″	9575K487	210.26
1 1/4″	9575K498	228.54
1 1/2″	9575K517	246.82
2″	9575K527	274.25
2 1/2″	9575K537	319.96
3″	9575K547	365.66
3 1/2″	9575K557	402.23
4″	9575K567	438.80
5″	9575K577	484.50
7/8″ Thick		
7/8″	9575K637	171.90
1″	9575K647	181.19
1 1/4″	9575K657	209.07
1 1/2″	9575K667	223.01
2″	9575K677	264.82
2 1/2″	9575K687	283.41
3″	9575K697	297.34

Width		
7/8″ Thick (Cont.)		
3 1/2″	9575K717	$311.28
4″	9575K727	348.45
1″ Thick		
1″	9575K747	229.14
1 1/4″	9575K757	249.06
1 1/2″	9575K767	268.99
2″	9575K777	298.88
2 1/2″	9575K787	348.69
3″	9575K797	398.50
3 1/2″	9575K817	438.35
4″	9575K827	478.20
1 1/4″ Thick		
1 1/4″	9575K877	264.75
1 1/2″	9575K887	285.93
2″	9575K897	317.70
2 1/2″	9575K917	370.65
3″	9575K927	423.60
3 1/2″	9575K937	465.96
4″	9575K947	508.32
1 1/2″ Thick		
1 1/2″	9575K997	295.61
2″	9575K118	328.46
2 1/2″	9575K128	383.20
3″	9575K138	437.95
3 1/2″	9575K148	481.74
4″	9575K158	525.54
2″ Thick		
2″	9575K218	467.84

Tight-Tolerance Sheets—Precision Ground Finish

- Hardness: 229-269 Brinell
- Yield Strength: 65,000 psi
- Annealed

Sheets are hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C60. Width and thickness tolerances are +0.015″. Flatness tolerance is 0.001″ per inch. Length tolerance is +1/4″, except 24″ lengths, which are +3/8″.

Thick.	3″ Wd. × 12″ Lg.		6″ Wd. × 6″ Lg.		6″ Wd. × 24″ Lg.		8″ Wd. × 24″ Lg.		10″ Wd. × 24″ Lg.		12″ Wd. × 24″ Lg.	
1/16″	9575K811	$83.26	9575K913	$83.26	9575K132	$237.24	9575K142	$300.64	9575K152	$353.71	9575K162	$416.28
1/8″	9575K813	93.09	9575K914	93.09	9575K292	278.11	9575K312	349.18	9575K322	408.43	9575K332	465.45
3/16″	9575K814	108.36	9575K915	108.36	9575K472	318.96	9575K482	393.14	9575K492	466.44	9575K512	541.81
1/4″	9575K815	122.94	9575K916	122.94	9575K652	340.97	9575K662	430.29	9575K672	528.64	9575K682	614.70
5/16″	9575K816	135.22	9575K918	135.22	9575K832	371.87	9575K842	473.28	9575K852	581.46	9575K862	676.12
3/8″	9575K818	144.58	9575K921	144.58	9575K117	399.84	9575K127	543.40	9575K137	643.38	9575K228	722.90
1/2″	9575K819	150.74	9575K923	150.74	9575K267	439.42	9575K277	564.54	9575K287	670.81	9575K297	753.72
5/8″	9575K821	163.24	9575K924	163.24	9575K437	473.41	9575K447	614.53	9575K457	714.19	9575K467	816.22
3/4″	9575K823	182.83	9575K925	182.83	9575K587	525.64	9575K597	671.91	9575K617	799.89	9575K627	914.16
1″	9575K825	199.25	9575K928	199.25	9575K837	572.85	9575K847	732.25	9575K857	871.73	9575K867	996.26
1 1/4″	9575K826	211.80	9575K929	211.80	9575K957	608.92	9575K967	778.37	9575K977	926.62	9575K987	1,059.00
1 1/2″	9575K828	218.97	9575K931	218.97	9575K168	629.55	9575K178	804.73	9575K188	958.01	9575K198	1,094.87

Rods—Unpolished (Mill) Finish

- Hardness: 230 Brinell
- Yield Strength: 65,000 psi
- Annealed

Meet ASTM A276 and AMS5630. Diameters up to 2″ are cold finished; 2 1/8″ to 5″ diameters are hot rolled. All rods can be heat treated to a maximum attainable hardness of Rockwell C60. Straightness tolerance is 0.15″ per 6 feet for 1/4″ to 2″ diameters and 0.075″ per 6 feet for 2 1/8″ to 5″ diameters. Length tolerance is +1/8″ for 1″ and 3″ lengths, ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
1/4″-2″	±0.003″
2 1/8″-3 1/2″	+0.047″
3 3/4″-5″	+0.078″

Dia.		1 ft.	3 ft.	6 ft.
1/4″	88985K11	—	—	$24.32
3/8″	88985K94	—	$21.80	37.59
7/16″	88985K955	$11.41	27.57	47.53
1/2″	88985K96	13.49	32.60	56.21
9/16″	88985K97	14.27	34.48	59.45
5/8″	88985K98	17.22	41.62	71.76
11/16″	88985K15	20.38	49.26	84.93
3/4″	88985K18	21.06	50.89	87.74
13/16″	88985K21	24.72	59.74	103.00
7/8″	88985K24	28.66	69.25	119.40
15/16″	88985K26	35.82	86.56	149.25
1″	88985K29	36.56	88.36	152.34

Dia.		1 ft.	3 ft.	6 ft.
1 1/16″	88985K32	$40.36	$97.54	$168.17
1 1/8″	88985K35	44.40	107.29	184.98
1 3/16″	88985K37	48.48	117.15	201.98
1 1/4″	88985K41	53.68	129.72	223.66
1 5/16″	88985K43	59.21	143.10	246.72
1 3/8″	88985K46	65.01	157.10	270.86
1 7/16″	88985K49	69.11	167.01	287.95
1 1/2″	88985K53	74.36	179.71	309.85
1 5/8″	88985K55	82.77	200.02	344.87
1 3/4″	88985K57	96.00	231.99	399.98
1 7/8″	88985K59	107.92	260.81	449.68
2″	88985K77	118.51	286.41	493.81

Dia.		1 ft.	3 ft.	6 ft.
2 1/8″	88985K79	$131.77	$318.45	$549.05
2 1/4″	88985K81	142.80	345.10	595.00
2 3/8″	88985K82	153.94	372.01	641.40
2 1/2″	88985K83	155.92	376.80	649.66
2 5/8″	88985K84	171.89	415.40	716.20
2 3/4″	88985K85	188.61	455.82	785.89
3″	88985K86	227.84	550.61	949.32
3 1/8″	88985K87	270.30	653.22	1,126.25
3 1/4″	88985K88	287.67	695.20	1,198.62
3 1/2″	88985K89	333.00	804.75	1,387.50
3 3/4″	88985K91	374.07	904.01	1,558.64
4″	88985K92	406.97	990.89	1,769.44

Dia.	1″ Long		3″ Long	
2″	88985K111	$17.28	88985K113	$44.44
2 1/4″	88985K121	20.83	88985K123	53.55
3″	88985K131	33.23	88985K133	85.44

Dia.	1″ Long		3″ Long	
3 1/2″	88985K141	$48.56	88985K143	$124.88
4″	88985K161	56.62	88985K163	141.56
5″	88985K171	76.94	88985K173	192.34

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Ultra-Hard Wear-Resistant Stainless Steel (Type 440C) *(Material continued from previous page)*

Ideal for use in bearings, valve parts, and knife blades, this high-carbon stainless steel offers good wear resistance and is one of the hardest stainless steels when heat treated. It maintains corrosion resistance up to 800° F. Magnetic.

Hardened Rods—Precision Ground Finish

- Hardness: Rockwell C55-C60
- Yield Strength: 275,000 psi
- Hardened

Meet ASTM A276 and AMS5630. Rods are cold finished. Diameter tolerance is –0.0002″. Straightness tolerance is not rated. Length tolerance is ±1/2″. Sold in 6″ lengths.

Dia.			Dia.			Dia.			Dia.		
1/8″	1328T31	$33.87	1/4″	1328T35	$42.53	1/2″	1328T41	$45.94	3/4″	1328T45	$57.93
3/16″	1328T33	41.32	3/8″	1328T39	43.77	5/8″	1328T43	49.47	1″	1328T47	66.39

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 217-255 Brinell
- Yield Strength: 70,000 psi
- Annealed

Meet ASTM A276 and AMS5630. Rods are cold finished and can be heat treated to a maximum attainable hardness of Rockwell C60. Diameter tolerance is –0.0005″. Straightness tolerance is 1/16″ per foot. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.	Dia.		1 ft.	3 ft.	6 ft.
1/8″	9094K31	$8.91	$20.68	$35.65	3/8″	9094K16	$14.57	$33.81	$58.29	7/8″	9094K22	$34.85	$80.86	$139.41
5/32″	9094K32	9.99	23.19	39.98	7/16″	9094K17	15.48	35.93	61.94	1″	9094K23	43.57	101.08	174.27
3/16″	9094K33	11.14	25.84	44.55	1/2″	9094K18	20.53	47.64	82.13	1 1/4″	9094K24	60.72	140.88	242.89
1/4″	9094K14	12.30	28.53	49.19	5/8″	9094K19	22.73	52.74	90.93	1 1/2″	9094K25	81.95	190.14	327.82
5/16″	9094K15	13.04	30.25	52.16	3/4″	9094K21	29.05	67.38	116.18					

Precision Balls—Reflective Finish

- Hardness: Rockwell C58-C65
- Yield Strength: 275,000 psi, except Grade 24 are not rated
- Full hard

Meet ASTM A276, ASTM A756, and AMS5630.
Grade 100 (Inch Sizes)—Sphericity is 0.0001″. Diameter tolerance is ±0.0005″.
Grade 24 (Inch Sizes)—Sphericity is 0.000024″. Diameter tolerance is ±0.0001″.
Grade 25 (Metric Sizes)—Sphericity is 0.0006 mm. Diameter tolerance is ±0.0025 mm.

INCH SIZES

Dia.	Pkg. Qty.		Pkg.
Grade 100			
1/16″	100	9529K14	$5.36
3/32″	100	9529K33	5.55
1/8″	100	9529K11	5.87
5/32″	100	9529K12	6.11
3/16″	100	9529K13	6.88
7/32″	100	9529K44	8.86
1/4″	100	9529K15	10.56
9/32″	100	9529K16	14.44
5/16″	100	9529K17	15.05
11/32″	50	9529K18	11.72
3/8″	50	9529K19	13.34
7/16″	25	9529K21	11.02
1/2″	25	9529K22	15.06

Dia.	Pkg. Qty.		Pkg.
Grade 100 (Cont.)			
9/16″	25	9529K23	$15.07
5/8″	10	9529K24	14.16
11/16″	10	9529K25	15.10
3/4″	10	9529K26	15.08
13/16″	5	9529K27	13.99
7/8″	5	9529K28	15.04
15/16″	5	9529K29	15.11
1″	3	9529K31	13.90
1 1/16″	3	9529K32	15.05
			Each
1 1/8″	—	9529K54	$8.50
1 3/16″	—	9529K55	10.61
1 1/4″	—	9529K49	11.33

Dia.	Pkg. Qty.		Each
Grade 100 (Cont.)			
1 3/8″	—	9529K56	$14.85
1 1/2″	—	9529K51	15.16
2″	—	9529K53	38.71
			Pkg.
Grade 24			
1/16″	50	9642K21	$4.89
5/64″	50	9642K23	5.40
3/32″	50	9642K25	6.02
7/64″	50	9642K27	5.00
1/8″	50	9642K29	5.11
9/64″	50	9642K31	14.85
5/32″	50	9642K33	5.56
3/16″	50	9642K35	7.72
7/32″	50	9642K37	9.72

Dia.	Pkg. Qty.		Pkg.
Grade 24 (Cont.)			
1/4″	50	9642K39	$10.99
17/64″	50	9642K41	11.79
9/32″	50	9642K43	12.59
5/16″	50	9642K45	13.29
11/32″	50	9642K47	15.29
3/8″	10	9642K49	4.65
13/32″	10	9642K51	10.07
7/16″	10	9642K53	8.00
1/2″	10	9642K57	8.30
9/16″	5	9642K59	7.75
5/8″	5	9642K61	10.16

METRIC SIZES

Dia., mm	Pkg. Qty.		Pkg.
Grade 25			
1	250	1598K16	$9.48
1.5	250	1598K17	9.93

Dia., mm	Pkg. Qty.		Pkg.
Grade 25 (Cont.)			
2	250	1598K18	$11.26
2.5	250	1598K22	12.15

Dia., mm	Pkg. Qty.		Pkg.
Grade 25 (Cont.)			
3	250	1598K23	$13.18
3.5	250	1598K24	15.28

Mold-Quality Wear-Resistant Stainless Steel (Type 420)

With its excellent polishability and high hardness, Type 420 stainless steel is ideal for manufacturing plastic molds. It is also used for knives, shafts, and surgical instruments. Type 420 is heat treatable and magnetic. It maintains corrosion resistance up to 1150° F.

Sheets—Unpolished (#2B Mill) Finish

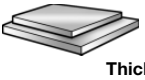

- Hardness: Rockwell C52
- Yield Strength: Not rated
- Hardened

Width tolerance is ±0.100″. Flatness tolerance is 0.005″. Length tolerance is ±0.005″.

Thick.	Thick. Tolerance		6″ Wd. × 12″ Lg.		6″ Wd. × 24″ Lg.	
0.006″	±0.001″		2626T11	$48.00	2626T21	$80.00
0.008″	±0.001″		2626T12★	58.50	2626T22♦	104.00
0.010″	±0.001″		2626T13	61.00	2626T23	110.63
0.012″	±0.001″		2626T14	64.00	2626T24	117.00
0.015″	±0.001″		2626T15	66.50	2626T25	123.75
0.018″	±0.001″		2626T16	69.00	2626T26	130.00
0.020″	±0.001″		2626T17	$71.50	2626T27	$136.25
0.025″	±0.001″		2626T18	75.86	2626T28	143.13
0.032″	±0.001″		2626T29	87.00	2626T31	145.00
0.039″	±0.001″		2626T32	88.50	2626T33	147.50
0.058″	±0.0015″		2626T34	92.20	2626T35	153.66

★ Size is 4 1/4″ Wd. × 12″ Lg. ♦ Size is 4 1/4″ Wd. × 24″ Lg.

Tight-Tolerance Flat Stock—Precision Ground Finish

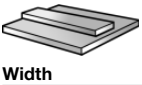

- Hardness: 255 Brinell
- Yield Strength: 50,000 psi
- Annealed

Flat stock is hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C52-C54. Width tolerance is +0.015″. Flatness tolerance is not rated. Length tolerance is +1/2″. Sold in 2-ft. lengths.

Width			Width			Width			Width		
1/4″ Thick *(+0.015″)*			***1/2″ Thick*** *(+0.015″)*			***3/4″ Thick*** *(+0.015″)*			***1″ Thick*** *(+0.015″)*		
1″	7025T11	$150.33	1″	7025T21	$198.24	1″	7025T31	$253.46	1″	7025T41	$295.90
2″	7025T12	219.15	2″	7025T22	280.79	2″	7025T32	356.82	2″	7025T42	412.54
3″	7025T13	299.42	3″	7025T23	377.58	3″	7025T33	452.19	3″	7025T43	520.56
4″	7025T14	362.50	4″	7025T24	453.62	4″	7025T34	540.50	4″	7025T44	643.85

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Mold-Quality Wear-Resistant Stainless Steel (Type 420)

(Material continued from previous page)

Rods—Unpolished (Mill) Finish

- Hardness: 163 Brinell
- Yield Strength: 50,000 psi
- Annealed

Meet ASTM A276 and A484. Rods are cold finished and can be heat treated to a maximum attainable hardness of Rockwell C57. Straightness tolerance is 1/16″ per 5 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.	Dia. Tolerance		1 ft.	3 ft.	6 ft.
1/2″	±0.002″	3234T11	$8.73	$21.82	$36.37
5/8″	±0.002″	3234T12	12.62	31.55	52.58
3/4″	±0.002″	3234T13	17.05	42.63	71.05
1″	±0.0025″	3234T14	$28.50	$71.26	$118.77
1 1/4″	±0.0025″	3234T15	40.80	102.00	170.00

Tough Wear-Resistant Stainless Steel (Type 440A)

This high-carbon, high-chromium martensitic stainless steel offers greater hardness than Type 420 stainless steel and greater toughness than Type 440C stainless steel while still providing good corrosion resistance. It maintains corrosion resistance up to 795° F. Often used for cutlery, valve parts, and surgical instruments.

Sheets—Unpolished (Mill) Finish

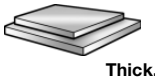

- Hardness: Rockwell C58
- Yield Strength: Not rated
- Hardened

Width tolerance is ±0.100″. Flatness tolerance is 0.005″ per inch. Length tolerance is ±0.005″.

Thick.	Thick. Tolerance	6″ Wd. × 12″ Lg.		6″ Wd. × 24″ Lg.	
0.010″	±0.001″	2629T11	$64.88	2629T21	$108.13
0.015″	±0.001″	2629T12	74.00	2629T22	130.00
0.020″	±0.001″	2629T13	83.53	2629T23	139.22
0.025″	±0.001″	2629T14	87.50	2629T24	152.50
0.031″	±0.001″	2629T15	$89.50	2629T25	$158.13
0.039″	±0.001″	2629T16	98.00	2629T26	179.00
0.047″	±0.001″	2629T17	106.51	2629T27	195.00
0.062″	±0.001″	2629T18	127.67	2629T28	240.88

Hollow Ball—Reflective Finish

- Hardness: Rockwell C54-60
- Yield Strength: Not rated
- Hardened

Meets AMSQQS763B. Grade is 1000. Sphericity is 0.001″. Diameter is 1″. Diameter tolerance is ±0.005″.

9327K33 ..... $9.45

Corrosion- and Wear-Resistant Stainless Steel (Type 420V)

Use Type 420V in place of tool steels, such as D2, when extra corrosion resistance is important. It offers better wear resistance than other stainless steels due to the addition of vanadium and carbon, and it has increased corrosion resistance because it's made of powdered metal. Maximum temperature for corrosion resistance is not rated. Magnetic.

Strips—Unpolished (Mill) Finish

- Hardness: 255-277 Brinell
- Yield Strength: Not rated
- Annealed

Strips are hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C58-C60. Width tolerance is +3/16″. Length tolerance is +1/8″. Flatness tolerance is 0.030″.

Thick.	Thick. Tolerance	1″ × 18″		1 1/2″ × 18″		2″ × 18″	
0.140″	+0.050″	9520K12	$51.86	9520K22	$70.33	9520K32	$87.54
0.156″	+0.050″	9520K42	60.53	9520K52	83.14	9520K62	102.33

High-Strength Stainless Steel (Type 13-8 PH)

Once heat treated, this precipitation-hardenable stainless steel offers increased strength and good corrosion resistance, even under stress. It maintains corrosion resistance up to 1100° F. Magnetic.

Rods—Unpolished (Mill) Finish

- Hardness: 363 Brinell
- Yield Strength: Not rated
- Annealed

Meet AMS5629. Rods are cold finished. Not rated for maximum attainable Rockwell hardness. Diameter tolerance is ±0.0025″. Straightness tolerance is 0.0125″ per foot. Length tolerance is ±1″ for 1-ft. lengths and ±3″ for 3-ft. lengths and 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1/4″	3667T18	$17.78	$41.27	$63.50
3/8″	3667T19	35.92	83.40	128.30
1/2″	3667T31	55.93	129.83	199.74
5/8″	3667T21	$87.70	$203.60	$313.23
3/4″	3667T22	111.60	259.08	398.58
7/8″	3667T23	$160.50	$372.59	$573.22
1″	3667T24	209.04	485.26	746.56

Wear-Resistant High-Strength Stainless Steel (Type 15-5 PH)

Commonly used in gears, cams, and aircraft parts, Type 15-5 PH combines high strength and wear resistance. It can be heat treated at low temperatures to increase its mechanical properties. It maintains corrosion resistance up to 1100° F. Magnetic.

Rods—Unpolished (Mill) Finish

- Hardness: 332 Brinell
- Yield Strength: 145,000 psi
- Annealed

Meet ASTM A564 as well as AMS2300 and AMS5659. Rods are cold finished. Not rated for maximum attainable Rockwell hardness. Straightness tolerance is 0.075″. Length tolerance is ±1″ per foot. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.	Tolerance
1/4″	±0.001″
3/8″-7/16″	±0.0015″
1/2″-7/8″	±0.002″
1″-1 1/4″	±0.0025″
1 1/2″	±0.003″

Dia.		1 ft.	3 ft.	6 ft.
1/4″	87095K82	$7.88	$18.38	$32.82
3/8″	87095K84	10.09	23.54	42.04
7/16″	87095K56	21.05	49.11	87.69
1/2″	87095K62	17.23	40.20	71.79
9/16″	87095K22	$18.94	$44.20	$78.92
5/8″	87095K23	22.88	53.38	95.33
3/4″	87095K24	29.27	68.29	121.95
7/8″	87095K25	36.49	85.14	152.03
1″	87095K27	$47.07	$109.83	$196.13
1 1/8″	87095K28	65.04	151.75	270.98
1 1/4″	87095K31	68.19	159.11	284.12
1 1/2″	87095K33	95.10	221.91	396.27

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Corrosion-Resistant High-Strength Stainless Steel (Type 17-4 PH)

Not only does Type 17-4 PH stainless steel have high strength but it also offers better corrosion resistance than Type 15-5 PH due to its slightly higher chromium content. It's also known as Type 630 stainless steel and can be strengthened by precipitation hardening at low temperatures to increase mechanical properties. It maintains corrosion resistance up to 1100° F. Magnetic.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 353 Brinell
- Yield Strength: 110,000 psi
- Annealed

Meet ASTM A564 and AMS5643. Bars are hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C47-C48. Flatness tolerance is not rated. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Width	Tolerance
3/4″-2″	±0.031″
2 1/4″-3 1/2″	+0.062″, –0.031″

Width		1 ft.	3 ft.	6 ft.
1/4″ Thick *(±0.015″)*				
3/4″	88775K112	$18.71	$43.41	$74.85
1″	88775K11	20.45	47.44	81.79
1 1/4″	88775K13	23.61	54.76	94.42
1 1/2″	88775K55	27.24	63.20	108.96
2″	88775K71	35.32	81.94	141.28
3″	88775K15	44.20	102.54	176.80
5/16″ Thick *(±0.015″)*				
1″	88775K121	25.45	59.04	101.80
2″	88775K132	45.40	105.33	181.61
3″	88775K141	54.05	125.39	216.19
3/8″ Thick *(±0.015″)*				
1″	88775K17	24.95	57.89	99.81
1 1/2″	88775K73	35.28	81.86	141.14
2″	88775K19	46.08	106.91	184.32
3″	88775K22	61.96	143.75	247.84
1/2″ Thick *(±0.015″)*				
3/4″	88775K56	27.34	63.42	109.35
1″	88775K24	30.76	71.37	123.05
1 1/4″	88775K152	42.88	99.48	171.52
1 1/2″	88775K26	48.13	111.66	192.51
1 3/4″	88775K161	50.81	117.87	203.23
2″	88775K28	56.27	130.54	225.07

Width		1 ft.	3 ft.	6 ft.
1/2″ Thick (Cont.)				
2 1/2″	88775K172	$58.24	$135.13	$232.98
3″	88775K31	78.28	181.61	313.12
5/8″ Thick *(±0.020″)*				
3/4″	88775K181	35.39	82.10	141.55
1″	88775K192	44.10	102.32	176.41
1 1/2″	88775K211	58.67	136.11	234.67
2″	88775K222	60.13	139.50	240.51
2 1/2″	88775K231	69.56	161.38	278.25
3″	88775K242	83.16	192.93	332.63
3/4″ Thick *(±0.020″)*				
1″	88775K33	40.04	92.89	160.16
1 1/4″	88775K332	50.50	117.16	202.00
1 1/2″	88775K35	52.66	122.16	210.62
2″	88775K37	68.40	158.69	273.60
2 1/2″	88775K341	75.44	175.03	301.77
3″	88775K39	95.74	222.11	382.95
1″ Thick *(±0.020″)*				
1″	88775K75	51.65	119.83	206.60
1 1/4″	88775K42	55.29	128.27	221.15
1 1/2″	88775K352	62.74	145.55	250.95
2″	88775K44	85.44	198.21	341.75
2 1/2″	88775K422	95.34	221.19	381.37

Width		1 ft.	3 ft.	6 ft.
1″ Thick (Cont.)				
3″	88775K46	$118.00	$273.77	$472.02
3 1/2″	88775K57	132.46	307.30	529.82
1 1/4″ Thick *(±0.031″)*				
1 1/4″	88775K77	86.80	201.37	347.19
1 1/2″	88775K48	92.10	213.67	368.40
2″	88775K431	104.93	243.43	419.71
2 1/4″	88775K51	118.66	275.29	474.63
2 1/2″	88775K53	131.72	305.58	526.86
3″	88775K442	151.20	350.78	604.80
1 1/2″ Thick *(±0.031″)*				
1 1/2″	88775K69	106.45	246.97	425.81
2″	88775K58	109.73	254.59	438.94
2 1/2″	88775K67	133.43	309.56	533.72
2 3/4″	88775K68	139.59	323.85	558.36
1 3/4″ Thick *(±0.031″)*				
1 3/4″	88775K79	129.93	301.44	519.72
2″ Thick *(±0.031″)*				
2″	88775K81	152.93	354.79	611.71
2 1/4″ Thick *(+0.062″, –0.031″)*				
2 1/4″	88775K83	174.60	405.07	698.39
2 1/2″ Thick *(+0.062″, –0.031″)*				
2 1/2″	88775K85	214.65	497.99	858.60

Strips—Unpolished (Mill) Finish

- Hardness: Rockwell C30-C38
- Yield Strength: 110,000 psi
- Annealed

Meet ASTM A693 and AMS5604. Strips are cold finished and can be heat treated to a maximum attainable hardness of Rockwell C40-C47. Width and length tolerances are ±0.015″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	4″×60″	
0.003″	±0.00015″	3254T11	$45.61
0.004″	±0.0002″	3254T12	51.71
0.005″	±0.00025″	3254T13	60.26
0.006″	±0.0003″	3254T14	77.38

Thick.	Thick. Tolerance	4″×60″	
0.008″	±0.0004″	3254T15	$84.75
0.010″	±0.0005″	3254T16	94.40
0.012″	±0.0006″	3254T17	107.74
0.015″	±0.0009″	3254T18	131.48

Thick.	Thick. Tolerance	4″×60″	
0.018″	±0.0010″	3254T19	$145.80
0.020″	±0.0010″	3254T21	158.48
0.025″	±0.0010″	3254T22	193.96
0.031″	±0.0010″	3254T23	210.17

Thick Sheets—Unpolished (Mill) Finish

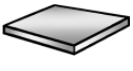

- Hardness: 352-363 Brinell
- Yield Strength: 160,000 psi
- Annealed

Meet ASTM A693 and AMS5604. Sheets up to 0.125″ thick are cold finished; sheets 0.1875″ thick and thicker are hot rolled. Not rated for maximum attainable Rockwell hardness. Width and length tolerances are ±1/8″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″		12″×24″		12″×36″		24″×24″		24″×30″		24″×48″	
0.032″	±0.002″	1773T11	$34.28	—	—	1773T12	$85.71	—	—	—	—	—	—
0.040″	±0.002″	1773T13	40.50	—	—	1773T14	101.25	—	—	—	—	—	—
0.050″	±0.002″	1773T15	44.06	—	—	1773T16	110.14	—	—	—	—	—	—
0.063″	±0.003″	1773T17	53.85	—	—	1773T18	134.63	—	—	—	—	—	—
0.080″	±0.004″	1773T19	64.62	—	—	1773T21	161.54	—	—	—	—	—	—
0.090″	±0.004″	1773T22	71.08	—	—	1773T23	177.70	—	—	—	—	—	—
0.100″	±0.005″	1773T24	96.30	—	—	1773T25	240.74	—	—	—	—	—	—
0.125″	±0.005″	1773T26	99.41	—	—	1773T27	248.52	—	—	—	—	—	—
0.1875″	+0.045″, –0.01″	6625K41	177.22	6625K42	$291.89	—	—	6625K43	$562.94	6625K44	$674.17	6625K45	$1,042.48
0.250″	+0.045″, –0.01″	6625K51	217.59	6625K52	358.39	—	—	6625K53	691.18	6625K54	860.65	6625K55	1,279.97
0.375″	+0.055″, –0.01″	6625K61	245.10	6625K62	403.69	—	—	6625K63	778.54	6625K64	951.55	6625K65	1,441.74
0.500″	+0.055″, –0.01″	6625K71	314.45	6625K72	526.28	—	—	6625K73	1,019.10	6625K74	1,240.51	6625K75	1,879.56

Tight-Tolerance Sheets—Precision Ground Finish

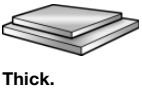

- Hardness: 440 Brinell
- Yield Strength: 125,000 psi
- Annealed

Meet ASTM A693 and AMS5604. Sheets are hot rolled and can be heat treated to a maximum attainable hardness of Rockwell C47. Thickness tolerance is ±0.001″. Width and length tolerances are +1/4″. Flatness tolerance is not rated.

Thick.	6″×24″		12″×24″	
1/16″	5492T11	$580.61	5492T51	$849.80
1/8″	5492T12	530.39	5492T52	755.67
3/16″	5492T13	551.36	5492T53	744.53
1/4″	5492T14	491.41	5492T54	689.39
3/8″	5492T16	534.32	5492T56	811.33

Thick.	6″×24″		12″×24″	
1/2″	5492T17	$685.98	5492T57	$993.55
5/8″	5492T18	739.05	—	—
3/4″	5492T19	845.69	—	—
1″	5492T21	1,024.19	—	—

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about stainless steel, see page 3685.

For information on the chemical composition of stainless steel alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8984KAC**.

Corrosion-Resistant High-Strength Stainless Steel (Type 17-4 PH)

(Material continued from previous page)

Rods—Unpolished (Mill) Finish

- Hardness: 341-363 Brinell
- Yield Strength: Not rated, except 1/2″ and 1″ lengths, which are 110,000 psi
- Annealed

Meet ASTM A564 and AMS5643. Diameters up to 3 1/2″ are cold finished; 4″ to 6″ diameters are hot rolled. Rods can be heat treated to a maximum attainable hardness of Rockwell C45-C48. Straightness tolerance is not rated. Length tolerance is ±1/16″ for 1/2″ and 1″ lengths, ±1/2″ for 1-ft. lengths, ±1 1/2″ for 3-ft. lengths, and ±3″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
3/16″-15/16″	±0.002″
1″-1 7/16″	±0.0025″
1 1/2″-3 1/4″	±0.003″
3 1/2″-5″	±0.078″
6″	+0.125″

Dia.		1 ft.	3 ft.	6 ft.
3/16″	88855K1	—	$12.38	$21.35
1/4″	88855K2	—	20.87	37.26
5/16″	88855K9	—	21.73	37.46
3/8″	88855K3	—	23.37	40.29
7/16″	88855K4	$10.50	24.36	42.00
1/2″	88855K5	13.25	30.74	53.00
9/16″	88855K6	13.60	31.56	54.41
5/8″	88855K7	13.99	32.46	55.97
11/16″	88855K151	22.37	51.90	89.49
3/4″	88855K16	23.85	55.34	95.41
13/16″	88855K18	24.35	56.49	97.40
7/8″	88855K22	25.38	58.88	101.51
15/16″	88855K25	$34.52	$80.07	$138.06
1″	88855K28	36.68	85.10	146.73
1 1/16″	88855K31	38.99	90.47	155.98
1 1/8″	88855K34	41.10	95.36	164.42
1 3/16″	88855K36	46.20	107.18	184.80
1 1/4″	88855K39	51.81	120.21	207.26
1 5/16″	88855K42	52.62	122.08	210.49
1 3/8″	88855K45	53.00	122.96	212.00
1 7/16″	88855K47	55.37	128.46	221.48
1 1/2″	88855K52	58.23	135.09	232.92
1 9/16″	88855K57	61.47	142.62	245.89
1 5/8″	88855K64	66.72	154.78	266.86
1 3/4″	88855K82	$76.55	$177.58	$306.18
1 7/8″	88855K84	81.82	189.82	327.27
2″	88855K86	99.77	231.45	399.06
2 1/8″	88855K87	108.71	252.21	434.84
2 1/4″	88855K88	111.17	257.93	444.70
2 3/8″	88855K89	119.56	277.39	478.26
2 1/2″	88855K91	141.51	328.30	566.04
2 3/4″	88855K93	168.19	390.21	672.77
3″	88855K95	197.56	458.35	790.26
3 1/8″	88855K96	212.89	493.90	851.55
3 1/4″	88855K97	228.84	530.91	915.36
3 1/2″	88855K99	261.14	605.84	1,044.56

Dia.	1/2″ Long		1″ Long	
3″	1319T11	$13.83	1319T12	$26.64
3 1/2″	1319T21	18.16	1319T22	34.10
4″	1319T31	23.32	1319T32	42.34
4 1/2″	1319T41	$27.16	1319T42	$49.40
5″	1319T51	32.23	1319T52	60.97
6″	1319T61	47.69	1319T62	90.63

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: 363 Brinell
- Yield Strength: 118,000 psi
- Annealed

Meet ASTM A564 and AMS2303 and AMS2315. Rods are cold finished and can be heat treated to a maximum attainable hardness of Rockwell C44. Diameter tolerance is –0.0005″. Straightness tolerance is 1/16″ per foot. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		1 ft.	3 ft.	6 ft.
1/8″	9095K83	$8.54	$19.80	$34.14
5/32″	9095K87	9.72	22.56	38.89
3/16″	9095K92	10.71	24.85	42.85
1/4″	9095K96	11.52	26.71	46.06
5/16″	9095K101	13.34	30.95	53.37
3/8″	9095K105	$14.79	$34.31	$59.15
7/16″	9095K47	16.11	37.38	64.45
1/2″	9095K52	17.68	41.01	70.71
5/8″	9095K56	22.40	51.96	89.59
3/4″	9095K61	28.99	67.26	115.97
7/8″	9095K65	$31.02	$71.97	$124.09
1″	9095K69	39.34	91.27	157.36
1 1/4″	9095K74	63.16	146.53	252.63
1 1/2″	9095K78	86.94	201.71	347.77

Tight-Tolerance Metric Rods—Precision Ground Finish

- Hardness: 326 Brinell
- Yield Strength: 118,000 psi
- Annealed

Meet ASTM A564. Rods are cold finished and can be heat treated to a maximum attainable hardness of Rockwell C42-C47. Diameter tolerance is ±0.0005″. Straightness tolerance is 1/16″ per 3 feet. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
5 mm	3180T11	—	—	$26.61
6 mm	3180T12	—	—	31.24
7 mm	3180T13	—	—	33.88
8 mm	3180T14	—	—	36.28
9 mm	3180T15	—	—	$39.54
10 mm	3180T16	—	$27.40	45.67
12 mm	3180T17	$13.56	33.89	56.48
14 mm	3180T18	16.71	41.77	69.62
16 mm	3180T19	$23.72	$59.29	$98.82
18 mm	3180T21	26.24	65.59	109.32
20 mm	3180T22	29.98	74.95	124.91
25 mm	3180T23	32.40	80.99	134.98

Hardened Rods—Unpolished (Mill) Finish

- Hardness: 311 Brinell
- Yield Strength: 145,000 psi
- Hardened (H1150 Temper)

Meet ASTM A564 and AMS5643. H1150 temper allows for improved machinability. Rods are cold finished. Diameter tolerance is ±0.002″ for 1/2″ to 7/8″ sizes and ±0.003″ for 1″ to 4″ sizes. Straightness tolerance is 0.075″. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/2″	87205K21	—	—	$49.90
3/4″	87205K11	—	$55.06	93.32
7/8″	87205K12	$30.30	71.52	121.22
1″	87205K13	36.47	86.07	145.88
1 1/8″	87205K14	44.32	104.60	177.28
1 1/4″	87205K15	52.62	124.17	210.46
1 3/8″	87205K16	$58.45	$137.94	$233.80
1 1/2″	87205K17	66.98	158.07	267.91
1 5/8″	87205K18	76.00	179.35	303.98
1 3/4″	87205K19	85.02	200.64	340.07
1 7/8″	87205K51	94.67	223.43	378.69
2″	87205K52	104.18	245.86	416.72
2 1/8″	87205K53	$117.80	$278.00	$471.19
2 1/4″	87205K54	127.23	300.26	508.91
2 1/2″	87205K55	150.99	356.34	603.96
2 3/4″	87205K56	182.69	431.16	730.78
3″	87205K57	211.31	498.69	845.23
4″	87205K61	367.20	866.59	1,468.80

Tight-Tolerance Hardened Rods—Precision Ground Finish

- Hardness: 388-444 Brinell
- Yield Strength: 170,000 psi
- Hardened (H900 Temper)

Meet ASTM A484 and A564 as well as AMS5643. Rods are cold finished. Diameter tolerance is –0.0005″. Straightness tolerance is 1/16″ per foot. Length tolerance is ±1″ for 1-ft. lengths, ±3″ for 3-ft. lengths, and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		1 ft.	3 ft.	6 ft.
1/8″	1141T21	—	—	$37.58
3/16″	1141T22	—	—	49.56
1/4″	1141T23	—	$30.28	54.08
5/16″	1141T24	—	35.12	62.71
3/8″	1141T25	—	$38.39	$68.55
1/2″	1141T26	$22.69	45.38	81.03
5/8″	1141T27	29.24	58.48	104.42
3/4″	1141T28	37.95	75.91	135.55
7/8″	1141T29	$46.28	$92.56	$165.28
1″	1141T31	58.25	116.51	208.05
1 1/4″	1141T32	82.13	164.26	293.32
1 1/2″	1141T33	108.89	217.79	388.91

***Warning!* Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.**

For information about the physical and mechanical properties of tungsten, as well as machining data, go to mcmaster.com and search for **8788AAC**.

Tungsten Carbide

Commonly called carbide, tungsten carbide offers excellent corrosion resistance. Use it to machine tools that are harder and longer lasting than those made from tool steel.

Tight-Tolerance Rods—Precision Ground Finish

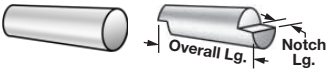

Notched at Both Ends

- Hardness: Rockwell A92
- Yield Strength: Not rated
- Pressure formed (sintered)

Rods are C2 tungsten carbide (10% cobalt). ***Inch Sizes—*** Diameter tolerance is –0.0003″ for rods up to 4½″ long; –0.0005″ for 6″ and 12″ lengths. Length tolerance is ±0.06″, except 12″ lengths have a plus tolerance. Straightness tolerance is not rated. ***Metric Sizes—*** Diameter tolerance is –0.007 mm and length tolerance is ±1.5 mm. Straightness tolerance is not rated.

RODS—INCH SIZES

Dia.	Length		
1/16″	1½″	8788A361	$3.41
3/32″	2″	8788A122	3.89
7/64″	2¼″	8788A123	4.46
1/8″	1½″	8788A124	2.60
1/8″	2¼″	8788A125	4.62
1/8″	3″	8788A126	4.79
1/8″	4″	8788A127	7.14
1/8″	6″	8788A128	11.03
1/8″	12″	8788A129	23.50
9/64″	2½″	8788A131	6.41
5/32″	2½″	8788A132	7.42
11/64″	2¾″	8788A133	8.27
3/16″	2″	8788A134	4.71
3/16″	3″	8788A135	9.08
3/16″	4″	8788A152	$11.03
3/16″	6″	8788A153	16.62
3/16″	12″	8788A154	34.59
13/64″	3″	8788A155	9.97
7/32″	3″	8788A156	11.35
15/64″	3¼″	8788A157	12.17
1/4″	2″	8788A158	6.33
1/4″	3″	8788A159	11.03
1/4″	4″	8788A161	17.03
1/4″	6″	8788A162	23.89
1/4″	12″	8788A163	50.32
17/64″	3½″	8788A164	14.69
9/32″	3½″	8788A165	17.23
19/64″	3¾″	8788A191	$17.63
5/16″	3″	8788A192	18.02
5/16″	4″	8788A193	21.57
5/16″	6″	8788A194	33.90
5/16″	12″	8788A195	68.59
3/8″	2½″	8788A196	14.89
3/8″	3″	8788A197	20.03
3/8″	4″	8788A198	26.97
3/8″	6″	8788A199	41.75
3/8″	12″	8788A221	90.29
27/64″	4½″	8788A222	38.13
7/16″	3″	8788A223	25.43
7/16″	6″	8788A224	52.19
1/2″	3″	8788A251	$25.04
1/2″	4″	8788A252	35.44
1/2″	6″	8788A253	59.65
1/2″	12″	8788A254	122.79
5/8″	3½″	8788A255	52.19
5/8″	6″	8788A256	101.12
5/8″	12″	8788A257	227.57
3/4″	4″	8788A258	78.29
3/4″	6″	8788A259	130.01
3/4″	12″	8788A261	263.95
1″	4″	8788A262	133.62
1″	6″	8788A263	220.46
1″	12″	8788A264	468.87

RODS—METRIC SIZES

Dia., mm	Length, mm		
3	38	8791A92	$2.69
3	75	8791A93	5.01
4	50	8791A95	5.04
4	75	8791A97	9.92
5	50	8791A99	$5.46
5	75	8791A12	10.33
6	50	8791A14	6.88
6	75	8791A16	11.44
10	100	8791A42	$38.23
16	127	8791A54	101.70
18	100	8791A56	109.26
20	100	8791A58	120.01
20	152	8791A62	$186.68
22	100	8791A64	182.24
25	100	8791A66	185.91

RODS NOTCHED AT BOTH ENDS—INCH SIZES

Dia.	Overall Length	Notch Length		
1/8″	1½″	1/4″	8788A136	$5.34
1/8″	3″	1/4″	8788A137	12.84
3/16″	2″	1/4″	8788A138	10.86
3/16″	3″	1/4″	8788A139	14.17
3/16″	6″	1/4″	8788A151	26.65
1/4″	2″	3/8″	8788A166	15.56
1/4″	3″	3/8″	8788A167	$21.75
1/4″	4″	3/8″	8788A168	28.14
1/4″	6″	3/8″	8788A169	39.72
5/16″	3″	3/8″	8788A225	28.61
5/16″	6″	3/8″	8788A226	45.24
3/8″	2½″	1/2″	8788A227	33.03
3/8″	3″	1/2″	8788A228	$38.46
3/8″	4″	1/2″	8788A229	49.30
3/8″	6″	1/2″	8788A265	55.60
1/2″	3″	1/2″	8788A266	48.33
1/2″	4″	1/2″	8788A267	63.32
1/2″	6″	1/2″	8788A268	87.49

Balls—Precision Ground Finish

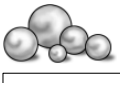

- Hardness: Rockwell A92
- Yield Strength: Not rated
- Pressure formed (sintered)

Balls are C2 tungsten carbide (6% cobalt). Diameter tolerance is ±0.0001″. Sphericity is 0.000025″.

INCH SIZES

Dia.	Pkg. Qty.		Pkg.
1/32″	5	9598K52	$5.87
3/64″	5	9598K53	6.25
1/16″	5	9598K54	6.58
5/64″	5	9598K55	9.31
3/32″	5	9598K56	7.07
7/64″	5	9598K57	10.76
1/8″	5	9598K58	$11.32
5/32″	5	9598K59	12.28
3/16″	5	9598K6	13.52
7/32″	5	9598K61	14.61
1/4″	5	9598K62	15.06
9/32″	2	9598K63	10.85
5/16″	2	9598K64	$11.79
11/32″	2	9598K65	12.07
3/8″	2	9598K66	12.46
7/16″	1	9598K68	8.35
1/2″	1	9598K7	11.70
9/16″	1	9598K71	14.42
5/8″	1	9598K72	$18.43
3/4″	1	9598K74	26.22
13/16″	1	9598K81	58.44
7/8″	1	9598K82	58.44
15/16″	1	9598K83	52.45
1″	1	9598K84	65.28

METRIC SIZES

Dia., mm	Pkg. Qty.		Pkg.
1	5	9686K81	$9.84
2	5	9686K82	10.92
3	5	9686K83	11.18
3.5	5	9686K84	12.13
4	2	9686K85	$5.87
5	2	9686K86	6.28
6	2	9686K87	6.47
7	2	9686K89	7.92
8	2	9686K91	$12.91
10	1	9686K93	8.10
12	1	9686K95	13.10
13	1	9686K77	$23.65
14	1	9686K78	27.65
15	1	9686K79	34.70

High-Strength Durable Tungsten

The addition of copper and nickel to tungsten creates a rigid, strong material that is great as a weight or counterbalance. Fabricate tools from this high-density chatter-free tungsten to dampen noise and vibration while machining.

Rods—Ground Finish

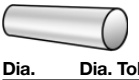

- Hardness: Rockwell C24
- Yield Strength: 80,000 psi
- Pressure formed (sintered)

Meet ASTM B777. Rods have a plus length tolerance, and straightness tolerance is not rated.

Dia.	Dia. Tolerance	*8″ Length*		*12″ Length*	
1/8″	+0.015″	8279K11	$41.47	8279K12	$51.84
3/16″	+0.015″	8279K13	51.93	8279K14	64.91
1/4″	+0.015″	8279K15	71.58	8279K16	89.48
5/16″	+0.030″	8279K17	84.65	8279K18	105.81
3/8″	+0.030″	8279K21	100.06	8279K22	125.08
7/16″	+0.030″	—	—	8279K24	152.66
1/2″	+0.030″	8279K25	142.45	8279K26	178.06
9/16″	+0.030″	—	—	8279K28	208.95
5/8″	+0.030″	8279K31	189.45	8279K32	236.81
3/4″	+0.030″	8279K33	$246.49	8279K34	$308.11
7/8″	+0.030″	8279K35	314.81	8279K36	393.51
1″	+0.050″	8279K37	387.44	8279K38	484.30
1 1/8″	+0.060″	—	—	8279K42	686.08
1 1/4″	+0.060″	—	—	8279K44	814.76
1 3/8″	+0.060″	—	—	8279K46	1,084.05
1 1/2″	+0.060″	—	—	8279K48	1,113.00
1 5/8″	+0.060″	—	—	8279K52	1,304.53
2″	+0.060″	—	—	8279K54	1,987.52

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about the physical and mechanical properties of nickel, as well as machining data, go to mcmaster.com and search for **9051KAC**.

Multipurpose Nickel (Alloy 400)

Also known as Monel 400, this nickel-copper alloy has good weldability and formability, excellent corrosion resistance, and high strength.

Sheets—Unpolished Mill Finish (Cold Finished)

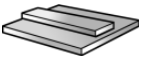

- Hardness: Rockwell B68
- Yield Strength: 25,000-45,000 psi
- Annealed

Meet ASTM B127. Thickness tolerance is ±0.004″. Width and length tolerances are ±½″. Flatness tolerance is ½″.

Thick.	2″×12″		2″×24″	
0.031″	9227K111	$25.10	9227K112	$43.50
0.037″	9227K141	33.36	9227K142	58.38
0.062″	9227K211	50.12	9227K212	86.74
0.078″	9227K241	52.86	9227K242	99.59
0.125″	9227K271	81.47	9227K272	146.74
	6″×12″		**6″×24″**	
0.031″	9227K131	$58.91	9227K132	$122.73
0.037″	9227K161	72.17	9227K162	164.03
0.062″	9227K231	131.52	9227K232	252.80
0.078″	9227K261	134.14	9227K262	264.30
0.125″	9227K291	203.57	9227K292	374.70
	12″×12″		**12″×24″**	
0.020″	88665K41	$61.07	88665K51	$106.56
0.032″	88665K42	97.59	88665K52	185.96
0.062″	88665K45	181.06	88665K55	341.62
0.078″	88665K46	221.28	88665K56	383.04
0.125″	88665K47	323.62	88665K57	606.60

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: 160-225 Brinell
- Yield Strength: 55,000-100,000 psi
- Stress relieved

Meet ASTM B164. Diameter tolerance is ±0.003″. Length tolerance is ±½″ for 1-ft. lengths and ±6″ for 4-ft. lengths. Straightness tolerance is not rated.

Dia.	1-ft. Length		4-ft. Length	
¼″	88745K111	$21.78	88745K41	$41.09
⅜″	88745K131	27.29	88745K43	90.96
½″	88745K34	53.95	88745K45	163.47
⅝″	88745K35	80.84	88745K47	244.96
¾″	88745K36	106.50	88745K49	322.73
1″	88745K37	164.48	88745K51	498.43

High-Strength Nickel (Alloy 625)

Nickel, chromium, and molybdenum form this high-strength alloy that provides excellent corrosion resistance and weldability. Material is also known as Inconel 625 and Haynes 625.

Sheets—Unpolished Mill Finish (Cold Finished)

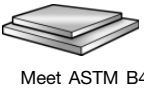

- Hardness: 145-241 Brinell
- Yield Strength: 60,000 psi
- Annealed

Meet ASTM B443 and AMS 5599. Thickness tolerance is ±0.005″. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	6″×6″		12″×12″		12″×24″	
0.040″	—	—	8786K11	$100.61	8786K13	$182.93
0.050″	—	—	8786K21	105.22	8786K23	191.30
0.063″	8786K61	$43.82	8786K31	150.63	8786K33	273.87
0.080″	8786K71	49.30	8786K41	169.47	8786K43	308.12
0.125″	8786K81	53.71	8786K51	246.16	8786K53	447.57

Rods—Unpolished Mill Finish (Cold Finished)

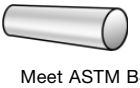

- Hardness: 145-241 Brinell
- Yield Strength: 60,000 psi
- Annealed

Meet ASTM B446 and AMS 5666. Diameter tolerance is ±0.003″, and length tolerance is +⅛″. Straightness tolerance is not rated.

To Order: Please specify length.

Dia.		3″	12″	36″
½″	8791K12	—	$75.15	$123.20
⅝″	8791K14	—	68.48	175.60
¾″	8791K16	—	99.57	255.31
1″	8791K22	$43.52	143.82	368.78
1¼″	8791K26	82.31	272.03	697.51
1⅜″	8791K28	84.22	278.37	713.76
1½″	8791K32	104.10	344.05	882.17
2″	8791K38	167.66	554.14	1,420.86

Ultra-Corrosion-Resistant Nickel (Alloy 200)

With 99% nickel content, Nickel 200 is considered commercially pure. In addition to outstanding corrosion resistance, it offers higher thermal and electrical conductivity than other nickel alloys.

Sheets—Unpolished Mill Finish (Cold Finished)

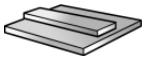

- Hardness: Not rated
- Yield Strength: 12,000 psi
- Annealed

Meet ASTM B162. Thickness tolerance is ±0.006″ for 0.062″ thickness and ±0.010″ for 0.125″. Width and length tolerances are +⅛″. Flatness tolerance is not rated.

Thick.	2″×12″		4″×12″	
0.062″	9197K511	$33.22	9197K521	$66.45
0.125″	9197K611	56.32	9197K621	112.65
	6″×12″		**12″×12″**	
0.062″	9197K531	$77.52	9194K61	$149.51
0.125″	9197K631	131.42	9194K71	253.46
	6″×24″		**12″×24″**	
0.062″	9197K532	$149.51	9194K62	$287.94
0.125″	9197K632	253.46	9194K72	488.14

Rod—Unpolished Mill Finish (Cold Finished)

- Hardness: Not rated
- Yield Strength: 60,000 psi
- Hardened (Cold worked)

Meet ASTM B160. Diameter tolerance is ±0.003″, and length tolerance is +⅛″. Straightness tolerance is 0.030″ per foot.

To Order: Please specify length.

Dia.		1 ft.	3 ft.	6 ft.
¼″	9136K21	$25.15	$65.87	$119.77
⅜″	9136K22	52.67	137.94	250.80
½″	9136K23	85.19	223.12	405.67
¾″	9136K25	165.07	432.34	786.07
1″	9136K26	230.46	603.60	1,097.45

High-Temperature Nickel (Alloy HX)

Also known as Inconel HX and Hastelloy X, this nickel alloy has excellent oxidation resistance and remains strong even when exposed to temperatures up to 2000° F.

Sheets—Unpolished Mill Finish (Cold Finished)

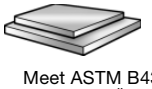

- Hardness: 145-241 Brinell
- Yield Strength: 54,000 psi
- Annealed

Meet ASTM B435 and AMS 5536. Thickness tolerance is ±0.003″, except 0.125″ thick sheets are ±0.005″, and 0.187″ to 0.250″ thick sheets are +0.125″, -0.010″. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	6″×6″		12″×12″		12″×24″	
0.020″	—	—	6505K11	$64.44	6505K31	$117.17
0.025″	—	—	6505K12	69.68	6505K32	126.69
0.029″	—	—	6505K13	93.38	6505K33	169.78
0.040″	—	—	6505K14	109.02	6505K34	198.21
0.050″	—	—	6505K15	118.35	6505K35	215.19
0.063″	—	—	6505K16	151.29	6505K36	275.07
0.090″	—	—	6505K17	213.75	6505K37	388.63
0.125″	6505K82	$74.08	6505K18	254.64	6505K38	462.98
0.187″	6505K83	120.18	6505K19	413.11	6505K39	751.10
0.250″	6505K84	147.09	6505K21	505.62	6505K41	919.30

Rods—Unpolished Mill Finish (Cold Finished)

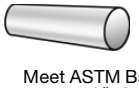

- Hardness: 145-241 Brinell
- Yield Strength: 54,000 psi
- Annealed

Meet ASTM B572. Diameter tolerance is ±0.003″, and length tolerance is +⅛″. Straightness tolerance is not rated.

To Order: Please specify length.

Dia.		3″	6″	12″	36″
½″	6513K11	—	—	$49.39	$123.48
⅞″	6513K15	—	$72.99	139.02	347.56
1″	6513K17	$48.30	78.02	148.61	371.52
1¼″	6513K21	65.66	106.06	202.02	505.05
1½″	6513K23	85.04	137.38	261.67	654.17
1¾″	6513K25	113.14	182.77	348.13	870.32
2″	6513K27	142.03	229.44	437.03	1,092.57

Warning! Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.

Invar & Titanium

For information about the physical and mechanical properties of Invar and titanium, as well as machining data, go to mcmaster.com and search for **9051KAC**.

Invar (Alloy 36)

When the temperature rises, this nickel-iron alloy displays minimal expansion and contraction.

Sheets—Unpolished Mill Finish (Cold Finished)

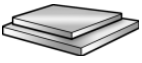

- Hardness: Rockwell B70
- Yield Strength: 40,000 psi
- Annealed

Meet ASTM F1684. Thickness tolerance is ±0.001″ for 0.010″ to 0.040″ thick sheets and ±0.004″ for 0.060″ to 0.100″ thick sheets. Width and length tolerances are +0.062″. Flatness tolerance is not rated.

Thick.	6″×6″		12″×12″		12″×24″	
0.010″	4287K11	$13.90	4287K12	$41.70	4287K13	$69.50
0.020″	4287K21	19.94	4287K22	59.81	4287K23	99.69
0.040″	4287K31	32.18	4287K32	96.53	4287K33	160.88
0.060″	4287K41	$43.20	4287K42	$129.60	4287K43	$216.00
0.100″	4287K51	72.86	4287K52	215.42	4287K53	316.80

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell B70
- Yield Strength: 40,000 psi
- Annealed

Meet ASTM F1684. Diameter tolerance is ±0.005″ for 1/8″ to 3/8″ dia. rods and ±0.012″ for 1/2″ to 1″ dia. rods. Length tolerance is +1/4″. Straightness tolerance is not rated. **To Order:** Please specify length.

Dia.		1/2 ft.	1 ft.	3 ft.
1/8″	4279K11	$7.91	$13.18	$32.95
1/4″	4279K12	10.71	17.84	44.61
3/8″	4279K13	22.00	36.66	91.66
1/2″	4279K14	31.21	52.02	130.05
5/8″	4279K15	$43.57	$75.42	$167.59
3/4″	4279K16	60.84	105.30	234.00
1″	4279K18	107.25	180.99	335.16

Ultra-Corrosion-Resistant Titanium (Grade 2)

Commercially pure with 98.9% titanium content, Grade 2 titanium offers the best combination of strength, formability, and weldability of our titanium offering. Durable and corrosion resistant, it's approximately 40% lighter than steel with a high strength-to-weight ratio.

Rectangular Bars—Unpolished Mill Finish (Hot Rolled)

- Hardness: Rockwell B68-B80
- Yield Strength: 40,000 psi
- Annealed

Meet ASTM B265. Width and length tolerances are +1/8″. Straightness tolerance is not rated. **To Order:** Please specify length.

Also Available: Rectangular bars with material certification in sizes shown below. Each comes with a traceable lot number and physical test report. Please ask for 9139K78 and specify thickness, width, and length.

Width		1/2 ft.	1 ft.	3 ft.
1/8″ Thick *(±0.010″)*				
1/2″	9139K11	—	$12.58	$29.26
3/4″	9139K13	—	16.54	38.47
1″	9139K15	$12.52	20.92	48.53
1 1/2″	9139K17	23.46	29.09	67.66
2″	9139K18	22.05	36.75	85.47
3″	9139K19	30.99	51.65	120.12
1/4″ Thick *(+0.045″, –0.010″)*				
1/2″	9139K21	—	23.67	55.04
1″	9139K25	23.65	39.41	91.65
2″	9139K28	40.30	67.17	156.21
3/8″ Thick *(+0.055″, –0.010″)*				
3/8″	9101K21	—	$22.36	$52.00
3/4″	9139K33	$27.89	46.48	108.10
1″	9139K35	32.70	54.50	126.74
1 1/2″	9139K37	45.95	76.59	178.11
2″	9139K38	57.54	95.89	223.01
3″	9139K39	82.86	138.11	321.18
1/2″ Thick *(+0.055″, –0.010″)*				
1/2″	9101K22	—	42.53	98.90
3/4″	9139K43	34.56	57.60	133.96
1″	9139K45	42.83	71.38	165.99
1 1/2″	9139K47	61.36	102.26	237.82
5/8″ Thick *(+0.055″, –0.010″)*				
5/8″	9101K23	$36.13	$60.22	$140.04
3/4″ Thick *(+0.060″, –0.010″)*				
3/4″	9101K24	49.48	82.46	191.77
1 1/2″	9139K57	81.41	135.69	315.55
2″	9139K58	102.87	171.46	398.74
3″	9139K59	147.83	246.38	572.97
1″ Thick *(+0.070″, –0.010″)*				
1″	9139K65	75.77	126.28	293.67
2″	9139K68	130.06	216.76	504.10
3″	9139K69	191.43	319.04	741.96

Sheets—Unpolished Mill Finish (Cold Finished, unless noted)

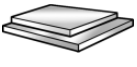

- Hardness: Rockwell B80
- Yield Strength: 40,000 psi
- Annealed

Meet ASTM B265. Width and length tolerances are +1/8″. Flatness tolerance is not rated. Sheets are cold finished, except 0.188″ thick sheets are hot rolled.

Also Available: Sheets with material certification in sizes shown below. Each comes with a traceable lot number and physical test report. Please ask for 9051K781 and specify thickness, width, and length.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		24″×24″		24″×36″	
0.020″	±0.003″	9051K33	$10.07	9051K34	$33.10	9051K35	$57.56	9051K36	$103.61	9051K37	$143.90
0.035″	±0.004″	9051K11	16.10	9051K12	52.91	9051K13	92.02	9051K14	165.64	9051K15	230.05
0.063″	±0.006″	9051K16	23.75	9051K17	78.02	9051K18	135.69	9051K19	244.24	9051K21	339.22
0.125″	±0.010″	9051K22	41.60	9051K23	136.70	9051K24	237.74	9051K25	427.92	9051K26	594.34
0.188″	±0.050″	9051K27	57.64	9051K28	189.40	9051K29	329.38	9051K31	592.89	9051K32	823.46

Rods—Unpolished Mill Finish (Cold Finished)

- Hardness: Rockwell B65-B85
- Yield Strength: 40,000 psi
- Annealed

Meet ASTM B348. Diameter tolerance is ±0.005″, and length tolerance is +1/8″. Straightness tolerance is not rated. **To Order:** Please specify length.

Also Available: Rods with material certification in sizes shown below. Each comes with a traceable lot number and physical test report. Please ask for 89145K781 and specify diameter and length.

Dia.		1/2 ft.	1 ft.	3 ft.	6 ft.
1/16″	89145K28	—	—	$2.91	$5.19
1/8″	89145K11	—	—	14.38	25.68
3/16″	89145K12	—	$10.24	19.11	34.12
1/4″	89145K13	$5.79	9.81	24.96	44.57
5/16″	89145K14	8.61	14.57	37.10	66.25
3/8″	89145K15	11.96	20.24	51.51	91.98
1/2″	89145K16	17.42	29.48	75.03	133.99
5/8″	89145K17	24.83	42.02	106.95	190.98
3/4″	89145K18	33.73	57.08	145.29	259.44
7/8″	89145K19	$49.92	$84.48	$215.04	$384.00
1″	89145K21	63.48	107.43	273.46	488.33
1 1/4″	89145K22	83.12	140.67	358.07	639.41
1 1/2″	89145K23	118.34	200.26	509.76	910.29
1 3/4″	89145K24	159.38	269.73	686.58	1,226.03
2″	89145K25	202.99	343.51	874.40	1,561.43
2 1/4″	89145K26	247.36	418.61	1,065.56	1,902.78
2 1/2″	89145K27	298.37	504.93	1,285.27	2,295.13

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about the physical and mechanical properties of titanium, as well as machining data, go to mcmaster.com and search for **9051KAC**.

High-Strength Titanium (Grade 5)

Also known as Ti-6Al-4V because of the addition of aluminum and vanadium alloying elements, this material is the strongest titanium we offer.

Rectangular Bars—Ground Finish

- Hardness: Rockwell C30-C34
- Yield Strength: 120,000 psi
- Annealed

Meet ASTM B265. Can be heat treated to a maximum attainable hardness of Rockwell C37-C39. Width and length tolerances are +1/16″. Straightness tolerance is 1/8″ per foot. **To Order:** Please specify length.

Width		½ ft.	1 ft.	3 ft.
⅛″ Thick *(±0.008″)*				
½″	**9081K11**	$22.67	$36.90	$87.85
1″	**9081K15**	39.50	64.31	153.11
2″	**9081K18**	69.62	113.33	269.83
3″	**9081K19**	97.05	157.98	376.15

Width		½ ft.	1 ft.	3 ft.
¼″ Thick *(+0.045″, –0.010″)*				
½″	**9081K21**	$31.11	$51.97	$120.59
1″	**9081K25**	51.49	86.01	199.56
2″	**9081K28**	91.31	152.54	353.93
3″	**9081K29**	126.67	211.61	490.97

Width		½ ft.	1 ft.	3 ft.
½″ Thick *(+0.045″, –0.010″)*				
3″	**9081K49**	$206.71	$345.32	$801.21
¾″ Thick *(+0.060″, –0.010″)*				
¾″	**9081K53**	98.41	164.40	381.43
1″	**9081K55**	119.10	198.96	461.62

Sheets—Ground Finish

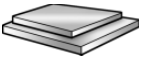

- Hardness: Rockwell C30-C34
- Yield Strength: 120,000 psi
- Annealed

Meet ASTM B265. Can be heat treated to a maximum attainable hardness of Rockwell C37-C39. Width and length tolerances are +1/16″. Flatness tolerance is ½″.

Thick.	Thick. Tolerance	6″×6″		12″×12″		12″×24″		24″×24″		24″×36″	
0.016″	±0.003″	**9039K11**	$58.94	**9039K12**	$168.40	**9039K13**	$315.74	**9039K28**	$589.39	**9039K14**	$841.98
0.032″	±0.004″	**9039K15**	65.25	**9039K16**	186.42	**9039K17**	349.53	**9039K29**	652.46	**9039K18**	932.08
0.063″	±0.005″	**9039K19**	123.56	**9039K21**	353.03	**9039K22**	661.94	**9039K3**	1,235.61	**9039K23**	1,765.16
0.125″	±0.008″	**9039K24**	150.77	**9039K25**	430.76	**9039K26**	807.68	**9039K31**	1,507.67	**9039K27**	2,153.82

Rods—Ground Finish

- Hardness: Rockwell C30-C34
- Yield Strength: 120,000 psi
- Annealed

Meet ASTM B348. Can be heat treated to a maximum attainable hardness of Rockwell C37-C39. Length tolerance is ±1/8″ for ½-, 1-, 3-, and 6-foot lengths and +1/16″ for ½″ and 1″ lengths. Straightness tolerance is 1/8″ per foot, except ½″ and 1″ lengths are not rated. **To Order:** Please specify length.

Dia.	Dia. Tolerance		½ ft.	1 ft.	3 ft.	6 ft.
1/8″	±0.002″	**89055K51**	$3.21	$5.44	$13.84	$24.71
3/16″	±0.002″	**89055K52**	5.57	9.43	24.01	42.87
1/4″	±0.002″	**89055K53**	10.76	18.21	46.35	82.77
5/16″	±0.002″	**89055K54**	14.35	24.28	61.81	110.37
3/8″	±0.002″	**89055K55**	19.13	32.37	82.39	147.13
1/2″	±0.002″	**89055K56**	22.04	37.29	94.93	169.51
5/8″	±0.006″	**89055K57**	26.30	44.51	113.29	202.30
3/4″	±0.006″	**89055K58**	38.84	65.72	167.29	298.74

Dia.	Dia. Tolerance		½ ft.	1 ft.	3 ft.	6 ft.
7/8″	±0.006″	**89055K59**	$52.61	$89.03	$226.62	$404.68
1″	±0.006″	**89055K61**	64.50	109.16	277.86	496.18
1¼″	±0.006″	**89055K62**	93.48	158.19	402.67	719.06
1½″	±0.006″	**89055K63**	123.21	208.51	530.76	947.79
1¾″	±0.006″	**89055K64**	162.69	275.32	700.82	1,251.46
2″	±0.006″	**89055K65**	204.44	345.97	880.66	1,572.61
2¼″	±0.006″	**89055K66**	251.70	425.95	1,084.24	1,936.14
2½″	±0.006″	**89055K67**	299.57	506.97	1,290.46	2,304.39

Dia.	Dia. Toler.	***½″ Long***		***1″ Long***	
2″	+0.006″	———	———	**89055K629**	$37.03
3″	+0.030″	**9257K11**	$60.08	**9257K13**	83.04
3½″	+0.030″	**9257K14**	77.76	**9257K16**	116.32
4″	+0.063″	**9257K17**	$89.52	**9257K19**	$136.06
5″	+0.063″	**9257K21**	133.84	**9257K23**	216.71

Hexagonal Bars—Ground Finish

- Hardness: Rockwell C30-C34
- Yield Strength: 120,000 psi
- Annealed

Meet ASTM B348. Can be heat treated to a maximum attainable hardness of Rockwell C37-C39. Hex size is measured across the flats. Hex size tolerance is +0.003″, –0.010″, and length tolerance is ±1/8″. Straightness tolerance is 1/8″ per foot. **To Order:** Please specify length.

Hex Size		1 ft.	3 ft.	6 ft.
7/16″	**9226K12**	$64.40	$149.40	$257.59
1/2″	**9226K13**	77.11	178.90	308.44
9/16″	**9226K14**	88.03	204.23	352.12
3/4″	**9226K15**	$150.36	$348.84	$601.44
13/16″	**9226K16**	166.01	385.14	664.04

Balls—Reflective Finish

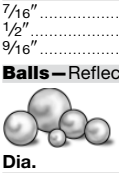

- Hardness: Rockwell C30-C34
- Yield Strength: 120,000 psi
- Annealed

Material is Grade 200. Diameter tolerance is ±0.001″. Sphericity is 0.0002″.

Dia.	Pkg. Qty.		Pkg.
1/32″	5	**9288K27**	$6.25
1/16″	5	**9288K29**	8.04
1/8″	5	**9288K31**	10.55
5/32″	5	**9288K33**	11.10
3/16″	5	**9288K35**	$12.20
1/4″	5	**9288K39**	14.62
3/8″	1	**9288K42**	23.42
1/2″	1	**9288K43**	25.79

High-Strength Weldable Titanium (Grade 9)

Also known as Ti-3Al-2.5V, this combination of titanium, aluminum, and vanadium has higher tensile strength than Grade 2 titanium at both room and elevated temperatures and offers better weldability than Grade 5.

Tubes—Unpolished Mill Finish (Cold Finished)

- Hardness: Not rated
- Yield Strength: 105,000 psi
- Stress relieved

Meet AMS 4945. OD tolerance is +0.004″, -0.002″. ID tolerance is ±0.003″. Length tolerance is ±1″, and straightness tolerance is 0.025″ per foot. **To Order:** Please specify length.

OD	ID	Wall Thick.		1 ft.	3 ft.	5 ft.
0.250″	0.218″	0.016″	**8806T11**	$42.06	$113.90	$175.23
0.250″	0.210″	0.020″	**8806T13**	44.04	119.28	183.50
0.375″	0.337″	0.019″	**8806T15**	41.71	112.97	173.80
0.375″	0.319″	0.028″	**8806T17**	62.15	168.31	258.94
0.500″	0.448″	0.026″	**8806T19**	$51.70	$140.01	$215.40
0.625″	0.561″	0.032″	**8806T21**	62.88	170.29	261.99
0.750″	0.672″	0.039″	**8806T23**	78.84	213.54	328.52
1.000″	0.898″	0.051″	**8806T25**	115.82	313.68	482.59

Warning! Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.

About Copper, Brass, and Bronze

Often referred to as red metals, copper, brass, and bronze are materials composed mainly of copper. They are excellent conductors of electricity and heat, plus they're corrosion resistant and easily shaped and joined by soldering and brazing. An alloy is called ***copper*** when it has a minimum copper content of 99.3%. ***Brass*** is a copper alloy in which zinc is the main alloying element. ***Bronze*** is a copper alloy with a main alloying element other than zinc or nickel.

Copper, brass, and bronze are either worked into a specific shape (typically called wrought) or cast into shape. A product may also be additionally worked or heat treated for strength and hardness. The ***temper*** of a product indicates its final condition after any working or heat treating. Products that are worked will have a temper ranging from soft to full-hard, designated with an "H". Cast products will not have an "H" temper since they're not very formable, though some cast products can be heat treated.

Copper Alloy	Page(s)
101	3717
110	3715-3716
122	3718
145	3718
182	3718-3719

Brass Alloy	Page(s)
260	3722-3724
330	3724
353	3721
360	3719-3720
385	3721-3722
464	3725
485	3725

Bronze Alloy	Page(s)
220	3729
316	3729
510	3730
544	3727
630	3729
642	3730
655	3730

Bronze Alloy	Page(s)
863	3730
903	3727
932	3726
936	3727
954	3728-3729
SAE 841	3728

Hardness

The hardness of a material is its resistance to another material penetrating its surface. Harder materials have more wear resistance, but they're also more brittle. *Note:* Alloy 122 is not rated.

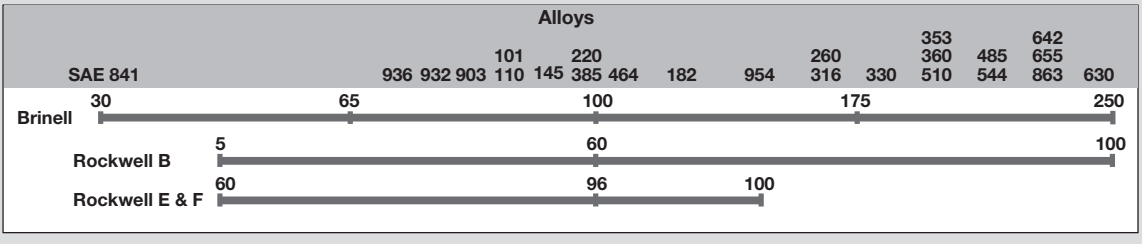

Yield Strength

The yield strength is the point at which metal bends and will not return to its original shape. At this point the material has changed shape permanently, but does not break. *Note:* Alloys 122 and 385 are not rated.

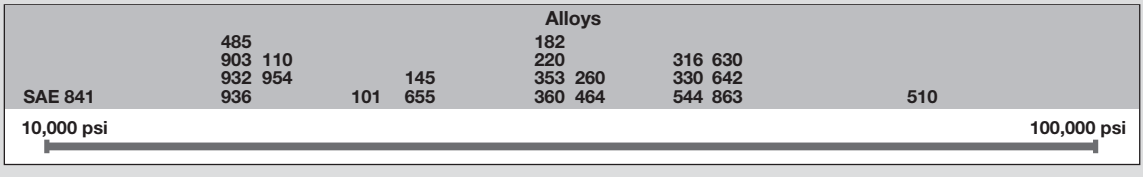

Weldability

Excellent— Superior performance for all commercial procedures and methods.
Good— Weldable by all commercial procedures and methods.
Fair— May require special techniques or testing to develop procedures.

Note: Alloys 145, 630, 642, and SAE 841 are not rated for TIG/MIG welding. Alloys 863, 903, 954, and SAE 841 are not rated for spot welding.

Welding Type	Excellent	Good	Fair	Not Recommended
TIG/MIG	122	101, 260, 655	220, 316, 464, 510, 903, 954	110, 182, 330, 353, 360, 385, 485, 544, 863, 932, 936
Arc		220, 510, 630, 655, 863, 954	101, 145, 260, 316, 330, 464, 642, 903	110, 122, 182, 353, 360, 385, 485, 544, 932, 936, SAE 841
Spot	655	260, 630	330, 464, 510, 642	101, 110, 122, 145, 182, 220, 316, 353, 360, 385, 485, 544, 932, 936

Electrical Conductivity

Copper alloys are known for their excellent electrical conductivity. Ratings for electrical conductivity use Alloy 101 as the standard. *Note:* SAE 841 is not rated.

Excellent	Good	Fair	Poor
101, 110, 145	182	122, 220, 260, 316	330, 353, 360, 385, 464, 485, 510, 544, 630, 642, 655, 863, 903, 932, 936, 954

Forming and Working

Forming and working indicate the extent to which a material won't crack when bent without applying heat.

Excellent	Good	Fair	Poor
101, 110, 122, 182, 220, 260, 330, 510	145, 316, 544	353, 464, 936	360, 385, 485, 630, 642, 655, 863, 903, 932, 954, SAE 841

Machinability

Machinable alloys can be cut, drilled, pressed, punched, turned, shaved, reamed, tapped, threaded, or otherwise machined.

Excellent— Ideal for machining. When cut, they don't require extensive post-machining cleaning. Produce very small chips.
Good— These alloys will have a good to excellent finish after machining and will produce curled or easily broken chips.
Fair— Have a satisfactory post-machining finish and will produce continuous chips.
Poor— Difficult to get satisfactory finish after machining.

Excellent	Good	Fair	Poor
145, 353, 360, 385	316, 485, 544, 642, 655, 932, 936, 954, SAE 841	110, 260, 330, 464, 510, 630	101, 122, 182, 220, 863, 903

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about copper, see page 3714.

For information about the chemical composition of copper alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC.**

Multipurpose Copper (Alloy 110)

With a minimum copper content of 99.9%, Alloy 110 has the characteristics for which copper is typically known: good electrical conductivity and corrosion resistance, as well as high formability. Also known as electronic grade, it is ideal for use in electrical applications such as bus bars, connectors, and gaskets. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: Rockwell F65-F80
- Yield Strength: 44,000 psi
- Temper: Hard (H04)

Meet ASTM B187. Straightness tolerance is ½″. Length tolerance is ±¼″.
To Order: Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width	Tolerance
¼″-2½″	±0.008″
3″-6″	±0.018″

Width	Each 1 ft.	Each 3 ft.	Each 6 ft.
1/16″ Thick *(Not rated for thick. tolerance)*			
½″	**8964K721**	____	____	$14.01
⅝″	**8964K1**	____	$9.80	17.50
¾″	**8964K2**	____	12.21	21.80
1″	**8964K3**	____	14.41	25.73
1/8″ Thick *(Not rated for thick. tolerance)*			
½″	**8964K4**	____	14.88	26.58
¾″	**8964K5**	$8.34	21.24	37.92
1″	**8964K78**	10.83	27.57	49.23
1½″	**8964K79**	15.26	38.84	69.35
2″	**8964K89**	20.34	51.78	92.46
4″	**8964K92**	38.84	98.86	176.54
6″	**8964K14**	58.26	148.29	264.81
3/16″ Thick *(±0.003″)*			
¾″	**8964K221**	11.90	30.28	54.07
1″	**8964K222**	14.92	37.98	67.82
1½″	**8964K223**	21.72	55.28	98.71
2″	**8964K927**	28.30	72.04	128.64
3″	**8964K16**	41.53	105.72	188.78
4″	**8964K94**	54.19	137.94	246.32
1/4″ Thick *(±0.004″)*			
¼″	**89275K45**	5.55	12.44	22.21
½″	**8964K6**	9.38	23.88	42.65
1/4″ Thick (Cont.)			
¾″	**8964K7**	$13.75	$34.99	$62.48
1″	**8964K8**	16.51	42.02	75.03
1½″	**8964K851**	24.65	62.75	112.06
2″	**8964K22**	32.23	82.03	146.49
3″	**8964K24**	48.34	123.05	219.74
6″	**8964K26**	93.90	239.01	426.80
5/16″ Thick *(±0.003″)*			
5/16″	**89275K46**	15.25	38.81	69.31
3/8″ Thick *(±0.004″)*			
⅜″	**89275K35**	9.79	24.93	44.52
1″	**8964K871**	23.94	60.94	108.83
1½″	**8964K28**	35.56	90.52	161.64
2″	**8964K31**	47.41	120.69	215.52
4″	**8964K33**	93.90	239.01	426.80
6″	**8964K35**	135.63	345.24	616.50
1/2″ Thick *(±0.0045″)*			
½″	**89275K36**	16.04	40.84	72.93
1″	**8964K37**	32.82	83.54	149.18
1½″	**8964K39**	47.41	120.69	215.52
2″	**8964K42**	62.02	157.86	281.90
4″	**8964K44**	120.55	306.86	547.97
6″	**8964K46**	153.43	390.56	697.42
5/8″ Thick *(±0.005″)*			
⅝″	**89275K71**	$23.82	$60.64	$108.29
1″	**8964K48**	39.28	99.98	178.54
1½″	**8964K51**	59.01	150.20	268.22
2″	**8964K53**	76.77	195.42	348.97
4″	**8964K55**	144.96	368.98	658.90
3/4″ Thick *(±0.005″)*			
¾″	**89275K37**	32.68	83.18	148.53
1½″	**8964K57**	69.46	176.81	315.74
2″	**8964K59**	90.09	229.31	409.49
1″ Thick *(±0.02″)*			
1″	**89275K38**	55.44	141.12	252.00
3″	**8964K62**	190.67	485.35	866.69
1 1/4″ Thick *(±0.0045″)*			
1¼″	**89275K39**	81.06	206.33	368.44
1 1/2″ Thick *(±0.0045″)*			
1½″	**89275K41**	129.49	329.60	588.58
2″ Thick *(±0.0045″)*			
2″	**89275K42**	192.37	489.68	874.43
2 1/2″ Thick *(±0.008″)*			
2½″	**89275K43**	296.91	755.78	1,349.61
3″ Thick *(±0.009″)*			
3″	**89275K44**	378.82	964.27	1,721.91

Rectangular Bars with Rounded Edges—Unpolished (Mill) Finish

- Hardness: Rockwell F80
- Yield Strength: 45,000 psi
- Temper: Hard (H04)

Meet ASTM B187. Width tolerance is ±0.008″ for ¾″ to 2″ sizes and ±0.012″ for 3″ size. Straightness tolerance is ¼″. Length tolerance is ±¼″. Sold in 6-ft. lengths.

Width	Each
1/8″ Thick *(±0.003″)*	
¾″	**2557T11**	$35.34
1″	**2557T12**	43.94
1½″	**2557T13**	64.06
2″	**2557T14**	85.93
3/16″ Thick *(±0.003″)*	
¾″	**2557T21**	$54.78
1″	**2557T22**	62.51
1½″	**2557T23**	85.74
2″	**2557T24**	109.98
1/4″ Thick *(±0.003″)*	
¾″	**2557T31**	$65.40
1″	**2557T32**	80.55
1½″	**2557T33**	110.19
2″	**2557T34**	135.89
3/8″ Thick *(±0.004″)*	
1″	**2557T41**	$114.32
1½″	**2557T42**	162.81
2″	**2557T43**	210.14
3″	**2557T44**	305.74

Rectangular Bars with Rounded Edges—Silver-Plated Finish

- Hardness: Rockwell F65-F80
- Yield Strength: Not rated
- Temper: Hard (H04)

Meet ASTM B187. Compared to the unpolished finish bars above, these silver-plated rectangular bars are slower to tarnish and have low electrical resistance at contact points. Plating thickness is 0.0000015″-0.000003″. Straightness tolerance is ¼″. Length tolerance is ±½″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Width	Tolerance
1″	±0.006″
1⅜″-4″	±0.012″
6″	±0.030″

Width	Each 1 ft.	Each 3 ft.	Each 6 ft.
1/4″ Thick *(±0.007″)*			
1″	**88865K621**	$18.42	$46.89	$83.74
1⅜″	**88865K622**	24.16	61.51	109.84
1½″	**88865K623**	31.67	65.68	117.28
1/4″ Thick (Cont.)			
1¾″	**88865K624**	$31.07	$79.08	$141.22
2″	**88865K625**	34.66	88.23	157.56
2½″	**88865K611**	39.28	99.99	178.56
1/4″ Thick (Cont.)			
3″	**88865K633**	$50.96	$129.72	$231.65
4″	**88865K655**	57.77	147.06	262.61
6″	**88865K699**	85.10	216.61	386.80

Sheets—Polished Finish

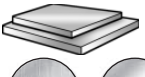

Brushed (#4 Satin) Finish

Mirror-Like (#8) Finish

- Hardness: Rockwell B25
- Yield Strength: 30,000 psi
- Temper: ¼ Hard (H01) to ½ Hard (H02)

Meet ASTM B152. Width and length tolerances are ±1/32″. Flatness tolerance is ⅛″. The polished side has a peel-off protective masking.

Brushed (#4 Satin) Finish— Polished to a fine brushed finish on one side with grain lines in one direction.

Mirror-Like (#8) Finish— Polished to a mirror-like finish on one side with no grain lines.

Finish Selector Pack— Contains one individually marked piece each of unpolished (mill), brushed (#4 satin), and mirror-like (#8) finishes. Each piece is approximately 1½″×3″×1/32″ thick.

1127T15 ..... **Per Pkg.** $22.96

Thick.	Thick. Tolerance	BRUSHED (#4 SATIN) FINISH 12″×12″	Each	12″×24″	Each	24″×24″	Each	MIRROR-LIKE (#8) FINISH 12″×12″	Each	12″×24″	Each	24″×24″	Each
0.032″	±0.005″	**9801K11**	$39.01	**9801K31**	$68.41	**9801K51**	$126.00	**9821K11**	$43.30	**9821K31**	$75.77	**9821K51**	$142.67
0.040″	±0.005″	**9801K12**	48.79	**9801K32**	86.11	**9801K52**	162.62	**9821K12**	54.42	**9821K32**	95.94	**9821K52**	181.23
0.062″	±0.007″	**9801K13**	73.11	**9801K33**	129.94	**9801K53**	241.92	**9821K13**	74.81	**9821K33**	133.04	**9821K53**	252.07
0.080″	±0.007″	**9801K14**	77.03	**9801K34**	154.08	**9801K54**	297.63	**9821K14**	88.96	**9821K34**	166.79	**9821K54**	314.69
0.125″	±0.007″	**9801K15**	114.11	**9801K35**	207.33	**9801K55**	391.18	**9821K15**	121.18	**9821K35**	218.17	**9821K55**	422.23
0.187″	±0.010″	**9801K16**	197.60	**9801K36**	346.21	**9801K56**	653.23	**9821K16**	195.39	**9821K36**	381.24	**9821K56**	712.33
0.250″	±0.010″	**9801K17**	254.77	**9801K37**	467.08	**9801K57**	849.23	**9821K17**	275.06	**9821K37**	504.27	**9821K57**	916.85

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about copper, see page 3714.

For information about the chemical composition of copper alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Multipurpose Copper (Alloy 110) *(Material continued from previous page)*

With a minimum copper content of 99.9%, Alloy 110 has the characteristics for which copper is typically known: good electrical conductivity and corrosion resistance, as well as high formability. Also known as electronic grade, it is ideal for use in electrical applications such as bus bars, connectors, and gaskets. Not heat treatable.

Soft Sheets—Unpolished (Mill) Finish

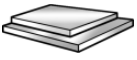

- Hardness: Rockwell F40-F84
- Yield Strength: For sheets up to 0.187″ thick, 10,000 to 28,000 psi; for sheets 0.250″ thick and thicker, not rated
- Temper: For sheets up to 0.187″ thick, Soft (annealed) to ⅛ Hard (H00); for sheets 0.250″ thick and thicker, ⅛ Hard (H00) to ¼ Hard (H01)

The 0.016″ to 0.062″ thick sheets meet ASTM B370; all others meet ASTM B152. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″ Each	12″×24″ Each	12″×48″ Each	36″×48″ Each	36″×96″ Each
0.016″	±0.003″	8963K31 $23.71	8963K51 $41.19	8963K221 $71.65	8963K71 $177.68	8963K21 $323.05
0.021″	±0.003″	8963K32 19.13	8963K52 33.29	8963K232 57.87	8963K72 143.51	8963K12 260.92
0.027″	±0.004″	8963K34 26.97	8963K54 42.02	8963K243 75.04	8963K74 186.09	8963K14 338.34
0.032″	±0.004″	8963K36 31.49	8963K56 47.93	8963K254 85.59	8963K76 212.23	8963K15 385.88
0.043″	±0.005″	8963K38 34.87	8963K58 63.88	8963K265 111.13	8963K78 275.58	8963K16 501.05
0.062″	±0.006″	8963K42 46.52	8963K62 88.60	8963K276 158.37	8963K82 411.38	8963K23 726.82
0.093″	±0.007″	8963K45 60.32	8963K65 116.69	8963K298 209.11	8963K85 558.56	8963K25 1,015.57
0.125″	±0.007″	8963K47 84.10	8963K67 146.31	8963K323 264.85	8963K86 704.04	8963K18 1,280.07
0.187″	±0.007″	8963K49 120.28	8963K69 218.57	8963K334 416.26	8963K89 1,132.45	8963K27 2,198.93

Thick.	Thick. Tolerance	6″×6″ Each	12″×12″ Each	12″×24″ Each	18″×18″ Each	24″×24″ Each
0.250″	±0.012″	8995K51 $50.62	8995K11 $151.22	8995K21 $302.38	8995K31 $314.05	8995K41 $527.81
0.313″	±0.015″	8995K52 63.28	8995K12 189.84	8995K22 357.31	8995K32 372.77	8995K42 628.41
0.375″	±0.015″	8995K53 67.72	8995K13 211.89	8995K23 400.28	8995K33 426.59	8995K43 758.39
0.500″	±0.015″	8995K54 84.67	8995K14 268.62	8995K24 508.95	8995K34 543.95	8995K44 906.58
0.625″	±0.019″	8995K55 102.33	8995K15 314.60	8995K25 597.63	8995K35 640.34	8995K45 1,070.44
0.750″	±0.019″	8995K56 118.02	8995K16 360.12	8995K26 685.93	8995K36 736.54	8995K46 1,234.57
1.000″	±0.024″	8995K57 157.14	8995K17 525.55	8995K27 875.92	—	—
1.250″	±0.029″	8995K58 187.66	8995K18 632.07	8995K28 1,059.63	—	—
1.500″	±0.029″	8995K59 214.15	8995K19 725.90	8995K29 1,223.70	—	—

Half-Hard Sheets—Unpolished (Mill) Finish

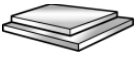

- Hardness: Rockwell F77-F89
- Yield Strength: 36,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B152. Width tolerance is ±1/16″. Length tolerance is ±1/16″, except 36″ lengths are ±½″. Flatness tolerance is not rated.

Thick.	Thick. Tol.	2″ Wd.×36″ Lg. Each	6″ Wd.×36″ Lg. Each	12″ Wd.×12″ Lg. Each	12″ Wd.×24″ Lg. Each	12″ Wd.×48″ Lg. Each	36″ Wd.×48″ Lg. Each
0.020″	±0.004″	8963K126 $11.32	8963K128 $30.71	8963K13 $27.00	8963K19 $44.35	8963K22 $77.13	8963K24 $192.83
0.025″	±0.004″	—	—	8963K28 32.30	8963K29 53.07	8963K33 92.29	8963K35 230.73
0.032″	±0.004″	8963K129 16.80	8963K132 45.82	8963K39 38.64	8963K41 63.48	8963K44 110.39	8963K46 275.98
0.040″	±0.006″	—	—	8963K53 46.66	8963K55 76.65	8963K57 133.30	8963K59 333.26
0.050″	±0.006″	8963K133 24.60	8963K135 70.43	8963K64 56.15	8963K66 92.25	8963K68 160.44	8963K73 401.10
0.062″	±0.006″	8963K136 31.24	8963K138 89.45	8963K77 65.68	8963K79 107.90	8963K81 187.66	8963K84 469.14
0.080″	±0.007″	8963K139 40.69	8963K142 111.48	8963K88 79.28	8963K9 130.25	8963K91 226.52	8963K92 566.30
0.093″	±0.007″	8963K143 45.11	8963K145 124.06	8963K94 92.31	8963K95 151.65	8963K96 263.74	8963K97 659.35
0.125″	±0.007″	8963K146 60.77	8963K148 167.15	8963K99 117.29	8963K11 192.69	8963K111 335.12	8963K113 837.79
0.156″	±0.008″	—	—	8963K115 142.78	8963K116 234.57	8963K117 407.96	8963K118 1,019.89
0.187″	±0.008″	8963K149 86.91	8963K152 239.86	8963K121 165.44	8963K122 271.79	8963K123 472.68	8963K124 1,181.70

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell F65
- Yield Strength: 40,000 psi
- Temper: Hard (H04)

Meet ASTM B187. Straightness tolerance is not rated. Length tolerance is ±1/16″ for ½″, 1″, and 4″ lengths, and ±¼″ for 1-, 3-, and 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tol.
⅛″-½″	±0.0015″
⅝″-2″	±0.0025″

Dia.	Tol.
2¼″-6″	±0.15″

Dia.		Each 1 ft.	3 ft.	6 ft.
⅛″	8966K41	—	—	$9.57
3/16″	8966K3	—	$9.48	16.64
¼″	8966K4	—	14.13	24.79
5/16″	8966K5	—	20.25	35.52
⅜″	8966K12	$9.88	26.81	47.03
7/16″	8966K51	11.54	31.33	54.96
½″	8966K13	16.81	45.62	80.04
⅝″	8966K14	25.57	69.41	121.78

Dia.		Each 1 ft.	3 ft.	6 ft.
¾″	8966K11	$35.23	$95.61	$167.74
⅞″	8966K35	45.51	123.54	216.73
1″	8966K36	57.40	155.80	273.34
1⅛″	8966K37	69.42	188.42	330.57
1¼″	8966K15	81.26	220.55	386.93
1⅜″	8966K16	94.32	256.02	449.16
1½″	8966K17	105.78	287.11	503.70

Dia.		Each 1 ft.	3 ft.	6 ft.
1⅝″	8966K18	$119.54	$324.47	$569.25
1¾″	8966K19	136.11	369.45	648.15
2″	8966K31	174.59	473.90	831.40
2¼″	8966K33	209.74	569.29	998.75
2½″	8966K38	219.60	596.06	1,045.72
2¾″	8966K39	308.31	836.85	1,468.15
3″	8966K46	338.17	917.89	1,610.34

Dia.	½″ Long	Each	1″ Long	Each	4″ Long	Each
2″	9103K21	$17.13	9103K22	$29.20	9103K26	$95.14
2½″	9103K41	20.80	9103K42	35.83	9103K46	115.58
3″	9103K31	30.37	9103K32	52.30	9103K36	168.70

Dia.	½″ Long	Each	1″ Long	Each	4″ Long	Each
4″	9103K51	$46.88	9103K52	$80.74	9103K56	$260.45
5″	9103K61	68.80	9103K62	118.49	9103K66	382.24
6″	9103K71	94.02	9103K72	161.92	9103K76	522.33

Metric Rods—Unpolished (Mill) Finish

- Hardness: 80-105 Brinell
- Yield Strength: 17,000 psi
- Temper: Not rated

Meet ASTM B124. Straightness tolerance is not rated. Length tolerance is +66 mm, –6 mm. Sold in 1-meter lengths.

Dia.	Dia. Tolerance		Each
2 mm	±0.08 mm	8966K91	$8.66
3 mm	±0.08 mm	8966K92	9.34
4 mm	±0.08 mm	8966K93	11.37
5 mm	±0.08 mm	8966K94	$15.94
6 mm	±0.08 mm	8966K95	23.78
8 mm	±0.11 mm	8966K96	35.83
10 mm	±0.11 mm	8966K97	$50.36
12 mm	±0.11 mm	8966K98	72.43
20 mm	±0.16 mm	8966K99	168.58

***Warning!** Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.*

For information about copper, see page 3714.

For information about the chemical composition of copper alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Ultra-Conductive Copper (Alloy 101)

Also known as oxygen-free high-conductivity (OFHC) or oxygen-free electronic (OFE) copper, this ultra-pure (99.99%) copper is good for high-temperature applications such as terminal lugs and wire connectors. It can be welded and brazed. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: Rockwell F80
- Yield Strength: 45,000 psi
- Temper: Hard (H04)

Meet ASTM B187. Width tolerance is ±0.015″ for 1″ and 2″ sizes and ±0.030″ for 4″ and 6″ sizes. Straightness tolerance is ¼″. Length tolerance is ±¼″.

Thick.	Thick. Tolerance	1″ Wd.×48″ Lg.	Each	2″ Wd.×48″ Lg.	Each	4″ Wd.×48″ Lg.	Each	6″ Wd.×24″ Lg.	Each	6″ Wd.×48″ Lg.	Each
0.064″	±0.004″	3350K12	$30.83	3350K19	$57.73	3350K27	$84.58	3350K42	$78.19	3350K35	$128.71
0.125″	±0.004″	3350K14	48.90	3350K22	89.56	3350K29	145.27	3350K43	137.74	3350K37	199.74
0.250″	±0.005″	3350K15	89.10	3350K23	165.73	3350K31	272.38	3350K44	265.75	3350K38	370.18
0.375″	±0.005″	3350K16	124.97	3350K24	234.99	3350K32	384.26	3350K45	367.24	3350K39	531.77
0.500″	±0.005″	3350K17	151.18	3350K25	269.02	3350K33	461.56	3350K46	443.16	3350K41	652.48

Sheets—Unpolished (Mill) Finish

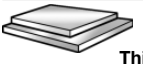

- Hardness: Rockwell F54-F84
- Yield Strength: 30,000 to 44,000 psi
- Temper: ⅛ Hard (H00) to ¼ Hard (H01)

Meet ASTM B152. Width and length tolerances are ±⅛″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	12″×24″	Each	12″×48″	Each	24″×48″	Each
0.032″	±0.003″	89675K11	$14.36	89675K31	$40.76	89675K41	$71.85	89675K51	$130.94	89675K61	$240.47
0.063″	±0.005″	89675K12	23.48	89675K33	71.52	89675K43	127.15	89675K53	238.62	89675K63	448.96
0.093″	±0.006″	89675K13	24.26	89675K35	94.23	89675K45	184.27	89675K55	331.71	89675K65	599.07
0.125″	±0.006″	89675K14	38.96	89675K36	116.46	89675K46	209.64	89675K56	381.19	89675K66	722.90
0.250″	±0.009″	89675K15	71.07	89675K37	211.20	89675K47	384.45	89675K57	728.81	89675K67	1,340.95
0.375″	±0.012″	89675K16	109.08	89675K38	326.85	89675K48	585.17	89675K58	1,096.51	89675K68	1,968.96
0.500″	±0.015″	89675K17	125.78	89675K39	401.93	89675K49	733.68	89675K59	1,360.79	89675K69	2,561.72

Thick Sheets—Unpolished (Mill) Finish

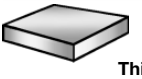

- Hardness: Rockwell F77-F89
- Yield Strength: 36,000 psi
- Temper: ½ Hard (H02)

Meet ASTM F68. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″	Each	9″×9″	Each	Thick.	Thick. Tolerance	6″×6″	Each	9″×9″	Each
0.625″	±0.017″	2554T12	$154.35	2554T14	$324.13	0.875″	±0.021″	2554T32	$184.48	2554T34	$392.42
0.750″	±0.017″	2554T22	169.11	2554T24	350.06	1.000″	±0.021″	2554T42	194.95	2554T44	416.73

Soft Sheets—Unpolished (Mill) Finish

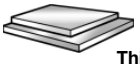

- Hardness: Rockwell F30-F75
- Yield Strength: 10,000 psi
- Temper: Soft (Annealed)

Meet ASTM F68. Width and length tolerances are ±1/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″×12″	Each	12″×36″	Each	Thick.	Thick. Tolerance	12″×12″	Each	12″×36″	Each
0.020″	±0.003″	2545T11	$30.00	2545T12	$77.11	0.062″	±0.008″	2545T51	$58.02	2545T52	$158.27
0.032″	±0.006″	2545T21	37.43	2545T22	97.14	0.093″	±0.010″	2545T61	82.91	2545T62	227.09
0.040″	±0.007″	2545T31	42.78	2545T32	112.33	0.125″	±0.010″	2545T81	97.50	2545T82	270.02
0.050″	±0.007″	2545T41	49.26	2545T42	133.71						

Tubes—Unpolished (Mill) Finish

- Hardness: Rockwell B60
- Yield Strength: 50,000 psi
- Temper: As drawn (H58)

Meet ASTM B75 and F68. OD tolerance is ±0.0025″. Straightness tolerance is 3/16″. Length tolerance is ±1/16″. Sold in 6-ft. lengths.

OD	ID	Each	OD	ID	Each	OD	ID	Each
0.032″ Wall Thickness *(±0.003″)*			***0.032″ Wall Thickness (Cont.)***			***0.065″ Wall Thickness*** *(±0.004″)*		
1/8″	0.061″	8965K85 $11.16	3/8″	0.311″	8965K88 $28.68	3/8″	0.245″	8965K89 $49.52
1/4″	0.186″	8965K86 19.79	1/2″	0.436″	8965K91 41.89	3/4″	0.620″	8965K92 123.32

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell F84-F94, except 6″ dia. rods have a hardness of Rockwell F42
- Yield Strength: 40,000 to 50,000 psi
- Temper: Hard (H04)

Meet ASTM B187. The 1″ to 6″ long rods also meet ASTM F68. Straightness tolerance is ½″, except 1″ to 6″ lengths are not rated. Length tolerance is +1/16″ for 1″ to 6″ lengths, ±⅛″ for 1-ft. lengths, ±¼″ for 3-ft. lengths, and ±½″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tol.
1/8″-7/8″	±0.003″
1″-4″	±0.006″
6″	±0.009″

Dia.		Each 1 ft.	3 ft.	6 ft.	Dia.		Each 1 ft.	3 ft.	6 ft.	Dia.		Each 1 ft.	3 ft.	6 ft.
1/8″	8965K41	____	____	$12.36	3/8″	8965K14	$15.23	$35.33	$60.91	7/8″	8965K68	$54.49	$126.43	$217.98
5/32″	8965K25	____	____	18.94	7/16″	8965K15	20.45	47.43	81.78	1″	8965K73	68.84	159.70	275.35
3/16″	8965K11	____	$14.38	24.80	1/2″	8965K82	23.02	53.42	92.10	1 1/4″	8965K74	99.69	231.27	398.74
1/4″	8965K12	____	17.54	30.24	5/8″	8965K71	36.12	83.81	144.50	1 1/2″	8965K75	146.16	339.08	584.62
5/16″	8965K13	____	25.89	44.64	3/4″	8965K72	47.36	109.88	189.45	2″	8965K76	221.34	513.50	885.34

Dia.	1″ Long	Each	2″ Long	Each	3″ Long	Each	4″ Long	Each	5″ Long	Each	6″ Long	Each
2″	8312K12	$27.80	8312K22	$53.37	8312K32	$77.40	8312K42	$101.23	8312K52	$115.51	8312K62	$136.14
4″	8312K14	92.03	8312K24	176.17	8312K34	238.60	8312K44	305.66	8312K54	360.86	8312K64	417.57
6″	8312K16	216.69	8312K26	413.96	8312K36	515.73	8312K46	687.61	8312K56	811.69	8312K66	907.02

Balls—Reflective Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: Hard

Made of Alloy 102, which is 99.95% pure copper, making it slightly less conductive than Alloy 101. Meet ASTM B2 and B3. Diameter tolerance is ±0.001″. Grade is 200. Sphericity is 0.0002″.

Dia.	Pkg. Qty.		Per Pkg.	Dia.	Pkg. Qty.		Per Pkg.	Dia.	Pkg. Qty.		Per Pkg.
1/16″	100	64715K14	$7.77	5/64″	100	64715K16	$8.40	3/32″	100	64715K18	$8.69

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about copper, see page 3714.

For information about the chemical composition of copper alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Weldable Copper (Alloy 122)

This electrically conductive copper is great for use in TIG/MIG welding and also offers excellent formability. Commonly used for plumbing pipe and tube, and water, gasoline, and oil lines. Not heat treatable.

Tubes—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02) to ¾ Hard (H03)

Meet ASTM B251. Create telescoping tubes by fitting a tube inside one that is the next larger size. OD tolerance is ±0.002″. Wall thickness tolerance is ±0.001″. Straightness tolerance is not rated. Length tolerance is ±1/32″.

OD	ID	Wall Thickness	1-ft. Length Pkg. Qty.		Per Pkg.	6-ft. Length	Each
1/16″	0.0345″	0.014″	15	7190K51	$13.02	7190K71	$4.56
3/32″	0.0658″	0.014″	15	7190K52	13.87	7190K72	5.20
1/8″	0.0970″	0.014″	12	7190K54	15.96	7190K73	7.00
5/32″	0.1283″	0.014″	12	7190K53	16.67	7190K75	8.68

Machinable Copper (Alloy 145)

Also known as tellurium copper, Alloy 145 offers good machinability, making it a great choice for creating high-speed screw machine products requiring conductivity and corrosion resistance. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 33,000 to 42,000 psi
- Temper: Hard (H04)

Meet ASTM B301. Width tolerance is ±0.012″ for 4″ size and ±0.018″ for 6″ size. Straightness tolerance is not rated. Length tolerance is ±¼″. **To Order:** Please specify 3- or 6-ft. length.

Width		Each 3 ft.	Each 6 ft.
¼″ Thick *(±0.0045″)*			
4″	9100K51	$185.77	$325.92
6″	9100K52	258.02	452.67
⅜″ Thick *(±0.0045″)*			
4″	9100K53	258.02	452.67
⅜″ Thick (Cont.)			
6″	9100K54	$347.97	$610.47
½″ Thick *(±0.0045″)*			
4″	9100K55	331.40	581.40
6″	9100K56	464.04	814.10
¾″ Thick *(±0.006″)*			
4″	9100K57	$464.04	$814.10
6″	9100K58	632.96	1,110.46
1″ Thick *(±0.005″)*			
4″	9100K59	562.59	987.00

Rods—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 30,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B301. Diameter tolerance is ±0.0025″. Straightness tolerance is not rated. Length tolerance is ±¼″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/8″	9100K11	____	____	$9.49
1/4″	9100K12	____	____	26.72
3/8″	9100K13	____	$31.57	55.39
1/2″	9100K14	$22.03	50.23	88.12
5/8″	9100K15	32.73	74.61	130.90
3/4″	9100K16	$44.79	$102.12	$179.15
7/8″	9100K17	58.25	132.81	233.00
1″	9100K18	72.55	165.40	290.18
1 1/8″	9100K19	87.88	200.37	351.52
1 1/4″	9100K21	104.12	237.40	416.50
1 3/8″	9100K22	$117.35	$267.56	$469.41
1 1/2″	9100K23	138.32	315.36	553.27
1 5/8″	9100K24	150.75	343.71	603.00
1 3/4″	9100K25	168.72	384.69	674.90
2″	9100K26	206.62	471.08	826.46

High-Strength Copper (Alloy 182)

Also known as RWMA Class 2 chromium copper, this chromium-copper alloy is stronger, harder, and more wear resistant than pure copper. It is difficult to machine. Commonly used in mold making, cable shields, and welding electrodes. Can be heat treated.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: Rockwell B60-B70
- Yield Strength: 48,000 to 65,000 psi
- Temper: Hard

Width tolerance is ±0.005″ for ⅛″ to ½″ sizes and ±0.009″ for ¾″ to 2″ sizes. Straightness tolerance is not rated. Length tolerance is +⅛″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Width		Each 1 ft.	Each 3 ft.	Each 6 ft.
⅛″ Thick *(±0.005″)*				
1/8″	89985K417	$11.37	$28.42	$47.37
¼″ Thick *(±0.005″)*				
1/2″	89985K52	16.20	40.50	67.50
1″	89985K54	44.00	110.00	183.33
1 1/2″	89985K55	42.52	106.30	177.17
2″	89985K56	48.48	121.20	202.00
⅜″ Thick *(±0.007″)*				
3/8″	89985K437	17.85	44.63	74.38
1/2″	89985K58	23.13	57.83	96.39
3/4″	89985K59	31.23	78.07	130.11
1″	89985K617	42.26	105.65	176.09
2″	89985K637	71.56	178.89	298.15
½″ Thick *(±0.005″)*				
1/2″	89985K447	$28.00	$70.00	$116.67
3/4″	89985K657	42.26	105.65	176.09
1″	89985K667	52.32	130.80	218.00
1 1/2″	89985K687	71.56	178.89	298.15
2″	89985K697	82.76	206.90	344.83
⅝″ Thick *(±0.006″)*				
1″	89985K717	57.23	143.08	238.46
1 1/2″	89985K737	81.00	202.50	337.50
2″	89985K747	100.97	252.41	420.69
¾″ Thick *(±0.006″)*				
3/4″	89985K467	50.31	125.77	209.62
1″	89985K757	67.56	168.89	281.48
¾″ Thick (Cont.)				
1 1/2″	89985K777	$90.62	$226.55	$377.59
1 3/4″	89985K787	103.03	257.59	429.31
2″	89985K797	120.80	302.00	503.33
1″ Thick *(±0.004″)*				
1″	89985K477	76.97	192.41	320.69
1 1/4″	89985K82	100.97	252.41	420.69
1 1/2″	89985K83	123.60	309.00	515.00
2″	89985K85	139.13	347.81	579.69
1 1/2″ Thick *(±0.007″)*				
1 1/2″	89985K497	159.37	398.44	664.06
2″	89985K88	200.82	502.06	836.76

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B70-B75
- Yield Strength: Not rated
- Temper: Hard

Diameter tolerance is ±0.003″ for ⅛″ to ½″ sizes and ±0.005″ for ⅝″ to 1½″ sizes. Straightness tolerance is not rated. Length tolerance is ±¼″ for 1- and 3-ft. lengths, and ±½″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/8″	89985K101	$19.94	$46.01	$76.69
3/16″	89985K102	22.12	51.05	85.09
1/4″	89985K103	24.62	56.81	94.68
3/8″	89985K104	37.92	87.50	145.83
1/2″	89985K105	$45.67	$105.38	$175.64
5/8″	89985K106	55.13	127.21	212.02
3/4″	89985K107	67.83	156.53	260.88
1″	89985K108	$113.09	$260.97	$434.95
1 1/4″	89985K109	146.89	338.99	564.98
1 1/2″	89985K111	187.29	432.21	720.35

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about copper and brass, see page 3714.

For information about the chemical composition of copper and brass alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

High-Strength Copper (Alloy 182) *(Material continued from previous page)*

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: Rockwell B70-B75
- Yield Strength: 48,000 to 65,000 psi
- Temper: Hard

Hex size is measured across the flats. Hex size tolerance is ±0.006″. Straightness tolerance is not rated. Length tolerance is +1/8″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Hex Size		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/2″	89985K89	$29.71	$74.29	$123.81
5/8″	89985K917	36.00	90.00	150.00
3/4″	89985K927	$42.54	$106.36	$177.27
1″	89985K937	64.40	161.00	268.33
1 1/8″	89985K947	$111.48	$278.71	$464.52
1 1/4″	89985K957	94.18	235.45	392.42

Ultra-Machinable Brass (Alloy 360)

The standard by which copper, brass, and bronze machinability is measured, Alloy 360 is also known as free-machining brass. Its lead content prevents successful welding but does provide lubrication to enable high-speed machining such as drilling, milling, and tapping with reduced tool wear and breakage. Alloy 360 is corrosion resistant and has a smooth finish that readily accepts plating. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 15,000 to 25,000 psi
- Temper: 1/2 Hard (H02)

Meet ASTM B16. Straightness tolerance is not rated. Length tolerance is ±1/2″ for 1- and 3-ft. lengths and ±3″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Width	Tolerance
1/8″-2″	±0.008″
2 1/4″-4″	±0.012″
5″-6″	Not rated

Width		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/16″ Thick *(±0.005″)*				
1/2″	8954K21	—	—	$14.48
3/4″	8954K61	—	—	19.73
1″	8954K44	—	—	20.52
1/8″ Thick *(±0.005″)*				
1/8″	8951K18	—	—	5.71
1/4″	8954K22	—	—	9.56
3/8″	8954K23	—	$10.31	18.09
1/2″	8954K25	—	12.34	21.65
5/8″	8954K3	—	17.65	30.97
3/4″	8954K4	$9.03	20.59	36.12
1″	8954K36	11.64	26.53	46.55
1 1/4″	8954K144	12.22	27.87	48.90
1 1/2″	8954K145	14.61	33.31	58.43
1 3/4″	8954K11	15.47	38.68	64.46
2″	8954K146	18.07	41.21	72.29
2 1/2″	8954K147	22.42	51.12	89.68
3″	8954K148	26.36	60.10	105.43
4″	8954K149	32.89	74.99	131.57
5/32″ Thick *(±0.005″)*				
5/32″	8951K19	—	—	11.22
3/16″ Thick *(±0.005″)*				
3/16″	8951K21	—	—	14.95
1/4″	8954K9	—	10.07	17.66
3/8″	8954K8	—	12.61	22.13
1/2″	8954K7	8.57	19.55	34.30
5/8″	8954K5	10.23	23.32	40.91
3/4″	8954K801	12.80	29.18	51.20
7/8″	8954K12	11.91	29.78	49.63
1″	8954K174	15.09	34.41	60.36
1 1/4″	8954K175	17.71	40.38	70.85
1 1/2″	8954K176	20.48	46.69	81.92
2″	8954K177	26.08	59.46	104.31
2 1/2″	8954K178	32.17	73.34	128.67
3″	8954K179	36.87	84.06	147.48
4″	8954K412	44.18	100.73	176.72
1/4″ Thick *(±0.005″)*				
1/4″	8951K22	—	—	20.24
5/16″	8954K6	—	17.45	30.62
3/8″	8954K502	8.63	19.68	34.52
1/2″	8954K411	11.42	26.04	45.68
5/8″	8954K182	12.06	27.50	48.24
3/4″	8954K183	14.28	32.56	57.13
1″	8954K184	18.11	41.30	72.46
1 1/4″	8954K185	21.89	49.90	87.55
1 1/2″	8954K186	26.01	59.31	104.05
1 3/4″	8954K13	25.80	64.49	107.48
2″	8954K187	33.30	75.92	133.20
2 1/4″	8954K14	30.99	77.47	129.11
2 1/2″	8954K101	39.18	89.32	156.71
3″	8954K102	41.17	93.88	164.70
4″	8954K103	54.86	89.32	219.43
5/16″ Thick *(±0.005″)*				
5/16″	8951K23	—	—	31.86
3/8″	8954K302	10.43	23.77	41.70
1/2″	8954K188	11.90	27.14	47.61
5/16″ Thick (Cont.)				
5/8″	8954K189	$14.72	$33.57	$58.89
3/4″	8954K191	17.70	40.35	70.79
1″	8954K192	22.35	50.95	89.39
1 1/2″	8954K193	31.61	72.06	126.42
2″	8954K104	38.99	88.89	155.95
3/8″ Thick *(±0.005″)*				
3/8″	8951K24	—	—	39.56
1/2″	8954K194	—	32.24	56.57
5/8″	8954K195	—	39.47	69.25
3/4″	8954K196	22.29	50.82	89.15
7/8″	8954K15	20.10	50.26	83.76
1″	8954K197	26.65	60.76	106.60
1 1/4″	8954K198	34.66	79.04	138.66
1 1/2″	8954K721	36.71	83.70	146.84
1 3/4″	8954K18	33.77	84.42	140.70
2″	8954K105	44.65	101.80	178.59
2 1/2″	8954K106	53.80	122.65	215.18
3″	8954K107	61.72	140.73	246.89
4″	8954K108	74.78	170.49	299.10
6″	8954K19	93.37	233.43	389.05
7/16″ Thick *(±0.005″)*				
7/16″	8951K25	—	—	47.72
1/2″ Thick *(±0.005″)*				
1/2″	8951K71	—	28.86	50.64
5/8″	8954K211	22.41	51.09	89.64
3/4″	8954K212	26.21	59.77	104.86
7/8″	8954K2	24.47	61.18	101.96
1″	8954K871	32.03	73.03	128.13
1 1/4″	8954K161	40.19	91.63	160.76
1 1/2″	8954K109	43.84	99.94	175.34
1 3/4″	8954K24	45.02	112.56	187.60
2″	8954K121	57.98	132.19	231.91
2 1/2″	8954K122	70.02	159.64	280.07
3″	8954K123	80.08	182.58	320.32
3 1/2″	8954K28	80.78	201.94	336.57
4″	8954K124	102.40	233.47	409.60
5″	8954K39	103.74	259.36	432.27
6″	8954K59	120.60	301.51	502.52
9/16″ Thick *(±0.006″)*				
9/16″	8951K72	—	35.73	62.68
5/8″ Thick *(±0.006″)*				
5/8″	8951K73	—	48.11	84.40
3/4″	8954K213	26.79	61.09	107.17
7/8″	8954K214	31.82	72.54	127.27
1″	8954K961	35.81	81.65	143.24
1 1/4″	8954K125	47.31	89.88	157.69
1 1/2″	8954K331	41.59	103.97	173.29
1 3/4″	8954K341	48.52	121.30	202.17
2″	8954K164	69.46	158.37	277.85
2 1/2″	8954K351	67.00	167.51	279.18
3″	8954K371	80.40	201.01	335.02
4″	8954K382	103.74	259.36	432.27
3/4″ Thick *(±0.006″)*				
3/4″	8951K74	27.91	63.63	111.63
7/8″	8954K394	34.46	86.14	143.57
3/4″ Thick (Cont.)				
1″	8954K126	$45.05	$102.71	$180.20
1 1/4″	8954K32	48.34	120.85	201.42
1 1/2″	8954K395	54.72	136.81	228.02
1 3/4″	8954K407	56.40	141.00	235.00
2″	8954K127	70.48	160.69	281.91
2 1/2″	8954K128	86.65	197.56	346.59
3″	8954K129	100.73	229.67	402.93
4″	8954K415	120.85	302.14	503.56
7/8″ Thick *(±0.005″)*				
1 1/2″	8954K419	58.34	145.86	243.10
2″	8954K463	75.20	187.99	313.32
1″ Thick *(±0.006″)*				
1″	8951K51	47.26	107.74	189.02
1 1/4″	8954K167	60.34	137.57	241.35
1 1/2″	8954K171	71.41	162.80	285.62
1 3/4″	8954K467	75.20	187.99	313.32
2″	8954K141	95.09	216.81	380.37
2 1/2″	8954K142	100.77	229.74	403.06
3″	8954K143	133.04	303.33	532.16
3 1/2″	8954K472	141.00	352.49	587.48
4″	8954K476	156.25	390.64	651.06
5″	8954K481	189.58	473.94	789.90
6″	8954K485	220.99	552.47	920.79
1 1/4″ Thick *(±0.006″)*				
1 1/4″	8951K53	76.48	174.39	305.94
1 1/2″	8954K489	89.52	223.80	373.00
1 3/4″	8954K494	104.44	261.10	435.17
2″	8954K504	115.10	287.74	479.57
2 1/2″	8954K521	143.87	359.68	599.46
3″	8954K531	166.70	416.74	694.57
4″	8954K551	214.85	537.13	895.22
1 3/8″ Thick *(±0.005″)*				
1 3/4″	8954K561	110.78	276.95	461.59
1 1/2″ Thick *(±0.007″)*				
1 1/2″	8951K55	102.01	232.58	408.03
2″	8954K565	138.12	345.30	575.50
2 1/2″	8954K57	166.70	416.74	694.57
3″	8954K581	193.36	483.41	805.68
4″	8954K601	249.50	623.76	1,039.60
1 3/4″ Thick *(±0.007″)*				
1 3/4″	8951K57	127.61	290.96	510.46
2″	8954K621	155.58	388.96	648.26
2 1/2″	8954K631	188.00	469.99	783.32
3″	8954K641	218.32	545.79	909.65
2″ Thick *(±0.007″)*				
2″	8951K59	152.78	348.34	611.12
2 1/2″	8954K651	189.58	473.94	789.90
3″	8954K661	227.49	568.72	947.87
4″	8954K671	294.65	736.63	1,227.71
2 1/4″ Thick *(±0.009″)*				
2 1/4″	8951K62	189.16	431.29	756.65
2 1/2″ Thick *(±0.009″)*				
2 1/2″	8951K64	219.00	499.32	876.00
3 1/2″	8954K681	322.27	805.69	1,342.81
3″ Thick *(±0.009″)*				
3″	8951K66	346.76	790.61	1,387.03

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about brass, see page 3714.

For information about the chemical composition of brass alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Ultra-Machinable Brass (Alloy 360) *(Material continued from previous page)*

The standard by which copper, brass, and bronze machinability is measured, Alloy 360 is also known as free-machining brass. Its lead content prevents successful welding but does provide lubrication to enable high-speed machining such as drilling, milling, and tapping with reduced tool wear and breakage. Alloy 360 is corrosion resistant and has a smooth finish that readily accepts plating. Not heat treatable.

Rectangular Bars with Material Certification—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 15,000 to 25,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B16. Each comes with a traceable lot number and physical test report. Width tolerance is ±0.005″ for ½″ to 1″ sizes and ±0.008″ for 1½″ and 2″ sizes. Straightness tolerance is not rated. Length tolerance is ±3″. Sold in 6-ft. lengths.

Width		Each
⅛″ Thick *(±0.0045″)*		
1″	**2569T31**	$56.55
1½″	**2569T32**	68.43
2″	**2569T33**	82.29
3/16″ Thick *(±0.004″)*		
1″	**2569T34**	$70.36
¼″ Thick *(±0.0045″)*		
½″	**2569T35**	55.68
¼″ Thick (Cont.)		
¾″	**2569T36**	$67.13
1″	**2569T37**	82.46
2″	**2569T38**	143.20
½″ Thick *(±0.0045″)*		
¾″	**2569T39**	$114.86
1″	**2569T41**	138.13
2″	**2569T42**	241.91

Hexagonal Bars—Unpolished (Mill) Finish

- Hardness: Rockwell B75-B80
- Yield Strength: 44,000 to 52,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B16. Hex size is measured across the flats. Straightness tolerance is not rated. Length tolerance is ±½″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Hex Size	Tolerance
3/16″-1¼″	±0.006″
1⅜″-3″	±0.009″

Hex Size		Each 1 ft.	Each 3 ft.	Each 6 ft.
3/16″	**8952K32**	____	____	$8.19
¼″	**8952K33**	____	____	12.09
5/16″	**8952K34**	____	____	20.35
⅜″	**8952K35**	____	____	29.00
7/16″	**8952K19**	____	____	34.40
½″	**8952K36**	____	____	44.47
9/16″	**8952K11**	____	$32.46	55.96
⅝″	**8952K12**	____	$41.94	$72.31
¾″	**8952K13**	$24.32	56.43	97.29
⅞″	**8952K14**	32.37	75.09	129.47
1″	**8952K93**	41.22	95.62	164.87
1⅛″	**8952K81**	50.26	116.60	201.04
1¼″	**8952K82**	60.78	141.02	243.14
1⅜″	**8952K83**	72.17	167.42	288.66
1½″	**8952K84**	$81.05	$188.02	$324.18
1⅝″	**8952K85**	96.17	223.10	384.66
1¾″	**8952K86**	107.50	249.39	429.98
2″	**8952K87**	132.78	308.06	531.13
2¼″	**8952K88**	173.07	401.52	692.27
2½″	**8952K89**	220.66	511.93	882.63
3″	**8952K91**	220.66	768.30	1,324.65

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B25-B80, except 3/32″ to 15/32″ and 6″ diameters are not rated
- Yield Strength: 15,000 to 25,000 psi
- Temper: ½ Hard (H02), except 4¼″ to 6″ diameters are as extruded

Meet ASTM B16. Straightness tolerance is ½″, except 4¼″ to 6″ diameters are not rated. Length tolerance is ±½″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.	Tolerance
3/32″-2⅛″	±0.003″
2 3/16″-4"	±0.006″
4¼″-6″	As extruded

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
3/32″	**8953K116**	____	____	$2.51
⅛″	**8953K41**	____	____	3.97
5/32″	**8953K42**	____	____	6.54
3/16″	**8953K43**	____	____	8.09
7/32″	**8953K44**	____	____	11.54
¼″	**8953K45**	____	____	13.07
9/32″	**8953K46**	____	____	15.58
5/16″	**8953K47**	____	____	19.12
11/32″	**8953K48**	____	____	23.78
⅜″	**8953K49**	____	____	27.28
13/32″	**8953K81**	____	____	31.04
7/16″	**8953K51**	____	____	35.12
15/32″	**8953K83**	____	____	38.83
½″	**8953K52**	____	____	44.88
17/32″	**8953K89**	____	$28.25	48.70
9/16″	**8953K91**	____	30.84	53.17
19/32″	**8953K13**	____	38.40	64.00
⅝″	**8953K92**	____	38.16	65.79
21/32″	**8953K93**	____	41.43	71.43
11/16″	**8953K2**	$19.19	47.97	79.95
23/32″	**8953K94**	21.07	48.89	84.30
¾″	**8953K95**	21.96	50.94	87.83
25/32″	**8953K96**	$22.53	$52.27	$90.12
13/16″	**8953K3**	23.94	59.84	99.74
27/32″	**8953K31**	25.95	64.88	108.14
⅞″	**8953K97**	27.68	64.23	110.74
15/16″	**8953K32**	32.04	80.11	133.51
1″	**8953K98**	36.00	83.51	143.99
1 1/16″	**8953K33**	40.33	100.84	168.06
1⅛″	**8953K28**	44.86	104.07	179.43
1 3/16″	**8953K34**	49.40	123.49	205.82
1¼″	**8953K29**	53.31	123.68	213.24
1 5/16″	**8953K36**	59.18	147.96	246.60
1⅜″	**8953K35**	63.98	148.43	255.92
1 7/16″	**8953K37**	69.66	174.14	290.23
1½″	**8953K17**	74.25	172.27	297.01
1 9/16″	**8953K38**	80.77	201.92	336.54
1⅝″	**8953K39**	86.13	199.82	344.51
1 11/16″	**8953K4**	94.21	235.54	392.56
1¾″	**8953K72**	96.37	223.57	385.47
1 13/16″	**8953K5**	108.68	271.71	452.85
1⅞″	**8953K8**	116.31	290.78	484.63
2″	**8953K24**	126.54	293.57	506.15
2 1/16″	**8953K6**	136.98	342.44	570.73
2⅛″	**8953K68**	$142.85	$357.13	$595.21
2 3/16″	**8953K7**	151.38	378.44	630.74
2¼″	**8953K71**	157.39	393.47	655.79
2⅜″	**8953K73**	175.36	438.40	730.67
2½″	**8953K26**	194.56	451.39	778.26
2⅝″	**8953K75**	210.59	526.48	877.47
2¾″	**8953K77**	231.13	577.82	963.03
2⅞″	**8953K78**	252.62	631.55	1,052.58
3″	**8953K69**	285.26	____	____
3⅛″	**8953K811**	207.10	____	____
3¼″	**8953K821**	224.00	____	____
3⅜″	**8953K791**	241.57	____	____
3½″	**8953K831**	259.80	____	____
3¾″	**8953K841**	298.23	____	____
4″	**8953K74**	518.70	____	____
4¼″	**8953K851**	396.98	____	____
4½″	**8953K861**	445.07	____	____
5″	**8953K871**	585.62	____	____
5¼″	**8953K881**	645.65	____	____
5½″	**8953K891**	708.60	____	____
6″	**8953K76**	795.46	____	____

Rods with Material Certification—Unpolished (Mill) Finish

- Hardness: Rockwell B75
- Yield Strength: 15,000 to 25,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B16. Each comes with a traceable lot number and physical test report. Straightness tolerance is ½″. Length tolerance is ±¼″. Sold in 6-ft. lengths.

Dia.	Dia. Tolerance		Each
⅛″	±0.0013″	**2572T11**	$13.97
3/16″	±0.0015″	**2572T13**	18.09
¼″	±0.0015″	**2572T15**	23.07
5/16″	±0.0015″	**2572T17**	29.12
⅜″	±0.0015″	**2572T19**	$37.28
½″	±0.0015″	**2572T21**	54.88
⅝″	±0.002″	**2572T23**	75.79
¾″	±0.002″	**2572T25**	97.83
⅞″	±0.002″	**2572T27**	$120.74
1″	±0.002″	**2572T29**	153.99
1¼″	±0.0025″	**2572T31**	223.24
1½″	±0.0025″	**2572T33**	307.01

Tight-Tolerance Rods—Precision Ground Finish

- Hardness: Rockwell B86
- Yield Strength: Not rated
- Temper: Not rated

Meet ASTM B16 and B249. Diameter tolerance is ±0.0002″. Straightness tolerance is not rated. Length tolerance is ±½″. Sold in 6-ft. lengths.

Dia.		Each
⅛″	**2575T11**	$57.64
3/16″	**2575T12**	62.20
¼″	**2575T13**	$65.71
⅜″	**2575T14**	76.99
½″	**2575T15**	$120.02
⅝″	**2575T16**	130.09
¾″	**2575T17**	$178.43
1″	**2575T18**	339.71

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about brass, see page 3714.

For information about the chemical composition of brass alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Ultra-Machinable Brass (Alloy 353)

Commonly called engraver's brass, Alloy 353 has machinability approaching that of Alloy 360 with a lower lead content. Well suited for forming applications such as knurling and threading, it's often used for nuts, gears, and wheels. It has fair corrosion resistance and is not heat treatable.

Sheets—Unpolished (Mill) Finish

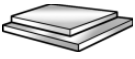

- Hardness: Rockwell B70
- Yield Strength: 50,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B121. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	12″×24″	Each	12″×48″	Each	24″×48″	Each
0.063″	±0.005″	8948K12	$23.66	8948K22	$51.43	8948K42	$89.47	8948K62	$166.13	8948K82	$295.77
0.125″	±0.006″	8948K14	43.25	8948K24	94.02	8948K44	163.55	8948K64	297.36	8948K84	540.65
0.150″	±0.007″	8948K15	54.60	8948K25	115.14	8948K45	200.21	8948K65	364.02		
0.250″	±0.009″	8948K17	80.13	8948K27	179.89	8948K47	303.00	8948K67	550.90	8948K87	1,001.64
0.375″	±0.012″	8948K19	118.08	8948K29	257.27	8948K49	446.50	8948K69	811.82	8948K89	1,476.03
0.500″	±0.015″	8948K21	156.92	8948K31	341.90	8948K51	593.37	8948K71	1,078.85	8948K91	1,961.55
0.750″	±0.018″	8948K23	221.52	8948K32	452.04	8948K52	812.22	8948K72	1,476.77		
1.000″	±0.022″	8948K26	284.66	8948K33	608.79	8948K53	1,043.76	8948K73	1,897.74		

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B80
- Yield Strength: 25,000 to 50,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B453. Diameter tolerance is ±0.002″. Straightness tolerance is not rated. Length tolerance is ±¼″. **To Order:** Please specify 3- or 6-ft. length.

Dia.		Each 3 ft.	Each 6 ft.	Dia.		Each 3 ft.	Each 6 ft.	Dia.		Each 3 ft.	Each 6 ft.
¼″	8313K17	$6.89	$12.31	⅜″	8313K19	$15.09	$26.95	⅝″	8313K15	$38.20	$68.21
5/16″	8313K18	10.74	19.18	½″	8313K14	24.44	43.64	¾″	8313K16	44.42	79.33

Ultra-Machinable Brass (Alloy 385)

Also known as architectural brass, Alloy 385 is easy to machine, with nearly the same machinability as Alloy 360. It is typically used in thresholds and ornamental trim such as hinges and lock bodies. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02)

Meet ASTM B455. Width tolerance is ±0.015″ for ¼″ to 1½″ sizes and ±0.025″ for 2″ to 4″ sizes. Straightness tolerance is not rated. Length tolerance is ±1″ for 2-ft. lengths, ±3″ for 4-ft. lengths, and ±6″ for 8-ft. lengths. **To Order:** Please specify 2-, 4-, or 8-ft. length.

Width		Each 2 ft.	Each 4 ft.	Each 8 ft.
⅛″ Thick (±0.010″)				
½″	9122K21	$9.33	$16.62	$29.16
¾″	9122K22	13.26	23.62	41.44
1″	9122K23	17.04	30.35	53.24
1¼″	9122K24	23.28	41.47	72.76
1½″	9122K25	25.39	45.22	79.34
2″	9122K27	33.85	60.30	105.79
3/16″ Thick (±0.010″)				
1″	9122K53	28.57	50.89	89.28
¼″ Thick (±0.010″)				
¼″	9122K66	13.15	23.42	41.08
½″	9122K31	18.46	32.88	57.68
¾″	9122K54	29.25	52.10	91.40
1″	9122K32	35.31	62.89	110.33
¼″ Thick (Cont.)				
1¼″	9122K33	$42.56	$75.81	$133.00
1½″	9122K34	50.04	89.13	156.37
2″	9122K35	66.72	118.84	208.50
3″	9122K56	104.29	185.76	325.90
4″	9122K57	126.53	225.38	395.40
⅜″ Thick (±0.010″)				
½″	9122K41	26.11	46.51	81.60
¾″	9122K42	37.55	66.88	117.33
1″	9122K43	50.51	89.96	157.83
1½″	9122K44	72.79	129.66	227.47
2″	9122K45	97.29	173.30	304.04
3″	9122K58	142.34	253.55	444.82
½″ Thick (±0.010″)				
½″	9122K69	$42.13	$75.05	$131.67
¾″	9122K51	52.25	93.08	163.29
1″	9122K52	68.15	121.40	212.98
2″	9122K62	126.53	225.38	395.40
2½″	9122K63	152.08	270.89	475.25
¾″ Thick (±0.010″)				
¾″	9122K71	81.54	145.24	254.80
1″	9122K64	104.29	185.76	325.90
2″	9122K65	175.73	313.03	549.17
1″ Thick (±0.0045″)				
1″	9122K72	139.38	248.27	435.56

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B54
- Yield Strength: Not rated
- Temper: ½ Hard (H02)

Meet ASTM B455. Diameter tolerance is ±0.002″. Straightness tolerance is not rated. Length tolerance is ±½″ for 2- and 4-ft. lengths and ±3″ for 8-ft. lengths. **To Order:** Please specify 2-, 4-, or 8-ft. length.

Dia.		Each 2 ft.	Each 4 ft.	Each 8 ft.	Dia.		Each 2 ft.	Each 4 ft.	Each 8 ft.	Dia.		Each 2 ft.	Each 4 ft.	Each 8 ft.
¼″	9122K75	$10.53	$17.54	$29.24	½″	9122K76	$37.01	$61.69	$102.81	¾″	9122K77	$76.03	$126.72	$211.20

Metric Rods—Unpolished (Mill) Finish

- Hardness: 90 Brinell
- Yield Strength: 60,000 psi
- Temper: ½ Hard

Meet ASTM B455. Diameter tolerance is –0.05 mm for 2 mm to 6 mm sizes and –0.08 mm for 8 mm to 20 mm sizes. Straightness tolerance is 0.4 mm per 400 mm. Length tolerance is +66 mm, –6 mm. Sold in 1-meter lengths.

Dia.		Each	Dia.		Each	Dia.		Each	Dia.		Each
2 mm	9122K79	$4.24	4 mm	9122K82	$8.65	6 mm	9122K84	$14.63	10 mm	9122K86	$34.26
3 mm	9122K81	5.75	5 mm	9122K83	11.65	8 mm	9122K85	23.68	20 mm	9122K88	118.09

U-Channels—Unpolished (Mill) Finish

- Hardness: Rockwell B54
- Yield Strength: Not rated
- Temper: As hot extruded (M30)

Meet ASTM B455. Edges are squared. Thickness, base, and leg length tolerances are ±1%. Straightness tolerance is not rated. Length tolerance is ±½″ for 4-ft. lengths and ±3″ for 8-ft. lengths. **To Order:** Please specify 4- or 8-ft. length.

Outside Base×Legs		Each 4 ft.	Each 8 ft.	Outside Base×Legs		Each 4 ft.	Each 8 ft.	Outside Base×Legs		Each 4 ft.	Each 8 ft.
0.093″ Thick				***0.125″ Thick***				***0.125″ Thick (Cont.)***			
½″×½″	2582T34	$44.30	$73.83	¾″×¾″	2582T35	$72.82	$121.36	1″×1″	2582T42	$98.81	$164.68
½″×¾″	2582T37	55.53	92.55	1″×¾″	2582T39	85.11	141.85	1¼″×1¼″	2582T36	108.58	180.96

(Material continued on following page)

Warning! *Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.*

For information about brass, see page 3714.

For information about the chemical composition of brass alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Ultra-Machinable Brass (Alloy 385) *(Material continued from previous page)*

Also known as architectural brass, Alloy 385 is easy to machine, with nearly the same machinability as Alloy 360. It is typically used in thresholds and ornamental trim such as hinges and lock bodies. Not heat treatable.

90° Angles—Unpolished (Mill) Finish

- Hardness: Rockwell B54
- Yield Strength: Not rated
- Temper: ½ Hard (H02)

Meet ASTM B455. Edges are squared. Thickness and leg length tolerances are ±1%. Straightness tolerance is ½″. Length tolerance is ±½″ for 2- and 4-ft. lengths and ±3″ for 8-ft. lengths. **To Order:** Please specify 2-, 4-, or 8-ft. length.

Outside Leg Lgs.		Each 2 ft.	Each 4 ft.	Each 8 ft.
1/16″ Thick				
¾″ × ¾″	**9124K44**	$15.09	$29.15	$52.05
1/8″ Thick				
½″ × ½″	**9124K41**	18.09	34.93	62.37
¾″ × ¾″	**9124K45**	28.16	54.38	97.10
¾″ × 1″	**9124K46**	28.72	55.45	99.02
1″ × 1″	**9124K48**	37.51	72.42	129.33
1/8″ Thick (Cont.)				
1¼″ × 1¼″	**9124K53**	$47.51	$91.74	$163.83
1½″ × 1½″	**9124K55**	57.51	111.05	198.31
2″ × 2″	**9124K58**	72.44	139.89	249.80
3/16″ Thick				
1″ × 1″	**9124K49**	56.66	109.41	195.38
1¼″ × 1¼″	**9124K54**	72.47	139.93	249.88
3/16″ Thick (Cont.)				
1½″ × 1½″	**9124K56**	$84.13	$162.46	$290.11
2″ × 2″	**9124K59**	108.95	210.39	375.70
1/4″ Thick				
1½″ × 1½″	**9124K57**	107.25	207.10	369.82
2″ × 2″	**9124K61**	132.76	256.37	457.80
3″ × 3″	**9124K63**	186.87	360.85	644.37

Formable Brass (Alloy 260)

This simple copper-zinc alloy offers the best formability of all the brasses, as well as good corrosion resistance and machinability. The standard for use in electrical connectors, it's commonly used for clips, lamp sockets, springs, rivets, eyelets, and wire screens. Not heat treatable.

Strips—Unpolished (Mill) Finish

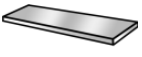

- Hardness: Rockwell B60-B77
- Yield Strength: 52,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B36. Width tolerance is ±1/16″. Thickness tolerance is ±0.0035″ for 0.020″ to 0.080″ sizes and ±0.006″ for 0.093″ to 0.188″ sizes. Flatness tolerance is not rated. Length tolerance is ±½″.

Thick.	2″ Wd. × 36″ Lg.	Each	4″ Wd. × 36″ Lg.	Each	6″ Wd. × 36″ Lg.	Each
0.020″	**8956K121**	$9.40	**8956K122**	$18.04	**8956K123**	$25.94
0.032″	**8956K124**	15.07	**8956K125**	28.89	**8956K126**	41.56
0.050″	**8956K127**	22.27	**8956K128**	42.72	**8956K129**	61.60
0.063″	**8956K131**	27.91	**8956K132**	53.52	**8956K133**	77.29
0.080″	**8956K134**	$32.68	**8956K135**	$62.87	**8956K136**	$90.80
0.093″	**8956K137**	39.46	**8956K138**	75.87	**8956K139**	109.59
0.125″	**8956K141**	51.02	**8956K142**	98.28	**8956K143**	142.14
0.188″	**8956K144**	73.67	**8956K145**	140.14	**8956K146**	205.55

Sheets—Unpolished (Mill) Finish

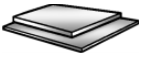

- Hardness: Rockwell B60-B77, except 0.010″ to 0.016″ thicknesses are not rated
- Yield Strength: 52,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B36. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″ × 12″	Each	12″ × 24″	Each	12″ × 96″	Each	24″ × 24″	Each	24″ × 48″	Each	24″ × 96″	Each
0.010″	±0.0015″	**8956K15**	$11.08	**8956K17**	$19.14	**8956K41**	$58.44	**8956K22**	$32.24	**8956K24**	$58.44	**8956K43**	$100.76
0.012″	±0.002″	**8956K31**	11.13	**8956K51**	18.55	**8956K11**	62.16	**8956K71**	33.26	**8956K91**	62.78	**8956K45**	111.71
0.016″	±0.0025″	**8956K32**	13.68	**8956K52**	23.57	**8956K12**	72.76	**8956K72**	42.60	**8956K92**	72.76	**8956K46**	132.29
0.020″	±0.0035″	**8956K33**	15.87	**8956K53**	27.64	**8956K13**	88.70	**8956K73**	48.82	**8956K93**	90.96	**8956K47**	164.94
0.025″	±0.0035″	**8956K34**	20.21	**8956K54**	35.02	**8956K14**	105.10	**8956K74**	59.60	**8956K94**	109.71	**8956K48**	194.66
0.032″	±0.004″	**8956K35**	24.97	**8956K55**	43.42	**8956K16**	135.46	**8956K75**	74.58	**8956K95**	134.41	**8956K49**	249.69
0.040″	±0.005″	**8956K36**	30.25	**8956K56**	52.61	**8956K18**	166.41	**8956K76**	91.52	**8956K96**	164.37	**8956K65**	309.31
0.050″	±0.006″	**8956K37**	37.25	**8956K57**	64.78	**8956K19**	204.90	**8956K77**	112.69	**8956K97**	202.85	**8956K66**	372.54
0.064″	±0.006″	**8956K38**	45.73	**8956K58**	76.57	**8956K21**	244.98	**8956K78**	139.82	**8956K98**	254.22	**8956K67**	459.63
0.080″	±0.007″	**8956K39**	48.79	**8956K59**	86.89	**8956K25**	298.32	**8956K79**	164.06	**8956K99**	298.32	**8956K68**	545.78
0.093″	±0.007″	**8956K42**	55.27	**8956K62**	98.34	**8956K27**	337.33	**8956K82**	183.22	**8956K88**	337.33	**8956K69**	619.63
0.125″	±0.007″	**8956K44**	66.48	**8956K64**	121.11	**8956K23**	417.74	**8956K84**	224.71	**8956K89**	409.92	**8956K26**	745.30
0.188″	±0.008″	**8956K112**	90.29	**8956K213**	177.27	**8956K516**	535.77	**8956K314**	299.66	**8956K415**	556.31	**8956K617**	1,069.83
0.250″	±0.010″	**8956K81**	145.20	**8956K83**	267.03	**8956K87**	901.21	**8956K85**	483.98	**8956K86**	901.21	**8956K28**	1,668.91

Thick Sheets—Unpolished (Mill) Finish

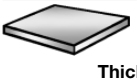

- Hardness: Rockwell B44-B77
- Yield Strength: Not rated
- Temper: ¼ Hard (H01) to ½ Hard (H02)

Meet ASTM B19 and B36. Width and length tolerances are ±3/16″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″ × 6″	Each	12″ × 12″	Each
¼″	±0.010″	**8956K116**	$80.61	———	———
½″	±0.017″	**8956K156**	141.19	**8956K216**	$434.91
¾″	±0.017″	**8956K166**	$191.69	**8956K226**	$616.61
1″	±0.021″	**8956K176**	243.87	**8956K236**	788.23

Sheets—Reflective Finish

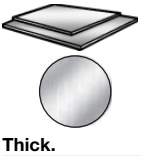

- Hardness: Rockwell B70
- Yield Strength: 52,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B70. Sheets are polished to a highly reflective finish on one side with minimal grain lines. The polished side has a peel-off protective masking. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	12″ × 12″	Each	12″ × 24″	Each	24″ × 48″	Each	24″ × 60″	Each
0.020″	±0.0035″	**89505K11**	$20.39	**89505K21**	$39.19	**89505K31**	$145.83	**89505K41**	$170.90
0.032″	±0.004″	**89505K12**	31.62	**89505K22**	58.20	**89505K32**	218.81	**89505K42**	265.51
0.050″	±0.006″	**89505K13**	46.48	**89505K23**	86.34	**89505K33**	328.46	**89505K43**	387.02

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about brass, see page 3714.

For information about the chemical composition of brass alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Formable Brass (Alloy 260) *(Material continued from previous page)*

Sheets—Polished Finish

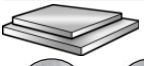

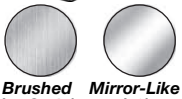

Brushed (#4 Satin) Finish *Mirror-Like (#8) Finish*

- Hardness: Rockwell B55
- Yield Strength: 40,000 psi
- Temper: ¼ Hard (H01) to ½ Hard (H02)

Meet ASTM B36. Width and length tolerances are ±1/32″. Flatness tolerance is ⅛″. The polished side has a peel-off protective masking.

Brushed (#4 Satin) Finish—Polished to a fine brushed finish on one side with grain lines in one direction.

Mirror-Like (#8) Finish—Polished to a mirror-like finish on one side with no grain lines.

Finish Selector Pack—Contains one individually marked piece each of unpolished (mill), brushed (#4 satin), and mirror-like (#8) finishes. Each piece is approximately 1½″×3″×1/32″ thick.

1219T11 ..... **Per Pkg.** $24.49

Thick.	Thick. Tolerance	BRUSHED (#4 SATIN) FINISH 12″×12″	Each	12″×24″	Each	24″×24″	Each	MIRROR-LIKE (#8) FINISH 12″×12″	Each	12″×24″	Each	24″×24″	Each
0.032″	±0.005″	9758K11	$26.44	9758K31	$47.89	9758K51	$88.14	9791K11	$44.11	9791K31	$74.55	9791K51	$140.34
0.040″	±0.005″	9758K12	33.77	9758K32	57.71	9758K52	109.05	9791K12	49.16	9791K32	84.10	9791K52	155.95
0.062″	±0.007″	9758K13	50.54	9758K33	89.84	9758K53	170.24	9791K13	57.74	9791K33	104.87	9791K53	201.67
0.080″	±0.007″	9758K14	76.23	9758K34	139.14	9758K54	272.82	9791K14	81.72	9791K34	142.12	9791K54	273.31
0.125″	±0.007″	9758K15	111.34	9758K35	205.31	9758K55	394.82	9791K15	117.45	9791K35	217.43	9791K55	418.13
0.187″	±0.010″	9758K16	177.27	9758K36	325.61	9758K56	626.18	9791K16	177.10	9791K36	332.83	9791K56	640.05

Round Tubes—Unpolished (Mill) Finish

- Hardness: Rockwell 30T 53
- Yield Strength: Not rated
- Temper: As drawn (H58)

Meets ASTM B135. OD tolerance is ±0.004″. Length tolerance is ±¼″. Straightness tolerance is not rated. **To Order:** Please specify 1- or 3-ft. length.

OD	ID		Each 1 ft.	Each 3 ft.
0.032″ Wall Thickness (±0.004″)				
3/16″	0.1235″	7782T38	$4.00	$10.53
1/4″	0.186″	7782T11	5.54	14.59
5/16″	0.2485″	7782T39	6.24	16.42
3/8″	0.311″	7782T42	7.58	19.95
1/2″	0.436″	7782T13	7.24	19.05
1″	0.936″	7782T15	13.57	35.70
1 3/8″	1.311″	7782T52	17.40	45.79
2 1/4″	2.186″	7782T58	27.30	71.83
0.049″ Wall Thickness (±0.004″)				
3/16″	0.0895″	7782T59	4.76	12.52
1/4″	0.152″	7782T61	6.93	18.23
5/16″	0.2145″	7782T62	8.91	23.45
0.049″ Wall Thickness (Cont.)				
3/8″	0.277″	7782T63	$11.03	$29.03
5/8″	0.527″	7782T64	13.32	35.05
3/4″	0.652″	7782T65	16.21	42.66
7/8″	0.777″	7782T66	19.11	50.29
0.065″ Wall Thickness (±0.006″)				
1/4″	0.120″	7782T21	8.79	23.13
5/16″	0.1825″	7782T41	11.17	29.40
3/8″	0.245″	7782T43	13.83	36.39
7/16″	0.3075″	7782T45	16.14	42.47
1/2″	0.370″	7782T23	13.32	35.05
9/16″	0.4325″	7782T46	15.26	40.16
5/8″	0.495″	7782T47	17.18	45.21
0.065″ Wall Thickness (Cont.)				
3/4″	0.620″	7782T48	$21.03	$55.34
7/8″	0.745″	7782T49	23.15	60.92
1″	0.870″	7782T27	22.97	60.46
1 1/8″	0.995″	7782T51	26.47	69.65
1 1/4″	1.120″	7782T31	28.14	74.05
1 3/8″	1.245″	7782T53	32.74	86.17
1 1/2″	1.370″	7782T33	34.28	90.21
1 5/8″	1.495″	7782T54	38.96	102.53
1 3/4″	1.620″	7782T55	42.09	110.75
1 7/8″	1.745″	7782T56	43.05	113.29
2 1/8″	1.995″	7782T57	48.99	128.93
2 1/2″	2.370″	7782T37	59.59	156.82

Balls—Reflective Finish

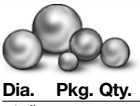

- Hardness: Rockwell B75-B87
- Yield Strength: 57,000 psi
- Temper: Not rated

Meet ASTM B134. Grade is 200. Sphericity is 0.0002″. Diameter tolerance is ±0.001″.

Dia.	Pkg. Qty.		Per Pkg.
1/16″	100	9617K29	$8.59
3/32″	100	9617K31	8.22
1/8″	100	9617K32	6.30
5/32″	100	9617K33	7.48
3/16″	100	9617K34	$7.92
7/32″	100	9617K35	10.39
1/4″	100	9617K36	12.65
5/16″	50	9617K38	11.01
11/32″	25	9617K39	$8.77
3/8″	25	9617K41	9.36
7/16″	10	9617K42	7.87
1/2″	10	9617K43	8.07
9/16″	10	9617K44	$10.86
5/8″	10	9617K45	13.84
3/4″	5	9617K47	12.05

Miniature Strips—Unpolished (Mill) Finish

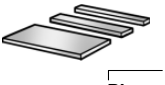

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02)

Meet ASTM B36. Thickness tolerance is ±0.002″. Width tolerance is ±0.005″. Flatness tolerance is not rated. Length tolerance is ±1/32″.

Thick.	¼″×12″ Pkg. Qty.		Per Pkg.	½″×12″ Pkg. Qty.		Per Pkg.	¾″×12″ Pkg. Qty.		Per Pkg.	1″×12″ Pkg. Qty.		Per Pkg.	2″×12″ Pkg. Qty.		Per Pkg.
0.016″	20	8859K661	$18.45	15	8859K671	$18.24	10	8859K681	$13.54	10	8859K691	$17.46	5	8859K711	$16.35
0.025″	15	8859K72	18.24	10	8859K73	14.90	6	8859K74	10.98	6	8859K75	16.42	5	8859K76	15.54
0.032″	15	8859K82	17.89	10	8859K83	19.81	6	8859K84	13.94	5	8859K85	16.34	3	8859K86	19.63
0.064″	8	8859K87	14.08	4	8859K88	13.59	3	8859K89	13.25	2	8859K91	13.47	3	8859K81	30.73

Miniature Thin Sheets—Unpolished (Mill) Finish

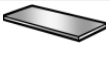

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02)

Meet ASTM B36. Width tolerance is ±0.005″. Flatness tolerance is not rated. Length tolerance is ±1/32″. Sheets are 4″ Wd.×10″ Lg.

Thick.	Thick. Tolerance	Pkg. Qty.		Per Pkg.	Thick.	Thick. Tolerance	Pkg. Qty.		Per Pkg.
0.005″	±0.001″	6	8859K92	$16.19	0.015″	±0.001″	6	8859K94	$19.01
0.010″	±0.001″	6	8859K93	20.23	0.032″	±0.001″	3	8859K95	16.63

Miniature Rectangular Tubes—Unpolished (Mill) Finish

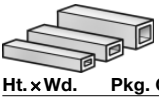

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02) to ¾ Hard (H03)

Create telescoping tubes by fitting a tube inside one that is the next larger size. Meet ASTM B135. Height and width tolerances are ±0.002″. Straightness tolerance is not rated. Length tolerance is ±1/32″. Sold in 1-ft. lengths.

Ht.×Wd.	Pkg. Qty.		Per Pkg.
0.014″ Wall Thickness (±0.001″)			
1/16″×1/16″	10	8859K391	$12.83
3/32″×3/32″	10	8859K411	14.70
3/32″×3/16″	4	8859K113	13.00
1/8″×1/8″	12	8859K42	20.48
0.014″ Wall Thickness (Cont.)			
1/8″×1/4″	4	8859K114	$16.17
5/32″×5/32″	10	8859K43	15.87
5/32″×5/16″	4	8859K115	16.20
3/16″×3/16″	6	8859K44	12.45
0.014″ Wall Thickness (Cont.)			
3/16″×3/8″	4	8859K116	$16.30
7/32″×7/32″	6	8859K45	13.20
1/4″×1/4″	6	8859K46	14.67

(Material continued on following page)

***Warning!* Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.**

For information about the chemical composition of brass alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Formable Brass (Alloy 260) *(Material continued from previous page)*

This simple copper-zinc alloy offers the best formability of all the brasses as well as good corrosion resistance and machinability. The standard for use in electrical connectors, it's commonly used for clips, lamp sockets, springs, rivets, eyelets, and wire screens. Not heat treatable.

Miniature Round Tubes—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02)

Meet ASTM B135. Create telescoping tubes by fitting a tube inside one that is the next larger size. OD tolerance is ±0.002″. Straightness tolerance is not rated. Length tolerance is ±1/32″.

OD	ID	1-ft. Length Pkg. Qty.	1-ft. Length Per Pkg.	3-ft. Length Pkg. Qty.	3-ft. Length Per Pkg.
0.014″ Wall Thickness (±0.001″)					
1/16″	0.035″	15	8859K171 $13.46	5	8859K231 $11.95
3/32″	0.066″	15	8859K18 14.08	5	8859K232 14.00
1/8″	0.097″	15	8859K19 21.77	5	8859K234 16.20
5/32″	0.128″	12	8859K21 18.48	5	8859K235 16.34
3/16″	0.160″	12	8859K22 17.70	6	8859K186 21.94
7/32″	0.191″	10	8859K23 19.38	6	8859K187 23.00
1/4″	0.222″	8	8859K24 20.74	5	8859K188 23.99
9/32″	0.253″	8	8859K25 19.61	5	8859K172 23.08
5/16″	0.285″	6	8859K26 16.21	4	8859K173 21.71
11/32″	0.316″	6	8859K27 16.19	—	—

OD	ID	1-ft. Length Pkg. Qty.	1-ft. Length Per Pkg.	3-ft. Length Pkg. Qty.	3-ft. Length Per Pkg.
0.014″ Wall Thickness (Cont.)					
3/8″	0.347″	6	8859K28 $16.31	3	8859K175 $22.04
13/32″	0.378″	4	8859K29 13.40	—	—
7/16″	0.410″	4	8859K31 13.91	—	—
15/32″	0.441″	4	8859K32 14.06	—	—
1/2″	0.472″	4	8859K33 12.62	—	—
17/32″	0.503″	3	8859K34 12.39	—	—
9/16″	0.535″	3	8859K35 13.17	—	—
19/32″	0.566″	2	8859K36 9.03	—	—
5/8″	0.597″	2	8859K37 9.54	—	—
21/32″	0.628″	2	8859K38 10.06	—	—

Miniature Metric Round Tubes—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02) to ¾ Hard (H03)

Meet ASTM B135. Create telescoping tubes by fitting a tube inside one that is the next larger size. OD tolerance is ±0.002″. Straightness tolerance is not rated. Length tolerance is ±1/32″. Sold in 300-mm (approximately 1-ft.) lengths.

OD	ID	Pkg. Qty.	Per Pkg.
0.45 mm Wall Thickness (±0.001″)			
2 mm	1.1 mm	4	88605K21 $4.09
3 mm	2.1 mm	4	88605K22 4.09
4 mm	3.1 mm	3	88605K23 4.72
0.45 mm Wall Thickness (Cont.)			
5 mm	4.1 mm	3	88605K24 $5.31
6 mm	5.1 mm	2	88605K25 4.91
7 mm	6.1 mm	2	88605K26 4.91
0.45 mm Wall Thickness (Cont.)			
8 mm	7.1 mm	2	88605K27 $5.01
9 mm	8.1 mm	1	88605K28 3.28
10 mm	9.1 mm	1	88605K29 3.38

Miniature Hexagonal Tubes—Unpolished (Mill) Finish

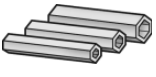

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02)

Meet ASTM B135. Hex size is measured across the flats. Outside hex tolerance is ±0.004″. Straightness tolerance is not rated. Length tolerance is ±1/32″. Sold in 1-ft. lengths.

Outside Hex	Inside Hex	Pkg. Qty.	Per Pkg.
0.014″ Wall Thickness (±0.001″)			
3/32″	0.0658″	8	8859K117 $14.40
1/8″	0.0970″	7	8859K118 14.40
0.014″ Wall Thickness (Cont.)			
5/32″	0.1283″	6	8859K119 $15.90
3/16″	0.1595″	5	8859K121 15.38

Miniature Rods—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ½ Hard (H02)

Meet ASTM B36. Diameter tolerance is ±0.002″. Straightness tolerance is not rated. Length tolerance is ±1/32″.

Dia.	Pkg. Qty.	Per Pkg.
1-ft. Length		
0.020″	25	8859K471 $7.92
1/32″	25	8859K481 9.05
3/64″	20	8859K491 9.50
1/16″	15	8859K511 8.56
1-ft. Length (Cont.)		
0.072″	15	8859K258 $11.75
0.081″	15	8859K257 12.83
3/32″	16	8859K52 15.55
0.114″	10	8859K156 13.47
1-ft. Length (Cont.)		
1/8″	10	8859K53 $14.65
5/32″	8	8859K54 15.63
3/16″	5	8859K155 12.85
3-ft. Length		
1/16″	10	8859K162 $15.70
3/32″	5	8859K166 11.20
1/8″	5	8859K164 15.93
5/32″	5	8859K168 16.19

Miniature Metric Rods—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: ¼ Hard (H01) to ½ Hard (H02)

Meet ASTM B36. Diameter tolerance is ±0.002″. Straightness tolerance is not rated. Length tolerance is ±1/32″. Sold in 300-mm (approximately 1-ft.) lengths.

Dia.	Pkg. Qty.	Per Pkg.
1 mm	5	88605K43 $2.46
2 mm	4	88605K46 2.67
2.5 mm	4	88605K47 $3.18
3 mm	3	88605K48 3.59
3.5 mm	3	88605K49 $4.91
4 mm	3	88605K51 5.28

Machinable and Formable Brass (Alloy 330)

A low lead content makes this yellow brass an ideal choice when you need both machinability and formability. It's also good for soldering and brazing applications and can be used in mildly corrosive environments. Not heat treatable.

Tubes—Unpolished (Mill) Finish

- Hardness: Rockwell 30T 70
- Yield Strength: 60,000 psi
- Temper: Hard drawn

Meets ASTM B135. OD tolerance is ±0.003″, except for the 2½″ size, which is ±0.005″. Length tolerance is ±¼″ for 3-ft. lengths and ±½″ for 6-ft. lengths. Straightness tolerance is not rated. **To Order:** Please specify 3- or 6-ft. length.

OD	ID	Each 3 ft.	Each 6 ft.
0.125″ Wall Thickness (±0.008″)			
5/8″	3/8″	1705T28 $59.84	$99.74
3/4″	1/2″	1705T29 70.95	118.25
7/8″	5/8″	1705T31 85.40	142.34
0.125″ Wall Thickness (Cont.)			
1″	3/4″	1705T32 $92.83	$154.72
1 1/4″	1″	1705T33 119.86	199.76
1 3/8″	1 1/8″	1705T34 125.52	209.20
0.125″ Wall Thickness (Cont.)			
1 1/2″	1 1/4″	1705T35 $138.22	$230.36
2″	1 3/4″	1705T37 164.50	274.17
2 1/2″	2 1/4″	1705T39 198.83	331.39

Warning! *Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.*

For information about brass, see page 3714.

For information about the chemical composition of brass alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Weldable Naval Brass (Alloy 464)

This weldable alloy offers good corrosion resistance for saltwater and steam applications, as well as improved strength thanks to a high zinc content. Alloy 464 is commonly used in marine hardware, valve stems, and propellers. Not heat treatable.

Rectangular Bars—Unpolished (Mill) Finish

- Hardness: Rockwell B65
- Yield Strength: 35,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B21. Width tolerance is ±0.006″ for ½″ to 1¼″ sizes and ±0.014″ for 1½″ to 4″ sizes. Straightness tolerance is ¼″. Length tolerance is ±½″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Width		Each 1 ft.	Each 3 ft.	Each 6 ft.
¼″ Thick *(±0.005″)*				
1″	**8949K41**	$17.84	$41.40	$71.38
1½″	**8949K42**	24.00	55.69	96.01
⅜″ Thick *(±0.005″)*				
4″	**8949K11**	86.82	201.42	347.28
½″ Thick *(±0.005″)*				
½″	**8972K21**	19.10	44.32	76.41
1″	**8949K13**	34.01	78.91	136.05
1½″	**8949K15**	48.52	112.57	194.09
2″	**8949K17**	61.91	143.64	247.66
½″ Thick (Cont.)				
2½″	**8949K19**	$74.69	$173.27	$298.74
3″	**8949K22**	84.89	196.93	339.54
⅝″ Thick *(±0.006″)*				
⅝″	**8972K22**	28.62	66.40	114.49
¾″ Thick *(±0.006″)*				
¾″	**8972K38**	40.15	93.15	160.60
1″	**8949K24**	48.83	113.29	195.33
1½″	**8949K26**	67.64	156.94	270.58
3″	**8949K28**	123.08	285.55	492.32
1″ Thick *(±0.006″)*				
1″	**8972K41**	$65.77	$152.58	$263.07
1¼″	**8949K31**	73.92	171.48	295.66
1½″	**8949K33**	84.64	196.35	338.54
2″	**8949K35**	108.05	250.68	432.20
3″	**8949K37**	155.26	360.20	621.04
1½″ Thick *(±0.007″)*				
1½″	**8972K43**	128.62	298.39	514.47
2″ Thick *(±0.007″)*				
2″	**8972K45**	222.45	516.08	889.79

Sheets—Polished Finish

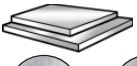

Brushed (#4 Satin)

Mirror-Like (#8)

- Hardness: Rockwell B80
- Yield Strength: 53,000 to 58,000 psi
- Temper: ¼ Hard (H01) to ½ Hard (H02)

Meet ASTM B21. Width and length tolerances are ±1⁄32″. Flatness tolerance is ⅛″. The polished side has a peel-off protective masking.

Brushed (#4 Satin) Finish— Polished to a fine brushed finish on one side with grain lines in one direction.

Mirror-Like (#8) Finish— Polished to a mirror-like finish on one side with no grain lines.

Thick.	Thick. Tolerance	BRUSHED (#4 SATIN) FINISH 12″×12″	Each	12″×24″	Each	24″×24″	Each	MIRROR-LIKE (#8) FINISH 12″×12″	Each	12″×24″	Each	24″×24″	Each
0.032″	±0.005″	**9739K11**	$28.10	**9739K31**	$54.81	**9739K51**	$93.68	**9794K11**	$35.37	**9794K31**	$69.12	**9794K51**	$128.00
0.040″	±0.005″	**9739K12**	34.60	**9739K32**	64.26	**9739K52**	117.33	**9794K12**	41.17	**9794K32**	76.31	**9794K52**	145.49
0.062″	±0.007″	**9739K13**	53.30	**9739K33**	102.62	**9739K53**	194.40	**9794K13**	61.31	**9794K33**	118.25	**9794K53**	218.98
0.080″	±0.007″	**9739K14**	68.05	**9739K34**	131.26	**9739K54**	237.53	**9794K14**	74.33	**9794K34**	142.68	**9794K54**	264.22
0.125″	±0.007″	**9739K15**	98.60	**9739K35**	189.12	**9739K55**	360.91	**9794K15**	105.36	**9794K35**	197.31	**9794K55**	375.90
0.187″	±0.010″	**9739K16**	147.72	**9739K36**	269.84	**9739K56**	501.93	**9794K16**	146.93	**9794K36**	284.15	**9794K56**	524.75
0.250″	±0.010″	**9739K17**	193.55	**9739K37**	396.98	**9739K57**	667.41	**9794K17**	204.18	**9794K37**	393.78	**9794K57**	729.23

Thick Sheets—Unpolished (Mill) Finish

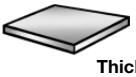

- Hardness: Not rated
- Yield Strength: 20,000 psi
- Temper: As hot rolled (M20)

Meet ASTM B171. Width and length tolerances are ±¼″. Flatness tolerance is not rated.

Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each	Thick.	Thick. Tolerance	6″×6″	Each	12″×12″	Each
¼″	±0.010″	**8949K54**	$90.41	**8949K45**	$273.67	1″	±0.021″	**8949K57**	$223.04	**8949K48**	$701.07
½″	±0.017″	**8949K55**	138.60	**8949K46**	395.95	1¼″	±0.025″	**8949K39**	258.67	**8949K49**	851.08
¾″	±0.017″	**8949K56**	179.66	**8949K47**	561.46	1½″	±0.030″	**8949K43**	314.16	**8949K51**	992.59

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B65
- Yield Strength: 35,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B21. Diameter tolerance is ±0.0025″. Straightness tolerance is ¼″, except for 3⁄16″ and ¼″ dia. rods, which have a tolerance of ½″. Length tolerance is ±½″ for 1-ft. and 3-ft. lengths and ±¼″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.	Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.	Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
3⁄16″	**8970K61**	—	—	$11.57	½″	**8970K56**	—	$34.72	$60.92	1″	**8970K78**	$49.97	$123.84	$217.26
¼″	**8970K62**	—	—	16.30	9⁄16″	**8970K57**	$15.61	38.69	67.88	1¼″	**8970K81**	54.08	134.01	235.11
5⁄16″	**8970K63**	—	—	24.04	⅝″	**8970K58**	17.49	43.34	76.04	1½″	**8970K83**	77.83	192.88	338.38
⅜″	**8970K64**	—	—	33.23	¾″	**8970K59**	24.11	59.76	104.84	2″	**8970K85**	124.41	308.31	540.90
7⁄16″	**8970K55**	—	$24.82	43.55	⅞″	**8970K75**	32.82	81.33	142.68					

Machinable Naval Brass (Alloy 485)

You may know this material as high-leaded naval brass—it has the strength and corrosion resistance of Alloy 464 naval brass, with the addition of lead to offer better machinability. Good for use in screw machine products, marine hardware, and valve stems. Not heat treatable.

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B60-B85, except 5⁄16″ and 7⁄16″ diameters are not rated
- Yield Strength: 25,000 to 27,000 psi
- Temper: ½ Hard (H02)

Meet ASTM B21. Diameter tolerance is ±0.0025″. Straightness tolerance is not rated. Length tolerance is ±½″ for 1- and 3-ft. lengths and ±3″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.	Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.	Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
5⁄16″	**9105K21**	—	$12.68	$22.64	⅞″	**9105K26**	$29.10	$77.61	$138.59	1½″	**9105K29**	$73.79	$196.77	$351.37
7⁄16″	**9105K22**	$8.17	21.80	38.92	1″	**9105K27**	37.17	99.11	176.98	1¾″	**9105K31**	94.85	252.95	451.69
½″	**9105K23**	10.21	27.22	48.61	1⅛″	**9105K42**	43.09	114.90	205.17	2″	**9105K32**	119.47	318.58	568.89
⅝″	**9105K24**	15.55	41.48	74.07	1¼″	**9105K28**	53.33	142.22	253.96	3″	**9105K33**	266.27	710.04	1,267.93
¾″	**9105K25**	21.88	58.35	104.19	1⅜″	**9105K43**	61.74	164.64	294.00					

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about bronze, see page 3714.

For information about the chemical composition of bronze alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Bearing-Grade Bronze (Alloy 932)

Also known as SAE 660 and bearing bronze, this alloy is considered the workhorse of all high-leaded bronzes. Due to the addition of lead, Alloy 932 is relatively soft and is readily machined into bushings and bearings. It has a smooth finish and is nonsparking. Not heat treatable.

Oversize Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 65 Brinell
- Yield Strength: 22,000 psi
- Temper: As cast (M07)

Meet ASTM B505. Thickness and width are oversized +0.078″ to +0.156″ to allow for finishing. Straightness tolerance is ½″. Length tolerance is +⅛″. **To Order:** Please specify 1- or 3-ft. length.

Width		Each 1 ft.	Each 3 ft.
¼″ Thick			
4″	**8234K21**	$83.12	$193.30
8″	**8234K41**	147.19	342.30
⅜″ Thick			
4″	**8234K22**	106.62	247.95
8″	**8234K42**	176.79	411.14
½″ Thick			
4″	**8234K23**	141.83	329.83
8″	**8234K43**	218.66	508.51
⅝″ Thick			
4″	**8234K24**	$149.25	$347.09
8″	**8234K44**	252.35	586.85
¾″ Thick			
4″	**8234K25**	171.46	398.74
8″	**8234K45**	288.77	671.55
1″ Thick			
4″	**8234K26**	204.31	475.14
8″	**8234K46**	354.91	825.38
1¼″ Thick			
4″	**8234K27**	$241.26	$561.07
8″	**8234K47**	417.52	970.98
1½″ Thick			
4″	**8234K28**	275.61	640.96
8″	**8234K48**	480.79	1,118.12
1¾″ Thick			
4″	**8234K29**	304.15	707.32
8″	**8234K49**	537.92	1,250.98

Tight-Tolerance Flat Stock—Precision Ground Finish

- Hardness: 65 Brinell
- Yield Strength: 20,000 psi
- Temper: As cast (M07)

Meet ASTM B505. Width and length tolerances are ±0.031″. Flatness tolerance is 0.010″ per foot. **To Order:** Please specify 1- or 2-ft. length.

Width		Each 1 ft.	Each 2 ft.
¼″ Thick *(±0.002″)*			
1″	**8294K11**	$39.14	$69.90
1½″	**8294K12**	50.70	90.53
2″	**8294K13**	63.00	112.50
2½″	**8294K14**	73.46	131.17
3″	**8294K15**	84.95	151.69
⅜″ Thick *(±0.002″)*			
1″	**8294K21**	49.37	88.16
1½″	**8294K22**	64.77	115.66
2″	**8294K23**	78.65	140.45
2½″	**8294K24**	93.86	167.60
½″ Thick *(±0.002″)*			
1″	**8294K31**	$55.85	$99.74
1½″	**8294K32**	74.38	132.83
2″	**8294K33**	90.64	161.86
2½″	**8294K34**	106.38	189.97
3″	**8294K35**	121.47	216.91
6″	**8294K36**	234.42	418.60
⅝″ Thick *(±0.002″)*			
1″	**8294K41**	67.02	119.68
1½″	**8294K42**	87.35	155.98
3″	**8294K45**	144.13	257.37
¾″ Thick *(±0.002″)*			
1″	**8294K51**	$73.91	$131.98
1½″	**8294K52**	96.81	172.88
2″	**8294K53**	118.89	212.31
2½″	**8294K54**	142.73	254.88
3″	**8294K55**	163.60	292.14
1″ Thick *(±0.002″)*			
1″	**8294K61**	89.99	160.70
1½″	**8294K62**	120.85	215.81
2″	**8294K63**	151.73	270.94
3″	**8294K65**	206.04	367.93

Oversize Tubes—Unpolished (Mill) Finish

- Hardness: 65 Brinell
- Yield Strength: 18,000 to 22,000 psi
- Temper: As cast (M07)

Meet ASTM B505. OD is oversized +0.030″ to +0.134″ and ID is undersized –0.019″ to –0.178″ to allow for finishing. Straightness tolerance is 0.004″ per inch. Length tolerance is +⅛″. Sold in 13″ lengths. **Also Available:** 6½″ lengths. Please ask for 8911K129 and specify OD and ID.

OD	ID		Each
⅛″ Wall Thickness			
1″	¾″	**8911K81**	$23.05
3/16″ Wall Thickness			
1″	⅝″	**8911K22**	30.26
¼″ Wall Thickness			
1″	½″	**8911K14**	34.58
1¼″	¾″	**8911K27**	46.11
1½″	1″	**8911K34**	56.15
1¾″	1¼″	**8911K42**	67.38
2″	1½″	**8911K48**	79.39
2¼″	1¾″	**8911K54**	89.47
2½″	2″	**8911K61**	95.49
3″	2½″	**8911K75**	117.14
5/16″ Wall Thickness			
1¼″	⅝″	**8911K23**	51.87
2″	1⅜″	**8911K113**	86.58
⅜″ Wall Thickness			
1¼″	½″	**8911K16**	57.63
1½″	¾″	**8911K28**	71.60
1¾″	1″	**8911K35**	83.43
⅜″ Wall Thickness (Cont.)			
2″	1¼″	**8911K43**	$98.04
2¼″	1½″	**8911K49**	109.50
2½″	1¾″	**8911K55**	130.36
3¼″	2½″	**8911K76**	167.98
7/16″ Wall Thickness			
1½″	⅝″	**8911K24**	77.21
½″ Wall Thickness			
1½″	½″	**8911K18**	76.91
1¾″	¾″	**8911K29**	92.95
2″	1″	**8911K36**	111.99
2¼″	1¼″	**8911K44**	125.32
2½″	1½″	**8911K51**	147.22
2¾″	1¾″	**8911K56**	158.43
3″	2″	**8911K63**	173.38
3¼″	2¼″	**8911K71**	185.92
3½″	2½″	**8911K77**	203.36
4″	3″	**8911K86**	238.32
4½″	3½″	**8911K115**	263.42
5″	4″	**8911K85**	286.15
½″ Wall Thickness (Cont.)			
6″	5″	**8911K118**	$368.04
6½″	5½″	**8911K122**	393.20
⅝″ Wall Thickness			
1¾″	½″	**8911K19**	101.86
2″	¾″	**8911K31**	120.45
2¼″	1″	**8911K111**	142.83
2½″	1¼″	**8911K45**	158.43
3″	1¾″	**8911K57**	192.18
3¼″	2″	**8911K64**	210.24
3¾″	2½″	**8911K78**	243.69
¾″ Wall Thickness			
2″	½″	**8911K21**	132.62
2¼″	¾″	**8911K32**	154.73
2½″	1″	**8911K38**	174.52
3″	1½″	**8911K53**	214.62
3½″	2″	**8911K65**	252.69
⅞″ Wall Thickness			
2½″	¾″	**8911K33**	179.89
3″	1¼″	**8911K47**	231.88
⅞″ Wall Thickness (Cont.)			
3¼″	1½″	**8911K112**	$253.75
3½″	1¾″	**8911K59**	272.72
1″ Wall Thickness			
3″	1″	**8911K41**	240.06
4″	2″	**8911K67**	357.90
5″	3″	**8911K91**	451.69
5½″	3½″	**8911K116**	526.97
6″	4″	**8911K87**	576.32
7″	5″	**8911K119**	679.66
8″	6″	**8911K123**	776.71
10″	8″	**8911K125**	998.27
1¼″ Wall Thickness			
4½″	2″	**8911K82**	460.90
1½″ Wall Thickness			
5″	2″	**8911K83**	567.67
6″	3″	**8911K84**	721.96
1¾″ Wall Thickness			
6″	2½″	**8911K114**	777.64

Oversize Rods—Unpolished (Mill) Finish

- Hardness: 65 Brinell
- Yield Strength: 20,000 psi
- Temper: As cast (M07)

Meet ASTM B505. Diameter is oversized +0.031″ to +0.094″ to allow for finishing. Straightness tolerance is not rated. Length tolerance is ±⅛″. Sold in 13″ lengths. **Also Available:** 6½″ lengths, offered in ⅞″ to 8″ diameters. Please ask for 8914K19 and specify diameter.

Dia.		Each
½″	**8914K14**	$14.54
⅝″	**8914K18**	20.94
¾″	**8914K22**	25.73
⅞″	**8914K23**	32.11
1″	**8914K26**	41.56
1⅛″	**8914K31**	49.17
1¼″	**8914K32**	57.64
1⅜″	**8914K34**	$70.66
1½″	**8914K36**	86.27
1⅝″	**8914K11**	96.72
1¾″	**8914K37**	106.22
1⅞″	**8914K12**	123.73
2″	**8914K38**	134.68
2¼″	**8914K41**	151.42
2½″	**8914K43**	$203.73
2¾″	**8914K45**	241.02
3″	**8914K47**	272.80
3¼″	**8914K55**	299.99
3½″	**8914K58**	373.89
3¾″	**8914K59**	422.77
4″	**8914K63**	473.86
4¼″	**8914K64**	$530.34
4½″	**8914K66**	501.41
5″	**8914K65**	684.92
5½″	**8914K15**	820.58
6″	**8914K67**	954.16
7″	**8914K69**	1,296.73
8″	**8914K71**	1,640.98

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about bronze, see page 3714.

For information about the chemical composition of bronze alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Machinable Bearing-Grade Bronze (Alloy 936)

Also known as modified SAE 64, this alloy is often used as an alternative to Alloy 932 because it is easier to machine and has better corrosion resistance. Use it for crankshaft bearings and thrust washers, and in pump applications. Not heat treatable.

Oversize Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 60-65 Brinell
- Yield Strength: 21,000 psi
- Temper: As cast

Meet ASTM B505. Thickness, width, and length are oversized +1/8″ to allow for finishing. Flatness tolerance is 1/8″. **To Order:** Please specify 1- or 3-ft. length.

Wd.		Each 1 ft.	Each 3 ft.
1/4″ Thick			
4″	**9110K31**	$138.77	$322.73
8″	**9110K51**	224.32	521.67
3/8″ Thick			
4″	**9110K33**	170.16	395.71
8″	**9110K53**	283.49	659.27
1/2″ Thick			
4″	**9110K35**	$196.63	$457.28
8″	**9110K55**	340.67	792.26
5/8″ Thick			
4″	**9110K37**	225.64	524.75
8″	**9110K57**	392.41	912.58
3/4″ Thick			
4″	**9110K39**	$256.30	$596.05
8″	**9110K59**	440.96	1,025.50
1″ Thick			
4″	**9110K41**	315.29	733.23
8″	**9110K61**	545.37	1,268.31
1 1/4″ Thick			
4″	**9110K43**	$371.60	$864.19
8″	**9110K63**	663.75	1,543.60
2″ Thick			
4″	**9110K49**	553.79	1,287.88
8″	**9110K69**	990.55	2,303.61

Oversize Tubes—Unpolished (Mill) Finish

- Hardness: 65 Brinell
- Yield Strength: 21,000 psi
- Temper: As cast (M07)

Meet ASTM B505. OD is oversized +1/16″ to +1/8″ and ID is undersized −1/32″ to −1/8″ to allow for finishing. Straightness tolerance is 3/32″. Length tolerance is +1/8″. Sold in 13″ lengths. **Also Available:** 6″ lengths. To order, please ask for 8918K19 and specify OD and ID.

OD	ID		Each
1/4″ Wall Thickness			
1″	1/2″	**8918K12**	$47.29
1 1/8″	5/8″	**8918K26**	206.53
1 1/4″	3/4″	**8918K37**	61.44
1 1/2″	1″	**8918K52**	74.88
1 3/4″	1 1/4″	**8918K58**	87.66
2″	1 1/2″	**8918K66**	99.83
2 1/4″	1 3/4″	**8918K76**	114.10
2 1/2″	2″	**8918K82**	125.37
3″	2 1/2″	**8918K89**	149.75
5″	4 1/2″	**8918K34**	267.64
5/16″ Wall Thickness			
1 1/4″	5/8″	**8918K28**	161.50
3/8″ Wall Thickness			
1 1/4″	1/2″	**8918K14**	$49.92
1 1/2″	3/4″	**8918K42**	89.85
1 3/4″	1″	**8918K54**	116.88
2″	1 1/4″	**8918K62**	128.36
2 1/4″	1 1/2″	**8918K68**	156.88
2 1/2″	1 3/4″	**8918K77**	167.16
1/2″ Wall Thickness			
1 1/2″	1/2″	**8918K16**	104.83
2″	1″	**8918K56**	156.88
2 1/2″	1 1/2″	**8918K72**	208.95
2 3/4″	1 3/4″	**8918K78**	222.88
3″	2″	**8918K84**	245.05
1/2″ Wall Thickness (Cont.)			
3 1/4″	2 1/4″	**8918K49**	$266.22
3 1/2″	2 1/2″	**8918K91**	258.39
4″	3″	**8918K94**	282.55
5″	4″	**8918K33**	363.68
5 1/2″	4 1/2″	**8918K38**	399.33
6″	5″	**8918K39**	454.41
5/8″ Wall Thickness			
2″	3/4″	**8918K46**	208.12
2 1/2″	1 1/4″	**8918K63**	236.81
3″	1 3/4″	**8918K81**	246.65
3 1/4″	2″	**8918K85**	276.46
3 3/4″	2 1/2″	**8918K92**	316.45
3/4″ Wall Thickness			
2″	1/2″	**8918K23**	$185.40
2 1/2″	1″	**8918K57**	264.67
3″	1 1/2″	**8918K74**	276.46
3 1/2″	2″	**8918K86**	321.69
4″	2 1/2″	**8918K93**	378.32
4 1/2″	3″	**8918K95**	423.43
1″ Wall Thickness			
3″	1″	**8918K59**	310.59
4″	2″	**8918K88**	454.41
5″	3″	**8918K96**	569.54
6″	4″	**8918K98**	695.61

Oversize Rods—Unpolished (Mill) Finish

- Hardness: 65 Brinell
- Yield Strength: 21,000 psi
- Temper: As cast (M07)

Meet ASTM B505. Diameter is oversized +1/32″ to +1/8″ to allow for finishing. Straightness tolerance is 3/8″. Length tolerance is +1/8″. Sold in 13″ lengths. **Also Available:** 6″ lengths. To order, please ask for 8917K98 and specify diameter.

Dia.		Each
1/2″	**8917K54**	$14.98
5/8″	**8917K58**	18.73
3/4″	**8917K62**	26.50
1″	**8917K66**	46.08
1 1/8″	**8917K68**	$109.77
1 1/4″	**8917K72**	69.12
1 1/2″	**8917K76**	90.42
1 3/4″	**8917K77**	122.02
2″	**8917K78**	$155.30
2 1/4″	**8917K81**	196.04
2 1/2″	**8917K83**	239.60
2 3/4″	**8917K85**	325.60
3″	**8917K87**	$331.59
3 1/2″	**8917K89**	449.25
4″	**8917K94**	588.49
5″	**8917K95**	919.16

Weldable Bearing-Grade Bronze (Alloy 903)

This tin-zinc bronze is also known as Navy G metal. It has a low lead content and can be welded, unlike most bearing-grade bronze alloys. It offers good corrosion resistance, especially in saltwater applications, and is typically used for gears, fittings, and pump parts. Not heat treatable.

Rods with Material Certification—Unpolished (Mill) Finish

- Hardness: 70 Brinell
- Yield Strength: 19,500 to 22,000 psi
- Temper: As cast (M07)

Meet ASTM B505 and Fed. Spec. QQ-C-390B. Each comes with a traceable lot number and test report. Diameter tolerance is ±0.005″ for 1″ to 3 1/2″ sizes and ±0.008″ for 4″ and 4 1/2″ sizes. Straightness tolerance is 1/4″. Length tolerance is +1/8″. Sold in 12″ lengths.

Dia.		Each
1″	**9104K11**	$50.94
1 1/2″	**9104K13**	111.60
2″	**9104K15**	$184.77
2 1/2″	**9104K17**	275.84
3″	**9104K19**	$366.92
3 1/2″	**9104K21**	480.75
4″	**9104K23**	$606.06
4 1/2″	**9104K25**	728.12

High-Strength Bearing-Grade Bronze (Alloy 544)

Also known as leaded phosphor bronze, this is the best bearing-grade bronze we offer. It's one of the strongest bronze alloys and is also highly machinable. Because of its good formability and resistance to corrosion and fatigue, it's widely used for shafts, gears, washers, and valve parts. Not heat treatable.

Rods—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 60,000 to 63,000 psi
- Temper: Hard (H04)

Meet ASTM B139. Diameter tolerance is ±0.002″ for 3/16″ to 1/2″ sizes and ±0.004″ for 5/8″ to 2″ sizes. Straightness tolerance is not rated. Length tolerance is ±1/2″. **To Order:** Please specify 1-, 3-, or 6-ft. length where prices are shown.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
3/16″	**8971K21**	——	$11.61	$20.37
1/4″	**8971K31**	$6.86	15.63	27.42
5/16″	**8971K33**	11.08	25.26	44.32
3/8″	**8971K35**	15.75	35.90	62.99
7/16″	**8971K22**	18.66	42.56	74.66
1/2″	**8971K71**	22.66	51.66	90.64
5/8″	**8971K23**	$24.50	$55.86	$98.00
11/16″	**8971K24**	30.58	69.73	122.33
3/4″	**8971K73**	44.06	100.46	176.25
7/8″	**8971K25**	47.60	108.54	190.42
1″	**8971K75**	68.74	156.73	274.97
1 1/8″	**8971K26**	68.04	155.13	272.15
1 1/4″	**8971K77**	$101.35	$231.08	$405.41
1 3/8″	**8971K27**	99.79	227.52	399.15
1 1/2″	**8971K79**	134.42	306.47	537.67
1 5/8″	**8971K28**	135.34	308.57	541.35
1 3/4″	**8971K29**	156.48	356.77	625.91
2″	**8971K41**	199.58	455.04	798.31

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about bronze, see page 3714.

For information about the chemical composition of bronze alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Oil-Filled Bearing-Grade Bronze (SAE 841)

Also known as oil-impregnated bronze, this alloy is infused with SAE 30 oil for continuous self-lubrication, perfect for areas where maintenance is difficult. SAE 841 is corrosion resistant, so it's great in applications such as water pumps, electrical generators, and motors. Not heat treatable.

Sheets—Unpolished (Mill) Finish

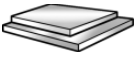

- Hardness: Not rated
- Yield Strength: 11,000 psi
- Temper: As pressed

Meet ASTM B438. Thickness tolerance is ±0.005″. Width and length are oversized to allow for finishing. Flatness tolerance is not rated.

Thick.	5″×6″	Each	6″×12″	Each
1/8″	8933K11	$42.88	—	—
3/16″	8933K12	49.07	—	—
1/4″	8933K13	52.22	8933K19	$146.18
3/8″	8933K14	69.83	8933K21	175.49
1/2″	8933K15	$75.29	8933K22	$198.52
5/8″	8933K16	93.54	—	—
3/4″	8933K17	113.54	—	—
1″	8933K18	140.24	8933K23	318.48

Oversize Tubes—Unpolished (Mill) Finish

- Hardness: Rockwell H50
- Yield Strength: 11,000 psi
- Temper: As pressed

Meet ASTM B438. OD is oversized and ID is undersized to allow for finishing. Straightness tolerance is not rated. Length is oversized to 6½″ to allow for finishing.

OD	ID	Each
3/16″ Wall Thickness		
1″	5/8″	8931K21 $25.27
1/4″ Wall Thickness		
1″	1/2″	8931K14 26.67
1 1/8″	5/8″	8931K89 33.20
1 1/4″	3/4″	8931K27 34.98
1 3/8″	7/8″	8931K92 41.51
1 1/2″	1″	8931K33 45.38
1 3/4″	1 1/4″	8931K42 46.22
2″	1 1/2″	8931K49 53.16
2 1/4″	1 3/4″	8931K61 61.96
5/16″ Wall Thickness		
1 1/8″	1/2″	8931K88 35.72
1 1/4″	5/8″	8931K22 37.02
1 1/2″	7/8″	8931K93 47.37
1 5/8″	1″	8931K94 50.95
3/8″ Wall Thickness		
1 1/4″	1/2″	8931K15 $38.00
1 3/8″	5/8″	8931K91 49.37
1 1/2″	3/4″	8931K28 48.05
1 3/4″	1″	8931K35 57.00
2″	1 1/4″	8931K43 62.60
2 1/4″	1 1/2″	8931K52 75.24
2 1/2″	1 3/4″	8931K62 79.74
2 3/4″	2″	8931K96 87.35
3″	2 1/4″	8931K97 101.55
3 3/4″	3″	8931K99 122.41
7/16″ Wall Thickness		
1 1/2″	5/8″	8931K23 50.84
1/2″ Wall Thickness		
1 1/2″	1/2″	8931K16 54.47
1 3/4″	3/4″	8931K29 65.13
1/2″ Wall Thickness (Cont.)		
2″	1″	8931K36 $72.79
2 1/4″	1 1/4″	8931K44 87.36
2 1/2″	1 1/2″	8931K53 92.25
2 3/4″	1 3/4″	8931K63 101.94
3″	2″	8931K67 117.02
3 1/4″	2 1/4″	8931K98 129.86
3 1/2″	2 1/2″	8931K71 138.30
4″	3″	8931K83 153.31
5/8″ Wall Thickness		
2″	3/4″	8931K31 80.33
2 1/2″	1 1/4″	8931K45 103.25
3″	1 3/4″	8931K64 125.85
3 3/4″	2 1/2″	8931K72 173.40
11/16″ Wall Thickness		
2″	5/8″	8931K24 82.30
3/4″ Wall Thickness		
2″	1/2″	8931K17 $89.90
2 1/2″	1″	8931K37 119.50
3″	1 1/2″	8931K55 138.88
4″	2 1/2″	8931K74 202.98
7/8″ Wall Thickness		
3″	1 1/4″	8931K47 144.91
3 1/2″	1 3/4″	8931K95 198.31
1″ Wall Thickness		
3″	1″	8931K39 155.05
4″	2″	8931K69 232.96
4 1/2″	2 1/2″	8931K75 282.93
5″	3″	8931K85 309.47
7″	5″	8931K25 456.98
1 1/2″ Wall Thickness		
6″	3″	8931K87 487.61

Oversize Rods—Unpolished (Mill) Finish

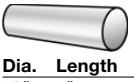

- Hardness: Not rated
- Yield Strength: 11,000 psi
- Temper: As pressed

Meet ASTM B438. Diameter and length are oversized to allow for finishing. Straightness tolerance is not rated.

Dia.	Length	Each
1/4″	2″	8932K31 $2.34
3/8″	3″	8932K32 5.36
1/2″	6 1/2″	8932K13 10.16
5/8″	6 1/2″	8932K14 17.11
3/4″	6 1/2″	8932K15 17.65
7/8″	6 1/2″	8932K16 $25.05
1″	6 1/2″	8932K17 30.98
1 1/8″	6 1/2″	8932K18 33.74
1 1/4″	6 1/2″	8932K19 40.39
1 3/8″	6 1/2″	8932K21 47.36
1 1/2″	6 1/2″	8932K22 $52.26
1 5/8″	6 1/2″	8932K23 61.61
1 3/4″	6 1/2″	8932K24 67.10
2″	6 1/2″	8932K25 82.31
2 1/4″	6 1/2″	8932K28 102.68
2 1/2″	6 1/2″	8932K26 $121.39
3″	6 1/2″	8932K27 171.90
4″	6 1/2″	8932K29 297.85
5″	6 1/2″	8932K35 453.57
6″	6 1/2″	8932K36 636.71

Corrosion-Resistant Bearing-Grade Bronze (Alloy 954)

Our most popular aluminum-bronze alloy, Alloy 954 offers an ideal combination of high strength and corrosion resistance. It is heat treatable and performs well in applications such as pressure-bearing surfaces where strength, hardness, and high temperature resistance are a must.

Oversize Rectangular Bars—Unpolished (Mill) Finish

- Hardness: 170 Brinell
- Yield Strength: 32,000 psi
- Temper: As cast (M07)

Meet ASTM B505. Thickness is oversized +0.067″ to +0.122″ and width is oversized +0.043″ to +0.098″ to allow for finishing. Straightness tolerance is not rated. Length tolerance is +1/4″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Width	Each 1 ft.	Each 3 ft.	Each 6 ft.
1/4″ Thick			
1″	8959K11 $19.82	$45.97	$79.26
1 1/2″	8959K12 25.73	59.68	102.90
2″	8959K13 33.10	76.79	132.39
2 1/2″	8959K14 39.49	91.63	157.98
3″	8959K15 47.63	110.50	190.51
3/8″ Thick			
1″	8959K16 26.42	61.30	105.69
1 1/2″	8959K17 35.52	82.42	142.10
2″	8959K18 44.92	104.21	179.67
2 1/2″	8959K19 54.60	126.67	218.39
3″	8959K21 66.21	153.61	264.85
1/2″ Thick			
1″	8959K22 33.03	76.62	132.11
1 1/2″	8959K23 46.16	107.10	184.66
1/2″ Thick (Cont.)			
2″	8959K24 $58.90	$136.64	$235.59
2 1/2″	8959K25 72.02	167.09	288.08
3″	8959K26 82.22	190.75	328.88
5/8″ Thick			
1″	8959K27 40.95	95.01	163.81
1 1/2″	8959K28 56.15	130.26	224.58
2″	8959K176 72.39	167.95	289.57
3/4″ Thick			
1″	8959K177 47.56	110.34	190.24
1 1/2″	8959K178 66.13	153.42	264.51
2″	8959K179 83.34	193.35	333.37
1″ Thick			
1″	8959K181 60.77	140.99	243.08
1 1/2″	8959K182 84.84	196.83	339.37
1″ Thick (Cont.)			
2″	8959K183 $107.08	$248.42	$428.31
3″	8959K184 149.59	347.06	598.38
4″	8959K185 189.09	438.68	756.34
5″	8959K186 224.93	521.84	899.72
1 1/2″ Thick			
2″	8959K187 145.98	338.67	583.92
2 1/2″	8959K188 174.47	404.78	697.89
2″ Thick			
3″	8959K189 269.50	625.24	1,078.00
4″	8959K191 334.87	776.89	1,339.46
2 1/2″ Thick			
4″	8959K192 416.32	965.86	1,665.27
3″ Thick			
3″	8959K193 374.44	868.69	1,497.74

Tight-Tolerance Flat Stock—Precision Ground Finish

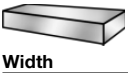

- Hardness: 170 Brinell
- Yield Strength: 32,000 psi
- Temper: As cast (M07)

Meet ASTM B505. Width and length tolerances are ±0.031″. Flatness tolerance is 0.01″ per foot. Sold in 12″ lengths.

Width	Each
1/4″ Thick *(±0.002″)*	
1″	4492T11 $33.09
2″	4492T12 59.06
3″	4492T13 64.67
3/8″ Thick *(±0.002″)*	
1″	4492T21 $36.73
2″	4492T22 57.19
3″	4492T23 75.33
1/2″ Thick *(±0.002″)*	
1″	4492T31 $40.00
2″	4492T32 65.08
3″	4492T33 94.10
3/4″ Thick *(±0.002″)*	
1″	4492T51 $46.72
2″	4492T52 76.19
3″	4492T53 104.31

(Material continued on following page)

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

For information about bronze, see page 3714.

For information about the chemical composition of bronze alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Corrosion-Resistant Bearing-Grade Bronze (Alloy 954) *(Material continued from previous pg.)*

Oversize Tubes—Unpolished (Mill) Finish

- Hardness: 180 Brinell
- Yield Strength: 32,000 psi
- Temper: As cast (M07)

Meet ASTM B505. OD is oversized +0.060″ to +0.100″ and ID is undersized −0.060″ to −0.100″ to allow for finishing. Straightness tolerance is 1/4″. Length tolerance is ±1/8″. Sold in 13″ lengths. **Also Available:** 6 1/2″ lengths in the same diameters listed below. Please ask for 8916K98 and specify OD and ID.

OD	ID		Each
1/4″ Wall Thickness			
1 1/4″	3/4″	**8916K27**	$40.99
1 1/2″	1″	**8916K34**	50.86
1 3/4″	1 1/4″	**8916K42**	59.32
2″	1 1/2″	**8916K48**	68.92
2 1/4″	1 3/4″	**8916K54**	77.36
2 1/2″	2″	**8916K61**	91.34
3″	2 1/2″	**8916K75**	113.05
3 1/2″	3″	**8916K21**	137.62
3/8″ Wall Thickness			
1 3/4″	1″	**8916K35**	$77.22
2″	1 1/4″	**8916K43**	88.96
2 1/4″	1 1/2″	**8916K49**	99.74
2 1/2″	1 3/4″	**8916K55**	118.66
1/2″ Wall Thickness			
2″	1″	**8916K36**	103.92
2 1/4″	1 1/4″	**8916K44**	120.15
2 1/2″	1 1/2″	**8916K51**	138.69
2 3/4″	1 3/4″	**8916K56**	157.84
1/2″ Wall Thickness (Cont.)			
3″	2″	**8916K63**	$165.62
3 1/2″	2 1/2″	**8916K77**	207.04
4″	3″	**8916K86**	228.73
5″	4″	**8916K22**	265.86
5 1/2″	4 1/2″	**8916K25**	298.22
6″	5″	**8916K24**	313.82
5/8″ Wall Thickness			
2 1/2″	1 1/4″	**8916K45**	164.44
3″	1 3/4″	**8916K57**	199.74
3 3/4″	2 1/2″	**8916K78**	236.83
3/4″ Wall Thickness			
2 1/2″	1″	**8916K38**	$177.40
3 1/2″	2″	**8916K65**	254.19
5 1/2″	4″	**8916K23**	380.73
1″ Wall Thickness			
3″	1″	**8916K41**	236.46
4″	2″	**8916K67**	319.59
4 1/2″	2 1/2″	**8916K82**	359.06
5″	3″	**8916K91**	402.65
1 1/2″ Wall Thickness			
6″	3″	**8916K93**	651.81

Oversize Rods—Unpolished (Mill) Finish

- Hardness: 170-180 Brinell
- Yield Strength: 28,500 to 32,000
- Temper: As cast (M07)

Meet ASTM B505. Diameter is oversized +0.0525″ to +0.213″ to allow for finishing. Straightness tolerance is not rated. Length tolerance is ±1/8″ for 13″ and 36″ lengths and +1/4″ for 72″ lengths. **To Order:** Please specify 13″, 36″, or 72″ length where prices are shown. **Also Available:** 6″ lengths in 3/4″ to 6″ diameters. Please ask for 8958K98 and specify diameter.

Dia.		Each 13″	Each 36″	Each 72″
3/8″	**8958K31**	—	—	$42.10
1/2″	**8958K32**	—	—	73.33
5/8″	**8958K61**	—	$49.93	86.09
3/4″	**8958K62**	$33.03	68.42	117.96
1″	**8958K63**	50.73	105.08	181.18
1 1/4″	**8958K64**	71.28	147.65	254.57
1 1/2″	**8958K65**	$97.16	$201.27	$347.01
1 3/4″	**8958K66**	125.29	259.53	447.46
2″	**8958K67**	160.83	333.15	574.39
2 1/4″	**8958K11**	192.47	—	—
2 1/2″	**8958K69**	244.63	506.74	873.69
2 3/4″	**8958K12**	267.40	—	—
3″	**8958K68**	$331.49	$686.65	$1,183.88
3 1/2″	**8958K13**	372.53	—	—
4″	**8958K14**	406.68	—	—
4 1/2″	**8958K15**	482.17	—	—
5″	**8958K16**	557.58	—	—
6″	**8958K17**	761.54	—	—

Corrosion-Resistant Bronze (Alloy 220)

This simple copper-zinc alloy, historically called commercial bronze, is often used for marine hardware, weatherstripping, and ornamental trim because of its finish and good corrosion resistance. It has a good combination of malleability and strength. Not heat treatable.

Sheets—Unpolished (Mill) Finish

- Hardness: Rockwell B58
- Yield Strength: 45,000 psi
- Temper: 1/2 Hard (H02)

Meet ASTM B36. Width and length tolerances are ±3/16″. Flatness tolerance is not rated.

Thick.	Thick. Tol.	12″×12″	Each	12″×24″	Each	12″×48″	Each	12″×96″	Each	24″×24″	Each	24″×48″	Each
0.032″	±0.002″	**88825K31**	$32.00	**88825K41**	$56.86	**88825K71**	$105.81	**88825K81**	$188.10	**88825K51**	$105.81	**88825K61**	$188.10
0.040″	±0.002″	**88825K32**	40.83	**88825K42**	70.02	**88825K72**	135.30	**88825K82**	224.86	**88825K52**	135.30	**88825K62**	224.86
0.050″	±0.002″	**88825K33**	48.45	**88825K43**	84.27	**88825K73**	162.18	**88825K83**	261.63	**88825K53**	162.18	**88825K63**	261.63
0.064″	±0.005″	**88825K34**	60.39	**88825K44**	105.19	**88825K74**	187.03	**88825K84**	336.62	**88825K54**	187.03	**88825K64**	336.62
0.080″	±0.005″	**88825K35**	71.00	**88825K45**	124.55	**88825K75**	209.70	**88825K85**	352.73	**88825K55**	209.70	**88825K65**	352.73
0.090″	±0.005″	**88825K36**	74.59	**88825K46**	120.06	**88825K76**	225.11	**88825K86**	375.18	**88825K56**	225.11	**88825K66**	375.18
0.125″	±0.008″	**88825K37**	93.74	**88825K47**	149.98	**88825K77**	284.07	**88825K87**	468.69	**88825K57**	284.07	**88825K67**	468.69
0.187″	±0.008″	**88825K38**	139.33	**88825K48**	236.86	**88825K78**	381.69	**88825K88**	696.65	**88825K58**	381.69	**88825K68**	696.65

Machinable and Corrosion-Resistant Bronze (Alloy 316)

Also known as leaded commercial bronze, Alloy 316 combines the natural corrosion resistance of Alloy 220 with the machinability of lead. Commonly used for cable clamps, pole line hardware, and screw machine products. Not heat treatable.

Rods—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 28,000 psi
- Temper: 1/2 Hard (H02)

Meet ASTM B140. Diameter tolerance is ±0.0025″. Straightness tolerance is 1/4″. Length tolerance is ±1/2″ for 1- and 3-ft. lengths and ±1/4″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
5/16″	**8947K23**	$9.46	$24.94	$43.00
3/8″	**8947K25**	12.50	32.96	56.83
1/2″	**8947K51**	21.37	56.34	97.14
5/8″	**8947K53**	32.12	84.67	145.98
3/4″	**8947K55**	$43.10	$113.63	$195.91
7/8″	**8947K64**	54.15	142.77	246.15
1″	**8947K57**	69.20	182.44	314.55
1 1/4″	**8947K67**	96.17	253.54	437.14
1 1/2″	**8947K59**	$132.90	$350.38	$604.11
1 3/4″	**8947K71**	172.96	455.98	786.18
2″	**8947K62**	213.92	563.97	972.36

High-Strength Bronze (Alloy 630)

Comparable to Ampco 45, this bronze alloy contains aluminum and nickel to increase its strength without diminishing its excellent ductility, toughness, and corrosion resistance. An excellent choice for applications involving heavy loads, friction, abrasive wear, and corrosion, it's often used for bearings, hydraulic valve parts, and aircraft landing gear components. Not heat treatable.

Rods—Unpolished (Mill) Finish

- Hardness: 201-248 Brinell
- Yield Strength: 60,000 to 68,000 psi
- Temper: HR50

Meet ASTM B150. Diameter tolerance is ±0.002″ for 3/8″ and 1/2″ sizes, ±0.003″ for 5/8″ to 1″ sizes, and ±0.004″ for 1 1/4″ to 1 1/2″ sizes. Straightness tolerance is not rated. Length tolerance is ±1/4″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
3/8″	**8203K11**	$13.69	$31.75	$54.75
1/2″	**8203K21**	22.55	52.30	90.18
5/8″	**8203K31**	32.88	76.28	131.52
3/4″	**8203K41**	$45.33	$105.16	$181.31
7/8″	**8203K51**	57.70	133.86	230.80
1″	**8203K61**	67.99	157.73	271.95
1 1/4″	**8203K81**	$102.62	$238.08	$410.49
1 3/8″	**8203K91**	119.41	277.03	477.63
1 1/2″	**8203K14**	139.62	323.91	558.47

***Warning!* Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.**

For information about bronze, see page 3714.

For information about the chemical composition of bronze alloys, as well as physical and mechanical properties, go to mcmaster.com and search for **8964KAC**.

Machinable High-Strength Bronze (Alloy 642)

The addition of aluminum gives Alloy 642 strength while maintaining its machinability. Also known as aluminum silicon bronze, it's typically used for valve bodies, gears, and bolts. Not heat treatable.

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B80-B100
- Yield Strength: 42,000 to 45,000 psi
- Temper: HR50

Meet ASTM B150. Diameter tolerance is ±0.002″ for 5/16″ to 1/2″ sizes and ±0.004″ for 5/8″ to 2″ sizes. Straightness tolerance is not rated. Length tolerance is ±1/4″. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
5/16″	89195K11	$8.32	$17.91	$31.99
3/8″	89195K13	10.95	23.59	42.13
1/2″	89195K15	18.89	40.69	72.66
5/8″	89195K48	$27.41	$59.04	$105.42
3/4″	89195K41	37.79	81.39	145.34
7/8″	89195K47	50.33	108.39	193.56
1″	89195K43	$62.99	$135.67	$242.26
1 1/2″	89195K45	116.92	251.83	449.69
2″	89195K51	188.96	406.99	726.77

Weldable High-Strength Bronze (Alloy 655)

Commonly called high-silicon bronze, Alloy 655 contains more silicon than other bronze alloys and is suitable for all types of welding. It has good formability but is harder to machine than Alloy 642. Often used for wear plates, bearings, and hydraulic valve parts. Not heat treatable.

Rods—Unpolished (Mill) Finish

- Hardness: Rockwell B75-B100, unless noted
- Yield Strength: 38,000 to 55,000 psi
- Temper: Hard (H04)

Meet ASTM B98. Diameter tolerance is ±0.002″ for 1/4″ to 1/2″ sizes and ±0.004″ for 5/8″ to 1 1/2″ sizes. Straightness tolerance is not rated. Length tolerance is ±1/2″. **To Order:** Please specify 3- or 6-ft. length.

Dia.		Each 3 ft.	Each 6 ft.
1/4″	89575K11★	$12.50	$22.73
5/16″	89575K13★	20.61	37.47
3/8″	89575K15★	24.04	43.70
1/2″	89575K72	$41.93	$76.23
5/8″	89575K22	58.29	105.98
3/4″	89575K23	87.65	159.36
1″	89575K25	$149.43	$271.69
1 1/4″	89575K26	223.12	405.68
1 1/2″	89575K27	346.33	629.69

★ Hardness is not rated.

Corrosion-Resistant High-Strength Bronze (Alloy 863)

Also known as manganese bronze, this alloy offers corrosion resistance in addition to superior strength and hardness. Ideal for heavy duty construction applications and harsh environments. Alloy 863 is not as machinable as many of the other bronze alloys and is not heat treatable.

Oversize Rods and Tubes—Unpolished (Mill) Finish

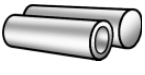

- Hardness: Rockwell B98
- Yield Strength: 62,000 psi
- Temper: As cast (M07)

Meet ASTM B505. Straightness tolerance is 1/4″. Length tolerance is +1/8″ for 13″ and 3-ft. lengths and +1/4″ for 6-ft. lengths.
Rods—Diameter is oversized +0.0525″ to +0.0725″ to allow for finishing. **To Order:** Please specify 3- or 6-ft. length.
Tubes—OD is oversized +0.0525″ to +0.109″ and ID is undersized –0.0505″ to –0.165″ to allow for finishing. Sold in 13″ lengths.

RODS

Dia.		Each 3 ft.	Each 6 ft.
1″	89225K52	$122.74	$223.16
1 1/2″	89225K53	246.64	448.44
2″	89225K54	376.10	683.82

TUBES

OD	ID	Wall Thickness		Each
2″	1″	1/2″	89355K11	$128.40
2 1/2″	1″	3/4″	89355K12	202.63
2 1/2″	2″	1/4″	89355K14	114.34
3″	2″	1/2″	89355K15	$201.52
4″	2″	1″	89355K17	407.59

Ultra-Strength Bronze (Alloy 510)

With high strength and excellent formability, Alloy 510 is great for parts subject to repeated stress such as springs, bellows, and contacts. It's commonly referred to as phosphor bronze. Not heat treatable.

Spring-Tempered Strips—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: 80,000 psi
- Temper: Spring (H08)

Meet ASTM B103. Width tolerance is ±0.010″ for 6″ wide strips and ±0.016″ for 12″ wide strips. Flatness tolerance is not rated. Length tolerance is ±1/4″. **To Order:** Please specify 1-, 4-, or 8-ft. length.

Thick.	Thick. Tolerance		Each 1 ft.	Each 4 ft.	Each 8 ft.
6″ Wide					
0.005″	±0.001″	9052K42	$16.55	$31.15	$33.84
0.008″	±0.001″	9052K43	17.31	36.39	46.79
0.010″	±0.002″	9052K44	17.24	37.77	51.36
0.013″	±0.002″	9052K46	17.37	39.70	56.25
0.016″	±0.003″	9052K48	19.21	48.39	75.23
0.020″	±0.004″	9052K45	19.98	52.95	86.18
0.025″	±0.004″	9052K23	23.81	52.57	91.54
0.032″	±0.004″	9052K25	31.24	64.55	101.60
0.040″	±0.004″	9052K27	35.38	80.42	129.86
0.050″	±0.006″	9052K29	39.94	81.85	143.48
0.064″	±0.006″	9052K33	52.56	119.66	195.95
0.090″	±0.007″	9052K35	70.15	165.45	244.34
0.125″	±0.007″	9052K38	84.63	201.80	309.47
12″ Wide					
0.005″	±0.001″	9052K51	$19.86	$46.47	$68.77
0.008″	±0.001″	9052K54	21.70	58.12	93.83
0.010″	±0.002″	9052K72	22.22	60.38	99.74
0.013″	±0.002″	9052K73	26.90	64.22	112.23
0.016″	±0.003″	9052K75	29.58	82.88	153.53
0.020″	±0.004″	9052K77	33.11	92.76	173.05
0.025″	±0.004″	9052K79	34.97	95.69	182.51
0.032″	±0.004″	9052K82	46.56	112.49	198.53
0.040″	±0.004″	9052K84	52.34	137.84	260.16
0.050″	±0.006″	9052K86	58.36	145.11	278.94
0.064″	±0.006″	9052K89	77.39	192.09	368.50
0.090″	±0.007″	9052K92	105.95	297.29	499.41
0.125″	±0.007″	9052K95	134.09	366.10	613.83

Rods—Unpolished (Mill) Finish

- Hardness: Not rated
- Yield Strength: Not rated
- Temper: Hard (H04)

Meet ASTM B139. Diameter tolerance is ±0.002″ for 1/4″ to 1/2″ sizes and ±0.004″ for 5/8″ to 2″ sizes. Straightness tolerance is not rated. Length tolerance is ±1/4″ for 1- and 3-ft. lengths and ±6″ for 6-ft. lengths. **To Order:** Please specify 1-, 3-, or 6-ft. length.

Dia.		Each 1 ft.	Each 3 ft.	Each 6 ft.
1/4″	88555K11	$6.61	$16.54	$27.56
5/16″	88555K13	9.83	24.58	40.96
3/8″	88555K15	12.89	32.21	53.69
1/2″	88555K17	21.01	52.52	87.53
5/8″	88555K39	$21.86	$54.64	$91.07
3/4″	88555K41	45.63	114.07	190.11
7/8″	88555K52	42.08	105.19	175.32
1″	88555K43	74.03	185.08	308.47
1 1/4″	88555K45	$99.86	$249.66	$416.10
1 1/2″	88555K47	134.48	336.20	560.33
1 3/4″	88555K58	155.37	388.42	647.36
2″	88555K49	225.15	562.87	938.11

Warning! ***Hardness and yield strength are not guaranteed and are intended only as a basis for comparison.***

About Wire

Bend-and-stay wire, also known as soft temper or annealed wire, is easy to bend and tends to retain its new shape once released. It is often used as tying and locking wire.

Spring-back wire, also known as spring temper wire, resists bending and tends to return to its original shape once released. It is often used to construct springs and wire rope.

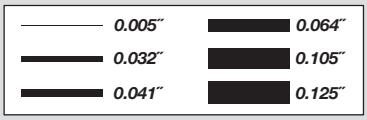

The sizes above are a few of the wire diameters we offer.

Stainless Steel Wire

For a wire gauge conversion chart, go to mcmaster.com and search for **9896KAC**.

Stainless Steel Wire

Bend-and-Stay Type 304 Stainless Steel—Matte Finish

Spool

- Bend-and-stay wire (soft temper)
- Meets ASTM A580 and A555, unless noted

Our most popular wire, this general-purpose pliable wire has good corrosion resistance. Diameter tolerance is ±0.0005″ for diameters up to 0.032″; ±0.001″ for diameters 0.038″ and larger. Maximum temperature is 550° F, unless noted.

Wire Dia.	1/4-lb. Spools Ft./Spool		Each	1-lb. Spools Ft./Spool		Each	5-lb. Coils Ft./Coil		Each	10-lb. Coils Ft./Coil		Each
0.005″	3,720	9882K11	$35.33	14,890	9882K21	$55.67	—	—	—	—	—	—
0.006″	2,585	9882K13	31.55	10,340	9882K23	52.12	—	—	—	—	—	—
0.007″	1,895	9882K15	29.30	7,595	9882K25	49.74	—	—	—	—	—	—
0.008″	1,450	9882K17	28.59	5,815	9882K27	49.54	—	—	—	—	—	—
0.010″	930	9882K31	25.22	3,720	9882K41	46.54	—	—	—	—	—	—
0.012″	645	9882K35	22.57	2,585	9882K45	43.26	—	—	—	—	—	—
0.014″	470	9882K39	22.17	1,895	9882K49	42.64	—	—	—	—	—	—
0.015″	410	8860K11	9.21	1,655	8860K18	26.94	8,275	8860K25●	$99.27	16,550	9070K68●	$184.17
0.020″	230	8860K12	8.85	930	8860K61▲	20.52	4,655	8860K81●	64.55	9,310	9070K69●	121.79
0.025″	145	8860K13	8.15	595	8860K62▲	20.20	2,980	8860K82●	64.00	5,960	9070K71●	120.76
0.032″	91	8860K14	6.10	360	8860K63▲	13.29	1,820	8860K83●	49.99	3,640	9070K72	94.33
0.038″	64	8860K71	6.09	255	8860K73	14.21	1,600	9112K63♣	67.20	2,580	9070K51●	101.50
0.041″	55	8860K15	6.83	220	8860K64▲	14.88	1,105	8860K84●	56.02	2,210	9070K81	105.69
0.045″	46	8860K75	6.37	180	8860K77	14.87	1,200	9112K73♣	67.61	1,840	9070K53●	106.22
0.051″	36	8860K16	6.51	140	8860K65▲	15.38	715	8860K85●	53.30	1,430	9070K82	101.27
0.064″	23	8860K17	5.77	91	8860K19	12.94	455	8860K26●	49.55	910	9070K93	94.15
0.081″	—	—	—	57	8860K21	11.98	285	8860K27	49.85	570	9070K94	94.71
0.102″	—	—	—	36	8860K22	11.91	180	8860K28	48.25	360	9070K95	91.68
0.125″	—	—	—	24	8860K23	11.78	120	8860K29	44.42	235	9070K76	84.41
0.162″	—	—	—	14	8860K24	12.06	70	8860K31	48.20	140	9070K85	91.58

●Material comes on a spool. ▲Material comes in a can. ♣Does not meet an ASTM specification; wax coated; 350° F max. temperature.

Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.	Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.	Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.
0.010″	50	6517K61	$7.62	0.020″	50	6517K11	$8.11	0.041″	50	6517K22	$11.57
0.012″	50	6517K62	7.75	0.025″	50	6517K65	8.59	0.045″	50	6517K24	11.90
0.014″	50	6517K63	8.00	0.032″	50	6517K66	10.83	0.051″	50	6517K27	12.25
0.015″	50	6517K64	7.99	0.038″	50	6517K67	11.39				

Safety Lock Wire Assortment—Includes 0.020″, 0.025″, 0.032″, 0.041″, and 0.051″ dia. wire in 1/4-lb. coils and a tie-twisting tool.
8862K13 ..... **Each** $75.87

Tie-Twisting Tool—Handle is plastic and rotates for quick twisting. Hook and shaft are steel.
2002T3 ..... **Each** $2.88

Spring-Back Type 304 Stainless Steel—Matte Finish

- Spring-back wire (spring temper)
- Meets ASTM A313 and A555

This multipurpose wire has good corrosion resistance. Diameter tolerance is ±0.001″. Max. temperature is 570° F.

Wire Dia.	1/4-lb. Coils Ft./Coil		Each	1-lb. Coils Ft./Coil		Each	Wire Dia.	1/4-lb. Coils Ft./Coil		Each	1-lb. Coils Ft./Coil		Each
0.033″	84	9495K78	$5.13	335	9495K26	$20.53	0.067″	20	9495K94	$7.30	82	9495K41	$15.51
0.035″	75	9495K79	5.01	300	9495K27	20.53	0.071″	18	9495K95	7.27	73	9495K65	15.51
0.037″	67	9495K81	5.01	265	9495K28	19.57	0.075″	16	9495K96	7.25	65	9495K67	15.19
0.039″	60	9495K82	4.89	240	9495K29	19.57	0.080″	—	—	—	57	9495K44	15.19
0.041″	55	9495K84	4.89	215	9495K31	19.57	0.086″	—	—	—	50	9495K71	14.08
0.043″	50	9495K85	4.78	195	9495K32	19.09	0.091″	—	—	—	44	9495K46	14.08
0.045″	45	9495K86	4.78	180	9495K33	19.09	0.094″	—	—	—	42	9495K47	14.08
0.047″	42	9495K87	4.78	165	9495K61	21.66	0.102″	—	—	—	35	9495K48	13.92
0.049″	38	9495K88	3.98	150	9495K63	15.91	0.106″	—	—	—	33	9495K73	13.92
0.051″	35	9495K89	3.98	140	9495K36	15.67	0.110″	—	—	—	30	9495K75	13.92
0.055″	30	9495K91	3.91	120	9495K37	24.65	0.125″	—	—	—	24	9495K53	13.92
0.059″	26	9495K92	3.87	105	9495K38	15.51	0.162″	—	—	—	14	9495K101	13.92
0.063″	23	9495K93	3.87	93	9495K39	15.51							

Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.	Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.	Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.
0.033″	100	8908K34	$10.04	0.043″	100	8908K46	$10.33	0.051″	100	8908K56	$11.86
0.035″	100	8908K36	9.53	0.045″	100	8908K48	11.91	0.055″	100	8908K58	12.29
0.037″	100	8908K38	9.23	0.047″	100	8908K52	12.40	0.059″	100	8908K62	14.25
0.039″	100	8908K42	9.38	0.049″	100	8908K54	11.37	0.063″	100	8908K64	14.97
0.041″	100	8908K44	9.75								

(Material continued on following page)

Warning! ***Temperature is not guaranteed and is intended only as a basis for comparison.***

For information about wire temper and wire diameters, see page 3731.

For a wire gauge conversion chart, go to mcmaster.com and search for **9896KAC**.

Stainless Steel Wire *(Continued from previous page)*

Spring-Back Type 304 Stainless Steel—Bright Finish

- Spring-back wire (spring temper)
- Meets ASTM A313 and A555

This multipurpose wire has good corrosion resistance. Diameter tolerance is ±0.001″. Maximum temperature is 570° F.

Wire Dia.	1/4-lb. Coils Ft./Coil		Each	1-lb. Coils Ft./Coil		Each
0.009″	1,145	9495K51	$17.46	4,595	9495K11	$50.64
0.010″	930	9495K52	15.04	3,720	9495K12	49.21
0.012″	645	9495K55	14.59	2,585	9495K14	48.72
0.014″	475	9495K57	12.87	1,895	9495K16	43.51
0.015″	410	89085K11	21.43	1,655	89085K42	40.49
0.016″	360	9495K59	11.59	1,450	9495K17	39.83
0.018″	285	9495K62	10.80	1,145	9495K18	36.33
0.020″	230	9495K64	9.60	930	9495K19	32.80
0.022″	190	9495K66	9.04	765	9495K21	30.41
0.024″	160	9495K68	8.40	645	9495K22	28.66
0.025″	145	89085K13	20.78	595	89085K44	42.31

Wire Dia.	1/4-lb. Coils Ft./Coil		Each	1-lb. Coils Ft./Coil		Each
0.026″	135	9495K72	$8.44	550	9495K23	$28.31
0.029″	110	9495K74	9.23	440	9495K24	27.05
0.031″	96	9495K76	8.25	385	9495K25	26.71
0.032″	91	89085K14	20.53	360	89085K46	39.56
0.040″	58	89085K15	22.36	230	89085K19	39.47
0.051″	36	89085K16	22.38	140	89085K21	36.19
0.063″	24	89085K17	19.89	94	89085K54	37.73
0.080″	—	—	—	58	89085K22	33.92
0.102″	—	—	—	36	89085K23	32.51
0.125″	—	—	—	24	89085K58	30.57
0.162″	—	—	—	14	89085K24	38.27

Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.	Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.	Wire Dia.	Pkg. Qty.	1-ft. Lengths	Pkg.
0.020″	100	8908K21	$12.81	0.026″	100	8908K26	$12.57	0.051″	50	89085K84	$15.59
0.022″	100	8908K22	12.12	0.029″	100	8908K28	14.10	0.063″	50	89085K85	15.18
0.024″	100	8908K24	12.39	0.031″	100	8908K32	15.24	0.080″	50	89085K86	15.57
0.025″	100	89085K82	14.27	0.040″	50	89085K83	15.53				

Bend-and-Stay Type 316L Stainless Steel

- Bend-and-stay wire (soft temper)
- Meets ASTM A580

This low-carbon version of Type 316 stainless steel is more corrosion resistant than Type 304. Diameter tolerance is ±0.001″. Maximum temperature is 400° F. Wire has a bright finish, except wire diameters 0.064″ and larger have a matte finish.

Wire Dia.	1/4-lb. Coils Ft./Coil			1-lb. Coils Ft./Coil		
0.015″	410	92705K11	$17.89	1,655	92705K18	$57.91
0.020″	230	92705K12	20.45	930	92705K19	53.64
0.032″	91	92705K14	15.99	360	92705K22	48.60
0.036″	72	92705K31	15.93	285	92705K33	48.26
0.040″	58	92705K15	15.91	230	92705K23	47.90
0.051″	35	92705K16	15.85	140	92705K24	47.50
0.064″	22	92705K17	18.01	91	92705K25	46.52
0.080″	—	—	—	58	92705K26	45.68
0.102″	—	—	—	36	92705K27	44.97
0.125″	—	—	—	24	92705K28	42.50

Spring-Back Type 316 Stainless Steel

- Spring-back wire (spring temper)
- Meets ASTM A313 and A555

Type 316 stainless steel wire is more corrosion resistant than Type 304. Diameter tolerance is ±0.001″. Maximum temperature is 570° F. Wire has a matte finish, except 0.015″ and 0.020″ diameters have a bright finish.

Wire Dia.	1/4-lb. Coils Ft./Coil			1-lb. Coils Ft./Coil		
0.015″	410	89045K31	$16.39	1,655	89045K12	$50.94
0.020″	230	89045K32	15.68	930	89045K38	45.89
0.032″	91	89045K34	14.42	360	89045K18	44.77
0.040″	58	89045K35	14.34	230	89045K42	44.62
0.051″	35	89045K36	14.25	140	89045K43	42.29
0.064″	22	89045K37	14.09	91	89045K44	41.87
0.080″	—	—	—	58	89045K45	41.51
0.102″	—	—	—	36	89045K46	40.58
0.125″	—	—	—	23	89045K28	40.20

Type 410 Stainless Steel—Matte Finish

Coil

- Bend-and-stay wire (soft temper)
- Meets ASTM A580

Wire is magnetic and can be hardened by heat-treating. Diameter tolerance is ±0.001″. Maximum temperature is 300° F.

Wire Dia.	1/4-lb. Spools Ft./Spool			1-lb. Coils Ft./Coil		
0.032″	91	6504K41	$7.05	360	6504K11	$23.20
0.040″	58	6504K42	6.92	230	6504K12	22.61
0.051″	35	6504K43	6.34	140	6504K13	22.05
0.064″	22	6504K44	8.24	91	6504K14	20.19
0.080″	—	—	—	58	6504K15	19.98
0.105″	—	—	—	34	6504K16	19.39
0.128″	—	—	—	23	6504K17	19.18

Type 430 Stainless Steel—Matte Finish

Coil

- Bend-and-stay wire (soft temper)
- Meets ASTM A580

Type 430 stainless steel is magnetic and has greater corrosion resistance than Type 410. Diameter tolerance is ±0.001″. Maximum temperature is 300° F.

Wire Dia.	1/4-lb. Spools Ft./Spool			1-lb. Coils Ft./Coil		
0.032″	91	89065K61	$9.18	360	89065K21	$20.72
0.040″	58	89065K62	9.67	230	89065K22	22.97
0.051″	35	89065K63	9.50	140	89065K23	22.35
0.064″	22	89065K64	8.73	91	89065K24	19.00
0.080″	—	—	—	58	89065K17	18.29
0.105″	—	—	—	34	89065K25	18.10
0.125″	—	—	—	24	89065K19	19.27

Slippery PTFE-Coated Stainless Steel Wire

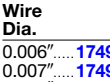

- Spring-back wire (spring temper)
- Meets ASTM A313

The PTFE coating provides a slippery surface that eases wire threading. Material is Type 304 stainless steel. Wire diameter includes coating and has a ±0.0005″ tolerance. Wire is sold in 70″ straight lengths that have a length tolerance of ±3″. Maximum temperature is 500° F. Color is green.

Wire Dia.			Wire Dia.			Wire Dia.			Wire Dia.			Wire Dia.		
0.006″	1749T11	$37.50	0.016″	1749T19	$43.88	0.031″	1749T29	$55.80	0.041″	1749T38	$58.47	0.061″	1749T52	$63.28
0.007″	1749T12	38.40	0.018″	1749T21	44.95	0.032″	1749T31	57.44	0.045″	1749T41	61.95	0.065″	1749T54	63.48
0.008″	1749T13	39.21	0.020″	1749T23	46.07	0.033″	1749T32	57.61	0.051″	1749T44	62.14	0.072″	1749T58	63.67
0.009″	1749T14	40.07	0.024″	1749T24	47.26	0.035″	1749T34	57.78	0.053″	1749T46	62.33	0.074″	1749T59	63.87
0.010″	1749T15	40.96	0.026″	1749T26	51.39	0.037″	1749T35	57.95	0.055″	1749T47	62.52	0.080″	1749T63	64.07
0.014″	1749T17	41.89	0.028″	1749T27	52.78	0.039″	1749T36	58.12	0.057″	1749T48	62.71	0.082″	1749T64	64.27
0.015″	1749T18	42.86	0.029″	1749T28	54.25	0.040″	1749T37	58.30	0.060″	1749T51	63.09	0.102″	1749T75	67.91
												0.106″	1749T76	68.12

Warning! *Temperature is not guaranteed and is intended only as a basis for comparison.*

For information about wire temper and wire diameters, see page 3731.

For a wire gauge conversion chart, go to mcmaster.com and search for **9896KAC**.

Flat Stainless Steel Wire

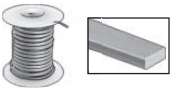

- Bend-and-stay wire (soft temper)

The flat wire's surfaces help prevent rolling and slipping and provide a tight, secure wrap around pipes, rods, and other round surfaces. Wire material is Type 304 stainless steel. Thickness and width tolerances are ±0.001″. Maximum temperature is 550° F. Finish is matte.

Thick.	Wd.	1/4-lb. Spools Ft./Spool			1-lb. Spools Ft./Spool		
0.010″	0.020″	355	4253K11	$16.74	1,435	4253K31	$55.80
0.010″	0.030″	235	4253K12	16.74	955	4253K32	55.80
0.020″	0.020″	175	4253K13	14.64	715	4253K33	48.79
0.020″	0.040″	89	4253K14	11.78	355	4253K34	39.26
0.020″	0.060″	60	4253K15	11.78	240	4253K35	39.26
0.032″	0.032″	70	4253K16	11.41	280	4253K36	38.05
0.032″	0.064″	35	4253K17	10.29	140	4253K37	34.29
0.032″	0.096″	23	4253K18	10.03	94	4253K38	33.43

Thick.	Wd.	1/4-lb. Spools Ft./Spool			1-lb. Spools Ft./Spool		
0.040″	0.040″	45	4253K19	$10.82	180	4253K39	$36.07
0.040″	0.080″	22	4253K21	10.26	90	4253K41	34.21
0.040″	0.120″	15	4253K22	9.58	60	4253K42	31.95
0.050″	0.050″	28	4253K23	10.31	115	4253K43	34.38
0.050″	0.100″	14	4253K24	9.46	58	4253K44	31.55

Steel Wire

1008 Carbon Steel—Zinc Galvanized

Spool

- Bend-and-stay wire (soft temper)
- Meets ASTM A641, unless noted

The zinc coating provides better corrosion resistance than black oxide. Diameter tolerance is ±0.003″. Maximum temperature is 300° F. ***1-ft. lengths*** are sold in packages of 50.

Also Available: 0.063″ to 0.135″ diameter wire in 100-lb. coils. Please ask for 8855K886 and specify diameter.

Wire Dia.	1/4-lb. Spools Ft./Spool		Each	1-lb. Spools Ft./Spool		Each	5-lb. Spools Ft./Spool		Each	10-lb. Coils Ft./Coil		Each	1-ft. Lengths	Pkg.
0.014″ ♦	475	8872K19	$6.36	1,910	8872K39	$15.15	9,565	8872K59	$48.62	19,130	8872K21 ●	$82.84	8872K72	$7.41
0.016″ ♦	355	8872K18	6.03	1,425	8872K38	14.40	7,145	8872K58	45.99	14,290	8872K22 ●	81.43	8872K73	7.91
0.018″ ♦	285	8872K17	5.64	1,140	8872K37	12.87	5,720	8872K57	40.90	11,440	8872K23 ●	72.24	8872K74	8.15
0.023″ ♦	175	8872K16	4.86	705	8872K36	12.03	3,540	8872K56	38.15	7,085	8872K24 ●	67.49	—	—
0.029″ ♦	110	8872K15	4.62	455	8872K35	11.08	2,290	8872K55	35.23	4,580	8872K25 ●	65.21	—	—
0.035″	77	8872K14	4.56	305	8872K34	11.39	1,545	8872K54	32.80	3,095	8872K26 ●	61.53	8872K75	12.17
0.041″	55	8872K13	4.36	220	8872K33	11.12	1,115	8872K53	32.72	2,230	8872K27	59.74	8872K76	12.73
0.048″	41	8872K12	4.22	165	8872K32	11.29	830	8872K52	32.58	1,660	8872K28	58.09	8872K77	12.97
0.063″	24	8872K11	4.01	96	8872K31	10.94	480	8872K51	32.47	960	8872K41	57.28	8872K78	14.18
0.080″	14	8872K29	3.71	55	8872K49	10.58	290	8872K69	29.89	585	8872K42	53.39	—	—
0.106″	—	—	—	33	8872K61★	6.23	165	8872K62★	26.23	330	8872K63	44.15	—	—
0.135″	—	—	—	20	8872K64★	6.58	100	8872K65★	26.30	200	8872K66	41.30	—	—

♦ Does not meet an ASTM specification. ★ Material comes coiled. ● Material comes spooled.

1008 Carbon Steel—Black-Oxide Finish

Coil

- Bend-and-stay wire (soft temper)
- Meets ASTM A853

Diameter tolerance is ±0.003″. Maximum temperature is 300° F. Color is dark gray to brownish. ***1-ft. lengths*** are sold in packages of 10.

Also Available: 0.063″ to 0.148″ diameter wire in 100-lb. coils. Please ask for 8855K887 and specify diameter.

Wire Dia.	1/4-lb. Spools Ft./Spool		Each	1-lb. Spools Ft./Spool		Each	5-lb. Spools Ft./Spool		Each	10-lb. Coils Ft./Coil		Each	1-ft. Lengths	Pkg.
0.014″	475	8870K19	$3.87	1,910	8870K39	$9.97	9,565	8870K59	$36.39	19,130	8870K21 ●	$58.70	—	—
0.016″	355	8870K18	3.51	1,425	8870K38	9.04	7,145	8870K58	32.96	14,290	8870K22 ●	53.16	—	—
0.018″	285	8870K17	3.37	1,140	8870K37	8.68	5,720	8870K57	31.61	11,440	8870K23 ●	51.00	—	—
0.023″	175	8870K16	3.25	705	8870K36	8.40	3,540	8870K56	30.62	7,085	8870K24 ●	49.39	—	—
0.029″	110	8870K15	3.02	455	8870K35	7.79	2,290	8870K55	28.40	4,580	8870K25 ●	45.81	—	—
0.035″	77	8870K14	2.70	305	8870K34	6.94	1,545	8870K54	25.33	3,095	8870K26 ●	40.86	—	—
0.041″	55	8870K13	2.51	220	8870K33	6.46	1,115	8870K53	23.56	2,230	8870K27	38.01	—	—
0.048″	41	8870K12	2.37	165	8870K32	6.10	830	8870K52	22.26	1,660	8870K28	35.91	—	—
0.063″	24	8870K11	2.04	96	8870K31	5.23	480	8870K51	19.09	960	8870K41	30.79	8870K81	$4.38
0.080″	14	8870K29	1.94	55	8870K49	5.02	290	8870K69	18.29	585	8870K42	29.50	8870K82	6.89
0.106″	—	—	—	33	8870K61★	5.78	165	8870K62★	22.62	330	8870K63	37.70	8870K83	10.01
0.135″	—	—	—	20	8870K64★	6.04	100	8870K65★	23.65	200	8870K66	39.41	8870K84	13.79
0.148″	—	—	—	17	8870K71★	5.99	85	8870K72★	23.44	170	8870K73	39.06	8870K85	14.51

★ Material comes coiled. ● Material comes spooled.

1008 Carbon Steel—PVC Coated

- Bend-and-stay wire (soft temper)
- Meets ASTM A853

The PVC coating is yellow and provides rust resistance. Wire can be used outdoors. Wire diameter does not include the coating. Coating thickness is a minimum of 7 mils. Diameter tolerance is ±0.002″. Maximum temperature is 375° F.

Wire Dia.	Ft./Coil	3-lb. Coil	
0.062″	245	8867K25	$11.85

1065 Carbon Steel—Matte Finish (Oil Coated)

- Spring-back wire (spring temper)
- Meets ASTM A229

Meets MIL-W-21425B Type 1. Diameter tolerance is ±0.002″, and length tolerance is +1″. Max. temp. is 250° F. Color is black.

Wire Dia.	Pkg. Qty.	3-ft. Lengths	Pkg.	Wire Dia.	Pkg. Qty.	3-ft. Lengths	Pkg.	Wire Dia.	Pkg. Qty.	3-ft. Lengths	Pkg.
0.063″	10	9667K51	$15.57	0.120″	5	9667K54	$15.49	0.162″	5	9667K57	$15.49
0.092″	10	9667K52	15.57	0.125″	5	9667K55	15.49	0.177″	5	9667K58	15.49
0.105″	10	9667K53	15.57	0.148″	5	9667K56	15.49	0.187″	5	9667K59	15.49

1075 Carbon Steel 72-Piece Wire Assortment—Matte Finish (Oil Coated)

Includes 18″ straight lengths in six diameters: 0.062″, 0.072″, 0.080″, 0.091″, 0.105″, and 0.120″. Length tolerance is ±0.010″. Packaged in a clear plastic tube.

8919K27 ..... **Each** $34.44

(Material continued on following page)

Warning! ***Temperature is not guaranteed and is intended only as a basis for comparison.***

For information about wire temper and wire diameters, see page 3731.

For a wire gauge conversion chart, go to mcmaster.com and search for **9896KAC**.

Steel Wire *(Continued from previous page)*

1080 Carbon Steel—Matte Finish (Phosphate Coated)

Coil

- Spring-back wire (spring temper)
- Meets ASTM A228

Also known as music wire. Diameter tolerance is ±0.0005″ for 0.009″ to 0.075″ wire diameters; ±0.001″ for 0.080″ to 0.187″ wire diameters. Maximum temperature is 300° F.

Wire Dia.	¼-lb. Coils Ft./Coil		Each	1-lb. Coils Ft./Coil		Each	5-lb. Coils Ft./Coil		Each	1-ft. Lengths Pkg. Qty.		Pkg.
0.009″	1,155	9666K11	$13.94	4,625	9666K72	$46.82	23,145	9666K511	$173.41	100	8907K91	$9.28
0.010″	935	9666K12	12.89	3,745	9666K73	42.91	18,745	9666K512	161.07	100	8907K92	9.24
0.011″	730	9666K13	9.89	2,935	9666K74	37.15	14,680	9666K513	159.84	100	8907K93	9.10
0.012″	650	9666K14	10.18	2,600	9666K75	33.97	13,020	9666K514	127.26	100	8907K94	8.86
0.013″	550	9666K15	9.39	2,215	9666K76	31.35	11,090	9666K515	117.42	100	8907K95	8.63
0.014″	475	9666K16	8.29	1,910	9666K77	27.65	9,565	9666K516	103.62	100	8907K96	8.51
0.016″	365	9666K17	6.87	1,465	9666K78	22.94	7,325	9666K517	85.92	100	8907K97	8.40
0.018″	285	9666K18	6.22	1,155	9666K79	20.73	5,785	9666K518	77.64	100	8907K98	8.40
0.020″	230	9666K19	5.47	935	9666K81	18.26	4,685	9666K519	68.40	100	8907K21	3.53
0.022″	190	9666K21	4.78	775	9666K82	15.95	3,875	9666K521	59.67	100	8907K22	4.90
0.024″	160	9666K22	4.27	650	9666K83	14.30	3,255	9666K522	53.46	100	8907K24	4.65
0.026″	140	9666K54	3.94	560	9666K23	10.87	2,800	9666K84	42.96	100	8907K26	5.67
0.029″	110	9666K55	3.80	445	9666K24	10.10	2,235	9666K85	39.84	100	8907K28	6.12
0.031″	97	9666K56	3.77	390	9666K25	9.61	1,955	9666K86	37.77	100	8907K32	6.48
0.033″	86	9666K57	3.69	340	9666K26	9.04	1,720	9666K87	36.51	100	8907K34	6.97
0.035″	76	9666K58	3.62	305	9666K27	8.74	1,525	9666K88	34.50	100	8907K36	8.37
0.037″	68	9666K59	3.52	270	9666K28	8.48	1,370	9666K89	33.45	100	8907K38	9.03
0.039″	61	9666K61	3.45	245	9666K29	8.27	1,235	9666K91	33.15	100	8907K42	10.01
0.041″	55	9666K62	3.41	220	9666K31	7.37	1,115	9666K92	28.92	100	8907K44	10.75
0.043″	50	9666K63	3.41	200	9666K32	7.22	1,015	9666K93	28.59	100	8907K46	11.41
0.045″	46	9666K64	3.35	185	9666K33	6.99	925	9666K94	27.45	100	8907K48	11.62
0.047″	42	9666K65	3.31	170	9666K34	6.99	850	9666K95	27.45	100	8907K52	12.56
0.049″	39	9666K66	3.20	155	9666K35	6.99	780	9666K96	27.45	100	8907K54	12.98
0.051″	36	9666K67	3.07	140	9666K36	6.71	720	9666K97	26.55	100	8907K56	12.81
0.055″	31	9666K68	3.07	120	9666K37	6.50	620	9666K98	26.47	100	8907K58	11.82
0.059″	27	9666K69	3.07	105	9666K38	6.49	540	9666K99	27.72	100	8907K62	11.79
0.063″	23	9666K71	3.00	94	9666K39	6.45	470	9666K101	25.23	100	8907K64	14.46
0.067″	—	—	—	83	9666K41	6.46	415	9666K102	25.15	—	—	—
0.071″	—	—	—	74	9666K42	6.45	370	9666K103	23.91	—	—	—
0.075″	—	—	—	68	9666K43	6.46	340	9666K104	25.08	—	—	—
0.080″	—	—	—	58	9666K44	6.07	290	9666K105	23.94	—	—	—
0.091″	—	—	—	46	9666K46	6.08	230	9666K107	23.97	—	—	—
0.094″	—	—	—	43	9666K47	6.08	215	9666K108	23.97	—	—	—
0.102″	—	—	—	36	9666K48	6.08	180	9666K109	23.97	—	—	—
0.105″	—	—	—	34	9666K123	5.83	170	9666K124	24.30	25	8907K12	9.51
0.110″	—	—	—	32	9666K51	6.08	160	9666K112	23.97	—	—	—
0.120″	—	—	—	25	9666K125	5.94	125	9666K126	24.74	25	8907K13	14.16
0.125″	—	—	—	24	9666K53	5.95	120	9666K114	23.46	25	8907K14	13.74
0.148″	—	—	—	18	9666K127	6.24	90	9666K128	25.99	5	8907K15	14.91
0.187″	—	—	—	10	9666K129	6.24	50	9666K131	25.99	5	8907K18	14.83

Copper Wire

- Bend-and-stay wire (soft temper)
- Meets ASTM B3

Useful for grounding applications, this Alloy 110 (99.9% copper) wire has excellent electrical conductivity. Diameter tolerance is ±0.0003″ for 0.003″ to 0.032″ wire diameters; ±0.0006″ for 0.040″ to 0.064″ wire diameters. Maximum temperature is not rated.

Tin-Coated wire is easy to solder. The corrosion-resistant coating slows oxidation.

Wire Dia.	¼-lb. Spools Ft./Spool			1-lb. Spools Ft./Spool			5-lb. Spools Ft./Spool			15-lb. Spools Ft./Spool		
Bright Finish												
0.003″	6,000	8873K39	$9.89	—	—	—	—	—	—	—	—	—
0.005″	3,200	8873K36	7.96	—	—	—	—	—	—	—	—	—
0.008″	1,965	8873K32	7.16	—	—	—	—	—	—	—	—	—
0.010″	785	8873K28	7.06	—	—	—	—	—	—	—	—	—
0.012″	495	8873K26	7.44	1,990	8873K66	$26.15	9,950	8873K91	$110.22	29,850	8873K86	$275.56
0.016″	315	8873K24	7.32	1,260	8873K64	26.12	6,300	8873K92	105.77	18,900	8873K84	271.21
0.020″	195	8873K22	6.87	790	8873K62	24.05	3,965	8873K93	101.79	11,895	8873K82	254.48
0.025″	125	8873K19	6.60	500	8873K59	23.34	2,505	8873K94	97.74	7,515	8873K79	244.36
0.032″	78	8873K17	6.60	315	8873K57	23.23	1,575	8873K95	95.27	4,725	8873K77	244.28
0.040″	49	8873K15	6.60	195	8873K55	23.11	995	8873K96	97.71	2,985	8873K75	244.28
0.051″	31	8873K13	6.59	125	8873K53	23.10	630	8873K97	97.58	1,890	8873K73	243.95
0.064″	20	8873K11	6.57	80	8873K51	23.04	400	8873K98	97.40	1,200	8873K71	243.50
Tin Coated												
0.005″	3,200	8871K56	11.34	—	—	—	—	—	—	—	—	—
0.010″	785	8871K48	7.04	—	—	—	—	—	—	—	—	—
0.013″	495	8871K46	6.69	1,990	8871K86	25.10	9,950	8871K11	111.54	29,850	8871K96	278.84
0.016″	315	8871K44	6.31	1,260	8871K84	23.67	6,300	8871K12	105.19	18,900	8871K94	262.97
0.020″	195	8871K42	6.21	790	8871K82	23.28	3,965	8871K13	103.49	11,895	8871K92	258.72
0.025″	125	8871K39	6.12	500	8871K79	22.97	2,505	8871K14	102.07	7,515	8871K99	255.17
0.032″	78	8871K37	6.19	315	8871K77	23.23	1,575	8871K15	103.24	4,725	8871K97	258.09
0.040″	49	8871K35	6.17	195	8871K75	23.15	995	8871K16	102.89	2,985	8871K95	257.22
0.051″	31	8871K33	6.15	125	8871K73	23.07	630	8871K17	102.54	1,890	8871K93	256.36
0.064″	20	8871K31	6.13	80	8871K71	22.99	400	8871K18	102.17	1,200	8871K91	255.42

Warning! ***Temperature is not guaranteed and is intended only as a basis for comparison.***

For information about wire temper and wire diameters, see page 3731.

For a wire gauge conversion chart, go to mcmaster.com and search for **9896KAC**.

Easy-to-Form Brass Wire

- Bend-and-stay wire (soft temper)
- Meets ASTM B134

Made of Alloy 260 brass, the most formable copper alloy, this wire also offers good electrical conductivity. Dia. tolerance is ±0.0005″, except 0.051″ and 0.064″ diameters are ±0.0008″. Maximum temperature is 400° F. Finish is matte, except 0.020″ and 0.025″ diameters have a bright finish.

Wire Dia.	1/4-lb. Spools Ft./Spool			1-lb. Spools Ft./Spool		
0.020″	210	8864K81	$9.17	850	8864K71	$27.22
0.025″	130	8864K82	8.65	535	8864K72	25.67
0.032″	84	8864K83	8.24	335	8864K73	24.44
0.040″	53	8864K84	7.94	210	8864K74	23.57
0.051″	33	8864K85	7.73	130	8864K75	22.95
0.064″	20	8864K86	7.41	83	8864K76	21.98

High-Strength Bronze Wire

- Spring-back wire (spring temper)
- Meets ASTM B159

Ideal for constructing springs, this wire is made of Alloy 510 phosphor bronze. Diameter tolerance is ±0.001″. Maximum temperature is 250° F. Wire has a bright finish.

Wire Dia.	1/4-lb. Coils Ft./Coil			1-lb. Coils Ft./Coil		
0.025″	125	9668K49	$23.45	—	—	—
0.032″	81	9668K51	21.18	—	—	—
0.051″	—	—	—	125	9668K68	$38.20
0.064″	—	—	—	81	9668K71	38.20
0.081″	—	—	—	50	9668K83	75.87

Lightweight Aluminum Wire

Spool

- Bend-and-stay wire (soft temper)
- Meets ASTM B211

This Alloy 1100 aluminum wire is lightweight and corrosion resistant and offers good electrical conductivity. Diameter tolerance is ±0.002″. Max. temp. is 200° F. Finish is matte.
Also Available: 0.080″, 0.114″, and 0.125″ diameter wire in 12-lb. coils. To order, please ask for 8866K887 and specify diameter.

Wire Dia.	1/4-lb. Spools Ft./Spool			1-lb. Spools Ft./Spool			5-lb. Coils Ft./Coil		
0.013″	1,735	8904K39	$15.86	6,940	8904K76	$44.40	34,700	8904K45	$151.03
0.016″	1,085	8904K37	12.14	4,355	8904K77	27.62	21,790	8904K46	119.05
0.020″	680	8904K35	10.69	2,725	8904K78	23.84	13,635	8904K47	102.74
0.025″	430	8904K33	10.45	1,720	8904K79	23.09	8,605	8904K48	99.54
0.032″	265	8904K31	10.32	1,075	8904K81	23.01	5,380	8904K49	99.19
0.040″	165	8904K71	10.08	675	8904K82	22.50	3,390	8904K51	96.97
0.051″	105	8904K72	10.00	425	8904K83	22.32	2,130	8904K52	96.20
0.064″	67	8904K73	9.99	265	8904K84	22.28	1,340	8904K53	96.02
0.081″	42	8904K74	10.20	165	8904K85	20.81	840	8904K54	78.59
0.114″	21	8904K41	6.53	84	8904K42	17.95	420	8904K55	81.59
0.125″	16	8904K75	9.54	66	8904K86	20.82	330	8904K56	80.31

High-Temperature Nickel Wire

Nickel wire withstands high temperatures and is corrosion resistant.

Alloy 400 Nickel—Matte Finish

Spool

- Bend-and-stay wire (soft temper)
- Meets ASTM B164

Made from Alloy 400, also known as Monel 400, this wire can be used as safety lock wire. Diameter tolerance is ±0.0005″, except diameters 0.032″ and larger are ±0.001″. Maximum temperature is 700° F.

Wire Dia.	1/4-lb. Spools Ft./Spool			1-lb. Spools Ft./Spool		
0.010″	830	8905K43	$31.55	3,325	8905K51	$90.14
0.016″	320	8905K37	22.72	1,295	8905K53	85.14
0.020″	205	8905K35	22.26	830	8905K54 ♦	80.44
0.025″	130	8905K33	21.81	530	8905K55 ♦	80.08
0.032″	81	8905K31	21.66	325	8905K56 ♦	79.53
0.051″	—	—	—	125	8905K57 ♦	78.81
0.125″	—	—	—	21	8905K58	83.60

♦ Material comes in a can.

Alloy 600 Nickel—Matte Finish

Can

- Bend-and-stay wire (soft temper)
- *Silver Finish:* Meets ASTM B166
  Charcoal Finish: Meets AMS 5687

Alloy 600 nickel, also known as Inconel, withstands even higher temperatures than Alloy 400. Diameter tolerance is ±0.0006″. Maximum temperature is 1000° F.

Wire Dia.	1/4-lb. Spools Ft./Spool			1-lb. Cans Ft./Can		
Silver Finish						
0.020″	215	90345K11	$27.13	870	90345K31	$66.68
0.032″	85	90345K19	24.69	340	90345K39	64.85
0.041″	51	90345K22	21.53	205	90345K42	65.15
Charcoal Finish						
0.032″	85	90345K29	24.69	340	90345K69	63.14
0.041″	51	90345K33	23.78	205	90345K73	62.94

Nickel Chromium—Bright Finish

- Bend-and-stay wire (soft temper)
- Meets ASTM B267 and B344

Made of nickel chromium, commonly referred to as Chromel C, this wire is often used for heating elements, resistance windings, and hot wire cutters. Diameter tolerance is ±0.0002″ for diameters up to 0.020″; ±0.0006″ for diameters 0.025″ and larger. Maximum temperature is 1850° F.

Wire Dia.	1/8-lb. Spools Ft./Spool			1/4-lb. Spools Ft./Spool			1-lb. Spools Ft./Spool		
0.003″	4,530	8880K87	$37.52	9,060	8880K39	$71.75	36,245	8880K69	$217.76
0.004″	2,400	8880K86	32.22	4,800	8880K38	58.92	19,200	8880K68	151.19
0.005″	1,600	8880K85	29.87	3,200	8880K36	52.51	12,800	8880K66	124.47
0.006″	1,015	8880K84	25.18	2,030	8880K34	36.28	8,120	8880K64	104.92
0.008″	980	8880K83	23.84	1,960	8880K32	31.47	7,855	8880K62	97.63
0.010″	400	8880K82	17.83	805	8880K27	29.24	3,220	8880K57	91.58
0.013″	245	8880K81	13.98	495	8880K25	22.35	1,990	8880K55	78.63
0.016″	155	8880K79	12.58	310	8880K24	23.84	1,255	8880K54	76.74
0.020″	99	8880K78	12.08	195	8880K22	23.61	790	8880K52	73.24
0.025″	62	8880K77	12.80	120	8880K19	25.63	495	8880K49	71.05
0.032″	39	8880K76	11.97	78	8880K17	24.28	310	8880K47	70.66
0.036″	32	8880K75	12.40	64	8880K16	24.59	255	8880K46	70.53
0.040″	25	8880K74	10.25	50	8880K15	20.95	200	8880K45	69.61
0.045″	20	8880K73	13.95	40	8880K14	24.12	160	8880K44	72.50
0.051″	16	8880K72	9.64	32	8880K13	19.24	125	8880K43	64.47
0.064″	10	8880K71	9.38	20	8880K11	18.76	80	8880K41	62.71

Warning! *Temperature is not guaranteed and is intended only as a basis for comparison.*

For information about wire temper and wire diameters, see page 3731.

For a wire gauge conversion chart, go to mcmaster.com and search for **9896KAC**.

Insulating Lead Wire

- Bend-and-stay wire (soft temper)
- Meets ASTM B29 and B749

Soft and formable, this wire is composed of 99.9% lead. It's dense, insulating, and corrosion-resistant, making it ideal for caulking and bearing alignment. Diameter tolerance is ±0.005″. Maximum temperature is 620° F. Finish is matte.

Wire Dia.	5-lb. Spools Ft./Spool			25-lb. Spools Ft./Spool		
0.125″	80	8879K1	$40.80	400	8879K13	$169.17
0.188″	35	8879K2	40.80	175	8879K14	169.17
0.250″	20	8879K3	40.80	100	8879K15	169.17

Ultra-Corrosion-Resistant Titanium Wire

- Bend-and-stay wire (soft temper)
- Meets ASTM B863

Considered commercially pure, this Grade 2 titanium wire is corrosion resistant and strong, yet it's still lightweight. Diameter tolerance is ±0.003″. Maximum temperature is 500° F. Finish is matte.

Wire Dia.	1/8-lb. Coils Ft./Coil			1/4-lb. Coils Ft./Coil		
0.025″	130	90455K31	$71.68	260	90455K49	$120.07
0.032″	79	90455K32	55.70	155	90455K51	95.66
0.046″	38	90455K33	47.53	76	90455K52	77.91
0.051″	31	90455K34	45.92	62	90455K53	76.41
0.080″	13	90455K36	38.69	24	90455K55	66.94
0.125″	6	90455K37	37.83	12	90455K56	66.31

Ultra-High-Temperature Tungsten Wire

- Bend-and-stay wire
- Meets ASTM F288

With the highest melting point of all metals, tungsten wire is often used in electrical and heating applications. Diameter tolerance is ±1.5%. Maximum temperature is 5000° F. Finish is matte.

Wire Dia.	1/16-lb. Spools Ft./Spool			1/8-lb. Spools Ft./Spool		
0.002″	2,390	3775K36	$140.53	4,785	3775K11	$175.30
0.005″	380	3775K37	106.03	765	3775K14	156.09
0.010″	95	3775K38	71.95	190	3775K17	102.16
0.016″	37	3775K39	73.16	74	3775K21	107.72
0.020″	23	3775K41	66.55	47	3775K24	94.44
0.025″	15	3775K42★	65.71	30	3775K27★	93.97
0.032″	9	3775K43★	64.49	18	3775K31★	95.07
0.051″	8	3775K44★	57.91	16	3775K34★	81.31

★ Material comes coiled.

Shape-Memory Nitinol Wire

- Bend-and-stay wire (soft temper)

Even after being bent or shaped, this titanium-nickel wire will return to its original form when heated. Diameter tolerance is ±0.0004″. Maximum temperature is not rated. Finish is matte.

Wire Dia.	Ft./Coil			Wire Dia.	Ft./Coil		
0.004″	30	8320K11	$37.26	0.011″	30	8320K15	$46.86
0.006″	30	8320K12	39.21	0.012″	30	8320K16	51.84
0.008″	30	8320K13	41.43	0.014″	30	8320K18	58.89
0.010″	30	8320K14	43.47	0.015″	30	8320K19	66.45

Expanded Metal Sheets with Diamond Openings

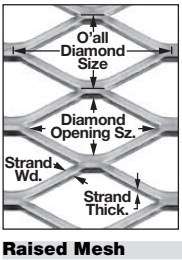

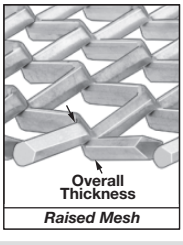

Raised Mesh

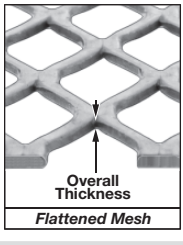

Flattened Mesh

Easily cut, form, and weld this expanded metal; sheets are lightweight, yet strong and rigid, and allow light and air to pass through.

Raised Mesh—Raised strands provide a skid-resistant surface. Sheets are excellent for use as safety guards for equipment or machinery.

Flattened Mesh—Formed from raised mesh that has been rolled to a smooth and flat finish, this mesh can be used to create protective enclosures, shelving, grilles, and baskets.

Raised Mesh

Overall Diamond Sz.	O'all Thick.	Diamond Opening Sz.	Strand Size Wd.	Strand Size Thick.	1′×1′ Sheets		2′×2′ Sheets		4′×4′ Sheets		4′×8′ Sheets	
Alloy 1008 Carbon Steel												
0.08″×0.19″	0.028″	0.04″×0.14″	0.022″	0.015″	9302T533	$20.75	9302T523	$61.02	—	—	—	—
0.10″×0.16″	0.020″	0.06″×0.10″	0.016″	0.015″	9302T531	16.42	9302T521	48.29	—	—	—	—
0.12″×0.29″	0.040″	0.07″×0.20″	0.030″	0.020″	9302T535	19.28	9302T525	56.72	—	—	—	—
0.20″×0.41″	0.065″	0.10″×0.26″	0.050″	0.025″	9302T537	22.66	9302T527	66.65	—	—	—	—
0.26″×1.00″	0.125″	0.17″×0.72″	0.073″	0.036″	9302T142	16.29	9302T111	36.70	9302T71	$68.34	9302T52	$116.35
0.26″×1.00″	0.125″	0.17″×0.72″	0.073″	0.048″	9302T144	19.02	9302T112	40.07	9302T72	74.84	9302T53	135.87
0.50″×1.20″	0.124″	0.44″×0.94″	0.072″	0.036″	9302T146	11.92	9302T113	27.09	9302T73	50.32	9302T54	85.16
0.50″×1.20″	0.155″	0.44″×0.94″	0.088″	0.048″	9302T147	12.34	9302T114	29.32	9302T74	56.25	9302T55	88.11
0.50″×1.20″	0.157″	0.38″×0.94″	0.086″	0.060″	9302T148	12.98	9302T115	30.12	9302T75	57.33	9302T56	92.73
0.50″×1.20″	0.182″	0.31″×0.94″	0.096″	0.092″	9302T149	14.41	9302T116	32.25	9302T76	63.77	9302T57	102.96
0.92″×2.00″	0.186″	0.81″×1.75″	0.099″	0.060″	9302T151	10.37	9302T117	25.60	9302T77	47.27	9302T58	74.04
0.92″×2.00″	0.195″	0.75″×1.69″	0.096″	0.092″	9302T152	11.51	9302T118	28.05	9302T78	52.66	9302T59	82.18
0.92″×2.00″	0.282″	0.75″×1.63″	0.144″	0.092″	9302T153	13.34	9302T119	29.38	9302T79	53.50	9302T61	95.29
0.92″×2.00″	0.300″	0.69″×1.56″	0.148″	0.134″	9302T154	15.92	9302T121	33.41	9302T81	67.28	9302T62	113.73
1.09″×2.40″	0.182″	1.00″×2.06″	0.096″	0.060″	9302T155	10.14	9302T122	24.29	9302T82	42.83	9302T63	72.40
1.33″×3.00″	0.211″	1.25″×2.63″	0.107″	0.060″	9302T156	9.74	9302T123	23.55	9302T83	41.47	9302T64	69.60
1.33″×3.00″	0.215″	1.19″×2.50″	0.104″	0.092″	9302T157	10.17	9302T124	24.27	9302T84	45.20	9302T65	72.67
1.33″×3.00″	0.289″	1.19″×2.50″	0.137″	0.092″	9302T158	10.98	9302T125	24.58	9302T85	47.11	9302T66	78.42
1.33″×3.00″	0.295″	1.13″×2.38″	0.142″	0.135″	9302T159	13.50	9302T126	30.12	9302T86	58.19	9302T67	96.44
1.85″×4.00″	0.325″	1.56″×3.38″	0.149″	0.134″	9302T161	12.74	9302T127	29.22	9302T87	57.55	9302T68	90.98
Type 304 Stainless Steel												
0.50″×1.20″	0.164″	0.44″×0.94″	0.087″	0.050″	9303T71	23.75	9303T61	56.05	9303T51	143.94	9303T21	263.87
0.50″×1.20″	0.164″	0.44″×0.94″	0.087″	0.062″	9303T72	26.42	9303T62	62.48	9303T52	160.25	9303T22	293.60
0.92″×2.00″	0.200″	0.81″×1.75″	0.106″	0.062″	9303T73	22.01	9303T63	50.76	9303T53	136.93	9303T23	244.61
0.92″×2.00″	0.200″	0.75″×1.69″	0.108″	0.093″	9303T74	26.34	9303T64	62.33	9303T54	159.71	9303T26	292.62
1.33″×3.00″	0.220″	1.25″×2.75″	0.115″	0.062″	9303T75	17.15	9303T65	40.25	9303T55	106.93	9303T28	190.51
1.33″×3.00″	0.220″	1.25″×2.63″	0.116″	0.093″	9303T76	20.63	9303T66	48.58	9303T56	124.95	9303T57	229.27

(Continued on following page)

Warning! *Temperature is not guaranteed and is intended only as a basis for comparison.*

Expanded Metal Sheets with Diamond Openings *(Continued from previous page)*

Raised Mesh (Cont.)

Overall Diamond Sz.	O'all Thick.	Diamond Opening Sz.	Strand Size Wd.	Strand Size Thick.	1′×1′ Sheets		2′×2′ Sheets		4′×4′ Sheets		4′×8′ Sheets	
Alloy 1100 Aluminum												
0.06″×0.13″	0.020″	0.03″×0.08″	0.015″	0.010″	9305T92	$13.98	9305T91	$41.13	—	—	—	—
0.08″×0.19″	0.028″	0.04″×0.14″	0.022″	0.015″	9305T94	17.36	9305T93	51.07	—	—	—	—
0.12″×0.29″	0.040″	0.07″×0.20″	0.030″	0.020″	9305T96	15.89	9305T95	46.73	—	—	—	—
0.20″×0.41″	0.042″	0.14″×0.31″	0.034″	0.032″	9305T98	14.35	9305T97	42.22	—	—	—	—
Alloy 3003 Aluminum												
0.50″×1.20″	0.158″	0.38″×0.94″	0.094″	0.051″	9305T111	16.37	9305T71	37.45	9305T61	$69.05	9305T21	$116.93
0.50″×1.20″	0.186″	0.38″×0.94″	0.096″	0.081″	9305T121	21.62	9305T72	46.55	9305T62	94.03	9305T22	154.45
0.92″×2.00″	0.200″	0.81″×1.75″	0.109″	0.051″	9305T131	13.23	9305T73	29.70	9305T63	55.07	9305T23	94.51
0.92″×2.00″	0.305″	0.69″×1.69″	0.170″	0.125″	9305T161	28.62	9305T76	58.91	9305T66	120.42	9305T26	204.42

Flattened Mesh

Overall Diamond Sz.	O'all Thick.	Diamond Opening Sz.	Strand Size Wd.	Strand Size Thick.	1′×1′ Sheets		2′×2′ Sheets		4′×4′ Sheets		4′×8′ Sheets	
Alloy 1008 Carbon Steel												
0.10″×0.16″	0.015″	0.06″×0.10″	0.016″	0.015″	9302T141	$16.42	9302T131	$48.29	—	—	—	—
0.12″×0.29″	0.020″	0.06″×0.20″	0.030″	0.020″	9302T143	19.28	9302T133	56.72	—	—	—	—
0.20″×0.41″	0.025″	0.10″×0.26″	0.050″	0.025″	9302T145	22.66	9302T135	66.65	—	—	—	—
0.26″×1.03″	0.030″	0.09″×0.69″	0.086″	0.030″	9302T162	16.78	9302T26	31.57	9302T11	$74.41	9302T32	$119.85
0.26″×1.03″	0.040″	0.09″×0.69″	0.086″	0.040″	9302T163	17.94	9302T27	35.23	9302T12	85.69	9302T33	128.15
0.50″×1.26″	0.029″	0.38″×1.00″	0.070″	0.029″	9302T164	12.30	9302T28	25.46	9302T13	50.28	9302T34	87.89
0.50″×1.26″	0.039″	0.28″×1.00″	0.109″	0.039″	9302T165	12.71	9302T29	26.89	9302T14	52.37	9302T35	90.82
0.50″×1.26″	0.050″	0.25″×1.00″	0.103″	0.050″	9302T166	13.38	9302T31	28.62	9302T15	54.60	9302T36	95.56
0.50″×1.26″	0.070″	0.25″×1.00″	0.122″	0.070″	9302T167	15.69	9302T48	35.01	9302T16	66.39	9302T37	112.07
0.92″×2.10″	0.048″	0.75″×1.75″	0.115″	0.048″	9302T168	10.51	9302T49	22.43	9302T17	45.15	9302T38	75.07
0.92″×2.10″	0.061″	0.69″×1.81″	0.119″	0.061″	9302T169	11.02	9302T69	24.78	9302T18	49.51	9302T39	78.71
0.92″×2.10″	0.070″	0.69″×1.78″	0.119″	0.070″	9302T171	11.62	9302T88	24.78	9302T19	49.77	9302T41	83.00
0.92″×2.10″	0.120″	0.56″×1.69″	0.164″	0.120″	9302T172	15.78	9302T89	35.30	9302T21	64.97	9302T42	112.71
1.09″×2.56″	0.048″	0.88″×2.25″	0.115″	0.048″	9302T173	10.28	9302T91	25.07	9302T22	50.74	9302T43	73.40
1.33″×3.20″	0.048″	1.06″×2.75″	0.123″	0.048″	9302T174	9.82	9302T92	25.09	9302T23	51.64	9302T44	70.13
1.33″×3.20″	0.070″	1.06″×2.75″	0.138″	0.070″	9302T175	10.31	9302T93	24.84	9302T24	51.75	9302T46	73.67
1.33″×3.20″	0.110″	1.00″×2.56″	0.175″	0.110″	9302T176	13.60	9302T94	31.42	9302T25	55.11	9302T47	97.11
Zinc Galvanized Carbon Steel												
0.50″×1.26″	0.050″	0.25″×1.00″	0.103″	0.050″	1248T61	16.94	1248T51	31.76	1248T31	66.59	1248T11	120.99
0.50″×1.26″	0.070″	0.25″×1.00″	0.122″	0.070″	1248T63	19.32	1248T53	34.56	1248T33	75.84	1248T13	138.02
0.92″×2.10″	0.120″	0.56″×1.69″	0.164″	0.120″	1248T65	20.42	1248T55	40.55	1248T35	84.35	1248T15	145.88
Type 304 Stainless Steel												
0.50″×1.26″	0.040″	0.31″×1.00″	0.093″	0.040″	9303T81	24.09	9303T31	56.88	9303T41	146.02	9303T11	267.69
0.50″×1.26″	0.050″	0.31″×1.00″	0.093″	0.050″	9303T82	26.74	9303T32	63.31	9303T42	162.18	9303T12	297.09
0.92″×2.10″	0.050″	0.75″×1.81″	0.118″	0.050″	9303T83	21.63	9303T33	48.64	9303T43	134.15	9303T15	240.33
0.92″×2.10″	0.070″	0.63″×1.75″	0.120″	0.070″	9303T84	26.57	9303T34	62.89	9303T44	161.19	9303T16	295.27
0.92″×2.10″	0.119″	0.56″×1.69″	0.160″	0.119″	9303T85	46.53	9303T38	111.11	9303T48	284.15	9303T19	517.02
1.33″×3.15″	0.050″	1.06″×2.75″	0.124″	0.050″	9303T86	17.28	9303T35	40.52	9303T45	107.36	9303T17	192.02
1.33″×3.15″	0.079″	1.00″×2.63″	0.124″	0.079″	9303T87	20.95	9303T36	49.35	9303T46	126.82	9303T18	232.78
Type 316 Stainless Steel												
0.50″×1.26″	0.040″	0.31″×1.00″	0.093″	0.040″	1337T61	26.92	1337T51	50.84	1337T31	163.15	1337T11	299.08
0.50″×1.26″	0.050″	0.31″×1.00″	0.093″	0.050″	1337T62	31.02	1337T53	58.59	1337T33	184.48	1337T13	344.62
0.92″×2.10″	0.070″	0.63″×1.75″	0.120″	0.070″	1337T63	26.44	1337T55	49.94	1337T35	164.33	1337T15	293.77
Alloy 1100 Aluminum												
0.10″×0.16″	0.015″	0.06″×0.10″	0.016″	0.015″	9305T86	14.44	9305T85	42.48	—	—	—	—
0.12″×0.29″	0.020″	0.06″×0.20″	0.030″	0.020″	9305T88	15.89	9305T87	46.73	—	—	—	—
0.20″×0.41″	0.032″	0.14″×0.31″	0.034″	0.032″	9305T99	14.35	9305T89	42.22	—	—	—	—
Alloy 3003 Aluminum												
0.22″×0.43″	0.028″	0.08″×0.31″	0.060″	0.029″	9305T137	17.91	9305T81	40.89	9305T59	86.10	9305T27	149.27
0.33″×1.02″	0.030″	0.19″×0.81″	0.082″	0.030″	9305T139	14.71	9305T83	35.14	9305T69	92.03	9305T29	122.55
0.50″×1.27″	0.040″	0.31″×1.00″	0.091″	0.040″	9305T122	17.13	9305T51	39.02	9305T41	70.82	9305T11	122.33
0.50″×1.27″	0.060″	0.31″×1.00″	0.103″	0.060″	9305T123	22.49	9305T52	50.52	9305T42	95.35	9305T12	160.63
0.92″×2.12″	0.040″	0.75″×1.81″	0.114″	0.040″	9305T124	13.61	9305T53	32.29	9305T43	55.96	9305T13	97.21
0.92″×2.12″	0.095″	0.63″×1.75″	0.180″	0.095″	9305T127	28.91	9305T56	64.81	9305T46	122.09	9305T16	206.47
0.92″×2.21″	0.070″	0.69″×1.75″	0.134″	0.070″	9305T125	18.55	9305T54	42.78	9305T44	80.41	9305T34	132.50
1.33″×3.15″	0.115″	1.00″×2.75″	0.190″	0.115″	9305T129	22.52	9305T58	51.48	9305T48	93.32	9305T18	160.89
Grade 2 Titanium												
0.25″×0.50″	0.065″	0.13″×0.29″	0.070″	0.065″	9259K11	97.18	9259K13	364.06	—	—	—	—

Decorative Metal Sheets with Patterned Openings

Cut, form, and weld these punched metal sheets. With numerous uses, decorative sheets can be used as guards and grilles and in architectural applications. All have an unpolished mill finish. Width and length tolerances are +¼″.

Pattern	Thick.	Ga.	Open Area	3′×3′4″ Sheets		3′×5′ Sheets	
Carbon Steel							
Square (½″×½″)	0.036″	20	53%	9344T21	$47.69	9344T31	$63.89
Square (½″×½″)	0.060″	16	53%	9344T23	60.65	9344T11	80.67
Square (¾″×¾″)	0.060″	16	56%	9344T25	66.27	9344T32	87.45
Diamond (¼″×½″)	0.036″	20	64%	9344T26	66.51	9344T34	87.47
Cane	0.030″	22	44%	9344T27	58.87	9344T35	79.85
Interweave	0.024″	24	53%	9344T28	41.49	9344T39	54.14
Alloy 3003 Aluminum							
Diamond (¼″×½″)	0.032″	20	64%	9344T51	64.47	9344T61	83.72
Cane	0.032″	20	44%	9344T52	67.24	9344T62	87.75
Interweave	0.032″	20	53%	9344T53	49.11	9344T66	63.34
Union Jack	0.032″	20	40%	9344T54	51.64	9344T65	66.92
Oval (¾″×¼″)	0.032″	20	66%	9344T55	48.91	9344T64	63.13

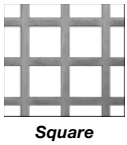
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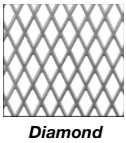
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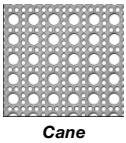
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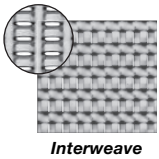
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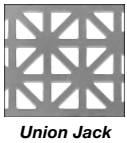
Union Jack

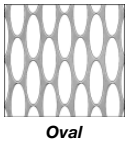
Oval

Don't see the shim stock you need? Just tell us what you're looking for and we'll get it for you.

Metal Shim Stock Sheet Assortment and Refills

Master Assortment— Contains 59 pieces, including all seven materials (one sheet of each size and thickness) listed below. Furnished in a spacious 24″ Ht.×30″ Wd.×11½″ Dp. steel cabinet that can also be used to store your own tools and supplies. Shim stock is cold rolled and not rated for hardness. Width tolerance is ±0.01″. Length tolerance is ±¼″. Thickness tolerance is ±10% for all thicknesses, except 0.005″ thick sheets are ±16%.

9300K59 ..... **Each** $484.56

Refill Assortments

Material	Temper	Meets ASTM	Sheet Size, Wd.×Lg.	Thickness	Total Pieces	Per Pkg.
Low Carbon Steel Grade 1010	Full Hard	——	6″×12″	0.001″, 0.0015″, 0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.007″, 0.008″, 0.01″, 0.012″, 0.015″	12	**9300K14** ... $27.18
Spring Steel Grade 1095	Spring	——	6″×12″	0.005″, 0.01″, 0.015″, 0.02″, 0.025″, 0.032″	6	**9300K27** ... $47.79
Aluminum Alloy 1100	Full Hard	B209	6″×50″	0.001″, 0.002″, 0.003″, 0.005″	4	**9300K8** $56.40
Stainless Steel Type 302	Full Hard	A666	6″×12″	0.001″, 0.0015″, 0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.007″, 0.008″, 0.01″, 0.012″, 0.015″	12	**9300K5** $51.31
Copper Alloy 110	Annealed	B152	6″×12″	0.005″, 0.01″, 0.015″, 0.02″, 0.025″	5	**9300K7** $88.82
Brass Alloy 260	½ Hard	B19	6″×12″	0.001″, 0.0015″, 0.002″, 0.003″, 0.004″, 0.005″, 0.006″, 0.007″, 0.008″, 0.01″, 0.012″, 0.015″	12	**9300K29** ... $35.91
Bronze Alloy 510	Spring	B103	6″×12″	0.005″, 0.008″, 0.01″, 0.013″, 0.016″, 0.02″, 0.025″, 0.032″	8	**9300K6** $127.16

Low Carbon Steel Shim Stock

For strength and weldability, turn to this magnetic steel. All are cold rolled.

1008-1010 Low Carbon Steel Rolls—Full Hard Temper

- Hardness: Rockwell B90

Rolls will vary from Grades 1008 to 1010. Meet ASTM A109. Width tolerance is ±0.005″ for 6″ wide rolls and ±0.01″ for 12″ wide rolls. Length tolerance is +3″, −¼″.

Thick.	Thick. Tolerance	6″ Wd.×100″ Lg.	Each	6″ Wd.×180″ Lg.	Each	12″ Wd.×120″ Lg.	Each
0.001″	±0.0001″	**9500K11**	$9.18	**9500K65**	$16.22	**9500K53**	$30.64
0.0015″	±0.00015″	**9500K12**	9.39	**9500K66**	16.50	——	——
0.002″	±0.0002″	**9500K13**	8.76	**9500K67**	15.65	**9500K36**	26.10
0.0025″	±0.00025″	**9500K64**	9.41	**9500K68**	16.11	——	——
0.003″	±0.0003″	**9500K15**	9.41	**9500K69**	16.48	**9500K37**	32.24
0.004″	±0.0005″	**9500K17**	9.64	**9500K71**	17.19	**9500K38**	33.22
0.005″	±0.0005″	**9500K18**	9.84	**9500K72**	17.53	**9500K39**	33.87
0.006″	±0.0005″	**9500K19**	10.19	**9500K73**	17.95	**9500K41**	34.73
0.007″	±0.00075″	**9500K21**	10.37	**9500K74**	18.40	**9500K42**	36.16

Thick.	Thick. Tolerance	6″ Wd.×100″ Lg.	Each	6″ Wd.×180″ Lg.	Each	12″ Wd.×120″ Lg.	Each
0.008″	±0.00075″	**9500K22**	$10.74	**9500K75**	$18.84	**9500K43**	$37.54
0.009″	±0.00075″	**9500K23**	10.92	**9500K76**	19.34	**9500K44**	38.51
0.01″	±0.00075″	**9500K24**	10.92	**9500K77**	19.91	**9500K45**	39.49
0.012″	±0.00075″	**9500K25**	11.30	**9500K78**	20.17	**9500K46**	39.92
0.015″	±0.00075″	**9500K27**	11.45	**9500K79**	20.69	**9500K47**	40.70
0.018″	±0.00075″	**9500K29**	12.58	**9500K81**	22.55	**9500K48**	41.26
0.02″	±0.001″	**9500K31**	12.17	**9500K82**	23.26	**9500K49**	43.84
0.025″	±0.001″	**9500K33**	13.80	**9500K83**	23.86	**9500K51**	45.09
0.031″	±0.0015″	**9500K34**	14.09	**9500K84**	26.01	**9500K52**	49.95

1008-1010 Low Carbon Steel Sheets—Full Hard Temper

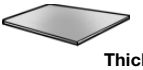

- Hardness: Rockwell B90

Sheets will vary from Grades 1008 to 1010. Width and length tolerances are ±0.075″. Sold in packages of 5.

Thick.	Thick. Tolerance	8″×12″	Per Pkg.
0.001″	±0.0001″	**9011K21** ♣	$16.22
0.002″	±0.0002″	**9011K22**	9.29
0.003″	±0.0003″	**9011K23**	9.46
0.004″	±0.0005″	**9011K24**	11.06
0.005″	±0.0005″	**9011K25**	$11.07
0.007″	±0.0007″	**9011K26**	11.77
0.01″	±0.0007″	**9011K27**	11.77
0.012″	±0.0007″	**9011K28**	$12.53
0.015″	±0.0007″	**9011K29**	13.28
0.02″	±0.001″	**9011K19**	14.03

♣ Meets ASTM A109 and Fed. Spec. QQ-S-698.

Sheet Assortment— Contains one 8″×12″ sheet of the following thicknesses: 0.002″, 0.003″, 0.004″, 0.005″, 0.007″, 0.01″, 0.012″, 0.015″, and 0.02″.

9301K5 ..... **Each** $23.02

1008 Low Carbon Steel Peel-Away (Laminated) Sheets—Soft (Annealed) Temper

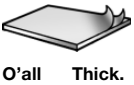

- Hardness: Rockwell B53-B62

Just peel off one or more of the laminated layers to get the exact thickness you need. Meet Fed. Spec. QQ-S-698. Width and length tolerances are ±⅛″.

O'all Thick.	Thick. Tolerance	12″×12″	Each	20″×24″	Each
0.002″ Thick Layers (±0.0002″)					
0.006″	+0.001″, −0.0005″	**9720K38**	$20.74	**9720K11**	$27.25
0.008″	+0.001″, −0.0005″	**9720K39**	21.80	**9720K12**	31.22
0.01″	+0.0015″, −0.0005″	**9720K41**	22.86	**9720K13**	35.42
0.016″	+0.0015″, −0.001″	**9720K42**	26.04	**9720K14**	47.65
0.02″	+0.002″, −0.001″	**9720K43**	28.16	**9720K15**	53.76
0.032″	+0.003″, −0.002″	**9720K44**	34.52	**9720K16**	74.57
0.048″	+0.005″, −0.002″	**9720K45**	43.02	**9720K17**	103.04
0.062″	+0.006″, −0.002″	**9720K46**	50.44	**9720K18**	128.59
0.094″	+0.009″, −0.003″	**9720K47**	67.42	**9720K19**	180.59
0.124″	+0.012″, −0.003″	**9720K48**	83.32	**9720K21**	224.77

O'all Thick.	Thick. Tolerance	12″×12″	Each	20″×24″	Each
0.003″ Thick Layers (±0.0003″)					
0.015″	+0.0015″, −0.001″	**9720K49**	$25.58	**9720K31**	$45.94
0.021″	+0.002″, −0.001″	**9720K51**	28.80	**9720K32**	57.21
0.033″	+0.003″, −0.002″	**9720K52**	35.24	**9720K33**	79.96
0.048″	+0.005″, −0.002″	**9720K53**	43.28	**9720K34**	107.57
0.063″	+0.006″, −0.002″	**9720K54**	51.32	**9720K35**	132.16
0.093″	+0.009″, −0.003″	**9720K55**	67.38	**9720K36**	185.33
0.126″	+0.012″, −0.003″	**9720K56**	85.08	**9720K37**	246.31

(Material continued on following page)

Low Carbon Steel Shim Stock *(Material continued from previous page)*

1008-1010 Low Carbon Steel Metric Rolls—Full Hard Temper

- Hardness: Rockwell B90

Rolls will vary from Grades 1008 to 1010. Meet ASTM A109 and Fed. Spec. QQ-S-698. Width tolerance is ±0.005″. Length tolerance is +¼″.

Thick.	Thick. Tolerance	*150 mm Wd.×2.5 m Lg.*	Each
0.05 mm	±0.005 mm	95085K51	$14.43
0.1 mm	±0.01 mm	95085K53	14.81
0.15 mm	±0.019 mm	95085K55	15.40
0.2 mm	±0.019 mm	95085K57	15.91
0.25 mm	±0.019 mm	95085K59	16.93
0.3 mm	±0.019 mm	95085K61	19.09
0.4 mm	±0.019 mm	95085K63	19.97
0.5 mm	±0.025 mm	95085K65	20.59
0.65 mm	±0.025 mm	95085K67	22.02
0.8 mm	±0.038 mm	95085K69	22.95

1008-1010 Low Carbon Steel Discs—Full Hard Temper

- Hardness: Rockwell B90

Discs will vary from Grades 1008 to 1010. Meet ASTM A109. Diameter tolerance is ±0.005″. Sold in packages of 5.

Dia.	*0.001″ Thick (±0.00008″)*	Per Pkg.	*0.002″ Thick (±0.0001″)*	Per Pkg.	*0.01″ Thick (±0.0005″)*	Per Pkg.
½″	2904T11	$12.30	2904T18	$12.96	2904T51	$18.23
¾″	2904T12	12.45	2904T19	13.25	2904T52	19.63
1″	2904T13	12.50	2904T21	13.30	2904T53	19.75
1½″	2904T14	12.81	2904T22	13.78	2904T54	20.20
2″	2904T15	13.02	2904T23	13.88	2904T55	20.86
3″	2904T16	13.13	2904T24	13.98	2904T56	21.56
4″	2904T17	13.61	2904T25	14.47	2904T57	22.95

Spring Steel Shim Stock

Spring steel is cold rolled and magnetic, has good wear resistance, and handles repeated stress well. ***Grade 1095*** is also known as blue-tempered steel; ***Grade 1075*** is also known as scaleless blue steel.

1095 Spring Steel Rolls—Full Hard Temper

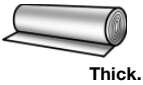

- Hardness: Rockwell C48-C51

Rolls are polished and meet ASTM A682, A684, and MIL-S-7947. Width tolerance is ±0.010″. Length tolerance is ±½″.

Thick.	Thick. Tolerance	*3″ Wd.×50″ Lg.*	Each
0.002″	±0.0002″	9503K11	$18.28
0.003″	±0.0003″	9503K12	19.24
		6″ Wd.×50″ Lg.	
0.004″	±0.0003″	9503K13	$20.59
0.005″	±0.0003″	9503K14	17.83
0.006″	±0.0004″	9503K15	18.00

Thick.	Thick. Tolerance	*6″ Wd.×50″ Lg.*	Each
0.007″	±0.0004″	9503K16	$18.07
0.008″	±0.0005″	9503K17	18.22
0.01″	±0.0007″	9503K18	19.39
0.012″	±0.0008″	9503K19	19.67
0.015″	±0.0008″	9503K21	22.33
0.016″	±0.001″	9503K25	24.92

Thick.	Thick. Tolerance	*6″ Wd.×50″ Lg.*	Each
0.018″	±0.001″	9503K26	$25.50
0.02″	±0.001″	9503K22	25.85
0.025″	±0.001″	9503K23	26.81
0.028″	±0.001″	9503K27	30.73
0.03″	±0.0015″	9503K28	31.61
0.032″	±0.0015″	9503K24	32.34

1075/1095 Spring Steel Strips—Full Hard Temper

- Hardness: Rockwell C44-C51

Strips are Grade 1095, unless noted. All meet ASTM A682. Width tolerance is ±0.060″, except 12″ wide strips which are +0.385″, –0.010″, and 22″ wide strips which are ±3″. Length tolerance is +3″, –½″.

Thick.	Thick. Tolerance	*6″ Wd.× 25″ Lg.*	Each	*12″ Wd.× 48″ Lg.*	Each	*22″ Wd.× 48″ Lg.*	Each
0.01″	±0.0007″	9014K22	$14.56	9014K17	$59.94	—	—
0.012″	±0.0008″	9014K61	14.63	—	—	—	—
0.015″	±0.0008″	9014K63	15.92	—	—	—	—
0.018″	±0.0008″	9014K24	18.46	—	—	—	—
0.02″	±0.001″	9014K65	18.12	9014K15	48.60	—	—
0.025″	±0.001″	9014K67	19.30	—	—	9014K56	$78.12
0.028″	±0.001″	9014K28	21.14	—	—	—	—
0.032″	±0.0015″	9014K69	21.22	—	—	9014K58■	87.80

■ Thick. tolerance is ±0.002″. ★ 24″ wide. Grade 1075. ♦ Grade 1075.

Thick.	Thick. Tolerance	*6″ Wd.×25″ Lg.*	Each	*22″ Wd.×48″ Lg.*	Each
0.035″	±0.002″	9014K91	$33.83	9014K59★	$92.46
0.042″	±0.002″	9014K92	43.73	9014K36	99.76
0.05″	±0.002″	9014K93	50.44	9014K38★	113.50
0.062″	±0.002″	9014K94	53.92	9014K41	127.88
		1½″ Wd.× 25″ Lg.		*4″ Wd.× 25″ Lg.*	
0.094″	±0.002″	—	—	9014K95♦	$90.78
0.125″	±0.002″	9014K96♦	$99.74	—	—

Aluminum Shim Stock

Not only is aluminum shim stock nearly pure aluminum, it also has good electrical conductivity. The alloys we carry are lightweight, nonmagnetic, and cold rolled.

Alloy 1100/1145 Aluminum Rolls—Full Hard Temper

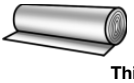

- Hardness: Not rated

Rolls are Alloy 1145, except 9708K74 is Alloy 1100. Meet ASTM B209. Width tolerance is ±0.005″. Length tolerance is +¼″.

Thick.	Thick. Tolerance	*6″ Wd.×50″ Lg.*	Each	*6″ Wd.×100″ Lg.*	Each
0.001″	±0.0003″	9708K91	$15.54	9708K71	$25.93
0.002″	±0.0003″	9708K92	16.74	9708K72	27.20
0.003″	±0.0003″	9708K93	16.70	9708K73	27.84
0.004″	±0.0004″	9708K94	16.98	9708K74	28.31

Thick.	Thick. Tolerance	*6″ Wd.×50″ Lg.*	Each	*6″ Wd.×100″ Lg.*	Each
0.005″	±0.0004″	9708K95	$17.34	9708K75	$28.91
0.006″	±0.0005″	9708K96	17.94	9708K76	29.89
0.008″	±0.0006″	9708K97	19.54	9708K78	32.56
0.01″	±0.0008″	9708K98	21.74	9708K81	36.24

Alloy 1100 Aluminum Peel-Away (Laminated) Sheets—Full Hard Temper

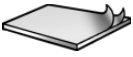

- Hardness: Not rated

Just peel off one or more of the laminated layers to get the exact thickness you need. Width and length tolerances are ±¼″.

O'all Thick.	Thick. Tolerance	*12″×12″*	Each
0.002″ Thick Layers (±0.0002″)			
0.006″	+0.001″, –0.0005″	9574K72	$9.28
0.008″	+0.001″, –0.0005″	9574K73	10.78
0.01″	+0.0015″, –0.0005″	9574K74	12.58
0.016″	+0.0015″, –0.001″	9574K75	13.98
0.02″	+0.002″, –0.001″	9574K76	18.07
0.032″	+0.003″, –0.002″	9574K77	23.49
0.048″	+0.005″, –0.002″	9574K78	30.38

O'all Thick.	Thick. Tolerance	*12″×12″*	Each
0.002″ Thick Layers (Cont.)			
0.062″	+0.006″, –0.002″	9574K79	$36.29
0.094″	+0.009″, –0.003″	9574K81	46.00
0.125″	+0.012″, –0.003″	9574K82	52.30
0.003″ Thick Layers (±0.0003″)			
0.016″	+0.0015″, –0.001″	9574K64	13.78
0.021″	+0.002″, –0.001″	9574K65	17.58
0.033″	+0.003″, –0.002″	9574K66	20.43

O'all Thick.	Thick. Tolerance	*12″×12″*	Each
0.003″ Thick Layers (Cont.)			
0.048″	+0.005″, –0.002″	9574K67	$29.98
0.063″	+0.006″, –0.002″	9574K68	36.09
0.093″	+0.009″, –0.003″	9574K69	40.69
0.125″	+0.012″, –0.003″	9574K71	46.33
		24″×24″	
0.187″	+0.018″, –0.003″	9574K61	$193.52
0.25″	+0.025″, –0.005″	9574K62	281.84

Don't see the shim stock you need? Just tell us what you're looking for and we'll get it for you.

Color-Coded Aluminum Shim Stock

Stronger than plastic and designed for heavy duty use, these nonmagnetic sheets come in several colors for quick and easy size identification. They are cold rolled.

Alloy 1100/3003 Aluminum Sheets— ½ to Full Hard Temper

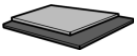

- Hardness: Brinell 32-44

Sheets 0.01″ thick and thinner are Alloy 1100; sheets 0.015″ thick and thicker are Alloy 3003. Width and length tolerances are ±1/16″.

Thick.	Thick. Tolerance	Color	6″×24″	Each	12″×24″	Each
0.002″	±0.0002″	Red	9536K11	$4.46	9536K31	$7.65
0.003″	±0.0003″	Green	9536K12	4.46	9536K32	7.65
0.004″	±0.0004″	Tan	9536K13	4.71	9536K33	8.04
0.005″	±0.0005″	Blue	9536K14	4.71	9536K34	8.04
0.007″	±0.0007″	Natural	9536K15	4.85	9536K35	8.37
0.01″	±0.001″	Brown	9536K16	$5.97	9536K36	$10.62
0.015″	±0.0015″	Pink	9536K47	6.39	9536K57	11.94
0.02″	±0.002″	Yellow	9536K18	7.54	9536K38	13.30
0.025″	±0.0025″	White	9536K19	7.80	9536K39	13.99
0.030″	±0.003″	Coral	9536K21	8.19	9536K41	15.43

6″×24″ Sheet Assortment— Contains one 6″×24″ sheet of each thickness listed above ..... 9536K51 **Per Pkg.** $47.27

12″×24″ Sheet Assortment— Contains one 12″×24″ sheet of each thickness listed above ..... 9536K52 **Per Pkg.** $85.65

Stainless Steel Shim Stock

Known for its corrosion and temperature resistance. All stainless steel shim stock is cold rolled. 300 series stainless steel may be slightly magnetic; Types 17-4 PH and 17-7 PH are magnetic. ***Type 316*** has the greatest corrosion resistance of the stainless steel we carry. ***Type 17-7 PH*** is stronger than the 300 series, while ***Type 17-4 PH*** is stronger than 17-7 PH.

Type 301 Stainless Steel Rolls— ½ Hard Temper

- Hardness: Rockwell C28-C38

Meet ASTM A240 and A666. Width tolerance is ±0.015″. Length tolerance is +2″.

Thick.	Thick. Tolerance	6″ Wd.×50″ Lg.	Each
0.002″	±0.0001″	2316K11	$16.60
0.003″	±0.00015″	2316K12	17.00
0.004″	±0.0002″	2316K13	17.20
0.005″	±0.00025″	2316K14	18.90
0.006″	±0.0003″	2316K15	19.40
0.007″	±0.00035″	2316K16	20.00
0.008″	±0.0004″	2316K17	20.20
0.01″	±0.0005″	2316K18	20.80
0.012″	±0.0006″	2316K19	$22.00
0.015″	±0.001″	2316K21	23.20
0.018″	±0.001″	2316K22	25.70
0.02″	±0.001″	2316K23	27.00
0.025″	±0.001″	2316K24	37.50
0.031″	±0.001″	2316K25	38.70
0.035″	±0.001″	2316K26	39.50

Type 301/302/304 Stainless Steel Rolls— Full Hard Temper

- Hardness: Rockwell C40-C45

Rolls will vary between Types 301, 302, and 304. Meet ASTM A666. Width tolerance is ±0.005″, except 9506K29 and 9784K41 have a width tolerance of +½″, and 24″ wide rolls have a width tolerance of +1″. Length tolerance is ±1/32″.

Thick.	Thick. Tolerance	6″ Wd.×50″ Lg.	Each	6″ Wd.×100″ Lg.	Each	12″ Wd.×50″ Lg.	Each	12″ Wd.×100″ Lg.	Each	24″ Wd.×50″ Lg.	Each
0.0005″	±0.000025″	9502K26	$38.65	53755K27	$63.82	9506K29	$70.73	9784K41	$121.92	—	—
0.001″	±0.0001″	9502K11	12.83	53755K11	24.49	9506K11	24.49	9784K42	41.07	9784K61	$64.15
0.0015″	±0.00007″	9502K33	13.46	53755K28	25.62	—	—	—	—	—	—
0.002″	±0.0002″	9502K12	13.21	53755K12	25.20	9506K12	25.96	9784K43	42.52	9784K62	34.07
0.003″	±0.0002″	9502K13	14.07	53755K13	26.71	9506K13	26.70	9784K44	43.32	9784K63	36.00
0.004″	±0.0002″	9502K24	14.38	53755K14	27.44	9506K14	27.52	9784K45	43.68	9784K64	38.04
0.005″	±0.0003″	9502K14	14.74	53755K15	28.37	9506K15	28.37	9784K46	44.30	9784K65	42.05
0.006″	±0.0003″	9502K15	15.11	53755K16	28.79	9506K16	28.79	9784K47	45.20	9784K66	45.88
0.007″	±0.0004″	9502K25	15.48	53755K17	29.49	9506K17	29.49	9784K48	45.93	9784K67	49.11
0.008″	±0.0004″	9502K16	15.84	53755K18	30.28	9506K18	30.26	9784K49	46.33	9784K68	52.36
0.009″	±0.00045″	9502K32	16.25	53755K26	31.00	—	—	—	—	—	—
0.01″	±0.0005″	9502K17	16.58	53755K19	31.71	9506K19	31.58	9784K51	51.77	9784K69	57.67
0.012″	±0.0007″	9502K18	16.98	53755K21	32.31	9506K21	32.30	9784K52	56.60	9784K71	64.28
0.015″	±0.001″	9502K19	19.50	53755K22	34.06	9506K22	33.94	9784K53	66.71	9784K72	75.41
0.02″	±0.001″	9502K21	22.14	53755K23	35.57	9506K23	36.06	9784K54	75.80	9784K73	81.30
0.025″	±0.001″	9502K22	23.62	53755K24	38.30	9506K24	38.86	9784K55	81.64	9784K74	94.62
0.031″	±0.001″	9502K23	27.38	53755K25	51.45	9506K25	54.07	9784K56	90.21	9784K75	113.63

Type 316 Stainless Steel Rolls— Soft (Annealed) Temper

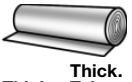

- Hardness: Rockwell B88

Meet ASTM A260 and A666. Width tolerance is ±0.005″. Length tolerance is ±1/8″.

Thick.	Thick. Tolerance	6″ Wd.×50″ Lg.	Each	6″ Wd.×100″ Lg.	Each	12″ Wd.×50″ Lg.	Each	12″ Wd.×100″ Lg.	Each	24″ Wd.×50″ Lg.	Each	24″ Wd.×100″ Lg.	Each
0.002″	±0.0001″	9548K11	$20.19	9548K21	$35.25	9548K31	$36.84	9548K41	$65.44	9548K51	$65.44	9548K61	$123.18
0.003″	±0.00015″	9548K12	22.62	9548K22	40.19	9548K32	41.81	9548K42	75.22	9548K52	75.22	9548K62	141.59
0.004″	±0.0002″	9548K13	26.09	9548K23	48.81	9548K33	48.75	9548K43	89.12	9548K53	89.12	9548K63	167.76
0.005″	±0.00025″	9548K14	27.06	9548K24	48.81	9548K34	50.50	9548K44	92.22	9548K54	92.22	9548K64	173.59
0.007″	±0.0005″	9548K15	32.76	9548K25	60.41	9548K35	62.00	9548K45	115.82	9548K55	115.82	9548K65	218.78
0.01″	±0.0005″	9548K16	33.56	9548K26	64.29	9548K36	67.18	9548K46	125.38	9548K56	125.38	9548K66	236.83
0.015″	±0.0005″	9548K17	48.03	9548K27	89.97	9548K37	84.06	9548K47	159.28	9548K57	159.28	9548K67	301.79
0.02″	±0.0005″	9548K18	54.14	9548K28	96.74	9548K38	86.14	9548K48	156.13	9548K58	142.40	9548K68	356.00
0.025″	±0.0008″	9548K19	58.81	9548K29	106.58	9548K39	117.82	9548K49	227.21	9548K59	227.21	9548K69	431.70

(Material continued on following page)

Stainless Steel Shim Stock *(Material continued from previous page)*

Type 17-4 PH Stainless Steel Rolls—Soft (Annealed) Temper

- Hardness: Rockwell C30-C38

Meet ASTM A693. Width tolerance is ±0.01″. Length tolerance is ±0.015″.

Thick.	Thick. Tolerance	4″ Wd.×60″ Lg.	Each
0.003″	±0.00015″	3723T11	$37.95
0.004″	±0.0002″	3723T12	44.12
0.005″	±0.00025″	3723T13	49.76
0.006″	±0.0003″	3723T14	65.80
0.008″	±0.0004″	3723T15	72.50
0.01″	±0.0005″	3723T16	85.57
0.012″	±0.0006″	3723T17	98.30
0.015″	±0.0009″	3723T18	121.41
0.018″	±0.001″	3723T19	135.11
0.02″	±0.001″	3723T21	154.13
0.025″	±0.001″	3723T22	182.20
0.031″	±0.001″	3723T23	190.15

Type 17-7 PH Stainless Steel Rolls—Full Hard Temper

- Hardness: Rockwell C41-C48

Meet ASTM A693. Width tolerance is ±0.015″. Length tolerance is +2″.

Thick.	Thick. Tolerance	6″ Wd.×50″ Lg.	Each
0.003″	±0.00015″	2325K11	$19.00
0.004″	±0.0002″	2325K12	19.20
0.005″	±0.00025″	2325K13	20.90
0.006″	±0.0003″	2325K14	21.40
0.007″	±0.00035″	2325K15	22.00
0.008″	±0.0004″	2325K16	22.20
0.01″	±0.0005″	2325K17	22.80
0.012″	±0.0006″	2325K18	24.00
0.015″	±0.001″	2325K19	27.20
0.02″	±0.001″	2325K21	31.00
0.025″	±0.001″	2325K22	37.50
0.031″	±0.00186″	2325K23	43.00

Type 301/302/304 Stainless Steel Sheets—Full Hard Temper

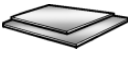

- Hardness: Rockwell C40-C45

Sheets will vary among Types 301, 302, and 304. Meet ASTM A666. Width tolerance is ±0.01″. Length tolerance is ±1/32″.

Thick.	Thick. Tolerance	8″ Wd.×12″ Lg.	Each	24″ Wd.×24″ Lg.	Each
0.001″	±0.00005″	9011K82	$6.25	9011K61	$32.31
0.002″	±0.0001″	9011K83	6.31	9011K63	21.15
0.003″	±0.00015″	9011K84	6.44	9011K64	24.81
0.004″	±0.0002″	9011K85	6.59	9011K65	27.88
0.005″	±0.00025″	9011K86	6.94	9011K66	30.58
0.007″	±0.00035″	9011K87	7.16	9011K67	40.19
0.01″	±0.0005″	9011K88	7.59	9011K68	47.40
0.012″	±0.0006″	9011K89	8.12	9011K69	55.19
0.015″	±0.0009″	9011K91	8.75	9011K71	62.88
0.02″	±0.001″	9011K92	9.72	9011K72	77.40

Sheet Assortment—Contains one 8″ Wd.×12″ Lg. sheet of each thickness listed above.

9301K6 ..... Each $54.47

Type 316 Stainless Steel Sheets—Soft (Annealed) Temper

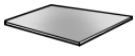

- Hardness: Rockwell B88

Meet ASTM A240 and A666. Width tolerance is ±0.005″. Length tolerance is ±1/8″.

Thick.	Thick. Tolerance	8″ Wd.×12″ Lg.	Each
0.001″	±0.00008″	2317K11	$7.83
0.002″	±0.0001″	2317K12	7.16
0.003″	±0.00015″	2317K13	7.94
0.004″	±0.0002″	2317K14	8.86
0.005″	±0.00025″	2317K15	9.38
0.007″	±0.0005″	2317K16	11.87
0.01″	±0.0005″	2317K17	12.35
0.012″	±0.0005″	2317K18	14.75
0.015″	±0.0005″	2317K19	15.35
0.02″	±0.0005″	2317K21	18.18

Type 302 Stainless Steel Peel-Away (Laminated) Sheets—Soft (Annealed) Temper

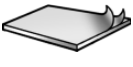

- Hardness: Not rated

Just peel off one or more of the laminated layers to get the exact thickness you need. Width and length tolerances are ±1/8″.

O'all Thick.	Thick. Tolerance	12″×12″	Each	20″×24″	Each
0.002″ Thick Layers (±0.0002″)					
0.008″	+0.001″, −0.0005″	9718K41	$28.13	9718K11	$59.15
0.01″	+0.0015″, −0.0005″	9718K42	30.76	9718K12	72.01
0.016″	+0.0015″, −0.001″	9718K43	38.70	9718K13	99.40
0.02″	+0.002″, −0.001″	9718K44	43.98	9718K14	116.69
0.032″	+0.003″, −0.002″	9718K45	59.84	9718K15	171.11
0.048″	+0.005″, −0.002″	9718K46	74.98	9718K16	232.22
0.062″	+0.006″, −0.002″	9718K47	99.50	9718K37	276.94
0.094″	+0.009″, −0.003″	9718K48	141.78	9718K18	413.35
0.124″	+0.012″, −0.003″	9718K49	181.44	9718K19	524.34
0.003″ Thick Layers (±0.0003″)					
0.015″	+0.0015″, −0.001″	9718K51	31.59	9718K22	61.91
0.021″	+0.002″, −0.001″	9718K52	37.21	9718K23	81.31
0.033″	+0.003″, −0.002″	9718K53	48.46	9718K24	116.07
0.048″	+0.005″, −0.002″	9718K54	62.52	9718K25	162.92
0.063″	+0.006″, −0.002″	9718K55	76.56	9718K26	202.99
0.093″	+0.009″, −0.003″	9718K56	104.68	9718K27	293.65
0.125″	+0.012″, −0.003″	9718K57	135.56	9718K28	348.31

Type 302/304 Stainless Steel Discs—Full Hard Temper

- Hardness: Rockwell C40-C45

Discs will vary between Types 302 and 304. Meet ASTM A666. Diameter tolerance is ±0.005″. Sold in packages of 5.

Dia.	0.001″ Thick (±0.00008″)	Per Pkg.	0.002″ Thick (±0.0001″)	Per Pkg.	0.01″ Thick (±0.0005″)	Per Pkg.
1/2″	2895T11	$18.15	2895T18	$18.43	2895T51	$21.70
3/4″	2895T12	18.48	2895T19	18.85	2895T52	23.23
1″	2895T13	18.73	2895T21	19.00	2895T53	23.50
1 1/2″	2895T14	19.27	2895T22	19.65	2895T54	23.89
2″	2895T15	19.80	2895T23	19.47	2895T55	24.42
3″	2895T16	20.40	2895T24	19.79	2895T56	24.96
4″	2895T17	21.01	2895T25	20.67	2895T57	25.75

Type 301/302/304 Stainless Steel Strips—Full Hard Temper

- Hardness: Rockwell C40-C45

Strips will vary among Types 301, 302, and 304. Meet ASTM A666. Width tolerance is ±0.005″. Length tolerance is +1/64″.

Thick.	Thick. Tolerance	6″ Wd.×25″ Lg.	Each
0.012″	±0.0006″	9014K81	$10.70
0.015″	±0.0009″	9014K83	11.21
0.02″	±0.001″	9014K85	12.54
0.025″	±0.001″	9014K87	13.59
0.031″	±0.001″	9014K89	16.27

Type 301/302/304 Stainless Steel Metric Strips—Full Hard Temper

- Hardness: Rockwell C40-C45

Strips will vary among Types 301, 302, and 304. Meet ASTM A666. Width tolerance is ±0.0005″. Length tolerance is +1/4″.

Thick.	Thick. Tolerance	150 mm Wd.×1.25 m Lg.	Each
0.05 mm	±0.005 mm	95055K31	$21.11
0.1 mm	±0.01 mm	95055K33	21.59
0.15 mm	±0.019 mm	95055K35	22.78
0.2 mm	±0.019 mm	95055K37	23.91
0.25 mm	±0.019 mm	95055K39	24.78
0.3 mm	±0.019 mm	95055K41	$25.84
0.4 mm	±0.019 mm	95055K43	28.03
0.5 mm	±0.025 mm	95055K45	33.28
0.65 mm	±0.025 mm	95055K47	36.68
0.8 mm	±0.038 mm	95055K49	41.79

Don't see the shim stock you need? Just tell us what you're looking for and we'll get it for you.

Nickel Shim Stock

Need good corrosion resistance in soft, easy-to-form shim stock? Then this cold-rolled, magnetic material is for you.

Alloy 200/201 Nickel Rolls—Soft (Annealed) Temper

- Hardness: Rockwell B50

Rolls will vary between Alloys 200 and 201. Width tolerance is ±0.005″. Length tolerance is ±¼″.

Thick.	Thick. Tolerance	6″ Wd.×25″ Lg.	Each	6″ Wd.×50″ Lg.	Each
0.001″	±0.0003″	9707K51	$58.88	9707K31	$84.11
0.002″	±0.0003″	9707K52	52.60	9707K32	87.69
0.003″	±0.0003″	9707K53	52.42	9707K33	91.17
0.005″	±0.0004″	9707K55	59.16	9707K35	98.60
0.01″	±0.0008″	9707K59	88.62	9707K41	136.33

Titanium Shim Stock

Titanium is 40% lighter than steel with a high strength-to-weight ratio, all while maintaining good corrosion resistance. It is nonmagnetic and cold rolled.

Grade 2 Titanium Rolls—Soft (Annealed) Temper

- Hardness: Rockwell B80

Width and length tolerances are ±0.015″.

Thick.	Thick. Tolerance	6″×50″	Each	12″×50″	Each
0.005″	±0.00025″	5747T11	$76.20	5747T21	$147.21
0.006″	±0.0003″	5747T12	92.80	5747T22	172.17
0.007″	±0.00035″	5747T13	96.73	5747T23	186.83
0.008″	±0.0004″	5747T14	110.58	5747T24	205.61
0.01″	±0.0005″	5747T15	130.56	5747T25	252.02
0.012″	±0.0006″	5747T16	156.94	5747T26	292.00
0.015″	±0.0009″	5747T17	178.10	5747T27	344.95
0.02″	±0.001″	5747T18	229.17	5747T28	444.05

Copper Shim Stock

Copper shim stock is cold rolled, nonmagnetic, and has good electrical conductivity and corrosion resistance.

Alloy 110 Copper Rolls—Soft (Annealed) Temper

- Hardness: Rockwell 15T 47-57

Meet ASTM B152. Thickness tolerance is ±10%. Width tolerance is ±0.01″. Length tolerance is +½″, −¼″.

Thick.	6″ Wd.×50″ Lg.	Each	6″ Wd.×100″ Lg.	Each
0.001″	9709K53	$23.03	9709K31	$41.26
0.002″	9709K54	23.69	9709K32	43.29
0.003″	9709K55	26.50	9709K33	48.73
0.004″	9709K61	27.05	9709K34	49.61
0.005″	9709K62	28.71	9709K35	52.20
0.006″	9709K63	29.92	9709K36	54.10
0.007″	9709K64	30.61	9709K37	55.34

Thick.	6″ Wd.×25″ Lg.	Each	6″ Wd.×50″ Lg.	Each	6″ Wd.×100″ Lg.	Each
0.008″	—	—	9709K65	$32.42	9709K38	$61.02
0.01″	—	—	9709K66	33.31	9709K41	61.24
0.015″	9014K43♣	$24.46	9709K71	40.62	9709K47	75.95
0.02″	9014K45♣	25.74	9709K72	44.49	9709K48	80.02
0.025″	9014K47♣	27.62	9709K73	50.41	9709K49	90.29
0.032″	—	—	9709K74	66.50	9709K52	119.07

♣ Shipped flat.

Brass Shim Stock

Stronger than copper; nonmagnetic with fair corrosion resistance.

Alloy 260 Brass Rolls—½ Hard Temper

- Hardness: Rockwell 30T 56-68

Meet ASTM B19 and B36. Sheets are cold rolled. Thickness tolerance is ±10%. Width tolerance is ±0.01″. Length tolerance is +½″, −¼″.

Thick.	6″ Wd.× 60″ Lg.	Each	6″ Wd.× 100″ Lg.	Each	12″ Wd.× 120″ Lg.	Each
0.001″	9504K11	$7.41	9501K11	$12.35	9299K11	$32.39
0.0015″	9504K12	7.52	9501K12	12.53	—	—
0.002″	9504K13	8.52	9501K13	13.97	9299K12	33.61
0.003″	9504K15	9.27	9501K14	15.20	9299K13	37.08
0.004″	9504K17	10.64	9501K15	17.45	9299K14	42.76
0.005″	9504K18	12.72	9501K16	20.85	9299K15	53.03
0.006″	9504K19	14.14	9501K17	23.18	9299K16	57.09
0.007″	9504K21	15.35	9501K18	25.04	—	—
0.008″	9504K22	21.39	9501K19	33.06	9299K18	79.34

Thick.	6″ Wd.× 25″ Lg.	Each	6″ Wd.× 60″ Lg.	Each	6″ Wd.× 100″ Lg.	Each	12″ Wd.× 120″ Lg.	Each
0.009″	—	—	9504K23	$18.75	9501K21	$29.50	—	—
0.01″	—	—	9504K24	20.05	9501K22	30.85	9299K21	$80.21
0.012″	9014K21♣	$14.01	9504K25	23.30	9501K23	35.85	9299K22	93.40
0.015″	9014K23♣	15.65	9504K26	24.41	9501K24	37.56	9299K25	97.66
0.018″	—	—	—	—	9501K47	55.50	—	—
0.02″	9014K25♣	21.22	9504K28	34.60	9501K25	53.23	9299K32	152.31
0.025″	9014K27♣	29.52	9504K39	45.71	9501K26	70.33	—	—
0.031″	9014K29♣	33.83	9504K3	52.47	9501K27	80.73	—	—

♣ Shipped flat.

Alloy 260 Brass Sheets—½ to Full Hard Temper

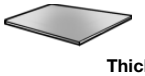

- Hardness: Rockwell 30T 56-74

Meet ASTM B36. Sheets are cold rolled. Width and length tolerances are ±1/16″.

Thick.	Thick. Tolerance	8″×12″	Each	Thick.	Thick. Tolerance	8″×12″	Each	Thick.	Thick. Tolerance	8″×12″	Each
0.001″	±0.0001″	9011K1	$3.23	0.005″	±0.0005″	9011K5	$6.05	0.012″	±0.0012″	9011K8	$11.83
0.002″	±0.0002″	9011K2	3.64	0.007″	±0.0007″	9011K6	8.01	0.015″	±0.0015″	9011K9	12.39
0.003″	±0.0003″	9011K3	3.79	0.01″	±0.001″	9011K7	10.18	0.02″	±0.002″	9011K11	21.29
0.004″	±0.0004″	9011K4	5.02								

***Sheet Assortment*—**Contains one 8″×12″ sheet of each thickness listed above ..... 9301K4 Each $48.61

Alloy 260 Brass Peel-Away (Laminated) Sheets—½ Hard Temper

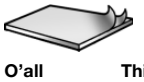

- Hardness: Not rated

Just peel off one or more of the laminated layers to get the exact thickness you need. Width and length tolerances are ±⅛″.

O'all Thick.	Thick. Tolerance	8″×24″	Each
0.002″ Thick Layers (±0.0002″)			
0.006″	+0.001″, −0.0005″	9521K11	$32.77
0.008″	+0.001″, −0.0005″	9521K12	37.30
0.01″	+0.0015″, −0.0005″	9521K33	41.82
0.016″	+0.0015″, −0.001″	9521K14	55.39

O'all Thick.	Thick. Tolerance	8″×24″	Each	12″×12″	Each
0.002″ Thick Layers (Cont.)					
0.02″	+0.002″, −0.001″	9521K15	$64.43	9521K71	$51.52
0.032″	+0.003″, −0.002″	9521K16	91.57	9521K72	74.23
0.048″	+0.005″, −0.002″	9521K17	127.75	9521K73	101.36
0.062″	+0.006″, −0.002″	9521K18	159.43	9521K74	125.09
0.094″	+0.009″, −0.003″	9521K19	221.72	9521K75	171.59
0.124″	+0.012″, −0.003″	9521K21	286.61	9521K76	220.24

Bronze Shim Stock

High strength makes this nonmagnetic corrosion-resistant material ideal for applications requiring good resistance to repetitive stress. It is cold rolled.

Alloy 510 Bronze Rolls—Spring Temper

- Hardness: Rockwell 30T 76-80

Meet ASTM B103. Width tolerance is ±0.01″. Length tolerance is +½″, –¼″.

Thick.	Thick. Tolerance	6″ Wd.×50″ Lg.	Each
0.005″	±0.0003″	9020K41	$14.24
0.008″	±0.0004″	9020K42	19.57
0.01″	±0.0007″	9020K43	23.67
0.013″	±0.001″	9020K44	28.92
0.016″	±0.001″	9020K45	35.31
0.02″	±0.001″	9020K46	$40.95
0.025″	±0.001″	9020K47	45.12
0.032″	±0.0015″	9020K48	62.00
0.04″	±0.002″	9020K49	72.24

Alloy 510 Bronze Strips—Spring Temper

- Hardness: Rockwell 30T 76-80

Meet ASTM B103. Width tolerance is ±0.01″. Length tolerance is +¼″, –⅛″.

Thick.	Thick. Tolerance	6″ Wd.×25″ Lg.	Each
0.016″	±0.001″	9014K33	$23.78
0.02″	±0.001″	9014K35	27.38
0.025″	±0.001″	9014K37	29.02
0.032″	±0.0015″	9014K39	33.13

Plastic Shim Stock

Made of molded high-impact polystyrene, plastic shim stock is lightweight, corrosion resistant, and economical.

Sheets

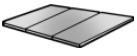

- Hardness: Rockwell M60-M75

These 6″×6″ square shims are scored into 2″×6″ sections to make size adjustments easy. Meet ASTM D638. Not rated for maximum temperature. Sheets may be black or gray. Width and length tolerances are ±⅛″. Sold in packages of 8.

Thick.	Thick. Tolerance		Per Pkg. 1-4	Per Pkg. 5-Up
1/16″	±0.0312″	95015K5	$3.06	$2.63
⅛″	±0.0312″	95015K6	5.42	4.67
¼″	±0.0312″	95015K7	10.28	8.70

Color-Coded Plastic Shim Stock

Not only lightweight and economical, this extruded shim stock is rustproof, impervious to oil, and comes in several colors for quick and easy size identification.

Sheets

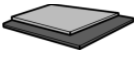

- Hardness: Not rated

Sheets up to 0.01″ thick are polyester. Sheets 0.0125″ thick are polycarbonate. Sheets 0.015″ to 0.06″ thick are PETG. Maximum temperature is 200° F for 0.0005″ to 0.0125″ thick sheets; 140° F for 0.015″ to 0.06″ thick. Width and length tolerances are ±1/16″.

Thick.	Thick. Tolerance	Color	5″×20″	Each	10″×20″	Each	12″×24″	Each	20″×20″	Each	20″×50″	Each
0.0005″	±0.0002″	Silver	9513K11	$3.32	9513K26	$5.22	9513K111	$8.00	9513K45	$8.80	9513K61	$17.72
0.00075″	±0.0002″	Gold	9513K131	3.15	9513K132	4.94	9513K133	8.00	9513K134	8.80	9513K135	17.72
0.001″	±0.0002″	Amber	9513K12	3.32	9513K27	5.22	9513K112	8.00	9513K46	8.80	9513K62	17.72
0.0015″	±0.0002″	Purple	9513K13	3.32	9513K28	5.22	9513K113	8.00	9513K47	8.80	9513K63	17.72
0.002″	±0.0002″	Red	9513K14	3.32	9513K29	5.22	9513K114	8.00	9513K48	8.80	9513K64	17.72
0.003″	±0.0002″	Green	9513K15	3.32	9513K31	5.22	9513K115	8.00	9513K49	8.80	9513K65	17.72
0.004″	±0.0002″	Tan	9513K16	3.45	9513K32	6.07	9513K116	9.16	9513K51	10.32	9513K66	19.77
0.005″	±0.0002″	Blue	9513K17	3.45	9513K33	6.07	9513K117	9.16	9513K52	10.32	9513K67	19.77
0.0075″	±0.0004″	Matte	9513K18	3.45	9513K34	6.07	9513K118	9.16	9513K53	10.32	9513K68	19.77
0.01″	±0.0005″	Brown	9513K19	3.57	9513K35	6.74	9513K119	10.57	9513K54	11.66	9513K69	27.02
0.0125″	±0.0006″	Black	9513K21	3.57	9513K36	7.02	9513K121	11.21	9513K55	12.13	9513K71	28.32
0.015″	±0.0015″	Pink	9513K22	3.57	9513K37	7.02	9513K122	11.21	9513K56	12.13	9513K72	28.32
0.02″	±0.002″	Yellow	9513K23	3.70	9513K38	7.58	9513K123	11.96	9513K57	13.12	9513K73	31.01
0.025″	±0.0025″	White	9513K24	4.07	9513K39	8.18	9513K124	13.16	9513K58	14.41	9513K74	34.47
0.03″	±0.003″	Coral	9513K25	4.07	9513K41	8.18	9513K125	13.17	9513K59	14.41	9513K75	34.47
0.04″	±0.004″	Clear	9513K81	5.39	9513K86	10.86	9513K126	17.63	9513K91	19.30	9513K96	42.04
0.05″	±0.005″	Clear	9513K82	6.09	9513K87	11.35	9513K127	19.04	9513K92	21.51	9513K97	45.77
0.06″	±0.006″	Clear	9513K83	6.57	9513K88	12.30	9513K128	20.97	9513K93	23.99	9513K98	53.07

Sheet Assortments—Contain a total of 15 sheets; one sheet of each thickness 0.0005″ to 0.03″.

5″×20″ Sheet Assortment	9513K42	Per Pkg.	$34.75
10″×20″ Sheet Assortment	9513K43	Per Pkg.	$59.35
12″×24″ Sheet Assortment	9513K76	Per Pkg.	$113.98
20″×20″ Sheet Assortment	9513K44	Per Pkg.	$117.74
20″×50″ Sheet Assortment	9513K77	Per Pkg.	$273.37

Precision Shim Bushing Stock

The tight tolerances on these smooth, low-friction materials allow you to increase or decrease a shaft or rod diameter size by simply slipping the bushing over the shaft or rod. They also fit inside each other to increase more than one wall thickness. Use carbide blades to cut to a specific length for a bushing, spacer, shim, or sleeve bearing. Length is 6″.

Delrin® acetal resin combines strength and wear resistance with good chemical resistance. Hardness is Rockwell M94. Condition is extruded. Meets ASTM D4181 and is FDA compliant. Temperature range is –4° to +180° F. OD and ID tolerances are ±0.0005″. Length tolerance is +0.05″.

UHMW polyethylene does not absorb moisture and has good wear and corrosion resistance. Hardness is Rockwell D66. Condition is extruded. Meets ASTM D4020 and is FDA compliant. Temperature range is –22° to +180° F. OD tolerance is -0.02″. ID tolerance is +0.02″. Length tolerance is +½″.

Steel (Alloy 4130) offers good weldability. Hardness is Rockwell C30-C45. Temper is annealed with a hardened surface. Condition is cold finished. Meets ASTM A513, except 1½″ OD meets ASTM A519. OD tolerance is ±0.035″. ID tolerance is ±0.038″. Length tolerance is +⅛″.

Stainless steel (Type 440C) is harder than steel bushing stock, with good wear and corrosion resistance. Hardness is Rockwell C55-C60. Temper is full hard. Condition is cold drawn. Meets ASTM A276. OD tolerance is -0.0002″. ID tolerance is +0.0002″. Length tolerance is ±0.01″.

OD	ID		Each
Delrin® Acetal Resin			
1/8″ Wall Thickness			
½″	¼″	1989T11	$29.91
¾″	½″	1989T12	31.09
1″	¾″	1989T13	31.52
1¼″	1″	1989T14	31.88
1½″	1¼″	1989T15	33.19
1¾″	1½″	1989T16	34.28
2″	1¾″	1989T17	34.95
2¼″	2″	1989T18	35.60
2½″	2¼″	1989T19	35.95
UHMW Polyethylene			
¼″ Wall Thickness			
¾″	¼″	1988T11	8.81
1¼″	¾″	1988T12	10.69
1¾″	1¼″	1988T13	13.72
2¼″	1¾″	1988T14	16.91
2¾″	2¼″	1988T15	21.06
3¼″	2¾″	1988T16	24.53
3¾″	3¼″	1988T17	29.88

OD	ID		Each
Steel (Alloy 4130)			
¼″ Wall Thickness			
1″	½″	8305T11	$91.52
1½″	1″	8305T12	97.08
2″	1½″	8305T13	84.75
Stainless Steel (Type 440C)			
1/32″ Wall Thickness			
⅜″	5/16″	1991T11	99.74
7/16″	⅜″	1991T12	122.42
½″	7/16″	1991T13	137.18
11/16″	⅝″	1991T15	121.32
¾″	11/16″	1991T16	128.27
13/16″	¾″	1991T17	170.89
1″	15/16″	1991T21	158.04
1/16″ Wall Thickness			
⅝″	½″	1991T14	118.53
1⅛″	1″	1991T22	193.09
1⅜″	1¼″	1991T24	239.37

About the Thickness of Foil

Need help deciding which thickness you need? Use the box on the right to gauge how thick your foil will be. Common food service foil is 0.0015″ thick.

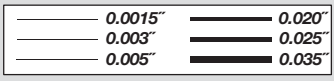

Aluminum Foil

Aluminum conducts electricity and heat, and is lightweight and corrosion resistant. Use this cold-rolled, nonmagnetic foil as a wrap, cover, mask, or patch. The ***1000 series alloys*** are nearly pure aluminum and the ***3000 series alloys*** are the most corrosion resistant of the aluminum alloys.

Alloy 1000/3000 Series Aluminum Rolls—Soft (Annealed) Temper

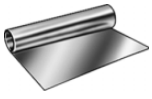

- Hardness: Not rated

General Purpose—Packed in a box; all except 0.002″ thick foil are suitable for use in the food industry. Made from 1000 series alloys. Meet ASTM B479. Width tolerance is ±3/32″. Length tolerance is +5 ft.

PTFE Coated—Made of 0.005″ thick Alloy 3003 with a 0.0005″ thick green PTFE coating on one side. The coating adds chemical resistance and has a slippery surface. Use as release liner in food packaging and as an EMI/RFI shield in electronic applications. Width tolerance is ±1/32″. Length tolerance is ±6″.

Adhesive Backed—Made of Alloy 1100/1145 with an acrylic adhesive. Width tolerance is ±1/64″. Length tolerance is +5 ft.

Wd. × Lg.		Each
General Purpose		
0.0007″ Thick (±0.00007″)		
12″ × 500 ft.	9060K51	$28.39
12″ × 1,000 ft.	9060K19	72.65
18″ × 500 ft.	9060K52	55.71
18″ × 1,000 ft.	9060K23	96.22
0.001″ Thick (±0.0001″)		
12″ × 250 ft.	9060K53	24.63
12″ × 500 ft.	9060K12	50.24
18″ × 250 ft.	9060K54	32.80
18″ × 500 ft.	9060K17	62.22
18″ × 1,000 ft.	9060K24	118.61
0.0015″ Thick (±0.00015″)		
6″ × 250 ft.	9060K56	31.63
6″ × 500 ft.	9060K21	54.48
8″ × 250 ft.	9060K57	40.79
8″ × 500 ft.	9060K22	70.15
0.002″ Thick (±0.0002″)		
18″ × 250 ft.	9060K18	73.57
18″ × 500 ft.	9060K59	140.07

Wd. × Lg.		Each
General Purpose (Cont.)		
0.003″ Thick (±0.0003″)		
36″ × 100 ft.	9060K14	$121.45
48″ × 100 ft.	9060K15	157.57
0.005″ Thick (±0.0005″)		
36″ × 100 ft.	9060K16	191.81
48″ × 100 ft.	9060K27	253.28
PTFE Coated		
0.0056″ Thick (±0.0008″)		
6″ × 25 ft.	8656K51	71.79
12½″ × 25 ft.	8656K61	133.33
Adhesive Backed		
0.0015″ Thick (±0.00015″)		
6″ × 180 ft.	8941K24	116.25
18″ × 180 ft.	8941K26	302.78
0.002″ Thick (±0.0002″)		
6″ × 100 ft.	8941K25	70.09
0.004″ Thick (±0.0004″)		
6″ × 180 ft.	8941K28	153.49
18″ × 180 ft.	8941K31	394.67

Alloy 1100/1145/1235 Aluminum Rolls—Full Hard Temper

- Hardness: Not rated

Rolls will vary between Alloys 1100, 1145, and 1235. Ideal as EMI/RFI shielding in electronic applications, these stiff rolls also resist folding. Width tolerance is ±1/8″. Length tolerance is +5 ft.

Wd. × Lg.		Each
0.001″ Thick (±0.0001″)		
6″ × 50 ft.	9012K11	$20.88
6″ × 100 ft.	9012K13	38.24
18″ × 50 ft.	9012K15	52.38
18″ × 100 ft.	9012K17	95.24
0.002″ Thick (±0.0002″)		
6″ × 50 ft.	9012K19	18.38
6″ × 100 ft.	9012K21	32.49

Wd. × Lg.		Each
0.002″ Thick (Cont.)		
18″ × 50 ft.	9012K23	$42.30
18″ × 100 ft.	9012K25	80.55
0.003″ Thick (±0.0003″)		
6″ × 50 ft.	9012K27	19.14
6″ × 100 ft.	9012K29	31.70
18″ × 50 ft.	9012K31	47.09
18″ × 100 ft.	9012K33	88.22

Alloy 3003/3105 Aluminum Rolls—½ Hard Temper

- Hardness: Not rated

The 0.012″ thick rolls are Alloy 3105 and the 0.016″ thick rolls are Alloy 3003. Width tolerance is ±1/8″. Length tolerance is ±6″ for 0.012″ thick rolls; ±5 ft. for 0.016″ thick rolls.

Wd. × Lg.		Each
0.012″ Thick (±0.0015″)		
14″ × 5 ft.	8980K52	$10.66
14″ × 10 ft.	8980K54	15.40
18″ × 5 ft.	8980K63	11.61
20″ × 10 ft.	8980K78	21.26
0.016″ Thick (±0.002″)		
6″ × 50 ft.	8980K41	41.52
10″ × 50 ft.	8980K11	64.05

Wd. × Lg.		Each
0.016″ Thick (Cont.)		
12″ × 50 ft.	8980K12	$81.60
14″ × 50 ft.	8980K16	86.80
18″ × 50 ft.	8980K81	101.28
20″ × 50 ft.	8980K14	119.37
28″ × 50 ft.	8980K15	168.09
36″ × 50 ft.	8980K86	199.82

Alloy 1000 Series Aluminum Sheets—Soft (Annealed) Temper

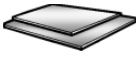

- Hardness: Not rated

Suitable for use in the food industry. Meet ASTM B479. Width tolerance is ±1/16″. Length tolerance is +1/4″. Comes in a dispenser box of 500 sheets.

Wd. × Lg.		Per Pkg.
0.0005″ Thick (±0.00005″)		
9″ × 10¾″	9060K34	$16.45

Wd. × Lg.		Per Pkg.
0.0007″ Thick (±0.00007″)		
12″ × 10¾″	9060K35	$26.68

Black Aluminum Foil

Mask light leaks and eliminate unwanted reflections. A black paint coating on both sides enables this foil to absorb light. Foil is cold rolled and nonmagnetic.

Alloy 1100 Aluminum Rolls—Soft (Annealed) Temper

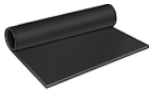

- Hardness: Not rated

Width tolerance is ±1/16″. Length tolerance is +6″.

Wd. × Lg.		Each
0.002″ Thick (±0.0002″)		
12″ × 10 ft.	7073T24	$18.66
24″ × 10 ft.	7073T26	33.66

Nickel Foil

Use this nickel-iron foil as a magnetic shield to protect electronic equipment from EMI/RFI interference. Foil is cold rolled.

Nickel Rolls—Soft (Annealed) Temper

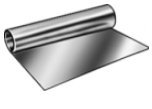

- Hardness: Not rated

Meet ASTM A753. Width tolerance is ±1/64″. *Adhesive-backed* foil has a rubber adhesive.

Sold in 1-ft. increments; maximum continuous length is 100 ft. **To Order:** Please specify length.

Wd.	Plain Back	Per Ft.	Adhesive Backed	Per Ft.
0.002″ Thick (±0.0002″)				
4″	8912K21	$22.02	8912K71	$26.47
0.004″ Thick (±0.0004″)				
4″	8912K22	17.95	8912K72	24.50
15″	8912K32	45.89	8912K62	59.22
0.006″ Thick (±0.0006″)				
4″	8912K23	37.31	8912K73	41.76
15″	8912K33	87.51	8912K63	99.74
0.01″ Thick (±0.001″)				
4″	8912K24	55.03	8912K74	60.10
15″	8912K34	136.67	8912K64	149.90

Cobalt-Nickel-Chromium Foil

Also known as Elgiloy/Phynox, this cold-rolled, magnetic foil can handle repeated stress, has excellent formability, and is corrosion resistant.

Cobalt-Nickel-Chromium Strips—Full Hard Temper

- Hardness: Rockwell C48

Width tolerance is ±0.003″. Length tolerance is ±1/8″.

Wd. × Lg.		Each
0.003″ Thick (±0.0005″)		
½″ × 48″	5210T11	$103.52
2″ × 48″	5210T12	216.19
4″ × 48″	5210T13	351.17
0.005″ Thick (±0.0005″)		
½″ × 48″	5210T21	104.21
2″ × 48″	5210T22	268.00
4″ × 48″	5210T23	456.07
0.006″ Thick (±0.0005″)		
½″ × 48″	5210T31	105.79
2″ × 48″	5210T32	224.48
4″ × 48″	5210T33	366.27

Wd. × Lg.		Each
0.008″ Thick (±0.0005″)		
½″ × 48″	5210T41	$118.29
2″ × 48″	5210T42	268.25
4″ × 48″	5210T43	447.15
0.01″ Thick (±0.0005″)		
½″ × 48″	5210T51	131.80
2″ × 48″	5210T52	331.83
4″ × 48″	5210T53	571.63
0.02″ Thick (±0.0005″)		
½″ × 48″	5210T61	135.11
2″ × 48″	5210T62	333.17
4″ × 48″	5210T63	574.13

Stainless Steel Foil

Corrosion resistant even at high temperatures, this cold-rolled stainless steel foil is ideal as a wrap, cover, mask, or patch. All meet ASTM A240 (unless noted) and all types are nonmagnetic, except Type 430 is magnetic.

Type 304 Stainless Steel Rolls—Soft (Annealed) Temper

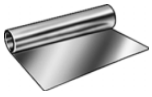

- Hardness: Not rated

Width tolerance is ±1/2″. Length tolerance is +5 ft. *Plain-back* foil makes good heat treating wraps for dry and oil-free parts, withstanding temperatures up to 1600°F. *Adhesive-backed* foil has an acrylic adhesive.

Plain Back

Wd. × Lg.		Each
0.002″ Thick (±0.0002″)		
12″ × 10 ft.	3254K22	$26.65
12″ × 25 ft.	3254K25	55.68
12″ × 50 ft.	3254K43	88.38
12″ × 100 ft.	3254K46	147.43
24″ × 10 ft.	3254K32	48.34
24″ × 25 ft.	3254K35	101.58
24″ × 50 ft.	3254K53	156.83
24″ × 100 ft.	3254K56	272.78

Adhesive Backed

Wd. × Lg.		Each
0.002″ Thick (±0.0002″)		
6″ × 25 ft.	8452K14	$49.35
6″ × 50 ft.	8452K15	93.67
6″ × 100 ft.	8452K16	182.84
12″ × 25 ft.	8452K17	93.96
12″ × 50 ft.	8452K18	183.23
12″ × 100 ft.	8452K19	361.78

Type 304 Stainless Steel Rolls—Full Hard Temper

- Hardness: Rockwell C40-C45

Meet ASTM A666. Width tolerance is ±0.01″. Length tolerance is ±1/64″.

Wd. × Lg.		Each
0.001″ Thick (±0.00005″)		
2″ × 10 ft.	3254K133	$15.89
4″ × 10 ft.	3254K155	28.67
6″ × 10 ft.	3254K177	32.78
0.002″ Thick (±0.0001″)		
2″ × 10 ft.	3254K135	23.47
4″ × 10 ft.	3254K157	31.94
6″ × 10 ft.	3254K179	33.89
0.003″ Thick (±0.00015″)		
2″ × 10 ft.	3254K137	23.47
4″ × 10 ft.	3254K159	31.94
6″ × 10 ft.	3254K182	33.89
0.004″ Thick (±0.0002″)		
2″ × 10 ft.	3254K139	21.13
4″ × 10 ft.	3254K162	28.75
6″ × 10 ft.	3254K184	40.50
0.005″ Thick (±0.00025″)		
2″ × 10 ft.	3254K141	21.88
4″ × 10 ft.	3254K163	35.50
6″ × 10 ft.	3254K185	41.25
0.006″ Thick (±0.0003″)		
2″ × 10 ft.	3254K142	21.88
4″ × 10 ft.	3254K164	35.50
6″ × 10 ft.	3254K186	41.25
0.007″ Thick (±0.00035″)		
2″ × 10 ft.	3254K143	21.88
4″ × 10 ft.	3254K165	35.50
6″ × 10 ft.	3254K187	41.25
0.008″ Thick (±0.0004″)		
2″ × 10 ft.	3254K144	21.88
4″ × 10 ft.	3254K166	35.50
6″ × 10 ft.	3254K188	41.25

Wd. × Lg.		Each
0.009″ Thick (±0.00045″)		
2″ × 10 ft.	3254K145	$21.88
4″ × 10 ft.	3254K167	35.50
6″ × 10 ft.	3254K189	41.25
0.01″ Thick (±0.0005″)		
2″ × 10 ft.	3254K146	20.83
4″ × 10 ft.	3254K168	33.81
6″ × 10 ft.	3254K191	47.50
0.012″ Thick (±0.0006″)		
2″ × 10 ft.	3254K147	19.89
4″ × 10 ft.	3254K169	41.82
6″ × 10 ft.	3254K192	52.61
0.015″ Thick (±0.0009″)		
2″ × 10 ft.	3254K148	25.54
4″ × 10 ft.	3254K171	46.09
6″ × 10 ft.	3254K193	58.26
0.018″ Thick (±0.001″)		
2″ × 10 ft.	3254K149	30.33
4″ × 10 ft.	3254K172	46.46
6″ × 10 ft.	3254K194	63.54
0.02″ Thick (±0.001″)		
2″ × 10 ft.	3254K151	30.00
4″ × 10 ft.	3254K173	47.71
6″ × 10 ft.	3254K195	63.54
0.025″ Thick (±0.001″)		
2″ × 10 ft.	3254K152	35.00
4″ × 10 ft.	3254K174	54.40
6″ × 10 ft.	3254K196	68.00
0.031″ Thick (±0.001″)		
2″ × 10 ft.	3254K153	36.73
4″ × 10 ft.	3254K175	59.90
6″ × 10 ft.	3254K197	78.46

Type 309 Stainless Steel Rolls—Soft (Annealed) Temper

- Hardness: Rockwell B75-B85

Able to withstand temperatures up to 2250°F, this foil is ideal as a heat treating wrap for dry and oil-free parts. Width tolerance is ±0.005″. Length tolerance is +1″. A crimping tool is included.

Wd. × Lg.		Each
0.002″ Thick (±0.0001″)		
24″ × 10 ft.	32645K82	$73.27
24″ × 25 ft.	32645K83	149.02
0.002″ Thick (Cont.)		
24″ × 50 ft.	32645K81	$220.82
24″ × 100 ft.	32645K85	398.74

Type 316 Stainless Steel Rolls—Full Hard Temper

- Hardness: Rockwell C40-C45

Provide the best corrosion resistance of the stainless steel we offer. Meet ASTM A666. Width tolerance is ±0.01″. Length tolerance is ±1/64″.

Wd. × Lg.		Each
0.004″ Thick (±0.0002″)		
2″ × 10 ft.	3774T22	$23.00
4″ × 10 ft.	3774T33	41.80
6″ × 10 ft.	3774T44	60.50
0.005″ Thick (±0.00025″)		
2″ × 10 ft.	3774T23	23.17
4″ × 10 ft.	3774T34	42.21
6″ × 10 ft.	3774T45	69.42
0.006″ Thick (±0.0003″)		
2″ × 10 ft.	3774T24	31.15
4″ × 10 ft.	3774T35	57.31
6″ × 10 ft.	3774T46	72.50
0.008″ Thick (±0.0004″)		
2″ × 10 ft.	3774T25	34.17
4″ × 10 ft.	3774T36	63.15
6″ × 10 ft.	3774T47	91.11
0.01″ Thick (±0.0005″)		
2″ × 10 ft.	3774T26	34.26
4″ × 10 ft.	3774T37	63.43
6″ × 10 ft.	3774T48	91.39

Wd. × Lg.		Each
0.012″ Thick (±0.0006″)		
2″ × 10 ft.	3774T27	$38.57
4″ × 10 ft.	3774T38	71.61
6″ × 10 ft.	3774T49	101.52
0.015″ Thick (±0.0009″)		
2″ × 10 ft.	3774T28	42.41
4″ × 10 ft.	3774T39	78.39
6″ × 10 ft.	3774T51	113.93
0.02″ Thick (±0.001″)		
2″ × 10 ft.	3774T29	47.07
4″ × 10 ft.	3774T41	87.76
6″ × 10 ft.	3774T52	130.78
0.025″ Thick (±0.001″)		
2″ × 10 ft.	3774T31	57.67
4″ × 10 ft.	3774T42	108.00
6″ × 10 ft.	3774T53	153.83
0.031″ Thick (±0.001″)		
2″ × 10 ft.	3774T32	64.84
4″ × 10 ft.	3774T43	121.61
6″ × 10 ft.	3774T54	181.61

Type 321 Stainless Steel Rolls—Soft (Annealed) Temper

- Hardness: Rockwell B92

Use as a heat treating wrap for dry and oil-free parts, withstanding temperatures up to 1850°F. Include a crimping tool. Titanium is added to prevent carbon buildup during welding and other high-temperature applications. Width tolerance is ±0.010″. Length tolerance is +2″, −1/2″.

Wd. × Lg.		Each
0.002″ Thick (±0.0002″)		
10″ × 10 ft.	3254K76	$20.91
10″ × 25 ft.	3254K77	39.97
10″ × 50 ft.	3254K75	66.92
10″ × 100 ft.	3254K78	128.33
0.002″ Thick (Cont.)		
20″ × 10 ft.	3254K16	$31.61
20″ × 25 ft.	3254K17	68.12
20″ × 50 ft.	3254K15	131.25
20″ × 100 ft.	3254K18	252.68

Type 430 Stainless Steel Rolls—Soft (Annealed) Temper

- Hardness: Rockwell B75-B83

Turn to these for easy weldability. Width tolerance is ±0.01″. Length tolerance is ±1/64″.

Wd. × Lg.		Each
0.006″ Thick (±0.0003″)		
2″ × 10 ft.	3803T23	$17.07
4″ × 10 ft.	3803T35	32.65
6″ × 10 ft.	3803T47	48.30
0.007″ Thick (±0.00035″)		
2″ × 10 ft.	3803T24	17.07
4″ × 10 ft.	3803T36	32.65
6″ × 10 ft.	3803T48	48.30
0.008″ Thick (±0.0004″)		
2″ × 10 ft.	3803T25	17.39
4″ × 10 ft.	3803T37	33.26
6″ × 10 ft.	3803T49	49.74
0.01″ Thick (±0.0005″)		
2″ × 10 ft.	3803T26	20.10
4″ × 10 ft.	3803T38	38.54
6″ × 10 ft.	3803T51	57.50
0.012″ Thick (±0.0006″)		
2″ × 10 ft.	3803T27	21.77
4″ × 10 ft.	3803T39	42.13
6″ × 10 ft.	3803T52	58.96

Wd. × Lg.		Each
0.015″ Thick (±0.0009″)		
2″ × 10 ft.	3803T28	$22.50
4″ × 10 ft.	3803T41	43.50
6″ × 10 ft.	3803T53	64.80
0.02″ Thick (±0.001″)		
2″ × 10 ft.	3803T29	23.94
4″ × 10 ft.	3803T42	46.73
6″ × 10 ft.	3803T54	69.52
0.025″ Thick (±0.001″)		
2″ × 10 ft.	3803T31	29.62
4″ × 10 ft.	3803T43	57.69
6″ × 10 ft.	3803T55	81.73
0.03″ Thick (±0.0015″)		
2″ × 10 ft.	3803T32	30.37
4″ × 10 ft.	3803T44	59.44
6″ × 10 ft.	3803T56	88.52
0.035″ Thick (±0.0015″)		
2″ × 10 ft.	3803T33	33.30
4″ × 10 ft.	3803T45	64.63
6″ × 10 ft.	3803T57	96.02

Stainless Steel Foil Bags

Foil bags offer durability at high temperatures, while providing the best possible heat treating of parts and tools in damp and corrosive environments. Made of nonmagnetic Type 309 stainless steel. Maximum temperature is 2100°F for up to 30 minutes. Temper is annealed. Width tolerance is ±0.005″. Length tolerance is ±1/8″.

Wd. × Lg.		Each
0.002″ Thick (±0.0002″)		
2 1/2″ × 5″	3438K11	$3.10
4″ × 6″	3438K12	4.71
6″ × 8″	3438K13	6.52
6″ × 12″	3438K27	9.77
8″ × 10″	3438K14	9.35
8″ × 14″	3438K29	11.74
0.002″ Thick (Cont.)		
10″ × 12″	3438K36	$11.74
10″ × 16″	3438K41	14.89
12″ × 14″	3438K43	14.89
12″ × 18″	3438K45	18.02
14″ × 16″	3438K47	19.12
14″ × 20″	3438K49	23.27
18″ × 24″	3438K51	34.38

Copper Foil

Nearly pure copper, this nonmagnetic foil is cold rolled and offers good electrical and heat conductivity.

Alloy 110 Copper Rolls—Soft (Annealed) Temper

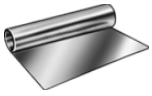

- Hardness: Not rated

Meet ASTM B152. Width tolerance is ±1/64″. Length tolerance is +5 ft. for 50-ft. rolls and +8 ft. for 100-ft. rolls.

Wd. × Lg.		Each
0.002″ Thick (±0.0003″)		
1/2″ × 100 ft.	9053K11	$25.92
1″ × 100 ft.	9053K22	29.81
1 1/2″ × 100 ft.	9053K67	33.47
2″ × 50 ft.	9053K312	34.06
2″ × 100 ft.	9053K31	37.58
4″ × 50 ft.	9053K422	45.17
4″ × 100 ft.	9053K42	77.33
6″ × 50 ft.	9053K532	73.95
6″ × 100 ft.	9053K53	118.37
0.003″ Thick (±0.0003″)		
1/2″ × 100 ft.	9053K12	33.68
1″ × 100 ft.	9053K23	37.36
1 1/2″ × 100 ft.	9053K68	44.51
2″ × 50 ft.	9053K322	42.31
2″ × 100 ft.	9053K32	55.06
4″ × 50 ft.	9053K432	54.86
4″ × 100 ft.	9053K43	115.20
0.003″ Thick (Cont.)		
6″ × 50 ft.	9053K542	$94.70
6″ × 100 ft.	9053K54	154.07
0.004″ Thick (±0.0008″)		
1/2″ × 100 ft.	9053K13	47.30
1″ × 100 ft.	9053K24	51.18
1 1/2″ × 100 ft.	9053K69	61.12
2″ × 50 ft.	9053K332	59.15
2″ × 100 ft.	9053K33	73.44
4″ × 50 ft.	9053K442	92.86
4″ × 100 ft.	9053K44	146.86
6″ × 50 ft.	9053K552	141.79
6″ × 100 ft.	9053K55	214.28
0.005″ Thick (±0.0008″)		
1/2″ × 100 ft.	9053K14	52.06
1″ × 100 ft.	9053K25	57.66
1 1/2″ × 100 ft.	9053K71	74.08
2″ × 50 ft.	9053K342	69.33
0.005″ Thick (Cont.)		
2″ × 100 ft.	9053K34	$92.00
4″ × 50 ft.	9053K452	122.24
4″ × 100 ft.	9053K45	179.76
6″ × 50 ft.	9053K562	183.82
6″ × 100 ft.	9053K56	266.97
0.007″ Thick (±0.001″)		
1/2″ × 100 ft.	9053K16	58.54
1″ × 100 ft.	9053K27	64.79
1 1/2″ × 100 ft.	9053K73	96.99
2″ × 50 ft.	9053K362	80.99
2″ × 100 ft.	9053K36	128.72
4″ × 50 ft.	9053K472	163.20
4″ × 100 ft.	9053K47	249.41
6″ × 50 ft.	9053K582	211.13
6″ × 100 ft.	9053K58	339.71
0.01″ Thick (±0.0015″)		
1/2″ × 100 ft.	9053K18	64.78
1″ × 100 ft.	9053K29	91.59
0.01″ Thick (Cont.)		
1 1/2″ × 100 ft.	9053K75	$138.00
2″ × 100 ft.	9053K38	183.79
4″ × 100 ft.	9053K49	319.76
6″ × 100 ft.	9053K61	472.00
0.016″ Thick (±0.0015″)		
1/2″ × 100 ft.	9053K19	72.55
1″ × 100 ft.	9053K64	99.13
1 1/2″ × 100 ft.	9053K76	149.02
2″ × 100 ft.	9053K39	194.60
4″ × 100 ft.	9053K51	343.71
6″ × 100 ft.	9053K62	497.64
0.021″ Thick (±0.0015″)		
1/2″ × 100 ft.	9053K21	80.54
1″ × 100 ft.	9053K65	130.20
1 1/2″ × 100 ft.	9053K77	189.50
2″ × 100 ft.	9053K41	251.09
4″ × 100 ft.	9053K52	441.16
6″ × 100 ft.	9053K63	612.39

Alloy 110 Copper Sheets—Soft (Annealed) Temper

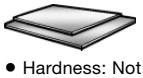

- Hardness: Not rated

Width and length tolerances are ±1/8″. Sold in packages of 25.

Wd. × Lg.		Per Pkg.
0.0028″ Thick (±0.00028″)		
6″ × 12″	8944K24	$36.07
12″ × 12″	8944K34	71.99
0.005″ Thick (±0.0005″)		
6″ × 12″	8944K25	56.79
12″ × 12″	8944K35	108.05
0.008″ Thick (±0.0008″)		
6″ × 12″	8944K26	$87.20
12″ × 12″	8944K36	168.07
0.01″ Thick (±0.001″)		
6″ × 12″	8944K27	114.39
12″ × 12″	8944K37	213.54
0.012″ Thick (±0.0012″)		
6″ × 12″	8944K28	$134.30
12″ × 12″	8944K38	261.44

Brass Foil

The addition of zinc gives brass increased strength over copper. It's nonmagnetic, cold rolled, conducts heat, and is corrosion resistant.

Alloy 260 Brass Rolls—1/2 Hard Temper

- Hardness: Not rated

Meet ASTM B36. Width tolerance is ±0.01″. Length tolerance is +10%, –5%.

Wd. × Lg.		Each
0.001″ Thick (±0.0003″)		
1/2″ × 15 ft.	90355K222	$61.50
1/2″ × 30 ft.	90355K111	92.26
1/2″ × 60 ft.	90355K11	132.62
1″ × 15 ft.	90355K422	61.51
1″ × 30 ft.	90355K311	92.23
1″ × 60 ft.	90355K31	157.66
2″ × 10 ft.	90355K622	61.51
2″ × 20 ft.	90355K511	92.26
2″ × 40 ft.	90355K51	157.66
4″ × 10 ft.	90355K822	61.51
4″ × 30 ft.	90355K71	157.66
0.002″ Thick (±0.0003″)		
1/2″ × 25 ft.	90355K223	61.51
1/2″ × 50 ft.	90355K121	92.26
1/2″ × 100 ft.	90355K112	132.62
1″ × 20 ft.	90355K423	61.51
1″ × 40 ft.	90355K321	92.26
1″ × 80 ft.	90355K32	157.66
2″ × 10 ft.	90355K623	61.51
2″ × 20 ft.	90355K521	92.26
2″ × 40 ft.	90355K52	157.66
4″ × 10 ft.	90355K823	61.51
4″ × 30 ft.	90355K72	157.66
0.005″ Thick (±0.0004″)		
1/2″ × 50 ft.	90355K224	61.51
1/2″ × 100 ft.	90355K131	92.26
1/2″ × 200 ft.	90355K113	132.62
1″ × 25 ft.	90355K424	61.51
1″ × 50 ft.	90355K331	92.26
1″ × 100 ft.	90355K303	157.66
2″ × 15 ft.	90355K624	61.51
2″ × 30 ft.	90355K531	92.26
2″ × 60 ft.	90355K53	157.66
4″ × 10 ft.	90355K824	61.51
0.005″ Thick (Cont.)		
4″ × 20 ft.	90355K731	$92.26
4″ × 40 ft.	90355K73	157.66
0.006″ Thick (±0.0004″)		
1/2″ × 50 ft.	90355K225	61.51
1/2″ × 100 ft.	90355K141	92.26
1/2″ × 200 ft.	90355K114	132.62
1″ × 25 ft.	90355K425	61.51
1″ × 50 ft.	90355K341	92.26
2″ × 15 ft.	90355K625	61.51
2″ × 30 ft.	90355K541	92.26
2″ × 60 ft.	90355K54	157.66
4″ × 10 ft.	90355K825	61.51
4″ × 20 ft.	90355K741	92.26
4″ × 40 ft.	90355K74	157.66
0.008″ Thick (±0.0006″)		
1/2″ × 35 ft.	90355K226	61.51
1/2″ × 75 ft.	90355K151	92.26
1″ × 25 ft.	90355K426	61.51
1″ × 50 ft.	90355K351	92.26
1″ × 100 ft.	90355K35	157.66
2″ × 15 ft.	90355K626	61.51
2″ × 30 ft.	90355K551	92.26
2″ × 60 ft.	90355K55	157.66
4″ × 10 ft.	90355K826	61.51
4″ × 20 ft.	90355K751	92.26
4″ × 40 ft.	90355K75	157.66
0.01″ Thick (±0.001″)		
1/2″ × 50 ft.	90355K227	61.51
1/2″ × 100 ft.	90355K161	92.26
1/2″ × 200 ft.	90355K116	132.62
1″ × 35 ft.	90355K427	61.51
1″ × 75 ft.	90355K361	92.26
1″ × 150 ft.	90355K36	157.66
2″ × 15 ft.	90355K627	61.51
0.01″ Thick (Cont.)		
2″ × 30 ft.	90355K561	$92.26
2″ × 60 ft.	90355K506	157.66
4″ × 10 ft.	90355K827	61.51
4″ × 20 ft.	90355K761	92.26
4″ × 40 ft.	90355K76	157.66
0.012″ Thick (±0.001″)		
1/2″ × 50 ft.	90355K228	61.51
1/2″ × 100 ft.	90355K171	92.26
1″ × 35 ft.	90355K428	61.51
1″ × 75 ft.	90355K371	92.26
1″ × 150 ft.	90355K37	157.66
2″ × 15 ft.	90355K628	61.51
2″ × 30 ft.	90355K571	92.26
2″ × 60 ft.	90355K507	157.66
4″ × 10 ft.	90355K828	61.51
4″ × 20 ft.	90355K771	92.26
4″ × 40 ft.	90355K77	157.66
0.015″ Thick (±0.001″)		
1/2″ × 50 ft.	90355K229	61.51
1/2″ × 100 ft.	90355K181	92.26
1/2″ × 200 ft.	90355K118	132.62
1″ × 35 ft.	90355K429	61.51
1″ × 75 ft.	90355K381	92.26
1″ × 150 ft.	90355K38	157.66
2″ × 15 ft.	90355K629	61.51
2″ × 30 ft.	90355K581	92.26
4″ × 10 ft.	90355K829	61.51
4″ × 20 ft.	90355K781	92.26
4″ × 40 ft.	90355K78	157.66
0.02″ Thick (±0.0015″)		
1/2″ × 50 ft.	90355K231	61.51
1/2″ × 100 ft.	90355K191	92.26
1/2″ × 200 ft.	90355K19	132.62
1″ × 25 ft.	90355K431	61.51
0.02″ Thick (Cont.)		
1″ × 50 ft.	90355K391	$92.26
1″ × 100 ft.	90355K39	157.66
2″ × 15 ft.	90355K631	61.50
2″ × 30 ft.	90355K591	92.26
2″ × 60 ft.	90355K59	157.66
4″ × 10 ft.	90355K831	61.51
4″ × 15 ft.	90355K791	92.26
4″ × 30 ft.	90355K79	157.66
0.025″ Thick (±0.0015″)		
1/2″ × 35 ft.	90355K232	61.51
1/2″ × 75 ft.	90355K211	92.26
1/2″ × 150 ft.	90355K212	132.62
1″ × 25 ft.	90355K432	61.51
1″ × 50 ft.	90355K411	92.26
1″ × 100 ft.	90355K41	157.66
2″ × 15 ft.	90355K632	61.51
2″ × 30 ft.	90355K611	92.26
2″ × 60 ft.	90355K61	157.66
4″ × 10 ft.	90355K832	61.51
4″ × 15 ft.	90355K811	92.26
4″ × 30 ft.	90355K81	157.66
0.032″ Thick (±0.002″)		
1/2″ × 30 ft.	90355K233	61.51
1/2″ × 60 ft.	90355K221	92.26
1/2″ × 120 ft.	90355K213	132.62
1″ × 20 ft.	90355K433	61.51
1″ × 40 ft.	90355K421	92.26
1″ × 80 ft.	90355K42	157.66
2″ × 15 ft.	90355K633	61.51
2″ × 30 ft.	90355K621	92.26
2″ × 60 ft.	90355K62	157.66
4″ × 5 ft.	90355K833	61.51
4″ × 10 ft.	90355K821	92.26
4″ × 20 ft.	90355K82	157.66

Alloy 260 Brass Sheet—1/2 Hard Temper

- Hardness: Not rated

Meets ASTM B36. Width and length tolerances are ±1/8″. Sold in packages of 5.

Wd. × Lg.		Per Pkg.
0.005″ Thick (±0.0005″)		
12″ × 12″	8939K25	$25.12

Slide-On Round Grips

Need to get a grip? Simply slide these grips onto handles. All have one closed end.

Standard— Made of heavy duty PVC for strength and durability. Temperature range is –20° to +180° F. **To Order:** Please specify color from those listed below.

High Temperature— They're made of silicone rubber to withstand temperatures of –50° to +600° F.

Cushioned— Made of closed-cell vinyl foam with a wall thickness of 0.125″ to 0.15″ to insulate and cushion vibration. Temperature range is –40° to +225° F.

Fits OD	O'all Lg.	Available Colors	Pkg. Qty.		Per Pkg.
(1) Standard— *Smooth Surface*					
5/8″	47/8″	Black, Red	6	97065K38	$4.78
3/4″	51/16″	Black, Red, White	6	97065K39	8.50
7/8″	51/16″	Black, Red, White	6	97065K41	8.14
1″	51/16″	Black, Red, White	6	97065K42	8.14
1 1/8″	51/4″	Black	6	97065K81	12.63
1 1/4″	51/4″	Black	6	97065K82	13.00
(2) Standard— *Smooth Surface, Tapered*					
7/8″	41/2″	Black, Red, White	6	97065K43	10.80
1″	41/2″	Black, Red, White	6	97065K44	11.20
(2) High Temperature— *Smooth Surface, Tapered*					
1″	41/2″	Orange	2	5271T11	8.31
(3) Standard— *Hex Surface*					
7/8″	41/2″	Black	6	9729K21	6.47
1 1/4″	45/8″	Black	6	9729K76	13.13
(4) Standard— *Dimpled Surface*					
5/8″	49/16″	Black, Red	6	9729K22	8.03
3/4″	49/16″	Black, Red	6	9729K23	5.53
(5) Standard— *Ribbed Surface*					
1 1/4″	411/16″	Black	6	97065K83	13.56
(6) Standard— *Ribbed Surface*					
3/4″	413/16″	Black, Red	6	97045K48	9.15
7/8″	43/4″	Black, Red	6	97045K49	6.80
1″	41/2″	Black, Red	6	97045K51	9.30
1 1/8″	411/16″	Black	6	97045K58	11.36
1 1/4″	411/16″	Black	6	97045K61	10.67
(6) High Temperature— *Ribbed Surface*					
1″	41/2″	Orange	2	5271T12	4.88
(7) Standard— *Ribbed Surface, Tapered*					
7/16″	31/8″	Black	6	97045K64	11.78
1/2″	31/8″	Black	6	97045K65	11.17
5/8″	31/8″	Black	6	97045K66	9.34
(8) Standard— *Ribbed Surface, Contoured*					
7/8″	49/16″	Black, Red, White	6	97045K56	10.87
(9) Standard— *Ribbed Surface with Flange*					
7/8″	49/16″	Black, Red, White	6	97045K57	11.96
(10) Standard— *Ribbed Surface with Finger Grip*					
5/8″	33/8″	Black, Red	6	97045K52	4.78
3/4″	413/16″	Black, Red	6	97045K53	10.71
7/8″	33/4″	Black	6	97045K63	5.66
7/8″	45/8″	Black, Red	6	97045K54	6.80
1″	49/16″	Black, Red	6	97045K55	9.49
1 1/8″	43/4″	Black	6	97045K59	11.78
1 1/4″	413/16″	Black	6	97045K62	11.11
(10) High Temperature— *Ribbed Surface with Finger Grip*					
1″	49/16″	Orange	2	5271T13	6.63

Fits OD	O'all Lg.	Available Colors	Pkg. Qty.		Per Pkg.
(11) Standard— *Smooth Top/Ribbed Bottom Surface, Contoured*					
7/16″	313/16″	Black	6	97045K67	$13.50
1/2″	313/16″	Black	6	97045K68	12.47
5/8″	313/16″	Black	6	97045K69	11.03
(12) Cushioned— *Smooth Surface*					
3/16″-1/4″	3″	Black	10	9282K11	5.87
1/4″-5/16″	4″	Black	10	9282K12	6.75
5/16″-3/8″	4″	Black	10	9282K13	6.75
5/16″-3/8″	7″	Black	10	9282K111	8.40
3/8″-27/64″	4″	Black	10	9282K14	7.51
3/8″-27/64″	6″	Black	10	9282K112	9.00
27/64″-5/8″	7 3/4″	Black	2	9282K36	7.24
31/64″-9/16″	5″	Black	6	9282K113	14.82
1/2″-5/8″	6″	Black	2	9282K114	5.19
1/2″-5/8″	12″	Black	2	9282K115	6.34
1/2″-5/8″	21″	Black	2	9282K116	7.38
9/16″-11/16″	6″	Black	2	9282K117	5.28
9/16″-11/16″	12″	Black	2	9282K118	6.47
9/16″-11/16″	15″	Black	2	9282K119	6.95
9/16″-11/16″	21″	Black	2	9282K121	7.51
5/8″-45/64″	4 1/2″	Black	6	9282K15	11.72
5/8″-45/64″	12″	Black	2	9282K122	6.45
45/64″-25/32″	4 1/2″	Black	6	9282K16	13.29
45/64″-25/32″	6″	Black	2	9282K123	5.16
45/64″-25/32″	12″	Black	2	9282K124	6.75
45/64″-25/32″	19″	Black	2	9282K125	7.51
27/32″-7/8″	4 3/4″	Black	6	9282K17	13.43
27/32″-7/8″	6″	Black	6	9282K25	13.43
27/32″-7/8″	8″	Black	6	9282K26	14.27
27/32″-7/8″	15″	Black	2	9282K27	5.80
27/32″-7/8″	21″	Black	2	9282K126	7.95
15/16″-1 3/64″	4 3/4″	Black	6	9282K19	14.08
15/16″-1 3/64″	12″	Black	2	9282K21	7.95
15/16″-1 3/64″	21″	Black	2	9282K127	8.21
15/16″-1 13/64″	6″	Black	6	9282K28	13.17
15/16″-1 13/64″	8″	Black	6	9282K29	14.26
15/16″-1 13/64″	15″	Black	2	9282K31	7.94
1 1/8″-1 3/16″	6″	Black	2	9282K128	6.88
1 1/8″-1 3/16″	12″	Black	2	9282K22	7.93
1 1/8″-1 3/16″	21″	Black	2	9282K129	8.36
1 7/32″-1 19/64″	4 3/4″	Black	6	9282K23	12.78
1 7/32″-1 19/64″	6″	Black	6	9282K32	13.77
1 7/32″-1 19/64″	8″	Black	2	9282K33	7.91
1 7/32″-1 19/64″	12″	Black	2	9282K24	8.97
1 7/32″-1 19/64″	15″	Black	2	9282K34	10.05
1 7/32″-1 19/64″	21″	Black	2	9282K131	10.95
1 7/16″-1 19/32″	6″	Black	2	9282K35	7.79
1 7/16″-1 19/32″	12″	Black	2	9282K132	8.52
1 7/16″-1 19/32″	21″	Black	2	9282K133	10.99
1 11/16″-1 7/8″	12″	Black	2	9282K134	9.56

Slide-On Rectangular and Square Grips

Grips fit flat, rectangular, and square handles and have one closed end.

Standard— Made of heavy duty vinyl for strength and durability. Temperature range is –20° to +180° F. Style 15 is a round grip with a rectangular slot. **To Order:** Please specify color from those listed.

Cushioned— The closed-cell vinyl foam has a wall thickness of 0.15″ to insulate and cushion vibration. Temperature range is –40° to +225° F.

Fits Size	O'all Lg.	Available Colors	Pkg. Qty.		Per Pkg.
(13) Standard— *Smooth Surface with Finger Grip*					
1/8″ × 1″	411/16″	Black, Red	6	9692K35	$9.82
3/16″ × 1″	411/16″	Black, Red	6	9692K36	8.87
1/4″ × 1″	411/16″	Black, Red	6	9692K37	9.29
(14) Cushioned— *Coarse Surface*					
3/4″ × 1/4″	4 3/4″	Black	6	9282K83	12.39
1″ × 1/8″	5″	Black	6	9282K81	9.70
1″ × 3/16″	5″	Black	6	9282K82	12.39
(15) Standard— *Ribbed Surface, Tapered*					
3/8″ × 1/2″	3 1/4″	Black	6	9692K38	11.73
(16) Cushioned— *Coarse Surface*					
1″ × 1″	5″	Black	6	9282K92	13.42

Slide-On Round Grips with Hanger Eye

Standard

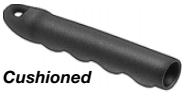

Cushioned

Create a handle and a hanger for your tools by slightly stretching these grips over them. Grips have finger grips to improve hold and one closed end. Temperature range is –10° to +150° F. Color is black.

Standard— Made of vinyl for durability.

Cushioned— The combination of vinyl and foam makes these durable and pliable.

Fits OD	O'all Lg.	Eye Lg.	*Standard*	Each	*Cushioned*	Each
5/8″	5 1/4″	9/16″	3221K41	$5.26	3221K51	$5.66
3/4″	5 1/4″	9/16″	3221K42	5.26	3221K52	5.66
7/8″	5 3/8″	9/16″	3221K43	5.26	3221K53	5.66
1″	5 5/8″	9/16″	3221K44	5.26	3221K54	5.66
1 1/4″	6″	1″	3221K45	5.26	3221K55	5.66

Wrap-Around Grips with Open Ends

You don't have to slide these grips on tools; a hook-and-loop closure secures them anywhere on the handle. Loop strip has an adhesive backing so you can attach it to the handle and then wrap the hook strip around it. Grips will not rotate once they're in place.

Made of closed-cell vinyl foam with a wall thickness of 0.2″ for a soft, textured grip. Foam insulates and resists oil. Temperature range is –20° to +150° F. Color is black.

Fits OD	O'all Lg.	Pkg. Qty.		Per Pkg.
1/2″-3/4″	4 1/4″	2	9445K21	$9.22
3/4″-1 1/16″	4 1/4″	2	9445K22	9.22
1 1/16″-1 3/8″	4 1/4″	2	9445K23	9.22

Slide-On Round Grips with Open Ends

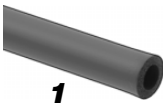

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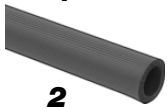

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3

Two open ends make these cushioned grips easy to stretch and fit anywhere along a handle. Made of vinyl foam, they insulate and cushion vibration. Temperature range is –20° to +220° F. Color is black. *Styles 1* and *2* can be cut with a utility knife and are closed-cell foam, so they resist moisture. *Style 3* is made of open-cell foam.

Fits OD	O'all Lg.	Wall Thick.	Pkg. Qty.		Each
(1) Smooth Surface— *Cut to Length*					
7/8″	24″	0.27″	—	9754K37	$4.33
7/8″	36″	0.27″	—	9754K38	6.05
7/8″	72″	0.27″	—	9754K11	11.27
1″	24″	0.32″	—	9754K39	6.97
1″	25″	0.205″	—	9754K43	4.91
1″	36″	0.32″	—	9754K41	9.95
1″	50″	0.205″	—	9754K14	8.78
1″	72″	0.32″	—	9754K13	17.51
(2) Ribbed Surface— *Cut to Length*					
1″	63″	0.2″	—	9754K24	10.97
1 1/4″	63″	0.237″	—	9754K15	16.90
(3) Coarse Surface, Contoured					**Per Pkg.**
5/8″-3/4″	4 1/2″	0.375″	5	9754K51	$5.97
3/4″-7/8″	4 1/2″	0.375″	5	9754K52	6.96
7/8″-1″	4 1/2″	0.375″	5	9754K53	8.43

Mold-Your-Own Grips

Create a custom grip to perfectly suit your hand. Just place these white plastic pellets in 176° to 185° F hot water until they soften. Then mold directly to your handle. Grips become rigid when cool. Cut with scissors when warm, rotary tools when cold. The material is reusable. Comes in a 1-lb. jar.

6225T11 ..... **Each** $22.92

Wrap-On Grips

Wrap these around handles to create a nonslip, grippable surface. Simply cut to length with scissors. All come with finishing tape to fasten ends.

Thin Wrap— Made of absorbent, polyurethane-coated nylon/rayon fabric. Temperature range is 0° to 120° F. Color is blue.

Peel-and-Stick Adhesive-Backed Foam— Made of EPDM foam with a temperature range of –20° to +150° F. Color is black.

Thick Foam— Extra cushioning resists damage from water and sunlight. Made of CPE (chlorinated polyethylene) and EPDM. Temperature range is –65° to +250° F. Color is black.

Lg.	Wd.	Thick.	Pkg. Qty.		Per Pkg.
Thin Wrap					
38 3/4″	1″	0.027″	3	32765K211	$6.36
Peel-and-Stick Adhesive-Backed Foam					
6 ft.	3/4″	0.0059″	1	32765K31	6.08
Thick Foam					
5 ft.	3/4″	0.162″	1	32765K41	7.49

Push-On Round Caps

Resilient Rubber

Chemical Resistant

High Temperature

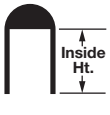

Chemical Resistant— Turn to these EPDM caps for excellent protective covers when plating, masking, and finishing. Durometer hardness is 40A-70A. Maximum temperature is 475° F for 10 minutes. Color is black.

High Temperature— Made of silicone to withstand temperatures up to 600° F for 10 minutes. Durometer hardness is 50A-60A. Color is red.

Fits OD	Inside Ht.	Pkg. Qty.		Per Pkg.
Chemical Resistant				
0.1″	1/2″	50	6448K21	$3.29
7/64″	3/4″	50	6448K22	3.81
1/8″	1″	50	6448K72	6.47
9/64″	1″	50	6448K73	6.77
5/32″	1″	50	6448K74	6.95
11/64″	1″	50	6448K75	7.77
3/16″	1″	50	6448K76	9.17
0.223″	1″	50	6448K23	5.92
15/64″	1″	50	6448K24	8.79
1/4″	1″	50	6448K77	10.47
5/16″	1″	50	6448K78	10.70
0.355″	1 1/2″	50	6448K25	9.46
3/8″	1″	25	6448K79	6.95
13/32″	1″	25	6448K26	4.37
7/16″	1″	25	6448K81	8.90
0.456″	1 1/2″	25	6448K27	5.44
15/32″	1″	10	6448K28	4.10
1/2″	1 1/2″	25	6448K82	9.17
0.535″	1 1/2″	50	6448K29	11.17
9/16″	1 1/2″	25	6448K83	9.84
5/8″	1 1/2″	50	6448K31	12.21
11/16″	1 1/2″	10	6448K32	4.44
3/4″	1 1/2″	10	6448K84	5.52
Chemical Resistant (Cont.)				
13/16″	1 1/2″	25	6448K33	$8.15
7/8″	1 1/2″	10	6448K85	5.96
15/16″	1 1/2″	10	6448K34	5.94
1″	1 1/2″	10	6448K86	7.86
1 1/16″	1 1/2″	10	6448K35	6.44
1 1/8″	1 1/2″	5	6448K36	3.91
1 3/16″	1 1/2″	5	6448K37	4.58
1 1/4″	1 1/2″	5	6448K38	4.78
1 1/2″	1 1/2″	5	6448K39	5.06
1 3/4″	2″	5	6448K911	6.47
1 7/8″	2″	5	6448K921	7.85
High Temperature				
3/32″	3/4″	100	92805K31	7.31
0.1″	1/2″	100	92805K32	7.55
1/8″	1″	25	92805K11	4.21
11/64″	1″	25	92805K12	5.00
3/16″	1″	100	92805K33	10.45
7/32″	1″	100	92805K34	12.97
15/64″	1 1/2″	10	92805K13	2.40
1/4″	1″	10	92805K14	2.70
9/32″	1″	100	92805K35	9.72
0.295″	1 1/2″	10	92805K15	2.89
0.34″	1″	100	92805K36	13.70
High Temperature (Cont.)				
0.355″	1 1/2″	10	92805K16	$3.14
3/8″	1 1/2″	5	92805K17	2.44
7/16″	1″	50	92805K37	13.63
0.48″	1 1/2″	10	92805K18	5.30
1/2″	1 1/2″	5	92805K19	2.48
0.535″	1 1/2″	10	92805K21	3.78
9/16″	1 1/2″	50	92805K38	13.85
0.6″	1 1/2″	10	92805K22	4.47
5/8″	1 1/2″	5	92805K23	2.54
11/16″	1 1/2″	25	92805K39	10.68
3/4″	1 1/2″	5	92805K24	3.56
13/16″	1 1/2″	5	92805K25	3.83
7/8″	1 1/2″	5	92805K26	4.90
15/16″	1 1/2″	25	92805K48	13.93
31/32″	1 1/2″	5	92805K27	5.13
1″	1 1/2″	5	92805K28	5.10
1 1/16″	1 1/2″	25	92805K41	12.47
1 1/8″	1 1/2″	10	92805K42	8.48
1 3/16″	1 1/2″	10	92805K43	8.55
1 1/2″	1 1/2″	25	92805K44	15.98
1 3/4″	2″	10	92805K45	14.00
1 7/8″	2″	10	92805K46	14.76
2″	2″	10	92805K47	15.53

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Push-On Round Caps *(Continued from previous page)*

Resilient Rubber with Mushroom Head

The mushroom head extends beyond the diameter of your pipe or tube for added protection. Made of EPDM with a durometer hardness of 65A-70A. Maximum temperature is 100° F. Color is black.

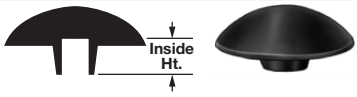

Fits OD	Inside Ht.	O'all Dia. × Ht.		Each
1/2"	11/16"	2 1/4" × 1"	5896T5	$7.33
5/8"	11/16"	2 1/4" × 1"	5896T6	7.33

Pliable Vinyl

Strong yet pliable, these vinyl caps will protect and mask. Caps that fit a range of ODs will stretch slightly (the lower end will have a looser fit; the upper end will be tighter).

Standard—Durometer hardness is 75A. Maximum temperature is 140° F for 10 minutes. Color is black.

High Temperature—Withstands temperatures up to 446° F for 10 minutes and has a durometer hardness of 88A. Color is black.

FDA Compliant—Made from FDA-compliant vinyl with a durometer hardness of 60A-70A. Maximum temperature is 200° F. Color is white.

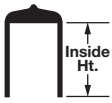

Standard/ High Temperature

Fits OD	1/2" Inside Height Pkg. Qty.		Per Pkg.	3/4" Inside Height Pkg. Qty.		Per Pkg.	1" Inside Height Pkg. Qty.		Per Pkg.	1 1/2" Inside Height Pkg. Qty.		Per Pkg.
Standard—*For Multiple ODs*												
1/16"-1/8"	100	9753K11	$3.07	—	—	—	—	—	—	—	—	—
1/8"-3/16"	100	9753K31	2.78	100	9753K32	$3.20	100	9753K33	$3.36	100	9753K34	$3.85
3/16"-1/4"	100	9753K12	3.42	100	9753K13	3.64	100	9753K14	3.85	100	9753K15	4.22
1/4"-5/16"	100	9753K35	3.55	100	9753K36	3.91	100	9753K37	4.06	100	9753K38	4.29
5/16"-3/8"	100	9753K16	3.64	100	9753K17	3.97	100	9753K18	4.25	100	9753K19	4.77
3/8"-7/16"	100	9753K39	3.91	100	9753K41	4.46	100	9753K42	4.49	100	9753K43	4.86
1/2"-9/16"	100	9753K44	4.36	100	9753K45	4.88	100	9753K46	5.08	100	9753K48	6.45
5/8"-11/16"	100	9753K47	5.09	100	9753K49	5.49	100	9753K51	6.00	100	9753K53	7.26
3/4"-13/16"	100	9753K52	5.73	100	9753K54	6.31	100	9753K82	7.00	100	9753K55	8.27
7/8"-15/16"	100	9753K56	6.65	100	9753K57	6.65	100	9753K86	8.09	100	9753K59	9.68
1"-1 1/16"	100	9753K58	7.38	100	9753K61	9.00	100	9753K89	9.53	100	9753K62	10.68
1 1/4"-1 5/16"	50	9753K63	11.34	50	9753K64	13.22	50	9753K65	13.38	50	9753K66	15.25
1 1/2"-1 9/16"	50	9753K68	13.10	50	9753K69	15.40	50	9753K71	15.43	25	9753K72	8.47
1 3/4"-1 13/16"	50	9753K75	11.60	50	9753K76	12.53	25	9753K77	8.29	25	9753K78	8.63
2"-2 1/16"	50	9753K91	15.54	25	9753K92	8.39	25	9753K93	9.39	25	9753K94	9.80
High Temperature—*For Multiple ODs*												
1/16"-1/8"	100	84735K11	5.43	100	84735K74	5.50	—	—	—	—	—	—
1/8"-3/16"	100	84735K12	5.50	100	84735K75	5.81	100	84735K86	5.60	100	84735K97	9.05
3/16"-1/4"	100	84735K13	5.81	100	84735K76	6.55	100	84735K87	6.55	100	84735K98	9.85
1/4"-5/16"	100	84735K14	5.79	100	84735K77	7.64	100	84735K88	6.71	100	84735K99	10.59
5/16"-3/8"	100	84735K15	6.00	100	84735K78	8.20	100	84735K89	7.29	100	84735K111	11.39
3/8"-7/16"	100	84735K16	6.71	100	84735K79	8.59	100	84735K91	7.41	100	84735K112	11.61
1/2"-9/16"	100	84735K17	7.19	100	84735K81	9.54	100	84735K92	7.70	100	84735K113	12.00
5/8"-11/16"	100	84735K18	8.68	100	84735K82	11.52	100	84735K93	11.50	100	84735K114	13.65
3/4"-13/16"	100	84735K71	9.93	100	84735K83	11.87	100	84735K94	12.73	50	84735K115	11.97
7/8"-15/16"	100	84735K72	9.91	100	84735K84	13.69	50	84735K95	11.86	50	84735K116	12.46
1"-1 1/16"	100	84735K73	11.59	50	84735K85	7.30	50	84735K96	11.97	50	84735K117	12.61
FDA Compliant												
1/8"	100	3504T12	6.50	—	—	—	100	3504T13	7.40	—	—	—
3/16"	100	3504T14	6.14	—	—	—	100	3504T15	8.02	—	—	—
1/4"	100	3504T16	6.87	—	—	—	100	3504T17	8.59	—	—	—
3/8"	100	3504T21	7.61	—	—	—	100	3504T22	10.23	—	—	—
1/2"	100	3504T23	7.61	—	—	—	100	3504T24	10.70	—	—	—
5/8"	100	3504T25	10.73	—	—	—	50	3504T26	6.79	—	—	—
3/4"	50	3504T27	7.12	—	—	—	50	3504T28	8.55	—	—	—
	2" Inside Height			**3" Inside Height**			**4" Inside Height**			**5" Inside Height**		
Standard												
3/16"	50	40005K12	$8.81	50	40005K13	$10.16	—	—	—	—	—	—
1/4"	50	40005K14	9.17	50	40005K15	10.57	50	40005K16	$12.27	—	—	—
3/8"	25	40005K17	8.76	25	40005K18	7.64	10	40005K19	6.33	10	40005K21	$6.54
1/2"	25	40005K22	8.95	25	40005K23	7.93	25	40005K24	15.54	10	40005K25	6.05
5/8"	25	40005K26	9.17	25	40005K27	11.17	10	40005K28	5.29	10	40005K29	7.44
3/4"	25	40005K31	9.81	25	40005K32	11.29	10	40005K33	5.72	10	40005K34	8.86
1"	25	40005K35	12.63	10	40005K36	7.40	10	40005K37	7.54	10	40005K38	10.56
1 1/4"	10	40005K39	6.59	10	40005K41	8.02	10	40005K42	9.45	10	40005K43	11.12
1 1/2"	10	40005K44	13.09	10	40005K45	12.62	10	40005K46	12.83	5	40005K47	9.55
2"	10	40005K51	13.60	5	40005K52	8.82	5	40005K53	8.80	5	40005K54	8.85

Pliable Vinyl with Pull Tab

It's easy to remove these caps after masking—just pull the tab. Durometer hardness is 75A. Maximum temperature is 140° F for 10 minutes. Color is black.

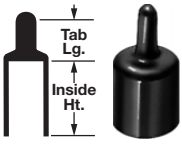

Fits OD	Tab Lg.	1/2" Inside Height Pkg. Qty.		Per Pkg.	3/4" Inside Height Pkg. Qty.		Per Pkg.	1" Inside Height Pkg. Qty.		Per Pkg.
1/4"	5/8"	100	9531K11	$7.78	100	9531K21	$8.44	100	9531K31	$8.81
3/8"	5/8"	100	9531K12	8.09	100	9531K22	8.72	100	9531K32	9.25
1/2"	11/16"	100	9531K13	9.59	100	9531K23	9.69	100	9531K33	11.29
5/8"	11/16"	100	9531K14	9.81	100	9531K24	11.71	100	9531K34	12.59
3/4"	27/32"	100	9531K15	11.09	100	9531K25	12.76	50	9531K35	14.17
7/8"	27/32"	50	9531K16	10.81	100	9531K26	14.41	50	9531K36	13.08
1"	7/8"	50	9531K17	11.13	50	9531K27	13.08	50	9531K37	13.08

(Continued on following page)

Push-On Round Caps *(Continued from previous page)*

Pliable Vinyl with Dome Top

Removable with just a squeeze of the dome top, these caps make good thread protectors and can be used for masking. Durometer hardness is 75A. Maximum temperature is 140° F for 10 minutes. Color is red.

Fits OD	Fits Pipe Size, NPT	Fits Thread Size	Inside Ht.	Pkg. Qty.		Per Pkg.
0.220″	—	—	3/8″	100	9343K51	$4.18
0.288″	—	5/16″	7/16″	100	9343K52	4.21
0.338″	1/8″	3/8″	7/16″	100	9343K53	4.27
0.362″	—	3/8″-7/16″	7/16″	100	9343K54	4.36
0.443″	1/4″	1/2″	1/2″	100	9343K55	4.47
0.513″	3/8″	9/16″	1/2″	100	9343K56	4.73
0.679″	—	5/8″	9/16″	100	9343K57	5.26
0.740″	1/2″	3/4″-7/8″	9/16″	100	9343K58	5.48
0.893″	—	11/16″	5/8″	100	9343K59	6.90
1.143″	1″	13/16″-15/16″	3/4″	100	9343K61	8.95
1.548″	1 1/4″	19/16″-15/8″	1 1/4″	25	9343K63	12.77

Rigid Plastic

Provide a protective cover to the ends of tubing. Made of polyethylene with a durometer hardness of 54D. Maximum temperature is 180° F for 15 minutes. Color is black.

Fits OD	Inside Ht.	Pkg. Qty.		Per Pkg.
7/16″	17/32″	100	9567K55	$5.22
1/2″	19/32″	100	9567K19	5.50
5/8″	21/32″	100	9567K21	5.72
3/4″	19/32″	100	9567K11	6.14
7/8″	19/32″	100	9567K12	6.40
1″	19/32″	100	9567K13	6.75
1 1/8″	19/32″	100	9567K15	7.39
1 1/4″	1/2″	100	9567K14	7.58
1 1/2″	9/16″	100	9567K16	12.51
1 3/4″	15/32″	50	9567K17	11.80
2″	15/32″	50	9567K18	12.15

Rigid Plastic with Tear Tab

Use these caps to protect the threads of NPT pipe and fittings. Caps have a groove inside that snaps onto the last thread to hold the cap securely, while the tear tab allows for easy removal. Made of polyethylene with a durometer hardness of 41D-46D. Maximum temperature is 150° F. Color is blue.

Fits OD	Fits Pipe Size, NPT	Inside Ht.	Pkg. Qty.		Per Pkg.
0.385″	1/8″	5/16″	100	6833K23	$3.82
0.512″	1/4″	15/32″	100	6833K24	3.82
0.643″	3/8″	15/32″	100	6833K25	4.08
0.800″	1/2″	5/8″	100	6833K26	5.32
1.005″	3/4″	5/8″	100	6833K27	7.62
1.261″	1″	13/16″	100	6833K28	10.83
1.604″	1 1/4″	27/32″	100	6833K29	12.69
1.841″	1 1/2″	27/32″	100	6833K31	13.74
2.313″	2″	7/8″	50	6833K32	10.91
2.792″	2 1/2″	15/16″	25	6833K33	8.51
3.411″	3″	13/8″	25	6833K34	11.04

Pliable Vinyl with Hanger Eye

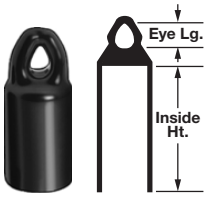

The eye turns these caps into an instant hanger once you slide them onto the end of a broom or tool handle. Durometer hardness is 80A. Maximum temperature is 140° F. Color is black.

Fits OD	Inside Ht.	Eye Lg.		Each
5/8″	2″	1/2″	13515K51	$4.13
3/4″	2″	5/8″	13515K52	4.63
7/8″	2″	5/8″	13515K53	4.76
1 1/16″	2″	5/8″	13515K54	4.76
1 1/4″	2″	51/64″	13515K55	4.76

Rigid Plastic with Static Control

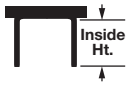

Protect electrical connectors with straight threads as well as unthreaded bayonet-type connectors from static. These polyethylene caps meet the static requirements of MIL-B-81705C, Type II. Maximum temperature is 140° F.

Conductive—Provide electrical shielding. Surface resistivity is less than 1×10^5 ohms/sq. Durometer hardness is 46D. Color is black.

Static Dissipative—Keep your equipment safe from harmful electrical currents. Surface resistivity is less than 1×10^{12} ohms/sq. Durometer hardness is 55A-65A. Color is pink.

Fits OD	Thread Size	Inside Ht.	Pkg. Qty.		Per Pkg.
Conductive					
0.244″	1/4″	15/32″	50	94075K11	$11.32
0.368″	3/8″	1/2″	50	94075K12	11.59
0.487″	1/2″	1/2″	50	94075K13	11.95
0.607″	5/8″	1/2″	50	94075K14	12.90
0.730″	3/4″	1/2″	50	94075K15	13.87
0.852″	7/8″	1/2″	50	94075K16	15.20
0.992″	1″	1/2″	25	94075K17	8.96
1.244″	1 1/4″	9/16″	25	94075K18	10.71
1.478″	1 1/2″	9/16″	25	94075K19	11.49
Static Dissipative					
0.245″	1/4″	1/2″	100	94075K31	7.92
0.360″	3/8″	1/2″	100	94075K32	9.24
0.480″	1/2″	1/2″	100	94075K33	9.89
0.600″	5/8″	1/2″	100	94075K34	10.54
0.720″	3/4″	1/2″	100	94075K35	11.11
0.850″	7/8″	1/2″	50	94075K36	8.81
0.973″	1″	1/2″	50	94075K37	9.11
1.231″	1 1/4″	9/16″	50	94075K38	10.60
1.463″	1 1/2″	9/16″	50	94075K39	12.37

Metal

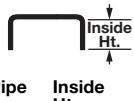

You'll get a tight fit with these metal caps. Ideal for protecting pipe and tubing during transportation and storage. Maximum temperature is not rated.

Fits OD	Fits Pipe Size	Inside Ht.	***Aluminum***	Each	***Steel***	Each
1 29/32″	1 1/2″	15/16″	9275K31	$5.05	9275K64	$2.31
2 3/8″	2″	1 1/16″	9275K32	5.79	9275K65	2.81
2 7/8″	2 1/2″	1 3/8″	9275K33	7.24	9275K66	3.24
3 1/2″	3″	1 3/8″	9275K34	9.81	9275K67	3.82
4″	3 1/2″	1 1/2″	9275K35	11.19	9275K68	4.12
4 1/2″	4″	1 7/8″	9275K36	12.50	9275K69	4.94
6 5/8″	6″	1 7/8″	9275K37	17.51	9275K71	7.23

Shrink-to-Fit Round Caps

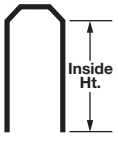

Put on one of these polyolefin caps and heat it up—it'll shrink to the size and shape of whatever it's covering. An EVA adhesive lines the inside of the cap to form a permanent bond when shrunk, preventing moisture from getting in. Durometer hardness is not rated. Caps shrink at 194° F. Maximum temperature for the caps is 300° F for 15 minutes; adhesive has a maximum temperature of 257° F. Color is black.

Fits OD		*Inside Ht.*			
Before Shrinking	After Shrinking	Before Shrinking	After Shrinking		Each
0.39″	0.16″	1.64″	1.23″	3435T11	$2.53
0.59″	0.20″	1.64″	1.23″	3435T12	2.85
0.87″	0.35″	2.83″	2.16″	3435T13	3.46
1.38″	0.71″	3.05″	2.60″	3435T14	3.91
2.17″	1.18″	4.35″	4.32″	3435T15	4.23
2.95″	1.65″	4.35″	3.27″	3435T16	5.23
3.94″	2.17″	5.22″	4.93″	3435T17	6.99
4.72″	2.76″	3.48″	2.61″	3435T18	7.97
6.30″	2.60″	8.27″	6.12″	3435T19	16.36

Push-On Tapered Round Caps

A simple tapered design allows these polyethylene caps to fit snugly and be removed easily. Durometer hardness is 41D-46D. Maximum temperature is 150° F. Color is red.

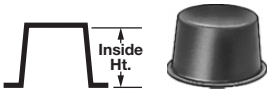

Fits Pipe Size	Fits OD Small End	Fits OD Large End	Inside Ht.	Pkg. Qty.		Per Pkg.
For Unthreaded Pipe						
1/8″	0.356″	0.422″	3/8″	100	4491K42	$4.05
1/4″	0.487″	0.568″	15/32″	100	4491K44	4.43
3/8″	0.613″	0.693″	1/2″	100	4491K57	4.71
1/2″	0.740″	0.849″	5/8″	100	4491K66	6.90
3/4″	0.933″	1.083″	3/4″	100	4491K56	7.23
1″	1.249″	1.402″	7/8″	100	4491K24	9.31
1 1/4″	1.568″	1.688″	3/4″	100	4491K34	11.38
1 1/2″	1.781″	1.938″	1″	50	4491K35	7.58
2″	2.235″	2.401″	1″	50	4491K76	10.20
2 1/2″	2.685″	2.947″	1″	50	4491K82	11.45

Fits Pipe Size, NPT	Fits OD Small End	Fits OD Large End	Inside Ht.	Pkg. Qty.		Per Pkg.
For NPT Threaded Fittings						
1/8″	0.356″	0.422″	3/8″	100	4491K42	$4.05
1/4″	0.468″	0.545″	7/16″	100	4491K43	4.60
3/8″	0.613″	0.693″	1/2″	100	4491K57	4.71
1/2″	0.740″	0.849″	5/8″	100	4491K66	6.90
3/4″	0.933″	1.083″	3/4″	100	4491K56	7.23
1″	1.173″	1.298″	13/16″	100	4491K61	7.81
1 1/4″	1.498″	1.620″	3/4″	50	4491K74	9.01
1 1/2″	1.718″	1.888″	1″	50	4491K75	9.82
2″	2.235″	2.401″	1″	50	4491K76	10.20
2 1/2″	2.685″	2.947″	1″	50	4491K82	11.45
3″	3.200″	3.492″	1 1/8″	25	4491K84	8.92
4″	4.290″	4.540″	1″	10	4491K87	6.59

Fits Thread Size	Fits OD Small End	Fits OD Large End	Inside Ht.	Pkg. Qty.		Per Pkg.
For Hydraulic Fittings and Other Straight Threads						
5/16″-24	0.235″	0.302″	3/8″	100	4491K12	$3.64
3/8″-24	0.327″	0.394″	3/8″	100	4491K23	3.63
7/16″-20	0.385″	0.451″	3/8″	100	4491K65	4.25
1/2″-20	0.409″	0.485″	7/16″	100	4491K88	4.48
9/16″-18	0.487″	0.568″	15/32″	100	4491K44	4.43
5/8″-18	0.518″	0.605″	1/2″	100	4491K25	4.70
3/4″-16	0.663″	0.761″	9/16″	100	4491K1	4.98
7/8″-14	0.753″	0.868″	5/8″	100	4491K27	6.12
1 1/16″-12	0.933″	1.083″	3/4″	100	4491K56	7.23
1 5/16″-12	1.173″	1.298″	13/16″	100	4491K61	7.81
1 5/8″-12	1.498″	1.620″	3/4″	50	4491K74	9.01
1 7/8″-12	1.718″	1.888″	1″	50	4491K75	9.82
2 1/4″-12	2.074″	2.250″	1″	50	4491K28	8.90
2 1/2″-12	2.333″	2.540″	1 1/32″	50	4491K29	9.82

Adhesive-Backed Flange Caps

Use the rubber-based adhesive backing to stick these polyethylene caps to the raised face of a flange, providing extra protection during transportation and storage. Sized to fit ANSI/ASME Class 150 and 300 flanges. Not rated for hardness. Maximum temperature is 165° F. Color is black.

Fits OD	Fits Pipe Size	Pkg. Qty.		Per Pkg.
1 3/8″	1/2″	20	3445T11	$13.61
1 11/16″	3/4″	15	3445T12	12.25
2″	1″	15	3445T13	14.70
2 1/2″	1 1/4″	10	3445T14	15.24
2 7/8″	1 1/2″	10	3445T15	15.68
3 5/8″	2″	10	3445T16	16.14
4 1/8″	2 1/2″	6	3445T17	13.88
5″	3″	4	3445T18	14.16
5 1/2″	3 1/2″	4	3445T19	15.24
6 3/16″	4″	3	3445T21	12.25
7 5/16″	5″	3	3445T22	13.07
8 1/2″	6″	2	3445T23	12.25
				Each
10 5/8″	8″	—	3445T24	$9.79
12 3/4″	10″	—	3445T25	13.61
15″	12″	—	3445T26	15.47
16 1/4″	14″	—	3445T27	19.49
18 1/2″	16″	—	3445T28	22.42
21″	18″	—	3445T29	29.45
23″	20″	—	3445T31	31.78

Threaded Round Caps

The outside ridges improve your grip as you simply twist these threaded caps on and off. They fit JIC/SAE fittings.

Polyethylene—Durometer hardness is 40D. Maximum temperature is 150° F for 10 minutes. Color is red.

Aluminum—Meet MIL-C-5501/3. Not rated for hardness. Maximum temperature is 650° F.

Polyethylene

Aluminum

Fits Thread Size	Fits Tubing Size	Inside Ht.	Pkg. Qty.		Per Pkg.
Polyethylene					
3/8″-24	3/16″	15/32″	100	1277K23	$4.68
7/16″-20	1/4″	15/32″	100	1277K24	5.31
1/2″-20	5/16″	15/32″	100	1277K25	5.73
5/8″-18	3/8″	13/16″	100	1277K26	6.17
3/4″-16	1/2″	9/16″	100	1277K27	7.13
3/4″ NPT	—	3/4″	100	1277K28	7.92
7/8″-14	5/8″	11/16″	100	1277K29	8.20
1″-14	—	25/32″	100	1277K31	8.92
1 1/16″-12	3/4″	3/4″	100	1277K32	9.20
Aluminum					
5/16″-24	1/8″	21/64″	50	3522T11	10.05
3/8″-24	3/16″	19/64″	50	3522T12	14.18
7/16″-20	1/4″	15/32″	50	3522T13	7.52
1/2″-20	5/16″	7/16″	50	3522T14	13.16
9/16″-18	3/8″	15/32″	50	3522T15	10.02
5/8″-18	7/16″	33/64″	50	3522T16	11.96
3/4″-16	1/2″	35/64″	50	3522T17	12.55
7/8″-14	5/8″	21/32″	50	3522T18	14.41
1 1/16″-12	3/4″	49/64″	25	3522T19	9.71
1 5/16″-12	1″	49/64″	25	3522T21	12.56
1 5/8″-12	1 1/4″	23/32″	10	3522T22	11.70

Stretch-Over Round Flange Caps

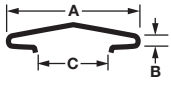

Protect the flanged ends of tubing by simply stretching these caps over them. Made of vinyl with a durometer hardness of 75A. Maximum temperature is 140° F for 10 minutes. Color is yellow.

Fits Flange Dia. (A)	Fits Flange Thick. (B)	(C)	Pkg. Qty.		Per Pkg.
1.310″	1/8″	0.68″	25	9532K11	$14.26
1.620″	1/8″	1.00″	10	9532K13	7.37
2.195″	1/8″	1.50″	10	9532K35	7.59
2.695″	1/8″	2.00″	10	9532K36	8.17
2.860″	1/8″	2.18″	10	9532K37	10.29
3.180″	1/8″	2.50″	10	9532K38	9.71
3.560″	1/8″	2.93″	10	9532K19	11.27
3.600″	1/8″	3.00″	10	9532K21	11.73
4.155″	1/8″	3.50″	10	9532K22	5.80
4.690″	1/8″	4.00″	5	9532K23	3.96
5.190″	1/8″	4.50″	5	9532K25	12.42
5.690″	1/8″	5.00″	5	9532K27	15.67
6.690″	1/8″	6.00″	2	9532K31	7.35

Push-On High-Visibility Caps

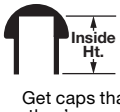

1

2

3

Get caps that really stand out. Their bright colors make them visible, so they're good for covering sharp ends. Made of polyethylene with a maximum temperature of 120° F.

Styles 1 and 2—Durometer hardness is 52A.

Style 3—Compliant with OSHA 1926.701(b), these caps have a steel insert and can withstand 250 lbs. from a 10-ft. drop. Top is 4″×4″. Not rated for hardness.

	Fits OD	Inside Ht.	Color	Pkg. Qty.		Per Pkg.
1	3/8″-7/8″	23/32″	Orange	10	9550K11	$5.00
2	1″-2 1/4″	3″	Orange	10	9550K12	11.49
3	3/8″-7/8″	219/32″	Orange	1	9550K15	2.85
3	7/8″-1 3/8″	227/32″	Yellow	1	9550K16	4.28

Push-On Rectangular and Square Caps

Rectangular, Flat End

Rectangular, Round End

Square, Tapered End

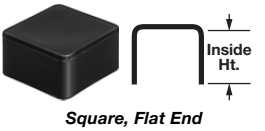

Square, Flat End

Rectangular—Made of vinyl, use these caps as covers and masking for rectangular objects. Durometer hardness is 75A. Maximum temperature is 140° F for 10 minutes. Color is black.

Square—They're perfect protection for the ends of square tubes. Color is black. Caps with a *tapered end* are vinyl and have a durometer hardness of 60A-80A and a maximum temperature of 350° F for 15 minutes. Caps with a *flat end* are polyethylene and have a durometer hardness of 54D and a maximum temperature of 180° F for 15 minutes.

Fits Size	Inside Ht.	Pkg. Qty.		Per Pkg.
Rectangular—*Flat End*				
1/16″ × 1/2″	1 1/2″	100	85945K42	$14.54
1/16″ × 1 1/2″	1/2″	50	85945K12	11.76
1/16″ × 1 21/32″	1″	50	85945K13	13.54
3/32″ × 7/16″	3/4″	100	85945K15	13.12
3/32″ × 1″	5 1/8″	10	85945K43	7.76
1/8″ × 1/2″	4 1/4″	25	85945K46	14.27
1/8″ × 3/4″	3/4″	100	85945K16	13.41
1/8″ × 3/4″	4 1/4″	10	85945K45	8.95
1/8″ × 1 1/8″	3/4″	100	85945K17	15.29
1/8″ × 1 1/8″	2″	50	85945K41	12.67
1/4″ × 5/8″	1 1/2″	100	85945K18	15.08
1/4″ × 1″	1 1/2″	50	85945K44	11.11
15/32″ × 2 1/8″	3/4″	50	85945K19	14.99
3/4″ × 1 1/8″	1/2″	50	85945K21	12.58
Rectangular—*Round End*				
1/16″ × 5/16″	1/2″	100	85945K22	12.19
1/16″ × 3/8″	3 1/2″	50	85945K23	11.30
1/16″ × 3/4″	2″	50	85945K25	13.19
1/16″ × 3/4″	4 3/8″	10	85945K56	10.32
1/8″ × 7/16″	1/2″	100	85945K26	11.88
1/8″ × 1/2″	1″	50	85945K27	12.22
1/8″ × 3/4″	2″	50	85945K28	14.13
1/8″ × 1″	1/2″	100	85945K29	13.11
1/8″ × 1″	2 1/2″	20	85945K51	13.35
3/16″ × 1/2″	2″	50	85945K31	12.13
3/16″ × 5/8″	1 1/2″	50	85945K53	13.31
1/4″ × 3/4″	5 1/4″	10	85945K54	12.40
1/4″ × 1″	1 1/2″	24	85945K52	14.76
1/4″ × 1 1/4″	5 1/2″	6	85945K55	9.70

Fits Size	Inside Ht.	Pkg. Qty.		Per Pkg.
Square—*Tapered End*				
1/4″ × 1/4″	1″	100	9092K81	$8.02
5/16″ × 5/16″	1″	100	9092K82	12.54
3/8″ × 3/8″	1″	100	9092K83	13.98
7/16″ × 7/16″	1″	50	9092K84	8.89
1/2″ × 1/2″	1/2″	50	9092K32	4.78
1/2″ × 1/2″	1″	50	9092K34	6.72
5/8″ × 5/8″	1/2″	100	9092K85	13.99
3/4″ × 3/4″	1/2″	50	9092K36	8.08
3/4″ × 3/4″	1″	50	9092K38	9.83
1″ × 1″	1/2″	50	9092K33	9.05
1″ × 1″	1″	50	9092K35	11.06
1 1/4″ × 1 1/4″	1/2″	25	9092K37	7.12
1 1/4″ × 1 1/4″	1″	25	9092K39	10.00
1 1/2″ × 1 1/2″	1/2″	25	9092K54	10.19
1 1/2″ × 1 1/2″	1″	25	9092K56	13.21
1 5/8″ × 1 5/8″	1″	10	9092K71	6.66
1 3/4″ × 1 3/4″	1″	10	9092K72	7.05
1 7/8″ × 1 7/8″	1″	10	9092K73	7.05
2″ × 2″	1/2″	10	9092K61	4.91
2″ × 2″	1″	10	9092K62	9.14
2 1/2″ × 2 1/2″	1″	10	9092K74	12.27
3″ × 3″	1″	5	9092K75	7.79
3 1/2″ × 3 1/2″	1″	5	9092K76	8.86
4″ × 4″	1″	5	9092K77	10.09
Square—*Flat End*				
1/2″ × 1/2″	1/2″	100	92675K41	5.60
5/8″ × 5/8″	1/2″	100	92675K42	8.08
3/4″ × 3/4″	1/2″	100	92675K43	8.74
1″ × 1″	1/2″	100	92675K44	11.10

Snap-In Pole Caps

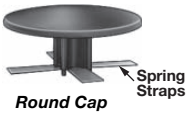

Round Cap

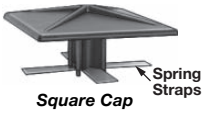

Square Cap

Keep your poles safe from the elements with these UV- and weather-resistant glass-filled polyester caps. As you insert the cap stem into the pole, the spring straps at the base of the cap bend. This creates force against the inside of the pole to hold the cap securely in place. Rockwell hardness is R119. Maximum temperature is 266° F. Color is black.

Fits Size	(A)	(B)		Each
Round				
3″ Dia.	1 1/2″	11/32″	97535K21	$5.12
3 1/2″ Dia.	1 7/16″	3/8″	97535K23	5.44
4″ Dia.	1 7/16″	13/32″	97535K25	5.44
4 1/4″ Dia.	1 3/8″	7/16″	97535K27	5.68
4 1/2″ Dia.	1 3/8″	7/16″	97535K29	6.12
5″ Dia.	1 3/8″	7/16″	97535K31	7.21
Square				
3″ Sq.	1 15/32″	17/32″	97535K3	5.15
4″ Sq.	1 13/32″	19/32″	97535K5	5.82
5″ Sq.	1 11/32″	5/8″	97535K7	7.21
6″ Sq.	1 1/4″	3/4″	97535K9	8.53

Snap-On Hex Nut Caps

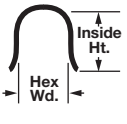

Protect heavy hex nuts and bolts from corrosion. The ridged edge snaps onto the base of the nut to hold caps in place. Made of polyethylene, they have a durometer hardness of 96A. Maximum temperature is 210° F. Color is black.

For Bolt Dia.	Fits Hex Wd.	Inside Ht.	Pkg. Qty.		Per Pkg.
1/4″	1/2″	17/32″	10	9267K41	$6.32
5/16″	35/64″	1/2″	10	9267K43	9.75
3/8″	43/64″	25/32″	10	9267K31	7.50
7/16″	3/4″	27/32″	10	9267K45	10.00
1/2″	7/8″	15/16″	10	9267K32	12.14
9/16″	15/16″	1″	5	9267K47	10.71
5/8″	1 1/16″	1″	10	9267K33	14.09
3/4″	1 1/4″	1 13/32″	5	9267K34	10.48
7/8″	1 13/32″	1 7/16″	5	9267K35	11.67
1″	1 5/8″	1 23/32″	5	9267K36	14.79
					Each
1 1/8″	1 13/16″	2″	—	9267K17	$6.38
1 1/4″	1 31/32″	2 3/32″	—	9267K18	9.03

Push-On Angle and Corner Caps

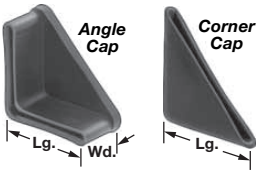

Angle Caps—Fit these polyethylene caps over the ends of 90° angle metal bars to protect the edges. Durometer hardness is 54D. Maximum temperature is 180° F for 15 minutes. Color is black.

Corner Caps—Ideal protection for the corners of glass and mirrors. Made of polyethylene with a durometer hardness of 80A. Maximum temperature is 122° F. Color is black.

Fits Thick.	Lg.	Wd.	Pkg. Qty.		Per Pkg.
Angle Caps					
1/8″	1″	9/16″	100	93105K54	$12.52
1/8″	1 1/2″	3/4″	25	93105K56	12.82
Corner Caps					Each
1/8″-3/16″	1 7/8″	—	—	5542T85	$0.42
1/4″	1 7/8″	—	—	5542T86	.47
3/8″	1 7/8″	—	—	5542T87	.55
1/2″	1 7/8″	—	—	5542T88	.60
3/4″	2 1/4″	—	—	5542T89	.74

Screw Caps

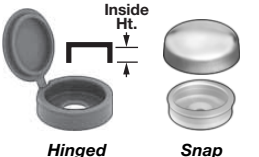

Hinged Cover

Snap Cover

Conceal and protect screw heads with these UV-resistant caps.

Hinged Covers—Made of polypropylene with a Rockwell hardness of R100. Maximum temperature is 250° F. **To Order:** Please specify color: black, brown, or white.

Snap Covers—Made of ABS plastic with an electroplated chrome or gold finish. Not rated for hardness and temperature.

Fits Screw Size	OD	Inside Ht.	Pkg. Qty.		Per Pkg.
Hinged Covers					
No. 4-No. 6	0.45″	0.13″	100	91620A100	$8.72
No. 8-No. 10	0.54″	0.14″	100	91620A200	8.91
1/4″	0.69″	0.17″	100	91620A300	10.36
Snap Covers—*Chrome Finish*					
No. 6-No. 8	0.52″	0.19″	25	91620A600	8.76
No. 10-1/4″	0.64″	0.22″	25	91620A800	8.76
Snap Covers—*Gold Finish*					
No. 6-No. 8	0.52″	0.19″	25	91620A700	13.10
No. 10-1/4″	0.64″	0.22″	25	91620A900	13.07

Push-In Round Plugs

Commonly used to plug holes in sheet metal.

Rigid Plastic

All are made of nylon. *Vented* plugs allow air circulation and permit heat and fumes to escape.

***Snap In*—**Ideal as glides and protective bumpers. Rockwell hardness is R113. Maximum temperature is 185° F. **To Order:** Please specify black or off-white, unless noted.

***Locking*—**Just press them in a hole—they have strips on the sides that expand beyond the hole diameter to lock into place. Rockwell hardness is R118. Maximum temperature is 250° F. Color is black.

Snap In, Off-White

Locking

Locking, Vented

Fits ID	Fits Panel Thick.	Head Dia.	Pkg. Qty.		Per Pkg.
Snap In					
1/8″	0.031″-0.094″	13/64″	100	9688K191	$4.36
0.15″	0.031″-0.094″	1/4″	100	9688K36★	4.77
3/16″	0.031″-0.140″	11/32″	100	9688K211	6.24
1/4″	0.031″-0.062″	27/64″	100	9688K221	6.26
5/16″	0.031″-0.140″	29/64″	100	9688K231	6.28
3/8″	0.031″-0.140″	37/64″	100	9688K241	6.29
7/16″	0.031″-0.171″	39/64″	100	9688K321	4.78
1/2″	0.031″-0.140″	43/64″	100	9688K251	7.07
9/16″	0.031″-0.140″	47/64″	100	9688K331	5.22
5/8″	0.031″-0.072″	51/64″	100	9688K261	7.85
11/16″	0.031″-0.109″	57/64″	100	9688K341	6.55
3/4″	0.031″-0.109″	63/64″	100	9688K271	9.04
0.787″	0.059″-0.080″	63/64″	100	9688K37♦	8.44
13/16″	0.031″-0.109″	11/32″	100	9688K281	9.66
7/8″	0.031″-0.109″	15/64″	100	9688K291	9.90
1″	0.031″-0.109″	17/32″	100	9688K311	11.28
Snap In (Metric)					
6 mm	0.8-1.6 mm	10 mm	100	9688K41★	4.52
8 mm	0.8-3.5 mm	12 mm	100	9688K42★	5.01
10 mm	0.8-3.5 mm	14 mm	100	9688K43★	5.16
12 mm	0.8-3.5 mm	16 mm	100	9688K44★	6.56
14 mm	0.8-3.5 mm	18 mm	100	9688K45★	6.80
16 mm	0.8-3.5 mm	20 mm	100	9688K46★	8.94
18 mm	0.8-4.0 mm	22 mm	100	9688K47★	9.42
20 mm	0.8-4.0 mm	26 mm	100	9688K48★	9.90
22 mm	0.8-4.0 mm	27.8 mm	100	9688K49★	10.48
24 mm	0.8-4.0 mm	28 mm	100	9688K51★	14.80
26 mm	0.8-4.0 mm	30 mm	100	9688K52★	14.90

★ Only available in off-white. ♦ Only available in black.

Fits ID	Fits Panel Thick.	Head Dia.	Pkg. Qty.		Per Pkg.
Snap In—Vented					
7/8″	0.031″-0.109″	15/64″	100	9688K641	$10.27
1″	0.031″-0.109″	17/32″	100	9688K688	11.70
Locking					
3/16″	0.016″-0.062″	1/4″	100	85985K11	4.70
1/4″	0.016″-0.062″	5/16″	100	85985K12	4.70
5/16″	0.016″-0.062″	3/8″	100	85985K13	5.00
3/8″	0.016″-0.125″	15/32″	100	85985K14	5.00
7/16″	0.016″-0.125″	17/32″	100	85985K15	5.38
1/2″	0.016″-0.125″	37/64″	100	85985K16	5.49
9/16″	0.016″-0.125″	21/32″	100	85985K17	6.17
5/8″	0.016″-0.125″	23/32″	100	85985K18	6.18
11/16″	0.016″-0.125″	25/32″	100	85985K19	7.55
3/4″	0.016″-0.125″	59/64″	100	85985K21	8.02
13/16″	0.016″-0.125″	57/64″	100	85985K22	8.59
7/8″	0.016″-0.125″	11/64″	100	85985K23	8.86
1″	0.016″-0.125″	113/64″	100	85985K24	9.63
13/32″	0.016″-0.125″	17/32″	100	85985K25	10.31
13/16″	0.016″-0.125″	15/16″	100	85985K26	12.02
1 1/4″	0.016″-0.125″	13/8″	100	85985K27	12.38
1 3/8″	0.016″-0.125″	1 1/2″	100	85985K28	14.75
1 1/2″	0.016″-0.125″	143/64″	50	85985K29	8.13
1 3/4″	0.016″-0.125″	159/64″	50	85985K31	9.75
2″	0.016″-0.125″	29/64″	50	85985K32	9.81
2 1/2″	0.016″-0.250″	225/32″	25	85985K35	12.52
Locking—Vented					
7/8″	0.016″-0.125″	11/64″	100	85985K33	8.86
1″	0.016″-0.125″	113/64″	100	85985K34	10.07

See-Through Rigid Plastic

Searching for a plug with a view? These are transparent for better visibility and light transmission. Press the plug in and it snaps into place. Made of polycarbonate. Not rated for hardness. Maximum temperature is 239° F.

Fits ID	Fits Panel Thick.	Head Dia.	Pkg. Qty.		Per Pkg.
3/16″	0.062″ max.	1/4″	10	1179K11	$5.28
1/4″	0.062″ max.	5/16″	10	1179K12	5.28
5/16″	0.062″ max.	3/8″	10	1179K13	5.28
3/8″	0.125″ max.	15/32″	10	1179K14	5.28
7/16″	0.125″ max.	17/32″	10	1179K15	5.28
1/2″	0.125″ max.	9/16″	10	1179K16	5.48
5/8″	0.125″ max.	47/64″	10	1179K17	6.18
3/4″	0.125″ max.	55/64″	10	1179K18	7.26
7/8″	0.125″ max.	61/64″	10	1179K19	8.43
2″	0.125″ max.	25/32″	5	1179K26	10.81

Flexible Plastic

A snap-in ring gives these polyethylene plugs a secure fit. Durometer hardness is 41D-46D. Maximum temperature is 150° F. Color is black.

Fits ID	Fits Panel Thick.	Head Dia.	Pkg. Qty.		Per Pkg.
3/8″	0.06″-0.11″	3/4″	100	9750K21	$5.02
1/2″	0.03″-0.08″	7/8″	100	9750K22	2.96
5/8″	0.06″-0.08″	1 1/16″	100	9750K23	3.52
3/4″	0.05″-0.11″	1″	100	9750K24	3.52
7/8″	0.03″-0.08″	15/32″	100	9750K25	4.80
1″	0.03″-0.08″	13/8″	100	9750K26	4.73
13/32″	0.03″-0.08″	15/16″	100	9750K27	7.80
13/16″	0.03″-0.08″	19/16″	100	9750K28	6.71
1 1/4″	0.03″-0.08″	15/8″	100	9750K31	6.60
1 1/2″	0.02″-0.08″	17/8″	100	9750K32	6.78
1 3/4″	0.03″-0.08″	2 1/8″	100	9750K33	7.43
2″	0.03″-0.08″	2 7/16″	50	9750K34	7.67
2 1/2″	0.03″-0.08″	3″	50	9750K35	10.61
2 5/8″	0.03″-0.08″	3 1/8″	25	9750K36	12.76
3″	0.03″-0.08″	3 3/8″	25	9750K37	13.63
4″	0.05″-0.10″	4 1/2″	10	9750K38	8.15

Metal

When it comes to durability, you can't beat these steel plugs. Their tapered prongs snap in to hold the plug in place. Not rated for hardness.

Plain

Fits ID	Fits Panel Thick.	Head Dia.	Pkg. Qty.	*Plain Steel*	Per Pkg.	*Nickel-Plated Steel*	Per Pkg.
1/8″	0.047″-0.078″	21/64″	50	9563K31	$8.25	9563K81	$8.86
3/16″	0.016″-0.062″	11/32″	50	9563K32	8.43	9563K82	9.36
1/4″	0.031″-0.062″	13/32″	50	9563K62	8.43	9563K41	10.11
9/32″	0.016″-0.062″	13/32″	50	9563K38	8.57	9563K39	10.18
5/16″	0.047″-0.078″	7/16″	50	9563K33	8.87	9563K83	10.26
3/8″	0.031″-0.046″	1/2″	50	9563K63	9.08	9563K42	10.59
25/64″	0.062″-0.093″	1/2″	50	9563K55	9.34	9563K56	10.81
7/16″	0.031″-0.062″	21/32″	50	9563K34	9.37	9563K84	11.66
1/2″	0.031″-0.062″	21/32″	50	9563K64	9.34	9563K43	12.46
9/16″	0.047″-0.093″	23/32″	50	9563K57	9.82	9563K58	12.66
5/8″	0.062″-0.093″	13/16″	50	9563K65	10.50	9563K44	12.68
11/16″	0.031″-0.062″	7/8″	50	9563K59	10.68	9563K61	12.92
3/4″	0.109″-0.125″	59/64″	50	9563K66	11.17	9563K45	13.26
13/16″	0.047″-0.093″	13/64″	50	9563K78	11.60	9563K79	13.21
7/8″	0.062″-0.093″	1 1/16″	50	9563K67	12.68	9563K46	14.05
15/16″	0.031″-0.078″	15/32″	25	9563K86	6.54	9563K87	7.31
1″	0.125″-0.156″	19/64″	25	9563K68	6.75	9563K47	7.97
1 1/8″	0.031″-0.125″	15/16″	25	9563K35	9.27	9563K85	9.67
1 3/16″	0.031″-0.093″	17/16″	25	9563K88	8.18	9563K89	9.33
1 1/4″	0.062″-0.093″	17/16″	25	9563K69	8.84	9563K48	10.22
1 3/8″	0.047″-0.125″	19/16″	25	9563K71	9.09	9563K49	10.50
1 1/2″	0.031″-0.062″	141/64″	25	9563K72	9.84	9563K51	11.49
1 5/8″	0.031″-0.125″	113/16″	25	9563K91	10.70	9563K93	12.85
1 3/4″	0.031″-0.093″	115/16″	25	9563K92	11.08	9563K95	12.99
2″	0.031″-0.062″	2 1/4″	10	9563K77	6.08	9563K54	6.84

***37-Piece Nickel-Plated Steel Assortment*—**Includes sizes to fit IDs: 3/8″ (12 pcs.), 1/2″ (10 pcs.), 5/8″ (7 pcs.), and 7/8″ (8 pcs.). Furnished in a compartmented plastic box.

9563K21 ..... **Each** $14.51

***270-Piece Nickel-Plated Steel Assortment*—**Includes sizes to fit IDs: 1/4″ (50 pcs.), 3/8″ (50 pcs.), 1/2″ (40 pcs.), 5/8″ (35 pcs.), 3/4″ (35 pcs.), 7/8″ (30 pcs.), 1″ (10 pcs.), 1 1/4″ (10 pcs.), and 1 1/2″ (10 pcs.). Furnished in a compartmented metal box.

9563K14 ..... **Each** $108.88

Push-In Tapered Round Plugs

They're tapered, allowing these plugs to conform to your hole diameter for a tight seal.

Resilient Rubber

When you're dealing with harsh environments, use these EPDM plugs. Durometer hardness is 40A-70A. Maximum temperature is 475° F for 10 minutes. Color is black.

Fits ID Large End	Fits ID Small End	Ht.	Pkg. Qty.		Per Pkg.
1/8"	1/16"	5/8"	100	6448K71	$6.29
3/16"	1/16"	3/4"	100	6448K87	7.37
1/4"	1/8"	3/4"	100	6448K88	8.46
11/32"	3/16"	5/8"	50	6448K89	7.16
3/8"	1/4"	3/4"	50	6448K91	8.42
1/2"	5/16"	13/16"	25	6448K92	6.24
21/32"	1/2"	1"	10	6448K93	5.87
3/4"	9/16"	1"	10	6448K94	6.30
25/32"	5/8"	1"	10	6448K95	8.46
15/16"	23/32"	1"	10	6448K96	10.97

High-Temperature Resilient Rubber

Perfect for high-temperature applications, these silicone plugs withstand temperatures up to 600° F for 10 minutes. Durometer hardness is 50A-60A.

Fits ID Large End	Fits ID Small End	Ht.	Color	Pkg. Qty.		Per Pkg.
1/8"	1/32"	5/8"	Clear	50	9277K41	$5.49
1/8"	1/16"	5/8"	Lt. Green	50	9277K35	5.64
3/16"	1/16"	5/8"	Pink	50	9277K36	7.55
1/4"	1/8"	3/4"	Black	50	9277K37	8.38
11/32"	3/16"	5/8"	Red	50	9277K38	10.48
3/8"	1/8"	1 1/4"	Red	25	9277K81	7.22
3/8"	1/4"	3/4"	Yellow	25	9277K39	8.39
1/2"	5/16"	13/16"	Clear	10	9277K52	5.31
5/8"	7/16"	13/16"	Lt. Green	10	9277K53	6.48
21/32"	1/2"	1"	Red	25	9277K82	9.30
3/4"	9/16"	1"	Black	10	9277K54	8.00
13/16"	5/8"	1"	Red	25	9277K83	14.38
15/16"	23/32"	1"	Yellow	10	9277K55	12.21
1 1/64"	25/32"	1"	Clear	5	9277K76	6.54
1 17/64"	1 1/32"	1"	Dk. Green	5	9277K77	8.17
						Each
1 39/64"	1 5/16"	1"	Clear	—	9277K49	$3.25
1 49/64"	1 15/32"	1"	Red	—	9277K31	3.47
1 31/32"	1 5/8"	1"	Clear	—	9277K62	4.06
2 13/64"	1 7/8"	1"	Purple	—	9277K79	4.89
2 31/64"	1 31/32"	1"	Red	—	9277K34	5.72
2 33/64"	2 1/8"	1"	Red	—	9277K68	6.26
2 61/64"	2 7/16"	1 3/8"	Red	—	9277K69	9.79
3 35/64"	3"	1 1/2"	Red	—	9277K71	14.80
4 3/64"	3 1/4"	1 1/2"	Red	—	9277K73	20.95
5"	3 1/2"	2"	Red	—	9277K75	32.47

Flexible Plastic

Thanks to their hollow design, these polyethylene plugs fit snugly yet are easy to remove. Durometer hardness is 41D-46D. Maximum temperature is 150° F. Color is red.

Fits Pipe Size	Fits ID Large End	Fits ID Small End	Ht.	Pkg. Qty.		Per Pkg.
For Unthreaded Pipe						
1/8"	0.302"	0.236"	3/8"	100	4491K11	$3.19
1/4"	0.396"	0.330"	3/8"	100	4491K41	3.54
3/8"	0.547"	0.471"	7/16"	100	4491K88	4.48
1/2"	0.667"	0.580"	1/2"	100	4491K25	4.70
3/4"	0.848"	0.750"	9/16"	100	4491K16	5.89
1"	1.090"	0.964"	3/4"	100	4491K14	7.63
1 1/4"	1.465"	1.312"	7/8"	100	4491K24	9.31
1 1/2"	1.682"	1.560"	3/4"	50	4491K74	9.01
2"	2.132"	1.975"	1"	50	4491K26	9.18
2 1/2"	2.602"	2.395"	1"	50	4491K29	9.82

Fits Pipe Size, NPT	Fits ID Large End	Fits ID Small End	Ht.	Pkg. Qty.		Per Pkg.
For NPT Threaded Fittings						
1/8"	0.396"	0.330"	3/8"	100	4491K41	$3.54
1/4"	0.485"	0.419"	3/8"	100	4491K42	4.05
3/8"	0.631"	0.550"	15/32"	100	4491K44	4.43
1/2"	0.788"	0.690"	9/16"	100	4491K2	5.06
3/4"	1.040"	0.915"	11/16"	100	4491K47	6.37
1"	1.215"	1.094"	3/4"	100	4491K59	6.54
1 1/4"	1.600"	1.513"	1/2"	100	4491K71	8.67
1 1/2"	1.805"	1.781"	3/8"	100	4491K72	10.78
2"	2.260"	2.230"	1/2"	50	4491K73	9.98
2 1/2"	2.790"	2.641"	3/4"	50	4491K81	11.19
3"	3.457"	3.325"	3/4"	50	4491K83	12.78
4"	4.430"	4.270"	7/8"	25	4491K86	14.37

Fits Thread Size	Fits ID Large End	Fits ID Small End	Ht.	Pkg. Qty.		Per Pkg.
For Hydraulic Fittings and Other Straight Threads						
5/16"-24	0.302"	0.236"	3/8"	100	4491K11	$3.19
3/8"-24	0.365"	0.299"	3/8"	100	4491K12	3.64
7/16"-20	0.427"	0.361"	3/8"	100	4491K13	3.86
1/2"-20	0.485"	0.419"	3/8"	100	4491K42	4.05
9/16"-18	0.547"	0.471"	7/16"	100	4491K88	4.48
5/8"-18	0.608"	0.532"	7/16"	100	4491K43	4.60
3/4"-16	0.727"	0.640"	1/2"	100	4491K15	5.10
7/8"-14	0.848"	0.750"	9/16"	100	4491K16	5.89
1 1/16"-12	1.040"	0.915"	11/16"	100	4491K47	6.37
1 5/16"-12	1.284"	1.175"	5/8"	100	4491K17	8.52
1 5/8"-12	1.600"	1.513"	1/2"	100	4491K71	8.67
1 7/8"-12	1.880"	1.750"	3/4"	100	4491K18	10.61
2 1/4"-12	2.243"	2.067"	1"	50	4491K19	8.87
2 1/2"-12	2.464"	2.298"	1"	50	4491K76	10.20
3"-12	2.980"	2.849"	3/4"	50	4491K22	12.04

Flexible Plastic with Pull Ring

Two built-in pull rings make removing these polyethylene plugs a breeze. Durometer hardness is 41D-46D. Maximum temperature is 150° F. Color is blue.

Fits ID Large End	Fits ID Small End	Fits Pipe Size, NPT	Ht.	Pkg. Qty.		Per Pkg.
3/8"	11/32"	1/8"	1/4"	100	57935K11	$6.13
31/64"	29/64"	1/4"	1/4"	100	57935K12	6.27
5/8"	9/16"	3/8"	3/8"	100	57935K13	6.60
49/64"	43/64"	1/2"	1/2"	100	57935K14	6.87
31/32"	57/64"	3/4"	1/2"	100	57935K15	8.00
1 7/32"	1 1/8"	1"	1/2"	100	57935K16	9.70
1 37/64"	1 1/2"	1 1/4"	1/2"	100	57935K17	12.70
1 13/16"	1 3/4"	1 1/2"	1/2"	50	57935K18	8.40
2 1/4"	2 7/32"	2"	1/2"	50	57935K19	13.85

Trade-Sized Pharmaceutical-Grade Resilient Rubber

Fully sterilizable, these silicone plugs meet USP Class VI and are FDA compliant. *Note:* Should not be used for implantation in the human body. Also known as laboratory stoppers, they won't crack or contaminate. Durometer hardness is 45A. Maximum temperature is 450° F. Color is translucent.

Trade Size	Fits ID Large End	Fits ID Small End	Ht.		Each
00	19/32"	13/32"	1"	92835K11	$5.68
0	21/32"	1/2"	1"	92835K12	6.21
1	3/4"	9/16"	1"	92835K13	6.39
2	25/32"	5/8"	1"	92835K14	6.58
3	7/8"	23/32"	1"	92835K15	6.72
4	1 1/32"	25/32"	1"	92835K16	7.27
5	1 1/16"	29/32"	1"	92835K17	$7.27
6	1 1/4"	1 1/32"	1"	92835K18	8.98
7	1 15/32"	1 3/16"	1"	92835K19	12.80
8	1 19/32"	1 5/16"	1"	92835K21	20.86
9	1 25/32"	1 15/32"	1"	92835K22	21.89
10	1 31/32"	1 21/32"	1"	92835K23	24.57

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Push-In Tapered Round Plugs *(Continued from previous page)*

Trade-Sized Resilient Rubber

Turn to these SBR plugs for good abrasion and water resistance. Also known as laboratory stoppers. Durometer hardness is 40A. Maximum temperature is 180° F. Color is black.

Plugs ***with through hole*** have a hole in the center for inserting a tube.

Solid

With Through Hole

Trade Size	Fits ID Large End	Fits ID Small End	Ht.	Solid Pkg. Qty.	Solid	Solid Per Pkg.	With Through Hole Hole Size	With Through Hole Pkg. Qty.	With Through Hole	With Through Hole Per Pkg.
000	1/2"	5/16"	13/16"	181	9545K51	$14.01	7/64"	100	9545K57	$7.96
00	19/32"	13/32"	1"	100	9545K11	14.37	7/64"	50	9545K24	7.67
0	21/32"	1/2"	1"	75	9545K12	12.50	7/64"	40	9545K25	7.11
1	3/4"	9/16"	1"	65	9545K13	12.82	5/32"	30	9545K26	6.33
2	25/32"	5/8"	1"	50	9545K14	12.36	13/64"	25	9545K27	6.25
3	7/8"	23/32"	1"	40	9545K15	11.11	13/64"	40	9545K28	11.11
4	1 1/32"	25/32"	1"	30	9545K16	10.07	13/64"	30	9545K29	10.15
5	1 1/16"	29/32"	1"	25	9545K17	10.06	13/64"	25	9545K31	10.11
5 1/2	1 3/32"	15/16"	1"	26	9545K52	10.45	13/64"	28	9545K58	10.81
6	1 1/4"	1 1/32"	1"	20	9545K18	10.91	13/64"	20	9545K32	10.91
7	1 15/32"	1 3/16"	1"	15	9545K19	9.88	13/64"	15	9545K33	10.30
8	1 19/32"	1 5/16"	1"	12	9545K21	10.38	13/64"	12	9545K34	10.40
9	1 25/32"	1 15/32"	1"	10	9545K22	10.55	13/64"	10	9545K75	10.55
10	1 31/32"	1 21/32"	1"	8	9545K23	10.63	13/64"	8	9545K36	10.63
11	2 3/16"	1 7/8"	1"	7	9545K53	10.04	13/64"	7	9545K59	11.08
11 1/2	2 15/32"	1 31/32"	1"	6	9545K54	10.25	13/64"	6	9545K61	11.01
13	2 11/16"	2 9/32"	1"	5	9545K55	10.28	13/64"	5	9545K62	10.94
13 1/2	2 7/8"	2 7/16"	1 3/8"	3	9545K56	10.41	13/64"	3	9545K63	11.05
						Each				Each
14	3 17/32"	2 15/16"	1 17/32"	—	9545K81	$6.03	13/64"	—	9545K82	$6.24
15	4 1/16"	3 9/32"	1 17/32"	—	9545K85	8.60	13/64"	—	9545K86	9.17
16	5"	3 17/32"	1 31/32"	—	9545K87	13.71	13/64"	—	9545K89	14.63

Trade-Sized Expandable Resilient Rubber

Just place one of these plugs into your opening and tighten the wing nut—the sides expand to create a seal. Nut is stainless steel.

General Purpose— Made of a natural rubber and SBR blend for good abrasion and impact resistance. Durometer hardness is 45A. Maximum temperature is 180° F for 20 minutes. Color is black.

High Temperature— They're silicone, so they can withstand temperatures up to 550° F. They also have excellent weather resistance. Durometer hardness is 55A. Color is red.

Trade Size	Fits ID Large End	Fits ID Small End	Ht.	General Purpose	General Purpose Each	High Temperature	High Temperature Each
2	25/32"	5/8"	1"	2605K31	$2.70	5117T11	$4.16
3	7/8"	23/32"	1"	2605K11	2.83	5117T12	4.79
4	1 1/32"	25/32"	1"	2605K33	3.07	5117T13	5.16
5	1 1/16"	29/32"	1"	2605K12	3.27	5117T14	5.37
5 1/2	1 3/32"	15/16"	1"	2605K13	3.37	5117T15	6.40
6	1 1/4"	1 1/32"	1"	2605K36	3.50	5117T16	6.63
6 1/2	1 11/32"	1 1/16"	1"	2605K14	3.70	5117T17	7.10
7	1 15/32"	1 3/16"	1"	2605K15	4.00	5117T18	7.60
7 1/2	1 17/32"	1 7/32"	1"	2605K39	4.23	5117T19	9.65
8	1 19/32"	1 5/16"	1"	2605K41	4.43	5117T21	10.22
8 1/2	1 11/16"	1 13/32"	1"	2605K16	4.28	5117T22	10.93
9	1 25/32"	1 15/32"	1"	2605K17	5.00	5117T23	12.43
9 1/2	1 13/16"	1 1/2"	1"	2605K43	5.07	5117T24	12.63
10	1 31/32"	1 21/32"	1"	2605K18	5.10	5117T25	13.79
10 1/2	2 3/32"	1 25/32"	1"	2605K45	6.13	5117T26	15.12
11	2 3/16"	1 7/8"	1"	2605K29	6.03	5117T27	16.06
11 1/2	2 15/32"	1 31/32"	1"	2605K21	6.62	5117T28	17.35
12	2 17/32"	2 1/8"	1"	2605K48	7.97	5117T29	19.29
13	2 11/16"	2 9/32"	1"	2605K49	9.00	5117T31	23.22
13 1/2	2 7/8"	2 7/16"	1 3/8"	2605K51	16.31	5117T32	29.88
14	3 17/32"	2 15/16"	1 17/32"	2605K52	42.22	5117T33	60.18
15	4 1/16"	3 9/32"	1 17/32"	2605K53	50.97	5117T34	73.95
16	5"	3 17/32"	1 31/32"	2605K54	77.29	5117T35	104.82

Trade-Sized Resilient Cork

Lightweight and compressible, these plugs are made of laboratory-grade 100% natural cork. They're also moisture resistant with a durometer hardness of 48A-73A. Maximum temperature is 150° F.

Trade Size	Fits ID Large End	Fits ID Small End	Ht.	Pkg. Qty.		Per Pkg.
0000	3/16"	3/32"	1/2"	100	9566K11	$6.20
000	1/4"	5/32"	1/2"	100	9566K12	6.77
00	5/16"	7/32"	1/2"	100	9566K13	6.93
0	3/8"	9/32"	1/2"	100	9566K14	7.10
1	7/16"	21/64"	5/8"	100	9566K15	8.05
2	1/2"	3/8"	11/16"	100	9566K16	8.25
3	9/16"	27/64"	3/4"	100	9566K17	9.52
4	5/8"	15/32"	13/16"	100	9566K18	9.78
5	11/16"	17/32"	7/8"	100	9566K19	10.61
6	3/4"	37/64"	15/16"	100	9566K2	11.21
7	13/16"	5/8"	1"	100	9566K21	13.02
8	7/8"	43/64"	1 1/16"	50	9566K22	8.48
9	15/16"	47/64"	1 1/8"	50	9566K23	10.87
10	1"	49/64"	1 1/4"	50	9566K24	14.13
11	1 1/16"	53/64"	1 1/4"	25	9566K61	8.79
12	1 1/8"	57/64"	1 1/4"	25	9566K62	8.30
13	1 3/16"	61/64"	1 1/4"	25	9566K63	8.06
14	1 1/4"	1 1/64"	1 1/4"	25	9566K25	8.91
16	1 3/8"	1 3/32"	1 1/2"	25	9566K26	13.47
18	1 1/2"	1 7/32"	1 1/2"	10	9566K27	6.48
20	1 5/8"	1 11/32"	1 1/2"	10	9566K28	6.41
22	1 3/4"	1 15/32"	1 1/2"	10	9566K29	7.38
24	1 7/8"	1 19/32"	1 1/2"	10	9566K76	7.90
26	2"	1 23/32"	1 1/2"	10	9566K31	10.26
28	2 1/8"	1 27/32"	1 1/2"	10	9566K84	15.90
30	2 1/4"	1 31/32"	1 1/2"	5	9566K85	11.83

Tapered Push-In Round Plugs with Flange

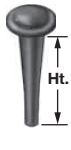

They're tapered for easy insertion, while the flange makes for easy removal. Made of vinyl, they can also plug tiny openings.

Standard— Durometer hardness is 60A-70A. Maximum temperature is 350° F for 20 minutes.

High Temperature— Durometer hardness is 85A-95A. Maximum temperature is 400° F for 20 minutes.

Fits ID Large End	Fits ID Small End	Ht.	Standard Color	Standard Pkg. Qty.	Standard	Standard Per Pkg.	High Temperature Color	High Temperature Pkg. Qty.	High Temperature	High Temperature Per Pkg.
0.15"	0.07"	5/8"	Red	100	40025K22	$13.89	Yellow	50	40025K46	$10.27
0.20"	0.10"	1/2"	Blue	50	40025K23	6.46	Yellow	50	40025K47	11.19
0.25"	0.14"	3/4"	Green	50	40025K24	6.66	Yellow	50	40025K48	12.05
0.30"	0.14"	1"	Brown	50	40025K25	11.40	Yellow	50	40025K49	12.76
0.31"	0.16"	3/4"	Orange	50	40025K26	11.91	Yellow	50	40025K51	13.61
0.31"	0.19"	1"	Gray	50	40025K27	12.18	Yellow	50	40025K52	14.46
0.34"	0.19"	3/4"	Red	50	40025K28	12.28	Yellow	50	40025K53	15.31

Push-In Round Plugs with Flange

The flanges stick out slightly, so you can easily grab a hold of these plugs for removal.

Pliable Vinyl

Plugs conform to threads to prevent movement once inserted. Durometer hardness is 75A. Maximum temperature is 140° F for 10 minutes. Color is red.

Fits ID	Fits Pipe Size, NPT	Fits Thread Size	Ht.	Pkg. Qty.		Per Pkg.
0.290″	—	5/16″	7/16″	100	9343K51	$4.18
0.390″	1/8″	3/8″	1/2″	100	9343K52	4.21
0.440″	—	7/16″	1/2″	100	9343K53	4.27
0.505″	1/4″	1/2″	1/2″	100	9343K54	4.36
0.555″	—	9/16″	5/8″	100	9343K55	4.47
0.660″	3/8″	5/8″	5/8″	100	9343K56	$4.73
0.815″	1/2″	3/4″	3/4″	100	9343K57	5.26
0.860″	—	7/8″	3/4″	100	9343K58	5.48
1.035″	3/4″	1 1/16″	13/16″	100	9343K59	6.90
1.285″	1″	1 1/4″-1 5/16″	1″	100	9343K61	8.95
1.698″	1 1/4″	1 5/8″-1 11/16″	1 1/2″	25	9343K63	12.77

Rigid Plastic with Static Control

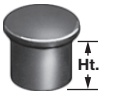

Protect electrical connectors with straight threads and unthreaded bayonet-type connectors from static. These polyethylene plugs meet static requirements of MIL-B-81705C, Type II. Maximum temperature is 140° F.

Conductive—Provide electrical shielding. Surface resistivity is less than 1×10^{5} ohms/sq. Durometer hardness is 46D. Color is black.

Static Dissipative—Keep equipment safe from harmful electrical currents. Surface resistivity is less than 1×10^{12} ohms/sq. Durometer hardness is 55A-65A. Color is pink.

Fits Thread Size	Conductive: Fits ID	Ht.	Pkg. Qty.		Per Pkg.	Static Dissipative: Fits ID	Ht.	Pkg. Qty.		Per Pkg.
1/2″-28	0.484″	17/32″	50	94075K51	$11.62	0.483″	5/8″	100	94075K71	$9.89
5/8″-24	0.599″	17/32″	50	94075K52	12.36	0.595″	5/8″	100	94075K72	10.54
3/4″-20	0.732″	17/32″	50	94075K53	13.09	0.715″	5/8″	100	94075K73	11.32
7/8″-20	0.854″	17/32″	50	94075K54	13.87	0.845″	5/8″	50	94075K74	8.81
1″-20	0.984″	17/32″	50	94075K55	14.22	0.963″	5/8″	50	94075K75	9.46
1 1/8″-18	1.093″	17/32″	25	94075K56	13.21	1.088″	5/8″	50	94075K76	10.11
1 1/4″-18	1.226″	17/32″	25	94075K57	10.61	1.215″	5/8″	50	94075K77	11.20
1 1/2″-18	1.466″	17/32″	25	94075K59	10.85	1.460″	5/8″	50	94075K79	13.58
2″-18	1.979″	17/32″	10	94075K62	9.08	1.939″	5/8″	25	94075K82	13.16

Push-In Finishing Plugs for Tubing

Smooth, Square — *Ribbed, Round*

Give tubes straight, clean ends by plugging them with these polyethylene plugs. Color is black.

Smooth—*Square* plugs have a durometer hardness of 41D-46D and a maximum temperature of 150° F. *Rectangular* plugs have a durometer hardness of 54D and a maximum temperature of 180° F for 15 minutes.

Ribbed—Their flexible ridges allow these plugs to fit a wide range of tube sizes. *Square* and *rectangular* plugs have a durometer hardness of 41D-49D and a maximum temperature of 150° F. *Round* plugs have a durometer hardness of 54D and a maximum temperature of 180° F for 15 minutes.

Fits Tube: OD	ID	Ht.	Pkg. Qty.		Per Pkg.
Smooth—*Square*					
3/4″	0.620″	1/2″	100	9565K11	$9.99
1″	0.740″	1/2″	100	9565K12	11.85
1″	0.840″	1/2″	100	9565K22	12.15
1″	0.870″	1/2″	100	9565K23	11.69
1″	0.890″	1/2″	100	9565K24	12.15
1″	0.920″	1/2″	100	9565K25	11.29
1 1/4″	0.990″	1/2″	100	9565K28	10.86
1 1/4″	1.090″	1/2″	100	9565K14	13.36
1 1/4″	1.120″	1/2″	100	9565K15	13.36
1 1/2″	1.240″	1/2″	100	9565K29	15.30
1 1/2″	1.340″	1/2″	100	9565K26	15.30
1 1/2″	1.370″	1/2″	100	9565K27	15.30
2″	1.740″	1/2″	50	9565K31	12.58
2″	1.840″	1/2″	50	9565K18	12.61
2″	1.870″	1/2″	50	9565K19	12.61
Smooth—*Rectangular*					
1″ ×1 1/2″	0.844″-0.875″×1.344″-1.375″	1/2″	25	9474K44	7.95
1″ ×2 1/2″	0.860″×2.360″	15/32″	25	9474K46	13.87
1 1/4″ ×2 1/2″	1.150″-1.175″×2.400″-2.425″	31/64″	10	9474K47	5.99
Ribbed—*Square*					
1/2″	0.3700″-0.4020″	7/16″	50	9565K94	5.91
5/8″	0.4590″-0.5550″	7/16″	50	9565K95	6.16
3/4″	0.5938″-0.6750″	7/16″	100	9565K5	7.37
1″	0.7188″-0.8438″	7/16″	100	9565K52	11.57
1″	0.8438″-0.9250″	7/16″	100	9565K51	11.57
1 1/8″	0.9590″-1.0550″	1/2″	25	9565K62	9.88
1 1/4″	1.0938″-1.1750″	1/2″	100	9565K53	14.74
Ribbed—*Square (Cont.)*					
1 1/2″	1.2812″-1.3438″	7/16″	50	9565K55	$14.89
1 1/2″	1.3438″-1.4250″	1/2″	50	9565K54	14.89
1 3/4″	1.5840″-1.6800″	1/2″	25	9565K65	14.50
2″	1.8438″-1.9250″	11/16″	25	9565K56	9.95
2 1/4″	1.9820″-2.0840″	1/2″	10	9565K91	6.49
2 1/2″	2.2320″-2.3340″	1/2″	10	9565K92	7.80
3″	2.4820″-2.6400″	1/2″	10	9565K93	9.89
Ribbed—*Rectangular*					
1/2″ ×1″	0.370″-0.402″×0.870″-0.902″	7/16″	50	9474K51	10.46
1/2″ ×1 1/2″	0.334″-0.430″×1.334″-1.430″	1/2″	100	9474K16	13.46
3/4″ ×1 1/2″	0.584″-0.680″×1.334″-1.430″	7/16″	100	9474K17	12.43
1″ ×1 1/4″	0.834″-0.930″×1.084″-1.180″	1/2″	20	9474K52	10.29
1″ ×1 1/2″	0.834″-0.930″×1.334″-1.430″	7/16″	50	9474K18	8.54
1″ ×2″	0.844″-0.944″×1.844″-1.944″	3/4″	25	9474K45	11.16
1″ ×2 1/2″	0.834″-0.930″×2.334″-2.430″	7/16″	25	9474K19	8.47
1″ ×3″	0.834″-0.930″×2.834″-2.930″	1/2″	10	9474K53	8.44
1 3/16″ ×2 3/8″	0.945″-1.063″×2.126″-2.244″	3/4″	25	9474K21	9.99
1 1/2″ ×2″	1.232″-1.334″×1.732″-1.834″	1/2″	10	9474K54	8.27
1 1/2″ ×3 1/2″	1.232″-1.334″×3.232″-3.334″	19/32″	5	9474K55	10.62
2″ ×3″	1.732″-1.834″×2.732″-2.834″	1/2″	10	9474K56	11.45
Ribbed—*Round*					
1/2″	0.344″-0.444″	1/2″	100	9283K17	6.21
5/8″	0.469″-0.569″	1/2″	100	9283K11	7.00
3/4″	0.594″-0.694″	33/64″	100	9283K12	11.10
7/8″	0.719″-0.819″	33/64″	100	9283K13	11.28
1″	0.844″-0.944″	35/64″	100	9283K14	11.68
1 1/4″	1.094″-1.194″	21/32″	50	9283K15	10.14
1 1/2″	1.344″-1.444″	21/32″	50	9283K16	10.93

Tool-Installed Round Sealing Plugs

Choose these plugs to permanently seal drilled unthreaded holes. All plugs are stainless steel. Maximum temperature is not rated.

To install, drill a hole using a drill with a size that matches the hole ID. Plugs with 5/32″ to 9/32″ hole diameters require a 90° point drill. Plugs with 5/16″ to 15/32″ hole diameters require a 118° point drill. Insert the plug in the hole, then press the ball bearing into place by striking the installation tool (sold separately) with a hammer or by using an arbor press. The hole size should have a tolerance of 0 to +0.004″.

Fits Hole Dia.	Fits Hole Dp., min.	Ht.	Plugs: Pkg. Qty.		Per Pkg.	Installation Tools	Each
5/32″	0.149″	0.146″	5	24675K81	$5.75	24675K41	$84.70
3/16″	0.208″	0.205″	5	24675K82	6.30	24675K42	84.70
7/32″	0.208″	0.205″	5	24675K83	8.80	24675K43	84.70
1/4″	0.247″	0.244″	5	24675K84	11.25	24675K44	84.70
9/32″	0.287″	0.284″	5	24675K85	13.00	24675K45	84.70
5/16″	0.326″	0.323″	5	24675K86	13.12	24675K46	84.70
11/32″	0.385″	0.382″	5	24675K87	14.43	24675K47	84.70
					Each		
3/8″	0.385″	0.382″	—	24675K88	$3.48	24675K48	$84.70
13/32″	0.425″	0.422″	—	24675K89	4.48	24675K49	84.70
7/16″	0.503″	0.500″	—	24675K91	5.04	24675K51	84.70
15/32″	0.503″	0.500″	—	24675K92	5.58	24675K52	84.70

Threaded Round Plugs

Raised Head

Protect NPT-threaded ports with these polyethylene plugs. Meet MIL-C-5501/5. Durometer hardness is 60D-70D. Maximum temperature is 165° F. Color is red.

Square-head plugs have tapered threads; ***serrated round-head plugs*** have straight threads.

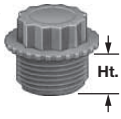

Fits Pipe Size, NPT	Ht.	Pkg. Qty.		Per Pkg. 1-4	Per Pkg. 5-Up
Square-Head Plugs					
1/8″	7/16″	100	5481K14	$9.15	$7.09
1/4″	1/2″	100	5481K15	10.79	8.35
3/8″	9/16″	100	5481K16	14.69	12.76
1/2″	19/32″	100	5481K17	15.75	13.90
3/4″	5/8″	50	5481K18	13.31	11.29
1″	23/32″	25	5481K19	8.94	7.50

Fits Pipe Size, NPT	Ht.	Pkg. Qty.		Per Pkg. 1-4	Per Pkg. 5-Up
Serrated Round-Head Plugs					
1/8″	17/64″	100	6844K29	$10.25	$8.58
1/4″	3/8″	100	6844K31	12.15	10.12
3/8″	21/64″	100	6844K32	14.40	12.01
1/2″	35/64″	100	6844K33	14.12	11.49
3/4″	5/8″	50	6844K34	11.05	8.99

Recessed Head

37° Flared Fitting Plugs— For use on JIC/SAE fittings. *Polyethylene* plugs have a durometer hardness of 40D, a maximum temperature of 150° F for 10 to 20 minutes, and are red in color. *Aluminum* plugs also fit straight-thread ports, are not rated for hardness, and have a maximum temperature of 650° F.

SAE Straight-Thread O-Ring Port Plugs— Ideal around fluid power components. Made of polyethylene with a durometer hardness of 60D-70D. Maximum temperature is 165° F. Color is red.

Flat-Faced O-Ring Hydraulic Fitting Plugs— Protect fluid lines and fittings. Made of aluminum. Hardness is not rated. Maximum temperature is 650° F.

Straight Tube and Hose Assembly Plugs— Form a low-pressure seal on straight tube ends. Made of aluminum. Hardness is not rated. Maximum temperature is 650° F.

Fits Thread Size	Fits ID	Ht.	Pkg. Qty.		Per Pkg.
37° Flared Fitting Plugs— *Polyethylene*					
5/16″-24	1/8″	7/16″	100	1277K33	$5.95
3/8″-24	3/16″	15/32″	100	1277K34	6.91
7/16″-20	1/4″	17/32″	100	1277K35	7.00
1/2″-20	5/16″	17/32″	100	1277K36	7.46
9/16″-18	3/8″	1/2″	100	1277K37	8.18
3/4″-16	1/2″	3/4″	100	1277K39	10.23
7/8″-14	5/8″	7/8″	100	1277K41	10.26
1 1/16″-12	3/4″	7/8″	100	1277K42	12.26
1 5/16″-12	1″	15/16″	100	1277K44	13.82
37° Flared Fitting Plugs— *Aluminum*					
3/8″-24	3/16″	3/8″	25	3438T33	10.32
7/16″-20	1/4″	15/32″	50	3438T34	8.92
1/2″-20	5/16″	15/32″	50	3438T35	9.42
9/16″-18	3/8″	1/2″	50	3438T36	9.30
5/8″-18	3/8″	1/2″	25	3438T37	11.10
3/4″-16	1/2″	19/32″	50	3438T38	13.10
7/8″-14	5/8″	11/16″	25	3438T39	8.22
1 1/16″-12	3/4″	21/32″	25	3438T41	12.26
1 5/16″-12	1″	23/32″	10	3438T42	8.69
1 7/8″-12	1 1/2″	7/8″	5	3438T43	12.73

Fits Thread Size	Fits ID	Ht.	Pkg. Qty.		Per Pkg.
SAE Straight-Thread O-Ring Port Plugs					
7/16″-20	—	5/16″	50	1277K71	$5.41
1/2″-20	—	5/16″	50	1277K72	5.81
9/16″-18	—	11/32″	50	1277K73	6.63
3/4″-16	—	13/32″	50	1277K74	6.94
7/8″-14	—	7/16″	50	1277K75	7.52
1 1/16″-12	—	5/8″	50	1277K76	8.58
Flat-Faced O-Ring Hydraulic Fitting Plugs					
11/16″-16	—	15/32″	25	3438T11	10.32
13/16″-16	—	17/32″	25	3438T12	11.29
1″-14	—	5/8″	10	3438T13	8.78
1 3/16″-12	—	11/16″	10	3438T14	7.80
1 7/16″-12	—	11/16″	10	3438T15	9.27
Straight Tube and Hose Assembly Plugs					
5/16″-24	5/32″	11/32″	25	3438T16	10.71
3/8″-24	3/16″	9/32″	25	3438T17	10.77
7/16″-20	1/4″	9/32″	25	3438T18	6.11
1/2″-20	5/16″	5/16″	25	3438T19	6.47
9/16″-18	3/8″	5/16″	25	3438T21	6.61
5/8″-18	7/16″	5/16″	25	3438T22	6.61
3/4″-16	1/2″	7/16″	25	3438T23	12.50
7/8″-14	5/8″	1/2″	25	3438T24	9.00
1 1/16″-12	3/4″	15/32″	25	3438T25	13.98
1 5/16″-12	1″	7/16″	25	3438T26	13.01
1 7/8″-12	1 1/2″	5/8″	5	3438T27	12.42

Pull-Through Round Plugs

Just use the thinner end of these plugs to pull the larger end into the hole and then pull the thinner end again to take the plug right out. The larger end stretches to fit and forms a tight seal when inserted in the hole. Durometer hardness is 40A-60A.

Standard— Made of EPDM with a maximum temperature of 350° F for 10 minutes. Color is black.

High Temperature— Made of silicone with a maximum temperature of 600° F for 10 minutes.

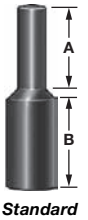

Standard

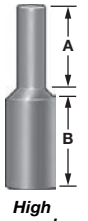

High Temperature

Fits ID	(A)	(B)	Standard Pkg. Qty.		Standard Per Pkg.	High Temperature Color	High Temperature Pkg. Qty.		High Temperature Per Pkg.
1/20″	0.337″	0.375″	100	9286K51	$9.74	Clear	50	2903K1	$5.26
1/16″	0.590″	0.612″	100	9286K52	9.71	Lt. Green	50	2903K2	5.43
5/64″	0.700″	0.700″	50	9286K73	7.86	Gray	25	2903K3	5.46
1/8″	0.700″	0.650″	50	9286K75	9.14	Pink	25	2903K4	6.00
9/64″	0.750″	0.625″	50	9286K76	8.57	Gray	25	2903K5	7.80
3/16″	1.000″	1.000″	50	9286K77	8.57	Clear	25	2903K6	7.97
1/4″	1.000″	1.000″	50	9286K81	8.00	Lt. Green	25	2903K17	9.29
17/64″	0.920″	0.937″	50	9286K78	9.29	Yellow	25	2903K7	9.51
5/16″	1.100″	0.757″	50	9286K82	12.17	Lt. Blue	25	2903K18	11.71
11/32″	0.925″	0.881″	50	9286K79	9.29	Clear	25	2903K8	11.80
3/8″	1.000″	1.000″	50	9286K83	13.00	Pink	25	2903K19	12.31
13/32″	1.000″	1.009″	50	9286K61	9.09	Lt. Green	25	2903K9	12.57
7/16″	1.000″	1.000″	25	9286K84	8.57	Gray	25	2903K21	14.29
29/64″	1.000″	1.000″	25	9286K62	8.63	Lt. Blue	25	2903K11	14.94
1/2″	0.956″	1.000″	25	9286K48	10.00	Clear	10	2903K22	9.51
33/64″	1.000″	1.000″	25	9286K63	10.20	Pink	10	2903K12	10.37
5/8″	1.000″	1.000″	25	9286K64	8.57	Gray	10	2903K13	13.80
3/4″	0.927″	1.000″	25	9286K65	13.57	Clear	5	2903K14	12.65
13/16″	1.326″	1.250″	10	9286K49	11.14	Lt. Blue	10	2903K23	14.81
7/8″	1.000″	1.000″	10	9286K66	9.86	Lt. Green	5	2903K15	13.77
1″	0.970″	1.000″	10	9286K67	11.57	Yellow	5	2903K16	14.65

For information about rubber, see page 3526. For vibration-damping mounts, see pages 1374-1383.

Bumpers with Threaded Stud

Our bumpers have a built-in stud so you won't need additional fasteners for installation.

Bumpers with Metal Core

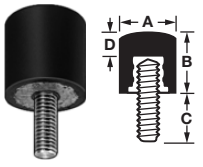

Inch and Metric

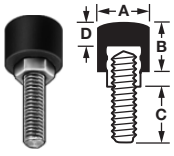

Inch with Hex Shoulder

Bumpers with a metal core withstand impact with a tough steel core that is surrounded by cushioning material. For indoor and outdoor use. *Medium-soft* bumpers have a durometer hardness of 40A. *Hard* bumpers have a durometer hardness of 70A-80A.

Neoprene rubber bumpers are gasoline and oil resistant. Temperature range is –40° to +200° F. Material is marking but nonstaining. Color is black. ***Polyurethane*** bumpers are abrasion and ozone resistant. Temperature range is –65° to +200° F. Material is marking but nonstaining. Color is red.

				NEOPRENE RUBBER					POLYURETHANE				
				Medium-Soft		Hard			Medium-Soft		Hard		
Dia. (A)	Ht. (B)	Thread Size	Thread Lg. (C)	Rubber Thick. (D)	Each		Each	Rubber Thick. (D)	Each	Rubber Thick. (D)	Each
Inch											
1¼″	1¼″	3/8″-16	5/8″	1/2″	9546K78	$11.30	—	—	1″	9223K28	$17.43	1/2″	9546K88 $12.47
1¼″	1¼″	3/8″-16	1″	1/2″	9546K19	11.57	—	—	1″	9223K29	17.85	1/2″	9546K65 12.69
1¼″	1¼″	3/8″-16	1¼″	1/2″	9546K21	11.79	—	—	1″	9223K31	18.29	1/2″	9546K66 13.35
1¼″	1¼″	1/2″-13	3/4″	1/2″	9546K28	12.55	—	—	15/16″	9223K32	18.74	1/2″	9546K67 13.60
1¼″	1¼″	5/8″-18	1″	1/2″	9546K22	12.98	—	—	27/32″	9223K33	19.22	1/2″	9546K68 13.95
1½″	13/16″	3/8″-16	3/4″	1/4″	9546K27	17.80	—	—	9/16″	9223K27	22.57	1/4″	9546K64 17.60
Inch with Hex Shoulders													
3/4″	5/8″	10-24	1/2″	1/4″	—	—	9546K93	$6.08	1/2″	9223K39	11.03	1/4″	9546K94 7.54
3/4″	5/8″	10-24	1¼″	1/4″	—	—	9546K95	6.35	1/2″	9223K41	11.40	1/4″	9546K96 7.87
3/4″	5/8″	10-32	1/2″	1/4″	—	—	9546K97	6.64	1/2″	9223K42	11.30	1/4″	9546K98 8.21
3/4″	5/8″	10-32	1¼″	1/4″	—	—	9546K112	6.98	1/2″	9223K43	11.40	1/4″	9546K115 8.59
3/4″	5/8″	1/4″-20	1/2″	1/4″	—	—	9546K118	7.32	15/32″	9223K44	11.76	1/4″	9546K122 8.99
3/4″	5/8″	1/4″-20	1¼″	1/4″	—	—	9546K123	7.73	15/32″	9223K45	12.32	1/4″	9546K124 9.44
3/4″	5/8″	1/4″-28	1/2″	1/4″	—	—	9546K125	7.94	15/32″	9223K46	12.72	1/4″	9546K126 9.49
3/4″	5/8″	1/4″-28	1¼″	1/4″	—	—	9546K131	8.16	15/32″	9223K47	13.95	1/4″	9546K133 9.97
3/4″	5/8″	5/16″-18	1/2″	1/4″	—	—	9546K17	8.49	9/16″	9223K48	13.62	1/4″	9546K62 9.72
3/4″	5/8″	5/16″-18	1¼″	1/4″	—	—	9546K18	8.62	9/16″	9223K49	14.55	1/4″	9546K63 10.14
3/4″	5/8″	5/16″-24	1/2″	1/4″	—	—	9546K137	8.81	9/16″	9223K51	16.75	1/4″	9546K138 10.51
3/4″	5/8″	5/16″-24	1¼″	1/4″	—	—	9546K139	9.06	9/16″	9223K52	17.80	1/4″	9546K141 11.11
Metric *(Dimensions are given in millimeters.)*													
19	16	M6×1.0	18	7	—	—	9546K235	6.63	12	9223K34	11.50	7	9546K236 8.22
19	16	M8×1.25	18	7	—	—	9546K241	6.95	10.7	9223K35	12.53	7	9546K242 8.77
32	32	M10×1.5	15	13	9546K251	11.98	—	—	—	—	—	13	9546K262 12.34
32	32	M10×1.5	30	13	9546K243	12.38	—	—	25.6	9223K36	17.63	13	9546K244 13.30
32	32	M12×1.75	30	13	9546K245	13.85	—	—	24.5	9223K37	19.66	13	9546K246 13.84
32	32	M16×2.0	15	13	9546K247	15.07	—	—	—	—	—	13	9546K248 15.55
32	32	M16×2.0	30	13	9546K253	15.80	—	—	—	—	—	13	9546K264 14.87
45	42	M16×2.0	30	19.5	9546K255	17.04	—	—	—	—	—	19.5	9546K266 19.76

Bumpers without Metal Core

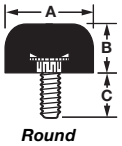

Round

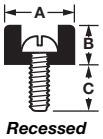

Recessed

Bumpers without a metal core have a built-in screw surrounded by cushioning material. Durometer hardness is 70A-80A, unless noted.

SBR rubber bumpers are abrasion resistant. Temperature range is –30° to +180° F, unless noted. For indoor use. All are nonmarking except the 7/16″ dia. bumper which is marking. Color is black. ***Polyurethane*** bumpers are abrasion and ozone resistant. Temperature range is –65° to +200° F. For indoor and outdoor use. Material is marking but nonstaining. Color is red.

				Hard SBR Rubber			Hard Polyurethane
Dia. (A)	Ht. (B)	Thread Size	Thread Lg. (C)	Pkg. Qty.	Per Pkg.		Each
Round							
7/16″	1/4″	6-32	1/4″	25	9541K8▲	$6.64	—
3/4″	7/16″	8-32	3/8″	25	9541K2	10.61	—
1″	1/2″	10-24	3/8″	25	9541K3	11.29	—
1″	1″	5/16″-18	7/8″	—	—	—	9541K11 $9.69
1½″	1½″	5/16″-18	7/8″	—	—	—	9541K13 10.77
2″	2″	5/16″-18	7/8″	—	—	—	9541K15 15.25
2½″	2½″	3/8″-16	7/8″	—	—	—	9541K17 24.27
3″	3″	1/2″-13	1¼″	—	—	—	9541K19 33.20
4″	4″	1/2″-13	1 5/16″	—	—	—	9541K21 63.06
Recessed							
1/2″	1/4″	6-32	1/4″	25	9541K1	5.80	—

▲ Temperature range is –60° to +180° F; durometer hardness is 60A medium-hard.

Roller Bumpers

For Round Tubing

For Square Tubing

Protect equipment and adjacent surfaces with these SBR rubber roller bumpers. They easily fit over round and square tubing and rods; a concealed bolt holds it together. Material is medium-hard with a durometer hardness of 67A. Temperature range is –40° to +180° F. For indoor and outdoor use. Material is nonmarking. Color is gray.

Dia.	Hole Dia.	Thick.		Each
For Round Tubing				
3″	5/8″	15/16″	9764K42	$9.03
3″	3/4″	15/16″	9764K44	8.89
3″	1″	15/16″	9764K47	8.68
3″	1¼″	15/16″	9764K49	8.84
5″	1″	1⅛″	9764K52	15.42
5″	1¼″	1⅛″	9764K54	16.25
5″	1½″	1⅛″	9764K56	13.57

Dia.	Hole Wd. × Lg.	Thick.		Each
For Square Tubing				
3″	1″ × 1″	15/16″	9764K41	$9.41
5″	1″ × 1″	1 13/16″	9764K43	14.07
5″	1½″ × 1½″	1 13/16″	9764K45	13.62
5″	2″ × 2″	1 13/16″	9764K46	13.55

McMASTER-CARR®

For information about rubber, see page 3526. For vibration-damping mounts, see pages 1374-1383.

Bumpers with Threaded Hole

These bumpers have a hole for quick installation and removal. They have a tough steel core surrounded by a cushioning material that withstands impact. *Medium-soft* bumpers have a durometer hardness of 40A, unless noted; *hard* bumpers have a durometer hardness of 70A-80A, unless noted. For indoor and outdoor use. Materials are marking but nonstaining.

Neoprene rubber bumpers are gasoline and oil resistant. Temperature range is –40° to +200° F, unless noted. Color is black. ***Polyurethane*** bumpers are abrasion and ozone resistant. Temperature range is –65° to +200° F, unless noted. Color is red.

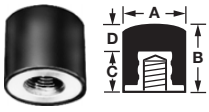

				NEOPRENE RUBBER				POLYURETHANE			
				Medium-Soft		Hard		Medium-Soft		Hard	
Dia. (A)	Ht. (B)	Thread Size	Thread Lg. (C)	Rubber Thick. (D)	Each		Each	Rubber Thick. (D)	Each	Rubber Thick. (D)	Each
Inch											
3/4"	5/8"	10-24	1/4"	1/4"	____	9546K106	$3.26	3/32"	9223K1	$5.87	1/4" 9546K29 $3.53
3/4"	5/8"	10-32	1/4"	1/4"	____	9546K72	3.34	3/32"	9223K2	6.21	1/4" 9546K74 3.69
3/4"	5/8"	1/4"-20	1/4"	1/4"	____	9546K76	3.42	3/32"	9223K3	6.62	1/4" 9546K79 3.87
3/4"	5/8"	1/4"-28	1/4"	1/4"	____	9546K82	3.51	3/32"	9223K4	6.82	1/4" 9546K84 4.06
3/4"	5/8"	5/16"-18	1/4"	1/4"	____	9546K43	3.91	3/32"	9223K5	8.29	1/4" 9546K61 4.00
3/4"	5/8"	5/16"-24	1/4"	1/4"	____	9546K86	4.17	3/32"	9223K6	6.96	1/4" 9546K92 4.56
1 1/4"	1 1/4"	3/8"-16	1/2"	1/2"	9546K23	$8.86	____	1/4"	9223K7	12.70	1/2" 9546K51 8.92
1 1/4"	1 1/4"	3/8"-24	1/2"	1/2"	9546K24	9.29	____	1/4"	9223K8	13.30	1/2" 9546K52 9.11
1 1/4"	1 1/4"	7/16"-20	1/2"	1/2"	9546K71	10.60	____	1/4"	9223K9	13.78	1/2" 9546K81 9.30
1 1/4"	1 1/4"	1/2"-13	1/2"	1/2"	9546K11	8.86	____	1/4"	9223K11	14.83	1/2" 9546K53 9.51
1 1/4"	1 1/4"	1/2"-20	1/2"	1/2"	9546K12	9.19	____	1/4"	9223K12	15.61	1/2" 9546K54 9.73
1 1/4"	1 1/4"	5/8"-18	1/2"	1/2"	9546K73	10.06	____	1/4"	9223K13	16.20	1/2" 9546K83 10.19
1 3/4"	1 5/8"	5/8"-11	5/8"	3/4"	9546K13	15.12	____	3/8"	9223K14	22.03	3/4" 9546K55 16.73
1 3/4"	1 5/8"	5/8"-18	5/8"	3/4"	9546K14	15.42	____	3/8"	9223K15	22.03	3/4" 9546K56 17.52
2 1/4"	2 1/4"	3/4"-10	1"	7/8"	9546K15	22.31	____	3/8"	9223K16	37.05	7/8" 9546K57 27.12
2 1/4"	2 1/4"	3/4"-16	1"	7/8"	9546K16	23.43	____	3/8"	9223K17	38.73	7/8" 9546K58 28.25
2 1/4"	2 1/4"	1"-8	1"	7/8"	9546K75	24.95	____	3/8"	9223K18	40.58	7/8" 9546K85 30.06
3"	2 3/4"	1"-8	1 1/4"	1 1/4"	9546K25■	41.09	____	1 1/4"	9223K19	61.03	1 1/4" 9546K59♦ 44.75
3"	2 3/4"	1 1/4"-12	1 1/4"	1 1/4"	9546K77■	43.65	____	1 1/4"	9223K21	65.58	1 1/4" 9546K87♦ 45.42
Metric *(Dimensions are given in millimeters.)*											
19	16	M6×1.0	6	7	9546K212	3.04	____	11	9223K22	5.46	7 9546K214 3.91
19	16	M8×1.25	6	7	9546K216	3.18	____	9.5	9223K23	5.80	7 9546K218 4.10
32	32	M10×1.25	13	13	9546K219	9.43	____	25.5	9223K24	14.57	13 9546K221 10.00
32	32	M12×1.25	13	13	9546K223	10.59	____	19	9223K25	15.57	13 9546K225 10.44

■ Temperature range is 60° to 200° F; durometer hardness is 40A-45A. ♦ Temperature range is 50° to 200° F; durometer hardness is 80A-90A.

Shock Absorbing Load-Rated Threaded Bumpers

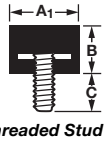

Threaded Stud

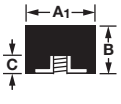

Threaded Hole

Threaded Stud

Threaded Hole

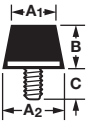

Designed to dampen vibration and shock, these bumpers are for applications that require load ratings. They have a metal plate for added reinforcement.

Polyurethane bumpers provide low bounce-back and are nonmarking. *Extra-soft* and *medium-soft* bumpers are slightly tacky. Temp. range is –40° to +160° F. For indoor use only. Color is black. *Medium-hard* bumpers have a temp. range of 55° to 194° F. For indoor and outdoor use. Color is black.

Synthetic rubber bumpers have a temp. range of –4° to +158° F. For indoor and outdoor use. Color is black.

Silicone rubber bumpers are ideal for high-temperature applications. Temp. range is –80° to +300° F. For indoor and outdoor use. Material is nonmarking. *Soft* bumpers are black; *hard* bumpers are orange.

Neoprene rubber bumpers are oil and gasoline resistant. Temperature range is –30° to +170° F. For indoor and outdoor use. Material is marking but nonstaining. Color is black.

					With Threaded Stud				With Threaded Hole			
Dia. (A1)	Dia. (A2)	Ht. (B)	Thread Size	Thread Lg. (C)	Metal Plate Thick.	Max. Load, lbs.	Each		Thread Lg. (C)	Metal Plate Thick.	Max. Load, lbs.	Each
Extra-Soft Polyurethane— *Durometer hardness is 50 OO.*												
1	3/4"	____	1/2"	8-32	1/2"	1/16"	3-5	2572K21 $5.94	1/4"	1/16"	3-5	2572K8 $5.57
1	1 1/2"	____	1"	1/4"-20	1/2"	1/16"	11-18	2572K22 8.54	23/64"	3/64"	11-18	2572K12 7.28
1	1 3/4"	____	27/32"	1/4"-20	1/2"	5/64"	20-40	2572K23 10.02	23/64"	3/64"	20-40	2572K15 8.00
Medium-Soft Polyurethane— *Durometer hardness is 70 OO.*												
1	3/4"	____	1/2"	8-32	1/2"	1/16"	6-8	2572K24 5.76	1/4"	1/16"	6-8	2572K9 5.42
1	1 1/2"	____	1"	1/4"-20	1/2"	1/16"	18-27	2572K25 7.21	23/64"	3/64"	18-27	2572K13 6.99
1	1 3/4"	____	27/32"	1/4"-20	1/2"	5/64"	35-75	2572K26 7.94	23/64"	3/64"	35-75	2572K16 7.57
Medium-Hard Polyurethane— *Durometer hardness is 58A.*												
2	9/32"	____	5/16"	4-40	13/64"	3/64"	4	93115K71 4.97	7/64"	3/64"	2	93115K81 4.74
2	13/32"	____	1/2"	6-32	3/8"	3/64"	8	93115K72 5.41	5/32"	3/64"	4	93115K82 5.09
2	13/32"	____	1/2"	8-32	3/8"	3/64"	8	93115K73 5.58	5/32"	3/64"	4	93115K83 5.33
2	5/8"	____	5/8"	1/4"-20	1/2"	3/64"	20	93115K74 6.00	1/4"	3/64"	12	93115K84 5.70
2	1"	____	3/4"	5/16"-18	5/8"	7/64"	50	93115K75 6.62	9/32"	7/64"	45	93115K85 7.26
Soft Synthetic Rubber— *Durometer hardness is 21A.*												
2	9/32"	____	5/16"	4-40	13/64"	3/64"	0.5	93115K95 5.66	7/64"	3/64"	0.3	93115K92 5.38
2	13/32"	____	1/2"	6-32	3/8"	3/64"	1	93115K96 6.13	5/32"	3/64"	0.6	93115K93 5.84
2	13/32"	____	1/2"	8-32	3/8"	3/64"	1	93115K97 6.47	5/32"	3/64"	0.6	93115K94 6.03
Soft Silicone Rubber— *Durometer hardness is 30A.*												
2	1"	____	3/4"	1/4"-20	1/2"	0.075"	25	8926T21 4.59	1/4"	0.07"	25	8926T23 4.29
2	1 1/2"	____	1"	5/16"-18	5/8"	0.060"	60	8926T27 7.72	21/64"	0.08"	60	8926T29 7.25
Hard Silicone Rubber— *Durometer hardness is 70A.*												
2	1"	____	3/4"	1/4"-20	1/2"	0.075"	90	8926T31 4.35	1/4"	0.07"	90	8926T33 4.00
2	1 1/2"	____	1"	5/16"-18	5/8"	0.060"	225	8926T37 7.31	21/64"	0.08"	225	8926T39 5.93
Medium-Hard Neoprene Rubber— *Durometer hardness is 50A. Packages of 4.*								**Per Pkg.**				
3	7/16"	15/16"	5/8"	1/4"-20	1/2"	5/64"	18	9377K63 $5.33	____	____	____	____
4	____	1"	1/2"	1/4"-20	1/2"	5/64"	25	9377K53 6.22	____	____	____	____
5	1 3/16"	1 5/8"	2"	5/16"-18	5/8"	3/32"	60	9377K23 10.42	____	____	____	____
6	1 5/8"	1 3/16"	1 1/2"	5/16"-18	5/8"	3/32"	75	9377K13 10.11	____	____	____	____
6	1 5/8"	1 3/8"	1"	5/16"-18	5/8"	3/32"	80	9377K43 9.78	____	____	____	____

For information about rubber, see page 3526.

Bumpers with Unthreaded Through Hole

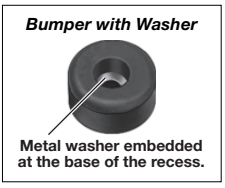

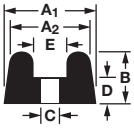

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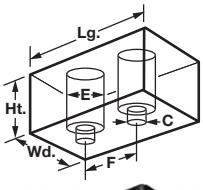

Bumper with Steel Base Plate

6

Bumper with Aluminum Base Plate

Also known as recessed bumpers, these bumpers can be installed with a screw (not included). All are for indoor and outdoor use except SBR rubber bumpers which are for indoor use. *Bumpers with washers* have a metal washer embedded at the base of the recess, giving them added strength and reinforcement. *Rectangular* bumpers have a 1/8″ thick metal plate at their base for added reinforcement.

SBR rubber bumpers are abrasion resistant. All have a temperature range of –30° to +180° F. Material is nonmarking. All are black except *Style 5* which is gray.

Vinyl bumper is load rated with a temperature range of 55° to 105° F. Material is nonmarking. Color is blue.

Thermoplastic elastomer bumpers are made of a plastic that acts like rubber but won't dry out and become brittle. Temperature range is –90° to +250° F. Material is nonmarking. Color is black.

Polyethylene bumpers have the hardest durometer of the bumpers that we offer. Temperature range is –50° to +150° F. Material is nonmarking. Color is black.

Neoprene bumpers are gasoline and oil resistant. Temperature range is –40° to +200° F. Material is marking but nonstaining. Color is black.

Polyurethane bumpers are abrasion and ozone resistant. Temperature range is –40° to +200° F. Material is marking but nonstaining. Color is red.

Round Bumpers

Dia. (A_1)	Dia. (A_2)	Ht. (B)	(C)	(D)	(E)	Pkg. Qty.	Without Washer	Per Pkg.	With Washer	Per Pkg.
(1) Hard SBR Rubber—Durometer hardness is 70A.										
7/8″	—	13/32″	3/16″	7/32″	3/8″	50	9540K29	$6.86	9540K48	$9.71
7/8″	—	17/32″	3/16″	1/4″	3/8″	50	9540K25	9.43	9540K58	13.93
(2) Hard SBR Rubber—Durometer hardness is 70A.										
1/2″	—	1/4″	1/8″	3/32″	15/64″	100	9540K11	5.69	9540K51	7.86
1/2″	—	1/4″	1/8″	3/32″	17/64″	100	9540K13	6.88	9540K43	8.62
5/8″	—	9/32″	5/32″	5/32″	9/32″	100	9540K14	8.43	9540K52	12.81
5/8″	—	13/32″	5/32″	5/32″	9/32″	100	9540K15	9.21	9540K53	13.89
23/32″	—	13/32″	3/16″	7/32″	5/16″	100	9540K24	10.61	9540K46	14.81
3/4″	—	13/32″	5/32″	5/32″	5/16″	100	9540K21	12.16	9540K55	14.22
3/4″	—	1″	5/32″	3/4″	3/8″	50	9540K31	13.61	9540K49	15.11
1″	—	1″	5/32″	3/4″	3/8″	25	9540K37	15.09	9540K38	15.09
1 1/2″	—	3/4″	1/4″	3/8″	3/4″	25	9540K36	15.03	9540K28	15.22
1 1/2″	—	1 1/2″	1/4″	1 1/8″	3/4″	5	—	—	9540K2	15.16
(3) Hard SBR Rubber—Durometer hardness is 70A.										
1/2″	25/64″	3/16″	1/8″	3/32″	7/32″	100	9540K12	10.11	9540K42	12.35
25/32″	3/4″	9/16″	3/16″	1/4″	3/8″	100	9540K22	12.74	9540K56	15.27
51/64″	3/4″	25/32″	11/64″	17/32″	11/32″	50	9540K23	7.97	9540K57	11.86
7/8″	3/4″	5/8″	3/16″	11/32″	5/16″	50	9540K32	8.40	9540K33	11.57
31/32″	11/16″	11/32″	3/16″	5/32″	3/8″	50	9540K26	5.42	9540K59	5.77
1″	25/32″	17/32″	3/16″	9/32″	3/8″	25	9540K27	4.50	9540K61	6.50
1 1/32″	1″	5/8″	3/16″	1/4″	9/16″	50	9540K34	12.74	9540K35	15.23
1 1/16″	7/8″	27/32″	3/16″	13/32″	3/8″	50	9540K39	14.70	9540K62	15.31
(3) Medium-Hard Vinyl—Durometer hardness is 56A. Load rated to 15 lbs.										
63/64″	3/4″	33/64″	1/8″	17/64″	31/64″	25	9641K3	10.88	—	—
(4) Hard SBR Rubber—Durometer hardness is 70A.										
21/32″	5/8″	1/2″	5/32″	1/4″	5/16″	100	9540K16	10.86	9540K54	13.58
(4) Hard Thermoplastic Elastomer—Durometer hardness is 75A.										
1/2″	15/32″	1/4″	1/8″	1/8″	17/64″	100	9405K12	9.38	—	—
5/8″	9/16″	7/16″	5/32″	1/4″	21/64″	100	9405K18	12.37	—	—
3/4″	5/8″	13/32″	5/32″	11/64″	5/16″	100	9405K16	14.90	—	—
3/4″	11/16″	9/32″	11/64″	5/32″	3/8″	100	9405K14	14.47	—	—
(4) Extra-Hard Polyethylene—Durometer hardness is 98A.										
1/2″	27/64″	17/64″	1/8″	7/64″	1/4″	100	9405K42	10.14	—	—
49/64″	21/32″	3/8″	5/32″	1/4″	3/8″	100	9405K43	11.48	—	—
7/8″	45/64″	5/8″	3/16″	7/32″	25/64″	100	9405K54	14.50	—	—
7/8″	23/32″	1/2″	3/16″	23/64″	3/8″	100	9405K48	14.03	—	—
1 1/8″	27/32″	3/4″	13/64″	5/16″	17/32″	50	9405K61	12.48	—	—
1 1/8″	27/32″	1″	1/4″	35/64″	15/32″	50	9405K59	12.08	—	—
(5) Medium-Hard SBR Rubber—Durometer hardness is 67A.								Each		
3 1/4″	—	15/16″	5/16″	21/32″	13/8″	—	9764K68	$6.09	—	—

Rectangular Bumpers

Lg.	Wd.	Ht.	Hole Dia. (C)	Counterbore Hole Dia. (E)	Mounting Holes, Ctr.-to-Ctr. (F)	With Steel Plate	Each	With Aluminum Plate	Each
(6) Hard Neoprene—Durometer hardness is 80A.									
1 1/2″	1″	3/4″	9/32″	13/32″	3/4″	—	—	9306K62	$9.44
1 3/4″	1″	3/4″	9/32″	13/32″	1″	9306K14	$4.92	—	—
1 3/4″	1″	1 3/4″	9/32″	13/32″	1″	—	—	9306K66	11.38
2 1/2″	5/8″	5/8″	9/32″	13/32″	1 1/2″	9306K18	6.44	—	—
2 1/2″	2″	2″	11/32″	1/2″	1 1/2″	9306K16	17.20	—	—
2 1/2″	2″	2″	11/32″	—	1 1/2″	9306K32	17.73	—	—
3″	1″	1 3/4″	13/32″	19/32″	1 3/4″	—	—	9306K68	17.66
3″	1 1/2″	1″	11/32″	1/2″	2″	—	—	9306K69	19.16
4″	1″	3/4″	9/32″	13/32″	1″	—	—	9306K64	16.69
4″	2 1/2″	2″	5/16″-18	—	3 1/4″	9306K34●	30.27	—	—
(6) Hard Polyurethane—Durometer hardness is 80A.									
1 1/2″	1″	3/4″	9/32″	13/32″	3/4″	—	—	9306K26	14.54
1 3/4″	1″	3/4″	9/32″	13/32″	1″	9306K15	8.66	—	—
1 3/4″	1″	1 3/4″	9/32″	13/32″	1″	—	—	9306K28	19.52
2 1/2″	5/8″	5/8″	9/32″	13/32″	1 1/2″	9306K19	9.37	—	—
2 1/2″	2″	2″	11/32″	1/2″	1 1/2″	9306K17	21.23	—	—
3″	1″	1 3/4″	13/32″	9/16″	1 3/4″	—	—	9306K29	25.55
3″	1 1/2″	1″	11/32″	1/2″	2″	—	—	9306K31	26.90
4″	1″	3/4″	9/32″	13/32″	1″	—	—	9306K27	22.82

● Has a threaded through hole.

For information about rubber, see page 3526.

Push-In Bumpers

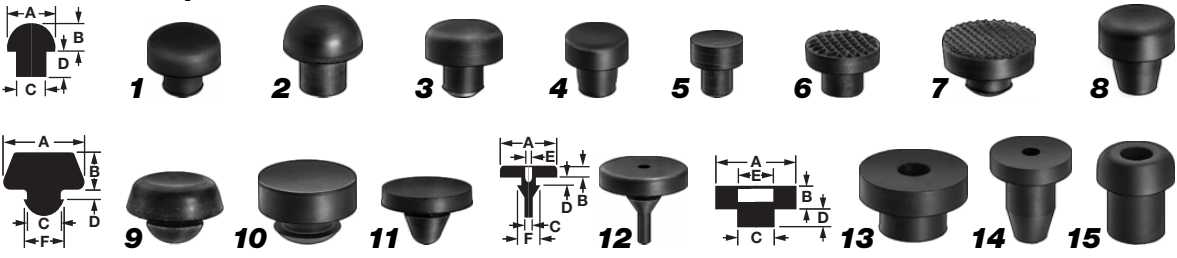

Simply press into a hole and—*voilà*—you have a bumper. ***Styles 9-12*** have an additional ridge for a tight grip. ***Styles 12-15*** compress to fit into tight holes.

SBR rubber bumpers are abrasion resistant. Temperature range is –30° to +180° F. For indoor use. Material is marking, unless noted. Color is black.

Thermoplastic elastomer bumpers are made of plastic that acts like rubber but won't dry out and become brittle. Temperature range is –90° to +220° F. For indoor and outdoor use. Material is nonmarking. Color is black.

Polyurethane bumpers provide low bounce-back. Temperature range is –40° to +160° F. For indoor use. Material is nonmarking. Color is black.

Dia. (A)	Ht. (B)	(C)	(D)	(E)	(F)	Pkg. Qty.		Per Pkg.
(1) Hard SBR Rubber—*Durometer hardness is 70A.*								
11/32"	5/32"	3/16"	3/16"	—	—	100	9544K12♣	$6.47
(2) Medium-Hard SBR Rubber—*Durometer hardness is 60A.*								
5/8"	5/16"	5/16"	1/4"	—	—	100	9544K34	8.29
15/16"	19/32"	19/32"	15/32"	—	—	25	9544K38	9.53
(2) Hard SBR Rubber—*Durometer hardness is 70A.*								
5/16"	3/16"	3/16"	3/16"	—	—	100	9544K19♣	6.89
(3) Hard SBR Rubber—*Durometer hardness is 70A.*								
1/2"	7/32"	1/4"	1/4"	—	—	100	9544K22♣	5.57
(4) Hard SBR Rubber—*Durometer hardness is 70A.*								
7/16"	3/16"	9/32"	1/4"	—	—	100	9544K23♣	6.65
(5) Hard SBR Rubber—*Durometer hardness is 70A.*								
3/8"	3/16"	7/32"	1/4"	—	—	100	9544K16♣	7.54
(6) Hard SBR Rubber—*Durometer hardness is 70A.*								
7/16"	1/8"	1/4"	3/16"	—	—	100	9544K25♣	11.49
(7) Hard SBR Rubber—*Durometer hardness is 70A.*								
9/16"	5/32"	9/32"	7/32"	—	—	100	9544K18♣	12.13
(8) Medium-Hard Thermoplastic Elastomer—*Durometer hardness is 65A.*								
7/8"	3/8"	5/8"	1/2"	—	—	10	1638K2	6.18
(8) Hard Thermoplastic Elastomer—*Durometer hardness is 75A.*								
7/16"	3/16"	9/32"	1/4"	—	—	100	1638K3	11.16
7/16"	3/16"	21/64"	7/32"	—	—	100	1638K1	11.53
(9) Medium-Hard SBR Rubber—*Durometer hardness is 60A.*								
1/2"	5/32"	1/4"	1/16"	—	5/16"	100	9309K13	9.26
(10) Medium-Hard SBR Rubber—*Durometer hardness is 55A-60A.*								
3/8"	3/32"	5/32"	1/32"	—	7/32"	100	9309K12	8.80
3/8"	5/32"	1/4"	1/32"	—	5/16"	100	9309K14	8.40
1/2"	3/32"	3/16"	1/16"	—	1/4"	100	9309K21	11.17
1/2"	1/4"	1/4"	1/16"	—	5/16"	100	9309K15	9.50
17/32"	1/16"	1/4"	1/8"	—	11/32"	100	9309K121♣	14.37
9/16"	1/8"	1/4"	1/8"	—	11/32"	100	9309K16	8.40
9/16"	1/8"	9/32"	5/64"	—	3/8"	100	9309K17	9.50
9/16"	5/32"	11/32"	1/16"	—	13/32"	100	9309K18	14.01
1"	5/16"	1/2"	3/16"	—	11/16"	50	9309K19	11.25
(10) Medium-Hard Thermoplastic Elastomer—*Durometer hardness is 55A-65A.*								
7/16"	3/16"	1/4"	1/8"	—	19/64"	100	1670K2	$10.74
1/2"	7/64"	19/64"	5/64"	—	3/8"	100	1670K3	12.04
9/16"	9/32"	19/64"	5/64"	—	3/8"	100	1670K1	13.76
(11) Medium-Hard SBR Rubber—*Durometer hardness is 60A.*								
7/16"	5/64"	1/4"	3/64"	—	5/16"	100	9309K22	8.43
7/16"	3/16"	1/4"	3/64"	—	5/16"	100	9309K23	10.72
(12) Medium-Hard SBR Rubber—*Durometer hardness is 55A.*								
7/8"	11/64"	1/8"	1/8"	1/8"	11/32"	50	9310K124♣	15.17
(13) Soft Polyurethane—*Durometer hardness is 50 OO.*								
3/4"	5/32"	1/2"	1/16"	1/4"	—	1	8638T25	1.65
1"	3/16"	29/64"	1/8"	1/4"	—	1	8638T23	1.92
1"	3/16"	29/64"	13/32"	1/4"	—	1	8638T21	2.58
(13) Medium-Soft Polyurethane—*Durometer hardness is 70 OO.*								
3/4"	5/32"	1/2"	1/16"	1/4"	—	1	8638T45	1.43
1"	3/16"	29/64"	1/8"	1/4"	—	1	8638T43	1.67
1"	3/16"	29/64"	13/32"	1/4"	—	1	8638T41	2.23
(13) Medium-Hard SBR Rubber—*Durometer hardness is 60A.*								
3/8"	7/64"	1/4"	17/64"	1/8"	—	50	9305K21	2.67
1/2"	3/32"	9/32"	7/64"	11/64"	—	50	9305K22	4.46
5/8"	3/32"	13/32"	5/16"	1/4"	—	50	9305K23	4.67
3/4"	1/8"	3/8"	3/8"	1/4"	—	50	9305K24	6.36
3/4"	1/8"	1/2"	1/4"	9/64"	—	50	9305K27	9.10
3/4"	1/8"	1/2"	9/32"	5/16"	—	50	9305K25	7.19
7/8"	3/16"	21/32"	3/16"	3/8"	—	50	9305K28	9.90
1"	1/4"	5/8"	3/8"	5/16"	—	25	9305K29	9.39
(14) Medium-Soft SBR Rubber—*Durometer hardness is 40A.*								
5/8"	3/16"	11/32"	13/16"	1/8"	—	25	9310K12	5.83
3/4"	7/32"	3/8"	29/32"	5/32"	—	25	9310K14	7.16
7/8"	1/4"	1/2"	1"	3/16"	—	25	9310K16	6.71
1"	1/4"	5/8"	1 1/4"	1/4"	—	25	9310K27	14.41
(14) Medium-Hard SBR Rubber—*Durometer hardness is 60A.*								
1 1/16"	15/64"	21/32"	11/64"	1/4"	—	25	9310K18	13.07
(15) Medium-Hard SBR Rubber—*Durometer hardness is 60A.*								
1/2"	3/16"	25/64"	1/2"	7/32"	—	25	9305K31	6.03
5/8"	1/8"	1/2"	7/16"	3/16"	—	25	9305K32	3.71
1"	3/8"	3/4"	3/4"	7/16"	—	25	9305K33	14.66

♣ Material is nonmarking.

Military Specification Bumpers with Unthreaded Through Holes

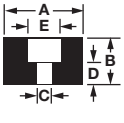

Meet Mil Spec MIL-G-3036 and are AN (Army/Navy) approved. Made from abrasion-resistant Buna-N rubber, these bumpers have a metal washer embedded at their base for added strength and reinforcement. They can be installed with a screw (not included). Bumpers are medium-soft with a durometer hardness of 50A. Temperature range is –45° to +250° F. For indoor use. Material is marking. Color is black.

Dia. (A)	Ht. (B)	(C)	(D)	(E)	Pkg. Qty.		Per Pkg.
1/2"	1/4"	1/8"	1/16"	15/64"	50	8884T13	$7.74
9/16"	3/8"	3/16"	5/32"	3/8"	50	8884T17	11.90
3/4"	9/16"	3/16"	5/16"	3/8"	10	8884T21	4.70
1"	1"	7/32"	7/16"	3/8"	10	8884T25	10.80
1"	1 1/2"	5/32"	7/8"	5/16"	5	8884T29	6.74

Tack Bumpers

Install these bumpers with just a few taps of a hammer or by pushing them in. Made of abrasion-resistant SBR rubber with a steel tack, bumpers are medium-hard with a durometer hardness of 65A-70A. Temperature range is –30° to +180° F for the *round top* bumpers and –60° to +212° F for the *flat top* bumpers. For indoor use. Material is marking. Color is black.

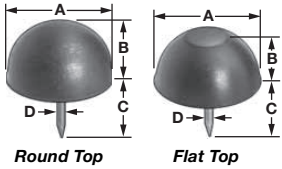

Round Top ***Flat Top***

Dia. (A)	Ht. (B)	(C)	(D)	Pkg. Qty.		Per Pkg.
Round Top						
3/8"	1/4"	3/8"	3/64"	50	9626K211	$9.40
1/2"	5/16"	3/8"	3/64"	50	9626K212	10.18
5/8"	3/8"	3/8"	3/64"	50	9626K213	10.85
3/4"	7/16"	1/2"	3/64"	50	9626K214	13.21
Flat Top						
5/8"	5/16"	17/32"	1/16"	100	9626K43	14.47
3/4"	3/8"	17/32"	1/16"	100	9626K44	15.58

For information about rubber, see page 3526

Adhesive-Backed Bumpers

Installation is no problem with these adhesive-backed bumpers—just press them into place. They are also used as pads and feet. Comparable to Bumpon bumpers. All are for indoor and outdoor use except for vinyl bumpers, which are for indoor use. Materials are nonmarking.

Vinyl bumpers have an acrylic adhesive that offers long term hold. Temperature range of vinyl and adhesive is 50° to 100° F.

Polyurethane bumpers are more abrasion resistant than vinyl bumpers. Adhesive is rubber-based and has a temperature range of 40° to 150° F, unless noted. Temperature range for polyurethane is 0° to 180° F, unless noted.

Polyolefin foam rubber bumpers offer good slip protection. Adhesive is rubber-based. Temperature range for polyolefin foam rubber and adhesive is –20° to +150° F.

Felt bumpers are great for protecting surfaces from scuffs and scrapes. Adhesive is rubber-based. Temperature range for felt and adhesive is –20° to +160° F.

Silicone foam rubber bumpers are ideal for high-temperature applications. Material is FDA compliant, unless noted. Adhesive is acrylic-based and has a temperature range of –15° to +225° F. Temperature range for silicone foam rubber is –100° to +450° F.

Dia.	Height	Color	Pkg. Qty.		Per Pkg.
(1) Dome					
Medium-Hard Vinyl—*Durometer hardness is 55A-65A.*					
21/32″	21/64″	Black	64	9723K85	$14.65
Medium-Hard Polyurethane—*Durometer hardness is 50A-55A.*					
11/32″	5/64″	Clear	144	95495K53	6.01
3/8″	5/32″	Clear	72	95495K55	5.10
3/8″	7/32″	Clear	150	95495K57	8.25
Medium-Hard Polyurethane—*Durometer hardness is 60A-70A.*					
1/4″	1/16″	Clear	289	95495K463	12.03
1/4″	5/64″	Clear	225	95495K64	9.84
5/16″	5/64″	Clear	144	95495K65	6.39
11/32″	5/64″	Black	144	95495K371	6.60
		Clear	144	95495K373	6.60
		White	144	95495K372	6.60
3/8″	5/32″	Black	72	95495K391	3.81
		Clear	72	95495K393	3.81
7/16″	13/64″	Black	121	95495K121	7.88
		Clear	121	95495K123	7.88
		White	121	95495K122	7.88
5/8″	5/16″	Black	40	95495K313■	11.89
		White	40	95495K311■	11.89
		Gray	40	95495K314■	11.89
		Brown	40	95495K312■	11.89
3/4″	5/64″	Clear	42	95495K68	5.53
(2) Flat					
Medium-Hard Vinyl—*Durometer hardness is 55A-65A.*					
1/2″	1/16″	Black	50	9723K92	4.13
		Opaque	50	9723K141	4.13
1/2″	9/64″	Black	50	9723K88	5.50
		Opaque	50	9723K144	5.50
41/64″	13/32″	Black	76	9723K17	15.92
Medium-Hard Polyurethane—*Durometer hardness is 50A-55A.*					
1/2″	9/64″	Clear	50	95495K51	3.19
Medium-Hard Polyurethane—*Durometer hardness is 60A-70A.*					
5/16″	7/64″	Black	56	95495K2■	6.90
3/8″	1/8″	Black	150	95495K66	7.88
1/2″	1/16″	Black	50	95495K181	3.00
		Clear	50	95495K183	3.00
		White	50	95495K182	3.00
1/2″	9/64″	Black	50	95495K111	3.50
		Clear	50	95495K113	3.50
		White	50	95495K112	3.50
1/2″	1/4″	Black	50	95495K221	4.63
		Clear	50	95495K223	4.63
		White	50	95495K222	4.63
21/32″	13/32″	Black	64	95495K61	7.52
3/4″	5/32″	Black	98	95495K188	15.06
		Clear	98	95495K189	15.06
3/4″	13/64″	Black	84	95495K186	11.00
		Clear	84	95495K187	11.00
13/16″	1/8″	Black	72	95495K191	11.80
		Clear	72	95495K193	11.80
		White	72	95495K192	11.80
1 1/8″	7/64″	Black	16	95495K69	4.90
(3) Recessed					
Medium-Hard Vinyl—*Durometer hardness is 55A-65A.*					
7/8″	13/32″	Black	36	9723K32	10.93
1 13/16″	9/16″	White	10	9723K33	12.86
Medium-Hard Polyurethane—*Durometer hardness is 60A-70A.*					
7/8″	13/32″	Clear	36	95495K62	8.12
1 13/16″	39/64″	Black	10	95495K481	14.81
		Clear	10	95495K483	14.81
		White	10	95495K482	14.81

■ Temperature range of polyurethane and adhesive is –30° to +150° F.

Dia.	Height	Color	Pkg. Qty.		Per Pkg.
(4) Concave					
Medium-Hard Polyurethane—*Durometer hardness is 60A-70A.*					
1/2″	9/64″	Black	50	95495K171	$3.50
		Clear	50	95495K173	3.50
		White	50	95495K172	3.50
7/8″	13/32″	Black	24	95495K315■	12.26
		White	24	95495K317■	12.26
(5) Round					
Medium-Soft Polyolefin Foam Rubber—*Durometer is not rated.*					
1/2″	1/16″	Black	100	8213K1	3.94
1/2″	1/8″	Black	100	8213K4	4.14
3/4″	1/16″	Black	100	8213K2	6.48
3/4″	1/8″	Black	100	8213K5	6.93
1″	1/16″	Black	100	8213K3	9.29
1″	1/8″	Black	100	8213K6	9.53
Soft Felt—*Durometer is not rated.*					
1/2″	1/8″	Black	500	8771K61	6.16
		White	500	8771K22	6.16
		Brown	500	8771K32	6.16
		Green	500	8771K12	6.16
3/4″	1/8″	Black	500	8771K65	12.19
		White	500	8771K23	12.19
		Brown	500	8771K33	12.19
		Green	500	8771K13	12.19
1″	1/8″	Black	500	8771K67	15.71
		White	500	8771K26	15.71
		Brown	500	8771K36	15.71
		Green	500	8771K14	15.71
(6) Tapered					
Medium-Hard Vinyl—*Durometer hardness is 55A-65A.*					
13/16″ Sq.	19/64″	Black	64	9723K81	12.84
		Opaque	64	9723K158	12.84
Medium-Hard Polyurethane—*Durometer hardness is 60A-70A.*					
1/2″ Sq.	15/64″	Black	50	95495K241	4.80
		Clear	50	95495K243	4.80
		White	50	95495K242	4.80
13/16″ Sq.	19/64″	Black	36	95495K319■	11.58
		White	36	95495K322■	11.58
		Gray	36	95495K323■	11.58
(7) Raised Square					
Medium-Hard Vinyl—*Durometer hardness is 55A-65A.*					
1/2″ Sq.	13/64″	Black	100	9723K87	11.21
Medium-Hard Polyurethane—*Durometer hardness is 60A-70A.*					
13/32″ Sq.	7/64″	Black	121	95495K421	7.42
		Clear	121	95495K423	7.42
		White	121	95495K422	7.42
1/2″ Sq.	1/8″	Black	50	95495K151	3.05
		Clear	50	95495K153	3.05
		White	50	95495K152	3.05
1″ Sq.	3/16″	Black	55	95495K67	12.04
(8) Square					
Medium-Soft Polyolefin Foam Rubber—*Durometer is not rated.*					
1/2″ Sq.	1/16″	Black	80	8213K7	2.90
1/2″ Sq.	1/8″	Black	80	8213K11	3.04
3/4″ Sq.	1/16″	Black	100	8213K8	4.07
3/4″ Sq.	1/8″	Black	100	8213K12	4.31
1″ Sq.	1/16″	Black	96	8213K9	5.68
1″ Sq.	1/8″	Black	96	8213K13	6.06
Soft Silicone Foam Rubber—*Durometer hardness is 50A.*					
1/2″ Sq.	1/8″	Orange-Red	20	3592K6●	10.03
1/2″ Sq.	3/16″	Orange-Red	20	3592K8●	10.72
Medium-Soft Silicone Foam Rubber—*Durometer is not rated.*					
1/2″ Sq.	1/4″	Orange	10	3592K1	8.06
1″ Sq.	1/4″	Orange	10	3592K2	12.83

● Not FDA compliant.

For information about rubber, see page 3526. For information about plastics, see page 3564.

Load-Rated Adhesive-Backed Rubber Bumpers

Use these load-rated bumpers as pads and feet to protect sensitive items such as electronics from impact and vibration. Durometer hardness is 30 OO for *extra-soft* bumpers; 50 OO for *soft* bumpers; 70 OO for *medium-soft* bumpers; and 56A for *medium-hard* bumpers. Materials are nonmarking. Adhesive is acrylic.

Polyurethane bumpers have a temperature range of –40° to +160° F. For indoor use. Color is black. ***Vinyl*** bumpers have a temperature range of 55° to 105° F. For indoor and outdoor use. Color is blue.

		Extra-Soft Polyurethane			Soft Polyurethane			Medium-Soft Polyurethane			Medium-Hard Vinyl		
(A)	(B)	Max. Load, lbs.		Each	Max. Load, lbs.		Each	Max. Load, lbs.		Each	Max. Load, lbs.	Pkg. Qty.	Per Pkg.
1/2"	1/16"	—	—	—	—	—	—	—	—	—	15	50	8218K1 $9.60
1/2"	1/8"	—	—	—	—	—	—	—	—	—	15	50	8218K2 12.28
3/4"	3/8"	2-5	8215K1	$1.32	6-8	8215K5	$1.28	9-11	8215K9	$1.22	—	—	—
1 1/4"	5/8"	2-4	8215K2	3.49	5-10	8215K6	3.33	15-22	8215K11	3.23	—	—	—
2"	1"	11-16	8215K3	7.09	17-24	8215K7	6.51	25-38	8215K12	6.51	—	—	—
2 1/2"	1 1/4"	35	8215K91	9.90	60	8215K92	9.38	80	8215K93	9.14	—	—	—

Wear-Resistant Adhesive-Backed Plastic Bumpers

With good wear resistance and low friction, you can use these plastic bumpers as pads and feet to protect surfaces. For indoor and outdoor use. Materials are nonmarking. Adhesive is acrylic. Color is white.

PTFE bumpers have increased temperature and chemical resistance over UHMW polyethylene. Bumpers are extra-hard with a durometer hardness of 51D. Temperature range of PTFE is –100° to +500° F; temperature range of adhesive is –20° to +180° F. ***UHMW polyethylene*** bumpers are extra-hard with a durometer hardness of 65D. Temperature range is –50° to +160° F.

Round

ROUND		PTFE			UHMW Polyethylene		
Dia.	Ht.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
1/2"	1/16"	10	8962T11	$16.77	20	8962T31	$5.65
3/4"	1/16"	5	8962T12	17.28	15	8962T32	6.72
1"	1/16"	5	8962T13	24.83	10	8962T33	7.24
2"	1/16"	2	8962T14	28.62	5	8962T34	9.99

SQUARE		PTFE			UHMW Polyethylene		
Sq. Size	Ht.	Pkg. Qty.		Per Pkg.	Pkg. Qty.		Per Pkg.
1/2"	1/16"	10	8962T21	$16.77	20	8962T41	$5.65
3/4"	1/16"	5	8962T22	17.28	15	8962T42	6.72
1"	1/16"	5	8962T23	24.83	10	8962T43	7.24
2"	1/16"	2	8962T24	28.62	5	8962T44	9.99

Heavy Duty Rubber Guards

Protect your dock and warehouse areas with these durable, weather- and abrasion-resistant rubber guards that absorb shock and vibration. Mount with screws (not included). Temperature range is –40° to +160° F. For indoor and outdoor use. Material is marking. Color is black, unless noted.

Nylon/polyester reinforced SBR rubber guards are hard with a durometer hardness of 80A, unless noted. *Style 1* has one 1 3/4" dia. reflector. *Style 3* has two reflectors. 2239T3 has 1 3/4" dia. reflectors; 2239T4 and 2239T13 have 2 1/8" dia. reflectors.

SBR rubber guards are medium-hard with a durometer hardness of 60A-75A, unless noted. *Styles 7, 8,* and *9* have a steel washer molded into the rubber above the mounting hole for added reinforcement. *Style 11* slopes on one end at a 15° angle.

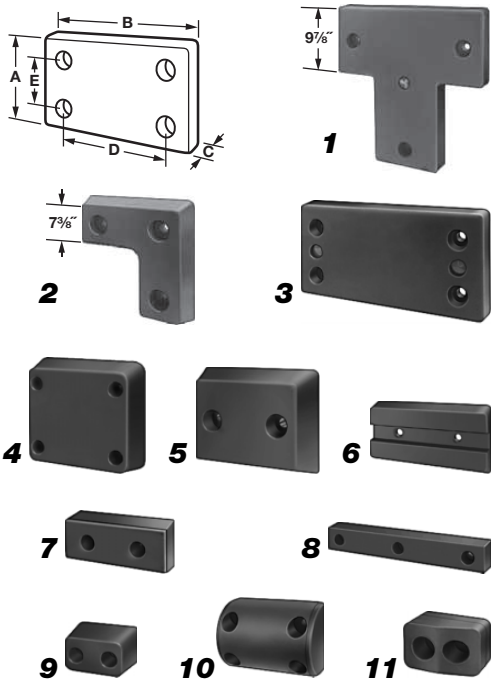

				Mounting Holes					
	(A)	(B)	(C)	No. of Holes	Ctr.-to-Ctr. (D)	(E)	Dia.	Counterbore Hole Dia.	Each
Nylon/Polyester Reinforced SBR Rubber									
1	21"	21"	3"	3	15 1/2"	14"	3/4"	2"	2239T6 $54.59
2	17"	17"	4"	3	10"	10"	1 1/4"	2 1/2"	2239T7 51.34
3	12"	24"	3"	4	18"	6"	3/4"	2"	2239T3 48.73
3	12"	24"	4"	4	18"	6"	3/4"	2"	2239T4 67.02
3	12"	24"	6"	4	18"	6"	3/4"	2"	2239T13 109.59
4	13"	12"	4"	4	7"	9"	3/4"	1 1/2"	2239T8 38.06
5	10"	13"	4"	2	7"	—	7/8"	2"	2239T15 31.67
5	10"	18"	4"	2	10"	—	1 3/16"	2 3/4"	2239T25 44.75
6	9"	18"	2"	2	9"	—	1"	—	2239T9★ 25.10
6	9"	18"	4"	2	9"	—	1"	—	2239T11 43.77
SBR Rubber									
7	2 7/8"	6"	3 1/4"	2	3"	—	1/2"	1 1/2"	21685T12 5.83
7	2 7/16"	7 3/4"	2"	2	4 1/2"	—	3/8"	1 1/8"	21685T11♣ 5.27
7	4 1/2"	10"	3"	2	5"	—	9/16"	1 1/2"	2195T61 11.65
7	4 1/2"	20"	3"	4	5"	—	9/16"	1 1/2"	2195T62 23.27
7	4 1/2"	30"	3"	6	5"	—	9/16"	1 1/2"	2195T63 36.02
8	2 1/2"	16"	2"	3	6 3/8"	—	3/8"	1 3/16"	21685T15 8.30
9	3"	4 7/8"	3 1/2"	2	2 1/2"	—	1/2"	1 1/8"	21685T13 6.30
9	3 1/2"	6"	3 1/2"	2	3 1/2"	—	9/16"	1 1/4"	3265T12 11.16
10	5 1/2"	7 1/2"	3 3/4"	4	5 1/2"	3"	5/8"	1 3/8"	21685T18♦ 13.37
10	5 1/2"	7 1/2"	3 3/4"	4	5 1/2"	3"	5/8"	1 3/8"	21685T16 10.81
11	4"	6"	3 1/4"	2	2 1/2"	—	1/2"	1 3/4"	21685T14♣ 8.41

★ Guard is medium-hard with a durometer hardness of 65A.
♣ Guard is hard with a durometer hardness of 80A. ♦ Color is yellow.

Load-Rated Heavy Duty Polyurethane Guards

Also called crane bumpers, these polyurethane guards are oil and grease resistant. Guards have a steel plate with mounting holes (screws not included) and are extra-hard with a durometer hardness of 90A. Temperature range is –60° to +225° F. For indoor and outdoor use. Material is nonmarking. Color is black (unless noted). Meet OSHA and ANSI requirements.

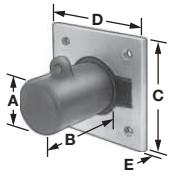

With Retaining Loop

			Mounting Plate			Mounting Holes				
(A)	(B)	Max. Load, ft.-lbs.	(C)	(D)	(E)	No. of Holes	Ctr.-to-Ctr.	Dia.	Retaining Loop ID	Each
1 5/8"	1 7/16"	31	2"	2"	3/16"	4	1 37/64"	7/32"	—	1043T51 $42.00
2"	1 15/16"	66	2 1/2"	2 1/2"	3/16"	4	1 31/32"	1/4"	—	1043T52 55.00
3"	5"	525	6 1/2"	6 1/2"	1/2"	4	4 1/2"	9/16"	1/2"	1043T55▲ 97.75
3 1/4"	2 3/4"	249	4"	4"	1/4"	4	3 9/64"	3/8"	—	1043T56 88.19
5"	4 5/16"	942	6 1/4"	6 1/4"	5/16"	4	4 59/64"	7/16"	—	1043T59 182.42
5"	8"	2,100	10"	10"	1/2"	4	7 1/2"	9/16"	3/4"	1043T61▲ 224.42

▲ Color is red.

For information about rubber, see page 3526. For information about plastics, see page 3564.

Heavy Duty Laminated Rubber Guards

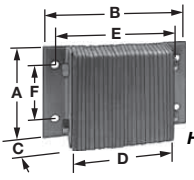

Horizontal Mount

Horizontal Mount w/ Steel Face

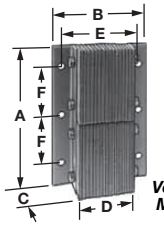

Vertical Mount

Cushion impact to docks and buildings with these guards that can withstand loads of 5,000 psi. Multiple shock-absorbing layers of rubberized fabric are strung on 3/4″ dia. rods and bolted tightly together at both ends with 1/4″ thick steel angle brackets. Guards have 3/4″ square mounting holes, unless noted (fasteners not included). Temperature range is not rated. For indoor and outdoor use. Material is marking. Color is black.

Guards with steel face have a 3/8″ thick steel floating plate on a cushion of laminated rubber.

Overall Size (A)	(B)	(C)	Guard Wd. (D)	MOUNTING HOLES No. of Holes	Ctr.-to-Ctr. (E)	(F)		Each
Horizontal Mount								
6″	26″	4 1/2″	20″	4	24″	3″	2238T91	$55.91
6″	38″	4 1/2″	32″	4	36″	3″	2238T92	84.31
10″	16″	4 1/2″	10″	4	14″	6″	2238T93	56.37
10″	16″	6″	10″	4	14″	6″	2238T82	102.23
10″	16″	9″	10″	4	14″	6″	2238T46	130.29
10″	20″	4 1/2″	14″	4	18″	6″	2238T75	57.57
10″	20″	6″	14″	4	18″	6″	2238T57	73.85
10″	26″	4 1/2″	20″	4	24″	6″	2238T94	85.98
10″	26″	6″	20″	4	24″	6″	2238T83	93.04
10″	26″	9″	20″	4	24″	6″	2238T47	178.65
10″	38″	4 1/2″	32″	4	36″	6″	2238T95	117.98
10″	38″	6″	32″	4	36″	6″	2238T84	150.49
10″	77″	4 1/2″	71″	5	75″	6″	2272T12♠	213.30
10″	89″	4 1/2″	83″	6	87″	6″	2272T13♠	249.94
10″	101″	4 1/2″	95″	6	99″	6″	2272T14♠	282.52
10″	115 1/2″	6″	109 1/2″	6	113 1/2″	6″	2272T34♠	370.28
10″	125″	4 1/2″	119″	7	123″	6″	2272T17♠	344.77
10″	125″	6″	119″	7	123″	6″	2272T35♠	423.62
12″	14″	4 1/2″	8″	6	12″	4″	2238T55	53.28
12″	14″	6″	8″	6	12″	4″	2238T56	67.05
12″	16″	4 1/2″	10″	6	14″	4″	2238T96	63.55
12″	16″	6″	10″	6	14″	4″	2238T77	81.05

Overall Size (A)	(B)	(C)	Guard Wd. (D)	MOUNTING HOLES No. of Holes	Ctr.-to-Ctr. (E)	(F)		Each
Horizontal Mount (Cont.)								
12″	20″	4 1/2″	14″	6	18″	4″	2238T76	$77.46
12″	26″	4 1/2″	20″	6	24″	4″	2238T97	93.16
12″	26″	6″	20″	6	24″	4″	2238T78	120.62
12″	38″	4 1/2″	32″	6	36″	4″	2238T98	130.45
Horizontal Mount with Steel Face								
10″	16″	5 1/4″	10″	4	14″	6″	2238T61♠	73.70
10″	16″	6 3/4″	10″	4	14″	6″	2238T65♠	95.88
10″	26″	5 1/4″	20″	4	24″	6″	2238T62♠	137.98
10″	26″	6 3/4″	20″	4	24″	6″	2238T66♠	184.11
12″	16″	5 1/4″	10″	6	14″	4″	2238T63♠	92.55
12″	26″	5 1/4″	20″	6	24″	4″	2238T64♠	153.45
Vertical Mount								
20″	13″	4 1/2″	7″	6	11″	7″	2238T99♠	95.81
20″	14″	6″	8″	6	12″	7″	2238T85♠	84.08
24″	13″	4 1/2″	7″	6	11″	9″	2238T81♠	82.65
24″	14″	6″	8″	6	12″	9″	2238T79♠	94.58
36″	13″	4 1/2″	7″	8	11″	10″	2238T58♠	88.07
Vertical Mount with Steel Face								
20″	13″	5 1/4″	8″	6	11″	7″	2238T67♠	113.79
20″	13″	6 3/4″	8″	6	11″	7″	2238T69♠	135.95
24″	13″	5 1/4″	8″	6	11″	9″	2238T68♠	132.27
24″	13″	6 3/4″	8″	6	11″	9″	2238T71♠	168.45

♠ Guard has 13/16″ dia. mounting holes and is hard with a durometer hardness of 80A-85A.

Heavy Duty Corner and Surface Guards

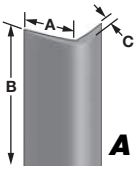

A

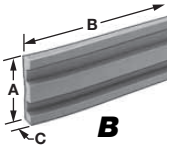

B

With Metal Bar

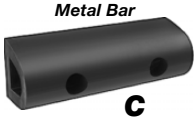

C

D

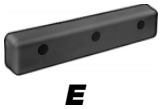

E

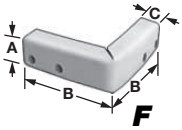

F

G

Often used in warehouses, these guards prevent damage to your docks and equipment. For indoor and outdoor use.

EPDM rubber and ***EPDM/SBR rubber*** guards are hard with a durometer hardness of 70A, unless noted. *Styles A* and *B* cushion impact and can be mounted using galvanized steel lag bolts (not included). Temperature range is –50° to +220° F, unless noted. Gray material is nonmarking; black material is marking. *Style C* guards without a metal bar allow you to drill your own holes as needed; guards with a metal bar have mounting holes (fasteners not included). Temperature range is –40° to +160° F. Material is marking.

Thermoplastic rubber guards are medium-hard with a durometer hardness of 60A. Material is marking. Temperature range is –20° to +180° F. They have a hollow back and can be mounted with bolts (not included).

Vinyl corner guards are extra-hard; durometer hardness is not rated. Mount them to corners and edges—they'll provide an extra degree of cushion at the point of contact. Mount with screws or nails (not included). Temperature range is not rated. Material is marking.

(A)	(B)	(C)	Mounting Holes No. of Holes	Ctr.-to-Ctr.	Dia.	Color		Each
EPDM Rubber Corner Guards								
A	4″	48″	7/8″-17/64″♣	—	—	—	Gray	8146A12	$96.05
A	4″	72″	7/8″-17/64″♣	—	—	—	Gray	8146A16	139.19
A	4″	48″	7/8″-17/64″♣	—	—	—	Black■	8146A14♦	87.27
A	4″	72″	7/8″-17/64″♣	—	—	—	Black■	8146A18♦	137.33
EPDM Rubber Surface Guards								
B	3″	48″	5/8″	—	—	—	Gray	8146A44★●	31.22
B	3″	72″	5/8″	—	—	—	Gray	8146A45★●	46.23
B	8″	48″	1 1/4″	—	—	—	Black■	8146A21	131.93
B	8″	72″	1 1/4″	—	—	—	Black■	8146A22	170.24
EPDM/SBR Rubber Surface Guards								
C	4 1/4″	48″	3 3/4″	—	—	—	Black	2195T53	49.03
C	4 1/4″	72″	3 3/4″	—	—	—	Black	2195T55	74.35
C	4 1/4″	120″	3 3/4″	—	—	—	Black	2195T57	123.87
EPDM/SBR Rubber Surface Guards with 3/16″ Metal Bar								
C	4 1/4″	12″	3 3/4″	2	6″	3/4″	Black	2195T41	16.39
C	4 1/4″	18″	3 3/4″	2	12″	3/4″	Black	2195T42	23.94
C	4 1/4″	24″	3 3/4″	2	18″	3/4″	Black	2195T43	31.90
C	4 1/4″	36″	3 3/4″	3	15″	3/4″	Black	2195T44	44.77
Thermoplastic Rubber Surface Guards								
D	2 1/2″	4″	1 1/2″	1	—	1/4″▲	White	46875K471	8.82
E	2 1/2″	12 1/4″	1 1/2″	3	4″	1/4″▲	Black	46875K412	15.84
E	2 1/2″	12 1/4″	1 1/2″	3	4″	1/4″▲	White	46875K411	15.84
Thermoplastic Rubber Corner Guards								
F	2 1/2″	7 1/2″	1 1/2″	4	2 1/2″	1/4″▲	Black	46875K422	17.38
F	2 1/2″	7 1/2″	1 1/2″	4	2 1/2″	1/4″▲	White	46875K421	17.38

(A)	(B)	(C)	Mounting Flange Ht.	Thick.	Color		Each
Vinyl Corner Guards							
G	4″	8″	2 1/4″	1 3/4″	1/4″	White	1296T35	$24.89
G	6″	10″	3″	7/8″	5/16″	White	1296T36	35.60

♣ Depth is tapered. ■ Guard has a yellow stripe. ♦ Guard is notched to fit irregular corner angles.
★ Guard is medium-hard with a durometer hardness of 55A.
● Temperature range is –20° to +150° F. ▲ Counterbore hole dia. is 5/8″.

For information about rubber, see page 3526.

Corner and Surface Guards with Metal Insert

Commonly used to protect carts and equipment, these guards have a metal insert for additional strength, unless noted. Install *Style A* from its unexposed side to conceal fasteners and install *Styles B, C, D* and *E* from their exposed side (fasteners not included). Materials are nonmarking.

SBR rubber is more impact and abrasion resistant than vinyl. Material is hard with a durometer hardness of 75A-80A, unless noted. Temp. range is –50° to +180°F. For indoor and outdoor use.

Vinyl surface guards conform to contours better than SBR rubber. Material is hard with a durometer hardness of 80A. Temperature range is –20° to +150°F. For indoor use.

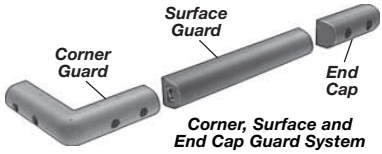

Corner, Surface and End Cap Guard System

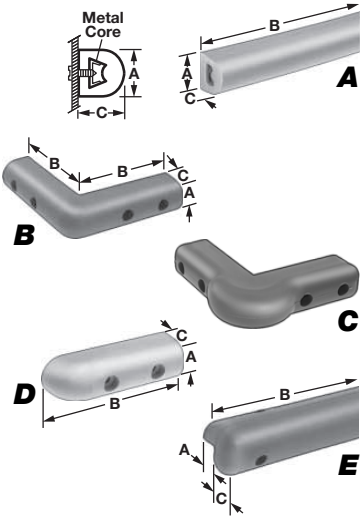

(A)	(B)	(C)	Mounting Holes: No. of Holes	Mounting Holes: Ctr.-to-Ctr.	Mounting Holes: Dia.	Color	SBR Rubber	Each	Vinyl	Each
Surface Guards										
A 3/4"	8 ft.	21/32"	—	—	—	Gray	11165A52	$27.90	—	—
A 3/4"	16 ft.	21/32"	—	—	—	Gray	11165A14	51.81	—	—
A 1 1/16"	8 ft.	15/16"	—	—	—	Gray	11165A54	43.10	—	—
A 1 1/16"	16 ft.	15/16"	—	—	—	Gray	11165A13	80.04	—	—
A 1 1/8"	6 ft.	1 1/16"	—	—	—	Black	—	—	11165A581	$39.90
A 1 1/8"	6 ft.	1 1/16"	—	—	—	Gray	—	—	11165A583	39.90
A 1 1/8"	6 ft.	1 1/16"	—	—	—	Tan	—	—	11165A582	39.90
A 1 1/8"	12 ft.	1 1/16"	—	—	—	Black	—	—	11165A421	72.05
A 1 1/8"	12 ft.	1 1/16"	—	—	—	Gray	—	—	11165A423	72.05
A 1 1/8"	12 ft.	1 1/16"	—	—	—	Tan	—	—	11165A422	72.05
A 1 1/2"	5 ft.	1"	—	—	—	Gray	11165A34	59.44	—	—
Corner Guards										
B 3/4"	2 1/2" × 2 1/2"	5/8"	4	1 1/8"	1/8"	Gray	11165A18	6.22	—	—
B 1 1/16"	3" × 3"	15/16"	4	1 1/4"	3/16"	Gray	11165A16	5.17	—	—
B 1 1/8"	2 7/8" × 2 7/8"	1 1/16"	4	1 17/32"	1/4"	Black	—	—	11165A441✓	13.37
B 1 1/8"	2 7/8" × 2 7/8"	1 1/16"	4	1 17/32"	1/4"	Gray	—	—	11165A443✓	13.37
B 1 1/8"	2 7/8" × 2 7/8"	1 1/16"	4	1 17/32"	1/4"	Tan	—	—	11165A442✓	13.37
B 1 1/2"	6 1/8" × 3"	1"	3	3"	1/4"	Gray	11165A31	26.59	—	—
C 1 1/16"	3" × 3"	1"	4	1 1/4"	3/16"	Gray	46875K43	5.33	—	—
End Caps										
D 1 1/8"	3 7/8"	1 1/16"	2	1 1/2"	1/4"	Black	—	—	11165A461✓	10.74
D 1 1/8"	3 7/8"	1 1/16"	2	1 1/2"	1/4"	Gray	—	—	11165A463✓	10.74
D 1 1/8"	3 7/8"	1 1/16"	2	1 1/2"	1/4"	Tan	—	—	11165A462✓	10.74
Edge Guards										
E 3/4"	1 ft.	7/16"	4	3 3/16"	5/32"	Gray	46875K45♥	10.07	—	—

✓ Does not have a metal insert. ♥ Guard is medium-hard durometer hardness of 60A-65A.

Flexible Heavy Duty Corner and Surface Guards

Mount these flexible guards flat or around corners to provide cushioned impact protection. For indoor and outdoor use. Materials are nonmarking.

Polyurethane foam guards have an adhesive back. *Soft* guards, with a durometer hardness of 20A, have a temperature range of –10° to +160°F for the material; adhesive temperature is not rated. *Medium-hard* guards, with a durometer hardness of 55A, have a temperature range of –30° to +175°F for the material and adhesive.

Fabric/foam guards have a polyester covering that provides long wear plus an inner cushion of closed cell foam that restricts water, air, and gas from passing through. Mount with fasteners (not included). Durometer hardness and temperature range are not rated.

EPDM rubber guards are more abrasion resistant than vinyl, and they also resist UV rays and salt water. Mount with fasteners (not included). Guards are hard with a durometer hardness of A70. Temperature range is –30° to +200°F.

Vinyl guards resist corrosion, salt water, and fungi. Mount with fasteners (not included). Guards are hard with a durometer hardness of 80A. Temperature range is –20° to +150°F. Guards are nonmarking. Mount *end caps* on guards for a finished look (fasteners not included). End caps are made of black polyurethane and are extra-soft with a durometer hardness of 25A-35A. Temperature range is –40° to +170°F.

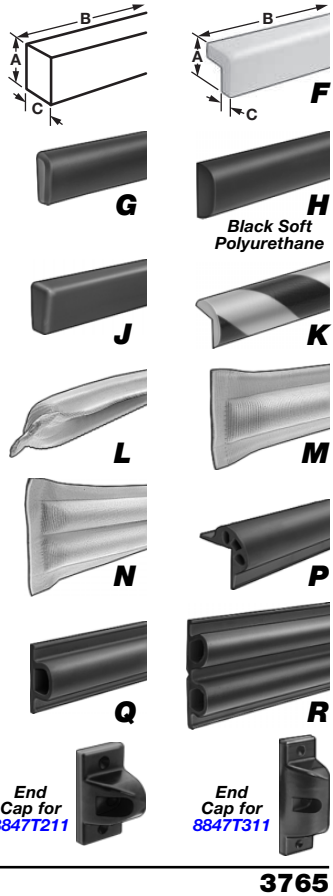

(A)	(B)	(C)	Bulb Ht.	Mounting Flange: Ht.	Mounting Flange: Thick.	Color		Each
Adhesive-Backed Soft Polyurethane Foam								
F 1 3/4"	23 1/2"	3/4"	—	—	—	Yellow	21705T31	$34.84
G 2"	18"	1/2"-3/4"♣	—	—	—	Black	21705T46	12.50
H 2 1/16"	18"	3/4"	—	—	—	Black	21705T45	13.02
J 2"	20"	7/8"-1"♣	—	—	—	Black	21705T44	13.59
J 2"	27"	7/8"-1"♣	—	—	—	Black	21705T43	14.88
Adhesive-Backed Medium-Hard Polyurethane Foam								
H 1 1/8"	39 3/8"	19/16"	—	—	—	Black/Yellow	21705T51	41.67
K 1 1/8"	39 3/8"	19/16"	—	—	—	Black/Yellow	21705T53	41.67
Fabric/Foam								
L —	10 ft.	5/8"	1 1/4"	5/8"	—	White	1293T21	82.75
L —	10 ft.	3/4"	1 1/2"	3/4"	—	White	1293T22	87.56
M 3 5/8"	4 ft.	1 1/4"	1 5/8"	1"	—	White	1293T111	25.90
N 5 1/2"	4 ft.	1 1/4"	1 3/4"	1"	—	White	1293T151	53.32
EPDM Rubber								
P 2 1/4"	6 ft.	3/4"	1 1/4"	3/4"	1/8"	Black	8847T15	38.82
Q 2 5/8"	6 ft.	1 1/4"	1 3/8"	5/8"	1/4"	Black	8847T16	38.82
Q 2 5/8"	12 ft.	1 1/4"	1 3/8"	5/8"	1/4"	Black	8847T17	71.35
Q 3 5/8"	6 ft.	1 3/8"	2"	3/4"	1/4"	Black	8847T18	47.14
Q 4 1/8"	6 ft.	1 1/2"	2 1/4"	1"	1/4"	Black	8847T19	55.26
Vinyl								
Q 2 3/4"	12 ft.	1 5/16"	1 9/32"	45/64"	7/32"	Black	8847T211	66.30
R 4 7/16"	12 ft.	1 3/16"	1 1/4"	3/4"	7/32"	Black	8847T311	95.00

Polyurethane End Cap for 8847T211 ..... 8847T92 Each $7.56
Polyurethane End Cap for 8847T311 ..... 8847T94 Each $8.56
♣ Depth is tapered.

For information about rubber, see page 3526. For information about plastics, see page 3564.

Plastic Corner Guards and Surface Guards

1

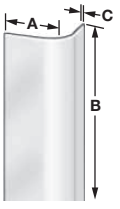

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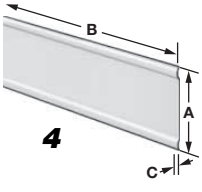

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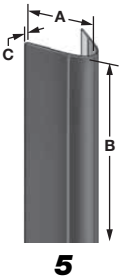

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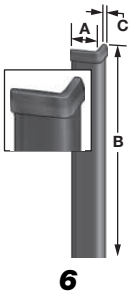

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All materials are for indoor use (unless noted) and are nonmarking except Style 6 guards, which are marking but nonstaining.

Polycarbonate Corner Guards and Surface Guards

Rely on these polycarbonate guards for your applications where durability is a must. Guards are extra-hard; durometer hardness is not rated. Temperature is not rated. ***Adhesive-backed guards*** mount to most clean surfaces. ***Screw-mount guards*** have drilled holes and are furnished with #6 screws, unless noted.

To Order: For Corner Guards, please specify color: clear, beige, black, or dark brown. Not sure what color you need? Order the selector pack listed below.

(A)	(B)	(C)	Adhesive Backed	Each Clear	Each Colored	Screw Mount	Each Clear	Each Colored
(1) Corner Guards—90° Angle								
3/4″	4 ft.	3/64″	1103A1	$2.43	$4.13	1103A7★	$2.46	$4.05
3/4″	8 ft.	3/64″	1103A2	4.72	8.00	1103A8★	4.51	8.01
1 1/8″	4 ft.	1/16″	1103A3	5.69	6.83	1103A41	5.52	7.52
1 1/8″	8 ft.	1/16″	1103A4	11.34	13.23	1103A42	10.81	15.03
2 1/2″	4 ft.	3/32″	1103A25	13.32	16.83	1103A63	12.01	17.36
2 1/2″	8 ft.	3/32″	1103A26	25.89	32.58	1103A64	23.82	33.48
(2) Corner Guards—Rounded 90° Angle								
2 1/2″	4 ft.	3/32″	1103A57	13.32	16.83	1103A77	12.01	17.36
2 1/2″	8 ft.	3/32″	1103A58	25.89	32.58	1103A78	23.82	33.48
(3) Corner Guards—135° Angle								
2 1/2″	4 ft.	3/32″	1103A47	13.32	16.83	1103A67	12.01	17.36
2 1/2″	8 ft.	3/32″	1103A48	25.89	32.58	1103A68	23.82	33.48
(4) Surface Guards								
3″	8 ft.	1/4″	____	____	____	11025A21	26.33	____
4″	8 ft.	1/4″	____	____	____	11025A22	33.12	____

Color Selector Pack for Styles 1-3—Size is 1 1/8″ × 2″. ..... 1103A9 **Per Pkg.** $0.01

★ Guards are nail-on and include 1 3/16″ nails.

Vinyl Corner Guards

With a rubber-based adhesive back, these vinyl strips mount to most clean surfaces. End caps snap onto corner guards to provide a finished look. Corner guards are extra-hard with a durometer hardness of 78D-79D.

Adjustable angle corner guard forms to fit rounded and awkward corners. Temperature range is not rated. For outdoor use. ***90° angle corner guards*** have a temperature range of –50° to +164° F; temperature range of adhesive is 0° to 150° F.

To Order: For Adjustable Angle Corner Guard, please specify color: beige, charcoal gray, dark brown, or white. For Corner Guards and End Caps, please specify color: beige or black.

Not sure what color you need? Order a selector pack listed below.

(A)	(B)	(C)	Adhesive-Backed Guards	Each	Snap-On End Caps	Each
(5) Adjustable Angle Corner Guard—0° to 180° Angle						
3″	4 ft.	3/32″	8147A1	$24.02	____	____
Color Selector Pack for Style 5—Size is 1 1/2″ × 2 7/16″.					8147A29	Each $3.13
(6) Corner Guards—90° Angle						
1 1/8″	4 ft.	5/64″	1278A1	13.80	1278A94	$3.70
1 1/8″	8 ft.	5/64″	1278A2	25.19	1278A94	3.70
2 1/2″	4 ft.	5/64″	1278A3	19.60	1278A95	4.33
2 1/2″	8 ft.	5/64″	1278A4	35.46	1278A95	4.33
Color Selector Pack for Style 6—Size is 1 7/8″ × 5″.					1278A15	Each $0.02

Cushioning Bulb Plastic Corner Guards

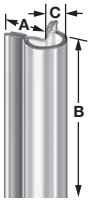

Corner Guard

90° Angle Connector

Straight Connector

A flexible bulb on these vinyl guards protects corners and cushions against the guard's edge. Material is hard; *guard* bulb has a durometer hardness of 75A; flat ends have a durometer hardness of 45D. *Connectors* have a durometer hardness of 30A. Maximum temperature is 90° F. For indoor and outdoor use. Material is nonmarking. Color is clear.

Adhesive-backed corner guards mount to most clean surfaces. Adhesive is acrylic. ***Screw-mount corner guards*** can be drilled to mount with screws or nails (fasteners not included). ***Connectors*** are vinyl and join guards together.

(A)	(B)	(C)	Adhesive-Backed Guards	Each	Screw-Mount Guards	Each
Corner Guards						
5/8″	4 ft.	29/64″	1523A13	$9.51	1523A15	$6.52
5/8″	8 ft.	29/64″	1523A14	17.15	1523A16	11.97
90° Angle Connector (1″ × 1″)					1523A21	Each $1.71
Straight Connector (45/64″ Long)					1523A22	Each $0.92

High-Visibility Heavy Duty Corner and Surface Guards

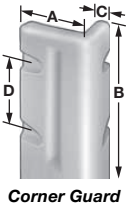

Corner Guard

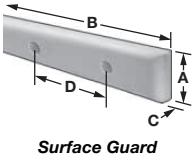

Surface Guard

The safety yellow color of these polyethylene guards visually alerts everyone in an area to obstructions. Mount with screws (not included). Guards are hard; durometer hardness is not rated. Temperature range is 32° to 140° F. For indoor and outdoor use. Material is marking.

(A)	(B)	(C)	Mounting Holes: No. of Holes	Ctr.-to-Ctr. (D)	Dia.		Each
Corner Guard							
7 1/2″	3 3/8 ft.	2 1/4″	4	9 7/8″	3/8″	4398A11	$61.85
Surface Guard							
6 1/4″	4 ft.	2 1/4″	4	11 7/8″	3/8″	4398A12	61.85

For information about rubber, see page 3526. For information about plastics, see page 3564.

Stainless Steel Corner and Surface Guards

Choose these guards for applications requiring corrosion resistance. For indoor use. Type 304 stainless steel offers increased corrosion resistance over Type 430 stainless steel.

Adhesive-backed guards have a rubber-based adhesive with a temperature range of 65° to 150°F. ***Cement-on guards*** require construction adhesive (not included; see page 3420). You can also drill them to mount with screws (not included). ***Screw-mount guards*** mount directly to the floor with the included 1/2" dia. bolts. Install ***end caps*** for a finished look and ***connectors*** to join two surface guards together. End caps and connectors are made of black ABS plastic and are nonmarking.

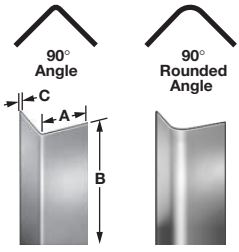

90° Angle Corner Guard — *Rounded 90° Angle Corner Guard*

90° Angle Floor-Mount Corner Guard

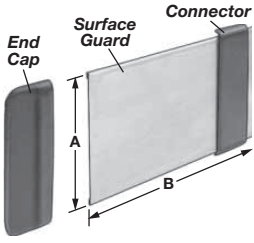

(A)	(B)	(C)	ADHESIVE BACKED Type 430 Stainless Steel	Each	ADHESIVE BACKED Type 304 Stainless Steel	Each	CEMENT ON Type 430 Stainless Steel	Each	CEMENT ON Type 304 Stainless Steel	Each	SCREW MOUNT Type 304 Stainless Steel	Each
Corner Guards—*90° Angle*												
1 1/8"	4 ft.	1/16"	8144A43	$30.90	1296A31	$33.50	8144A33	$25.80	1296A11	$31.38		
1 1/8"	8 ft.	1/16"	8144A47	52.48	1296A32	63.65	8144A35	48.00	1296A12	52.60		
2 1/2"	4 ft.	1/16"	8144A45	53.96	1296A33	62.96	8144A34	40.73	1296A13	52.50		
2 1/2"	8 ft.	1/16"	8144A48	96.84	1296A34	112.59	8144A36	71.78	1296A14	92.07		
3 1/2"	4 ft.	1/16"	8144A46	63.04	1296A35	81.82	8144A12	51.28	1296A15	70.24		
3 1/2"	8 ft.	1/16"	8144A49	122.00	1296A36	148.75	8144A14	95.56	1296A16	107.67		
Corner Guards—*Rounded 90° Angle*												
3 1/2"	4 ft.	1/16"			1296A37	74.52			1296A21	66.91		
3 1/2"	8 ft.	1/16"			1296A38	148.75			1296A22	146.64		
Floor-Mount Corner Guards—*90° Angle*												
4 5/8"	1 ft.	1/8"									1495A11	$157.56
4 5/8"	1 1/2 ft.	1/8"									1495A12	177.71
Surface Guards												
5"	8 ft.	1/16"	8144A26	97.68	1296A39	113.00						

Accessories for Surface Guards

End Cap (5 1/4" Ht. × 1 7/8" Wd. × 1/16" Dp.) ..... 8144A27 **Each** $8.23

Connector (5 3/8" Ht. × 2 13/16" Wd. × 1/16" Dp.) ..... 8144A28 **Each** $8.27

Vinyl Cover Corner and Surface Guards with Aluminum Base

Installation is easy—simply mount the aluminum base (fasteners not included, unless noted) and then snap the high-impact vinyl strip over it. Material is extra-hard with a durometer hardness of 80D, unless noted. Temperature range is −20° to +150°F. For indoor use. Material is nonmarking.

Corner guards and ***end caps*** have 1/4" dia. mounting holes. ***Corner guards with end caps*** are furnished with end caps to provide a finished look. Mounting screws are included for fastening.

To Order: For *Styles 1* and *2*, please specify color: black, gray, or tan. For *Styles 3-5*, please specify color: black, gray, silver, tan, or white.

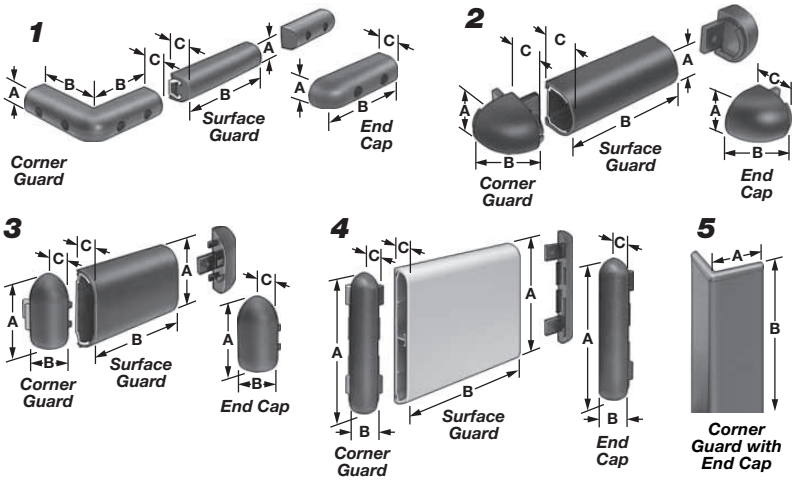

	(A)	(C)	(B)	Surface Guards	Each	(B)	Corner Guards	Each	(B)	End Caps	Each	(B)	Corner Guard with End Caps	Each
1	1 1/8"	1 1/16"	6 ft.	11335A83●	$35.15	2 7/8"	11165A44●	$13.37	3 7/8"	11165A46●	$10.74			
1	1 1/8"	1 1/16"	12 ft.	11335A37●	60.00	2 7/8"	11165A44●	13.37	3 7/8"	11165A46●	107.67			
2	1 1/8"	1 1/16"	6 ft.	11335A81	30.44	1 1/2"	11335A15	8.71	1 1/2"	11335A14	7.15			
2	1 1/8"	1 1/16"	12 ft.	11335A13	52.29	1 1/2"	11335A15	8.71	1 1/2"	11335A14	7.15			
2	2"	1 3/4"	6 ft.	11335A82	62.22	2 3/8"	11335A26	10.94	2 1/2"	11335A28	12.06			
2	2"	1 3/4"	12 ft.	11335A24	103.50	2 3/8"	11335A26	10.94	2 1/2"	11335A28	12.06			
3	2 15/16"	1"	6 ft.	11335A84	39.20	1 3/8"	11335A63	13.23	1"	11335A65	7.04			
3	2 15/16"	1"	12 ft.	11335A61	69.67	1 3/8"	11335A63	13.23	1"	11335A65	7.04			
3	6"	1"	6 ft.	11335A85	79.20	1 1/2"	11335A74	5.44	1 1/2"	11335A76	4.21			
3	6"	1"	12 ft.	11335A72	143.36	1 1/2"	11335A74	5.44	1 1/2"	11335A76	4.21			
4	7 3/4"	1"	12 ft.	1119A13	147.16	1 1/2"	1119A15	5.85	1 1/2"	1119A14	3.97			
5	3"											4 ft.	1119A11	$37.72
5	3"											8 ft.	1119A12	65.19

● Material is hard with a durometer hardness of 80A.

For information about rubber, see page 3526.

Aluminum Wall Guards

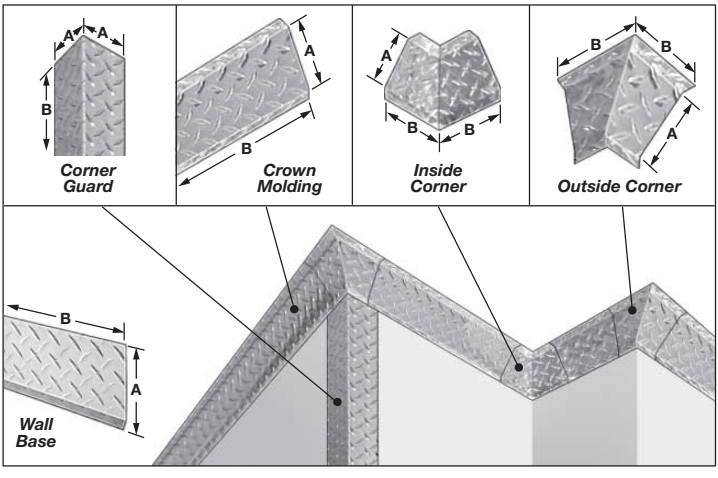

Our rigid aluminum guards offer heavy duty protection and are ideal for washdown applications. They are approximately 3/64″ thick and have a raised diamond pattern. For indoor use.

Use the ***wall base*** to cover gaps between walls and floors and the ***corner guards*** to protect outside wall corners from impact. They have a rubber-based adhesive for easy installation. Just remove backing and press into position.

Install the ***crown molding*** and the ***outside*** and ***inside crown molding corners*** for a decorative finish where the wall meets the ceiling. Mount with nails, screws, or construction cement (not included).

(A)	(B)		Each
Adhesive-Backed Wall Base			
4 3/4″	4 ft.	8933T71	$21.61
Adhesive-Backed Corner Guards			
1 1/8″	4 ft.	8933T41	15.77
3″	8 ft.	8933T51	50.74
4″	4 ft.	8933T61	31.36
Crown Molding			
4″	4 ft.	8933T11	24.67
Crown Molding Outside Corner			
4″	4″	8933T31	20.40
Crown Molding Inside Corner			
4″	4″	8933T21	22.43

Vinyl Wall Bases

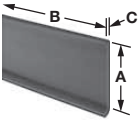

Wall Base

With a tapered top and coved bottom lip, these wall bases seal the corner where the wall meets the floor. Bases are extra-hard with a durometer hardness of 90A-94A. For indoor use. Material is nonmarking.

Adhesive-backed wall bases offer easy installation; just peel off backing and press into place. Adhesive is synthetic resin. You can also form them into inside and outside corners. Temperature range for material and adhesive is 32° to 120° F.

Wall bases require adhesive (sold separately below) to mount. They can be shaped to make inside and outside corners, or select the outside and inside corners that come already shaped into an angle. Bases and corners meet ASTM F1861. Temperature range is 50° to 110° F. Not sure what color you need? Order the selector pack listed below.

Wall-base adhesive is required to mount cement-on wall bases and corners. The 1-gallon can of acrylic-based adhesive covers 400-480 ft. of 2 1/2″ high bases; 250-300 ft. of 4″ high bases; or 166-200 ft. of 6″ high bases. Temperature is not rated.

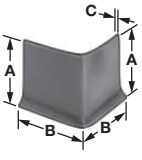

Wall Base Outside Corner

Wall Base Inside Corner

(A)	(B)	(C)	Black	Each	Brown	Each	Gray	Each	Beige	Each	White	Each
Adhesive-Backed Wall Bases												
4″	4 ft.	1/16″	1468A44	$4.09	1468A43	$4.09	1468A47	$4.09	1468A46■	$4.09	1468A45	$4.09
4″	20 ft.	1/16″	1468A22	18.49	1468A21	18.49	1468A19	18.49	1468A24■	18.49	1468A23	18.49
Wall Bases												
2 1/2″	4 ft.	1/8″	1778A61	3.51	1778A62	3.67	1778A63	3.80	1778A64	3.80	____	____
2 1/2″	120 ft.	1/8″	1778A65	95.73	1778A66	99.74	1778A67	103.64	1778A68	103.64	____	____
4″	4 ft.	1/8″	1778A14	3.80	1778A51	4.06	1778A18	4.20	1778A21	4.20	____	____
4″	120 ft.	1/8″	1778A81	109.04	1778A82	116.63	1778A83	120.52	1778A84	120.52	____	____
6″	4 ft.	1/8″	1778A15	5.59	1778A52	6.20	1778A19	6.15	1778A22	6.15	____	____
6″	100 ft.	1/8″	1778A85	134.00	1778A86	148.78	1778A87	147.60	1778A88	147.60	____	____
Wall Base Outside Corners— *90° Angle*												
2 1/2″	4″	1/8″	1778A71	2.44	1778A72	2.44	1778A73	2.44	1778A74	2.44	____	____
4″	4″	1/8″	1778A28	2.60	1778A54	2.60	1778A33	2.60	1778A35	2.60	____	____
6″	4″	1/8″	1778A29	2.67	1778A55	2.67	1778A34	2.67	1778A36	2.67	____	____
Wall Base Inside Corners— *90° Angle*												
2 1/2″	4″	1/8″	1778A75	2.44	1778A76	2.44	1778A77	2.44	1778A78	2.44	____	____
4″	4″	1/8″	1778A42	2.60	1778A57	2.60	1778A46	2.60	1778A48	2.60	____	____
6″	4″	1/8″	1778A43	2.67	1778A58	2.67	1778A47	2.61	1778A49	2.67	____	____

Color Selector Pack for Wall Bases and Corners—Size is 1 1/8″ × 2″. ..... 1778A11 **Each** $0.01

Wall-Base Adhesive—One Gallon Can ..... 7539A12 **Each** $28.95

■ Color is almond.

Bracket-Mount Metal Bumper Rails

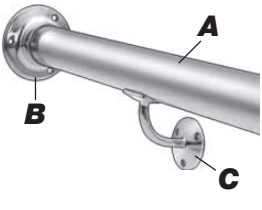

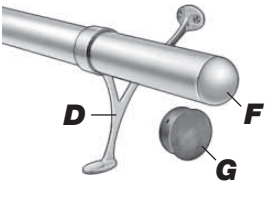

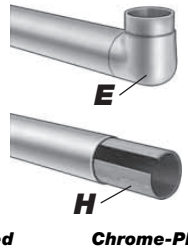

Combine components to create a railing system that protects surfaces. Components are sized to fit together and mount on floors and walls. For indoor and outdoor use.

Styles B, C, and ***D*** include mounting screws. ***Style H*** connector includes adhesive and a mixing stick to connect two lengths of rail (any material). When installed, the connector is completely concealed by the rail.

	Dimensions		Polished Brass	Each	Chrome-Plated Brass	Each	Bright Black Finished Brass	Each	Matte Finished Type 304 Stainless Steel	Each
A	Rail	2″ Dia.; 8 ft. Lg.	10515A51	$197.12	10515A52★	$90.38	10515A53●	$101.04	1299A1	$73.85
B	Wall Flange	4″ Base Dia.; 1 1/4″ Ht.	10515A32	21.25	10515A22	29.17	10515A61	28.45	1299A2	24.15
C	Wall Bracket	2 3/8″ Base Dia.; 3 1/4″ Ht.	10515A33	23.50	10515A23	31.31	10515A62	30.60	1299A3	34.38
D	Floor Bracket	7″ Ht.; 7 1/8″ Depth	10515A38	43.45	10515A28	45.83	10515A63	49.32	1299A8	48.30
E	90° Elbow	2″ Dia.; 2 1/8″ Lg. × 2 1/8″ Lg.	10515A37	28.41	10515A27	36.93	10515A64	37.98	1299A5	56.25
F	Domed End Cap	2″ Dia.; 1″ Ht.	10515A34	22.89	10515A24	31.12	10515A65	30.37	1299A4	21.43
G	Flat End Cap	2″ Dia.; 1/8″ Ht.	10515A35	16.05	10515A25	24.62	10515A66	23.88	1299A6	15.24
H	Connector	2″ Dia.; 5″ Lg.	____	____	____	____	____	____	1299A12	14.26

★ Rail is bright polished Type 304 stainless steel. ● Rail is bright black powder-coated Type 304 stainless steel.

For information about rubber, see page 3526.

Rubber Edge Trim

Cover exposed or unfinished metal, plastic, wood, and glass edges with this flexible rubber trim. Installation is simple—just press onto edge. All are medium-hard with a durometer hardness of 45A-70A except silicone foam rubber which is soft with a durometer hardness of 60 OO-75 OO.

Neoprene rubber (Styles 1 and 3-8) has good fuel, water, and ozone resistance. Temperature range is –40° to +158° F. For indoor and outdoor use. Material is nonmarking.

EPDM rubber (Styles 1 and 9) has excellent weather and ozone resistance. Temperature range is –50° to +300° F. For indoor and outdoor use. Material is marking.

SBR rubber (Styles 1-3 and 10) has excellent abrasion resistance. For indoor use. Temperature range is –20° to +225° F. *Styles 1-3* are marking and *Style 10* is nonmarking.

Silicone rubber and ***foam rubber*** (Styles 3 and 6) have excellent high temperature resistance. Temperature range is –85° to +450° F. For indoor and outdoor use. Material is nonmarking. *Silicone foam rubber* is closed cell.

Conductive EPDM rubber (Style 10) has a surface resistivity of 1.41 ohms. Temperature range is –20° to +250° F. For indoor use. Material is nonmarking.

To Order: Please specify length from available lengths listed below.

8-Piece SBR Rubber Edge Trim Assortment— Includes 6″ lengths of items marked with ★.

8510K95 ..... **Pkg.** $4.17

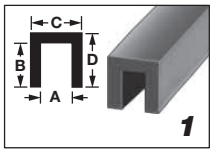

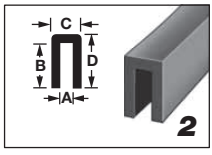

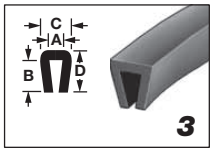

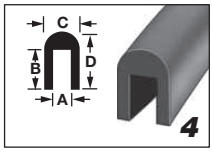

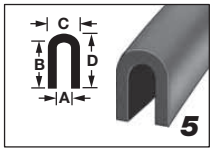

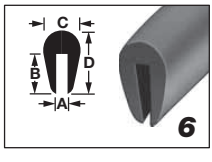

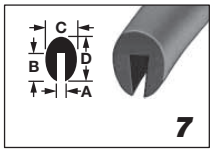

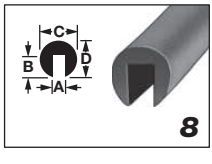

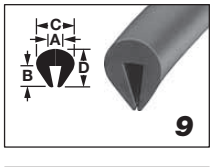

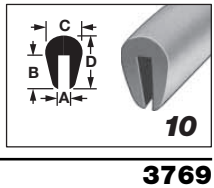

(A)	(B)	(C)	(D)	Color	Available Lengths, ft.		Per Ft. 1-49	Per Ft. 50-Up
Neoprene Rubber								
1	1/32″	7/16″	3/16″	1/2″	Black	10, 25, 50, 100	**8507K41**	$1.00	$0.57
1	1/16″	1/8″	3/16″	1/4″	Black	10, 25, 50, 100	**8507K42**	1.09	.64
1	1/8″	1/4″	1/4″	5/16″	Black	10, 25, 50, 100	**8507K43**	.81	.63
1	3/16″	5/16″	5/16″	3/8″	Black	10, 25, 50, 100	**8507K44**	1.14	.69
1	3/8″	3/4″	5/8″	1″	Black	10, 25, 50, 100	**8507K46**	2.45	1.81
1	3/4″	5/8″	1″	3/4″	Black	10, 25, 50, 100	**8507K47**	2.20	1.43
EPDM Rubber								
1	1/2″	5/8″	11/16″	23/32″	Black	10, 25, 50, 100	**8693K16**	1.66	1.04
SBR Rubber								
1	3/16″	7/16″	5/16″	1/2″	Black	10, 25, 50, 100	**8510K19★**	.64	.49
1	1/4″	5/16″	3/8″	3/8″	Black	10, 25, 50, 100	**8510K22★**	.65	.42
1	3/8″	13/32″	1/2″	1/2″	Black	10, 25, 50, 100	**8510K25★**	.84	.56
1	1/2″	1/2″	5/8″	5/8″	Black	10, 25, 50, 100	**8510K29★**	1.16	.87
2	1/32″	5/32″	7/64″	7/32″	Black	10, 25, 50, 100	**8510K11★**	.39	.25
2	1/16″	11/32″	7/32″	7/16″	Black	10, 25, 50, 100	**8510K12★**	.74	.45
2	3/32″	21/64″	3/16″	3/8″	Black	10, 25, 50, 100	**8510K14★**	.42	.36
3	1/8″	1/4″	1/4″	5/16″	Black	10, 25, 50, 100	**8510K16★**	.48	.32
Neoprene Rubber								
3	1/32″	9/32″	9/32″	3/8″	Black	10, 25, 50, 100	**8507K72**	1.13	.68
3	1/8″	23/32″	9/16″	1″	Black	10, 25, 50, 100	**8507K74**	2.87	2.07
3	1/4″	1/2″	1/2″	5/8″	Black	10, 25, 50, 100	**8507K45**	1.61	.97
Silicone Rubber								
3	1/8″	1/4″	1/4″	5/16″	Orange-Red	10, 25, 50, 100	**4869A4**	1.14	.99
Silicone Foam Rubber								
3	1/8″	1/4″	1/4″	5/16″	Orange-Red	10, 25, 50, 100	**4869A5**	3.78	2.33
Neoprene Rubber								
4	1/16″	1/4″	3/16″	5/16″	Black	10, 25, 50, 100	**8507K52**	.83	.61
4	3/16″	3/8″	3/8″	9/16″	Black	10, 25, 50, 100	**8507K54**	1.36	.81
5	1/32″	1/8″	5/32″	3/16″	Black	10, 25, 50, 100	**8507K61**	.65	.45
5	1/16″	5/16″	1/8″	3/8″	Black	10, 25, 50, 100	**8507K63**	.80	.46
5	1/8″	1/4″	1/4″	5/16″	Black	10, 25, 50, 100	**8507K65**	.88	.51
5	3/16″	5/8″	7/16″	3/4″	Black	10, 25, 50, 100	**8507K67**	1.62	1.06
6	1/32″	1/4″	13/64″	3/8″	Black	10, 25, 50, 100	**8507K14**	.92	.48
6	1/16″	3/8″	1/4″	1/2″	Black	10, 25, 50, 100	**8507K15**	1.28	.74
6	1/8″	15/32″	23/64″	5/8″	Black	10, 25, 50, 100	**8507K16**	1.32	.99
6	3/16″	9/16″	15/32″	3/4″	Black	10, 25, 50, 100	**8507K31**	2.10	1.52
6	1/4″	19/32″	37/64″	13/16″	Black	10, 25, 50, 100	**8507K32**	2.41	1.64
6	5/16″	23/32″	19/32″	15/16″	Black	10, 25, 50, 100	**8507K33**	2.64	1.77
6	3/8″	25/32″	43/64″	1″	Black	10, 25, 50, 100	**8507K34**	3.12	2.02
Silicone Rubber								
6	1/16″	3/8″	1/4″	1/2″	Orange-Red	10, 25, 50, 100	**4869A1**	3.12	1.78
6	1/8″	15/32″	23/64″	5/8″	Orange-Red	10, 25, 50, 100	**4869A2**	4.35	2.45
Silicone Foam Rubber								
6	1/8″	15/32″	23/64″	5/8″	Orange-Red	10, 25, 50, 100	**4869A3**	4.38	2.97
Neoprene Rubber								
7	1/32″	5/32″	11/64″	1/4″	Black	10, 25, 50, 100	**8507K11**	.81	.45
7	1/16″	7/32″	15/64″	5/16″	Black	10, 25, 50, 100	**8507K12**	1.02	.53
7	1/8″	9/32″	19/64″	3/8″	Black	10, 25, 50, 100	**8507K13**	1.13	.74
7	3/16″	5/16″	7/16″	15/32″	Black	10, 25, 50, 100	**8507K21**	1.34	.91
8	1/16″	11/64″	1/4″	1/4″	Black	10, 25, 50, 100	**8507K36**	1.44	.82
8	1/4″	11/32″	1/2″	1/2″	Black	10, 25, 50, 100	**8507K22**	1.53	.91
8	5/16″	7/16″	19/32″	5/8″	Black	10, 25, 50, 100	**8507K23**	2.35	1.60
8	3/8″	15/32″	11/16″	5/8″	Black	10, 25, 50, 100	**8507K24**	1.97	1.53
EPDM Rubber								
9	1/4″	5/8″	3/4″	15/16″	Black	10, 25, 50, 100	**8693K22**	2.25	1.41
9	3/8″	5/8″	3/4″	15/16″	Black	10, 25, 50, 100	**8693K24**	2.30	1.58
9	1/2″	5/8″	3/4″	15/16″	Black	10, 25, 50, 100	**8693K26**	2.73	1.87
SBR Rubber									**Each**
10	3/64″	5/32″	19/64″	9/16″	Gray	2 1/2	**9279K11**		$11.80
10	1/16″	5/16″	9/32″	37/64″	Gray	2 1/2	**9279K12**		12.58
10	1/16″	7/16″	5/16″	19/32″	Gray	2 1/2	**9279K13**		13.49
Conductive EPDM Rubber								
10	1/16″	5/16″	19/64″	35/64″	Black	2 1/2	**9279K22**		14.55
10	1/16″	7/16″	21/64″	19/32″	Black	2 1/2	**9279K23**		16.62

For information about rubber, see page 3526.

Vinyl Trim

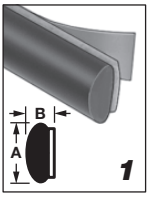

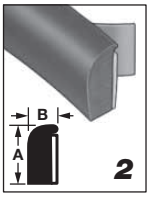

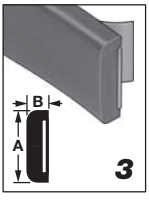

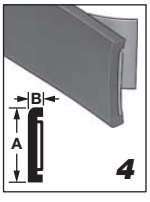

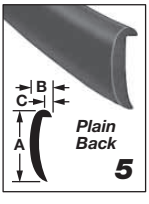

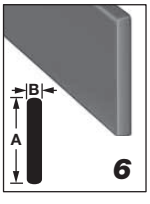

Unlike metal trim, vinyl offers flexibility.

Adhesive Backed— Just peel off the release paper and press into place. Trim is extra-hard with a durometer hardness of 90A-97A. Temperature range for vinyl and acrylic adhesive is –20° to +150° F. For indoor and outdoor use. *Styles 1* and *5* are nonmarking; *Styles 2, 3,* and *4* are marking.

Plain Back— Install *Style 5* with tape that has adhesive on both sides (not included). Trim is extra-hard with a durometer hardness of 90A. Temperature range is –20° to +150° F. For indoor and outdoor use. Material is marking. Install *Style 6* with contact cement (not included). Trim is extra-hard with a durometer hardness of 74D-78D. Temperature range is 50° to 90° F. For indoor use. Material is nonmarking. *Style 6 white trim* matches Wilsonart Frosty White 1573, Nevamar Solid White S7004, and Pionite Carnation White SW806. *Style 6 black trim* matches Formica Black 909, Wilsonart Black 1595, Nevamar Black S-6-1, and Pionite Black SE101.

To Order: Please specify 10-, 25-, 50-, or 100-ft. length.

(A)	(B)	(C)	Color		Each 10 ft.	25 ft.	50 ft.	100 ft.
Adhesive Backed								
1	5/16″	3/16″	—	Black	**1000A4**	$11.20	$27.99	$55.05	$93.30
1	7/16″	7/32″	—	Black	**1000A5**	13.53	33.83	66.54	112.78
2	9/16″	1/4″	—	Black	**1000A1**	21.75	54.37	108.73	181.22
3	31/32″	1/4″	—	Black	**1000A3**	37.88	99.87	199.74	344.38
4	1″	1/8″	—	Black	**1000A2**	30.02	75.04	150.08	250.14
5	9/16″	5/16″	3/16″	Black	**4976A1**	19.52	48.80	97.53	162.68
5	1 1/16″	9/32″	3/16″	Black	**4976A2**	22.92	57.29	114.59	190.98

(A)	(B)	(C)	Color	Available Lengths, ft.		Per Ft. 1-49	50-Up
Plain Back							
5	13/16″	11/32″	1/8″	Black	10, 25, 50, 100	**8323K1**	$2.17	$1.62
5	15/16″	15/32″	7/32″	Black	10, 25, 50, 100	**8323K2**	2.34	1.79
5	19/16″	3/4″	1/4″	Black	10, 25, 50, 100	**8323K3**	6.24	4.61
5	1 7/8″	1″	3/8″	Black	10, 25, 50, 100	**8323K5**	6.62	4.89
6	15/16″	1/8″	—	Black	10, 25, 50, 100	**1620A312**	.55	.43
				White	10, 25, 50, 100	**1620A311**	.55	.43
6	1 5/16″	1/8″	—	Black	10, 25, 50, 100	**1620A412**	.72	.56
				White	10, 25, 50, 100	**1620A411**	.72	.56

Self-Gripping Vinyl Edge Trim with Metal Core

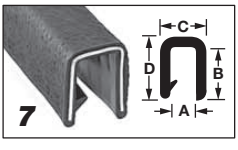

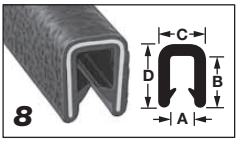

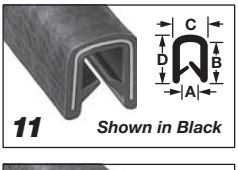

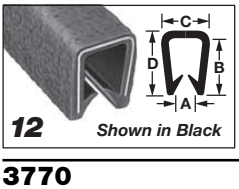

A metal core and one or two gripping fingers hold this flexible vinyl edge trim in place. It's easy to install—just push onto an edge. Material meets FMVSS 302 flammability rating. Temperature range is –20° to +150° F. For indoor and outdoor use. Material is nonmarking.

Styles 7, 8, 10, 11, and ***12*** are hard with a durometer hardness of 80A-85A. ***Style 9*** is medium-hard with a durometer hardness of 65A.

6-Piece Assortment— Includes 4″ lengths of items marked with ★..... **8451A5** **Each** $4.04

To Order: Please specify length from available lengths listed below.

(A)	(B)	(C)	(D)	Color	Available Lengths, ft.		Per Ft. 1-49	50-Up
Fits Single Edge Thickness								
Single Gripping Finger								
7	1/16″	19/64″	1/4″	3/8″	Textured Black	10, 25, 50, 100	**24175K12**	$0.87	$0.54
7	3/32″	5/16″	17/64″	7/16″	Textured Black	10, 25, 50, 100	**24175K13**	.96	.60
7	1/8″	15/32″	19/64″	9/16″	Textured Black	10, 25, 50, 100	**24175K14**	1.13	.76
7	3/16″	29/64″	23/64″	17/32″	Textured Black	10, 25, 50, 100	**24175K15**	1.17	.76
7	1/4″	27/64″	27/64″	1/2″	Textured Black	10, 25, 50, 100	**24175K16**	1.17	.76
7	5/16″	9/16″	31/64″	21/32″	Textured Black	10, 25, 50, 100	**24175K17**	1.31	.86
7	1/2″	1/2″	43/64″	19/32″	Textured Black	10, 25, 50, 100	**24175K18**	1.34	.86
7	1/2″	59/64″	63/64″	1″	Textured Black	10, 25, 50, 100	**24175K31**	2.52	1.72
7	5/8″	59/64″	51/64″	15/16″	Textured Black	10, 25, 50, 100	**24175K32**	2.53	1.77
7	3/4″	51/64″	59/64″	7/8″	Textured Black	10, 25, 50, 100	**24175K33**	2.54	1.79
Dual Gripping Fingers								
8	1/8″	15/32″	5/16″	35/64″	Textured Black	10, 25, 50, 100	**24175K42**	1.06	.70
8	5/32″	15/32″	21/64″	35/64″	Textured Black	10, 25, 50, 100	**24175K43**	1.09	.70
8	3/16″	7/16″	23/64″	17/32″	Textured Black	10, 25, 50, 100	**24175K44**	1.11	.76
8	1/4″	25/64″	27/64″	1/2″	Textured Black	10, 25, 50, 100	**24175K45**	1.14	.76
Fits Varying Edge Thicknesses								
Single Gripping Finger								
9	1/64″-1/32″	9/32″	15/64″	23/64″	Black	10, 25, 50, 100	**8451A22★**	.88	.66
9	1/16″-11/64″	7/16″	25/64″	33/64″	Textured Black	10, 25, 50, 100	**8451A72**	1.15	.72
					Black	10, 25, 50, 100	**8451A74★**	1.15	.72
					White	10, 25, 50, 100	**8451A73**	1.15	.72
9	3/32″-3/16″	7/16″	25/64″	33/64″	Black	10, 25, 50, 100	**8451A47**	1.18	.73
					Orange	10, 25, 50, 100	**8451A68**	1.27	.73
					White	10, 25, 50, 100	**8451A45**	1.27	.73
					Yellow	10, 25, 50, 100	**8451A67**	1.27	.73
9	5/64″-13/64″	37/64″	3/8″	21/32″	Black	10, 25, 50, 100	**8451A53★**	1.28	.82
Dual Gripping Fingers								
10	1/64″-3/64″	3/8″	9/32″	29/64″	Black	10, 25, 50, 100	**8451A55★**	.84	.65
					White	10, 25, 50, 100	**8451A54**	.84	.65
11	1/32″-1/8″	7/16″	25/64″	33/64″	Textured Black	10, 25, 50, 100	**8451A63★**	1.11	.72
					Black	10, 25, 50, 100	**8451A35**	.95	.71
					White	10, 25, 50, 100	**8451A64**	.95	.71
12	9/64″-1/4″	37/64″	1/2″	21/32″	Black	10, 25, 50, 100	**8451A62★**	1.08	.86
					White	10, 25, 50, 100	**8451A61**	1.08	.86
12	1/4″-1/2″	9/16″	23/32″	41/64″	Black	10, 25, 50, 100	**8451A31**	1.37	1.01
					White	10, 25, 50, 100	**8451A32**	1.37	1.01

Plastic Edge Trim

Because these edge trim strips are flexible they'll conform to flat and round edges. Just cut to desired length and push onto edge—the firm, positive grip holds the strip in place. Materials are nonmarking.

Polyethylene trim has a temperature range of –30° to +149° F. *Styles 1, 3,* and *5* are for indoor and outdoor use; *Styles 2* and *4* are for indoor use. Choose trim with an adhesive strip located on its inside top for an additional grip. Material is extra-hard; *Styles 1, 3,* and *5* have a durometer hardness of 51D-54D, and *Styles 2* and *4* have a durometer hardness of 88A-92A.

Nylon trim is extra-hard with a durometer hardness of 98A-102A. Temperature range is –40° to +180° F. For indoor use. Meets Mil. Spec. MS-21266.

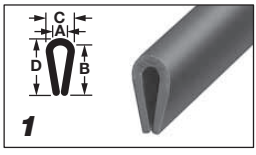

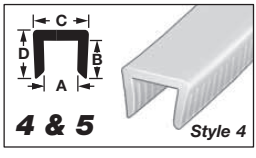

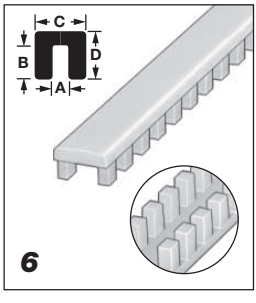

(A)	(B)	(C)	(D)	Color	Lg.		Each
Polyethylene							
1	1/8″	7/16″	1/4″	1/2″	Black	100 ft.	86875K141 $45.00
1	9/64″	19/64″	1/4″	11/32″	Black	100 ft.	86875K28 37.51
1	1/4″	29/64″	23/64″	1/2″	Black	100 ft.	86875K29 46.39
2	3/64″	5/32″	1/8″	3/16″	Off-White	100 ft.	8500K63 35.97
2	1/16″	5/32″	1/8″	3/16″	Off-White	100 ft.	8500K64 37.07
2	1/16″	5/32″	11/64″	13/64″	Off-White	100 ft.	8500K65 37.25
2	5/64″	5/32″	11/64″	13/64″	Off-White	100 ft.	8500K66 40.07
2	3/32″	11/64″	13/64″	7/32″	Off-White	100 ft.	8500K67 40.76
2	1/8″	11/64″	13/64″	7/32″	Off-White	100 ft.	8500K68 45.31
2	3/16″	7/32″	9/32″	17/64″	Off-White	100 ft.	8500K69 56.74
2	1/4″	13/64″	3/8″	9/32″	Off-White	100 ft.	8500K91 62.73
Polyethylene with Adhesive Strip							
3	3/64″	9/64″	3/16″	11/64″	Black	100 ft.	4883A4 24.42
3	7/64″	9/64″	9/32″	3/16″	Black	100 ft.	4883A5 26.86
Serrated Polyethylene							
4	3/64″	5/32″	1/8″	3/16″	Off-White	100 ft.	8500K77 33.20
4	1/16″	5/32″	1/8″	3/16″	Off-White	100 ft.	8500K78 34.06
4	1/16″	5/32″	11/64″	13/64″	Off-White	100 ft.	8500K79 34.97
4	5/64″	5/32″	11/64″	13/64″	Off-White	100 ft.	8500K81 37.86
4	3/32″	11/64″	13/64″	7/32″	Off-White	100 ft.	8500K82 38.63
4	1/8″	11/64″	13/64″	7/32″	Off-White	100 ft.	8500K93 46.62
4	3/16″	7/32″	9/32″	17/64″	Off-White	100 ft.	8500K94 61.01
4	1/4″	13/64″	3/8″	9/32″	Off-White	100 ft.	8500K95 61.39
Serrated Polyethylene with Adhesive Strip							
5	3/64″	9/64″	3/16″	11/64″	Black	100 ft.	4883A1 23.82
5	1/16″	9/64″	11/64″	11/64″	Black	100 ft.	4883A2 24.68
5	7/64″	9/64″	15/64″	3/16″	Black	100 ft.	4883A3 27.63
Nylon—*Package quantity is 25.*							**Pkg.**
6	1/16″	3/32″	5/32″	5/32″	Off-White	12 3/4″	85085K2 $4.47
6	3/32″	3/32″	11/64″	5/32″	Off-White	12 3/4″	85085K4 6.13
6	3/16″	5/32″	21/64″	15/64″	Off-White	12 3/4″	85085K8 11.67

Nylon-Coated Stainless Steel Edge Trim

Use these Type 304 stainless steel edge trim strips to protect wire, cable, and hose from sharp edges. They're flexible so they'll conform to flat, round, and irregular-shaped edges. To install, just push onto the edge—the firm, positive grip holds the trim in place. For indoor and outdoor use. Material is nonmarking. Meets UL 94V0 flammability rating. Use cutting shears (sold separately below) to cut edge trim to desired length.

Nylon-coated stainless steel trim is excellent for harsh temperatures, shock, and vibration. Temperature range is –40° to +285° F. Meets Mil. Spec. NASM22529-1.

Cushioned nylon-coated stainless steel trim has a channel that provides additional cushioning protection. Temperature range is –40° to +185° F.

Nylon-Coated Stainless Steel

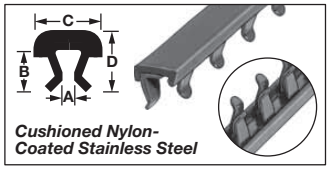

Cushioned Nylon-Coated Stainless Steel

(A)	(B)	(C)	(D)	Color	*5-ft. Lengths*		*25-ft. Lengths*	
Nylon-Coated Stainless Steel								
0.044″-0.056″	0.18″	0.13″	0.20″	Black	11745T51	$18.79	11745T11	$78.85
0.055″-0.069″	0.18″	0.13″	0.20″	Black	11745T52	18.79	11745T12	78.85
Cushioned Nylon-Coated Stainless Steel								
0.044″-0.056″	0.18″	0.19″	0.23″	Black	11745T61	19.60	11745T22	84.07
0.055″-0.069″	0.18″	0.19″	0.23″	Black	11745T62	19.60	11745T23	84.07
Cutting Shears							11745T36	$28.47

Push-In Stem Polyethylene Trim

A barbed rib anchors this polyethylene trim in place and provides a snug fit. The trim flattens against the surface when installed. Trim requires a groove or opening 0.002″ smaller than stem thickness (C) for installation. It is extra-hard with a durometer hardness of 95A. Temperature range is –10° to +150° F. For indoor use. Material is marking but nonstaining.

To Order: Please specify black or white, and length from available lengths listed.

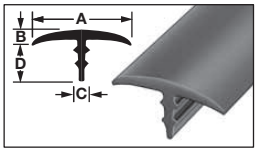

(A)	(B)	(C)	(D)	Available Lengths, ft.		Per Ft. 1-99	100-Up
1/2″	1/16″	3/32″	1/4″	10, 25, 50, 100	93165K1	$0.48	$0.41
3/4″	5/64″	3/32″	19/64″	10, 25, 50, 100	93165K4	.59	.51
13/16″	1/16″	7/64″	19/64″	10, 25, 50, 100	93165K5	.64	.54
7/8″	3/32″	7/64″	5/16″	10, 25, 50, 100	93165K6	.76	.65
1 1/4″	1/16″	7/64″	5/16″	10, 25, 50, 100	93165K7	.95	.80

Clear Vinyl Edge Trim

In addition to providing wear and abrasion resistance, this vinyl edge trim meets FDA requirements for food applications. Just press-fit it into place. Temperature range is –45° to +165° F. For indoor and outdoor use. Material is nonmarking.

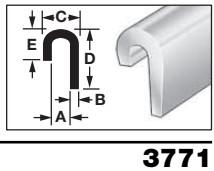

(A)	(B)	(C)	(D)	(E)	Color	Lg., ft.	
1/8″	3/64″	13/64″	39/64″	11/64″	Clear	8	9082T21 $9.17
1/8″	1/16″	1/4″	5/8″	3/16″	Clear	8	9082T23 10.83
3/16″	1/16″	5/16″	29/32″	1/4″	Clear	8	9082T25 13.07
3/16″	3/32″	3/8″	15/16″	9/32″	Clear	8	9082T29 18.63
1/4″	1/16″	3/8″	13/16″	5/16″	Clear	8	9082T27 15.31
1/4″	1/8″	1/2″	1 1/4″	3/8″	Clear	8	9082T31 26.75

For information about plastics, see page 3564.

Adhesive-Backed Plastic Trim

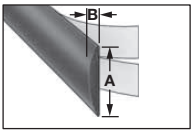

Made of a flexible polyolefin/polypropylene blend, this trim has an adhesive backing so it installs quickly. Material is extra-hard; durometer hardness is not rated. Temperature range is not rated. For indoor and outdoor use. Material is nonmarking.

(A)	(B)	Color	Lg.		
1″	1/4″	Black	6 ft.	1684A23	$15.96
2″	1/4″	Black	6 ft.	1684A25	24.56

Wear-Resistant Plastic Trim

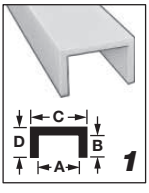

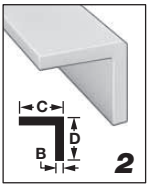

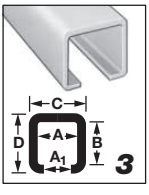

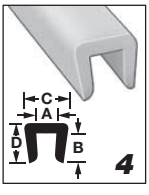

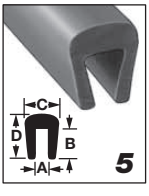

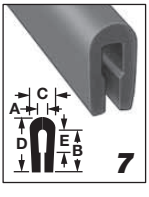

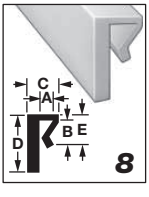

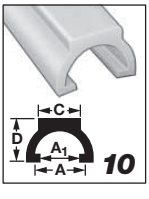

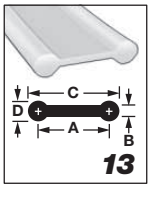

Place this durable edge trim over rails and guides along conveyors to minimize friction. Press-fit it on edges or mount with screws; screws are not included.

PTFE (polytetrafluoroethylene) is chemical resistant and provides a nonstick surface. Material is extra-hard with a durometer hardness of 55D. Temperature range is –350° to +500°F. For indoor and outdoor use. Material is nonmarking. *Style 1* mounts only with screws.

UHMW polyethylene has excellent wear resistance. Meets FDA requirements for direct food contact. Material is extra-hard with a durometer hardness of 68D. Temperature range is –22° to +180°F. For indoor use. Material is marking but nonstaining. *Styles 1, 2,* and *13* mount only with screws.

MDS-filled (molybdenum disulfide) nylon 6 is resistant to ammonia and oils. It provides better abrasion and wear resistance than regular nylon. Material is hard; durometer hardness is not rated. Temperature range is –40° to +225°F. For indoor use. Material is nonmarking. *Styles 4-8* and *11* press fit on edge.

To Order: Please specify length from those listed below. The last length listed is full-roll length.

	(A)	(A_1)	(B)	(C)	(D)	(E)	Color	Available Lengths, ft.		Per Ft. Partial Roll	Per Ft. Full Roll
PTFE											
1	1″	—	39/64″	1 1/4″	47/64″	—	White	2, 5, 8	9272K31	$26.30	$23.91
UHMW Polyethylene											
1	1″	—	39/64″	1 1/4″	47/64″	—	White	2, 5, 8	8672K31	3.04	2.63
1	2 1/2″	—	5/8″	3″	1″	—	White	2, 5, 8	8672K32	4.82	4.32
1	3 1/2″	—	7/8″	4 1/4″	1 1/4″	—	White	2, 5, 8	8672K33	6.81	6.10
2	—	—	1/4″	1 1/2″	1 1/2″	—	White	2, 5, 8	8672K36	2.92	2.62
2	—	—	1/4″	2″	2″	—	White	2, 5, 8	8672K37	3.74	3.26
2	—	—	1/2″	3″	3″	—	White	2, 5, 8	8672K38	8.12	7.30
3	1″	1/2″	1″	1 1/4″	1 1/4″	—	White	2, 5, 8	8672K24	2.80	2.44
3	1″	5/8″	1/4″	1 1/4″	1/2″	—	White	2, 5, 8	8672K21	2.25	1.96
3	1 1/2″	13/64″	1/2″	1 11/16″	11/16″	—	White	2, 5, 8	8672K22	1.72	1.50
3	2″	13/8″	1/4″	2 3/16″	13/32″	—	White	2, 5, 8	8672K23	1.86	1.62
3	2″	1 1/2″	1 1/2″	2 1/4″	1 49/64″	—	White	2, 5, 8	8672K25	6.99	6.10
PTFE											
3	1″	1/2″	1″	1 1/4″	1 1/4″	—	White	2, 5, 8	9272K33	48.57	44.46
4	1/8″	—	1/4″	9/32″	11/32″	—	White	2, 5, 8	9272K35	12.71	11.44
4	1/4″	—	3/8″	1/2″	1/2″	—	White	2, 5, 8	9272K36	15.93	14.37
4	3/8″	—	1/2″	3/4″	5/8″	—	White	2, 5, 8	9272K37	18.54	16.86
UHMW Polyethylene											
4	1/8″	—	1/4″	9/32″	11/32″	—	White	5, 10, 25, 50, 100	8672K41	.98	.87
4	5/32″	—	23/64″	39/64″	51/64″	—	White	5, 10, 25, 50, 100	8672K46	2.13	1.85
4	1/4″	—	3/8″	1/2″	1/2″	—	White	5, 10, 25, 50, 100	8672K42	1.31	1.14
4	5/16″	—	3/8″	1/2″	1/2″	—	White	5, 10, 25, 50, 100	8672K43	1.56	1.36
4	3/8″	—	1/2″	3/4″	5/8″	—	White	5, 10, 25, 50, 100	8672K44	1.73	1.51
MDS-Filled Nylon 6											
4	1/16″	—	7/32″	11/64″	9/32″	—	Dark Gray	10, 25, 50, 100	8721K35	.89	.71
4	1/8″	—	1/4″	1/4″	5/16″	—	Dark Gray	10, 25, 50, 100	8721K36	1.03	.83
4	17/64″	—	19/64″	27/64″	3/8″	—	Dark Gray	10, 25, 50, 100	8721K37	1.16	.95
UHMW Polyethylene											
5	1/8″	—	3/8″	21/64″	1/2″	—	White	5, 10, 25, 50, 100	8672K47	1.25	1.07
MDS-Filled Nylon 6											
5	3/16″	—	7/32″	5/16″	3/8″	—	Dark Gray	10, 25, 50, 100	8721K16	1.54	1.16
6	7/64″	—	1/4″	15/64″	21/64″	—	Dark Gray	10, 25, 50, 100	8721K12	1.00	.77
6	1/8″	—	7/16″	1/4″	1/2″	—	Dark Gray	10, 25, 50, 100	8721K14	1.30	1.00
6	13/64″	—	15/16″	21/64″	1″	—	Dark Gray	10, 25, 50, 100	8721K42	2.66	2.06
6	1/4″	—	7/16″	23/64″	1/2″	—	Dark Gray	10, 25, 50, 100	8721K15	1.37	1.06
7	1/8″	—	15/32″	21/64″	41/64″	15/64″	Dark Gray	10, 25, 50, 100	8721K13	1.90	1.52
8	3/16″	—	3/8″	5/16″	1″	7/16″	Dark Gray	10, 25, 50, 100	8721K11	1.37	1.19
8	5/16″	—	3/8″	7/16″	1″	7/16″	Dark Gray	6	8721K27	1.52	1.27
PTFE											
8	1/4″	—	35/64″	1/2″	1″	21/32″	White	2, 5, 8	9272K42	33.78	30.70
UHMW Polyethylene											
8	13/64″	—	3/8″	17/32″	3″	35/64″	White	5, 10, 25, 50, 100	8672K52	3.40	2.96
8	1/4″	—	3/8″	17/32″	1″	17/32″	White	5, 10, 25, 50, 100	8672K51	1.96	1.71
9	35/64″	19/64″	—	47/64″	27/64″	—	White	5, 10, 25, 50, 100	8672K55	1.14	1.00
9	11/16″	3/8″	—	27/32″	33/64″	—	White	5, 10, 25, 50, 100	8672K56	1.32	1.17
9	3/4″	1/2″	—	1″	37/64″	—	White	5, 10, 25, 50, 100	8672K57	1.29	1.12
PTFE											
9	1/2″	1/4″	—	11/16″	11/32″	—	White	2, 5, 8	9272K25	23.76	21.60
9	5/8″	3/8″	—	7/8″	7/16″	—	White	2, 5, 8	9272K26	27.14	24.67
9	3/4″	1/2″	—	1″	1/2″	—	White	2, 5, 8	9272K27	30.14	27.40
UHMW Polyethylene											
10	3/4″	9/16″	—	5/8″	5/8″	—	White	5, 10, 25, 50, 100	8672K58	2.00	1.73
MDS-Filled Nylon 6											
11	5/8″	3/8″	—	—	29/64″	—	Dark Gray	6	8721K25	1.52	1.34
11	3/4″	3/8″	—	—	1/2″	—	Dark Gray	6	8721K26	1.64	1.46
PTFE											
12	1/2″	—	—	11/16″	—	—	White	2, 5, 8	9272K45	13.78	12.53
UHMW Polyethylene											
12	3/8″	—	—	19/32″	—	—	White	5, 10, 25, 50, 100	8672K68	1.16	1.04
12	1/2″	—	—	11/16″	—	—	White	5, 10, 25, 50, 100	8672K59	1.05	.95
13	2 1/2″	—	1/4″	3 1/4″	3/4″	—	White	5, 10	8672K27	5.59	4.87

Metal Trim

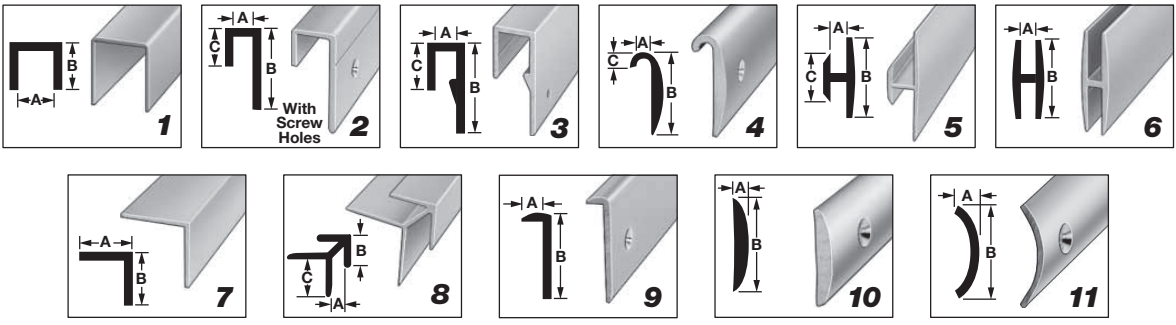

Give your edges maximum protection with this tough metal trim. Just press-fit or screw onto the edge to install. Length tolerance is ±1/4″.

Stainless steel trim offers corrosion resistance. *Type 430* has a highly polished look, *Type 304* is a good general-purpose stainless steel, and *Type 316* has the best corrosion resistance of the stainless steel trims we offer. ***Aluminum*** trim is easy to machine, lightweight, and offers good corrosion resistance. It is also anodized for a tough finish.

Styles 1-6 are ideal for panels, boards, signs, and mirrors. *Styles 5* and *6* can also be used to join two edges together. *Style 7* is for outside edges. *Style 8* is used to finish and connect panel sections. *Style 9* is great for step nosing. *Styles 10* and *11* protect walls and cabinets from impact.

Trim with Screw Holes—Fasteners are not included. *Styles 2* and *3* have holes on 4″ centers and require #5 fasteners. *Styles 4, 9, 10,* and *11* have countersunk holes on 6″ centers. *Style 4* requires #8 fasteners. *Style 9* requires #5 oval-head fasteners. *Style 10* ***aluminum*** trim requires #5 oval-head fasteners; ***Type 304 stainless steel*** trim requires #4 fasteners; and ***Type 316 stainless steel*** requires #8 fasteners (unless noted). *Style 11* requires #8 fasteners (unless noted).

(A)	(B)	(C)	Thick.	3-ft. Lengths		6-ft. Lengths	
Smooth Type 430 Stainless Steel—*Bright Finish*							
1	1/4″	5/16″	1/64″	8123A24	$5.46	8123A25	$9.60
1	1/4″	1/2″	1/64″	8123A26	7.54	8123A27	15.08
1	1/2″	5/16″	1/64″			8123A62	12.24
1	3/4″	3/8″	1/64″			8123A63	13.12
Smooth Aluminum—*Dull Finish*							
1	1/4″	7/16″	1/16″	8123A42	7.79	8123A71	12.83
1	17/64″	15/16″	1/16″	8123A43	10.58	8123A72	17.39
1	3/8″	5/16″	1/16″	8123A44	7.65	8123A73	12.54
1	1/2″	9/16″	1/16″	8123A45	10.52	8123A74	17.79
1	3/4″	5/16″	1/16″	8123A46	10.15	8123A75	19.81
1	3/4″	3/4″	1/8″	8123A48	20.33	8123A79	34.60
1	1″	13/16″	1/16″	8123A47	12.74	8123A77	22.78
2	1/16″	23/32″	3/16″	8427A32	6.77	8427A61	10.36
2	3/8″	7/8″	3/8″	8427A34	12.20	8427A67	19.29
2	1/2″	1 1/4″	9/16″	8427A35	11.19	8427A78	18.38
Smooth Aluminum—*Bright Finish*							
2	21/64″	1″	3/32″	8427A16	7.22	8427A17	14.08
Smooth Aluminum with Screw Holes—*Bright Finish*							
2	11/64″	23/32″	19/64″	8427A52	7.24	8427A63	11.91
2	13/64″	23/32″	5/16″	8427A53	8.36	8427A64	13.65
2	17/64″	7/8″	5/16″	8427A33	9.18	8427A65	14.50
2	21/64″	1 11/64″	21/32″	8427A54	9.81	8427A68	15.55
Smooth Type 430 Stainless Steel with Screw Holes—*Bright Finish*							
2	5/16″	3/4″	5/16″	1/32″		8427A69	10.91
Smooth Aluminum with Screw Holes—*Dull Finish*							
3	19/64″	15/16″	3/8″	1/16″	8427A1	7.88	8427A2	15.24
3	19/64″	1 1/4″	5/8″	1/16″	8427A3	10.15	8427A4	18.87
Smooth Aluminum with Screw Holes—*Bright Finish*							
4	11/64″	15/16″	3/16″	1/8″	8427A12	24.75	8427A7	39.72
4	11/64″	1 11/64″	11/64″	9/64″	8427A13	30.99	8427A8	51.85
Smooth Aluminum—*Bright Finish*							
5	1/4″	1 3/8″	1/2″	3/64″	8429A7	8.37	8429A8	15.19
Smooth Aluminum—*Dull Finish*							
5	33/64″	1 1/4″	5/8″	1/16″	8429A65	11.44	8429A72	18.77
6	5/32″	1 3/64″		3/64″	8429A3	9.31	8429A4	18.55
6	17/64″	1 3/64″		3/64″	8429A1	11.66	8429A2	23.24
7	1/2″	1/2″		1/16″	8122A51	6.58	8122A45	9.08
7	1/2″	1″		1/16″	8122A46	7.46	8122A47	13.96
7	1/2″	1″		3/32″	8122A53	9.46	8122A54	17.66
7	3/4″	3/4″		1/16″	8122A55	9.40	8122A48	13.79
7	3/4″	3/4″		1/8″	8122A73	15.01	8122A82	17.79

(A)	(B)	(C)	Thick.	3-ft. Lengths		6-ft. Lengths	
Smooth Aluminum—*Dull Finish (Cont.)*							
7	3/4″	1 3/4″	3/32″	8122A74	$13.53	8122A83	$24.97
7	1″	1″	1/16″	8122A58	9.47	8122A84	14.04
7	1″	1″	1/8″	8122A75	19.66	8122A85	23.97
7	1 1/8″	1 3/4″	3/32″	8122A76	14.93	8122A86	23.32
7	1 1/2″	1 1/2″	1/8″	8122A77	24.91	8122A87	33.19
7	2″	2″	1/8″	8122A79	27.55	8122A88	42.27
Smooth Type 430 Stainless Steel—*Bright Finish*							
7	1/2″	1/2″	1/64″			8122A61▲	16.40
7	3/4″	3/4″	1/64″			8122A62▲	18.75
7	1″	1″	1/64″			8122A63▲	21.92
Smooth Aluminum—*Bright Finish*							
7	11/16″	11/16″	3/64″	8122A81	8.16	8122A13	16.22
Smooth Aluminum—*Dull Finish*							
8	19/64″	39/64″	53/64″	3/64″	8427A5	12.19	8427A6	23.98
Smooth Aluminum with Screw Holes—*Bright Finish*							
9	11/64″	13/16″	1/16″	1104A64	8.96	1104A93	14.65
9	3/16″	9/16″	1/16″	1104A62	8.00	1104A91	13.38
9	3/16″	1 1/8″	1/16″	1104A68	10.31	1104A96	17.69
9	3/16″	15/16″	1/16″	1104A72	11.73	1104A97	19.58
9	13/64″	15/16″	1/16″	1104A66	9.68	1104A94	16.19
9	31/64″	59/64″	1/16″	1104A74♠	10.72	1104A31♠	18.12
9	31/64″	1 19/32″	1/16″	1104A76♠	12.74	1104A32♠	22.09
Grooved Aluminum with Screw Holes—*Bright Finish*							
9	3/16″	2 5/64″	5/64″	1104A88	15.32	1104A84	27.04
Anodized Aluminum with Screw Holes—*Bright Finish*							
10	5/32″	3/8″		8124A14	13.35	8124A15	25.13
10	3/16″	1/2″		8124A16	16.06	8124A12	25.69
10	3/16″	3/4″		8124A36	13.90	8124A43	20.98
10	3/16″	1″		8124A37	16.14	8124A44	27.11
Type 304 Stainless Steel with Screw Holes—*Polished Finish*							
10	1/8″	1/2″				1693A51	93.80
Type 316 Stainless Steel with Screw Holes—*Polished Finish*							
10	3/16″	3/4″				1693A52	164.50
10	1/4″	1″				1693A53♦	212.46
10	1/4″	1 1/4″				1693A54★	354.53
Type 304 Stainless Steel with Screw Holes—*Polished Finish*							
11	3/16″	1/2″				1693A61●	34.89
11	1/4″	3/4″				1693A62	52.77
11	1/4″	1″				1693A63	57.55
11	1/4″	1 1/4″				1693A64	57.53

▲ 8-ft. length. ♠ Longest leg is not beveled. ♦ 5-ft. length. ★ Requires #10 fasteners. ● Requires #4 fasteners.

Push-In Stem Aluminum Trim

Protect your edges with this trim that is anchored in place with its barbed rib. Material has a polished finish. For indoor use.

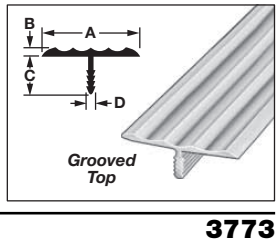

(A)	(B)	(C)	(D)	Groove Width	3-ft. Lengths		6-ft. Lengths	
Smooth Top								
3/4″	5/64″	3/8″	3/32″	0.1″	1618A33	$2.38	1618A43	$4.36
1 1/4″	7/64″	3/8″	3/32″	0.1″	1618A34	4.40	1618A44	5.41
Grooved Top								
1 1/4″	7/64″	7/16″	3/32″	0.1″	1618A31	4.39	1618A41	7.47
1 1/2″	3/32″	21/64″	1/8″	0.125″	1618A32	5.66	1618A42	10.20

Tool-Installed Two-Piece Grommets

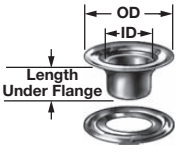

Grommet and Plain Washer

Grommet and Washer with Teeth

Grommet and Washer with Extended Neck

Rolled-Rim Grommet and Washer with Teeth

Give your holes some extra reinforcement with these metal grommets. Trade size is often stamped on the grommet and refers to the size of installation tool needed and the hole size to be cut into the material before setting. Use the Grommet Hole Cutter and the Grommet-Installation Tools, sold separately on page 3775, to install. *Brass* and *nickel-plated brass* grommets meet MIL-G-16491D, MS-20230, and AN-230 (Army-Navy). Use indoors and outdoors.

Grommets and washers with teeth prevent rotation and loosening, especially in woven materials. ***Grommets and washers with extended neck*** have an elongated neck that reinforces the hole in lightweight materials. ***Rolled-rim grommets and washers with teeth***, also known as rolled-rim grommets and spur washers, have a rim that provides added grip.

Trade Size	ID	OD	Length Under Flange	Max. Material Thick.	Brass Pkg. Qty.	Brass Pkg.	Nickel-Plated Brass Pkg. Qty.	Nickel-Plated Brass Pkg.	Aluminum Pkg. Qty.	Aluminum Pkg.	Type 305 Stainless Steel Pkg. Qty.	Type 305 Stainless Steel Pkg.
Grommets and Plain Washers												
00	3/16″	0.425″	0.135″	0.063″	50	9604K21	50	86625K31	$4.32	50	8264K2	$4.29	—	—
0	1/4″	0.545″	0.175″	0.101″	50	9604K22	4.51	50	86625K32	5.18	50	8264K11	4.59	50	96015K31	$10.83
1	9/32″	0.687″	0.185″	0.108″	50	9604K23	5.03	50	86625K33	5.69	50	8264K12	4.94	25	96015K32	9.07
2	3/8″	0.815″	0.215″	0.140″	50	9604K24	5.42	50	86625K34	6.55	50	8264K13	7.14	25	96015K33	9.40
3	7/16″	0.97″	0.295″	0.219″	50	9604K25	7.88	50	86625K35	9.73	50	8264K14	10.50	—	—	—
4	1/2″	1.05″	0.374″	0.298″	50	9604K26	9.35	50	86625K36	11.64	50	8264K15	11.44	—	—	—
5	5/8″	1.22″	0.33″	0.254″	50	9604K27	14.17	25	86625K37	9.98	25	8264K16	9.43	—	—	—
6	13/16″	1.75″	0.232″	0.149″	10	9604K28	8.71	10	86625K38	9.56	—	—	—	—	—	—
Grommets and Washers with Teeth												
0	1/4″	0.545″	0.175″	0.101″	50	9605K21	4.93	—	—	—	—	—	—	—	—	—
1	9/32″	0.687″	0.185″	0.108″	50	9605K22	5.98	—	—	—	—	—	—	—	—	—
2	3/8″	0.815″	0.215″	0.141″	50	9605K23	7.03	—	—	—	—	—	—	—	—	—
3	7/16″	0.97″	0.295″	0.219″	50	9605K24	9.41	—	—	—	—	—	—	—	—	—
4	1/2″	1.05″	0.374″	0.295″	50	9605K25	10.98	—	—	—	—	—	—	—	—	—
5	5/8″	1.22″	0.33″	0.251″	25	9605K26	9.50	—	—	—	—	—	—	—	—	—
Grommets and Washers with Extended Neck												
00	3/16″	0.425″	0.135″	0.062″	50	8271K31	4.35	—	—	—	—	—	—	—	—	—
0	1/4″	0.545″	0.175″	0.102″	50	8271K32	4.88	—	—	—	—	—	—	—	—	—
1	9/32″	0.687″	0.185″	0.112″	50	8271K33	5.19	—	—	—	—	—	—	—	—	—
2	3/8″	0.815″	0.215″	0.139″	50	8271K34	6.75	—	—	—	—	—	—	—	—	—
3	7/16″	0.97″	0.295″	0.218″	50	8271K35	8.71	—	—	—	—	—	—	—	—	—
4	1/2″	1.05″	0.374″	0.296″	50	8271K36	12.42	—	—	—	—	—	—	—	—	—
Rolled-Rim Grommets and Washers with Teeth												
0	9/32″	0.67″	0.175″	0.096″	50	9606K41	10.22	50	87995K51	10.96	—	—	—	—	10	96075K41	8.24
1	13/32″	0.79″	0.205″	0.126″	50	9606K42	11.41	50	87995K52	12.50	—	—	—	—	—	—	—
2	7/16″	0.89″	0.255″	0.174″	50	9606K43	14.02	50	87995K53	14.88	—	—	—	—	10	96075K43	13.90
3	15/32″	0.97″	0.255″	0.172″	25	9606K44	9.30	25	87995K54	10.54	—	—	—	—	—	—	—
4	9/16″	1.12″	0.32″	0.237″	25	9606K45	10.22	25	87995K55	11.52	—	—	—	—	10	96075K44	14.94
5	5/8″	1.285″	0.38″	0.296″	25	9606K46	14.09	10	87995K56	7.30	—	—	—	—	—	—	—
6	3/4″	1.535″	0.42″	0.332″	15	9606K47	14.86	5	87995K57	6.85	—	—	—	—	—	—	—
7	29/32″	1.725″	0.446″	0.363″	5	9606K48	10.28	5	87995K58	11.15	—	—	—	—	—	—	—
8	1 3/32″	1.865″	0.465″	0.382″	5	9606K49	11.64	5	87995K59	13.48	—	—	—	—	—	—	—

Military Specification Grommet Kits

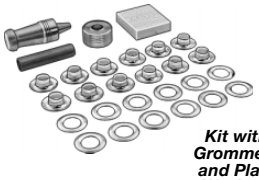

Kit with Grommets and Plain Washers

Get everything you need to install military specification grommets in one handy kit. Includes a hole cutter, installation die set, cutting block, brass grommets (all meet MIL-G-16491F), and instructions. Use indoors and outdoors.

Trade Size	ID	OD	Length Under Flange	Max. Material Thick.	Grommets and Plain Washers No. of Grommets		Grommets and Washers with Teeth No. of Grommets	
0	1/4″	0.545″	0.175″	0.11″	24	9610K31	$9.35	48	9610K16	$12.27
1	5/16″	0.687″	0.185″	0.12″	24	9610K32	9.77	48	9610K17	12.90
2	3/8″	0.815″	0.215″	0.15″	24	9610K13	10.17	24	9610K18	13.31
3	7/16″	0.97″	0.295″	0.23″	12	9610K34	11.65	24	9610K19	14.35
4	1/2″	1.05″	0.374″	0.3″	12	9610K35	11.79	24	9610K21	14.98

Self-Piercing Tool-Installed Two-Piece Grommets

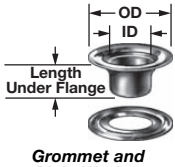

Grommet and Plain Washer

Rolled-Rim Grommet and Washer with Teeth/ Extended Neck

The sharp neck on these brass grommets cuts the material as you set them. To install, use the proper die set (sold below) with bench press 95715A690, sold separately below and on page 3299. Trade size refers to the size of installation tool needed and the grommet's hole size once set. Use indoors and outdoors. ***Rolled-rim grommets and washers with teeth/extended neck***, also known as rolled-rim grommets and spur washers, have teeth on the washer for a more secure grip on the material.

Trade Size	ID	OD	Length Under Flange	Max. Material Thick.	Grommets Pkg. Qty.	Grommets Pkg.	Grommets Pkg.	Die Sets ♦ Each	Die Sets ♦ Each
Grommets and Plain Washers									
0	1/4″	0.562″	0.161″	0.188″	50	7253K11	$9.00	7253K111★	$60.89
1	5/16″	0.625″	0.193″	0.188″	50	7253K12	9.93	7253K112★	60.68
2	3/8″	0.75″	0.189″	0.188″	50	7253K13	11.36	7253K113★	59.92
3	7/16″	0.938″	0.188″	0.172″	50	7253K14	14.13	7253K211	263.33
4	5/8″	1.125″	0.172″	0.156″	25	7253K15	10.63	7253K212	263.33
Rolled-Rim Grommets and Washers with Teeth/Extended Neck									
0	9/32″	0.688″	0.188″	0.172″	50	8276K41	10.10	8276K62	147.07
1	3/8″	0.75″	0.188″	0.172″	50	8276K42	11.24	8276K63	147.07
2	7/16″	0.875″	0.203″	0.188″	50	8276K43	14.24	8276K64	147.07
4	9/16″	1.125″	0.25″	0.234″	25	8276K44	14.24	8276K65	212.13

♦ Requires bench press ..... 95715A690 Each $264.24
★ Requires adapter ..... 7253K33 Each $17.22

Grommet-Installation Tools

Punch and Die Set

Hand Press

Die Set for Hand Press

Got the grommet? Now get the tools. Create a hole with Grommet Hole Cutters (sold below) and then use either the Punch and Die Sets or the Hand Press and Die Sets to set grommets.

Punch and Die Sets

Punch and die are stamped with the corresponding grommet trade size. Strike the punch with a wooden or rawhide mallet to set grommets.

Trade Size	For Grommets and Plain or Teeth Washers: Hole Size			For Rolled-Rim Grommets and Teeth/Extended Neck Washers: Hole Size		
00	3/16″	9612K25	$31.85	—	—	—
0	1/4″	9612K26	31.20	9/32″	9612K17	$31.85
1	9/32″	9612K27	31.85	13/32″	9612K18	31.85
2	3/8″	9612K28	32.69	7/16″	9612K19	32.69
3	7/16″	9612K29	32.29	15/32″	9612K21	32.29
4	1/2″	9612K31	32.92	9/16″	9612K22	32.92
5	5/8″	9612K32	53.07	5/8″	9612K23	53.07
6	13/16″	9612K33	72.85	3/4″	9612K24	72.85
7	—	—	—	29/32″	9612K35	79.63
8	—	—	—	1 3/32″	9612K36	79.63

Hand Press and Die Sets

Hand Press— Squeeze the adjustable pliers-grip handle to set metal grommets in a single action. Tool includes a four-piece die set for 9/16″ snaps (see page 3299 for snaps). Die sets for grommets are sold separately below.

95720A690 ..... $139.54

Trade Size	Die Sets for Grommets and Plain Washers: Hole Size			Die Sets for Rolled-Rim Grommets and Teeth/Extended Neck Washers: Hole Size		
00	3/16″	95720A710	$39.90	—	—	—
0	1/4″	95720A715	39.90	5/16″	95720A810	$46.50
1	5/16″	95720A720	39.90	3/8″	95720A820	46.50
2	3/8″	95720A730	46.50	—	—	—

Grommet Hole Cutters

Create a hole by striking the cutter with a wooden or rawhide mallet. The offset handle makes it easy to remove material.

Trade Size	Hole Size		
00	3/16″	9611K11	$20.64
0	1/4″	9611K12	21.05
1	9/32″	9611K13	21.49
2	3/8″	9611K14	23.73
3	7/16″	9611K15	24.22
4	1/2″	9611K16	28.05
5	5/8″	9611K17	35.95
6	3/4″	9611K18	36.69
7	7/8″	9611K19	42.04
8	1″	9611K21	42.04

Easy-Install Two-Piece Grommets

Just snap the two parts together in a hole you've cut to size; no setting tools required. Use 96135K49 with hole cutter 9611K14; 96135K54 and K55 with cutter 9611K17 (both sold separately above). Grommets are made of polypropylene. Temperature range is 0° to 115°F, except 96135K49 is not rated. Durometer hardness is not rated. Use indoors and outdoors.

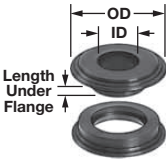

ID	OD	Length Under Flange	Max. Material Thick.	Color	Pkg. Qty.		Pkg.
23/64″	1 5/64″	3/16″	0.203″	Black	10	96135K49	$7.98
1/2″	1 1/8″	3/16″	0.025″	Black	50	96135K54	7.24
1/2″	1 1/8″	3/16″	0.025″	White	50	96135K55	7.24

Push-In Grommets with Flange

Eliminate the clutter of cords, computer cables, and machine control wires. Use indoors, except *Styles E, F,* and *H* can also be used outdoors.

Rectangular

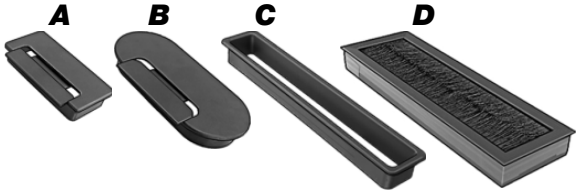

(A&B) With Removable Slot Cover— Made of ABS plastic. Temperature range is 30° to 135°F.

(C) Slotted— Polystyrene plastic; temperature range is 30° to 135°F.

(D) Nylon Brush— The bristles keep dust and debris in line. Made of PVC plastic with a temperature range of 30° to 135°F.

Fits Hole Size, Lg. × Wd.	Flange Size, Lg. × Wd.	Depth Under Flange	Opening Size, Lg. × Wd.	Color		
(A) With Removable Slot Cover						
3 3/4″ × 1 3/4″	4″ × 2″	5/8″	3″ × 3/4″	Blk.	93775K51	$7.33
3 3/4″ × 1 3/4″	4″ × 2″	5/8″	3″ × 3/4″	Brn.	93775K52	7.33
3 3/4″ × 1 3/4″	4″ × 2″	5/8″	3″ × 3/4″	—	93775K54●	35.95
3 3/4″ × 1 3/4″	4″ × 2″	5/8″	3″ × 3/4″	Wh.	93775K53	7.33
(B) With Removable Slot Cover— *Rounded Edges*						
6″ × 2 1/2″	6 1/2″ × 3″	5/8″	3 1/2″ × 1″	Blk.	93775K61	9.66
6″ × 2 1/2″	6 1/2″ × 3″	5/8″	3 1/2″ × 1″	Brn.	93775K62	9.66
6″ × 2 1/2″	6 1/2″ × 3″	5/8″	3 1/2″ × 1″	—	93775K64●	54.32
6″ × 2 1/2″	6 1/2″ × 3″	5/8″	3 1/2″ × 1″	Wh.	93775K63	9.66
(C) Slotted						
12″ × 1 3/4″	12 1/2″ × 2 1/4″	1 1/8″	11 3/4″ × 1 9/16″	Blk.	4831K12	6.58
17″ × 1 3/4″	17 1/2″ × 2 1/4″	1 1/8″	16 3/4″ × 1 9/16″	Blk.	4831K13	7.24
(D) Nylon Brush						
12″ × 3 3/4″	12 1/4″ × 4″	1 3/16″	11 3/8″ × 3 1/8″♥	Blk.	4523K15	27.91
24″ × 3 3/4″	24 1/4″ × 4″	1 3/16″	23 3/8″ × 3 1/8″♥	Blk.	4523K16	55.81
36″ × 3 3/4″	36 1/4″ × 4″	1 3/16″	35 3/8″ × 3 1/8″♥	Blk.	4523K17	83.72
48″ × 3 3/4″	48 1/4″ × 4″	1 3/16″	47 3/8″ × 3 1/8″♥	Blk.	4523K18	111.63

● Has a chrome plating. Does not have a slot cover.
♥ Dimensions refer to the area covered by bristles.

Round

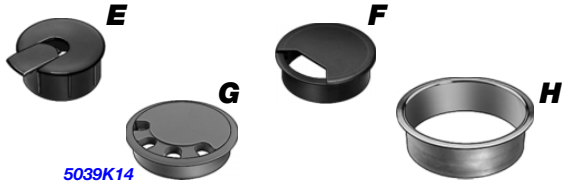

(E) With Removable Slot Cover— Made of ABS plastic. Maximum temperature is 225°F.

(F) Slotted— Polystyrene plastic with a max. temperature of 225°F.

(G) Floor Access with Swivel Cover— They're made of ABS plastic and designed to withstand foot traffic. 5039K14 has four openings to keep cords from tangling. Temperature range is –40° to +100°F.

(H) Type 304 Stainless Steel— Handles large groups of cords. The optional cover for the 6″ grommets tilts in to allow materials to pass through.

Fits Hole Dia.	Flange Dia.	Depth Under Flange	Opening Size	Color		
(E) With Removable Slot Cover						
2″	2 1/4″	1″	41/64″ Lg. × 1 7/64″ Wd.	Black	93775K21	$4.28
2″	2 1/4″	1″	41/64″ Lg. × 1 7/64″ Wd.	White	93775K22	4.28
2 3/4″	3″	1″	61/64″ Lg. × 1 9/16″ Wd.	Black	93775K31	5.02
2 3/4″	3″	1″	61/64″ Lg. × 1 9/16″ Wd.	White	93775K32	5.02
(F) Slotted						
3 1/4″	3 5/8″	1″	2 5/64″ Lg. × 3/4″ Wd.	Black	93775K46	5.97
(G) Floor Access with Swivel Cover						
2 15/16″	3 9/16″	1 7/16″	2 3/16″ Lg. × 5/8″ Wd.	Black	5039K12	11.70
5″	5 1/2″	1 3/8″	3 1/2″ Lg. × 3/4″ Wd.	Black	5039K13	17.50
8 3/16″	9 1/16″	1 3/4″	1 1/4″ Dia. (four)	Black	5039K14	43.84
(H) Stainless Steel						
6″	6 3/4″	1″	5 7/8″ Dia.	—	4911K11	37.40
6″	6 3/4″	2″	5 7/8″ Dia.	—	4911K12	45.52
6″	6 3/4″	6″	5 7/8″ Dia.	—	4911K13	71.40
8″	8 5/8″	1″	7 7/8″ Dia.	—	4911K14	47.17
8″	8 5/8″	2″	7 7/8″ Dia.	—	4911K15	54.80

Optional Cover for 6″ Dia. Stainless Steel Grommets ..... 4911K22 ..... 34.21

Push-In Expandable Grommets

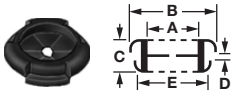

Flexible

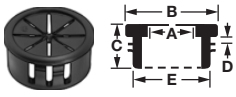

Rigid

The center hole flexes to tightly hold cables, cords, and tubing.

Flexible grommets are thermoplastic and are installed by squeezing the sides and pressing them into a hole in a panel. Durometer hardness is 50A. Temperature range is 5° to 250° F. Use indoors.

Rigid grommets snap and lock into place. They're nylon with a Rockwell hardness of R118. Temperature range is –40° to +250° F. Use indoors and outdoors.

ID (A)	OD (B)	O'all Thick. (C)	Panel Thick. (D)	Panel Hole Dia. (E)	Pkg. Qty.	Black	Pkg.	White	Pkg.
Flexible									
3/32"-3/8"	21/32"	1/4"	1/16"	1/2"	25	4946A1	$5.11	____	____
5/32"-13/16"	1 1/4"	3/8"	1/16"	1"	25	4946A2	8.95	____	____
Rigid									
7/16" max.	23/32"	13/32"	1/32"-1/8"	5/8"	100	4946A21	5.50	4946A211	$5.50
1/2" max.	55/64"	25/64"	1/32"-1/8"	3/4"	100	4946A22	6.87	4946A221	6.87
9/16" max.	15/16"	29/64"	1/32"-1/8"	7/8"	100	4946A24	7.51	4946A241	7.51
3/4" max.	1 1/16"	29/64"	1/32"-1/8"	1"	100	4946A25	9.76	____	____
13/16" max.	1 5/32"	29/64"	1/32"-1/8"	1 3/32"	100	4946A26	10.13	____	____
7/8" max.	1 23/64"	29/64"	1/32"-1/8"	1 1/4"	100	4946A27	14.05	____	____

Push-In Military Specification Grommets

Manufactured to meet MIL-G-3036 and MS-35489 (unless noted), these grommets are also AN (Army-Navy) approved. They insulate and seal around holes cut into panels, while damping vibration and minimizing abrasion. Durometer hardness is 50A.

Flexible grommets are made of Buna-N rubber, have a temperature range of 0° to 250° F, and are black in color. Use indoors.

High-temperature flexible grommets are silicone with a temperature range of –60° to +500° F. Color is red-orange. Use indoors and outdoors.

Also Available: Additional Flexible MS-35489 grommet numbers 1-156. Please ask for 9307K92 and specify MS-35489 number.

ID (A)	OD (B)	O'all Thick. (C)	Panel Thick. (D)	Panel Hole Dia. (E)	MS-35489 No.	AN-931 No.	Flexible Pkg. Qty.	Flexible	Flexible Pkg.	High-Temperature Flexible Pkg. Qty.	High-Temperature Flexible	High-Temperature Flexible Pkg.
1/8"	11/32"	3/16"	1/16"	1/4"	1	210	100	9307K35	$5.62	25	1061T11	$6.14
1/8"	3/4"	3/16"	1/16"	9/16"	2	2-9	25	9307K41	7.28	10	1061T41	7.94
3/16"	7/16"	3/16"	1/16"	5/16"	4	3-5	50	9307K11	2.67	25	1061T12	7.08
3/16"	7/16"	1/4"	1/8"	5/16"	33	A3-5	50	9307K12	3.17	25	1061T24	6.36
3/16"	7/16"	3/8"	1/4"	5/16"	91	C3-5	50	9307K37	4.84	10	1061T82	3.33
3/16"	3/4"	3/16"	1/16"	9/16"	134	3-9	50	9307K43	9.93	10	1061T44	6.81
3/16"	7/8"	3/16"	1/16"	5/8"	5	3-10	25	9307K44	8.42	10	1061T42	9.21
3/16"	7/8"	5/16"	3/16"	5/8"	63	B3-10	25	9307K36	9.76	10	1061T43	9.68
1/4"	5/8"	3/16"	1/16"	7/16"	6	4-7	50	9307K13	3.75	10	1061T13	5.85
1/4"	5/8"	1/4"	1/8"	7/16"	35	A4-7	50	9307K14	4.06	10	1061T25	6.20
1/4"	5/8"	5/16"	3/16"	7/16"	64	B4-7	50	9307K38	5.00	10	1061T46	5.94
1/4"	5/8"	3/8"	1/4"	7/16"	93	C4-7	50	9307K39	5.62	10	1061T47	6.25
1/4"	1"	1/4"	1/16"	3/4"	7	4-12	25	9307K64	10.56	10	1061T45	11.75
1/4"	1 1/4"	1/4"	1/16"	1"	8	4-16	25	9307K76	6.58	5	1061T14	9.61
5/16"	13/16"	5/16"	1/16"	9/16"	9	5-9	50	9307K16	6.76	10	1061T15	8.18
5/16"	13/16"	3/8"	1/8"	9/16"	38	A5-9	50	9307K17	6.91	10	1061T26	9.85
5/16"	13/16"	7/16"	3/16"	9/16"	67	B5-9	50	9307K18	7.06	10	1061T35	10.22
5/16"	13/16"	1/2"	1/4"	9/16"	96	C5-9	50	9307K91	7.06	10	1061T37	9.43
5/16"	1"	5/16"	1/16"	3/4"	10	5-12	25	9307K77	10.62	10	1061T48	12.00
5/16"	1"	3/8"	1/8"	3/4"	39	A5-12	25	9307K42	10.59	10	1061T49	13.25
5/16"	1"	7/16"	3/16"	3/4"	68	B5-12	25	9307K58	10.94	10	1061T51	13.50
3/8"	11/16"	9/32"	1/16"	1/2"	____	930-1	50	9307K21	4.38	10	1061T83	6.00
3/8"	3/4"	3/8"	1/16"	9/16"	____	930-2	50	9307K48	10.81	10	1061T84	8.53
3/8"	3/4"	3/4"	3/8"	9/16"	____	930-3	25	9307K49	8.35	10	1061T85	7.65
3/8"	7/8"	5/16"	1/16"	5/8"	11	6-10	50	9307K22	7.72	10	1061T53	10.00
3/8"	7/8"	3/8"	1/8"	5/8"	40	A6-10	50	9307K23	8.24	5	1061T27	6.97
3/8"	7/8"	7/16"	3/16"	5/8"	69	B6-10	50	9307K59	8.75	5	1061T36	6.71
3/8"	1 1/4"	1/4"	1/16"	1"	12	6-16	50	9307K24	7.72	5	1061T54	9.50
7/16"	15/16"	5/16"	1/16"	11/16"	13	7-11	50	9307K25	7.72	5	1061T17	7.04
1/2"	1"	9/32"	3/32"	3/4"	____	930-4	25	9307K85	10.46	10	1061T86	11.58
1/2"	1 1/16"	5/16"	1/16"	13/16"	14	8-13	50	9307K26	8.68	5	1061T18	8.96
1/2"	1 1/16"	3/8"	1/8"	13/16"	43	A8-13	50	9307K27	9.67	5	1061T28	9.49
1/2"	1 1/16"	7/16"	3/16"	13/16"	72	B8-13	50	9307K62	10.00	5	1061T55	8.62
1/2"	1 1/16"	1/2"	1/4"	13/16"	101	C8-13	50	9307K63	10.19	5	1061T39	9.03
1/2"	1 1/2"	1/4"	1/16"	1 1/4"	15	8-20	50	9307K28	11.12	5	1061T56	13.81
9/16"	1 1/16"	5/16"	1/16"	13/16"	16	9-13	25	9307K52	11.31	5	1061T57	5.88
5/8"	1 1/8"	5/16"	1/16"	7/8"	17	10-14	10	9307K53	7.53	5	1061T58	8.12
5/8"	1 1/8"	3/8"	1/8"	7/8"	46	A10-14	10	9307K65	7.63	5	1061T59	9.12
5/8"	1 1/8"	7/16"	3/16"	7/8"	75	B10-14	10	9307K66	7.76	5	1061T61	10.00
5/8"	1 1/8"	1/2"	1/4"	7/8"	104	C10-14	10	9307K67	7.91	5	1061T62	11.64
5/8"	1 1/2"	1/4"	1/16"	1 1/4"	18	10-20	10	9307K86	8.55	2	1061T63	6.38
11/16"	15/16"	7/16"	1/8"	1"	48	A11-16	25	9307K79	8.68	5	1061T64	12.38
11/16"	15/16"	1/2"	3/16"	1"	77	B11-16	25	9307K68	8.22	5	1061T65	13.10
11/16"	15/16"	9/16"	1/4"	1"	106	C11-16	25	9307K69	8.62	5	1061T66	14.29
3/4"	1 3/8"	3/8"	1/16"	1 1/16"	20	12-17	25	9307K81	8.60	5	1061T67	11.25
3/4"	1 3/8"	7/16"	1/8"	1 1/16"	49	A12-17	25	9307K82	8.12	5	1061T68	13.69
3/4"	1 3/8"	9/16"	1/4"	1 1/16"	107	C12-17	25	9307K71	8.55	5	1061T69	14.29
3/4"	1 5/8"	1/4"	1/16"	1 1/4"	135	12-20	10	9307K55	10.13	2	1061T71	6.10
7/8"	1 5/8"	7/16"	1/16"	1 1/4"	22	14-20	25	9307K83	10.00	2	1061T74	7.10
7/8"	1 5/8"	1/2"	1/8"	1 1/4"	51	A14-20	25	9307K72	10.44	2	1061T75	7.95
7/8"	1 5/8"	9/16"	3/16"	1 1/4"	80	B14-20	25	9307K73	11.81	2	1061T76	8.10
1"	1 3/4"	7/16"	1/16"	1 3/8"	23	16-22	10	9307K61	10.08	2	1061T77	9.33
1"	1 3/4"	1/2"	1/8"	1 3/8"	52	A16-22	10	9307K74	10.00	2	1061T78	8.57
1 1/2"	2 1/8"	7/16"	1/16"	1 3/4"	27	24-28	25	9307K84	13.25	1	1061T79	6.70
1 1/2"	2 1/8"	1/2"	1/8"	1 3/4"	56	A24-28	25	9307K75	13.04	1	1061T81	8.80

Push-In Grommets

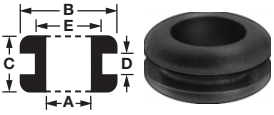

Style 1

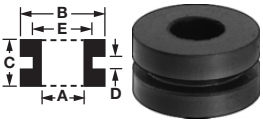

Style 2

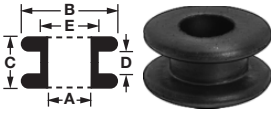

Style 3

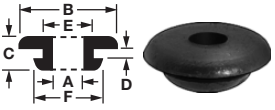

Style 4

Insulate and seal around holes cut in solid panels, while damping vibration and minimizing abrasion. Durometer hardness is 55A. Use indoors and outdoors. Color is black. ***Flexible*** grommets are made of SBR rubber and have a temperature range of –56° to +200° F. ***High-temperature flexible*** grommets are made of fluoroelastomer and have a temperature range of 10° to 450° F.

	ID (A)	OD (B)	O'all Thick. (C)	Panel Thick. (D)	Panel Hole Dia. (E)	Pkg. Qty.		Pkg.
Flexible								
1	1/8"	11/32"	7/32"	1/16"	3/16"	100	9600K17	$3.62
1	1/8"	11/32"	7/32"	1/16"	1/4"	100	9600K11	3.77
1	5/32"	1/2"	7/32"	1/16"	3/8"	100	9600K41	5.54
1	5/32"	11/16"	9/32"	1/16"	1/2"	100	9600K27	13.13
1	3/16"	13/32"	7/32"	1/16"	5/16"	100	9600K13	4.04
1	3/16"	13/32"	5/16"	3/32"	9/32"	100	9600K38	4.42
1	3/16"	1/2"	1/4"	1/16"	5/16"	100	9600K39	5.70
1	3/16"	1/2"	9/32"	3/32"	5/16"	100	9600K23	5.56
1	3/16"	9/16"	3/8"	1/8"	7/16"	100	9600K45	12.07
1	1/4"	1/2"	5/32"	1/32"	11/32"	100	9600K14	5.48
1	1/4"	1/2"	3/16"	1/16"	11/32"	100	9600K24	5.56
1	1/4"	1/2"	3/16"	1/16"	3/8"	100	9600K25	5.66
1	1/4"	5/8"	11/32"	1/16"	3/8"	100	9600K28	6.23
1	17/64"	5/8"	3/8"	1/8"	13/32"	100	9600K26	11.47
1	9/32"	9/16"	1/4"	1/16"	3/8"	100	9600K15	4.83
1	9/32"	19/32"	13/64"	1/16"	3/8"	100	9600K42	5.24
1	9/32"	5/8"	1/4"	1/16"	7/16"	100	9600K16	6.04
1	9/32"	1 1/8"	11/32"	3/32"	7/8"	100	9600K48	15.25
1	5/16"	5/8"	1/4"	1/16"	1/2"	100	9600K31	6.49
1	5/16"	11/16"	7/16"	1/4"	1/2"	100	9600K54	14.94
1	3/8"	5/8"	1/4"	1/16"	1/2"	100	9600K32	6.63
1	3/8"	5/8"	9/32"	3/32"	7/16"	100	9600K33	6.39
1	3/8"	13/16"	3/8"	3/32"	1/2"	100	9600K34	12.84
1	3/8"	7/8"	11/32"	1/16"	5/8"	100	9600K46	12.84
1	3/8"	7/8"	13/32"	1/8"	5/8"	100	9600K47	14.91
1	13/32"	11/16"	1/4"	1/16"	1/2"	100	9600K18	7.36
1	7/16"	3/4"	1/4"	1/16"	9/16"	100	9600K19	8.62
1	1/2"	1"	9/32"	3/32"	3/4"	100	9600K22	14.41
1	9/16"	1"	5/16"	1/16"	3/4"	100	9600K21	12.12
1	5/8"	1 1/8"	5/16"	1/16"	7/8"	100	9600K36	14.81

	ID (A)	OD (B)	O'all Thick. (C)	Panel Thick. (D)	Panel Hole Dia. (E)	(F)	Pkg. Qty.		Pkg.
Flexible (Cont.)									
1	5/8"	1 1/8"	3/8"	1/8"	7/8"	—	100	9600K37	$14.60
1	11/16"	15/16"	3/8"	5/64"	1"	—	25	9600K55	6.03
1	23/32"	19/32"	3/8"	3/32"	1 1/16"	—	25	9600K56	8.11
1	3/4"	1 1/8"	11/32"	3/32"	15/16"	—	25	9600K71	7.39
1	3/4"	1 1/2"	5/16"	3/32"	1 1/8"	—	25	9600K49	10.07
1	3/4"	1 5/8"	5/16"	1/16"	1 3/32"	—	25	9600K57	13.44
1	7/8"	1 5/8"	7/16"	1/16"	1 1/4"	—	25	9600K58	12.49
1	1"	1 3/4"	3/8"	3/32"	1 3/8"	—	25	9600K59	9.16
1	1"	1 3/4"	13/32"	7/64"	1 3/8"	—	25	9600K51	14.63
1	1 1/4"	1 7/8"	11/32"	1/16"	1 1/2"	—	25	9600K61	14.37
1	1 1/4"	1 7/8"	3/8"	3/32"	1 1/2"	—	25	9600K52	11.40
1	1 1/4"	1 7/8"	13/32"	1/8"	1 1/2"	—	25	9600K72	14.94
1	1 1/4"	2 1/8"	3/8"	3/32"	1 3/4"	—	25	9600K62	15.33
1	1 1/2"	2 3/8"	3/8"	3/32"	2"	—	25	9600K63	15.27
2	1/4"	9/16"	19/64"	3/64"	3/8"	—	100	9600K43	6.85
2	1/4"	9/16"	5/16"	1/16"	7/16"	—	100	9600K44	7.68
2	1/4"	3/4"	7/16"	1/8"	1/2"	—	100	9600K69	15.07
2	5/16"	3/4"	3/8"	1/8"	1/2"	—	100	9600K53	10.38
2	13/32"	13/16"	5/16"	1/16"	9/16"	—	100	9600K35	11.42
3	5/32"	21/64"	13/64"	7/64"	1/4"	—	100	9600K66	12.58
3	9/32"	5/8"	11/32"	5/32"	3/8"	—	100	9600K67	6.00
4	3/16"	5/8"	7/32"	1/16"	5/16"	7/16"	100	9600K64	7.32
4	3/8"	1"	13/32"	9/64"	11/16"	7/8"	100	9600K65	15.12
High-Temperature Flexible									**Each**
1	1/2"	1"	9/32"	3/32"	3/4"	—	—	5273T14	$4.33
1	5/8"	1 1/8"	5/16"	1/16"	7/8"	—	—	5273T13	6.04
1	5/8"	1 1/8"	3/8"	1/8"	7/8"	—	—	5273T15	5.48
1	1 1/4"	1 7/8"	11/32"	1/16"	1 1/2"	—	—	5273T12	10.39
1	1 1/2"	2 3/8"	3/8"	3/32"	2"	—	—	5273T11	14.24

Push-In Locking Grommets

Snap and lock these grommets into place with just a push. They fit a range of panel thicknesses so they're ideal around sharp edges and unevenly drilled and punched holes. Made of rigid nylon. Rockwell hardness is R118. Temperature range is –40° to +250° F. Use indoors and outdoors.

To Order: Please specify color: black or white.

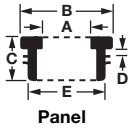

ID (A)	OD (B)	O'all Thick. (C)	Panel Thick. Range (D)	Panel Hole Dia. (E)	Pkg. Qty.		Pkg.
1/8"	1/4"	15/64"	1/32"-1/16"	3/16"	100	5269T11	$4.81
1/8"	5/16"	5/16"	1/32"-1/16"	1/4"	100	5269T21	4.81
3/16"	3/8"	5/16"	1/32"-1/16"	5/16"	100	5269T22	4.98
3/16"	15/32"	13/32"	1/32"-1/16"	3/8"	100	5269T23	4.81
1/4"	3/8"	15/64"	1/32"-1/16"	5/16"	100	5269T12	4.81
1/4"	15/32"	13/32"	1/32"-1/16"	3/8"	100	5269T24	4.98
1/4"	37/64"	13/32"	1/32"-1/16"	1/2"	100	5269T28	5.63
1/4"	23/32"	13/32"	1/32"-1/16"	5/8"	100	5269T35	6.32
5/16"	37/64"	13/32"	1/32"-1/16"	1/2"	100	5269T29	5.63
5/16"	21/32"	13/32"	1/32"-1/16"	9/16"	100	5269T32	6.08
3/8"	9/16"	1/4"	1/32"-1/16"	1/2"	100	5269T14	4.81
3/8"	37/64"	13/32"	1/32"-1/16"	1/2"	100	5269T31	5.42
3/8"	21/32"	13/32"	1/32"-1/16"	9/16"	100	5269T33	6.32
3/8"	27/32"	13/32"	1/32"-1/16"	3/4"	100	5269T41	7.39
3/8"	61/64"	29/64"	1/32"-1/16"	7/8"	100	5269T47	8.14
7/16"	21/32"	13/32"	1/32"-1/16"	9/16"	100	5269T34	6.08
7/16"	23/32"	13/32"	1/32"-1/16"	5/8"	100	5269T36	6.32
7/16"	61/64"	29/64"	1/32"-1/16"	7/8"	100	5269T48	7.83
1/2"	45/64"	1/4"	1/32"-1/16"	5/8"	100	5269T16	5.49

ID (A)	OD (B)	O'all Thick. (C)	Panel Thick. Range (D)	Panel Hole Dia. (E)	Pkg. Qty.		Pkg.
1/2"	23/32"	13/32"	1/32"-1/16"	5/8"	100	5269T37	$6.08
1/2"	27/32"	13/32"	1/32"-1/16"	3/4"	100	5269T42	7.10
1/2"	61/64"	29/64"	1/32"-1/16"	7/8"	100	5269T49	7.83
9/16"	27/32"	13/32"	1/32"-1/16"	3/4"	100	5269T43	7.10
9/16"	61/64"	29/64"	1/32"-1/16"	7/8"	100	5269T51	7.83
5/8"	53/64"	1/4"	1/32"-1/16"	3/4"	100	5269T17	6.27
5/8"	57/64"	13/32"	1/32"-1/16"	13/16"	100	5269T46	7.83
5/8"	61/64"	29/64"	1/32"-1/16"	7/8"	100	5269T52	8.14
11/16"	61/64"	29/64"	1/32"-1/16"	7/8"	100	5269T53	7.83
3/4"	15/16"	1/4"	1/32"-1/16"	7/8"	100	5269T19	6.83
3/4"	1 1/8"	29/64"	1/32"-1/16"	1"	100	5269T54	9.63
15/16"	1 5/16"	29/64"	1/32"-1/16"	1 3/16"	100	5269T58	12.39
15/16"	1 23/64"	29/64"	1/32"-1/16"	1 1/4"	100	5269T59	12.39
1"	1 15/32"	29/64"	1/32"-1/16"	1 3/8"	100	5269T61	12.91
1 1/16"	1 39/64"	29/64"	1/32"-1/16"	1 1/2"	100	5269T62	14.32
1 1/8"	1 39/64"	29/64"	1/32"-1/16"	1 1/2"	100	5269T63	14.94
1 5/16"	1 39/64"	29/64"	1/32"-1/16"	1 1/2"	100	5269T64	14.32
1 3/8"	1 7/8"	29/64"	1/32"-1/16"	1 3/4"	100	5269T65	14.95
1 5/8"	2 1/8"	29/64"	1/32"-1/16"	2"	100	5269T66	14.95

Shrink-to-Fit Sealing Grommets

Just turn up the heat and these grommets will shrink around wires and cables for a snug fit. A water-resistant rubber adhesive around the inside makes the bond tight, while the flange covers imperfect holes. Grommets are polyolefin and shrink at 257° F. Durometer hardness is 45D. Temperature range is –40° to +212° F. Use indoors and outdoors. Color is red.

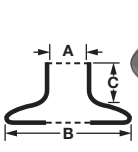

ID (A) Before Shrinking	After Shrinking	Flange OD (B)	(C)		
1.41"	0.47"	3.58"	0.669"	5277T11	$6.33
2"	0.82"	5"	0.787"	5277T12	7.50
2.6"	1.22"	5.63"	0.945"	5277T13	9.89

Sealing Grommets for Pipe and Tube

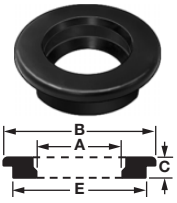

Press Fit

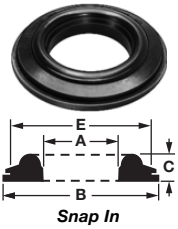

Snap In

Tightly seal the gap between pipe or tubing and a panel wall, keeping water and oil-based liquids from leaking through the seams. Made of flexible PVC. Color is black.

Press Fit— A tapered inner wall expands when pipe is inserted. Durometer hardness is 75A. Temperature range is –20° to +160° F.

Snap In— Grommets bend and move to compensate for pipe misalignment and movement. Durometer hardness is 60A. Temperature range is –40° to +200° F.

For Pipe Size	Fits Dia.	ID (A)	OD (B)	O'all Thick. (C)	Fits Panel Thick.	Panel Hole Dia. (E)		
Press Fit								
3/8"	0.68"	0.45"	1.46"	0.55"	1/4"	1.05"	9280K31	$2.14
1/2"	0.86"	0.63"	2.00"	0.72"	3/8"	1.31"	9280K32	2.63
3/4"	1.04"	0.82"	2.00"	0.72"	3/8"	1.31"	9280K33	2.72
1"	1.30"	1.05"	2.46"	0.72"	3/8"	1.78"	9280K34	3.34
1 1/4"	1.63"	1.35"	2.81"	0.72"	3/8"	2.07"	9280K35	3.92
1 1/2"	1.87"	1.56"	3.20"	0.72"	3/8"	2.54"	9280K36	4.43
2"	2.30"	2.00"	3.92"	0.77"	3/8"	3.05"	9280K37	6.94
3"	3.45"	3.10"	4.90"	0.74"	3/8"	4.01"	9280K38	9.11
4"	4.45"	4.12"	5.85"	0.74"	3/8"	5.06"	9280K39	9.97
6"	6.45"	6.12"	8.03"	0.73"	3/8"	7.06"	9280K41	13.88
Snap In								
1/8"	0.37"-0.40"	0.35"	1 3/8"	0.53"	0.05"-0.12"	1 1/16"	63595K31	.58
1/4"	0.50"-0.55"	0.47"	1 9/16"	0.58"	0.05"-0.12"	1 1/4"	63595K32	.60
3/8"	0.63"-0.71"	0.60"	1 11/16"	0.60"	0.05"-0.12"	1 3/8"	63595K33	.64
1/2"	0.82"-0.91"	0.77"	2"	0.64"	0.05"-0.12"	1 5/8"	63595K34	.74
3/4"	1.02"-1.10"	0.97"	2 7/16"	0.64"	0.05"-0.12"	2"	63595K35	.90
1"	1.30"-1.39"	1.23"	2 7/8"	0.68"	0.05"-0.12"	2 3/8"	63595K36	1.30
1 1/4"	1.62"-1.75"	1.52"	3 1/8"	0.68"	0.05"-0.12"	2 5/8"	63595K37	1.33
1 1/2"	1.87"-2.00"	1.75"	3 3/8"	0.68"	0.05"-0.12"	2 7/8"	63595K38	1.65
2"	2.25"-2.37"	2.10"	3 3/4"	0.68"	0.05"-0.12"	3 1/4"	63595K39	1.94
2 1/2"	2.87"-3.00"	2.69"	4 1/2"	0.74"	0.05"-0.12"	4"	63595K41	3.10
3"	3.37"-3.50"	3.25"	5 3/8"	0.79"	0.05"-0.12"	4 7/8"	63595K42	5.57
3 1/2"	4.00"-4.12"	3.75"	6 1/4"	1.03"	0.05"-0.18"	5 3/4"	63595K43	8.15
4"	4.50"-4.62"	4.25"	6 3/4"	1.06"	0.05"-0.18"	6 1/4"	63595K44	8.47

Telescoping Tapered Metal Covers

Overlapping spiral coils extend and retract to protect equipment from hot and sharp chips that are too harsh for coated-fabric bellows. Covers are made of 1095 blue carbon steel. For a proper fit, choose a cover with a small end ID that's at least 1/4" larger than the small end diameter of the item to be covered.

Small End ID	Large End OD	Wall Thick.	Expanded Lg.	Compressed Lg.		
1/2"	1"	0.01"	4"	1/2"	93735K32	$27.64
3/4"	1 3/8"	0.01"	10"	3/4"	93735K36	50.77
1"	1 3/4"	0.015"	10"	1"	93735K43	56.71
1 1/4"	2 1/16"	0.015"	14"	1 3/8"	93735K47	72.22
1 1/2"	2 1/4"	0.015"	10"	1 3/8"	93735K49	68.87
1 1/2"	2 3/8"	0.015"	18"	2"	93735K51	97.07
1 3/4"	2 3/4"	0.015"	36"	3"	93735K64	181.48
2 1/4"	3 5/8"	0.02"	36"	3"	93735K74	193.16

Flat Bellows

Three-Sided Way Cover Bellows

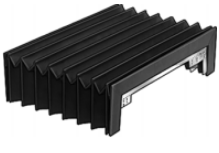

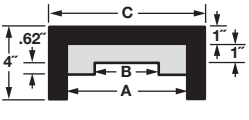

Place these three-sided bellows over equipment for protection from liquids and particles. They have a notched opening with perforated tabs that can be removed to widen the opening. Made of neoprene-coated nylon with PVC stiffeners along the edges of each fold to enhance rigidity. Wall thickness is 0.02". Temperature range is –40° to +225° F. Color is black.

To Order: Please specify expanded length in 1-ft. increments.

Mounting flanges are made of aluminum and are furnished in six pieces.

Inside Wd. (A)	Notch Wd. (B)	O'all Wd. (C)	Max. Cont. Expanded Lg.	One Foot Compresses To	*Bellows*	Per Ft.	*Mounting Flanges*	Each
8 1/8"	4 1/8"- 8 1/8"	10 1/2"	10 ft.	1 5/8"	8938A44	$64.25	8938A55	$15.38
12 1/8"	8 1/8"-12 1/8"	14 1/2"	10 ft.	1 5/8"	8938A45	71.19	8938A56	17.95
16 1/8"	12 1/8"-16 1/8"	18 1/2"	10 ft.	1 5/8"	8938A46	79.05	8938A57	18.60
20 1/8"	16 1/8"-20 1/8"	22 1/2"	10 ft.	1 5/8"	8938A47	93.86	8938A58	18.60
24 1/8"	20 1/8"-24 1/8"	26 1/2"	10 ft.	1 5/8"	8938A48	101.36	8938A59	19.57
28 1/8"	24 1/8"-28 1/8"	30 1/2"	10 ft.	1 5/8"	8938A49	105.00	8938A61	20.41

Top Way Cover Bellows

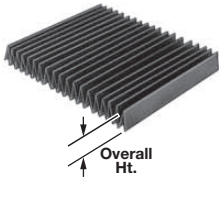

Choose these flat flexible bellows for one-sided coverage—they're ideal for protecting equipment from light dust and mist. Made of permanently pleated, melamine-coated polyester, they resist abrasion, coolants, and oil. Meet UL 94HB for flammability. Wall thickness is 0.01". Temperature range is –10° to +200° F. Color is black.

To Order: Please specify expanded length in 1-ft. increments.

O'all Ht.	Max. Cont. Expanded Lg.	One Foot Compresses To	*1-ft. Wide*	Per Ft.	*2-ft. Wide*	Per Ft.
0.59"	8 ft.	0.59"	1320K23	$25.64	1320K34	$32.25
0.79"	8 ft.	0.47"	1320K25	26.23	1320K36	32.98
1"	8 ft.	0.39"	1320K27	26.77	1320K38	33.64

Bridgeport Way Cover Bellows Set

Upper Column Way Bellows with Rear Knee Way Bellows

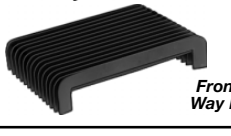

Front Knee Way Bellows

Guard against damage caused by flying chips and abrasive particles on your Bridgeport machine. Made of 0.032" thick Goralon-coated fabric, the ends wrap around your machine for quick mounting and removal. You'll get bellows for upper column way, rear knee way, and front knee way; plus mounting hardware. Fits all standard 9" and 12" travel Bridgeport machines except Series II Bridgeport machines. Temperature range is –30° to +260° F. Color is black.

2963A13 ..... $557.14

Round Bellows with Cuff Ends

To install, slide over your machine's rod or shaft and secure cuff ends with hose clamps (not included). Color is black, except for *rigid* bellows, which are gray. Venting is recommended for *sealed* and *molded* bellows. *Sewn* bellows are sewn along the edge of the ID and OD, so they have a more rugged appearance.

Flexible, Molded

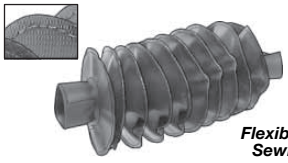

Flexible, Sewn

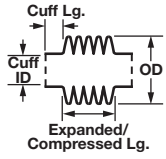

Ultra Flexible—Sealed

Made from tear-resistant polyurethane with a wall thickness of 0.01″, these bellows are extra flexible. Bellows are die cut and then welded together into one piece. They resist oils and abrasion. Temperature range is –60° to +225° F.

Cuff ID	Cuff Lg.	OD	1-ft. Expanded Lg. Compressed Lg.			2-ft. Expanded Lg. Compressed Lg.		
1/2″	1/2″	2 1/2″	1″	9741K41	$52.03	2″	9741K51	$87.85
3/4″	1/2″	2 3/4″	1″	9741K42	53.18	2″	9741K52	89.80
1″	1/2″	3″	1″	9741K43	54.36	2″	9741K53	101.63
1 1/4″	1/2″	3 1/4″	1″	9741K44	63.28	2″	9741K54	103.91
1 1/2″	1/2″	3 1/2″	1″	9741K45	66.82	2″	9741K55	106.06
1 3/4″	1/2″	3 3/4″	1″	9741K46	$69.73	2″	9741K56	$108.53
2″	1/2″	4″	1″	9741K47	71.28	2″	9741K57	110.88
2 1/2″	1/2″	4 1/2″	1″	9741K48	72.88	2″	9741K58	113.56
3″	1/2″	5″	1″	9741K49	77.01	2″	9741K59	120.72

Flexible—Molded

Molded from neoprene and latex to resist light oils, abrasion, and ozone. Wall thickness is 0.02″ to 0.04″. Temperature range is –15° to +190° F.

Cuff ID	Cuff Lg.	OD	Expanded Lg.	Compressed Lg.		
With Same Cuff IDs						
1/4″	1/2″	5/8″	11″	2 3/4″	5298K21	$49.74
1/2″	1/2″	1 1/8″	11″	2 3/4″	5298K22	42.86
5/8″	5/16″	1 11/16″	2 1/4″	9/16″	5298K23	17.00
3/4″	3/4″	1 5/8″	10 1/2″	2 5/8″	5298K85	52.00
1″	1″	2 1/8″	10″	2 1/2″	5298K24	18.76
1 1/4″	1″	2 3/8″	10″	2 1/2″	5298K25	36.46
1 1/2″	3/4″	1 3/4″	7″	1 3/4″	5298K26	19.74
1 1/2″	1 1/2″	2 5/8″	10″	2 1/2″	5298K27	46.43
1 3/4″	1 1/2″	2 7/8″	9″	2 1/4″	5298K28	37.50
With Same Cuff IDs (Cont.)						
2″	1 1/2″	3 1/8″	9″	2 1/4″	5298K29	$28.31
2 1/2″	1 1/2″	3 7/8″	9″	2 1/4″	5298K71	48.15
3″	1 1/2″	4 5/8″	9″	2 1/4″	5298K72	56.67
4″	1 1/2″	5 5/8″	9″	2 1/4″	5298K73	58.62
6″	2″	8 1/8″	8″	2″	5298K74	65.00
8″	2″	10 1/8″	8″	2″	5298K75	71.67
With Different Cuff IDs						
1/4″, 7/16″	1/2″	7/8″	4 1/2″	1 1/8″	5298K76	17.18
9/32″, 5/8″	1/8″	3/4″	1 1/8″	9/32″	5298K77	19.74

Flexible—Sewn

Bellows are neoprene-coated nylon, so they resist tearing. Wall thickness is 0.022″. Temperature range is –60° to +250° F.
Also Available: Custom lengths. Please ask for 1278K88 and specify ID, OD, and expanded length in 1″ increments.

Cuff ID	Cuff Lg.	OD	1-ft. Expanded Lg. Compressed Lg.			2-ft. Expanded Lg. Compressed Lg.			4-ft. Expanded Lg. Compressed Lg.		
3/4″	1″	3 1/4″	3/4″	1278K11	$43.39	1 1/2″	1278K28	$86.97	3″	1278K46	$174.02
1″	1″	3 1/2″	3/4″	1278K12	45.29	1 1/2″	1278K29	90.51	3″	1278K47	180.86
1 1/4″	1″	3 3/4″	3/4″	1278K13	46.45	1 1/2″	1278K31	92.83	3″	1278K48	185.71
1 1/2″	1″	4″	3/4″	1278K14	46.90	1 1/2″	1278K32	94.33	3″	1278K49	191.70
1 3/4″	1″	4 1/4″	3/4″	1278K15	47.77	1 1/2″	1278K33	95.48	3″	1278K51	190.22
2″	1″	4 1/2″	3/4″	1278K16	48.65	1 1/2″	1278K34	97.02	3″	1278K52	194.18
2 1/4″	1″	4 3/4″	3/4″	1278K17	48.95	1 1/2″	1278K35	97.90	3″	1278K53	198.02
2 3/4″	1″	5 1/4″	3/4″	1278K18	49.74	1 1/2″	1278K36	99.49	3″	1278K54	203.93
3 1/4″	1″	5 3/4″	3/4″	1278K19	50.66	1 1/2″	1278K37	101.43	3″	1278K55	206.34
4 1/4″	1″	6 3/4″	3/4″	1278K21	59.89	1 1/2″	1278K38	120.31	3″	1278K56	225.04
5 1/4″	1″	7 3/4″	3/4″	1278K22	72.19	1 1/2″	1278K39	144.53	3″	1278K57	288.99
6 1/4″	1″	8 3/4″	3/4″	1278K23	80.34	1 1/2″	1278K41	160.74	3″	1278K58	321.30

Rigid—Molded

With excellent resistance to abrasion and ozone, these neoprene/nylon-coated Goralon bellows have a sturdy wall thickness of 0.04″. Temperature range is –30° to +260° F. **Also Available:** Custom lengths. Please ask for 9421K77 and specify ID, OD, and expanded length in 1″ increments.

Cuff ID	Cuff Lg.	OD	1-ft. Expanded Lg. Compressed Lg.			2-ft. Expanded Lg. Compressed Lg.			3-ft. Expanded Lg. Compressed Lg.			4-ft. Expanded Lg. Compressed Lg.		
1″	1″	1 3/4″	2 3/4″	9421K62	$73.30	5 1/4″	9421K11	$111.49	—	—	—	—	—	—
1 1/2″	1″	2 3/8″	2 1/4″	9421K63	74.71	4 1/2″	9421K12	114.33	7 5/8″	9421K34	$154.70	8 7/8″	9421K81	$182.27
2″	1″	3″	2 1/4″	9421K64	78.28	4″	9421K13	116.98	6 5/8″	9421K35	162.05	8 7/8″	9421K82	188.36
2 1/2″	1″	3 1/2″	2 1/4″	9421K65	79.70	4″	9421K14	118.24	6 5/8″	9421K36	170.13	8″	9421K83	199.31
3″	1″	4 1/4″	1 3/4″	9421K66	82.44	3 1/4″	9421K15	120.80	5 1/2″	9421K37	177.02	7 1/8″	9421K84	207.66
4″	1″	5 1/2″	1 1/2″	9421K67	91.06	2 3/4″	9421K16	132.15	4 1/2″	9421K38	206.19	6″	9421K85	242.24
5″	1″	6 3/4″	1 3/8″	9421K68	111.46	2 1/2″	9421K17	157.59	4″	9421K39	217.96	5 1/8″	9421K86	265.16
6″	1″	8″	1 1/8″	9421K69	120.88	2 1/4″	9421K18	172.78	—	—	—	—	—	—
8″	1″	10″	1 1/8″	9421K72	153.26	2 1/2″	9421K21	214.22	—	—	—	—	—	—
10″	1″	12″	1 1/4″	9421K73	180.77	2 1/4″	9421K22	261.69	—	—	—	—	—	—

FDA-Compliant Round Bellows with Cuff Ends

Made from FDA-compliant neoprene, these rigid bellows slide over your machine's rod or shaft. Secure with hose clamps (not included). They're molded, so venting is recommended. Wall thickness is 0.06″, unless noted. Resist oils, coolants, and abrasion. Temperature range is –25° to +220° F. Color is off-white. **Also Available:** Custom lengths. Please ask for 95635K35 and specify ID, OD, and expanded length in 1″ increments up to 2 ft.

Cuff ID	Cuff Lg.	OD	1-ft. Expanded Lg. Compressed Lg.			2-ft. Expanded Lg. Compressed Lg.		
1″	1″	1 3/4″	1 29/32″	95635K42■	$71.91	3 13/16″	95635K61■	$112.43
1 1/2″	1″	2 1/2″	1 13/32″	95635K43■	76.90	2 13/16″	95635K62■	123.90
2″	1″	3″	2 13/16″	95635K44	92.67	5 5/8″	95635K63	146.38
2 1/2″	1″	3 1/2″	2 13/16″	95635K45	101.18	5 5/8″	95635K64	157.96
3″	1″	4 1/4″	2 1/4″	95635K46	104.36	4 1/2″	95635K65	158.69
4″	1″	5 1/2″	2″	95635K47	117.24	3 13/16″	95635K66	176.30
5″	1″	6 3/4″	1 23/32″	95635K48	137.75	3 1/4″	95635K67	214.56
6″	1″	8″	1 13/32″	95635K49	147.15	2 13/16″	95635K68	232.36
8″	1″	10″	1 13/32″	95635K52	187.01	2 13/16″	95635K71	292.16
10″	1″	12″	1 13/32″	95635K53	236.83	2 13/16″	95635K72	359.44
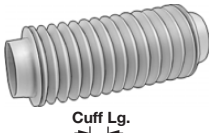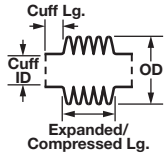
■ Wall thickness is 0.03″.